

Tide Tables 2013 – Central and Western Pacific Ocean and Indian Ocean

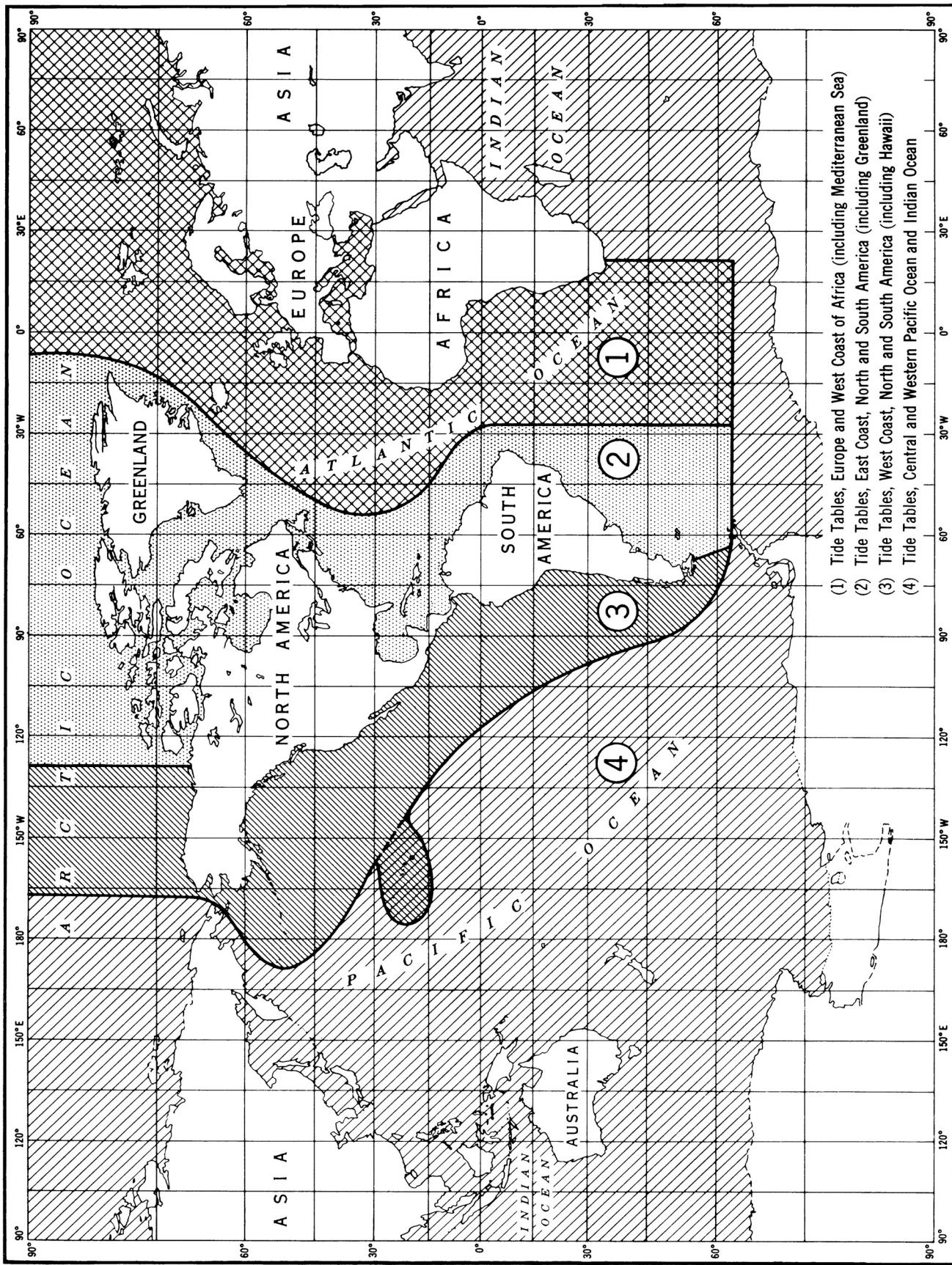
Tide Tables 2013

HIGH AND LOW WATER PREDICTIONS

Central and Western Pacific Ocean and Indian Ocean



INDEX OF TIDE TABLE COVERAGE



Tide Tables 2013 HIGH AND LOW WATER PREDICTIONS

Central and Western Pacific Ocean and Indian Ocean

Issued 2012



**This edition of the Tide Tables and Tidal Current Tables
is dedicated in memory of
Tommy James Kendrick
(1940-2012)**



Tommy Kendrick's career as a physical oceanographer spanned more than 40 years, beginning within the US Coast and Geodetic Survey, and later as a part of NOAA. Mr. Kendrick worked within offices which were dedicated to the measurement, analysis and prediction of tides and tidal currents and the dissemination of that information to the public. Mr. Kendrick's knowledge and dedication contributed substantially to improvements in the products, services, information and data available through NOAA's Center for Operational Oceanographic Products and Services (CO-OPS). This is particularly true in regards to the publication of the annual Tide Tables and Tidal Current Tables, which Mr. Kendrick directed for many years.

"We are tied to the ocean. And when we go back to the sea, whether it is to sail or to watch - we are going back from whence we came."

John F. Kennedy

SOURCES OF ADDITIONAL INFORMATION

THE NATIONAL OCEAN SERVICE IS NO LONGER PRINTING AND DISTRIBUTING THE TIDE AND TIDAL CURRENT TABLES

Tide and Tidal current data continue to be updated, generated and published by the NOAA/National Ocean Service; however, the printing and distribution in book-form is now done by the Federal Aviation Administration and several private companies working from information provided by NOS.

NOS now offers two vehicles for obtaining predictions. First, the complete set of Tables as camera-ready page-images will be available on CD-ROM. The CD-ROM vehicle is primarily intended for use by federal or private printers who wish to print in book-form the full set of Tables for distribution to resellers and the general public. Second, for domestic tide reference stations, limited predictions are available on the NOS, Center for Operational Oceanographic Products and Services (CO-OPS), web site, (<http://tidesandcurrents.noaa.gov/>).

In addition to predictions, the web site provides updated information on the status of the Tables as they are finalized each year. Notices concerning the most recent Table updates and publication cut-off dates are included.

For the names of companies printing and distributing the Tables, please call or write to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
301-713-2815, fax 301-713-4500

PUBLICATIONS:

United States Coast Pilots and Nautical Charts may be ordered from:

FAA, AeroNav Products
APLG Distribution Division, AJV-37
10201 Good Luck Road
Glenn Dale, MD 20769-9700
(301) 436-8301
(800) 638-8972 toll free, U.S. Only
<http://www.aeronav.faa.gov>

A list of authorized sales agents is published in the Nautical Chart Catalogs or may be obtained on request from the National Ocean Service. The publications may also be purchased across-the-counter at the NOAA, Distribution Branch office listed above.

TECHNICAL ASSISTANCE:

Technical questions relating to tide and current predictions, as well as requests for special predictions, should be addressed to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815

SOURCES OF ADDITIONAL INFORMATION

Technical questions relating to ***actual tide observations, tidal datums, and other information necessary*** for ***engineering projects*** should be addressed to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2877

Technical questions relating to *other publications and nautical charts* should be addressed to:

National Ocean Service
Navigation Services Division
1315 East-West Highway.
Silver Spring, MD 20910
(301) 713-2729

WEBSITES

(PORTS® * Predictions * Observations * Bench Marks * Tides Online * Great Lakes Online)

<http://tidesandcurrents.noaa.gov>

Coastal Services Center - <http://www.csc.noaa.gov>
Marine Chart Division - <http://www.nauticalcharts.noaa.gov>
Ocean Predictions Center - <http://www.opc.ncep.noaa.gov>
National Centers for Environmental Predictions - <http://www.ncep.noaa.gov>
National Climatic Data Center - <http://www.ncdc.noaa.gov>
National Data Buoy Center - <http://www.ndbc.noaa.gov>
National Geodetic Survey - <http://www.ngs.noaa.gov>
National Geophysical Data Center - <http://www.ngdc.noaa.gov>
National Ocean Service - <http://www.nos.noaa.gov>
National Oceanic and Atmospheric Administration - <http://www.noaa.gov>
National Oceanographic Data Center - <http://www.nodc.noaa.gov>
National Weather Service - <http://www.nws.noaa.gov>
U.S. Coast Guard - <http://www.uscg.mil>
U.S. Geological Survey - <http://www.usgs.gov>
U.S. Naval Observatory - <http://www.usno.navy.mil>
U.S. Naval Oceanographic Office - <https://oceanography.navy.mil>

CORRECTIONS:

Corrections to this publication, after the date of printing, may appear in the Notice to Mariners. They may also appear in the Local Notice to Mariners, published weekly, by the various United States Coast Guard Districts.

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IMPORTANT NOTICES

For the most part, tide predictions for U.S. reference stations are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights should be considered as those expected under average weather conditions. During times when weather conditions differ from what is considered average for the area, the mariner must take note of the corresponding differences between predicted levels and those actually observed. Generally, prolonged onshore winds or a low barometric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted. Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges may be expected near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides), and increased ranges may be expected when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range will depend upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, the mariner should closely follow local weather forecasts as they relate to the effects upon the tide levels.

DAYLIGHT-SAVING TIME IS NOT USED IN THIS PUBLICATION. All daily tide predictions and predictions compiled by the use of Table 2 data are based on the standard time meridian indicated for each location. Predicted times may be converted to daylight-saving times, where necessary, by adding 1 hour to these data. In converting times from the Astronomical Data on the inside back cover, it should be noted that daylight-saving time is based on a meridian 15° east of the normal standard meridian for a particular place.

Predicted heights for all reference stations in table 1 are given in both feet and centimeters. Predicted values from the use of table 2 and 3 will be in the English system, but can be converted to metric units by the use of table 6.

The daily tide predictions for the Philippine locations, JOLO, LEGASPI PORT, and SAN FERNANDO HARBOR do not appear in this publication. Daily tide predictions for the Philippine locations are normally supplied to the National Ocean Service by the Bureau of Coast and Geodetic Survey, Republic of the Philippines in accordance with cooperative arrangements for the exchange of tidal predictions. Their predictions were not forwarded in time to appear in this publication. Those predictions usually appear on pages 172 through 175 and 188 through 195. These pages have been omitted from this publication.

NOS, in partnership with other agencies and institutions, has established a series of Physical Oceanographic Real Time Systems (PORTS®) in selected areas. These PORTS® sites provide constantly updated information on tide and tidal current conditions, water temperature, and weather conditions. This information is updated every six minutes. PORTS® sites are currently in operation at several major harbors with future sites to be added. The information is accessible through a computer data connection or by a voice response system at the following numbers:

PORTS® SITES	VOICE ACCESS	INTERNET ACCESS
CHERRY POINT	888-817-7794	www.tidesandcurrents.noaa.gov
CHESAPEAKE BAY	866-CH-PORTS (866-247-6787)	"
DELAWARE RIVER & BAY	866-30-PORTS (866-307-6787)	"
GULFPORT	888-257-1858	"
HOUSTON/GALVESTON	866-HG-PORTS (866-447-6787)	"
LAKE CHARLES	888-817-7692	"
LOS ANGELES/LONG BEACH		"
LOWER COLUMBIA RIVER	888-53-PORTS (888-537-6787)	"
LOWER MISSISSIPPI RIVER	888-817-7767	"
MOBILE BAY	877-84-PORTS (877-847-6787)	"

IMPORTANT NOTICES

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NARRAGANSETT BAY	866-75-PORTS (866-757-6787)	"
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NEW YORK/NEW JERSEY	866-21-PORTS (866-217-6787)	"
PASCAGOULA	888-257-1857	"
PORT OF ANCHORAGE	866-AK-PORTS (866-257-6787)	"
SABINE NECHES	888-257-1859	"
SAN FRANCISCO BAY	866-SB-PORTS (866-727-6787)	"
SOO LOCKS	301-713-9596	"
TACOMA	888-60-PORTS (888-607-6787)	"
TAMPA BAY	866-TB-PORTS (866-827-6787)	"

SAMOA ISLANDS

The country of Samoa has changed their time meridian from 165° West to 195° East. Beginning with the 2013 edition of the "Tide Tables, Central and Western Pacific and Indian Ocean", tide predictions for "Apia, Samoa Island" and for secondary stations in the country of Samoa have been provided relative to the 195° East time meridian. Secondary stations in the western hemisphere which were reference to "Apia, Samoa Island" have been recalculated to use "Pago Pago" as the new reference station for tide predictions.

(Issued January 9, 2012)

INTRODUCTION

Tide tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1853. For a number of years these tables appeared as appendixes to the annual reports of the Superintendent of the Survey, and consisted of detailed instructions enabling the mariner to make his own prediction of tides as the occasion arose.

The first tables to give predictions for each day were those for the year 1867. They gave the times and heights of high waters only and were published in two separate parts, one for the Atlantic coast and the other for the Pacific coast of the United States. Together they contained daily predictions for 19 stations and tidal differences for 124 stations. A few years later predictions for the low waters were also included, and for the year 1896 the tables were extended to include the entire maritime world, with full predictions for 70 ports and tidal differences for about 3,000 stations.

The tide tables are now issued in four volumes, as follows: Europe and West Coast of Africa (including the Mediterranean Sea); East Coast of North and South America (including Greenland); West Coast of North and South America (including the Hawaiian Islands); Central and Western Pacific Ocean and Indian Ocean. Together, they contain daily predictions for 272 reference ports and differences and other constants for about 6,000 stations.

This edition of the Tide Tables, Central and Western Pacific Ocean and Indian Ocean contains full daily predictions for 95 reference stations and differences and other constants for more than 1,932 stations. It also contains a table for obtaining the approximate height of the tide at any time, a table of local mean time of sunrise and sunset for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table for converting feet to centimeters, a table of the Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices, and a glossary of terms.

Up to and including the tide tables for the year 1884, all the tide predictions were computed by means of auxiliary tables and curves constructed from the results of tide observations at the different ports. From 1885 to 1911, inclusively, the predictions were generally made by means of the Ferrel tide-predicting machine. From 1912 to 1965, inclusively, they were made by means of the Coast and Geodetic Survey tide predicting machine No. 2. Since 1966, predictions have been made by electronic computer.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results, and as further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the National Ocean Service, Oceanographic Division, 1305 East-West Highway, N/OPS3, Silver Spring, Maryland 20910, U.S.A.

In accordance with cooperative arrangements between the National Ocean Service and the authorities listed below, predictions for the following stations appear in this issue:

Hydrographic Office, Japan.—O. Paramushir Island, Kamaisi, Yokohama, Kobe, Kure, Moji, Sasebo, and Naha.

Hydrographic Department, Admiralty, England.—Musi River, Surabaja Strait, Kutei River entrance, Barito River, Shatt al Arab, Mina Salman, Aden, Karachi, Dar es Salaam, Dreger Harbor, Mina Al Ahmadi, Musay'id Outer Channel Entrance, Mina Jebel Ali, Manila, Cebu and Davao.

Department of Lands and Survey, New Zealand.—Wellington and Auckland.

Geodetic and Research Branch, Survey of India, India.—Mergui, Rangoon, Sagar, Madras, Colombo, Bombay, and Suez.

Service Hydrographique, France.—Do Son, Mui Vung Tau.

Hydrographic Department, Thailand.—Bangkok Bar.

Maritime Headquarters, Republic of South Africa.—Durban.

Instituto Hidrografico, Portugal.—Beira.

INTRODUCTION

Hydrographic Office, Australia.—Sydney, Darwin, Port Phillip, Townsville, Brisbane Bar, Port Adelaide, Port Lincoln, and Port Hedland.

Port of Singapore Authority.—Singapore.

National Mapping & Resource Information Authority, Republic of the Philippines.—Legaspi Port, San Fernando Harbor, Jolo.

National Marine Data and Information Service, Peoples Republic of China.—Hong Kong, Dalian, Qinhuangdao, Tanggu, Yantai, Qingdao, Lianyungang, Wusong, Zhongjun, Kanmen, Xiamen, Shantou, Huangpu, Haikou, and Beihai.

Marine Meteorological Center, Central Weather Bureau, Taiwan.—PengHu, Keelung.

LIST OF REFERENCE STATIONS

Name of station	Page	Datum below mean sea-level	Updated	Data Series
Aden, Yemen.....	360	4.4		
Apia, Samoa Islands	252	1.6		
Auckland, New Zealand	268	5.8		
Bangkok Bar, Thailand.....	140	7.7		
Barito River, Borneo	168	4.3		
Beihai, China.....	128	8.4		
Beira, Mozambique	372	11.4		
Belawan Channel, Sumatra.....	148	4.9		
Bombay, India	328	8.2		
Brisbane Bar, Australia	284	4.0		
Cebu, Philippines	180	2.4		
Ch'ang Chiang Approach, China	92	9.7		
Chuuk, Moen Island, Caroline Islands	204	3.56	2003	6 years (1981-1986)
Colombo, Sri Lanka	324	1.2		
Dalian, China	60	5.3		
Dar Es Salaam, Tanzania	368	5.0		
Darwin, Australia	276	13.5		
Davao, Philippines	176	2.5		
Diego Garcia Island.....	380	2.70		
Djakarta, Java	156	2.0		
Do Son, Vietnam	132	6.1		
Dreger Harbor, New Guinea	272	3.8		
Durban, South Africa.....	376	3.6		
Guam, Mariana Islands	196	1.4	2002	5 years (1994-2000)
Haikou, China.....	124	4.9	2002	5 years (1994-1998)
Hilo, Hawaii Island, Hawaii.....	240	1.19	2002	5 years (1994-1998)
Hong Kong, China.....	120	4.5		
Honolulu, Hawaii	228	0.8	2003	5 years (1996-2000)
Huangpu, China	116	5.1		
Inch'on, Korea	52	15.2		
Jolo, Philippines**	172	1.1		
Johnston Island.....	244	1.07	2002	5 years (1994-1998)
Kahului, Maui Island, Hawaii	236	1.16	2002	5 years (1994-1998)
Kamaisi, Japan.....	16	2.8		
Kanmen, China.....	96	10.8		
Karachi, Pakistan	332	5.4		
Keelung (Chi-lung Chiang), Taiwan.....	112	1.9		
Kobe, Japan	24	3.1		
Kure, Japan	32	6.6		
Kutei River Entrance, Borneo.....	164	4.6		
Kwajalein Atoll, Marshall Islands.....	216	3.0	2001	5 years (1994-1998)
Legaspi Port, Philippines**	192	2.4		
Lianyun Gang, China.....	80	9.5		
Madras, India	320	2.1		
Malakal Harbor, Palau Islands	200	3.6		
Manila, Philippines	184	1.6		
Mergui, Burma	308	9.1		
Mina Al Ahmadi, Kuwait	340	5.64		
Mina Jebel Ali, United Arab Emirates.....	356	3.34		
Mina Salman, Bahrain	348	4.2		

LIST OF REFERENCE STATIONS Cont.

Name of station	Page	Datum below mean sea-level	Updated	Data Series
Moji, Japan.....	36	4.6		
Moku O Loe, Oahu Island, Hawaii	232	1.07	2002	4 years (1993-1996)
Mui Vung Tau, Vietnam.....	136	7.9		
Musay'id Outer Channel Entrance, Qatar	352	3.84		
Musi River, Sumatra.....	152	6.2		
Naha, Japan.....	44	3.9		
Namp'Ohang, Korea	56	10.0		
Nawiliwili, Kauai Island, Hawaii.....	224	0.85	2002	4 years (1993-1996)
O. Paramushiru, Kuril Islands.....	8	3.8		
Otomari, Sakhalin Island	4	2.4		
Pago Pago, American Samoa.....	260	1.34	2002	3 years (1989-1991)
Papeete Harbor, Tahiti Island.....	248	0.73	2003	5 years (1994-1998)
PengHu (Ma-Kung Kang), Pescadores ..	108	5.1		
Pohnpei Harbor, Caroline Island	208	2.3		
Port Adelaide, Australia	296	4.9		
Port Hedland, Australia	304	10.0		
Port Lincoln, Australia	300	2.9		
Port Phillip, Australia	292	2.9		
Pusan, Korea	48	2.1		
Qingdao (Da Gang), China	76	7.8		
Qinhuangdao, China	64	3.0		
Rangoon, Burma	312	10.2		
Ras at Tannurah, Saudi Arabia	344	4.1		
Sagar, India	316	9.7		
Sakate, Japan	28	3.3		
San Fernando Harbor, Philippines**.....	188	1.0		
Sand Island, Midway Islands	220	0.65	2002	5 years (1994-1998)
Sasebo, Japan	40	5.4		
Shantou, China	104	4.5		
Shatt al Arab, Iraq	336	5.7		
Singapore, Malaysia	144	5.2		
Suez, Egypt.....	364	3.7		
Surabaja Strait, Java	160	3.6		
Suva, Suva Harbor	256	2.15	2003	8 years (1990-1997)
Sydney, Australia	288	3.0		
Tanggu, China	68	7.9		
Townsville, Australia	280	5.2		
Wake Island.....	212	1.17	2002	5 years (1994-1998)
Wellington, New Zealand	264	2.9		
Wusong, China.....	84	6.6		
Xiamen, China.....	100	10.8		
Yamato Wan, Matsuwa To.....	12	2.6		
Yantai, China.....	72	4.8		
Yokohama, Japan	20	3.8		
Zhongjun, China.....	88	7.4		

*New Reference Station.

**Daily predictions for this station were omitted.

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1 were calculated.

TABLE 1.—DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as *reference stations*. By using tidal differences from table 2, one can calculate the approximate times and heights of the tide at many other places which are called *subordinate stations*. Instructions on the use of the tidal differences are found in the explanation of table 2.

High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by the comparison of consecutive heights. Because of diurnal inequality at certain places, however, there may be a difference of only a few tenths of a foot between one high water and low water of a day, but a marked difference in height between the other high water and low water. Therefore, in using the Tide Tables it is essential, to note carefully the heights as well as the times of the tides.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page.

Datum.—The datum from which the predicted heights are reckoned is the same as that used for the charts of the locality. In this table a datum approximating to mean low water springs, Indian spring low water, or the lowest possible low water is generally used. The depression of the datum below mean sea level for each of the reference stations of this volume is given on the preceding page.

Depth of water.—The nautical charts published by the United States and other maritime nations show the depth of the water as referred to a low water datum corresponding to that from which the predicted tidal heights are reckoned. To find the actual depth of water at any time, the height of the tide should be added to the charted depth. If the height of the tide is negative—that is, if there is a minus sign (−) before the tabular height—the height should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and following tides, or table 3 may be used. The reference stations in table 1 contain the heights in centimeters as well as feet.

Variation in sea level.—Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted, while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

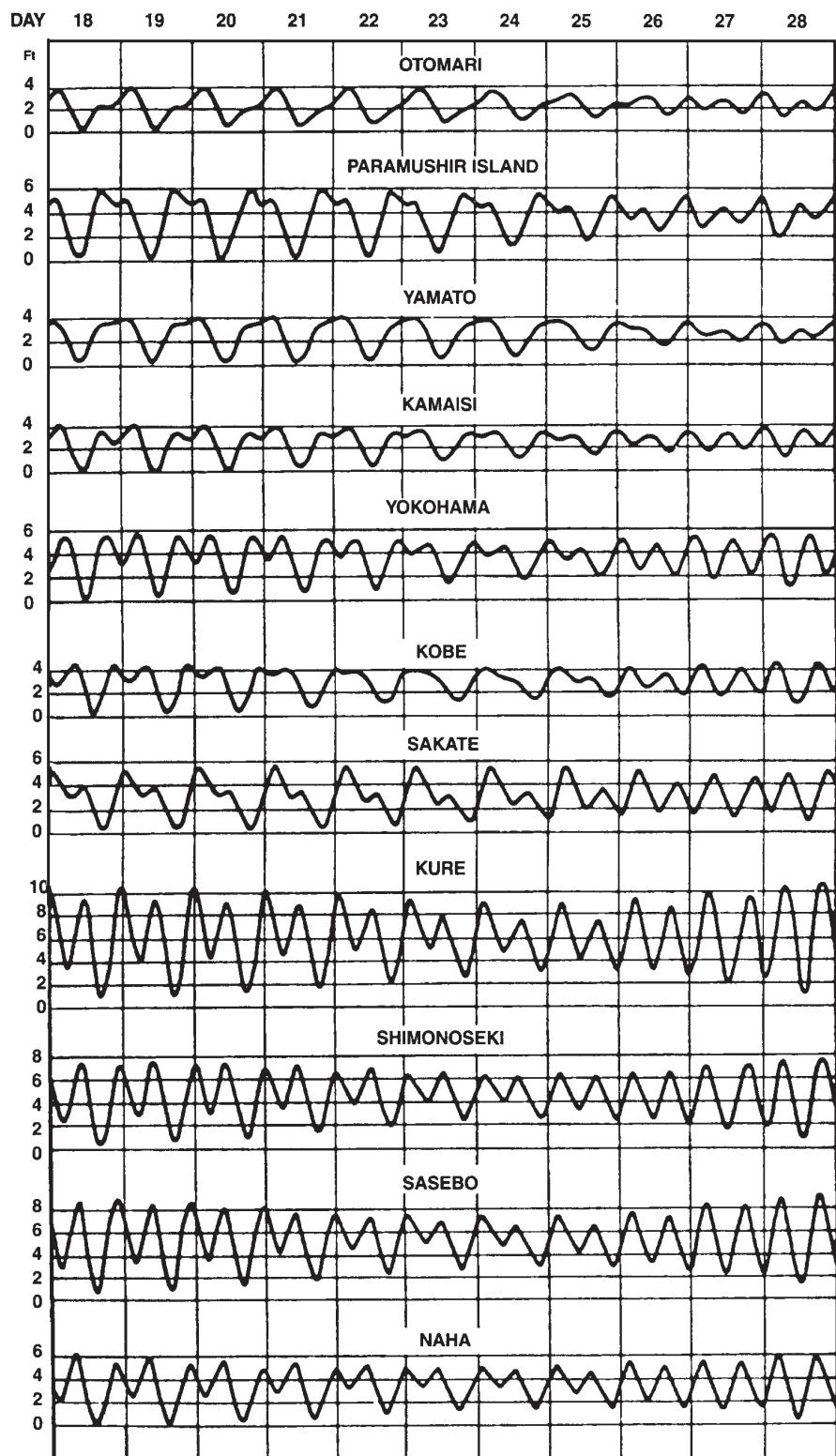
Number of tides.—There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus, on certain days of each month only a single high or a single low water occurs. At some stations, during portions of each month, the tide becomes diurnal—that is, only one high and one low water will occur during the period of a lunar day.

Relation of tide to current.—In using these tables of tide predictions bear in mind that they give the times and heights of high and low waters and not the times of turning of the current or slack water. For stations on the outer coast there is usually a small difference between the time of high or low water and the beginning of ebb or flood current, but for places in narrow channels, landlocked harbors, or on tidal rivers,

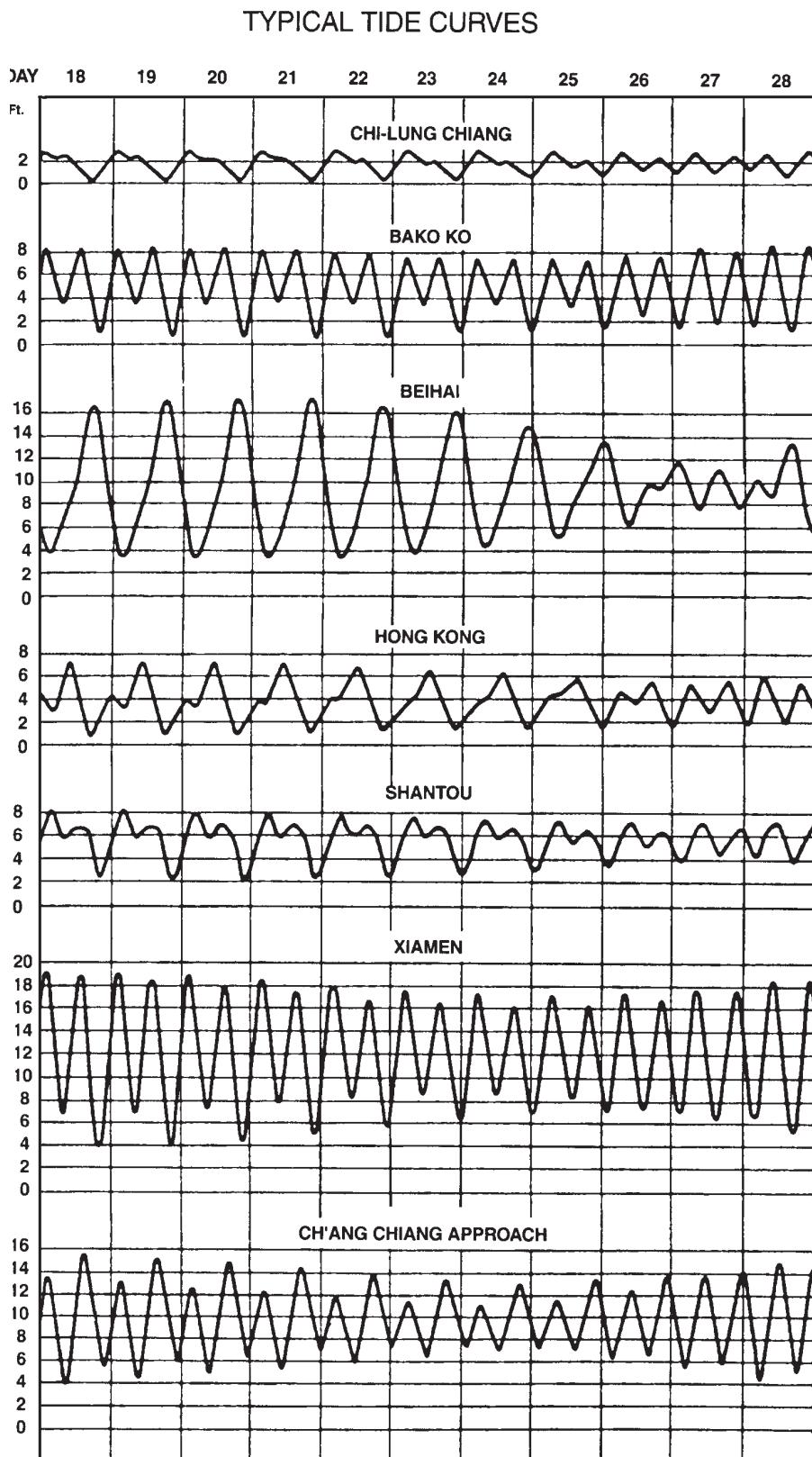
the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted time of slack water, and other current data, reference should be made to the Tidal Current Tables prepared by the National Ocean Service, for the Atlantic and the Pacific coast of North America and Asia.

Typical tide curves.— The principal variations in the tide are illustrated by the curves for 25 stations on pages 3, 3a and 3b. These stations are on the Japan and China coasts, but similar variations will be found in other localities. The tide at Pusan is uniformly semidiurnal with the variations following the Moon's phase. The tides for the remainder of the group exhibits considerable inequality. By reference to the curves it is seen that where the inequality is large the tide at some places becomes diurnal around the times of the Moon's maximum declination, whereas at other places there is just a few tenths of a foot difference between the heights of successive high and low waters. It is essential therefore in using tide tables to carefully note the heights as well as the times of the tide.

TYPICAL TIDE CURVES

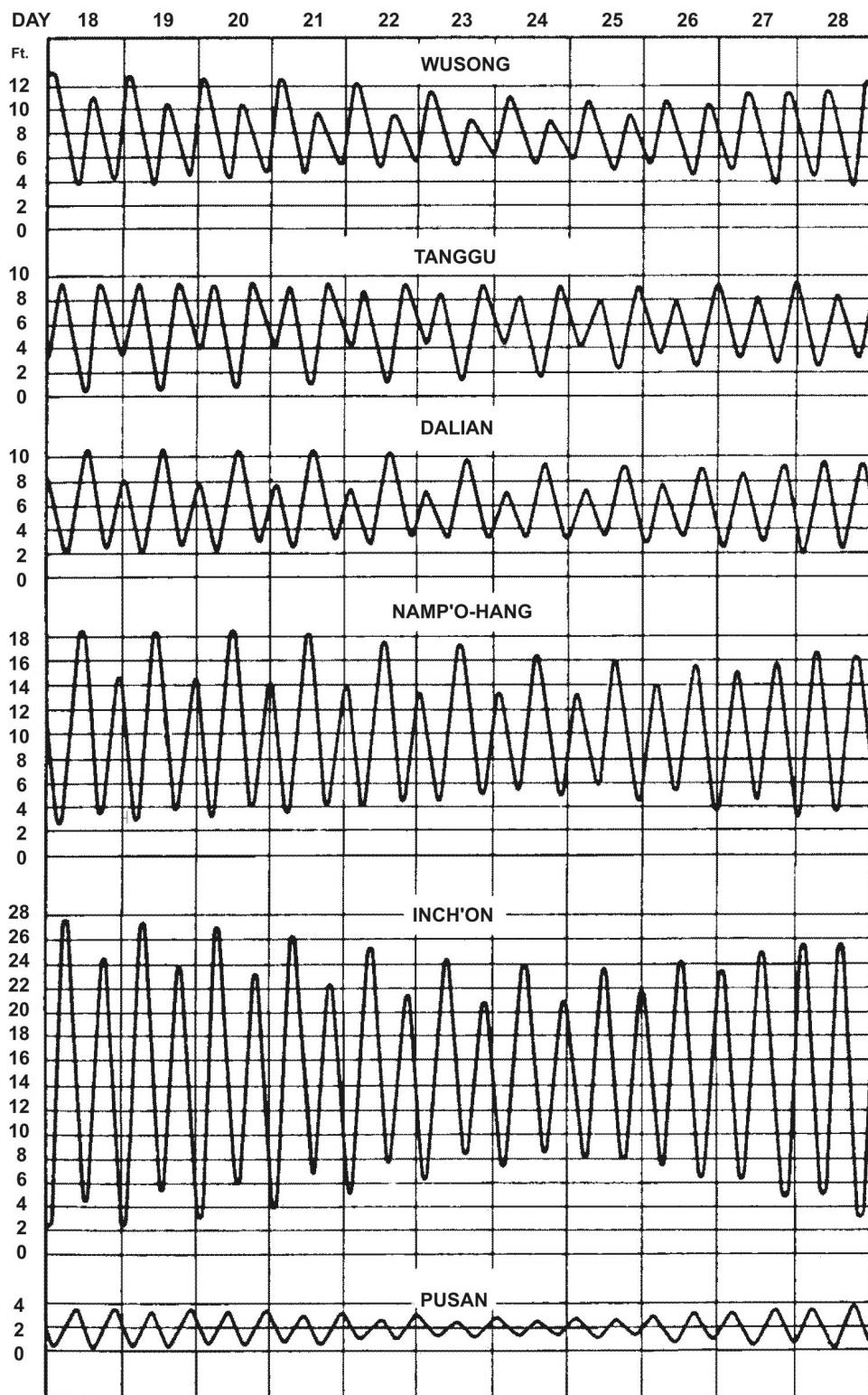


Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.



Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.

TYPICAL TIDE CURVE



Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.

Otomari, Sakhalin Island, 2013

Times and Heights of High and Low Waters

January				February				March				
	Time	Height			Time	Height			Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0149	1.0	30	16 W	0210	1.2	37	1 F	0153	1.5	46	
	0818	2.8	85		0826	3.3	101		0807	3.4	104	
	1214	2.4	73		1345	2.0	61		1403	1.9	58	
	1848	4.2	128		1954	3.9	119		1959	3.3	101	
2 W	0214	1.2	37	17 Th	0234	1.5	46	2 Sa	0204	1.8	55	
	0841	2.9	88		0856	3.5	107		0831	3.6	110	
	1258	2.4	73		1446	2.0	61		1504	1.8	55	
	1921	4.0	122		2037	3.4	104		2041	2.8	85	
3 Th	0236	1.4	43	18 F	0254	1.7	52	3 Su	0208	1.9	58	
	0903	3.0	91		0929	3.6	110		0902	3.8	116	
	1351	2.4	73		1556	2.1	64		1626	1.8	55	
	1957	3.7	113		2124	2.9	88		2136	2.4	73	
4 F	0255	1.6	49	19 M	0307	2.0	61	4 M	0159	2.0	61	
	0928	3.2	98		1007	3.7	113		0945	3.9	119	
	1459	2.4	73		1725	2.0	61		1829	1.7	52	
	2039	3.2	98		2224	2.5	76		●			
5 Sa	0309	1.9	58	20 Su	0309	2.1	64	5 Tu	1045	4.1	125	
	0959	3.4	104		1052	3.8	116		2040	1.3	40	
	1634	2.3	70		1920	1.9	58		2132	1.4	43	
	●	2137	2.8						5 Tu	0045	1.8	55
6 Su	0316	2.1	64	21 M	1148	3.9	119	20 W	1156	3.6	110	
	1041	3.7	113		2101	1.7	52		2132	1.4	43	
	1843	2.0	61						5 Tu	0908	3.9	119
	2342	2.3	70						1816	1.2	37	
7 M	0301	2.2	67	22 Tu	1254	3.9	119	6 W	1207	4.2	128	
	1136	4.0	122		2158	1.5	46		2148	1.0	30	
	2038	1.6	49						21 Th	1322	3.6	110
									6 W	1013	3.8	116
8 Tu	1242	4.3	131	23 W	1359	4.1	125	7 F	1336	4.3	131	
	2145	1.1	34		2237	1.3	40		2242	3.7	113	
									7 Th	1148	3.7	113
									22 F	2127	3.0	27
9 W	1350	4.6	140	24 Th	1455	4.2	128	8 F	1452	4.4	134	
	2236	0.8	24		2309	1.1	34		2309	2.4	73	
									23 Sa	0528	2.2	67
									23 Sa	0820	3.8	116
10 Th	1455	4.8	146	25 F	1543	4.3	131	9 Sa	1527	3.8	116	
	2319	0.5	15		2338	1.0	30		2308	1.0	30	
									9 Sa	0528	2.5	76
									9 Sa	0931	2.1	64
11 F	1553	5.0	152	26 Sa	0617	2.6	79	10 M	1023	2.6	79	
	2359	0.4	12		0926	2.4	73		1653	2.9	119	
					1625	4.4	134		2356	1.0	30	
									10 Su	0500	2.4	73
12 Sa	0653	2.6	79	27 Su	0006	0.9	27	25 M	1023	1.8	55	
	0938	2.5	76		0632	2.7	82		1653	3.9	119	
	1647	5.0	152		1018	2.3	70		2307	0.9	27	
	●				○	1702	4.4	134		2332	1.0	30
13 Su	0037	0.5	15	28 M	0032	0.9	27	26 Tu	0558	2.8	85	
	0709	2.7	82		0650	2.8	85		1108	1.6	49	
	1048	2.3	70		1103	2.2	67		1732	3.8	116	
	1738	4.9	149		1738	4.4	134		○			
14 M	0111	0.6	18	29 Tu	0056	1.0	30	11 M	0012	0.7	21	
	0731	2.9	88		0709	2.9	88		0621	2.8	85	
	1149	2.2	67		1146	2.1	64		1107	1.8	55	
	1825	4.7	143		1812	4.2	128		1738	4.4	134	
15 Tu	0142	0.9	27	30 W	0118	1.1	34	14 Th	0039	0.9	27	
	0757	3.1	94		0728	3.0	91		0642	3.1	94	
	1247	2.1	64		1228	2.0	61		1201	1.6	49	
	1910	4.3	131		1846	4.0	122		1823	4.1	125	
31 Th	0138	1.3	40	31 Th	0747	3.2	98	27 W	0018	1.1	34	
					1313	1.9	58		0616	3.0	91	
					1921	3.7	113		1151	1.4	43	
									1811	3.7	113	
16 Sa	0056	1.6	49	16 Sa	0054	1.4	43	28 Th	0018	1.3	40	
	0712	3.6	110		0712	3.6	110		0656	3.4	104	
	1411	0.8	24		1411	1.2	37		1319	1.2	37	
	2017	2.5	76		1929	3.1	94		1929	3.1	94	
17 Su	0056	1.6	49	17 Su	0110	1.7	52	16 Sa	0056	1.6	49	
	0742	3.6	110		0742	3.6	110		0712	3.6	110	
	1456	1.0	30		1456	1.0	30		1408	1.1	34	
	2055	2.3	70		2055	2.7	82		2055	2.7	82	
18 M	0121	1.7	52	18 M	0125	1.8	55	16 F	0111	1.8	55	
	0814	3.6	110		0852	3.5	107		0822	3.9	119	
	1549	1.1	34		1700	1.2	37		1623	1.2	37	
	2139	2.0	61		2212	1.9	58		2212	1.9	58	
19 Tu	0125	1.8	55	19 Tu	0107	1.7	52	16 W	0107	1.7	52	
	0852	3.5	107		0941	3.3	101		0941	3.3	101	
	2255	1.8	55		●				●			
	2544	1.8	55									
20 W	0107	1.7	52	20 W	0107	1.7	52	16 F	0440	2.7	82	
	0941	3.3	101		2115	1.2	37		1021	1.3	40	
	●								1644	3.3	101	
	2327	1.3	40						2305	1.2	37	
21 F	0459	2.9	88	21 F	0459	2.9	88	16 M	0424	2.4	73	
	1107	1.0	30		2122	3.2	98		0931	1.6	49	
	1729	3.2	98		2217	1.1	34		1557	3.3	101	
	2327	1.3	40		2242	1.1	34		2242	1.1	34	
22 F	0521	3.2	98	22 F	0521	3.2	98	16 M	0424	2.4	73	
	1150	0.7	21		1814	3.0	91		0931	1.6	49	
	1814	3.0	91		2347	1.5	46		1557	3.3	101	
	2347	1.5	46						2332	1.0	30	
23 W	0521	3.2	98	23 W	0521	3.2	98	16 F	0440	2.7	82	
	1203	0.9	27		1821	3.4	104		1021	1.3	40	
	1821	3.4	104		●				1644	3.3	101	
	2347	1.5	46		●				2305	1.2	37	
24 M	0521	3.2	98	24 M	0521	3.2	98	16 W	0440	2.7	82	
	1150	0.7	21		1814	3.0	91		1021	1.3	40	
	1814	3.0	91		2347	1.5	46		1644	3.3	101	
	2347	1.5	46		●				2332	1.0	30	
25 F	0545	3.4	104	25 F	0545	3.4	104	16 F	0440	2.7	82	
	1235	0.5	15		1859	2.8	85		1021	1.3	40	
	1859	2.8	85		●				1644	3.3	101	
	2327	1.3	40		●				2305	1.2	37	
26 Tu	0440	2.7	82	26 Tu	0440	2.7	82	16 M	0440	2.7	82	
	1021	1.3	40		1859	2.8	85		1021	1.3	40	
	1644	3.3	101		●				1644	3.3	101	
	2305	1.2	37		●				2305	1.2	37	
27 W	0459	2.9	88	27 W	0459	2.9	88	16 F	0440	2.7	82	
	1107	1.0	30		1859	2.8	85		1021	1.3	40	
	1729	3.2	98		●				1644	3.3	101	
	2327	1.3	40		●							

Otomari, Sakhalin Island, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0022 1.8 55	16 0040 1.7 52	1 W 0748 3.9 119	16 0038 2.0 61	1 Sa 0339 2.2 67	16 0243 2.3 70						
0717 3.9 119	Tu 0736 3.6 110	W 1609 0.5 15	Th 0745 3.6 110	0946 3.1 94	0844 3.2 98						
1510 0.5 15	1521 0.8 24		1540 0.9 27	1705 1.4 43	1556 1.5 46						
2143 1.9 58	2143 1.9 58		2234 2.1 64	O	2248 2.9 88						
2 Tu 0018 1.8 55	17 0052 1.8 55	2 Th 0842 3.6 110	17 0113 2.0 61	2 Su 0001 2.8 85	17 0416 2.3 70						
0758 3.9 119	W 0812 3.4 104	1713 0.8 24	0824 3.4 104	0548 2.1 64	M 0940 2.9 88						
1621 0.7 21	1615 1.0 30		1622 1.1 34	1115 2.7 82	1620 1.7 52						
O	O		2329 2.2 67	1741 1.7 52	O 2324 3.2 98						
3 W 0848 3.7 113	18 0856 3.2 98	3 F 0952 3.2 98	18 0216 2.1 64	3 M 0043 3.1 94	18 0612 2.1 64						
1751 0.8 24	Th 1722 1.1 34	1817 1.0 30	Sa 0912 3.1 94	0744 1.8 55	Tu 1114 2.5 76						
O	O		1706 1.3 40	1314 2.4 73	1642 2.0 61						
4 Th 0957 3.5 107	19 0956 3.0 91	4 Sa 0149 2.2 67	19 0016 2.4 73	4 Tu 0123 3.4 104	19 0007 3.5 107						
1926 0.9 27	F 1837 1.2 37	0458 2.1 64	Su 0414 2.2 67	0901 1.4 43	W 0758 1.7 52						
5 F 1141 3.2 98	20 1125 2.8 85	5 Su 0204 2.5 76	20 0052 2.6 79	5 W 0203 3.7 113	19 1348 2.3 70						
2033 1.0 30	Sa 1940 1.3 40	0736 1.8 55	M 0634 2.0 61	0955 1.1 34	Tu 1701 2.2 67						
6 Sa 0411 2.1 64	21 0240 2.2 67	6 M 0228 2.8 85	21 0125 2.9 88	6 Th 0242 3.9 119	21 0146 4.1 125						
0630 2.0 61	Su 0643 2.0 61	0859 1.4 43	Tu 0812 1.7 52	1038 0.9 27	F 1009 0.8 24						
1335 3.1 94	1309 2.7 82	1502 2.5 76	1404 2.4 73	1728 2.4 73	O						
2116 1.0 30	2026 1.3 40	2033 1.6 49	1918 1.8 55	2012 2.2 67	O						
7 Su 0344 2.3 70	22 0252 2.4 73	7 Tu 0256 3.1 94	22 0159 3.2 98	7 F 0321 4.1 125	22 0240 4.5 137						
0840 1.7 52	M 0824 1.7 52	0954 1.0 30	W 0917 1.2 37	1115 0.7 21	Sa 1100 0.5 15						
1500 3.0 91	1434 2.7 82	1611 2.5 76	1538 2.4 73	1807 2.4 73	O						
2148 1.2 37	2101 1.4 43	2104 1.7 52	1956 2.0 61	2056 2.3 70	O						
8 M 0355 2.6 79	23 0311 2.7 82	8 W 0326 3.4 104	23 0235 3.6 110	8 Sa 0359 4.2 128	23 0333 4.7 143						
0946 1.3 40	Tu 0926 1.3 40	1039 0.7 21	1011 0.8 24	1151 0.6 18	Su 1146 0.3 9						
1604 3.0 91	1542 2.7 82	1704 2.5 76	1651 2.4 73	1840 2.4 73	O						
2215 1.3 40	2132 1.5 46	2133 1.8 55	2032 2.1 64	2137 2.2 67	O						
9 Tu 0415 2.9 88	24 0335 3.0 91	9 Th 0356 3.6 110	24 0314 3.9 119	9 Sa 0436 4.2 128	24 0425 4.9 149						
1036 0.9 27	W 1016 0.9 27	1118 0.5 15	1100 0.4 12	1225 0.6 12	M 1231 0.2 6						
1655 2.9 88	1640 2.7 82	1749 2.4 73	1753 2.4 73	1910 2.4 73	W 1933 2.5 76						
2240 1.4 43	2159 1.6 49	2202 1.9 58	2107 2.2 67	2217 2.2 67	M 2200 2.3 70						
10 W 0440 3.2 98	25 0402 3.3 101	10 Th 0427 3.8 116	25 0355 4.3 131	10 M 0512 4.3 131	25 0516 4.9 149						
1120 0.6 18	1102 0.5 15	1155 0.4 12	Sa 1147 0.1 3	1259 0.6 18	Tu 1313 0.2 6						
1741 2.8 85	1733 2.7 82	1828 2.4 73	1848 2.4 73	1940 2.5 76	2000 2.5 76						
2303 1.5 46	2224 1.7 52	2230 1.9 58	O 2141 2.2 67	2254 2.2 67	Tu 2305 2.3 70						
11 Th 0507 3.5 107	26 0432 3.6 110	11 Sa 0459 3.9 119	26 0438 4.5 137	11 Tu 0546 4.2 128	26 0607 4.8 146						
1200 0.4 12	F 1148 0.2 6	1231 0.3 9	Su 1235 -0.1 -3	1332 0.7 21	W 1353 0.4 12						
1822 2.7 82	1825 2.5 76	1906 2.4 73	1938 2.3 70	2012 2.5 76	M 2028 2.6 79						
2325 1.6 49	O 2247 1.8 55	2257 1.9 58	2217 2.2 67	2329 2.2 67	O						
12 F 0534 3.6 110	27 0505 3.9 119	12 Su 0531 4.0 122	27 0523 4.6 140	12 W 0620 4.2 128	27 0010 2.2 67						
1238 0.4 12	1235 0.0 0	1307 0.3 9	M 1323 0.0 0	1404 0.8 24	Th 0656 4.5 137						
1901 2.6 79	1917 2.4 73	1942 2.3 70	2026 2.3 70	2043 2.5 76	W 1430 0.7 21						
2347 1.6 49	2307 1.9 58	2323 1.9 58	2256 2.1 64	O	2059 2.8 85						
13 Sa 0603 3.7 113	28 0541 4.1 125	13 M 0604 3.9 119	28 0609 4.6 140	13 Th 0653 4.0 122	28 0117 2.2 67						
1316 0.4 12	Su 1323 0.0 0	1343 0.4 12	Tu 1410 0.1 3	1434 0.9 27	F 1503 1.1 34						
1938 2.4 73	2010 2.2 67	2019 2.2 67	2111 2.2 67	2115 2.5 76	W 1532 1.4 43						
2326 1.9 58	2348 1.9 58	2348 1.9 58	2342 2.1 64	2145 2.6 79	Tu 2208 3.2 98						
14 Su 0007 1.7 52	29 0619 4.2 128	14 Tu 0636 3.9 119	29 0657 4.4 134	14 F 0726 3.8 116	29 0231 2.2 67						
0632 3.7 113	M 1415 0.0 0	1421 0.6 18	W 1457 0.4 12	1503 1.1 34	Sa 0837 3.6 110						
1354 0.5 15	2110 2.0 61	2058 2.2 67	2154 2.3 70	2145 2.6 79	1532 1.4 43						
2015 2.2 67	2343 1.9 58	O	2237 2.4 73	2215 2.7 82	2208 3.2 98						
15 M 0025 1.7 52	30 0702 4.1 125	15 W 0012 2.0 61	30 0039 2.1 64	15 F 0136 2.3 70	30 0355 2.1 64						
0703 3.7 113	Tu 1509 0.2 6	0710 3.7 113	0747 4.1 125	Sa 0802 3.6 110	Su 0934 3.1 94						
1435 0.6 18	1459 0.7 21	1459 0.7 21	1542 0.7 21	1531 1.3 40	1556 1.7 52						
2055 2.1 64	2143 2.1 64	2143 2.1 64	2237 2.4 73	2215 2.7 82	O 2249 3.4 104						
31 F 0155 2.2 67	31 F 0841 3.6 110	31 F 1625 1.0 30	31 F 2320 2.6 79	O	O						

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Otomari, Sakhalin Island, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height										
1 M 0536 2.0 61	16 0403 2.1 64	1 Th 0828 1.6 49	16 F 0744 1.4 43	1 Su 0105 3.6 110	16 M 0050 3.7 113	16 M 0934 1.0 30					
1048 2.6 79	Tu 0918 2.8 85	1 Tu 1502 2.0 61	F 2324 4.1 125	1 Su 0948 1.3 40	16 M 0050 3.7 113						
1613 2.0 61	○ 2212 3.6 110	1 Th 2212 3.6 110	16 F 2324 4.1 125	1 Su 0948 1.3 40	16 M 0050 3.7 113						
2334 3.6 110				1 Su 0948 1.3 40	16 M 0050 3.7 113						
2 Tu 0725 1.8 55	17 W 0548 2.0 61	2 F 0029 3.9 119	17 Sa 0912 1.1 34	2 M 0218 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113	17 Tu 0222 3.7 113
1251 2.3 70	W 1041 2.4 73	2 F 0936 1.4 43	17 Sa 0912 1.1 34	2 M 1020 1.2 37	17 Tu 1008 1.0 30						
1620 2.2 67	1458 2.1 64	2031 3.9 119		2 M 1654 2.4 73	17 Tu 1629 2.5 76						
				2 M 2016 2.2 67	17 Tu 2056 1.9 58						
3 W 0023 3.8 116	18 Th 0749 1.7 52	3 Sa 0137 4.0 122	18 Su 0055 4.2 128	3 Tu 0314 3.8 116	18 W 0332 3.7 113						
0851 1.6 49		3 Sa 1020 1.3 40	18 Su 1003 0.9 27	3 Tu 1047 1.2 37	18 W 1037 1.1 34						
				3 Tu 1659 2.5 76	18 W 1639 2.8 85						
				3 Tu 2122 2.0 61	18 W 2202 1.5 46						
4 Th 0115 4.0 122	19 F 0003 4.1 125	4 Su 0238 4.1 125	19 M 0218 4.3 131	4 W 0400 3.8 116	19 Th 0429 3.7 113						
0950 1.3 40	0914 1.3 40	4 Su 1054 1.2 37	19 M 1042 0.8 24	4 W 1111 1.1 34	19 Th 1103 1.2 37						
			19 M 1747 2.4 73	4 W 1713 2.7 82	19 Th 1659 3.1 94						
			19 M 2000 2.3 70	4 W 2212 1.8 55	19 Th 2256 1.2 37						
5 F 0207 4.1 125	20 Sa 0113 4.4 134	5 M 0328 4.2 128	20 Tu 0326 4.4 134	5 Th 0441 3.8 116	20 W 0519 3.6 110						
1033 1.1 34	Sa 1011 0.9 27	5 M 1123 1.1 34	20 Tu 1116 0.8 24	5 Th 1133 1.2 37	20 W 1128 1.4 43						
		5 M 1756 2.6 79	20 Tu 1738 2.6 79	5 Th 1732 2.9 88	20 W 1724 3.4 104						
		5 M 2113 2.3 70	20 Tu 2136 2.1 64	5 Th 2256 1.6 49	20 W 2345 0.9 27						
6 Sa 0256 4.2 128	21 Su 0221 4.6 140	6 Tu 0412 4.3 131	21 W 0425 4.4 134	6 F 0519 3.7 113	21 Th 0605 3.4 104						
1110 1.0 30	Su 1057 0.6 18	6 Tu 1150 1.0 30	21 W 1147 0.8 40	6 F 1155 1.3 40	21 Th 1151 1.5 46						
		6 Tu 1809 2.7 82	21 W 1752 2.8 85	6 F 1751 3.1 94	21 Th 1751 3.7 113						
		6 Tu 2208 2.2 67	21 W 2243 1.8 55	6 F 2338 1.4 43	21 Th 2338 1.4 43						
7 Su 0341 4.3 131	22 M 0325 4.8 146	7 W 0451 4.3 131	22 Th 0517 4.3 131	7 Sa 0557 3.6 110	22 W 0630 0.7 21						
1143 0.9 27	M 1138 0.5 15	7 W 1215 1.0 30	22 Th 1215 1.0 30	7 Sa 1214 1.4 43	22 W 0649 3.1 94						
1835 2.5 76	W 1839 2.5 76	7 W 1827 2.8 85	22 Th 1814 3.1 94	7 Sa 1811 3.3 101	22 W 1212 1.6 49						
2109 2.4 73	2100 2.4 73	7 W 2254 2.1 64	22 Th 2340 1.5 46	7 Sa 1820 3.3 101	22 W 1820 3.8 116						
8 M 0422 4.4 134	23 Tu 0422 4.9 149	8 Th 0527 4.2 128	23 F 0605 4.1 125	8 Su 0018 1.3 40	23 M 0114 0.7 21						
1214 0.8 24	Tu 1216 0.5 15	8 Th 1239 1.1 34	23 F 1241 1.2 37	8 Su 0635 3.4 104	23 M 0731 2.9 88						
1853 2.6 79	Tu 1848 2.6 79	8 Th 1847 2.9 88	23 F 1840 3.4 104	8 Su 1231 1.6 49	23 M 1232 1.8 55						
● 2202 2.4 73	○ 2220 2.2 67	8 Th 2337 2.0 61	23 F 1850 3.5 107	8 Su 1832 3.5 107	23 M 1850 3.9 119						
9 Tu 0500 4.4 134	24 W 0516 4.8 146	9 F 0602 4.1 125	24 Sa 0033 1.3 40	9 M 0100 1.2 37	24 Tu 0159 0.8 24						
1244 0.9 27	W 1251 0.6 18	9 F 1301 1.2 37	24 Sa 0651 3.8 116	9 M 0713 3.1 94	24 Tu 0812 2.6 79						
1915 2.7 82	W 1908 2.8 85	9 F 1907 3.0 91	24 Sa 1304 1.4 43	9 M 1243 1.7 52	24 Tu 1248 1.9 58						
2248 2.3 70	2327 2.1 64		24 Sa 1908 3.6 110	9 M 1854 3.6 110	24 Tu 1922 3.9 119						
10 W 0536 4.4 134	25 Th 0606 4.6 140	10 Sa 0018 1.9 58	25 Tu 0125 1.3 40	10 Tu 0146 1.1 34	25 W 0246 0.9 27						
1312 0.9 27	Th 1323 0.9 27	10 Sa 0636 3.9 119	25 Tu 0735 3.4 104	10 Tu 0754 2.7 82	25 W 0856 2.3 70						
1938 2.7 82	Th 1933 3.0 91	10 Sa 1320 1.4 43	25 Tu 1324 1.6 49	10 Tu 1251 1.9 58	25 W 1300 1.9 58						
2331 2.3 70		10 Sa 1926 3.2 98	25 Tu 1938 3.7 113	10 Tu 1921 3.8 116	25 W 1956 3.8 116						
11 Th 0610 4.3 131	26 F 0625 4.3 131	11 Su 0101 1.8 55	26 M 0217 1.3 40	11 W 0239 1.1 34	26 W 0340 1.1 34						
1338 1.0 30	W 0655 4.3 131	11 Su 0710 3.6 110	26 M 0819 3.0 91	11 W 0841 2.4 73	26 Th 0949 2.1 64						
2002 2.8 85	W 1351 1.1 34	11 Su 1335 1.6 49	26 M 1341 1.8 55	11 W 1250 1.9 58	26 Th 1304 1.9 58						
	W 2002 3.3 101	11 Su 1946 3.3 101	26 M 2010 3.8 116	11 W 1953 3.9 119	26 Th 2035 3.9 119						
12 F 0013 2.3 70	27 Sa 0129 1.8 55	12 M 0746 3.3 101	27 Tu 0905 2.6 79	12 Th 0946 2.0 61	27 W 0448 1.3 40						
0642 4.1 125	W 0741 3.9 119	12 M 1416 1.4 43	27 Tu 1352 1.9 58	12 Th 1232 1.9 58	27 F 2125 3.5 107						
1401 1.2 37	W 1416 1.4 43	12 M 2009 3.5 107	27 Tu 2045 3.8 116	12 Th 2035 3.9 119	27 F 2125 3.5 107						
2024 2.9 88	W 2033 3.5 107		27 Tu 2045 3.8 116	12 Th 2035 3.9 119	27 F 2125 3.5 107						
13 Sa 0057 2.3 70	28 Su 0231 1.8 55	13 Tu 0826 2.9 88	28 W 1000 2.3 70	13 F 2133 3.9 119	28 W 0621 1.4 43						
0715 3.9 119	W 0829 3.4 104	13 Tu 1352 1.9 58	28 W 1353 2.0 61	13 F 2127 3.8 116	28 W 2238 3.3 101						
1422 1.3 40	W 1436 1.7 52	13 Tu 2037 3.7 113	28 W 2127 3.8 116	13 F 2127 3.8 116	28 W 2238 3.3 101						
2046 3.0 91	W 2106 3.6 110		28 W 2127 3.8 116	13 F 2127 3.8 116	28 W 2238 3.3 101						
14 Su 0146 2.2 67	29 M 0340 1.8 55	14 W 0916 2.4 73	29 Th 2222 3.7 113	14 Sa 2300 3.8 116	29 W 0751 1.4 43						
0749 3.6 110	M 0919 2.9 88	14 W 1348 2.0 61	29 Th 2222 3.7 113	14 Sa 2300 3.8 116	29 W 0846 1.0 30						
1440 1.6 49	M 1451 1.9 58	14 W 2115 3.9 119	29 Th 2222 3.7 113	14 Sa 2300 3.8 116	29 W 0846 1.0 30						
2109 3.2 98	W 2144 3.8 116		29 Th 2222 3.7 113	14 Sa 2300 3.8 116	29 W 0846 1.0 30						

Otomari, Sakhalin Island, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0146	3.2	98	16 W 0228	3.1	94	1 F 0329	2.8	85	16 Sa 0454	2.7	82
0922	1.3	40	0914	1.4	43	0904	1.8	55	0903	2.2	67
1545	2.5	76	1525	2.9	88	1515	3.3	101	1534	4.0	122
2025	2.0	61	2125	1.5	46	2205	1.1	34	2306	0.7	21
2 W 0251	3.2	98	17 Th 0340	3.1	94	2 Sa 0426	2.8	85	2 M 0541	2.6	79
0951	1.3	40	0943	1.6	49	0932	1.9	58	0934	2.2	67
1557	2.7	82	1546	3.2	98	1542	3.6	110	1608	4.2	128
2124	1.7	52	2217	1.1	34	2249	0.8	24	2343	0.5	15
3 Th 0344	3.3	101	18 F 0437	3.0	91	3 Su 0518	2.8	85	18 M 0621	2.6	79
1016	1.4	43	1009	1.7	52	0957	2.0	61	1005	2.2	67
1615	2.9	88	1613	3.5	107	1611	3.9	119	1642	4.3	131
2211	1.4	43	2303	0.7	21	● 2332	0.5	15	○		
4 F 0430	3.3	101	19 Sa 0525	3.0	91	4 M 0607	2.7	82	19 Tu 0020	0.5	15
1039	1.5	46	1033	1.8	55	1020	2.1	64	0657	2.6	79
1635	3.2	98	1641	3.8	116	1643	4.2	128	1036	2.2	67
2253	1.1	34	○ 2344	0.5	15				1716	4.4	134
5 Sa 0514	3.2	98	20 Su 0609	2.8	85	5 Tu 0015	0.3	9	20 W 0055	0.5	15
1101	1.6	49	1057	1.8	55	0657	2.6	79	0732	2.6	79
1657	3.4	104	1711	4.0	122	1041	2.2	67	1105	2.2	67
● 2335	0.8	24				1717	4.4	134	1750	4.3	131
6 Su 0557	3.1	94	21 M 0024	0.4	12	6 W 0101	0.2	6	21 Th 0131	0.6	18
1120	1.7	52	0651	2.7	82	0748	2.4	73	0807	2.5	76
1721	3.6	110	1121	1.9	58	1100	2.2	67	1133	2.2	67
			1742	4.1	125	1754	4.5	137	1824	4.2	128
7 M 0016	0.6	18	22 Tu 0103	0.4	12	7 Th 0149	0.3	9	22 F 0207	0.8	24
0641	2.9	88	0730	2.6	79	0844	2.3	70	0844	2.5	76
1137	1.8	55	1143	1.9	58	1117	2.2	67	1202	2.2	67
1747	3.8	116	1814	4.1	125	1834	4.5	137	1857	4.1	125
8 Tu 0100	0.5	15	23 W 0143	0.6	18	8 F 0240	0.4	12	23 Sa 0244	1.0	30
0726	2.6	79	0810	2.4	73	1918	4.3	131	0924	2.4	73
1149	1.9	58	1203	2.0	61				1233	2.3	70
1816	4.0	122	1846	4.0	122				1932	3.9	119
9 W 0147	0.5	15	24 Th 0224	0.7	21	9 Sa 0335	0.7	21	24 Su 0321	1.2	37
0816	2.3	70	0852	2.3	70	2007	4.0	122	0008	2.5	76
1156	2.0	61	1221	2.0	61				1312	2.3	70
1849	4.1	125	1920	3.9	119				2009	3.7	113
10 Th 0241	0.6	18	25 F 0309	0.9	27	10 Sa 0433	1.0	30	25 M 0359	1.4	43
0918	2.1	64	0943	2.2	67	2108	3.6	110	1057	2.6	79
1153	2.0	61	1235	2.0	61				1413	2.4	73
1927	4.1	125	1957	3.7	113				2052	3.4	104
11 F 0345	0.8	24	26 Sa 0401	1.1	34	11 M 0533	1.3	40	10 Tu 0426	1.6	49
2013	3.9	119	2040	3.5	107	1319	2.5	76	1119	3.1	94
						1549	2.4	73	1657	2.4	73
						2238	3.1	94	● 2225	3.0	91
12 Sa 0505	1.0	30	27 Su 0502	1.3	40	11 Tu 0630	1.5	46	26 O 0438	1.6	49
2114	3.7	113	2137	3.2	98	1333	2.7	82	1205	3.4	104
●						1902	2.2	67	1912	2.1	64
13 Su 0637	1.1	34	28 M 0609	1.5	46	27 W 0518	1.8	55	11 O 0458	1.9	58
2247	3.4	104	2304	3.0	91	0717	1.8	55	1205	3.4	104
						1359	3.1	94	1734	2.3	70
						2039	1.7	52	● 2221	2.7	82
14 M 0751	1.2	37	29 Tu 0710	1.5	46	14 Th 0237	2.7	82	14 Sa 0422	4.2	128
			1414	2.5	76	0756	2.0	61	2229	1.1	34
			1849	2.2	67	1429	3.4	104			
						2139	1.3	40			
15 Tu 0050	3.2	98	30 W 0052	2.8	85	15 F 0356	2.7	82	14 Tu 0326	2.6	79
0839	1.3	40	0756	1.6	49	0831	2.1	64	15 Sa 0723	2.3	70
1515	2.5	76	1430	2.7	82	1501	3.8	116	1417	3.8	116
2013	2.0	61	2021	1.9	58	2225	0.9	27	2200	1.1	34
			31 Th 0220	2.8	85						
			0833	1.7	52						
			1451	3.0	91						
			2119	1.5	46						

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

O. Paramushiru (Zaliv Tukharka), Kuril Islands, 2013

Times and Heights of High and Low Waters

January				February				March					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 Tu	0029	0.7	20	16 W	0039	1.1	35	1 F	0124	2.2	68		
0754	6.0	182	W 0744	5.9	180	F 0755	5.8	178	Sa 0740	5.8	177		
1328	3.9	120	1335	3.4	104	1422	2.5	75	1425	1.9	59		
1807	5.1	156	1843	5.1	155	2018	4.9	149	2050	5.0	152		
2 W	0106	1.1	33	17 Th	0115	1.6	50	2 Sa	0157	2.8	85		
0820	5.9	181	0809	5.9	179	Sa 0820	5.8	178	17 Su	0204	3.3	102	
1414	3.5	108	1419	3.0	92	1510	2.1	65	Su 1513	1.7	52		
1907	4.9	149	1943	4.9	148	2126	4.7	143	2159	4.8	147		
3 Th	0143	1.6	49	18 F	0151	2.2	67	3 Su	0231	3.3	101		
0846	5.9	179	0834	5.9	179	Su 0847	5.9	179	18 M	0238	3.8	116	
1503	3.1	95	1507	2.6	79	1602	1.8	56	M 0835	5.8	177		
2013	4.6	141	2051	4.6	141	2247	4.6	139	1606	1.5	47		
4 F	0220	2.2	67	19 M	0225	2.8	85	18 O	0232	4.7	144		
0913	5.8	178	Sa 0900	5.9	179	0304	3.8	117	3 Su	0140	3.4	104	
1554	2.7	82	1558	2.2	68	0916	5.8	178	1726	5.7	175		
2130	4.4	133	○ 2209	4.4	135	M 1658	1.6	49	1428	1.5	46		
5 Sa	0256	2.8	86	20 Su	0300	3.4	103	1220	5.1	155			
0940	5.8	177	0927	5.9	179	5 Tu	0029	4.6	139	18 M	0214	3.8	117
1649	2.3	69	1653	1.9	57	Su 0342	4.3	132	19 Tu	0315	4.2	129	
○ 2302	4.2	129	2346	4.4	134	Tu 0950	5.8	177	1704	1.4	44		
6 Su	0335	3.4	105	21 M	0336	3.9	120	4 O	0214	3.8	117		
1009	5.8	177	0958	5.8	178	W 0438	4.7	143	1755	5.7	175		
1746	1.8	56	1752	1.5	47	1032	5.7	175	1516	1.4	43		
7 M	0053	4.3	132	6 W	0224	4.8	146	2230	5.0	151			
0418	4.0	123	22 Tu	0143	4.6	139	20 W	0105	4.8	145			
1042	5.8	177	0419	4.4	135	Tu 0342	4.3	132	5 Tu	0251	4.2	128	
1842	1.4	43	1034	5.8	178	Su 0950	5.8	177	1611	1.4	43		
8 Tu	0247	4.7	142	1850	1.2	37	1807	1.4	42	○ 2354	4.9	149	
0517	4.5	138	23 W	0328	4.9	149	7 Th	0341	5.1	154			
1119	5.8	177	0534	4.8	147	W 0622	5.0	151	22 F	0333	5.2	157	
1937	1.0	31	1117	5.8	176	1128	5.6	172	Th 0720	4.8	147		
			1947	1.0	29	1958	1.0	32	1157	5.4	164		
9 W	0406	5.1	154	2052	1.0	29	2011	1.3	39	2011	5.4	165	
0648	4.9	150	24 Th	0424	5.2	159	2105	1.3	40	1817	1.5	46	
1203	5.8	176	0724	5.1	154	9 Sa	0451	5.5	167	8 F	0231	5.1	154
2028	0.7	21	1212	5.7	174	Su 0922	4.7	143	0635	4.7	142		
10 Th	0453	5.4	164	2039	0.8	23	1353	5.5	167	1321	5.3	162	
0824	5.1	154	24 O	0424	5.2	159	2141	1.0	29	2105	1.3	40	
1255	5.7	174	W 0855	5.0	153	9 Sa	0451	5.5	167	1923	1.6	48	
2115	0.5	14	1316	5.6	172	Su 0922	4.7	143	1934	2.0	60		
11 F	0528	5.6	172	2128	0.6	19	1353	5.5	167	9 Sa	0316	5.2	157
0939	5.0	153	26 Sa	0528	5.6	172	2141	1.0	29	1245	5.2	157	
1353	5.7	173	1000	4.8	146	24 O	0436	5.4	164	2024	1.6	50	
2200	0.4	11	1423	5.6	170	Su 0922	4.7	143	1245	5.2	157		
12 Sa	0559	5.8	177	2213	0.6	19	1353	5.5	167	2035	2.1	65	
1037	4.8	147	27 W	0554	5.7	175	2141	1.0	31	10 M	0326	5.2	158
1452	5.6	171	Su 1050	4.5	137	2226	1.0	31	0914	3.3	101		
● 2243	0.4	11	1527	5.5	169	○ 2226	1.0	31	1458	5.2	157		
13 Su	0627	5.9	180	○ 2255	0.7	22	2238	1.5	47	2128	2.3	70	
1125	4.6	139	28 M	0619	5.8	177	12 Tu	0542	5.3	157			
1551	5.5	169	1134	4.1	125	1139	3.5	106	0554	4.5	137		
2323	0.5	15	1627	5.5	167	1703	5.5	167	1058	5.4	165		
14 M	0653	5.9	181	2335	1.0	29	2346	1.5	47	1223	5.5	167	
1209	4.2	129	29 Tu	0643	5.8	177	1222	2.4	72	2248	2.2	66	
1648	5.4	165	1215	3.7	112	1219	3.1	93	○ 2258	2.8	85		
15 Tu	0002	0.8	23	1724	5.4	165	1758	5.4	166	2248	2.2	66	
0719	5.9	181	30 W	0013	1.3	40	1831	5.5	168	2258	2.8	85	
1252	3.8	117	0707	5.8	177	1831	5.5	168	2258	2.8	85		
1745	5.3	161	1256	3.2	99	1853	5.3	163	2258	2.8	85		
16 F	0005	2.8	86	1820	5.3	161	1949	5.2	158	2258	2.8	85	
1226	0005	2.8	86	31 Th	0049	1.7	53	1949	5.2	158	2258	2.8	85
1226	0554	5.5	169	0731	5.8	178				2258	2.8	85	
1226	1225	1.7	51	1338	2.8	86				2258	2.8	85	
1226	1900	5.6	171	1917	5.1	156				2258	2.8	85	

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Heights are referred to the chart datum of soundings.

O. Paramushiru (Zaliv Tukharka), Kuril Islands, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0127 0635 1351 2113	h m 4.0 5.6 0.9 5.5	ft 122 170 28 167	cm 122 167 23 170	16 Tu 0145 0628 1357 2133	h m 4.3 5.5 0.8 5.6	ft 131 167 23 170	cm 131 167 23 170	1 W 0208 0630 1404 2146	h m 4.4 5.3 0.8 5.6	ft 134 161 23 172	cm 134 152 28 173
	0127	4.0	122		0145	4.3	131		0234	4.3	130
	0635	5.6	170		0628	5.5	167		0644	5.0	152
	1351	0.9	28		1357	0.8	23		1412	0.9	28
2 Tu 0207 0707 1437 2211	h m 4.2 5.5 1.0 5.3	ft 129 168 32 163	cm 129 168 31 166	2 Th 0232 0717 1450 2226	h m 4.4 5.0 1.1 5.4	ft 134 153 43 168	cm 134 153 43 169		0333	4.0	123
	0207	4.2	129		0232	4.4	134		0743	4.7	143
	0707	5.5	168		0717	5.3	162		1456	1.4	43
	1437	1.0	32		1443	1.0	31		2229	5.5	169
3 W 0254 0745 1527 O	h m 4.4 5.4 1.2 5.2	ft 134 164 38 159	cm 134 155 42 162	3 F 0330 0754 1533 2319	h m 4.4 5.1 1.4 5.3	ft 133 155 42 162	cm 133 155 42 164		0437	3.7	113
	0254	4.4	134		0330	4.4	133		0859	4.4	133
	0745	5.4	164		0754	5.1	155		1545	2.0	60
	1527	1.2	38		1533	1.4	42		2307	5.4	166
4 Th 0356 0833 1623	h m 4.5 5.2 1.5	ft 136 158 47	cm 136 158 47	4 Sa 0442 0858 1630	h m 4.2 4.8 1.8	ft 129 146 55	cm 129 146 66		0541	3.2	99
	0356	4.5	136		0442	4.2	129		1039	4.1	126
	0833	5.2	158		0858	4.8	146		1641	2.6	78
	1623	1.5	47		1630	1.8	55		2343	5.3	163
5 F 0016 0517 0942 1728	h m 5.2 4.4 4.9 1.9	ft 157 133 150 57	cm 157 133 138 68	5 Sa 0010 0601 1031 1735	h m 5.2 3.9 4.5 2.2	ft 160 120 138 68	cm 160 130 138 68		0626	3.3	102
	0016	5.2	157		0010	5.2	160		1741	2.7	81
	0517	4.4	133		0601	3.9	120		1744	3.1	95
	0942	4.9	150		1031	4.5	138		1744	3.1	95
6 Sa 0111 0642 1120 1837	h m 5.1 4.1 4.7 2.2	ft 156 124 144 66	cm 156 124 144 66	6 Su 0055 0709 1222 1845	h m 5.2 3.5 4.5 2.6	ft 158 106 136 79	cm 158 106 136 79		0037	5.2	160
	0111	5.1	156		0055	5.2	158		0722	2.8	85
	0642	4.1	124		0709	3.5	106		1320	4.4	134
	1120	4.7	144		1222	4.5	136		1851	3.1	94
7 Su 0156 0748 1304 1944	h m 5.1 3.6 4.7 2.4	ft 156 111 144 74	cm 156 111 144 74	7 M 0134 0802 1359 1953	h m 5.2 2.9 4.7 2.9	ft 157 89 142 89	cm 157 89 142 89		0113	5.2	160
	0156	5.1	156		0134	5.2	157		0810	2.2	67
	0748	3.6	111		0802	2.9	89		1447	4.7	144
	1304	4.7	144		1359	4.7	142		1959	3.5	106
8 M 0232 0839 1431 2045	h m 5.2 3.1 4.9 2.7	ft 157 94 150 81	cm 157 94 150 81	8 Tu 0209 0847 1515 2053	h m 5.2 2.4 5.0 3.2	ft 158 72 152 98	cm 158 72 152 98		0148	5.2	160
	0232	5.2	157		0209	5.2	158		0853	1.6	50
	0839	3.1	94		0847	2.4	72		1554	5.1	155
	1431	4.9	150		1515	5.0	152		2100	3.8	115
9 Tu 0303 0922 1539 2138	h m 5.2 2.5 5.2 2.9	ft 158 77 158 88	cm 158 77 158 88	9 W 0241 0928 1617 2146	h m 5.2 1.8 5.3 3.5	ft 159 54 161 106	cm 159 54 161 106		0221	5.3	162
	0303	5.2	158		0241	5.2	159		0934	1.1	34
	0922	2.5	77		0928	1.8	54		1650	5.4	165
	1539	5.2	158		1617	5.3	161		2154	4.0	122
10 W 0332 1001 1637 ●	h m 5.2 2.0 5.4 3.1	ft 160 61 166 96	cm 160 61 166 96	10 Th 0311 1007 1710 2233	h m 5.3 1.3 5.6 3.7	ft 162 39 170 114	cm 162 39 170 114		0253	5.4	164
	0332	5.2	160		0311	5.3	162		1013	0.7	20
	1001	2.0	61		1007	1.3	39		1740	5.7	173
	1637	5.4	166		1710	5.6	170		2243	4.2	128
11 Th 0400 1039 1730 2307	h m 5.3 1.5 5.7 3.4	ft 162 46 173 104	cm 162 46 173 104	11 F 0341 1045 1759 2316	h m 5.4 0.9 5.8 4.0	ft 164 26 176 121	cm 164 26 176 121		0327	5.4	166
	0400	5.3	162		0341	5.4	164		1052	0.3	10
	1039	1.5	46		1045	0.9	26		1825	5.9	179
	1730	5.7	173		1759	5.8	176		2328	4.4	133
12 F 0427 1117 1818 2346	h m 5.4 1.1 5.8 3.7	ft 165 33 177 112	cm 165 33 177 112	12 Sa 0411 1123 1845 2357	h m 5.4 0.5 5.9 4.1	ft 166 16 179 126	cm 166 16 179 126		0401	5.5	167
	0427	5.4	165		0411	5.4	166		1131	0.2	5
	1117	1.1	33		1123	0.5	16		1909	5.9	181
	1818	5.8	177		1845	5.9	179		2032	5.9	180
13 Sa 0455 1155 1906	h m 5.5 0.8 5.8	ft 167 24 178	cm 167 24 178	13 M 0011 0436 1210 1951	h m 5.5 5.5 0.1 5.9	ft 167 167 4 181	cm 167 167 4 181		0028	4.5	138
	0455	5.5	167		0442	5.5	168		0440	5.4	165
	1155	0.8	24		1202	0.4	11		1219	0.1	2
	1906	5.8	178		1931	5.9	180		2004	5.9	181
14 Su 0025 0524 1234 1954	h m 3.9 5.5 0.7 5.8	ft 120 169 20 177	cm 120 169 20 177	14 Tu 0055 0515 1241 2016	h m 4.3 5.5 0.4 5.9	ft 131 168 11 179	cm 131 168 11 179		0515	5.4	165
	0025	3.9	120		0055	4.3	131		1249	0.3	8
	0524	5.5	169		0515	5.5	168		2032	5.9	180
	1234	0.7	20		1241	0.4	11		2040	5.9	179
15 M 0103 0555 1314 2043	h m 4.1 5.5 0.6 5.7	ft 126 169 19 174	cm 126 169 19 174	15 W 0142 0556 1321 2101	h m 4.4 5.2 0.5 5.8	ft 134 160 16 176	cm 134 160 16 176		0142	4.4	135
	0103	4.1	126		0142	4.4	134		0556	5.2	160
	0555	5.5	169		0556	5.2	160		1330	0.5	16
	1314	0.6	19		1321	0.5	15		2112	5.8	176
16 Su 0121 0551 1420 2128	h m 4.4 5.4 1.2 5.6	ft 134 165 36 170	cm 134 165 36 170	16 Su 0257 0711 1420 2148	h m 3.9 4.7 1.2 5.6	ft 120 144 36 172	cm 120 144 36 172		0257	3.9	120
	0121	4.4	134		0257	3.9	120		0711	4.7	144
	0551	5.4	165		0711	4.7	144		1420	1.2	36
	1420	1.2	36		1420	1.2	36		2148	5.6	172

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

O. Paramushiru (Zaliv Tukharka), Kuril Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0414	2.5	75	16 0419	1.9	59	1 Th 0520	1.2	37	16 0526	1.0	32
0949	4.1	124	Tu 1031	4.1	124	Th 1301	4.2	128	F 1338	4.4	134
1511	2.7	81	1513	3.1	95	1555	4.0	123	1617	4.3	132
2156	5.5	169	● 2144	5.5	169	2207	5.5	167	2206	5.3	162
2 Tu 0510	2.0	61	17 0515	1.5	47	2 F 0620	1.0	30	17 0629	1.0	29
1127	4.0	121	W 1214	4.1	124	1454	4.5	136	Sa 1506	4.6	141
1551	3.3	100	1551	3.7	112	1658	4.4	134	1751	4.5	137
2226	5.5	169	2215	5.5	169	2250	5.4	165	2302	5.2	158
3 W 0606	1.5	47	18 0613	1.2	36	3 Sa 0720	0.8	23	18 0731	0.9	26
1321	4.1	126	Th 1413	4.3	131	1600	4.8	145	Su 1554	4.8	147
1639	3.8	117	1640	4.2	127	1848	4.6	141	1941	4.5	136
2300	5.5	169	2251	5.5	168	2346	5.3	162			
4 Th 0702	1.1	33	19 0710	0.8	25	4 Su 0816	0.6	18	19 0015	5.1	154
1508	4.5	136	F 1547	4.7	142	1637	5.0	153	M 0829	0.8	24
1747	4.3	132	1804	4.6	139	2029	4.6	140	1626	5.0	152
2338	5.5	168	2336	5.5	167				2059	4.2	129
5 F 0754	0.7	21	20 0804	0.5	16	5 M 0055	5.2	159	4 W 0223	4.9	149
1618	4.9	148	Sa 1637	5.0	152	0908	0.5	14	19 0309	4.9	149
1919	4.7	142	1950	4.8	145	1706	5.2	158	M 0944	1.2	38
						2138	4.4	133	Th 1613	5.0	151
6 Sa 0022	5.5	168	21 0030	5.4	164	6 Tu 0206	5.2	157	○ 2209	2.5	76
0843	0.4	11	0855	0.3	10	0955	0.5	14	21 0249	5.0	153
1703	5.2	159	Su 1711	5.2	159	1732	5.3	161	W 1007	0.9	27
2047	4.8	146	2114	4.7	143	2230	4.0	123	1718	5.2	157
7 Su 0113	5.4	166	22 0132	5.3	162	7 W 0314	5.2	157	○ 2238	3.4	104
0929	0.1	4	M 0942	0.2	6	1038	0.6	17	21 0249	5.0	153
1739	5.4	166	1741	5.4	164	1757	5.3	163	6 F 0432	5.1	156
2156	4.8	145	2216	4.5	137	● 2313	3.6	110	1101	1.7	51
8 M 0208	5.4	165	23 0236	5.3	161	8 Th 0415	5.1	156	1723	5.1	155
1013	0.0	0	Tu 1026	0.2	6	1119	0.8	23	2322	2.2	68
1810	5.6	171	1807	5.5	167	1821	5.3	163	21 0507	5.2	160
● 2252	4.6	139	○ 2305	4.2	127	2354	3.2	97	Sa 1110	2.3	71
9 Tu 0305	5.3	163	24 0338	5.2	159	9 F 0513	5.1	155	22 0558	5.3	163
1055	0.0	0	W 1107	0.3	10	1157	1.1	33	Su 1149	2.7	81
1839	5.7	173	1833	5.5	168	1844	5.4	164	1728	5.2	157
2340	4.3	131	2348	3.8	116						
10 W 0402	5.2	160	25 0436	5.1	156	10 Sa 0034	2.7	83	8 0000	1.8	54
1134	0.2	5	Th 1146	0.6	17	0608	5.0	153	23 0004	1.1	35
1906	5.7	173	1858	5.5	169	1233	1.5	45	M 0648	5.4	164
						1907	5.4	165	1225	3.0	92
11 Th 0023	4.0	121	26 0030	3.4	104	11 M 0115	2.3	71	1811	5.2	159
0458	5.1	156	0533	5.0	153	0704	4.9	149	24 0043	0.9	27
1213	0.5	14	F 1224	0.9	28	1308	2.0	60	M 0711	5.2	158
1933	5.7	173	1922	5.5	168	1931	5.4	165	1251	2.8	84
12 F 0107	3.6	109	27 0112	3.0	90	26 0117	1.7	51	1835	5.3	161
0555	5.0	151	Sa 0630	4.9	148	0735	5.0	151	9 0039	1.4	43
1250	0.9	26	1300	1.4	42	M 1316	2.6	78	24 0739	5.3	162
1958	5.6	172	1946	5.5	168	1916	5.3	163	M 1301	3.3	102
13 Sa 0151	3.2	97	28 0155	2.6	78	11 W 0203	1.0	30	1821	5.3	161
0654	4.7	144	Su 0728	4.7	142	0905	4.5	137	26 0207	0.7	22
1327	1.3	41	1335	1.9	58	1415	3.0	91	Th 0927	5.1	154
2023	5.6	171	2010	5.5	168	2022	5.4	166	1417	3.9	119
14 Su 0237	2.8	84	29 0240	2.2	66	14 M 0157	1.9	59	1923	5.2	159
0756	4.5	136	M 0831	4.5	136	0801	4.7	143	27 0254	0.8	25
1402	1.9	59	1409	2.5	75	1342	2.5	75	Th 1005	4.8	145
2049	5.6	170	2035	5.5	168	1956	5.4	166	1439	3.8	117
15 M 0326	2.3	71	● 2051	5.4	166				2003	5.3	161
0907	4.2	129	2102	5.5	168				● 2001	5.1	155
1437	2.5	77									
2115	5.5	169									
16 31 0423	1.5	46									
W 1111	4.1	126									
1516	3.5	108									
2132	5.5	168									

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

O. Paramushiru (Zaliv Tukharka), Kuril Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0701	1.8	55	16 W 0042	4.3	132	1 F 0300	4.7	143	1 Su 0418	5.1	156
1419	4.8	147	W 0710	2.3	71	0822	3.2	99	0836	4.4	134
2004	3.4	103	1357	4.9	150	1409	5.1	156	1335	5.5	168
			2017	2.7	83	2107	1.5	46	2122	0.6	17
2 W 0121	4.5	138	17 Th 0214	4.5	138	2 Sa 0405	5.1	154	2 M 0510	5.5	167
0806	2.0	62	0815	2.6	80	0920	3.5	108	0939	4.6	140
1454	4.9	148	1430	5.0	151	1441	5.2	158	1413	5.5	169
2053	2.9	87	2101	2.2	66	2147	1.0	31	2203	0.2	7
3 Th 0244	4.7	144	18 F 0327	4.9	148	3 Su 0459	5.3	163	3 Tu 0555	5.7	175
0903	2.2	68	0912	2.9	88	1011	3.8	116	1021	4.3	132
1523	4.9	150	1501	5.0	153	1512	5.2	160	1459	5.4	166
2135	2.3	70	2141	1.6	49	● 2226	0.6	18	○ 2234	0.2	6
4 F 0350	5.0	152	19 Sa 0426	5.2	157	4 M 0548	5.6	171	4 W 0635	5.9	180
0954	2.5	76	1002	3.1	96	1057	4.0	122	1124	4.7	144
1551	5.0	152	1530	5.1	155	1544	5.3	163	1536	5.5	169
2214	1.8	54	○ 2220	1.1	34	2305	0.3	8	2313	0.0	1
5 Sa 0447	5.2	159	20 Su 0519	5.4	165	5 Tu 0634	5.8	176	5 W 0657	5.9	180
1038	2.8	84	1047	3.4	104	1140	4.2	127	1155	4.5	138
● 1618	5.1	154	1559	5.2	158	1617	5.4	164	1614	5.4	166
2252	1.3	39	2258	0.7	22	2343	0.1	3	2352	0.0	0
6 Su 0538	5.4	165	21 M 0608	5.6	170	6 W 0718	5.8	178	6 F 0002	0.1	2
1119	3.0	92	1129	3.6	111	1223	4.3	131	0748	6.0	183
1645	5.2	157	1629	5.2	160	1652	5.4	164	1258	4.5	137
2330	0.9	27	2336	0.4	13				1707	5.3	162
7 M 0628	5.5	168	22 Tu 0654	5.7	173	7 Th 0022	0.1	3	7 Sa 0041	0.3	9
1158	3.3	101	1209	3.9	118	0801	5.8	177	0815	5.9	180
1712	5.2	159	1659	5.3	162	1306	4.3	132	1327	4.4	134
						1729	5.3	162	1738	5.2	159
8 Tu 0009	0.6	19	23 W 0015	0.3	8	8 F 0102	0.2	7	23 Sa 0111	0.4	12
0716	5.5	168	0741	5.7	173	0844	5.7	175	0852	5.8	178
1236	3.6	109	1249	4.0	123	1354	4.3	131	1417	4.2	129
1740	5.3	161	1731	5.3	162	1810	5.2	157	1827	5.0	152
9 W 0048	0.5	15	24 Th 0054	0.3	8	9 Sa 0143	0.5	16	24 Su 0152	0.8	24
0805	5.5	167	0827	5.6	171	0926	5.6	172	0929	5.7	175
1314	3.8	117	1331	4.2	127	1447	4.2	128	1512	4.0	121
1811	5.3	161	1806	5.2	160	1858	4.9	150	1925	4.7	143
10 Th 0129	0.5	15	25 F 0136	0.4	13	10 Su 0227	0.9	28	25 M 0234	1.3	40
0855	5.3	163	0914	5.5	168	1007	5.5	168	1004	5.6	171
1354	4.0	122	1419	4.2	128	1548	4.0	121	1612	3.6	110
1844	5.2	159	1845	5.1	155	○ 1958	4.6	140	2037	4.4	133
11 F 0213	0.6	19	26 Sa 0219	0.7	21	11 M 0313	1.4	44	10 Tu 0241	1.8	54
0948	5.2	159	1002	5.4	164	1047	5.4	165	0956	5.7	174
1442	4.1	126	1515	4.2	127	1655	3.6	111	1626	3.2	97
1922	5.1	155	1932	4.9	148	2118	4.3	131	○ 2123	4.2	129
12 Sa 0300	0.9	27	27 Su 0306	1.1	33	12 Tu 0405	2.0	61	11 W 0319	1.9	57
1045	5.1	155	1050	5.2	160	1126	5.3	162	1039	5.5	168
1541	4.2	127	1623	4.0	122	1800	3.2	97	1714	3.2	97
● 2010	4.9	148	○ 2035	4.6	139	2302	4.1	125	○ 2210	4.1	126
13 Su 0353	1.2	37	28 M 0359	1.5	47	13 W 0504	2.6	78	26 W 0409	2.5	76
1141	5.0	152	1137	5.2	157	1204	5.2	160	1113	5.4	166
1657	4.0	123	1737	3.7	112	1858	2.7	81	1812	2.7	81
2117	4.6	139	2204	4.3	130						
14 M 0453	1.6	49	29 Tu 0459	2.0	62	14 Th 0054	4.2	128	29 F 0148	4.3	132
1234	5.0	151	1220	5.1	155	0611	3.1	94	0613	3.6	111
1819	3.7	114	1844	3.2	98	1240	5.2	159	1222	5.4	165
2253	4.4	133	2355	4.2	128	1947	2.1	63	1954	1.5	47
15 Tu 0600	2.0	61	30 W 0607	2.5	77	15 F 0229	4.5	137	14 Sa 0238	4.5	138
1319	4.9	150	1259	5.1	154	0722	3.5	107	0614	4.2	127
1926	3.3	100	1939	2.7	81	1315	5.2	160	1207	5.6	171
			2025	2.1	64	2032	1.5	46	2002	1.1	34
31 Th 0139	4.4	133									
0717	2.9	89									
1335	5.1	154									
2025	2.1	64									

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yamato Wan, Matsuwa To, Kuril Islands, 2013

Times and Heights of High and Low Waters

January				February				March			
	Time	Height			Time	Height			Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm
1 Tu	0107	0.4	12	16 W	0134	0.6	18	1 F	0135	1.3	40
	0910	3.3	101		0844	3.4	104		0152	2.0	61
	1223	3.1	94		1343	2.6	79	16 Sa	0812	3.6	110
	1735	3.8	116		1900	3.6	110		1507	1.5	46
2 W	0135	0.6	18	17 Th	0203	1.0	30	2 Sa	0156	1.6	49
	0920	3.3	101		0902	3.5	107		0205	2.2	67
	1317	3.0	91		1445	2.3	70	17 Su	0833	3.7	113
	1818	3.6	110		1959	3.2	98		1601	1.4	43
3 Th	0202	0.8	24	18 F	0228	1.5	46	3 Su	0212	2.0	61
	0930	3.3	101		0921	3.6	110		0202	2.5	76
	1416	2.8	85		1549	2.0	61	3 M	0856	3.8	116
	1908	3.4	104		2106	2.8	85		1703	1.4	43
4 F	0227	1.2	37	19 Sa	0245	1.9	58	4 M	0215	2.3	70
	0943	3.4	104		0942	3.7	113		0925	3.8	116
	1523	2.5	76		1659	1.8	55	4 Tu	1817	1.3	40
	2011	3.0	91		2237	2.5	76		0746	4.0	122
5 Sa	0250	1.5	46	20 Su	0248	2.2	67	5 W	1001	3.8	116
	0957	3.5	107		1006	3.7	113		1934	1.2	37
	1638	2.1	64		1814	1.6	49	5 Tu	0122	2.7	82
	2139	2.7	82						0816	4.1	125
6 Su	0307	2.0	61	21 M	1034	3.8	116	5 Tu	1641	0.8	24
	1017	3.7	113		1928	1.3	40				
	1758	1.7	52					6 W	0854	4.1	125
									1758	0.8	24
7 M	0014	2.4	73	22 Tu	1109	3.8	116	6 W	2042	3.7	113
	0255	2.3	70		2032	1.1	34	21 Th	1051	3.7	113
	1042	3.9	119						2042	1.1	34
	1914	1.2	37					6 W	0854	4.1	125
8 Tu	1116	4.1	125	23 W	1153	3.9	119	21 Th	1051	3.7	113
	2020	0.7	21		2125	0.9	27		2042	3.7	113
								21 Th	1817	3.6	110
9 W	1201	4.2	128	24 Th	1248	3.9	119	9 Sa	1405	4.1	125
	2118	0.3	9		2209	0.7	21	9 Sa	2245	0.3	9
								24 Su	0650	3.1	94
									0900	3.0	91
10 Th	1258	4.3	131	25 F	1347	3.9	119	10 Su	0705	3.3	101
	2210	0.0	0		2247	0.6	18		0944	3.2	98
								10 M	1008	2.8	85
									1522	4.1	125
11 F	1402	4.4	134	26 Sa	1442	3.9	119	11 M	0700	3.3	101
	2258	-0.2	-6		2320	0.5	15		1056	2.9	88
								11 M	1630	4.0	122
										2328	1.0	30
12 Sa	1506	4.4	134	27 Su	1533	3.9	119	12 Tu	0627	3.1	94
	2342	-0.2	-6		2351	0.5	15		1055	2.6	79
								12 M	1638	3.7	113
									2351	1.1	34
13 Su	0815	3.5	107	28 M	0752	3.2	98	12 O	0631	3.2	98
	1028	3.4	104		1052	3.1	94		0708	3.3	101
	1608	4.3	131		1621	3.9	119		1152	2.5	76
									1731	3.8	116
14 M	0023	0.0	0	13 W	0038	0.9	27	12 W	0631	3.2	98
	0818	3.4	104		0721	3.4	104		1138	2.2	67
	1140	3.1	94		1242	2.2	67		1730	3.6	110
	1707	4.2	128		1827	3.6	110				
15 Tu	0100	0.3	9	14 Th	0107	1.3	40	12 Tu	1105	2.1	64
	0829	3.4	104		0736	3.5	107		1701	3.6	110
	1243	2.8	85		1330	1.9	58				
	1804	3.9	119		1922	3.4	104	12 O	2338	1.4	43
16 W	0111	1.0	30	15 F	0132	1.6	49	13 W	0554	3.3	101
	0806	3.3	101		0753	3.6	110		1149	1.7	52
	1315	2.4	73		1418	1.7	52		1759	3.5	107
	1845	3.5	107		1827	3.6	110		2342	2.1	64
17 Th	0111	1.0	30	16 Sa	0046	0.8	24	14 Th	0009	1.7	52
	0806	3.3	101		0758	3.3	101		0610	3.4	104
	1315	2.4	73		1228	2.7	82		1230	1.4	43
	1845	3.5	107		1755	3.7	113		1853	3.4	104
18 F	0111	1.0	30	15 F	0132	1.6	49	15 F	0036	2.0	61
	0806	3.3	101		0753	3.6	110		0627	3.6	110
	1315	2.4	73		1418	1.7	52		1309	1.2	37
	1845	3.5	107		1827	3.6	110		1944	3.3	101
19 Sa	0111	1.0	30	16 Sa	0046	0.8	24	16 Sa	0007	2.4	73
	0806	3.3	101		0758	3.3	101		0537	3.7	113
	1315	2.4	73		1228	2.7	82		1247	0.7	21
	1845	3.5	107		1755	3.7	113		1954	3.4	104
20 Su	0111	1.0	30	17 Su	0117	2.5	76	17 Su	0029	2.7	82
	0806	3.3	101		0705	3.7	113		0559	3.9	119
	1315	2.4	73		1429	1.1	34		1332	0.5	15
	1845	3.5	107		2133	3.0	91		2057	3.3	101

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Yamato Wan, Matsuwa To, Kuril Islands, 2013

Times and Heights of High and Low Waters

April					May					June																																																																																																																																																																																																																																					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																																																																																																																																																																																																																																	
1 M	0047 0626 1420 2214	2.9 4.1 0.4 3.2	88 125 12 98	16 Tu W	0054 0630 1437	3.0 3.8 0.8	91 116 24	1 W	0627 1456	4.2 0.2	128 6	16 Th	0618 1446 2335	3.8 0.7 3.2	116 21 98	1 Sa	0352 0814 1559	2.9 3.3 1.2	88 101 37	16 Su	0322 0735 1515	2.9 3.2 1.3	88 98 40	16 O	2339	3.4	104	16 M	0322 0848 1542	2.9 2.8 1.7	88 85 52	17 O	0446 0946 1636	2.6 2.8 1.6	79 85 49	17 M	0446 0848 1542	2.6 2.8 1.7	79 85 52	17 O	2308	3.5	107	18 Tu	0610 1048 1603	2.2 2.5 2.1	67 76 64	18 M	0610 1048 2328	2.2 2.5 3.6	67 76 110	18 O	2328	3.6	110	19 W	0720 2352	1.7 3.8	52 116	19 F	0817	1.2	37	20 Th	0100 0913	3.7 1.2	113 37	20 O	0024 0909	4.0 0.7	122 21	21 Tu	0131 0955	3.8 0.8	116 24	21 M	0131 0955	3.8 0.8	116 24	21 F	0024 0909	4.0 0.7	122 21	22 Sa	0104 0958	4.2 0.2	128 6	22 O	0203 1033	3.9 0.6	119 18	22 W	0104 0958	4.2 0.2	128 6	23 Tu	0236 1109	4.0 0.4	122 12	23 M	0236 1109	4.0 0.4	122 12	23 O	0151 1045	4.4 -0.1	134 -3	23 O	0243 1131	4.5 -0.3	137 -9	24 Tu	0309 1142	4.0 0.3	122 9	24 M	0309 1142	4.0 0.3	122 9	24 O	0343 1215	4.0 0.3	122 9	25 Tu	0338 1215	4.5 -0.3	137 -9	25 M	0338 1215	4.5 -0.3	137 -9	26 Tu	0417 1246	4.0 0.3	122 9	26 W	0433 1257	4.4 -0.2	134 -6	26 O	0433 2111	4.4 3.5	134 107	27 Tu	0451 1317	4.0 0.4	122 12	27 M	0451 1317	4.0 0.4	122 12	27 O	0003 1337	3.3 0.1	101 3	27 W	0003 1337	3.3 0.1	101 3	27 O	0232 2126	2.8 3.4	85 104	28 Tu	0116 1447	3.0 1.0	91 30	28 M	0116 1447	3.0 1.0	91 30	28 O	0243 2203	4.5 3.5	137 107	29 Tu	0207 1447	3.1 1.0	94 30	29 M	0207 1447	3.1 1.0	94 30	29 O	0232 2225	2.8 3.6	85 110	30 Tu	0351 1515	2.4 1.5	73 46	30 M	0351 1515	2.4 1.5	73 46	30 O	0351 2225	2.4 3.6	73 110																																								
2 Tu	0056 0658 1514	3.0 4.2 0.4	91 128 12	17 W	0657 1519	3.8 0.9	116 27	2 Th	0712 1547	4.0 0.5	122 15	17 F	0136 1523	3.1 0.9	94 27	2 Su	0542 1636	2.6 1.6	79 49	17 M	0446 1636	2.6 1.6	79 52	17 O	0446 2308	2.6 3.5	79 107	18 Tu	0610 1048 1603	2.2 2.5 2.1	67 76 64	18 M	0610 1048 2328	2.2 2.5 3.6	67 76 110	18 O	0610 2328	2.2 3.6	67 110	19 W	0720 2352	1.7 3.8	52 116	19 F	0817	1.2	37	20 Th	0100 0913	3.7 1.2	113 37	20 O	0024 0909	4.0 0.7	122 21	21 Tu	0131 0955	3.8 0.8	116 24	21 M	0131 0955	3.8 0.8	116 24	21 F	0024 0909	4.0 0.7	122 21	22 Sa	0104 0958	4.2 0.2	128 6	22 O	0203 1033	3.9 0.6	119 18	22 W	0104 0958	4.2 0.2	128 6	23 Tu	0236 1109	4.0 0.4	122 12	23 M	0236 1109	4.0 0.4	122 12	23 O	0151 1045	4.4 -0.1	134 -3	23 O	0243 1131	4.5 -0.3	137 -9	24 Tu	0309 1142	4.0 0.3	122 9	24 M	0309 1142	4.0 0.3	122 9	24 O	0343 1215	4.0 0.3	122 9	25 Tu	0338 1215	4.5 -0.3	137 -9	25 M	0338 1215	4.5 -0.3	137 -9	26 Tu	0417 1246	4.0 0.3	122 9	26 W	0433 1257	4.4 -0.2	134 -6	26 O	0433 2111	4.4 3.5	134 107	27 Tu	0451 1317	4.0 0.4	122 12	27 M	0451 1317	4.0 0.4	122 12	27 O	0003 1337	3.3 0.1	101 3	27 W	0003 1337	3.3 0.1	101 3	27 O	0232 2126	2.8 3.4	85 104	28 Tu	0116 1447	3.0 1.0	91 30	28 M	0116 1447	3.0 1.0	91 30	28 O	0243 2203	4.5 3.5	137 107	29 Tu	0207 1447	3.1 1.0	94 30	29 M	0207 1447	3.1 1.0	94 30	29 O	0232 2225	2.8 3.6	85 110	30 Tu	0351 1515	2.4 1.5	73 46	30 M	0351 1515	2.4 1.5	73 46	30 O	0351 2225	2.4 3.6	73 110																																																								
3 W	0735 1614	4.1 0.6	125 18	18 Th	0727 1607	3.7 1.1	113 34	3 F	0804 1641	3.7 0.9	113 27	18 Sa	0003 0259 0732	3.2 3.1 3.4	98 94 104	3 M	0004 0716 1215	3.5 2.1 2.5	107 64 76	3 O	0004 1709	3.5 2.1	107 64	4 Th	0111 0510 0920	3.2 3.0 3.3	98 91 101	4 F	0023 0459 0832	3.2 2.9 3.1	98 88 94	4 Su	0031 0823 1522	3.6 1.6 2.5	110 49 76	4 M	0031 0823 1733	3.6 1.6 2.4	110 49 73	5 F	0040 0654 1034	3.2 2.6 2.7	98 79 82	5 Su	0100 0913	3.7 1.2	113 37	5 O	0100 1729	3.7 1.9	113 58	6 Sa	0133 0726 1137	3.3 2.6 2.9	101 79 88	6 M	0056 0654 1034	3.3 2.6 2.7	101 79 82	6 O	0056 1819	3.3 2.2	101 67	7 Tu	0251 0649 1044	3.0 2.9 3.0	91 88 91	7 F	0219 0931 1605	3.5 1.6 2.9	107 49 88	7 Sa	0115 0848 1545	3.4 1.6 2.8	104 49 85	7 O	0203 1912	3.9 2.6	119 79	8 Tu	0257 0911 1506	3.1 2.1 3.0	94 64 91	8 F	0243 1012 1723	3.6 1.2 3.1	110 37 94	8 Sa	0137 0931 2006	3.6 1.1 2.9	110 34 88	8 O	0236 1721	4.0 3.0	122 91	9 Tu	0307 1049 1822	3.7 0.9 3.2	113 27 98	9 M	0204 1013 1833	3.8 0.5 3.3	116 15 101	9 O	0309 2054	4.0 3.2	122 98	10 W	0324 1030 1734	3.4 1.1 3.3	104 34 101	10 M	0332 1123 1912	3.8 0.6 3.3	116 18 101	10 O	0240 2240	3.4 3.1	104 94	11 Tu	0344 1110 1835	3.6 0.7 3.4	110 21 104	11 M	0357 1157 1957	3.9 0.5 3.4	119 15 104	11 O	0313 2131	4.3 3.2	131 104	12 Tu	0422 1030 1734	3.4 1.1 3.3	104 34 101	12 M	0423 1229 2040	3.9 0.4 3.4	119 12 104	12 O	0355 2336	4.4 3.2	134 104	13 Tu	0407 1151 1934	3.9 0.3 3.5	119 9 107	13 M	0450 1302 2123	3.9 0.4 3.4	119 12 104	13 O	0439 2359	4.5 3.3	137 101	14 Tu	0517 1336 2208	3.9 0.4 3.3	119 12 101	14 M	0526 1309 1437	4.4 -0.3 0.2	134 -9 6	14 O	0526 2225	4.4 3.5	134 107	15 Tu	0040 0546 1406	2.9 3.8 3.3	88 116 98	15 M	0021 0546 1410	3.2 3.9 0.6	98 119 18	15 O	0207 1447	3.1 1.0	94 30	16 Tu	0213 0710 1519	3.2 3.8 0.7	98 116 21	16 M	0207 0644 1447	3.1 3.5 1.0	94 107 30	16 O	0213 2315	3.2 3.4	104 104	17 Tu	0436 1234 2035	4.1 0.0 3.5	125 0 107	17 M	0450 1302 2123	3.9 0.4 3.4	119 12 104	17 O	0439 2359	4.5 3.3	137 101	18 Tu	0509 1319 2138	4.2 -0.1 3.4	128 -3 104	18 M	0517 1336 2208	3.9 0.4 3.3	119 12 101	18 O	0526 2225	4.4 3.5	134 107	19 Tu	0008 0546 1406	3.3 4.3 0.0	101 131 0	19 M	0021 0546 1410	3.2 3.9 0.6	98 119 18	19 O	0213 2315	3.2 3.4	104 104	20 Tu	0213 0710 1519	3.2 3.8 0.7	98 116 21	20 M	0213 0644 1447	3.2 3.5 1.0	98 107 30	20 O	0213 2225	3.2 3.6	104 110

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Yamato Wan, Matsuwa To, Kuril Islands, 2013

Times and Heights of High and Low Waters

July				August				September				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m 0515 M 1013 1534 2250	ft 2.1 2.6 1.9 3.7	cm 64 79 58 113	h m 16 0408 Tu 0918 1450 2152	ft 2.1 2.7 1.9 3.6	cm 64 82 58 110	h m 1 0655 Th 2247	ft 1.3 3.9	cm 40 119	h m 16 0552 F 2152	ft 1.0 4.1	cm 30 125	
0515 1013 1534 2250	2.1 2.6 1.9 3.7	64 79 58 113	0408 0918 1450 2152	2.1 2.7 1.9 3.6	64 82 58 110	0655 Th 2247	1.3 3.9	40 119	0552 F 2152	1.0 4.1	30 125	
0636 1247 1528 2319	1.7 2.4 2.3 3.8	52 73 70 116	17 W 1119 1449 2215	1.7 2.5 2.3 3.8	52 76 70 116	0804 F 2332	1.1 3.9	34 119	0711 Sa 2247	0.8 4.1	24 125	
0747 W 2351	1.3 3.9	40 119	18 Th 0634 2246	1.3 4.0	40 122	0903 Sa	0.9	27	0823 Su	0.5	15	
0845 Th	1.0	30	19 F 0744 2329	0.9 4.2	27 128	0030 Su	3.8 0.8	116 24	0004 M 0924	4.1 0.4	125 12	
0029 F 0933	3.9 0.8	119 24	20 Sa	0847	0.5 15	0133 M 1032	3.8 0.7	116 21	0133 Tu 1017 1837 2109	4.1 0.4 3.2 3.1	125 12 98 94	
0111 Sa 1015	4.0 0.6	122 18	21 Su	0024 0943	4.3 0.2	131 6	0233 Tu 1107 1936 2146	3.8 0.7 3.2 3.1	116 21 98 94	0256 W 1102 1829 O 2228	4.0 0.5 3.2 2.8	122 12 98 85
0156 Su 1053	4.0 0.5	122 15	22 M	0129 1033	4.4 0.0	134 0	0327 W 1138 1928 ● 2245	3.8 0.7 3.2 3.0	116 21 98 91	0410 Th 1141 1836 2326	3.9 0.7 3.2 2.4	119 21 98 73
0241 M 1128	4.0 0.4	122 12	23 Tu	0238 1119	4.4 -0.1	134 -3	0416 Th 1206 1929 2332	3.8 0.8 3.2 2.8	116 24 98 85	0515 F 1217 1849	3.8 1.1 3.3	116 34 101
0325 Tu 1200	4.0 0.4	122 12	24 W	0344 1202 1955 2312	4.3 0.0 3.3 3.1	131 0 101 94	0502 F 1232 1935	3.7 0.9 3.2	113 27 98	0019 Sa 1248 1905	2.0 1.4 3.5	61 43 107
0407 W 1229	4.0 0.4	122 12	25 Th	0448 1241 2003	4.2 0.3 3.3	128 9 101	0016 Sa 0549 1256 1942	2.5 3.6 1.1	76 110 34	0108 Su 0714 1314 1923	1.7 3.4 1.8	52 104 55 110
0448 Th 1257	3.9 0.5	119 15	26 F	0018 0549 1315 2017	2.8 3.9 0.7 3.4	85 119 21 104	0059 Su 0637 1319 1952	2.3 3.4 1.4 3.4	70 104 43 104	0157 M 0814 1336 1944	1.4 3.2 2.1 3.7	43 98 64 113
0018 F 0529	3.1 3.8	94 116	27 Sa	0120 0650 1346 2034	2.4 3.6 1.1 3.5	73 110 34 107	0145 M 0731 1339 2005	2.0 3.2 1.7	61 98 52 107	0246 Tu 0918 1352 2007	1.3 2.9 2.4 3.8	40 88 73 116
0110 Sa 0613	2.9 3.6	88 110	28 Su	0221 0752 1413 2053	2.1 3.3 1.5 3.6	64 101 46 110	0235 Tu 0833 1356 2021	1.7 3.0 2.1 3.7	52 91 64 113	0340 W 1039 1353 ● 2033	1.2 2.7 2.6 3.8	37 82 79 116
0204 Su 1413	2.7 3.3	82 101	29 M	0323 0901 1432 2116	1.9 2.9 1.9 3.7	58 88 58 113	0331 W 0953 1403 ● 2043	1.5 2.7 2.4 3.8	46 82 73 116	0439 Th 2103 2112 ● 2043	1.2 3.8	37 116
0302 M 0800	2.4 3.0	73 91	30 Tu	0429 1029 1439 ● 2141	1.6 2.6 2.3 3.8	49 79 70 116	0437 Th 2112 2140 ● 2141	1.2 4.0 3.7 3.8	37 122 113 116	0549 F 2140 2113 ● 2233	1.2 3.7	37 116
0540 W	2.4	73	31 W	0540 2211	1.4 3.8	43 116	0633 Su 2219	0.8 3.8	24 116	0633 M 2219 2233	0.8 3.7	24 116

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Yamato Wan, Matsuwa To, Kuril Islands, 2013

Times and Heights of High and Low Waters

October				November				December										
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height							
h m 0809 Tu 2023	ft 1.5 3.0 2.8	cm 46 91 85	h m 16 W 0043 0807 1512 2110	ft 3.1 1.6 3.2 2.2	cm 94 49 98 67	h m 1 F 0304 0827 1442 2143	ft 2.9 2.2 3.3 1.6	cm 88 67 101 49	h m 16 Sa 0518 0842 1437 2231	ft 3.0 2.8 3.8 0.7	cm 91 85 116 21	h m 1 Su 1339 2159	ft 3.8 0.6	cm 116 18	h m 16 M 1415 2256	ft 4.0 0.3	cm 122 9	
0822 1622 2023	3.0 3.0 2.8	70 91 85	0901 1615 2119	1.5 3.0 2.5	46 91 76	0912 1527 2158	2.5 3.3 1.7	76 101 52	0930 1505 2308	3.0 3.9 0.5	91 119 15	1412 2240	4.1 0.2	125 6				
0944 1619 2159	1.7 3.1 2.2	52 94 67	0950 1546 2240	2.2 3.5 1.2	67 107 37	0950 1518 ● 2255	2.7 3.7 0.7	82 113 21	1011 1534 ○ 2343	3.2 4.0 0.3	101 122 9	1450 2322	4.3 -0.1	131 -3	1454 W	4.1	125	
1019 1626 2236	1.8 3.2 1.8	55 98 55	1030 1607 ○ 2319	2.4 3.6 0.9	73 110 27	1023 1542 2333	3.0 3.9 0.3	91 119 9	1046 1603	3.3 4.0	101 122	1532 Th	4.1	125	0005 1609	0.2	6	
1051 1637 ● 2311	2.0 3.3 1.4	61 101 43	1104 1630 2356	2.7 3.8 0.6	82 116 18	1052 1610	3.2	98	0017 W 0837	0.2 3.4	6 104	0004 Th	-0.3 4.5	-9 137	0036 F	0.3	9	
1119 1651 2348	2.3 3.5 1.0	70 107 30	1134 1653	2.8 3.8	85 116	0724 Tu 1610	3.5	107	0116 W 1116	0.3 3.3	9 101	0017 Th	1617	4.5	137	0911 F	3.4	104
1144 1709	2.5 3.7	76 113	0717 M 1653	3.4 3.8	104 116	0821 W 1116	3.5	107	0118 Th 1143	3.4 3.3	104 101	0047 F	1704	-0.3 4.4	134	0106 Sa	0.4	12
1717	3.9	119	1116	3.9	119	1642	4.3	131	1703	4.0	122	0106 Sa	0928 1211 1721	0.4 3.4 3.3	104 101 119	0135 Su	0.5	15
0645 1144 1709	3.4 2.5 3.7	104 76 113	0032 Tu 0806	0.5 3.4	15 104	0014 W 0821	0.0	0	0050 Th 0918	0.3 3.4	9 104	0047 F	1704	-0.3 4.4	134	0106 Sa	0.4	12
1205 1730	2.8 3.9	85 119	0856 W 1220	3.3 3.1	101 94	0821 W 1116	3.5	107	0118 Th 1143	3.4 3.3	104 101	0047 F	1704	-0.3 4.4	134	0106 Sa	0.4	12
0026 0740 1205 1730	0.7 3.4 2.8 3.9	21 104 85 119	0108 W 0856	0.5	15	0141 F 1758	-0.1	-3	0124 Th 0921	0.3 3.5	9 107	0130 Th 0957	-0.2	-6	0135 Su	0.5	15	
0108 0841 1223 1756	0.5 3.3 3.0 4.1	15 101 91 125	0144 Th 0951	0.5	15	0227 Sa 1842	0.1	3	0124 Th 0958	0.3 3.4	9 104	0130 Th 0957	-0.2	-6	0135 Su	0.5	15	
0153 0953 1234 1827	0.3 3.2 3.1 4.2	9 98 94 128	0222 F 1836	0.6	18	0315 Tu 1932	0.4	12	0157 Sa 1036	0.5 3.3	15 101	0211 Th 1339	0.1 3.2	3	0203 M	0.7	21	
0243 1903	0.3 4.1	9 125	0303 Sa	0.8	24	0315 Tu 1208	0.4	12	0231 Sa 1109	0.7 3.3	21 101	0211 Th 1339	0.1 3.2	3	0203 M	0.7	21	
0338 1945	0.5 4.0	15 122	0348 Su	1.0	30	0315 Tu 1255	1.2	37	0231 Sa 1336	0.7 3.2	21 98	0251 M 1509	0.6 2.9	18	0229 Tu	1.0	30	
0440 2040	0.7 3.7	21 113	0438 M	1.2	37	0458 Tu 1848	1.2	37	0451 Th 1229	1.9	58	0251 M 1509	0.6 2.9	18	0229 Tu	1.0	30	
0549 1517 1723 2213	1.0 3.2 3.1 3.4	30 98 94 104	0534 Tu 1914	1.5	46	0534 Th 1343	2.7	82	0530 F 1249	2.5	76	0316 Th 1300	1.7 3.9	52	0316 Th	1.7	52	
0701 1502 2001	1.3 3.2 2.7	40 98 82	0635 W	1.7	52	0649 Th 1409	2.1	64	0530 F 1249	2.3	70	0402 W 1127	1.6	49	0316 Th	1.7	52	
0734 1429 2107	2.0 3.2 2.1	61 98 64	0734 Th	2.8	85	0649 Th 1409	2.1	64	0530 F 1249	2.3	70	0429 Th 1155	2.1	64	0330 F	2.0	61	
0106 1429 2107	2.8 3.2 2.1	85 98 64	0106 Th	2.8	85	0649 Th 1409	2.1	64	0530 F 1249	2.3	70	0429 Th 1155	2.1	64	0330 F	2.0	61	
0106 0734 1429 2107	2.8 2.0 3.2 2.1	85 61 98 64	0106 Th	2.8	85	0649 Th 1409	2.1	64	0530 F 1249	2.3	70	0429 Th 1155	2.1	64	0330 F	2.0	61	

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings.

* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Kamaishi, Japan, 2013

Times and Heights of High and Low Waters

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kamaisi, Japan, 2013

Times and Heights of High and Low Waters

April					May					June							
	Time	Height															
	h m	ft cm															
1 M	0535	4.3 130	16 Tu	0539	3.9 120	1 W	0025	2.6 80	16 Th	0025	2.6 80	1 Sa	0247	2.4 72	16 Su	0203	2.5 76
	1246	0.2 6		1258	0.7 20		0555	4.1 126		0550	3.8 116		0802	3.4 104		0724	3.5 106
	1946	3.2 98		1947	3.1 96		1325	0.4 13		1312	0.9 26		1442	1.6 49		1403	1.7 51
2 Tu	0022	2.4 73	17 W	0025	2.5 76	2 Th	0123	2.7 82	17 F	0114	2.7 81	2 Su	0412	2.1 65	17 M	0315	2.3 70
	0611	4.1 126		0610	3.7 114		0647	3.8 115		0631	3.5 108		0940	3.1 95		0846	3.2 98
	1339	0.5 14		1343	0.9 27		1423	0.9 26		1356	1.1 35		1539	2.0 62		1454	2.0 62
3 W	2104	3.0 90	18 O	2045	3.0 92	3 F	2159	3.2 99	18 Sa	2103	3.4 105	3 M	0530	1.8 54	18 Tu	0435	2.0 60
	0059	2.6 79		0105	2.6 79		0250	2.6 80		0730	3.2 99		1143	3.1 93		1045	3.1 95
	0654	3.9 118		0646	3.5 106		0800	3.4 104		1532	1.2 38		1452	1.4 44		1558	2.4 74
4 Th	1448	0.8 24		1441	1.1 35		2301	3.3 101		2157	3.4 105		2317	3.9 120		2217	4.0 123
	2304	2.9 88		2205	3.0 91		0439	2.4 72		0404	2.5 75		0633	1.4 42		0546	1.5 47
	0211	2.8 84		0221	2.7 82		0951	3.1 95		0907	3.0 92		1319	3.2 98		1244	3.3 100
5 F	0755	3.5 108	19 F	0741	3.2 97	4 Sa	1647	1.5 47	19 Su	1600	1.7 52	4 Tu	1753	2.6 79	19 W	1244	3.3 100
	1617	1.0 31		1557	1.3 40		2351	3.4 105		2249	3.5 107		1711	2.7 83		1711	2.7 83
	1746	1.1 34		2330	3.1 93		0604	1.9 59		0531	2.1 64		0006	4.1 124		0646	1.0 32
6 Sa	0031	3.0 92	20 Sa	0448	2.6 80	5 Su	1156	3.1 94	20 M	1118	3.0 91	5 W	0724	1.0 31	20 Th	1405	3.6 110
	0437	2.7 82		0936	3.0 90		1757	1.8 54		1711	1.9 58		1423	3.4 105		1822	3.0 90
	0945	3.3 100		1716	1.4 43		1854	1.9 58		2336	3.6 111		1856	2.7 83		1926	3.1 94
7 Su	0113	3.2 97	21 Su	0024	3.2 97	6 M	0032	3.6 110	21 Tu	0631	1.6 49	6 Th	0051	4.2 127	21 F	0001	4.3 132
	0625	2.3 70		0623	2.3 69		0703	1.4 44		1256	3.2 98		0808	0.7 21		0739	0.6 17
	1157	3.2 99		1152	3.0 91		1321	3.3 100		1816	2.1 64		1509	3.7 112		1504	3.9 118
8 M	1853	1.1 35		1822	1.4 43		1854	1.9 58		1951	2.8 85		1951	2.8 85		1926	3.1 94
	0143	3.4 103	22 M	0100	3.3 102	7 Tu	0108	3.8 116	22 W	0017	3.8 117	7 F	0133	4.3 130	22 Sa	0054	4.5 138
	0726	1.8 55		0713	1.8 55		0749	1.0 30		0718	1.1 33		0847	0.5 14		0829	0.2 5
	1320	3.4 105		1313	3.2 99		1420	3.5 106		1403	3.5 107		1549	3.8 117		1553	4.1 124
9 Tu	1944	1.2 36		1915	1.4 44		1943	2.0 62		1912	2.3 69		2038	2.8 85		2022	3.1 95
	0210	3.6 109	23 Tu	0130	3.5 108	8 W	0142	4.0 121	23 Th	0802	0.5 16	8 Sa	0211	4.4 133	23 Su	0146	4.8 145
	0811	1.3 40		0752	1.3 39		1507	3.7 112		1459	3.8 116		0924	0.3 9		0917	-0.1 -3
	1419	3.7 112		1410	3.5 108		2025	2.1 65		2001	2.4 74		1624	3.9 120		1636	4.2 128
10 W	2025	1.2 38		2000	1.5 46		0244	4.2 128	24 F	0135	4.3 130	9 Su	0248	4.4 135	24 M	0237	4.9 149
	0301	3.9 120		0226	4.0 121		0942	0.1 4		0845	0.1 2		1657	4.0 121		1003	-0.2 -6
	0927	0.5 15		0907	0.3 9		1627	3.8 117		1549	4.0 121		2118	2.8 85		2113	3.1 94
11 Th	1549	3.9 118		1546	4.0 121		2139	2.3 71		2047	2.6 79		2155	2.8 85		2201	3.0 90
	2134	1.5 47		2118	1.8 55		0214	4.2 128		0214	4.5 137		0322	4.4 135		0327	5.0 151
	●			2154	2.0 62		0942	0.1 4		0928	-0.3 -8		1034	0.3 8		1047	-0.1 -2
12 F	0326	4.1 124	26 F	0255	4.2 128	11 Sa	0314	4.3 130	26 Su	0254	4.7 142	11 Tu	0356	4.4 135	26 W	0416	4.9 148
	1002	0.3 8		0945	-0.1 -2		1016	0.1 2		1012	-0.4 -12		1107	0.4 11		1128	0.2 6
	1628	3.9 118		1633	4.0 122		1703	3.8 117		1724	4.1 124		1759	4.0 121		1827	4.2 128
13 Th	2204	1.7 52		2154	2.0 62		2211	2.4 73		2211	2.8 84		2304	2.7 83		2335	2.6 79
	0352	4.2 127	27 Sa	0326	4.4 133	12 Su	0344	4.3 130	27 M	0335	4.7 144	12 W	0430	4.3 132	27 Th	0505	4.7 142
	1036	0.2 5		1025	-0.3 -9		1050	0.1 2		1056	-0.4 -5		1139	0.5 16		1206	0.6 18
	1705	3.8 116		1719	4.0 121		1738	3.8 115		1809	4.0 122		1831	4.0 121		1858	4.2 128
14 Su	2233	1.9 58		2229	2.2 68		2243	2.5 75		2254	2.8 84		2340	2.7 82		2448	2.8 85
	0444	4.2 127	28 Su	0359	4.5 136	13 M	0414	4.2 129	28 Tu	0419	4.7 143	13 Th	0505	4.2 128	28 F	0025	2.4 74
	1144	0.2 7		1149	-0.2 -7		1124	0.2 6		1140	-0.2 -5		1212	0.7 22		0556	4.3 132
	1820	3.5 107		1858	3.6 110		1814	3.7 113		1853	3.9 118		1903	3.9 120		1242	1.0 32
15 M	2327	2.2 67		2341	2.6 78		2314	2.5 77		2340	2.7 83		1928	4.2 128		1959	4.2 129
	0511	4.1 124	29 Tu	0512	4.4 133	14 W	0444	4.2 127	29 W	0505	4.5 137	14 F	0019	2.7 81	29 Sa	0118	2.3 69
	1219	0.4 13		1235	0.1 2		1158	0.4 11		1224	0.2 6		0543	4.0 122		0650	4.0 121
	1900	3.3 102		1953	3.4 104		1851	3.6 110		1936	3.8 116		1245	1.0 30		1317	1.5 47
16 M	2355	2.4 72				15 W	0516	4.0 122		0554	4.2 128	15 F	0106	2.6 79	30 Su	0220	2.1 65
							1308	0.7 20		0627	3.7 114		0627	3.7 114		0752	3.5 108
							2017	3.7 114		2017	3.7 114		1322	1.3 40			

Kamaisi, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0331 2.0 60		16 0231 2.0 62		1 Th 0518 1.7 53		16 F 0434 1.5 47		1 Su 0655 1.6 49		16 M 0655 1.4 42	
0914 3.2 98		Tu 0829 3.4 105		2205 4.2 129		2124 4.4 135		1428 3.8 116		1412 4.0 122	
1430 2.4 74		1400 2.4 74						1905 3.3 100		1910 3.0 92	
2115 4.2 129	●	2028 4.4 133									
2 Tu 0448 1.8 54		17 0344 1.8 56		2 F 0629 1.5 47		17 Sa 0604 1.3 40		2 M 0031 4.1 125		17 Tu 0045 4.3 132	
1119 3.1 95		W 1022 3.3 100		1434 3.6 110		1424 3.8 115		0743 1.4 44		0748 1.3 39	
1523 2.8 85		1448 2.9 87		1738 3.5 106		1729 3.6 110		1447 4.0 122		1435 4.2 127	
2205 4.2 129		2112 4.4 133		2332 4.2 129		2301 4.4 135		1955 3.0 92		2001 2.5 76	
3 W 0559 1.5 47		18 0506 1.5 47		3 Sa 0726 1.3 40		18 Su 0714 1.0 31		3 Tu 0130 4.3 131		18 W 0151 4.6 139	
1324 3.3 100		1253 3.4 103		1500 3.8 116		1453 4.0 122		0822 1.3 39		0831 1.3 40	
1643 3.1 94		1603 3.2 98		1911 3.4 103		1906 3.4 104		1506 4.1 126		1459 4.4 133	
2305 4.2 129		2209 4.4 134						2033 2.7 82		2044 2.0 61	
4 Th 0658 1.2 38		19 0621 1.1 35		4 Su 0045 4.3 131		19 M 0033 4.6 139		4 W 0217 4.5 136		19 Th 0244 4.7 144	
1429 3.5 107		1419 3.7 113		0811 1.1 34		0808 0.8 24		0857 1.2 37		0908 1.4 43	
1812 3.2 98		1740 3.4 105		1524 4.0 121		1520 4.2 127		1526 4.3 131		1522 4.5 138	
		2320 4.5 137		2008 3.2 97		2008 3.1 93		2105 2.4 72		2123 1.6 48	
5 F 0008 4.3 130		20 0725 0.8 23		5 M 0140 4.5 136		20 Tu 0143 4.8 146		5 Th 0257 4.6 141		20 F 0331 4.8 145	
0747 1.0 30		1508 4.0 121		0850 1.0 29		0854 0.7 22		0929 1.2 37		0941 1.6 49	
1510 3.7 114		1905 3.4 105		1547 4.1 125		1545 4.3 132		1547 4.4 135		1546 4.7 143	
1924 3.2 98				2050 3.0 91		2056 2.7 81		2137 2.0 62		2201 1.2 37	
6 Sa 0104 4.4 133		21 0033 4.7 142		6 Tu 0224 4.6 140		21 W 0240 5.0 151		6 F 0336 4.7 143		21 Sa 0414 4.7 144	
0830 0.8 24		0819 0.4 13		0924 0.9 26		0934 0.8 23		0959 1.3 41		1011 1.9 57	
1543 3.9 120		1546 4.2 127		1609 4.2 129		1610 4.4 135		1608 4.6 139		1609 4.8 146	
2020 3.1 95		2011 3.3 101		2125 2.8 84		2139 2.2 68		2209 1.7 53		2238 1.0 31	
7 Su 0151 4.5 136		22 0138 4.9 148		7 W 0304 4.7 143		22 Th 0330 5.0 152		7 Sa 0415 4.7 143		22 Su 0455 4.6 139	
0908 0.6 19		0908 0.2 7		0956 0.9 26		1009 1.0 29		1028 1.5 46		1039 2.2 66	
1613 4.0 123		1620 4.3 130		1632 4.3 132		1634 4.6 139		1631 4.7 142		1634 4.9 148	
2103 3.0 92		2105 3.1 93	●	2159 2.5 77		2220 1.9 57		2242 1.5 45		2314 1.0 30	
8 M 0233 4.6 139		23 0235 5.0 152		8 Th 0342 4.7 144		23 F 0416 4.9 150		8 Su 0454 4.6 141		23 M 0535 4.4 133	
0944 0.5 16		0952 0.2 7		1027 0.9 28		1041 1.3 39		1056 1.8 55		1106 2.4 74	
1640 4.1 126		Tu 1650 4.4 133		1654 4.4 135		1657 4.7 142		1654 4.8 145		1659 4.9 148	
● 2141 2.9 89		O 2152 2.8 84		2231 2.3 71		2300 1.6 49		2316 1.3 40		2352 1.0 31	
9 Tu 0311 4.6 140		24 0327 5.1 154		9 F 0419 4.7 143		24 Sa 0500 4.7 144		9 M 0535 4.5 136		24 Tu 0616 4.1 125	
1017 0.5 16		1032 0.4 12		1056 1.1 33		1110 1.6 49		1123 2.1 64		1131 2.7 81	
1707 4.2 127		1719 4.4 134		1717 4.5 137		1721 4.8 145		1719 4.8 146		1726 4.8 146	
2216 2.8 85		2237 2.5 75		2305 2.1 65		2340 1.5 45		2354 1.2 37			
10 W 0348 4.6 140		25 0417 5.0 151		10 Sa 0457 4.6 140		25 Su 0543 4.4 135		10 Tu 0619 4.2 128		25 W 0031 1.2 36	
1049 0.6 19		1108 0.7 21		1124 1.3 41		1137 2.0 61		1150 2.4 74		0700 3.9 118	
1733 4.2 129		1745 4.5 136		1741 4.6 139		1746 4.8 146		1745 4.8 146		1155 2.9 88	
2250 2.7 81		2321 2.2 67		2340 2.0 60						1754 4.6 141	
11 Th 0424 4.6 139		26 0504 4.8 145		11 Su 0536 4.4 134		26 M 0021 1.5 45		11 W 0036 1.2 37		26 Th 0114 1.4 43	
1120 0.8 23		1141 1.1 33		1151 1.6 50		0626 4.1 125		0712 3.9 119		0753 3.6 110	
1759 4.3 130		1811 4.5 138		1805 4.6 140		1201 2.3 71		1216 2.8 85		1220 3.1 94	
2325 2.6 78						1812 4.8 145		1815 4.8 145		1824 4.4 135	
12 F 0501 4.4 135		27 0005 2.0 61		12 M 0018 1.8 56		27 Tu 0105 1.5 47		12 W 0127 1.3 40		27 F 0208 1.7 51	
1149 1.0 30		0551 4.4 135		0620 4.2 127		0714 3.8 115		0822 3.6 109		0911 3.4 105	
1825 4.3 131		1211 1.5 46		1219 2.0 61		1224 2.7 81		1242 3.1 94		1248 3.2 99	
		1836 4.6 139		1831 4.6 141		1840 4.7 142		1851 4.6 141		1901 4.2 127	
13 Sa 0003 2.4 74		28 0052 1.9 58		13 Tu 0101 1.7 53		28 W 0156 1.7 52		13 M 0234 1.5 45		28 F 0321 1.9 57	
0540 4.2 129		0639 4.1 124		0711 3.9 118		0814 3.5 106		1039 3.4 104		1144 3.4 105	
1219 1.3 39		1238 2.0 60		1246 2.4 73		1245 2.9 89		1310 3.4 103		1359 3.4 104	
1852 4.3 132		1904 4.6 140		1900 4.6 141		1913 4.5 137		1939 4.4 135		2001 3.9 118	
14 Su 0044 2.3 71		29 0143 1.9 57		14 W 0154 1.7 52		29 Th 0302 1.8 56		14 Sa 0406 1.6 48		29 Su 0449 1.9 59	
0624 4.0 122		0733 3.7 112		0819 3.5 108		0956 3.3 100		1317 3.6 110		1301 3.6 110	
1250 1.6 49		1304 2.4 72		1314 2.8 85		1259 3.2 97		1508 3.6 109		1725 3.4 103	
1921 4.3 132		1934 4.6 139	●	1934 4.6 140		1955 4.3 131		2100 4.2 129		2214 3.7 112	
15 M 0132 2.2 67		30 0244 1.9 57		15 Th 0304 1.7 51		30 F 0426 1.9 58		15 Su 0543 1.5 46		30 M 0604 1.9 57	
0717 3.7 113		0842 3.3 102		1019 3.3 102		2102 4.1 125		1751 3.4 104		1328 3.8 116	
1323 2.0 61		1330 2.7 83		1345 3.2 97				2306 4.1 126			
1952 4.3 132		2011 4.5 136		2018 4.5 138							
		31 0358 1.9 57				31 Sa 0550 1.8 55					
		1042 3.2 97				1414 3.6 111					
		1358 3.1 93				1727 3.5 107					
		2058 4.4 133				2258 4.0 122					

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kamaisi, Japan, 2013

Times and Heights of High and Low Waters

October				November				December															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm												
1 Tu	0013 0700 1350 1936	3.8 1.8 4.0 2.7	115 54 121 81	16 W	0054 0713 1340 1948	4.0 1.9 4.2 1.9	121 57 128 57	1 F	0200 0736 1334 2015	3.9 2.2 4.3 1.3	120 67 132 39	16 Sa	0255 0801 1349 2050	4.0 2.7 4.6 0.6	123 81 140 18	1 Su	0249 0736 1312 2030	3.9 2.8 4.6 0.4	119 86 139 12	16 M	0344 0821 1355 2113	3.9 3.0 4.5 0.3	119 91 138 9
2 W	0119 0743 1411 2010	4.0 1.7 4.1 2.2	122 51 126 68	17 Th	0158 0757 1407 2028	4.2 2.0 4.4 1.4	128 60 134 42	2 Sa	0247 0817 1403 2050	4.2 2.3 4.5 0.8	127 70 138 24	17 Su	0338 0842 1422 2126	4.2 2.8 4.7 0.4	127 84 143 12	2 M	0336 0823 1352 2111	4.1 2.9 4.8 0.0	126 89 145 0	17 Tu	0418 0905 1434 2149	4.0 3.0 4.6 0.2	123 90 140 6
3 Th	0208 0821 1433 2042	4.2 1.7 4.3 1.8	129 51 131 55	18 F	0248 0836 1433 2106	4.4 2.1 4.6 1.0	133 64 140 29	3 Su	0331 0854 1432 ● 2126	4.4 2.4 4.7 0.4	133 74 144 13	18 M	0417 0919 1454 ○ 2201	4.2 2.8 4.8 0.3	129 86 145 9	3 Tu	0421 0906 1432 ● 2153	4.3 3.0 4.9 -0.2	130 91 150 -7	18 W	0449 0943 1510 2222	4.1 2.9 4.6 0.2	124 88 140 6
4 F	0251 0855 1456 2113	4.4 1.7 4.5 1.4	135 53 137 43	19 Sa	0333 0910 1500 ○ 2142	4.5 2.3 4.7 0.7	136 69 144 21	4 M	0415 0930 1502 2203	4.5 2.6 4.9 0.2	136 80 145 5	19 Tu	0453 0954 1525 2235	4.2 2.9 4.8 0.3	129 88 145 9	19 W	0505 0949 1513 2235	4.3 3.0 5.0 -0.3	131 86 153 -8	19 Th	0519 1018 1544 2254	4.1 2.8 4.6 0.3	125 86 139 8
5 Sa	0332 0927 1519 ● 2146	4.6 1.9 4.7 1.0	139 57 142 32	20 Su	0414 0942 1527 2217	4.5 2.4 4.8 0.6	136 74 147 17	5 Tu	0459 1005 1534 2243	4.4 2.8 5.0 0.1	135 85 152 2	20 W	0528 1027 1556 2309	4.2 2.9 4.7 0.4	128 89 143 12	20 Th	0548 1031 1555 2317	4.3 3.0 5.0 -0.1	130 92 152 -3	20 F	0547 1052 1618 2325	4.1 2.8 4.5 0.4	125 84 136 13
6 Su	0413 0958 1544 2220	4.6 2.1 4.8 0.8	140 63 146 23	21 M	0453 1013 1554 2252	4.4 2.6 4.9 0.6	134 79 148 17	6 W	0545 1040 1609 2324	4.3 3.0 5.0 0.1	132 80 153 4	21 Th	0602 1100 1627 2342	4.1 3.0 4.6 0.6	126 90 140 18	21 Sa	0629 1115 1640 2359	4.2 3.0 4.9 0.2	127 82 148 6	21 F	0616 1127 1652 2356	4.1 2.7 4.3 0.6	124 82 131 19
7 M	0454 1028 1610 2257	4.6 2.3 4.9 0.6	139 71 149 19	22 Tu	0531 1042 1622 2327	4.3 2.8 4.8 0.7	130 84 147 20	7 Th	0633 1117 1646	4.2 3.1 4.9	127 93 150	22 F	0637 1135 1659	4.0 3.0 4.4	123 91 134	7 Sa	0709 1204 1728	4.1 2.9 4.6	124 87 139	22 Su	0644 1205 1727	4.1 2.6 4.1	124 80 125
8 Tu	0538 1058 1638 2336	4.4 2.6 4.9 0.6	134 79 150 19	23 W	0609 1111 1650	4.1 2.9 4.7	126 88 143	8 F	0008 0725 1159 1727	0.4 4.0 3.1 4.7	121 121 96 143	23 Sa	0016 0714 1213 1733	0.8 4.0 3.0 4.2	25 121 121 127	23 M	0026 0714 1247 1806	0.9 4.1 2.6 3.8	28 124 78 116				
9 W	0625 1127 1708	4.2 2.8 4.9	127 86 149	24 Th	0003 0650 1141 1719	0.9 4.0 3.0 4.5	26 90 92 138	9 Sa	0055 0822 1254 1816	0.8 3.8 3.1 4.3	23 90 96 132	24 M	0052 0826 1302 1811	1.1 4.0 3.0 3.9	34 122 78 118	24 Tu	0056 0746 1339 1854	1.2 4.0 2.5 3.5	37 123 76 106				
10 Th	0019 0720 1158 1742	0.8 3.9 3.1 4.8	23 119 93 145	25 F	0041 0736 1214 1750	1.1 3.8 3.1 4.3	34 116 95 131	10 Su	0148 0924 1415 ○ 1921	1.2 3.8 3.1 3.9	36 115 95 119	25 M	0131 0839 1410 1902	1.4 3.9 3.0 3.5	43 118 108 108	25 W	0204 0906 1535 ○ 2051	1.6 4.0 2.3 3.3	50 122 71 100	25 O	0129 0820 1446 2001	1.6 4.0 2.3 3.1	48 123 71 96
11 F	0109 0833 1236 1823	1.0 3.7 3.2 4.5	30 30 99 138	26 Sa	0124 0832 1300 1826	1.4 3.7 3.2 4.0	43 112 98 122	11 M	0251 1024 1604 2103	1.6 3.8 2.9 3.5	49 116 88 108	26 Tu	0218 0928 1549 ○ 2029	1.7 3.9 2.8 3.2	53 118 85 98	11 W	0253 0951 1702 2302	2.1 4.1 2.0 3.1	65 124 60 94	26 Th	0208 0859 1608 2153	2.0 4.0 2.1 2.9	60 123 63 89
12 Sa	0211 1018 1342 ● 1920	1.3 3.6 3.4 4.2	39 109 103 128	27 Su	0218 0945 1425 ○ 1919	1.7 3.6 3.3 3.7	51 110 100 112	12 Tu	0404 1116 1738 2320	2.0 3.9 2.4 3.4	60 119 74 104	27 W	0319 1019 1722 2252	2.1 3.9 2.4 3.1	63 119 74 94	27 Th	0355 1042 1813	2.5 4.1 1.5	77 126 47	27 F	0300 0943 1728	2.4 4.1 1.7	72 124 51
13 Su	0333 1152 1601 2059	1.6 3.7 3.3 3.9	48 112 102 118	28 M	0329 1102 1654 2116	1.9 3.7 3.1 3.4	58 112 95 103	13 W	0519 1200 1841	2.3 4.1 1.9	69 124 57	28 Th	0432 1107 1822	2.3 4.0 1.9	71 122 59	13 F	0107 0511 1135 1909	3.2 2.8 4.2 1.1	98 86 129 35	28 Sa	0028 0415 1035 1832	3.0 2.7 4.1 1.2	92 83 126 36
14 M	0505 1240 1757 2319	1.7 3.8 3.0 3.8	53 116 90 116	29 Tu	0448 1157 1820 2342	2.0 3.8 2.8 3.4	62 116 84 104	14 Th	0100 0622 1239 1930	3.6 2.4 4.3 1.4	109 74 130 42	29 F	0046 0543 1152 1908	3.3 2.5 4.1 1.4	100 77 126 43	14 Sa	0219 0625 1226 1955	3.5 3.0 4.3 0.8	106 90 132 24	29 Su	0202 0541 1133 1926	3.3 3.0 4.3 0.7	101 91 130 20
15 Tu	0618 1312 1901	1.8 4.0 2.4	55 122 74	30 W	0557 1235 1905	2.1 4.0 2.3	64 121 69	15 F	0205 0715 1315 2011	3.8 2.6 4.4 0.9	117 78 135 28	30 Sa	0156 0644 1233 1949	3.6 2.7 4.3 0.9	110 82 132 26	15 Su	0306 0728 1313 2036	3.7 3.0 4.4 0.5	113 92 135 15	30 M	0259 0656 1230 2015	3.6 3.1 4.4 0.2	111 95 135 6
				31 Th	0104 0651 1306 1941	3.6 2.1 4.1 1.8	111 65 126 54								31 Tu	0340 0801 1328 2101	3.9 3.1 4.6 -0.1	119 94 141 -4					

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yokohama, Japan, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0053	0.6	18	16 W	0126	1.0	29	1 F	0139	1.3	40
0726	5.8	176		0757	5.7	175		0751	5.7	174	
1307	2.9	87		1355	2.3	69		1402	1.8	56	
1837	5.6	171		1930	5.3	161		2003	5.1	154	
2 W	0125	0.9	27	17 Th	0155	1.5	47	2 Sa	0211	1.8	56
0757	5.7	173		0824	5.6	170		0822	5.5	169	
1343	2.8	85		1438	2.3	70		1448	1.8	56	
1918	5.3	162		2015	4.8	145		2101	4.6	141	
3 Th	0158	1.3	39	18 F	0222	2.1	65	3 Su	0247	2.5	75
0831	5.6	171		0852	5.4	165		0857	5.4	164	
1425	2.7	83		1529	2.3	71		1549	1.9	57	
2007	5.0	151		2109	4.3	130	○	2223	4.2	128	
4 F	0235	1.8	54	19	0248	2.7	82	4 M	0333	3.1	95
0907	5.5	167		0924	5.2	159		0941	5.2	157	
1520	2.7	81		1640	2.4	72		1722	1.8	55	
2112	4.6	139	○	2227	3.9	118					
5 Sa	0319	2.4	72	20 Su	0317	3.2	98	5 Tu	0047	4.1	124
0948	5.4	164		1006	5.0	152		0503	3.6	111	
1635	2.5	76		1810	2.2	68		1044	5.0	151	
○ 2244	4.3	130						1902	1.5	45	
6 Su	0420	3.0	90	21 M	0128	3.8	115	6 W	0257	4.5	136
1038	5.3	161		0432	3.7	113		0713	3.8	116	
1807	2.1	65		1109	4.8	147		1223	4.9	149	
				1928	1.9	58		2018	1.0	30	
7 M	0052	4.3	130	22 Tu	0332	4.2	127	7 Th	0350	5.0	151
0551	3.4	104		0711	3.9	118		0840	3.6	109	
1139	5.2	159		1244	4.8	145		1402	5.1	156	
1926	1.6	48		2026	1.5	46		2117	0.5	16	
8 Tu	0244	4.7	142	23 W	0402	4.6	139	8 F	0427	5.3	163
0726	3.6	111		0835	3.7	114		0938	3.2	97	
1254	5.3	161		1406	4.9	150		1509	5.5	168	
2029	1.0	29		2112	1.1	34		2206	0.2	6	
9 W	0349	5.2	158	24 Th	0427	4.9	149	9 Sa	0500	5.6	172
0842	3.6	110		0928	3.5	106		1024	2.7	83	
1406	5.5	168		1459	5.2	158		1559	5.9	179	
2124	0.4	11		2152	0.8	23		2249	0.0	1	
10 Th	0436	5.6	171	25 F	0451	5.2	157	10 Su	0529	5.8	177
0942	3.4	105		1008	3.2	99		1104	2.3	70	
1507	5.8	178		1539	5.4	166		1643	6.1	186	
2213	0.0	-1		2228	0.5	15	●	2327	0.1	3	
11 F	0516	5.9	180	26 Sa	0515	5.4	164	11 M	0557	5.9	180
1032	3.2	98		1042	3.0	91		1141	1.9	59	
1558	6.1	186		1615	5.7	174		1723	6.1	187	
2259	-0.3	-8		2302	0.3	9					
12 Sa	0553	6.0	184	27 Su	0539	5.6	170	12 Tu	0001	0.3	10
1117	3.0	90		1114	2.7	83		0624	5.9	180	
1644	6.3	191		1649	5.9	179		1217	1.7	51	
● 2341	-0.3	-8		○ 2334	0.3	8		1802	6.0	182	
13 Su	0628	6.1	185	28 M	0603	5.7	174	13 W	0032	0.7	22
1158	2.7	82		1145	2.5	75		0648	5.8	178	
1727	6.3	191		1723	5.9	181		1251	1.5	46	
								1839	5.7	173	
14 M	0019	0.0	0	29 Tu	0006	0.3	10	14 Th	0100	1.2	37
0700	6.0	183		0629	5.8	176		0711	5.7	175	
1237	2.5	75		1217	2.3	69		1325	1.5	45	
1808	6.1	185		1759	5.9	180		1916	5.3	161	
15 Tu	0055	0.4	12	30 W	0037	0.5	16	15 F	0126	1.7	52
0729	5.9	180		0655	5.8	177		0734	5.6	171	
1316	2.3	71		1250	2.1	63		1401	1.6	48	
1848	5.7	174		1836	5.7	175		1956	4.9	148	
16 Sa	0107	0.9	26	31 Th	0723	5.8	176				
				1324	1.9	59					
				1916	5.4	166					

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yokohama, Japan, 2013

Times and Heights of High and Low Waters

April				May				June					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
1 M 0140 0710 1410 2109	h m 2.8 5.6 0.7 4.8	ft 85 170 22 147	cm 156 141	16 Tu 0134 0706 1415 2100	h m 3.1 5.1 1.3 4.6	ft 95 156 40 141	cm 105 159 34 149	1 W 0224 0736 1455 2219	h m 3.4 5.2 1.1 4.9	ft 105 159 34 149	cm 103 151 47 151		
	0140	0710	1410	2109	0134	0706	1415	2100	0224	0736	1455		
	0746	1505	2232		0207	0737	1502	2200	0331	0835	1602		
	1.2	1.3	4.5		3.4	4.8	1.7		3.6	4.8	1.7		
2 Tu 0220 0746 1505 2232	3.2	5.2	1.2		103	146	51		109	145	51		
	0220	0746	1505		0207	0737	1502		0253	0811	1521		
	1.6	1.3	4.5		3.4	4.8	1.4		3.5	4.6	1.9		
	4.8	136			146	134	134		106	140	58		
3 W 0318 0834 1627 O	3.6	4.8	1.6		18 Th 0254 0820 1610 2321	3.6	4.4		106	0414 0927 1628 2318	3.5	4.3	
	0318	0834	1627		0254	0820	1610		0414	0927	1628		
	4.8	147	1.6		110	135	61		3.5	107	69		
	1.6	48			131	131			4.9	148	97		
4 Th 0028 0518 1002 1812	4.4	3.7	4.4		19 F 0504 0945 1742	3.7	4.1		147	0604 1121 1748	3.2	4.1	
	0028	0518	1002		0504	0945	1742		0604	1121	126		
	1.8	114	1.8		113	124	2.2		99	126	76		
	54				147	124	66		4.8	147	71		
5 F 0156 0721 1233 1937	4.6	3.4	4.3		20 Sa 0055 0723	4.4	3.4		152	0019 0717 1309 1902	5.0	2.7	
	0156	0721	1233		0055	0723	1217		151	0717	133		
	140	103	131		4.4	3.4	4.0		151	1309	183		
	52				134	103	2.1		152	1309	205		
6 Sa 0244 0825 1411 2037	4.9	2.8	4.7		21 Su 0155 0816	4.7	2.9		157	0113 0806 1426 2005	5.1	2.1	
	0244	0825	1411		0155	0816	2.9		156	0806	143		
	149	87	142		142	1354	4.4		156	1426	143		
	1.6	49			133	1354	2.0		157	2005	2.7		
7 Su 0318 0910 1510 2123	5.2	2.2	5.1		22 M 0233 0852	5.0	2.3		163	0200 0920 1549 2131	5.4	1.3	
	0318	0910	1510		0233	0852	4.9		163	0920	141		
	157	66	155		152	1452	1.9		163	1549	157		
	1.5	47			158	2053	1.9		163	2131	2.6		
8 M 0346 0947 1555 2203	5.4	1.6	5.4		23 Tu 0305 0926	5.3	1.6		161	0327 0957 1629 2211	5.5	0.9	
	0346	0947	1555		0305	0926	1.6		161	0957	166		
	165	48	165		161	1539	5.3		161	1629	166		
	48				161	2137	1.9		161	2211	2.6		
9 Tu 0413 1023 1635 2239	5.6	1.1	5.6		24 W 0334 1001	5.6	1.0		170	0356 1032 1706 2247	5.7	0.6	
	0413	1023	1635		0334	1001	32		173	1032	173		
	171	34	172		170	1622	5.8		173	1706	175		
	52				170	2137	1.9		173	2247	2.7		
10 W 0438 1056 1711 2312	5.7	0.8	5.8		25 Th 0404 1036	5.8	0.5		177	0424 1055 1748 2321	5.9	-0.1	
	0438	1056	1711		0404	1036	0.5		177	1055	174		
	174	23	176		177	1705	6.0		177	1748	188		
	58				177	2257	2.1		177	2319	3.0		
11 Th 0502 1129 1747 2343	5.8	0.5	5.7		26 F 0435 1113	6.0	0.1		183	0440 1138 1814 2352	6.2	-0.3	
	0502	1129	1747		0435	1113	3		183	1138	188		
	176	16	175		183	1749	6.1		183	1814	192		
	65				183	2336	2.3		183	2352	2.9		
12 F 0525 1200 1821	5.8	0.5	5.6		27 Sa 0507 1152	6.1	-0.1		186	0003 0521 1223 1922	3.1	-0.2	
	0525	1200	1821		0507	1152	-3		186	0521	1223	-5	
	176	14	172		186	1835	6.1		186	1223	1922	-5	
	166				186	1835	6.1		186	1922	1939	-5	
13 Sa 0549 1232 1856	2.4	0.5	0.5		28 M 0015 0539	2.6	-0.1		79	0047 0603 1307 2010	3.2	0.2	
	0549	1232	1856		0015	0539	-3		79	0603	1307	-5	
	72	16	166		170	1232	-0.1		79	1307	2010	-7	
	175				170	1923	5.8		79	1307	2010	-7	
14 Su 0039 1304 1933	2.6	0.7	5.2		29 M 0054 1315	2.9	0.2		88	0054 0616 1317 1959	3.1	0.9	
	0039	1304	1933		0054	0614	1.0		88	0616	1317	161	
	80	21	159		0054	0614	5.9		88	1317	1959	161	
	88				170	2015	5.5		88	1959	2057	161	
15 M 0107 0639 1338	2.9	0.6	1.0		30 Tu 0135 0652	3.2	0.6		97	0222 0647 1352 2040	3.3	0.2	
	0107	0639	1338		0135	0652	0.6		97	0647	1352	161	
	88	165	29		3.2	5.6	1.8		97	1352	2040	161	
	150				97	180	1.8		97	2040	2144	163	
31 F 0322 1211 2208	3.2	0.5	1.9		31 W 0840	3.2	0.6		99	0322 0840 1530 2232	3.2	0.9	
	0322	1211	2208		3.2	0.5	1.8		99	0840	1530	166	
	171	0	5.4		99	180	1.9		99	1530	2232	166	
	84				99	180	5.2		99	2232	5.2	166	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yokohama, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0505	2.6	78	16 Tu 0355	2.5	76	1 Th 0647	2.2	68	1 Su 0116	4.9	148
1101	4.3	132	1009	4.7	142	1452	4.5	137	0820	2.0	61
1626	3.3	101	1547	3.1	93	1836	4.2	129	1541	5.2	157
2252	5.3	162	● 2202	5.6	170	2356	5.0	153	2102	3.8	115
2 Tu 0622	2.3	71	17 W 0512	2.3	70	2 0754	2.0	60	2 M 0229	5.2	157
1302	4.3	130	1149	4.6	139	1540	4.9	148	0907	1.7	52
1746	3.7	114	1701	3.6	109	2013	4.1	126	1604	5.4	166
2348	5.2	159	2254	5.5	167				2139	3.4	103
3 W 0728	2.0	61	18 Th 0636	1.9	59	3 Sa 0135	5.1	155	3 Tu 0316	5.5	168
1450	4.6	139	1350	4.8	145	0846	1.6	50	0946	1.5	46
1916	3.9	119	1837	3.9	119	1610	5.2	158	1625	5.7	174
						2113	3.9	118	2212	3.0	91
4 Th 0057	5.2	158	19 F 0002	5.4	166	4 Su 0241	5.3	162	4 W 0355	5.8	178
0822	1.6	50	0748	1.4	44	0931	1.3	41	0935	0.9	26
1544	4.9	150	1515	5.2	158	1635	5.4	166	1634	6.0	182
2029	3.9	118	2003	3.9	120	2156	3.6	110	2159	3.2	99
5 F 0203	5.3	161	20 Sa 0121	5.5	169	5 M 0327	5.6	170	5 Th 0431	6.1	186
0908	1.3	40	0849	0.9	28	1010	1.1	34	1056	1.3	40
1622	5.2	159	1609	5.6	172	1700	5.7	173	1710	6.1	187
2124	3.8	115	2112	3.8	116	2232	3.3	101	● 2312	2.2	68
6 Sa 0255	5.4	166	21 Su 0233	5.8	177	6 Tu 0405	5.8	178	6 W 0506	6.3	191
0950	1.0	32	0944	0.5	15	1046	1.0	30	1128	1.4	43
1653	5.5	167	1653	6.0	183	1723	5.9	179	1734	6.3	191
2209	3.6	110	2208	3.5	108	2304	3.1	93	2343	1.9	58
7 Su 0337	5.6	172	22 M 0333	6.1	187	7 W 0441	6.0	184	7 Th 0542	6.3	193
1028	0.9	26	1034	0.2	7	1120	1.0	29	1159	1.6	49
1722	5.6	172	1731	6.2	189	1747	6.0	183	1758	6.4	194
2247	3.4	105	2256	3.2	98	● 2336	2.8	85			
8 M 0414	5.8	177	23 Tu 0424	6.4	194	8 Th 0515	6.1	187	8 Su 0014	1.6	50
1104	0.7	22	1120	0.2	5	1152	1.0	30	0550	6.5	197
1749	5.8	176	1807	6.3	192	1812	6.1	186	1217	1.3	40
● 2322	3.3	100	○ 2340	2.9	88				1829	6.4	194
9 Tu 0449	5.9	180	24 W 0512	6.5	197	9 F 0007	2.5	77	24 Sa 0036	1.8	54
1139	0.7	21	1202	0.4	11	0550	6.1	187	0631	6.2	190
1816	5.9	179	1840	6.3	193	1222	1.2	36	1248	1.8	55
2354	3.1	96				1837	6.2	188	1854	6.3	191
10 W 0523	5.9	181	25 Th 0021	2.6	79	10 Sa 0038	2.3	71	25 Su 0112	1.7	51
1211	0.8	24	0557	6.4	195	0627	6.0	184	0711	5.9	179
1843	5.9	180	1240	0.7	22	1253	1.4	44	1316	2.3	71
			1911	6.2	190	1903	6.2	188	1918	6.1	187
11 Th 0026	3.0	91	26 F 0101	2.4	73	11 Su 0111	2.2	66	26 M 0149	1.7	53
0557	5.9	179	0641	6.1	187	0706	5.8	178	0754	5.4	166
1243	1.0	29	1315	1.2	38	1323	1.8	56	1343	2.9	87
1911	5.9	181	1940	6.1	187	1930	6.1	187	1942	5.9	181
12 F 0059	2.9	88	27 Sa 0141	2.3	69	12 M 0146	2.1	63	11 W 0202	1.5	47
0633	5.7	175	0726	5.7	175	0751	5.5	169	0839	5.3	163
1314	1.2	37	1347	1.8	56	1355	2.3	71	1407	3.3	101
1940	5.9	180	2007	6.0	183	1959	6.0	184	1951	5.9	180
13 Sa 0134	2.8	85	28 Su 0223	2.2	68	13 Th 0226	2.1	63	13 W 0202	1.5	47
0713	5.5	168	0813	5.3	161	0844	5.2	158	0839	5.3	163
1346	1.6	48	1416	2.5	75	1429	2.9	87	1407	3.3	101
2011	5.9	179	2034	5.8	178	2032	5.9	179	1951	5.9	180
14 Su 0212	2.7	82	29 M 0310	2.3	70	14 W 0317	2.1	63	14 Th 0252	1.7	53
0759	5.2	160	0907	4.8	147	0953	4.9	148	0951	5.0	151
1420	2.0	61	1445	3.1	93	1510	3.4	105	1450	3.8	116
2043	5.8	176	2104	5.6	172	● 2111	5.7	173	2031	5.6	171
15 M 0257	2.6	80	30 Tu 0410	2.4	72	15 Th 0430	2.1	64	28 F 0332	2.3	70
0856	5.0	151	1017	4.4	135	1137	4.6	141	1029	4.6	141
1458	2.5	76	1518	3.6	109	1618	4.0	121	1454	4.2	127
2120	5.7	173	● 2141	5.4	165	2204	5.4	166	● 2036	5.0	152
31 W 0527	2.4	73	31 W 1213	4.3	130						
			1619	4.0	122						
			2232	5.2	158						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yokohama, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0211	4.9	150	16 W 0242	5.4	166	1 F 0326	5.5	168	1 Su 0417	5.7	174
0830	2.2	66	0854	2.2	66	0914	2.5	77	0925	3.1	94
1516	5.4	165	1519	5.9	179	1512	5.9	180	1537	6.0	183
2114	3.1	93	2124	2.1	64	2144	1.5	46	2215	0.8	25
2 W 0301	5.3	163	17 Th 0334	5.8	177	2 Sa 0408	5.9	181	2 M 0445	6.0	184
0913	2.0	61	0938	2.2	67	0955	2.6	78	1029	3.1	96
1539	5.7	174	1548	6.1	185	1542	6.2	188	1607	6.1	186
2145	2.6	78	2201	1.5	47	2218	1.0	30	2251	0.6	18
3 Th 0341	5.7	175	18 F 0417	6.1	186	3 Su 0449	6.2	190	18 M 0529	6.2	190
0951	1.9	58	1017	2.3	71	1035	2.7	91	1105	3.2	98
1603	6.0	182	1615	6.2	190	1612	6.4	194	1636	6.1	187
2215	2.0	62	2237	1.1	35	● 2254	0.5	16	○ 2325	0.5	16
4 F 0419	6.1	185	19 W 0457	6.2	190	4 M 0531	6.4	195	19 Tu 0605	6.0	183
1027	1.9	58	1053	2.5	77	1113	2.8	86	1138	3.3	100
1627	6.2	189	1641	6.3	192	1644	6.5	198	1704	6.1	186
2245	1.6	48	○ 2311	0.9	27	2331	0.3	8	2358	0.6	17
5 Sa 0457	6.3	193	20 Su 0535	6.2	190	5 Tu 0614	6.4	195	20 W 0638	5.9	181
1101	2.0	61	1126	2.8	84	1151	3.0	92	1210	3.4	103
1652	6.4	194	1707	6.3	192	1716	6.5	198	1733	6.0	184
● 2317	1.2	36	2345	0.8	24	● 2001	-0.2	-5	● 0015	0.5	15
6 Su 0535	6.4	196	21 M 0611	6.1	187	6 W 0010	0.2	7	6 Th 0658	6.2	190
1135	2.2	67	1157	3.0	91	0700	6.2	190	1222	3.3	100
1719	6.5	197	1732	6.3	191	1230	3.3	100	1740	6.4	195
2350	0.9	28				1751	6.4	195			
7 M 0615	6.4	195	22 Tu 0018	0.8	25	7 Th 0051	0.4	11	21 F 0044	0.0	1
1209	2.5	76	0648	6.0	182	0711	5.8	177	0742	6.1	185
1746	6.5	197	1227	3.2	98	1241	3.4	105	1305	3.3	101
			1757	6.1	187	1802	5.8	178	1823	6.1	187
8 Tu 0026	0.8	24	23 W 0051	1.0	30	8 F 0135	0.7	22	8 M 0044	0.0	1
0659	6.2	189	0725	5.7	174	0843	5.7	173	0746	5.6	172
1243	2.9	88	1256	3.4	105	1357	3.7	114	1313	3.5	108
1815	6.4	194	1823	5.9	180	1910	5.8	176	1833	5.6	171
9 W 0103	0.9	26	24 Th 0126	1.3	39	9 Sa 0225	1.2	37	9 M 0257	1.7	52
0747	5.9	179	0804	5.4	166	0943	5.4	165	0956	5.4	165
1318	3.3	100	1326	3.6	111	1456	3.9	118	1554	3.2	97
1846	6.2	188	1851	5.6	172	2003	5.3	162	2116	4.7	144
10 Th 0145	1.1	33	25 F 0203	1.6	50	10 M 0324	1.8	55	10 W 0256	2.1	63
0843	5.5	168	0850	5.2	158	1050	5.2	160	0952	5.2	158
1358	3.7	112	1400	3.9	118	1623	3.8	117	1545	3.7	113
1922	5.9	179	1923	5.3	161	● 2124	4.8	147	2053	4.5	137
11 F 0236	1.5	45	26 Sa 0247	2.0	62	11 M 0439	2.3	70	26 W 0351	2.5	76
0955	5.2	157	0945	5.0	151	1200	5.2	159	1047	5.1	156
1450	4.0	123	1450	4.1	124	1809	3.5	106	1737	3.5	107
2007	5.5	167	2004	4.9	149	2326	4.6	139	● 2240	4.2	129
12 Sa 0344	1.9	58	27 Su 0347	2.4	73	12 Tu 0605	2.7	81	10 O 0348	2.4	72
1132	5.0	152	1057	4.9	148	1301	5.3	162	1045	5.3	161
1625	4.2	129	1645	4.1	126	1925	2.9	88	1720	3.0	90
● 2120	5.0	153	○ 2122	4.5	137				● 2255	4.3	132
13 Su 0520	2.2	67	28 M 0511	2.7	81	13 W 0720	2.9	87	11 O 0455	3.0	90
1308	5.1	155	1221	4.9	149	1350	5.5	167	1139	5.2	160
1836	4.0	121	1907	3.8	116	2017	2.3	69	1844	2.5	77
2333	4.8	146	2350	4.3	132	1954	2.4	74	● 2240	4.2	129
14 M 0653	2.2	68	29 Tu 0635	2.7	83	14 Th 0240	5.1	155	1047	5.1	156
1407	5.3	163	1326	5.1	155	0819	3.0	90	1737	3.5	107
1953	3.4	103	2003	3.3	100	1430	5.7	173	2035	1.8	54
15 Tu 0132	5.0	153	30 W 0138	4.6	141	2100	1.7	51	1947	2.0	61
0801	2.2	67	0739	2.7	81						
1447	5.6	171	1408	5.3	163						
2043	2.7	83	2039	2.7	83						
16 31 Th 0240	5.1	154									
0830	2.6	78									
1441	5.6	172									
2112	2.1	64									

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kobe, Japan, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0308	0.3	10	16 W	0340	0.7	21	1 F	0354	1.0	32				
0940	4.4	134	W 1008	4.2	129	F 1011	4.1	126	Sa 1011	3.6	111				
1519	2.7	81	1616	2.1	65	1642	1.6	49	1749	1.5	46				
2056	3.9	118	2150	3.5	107	2231	3.4	104	2318	2.8	84				
2 W	0344	0.7	20	17 Th	0411	1.4	43	2 Sa	0433	1.6	50				
1016	4.3	130	Th 1044	3.9	120	Sa 1047	3.9	119	17 Su	0303	2.6	78			
1613	2.6	79	1736	2.1	65	1750	1.5	46	1910	1.5	45				
2144	3.6	109	2240	3.0	90	2340	3.0	92	2223	3.8	115				
3 Th	0422	1.0	32	18 F	0429	2.0	62	3 Su	0515	2.3	69				
1056	4.1	125	F 1118	3.7	112	Su 1124	3.7	113	M 2031	3.4	103				
1722	2.5	76	1939	1.9	59	1911	1.3	41	O	0923	3.4	103			
2242	3.2	98	2352	2.5	77	O	0408	2.1	64	3 M	1002	4.0	121		
4 F	0504	1.6	48	19 Sa	0207	2.4	74	4 M	0426	2.9	88				
1139	3.9	120	Sa 1141	3.5	106	M 0610	2.9	87	Tu 2144	3.4	105				
1902	2.3	69	2051	1.7	51	2040	1.1	33	O	0812	3.4	105			
2358	2.9	88	O	0452	2.7	83	4 M	1031	3.7	112					
5 Sa	0552	2.1	64	20 Su	1120	3.4	103	W 1829	1.0	30	Tu 1904	3.4	105		
1224	3.8	116	Su 2147	1.4	43	5 Tu	0548	3.3	102	O	0754	3.4	105		
2036	1.9	57	2147	0.7	22	Tu 0758	3.2	99	20 W	0757	3.5	107			
O	0202	2.8	86	2240	1.0	31	Tu 1253	3.4	105	5 M	0413	3.3	100		
6 Su	0656	2.6	80	21 M	0900	3.4	105	W 2240	0.7	22	W 2033	3.5	107		
1313	3.7	114	2233	1.1	34	6 W	0625	3.7	112	O	0714	3.4	104		
2132	1.4	43	2107	3.3	101	Th 1435	3.0	90	2000	1.0	30	O	2033	3.4	104
7 M	0537	3.2	98	1441	3.4	105	1609	3.0	91	2122	3.4	105			
0824	3.0	92	2253	0.3	10	2323	0.8	25	O	0200	1.0	30			
1409	3.7	114	22 M	0828	3.5	108	21 Th	0720	3.5	108	21 W	0603	3.5	108	
2218	0.9	27	Tu 2312	0.9	26	2102	3.0	90	2134	0.9	26	Th 2151	1.4	43	
8 Tu	0618	3.7	112	1609	3.7	113	2134	0.8	25	2122	3.4	105			
0952	3.2	97	23 W	0809	3.6	110	2336	0.0	-1	2224	3.2	104			
1512	3.8	117	2348	0.6	18	7 Th	0639	3.9	120	2244	1.3	40			
2302	0.4	11	F 1138	2.8	84	22 M	0637	3.6	111						
9 W	0632	4.0	123	1709	4.1	125	Th 1205	2.9	88	22 F	0541	3.6	111		
1055	3.1	96	9 Sa	0710	3.7	113	1655	3.2	99	1333	2.8	84			
1615	4.1	124	Th 1159	3.1	96	2357	0.6	19	1558	2.9	88				
2344	-0.1	-4	1659	3.5	106	23 Th	0601	3.8	116	2244	1.3	40			
10 Th	0643	4.4	133	1215	2.3	71	1233	3.1	94	22 M	0550	3.7	114		
1143	3.0	91	1759	4.5	136	1450	3.2	97	1205	2.6	80				
1712	4.4	133	23 F	0641	4.1	126	1732	3.6	109	1641	3.2	97			
11 F	0026	-0.5	-16	1114	2.9	87	1225	2.3	69	2321	1.2	37			
0709	4.7	142	1845	4.7	143	1807	3.9	120	9 Sa	0556	3.8	116			
1226	2.7	83	O	0020	0.4	11	2354	0.4	13	Su 1153	2.3	71			
1804	4.7	142	7 Tu	0711	3.9	118	1705	3.9	120	1717	3.6	109			
12 Sa	0107	-0.8	-23	1217	2.9	89	1834	4.6	140	2349	1.1	34			
0741	4.9	148	1739	3.7	113	1250	1.9	57	O	0558	4.0	123			
1308	2.5	75	F 1217	3.9	118	1250	1.9	57	24 M	0605	4.0	121			
O	1852	4.8	147	1816	4.0	121	1843	4.3	130	1204	1.9	58			
13 Su	0147	-0.8	-23	1928	4.7	144	O	1920	4.5	138	1752	4.0	122		
0816	4.9	149	27 W	0116	0.0	1	26 Tu	0115	0.3	8	2015	1.0	31		
1350	2.3	69	743	4.2	127	1728	4.3	132	0623	4.2	129				
1938	4.8	146	O 1853	4.2	127	1322	1.5	45	1229	1.4	42				
14 M	0226	-0.5	-14	2010	4.5	138	1920	4.5	138	1829	4.4	135			
0853	4.8	145	29 Tu	0212	0.0	0	26 M	0028	0.4	13	26 W	0044	1.0	30	
1434	2.1	65	0832	4.4	134	712	4.6	139	0648	4.5	137				
2022	4.5	138	Tu 1417	1.9	58	1357	1.1	35	1300	0.9	27				
15 Tu	0305	0.0	1	2010	4.3	131	O 1916	4.7	142	O 1908	4.8	145			
0930	4.6	139	1417	1.9	58	2000	4.6	140	2034	4.9	148				
1521	2.1	65	1543	1.4	42	2000	4.6	140	O	0151	1.2	38			
2106	4.1	124	2133	3.7	112	2037	4.3	131	0748	4.8	145				
15 F	0305	0.0	1	14	0307	1.0	31	1432	0.8	24	F 1417	0.2	7		
0930	4.6	139	0923	4.2	128	2037	4.3	131	2034	4.9	148				
1521	2.1	65	1543	1.4	42	14	0206	1.2	36	29	0151	1.2	38		
2106	4.1	124	1638	1.5	45	8 Tu	0812	4.4	135	0748	4.8	145			
15 W	0305	0.0	1	1638	1.5	45	1432	0.8	24	F 1417	0.2	7			
0930	4.6	139	2052	4.1	126	2037	4.3	131	2034	4.9	148				
1521	2.1	65	31 Th	0317	0.5	16	14	0206	1.2	36	29	0151	1.2	38	
2106	4.1	124	0936	4.3	131	8 Tu	0812	4.4	135	0748	4.8	145			
O	1546	1.7	51	1546	1.7	51	1432	0.8	24	F 1417	0.2	7			
2138	3.8	117	2138	3.8	117	2037	4.3	131	2034	4.9	148				

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kobe, Japan, 2013

Times and Heights of High and Low Waters

April					May					June							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height				
h m 0353 M 0926 1653 2341	ft 2.7 4.1 0.6 3.7	cm 83 124 18 114	h m 0333 Tu 0825 1708	ft 3.2 3.6 1.2 38	cm 98 111 31 38	h m 0457 W 0947 1742	ft 3.5 3.8 1.0 31	cm 107 116 110 47	h m 0445 Th 0645 1719	ft 3.5 3.6 1.5 47	cm 108 110 100 76	h m 0147 Sa 1251 1924	ft 4.2 3.3 2.5 76	cm 129 87 100 74	h m 0012 16 0847 1156 1814	ft 4.3 3.1 3.4 2.4	cm 132 93 103 74
2 Tu 0448 0950 1803	3.2 3.7 0.9	98 113 27	17 W 0037 0420 0659 1802	3.6 3.4 3.5 1.5	109 105 108 45	2 Th 0224 1855	4.1 1.5	125 45	17 F 0052 1808	4.0 1.8	122 56	2 Su 0235 1010 1525 2040	4.2 2.5 3.3 3.0	127 76 100 90	17 M 0058 0923 1343 1913	4.3 2.7 3.3 2.8	130 83 102 86
3 W 0329 1927	3.7 1.1	114 34	18 Th 0321 1905	3.7 1.7	112 51	3 F 0335 1036 1304 2019	4.1 3.0 3.1 1.8	125 90 95 56	18 Sa 0238 1029 1205 1905	4.0 3.0 3.0 2.1	122 91 92 65	3 M 0305 1034 1821 2142	4.1 2.2 3.5 3.3	126 66 108 100	18 Tu 0144 0944 1543 2025	4.2 2.3 3.6 3.1	129 71 110 96
4 Th 0439 2101	3.9 1.3	119 39	19 F 0410 2031	3.8 1.8	115 56	4 Sa 0402 1105 1502 2131	4.1 2.6 3.2 2.1	124 79 97 65	19 Su 0308 1042 1440 2017	4.0 2.7 3.1 2.4	122 82 94 73	4 Tu 0336 1052 1916 2228	4.1 1.8 3.8 3.5	126 56 116 106	19 W 0229 1009 1656 2136	4.3 1.9 4.0 3.4	131 57 122 103
5 F 0511 1155 1501 2208	4.0 2.8 3.1 1.3	121 86 96 40	20 Sa 0437 1152 1531 2143	3.8 2.7 2.9 1.9	117 82 89 58	5 Su 0408 1107 1608 2220	4.1 2.3 3.4 2.4	124 69 105 73	20 M 0321 1049 1555 2125	4.0 2.4 3.4 2.6	122 73 103 79	5 W 0410 1118 1847 2308	4.2 1.5 4.0 3.5	127 46 122 108	20 Th 0317 1044 1739 2236	4.4 1.4 4.4 3.5	134 42 135 106
6 Sa 0509 1124 1609 2253	4.0 2.5 3.4 1.4	121 77 105 42	21 Su 0450 1138 1620 2229	3.9 2.5 3.2 1.9	118 75 99 58	6 M 0427 1107 1656 2257	4.1 1.9 3.7 2.6	125 57 114 78	21 Tu 0343 1050 1644 2218	4.1 2.0 3.8 2.7	125 60 116 82	6 Th 0445 1151 1835 2345	4.3 1.2 4.3 3.5	130 37 130 108	21 F 0407 1125 1817 2327	4.6 0.8 4.9 3.4	141 25 148 105
7 Su 0514 1119 1658 2328	4.1 2.1 3.8 1.5	124 63 117 45	22 M 0456 1127 1659 2304	3.9 2.1 3.7 1.9	120 64 112 58	7 Tu 0454 1131 1739 2332	4.2 1.4 4.0 2.7	128 44 123 82	22 W 0414 1109 1728 2303	4.3 1.4 4.3 2.8	130 44 130 84	7 F 0520 1227 1906	4.4 1.0 4.5	133 29 138	22 Sa 0457 1209 1856	4.9 0.4 5.2	149 11 159
8 M 0536 1145 1742	4.2 1.6 4.2	129 48 127	23 Tu 0511 1138 1737 2338	4.1 1.6 4.1 1.9	125 49 126 57	8 W 0525 1203 1820	4.3 1.1 4.3	132 33 131 131	23 Th 0450 1142 1811 2346	4.5 0.9 4.7 2.8	138 26 144 84	8 Sa 0020 0555 1304 1939	3.5 4.5 0.8 4.7	106 136 24 143	23 Su 0013 0548 1254 1935	3.3 5.2 0.0 5.4	102 157 0 166
9 Tu 0001 0604 1219 1824	1.5 4.4 1.1 4.4	47 134 34 135	24 W 0536 1205 1817	4.4 1.0 4.6	133 32 140 140	9 Th 0006 0557 1239 1901	2.8 4.4 0.8 4.5	84 135 24 137	24 F 0528 1221 1855 2013	4.8 0.3 5.1 4.8	146 10 156 146	9 Su 0054 0628 1340 2013	3.4 4.5 0.7 4.8	104 138 22 146	24 M 0058 0637 1340 2016	3.2 5.3 -0.1 5.5	99 163 -4 169
10 W 0034 0635 1255 ● 1905	1.7 4.5 0.8 4.6	51 137 24 139	25 Th 0013 0607 1239 1858	1.9 4.7 0.5 5.0	57 142 15 152	10 F 0040 0627 1316 ● 1941	2.8 4.5 0.6 4.6	86 136 18 141	25 Sa 0028 0608 1304 1940	2.8 5.0 -0.1 5.3	85 153 -2 163	10 M 0127 0700 1415 2048	3.3 4.5 0.8 4.8	102 138 23 147	25 Tu 0144 0726 1425 2058	3.1 5.4 0.0 5.5	96 164 0 167
11 Th 0106 0705 1333 1945	1.9 4.5 0.6 4.6	57 138 18 140	26 F 0050 0640 1318 ○ 1942	2.0 4.9 0.1 5.2	60 148 2 158	11 Sa 0112 0656 1354 2021	2.9 4.5 0.6 4.7	88 136 17 142	26 Su 0111 0650 1350 2027	2.9 5.1 -0.2 5.4	87 156 -7 164	11 Tu 0202 0733 1450 2123	3.3 4.5 0.9 4.8	102 136 27 145	26 W 0231 0814 1510 2141	3.1 5.2 0.4 5.2	95 159 13 160
12 F 0137 0733 1411 ● 1905	2.1 4.4 0.5 4.6	64 135 16 139	27 Sa 0129 0715 1401 2029	2.1 5.0 -0.1 5.2	65 151 -4 157	12 Su 0144 0722 1432 2102	3.0 4.4 0.6 4.6	91 133 19 139	27 M 0156 0733 1438 2116	3.0 5.1 -0.2 5.2	91 155 -5 159	12 M 0240 0808 1526 2201	3.4 4.3 1.1 4.7	103 132 33 142	27 Th 0322 0903 1556 2226	3.1 4.9 1.0 5.0	96 148 31 151
13 Sa 0207 0758 1451 2109	2.4 4.3 0.6 4.3	73 130 19 130	28 Su 0210 0751 1448 2121	2.4 4.9 -0.1 4.9	74 148 -3 150	13 M 0216 0745 1511 2145	3.1 4.2 0.8 4.4	95 129 24 135	28 Tu 0244 0818 1528 2209	3.2 4.9 0.2 5.0	97 148 5 151	13 Th 0326 0848 1603 2241	3.4 4.1 1.3 4.5	104 125 41 138	28 F 0423 0955 1641 2314	3.1 4.4 1.7 4.7	96 133 52 142
14 Su 0235 0818 1533 2156	2.7 4.1 0.8 4.0	82 124 24 122	29 M 0254 0829 1540 2221	2.8 4.6 0.1 4.6	86 140 4 140	14 Tu 0252 0806 1552 2233	3.3 4.0 1.0 4.3	100 123 31 130	29 W 0339 0906 1621 2307	3.3 4.5 0.7 4.7	102 137 21 142	14 F 0425 0936 1642 2325	3.4 3.8 1.7 4.4	105 117 51 134	29 Sa 0605 1055 1726	3.1 3.9 2.4	94 118 74
15 M 0302 0830 1618 2254	3.0 3.9 1.0 3.8	90 118 31 115	30 Tu 0346 0907 1638 2338	3.2 4.2 0.5 4.2	98 129 16 129	15 W 0337 0822 1634 2330	3.4 3.8 1.3 4.1	105 116 39 125	30 Th 0450 1001 1716 2310	3.5 4.0 1.3 4.0	106 123 40 125	15 Sa 0653 1037 1725 31	3.4 3.6 2.0 4.4	103 109 62 134	30 Su 0005 0812 1220 F 1807	4.4 2.8 3.4 3.1	135 85 105 94

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kobe, Japan, 2013

Times and Heights of High and Low Waters

July				August				September											
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height								
h m 0057 M 0910	ft 4.3 2.5	cm 130 75	16 Tu 1309 1828 O	h m 0732 Tu 1309 1828	ft 2.6 3.7 3.3	cm 78 112 100	1 Th 1957	h m 0956 F 0911 1744 2145	ft 2.1 4.5 4.7 4.3	cm 63 56 142 131	16 Su 0021 F 1015 1805 2239	ft 4.4 1.8 4.7 4.1	cm 135 56 144 118	1 Su 0204 M 1056 1805 2349	ft 3.9 2.0 4.7 3.9	cm 120 60 144 118	16 M 1047 1733 2310	ft 4.5 1.6 3.4	cm 136 49 104
2 Tu 0145 0954	4.2 2.2	127 66	17 W 0035 0837 1649 1942	4.5 2.2 3.9 3.7	136 68 119 113	2 F 1042 1952	1.9 4.5	57	17 Sa 0148 1015 1805 2239	4.4 1.5 4.9 4.1	135 46 150 126	2 M 0442 1133 1816 2355	4.3 1.8 4.8 3.6	130 56 147 110	17 Tu 0439 1126 1750 2339	4.9 1.5 5.3 2.9	148 46 161 87		
3 W 0231 1029 1950 2349	4.1 1.9 4.2 4.1	126 58 127 124	18 Th 0124 0935 1745 2111	4.4 1.8 4.3 3.9	135 56 131 120	3 Sa 1122 1842 2343	1.7 4.6 4.1	51	18 Su 0332 1104 1807 2315	4.6 1.2 5.1 3.8	135 36 156 116	3 Tu 0520 1203 1831	4.5 1.7 5.0	138 53 151	18 W 0528 1202 1817	5.3 1.5 5.5	161 46 167		
4 Th 0318 1104 2001 2306	4.1 1.7 4.3 4.1	126 51 131 124	19 F 0224 1027 1809 2226	4.5 1.4 4.7 4.0	137 42 142 121	4 Su 0447 1158 1847	4.3 1.5 4.8	132 46 145	19 M 0441 1146 1824 2352	5.0 0.9 5.3 3.3	152 28 163 102	4 W 0013 0554 1230 1848	3.3 4.8 1.7 5.1	100 147 151 156	19 Th 0014 0612 1237 1847	2.3 5.6 1.6 5.6	71 170 50 171		
5 F 0406 1140 1900 2339	4.2 1.4 4.4 4.0	129 44 135 121	20 Sa 0336 1115 1823 2318	4.7 1.0 5.0 3.8	142 29 153 116	5 M 0003 0529 1230 1905	3.8 4.5 1.3 4.9	117 138 41 149	20 Tu 0535 1225 1851	5.4 0.8 5.6	165 23 170	5 Th 0036 0628 1255 1908	2.9 5.1 1.6 5.3	88 156 150 161	20 F 0052 0655 1311 1918	1.9 5.7 1.9 5.6	58 174 57 172		
6 Sa 0453 1215 1906	4.3 1.2 4.6	132 37 141	21 Su 0443 1200 1847	5.0 0.5 5.3	151 16 162	6 Tu 0028 0607 1300 1926	3.6 4.8 1.2 5.0	109 146 38 153	21 W 0030 0623 1303 1922	2.9 5.7 0.8 5.7	88 174 25 174	6 F 0105 0704 1323 1933	2.5 5.4 1.7 5.4	77 164 51 166	21 Sa 0131 0738 1344 1949	1.6 5.6 2.3 5.5	50 172 69 169		
7 Su 0010 0536 1250 1929	3.8 4.5 1.0 4.8	116 137 32 146	22 M 0003 0540 1243 1918	3.5 5.3 0.3 5.5	108 162 8 169	7 W 0056 0642 1327 1948	3.3 5.0 1.2 5.2	101 152 38 157	22 Th 0110 0708 1339 1955	2.5 5.8 1.0 5.7	76 178 32 175	7 Sa 0139 0742 1354 2001	2.2 5.5 1.8 5.5	67 167 56 168	22 Su 0212 0820 1416 2018	1.5 5.4 2.7 5.3	47 165 83 162		
8 M 0041 0615 1323 ● 1955	3.6 4.6 1.0 4.9	111 141 29 150	23 Tu 0045 0631 1324 1953	3.2 5.6 0.2 5.7	99 170 6 173	8 Th 0127 0718 1355 2013	3.1 5.1 1.3 5.2	93 156 39 160	23 F 0152 0751 1415 2028	2.2 5.7 1.5 5.6	68 175 46 171	8 Su 0216 0823 1427 2032	1.9 5.4 2.1 5.5	59 166 65 167	23 M 0256 0905 1444 2043	1.6 5.0 3.2 5.0	49 153 98 153		
9 Tu 0113 0652 1354 2023	3.4 4.8 1.0 5.0	105 145 12 152	24 W 0128 0719 1405 2029	3.0 5.7 0.4 5.6	90 173 12 172	9 F 0201 0756 1425 2042	2.8 5.2 1.4 5.3	86 157 44 161	24 Sa 0235 0835 1449 2100	2.1 5.4 2.1 5.3	65 164 64 163	9 M 0259 0908 1504 2104	1.8 5.2 2.6 5.3	56 159 79 162	24 Tu 0343 0954 1506 2057	1.8 4.6 3.7 4.7	54 141 112 143		
10 W 0146 0729 1425 2051	3.3 4.8 1.0 5.0	101 146 31 153	25 Th 0212 0805 1445 2106	2.8 5.5 0.9 5.5	84 169 26 167	10 Sa 0241 0836 1457 2113	2.7 5.1 1.7 5.2	81 155 53 160	25 Su 0323 0920 1519 2130	2.2 4.9 2.8 5.1	66 150 84 154	10 Tu 0347 0900 1544 2136	1.8 4.9 3.1 5.1	55 149 96 154	25 W 0438 1100 1510 2036	2.0 4.3 4.0 4.5	60 130 122 137		
11 Th 0223 0807 1456 2122	3.2 4.7 1.2 5.0	98 144 37 152	26 F 0300 0851 1524 2143	2.7 5.2 1.5 5.2	82 158 46 159	11 Su 0325 0921 1533 2146	2.6 4.9 2.2 5.1	78 148 66 156	26 M 0419 1010 1542 2155	2.3 4.4 3.3 4.7	69 134 102 144	11 W 0446 1106 1542 2207	1.9 4.5 3.7 4.8	57 137 114 145	26 Th 0543 1853	2.2 4.5	66 136		
12 F 0305 0848 1530 2156	3.1 4.6 1.5 4.9	96 140 45 149	27 Sa 0353 0938 1600 2221	2.7 4.7 2.2 4.9	82 143 68 149	12 M 0418 1012 1612 2221	2.5 4.5 2.7 4.9	76 138 82 150	27 Tu 0530 1118 1527 2201	2.4 4.0 3.8 4.5	72 121 116 137	12 Th 0556 1516 1738 2227	1.9 4.3 4.2 137	59 132 129 137	27 F 0653 1810 1738 ●	2.3 4.5 70 138			
13 Sa 0355 0934 1606 2232	3.1 4.3 1.8 4.8	95 132 56 146	28 Su 0501 1031 1631 2256	2.7 4.1 2.9 4.6	83 126 89 141	13 Tu 0521 1116 1657 2257	2.4 4.2 3.2 4.7	73 128 99 144	28 W 0649 2000 1641 O	2.4 4.4 4.7 142	72 135 142 O	13 M 0719 1641 1641 O	2.0 4.7 4.7 142	60 152 144 O	28 Sa 0812 1714	2.4 4.6	72 140		
14 Su 0456 1027 1647 2311	3.0 4.1 2.3 4.7	92 124 70 142	29 M 0643 1144 1638 2325	2.6 3.7 3.5 4.4	80 112 107 134	14 W 0634 1404 1754 2335	2.3 4.0 3.8 4.6	69 121 116 139	29 Th 0803 1919 1924 O	2.3 4.6 4.2 140	71 139 128 141	14 Sa 0849 1721 2350 O	1.9 4.9 4.1 125	57 149 125 O	29 Su 0926 1712	2.3 4.7	71 142		
15 M 0613 1134 1733 2352	2.9 3.8 2.8 4.5	87 116 85 138	30 Tu 0802 2324	2.5 4.3	75 130	15 Th 0751 1657 1924	2.1 4.3 4.2	64 132 128	30 F 0912 1908 1924	2.2 4.6 4.6	68 140 141	15 Su 0204 0959 1735 2302	4.2 1.7 5.0 3.8	127 53 152 117	30 M 0056 0351 1019 2353	3.6 3.8 2.3 3.4	109 115 70 104		
			31 W 0904	2.3	69				31 Sa 1010	2.1	64								

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kobe, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0432	4.0	123	16 W 0436	4.5	137	1 F 0530	4.4	134	1 Su 0609	4.5	137
1059	2.3	69	W 1102	2.2	68	1118	2.7	81	Sa 1147	3.1	95
1735	4.8	145	1712	5.0	153	1714	4.8	146	1735	4.8	145
2346	3.1	95	2327	2.2	68	2354	1.5	47	1703	4.7	142
2 W 0507	4.4	133	17 Th 0521	4.9	148	2 0605	4.8	147	2 M 0007	0.4	11
1129	2.2	68	1136	2.4	72	1151	2.6	80	0645	4.9	148
1747	4.9	148	1740	5.2	157	1743	5.1	154	1207	2.9	89
2355	2.8	84	2359	1.7	52				1743	4.9	150
3 Th 0540	4.7	144	18 F 0605	5.1	156	3 Su 0023	1.0	31	3 Tu 0046	-0.1	-3
1155	2.2	67	1210	2.5	76	0643	5.2	159	0725	5.2	157
1803	5.1	154	1811	5.3	161	1227	2.7	81	1249	2.9	88
●			● 1815	5.2	160	● 1839	4.8	146	● 1825	5.1	155
4 F 0015	2.3	69	19 Sa 0035	1.3	40	4 M 0058	0.6	17	4 W 0128	-0.4	-12
0614	5.1	155	0647	5.3	162	0724	5.4	166	0808	4.9	150
1222	2.2	66	1244	2.7	81	1304	2.7	83	1329	3.2	99
1825	5.2	160	1842	5.3	162	1849	5.4	164	1907	4.7	142
5 Sa 0043	1.8	55	20 Su 0113	1.0	32	5 Tu 0138	0.3	8	5 Th 0213	-0.4	-13
0651	5.4	165	0729	5.3	163	0808	5.5	168	0851	5.2	159
1253	2.2	67	1317	2.9	88	1344	2.9	89	1417	3.0	91
● 1852	5.4	166	1912	5.2	160	1925	5.3	163	1953	5.0	151
6 Su 0117	1.4	42	21 M 0152	1.0	30	6 W 0222	0.2	6	6 F 0259	-0.2	-7
0730	5.6	171	0811	5.2	159	0857	5.4	164	0939	5.0	153
1326	2.3	71	1348	3.1	106	1426	3.2	98	1508	3.1	95
1923	5.5	169	1939	5.1	154	2002	5.2	157	2040	4.6	141
7 M 0154	1.1	34	22 Tu 0233	1.0	32	7 Th 0310	0.4	11	7 Sa 0347	0.2	7
0813	5.6	171	0856	5.0	153	0951	5.1	156	1030	4.7	143
1402	2.6	80	1418	3.4	105	1515	3.5	108	1518	3.6	110
1955	5.5	168	2000	4.8	146	2040	4.8	146	1948	4.0	122
8 Tu 0237	1.0	30	23 W 0315	1.2	38	8 F 0404	0.7	22	8 Su 0438	0.9	26
0900	5.4	165	0944	4.7	144	1056	4.8	145	1128	4.4	134
1441	3.0	92	1446	3.7	113	1617	3.8	117	1619	3.7	113
2027	5.3	162	2009	4.5	138	2120	4.3	132	1827	3.8	116
9 W 0325	1.1	33	24 Th 0400	1.5	46	9 Sa 0504	1.2	36	9 M 0530	1.5	46
0954	5.1	155	1042	4.5	136	1237	4.5	137	1237	4.1	126
1524	3.5	107	1513	4.0	121				2056	2.8	84
2059	5.0	152	1928	4.3	132				2352	3.1	95
10 Th 0421	1.3	39	25 F 0450	1.8	54	10 Su 0612	1.7	51	10 M 0630	2.2	66
1105	4.7	143	1221	4.3	130	1502	4.5	137	1350	4.0	122
1618	4.0	122	1557	4.2	127	2208	3.3	102	2151	2.3	70
2127	4.6	140	1817	4.2	129	●			●		
11 F 0528	1.6	48	26 Sa 0544	2.0	62	11 M 0007	3.4	105	11 W 0410	3.0	90
1444	4.6	139	1514	4.3	132	0733	2.1	64	0748	2.7	83
						1540	4.5	137	1436	3.9	120
						2241	2.9	88	2230	1.9	57
12 Sa 0648	1.8	55	27 Su 0648	2.3	69	12 Tu 0228	3.4	104	11 O 0410	3.0	90
1603	4.8	145	1553	4.4	135	0856	2.4	74	0748	2.7	83
●			●			1549	4.4	135	1436	3.9	120
13 Su 0819	2.0	60	28 M 0810	2.5	75	2259	2.5	76	2230	1.9	57
1640	4.8	147	1617	4.5	136	12 W 0314	2.9	89	12 Th 0615	3.3	101
2323	3.5	108	2342	3.1	94	0736	2.6	79	0916	3.1	95
						1507	4.1	124	1512	3.9	120
14 M 0225	3.8	117	29 Tu 0339	3.4	103	2257	2.3	70	2254	1.5	45
0934	2.1	63	0923	2.6	78	1036	2.9	89			
1647	4.8	147	1633	4.5	136	1632	4.6	139			
2315	3.2	98	2334	2.9	87	2319	1.6	49			
15 Tu 0343	4.1	126	30 W 0423	3.7	112	14 0445	3.9	120	14 Sa 0742	3.8	117
1024	2.2	66	1012	2.6	80	0955	2.9	89	1058	3.4	105
1651	4.9	149	1641	4.5	137	F 1551	4.2	128	1626	4.0	123
2304	2.8	84	2331	2.5	77	1523	4.1	125	2344	0.8	24
						2301	2.1	63	2305	1.9	59
						2311	1.6	49	2315	1.1	34
16 0457	4.0	122	31 Th 1047	2.7	81				2315	1.1	34
						1653	4.6	140			
						2335	2.1	63			

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sakate, Shodo Shima, Japan, 2013

Times and Heights of High and Low Waters

January				February				March									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	cm		h m	ft	cm		h m	ft	cm							
1 Tu 1954	0629 1335 1954	0.2 5.0 2.0	6 152 61	16 W 0732 1422 2045	0.115 0.8 4.9 1.5	3.7 24 149 46	113	1 F 0747 1401 2036	0.135 4.6 1.0	4.0 122 30	128	16 Sa 0903 1445 2129	0.028 4.1 0.8	4.5 137 24	16 Sa 0145 0743 1306 1946	0.145 2.2 4.2 0.8	4.8 146 128 24
2 W 1413 2040	0045 0.4 5.0 1.7	107 12 152 52		17 Th 0828 1502 2135	0.229 4.7 1.2	3.7 143 37	113	2 Sa 0843 1440 2125	0.241 4.3 0.7	4.0 122 21	128	2 Sa 0126 0734 1312	0.126 1.7 4.3	4.6 140 131	17 Su 0841 1349 2035	0.242 3.9 0.7	4.8 146 21
3 Th 1453 2128	0150 0.7 4.8 1.4	107 21 146 43		18 F 0929 1544 2228	0.346 4.3 0.9	3.7 131 27	113	3 Su 0950 1520 0	0.358 3.9 0.5	4.0 122 15	128	3 Su 0230 0833 0	0.230 2.1 0.7	4.6 140 15	18 M 0946 1438 2130	0.344 3.7 0.8	4.7 143 24
4 F 1534 2219	0301 0.1 4.5 1.1	107 34 137 34		19 Sa 1039 1631 0	0.510 4.0 0.7	3.8 122 21	116	4 M 1115 1607 2328	0.531 3.6 0.4	4.1 125 12	134	4 M 0345 1434 2142	0.345 3.8 0.4	4.6 140 12	19 Tu 1102 1538 2232	0.454 3.4 0.9	4.7 143 27
5 Sa 1618 0	0422 1.6 4.1 0.8	107 49 125 24		20 Su 1206 1728	0.638 3.6	4.0 110	122	5 Tu 1303 1711	0.714 3.3	4.3 131	131	5 Tu 0514 1113 0	0.514 2.8 0.5	4.6 140 15	20 W 1229 1701 0	0.611 3.2 1.0	4.6 140 30
6 Su 1707	0557 2.1 3.8	113 116		21 M 0758 1343 1835	0.026 2.5 3.3	0.6 76	18	6 W 0836 1441 1836	0.039 2.7	0.3 143	9	21 Th 0914 1530 2014	0.139 2.2 3.2	0.6 146 98	21 Th 0723 1349 1838	0.723 2.3 3.1	4.7 143 94
7 M 1309 1803	0012 4.1 2.4 3.5	15 125 73 107		22 Tu 0902 1504 1939	0.124 2.4 3.2	0.4 73	12	7 Th 0934 1541 1953	0.145 2.6 3.3	0.1 155	3	22 Th 0955 1604 2056	0.230 2.2 3.3	0.5 149 101	22 F 0822 1444 1847	0.054 2.1 3.2	1.0 146 101
8 Tu 1435 1900	0110 4.6 2.5 3.4	6 140 76 104		8 F 0950 1558 2027	0.215 2.3 3.1	0.3 70	9	23 Sa 1028 1621 2051	0.242 2.5 3.5	-0.1 162	-3	8 F 0911 1626 2125	0.309 2.2 3.5	0.5 146 107	23 Sa 0154 0907 2045	0.154 4.9 3.6	1.0 149 110
9 W 1539 1952	0203 0.1 5.0 2.6	-3 152 79 104		9 W 1028 1633 2058	0.256 2.3 3.2	0.2 70	6	9 Sa 1055 1653 2140	0.330 2.4 3.7	-0.1 165	3	9 Sa 0954 1642 2149	0.341 2.1 3.7	0.5 149 113	24 Su 0242 0939 2121	0.242 4.9 3.8	1.0 149 116
10 Th 1627 2037	0251 -0.3 5.3 2.6	-9 162 79 107		10 F 1057 1656 2119	0.329 2.4 3.3	0.2 73	6	10 Sa 1126 1722 2226	0.413 2.2 3.9	0.0 162	0	10 M 1102 1658 2216	0.409 2.0 3.9	0.6 146	25 M 0320 1001 2151	0.320 4.8 4.1	1.1 146 125
11 F 1707 2121	0335 -0.5 5.5 2.6	-15 168 79 110		11 F 1120 1714 2140	0.356 2.4 3.4	0.2 73	6	11 M 1155 1754 2314	0.454 2.0 4.1	0.3 158	9	11 M 1048 1653 2241	0.439 1.8 128	0.8 155	26 Tu 1016 1620 2219	0.353 1.6 4.5	1.2 143 137
12 Sa 1745 0	0417 5.5 2.6 3.7	-15 168 79 113		12 Su 1138 1732 0	0.422 2.4 3.6	0.2 73	6	12 Tu 1224 1830	0.537 1.8	0.6 152	18	12 W 1136 1747 2336	0.513 1.5 4.4	0.9 143	27 W 1030 1641 0	0.425 1.3 4.7	1.4 140 143
13 Su 1826 2302	0501 5.4 2.5 3.8	-9 165 76 116		13 M 1157 1757 2249	0.452 2.2 3.7	0.3 67	9	13 W 0622 1255 1909	0.008 4.8 1.5	4.2 146	128	13 W 1136 1822	0.553 1.2	1.1 140	28 Th 1048 1748	0.501 1.3	1.6 137
14 M 1910	0548 5.3 2.2	0 162 67		14 Tu 1221 1829 2338	0.527 1.9 3.8	0.3 58	9	14 Th 0711 1328 1953	0.106 4.6 1.2	4.2 140	128	14 Th 1200 1822	0.005 4.5	4.6 140	29 F 1113 1744	0.543 0.7	1.9 134
15 Tu 1343 1957	0005 0.3 5.1	3.8 116 9 155 58		15 W 1251 1907	0.609 1.6	0.5 49	15	15 F 0804 1404 2039	0.208 4.4 0.9	4.2 134	128	15 F 1230 1902	0.053 0.9	4.7 143	30 Sa 1147 1827	0.025 0.5	5.1 155
	31 Th	0034 0656 1325 1950	3.9 0.7 4.7 1.3		31 Th	0034 0656 1325 1950	3.9 0.7 4.7 1.3	119 21 143 40				31 Su	0123 0729 1226 1917	5.2 2.4 4.1 0.3	158 73 125 9		

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Heights are referred to the chart datum of soundings.

Sakate, Shodo Shima, Japan, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0227 5.2 158	16 0309 5.1 155	1 W 0331 5.5 168	16 Th 0325 5.4 165	1 Sa 0501 5.4 165	16 0408 5.4 165						
0833 2.7 82	0924 2.6 79	W 0952 2.9 88	Th 0955 2.5 76	Sa 1138 2.1 64	Su 1050 2.0 61						
1311 3.9 119	1354 3.6 110	1355 3.6 110	1428 3.5 107	1726 3.9 119	1629 3.9 119						
2012 0.3 9	2043 0.8 24	2058 0.6 18	2100 1.0 30	O 2306 2.0 61	2221 2.0 61						
2 Tu 0339 5.1 155	17 0408 5.1 155	2 Th 0438 5.4 165	17 F 0417 5.3 162	2 Su 0556 5.1 155	17 0454 5.1 155						
0948 2.8 85	1031 2.5 76	1108 2.7 82	1053 2.3 70	1238 1.8 55	M 1142 1.8 55						
1403 3.7 113	1500 3.4 104	1526 3.5 107	1544 3.5 107	1906 4.2 128	1757 4.1 125						
2115 0.5 15	2142 0.9 27	O 2210 1.0 30	2200 1.3 40	O 2334 2.4 73	O 2334 2.4 73						
3 W 0500 5.0 152	18 0512 5.0 152	3 F 0546 5.2 158	18 Sa 0510 5.1 155	3 M 0029 2.4 73	18 Tu 0542 4.8 146						
1118 2.9 88	1143 2.4 73	1222 2.4 73	Sa 1151 2.1 64	0651 4.8 146	Tu 1233 1.5 46						
1511 3.4 104	1621 3.2 98	1726 3.4 104	Sa 1712 3.5 107	1332 1.4 43	1922 4.5 137						
O 2229 0.7 21	O 2249 1.1 34	2330 1.4 43	O 2307 1.6 49	2025 4.6 140							
4 Th 0624 5.0 152	19 0617 4.9 149	4 Sa 0650 5.1 155	19 Su 0604 4.9 149	4 Tu 0153 2.7 82	19 W 0054 2.8 85						
1254 2.7 82	F 1252 2.2 67	1325 2.0 61	Su 1245 1.8 55	0741 4.6 140	0629 4.5 137						
1704 3.2 98	1757 3.2 98	1916 3.7 113	1841 3.7 113	1418 1.1 34	1320 1.2 37						
2353 1.0 30				2126 5.0 152	2031 5.0 152						
5 F 0738 5.0 152	20 0000 1.3 40	5 Su 0055 1.8 55	20 M 0019 1.9 58	5 W 0304 2.9 88	20 Th 0210 3.0 91						
1407 2.4 73	Sa 0717 4.9 149	0746 4.9 149	0655 4.7 143	0822 4.3 131	0712 4.3 131						
1909 3.4 104	1348 2.0 61	1416 1.6 49	1331 1.6 49	1456 0.9 27	1403 0.9 27						
	1922 3.5 107	2035 4.2 128	1954 4.1 125	2213 5.3 162	2126 5.4 165						
6 Sa 0116 1.1 34	21 0109 1.5 46	6 M 0210 2.0 61	21 Tu 0130 2.2 67	6 Th 0359 3.0 91	21 F 0313 3.1 94						
0835 5.1 155	0806 4.8 146	0832 4.8 146	0737 4.6 140	0852 4.2 128	0749 4.3 131						
1455 2.0 61	1428 1.8 55	1455 1.3 40	1409 1.3 40	1526 0.8 24	1443 0.6 18						
2031 3.8 116	2023 3.8 116	2132 4.6 140	2050 4.6 140	2251 5.5 168	2212 5.8 177						
7 Su 0224 1.2 37	22 0208 1.6 49	7 Tu 0311 2.2 67	22 W 0231 2.3 70	7 F 0441 3.2 98	22 0405 3.3 101						
0917 5.0 152	M 0842 4.7 143	0906 4.6 140	0809 4.4 134	0909 4.0 122	Sa 0822 4.3 131						
1530 1.7 52	1458 1.5 46	1527 1.1 34	1440 1.0 30	1551 0.8 24	1522 0.3 9						
2128 4.2 128	2108 4.2 128	2217 5.0 152	2135 5.0 152	2322 5.5 168	2255 6.1 186						
8 M 0318 1.4 43	23 0256 1.7 52	8 W 0359 2.4 73	23 Th 0322 2.5 76	8 Sa 0513 3.3 101	23 0450 3.4 104						
0949 4.9 149	Tu 0908 4.6 140	0930 4.4 134	0834 4.3 131	0920 4.0 122	0856 4.4 134						
1558 1.5 46	1522 1.3 40	1552 0.9 27	1510 0.7 21	1615 0.8 24	Su 1602 0.2 6						
2213 4.5 137	2145 4.6 140	2254 5.1 155	2216 5.4 165	2349 5.5 168	O 2338 6.2 189						
9 Tu 0402 1.7 52	24 0336 1.9 58	9 Th 0437 2.7 82	24 F 0407 2.7 82	9 Su 0541 3.4 104	24 M 0534 3.5 107						
1013 4.7 143	0925 4.5 137	0944 4.2 128	0855 4.2 128	0936 4.0 122	M 0937 4.4 134						
1622 1.3 40	1543 1.1 34	1615 0.8 24	1540 0.4 12	1642 0.7 21	1646 0.2 6						
2250 4.8 146	2218 4.9 149	2326 5.2 158	2256 5.7 174	O 2337 5.5 168							
10 W 0439 2.0 61	25 0414 2.1 64	10 Th 0511 2.9 88	25 Sa 0451 3.0 91	10 M 0016 5.5 168	25 Tu 0023 6.2 189						
1029 4.5 137	0941 4.4 134	0955 4.1 125	0920 4.2 128	0612 3.4 104	0622 3.5 107						
1645 1.1 34	1607 0.8 24	1638 0.7 21	1615 0.2 6	1007 4.1 125	1028 4.5 137						
● 2325 4.9 149	2255 5.2 158	● 2355 5.3 162	O 2340 5.9 180	1715 0.7 21	1735 0.4 12						
11 Th 0515 2.3 70	26 0454 2.4 73	11 Sa 0544 3.0 91	26 Su 0538 3.2 98	11 Tu 0046 5.6 171	26 W 0109 6.2 189						
1044 4.4 134	1000 4.3 131	1011 4.1 125	0952 4.3 131	0650 3.3 101	0714 3.4 104						
1710 1.0 30	F 1637 0.5 15	1706 0.7 21	Su 1656 0.1 3	1052 4.1 125	1132 4.4 134						
	O 2337 5.5 168			1755 0.8 24	1829 0.7 21						
12 F 0000 5.0 152	27 0538 2.6 79	12 Su 0028 5.3 162	27 M 0029 5.9 180	12 W 0121 5.7 174	27 0155 6.1 186						
0552 2.5 76	1027 4.3 131	0623 3.1 94	0631 3.3 101	0734 3.1 94	0808 3.1 94						
1103 4.2 128	1715 0.3 9	1041 4.0 122	1034 4.2 128	1149 4.0 122	1247 4.4 134						
1740 0.8 24		1741 0.6 18	1745 0.1 3	1841 0.8 24	1926 1.1 34						
13 Sa 0039 5.1 155	28 0027 5.6 171	13 M 0105 5.4 165	28 Tu 0123 6.0 183	13 Th 0201 5.7 174	28 0241 6.0 183						
0635 2.6 79	0631 2.8 85	0710 3.0 91	0731 3.3 101	0822 2.8 85	F 0902 2.7 82						
1132 4.1 125	1103 4.2 128	1123 3.9 119	1130 4.1 125	1253 4.0 122	1410 4.3 131						
1817 0.7 21	1801 0.2 6	1823 0.6 18	1840 0.3 9	1931 1.0 30	2026 1.6 49						
14 Su 0124 5.2 158	29 0124 5.6 171	14 Tu 0149 5.4 165	29 W 0218 5.9 180	14 F 0242 5.7 174	29 0325 5.8 177						
0726 2.7 82	0731 3.0 91	0802 2.9 88	0834 3.1 94	0910 2.5 76	Sa 0955 2.3 70						
1211 4.0 122	1149 4.0 122	1218 3.8 116	1240 4.0 122	1400 3.9 119	1538 4.3 131						
1900 0.7 21	1854 0.2 6	1912 0.7 21	1940 0.6 18	2023 1.2 37	2130 2.1 64						
15 M 0214 5.2 158	30 0226 5.6 171	15 W 0236 5.5 168	30 Th 0313 5.8 177	15 F 0324 5.6 171	30 M 0411 5.5 168						
0823 2.7 82	0839 3.0 91	0858 2.7 82	0936 2.8 85	1000 2.3 70	Su 1050 2.0 61						
1259 3.8 116	1245 3.9 119	1320 3.7 113	1404 3.8 116	1511 3.9 119	1709 4.4 134						
1949 0.7 21	1953 0.3 9	2004 0.8 24	2043 1.0 30	2119 1.6 49	O 2240 2.6 79						
				31 0407 5.6 171							
				F 1037 2.5 76							
				1541 3.8 116							
				2150 1.5 46							

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sakate, Shodo Shima, Japan, 2013

Times and Heights of High and Low Waters

July				August				September								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m 0459 M 1147 1842	ft 5.1 1.7 4.7	cm 155 52 143	h m 16 Tu 1718 O 2259	ft 5.2 1.8 4.7 3.0	cm 158 55 143 91	h m 1 Th 1258 2038	ft 3.6 4.4 1.6 5.7	cm 110 134 49 174	h m 16 F 1200 1954	ft 3.8 4.5 1.5 5.8	cm 116 137 46 177					
0553 1245 2004	4.8 1.4 5.0	146 43 152	00351 W 1138 1851	0435 1.5 46	0242 F 0717 1355 2132	3.6 4.3 1.5 5.9	110 131 46 180	0017 Sa 0556 1310 2059	3.8 4.4 1.3 6.1	116 134 40 186	0310 Su 1414 2135	3.3 1.8 6.0	101 131 183	16 M 1401 2121	0250 0739 1.6 6.2	3.4 4.4 49 189
0651 1339 2109	4.5 1.2 5.4	137 37 165	0028 Th 0526 1237 2013	3.4 4.5 1.3 5.4	0343 Sa 0814 1441 2213	3.5 4.3 1.4 6.0	107 131 43 183	0307 Su 0719 1412 2148	3.7 4.4 1.2 6.4	113 134 37 195	0412 Tu 0925 1531 2231	3.2 4.7 1.8 5.9	98 143 55 180	17 Tu 1457 2157	0329 0846 1.7 6.2	3.1 4.8 52 189
0744 1426 2159	4.3 1.1 5.6	131 34 171	0159 F 0624 1333 2115	3.6 4.3 1.0 5.8	0422 Su 0854 1518 2245	3.4 4.3 1.4 6.0	104 131 43 183	0351 M 0825 1504 2227	3.6 4.7 1.1 6.5	110 143 34 198	0429 W 0949 1600 2246	3.1 4.9 1.9 5.8	94 149 58 177	18 W 1544 2226	0400 0938 1.9 6.0	2.9 5.2 58 183
0826 1504 2238	4.1 1.0 5.8	125 30 177	0311 Sa 0720 1424 2205	3.6 4.3 0.8 6.2	0447 M 0920 1548 2309	3.5 4.4 1.4 6.0	107 134 43 183	0425 Tu 0917 1550 2300	3.5 4.9 1.2 6.4	107 149 37 195	0444 Th 1013 1627 2258	3.0 5.1 2.1 5.7	91 155 64 174	19 Th 1626 O 2249	0427 1022 2.1 5.8	2.6 5.5 64 177
0854 1534 2310	4.1 1.0 5.8	125 30 177	0403 Su 0811 1511 2247	3.6 4.5 0.6 6.4	0505 Tu 0941 1614 2327	3.5 4.5 1.5 5.9	107 137 46 180	0456 W 1005 1633 O 2330	3.3 5.2 1.5 6.3	101 158 46 192	0501 F 1043 1658 2313	2.8 5.3 2.3 5.7	85 162 70 174	20 F 1706 2310	0454 1104 2.5 5.6	2.4 5.7 76 171
0911 1600 2336	4.1 1.0 5.8	125 30 177	0443 M 0858 1555 2325	3.7 4.6 0.6 6.4	0521 W 1006 1642 ● 2343	3.5 4.7 1.6 5.9	107 143 49 180	0527 Th 1054 1716 2359	3.1 5.4 1.8 6.1	94 165 55 186	0525 Sa 1121 1735 2336	2.6 5.5 2.4 5.6	79 168 73 171	21 Sa 1749 2334	0524 1149 2.8 5.4	2.2 5.8 85 165
0929 1627 ● 2358	4.2 1.1 5.8	128 34 177	0520 M 0946 1639	3.6 4.8 0.7 21	0542 Th 1041 1714	3.3 4.9 1.7 52	101 149 52 52	0602 F 1148 1802	2.9 5.5 2.2 67	88 168 67 70	0557 Su 1208 1819	2.3 5.7 2.7 82	70 174 82 82	22 Su 1836	0558 1237 5.8 3.1	2.0 177 94
0958 1657	4.3 1.1	131 34	0003 W 0559 1040 1726	6.4 3.5 4.9 1.0	0003 F 0610 1126 1753	6.4 3.1 5.0 1.9	195 194 180 58	0029 Sa 0642 1246 1853	5.9 2.6 5.6 2.6	180 79 171 79	0007 M 0637 1302 1911	5.5 2.0 5.8 2.9	168 61 177 88	23 M 1331 1929	0003 0638 5.9 3.3	5.2 1.8 180 101
0620 1041 1733	3.4 4.4 1.2	104 134 37	0040 W 0641 1142 1817	6.3 3.3 4.9 1.4	0030 Th 0645 1218 1838	5.9 2.8 5.1 2.1	192 85 155 64	0102 Sa 0726 1350 1948	5.7 2.3 5.6 91	174 70 171 91	0043 Tu 0722 1403 2009	5.3 1.7 5.8 3.2	162 52 177 98	24 W 1531 2136	0124 0813 1.6 3.5	4.8 49 177 107
0655 1134 1815	3.2 4.5 1.3	98 137 40	0118 F 0727 1251 1910	6.1 3.0 5.0 1.8	0102 Th 0726 1316 1928	5.8 2.4 5.2 2.3	186 73 158 70	0140 M 0814 1456 2048	5.5 2.1 5.6 3.3	168 64 171 101	0123 W 0812 1512 2115	5.1 1.5 5.8 3.5	155 46 177 107	25 Th 1638 2251	0216 0909 1.7	4.5 52 174 107
0736 1233 1902	2.9 4.5 1.4	180 137 43	0156 F 0816 1404 2007	6.0 2.6 5.0 2.3	0138 M 0810 1419 2023	5.7 2.1 5.3 2.7	183 64 162 82	0221 Tu 0905 1607 2156	5.2 1.9 5.6 3.5	158 58 171 107	0207 Th 0909 1632 2237	4.9 1.5 5.7 3.7	149 46 174 113	26 F 1749 O	0322 1012 5.7	4.3 1.8 174
0819 1336 1952	2.6 4.5 1.7	180 137 52	0236 Sa 0906 1521 2108	5.7 2.2 5.0 2.7	0215 Tu 0857 1528 2125	5.4 1.9 5.3 3.1	174 58 162 94	0308 W 1001 1723 ● 2316	4.9 1.8 5.6 3.7	149 55 171 113	0257 F 1015 1803 ● 2316	4.6 1.5 5.7 113	140 46 174 113	27 F 1749 O	0322 1012 5.7	4.3 1.8 174
0904 1442 2046	2.3 4.6 2.1	174 137 64	0318 M 0958 1641 2216	5.4 2.0 5.1 3.2	0255 W 0950 1649 ● 2241	5.1 1.7 5.3 3.5	165 52 162 107	0407 Th 1103 1843	4.6 1.9 5.6 171	140 58 171 107	0017 Sa 0409 1132 1929	3.8 4.3 5.9	116 131 180	28 Sa 1121 1858	0013 0448 5.7	3.4 4.1 104
0951 1554 2147	2.0 4.6 2.5	168 140 76	0403 Tu 1054 1806 ● 2338	5.1 5.2 3.5	0340 Th 1051 1825	4.8 1.6 5.5	155 49 168	0049 F 0526 1212 1954	3.7 4.3 1.9 5.8	113 131 58 177	0150 Su 0600 1252 2033	3.7 4.2 6.1	113 128 186	29 M 1337 2045	0128 0626 5.7	3.1 4.0 94
0311 0952 1554 2147	5.5 2.0 4.6 2.5	168 61 140 76	0457 W 1155 1929	4.7 1.7 5.2	0213 Sa 0654 1318 2051	3.5 4.3 5.9	143 155 165	0213 Sa 0654 1318 2051	3.5 4.3 5.9	107 131 180	0150 Su 0600 1252 2033	3.7 4.2 6.1	113 128 186	30 M 1337 2045	0223 0743 5.7	2.9 4.2 174

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sakate, Shodo Shima, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0302 2.7 82	16 W 0300 2.3 70	1 F 0308 1.5 46	16 Sa 0333 0.8 24	1 Su 0256 0.4 12	16 M 0341 0.2 6						
0838 4.5 137	0902 4.8 146	0939 4.9 149	1039 5.3 162	1005 5.1 155	1113 5.2 158						
1429 2.0 61	1451 2.1 64	1525 2.3 70	1624 2.7 82	1554 2.5 76	1707 2.8 85						
2120 5.7 174	2119 5.5 168	2108 4.7 143	2127 4.2 128	2039 3.9 119	2117 3.5 107						
2 W 0329 2.5 76	17 Th 0331 2.0 61	2 Sa 0329 1.3 40	17 Su 0359 0.7 21	2 M 0324 0.1 3	17 Tu 0407 0.2 6						
0917 4.7 143	0951 5.2 158	1010 5.2 158	1114 5.4 165	1041 5.3 162	1141 5.1 155						
1509 2.1 64	1540 2.3 70	1601 2.5 76	1701 2.9 88	1634 2.7 82	1735 2.8 85						
2144 5.6 171	2146 5.3 162	2121 4.6 140	2140 4.1 125	2101 3.9 119	2133 3.5 107						
3 Th 0349 2.4 73	18 F 0359 1.7 52	3 Su 0351 1.0 30	18 M 0424 0.6 18	3 Tu 0356 -0.1 -3	18 W 0433 0.2 6						
0948 5.0 152	1033 5.5 168	1042 5.5 168	1146 5.4 165	1120 5.5 168	1207 5.1 155						
1543 2.2 67	1622 2.6 79	1637 2.7 82	1735 3.1 94	1715 2.9 88	1803 2.8 85						
2159 5.4 165	2206 5.1 155	● 2137 4.5 137	○ 2155 4.0 122	● 2129 4.0 122	2159 3.5 107						
4 F 0406 2.2 67	19 Sa 0424 1.5 46	4 M 0417 0.7 21	19 Tu 0451 0.5 15	4 W 0434 -0.3 -9	19 Th 0504 0.2 6						
1014 5.3 162	1111 5.7 174	1118 5.7 174	1218 5.4 165	1203 5.6 171	1235 5.1 155						
1613 2.4 73	1700 2.9 88	1716 3.1 94	1812 3.1 94	1802 3.0 91	1835 2.7 82						
2209 5.3 162	○ 2221 4.9 149	2200 4.5 137	2221 4.0 122	2208 4.0 122	2240 3.5 107						
5 Sa 0423 2.0 61	20 Su 0450 1.3 40	5 Tu 0450 0.5 15	20 W 0525 0.5 15	5 Th 0518 -0.3 -9	20 F 0541 0.2 6						
1043 5.5 168	1148 5.7 174	1202 5.8 177	1254 5.4 165	1252 5.6 171	1306 5.1 155						
1645 2.6 79	1739 3.1 94	1803 3.1 94	1856 3.1 94	1855 3.0 91	1915 2.5 76						
● 2223 5.2 158	2239 4.7 143	2232 4.4 134	2300 3.9 119	2258 3.9 119	2333 3.5 107						
6 Su 0447 1.7 52	21 M 0520 1.2 37	6 W 0532 0.3 9	21 Th 0605 0.5 15	6 F 0609 -0.2 -6	21 Sa 0624 0.3 9						
1118 5.7 174	1227 5.7 174	1254 5.8 177	1335 5.4 165	1344 5.6 171	1342 5.1 155						
1722 2.8 85	1822 3.3 101	1900 3.2 98	1947 2.9 88	1955 2.8 85	2000 2.3 70						
2244 5.1 155	2306 4.6 140	2315 4.3 131	2353 3.7 113								
7 M 0518 1.4 43	22 Tu 0556 1.1 34	7 Th 0622 0.3 9	22 F 0652 0.6 18	7 Sa 0002 3.7 113	22 Su 0034 3.4 104						
1203 5.9 180	1312 5.7 174	1353 5.8 177	1420 5.4 165	0706 0.1 3	0712 0.4 12						
1808 3.0 91	1913 3.3 101	2004 3.3 101	2041 2.7 82	1437 5.5 168	1421 5.1 155						
2315 5.0 152	2343 4.4 134			2056 2.6 79	2047 2.0 61						
8 Tu 0558 1.2 37	23 W 0639 1.1 34	8 F 0008 4.1 125	23 Sa 0057 3.6 110	8 Su 0120 3.6 110	23 M 0140 3.4 104						
1255 5.9 180	1401 5.7 174	0718 0.4 12	0744 0.7 21	0807 0.5 15	0803 0.7 21						
1902 3.2 98	2010 3.3 101	1455 5.7 174	1507 5.4 165	1529 5.3 162	1501 5.0 152						
2353 4.8 146		2114 3.2 98	2137 2.5 76	2157 2.2 67	2135 1.6 49						
9 W 0645 1.0 30	24 Th 0032 4.2 128	9 Sa 0115 3.9 119	24 Su 0208 3.5 107	9 M 0252 3.5 107	24 Tu 0250 3.4 104						
1356 5.9 180	0728 1.1 34	0821 0.7 30	0840 0.9 30	0913 1.0 30	0857 1.0 30						
2004 3.4 104	1455 5.7 174	1559 5.6 171	1557 5.2 158	1621 5.0 152	1543 4.7 143						
	2113 3.2 98	2227 2.9 88	2233 2.2 67	2258 1.8 55	2225 1.4 43						
10 Th 0038 4.7 143	25 F 0131 4.0 122	10 Su 0239 3.7 113	25 M 0327 3.4 104	10 Tu 0437 3.5 107	25 W 0405 3.4 104						
0739 1.0 30	0823 1.2 37	0930 1.1 34	0939 1.2 37	1026 1.5 46	0957 1.4 43						
1504 5.9 180	1553 5.6 171	1704 5.4 165	1647 5.0 152	1716 4.7 143	1627 4.4 134						
2116 3.5 107	2219 3.0 91	○ 2340 2.6 79	2329 1.9 58	○ 2316 1.1 34							
11 F 0130 4.4 134	26 Sa 0242 3.8 116	11 M 0432 3.6 110	26 Tu 0455 3.4 104	11 W 0000 1.4 43	26 Th 0532 3.5 107						
0840 1.1 34	0923 1.4 43	1048 1.5 46	1045 1.5 46	0625 3.7 113	1108 1.8 55						
1618 5.8 177	1653 5.5 168	1808 5.2 158	1740 4.8 146	1150 2.0 61	1714 4.1 125						
2238 3.5 107	2327 2.8 85			1813 4.4 134							
12 Sa 0235 4.1 125	27 Su 0408 3.7 113	12 Tu 0046 2.2 67	27 W 0024 1.6 49	12 Th 0059 1.0 30	27 F 0009 0.9 27						
0949 1.3 40	1029 1.6 49	0631 3.8 116	0625 3.5 107	0756 4.1 125	0700 3.7 113						
1738 5.7 174	1754 5.4 165	1213 1.9 58	1158 1.8 55	1321 2.4 73	1230 2.2 67						
○		1907 5.0 152	1831 4.6 140	1908 4.1 125	1804 3.8 116						
13 Su 0008 3.4 104	28 M 0032 2.6 79	13 W 0142 1.8 55	28 Th 0112 1.3 40	13 M 0151 0.7 21	28 F 0100 0.6 18						
0414 3.9 119	0545 3.7 113	0802 4.2 128	0742 3.9 119	0904 4.6 140	0815 4.2 128						
1109 1.6 49	1140 1.8 55	1336 2.2 67	1312 2.1 64	1443 2.5 76	1352 2.3 70						
1853 5.7 174	1853 5.3 162	1958 4.8 146	1917 4.3 131	1957 3.9 119	1852 3.5 107						
14 M 0125 3.1 94	29 Tu 0127 2.3 70	14 Th 0227 1.3 40	29 F 0153 1.0 30	14 Sa 0235 0.4 12	29 W 0146 0.3 9						
0621 4.0 122	0710 3.9 119	0908 4.7 143	0840 4.3 131	0957 4.9 149	0912 4.6 140						
1234 1.8 55	1251 1.9 58	1445 2.4 73	1416 2.2 67	1546 2.6 79	1459 2.4 73						
1955 5.7 174	1943 5.2 158	2038 4.6 140	1952 4.1 125	2035 3.7 113	1933 3.4 104						
15 Tu 0220 2.7 82	30 W 0211 2.0 61	15 F 0303 1.0 30	30 Sa 0226 0.7 21	15 Su 0311 0.2 6	30 M 0227 0.0 0						
0756 4.3 131	0814 4.2 128	0958 5.1 155	0926 4.7 143	1038 5.1 155	0958 5.0 152						
1349 1.9 58	1353 2.0 61	1540 2.5 76	1510 2.4 73	1633 2.6 79	1551 2.5 76						
2043 5.6 171	2022 5.0 152	2107 4.4 134	2018 4.0 122	2101 3.5 107	2008 3.5 107						
31 Th 0243 1.7 52	31 Th 0902 4.6 140										
1443 2.2 67	1443 2.2 67										
2050 4.9 149	2050 4.9 149										

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kure, Japan, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	0544 1209 1815	0.4 11.3 2.8	13 343 86	16 W	0015 0628 1248 1859	10.4 0.6 11.2 2.0	317 18 342 62	1 F	0032 0642 1253 1907	10.2 1.1 10.8 1.6	312 35 330 48	16 Sa	0108 0706 1309 1931	9.6 2.9 9.7 2.1	292 88 295 63	1 F	0548 1154 1806	0.6 11.2 0.5	19 341 14	16 Sa	0005 0607 1205 1821	10.7 2.3 10.2 1.0	326 70 312 32
2 W	0004 0620 1244 1853	9.8 0.9 11.0 2.8	300 26 336 85	17 Th	0057 0705 1322 1938	9.8 1.7 10.5 2.3	298 52 321 71	2 Sa	0115 0721 1328 1949	9.8 2.1 10.2 1.7	300 63 312 53	17 Sa	0018 0624 1227 1842	11.0 1.4 10.7 0.6	335 43 327 19	2 Sa	0018 0624 1227 1842	11.0 1.4 10.7 0.6	335 43 327 19	17 Su	0040 0637 1231 1851	10.2 3.1 9.6 1.6	310 95 292 48
3 Th	0045 0658 1320 1935	9.5 1.5 10.7 2.8	291 45 326 85	18 F	0141 0742 1356 2022	9.1 2.9 9.7 2.7	276 88 297 83	3 Su	0205 0806 1408 2041	9.3 3.2 9.5 2.0	284 97 290 62	18 M	0244 0824 1417 2107	8.1 5.0 8.0 3.2	247 151 244 99	3 Su	0100 0704 1301 1923	10.5 2.4 10.1 1.0	321 73 307 31	18 M	0116 0710 1300 1925	9.5 4.0 8.9 2.3	290 121 270 69
4 F	0131 0741 1400 2022	9.2 2.3 10.2 2.8	279 69 311 86	19 Sa	0234 0824 1434 2117	8.3 4.1 8.9 3.1	254 124 272 94	4 M	0313 0908 1501 2153	8.8 4.3 8.7 2.2	267 131 221 68	19 Tu	0424 0955 1525 2251	7.7 5.7 7.3 3.5	234 175 221 107	4 M	0149 0749 1340 2012	9.8 3.5 9.2 1.6	300 108 281 50	19 Tu	0201 0751 1335 2009	8.8 4.8 8.0 3.0	269 147 245 91
5 Sa	0228 0832 1447 2122	8.8 3.2 9.6 2.8	267 98 294 84	20 Su	0351 0925 1528 2237	7.8 5.1 8.2 3.2	238 156 249 99	5 Tu	0451 1049 1624 2328	8.6 5.0 8.2 2.1	262 152 250 63	20 W	0620 1237 1734	8.0 5.6 7.1	243 170 216	5 Tu	0254 0852 1433 2123	9.1 4.6 8.4 2.3	278 141 255 69	20 W	0307 0857 1431 2123	8.2 5.5 7.3 3.6	250 169 222 111
6 Su	0344 0942 1548 2238	8.5 4.1 9.2 2.5	260 125 279 75	21 M	0539 1124 1655	7.8 5.6 7.7	239 171 235	6 W	0629 1236 1804	9.1 4.8 8.3	278 146 252	21 Th	0029 0728 1340 1901	3.1 8.6 4.9 7.6	95 263 149 233	6 W	0432 1041 1605 2308	8.7 5.2 7.7 2.5	266 158 236 75	21 Th	0504 1141 1628 2326	8.0 5.6 6.9 3.7	244 170 210 113
7 M	0520 1117 1705 2357	8.8 4.6 8.9 1.8	268 139 271 56	22 Tu	0002 0701 1302 1821	3.0 8.4 5.3 7.8	91 256 163 237	7 Th	0052 0741 1347 1923	1.4 10.0 4.0 8.9	42 304 123 271	22 F	0130 0812 1418 1953	2.4 9.3 4.1 8.4	73 284 126 257	7 Th	0615 1231 1801	9.1 4.7 7.9	278 143 242	22 F	0634 1259 1826	8.5 4.9 7.4	258 148 226
8 Tu	0643 1245 1823	9.5 4.4 9.1	291 135 276	23 W	0106 0757 1359 1923	2.4 9.1 4.8 8.2	74 277 146 250	8 F	0157 0834 1439 2023	0.5 10.8 3.2 9.7	15 330 97 296	23 Sa	0215 0846 1450 2034	1.6 10.0 3.4 9.2	49 304 103 281	8 F	0040 0726 1336 1920	1.9 9.8 3.7 8.8	59 300 114 268	23 Sa	0048 0727 1342 1926	3.1 9.1 4.0 8.3	95 278 122 254
9 W	0106 0748 1352 1929	1.0 10.4 3.9 9.5	29 318 120 289	24 Th	0156 0838 1439 2010	1.8 9.7 4.2 8.8	54 297 129 267	9 Sa	0249 0919 1523 2113	-0.3 11.5 2.4 10.5	-9 349 72 319	24 Su	0253 0916 1520 2111	0.9 10.5 2.7 10.0	28 320 81 304	9 Sa	0145 0816 1424 2016	1.1 10.6 2.7 9.8	35 322 83 298	24 Su	0141 0806 1416 2010	2.4 9.8 3.1 9.4	72 298 122 285
10 Th	0204 0843 1447 2027	0.1 11.3 3.3 10.0	2 343 102 284 305	25 F	0237 0912 1512 2050	1.1 10.3 3.7 9.3	34 313 112 284	10 Su	0334 0959 1603 2157	-0.8 11.8 1.7 11.0	-23 360 53 335	25 M	0328 0947 1551 2147	0.4 11.0 2.0 10.6	11 334 60 322	10 Su	0235 0857 1504 2102	0.5 11.1 1.8 10.6	15 339 56 323	25 M	0223 0839 1448 2049	1.6 10.4 2.2 10.3	49 317 66 313
11 F	0257 0931 1535 2119	-0.7 11.8 2.8 10.5	-21 361 86 320	26 Sa	0313 0943 1543 2126	0.6 10.7 3.2 9.8	17 326 97 299	11 M	0415 1035 1641 2238	-0.9 11.9 1.3 11.2	-26 364 39 341	26 Tu	0402 1018 1623 2224	0.0 11.3 1.4 11.0	1 344 42 335	11 M	0318 0934 1541 2143	0.1 11.4 1.1 11.2	4 348 35 340	26 Tu	0301 0912 1522 2127	1.0 10.9 1.3 11.1	31 332 40 337
12 Sa	0345 1015 1619 2206	-1.1 12.2 2.4 10.8	-34 372 72 330	27 Su	0348 1013 1614 2202	0.1 11.0 2.7 10.2	4 336 83 311	12 Tu	0453 1110 1717 2317	-0.6 11.8 1.0 11.1	-18 361 31 339	27 W	0437 1049 1656 2301	0.0 11.5 0.9 11.2	-1 349 27 342	12 Tu	0356 1008 1616 2221	0.1 11.5 0.7 11.4	3 351 21 347	27 W	0338 0946 1556 2205	0.7 11.2 0.6 11.6	21 342 18 354
13 Su	0429 1057 1700 2251	-1.2 12.3 2.1 11.0	-37 374 63 334	28 M	0421 1044 1646 2239	-0.1 11.3 2.3 10.5	-3 343 70 319	13 W	0529 1143 1751 2354	0.0 11.5 1.0 10.8	0 351 31 329	28 Th	0512 1121 1730 2339	0.2 11.5 0.6 11.3	5 349 18 343	13 W	0432 1040 1649 2257	0.4 11.4 0.5 11.4	11 348 14 346	28 Th	0415 1019 1630 2244	0.6 11.4 0.0 11.9	19 347 1 363
14 M	0511 1136 1740 2334	-1.0 12.1 1.9 10.8	-29 369 58 329	29 Tu	0455 1115 1720 2315	-0.2 11.4 1.9 10.5	-5 347 59 321	14 Th	0603 1213 1825	0.9 11.1 1.2	26 337 36 47	14 Th	0505 1110 1721 2332	0.9 11.2 0.5 11.1	27 340 14 339	29 F	0452 1054 1706 2324	0.8 11.4 -0.3 11.9	25 346 -8 363				
15 Tu	0550 1213 1700 1820	-0.3 11.7 2.1 1.9	-10 358 63 57	30 W	0530 1147 1754 2353	0.0 11.4 1.7 10.5	1 347 51 319	15 F	0031 0635 1242 1857	10.3 1.8 10.4 1.5	313 55 317 47	15 F	0537 1138 1751	1.5 10.8 0.7	47 328 20	30 Sa	0530 1128 1743	1.3 11.1 -0.3	41 337 -8	31 Su	0005 0609 1204 1822	11.6 2.1 10.6 0.1	355 63 322 2
				31 Th	0605 1220 1830	0.5 11.2 1.5	14 342 47																

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kure, Japan, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
1 M	0049	11.1	339	16 Tu	0052	10.2	310	1 W	0133	11.0	335	16 Th	0111	10.4	317
	0652	3.0	91		0649	4.0	123		0739	4.0	122		0716	4.4	133
	1241	9.9	301		1234	9.0	274		1321	9.2	280		1257	8.8	269
	1904	0.7	22		1855	2.0	62		1947	1.6	50		1917	2.5	77
2 Tu	0140	10.4	317	17 W	0133	9.6	293	2 Th	0234	10.3	314	17 F	0156	10.0	305
	0742	3.9	120		0731	4.6	141		0847	4.4	134		0807	4.6	141
	1325	9.1	276		1312	8.3	253		1427	8.5	259		1348	8.3	254
	1955	1.6	48		1936	2.8	84	○	2055	2.6	80		2007	3.2	98
3 W	0245	9.6	294	18 Th	0225	9.1	276	3 F	0347	9.8	300	18 Sa	0249	9.6	293
	0851	4.7	144		0830	5.2	157		1012	4.4	134		0913	4.7	143
	1425	8.2	250		1404	7.6	233		1558	8.1	248		1458	8.0	243
○	2107	2.4	74	○	2035	3.5	106		2221	3.3	100	○	2114	3.8	116
4 Th	0415	9.2	281	19 F	0340	8.7	264	4 Sa	0504	9.6	294	19 Su	0356	9.4	286
	1036	4.9	150		1011	5.3	161		1134	3.9	118		1034	4.4	134
	1606	7.7	235		1534	7.3	221		1734	8.5	258		1632	8.1	247
	2249	2.9	87		2207	3.9	119		2347	3.5	106		2240	4.1	125
5 F	0547	9.4	285	20 Sa	0512	8.7	266	5 Su	0612	9.8	298	20 M	0508	9.4	287
	1211	4.3	130		1152	4.8	145		1238	3.1	94		1146	3.7	113
	1755	8.1	246		1732	7.6	231		1848	9.2	280		1759	8.8	268
	2347	3.7	114		2347	3.7	114					5 W	0122	4.5	138
6 Sa	0020	2.6	80	21 Su	0622	9.1	278	6 M	0056	3.3	102	21 Tu	0004	4.0	121
	0655	9.8	300		1249	3.9	118		0706	10.0	305		0613	9.7	295
	1313	3.3	101		1847	8.5	258		1328	2.3	69		1244	2.8	84
	1909	9.0	274						1943	10.0	304		1903	9.8	299
7 Su	0125	2.1	65	22 M	0056	3.2	97	7 Tu	0149	3.1	95	22 W	0108	3.6	109
	0746	10.3	315		0713	9.7	296		0751	10.2	312		0706	10.1	307
	1359	2.3	71		1332	2.9	87		1410	1.5	47		1332	1.7	53
	2002	9.9	303		1939	9.5	291		2028	10.7	325		1955	10.8	330
8 M	0214	1.7	52	23 Tu	0147	2.5	77	8 W	0233	3.0	91	23 Th	0201	3.1	96
	0827	10.7	327		0755	10.3	313		0830	10.4	316		0754	10.5	320
	1439	1.5	45		1411	1.8	56		1447	1.0	31		1417	0.8	23
	2046	10.7	326		2023	10.6	323		2107	11.1	339		2042	11.7	356
9 Tu	0256	1.5	45	24 W	0231	2.0	61	9 Th	0312	2.9	89	24 F	0249	2.9	87
	0903	10.9	333		0834	10.7	327		0905	10.5	319		0839	10.8	330
	1515	0.9	26		1449	0.9	27		1522	0.7	21		1501	0.0	0
	2125	11.2	342		2104	11.5	349		2144	11.4	347		2128	12.3	375
10 W	0334	1.5	45	25 Th	0313	1.7	52	10 F	0347	3.0	91	25 Sa	0334	2.7	83
	0937	11.0	335		0912	11.1	337		0937	10.5	319		0923	11.0	336
	1549	0.5	15		1527	0.1	3		1555	0.6	17		1545	-0.5	-16
	2202	11.5	349		2146	12.1	368	●	2218	11.5	350		2214	12.6	385
11 Th	0409	1.7	51	26 F	0353	1.6	50	11 Sa	0421	3.1	95	26 Su	0419	2.8	84
	1008	10.9	333		0949	11.2	342		1008	10.4	317		1006	11.1	338
	1621	0.3	9		1605	-0.5	-14		1626	0.6	17		1629	-0.7	-22
	2237	11.5	350		2228	12.4	378		2252	11.5	349		2300	12.7	387
12 F	0442	2.0	62	27 Sa	0434	1.8	55	12 Su	0453	3.3	101	27 W	0504	2.9	88
	1037	10.7	329		1027	11.2	341		1038	10.3	313		1051	11.0	336
	1652	0.3	10		1645	-0.7	-21		1657	0.7	21		1713	-0.6	-17
	2310	11.4	346		2310	12.4	378		2325	11.3	345		2346	12.5	381
13 Sa	0513	2.5	75	28 Su	0515	2.2	67	13 M	0525	3.5	107	28 Tu	0550	3.1	95
	1105	10.5	319		1106	11.0	334		1109	10.1	307		1137	10.7	327
	1721	0.5	16		1725	-0.6	-17		1728	1.0	29		1759	-0.1	-2
	2343	11.1	337		2355	12.1	370		2358	11.1	338		1822	1.8	55
14 Su	0543	3.0	90	29 M	0558	2.8	84	14 Tu	0558	3.8	115	29 F	0051	11.2	340
	1133	10.1	307		1147	10.5	320		1141	9.7	297		0638	3.4	103
	1750	0.9	27		1808	-0.1	-3		1800	1.4	42		1225	10.3	314
	1821	1.4	42									1846	0.7	22	
15 M	0016	10.7	325	30 Tu	0042	11.6	354	15 W	0033	10.8	329	30 Sa	0121	11.6	354
	0615	3.5	106		0645	3.4	104		0634	4.0	123		0729	3.6	111
	1202	9.6	292		1230	9.9	302		1217	9.3	284		1317	9.7	297
	1821	1.4	42		1854	0.7	21		1836	1.9	58		1937	1.7	53
												31 F	0212	11.0	335
												0827	3.8	116	
												1418	9.2	280	
												2034	2.8	85	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kure, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0315	10.0	306	16 Tu 0218	10.5	321	1 Th 0424	8.6	263	1 Su 0337	9.3	283
0952	3.6	109	0846	3.3	101	1130	3.9	120	F 1037	3.2	98
1618	9.0	275	1506	9.5	291	1834	9.4	288	1745	10.1	307
2209	5.3	161	● 2105	4.7	144				2353	6.0	183
2 Tu 0416	9.4	287	17 W 0308	10.0	305	2 0042	6.3	193	17 Sa 0516	9.2	279
1105	3.5	107	0951	3.2	99	0558	8.6	261	1209	2.8	84
1747	9.2	279	1631	9.5	291	1243	3.5	108	1905	10.9	331
2341	5.7	175	2228	5.4	165	1936	10.1	307			
3 W 0528	9.1	277	18 Th 0416	9.6	292	3 Sa 0145	5.8	177	18 Su 0115	5.3	163
1214	3.2	98	1110	2.9	89	0707	8.9	272	0645	9.7	295
1858	9.7	295	1801	10.0	306	1338	3.0	91	1323	1.9	59
						2021	10.7	325	2004	11.7	357
4 Th 0059	5.6	172	19 F 0004	5.5	168	4 Su 0228	5.2	159	19 M 0212	4.4	135
0634	9.1	277	0538	9.5	291	0758	9.5	289	0753	10.5	321
1311	2.8	84	1226	2.3	69	1423	2.4	74	1420	1.1	34
1953	10.3	313	1915	10.9	331	2057	11.2	341	2051	12.4	378
5 F 0156	5.3	162	20 Sa 0121	5.1	155	5 M 0302	4.7	142	20 Tu 0258	3.5	107
0728	9.3	284	0653	9.9	301	0839	10.1	307	0847	11.4	347
1358	2.3	69	1332	1.4	44	1500	1.9	59	1509	0.6	17
2037	10.8	329	2014	11.7	357	2129	11.6	353	2133	12.9	392
6 Sa 0241	4.9	150	21 Su 0220	4.5	137	6 Tu 0332	4.1	126	21 W 0340	2.8	84
0813	9.6	296	0758	10.5	319	0916	10.6	323	0934	12.0	367
1440	1.8	56	1430	0.7	20	1535	1.5	47	1552	0.3	10
2115	11.2	341	2106	12.4	378	2159	11.9	362	● O 2212	13.1	398
7 Su 0317	4.6	139	22 M 0311	3.8	117	7 W 0402	3.7	112	22 Th 0419	2.2	66
0853	10.0	305	0854	11.1	338	0951	11.0	336	1017	12.4	377
1517	1.5	46	1521	0.1	2	1607	1.3	40	1633	0.5	16
2149	11.5	350	2152	12.9	393	● 2228	12.1	369	2248	13.0	396
8 M 0351	4.3	130	23 Tu 0356	3.2	99	8 Th 0432	3.3	100	23 F 0456	1.8	56
0929	10.3	315	0944	11.6	353	1025	11.3	345	1058	12.4	378
1552	1.3	39	Tu 1607	-0.2	-6	1640	1.3	39	1711	1.1	33
● 2221	11.7	356	O 2234	13.1	399	2258	12.2	373	2323	12.7	387
9 Tu 0422	4.0	121	24 W 0439	2.8	85	9 F 0504	2.9	89	24 Sa 0532	1.7	53
1005	10.6	323	1031	11.9	363	1101	11.5	349	1138	12.1	370
1625	1.2	36	1651	-0.1	-2	1713	1.4	44	1747	1.9	58
2252	11.8	360	2314	13.1	398	2328	12.2	373	2355	12.2	372
10 W 0454	3.7	114	25 Th 0520	2.5	76	10 Sa 0536	2.6	80	25 Su 0608	1.9	58
1040	10.7	327	1116	11.9	364	1137	11.5	349	1217	11.6	355
1658	1.2	36	1732	0.4	13	1747	1.8	55	1821	2.9	89
2323	11.9	362	2353	12.8	390				1841	3.5	108
11 Th 0527	3.5	108	26 F 0600	2.4	72	11 M 0000	12.1	369	10 Tu 0003	11.7	357
1116	10.7	327	1159	11.7	356	0610	2.5	76	0619	1.6	50
1732	1.4	42	1812	1.3	39	1215	11.3	344	1238	11.6	354
2354	11.9	362				1822	2.4	73	1841	3.5	108
12 F 0601	3.4	103	27 Sa 0029	12.3	376	12 M 0026	11.6	353	10 W 0036	11.1	339
1153	10.6	324	0640	2.5	75	0642	2.3	69	0657	2.0	60
1807	1.7	52	1242	11.2	341	1257	11.0	335	W 1324	11.1	337
			1851	2.4	72	1856	4.0	122	1924	4.5	138
13 Sa 0027	11.7	358	28 Su 0105	11.7	356	13 Tu 0026	11.6	353	11 Th 0046	9.7	297
0636	3.3	100	0720	2.7	83	0642	2.3	69	0712	3.1	96
1232	10.4	318	1327	10.5	321	1257	11.0	335	1352	9.9	302
1843	2.3	69	1930	3.6	109	1822	2.4	73	1943	5.9	180
14 Su 0101	11.5	350	29 M 0140	10.9	332	13 M 0032	11.8	359	12 Th 0113	10.4	317
0714	3.2	99	0802	3.1	95	0646	2.5	75	0742	2.5	76
1314	10.2	310	1419	9.8	299	1255	11.0	335	1422	10.4	318
1922	3.0	90	2012	4.8	146	1900	3.2	97	2020	5.5	169
15 M 0137	11.1	337	20 F 0228	9.9	302	27 Tu 0056	10.8	329	12 W 0122	8.9	272
0756	3.3	100	0853	3.6	110	0718	2.8	86	0756	3.9	119
1403	9.8	300	1528	9.2	281	1340	10.2	312	1501	9.3	284
2007	3.8	117	● 2110	5.9	179	1932	5.1	155	● 2057	6.5	199
16 W 0305	11.7	358	28 W 0105	11.7	356	13 Th 0126	9.9	303	13 Th 0218	8.1	248
0636	3.3	100	0720	2.7	83	0757	3.5	106	0843	3.1	95
1232	10.4	318	1327	10.5	321	1436	9.5	290	1547	10.0	304
1843	2.3	69	1930	3.6	109	● 2019	6.1	188	● 2153	6.2	188
14 Su 0101	11.5	350	29 M 0140	10.9	332	14 Th 0203	9.1	277	14 Sa 0319	8.9	270
0714	3.2	99	0802	3.1	95	0851	4.1	126	1017	3.5	106
1314	10.2	310	1419	9.8	299	1611	9.1	276	1731	10.2	310
1922	3.0	90	2012	4.8	146	2158	6.8	208	2350	5.9	179
15 M 0137	11.1	337	30 Tu 0217	10.0	306	15 Th 0309	8.3	253	15 Su 0515	8.9	270
0756	3.3	100	0853	3.6	110	0910	3.1	96	0521	8.1	247
1403	9.8	300	1528	9.2	281	1603	9.8	298	1209	4.3	130
2007	3.8	117	● 2110	5.9	179	2200	6.0	183	1907	9.8	300
16 W 0305	11.7	358	31 W 0103	9.2	281	31 Th 0022	6.6	200	31 Sa 0521	8.1	247
0636	3.3	100	1003	3.9	120				1209	4.3	130
1232	10.4	318	1707	9.1	276				1907	9.8	300
1843	2.3	69	2257	6.5	199						

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Heights are referred to the chart datum of soundings.

Kure, Japan, 2013

Times and Heights of High and Low Waters

October				November				December				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 0127	4.8	146	16 W 0131	3.1	93	1 F 0153	2.4	73	1 Sa 0227	1.0	32	
0714	9.2	281	W 0735	10.6	324	0806	10.9	331	Sa 0849	11.5	350	
1324	3.5	108	1346	2.6	78	1411	3.0	91	1453	3.3	100	
1947	10.7	326	1959	11.5	351	2011	11.1	337	2044	10.8	328	
2 W 0200	3.9	119	17 Th 0213	2.1	64	2 0229	1.4	44	17 Su 0304	0.7	20	
0756	10.2	310	0822	11.5	350	Sa 0846	11.7	356	2 M 0240	0.1	3	
1406	2.9	88	1432	2.3	70	1452	2.6	80	17 Tu 0909	12.0	365	
2020	11.2	342	2038	11.7	358	2048	11.4	346	1513	3.0	91	
3 Th 0231	3.0	92	18 F 0252	1.4	42	3 Su 0306	0.7	20	2058	10.9	331	
0833	11.0	336	0904	12.1	368	M 0926	12.3	375	18 W 0323	0.5	14	
1443	2.4	72	1512	2.3	69	Su 1531	2.5	75	Tu 0953	11.3	343	
2052	11.6	355	2114	11.8	360	● 2125	11.5	352	1557	3.6	110	
4 F 0303	2.2	68	19 Sa 0328	0.9	27	4 M 0343	0.1	3	O 2134	10.0	305	
0909	11.7	358	0943	12.4	377	1006	12.7	386	18 0357	0.3	10	
1518	2.0	62	1550	2.5	75	1611	2.5	77	W 1027	11.3	345	
2123	11.9	364	O 2147	11.7	357	2202	11.5	352	1628	3.5	106	
5 Sa 0335	1.5	46	20 Su 0402	0.7	21	5 Tu 0421	-0.2	-6	● 2142	11.0	336	
0946	12.3	374	1020	12.4	377	1047	12.7	388	19 0430	0.3	10	
1554	1.9	59	1625	2.8	85	1652	2.8	86	W 1059	11.3	345	
● 2156	12.1	368	2218	11.5	350	2241	11.4	346	Th 1700	3.4	104	
6 Su 0409	1.0	30	21 M 0435	0.7	22	6 W 0501	-0.2	-6	2246	11.0	335	
1023	12.6	383	1055	12.2	371	1130	12.6	383	19 0466	0.5	14	
1630	2.1	63	1658	3.2	99	1734	3.2	98	W 1131	11.3	343	
2229	12.0	367	2248	11.1	339	2321	11.0	335	Th 1732	3.3	102	
7 M 0444	0.7	21	22 Tu 0506	1.0	30	7 Th 0543	0.1	4	O 2314	9.9	302	
1102	12.6	385	1130	11.8	361	1216	12.1	370	20 0502	0.5	14	
1707	2.5	75	1731	3.7	114	1819	3.7	114	W 1171	11.3	343	
2303	11.8	360	2317	10.7	326	2321	11.0	335	Th 1732	3.3	102	
8 Tu 0520	0.6	19	23 W 0536	1.4	42	8 F 0003	10.4	318	20 0534	0.7	22	
1142	12.4	379	1204	11.4	348	0627	0.8	24	W 1202	11.1	339	
1746	3.1	94	1803	4.3	130	1305	11.6	353	Th 1806	3.3	102	
2338	11.4	347	2346	10.2	310	1910	4.2	129	2349	9.7	295	
9 W 0557	0.9	26	24 Th 0607	1.9	59	9 Sa 0052	9.8	298	21 Sa 0607	1.1	35	
1225	12.0	365	1240	10.9	332	0718	1.6	50	W 1234	10.9	333	
1827	3.8	117	1838	4.8	146	1401	11.0	334	Th 1841	3.4	103	
10 Th 0015	10.8	328	25 F 0018	9.5	291	2012	4.6	141	22 0607	1.1	35	
0638	1.4	42	0641	2.6	79	23 M 0153	9.1	276	W 1254	11.8	359	
1313	11.4	347	1321	10.3	315	0819	2.6	80	Th 1901	3.3	100	
1915	4.7	142	1920	5.3	162	1507	10.4	317	22 0607	1.1	35	
11 F 0057	10.0	305	26 Sa 0056	8.9	270	● 2129	4.7	143	W 1254	11.8	359	
0726	2.1	65	0721	3.3	102	25 Tu 0128	8.4	256	Th 1901	3.3	100	
1412	10.7	326	1412	9.7	297	0745	3.2	99	23 M 0252	8.7	266	
2017	5.4	165	2019	5.8	176	1426	9.8	298	W 1430	9.7	295	
12 Sa 0152	9.2	280	27 Su 0149	8.2	249	2050	4.8	145	Th 2100	3.5	107	
0830	3.0	91	0817	4.1	125	26 W 0233	7.9	242	25 0200	8.4	257	
1532	10.2	311	1523	9.4	285	0937	3.4	105	W 0806	3.2	97	
● 2150	5.7	173	O 2202	5.8	178	M 1623	10.1	308	Th 1533	9.9	302	
13 Su 0320	8.6	262	28 M 0319	7.7	235	2255	4.2	129	O 2207	3.4	104	
1002	3.5	108	0946	4.6	141	2314	8.6	261	25 O 0252	8.7	266	
1705	10.2	311	1653	9.3	284	0937	3.4	105	W 1533	9.9	302	
2331	5.2	157	2338	5.3	161	1527	9.4	287	Th 2207	3.4	104	
14 M 0513	8.8	267	29 Tu 0521	8.0	243	1836	10.3	314	25 0200	8.4	257	
1139	3.5	106	1127	4.6	139	0101	2.5	77	W 1533	9.9	302	
1819	10.6	323	1802	9.6	294	0718	10.2	311	O 2100	3.5	107	
15 Tu 0040	4.1	126	30 W 0034	4.4	134	1323	3.5	108	25 0200	8.4	257	
0636	9.6	293	0634	8.9	270	1925	10.5	321	W 1430	9.7	295	
1251	3.0	92	1237	4.1	124	0646	9.4	285	Th 1851	9.3	284	
1914	11.1	339	1853	10.1	308	1245	4.1	125	25 0200	8.4	257	
16 31	0116	3.4	104	2007	10.7	326	1842	9.8	299	W 1948	9.8	298
0724	9.9	301	17 Th 0127	3.5	106	29 0023	3.0	92	Th 2021	0.0	-1	
1328	3.5	106	1328	3.5	106	0718	10.2	311	W 0856	11.5	350	
1934	10.6	323	1934	10.6	323	1411	3.3	102	Th 1500	3.2	97	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Moji, Japan, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm		h m	ft	cm		h m	ft	cm					
1 Tu	0513	0.0	-1	16 W	0555	0.1	3	1 F	0605	0.5	14	16 Sa			
1130	6.4	196		1218	6.5	197		1158	6.5	197		0526	1.2	37	
1731	1.6	48		1822	1.0	32		1828	0.8	24		1111	6.5	198	
2304	6.4	195									1749	0.5	15		
2 W	0548	0.3	9	17 Th	0012	6.1	187	2 Sa	0018	6.0	183	2 Sa	0548	0.7	20
1157	6.3	193		0627	0.9	26		0643	1.1	33		1130	6.7	204	
1808	1.6	49		1240	6.2	188		1228	6.3	191		1808	0.2	5	
2342	6.1	187		1902	1.3	41		1913	1.0	31			1821	1.0	29
3 Th	0625	0.7	22	18 F	0052	5.6	171	3 Su	0107	5.5	169	18 M	0150	4.8	147
1227	6.2	190		0700	1.6	49		0726	1.8	55		0214	6.2	188	
1851	1.7	51		1307	5.9	179		1310	6.0	182		0625	1.3	40	
				1947	1.7	52	O	2010	1.3	39	O	1159	6.4	196	
4 F	0029	5.8	177	19 W	0142	5.1	156	4 M	0215	5.1	155	4 M	0058	5.7	173
0706	1.2	38		0736	2.3	71		0825	2.5	87		0707	2.1	63	
1304	6.1	185		1346	5.5	169		1410	5.6	171		1240	6.0	184	
1943	1.7	53	O	2046	2.0	61		2127	1.4	44		1945	1.0	32	
5 Sa	0129	5.4	166	20 Su	0251	4.7	143	5 Tu	0409	4.8	146	5 Tu	0202	5.1	156
0756	1.8	56		0827	3.0	91		1000	3.0	91		0806	2.8	85	
1354	5.9	179		1450	5.2	159		1543	5.4	165		1340	5.5	168	
O	2048	1.8	54	2207	2.1	65		2304	1.3	40	O	2101	1.5	46	
6 Su	0250	5.2	157	21 M	0432	4.5	138	6 W	0618	5.1	154	6 W	0404	4.8	146
0903	2.4	73		1007	3.4	104		1152	2.9	87		0658	4.9	148	
1501	5.7	175		1624	5.1	156		1724	5.6	170		1250	3.1	93	
2207	1.6	48		2333	1.9	59					1818	5.2	159		
7 M	0435	5.1	155	22 Tu	0617	4.7	144	7 Th	0028	0.8	24	21 Th	0003	2.0	61
1032	2.7	82		1206	3.3	101		0736	5.6	170		0658	4.9	148	
1621	5.8	176		1744	5.3	161		1307	2.3	70		1333	2.5	75	
2329	1.1	34						1843	6.0	183		1911	5.6	172	
8 Tu	0619	5.4	164	23 W	0039	1.5	46	8 F	0132	0.1	4	22 F	0103	1.5	45
1203	2.6	79		0726	5.1	156		0830	6.1	186		0747	5.3	162	
1738	6.0	183		1310	2.9	88		1401	1.6	49		1145	2.9	88	
				1842	5.6	170		1947	6.4	196		1724	5.3	163	
9 W	0040	0.5	14	24 Th	0128	1.0	31	9 Sa	0223	-0.5	-14	24 Sa	0119	0.6	19
0735	5.8	178		0811	5.5	168		0913	6.5	199		0811	6.1	186	
1313	2.2	67		1353	2.5	75		1447	1.0	30		1347	1.3	41	
1845	6.4	194		1928	5.9	180		2041	6.8	207		1947	6.3	193	
10 Th	0140	-0.2	-6	25 F	0208	0.6	17	10 Su	0308	-0.8	-24	25 M	0257	0.0	-1
0835	6.3	192		0847	5.8	177		0952	6.8	207		0923	6.4	194	
1409	1.7	53		1429	2.0	61		1529	0.5	15		1513	0.8	25	
1944	6.7	205		2007	6.2	189	O	2128	7.0	213		2113	6.7	203	
11 F	0232	-0.8	-23	26 Sa	0244	0.1	4	11 M	0347	-0.9	-27	26 Tu	0331	-0.3	-10
0924	6.7	203		0919	6.1	185		1025	6.9	210		0952	6.6	201	
1458	1.3	40		1502	1.6	49		1607	0.2	7		1546	0.4	12	
2039	7.0	213		2045	6.5	197		2209	7.0	214	O	2151	6.8	208	
12 Sa	0319	-1.1	-33	27 Su	0318	-0.2	-6	12 Tu	0424	-0.7	-21	11 M	0249	-0.2	-5
1009	6.9	210		0949	6.3	192		1054	6.9	209		0924	6.7	205	
1543	1.0	30		1534	1.3	39		1643	0.1	4		1509	0.2	5	
O	2129	7.1	217	O	2121	6.6	201		2245	6.9	210		2120	6.9	210
13 Su	0403	-1.1	-35	28 M	0351	-0.4	-13	13 W	0457	-0.3	-9	12 O	0326	-0.2	-7
1048	7.0	212		1018	6.5	197		1117	6.7	205		0953	6.9	209	
1625	0.8	24		1607	1.0	31		1717	0.2	6		1544	-0.1	-3	
2215	7.1	216		2155	6.7	204		2318	6.6	201		2157	6.9	211	
14 M	0443	-1.0	-29	29 Tu	0424	-0.5	-14	14 Th	0527	0.3	8	13 O	0431	0.3	8
1123	6.9	210		1045	6.6	200		1135	6.6	200		1043	6.8	207	
1705	0.7	22		1640	0.8	24		1750	0.5	14		1649	-0.1	-3	
2256	6.9	210		2229	6.7	203		2349	6.2	190		2259	6.7	203	
15 Tu	0520	-0.5	-15	30 W	0457	-0.4	-11	15 F	0555	0.9	27	14 Th	0431	0.3	8
1153	6.7	204		1110	6.6	201		1152	6.3	193		1053	6.7	203	
1743	0.8	25		1714	0.7	21		1823	0.8	25		1720	0.1	4	
2335	6.6	200		2303	6.6	200					2327	6.4	195		
31 Th	0531	0.0	-1								31 F	0419	0.2	7	
	1133	6.6	200								1012	7.1	215		
	1750	0.7	21								1635	-0.6	-18		
	2339	6.3	193								2259	7.0	213		

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Moji, Japan, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0016 h m 6.3 193	16 Tu 0009 6.0 183	1 W 0108 6.2 188	16 Th 0027 6.2 188	1 Sa 0246 6.2 189	16 Su 0123 6.4 196	M 0613 1.7 53	W 0602 2.5 76	W 0658 2.5 76	W 0855 2.7 81	W 0748 2.9 87	W 0748 2.9 87
1142 6.5 199	Tu 1139 6.1 185	1229 6.2 190	1201 6.0 184	1455 5.8 178	1337 6.0 182	1838 0.4 11	1830 1.3 41	1923 1.1 33	1851 1.7 52	2105 2.5 77	2005 2.5 76
1932 1.0 31	1914 1.9 57	2028 1.7 53	1941 2.2 66	2220 2.9 89	2110 2.9 88						
2 Tu 0102 5.8 178	17 W 0046 5.6 172	2 0210 5.8 177	17 F 0109 5.9 180	2 0347 6.1 185	17 M 0216 6.3 193	0700 2.4 73	0639 2.9 88	0803 2.8 86	0715 3.1 94	1010 2.5 77	0854 2.8 85
1226 6.1 185	1217 5.6 172	1342 5.7 175	1254 5.7 173	1617 5.7 174	1456 5.8 178	1932 1.0 31	1914 1.9 57	2028 1.7 53	1941 2.2 66	2220 2.9 89	2110 2.9 88
3 W 0207 5.3 163	18 Th 0136 5.3 161	3 F 0329 5.6 171	18 Sa 0205 5.7 174	3 M 0451 6.1 186	18 Tu 0320 6.3 192	0805 3.0 90	0730 3.3 100	0927 2.9 88	1121 2.2 67	1009 2.5 77	1009 2.5 77
1334 5.5 168	1315 5.2 157	1521 5.5 167	1415 5.4 164	1737 5.8 177	1624 5.9 180	2045 1.6 50	2015 2.4 72	2149 2.2 67	2047 2.5 77	2336 3.1 93	2229 3.1 94
4 Th 0358 5.1 156	19 F 0259 5.1 154	4 Sa 0450 5.7 173	19 Su 0320 5.7 173	4 Tu 0548 6.3 191	19 W 0428 6.5 197	0946 3.1 96	0903 3.5 107	1054 2.6 78	0949 3.1 93	1220 1.8 54	1121 2.0 61
1528 5.2 158	1509 4.9 149	1655 5.5 169	1552 5.4 164	1847 6.0 184	1748 6.2 188	2222 1.9 58	2145 2.6 78	2312 2.3 70	2207 2.7 81	2026 6.5 199	2348 3.0 92
5 F 0542 5.3 162	20 Sa 0438 5.1 156	5 Su 0556 5.9 181	20 M 0432 5.8 178	5 W 0040 3.0 90	20 Th 0531 6.7 205	1127 2.7 82	1101 3.2 97	1202 2.0 60	1107 2.5 77	0636 6.5 197	1225 1.3 41
1719 5.4 164	1653 5.1 155	1813 5.8 178	1107 5.7 173	1309 1.4 42	1902 6.6 200	2351 1.7 51	2315 2.4 73	2324 2.5 77	1942 6.3 192		
6 Sa 0649 5.7 175	21 Su 0548 5.4 166	6 M 0020 2.1 65	21 Tu 0531 6.2 188	6 Th 0130 2.8 85	21 F 0056 2.8 85	1235 2.0 60	1208 2.5 77	0647 6.2 189	1208 1.8 55	0717 6.7 203	0628 7.1 216
1838 5.8 178	1803 5.5 168	1255 1.3 41	1823 6.1 186	1352 1.0 31	1322 0.7 21			1255 1.3 41	1915 6.2 188	2026 6.5 199	2006 7.0 212
7 Su 0055 1.3 40	22 M 0021 2.0 60	7 Tu 0113 1.9 59	22 W 0029 2.2 68	7 F 0212 2.6 80	22 M 0153 2.5 76	0736 6.2 188	0638 5.9 179	0727 6.5 197	0621 6.5 199	0752 6.9 209	0722 7.4 226
1324 1.2 37	1255 1.7 53	1339 0.8 25	1259 1.0 32	1430 0.8 23	1415 0.1 4	1937 6.3 191	1900 6.0 183	2004 6.4 196	1924 6.5 199	2103 6.7 205	2103 7.3 222
8 M 0144 1.0 29	23 Tu 0112 1.5 46	8 W 0157 1.8 55	23 Th 0123 1.9 59	8 Sa 0249 2.5 76	23 M 0244 2.2 67	0814 6.5 198	0719 6.3 192	0801 6.7 203	0706 6.9 210	0825 7.0 213	0815 7.6 233
1406 0.6 18	1336 1.0 29	1418 0.5 14	1347 0.3 10	1506 0.6 19	23 Su 0244 2.2 67	2024 6.6 201	1952 6.5 198	2045 6.6 202	2020 6.9 211	2137 6.8 208	1505 0.2 7
1444 0.1 4	1416 0.2 7	1453 0.2 7	1433 0.2 7	1540 0.6 17	23 Tu 0244 2.2 67	2105 6.8 206	2040 6.9 209	2121 6.7 205	2113 7.2 220	2209 6.9 210	2154 7.5 229
9 Tu 0225 0.8 23	24 W 0156 1.1 34	9 Th 0235 1.7 53	24 F 0213 1.7 52	9 Sa 0324 2.4 74	24 M 0332 2.0 61	0846 6.7 204	0756 6.7 204	0829 6.8 207	0751 7.2 220	0857 7.1 216	0908 7.8 238
1444 0.1 4	1416 0.2 7	1453 0.2 7	1433 0.2 7	1540 0.6 17	24 Su 0332 2.0 61	2105 6.8 206	2040 6.9 209	2121 6.7 205	2113 7.2 220	2209 6.9 210	2241 7.6 232
10 W 0301 0.7 22	25 Th 0238 0.9 26	10 F 0310 1.7 53	25 Sa 0259 1.6 48	10 M 0356 2.4 73	25 Tu 0418 1.9 57	0913 6.8 207	0832 7.0 214	0855 6.9 210	0835 7.4 227	0930 7.1 217	1000 7.8 239
1519 -0.1 -3	1456 -0.3 -10	1527 0.1 4	1518 -0.6 -17	1613 0.6 18	25 M 0418 1.9 57	● 2140 6.8 208	2126 7.1 217	2153 6.8 206	2202 7.3 224	2239 6.9 210	2324 7.6 231
2140 6.8 208											
11 Th 0334 0.8 25	26 F 0319 0.8 24	11 Sa 0342 1.8 56	26 Su 0344 1.6 48	11 Tu 0428 2.4 73	26 M 0503 1.8 56	0936 6.9 209	0907 7.2 220	0921 6.9 211	0920 7.5 230	1002 7.1 216	1050 7.7 235
1552 -0.2 -6	1536 -0.7 -21	1559 0.2 5	1604 -0.7 -21	1646 0.7 22	26 Tu 0503 1.8 56	2212 6.8 207	2211 7.3 221	2223 6.8 206	2248 7.3 224	2308 6.9 209	1722 0.1 3
2212 6.8 207											
12 F 0405 1.0 32	27 Sa 0400 0.9 28	12 Su 0413 2.0 60	27 M 0429 1.7 51	12 W 0501 2.5 75	27 M 0004 7.4 227	0955 6.8 208	0942 7.3 223	0949 6.9 211	1005 7.5 229	1035 7.0 213	0547 1.9 58
1623 -0.1 -3	1617 -0.8 -24	1631 0.3 9	1649 -0.5 -16	1719 0.9 228	27 Th 0501 2.5 75	2254 6.7 218	2252 6.7 204	2334 7.2 220	2337 6.8 207	1139 7.4 227	1139 7.4 227
2240 6.7 204											
13 Sa 0434 1.3 41	28 Su 0441 1.2 37	13 M 0444 2.1 65	28 Tu 0514 1.8 56	13 Th 0535 2.6 78	28 M 0041 7.2 220	1016 6.8 207	1017 7.3 221	1018 6.8 208	1052 7.3 224	1110 6.8 207	0632 2.1 63
1652 0.1 3	1659 -0.6 -19	1702 0.5 16	1734 -0.1 -4	1753 1.2 37	28 F 0041 7.2 220	2308 6.5 199	2336 7.0 212	2322 6.6 200	1734 -0.1 -4	1753 1.2 37	1227 7.1 215
2308 6.5 199											
14 Su 0502 1.7 52	29 M 0523 1.6 49	14 Tu 0515 2.3 71	29 W 0018 7.0 213	14 F 0008 6.7 204	29 M 0116 7.0 212	1040 6.6 202	1055 7.1 215	1049 6.7 203	0601 2.1 64	0612 2.7 81	0720 2.3 70
1723 0.4 13	1743 -0.2 -7	1735 0.9 26	1140 7.0 214	1148 6.6 200	29 F 0116 7.0 212	2337 6.3 192	2254 7.2 218	2353 6.4 194	1820 0.5 14	1831 1.6 49	1318 6.6 201
2337 6.3 192											
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 W 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204	1811 1.3 39	1234 6.6 201	1809 1.2 36	30 F 0154 6.7 204	1830 0.4 12	1830 0.4 12	1909 1.2 36	1909 1.2 36	1913 2.0 62	1417 6.2 188
15 M 0531 2.1 63	30 Tu 0020 6.6 201	15 W 0549 2.6 79	30 Th 0103 6.7 204	15 F 0008 6.6 200	30 M 0154 6.7 204	1108 6.4 195	0607 2.0 62	1122 6.4 194	0650 2.3 71	0655 2.8 85	0815 2.5 77
1754 0.9 26	1137 6.7 204										

Moji, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0240	6.5	197	16 Tu 0125	6.9	210	1 Th 0356	6.2	189	1 Su 0259	6.6	202
0919	2.7	81	0812	2.6	78	1103	3.0	92	0601	6.4	196
1529	5.8	178	1413	6.2	190	1747	5.9	179	1243	2.8	84
2119	3.5	108	● 2026	3.2	98	2340	4.4	135	1922	6.5	199
2 Tu 0341	6.3	192	17 W 0222	6.7	205	2 0520	6.3	193	2 M 0117	3.6	110
1033	2.6	80	0922	2.5	77	1215	2.7	83	0653	6.8	208
1654	5.8	176	1542	6.1	185	1902	6.2	190	1327	2.3	69
2244	3.9	118	2144	3.6	111				1958	6.9	210
3 W 0450	6.3	192	18 Th 0336	6.7	203	3 Sa 0052	4.0	123	3 Tu 0151	3.1	93
1143	2.4	73	1043	2.3	70	0622	6.6	201	0735	7.2	219
1817	5.9	181	1726	6.2	189	1309	2.3	70	1404	1.8	55
			2318	3.7	113	1951	6.6	201	2029	7.2	220
4 Th 0007	3.8	116	19 F 0456	6.8	208	4 Su 0138	3.6	110	4 W 0223	2.5	77
0553	6.4	196	1200	1.8	54	0710	6.9	211	0814	7.5	229
1241	2.1	63	1853	6.6	200	1352	1.9	46	1438	1.4	43
1921	6.2	190				2028	6.9	210	2059	7.5	228
5 F 0108	3.6	109	20 Sa 0038	3.4	104	5 M 0215	3.2	97	5 Th 0255	2.1	63
0644	6.7	203	0607	7.2	218	0751	7.2	220	0852	7.7	235
1329	1.7	52	1307	1.2	36	1429	1.5	46	1511	1.2	36
2009	6.5	199	2000	7.0	214	2101	7.2	218	● 2127	7.7	234
6 Sa 0154	3.3	100	21 Su 0140	3.0	90	6 Tu 0248	2.8	85	6 W 0327	1.7	51
0727	6.9	211	0709	7.5	229	0829	7.4	227	0901	8.2	250
1411	1.4	42	1404	0.6	18	1503	1.2	37	1524	0.4	12
2047	6.8	207	2056	7.4	227	2131	7.3	224	○ 2200	8.0	245
7 Su 0233	3.0	91	22 M 0233	2.5	75	7 Th 0320	2.5	75	21 0304	1.7	52
0805	7.1	217	0808	7.8	239	0905	7.6	232	W 0901	8.2	250
1448	1.1	34	1455	0.2	5	1536	1.0	31	1524	0.4	12
2122	7.0	212	2143	7.7	236	● 2200	7.5	228	2153	7.8	238
8 M 0307	2.8	84	23 Tu 0320	2.0	62	8 Th 0351	2.2	67	21 0327	1.7	51
0841	7.3	222	0904	8.1	246	0941	7.7	234	W 0909	7.8	239
1523	0.9	28	1541	0.0	-1	1608	1.0	30	1544	1.1	33
● 2153	7.1	216	○ 2226	7.9	241	2227	7.6	231	2216	7.9	240
9 Tu 0339	2.6	79	24 W 0404	1.7	52	9 F 0423	2.0	61	22 0344	1.3	41
0916	7.4	225	0956	8.1	248	1015	7.7	234	Th 0948	8.3	252
1556	0.9	26	1624	0.1	2	1640	1.1	33	1603	0.5	16
2223	7.2	219	2304	7.9	241	2251	7.6	233	2233	8.1	246
10 W 0412	2.5	75	25 Th 0446	1.6	48	10 Sa 0456	1.9	57	23 0423	1.2	36
0951	7.4	226	1044	8.0	245	1049	7.6	231	W 1030	8.1	248
1628	0.9	26	1703	0.4	13	1712	1.3	41	1639	0.9	27
2251	7.3	221	2337	7.8	238	2314	7.6	233	2300	8.0	243
11 Th 0444	2.4	72	26 F 0526	1.6	48	11 Su 0530	1.9	57	24 0500	1.2	37
1025	7.3	224	1127	7.8	237	1123	7.4	226	W 1107	7.9	240
1701	1.0	30	1740	1.0	31	1746	1.7	53	1712	1.4	44
2318	7.3	221				2337	7.6	231	2322	7.8	237
12 F 0517	2.3	71	27 Sa 0006	7.6	232	12 M 0607	1.9	59	25 0536	1.4	44
1059	7.3	221	0606	1.8	54	1200	7.2	219	W 1142	7.5	228
1734	1.2	38	1207	7.4	225	1822	2.3	70	1743	2.1	64
2344	7.2	220	1816	1.7	53				2341	7.5	230
13 Sa 0553	2.4	72	28 Su 0031	7.3	224	13 Tu 0005	7.4	227	11 W 0611	1.4	42
1135	7.1	215	0647	2.1	63	0649	2.1	64	12 Tu 0545	1.4	42
1809	1.6	49	1248	6.9	210	1245	6.8	208	W 1151	7.3	222
			1850	2.5	77	1902	2.9	89	1801	2.5	77
14 Su 0011	7.2	218	29 M 0057	7.1	215	● 1924	4.1	126	2332	7.6	231
0632	2.4	73	0731	2.4	74	14 W 0043	7.2	220	11 W 0649	1.8	59
1216	6.8	208	1335	6.4	195	0739	2.4	72	1233	6.4	194
1847	2.1	64	1928	3.3	100	1344	6.4	195	1937	3.8	116
15 M 0043	7.0	214	● 2017	4.0	121	● 1954	3.6	109	● 1949	4.5	136
0717	2.5	76	30 Tu 0132	6.7	205	15 W 0137	6.9	210	27 0032	6.3	193
1307	6.5	199	0825	2.8	86	0847	2.6	79	W 0740	3.1	93
1931	2.7	81	1437	6.0	182	1517	6.1	185	1412	5.8	177
			● 2017	4.0	121	2114	4.1	125	● 1949	4.5	136
31 W 0228	6.4	195							2213	4.6	140
0938	3.1	94							2213	4.6	140
1606	5.8	176							2213	4.6	140
2143	4.5	136							2213	4.6	140

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Moji, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0043	3.4	104	16 W 0055	2.0	61	1 F 0117	1.6	48	16 Sa 0157	0.5	16
0627	6.5	198	0703	7.1	215	0731	6.8	208	0827	6.8	208
1251	2.5	76	1314	1.8	54	1334	1.9	55	1416	2.0	60
1914	6.7	205	1941	7.3	222	1931	7.2	218	2008	7.1	216
2 W 0119	2.7	83	17 Th 0140	1.3	39	2 Sa 0155	0.9	26	17 Su 0235	0.2	7
0713	6.9	211	0755	7.4	225	0816	7.2	218	0906	6.9	211
1331	2.0	62	1359	1.5	46	1415	1.6	48	1453	1.9	59
1946	7.1	217	2016	7.5	228	2004	7.4	226	2036	7.2	218
3 Th 0152	2.1	63	18 F 0220	0.8	23	3 Su 0233	0.3	9	18 M 0311	0.1	4
0755	7.3	222	0839	7.5	230	0900	7.4	226	0940	7.0	212
1408	1.6	49	1438	1.4	44	1455	1.5	45	1528	2.0	61
2017	7.4	226	2046	7.6	232	● 2037	7.6	232	○ 2103	7.2	218
4 F 0226	1.5	45	19 Sa 0257	0.5	14	4 M 0312	-0.1	-4	19 Tu 0345	0.1	4
0835	7.6	231	0919	7.6	231	0944	7.5	229	1011	6.9	210
1443	1.3	41	1514	1.5	47	1535	1.5	46	1600	2.1	64
2046	7.7	234	○ 2112	7.6	232	2111	7.7	235	2130	7.1	217
5 Sa 0300	1.0	29	20 Su 0333	0.4	11	5 Tu 0353	-0.3	-9	20 W 0417	0.3	8
0915	7.7	236	0954	7.5	229	1027	7.4	227	1040	6.8	207
1519	1.3	39	1548	1.8	54	1616	1.7	51	1631	2.2	68
● 2115	7.8	239	2133	7.6	231	2146	7.7	234	2200	7.0	213
6 Su 0335	0.6	19	21 M 0406	0.4	13	6 W 0434	-0.3	-8	21 Th 0449	0.5	15
0954	7.8	238	1026	7.3	224	1109	7.3	222	1109	6.7	203
1554	1.4	42	1619	2.1	63	1657	2.0	60	1703	2.4	74
2141	7.9	241	2155	7.5	228	2223	7.5	229	2231	6.8	207
7 M 0411	0.4	13	22 Tu 0438	0.7	20	7 Th 0517	0.0	1	22 F 0522	0.8	25
1032	7.7	235	1056	7.1	217	1153	7.0	212	1139	6.5	197
1631	1.6	50	1649	2.4	74	1741	2.4	72	1736	2.6	80
2208	7.9	240	2220	7.3	222	2306	7.2	219	2306	6.5	198
8 Tu 0448	0.5	14	23 W 0510	1.0	30	8 F 0603	0.5	16	23 Sa 0556	1.2	37
1110	7.5	228	1125	6.9	210	1240	6.6	201	1212	6.3	191
1708	2.1	63	1719	2.8	85	1831	2.7	83	1813	2.9	87
2237	7.7	235	2249	7.0	214	2356	6.7	205	2344	6.1	186
9 W 0528	0.7	22	24 Th 0542	1.4	44	9 Sa 0654	1.1	35	24 Su 0634	1.6	50
1150	7.2	218	1157	6.6	201	1337	6.2	190	1251	6.0	183
1748	2.6	79	1751	3.2	97	1931	3.1	93	1858	3.1	94
2312	7.4	227	2323	6.7	203						
10 Th 0612	1.1	35	25 F 0618	1.9	59	10 Su 0104	6.2	189	25 M 0033	5.7	173
1234	6.7	205	1235	6.2	190	0754	1.8	55	0719	2.1	65
1834	3.2	97	1829	3.5	108	1451	6.0	183	1343	5.8	176
2356	7.0	213				○ 2048	3.1	96	1959	3.2	98
11 F 0703	1.7	53	26 Sa 0003	6.2	189	11 M 0239	5.8	178	26 Tu 0147	5.3	161
1335	6.3	191	0701	2.5	75	0909	2.3	70	0818	2.5	77
1934	3.7	112	1326	5.9	179	1613	6.0	183	1453	5.6	172
			1921	3.9	119	2215	2.9	87	○ 2123	3.1	95
12 Sa 0059	6.5	197	27 Su 0104	5.7	174	12 Tu 0419	5.8	177	10 O 0214	5.6	171
0811	2.3	70	0800	2.9	89	1032	2.5	76	0828	2.0	61
1516	6.0	182	1449	5.6	172	1722	6.2	189	1510	5.8	178
● 2104	3.9	119	○ 2053	4.1	124	2330	2.3	69	○ 2132	2.2	67
13 Su 0246	6.1	185	28 M 0259	5.4	165	13 W 0542	6.0	184	12 F 0328	5.2	157
0940	2.6	79	0926	3.2	97	1147	2.4	74	0934	2.8	85
1700	6.1	187	1624	5.7	174	1816	6.5	198	1608	5.7	175
2247	3.5	108	2247	3.7	114				2245	2.7	81
14 M 0440	6.2	189	29 Tu 0442	5.6	170	14 Th 0028	1.6	48	29 F 0606	5.7	175
1111	2.5	75	1055	3.1	93	0648	6.4	194	1204	2.5	76
1810	6.5	199	1730	6.0	184	1246	2.2	68	1801	6.3	193
			2352	3.1	94	1900	6.8	206			
15 Tu 0001	2.8	86	30 W 0550	6.0	182	15 F 0115	1.0	30	15 Sa 0039	1.2	37
0601	6.6	202	1201	2.7	81	0742	6.6	202	0706	6.2	189
1221	2.1	64	1817	6.4	195	1334	2.1	63	1300	2.2	66
1901	6.9	211				1937	7.0	212	1845	6.7	204
			31 Th 0038	2.3	71						
			0643	6.4	195						
			1251	2.2	68						
			1856	6.8	207						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sasebo, Japan, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu	0425	0.3	10	16 W	0511	0.6	17	1 F	0518	1.0	31	
1049	8.5	259		1134	8.5	258		1125	8.4	255		
1650	2.6	78		1744	1.9	57		1744	1.5	45		
2231	7.9	242		2333	7.6	233		2345	7.5	230		
2 W	0500	0.7	22	17 Th	0545	1.5	46	2 Sa	0557	1.8	55	
1121	8.3	253		1204	7.9	242		1201	8.0	243		
1727	2.6	78		1825	2.2	66		1830	1.6	50		
2311	7.6	232										
3 Th	0538	1.2	38	18 F	0017	6.9	210	3 Su	0040	7.0	212	
1157	8.0	245		0620	2.5	75		0643	2.7	82		
1810	2.6	79		1235	7.4	225		1245	7.5	228		
2359	7.2	218		1911	2.5	76	○	1928	1.9	57		
4 F	0621	1.9	58	19 Sa	0112	6.2	188	4 M	0200	6.4	194	
1239	7.7	235		0658	3.3	102		0744	3.6	109		
1903	2.6	79		1315	6.9	209		1346	7.0	213		
	○	2011	2.8	84		2046	2.0	61		2156	2.9	88
5 Sa	0102	6.7	203	20 Su	0235	5.6	172	5 Tu	0358	6.2	190	
0713	2.7	81		0752	4.1	126		0921	4.2	127		
1331	7.4	226		1415	6.4	196		1517	6.7	205		
○ 2008	2.5	76		2132	2.8	85		2223	1.7	53		
6 Su	0230	6.4	194	21 M	0437	5.6	171	6 W	0541	6.8	206	
0822	3.3	102		0935	4.6	140		1116	4.1	124		
1437	7.2	219		1548	6.3	191		1653	7.0	212		
2127	2.2	67		2257	2.5	76		2345	1.1	33		
7 M	0415	6.5	199	22 Tu	0606	6.1	185	7 Th	0648	7.5	229	
0951	3.7	114		1133	4.5	137		1231	3.4	105		
1554	7.2	220		1709	6.5	197		1805	7.5	230		
2246	1.6	48		2359	2.0	60						
8 Tu	0543	7.1	216	23 W	0656	6.7	203	8 F	0046	0.3	9	
1121	3.7	113		1237	4.1	124		0736	8.3	252		
1707	7.5	229		1807	6.9	209		1325	2.7	82		
2354	0.8	24				1902	8.2	251				
9 W	0649	7.8	239	24 Th	0045	1.4	42	9 Sa	0136	-0.3	-10	
1233	3.3	102		0732	7.2	219		0817	8.9	270		
1810	8.0	244		1319	3.6	110		1409	2.0	60		
		1851	7.3	223				1951	8.8	268		
10 Th	0052	0.0	-1	25 F	0124	0.9	26	10 Su	0221	-0.7	-21	
0743	8.6	261		0803	7.7	234		0854	9.2	281		
1330	2.9	87		1353	3.1	96		1449	1.4	42		
1905	8.5	260		1929	7.7	236	○	2035	9.2	279		
11 F	0143	-0.7	-22	26 Sa	0159	0.4	12	11 M	0301	-0.8	-23	
0830	9.1	278		0832	8.1	247		0928	9.4	285		
1419	2.3	71		1425	2.7	83		1526	1.0	31		
1956	9.0	273		2004	8.1	247		2117	9.2	280		
12 Sa	0231	-1.1	-34	27 Su	0232	0.1	2	12 Tu	0338	-0.5	-14	
0913	9.4	288		0900	8.4	257		0958	9.3	282		
1504	1.9	59		1455	2.3	71		1602	0.9	26		
○ 2043	9.2	280		○ 2038	8.4	256		2155	9.0	273		
13 Su	0315	-1.1	-35	28 M	0304	-0.1	-4	13 W	0412	0.1	3	
0953	9.5	290		0927	8.7	264		1026	9.0	273		
1547	1.7	51		1525	2.0	60		1635	0.9	27		
2128	9.2	279		2111	8.6	261		2232	8.5	260		
14 M	0356	-0.9	-27	29 Tu	0336	-0.2	-5	14 Th	0443	0.8	25	
1030	9.4	285		0955	8.8	268		1051	8.6	261		
1627	1.6	48		1556	1.7	51		1708	1.1	34		
2210	8.9	270		2145	8.6	261		2307	7.9	241		
15 Tu	0435	-0.3	-8	30 W	0409	0.0	0	15 F	0513	1.7	51	
1103	9.0	273		1023	8.8	268		1116	8.1	247		
1706	1.7	51		1629	1.5	45		1742	1.5	45		
2251	8.3	254		2221	8.4	256		2344	7.2	220		
	31 Th	0443	0.4	12								
		1053	8.7	264								
		1704	1.4	43								
		2300	8.1	246								

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sasebo, Japan, 2013

Times and Heights of High and Low Waters

April					May					June				
Time	Height		Time	Height	Time	Height		Time	Height	Time	Height		Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0532	2.8	85	16 Tu 0526	3.7	114	1 W 0038	8.2	251	16 Th 0001	7.8	238	1 Sa 0219	8.0	243
1112	8.2	251	1105	7.4	227	0626	3.8	115	0554	4.2	127	0829	3.7	114
1752	0.8	23	1748	1.9	59	1159	7.7	235	1129	7.3	223	1426	7.1	216
						1841	1.5	47	1810	2.4	72	2032	3.3	102
2 Tu 0035	7.7	234	17 W 0022	7.1	216	2 Th 0146	7.7	235	17 F 0048	7.4	227	2 Su 0321	7.7	236
0622	3.6	110	0605	4.2	128	0736	4.1	125	0646	4.4	133	0943	3.5	106
1200	7.5	230	1143	6.9	210	1312	7.1	216	1222	6.9	209	1556	7.0	214
1849	1.5	46	1836	2.5	77	1951	2.3	71	1903	2.9	88	2148	3.8	117
3 W 0154	7.1	215	18 Th 0122	6.6	202	3 F 0305	7.4	227	18 Sa 0148	7.3	221	3 M 0420	7.7	236
0733	4.2	129	0704	4.6	141	0904	4.1	124	0757	4.4	135	1049	3.0	92
1309	6.8	208	1241	6.3	193	1451	6.8	206	1343	6.5	198	2011	3.3	101
○ O 2006	2.2	66	1942	3.0	92	2116	2.9	87						
4 Th 0338	6.8	208	19 F 0250	6.4	196	4 Sa 0418	7.5	228	19 Su 0259	7.2	220	4 Tu 0511	7.9	240
0921	4.4	134	0848	4.8	145	1028	3.6	110	0922	4.1	126	1040	2.5	76
1500	6.5	197	1431	6.0	183	1626	6.9	211	1522	6.6	200	1717	7.8	238
2148	2.4	74	2114	3.2	99	2237	3.0	91	2130	3.5	106	2304	4.0	123
5 F 0504	7.2	218	20 Sa 0419	6.7	203	5 Su 0515	7.7	235	20 M 0404	7.5	228	5 W 0001	4.0	123
1102	3.9	118	1037	4.3	131	1129	2.9	88	1032	3.5	106	0556	8.1	246
1645	6.8	207	1621	6.3	191	1738	7.4	226	1644	7.1	215	1227	2.0	61
2314	2.2	67	2239	3.1	94	2341	2.9	89	2243	3.4	103	1903	8.1	247
6 Sa 0601	7.6	232	21 Su 0516	7.1	217	6 M 0559	8.0	244	21 Tu 0457	7.9	240	6 Th 0050	3.9	120
1202	3.0	92	1134	3.5	108	1216	2.2	67	1126	2.6	80	0635	8.3	253
1755	7.4	227	1729	6.9	211	1832	7.9	241	1746	7.7	236	1306	1.6	48
			2339	2.7	81				2343	3.1	96	1943	8.5	258
7 Su 0014	1.8	56	22 M 0558	7.7	234	7 Tu 0032	2.8	86	22 W 0544	8.4	255	7 F 0132	3.8	116
0643	8.1	247	1215	2.7	82	0636	8.3	253	1212	1.7	52	0712	8.5	259
1247	2.2	66	1819	7.7	234	1256	1.6	48	1839	8.5	260	1342	1.2	38
1848	8.1	246				1917	8.4	255				2019	8.8	267
8 M 0100	1.6	48	23 Tu 0026	2.2	68	8 W 0114	2.8	84	23 Th 0036	2.9	88	8 Sa 0209	3.7	113
0717	8.5	259	0633	8.2	251	0709	8.5	260	0627	8.9	270	0746	8.7	264
1325	1.4	43	1251	1.8	54	1332	1.1	33	1256	0.8	25	1417	1.0	31
1932	8.6	262	1903	8.4	257	1957	8.7	265	1929	9.2	280	2052	8.9	272
9 Tu 0141	1.4	44	24 W 0109	1.9	58	9 Th 0153	2.8	84	24 F 0125	2.7	83	9 Sa 0244	3.6	111
0748	8.8	267	0708	8.8	267	0741	8.7	264	0710	9.3	283	0820	8.8	268
1359	0.9	26	1327	0.9	28	1405	0.8	23	1340	0.1	3	1451	0.9	28
2011	8.9	272	1946	9.1	278	2033	8.9	271	2018	9.7	296	2124	9.0	275
10 W 0217	1.5	45	25 Th 0150	1.7	51	10 F 0228	2.8	86	25 M 0213	2.6	80	10 M 0317	3.6	110
0816	8.9	271	0743	9.2	280	0811	8.7	266	0753	9.5	291	0854	8.8	268
1432	0.5	15	1405	0.2	5	1438	0.6	18	1426	-0.4	-12	1525	1.0	29
● 2048	9.1	276	2029	9.6	292	2107	9.0	273	2107	10.0	305	2156	9.0	274
11 Th 0251	1.7	51	26 F 0232	1.6	50	11 Sa 0302	3.0	90	26 Su 0301	2.7	81	11 Tu 0350	3.6	111
0844	8.9	272	0819	9.4	288	0842	8.7	266	0838	9.7	295	0927	8.7	266
1504	0.4	11	1444	-0.4	-11	1510	0.6	18	1512	-0.6	-18	1558	1.1	34
2122	9.0	275	2114	9.8	299	2139	8.9	271	2156	10.0	305	2228	8.9	271
12 F 0323	2.0	61	27 Sa 0314	1.8	56	12 Su 0334	3.1	96	27 M 0348	2.8	85	12 W 0423	3.7	113
0911	8.8	268	0857	9.5	290	0912	8.6	263	0924	9.6	292	1000	8.5	260
1535	0.4	12	1525	-0.6	-17	1543	0.7	22	1559	-0.4	-13	1632	1.4	42
2155	8.8	269	2200	9.7	297	2212	8.7	266	2245	9.8	299	2301	8.7	266
13 Sa 0353	2.4	73	28 Su 0357	2.2	67	13 M 0406	3.3	102	28 Tu 0436	3.0	92	13 Th 0457	3.8	116
0938	8.6	262	0937	9.4	285	0943	8.4	257	1012	9.3	282	1035	8.3	252
1605	0.6	18	1609	-0.4	-13	1615	1.0	30	1647	0.1	2	1708	1.8	54
2227	8.5	259	2248	9.4	287	2245	8.5	258	2335	9.4	286	2336	8.5	259
14 Su 0423	2.8	86	29 M 0442	2.7	82	14 Tu 0438	3.6	110	29 W 0526	3.3	100	14 F 0536	3.9	119
1005	8.3	253	1019	9.0	273	1015	8.1	248	1102	8.8	267	1114	7.9	241
1637	0.9	28	1655	0.0	1	1650	1.3	41	1736	0.8	24	1746	2.2	68
2301	8.1	246	2340	8.9	270	2321	8.2	249				1851	3.0	90
15 M 0453	3.3	100	30 Tu 0530	3.2	99	15 W 0513	3.9	118	30 Th 0026	8.9	271	15 Sa 0015	8.3	252
1034	7.9	241	1105	8.4	256	1049	7.8	237	0619	3.5	108	0620	4.0	121
1710	1.4	42	1744	0.7	22	1727	1.8	56	1157	8.1	248	1202	7.5	229
2337	7.6	231							1828	1.7	51	1831	2.8	85
									31 F 0120	8.4	255			
									0719	3.7	114			
									1303	7.5	230			
									1925	2.6	78			

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sasebo, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0214	8.0	243	16 0102	8.5	258	1 Th 0326	7.5	228	16 0236	8.0	244
0850	3.5	108	Tu 0735	3.4	104	1031	3.6	110	F 0939	3.1	94
1515	7.0	214	1351	7.4	227	1740	7.3	223	1657	7.9	241
2048	4.6	140	● 1947	4.2	128	2309	5.6	172	2230	5.3	163
2 Tu 0315	7.7	235	17 W 0159	8.2	251	2 0448	7.6	232	17 Sa 0413	8.1	248
1002	3.4	103	0845	3.2	99	1137	3.2	97	1105	2.5	77
1646	7.1	216	1527	7.4	226	1834	7.8	238	1809	8.6	262
2212	5.0	152	2105	4.7	144				2353	4.8	147
3 W 0421	7.7	234	18 Th 0312	8.1	248	3 Sa 0016	5.2	160	18 Su 0530	8.7	265
1108	3.1	93	1003	2.9	87	0548	8.0	243	1211	1.8	54
1758	7.4	227	1700	7.8	239	1226	2.7	82	1901	9.3	284
2332	5.0	152	2236	4.9	148	1912	8.3	253			
4 Th 0519	7.8	239	19 F 0428	8.3	254	4 Su 0100	4.8	146	19 M 0050	4.1	124
1201	2.6	79	1117	2.2	66	0634	8.4	257	0630	9.4	287
1849	7.9	241	1813	8.5	259	1306	2.2	68	1304	1.1	34
			2355	4.6	140	1943	8.8	267	1944	9.9	303
5 F 0030	4.8	145	20 Sa 0536	8.8	268	5 M 0135	4.3	132	20 Tu 0137	3.3	101
0608	8.1	248	1219	1.4	42	0713	8.9	270	0721	10.0	306
1245	2.1	65	1910	9.3	282	1342	1.8	56	1351	0.7	21
1929	8.3	254				2012	9.2	279	2023	10.4	316
6 Sa 0115	4.5	137	21 Su 0057	4.1	125	6 Tu 0207	3.9	120	21 W 0220	2.7	81
0651	8.4	257	0635	9.4	285	0748	9.2	281	0808	10.5	319
1324	1.7	53	1314	0.7	21	1415	1.5	47	1434	0.6	18
2004	8.7	265	2000	9.9	301	2040	9.4	288	● 2059	10.6	322
7 Su 0153	4.2	128	22 M 0150	3.6	109	7 W 0238	3.5	108	21 M 0239	2.5	77
0729	8.7	266	0728	9.9	301	0822	9.5	289	0837	9.9	303
1400	1.4	44	1404	0.2	6	1447	1.4	43	1454	1.7	51
2035	9.0	274	2046	10.3	314	● 2107	9.7	295	2059	10.1	307
8 M 0227	4.0	121	23 Tu 0237	3.1	94	8 Th 0307	3.2	99	22 W 0300	2.2	66
0804	9.0	273	0818	10.2	312	0855	9.6	293	0853	10.6	323
1434	1.2	38	1451	0.0	0	1519	1.4	43	1515	0.8	25
● 2106	9.2	281	○ 2128	10.5	321	2135	9.8	299	2133	10.5	321
9 Tu 0300	3.8	115	24 W 0322	2.7	82	9 F 0338	3.0	91	23 M 0338	1.9	59
0838	9.1	278	0905	10.4	316	0928	9.6	293	0935	10.4	317
1508	1.2	36	1535	0.2	5	1551	1.6	48	1552	1.3	41
2136	9.3	284	2207	10.5	319	2202	9.8	299	2204	10.3	314
10 W 0331	3.6	110	25 Th 0405	2.5	76	10 Sa 0409	2.8	85	24 Su 0415	1.9	59
0912	9.2	279	0952	10.2	310	1003	9.5	289	1016	10.0	304
1540	1.2	38	1617	0.7	21	1623	1.9	58	1628	2.1	64
2205	9.4	285	2244	10.2	311	2231	9.7	297	2233	9.9	301
11 Th 0403	3.5	107	26 F 0446	2.5	76	11 Su 0443	2.7	82	9 M 0417	1.8	55
0945	9.1	276	1037	9.7	297	1040	9.2	281	1027	9.6	294
1613	1.4	44	1656	1.5	45	1658	2.4	74	1636	2.8	84
2235	9.3	284	2318	9.8	298	2302	9.5	290	2229	9.7	297
12 F 0436	3.4	105	27 Sa 0527	2.7	81	12 M 0521	2.7	83	25 W 0451	2.2	66
1020	8.9	271	1122	9.1	277	1123	8.8	268	1056	9.4	285
1647	1.8	54	1734	2.4	74	1735	3.1	95	1701	3.0	91
2305	9.2	280	2351	9.3	282	2337	9.2	280	2301	9.4	286
13 Sa 0511	3.4	104	28 Su 0609	3.0	90	13 Tu 0604	2.9	87	26 W 0528	2.6	78
1057	8.6	262	1209	8.4	255	1215	8.3	252	1137	8.6	262
1722	2.2	68	1811	3.4	105	1818	3.9	119	M 1734	3.9	118
2339	9.0	274				2302	9.5	290	2329	8.8	269
14 Su 0551	3.4	104	29 M 0024	8.7	264	14 W 0018	8.8	267	1204	8.5	260
1141	8.2	250	0656	3.3	101	0658	3.1	93	1819	5.4	164
1801	2.9	87	1306	7.6	232	1326	7.7	236	2358	7.5	230
			1852	4.4	133	● 1915	4.7	143	● 2037	5.6	170
15 M 0016	8.7	266	30 Tu 0104	8.1	248	15 W 0114	8.3	253	13 M 0412	7.9	241
0637	3.4	105	0752	3.6	111	0809	3.2	98	0925	3.2	98
1236	7.8	237	1424	7.1	216	1511	7.5	230	1651	8.0	244
1848	3.5	107	● 1946	5.2	158	2039	5.3	162	2235	5.3	161
			31 W 0201	7.7	234				2347	4.5	137
			0907	3.8	115						
			1611	7.0	212						
			2117	5.7	173						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sasebo, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0008	4.4	135	16 W 0016	2.9	88	1 F 0033	2.3	70	1 Sa 0111	1.1	33
0552	7.9	242	0619	8.9	271	0647	8.7	265	0740	8.9	272
1208	3.1	93	1231	2.3	71	1248	2.7	82	1334	3.0	90
1831	8.6	261	1847	9.3	284	1845	9.1	277	1921	8.9	271
2 W 0040	3.7	112	17 Th 0056	2.1	63	2 Sa 0107	1.5	45	17 Su 0147	0.7	21
0633	8.6	261	0705	9.4	288	0727	9.3	283	0818	9.1	278
1246	2.6	79	1313	2.2	67	1328	2.5	75	1412	3.0	91
1859	9.1	276	1919	9.6	293	1918	9.5	289	1953	9.0	273
3 Th 0109	3.0	90	18 F 0133	1.4	43	3 Su 0142	0.8	23	18 M 0221	0.5	15
0710	9.2	279	0747	9.8	299	0807	9.8	298	0853	9.2	280
1321	2.3	69	1353	2.2	68	1407	2.4	72	1447	3.1	94
1927	9.5	289	1950	9.7	297	● 1953	9.7	297	○ 2025	8.9	272
4 F 0139	2.3	69	19 W 0209	1.0	30	4 M 0219	0.2	6	19 Tu 0255	0.5	15
0745	9.6	294	0826	9.9	302	0848	10.0	305	0926	9.1	278
1355	2.0	62	1429	2.4	74	1448	2.4	74	1520	3.2	99
1955	9.8	300	○ 2020	9.7	296	2030	9.8	300	2056	8.8	268
5 Sa 0209	1.6	49	20 Su 0243	0.8	25	5 Tu 0259	-0.1	-3	20 W 0328	0.6	18
0821	10.0	306	0903	9.8	300	0932	10.0	306	0959	8.9	272
1429	2.0	61	1504	2.8	84	1530	2.7	82	1553	3.4	104
● 2024	10.1	307	2049	9.5	291	2108	9.7	296	2128	8.6	261
6 Su 0242	1.1	34	21 M 0316	0.9	26	6 W 0341	-0.1	-3	21 Th 0401	0.9	26
0858	10.2	311	0939	9.6	292	1019	9.8	298	1032	8.7	264
1505	2.2	66	1537	3.1	96	1614	3.1	93	1626	3.6	111
2055	10.1	309	2118	9.3	283	2150	9.4	286	2200	8.2	251
7 M 0317	0.9	26	22 Tu 0348	1.1	33	7 Th 0426	0.2	7	22 F 0435	1.2	38
0937	10.1	309	1013	9.2	281	1109	9.3	284	1106	8.3	253
1542	2.5	77	1609	3.6	110	1701	3.5	107	1701	3.9	118
2128	10.0	304	2147	8.9	272	2235	8.9	270	2234	7.8	239
8 Tu 0355	0.8	25	23 W 0421	1.5	45	8 F 0515	0.8	25	23 Sa 0511	1.7	53
1020	9.8	299	1048	8.8	267	1204	8.7	266	1143	7.9	241
1621	3.1	93	1641	4.1	124	1755	4.0	121	1740	4.1	125
2204	9.6	294	2217	8.5	259	2327	8.2	250	2312	7.3	223
9 W 0436	1.1	33	24 Th 0456	2.0	60	9 Sa 0609	1.6	49	24 M 0551	2.3	70
1108	9.3	283	1126	8.2	251	1309	8.2	250	1227	7.5	230
1704	3.7	114	1716	4.5	137	1901	4.3	131	1829	4.3	131
2243	9.1	278	2250	8.0	243						
10 Th 0523	1.6	48	25 F 0535	2.5	77	10 Su 0035	7.5	230	25 M 0002	6.8	207
1204	8.6	263	1211	7.7	235	0715	2.4	72	0639	2.9	87
1754	4.4	135	1758	4.9	150	1425	7.8	239	1322	7.3	221
2330	8.5	258	2330	7.4	225	○ 2025	4.3	131	1936	4.4	133
11 F 0618	2.2	68	26 Sa 0623	3.1	95	11 M 0210	7.1	216	26 Tu 0116	6.3	193
1319	8.0	245	1312	7.3	222	0835	3.0	91	0742	3.3	102
1902	5.0	153	Sa 1901	5.2	159	M 1541	7.8	238	Tu 1430	7.1	217
						2152	3.8	117	○ 2100	4.1	125
12 Sa 0035	7.8	237	27 Su 0032	6.8	208	12 Tu 0351	7.2	218	27 M 0259	6.2	190
0731	2.9	87	0729	3.6	111	1000	3.2	98	0901	3.6	111
1458	7.8	237	1437	7.1	215	1643	8.0	243	1538	7.2	220
● 2042	5.2	158	○ 2047	5.2	160	2259	3.1	95	2214	3.5	108
13 Su 0220	7.3	224	28 M 0225	6.5	198	13 W 0510	7.6	231	27 Th 0259	6.7	205
0907	3.1	96	0858	3.9	119	1111	3.2	98	0901	3.6	111
1626	8.0	244	1602	7.3	221	1731	8.2	251	1645	7.4	225
2224	4.7	142	2227	4.8	145	2350	2.3	71	2309	2.7	83
14 M 0408	7.6	231	29 Tu 0412	6.7	205	14 Th 0609	8.1	247	27 F 0533	7.3	221
1036	3.0	91	1022	3.7	114	1207	3.1	94	1122	3.4	105
1726	8.5	258	1659	7.6	233	1812	8.5	260	1723	8.0	243
2329	3.8	116	2321	4.0	122				2355	1.8	56
15 Tu 0523	8.2	251	30 W 0518	7.3	223	15 F 0033	1.6	50	30 Sa 0625	8.0	243
1141	2.7	81	1121	3.4	104	0658	8.6	261	1216	3.1	96
1810	8.9	272	1739	8.1	247	1253	3.0	92	1806	8.4	257
			2359	3.2	97	1847	8.7	266			
31 Th 0606	8.0	244	31 Th 1207	3.0	92						
			1813	8.6	262						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Naha, Nansei Shoto, Japan, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 0313	0.2	6	16 W 0358	0.4	12	1 F 0400	0.8	23	16 F 0423	1.8	54	
0938	5.8	176	W 1023	5.9	181	F 1014	5.9	181	Sa 1040	5.5	167	
1523	2.1	65	1624	1.6	49	1627	1.3	39	Sa 1712	1.5	45	
2114	5.8	178	2215	5.5	168	2231	5.3	163	2315	4.5	137	
2 W 0347	0.5	14	17 Th 0432	1.0	32	2 Sa 0437	1.3	39	2 Sa 0338	1.0	32	
1011	5.7	174	Th 1058	5.7	173	Sa 1052	5.8	176	17 Su 1115	5.2	157	
1603	2.1	64	1711	1.7	53	1717	1.3	41	Su 1806	1.8	54	
2155	5.5	169	2301	4.9	150	2326	4.9	148	2224	5.5	167	
3 Th 0423	0.8	25	18 F 0506	1.7	51	3 Su 0521	1.9	57	18 M 0016	4.0	123	
1049	5.6	172	F 1136	5.4	164	Su 1137	5.5	169	M 0533	2.8	86	
1650	2.1	64	1805	1.9	58	1822	1.4	44	1203	4.8	146	
2243	5.2	158	2357	4.4	133	○	1922	2.0	60	○ 1922	2.0	60
4 F 0505	1.3	39	19 M 0545	2.3	70	4 M 0044	4.4	135	19 Tu 0204	3.8	115	
1131	5.5	168	Sa 1221	5.1	156	M 0619	2.5	75	Tu 0648	3.2	99	
1748	2.0	62	Sa 1913	2.0	62	1236	5.3	162	1324	4.5	138	
2345	4.8	146	○	1947	1.4	43	2057	1.9	59	2057	1.9	59
5 Sa 0554	1.8	54	20 Su 0118	3.9	120	5 Tu 0234	4.3	130	20 W 0413	4.0	121	
1222	5.4	166	Su 0639	2.8	85	Tu 0748	2.9	88	W 0910	3.3	102	
1900	1.9	59	1322	4.9	149	1357	5.2	159	1507	4.6	139	
○	2036	2.0	60	2121	1.1	34	2217	1.6	49	○ 1924	1.3	41
6 Su 0109	4.5	136	21 M 0314	3.9	118	6 W 0418	4.6	139	5 Tu 0037	4.5	137	
0659	2.3	69	0810	3.1	96	W 0931	3.0	94	W 0600	2.8	84	
1323	5.4	164	1438	4.8	147	1525	5.4	164	Tu 1204	5.2	159	
2023	1.6	49	2154	1.7	51	2238	0.6	19	○ 1944	2.0	61	
7 M 0252	4.5	136	22 Tu 0449	4.2	127	7 Th 0526	5.1	154	6 W 0229	4.3	132	
0821	2.6	80	Tu 0952	3.2	97	F 1051	2.7	81	W 0741	3.1	95	
1434	5.5	167	1550	5.0	151	1639	5.7	175	1337	5.0	151	
2141	1.1	33	2254	1.3	39	2337	0.1	3	2310	1.2	37	
8 Tu 0422	4.8	146	23 W 0542	4.5	138	8 F 0615	5.5	169	7 Th 0409	4.6	141	
0944	2.7	82	1100	3.0	91	W 1149	2.2	67	W 0933	3.0	90	
1543	5.7	175	1647	5.2	159	1738	6.2	188	Th 1621	4.9	148	
2248	0.5	14	2338	0.9	27	1753	5.6	171	1519	5.1	155	
9 W 0530	5.2	160	24 Th 0619	4.9	150	9 Sa 0025	-0.3	-10	2225	0.9	27	
1055	2.6	78	Th 1146	2.7	83	Sa 0656	5.9	181	2105	1.2	38	
1645	6.1	186	1731	5.5	168	1236	1.7	52	2118	1.9	58	
2344	-0.1	-4	1829	6.5	199	1829	6.5	199	2118	1.9	58	
10 Th 0624	5.7	174	25 F 0016	0.5	15	10 Su 0108	-0.5	-16	22 W 0552	4.8	146	
1153	2.3	70	0650	5.2	159	Su 0733	6.2	190	Th 1128	2.7	82	
1741	6.5	197	1222	2.5	75	Tu 1319	1.3	40	1712	5.2	159	
1810	5.8	177	1810	5.8	177	○ 1914	6.7	204	2350	0.8	24	
11 F 0034	-0.6	-19	26 Sa 0049	0.2	6	11 M 0147	-0.5	-15	8 F 0510	5.1	156	
0711	6.1	185	0718	5.5	167	W 0808	6.4	194	W 1048	2.5	75	
1244	2.0	62	Sa 1255	2.2	67	W 1236	1.9	57	1637	5.5	167	
1832	6.7	205	1845	6.0	184	1830	6.0	182	2323	0.5	16	
12 Sa 0120	-0.9	-26	27 Su 0223	0.0	0	26 M 0108	0.2	6	8 Th 0128	0.1	3	
0753	6.3	191	0745	5.7	173	W 0733	6.2	190	W 0741	6.1	185	
1330	1.8	54	1326	1.9	59	M 1359	1.0	32	Tu 1339	1.1	33	
● 1920	6.9	209	○ 1919	6.2	189	1956	6.7	203	○ 1942	6.4	195	
13 Su 0203	-0.9	-26	28 W 0152	-0.1	-3	11 M 0147	-0.5	-15	9 M 0049	0.1	4	
0833	6.3	193	0813	5.9	179	W 0808	6.4	194	W 0704	6.2	190	
1415	1.6	49	1358	1.7	52	W 1437	0.9	27	1303	0.9	27	
2006	6.8	207	1954	6.3	191	2036	6.4	196	1905	6.5	197	
14 M 0244	-0.6	-19	29 Tu 0222	-0.1	-3	27 W 0223	-0.3	-8	11 M 0049	0.1	4	
0911	6.3	192	0841	6.0	182	W 0809	6.3	191	26 Tu 0025	0.7	21	
1458	1.5	46	Tu 1431	1.5	46	W 1412	0.8	23	0635	6.0	183	
2050	6.5	198	2029	6.2	190	2018	6.4	195	1242	1.0	29	
15 Tu 0322	-0.2	-5	30 W 0254	0.1	2	13 Th 0256	0.2	5	2021	6.3	191	
0948	6.1	187	0910	6.0	184	W 0838	6.4	194	1944	6.4	196	
1541	1.5	46	1506	1.3	41	W 1447	0.6	17	○ 1928	6.5	197	
2132	6.0	184	2106	6.1	185	2057	6.3	191	● 1928	6.5	197	
16 W 0326	0.3	10	31 Th 0326	0.3	10	13 Th 0231	0.3	8	27 W 0058	0.6	17	
0941	6.0	183	0941	6.0	183	W 0838	6.4	194	0735	6.4	193	
1544	1.3	39	1544	1.3	39	W 1447	0.6	17	1316	0.5	14	
2146	5.8	176	2146	5.8	176	2056	6.0	182	○ 1928	6.5	197	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Naha, Nansei Shoto, Japan, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0402 2.1 63	16 0358 2.7 82	1 W 0455 2.8 84	16 0426 3.0 92	1 Sa 0102 5.6 172	16 0557 3.0 91						
0957 6.1 185	Tu 0954 5.4 165	W 1040 5.7 175	Th 1014 5.3 163	Sa 0710 2.7 83	Su 1146 5.2 159						
1644 0.5 14	1643 1.2 37	1737 0.9 27	1703 1.5 45	1258 5.1 156	1809 2.2 68						
2321 5.1 156	2313 4.8 145		2340 5.1 156	O 1921 2.2 66							
2 Tu 0453 2.6 78	17 0439 3.0 91	2 Th 0030 5.2 159	17 0522 3.1 96	2 Su 0203 5.6 171	17 0042 5.7 175						
1045 5.6 171	W 1034 5.0 153	0609 3.0 90	1106 5.0 153	0827 2.5 76	M 0707 2.9 87						
1746 0.9 28	1733 1.6 49	1150 5.2 160	1755 1.8 55	1426 4.9 150	1305 5.0 153						
	O 1848 1.4 42			2031 2.6 78	O 1911 2.6 78						
3 W 0039 4.7 144	18 0015 4.5 137	3 F 0146 5.1 156	18 0039 5.1 154	3 M 0301 5.7 173	18 0140 5.8 177						
0604 3.0 91	0540 3.2 99	0738 2.9 88	0637 3.2 97	0936 2.2 66	Tu 0822 2.5 76						
1152 5.2 157	Th 1131 4.7 142	1321 4.9 150	1219 4.7 144	1549 5.0 152	1435 5.1 155						
O 1908 1.3 40	O 1841 1.9 58	2007 1.7 52	O 1859 2.1 64	2138 2.8 84	2022 2.8 86						
4 Th 0217 4.7 142	19 0141 4.4 135	4 Sa 0256 5.2 160	19 0146 5.1 156	4 Tu 0353 5.8 177	19 0240 6.0 182						
0748 3.1 94	F 0725 3.3 102	0904 2.6 78	0804 3.0 91	1033 1.7 53	W 0931 2.0 60						
1331 4.9 148	1306 4.4 134	1456 4.9 149	1353 4.7 142	1656 5.2 159	W 1557 5.3 163						
2042 1.4 44	2004 2.0 62	2122 1.9 57	2011 2.2 68	2237 2.9 87	2133 3.0 90						
5 F 0341 4.9 149	20 0304 4.6 141	5 Su 0354 5.5 167	20 0247 5.3 162	5 W 0439 6.0 182	20 0338 6.3 191						
0927 2.8 84	Sa 0909 3.1 93	1010 2.0 62	0917 2.5 77	1120 1.4 42	Th 1031 1.3 41						
1513 4.9 150	1451 4.5 137	1613 5.1 156	1519 4.9 149	1748 5.5 167	1705 5.8 176						
2200 1.3 40	2120 1.9 59	2223 1.9 59	2119 2.3 69	2325 2.9 87	2237 2.9 89						
6 Sa 0438 5.3 161	21 0401 5.0 152	6 M 0440 5.7 175	21 0340 5.6 172	6 Th 0519 6.1 187	21 0433 6.6 202						
1035 2.2 67	Su 1013 2.6 78	1101 1.5 46	1013 1.9 32	1200 1.0 32	F 1125 0.7 22						
1629 5.3 161	1605 4.9 148	1712 5.4 165	1627 5.3 162	1830 5.7 174	1802 6.2 189						
2259 1.1 35	2219 1.7 53	2313 1.9 59	2218 2.2 67		2334 2.8 86						
7 Su 0521 5.7 173	22 0442 5.4 164	7 Tu 0519 6.0 182	22 0425 6.0 184	7 F 0006 2.9 87	22 0525 7.0 212						
1125 1.6 48	M 1057 1.9 59	1143 1.0 32	1102 1.2 37	0556 6.3 192	Sa 1216 0.2 6						
1726 5.7 173	1700 5.3 163	1800 5.7 173	1723 5.8 176	1236 0.8 24	1854 6.6 200						
2344 1.0 31	2306 1.5 46	2354 2.0 60	2310 2.1 65	1907 5.9 180							
8 M 0557 6.0 182	23 0517 5.8 177	8 W 0553 6.2 188	23 0508 6.4 196	8 Sa 0042 2.9 87	23 0026 2.7 83						
1206 1.0 32	Tu 1136 1.2 38	1221 0.7 21	1147 0.5 16	0631 6.4 195	Su 0615 7.3 221						
1812 6.0 182	1747 5.8 177	1841 5.8 178	1814 6.2 188	1310 0.6 19	1305 -0.2 -5						
	2348 1.3 41		2357 2.1 63	1941 6.0 183	O 1942 6.8 207						
9 Tu 0023 1.0 31	24 0551 6.2 189	9 Th 0030 2.0 62	24 0550 6.8 206	9 Su 0116 2.8 86	24 0116 2.6 80						
0630 6.2 189	W 1214 0.6 19	0626 6.3 192	1231 0.0 0	0704 6.5 197	M 0705 7.4 227						
1243 0.6 19	1830 6.2 189	1255 0.4 13	1902 6.5 197	1343 0.6 17	1353 -0.3 -9						
1853 6.1 187		1918 5.9 181		2014 6.0 184	2028 6.9 210						
10 W 0058 1.1 34	25 0027 1.3 39	10 Th 0103 2.1 65	25 0043 2.1 64	10 M 0148 2.8 86	25 0205 2.5 77						
0700 6.3 193	F 0625 6.6 200	0656 6.3 193	0633 7.0 214	0737 6.5 198	Tu 0754 7.4 227						
1317 0.4 11	1252 0.1 2	1328 0.3 9	1316 -0.4 -12	1416 0.6 18	1439 -0.2 -5						
● 1931 6.2 188	1914 6.5 197	● 1953 6.0 182	O 1950 6.6 201	2045 6.0 184	2113 6.9 209						
11 Th 0129 1.3 39	26 0106 1.3 40	11 Sa 0135 2.3 69	26 0128 2.2 66	11 Tu 0220 2.9 87	26 0253 2.5 75						
0728 6.4 194	F 0701 6.8 207	0726 6.3 193	0717 7.2 218	0810 6.4 196	W 0843 7.3 221						
1350 0.2 6	1332 -0.3 -10	Sa 1400 0.3 9	1402 -0.5 -16	1449 0.7 21	1525 0.2 6						
2006 6.1 185	O 1958 6.5 199	2027 5.9 180	2038 6.6 201	2117 6.0 183	2157 6.8 206						
12 F 0159 1.5 47	27 0145 1.5 46	12 Su 0205 2.4 73	27 0214 2.3 69	12 W 0253 2.9 88	27 0343 2.5 75						
0756 6.3 192	Sa 0738 6.9 210	0756 6.3 191	0802 7.1 216	0844 6.3 192	Th 0932 6.9 210						
1422 0.2 6	1413 -0.5 -15	1433 0.4 11	1449 -0.4 -13	1523 0.9 27	1609 0.7 22						
2040 5.9 180	2043 6.4 196	2100 5.8 176	2127 6.5 197	2151 5.9 181	2241 6.6 200						
13 Sa 0227 1.8 55	28 0226 1.8 54	13 M 0235 2.5 77	28 0302 2.4 74	13 Th 0329 2.9 89	28 0434 2.5 76						
0824 6.2 189	Su 0817 6.8 208	0827 6.1 187	0850 6.9 210	0920 6.1 186	F 1023 6.4 195						
1454 0.3 10	1458 -0.4 -13	1506 0.6 17	1538 -0.1 -2	1558 1.1 35	1653 1.4 42						
2114 5.6 172	2131 6.2 188	2134 5.6 171	2217 6.2 190	2226 5.9 179	2325 6.4 194						
14 Su 0255 2.1 64	29 0309 2.1 64	14 Tu 0307 2.7 82	29 0354 2.6 78	14 F 0410 3.0 90	29 0530 2.6 78						
0852 6.0 183	M 0859 6.6 201	0859 5.9 181	0940 6.5 198	0959 5.8 178	Sa 1119 5.9 179						
1527 0.5 16	1545 -0.1 -4	1541 0.8 24	1628 0.4 13	1635 1.5 45	Su 1224 5.3 163						
2149 5.4 164	2223 5.8 178	2210 5.4 166	2308 6.0 183	2305 5.8 177	O 1829 2.7 82						
15 M 0325 2.4 73	30 0358 2.4 74	15 W 0343 2.9 87	30 0451 2.7 82	15 Sa 0458 3.0 92	30 0012 6.2 188						
0921 5.7 175	Tu 0946 6.2 189	0934 5.7 173	1036 6.0 184	1046 5.5 169	Su 0631 2.6 80						
1603 0.9 26	1637 0.3 10	1619 1.1 34	1720 1.0 31	1718 1.8 56	1224 5.3 163						
2227 5.1 154	2321 5.5 167	2251 5.2 160		2350 5.7 175	O 1829 2.7 82						
				31 0003 5.8 176							
				F 0557 2.8 84							
				1140 5.5 168							
				1818 1.6 50							

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Naha, Nansei Shoto, Japan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0103	6.0	182	16 Tu 0622	2.7	81	1 Th 0209	5.8	177	1 Su 0112	6.3	191
0741	2.6	80	1230	5.4	165	0924	2.7	81	0404	5.8	178
1346	5.0	152	1822	3.0	91	1621	5.2	157	1049	2.4	72
1930	3.2	98	●			2128	4.2	128	1732	5.9	180
2 Tu 0202	5.9	179	17 W 0044	6.2	190	2 0325	5.9	179	2314	3.7	113
0854	2.5	75	0736	2.5	76	2 F 1029	2.4	72	16 0400	6.4	195
1520	5.0	151	1402	5.2	160	1722	5.5	168	M 1048	1.6	50
2045	3.5	108	1934	3.4	104	2242	4.0	123	1721	6.6	200
3 W 0303	5.9	179	18 Th 0149	6.2	190	3 Sa 0427	6.1	185	2310	2.9	89
1001	2.2	67	0857	2.1	65	1119	2.0	61	16 1040	6.4	195
1639	5.2	157	1538	5.4	166	1802	5.9	179	M 1048	1.6	50
2200	3.6	111	2059	3.6	110	2332	3.8	115	1721	6.6	200
4 Th 0401	6.0	182	19 F 0301	6.4	195	4 Su 0516	6.4	194	2310	2.9	89
1056	1.9	57	1010	1.6	50	1159	1.7	51	16 0400	6.4	195
1736	5.4	166	1655	5.8	178	1834	6.2	188	M 1048	1.6	50
2301	3.6	109	2217	3.6	109				1721	6.6	200
5 F 0451	6.1	187	20 Sa 0409	6.7	205	5 M 0010	3.5	106	16 0400	6.4	195
1140	1.5	47	1112	1.0	32	0557	6.7	203	M 1048	1.6	50
1819	5.8	176	1755	6.3	193	1234	1.4	43	1721	6.6	200
2348	3.5	106	2322	3.3	102	1903	6.4	196	2310	2.9	89
6 Sa 0534	6.3	193	21 Su 0511	7.1	217	6 Tu 0043	3.2	98	16 0400	6.4	195
1219	1.2	38	1206	0.6	17	0633	6.9	210	M 1048	1.6	50
1854	6.0	183	1844	6.8	206	1306	1.2	38	1721	6.6	200
7 Su 0026	3.3	101	22 M 0017	3.0	92	7 W 0115	3.0	90	2310	2.9	89
0612	6.5	199	0606	7.5	228	0708	7.1	215	16 0400	6.4	195
1254	1.0	32	1255	0.2	6	1336	1.1	35	M 1048	1.6	50
1926	6.2	189	1928	7.1	215	● 1957	6.8	208	1721	6.6	200
8 M 0100	3.2	97	23 Tu 0106	2.7	82	8 Th 0145	2.7	83	2310	2.9	89
0648	6.7	204	0657	7.7	235	0741	7.2	218	16 0400	6.4	195
1327	0.9	28	Tu 1340	0.1	3	1406	1.2	36	M 1048	1.6	50
● 1956	6.3	193	O 2010	7.3	221	2024	7.0	212	1721	6.6	200
9 Tu 0133	3.1	93	24 W 0153	2.4	74	9 F 0217	2.5	77	2310	2.9	89
0722	6.8	207	0746	7.7	236	0815	7.1	217	16 0400	6.4	195
1359	0.9	27	1423	0.3	8	1437	1.3	40	M 1048	1.6	50
2025	6.4	196	2049	7.3	222	2051	7.0	214	1721	6.6	200
10 W 0204	3.0	90	25 Th 0238	2.2	68	10 Sa 0250	2.4	72	2310	2.9	89
0756	6.8	208	0832	7.6	231	0851	7.0	213	16 0400	6.4	195
1430	0.9	28	1504	0.7	20	1507	1.6	48	M 1048	1.6	50
2054	6.5	198	2127	7.2	220	2120	7.1	215	1721	6.6	200
11 Th 0237	2.9	87	26 F 0322	2.2	66	11 Su 0326	2.3	69	2310	2.9	89
0830	6.8	206	0918	7.2	220	0929	6.8	206	16 0400	6.4	195
1502	1.1	33	1542	1.2	37	1540	1.9	58	M 1048	1.6	50
2124	6.5	199	2204	7.1	215	2152	7.0	213	1721	6.6	200
12 F 0312	2.8	85	27 Sa 0407	2.2	67	12 M 0405	2.3	69	2310	2.9	89
0906	6.6	201	1004	6.7	204	1011	6.4	196	16 0400	6.4	195
1534	1.3	40	1619	1.9	57	1615	2.4	72	M 1048	1.6	50
2155	6.5	198	2240	6.8	207	2226	6.9	209	1721	6.6	200
13 Sa 0350	2.8	84	28 W 0454	2.4	72	13 Tu 0451	2.3	70	2310	2.9	89
0944	6.4	194	1052	6.1	186	1102	6.0	183	16 0400	6.4	195
1607	1.6	50	1655	2.5	77	1655	2.9	88	M 1048	1.6	50
2229	6.5	197	2318	6.5	199	2307	6.7	203	1721	6.6	200
14 Su 0432	2.7	83	29 M 0547	2.6	78	14 W 0548	2.4	73	2310	2.9	89
1027	6.1	185	1147	5.5	169	1209	5.6	171	16 0400	6.4	195
1645	2.0	62	1735	3.2	97	1747	3.4	105	M 1048	1.6	50
2306	6.4	195	●			●			1721	6.6	200
15 M 0521	2.7	82	30 W 0001	6.2	190	0000	6.4	196	2310	2.9	89
1120	5.7	174	0649	2.7	83	0703	2.4	74	16 0400	6.4	195
1728	2.5	76	1300	5.1	156	1345	5.4	164	M 1048	1.6	50
2350	6.3	192	1826	3.7	113	1904	3.9	119	1721	6.6	200
16 Sa 0056	6.0	182	31 W 0804	2.8	85	0705	2.9	88	2310	2.9	89
1443	5.0	151	1443	5.0	151	1354	5.0	153	16 0400	6.4	195
1947	4.1	125	1947	4.1	125	1850	4.4	133	M 1048	1.6	50

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Naha, Nansei Shoto, Japan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0432	5.8	176	16 W 0458	6.3	193	1 F 0532	6.1	185	1 Su 0001	0.8	23
1052	2.3	69	W 1114	1.8	55	F 1127	2.1	63	Sa 0625	6.1	186
1717	6.1	187	1727	6.7	205	1729	6.6	200	1211	2.3	71
2321	2.9	88	2339	1.6	50	2356	1.1	34	1804	6.6	200
2 W 0517	6.2	189	17 Th 0548	6.7	203	2 Sa 0614	6.4	196	2 M 0011	0.0	1
1130	2.0	61	1157	1.8	54	1205	2.0	60	17 Su 0704	6.2	189
1746	6.5	198	1802	7.0	212	1802	6.9	210	1247	2.4	73
2353	2.3	71							1837	6.6	201
3 Th 0555	6.6	201	18 F 0019	1.1	35	3 Su 0031	0.6	17	18 M 0112	0.3	9
1205	1.8	55	0632	6.9	209	0655	6.7	204	Tu 0741	6.2	190
1813	6.8	208	1234	1.8	56	1243	2.0	60	1320	2.5	76
			1835	7.1	216	● 1836	7.1	217	O 1909	6.6	200
4 F 0024	1.8	56	19 Sa 0055	0.8	25	4 M 0109	0.2	5	3 Tu 0054	-0.4	-13
0632	6.9	210	0712	6.9	210	0736	6.8	208	17 M 0729	6.4	196
1237	1.7	52	1309	2.0	62	1321	2.1	63	1304	2.2	66
1841	7.1	216	O 1906	7.1	217	1911	7.2	220	● 1852	7.0	214
5 Sa 0056	1.3	41	20 Su 0130	0.6	19	5 Tu 0148	-0.1	-2	18 W 0138	-0.7	-20
0709	7.1	216	0750	6.8	208	0819	6.8	207	4 W 0814	6.5	198
1310	1.7	52	1341	2.3	69	1400	2.3	69	1352	2.6	79
● 1910	7.3	222	1936	7.0	214	1950	7.2	219	1940	6.5	197
6 Su 0130	1.0	30	21 M 0204	0.6	19	6 W 0231	-0.1	-3	19 M 0218	0.3	10
0747	7.2	218	0827	6.6	202	0905	6.6	201	20 W 0849	6.0	183
1343	1.9	57	1412	2.5	77	1442	2.5	76	1423	2.7	83
1940	7.4	225	2005	6.9	209	2030	7.0	213	2011	6.3	192
7 M 0205	0.8	23	22 Tu 0238	0.8	23	7 Th 0316	0.1	4	21 Th 0252	0.5	16
0826	7.1	215	0903	6.3	193	0954	6.3	192	6 F 0309	-0.4	-13
1418	2.1	65	1442	2.8	86	1529	2.8	84	9 W 0947	6.2	190
2013	7.3	224	2035	6.6	201	2116	6.7	203	1525	2.3	71
8 Tu 0243	0.7	21	23 W 0312	1.0	31	8 F 0405	0.5	16	6 Th 1435	2.2	68
0909	6.8	208	0939	6.0	184	1049	6.0	182	2022	6.9	210
1455	2.5	75	1513	3.1	94	1624	3.1	93			
2048	7.2	219	2105	6.3	192	2207	6.2	188			
9 W 0325	0.8	25	24 Th 0348	1.3	41	9 Sa 0501	1.0	31			
0956	6.4	196	1018	5.7	174	1152	5.7	173			
1535	2.9	88	1548	3.3	102	1733	3.2	98			
2128	6.9	209	2139	5.9	181	2312	5.7	173			
10 Th 0413	1.1	35	25 F 0429	1.7	53	23 M 0402	1.1	34			
1051	6.0	183	1104	5.4	164	1036	5.4	166			
1623	3.3	101	1631	3.6	110	1613	3.1	94			
2214	6.5	197	2219	5.5	168	2157	5.4	165			
11 F 0511	1.6	48	26 Sa 0518	2.1	65	23 M 0442	1.5	45			
1202	5.6	172	1204	5.2	157	1121	5.3	161			
1730	3.7	112	1737	3.8	116	1707	3.2	98			
2316	6.0	182	2317	5.1	155	2246	5.0	153			
12 Sa 0626	2.0	60	27 W 0622	2.5	75	11 F 0530	1.9	57			
1333	5.5	167	1324	5.1	154	1215	5.2	157			
1907	3.8	116	1923	3.8	117	1819	3.2	98			
●			O			2354	4.7	142			
13 Su 0048	5.6	171	28 M 0054	4.8	147	10 Th 0147	4.7	142			
0757	2.1	65	0743	2.7	81	752	2.3	70			
1459	5.6	172	1443	5.2	159	1421	5.3	161			
2049	3.5	107	2101	3.5	107	2028	2.8	86	O 1951	2.3	69
14 M 0233	5.6	171	29 Tu 0240	4.9	148	11 F 0535	5.2	157			
0921	2.1	64	0859	2.6	79	1043	5.0	152			
1602	6.0	183	1540	5.5	168	0955	2.5	75			
2202	2.9	89	2202	3.0	91	1652	6.3	191			
15 Tu 0356	5.9	181	30 W 0354	5.2	158	2321	1.2	36			
1024	1.9	59	0959	2.4	74						
1648	6.4	194	1621	5.8	178						
2255	2.3	69	2245	2.4	73						
31 Th 0448	5.6	171									
1046	2.2	68									
1656	6.2	189									
2321	1.7	53									

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pusan, Korea, 2013

Times and Heights of High and Low Waters

January			February			March		
Time	Height		Time	Height		Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 1039 1624 2256	0.2 3.7 0.1 3.2	6 113 3 98	16 W 1120 1736 2341	0.2 3.8 0.2 3.5	6 116 6 107	1 F 1126 1712 2345	0.2 0.1 3.3	6 110 101
	0403 1039 1624 2256	0.2 3.7 0.1 3.2	0455 W 1155 1817	0.2 3.4 0.5 1.5	6 104 101 9	16 Sa 1154 1758	0.6 0.6	18 18 18
	1039 1659 2331	3.7 0.2 3.1	113 6 94			1 F 1031 1614 2250	-0.1 -0.1 3.8	-3 -3 116
	1624 2331	0.1 3.1	3 94			0405 Sa 1106 1648 2325	0.4 3.7 0.0 3.6	9 113 0 110
2 W 1113 1659 2331	0.3 0.2 3.1	9 6 94	17 Th 0533 1155 1817	0.5 3.4 0.5	15 104 15	2 Sa 0536 1205 1753	0.4 3.3 0.3	12 27 9
0436 1113 1659 2331	0.3 3.6 0.2 3.1	9	0533 Th 1155 1817	0.5 3.4 0.5	15	0021 Su 0603 1226 1837	3.1 0.9 2.7	94 27 82
0514 1150 1739	0.4 3.4 0.3	12	3 Su 0020 0613 1231 1903	3.2 0.8 3.0 0.7	98 24 91 21	18 M 0103 0653 1306 1952	2.7 1.2 2.4 1.2	82 37 73 37
0010 0601 1231 1829	3.0 0.6 3.2 0.5	91	3 O 1847	0.6	18	0518 Su 1145 1727	0.4 3.4	12 104 9
4 F 0010 0601 1231 1829	3.0 0.6 3.2 0.5	91	19 Sa 0103 0704 1311 2004	2.9 1.1 2.6 1.0	88 34 79 30	18 M 0145 0751 1350 2009	0.4 1.0 2.7 0.8	24 43 61 24
0057 0706 1322 1935	2.9 0.8 2.9 0.6	88	5 Sa 0155 0821 1404 2121	2.6 1.3 2.3 1.1	79 40 70 34	20 W 0239 0940 1523 2151	2.7 1.1 2.5 0.9	82 34 76 27
0158 0836 1428 2058	2.7 0.9 2.7 0.7	82	5 Tu 0349 1047 1735 2312	2.3 1.3 2.1 1.1	70 40 64 34	5 Tu 0057 0729 1329 1936	3.0 1.0 2.6 1.0	91 30 79 30
0158 0836 1428 2058	2.7 0.9 2.7 0.7	82	6 Su 0312 0959 1558 2236	2.4 1.3 2.1 1.1	73 40 64 34	20 W 0446 1110 1718 2317	2.5 1.1 2.7 0.7	79 37 73 34
0325 1005 1559 2218	2.7 0.9 2.7 0.6	82	6 W 0545 1200 1837	2.5 1.1 2.4	76 34 73	21 Th 0213 0930 1504 2139	2.7 1.2 2.4 1.1	70 40 61 37
0325 1005 1559 2218	2.7 0.9 2.7 0.6	82	7 M 0504 1123 1800 2340	2.4 1.2 2.2 0.9	73 37 67 27	21 Th 0614 1218 1833	3.1 0.6 3.0	94 18 91
0508 1120 1731 2328	2.9 0.7 2.9 0.5	88	7 Th 0010 1103 1712 2313	0.9 1.0 2.6 0.9	27 30 79 27	22 F 0431 1103 1712 2313	2.7 1.0 2.6 0.9	82 34 70 30
0622 1224 1840	3.3 0.4 3.2	101	8 Tu 0616 1223 1852	2.7 1.0 2.5	82 30 76	8 F 0023 0709 1312 1925	0.5 3.6 0.3 3.5	15 110 9 107
0622 1224 1840	3.3 0.4 3.2	101	8 F 0030 0701 1305 1930	0.7 3.0 0.8 2.8	21 91 24 85	23 Sa 0053 0716 1317 1944	0.6 3.2 0.5 3.1	18 91 15 94
0028 0717 1318 1933	0.2 3.7 0.2 3.5	6	9 W 0116 0753 1358 2008	0.2 4.0 0.0 3.8	6 122 0 116	9 Sa 0128 0750 1346 2015	0.4 3.6 0.2 3.4	12 110 6 104
0122 0804 1408 2020	0.0 4.1 -0.1 3.8	0	10 Th 0111 0738 1339 2003	0.5 3.3 0.5 3.1	15 101 15 94	10 M 0201 0832 1438 2048	0.0 4.2 -0.2 4.1	9 0 -6 125
0122 0804 1408 2020	0.0 4.1 -0.1 3.8	0	10 M 0200 0822 1415 2044	0.1 3.8 0.0 3.7	3 116 0 113	10 Su 0106 0737 1339 1951	0.3 3.8 0.1 116	9 116 3 116
11 F 0804 1408 2020	0.0 4.1 -0.1 3.8	0	11 M 0242 0909 1516 2125	-0.1 4.3 -0.3 4.2	-3 131 -9 128	11 M 0231 0854 1443 2114	0.0 4.0 -0.1 3.8	0 122 -3 116
0210 0846 1453 2103	-0.1 4.3 -0.2 4.0	-3	12 Sa 0219 0844 1438 2105	0.2 3.8 0.1 3.5	6 116 -2 107	12 W 0319 0945 1551 2201	-0.2 4.3 -0.2 4.2	-6 131 -6 128
0210 0846 1453 2103	-0.1 4.3 -0.2 4.0	-3	12 W 0302 0926 1512 2145	-0.1 4.1 -0.2 3.9	-3 125 -6 119	12 Tu 0223 0848 1449 2102	0.0 4.2 -0.2 4.2	0 128 -6 128
0254 0927 1536 2144	-0.2 4.4 -0.2 4.1	-6	13 Su 0249 0916 1506 2136	0.1 3.9 0.0 3.6	-3 119 -3 110	13 W 0354 1019 1624 2236	-0.1 4.1 -0.1 4.0	-3 125 -6 128
0336 1006 1617 2224	-0.1 4.3 -0.2 4.0	-3	14 M 0319 0947 1535 2206	0.0 4.0 -0.1 3.6	0 122 -3 110	14 Th 0426 1051 1656 2310	0.1 3.9 0.1 116	3 122 -3 125
0416 1043 1657 2302	0.0 4.1 0.0 3.8	0	15 Tu 0350 1019 1605 2237	0.0 3.9 -0.1 3.6	0 107 9 110	15 F 0457 1123 1726 2345	0.3 3.5 0.3 3.4	9 107 9 104
0416 1043 1657 2302	0.0 4.1 0.0 3.8	0	31 Th 0421 1052 1636 2309	0.1 3.8 0.0 3.5	3 116 0 107			

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pusan, Korea, 2013

Times and Heights of High and Low Waters

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Pusan, Korea, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0146	3.3	101	16 Tu 0056	3.6	110	1 Th 0336	2.9	88	16 F 0244	3.3	101
0850	1.4	43	0658	1.3	40	1021	1.8	55	0914	1.7	52
1431	3.2	98	1326	3.4	104	1639	3.2	98	1554	3.5	107
2113	1.8	55	● 1953	1.6	49	2309	2.0	61	2236	1.7	52
2 Tu 0259	3.0	91	17 W 0154	3.4	104	2 0541	3.0	91	17 Sa 0434	3.4	104
0955	1.5	46	0816	1.4	43	1124	1.7	52	1043	1.6	49
1556	3.1	94	1440	3.4	104	1756	3.5	107	1735	3.8	116
2228	1.8	55	2128	1.6	49	2344	1.4	43	1855	4.0	122
3 W 0443	2.9	88	18 Th 0315	3.3	101	3 Sa 0007	1.8	55	18 Su 0558	3.8	116
1055	1.4	43	0941	1.4	43	0635	3.3	101	1150	1.3	40
1721	3.3	101	1622	3.5	107	1214	1.5	46	1836	4.3	131
2331	1.7	52	2247	1.5	46	1843	3.8	116	● 0056	1.3	40
4 Th 0559	3.1	94	19 F 0451	3.4	104	4 Su 0049	1.6	49	19 M 0039	1.1	34
1146	1.3	40	1055	1.3	40	0714	3.6	110	0654	4.2	128
1818	3.5	107	1749	3.8	116	1254	1.3	40	1244	1.0	30
			2353	1.2	37	1920	4.1	125	1924	4.7	143
5 F 0021	1.5	46	20 Sa 0608	3.8	116	5 M 0122	1.3	40	20 Tu 0126	0.8	24
0648	3.3	101	1158	1.0	30	0747	3.8	116	0740	4.6	140
1230	1.2	37	1849	4.3	131	1329	1.2	37	1331	0.8	24
1901	3.7	113				1954	4.3	131	2006	5.0	152
6 Sa 0102	1.3	40	21 Su 0049	1.0	30	6 Tu 0151	1.1	34	21 W 0208	0.6	18
0727	3.5	107	0706	4.1	125	0818	4.1	125	0822	4.9	149
1309	1.1	34	1253	0.8	24	1401	1.0	30	1414	0.6	18
1938	4.0	122	1938	4.6	140	2026	4.5	137	● 2045	5.1	155
7 Su 0137	1.2	37	22 M 0140	0.7	21	7 W 0219	1.0	30	21 M 0208	0.6	18
0802	3.7	113	0755	4.5	137	0848	4.2	128	0822	4.9	149
1344	1.0	30	1343	0.6	18	1431	0.9	27	1438	0.7	21
2013	4.2	128	2022	4.9	149	● 2058	4.7	143	2104	4.7	143
8 M 0208	1.0	30	23 Tu 0226	0.5	15	8 Th 0246	0.8	24	21 W 0219	0.7	21
0835	3.8	116	0840	4.7	143	0918	4.3	131	0853	4.5	137
1417	0.9	27	1429	0.5	15	1500	0.9	27	1438	0.7	21
● 2046	4.4	134	○ 2104	5.1	155	2129	4.7	143	2132	4.7	143
9 Tu 0239	0.9	27	24 W 0310	0.5	15	9 F 0314	0.8	24	8 Su 0325	0.5	15
0907	3.9	119	0922	4.8	146	0948	4.4	134	0954	4.5	137
1448	0.8	24	1512	0.5	15	1529	0.9	27	1539	0.8	24
2119	4.4	134	2144	5.1	155	2200	4.7	143	2208	4.5	137
10 W 0308	0.8	24	25 Th 0352	0.5	15	10 Sa 0343	0.8	24	9 M 0325	0.7	21
0939	4.0	122	1003	4.8	146	1018	4.3	131	1024	4.5	137
1519	0.8	24	1554	0.7	21	1600	0.9	27	1609	0.9	27
2152	4.4	134	2223	4.9	149	2232	4.5	137	2238	4.1	125
11 Th 0338	0.8	24	26 F 0434	0.7	21	11 Su 0413	0.8	24	24 Tu 0429	1.0	30
1010	4.0	122	1043	4.7	143	1049	4.3	131	1100	4.2	128
1549	0.9	27	1635	0.9	27	1632	1.0	30	1612	0.9	27
2224	4.4	134	2301	4.7	143	2305	4.3	131	2243	4.3	131
12 F 0408	0.8	24	27 Sa 0515	0.9	27	26 M 0510	1.1	34	11 W 0459	1.2	37
1042	3.9	119	1123	4.4	134	1130	4.3	131	1137	3.9	119
1621	0.9	27	1716	1.2	37	1716	1.4	43	1716	1.5	46
2257	4.2	128	2339	4.3	131	2342	3.9	119	2321	4.0	122
13 Sa 0441	0.9	27	28 Su 0558	1.2	37	13 Tu 0525	1.1	34	11 W 0535	1.5	46
1115	3.8	116	1203	4.1	125	1203	3.9	119	1219	3.5	107
1656	1.1	34	1759	1.5	46	1757	1.5	46	1804	1.7	52
2332	4.1	125				● 1857	2.0	61	● 1955	1.9	58
14 Su 0517	1.0	30	29 M 0018	3.9	119	14 W 0026	3.8	116	12 W 0032	3.0	91
1151	3.7	113	0647	1.5	46	0615	1.4	43	0639	1.8	55
1737	1.2	37	1247	3.8	116	1253	3.7	113	1313	3.2	98
			1852	1.8	55	● 1912	1.8	55	● 1955	1.9	58
15 M 0010	3.9	119	30 Tu 0059	3.5	107	15 0123	3.5	107	12 W 006	3.7	113
0601	1.1	34	0749	1.7	52	0730	1.6	49	0545	1.3	40
1233	3.6	110	1339	3.4	104	1403	3.5	107	1232	3.7	113
1832	1.5	46	● 2012	2.0	61	2103	1.9	58	1853	1.7	52
			31 W 0154	3.1	94				● 1955	1.9	58
			0906	1.8	55	14 0026	3.8	116	12 W 006	3.7	113
			1451	3.2	98	0804	2.0	61	0545	1.3	40
			2148	2.1	64	1355	3.3	101	1232	3.7	113
						2102	2.2	67	1853	1.7	52
						2243	2.1	64	● 1955	1.9	58
						31 Sa 0519	2.9	88	12 W 006	3.7	113
						1101	1.9	58	0545	1.3	40
						1724	3.3	101	1232	3.7	113
						2345	1.8	55	1853	1.7	52

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Heights are referred to the chart datum of soundings.

Pusan, Korea, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0622 3.3 101	16 W 0002 0.8 24	1 F 0012 0.5 15	16 Sa 0056 0.4 12	1 Su 0016 0.2 6	16 M 0114 0.4 12						
1203 1.2 37	0620 3.8 116	0653 3.6 110	0720 3.8 116	0704 3.6 110	0742 3.6 110						
1820 3.6 110	1216 0.9 27	1241 0.5 15	1316 0.5 15	1257 0.3 9	1341 0.5 15						
	1845 3.9 119	1900 3.7 113	1941 3.6 110	1916 3.5 107	2004 3.2 98						
2 W 0020 1.0 30	17 Th 0043 0.5 15	2 Sa 0047 0.3 9	17 Su 0131 0.3 9	2 M 0100 0.0 0	17 Tu 0149 0.3 9						
0655 3.6 110	0702 4.1 125	0729 3.9 119	0756 4.0 122	0746 3.9 119	0818 3.7 113						
1239 1.0 30	1257 0.7 21	1319 0.3 9	1350 0.4 12	1341 0.1 3	1414 0.4 12						
1857 3.9 119	1924 4.1 125	1939 3.9 119	2016 3.7 113	2001 3.8 116	2038 3.3 101						
3 Th 0050 0.8 24	18 F 0120 0.4 12	3 Su 0123 0.1 3	18 M 0204 0.2 6	3 Tu 0143 -0.1 -3	18 W 0223 0.2 6						
0726 3.9 119	0740 4.3 131	0805 4.2 128	0832 4.1 125	0828 4.1 125	0852 3.8 116						
1312 0.7 21	1334 0.5 15	1356 0.2 6	1423 0.4 12	1425 0.0 0	1446 0.3 9						
1931 4.2 128	2000 4.3 131	● 2017 4.1 125	2050 3.7 113	2045 3.9 119	2112 3.4 104						
4 F 0120 0.5 15	19 Sa 0154 0.3 9	4 M 0159 0.0 0	19 Tu 0236 0.2 6	4 W 0226 -0.1 -3	19 Th 0255 0.2 6						
0756 4.2 128	0816 4.5 137	0842 4.3 131	0906 4.1 125	0910 4.3 131	0926 3.9 119						
1344 0.5 15	1408 0.4 12	1434 0.1 3	1456 0.4 12	1510 -0.1 -3	1517 0.3 9						
2005 4.4 134	2034 4.3 131	2057 4.1 125	2124 3.6 110	2128 3.9 119	2145 3.4 104						
5 Sa 0150 0.4 12	20 Su 0227 0.3 9	5 Tu 0236 0.0 0	20 W 0307 0.3 9	5 Th 0309 -0.1 -3	20 F 0327 0.2 6						
0828 4.4 134	0851 4.5 137	0919 4.3 131	0941 4.0 122	0952 4.2 128	0959 3.8 116						
1416 0.4 12	1441 0.5 15	1514 0.2 6	1528 0.4 12	1556 0.0 0	1549 0.3 9						
● 2039 4.5 137	2108 4.2 128	2137 4.0 122	2158 3.5 107	2211 3.8 116	2218 3.3 101						
6 Su 0221 0.3 9	21 M 0258 0.3 9	6 W 0314 0.1 3	21 Th 0339 0.4 12	6 F 0353 0.1 3	21 Sa 0359 0.3 9						
0900 4.5 137	0925 4.5 137	0959 4.3 131	1016 3.8 116	1034 4.1 125	1033 3.7 113						
1449 0.4 12	1513 0.5 15	1556 0.3 9	1601 0.5 15	1644 0.2 6	1620 0.3 9						
2114 4.4 134	2141 4.0 122	2218 3.9 119	2233 3.3 101	2256 3.7 113	2251 3.2 98						
7 M 0253 0.3 9	22 Tu 0328 0.5 15	7 Th 0354 0.3 9	22 F 0411 0.6 18	7 Sa 0440 0.3 9	22 Su 0431 0.4 12						
0934 4.5 137	1000 4.3 131	1041 4.1 125	1052 3.6 110	1118 3.8 116	1107 3.5 107						
1523 0.5 15	1544 0.7 21	1643 0.5 15	1636 0.6 18	1738 0.4 12	1654 0.4 12						
2150 4.3 131	2215 3.8 116	2303 3.6 110	2309 3.1 94	2343 3.4 104	2325 3.0 91						
8 Tu 0326 0.4 12	23 W 0358 0.7 21	8 F 0438 0.6 18	23 Sa 0446 0.7 21	8 Su 0532 0.6 18	23 M 0506 0.5 15						
1009 4.4 134	1035 4.0 122	1126 3.8 116	1129 3.4 104	1204 3.5 107	1142 3.3 101						
1600 0.6 18	1617 0.9 27	1740 0.8 24	1716 0.8 24	1839 0.6 18	1731 0.5 15						
2228 4.1 125	2249 3.5 107	2352 3.3 101	2348 2.8 85								
9 W 0402 0.6 18	24 Th 0429 0.9 27	9 Sa 0532 0.9 27	24 Su 0528 0.9 27	9 M 0033 3.1 94	24 Tu 0002 2.9 88						
1048 4.2 128	1112 3.7 113	1216 3.5 107	1210 3.1 94	0635 0.8 24	0547 0.7 21						
1641 0.9 27	1652 1.1 34	1858 1.0 30	1806 0.9 27	1255 3.2 98	1220 3.1 94						
2309 3.8 116	2326 3.1 94			1949 0.8 24	1815 0.6 18						
10 Th 0442 0.8 24	25 F 0504 1.1 34	10 Su 0049 3.0 91	25 M 0033 2.6 79	10 Tu 0131 2.9 88	25 W 0044 2.7 82						
1131 3.9 119	1152 3.4 104	0650 1.2 37	0629 1.1 34	0756 1.1 34	0642 0.9 27						
1733 1.2 37	1736 1.3 40	1318 3.1 94	1258 2.9 88	1356 2.9 88	1305 2.9 88						
2357 3.5 107		● 2027 1.1 34	1915 1.0 30	2100 0.8 24	1913 0.7 21						
11 F 0531 1.2 37	26 Sa 0009 2.8 85	11 M 0201 2.8 85	26 Tu 0130 2.5 76	11 Tu 0242 2.7 82	26 W 0135 2.6 79						
1222 3.6 110	0553 1.4 43	0835 1.3 40	0802 1.2 37	0919 1.1 34	0803 1.0 30						
1856 1.4 43	1240 3.1 94	1439 2.9 88	1356 2.7 82	1517 2.6 79	1401 2.7 82						
	1849 1.4 43	2143 1.0 30	● 2037 1.0 30	2206 0.8 24	2028 0.8 24						
12 Sa 0057 3.2 98	27 Su 0105 2.6 79	12 Tu 0332 2.8 85	27 W 0244 2.4 73	12 Tu 0410 2.7 82	27 F 0246 2.5 76						
0650 1.5 46	0742 1.6 49	1000 1.2 37	0926 1.2 37	1032 1.1 34	0930 1.0 30						
1332 3.3 101	1341 2.9 88	1618 3.0 91	1508 2.7 82	1652 2.6 79	1516 2.6 79						
● 2050 1.5 46	● 2043 1.5 46	2245 0.9 27	2146 0.9 27	2303 0.8 24	2144 0.7 21						
13 Su 0220 3.0 91	28 M 0232 2.5 76	13 W 0457 3.0 91	28 Th 0415 2.6 79	13 Tu 0527 2.9 88	28 Sa 0422 2.6 79						
0856 1.6 49	0927 1.5 46	1105 1.0 30	1030 1.0 30	1133 1.0 30	1043 0.8 24						
1515 3.2 98	1503 2.8 85	1731 3.1 94	1627 2.8 85	1800 2.8 85	1645 2.7 82						
2213 1.3 40	2200 1.3 40	2335 0.7 21	2242 0.7 21	2353 0.6 18	2251 0.6 18						
14 M 0408 3.0 91	29 Tu 0428 2.6 79	14 Th 0556 3.3 101	29 F 0526 2.9 88	14 Tu 0621 3.1 94	29 Su 0545 3.0 91						
1026 1.4 43	1032 1.3 40	1156 0.9 27	1124 0.7 21	1223 0.8 24	1146 0.6 18						
1659 3.3 101	1630 2.9 88	1822 3.3 101	1734 3.0 91	1848 2.9 88	1801 2.9 88						
2314 1.1 34	2253 1.1 34		2331 0.4 12		2350 0.3 9						
15 Tu 0528 3.4 104	30 W 0533 2.9 88	15 F 0018 0.5 15	30 Sa 0619 3.2 98	15 Tu 0036 0.5 15	30 M 0644 3.4 104						
1128 1.1 34	1122 1.1 34	0641 3.6 110	1212 0.5 15	0704 3.4 104	1241 0.3 9						
1800 3.6 110		1238 0.7 21	1903 3.5 107	1829 3.3 101	1859 3.3 101						
	31 Th 0616 3.3 101										
	1203 0.8 24										
	1819 3.5 107										

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 0122	3.1	94	16 0157	1.2	37	1 0204	0.4	12	16 0233	2.0	61
Tu 0727	24.0	732	W 0812	25.7	783	F 0815	26.2	799	Sa 0852	25.4	774
1323	1.1	34	1405	0.8	24	1418	0.6	18	1453	4.2	128
1945	26.6	811	2027	27.0	823	2028	27.1	826	2057	24.6	750
2 0154	2.8	85	17 0233	1.9	58	2 0239	0.5	15	17 0305	3.2	98
W 0801	24.1	735	Th 0850	25.0	762	Sa 0852	26.1	796	Su 0927	24.2	738
1358	1.3	40	1443	2.5	76	1459	1.9	58	1530	6.2	189
2016	26.5	808	2100	25.7	783	2105	26.1	796	2132	22.9	698
3 0227	2.5	76	18 0308	2.8	85	3 0319	1.3	40	18 0341	4.9	149
Th 0836	24.2	738	F 0927	24.0	732	Su 0936	25.2	768	M 1008	22.5	686
1435	1.8	55	1523	4.5	137	1547	4.0	122	1616	8.5	259
2050	26.1	796	2134	24.1	735	O 2152	24.3	741	O 2219	21.0	640
4 0303	2.6	79	19 0345	4.1	125	4 0409	2.9	88	19 0429	6.8	207
F 0915	23.9	728	Sa 1008	22.7	692	M 1035	23.8	725	Tu 1109	20.8	634
1517	3.0	91	1607	6.7	204	1651	6.5	198	1730	10.6	323
2130	25.2	768	O 2214	22.3	680	2255	22.2	677	2331	19.1	582
5 0347	3.2	98	20 0430	5.7	174	5 0517	4.6	140	20 0548	8.5	259
Sa 1004	23.3	710	Su 1100	21.4	652	Tu 1158	22.6	689	W 1241	19.9	607
1610	4.7	143	1707	8.9	271	1822	8.2	250	1919	11.0	335
O 2221	23.8	725	2309	20.5	625						
6 0443	4.1	125	21 0532	7.2	219	6 W 0025	20.7	631	21 0109	18.5	564
Su 1110	22.6	689	M 1212	20.3	619	0646	5.4	165	Th 0729	8.6	262
1721	6.6	201	1833	10.3	314	1337	22.9	698	1419	20.7	631
2332	22.2	677				2000	7.8	238	2048	9.5	290
7 0556	4.9	149	22 0027	19.2	585	7 Th 0201	21.1	643	22 0235	19.7	600
M 1234	22.5	686	Tu 0656	7.8	238	0813	4.4	134	F 0848	7.0	213
1852	7.4	226	1341	20.5	625	1503	24.7	753	1527	22.7	692
			2007	9.8	299	2116	5.7	174	2143	7.2	219
8 0057	21.6	658	23 0153	19.3	588	8 F 0318	22.8	695	23 0336	21.7	661
Tu 0719	4.5	137	W 0817	6.9	210	0923	2.3	70	Sa 0942	4.8	146
1401	23.7	722	1500	22.0	671	1605	26.9	820	1612	24.6	750
2018	6.5	198	2118	8.1	247	2213	3.4	104	2223	5.1	155
9 0219	22.3	680	24 0305	20.6	628	9 Sa 0417	24.8	756	24 0421	23.6	719
W 0833	2.9	88	0919	5.3	162	1017	0.4	12	Su 1023	2.9	88
1514	25.8	786	1556	23.8	725	1655	28.5	869	1648	26.0	792
2127	4.6	140	2208	6.2	189	2259	1.6	49	2258	3.4	104
10 0326	23.8	725	25 0359	22.2	677	10 Th 0506	26.3	802	10 0500	25.0	762
Th 0935	1.0	30	M 1006	3.6	110	Su 1105	-0.8	-24	M 1101	1.5	46
1613	27.8	847	1638	25.2	768	1738	29.3	893	1721	27.1	826
2223	2.7	82	2248	4.7	143	O 2341	0.5	15	2329	2.1	64
11 0423	25.2	768	26 0443	23.4	713	11 M 0551	27.1	826	11 0406	25.1	765
F 1028	-0.7	-21	Sa 1046	2.2	67	1148	-1.2	-37	Su 1004	1.9	58
1704	29.2	890	1715	26.2	799	1816	29.2	890	1637	27.8	847
2312	1.4	43	2324	3.5	107				2241	1.8	55
12 0514	26.1	796	27 0522	24.2	738	12 Tu 0019	0.0	0	12 0533	27.9	850
Sa 1116	-1.6	-49	Su 1123	1.3	40	0632	27.4	835	W 0610	26.9	820
1751	29.8	908	1749	26.8	817	1228	-0.9	-27	1211	-0.1	-3
O 2357	0.7	21	O 2357	2.7	82	1852	28.7	875	1826	28.1	856
13 0602	26.5	808	28 0559	24.8	756	13 W 0055	0.1	3	28 0033	0.2	6
Su 1201	-1.8	-55	M 1158	0.7	21	0711	27.3	832	Th 0645	27.6	841
1835	29.7	905	1822	27.1	826	1306	-0.1	-3	1247	-0.4	-12
						1925	27.9	850	1858	28.2	860
14 0039	0.5	15	29 0028	2.1	64	14 Th 0129	0.4	12	14 0028	0.1	3
M 0648	26.5	808	Tu 0634	25.2	768	0747	26.9	820	Th 0645	28.2	860
1244	-1.4	-43	1232	0.2	6	1343	1.0	30	1245	1.0	30
1916	29.1	887	1853	27.4	835	1956	27.0	823	1855	27.3	832
15 0119	0.7	21	30 0100	1.4	43	15 F 0202	1.1	34	15 0100	0.5	15
Tu 0732	26.2	799	W 0708	25.6	780	0820	26.3	802	0719	27.8	847
1325	-0.5	-15	1306	0.0	0	1418	2.5	76	1320	1.9	58
1953	28.1	856	1923	27.5	838	2026	25.9	789	1926	26.5	808
			31 0131	0.8	24						
			Th 0741	26.0	792						
			1341	0.1	3						
			1955	27.5	838						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2013

Times and Heights of High and Low Waters

April				May				June							
	Time	Height			Time	Height			Time	Height					
1 M	h m 0159	ft -0.5	cm -15	16 Tu	0207 0830	3.5 25.9	107 789	1 W	0231 0905	1.3 28.2	40 860	16 Th	0223 0849	4.5 25.6	137 780
	0822	28.9	881		1442	6.3	192		1516	4.8	146		1033	25.4	774
	1434	2.7	82		2043	23.2	707		2124	24.3	741		1650	6.5	198
	2036	26.0	792						2110	22.6	689		2311	22.8	695
2 Tu	0242	0.9	27	17 W	0241 0907	4.7 24.7	143 753	2 Th	0321 0957	3.3 26.4	101 805	17 F	0301 0928	5.5 24.7	168 753
	0909	27.6	841		1520	7.7	235		1612	6.5	198		1543	7.6	232
	1523	4.7	143		2125	21.9	668		2224	22.8	695		2157	21.7	661
	2126	24.2	738												
3 W	0332	3.0	91	18 Th	0321 0951	6.2 23.3	189 710	3 F	0421 1059	5.6 24.6	171 750	18 Sa	0347 1016	6.8 23.6	207 713
	1004	25.6	780		1609	9.1	277		1722	7.8	238		1636	8.3	253
	1623	7.0	213		2221	20.5	625		2337	21.7	661		2257	21.0	640
	2229	22.2	677												
4 Th	0435	5.4	165	19 F	0414 1054	7.9 21.8	241 664	4 Sa	0536 1214	7.5 23.3	229 710	19 Su	0449 1120	8.1 22.7	247 692
	1118	23.7	722		1722	10.2	311		1842	8.0	244		1746	8.5	259
	1744	8.7	265		2340	19.6	597								
	2354	20.8	634												
5 F	0600	7.2	219	20 Sa	0535 1219	9.2 21.2	280 646	5 Su	0101 0703	21.8 8.1	664 247	20 M	0012 0611	21.1 8.8	643 268
	1251	22.8	695		1853	10.0	305		1334	23.1	704		1235	22.5	686
	1918	8.5	259						1958	6.8	207		1902	7.7	235
													2105	5.0	152
6 Sa	0130	21.1	643	21 Su	0107 0709	20.0 9.0	610 274	6 M	0220 0820	23.2 7.3	707 223	21 Tu	0128 0733	22.3 8.1	680 247
	0734	7.1	216		1339	21.9	668		1440	23.9	728		1346	23.3	710
	1419	23.7	722		2007	8.2	250		2056	5.1	155		2007	5.9	180
	2036	6.6	201												
7 Su	0250	23.1	704	22 M	0219 0823	21.9 7.3	668 223	7 Tu	0320 0920	25.1 5.8	765 177	22 W	0232 0840	24.5 6.4	747 195
	0849	5.5	168		1441	23.6	719		1531	24.9	759		1445	24.7	750
	1523	25.2	768		2100	5.8	177		2142	3.5	107		2101	3.7	113
	2131	4.3	131												
8 M	0348	25.4	774	23 Tu	0313 0918	24.3 5.2	741 158	8 W	0406 1007	26.9 4.6	820 140	23 Th	0325 0935	26.9 4.5	820 137
	0945	3.7	113		1528	25.3	771		1612	25.6	780		1535	26.0	792
	1608	26.6	811		2142	3.5	107		2221	2.3	70		2148	1.7	52
	2214	2.4	73												
9 Tu	0432	27.2	829	24 W	0358 1004	26.6 3.2	811 98	9 Th	0445 1048	28.0 3.9	853 119	24 F	0412 1024	28.9 3.0	881 823
	1030	2.4	73		1610	26.8	817		1648	25.9	789		1622	27.0	823
	1646	27.3	832		2221	1.5	46		2256	1.8	55		2233	0.2	6
	2251	1.2	37												
10 W	0510	28.3	863	25 Th	0438 1047	28.5 1.8	869 55	10 F	0521 1127	28.5 3.7	869 113	25 Sa	0458 1111	30.3 2.1	924 64
	1110	1.9	58		1649	27.7	844		1723	25.9	789		1708	27.4	835
	1719	27.3	832		2300	0.1	3		2331	1.8	-0.7		2318	-0.7	-21
	2325	0.7	21												
11 Th	0545	28.7	875	26 F	0518 1129	29.8 1.0	908 30	11 Sa	0555 1204	28.4 3.9	866 119	26 M	0544 1111	30.9 2.1	942 64
	1147	1.9	58		1730	28.0	853		1759	25.5	777		1756	27.4	835
	1752	27.0	823		2339	-0.8	-24								
	2358	0.8	24												
12 F	0619	28.6	872	27 Sa	0600 1211	30.5 0.9	930 27	12 Su	0005 0630	2.1 28.1	64 856	27 W	0056 0725	3.2 27.2	98 829
	1223	2.5	76		1812	27.9	850		1240	4.4	134		1244	1.9	58
	1825	26.4	805						1836	25.0	762		1846	27.0	823
13 Sa	0031	1.2	37	28 Su	0020 0644	-1.1 30.7	-34 936	13 M	0039 0705	2.6 27.5	79 838	28 Tu	0048 0722	-0.7 30.6	-21 933
	0652	28.2	860		1255	1.2	37		1316	5.0	152		1330	2.4	73
	1259	3.2	98		1857	27.5	838		1914	24.5	747		1937	26.5	808
	1858	25.8	786												
14 Su	0103	1.8	55	29 M	0102 0729	-0.9 30.3	-27 924	14 Tu	0114 0740	3.1 27.0	94 823	29 W	0134 0810	0.1 29.9	3 911
	0725	27.6	841		1340	2.0	61		1351	5.6	171		1407	3.2	98
	1333	4.1	125		1943	26.7	814		1952	23.9	728		2027	25.9	789
	1932	25.1	765												
15 M	0134	2.6	79	30 Tu	0145 0816	-0.1 29.5	-3 899	15 W	0148 0814	3.7 26.4	113 805	30 Th	0221 0857	1.4 28.7	43 875
	0757	26.9	820		1426	3.2	98		1426	6.2	189		1504	4.2	128
	1407	5.2	158		2032	25.7	783		2030	23.3	710		2118	25.0	762
	2007	24.3	741												
31 F	0309	1.2	37	31 F	0309 0943	3.2 27.2	98 829	13 Th	0131 0758	3.5 26.9	107 820	28 F	0207 0839	1.4 29.1	43 887
	0652	28.2	860		1255	1.2	37		1316	5.0	152		1407	5.4	125
	1259	3.2	98		1857	27.5	838		1914	24.5	747		2014	23.9	728
	1858	25.8	786												
16 Su	0338	5.2	158	30 Su	0338 0959	-0.1 25.9	-3 789	15 Sa	0242 0904	4.5 26.1	137 796	30 M	0338 1612	5.2 5.3	158 162
	0757	26.9	820		1426	3.2	98		1504	4.2	128		2130	23.3	710
	1407	5.2	158		2032	25.7	783		2118	25.0	762				
	2007	24.3	741												
29 Sa	0251	3.1	94	31 F	0309 0943	3.2 27.2	98 829	14 F	0205 0830	3.9 26.6	119 811	29 Sa	0251 1527	3.1 4.1	94 125
	0919	27.6	841		1255	1.2	37		1316	5.0	152		1440	5.5	125
	1527	4.1	125		1857	27.5	838		1914	24.5	747		2051	23.7	728
	2147	25.1	765												

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Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0430	7.5	229	16 0344	5.7	174	1 Th 0604	11.5	351	16 0536	9.4	287
1044	24.1	735	Tu 0953	25.5	777	1157	20.9	637	F 1140	22.4	683
1704	6.6	201	1612	4.8	146	1824	8.8	268	1801	6.5	198
2334	22.9	698	● 2236	24.3	741						
2 Tu 0535	9.6	293	17 0443	7.5	229	2 0112	22.0	671	17 0050	24.1	735
1140	22.4	683	W 1051	24.0	732	0738	11.5	351	Sa 0715	9.6	293
1809	7.5	229	1714	5.7	174	1323	20.5	625	1317	22.2	677
			2349	23.8	725	1948	8.5	259	1932	6.1	186
3 W 0044	22.5	686	18 0605	8.9	271	3 Sa 0235	23.2	707	18 0221	25.5	777
0656	10.5	320	Th 1210	22.9	698	0855	10.0	305	Su 0840	7.8	238
1251	21.4	652	1833	6.0	183	1440	21.6	658	1440	23.6	719
1921	7.6	232				2056	7.0	213	2048	4.2	128
4 Th 0201	23.1	704	19 0116	24.3	741	4 Su 0336	24.9	759	19 0330	27.8	847
0816	10.0	305	F 0736	8.8	268	0950	8.1	247	M 0942	5.3	162
1404	21.6	658	1335	22.9	698	1539	23.2	707	1544	25.7	783
2027	6.7	204	1953	5.1	155	2147	5.3	162	2147	2.1	64
5 F 0307	24.5	747	20 0235	26.1	796	5 M 0421	26.5	808	20 0424	29.7	905
0919	8.6	262	Sa 0853	7.1	216	1032	6.3	192	Tu 1032	3.1	94
1507	22.6	689	1450	24.1	735	1625	24.6	750	1637	27.6	841
2122	5.5	168	2101	3.2	98	2230	3.9	119	2238	0.5	15
6 Sa 0358	26.0	792	21 0340	28.2	860	6 Tu 0459	27.6	841	21 0509	30.8	939
1009	7.1	216	Su 0954	5.1	155	1109	5.1	155	W 1116	1.7	76
1558	23.7	722	1552	25.7	783	1706	25.5	777	1724	28.7	875
2208	4.3	131	2159	1.4	43	2308	3.0	91	● 2323	-0.2	-6
7 Su 0440	27.1	826	22 0434	30.0	914	7 W 0533	28.1	856	6 0534	28.6	872
1051	6.0	183	M 1046	3.3	101	1143	4.3	131	F 1144	2.5	76
1643	24.5	747	1646	27.0	823	1744	26.0	792	1752	27.8	847
2249	3.5	107	2250	0.0	0	● 2343	2.5	76	2353	1.8	55
8 M 0519	27.7	844	23 0524	31.0	945	8 Th 0606	28.3	863	8 0028	1.7	52
1130	5.3	162	Tu 1133	2.2	67	1214	3.7	113	Su 0636	28.7	875
1724	24.9	759	1736	27.7	844	1819	26.3	802	1245	1.4	43
● 2327	3.0	91	○ 2337	-0.6	-18				1858	28.5	869
9 Tu 0556	27.9	850	24 0610	31.3	954	9 F 0017	2.3	70	9 M 0103	1.9	58
1206	4.9	149	W 1217	1.6	49	0637	28.4	866	24 0046	0.9	27
1804	25.0	762	1825	28.1	856	1245	3.2	98	Sa 0708	28.5	869
						1853	26.5	808	1310	1.2	37
10 W 0003	2.9	88	25 0022	-0.4	-12	10 Sa 0051	2.2	67	24 1929	28.6	872
0631	27.8	847	0654	30.9	942	0707	28.4	866	9 1932	28.7	875
1240	4.7	143	1259	1.5	46	1315	2.8	85	25 0140	2.4	73
1842	25.0	762	1912	28.0	853	1926	26.8	817	25 0742	28.1	856
11 Th 0038	2.9	88	26 0106	0.4	12	10 Su 0125	2.1	64	11 Tu 1353	1.1	34
0704	27.7	844	0735	30.1	917	0739	28.5	869	2008	28.5	869
1312	4.5	137	F 1338	1.8	55	1345	2.0	61			
1919	25.0	762	1955	27.7	844	2005	27.9	850			
12 F 0112	2.9	88	27 0148	1.6	49	11 M 0203	3.7	113	10 2050	27.7	844
0736	27.7	844	Sa 0812	29.0	884	0811	27.2	829	26 0219	3.5	107
1343	4.2	128	1416	2.4	73	1418	2.9	88	W 0820	27.2	829
1953	25.1	765	2036	27.1	826	1958	27.1	826	● 1432	1.8	55
13 Sa 0146	3.1	94	28 0228	3.3	101	2040	26.9	820	2050	27.7	844
0805	27.6	841	Su 0847	27.7	844						
1414	3.9	119	1453	3.3	101						
2026	25.2	768	2115	26.1	796						
14 Su 0221	3.5	107	29 0309	5.3	162						
0836	27.3	832	M 0921	26.1	796						
1447	3.8	116	1531	4.6	140						
2100	25.2	768	2156	24.9	759						
15 M 0259	4.3	131	30 0353	7.6	232						
0910	26.7	814	Tu 0959	24.3	741						
1525	4.1	125	1613	6.2	189						
2141	24.9	759	● 2244	23.5	716						
16 W 0447	9.8	299	31 0447	9.8	299						
1048	22.4	683	W 1048	22.4	683						
1708	7.8	238	1708	7.8	238						
2348	22.3	680	2348	22.3	680						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0221 22.8 695	16 W 0250 25.7 783	1 F 0311 24.8 756	16 Sa 0353 25.4 774	1 Su 0316 24.5 747	16 M 0408 23.6 719						
0847 8.8 268	0902 4.8 146	0926 4.1 125	1002 1.9 58	0929 2.2 67	1017 2.2 67						
1445 22.3 680	1519 25.7 783	1541 26.0 792	1628 27.8 847	1553 27.1 826	1648 26.8 817						
2051 7.2 219	2118 4.1 125	2147 4.1 125	2230 3.4 104	2204 3.3 101	2255 4.1 125						
2 W 0314 24.7 753	17 Th 0341 27.2 829	2 Sa 0351 26.3 802	17 Su 0431 25.9 789	2 M 0402 25.7 783	17 Tu 0449 24.2 738						
0931 6.4 195	0949 2.6 79	1003 2.1 64	1039 1.1 34	1013 0.3 9	1055 1.6 49						
1535 24.6 750	1607 27.8 847	1620 27.9 850	1705 28.4 866	1637 28.7 875	1725 27.2 829						
2138 5.1 155	2206 2.6 79	2228 2.6 79	2310 3.1 94	2250 2.1 64	2333 3.6 110						
3 Th 0354 26.4 805	18 F 0422 28.0 853	3 Su 0429 27.2 829	18 M 0507 25.9 789	3 Tu 0446 26.5 808	18 W 0527 24.4 744						
1007 4.3 131	1029 1.2 37	1040 0.6 18	1115 0.9 27	1056 1.0 30	1132 1.3 40						
1614 26.5 808	1648 29.1 887	1657 29.2 890	1740 28.4 866	1721 29.7 905	1801 27.2 829						
2217 3.4 104	2249 1.9 58	● 2308 1.7 52	○ 2347 3.3 101	● 2334 1.3 40							
4 F 0428 27.6 841	19 Sa 0457 28.2 860	4 M 0506 27.7 844	19 Tu 0542 25.5 777	4 W 0532 26.8 817	19 Th 0010 3.6 110						
1039 2.6 79	1105 0.5 15	1117 0.4 12	1150 1.2 37	1140 1.7 52	0606 24.3 741						
1649 27.9 850	1725 29.5 899	1736 29.9 911	1815 28.0 853	1807 30.1 917	1208 1.4 43						
2253 2.2 67	○ 2328 1.9 58	2348 1.4 43			1836 27.0 823						
5 Sa 0501 28.3 863	20 Su 0531 27.8 847	5 Tu 0546 27.7 844	20 W 0024 3.7 113	5 Th 0019 1.1 34	20 F 0046 3.7 113						
1111 1.4 43	1139 0.5 15	1156 0.9 27	0619 24.9 759	0619 26.7 814	0645 24.0 732						
1723 28.9 881	1800 29.3 893	1817 30.1 917	1224 1.7 52	1224 1.9 58	1244 1.6 49						
● 2330 1.6 49			1850 27.4 835	1854 30.0 914	1911 26.6 811						
6 Su 0533 28.6 872	21 M 0005 2.5 76	6 W 0030 1.5 46	21 Th 0100 4.3 131	6 F 0104 1.3 40	21 Sa 0120 3.8 116						
1144 0.6 18	0605 27.1 826	0628 27.3 832	0657 24.3 741	0708 26.4 805	0723 23.8 725						
1758 29.4 896	1212 1.1 34	1237 1.0 30	1259 2.3 70	1310 1.5 46	1318 1.9 58						
	1834 28.7 875	1900 30.0 914	1925 26.7 814	1942 29.5 899	1944 26.2 799						
7 M 0006 1.4 43	22 Tu 0041 3.5 107	7 Th 0114 2.0 61	22 F 0136 4.9 149	7 Sa 0150 1.7 52	22 Tu 0152 4.0 122						
0608 28.5 869	0638 26.2 799	0713 26.7 814	0735 23.7 722	0758 25.8 786	0759 23.5 716						
1218 0.1 3	1245 1.8 55	1320 0.5 15	1334 2.9 88	1356 0.5 15	1352 2.4 73						
1834 29.7 905	1908 28.0 853	1947 29.4 896	2000 26.0 792	2029 28.6 872	2016 25.8 786						
8 Tu 0045 1.7 52	23 W 0117 4.5 137	8 F 0159 2.9 88	23 Sa 0211 5.6 171	8 Su 0236 2.5 76	23 M 0224 4.1 125						
0644 28.1 856	0713 25.3 771	0801 25.8 786	0813 23.1 704	0848 25.0 762	0833 23.1 704						
1254 0.0 0	1318 2.7 82	1405 0.5 15	1409 3.7 113	1443 1.1 34	1426 3.0 91						
1912 29.7 905	1942 27.1 826	2035 28.3 863	2035 25.2 768	2115 27.2 829	2047 25.2 768						
9 W 0125 2.3 70	24 Th 0152 5.6 171	9 Sa 0247 4.1 125	24 Su 0247 6.2 189	9 M 0324 3.5 107	24 Tu 0257 4.4 134						
0724 27.5 838	0749 24.4 744	0853 24.7 753	0853 22.3 680	0940 24.0 732	0909 22.7 692						
1333 0.3 9	1352 3.6 110	1453 2.1 64	1446 4.7 143	1534 3.2 98	1503 4.0 122						
1953 29.2 890	2016 26.1 796	2127 26.8 817	2113 24.3 741	2203 25.4 774	2121 24.4 744						
10 Th 0207 3.4 104	25 F 0228 6.7 204	10 Su 0340 5.6 171	25 M 0326 7.0 213	10 W 0417 4.8 146	25 Th 0333 4.9 149						
0806 26.5 808	0827 23.3 710	0951 23.3 710	0938 21.4 652	1037 22.7 692	0949 22.0 671						
1415 1.2 37	1427 4.8 146	1549 4.2 128	1529 6.0 183	1632 5.6 171	1546 5.5 168						
2039 28.1 856	2054 24.9 759	● 2227 25.1 765	2158 23.1 704	● 2258 23.5 716	● 2203 23.2 707						
11 F 0254 5.0 152	26 Sa 0307 8.0 244	11 M 0445 6.9 210	26 Tu 0413 7.7 235	11 W 0519 5.9 180	26 Th 0419 5.6 171						
0855 25.0 762	0910 22.1 674	1101 22.0 671	1033 20.5 625	1145 21.8 664	1043 21.3 649						
1503 2.9 88	1507 6.3 192	1659 6.4 195	1624 7.5 229	1745 7.6 232	1643 7.1 216						
2133 26.6 811	2139 23.5 716	2338 23.6 719	● 2255 22.0 671		2300 21.9 668						
12 Sa 0350 7.0 213	27 Su 0355 9.3 283	12 Tu 0603 7.5 229	27 W 0517 8.3 253	12 Th 0004 22.0 671	27 F 0521 6.2 189						
0955 23.2 707	1005 20.7 631	1223 21.6 658	0631 6.4 195	0631 6.4 195	1156 21.0 640						
1602 5.0 152	1558 7.9 241	1824 7.5 229	1741 8.6 262	1304 21.7 661	1804 8.2 250						
● 2242 24.8 756	● 2239 22.1 674			1909 8.3 253							
13 Su 0504 8.7 265	28 M 0503 10.4 317	13 W 0058 23.0 701	28 Th 0008 21.4 652	13 F 0119 21.3 649	28 Sa 0016 21.1 643						
1116 21.7 661	1120 19.7 600	0723 6.7 204	0634 7.9 241	0744 5.9 180	0639 6.1 186						
1720 6.9 210	1714 9.4 287	1347 22.6 689	1302 20.8 634	1421 22.8 695	1318 21.8 664						
	2359 21.3 649	1948 7.1 216	1907 8.4 256	2026 7.6 232	1933 7.9 241						
14 M 0010 23.7 722	29 Tu 0633 10.3 314	14 Th 0211 23.6 719	29 F 0121 21.8 664	14 Sa 0228 21.8 664	29 Tu 0136 21.4 652						
0637 8.9 271	1246 19.9 607	0828 5.0 152	0744 6.4 195	0845 4.6 140	0755 4.8 146						
1250 21.6 658	1848 9.4 287	1455 24.6 750	1411 22.6 689	1522 24.4 744	1431 23.7 722						
1854 7.3 223		2055 5.7 174	2019 7.0 213	2126 6.3 192	2046 6.3 192						
15 Tu 0140 24.2 738	30 W 0119 21.7 661	15 F 0308 24.6 750	30 Sa 0224 23.0 701	15 M 0323 22.7 692	30 M 0244 22.7 692						
0801 7.3 223	0750 8.7 265	0919 3.2 98	0841 4.3 131	0934 3.3 101	0858 2.7 82						
1415 23.3 710	1401 21.5 655	1546 26.5 808	1506 24.9 759	1609 25.9 789	1531 26.0 792						
2016 6.0 183	2005 8.0 244	2147 4.3 131	2116 5.1 155	2213 5.0 152	2145 4.3 131						
31 Th 0223 23.2 707	31 Th 0844 6.4 195				31 Th 0342 24.2 738						
	1457 23.8 725				Tu 0952 0.6 18						
	2101 6.0 183				Tu 1623 28.0 853						
					2236 2.5 76						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Namp'O-Hang, Korea, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 0524	2.1	64	16 0003	18.5	564	1 0607	1.3	40	16 0046	16.1	491
Tu 1123	14.6	445	W 0617	1.2	37	F 1215	16.4	500	Sa 0657	2.1	64
1716	1.8	55	1226	15.7	479	1819	2.1	64	1314	16.2	494
2340	17.8	543	1820	2.0	61	1923	3.6	110	1923	1.5	46
2 0558	2.0	61	17 0040	17.4	530	17 0121	15.0	457	2 0540	1.1	34
W 1157	14.9	454	Th 0657	1.7	52	Sa 0647	1.5	46	Sa 1156	17.7	539
1754	2.1	64	1308	15.4	469	1258	16.4	500	1805	2.0	61
1908	3.0	91	1908	2.9	88	2016	4.7	143	1851	3.5	107
3 0014	17.6	536	18 0119	16.1	491	3 0109	16.1	491	18 0203	13.9	424
Th 0636	1.9	58	F 0741	2.3	70	Su 0733	1.9	58	M 0829	3.7	113
1237	15.1	460	1353	15.0	457	1348	16.1	491	1449	14.9	454
1838	2.6	79	2001	4.0	122	O 2008	3.9	119	O 2120	5.5	168
4 0052	17.0	518	19 0201	14.9	454	4 0158	14.9	454	19 0255	12.8	390
F 0720	2.1	64	Sa 0829	3.0	91	M 0830	2.6	79	Tu 0930	4.3	131
1323	15.1	460	1445	14.5	442	1448	15.7	479	1556	14.4	439
1931	3.3	101	O 2102	4.9	149	2124	4.8	146	2233	5.9	180
5 0137	16.1	491	20 0250	13.6	415	5 0259	13.5	411	20 0408	11.9	363
Sa 0811	2.4	73	Su 0924	3.5	107	Tu 0941	3.2	98	W 1039	4.6	140
1417	15.0	457	1549	14.2	433	1606	15.4	469	1724	14.3	436
O 2037	4.1	125	2211	5.5	168	2251	5.1	155	2346	5.7	174
6 0229	15.0	457	21 0352	12.5	381	6 W 0422	12.4	378	21 0547	11.8	360
Su 0911	2.7	82	M 1025	3.9	119	1059	3.4	104	Th 1148	4.4	134
1522	15.0	457	1707	14.2	433	1744	15.6	475	1845	14.9	454
2154	4.6	140	2323	5.6	171						
7 0333	13.9	424	22 0515	12.0	366	7 Th 0014	4.6	140	22 0050	5.1	155
M 1018	2.8	85	Tu 1127	3.9	119	0611	12.3	375	F 0708	12.4	378
1640	15.2	463	1825	14.7	448	1215	3.0	91	1248	3.9	119
2315	4.6	140	1927	15.5	472	1911	16.7	509	1944	15.8	482
8 0454	13.0	396	23 0029	5.2	158	8 F 0124	3.6	110	23 0143	4.3	131
Tu 1128	2.6	79	W 0640	12.0	366	0738	13.2	402	Sa 0803	13.3	405
1808	15.9	485	1226	3.6	110	1321	2.2	67	1339	3.2	98
1927	15.5	472	2015	17.9	546	2029	16.6	506	2029	17.2	524
9 0031	4.0	122	24 0127	4.6	140	9 Sa 0222	2.5	76	24 0226	3.5	107
W 0627	12.9	393	Th 0743	12.5	381	0839	14.4	439	Su 0845	14.2	433
1233	2.1	64	1318	3.1	94	1419	1.4	43	1423	2.6	79
1924	17.1	521	2016	16.4	500	2106	18.8	573	2105	17.2	524
10 0137	3.1	94	25 0215	3.9	119	10 Su 0312	1.6	49	25 0302	2.8	85
Th 0745	13.4	408	F 0831	13.1	399	0928	15.5	472	M 0919	15.0	457
1333	1.5	46	1404	2.7	82	1510	0.8	24	1501	2.1	64
2025	18.3	558	2056	17.0	518	O 2150	19.3	588	2136	17.5	533
11 0235	2.2	67	26 0256	3.3	101	11 M 0355	1.0	30	26 0334	2.2	67
F 0846	14.2	433	Sa 0909	13.7	418	1010	16.3	497	Tu 0949	15.7	479
1428	0.8	24	1444	2.2	67	1555	0.5	15	1536	1.6	49
2116	19.3	588	2130	17.5	533	2230	19.3	588	O 2204	17.7	539
12 0326	1.4	43	27 0331	2.8	85	12 Tu 0434	0.7	21	27 0405	1.7	52
Sa 0937	14.9	454	Su 0942	14.2	433	1049	16.8	512	W 1018	16.4	500
1518	0.4	12	1520	1.9	58	1638	0.6	18	1611	1.4	43
O 2202	19.8	604	O 2200	17.7	539	2306	18.9	576	2232	17.8	543
13 0412	0.9	27	28 0402	2.3	70	13 W 0510	0.8	24	28 0435	1.3	40
Su 1022	15.4	469	M 1010	14.6	445	1125	17.0	518	Th 1047	17.0	518
1605	0.3	9	1554	1.6	49	1718	1.1	34	1646	1.3	40
2245	19.8	604	2226	17.9	546	2340	18.1	552	2300	17.7	539
14 0455	0.8	24	29 0432	2.0	61	14 Th 0545	1.0	30	14 0439	1.1	34
M 1105	15.8	482	Tu 1038	15.1	460	1200	16.9	515	1102	18.1	552
1651	0.5	15	1626	1.4	43	1758	1.8	55	1658	1.4	43
2325	19.3	588	2252	18.0	549				2315	17.4	530
15 0536	0.9	27	30 0501	1.6	49	15 F 0013	17.2	524	15 0511	1.3	40
Tu 1145	15.8	482	W 1106	15.6	475	0620	1.5	46	1133	18.0	549
1735	1.1	34	1700	1.4	43	1236	16.6	506	1734	1.9	58
2320	17.9	546	1839	2.6	79	1839	2.6	79	2344	16.7	509
31 0533	1.4	43									
Th 1138	16.1	491									
1737	1.6	49									
2352	17.6	536									

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Namp'O-Hang, Korea, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0557	1.7	52	16 Tu 0019	14.9	454	1 W 0035	14.8	451	1 Sa 0033	14.7	448
1224	18.5	564	0619	3.1	94	0634	3.0	91	0631	3.8	116
1844	3.1	94	1244	17.4	530	1306	18.2	555	1256	17.6	536
			1906	4.1	125	1939	4.0	122	1926	4.3	131
2 Tu 0038	15.1	460	17 W 0057	14.4	439	2 Th 0130	14.1	430	17 F 0117	14.4	439
0645	2.5	76	0702	3.8	116	0735	4.1	125	0721	4.4	134
1313	17.7	539	1326	16.7	509	1404	17.1	521	1340	17.0	518
1943	4.1	125	1958	4.8	146	2047	4.6	140	2019	4.5	137
3 W 0130	14.1	430	18 Th 0143	13.8	421	3 F 0238	13.5	411	18 Sa 0208	14.2	433
0744	3.6	110	0756	4.6	140	0851	5.0	152	0821	5.1	155
1412	16.7	509	1416	16.0	488	1514	16.1	491	1431	16.3	497
2057	5.0	152	2100	5.2	158	2200	4.7	143	2118	4.7	143
4 Th 0236	13.1	399	19 F 0240	13.2	402	4 Sa 0405	13.5	411	19 Su 0309	14.1	430
0900	4.6	140	0904	5.2	158	1014	5.4	165	0931	5.5	168
1529	15.7	479	1517	15.3	466	1637	15.4	469	1531	15.7	479
2220	5.2	158	2208	5.3	162	2309	4.4	134	2220	4.5	137
5 F 0411	12.6	384	20 Sa 0353	13.0	396	5 Su 0538	14.2	433	20 M 0420	14.4	439
1028	4.9	149	1018	5.4	165	1131	5.2	158	1043	5.5	168
1706	15.4	469	1630	14.9	454	1801	15.3	466	1638	15.2	463
2338	4.8	146	2313	5.0	152	2319	4.1	125	2319	4.1	125
6 Sa 0559	13.2	402	21 Su 0518	13.4	408	6 M 0010	3.9	119	21 Tu 0535	15.1	460
1150	4.6	140	1129	5.1	155	0650	15.4	469	1150	5.1	155
1834	15.9	485	1748	15.0	457	1238	4.6	140	1750	15.1	460
7 Su 0043	3.9	119	22 M 0011	4.3	131	7 Tu 0102	3.3	101	22 W 0013	3.5	107
0715	14.6	445	0633	14.4	439	0745	16.7	509	0642	16.3	497
1258	3.8	116	1230	4.5	137	1335	3.9	119	1250	4.4	134
1938	16.6	506	1853	15.4	469	2000	15.9	485	1856	15.2	463
8 M 0136	3.0	91	23 Tu 0101	3.5	107	8 W 0148	2.7	82	23 Th 0103	2.9	88
0809	16.1	491	0729	15.6	475	0830	17.7	539	0739	17.5	533
1354	2.9	88	1324	3.7	113	1423	3.4	104	1345	3.6	110
2028	17.1	521	1946	15.9	485	2045	16.0	488	1954	15.5	472
9 Tu 0221	2.2	67	24 W 0144	2.8	85	9 Th 0228	2.4	73	24 F 0150	2.3	70
0854	17.3	527	0815	16.8	512	0909	18.4	561	0828	18.7	570
1442	2.3	70	1411	2.9	88	1505	3.0	91	1435	2.9	88
2110	17.3	527	2030	16.3	497	2123	15.9	485	2044	15.7	479
10 W 0300	1.8	55	25 Th 0224	2.1	64	10 F 0304	2.3	70	25 Sa 0235	1.8	55
0932	18.1	552	0855	17.9	546	0944	18.8	573	0914	19.6	597
1524	2.0	61	1455	2.3	70	1543	2.9	88	1523	2.5	76
2147	17.2	524	2110	16.5	503	2156	15.8	482	2130	15.9	485
11 Th 0335	1.6	49	26 F 0303	1.6	49	11 Sa 0337	2.3	70	26 Su 0318	1.5	46
1006	18.5	564	0933	18.9	576	1015	18.9	576	0958	20.3	619
1602	1.9	58	1538	1.9	58	1618	3.0	91	1610	2.3	70
2220	16.9	515	2148	16.5	503	2227	15.5	472	2215	15.9	485
12 F 0407	1.6	49	27 Sa 0340	1.3	40	12 Tu 0408	2.4	73	27 M 0402	1.5	46
1037	18.7	570	1011	19.5	594	1044	18.8	573	1041	20.5	625
1637	2.1	64	1620	1.8	55	1651	3.1	94	1657	2.3	70
2249	16.4	500	2226	16.3	497	2255	15.3	466	2259	15.7	479
13 Sa 0438	1.8	55	28 Su 0418	1.3	40	13 M 0440	2.6	79	28 Tu 0447	1.8	55
1107	18.6	567	1050	19.8	604	1113	18.7	570	1125	20.3	619
1711	2.4	73	1703	2.0	61	1724	3.3	101	1744	2.6	79
2318	15.9	485	2305	16.0	488	2324	15.1	460	2345	15.5	472
14 Su 0509	2.1	64	29 M 0459	1.5	46	14 Tu 0513	2.9	88	29 W 0535	2.4	73
1136	18.3	558	1131	19.6	597	1144	18.4	561	1211	19.7	600
1746	2.9	88	1750	2.5	76	1800	3.6	110	1835	3.1	94
2347	15.4	469	2348	15.4	469	2356	14.9	454			
15 M 0542	2.6	79	30 Tu 0543	2.1	64	15 W 0550	3.3	101	30 Th 0034	15.2	463
1208	17.9	546	1216	19.1	582	1218	18.1	552	0627	3.2	98
1823	3.5	107	1841	3.2	98	1840	3.9	119	1259	18.7	570
									1929	3.6	110
									31 F 0128	14.8	451
									0727	4.2	128
									1351	17.6	536
									2028	4.0	122

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Namp'O-Hang, Korea, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0308	15.7	479	16 0153	16.8	512	1 Th 0440	16.0	488	16 Su 0325	17.2	524
0920	6.0	183	Tu 0809	5.3	162	1101	7.1	216	F 1010	6.5	198
1517	15.5	472	1404	16.9	515	1650	13.7	418	1540	14.4	439
2150	4.5	137	● 2040	4.0	122	2305	5.5	168	2220	5.0	152
2 Tu 0418	15.7	479	17 0250	16.8	512	2 0600	16.4	500	17 Sa 0452	17.1	521
1030	6.4	195	W 0918	5.9	180	1208	6.8	207	1133	6.3	192
1625	14.5	442	1500	15.8	482	1816	13.6	415	1717	14.0	427
2248	4.7	143	2142	4.2	128				2338	4.7	143
3 W 0534	16.1	491	18 0359	16.8	512	3 Sa 0006	5.3	162	18 Su 0625	17.8	543
1139	6.4	195	Th 1036	6.2	189	0707	17.0	518	1247	5.4	165
1743	14.0	427	1609	14.9	454	1307	6.3	192	1854	14.6	445
2346	4.6	140	2250	4.3	131	1924	14.1	430			
4 Th 0642	16.7	509	19 0520	17.2	524	4 Su 0101	4.9	149	19 M 0047	4.0	122
1241	6.1	186	F 1153	5.9	180	0759	17.8	543	0739	18.9	576
1854	14.0	427	1735	14.4	439	1357	5.6	171	1348	4.4	134
			2358	4.0	122	2015	14.7	448	2004	15.7	479
5 F 0039	4.4	134	20 0642	18.1	552	5 M 0148	4.4	134	20 Tu 0148	3.1	94
0738	17.5	533	Sa 1302	5.1	155	0841	18.4	561	0835	20.0	610
1336	5.6	171	1902	14.6	445	1439	5.0	152	1441	3.4	104
1951	14.3	436				2055	15.3	466	2058	16.9	515
6 Sa 0127	4.1	125	21 0101	3.4	104	6 Tu 0230	4.0	122	21 W 0242	2.4	73
0824	18.2	555	Su 0751	19.2	585	0917	18.9	576	0923	20.6	628
1423	5.1	155	1403	4.2	128	1516	4.5	137	1527	2.6	79
2038	14.7	448	2012	15.3	466	2129	15.8	482	● 2144	17.9	546
7 Su 0211	3.9	119	22 0158	2.7	82	7 W 0307	3.6	110	7 Th 0330	2.0	61
0904	18.7	570	M 0848	20.3	619	0948	19.1	582	1006	20.7	631
1504	4.7	143	1457	3.4	104	1547	4.1	125	1608	2.2	67
2116	15.0	457	2108	16.1	491	● 2159	16.3	497	2226	18.6	567
8 M 0250	3.6	110	23 0251	2.2	67	8 Th 0341	3.4	104	23 F 0416	2.0	61
0938	19.0	579	Tu 0937	21.0	640	1015	19.2	585	1045	20.4	622
1540	4.4	134	1546	2.8	85	1617	3.7	113	1647	2.2	67
● 2150	15.2	463	○ 2157	16.9	515	2226	16.7	509	2305	18.9	576
9 Tu 0325	3.5	107	24 0341	1.9	58	9 F 0413	3.3	101	24 Sa 0458	2.3	70
1009	19.1	582	W 1022	21.2	646	1040	19.2	585	1121	19.7	600
1613	4.1	125	1631	2.4	73	1645	3.4	104	1724	2.4	73
2219	15.4	469	2242	17.4	530	2253	17.2	524	2342	18.8	573
10 W 0359	3.4	104	25 0428	2.0	61	10 Sa 0446	3.2	98	10 Tu 0540	3.0	91
1036	19.2	585	Th 1104	20.9	637	1106	19.1	582	1156	18.7	570
1643	3.9	119	1714	2.4	73	1715	3.2	98	1801	2.9	88
2247	15.7	479	2325	17.7	539	2322	17.6	536			
11 Th 0432	3.3	101	26 0515	2.4	73	11 M 0521	3.4	104	26 Tu 0020	18.5	564
1103	19.2	585	Sa 1144	20.3	619	1135	18.9	576	0623	3.9	119
1714	3.7	113	F 1755	2.6	79	1747	3.1	94	1232	17.6	536
2316	16.0	488				2356	17.9	546	1839	3.6	110
12 F 0506	3.4	104	27 0007	17.7	539	12 M 0559	3.7	113	11 W 0011	18.9	576
1131	19.1	582	Sa 0601	3.2	98	1208	18.5	564	0625	4.0	122
1746	3.5	107	1223	19.2	585	1824	3.1	94	1223	17.0	518
2347	16.4	500				1837	3.0	91	1834	3.3	101
13 Sa 0542	3.6	110	28 0050	17.5	533	13 Tu 0035	18.1	552	11 W 0057	18.5	564
1202	18.9	576	Su 0650	4.1	125	0644	4.3	131	0719	5.0	152
1821	3.4	104	1303	18.0	549	1247	17.7	539	1309	15.9	485
			1920	3.6	110	1906	3.5	107	1921	4.3	131
14 Su 0023	16.7	509	29 0135	17.1	521	14 W 0121	17.9	546	14 Th 0235	16.5	503
0623	4.0	122	M 0742	5.2	158	0739	5.2	158	0905	6.8	207
1237	18.5	564	1345	16.7	509	1332	16.7	509	1444	14.2	433
1900	3.5	107	2008	4.3	131	● 1958	4.1	125	2113	5.8	177
15 M 0105	16.8	512	30 0226	16.6	506	15 Th 0217	17.6	536	15 F 0341	16.0	488
0711	4.6	140	Tu 0842	6.2	189	0848	6.1	186	1018	7.2	219
1317	17.8	543	1433	15.4	469	1428	15.5	472	1557	13.4	408
1946	3.7	113	● 2102	4.9	149				2223	6.1	186
16 W 0326	16.2	494	31 0949	6.9	210				31 Sa 0506	15.9	485
			1532	14.3	436				1130	7.0	213
			2202	5.4	165				1732	13.4	408
									2332	5.9	180

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Namp'O-Hang, Korea, 2013

Times and Heights of High and Low Waters

October				November				December															
	Time	Height			Time	Height			Time	Height													
	h m	ft cm		h m	ft cm			h m	ft cm														
1 Tu	0638 1243 1909	16.1 5.2 14.8	491 158 451	16 W	0026 0702 1305 1939	4.4 16.8 3.4 16.5	134 512 104 503	1 F	0107 0727 1326 1958	4.0 15.6 2.9 16.8	122 475 88 512	16 Su	0126 0732 1406 2050	3.4 14.4 1.9 18.3	104 439 58 558	16 M	0232 0846 1421 2111	3.1 14.0 2.0 18.0	94 427 61 549				
2 W	0053 0730 1328 1955	4.8 16.7 4.3 15.9	146 509 131 485	17 Th	0126 0758 1352 2027	3.5 17.3 2.5 17.9	107 527 76 546	2 Sa	0154 0811 1405 2037	3.2 15.9 2.2 17.8	98 485 67 543	17 Su	0248 0904 1445 2127	2.6 15.6 1.7 18.8	79 475 52 573	2 M	0215 0822 1414 2053	2.6 14.6 1.3 18.6	79 445 40 567				
3 Th	0140 0812 1407 2033	4.0 17.2 3.5 16.9	122 524 107 515	18 F	0218 0844 1434 2108	2.7 17.6 1.9 18.8	82 536 58 573	3 Su	0237 0849 1442 2113	2.6 16.1 1.7 18.7	79 491 52 570	18 M	0328 0941 1521 2201	2.4 15.4 1.6 18.9	73 469 49 576	3 Tu	0302 0908 1456 2135	2.0 14.8 0.9 19.3	61 451 27 588				
4 F	0222 0848 1441 2106	3.3 17.5 2.9 17.7	101 533 88 539	19 Sa	0303 0924 1512 2146	2.2 17.6 1.7 19.3	67 536 52 588	4 M	0317 0926 1517 2149	2.2 16.1 1.4 19.3	67 491 52 588	4 Tu	0347 0951 1554 2232	1.6 15.0 1.8 18.7	49 457 55 570	19 W	0423 1029 1608 2246	2.4 14.2 1.8 18.1	73 433 55 552				
5 Sa	0259 0919 1513 2137	2.9 17.6 2.5 18.4	88 536 76 561	20 Su	0344 1000 1547 2220	2.1 17.2 1.7 19.4	64 524 52 591	5 Tu	0357 1002 1554 2225	2.0 16.0 1.2 19.6	61 488 37 597	20 W	0439 1044 1627 2302	2.5 14.9 2.0 18.5	76 454 61 564	20 Th	0431 1033 1621 2259	1.5 15.0 0.8 19.6	46 457 24 597	20 F	0454 1057 1640 2314	2.4 14.3 1.9 18.0	73 436 58 549
6 Su	0335 0949 1544 2207	2.5 17.6 2.1 19.0	76 536 64 579	21 M	0421 1033 1620 2252	2.3 16.7 1.9 19.3	70 509 58 588	6 W	0438 1039 1632 2304	2.0 15.7 1.4 19.6	61 479 43 597	21 Th	0512 1114 1700 2333	2.7 14.6 2.3 18.1	82 445 70 552	21 Sa	0516 1117 1706 2342	1.6 14.9 1.1 19.2	49 454 34 585	21 M	0526 1126 1714 2343	2.4 14.3 2.0 17.7	73 436 61 539
7 M	0411 1019 1616 2239	2.4 17.4 2.0 19.3	73 530 61 588	22 Tu	0457 1104 1652 2323	2.6 16.1 2.3 18.9	79 491 70 576	7 Th	0521 1119 1714 2347	2.3 15.3 1.8 19.2	70 466 55 585	22 F	0548 1145 1735	3.0 14.4 2.7	91 439 82	7 Sa	0603 1203 1756	2.0 14.6 1.9	61 445 58	22 Su	0600 1158 1751	2.4 14.4 2.4	73 439 73
8 Tu	0448 1051 1650 2315	2.5 17.0 2.0 19.4	76 518 61 591	23 W	0532 1135 1726 2355	3.2 15.5 2.8 18.3	98 472 85 558	8 F	0609 1204 1801	2.9 14.8 2.5	88 451 76 76	23 Sa	0005 0626 1221 1816	17.7 3.3 14.1 3.2	539 101 430 98	8 Su	0028 0654 1254 1851	18.4 2.4 14.3 2.8	561 73 436 85	23 M	0015 0636 1234 1832	17.4 2.5 14.5 2.9	530 76 442 88
9 W	0528 1127 1728 2355	2.9 16.5 2.3 19.2	88 503 70 585	24 Th	0610 1207 1803	3.8 14.9 3.5	116 454 107	9 Sa	0034 0703 1255 1857	18.4 3.6 14.1 3.5	561 110 430 107	24 M	0042 0709 1302 1903	17.1 3.6 13.9 3.9	521 110 424 119	9 Tu	0117 0750 1351 1956	17.2 2.9 14.0 3.9	524 88 427 119	24 W	0050 0717 1316 1920	16.9 2.6 14.4 3.5	515 79 439 107
10 Th	0614 1208 1812	3.6 15.8 3.0	110 482 91	25 F	0031 0653 1245 1846	17.7 4.4 14.3 4.2	539 134 436 128	10 Su	0128 0808 1359 2008	17.3 4.2 13.5 4.6	527 128 411 140	25 Tu	0124 0759 1351 2000	16.5 3.9 13.6 4.6	503 119 415 140	25 W	0212 0852 1500 2111	15.9 3.3 13.8 4.7	485 101 421 143	25 O	0130 0804 1505 2018	16.2 2.8 14.4 4.2	494 85 439 128
11 F	0041 0709 1258 1906	18.6 4.5 14.8 4.0	567 137 451 122	26 Sa	0112 0744 1331 1939	16.9 5.0 13.8 5.0	515 152 421 152	11 M	0232 0920 1518 2133	16.2 4.4 13.3 5.2	494 134 405 158	26 Tu	0212 0857 1450 2108	15.7 4.1 13.5 5.1	479 125 411 155	26 W	0317 0957 1621 2230	14.7 3.4 14.0 5.0	448 104 427 152	26 Th	0217 0858 1502 2127	15.3 3.0 14.3 4.8	466 91 436 146
12 Sa	0137 0817 1359 2018	17.6 5.3 13.9 5.0	536 162 424 152	27 Su	0202 0845 1428 2047	16.1 5.4 13.3 5.6	491 165 405 171	12 Tu	0350 1033 1653 2256	15.3 4.2 13.8 5.1	466 128 421 155	27 W	0308 0958 1558 2221	14.9 4.0 13.6 5.2	454 122 415 158	27 F	0434 0959 1744 2344	13.8 3.1 14.7 4.8	421 94 448 146	27 Th	0312 0959 1609 2241	14.3 3.1 14.5 4.9	436 94 442 149
13 Su	0246 0939 1523 2147	16.6 5.6 13.3 5.5	506 171 405 168	28 M	0302 0952 1541 2202	15.4 5.5 13.1 5.8	469 168 399 177	13 W	0517 1138 1816 2330	14.9 3.7 14.9 4.9	454 113 454 149	28 Th	0414 1057 1713 2330	14.3 3.7 14.2 4.9	436 113 433 149	28 Sa	0556 1159 1852 2353	13.4 3.0 15.7 4.5	408 91 479 137	28 Tu	0418 1101 1726 2353	13.5 3.0 15.0 4.5	411 91 457 137
14 M	0415 1100 1711 2314	16.0 5.3 13.6 5.2	488 162 415 158	29 Tu	0413 1056 1705 2313	15.0 5.1 13.5 5.5	457 155 411 168	14 Th	0009 0634 1234 1918	4.5 15.1 2.9 16.3	137 460 88 497	29 F	0525 1153 1822 2008	14.1 3.1 15.2 4.6	430 94 463 500	29 Sa	0049 0706 1252 1946	4.3 13.5 2.6 16.7	485 104 411 509	29 W	0536 1202 1841 2038	13.1 2.6 16.0 18.3	399 79 488 558
15 Tu	0549 1208 1838	16.2 4.4 15.0	494 134 457	30 W	0529 1153 1818	15.0 4.4 14.5	457 134 442	15 F	0110 0733 1323 2008	3.7 15.3 2.3 17.5	113 466 70 533	30 Sa	0031 0633 1243 1920	4.2 14.1 2.5 16.4	128 430 76 500	30 Tu	0144 0801 1339 2032	3.7 13.8 2.2 17.5	113 421 67 533	30 M	0058 0655 1258 1944	3.8 13.1 2.0 17.2	116 399 61 524
				31 Th	0015 0635 1242 1913	4.8 15.3 3.6 15.6	146 466 110 475								31 Tu	0156 0801 1351 2038	2.9 13.6 1.3 18.3	88 415 40 558					

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dalian, China, 2013

Times and Heights of High and Low Waters

January					February					March					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 Tu	0624	1.0 32		16 W	0029	9.7 296	1 F	0038	9.2 280	16 Sa	0118	8.3 252	1 F	0559	0.0 -1
	1210	7.7 235		0700	0.2 6		0703	0.1 3		0739	0.4 12		1200	9.2 281	
	1813	0.4 13		1251	8.2 251		1302	8.5 258		1351	8.5 258		1818	0.2 7	
				1903	0.2 6		1915	0.5 16		2008	1.7 52				
2 W	0025	9.6 294		17 Th	0111	9.2 279	2 Sa	0117	8.8 269	17 Su	0159	7.6 232	2 Sa	0016	9.0 273
	0657	0.9 27		0740	0.3 9		0741	0.0 1		0817	0.8 25		0634	-0.2 -6	
	1247	7.7 236		1339	8.1 247		1347	8.5 259		1439	8.1 247		1239	9.4 287	
	1851	0.6 19		1950	0.9 28		2002	1.0 29		2059	2.4 74		1901	0.5 16	
3 Th	0101	9.4 286		18 F	0153	8.5 258	3 Su	0200	8.3 253	18 M	0243	6.9 209	3 Su	0055	8.6 262
	0733	0.7 22		0823	0.5 16		0824	0.1 4		0901	1.4 42		0713	-0.2 -5	
	1328	7.8 237		1431	7.9 240		1439	8.4 257		1537	7.7 234		1323	9.4 286	
	1934	0.9 28		2042	1.7 53		2058	1.6 48		2204	3.1 95		1949	1.0 31	
4 F	0142	9.0 274		19 Sa	0239	7.7 235	4 M	0250	7.6 231	19 Tu	0341	6.1 187	4 M	0139	8.0 244
	0813	0.7 20		0908	0.9 27		0915	0.4 13		0958	2.0 61		0756	0.1 2	
	1415	7.8 238		1530	7.6 232		1542	8.2 251		1654	7.3 223		1415	9.1 278	
	2023	1.3 40		2142	2.5 77		2208	2.2 67		2340	3.5 107		2045	1.7 51	
5 Sa	0228	8.5 258		20 Su	0333	6.9 210	5 Tu	0352	6.8 207	20 W	0509	5.7 173	5 Tu	0229	7.3 222
	0859	0.7 20		1000	1.3 41		1018	0.8 24		1119	2.4 72		0847	0.6 17	
	1511	7.8 239		1641	7.4 225		1700	8.1 247		1825	7.3 223		1518	8.6 263	
	2123	1.8 54		2300	3.1 95		2337	2.6 78					2156	2.3 71	
6 Su	0322	7.8 238		21 M	0441	6.2 190	6 W	0516	6.2 189	21 Th	0117	3.3 100	6 W	0334	6.5 197
	0953	0.7 22		1105	1.7 30		1138	1.0 30		0645	5.7 35		0952	1.1 35	
	1616	7.9 242		1801	7.4 226		1829	8.3 253		1247	2.3 70		1639	8.2 250	
	2235	2.2 66								1940	7.7 236		2330	2.7 82	
7 M	0427	7.2 220		22 Tu	0039	3.2 99	7 Th	0116	2.4 72	22 F	0217	2.8 84	7 Th	0507	6.0 182
	1056	0.8 23		0605	5.9 179		0648	6.1 187		0755	6.2 189		1121	1.5 47	
	1731	8.2 250		1220	1.9 58		1300	0.8 24		1353	1.8 55		1817	8.1 248	
	2358	2.3 71		1916	7.7 236		1946	8.8 268		2032	8.2 251				
8 Tu	0544	6.8 207		23 W	0154	3.0 90	8 F	0227	1.8 55	23 Sa	0300	2.2 66	8 F	0108	2.4 73
	1206	0.7 20		0723	6.0 183		0801	6.6 200		0842	6.8 208		0647	6.2 188	
	1846	8.7 266		1328	1.7 52		1409	0.3 9		1442	1.2 37		1253	1.4 42	
				2016	8.2 250		2046	9.3 283		2110	8.7 266		1937	8.5 258	
9 W	0123	2.1 64		24 Th	0248	2.5 76	9 Sa	0319	1.2 37	24 Su	0333	1.6 49	9 Sa	0214	1.8 55
	0700	6.7 204		0822	6.4 195		0857	7.2 218		0919	7.4 226		0758	6.8 208	
	1314	0.4 11		1421	1.3 40		1506	-0.2 -6		1521	0.7 22		1405	0.9 27	
	1952	9.4 285		2101	8.7 265		2133	9.6 294		2142	9.1 276		2035	8.9 270	
10 Th	0232	1.6 49		25 F	0328	2.0 61	10 Su	0402	0.8 23	25 M	0402	1.1 35	10 Su	0302	1.2 37
	0805	6.9 209		0906	6.9 209		0943	7.7 236		0951	7.9 240		0850	7.6 231	
	1416	-0.1 -3		1505	0.9 27		1554	-0.5 -16		1556	0.4 11		1500	0.4 13	
	2049	9.9 302		2137	9.1 277		2214	9.8 298		2210	9.2 281		2119	9.1 278	
11 F	0327	1.1 35		26 Sa	0402	1.6 49	11 M	0440	0.4 12	26 Tu	0430	0.8 24	11 M	0341	0.8 24
	0902	7.2 220		0942	7.3 221		1024	8.2 250		1021	8.3 252		0932	8.2 251	
	1510	-0.5 -16		1542	0.5 15		1637	-0.6 -19		1630	0.1 4		1545	0.1 4	
	2140	10.3 314		2208	9.4 285		2251	9.7 297		2238	9.3 284		2155	9.2 281	
12 Sa	0415	0.8 23		27 Su	0432	1.3 39	12 Tu	0516	0.2 5	27 W	0457	0.5 14	12 Tu	0416	0.5 14
	0951	7.6 231		1014	7.5 230		1104	8.5 260		1051	8.6 263		0909	8.7 266	
	1600	-0.8 -24		1615	0.2 7		1718	-0.5 -14		1704	0.1 2		1625	0.1 2	
	2225	10.5 319		2236	9.5 289		2327	9.5 291		2307	9.3 283		2229	9.2 279	
13 Su	0459	0.5 15		28 M	0500	1.0 31	13 W	0551	0.0 1	28 Th	0527	0.2 6	13 W	0448	0.3 9
	1037	7.9 240		1045	7.8 237		1144	8.7 265		1124	9.0 273		1045	9.1 277	
	1647	-0.9 -27		1648	0.1 2		1759	-0.1 -4		1740	0.1 2		1703	0.2 7	
	2307	10.4 317		2303	9.5 291					2340	9.2 280		2302	9.0 275	
14 M	0540	0.3 10		29 Tu	0528	0.8 23	14 Th	0003	9.2 1	29 F	0457	0.2 6	14 Th	0520	0.2 6
	1121	8.1 247		1116	8.0 243		0627	0.0 1		1225	8.8 267		1121	9.3 284	
	1732	-0.8 -23		1722	0.0 1		1840	0.4 11					1741	0.5 15	
	2349	10.1 308		2332	9.5 290					2337	8.8 268		2337	8.8 268	
15 Tu	0620	0.2 7		30 W	0557	0.5 16	15 F	0040	8.8 4	15 F	0553	0.2 7	15 F	0520	0.2 6
	1206	8.2 251		1148	8.1 248		0702	0.1 4		1307	8.7 265		1158	9.4 287	
	1817	-0.4 -11		1757	0.1 3		1923	1.0 30					1820	0.9 26	
				31 Th	0003	9.4 9							31 Su	0609	-0.2 -6
				0629	0.3 9								1221	10.4 317	
				1223	8.3 254								1853	0.9 26	
				1834	0.3 8										

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dalian, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0039 8.3 253		16 Tu 0104 7.7 235		1 W 0121 7.9 240		16 Th 0126 7.8 238		1 Sa 0318 8.2 250		16 Su 0234 8.4 256	
0651 0.0 -1		0703 1.3 40		0726 0.7 22		0719 1.9 59		0921 2.4 72		0832 2.8 84	
1308 10.2 312		1326 9.7 295		1354 10.4 316		1343 10.0 304		1544 9.4 285		1447 9.6 292	
1944 1.3 40		2003 2.5 75		2040 1.9 57		2024 2.6 80		2222 2.1 63		2120 2.3 71	
2 Tu 0127 7.8 237		17 W 0145 7.3 223		2 Th 0220 7.5 228		17 F 0211 7.6 231		2 Su 0434 8.2 251		17 M 0329 8.5 258	
0737 0.3 10		0742 1.7 53		0824 1.3 41		0804 2.4 72		1037 2.9 89		0932 3.1 95	
1401 9.8 299		1410 9.2 281		1458 9.7 295		1429 9.5 289		1652 8.7 266		1541 9.1 277	
2043 1.9 57		2051 2.8 86		2145 2.2 66		2112 2.8 84		2326 2.2 66		2213 2.3 71	
3 W 0222 7.2 218		18 Th 0232 6.9 210		3 F 0332 7.2 220		18 Sa 0305 7.4 225		3 M 0549 8.5 259		18 Tu 0432 8.7 265	
0831 1.0 29		0828 2.3 69		0934 2.1 63		0858 2.8 86		1201 3.2 98		1041 3.3 102	
1506 9.2 279		1503 8.7 264		1611 9.0 274		1525 9.0 274		1800 8.3 252		1645 8.7 264	
2154 2.4 72		2150 3.1 95		2258 2.3 70		2207 2.8 85		2001 8.0 245		2311 2.2 68	
4 Th 0332 6.6 200		19 F 0335 6.5 198		4 Sa 0459 7.2 220		19 Su 0410 7.4 225		4 Tu 0028 2.2 66		19 W 0540 9.2 279	
0940 1.6 50		0928 2.8 86		1100 2.5 77		1007 3.2 97		0655 8.9 272		1156 3.3 102	
1627 8.5 260		1611 8.2 249		1730 8.5 260		1630 8.6 262		1316 3.2 97		1754 8.4 256	
2322 2.6 78		2302 3.2 97				2307 2.7 81		1904 8.1 246			
5 F 0509 6.3 193		20 Sa 0500 6.4 196		5 Su 0011 2.2 66		20 M 0525 7.7 235		5 W 0122 2.1 65		20 Th 0012 2.0 62	
1112 2.1 64		1052 3.1 95		0620 7.6 233		1125 3.2 98		0752 9.4 287		0645 9.8 299	
1759 8.3 252		1731 8.0 243		1227 2.6 79		1740 8.4 256		1417 3.0 92		1311 3.1 94	
				1841 8.3 254				2001 8.0 245		1859 8.3 254	
6 Sa 0046 2.3 70		21 Su 0016 2.9 89		6 M 0111 1.9 58		21 Tu 0007 2.3 71		6 Th 0210 2.0 62		21 F 0111 1.7 52	
0640 6.8 206		0623 6.9 209		0725 8.3 253		0631 8.4 256		0839 9.9 301		0743 10.5 321	
1244 2.0 61		1217 3.0 90		1338 2.4 73		1238 2.9 89		1507 2.8 86		1417 2.7 81	
1915 8.4 255		1841 8.1 247		1940 8.3 254		1843 8.4 257		2048 8.1 247		1959 8.4 256	
7 Su 0148 1.8 55		22 M 0114 2.4 73		7 Tu 0200 1.6 49		22 W 0101 1.9 58		7 F 0252 2.0 60		22 Sa 0207 1.3 40	
0747 7.5 229		0722 7.6 232		0816 9.0 273		0724 9.2 281		0919 10.3 313		0836 11.2 341	
1355 1.6 49		1325 2.4 74		1434 2.1 65		1342 2.5 75		1550 2.7 81		1514 2.3 69	
2012 8.6 261		1935 8.4 256		2028 8.3 254		1937 8.6 261		2130 8.2 250		2053 8.6 261	
8 M 0235 1.3 40		23 Tu 0158 1.8 55		8 W 0242 1.4 44		23 Th 0150 1.4 44		8 Sa 0329 1.9 58		23 M 0259 1.0 29	
0836 8.3 252		0807 8.5 258		0858 9.5 289		0811 10.0 306		0955 10.6 322		0926 11.7 356	
1449 1.2 37		1418 1.8 56		1520 2.0 60		1437 2.0 61		1627 2.6 78		1605 2.0 60	
2056 8.7 265		2020 8.7 264		2109 8.4 255		2026 8.7 265		2207 8.3 254		2144 8.7 266	
9 Tu 0313 1.0 30		24 W 0236 1.2 38		9 Th 0318 1.3 41		24 F 0235 1.0 30		9 Su 0404 1.8 55		24 M 0349 0.7 20	
0916 8.9 270		0846 9.3 283		0934 9.9 302		0856 10.8 329		1029 10.8 328		1015 12.0 365	
1533 1.0 31		1503 1.3 41		1600 1.9 58		1527 1.7 51		1702 2.5 77		1654 1.8 54	
2132 8.7 266		2100 8.9 270		2145 8.4 255		2112 8.8 267		2242 8.4 257		2233 8.9 271	
10 W 0347 0.8 24		25 Th 0312 0.8 24		10 F 0352 1.3 39		25 Sa 0319 0.6 19		10 M 0438 1.7 53		25 Tu 0438 0.5 15	
0952 9.4 285		0923 10.0 305		1008 10.2 311		0940 11.4 346		1102 10.9 332		1103 12.0 367	
1612 1.0 30		1545 1.0 31		1638 1.9 59		1615 1.5 45		1735 2.5 76		1741 1.6 50	
2206 8.7 265		2138 9.0 273		2221 8.3 254		2158 8.8 267		2317 8.5 259		2321 9.0 275	
11 Th 0419 0.7 21		26 F 0349 0.4 13		11 Sa 0424 1.3 39		26 Su 0404 0.4 12		11 Tu 0511 1.7 52		26 W 0526 0.6 17	
1026 9.7 295		1000 10.6 323		1042 10.5 319		1025 11.7 357		1134 10.9 333		1150 11.9 362	
1649 1.1 33		1628 0.9 27		1714 2.0 60		1703 1.4 43		1809 2.5 75		1826 1.5 47	
2239 8.6 262		2217 8.9 271		2256 8.3 254		2244 8.7 265		2352 8.5 260			
12 F 0450 0.7 20		27 Sa 0427 0.2 5		12 Su 0456 1.3 39		27 M 0449 0.3 8		12 W 0546 1.7 53		27 Th 0010 9.2 279	
1100 9.9 303		1040 11.0 335		1116 10.6 323		1112 11.8 360		1207 10.9 331		0616 0.8 25	
1726 1.2 38		1712 0.9 27		1750 2.1 63		1752 1.4 43		1842 2.4 74		1237 11.5 350	
2314 8.5 258		2258 8.8 267		2332 8.3 252		2332 8.6 263		1912 1.5 47			
13 Sa 0521 0.7 22		28 Su 0507 0.0 1		13 M 0529 1.3 41		28 Tu 0536 0.3 10		13 Th 0028 8.5 259		28 F 0100 9.2 281	
1134 10.1 307		1122 11.2 342		1150 10.6 324		1200 11.7 357		0622 1.9 57		0706 1.3 39	
1803 1.5 45		1759 1.0 31		1826 2.2 66		1842 1.5 46		1242 10.7 327		1325 11.0 334	
2349 8.3 252		2342 8.5 260				1916 2.4 73		1959 1.6 49			
14 Su 0554 0.8 25		29 M 0550 0.0 1		14 Tu 0008 8.2 249		29 W 0022 8.5 260		14 F 0106 8.5 258		29 O 0154 9.2 280	
1210 10.1 308		1208 11.2 342		0604 1.4 44		0626 0.6 17		0701 2.1 64		0800 1.9 58	
1841 1.7 53		1849 1.2 38		1225 10.5 321		1251 11.4 346		1319 10.4 318		1415 10.3 313	
15 M 0026 8.0 245		30 Tu 0029 8.2 251		1902 2.3 70		1933 1.6 49		1953 2.4 72		2047 1.7 53	
0627 1.0 30		0636 0.3 8									
1247 10.0 304		1259 10.9 333		1302 10.3 315		2026 1.8 54					
1920 2.1 63		1942 1.6 48		1941 2.5 75							
31 F 0213 8.3 253											
0816 1.6 50											
1442 10.1 308											
2121 1.9 59											

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dalian, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0358 9.0 275	16 0252 9.4 287	1 Th 0537 9.2 280	16 F 0425 9.8 300	1 Su 0029 3.7 112	16 M 0014 2.6 78						
1006 3.3 102	Tu 0901 3.1 94	1217 4.6 139	1101 3.9 120	0723 9.2 280	0658 9.7 297						
1608 8.8 267	1501 9.4 285	1744 7.4 227	1639 7.8 239	1401 4.1 125	1339 3.0 92						
2236 2.3 71	● 2127 2.0 62	2357 3.3 101	2300 2.5 75	1940 7.6 231	1925 8.0 244						
2 Tu 0510 9.1 276	17 0350 9.5 289	2 0653 9.4 285	17 Sa 0550 9.9 301	2 M 0138 3.3 101	17 Tu 0131 2.1 65						
1127 3.8 117	W 1006 3.5 106	1335 4.4 133	1237 3.9 118	0817 9.6 294	0803 10.1 308						
1715 8.1 248	1559 8.7 266	1905 7.4 227	1812 7.6 232	1445 3.5 108	1432 2.4 72						
2339 2.6 79	2224 2.2 66			2030 8.2 250	2022 8.8 267						
3 W 0620 9.2 281	18 0458 9.7 295	3 Sa 0108 3.3 100	18 Su 0024 2.4 73	3 Tu 0229 2.8 85	18 W 0231 1.6 48						
1250 4.0 121	Th 1123 3.7 113	0759 9.7 296	0711 10.3 313	0857 10.0 306	0852 10.4 317						
1826 7.8 237	1711 8.2 250	1433 4.0 121	1356 3.3 102	1520 3.0 91	1514 1.8 55						
	2331 2.2 68	2009 7.8 237	1932 7.9 242	2108 8.8 267	2108 9.5 289						
4 Th 0042 2.7 83	19 0613 10.0 306	4 Su 0206 3.0 91	19 M 0138 2.0 60	4 W 0309 2.3 70	19 M 0320 1.2 37						
0725 9.5 291	F 1249 3.6 110	0848 10.1 309	0817 10.8 328	0930 10.3 315	0932 10.5 320						
1359 3.8 116	1829 8.0 244	1517 3.5 107	1452 2.7 82	1549 2.5 77	1552 1.4 43						
1934 7.7 236		2057 8.2 251	2033 8.5 260	2141 9.3 282	2148 10.0 306						
5 F 0140 2.7 83	20 0042 2.0 62	5 M 0253 2.6 80	20 Tu 0239 1.4 44	5 Th 0344 1.9 59	20 W 0403 1.1 33						
0821 10.0 304	Sa 0723 10.6 322	0926 10.5 321	0909 11.2 341	0958 10.5 320	1008 10.4 318						
1453 3.5 107	1405 3.2 97	1552 3.1 95	1538 2.1 65	1616 2.2 66	1627 1.2 36						
2030 7.9 242	1941 8.1 247	2134 8.7 265	2122 9.2 280	● 2211 9.6 294	2226 10.4 317						
6 Sa 0229 2.6 78	21 0148 1.7 51	6 Tu 0331 2.3 69	21 W 0330 1.0 32	6 F 0416 1.7 53	21 M 0444 1.2 37						
0906 10.4 316	Su 0825 11.2 340	0959 10.8 328	0952 11.4 346	1025 10.5 321	1044 10.3 313						
1537 3.2 98	1505 2.7 81	1622 2.8 85	1618 1.7 52	1643 1.9 57	1701 1.1 33						
2115 8.2 250	2042 8.5 258	2207 9.0 275	○ 2206 9.7 296	2240 9.9 303	2304 10.6 324						
7 Su 0311 2.4 72	22 0246 1.2 38	7 M 0405 2.0 61	22 Th 0416 0.9 27	7 Sa 0449 1.6 50	22 M 0524 1.5 45						
0944 10.7 325	0918 11.6 354	1027 10.9 332	1031 11.3 345	1054 10.5 320	1120 10.0 304						
1613 3.0 91	1554 2.2 67	1650 2.5 77	1656 1.4 44	1711 1.6 49	1735 1.1 34						
2153 8.5 259	2134 8.9 270	● 2239 9.3 283	2248 10.1 308	2310 10.2 312	2343 10.7 327						
8 M 0348 2.1 65	23 0339 0.9 27	8 Th 0438 1.9 57	23 F 0500 1.0 29	8 Su 0524 1.7 51	23 M 0605 1.8 56						
1017 10.9 332	Tu 1006 11.9 362	1055 10.9 333	1109 11.1 339	1124 10.4 317	1157 9.6 294						
1646 2.8 85	1639 1.9 57	1717 2.3 70	1733 1.3 39	1741 1.4 42	1810 1.2 38						
● 2227 8.7 266	○ 2221 9.3 283	2309 9.5 289	2329 10.3 315	2344 10.5 320							
9 Tu 0423 2.0 60	24 0428 0.7 21	9 F 0511 1.8 56	24 M 0543 1.3 39	9 M 0600 1.8 54	24 Tu 0022 10.7 325						
1048 11.0 335	W 1050 11.9 362	1122 10.9 332	1147 10.8 329	1158 10.2 311	0646 2.3 70						
1716 2.6 80	1721 1.6 49	1745 2.1 63	1809 1.2 38	1815 1.2 37	1235 9.2 281						
2300 8.9 271	2306 9.6 292	2340 9.6 294			1846 1.5 46						
10 W 0456 1.9 57	25 0515 0.8 23	10 Sa 0544 1.9 58	25 Su 0011 10.4 318	10 Tu 0021 10.7 326	25 W 0104 10.4 318						
1118 11.0 336	Th 1133 11.7 356	1152 10.8 328	0626 1.7 53	0641 2.0 60	0730 2.8 86						
1746 2.5 76	1802 1.5 45	1815 1.9 57	1226 10.3 315	1236 9.9 301	1315 8.7 265						
2333 9.0 274	2352 9.8 299		1847 1.3 41	1852 1.2 36	1923 1.9 58						
11 Th 0529 1.9 57	26 0601 1.0 31	11 Su 0013 9.8 300	26 M 0055 10.4 317	11 Tu 0102 10.7 327	26 M 0148 10.1 307						
1147 11.0 335	F 1215 11.3 345	0620 2.0 61	0711 2.3 71	0726 2.3 71	0818 3.4 104						
1816 2.4 72	1843 1.4 43	1225 10.6 323	1306 9.8 299	1317 9.4 287	1359 8.1 248						
		1847 1.7 51	1925 1.6 49	1933 1.3 40	2004 2.4 74						
12 F 0006 9.1 276	27 0038 9.9 302	12 M 0049 10.0 305	27 Tu 0141 10.2 311	12 Th 0151 10.6 322	27 M 0237 9.5 290						
0604 2.0 60	Sa 0648 1.5 46	0700 2.2 68	0758 3.0 92	0819 2.9 87	0913 3.9 120						
1219 10.9 331	1257 10.8 329	1301 10.3 314	1348 9.2 279	1405 8.8 267	1450 7.5 229						
1847 2.2 67	1924 1.4 44	1923 1.6 48	2005 2.0 62	2021 1.7 51	2054 3.1 94						
13 Sa 0041 9.2 279	28 0127 9.9 302	13 Tu 0130 10.1 309	28 W 0231 9.9 301	13 M 0249 10.2 310	28 M 0339 9.0 273						
0641 2.1 65	Su 0737 2.2 66	0744 2.6 78	0851 3.7 114	0925 3.4 103	1025 4.3 132						
1252 10.7 325	1341 10.2 310	1341 9.8 300	1435 8.4 256	1504 8.0 245	1601 7.0 214						
1920 2.1 63	2007 1.6 50	2003 1.6 50	● 2050 2.6 79	● 2120 2.2 66	2203 3.6 110						
14 Su 0119 9.2 281	29 0218 9.8 298	14 W 0218 10.1 308	29 Th 0328 9.4 287	14 M 0402 9.7 297	29 M 0500 8.6 261						
0721 2.4 72	M 0829 2.9 89	0835 3.0 92	0956 4.4 134	1048 3.7 114	1158 4.3 132						
1330 10.3 315	1427 9.4 287	1428 9.2 281	1532 7.7 234	1625 7.4 227	1739 6.9 211						
1957 2.0 60	2052 2.0 62	● 2049 1.8 56	2146 3.2 98	2241 2.6 79	2336 3.8 116						
15 M 0202 9.3 284	30 0316 9.5 291	15 Th 0315 10.0 304	30 F 0441 9.0 275	15 Su 0534 9.5 290	30 M 0624 8.6 261						
0807 2.7 82	Tu 0929 3.7 112	0940 3.5 108	1128 4.8 145	1225 3.6 110	1310 3.9 119						
1412 9.9 302	1520 8.6 263	1525 8.5 259	1654 7.2 219	1806 7.4 226	1858 7.4 225						
2039 2.0 60	● 2143 2.5 77	2146 2.2 66	2303 3.7 112								
	31 0422 9.3 284		31 Th 0607 8.9 272								
	W 1044 4.3 132		Sa 1259 4.6 140								
	1624 7.9 241		1828 7.2 218								
	2244 3.0 92										

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dalian, China, 2013

Times and Heights of High and Low Waters

October				November				December									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm						
1 Tu	0058	3.5	106	16 W	0121	2.2	66	1 F	0204	2.3	70						
0728	8.9	270	0738	9.2	280	0803	8.6	263	16 Sa	0257	1.7	51					
1359	3.3	100	1403	1.8	56	1418	1.6	49	16 Su	0845	8.2	249					
1953	8.1	246	2006	9.0	273	2030	9.4	287	1455	0.9	27						
2 W	0156	2.9	88	17 Th	0220	1.7	52	2114	9.9	302	2114	0.6	18				
0814	9.3	282	0828	9.3	284	0842	8.9	270	2036	10.0	304	2036	1.0	20			
1435	2.7	81	1445	1.4	42	1454	1.1	33	1415	0.6	18	1513	0.7	22			
2034	8.8	267	2051	9.6	293	2106	10.1	308	2118	10.6	323	2141	9.7	296			
3 Th	0240	2.3	70	18 F	0308	1.4	43	●	2141	10.7	325	16 M	0331	1.7	53		
0850	9.6	292	0908	9.4	286	0919	9.0	273	17 Sa	0910	7.9	241					
1507	2.1	65	1523	1.1	33	1529	0.7	20	1532	0.8	24	1550	0.6	18			
2108	9.4	287	2130	10.1	309	●	2141	10.7	325	2150	10.2	311	2215	9.9	302		
4 F	0317	1.8	56	19 Sa	0351	1.3	40	3 0328	1.4	42	18 M	0419	1.5	46			
0922	9.8	298	0945	9.3	284	0919	9.0	273	18 Tu	1002	8.2	249	3 Tu	0353	1.0	31	
1536	1.7	51	1558	1.0	29	1529	0.7	20	1607	0.8	23	1542	-0.2	-7			
2139	9.9	303	○ 2206	10.5	319	●	2141	10.7	325	2225	10.4	317	● 2201	11.0	335		
5 Sa	0352	1.5	47	20 Su	0430	1.4	42	4 M	0408	1.1	34	18 W	0446	1.5	46		
0952	9.8	300	1020	9.2	280	1035	8.9	272	19 Tu	1038	8.1	248	W Tu	1024	7.6	232	
1605	1.3	40	1631	0.9	28	1644	0.1	4	1641	0.8	23	1625	-0.5	-14			
● 2209	10.4	317	2242	10.7	325	2258	11.3	344	2259	10.5	319	2245	11.2	341			
6 Su	0428	1.4	42	21 M	0509	1.6	48	5 Tu	0450	1.0	32	20 W	0533	1.6	50		
1024	9.8	300	1056	9.0	275	1117	8.7	266	20 Th	1114	8.1	247	5 Th	0524	0.7	22	
1637	1.0	31	1704	1.0	29	1725	0.1	2	1715	0.8	24	1103	8.2	249			
2242	10.8	328	2318	10.7	327	2341	11.3	345	2334	10.4	318	1711	-0.5	-16			
7 M	0505	1.3	41	22 Tu	0547	1.8	55	6 W	0533	1.1	33	2330	11.1	339	2350	9.9	302
1058	9.7	296	1132	8.8	268	1201	8.5	259	21 Th	1150	8.0	244	21 Sa	0551	1.4	42	
1710	0.8	24	1738	1.1	33	1810	0.2	6	1750	0.9	28	1133	7.7	236			
2318	11.1	337	2354	10.7	326	●	2341	11.3	345	●	1758	-0.4	-12	F	1732	0.5	16
8 Tu	0544	1.4	44	23 W	0626	2.1	64	7 Th	0620	1.2	37	2350	11.1	339	2350	9.9	302
1135	9.5	290	1210	8.5	260	0710	1.4	43	22 F	0645	10.3	313	22 Sa	0624	1.3	41	
1747	0.7	21	1813	1.3	39	1250	8.2	249	22 Tu	1201	8.5	259	21 Sa	1208	7.7	235	
2357	11.2	340	●	1858	0.5	15	1858	1.5	45	21 Th	1750	0.9	28	21 Sa	1807	0.7	20
9 W	0628	1.6	50	24 Th	0032	10.5	319	8 Sa	0119	10.6	323	22 M	0009	10.3	313		
1216	9.2	280	0706	2.4	73	0804	1.7	51	24 Sa	0723	2.0	61	22 F	0659	0.8	23	
1827	0.7	22	1249	8.2	250	1346	7.8	238	23 Tu	1307	7.6	232	22 Su	1243	7.6	232	
●	1850	1.6	49	1850	1.0	32	1904	1.5	45	23 Th	1826	1.1	35	22 Sa	1843	0.9	28
10 Th	0042	11.1	337	25 Tu	0112	10.1	308	10 M	0218	9.9	302	23 F	0018	10.8	330		
0716	2.0	60	0749	2.8	84	0904	1.9	59	25 Tu	0207	9.1	276	22 M	0045	10.3	313	
1301	8.7	266	1331	7.8	238	1450	7.5	228	10 Tu	0939	1.1	33	22 F	0645	0.8	23	
1912	1.0	29	1930	2.0	62	●	2057	1.7	52	1544	7.1	217	1456	7.5	230		
11 F	0132	10.7	326	26 Sa	0155	9.6	293	2037	2.4	74	2153	1.9	58	● 2100	2.1	65	
0811	2.4	73	0836	3.1	95	11 M	0326	9.2	279	●	2142	2.9	88	25 Th	0216	8.5	260
1353	8.2	249	1418	7.4	225	1012	2.1	63	26 Tu	0407	8.1	246	26 F	0851	1.3	40	
2003	1.4	44	2016	2.6	79	1610	7.3	224	1543	7.0	213	1457	7.3	224			
12 Sa	0231	10.1	308	27 Su	0444	9.0	274	2216	2.2	68	2153	1.9	58	● 2100	2.1	65	
0917	2.8	86	0933	3.4	104	1125	2.0	60	26 Tu	0207	8.5	258	26 Th	0306	8.0	243	
1457	7.6	232	1518	7.0	213	1738	7.6	232	1543	2.4	72	1557	7.4	225			
●	2106	2.0	62	●	2114	3.1	96	2345	2.4	74	2206	2.4	72	2206	2.5	76	
13 Su	0345	9.5	289	28 M	0351	8.4	257	12 Tu	0444	8.5	260	12 Th	0519	7.5	228		
1035	3.1	93	1040	3.5	106	1233	1.7	52	27 W	0359	7.9	242	27 F	0405	7.4	227	
1620	7.3	221	1639	6.9	209	1850	8.2	250	1657	7.2	218	1706	7.6	233			
2230	2.5	77	2235	3.5	107	●	2345	2.4	74	2300	3.0	92	2321	2.6	80		
14 M	0514	9.1	276	29 Tu	0509	8.1	247	12 Th	0444	8.5	260	12 Th	1039	1.3	41		
1201	2.9	88	1154	3.3	100	0706	8.1	248	27 W	1040	2.3	70	27 F	1039	1.3	41	
1757	7.5	228	1803	7.2	219	1328	1.4	42	1657	7.2	218	1821	8.0	245			
15 Tu	0003	2.6	78	14 F	0206	1.9	58	1947	8.9	271	2300	3.0	92	2321	2.6	80	
0635	9.0	275	0621	8.1	248	0104	2.2	68	29 Sa	0617	7.6	231	29 Th	0405	7.4	227	
1310	2.4	73	1254	2.8	85	0706	8.1	248	1328	1.6	50	29 Su	0627	7.0	212		
1911	8.2	249	1905	7.9	240	1415	1.1	33	1905	8.4	257	29 Th	1244	0.9	26		
●	1952	8.7	264	31 Th	0111	2.9	89	●	2034	9.5	289	29 Tu	1919	8.9	270		
16 W	0001	3.4	103	30 W	0206	1.9	58	14 F	0104	2.2	68	30 M	0151	2.0	61		
0621	8.1	248	0800	8.2	249	0617	7.6	231	0706	8.1	246	30 Th	0731	7.1	215		
1254	2.8	85	1415	1.1	33	1328	1.6	50	1808	7.7	235	30 M	1343	0.4	12		
1905	7.9	240	2034	9.5	289	1947	8.9	271	1953	9.3	282	30 Tu	2013	9.6	292		
●	1952	8.7	264	31 Th	0718	8.4	255	●	2103	9.4	287	31 M	0250	1.5	45		
1340	2.2	66	1340	2.2	66	1718	8.4	255	1436	-0.1	-4	31 Tu	0827	7.3	222		
1952	8.7	264	1952	8.7	264	1952	8.7	264	2103	10.2	311	31 Tu	1436	-0.1	-4		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qinhuangdao, China, 2013

Times and Heights of High and Low Waters

January				February				March				
	Time	Height			Time	Height			Time	Height		
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 Tu	0315	3.2 98		16 W	0350 2.9 87		1 F	0411 3.0 90		1 F	0309 3.0 90	
	0541	2.8 84		0626 2.3 71			0756 2.0 62			0710 1.7 53		
	0953	3.6 110		1049 3.0 91			1138 2.6 80			1525 2.9 88		
	2010	0.7 22		2027 0.9 26			1939 1.3 40			1840 1.9 57		
2 W	0354	3.2 98		17 Th	0423 2.8 86		2 Sa	0446 2.8 86		2 Sa	0801 1.5 45	
	0633	2.7 82		0746 2.1 65			0852 1.8 54			1606 2.9 87		
	1036	3.4 104		1140 2.7 81			1229 2.3 70			1856 2.0 62		
	2028	0.9 26		2041 1.2 36			1959 1.5 46			2340 3.1 93		
3 Th	0432	3.1 96		18 F	0452 2.8 86		3 Su	0113 2.8 85		3 Su	0851 1.2 37	
	0737	2.6 78		0854 1.9 58			0949 1.5 45			1651 2.7 83		
	1126	3.1 96		1229 2.3 70			1322 1.9 59			1918 2.2 67		
	2025	1.0 30		2022 1.4 43			● 2023 1.7 52			●		
4 F	0509	3.0 92		19 M	0509 2.9 87		4 M	0147 3.2 97		4 M	0013 3.4 105	
	0847	2.4 72		1001 1.7 51			1101 1.2 36			0944 1.0 30		
	1221	2.8 86		1318 1.9 59			● 2029 1.6 49			1011 1.2 36		
	2036	1.1 35		●								
5 Sa	0543	2.9 88		20 Su	0258 3.1 96		5 Tu	0226 3.5 108		5 Tu	0053 3.8 116	
	0955	2.1 63		1205 1.4 44			1240 0.9 26			1049 0.8 25		
	1317	2.4 73		● 2101 1.4 42			●			●		
	●											
6 Su	0252	2.9 87		21 M	0337 3.4 105		6 W	0311 3.8 116		6 W	0138 4.0 122	
	1111	1.7 52		1326 1.1 35			1424 0.5 16			1211 0.7 21		
	1421	1.9 58		●			●			●		
	1716	1.6 49										
7 M	0325	3.2 98		22 Tu	0417 3.6 110		7 Th	0401 3.9 120		7 Th	0227 4.1 124	
	1300	1.2 38		1458 0.9 27			1538 0.2 7			1334 0.6 19		
	●											
8 Tu	0402	3.6 109		23 W	0504 3.7 114		8 F	0457 3.9 119		8 F	0323 3.9 119	
	1439	0.8 24		1545 0.7 20			1626 0.0 1			1507 0.6 17		
	●											
9 W	0442	3.9 118		24 Th	0558 3.8 115		9 Sa	0607 3.8 115		9 Sa	0439 3.6 111	
	1549	0.3 9		1626 0.5 16			1710 0.0 1			1559 0.6 18		
	●											
10 Th	0526	4.1 124		25 F	0649 3.8 115		10 Su	0730 3.6 109		10 Su	0624 3.4 103	
	1639	0.0 -1		1705 0.5 15			1751 0.2 6			1643 0.8 23		
	●											
11 F	0614	4.1 126		26 Sa	0732 3.7 113		11 M	0830 3.3 101		11 M	0038 2.8 84	
	1725	-0.2 -7		1741 0.5 16			1829 0.5 14			0307 2.5 76		
	●											
12 Sa	0709	4.1 124		27 Su	0810 3.6 109		12 Tu	0216 2.8 84		12 Tu	0110 2.8 86	
	1808	-0.2 -7		1816 0.6 18			0446 2.3 71			0423 2.2 67		
	●			●			0922 3.1 93			0840 2.9 88		
							1903 0.8 25			● 1757 1.3 41		
13 Su	0810	3.9 118		28 M	0145 2.9 87		13 W	0250 2.8 85		13 W	0145 2.9 88	
	1850	-0.1 -2		0401 2.5 77			0602 2.1 64			0529 1.9 59		
	●			0845 3.4 105			1011 2.8 85			1406 3.1 96		
				1849 0.7 21			1929 1.2 36			1825 1.7 53		
14 M	0905	3.6 110		29 Tu	0221 3.0 90		14 Th	0323 2.8 85		14 Th	0220 2.9 89	
	1928	0.2 6		0457 2.5 75			0703 1.9 58			0622 1.7 52		
	●			0922 3.3 100			1058 2.6 78			1444 3.1 96		
				1918 0.8 25			1942 1.5 46			1838 2.1 64		
15 Tu	0316	2.9 88		30 W	0257 3.0 92		15 F	0354 2.8 85		15 F	0709 1.5 47	
	0518	2.5 77		0556 2.4 73			0757 1.7 51			1519 3.1 94		
	0957	3.3 101		1002 3.1 94			1145 2.3 70			1811 2.3 71		
	2001	0.5 16		1939 1.0 30			1916 1.7 53			2256 3.2 98		
31 Th	0334	3.0 92		31 Th	0658 2.2 68							
	0658	2.2 68		1048 2.9 87			1939 1.2 36					
	●											

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qinhuangdao, China, 2013

Times and Heights of High and Low Waters

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Qinhuangdao, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 0120 M 0941 1527 2353	ft 3.8 2.8 4.5 3.1	cm 117 85 136 95	h m 16 0109 Tu 0836 1425 O 2251	ft 4.0 3.0 4.6 3.2	cm 122 90 141 98	h m 1 Th 0043 1546	ft 2.5 5.5	cm 77 168	h m 16 F 1447 Su 1625	ft 5.7 5.3	cm 174 162
2 0242 Tu 0516 1607	3.3 3.1 4.8	101 94 147	17 W 0207 0453 1458	3.5 3.2 5.0	108 97 152	2 F 0205 1639	2.3 5.6	69 171	2 M 0333 1758	2.1 5.2	63 157
3 W 0110 1652	2.7 5.1	82 156	18 Th 0026 1537	2.8 5.3	85 163	3 Sa 0314 1741	2.0 5.6	62 172	18 Su 0250 1636	1.7 5.8	51 176
4 Th 0232 1739	2.3 5.3	69 162	19 F 0149 1620	2.3 5.6	70 172	4 Su 0400 1839	1.9 5.6	57 171	19 M 0349 1749	1.4 5.6	44 171
5 F 0332 1825	1.9 5.5	59 167	20 Sa 0313 1708	1.8 5.8	55 178	5 M 0440 1927	1.8 5.5	55 168	20 Tu 0436 1911	1.4 5.4	42 164
6 Sa 0417 1909	1.7 5.5	52 169	21 Su 0409 1803	1.4 5.9	42 180	6 Tu 0517 2009	1.9 5.4	57 164	21 W 0517 1321 O 2014	1.5 4.5 5.1	45 136 156
7 Su 0458 1948	1.6 5.6	49 170	22 M 0455 1909	1.1 5.9	34 179	7 W 0552 1335 ● 2047	2.0 4.6 5.2	60 141 159	22 Th 0556 1354 1605 2108	1.8 4.5 4.3 4.8	54 136 130 146
8 M 0537 2025	1.6 5.5	49 169	23 Tu 0539 2010	1.1 5.7	33 174	8 Th 0624 1407 1701 2124	2.1 4.7 4.2 5.1	65 143 127 154	23 F 0630 1428 1757 2158	2.1 4.5 3.6 4.5	65 137 109 136
9 Tu 0614 1356 1605 2059	1.7 4.7 4.4 5.5	51 142 135 167	24 W 0620 2103	1.2 5.4	36 166	9 F 0652 1440 1759 2203	2.3 4.8 4.0 4.8	71 145 122 147	24 M 0659 1502 1855 2247	2.5 4.5 3.2 4.1	77 136 99 126
10 W 0650 1429 1653 2133	1.8 4.7 4.4 5.4	54 144 133 164	25 Th 0658 1456 1720 2155	1.5 4.7 4.2 5.2	45 142 128 157	10 Sa 0711 1514 1855 2245	2.6 4.7 3.8 4.6	78 144 116 140	25 Su 0714 1133 1947 2334	3.0 4.3 3.0 3.8	90 130 91 117
11 Th 0722 1504 1742 2209	1.9 4.8 4.3 5.2	58 145 132 159	26 F 0733 1531 1840 2245	1.8 4.6 3.9 4.8	56 141 120 145	11 Su 0710 1548 1948 2330	2.8 4.7 3.6 4.3	85 142 109 132	26 M 0149 0401 0658 1205	3.4 4.0 3.2 4.7	105 123 98 143
12 F 0751 1539 1838 2248	2.1 4.8 4.3 5.0	63 145 130 153	27 Sa 0801 1604 1945 2335	2.3 4.6 3.6 4.4	69 139 111 133	12 M 0713 1621 2040	3.0 4.5 3.3	90 138 101 100	27 Tu 0440 0707 1238 2131	3.9 3.4 5.1 2.6	118 103 154 78
13 Sa 0812 1615 1939 2331	2.3 4.7 4.1 4.8	69 144 125 145	28 W 0819 1635 2046	2.7 4.6 3.3	81 139 102	13 Tu 0018 0731 1254 2133	4.0 3.1 4.8 3.0	122 95 145 91	28 M 0526 0727 1313 O 2234	3.7 3.5 5.3 2.5	113 107 163 75
14 Su 0812 1649 2041	2.5 4.6 3.9	76 141 118	29 M 0024 0811 1338 2150	4.0 3.0 4.7 3.1	121 91 143 94	14 W 0108 0752 1327 O 2234	3.6 3.3 5.1 2.7	110 102 156 82	29 Th 1349 2359	5.5 2.4	168 72
15 M 0018 0816 1720 2143	4.4 2.7 4.5 3.6	135 82 138 109	30 Tu 0117 0811 1418 O 2321	3.5 3.2 5.1 2.8	108 99 154 86	15 Th 1404 2358	5.4 2.4	166 72	30 F 1430 0044 0118	5.5 1.7 2.3	169 53 69
			31 W 1500	5.3	163				31 Sa 1517	5.5	167

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qinhuangdao, China, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 Tu	0239 1653	2.3 4.3	69 132	16 W	0212 1052	2.0 3.4	60 105	1 F	0205 0720	2.7 3.5	81 106	16 Sa	0229 0710 1624	2.8 3.7 1.3	85 112 39	1 Su	0625 1614	3.7 1.1	113 34	16 M	0710 1703	3.9 0.5	118 16
2 W	0327 1129 1409 1828	2.4 3.8 3.6 4.1	72 116 110 125	17 Th	0313 1126	2.3 3.5	69 106	2 Sa	0240 0733 1616	2.9 3.7 1.9	87 112 59	17 O	0031 0300 0742 1710	3.4 3.1 3.9 1.0	104 93 119 31	2 M	0651 1702	3.9 0.7	120 22	17 O	0745 1743	4.0 0.5	121 15
3 Th	0403 1151 1515 1935	2.5 3.8 3.2 3.9	77 116 98 119	18 F	0358 0755 1621	2.6 3.4 2.2	78 105 67	3 Su	0032 0312 0755	3.5 3.1 3.9	108 93 118	18 M	0110 0328 0813	3.6 3.2 4.1	109 124 124	3 Tu	0717 1748	4.2 0.4	127 13	18 W	0817 1822	4.0 0.5	121 16
4 F	0429 1224 1615 2028 2237	2.7 3.8 2.9 3.7 3.4	83 117 88 113 105	19 Sa	0045 0431 0824 O	3.8 2.9 3.7	117 88 114 57	4 M	0111 0344 0817	3.8 3.2 4.1	116 99 125	19 Tu	0146 0357 0841 1755	3.7 3.3 4.2 1.2	112 101 129 38	4 W	0748 1833	4.3 0.2	132 6	19 Th	0847 1859	4.0 0.6	121 17
5 Sa	0051 0440 0853 ●	3.8 3.0 3.8 2.6	117 90 116 78	20 Su	0127 0446 0853 1711	4.0 3.2 4.0 1.6	122 97 123 50	5 Tu	0152 0416 0839 1840	4.0 3.4 4.4 1.0	122 103 133 29	20 W	0220 0430 0909 1912	3.7 3.3 4.3 0.9	113 101 132 26	20 Th	0826 1916	4.4 0.1	135 3	20 F	0234 0442 0918 1934	3.2 2.9 3.9 0.7	98 89 120 20
6 Su	0130 0447 0914 1801	4.0 3.1 4.0 2.3	123 96 122 69	21 M	0205 0446 0921 1844	4.1 3.4 4.3	124 104 131 46	6 W	0234 0448 0905 1925	4.1 3.5 4.6	125 107 140 23	21 Th	0252 0504 0938 1949	3.7 3.3 4.4	112 101 134 27	6 F	0909 1959	4.4 0.1	134 4	21 Sa	0307 0524 0951 2006	3.2 2.9 3.8 0.7	98 87 117 22
7 M	0208 0504 0937 1848	4.2 3.3 4.3 2.0	128 101 130 60	22 Tu	0241 0505 0949 1925	4.1 3.5 4.5 1.4	124 107 138 43	7 Th	0317 0521 0939 2009	4.1 3.6 4.8 0.7	124 109 145 20	22 F	0325 0540 1011 2025	3.6 3.2 4.4	110 99 134 29	7 Sa	0958 2039	4.2 0.3	128 9	22 Su	0341 0607 1028 2034	3.2 2.8 3.7 0.9	98 86 113 26
8 Tu	0248 0527 1001 1933	4.3 3.4 4.5 1.7	130 105 138 52	23 W	0315 0532 1018 2005	4.0 3.5 4.7	123 108 144 42	8 F	1021 2053	4.8	146	23 Sa	0358 0616 1048 2059	3.5 3.2 4.3 1.0	108 98 131 32	8 Su	1053 2116	3.9 0.5	119 16	23 M	0416 0656 1110 2052	3.2 2.8 3.5 1.0	97 85 107 30
9 W	0330 0553 1028 2019	4.3 3.6 4.8 1.5	130 109 147 45	24 Th	0348 0602 1052 2044	3.9 3.5 4.9	119 108 148 43	9 Sa	1111 2137	4.7	142	24 Su	0433 0654 1129 2129	3.4 3.1 4.1 1.2	105 96 126 36	9 M	0515 0725 1152 2151	3.1 2.8 3.5 0.9	95 86 106 27	24 Tu	0451 0755 1156 2043	3.1 2.7 3.2 1.1	96 82 99 35
10 Th	0415 0620 1104 2106	4.1 3.6 5.1 1.3	125 111 154 41	25 F	0420 0633 1129 2125	3.8 3.5 4.9	115 107 148 45	10 Su	1207 2223	4.4	133	25 M	0511 0739 1214 2154	3.3 3.1 3.9 1.4	102 95 118 42	10 Tu	0553 0905 1249 2220	3.0 2.6 3.0 1.2	92 79 91 38	25 W	0526 0910 1246 2055	3.1 2.5 2.9 1.3	94 77 88 39
11 F	1147 2156	5.2 1.3	158 39	26 Sa	0457 0702 1210 2206	3.6 3.5 4.8 1.6	111 106 146 49	11 M	1303 2312	3.9	119	26 O	0549 0841 1303 2154	3.3 3.0 3.5 1.6	100 92 107 49	11 W	0626 1043 1346 2243	3.0 2.3 2.4 1.6	90 70 74 50	26 Th	0555 1026 1338 2120	3.0 2.3 2.5 1.5	92 69 76 46
12 Sa	1237 2254	5.1 1.3	156 41	27 O	1253 2252	4.6 1.8	139 55	12 Tu	0727 1004 1402	3.1 3.0 3.3	95 92 102	27 W	0624 1028 1355 2200	3.2 2.9 3.1 1.8	98 87 94 56	12 Th	0450 1306 1554 1813	3.0 1.8 1.9 1.7	91 56 59 53	27 F	0557 1208 1448 1813	3.0 1.9 2.0 1.8	91 59 62 54
13 Su	1330	4.9	148	28 M	1339 2344	4.3 2.0	130 61	13 W	0006 0811 1304 1608	1.7 3.1 2.6 2.8	52 93 80 86	28 Th	0639 1247 1513 2006	3.2 2.5 2.6 2.1	97 77 79 64	13 F	0513 1429	3.3 1.4	100 42	28 Sa	0412 1350	3.2 1.5	99 45
14 M	0001 1427	1.5 4.4	46 135	29 Tu	1431	3.8	117	14 Th	0101 0614 1417 2255	2.1 3.1 2.1 2.8	64 96 64 86	29 F	0609 1408 1713 1948	3.3 2.0 2.2 2.1	100 62 68 65	14 Sa	0553 1534	3.6 1.0	109 29	29 Su	0443 1516	3.5 1.0	108 31
15 Tu	0107 1609	1.7 3.9	53 120	30 W	0038 0823 1216 1558	2.2 3.4 3.2 3.4	68 103 99 104	15 F	0149 0637 1530 2348	2.5 3.4 1.6 3.1	75 104 50 96	30 Sa	0603 1518	3.5 1.5	106 47	15 Su	0632 1620	3.8 0.7	115 21	30 M	0518 1609	3.8 0.6	116 17
				31 Th	0126 0831 1414 1749	2.5 3.3 2.8 3.1	75 102 85 94									31 Tu	0556 1656	4.0 0.2	122 6				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Tanggu (Xingang), China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0542 11.5 351	16 W 0035 1.4 44	1 F 0039 2.3 69	16 Sa 0115 3.2 98	1 F 0515 11.1 339	16 Sa 0015 3.7 113						
1205 4.6 141	W 0613 11.1 339	F 0616 11.2 342	Sa 0649 11.3 343	1207 2.8 84	0537 11.3 344						
1712 10.8 330	1254 3.8 115	1304 3.1 94	1340 2.6 80	1729 11.4 347	1233 2.6 79						
	1809 10.8 329	1822 10.9 332	1919 10.8 328		1811 11.5 352						
2 W 0021 2.0 60	17 Th 0112 2.0 60	2 Sa 0113 2.6 79	17 Su 0147 3.9 118	2 Sa 0022 2.9 89	17 Su 0043 4.2 127						
0613 11.5 350	0651 11.2 342	0646 11.3 344	0724 11.2 340	0542 11.2 341	0606 11.4 348						
1242 4.3 132	1334 3.3 102	1342 2.7 81	1419 2.6 80	1244 2.4 73	1306 2.4 74						
1751 10.8 328	1858 10.6 324	1907 10.8 329	2011 10.4 316	1810 11.4 347	1853 11.5 349						
3 Th 0054 2.1 64	18 F 0148 2.6 79	3 Su 0150 3.1 95	18 M 0223 4.7 143	3 Su 0057 3.4 104	18 M 0113 4.7 142						
0646 11.5 349	0731 11.2 342	0720 11.3 344	0802 10.8 330	0611 11.3 344	0637 11.4 347						
1321 4.0 121	1416 3.1 93	1425 2.3 71	1505 2.9 87	1322 2.1 64	1341 2.5 75						
1834 10.7 325	1951 10.3 314	O 1958 10.5 321	O 2116 9.9 301	1854 11.3 343	1939 11.2 341						
4 F 0129 2.3 71	19 Sa 0226 3.3 102	4 M 0232 3.8 117	19 Tu 0308 5.6 170	4 M 0133 4.0 122	19 Tu 0148 5.2 160						
0720 11.4 347	0814 11.1 337	0800 11.1 338	0848 10.3 314	0645 11.3 344	0712 11.1 338						
1403 3.5 107	1503 3.0 98	1514 2.2 68	1603 3.2 98	1403 2.0 60	1421 2.8 84						
1923 10.5 320	O 2053 9.9 301	2101 10.0 306	2237 9.5 289	1945 10.9 332	2034 10.7 326						
5 Sa 0210 2.8 84	20 Su 0309 4.2 129	5 Tu 0323 4.7 144	20 W 0413 6.3 193	5 Tu 0214 4.7 144	20 W 0229 5.9 180						
0758 11.3 345	0900 10.7 327	0848 10.7 327	0955 9.8 298	0725 11.1 337	0754 10.6 323						
1450 3.1 94	1557 3.0 92	1615 2.3 71	1717 3.5 108	1452 2.1 65	1510 3.3 100						
O 2019 10.2 312	2207 9.5 289	2224 9.5 291	O 2046 10.3 313	O 2140 10.2 310							
6 Su 0256 3.4 103	21 M 0403 5.2 159	6 W 0431 5.6 171	21 Th 0009 9.5 289	6 W 0304 5.6 170	21 Th 0324 6.5 198						
0843 11.1 339	0954 10.3 314	0953 10.2 314	0542 6.7 203	0814 10.6 322	0854 9.9 303						
1543 2.7 83	1701 3.1 94	1733 2.4 73	1121 9.5 289	1555 2.5 76	1615 3.9 118						
2127 9.9 303	2334 9.4 285		1841 3.5 107	2209 9.7 295	2303 9.9 301						
7 M 0353 4.2 127	22 Tu 0513 6.0 182	7 Th 0003 9.4 287	22 F 0121 9.8 300	7 Th 0420 6.3 192	22 F 0452 6.8 206						
0935 10.9 322	1059 9.9 303	0602 6.2 188	0713 6.4 194	0926 9.9 301	1026 9.4 288						
1646 2.4 74	1814 3.1 93	1115 9.9 301	1249 9.7 295	1718 2.8 86	1736 4.1 126						
2251 9.8 298		1901 2.2 67	1955 3.1 96	2357 9.5 290							
8 Tu 0502 4.9 150	23 W 0056 9.6 293	8 F 0132 9.7 297	23 Sa 0212 10.3 314	8 F 0602 6.5 198	23 Sa 0026 10.0 306						
1036 10.6 324	0636 6.3 192	0737 6.1 186	0816 5.7 173	1110 9.5 289	0624 6.4 195						
1757 2.1 65	1214 9.8 299	1243 9.9 302	1350 10.1 309	1852 2.8 84	1202 9.5 290						
	1927 2.8 84	2021 1.7 53	2047 2.7 82		1858 4.0 121						
9 W 0018 9.9 302	24 Th 0201 10.1 308	9 Sa 0238 10.2 310	24 Su 0251 10.7 327	9 Sa 0125 9.9 301	24 Su 0124 10.5 319						
0622 5.5 167	0751 6.1 187	0850 5.6 170	0901 5.0 152	0737 5.9 180	0736 5.6 171						
1142 10.4 318	1320 10.0 305	1358 10.2 311	1434 10.6 323	1254 9.7 297	1313 10.0 305						
1912 1.8 54	2027 2.4 73	2124 1.3 40	2129 2.3 71	2011 2.4 72	2002 3.5 107						
10 Th 0133 10.2 312	25 F 0247 10.5 321	10 Sa 0326 10.5 319	25 M 0324 11.0 336	10 Su 0223 10.3 315	25 M 0207 10.9 332						
0743 5.7 174	0844 5.7 174	0947 5.0 152	0940 4.4 134	0843 5.0 152	0827 4.8 145						
1249 10.4 318	1412 10.3 315	1458 10.6 322	1510 10.9 333	1408 10.3 314	1404 10.6 324						
2025 1.3 40	2114 2.1 63	O 2216 1.2 36	2205 2.1 65	2111 2.1 64	2050 3.1 95						
11 F 0238 10.6 323	26 Sa 0322 10.9 331	11 M 0403 10.6 324	26 Tu 0355 11.2 340	11 M 0304 10.6 324	26 Tu 0243 11.2 342						
0853 5.6 172	0926 5.2 160	1034 4.4 135	1017 3.9 120	0933 4.2 127	0909 4.0 121						
1351 10.5 321	Sa 1454 10.6 324	1547 10.8 330	Tu 1543 11.1 339	M 1501 10.8 329	Tu 1445 11.2 340						
2128 0.9 28	2155 1.9 57	2300 1.3 41	O 2240 2.1 65	2159 2.1 64	2131 2.9 88						
12 Sa 0332 10.9 331	27 Su 0354 11.1 337	12 Tu 0437 10.7 327	27 W 0423 11.2 341	12 Tu 0339 10.8 329	27 W 0315 11.4 347						
0953 5.4 166	1003 4.9 148	1115 3.9 120	1054 3.5 108	1016 3.6 110	0948 3.3 102						
1448 10.7 325	1527 10.8 329	1630 11.0 334	1616 11.2 342	1544 11.1 338	1522 11.6 353						
O 2224 0.7 22	O 2230 1.8 54	2338 1.7 53	2314 2.3 69	O 2240 2.4 73	O 2211 2.9 89						
13 Su 0418 11.0 334	28 M 0423 11.2 340	13 W 0510 10.9 331	28 Th 0450 11.2 340	13 M 0410 10.9 332	28 Th 0344 11.4 347						
1045 5.2 157	1039 4.5 138	1153 3.5 107	1131 3.1 96	1054 3.3 100	1027 2.9 87						
1541 10.8 328	1558 10.9 331	1711 11.0 336	1652 11.3 345	1620 11.3 343	1600 11.8 361						
2312 0.8 24	2303 1.8 54		2348 2.6 78	2316 2.8 86	2249 3.1 95						
14 M 0458 11.0 335	29 Tu 0452 11.2 341	14 Th 0013 2.2 67		14 M 0440 11.0 335	29 F 0412 11.4 346						
1131 4.8 145	1115 4.2 129	0542 11.0 336		1129 3.1 93	1106 2.5 76						
1632 10.8 330	1629 10.9 332	1229 3.1 96		1656 11.4 347	1638 12.0 365						
2355 1.0 32	2335 1.9 57	1751 11.1 337		2347 3.3 100	2327 3.5 107						
15 Tu 0535 11.0 336	30 W 0520 11.2 341	15 F 0044 2.7 82		15 F 0509 11.1 339	30 Sa 0439 11.3 345						
1213 4.3 130	1151 3.9 120	0615 11.2 341		1201 2.8 86	1145 2.2 66						
1721 10.9 331	1703 10.9 332	1304 2.9 87		1732 11.5 350	1718 12.0 367						
		1833 11.0 334									
		31 Th 0007 2.0 61			31 Su 0004 4.0 121						
		0548 11.2 341			0508 11.4 346						
		1227 3.5 108			1224 1.9 58						
		1740 10.9 332			1801 12.0 365						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Tanggu (Xingang), China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0042	4.5	137	16 Tu 0049	5.4	166	1 W 0117	5.9	180	1 Sa 0259	5.5	168
0541	11.4	348	0603	11.6	355	0605	11.5	351	0810	11.3	343
1305	1.8	54	1312	2.5	77	1341	1.8	56	1514	3.2	98
1847	11.8	359	1915	12.0	367	1935	12.0	365	2113	12.3	374
2 Tu 0122	5.1	155	17 W 0124	5.8	176	2 Th 0207	6.2	188	2 Su 0359	5.1	155
0618	11.4	346	0640	11.4	348	0659	11.2	341	0928	10.9	333
1349	1.8	56	1349	2.8	86	1432	2.3	69	1613	4.0	123
1938	11.4	346	2001	11.7	356	2035	11.6	354	2215	12.1	368
3 W 0206	5.7	174	18 Th 0204	6.1	186	3 F 0308	6.2	190	3 M 0504	4.6	140
0703	11.1	337	0722	11.0	334	0806	10.7	326	0752	10.9	333
1440	2.2	66	1431	3.3	101	1533	2.9	88	1449	3.8	116
2041	10.8	329	2056	11.2	341	2143	11.3	344	2112	11.8	360
4 Th 0304	6.3	191	19 F 0255	6.4	196	4 Sa 0422	6.0	182	4 Su 0333	6.1	185
0800	10.5	319	0816	10.3	315	0935	10.2	311	0856	10.5	319
1544	2.7	82	1524	3.9	118	1643	3.5	108	1544	4.3	131
2201	10.3	314	2201	10.8	329	2300	11.2	340	2209	11.6	354
5 F 0427	6.5	199	20 Sa 0407	6.6	200	5 Su 0538	5.4	164	5 M 0442	5.6	172
0927	9.8	299	0934	9.8	299	1114	10.2	310	1017	10.3	315
1704	3.2	97	1632	4.3	132	1759	4.0	123	1650	4.7	143
2337	10.2	311	2314	10.7	326	2309	11.6	353	1939	5.7	173
6 Sa 0600	6.1	187	21 Su 0532	6.2	189	6 M 0010	11.3	344	21 Tu 0548	5.0	151
1119	9.6	292	1106	9.7	296	0650	4.5	138	1139	10.6	322
1832	3.3	102	1748	4.4	135	1241	10.6	322	1801	5.0	151
7 Su 0055	10.5	320	22 M 0021	10.9	333	7 Tu 0107	11.5	349	22 W 0005	11.7	357
0722	5.2	159	0642	5.4	165	0751	3.7	114	0649	4.1	124
1257	10.0	306	1226	10.2	310	1347	11.2	340	1249	11.3	345
1948	3.2	99	1900	4.3	131	2014	4.4	134	1910	5.1	154
8 M 0149	10.9	331	23 Tu 0111	11.3	343	8 W 0154	11.6	353	23 Th 0054	11.9	362
0822	4.2	129	0740	4.5	137	0842	3.1	96	0745	3.2	99
1404	10.7	326	1326	10.9	331	1439	11.6	355	1346	12.0	367
2046	3.2	97	2000	4.1	124	2105	4.6	140	2013	5.1	155
9 Tu 0232	11.1	338	24 W 0152	11.5	352	9 Th 0234	11.6	354	24 F 0138	12.0	366
0911	3.5	106	0828	3.6	109	0926	2.9	87	0839	2.6	78
1453	11.2	341	1415	11.6	353	1520	12.0	366	1438	12.6	385
2134	3.3	101	2052	3.9	120	2148	4.9	150	2109	5.2	159
10 W 0308	11.2	342	25 Th 0227	11.7	356	10 F 0309	11.6	354	25 Sa 0219	12.0	367
0953	3.1	94	0914	2.9	88	1005	2.7	83	0930	2.1	63
1533	11.5	351	1459	12.1	370	1557	12.3	374	1526	13.0	396
2215	3.6	111	2139	4.0	122	2225	5.2	160	2200	5.4	166
11 Th 0339	11.2	342	26 F 0300	11.7	357	11 Sa 0339	11.6	353	26 M 0258	12.0	367
1030	2.9	88	0958	2.4	72	1041	2.7	82	1021	1.8	54
1608	11.7	357	1542	12.5	381	1631	12.5	381	1614	13.1	400
2250	4.1	124	2223	4.3	130	2259	5.6	170	2250	5.7	175
12 F 0408	11.3	343	27 Sa 0332	11.6	355	12 M 0406	11.6	355	27 W 0338	12.0	366
1104	2.8	85	1042	2.0	62	1114	2.7	81	1111	1.6	49
1642	11.9	362	1625	12.7	386	1704	12.7	388	1700	13.1	399
2321	4.5	137	2307	4.7	142	2329	5.8	177	2338	6.0	183
13 Sa 0435	11.4	346	28 Tu 0405	11.6	354	13 M 0433	11.8	359	28 F 0422	12.0	365
1136	2.7	82	1125	1.8	55	1145	2.6	80	1158	1.5	47
1716	12.1	368	1709	12.7	386	1739	12.9	392	1747	13.0	396
2349	4.9	148	2349	5.1	156	2359	5.9	180	1831	13.3	404
14 Su 0501	11.5	351	29 M 0440	11.6	355	14 Tu 0505	11.9	362	29 W 0025	6.1	187
1206	2.5	77	1209	1.6	50	1217	2.6	80	0510	11.9	364
1753	12.2	373	1754	12.5	382	1815	12.9	393	1245	1.6	50
15 M 0018	5.2	157	30 Tu 0032	5.5	169	15 W 0032	6.0	182	30 F 0113	6.1	186
0530	11.6	355	0519	11.6	355	0540	11.9	362	0603	11.8	361
1238	2.4	74	1254	1.6	50	1250	2.7	83	1332	1.9	59
1833	12.2	373	1842	12.3	375	1853	12.8	389	1924	12.7	386
16 Sa 0203	5.5	169	17 F 0702	11.6	354	17 G 0203	5.9	179	17 F 0702	11.6	354
0731	11.3	352	1421	2.5	75	1421	2.5	75	1421	2.5	75
1447	3.8	116	2017	12.5	380	2017	12.5	380	2036	13.0	396

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Tanggu (Xingang), China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0328	4.3	132	16	0234	4.4	135	1 Th	0443	4.0	122
	0907	11.5	352		0802	11.9	364		1114	11.4	348
	1538	4.7	144		1437	4.9	148		1659	7.5	228
	2129	12.7	388	●	2021	13.1	398		2237	11.9	364
2 Tu	0425	4.1	125	17 W	0322	4.1	124	2 F	0553	4.0	123
	1024	11.3	345		0904	11.7	357		1238	11.7	356
	1637	5.7	174		1528	5.6	172		1825	7.9	241
	2228	12.4	377		2109	12.8	389		2352	11.7	356
3 W	0528	3.9	120	18 Th	0419	3.8	115	3 Sa	0708	3.8	117
	1148	11.4	346		1023	11.5	352		1347	12.2	372
	1747	6.5	198		1632	6.4	196		1944	7.7	235
	2332	12.1	368		2207	12.5	380				
4 Th	0636	3.7	113	19 F	0526	3.5	106	4 Su	0102	11.8	359
	1304	11.7	358		1149	11.7	357		0811	3.5	106
	1904	6.9	211		1751	7.1	215		1436	12.7	387
					2314	12.2	373		2041	7.2	220
5 F	0035	11.9	364	20 Sa	0639	3.1	94	5 M	0159	12.1	368
	0740	3.3	102		1306	12.1	370		0901	3.1	96
	1409	12.3	375		1915	7.3	221		1513	13.1	399
	2010	7.0	213						2125	6.7	204
6 Sa	0131	12.0	365	21 Su	0023	12.2	371	6 Tu	0243	12.4	377
	0836	3.0	92		0753	2.6	79		0942	3.0	91
	1457	12.8	390		1412	12.7	386		1543	13.3	406
	2102	6.9	210		2030	7.1	217		2201	6.2	190
7 Su	0219	12.1	368	22 M	0127	12.3	375	7 W	0318	12.6	383
	0922	2.8	85		0900	2.1	63		1018	3.0	90
	1534	13.2	401		1507	13.1	398		1612	13.4	409
	2146	6.7	205		2132	6.8	206	●	2235	5.9	179
8 M	0259	12.2	373	23 Tu	0225	12.5	380	8 Th	0349	12.7	386
	1003	2.7	83		0957	1.7	53		1051	3.1	93
	1606	13.4	407		1555	13.3	405		1639	13.5	411
●	2223	6.5	199		○ 2227	6.3	193		2309	5.5	169
9 Tu	0333	12.4	377	24 W	0320	12.6	385	9 F	0419	12.7	387
	1039	2.8	85		1048	1.7	51		1122	3.2	98
	1635	13.5	410		1636	13.4	407		1706	13.5	410
	2257	6.3	193		2315	5.9	179		2342	5.2	160
10 W	0404	12.4	379	25 Th	0412	12.7	388	10 Sa	0452	12.7	387
	1113	2.9	88		1134	1.9	58		1153	3.5	106
	1704	13.5	412		1715	13.4	408		1732	13.4	409
	2330	6.1	187		2359	5.3	163				
11 Th	0435	12.4	379	26 F	0502	12.7	388	11 Su	0016	4.9	148
	1144	3.1	93		1216	2.4	72		0527	12.7	387
	1734	13.5	412		1753	13.4	409		1223	3.8	115
									1759	13.4	409
12 F	0004	5.9	180	27 Sa	0041	4.8	147	12 M	0051	4.4	135
	0509	12.4	378		0551	12.7	387		0607	12.7	387
	1214	3.2	98		1256	3.0	90		1256	4.2	127
	1804	13.5	411		1832	13.5	411		1827	13.5	410
13 Sa	0038	5.6	172	28 Su	0123	4.3	132	13 Tu	0127	4.0	121
	0545	12.3	376		0641	12.6	383		0650	12.6	385
	1245	3.4	105		1334	3.7	112		1331	4.7	143
	1835	13.4	409		1912	13.5	410		1859	13.4	409
14 Su	0114	5.3	161	29 M	0205	4.0	121	14 W	0206	3.6	110
	0625	12.3	374		0734	12.3	375		0739	12.4	379
	1318	3.8	115		1414	4.5	138		1410	5.4	164
	1907	13.4	407		1954	13.3	405	●	1936	13.3	404
15 M	0153	4.9	149	30 Tu	0250	3.8	117	15 Th	0251	3.4	104
	0710	12.1	370		0836	11.9	364		0837	12.0	367
	1355	4.2	129		1457	5.5	168		1458	6.2	189
	1942	13.3	404		2040	12.9	394		2022	12.9	392
16 W	0342	3.9	118	31 W	0949	11.6	353				
					1551	6.6	201				
					2133	12.4	379				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Tanggu (Xingang), China, 2013

Times and Heights of High and Low Waters

October				November				December							
	Time	Height			Time	Height			Time	Height					
	h m	ft cm		h m	ft cm			h m	ft cm						
1	0642	4.9 148		16	0012	10.8 329	1	0110	11.0 334	16	0254	11.0 336			
Tu	1305	11.5 351	W	0706	3.7 112	F	0739	4.6 140	Sa	0838	4.4 135	M	0901	5.3 161	
	1925	6.5 197		1309	11.6 353		1327	11.6 353		1405	11.3 343		1420	10.6 324	
				1945	4.6 139		2006	3.6 110		2100	2.3 69		2125	1.8 54	
2	0058	11.0 336		17	0127	11.4 348	2	0158	11.7 356	2	0216	11.6 354		17	0335 11.3 344
W	0746	4.5 136	Th	0812	3.5 108	Sa	0829	4.3 132	Su	0925	4.7 142	M	0840	4.7 144	
	1349	11.9 364		1357	11.8 361		1403	11.8 359		1444	11.2 342		1353	11.3 344	
	2013	5.5 168		2039	3.6 111		2050	2.8 86	O	2143	2.1 64		2103	1.5 46	
3	0149	11.6 354		18	0223	12.0 365	3	0240	12.3 374	3	0303	12.0 367		18	0408 11.5 350
Th	0833	4.1 124	F	0905	3.6 109	Su	0915	4.2 129	M	1006	5.0 151	Tu	0931	4.8 145	
	1424	12.3 374		1438	12.0 365		1435	11.9 362		1517	11.2 340		1433	11.3 345	
	2053	4.7 142		2125	3.1 93	●	2133	2.3 69		2222	2.1 63	●	2153	1.1 35	
4	0229	12.2 371		19	0309	12.3 376	4	0321	12.7 386	4	0349	12.2 372		19	0438 11.6 353
F	0913	3.8 116	Sa	0950	3.8 117	M	0958	4.3 132	Tu	1041	5.2 160	W	1020	4.9 149	
	1454	12.5 381		1514	12.0 365		1507	11.9 362		1546	11.2 341		1513	11.3 344	
	2130	3.9 120	O	2206	2.8 84		2215	1.9 57		2257	2.1 64		2242	1.0 30	
5	0305	12.6 385		20	0348	12.5 381	5	0402	12.9 392	5	0434	12.2 371		20	0508 11.7 356
Sa	0950	3.7 114	Su	1029	4.3 130	Tu	1040	4.6 139	W	1113	5.4 165	Th	1108	5.1 154	
	1522	12.6 383		1545	11.9 363		1539	11.8 361		1614	11.3 344		1554	11.3 343	
●	2207	3.4 103		2244	2.7 81		2258	1.7 51		2330	2.2 66		2330	0.9 27	
6	0341	12.9 394		21	0424	12.6 383	6	0443	12.9 392	6	0520	12.0 367		21	0539 11.7 357
Su	1027	3.9 118	M	1104	4.7 144	W	1122	4.9 148	Th	1143	5.5 167	F	1154	5.1 156	
	1548	12.5 382		1614	11.9 363		1613	11.8 360		1645	11.4 347		1641	11.2 341	
	2244	3.0 91		2319	2.6 80		2341	1.5 47					21	1157 5.0 151	
7	0417	13.1 399		22	0500	12.6 385	7	0527	12.7 388	7	0017	1.0 29		22	0016 2.1 65
M	1104	4.2 127	Tu	1135	5.2 157	Th	1204	5.2 158	Sa	0557	12.3 374	Su	0605	11.9 362	
	1615	12.5 381		1641	12.0 365		1652	11.8 359		1214	5.4 165		1242	5.1 154	
	2322	2.7 81		2352	2.6 79				1721	11.4 347		1733	11.1 337		
8	0456	13.2 401		23	0537	12.7 387	8	0025	1.5 46	8	0104	1.2 37		23	0047 2.3 69
Tu	1141	4.5 138	W	1205	5.4 166	F	0612	12.5 381	Sa	0633	12.2 371	Su	0652	11.7 356	
	1643	12.5 382		1711	12.0 367		1247	5.4 166		1249	5.3 163		1330	4.8 147	
							1736	11.6 355		1801	11.3 343		1830	10.8 330	
9	0000	2.4 73		24	0024	2.6 79	9	0111	1.6 50	9	0151	1.6 50		24	0119 2.5 76
W	0536	13.1 399	Th	0616	12.6 385	Sa	0701	12.1 370	M	0712	11.9 364	M	0742	11.5 350	
	1218	5.0 151		1236	5.7 174		1335	5.6 171		1327	5.3 162		1422	4.5 136	
	1716	12.5 382		1745	12.0 367		1828	11.4 346		1844	10.9 332	○	1934	10.5 319	
10	0040	2.2 68		25	0058	2.7 82	10	0200	2.0 60	10	0241	2.3 70		25	0156 2.9 87
Th	0620	12.9 393	F	0658	12.4 379	Su	0757	11.7 358	M	0755	11.6 354	Tu	0835	11.3 344	
	1256	5.4 166		1310	5.9 181		1430	5.6 172		1411	5.3 162		1520	4.0 123	
	1753	12.5 380		1823	11.8 360	○	1931	10.9 331		1933	10.4 318		2048	10.1 308	
11	0122	2.2 68		26	0135	3.0 92	11	0256	2.6 78	11	0337	3.1 95		26	0238 3.4 103
F	0709	12.5 381	Sa	0743	12.1 368	M	0900	11.4 346	Tu	0843	11.3 343	W	0933	11.1 337	
	1339	5.9 181		1349	6.2 189		1537	5.4 166		1504	5.2 159		1624	3.6 110	
	1837	12.2 372		1907	11.4 346		2054	10.3 314	○	2033	9.9 303		2212	9.8 300	
12	0210	2.4 74		27	0216	3.5 108	12	0401	3.2 98	12	0440	3.9 120		27	0328 4.0 121
Sa	0806	12.0 365	Su	0835	11.6 353	Tu	1010	11.1 338	W	0937	11.0 334	F	0929	10.9 331	
	1430	6.4 195		1437	6.4 196		1653	5.0 151		1607	4.9 150		1731	3.2 97	
○	1931	11.6 355		2001	10.7 326		2230	10.1 308		2151	9.6 294		2338	9.9 301	
13	0307	2.9 88		28	0305	4.1 126	13	0516	3.8 116	13	0417	4.5 136		13	0552 4.6 140
Su	0917	11.4 348	M	0936	11.1 339	W	1123	11.0 336	Th	1035	10.8 330	F	1142	10.7 326	
	1541	6.7 204		1543	6.6 200		1807	4.2 128		1716	4.4 133		1839	2.7 83	
	2047	10.9 333		2119	10.1 308				2314	9.8 298					
14	0420	3.4 104		29	0409	4.7 143	14	0002	10.3 315	29	0527	4.8 145		14	0055 10.2 310
M	1043	11.2 340	Tu	1046	10.9 332	F	0633	4.2 127	W	1132	10.9 331	Sa	0706	5.0 152	
	1711	6.5 198		1706	6.3 191		1227	11.1 339		1819	3.6 109		1243	10.6 324	
	2231	10.5 321		2249	9.9 303		1914	3.3 102					1943	2.3 70	
15	0544	3.7 113		30	0525	5.0 151	15	0115	10.9 331	30	0026	10.3 315		15	0201 10.6 324
Tu	1206	11.3 344	W	1153	11.0 335	F	0742	4.3 131	Sa	0638	4.9 148	M	0809	5.2 158	
	1836	5.6 172		1818	5.5 168		1320	11.2 342		1224	11.0 336		1335	10.6 324	
							2011	2.7 81		1917	2.8 84		2038	2.0 60	
31	0009	10.3 314		31	0637	4.9 148							31	0155 10.8 329	
					1246	11.3 344							Tu	0808 5.2 159	
					1917	4.6 139							1319	10.8 328	
													2042	1.3 39	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yantai, China, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu 0610	0.9	26		16 W 0030	8.0	245		1 F 0040	7.6	233		
1221	7.3	221		W 0643	0.2	7		F 0650	0.4	13		
1811	1.5	46		1303	7.5	230		Sa 1308	7.6	231		
				1856	1.1	34		1910	0.9	28		
									1958	1.4	42	
2 W 0024	7.8	238		17 Th 0114	7.7	234		16 Sa 0121	7.4	227		
0643	0.8	23		0724	0.5	15		0729	0.6	17		
1256	7.3	222		1345	7.4	226		1348	7.5	230		
1850	1.5	45		1943	1.3	41		1956	1.0	31		
									2052	1.8	54	
3 Th 0100	7.6	231		18 F 0159	7.2	219		3 Su 0208	7.1	217		
0718	0.7	22		0807	0.9	26		0812	0.9	26		
1335	7.3	222		1430	7.2	219		1434	7.4	226		
1933	1.5	46		2036	1.7	51		O 2049	1.2	38		
									2206	2.2	66	
4 F 0143	7.3	223		19 M 0247	6.6	202		18 M 0259	6.2	188		
0758	0.8	24		0855	1.4	44		0853	2.2	67		
1418	7.3	221		1518	6.8	208		1513	6.6	202		
2022	1.6	48		O 2143	2.0	61		O 2049	1.2	38		
									2330	2.4	72	
5 Sa 0232	7.0	214		20 Su 0342	6.0	184		5 Tu 0404	6.1	187		
0844	1.0	30		0954	2.0	62		1009	1.9	58		
1507	7.2	218		1614	6.5	197		1629	6.8	208		
O 2119	1.7	51		2302	2.2	68		2326	1.7	51		
									20 W 1131	3.2	97	
6 Su 0328	6.6	202		21 M 0455	5.6	170		20 W 1737	5.9	180		
0938	1.3	40		1107	2.5	77		Tu 0404	6.1	187		
1603	7.1	215		1725	6.2	190		1009	1.9	58		
2230	1.7	53							1131	3.2	97	
									1737	5.9	180	
7 M 0433	6.3	192		22 Tu 0022	2.2	67		20 M 0536	5.3	162		
1044	1.6	50		0625	5.4	166		0838	1.8	54		
1708	7.0	214		1225	2.8	85		1500	7.3	222		
2352	1.6	50		1846	6.2	190		O 2141	1.5	45		
									2229	2.4	72	
8 Tu 0553	6.1	186		23 W 0137	2.0	60		21 M 0529	5.7	175		
1158	1.9	57		0747	5.6	172		0704	5.4	166		
1822	7.1	217		1336	2.7	83		1132	2.3	70		
				1954	6.6	200		1750	6.6	202		
									1259	3.1	95	
9 W 0113	1.3	41		24 Th 0235	1.6	49		1914	6.1	186		
0712	6.2	190		0847	6.0	184			0704	5.4	166	
1312	1.9	57		1431	2.5	75			1405	2.7	83	
1933	7.4	226		2044	7.0	212			2016	6.6	200	
									2310	1.7	53	
10 Th 0219	0.9	28		25 F 0319	1.2	38		22 M 0325	1.1	34		
0820	6.5	199		0928	6.4	196		0901	6.3	193		
1417	1.7	52		1513	2.1	64		0919	6.7	203		
2035	7.8	237		2124	7.3	224		1508	1.5	47		
				O 2211	7.9	242		2126	7.7	234		
11 F 0313	0.6	17		26 Sa 0354	1.0	30		23 M 0349	1.4	44		
0920	6.8	208		1001	6.7	205		0901	6.3	193		
1512	1.4	44		1547	1.8	54		0919	6.7	203		
2130	8.1	247		2200	7.6	233		1524	1.7	53		
									2138	7.4	227	
12 Sa 0401	0.3	8		27 Su 0424	0.9	26		24 W 0205	1.2	37		
1012	7.1	217		1031	7.0	212		0325	1.1	34		
1600	1.2	37		1617	1.5	46		0350	0.4	11		
O 2218	8.3	254		O 2233	7.8	238		1004	7.1	215		
									1005	7.1	216	
13 Su 0444	0.1	4		28 M 0450	0.8	23		1552	1.2	36		
1057	7.3	223		1100	7.1	217		O 2211	7.9	242		
1645	1.0	32		1646	1.3	39		2214	7.7	234		
2303	8.4	256		2304	7.9	240		2252	8.1	246		
									2242	7.8	238	
14 M 0524	0.1	2		29 Tu 0517	0.7	20		26 O 0420	0.8	23		
1140	7.5	228		1128	7.3	221		1034	7.3	224		
1728	1.0	30		1717	1.1	34		1624	1.0	32		
2347	8.3	253		2334	7.8	239		O 2242	7.8	238		
									2252	8.1	246	
15 Tu 0603	0.1	3		30 W 0545	0.6	17		22 M 0516	0.5	16		
1221	7.5	230		1159	7.4	225		1133	0.7	21		
1811	1.0	30		1751	1.0	30		1731	0.7	21		
									2344	7.8	239	
16 Sa 0005	7.8	237		31 Th 0616	0.5	14		2310	7.8	238		
				1231	7.5	228						
				1829	0.9	28						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yantai, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0050 0645 1303 1926	7.7 1.3 8.4 0.8	ft 235 39 256 25	cm	16 Tu 0118 0701 1319 1946	7.3 2.3 8.0 1.7	ft 224 71 245 51	cm	1 W 0139 0725 1343 2018	7.7 2.2 8.4 1.2	ft 234 68 256 37	cm
2 Tu 0141 0731 1351 2023	7.3 1.7 8.1 1.1	ft 224 52 246 35	cm	17 W 0200 0740 1358 2034	7.0 2.7 7.6 1.9	ft 214 82 233 59	cm	2 Th 0236 0824 1440 2123	7.4 2.6 7.9 1.5	ft 225 80 240 46	cm
3 W 0237 0827 1446 2134	6.9 2.3 7.5 1.5	ft 210 69 229 46	cm	18 Th 0248 0828 1444 2131	6.7 3.1 7.2 2.2	ft 203 94 218 67	cm	3 F 0343 0937 1544 2234	7.1 3.0 7.3 1.8	ft 216 91 222 54	cm
4 Th 0346 0941 1552 2257	6.4 2.8 6.9 1.8	ft 195 85 211 54	cm	19 F 0351 0933 1542 2241	6.3 3.4 6.7 2.4	ft 192 105 209 73	cm	4 Sa 0500 1105 1705 2353	7.0 3.1 6.9 1.9	ft 212 94 209 59	cm
5 F 0520 1114 1722	6.2 3.1 6.5	ft 188 93 198	cm	20 Sa 0519 1100 1704 2358	6.2 3.5 6.4 2.4	ft 190 107 194 72	cm	5 Su 0612 1240 1835	7.1 2.9 6.8	ft 216 87 208	cm
6 Sa 0032 0642 1300 1902	1.7 6.4 2.8 6.6	ft 53 195 86 201	cm	21 Su 0626 1230 1834	6.5 3.2 6.5	ft 198 97 198	cm	6 M 0103 0717 1344 1943	2.0 7.4 2.4 7.0	ft 60 225 74 213	cm
7 Su 0141 0752 1404 2009	1.5 6.8 2.3 7.0	ft 46 208 70 212	cm	22 M 0103 0721 1332 1935	2.1 7.0 2.6 6.9	ft 65 212 80 210	cm	7 Tu 0155 0812 1430 2038	2.0 7.7 2.1 7.3	ft 60 236 63 221	cm
8 M 0228 0844 1449 2059	1.3 7.3 1.8 7.3	ft 40 222 56 222	cm	23 Tu 0151 0807 1417 2024	1.8 7.5 2.0 7.3	ft 56 228 61 223	cm	8 W 0237 0855 1509 2123	2.0 8.0 1.8 7.4	ft 61 245 54 227	cm
9 Tu 0305 0924 1525 2141	1.2 7.7 1.5 7.5	ft 38 234 45 229	cm	24 W 0231 0848 1456 2106	1.6 7.9 1.5 7.7	ft 48 242 45 235	cm	9 Th 0314 0932 1546 2202	2.1 8.3 1.6 7.6	ft 64 252 49 232	cm
10 W 0338 0958 1600 2217	1.2 8.0 1.3 7.6	ft 38 243 39 233	cm	25 Th 0307 0925 1534 2146	1.4 8.4 1.1 8.0	ft 42 255 33 243	cm	10 F 0349 0925 1621 2237	2.2 8.5 1.5 7.7	ft 67 258 47 236	cm
11 Th 0411 1029 1634 2252	1.3 8.2 1.2 7.7	ft 41 249 36 235	cm	26 F 0344 1002 1614 2226	1.3 8.7 0.9 8.1	ft 39 265 26 248	cm	11 Sa 0423 1038 1657 2312	2.3 8.6 1.5 7.8	ft 69 262 46 239	cm
12 F 0444 1101 1710 2326	1.4 8.3 1.1 7.7	ft 44 253 35 235	cm	27 Sa 0422 1040 1656 2309	1.3 8.9 0.7 8.2	ft 40 271 22 249	cm	12 Su 0457 1111 1733 2347	2.4 8.7 1.5 7.9	ft 72 265 47 240	cm
13 Sa 0517 1134 1747	1.6 8.4 1.2	ft 48 256 36	cm	28 Su 0503 1120 1741 2355	1.4 9.0 0.7 8.1	ft 43 275 22 247	cm	13 M 0530 1145 1809	2.5 8.7 1.6	ft 75 266 48	cm
14 Su 0001 0551 1208 1825	7.7 1.8 8.4 1.3	ft 234 54 256 39	cm	29 M 0546 1204 1829	1.6 9.0 0.8	ft 48 274 24 24	cm	14 Tu 0023 0604 1220 1846	7.8 2.6 8.6 1.6	ft 239 78 263 50	cm
15 M 0038 0625 1243 1905	7.5 2.0 8.3 1.4	ft 230 61 252 44	cm	30 Tu 0045 0633 1251 1920	7.9 1.9 8.8 1.0	ft 242 57 268 29	cm	15 W 0100 0640 1257 1923	7.8 2.7 8.4 1.7	ft 237 82 257 53	cm
31 F 0227 0815 1430 2100				30 F 0133 0717 1336 2004				14 Th 0042 0625 1243 1911	8.3 2.3 9.2 1.0	ft 246 70 279 31	cm
31 F 0227 0815 1430 2100				31 F 0227 0815 1430 2100				14 F 0119 0701 1316 1934	8.2 2.9 8.5 1.8	ft 246 83 253 56	cm
30 M 0254 0856 1505 2120				30 F 0158 0744 1358 2014				15 Sa 0158 0744 1358 2014	8.1 3.0 8.2 1.9	ft 247 91 250 59	cm
30 M 0254 0856 1505 2120				31 F 0227 0815 1430 2100				15 O 0158 0744 1358 2014	8.1 3.0 8.2 1.5	ft 247 91 250 59	cm

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Yantai, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0348	8.4	255	16 Tu 0249	8.7	265	1 Th 0459	7.9	241	16 Su 0400	8.6	261
1009	3.1	93	0857	2.8	86	1201	3.3	101	0041	4.5	138
1604	7.5	230	1508	8.0	244	1806	6.9	211	0654	7.5	230
2222	2.7	83	● 2111	2.5	75	1656	7.3	223	1345	3.1	93
2 Tu 0448	8.1	248	17 W 0339	8.6	262	2255	3.7	112	2003	7.3	222
1126	3.1	94	1001	2.9	87	1 M 0000	4.2	128	16 M 0015	3.8	115
1719	7.1	217	1608	7.6	233	0618	7.8	237	0635	7.9	240
2330	3.2	98	2211	2.9	88	1318	3.1	95	1329	2.3	70
3 W 0553	8.0	244	18 Th 0437	8.5	259	1931	7.1	216	1936	7.6	233
1242	3.0	91	1119	2.8	85	3 Sa 0117	4.3	131	1 M 0141	3.3	101
1841	7.0	214	1723	7.4	226	0731	8.0	243	0752	8.3	252
2322	3.2	99	2322	3.2	99	1420	2.8	85	1424	1.9	58
4 Th 0041	3.5	108	19 F 0546	8.5	259	2037	7.5	228	2036	8.2	249
0700	8.0	245	1241	2.6	78	4 Su 0218	4.1	124	17 W 0141	3.3	101
1347	2.8	84	1847	7.4	227	0826	8.3	254	0924	8.8	267
1956	7.2	220				1506	2.4	74	1542	2.1	65
5 F 0145	3.7	112	20 Sa 0037	3.4	103	2121	7.9	240	2154	8.5	259
0800	8.2	250	0700	8.7	264	1 M 0144	3.5	108	19 W 0318	2.3	70
1441	2.5	75	1352	2.1	65	0800	8.7	266	0933	9.0	274
2055	7.5	230	1959	7.7	236	1442	1.8	56	1543	1.5	46
6 Sa 0237	3.6	111	21 Su 0149	3.3	100	2054	8.2	249	○ 2200	9.0	273
0847	8.5	255	0807	9.0	278	5 M 0303	3.8	115	5 Th 0344	2.8	85
1524	2.2	68	1451	1.7	52	0909	8.7	265	0958	9.0	275
2139	7.9	240	2102	8.1	248	1542	2.2	67	1608	2.0	61
7 Su 0319	3.5	108	21 Tu 0339	3.4	105	2155	8.2	251	● 2223	8.8	267
0928	8.8	268	0906	9.4	286	21 M 0244	3.1	94	20 F 0357	2.0	60
1601	2.0	62	1540	1.3	41	0859	9.2	279	1014	9.1	278
2215	8.1	247	2157	8.5	260	1527	1.5	45	1617	1.5	46
8 M 0355	3.4	103	22 W 0424	3.0	92	2143	8.6	263	2236	9.2	279
1004	9.0	275	0906	9.4	286	21 M 0331	2.7	81	21 Sa 0434	1.8	55
1634	1.9	59	1540	1.3	41	0947	9.5	289	1052	9.1	278
● 2247	8.3	253	2244	8.8	269	1613	2.0	62	1634	1.6	50
9 Tu 0428	3.2	98	23 Th 0438	2.8	84	2225	8.5	258	2251	9.0	273
1038	9.2	280	0957	9.7	295	7 W 0409	3.1	96	21 Sa 0512	1.8	54
1704	1.9	58	1624	1.1	35	1021	9.2	281	1129	9.0	275
2318	8.5	258	2244	8.8	269	1640	2.0	60	1728	1.8	55
10 W 0458	3.1	94	23 M 0540	2.8	84	● 2254	8.7	264	2345	9.3	284
1112	9.2	281	0957	9.7	295	2323	8.8	268	8 Su 0516	2.1	63
1732	1.9	57	1624	1.1	35	2352	8.9	272	23 M 0552	1.8	56
2348	8.6	261	2244	8.8	269	9 M 0507	2.7	83	1208	8.8	269
11 Th 0529	3.0	90	24 W 0427	2.5	77	9 F 0534	2.1	64	1805	2.1	64
1146	9.2	279	0957	9.7	295	1125	9.3	283	24 Tu 0021	9.2	281
1801	1.8	56	1624	1.1	35	1732	1.9	57	0634	2.0	61
12 F 0020	8.6	263	2244	8.8	269	2352	8.9	272	1247	8.6	261
0602	2.9	87	24 W 0555	2.3	71	9 F 0534	2.1	64	1843	2.5	75
1219	9.0	275	1215	9.6	292	1153	9.4	288	25 W 0058	9.0	275
1830	1.8	55	1825	1.2	38	1756	1.5	46	0718	2.2	68
13 Sa 0029	3.0	90	26 F 0555	9.2	280	11 M 0018	9.4	286	1329	8.2	249
1146	9.2	279	0555	2.3	71	0616	2.1	65	1922	2.9	88
1801	1.8	56	1215	9.6	292	1234	9.2	280	26 Th 0136	8.7	265
14 W 0529	3.0	90	1825	1.2	38	1801	1.8	56	0807	2.6	78
0602	2.9	87	27 F 0555	9.2	280	1156	9.2	280	1415	7.7	235
1219	9.0	275	0555	2.3	71	0616	2.1	65	2005	3.4	105
1830	1.8	55	1215	9.6	292	1234	9.2	280	27 W 0218	8.2	250
13 Sa 0029	3.0	90	1825	1.2	38	1835	1.8	56	0906	2.9	89
1146	9.2	279	27 F 0555	9.2	280	2101	9.4	285	1510	7.2	219
1801	1.8	56	0555	2.3	71	0716	2.0	60	● 2059	4.0	121
14 W 0529	3.0	90	1215	9.6	292	2128	8.6	263	26 Th 0136	8.7	265
0602	2.9	87	1825	1.2	38	1914	2.2	68	0807	2.6	78
1219	9.0	275	27 F 0555	9.2	280	2144	2.8	85	1415	7.7	235
1830	1.8	55	0555	2.3	71	2157	2.8	85	2005	3.4	105
13 Sa 0029	3.0	90	1215	9.6	292	2178	8.6	263	27 W 0218	8.2	250
1146	9.2	279	1825	1.2	38	2192	2.3	71	0906	2.9	89
1801	1.8	56	27 F 0555	9.2	280	2192	2.3	71	1510	7.2	219
14 W 0529	3.0	90	0555	2.3	71	2204	2.8	85	● 2059	4.0	121
0602	2.9	87	1215	9.6	292	2217	2.8	85	26 Th 0136	8.7	265
1219	9.0	275	1825	1.2	38	2230	2.8	85	0807	2.6	78
1830	1.8	55	27 F 0555	9.2	280	2244	2.8	85	1415	7.7	235
13 Sa 0029	3.0	90	0555	2.3	71	2257	2.8	85	2005	3.4	105
1146	9.2	279	1215	9.6	292	2270	2.8	85	27 W 0218	8.2	250
1801	1.8	56	1825	1.2	38	2283	2.8	85	0906	2.9	89
14 W 0529	3.0	90	27 F 0555	9.2	280	2296	2.8	85	1510	7.2	219
0602	2.9	87	0555	2.3	71	2309	2.8	85	● 2059	4.0	121
1219	9.0	275	1215	9.6	292	2322	2.8	85	26 Th 0136	8.7	265
1830	1.8	55	1825	1.2	38	2335	2.8	85	0807	2.6	78
13 Sa 0029	3.0	90	27 F 0555	9.2	280	2348	2.8	85	1415	7.7	235
1146	9.2	279	0555	2.3	71	2361	2.8	85	2005	3.4	105
1801	1.8	56	1215	9.6	292	2374	2.8	85	27 W 0218	8.2	250
14 W 0529	3.0	90	1825	1.2	38	2387	2.8	85	0906	2.9	89
0602	2.9	87	27 F 0555	9.2	280	2390	2.8	85	1510	7.2	219
1219	9.0	275	0555	2.3	71	2403	2.8	85	● 2059	4.0	121
1830	1.8	55	1215	9.6	292	2416	2.8	85	26 Th 0136	8.7	265
13 Sa 0029	3.0	90	1825	1.2	38	2429	2.8	85	0807	2.6	78
1146	9.2	279	27 F 0555	9.2	280	2442	2.8	85	1415	7.7	235
1801	1.8	56	0555	2.3	71	2455	2.8	85	2005	3.4	105
14 W 0529	3.0	90	1215	9.6	292	2468	2.8	85	27 W 0218	8.2	250
0602	2.9	87	1825	1.2	38	2481	2.8	85	0906	2.9	89
1219	9.0	275	27 F 0555	9.2	280	2494	2.8	85	1510	7.2	219
1830	1.8	55	0555	2.3	71	2507	2.8	85	● 2059	4.0	121
13 Sa 0029	3.0	90	1215	9.6	292	2520	2.8	85	26 Th 0136	8.7	265
1146	9.2	279	1825	1.2	38	2533	2.8	85	0807	2.6	78
1801	1.8	56	27 F 0555	9.2	280	2546	2.8	85	1415	7.7	235
14 W 0529	3.0	90	0555	2.3	71	2559	2.8	85	2005	3.4	105
0602	2.9	87	1215	9.6	292	2572	2.8	85	27 W 0218	8.2	250
1219	9.0	275	1825	1.2	38	2585	2.8	85	0906	2.9	89
1830	1.8	55	27 F 0555	9.2	280	2598	2.8	85	1510	7.2	219
13 Sa 0029	3.0	90	0555	2.3	71	2611	2.8	85	● 2059	4.0	121
1146	9.2	279	1215	9.6	292	2624	2.8	85	26 Th 0136	8.7	265
1801	1.8	56	1825	1.2	38	2637	2.8	85	0807	2.6	78
14 W 0529	3.0	90	27 F 0555	9.2	280	2650	2.8	85	1415	7.7	235
0602	2.9	87	0555	2.3	71	2663	2.8	85	2005	3.4	105
1219											

Yantai, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0110	4.0	121	16 W 0130	2.8	86	1 F 0203	2.3	71	1 Sa 0248	1.5	47
0717	7.3	224	0735	7.7	234	0809	7.5	228	0859	7.4	226
1347	2.8	84	1357	1.9	58	1415	2.1	63	1453	1.9	58
2000	7.5	229	2009	8.0	245	2029	8.1	248	2110	8.3	252
2 W 0203	3.4	103	17 Th 0222	2.3	69	2 0242	1.8	55	17 Su 0327	1.3	40
0810	7.8	237	0831	8.0	244	0850	7.9	240	0941	7.6	231
1429	2.4	74	1440	1.7	53	1451	1.8	56	1531	1.9	59
2041	8.0	243	2055	8.4	257	2106	8.5	260	2146	8.4	257
3 Th 0242	2.8	85	18 F 0303	1.8	56	3 Su 0319	1.4	42	18 M 0404	1.2	38
0852	8.2	250	0916	8.3	252	0928	8.2	249	1019	7.7	234
1502	2.1	65	1517	1.7	52	1526	1.7	51	1608	2.0	61
2114	8.4	255	2133	8.7	266	● 2141	8.9	270	2220	8.5	260
4 F 0314	2.3	70	19 Sa 0340	1.6	49	4 M 0356	1.1	33	19 Tu 0404	1.2	37
0927	8.5	260	0956	8.4	256	1005	8.3	254	1053	7.7	235
1531	2.0	60	1552	1.8	54	1603	1.6	49	1643	2.1	63
2145	8.7	266	○ 2208	8.9	271	2217	9.1	276	2254	8.6	262
5 Sa 0345	1.9	58	20 Su 0417	1.5	45	5 Tu 0436	0.9	28	20 W 0519	1.2	38
1000	8.7	266	1033	8.4	257	1044	8.4	256	1128	7.7	236
● 2215	9.0	273	1627	1.9	57	1642	1.6	49	1719	2.1	65
2242	9.0	274	2242	9.0	274	2254	9.2	280	2328	8.6	261
6 Su 0418	1.6	50	21 M 0454	1.5	45	6 W 0518	0.9	27	21 Th 0556	1.3	40
1031	8.9	270	1109	8.4	256	1127	8.4	255	1203	7.7	234
1631	1.8	54	1703	2.0	62	1724	1.7	51	1754	2.2	67
2246	9.2	279	2316	9.0	275	2336	9.2	279	● 0554	0.4	12
7 M 0454	1.5	45	22 Tu 0533	1.5	47	7 Th 0603	0.9	27	21 F 0554	0.4	12
1105	8.9	271	1145	8.3	253	1213	8.2	251	1205	7.8	238
1705	1.8	54	1739	2.2	68	1809	1.8	56	1758	1.4	44
2319	9.3	284	2351	9.0	273	● 0611	8.7	265	21 Sa 0611	1.0	31
8 Tu 0533	1.4	43	23 W 0613	1.7	51	8 F 0021	9.0	274	0643	0.5	14
1143	8.8	269	1223	8.2	249	0652	1.0	31	0641	0.5	14
1742	1.8	56	1816	2.5	75	1304	8.0	243	1240	7.6	231
2356	9.4	285	1859	2.1	64	1859	2.1	64	1830	2.3	71
9 W 0615	1.4	43	24 Th 0027	8.8	267	9 Sa 0111	8.6	263	● 0011	8.7	265
1225	8.7	264	0653	1.8	56	0745	1.2	36	0633	1.4	43
1823	2.0	62	1302	7.9	241	1400	7.7	234	1255	7.7	235
1854	2.8	84	1854	2.8	84	1954	2.4	73	1848	1.6	48
10 Th 0037	9.3	282	25 F 0104	8.5	258	10 Su 0208	8.1	247	22 Tu 0003	8.4	257
0701	1.5	46	0736	2.1	63	0845	1.4	44	0633	1.4	43
1313	8.4	255	1345	7.6	231	1502	7.3	224	1240	7.6	231
1909	2.4	72	1934	3.1	94	● 2100	2.7	82	1830	2.3	71
11 F 0123	9.0	273	26 Sa 0144	8.0	245	11 M 0310	7.5	230	● 0011	8.7	265
0755	1.7	53	0823	2.3	71	0951	1.7	52	0641	0.5	14
1407	7.9	242	1433	7.2	219	1615	7.1	217	1255	7.7	235
2002	2.8	85	2022	3.4	105	2219	2.9	87	1848	1.6	48
12 Sa 0217	8.5	258	27 Su 0230	7.5	229	12 Tu 0423	7.0	214	22 Tu 0011	8.7	265
0859	2.0	62	0918	2.6	79	1104	1.9	58	0641	0.5	14
1511	7.4	227	1533	6.8	208	1733	7.2	219	1240	7.6	231
● 2108	3.2	98	● 2124	3.7	114	2350	2.7	83	1830	2.3	71
13 Su 0321	7.9	240	28 M 0327	7.0	213	13 W 0554	6.9	209	● 0011	8.7	265
1014	2.3	69	1023	2.8	86	1221	1.9	59	0748	1.7	56
1634	7.1	217	1659	6.7	203	1840	7.4	226	1247	2.0	61
2233	3.5	106	2248	3.8	116	2305	2.9	89	1908	7.2	219
14 M 0439	7.4	226	29 Tu 0448	6.6	202	14 Th 0109	2.3	71	● 0241	2.0	62
1139	2.3	71	1136	2.8	86	0710	7.0	213	0638	6.3	192
1802	7.2	220	1807	6.9	209	1324	1.9	58	1247	2.0	61
15 Tu 0010	3.3	102	30 W 0014	3.5	107	1939	7.7	236	1908	7.2	219
0621	7.3	224	0619	6.7	205	2028	8.0	245	● 2051	2.2	67
1301	2.1	65	1243	2.7	81	1409	2.3	71	0143	1.7	52
1912	7.6	231	1903	7.2	220	1721	7.1	216	0638	6.2	190
16 Sa 0118	3.0	90	31 Th 0721	7.1	216	1334	2.4	72	1238	1.9	58
0721	7.1	216	1334	2.4	72	1949	7.7	235	1903	7.3	222

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qingdao (Da Gang), China, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu	0114	2.9	87	16 W	0153	1.9	57	1 F	0206	1.7	51	1 Sa
	0625	12.7	388		0708	13.1	400		0247	1.8	55	
	1330	1.0	29		1411	0.5	14		0816	11.8	361	
	1904	13.1	399		1944	13.0	396		1500	2.8	85	
2 W	0150	2.8	85	17 Th	0236	2.1	64	1 F	1422	1.0	32	16 Sa
	0703	12.5	382		0755	12.3	376		1949	13.0	397	
	1405	1.1	34		1452	1.4	43		2030	11.6	354	
	1940	12.9	394		2028	12.2	373					
3 Th	0229	2.8	84	18 F	0321	2.5	75	17 Su	0247	2.4	73	17 Sa
	0745	12.2	372		0847	11.4	346		0910	10.9	332	
	1443	1.4	43		1536	2.6	79		1544	3.9	120	
	2021	12.6	385		2118	11.4	348		2117	10.7	327	
4 F	0312	2.8	85	19 M	0413	2.9	89	18 O	0333	1.9	58	18 M
	0833	11.7	358		0951	10.5	319		0904	11.7	357	
	1528	1.9	58		1626	3.8	115		1553	2.7	83	
	2108	12.2	373		2218	10.6	324		2122	11.9	364	
5 Sa	0402	2.8	86	19 W	0525	3.5	106	19 O	0421	3.0	91	19 Tu
	0931	11.3	343		1012	11.0	335		1022	10.1	308	
	1620	2.6	79		1654	3.7	114		1638	5.0	153	
	2204	11.8	360		2226	11.3	344		2222	10.0	304	
6 Su	0501	2.8	85	20 M	0644	3.6	109	20 W	0407	1.8	54	20 W
	1044	10.9	332		1115	9.9	301		0953	11.2	342	
	1724	3.3	100		1730	4.8	146		1637	4.4	133	
	2310	11.5	352		2334	10.1	309		2157	11.1	338	
7 M	0611	2.5	77	20 Tu	0538	2.3	69	20 W	0953	11.2	342	20 Tu
	1206	10.9	333		1139	10.6	323		1922	5.9	181	
	1840	3.8	115		1814	4.5	137					
8 Tu	0022	11.5	351	21 M	0624	3.4	105	21 W	0644	3.6	109	21 Th
	0725	2.0	61		1253	9.9	301		0804	3.2	99	
	1329	11.4	348		1851	5.4	164		1126	10.6	324	
	1959	3.8	117						1801	5.0	153	
9 W	0130	11.8	359	22 Th	0050	10.0	305	22 F	0115	9.8	299	22 F
	0837	1.2	38		0741	3.2	99		0822	1.6	48	
	1437	12.2	371		1407	10.3	314		1433	11.6	354	
	2109	3.5	108		2010	5.4	165		2100	4.1	125	
10 Th	0231	12.2	373	23 W	0155	10.2	312	23 F	0222	11.5	352	23 Sa
	0939	0.5	14		0846	2.8	84		0931	0.9	26	
	1532	12.9	394		1501	10.9	331		1526	12.4	378	
	2208	3.1	94		2113	5.1	154		2201	3.3	102	
11 F	0325	12.8	391	24 Th	0247	10.7	327	24 Sa	0319	12.3	375	24 Su
	1034	-0.2	-6		0939	2.2	67		1026	0.2	5	
	1619	13.5	412		1543	11.5	349		1609	13.0	397	
	2300	2.6	79		2200	4.5	137		2251	2.6	79	
12 Sa	0413	13.4	407	25 M	0329	11.3	344	25 Su	0406	13.1	398	25 M
	1123	-0.7	-20		1023	1.6	50		1114	-0.3	-9	
	1702	13.8	422		1617	11.9	364		1648	13.5	411	
	2346	2.2	67		2240	3.9	119		2334	2.0	60	
13 Su	0459	13.7	419	26 Sa	0403	11.8	361	11 M	0449	13.6	414	11 Tu
	1209	-0.8	-25		1101	1.2	37		1155	-0.4	-13	
	1742	14.0	426		1646	12.4	378		1725	13.7	418	
					2316	3.3	101					
14 M	0029	1.9	58	27 W	0435	12.4	377	12 F	0014	1.5	46	12 Tu
	0542	13.8	422		1136	0.9	27		0529	13.8	421	
	1251	-0.7	-21		1713	12.8	389		1233	-0.3	-9	
	1822	13.9	423		2350	2.8	84		1800	13.7	419	
15 Tu	0111	1.8	55	28 M	0505	12.8	390	13 W	0052	1.3	39	13 Th
	0625	13.6	416		1208	0.7	20		0608	13.7	419	
	1332	-0.3	-8		1740	13.1	399		1310	0.1	4	
	1903	13.5	412						1836	13.5	413	
16 F	0023	2.3	71	29 Tu	0130	1.8	54	14 Th	0129	1.2	37	14 Th
	0537	13.1	398		0646	13.2	401		0648	13.4	407	
	1239	0.5	16		1808	13.3	405		1345	0.8	24	
	1808	13.3	405						1912	13.1	400	
17 W	0055	2.0	60	30 Th	0207	1.4	43	15 F	0207	12.7	387	15 F
	0610	13.2	403		0730	12.7	387					
	1311	0.5	15						1422	1.7	52	
	1838	13.4	408						1949	12.4	379	
18 Th	0130	1.8	54	31 Th	0646	13.2	401	14 F	0129	1.2	37	14 F
	1345	0.7	20		1345	0.7	20		0648	13.4	407	
	1912	13.3	406						1246	1.0	32	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qingdao (Da Gang), China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0208 0.4 13	16 0227 2.0 61	1 W 0245 0.7 22	16 0242 2.3 71	1 Sa 0428 2.2 68	16 0341 3.0 90						
0741 13.4 408	Tu 0814 12.2 373	W 0829 13.1 400	Th 0837 12.6 384	Sa 1024 12.6 385	Su 0933 12.9 394						
1431 2.8 86	1445 4.5 138	1517 4.1 125	1509 5.1 154	1716 4.2 129	1621 4.6 139						
1943 12.9 394	1956 11.6 353	2025 12.2 373	2018 11.6 353	O 2237 11.4 347	2142 11.6 354						
2 Tu 0256 0.9 28	17 0308 2.5 77	2 Th 0343 1.4 44	17 0325 2.8 84	2 Su 0534 3.1 93	17 0433 3.4 104						
0836 12.5 382	W 0908 11.6 354	F 0935 12.4 377	F 0929 12.2 373	1141 12.4 377	M 1029 12.7 387						
1524 3.8 117	1532 5.2 159	1624 4.6 141	1601 5.2 160	1828 4.0 121	1720 4.3 131						
2035 12.0 366	2044 10.9 333	O 2134 11.4 348	2114 11.1 337	O 2253 11.5 350							
3 W 0353 1.6 48	18 0357 3.1 93	3 F 0451 2.2 66	18 0415 3.2 97	3 M 0004 11.2 342	18 0533 3.9 118						
0945 11.6 355	Th 1015 11.2 340	F 1059 11.9 363	Sa 1028 12.0 365	0645 3.7 113	Tu 1131 12.7 386						
1630 4.7 144	1631 5.7 174	1742 4.7 144	1702 5.2 159	1250 12.3 376	1823 3.8 116						
O 2143 11.1 338	O 2150 10.3 314	2301 10.9 333	O 2225 10.7 327	1936 3.5 106							
4 Th 0505 2.2 67	19 0457 3.4 105	4 Sa 0607 2.6 80	19 0514 3.5 107	4 Tu 0123 11.5 350	19 0010 11.8 359						
1119 11.1 339	F 1134 11.0 335	Sa 1226 11.9 363	Su 1134 11.9 364	0753 4.1 125	W 0642 4.1 126						
1755 5.1 155	1744 5.8 176	1901 4.3 131	1807 4.9 148	1345 12.4 378	1234 12.9 392						
2314 10.6 322	2321 10.1 307		2345 10.8 330	2034 2.9 88	1927 3.1 94						
5 F 0630 2.5 75	20 0605 3.6 110	5 Sa 0030 11.0 335	20 0620 3.6 111	5 W 0226 12.0 365	20 0122 12.4 378						
1259 11.3 345	Sa 1244 11.2 342	Su 0723 2.8 86	M 1236 12.2 371	0853 4.3 132	Th 0752 4.2 128						
1924 4.7 144	1859 5.3 162	1330 12.2 371	1911 4.2 127	1432 12.5 381	1332 13.2 403						
6 Sa 0050 10.7 327	21 0041 10.4 317	6 M 0144 11.5 349	21 0056 11.4 347	6 Th 0315 12.5 380	21 0225 13.2 403						
0753 2.3 69	Su 0717 3.4 105	F 0829 2.9 87	Tu 0728 3.5 108	0944 4.4 133	W 0856 4.0 123						
1403 11.8 361	1339 11.7 356	M 1420 12.5 381	1328 12.6 384	1513 12.6 385	F 1424 13.7 417						
2036 3.9 119	2005 4.5 137	2105 2.8 85	2011 3.3 100	2208 2.1 63	2127 1.3 40						
7 Su 0202 11.4 346	22 0143 11.1 338	7 Tu 0240 12.0 366	22 0156 12.2 373	7 F 0356 12.9 393	22 0319 14.1 429						
0859 1.9 58	M 0821 3.1 93	F 0923 2.9 89	W 0830 3.3 100	1028 4.5 136	Sa 0955 3.8 116						
1450 12.4 377	1422 12.3 374	1501 12.7 388	1414 13.1 400	1550 12.8 389	1513 14.1 431						
2131 3.0 91	2057 3.5 107	2151 2.2 66	2104 2.3 70	2248 1.8 56	2221 0.6 17						
8 M 0256 12.1 368	23 0234 12.0 366	8 W 0326 12.6 383	23 0248 13.2 401	8 Sa 0433 13.3 404	23 0408 14.8 450						
0951 1.6 50	Tu 0914 2.5 77	1009 3.0 92	0925 3.0 91	1107 4.5 137	Su 1048 3.5 108						
1529 12.8 391	1500 12.9 392	1538 12.9 394	1457 13.6 416	1623 13.0 395	1600 14.5 443						
2216 2.2 67	2143 2.5 77	2232 1.7 52	2153 1.3 41	O 2326 1.7 52	O 2311 0.0 0						
9 Tu 0340 12.7 387	24 0317 12.9 394	9 Th 0406 13.0 396	24 0336 14.0 426	9 Su 0508 13.5 412	24 0454 15.2 464						
1035 1.6 49	W 1001 2.1 63	F 1049 3.2 97	F 1016 2.8 85	1143 4.5 136	M 1138 3.3 102						
1604 13.1 400	1535 13.4 409	1612 13.0 397	1538 14.1 430	1654 13.1 400	1646 14.8 452						
2256 1.6 49	2225 1.6 48	2309 1.4 44	2240 0.6 17		2359 -0.3 -10						
10 W 0420 13.2 402	25 0358 13.7 419	10 Th 0443 13.3 406	25 0420 14.6 446	10 M 0002 1.6 50	25 0538 15.4 469						
1113 1.7 53	F 1044 1.8 54	F 1126 3.3 102	Sa 1104 2.7 82	0542 13.7 418	Tu 1225 3.2 497						
1637 13.3 406	1609 13.9 423	1643 13.1 399	Sa 1619 14.4 440	1219 4.4 135	1732 14.9 454						
● 2332 1.2 38	2305 0.8 25	● 2345 1.3 41	O 2326 0.0 0	1725 13.2 403							
11 Th 0457 13.5 411	26 0437 14.4 438	11 Sa 0519 13.5 413	26 0504 15.0 458	11 Tu 0036 1.6 50	26 0046 -0.3 -10						
1148 2.0 60	F 1126 1.7 51	Sa 1201 3.5 107	Su 1151 2.7 83	0615 13.8 420	W 0622 15.3 466						
1708 13.4 408	F 1644 14.2 433	Sa 1714 13.1 400	Su 1700 14.6 444	1254 4.4 135	1312 3.2 97						
O 2346 0.2 7	O 2346 0.2 7			1758 13.2 403	1818 14.7 449						
12 F 0007 1.0 32	27 0517 14.7 449	12 Su 0019 1.3 41	27 0011 -0.3 -9	12 W 0110 1.7 53	27 0132 0.0 -1						
0533 13.6 415	Sa 1207 1.8 55	Su 0555 13.6 414	M 0549 15.1 461	0649 13.8 420	0706 15.0 456						
1222 2.3 70	1720 14.3 437	Su 1236 3.7 113	M 1237 2.9 88	1329 4.5 137	1359 3.2 99						
1739 13.3 405		1745 13.1 398	1744 14.5 442	1833 13.1 399	1906 14.2 434						
13 Sa 0041 1.0 32	28 0027 -0.1 -3	13 M 0054 1.5 45	28 0057 -0.3 -9	13 W 0143 1.9 59	28 0218 0.6 17						
0609 13.5 413	Su 0559 14.8 450	M 0631 13.5 412	Tu 0634 14.9 455	0725 13.7 417	F 0754 14.4 439						
1256 2.7 82	1250 2.2 66	1310 4.0 122	1324 3.2 97	1406 4.6 139	1448 3.4 105						
1810 13.1 398	1759 14.2 433	1818 12.9 393	1829 14.2 432	1911 12.8 390	1957 13.5 411						
14 Su 0115 1.2 37	29 0110 -0.1 -4	14 Tu 0128 1.7 51	29 0145 0.0 0	14 W 0218 2.2 67	29 0306 1.5 45						
0647 13.3 405	M 0644 14.5 441	F 0710 13.3 405	W 0723 14.5 441	0803 13.5 411	Sa 0845 13.7 419						
1330 3.2 97	1334 2.7 83	1346 4.3 132	1413 3.5 108	1445 4.6 141	1541 3.7 112						
1843 12.7 387	1841 13.8 421	1853 12.6 383	1919 13.6 414	1953 12.4 378	2055 12.6 383						
15 M 0150 1.5 47	30 0155 0.2 5	15 W 0204 2.0 60	30 0234 0.6 18	15 Sa 0256 2.5 77	30 0357 2.6 78						
0728 12.8 391	Tu 0733 13.9 424	W 0751 13.0 395	W 0816 13.8 422	0845 13.2 402	Su 0943 13.1 398						
1406 3.8 117	1422 3.4 104	1425 4.7 143	1507 3.9 119	1530 4.7 142	1640 3.8 117						
1917 12.2 372	1929 13.1 400	1932 12.1 370	2014 12.8 390	2042 12.0 365	O 2205 11.8 359						
			31 0328 1.3 41								
			F 0915 13.2 401								
			1607 4.2 128								
			2119 12.0 365								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qingdao (Da Gang), China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0455 3.7 114		16 0359 3.5 107		1 Th 0038 11.4 346		16 0541 5.5 169		1 Su 0218 12.0 367		16 0148 13.0 395	
1051 12.5 381	Tu 0937 13.3 405	16 0633 6.4 195	F 1111 12.5 382	16 0829 6.6 202	M 0819 5.0 153			1358 11.7 356	1339 12.7 387		
1746 3.9 118	16 1231 11.5 352	1825 3.1 94		1358 11.7 356		1339 12.7 387		2053 3.6 109	2047 2.0 61		
2332 11.4 346	16 2213 12.1 370	1922 4.0 122									
2 Tu 0602 4.7 144		17 W 0456 4.3 130		2 F 0153 11.7 358		2 M 0300 12.6 383		17 Tu 0241 13.7 417			
1204 12.1 370	17 1037 13.0 395	2 0753 6.6 201	Sa 0706 5.7 175	2 M 0921 5.9 180	Tu 0920 4.0 122			17 1438 13.5 412			
1855 3.7 113	17 1742 3.5 107	1336 11.7 356	1234 12.6 384	2 M 1444 12.3 375	1438 13.5 412			2140 3.0 91	2144 1.3 40		
2332 12.0 367	2332 12.0 367	2029 3.6 110	1947 2.6 78	2140 3.0 91							
3 W 0103 11.5 349		18 Th 0606 4.9 148		3 Sa 0249 12.3 374		3 Tu 0334 13.1 399		18 W 0324 14.3 435			
0715 5.4 164	18 1146 12.9 392	0858 6.4 194	Su 0827 5.3 162	3 Tu 1002 5.1 155	W 1010 3.1 93			18 1527 14.3 435			
1309 12.0 367	18 1852 3.0 92	1429 12.0 367	1347 13.1 399	3 Tu 1521 13.0 396	1521 13.0 396			2221 2.5 76	2231 1.0 29		
2001 3.4 103		2123 3.1 94	2059 1.8 54	3 Tu 2221 2.5 76							
4 Th 0212 11.9 362		19 F 0057 12.4 379		4 Su 0331 12.8 389		4 W 0402 13.5 413		19 Th 0402 14.7 447			
0824 5.6 171	19 0723 5.1 156	0948 5.9 180	M 0932 4.5 138	4 W 1039 4.3 131	Th 1053 2.3 70			19 1609 14.8 452			
1405 12.1 369	19 1256 13.0 397	1511 12.5 382	1448 13.8 422	4 W 1554 13.6 416	O 2314 0.9 28			2256 2.1 65			
2057 3.0 90	19 2003 2.3 71	2209 2.6 80	2158 1.0 30								
5 F 0305 12.4 378		20 Sa 0210 13.2 402		5 M 0405 13.2 403		5 Th 0427 14.0 426		20 F 0437 14.9 454			
0921 5.6 170	20 0837 5.0 151	1029 5.4 164	Tu 1025 3.7 113	5 Th 1112 3.6 109	W 1133 1.8 54			20 1649 15.1 460			
1452 12.3 376	20 1400 13.5 410	1547 13.1 398	1538 14.6 445	5 Th 1626 14.2 434	1649 15.1 460			● 2329 1.9 57	2352 1.2 36		
2146 2.6 78	20 2110 1.5 46	2248 2.2 68	2248 0.4 13								
6 Sa 0347 12.9 392		21 Su 0309 14.0 427		6 Tu 0434 13.6 415		6 F 0453 14.4 438		21 Sa 0512 14.9 453			
1009 5.4 165	21 0941 4.5 137	1106 4.8 147	W 1112 3.0 91	6 F 1145 3.0 90	W 1211 1.5 46			21 Sa 1211 1.5 46			
1531 12.6 385	21 1457 14.0 428	1618 13.5 413	1623 15.2 462	6 F 1658 14.7 447	1658 14.7 447			● 2329 0.2 6			
2229 2.2 68	21 2208 0.7 22	2324 1.9 59	○ 2333 0.2 6								
7 Su 0423 13.3 404		22 M 0358 14.7 449		7 W 0500 14.0 426		7 Th 0001 1.7 53		22 Su 0029 1.7 51			
1049 5.2 158	22 M 1037 3.9 120	1140 4.3 131	1154 2.5 75	7 Th 0520 14.6 446	545 14.7 447			22 Su 1248 1.5 46			
1606 13.0 395	22 M 1548 14.6 446	1649 14.0 426	1705 15.5 471	7 Th 1217 2.5 76	1248 1.5 46			1731 15.0 456	1807 14.8 450		
2309 2.0 61	22 2300 0.1 4	● 2357 1.8 55		7 Th 1731 15.0 456							
8 M 0455 13.6 414		23 Tu 0441 15.2 464		8 Th 0526 14.3 435		8 Su 0033 1.7 53		23 M 0105 2.4 72			
1126 4.9 150	23 Tu 1126 3.4 104	1212 3.8 117	1234 2.2 66	8 Su 0539 15.3 467	0549 14.8 452			23 M 1324 1.8 54			
1637 13.3 406	23 Tu 1635 15.1 460	1720 14.3 435	1746 15.4 469	8 Su 1250 2.2 67	1250 2.2 67			1806 15.0 457	1847 14.2 433		
● 2345 1.8 56	23 ○ 2348 -0.2 -6			8 Su 1806 15.0 457							
9 Tu 0525 13.8 422		24 W 0523 15.5 472		9 F 0028 1.7 53		9 M 0107 2.0 60		24 Tu 0141 3.2 97			
1201 4.6 141	24 W 1212 3.0 92	0553 14.5 441	Sa 0615 15.1 460	9 M 0621 14.8 452	0621 14.8 452			24 Tu 1402 2.2 68			
1708 13.6 414	24 W 1720 15.3 467	1244 3.5 106	1313 2.1 64	9 M 1326 2.0 61	1326 2.0 61			1844 14.8 451	1931 13.4 409		
1708 13.6 414		1752 14.4 440	1827 15.0 457	9 M 1844 14.8 451							
10 W 0019 1.7 53		25 Th 0032 -0.2 -6		10 Sa 0059 1.8 54		10 Tu 0144 2.4 74		25 W 0219 4.2 127			
0554 14.1 429	25 Th 0603 15.5 471	0621 14.6 445	Sa 0652 14.6 445	10 Tu 0656 14.6 445	0656 14.6 445			25 W 0730 12.8 390			
1235 4.4 134	25 Th 1255 2.8 85	1317 3.2 98	1353 2.3 69	10 Tu 1405 2.0 62	1405 2.0 62			1442 2.9 87			
1740 13.7 419	25 Th 1803 15.3 465	1827 14.4 440	1910 14.3 435	10 Tu 1928 14.3 436	1928 14.3 436			2021 12.5 382			
11 Th 0050 1.8 54		26 F 0115 0.2 5		11 Su 0131 1.9 59		11 W 0224 3.1 96		26 Th 0300 5.2 158			
0623 14.2 433	26 F 0643 15.2 463	0652 14.6 445	Su 1352 3.1 93	26 M 0730 13.9 423	0730 13.9 423			26 Th 0812 11.9 364			
1309 4.2 127	26 F 1338 2.7 83	1434 3.1 93	1434 2.7 81	26 M 1434 2.7 81	1434 2.7 81			1528 3.5 108			
1813 13.7 419	26 F 1848 14.8 451	1905 14.2 434	1958 13.4 407	26 M 1958 13.4 407	1958 13.4 407			2128 11.7 357			
12 F 0122 1.9 57		27 Sa 0156 0.9 27		12 M 0206 2.3 71		12 Th 0249 3.7 114		27 F 0349 6.1 187			
0654 14.2 434	27 Sa 0725 14.7 448	0728 14.4 439	1519 3.2 99	12 Th 0812 13.0 397	0825 13.4 408			27 F 0909 11.1 339			
1343 4.0 123	27 Sa 1422 2.9 87	1430 3.0 92	1519 3.2 99	12 Th 1540 2.6 79	1540 2.6 79			1624 4.2 127			
1849 13.6 416	27 Sa 1934 14.0 428	1948 13.8 421	2054 12.3 376	12 Th 2123 12.7 387	2123 12.7 387			● 2302 11.3 343			
13 Sa 0155 2.0 62		28 Su 0238 1.9 58		13 Th 0249 3.7 114							
0727 14.1 431	28 Su 0809 14.0 426	0808 14.0 428	13 Th 0812 13.0 397								
1419 3.9 120	28 Su 1508 3.1 96	1513 3.1 93	1519 3.2 99								
1928 13.4 407	28 Su 2027 13.1 398	2039 13.2 403	● 2211 11.5 351								
14 Su 0230 2.4 72		29 M 0323 3.1 96		14 Th 0331 3.8 115		14 Th 0430 6.2 188		29 Su 0029 11.4 346			
0804 13.9 425	29 M 0858 13.2 401	0856 13.5 412	1605 3.2 97	14 Th 1013 11.3 345	1013 11.3 345			29 Su 0623 7.0 212			
1459 3.9 119	29 M 1559 3.5 108	1605 3.2 97	● 2143 12.6 383	14 Th 1716 4.4 133	1716 4.4 133			1212 10.7 326			
2013 13.0 396	29 M 2130 12.1 368							1856 4.5 136			
15 M 0311 2.9 87		30 Tu 0414 4.5 136		15 Th 0428 4.8 145		15 Th 0001 11.3 343		30 M 0129 11.7 358			
0847 13.6 416	30 Tu 0957 12.3 376	0956 12.9 394	1709 3.2 99	15 Th 0546 7.0 212	0546 7.0 212			0745 6.4 195			
1545 3.9 118	30 Tu 1659 3.9 120	1145 11.0 336	1834 4.5 137	15 Th 1145 11.0 336	1145 11.0 336			1316 11.2 341			
2107 12.5 382	30 Tu 2254 11.4 348	2306 12.2 371		15 Th 1834 4.5 137	1834 4.5 137			2007 4.0 122			
31 W 0516 5.6 172		31 W 1112 11.7 358		31 Sa 0121 11.5 352							
1808 4.1 126	31 W 1808 4.1 126			31 Sa 0715 7.1 216							
				31 Sa 1300 11.2 342							
				31 Sa 1952 4.2 127							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Qingdao (Da Gang), China, 2013

Times and Heights of High and Low Waters

October				November				December							
	Time	Height			Time	Height			Time	Height					
1 Tu	0214	12.3	374	16 W	0217	13.3	404	1 F	0237	13.0	396	16 Su	0235	12.9	394
	0843	5.5	168		0902	3.2	98		0926	2.9	87		0933	1.4	44
	1408	11.9	362		1425	12.9	394		1457	13.1	398		1011	1.3	40
	2100	3.4	104		2123	1.9	58		2143	2.7	81		1543	13.1	399
2 W	0250	12.8	391	17 Th	0300	13.7	417	2 Sa	0312	13.5	413	17 Su	0349	13.1	400
	0927	4.5	137		0950	2.3	70		1006	1.9	58		1050	1.0	32
	1450	12.7	387		1513	13.6	414		1536	13.8	422		1622	13.4	408
	2143	2.9	87		2210	1.8	54		2225	2.3	69		2308	3.0	92
3 Th	0321	13.4	407	18 F	0337	14.0	426	3 Su	0345	14.0	428	18 M	0423	13.2	401
	1005	3.5	108		1033	1.6	50		1045	1.1	34		1127	1.0	30
	1527	13.5	411		1555	14.1	429		1615	14.5	442		1659	13.5	412
	2222	2.4	72		2252	1.9	58		2305	2.0	61		2344	3.2	97
4 F	0350	13.9	423	19 Sa	0412	14.1	430	4 M	0420	14.4	439	19 Tu	0456	13.1	400
	1040	2.7	82		1111	1.2	38		1124	0.5	15		1203	1.0	31
	1601	14.2	433		1634	14.3	437		1653	14.9	454		1735	13.5	412
	2258	2.0	61		2329	2.2	66		2345	2.0	61		2327	2.2	66
5 Sa	0418	14.3	436	20 Su	0445	14.1	430	5 Tu	0455	14.6	445	20 W	0019	3.4	103
	1115	2.0	60		1148	1.1	33		1204	0.1	4		0528	13.1	398
	1635	14.8	450		1712	14.4	438		1733	15.0	457		1237	1.2	36
	2333	1.8	56									1812	13.4	409	
6 Su	0448	14.7	447	21 M	0005	2.6	78	6 W	0026	2.2	66	21 Th	0054	3.6	110
	1150	1.4	44		0517	13.9	425		0533	14.6	444		0600	12.9	392
	1711	15.1	460		1223	1.1	35		1245	0.0	0		1312	1.4	44
					1749	14.2	434		1816	14.8	451		1849	13.2	401
7 M	0008	1.8	56	22 Tu	0040	3.0	92	7 Th	0109	2.6	78	22 F	0129	3.9	119
	0520	14.8	452		0549	13.6	416		0614	14.2	433		0635	12.5	381
	1226	1.1	33		1258	1.4	43		1329	0.2	6		1347	1.8	54
	1748	15.2	463		1827	13.9	423		1903	14.3	436		1929	12.8	389
8 Tu	0045	2.1	63	23 W	0115	3.6	109	8 F	0155	3.1	95	23 Sa	0206	4.3	130
	0554	14.8	452		0622	13.2	402		0700	13.6	414		0713	12.0	366
	1304	0.9	28		1334	1.8	56		1416	0.7	20		1424	2.2	67
	1828	15.0	456		1908	13.3	406		1955	13.6	414		2013	12.3	375
9 W	0125	2.6	78	24 Th	0152	4.2	129	9 Sa	0245	3.7	114	24 Su	0247	4.6	141
	0631	14.5	442		0657	12.6	385		0753	12.7	388		0757	11.4	348
	1344	1.0	32		1412	2.3	71		1509	1.3	41		1504	2.7	82
	1913	14.4	439		1954	12.7	386		2057	12.8	389		2104	11.8	361
10 Th	0207	3.3	101	25 F	0231	4.9	150	10 Su	0345	4.3	131	25 M	0334	4.9	149
	0714	13.9	423		0736	11.9	364		0858	11.8	360		0851	10.8	328
	1429	1.4	43		1452	3.0	90		1611	2.1	63		1550	3.2	97
	2005	13.6	415		2048	12.0	365		2212	12.2	371		2202	11.5	350
11 F	0256	4.2	127	26 Sa	0315	5.6	170	11 M	0458	4.6	139	26 W	0430	5.0	152
	0805	13.0	397		0824	11.2	341		1021	11.2	341		1002	10.3	315
	1522	2.0	61		1539	3.5	108		1726	2.7	81		1645	3.6	110
	2110	12.7	388		2158	11.5	350		2340	12.0	366		2308	11.4	346
12 Sa	0356	5.0	152	27 Su	0411	6.1	185	12 Tu	0621	4.3	130	27 M	0536	4.8	146
	0909	12.1	368		0935	10.5	321		1152	11.1	339		1125	10.3	314
	1628	2.6	79		1637	4.0	123		1847	2.9	88		1751	3.9	118
	2236	12.2	371		2317	11.3	345					1924	3.6	111	
13 Su	0515	5.4	165	28 M	0524	6.2	188	13 W	0052	12.2	372	28 F	0012	11.5	350
	1037	11.5	350		1112	10.3	315		0738	3.5	107		0645	4.2	129
	1749	3.0	90		1746	4.3	130		1310	11.5	352		1236	10.8	328
									2000	2.9	87		1902	3.8	116
14 M	0015	12.2	373	29 Tu	0024	11.5	350	14 Th	0147	12.5	382	29 F	0105	11.9	362
	0646	5.2	157		0644	5.7	175		0838	2.6	80		0749	3.4	103
	1213	11.6	353		1226	10.6	324		1411	12.1	369		1335	11.5	351
	1916	2.8	84		1901	4.1	126		2058	2.8	84		2008	3.5	106
15 Tu	0125	12.7	387	30 W	0117	11.9	362	15 F	0233	12.8	390	30 Sa	0152	12.4	377
	0803	4.3	130		0751	4.9	149		0928	1.8	56		0843	2.4	73
	1327	12.2	372		1325	11.3	345		1501	12.7	386		1427	12.4	378
	2027	2.3	70		2006	3.7	113		2147	2.8	84		2104	3.1	93
31 Th	0159	12.4	378	31 Th	0842	3.9	118					15 Su	0253	11.9	362
					1414	12.2	371						0957	0.4	13
					2058	3.2	97						1546	13.3	406
													2224	2.7	82

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Lianyungang, China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0244	3.7	112	16 W 0331	2.8	85	1 F 0335	2.7	83	1 F 0242	1.9	59
0802	15.8	481	0845	16.1	491	0903	16.0	488	0805	16.8	512
1458	2.0	60	1549	1.4	42	1549	1.9	58	1457	1.5	47
2047	16.2	494	2127	16.2	494	2128	16.3	496	2213	14.7	447
2 W 0319	3.7	112	17 Th 0414	3.0	92	2 Sa 0415	2.8	84	2 Sa 0316	1.9	57
0840	15.6	476	0935	15.3	466	0951	15.5	473	0847	16.6	505
1531	2.1	64	1629	2.3	70	1632	2.6	78	1534	2.1	63
2121	16.1	491	2211	15.5	471	2212	15.8	483	2100	16.5	504
3 Th 0358	3.7	113	18 F 0501	3.4	103	3 Su 0503	2.9	87	3 Su 0356	1.9	59
0923	15.3	465	1031	14.3	437	1048	14.9	453	0936	16.0	489
1609	2.4	72	1714	3.4	105	1723	3.5	106	1616	2.9	89
2201	15.9	484	2300	14.5	443	2304	15.2	462	2359	12.8	389
4 F 0442	3.8	115	19 M 0554	3.8	116	4 M 0601	3.0	92	4 M 0443	2.2	67
1013	14.8	451	1137	13.4	409	1157	14.2	432	1034	15.3	465
1655	2.8	85	1806	4.6	141	1826	4.5	138	1707	4.0	122
2248	15.5	473	2356	13.6	414				2236	15.1	459
5 Sa 0534	3.8	115	20 Su 0655	4.2	127	5 Tu 0006	14.4	439	5 Tu 0542	2.6	79
1114	14.3	436	1257	12.9	392	0712	3.1	95	0819	4.5	136
1749	3.4	104	1908	5.7	173	1321	13.8	421	1453	12.9	392
2343	15.1	460				1943	5.3	162	2050	7.0	212
6 Su 0635	3.6	111	21 M 0103	12.9	392	6 W 0119	13.8	422	21 M 0241	12.2	372
1225	14.0	427	0804	4.3	131	0832	2.9	89	0933	4.1	126
1854	4.1	124	1419	12.8	390	1448	14.0	428	1600	13.5	410
			2023	6.3	192	2112	5.5	168	2207	6.5	197
7 M 0046	14.8	450	22 Tu 0219	12.6	383	7 Th 0239	13.8	421	22 F 0348	12.8	390
0744	3.3	101	0914	4.1	126	0953	2.4	74	1036	3.5	108
1344	14.1	429	1532	13.2	402	1603	14.7	449	1650	14.2	432
2008	4.6	139	2140	6.4	194	2234	5.0	152	2303	5.6	170
8 Tu 0152	14.6	446	23 W 0327	12.8	389	8 F 0352	14.4	438	23 M 0437	13.6	416
0855	2.8	84	1018	3.6	111	1106	1.7	51	1127	2.9	87
1501	14.6	445	1631	13.8	422	1702	15.6	474	1729	14.9	454
2125	4.7	142	2242	6.0	182	2338	4.2	127	2348	4.6	140
9 W 0259	14.8	452	24 Th 0421	13.3	406	9 Sa 0451	15.2	462	24 Su 0517	14.5	443
1005	2.0	62	1111	3.1	94	1207	1.0	30	1211	2.2	68
1609	15.4	469	1717	14.5	442	1749	16.2	494	1801	15.5	471
2239	4.4	133	2330	5.3	163				2331	4.0	123
10 Th 0402	15.3	466	25 F 0503	14.0	427	10 M 0031	3.4	104	25 M 0444	14.9	453
1110	1.3	39	1156	2.5	77	0539	15.9	486	1158	1.4	43
1706	16.2	493	1755	15.1	460	1258	0.5	16	1735	15.9	485
2341	3.9	118				1830	16.6	507	1829	15.9	484
11 F 0457	15.9	484	26 Sa 0011	4.7	142	11 M 0116	2.8	85	11 M 0021	3.1	95
1209	0.7	20	0539	14.7	448	0623	16.5	503	0531	15.6	476
1756	16.8	512	Sa 1236	2.1	63	M 1341	0.4	12	M 1245	1.1	35
			1827	15.6	474	1906	16.8	513	O 1855	16.2	495
12 Sa 0035	3.4	103	27 Su 0048	4.0	123	12 Tu 0156	2.4	72	12 O 0104	2.4	74
0546	16.4	501	0611	15.3	466	0704	16.8	511	0611	16.2	493
1302	0.3	8	1311	1.7	53	1418	0.6	18	1354	1.3	40
● 1841	17.1	522	O 1856	15.9	485	1942	16.9	514	1921	16.5	504
13 Su 0123	3.0	92	28 M 0123	3.5	106	13 W 0232	2.1	65	27 O 0137	2.5	75
0631	16.8	513	0642	15.8	481	0744	16.7	509	0654	16.5	502
1349	0.1	4	1344	1.5	47	1450	1.0	31	1354	1.3	40
1923	17.2	525	1923	16.1	492	2017	16.7	508	1949	16.7	510
14 M 0207	2.8	85	29 Tu 0156	3.1	94	14 Th 0308	2.1	64	14 O 0104	2.4	74
0715	16.9	516	0713	16.1	491	0826	16.3	498	0728	16.6	505
1432	0.3	8	1413	1.4	44	1522	1.6	50	1426	1.9	58
2004	17.1	521	1950	16.3	498	2053	16.2	495	1947	16.4	501
15 Tu 0249	2.7	83	30 W 0228	2.9	87	15 F 0344	2.3	70	15 F 0243	1.8	55
0808	16.7	509	0745	16.3	496	0911	15.7	479	0808	16.4	500
1511	0.7	21	1442	1.4	44	1556	2.5	75	1455	2.4	73
2045	16.8	511	2018	16.5	502	2131	15.6	474	2020	16.1	491
31 Th 0300	2.7	83	Th 0822	16.2	495						
			1513	1.6	48						
			2051	16.5	502						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Lianyun Gang, China, 2013

Times and Heights of High and Low Waters

April					May					June										
Time		Height			Time		Height			Time		Height			Time		Height			
1 M	0343	1.4	42		16 Tu	0402	2.7	83		1 W	0427	1.5	47		16 Th	0415	3.1	93		
	0928	16.5	502			1006	15.4	468			1022	16.4	500			0616 Sa	1216	2.9	88	16 Su
	1608	3.6	109			1621	5.2	157			1701	4.8	146			1904	15.8	482		1119
	2124	15.9	484			2145	14.4	439			2211	15.0	457			2027 O	14.3	437		16.1
2 Tu	0433	1.8	54		17 W	0445	3.2	98		2 F	0528	2.2	66		17 F	0459	3.5	107		
	1028	15.7	479			1100	14.8	450			1131	15.7	479			0026 Su	0721	14.2	432	0606 17 M
	1702	4.6	140			1709	5.9	179			1809	5.3	161			1322	15.6	476		1211 17 O
	2220	14.9	454			2235	13.6	416			2322	14.1	431			2012	4.4	134		1858
3 W	0534	2.4	72		18 Th	0535	3.8	115		3 F	0638	2.8	85		18 Sa	1210	3.9	120		
	1139	14.9	454			1200	14.3	435			1246	15.3	465			1839 O	15.1	460		0038 18 Tu
	1811	5.5	167			1808	6.4	195			1926	5.3	162			0148 M	0828	4.3	132	0707 18 O
	2329	13.9	424			2338	13.0	397								1426	15.4	469		1307 18 Tu
4 Th	0649	2.9	88		19 F	0635	4.2	128		4 Sa	0045	13.6	416		19 Su	1308	15.0	457		
	1303	14.4	439			1306	14.0	426			0751	3.2	97			0650 Tu	0934	4.8	146	
	1934	5.9	179			1918	6.5	198			1400	15.1	461			1308 W	1523	15.3	466	
											2041	4.9	148			2213	3.3	101		1406 19 W
5 F	0053	13.3	405		20 Sa	0052	12.7	387		5 Su	0210	13.7	419		20 M	0121	13.6	416		
	0811	3.1	93			0741	4.4	133			0903	3.4	104			0754 Th	1034	4.3	132	
	1427	14.4	440			1412	14.1	429			1506	15.3	465			1406 W	1611	15.3	466	
	2101	5.5	168			2030	6.0	184			2148	4.1	124			2045 O	2.9	88		0259 20 Th
6 Sa	0223	13.4	408		21 Su	0211	13.0	395		6 M	0321	14.3	435		21 Tu	0231	14.2	434		
	0931	2.9	88			0847	4.2	128			1009	3.5	106			0857 W	1125	5.2	158	
	1537	14.9	454			1511	14.5	441			1559	15.5	472			1500 Th	1653	15.4	468	
	2214	4.6	140			2135	5.2	157			2245	3.2	99			2143 O	2.6	80		0453 21 F
7 Su	0337	14.0	428		22 M	0316	13.7	419		7 Tu	0418	14.9	454		22 W	0331	15.2	462		
	1039	2.5	77			0950	3.8	115			1106	3.6	109			0958 F	1208	5.2	160	
	1630	15.4	470			1558	15.1	460			1642	15.6	477			1548 Sa	1729	15.5	472	
	2313	3.6	109			2230	4.1	125			2334	2.6	80			2236 O	1.2	36		0457 22 Sa
8 M	0433	14.8	451		23 Tu	0408	14.8	450		8 W	0506	15.5	472		23 Th	0424	16.2	493		
	1136	2.3	70			1045	3.2	98			1154	3.7	113			1056 Sa	1067	16.3	498	
	1712	15.8	482			1637	15.7	480			1719	15.7	480			1631 O	1245	5.3	161	
						2317	3.1	93							1726 O	1802	15.7	478		0548 23 Su
9 Tu	0001	2.8	84		24 W	0452	15.8	482		9 Th	0016	2.2	68		24 F	0513	17.1	521		
	0519	15.5	472			1134	2.8	84			0548	15.9	486			1150 Sa	0653	16.6	507	
	1223	2.3	69			1712	16.4	499			1234	3.9	120			1713 O	1318	5.2	160	
	1747	16.0	489								1751	15.8	482			1834 O	15.9	484		0047 24 M
10 W	0043	2.2	67		25 Th	0001	2.1	65		10 F	0053	2.1	64		25 Sa	0014	1.1	35		
	0559	16.0	487			0534	16.7	509			0626	16.3	496			0559 M	0728	16.8	513	
	1301	2.5	76			1219	2.4	74			1307	4.1	126			1240 O	1351	5.2	158	
	1818	16.1	492			1745	16.9	514			1822	15.8	483			1754 O	1907	16.0	488	
11 Th	0118	1.9	58		26 F	0042	1.4	44		11 Sa	0125	2.1	63		26 Tu	0101	0.7	21		
	0637	16.3	497			0615	17.4	529			0703	16.5	502			0845 W	0803	17.0	517	
	1332	2.8	85			1302	2.4	72			1338	4.3	131			1425 Th	1455	5.2	157	
	1848	16.2	493			1819	17.2	525			1854	15.9	484			1941 O	16.0	488		0228 26 F
12 F	0149	1.8	55		27 Sa	0123	1.0	30		12 Su	0156	2.1	65		12 Tu	0109	2.5	75		
	0714	16.4	501			0656	17.7	541			0740	16.6	506			0839 W	0809	18.6	556	
	1401	3.1	95			1344	2.5	76			1409	4.5	136			1455 Th	1544	4.1	125	
	1918	16.1	491			1856	17.3	528			1926	15.8	483			2017 O	15.9	484		0228 27 W
13 Sa	0219	1.9	57		28 Su	0204	0.8	23		13 M	0228	2.2	68		13 Tu	0236	0.6	17		
	0753	16.4	501			0741	17.8	543			0819	16.6	505			0915 F	0915	16.9	514	
	1431	3.4	105			1427	2.9	88			1442	4.7	142			1538 O	15.8	5.2	159	
	1951	15.9	486			1936	17.2	523			2001	15.7	478			2056 O	15.6	475		0403 28 F
14 Su	0250	2.0	62		29 M	0247	0.8	23		14 Tu	0301	2.4	74		14 W	0326	0.9	26		
	0834	16.2	495			0829	17.6	536			0900	16.4	501			0913 F	1557	4.3	131	
	1503	3.9	118			1513	3.4	105			1519	5.0	151			1557 O	1620	5.3	161	
	2025	15.6	475			2021	16.7	508			2038	15.4	468			2101 O	16.3	498		0348 14 F
15 M	0324	2.3	70		30 Tu	0334	1.0	32		15 W	0336	2.7	82		30 Th	0419	1.4	42		
	0918	15.8	483			0922	17.1	520			0943	16.1	492			1009 F	17.2	523		0427 15 M
	1539	4.5	136			1603	4.1	126			1559	5.3	162			1654 O	14.6	141		1033 30 Su
	2103	15.1	459			2111	15.9	485			2119	14.9	454			2200 O	15.5	473		1135 30 O
															31 F	0515	2.1	64		
															1111 O	16.5	504		1111 31 F	
															1756 O	4.8	147		1756 31 F	
															2307 O	14.7	449		2358 31 O	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Lianyun Gang, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0642	4.5	136	16 0530	4.3	130	1 Th 0203	14.4	439	1 Su 0053	15.4	468
1236	15.7	478	Tu 1122	16.5	504	0810	7.3	221	F 0714	6.3	192
1933	4.4	134	1816	4.5	137	1359	14.2	432	1250	15.6	475
●						2100	4.7	142	2002	3.7	113
2 Tu 0119	14.4	438	17 0002	15.2	462	2 0317	14.7	448	17 Sa 0218	15.6	474
0746	5.4	166	W 0630	5.0	151	0926	7.5	230	17 0837	6.6	200
1340	15.1	460	1219	16.2	494	1508	14.2	432	Sa 1406	15.5	471
2037	4.2	128	1919	4.1	126	2203	4.3	132	2118	3.2	97
3 W 0235	14.5	441	18 0116	15.2	463	3 Sa 0419	15.2	464	18 Su 0334	16.2	494
0855	6.1	187	Th 0738	5.6	170	1029	7.3	224	18 0959	6.2	189
1444	14.8	451	1322	16.0	487	1604	14.6	444	Su 1521	15.9	484
2139	3.9	119	2026	3.6	110	2257	3.8	117	2231	2.5	75
4 Th 0342	14.9	455	19 0234	15.6	476	4 Su 0507	15.8	482	4 Tu 0514	16.1	490
1001	6.5	197	F 0853	5.9	179	1120	6.9	210	4 M 0436	17.0	519
1541	14.8	450	1429	16.0	488	1649	15.1	461	4 W 1211	5.1	156
2235	3.5	108	2134	2.9	88	2344	3.4	103	4 M 1623	16.7	508
5 F 0439	15.5	471	20 0345	16.4	499	5 M 0546	16.3	498	4 W 2335	1.7	52
1058	6.5	197	Sa 1009	5.7	175	1202	6.3	192	5 Th 0032	3.0	91
1629	15.0	456	1534	16.4	499	1726	15.7	480	5 Th 0615	16.9	516
2324	3.2	99	2241	2.1	65	20 0526	17.7	541	5 Th 1246	4.4	134
6 Sa 0526	16.0	487	21 0446	17.3	526	6 Tu 0024	3.0	92	6 O 1808	17.0	519
1145	6.3	192	Su 1116	5.3	161	0619	16.8	511	6 O 0106	2.8	84
1710	15.3	466	1632	16.9	516	1239	5.7	174	6 F 0640	17.2	525
			2342	1.4	43	1800	16.3	497	6 F 1320	3.8	117
7 Su 0007	3.0	90	22 0539	18.0	549	7 W 0100	2.8	85	6 O 1839	17.5	533
0605	16.4	501	M 1214	4.7	144	0648	17.1	521	7 O 0137	2.7	82
1224	6.0	184	1725	17.5	534	1313	5.2	157	7 Sa 0705	17.5	532
1745	15.7	478	● 1831	16.8	511	1831	16.8	511	7 Sa 1352	3.5	107
8 M 0046	2.8	84	23 0039	0.9	27	8 Th 0133	2.7	81	7 Sa 1912	17.7	541
0640	16.8	511	Tu 0626	18.5	564	0715	17.3	527	8 O 0208	2.7	83
1300	5.7	175	1306	4.3	130	1346	4.7	143	8 Su 0732	17.7	538
● 1818	16.1	490	O 1812	18.0	548	1902	17.1	521	8 Su 1424	3.3	100
9 Tu 0120	2.6	80	24 0130	0.6	19	23 F 0201	1.2	37	8 Su 1947	17.8	543
0712	17.1	520	W 0709	18.7	570	0725	18.4	560	9 M 0244	3.4	103
1334	5.4	166	1355	3.9	119	1420	3.1	96	9 M 0802	17.1	521
1850	16.4	499	1858	18.2	554	1927	18.2	555	9 M 1503	2.8	86
10 W 0153	2.6	79	25 0217	0.7	21	9 F 0203	2.6	80	9 M 2035	17.1	521
0743	17.2	525	Th 0750	18.7	569	0741	17.4	531	9 M 0317	4.1	126
1407	5.2	157	1440	3.7	113	1418	4.4	134	9 M 0839	16.5	502
1922	16.5	504	1943	18.0	550	1934	17.3	526	9 M 1540	3.2	99
11 Th 0223	2.6	80	26 0300	1.0	32	9 F 0239	1.7	53	9 M 2122	16.4	500
0813	17.3	528	Sa 0831	18.4	561	10 F 0801	18.1	552	10 W 0355	5.0	153
1441	5.0	151	1524	3.6	111	1458	3.1	95	10 W 0919	15.7	478
1956	16.6	505	2030	17.6	536	2010	17.8	543	10 W 1622	3.8	117
12 F 0253	2.7	83	27 0341	1.8	54	11 M 0302	2.9	87	10 W 2114	17.2	524
0843	17.3	528	Sa 0914	17.9	545	0838	17.5	534	10 W 2217	15.6	476
1515	4.9	148	1609	3.7	114	1450	4.2	128	11 M 0315	3.4	103
2032	16.4	501	2120	16.8	513	2009	17.3	526	11 M 0838	17.6	535
13 Sa 0324	2.9	88	28 0423	2.8	84	12 M 0322	2.7	82	11 M 1536	3.2	97
0915	17.3	526	Su 0959	17.2	523	0808	17.5	534	11 M 2027	17.6	537
1552	4.8	146	1657	4.0	122	1537	3.3	100	11 W 0356	4.0	123
2113	16.2	493	2217	15.9	486	2057	17.1	522	11 W 0921	17.1	522
14 Su 0400	3.2	97	29 0508	3.9	120	12 M 0350	3.4	105	11 W 1621	3.3	100
0951	17.1	521	M 1048	16.3	497	0838	17.6	537	11 W 2209	16.5	504
1633	4.8	145	1749	4.3	132	1450	4.2	128	12 M 0314	2.5	76
2200	15.8	483	2324	15.1	460	2009	17.3	526	12 M 1537	3.3	100
15 M 0441	3.6	111	30 0559	5.2	160	12 M 0430	4.6	139	12 M 2057	5.0	153
1033	16.9	514	Tu 1144	15.4	469	0913	17.5	533	12 M 1101	16.4	500
1721	4.7	142	1847	4.6	141	1602	4.0	123	12 M 1807	3.5	103
2256	15.5	471	● 2334	15.6	477	2134	16.7	509	12 M 2317	15.8	483
16 W 0043	14.5	442							13 F 0445	5.0	151
0659	6.4	196							13 F 1101	13.9	425
1248	14.6	445							13 F 1807	5.0	153
1952	4.8	146							13 O 0529	7.0	212
31 0043	14.5	442							13 O 1101	13.9	425
W 0659	6.4	196							13 O 1826	3.8	115
1248	14.6	445							13 O 1915	5.3	163
1952	4.8	146							14 M 0445	5.0	151
									14 M 0751	7.8	239
									14 M 1336	13.2	401
									14 M 2027	5.3	161
									15 M 0150	14.2	434
									15 M 0751	7.8	239
									15 M 1336	13.2	401
									15 M 2027	5.3	161
									15 M 0257	14.5	443
									15 M 0908	7.3	223
									15 M 1450	13.6	416
									15 M 2132	4.9	149

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Lianyun Gang, China, 2013

Times and Heights of High and Low Waters

October				November				December									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm						
1 Tu 0349 1008 1545 2227	15.1 6.4 14.5 4.3	459 194 441 131	16 W 0356 1038 1604 2302	16.3 3.9 15.8 2.7	498 118 483 82	1 F 0417 1056 1635 2313	15.8 3.5 15.9 3.5	482 107 107 107	16 Sa 0454 1152 1725 2324	16.0 2.0 16.2 3.4	487 60 493 104	1 Su 0409 1102 1650 2324	15.9 2.1 16.3 3.4	486 65 498 104	16 M 0511 1212 1756	15.0 2.0 15.7	456 61 478
2 W 0431 1055 1629 2314	15.6 5.3 15.4 3.7	477 162 470 114	17 Th 0442 1130 1653 2353	16.8 3.0 16.5 2.6	511 90 504 80	2 Sa 0451 1138 1715 2356	16.4 2.6 16.8 3.1	501 80 513 94	17 Su 0011 0529 1231 1804	3.7 16.0 1.8 16.5	114 489 55 502	2 M 0450 1148 1735	16.6 1.3 17.1	505 41 522	17 Tu 0027 0547 1249 1832	4.5 15.2 1.9 15.9	136 464 59 485
3 Th 0505 1136 1707 2354	16.2 4.3 16.3 3.2	494 131 497 99	18 F 0520 1215 1736	17.0 2.3 17.0	518 71 519	3 Su 0523 1217 1753	17.0 1.9 17.5	518 513 533	18 M 0047 0602 1306 1842	3.9 16.1 1.9 16.6	120 490 57 506	3 Tu 0012 0530 1234 1818	3.1 17.1 0.8 17.7	94 520 24 538	18 W 0100 0620 1323 1907	4.4 15.5 1.9 16.1	133 471 59 491
●																	
4 F 0534 1213 1742	16.7 3.4 17.1	509 105 520	19 Sa 0036 0554 1254	2.8 17.1 2.0	85 520 62	4 M 0037 0556 1256	2.9 17.4 1.4	88 531 44	19 Tu 0119 0634 1338	4.1 16.1 2.0	126 490 61	4 W 0058 0611 1318	3.0 17.4 0.5	90 529 15 545	19 Th 0132 0652 1354	4.2 15.6 2.0	129 477 60 494
Sa ● 0032 0601 1249	2.9 17.1 2.8	89 522 86	20 Su 0112 0626 1329	3.1 17.0 2.0	96 517 61	5 Tu 0117 0631 1335	2.9 17.7 1.2	88 538 36	20 W 0150 0707 1409	4.3 16.0 2.2	131 488 67	5 Th 0144 0654 1404	3.0 17.4 0.4	91 530 13 543	20 F 0204 0725 1424	4.1 15.7 2.1	126 479 63 494
1815 17.6 537			1854 17.3 528			1914 18.1 551			1957 19.5 503			1948 17.8 543			2015 16.2 494		
6 Su 0107 0628 1323	2.8 17.5 2.4	84 533 74	21 M 0144 0658 1401	3.6 16.8 2.2	109 512 66	6 W 0158 0709 1415	3.1 17.6 1.1	95 536 35	21 Th 0222 0741 1442	4.5 15.8 2.4	136 482 74	6 F 0230 0739 1451	3.1 17.2 0.6	96 523 19 532	21 Sa 0237 0759 1455	4.1 15.6 2.2	124 475 68 490
1850 17.9 547			1933 17.2 523			1959 17.9 546			2036 19.5 496			2035 17.5 532			2049 16.1 490		
7 M 0142 0658 1358	2.8 17.7 2.2	86 540 67	22 Tu 0214 0730 1433	4.0 16.5 2.5	123 503 75	7 Th 0242 0751 1500	3.5 17.2 1.3	107 525 41	22 F 0257 0818 1516	4.7 15.5 2.8	143 471 84	7 Sa 0318 0828 1541	3.4 16.6 1.0	105 506 32	22 M 0313 0836 1528	4.1 15.3 2.5	126 465 76 482
1929 18.0 550			2014 16.9 514			2048 17.5 532			2117 15.9 486			2126 16.9 515			2125 15.8 482		
8 Tu 0218 0732 1434	3.1 17.7 2.1	94 540 65	23 W 0247 0805 1507	4.5 16.1 2.9	137 490 87	8 F 0329 0839 1550	4.1 16.5 1.8	124 504 54	23 Sa 0336 0858 1554	5.0 14.9 3.2	153 454 97	8 Su 0411 0922 1634	3.8 15.8 1.7	116 481 52	23 M 0352 0916 1603	4.3 14.8 2.9	131 451 87 471
2011 17.8 544			2058 16.4 499			2143 16.8 512			2201 15.5 472			2223 16.2 493			2203 15.5 471		
9 W 0257 0811 1515	3.5 17.4 2.2	108 531 68	24 Th 0323 0843 1545	5.1 15.5 3.3	154 101 101	9 Sa 0423 0935 1648	4.7 15.6 2.4	142 476 72	24 Su 0420 0944 1636	5.4 14.2 3.7	164 434 112	9 M 0510 1024 1733	4.1 14.8 2.5	126 452 76 493	24 Tu 0434 1002 1644	4.5 14.2 3.3	136 434 101 2245
2100 17.4 530			2147 15.8 481			2247 16.0 489			2249 15.0 458			2326 15.5 471			2245 15.1 459		
10 Th 0341 0856 1603	4.2 16.8 2.5	129 512 77	25 F 0404 0926 1628	5.7 14.7 3.9	174 449 118	10 Su 0527 1042 1756	5.2 14.7 3.0	157 91	25 M 0510 1038 1725	5.7 13.6 4.2	173 414 127	10 Tu 0617 1138 1839	4.3 14.0 3.3	130 427 101	25 W 0523 1056 1733	4.6 13.7 3.8	141 418 117
2156 16.7 509			2241 15.2 462			●			2342 14.6 444			2334 14.6 446			2334 14.6 446		
11 F 0433 0949 1700	5.1 15.9 3.0	154 485 91	26 Sa 0452 1017 1718	6.4 13.9 4.5	194 425 136	11 M 0001 0642 1203	15.5 5.3 14.0	472 161 428	26 Tu 0609 1143 1823	5.8 13.1 4.6	177 399 140	11 W 0036 0729 1304	14.9 4.1 13.6	455 125 416	26 Th 0619 1201 1831	4.6 13.4 4.3	141 408 131
2303 15.9 486			2342 14.6 445			1910 3.4 104			●			1949 4.0 122			26 O 0619 1201 1831	4.6 13.4 4.3	141
12 Sa 0537 1056 1811	5.8 15.0 3.4	177 456 105	27 Su 0550 1122 1817	6.9 13.3 5.0	209 404 151	12 Tu 0117 0801 1331	15.2 4.9 14.0	464 149 426	27 W 0040 0714 1257	14.3 5.5 13.1	437 169 398	12 M 0146 0839 1425	14.6 3.6 13.8	445 111 421	27 F 0031 0722 1314	14.4 4.4 13.4	438 409
●			●			2025 3.6 110			1927 4.8 146			2100 4.4 135			1937 4.6 141		
13 Su 0024 0656 1218	15.5 6.2 14.3	471 188 437	28 M 0047 0659 1239	14.3 7.0 12.9	435 212 394	13 W 0227 0913 1448	15.3 4.1 14.4	467 124 440	28 Th 0139 0819 1409	14.4 5.0 13.5	438 151 412	13 M 0250 0944 1532	14.5 3.1 14.3	443 93 436	28 Sa 0132 0827 1428	14.4 3.8 13.9	438 115 424
1932 3.6 110			1924 5.2 157			2135 3.6 110			2032 4.7 142			2206 4.6 139			2047 4.7 142		
14 M 0147 0821 1347	15.4 5.9 14.4	470 179 438	29 Tu 0153 0812 1357	14.3 6.5 13.2	436 199 402	14 Th 0326 1014 1549	15.6 3.1 15.1	475 96 461	29 F 0235 0919 1511	14.7 4.1 14.4	448 124 438	14 W 0345 1041 1629	14.6 2.5 14.9	445 77 453	29 Sa 0234 0930 1622	14.6 3.0 14.8	446 91 450
2052 3.4 104			2030 5.0 153			2236 3.6 109			2134 4.3 131			2302 4.6 140			2156 4.4 134		
15 Tu 0259 0937 1504	15.8 5.0 15.0	481 151 458	30 W 0251 0917 1502	14.6 5.6 13.9	446 172 425	15 F 0414 1106 1641	15.8 2.4 15.7	483 74 480	30 Sa 0325 1012 1603	15.3 3.1 15.4	466 94 469	15 M 0432 1102 1716	14.8 2.2 15.3	450 66 467	30 Th 0332 1030 1631	15.2 2.1 15.7	462 64 479
2203 3.0 92			2131 4.6 141			2327 3.6 110			2231 3.8 117			2349 4.5 138			2300 3.9 120		
31 Th 0338 1010 1552	15.2 4.6 14.9	463 139 455	31 Th 1010 1552 2225	15.2 4.1 4.1	463 124 124										31 Th 1127 1721 2355	15.8 1.2 3.4	482 38 104

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Wusong (Shanghai), China, 2013

Times and Heights of High and Low Waters

January						February						March							
Time		Height		Time		Height		Time		Height		Time		Height		Time			
1 Tu	0237	9.8	298	16 W	0332	10.0	306	1 F	0329	10.3	315	16 Sa	0414	9.6	293	1 F	0230	11.5	350
	0956	1.6	48		1056	1.4	43		1057	1.6	49		1131	2.2	66		1031	1.1	33
	1456	11.5	351		1548	11.1	338		1545	10.8	330		1620	9.0	274		1449	11.4	348
	2243	1.8	55		2341	1.1	35		2334	1.3	41		2342	1.8	55		2240	1.2	36
2 W	0313	9.7	295	17 Th	0414	9.6	294	2 Sa	0410	10.1	308	17 Su	0449	8.9	272	2 Sa	0311	11.4	346
	1034	1.7	52		1131	1.8	54		1135	1.9	59		1150	2.8	84		1049	1.6	49
	1527	11.3	343		1624	10.2	311		1623	10.1	308		1656	7.9	240		1523	10.9	333
	2319	1.9	59						2356	1.6	50		2358	2.4	72		2300	1.6	49
3 Th	0350	9.4	288	18 F	0004	1.5	46	3 Su	0455	9.6	294	18 M	0532	8.2	249	3 Su	0345	11.0	336
	1057	2.1	64		0455	9.0	275		1209	2.6	80		1239	3.3	102		1132	1.9	58
	1604	10.7	327		1149	2.4	74		1710	9.1	277		1746	6.7	205		1603	10.0	306
	2347	1.8	55		1701	9.1	277		●				●				2333	1.8	54
4 F	0431	9.2	281	19 Sa	0036	1.8	54	4 M	0038	2.0	61	19 Tu	0036	2.9	88	4 M	0428	10.5	319
	1139	2.4	74		0540	8.4	255		0553	9.1	277		0640	7.5	229		1203	3.2	99
	1646	10.0	306		1233	3.0	92		1310	3.2	99		1405	3.8	115		1704	7.0	214
	●	1745	7.9		241				1813	8.0	243		1911	5.8	178		2335	3.2	99
5 Sa	0031	1.9	59	20 Su	0103	2.2	68	5 Tu	0126	2.5	77	20 W	0151	3.4	103	5 Tu	0525	9.6	292
	0524	9.0	275		0637	7.7	236		0713	8.6	263		0822	7.3	224		1258	3.3	100
	1232	3.0	90		1335	3.5	108		1446	3.5	108		1604	3.5	108		1755	7.6	233
	●	1739	9.2		1847	6.8	208		1946	7.2	219		2114	5.9	179		●		
6 Su	0114	2.2	68	21 M	0156	2.6	80	6 W	0252	2.8	85	21 Th	0345	3.3	100	6 W	0046	3.1	93
	0629	8.8	269		0757	7.4	227		0857	8.7	266		0953	7.9	242		0649	8.7	266
	1337	3.4	105		1514	3.7	112		1637	3.1	96		1721	3.0	91		1440	3.6	109
	1848	8.4	257		2018	6.2	189		2131	7.2	220		2228	6.7	204		1939	6.8	208
7 M	0217	2.4	74	22 Tu	0315	2.8	85	7 Th	0438	2.5	76	22 F	0506	2.7	83	7 Th	0230	3.5	106
	0752	8.9	270		0924	7.7	236		1024	9.5	290		1048	8.9	271		0844	8.7	264
	1512	3.5	107		1650	3.2	98		1800	2.4	74		1813	2.5	77		1633	3.1	93
	2013	8.0	244		2152	6.4	194		2251	8.0	244		2312	7.7	236		2137	7.2	218
8 Tu	0337	2.4	72	23 W	0438	2.5	77	8 F	0602	1.9	58	23 Sa	0607	2.1	65	8 F	0434	3.0	92
	0917	9.4	286		1030	8.5	258		1126	10.5	320		1128	9.8	299		1014	9.4	287
	1647	3.1	93		1755	2.7	82		1912	1.8	56		1857	2.2	67		1751	2.3	70
	2139	8.1	248		2252	7.0	214		2348	9.0	273		2347	8.8	267		2250	8.3	252
9 W	0455	2.1	64	24 Th	0543	2.1	63	9 Sa	0717	1.3	41	24 Su	0659	1.7	51	9 Sa	0555	2.2	68
	1028	10.2	312		1118	9.4	285		1217	11.3	344		1206	10.6	322		1114	10.3	315
	1808	2.5	76		1846	2.3	70		2010	1.5	45		1941	1.9	58		1854	1.7	51
	2250	8.7	264		2334	7.8	239		2241	1.3	39		2338	9.4	286		2316	9.3	283
10 Th	0614	1.7	51	25 F	0640	1.6	48	10 Su	0034	9.8	298	25 M	0021	9.7	295	10 Su	0703	1.6	48
	1127	11.2	340		1158	10.1	309		0818	0.9	27		0747	1.3	40		1201	11.0	336
	1928	2.0	60		1934	2.0	62		1302	11.7	357		1235	11.1	339		1946	1.2	38
	2348	9.3	284		●	2051	1.2	36	2031	1.6	49	2038	0.9	27	2351	10.3	315		
11 F	0729	1.2	38	26 Sa	0010	8.7	264	11 M	0118	10.4	317	26 Tu	0056	10.4	316	11 O	0021	10.3	314
	1220	11.9	363		0733	1.1	35		0859	0.7	22		0836	1.0	30		0756	1.2	36
	2033	1.2	37		1230	10.8	329		1329	12.0	367		1314	11.6	353		1234	11.4	347
	●	2119	1.4		2010	2.1	63		2142	0.8	23		2055	1.7	53		2038	0.9	27
12 Sa	0039	9.9	301	27 Su	0044	9.3	284	12 Tu	0200	10.6	324	27 W	0127	11.0	334	12 Tu	0101	10.8	330
	0829	0.9	28		0812	1.1	35		0941	0.5	16		0914	1.3	39		0842	0.9	28
	1310	12.3	375		1308	11.2	342		1417	11.8	360		1341	11.7	356		1317	11.5	352
	●	2119	1.4		2044	1.9	58		2219	1.3	39		2138	1.3	40		2107	1.3	40
13 Su	0125	10.3	314	28 M	0118	9.8	300	13 W	0231	10.7	325	28 Th	0204	11.2	342	13 W	0130	11.2	342
	0910	0.8	23		0848	0.9	28		1019	1.0	32		0944	1.1	33		0931	0.9	28
	1348	12.4	377		1333	11.5	349		1449	11.3	344		1418	11.8	359		1349	11.3	344
	2152	1.1	33		2132	1.6	50		2241	0.9	28		2205	1.6	48		2139	1.0	31
14 M	0212	10.4	318	29 Tu	0151	10.1	309	14 Th	0310	10.5	320	29 F	0210	11.2	342	14 F	0210	11.2	342
	0949	0.7	21		0933	0.8	25		1041	1.2	38		1521	10.8	329		0946	1.4	43
	1426	12.5	380		1412	11.6	354		2301	1.3	39		2301	1.3	39		1420	11.1	337
	2242	0.8	23		2153	1.7	53		2330	1.3	41		2158	1.4	43		2141	1.3	39
15 Tu	0255	10.3	315	30 W	0223	10.4	316	15 F	0339	10.1	308	30 F	0235	11.1	338	15 F	0214	12.6	384
	1035	0.7	22		0955	1.2	36		1059	1.8	55		1550	9.9	303		1008	1.7	53
	1514	11.9	362		1437	11.5	351		2236	1.3	40		2330	1.3	41		1448	10.5	320
	2311	1.3	40		●	2058	10.4	316	2255	1.5	46	2230	1.4	42	2213	1.7	53		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Wusong (Shanghai), China, 2013

Times and Heights of High and Low Waters

April				May				June						
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height			
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm			
1 M	0325	12.1	369	16 Tu	0332	10.9	331	1 W	0401	12.1	369			
1128	2.3	69	1110	2.8	86	1159	2.7	81	16 Th	0344	11.2	342		
1549	10.0	305	1554	8.6	262	1636	9.4	285	1615	8.9	272			
2258	2.4	72	2238	3.0	92	2333	3.3	101	2251	3.7	114			
2 Tu	0412	11.3	344	17 W	0408	10.2	310	2 F	0457	11.1	337			
1159	2.8	84	1146	3.1	96	1256	3.1	93	17 F	0424	10.6	322		
1640	8.9	270	1637	7.8	237	1748	8.6	261	1706	8.5	258			
2336	2.9	89	2302	3.6	109	●	2336	4.2	129	2336	4.2	129		
3 W	0508	10.2	312	18 Th	0454	9.4	286	3 F	0030	4.0	122			
1259	3.3	101	1236	3.6	110	0612	10.1	307	18 Sa	0516	9.9	302		
1753	7.7	236	1738	7.1	216	1409	3.2	99	18 M	0303	4.4	133		
● O	0234	4.2	129	● O	2348	4.2	129	1811	8.3	252	18 Tu	0134	4.4	133
4 Th	0027	3.7	114	19 F	0602	8.7	266	4 Sa	0204	4.3	132			
0631	9.3	282	1350	3.8	117	0745	9.5	290	19 Su	0045	4.7	143		
1434	3.4	105	1911	6.9	210	1534	3.1	93	19 M	0626	9.4	287		
1940	7.2	220				2050	8.7	265	19 Tu	0432	3.9	120		
5 F	0222	4.1	124	20 Sa	0133	4.6	141	5 Su	0749	9.4	285			
0823	9.1	276	0736	8.5	260	0909	9.5	291	5 M	0223	4.8	145		
1611	3.0	92	1518	3.7	113	1643	2.7	81	5 W	1027	9.4	287		
2126	7.8	239	2049	7.5	229	2157	9.5	291	5 Th	1742	2.8	86		
6 Sa	0421	3.5	107	21 Su	0327	4.4	133	6 M	0352	4.3	131			
0950	9.6	292	0900	9.0	274	1012	9.9	301	6 Tu	0637	2.9	88		
1732	2.3	70	1632	3.3	100	1742	2.3	70	6 Th	1116	9.8	299		
2230	9.0	274	2152	8.7	264	2246	10.4	318	6 F	1023	10.4	316		
7 Su	0541	2.6	80	22 W	0444	3.7	112	7 Tu	0614	2.8	84			
1048	10.3	313	0959	9.8	299	1102	10.2	312	7 F	1003	3.7	112		
1833	1.7	52	1732	2.8	86	1835	2.0	60	7 M	1157	10.2	310		
2318	10.1	307	2235	9.9	302	2327	11.2	342	7 Sa	1734	3.0	90		
8 M	0642	2.0	61	8 Tu	0547	3.0	92	8 W	0704	2.5	75			
1130	10.8	328	1046	10.6	323	1142	10.5	320	8 M	1054	11.0	334		
1921	1.6	50	1826	2.6	78	1916	2.1	64	8 Th	1832	2.5	77		
2358	10.8	330	2316	11.1	339				8 Sa	1949	2.6	79		
9 Tu	0737	1.6	48	9 W	0645	2.5	75	9 Th	0007	11.7	357			
1213	11.1	338	1126	11.4	346	0746	2.2	67	9 M	0727	2.7	81		
1952	1.5	45	1910	2.3	70	1219	10.8	328	9 Sa	1138	11.5	350		
			2354	12.0	367	1948	2.0	61	9 Tu	1929	2.5	75		
10 W	0029	11.5	349	10 Th	0741	1.9	59	10 F	0036	12.1	368			
0827	1.8	55	1209	11.8	360	0834	2.1	63	10 M	0009	13.4	409		
1246	11.1	338	1951	2.0	61	1254	10.8	329	10 Tu	0814	2.4	72		
● 2035	1.2	38				● 2031	1.9	59	10 F	1222	11.9	363		
11 Th	0110	11.7	356	11 F	0026	13.0	396	11 O	0151	12.9	393			
0848	1.8	54	0838	1.4	42	0857	2.4	73	11 M	0945	2.6	80		
1319	11.1	338	1246	12.0	366	1324	10.8	330	11 Tu	1411	10.8	330		
2055	1.6	50	2039	1.5	47	2049	2.2	68	11 F	2050	2.7	83		
12 F	0134	11.8	359	12 W	0113	13.4	408	12 M	0123	14.4	438			
0933	1.8	54	0931	1.4	43	0937	2.2	67	12 Tu	0222	12.8	391		
1350	10.8	330	1323	12.1	369	1358	10.6	324	12 F	1018	2.9	89		
2132	1.6	49	2124	1.9	59	2120	2.5	76	12 M	1537	11.8	360		
13 Sa	0210	11.8	360	13 W	0143	13.5	410	12 Th	2137	2.0	60			
0947	2.1	64	0952	1.7	51	0958	2.5	76	12 W	2150	3.1	93		
1419	10.6	322	1409	11.7	358	1426	10.4	317	13 Th	1100	2.1	64		
2144	1.9	59	2146	1.8	56	2142	2.6	78	13 M	1518	11.9	362		
14 Su	0233	11.6	355	2228	2.3	71	2232	3.2	98	13 F	2244	2.8	85	
1023	2.4	72							13 Th	1144	2.0	61		
1448	10.0	306							13 M	1608	11.5	349		
2200	2.3	70							13 F	2323	3.4	103		
15 M	0304	11.4	346	29 Tu	0224	13.5	413	14 Th	0323	12.2	371			
1044	2.4	73	1042	1.5	46	1035	2.5	76	14 M	1113	3.0	92		
1518	9.4	286	1453	11.1	338	1501	9.9	303	14 Tu	1552	10.1	309		
2225	2.7	81	2228	2.3	71	2200	3.0	90	14 F	2246	3.6	111		
15 M	0314	11.0	346						15 Th	0441	11.9	362		
1044	2.4	73	1126	2.3	71	1056	2.8	85	15 M	1243	2.7	82		
1518	9.4	286	1540	10.3	313	1533	9.4	287	15 Tu	1727	9.8	300		
2225	2.7	81	2248	2.7	83	2232	3.2	98	15 F	0358	11.6	354		
15 M	0314	11.0	346						15 Tu	1144	3.1	94		
1044	2.4	73	30 Tu	0314	13.0	395	1056	2.4	74	15 F	1632	9.9	302	
1518	9.4	286	1126	2.3	71	1262	10.4	317	15 Tu	2330	4.1	126		
2225	2.7	81	1540	10.3	313	1322	3.4	103	15 F	0419	12.5	381		
15 M	0314	11.0	346						15 Tu	1222	2.7	81		
1044	2.4	73	30 Tu	0314	13.0	395	1322	3.4	103	15 F	1658	11.0	334	
1518	9.4	286	1126	2.3	71	1322	3.4	103	15 Tu	1753	10.4	318		
2225	2.7	81	2248	2.7	83	2232	3.2	98	15 F	0001	3.9	118		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Wusong (Shanghai), China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0053	4.5	136	16 0452	11.0	334	1 Th 0250	5.2	159	1 Su 0150	5.2	159
0601	10.1	307	Tu 1232	3.4	103	0741	7.7	235	F 0639	8.9	270
1337	3.3	102	1738	10.9	332	1430	4.6	140	1336	4.5	138
1859	10.0	305	●			2045	9.9	301	1947	10.9	332
2 Tu 0207	4.8	147	17 W 0051	4.9	148	2 0434	4.6	141	17 Sa 0344	4.9	148
0711	9.0	274	0552	10.0	306	0928	7.7	235	0831	8.6	262
1434	3.7	112	1315	3.8	117	1600	4.5	137	1531	4.5	138
2014	9.9	302	1850	10.8	329	2200	10.6	322	2125	11.5	352
3 W 0342	4.7	142	18 Th 0221	5.1	155	3 Sa 0543	3.9	118	18 Su 0517	4.0	121
0837	8.4	256	0712	9.3	283	1036	8.4	257	1004	9.4	287
1541	3.8	115	1430	4.1	124	1713	4.0	123	1702	3.9	120
2127	10.3	313	2016	11.1	337	2250	11.4	348	2232	12.6	384
4 Th 0502	4.1	125	19 F 0358	4.7	142	4 Su 0637	3.3	101	19 M 0635	2.9	89
0956	8.5	259	0846	9.2	279	1118	9.4	286	1104	10.6	323
1648	3.7	112	1551	4.0	122	1809	3.5	108	1826	3.3	100
2227	10.9	333	2136	11.8	360	2328	12.3	374	2323	13.6	415
5 F 0607	3.5	107	20 Sa 0531	3.8	117	5 M 0722	3.1	96	20 Tu 0738	2.1	63
1054	9.0	274	1006	9.7	296	1152	10.3	313	1151	11.6	355
1747	3.4	103	1719	3.7	112	1855	3.1	95	1931	2.3	71
2314	11.7	356	2239	12.8	389	●			● 1954	2.8	84
6 Sa 0657	3.1	94	21 Su 0641	3.0	91	6 Tu 0004	12.9	393	21 W 0011	14.2	433
1136	9.6	293	1108	10.6	322	0750	3.0	90	0836	1.6	49
1841	3.1	93	1834	3.0	90	1221	11.1	338	1226	12.6	385
2352	12.3	375	2329	13.7	418	1941	2.8	85	○ 2030	1.9	57
7 Su 0743	2.8	84	22 M 0744	2.2	68	7 W 0029	13.4	409	21 Th 0011	14.2	433
1213	10.3	313	1201	11.4	347	0836	2.7	82	0836	2.3	71
1931	2.8	86	1935	2.5	75	1253	11.6	354	1226	12.8	391
● 2001	2.9	87	○ 2033	2.0	62	● 2025	2.9	89	● 2037	2.4	72
8 M 0025	12.9	393	23 Tu 0020	14.4	439	8 Th 0107	13.6	414	8 W 0027	13.8	420
0831	2.6	80	0843	1.6	49	0854	3.0	92	0838	2.3	71
1246	10.8	328	Tu 1246	12.0	366	1321	12.1	369	1253	12.8	391
● 2001	2.9	87	○ 2033	2.0	62	2049	2.9	87	2133	2.0	61
9 Tu 0101	13.1	400	24 W 0110	14.6	446	9 F 0127	13.8	420	21 Sa 0107	13.8	421
0850	2.9	87	0938	1.4	43	0943	2.6	80	0854	2.8	86
1317	11.2	341	1326	12.6	383	1353	12.3	375	1321	13.4	409
2040	2.7	82	2123	2.4	74	2131	2.8	84	2113	2.9	87
10 W 0127	13.4	408	25 Th 0138	14.5	441	10 M 0205	13.6	414	23 Su 0127	13.9	423
0934	2.7	83	1000	2.1	64	0952	2.9	89	0937	2.2	68
1349	11.4	346	1415	12.7	388	1421	12.6	383	1354	13.5	411
2110	3.0	91	2151	2.5	77	2150	3.1	96	2140	2.6	79
11 Th 0202	13.3	405	26 F 0223	14.4	440	11 M 0233	13.2	403	23 M 0234	12.9	392
0951	2.9	89	1045	1.6	49	0952	2.9	89	0313	10.7	327
1419	11.5	350	1458	12.5	382	1454	12.5	382	W 1030	3.2	97
2139	3.0	91	2233	2.6	80	2230	3.2	97	1532	11.9	363
12 F 0227	13.2	403	27 Sa 0311	13.6	414	12 M 0313	12.4	377	2301	3.9	119
1033	2.8	84	1116	2.4	74	1034	2.6	79	26 W 0348	9.5	290
1451	11.4	348	1533	12.2	373	1454	12.5	382	1038	3.8	116
2205	3.3	102	2300	3.3	102	2230	3.2	97	1537	12.9	392
13 Sa 0300	12.9	392	28 Su 0346	12.6	384	12 M 0345	11.2	341	2323	4.0	121
1049	2.9	87	1140	2.5	75	1047	2.9	87	1044	3.0	90
1522	11.4	348	1620	11.8	359	1525	12.5	382	1536	12.3	374
2238	3.5	106	2336	3.8	116	2252	3.7	114	2256	3.8	117
14 Su 0329	12.5	380	29 M 0425	11.4	348	13 Tu 0336	12.2	371	13 W 0358	10.9	331
1125	3.1	94	1203	3.1	94	1122	3.1	96	1051	4.5	137
1601	11.3	344	1706	11.1	338	1609	12.2	371	1701	10.0	304
2309	4.0	121	● 1759	10.3	315	2334	4.2	127	● 1740	11.0	336
15 M 0408	11.8	360	30 Tu 0007	4.6	139	14 W 0419	11.2	340	13 M 0010	4.6	140
1149	3.1	95	0508	10.0	306	1146	3.4	104	0456	9.5	289
1643	11.1	339	1234	3.6	109	1659	11.7	356	1145	4.3	131
2351	4.4	133	● 1759	10.3	315	● 1803	9.8	298	1740	11.0	336
16 0608	8.7	265	31 W 0107	5.1	156	28 W 0421	9.8	300	1832	9.2	280
1313	4.2	128	1313	4.2	128	1131	3.8	116	● 1740	11.0	336
1912	9.8	299	1912	9.8	299	1659	10.7	325	● 1740	11.0	336
17 0608	8.7	265	30 Sa 0356	5.0	151	13 M 0339	4.6	139	2804	5.0	152
1313	4.2	128	1529	4.2	128	0906	7.2	219	0544	7.2	219
1912	9.8	299	1912	9.8	299	1515	5.2	160	1134	5.3	161
18 0608	8.7	265	31 Sa 0906	7.2	219	1932	10.5	321	1832	9.2	280
1313	4.2	128	1529	4.2	128	2127	10.0	305	● 1740	11.0	336
1912	9.8	299	31 W 0608	8.7	265	30 Tu 0417	4.3	132	2804	5.0	152
18 0608	8.7	265	1313	4.2	128	0813	7.0	213	0544	7.2	219
1313	4.2	128	1912	9.8	299	1411	5.7	173	1134	5.3	161
1912	9.8	299	● 1759	10.3	315	2032	9.3	284	1832	9.2	280
17 0608	8.7	265	30 M 0417	4.3	132	0429	5.0	151	2804	5.0	152
1313	4.2	128	1529	4.2	128	0813	7.0	213	0544	7.2	219
1912	9.8	299	● 1759	10.3	315	1411	5.7	173	1134	5.3	161
18 0608	8.7	265	31 W 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
17 0608	8.7	265	30 M 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
18 0608	8.7	265	31 W 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
17 0608	8.7	265	30 M 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
18 0608	8.7	265	31 W 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
17 0608	8.7	265	30 M 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
18 0608	8.7	265	31 W 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315	0813	7.0	213	0544	7.2	219
17 0608	8.7	265	30 M 0417	4.3	132	2032	9.3	284	1832	9.2	280
1313	4.2	128	1529	4.2	128	0429	5.0	151	2804	5.0	152
1912	9.8	299	● 1759	10.3	315</						

Wusong (Shanghai), China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0513	3.7	113	16 W 0550	2.4	74	1 F 0555	2.6	80	1 Su 0651	1.6	48
1026	9.3	284	W 1042	11.1	339	F 1056	11.6	353	Sa 1140	12.0	365
1707	4.1	126	1807	2.9	89	1832	2.6	78	1937	1.8	54
2225	11.2	341	2256	12.0	365	2305	11.6	355	2358	10.8	328
2 W 0558	3.2	98	17 Th 0643	1.8	55	2 Sa 0643	2.1	65	2 M 0657	1.6	50
1057	10.6	323	1121	12.2	373	1126	12.8	389	1220	12.4	379
1801	3.4	103	1904	2.4	74	1932	1.9	57	2017	2.1	65
2302	12.1	368	2329	12.5	380	2336	12.1	370	O		
3 Th 0642	2.7	82	18 F 0737	1.3	39	3 Su 0735	1.5	47	18 M 0030	10.9	331
1124	11.8	360	1201	12.8	390	1208	13.5	410	0805	1.6	50
1849	2.8	86	1944	2.0	61	2002	2.1	64	1252	12.5	381
2329	12.8	391	O			●			2044	1.9	58
4 F 0733	2.2	67	19 Sa 0013	12.5	382	4 M 0016	12.6	384	19 Tu 0107	10.7	327
1156	12.7	387	0802	1.8	56	0815	1.9	59	0838	1.6	48
1939	2.2	67	1225	13.4	408	1225	14.3	435	1323	12.7	386
O			2038	1.6	48	2047	1.3	40	2131	2.0	60
5 Sa 0007	13.2	403	20 Su 0044	12.3	374	5 Tu 0056	12.5	380	20 W 0137	10.5	320
0753	2.5	75	0837	1.5	45	0843	1.5	47	0858	2.0	60
1222	13.6	416	1310	13.3	406	1317	14.4	439	1355	12.4	378
● 2035	1.7	52	2055	2.3	71	2141	1.0	30	2145	2.2	66
6 Su 0028	13.6	414	21 M 0118	12.1	368	6 W 0129	12.3	376	21 Th 0210	10.2	311
0838	1.8	54	0855	2.1	65	0931	1.4	42	0932	2.0	61
1300	13.9	424	1329	13.4	407	1357	14.0	428	1424	12.2	372
2051	2.2	68	2138	2.1	64	2206	2.0	62	2217	2.5	76
7 M 0112	13.4	409	22 Tu 0150	11.5	351	7 Th 0217	11.7	357	22 F 0241	9.7	296
0902	2.4	74	0928	2.4	74	0948	2.1	64	0945	2.4	44
1322	14.5	441	1410	13.0	396	1429	13.8	421	1455	11.7	357
2141	1.7	51	2153	2.6	80	2247	1.9	59	2243	2.5	76
8 Tu 0142	13.0	395	23 W 0220	11.0	334	8 F 0305	10.9	331	23 Sa 0315	9.2	280
0938	1.9	59	0940	2.5	77	1025	2.7	82	1006	2.8	86
1409	14.2	432	1434	12.6	383	1523	12.9	394	1527	11.1	339
2209	2.7	82	2232	2.7	83	2337	2.4	74	2313	2.8	85
9 W 0221	12.5	380	24 Th 0253	10.1	309	9 Sa 0359	9.9	301	24 M 0356	8.6	261
0957	2.6	79	0949	3.0	92	1050	3.2	98	1035	3.2	97
1434	13.7	419	1507	12.0	365	1617	11.8	360	1605	10.4	317
2244	2.6	79	2250	3.2	97	O			2349	3.0	91
10 Th 0305	11.5	350	25 F 0326	9.3	282	10 Su 0023	3.1	93	25 Tu 0444	8.0	244
1030	2.8	86	1009	3.5	107	0505	8.9	272	11 M 1108	3.8	115
1524	13.1	400	1540	11.2	340	1141	4.0	121	1653	9.6	293
2328	3.4	104	2328	3.7	112	● 1726	10.6	324	O		
11 F 0353	10.3	313	26 Sa 0410	8.3	254	11 M 0132	3.2	99	26 Tu 0038	3.2	98
1045	3.5	108	1029	4.1	124	0630	8.4	256	0548	7.7	234
1616	12.0	366	1623	10.2	311	M 1309	4.5	137	1209	4.3	132
O			O			1858	9.8	299	● 1759	9.0	273
12 Sa 0012	4.0	122	27 Su 0011	4.1	124	12 Tu 0251	3.1	95	27 W 0142	3.3	102
0457	9.0	274	0509	7.5	229	0812	8.7	264	0710	7.8	237
1132	4.4	135	1109	4.8	146	1504	4.3	130	1347	4.5	138
● 1728	10.8	330	O			2030	9.6	294	1921	8.7	265
13 Su 0139	4.3	131	28 M 0129	4.3	132	13 W 0409	2.7	82	28 Th 0254	3.2	98
0636	8.1	248	0648	7.1	217	0927	9.6	292	0830	8.5	259
1304	5.2	157	1251	5.3	163	1638	3.5	106	1529	4.2	127
1921	10.2	310	1908	8.9	271	2141	9.9	303	2040	8.9	272
14 M 0324	3.9	120	29 Tu 0257	4.1	125	14 Th 0516	2.2	68	29 F 0403	2.9	88
0841	8.5	260	0840	7.7	236	1022	10.6	323	0933	9.6	293
1529	4.8	146	1502	5.1	154	1744	2.8	84	1644	3.4	105
2102	10.6	322	2039	9.3	282	2234	10.3	314	2143	9.5	289
15 Tu 0446	3.1	95	30 W 0409	3.6	111	15 F 0609	1.8	56	30 Sa 0507	2.5	75
0956	9.8	299	0940	9.0	273	1108	11.4	348	1023	10.8	330
1655	3.7	114	1627	4.3	130	1842	2.2	67	1749	2.8	84
2208	11.4	346	2140	10.0	306	2318	10.6	324	2233	10.2	310
31 Th 0505	3.1	95	O			O			O		
1020	10.3	315	O			O			O		
1731	3.4	103	O			O			O		
2224	10.9	333	O			O			O		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Zhongjun, Changjiang Approach, China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0059	11.4	347	16 W 0153	11.6	354	1 F 0152	11.9	364	16 Sa 0230	11.2	341
0807	1.8	56	W 0903	1.8	54	F 0904	2.1	65	Sa 0935	2.8	85
Tu 1324	13.2	401	W 1412	12.7	386	F 1408	12.5	382	Sa 1437	10.6	324
2048	2.3	71	W 2144	1.7	52	F 2135	1.8	54	Sa 2145	2.4	72
2 W 0133	11.2	342	17 Th 0229	11.1	339	2 Sa 0227	11.7	357	2 Sa 0133	12.8	391
0838	2.1	64	Th 0934	2.4	74	Sa 0938	2.6	80	Sa 0958	3.6	109
1355	12.9	392	Th 1444	11.7	357	Sa 1443	11.8	360	Sa 1510	9.5	291
2122	2.5	75	Th 2206	2.2	66	Sa 2157	2.2	67	Sa 2203	3.1	95
3 Th 0209	11.1	337	18 F 0310	10.5	321	3 Su 0313	11.3	343	18 M 0352	9.8	300
0906	2.7	82	F 0956	3.3	100	Su 1017	3.4	105	M 1043	4.4	133
1428	12.4	378	F 1518	10.7	326	Su 1526	10.8	329	M 1558	8.4	255
2150	2.5	75	F 2235	2.6	79	O 2235	2.7	82	O 2239	3.8	117
4 F 0252	10.8	328	19 Sa 0357	9.9	302	4 M 0412	10.7	325	19 Tu 0501	9.2	280
0943	3.2	99	Sa 1037	4.1	124	M 1114	4.3	130	Tu 1208	5.0	153
1508	11.7	358	Sa 1600	9.5	291	M 1627	9.6	294	Tu 1719	7.4	226
2231	2.6	80	O 2306	3.2	97	M 2327	3.3	102	Tu 2355	4.5	137
5 Sa 0344	10.5	319	20 Su 0456	9.3	284	5 Tu 0535	10.1	308	5 Tu 0646	9.0	274
1034	3.9	120	Su 1137	4.8	146	Tu 1249	4.7	143	W 1411	4.8	146
1559	10.9	332	Su 1700	8.5	259	Tu 1758	8.7	266	W 1926	7.3	222
O 2314	3.0	92	Su 2359	3.7	113	W 2049	8.7	264	W 2049	8.1	247
6 Su 0453	10.2	311	21 M 0617	9.1	276	6 W 0053	3.7	113	21 Th 0154	4.4	133
1144	4.5	138	M 1320	5.0	153	W 0724	10.2	312	Th 0819	9.6	293
1706	10.1	307	M 1831	7.8	238	W 1441	4.2	129	Th 1532	4.0	123
7 M 0018	3.3	100	22 Tu 0123	3.9	120	W 1947	8.7	264	Th 2049	9.2	279
0618	10.3	313	Tu 0749	9.4	286	7 Th 0241	3.4	103	F 0318	3.6	111
1320	4.7	142	Tu 1458	4.5	137	Th 0854	11.1	338	F 0917	10.5	321
1832	9.5	291	Tu 2007	7.9	242	Th 1608	3.2	99	F 1627	3.3	102
8 Tu 0140	3.2	98	23 W 0245	3.6	109	Th 2110	9.4	287	Th 2135	9.2	279
0748	10.8	330	W 0858	10.2	311	F 0956	12.1	369	F 0917	10.5	321
1455	4.1	125	W 1604	3.8	115	F 1721	2.4	72	W 1435	4.0	122
2000	9.6	293	W 2110	8.6	262	F 2209	10.4	317	W 1951	8.4	256
9 W 0301	2.8	86	24 Th 0350	2.9	89	9 Sa 0524	1.8	54	9 Sa 0400	2.9	87
0903	11.7	358	Th 0947	11.1	337	Sa 1046	12.9	394	Sa 0941	11.9	362
1617	3.3	100	Th 1655	3.1	96	Sa 1823	1.7	53	Sa 1702	2.1	63
2112	10.1	309	Th 2156	9.4	288	Sa 2248	11.3	345	Sa 2202	10.7	326
10 Th 0420	2.2	68	25 F 0445	2.3	69	10 Su 0630	1.2	36	10 M 0510	2.0	60
1002	12.7	387	F 1026	11.8	361	Su 1128	13.4	409	M 1111	12.7	387
1732	2.4	72	F 1741	2.7	82	Su 1908	1.3	41	M 1837	1.9	58
2211	10.8	330	F 2233	10.2	312	O 2343	11.9	363	M 2322	11.8	360
11 F 0532	1.4	44	26 Sa 0537	1.6	50	11 M 0712	0.9	27	26 M 0641	1.2	36
1053	13.5	410	Sa 1103	12.4	379	M 1209	13.5	413	Tu 1144	13.0	397
1835	1.7	51	Sa 1826	2.5	77	M 1948	1.0	30	Tu 1911	1.9	57
2302	11.4	348	Sa 2307	10.9	333	O 2356	12.4	377	O 2356	12.4	377
12 Sa 0633	0.9	27	27 Su 0622	1.4	43	12 Tu 0021	12.2	372	12 Tu 0650	1.1	33
1139	13.9	424	Su 1136	12.8	391	Tu 0749	0.8	23	W 1145	13.0	396
1932	1.2	38	Su 1857	2.3	70	Tu 1244	13.3	405	Tu 1927	1.2	36
● 2350	11.8	361	Su 2342	11.4	348	Tu 2031	0.9	28	● 2334	13.1	398
13 Su 0725	0.9	28	28 M 0656	1.1	35	13 W 0057	12.3	374	13 W 0029	12.7	388
1222	14.1	430	M 1209	13.1	400	W 0831	1.0	29	W 0735	1.0	31
2006	1.4	43	M 1938	2.0	60	W 1315	12.9	393	W 1247	13.2	401
14 M 0035	12.0	365	29 Tu 0014	11.8	359	W 2047	1.2	37	W 1947	1.1	33
0757	0.9	27	Tu 0737	1.0	31	14 Th 0129	12.1	368	14 Th 0034	12.6	384
1303	13.9	423	Tu 1239	13.2	402	Th 0847	1.6	48	Th 0756	1.5	46
2046	1.2	37	Tu 2005	2.0	61	Th 1343	12.3	374	Th 1247	12.4	378
15 Tu 0113	11.9	363	30 W 0047	12.0	365	F 2107	1.6	48	2011	1.4	43
0838	1.0	32	W 0805	1.4	42	15 F 0201	11.7	357	15 F 0105	12.5	382
1338	13.4	407	W 1308	13.2	402	W 0909	2.3	69	W 0831	1.7	52
2122	1.7	51	W 2039	1.7	51	W 1409	11.5	352	W 1312	11.9	364
16 Th 0118	12.0	367	31 Th 0838	1.5	47	W 2132	1.8	55	W 2035	1.5	45
0838	1.337	395	Th 1337	13.0	395	W 2102	1.8	56	W 2022	1.7	51
1337	1.4	407	Th 2102	1.8	56				31 Su 0118	13.7	419
2122	1.7	51							Su 0847	1.9	57
									Su 1331	12.1	370
									Su 2042	1.8	55

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Zhongjun, Changjiang Approach, China, 2013

Times and Heights of High and Low Waters

April				May				June							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
1 M 0157 0928 1409 2105	h m 13.3 2.5 11.3 2.5	ft 406 76 343 75	cm 406 96 298 103	16 Tu 0206 0922 1417 2050	h m 12.2 3.1 9.8 3.4	ft 373 96 298 103	cm 373 84 316 104	1 W 0232 1006 1459 2137	h m 13.3 2.8 10.4 3.4	ft 405 84 316 104	cm 405 98 299 122	1 Sa 0410 1141 1702 2340	h m 11.9 2.9 10.3 4.6	ft 364 89 315 141	cm 364 89 315 145
	0239 1003 1459 2137	12.6 3.1 10.1 3.2	384 96 309 98		0241 0956 1500 2119	11.5 3.7 8.9 4.1	352 113 272 126		0328 1047 1601 2205	10.8 4.3 8.2 4.9	328 131 250 149	0519 1243 1820 2341	11.0 3.1 10.4 5.1	336 96 317 156	
	0335 1102 1607 0231	11.6 3.9 9.0 4.2	354 118 274 127		0328 1047 1601 2205	11.3 4.3 8.2 4.9	345 131 250 149		0441 1214 1736 1935	11.3 3.5 9.3 5.2	345 122 282 158	0109 0636 1348 1935	4.7 10.4 3.1 10.9	144 318 95 331	
	0458 1236 1752	10.7 4.1 8.4	325 126 255		0437 1205 1735 2347	10.1 4.6 7.9 5.4	307 140 242 164		0009 0610 1337 1910	4.8 10.8 3.3 9.7	145 328 296	0235 0748 1450 2035	4.3 10.3 3.0 11.5	130 314 90 352	
5 F 0024 0648 1415 1943	4.7 10.4 3.6 8.9	144 317 110 271	20 Sa 0609 1334 1916	9.8 4.4 8.5	300 133 260	5.2 328	20 Su 0154 0733 1447 2020	4.4 10.8 2.8 10.6	133 328 86 324	0036 0618 1332 1919	5.2 10.5 3.9 10.2	159 319 119 312	5 W 0342 0848 1545 2125	3.6 10.5 2.7 12.3	110 320 82 374
	0225 0815 1534 2054	4.2 10.9 2.7 10.1	127 312 83 307	0140 0732 1442 2021	5.0 10.2 3.8 9.6	152 312 115 293	0316 0836 1547 2113	3.6 11.1 2.3 11.5	111 338 71 352	0237 0744 1443 2037	4.3 10.7 3.3 12.7	132 326 101 388			
	0346 0914 1636 2143	3.1 11.6 1.9 11.2	95 355 59 341	0255 0831 1539 2107	4.1 11.0 3.1 10.9	126 334 334 331	0421 0926 1639 2157	2.9 11.5 1.9 12.3	89 349 59 375	0316 0831 1537 2112	3.9 11.2 2.9 12.5	118 342 89 380			
	0449 1000 1731 2223	2.3 12.2 1.4 12.1	69 371 43 368	0357 0919 1632 2149	3.3 11.7 2.5 12.0	100 356 77 365	0512 1009 1726 2235	2.4 11.7 1.9 12.8	74 356 58 390	0422 0924 1634 2200	3.1 11.7 2.4 13.5	94 358 73 410			
9 Tu 0543 1041 1805 2303	1.7 12.4 1.4 12.6	52 378 42 385	24 W 1002 1719 2228	2.6 12.3 2.2 13.0	78 374 68 396	9 Th 1048 1757 2312	2.2 11.8 1.8 13.2	66 360 55 402	0554 1048 1757 2312	2.2 11.8 1.8 13.2	66 360 55 402	9 F 0646 1133 1836 2356	2.2 11.5 2.1 13.8	66 352 63 422	
	10 W 0633 1116 1842 2338	1.5 12.4 1.2 12.9	45 379 36 393	0546 1043 1800 2309	2.0 12.7 1.9 13.7	61 387 57 419	0637 1122 1836 2346	2.0 11.8 1.7 13.4	60 360 53 408	0621 1057 1817 2328	2.0 12.5 1.9 14.8	62 382 57 451			
	11 Th 0700 1150 1909	1.8 12.3 1.5	54 374 45	0639 1121 1844 2349	1.5 12.9 1.5 14.3	47 392 46 435	0708 1155 1900	2.2 11.7 2.0	66 358 60	0707 1144 1857	1.7 12.6 1.7	53 385 53			
	12 F 0010 0736 1219 1937	13.0 1.7 12.0 1.5	397 53 367 46	0732 1200 1931	1.3 12.9 1.3	40 392 40	0017 0742 1226 1933	13.5 2.1 11.5 2.0	412 65 352 62	0012 0752 1227 1941	15.1 1.4 12.5 1.7	459 44 381 51			
13 Sa 0039 0758 1248 1953	13.0 2.1 11.7 1.9	397 64 356 58	28 Su 0803 1241 1953	14.5 12.6 1.7	443 383 52	13 M 0810 1257 1950	13.5 11.3 2.4	411 344 73	0047 1257 1950	13.5 11.3 2.4	411 344 73	13 Th 0055 0842 1310 2024	15.0 1.3 12.2 2.1	457 39 372 65	
	14 Su 0108 0832 1314 2015	13.0 2.2 11.2 2.3	395 68 341 71	0107 0844 1319 2032	14.4 1.7 12.0 2.0	440 51 366 60	0117 0840 1327 2016	13.3 2.5 10.9 2.9	406 76 331 88	0138 0930 1359 2053	14.6 1.6 11.7 2.6	445 48 358 78			
	15 M 0135 0851 1345 2035	12.7 2.6 10.6 2.7	386 80 322 82	0147 0930 1405 2054	14.0 2.1 10.4 2.7	427 63 316 81	0148 0907 1403 2039	12.9 2.9 10.4 3.3	394 88 316 101	0224 1000 1452 2137	13.9 2.2 11.2 3.2	425 66 341 98			
	16 W 0140 0855 1345 2035	12.7 2.6 10.6 2.7	30 Tu 1045 1617	14.0 2.1 11.3 2.7	427 63 343 82	15 W 0148 0907 1403 2054	12.9 2.9 10.4 3.3	394 88 316 101	0232 1055 1502 2137	12.8 3.0 10.7 4.1	389 91 327 126	0330 1055 1617 2257	12.3 2.7 11.2 4.6	375 81 342 139	
31 F 0313 1047 1552 2231												13 F 0313 1047 1552 2231	13.0 2.6 10.7 4.0	396 78 325 122	

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Heights are referred to the chart datum of soundings.

Zhongjun, Changjiang Approach, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0423	11.1	339	16 Tu 0319	12.1	368	1 Th 0048	5.6	172	16 F 0501	9.9	301
1141	3.2	97	1034	3.1	95	0553	8.8	267	1147	4.6	139
1723	10.9	331	1609	11.7	358	1237	4.8	145	1824	11.9	362
● 2259	5.0	151	1911	10.9	332	1911	10.9	332	1451	4.7	144
2 Tu 0011	5.1	156	17 W 0417	11.1	339	2026	11.6	355	2052	12.1	368
0530	10.1	307	1123	3.7	112	0231	5.1	155	0402	3.6	110
1238	3.6	110	1722	11.6	355	0739	8.7	264	0921	10.2	312
1841	10.9	331	F 1408	4.6	141	1408	4.6	141	1548	3.7	113
3 W 0143	5.0	153	Th 0028	5.2	160	2026	12.6	355	2131	13.0	396
0652	9.5	289	0535	10.3	315	0341	4.1	125	0444	2.9	88
1346	3.8	115	1236	3.9	120	0853	9.3	284	0953	11.4	346
1955	11.3	345	1852	12.0	365	1520	4.0	122	1639	2.9	87
4 Th 0303	4.4	134	19 F 0203	4.8	146	2118	12.5	382	2205	13.7	418
0810	9.5	290	0707	10.1	308	0435	3.2	99	0531	2.3	71
1453	3.6	110	1400	3.8	116	0939	10.2	311	1020	12.3	376
2055	12.0	367	2013	12.8	389	1615	3.3	100	1727	2.4	73
5 F 0406	3.6	110	20 Sa 0331	3.8	115	2158	13.3	406	2236	14.2	434
0910	9.9	303	0828	10.5	321	0519	2.8	85	● 2301	14.8	450
1551	3.2	98	1524	3.3	100	1013	11.1	338	0559	2.2	68
2142	12.8	389	2117	13.7	419	1700	2.7	81	1052	13.2	401
6 Sa 0458	3.0	90	21 Su 0441	2.7	82	2233	13.9	424	1802	2.0	61
0957	10.5	321	0933	11.3	344	0553	2.4	74	● 2306	14.5	443
1643	2.8	85	1635	2.5	76	1047	11.8	361	0638	1.7	53
2222	13.4	408	2211	14.6	446	1744	2.2	66	1121	13.8	420
7 Su 0543	2.5	76	21 W 0545	1.8	55	2306	14.3	436	1841	1.7	52
1036	11.1	337	1025	12.1	368	0636	2.4	74	2336	14.6	446
1732	2.4	72	1738	1.9	57	1116	12.5	380	● 2322	15.4	469
2259	13.8	422	2258	15.3	465	1830	1.9	57	21 F 0636	0.8	24
8 M 0630	2.2	68	23 Tu 0644	1.1	33	● 2336	14.5	443	0595	13.4	408
1110	11.6	353	1112	12.8	389	0702	2.2	67	1833	1.2	37
1807	2.3	69	Tu 1836	1.4	43	0745	0.9	26	● 2322	15.4	469
● 2332	14.1	431	O 2340	15.5	473	1149	12.9	393	21 Sa 0636	0.8	24
9 Tu 0656	2.3	70	24 W 0739	0.6	19	1856	2.0	61	1153	14.2	434
1144	11.9	363	1158	13.2	403	0006	14.6	445	1924	2.0	61
1844	2.1	63	1932	1.2	36	0738	1.9	57	0706	2.0	62
10 W 0004	14.3	435	25 Th 0022	15.5	472	1218	14.0	427	22 Sa 0706	2.0	62
0736	2.1	64	0817	1.2	38	1856	2.0	61	0740	1.4	44
1214	12.1	370	1243	13.4	407	0102	2.2	66	1228	14.3	436
1919	2.3	70	2001	1.8	54	0738	1.9	57	1950	2.3	69
11 Th 0034	14.3	435	26 F 0101	15.1	459	1218	13.2	402	● 2336	14.6	446
0758	2.3	70	0846	1.0	32	1934	2.0	60	23 M 0034	14.7	448
1247	12.2	373	1320	13.3	405	0006	14.6	445	0036	14.3	435
1946	2.4	72	2037	2.1	63	0738	1.9	57	0757	2.0	62
12 F 0103	14.2	432	27 Sa 0137	14.4	439	1255	13.2	402	1255	14.5	442
0834	2.1	64	0919	1.7	52	1934	2.0	60	2024	2.6	79
1316	12.3	374	1402	13.0	396	0344	14.6	445	● 2322	15.4	469
2015	2.8	85	2105	2.9	88	0820	1.5	46	24 Tu 0105	12.5	382
13 Sa 0131	13.9	424	28 W 0211	13.5	411	1255	13.9	402	0754	2.0	61
0853	2.3	70	0941	2.0	61	1934	2.0	60	1301	14.0	427
1351	12.2	371	1443	12.5	380	0344	14.6	445	2019	2.8	86
2044	3.1	94	2138	3.6	110	0738	1.9	57	● 2336	14.6	446
14 Su 0201	13.5	412	28 Th 0247	12.3	376	1255	13.2	402	24 M 0036	14.3	435
0928	2.5	77	1003	2.7	82	1934	2.0	60	0105	12.5	382
1426	12.1	369	1527	11.9	362	0244	12.2	372	0754	2.0	61
2118	3.7	112	2212	4.5	138	0948	3.1	94	1301	14.0	427
15 M 0236	12.9	393	● 2232	4.8	146	1439	12.4	378	2041	3.2	99
0953	2.7	83	2310	5.3	163	2059	3.3	100	● 2336	14.6	446
1512	11.9	364	31 W 0424	9.7	297	0136	13.9	423	25 W 0134	11.6	353
2158	4.3	131	1118	4.3	130	0738	2.6	79	0832	3.1	94
16 M 0328	11.1	337	1738	10.8	328	0922	2.6	79	1401	12.9	394
1036	3.4	104	1034	3.9	118	1435	13.0	397	2106	4.0	123
1623	11.2	342	1642	12.0	365	2138	3.9	120	● 2253	5.6	171
● 2310	5.3	163	2355	5.4	165	0136	13.1	400	26 Th 0206	10.5	320
31 W 0424	9.7	297	0102	14.3	436	0853	2.3	69	0841	3.9	119
1118	4.3	130	0834	1.9	57	1404	13.1	399	1438	12.1	368
1738	10.8	328	1319	13.5	410	2032	2.6	80	2145	4.9	148
1034	3.9	118	1443	12.5	380	0136	13.1	400	● 2336	14.6	446
1642	12.0	365	2138	3.6	110	0922	2.6	79	27 F 0248	9.3	283
2355	5.4	165	1443	12.5	380	1435	12.4	378	0901	4.9	148
1955	11.1	338	2138	3.6	110	2059	3.3	100	1530	11.1	338
● 2310	5.3	163	1443	12.5	380	1934	2.6	79	● 2253	5.6	171
31 W 0424	9.7	297	1443	12.5	380	1934	2.6	79	28 M 0359	8.2	249
1118	4.3	130	2138	3.6	110	1524	11.6	354	0948	5.9	179
1738	10.8	328	1443	12.5	380	● 2218	5.3	161	1705	10.3	314
1034	3.9	118	2138	3.6	110	1524	11.6	354	● 2345	5.3	162
1642	12.0	365	1443	12.5	380	1524	12.0	366	● 2345	5.3	162
2355	5.4	165	2138	3.6	110	1614	12.0	366	● 2253	5.6	171
1955	11.1	338	1443	12.5	380	1614	12.0	366	27 F 0248	9.3	283
● 2310	5.3	163	2138	3.6	110	1614	12.0	366	0901	4.9	148
31 W 0424	9.7	297	1443	12.5	380	1614	12.0	366	1530	11.1	338
1118	4.3	130	2138	3.6	110	1614	12.0	366	● 2253	5.6	171
1738	10.8	328	1443	12.5	380	1614	12.0	366	28 M 0359	8.2	249
1034	3.9	118	2138	3.6	110	1614	12.0	366	0948	5.9	179
1642	12.0	365	2138	3.6	110	1614	12.0	366	1705	10.3	314
2355	5.4	165	1443	12.5	380	1614	12.0	366	● 2345	5.3	162
1955	11.1	338	2138	3.6	110	1614	12.0	366	● 2345	5.3	162
● 2310	5.3	163	1443	12.5	380	1614	12.0	366	27 F 0248	9.3	283
31 W 0424	9.7	297	2138	3.6	110	1614	12.0	366	0901	4.9	148
1118	4.3	130	1443	12.5	380	1614	12.0	366	1530	11.1	338
1738	10.8	328	2138	3.6	110	1614	12.0	366	● 2253	5.6	171
1034	3.9	118	1443	12.5	380	1614	12.0	366	28 M 0359	8.2	249
1642	12.0	365	2138	3.6	110	1614	12.0	366	0948	5.9	179
2355	5.4	165	1443	12.5	380	1614	12.0	366	1705	10.3	314
1955	11.1	338	2138	3.6	110	1614	12.0	366	● 2345	5.3	162
● 2310	5.3	163	1443	12.5	380	1614	12.0	366	27 F 0248	9.3	283
31 W 0424	9.7	297	2138	3.6	110	1614	12.0	366	0901	4.9	148
1118	4.3	130	1443	12.5	380	1614	12.0	366	1530	11.1	338
1738	10.8	328	2138	3.6	110	1614	12.0	366	● 2253	5.6	171
1034	3.9	118	1443	12.5	380	1614	12.0	366	28 M 0359	8.2	

Zhongjun, Changjiang Approach, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0322 3.9 120	16 W 0355 2.3 71	1 F 0403 2.8 84	16 Sa 0501 1.7 51	1 Su 0412 2.4 72	16 M 0512 1.9 57						
0857 10.2 312	0912 12.3 374	0927 12.7 387	1015 13.5 410	0941 13.2 401	1038 12.8 389						
1521 4.3 131	1618 2.9 88	1634 2.8 85	1741 2.1 64	1657 2.7 81	1800 2.5 75						
2058 12.3 374	2125 13.3 404	2135 12.7 388	2224 12.1 370	2149 12.1 368	2246 10.9 333						
2 W 0405 3.2 97	17 Th 0449 1.6 50	2 Sa 0448 2.2 66	17 Su 0542 1.5 45	2 M 0504 1.8 56	17 Tu 0551 1.6 49						
0926 11.6 353	0953 13.4 408	1003 13.8 420	1052 13.7 419	1023 14.1 429	1115 13.1 399						
1611 3.3 100	1718 2.2 67	1731 2.0 62	1829 2.2 68	1751 2.1 64	1841 2.3 70						
2133 13.1 399	2205 13.6 415	2211 13.3 404	2300 12.1 369	2234 12.5 380	2320 11.1 339						
3 Th 0446 2.5 77	18 F 0539 1.1 35	3 Su 0537 1.6 49	18 M 0618 1.7 51	3 Tu 0553 1.4 43	18 W 0634 1.4 43						
0957 12.8 389	1028 14.1 429	1039 14.6 444	1124 13.9 424	1107 14.7 447	1149 13.2 403						
1657 2.5 77	1758 1.9 57	1816 2.0 61	1852 2.2 67	1846 1.6 50	1915 2.5 76						
2206 13.7 419	2243 13.6 415	● 2249 13.5 412	2333 11.9 364	● 2315 12.6 385	2353 11.2 342						
4 F 0533 2.0 60	19 Sa 0619 1.4 43	4 M 0626 1.6 50	19 Tu 0643 1.6 50	4 W 0642 1.1 33	19 Th 0659 1.5 47						
1025 13.7 419	1106 14.4 439	1115 15.2 462	1158 13.9 423	1149 14.9 455	1220 13.3 404						
1743 1.9 58	1840 1.6 49	1851 1.7 62	1932 2.2 68	1940 1.3 41	1944 2.4 74						
2238 14.1 430	○ 2315 13.4 408	2327 13.5 411		2359 12.6 385							
5 Sa 0604 2.0 60	20 Su 0642 1.3 41	5 Tu 0649 1.5 45	20 W 0003 11.7 357	5 Th 0732 1.0 30	20 F 0023 11.2 341						
1058 14.5 442	1139 14.4 439	1153 15.4 468	0709 2.0 60	1229 15.0 457	0735 1.6 48						
● 2309 14.3 435	1910 2.1 65	1940 1.4 44	1227 13.7 419	2030 1.5 45	1250 13.1 400						
2348 13.0 396			1951 2.6 79		2013 2.6 80						
6 Su 0640 1.5 47	21 M 0706 1.8 56	6 W 0003 13.3 404	21 Th 0034 11.4 346	6 F 0045 12.3 376	21 Sa 0054 11.1 337						
1130 15.0 457	1210 14.3 436	0732 1.4 42	0735 2.1 65	0759 1.5 46	0755 1.9 59						
1904 1.9 57	1939 2.2 68	1230 15.3 466	1258 13.5 411	1316 14.6 446	1319 13.0 395						
2344 14.2 433		2021 2.2 66	2024 2.9 89	2058 1.9 58	2041 2.6 79						
7 M 0714 1.8 55	22 Tu 0016 12.5 380	7 Th 0046 12.7 387	22 F 0104 11.0 334	7 Sa 0131 11.8 359	22 M 0125 10.8 329						
1204 15.2 464	0732 2.0 61	0752 2.0 61	0753 2.6 80	0839 1.9 58	0827 2.4 74						
1941 1.7 51	1239 14.0 428	1313 14.8 452	1327 13.1 399	1401 13.9 425	1348 12.6 384						
2000 2.7 83		2049 2.4 73	2047 3.1 95	2143 2.1 65	2107 2.8 84						
8 Tu 0015 13.8 422	23 W 0046 11.9 362	8 F 0128 11.9 362	23 Sa 0137 10.4 317	8 Su 0220 11.2 341	23 M 0159 10.5 319						
0739 1.7 51	0743 2.5 76	0828 2.6 80	0818 3.2 97	0914 2.7 83	0847 2.9 87						
1238 15.1 461	1308 13.7 417	1358 14.0 428	1400 12.5 381	1449 13.0 397	1418 12.1 370						
2018 2.4 73	2032 3.0 92	2137 2.9 88	2119 3.5 107	2230 2.6 78	2139 2.9 87						
9 W 0051 13.3 405	24 Th 0114 11.2 340	9 Sa 0219 10.9 333	24 Su 0215 9.8 299	9 M 0318 10.5 321	24 Tu 0238 10.1 308						
0759 2.2 68	0758 3.1 93	0855 3.4 104	0843 3.8 116	0959 3.5 108	0920 3.5 107						
1315 14.8 451	1338 13.1 400	1451 13.0 396	1436 11.8 359	1544 11.9 364	1455 11.5 352						
2045 2.7 83	2053 3.6 109	2228 3.6 109	2154 3.8 117	● 2315 3.0 92	2211 3.1 95						
10 Th 0129 12.4 377	25 F 0148 10.3 314	10 Su 0325 10.0 305	25 M 0304 9.2 281	10 Tu 0427 10.0 305	25 W 0324 9.8 299						
0830 2.7 82	0820 3.7 114	0948 4.4 134	0920 4.6 139	1104 4.3 132	0958 4.1 125						
1357 14.1 429	1412 12.4 377	1559 11.9 362	1523 11.0 336	1651 10.9 332	1540 10.8 330						
2127 3.5 108	2129 4.2 129	● 2337 3.9 118	2244 4.2 127		● 2254 3.4 103						
11 F 0215 11.2 342	26 Sa 0228 9.4 286	11 M 0456 9.4 288	26 Tu 0410 8.9 270	11 W 0017 3.2 98	26 Th 0426 9.6 292						
0852 3.6 109	0841 4.5 138	1121 5.2 158	1021 5.3 161	0551 9.8 300	1100 4.7 144						
1449 13.1 398	1455 11.5 349	1730 11.1 338	1629 10.4 316	1237 4.7 143	1640 10.1 309						
2217 4.3 132	2216 4.9 148		● 2351 4.3 131	1808 10.1 309	2352 3.6 110						
12 Sa 0319 10.0 304	27 Su 0327 8.5 260	12 Tu 0100 3.7 113	27 W 0537 8.9 272	12 Th 0128 3.1 95	27 F 0545 9.7 295						
0938 4.7 143	0922 5.5 168	0639 9.8 298	1201 5.6 170	0714 10.2 311	1233 5.0 151						
1604 11.9 363	1602 10.5 321	1319 5.0 153	1752 10.1 307	1408 4.5 136	1757 9.7 296						
● 2345 4.8 146	● 2339 5.2 158	1901 11.0 335		1926 9.9 301							
13 Su 0501 9.1 278	28 M 0512 8.1 248	13 W 0218 3.1 95	28 Th 0105 4.1 125	13 M 0235 2.8 85	28 Tu 0104 3.6 109						
1120 5.6 172	1107 6.2 190	0758 10.8 329	0704 9.7 296	0822 10.9 332	0710 10.2 312						
1757 11.3 345	1744 10.1 309	1448 4.1 125	1341 5.1 155	1528 3.8 117	1405 4.6 140						
		2009 11.3 345	1909 10.3 313	2032 10.0 305	1918 9.7 297						
14 M 0132 4.3 131	29 Tu 0113 4.9 149	14 F 0324 2.5 76	29 F 0214 3.6 109	14 Sa 0335 2.4 73	29 Th 0223 3.2 98						
0707 9.5 290	0712 8.8 267	0853 11.9 363	0807 10.9 331	0916 11.7 356	0822 11.2 341						
1339 5.2 158	1324 5.8 178	1555 3.2 98	1455 4.2 129	1631 3.1 95	1528 3.9 118						
1936 11.8 359	1913 10.5 320	2102 11.7 358	2011 10.8 330	2124 10.3 315	2029 10.2 311						
15 Tu 0252 3.2 99	30 W 0223 4.2 128	15 F 0418 2.0 61	30 Sa 0315 3.0 90	15 M 0430 2.0 62	30 M 0335 2.6 78						
0823 10.9 331	0814 10.0 306	0935 12.8 390	0857 12.1 368	1000 12.3 375	0921 12.2 373						
1507 4.0 121	1440 4.8 145	1652 2.6 78	1558 3.4 103	1558 3.4 103	1637 3.0 91						
2039 12.6 383	2012 11.3 343	2146 12.0 367	2102 11.5 350	2207 10.7 325	2129 10.8 330						
31 Th 0316 3.4 105											
0853 11.4 348											
1539 3.7 113											
2056 12.1 368											

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ch'ang Chiang Approach (Side Saddle), China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0559	3.7	113	16 W 0032	13.7	418	1 F 0035	14.0	427	16 Sa 0119	13.5	411
1207	15.2	463	W 0652	3.4	104	F 0657	3.9	119	Sa 0736	5.3	162
1838	4.6	140	1254	15.0	457	1251	14.5	442	1323	13.0	396
			1927	3.9	119	1923	3.9	119	1951	4.8	146
2 W 0013	13.2	402	17 Th 0112	13.3	405	2 Sa 0114	13.6	415	17 Su 0158	12.7	387
0632	4.0	122	0730	4.4	134	0737	4.7	143	0812	6.3	192
1239	14.9	454	1329	14.1	430	1328	13.7	418	1355	12.0	366
1912	4.7	143	2003	4.5	137	2003	4.4	134	2024	5.5	168
3 Th 0050	13.0	396	18 F 0156	12.7	387	3 Su 0203	13.1	399	18 M 0246	12.0	366
0710	4.5	137	0810	5.5	168	0826	5.7	174	0856	7.3	223
1314	14.3	436	1406	13.0	396	1412	12.6	384	M 1437	11.1	338
1950	5.0	152	2042	5.2	158	O 2052	4.9	149	O 2108	6.3	192
4 F 0133	12.7	387	19 W 0247	12.0	366	4 M 0307	12.5	381	19 Tu 0359	11.4	347
0753	5.2	158	0855	6.6	201	0933	6.7	204	1010	8.1	247
1355	13.6	415	1449	12.0	366	1514	11.6	354	1552	10.3	314
2034	5.2	158	O 2127	5.8	177	2159	5.5	168	2220	6.9	210
5 Sa 0228	12.3	375	20 Su 0354	11.5	351	5 Tu 0441	12.1	369	20 W 0541	11.4	347
0847	6.0	183	0957	7.5	229	1112	7.3	223	1223	8.2	250
1447	12.7	387	1549	11.1	338	1649	10.8	329	1748	10.1	308
O 2130	5.5	168	2228	6.3	192	2331	5.6	171	O 2131	5.6	171
6 Su 0344	12.0	366	21 M 0519	11.4	347	6 W 0626	12.6	384	21 Th 0011	6.9	210
1001	6.7	204	1134	8.0	244	1304	6.9	210	0705	12.0	366
1559	11.9	363	1712	10.6	323	1834	11.0	335	1352	7.4	226
2242	5.6	171	2350	6.4	195				1914	10.7	326
7 M 0519	12.2	372	22 Tu 0640	11.8	360	7 Th 0105	5.1	155	22 F 0134	6.2	189
1138	7.0	213	1318	7.7	235	0744	13.5	411	0802	12.9	393
1727	11.5	351	1835	10.7	326	1419	5.9	180	1438	6.5	198
						1951	11.7	357	2009	11.6	354
8 Tu 0005	5.3	162	23 W 0109	6.0	183	8 F 0215	4.1	125	23 Sa 0227	5.3	162
0645	12.9	393	0742	12.5	381	0841	14.6	445	0844	13.8	421
1314	6.5	198	1421	7.0	213	1512	4.8	146	1514	5.6	171
1849	11.7	357	1940	11.1	338	2049	12.6	384	2052	12.5	381
9 W 0121	4.5	137	24 Th 0207	5.4	165	9 Sa 0310	3.2	98	24 Su 0309	4.5	137
0753	14.0	427	0830	13.3	405	0928	15.4	469	0920	14.5	442
1425	5.7	174	1505	6.2	189	1557	3.9	119	1546	4.7	143
1956	12.2	372	2030	11.7	357	2136	13.5	411	2129	13.4	408
10 Th 0224	3.6	110	25 F 0252	4.7	143	10 Su 0357	2.5	76	25 M 0346	3.7	113
0849	15.0	457	0910	14.1	430	1009	16.0	488	0954	15.1	460
1521	4.7	143	1541	5.5	168	1637	3.2	98	1618	4.0	122
2052	12.8	390	2111	12.4	378	O 2219	14.2	433	2204	14.1	430
11 F 0317	2.8	85	26 Sa 0331	4.1	125	11 M 0439	2.2	67	26 Su 0422	3.2	98
0938	15.9	485	0946	14.7	448	1046	16.2	494	1025	15.5	472
1609	4.0	122	Sa 1614	4.8	146	1714	2.8	85	Tu 1649	3.4	104
2142	13.4	408	2148	13.0	396	2258	14.6	445	O 2237	14.7	448
12 Sa 0406	2.2	67	27 W 0406	3.6	110	12 Tu 0519	2.3	70	27 W 0457	2.8	85
1022	16.4	500	1018	15.2	463	1121	16.0	488	1056	15.6	475
1653	3.4	104	1645	4.3	131	1749	2.7	82	1720	3.0	91
O 2227	13.8	421	O 2223	13.5	411	2335	14.7	448	2310	15.1	460
13 Su 0450	2.0	61	28 M 0440	3.2	98	13 W 0556	2.7	82	13 Th 0532	2.8	85
1103	16.5	503	1049	15.5	472	1153	15.5	472	1126	15.5	472
1734	3.2	98	1716	3.9	119	1821	2.9	88	1752	2.9	88
2310	14.0	427	2255	13.8	421				2343	15.2	463
14 M 0533	2.1	64	29 Tu 0513	3.0	91	14 Th 0631	3.4	104	1424	3.2	98
1142	16.3	497	1119	15.6	475	1223	14.8	451	1124	15.1	460
1813	3.2	98	1746	3.7	113	1852	3.4	104	1750	2.9	88
2351	14.0	427	2327	14.1	430				2345	15.2	463
15 Tu 0613	2.6	79	30 W 0546	3.1	94	15 F 0044	14.1	430	15 Th 0609	3.8	116
1219	15.8	482	1149	15.5	472	0704	4.3	131	1152	14.5	442
1850	3.5	107	1816	3.6	110	1253	14.0	427	1818	3.4	104
						1921	4.0	122			
			31 Th 0000	14.1	430						
			0620	3.3	101						
			1219	15.1	460						
			1848	3.7	113						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ch'ang Chiang Approach (Side Saddle), China, 2013

Times and Heights of High and Low Waters

April				May				June															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
1 M 0046 0720 1251 1921	h m 15.4 4.8 13.3 4.0	ft 469 146 405 122	cm 0046 0720 1250 1908	16 Tu 0052 0720 1225 1908	h m 14.3 6.3 12.2 5.5	ft 436 192 372 168	cm 0052 0720 1250 1908	1 W 0128 0809 1335 2004	h m 15.2 5.7 12.3 5.1	ft 463 174 375 155	cm 0128 0809 1335 2004	16 Th 0107 0742 1310 1927	h m 14.4 6.6 12.1 6.1	ft 439 201 369 186	cm 0107 0742 1310 1927	1 Sa 0312 0955 1558 2203	h m 14.0 6.2 12.1 6.9	ft 427 189 369 210	cm 0312 0955 1558 2203	16 Su 0206 0846 1437 2048	h m 14.1 6.4 12.3 6.9	ft 430 195 375 210	cm 0206 0846 1437 2048
2 Tu 0134 0811 1337 2011	h m 14.6 5.8 12.3 4.9	ft 445 177 375 149	cm 0134 0811 1337 2011	17 W 0128 0758 1326 1945	h m 13.6 6.9 11.6 6.2	ft 415 210 354 189	cm 0128 0758 1326 1945	2 Th 0227 0912 1445 2109	h m 14.2 6.4 11.6 6.1	ft 433 195 354 186	cm 0227 0912 1445 2109	2 Su 0420 1103 1723 2327	h m 13.3 6.2 12.3 7.4	ft 405 189 375 226	cm 0420 1103 1723 2327	17 M 0259 0941 1552 2158	h m 13.5 6.5 12.3 7.4	ft 411 198 375 226	cm 0259 0941 1552 2158				
3 W 0234 0918 1442 2118	h m 13.6 6.8 11.3 5.9	ft 415 207 344 180	cm 0234 0918 1442 2118	18 Th 0215 0849 1419 2039	h m 12.9 7.5 11.0 7.0	ft 393 229 335 213	cm 0215 0849 1419 2039	3 F 0342 1029 1624 2234	h m 13.4 6.7 11.3 6.7	ft 408 204 344 204	cm 0342 1029 1624 2234	3 M 0531 1211 1835 2120	h m 12.9 6.0 12.9 7.2	ft 393 183 393 219	cm 0531 1211 1835 2120	18 Tu 0408 1046 1717 2324	h m 12.9 6.3 12.7 7.6	ft 393 192 387 232	cm 0408 1046 1717 2324				
4 Th 0402 1050 1631 2255	h m 12.9 7.2 10.7 6.5	ft 393 219 326 198	cm 0402 1050 1631 2255	19 F 0325 1003 1556 2200	h m 12.3 7.9 10.6 7.5	ft 375 241 323 229	cm 0325 1003 1556 2200	4 Sa 0508 1152 1801	h m 13.1 6.5 11.8	ft 399 198 360	cm 0508 1152 1801	4 Tu 0048 0633 1310 1931	h m 7.3 12.8 5.5 13.6	ft 223 390 168 415	cm 0048 0633 1310 1931	19 W 0525 1158 1832 2030	h m 12.7 5.9 13.5 15.6	ft 387 180 411 475	cm 0525 1158 1832 2030				
5 F 0545 1230 1824	h m 12.8 6.8 11.2	ft 390 207 341	cm 0545 1230 1824	20 Sa 0501 1137 1747 2343	h m 12.2 7.6 11.0 7.4	ft 372 232 335 226	cm 0501 1137 1747 2343	5 Su 0007 0622 1300 1910	h m 6.8 13.2 5.8 12.7	ft 207 402 177 387	cm 0007 0622 1300 1910	5 M 0153 0726 1400 2017	h m 6.9 12.9 5.1 14.3	ft 210 393 155 436	cm 0153 0726 1400 2017	20 Th 0050 0636 1305 1935	h m 7.2 12.8 5.3 14.6	ft 219 390 162 445	cm 0050 0636 1305 1935				
6 Sa 0035 0703 1339	h m 6.2 13.3 5.8	ft 189 405 177	cm 0035 0703 1339	21 Su 0620 1253 1858	h m 12.6 6.8 12.0	ft 384 207 366	cm 0620 1253 1858	6 M 0122 0719 1352 2001	h m 6.3 13.4 5.0 13.7	ft 192 408 152 418	cm 0122 0719 1352 2001	6 Tu 0244 0621 1250 1910	h m 6.4 13.0 5.8 13.4	ft 195 396 177 408	cm 0244 0621 1250 1910	21 F 0203 0738 1405 2030	h m 6.5 13.2 4.5 15.6	ft 198 402 137 475	cm 0203 0738 1405 2030				
7 Su 0148 0758 1428	h m 5.5 14.0 4.8	ft 168 427 146	cm 0148 0758 1428	22 M 0105 0717 1345 1949	h m 6.7 13.2 5.8 13.2	ft 204 402 177 402	cm 0105 0717 1345 1949	7 Tu 0219 0806 1436 2043	h m 5.8 13.7 4.4 14.5	ft 177 418 396 442	cm 0219 0806 1436 2043	7 F 0328 0853 1520 2134	h m 6.0 13.2 4.4 15.4	ft 183 402 396 469	cm 0328 0853 1520 2134	22 Sa 0302 0833 1459 2120	h m 5.7 13.6 3.8 16.5	ft 174 415 116 503	cm 0302 0833 1459 2120				
8 M 0241 0841 1509 2107	h m 4.7 14.5 4.0 14.4	ft 143 442 122 439	cm 125 442 122 439	23 Tu 0204 0804 1428 2033	h m 5.7 13.9 4.8 14.3	ft 174 424 146 436	cm 204 804 1428 2033	8 W 0305 0845 1514 2121	h m 5.3 13.9 3.9 15.1	ft 162 424 119 460	cm 305 845 1514 2121	8 Sa 0406 0932 1556 2209	h m 5.7 13.3 4.3 15.7	ft 174 405 131 479	cm 306 932 1556 2209	23 Su 0354 0924 1549 2207	h m 5.0 13.9 3.2 17.1	ft 152 424 98 521	cm 354 924 1549 2207				
9 Tu 0326 0919 1545 2144	h m 4.1 14.8 3.4 15.1	ft 125 451 104 460	cm 125 451 104 460	24 W 0252 0845 1508 2113	h m 4.8 14.4 3.9 15.4	ft 146 439 119 469	cm 252 845 1508 2113	9 Th 0346 0922 1548 2113	h m 5.0 14.0 3.7 15.5	ft 152 427 113 469	cm 346 922 1548 2113	9 Sa 0442 1007 1629 2242	h m 5.6 13.4 4.3 15.8	ft 171 408 131 482	cm 442 1007 1629 2242	24 M 0442 1012 1637 2253	h m 4.5 14.2 2.9 17.4	ft 137 433 88 530	cm 442 1012 1637 2253				
10 W 0406 0953 1619 2218	h m 3.8 14.8 3.1 15.5	ft 116 451 94 472	cm 116 451 94 472	25 Th 0337 0924 1547 2228	h m 4.1 14.8 3.1 16.1	ft 125 451 94 491	cm 337 924 1547 2228	10 F 0424 0956 1621 2228	h m 4.8 13.9 3.7 15.7	ft 146 424 113 479	cm 424 956 1621 2228	10 M 0405 0940 1604 2218	h m 4.4 14.3 2.9 16.9	ft 134 436 88 515	cm 405 940 1604 2218	25 Tu 0528 1059 1723 2337	h m 4.3 14.4 2.9 17.3	ft 131 439 88 527	cm 528 1059 1723 2337				
11 Th 0442 1024 1650 2250	h m 3.8 14.7 3.1 15.7	ft 116 448 94 479	cm 116 448 94 479	26 F 0420 1003 1626 2233	h m 3.7 14.9 2.7 16.6	ft 113 454 82 506	cm 420 1003 1626 2233	11 Sa 0458 1028 1651 2300	h m 4.9 13.8 3.8 15.7	ft 149 421 116 479	cm 458 1028 1651 2300	11 M 0452 1024 1649 2302	h m 4.1 14.3 2.7 17.1	ft 125 436 82 521	cm 452 1024 1649 2302	26 W 0612 1145 1808 2337	h m 4.2 14.3 3.3 17.3	ft 128 436 101 527	cm 612 1145 1808 2337				
12 F 0516 1055 1719 2321	h m 4.0 14.4 3.3 15.6	ft 122 439 101 475	cm 122 439 101 475	27 Sa 0502 1041 1705 2313	h m 3.6 14.8 2.5 16.8	ft 110 439 76 512	cm 502 1041 1705 2313	12 M 0531 1100 1720 2331	h m 5.1 13.5 4.1 15.6	ft 155 411 125 475	cm 531 1100 1720 2331	12 Tu 0538 1108 1733 2347	h m 4.1 14.2 2.8 17.0	ft 125 433<br									

Ch'ang Chiang Approach (Side Saddle), China, 2013

Times and Heights of High and Low Waters

July				August				September							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 M	0327	13.3	405	16 Tu	0217	13.9	424	1 Th	0445	11.7	357	16 Su	0358	12.0	366
1009	6.2	189	0858	6.0	183	1122	7.2	219	F	1042	6.7	204	0138	8.5	259
1633	12.6	384	1508	13.1	399	1818	13.0	396	1740	13.6	415	0659	11.7	357	
2238	7.9	241	● 2123	7.4	226							1317	7.3	223	
2 Tu	0431	12.6	384	17 W	0315	13.0	396	2 F	0055	8.7	265	17 Sa	0015	8.3	253
1113	6.4	195	0958	6.2	189	0611	11.6	354	1218	6.4	195	0224	7.6	232	
1750	12.8	390	1631	13.1	399	1244	7.0	213	1906	14.4	439	0754	12.6	384	
			2246	7.9	241	1923	13.6	415				1410	6.6	201	
3 W	0005	8.2	250	18 Th	0435	12.4	378	3 Sa	0205	8.1	247	18 Su	0143	7.4	226
0542	12.2	372	1114	6.2	189	0720	11.9	363	0714	12.5	381	0258	6.7	204	
1222	6.3	192	1801	13.6	415	1347	6.5	198	1337	5.6	171	0836	13.5	411	
1857	13.3	405				2013	14.3	436	2008	15.4	469	1452	5.8	177	
4 Th	0125	7.9	241	19 F	0026	7.8	238	4 Su	0251	7.3	223	19 M	0242	6.3	192
0647	12.1	369	0603	12.3	375	0813	12.5	381	0817	13.4	408	0330	5.9	180	
1323	6.0	183	1235	5.8	177	1435	6.0	183	1438	4.6	140	0913	14.3	436	
1951	14.0	427	1917	14.5	442	2054	15.0	457	2058	16.4	500	1528	5.1	155	
5 F	0224	7.4	226	20 Sa	0150	7.1	216	5 M	0328	6.6	201	20 Tu	0329	5.2	158
0743	12.4	378	0719	12.7	387	0856	13.2	402	0908	14.4	439	0400	5.2	158	
1413	5.6	171	1347	5.1	155	1515	5.4	165	1528	3.9	119	0946	15.0	457	
2035	14.6	445	2018	15.5	472	2130	15.7	479	2142	17.0	518	● 2205	16.4	500	
6 Sa	0310	6.8	207	21 Su	0252	6.2	189	6 Tu	0401	6.0	183	21 W	0411	4.4	134
0831	12.7	387	0821	13.3	405	0934	13.8	421	0953	15.2	463	0430	4.6	140	
1457	5.2	158	1446	4.2	128	1551	4.9	149	1614	3.4	104	1019	15.6	475	
2115	15.2	463	2110	16.5	503	2203	16.1	491	○ 2221	17.3	527	1637	4.3	131	
7 Su	0349	6.3	192	22 M	0344	5.3	162	7 W	0432	5.5	168	22 Th	0450	3.8	116
0913	13.1	399	0915	14.0	427	1009	14.3	436	1035	15.7	479	0500	4.2	128	
1535	4.9	149	1539	3.5	107	1625	4.6	140	1656	3.3	101	1051	15.9	485	
2151	15.6	475	2157	17.1	521	● 2234	16.4	500	2258	17.2	524	1711	4.3	131	
8 M	0424	5.9	180	23 Tu	0429	4.6	140	8 Th	0501	5.1	155	23 Su	0527	3.6	110
0951	13.4	408	1004	14.6	445	1041	14.7	448	1114	15.9	485	0530	4.1	125	
1611	4.7	143	1626	3.1	94	1658	4.4	134	1736	3.7	113	1123	16.1	491	
● 2225	16.0	488	○ 2240	17.5	533	2303	16.5	503	2332	16.8	512	1745	4.5	137	
9 Tu	0457	5.7	174	24 W	0512	4.1	125	9 F	0530	4.8	146	24 M	0602	3.7	113
1026	13.7	418	1049	15.0	457	1113	15.0	457	1152	15.8	482	0601	4.1	125	
1644	4.6	140	1711	3.1	94	1730	4.5	137	1814	4.3	131	1157	16.0	488	
2256	16.1	491	2321	17.4	530	2331	16.4	500				1821	5.0	152	
10 W	0527	5.5	168	25 Th	0553	3.9	119	10 Sa	0559	4.7	143	25 Tu	0005	15.4	469
1100	13.8	421	1133	15.1	460	1144	15.1	460	0636	4.1	125	0634	4.4	134	
1716	4.6	140	1754	3.4	104	1803	4.7	143	1229	15.4	469	1234	15.7	479	
2327	16.1	491	2359	17.0	518				1851	5.2	158	1900	5.7	174	
11 Th	0557	5.4	165	26 F	0632	4.0	122	11 Su	0000	16.1	491	26 W	0032	13.9	424
1132	13.9	424	1215	15.0	457	0629	4.7	143	0629	4.7	143	0659	5.4	165	
1748	4.7	143	1835	4.1	125	1217	15.0	457	1307	14.8	451	1310	14.6	445	
2356	16.0	488				1837	5.1	155	1927	6.3	192	1934	7.3	223	
12 F	0627	5.3	162	27 Sa	0036	16.3	497	27 M	0037	15.2	463	11 W	0039	14.6	445
1204	13.9	424	0710	4.4	134	0738	5.3	162	0708	4.8	146	0711	4.9	149	
1820	5.0	152	1258	14.6	445	1337	14.4	439	M	1307	14.8	451	0729	6.3	192
			1916	5.0	152	2000	6.6	201	1837	5.1	155	1317	15.1	460	
13 Sa	0025	15.7	479	28 Su	0112	15.4	469	28 W	0143	13.2	402	11 W	0039	14.6	445
0658	5.4	165	0747	4.9	149	0816	6.4	195	0816	6.4	195	0711	4.9	149	
1238	13.9	424	1342	14.1	430	1438	13.3	405	1438	13.3	405	1351	13.7	418	
1855	5.4	165	1958	6.2	189	● 2054	8.4	256	● 2216	8.4	256	2016	8.2	250	
14 Su	0057	15.3	466	29 M	0150	14.3	436	29 W	0226	12.2	372	12 Th	0119	13.7	418
0732	5.5	168	0827	5.6	171	0822	5.8	177	0740	5.5	168	0755	5.6	171	
1317	13.7	418	1433	13.5	411	1434	13.8	421	1348	14.1	430	1412	14.3	436	
1934	6.0	183	2045	7.3	223	● 2058	7.6	232	2006	7.4	226	2046	7.7	235	
15 M	0133	14.6	445	30 Tu	0232	13.3	405	30 W	0340	11.3	344	12 F	0119	13.7	418
0811	5.7	174	0911	6.3	192	0920	6.3	192	0901	7.2	219	0807	7.1	216	
1405	13.4	408	1536	12.9	393	1556	13.4	408	1551	12.7	387	1448	13.0	396	
2021	6.7	204	● 2144	8.3	253	2224	8.3	253	2210	9.1	277	● 2117	8.9	271	
31 W	0327	12.3	375									13 F	0211	12.6	384
1007	6.9	210	1007	6.9	210	0534	11.2	341	0855	6.5	198	0907	7.9	241	
1656	12.7	387	1656	12.7	387	1155	7.9	241	1533	13.6	415	1622	12.6	384	
2312	8.9	271	2312	8.9	271	1850	13.2	402	● 2205	8.4	256	2303	9.1	277	
31 W	0013	9.2	280									14 S	0340	11.7	357
0534	11.2	341										0103	10.9	332	
1155	7.9	241										0107	8.3	253	
1850	13.2	402										1759	12.8	390	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ch'ang Chiang Approach (Side Saddle), China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0141	7.6	232	16 W 0159	5.5	168	1 F 0209	5.4	165	1 Sa 0254	3.9	119
0726	12.5	381	W 0759	13.9	424	F 0815	14.4	439	Sa 0903	15.3	466
1335	7.0	213	1412	5.4	165	1432	5.6	171	1527	5.0	152
1949	14.3	436	2014	15.1	460	2025	14.6	445	2104	14.1	430
2 W 0219	6.6	201	17 Th 0242	4.6	140	2 Sa 0248	4.4	134	17 Su 0331	3.5	107
0809	13.6	415	0843	15.0	457	0854	15.4	469	0940	15.7	479
1421	6.1	186	1500	4.8	146	1515	4.9	149	1606	4.8	146
2026	15.0	457	2054	15.5	472	2102	14.9	454	O 2139	14.1	430
3 Th 0252	5.6	171	18 F 0321	3.8	116	3 Su 0325	3.7	113	18 M 0406	3.4	104
0846	14.6	445	0922	15.8	482	0932	16.2	494	Tu 1014	15.9	485
1501	5.3	162	1543	4.4	134	1557	4.4	134	1643	4.8	146
2101	15.6	475	2130	15.5	472	● 2139	15.1	460	2213	14.0	427
4 F 0324	4.8	146	19 W 0357	3.4	104	4 M 0403	3.1	94	19 Tu 0438	3.5	107
0921	15.5	472	0958	16.2	494	1010	16.7	509	1047	15.9	485
1539	4.7	143	1622	4.3	131	1638	4.1	125	1717	5.0	152
2134	15.9	485	O 2203	15.4	469	2216	15.1	460	2245	13.7	418
5 Sa 0357	4.1	125	20 Su 0430	3.3	101	5 Tu 0441	2.9	88	20 W 0509	3.8	116
0955	16.1	491	1032	16.4	500	1049	17.0	518	1119	15.7	479
1616	4.3	131	1658	4.5	137	1720	4.2	128	1750	5.3	162
● 2206	16.0	488	2235	15.1	460	2254	14.8	451	2316	13.4	408
6 Su 0429	3.6	110	21 M 0502	3.5	107	6 W 0520	3.0	91	21 Th 0538	4.2	128
1029	16.6	506	1105	16.3	497	1130	16.8	512	1150	15.4	469
1653	4.2	128	1733	4.9	149	1803	4.6	140	1822	5.7	174
2238	15.9	485	2306	14.6	445	2333	14.3	436	2347	13.0	396
7 M 0503	3.4	104	22 Tu 0531	3.9	119	7 Th 0600	3.3	101	22 F 0607	4.7	143
1104	16.8	512	1137	16.0	488	1212	16.4	500	1221	14.9	454
1730	4.4	134	1806	5.5	168	1848	5.2	158	1853	6.1	186
2311	15.5	472	2336	14.0	427						
8 Tu 0537	3.5	107	23 W 0600	4.5	137	8 F 0014	13.7	418	23 Sa 0019	12.6	384
1140	16.6	506	1209	15.5	472	0644	4.0	122	0637	5.3	162
1810	4.8	146	1838	6.2	189	1259	15.7	479	1255	14.4	439
2345	14.9	454				1939	5.9	180	1928	6.6	201
9 W 0613	3.9	119	24 Th 0005	13.4	408	9 Sa 0102	12.9	393	24 Su 0054	12.1	369
1220	16.2	494	0627	5.2	158	0733	4.9	149	0711	5.9	180
1852	5.6	171	1241	14.8	451	1353	14.8	451	1332	13.8	421
			1911	6.9	210	2037	6.5	198	2008	6.9	210
10 Th 0022	14.2	433	25 F 0036	12.7	387	10 Su 0203	12.1	369	10 M 0138	11.6	354
0653	4.6	140	0657	5.9	180	0833	5.9	180	0755	6.5	198
1305	15.5	472	1318	14.1	430	1502	13.9	424	1419	13.2	402
1941	6.5	198	1949	7.6	232	● 2150	6.9	210	2059	7.2	219
11 F 0105	13.2	402	26 Sa 0111	12.0	366	11 M 0333	11.5	351	26 Tu 0243	11.2	341
0740	5.4	165	0733	6.7	204	0952	6.7	204	0853	7.1	216
1400	14.6	445	1404	13.4	408	1628	13.3	405	Tu 1524	12.6	384
2044	7.4	226	2039	8.1	247	2313	6.8	207	● 2204	7.2	219
12 Sa 0202	12.2	372	27 Su 0202	11.3	344	12 Tu 0521	11.8	360	11 W 0439	11.8	360
0842	6.4	195	0823	7.4	226	1126	7.0	213	1046	6.9	210
1520	13.7	418	1512	12.8	390	1750	13.3	405	1656	12.5	381
● 2209	7.9	241	● 2152	8.4	256				2338	5.8	177
13 Su 0339	11.4	347	28 W 0338	10.9	332	13 F 0028	6.1	186	12 W 0604	12.2	372
1010	7.0	213	0941	8.0	244	0641	12.6	384	1215	7.0	213
1704	13.5	411	1645	12.6	384	1249	6.6	201	1807	12.3	375
2349	7.6	232	2324	8.2	250	1853	13.5	411	2318	6.8	207
14 M 0543	11.7	357	29 Th 0533	11.2	341	14 Th 0126	5.3	162	27 F 0416	11.2	357
1153	7.0	213	1122	8.0	244	0738	13.6	415	1039	7.2	219
1829	14.0	427	1804	12.9	393	1353	6.0	183	1645	11.8	360
15 Tu 0106	6.7	204	30 W 0038	7.4	226	1943	13.8	421	2321	5.9	180
0704	12.7	387	0644	12.2	372	29 F 0027	6.1	186	27 Th 0434	11.7	357
1313	6.3	192	1246	7.3	223	0824	14.6	445	1091	7.1	216
1928	14.6	445	1900	13.5	411	1443	5.4	165	1806	11.8	360
16 Th 0128	6.4	195	31 Th 0733	13.3	405	2025	14.0	427	1337	6.4	195
0733	13.3	405	1344	6.5	198				1915	12.1	369
1345	6.5	198	1945	14.1	430						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kanmen, China, 2013

Times and Heights of High and Low Waters

January				February				March					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 Tu	0457	2.0	61	16 W	0539	1.6	50	1 F	0545	2.5	75		
1121	18.7	570	W 1203	18.5	565	F 1202	18.4	560	Sa 0619	4.3	132		
1716	4.4	133	1803	3.3	101	1809	3.1	96	1235	16.4	501		
2313	17.5	532							1850	3.9	118		
2 W	0530	2.4	73	17 Th	0011	17.2	523	2 Sa	0021	17.4	530		
1155	18.4	562	0617	2.9	89	0623	3.4	104	17 Su	0113	15.6	474	
1753	4.4	135	1242	17.6	536	1240	17.7	541	1317	15.3	466		
2354	17.1	521	1846	3.9	118	1851	3.5	107	1937	5.0	151		
3 Th	0606	3.0	92	18 F	0101	16.1	491	3 Su	0114	16.6	506		
1232	18.0	549	0658	4.4	134	0708	4.7	143	18 M	0211	14.5	441	
1833	4.5	138	1325	16.5	503	1327	16.9	514	0604	7.3	222		
			1934	4.6	141	O 1942	4.1	125	1412	14.2	432		
4 F	0041	16.6	505	19 M	0157	15.0	458	18 O	0006	18.0	550		
0647	3.8	117	0746	5.9	181	0804	6.1	187	0604	3.6	111		
1315	17.5	533	1415	15.4	470	1431	15.9	486	1211	17.7	538		
1919	4.8	145	O 2036	5.4	164	2050	4.7	144	1829	2.7	82		
5 Sa	0140	16.0	487	20 Su	0305	14.2	432	5 Tu	0347	15.3	466		
0736	4.9	149	0855	7.3	223	0932	7.3	223	20 W	0500	13.9	423	
1408	16.9	516	1518	14.5	442	1550	15.4	469	1105	8.5	258		
O 2016	5.0	151	2158	5.7	175	2231	4.7	143	1700	13.5	410		
6 Su	0252	15.6	474	21 M	0429	13.9	423	6 W	0519	15.7	479		
0838	6.0	182	1027	8.0	244	1118	7.3	223	21 Th	0614	14.8	450	
1512	16.4	501	1633	14.1	429	1714	15.6	474	1221	7.7	234		
2133	4.9	150	2318	5.5	167	2358	3.8	115	1813	14.3	435		
7 M	0412	15.6	475	22 Tu	0546	14.4	439	7 Th	0634	16.9	514		
1007	6.7	203	1150	7.8	239	1238	6.4	194	22 F	0047	4.7	144	
1621	16.3	497	1746	14.3	437	1829	16.4	499	0708	15.9	485		
2257	4.2	129							1311	6.6	201		
8 Tu	0534	16.3	498	23 W	0025	4.7	144	1905	15.4	469			
1132	6.5	199	0649	15.4	468	8 F	0110	2.5	75	2349	4.3	130	
1731	16.6	506	1251	7.2	218	0736	18.1	552					
			1844	15.0	458	1338	5.1	156					
9 W	0009	3.1	95	23 Sa	0133	3.6	111	1946	16.5	504			
0642	17.5	533	0737	16.4	501	0750	17.0	519					
1243	5.8	178	1336	6.4	194	1351	5.5	167					
1836	17.3	526	1930	15.8	483	1946	16.5	504					
10 Th	0114	1.9	57	24 Th	0117	3.8	116	24 F	0205	1.2	38		
0742	18.7	569	0817	17.4	530	0828	19.1	581	0211	2.7	82		
1342	5.0	152	1414	5.5	169	1426	3.9	120	0825	17.9	547		
1933	18.0	548	2008	16.7	508	2020	18.3	557	1426	4.4	135		
11 F	0210	0.8	23	O 2105	18.8	572			2022	17.5	534		
0835	19.6	597	26 Sa	0235	2.2	68							
1433	4.2	127	0852	18.2	554	11 M	0330	0.2	7				
2024	18.6	566	1448	4.8	147	0949	19.7	599	26 Th	0316	1.5	47	
			2042	17.4	529	1547	2.4	74	0928	19.0	579		
12 Sa	0258	0.0	0	O 2147	18.9	576	2147	18.9	576	1532	2.8	85	
0923	20.1	612	27 Su	0308	1.7	53			2131	18.8	573		
1519	3.5	108	0925	18.7	570								
O 2112	18.9	576	1520	4.2	128								
			O 2115	17.9	545								
13 Su	0342	-0.3	-8	28 W	0339	1.4	44	12 Tu	0406	0.5	14		
1007	20.2	615	0956	19.0	579	1023	19.4	591	0958	19.2	585		
1601	3.1	95	1553	3.7	113	1624	2.1	65	1604	2.2	68		
2157	18.9	577	2149	18.2	555	2226	18.7	570	2207	19.1	581		
14 M	0423	0.0	-1	29 Tu	0409	1.4	42	27 W	0348	1.4	42		
1047	19.9	606	1027	19.1	582	1127	18.3	557	0924	19.0	578		
1642	3.0	90	1625	3.3	102	1734	2.4	73	1527	1.9	55		
2241	18.6	568	2223	18.3	559	2343	17.5	534	O 2133	18.7	571		
15 Tu	0502	0.6	19	30 W	0440	1.5	46	28 Th	0312	1.2	38		
1126	19.3	589	1057	19.0	580	1056	18.9	577	0853	18.9	576		
1722	3.0	92	1658	3.1	95	1659	2.1	64	1506	1.9	55		
2325	18.0	549	2259	18.2	556	2304	18.2	555	O 2111	19.3	588		
			31 Th	0511	1.9	57							
			1128	18.8	573								
			1732	3.0	92								
			2337	17.9	547								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kanmen, China, 2013

Times and Heights of High and Low Waters

April				May				June															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm												
1 M	0551	4.2	127	16 Tu	0014	16.9	514	1 W	0048	18.1	551	1 Sa	0235	17.1	521	16 Su	0131	17.0	517				
	1151	17.4	530		0601	5.6	172		0636	5.3	162		0837	5.3	161		0737	5.6	172				
	1815	2.1	65		1158	15.6	474		1236	16.3	496		1219	15.4	468		1347	15.5	471				
					1824	3.8	116		1901	2.9	88		1845	4.2	128		1955	5.2	157				
2 Tu	0051	17.5	533	17 W	0059	16.1	490	2 Th	0154	17.1	522	17 F	0121	16.4	499	2 Su	0339	16.5	502	17 M	0224	16.6	505
	0640	5.4	166		0645	6.7	203		0740	6.1	187		0716	6.6	200		0954	5.1	155		0837	5.6	172
	1241	16.2	495		1242	14.7	447		1351	15.3	467		1313	14.7	449		1615	15.2	464		1455	15.3	467
	1907	3.3	101		1911	4.9	150		2008	4.1	125		1936	5.1	154		2219	5.4	165		2100	5.8	176
3 W	0200	16.4	501	18 Th	0155	15.3	466	3 F	0305	16.5	502	18 Sa	0216	15.9	484	3 M	0444	16.2	493	18 Tu	0324	16.4	500
	0742	6.7	205		0743	7.5	230		0908	6.4	196		0819	6.9	209		1103	4.5	138		0950	5.2	160
	1353	15.1	459		1344	13.8	422		1516	14.8	451		1424	14.3	437		1729	15.6	476		1609	15.6	476
	2017	4.6	139		2016	5.9	179		2138	4.8	147		2043	5.7	175		2329	5.6	170		2218	6.0	183
4 Th	0324	15.8	481	19 F	0305	14.8	451	4 Sa	0419	16.3	496	19 Su	0318	15.7	478	4 Tu	0545	16.2	493	19 W	0426	16.5	504
	0922	7.4	226		0918	7.9	242		1032	5.8	178		0939	6.6	201		1204	3.8	116		1057	4.4	133
	1526	14.5	441		1506	13.5	411		1647	15.1	459		1539	14.5	441		1829	16.2	495		1725	16.5	502
	2203	5.1	154		2147	6.3	191		2300	4.9	148		2202	5.9	179						2327	5.8	176
5 F	0449	15.9	485	20 Sa	0420	14.9	455	5 Su	0527	16.5	504	20 M	0422	15.9	485	5 W	0030	5.4	166	20 Th	0528	16.9	516
	1059	6.8	207		1038	7.4	225		1142	4.8	147		1046	5.7	175		0638	16.3	497		1158	3.2	99
	1705	14.9	453		1633	13.9	424		1758	15.9	484		1656	15.3	465		1256	3.1	94		1829	17.7	538
	2331	4.5	138		2302	5.8	178						2309	5.5	168		1921	16.9	515				
6 Sa	0602	16.6	507	21 Su	0524	15.6	476	6 M	0008	4.5	137	21 Tu	0520	16.5	502	6 Th	0119	5.2	160	21 F	0030	5.2	160
	1212	5.5	167		1142	6.3	191		0625	16.9	515		1143	4.5	138		0724	16.5	502		0626	17.5	534
	1818	15.9	486		1746	15.1	459		1239	3.7	112		1801	16.5	502		1341	2.5	76		1255	2.1	63
									1855	16.7	510					2004	17.5	533		1926	18.8	574	
7 Su	0040	3.6	111	22 M	0003	5.1	154	7 Tu	0103	4.1	126	22 W	0008	4.9	149	7 F	0201	5.1	154	22 Sa	0126	4.6	141
	0659	17.5	532		0616	16.5	504		0713	17.2	524		0612	17.2	524		0803	16.6	507		0720	18.1	553
	1307	4.1	124		1234	4.9	149		1325	2.7	83		1236	3.2	97		1420	2.1	64		1350	1.0	31
	1914	17.0	519		1839	16.4	501		1942	17.4	530		1855	17.7	541		2043	17.9	546		2019	19.8	603
8 M	0131	2.9	89	23 Tu	0054	4.1	125	8 W	0147	3.9	119	23 Th	0101	4.2	128	8 Sa	0237	4.9	149	23 Su	0218	4.1	124
	0745	18.0	548		0659	17.5	532		0753	17.3	527		0659	17.9	545		0837	16.8	511		0810	18.6	568
	1352	2.9	88		1318	3.5	106		1406	2.1	63		1324	1.9	59		1456	1.9	57		1441	0.2	7
	2001	17.8	543		1925	17.8	542		2023	17.8	544		1945	18.9	576		2118	18.2	556		2109	20.4	622
9 Tu	0213	2.6	78	24 W	0138	3.3	101	9 Th	0224	3.9	118	24 F	0150	3.6	111	9 Su	0310	4.8	145	24 M	0307	3.6	111
	0823	18.2	554		0739	18.2	555		0827	17.3	526		0744	18.4	562		0908	16.9	515		0859	18.9	577
	1430	2.1	63		1359	2.2	67		1442	1.7	51		1411	0.9	27		1530	1.8	54		1529	-0.2	-6
	2041	18.2	556		2008	18.9	575		2059	18.1	552		2033	19.8	602		2151	18.4	562		2158	20.6	628
10 W	0249	2.6	78	25 Th	0218	2.7	83	10 F	0257	4.0	121	25 Sa	0235	3.3	101	10 M	0343	4.7	143	25 Tu	0353	3.4	103
	0856	18.1	552		0817	18.7	570		0858	17.2	524		0829	18.7	571		0939	17.0	518		0947	19.0	579
	1505	1.6	48		1438	1.2	36		1515	1.5	46		1456	0.2	5		1603	1.8	55		1616	-0.2	-6
	2116	18.4	562		2051	19.6	598		2133	18.2	556		2120	20.2	616		2225	18.5	564		2245	20.5	624
11 Th	0321	2.8	85	26 F	0257	2.5	76	11 Sa	0328	4.1	124	26 Su	0320	3.2	98	11 M	0416	4.7	143	26 W	0439	3.3	100
	0925	17.9	545		0855	19.0	578		0928	17.1	520		0913	18.8	574		1010	17.0	518		1035	18.8	573
	1537	1.4	42		1516	0.5	15		1547	1.5	46		1541	-0.2	-5		1635	2.0	61		1700	0.3	8
	2149	18.4	561		2133	20.0	610		2206	18.3	557		2208	20.3	619		2259	18.4	561		2331	20.0	610
12 F	0350	3.1	95	27 Sa	0336	2.6	78	12 M	0359	4.3	130	27 M	0404	3.3	102	12 W	0451	4.8	145	27 Th	0525	3.3	102
	0953	17.6	536		0933	18.9	577		0957	17.0	517		0957	18.7	569		1044	16.9	515		1126	18.3	559
	1609	1.4	43		1556	0.2	6		1619	1.7	51		1626	-0.1	-3		1709	2.4	73		1745	1.1	34
	2222	18.3	557		2217	20.0	610		2241	18.2	555		2256	20.1	612		2333	18.2	554				
13 Sa	0420	3.5	108	28 Tu	0416	3.0	90	13 M	0432	4.5	138	28 W	0450	3.6	111	13 Th	0527	5.0	151	28 F	0016	19.3	589
	1021	17.3	527		1012	18.6	568		1027	16.8	511		1044	18.3	557		1120	16.6	507		0611	3.6	109
	1640	1.6	50		1636	0.3	8		1652	2.0	62		1712	0.4	12		1743	2.9	89		1220	17.6	537
	2257	18.0	549		2303	19.7	599		2316	17.9	547		2346	19.5	595					1831	2.3	70	
14 Su	0450	4.1	125	29 M	0458	3.6	109	14 Tu	0507	4.9	150	29 W	0537	4.1	124	14 F	0009	17.8	543	29 Sa	0104	18.4	561
	1051	16.9	514		1054	18.1	552		1100	16.4	501		1134	17.7	538		0606	5.2	158		0701	4.0	121
	1712	2.1	65		1720	0.8	24		1726	2.6	78		1800	1.3	39		1200	16.3	496		1318	16.8	511
	2334	17.6	535		2352	19.0	578		2354	17.5	534					1821	3.6	109		1921	3.7	113	
15 M	0524	4.8	146	30 Tu	0544	4.4	134	15 W	0544	5.4	165	30 Th	0039	18.8	572	15 Sa	0047	17.4	530	30 Su	0154	17.4	531
	1122	16.3	496		1140	17.3	527		1136	15.9	486		0629	4.6	139		0648	5.4	166		0758	4.5	136
	1746	2.9	87		1807	1.7	52		1803	3.3	101		1233	16.8	513		1248	15.8	483	</			

Kanmen, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0251	16.5	502	16 Tu 0136	17.3	528	1 Th 0411	14.7	448	1 Su 0307	16.2	494
0907	4.8	146	0751	4.8	146	1047	5.4	166	0945	5.1	154
1533	15.3	466	1417	16.2	493	1726	15.2	464	1636	16.5	502
2132	6.2	190	● 2013	5.9	180	2323	8.0	243	2235	7.7	235
2 Tu 0354	15.7	479	17 W 0233	16.8	512	2 0529	14.8	450	17 Sa 0431	16.1	492
1019	4.8	146	0856	4.9	149	1156	5.0	153	1112	4.4	134
1652	15.2	464	1532	16.0	488	1832	16.0	489	1756	17.5	533
2247	6.8	207	2129	6.7	204				2356	6.9	211
3 W 0501	15.4	469	18 Th 0341	16.5	502	3 Sa 0029	7.4	227	18 Su 0552	16.9	514
1127	4.5	136	1017	4.6	139	0632	15.4	468	1225	3.3	100
1800	15.7	479	1655	16.5	502	1253	4.3	131	1900	18.8	572
2357	6.8	207	2255	6.8	207	1923	17.0	518			
4 Th 0604	15.5	471	19 F 0453	16.6	505	4 Su 0118	6.7	204	19 M 0101	5.7	173
1227	3.9	119	1129	3.7	113	0720	16.1	492	0657	18.0	548
1858	16.4	501	1810	17.5	534	1339	3.5	108	1327	2.1	63
						2004	17.9	545	1954	19.9	606
5 F 0054	6.5	197	20 Sa 0008	6.3	191	5 M 0158	5.9	181	20 Tu 0155	4.4	134
0658	15.8	482	0603	17.1	522	0759	16.9	515	0751	19.0	580
1317	3.3	101	1235	2.6	79	1417	2.9	89	1418	1.1	35
1945	17.2	524	1912	18.8	572	2038	18.6	566	2041	20.6	627
6 Sa 0139	6.0	183	21 Su 0111	5.4	165	6 Tu 0233	5.2	159	21 W 0241	3.3	101
0741	16.3	496	0704	17.9	547	0832	17.6	535	0840	19.7	601
1400	2.8	85	1337	1.5	45	1451	2.5	76	1502	0.7	22
2025	17.8	544	2007	19.8	605	2110	19.1	581	● 2122	20.8	634
7 Su 0218	5.5	169	22 M 0206	4.5	136	7 W 0305	4.6	140	22 Th 0323	2.6	78
0819	16.7	509	0759	18.7	571	0904	18.1	551	0924	20.0	609
1438	2.4	72	1430	0.6	18	1523	2.3	69	1542	0.9	26
2101	18.4	560	2057	20.6	627	● 2140	19.3	589	2159	20.6	628
8 M 0253	5.2	157	23 Tu 0255	3.7	112	8 Th 0338	4.1	125	23 F 0402	2.1	65
0852	17.1	521	0849	19.3	588	0936	18.5	563	1006	19.9	606
1512	2.1	64	1518	0.1	3	1554	2.2	68	1619	1.4	43
● 2134	18.7	571	○ 2143	20.8	635	2210	19.4	592	2234	20.1	613
9 Tu 0326	4.8	146	24 W 0340	3.1	93	9 F 0410	3.7	114	24 Sa 0440	2.1	63
0923	17.4	530	0937	19.6	596	1009	18.6	568	1047	19.5	593
1545	2.0	61	1601	0.1	3	1624	2.4	72	1655	2.3	71
2206	18.9	576	2225	20.7	632	2238	19.4	591	2308	19.4	592
10 W 0359	4.5	138	25 Th 0423	2.7	82	10 Sa 0442	3.5	107	25 Su 0518	2.4	72
0955	17.6	536	1023	19.5	593	1043	18.7	569	1129	18.7	571
1617	2.1	63	1643	0.6	18	1655	2.7	82	1730	3.4	105
2237	18.9	577	2306	20.3	618	2308	19.2	586	2343	18.5	565
11 Th 0433	4.4	133	26 F 0505	2.6	80	11 Su 0515	3.4	104	26 M 0556	3.0	90
1028	17.7	538	1109	19.0	580	1120	18.5	564	1213	17.8	543
1648	2.3	70	1723	1.5	45	1728	3.2	99	1807	4.8	146
2308	18.8	574	2345	19.6	596	2339	18.9	577			
12 F 0507	4.3	131	27 Sa 0547	2.8	86	12 M 0551	3.5	107	27 Tu 0019	17.5	533
1102	17.6	536	1157	18.3	558	1200	18.1	552	0637	3.9	118
1721	2.7	82	1803	2.7	82	1804	4.0	123	1301	16.8	511
2339	18.6	567							1849	6.3	191
13 Sa 0542	4.3	131	28 Su 0024	18.6	567	13 Tu 0015	18.4	562	12 ● 0029	17.7	541
1140	17.4	530	0630	3.3	100	0630	3.8	115	0651	3.9	120
1755	3.2	99	1247	17.4	529	1248	17.5	534	1329	17.3	526
			1846	4.2	127	1847	5.1	155	1917	6.9	210
14 Su 0013	18.3	557	29 M 0106	17.5	534	14 W 0058	17.7	541	27 F 0029	15.2	463
0620	4.4	134	0718	4.0	123	0817	4.2	129	0737	6.0	184
1223	17.0	519	1342	16.3	497	1348	16.8	513	1422	15.3	467
1833	4.0	121	1935	5.7	175	● 1939	6.4	194	● 2014	8.8	269
15 M 0051	17.8	544	30 Tu 0155	16.3	498	15 Th 0153	16.9	515	28 F 0125	16.7	508
0702	4.6	139	0815	4.9	148	0817	4.8	147	0752	4.9	150
1314	16.6	505	1446	15.4	469	1505	16.3	497	1545	16.5	504
1918	4.9	149	● 2040	7.2	218	2053	7.5	228	● 2035	8.0	245
16 W 0256	15.3	466	31 W 0930	5.4	166				2159	9.0	275
1607	14.9	455	1607	14.9	455						
2203	8.0	243	2203	8.0	243						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kanmen, China, 2013

Times and Heights of High and Low Waters

October				November				December			
	Time	Height			Time	Height			Time	Height	
	h m	ft cm		h m	ft cm			h m	ft cm		
1 Tu	0015	7.1 217	16 W	0033	4.7 142	1 F	0059	4.2 128	16 Sa	0144	2.2 67
	0616	15.8 481		0640	17.9 547		0708	18.0 550		0759	18.6 568
	1234	5.3 161		1257	3.6 110		1317	4.4 133		1403	4.3 130
	1849	17.4 530		1910	19.0 580		1918	18.6 568		2004	18.2 555
2 W	0058	5.8 178	17 Th	0122	3.3 100	2 Sa	0138	3.0 90	17 Su	0223	1.7 52
	0701	17.1 521		0730	18.9 576		0749	19.2 585		0838	18.9 577
	1316	4.4 133		1343	3.1 95		1356	3.7 114		1438	4.3 131
	1926	18.3 559		1952	19.4 591		1955	19.3 587		2038	18.1 553
3 Th	0135	4.6 140	18 F	0203	2.3 70	3 Su	0215	1.9 59	18 M	0258	1.5 46
	0739	18.3 557		0813	19.5 594		0830	20.0 611		0914	19.1 581
	1352	3.6 110		1423	3.0 92		1434	3.4 103		1511	4.4 135
	2000	19.1 582		2029	19.4 591		● 2032	19.6 598		2110	18.0 549
4 F	0210	3.5 107	19 Sa	0241	1.7 52	4 M	0252	1.2 37	19 Tu	0331	1.5 47
	0815	19.2 586		0852	19.7 600		0911	20.5 626		0949	19.0 580
	1426	3.1 94		1457	3.2 98		1511	3.3 100		1542	4.6 141
	2031	19.6 597		○ 2101	19.2 585		2109	19.7 601		2141	17.8 543
5 Sa	0243	2.7 81	20 Su	0316	1.5 46	5 Tu	0329	0.8 25	20 W	0403	1.8 54
	0851	19.9 607		0929	19.6 598		0952	20.7 630		1024	18.9 575
	1459	2.9 87		1529	3.6 110		1550	3.5 107		1614	4.9 148
	● 2103	19.8 605		2132	18.8 574		2147	19.6 596		2212	17.6 535
6 Su	0316	2.0 62	21 M	0349	1.6 48	6 W	0408	0.8 24	21 Th	0435	2.1 65
	0928	20.3 618		1004	19.4 591		1036	20.4 623		1100	18.6 566
	1532	2.9 88		1600	4.1 125		1630	4.0 121		1647	5.2 158
	2135	19.9 606		2203	18.4 561		2228	19.1 583		2246	17.2 524
7 M	0350	1.7 51	22 Tu	0422	1.9 58	7 Th	0450	1.1 35	22 F	0508	2.7 83
	1006	20.3 620		1040	19.0 579		1122	19.9 606		1137	18.1 553
	1607	3.2 98		1632	4.7 143		1714	4.7 142		1724	5.6 172
	2209	19.7 600		2235	17.9 545		2312	18.4 561		2322	16.6 507
8 Tu	0425	1.6 49	23 W	0454	2.5 75	8 F	0536	1.9 59	23 Sa	0543	3.5 106
	1046	20.1 612		1118	18.4 562		1213	19.1 581		1217	17.6 535
	1643	3.8 116		1705	5.4 164		1803	5.5 167		1804	6.2 189
	2245	19.3 587		2308	17.2 525					1849	5.0 152
9 W	0502	1.9 58	24 Th	0529	3.3 100	9 Sa	0003	17.5 532	24 Su	0004	15.9 485
	1129	19.5 595		1158	17.7 540		0627	3.0 92		0622	4.4 134
	1723	4.7 143		1743	6.2 190		1313	18.1 553		1301	16.9 515
	2325	18.5 565		2345	16.4 500		1900	6.3 192		1850	6.8 207
10 Th	0545	2.6 79	25 F	0607	4.3 131	10 Su	0109	16.4 500	25 M	0055	15.2 462
	1219	18.7 569		1244	16.9 515		0727	4.3 130		0708	5.4 165
	1809	5.8 176		1826	7.2 219		1422	17.4 530		1422	16.3 496
							● 2016	6.8 208		1948	7.3 221
11 F	0011	17.6 535	26 Sa	0029	15.5 471	11 M	0231	15.7 478	26 Tu	0202	14.6 444
	0635	3.6 110		0653	5.4 166		0847	5.3 161		0808	6.3 192
	1321	17.7 538		1338	16.0 489		1535	17.0 518		1452	15.9 485
	1906	7.0 213		1922	8.1 246		2151	6.5 198		2109	7.3 221
12 Sa	0113	16.4 500	27 Su	0130	14.6 444	12 Tu	0359	15.6 477	27 W	0315	14.5 441
	0738	4.8 146		0755	6.5 198		1020	5.5 168		0931	6.8 206
	1439	16.9 515		1444	15.5 472		1645	17.1 522		1555	15.9 486
	● 2028	7.8 238		○ 2057	8.5 259		2307	5.4 166		2224	6.6 200
13 Su	0241	15.6 476	28 M	0249	14.1 429	13 W	0520	16.3 497	28 Th	0433	15.0 457
	0909	5.6 170		0927	7.0 214		1133	5.2 158		1045	6.6 200
	1603	16.8 513		1557	15.5 472		1747	17.5 534		1656	16.4 500
	2215	7.4 227		2221	8.0 244					2324	5.4 165
14 M	0415	15.7 479	29 Tu	0415	14.3 437	14 Th	0010	4.2 127	29 F	0541	16.1 491
	1047	5.3 161		1044	6.8 206		0622	17.2 525		1147	6.0 182
	1718	17.5 532		1702	16.0 488		1234	4.8 145		1749	17.1 522
	2332	6.2 188		2325	6.9 211		1840	17.9 546			
15 Tu	0538	16.7 510	30 W	0530	15.4 469	15 F	0101	3.0 92	30 Sa	0017	4.1 124
	1200	4.4 135		1144	6.0 184		0715	18.0 550		0636	17.5 532
	1820	18.3 558		1755	16.9 515		1322	4.4 134		1240	5.2 159
							1925	18.1 553		1837	17.9 546
			31 Th	0016	5.6 170						
				0623	16.7 510						
				1234	5.2 158						
				1838	17.8 543						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Xiamen, China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0159	18.1	551	16 W	0251	19.1	582	1 F	0303	18.4	562
	0826	2.3	71		0911	2.1	65		0915	3.0	90
	1447	18.9	576		1530	19.5	594		1529	18.9	576
	2051	5.2	157		2143	4.0	123		2144	3.5	108
2 W	0237	17.9	547	17 Th	0338	18.3	557	2 Sa	0348	18.1	552
	0857	2.6	80		0953	3.2	98		0955	3.6	111
	1518	18.7	571		1605	18.8	574		1605	18.6	567
	2130	5.0	153		2226	4.3	132		2230	3.5	108
3 Th	0317	17.6	537	18 F	0426	17.2	524	3 Su	0438	17.5	533
	0937	3.1	96		1038	4.5	137		1044	4.6	139
	1554	18.6	566		1646	17.9	547		1649	18.0	549
	2208	5.0	151		2311	4.7	142	○	2321	3.7	112
4 F	0403	17.3	526	19 Sa	0517	16.1	490	4 M	0539	16.7	509
	1019	3.9	120		1123	5.8	178		1141	5.7	175
	1636	18.2	556		1731	16.9	515		1744	17.2	525
	2258	4.8	145	○							
5 Sa	0457	16.8	513	20 Su	0005	5.1	156	5 Tu	0026	3.9	118
	1107	4.7	144		0619	15.1	459		0654	16.0	489
	1723	17.8	543		1217	7.0	213		1250	6.7	204
	2355	4.7	142		1826	15.9	485		1854	16.6	506
6 Su	0602	16.4	501	21 M	0109	5.4	166	6 W	0144	3.7	114
	1207	5.6	171		0737	14.5	442		0822	16.1	492
	1820	17.5	532		1329	7.8	237		1417	7.1	216
					1934	15.3	467		2016	16.6	506
7 M	0059	4.3	132	22 Tu	0223	5.3	163	7 Th	0305	3.1	94
	0719	16.3	498		0859	14.7	449		0945	17.1	522
	1318	6.3	192		1450	7.9	242		1543	6.6	200
	1927	17.3	527		2046	15.3	467		2135	17.4	529
8 Tu	0211	3.7	112	23 W	0332	4.7	144	8 F	0416	2.1	63
	0841	16.9	514		1008	15.6	474		1052	18.4	560
	1438	6.5	197		1601	7.5	230		1651	5.6	172
	2037	17.6	537		2149	15.8	482		2241	18.4	560
9 W	0323	2.7	81	24 Th	0428	3.9	119	9 Sa	0515	1.1	35
	0955	17.9	546		1101	16.5	504		1148	19.4	592
	1552	6.1	187		1656	6.8	208		1747	4.7	144
	2144	18.2	556		2241	16.5	504		2337	19.3	587
10 Th	0427	1.5	46	25 F	0512	3.1	93	10 Su	0605	0.7	20
	1100	19.1	582		1145	17.5	532		1235	20.0	611
	1658	5.5	169		1742	6.1	187		1835	4.0	122
	2244	19.0	579	●	2324	17.2	524				
11 F	0523	0.6	17	26 Sa	0552	2.3	71	11 M	0027	19.7	599
	1156	20.0	610		1221	18.1	553		0651	0.7	20
	1755	4.9	150		1817	5.6	172		1314	20.2	615
	2340	19.6	598						1914	3.6	111
12 Sa	0614	0.0	0	27 Su	0001	17.8	543	12 Tu	0110	19.8	604
	1247	20.6	627		0630	1.9	59		0733	1.1	34
	1846	4.5	136	●	1254	18.7	569		1351	20.1	612
	●				1851	5.1	155		1953	3.3	100
13 Su	0031	19.9	608	28 M	0039	18.3	557	13 W	0153	19.6	598
	0702	-0.1	-2		0700	1.8	54		0809	1.8	56
	1332	20.7	631		1326	18.9	576		1424	19.7	599
	1934	4.1	126		1926	4.8	147		2034	3.2	97
14 M	0118	19.9	606	29 Tu	0112	18.5	563	14 Th	0235	19.2	584
	0749	0.3	9		0735	1.8	54		0847	2.6	79
	1412	20.5	625		1355	19.1	582		1456	19.3	587
	2016	4.1	125		1955	4.4	134		2107	3.2	98
15 Tu	0204	19.6	598	30 W	0148	18.6	568	15 F	0313	18.4	561
	0833	1.1	33		0806	2.1	63		0923	3.6	111
	1452	20.1	614		1425	19.1	582		1529	18.5	565
	2058	4.0	121		2033	4.0	123		2146	3.4	104
16	0225	18.5	565	31 Th	0841	2.4	72				
					1455	19.1	583				
					2103	3.8	115				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Xiamen, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0331 19.2 585	16 Tu 0345 17.3 526	1 W 0418 18.8 573	16 Th 0404 17.1 520	1 Sa 0558 18.1 552	16 Su 0502 17.1 522	1 M 0935 4.6 139	16 Tu 0944 6.0 182	12 Tu 1023 5.4 166	16 Th 1004 6.2 189	16 Sa 1214 5.1 154	16 Su 1114 5.5 168
1525 18.3 557	Tu 1533 16.5 502	1611 17.4 531	1553 15.9 486	1553 15.9 486	1715 15.9 484	1525 2153 1.7 53	Tu 2156 3.5 106	2244 2.2 68	2215 3.7 113	1817 16.5 504	1715 15.9 484
2 Tu 0420 18.3 557	17 W 0424 16.4 500	2 Th 0516 18.0 548	17 F 0447 16.5 504	2 Sa 0031 4.2 127	17 M 0551 16.8 513	2 Tu 1022 5.5 169	W 1028 6.7 204	1125 5.9 181	1053 6.5 197	0657 17.5 534	1208 5.3 161
1613 17.5 532	1612 15.6 476	1715 16.6 506	1643 15.4 468	1319 4.9 150	1818 15.7 478	2249 2.5 77	2242 4.2 129	2346 3.2 98	2301 4.4 134	1932 16.2 495	2325 4.6 139
3 W 0519 17.3 526	18 Th 0512 15.6 474	3 F 0621 17.3 527	18 Sa 0537 16.0 489	3 M 0137 5.0 151	18 Tu 0020 5.2 157	1122 6.4 195	Th 1115 7.3 222	1234 6.1 185	1149 6.6 201	0759 17.2 523	0647 16.7 508
1714 16.4 501	1704 14.7 449	1833 16.1 490	1743 14.9 454	1426 4.5 138	1310 4.9 148	2354 3.5 106	○ 2337 5.1 154	2359 5.0 153	2045 16.3 498	1930 15.9 484	1930 15.9 484
4 Th 0633 16.4 501	19 F 0613 14.9 455	4 Sa 0056 4.1 124	19 Su 0636 15.8 481	4 Tu 0245 5.4 166	19 W 0127 5.6 170	1240 6.9 210	F 1222 7.6 233	0733 17.0 519	1252 6.4 196	0859 17.0 519	0747 16.8 511
1836 15.8 481	1814 14.1 431	1350 5.7 175	1855 14.8 452	1526 3.9 120	1414 4.1 124	2151 16.8 511	2042 16.6 506	1955 16.1 491	2151 16.8 511	2042 16.6 506	2042 16.6 506
5 F 0113 4.1 124	20 Sa 0044 5.6 171	5 Su 0211 4.5 137	20 M 0104 5.4 164	5 W 0348 5.6 170	20 Th 0237 5.7 173	0757 16.4 500	0728 14.8 452	0841 17.2 525	0739 16.0 487	0955 17.1 520	0849 17.2 523
1406 6.7 204	1340 7.4 227	1500 5.0 153	1359 5.8 176	1620 3.3 101	1518 3.0 92	2006 15.9 485	1940 14.3 435	2111 16.6 507	2010 15.4 469	2249 17.3 528	2150 17.7 538
6 Sa 0237 4.0 123	21 Su 0159 5.6 171	6 M 0321 4.6 139	21 Tu 0213 5.4 165	6 Th 0446 5.6 170	21 W 0345 5.5 168	0913 17.1 522	0840 15.5 471	0941 17.6 536	0840 16.5 504	0949 17.8 542	0949 17.8 542
1527 5.8 177	1453 6.6 200	1600 4.1 124	1501 4.7 143	1706 2.8 84	1616 1.8 56	2128 16.8 511	2055 15.2 463	2215 17.4 530	2118 16.5 502	2339 17.8 542	2253 18.8 573
7 Su 0348 3.6 111	22 M 0308 5.2 157	7 Tu 0420 4.5 137	22 W 0319 5.2 158	7 F 0536 5.5 168	22 Th 0448 5.1 156	1014 17.9 546	0938 16.4 500	1033 17.8 544	0936 17.3 526	1129 17.1 522	1046 18.4 562
1628 4.7 142	1550 5.3 162	1651 3.2 99	1556 3.4 104	1749 2.3 71	1711 0.8 24	2233 17.8 543	2157 16.5 503	2309 18.0 549	2219 17.7 540	2350 19.8 604	1711 0.8 24
8 M 0446 3.2 99	23 Tu 0405 4.5 138	8 W 0510 4.5 137	23 Th 0417 4.8 147	8 Sa 0021 18.0 550	23 W 0545 4.8 145	1104 18.5 565	1025 17.4 529	1115 17.9 546	1026 17.9 547	0615 5.5 169	1140 19.0 580
1715 3.7 112	1639 4.0 122	1735 2.7 82	1647 2.1 65	1205 17.2 524	23 O 1804 0.0 0	2326 18.5 565	2250 17.8 544	2356 18.4 562	2313 18.9 577	1827 2.2 66	1804 0.0 0
9 Tu 0536 3.2 97	24 W 0455 4.0 121	9 Th 0555 4.6 140	24 F 0510 4.5 137	9 Sa 0058 18.3 557	24 M 0044 20.5 625	1147 18.8 573	1107 18.2 555	1154 17.9 545	1112 18.5 565	0653 5.5 168	0639 4.5 136
1756 3.0 90	1719 2.9 87	1810 2.3 71	1735 1.1 34	1242 17.3 526	24 W 0639 4.5 136	2339 19.0 579	2339 19.0 579	1900 2.0 61	1900 2.0 61	1233 19.4 592	1855 -0.4 -11
10 W 0010 19.0 579	25 Th 0542 3.6 111	10 F 0038 18.6 566	25 Sa 0005 19.8 605	10 M 0134 18.3 558	25 Tu 0135 20.8 635	0616 3.4 104	1147 18.8 573	0638 4.8 146	0602 4.3 131	0731 5.5 169	0731 4.2 129
1223 18.7 569	1147 18.8 573	1230 17.7 541	1158 19.0 579	1158 19.0 579	1314 17.2 525	● 1836 2.5 77	1847 2.1 64	1847 2.1 64	1819 0.3 10	1935 2.0 60	1323 19.5 595
1836 2.5 77	1800 1.8 55	● 1847 2.1 64	1907 -0.1 -3	1935 2.0 60	1946 -0.3 -8						
11 Th 0050 19.1 583	26 F 0023 19.8 602	11 Sa 0112 18.5 565	26 Su 0055 20.4 622	11 Tu 0205 18.3 557	26 W 0222 20.8 634	0654 3.7 113	0626 3.7 112	0710 5.1 156	0653 4.2 129	0800 5.5 169	0820 4.2 127
1254 18.5 564	1226 19.0 580	1300 17.6 535	1245 19.2 585	1348 17.3 526	1413 19.5 595	1906 2.4 73	○ 1842 1.0 31	1919 2.1 65	1907 -0.1 -3	2006 2.1 64	2036 0.2 6
1906 2.4 73	1800 1.8 55	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						
12 M 0127 18.9 577	27 Sa 0107 20.2 617	12 Su 0147 18.4 562	27 M 0145 20.6 628	12 W 0239 18.2 554	27 Th 0307 20.6 627	0732 4.1 126	0707 3.8 115	0745 5.2 159	0744 4.3 131	0837 5.5 168	0907 4.0 123
1325 18.2 554	1303 19.2 586	1333 17.4 531	1334 19.2 585	1422 17.1 520	1504 19.2 586	1941 2.2 67	1924 0.6 19	1950 2.1 63	1956 -0.1 -4	2041 2.3 71	2123 1.1 33
1941 2.2 67	1800 1.8 55	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						
13 Sa 0200 18.8 572	28 Su 0152 20.4 621	13 M 0219 18.2 555	28 Tu 0234 20.4 623	13 W 0310 18.0 548	28 M 0353 20.1 612	0800 4.6 139	0753 4.0 122	0817 5.5 168	0834 4.4 135	0908 5.6 170	0958 4.0 121
1354 18.0 548	1345 19.1 583	1402 17.2 525	1421 18.9 575	1458 16.9 516	1557 18.7 570	2010 2.3 70	2006 0.5 14	2025 2.3 70	2048 0.2 7	2114 2.8 84	2210 2.1 64
2010 2.3 70	1800 1.8 55	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						
14 Su 0235 18.4 561	29 M 0239 20.1 613	14 Tu 0253 18.0 548	29 W 0321 20.0 610	14 F 0345 17.8 542	29 W 0439 19.4 591	0836 5.0 151	0841 4.4 133	0851 5.6 172	0925 4.7 143	0947 5.5 168	1049 4.0 123
1425 17.6 535	1430 18.8 573	1438 17.0 517	1513 18.5 564	1539 16.6 507	1652 17.9 546	2045 2.4 74	2054 0.7 20	2057 2.6 78	2140 1.0 29	2152 3.2 98	2300 3.2 98
2045 2.4 74	1800 1.8 55	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						
15 M 0307 17.9 546	30 Tu 0327 19.5 595	15 W 0328 17.5 534	30 Th 0411 19.5 594	15 F 0421 17.4 531	30 M 0524 18.5 564	0906 5.5 167	0931 4.9 148	0929 6.0 182	1015 4.9 148	1031 5.5 168	1142 4.2 129
1456 17.1 522	1516 18.2 554	1512 16.5 502	1608 17.9 546	1624 16.2 494	1751 17.1 520	2119 2.9 88	2147 1.3 39	2135 3.0 92	2233 2.0 60	2237 3.8 116	2355 4.4 135
2119 2.9 88	1800 1.8 55	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						
16 F 0503 18.8 573	31 F 1112 5.0 151	16 Sa 0503 18.8 573	31 F 1112 5.0 151	16 M 0558 18.1 552	31 M 0353 20.1 612	1112 5.0 151	1709 17.2 524	1730 3.1 96	1730 3.1 96	1751 17.1 520	2355 4.4 135
1709 17.2 524	1730 3.1 96	● 1842 1.0 31		1935 2.0 60	1946 -0.3 -8						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Xiamen, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0614	17.7	538	16	0511	17.7	539	1 Th	0114	7.2	218
	1239	4.4	134		1133	4.3	131		0721	15.8	482
	1855	16.3	496		1747	16.7	509		1358	4.9	149
				●	2347	5.1	156		2038	15.4	470
2 Tu	0055	5.5	169	17	0602	17.3	527	2 F	0230	7.5	229
	0710	16.9	514		1231	4.1	125		0833	15.6	475
	1342	4.4	135		1854	16.5	503		1507	4.6	141
	2006	15.9	484						2150	15.9	486
3 W	0201	6.3	192	18	0050	5.8	178	3 Sa	0343	7.3	223
	0812	16.3	498		0702	17.0	518		0939	15.9	485
	1446	4.2	129		1337	3.7	114		1608	4.0	122
	2118	16.0	488		2009	16.7	509		2248	16.8	512
4 Th	0311	6.6	202	19	0203	6.3	192	4 Su	0442	6.8	206
	0915	16.2	494		0811	17.1	520		1035	16.5	504
	1547	3.8	115		1447	3.0	91		1658	3.3	101
	2222	16.5	503		2127	17.5	533		2335	17.7	538
5 F	0414	6.5	198	20	0320	6.2	189	5 M	0531	6.1	187
	1012	16.4	500		0922	17.6	535		1121	17.2	524
	1641	3.2	98		1555	2.0	60		1742	2.8	84
	2315	17.2	524		2236	18.7	570				
6 Sa	0508	6.2	190	21	0431	5.6	172	6 Tu	0013	18.3	559
	1101	16.7	510		1029	18.3	559		0606	5.6	171
	1726	2.7	83		1656	1.0	29		1200	17.8	544
					2337	19.8	605		1817	2.4	74
7 Su	0001	17.8	542	22	0531	5.0	152	7 W	0009	20.8	634
	0554	5.9	180		1127	19.2	585		0607	4.0	122
	1145	17.1	521		1752	0.2	7		1207	20.5	625
	1804	2.3	70						○ 1825	0.9	28
8 M	0041	18.2	555	23	0030	20.7	630	8 Th	0049	18.9	575
	0635	5.6	172		0624	4.4	134		0643	5.1	156
	1223	17.3	528		1220	19.9	606		1239	18.4	560
	● 1842	2.0	62		○ 1843	0.0	-1		1852	2.2	68
9 Tu	0114	18.5	563	24	0117	21.1	642	9 F	0150	19.3	587
	0707	5.5	167		0712	3.9	119		0748	4.5	137
	1257	17.6	537		1311	20.3	618		1348	18.8	574
	1915	2.0	62		1931	0.2	6		1957	2.6	79
10 W	0148	18.6	568	25	0202	21.1	644	10 Sa	0219	19.2	585
	0742	5.2	160		0759	3.6	111		0821	4.3	130
	1334	17.8	542		1400	20.3	618		1423	18.8	572
	1948	2.1	63		2015	0.8	88		2032	2.9	88
11 Th	0218	18.6	567	26	0244	20.9	636	11 Su	0249	19.2	585
	0814	5.2	157		0846	3.4	104		0852	3.9	120
	1406	17.8	542		1449	19.9	608		1459	18.8	572
	2022	2.4	72		2101	1.6	49		2105	3.4	104
12 F	0249	18.6	567	27	0323	20.2	617	12 M	0320	19.0	579
	0848	4.9	150		0932	3.4	103		0933	3.7	112
	1443	17.7	541		1537	19.3	589		1541	18.6	566
	2053	2.6	80		2146	2.7	81		2144	3.9	119
13 Sa	0320	18.5	563	28	0402	19.6	598	13 Tu	0355	18.8	573
	0922	4.8	147		1012	3.5	108		1010	3.6	109
	1521	17.6	535		1624	18.4	560		1626	18.1	551
	2131	3.1	94		2231	3.8	116		2228	4.8	145
14 Su	0353	18.3	559	29	0443	18.7	571	14 W	0437	18.3	559
	0958	4.6	140		1059	3.8	115		1058	3.6	109
	1602	17.4	529		1714	17.4	530		1719	17.5	534
	2207	3.7	113		2315	5.1	155		○ 2318	5.6	171
15 M	0431	18.1	551	30	0527	17.6	537	15 Th	0526	17.7	538
	1044	4.4	134		1153	4.2	129		1157	3.7	113
	1650	17.1	520		1811	16.3	498		1826	17.0	517
	2253	4.3	132								
16 W	0008	6.2	190	31	0008	6.2	190	17 F	0357	18.7	570
	0618	16.6	506		0618	16.6	506		1017	3.7	112
	1252	4.7	143		1252	4.7	143		1637	17.8	542
	1920	15.6	474		1920	15.6	474		2240	5.7	174

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Xiamen, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0327 7.3 223	16 W 0350 5.0 151	1 F 0419 4.6 141	16 Sa 0506 2.7 83	1 Su 0425 2.9 89	16 M 0531 2.4 74						
0922 16.2 495	0953 18.9 576	1029 18.4 560	1125 19.4 592	1046 19.1 581	1155 18.7 570						
1542 5.3 163	1609 3.9 118	1637 4.9 150	1731 5.0 152	1648 5.2 158	1754 5.7 175						
2208 17.5 533	2225 19.7 601	2240 19.0 578	2319 19.2 585	2239 19.2 585	2337 18.2 556						
2 W 0417 6.2 188	17 Th 0443 3.8 117	2 Sa 0500 3.4 103	17 Su 0549 2.2 68	2 M 0510 1.7 51	17 Tu 0607 2.1 65						
1017 17.5 532	1050 19.8 604	1114 19.5 595	1208 19.7 600	1136 20.1 612	1235 18.9 577						
1633 4.6 140	1702 3.6 111	1720 4.6 139	1810 5.2 158	1738 4.8 146	1835 5.7 173						
2251 18.4 562	2310 20.1 613	2318 19.5 595	2356 19.1 583	2323 19.7 599	O						
3 Th 0459 5.0 153	18 F 0529 3.1 93	3 Su 0542 2.3 71	18 M 0626 2.1 65	3 Tu 0556 0.8 23	18 W 0011 18.2 556						
1102 18.6 567	1140 20.4 621	1157 20.4 622	1247 19.7 601	1222 20.7 632	0644 2.0 60						
1713 4.1 124	1750 3.7 113	1802 4.3 131	1849 5.3 161	1825 4.7 142	1308 19.0 579						
2329 19.1 583	2350 20.2 615	2355 20.0 609	O	●	1906 5.7 173						
4 F 0539 4.0 122	19 Sa 0607 2.5 77	4 M 0619 1.6 50	19 Tu 0032 19.0 578	4 W 0006 20.0 610	19 Th 0046 18.3 557						
1144 19.6 597	1223 20.5 624	1240 20.9 638	0658 2.1 63	0641 0.2 7	0715 2.0 62						
1753 3.7 112	1833 4.0 123	1845 4.2 129	1322 19.6 596	1308 21.1 643	1341 19.0 580						
O			1926 5.6 171	1910 4.5 138	1941 5.6 170						
5 Sa 0001 19.7 600	20 Su 0026 19.9 607	5 Tu 0034 20.1 614	20 W 0103 18.7 571	5 Th 0052 20.1 613	20 M 0119 18.2 554						
0612 3.3 101	0645 2.3 69	0658 1.1 33	0734 2.2 66	0727 0.2 6	0748 2.1 65						
1223 20.2 615	1302 20.4 622	1322 21.1 642	1356 19.4 591	1355 21.1 644	1411 18.9 576						
● 1833 3.6 110	1907 4.5 137	1929 4.6 139	1957 5.7 175	1959 4.6 139	2012 5.6 172						
6 Su 0035 20.0 609	21 M 0058 19.7 599	6 W 0110 20.0 611	21 Th 0138 18.5 564	6 F 0140 19.9 608	21 Sa 0153 18.0 550						
0647 2.6 80	0720 2.3 70	0742 0.9 27	0805 2.5 75	0812 0.5 14	0821 2.5 76						
1300 20.6 628	1340 20.1 613	1405 21.0 639	1430 19.0 580	1442 20.8 635	1443 18.8 572						
1906 3.8 116	1944 4.9 150	2010 4.8 147	2035 5.9 180	2049 4.7 143	2047 5.5 169						
7 M 0106 20.0 611	22 Tu 0132 19.3 589	7 Th 0153 19.8 605	22 F 0210 18.1 551	7 Sa 0231 19.5 595	22 M 0230 17.7 539						
0722 2.3 69	0754 2.4 73	0826 1.2 37	0841 2.8 85	0902 1.1 33	0852 2.8 86						
1340 20.7 632	1414 19.7 600	1451 20.6 628	1502 18.7 570	1529 20.3 618	1514 18.5 563						
1945 4.0 123	2020 5.5 167	2057 5.1 156	2107 6.2 188	2141 4.9 150	2124 5.7 174						
8 Tu 0141 20.0 610	23 W 0202 18.9 575	8 F 0240 19.4 590	23 Sa 0248 17.6 537	8 Su 0323 18.8 573	23 M 0305 17.3 527						
0759 1.9 59	0832 2.7 81	0912 1.7 52	0916 3.4 105	0955 2.0 62	0931 3.4 104						
1419 20.6 627	1450 19.2 585	1541 20.0 609	1540 18.2 554	1618 19.7 599	1549 18.1 553						
2027 4.6 139	2054 5.8 178	2150 5.6 171	2148 6.5 197	2236 5.2 158	2200 5.7 174						
9 W 0215 19.7 601	24 Th 0238 18.3 559	9 Sa 0332 18.7 569	24 Su 0330 16.9 516	9 M 0422 18.0 549	24 Tu 0348 16.8 511						
0842 1.9 58	0904 3.2 98	1006 2.6 78	0955 4.2 127	1050 3.2 98	1005 4.2 127						
1502 20.2 616	1528 18.5 563	1635 19.2 586	1618 17.6 536	1710 19.0 578	1627 17.7 538						
2106 5.1 155	2134 6.4 196	2248 6.1 186	2234 6.8 208	2334 5.3 163	2246 5.8 177						
10 Th 0256 19.3 589	25 F 0314 17.6 536	10 Su 0433 17.8 544	25 M 0415 16.2 494	10 Tu 0529 17.2 525	25 W 0438 16.2 493						
0928 2.3 71	0945 3.9 119	1106 3.6 109	1042 5.0 152	1150 4.5 136	1051 4.9 150						
1551 19.6 597	1607 17.7 540	1736 18.5 565	1705 17.0 518	1808 18.3 559	1710 17.2 525						
2156 5.7 173	2213 7.1 216	2354 6.4 195	2325 7.1 217	O	2338 5.8 178						
11 F 0344 18.6 568	26 Sa 0357 16.8 511	11 M 0545 17.2 523	26 Tu 0512 15.6 474	11 W 0040 5.3 162	26 M 0537 15.7 478						
1017 2.9 89	1030 4.8 146	1214 4.6 139	1135 5.8 177	0643 16.7 510	1145 5.7 175						
1646 18.7 571	1654 16.9 515	1844 18.2 554	1800 16.6 506	1255 5.5 167	1803 16.9 514						
2254 6.5 197	2304 7.6 233	O	1910 17.9 545	1910 17.9 545	O						
12 Sa 0442 17.8 542	27 Su 0449 15.8 483	12 Tu 0107 6.2 190	27 W 0027 7.1 215	12 Th 0148 5.0 152	27 F 0037 5.6 172						
1119 3.8 115	1119 5.7 175	0706 17.0 518	0624 15.2 464	0800 16.6 507	0646 15.6 474						
1753 18.0 548	1753 16.2 495	1330 5.1 155	1238 6.4 194	1406 6.1 186	1249 6.4 194						
O	O	1953 18.3 557	1903 16.6 505	2014 17.7 540	1903 16.8 511						
13 Su 0003 7.0 214	28 M 0008 8.0 245	13 W 0221 5.5 168	28 Th 0135 6.5 198	13 F 0254 4.4 133	28 Sa 0144 5.1 154						
0554 17.1 521	0557 15.2 463	0827 17.4 531	0741 15.6 475	0913 17.0 519	0802 16.0 487						
1233 4.4 135	1224 6.4 195	1442 5.2 159	1347 6.5 198	1515 6.3 191	1400 6.6 201						
1909 17.7 541	1902 16.0 488	2055 18.6 568	2005 17.0 517	2114 17.8 542	2008 17.1 520						
14 M 0125 7.0 214	29 Tu 0123 7.9 240	14 Th 0326 4.5 137	29 F 0239 5.5 168	14 Sa 0354 3.6 110	29 Su 0250 4.0 122						
0721 17.0 519	0719 15.2 462	0937 18.2 555	0851 16.5 504	1016 17.7 538	0915 17.0 517						
1353 4.6 140	1338 6.6 200	1546 5.1 156	1453 6.2 190	1616 6.1 187	1512 6.4 194						
2026 18.2 555	2011 16.4 501	2150 19.0 579	2102 17.7 539	2208 18.0 548	2110 17.7 540						
15 Tu 0244 6.1 187	30 W 0235 7.1 215	15 F 0419 3.5 107	30 Sa 0336 4.2 128	15 M 0446 2.9 89	30 Tu 0352 2.7 82						
0845 17.8 543	0836 15.9 486	1036 19.0 578	0952 17.8 542	1109 18.2 556	1019 18.2 555						
1507 4.3 132	1448 6.2 188	1642 5.0 152	1554 5.7 175	1708 5.9 181	1618 5.8 178						
2132 19.0 580	2109 17.3 526	2238 19.2 586	2152 18.5 563	2254 18.1 553	2207 18.5 564						
31 Th 0332 5.9 179	31 Th 0937 17.2 523										
1546 5.5 169	1546 5.5 169										
2157 18.2 554	2157 18.2 554										

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shantou, China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0237	5.7	174	16 W 0430	5.9	181	1 F 0445	5.8	176	16 Sa 0555	5.9	179
0852	1.6	49	W 0934	1.8	54	F 0941	2.1	65	Sa 1026	2.8	86
1652	6.8	208	1725	6.8	208	1727	6.4	195	Sa 1743	6.1	187
2106	4.1	125	2202	3.4	104	2211	2.7	82	2306	2.2	68
2 W 0339	5.7	174	17 Th 0516	5.9	179	2 Sa 0538	5.8	176	17 Su 0643	5.6	171
0923	1.8	55	1015	2.1	65	Sa 1015	2.5	75	Su 1109	3.2	97
1720	6.8	206	1759	6.7	204	1756	6.4	194	Su 1801	5.9	181
2151	3.9	118	2255	3.1	95	2307	2.4	72			
3 Th 0436	5.7	173	18 F 0608	5.7	174	3 Su 0632	5.7	173	18 M 0003	2.2	67
1000	2.0	60	1059	2.6	80	Su 1104	2.8	86	M 0731	5.3	162
1755	6.8	206	1833	6.5	198	1832	6.2	190	M 1151	3.7	112
2238	3.6	109	2359	2.9	89	○			○ 1817	5.8	176
4 F 0534	5.6	171	19 M 0706	5.5	167	4 M 0004	2.0	62	19 Tu 0109	2.2	67
1042	2.3	70	Sa 1149	3.1	96	M 0732	5.6	170	Tu 0844	5.1	155
1833	6.6	202	1853	6.3	191	M 1157	3.3	101	1253	4.1	126
2331	3.2	99	○			1841	6.1	186	1833	5.6	171
5 Sa 0635	5.5	168	20 Su 0100	2.7	83	5 Tu 0108	1.8	54	20 W 0220	2.2	66
1121	2.7	82	Su 0815	5.2	160	Tu 0851	5.5	169	W 1027	5.1	155
1905	6.5	198	1235	3.6	110	Tu 1254	3.8	117	W 1414	4.4	135
○			1916	6.0	184	1845	6.0	184	W 1859	5.4	166
6 Su 0039	2.8	86	21 M 0210	2.5	75	6 W 0223	1.5	45	21 Th 0323	2.1	63
0746	5.5	167	0946	5.2	157	W 1025	5.7	173	Th 1153	5.4	164
1216	3.1	96	1338	4.1	126	W 1416	4.3	131	W 1540	4.5	137
1942	6.4	194	1932	5.8	177	1914	6.0	183	1948	5.3	162
7 M 0147	2.4	72	22 Tu 0319	2.2	68	7 Th 0338	1.2	37	22 F 0427	1.9	58
0911	5.5	169	1118	5.3	162	Th 1155	6.0	183	F 1249	5.7	173
1324	3.7	114	1501	4.5	136	1538	4.5	137	1647	4.4	133
1958	6.2	189	1956	5.6	172	2008	6.0	182	2050	5.2	160
8 Tu 0253	1.8	56	23 W 0418	1.9	59	8 F 0443	1.0	30	23 Sa 0518	1.7	53
1042	5.8	178	1229	5.6	172	W 1302	6.3	193	Sa 1332	5.9	180
1436	4.2	127	1615	4.6	140	W 1648	4.4	135	1735	4.1	126
1957	6.2	188	2034	5.5	169	2111	5.9	181	2146	5.2	160
9 W 0355	1.3	40	24 Th 0509	1.7	51	9 Sa 0542	0.9	26	24 Su 0600	1.7	51
1159	6.3	191	1321	6.0	182	Sa 1356	6.6	201	Su 1406	6.1	186
1545	4.5	136	1715	4.5	138	Sa 1745	4.2	129	1812	3.9	118
2026	6.2	190	2121	5.5	168	2209	5.9	181			
10 Th 0454	1.0	29	25 F 0552	1.5	45	10 Su 0634	1.0	29	25 M 0044	5.2	160
1305	6.7	204	1403	6.2	190	Su 1441	6.7	203	M 0635	1.7	52
1648	4.6	140	1802	4.4	135	Su 1837	4.0	121	M 1437	6.2	188
2118	6.3	192	2208	5.5	169	●			1845	3.6	110
11 F 0549	0.7	20	26 Sa 0629	1.3	41	11 M 0144	5.8	177	26 Tu 0150	5.5	167
1402	7.0	212	1438	6.4	194	M 0715	1.2	36	Tu 0707	1.8	56
1748	4.6	140	1836	4.3	130	M 1515	6.6	201	Tu 1502	6.2	188
2213	6.3	193	2248	5.5	169	M 1921	3.6	111	○ 1915	3.3	101
12 Sa 0640	0.6	19	27 Su 0703	1.3	41	26 Tu 0150	5.5	167	11 M 0106	5.7	173
1452	7.1	216	1507	6.5	197	Tu 0707	1.8	56	0619	1.7	52
1836	4.5	136	1907	4.1	125	Tu 1502	6.2	188	M 1417	6.2	190
● 2306	6.3	192	○ 2323	5.6	170	Tu 1921	3.6	111	○ 1915	3.3	101
13 Su 0728	0.8	23	28 M 0734	1.4	44	26 ○ 0144	5.8	177	11 ○ 0106	5.7	173
1535	7.1	216	1533	6.5	197	Th 0715	1.2	36	0600	2.3	70
1925	4.3	130	1939	3.9	120	M 1515	6.6	201	Tu 1354	5.9	180
2359	6.2	189				M 1921	3.6	111	1816	3.0	91
14 M 0813	1.0	30	29 Tu 0231	5.6	170	26 ○ 0144	5.8	177	26 ○ 0100	5.4	165
1613	7.1	215	0802	1.6	48	Th 0909	2.2	66	0600	2.3	70
2017	4.0	121	1559	6.5	198	Th 1650	6.4	195	1417	6.2	190
			2010	3.7	113	2127	2.7	81	1831	3.3	101
15 Tu 0332	6.1	185	30 W 0306	5.6	171	14 Tu 0424	6.0	184	26 ○ 0152	5.8	176
0854	1.4	42	0835	1.8	54	Th 0909	2.2	66	0700	2.0	61
1651	7.0	212	1624	6.4	196	Th 1650	6.4	195	1449	6.1	187
2109	3.7	114	2048	3.4	105	2001	3.3	101	● 1908	3.0	90
31 Th 0353	5.7	174				1949	3.0	91	○ 1849	2.6	79
0903	2.0	60									
1654	6.5	198									
2126	3.1	94									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shantou, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0537	6.6	202	16	0601	6.3	191	1 W	0636	6.8	207
0951	3.6	109	Tu	1017	3.8	116		1048	3.9	120	
1428	5.7	174		1624	5.4	165		1517	5.7	174	
2232	0.9	28		2241	1.5	45		2328	0.9	27	
2 Tu	0632	6.5	198	17	0640	6.0	183	2 Th	0734	6.6	200
1036	3.7	114	W	1105	3.9	120		1144	3.9	120	
1552	5.7	175		1644	5.3	163		1637	5.5	168	
2326	1.0	30		2326	1.6	50	○				
3 W	0734	6.3	191	18	0724	5.8	176	3 F	0024	1.3	40
1143	4.0	121	Th	1156	4.1	125		0836	6.3	193	
1657	5.7	175		1715	5.2	159		1308	3.9	118	
○			○					1817	5.3	161	
4 Th	0040	1.2	38	19	0021	1.9	59	4 Sa	0131	1.8	54
0845	6.1	186	F	0827	5.6	170		0941	6.2	188	
1253	4.2	128		1310	4.1	126		1432	3.6	110	
1759	5.6	170		1755	5.1	154		2113	5.1	156	
5 F	0149	1.5	47	20	0125	2.2	68	5 Su	0242	2.2	67
1003	6.0	184	Sa	0941	5.5	168		1045	6.0	183	
1429	4.2	127		1425	4.0	122		1539	3.1	96	
1914	5.4	164		1858	4.9	148		2300	5.3	162	
6 Sa	0303	1.8	54	21	0230	2.5	75	6 M	0244	2.6	78
1119	6.1	185	Su	1046	5.6	170		0937	5.6	172	
1551	3.8	116		1531	3.7	113		1447	3.1	96	
2241	5.3	161		2147	4.8	146		2149	4.8	147	
7 Su	0409	2.0	61	22	0336	2.6	80	7 Tu	0241	2.9	88
1219	6.0	184	M	1141	5.7	173		1034	5.6	170	
1653	3.4	104		1622	3.2	99		1544	2.7	81	
				2344	5.2	157		2324	5.2	159	
8 M	0024	5.5	169	23	0431	2.8	85	8 W	0345	5.6	178
0511	2.2	68	Tu	1226	5.6	172		0448	2.9	88	
1307	6.0	182		1707	2.8	85		1231	5.6	172	
1743	3.0	90						1732	2.3	70	
9 Tu	0124	5.8	178	24	0050	5.6	172	9 Th	0024	5.6	176
0559	2.5	76	W	0521	3.0	90		0624	3.4	104	
1346	5.8	178		1300	5.6	172		1335	5.3	161	
1824	2.6	80		1747	2.3	69		1849	1.7	52	
10 W	0209	6.1	187	25	0143	6.1	185	10 F	0252	6.4	195
0641	2.8	85	Th	0603	3.1	96		0707	3.6	111	
1410	5.7	173		1338	5.6	170		1120	5.2	160	
● 1858	2.3	70		1827	1.8	55	●	1921	1.5	46	
11 Th	0253	6.3	193	26	0228	6.4	196	11 M	0327	6.5	198
0718	3.1	95	F	0646	3.4	104		0746	3.8	116	
1439	5.6	171		1359	5.5	167		1157	5.2	160	
1933	2.0	62	○	1908	1.3	41		1957	1.3	40	
12 F	0331	6.4	196	27	0313	6.7	205	12 M	0404	6.6	200
0753	3.3	102	Sa	0725	3.6	111		0814	3.9	119	
1455	5.5	168		1131	5.4	166		1224	5.3	162	
2008	1.8	54		1952	1.0	30		2031	1.2	38	
13 Sa	0406	6.5	198	28	0401	6.9	210	13 M	0439	6.6	200
0827	3.5	106	Su	0811	3.8	115		0852	3.9	119	
1530	5.5	168		1219	5.7	173		1309	5.3	162	
2044	1.5	46		2037	0.7	22		2106	1.1	35	
14 Su	0447	6.5	198	29	0449	7.0	212	14 Tu	0511	6.5	199
0903	3.6	109	M	0900	3.9	118		0927	3.9	118	
1542	5.5	167		1312	5.8	176		1354	5.3	161	
2119	1.4	43		2126	0.6	17		2143	1.1	35	
15 M	0521	6.4	195	30	0541	6.9	211	15 W	0548	6.4	195
0944	3.7	113	Tu	0946	3.9	119		1005	3.8	117	
1558	5.4	166		1411	5.8	177		1454	5.2	159	
2202	1.4	42		2221	0.6	19		2215	1.3	39	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shantou, China, 2013

Times and Heights of High and Low Waters

July					August					September								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time				
1 M 0028 0802 1330 2102	2.3 6.0 2.5 5.3	ft cm 70 184 75 162	16 Tu 1217 1949	6.0 2.4 5.3	183 72 163	1 Th 0709 1455 2305	3.9 2.0 5.6	119 61 171	16 F 0706 1350 2203	3.9 1.6 5.0	120 50 186	1 Su 0747 1609	4.7 2.3	143 71	16 M 0310 0756 1551	4.6 6.1 1.9	141 186 59	
	0130 0830 1439 2226	2.9 5.7 2.1 5.3	89 174 65 163	17 W 0016 0741 1319 2101	2.8 5.8 2.1 5.4	86 178 63 164	2 F 0302 0732 1601	4.2 5.6 1.9	129 171 57	17 Sa 0203 0644 1503 2329	4.3 6.0 1.4 6.4	132 184 43 194	2 M 0032 0442 0847 1703	6.2 4.5 5.5 2.2	190 138 169 68	17 Tu 0009 0421 1132 1651	7.0 4.4 6.1 2.1	212 134 185 63
	0239 0755 1544 2346	3.4 5.5 1.9 5.6	104 169 58 170	18 Th 0116 0713 1426 2228	3.4 5.7 1.7 5.6	104 173 53 171	3 Sa 0021 0420 0819 1659	5.9 4.4 5.5 1.7	179 134 168 53	18 Su 0327 0739 1614	4.5 6.0 1.3	138 184 39	3 Tu 0119 0529 0940 1748	6.5 4.3 5.5 2.2	197 131 169 67	18 W 0106 0521 1251 1742	7.0 4.0 6.3 2.3	214 122 193 69
	0347 0816 1643	3.8 5.5 1.6	116 167 49	19 F 0226 0707 1532 2353	3.9 5.7 1.3 6.0	118 175 40 183	4 Su 0121 0523 0911 1748	6.2 4.3 5.4 1.6	188 132 166 48	19 M 0043 0440 0845 1715	6.7 4.5 6.1 1.2	205 136 185 36	4 W 0159 0609 1331 1825	6.6 4.0 5.7 2.3	202 123 173 69	19 Th 0151 0608 1352 1831	7.0 3.6 6.7 2.6	213 111 204 78
5 F 0055 0454 0859 1736	5.9 4.0 5.4 1.4	179 123 164 43	20 Sa 0342 0754 1637	4.2 5.8 1.0	128 178 29	5 M 0207 0611 1000 1828	6.4 4.2 5.4 1.5	195 128 166 45	20 Tu 0143 0539 0947 1811	7.0 4.2 6.1 1.2	212 129 185 38	5 Th 0232 0643 1406 1900	6.7 3.7 5.9 2.4	203 114 181 73	20 F 0227 0647 1442 1909	6.8 3.3 7.0 2.9	207 101 212 89	
	0152 0551 0942 1821	6.2 4.1 5.3 1.2	188 124 162 37	21 Sa 0103 0453 0852 1737	6.5 4.3 5.9 0.6	197 131 180 19	6 Tu 0246 0649 1039 1904	6.6 4.1 5.5 1.5	201 124 167 45	21 W 0232 0632 1036 1858	7.1 4.0 6.1 1.4	215 121 185 43	6 F 0258 0712 1448 1934	6.7 3.5 6.2 2.6	203 107 190 80	21 Sa 0256 0723 1521 1948	6.7 2.9 7.1 3.2	205 89 216 99
	0238 0640 1022 1858	6.4 4.1 5.3 1.1	195 124 162 34	22 M 0203 0554 0952 1834	6.9 4.3 6.0 0.5	209 130 182 15	7 W 0316 0719 1116 ● 1940	6.7 3.9 5.5 1.6	203 118 168 48	22 Th 0310 0715 1452 1941	7.0 3.7 6.3 1.7	214 112 191 53	7 Sa 0322 0745 1527 1959	6.6 3.2 6.4 2.9	200 99 195 89	22 Su 0326 0804 1603 2027	6.6 2.7 7.3 3.5	200 81 221 108
	0313 0716 1103 ● 1932	6.5 4.0 5.3 1.1	199 122 163 33	23 M 0257 0650 1048 ○ 1922	7.1 4.1 6.0 0.6	216 125 184 17	8 Th 0345 0753 1200 2005	6.6 3.7 5.4 1.8	202 113 166 54	23 F 0346 0753 1545 2026	6.9 3.3 6.5 2.1	210 101 198 65	8 Su 0348 0816 1600 2035	6.6 3.0 6.6 3.1	200 90 202 95	23 M 0349 0844 1648 2106	6.6 2.4 7.3 3.7	200 73 221 114
9 Tu 0346 0751 1138 2004	6.6 3.9 5.3 1.1	201 120 163 34	24 W 0344 0740 1137 2010	7.1 3.9 6.0 0.8	217 119 183 24	9 F 0408 0821 1542 2037	6.6 3.5 5.7 2.0	201 108 174 60	24 Sa 0415 0836 1631 2105	6.8 3.0 6.6 2.5	206 92 201 77	9 M 0411 0853 1645 2105	6.5 2.6 6.8 3.3	197 79 207 102	24 Tu 0420 0926 1726 2148	6.4 2.2 7.1 3.9	196 67 217 120	
	0413 0821 1214 2037	6.6 3.8 5.3 1.2	201 116 163 37	25 W 0424 0822 1225 2052	7.0 3.6 5.9 1.1	214 109 180 34	10 Th 0437 0855 1620 2105	6.5 3.3 5.8 2.2	199 100 176 67	25 Su 0450 0922 1713 2145	6.7 2.7 6.6 2.9	203 82 202 88	10 Tu 0443 0933 1726 2144	6.5 2.3 6.8 3.5	197 69 208 107	25 W 0442 1010 1809 2226	6.4 2.1 7.0 4.2	196 65 213 127
	0444 0855 1258 2104	6.6 3.7 5.2 1.4	200 112 160 42	26 Th 0501 0915 1648 2137	6.9 3.3 5.9 1.5	211 101 181 47	11 Su 0500 0929 1658 2140	6.5 3.0 5.9 2.4	198 92 181 74	26 M 0516 1011 1802 2223	6.5 2.4 6.6 3.2	197 74 201 98	11 W 0506 1018 1813 2228	6.3 1.9 6.9 3.7	193 59 209 114	26 Th 0504 1057 1855 2315	6.3 2.2 6.7 4.4	192 68 205 135
	0509 0926 1631 2138	6.5 3.5 5.2 1.5	198 108 160 47	27 F 0538 1003 1742 2218	6.8 2.9 6.0 1.9	206 89 183 57	12 M 0532 1007 1746 2215	6.4 2.6 6.0 2.7	195 80 184 81	27 Tu 0544 1102 1849 2308	6.4 2.3 6.4 3.5	194 69 195 107	12 Th 0535 1110 1910 2320	6.3 1.8 6.8 4.1	193 54 206 124	27 F 0531 1151 1944 ● 2135	6.2 2.4 6.4 4.4	190 74 196 135
13 Sa 0540 1003 1703 2208	6.4 3.2 5.2 1.8	195 99 160 54	28 Su 0611 1050 1832 2304	6.5 2.6 6.0 2.4	199 79 182 72	13 Tu 0557 1055 1835 2300	6.3 2.3 6.0 3.0	192 70 184 91	28 W 0559 1147 1936 ● 2358	6.2 2.2 6.2 3.9	189 68 188 119	13 F 0533 1215 2015 ● 2358	6.3 1.8 6.6 3.9	192 55 201 119	28 Sa 0016 0557 1255 2052	4.7 6.0 2.7 6.2	144 184 81 190	
	0607 1044 1752 2247	6.3 3.1 5.3 2.0	193 93 162 62	29 M 0644 1147 1922 2348	6.3 2.4 5.8 3.4	193 72 183 105	14 W 0632 1145 1928 ● 2348	6.2 2.0 6.0 3.4	188 62 183 105	29 Th 0613 1247 2039 ● 2348	6.1 2.3 5.9 3.4	185 70 181 105	14 Sa 0035 0557 1330 2138	4.4 6.3 1.9 6.6	135 191 58 200	29 Su 0142 0634 1400 2212	4.8 5.8 2.9 6.2	147 178 88 190
	0642 1128 1847 2329	6.2 2.7 5.3 2.4	189 82 163 72	30 Tu 0659 1239 2023 ● 2348	6.1 2.3 5.7	185 69 173	15 Th 0638 1245 2039	6.0 1.8 6.0	184 54 183	30 F 0058 0629 1357 2205	4.4 5.9 2.4 5.9	134 181 72 179	15 Su 0147 0647 1444 2300	4.7 6.2 1.9 6.7	143 189 59 205	30 M 0254 0730 1508 2319	4.8 5.6 3.0 6.4	145 172 90 194
	0704 1347 2141	5.9 2.2 5.5	179 66 169	31 W 0043 1347 2141	3.4 2.2 5.5	103 66 169	31 Sa 0218 1507 2327	4.7 2.4 6.0	142 73 183	31 W 0218 1507 2327	4.7 2.4 6.0	142 176 183						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Shantou, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0357	4.5	138	16 W 0407	4.0	121	1 F 0445	3.3	102	1 Su 0532	2.5	75
0924	5.6	170	W 1139	6.5	197	F 1222	6.4	194	Sa 1328	7.0	214
1606	3.0	92	1624	3.0	92	1645	3.8	117	1731	4.3	130
2 W 0012	6.5	198	17 Th 0023	6.9	209	2 Sa 0024	6.4	196	17 M 0035	6.3	192
0445	4.2	127	0458	3.5	107	0522	2.9	88	0609	2.2	66
1150	5.8	177	1245	6.8	207	1311	6.8	208	1411	7.2	220
1656	3.1	93	1716	3.3	100	1726	4.0	122	O 1817	4.5	136
3 Th 0056	6.6	201	18 F 0100	6.8	206	3 Su 0053	6.4	196	18 M 0039	6.2	189
0525	3.8	116	0543	3.1	96	0557	2.4	74	0650	2.0	61
1254	6.2	188	1340	7.1	217	1357	7.2	220	1451	7.3	224
1738	3.1	96	1759	3.6	110	● 1807	4.2	129	1858	4.6	139
4 F 0134	6.6	202	19 Sa 0137	6.6	202	4 M 0132	6.4	195	19 Tu 0014	6.2	188
0600	3.4	105	0624	2.8	85	0635	2.1	63	0720	1.8	56
1344	6.6	200	1422	7.3	222	1440	7.5	228	1525	7.4	225
1813	3.3	102	O 1843	3.9	120	1843	4.4	135	1937	4.7	142
5 Sa 0159	6.6	201	20 Su 0156	6.5	197	5 Tu 0147	6.3	193	20 W 0108	6.2	188
0634	3.1	94	0700	2.5	75	0717	1.7	53	0757	1.8	54
1423	6.8	208	1503	7.5	228	1520	7.7	234	1602	7.4	226
● 1850	3.5	108	1916	4.1	126	1923	4.6	139	2006	4.7	143
6 Su 0231	6.5	199	21 M 0232	6.5	197	6 W 0015	6.4	194	21 Th 0201	6.2	188
0702	2.8	84	0739	2.3	69	0757	1.5	46	0833	1.8	55
1500	7.2	218	1543	7.5	229	1606	7.8	237	1637	7.3	224
1921	3.8	117	1956	4.3	131	2011	4.7	142	2050	4.7	143
7 M 0250	6.5	198	22 Tu 0247	6.4	195	7 Th 0105	6.5	197	22 F 0250	6.1	187
0739	2.4	73	0811	2.1	65	0843	1.4	43	0906	1.9	57
1542	7.3	224	1618	7.5	229	1653	7.7	236	1709	7.3	222
1957	4.0	122	2036	4.5	137	2055	4.7	144	2127	4.6	141
8 Tu 0320	6.4	195	23 W 0319	6.4	194	8 F 0208	6.5	198	23 Sa 0340	6.1	185
0819	2.1	63	0855	2.1	63	0938	1.5	45	0941	2.0	61
1620	7.4	227	1659	7.4	227	1741	7.6	233	1748	7.1	217
2037	4.2	127	2109	4.6	139	2154	4.8	146	2216	4.6	139
9 W 0344	6.4	196	24 Th 0344	6.4	194	9 Sa 0327	6.4	196	24 M 0427	5.9	181
0905	1.8	56	0933	2.1	64	1026	1.6	50	1022	2.2	67
1707	7.5	229	1737	7.3	222	1835	7.5	229	1821	6.9	211
2114	4.3	132	2157	4.6	141	2255	4.7	143	2305	4.5	138
10 Th 0408	6.4	195	25 F 0418	6.3	191	10 Sa 0459	6.3	193	25 Tu 0508	5.7	175
0955	1.7	53	1015	2.2	67	1135	2.0	61	1105	2.5	76
1757	7.4	227	1814	7.1	216	1934	7.3	224	1903	6.8	206
2209	4.5	136	2242	4.8	145	● 1950	7.2	219	● 1950	6.6	201
11 F 0432	6.5	197	26 Sa 0450	6.2	188	11 M 0016	4.7	142	26 Tu 0017	4.4	134
1045	1.8	54	1103	2.4	74	0633	6.2	188	0603	5.5	169
1848	7.3	222	1900	6.8	208	1230	2.5	76	1152	2.9	88
2307	4.6	140	2343	4.8	147	2036	7.2	219	● 1950	6.6	201
12 Sa 0503	6.4	196	27 Su 0531	6.0	182	12 Tu 0146	4.3	132	27 W 0121	4.1	126
1148	1.9	58	1154	2.8	84	0810	6.0	184	0722	5.4	164
1950	7.1	216	1952	6.6	201	1339	3.0	90	1249	3.3	101
●			●			2138	7.0	214	2041	6.5	197
13 Su 0023	4.8	147	28 M 0057	4.8	145	13 W 0256	3.9	118	28 Th 0225	3.8	115
0603	6.3	193	0618	5.7	175	1000	6.1	187	0902	5.4	165
1301	2.3	69	1249	3.1	93	1450	3.3	101	1352	3.6	111
2103	7.0	213	2053	6.5	197	2235	6.9	209	2135	6.4	195
14 M 0146	4.7	143	29 Tu 0210	4.6	140	14 Th 0355	3.3	102	29 F 0316	3.3	100
0731	6.2	188	0736	5.6	170	1132	6.5	197	1037	5.7	175
1415	2.6	78	1358	3.3	101	1548	3.7	113	1455	3.9	120
2219	7.0	212	2158	6.5	197	2321	6.6	201	2225	6.3	192
15 Tu 0304	4.4	134	30 W 0310	4.2	129	15 F 0447	2.8	86	30 Sa 0406	2.7	83
0958	6.1	187	0944	5.6	171	1236	6.8	207	1147	6.2	189
1524	2.8	84	1501	3.5	108	1646	4.0	122	1553	4.2	127
2330	7.0	213	2254	6.5	198	2354	6.4	196	2300	6.2	190
31 Th 0402	3.8	116	31 Th 1118	5.9	180						
			1557	3.7	113						
			2343	6.5	199						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Penghu (Ma-Kung Kang), Pescadores Islands, 2013

Times and Heights of High and Low Waters

January				February				March				
	Time	Height			Time	Height			Time	Height		
	h m	ft cm		h m	ft cm			h m	ft cm			
1	0052	2.5 76		16	0150	2.5 75	1	0200	2.4 73	16	0109	
Tu	0658	-5.9 -180	W	0750	-5.7 -173	F	0745	-5.5 -168	Sa	0843	-4.4 -135	
	1347	2.1 64		1433	2.3 71		1428	2.5 75		1511	1.9 59	
	1911	-4.0 -123		2016	-4.4 -135		2010	-5.2 -158		2128	-5.0 -151	
2	0130	2.4 74		17	0238	2.0 62	2	0246	2.0 62	17	0354	
W	0731	-5.8 -176	Th	0831	-5.2 -157	Sa	0827	-5.1 -155	Su	0930	-3.9 -118	
	1420	2.2 67		1514	2.2 66		1508	2.4 73		1551	1.6 48	
	1950	-4.2 -128		2111	-4.5 -137		2101	-5.3 -161		2224	-4.7 -144	
3	0213	2.2 68		18	0330	1.5 46	3	0341	1.5 47	18	0454	
Th	0810	-5.5 -169	F	0918	-4.6 -139	Su	0917	-4.5 -138	M	1025	-3.3 -100	
	1458	2.2 68		1557	1.9 58		1556	2.2 67	O	2201	-5.3 -162	
	2036	-4.4 -134		2210	-4.5 -136		O	2327	-4.5 -137		0237	-2.1 64
4	0301	1.9 58		19	0430	1.0 30	4	0447	1.0 32	19	0604	
F	0854	-5.2 -158	Sa	1011	-3.9 -120	M	1016	-3.9 -119	Tu	1133	-2.8 -86	
	1541	2.2 68		1645	1.6 49		1652	1.9 58		1738	0.9 27	
	2129	-4.6 -139	O	2315	-4.4 -134		2310	-5.3 -162			0332	1.6 48
5	0358	1.5 47		20	0537	0.6 17	5	0608	0.7 22	20	0418	
Sa	0946	-4.7 -143	Su	1114	-3.3 -102	Tu	1127	-3.4 -103	W	0720	-0.2 6	
	1630	2.2 66		1740	1.3 40		1801	1.7 51		1250	-2.6 -79	
O	2229	-4.8 -145								1851	0.8 23	
6	0508	1.2 36		21	0024	-4.4 -134	6	0033	-5.4 -164	21	0600	
Su	1046	-4.2 -127	M	0651	0.4 11	W	0735	0.7 22	Th	0148	-4.6 -139	
	1728	2.1 63		1226	-2.9 -89		1253	-3.1 -93	Sa	0832	0.4 13	
	2337	-5.0 -152		1841	1.1 35		1919	1.6 50		1402	-2.7 -81	
7	0628	1.0 31		22	0133	-4.5 -138	7	0202	-5.7 -173	22	0030	
M	1154	-3.7 -112	Tu	0805	0.4 12	Th	0853	1.0 31	F	0247	-4.9 -148	
	1832	2.0 62		1337	-2.7 -83		1420	-3.1 -95		0928	0.8 25	
				1943	1.1 35		2034	1.8 56		1501	-3.0 -90	
8	0051	-5.3 -163		23	0235	-4.8 -147	8	0315	-6.0 -184	23	0159	
Tu	0750	1.1 33	W	0912	0.7 20	F	0957	1.5 45	Sa	0336	-5.2 -159	
	1309	-3.3 -102		1439	-2.8 -84		1531	-3.4 -103		1010	1.2 38	
	1940	2.1 64		2039	1.3 39		2139	2.2 67		1549	-3.3 -102	
9	0208	-5.8 -176		24	0326	-5.2 -158	9	0413	-6.3 -193	24	0417	
W	0904	1.4 43	Th	1003	1.0 30	Sa	1049	1.9 58	M	-5.5 -169	-5.6 -171	
	1423	-3.2 -99		1531	-3.0 -90		1626	-3.7 -114	W	0839	1.1 34	
	2045	2.3 70		2129	1.5 47		2235	2.5 77		1427	-3.2 -99	
10	0316	-6.2 -190		25	0409	-5.5 -168	10	0502	-6.4 -195	25	0417	
Th	1007	1.8 54	M	1043	1.3 41	Su	1133	2.2 67	Tu	0524	-5.8 -176	
	1529	-3.3 -100		1615	-3.2 -98		1712	-4.1 -126		1110	2.3 70	
	2145	2.6 78		2213	1.9 57	O	2325	2.8 84		1729	-4.2 -128	
11	0414	-6.6 -200		26	0447	-5.8 -177	11	0543	-6.3 -192	11	0452	
F	1102	2.1 64	Sa	1118	1.6 49	M	1213	2.4 73	F	0524	-5.7 -177	
	1625	-3.4 -105		1651	-3.5 -107		1752	-4.5 -136	W	1151	2.3 70	
	2240	2.8 85		2252	2.2 66				Tu	1729	-4.6 -140	
12	0506	-6.7 -205		27	0519	-6.0 -183	12	0010	2.8 86	12	0532	
Sa	1150	2.3 71	Su	1150	1.9 57	Tu	0619	-6.1 -185	F	0550	-5.7 -175	
	1714	-3.6 -111		1722	-3.8 -115		1249	2.5 76	W	1222	2.5 77	
O	2331	2.9 89		O	2330	2.5 75		1831	-4.8 -145		1757	-5.0 -152
13	0551	-6.7 -203		28	0547	-6.1 -185	13	0053	2.7 83	13	0000	
Su	1233	2.4 74	M	1221	2.0 62	W	0652	-5.8 -176	W	0550	-5.2 -158	
	1758	-3.9 -118		1749	-4.1 -124		1325	2.5 76	Tu	1147	2.5 75	
							1910	-5.0 -152		1748	-5.1 -154	
14	0019	2.9 89		29	0006	2.6 80	14	0135	2.5 75	14	0041	
M	0632	-6.5 -197	Tu	0611	-6.1 -185	Th	0725	-5.4 -164	Th	0635	-5.1 -155	
	1314	2.5 75		1251	2.2 67		1400	2.4 73		1255	2.5 76	
	1841	-4.1 -125		1816	-4.4 -134		1952	-5.1 -155		1857	-5.5 -167	
15	0105	2.8 84		30	0042	2.7 82	15	0217	2.1 64	15	0120	
Tu	0711	-6.1 -186	W	0637	-6.0 -182	F	0802	-5.0 -151	F	0706	-4.8 -146	
	1354	2.4 74		1321	2.3 71		1435	2.2 68		1327	2.4 73	
	1927	-4.3 -131		1848	-4.7 -143		2038	-5.1 -155		1932	-5.5 -168	
			31	0119	2.6 80							
			Th	0708	-5.8 -176							
				1353	2.5 75							
				1926	-5.0 -152							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Penghu (Ma-Kung Kang), Pescadores Islands, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0235 2.1 65	16 0305 1.5 46	1 W 0331 1.9 58	16 0324 1.5 45	1 Sa 0508 2.1 63	16 0413 1.8 55						
0758 -3.7 -114	Tu 0840 -3.3 -101	W 0909 -3.1 -94	Th 0903 -3.1 -95	Sa 1130 -3.8 -115	Su 1005 -3.6 -110						
1423 2.4 73	1429 1.5 47	1510 1.9 57	1447 1.3 40	1721 1.3 41	1612 1.2 36						
2035 -5.8 -177	2108 -5.2 -157	2149 -5.5 -168	2119 -5.0 -152	O 2345 -4.6 -139	2215 -4.5 -137						
2 Tu 0332 1.7 51	17 0350 1.2 37	2 Th 0432 1.7 52	17 0407 1.4 42	2 Su 0605 2.0 61	17 0459 1.8 56						
0855 -3.3 -102	W 0927 -3.1 -93	1026 -3.1 -94	0951 -3.1 -94	1238 -4.1 -126	M 1100 -3.8 -117						
1515 2.0 60	1511 1.2 37	1619 1.4 44	1537 1.0 32	1834 1.2 38	1718 1.0 32						
2141 -5.5 -168	2154 -4.8 -147	2259 -5.1 -156	2205 -4.7 -143	O 2310 -4.1 -126							
3 W 0439 1.3 40	18 0442 1.0 30	3 F 0535 1.6 49	18 0455 1.3 41	3 M 0050 -4.2 -127	18 0552 1.9 58						
1006 -3.1 -93	1022 -2.9 -87	1145 -3.3 -100	1046 -3.1 -95	0704 2.0 61	Tu 1201 -4.2 -128						
1621 1.5 45	1603 0.9 26	1738 1.2 37	1640 0.8 25	1345 -4.5 -138	1833 1.0 31						
O 2300 -5.2 -158	O 2248 -4.5 -137	O 2259 -4.4 -134	O 2259 -4.4 -134	1945 1.3 40							
4 Th 0552 1.1 34	19 0541 0.9 26	4 Sa 0012 -4.8 -146	19 0549 1.4 43	4 Tu 0153 -3.8 -117	19 0013 -3.8 -115						
1139 -3.0 -90	F 1127 -2.8 -84	0640 1.7 51	1148 -3.3 -101	0801 2.0 62	W 0650 2.0 61						
1744 1.2 36	1713 0.6 19	1302 -3.7 -112	1755 0.8 23	1447 -5.0 -151	1307 -4.7 -142						
2353 -4.3 -131	2353 -4.3 -131	1857 1.2 38	O 2052 1.5 45	2052 1.5 45	1948 1.2 37						
5 F 0028 -5.0 -152	20 0644 1.0 29	5 Sa 0124 -4.6 -139	20 0000 -4.2 -127	5 W 0253 -3.6 -110	20 0119 -3.5 -107						
0707 1.2 36	1239 -2.9 -89	0743 1.8 55	0646 1.6 48	0854 2.1 63	Su 0749 2.2 66						
1310 -3.2 -97	1838 0.7 20	1412 -4.2 -128	1253 -3.7 -113	1542 -5.3 -161	Th 1412 -5.2 -158						
1909 1.2 37		2009 1.4 44	1912 1.0 29	2151 1.7 51	2058 1.5 46						
6 Sa 0147 -5.0 -152	21 0102 -4.3 -130	6 M 0228 -4.4 -135	21 0105 -4.0 -123	6 Th 0347 -3.4 -105	21 0225 -3.3 -100						
0815 1.5 45	Su 0744 1.2 37	0839 2.0 61	0742 1.8 56	0941 2.1 63	F 0847 2.4 72						
1427 -3.7 -113	1345 -3.3 -101	1513 -4.8 -145	1354 -4.3 -130	1630 -5.5 -169	1514 -5.7 -174						
2023 1.5 47	1953 1.0 30	2112 1.8 54	2021 1.3 40	2243 1.8 56	2201 1.9 58						
7 Su 0254 -5.0 -153	22 0203 -4.4 -133	7 M 0325 -4.3 -130	22 0206 -3.9 -120	7 F 0435 -3.3 -102	22 0328 -3.1 -95						
0913 1.8 56	W 0836 1.6 49	0929 2.2 66	0834 2.1 65	1024 2.1 63	Sa 0942 2.6 78						
1528 -4.3 -131	1441 -3.9 -119	1606 -5.2 -159	1449 -4.9 -150	1713 -5.7 -174	1613 -6.1 -187						
2126 2.0 60	2055 1.5 46	2208 2.0 62	2123 1.8 54	2327 1.9 58	2258 2.2 68						
8 M 0350 -5.0 -153	23 0255 -4.5 -136	8 W 0416 -4.1 -125	23 0301 -3.8 -116	8 Sa 0516 -3.2 -99	23 0428 -3.1 -93						
1001 2.2 66	Tu 0922 2.0 62	1012 2.3 69	0923 2.4 74	1102 2.0 62	Su 1035 2.8 84						
1620 -4.8 -147	1527 -4.5 -138	1651 -5.5 -169	1539 -5.5 -169	1750 -5.8 -177	1710 -6.4 -195						
2220 2.3 70	2149 2.1 63	2256 2.2 67	2218 2.2 67	O 2351 2.5 75							
9 Tu 0437 -4.9 -150	24 0341 -4.5 -137	9 Th 0500 -3.9 -120	24 0353 -3.6 -111	9 Su 0006 1.9 59	24 0525 -3.1 -93						
1042 2.4 72	W 1003 2.4 74	1051 2.3 69	1009 2.7 81	0552 -3.2 -98	M 1127 2.9 88						
1704 -5.2 -159	1609 -5.2 -157	1731 -5.7 -175	1627 -6.0 -184	1137 2.0 61	1807 -6.5 -198						
2307 2.5 76	2238 2.5 76	2339 2.2 68	2311 2.5 76	1823 -5.8 -177							
10 W 0518 -4.7 -144	25 0423 -4.4 -134	10 Th 0537 -3.8 -115	25 0443 -3.4 -105	10 M 0042 1.9 58	25 0039 2.6 78						
1120 2.4 74	1043 2.7 82	1127 2.2 68	1054 2.8 86	0625 -3.2 -97	Su 0620 -3.1 -95						
1742 -5.5 -168	1647 -5.7 -173	1806 -5.8 -177	1715 -6.3 -193	1210 2.0 60	Tu 1218 2.9 89						
● 2350 2.6 78	● 2324 2.8 85	●	O 1854 5.7 -175	1854 5.7 -175	1901 -6.4 -195						
11 Th 0552 -4.5 -137	26 0503 -4.2 -127	11 Sa 0018 2.2 67	26 0001 2.6 80	11 Tu 0116 1.9 57	26 0126 2.6 79						
1154 2.4 74	1121 2.9 88	0610 -3.6 -110	0532 -3.3 -100	0656 -3.2 -97	W 0714 -3.3 -100						
1816 -5.7 -173	1724 -6.0 -184	1200 2.1 65	1140 2.9 87	1241 1.9 58	W 1308 2.8 86						
O		1838 -5.8 -178	1806 -6.5 -197	1921 -5.6 -172	1951 -6.2 -188						
12 F 0029 2.5 76	27 0009 2.9 87	12 Sa 0055 2.1 64	27 0050 2.6 79	12 W 0149 1.8 55	27 0211 2.6 79						
0623 -4.3 -130	0542 -3.9 -119	0641 -3.5 -106	0622 -3.1 -96	0726 -3.2 -98	W 0809 -3.5 -106						
1226 2.4 72	1159 2.9 89	1230 2.0 62	1226 2.8 86	1314 1.8 56	Th 1359 2.6 79						
1848 -5.7 -175	1805 -6.3 -191	1908 -5.8 -177	1901 -6.4 -196	1947 -5.5 -167	2038 -5.8 -177						
13 Sa 0107 2.3 71	28 0056 2.8 84	13 M 0132 1.9 59	28 0139 2.5 76	13 Th 0222 1.8 54	28 0257 2.6 78						
0653 -4.1 -124	Su 0622 -3.6 -110	0712 -3.4 -103	0716 -3.1 -95	0758 -3.2 -99	F 0905 -3.7 -114						
1256 2.2 68	1240 2.9 87	1300 1.9 58	1315 2.6 80	1349 1.7 53	1453 2.3 70						
1919 -5.7 -175	1850 -6.3 -192	1937 -5.7 -173	1957 -6.2 -190	2015 -5.3 -162	2124 -5.3 -163						
14 Su 0145 2.1 63	29 0144 2.5 76	14 Tu 0208 1.8 54	29 0229 2.3 71	14 F 0256 1.7 53	29 0344 2.5 76						
0724 -3.8 -117	Tu 0708 -3.4 -103	0745 -3.3 -100	0815 -3.1 -96	0834 -3.3 -101	Sa 1003 -4.0 -122						
1325 2.1 63	M 1323 2.7 81	1331 1.7 53	1407 2.3 71	1429 1.6 49	1552 1.9 58						
1951 -5.6 -172	1943 -6.1 -187	2007 -5.5 -168	2051 -5.9 -180	2048 -5.1 -155	2214 -4.8 -146						
15 M 0224 1.8 55	30 0235 2.2 67	15 W 0245 1.6 49	30 0320 2.2 68	15 F 0332 1.8 54	30 0433 2.4 72						
0800 -3.6 -110	Tu 0802 -3.2 -97	0821 -3.2 -97	0918 -3.3 -100	0916 -3.4 -104	Su 1101 -4.2 -128						
1355 1.8 56	1412 2.3 70	1406 1.5 47	1505 2.0 61	1516 1.4 43	1656 1.5 47						
2027 -5.4 -166	2044 -5.9 -179	2040 -5.3 -161	2145 -5.5 -168	2128 -4.8 -146	O 2309 -4.2 -129						
31 F 0413 2.1 65											
1024 -3.5 -107											
1611 1.6 50											
2243 -5.1 -154											

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Penghu (Ma-Kung Kang), Pescadores Islands, 2013

Times and Heights of High and Low Waters

July				August				September										
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height							
h m 0525 M 1203 1804	ft 2.2 -4.4 1.3	cm 68 -134 40	h m 0417 Tu 1020 1649 O 2232	ft 2.3 -4.3 1.4	cm 69 -131 42 -118	h m 0027 Th 0634 1325 1951	ft -2.8 1.8 -4.5	cm -86 56 -136 34	h m 0535 F 1206 1901	ft 2.3 -4.8	cm 70 -147 43	h m 0154 Su 0756 1436 2114	ft -2.2 1.7 -4.3	cm -68 52 -130 50	h m 0150 16 0756 M 1431 2105	ft -2.7 2.4 -5.0	cm -83 74 -151 73	
1 M	0009 Tu 0621 1306 1914	-3.7 2.1 -4.6 1.2	-114 63 -140 36	16 W 0508 1120 1802 2334	2.2 -4.6 1.2 -3.4	68 -139 37 -104	1 Th 0132 0736 1427 2100	-2.6 1.7 -4.6 1.3	-79 53 -140 39	16 Sa 0028 0649 1331 2020	-2.7 2.2 -5.1 1.6	-81 68 -154 50	1 Su 0252 0854 1526 2159	-2.5 2.0 -4.5 2.0	-75 60 -138 61	16 Tu 0259 0904 1531 2158	-3.2 2.9 -5.1 2.8	-97 87 -156 86
	0112 W 0719 1410 2025	-3.3 1.9 -4.8	-101 59 -147 37	18 Th 0607 1230 1921	2.2 -4.9 1.2	67 -148 37	3 Sa 0234 0834 1522 2156	-2.5 1.8 -4.8 1.5	-77 54 -147 47	18 Su 0154 0805 1446 2128	-2.6 2.4 -5.4 2.1	-80 73 -164 63	3 Tu 0341 0943 1609 2236	-2.8 2.3 -4.7 2.3	-85 71 -144 71	18 W 0355 1003 1622 2243	-3.7 3.2 -5.1 3.1	-113 99 -156 96
	0214 Th 0816 1509 2130	-3.1 1.9 -5.1	-93 58 -154 42	19 F 0046 0713 1346 2038	-3.1 2.2 -5.2 1.4	-93 67 -159 44	4 Su 0330 0927 1609 2240	-2.6 1.9 -5.0 1.8	-80 59 -153 55	19 M 0307 0914 1549 2224	-2.9 2.7 -5.7 2.5	-87 83 -173 76	4 W 0423 1027 1647 2309	-3.1 2.7 -4.9 2.7	-96 83 -148 81	19 Th 0444 1054 1707 O 2324	-4.2 3.5 -5.0 3.3	-127 108 -152 102
	0312 F 0909 1601 2225	-2.9 1.9 -5.3	-89 58 -161 48	20 Sa 0202 0820 1458 2146	-2.9 2.3 -5.6 1.8	-87 71 -172 56	5 M 0416 1013 1650 2316	-2.8 2.2 -5.2 2.0	-85 66 -159 62	20 Tu 0408 1014 1644 2312	-3.2 3.1 -5.8 2.9	-98 94 -176 87	5 Th 0459 1106 1721 O 2340	-3.5 3.1 -4.9 2.9	-107 93 -149 88	20 F 0527 1140 1746	-4.5 3.6 -4.7	-138 111 -143
6 Sa	0404 0956 1645 2309	-2.9 1.9 -5.4	-89 59 -166 54	21 Su 0315 0924 1602 2244	-2.9 2.6 -6.0 2.2	-87 79 -184 68	6 Tu 0457 1053 1727 2349	-3.0 2.4 -5.3 2.2	-91 73 -162 68	21 W 0500 1107 1733 O 2355	-3.6 3.4 -5.7 3.1	-109 103 -174 95	6 F 0530 1144 1750 O 2355	-3.8 3.3 -4.8 3.1	-117 100 -146 95	21 Sa 0002 0607 1224 1821	3.4 -4.8 3.6 -4.4	105 -146 109 -134
7 Su	0448 1038 1725 2347	-3.0 2.0 -5.6	-90 61 -170 57	22 M 0419 1023 1701 2335	-3.0 2.9 -6.2 2.6	-90 87 -190 78	7 W 0532 1130 1800 ●	-3.2 2.6 -5.3 2.2	-98 79 -162 68	22 Th 0548 1156 1816 ●	-3.9 3.5 -5.5 3.1	-120 107 -167 95	7 Sa 0011 0557 1221 1815	3.1 -4.1 3.4 -4.6	93 -126 103 -140	22 Su 0038 0646 1306 1856	3.4 -4.9 3.4 -4.1	104 -150 103 -124
8 M	0527 1116 1800 ●	-3.0 2.1 -5.6	-92 64 -171 171	23 Tu 0515 1118 1755 O	-3.2 3.1 -6.3	-97 94 -191 ●	8 Th 0019 0603 1206 1828	2.4 -3.4 2.8 -5.2	72 -104 84 -159	23 F 0034 0632 1241 1855	3.2 -4.2 3.5 -5.1	99 -129 106 -156	8 Su 0041 0624 1258 1842	3.2 -4.4 3.3 -4.3	97 -135 101 -132	23 M 0112 0725 1348 1932	3.3 -5.0 3.1 -3.7	101 -152 94 -114
9 Tu	0020 0602 1151 1831	1.9 -3.1 2.2 -5.6	59 -94 66 -171	24 W 0021 0606 1208 1844	2.8 -3.4 3.2 -6.1	84 -104 98 -186	9 F 0048 0630 1241 1851	2.5 -3.6 2.8 -5.1	76 -110 86 -154	24 Sa 0112 0716 1326 1932	3.2 -4.5 3.3 -4.7	99 -136 100 -144	9 M 0112 0657 1337 1915	3.2 -4.7 3.1 -4.0	99 -143 95 -123	24 Tu 0147 0807 1431 2012	3.1 -4.9 2.7 -3.4	94 -150 82 -103
10 W	0052 0633 1225 1859	2.0 -3.2 2.2 -5.5	61 -98 68 -168	25 Th 0104 0656 1257 1928	2.9 -3.7 3.1 -5.8	88 -113 96 -176	10 Sa 0117 0656 1316 1914	2.6 -3.8 2.8 -4.9	79 -117 85 -148	25 Su 0149 0802 1411 2010	3.2 -4.6 3.0 -4.3	97 -141 90 -131	10 Tu 0145 0737 1421 1955	3.2 -4.9 2.8 -3.7	99 -148 86 -113	25 W 0222 0851 1421 2058	2.8 -4.8 2.8 -3.0	86 -145 69 -92
11 Th	0122 0701 1259 1923	2.0 -3.3 2.2 -5.3	62 -101 68 -163	26 F 0145 0746 1345 2009	2.9 -4.0 3.0 -5.4	89 -121 90 -164	11 Su 0147 0727 1354 1944	2.7 -4.1 2.7 -4.6	82 -125 81 -140	26 M 0227 0849 1459 2052	3.1 -4.7 2.5 -3.8	93 -142 77 -117	11 W 0224 0825 1512 2043	3.1 -4.9 2.4 -3.3	95 -149 74 -100	26 Th 0301 0940 1612 2150	2.5 -4.5 1.9 -2.6	75 -137 57 -80
12 F	0152 0729 1334 1946	2.1 -3.5 2.2 -5.2	63 -106 67 -158	27 Sa 0225 0838 1434 2050	2.9 -4.2 2.7 -4.9	89 -128 81 -149	12 M 0219 0806 1437 2022	2.8 -4.3 2.4 -4.3	84 -132 74 -130	27 Tu 0307 0939 1552 2141	2.8 -4.6 2.1 -3.3	85 -140 63 -102	27 F 0346 1034 1711 O 2251	2.0 -4.2 1.6 -2.3	62 -127 48 -70			
13 Sa	0223 0801 1412 2016	2.1 -3.6 2.1 -5.0	65 -111 64 -151	28 Su 0307 0930 1527 2135	2.8 -4.4 2.2 -4.4	86 -133 68 -133	13 Tu 0256 0853 1527 2107	2.8 -4.5 2.1 -3.9	84 -138 64 -118	28 F 0351 1032 1651 O 2236	2.4 -4.4 1.6 -2.9	74 -135 50 -87	13 M 0405 1031 1726 O 2256	2.6 -4.7 1.8 -2.6	78 -144 54 -78	28 Sa 0443 1134 1816 2359	1.7 -3.9 1.4 -2.1	51 -119 43 -65
14 Su	0255 0840 1456 2053	2.2 -3.9 1.9 -4.7	68 -118 58 -143	29 M 0352 1023 1625 2226	2.6 -4.5 1.8 -3.8	80 -136 55 -116	14 W 0340 0947 1628 O 2202	2.7 -4.6 1.7 -3.4	81 -141 53 -103	29 Th 0441 1130 1756 2339	2.1 -4.2 1.3 -2.4	63 -129 41 -74	14 Sa 0515 1152 1845 2000	2.3 -4.7 1.7 -2.0	69 -142 52 -60	29 Su 0556 1241 1922 2020	1.5 -3.8 1.5 -1.8	45 -115 46 -55
15 M	0333 0926 1547 2138	2.3 -4.1 1.6 -4.3	69 -124 50 -132	30 Tu 0440 1120 1729 O 2323	2.3 -4.5 1.4 -3.2	71 -136 44 -99	15 Th 0432 1051 1740 2309	2.5 -4.7 1.5 -3.0	75 -144 45 -90	30 F 0542 1233 1907 2017	1.7 -4.1 1.2 -2.4	53 -125 38 -42	15 Su 0024 0637 1319 2000	-2.5 2.2 -4.8 2.0	-75 67 -145 60	30 M 0108 0711 1343 2020	-2.2 1.5 -3.8 1.8	-68 47 -117 55
				31 W 0534 1221 1838	2.1 -4.4 1.2	63 -135 36	31 Sa 0047 0650 1338 2017	-2.2 1.6 -4.1 1.4	-68 49 -125 42									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Penghu (Ma-Kung Kang), Pescadores Islands, 2013

Times and Heights of High and Low Waters

October				November				December				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 0210	-2.6	-78	16 W 0245	-3.7	-114	1 F 0303	-4.1	-124	16 Sa 0410	-5.2	-160	
0816	1.9	57	W 0851	2.7	83	F 0925	2.6	79	Sa 1025	2.8	84	
1437	-4.0	-123	1508	-4.5	-137	1518	-4.0	-121	1618	-3.7	-113	
2108	2.2	66	2127	2.9	89	2139	3.0	91	2223	2.9	89	
2 W 0302	-3.0	-92	17 Th 0340	-4.3	-131	2 F 0344	-4.7	-142	17 Su 0451	-5.5	-168	
0910	2.3	71	0949	3.1	94	Sa 1013	3.1	93	Su 1110	2.8	86	
1523	-4.3	-130	1558	-4.4	-135	1559	-4.0	-121	1657	-3.6	-109	
2149	2.6	79	2212	3.2	97	O 2218	3.3	101	O 2301	2.9	89	
3 Th 0345	-3.5	-107	18 F 0427	-4.8	-146	3 Su 0421	-5.2	-159	18 M 0527	-5.6	-172	
0957	2.8	86	1039	3.3	101	Su 1059	3.4	103	M 1152	2.8	85	
1604	-4.4	-134	1641	-4.2	-129	1637	-3.9	-118	1731	-3.5	-106	
2225	3.0	90	2253	3.3	101	● 2256	3.5	108	2336	2.9	87	
4 F 0422	-4.0	-123	19 W 0508	-5.1	-155	4 M 0456	-5.6	-172	4 Tu 0600	-5.7	-173	
1040	3.2	99	Sa 1125	3.4	104	M 1143	3.5	107	Tu 1230	2.7	82	
1640	-4.4	-134	O 1719	-4.0	-123	1713	-3.7	-112	1803	-3.4	-104	
2259	3.2	99	2330	3.3	101	2334	3.6	111	2355	3.4	105	
5 Sa 0454	-4.5	-136	20 Su 0545	-5.3	-161	5 Tu 0532	-5.9	-180	5 Th 0603	-6.5	-198	
1121	3.5	108	Su 1207	3.3	102	Su 1227	3.4	105	W 0630	-5.7	-173	
1712	-4.3	-131	1753	-3.8	-116	Tu 1750	-3.5	-106	Th 1302	3.0	90	
● 2332	3.5	106	1835	-3.3	-102	1835	-3.3	-102	1818	-3.4	-104	
6 Su 0524	-4.9	-148	21 M 0005	3.2	99	6 W 0013	3.6	111	6 F 0041	3.3	101	
1201	3.6	111	0620	-5.3	-163	W 0613	-6.0	-182	M 0650	-6.3	-193	
1741	-4.1	-124	1247	3.2	97	1312	3.2	98	Th 1349	2.8	84	
1826	-3.6	-110	1826	-3.6	-110	1831	-3.3	-100	1906	-3.4	-104	
7 M 0005	3.6	109	22 Tu 0038	3.1	95	7 Th 0055	3.5	106	7 F 0040	2.6	80	
0555	-5.2	-157	0653	-5.3	-163	W 0659	-5.9	-179	Th 0700	-5.6	-170	
1241	3.6	109	1326	2.9	89	1400	2.9	89	1343	2.4	72	
1813	-3.8	-116	1900	-3.4	-104	1918	-3.1	-95	1909	-3.3	-101	
8 Tu 0039	3.6	110	23 W 0110	2.9	89	8 F 0141	3.2	97	8 Sa 0112	2.5	75	
0631	-5.3	-163	0729	-5.2	-160	W 0752	-5.6	-171	W 0732	-5.4	-165	
1323	3.3	102	1406	2.6	80	1452	2.6	79	Th 1419	2.2	66	
1850	-3.5	-108	1938	-3.2	-98	2013	-3.0	-90	1946	-3.2	-99	
9 W 0116	3.5	106	24 Th 0142	2.7	82	9 Sa 0233	2.8	84	9 M 0225	2.0	60	
0714	-5.3	-163	0808	-5.1	-154	Sa 0852	-5.2	-160	Sa 0849	-4.9	-148	
1409	3.0	91	1448	2.3	70	1549	2.3	71	1456	2.0	61	
1933	-3.2	-98	2020	-3.0	-91	2121	-2.9	-88	2028	-3.1	-96	
10 Th 0158	3.2	99	25 F 0218	2.4	72	10 M 0337	2.3	70	10 W 0312	1.6	50	
0805	-5.2	-160	0850	-4.8	-145	Su 1000	-4.8	-147	Su 0935	-4.5	-137	
1502	2.6	79	1533	2.0	61	Su 1651	2.2	67	M 1622	1.7	53	
2026	-2.9	-89	2108	-2.7	-83	O 2242	-3.0	-90	2210	-3.1	-93	
11 F 0247	2.9	88	26 Sa 0259	2.0	61	11 M 0452	1.9	59	11 O 0409	1.3	41	
0905	-5.0	-152	0937	-4.4	-134	Sa 1116	-4.5	-136	W 1027	-4.1	-126	
1603	2.2	68	1623	1.7	53	M 1756	2.2	66	Th 1714	1.7	53	
2130	-2.7	-81	2202	-2.5	-76	O 2311	-3.1	-96	O 2242	-3.6	-110	
12 Sa 0348	2.5	75	27 Su 0350	1.6	50	12 Tu 0005	-3.2	-99	12 W 0520	1.2	36	
1016	-4.7	-144	1031	-4.0	-123	Tu 0612	1.8	56	W 1128	-3.9	-118	
1712	2.0	62	1719	1.6	49	1233	-4.2	-127	Th 1812	1.8	56	
● 2251	-2.5	-77	O 2305	-2.4	-74	1900	2.3	69	1306	-3.6	-111	
13 Su 0504	2.1	65	28 M 0457	1.4	42	13 W 0121	-3.7	-114	1308	-3.6	-111	
1139	-4.5	-137	1133	-3.8	-115	Th 0727	2.0	60	1306	-3.6	-111	
1824	2.0	62	1819	1.6	49	1342	-4.0	-123	1910	2.1	63	
14 M 0020	-2.7	-82	29 Tu 0014	-2.5	-77	2000	2.5	75	2018	2.2	66	
0628	2.1	64	0617	1.3	41	14 F 0227	-4.3	-132	1404	-4.0	-121	
1301	-4.5	-136	1240	-3.7	-112	Th 0834	2.3	69	29 W 0750	1.5	47	
1934	2.3	69	1918	1.8	56	1442	-3.9	-120	F 1336	-3.7	-112	
15 Tu 0140	-3.1	-96	30 W 0120	-2.9	-88	2053	2.7	82	2004	2.4	72	
0745	2.3	71	0731	1.6	49	14	0227	-4.3	-132	14 O 0120	-4.0	-121
1410	-4.5	-137	1341	-3.7	-114	Th 0834	2.3	69	29 F 0750	1.5	47	
2035	2.6	79	2011	2.2	67	1442	-3.9	-120	Th 1336	-3.7	-112	
16 Th 0216	-3.4	-105	31 Th 0832	2.1	63	2053	2.7	82	29 M 0120	-4.0	-121	
0832	2.1	63	1433	-3.9	-118	14	0227	-4.3	-132	29 W 0750	1.5	47
1433	-3.9	-118	2057	2.6	79	Th 0834	2.3	69	29 F 1336	-3.7	-112	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0505	-2.0	-61		16 W 0600	-1.8	-54		1 F 0020	0.5	15	
1258	1.1	33		W 1322	1.0	30		F 0601	-1.4	-42	
1821	-0.4	-11		1923	-0.9	-26		Sa 1317	0.8	25	
2322	0.4	12						1346	0.5	16	
								2042	-1.3	-40	
2 W 0545	-1.8	-55		17 Th 0122	0.3	9		16 Sa 0225	0.4	11	
1332	1.0	32		0703	-1.3	-39		Sa 0751	-0.6	-18	
1916	-0.6	-17		1405	0.9	27		1144	0.7	22	
				2036	-1.0	-32		1731	-1.5	-46	
3 Th 0024	0.3	10		18 F 0249	0.2	7		1 F 1144	-1.2	-36	
0631	-1.6	-48		0816	-0.9	-26		Sa 1144	0.7	22	
1410	1.0	31		1451	0.8	23		1211	0.7	20	
2015	-0.8	-25		2141	-1.2	-37		1828	-1.7	-51	
4 F 0142	0.3	8		19 Sa 0419	0.2	7		18 M 0513	0.4	13	
0728	-1.2	-38		0931	-0.5	-16		Su 1024	-0.2	-6	
1452	1.0	29		1537	0.6	19		M 1517	0.3	9	
2113	-1.1	-34		● 2243	-1.4	-42		○ 2244	-1.5	-45	
5 Sa 0314	0.3	8		20 Su 0552	0.4	11		3 Su 0136	0.7	22	
0838	-1.0	-29		1049	-0.3	-9		16 M 0641	-0.6	-18	
1536	0.8	25		1622	0.5	15		1246	0.6	17	
● 2208	-1.4	-44		2340	-1.5	-47		1936	-1.8	-55	
6 Su 0444	0.4	11		21 M 0710	0.5	16		4 M 0255	0.7	21	
0952	-0.7	-21		1214	-0.2	-5		11 Tu 0807	-0.3	-10	
1621	0.7	22		1705	0.4	11		19 Tu 0630	0.6	17	
2300	-1.8	-55						1152	-0.1	-4	
				6 W 0430	0.5	14		19 M 0807	-0.3	-10	
7 M 0604	0.6	18		7 Tu 1059	-0.3	-10		1608	0.2	7	
1106	-0.5	-14		1625	0.4	13		2342	-1.6	-48	
1702	0.6	19		2329	-2.3	-70		2047	-1.9	-58	
2351	-2.2	-67									
				5 Tu 0551	0.6	19		5 Tu 0418	0.8	23	
8 Tu 0444	0.8	25		20 W 0726	0.7	20		1338	0.5	14	
1215	-0.3	-9		1059	-0.3	-10		1448	0.3	10	
1738	0.6	17		1625	0.4	13		2159	-2.0	-62	
				2329	-2.3	-70					
9 W 0039	-2.5	-77		7 Th 0024	-2.6	-78		5 W 0536	0.8	25	
0812	1.0	31		0807	0.7	20		6 W 036	-0.2	-7	
1314	-0.2	-6		1327	-0.1	-4		1113	-0.2	-6	
1812	0.6	17		1743	0.3	9		1606	0.3	8	
								1752	0.2	7	
10 Th 0124	-2.8	-86		22 Th 0031	-1.7	-52		2308	-2.1	-65	
0906	1.1	35		0846	0.9	28					
1400	-0.2	-5		1314	-0.3	-9		23 W 0642	0.9	28	
1847	0.6	18		1807	0.4	13		1225	-0.3	-10	
								1724	0.3	9	
11 F 0208	-3.0	-92		7 F 0024	-2.6	-78		22 F 0642	0.9	28	
0954	1.2	36		0846	0.8	24		1302	-0.3	-9	
1440	-0.2	-5		1314	-0.3	-8		1732	0.2	7	
1931	0.7	20		1818	0.3	8					
								1835	0.4	11	
12 Sa 0252	-3.1	-93		8 F 0114	-1.8	-56		23 F 0010	-2.2	-68	
1038	1.2	36		0852	0.8	24		0737	1.0	29	
1520	-0.3	-8		1418	-0.1	-4		1314	-0.5	-14	
● 2024	0.7	21		1818	0.3	8		1835	0.4	11	
13 Su 0335	-2.9	-89		8 W 0149	-2.0	-61		23 W 0010	-2.2	-68	
1120	1.1	35		0930	0.8	25		0825	0.9	27	
1604	-0.4	-12		1453	-0.1	-4		1350	-0.6	-19	
2125	0.7	20		1854	0.3	8		1939	0.4	13	
14 Th 0124	-2.7	-81		9 W 0219	-2.1	-64		25 M 0149	-2.1	-65	
0906	1.1	34		1001	0.9	27		1011	0.8	25	
1400	-0.2	-5		1517	-0.2	-5		1511	-0.6	-19	
1847	0.6	18		1932	0.3	10		2059	0.6	17	
15 F 0208	-3.0	-92		11 M 0321	-2.5	-75		10 F 0244	-1.9	-57	
0954	1.2	36		1051	0.9	26		1011	0.8	25	
1440	-0.2	-5		1542	-0.8	-25		1511	-0.6	-19	
1931	0.7	20		2152	0.6	18		2144	0.7	20	
16 Sa 0252	-3.1	-93		27 W 0311	-2.2	-67		11 M 0230	-1.9	-59	
1038	1.2	36		1055	0.9	28		0943	0.7	21	
1551	-0.3	-9		1551	-0.3	-9		1449	-1.0	-31	
● 2024	0.7	21		○ 2054	0.5	14		2132	0.6	18	
17 Su 0335	-2.9	-89		28 W 0338	-2.2	-66		26 M 0308	-1.7	-51	
1120	1.1	35		1121	0.9	28		1014	0.6	19	
1614	-0.4	-13		1614	-0.4	-13		1522	-1.2	-36	
2138	0.7	20		2138	0.5	16		● 2225	0.6	19	
18 M 0420	-2.7	-81		29 Tu 0406	-2.1	-63		27 O 0242	-1.2	-37	
1200	1.1	34		1147	0.9	28		0940	0.8	23	
1657	-0.5	-16		1646	-0.6	-18		1502	-1.3	-40	
2235	0.6	17		2225	0.6	17		○ 2154	1.0	29	
19 Tu 0507	-2.2	-68		30 W 0438	-1.9	-58		13 W 0346	-1.3	-41	
1241	1.0	32		1214	0.9	28		1041	0.6	17	
1804	-0.7	-21		1726	-0.8	-24		1600	-1.3	-41	
2355	0.4	13		2318	0.5	16		2325	0.8	24	
20 F 0516	-1.7	-51		31 Th 0516	-1.7	-51		2136	-1.4	-44	
1058	0.9	27		1244	0.9	27					
1817	-1.0	-31		1817	-1.0	-31					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0136	1.1	34	16 Tu 0234	1.0	30	1 W 0233	1.4	44	1 Sa 0401	1.6	48
0639 -0.1	-2		0838 0.1	2	7	0820 0.2	7	16 Th 0242	1.3	40	
1140 0.6	18		1216 0.3	10		1227 0.6	18	16 Sa 1029	-0.2	-7	
1901 -2.0	-60		1928 -1.3	-40		1950 -1.7	-51	16 Th 0854	0.3	8	
2 Tu 0248	1.1	33	17 W 0330	1.0	30	17 F 0328	1.3	41	2 Su 1627	0.8	25
0817 0.0	0		0941 0.1	2		0950 0.0	1	2 O 2205	-0.5	-15	
1244 0.5	14		1315 0.3	8		1431 0.5	14	2 M 1128	-0.5	-16	
2016 -1.9	-58		2026 -1.2	-37		2110 -1.4	-43	2 M 1755	1.0	30	
3 W 0403	1.1	33	18 Th 0425	1.0	31	3 F 0413	1.3	41	3 M 2320	-0.2	-6
0956 0.0	-1		1043 0.0	0		1102 -0.3	-8	3 M 1220	-0.8	-23	
1425 0.3	9		1429 0.2	7		1629 0.5	15	3 O 1911	1.1	35	
2133 -1.8	-55		2128 -1.1	-34		2228 -1.1	-35	3 O 1844	1.5	46	
4 Th 0513	1.1	33	19 F 0515	1.0	31	4 Sa 0537	1.3	39	4 Tu 1107	-0.6	-18
1120 -0.2	-7		1132 -0.1	-4		1158 -0.5	-16	4 Tu 1744	1.2	36	
1615 0.3	8		1550 0.3	8		1758 0.6	19	4 Tu 2256	0.1	4	
2248 -1.7	-53		2231 -1.0	-32		2339 -0.9	-28	4 W 0441	1.5	46	
5 F 0614	1.1	33	20 Sa 0559	1.0	32	5 M 0628	1.1	35	5 M 0519	1.4	44
1219 -0.5	-14		1211 -0.3	-10		1245 -0.8	-24	5 M 0630	1.1	35	
1749 0.4	11		1711 0.3	10		1912 0.8	24	5 W 1852	1.4	43	
2356 -1.6	-50		2329 -1.0	-30		2333 -0.4	-12	5 W 2357	0.3	9	
6 Sa 0706	1.0	31	21 Su 0640	1.0	32	6 M 0042	-0.7	-21	6 Th 0136	0.2	7
1304 -0.7	-21		1242 -0.5	-16		0713 1.0	30	6 W 0707	1.0	30	
1903 0.5	15		1823 0.5	15		1325 -1.0	-30	6 M 1804	0.8	25	
						2015 1.0	29	6 M 1343	-1.0	-32	
7 Su 0053	-1.5	-46	22 M 0019	-0.9	-28	7 Tu 0138	-0.5	-14	7 W 2110	1.4	43
0752 0.9	27		0717 1.0	31		0752 0.8	25	7 M 0729	0.9	26	
1340 -0.9	-27		1310 -0.8	-23		1358 -1.1	-35	7 Th 1414	-1.1	-35	
2005 0.6	19		1924 0.7	21		2110 1.0	32	7 W 2156	1.5	45	
8 M 0142	-1.3	-39	23 Tu 0102	-0.8	-25	8 W 0228	-0.2	-7	8 Th 0235	0.4	12
0832 0.8	23		0749 1.0	29		0821 0.7	20	8 W 0729	0.9	26	
1410 -1.0	-32		1336 -1.0	-32		1427 -1.3	-39	8 M 1414	-1.2	-37	
2101 0.7	22		2017 0.9	28		2158 1.1	34	8 M 2236	1.5	46	
9 Tu 0224	-1.0	-32	24 W 0140	-0.7	-21	9 Th 0315	0.0	-1	9 W 2312	1.5	47
0905 0.6	18		0815 0.9	27		0833 0.6	17	9 M 0409	0.6	18	
1437 -1.2	-38		1402 -1.3	-41		1452 -1.4	-42	9 M 0734	0.8	24	
2151 0.8	24		2107 1.1	34		2241 1.2	36	9 M 1506	-1.3	-39	
10 W 0303	-0.8	-24	25 Th 0215	-0.5	-16	10 Th 0359	0.1	4	10 W 2312	1.5	47
0930 0.5	15		0833 0.8	25		0827 0.5	16	10 M 0514	0.7	20	
1505 -1.4	-42		1432 -1.7	-51		1519 -1.4	-44	10 M 0844	0.9	27	
● 2238 0.9	26		2155 1.3	40		2321 1.2	37	10 M 1604	-1.3	-40	
11 Th 0342	-0.5	-16	26 F 0251	-0.3	-9	11 Sa 0445	0.3	8	11 W 0016	1.6	48
0944 0.4	13		0842 0.8	25		0845 0.6	17	11 M 0543	0.7	20	
1537 -1.5	-46		1507 -2.0	-60		1551 -1.5	-46	11 Tu 0930	0.9	28	
2322 0.9	28		2244 1.4	44		2359 1.2	38	11 Tu 1638	-1.2	-38	
12 F 0426	-0.3	-10	27 Sa 0329	-0.1	-3	12 M 0534	0.3	10	12 W 0048	1.6	49
0955 0.4	13		0856 0.9	26		0918 0.6	18	12 M 0851	1.2	38	
1614 -1.5	-47		1548 -2.1	-65		1627 -1.5	-46	12 W 1620	-2.2	-67	
			2335 1.5	46				12 W 1020	1.0	29	
13 Sa 0007	1.0	29	28 Su 0415	0.1	3	13 M 0037	1.3	39	13 W 1715	-1.1	-35
0524 -0.2	-5		0925 0.9	28		0624 0.4	11	13 Th 0019	1.8	56	
1018 0.4	13		1635 -2.2	-68		0958 0.6	18	13 Th 0501	0.6	17	
1656 -1.5	-47					1706 -1.4	-44	13 Th 0948	1.2	36	
14 Su 0052	1.0	29				1714 -2.0	-61	13 Th 1114	0.9	28	
0631 0.0	-1		29 M 0029	1.5	46			13 Th 1756	-1.0	-30	
1050 0.4	13		0514 0.2	7				13 Th 2048	1.2	37	
1742 -1.5	-46		1007 0.9	27				13 Th 1902	-0.7	-22	
15 M 0141	1.0	30	1731 -2.1	-65							
0736 0.1	2										
1129 0.4	12										
1833 -1.4	-43										

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0406	1.6	50	16 0305	1.7	52	1 Th 0002	0.9	27	16 0352	1.4	44
1053	-0.4	-13	Tu 0934	-0.4	-11	0451	1.4	43	F 1052	-1.0	-31
1743	1.3	41	1608	1.3	41	1207	-0.6	-18	1823	1.9	58
2258	0.4	12	● 2120	0.4	11	1943	1.8	55	2344	0.8	25
2 Tu 0457	1.5	45	17 W 0348	1.6	49	2 0115	0.9	28	17 Sa 0446	1.4	44
1150	-0.6	-19	1027	-0.7	-20	0531	1.3	40	1149	-1.2	-38
1902	1.5	46	1727	1.5	47	1254	-0.7	-21	1923	2.0	62
			2233	0.6	17	2032	1.9	57			
3 W 0017	0.6	18	18 Th 0430	1.5	47	3 Sa 0207	0.9	28	18 Su 0044	0.8	24
0542	1.3	41	1118	-1.0	-30	0604	1.2	38	0537	1.4	44
1240	-0.8	-23	1837	1.7	53	1332	-0.8	-23	1242	-1.4	-44
2006	1.6	50	2342	0.7	21	2114	1.9	58	2016	2.1	63
4 Th 0131	0.7	21	19 0507	1.5	45	4 Su 0244	0.9	28	19 M 0127	0.7	21
0618	1.2	37	1207	-1.3	-40	0636	1.2	38	0627	1.5	46
1322	-0.9	-26	1939	1.9	59	1404	-0.8	-24	1328	-1.5	-46
2059	1.7	52				2148	1.9	58	2102	2.1	63
5 F 0230	0.8	24	20 Sa 0043	0.8	24	5 M 0310	0.9	28	20 Tu 0202	0.6	18
0637	1.1	34	0541	1.5	45	0712	1.3	39	0721	1.6	48
1357	-1.0	-29	1254	-1.6	-48	1431	-0.8	-25	1412	-1.4	-44
2143	1.8	54	2034	2.1	63	2217	1.9	57	2144	2.0	61
6 Sa 0315	0.8	25	21 Su 0131	0.8	25	6 Tu 0326	0.9	26	21 W 0236	0.4	12
0649	1.0	32	0616	1.5	47	0753	1.3	41	0822	1.6	50
1426	-1.0	-30	1339	-1.8	-54	1456	-0.8	-25	1453	-1.2	-38
2220	1.8	54	2124	2.1	65	2243	1.9	57	● 2222	1.9	58
7 Su 0348	0.9	26	22 M 0211	0.8	25	7 Th 0339	0.8	24	22 Sa 0313	0.2	6
0713	1.1	33	0658	1.6	49	0837	1.4	43	0931	1.7	51
1451	-1.0	-32	1422	-1.8	-56	1521	-0.8	-23	1535	-1.0	-29
2251	1.8	54	2209	2.1	65	● 2307	1.8	56	2257	1.8	56
8 M 0411	0.9	27	23 Tu 0248	0.7	22	8 Th 0358	0.7	20	23 F 0357	0.0	0
0749	1.1	35	0751	1.7	51	0924	1.5	45	1042	1.7	51
1516	-1.0	-32	1506	-1.7	-53	1548	-0.7	-21	1620	-0.6	-17
● 2319	1.8	54	○ 2252	2.1	64	2330	1.8	56	2331	1.8	55
9 Tu 0426	0.9	26	24 W 0330	0.6	18	9 F 0426	0.5	15	24 Sa 0449	-0.1	-4
0833	1.2	36	0853	1.7	51	1013	1.5	47	1152	1.6	50
1543	-1.0	-32	1550	-1.5	-46	1618	-0.5	-16	1711	-0.1	-4
2346	1.8	55	2332	2.1	63	2355	1.8	56			
10 W 0444	0.8	25	25 Th 0419	0.5	14	10 Sa 0503	0.3	9	25 Su 0006	1.7	53
0920	1.2	38	1007	1.6	50	1106	1.6	48	0554	-0.2	-7
1613	-1.0	-30	1637	-1.1	-34	1653	-0.3	-10	1301	1.6	49
									1820	0.3	8
11 Th 0012	1.8	55	26 F 0012	2.0	61	11 M 0020	1.8	56	26 Tu 0044	1.6	50
0514	0.7	22	0519	0.3	9	0549	0.1	3	0708	-0.3	-9
1011	1.3	39	1134	1.5	47	1205	1.5	47	1412	1.6	48
1646	-0.9	-26	1731	-0.7	-20	1735	-0.1	-3	1944	0.6	17
12 F 0040	1.8	56	27 Sa 0053	2.0	60	12 M 0050	1.8	55	27 Tu 0127	1.5	47
0554	0.6	17	0637	0.1	4	0645	-0.1	-3	0818	-0.4	-11
1105	1.3	40	1303	1.5	45	1314	1.5	47	1529	1.6	49
1722	-0.7	-21	1837	-0.2	-5	1830	0.2	6	2102	0.8	23
13 Sa 0111	1.8	56	28 Su 0137	1.9	57	13 Th 0125	1.7	53	28 W 0215	1.4	44
0645	0.4	12	0758	-0.1	-2	0747	-0.3	-9	0922	-0.4	-12
1205	1.3	39	1428	1.4	44	1433	1.5	47	1651	1.6	50
1805	-0.5	-14	1958	0.3	8	1944	0.5	14	● 2221	0.9	26
14 Su 0145	1.8	56	29 M 0224	1.8	54	14 Th 0207	1.6	50	29 Th 0308	1.3	41
0742	0.2	6	0908	-0.2	-7	0850	-0.6	-17	1024	-0.4	-13
1318	1.2	38	1554	1.4	44	1555	1.6	50	1804	1.7	53
1859	-0.2	-5	2118	0.6	17	● 2107	0.7	20	2343	0.9	26
15 M 0223	1.8	54	30 Tu 0313	1.6	50	15 Th 0258	1.5	47	30 Sa 0402	1.2	38
0839	-0.1	-2	1011	-0.4	-11	0952	-0.8	-24	1123	-0.5	-15
1442	1.2	38	1723	1.6	48				1902	1.8	55
2006	0.1	3	● 2237	0.8	24						
16 W 0403	1.5	46	31 W 1111	-0.5	-15				31 Sa 0048	0.8	25
			1842	1.7	52				0456	1.2	37
									1216	-0.6	-17
									1949	1.8	56

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2013

Times and Heights of High and Low Waters

October			November			December							
Time	Height		Time	Height		Time	Height		Time	Height			
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 Tu 0119 0.3 8 0635 1.1 33 1300 -0.6 -17 2002 1.6 48	16 W 0110 -0.5 -14 0737 1.2 37 1317 -0.8 -25 2000 1.3 41		1 F 0128 -0.8 -25 0811 1.2 36 1339 -0.3 -10 2002 1.1 33		16 Sa 0210 -1.5 -46 0935 1.2 38 1500 -0.2 -5 2024 0.6 18	1 Su 0128 -1.8 -55 0848 1.2 37 1353 -0.2 -5 1926 0.7 22		16 M 0236 -2.0 -61 1019 1.0 32 1549 -0.1 -2 1950 0.3 9					
			2 W 0143 0.1 3 0728 1.2 37 1336 -0.5 -15 2033 1.5 46	17 Th 0144 -0.7 -21 0835 1.3 41 1404 -0.6 -18 2036 1.1 35		2 Sa 0155 -1.1 -34 0859 1.4 42 1415 -0.2 -6 2025 1.0 30	17 Su 0241 -1.6 -50 1022 1.3 39 1548 0.0 0 O 2033 0.5 15		2 M 0201 -2.1 -65 0936 1.4 42 1433 0.0 -1 1943 0.7 22	17 Tu 0304 -2.0 -62 1057 1.0 32 1626 0.0 -1 O 2012 0.3 9			
			3 Th 0204 -0.1 -3 0817 1.3 41 1407 -0.4 -13 2101 1.4 44	18 F 0216 -0.9 -27 0929 1.4 44 1448 -0.3 -10 2106 1.0 31		3 Su 0223 -1.4 -43 0944 1.5 47 1449 0.0 -1 ● 2040 1.0 29	18 M 0311 -1.7 -52 1104 1.3 40 1635 0.1 2 2047 0.5 15		3 Tu 0237 -2.4 -73 1022 1.5 46 1511 0.1 2 ● 2005 0.8 24	18 W 0332 -2.1 -63 1131 1.0 32 1659 0.0 -1 2048 0.3 9			
			4 F 0226 -0.3 -9 0902 1.5 45 1436 -0.3 -10 2125 1.4 42	19 Sa 0247 -1.1 -33 1018 1.5 45 1531 -0.1 -3 O 2128 0.9 28		4 M 0255 -1.7 -51 1030 1.6 50 1525 0.1 3 2053 1.0 29	19 Tu 0344 -1.7 -53 1144 1.3 40 1723 0.1 4 2118 0.5 14		4 W 0317 -2.6 -79 1108 1.5 47 1553 0.1 3 2043 0.8 25	19 Th 0402 -2.1 -63 1204 1.0 32 1732 0.0 -1 2131 0.3 10			
5 Sa 0250 -0.6 -17 0946 1.6 49 ● 1505 -0.2 -5 2145 1.3 40	20 Su 0321 -1.2 -37 1106 1.5 46 1620 0.1 3 2144 0.9 26		5 Tu 0332 -1.9 -58 1116 1.7 52 1607 0.2 7 2115 1.0 29	20 W 0420 -1.7 -53 1224 1.3 40 1813 0.1 4 2159 0.5 14		5 Th 0401 -2.6 -80 1155 1.5 47 1643 0.1 3 2134 0.8 25		20 F 0434 -2.0 -61 1235 1.0 32 1809 0.0 -3 2218 0.3 10					
			6 Su 0318 -0.8 -25 1031 1.7 52 1538 0.0 0 2200 1.2 38	21 M 0359 -1.2 -38 1152 1.5 46 1720 0.2 7 2209 0.8 25		6 W 0415 -2.0 -61 1206 1.7 53 1700 0.3 10 2153 1.0 29	21 Th 0459 -1.7 -51 1303 1.3 39 1903 0.1 4 2246 0.4 13		6 F 0450 -2.5 -77 1244 1.5 46 1747 0.0 1 2238 0.7 22	21 Sa 0509 -1.9 -58 1307 1.0 32 1851 0.0 -5 2308 0.3 9			
			7 M 0353 -1.0 -32 1119 1.8 54 1616 0.2 6 2215 1.2 38	22 Tu 0443 -1.2 -38 1239 1.5 46 1827 0.3 10 2245 0.8 24		7 Th 0505 -2.0 -61 1300 1.7 52 1812 0.4 11 2247 0.9 27	22 F 0541 -1.5 -47 1344 1.3 39 1954 0.1 2 2337 0.4 12		7 Sa 0545 -2.3 -69 1335 1.4 44 1910 0.1 -4	22 Su 0546 -1.7 -52 1341 1.0 32 1939 0.0 -9			
			8 Tu 0435 -1.2 -38 1211 1.8 55 1706 0.4 11 2240 1.2 37	23 W 0531 -1.2 -36 1328 1.5 45 1931 0.4 11 2329 0.7 22		8 F 0605 -1.9 -57 1359 1.6 50 1941 0.3 8	23 Sa 0627 -1.4 -43 1427 1.2 38 2045 0.0 -1		8 Su 0002 0.6 17 0649 -1.9 -57 1429 1.4 42 2036 -0.4 -12	23 M 0004 0.3 8 0628 -1.5 -46 1417 1.0 31 2029 -0.5 -14			
9 W 0526 -1.3 -40 1309 1.8 54 1817 0.5 16 2320 1.1 35	24 Th 0624 -1.1 -33 1420 1.5 45 2032 0.3 10		9 Sa 0004 0.7 22 0714 -1.6 -50 1501 1.6 48 2108 0.1 2	24 M 0037 0.3 10 0718 -1.2 -37 1510 1.2 37 2134 -0.2 -5		9 M 0154 0.4 12 0803 -1.5 -45 1524 1.2 38 ● 2150 -0.7 -22		24 Tu 0110 0.2 5 0718 -1.2 -38 1456 1.0 30 2119 -0.7 -21					
			10 Th 0628 -1.3 -40 1415 1.7 53 1949 0.6 17	25 F 0021 0.7 20 0720 -1.0 -29 1514 1.4 44 2133 0.3 9		10 Su 0154 0.6 18 0831 -1.4 -42 1602 1.5 46 ● 2221 -0.2 -7	25 M 0149 0.3 8 0815 -1.0 -31 1554 1.2 36 2222 -0.3 -10		10 Tu 0343 0.4 12 0924 -1.1 -33 1619 1.1 35 2254 -1.0 -32	25 W 0232 0.1 4 0817 -1.0 -31 1538 1.0 29 ● 2209 -1.0 -29			
			11 F 0022 1.0 31 0740 -1.2 -38 1525 1.7 52 2120 0.5 15	26 Sa 0123 0.6 18 0820 -0.8 -25 1607 1.4 43 2230 0.2 6		11 M 0350 0.6 18 0950 -1.1 -35 1700 1.4 43 2322 -0.6 -17	26 Tu 0313 0.3 8 0917 -0.8 -25 1637 1.1 35 ● 2305 -0.6 -18		11 W 0516 0.5 15 1042 -0.8 -23 1712 1.0 30 2351 -1.3 -41	26 Th 0402 0.2 6 0924 -0.8 -23 1621 0.9 26 2256 -1.2 -38			
			12 Sa 0157 0.9 28 0857 -1.2 -37 1633 1.7 52 ● 2240 0.3 9	27 Su 0235 0.6 17 0922 -0.7 -22 1657 1.4 42 ● 2319 0.1 2		12 Tu 0523 0.7 22 1105 -0.9 -28 1752 1.3 39	27 W 0440 0.4 11 1021 -0.7 -20 1719 1.1 33 2345 -0.9 -26		12 Th 0638 0.7 21 1157 -0.5 -16 1802 0.8 25	27 F 0525 0.3 10 1033 -0.6 -17 1703 0.8 23 2341 -1.6 -49			
13 Su 0342 0.9 26 1012 -1.1 -35 1735 1.7 52 2342 0.0 1	28 M 0355 0.6 17 1024 -0.6 -19 1741 1.4 42 2359 -0.1 -3		13 W 0013 -0.9 -26 0640 0.9 27 1213 -0.7 -22 1840 1.1 34	28 Th 0556 0.5 16 1122 -0.5 -16 1759 1.0 31		13 F 0042 -1.6 -49 0747 0.9 26 1308 -0.4 -11 1846 0.6 19		28 Sa 0636 0.6 17 1140 -0.4 -12 1741 0.7 20					
			14 M 0515 1.0 29 1122 -1.1 -33 1829 1.6 50	29 Tu 0513 0.7 20 1123 -0.6 -17 1821 1.3 40		14 Th 0057 -1.1 -35 0746 1.0 32 1313 -0.5 -16 1923 0.9 28	29 F 0021 -1.1 -35 0700 0.8 23 1219 -0.4 -13 1834 0.9 27		14 Sa 0126 -1.8 -54 0846 1.0 30 1411 -0.2 -7 1922 0.5 14	29 Su 0023 -1.9 -59 0738 0.8 25 1241 -0.3 -9 1814 0.6 18			
			15 Tu 0030 -0.2 -7 0631 1.1 33 1223 -1.0 -30 1917 1.5 46	30 W 0032 -0.3 -10 0622 0.8 25 1215 -0.5 -15 1859 1.3 39		15 F 0136 -1.3 -41 0844 1.2 36 1409 -0.3 -10 1959 0.7 22	30 Sa 0055 -1.5 -45 0757 1.0 30 1309 -0.3 -9 1904 0.8 24		15 Su 0204 -1.9 -58 0936 1.0 31 1504 -0.1 -4 1942 0.3 10	30 M 0104 -2.3 -70 0833 1.0 32 1332 -0.2 -5 1840 0.6 18			
			31 Th 0102 -0.6 -17 0720 1.0 30 1300 -0.4 -13 1933 1.2 36						31 Tu 0143 -2.6 -80 0922 1.2 36 1414 -0.1 -4 1908 0.6 19				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Huangpu, China, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu	0136	8.6	263	16 W	0246	8.4	257	1 F	0303	7.4	225
Tu	1021	0.8	24	W	1053	1.1	34	F	1042	1.2	36
1604	6.4	196		1656	6.9	209		1621	7.1	215	
2100	3.0	92		2224	2.8	86		2243	2.1	64	
2 W	0213	8.3	252	17 Th	0330	7.5	230	2 Sa	0353	6.7	205
W	1050	0.8	24	Th	1117	1.4	43	Sa	1108	1.6	48
1642	6.6	201		1732	6.8	208		1644	7.2	220	
2147	3.1	93		2322	3.1	93		2349	2.3	69	
3 Th	0257	7.7	236	18 F	0426	6.6	201	3 Su	0458	5.9	181
Th	1123	1.0	32	F	1144	1.9	57	Su	1145	2.2	68
1719	6.7	205		1801	6.8	206		1719	7.4	227	
2247	3.1	96		O				O	1736	6.6	201
4 F	0348	7.1	215	19 Sa	0043	3.1	96	4 M	0121	2.2	68
F	1152	1.4	42	Sa	0535	5.6	170	M	0633	5.2	157
1758	7.0	212		1205	2.6	78		1228	3.1	95	
O	1841	6.8	206		1818	7.7	234				
5 Sa	0001	3.2	98	20 Su	0218	2.9	87	5 Tu	0254	1.9	57
Sa	0456	6.3	192	Su	0715	4.7	144	Tu	0906	4.8	145
O	1232	1.9	57	Su	1241	3.3	100		1338	3.8	116
O	1840	7.3	222	Su	1936	6.9	209		1934	8.0	243
6 Su	0136	3.0	92	21 M	0344	2.3	70	6 W	0428	1.4	42
Su	0627	5.6	170	M	0951	4.4	134	W	1115	5.2	157
1322	2.5	77		M	1347	3.9	120		1513	4.1	124
1925	7.7	236			2034	7.1	217		2050	8.5	259
7 M	0312	2.5	76	22 Tu	0456	1.6	50	7 Th	0548	0.8	25
M	0849	5.2	158	Tu	1150	4.8	145	F	1214	5.6	172
1426	3.1	94		Th	1517	4.2	128		1634	3.7	114
2016	8.3	254		Th	2122	7.5	229		2155	9.0	275
8 Tu	0441	1.7	53	23 W	0554	1.1	33	8 F	0651	0.5	15
Tu	1046	5.3	163	W	1225	5.2	157	Sa	1252	6.0	183
1534	3.3	102		W	1625	4.1	124	F	1737	3.1	95
2108	9.0	273		W	2205	8.0	243		2251	9.4	288
9 W	0554	1.1	33	24 Th	0643	0.7	22	9 Sa	0745	0.5	14
W	1159	5.7	174	Th	1250	5.4	165	Sa	1324	6.3	191
1638	3.4	103		Th	1708	3.7	112	Sa	1831	2.5	76
2159	9.5	290		Th	2242	8.4	255	Sa	2341	9.6	292
10 Th	0658	0.6	17	25 F	0723	0.6	19	10 Su	0824	0.7	22
Th	1254	6.0	184	F	1311	5.6	172	Su	1358	6.5	199
1737	3.2	98		F	1748	3.2	98		1911	2.1	64
2250	9.9	302		F	2316	8.7	265	O			
11 F	0754	0.3	10	26 Sa	0756	0.6	17	11 M	0028	9.4	288
F	1339	6.2	190	Sa	1335	5.8	178	M	0854	0.9	26
1831	3.0	90		Sa	1830	2.9	87	M	1430	6.7	204
2338	10.1	308		Sa	2353	8.8	269	M	1955	1.7	53
12 Sa	0845	0.3	10	27 Su	0834	0.6	19	12 Tu	0115	9.1	276
Sa	1420	6.4	195	Su	1400	6.0	184	Tu	0929	1.1	35
1913	2.8	85		Su	1902	2.5	76	Tu	1459	6.9	210
O				Su					2042	1.6	48
13 Su	0024	10.0	306	28 M	0026	8.8	268	13 W	0201	8.5	259
Su	0925	0.6	18	M	0857	0.8	23	W	0943	1.2	36
1502	6.6	200		M	1428	6.2	190	W	1528	7.0	213
1958	2.5	77		M	1941	2.2	67	W	2125	1.8	55
14 M	0112	9.7	297	29 Tu	0104	8.6	263	14 Th	0244	7.8	239
M	0958	0.7	20	Tu	0929	0.9	28	Th	1002	1.4	42
1543	6.7	204		Tu	1457	6.5	197	Th	1548	7.0	214
2046	2.4	73		Tu	2023	2.1	65	Th	2207	1.9	59
15 Tu	0200	9.2	280	30 W	0140	8.3	253	15 F	0328	7.1	216
Tu	1036	0.8	25	W	0950	0.9	27	F	1028	1.7	53
1620	6.8	208		W	1526	6.7	204	F	1601	7.0	212
2137	2.5	76		W	2058	2.0	60	F	2304	2.1	65
16 Sa	0218	7.9	242	31 Th	0218	1.0	31				
Sa	1015	1.0	31	Th	1554	6.9	210				
				Th	2145	2.0	60				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Huangpu, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0417	6.4	196	16	0445	5.8	177	1 W	0536	6.2	188
	1003	3.1	94		0941	3.8	116		1043	4.0	123
	1509	9.1	277		1504	8.1	248		1556	9.3	284
	2358	0.8	25								
2 Tu	0529	5.8	177	17 W	0005	1.2	37	2 Th	0059	1.0	31
	1043	3.8	115		0553	5.4	164		0704	6.1	186
	1601	8.7	266		1006	4.3	132		1154	4.5	136
					1544	7.7	234		1707	8.6	263
3 W	0105	1.1	33	18 F	0102	1.4	42	3 F	0203	1.4	42
	0718	5.4	165		0727	5.2	159		0828	6.4	194
	1141	4.5	138		1044	4.8	147		1332	4.5	136
	1713	8.2	251		1642	7.2	219		1831	8.0	244
4 Th	0229	1.3	40	19 F	0210	1.5	46	4 Sa	0309	1.6	50
	0933	5.7	173		0918	5.5	167		0927	6.9	209
	1336	4.8	147		1255	5.1	155		1459	4.0	121
	1852	7.9	240		1814	6.8	207		2000	7.6	232
5 F	0350	1.3	40	20 Sa	0319	1.5	47	5 Su	0405	1.8	55
	1035	6.2	190		1000	6.0	182		1007	7.4	225
	1519	4.3	132		1449	4.6	140		1615	3.3	100
	2025	7.9	241		1959	6.8	206		2119	7.4	226
6 Sa	0456	1.3	39	21 Su	0416	1.6	48	6 M	0451	2.0	60
	1108	6.8	206		1020	6.5	199		1037	7.8	239
	1633	3.4	104		1602	3.8	116		1720	2.6	80
	2142	8.1	246		2118	7.1	215		2229	7.3	223
7 Su	0546	1.3	40	22 M	0501	1.6	49	7 Tu	0532	2.1	64
	1135	7.2	219		1041	7.1	217		1103	8.2	217
	1729	2.6	80		1659	3.0	90		1817	2.1	65
	2245	8.2	249		2219	7.4	226		2325	7.3	221
8 M	0626	1.5	47	23 Tu	0541	1.7	52	8 W	0603	2.3	71
	1158	7.5	230		1103	7.8	237		1125	8.6	262
	1818	2.0	61		1753	2.2	68		1904	1.8	54
	2338	8.1	247		2312	7.6	233				
9 Tu	0651	1.7	52	24 W	0616	1.8	56	9 Th	0012	7.2	218
	1219	7.9	240		1128	8.4	256		0638	2.5	75
	1905	1.6	50		1845	1.7	51		1152	8.9	270
									1949	1.5	46
10 W	0023	7.9	242	25 Th	0001	7.7	236	10 F	0053	7.1	215
	0721	1.9	59		0651	1.9	58		0703	2.7	83
	1239	8.1	248		1158	9.0	274		1216	9.1	277
	1952	1.4	43		1940	1.2	37		2035	1.3	40
11 Th	0106	7.7	235	26 F	0048	7.7	234	11 Sa	0131	6.9	211
	0747	2.0	61		0730	2.2	66		0736	2.8	85
	1300	8.4	255		1226	9.5	289		1244	9.2	280
	2038	1.2	38		2035	0.9	28		2108	1.3	40
12 F	0146	7.4	226	27 Sa	0136	7.5	229	12 Su	0210	6.8	207
	0810	2.3	70		0759	2.3	70		0759	3.1	93
	1319	8.5	260		1259	9.9	302		1311	9.3	283
	2120	1.2	37		2125	0.9	26		2146	1.1	35
13 Sa	0226	7.1	216	28 Su	0226	7.2	220	13 M	0251	6.6	201
	0838	2.5	76		0840	2.5	77		0832	3.1	96
	1342	8.6	262		1333	10.1	308		1340	9.2	280
	2158	1.1	33		2211	0.6	18		2224	1.1	35
14 Su	0308	6.7	205	29 M	0322	6.9	209	14 Tu	0334	6.4	195
	0857	2.9	88		0910	3.1	94		0855	3.5	106
	1406	8.6	262		1411	10.1	309		1410	9.0	275
	2240	1.0	30		2303	0.5	16		2259	1.1	33
15 M	0353	6.3	192	30 Tu	0424	6.5	197	15 W	0422	6.1	187
	0923	3.3	100		0949	3.5	107		0928	3.8	116
	1431	8.4	257		1459	9.9	301		1445	8.7	265
	2321	1.1	33		2359	0.7	20		2342	1.1	33
16 F	0042	1.2	36	31 F	0621	6.8	207				
					1151	3.8	117				
					1655	8.8	268				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Huangpu, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0114 2.4 72 0704 7.6 232 1406 3.4 103 1854 6.6 202	h m ft cm	16 Tu 0014 2.2 67 0538 7.8 237	h m ft cm	1 Th 0140 4.2 129 0752 7.8 237	h m ft cm	16 F 0103 4.1 126 0647 8.7 266	h m ft cm	1 Su 0354 4.9 150 0922 7.9 242	h m ft cm	16 M 0402 4.4 133 0915 9.2 280	
	● 1741 6.8 206	1251 3.1 93	1616 2.4 73	1534 2.1 65	2131 5.8 177	1724 2.0 60	1742 1.6 49	1742 1.6 49	1748 1.5 47	1748 1.5 47	
	2217 5.5 167	1912 6.2 189	2327 5.8 177	2303 6.3 191	2352 6.8 207	1830 1.4 44	2345 6.6 200	2335 7.5 228	2335 7.5 228	2335 7.5 228	
	1854 6.6 202	1912 6.2 189	2101 6.0 182	1817 1.7 51	1808 1.4 44	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	
2 Tu 0155 2.9 89 0756 7.8 238 1534 3.0 92 2026 6.0 183	0058 2.8 84	17 W 0027 8.2 249	0258 4.6 139	2 F 0858 8.1 246	0236 4.5 137	2 M 0450 4.3 131	0508 3.4 105	17 Tu 1019 9.5 291			
	1422 2.9 88	1724 2.0 60	1724 2.0 60	1830 1.4 44	1808 1.4 44	1013 8.5 258	1019 9.5 291	1840 1.5 45	1840 1.5 45		
	2327 5.8 177	2303 6.3 191	2352 6.8 207	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45		
	2101 6.0 182	1817 1.7 51	1808 1.4 44	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45		
3 W 0249 3.4 104 0847 8.1 247 1648 2.5 76 2205 5.8 176	18 Th 0154 3.3 101	0154 3.3 101	3 Sa 0409 4.5 136	0359 4.3 130	3 Tu 0003 6.9 211	0005 7.9 242	18 W 0601 2.6 79				
	0727 8.6 263	0919 9.6 294	0951 8.5 258	0919 9.6 294	0536 3.6 109	0601 2.6 79	1115 9.6 294				
	1548 2.4 74	1808 1.4 44	1817 1.7 51	1808 1.4 44	1055 8.9 270	1115 9.6 294	1908 1.8 54				
	2101 6.0 182	2352 6.8 207	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45	1859 1.5 45				
4 Th 0348 3.7 113 0932 8.4 257	19 F 0301 3.7 112	0301 3.7 112	4 Su 0002 6.2 188	0507 3.6 111	4 W 0022 7.3 222	0035 8.3 254	19 Th 0651 2.0 62				
	0830 9.2 281	1020 10.2 310	0502 4.1 124	1903 1.2 38	0614 3.0 92	0651 2.0 62	1207 9.5 291				
	1707 1.9 59	1132 9.1 276	1032 8.9 271	1936 1.5 46	1211 9.1 278	1211 9.1 278	1941 1.7 53				
	2238 6.1 187	1858 1.5 45	1858 1.5 45	1957 1.7 52	1957 1.7 52	1957 1.7 52	1957 1.7 52				
5 F 0441 3.8 115 1014 8.8 268	20 Sa 0410 3.7 113	0410 3.7 113	5 M 0027 6.5 197	0029 7.2 220	5 Th 0044 7.7 234	0100 8.6 263	20 F 0740 1.7 52				
	0930 9.9 301	0604 2.9 89	0546 3.6 109	0604 2.9 89	0652 2.5 76	0740 1.7 52	1255 9.3 282				
	1818 1.5 46	1115 10.4 318	1111 9.3 282	1115 10.4 318	1211 9.1 278	1211 9.1 278	2004 2.0 61				
	2345 6.5 197	1950 1.2 38	1940 1.4 43	1950 1.2 38	1957 1.7 52	1957 1.7 52	1957 1.7 52				
6 Sa 0004 6.1 186 0527 3.7 113	21 Su 0510 3.5 107	0510 3.5 107	6 Tu 0052 6.7 205	0104 7.6 232	6 F 0106 8.0 244	0124 8.9 270	21 Sa 0830 1.6 48				
	1025 10.4 317	0631 3.1 94	0631 3.1 94	0656 2.3 70	0737 2.1 63	0830 1.6 48	1339 8.9 270				
	1917 1.2 38	1148 9.4 287	1148 9.4 287	1207 10.4 318	1251 9.0 274	1339 8.9 270	2036 2.1 63				
	1926 1.6 49	2008 1.5 47	2008 1.5 47	2032 1.5 45	2027 1.9 58	2027 1.9 58	2027 1.9 58				
7 Su 0038 6.3 191 0600 3.5 107	22 M 0037 6.8 206	0037 6.8 206	7 W 0116 7.0 213	0139 7.9 242	7 Sa 0130 8.3 254	0146 9.0 274	22 Su 0912 1.7 51				
	0607 3.1 96	0703 2.8 85	0703 2.8 85	0746 1.9 57	0815 2.0 60	0912 1.7 51	1422 8.4 256				
	1118 10.8 329	1221 9.4 288	1221 9.4 288	1257 10.2 310	1327 8.8 269	1422 8.4 256	2055 2.4 73				
	1959 1.5 46	2008 1.1 34	2041 1.5 47	2053 1.6 50	2050 1.8 56	2050 1.8 56	2050 1.8 56				
8 M 0107 6.5 197 0639 3.2 98	23 Tu 0121 7.0 214	0121 7.0 214	8 Th 0143 7.3 221	0209 8.2 250	8 Su 0155 8.6 263	0207 9.1 276	23 M 0957 1.6 49				
	0700 2.7 83	0742 2.4 74	0742 2.4 74	0835 1.7 52	0855 1.7 53	0957 1.6 49	1507 7.8 239				
	1210 10.9 332	1259 9.4 285	1259 9.4 285	1344 9.7 295	1408 8.5 260	1045 1.6 50	2130 2.8 84				
	2056 1.1 34	2104 1.6 50	2104 1.6 50	2131 1.7 51	2114 2.1 63	1045 1.6 50	2143 3.3 102				
9 Tu 0138 6.6 201 0717 3.1 93	24 W 0204 7.3 222	0204 7.3 222	9 F 0210 7.5 229	0239 8.4 256	9 M 0218 8.9 271	0227 9.0 275	24 Tu 1045 1.6 50				
	0751 2.3 71	0824 2.4 72	0824 2.4 72	0917 1.9 57	1427 9.1 278	1045 1.6 50	1553 7.3 221				
	1301 10.8 328	1333 9.1 278	1333 9.1 278	1428 1.9 57	2144 2.2 68	1450 8.1 248	2143 3.3 102				
	2141 1.2 38	2136 1.6 49	2136 1.6 49	2148 1.9 57	2144 2.2 68	2144 2.2 68	2144 2.2 68				
10 W 0209 6.8 206 0749 2.9 87	25 Th 0246 7.5 230	0246 7.5 230	10 Sa 0239 7.7 236	0304 8.5 258	10 Tu 0244 9.1 276	0258 8.8 268	25 W 1134 1.7 53				
	0844 2.1 64	0857 2.2 68	0857 2.2 68	1005 2.0 61	1533 7.6 232	1134 1.7 53	1645 6.6 201				
	1350 10.4 316	1410 8.8 269	1410 8.8 269	1513 8.4 257	2212 2.2 68	1533 7.6 232	2205 4.0 122				
	2208 1.5 46	2157 1.7 51	2157 1.7 51	2239 2.7 82	2208 2.8 85	2208 2.8 85	2205 4.0 122				
11 Th 0244 6.9 210	26 F 0325 7.7 236	0325 7.7 236	11 Su 0306 8.0 243	0323 8.5 258	11 W 0313 9.2 281	0328 8.4 256	26 Th 1220 2.0 62				
	0933 2.1 64	0943 2.1 65	0943 2.1 65	1058 2.2 66	1601 7.6 232	1135 1.6 49	1756 6.0 183				
	1436 9.7 297	1450 8.4 257	1450 8.4 257	1601 7.6 232	2239 2.7 82	1628 7.0 213	2220 4.7 143				
	2243 1.5 45	2226 1.9 57	2226 1.9 57	2239 2.7 82	2244 3.4 103	2244 3.4 103	2220 4.7 143				
12 F 0318 7.0 214	27 Sa 0400 7.9 240	0400 7.9 240	12 M 0331 8.1 248	0353 8.3 254	12 Th 1235 1.8 56	0412 7.9 240	27 F 1324 2.2 67				
	0906 2.8 86	1017 2.4 72	1034 2.2 67	1154 2.4 73	1747 6.3 191	1324 2.2 67	1949 5.7 173				
	1417 9.0 275	1523 9.0 274	1530 7.9 241	1656 6.8 206	2323 4.3 131	1235 1.8 56	2257 5.4 164				
	2240 1.4 43	2310 1.8 56	2253 2.1 63	2256 3.4 104	2321 4.2 128	1235 1.8 56	2257 5.4 164				
13 Sa 0352 7.2 219	28 Su 0429 7.9 241	0429 7.9 241	13 Tu 0401 8.3 254	0426 8.1 247	13 F 1951 5.9 180	0517 7.3 224	28 Sa 1440 2.2 66				
	0948 2.8 84	1111 2.6 80	1131 2.3 70	1257 2.5 76	1810 5.9 181	1440 2.2 66	2216 6.0 184				
	1457 8.6 262	1614 8.1 247	1622 7.3 221	2325 2.7 83	2321 4.2 128	1450 2.2 66	2216 6.0 184				
	2307 1.5 47	2336 2.2 67	2336 2.2 67	2359 5.0 151	2324 6.1 187	1450 2.2 66	2216 6.0 184				
14 Su 0425 7.3 223	29 M 0501 7.9 240	0501 7.9 240	14 W 0437 8.5 258	0519 7.7 236	14 Sa 1519 2.0 60	0143 5.7 174	29 Su 1552 2.0 60				
	1039 2.9 87	1220 2.9 88	1242 2.4 72	1412 2.5 77	1519 2.0 60	0704 7.1 216	2248 6.5 199				
	1540 8.1 246	1712 7.1 216	1729 6.5 199	2003 5.4 166	2205 6.3 191	1552 2.0 60	2248 6.5 199				
	2339 1.7 53	1826 6.2 188	1826 6.2 188	2359 5.0 151	2324 6.1 187	1644 1.7 53	2304 7.0 213				
15 M 0500 7.5 229	30 Tu 0002 2.8 86	0002 2.8 86	15 Th 0003 3.4 103	0640 7.4 227	15 Su 0756 8.8 268	0332 5.2 158	30 M 0841 7.3 221				
	1138 3.0 91	0540 7.8 237	0530 8.6 262	1535 2.3 70	1644 1.7 53	0841 7.3 221	1649 1.8 54				
	1631 7.4 226	1338 3.0 90	1402 2.4 73	2246 5.7 173	2301 6.9 210	1649 1.8 54	2304 7.0 213				
	2111 5.5 168	1826 6.2 188	1915 5.9 180	2324 6.1 187	2324 6.1 187	1649 1.8 54	2304 7.0 213				
31 W 0040 3.5 108	31 W 0638 7.7 235	0638 7.7 235	31 Sa 0218 5.3 162	0218 5.3 162	31 Sa 0812 7.5 230	0332 5.2 158	30 M 0841 7.3 221				
	1458 2.8 85	1458 2.8 85	1646 1.9 59	1646 1.9 59	1646 1.9 59	0841 7.3 221	1649 1.8 54				
	2011 5.5 168	2011 5.5 168	2011 5.5 168	2324 6.1 187	2324 6.1 187	1649 1.8 54	2304 7.0 213				
	1826 6.2 188	1915 5.9 180	1915 5.9 180	2324 6.1 187	2324 6.1 187	1649 1.8 54	2304 7.0 213				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Huangpu, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0430	4.4	134	16 W 0503	3.1	96	1 F 0544	2.7	81	1 Su 0653	1.7	53
0947	7.7	234	W 1020	8.4	257	F 1114	7.4	226	Sa 1223	7.2	218
1735	1.7	52	1744	1.9	59	1745	2.2	67	1804	2.8	84
2321	7.4	227	2329	8.5	260	2309	8.9	272	2327	9.3	282
2 W 0514	3.6	109	17 Th 0558	2.5	75	2 Sa 0638	2.0	61	2 M 0744	1.3	40
1036	8.1	247	1121	8.5	258	1201	7.6	232	17 Su 1305	7.1	216
1808	1.8	54	1822	2.1	64	1822	2.4	72	1838	2.9	88
2340	7.9	241	2353	8.9	270	2333	9.4	287	O 2354	9.4	286
3 Th 0558	2.8	86	18 F 0649	2.0	60	3 Su 0732	1.5	45	18 M 0823	1.3	39
1121	8.4	255	1212	8.4	255	1247	7.7	235	1903	7.0	214
1841	1.8	55	1850	2.2	66	1852	2.4	74	1934	3.1	96
●											
4 F 0000	8.4	255	19 0014	9.1	278	4 M 0002	9.9	301	19 Tu 0018	9.4	288
0643	2.2	68	0741	1.6	49	0810	1.2	38	0856	1.1	34
1205	8.5	258	1257	8.2	249	1332	7.6	233	1421	6.9	211
1907	2.0	61	O 1921	2.5	76	1934	2.6	79	1934	3.3	101
5 Sa 0021	8.8	269	20 Su 0033	9.3	283	5 Tu 0029	10.1	309	20 W 0048	9.4	286
0733	1.8	56	0831	1.4	44	0857	0.9	26	0935	1.0	31
1246	8.4	257	1340	7.9	241	1419	7.5	228	1459	6.8	207
● 1941	2.0	62	1945	2.6	80	1958	3.0	91	1959	3.5	108
6 Su 0046	9.2	280	21 M 0057	9.4	287	6 W 0103	10.3	315	21 Th 0114	9.3	282
0811	1.6	50	0905	1.4	42	0947	0.6	19	1003	1.0	32
1327	8.3	254	1421	7.6	233	1510	7.3	221	1540	6.7	203
2004	2.3	69	2013	3.0	92	2040	3.3	100	2030	3.7	114
7 M 0110	9.5	291	22 Tu 0119	9.4	287	7 Th 0140	10.3	313	22 F 0146	9.0	273
0856	1.3	41	0948	1.2	38	1038	0.7	20	1041	1.0	31
1410	8.1	246	1503	7.3	223	1606	7.0	213	1624	6.5	197
2039	2.5	75	2037	3.3	101	2116	3.9	119	2100	4.1	126
8 Tu 0135	9.7	297	23 W 0147	9.3	282	8 F 0221	10.0	305	23 Sa 0217	8.6	261
0947	1.1	34	1031	1.2	37	1124	0.9	27	1115	1.1	35
1457	7.7	236	1548	7.0	212	1709	6.7	205	1713	6.3	192
2102	3.0	90	2059	3.8	116	2158	4.4	134	2136	4.5	137
9 W 0205	9.9	302	24 Th 0214	9.0	275	9 Sa 0316	9.4	288	24 Su 0256	8.0	244
1039	1.0	30	1102	1.3	41	1215	1.2	36	1153	1.3	39
1548	7.3	222	1637	6.6	200	1826	6.7	203	1811	6.2	190
2141	3.4	103	2124	4.3	131	2308	4.8	147	2234	4.8	147
10 Th 0241	9.8	298	25 F 0247	8.6	261	10 Su 0424	8.7	266	10 M 0343	7.3	224
1131	1.1	35	1145	1.5	45	1315	1.5	47	1241	1.5	47
1651	6.8	206	1740	6.2	188	1953	6.9	210	1916	6.4	195
2209	4.2	128	2153	4.9	148	●			2007	7.4	226
11 F 0327	9.4	288	26 Sa 0324	8.0	244	11 M 0049	4.9	150	11 Tu 0206	3.8	116
1228	1.5	45	1238	1.7	53	0549	8.0	243	0656	6.5	199
1815	6.3	193	1908	6.0	183	1421	1.9	57	1424	2.3	70
2259	4.9	149	2239	5.4	165	2100	7.4	225	2053	7.8	237
12 Sa 0434	8.9	271	27 Su 0417	7.4	225	13 W 0229	4.4	135	13 Tu 0206	3.8	116
1338	1.7	52	1339	1.9	59	0720	7.4	227	0649	5.0	151
2019	6.4	195	2047	6.2	190	1522	2.1	64	1333	1.9	58
●			O			2146	7.9	241	●		
13 Su 0046	5.3	162	28 M 0054	5.6	171	13 W 0348	3.6	111	26 Tu 0000	5.0	151
0605	8.4	256	0544	6.8	207	0857	7.1	217	0449	6.7	203
1456	1.9	57	1445	2.0	62	1611	2.2	68	1333	1.9	58
2145	7.0	212	2139	6.7	205	2218	8.3	254	2013	6.8	206
14 M 0241	4.9	150	29 Tu 0247	5.1	156	14 Th 0457	2.9	88	28 F 0313	3.9	120
0743	8.2	251	0734	6.6	200	1029	7.1	216	0817	5.9	179
1610	1.9	58	1544	2.0	62	1654	2.3	71	1521	2.4	74
2229	7.5	230	2205	7.3	221	2242	8.7	265	2122	7.9	240
15 Tu 0359	4.1	124	30 W 0356	4.3	131	15 F 0559	2.3	69	29 O 0429	3.1	95
0907	8.3	254	0910	6.8	206	1134	7.2	218	1001	6.1	185
1703	1.9	59	1632	2.1	63	1737	2.5	75	1607	2.6	78
2301	8.1	247	2226	7.8	238	2306	9.0	275	2150	8.5	260
31 Th 0452	3.4	105	●						2227	8.8	267
1020	7.1	216							14 Tu 0559	1.8	54
1708	2.2	66							1146	6.0	183
2246	8.4	255							1651	3.1	95

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Hong Kong, China, 2013

Times and Heights of High and Low Waters

January				February				March								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 Tu	0547	1.8	55	16 W	0616	1.9	58	1 F	0012	6.2	188					
1231	5.0	152		1330	5.4	164		0616	2.2	66						
1642	3.8	117		1801	3.5	106	1 Sa	1303	5.6	172	16 Sa	0053	5.1	154		
2322	7.0	212					16 F	1822	3.1	96	17 F	1141	6.1	187		
2 W	0618	2.0	60	17 Th	0033	6.3	191	17 Su	1339	5.7	174	17 Sa	0624	2.9	88	
1315	5.2	157		0646	2.4	72		1939	3.2	99	17 F	1729	2.2	68		
1733	3.9	120		1414	5.5	168				18 F	1141	6.1	187			
2351	6.5	199		1856	3.7	114	1726	3.3	102	18 Sa	1215	6.3	192			
3 Th	0651	2.2	68	18 F	0109	5.5	167			1820	2.3	71	17 Su	0042	4.8	145
1404	5.3	162		0713	2.8	85	18 M	0232	3.9	119	18 F	1216	6.1	187		
1827	4.0	123		1501	5.6	171	18 M	0649	3.4	103	18 Sa	1918	2.6	79		
				2012	3.9	120	18 O	2049	3.3	101	18 F	0125	4.3	132		
4 F	0030	6.0	183	19 F	0149	4.7	144	19 M	0152	4.9	149	18 M	0557	3.5	108	
0727	2.5	76		0737	3.1	95	19 M	0724	2.9	88	19 Tu	1527	5.7	175		
1455	5.5	169		1552	5.7	175	19 M	1434	6.0	183	19 O	2339	3.1	94		
1929	4.1	125		2237	3.8	116	19 O			19 Tu	1919	2.5	77			
5 Sa	0131	5.4	164	20 W	0253	4.1	124	19 Tu	1631	5.8	177	19 Sa	0225	4.6	139	
0806	2.8	85		0755	3.4	103	19 Tu	0802	3.2	99	19 M	0652	3.3	101		
1546	5.8	178		1645	5.9	180	19 Tu	1541	6.3	191	19 M	1339	6.4	196		
2104	4.0	123					19 Tu	2301	3.0	91	19 Tu	2048	2.7	81		
6 Su	0308	4.7	144	21 M	0048	3.3	101	20 W	0529	4.0	121	19 Tu	0404	4.1	126	
0850	3.1	95		0519	3.7	112	20 W	0850	3.5	108	19 Tu	0730	3.6	111		
1637	6.2	190		0753	3.5	108	20 W	1652	6.6	200	19 Tu	1443	6.5	197		
2315	3.5	108		1738	6.1	186	20 W	1731	6.0	182	19 Tu	2244	2.5	77		
7 M	0531	4.4	133	21 W	0047	2.4	73	21 Th	0140	2.3	71	19 Tu	0446	5.8	177	
0942	3.4	103		0712	4.0	121	21 Th	1826	6.2	189	19 Tu	2341	2.7	81		
1727	6.7	204		1000	3.7	114	21 Th	1757	7.0	212	19 Tu			19 Tu		
8 Tu	0037	2.8	86	22 M	0144	2.8	85	22 Th	0150	1.8	56	19 Tu	0556	4.0	123	
0655	4.3	130		1909	6.6	201	22 Th	0836	4.2	127	19 Tu	0821	3.9	120		
1043	3.6	109		1251	3.5	106	22 Th	1132	3.7	114	19 Tu	1619	6.5	199		
1818	7.2	219		1955	7.6	232	22 Th	1859	7.3	223	19 Tu			19 Tu		
9 W	0139	2.1	63	23 W	0218	2.3	71	23 Th	0229	1.4	43	19 Tu	0022	2.2	67	
0811	4.3	132		1909	6.6	201	23 Th	0916	4.4	134	19 Tu	0745	4.3	130		
1146	3.6	111		1251	3.5	106	23 Th	1132	3.7	114	19 Tu	0955	4.1	124		
1911	7.6	233		1955	7.6	232	23 Th	1859	7.3	223	19 Tu	1739	6.7	204		
10 Th	0229	1.5	45	24 M	0247	2.0	60	24 Sa	0303	1.1	35	19 Tu	0121	1.9	57	
0917	4.5	136		0935	3.9	120	24 Sa	0949	4.6	141	19 Tu	0823	4.5	137		
1250	3.6	109		1144	3.8	115	24 Sa	1351	3.1	95	19 Tu	1149	3.8	117		
2004	8.1	246		1948	6.9	209	24 Sa	2048	7.7	236	19 Tu	1846	6.9	209		
11 F	0314	1.0	32	25 F	0314	1.7	52	25 M	0334	1.1	33	19 Tu	0157	1.7	51	
1007	4.6	141		0940	4.1	125	25 M	1020	4.9	149	19 Tu	0850	4.8	145		
1349	3.4	105		1248	3.7	112	25 M	1443	2.8	85	19 Tu	1258	3.3	102		
2055	8.3	253		2026	7.1	215	25 M	2136	7.7	235	19 Tu	1945	7.0	213		
12 F	0355	0.9	26	26 Sa	0339	1.5	47	26 Tu	0405	1.2	36	19 Tu	0229	1.6	48	
1049	4.8	146		0951	4.3	131	26 Tu	1052	5.2	157	19 Tu	0914	5.1	154		
1443	3.3	101		1343	3.5	107	26 Tu	1531	2.6	78	19 Tu	1353	2.9	87		
2144	8.3	254		2103	7.2	219	26 Tu	2221	7.4	227	19 Tu	2039	7.0	213		
13 Su	0433	0.9	27	26 O	0399	1.5	47	26 O	0405	1.2	36	19 Tu	0259	1.6	49	
1129	4.9	150		1014	4.6	139	26 O	1123	5.4	164	19 Tu	0851	5.6	170		
1534	3.2	97		1432	3.3	102	26 O	1617	2.5	75	19 Tu	1430	2.6	79		
2230	8.1	248		2140	7.3	221	26 O	2303	7.0	213	19 Tu	2112	6.4	194		
14 M	0509	1.1	34	27 W	0403	1.5	45	27 Tu	0436	1.4	43	19 Tu	0329	1.7	53	
1208	5.1	155		1042	4.8	146	27 Tu	1123	5.4	164	19 Tu	0920	6.0	183		
1623	3.2	97		1517	3.2	97	27 Tu	1617	2.5	75	19 Tu	1512	2.1	65		
2314	7.7	234		2216	7.2	219	27 Tu	2303	7.0	213	19 Tu	2158	6.3	192		
15 Tu	0544	1.5	45	28 M	0425	1.5	45	28 Th	0506	1.7	53	19 Tu	0307	2.1	64	
1248	5.2	160		1148	5.3	161	28 Th	1156	5.6	170	19 Tu	0952	6.4	195		
1711	3.3	100		1645	3.1	93	28 Th	1703	2.5	77	19 Tu	1555	1.8	54		
2355	7.1	215		2331	6.6	202	28 Th	2342	6.4	195	19 Tu	2244	6.1	186		
16 Sa	0545	1.9	58	29 Th	0449	1.5	47	29 Th	0535	2.1	65	19 Tu	0428	2.3	70	
1225	5.5	167		1114	5.1	154	29 Th	1229	5.7	173	19 Tu	1024	6.8	206		
1732	3.1	94		1601	3.1	94	29 Th	1749	2.7	83	19 Tu	1654	2.0	61		
				2254	7.0	213				19 Tu	2330	5.8	176			
17 Tu	0516	1.7	51	30 W	0516	1.7	51	17 Tu	0017	5.7	175	19 Tu	0456	2.6	80	
1248	5.2	160		1148	5.3	161	17 Tu	0601	2.5	77	19 Tu	1130	6.2	188		
1711	3.3	100		1645	3.1	93	17 Tu	1302	5.7	174	19 Tu	1738	2.1	65		
2355	7.1	215		2331	6.6	202	17 Tu	1839	3.0	91						
18 Su	0545	1.9	58	31 Th	1225	5.5	167				31 Tu	0025	5.3	163		
1132	3.1	94		1732	3.1	94				31 Tu	0514	3.1	94			
										31 Tu	1132	7.1	216			
										31 Tu	1820	1.6	50			

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Hong Kong, China, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0132	4.9	149	16 Tu 0130	4.3	130	1 W 0258	4.6	140	1 Sa 0442	5.2	157
0551	3.5	106	0518	3.9	119	0620	4.1	124	0842	4.1	124
1214	7.1	215	1115	6.5	197	1248	7.1	217	1448	5.7	174
1921	1.9	58	1954	2.3	70	2033	1.7	53	2153	2.4	72
2 Tu 0253	4.5	137	17 W 1205	6.3	191	2 0422	4.7	142	2 Su 0531	5.4	166
0629	3.8	116	2059	2.4	74	0716	4.3	131	17 F 2128	6.1	186
1305	6.9	210				1350	6.7	203	2109	2.3	69
2046	2.1	65				2142	2.0	61			
3 W 0418	4.3	132	18 Th 1311	6.0	183	3 F 0548	4.9	149	3 M 0611	5.7	175
0716	4.1	126	2210	2.5	77	0838	4.4	134	18 Sa 0443	4.6	139
1410	6.7	203				1519	6.2	188	0745	4.4	135
2217	2.2	67				2245	2.2	68	1333	5.7	174
4 Th 1548	6.4	196	19 F 1436	5.7	175	4 Sa 0626	5.2	158	4 Tu 0647	6.0	184
2334	2.2	66	2316	2.5	76	1033	4.1	126	19 W 0516	4.9	148
						1701	5.8	176	0934	4.4	133
						2339	2.4	73	1501	5.3	163
5 F 0714	4.8	145	20 Sa 0712	4.6	141	5 Su 0657	5.5	167	2255	2.6	78
1028	4.3	130	0949	4.5	137	1152	3.6	111	20 M 0546	5.2	160
1720	6.3	193	1626	5.6	170	1816	5.5	167	1116	3.9	120
									1705	5.1	155
6 Sa 0030	2.1	65	21 Su 0006	2.5	75	6 M 0024	2.6	78	2341	2.7	81
0744	5.0	153	0659	4.9	149	0726	5.8	177	21 Tu 0616	5.7	173
1157	3.8	116	1141	4.1	126	1253	3.1	93	1226	3.3	100
1831	6.3	191	1748	5.6	170	1923	5.3	161	1836	5.0	152
7 Su 0111	2.1	64	22 M 0046	2.4	74	7 Tu 0103	2.7	82	21 F 0054	3.3	100
0809	5.3	162	0711	5.3	161	0755	6.1	186	0751	6.5	198
1259	3.2	98	1246	3.5	108	1345	2.5	76	1427	1.9	58
1934	6.2	189	1900	5.6	171	2023	5.1	156	2139	4.3	130
8 M 0147	2.2	66	23 Tu 0120	2.4	74	8 W 0139	2.9	87	22 F 0054	3.3	100
0833	5.7	173	0736	5.7	175	0823	6.4	195	0646	6.2	189
1350	2.7	81	1335	2.9	88	1431	2.0	61	1321	2.6	78
2030	6.1	185	2002	5.7	173	2118	5.0	152	1945	5.0	151
9 Tu 0220	2.3	69	24 W 0152	2.5	76	9 Th 0212	3.0	92	2045	5.0	151
0859	6.0	183	0804	6.2	190	0850	6.6	202	0714	6.7	205
1437	2.2	66	1420	2.2	68	1515	1.6	50	1410	1.8	56
2120	5.9	181	2057	5.7	173	2205	4.9	148	1457	1.2	37
10 W 0251	2.4	74	25 Th 0225	2.6	79	10 F 0244	3.2	97	2143	4.9	150
0926	6.3	191	0834	6.7	205	0913	6.8	207	0143	3.0	92
1521	1.8	56	1505	1.6	50	1556	1.4	43	0741	7.3	221
2204	5.7	174	2148	5.6	172	2245	4.7	144	1547	1.2	37
11 Th 0322	2.7	81	26 F 0259	2.8	84	11 Sa 0313	3.3	102	2143	4.9	150
0953	6.5	198	0903	7.2	219	0848	6.9	211	0847	8.0	243
1603	1.6	50	1550	1.2	37	1637	1.3	41	1633	0.6	17
2244	5.4	166	2240	5.5	167	2322	4.6	140	2350	4.8	146
12 F 0351	2.9	89	27 Sa 0334	3.0	91	12 M 0341	3.5	108	20 M 0223	3.1	96
1016	6.6	201	0931	7.5	229	0902	7.0	214	0808	7.7	235
1646	1.6	49	1636	1.0	29	1718	1.4	42	1544	0.8	23
2321	5.2	157	2336	5.2	160	2359	4.4	135	2245	4.9	148
13 Sa 0418	3.2	97	28 Su 0411	3.2	99	13 M 0408	3.7	113	27 W 0348	3.4	104
1030	6.7	203	1007	7.7	234	0933	7.0	214	0953	8.1	246
1728	1.7	52	1726	1.0	29	1759	1.5	46	1723	0.6	17
2357	4.8	147							1820	1.5	45
14 Su 0442	3.4	105	29 M 0042	5.0	151	14 Tu 0045	4.3	132	12 F 0039	4.2	129
1007	6.7	204	0450	3.5	107	0435	3.9	118	0422	3.8	115
1812	1.9	57	1059	7.7	234	1009	6.9	211	0957	7.0	212
			1820	1.1	34	1842	1.7	51	1145	1.5	45
15 M 0036	4.5	138	30 Tu 0150	4.7	144	15 W 0144	4.3	130	1843	1.2	36
0504	3.7	113	0532	3.8	116	0503	4.0	123			
1036	6.6	202	1154	7.5	228	1049	6.7	205			
1900	2.1	63	1923	1.4	43	1927	1.9	58			
									31 F 0341	4.9	149
									0717	4.0	123
									1335	6.4	195
									2100	2.0	61

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Hong Kong, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0437 5.6 171	16 0258 5.5 169	1 Th 0523 6.1 187	16 F 0352 6.7 205	1 Su 0606 6.5 198	16 M 0609 7.3 223						
1001 3.6 109	0846 3.6 109	1232 2.8 85	1138 2.6 80	1339 2.4 74	1318 2.2 67						
1616 4.5 138	1414 4.7 144	1838 4.3 131	2109 4.6 140	2109 4.6 140	2023 5.4 165						
2134 3.0 92	2040 2.9 89	2140 4.0 122	2346 4.4 134								
2 Tu 0525 5.9 179	17 0349 5.9 180	2 0608 6.3 192	17 0506 7.1 215	2 0654 6.7 204	17 Tu 0031 4.0 123						
1128 3.2 98	1027 3.2 99	1329 2.4 73	1250 2.1 64	1413 2.3 69	0713 7.4 227						
1744 4.1 125	1651 4.3 130	2013 4.5 136	2110 4.8 145	1357 2.1 64							
2218 3.3 100	2126 3.2 98	2308 4.0 123	2049 5.7 175								
3 W 0608 6.1 185	18 0437 6.3 193	3 Sa 0649 6.5 198	18 Su 0612 7.4 225	3 Tu 0054 4.1 126	18 W 0129 3.5 107						
1240 2.8 84	1149 2.7 82	1411 2.0 62	1344 1.7 51	0739 6.9 209	0811 7.5 228						
1917 3.9 118	1820 4.1 126	2146 4.1 125	2058 4.7 143	1442 2.2 66	1432 2.1 64						
2302 3.5 106	2221 3.4 105	2353 3.9 120		2106 5.0 153	2117 6.1 185						
4 Th 0647 6.3 192	19 0524 6.8 207	4 Su 0725 6.7 204	19 M 0028 3.8 117	4 W 0144 3.8 116	19 0220 3.0 92						
1337 2.3 70	1257 2.0 62	1445 1.8 55	0715 7.7 234	0823 7.0 212	0903 7.4 225						
2105 3.9 118	1940 4.1 126	2205 4.2 128	1427 1.4 42	1508 2.1 65	1505 2.3 69						
2349 3.6 110	2325 3.6 109		2132 4.9 150	2118 5.3 162	2147 6.4 195						
5 F 0722 6.5 198	20 0614 7.3 221	5 M 0100 3.8 117	20 Tu 0131 3.5 106	5 Th 0227 3.5 106	20 0308 2.7 81						
1423 1.9 57	1354 1.4 44	0759 6.9 209	0813 7.9 240	0905 7.0 214	0952 7.2 218						
2154 3.9 120	2104 4.3 130	1517 1.6 50	1506 1.3 39	1534 2.2 67	1538 2.5 76						
		2218 4.3 132	2204 5.2 158	2142 5.7 173	2218 6.7 204						
6 Sa 0037 3.6 111	21 0033 3.5 108	6 Tu 0153 3.7 112	21 W 0226 3.1 95	6 F 0308 3.2 97	21 0354 2.5 75						
0752 6.7 204	0709 7.7 234	0833 7.0 213	0908 7.9 240	0946 7.0 212	1038 6.8 207						
1502 1.6 48	1443 1.0 30	1547 1.6 48	1542 1.3 41	1559 2.3 71	1609 2.9 87						
2228 4.0 122	2158 4.4 135	2215 4.5 138	2236 5.5 167	2211 6.0 184	2249 6.9 210						
7 Su 0123 3.6 110	22 0137 3.4 104	7 W 0238 3.5 107	22 Th 0316 2.8 85	7 Sa 0349 3.0 90	22 0440 2.4 74						
0815 6.9 209	0811 8.0 243	0908 7.1 215	0958 7.7 234	1029 6.8 208	1121 6.3 193						
1538 1.3 41	1528 0.7 22	1615 1.6 49	1616 1.5 47	1626 2.5 77	1639 3.2 99						
2256 4.1 124	2241 4.6 141	● 2224 4.8 145	2308 5.8 176	2242 6.4 194	2320 7.0 212						
8 M 0208 3.6 109	23 0232 3.2 98	8 Th 0320 3.3 102	23 F 0405 2.6 80	8 Su 0431 2.8 86	23 0526 2.6 78						
0828 7.0 213	0909 8.1 246	0944 7.0 214	1046 7.3 222	1112 6.6 200	1202 5.8 178						
1613 1.2 38	1610 0.7 20	1643 1.7 52	1650 1.9 58	1656 2.8 85	1707 3.6 111						
● 2317 4.1 126	○ 2321 4.8 147	2249 5.1 154	2342 6.0 183	2315 6.6 201	2349 7.0 212						
9 Tu 0250 3.5 108	24 0325 3.0 92	9 F 0402 3.2 99	24 Sa 0453 2.6 80	9 M 0516 2.8 84	24 0616 2.8 85						
0849 7.1 215	1002 8.0 243	1023 6.9 210	1131 6.7 205	1157 6.2 188	1243 5.3 163						
1646 1.2 38	1650 0.8 25	1710 1.9 57	1722 2.4 72	1727 3.1 95	1731 4.0 121						
2330 4.3 130	2359 5.0 153	2319 5.3 162		2349 6.8 207							
10 W 0331 3.5 107	25 0415 2.9 89	10 Sa 0444 3.2 97	25 Su 0017 6.1 187	10 Tu 0604 2.8 85	25 0016 6.9 209						
0921 7.1 215	1052 7.6 233	1102 6.6 201	0542 2.8 84	1247 5.7 173	0712 3.1 93						
1718 1.3 41	1728 1.1 35	1738 2.1 65	1213 6.1 185	1800 3.5 106	1334 4.9 150						
2337 4.4 135		2353 5.6 170	1753 2.8 86		1747 4.3 130						
11 Th 0413 3.5 107	26 0040 5.2 160	11 M 0529 3.2 97	26 M 0053 6.2 190	11 W 0026 6.9 211	26 0046 6.7 205						
0956 6.9 211	0505 2.9 89	1145 6.2 190	0636 3.0 91	0700 2.9 88	0824 3.2 99						
1749 1.5 46	1139 7.1 216	1808 2.4 74	1254 5.4 165	1356 5.2 158	1500 4.6 140						
	1805 1.6 49		1822 3.3 100	1835 3.9 118	1713 4.5 136						
12 F 0005 4.6 140	27 0122 5.4 166	12 M 0028 5.8 177	27 Tu 0131 6.2 190	12 W 0108 7.0 213	27 0126 6.6 201						
0456 3.5 108	0557 3.0 92	0617 3.2 98	0739 3.2 99	0817 3.0 91	0955 3.3 100						
1034 6.7 204	1224 6.4 194	1231 5.7 175	1342 4.8 146	1536 4.8 146							
1821 1.7 53	1840 2.1 65	1840 2.8 84	1847 3.7 112	1914 4.2 129							
13 Sa 0040 4.8 146	28 0206 5.6 170	13 Tu 0105 6.0 183	28 W 0217 6.2 189	13 M 0203 7.0 214	28 0232 6.4 196						
0541 3.6 109	0654 3.2 98	0713 3.2 99	0907 3.3 102	0958 2.9 89	1114 3.2 97						
1116 6.3 193	1307 5.6 171	1325 5.2 158	1520 4.3 131	1714 4.7 143							
1852 2.0 60	1914 2.6 80	1914 3.1 95	● 1904 4.0 121	2004 4.5 138							
14 Su 0121 5.0 152	29 0252 5.7 175	14 W 0147 6.2 190	29 Th 0316 6.2 189	14 M 0321 7.1 215	29 0401 6.4 194						
0630 3.6 111	0805 3.4 104	1503 4.6 140	1045 3.2 99	1124 2.7 82	1210 3.1 93						
1203 5.9 179	1354 4.9 148	1946 3.1 93	● 1951 3.5 106	1913 4.9 149	2128 4.7 142						
1926 2.3 69				2128 4.7 142							
15 M 0207 5.2 160	30 0341 5.8 178	15 Th 0240 6.4 196	30 F 0416 6.3 191	15 M 0455 7.2 219	30 0514 6.4 195						
0727 3.6 111	0938 3.4 104	1011 3.1 93	1204 3.0 90	1231 2.4 73	1252 2.9 88						
1301 5.3 163	1547 4.2 129	1700 4.3 131		1954 5.2 157	2000 5.2 160						
2001 2.6 79	● 2015 3.4 104	2036 3.8 116		2318 4.5 137	2351 4.8 146						
	31 0432 6.0 182	W 1112 3.2 97	31 Sa 0513 6.4 194								
	1735 3.9 118	1735 3.9 118	Sa 1259 2.7 82								
	2043 3.7 112	2043 3.7 112									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Hong Kong, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0619 6.5 197	16 W 0034 4.1 124	1 F 0124 3.7 114	16 Sa 0216 2.7 82	1 Su 0155 2.7 82	16 M 0305 2.0 62						
1325 2.8 86	0706 6.8 208	0752 6.1 185	0853 5.6 170	0830 5.3 162	0943 4.6 141						
1959 5.5 168	1318 2.9 87	1326 3.3 101	1344 3.7 112	1307 3.6 110	1327 3.8 117						
	2007 6.5 199	1955 7.0 212	2039 7.5 230	1954 7.7 235	2050 7.5 229						
2 W 0048 4.4 133	17 Th 0128 3.4 105	2 Sa 0204 3.1 95	17 Su 0259 2.3 70	2 M 0236 2.0 62	17 Tu 0341 1.8 55						
0717 6.6 201	0805 6.7 205	0843 6.1 187	0941 5.5 167	0922 5.4 164	1017 4.7 142						
1354 2.8 85	1353 3.0 90	1357 3.4 104	1415 3.8 116	1345 3.7 112	1356 3.9 118						
2012 5.9 179	2037 6.9 210	2027 7.4 226	2111 7.7 234	2033 8.1 248	2122 7.6 231						
3 Th 0134 3.9 118	18 F 0216 2.9 89	3 Su 0245 2.5 77	18 M 0340 2.1 63	3 Tu 0319 1.5 47	18 W 0415 1.7 51						
0809 6.7 201	0858 6.6 201	0932 6.1 187	1022 5.4 164	1014 5.4 165	1047 4.7 144						
1420 2.8 85	1426 3.1 95	1429 3.5 107	1442 4.0 121	1426 3.7 114	1427 3.9 118						
2035 6.3 191	2109 7.2 219	● 2100 7.8 238	2142 7.7 236	● 2116 8.4 257	2153 7.6 231						
4 F 0215 3.4 103	19 Sa 0301 2.5 77	4 M 0326 2.1 63	19 Tu 0420 2.0 60	4 W 0403 1.3 39	19 Th 0447 1.7 51						
0856 6.7 205	0946 6.4 195	1020 6.1 186	1100 5.2 160	1107 5.4 165	1118 4.8 145						
1446 2.9 88	1457 3.3 102	1503 3.7 113	1506 4.1 125	1509 3.8 117	1459 3.9 119						
2103 6.7 204	○ 2140 7.4 226	2135 8.1 248	2210 7.7 236	2202 8.6 261	2220 7.5 228						
5 Sa 0256 3.0 90	20 Su 0345 2.3 70	5 Tu 0409 1.8 55	20 W 0459 2.0 61	5 Th 0449 1.2 37	20 F 0519 1.8 54						
0941 6.7 204	1030 6.1 187	1110 5.9 181	1137 5.2 157	1202 5.3 163	1151 4.8 147						
1514 3.0 92	1527 3.6 110	1538 3.9 119	1526 4.2 129	1555 4.0 121	1535 4.0 121						
● 2134 7.1 215	2211 7.5 230	2214 8.3 253	2233 7.6 232	2250 8.5 259	2244 7.3 223						
6 Su 0337 2.6 79	21 M 0428 2.2 68	6 W 0455 1.7 52	21 Th 0538 2.1 65	6 F 0537 1.3 41	21 Sa 0551 1.9 59						
1026 6.6 201	1110 5.8 178	1205 5.7 175	1217 5.1 154	1257 5.3 162	1228 4.9 149						
1544 3.2 98	1554 3.9 119	1616 4.2 127	1544 4.4 133	1644 4.1 126	1615 4.1 124						
2207 7.4 225	2239 7.5 230	2257 8.3 254	2236 7.4 227	2338 8.2 250	2304 7.1 215						
7 M 0419 2.4 72	22 Tu 0512 2.3 71	7 Th 0545 1.8 55	22 F 0617 2.3 71	7 Sa 0627 1.6 50	22 Su 0622 2.1 64						
1112 6.4 194	1150 5.5 169	1308 5.5 168	1304 5.0 152	1352 5.3 163	1312 5.0 151						
1615 3.5 106	1618 4.2 127	1657 4.4 135	1605 4.5 138	1736 4.3 132	1702 4.2 129						
2240 7.6 232	2304 7.5 228	2344 8.2 249	2246 7.2 220	2319 4.5 138	2319 6.7 204						
8 Tu 0504 2.3 69	23 W 0556 2.5 76	8 F 0641 2.1 63	23 Sa 0658 2.5 77	8 Su 0026 7.7 235	23 M 0654 2.3 71						
1202 6.0 184	1232 5.2 160	1414 5.4 164	1359 5.0 152	0721 2.1 63	1401 5.1 155						
1649 3.8 116	1634 4.4 134	1743 4.7 144	1630 4.7 143	1447 5.4 166	1754 4.4 133						
2316 7.7 235	2323 7.3 223	2323 7.3 223	2319 6.9 211	1833 4.5 138	2342 6.3 191						
9 W 0553 2.3 71	24 Th 0644 2.8 84	9 Sa 0033 7.8 239	24 Su 0743 2.8 84	9 M 0115 7.0 214	24 Tu 0728 2.6 78						
1302 5.6 172	1325 5.0 153	0750 2.4 73	1457 5.1 154	0818 2.5 76	1453 5.2 160						
1724 4.2 127	1633 4.6 140	1520 5.4 164	1705 4.9 149	1544 5.6 172	1851 4.5 137						
2357 7.7 235	2314 7.1 217	1839 5.0 151	● 1944 4.7 143	● 1944 4.7 143	● 1944 4.7 143						
10 Th 0650 2.5 76	25 F 0738 3.0 91	10 Su 0128 7.4 225	25 M 0000 6.5 199	10 Tu 0213 6.3 191	25 W 0016 5.8 176						
1418 5.3 162		0907 2.7 81	0835 3.0 90	0915 2.9 88	0805 2.8 86						
1803 4.5 137		1635 5.5 169	1554 5.2 160	1641 5.9 181	1542 5.5 168						
● 1537 5.1 156		○ 1949 5.2 157	1859 5.1 155	2157 4.6 139	● 2003 4.6 139						
1849 4.8 147											
11 F 0044 7.6 232	26 Sa 0003 6.9 210	11 M 0236 6.9 209	26 Tu 0058 6.1 185	11 Tu 0348 5.5 169	26 W 0128 5.2 158						
0807 2.7 83	0844 3.1 96	1013 2.9 88	0930 3.1 96	1010 3.2 98	0848 3.1 93						
1537 5.1 156		1744 5.9 179	1645 5.5 168	1734 6.3 191	1630 5.8 178						
1849 4.8 147		2204 5.0 152	● 2036 5.1 156	2332 4.1 124	2226 4.3 132						
12 Sa 0142 7.4 225	27 Su 0108 6.6 200	12 Tu 0420 6.4 194	27 W 0235 5.6 171	12 Th 0524 5.0 153	27 F 0407 4.7 142						
0939 2.8 86	0956 3.2 99	1109 3.1 94	1022 3.3 100	1059 3.5 106	0937 3.3 100						
● 1537 5.1 156	○ 2340 4.9 150	1824 6.2 190	1728 5.9 179	1820 6.6 202	1716 6.2 190						
1849 4.8 147		2332 4.5 136	2314 4.8 145	1843 4.7 145							
13 Su 0258 7.2 218	28 M 0226 6.3 191	13 W 0545 6.0 184	28 Th 0456 5.3 161	13 Tu 0045 3.5 106	28 W 0006 3.7 113						
1055 2.8 86	1059 3.2 99	1155 3.2 99	1109 3.4 103	0644 4.8 145	0601 4.5 136						
1843 5.5 168	1853 5.4 165	1858 6.6 201	1806 6.3 192	1142 3.7 112	1031 3.4 105						
2148 5.1 155	2130 5.3 162			1901 6.9 211	1759 6.7 204						
14 M 0441 7.0 212	29 Tu 0412 6.0 184	14 Th 0036 3.8 117	29 F 0026 4.1 125	14 Sa 0141 2.9 88	29 W 0105 3.0 90						
1155 2.8 85	1146 3.2 99	0657 5.8 177	0626 5.2 159	0756 4.6 141	0716 4.5 137						
1913 5.8 177	1846 5.7 174	1235 3.4 103	1150 3.5 106	1222 3.8 115	1125 3.6 109						
2328 4.7 142	2340 4.9 150	1932 7.0 212	1841 6.8 206	1940 7.2 219	1843 7.2 219						
15 Tu 0559 6.9 210	30 W 0539 6.0 182	15 F 0129 3.2 98	30 Sa 0114 3.4 103	15 Tu 0226 2.4 73	30 M 0150 2.2 68						
1240 2.8 85	1224 3.2 99	0759 5.7 173	0733 5.2 160	0859 4.6 140	0819 4.6 140						
1939 6.2 188	1900 6.1 185	1311 3.5 108	1228 3.5 108	1256 3.8 117	1218 3.6 110						
		2006 7.3 222	1917 7.3 221	2016 7.4 225	1928 7.7 234						
		31 Th 0039 4.4 133									
		0652 6.0 183									
		1256 3.3 100									
		1926 6.5 199									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Haikou, China, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 Tu	0942 1832	7.2 2.1	218 63	16 W	0230 0442	5.3 5.1	162 155	1 F	0059 0534	5.2 4.1	157 126	16 Sa	0632 1311	3.1 5.6	95 170	1 F	0448 1131	3.2 6.8	97 206	16 Sa	0538 1239	2.3 6.0	71 183
2 W	1008 1900	7.0 2.3	212 71	17 Th	0200 0534	5.1 4.6	156 140	2 Sa	0054 0623	5.2 3.8	160 115	17 Su	0002 0730	6.1 3.1	187 94	2 Sa	0534 1229	2.7 6.4	83 195	17 Su	0623 1333	2.3 5.4	71 166
3 Th	0322 0529 1044 1928	5.6 5.4 6.7 2.8	171 166 203 84	18 F	0137 0634	5.2 4.3	160 130	3 Su	0053 0719	5.5 3.4	169 105	18 M	0025 0834	6.5 3.1	197 95	3 Su	0622 1333	2.4 5.8	73 177	18 M	0705 2351	2.4 6.8	74 207
4 F	0324 0616 1138 1950	5.4 5.2 6.3 3.3	164 158 191 101	19 Sa	0124 0752	5.6 4.0	171 123	4 M	0101 0828	6.0 3.1	184 96	19 Tu	0103 0950	6.6 3.2	201 97	4 M	0712	2.3	69	19 Tu	0742	2.6	79
5 Sa	0256 0722 1252 0003	5.3 4.9 5.7 4.0	161 148 173 122	20 Su	0127 0932	6.0 3.8	184 116	5 Tu	0125 1003	6.5 2.9	198 89	20 W	0202 1435	6.6 2.8	201 84	5 Tu	0012 0808	6.8 2.3	208 70	20 W	0033 0822	6.8 2.8	206 85
6 Su	0241 0905 1504 1946	5.5 4.4 5.0 4.6	167 134 153 141	21 M	0152 1229	6.4 3.4	195 103	6 W	0212 1422	6.9 2.4	210 72	21 Th	0320 1527	6.6 2.3	200 70	6 W	0050 0919	7.1 2.5	215 76	21 Th	0125 1339	6.6 2.9	202 88
7 M	0240 1120	5.9 3.7	180 112	22 Tu	0243 1430	6.6 2.8	201 86	7 Th	0338 1538	7.1 1.7	217 51	22 F	0436 1601	6.6 2.0	201 61	7 Th	0154 1428	7.1 2.1	216 65	22 F	0229 1431	6.4 2.6	196 80
8 Tu	0305 1319	6.5 2.9	197 87	23 W	0355 1534	6.7 2.3	205 70	8 F	0507 1626	7.3 1.2	223 37	23 Sa	0543 1621	6.6 1.9	202 57	8 F	0326 1523	7.0 1.8	214 54	23 Sa	0347 1453	6.3 2.5	191 75
9 W	0359 1451	7.0 2.0	213 62	24 Th	0507 1621	6.9 1.9	210 58	9 Sa	0623 1702	7.4 1.1	227 33	24 Su	0645 1624	6.7 1.8	203 56	9 Sa	0459 1557	7.0 1.7	213 52	24 Su	0507 1502	6.2 2.4	189 72
10 Th	0513 1606	7.4 1.4	227 42	25 F	0610 1656	7.0 1.7	214 51	10 Su	0733 1725	7.5 1.2	230 37	25 M	0205 0744	5.2 6.7	158 205	10 Su	0627 1615	7.0 1.9	214 57	25 M	0116 0634	5.2 6.2	159 190
11 F	0624 1704	7.8 1.0	237 29	26 Sa	0704 1718	7.1 1.6	216 49	11 M	0838 1733	7.5 1.6	230 48	26 Tu	0243 0842	4.8 6.8	145 208	11 M	0140 0750	5.2 7.1	157 215	26 Tu	0154 0755	4.6 6.4	141 195
12 Sa	0727 1750	8.0 0.9	243 26	27 Su	0751 1721	7.1 1.6	217 49	12 Tu	0042 0315 0941	5.2 4.9 7.4	160 149 226	27 W	0323 0939 1708	4.2 6.9 2.3	129 210 70	12 Tu	0228 0903 1632	4.4 7.1 2.7	133 217 81	27 W	0234 0904 1603	3.9 6.6 3.0	120 202 90
13 Su	0826 1822	8.0 1.0	244 32	28 M	0043 0253	5.7 5.5	174 167	13 W	0021 0401	5.0 4.2	152 129	28 Th	0405 1035	3.7 6.9	112 210	13 W	0315 1007	3.6 7.1	110 215	28 Th	0317 1005	3.2 6.8	97 208
14 M	0920 1838	7.8 1.5	239 45	29 Tu	0058 0332	5.5 5.2	169 158	14 Th	0005 0448	5.0 3.7	153 112	28 F	0405 1035	3.7 6.9	112 210	14 Th	0403 1102	3.0 6.9	91 209	29 F	0401 1104	2.5 6.9	76 209
15 Tu	1011 1847	7.5 2.1	230 63	30 W	0108 0410	5.4 4.9	164 148	15 F	0539 1223	3.3 6.2	101 190	15 F	0451 1814	2.6 3.9	78 130	15 F	0447 1713	1.9 4.3	58 148	30 Sa	0447 1206	1.9 6.6	58 202
				31 Th	0105 0451	5.2 4.5	159 137								31 Su	0533 1324	1.5 6.2	47 189					
					1050	6.8	206									1708	5.4	165					
					1828	2.5	77									2238	7.0	212					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Haikou, China, 2013

Times and Heights of High and Low Waters

April					May					June														
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm										
1 M	0621 2312	1.5 7.3	45 222	16 Tu	0644 2328	2.1 7.0	63 214	1 W	0725 2341	1.5 7.6	46 232	16 Th	0717 2332	2.2 6.8	66 207	1 Sa	0017 0920	7.0 2.8	212 85	16 Su	0832 1701	2.8 5.2	84 160	
2 Tu	0710 2352	1.6 7.4	50 226	17 W	0716	2.3	70	2 Th	0834	2.0	62	17 F	0808 2356	2.4 6.5	74 198	2 Su	0119 1001 1756 2125	6.3 3.4 5.2 4.8	192 105 157 146	17 M	0031 0911 1632 2107	5.9 3.3 5.2 4.8	180 100 157 146	
3 W	0804	2.0	61	18 Th	0005 0759	6.9 2.5	209 77	3 F	0025 1055	7.3 2.5	222 77	18 Sa	0915	2.7	83	3 M	0326 1037 1719 2314	5.6 4.1 5.3 4.1	171 124 162 125	18 Tu	0153 0948 1613 2254	5.4 3.9 5.3 4.1	164 118 162 126	
4 Th	0037 1204	7.3 2.4	224 73	19 F	0038 0920	6.6 2.8	201 86	4 Sa	0120 1207	6.8 2.9	207 89	19 Su	0028 1028 2000 2207	6.1 3.1 5.5 5.5	187 93 169 168	4 Tu	0617 1107 1716	5.3 4.6 5.7	161 141 175	19 W	0447 1018 1620	5.0 4.5 5.7	152 138 173	
5 F	0138 1341	7.1 2.4	216 72	20 Sa	0113 1213	6.3 2.9	192 89	5 Su	0300 1247 2002 2320	6.2 3.3 5.3 5.0	190 101 161 152	20 M	0134 1134 1929 2338	5.7 3.4 5.3 4.9	174 103 162 149	5 W	0044 0827 1134 1735	3.3 5.3 5.1 6.2	100 161 154 190	20 Th	0015 1648	3.3 6.2	101 190	
6 Sa	0308 1426	6.8 2.5	206 75	21 Su	0215 1308 2115	6.0 2.9 5.6	182 89 171	6 M	0531 1315 1935	5.9 3.8 5.3	180 116 161	21 Tu	0430 1226 1843	5.3 3.8 5.3	163 116 161	6 Th	0151 1807	2.6 6.7	78 204	21 F	0123 1732	2.4 6.9	74 209	
7 Su	0501 1448 2144	6.5 2.7 5.3	198 82 162	22 M	0014 0429 1346 2057	5.4 5.7 3.0 5.4	164 175 92 164	7 Tu	0041 0735 1340 1920	4.1 5.9 4.3 5.6	125 180 130 170	22 W	0040 0715 1306 1825	4.1 5.4 4.3 5.5	124 166 132 169	7 F	0249 1848	2.0 7.0	61 214	22 Sa	0228 1824	1.6 7.4	50 227	
8 M	0043 0652 1459 2115	5.0 6.5 3.1 5.2	153 197 93 157	23 Tu	0059 0647 1419 2034	4.7 5.8 3.3 5.2	144 177 100 160	8 W	0141 0858 1403 1924	3.2 6.0 4.7 6.0	98 183 143 183	23 Th	0131 0907 1337 1834	3.1 5.8 5.0 6.0	95 177 151 184	8 Sa	0343 1931	1.7 7.3	51 221	23 Su	0331 1919	1.0 7.9	32 241	
9 Tu	0138 0822 1515 2102	4.1 6.6 3.5 5.3	126 201 106 161	24 W	0143 0820 1448 2012	3.9 6.1 3.7 5.4	120 187 114 164	9 Th	0235 1004 1424 1939	2.5 6.1 5.1 6.4	75 185 155 196	24 F	0222 1035 1403 1900	2.2 6.1 5.6 6.7	67 187 171 204	9 Su	0431 2014	1.5 7.4	46 225	24 M	0432 2013	0.7 8.2	22 250	
10 W	0229 0931 1534 2100	3.3 6.7 4.0 5.6	101 203 121 171	25 Th	0227 0933 1513 2011	3.1 6.4 4.3 5.8	93 196 132 176	10 F	0326 1105 1445 2003	1.9 6.0 5.3 6.8	59 184 163 208	25 Sa	0313 1158 1429 1939	1.4 6.4 6.1 7.3	43 196 187 223	10 M	0512 2056	1.5 7.4	46 227	25 Tu	0526 2105	0.6 8.2	19 251	
11 Th	0318 1030 1552 2106	2.6 6.6 4.5 6.0	79 201 136 184	26 F	0313 1042 1533 2026	2.2 6.6 5.0 6.4	67 201 152 194	11 Sa	0415 1205 1507 2036	1.6 6.0 5.5 7.1	50 183 169 216	26 Su	0407 2026	0.9 7.8	28 237	11 Tu	0543 2135	1.6 7.3	48 224	26 W	0612 2155	0.8 8.1	24 246	
12 F	0407 1123 1606 2118	2.1 6.4 4.9 6.4	64 196 148 196	27 Sa	0400 1159 1551 2054	1.5 6.6 5.6 7.0	45 202 171 212	12 Su	0459 1306 1531 2114	1.6 5.9 5.7 7.3	48 180 173 221	27 M	0502 2114	0.7 8.0	21 245	12 W	0610 2210	1.7 7.2	51 220	27 Th	0650 2243	1.2 7.7	37 236	
13 Sa	0453 1218 1618 2141	1.8 6.1 5.1 6.8	56 187 156 207	28 Su	0448 1329 1608 2132	1.0 6.5 6.1 7.4	32 199 186 227	13 M	0537 2153	1.6 7.3	50 222	28 Tu	0559 2202	0.8 8.1	23 246	13 Th	0640 2239	1.8 7.0	56 212	28 F	0721 2332	1.8 7.2	55 220	
14 Su	0536 1322 1631 2213	1.8 5.8 5.3 7.0	55 177 162 213	29 M	0538 2214	1.0 7.7	29 236	14 Tu	0609 2231	1.8 7.2	54 220	29 W	0654 2248	1.1 7.9	33 240	14 F	0714 2307	2.1 6.7	63 204	29 Sa	0750 1535 1824	2.5 5.1 4.8	77 154 145	
15 M	0613 2250	1.9 7.1	58 215	30 Tu	0630 2258	1.1 7.8	34 238	15 W	0640 2304	1.9 7.1	59 215	30 Th	0748 2331	1.5 7.5	47 229	15 Sa	0752 2341	2.4 6.4	72 194	30 Su	0028 0815 1450 1941	6.5 3.3 5.1 4.3	199 100 156 132	
													31 F	0836	2.1	65								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Haikou, China, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0144 5.8 176 0833 4.0 121 1436 5.5 167 2115 3.9 120	h m ft cm	16 0101 5.7 175 0746 3.7 113 1358 5.6 170 O 2030 3.9 118	h m ft cm	1 Th 1428 7.0 213	h m ft cm	16 F 1406 7.3 221	h m ft cm	1 Su 0243 2.6 78 1620 7.2 219	h m ft cm	16 M 0226 2.3 69 1629 7.6 232	
	0144 5.8 176	0101 5.7 175	0746 3.7 113	1428 7.0 213	0033 2.6 78	1524 7.5 229	0317 2.3 71	0243 2.6 78	0226 2.3 69		
	0833 4.0 121	0749 4.3 132	1541 7.1 217	1524 7.5 229	0317 2.3 71	1728 7.2 220	0317 2.3 71	1620 7.2 219	1629 7.6 232		
	1436 5.5 167	1417 6.0 182	2203 3.3 102	1645 7.7 236	0334 2.2 68	1917 7.7 234	0320 2.3 70	0243 2.6 78	0226 2.3 69		
2 Tu 0334 5.1 154 0837 4.5 137 1448 6.0 182 2306 3.4 104	0236 5.1 156	17 W 0749 4.3 132 1417 6.0 182 2203 3.3 102	0114 2.8 84	2 F 0114 2.8 84	0033 2.6 78	18 0232 2.0 60	0334 2.2 68	0320 2.3 70	0226 2.3 69		
	0334 5.1 154	0749 4.3 132	1541 7.1 217	0114 2.8 84	0033 2.6 78	1645 7.7 236	0334 2.2 68	1041 5.9 181	1629 7.6 232		
	0837 4.5 137	1417 6.0 182	2203 3.3 102	1645 7.7 236	0334 2.2 68	1302 5.8 176	1041 5.9 181	1320 5.7 173	1629 7.6 232		
	1448 6.0 182	2203 3.3 102	1645 7.7 236	1645 7.7 236	1059 5.9 179	1830 7.2 220	1041 5.9 181	1917 7.7 234	1629 7.6 232		
3 W 1525 6.4 196	18 Th 1455 6.5 197	3 Sa 0245 2.3 70	18 Su 0232 2.0 60	3 Tu 0334 2.2 68	0320 2.3 70	18 W 0320 2.3 70	0334 2.2 68	0226 2.3 69			
	1525 6.4 196	2349 2.8 84	1653 7.3 221	1645 7.7 236	0326 1.5 46	1041 5.9 181	1041 5.9 181	1629 7.6 232			
	20 0143 2.1 63	0143 2.1 63	0412 1.7 53	0359 1.3 40	0340 2.2 68	1041 5.9 181	1041 5.9 181	1629 7.6 232			
	20 0143 2.1 63	1703 7.5 228	1849 7.5 228	1904 8.1 247	0340 2.2 68	1049 5.7 175	1049 5.7 175	1629 7.6 232			
4 Th 0052 2.8 86	19 F 1554 7.0 213	4 Su 0338 1.9 59	19 M 0326 1.5 46	4 W 0340 2.2 68	0336 2.6 79	19 Th 1013 5.7 173	0336 2.6 79	0226 2.3 69			
	0052 2.8 86	1755 7.4 225	1755 7.4 225	1757 8.0 243	0340 2.2 68	1408 4.8 146	1013 5.7 173	1629 7.6 232			
	1622 6.8 207	1622 6.8 207	1849 7.5 228	1904 8.1 247	0340 2.2 68	2032 7.7 235	1408 4.8 146	1629 7.6 232			
	1723 7.1 215	1703 7.5 228	1849 7.5 228	1904 8.1 247	0353 2.3 70	0355 3.1 95	2032 7.7 235	1629 7.6 232			
5 F 0211 2.3 70	20 Sa 0143 2.1 63	5 M 0412 1.7 53	20 Tu 0359 1.3 40	5 Th 0353 2.3 70	0355 3.1 95	20 F 0959 5.7 174	0355 3.1 95	0226 2.3 69			
	0211 2.3 70	1703 7.5 228	1849 7.5 228	1904 8.1 247	0353 2.3 70	1456 3.9 119	0959 5.7 174	1629 7.6 232			
	1723 7.1 215	1703 7.5 228	1849 7.5 228	1904 8.1 247	0353 2.3 70	2139 7.6 233	1456 3.9 119	1629 7.6 232			
	2139 7.6 233	2139 7.6 233	2139 7.6 233	2139 7.6 233	0413 2.5 76	0414 3.7 114	0414 3.7 114	0226 2.3 69			
6 Sa 0317 1.9 57	21 Su 0304 1.4 44	6 Tu 0431 1.7 51	21 W 0421 1.4 42	6 F 0413 2.5 76	0414 3.7 114	21 Sa 0414 3.7 114	0414 3.7 114	0226 2.3 69			
	0317 1.9 57	1808 7.9 240	1938 7.5 228	1208 5.8 178	0413 2.5 76	0955 6.0 183	0414 3.7 114	1629 7.6 232			
	1820 7.3 222	1808 7.9 240	1938 7.5 228	1409 5.7 173	0413 2.5 76	1544 3.2 97	0955 6.0 183	1629 7.6 232			
	2239 7.4 225	2239 7.4 225	2239 7.4 225	2008 8.1 248	0413 2.5 76	2239 7.4 225	0955 6.0 183	1629 7.6 232			
7 Su 0409 1.6 49	22 M 0403 1.0 30	7 W 0440 1.7 52	22 Th 0441 1.7 51	7 Sa 0434 2.8 86	0431 4.4 134	22 Su 0431 4.4 134	0431 4.4 134	0226 2.3 69			
	0409 1.6 49	1909 8.2 249	1205 5.6 170	1153 5.4 166	0434 2.8 86	0957 6.5 197	0431 4.4 134	1629 7.6 232			
	1910 7.4 227	1909 8.2 249	1442 5.2 160	1458 4.9 150	0434 2.8 86	1633 2.7 82	0957 6.5 197	1629 7.6 232			
	2023 7.4 227	2023 7.4 227	2111 8.0 244	2111 8.0 244	0434 2.8 86	2336 7.0 213	1633 2.7 82	1629 7.6 232			
8 M 0448 1.5 46	23 Tu 0447 0.8 24	8 Th 0455 1.8 54	23 F 0503 2.2 67	8 Su 0454 3.3 101	0442 4.9 150	23 M 1004 7.0 212	0442 4.9 150	0226 2.3 69			
	0448 1.5 46	2006 8.3 252	1211 5.4 166	1130 5.3 162	0442 4.9 150	1721 2.5 75	1004 7.0 212	1629 7.6 232			
	1956 7.5 229	2006 8.3 252	1521 4.9 149	1545 4.2 127	0442 4.9 150	2305 7.0 214	1004 7.0 212	1629 7.6 232			
	●	●	2105 7.3 224	2213 7.7 236	0442 4.9 150	2305 7.0 214	1004 7.0 212	1629 7.6 232			
9 Tu 0513 1.5 46	24 W 0519 0.9 26	9 F 0516 2.0 60	24 Sa 0524 2.9 88	9 M 0511 3.9 118	0032 6.4 196	24 Tu 0448 5.3 161	0032 6.4 196	0226 2.3 69			
	0513 1.5 46	2101 8.2 250	1208 5.4 165	1121 5.5 167	0032 6.4 196	1020 7.4 225	0448 5.3 161	1629 7.6 232			
	2038 7.5 228	2101 8.2 250	1601 4.5 138	1634 3.5 108	0032 6.4 196	1808 2.5 76	1020 7.4 225	1629 7.6 232			
	2251 7.5 228	2251 7.5 228	2149 7.2 219	2312 7.3 222	0032 6.4 196	1808 2.5 76	1020 7.4 225	1629 7.6 232			
10 W 0531 1.5 47	25 Th 0546 1.2 37	10 Sa 0539 2.3 69	25 Su 0541 3.6 111	10 Tu 0003 6.7 204	0141 5.8 178	25 W 0450 5.4 166	0141 5.8 178	0226 2.3 69			
	0531 1.5 47	1343 5.5 168	1204 5.4 165	1119 5.9 180	0003 6.7 204	1046 7.7 234	0450 5.4 166	1629 7.6 232			
	1324 5.6 172	1549 5.2 160	1642 4.2 128	1725 3.1 95	0003 6.7 204	1802 2.6 79	1046 7.7 234	1629 7.6 232			
	1536 5.4 165	2156 7.9 242	2237 7.0 213	2330 6.7 203	0003 6.7 204	1852 2.7 81	1046 7.7 234	1629 7.6 232			
11 Th 0551 1.7 51	26 F 0611 1.8 54	11 Su 0600 2.7 82	26 M 0008 6.7 204	11 W 0108 6.1 187	1121 7.7 236	26 Th 1933 2.9 88	1121 7.7 236	0226 2.3 69			
	0551 1.7 51	1330 5.2 157	1206 5.5 169	0551 4.3 130	0008 6.7 204	1933 2.9 88	1933 2.9 88	1629 7.6 232			
	1344 5.5 168	1637 4.7 142	1725 3.8 117	1122 6.4 195	0008 6.7 204	1850 2.4 74	1933 2.9 88	1629 7.6 232			
	1614 5.2 159	2251 7.5 229	2330 6.7 203	1819 2.9 89	0008 6.7 204	1850 2.4 74	1933 2.9 88	1629 7.6 232			
12 F 0617 1.8 56	27 Sa 0634 2.5 76	12 M 0617 3.2 99	27 Tu 0103 6.0 182	12 Th 1151 7.5 229	1201 7.6 233	27 F 2019 3.1 96	1201 7.6 233	0226 2.3 69			
	0617 1.8 56	1300 5.1 156	1211 5.8 176	0551 4.7 143	0103 6.0 182	2019 3.1 96	2019 3.1 96	1629 7.6 232			
	1358 5.4 164	1728 4.1 125	1812 3.5 108	1135 6.9 210	0103 6.0 182	●	2019 3.1 96	1629 7.6 232			
	1653 5.0 152	2349 6.9 211	2349 6.9 211	1917 2.9 89	0103 6.0 182	●	2019 3.1 96	1629 7.6 232			
13 Sa 0644 2.1 65	28 Su 0654 3.2 99	13 Tu 0029 6.2 190	28 W 0208 5.2 159	13 F 1227 7.7 235	1250 7.4 226	28 Sa 1204 2.7 81	1250 7.4 226	0226 2.3 69			
	0644 2.1 65	1248 5.4 165	0631 3.9 118	0541 4.8 147	0208 5.2 159	1204 2.7 81	1204 2.7 81	1629 7.6 232			
	1358 5.3 161	1826 3.7 113	1222 6.1 186	1202 7.2 220	0208 5.2 159	●	1204 2.7 81	1629 7.6 232			
	1734 4.8 145	2304 3.4 105	1904 3.2 99	1200 3.0 92	0208 5.2 159	●	1204 2.7 81	1629 7.6 232			
14 Su 0709 2.6 78	29 M 0050 6.2 189	14 W 0137 5.6 171	29 Th 1243 7.3 224	14 Sa 1324 7.7 236	0100 3.2 99	29 Su 1357 7.1 217	0100 3.2 99	0226 2.3 69			
	0709 2.6 78	0704 3.9 120	0637 4.5 136	2136 3.1 95	0100 3.2 99	1357 7.1 217	1357 7.1 217	1629 7.6 232			
	1350 5.2 160	1247 5.9 180	1242 6.5 199	2136 3.1 95	0100 3.2 99	1527 6.9 209	1357 7.1 217	1629 7.6 232			
	1821 4.5 138	1934 3.4 105	2004 3.0 91	2117 2.8 85	0100 3.2 99	1527 6.9 209	1357 7.1 217	1629 7.6 232			
15 M 0731 3.1 94	30 Tu 0155 5.4 165	15 Th 0332 4.9 150	30 F 1343 7.3 223	15 Su 0123 2.6 78	0100 3.2 99	30 M 1527 6.9 209	0100 3.2 99	0226 2.3 69			
	0731 3.1 94	0700 4.4 134	0537 4.9 149	1314 6.9 211	0100 3.2 99	1527 6.9 209	1527 6.9 209	1629 7.6 232			
	1351 5.3 163	1300 6.4 195	1314 6.9 211	2117 2.8 85	0100 3.2 99	1527 6.9 209	1527 6.9 209	1629 7.6 232			
	1917 4.2 129	2054 3.3 100	2004 3.0 91	2117 2.8 85	0100 3.2 99	1527 6.9 209	1527 6.9 209	1629 7.6 232			
31 W 0622 4.6 139	31 W 0334 4.6 141		31 Sa 0140 2.9 88			31 W 1503 7.3 221		0226 2.3 69			
	0622 4.6 139	0622 4.6 139		1503 7.3 221		1503 7.3 221		1629 7.6 232			
	1333 6.8 206	1333 6.8 206						1629 7.6 232			
	2245 3.1 95	2245 3.1 95						1629 7.6 232			

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Haikou, China, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0215	3.0	92	16 W 0208	3.2	99	1 F 0147	4.1	125	16 Sa 0128	5.4	166
1004	6.3	191	0920	6.1	187	0811	6.1	186	0704	6.7	203
1230	6.1	187	1241	5.7	175	1344	4.4	134	1428	3.0	91
1656	6.7	204	1824	6.9	211	2029	6.3	191	2212	6.4	195
2 W 0227	3.0	92	17 Th 0225	3.6	111	2 Sa 0213	4.5	138	17 Su 0143	5.8	178
0940	6.1	185	0850	5.9	181	0753	6.2	190	0715	7.1	217
1309	5.6	171	1326	4.8	145	1420	3.6	109	1517	2.4	73
1824	6.7	203	2000	7.0	214	2135	6.6	201	2315	6.5	197
3 Th 0244	3.1	95	18 F 0243	4.2	127	3 Su 0235	5.1	154	18 M 0201	6.1	186
0933	6.0	182	0835	6.1	188	0750	6.6	201	0736	7.5	229
1345	5.0	151	1413	3.8	116	1459	2.8	84	1604	2.1	63
1942	6.8	207	2115	7.1	217	● 2239	6.8	207	●		
4 F 0306	3.3	101	19 Sa 0301	4.7	144	4 M 0254	5.6	171	19 Tu 0015	6.5	197
0924	5.9	181	0832	6.5	197	0803	7.1	216	0224	6.3	191
1423	4.3	130	1501	3.0	92	1541	2.1	64	0807	7.8	237
2048	7.0	212	○ 2217	7.1	215	2351	6.9	211	1647	2.0	61
5 Sa 0328	3.7	113	20 Su 0317	5.2	160	5 Tu 0314	6.2	188	20 W 0843	7.9	240
0916	6.1	185	0837	6.9	211	0827	7.6	232	1724	2.1	64
1503	3.6	109	1549	2.5	75	1624	1.7	51	● 2147		
● 2147	7.1	216	2317	6.9	210	●			5 Th 0840	8.2	251
6 Su 0348	4.2	128	21 M 0330	5.7	173	6 W 0114	7.0	212	20 W 1732	1.3	39
0915	6.4	194	0849	7.4	225	0334	6.6	201	0924	8.3	252
1544	2.9	89	1635	2.2	67	0900	8.0	245	1825	1.5	46
2245	7.1	216	1708	1.5	46	●			6 F 0924	8.3	252
7 M 0405	4.8	146	22 Tu 0019	6.6	202	7 Th 0936	8.3	252	21 Sa 1823	7.3	223
0924	6.8	208	0342	5.9	181	1754	1.6	50	1752	2.3	69
1627	2.4	72	0910	7.7	235	● 2245			22 F 0924	8.3	252
2347	6.9	211	1718	2.2	66	1708	1.5	46	1849	2.4	74
8 Tu 0422	5.4	164	23 W 0131	6.3	193	8 F 1010	8.3	253	22 M 1003	7.1	216
0943	7.3	223	0353	6.1	185	1844	2.0	60	1918	1.9	59
1709	2.0	62	0940	7.9	241	● 2347			1002	8.1	246
1753	1.9	58	1755	2.3	71	23 Sa 1019	7.5	229	23 Su 1022	6.8	208
9 W 0106	6.6	201	24 Th 1014	7.9	242	9 Sa 1035	8.1	248	1919	2.5	76
0437	5.9	180	1825	2.6	78	1944	2.5	76	2048	3.1	96
1009	7.7	236	● 2447			24 Su 1031	7.3	221	2048	3.1	96
1753	1.9	58	1755	2.3	71	1929	3.0	90	● 2447		
10 Th 1039	8.0	245	25 F 1047	7.8	238	10 Su 1018	7.8	238	11 Tu 1139	6.6	200
1839	2.0	62	1855	2.8	86	2230	3.0	91	2122	3.8	117
● 2447			● 2447			● 2447			● 2447		
11 F 1110	8.1	248	26 Sa 1116	7.6	231	11 M 1033	7.3	224	11 W 0606	5.7	173
1930	2.4	73	1935	3.1	95	2344	3.4	104	0844	5.6	170
● 2447			● 2447			2140	3.6	111	1304	5.7	175
12 Sa 1131	8.0	244	27 Su 1127	7.3	221	12 Tu 1100	6.7	203	2149	4.5	138
2041	2.8	86	2050	3.4	105	● 2745	6.1	187	● 2745	6.1	187
● 2447			● 2447			2248	4.0	123	1206	4.8	145
13 Su 1104	7.7	236	28 M 1059	6.9	210	13 W 0026	3.9	119	1839	5.3	161
● 2447			2355	3.6	110	0801	6.1	185	2205	5.1	155
1356	7.3	223	1857	6.0	182	1217	5.8	176	1121	4.7	144
1656	6.7	203	● 2447			1704	6.1	186	1445	4.8	146
● 2447			● 2447			1936	6.1	187	2013	4.6	141
14 M 0053	2.9	88	29 Tu 0927	6.5	199	14 Th 0052	4.4	135	1220	5.7	174
1356	7.3	223	● 2447			0727	6.0	183	1445	4.8	146
● 2447			● 2447			1254	4.8	146	2013	4.6	141
15 Tu 0141	3.0	91	30 W 0042	3.7	112	1936	6.1	187	1121	4.7	144
1624	7.0	213	0838	6.3	192	15 F 0111	5.0	151	1445	4.8	146
● 2447			1302	5.9	179	0706	6.2	190	2013	4.6	141
1601	5.9	181	1601	5.9	181	1340	3.8	116	1341	3.7	112
● 2447			● 2447			2104	6.3	192	2138	5.9	179
31 Th 0117	3.8	117	● 2447			● 2447			● 2447		
0825	6.2	188	● 2447			● 2447			● 2447		
1314	5.2	158	● 2447			● 2447			● 2447		
1857	6.0	182	● 2447			● 2447			● 2447		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beihai, China, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	0744 1711	14.1 3.7	430 112	16 W	0847 1720 2310	13.7 4.6 7.2	419 141 219	1 F	0208 0916 1641 2217	6.3 11.6 5.5 8.6	192 355 169 262	16 Sa	0448 1039 1600 2240	5.6 8.7 6.6 11.0	171 265 202 335	1 F	0205 0852 1510 2020	5.1 11.2 6.6 9.7	154 340 201 297	16 Sa	0358 1008 1414 2054	4.3 8.5 7.4 12.0	132 260 225 366
2 W	0819 1728	13.6 4.0	416 122	17 Th	0220 0935 1729 2326	6.6 12.2 5.3 8.5	202 371 163 258	2 Sa	0342 1008 1646 2248	6.3 10.2 6.1 9.9	192 311 186 303	17 Su	0622 1142 1538 2328	5.7 7.2 6.5 11.7	173 220 198 358	2 Sa	0327 0949 1514 2058	4.7 9.8 7.1 11.1	144 299 215 338	17 Su	0513 1112 1340 2137	4.4 7.4 7.1 12.5	134 225 216 381
3 Th	0857 1744	13.0 4.4	395 135	18 F	0402 1022 1739	7.0 10.4 5.9	212 317 180	3 Su	0531 1113 1637 2330	6.1 8.5 6.5 11.4	187 198 347	18 M	0830	5.4	166	3 Su	0451 1058 1458 2145	4.4 8.3 7.2 12.3	135 252 219 376	18 M	0633 2219	4.5 12.8	136 389
4 F	0940 1801	11.9 5.0	362 152	19 Sa	0002 0555 1109 1729	9.8 7.1 8.6 6.2	299 217 261 189	4 M	0746 1302 1610	5.6 6.8 6.3	172 206 193	19 Tu	0017 1106	12.3 4.8	374 145	4 M	0626 2238	4.2 13.3	129 404	19 Tu	0800 2306	4.4 12.9	134 392
5 Sa	0019 0406 1032 1809	8.6 7.7 10.4 5.7	262 234 317 173	20 Su	0045 0907 1201 1703	11.0 6.7 6.9 6.2	336 205 209 188	5 Tu	0019 1028	12.7 4.6	388 140	20 W	0107 1211	12.7 4.1	386 125	5 Tu	0818 2337	3.9 13.9	120 423	20 W	0933 2357	4.2 12.8	129 391
6 Su	0043 0631 1144 1805	9.9 7.5 8.6 6.2	302 229 262 190	21 M	0129 1225	12.0 5.4	366 166	6 W	0114 1208	13.8 3.4	422 104	21 Th	0158 1255	13.0 3.6	396 111	6 W	1020	3.5	106	21 Th	1049	4.0	122
7 M	0113 1000 1411 1744	11.5 6.4 6.9 6.3	350 195 209 193	22 Tu	0211 1307	12.8 4.4	390 134	7 Th	0212 1311	14.7 2.6	447 80	22 F	0250 1331	13.2 3.4	402 105	7 Th	0043 1144	14.2 3.1	433 94	22 F	0055 1140	12.8 3.9	389 120
8 Tu	0152 1201	13.1 4.6	398 141	23 W	0254 1343	13.4 3.7	407 112	8 F	0312 1404	15.1 2.3	461 71	23 Sa	0343 1405	13.3 3.4	406 105	8 F	0151 1242	14.3 3.0	437 91	23 Sa	0157 1219	12.6 4.1	385 124
9 W	0238 1308	14.5 3.2	441 98	24 Th	0335 1416	13.7 3.2	419 99	9 Sa	0413 1449	15.3 2.4	467 74	24 Su	0437 1430	13.4 3.7	407 113	9 Sa	0300 1326	14.3 3.2	435 99	24 Su	0302 1252	12.5 4.4	380 134
10 Th	0328 1407	15.5 2.3	472 69	25 F	0417 1448	14.0 3.1	427 93	10 Su	0515 1524	15.3 2.9	465 88	25 M	0530 1452	13.3 4.1	405 126	10 Su	0410 1402	14.1 3.9	429 118	25 M	0409 1314 1829 2100	12.3 5.0 6.8 6.5	375 151 208 199
11 F	0421 1500	16.1 1.9	491 57	26 Sa	0500 1516	14.1 3.1	431 93	11 M	0615 1546	14.9 3.7	455 112	26 Tu	0620 1501 1954 2314	13.2 4.7 6.4 5.8	401 144 195 176	11 M	0518 1420 1901 2237	13.7 4.7 6.3 5.6	418 144 193 170	26 Tu	0515 1326 1815 2255	12.1 5.7 7.5 6.0	368 173 230 183
12 Sa	0516 1547	16.3 1.9	498 59	27 Su	0543 1540	14.1 3.2	431 99	12 Tu	0711 1553 2046	14.3 4.6 6.2	435 139 190	27 W	0710 1503 1946	12.8 5.3 7.3	390 163 221	12 Tu	0622 1422 1855	13.1 5.7 7.4	400 173 226	27 W	0616 1326 1816	11.7 6.5 8.7	358 197 264
13 Su	0611 1625	16.2 2.3	494 71	28 M	0626 1559	14.0 3.5	428 108	13 W	0032 0805 1553 2047	5.4 13.3 5.4 7.4	165 404 164 226	28 Th	0044 0759 1504 1956	5.4 12.1 6.0 8.4	166 370 265 256	13 W	0014 0721 1420 1908	5.2 12.2 6.5 8.8	157 373 197 267	28 Th	0028 0715 1324 1831	5.2 11.2 7.1 10.1	158 340 217 308
14 M	0705 1654	15.7 3.0	480 92	29 Tu	0707 1611	13.8 3.9	421 120	14 Th	0159 0857 1559 2113	5.4 11.9 6.0 8.8	166 363 183 267		14 Th	0137 0818 1424 1936	4.7 11.1 7.0 10.1	142 339 214 308	29 F	0145 0816 1330 1858	4.2 10.2 7.6 11.6	129 312 232 355			
15 Tu	0757 1710	14.9 3.8	455 116	30 W	0748 1620 2156	13.4 4.4 6.6	408 134 202	15 F	0324 0947 1606 2154	5.5 10.3 6.5 10.0	168 315 198 304		15 F	0248 0913 1425 2013	4.4 9.8 7.3 11.2	133 300 224 342	30 Sa	0257 0920 1319 1936	3.5 9.1 7.8 13.0	107 277 239 397			
				31 Th	0042 0831 1626 2158	6.2 12.7 4.9 7.5	190 387 150 228									31 Su	0411 2022	3.0 14.0	92 428				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beihai, China, 2013

Times and Heights of High and Low Waters

April					May					June																	
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
1 M	0535 2112	3.0 14.6	90 445	16 Tu	0627 2129	3.8 13.7	115 417	1 W	0712 2148	2.6 15.3	79 467	16 Th	0700 2131	3.8 13.7	116 417	1 Sa	0810 2341	4.4 12.5	135 381	16 Su	0702 2235	4.9 11.8	148 359				
2 Tu	0658 2207	3.0 14.7	90 449	17 W	0728 2209	3.9 13.5	118 410	2 Th	0817 2247	3.0 14.5	92 443	17 F	0739 2210	4.1 13.1	124 399	2 Su	0833 1432 1757	5.3 8.7 8.0	163 265 243	17 M	0719 1336 1644	5.4 8.7 8.2	166 265 250				
3 W	0829 2308	3.1 14.5	93 443	18 Th	0831 2255	4.0 13.1	121 399	3 F	0910 2354	3.6 13.5	110 413	18 Sa	0813 2256	4.4 12.4	134 377	3 M	0057 0841 1456 2050	10.9 6.2 10.1 7.6	331 190 307 233	18 Tu	0725 1352 1940	6.1 9.9 7.9	187 301 242				
4 Th	0955	3.2	97	19 F	0927 2348	4.1 12.6	126 384	4 Sa	0950	4.3	132	19 Su	0843 2358	4.9 11.5	149 349	4 Tu	0234 0833 1526 2310	9.3 6.9 11.4 6.5	284 210 348 199	19 W	0108 0715 1417 2230	9.1 6.7 11.4 6.7	276 205 346 203				
5 F	0016 1056	14.1 3.5	430 106	20 Sa	1012	4.4	134	5 Su	0112 1019 1608 1907	12.4 5.2 8.2 7.7	379 160 249 234	20 M	0904 1527 1801	5.5 8.5 8.3	169 260 252	5 W	0419 0816 1600	8.1 7.2 12.7	246 219 386	20 Th	0313 0657 1451	7.7 7.0 12.9	236 213 394				
6 Sa	0131 1142	13.6 4.0	415 122	21 Su	0054 1046	12.0 4.9	367 148	6 M	0241 1036 1618 2143	11.3 6.2 9.3 7.1	344 189 284 217	21 Tu	0130 0914 1527 2119	10.4 6.3 9.6 7.6	317 192 292 233	6 Th	0040 1636	5.3 13.6	162 415	21 F	0006 1531	5.1 14.5	154 441				
7 Su	0250 1214 1739 1957	13.0 4.8 7.0 6.8	396 146 213 206	22 M	0214 1111 1704 1951	11.5 5.5 7.9 7.5	350 167 240 230	7 Tu	0410 1039 1641 2334	10.2 7.0 10.6 6.1	311 214 324 185	22 W	0316 0909 1546 2324	9.4 7.1 11.0 6.2	287 216 335 189	7 F	0146 1711	4.4 14.3	134 435	22 Sa	0116 1616	3.6 15.7	111 479				
8 M	0409 1234 1734 2213	12.3 5.7 7.9 6.3	376 174 242 192	23 Tu	0341 1125 1655 2217	11.0 6.3 8.8 6.8	334 192 268 207	8 W	0535 1026 1707	9.3 7.5 11.9	283 230 363	23 Th	0500 0856 1611	8.6 7.5 12.6	261 229 384	8 Sa	0239 1746	3.8 14.6	117 446	23 Su	0220 1706	2.7 16.5	82 504				
9 Tu	0524 1239 1745 2355	11.6 6.6 9.2 5.5	354 202 279 167	24 W	0502 1127 1703 2357	10.4 7.1 10.1 5.5	318 217 308 169	9 Th	0053 0656 1016 1737	5.0 8.5 7.7 13.0	152 258 235 397	24 F	0041 1644	4.6 14.2	141 433	9 Su	0325 1819	3.5 14.8	108 451	24 M	0320 1759	2.2 16.9	67 514				
10 W	0632 1239 1804	10.8 7.3 10.5	329 223 320	25 Th	0617 1121 1722	9.8 7.7 11.6	300 236 355	10 F	0200 1809	4.2 13.8	127 421	25 Sa	0150 1725	3.3 15.6	100 474	10 M	0408 1854	3.4 14.8	105 451	25 Tu	0417 1854	2.1 16.8	65 512				
11 Th	0110 0736 1236 1832	4.6 9.8 7.7 11.7	141 300 236 358	26 F	0113 0729 1115 1751	4.2 9.1 8.0 13.3	128 276 245 405	11 Sa	0258 1842	3.7 14.3	113 436	26 Su	0256 1811	2.4 16.4	74 500	11 Tu	0446 1928	3.5 14.7	107 447	26 W	0506 1949	2.4 16.3	74 498				
12 F	0218 0838 1220 1905	4.0 8.9 7.8 12.7	122 270 239 388	27 Sa	0223 1829	3.1 14.7	94 447	12 Su	0350 1914	3.5 14.5	107 442	27 M	0403 1901	2.1 16.7	63 510	12 W	0519 2002	3.6 14.4	111 439	27 Th	0546 2043	3.0 15.5	92 473				
13 Sa	0322 0940 1201 1941	3.7 7.9 7.6 13.4	114 241 232 407	28 Su	0332 1914	2.4 15.6	74 475	13 M	0442 1948	3.5 14.5	106 443	28 Tu	0508 1952	2.1 16.6	63 505	13 Th	0552 2037	3.8 14.0	117 427	28 F	0616 2138	3.8 14.3	115 436				
14 Su	0423	3.6	111	29 M	0445 2003	2.2	16.0	67	14 Tu	0529 2021	3.5	14.4	108	29 W	0608 2045	2.4	16.0	73 488	14 F	0618 2112	4.1	13.5	125 410	29 Sa	0639 1221 1444 2234	4.7 7.4 7.1 12.8	142 227 217 389
15 M	0526 2052	3.7	113	30 Tu	0601 2054	2.3	15.8	70	15 W	0615 2055	3.6	14.1	111 430	30 Th	0659 2139	2.9	15.1	89 461	15 Sa	0642 2150	4.4	12.8	135 389	30 Su	0653 1239 1652 2336	5.5 8.8 7.5 11.0	169 268 229 334
														31 F	0739 2237	3.6 13.9	110 425										

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beihai, China, 2013

Times and Heights of High and Low Waters

July					August					September						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 M	0701	6.3	191	16 Tu	0552	6.3	191	1 Th	1348	13.5	411	16 F	1244	14.4	439	
	1314	10.3	313		1207	10.1	309		2315	4.1	125		0025	4.2	127	
	1916	7.5	228		1813	7.4	226						1439	13.9	424	
	●	2346	9.1	277									16 M	1429	15.0	457
2 Tu	0049	9.1	277	17 W	0541	6.7	204	2 F	0017	4.8	145	17 Sa	1342	15.2	462	
	0647	6.8	206		1242	11.5	352		1436	13.9	425		0106	4.1	124	
	1355	11.6	355		2052	6.6	201						1534	13.9	424	
	2205	6.7	205										17 Tu	0042	3.9	118
3 W	0239	7.5	229	18 Th	0129	7.5	228	3 Sa	0113	4.1	125	18 Su	0028	3.3	102	
	0628	6.8	207		0520	6.7	205		1523	14.2	434		0138	4.2	128	
	1439	12.8	390		1323	13.0	397						1629	13.8	420	
	2306	5.2	160		2306	5.2	160						18 W	0116	4.5	136
4 Th	0010	5.5	169	19 F	1410	14.4	439	4 Su	0157	3.7	114	19 M	0124	3.0	91	
	1521	13.6	416		1609	14.4	440		1609	14.4	440		0204	4.5	138	
													19 W	0135	5.3	163
													0618	7.4	226	
													1024	6.3	191	
													○	1755	13.7	417
5 F	0119	4.5	138	20 Sa	0030	3.9	120	5 M	0230	3.6	110	20 Tu	0211	3.0	92	
	1602	14.2	433		1502	15.5	472		1655	14.5	442		0220	5.1	154	
													20 F	0141	6.2	190
													0624	8.6	263	
													1209	5.7	173	
													1858	12.7	388	
6 Sa	0211	3.9	119	21 Su	0136	3.0	91	6 Tu	0302	3.7	112	21 W	0248	3.5	106	
	1642	14.6	444		1558	16.2	494		1741	14.4	440		0228	5.6	171	
													21 Sa	0147	7.0	214
													0644	10.1	308	
													1328	5.0	152	
													1958	11.5	352	
7 Su	0254	3.6	109	22 M	0231	2.5	76	7 W	0325	3.9	120	22 Th	0312	4.3	130	
	1721	14.7	449		1656	16.6	505		1826	14.3	435		0233	6.2	189	
													22 Su	0154	7.5	230
													0715	11.5	352	
													1442	4.6	140	
													2057	10.2	311	
8 M	0328	3.4	105	23 Tu	0321	2.4	74	8 Th	0344	4.4	133	23 F	0320	5.2	158	
	1800	14.8	450		1754	16.6	505		1908	13.9	425		0754	7.2	218	
													23 M	0201	7.9	241
													0755	12.7	387	
													1556	4.5	136	
													2158	8.9	270	
9 Tu	0401	3.5	107	24 W	0403	2.8	84	9 F	0356	4.8	147	24 M	0324	6.0	184	
	1839	14.7	447		1853	16.2	495		0904	6.9	209		0809	8.6	261	
													1359	5.5	169	
													2047	12.5	382	
													2129	10.1	308	
10 W	0427	3.7	113	25 Th	0432	3.4	105	10 Sa	0405	5.3	162	25 Su	0338	6.7	205	
	1917	14.4	440		1949	15.5	473		0908	7.6	231		0843	10.0	306	
													1528	5.4	166	
													2143	10.9	332	
													2234	8.7	266	
11 Th	0451	4.0	121	26 F	0452	4.3	131	11 Su	0412	5.8	177	26 M	0341	7.3	221	
	1954	14.1	430		1001	6.4	195		0922	8.5	260		0926	11.4	346	
					1233	6.1	186		1418	6.6	201		1649	5.4	166	
					2044	14.4	439		2115	11.8	359		2243	9.2	281	
12 F	0509	4.3	131	27 Sa	0505	5.2	158	12 M	0419	6.4	194	27 Tu	0336	7.4	225	
	2032	13.6	414		1007	7.6	233		0948	9.6	293		1016	12.4	378	
					1420	6.4	194		1547	6.5	198		1823	5.5	167	
					2139	12.9	392		2205	10.5	320		2357	7.7	235	
13 Sa	0525	4.7	143	28 Su	0518	6.0	183	13 Tu	0421	6.8	208	28 W	0312	7.2	219	
	2109	12.9	393		1037	9.1	277		1020	10.9	331		1107	13.1	399	
					1603	6.5	199		1727	6.3	191		2012	5.3	163	
					2235	11.1	337		2305	9.0	274					
													○			
14 Su	0538	5.2	157	29 M	0523	6.6	202	14 W	0410	7.1	215	29 Th	1159	13.5	412	
	1120	7.9	241		1120	10.5	321		1102	12.1	370		2212	5.0	151	
	1419	7.4	225		1754	6.6	202		1916	5.8	178					
	2151	11.9	363		2337	9.2	280							○		
15 M	0550	5.7	173	30 Tu	0513	6.9	211	15 Th	0030	7.4	227	30 F	1251	13.7	419	
	1140	8.9	271		1208	11.8	359		0351	6.9	210		2334	4.5	136	
	1604	7.5	230		2001	6.4	194		1150	13.4	407		2121	5.1	154	
	2241	10.6	324													
													○			
					31 W	0100	7.5	229		0449	6.8	207		1344	13.9	423
						1258	12.8	390		1258	12.8	390				
						2235	5.6	172		2235	5.6	172				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beihai, China, 2013

Times and Heights of High and Low Waters

October				November				December				
	Time	Height			Time	Height			Time	Height		
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 Tu	1450	12.8 390		16 W	0456	7.9 242	1 F	0439	10.0 304	16 Sa	0443	12.7 388
	0744	7.5 228			1037	7.5 228		1240	5.2 159		1239	5.2 157
	1534	12.7 388			1641	10.0 306		1844	8.2 251			
	2345	6.2 188			2234	7.3 223		2142	7.7 236			
2 W	0014	5.2 160		17 Th	0503	9.0 274	2 Sa	0452	11.1 339	17 Su	0514	13.8 421
	1557	12.4 379			1001	7.0 212		1345	4.3 131			
	1653	11.9 362			1758	9.5 289		O				
	2353	7.0 214			2237	7.8 237						
3 Th	0034	5.8 177		18 F	0518	10.3 313	3 Su	0510	12.5 380	18 M	0548	14.6 444
	0558	8.1 246			1142	5.9 181		1446	3.8 116		0502	15.4 470
	0924	7.4 226			1806	11.0 335						
	1701	12.1 368			2359	7.7 234		●				
4 F	0044	6.5 197		19 Sa	0541	11.7 356	4 M	0536	13.9 423	19 Tu	0622	15.0 456
	0557	8.9 272			1258	5.0 151		1538	3.6 110		0544	16.2 495
	1105	6.8 207			1915	10.0 305						
	1800	11.7 356		O				2234	7.9 242		1625	3.4 103
5 Sa	0047	7.1 215		20 Su	0003	8.1 246	5 Tu	0609	15.1 459	20 W	0655	15.1 459
	0605	10.0 306			0610	13.0 395		1627	3.6 110		0630	16.6 506
	1230	5.9 181			1404	4.2 129						
	1856	11.1 338			2019	9.0 274		1628	2.3 69		0706	14.6 445
6 Su	0049	7.6 231		21 M	0645	13.9 425	6 W	0650	15.9 485	21 Th	0728	15.0 456
	0621	11.3 345			1510	3.9 120		1710	3.7 112		0717	16.5 504
	1339	5.0 152										
	1953	10.3 313										
7 M	0055	7.9 241		22 Tu	0723	14.5 442	7 Th	0735	16.2 495	22 F	0800	14.7 448
	0647	12.7 387			1615	3.9 120		1720	2.8 84		1749	3.8 117
	1445	4.2 128										
	2054	9.3 283										
8 Tu	0052	8.1 247		23 W	0800	14.7 448	8 F	0822	16.2 493	23 Sa	0833	14.3 436
	0721	13.9 423			1716	4.0 122		1826	3.0 91		1825	4.0 122
	1550	3.8 115										
	2211	8.2 250										
9 W	0036	7.9 241		24 Th	0837	14.6 446	9 Sa	0912	15.7 479	24 Su	0906	13.7 419
	0803	14.8 451			1814	4.1 126		1927	3.3 102		1859	4.2 129
	1706	3.6 109										
10 Th	0849	15.3 466		25 F	0914	14.4 438	10 Su	1006	14.9 455	25 M	0940	13.1 398
	1823	3.5 108			1912	4.3 130		2018	3.9 118		1928	4.6 139
				O								
11 F	0940	15.4 470		26 Sa	0953	14.0 426	11 M	1109	13.9 423	26 Tu	1016	12.2 372
	1948	3.6 110			2006	4.4 135		2057	4.6 139		1953	5.0 152
12 Sa	1036	15.2 463		27 Su	1036	13.5 410	12 Tu	1224	12.6 385	27 W	1100	11.2 340
	2106	3.7 114			2053	4.7 142		2125	5.4 164			
				O								
13 Su	1141	14.8 450		28 M	1126	12.8 390	13 W	0332	8.9 270	28 Th	0311	9.4 285
	2206	4.0 122			2130	5.0 152		0645	8.3 253		1115	9.0 274
								1353	11.3 345		1552	7.5 230
								2142	6.3 192		1943	6.8 208
14 M	1253	14.2 432		29 Tu	1229	12.0 367	14 Th	0351	10.1 308	29 F	0314	10.3 315
	2252	4.5 138			2200	5.4 166		0929	7.7 234		0956	8.2 249
								1534	10.1 307		1431	8.8 267
								2149	7.1 216		2023	6.8 206
15 Tu	1412	13.5 411		30 W	1347	11.3 344	15 F	0414	11.4 348	30 Sa	0332	11.5 351
	2324	5.2 160			2220	6.0 184		1120	6.4 196		1139	6.7 203
								1710	9.1 276		1634	7.9 241
											2019	7.2 218
				31 Th	0435	9.1 276						
					0824	8.4 256						
					1516	10.6 323						
					2232	6.7 204						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Do Son, Hon Dau, Vietnam, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	0618 1930	10.5 2.3	321 70	16 W	0653 2043	9.2 3.5	279 107	1 F	0642 2154	7.5 5.0	229 153	16 Sa	0254 1104 2206	6.2 4.8 6.8	188 146 206	1 F	0549 1044 1523 2327	6.5 5.8 6.4 5.1	198 177 196 156	16 Sa	0837 1901	4.3 7.5	131 229
2 W	0650 2010	10.0 3.0	305 91	17 Th	0704 2103	8.1 4.6	246 140	2 Sa	0620 1239 1952	6.4 5.4 6.3	196 164 192	17 Su	1107 2343	4.0 7.6	121 231	2 Sa	0519 1000 1806	5.5 5.1 7.2	167 154 219	17 Su	0910 2025	3.6 8.0	110 243
3 Th	0720 2045	9.2 3.9	281 118	18 F	0630 1749	7.1 5.4	217 165	3 Su	0127 0247 1200 2217	6.1 6.1 4.5 7.4	187 187 136 226	18 M	1134	3.3	100	3 Su	0945 1946	4.0 8.0	123 244	18 M	0947 2143	3.1 8.4	94 255
4 F	0740 2055	8.2 5.0	251 151	19 Sa	0425 1334	6.8 5.1	208 154	4 M	1200 2344	3.4 8.6	103 261	19 Tu	0030 1210	8.3 2.8	252 84	4 M	1009 2118	3.0 8.8	92 268	19 Tu	1025 2248	2.7 8.7	83 265
				5 O																			
5 Sa	0714 1504	7.2 5.5	219 167	20 Su	0321 1306	7.2 4.2	219 128	5 Tu	1231	2.4	72	20 W	0109 1249	8.8 2.4	268 73	5 Tu	1050 2246	2.2 9.5	67 289	20 W	1104 2341	2.5 8.9	77 272
				6 O																			
6 Su	0429 1410	6.7 4.8	205 145	21 M	0157 1318	7.9 3.4	242 103	6 W	0045 1315	9.5 1.6	291 49	21 Th	0143 1332	9.2 2.2	280 66	6 W	1140	1.7	51	21 Th	1146	2.5	75
7 M	0121 1344	7.6 3.7	233 113	22 Tu	0209 1349	8.7 2.7	265 82	7 Th	0139 1409	10.3 1.1	315 34	22 F	0215 1418	9.4 2.1	288 63	7 Th	0003 1237	10.0 1.4	304 44	22 F	0026 1230	9.1 2.6	276 78
8 Tu	0125 1401	8.9 2.6	270 79	23 W	0233 1426	9.3 2.2	283 66	8 F	0231 1509	10.8 1.0	329 29	23 Sa	0245 1509	9.6 2.1	292 65	8 F	0111 1340	10.2 1.5	311 47	23 Sa	0106 1320	9.1 2.8	276 85
9 W	0159 1439	10.0 1.6	304 50	24 Th	0258 1507	9.7 1.8	297 56	9 Sa	0321 1617	10.9 1.1	332 33	24 Su	0316 1607	9.6 2.3	292 71	9 Sa	0211 1455	10.1 1.9	308 58	24 Su	0145 1421	8.9 3.1	271 96
10 Th	0242 1526	10.9 1.0	331 30	25 F	0325 1549	10.1 1.6	308 49	10 Su	0409 1730	10.7 1.5	325 45	25 M	0348 1716	9.4 2.7	286 81	10 Su	0306 1627	9.7 2.5	296 75	25 M	0224 1545	8.6 3.6	262 111
11 F	0328 1619	11.5 0.7	349 20	26 Sa	0352 1633	10.3 1.6	314 48	11 M	0454 1843	10.1 2.1	307 64	26 Tu	0422 1836	9.0 3.1	274 95	11 M	0358 1810	9.1 3.1	276 94	26 Tu	0304 1815	8.1 4.2	246 127
12 Sa	0415 1716	11.6 0.7	355 20	27 Su	0420 1719	10.4 1.7	316 51	12 Tu	0535 1952	9.3 2.9	282 89	27 W	0456 2002	8.4 3.7	255 113	12 Tu	0445 1939	8.2 3.7	249 114	27 W	0343 2015	7.3 4.6	223 139
13 Su	0500 1814	11.5 1.0	350 30	28 M	0450 1808	10.2 2.0	312 60	13 W	0606 2056	8.2 3.8	251 117	28 Th	0527 2135	7.5 4.4	229 134	13 W	0523 2059	7.2 4.5	219 136	28 Th	0419 0845 1353 2209	6.4 5.9 6.7 4.9	196 181 203 149
14 M	0544 1909	11.0 1.6	335 49	29 Tu	0521 1859	9.9 2.5	302 75	14 Th	0614 2156	7.2 4.8	219 147					14 Th	0525 0926 1537 2224	6.2 5.9 6.5 5.2	188 181 197 158	29 F	0438 0754 1551	5.4 5.3 7.5	165 161 229
15 Tu	0623 2001	10.2 2.5	310 76	30 W	0553 1954	9.3 3.1	284 95	15 F	0530 1141 1843 2301	6.3 5.6 6.0 5.8	193 171 184 177					15 F	0201 0834 1731	5.4 5.1 7.0	166 156 214	30 Sa	0715 1711	4.3 8.4	131 255
31 Th	0622 2051	8.5 4.0	259 122													31 Su	0739 1825	3.3 9.1	101 277				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Do Son, Hon Dau, Vietnam, 2013

Times and Heights of High and Low Waters

April					May					June						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
1 M	0822 1937	2.5 9.7	cm 295	16 Tu	0847 2035	2.4 9.3	cm 283	1 W	0838 2026	1.3 10.7	cm 325	16 Th	0838 2026	2.2 9.7	cm 297	
2 Tu	0911 2049	1.9 10.0	cm 305	17 W	0925 2123	2.4 9.3	cm 284	2 Th	0931 2125	1.6 10.2	cm 311	17 F	0913 2102	2.6 9.4	cm 285	
3 W	1003 2203	1.6 10.1	cm 309	18 Th	1003 2209	2.5 9.2	cm 281	3 F	1024 2223	2.2 9.5	cm 289	18 Sa	0948 2138	3.1 8.8	cm 268	
4 Th	1059 2317	1.7 10.0	cm 304	19 F	1042 2253	2.7 9.0	cm 275	4 Sa	1118 2317	3.1 8.5	cm 260	19 Su	1021 2209	3.8 8.1	cm 246	
5 F	1159	2.1	cm 63	20 Sa	1125 2337	3.1 8.6	cm 263	5 Su	1213 2357	4.1 7.5	cm 228	20 M	1035 2228	4.7 7.2	cm 219	
6 Sa	0029 1307	9.6 2.7	cm 292	21 Su	1214 1307	3.7 8.6	cm 82	6 M	1318 2336	5.2 6.4	cm 160	21 Tu	0655 2026	5.5 6.3	cm 168	
7 Su	0136 1435	8.9 3.5	cm 272	22 M	0020 1316	8.1 4.5	cm 136	7 Tu	0638 1332	5.9 6.4	cm 181	22 W	0518 1422	5.2 6.9	cm 160	
8 M	0238 1711	8.1 4.3	cm 247	23 Tu	0101 1731	7.4 5.2	cm 160	8 W	0435 1436	5.2 7.4	cm 225	23 Th	0425 1424	4.5 8.1	cm 246	
9 Tu	0337 1914	7.1 4.9	cm 217	24 W	0136 0708 1309 2041	6.5 5.8 6.4 5.4	cm 198 176 196 165	9 Th	0410 1528	4.2 8.2	cm 251	24 F	0405 1504	3.5 9.2	cm 107	
10 W	0436 0726 1409	6.1 6.0 6.7	cm 186 183 204	25 Th	0142 0620 1428	5.5 5.2 7.5	cm 168 160 228	10 F	0450 1616	3.4 8.9	cm 104	25 Sa	0428 1552	2.5 10.2	cm 310	
11 Th	0504 1538	5.1 7.4	cm 156 227	26 F	0517 1530	4.3 8.5	cm 132	11 Sa	0533 1703	2.8 9.4	cm 84	26 Su	0507 1642	1.7 10.9	cm 332	
12 F	0601 1648	4.3 8.1	cm 130 247	27 Sa	0531 1629	3.3 9.4	cm 101	12 Su	0613 1747	2.3 9.8	cm 70	27 M	0553 1733	1.1 11.3	cm 345	
13 Sa	0647 1751	3.5 8.6	cm 108	28 Su	0610 1728	2.4 10.2	cm 74	13 M	0652 1829	2.0 10.0	cm 62	28 Tu	0642 1824	0.9 11.4	cm 347	
14 Su	0730 1849	3.0 9.0	cm 91	29 M	0656 1827	1.7 10.6	cm 53	14 Tu	0728 1909	2.0 10.0	cm 306	29 W	0733 1914	1.0 11.1	cm 337	
15 M	0809 1944	2.6 9.2	cm 80	30 Tu	0746 1926	1.4 10.8	cm 42	15 W	0803 1948	2.0 9.9	cm 303	30 Th	0823 2003	1.4 10.4	cm 318	
													31 F	0912 2046	2.2 9.5	cm 291

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Do Son, Hon Dau, Vietnam, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 0709 M 1727	ft 5.4 6.8	cm 164 206	h m 0232 Tu 1630	ft 5.6 6.5	cm 170 199	h m 0027 Th 1336	ft 3.6 8.7	cm 109 265	h m 1204 F 1352	ft 9.5 9.7	cm 289 295
●											
2 Tu 0245 1542	5.3 7.1	161 215	17 W 0140 1306	4.9 7.3	150 221	2 F 0109 1409	3.0 9.3	91 283	17 Sa 0035 1304	2.4 10.2	72 312
3 W 0149 1421	4.4 8.0	133 243	18 Th 0114 1303	4.0 8.4	121 256	3 Sa 0156 1441	2.6 9.7	78 296	18 Su 0131 1358	2.0 10.7	60 326
4 Th 0204 1440	3.5 8.8	106 268	19 F 0132 1336	3.0 9.5	90 289	4 Su 0244 1511	2.3 10.0	70 304	19 M 0237 1449	1.8 10.8	56 330
5 F 0241 1509	2.7 9.4	83 288	20 Sa 0211 1419	2.1 10.4	64 316	5 M 0334 1539	2.2 10.1	67 307	20 Tu 0354 1539	2.0 10.6	60 323
6 Sa 0323 1539	2.2 9.9	67 303	21 Su 0300 1505	1.4 11.0	44 335	6 Tu 0426 1607	2.2 10.1	68 307	21 W 0520 1627	2.3 10.1	70 307
7 Su 0407 1609	1.8 10.2	56 312	22 M 0357 1551	1.1 11.3	34 343	7 W 0518 1636	2.4 9.9	73 301	22 Th 0643 1711	2.8 9.3	86 282
●											
8 M 0449 1638	1.7 10.4	51 317	23 Tu 0500 1638	1.1 11.2	33 340	8 Th 0611 1705	2.7 9.5	81 291	23 F 0758 1749	3.5 8.3	107 252
●											
9 Tu 0531 1707	1.6 10.4	50 318	24 W 0604 1723	1.3 10.7	41 327	9 F 0705 1735	3.1 9.0	94 275	24 Sa 0908 1805	4.3 7.2	132 219
●											
10 W 0611 1737	1.8 10.3	54 314	25 Th 0707 1805	1.9 10.0	58 304	10 Sa 0801 1804	3.7 8.3	112 253	25 Su 0046 1018	6.8 5.2	206 160
●											
11 Th 0651 1807	2.1 10.0	63 304	26 F 0807 1840	2.7 9.0	82 274	11 Su 0900 1825	4.4 7.4	135 227	26 M 0536 1147	6.9 6.1	211 187
●											
12 F 0731 1837	2.5 9.5	77 289	27 Sa 0901 1858	3.7 7.9	112 240	12 M 1011 1808	5.3 6.5	162 198	27 Tu 0752 2158	7.5 4.3	228 130
●											
13 Sa 0811 1905	3.1 8.8	95 268	28 Su 0945 1830	4.8 6.9	145 210	13 Tu 0627 1330	6.7 6.2	204 189	28 W 1014 2238	8.1 3.7	247 112
●											
14 Su 0850 1925	3.9 7.9	119 242	29 M 0605 0706	5.9 5.9	180 180	14 W 0900 2314	7.6 3.9	231 120	29 Th 1140 2322	8.7 3.2	266 99
●											
15 M 0922 1909	4.9 7.0	149 213	30 Tu 0002 1419	5.3 7.0	161 214	15 Th 1050 2348	8.6 3.1	261 93	30 F 1234 1316	9.2 9.5	280 290
●											
31 W 1307	7.9	241							31 Sa 0008 1316	3.0 9.5	92 290

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Do Son, Hon Dau, Vietnam, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	0033 1313	3.9 9.2	119 280	16 W	0130 1337	4.6 8.6	140 261	1 F	0413 0544 1217 1838	6.4 6.4 7.0 6.0	196 196 213 182	16 Sa	0230 1606	8.3 4.5	253 136	1 Su	0238 1611	8.6 3.8	263 116	16 M	0331 1615	10.0 2.3	305 69
2 W	0133 1347	4.4 8.8	134 268	17 Th	0506 1424 2114	5.4 7.5 6.8	165 230 207	2 Sa	0205 1805	7.3 5.5	223 167	17 Su	0311 1636	9.2 3.6	281 109	2 M	0258 1625	9.7 2.9	295 88	17 Tu	0406 1655	10.5 1.8	320 56
3 Th	0309 1421	5.0 8.3	151 252	18 F	0044 0720 1404 1836	6.9 5.8 6.5 6.3	210 178 197 192	3 Su	0235 1727	8.3 4.7	254 142	18 M	0356 1715	9.9 2.9	303 88	3 Tu	0336 1656	10.6 2.1	324 63	18 W	0442 1735	10.8 1.7	329 51
4 F	0631 1452 2029	5.3 7.6 6.5	163 231 199	19 Sa	0214 1704	7.8 5.4	239 164	4 M	0319 1729	9.3 3.7	284 114	19 Tu	0442 1755	10.4 2.4	318 74	4 W	0420 1735	11.4 1.5	346 45	19 Th	0516 1812	10.9 1.7	332 51
5 Sa	0015 0819 1517 ● 1957	6.8 5.6 6.7 6.2	207 170 205 189	20 Su	0321 1736	8.7 4.5	264 136	5 Tu	0408 1755	10.2 2.9	312 88	20 W	0526 1832	10.7 2.2	327 67	5 Th	0506 1819	11.8 1.2	359 37	20 F	0549 1846	10.8 1.9	330 57
6 Su	0222 1017 1459 1912	7.6 5.7 5.8 5.6	232 175 178 170	21 M	0422 1817	9.3 3.7	284 113	6 W	0501 1832	10.9 2.2	333 68	21 Th	0608 1907	10.8 2.2	330 66	6 F	0555 1905	11.9 1.3	362 39	21 Sa	0621 1918	10.6 2.2	324 67
7 M	0336 1848	8.5 4.7	258 143	22 Tu	0522 1858	9.8 3.2	298 97	7 Th	0555 1915	11.4 1.8	347 56	22 F	0648 1940	10.8 2.3	328 71	7 Sa	0643 1952	11.6 1.7	354 52	22 Su	0651 1947	10.3 2.7	313 81
8 Tu	0442 1906	9.3 3.8	282 115	23 W	0619 1937	10.1 2.9	307 88	8 F	0651 2000	11.5 1.8	352 55	23 Sa	0726 2010	10.6 2.6	322 80	8 Su	0729 2036	11.0 2.5	335 75	23 M	0719 2013	9.8 3.2	298 99
9 W	0549 1942	9.9 3.0	303 92	24 Th	0715 2014	10.2 2.8	311 85	9 Sa	0747 2047	11.4 2.1	348 65	24 Su	0802 2038	10.2 3.1	312 93	9 M	0810 2113	10.1 3.4	308 105	24 Tu	0743 2027	9.1 4.0	278 121
10 Th	0657 2025	10.5 2.5	319 77	25 F	0807 2049	10.2 2.9	311 88	10 Su	0843 2133	10.9 2.8	333 85	25 M	0834 2102	9.8 3.6	298 111	10 Tu	0839 2123	9.0 4.6	275 140	25 W	0758 1958	8.4 4.8	255 145
11 F	0806 2113	10.8 2.3	328 70	26 Sa	0856 2123	10.1 3.1	307 95	11 M	0937 2217	10.2 3.7	310 113	26 Tu	0904 2113	9.2 4.3	281 131	11 W	0836 1944	7.9 5.5	240 168	26 Th	0726 1643	7.5 5.3	230 163
12 Sa	0917 2205	10.8 2.5	330 75	27 Su	0941 2156	9.8 3.5	300 106	12 Tu	1024 2248	9.2 4.8	281 146	27 W	0926 2053	8.5 5.1	259 154	12 Th	0633 1624	7.2 5.6	218 172	27 F	0529 1535	7.1 5.0	216 151
13 Su	1027 2301	10.6 2.9	324 89	28 M	1022 2228	9.5 4.0	291 122	13 W	1052 2120	8.1 5.9	247 179	28 Th	0923 1818	7.7 5.6	235 172	13 F	0255 1511	7.4 4.8	225 145	28 Sa	0241 1501	7.5 4.2	229 128
14 M	1135	10.2	310	29 Tu	1100 2256	9.1 4.6	277 141	14 Th	1015 1806	7.1 6.2	215 189	29 F	0700 1708	7.1 5.3	216 163	14 Sa	0234 1503	8.4 3.8	256 115	29 Su	0215 1454	8.5 3.2	259 99
15 Tu	0004 1239	3.7 9.5	112 289	30 W	1134 2301	8.5 5.4	260 164	15 F	0212 1641	7.3 5.5	221 167	30 Sa	0303 1633	7.6 4.7	232 144	15 Su	0257 1535	9.3 2.9	283 89	30 M	0227 1517	9.5 2.3	290 71
				31 Th	1203 2027	7.8 6.1	238 186								31 Tu	0258 1554	10.5 1.5	319 47					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mui Vung Tau, Vietnam, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0230 12.0 365	16 W 0344 11.8 360	1 F 0412 11.4 348	16 Sa 0533 10.4 317	1 F 0329 12.1 369	16 Sa 0434 11.3 343						
0953 2.6 80	1033 3.2 97	1047 4.4 134	1115 6.2 188	0951 4.2 129	1017 6.0 183						
1657 12.1 369	1729 12.0 365	1707 11.9 362	1721 11.3 343	1549 12.0 366	1556 11.4 347						
2220 8.3 253	2310 6.8 208	2321 5.6 171		2211 3.9 119	2244 3.5 106						
2 W 0311 11.6 355	17 Th 0440 11.1 337	2 Sa 0511 10.9 331	17 Su 0006 4.9 150	2 Sa 0419 11.8 359	17 Su 0520 10.7 326						
1028 3.3 100	1111 4.4 135	1125 5.4 166	0636 9.7 297	1027 5.2 157	1046 6.8 207						
1730 12.0 365	1802 11.7 357	1739 11.8 360	1146 7.1 216	1617 12.0 366	1617 11.2 340						
2303 8.0 244			1746 11.0 335	2253 3.5 107	2322 3.7 114						
3 Th 0359 11.2 340	18 F 0001 6.6 200	3 Su 0013 5.1 156	18 M 0058 5.0 152	3 Su 0516 11.2 342	18 M 0613 10.1 309						
1107 4.1 126	0545 10.2 312	0626 10.2 311	0801 9.3 283	1104 6.2 188	1117 7.5 229						
1803 11.9 362	1148 5.7 174	1207 6.6 200	1221 7.9 242	1648 11.9 362	1638 10.9 331						
2354 7.6 231	1836 11.5 350	1816 11.7 358	1816 10.7 327	2342 3.3 102							
4 F 0500 10.6 322	19 Sa 0059 6.2 190	4 M 0114 4.7 142	19 Tu 0158 5.0 153	4 M 0626 10.6 322	19 Tu 0005 4.1 125						
1149 5.1 156	0707 9.5 291	0807 9.8 299	0943 9.2 280	1146 7.2 220	0722 9.7 295						
1840 11.8 360	1226 6.9 209	1257 7.6 233	1305 8.6 263	1723 11.7 356	1152 8.2 249						
1911 11.3 344		1902 11.6 355	1859 10.4 317	1701 10.5 319	1701 10.5 319						
5 Sa 0052 7.0 213	20 Su 0204 5.9 179	5 Tu 0224 4.1 125	20 W 0310 4.9 150	5 Tu 0039 3.3 101	20 W 0055 4.5 137						
0626 9.9 303	0848 9.3 282	0957 9.9 301	1113 9.5 290	0800 10.1 308	0854 9.5 290						
1236 6.2 188	1308 7.8 239	1401 8.6 262	1423 9.1 278	1236 8.2 250	1242 8.7 266						
1921 11.8 360	1952 11.1 339	2002 11.6 353	2017 10.1 309	1808 11.4 346	1728 10.0 305						
6 Su 0158 6.2 188	21 M 0313 5.4 165	6 W 0341 3.5 106	21 Th 0425 4.6 141	6 W 0147 3.4 103	21 Th 0157 4.8 146						
0822 9.7 295	1026 9.4 285	1126 10.4 317	1212 10.0 305	0948 10.1 308	1021 9.7 295						
1332 7.2 220	1401 8.6 263	1534 9.2 280	1649 9.2 280	1348 8.9 272	1410 9.1 276						
2007 11.9 362	2040 11.1 337	2115 11.6 353	2145 10.1 309	1914 10.9 333	1820 9.5 290						
7 M 0308 5.2 157	22 Tu 0421 4.9 148	7 Th 0457 2.8 85	22 F 0528 4.2 127	7 Th 0308 3.4 103	22 Th 0314 5.0 151						
1007 10.0 304	1144 9.8 298	1232 11.0 335	1250 10.5 319	1113 10.5 319	1120 10.1 307						
1438 8.1 248	1521 9.2 279	1718 9.2 279	1812 8.7 266	1542 9.2 279	1653 8.8 268						
2058 12.0 367	2132 11.0 336	2226 11.7 358	2252 10.4 316	2054 10.7 325	2111 9.3 282						
8 Tu 0416 4.0 122	23 W 0518 4.2 128	8 F 0602 2.1 64	23 Sa 0617 3.7 112	8 F 0434 3.2 98	23 Sa 0434 4.8 147						
1129 10.6 323	1241 10.3 313	1322 11.5 350	1319 10.9 332	1212 10.9 332	1158 10.4 318						
1559 8.8 268	1706 9.3 284	1831 8.7 264	1853 8.1 248	1731 8.6 262	1757 8.1 247						
2151 12.3 375	2223 11.1 338	2330 12.0 366	2346 10.8 328	2226 10.8 330	2241 9.6 293						
9 W 0519 2.9 87	24 Th 0605 3.6 109	9 Sa 0656 1.6 49	24 Su 0658 3.2 99	9 Sa 0547 3.0 90	24 Su 0538 4.5 138						
1234 11.3 343	1322 10.7 327	1403 11.8 360	1345 11.3 343	1256 11.3 343	1227 10.8 329						
1722 9.1 277	1818 9.1 278	1922 7.9 242	1925 7.4 227	1831 7.7 234	1829 7.3 221						
2244 12.6 384	2310 11.3 343			2339 11.2 342	2341 10.2 312						
10 Th 0615 1.8 55	25 F 0645 3.0 92	10 Su 0028 12.3 375	25 M 0033 11.2 342	10 Su 0644 2.8 85	25 M 0626 4.2 129						
1329 11.8 361	1355 11.2 340	0743 1.4 44	0735 3.0 90	1331 11.5 350	1253 11.1 339						
1830 9.0 275	1905 8.8 268	1439 12.0 366	1410 11.5 351	1915 6.6 202	1859 6.3 191						
2335 12.9 393	2353 11.5 349	2005 7.2 218	1956 6.7 205								
11 F 0705 1.0 32	26 Sa 0722 2.6 78	11 M 0122 12.5 380	26 Tu 0117 11.7 356	11 M 0040 11.6 355	26 Tu 0031 10.9 333						
1417 12.3 374	1425 11.5 351	0824 1.7 51	0810 2.9 87	0731 2.9 87	0708 4.1 124						
1925 8.7 266	1943 8.4 256	1511 12.0 367	1434 11.7 358	1401 11.6 354	1318 11.4 348						
12 Sa 0025 13.1 398	27 Su 0035 11.7 356	2045 6.4 195	2026 5.9 181	1952 5.6 171	1929 5.2 159						
0751 0.7 20	0756 2.3 69										
1501 12.5 381	1453 11.8 359										
2012 8.3 254	2017 8.0 243										
13 Su 0114 13.1 399	28 M 0115 11.9 362	13 W 0302 12.2 371	28 Th 0243 12.2 371	13 M 0222 12.1 370	28 Th 0201 12.1 368						
0834 0.7 21	0830 2.2 66	0938 3.1 93	0917 3.5 107	0846 3.7 113	0821 4.3 130						
1541 12.6 383	1519 11.9 364	1607 11.8 361	1522 12.0 365	1452 11.7 356	1408 12.0 365						
2056 7.9 241	2049 7.5 230	2200 5.3 162	2133 4.5 137	2101 4.0 123	2034 3.2 98						
14 M 0203 12.9 393	29 Tu 0155 12.0 366	14 Th 0350 11.7 358	14 F 0200 12.0 366	14 M 0133 12.0 366	27 W 0116 11.6 353						
0915 1.2 37	0903 2.3 71	1012 4.0 123	0844 3.1 93	0810 3.2 97	0745 4.0 123						
1619 12.4 379	1546 12.0 366	1633 11.7 356	1458 11.9 362	1428 11.7 356	1342 11.7 357						
2139 7.5 229	2122 7.1 215	2240 5.0 153	2058 5.2 158	2027 4.7 143	2000 4.2 127						
15 Tu 0252 12.5 380	30 W 0237 12.0 365	15 F 0440 11.1 339	28 O 0243 12.2 371	15 M 0222 12.1 370	28 Th 0201 12.1 368						
0954 2.1 63	0936 2.8 85	1044 5.1 156	0917 3.5 107	0846 3.7 113	0821 4.3 130						
1654 12.2 373	1612 12.0 366	1657 11.5 350	1522 12.0 365	1452 11.7 356	1408 12.0 365						
2223 7.2 218	2157 6.6 201	2321 4.9 150	2133 4.5 137	2101 4.0 123	2034 3.2 98						
16 Th 0322 11.8 360	31 Th 1011 3.5 106										
1639 11.9 364	1639 11.9 364										
2237 6.1 186	2237 6.1 186										

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mui Vung Tau, Vietnam, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0520	11.5	352	16	0557	10.5	321	1 W	0630	11.3	344
Tu	1047	7.1	216	Tu	1057	8.0	243	W	1128	8.2	251
	1606	11.9	364		1548	10.7	326		1618	11.2	340
	2317	1.9	59		2325	3.3	100		2352	1.9	58
2 Tu	0629	11.0	334	17 W	0655	10.2	311	2 Th	0742	11.0	334
	1133	7.9	242		1140	8.4	257		1236	8.5	258
	1643	11.5	351		1612	10.2	312		1712	10.3	313
O	1729	10.9	333	O	1636	9.7	295				
3 W	0012	2.4	73	18 Th	0008	3.9	118	3 F	0052	2.9	89
	0756	10.6	322		0808	10.0	306		0855	10.8	330
	1231	8.6	263		1239	8.7	266		1410	8.3	252
O	1729	10.9	333	O	1636	9.7	295		1849	9.4	286
4 Th	0117	3.0	92	19 F	0101	4.5	136	4 Sa	0203	4.0	121
	0928	10.5	320		0920	10.1	308		0955	10.8	330
	1359	8.9	272		1411	8.7	266		1557	7.4	227
	1846	10.2	310		1721	9.1	276		2105	9.1	277
5 F	0236	3.6	111	20 Sa	0208	5.0	151	5 Su	0326	4.8	147
	1041	10.7	326		1015	10.3	314		1043	10.9	332
	1604	8.5	260		1618	8.2	250		1708	6.3	191
	2056	9.8	298		2042	8.6	263		2243	9.4	288
6 Sa	0405	4.0	122	21 Su	0326	5.2	160	6 M	0447	5.4	164
	1133	10.9	333		1055	10.5	321		1121	11.0	333
	1730	7.5	230		1717	7.3	222		1756	5.0	153
	2237	10.1	307		2228	9.1	277		2354	10.0	306
7 Su	0525	4.2	127	22 M	0442	5.3	163	7 Tu	0552	5.8	177
	1213	11.1	339		1126	10.8	330		1152	11.1	337
	1820	6.3	193		1752	6.2	189		1835	3.9	118
	2350	10.6	324		2332	9.8	300				
8 M	0624	4.3	132	23 Tu	0543	5.3	162	8 W	0052	10.6	323
	1245	11.3	343		1155	11.1	339		0642	6.1	187
	1858	5.2	157		1826	5.0	152		1220	11.2	340
O	1910	2.9	77						1910	2.9	87
9 Tu	0049	11.2	341	24 W	0025	10.7	325	9 Th	0140	11.0	336
	0711	4.6	139		0632	5.3	162		0723	6.4	196
	1313	11.4	346		1223	11.5	350		1246	11.3	344
	1933	4.1	124		1859	3.7	113		1943	2.1	63
10 W	0140	11.6	354	25 Th	0112	11.4	347	10 F	0224	11.3	343
	0750	4.9	149		0715	5.4	165		0757	6.7	204
	1337	11.5	349		1251	11.8	360		1311	11.4	346
O	2006	3.2	97		1934	2.5	75		● 2015	1.5	47
11 Th	0225	11.8	360	26 F	0159	11.9	364	11 Sa	0303	11.4	346
	0824	5.3	163		0755	5.7	173		0829	7.0	212
	1400	11.5	351		F 1321	12.1	370		1335	11.4	347
	2038	2.6	78		O 2011	1.4	43		2045	1.3	39
12 F	0307	11.8	360	27 Sa	0246	12.3	374	12 Su	0342	11.3	345
	0854	5.9	179		0833	6.1	185		0900	7.3	221
	1422	11.5	352		1352	12.4	377		1359	11.3	345
	2109	2.2	68		2049	0.7	21		2116	1.3	39
13 Sa	0347	11.6	355	28 Su	0335	12.3	375	13 M	0420	11.2	341
	0923	6.4	195		0912	6.6	200		0932	7.5	229
	1443	11.5	350		1424	12.4	378		1424	11.1	339
	2141	2.2	66		2130	0.4	11		2148	1.5	47
14 Su	0427	11.3	345	29 M	0427	12.1	369	14 Tu	0459	11.0	335
	0953	6.9	211		0952	7.2	218		1007	7.8	238
	1504	11.3	345		1459	12.2	373		1450	10.8	329
	2213	2.4	72		2213	0.5	14		2221	2.0	60
15 M	0509	10.9	333	30 Tu	0525	11.7	357	15 W	0543	10.8	329
	1023	7.5	228		1036	7.7	236		1046	8.1	246
	1526	11.1	337		1536	11.8	360		1516	10.4	317
	2247	2.8	84		2259	1.0	31		2257	2.6	78

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mui Vung Tau, Vietnam, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0051	4.6	140	16 0012	4.5	137	1 Th 0143	7.1	216	16 F 0128	7.2	218
0759	10.3	314	Tu 0649	10.3	314	0812	9.6	294	0723	10.3	315
1430	5.0	151	1325	4.6	140	1549	3.4	103	1458	2.5	76
2045	8.1	248	● 1936	8.2	249	2318	8.4	255	2244	9.0	275
2 Tu 0143	5.8	176	17 W 0100	5.5	167	2 0253	7.7	234	2 M 0027	9.6	292
0841	10.2	310	0730	10.3	315	0907	9.5	291	0559	7.7	235
1540	4.2	128	1428	3.8	115	1653	2.9	89	1042	9.3	283
2220	8.3	252	2123	8.2	251	2355	9.6	292	1759	3.1	96
3 W 0244	6.7	205	18 Th 0156	6.4	196	3 Sa 0022	8.8	268	18 0430	8.0	243
0922	10.1	309	0819	10.4	318	0438	7.9	242	0951	10.4	317
1642	3.4	103	1535	2.8	86	1003	9.5	291	1725	1.3	41
2338	8.6	263	2252	8.7	265	1746	2.4	74	1842	2.9	87
4 Th 0358	7.4	225	19 F 0307	7.2	219	4 Su 0107	9.2	281	19 0048	10.1	308
1003	10.1	309	0913	10.6	323	0603	7.8	237	0556	7.5	230
1734	2.6	79	1642	1.8	56	1055	9.7	295	1100	10.7	325
5 F 0039	9.1	277	20 Sa 0003	9.3	284	1830	2.0	60	1825	0.9	27
0518	7.7	235	0434	7.6	232	5 M 0142	9.6	294	5 0131	10.5	321
1042	10.2	311	1010	10.8	330	0655	7.4	225	0655	6.8	208
1817	1.9	58	1743	0.9	26	1143	9.8	300	1203	11.0	336
6 Sa 0128	9.5	290	21 Su 0101	10.0	304	1909	1.6	48	1916	0.7	20
0621	7.7	236	0555	7.6	232	6 Tu 0211	10.0	304	21 0209	10.8	330
1121	10.3	314	1106	11.1	339	0733	7.0	212	0741	6.0	182
1856	1.3	41	1837	0.0	1	1226	10.0	306	1300	11.3	344
7 Su 0208	9.9	301	22 M 0151	10.5	319	1944	1.3	41	○ 2001	0.8	23
0709	7.6	232	0658	7.3	223	7 W 0238	10.3	313	21 0209	10.8	330
1159	10.4	316	1200	11.4	346	0807	6.5	197	0741	6.0	182
1931	1.0	29	1927	-0.5	-15	1308	10.2	312	1300	11.3	344
8 M 0242	10.2	310	23 Tu 0235	10.9	331	● 2018	1.3	39	○ 2001	0.8	23
0749	7.4	225	0749	6.8	208	8 Th 0304	10.5	319	22 0213	10.8	330
1235	10.4	318	1252	11.5	350	0839	6.0	183	0813	5.0	153
● 2005	0.7	22	○ 2012	-0.6	-19	1348	10.4	317	1349	10.9	333
9 Tu 0314	10.4	317	24 W 0316	11.0	336	2051	1.4	44	2027	2.8	85
0826	7.2	218	0836	6.3	192	9 F 0329	10.6	322	21 0213	11.4	347
1312	10.4	317	1344	11.4	348	0911	5.5	168	0843	4.3	131
2038	0.7	21	2055	-0.3	-9	1429	10.4	318	1353	11.4	347
10 W 0344	10.6	322	25 Th 0354	11.1	337	2123	1.8	56	2042	1.2	37
0901	6.9	211	0920	5.7	175	10 Sa 0354	10.6	324	22 0243	11.0	334
1348	10.3	315	1437	11.2	340	0945	5.1	154	0823	5.1	156
2110	0.9	27	2136	0.4	12	1512	10.3	315	1430	11.2	340
11 Th 0414	10.6	324	26 F 0430	10.9	333	2156	2.4	12	2100	3.2	97
0936	6.7	204	1004	5.3	161	11 M 0419	10.6	323	22 0236	11.0	336
1426	10.2	311	1530	10.7	325	1021	4.6	140	0843	4.3	131
2143	1.3	39	2216	1.4	44	1559	10.1	307	1353	11.4	347
12 F 0443	10.6	323	27 Sa 0505	10.7	327	2230	3.2	99	2042	1.2	37
1012	6.5	197	1050	4.9	149	12 M 0445	10.6	322	21 0243	11.0	334
1507	9.9	303	1627	10.0	305	1101	4.2	127	0902	4.4	134
2217	1.8	56	2255	2.7	81	1652	9.6	294	1445	11.3	344
13 Sa 0512	10.5	320	28 Su 0539	10.5	320	2306	4.2	128	2120	2.0	60
1052	6.2	188	1139	4.6	140	13 M 0514	10.5	321	2051	1.4	44
1553	9.5	291	1731	9.3	282	1148	3.7	114	0916	3.6	111
2252	2.6	80	2334	3.9	120	1758	9.2	279	1513	11.2	341
14 Su 0542	10.4	317	29 M 0612	10.2	312	2345	5.2	159	2133	3.8	116
1136	5.8	176	1233	4.3	132	14 F 0548	10.5	320	0343	10.9	333
1648	9.1	276	1846	8.5	260	0629	10.4	317	0951	3.1	95
2330	3.5	107	● 2017	8.1	247	1346	3.0	90	1600	11.0	335
15 M 0614	10.3	315	30 Tu 0013	5.2	157	2111	8.7	264	2207	4.6	141
1227	5.2	160	0647	10.0	305	15 F 0031	6.2	190	2027	4.6	141
1759	8.6	261	1334	4.1	124	0629	10.4	317	0325	11.2	341
● 2017	8.1	247	● 2017	8.1	247	1345	3.9	118	2234	6.6	202
16 M 0614	10.3	315	31 W 0054	6.2	190	2111	8.7	264	2035	10.9	332
1227	5.2	160	0726	9.8	299	15 F 0101	7.7	234	21 0236	11.4	347
1759	8.6	261	1440	3.8	115	0641	9.4	288	0813	2.8	85
● 2017	8.1	247	2153	8.1	246	1445	3.9	118	1425	2.8	85
17 M 0614	10.3	315	32 W 0726	9.8	299	2247	8.7	266	2231	9.9	302
1227	5.2	160	1440	3.8	115	0758	9.2	279	2334	10.3	315
1759	8.6	261	2153	8.1	246	1559	3.8	115	2336	10.4	316

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mui Vung Tau, Vietnam, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm																				
1 Tu	0547 1034 1715	7.7 9.3 4.7	235 282 143	16 W	0550 1122 1749	6.6 10.7 4.6	200 326 141	1 F	0612 1211 1809	5.6 10.9 6.2	170 332 190	16 Sa	0650 1320 1859	3.6 11.8 7.3	110 361 224	1 Su	0613 1249 1816 2345	3.7 11.6 7.9 12.9	113 355 240 393	16 M	0706 1404 1915	2.7 11.8 8.7	81 359 266
2 W	0005 0618 1133 1806	10.7 6.9 9.8 4.5	327 210 300 138	17 Th	0015 0633 1224 1842	11.7 5.3 11.3 4.9	356 162 345 149	2 Sa	0003 0644 1257 1852	12.1 4.4 11.6 6.4	369 134 354 194	17 Su	0027 0726 1406 O	12.4 2.8 12.1 7.7	378 85 370 234	2 M	0652 1336 1903	2.5 12.3 8.0	76 374 244	17 Tu	0018 0740 1443 O	12.4 2.2 12.0 8.7	378 67 365 266
3 Th	0032 0646 1220 1848	11.0 6.0 10.5 4.4	336 183 320 135	18 F	0045 0711 1317 1925	11.8 4.2 11.8 5.3	361 128 360 161	3 Su	0030 0717 1341 ●	12.4 3.2 12.2 6.6	379 99 372 200	18 M	0053 0759 1448 2011	12.5 2.2 12.3 8.0	381 68 374 243	3 Tu	0020 0731 1423 ●	13.3 1.5 12.7 8.2	405 45 387 249	18 W	0048 0813 1519 2027	12.4 2.0 12.1 8.7	379 61 368 265
4 F	0056 0715 1304 1925	11.4 5.1 11.2 4.4	346 154 340 135	19 Sa	0112 0746 1405 O	12.0 3.2 12.1 5.8	365 99 369 176	4 M	0058 0751 1425 2009	12.8 2.2 12.6 6.9	390 68 384 211	19 Tu	0119 0831 1528 2044	12.5 2.0 12.2 8.2	382 60 373 251	4 W	0056 0812 1511 2030	13.5 0.8 12.9 8.4	413 24 394 255	19 Th	0119 0845 1553 2101	12.4 2.0 12.1 8.7	377 61 369 265
5 Sa	0120 0744 1346 ●	11.6 4.1 11.7 4.7	354 124 356 142	20 Su	0137 0820 1450 2035	12.0 2.6 12.2 6.3	367 78 371 192	5 Tu	0128 0828 1511 2047	13.0 1.4 12.8 7.4	397 44 389 225	20 W	0144 0903 1607 2116	12.5 2.0 12.1 8.5	380 61 369 260	5 Th	0134 0853 1600 2114	13.6 0.6 13.0 8.5	415 17 395 260	20 F	0150 0917 1627 2137	12.2 2.3 12.1 8.7	371 69 369 264
6 Su	0144 0816 1428 2035	11.9 3.2 12.0 5.1	362 97 367 154	21 M	0201 0853 1533 2106	12.1 2.2 12.0 6.9	368 68 367 210	6 W	0159 0907 1601 2126	13.2 1.0 12.7 7.9	401 32 387 241	21 Th	0210 0935 1647 2150	12.3 2.3 11.9 8.8	374 70 363 268	6 F	0214 0936 1650 2201	13.4 0.8 12.8 8.7	409 24 390 265	21 Sa	0222 0949 1701 2215	11.9 2.7 12.0 8.7	362 83 366 264
7 M	0210 0849 1512 2109	12.1 2.4 12.1 5.7	368 74 370 173	22 Tu	0224 0926 1615 2137	12.0 2.2 11.7 7.4	366 67 358 227	7 Th	0233 0948 1656 2209	13.1 1.1 12.4 8.4	399 33 379 257	22 F	0236 1008 1729 2229	11.9 2.8 11.7 9.0	363 86 357 275	7 Sa	0258 1020 1744 2254	13.0 1.5 12.6 8.8	395 45 383 267	22 Su	0256 1022 1737 2258	11.5 3.3 11.9 8.6	350 102 362 263
8 Tu	0237 0926 1600 2145	12.2 1.9 12.0 6.4	372 59 365 195	23 W	0246 0959 1659 2209	11.8 2.4 11.4 8.0	361 74 347 244	8 F	0309 1033 1758 2300	12.8 1.5 12.1 8.9	389 46 369 272	23 Sa	0303 1043 1816 2316	11.5 3.5 11.5 9.2	350 106 352 281	8 Su	0346 1108 1840 2357	12.2 2.5 12.3 8.7	372 76 375 264	23 M	0333 1057 1814 2347	11.0 4.1 11.7 8.5	335 124 358 258
9 W	0306 1006 1655 2223	12.2 1.7 11.6 7.2	372 52 354 220	24 Th	0308 1034 1748 2244	11.5 2.9 11.0 8.5	352 89 335 259	9 Sa	0350 1123 1908 1908	12.1 2.3 70 11.8	370 70 360 360	24 Su	0332 1121 1908 1936	10.9 4.2 129 11.5	333 129 349 349	9 M	0447 1121 1908 ●	11.3 4.2 115 368	343 115 368 ●	24 Tu	0419 1136 1852 ●	10.4 4.9 11.6 ●	317 149 355 ●
10 Th	0338 1051 1800 2307	12.1 1.8 11.2 8.0	368 56 341 244	25 F	0331 1111 1847 2328	11.2 3.5 10.7 9.0	340 108 327 273	10 F	0004 0441 1221 ●	9.2 11.3 3.3 11.7	280 345 102 357	25 M	0017 0408 1205 2001	9.3 10.3 5.0 11.4	282 313 153 348	10 Tu	0113 0617 1258 2031	8.3 10.3 5.1 12.0	252 314 155 365	25 W	0044 0524 1219 ●	8.1 9.8 5.8 ●	248 298 176 ●
11 F	0414 1142 1920	11.7 2.3 10.8	357 69 330	26 Sa	0355 1154 1957	10.6 4.2 10.6	324 129 323	11 M	0131 0604 1328 2123	9.1 10.4 4.4 11.7	276 317 135 358	26 Tu	0134 0508 1258 ●	9.0 9.5 5.8 11.5	275 291 176 350	11 W	0239 0819 1404 2119	7.5 9.8 6.3 11.9	229 300 192 364	26 Th	0148 0714 1310 2014	7.5 9.3 6.6 11.6	230 284 202 355
12 Sa	0004 0458 1243 ●	8.7 11.2 2.9 10.8	264 340 89 328	27 Su	0032 0418 1246 ●	9.2 10.0 4.9 10.7	281 306 150 326	12 Tu	0315 0821 1446 2213	8.4 9.9 5.4 11.9	255 301 164 362	27 F	0358 1004 1400 2131	6.5 10.0 6.5 11.6	197 305 197 354	27 M	0254 0916 1518 2057	6.7 9.4 7.3 11.8	204 287 227 359				
13 Su	0125 0605 1356 2204	9.0 10.4 3.6 11.0	274 318 109 334	28 M	0212 0455 1349 2158	9.2 9.4 5.5 10.9	279 285 168 333	13 W	0436 1010 1608 2254	7.2 10.2 6.1 12.0	219 310 185 366	28 Th	0407 0953 1510 2206	7.4 9.4 7.0 11.8	226 288 214 361	13 F	0459 1124 1635 2240	5.3 10.5 8.0 12.1	162 320 244 368	28 Sa	0356 1042 1519 2141	5.6 9.9 8.1 12.0	171 303 247 367
14 M	0319 0811 1520 2259	8.7 9.9 4.1 11.3	266 302 125 343	29 Tu	0425 0837 1504 2237	8.6 8.9 5.9 11.2	261 272 180 341	14 Th	0530 1127 1719 2329	5.9 10.8 6.6 12.1	180 329 201 370	29 F	0454 1104 1620 2239	6.3 10.1 7.4 12.1	191 309 226 370	14 Sa	0547 1227 1741 2314	4.3 11.0 8.4 12.2	130 336 256 371	29 Su	0453 1148 1635 2225	4.4 10.6 8.6 12.4	134 324 261 378
15 Tu	0454 1003 1643 2340	7.8 10.1 4.4 11.5	237 308 134 350	30 W	0511 1020 1617 2308	7.7 9.4 6.1 11.5	234 286 186 350	15 F	0613 1228 1814 2359	4.7 11.4 7.0 12.3	143 347 213 374	30 Sa	0534 1228 1814 2312	5.0 10.9 7.7 12.5	153 333 234 381	15 Su	0629 1320 1832 2346	3.3 11.5 8.6 12.3	102 350 263 375	30 M	0544 1243 1745 2309	3.1 11.4 8.7 12.8	96 346 266 390
				31 Th	0542 1122 1719 2336	6.7 10.1 6.2 11.8	203 308 188 359									31 Tu	0631 1333 1843 2353	2.0 12.0 8.7 13.2	61 365 266 401				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bangkok Bar, Thailand, 2013

Times and Heights of High and Low Waters

January				February				March			
	Time	Height			Time	Height			Time	Height	
1	0105 3.1 93			16	0145 3.3 101			1	0143 4.8 145		
Tu	0838 12.1 370	W	0855 12.2 373	F	0810 11.9 364	Sa	0809 11.6 354	16	0212 6.6 201	F	0104 5.4 164
	1421 8.8 268		1458 7.6 231		1439 6.4 194		1503 5.3 161	1	0700 11.8 360	Sa	0657 11.4 347
	1814 10.1 309		1935 9.9 302		2000 10.4 318		2114 9.9 302		1334 5.2 160		1351 4.2 128
2	0130 3.4 104	17	0213 4.4 133	2	0208 5.6 171	17	0229 7.5 228	2	0134 6.1 185	17	0158 7.6 233
W	0857 12.0 367	Th	0907 11.9 364	Sa	0824 11.9 364	Su	0824 11.5 349	Sa	0716 11.8 361	Su	0716 11.3 344
	1450 8.4 255		1527 6.9 211		1510 5.7 174		1535 5.1 156		1404 4.6 139		1420 4.1 124
	1855 9.9 302		2027 9.4 287		2054 10.2 310		2212 9.6 292		2018 11.4 347		2108 10.9 333
3	0155 4.0 121	18	0235 5.5 168	3	0234 6.6 201	18	0241 8.3 252	3	0204 6.9 210	18	0223 8.2 250
Th	0906 11.9 364	F	0915 11.7 357	Su	0841 11.9 362	M	0833 11.2 342	Su	0736 11.8 361	M	0735 11.1 338
	1521 7.8 238		1600 6.4 195		1546 5.2 158		1610 5.2 157		1437 4.1 125		1450 4.1 125
	1942 9.6 294		2125 8.9 272	O	2202 9.8 299		2345 9.4 285		2115 11.1 339		2159 10.7 327
4	0218 4.7 144	19	0249 6.7 204	4	0302 7.7 235	19	0252 9.0 275	4	0234 7.8 238	19	0250 8.8 267
F	0916 11.8 361	Sa	0924 11.5 350	M	0903 11.7 357	Tu	0836 11.0 334	M	0759 11.7 358	Tu	0750 10.8 330
	1555 7.2 218		1636 6.0 183		1635 4.9 148		1656 5.3 162		1515 3.9 119		1525 4.4 134
	2038 9.3 283	O	2245 8.5 260		2354 9.5 290				2223 10.8 328		2304 10.5 320
5	0244 5.7 173	20	0245 7.7 236	5	0328 8.9 272	20	0824 10.7 325	5	0308 8.8 267	20	0323 9.3 284
Sa	0930 11.7 358	Su	0932 11.2 342	Tu	0925 11.4 348	W	1804 5.5 168	Tu	0824 11.5 350	W	0800 10.5 320
	1635 6.5 197		1719 5.8 176		1744 4.7 143				1602 4.0 123	O	
	2153 8.9 271										
6	0311 6.9 209	21	0932 10.9 333	6	0939 11.0 336	21	0706 10.6 322	6	0002 10.5 319	21	0030 10.4 316
Su	0952 11.6 353	M	1816 5.6 170	W	1916 4.4 135	Th	1941 5.4 166	W	0350 9.7 296	Th	0419 9.9 301
	1729 5.8 176								0846 11.1 338		0738 10.2 310
									1708 4.4 133		1705 5.3 163
7	0003 8.7 265	22	0909 10.7 326	7	0523 11.2 340	22	0515 11.0 336	7	0244 10.7 325	22	0237 10.5 320
M	0339 8.2 250	Tu	1940 5.3 161	Th	2045 4.0 121	F	2113 5.1 156	Th	0627 10.4 318	F	1826 5.8 176
	1020 11.3 344								0849 10.5 321		
	1838 5.1 154								1841 4.7 142		
8	1051 11.0 334	23	0725 10.7 326	8	0545 11.9 362	23	0532 11.5 350	8	0415 11.3 344	23	0354 10.9 331
Tu	1956 4.3 130	W	2056 4.8 147	F	2158 3.4 104	Sa	1148 9.2 279	F	2000 11.7 319	Sa	2000 5.9 181
							1437 9.4 288		0350 9.7 296		
							2213 4.7 144		0846 11.1 338		
9	0524 10.8 329	24	0555 11.1 339	9	0610 12.3 375	24	0553 11.7 357	9	0450 11.7 357	24	0423 11.1 339
W	0841 10.5 320	Th	2154 4.3 130	Sa	1154 9.5 291	Su	1149 8.7 266	Sa	1104 9.0 275	Su	1101 8.3 253
	1130 10.6 324				1514 10.2 312		1545 9.9 302		1414 9.5 290		1445 9.0 273
	2105 3.4 105				2254 3.0 92		2258 4.5 136		2134 4.5 138		2125 5.9 179
10	0556 11.8 359	25	0607 11.6 354	10	0634 12.5 380	25	0611 11.8 359	10	0515 11.9 363	25	0440 11.3 343
Th	1126 10.4 316	F	1208 9.5 291	Su	1214 8.9 272	M	1203 8.2 251	Su	1114 8.2 249	M	1103 7.6 232
	1306 10.4 318		1433 9.8 298		1622 10.6 323		1632 10.4 316		1540 10.1 307		1552 9.7 295
	2208 2.7 82		2241 3.8 115	O	2341 2.9 89		2334 4.4 134		2233 4.4 135		2222 5.8 176
11	0631 12.4 378	26	0631 11.9 364	11	0657 12.4 379	26	0625 11.7 358	11	0535 12.0 365	26	0453 11.3 344
F	1204 10.1 308	Sa	1221 9.3 284	M	1242 8.2 250	Tu	1223 7.6 233	M	1136 7.3 222	Tu	1120 6.8 207
	1445 10.4 318		1540 10.0 306		1718 10.9 331		1715 10.8 329		1643 10.7 326		1642 10.4 318
	2303 2.1 65		2322 3.4 105	O					2321 4.6 139		2305 5.8 178
12	0706 12.7 388	27	0657 12.1 368	12	0021 3.2 98	27	0006 4.6 139	12	0556 11.9 363	27	0507 11.3 344
Sa	1238 9.8 299	Su	1241 9.1 277	Tu	0719 12.3 375	W	0634 11.7 357	Tu	1204 6.4 194	W	1141 5.9 179
	1559 10.6 322		1626 10.3 313		1312 7.5 228		1244 6.9 210		1736 11.1 339		1726 11.2 340
	2352 1.9 57	O	2357 3.3 102		1808 10.9 332		1757 11.2 340	O			2343 6.0 184
13	0739 12.9 392	28	0719 12.1 368	13	0056 3.8 117	28	0035 4.9 149	13	0000 5.0 152	28	0523 11.4 346
Su	1315 9.4 286	M	1301 8.8 269	W	0737 12.1 368	Th	0645 11.7 358	W	0614 11.7 358	Th	1204 4.9 150
	1658 10.6 324		1705 10.5 319		1340 6.8 206		1307 6.1 185		1231 5.6 171		1445 11.7 357
					1855 10.8 329		1841 11.4 347		1822 11.4 346		
14	0036 2.0 60	29	0026 3.4 105	14	0125 4.7 143			14	0035 5.6 171	29	0018 6.4 194
M	0810 12.8 389	Tu	0738 12.0 366	Th	0748 11.8 361			Th	0627 11.6 353	F	0542 11.5 349
	1351 8.8 269		1323 8.4 256		1407 6.1 187				1259 5.0 152		1231 4.0 122
	1752 10.5 321		1745 10.6 323		1940 10.5 321				1904 11.4 346		1857 12.1 368
15	0115 2.5 76	30	0052 3.7 113	15	0149 5.6 172			15	0105 6.3 193	30	0055 6.9 209
Tu	0836 12.5 382	W	0751 12.0 365	F	0757 11.7 357			F	0639 11.5 350	Sa	0603 11.5 351
	1426 8.2 251		1346 7.8 238		1434 5.6 171				1325 4.5 138		1304 3.3 100
	1844 10.3 314		1827 10.6 324		2025 10.2 312				1945 11.3 343		1946 12.2 372
31	0117 4.1 126	31	0117 4.1 126					14	0035 5.6 171	31	0132 7.5 228
	0800 11.9 364	Th	1412 7.1 216					Th	0627 11.6 353	Su	0629 11.5 350
			1911 10.6 323								1339 2.9 87
											2041 12.1 370

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bangkok Bar, Thailand, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0211 8.2 249		16 Tu 0229 8.6 262		1 W 0330 9.0 275		16 Th 0324 8.5 258		1 Sa 0542 7.1 217		16 Su 0432 7.1 216	
0657 11.4 347		0659 10.4 317		0712 10.2 312		0706 9.3 284		0933 8.3 252		0834 8.2 249	
1415 2.7 83		1421 3.3 100		1450 2.3 70		1435 3.2 98		1608 4.3 131		1510 4.5 138	
2140 11.9 363		2152 11.5 350		2250 12.1 369		2224 11.5 351		2332 11.2 342		2226 10.8 328	
2 Tu 0252 8.8 269		17 W 0309 8.9 271		2 Th 0440 9.0 273		17 F 0414 8.4 257		2 Su 0638 6.4 195		17 M 0515 6.6 201	
0727 11.2 340		0719 10.1 308		0759 9.7 296		0734 9.0 273		1115 7.7 236		0940 7.8 238	
1457 2.9 89		1455 3.7 112		1536 3.1 93		1506 3.8 117		1651 5.7 174		1535 5.5 169	
2245 11.6 354		2245 11.3 344		2340 11.8 359		2301 11.3 343		2241 10.5 320			
3 W 0344 9.4 287		18 Th 0400 9.2 279		3 F 0607 8.6 262		18 Sa 0515 8.3 252		3 M 0001 10.7 327		18 Tu 0604 5.9 180	
0800 10.8 328		0735 9.7 297		0859 9.0 275		0805 8.5 259		0735 5.6 171		1130 7.6 201	
1545 3.4 104		1531 4.3 130		1628 4.1 125		1535 4.7 142		1328 7.8 237		1610 6.7 204	
○		○ 2342 11.1 337		○ 2336 10.9 333		○ 2336 10.9 333		1746 7.1 217		2305 10.2 312	
4 Th 0000 11.4 346		19 F 0520 9.3 283		4 Sa 0026 11.5 349		19 Su 0658 7.8 239		4 Tu 0033 10.2 312		19 W 0705 5.1 156	
0516 9.7 297		0650 9.3 284		0728 7.9 240		0900 7.9 242		0829 4.8 147		1422 8.1 247	
0830 10.2 310		1615 5.0 152		1036 8.3 252		1609 5.6 170		1610 8.6 263		1719 7.9 242	
1645 4.1 126				1730 5.3 161				1933 8.2 251		2342 9.9 303	
5 F 0122 11.3 343		20 Sa 0041 10.9 332		5 Su 0110 11.1 339		20 M 0009 10.6 323		5 W 0109 9.8 299		20 Th 0807 4.2 127	
1805 4.9 150		1715 5.8 176		0834 6.9 210		0757 7.1 217		0915 4.1 124		1633 9.3 283	
○		○ 1314 8.1 247		1314 8.1 247		1129 7.5 229		1705 9.6 293		2009 8.8 269	
6 Sa 0236 11.3 343		21 Su 0137 10.8 328		6 M 0152 10.8 330		21 Tu 0043 10.3 314		6 Th 0148 9.5 290		21 F 0030 9.7 295	
0947 8.5 258		1843 6.5 198		0919 5.9 179		0835 6.1 187		0955 3.4 103		0905 3.2 97	
1234 8.7 265		1446 8.5 258		1524 8.8 268		1440 8.2 249		1739 10.4 318		1724 10.4 316	
1940 5.5 168		2018 6.9 211		2026 7.2 219		1900 7.6 231		2304 8.6 262		2219 9.0 275	
7 Su 0326 11.3 345		22 M 0224 10.7 326		7 Tu 0231 10.6 323		22 W 0119 10.1 308		7 F 0233 9.4 285		22 Sa 0130 9.5 290	
1008 7.4 227		0955 7.2 227		0955 4.9 148		0912 5.1 154		1031 2.9 87		1000 2.3 69	
1445 9.1 277		1446 8.5 258		1637 9.8 298		1614 9.3 283		1811 11.0 335		1810 11.3 343	
2102 5.9 179		2018 6.9 211		2149 7.6 232		2054 8.1 247		2355 8.4 257		2337 9.0 274	
8 M 0357 11.3 345		23 Tu 0301 10.7 325		8 W 0307 10.4 317		23 Th 0159 10.0 306		8 Sa 0319 9.3 284		23 M 0236 9.5 289	
1032 6.4 195		1011 6.3 191		1027 4.0 121		0947 3.9 120		1107 2.5 75		1053 1.5 46	
1607 9.9 303		1600 9.4 288		1724 10.7 325		1707 10.4 317		1845 11.4 346		1854 11.8 361	
2209 6.1 186		2140 7.1 216		2252 7.8 238		2218 8.3 253		○			
9 Tu 0422 11.3 344		24 W 0330 10.7 325		9 Th 0337 10.3 313		24 F 0240 10.0 306		9 Su 0034 8.3 254		24 M 0031 8.9 270	
1100 5.4 164		1034 5.2 158		1058 3.3 100		1025 2.9 87		0404 9.3 284		0341 9.5 291	
1705 10.7 327		1653 10.5 319		1804 11.3 344		1754 11.3 345		1142 2.2 67		1145 1.0 29	
2301 6.4 194		2238 7.2 220		2341 7.9 242		2319 8.4 257		1919 11.5 351		1938 12.2 372	
10 W 0445 11.2 341		25 Th 0353 10.7 326		10 F 0406 10.2 310		25 Sa 0321 10.1 308		10 M 0107 8.3 252		25 Tu 0119 8.6 263	
1129 4.5 138		1100 4.1 125		1128 2.8 85		1105 2.0 60		0445 9.3 284		0443 9.6 292	
1753 11.3 345		1739 11.4 346		1843 11.6 354		1841 11.9 364		1216 2.1 64		1234 0.7 22	
● 2345 6.7 205		2325 7.4 226		○		○		1952 11.5 352		2020 12.4 377	
11 Th 0504 11.1 338		26 F 0418 10.8 329		11 Sa 0021 8.1 247		26 Su 0013 8.6 261		11 Tu 0139 8.2 250		26 W 0206 8.2 251	
1157 3.9 118		1130 3.1 95		0436 10.1 308		0404 10.2 310		0524 9.3 284		0544 9.5 290	
1835 11.6 355		1825 12.0 366		1157 2.5 77		1149 1.3 40		1251 2.1 64		1320 0.9 27	
○		○ 1918 11.8 359		1918 11.8 359		1930 12.3 376		2025 11.6 353		2100 12.3 376	
12 F 0021 7.2 219		27 Sa 0009 7.7 235		12 Su 0056 8.2 251		27 M 0105 8.7 264		12 W 0213 8.1 247		27 Th 0251 7.7 236	
0523 11.0 334		0446 10.9 332		0507 10.1 307		0448 10.1 309		0600 9.2 281		0642 9.3 284	
1223 3.4 105		1204 2.3 70		1228 2.4 73		1236 1.0 30		1323 2.2 68		1402 1.4 43	
1914 11.7 358		1914 12.4 378		1953 11.8 359		2021 12.5 382		2058 11.6 353		2132 12.1 369	
13 Sa 0054 7.6 232		28 Su 0054 8.1 246		13 M 0128 8.4 255		28 Tu 0200 8.7 265		13 W 0246 8.0 243		28 F 0333 7.1 217	
0545 10.9 332		0518 10.9 332		0538 10.0 304		0535 10.0 305		0635 9.1 276		0741 9.0 275	
1250 3.2 97		1244 1.8 55		1259 2.4 73		1322 1.0 31		1353 2.5 77		1438 2.3 70	
1949 11.7 358		2006 12.6 383		2028 11.7 358		2111 12.5 382		2129 11.5 351		2159 11.7 358	
14 Su 0124 8.0 244		29 M 0142 8.5 258		14 Tu 0202 8.4 257		29 W 0255 8.6 261		14 F 0322 7.7 236		29 Sa 0414 6.5 197	
0610 10.8 329		0553 10.8 330		0609 9.8 300		0627 9.8 298		0711 8.8 269		0841 8.6 262	
1318 3.1 93		1325 1.6 50		1331 2.5 76		1407 1.3 41		1421 3.0 92		1511 3.5 106	
2026 11.7 356		2102 12.5 382		2105 11.7 358		2156 12.4 378		2155 11.4 346		2217 11.3 345	
15 M 0155 8.3 253		30 Tu 0232 8.8 268		15 W 0241 8.5 258		30 Th 0351 8.2 251		15 Sa 0357 7.5 228		30 Su 0453 5.8 177	
0635 10.6 324		0630 10.6 323		0638 9.6 293		0722 9.4 286		0748 8.5 260		0949 8.1 247	
1349 3.1 94		1407 1.8 55		1403 2.8 84		1448 2.0 62		1446 3.7 113		1541 4.9 148	
2106 11.6 354		2158 12.4 377		2145 11.7 356		2234 12.1 369		2214 11.1 337		2234 10.9 332	
○		○		○		○		○		○	
31 F 0446 7.7 236		32 F 0823 8.9 270		32 F 0446 7.7 236		32 F 0823 8.9 270		32 F 0446 7.7 236		32 F 0446 7.7 236	
○		○		○		○		○		○	
15 W 1528 3.1 93		1528 3.1 93		1528 3.1 93		1528 3.1 93		1528 3.1 93		1528 3.1 93	
2305 11.7 356		2305 11.7 356		2305 11.7 356		2305 11.7 356		2305 11.7 356		2305 11.7 356	

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bangkok Bar, Thailand, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0536	5.2	160	16 0423	5.2	160	1 Th 0602	4.2	128	16 Su 0518	3.6	110
1115	7.7	235	Tu 0952	8.2	251	2133	9.6	294	F 1403	9.2	281
1609	6.3	191	1516	5.9	181				1618	9.1	278
2249	10.4	317	● 2142	10.6	322				2135	10.1	308
2 Tu 0628	4.8	146	17 W 0503	4.7	143	2 0715	4.1	126	2 M 0855	4.3	130
1332	7.7	235	1130	8.1	247	1835	9.6	294	17 Sa 0639	3.5	106
1618	7.6	231	1545	7.1	217				1633	10.2	310
2300	9.9	303	2204	10.3	315						
3 W 0726	4.4	133	18 Th 0600	4.2	128	3 Sa 0834	3.8	117	3 Tu 0238	8.6	261
2314	9.5	290	1409	8.4	255	1730	10.2	311	0958	4.0	121
			1620	8.4	255				1730	11.2	340
			2230	10.0	305				2339	7.5	229
4 Th 0826	3.9	120	19 F 0715	3.6	111	4 Su 0938	3.4	104	4 W 0347	9.0	275
1749	9.5	291	1656	9.6	292	1747	10.7	327	19 M 0927	2.7	81
2243	9.2	279	1945	9.4	287				1743	11.5	352
2339	9.2	279	2251	9.6	294				2344	8.5	259
5 F 0920	3.4	105	20 Sa 0833	3.0	90	5 M 0001	8.3	254	5 Th 0439	9.5	290
1749	10.2	311	1734	10.6	324	0234	8.6	263	0930	2.3	69
2341	8.8	268				1030	3.0	91	1127	3.8	115
						1811	11.8	361	1813	11.3	343
6 Sa 0105	8.9	270	21 Su 0944	2.2	67	6 Tu 0018	8.0	243	●		
1008	3.0	90	1813	11.4	347	0345	8.9	271	21 W 0002	7.8	237
1810	10.7	327				1114	2.7	81	0411	9.5	289
						1842	11.4	346	1121	2.1	64
7 Su 0011	8.5	258	22 M 0012	9.0	274	7 W 0040	7.6	232	1836	11.9	364
0245	8.8	268	0220	9.1	278	0438	9.2	279	21 F 0019	6.4	195
1051	2.5	77	1045	1.6	48	1152	2.6	78	0523	9.9	302
1838	11.1	339	1848	11.9	362	● 1907	11.4	347	1200	4.0	121
8 M 0039	8.2	250	23 Tu 0036	8.6	261	8 Th 0103	7.3	221	1827	11.2	341
0349	8.9	271	0351	9.3	283	0522	9.4	285	21 Sa 0020	4.6	141
1131	2.2	68	1138	1.1	35	1226	2.7	82	0615	10.9	332
● 1910	11.3	345	○ 1921	12.1	369	1930	11.4	346	1223	4.9	150
9 Tu 0107	8.0	244	24 W 0107	8.0	245	9 F 0127	6.9	209	1816	11.3	343
0439	9.0	275	0459	9.5	289	0602	9.5	289	22 Su 0052	4.0	122
1209	2.1	64	1226	1.1	33	1256	3.0	92	0703	11.0	334
1940	11.4	348	1953	12.1	370	1948	11.3	343	1258	5.7	174
10 W 0133	7.8	238	25 Th 0143	7.4	225	9 Sa 0136	5.3	163	1831	11.1	337
0522	9.1	277	0559	9.5	291	0602	9.5	289	23 M 0052	4.0	122
1244	2.1	65	1308	1.4	44	1256	3.0	92	0747	10.9	331
2008	11.5	349	2022	12.0	366	1948	11.3	343	1328	6.5	199
11 Th 0200	7.6	231	26 F 0219	6.7	203	24 Sa 0103	6.1	187	1849	10.9	332
0601	9.1	277	0656	9.5	289	0609	10.1	308	23 Tu 0120	3.5	108
1314	2.3	71	1345	2.2	67	1226	2.7	82	0645	10.5	320
2034	11.4	348	2046	11.7	357	1930	11.4	346	1330	4.9	149
12 F 0228	7.3	221	27 Sa 0254	5.9	181	24 W 0132	4.4	134	1853	11.1	337
0640	9.0	275	0750	9.2	281	0701	10.1	307	24 M 0149	3.3	101
1341	2.7	83	1417	3.3	100	1321	3.8	115	0831	10.7	325
2056	11.3	344	2105	11.4	347	1945	11.4	346	1356	7.2	220
13 Sa 0255	6.9	209	28 Su 0326	5.3	161	25 Sa 0207	4.7	143	1911	10.8	328
0719	8.9	271	0845	8.9	271	0751	9.9	302	25 W 0219	3.2	98
1405	3.3	100	1445	4.5	136	1347	4.1	126	0916	10.5	320
2110	11.1	339	2117	11.0	336	2000	11.1	339	1426	7.8	239
14 Su 0321	6.4	194	29 M 0357	4.8	145	1957	11.1	338	1933	10.6	322
0801	8.7	265	0946	8.5	259	2025	10.9	332	2054	10.2	312
1429	4.0	122	1510	5.7	175	2009	10.9	332	2054	9.9	301
2118	10.9	333	2128	10.7	326	2026	10.7	325	2008	9.9	301
15 M 0350	5.8	178	30 Tu 0431	4.4	134	2026	10.7	325	27 F 0328	3.6	110
0850	8.5	259	1100	8.2	249	1045	3.9	118	1110	10.2	310
1451	4.9	149	1528	6.9	211	0933	9.4	286	1543	8.9	271
2128	10.8	328	● 2139	10.4	316	1443	6.8	208	● 2008	9.9	301
16 0355	5.8	178	31 W 0512	4.2	129	2026	10.7	325	27 Th 0328	3.6	110
0850	8.5	259	1251	8.1	246	1045	3.9	118	1110	10.2	310
1451	4.9	149	1516	7.9	242	0933	9.4	286	1543	8.9	271
2128	10.8	328	2147	10.0	305	1521	8.5	258	● 2008	9.9	301
17 0355	5.8	178	31 W 0512	4.2	129	2052	10.1	307	27 F 0328	3.6	110
0850	8.5	259	1251	8.1	246	1045	3.9	118	1110	10.2	310
1451	4.9	149	1516	7.9	242	0933	9.4	286	1543	8.9	271
2128	10.8	328	2147	10.0	305	1521	8.5	258	● 2008	9.9	301

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bangkok Bar, Thailand, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0750 5.4 166	16 W 0214 8.8 267	1 F 0408 9.4 286	16 Sa 0510 10.8 330	1 Su 0504 10.6 323	16 M 0603 11.5 351						
1555 10.8 330	0830 5.5 168	0932 7.3 222	1030 8.2 249	1000 9.0 275	1134 9.4 286						
2239 7.5 229	1527 11.3 343	1515 10.6 323	1516 10.6 323	1411 10.4 317	1454 10.1 309						
	2208 6.1 185	2222 5.1 156	2239 3.3 102	2205 3.6 109	2249 3.1 93						
2 W 0244 8.5 259	17 Th 0344 9.6 293	2 Sa 0453 10.4 317	17 Su 0550 11.5 351	2 M 0542 11.5 351	17 Tu 0632 11.9 362						
0914 5.4 166	0942 5.8 178	1029 7.4 226	1121 8.3 254	1059 9.1 278	1211 9.3 282						
1620 11.0 334	1557 11.2 342	1539 10.6 323	1546 10.5 321	1452 10.5 321	1539 10.2 311						
2250 6.8 207	2239 5.0 152	2247 4.2 127	2311 2.9 87	2241 2.7 83	2323 2.8 85						
3 Th 0354 9.2 281	18 F 0446 10.5 320	3 Su 0532 11.3 343	18 M 0628 11.9 364	3 Tu 0622 12.2 371	18 W 0703 12.1 368						
1013 5.4 166	1039 6.1 187	1113 7.6 232	1203 8.5 259	1145 9.3 282	1242 9.2 280						
1639 11.0 335	1624 11.2 340	1600 10.7 325	1616 10.5 320	1533 10.7 326	1621 10.3 313						
2311 6.0 183	2311 4.1 124	● 2314 3.3 101	2341 2.6 79	● 2320 2.0 62	2356 2.7 81						
4 F 0445 10.0 304	19 Sa 0537 11.2 341	4 M 0612 11.9 362	19 Tu 0705 12.1 368	4 W 0705 12.6 383	19 Th 0733 12.1 369						
1058 5.5 168	1127 6.5 199	1153 7.9 240	1239 8.7 264	1232 9.4 285	1309 9.1 277						
1656 11.0 334	1648 11.0 336	1625 10.8 329	1646 10.4 318	1616 10.8 329	1700 10.3 314						
2333 5.2 160	○ 2342 3.4 103	2345 2.6 78									
5 Sa 0527 10.7 325	20 Su 0622 11.6 354	5 Tu 0655 12.3 375	20 W 0011 2.5 76	5 Th 0004 1.6 49	20 F 0030 2.7 82						
1135 5.8 176	1207 7.0 213	1232 8.2 250	0740 12.1 368	0751 12.8 390	0803 12.1 369						
1713 10.9 333	1709 10.9 331	1655 10.9 332	1310 8.8 268	1322 9.4 286	1339 9.0 274						
● 2357 4.5 136			1718 10.4 316	1700 10.8 328	1736 10.2 312						
6 Su 0607 11.2 341	21 M 0012 3.0 90	6 W 0020 2.1 63	21 Th 0043 2.5 77	6 F 0049 1.5 47	21 Sa 0100 2.9 87						
1209 6.1 187	0704 11.7 358	0743 12.5 381	0813 12.0 366	0838 12.9 393	0831 12.1 369						
1730 11.0 334	1243 7.5 228	1316 8.6 261	1343 8.9 270	1415 9.3 283	1413 8.8 269						
	1730 10.8 328	1729 10.9 331	1749 10.2 312	1749 10.6 322	1809 10.0 306						
7 M 0022 3.7 112	22 Tu 0040 2.8 84	7 Th 0100 1.8 56	22 F 0115 2.7 82	7 Sa 0133 1.8 55	22 Su 0130 3.1 96						
0648 11.6 353	0744 11.7 356	0834 12.5 382	0847 12.0 365	0922 12.8 390	0859 12.1 368						
1243 6.6 201	1314 7.9 242	1405 8.9 271	1421 8.9 271	1509 9.0 275	1447 8.6 262						
1749 11.0 335	1756 10.6 324	1804 10.7 327	1819 10.0 305	1842 10.2 311	1843 9.8 298						
8 Tu 0052 3.1 93	23 W 0109 2.7 83	8 F 0141 1.9 58	23 Sa 0146 3.0 91	8 Su 0215 2.4 73	23 M 0156 3.7 112						
0734 11.8 359	0821 11.6 353	0929 12.4 379	0924 11.9 364	1001 12.6 384	0923 11.9 364						
1318 7.2 218	1345 8.3 253	1500 9.1 277	1504 8.9 270	1605 8.6 261	1523 8.3 254						
1813 11.0 335	1823 10.5 320	1845 10.4 317	1848 9.7 295	1941 9.6 294	1917 9.4 288						
9 W 0125 2.6 80	24 Th 0140 2.8 86	9 Sa 0223 2.3 71	24 Su 0217 3.5 106	9 M 0253 3.3 102	24 Tu 0218 4.3 132						
0825 11.8 359	0900 11.5 349	1021 12.3 374	1001 11.8 360	1033 12.3 374	0940 11.7 357						
1358 7.8 237	1421 8.6 261	1607 9.1 276	1555 8.8 267	1703 7.9 241	1523 8.0 243						
1840 10.9 333	1850 10.3 313	1931 9.9 303	1916 9.3 283	● 2048 9.0 275	1958 9.1 276						
10 Th 0200 2.5 75	25 F 0214 3.1 93	10 Su 0307 3.0 92	25 M 0246 4.2 127	10 Tu 0331 4.6 139	25 W 0239 5.2 158						
0922 11.6 355	0944 11.4 346	1111 12.0 366	1038 11.6 353	1101 11.9 362	0951 11.5 350						
1440 8.4 256	1503 8.8 268	1730 8.7 266	1659 8.6 261	1803 7.2 218	1638 7.5 230						
1910 10.7 327	1914 9.9 303	● 2030 9.3 282	1947 8.8 267	2218 8.4 255	● 2051 8.6 262						
11 F 0240 2.6 78	26 Sa 0248 3.5 107	11 M 0356 4.0 122	26 Tu 0313 5.0 153	11 W 0411 6.0 183	26 Th 0257 6.1 187						
1025 11.5 349	1034 11.2 342	1157 11.7 358	1112 11.3 343	1130 11.5 349	1003 11.3 343						
1533 9.0 273	1559 9.0 273	1850 8.0 245	1856 8.2 249	1904 6.4 194	1725 7.0 213						
1944 10.4 317	1933 9.5 289	2200 8.5 260	● 2031 8.2 251		2217 8.2 250						
12 Sa 0325 3.0 90	27 Su 0325 4.1 126	12 Tu 0454 5.2 158	27 W 0338 6.0 184	12 Th 0035 8.2 249	27 F 0312 7.2 220						
1135 11.3 343	1129 11.1 337	1241 11.5 349	1144 10.9 333	0457 7.5 229	1023 11.1 337						
1659 9.3 282	1840 9.0 274	1958 7.1 216	1953 7.5 228	1201 11.0 335	1826 6.3 191						
● 2021 9.9 301	● 1938 9.0 274		2251 7.7 235	2002 5.5 168							
13 Su 0421 3.6 110	28 M 0407 4.9 150	13 W 0032 8.2 250	28 Th 0408 7.1 217	13 F 0412 9.0 273	28 Sa 0148 8.4 255						
1247 11.2 341	1226 10.9 333	0611 6.4 196	1214 10.7 325	0618 8.8 269	0259 8.4 255						
1909 9.0 275		1324 11.2 340	2028 6.6 202	1237 10.6 322	1054 10.8 330						
2114 9.2 279		2049 6.0 184		2053 4.7 144	1934 5.4 165						
14 M 0534 4.4 134	29 Tu 0503 5.8 176	14 Th 0251 8.8 268	29 F 0310 8.3 253	14 Sa 0510 10.1 307	29 Su 0236 4.5 137						
1355 11.2 341	1319 10.8 329	0750 7.4 225	0554 8.2 251	0906 9.5 290							
2049 8.2 250	2200 7.7 234	1405 10.9 332	1249 10.4 318	1319 10.3 313							
2347 8.5 258		2130 5.0 153	2100 5.6 172	2136 4.0 123							
15 Tu 0704 5.1 155	30 W 0031 7.7 236	15 F 0420 9.8 300	30 Sa 0428 9.5 289	15 M 0538 10.9 333	30 Tu 0523 10.7 326						
1448 11.2 342	0626 6.6 201	0921 7.9 241	0827 8.9 270	1044 9.5 290	0926 10.1 308						
2135 7.2 218	1406 10.7 326	1443 10.7 327	1330 10.4 316	1406 10.1 309	1245 10.5 319						
	2141 6.9 211	2205 4.1 124	2131 4.6 140	2214 3.5 106	2130 3.5 108						
31 Th 0251 8.4 256											
0808 7.1 217											
1445 10.7 325											
2159 6.0 184											

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Singapore (Tanjong Pagar), Singapore, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0152	9.5	290	16 W 0231	9.8	300	1 F 0205	9.5	290	16 Sa 0058	9.8	300
0718	4.9	150	W 0811	3.9	120	F 0815	3.3	100	Sa 0903	3.0	90
1258	10.2	310	1358	10.2	310	1403	9.8	300	1511	8.5	260
1935	2.0	60	2037	2.3	70	2022	3.0	90	2105	3.9	120
2 W 0216	9.5	290	17 Th 0301	9.5	290	2 F 0237	9.5	290	2 Sa 0130	9.8	300
0754	4.6	140	0854	3.9	120	Sa 0858	3.3	100	17 Su 0948	3.0	90
1333	9.8	300	1446	9.5	290	1452	9.2	280	Su 1600	7.5	230
2007	2.3	70	2113	3.0	90	2056	3.3	100	2130	4.6	140
3 Th 0246	9.5	290	18 F 0331	9.2	280	3 Su 0316	9.5	290	18 M 0335	8.9	270
0833	4.6	140	0939	3.9	120	Su 0948	3.3	100	M 1046	3.3	100
1416	9.5	290	1537	8.5	260	1552	8.2	250	1705	6.9	210
2041	2.6	80	2146	3.9	120	● 2139	4.3	130	● 2158	5.2	160
4 F 0320	9.2	280	19 W 0405	8.9	270	4 M 0405	9.2	280	3 Su 0203	9.8	300
0920	4.3	130	Sa 1033	3.9	120	M 1054	3.3	100	18 M 0839	2.0	60
1505	9.2	280	1639	7.5	230	1715	7.5	230	1448	8.9	270
2120	3.3	100	● 2224	4.6	140	2235	5.2	160	2041	3.9	120
5 Sa 0403	9.2	280	20 Su 0445	8.9	270	5 Tu 0503	9.2	280	19 M 0216	9.2	280
1016	4.3	130	Su 1145	3.9	120	Tu 1215	3.3	100	20 W 0911	2.3	70
1607	8.2	250	1805	6.9	210	1931	7.2	220	1537	7.5	230
● 2211	3.9	120	2316	5.6	170	20 W 1328	3.6	110	2054	4.6	140
6 Su 0454	9.2	280	21 M 0535	8.5	260	6 W 0001	5.9	180	5 Tu 0330	9.2	280
1128	3.9	120	1307	3.9	120	W 0620	8.9	270	20 W 1109	3.3	100
1733	7.9	240	2037	6.9	210	1343	3.0	90	W 1745	6.2	190
2315	4.9	150	2126	7.9	240	2126	7.5	230	● 2207	5.6	170
7 M 0554	9.2	280	22 Tu 0043	6.2	190	7 Th 0152	6.2	190	20 W 0320	8.2	250
1245	3.6	110	0646	8.2	250	Su 0754	9.2	270	W 1109	3.3	100
1930	7.5	230	1422	3.6	110	1500	2.3	70	Tu 1716	7.2	220
2200	7.2	220	2200	7.2	220	2226	8.5	260	● 2220	5.2	160
8 Tu 0035	5.6	170	23 W 0209	6.2	190	8 F 0316	5.9	180	21 Th 0433	8.9	270
0700	9.2	280	0811	8.5	260	Sa 0907	9.5	290	21 W 1230	3.6	110
1358	3.0	90	1524	3.0	90	1600	2.0	60	Th 2030	6.6	200
2122	8.2	250	2241	7.9	240	2311	9.2	280	22 F 0416	7.5	230
9 W 0201	5.9	180	24 Th 0318	5.9	180	9 Sa 0415	5.2	160	22 F 0605	7.2	220
0809	9.5	290	0913	8.9	270	Sa 1003	10.2	310	W 1350	3.6	110
1501	2.3	70	1611	2.6	80	1650	1.3	40	2126	7.2	220
2231	8.9	270	2313	8.2	250	2350	9.5	290	22 F 0316	4.9	150
10 Th 0315	5.9	180	25 W 0407	5.6	170	10 M 0501	4.6	140	23 F 0815	7.5	230
0909	10.2	310	0958	9.2	280	Su 1050	10.5	320	Sa 1501	3.3	100
1556	1.6	50	1646	2.3	70	M 1735	1.3	40	2158	7.5	230
2322	9.5	290	2343	8.9	270	● 2343	9.2	280	22 F 0316	4.9	150
11 F 0415	5.6	170	26 Sa 0446	5.2	160	11 M 0022	9.5	290	23 F 0916	8.2	250
1003	10.5	320	Sa 1035	9.5	290	W 0545	4.3	130	Su 1550	2.6	80
1648	1.0	30	Sa 1718	2.0	60	M 1133	10.8	330	2222	8.2	250
● 1739	1.0	30	● 1748	2.0	60	1818	1.3	40	22 F 0316	4.9	150
12 Sa 0007	9.8	300	27 Su 0009	9.2	280	12 Tu 0048	9.8	300	23 F 0535	2.3	70
0507	5.2	160	0518	4.9	150	W 0626	3.6	110	W 1145	9.8	290
1052	10.8	330	1107	9.8	300	1216	10.8	330	W 1801	2.6	80
● 1739	1.0	30	○ 1748	2.0	60	1900	1.6	50	W 2352	9.8	300
13 Su 0048	9.8	300	28 M 0033	9.2	280	13 W 0113	9.8	300	13 Tu 0000	9.5	290
0558	4.9	150	0552	4.6	140	0707	3.3	100	W 0605	2.6	80
1141	11.2	340	1137	10.2	310	1300	10.5	320	1207	10.2	310
1828	1.0	30	1818	2.0	60	1937	2.0	60	1839	2.3	70
14 M 0128	10.2	310	29 Tu 0054	9.5	290	14 Th 0139	9.8	300	14 Th 0024	9.5	290
0645	4.6	140	0624	4.3	130	0745	3.0	90	W 0641	2.3	70
1228	11.2	340	Tu 1211	10.2	310	1343	10.2	310	1248	9.8	300
1916	1.3	40	1848	2.0	60	2011	2.6	80	1913	2.6	80
15 Tu 0201	9.8	300	30 W 0115	9.5	290	15 F 0205	9.5	290	15 F 0050	9.5	290
0728	4.3	130	0700	3.9	120	W 0822	3.0	90	W 0716	2.0	60
1313	10.8	330	1245	10.2	310	1426	9.5	290	1330	9.5	290
2000	1.6	50	1918	2.0	60	2039	3.3	100	1943	3.0	90
16 Th 0137	9.5	290	31 Th 0735	3.6	110						
			1322	10.2	310						
			1950	2.3	70						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Singapore (Tanjong Pagar), Singapore, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0139 9.8 300		16 Tu 0145 9.2 280		1 W 0213 9.8 300		16 Th 0156 8.9 270		1 Sa 0407 8.5 260		16 Su 0307 8.2 250	
0824 1.0 30		0841 1.6 50		0913 1.0 30		0854 1.6 50		1101 2.0 60		0946 2.0 60	
1503 8.5 260		1520 7.5 230		1613 8.2 250		1545 7.5 230		1748 7.9 240		1633 7.9 240	
2035 4.3 130		2031 4.6 140		2122 4.6 140		2054 4.6 140		2331 3.9 120		2222 3.9 120	
2 Tu 0222 9.8 300		17 W 0215 8.9 270		2 Th 0311 9.2 280		17 F 0233 8.5 260		2 Su 0526 7.9 240		17 M 0405 7.5 230	
0918 1.3 40		0924 2.3 70		1015 1.3 40		0939 2.0 60		1209 2.6 80		1037 2.6 80	
1609 7.9 240		1605 7.2 220		1718 7.9 240		1630 7.2 220		1846 7.9 240		1724 7.9 240	
2120 4.6 140		2103 4.9 150		2228 4.9 150		2143 4.6 140		2331 3.6 110		2331 3.6 110	
3 W 0313 9.2 280		18 Th 0250 8.2 250		3 F 0418 8.5 260		18 Sa 0322 7.9 240		3 M 0101 3.6 110		18 Tu 0524 6.9 210	
1022 2.0 60		1018 2.6 80		1128 2.0 60		1031 2.6 80		0700 7.2 220		1137 3.3 100	
1728 7.5 230		1703 6.9 210		1837 7.5 230		1724 7.2 220		1322 3.3 100		1822 7.9 240	
○ 2222 5.2 160		○ 2156 5.2 160		○ 2254 4.6 140		○ 2254 4.6 140		1939 7.9 240			
4 Th 0422 8.5 260		19 F 0343 7.5 230		4 Sa 0000 4.9 150		19 Su 0431 7.2 220		4 Tu 0216 3.0 90		19 W 0043 3.0 90	
1145 2.3 70		1128 3.3 100		0546 7.9 240		1135 3.0 90		0830 7.2 220		0658 6.9 210	
1915 7.2 220		1826 6.6 200		1252 2.6 80		1828 7.2 220		1424 3.6 110		1245 3.6 110	
		2335 5.6 170		1946 7.9 240				2026 8.2 250		1920 8.2 250	
5 F 0003 5.6 170		20 Sa 0509 7.2 220		5 Su 0139 4.3 130		20 M 0015 4.6 140		5 W 0313 2.3 70		20 Th 0148 2.3 70	
0558 8.2 250		1245 3.3 100		0730 7.9 240		0603 6.9 210		0941 7.5 230		0830 7.2 220	
1320 2.6 80		1956 6.9 210		1409 2.6 80		1243 3.3 100		1516 3.6 110		1354 3.9 120	
2035 7.5 230				2039 8.2 250		1928 7.5 230		2107 8.5 260		2013 8.5 260	
6 Sa 0201 5.2 160		21 Su 0111 5.2 160		6 M 0250 3.6 110		21 Tu 0130 3.9 120		6 Th 0358 1.6 50		21 F 0246 1.6 50	
0752 8.2 250		0703 6.9 210		0848 7.9 240		0743 7.2 220		1035 7.9 240		0948 7.5 230	
1443 2.6 80		1354 3.3 100		1511 3.0 90		1345 3.3 100		1600 3.9 120		1456 3.9 120	
2130 8.2 250		2045 7.5 230		2118 8.2 250		2016 8.2 250		2143 8.9 270		2103 9.2 280	
7 Su 0315 4.3 130		22 M 0224 4.6 140		7 Tu 0341 3.0 90		22 W 0230 3.0 90		7 F 0433 1.3 40		22 Sa 0337 0.7 20	
0905 8.5 260		0831 7.5 230		0950 8.2 250		0856 7.5 230		1118 7.9 240		1050 8.2 250	
1541 2.3 70		1452 3.0 90		1556 3.0 90		1439 3.3 100		1637 3.9 120		1552 3.9 120	
2207 8.5 260		2118 8.2 250		2146 8.5 260		2056 8.5 260		2218 8.9 270		2152 9.5 290	
8 M 0401 3.6 110		23 Tu 0315 3.6 110		8 W 0418 2.3 70		23 Th 0316 2.0 60		8 Sa 0505 1.0 30		23 O 0428 0.0 0	
0958 9.2 280		0926 8.2 250		1039 8.5 260		0954 8.2 250		1156 8.2 250		1145 8.5 260	
1626 2.3 70		1535 3.0 90		1635 3.0 90		1528 3.3 100		1711 3.9 120		1646 3.9 120	
2231 8.9 270		2146 8.5 260		2215 8.9 270		2135 9.2 280		● 2254 9.2 280		○ 2239 10.2 310	
9 Tu 0439 3.0 90		24 W 0352 2.6 80		9 Th 0452 1.6 50		24 F 0400 1.3 40		9 Su 0539 1.0 30		24 M 0520 -0.3 -10	
1043 9.5 290		1011 8.5 260		1122 8.5 260		1048 8.5 260		1231 8.2 250		1233 8.9 270	
1703 2.3 70		1613 3.0 90		1709 3.3 100		1615 3.6 110		1745 3.9 120		1741 3.9 120	
2252 9.2 280		2215 9.2 280		2243 9.2 280		2215 9.8 300		2328 9.2 280		2330 10.5 320	
10 W 0513 2.3 70		25 Th 0428 2.0 60		10 F 0524 1.3 40		25 Sa 0445 0.3 10		10 M 0613 1.0 30		25 Tu 0615 -0.3 -10	
1124 9.5 290		1054 9.2 280		1203 8.5 260		1141 8.9 270		1303 8.2 250		1322 9.2 280	
1739 2.6 80		1650 3.0 90		1741 3.6 110		1703 3.6 110		1818 3.9 120		1833 3.6 110	
● 2316 9.5 290		2246 9.5 290		● 2315 9.5 290		○ 2256 10.2 310					
11 Th 0545 1.6 50		26 F 0507 1.3 40		11 Sa 0556 1.0 30		26 Su 0533 0.0 0		11 Tu 0000 9.2 280		26 W 0018 10.5 320	
1203 9.5 290		1139 9.5 290		1241 8.5 260		1235 9.2 280		0646 1.0 30		0709 -0.3 -10	
1811 3.0 90		1731 3.0 90		1811 3.6 110		1754 3.6 110		1337 8.2 250		1409 9.2 280	
2345 9.5 290		○ 2320 9.8 300		2346 9.5 290		2341 10.5 320		1852 3.9 120		1924 3.6 110	
12 F 0618 1.3 40		27 Sa 0550 0.7 20		12 M 0630 1.0 30		27 W 0624 -0.3 -10		12 M 0613 1.0 30		27 Th 0107 10.2 310	
1245 9.2 280		1228 9.5 290		1316 8.5 260		1330 9.2 280		0720 1.0 30		0801 0.0 0	
1843 3.3 100		1815 3.3 100		1843 3.9 120		1845 3.9 120		1409 8.2 250		1450 8.9 270	
		2358 10.2 310						1928 3.9 120		2015 3.3 100	
13 Sa 0013 9.5 290		28 Su 0637 0.3 10		13 M 0703 1.0 30		28 W 0028 10.5 320		13 Th 0756 1.0 30		28 F 0200 9.8 300	
0652 1.3 40		1324 9.2 280		1352 8.2 250		1422 8.9 270		1439 7.9 240		0850 0.7 20	
1324 8.9 270		1900 3.6 110		1915 3.9 120		1937 3.9 120		2001 3.9 120		1531 8.5 260	
1911 3.6 110										2103 3.3 100	
14 Su 0043 9.5 290		29 M 0039 10.2 310		14 Tu 0050 9.2 280		29 W 0116 10.2 310		14 F 0141 8.9 270		29 O 0252 9.2 280	
0726 1.3 40		0726 0.3 10		0739 1.0 30		0811 0.0 0		0830 1.3 40		0937 1.3 40	
1403 8.5 260		1420 8.9 270		1428 7.9 240		1513 8.9 270		1513 7.9 240		1611 8.5 260	
1939 3.9 120		1945 3.9 120		1945 4.3 130		2026 3.9 120		2039 3.9 120		2158 3.3 100	
15 M 0113 9.5 290		30 Tu 0124 10.2 310		15 W 0122 9.2 280		30 Th 0209 9.8 300		15 Sa 0220 8.5 260		30 O 0352 8.5 260	
0801 1.3 40		0818 0.3 10		0816 1.3 40		0905 0.7 20		0905 1.6 50		1024 2.0 60	
1441 8.2 250		1515 8.5 260		1505 7.9 240		1601 8.5 260		1548 7.9 240		1654 8.2 250	
2003 4.3 130		2030 4.3 130		2016 4.3 130		2118 4.3 130		2124 3.9 120		2300 3.3 100	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Singapore (Tanjong Pagar), Singapore, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0500	7.5	230	16 0345	7.5	230	1 Th 0039	2.6	80	16 0624	6.6	200
1116	3.0	90	Tu 0956	2.6	80	Th 0743	5.9	180	F 1133	4.6	140
1741	7.9	240	1628	8.2	250	1230	4.9	150	1748	8.2	250
● 2256	2.6	80	1830	7.5	230				1428	5.2	160
2 Tu 0015	3.0	90	17 0458	7.2	220	2 0152	2.3	70	16 2041	7.5	230
0624	6.9	210	W 1050	3.3	100	0922	6.2	190	M 0220	2.6	80
1220	3.6	110	1724	8.2	250	1348	4.9	150	0946	6.9	210
1835	7.9	240	1952	7.5	230	1916	8.2	250	1446	4.6	140
● 2131	7.9	240							2041	8.5	260
3 W 0131	2.6	80	18 0005	2.3	70	3 Sa 0258	2.0	60	17 0216	2.0	60
0807	6.6	200	Th 0631	6.6	200	1015	6.9	210	M 0924	7.9	240
1330	4.3	130	1201	3.9	120	1456	4.9	150	1446	4.6	140
1933	7.9	240	1828	8.2	250	2100	7.9	240	2041	8.5	260
● 2224	9.8	300							0216	2.0	60
4 Th 0235	2.3	70	19 0118	2.0	60	4 Su 0350	1.6	50	17 0322	1.6	50
0931	6.9	210	F 0826	6.9	210	1050	7.2	220	M 1009	8.5	260
1433	4.6	140	1322	4.6	140	1546	4.6	140	Tu 1543	3.9	120
2030	7.9	240	1937	8.5	260	2146	8.2	250	2137	7.9	240
● 2137	7.9	240							2041	8.5	260
5 F 0328	1.6	50	20 0226	1.3	40	5 M 0431	1.3	40	18 0413	1.3	40
1028	7.2	220	Sa 0950	7.5	230	1120	7.5	230	W 1043	8.9	270
1526	4.6	140	1437	4.6	140	1628	4.3	130	1626	3.3	100
2118	8.2	250	2043	8.9	270	2226	8.5	260	2224	9.8	300
● 2313	9.2	280							0413	1.3	40
6 Sa 0411	1.3	40	21 0326	0.7	20	6 Tu 0505	1.3	40	20 0537	1.6	50
1109	7.5	230	Su 1046	8.2	250	1148	7.9	240	F 1133	9.2	280
1609	4.3	130	1541	4.3	130	1703	3.9	120	1745	2.0	60
2201	8.5	260	2141	9.5	290	2300	8.9	270	2348	10.2	310
● 2313	9.5	290							0513	1.6	50
7 Su 0448	1.3	40	22 0422	0.3	10	7 W 0539	1.3	40	20 0537	1.6	50
1143	7.9	240	M 1135	8.5	260	1213	8.2	250	F 1133	9.2	280
1648	4.3	130	1637	3.9	120	1737	3.6	110	1745	2.6	80
2239	8.9	270	2231	9.8	300	● 2330	9.2	280	2345	9.5	290
● 2313	8.9	270							0543	1.6	50
8 M 0522	1.0	30	23 0515	0.0	0	8 Th 0609	1.3	40	21 0616	2.0	60
1215	7.9	240	Tu 1216	8.9	270	1233	8.5	260	Sa 1200	9.5	290
1722	3.9	120	Tu 1730	3.6	110	1811	3.3	100	1822	1.6	50
● 2313	8.9	270	O 2320	10.2	310				0613	1.6	50
● 2313	8.9	270							0654	2.3	70
9 Tu 0556	1.0	30	24 0605	0.0	0	9 F 0001	9.2	280	22 0033	9.8	300
1245	8.2	250	W 1258	9.2	280	0639	1.3	40	Su 0654	2.3	70
1758	3.9	120	1820	3.3	100	1256	8.5	260	1231	9.5	290
2345	9.2	280				1845	3.0	90	1900	1.3	40
● 2313	9.2	280							0018	9.5	290
10 W 0630	1.0	30	25 0009	10.5	320	10 Sa 0035	9.2	280	23 0118	9.5	290
1313	8.2	250	0656	0.0	0	0709	1.3	40	M 0728	2.6	80
1831	3.6	110	1335	9.2	280	1318	8.5	260	1301	9.5	290
1909	3.0	90	1909	3.0	90	1920	2.6	80	1937	1.3	40
● 2313	3.0	90							0643	2.0	60
11 Th 0018	9.2	280	26 0058	10.2	310	11 Su 0131	9.2	280	24 0203	8.9	270
0701	1.0	30	0745	0.3	10	0739	1.6	50	F 0758	3.3	100
1339	8.2	250	F 1411	8.9	270	1346	8.9	270	M 1333	9.2	280
1907	3.6	110	1956	2.6	80	1958	2.3	70	2016	1.6	50
● 2313	3.6	110							0058	9.2	280
12 F 0050	9.2	280	27 0146	9.8	300	12 M 0150	8.9	270	25 0248	8.2	250
0733	1.0	30	0828	1.0	30	0811	2.0	60	W 0828	3.9	120
1403	8.2	250	1445	8.9	270	1418	8.9	270	Tu 1405	8.9	270
1943	3.3	100	2041	2.3	70	2039	2.3	70	2100	2.0	60
● 2313	3.3	100							0131	9.2	280
13 Sa 0126	9.2	280	28 0237	9.2	280	13 Tu 0235	8.5	260	25 0248	8.2	250
0805	1.3	40	Su 0907	1.6	50	0739	1.6	50	W 0828	3.9	120
1431	8.2	250	1518	8.5	260	1346	8.9	270	Tu 1439	8.5	260
2020	3.3	100	2128	2.3	70	1958	2.3	70	2150	2.3	70
● 2313	3.3	100							0230	8.5	260
14 Su 0203	8.9	270	29 0331	8.2	250	14 Tu 0331	7.9	240	26 0335	7.5	230
0837	1.6	50	0945	2.6	80	0907	1.6	50	W 0858	4.3	130
1503	8.2	250	1554	8.2	250	1018	3.9	120	Th 1439	8.5	260
2103	3.0	90	2220	2.3	70	1616	7.5	230	2150	2.3	70
● 2313	3.0	90							0226	3.0	90
15 M 0248	8.2	250	30 0431	7.2	220	15 Th 0445	7.2	220	27 0428	6.9	210
0913	2.0	60	Tu 1026	3.3	100	1637	8.2	250	F 0935	4.9	150
1541	8.2	250	1635	7.9	240	2337	2.0	60	1507	7.9	240
2154	3.0	90	● 2324	2.6	80				● 2256	3.0	90
● 2313	3.0	90							0446	7.2	220
16 W 0545	6.6	200	31 0545	6.6	200	1724	7.5	230	28 0539	6.6	200
1724	4.3	130	W 1116	4.3	130				Sa 1041	5.2	160
1724	7.5	230							1620	7.5	230

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Singapore (Tanjong Pagar), Singapore, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0243	3.0	90	16 W 0309	2.6	80	1 F 0322	3.6	110	1 Sa 0415	3.9	120
0931	7.5	230	0933	8.9	270	0928	8.9	270	0952	9.5	290
1458	4.6	140	1533	3.6	110	1541	3.0	90	1633	2.0	60
2105	7.9	240	2133	9.2	280	2203	8.9	270	2309	9.5	290
2 W 0333	2.6	80	17 Th 0358	2.6	80	2 Sa 0358	3.6	110	17 Su 0450	4.3	130
0958	8.2	250	1003	9.2	280	0958	9.5	290	1024	9.8	300
1541	3.9	120	1615	3.0	90	1613	2.3	70	1705	1.6	50
2148	8.5	260	2222	9.5	290	2245	9.5	290	2350	9.5	290
3 Th 0411	2.6	80	18 F 0439	2.6	80	3 Su 0431	3.6	110	18 M 0524	4.3	130
1020	8.5	260	1028	9.5	290	1028	9.8	300	1056	10.2	310
1615	3.3	100	1648	2.3	70	1648	1.6	50	1737	1.6	50
2224	8.9	270	2305	9.8	300	● 2326	9.8	300	●		
4 F 0441	2.6	80	19 Sa 0516	3.0	90	4 M 0511	3.9	120	19 Tu 0028	9.5	290
1041	9.2	280	1054	9.5	290	1100	10.2	310	0558	4.6	140
1645	2.6	80	1724	1.6	50	1726	1.3	40	1130	10.2	310
2258	9.2	280	○ 2346	9.8	300	1809	1.6	50	1809	0.7	20
5 Sa 0511	2.6	80	20 Su 0552	3.3	100	5 Tu 0009	9.8	300	20 W 0105	9.5	290
1105	9.5	290	1124	9.8	300	0552	3.9	120	0630	4.6	140
1716	2.0	60	1756	1.3	40	1137	10.5	320	1203	10.2	310
● 2331	9.5	290	1809	1.0	30	1843	1.6	50	1845	0.7	20
6 Su 0541	2.6	80	21 M 0030	9.8	300	6 W 0100	9.8	300	21 Th 0139	9.2	280
1133	9.5	290	0626	3.6	110	0637	4.3	130	0701	4.9	150
1750	1.6	50	1154	9.8	300	1216	10.5	320	1235	9.8	300
1831	1.3	40	1831	1.3	40	1854	0.7	20	1918	1.6	50
7 M 0009	9.8	300	22 Tu 0113	9.5	290	7 Th 0154	9.5	290	22 F 0215	8.9	270
0616	3.0	90	0656	3.9	120	0722	4.6	140	0735	4.9	150
1203	9.8	300	1226	9.8	300	1300	10.5	320	1309	9.8	300
1830	1.3	40	1905	1.3	40	1945	1.0	30	1954	2.0	60
8 Tu 0052	9.5	290	23 W 0152	9.2	280	8 F 0246	9.2	280	23 Sa 0248	8.9	270
0654	3.3	100	0726	4.3	130	0809	4.9	150	0809	4.9	150
1239	9.8	300	1258	9.5	290	1346	10.2	310	1343	9.5	290
1911	1.0	30	1943	1.6	50	2037	1.3	40	2031	2.3	70
9 W 0141	9.2	280	24 Th 0231	8.5	260	9 Sa 0343	8.9	270	24 M 0326	8.5	260
0733	3.6	110	0758	4.6	140	0900	4.9	150	0846	5.2	160
1316	9.8	300	1331	9.5	290	1439	9.8	300	1418	9.2	280
1958	1.3	40	2022	2.0	60	2137	2.0	60	2111	3.0	90
10 Th 0237	8.9	270	25 F 0313	8.2	250	10 Su 0443	8.5	260	25 M 0407	8.2	250
0815	4.3	130	0830	4.9	150	1000	5.2	160	0933	5.2	160
1358	9.5	290	1403	8.9	270	1545	9.2	280	1503	8.5	260
2048	1.3	40	2107	2.3	70	● 2245	2.6	80	2200	3.6	110
11 F 0339	8.2	250	26 Sa 0356	7.5	230	11 M 0552	8.5	260	26 Tu 0456	8.2	250
0901	4.6	140	0907	5.2	160	1120	5.2	160	1041	5.2	160
1448	9.2	280	1441	8.5	260	1707	8.5	260	1609	7.9	240
2148	2.0	60	2203	3.0	90	● 2301	3.9	120	● 2301	3.9	120
12 Sa 0450	7.9	240	27 Su 0448	7.2	220	12 Tu 0007	3.3	100	27 W 0558	8.2	250
1001	5.2	160	1001	5.6	170	0703	8.5	260	1200	5.2	160
1554	8.9	270	1533	7.9	240	1301	4.9	150	1741	7.5	230
● 2303	2.3	70	● 2311	3.6	110	1854	8.2	250	1805	7.9	240
13 Su 0622	7.5	230	28 M 0600	7.2	220	13 W 0131	3.6	110	13 Th 0011	4.3	130
1130	5.6	170	1128	5.6	170	0803	8.5	260	0700	8.2	250
1720	8.2	250	1658	7.2	220	1422	4.3	130	1316	4.6	140
1441	4.3	130	1856	7.2	220	2024	8.5	260	1926	7.5	230
2048	8.5	260	2026	7.5	230	2224	9.2	280	2128	8.2	250
14 M 0035	2.6	80	29 Tu 0026	3.9	120	14 Th 0239	3.6	110	29 F 0120	4.6	140
0750	7.9	240	0724	7.2	220	0846	8.9	270	0754	8.9	270
1320	5.2	160	1258	5.2	160	1516	3.3	100	1416	3.9	120
1911	8.2	250	1856	7.2	220	2131	8.9	270	2046	7.9	240
15 Tu 0203	2.6	80	30 W 0137	3.9	120	15 Sa 0331	3.9	120	30 Sa 0220	4.6	140
0850	8.2	250	0820	7.9	240	0922	9.2	280	0837	9.2	280
1441	4.3	130	1415	4.6	140	1600	2.6	80	1501	3.0	90
2048	8.5	260	2026	7.5	230	2224	9.2	280	2148	8.5	260
16 31 Th 0237	3.6	110									
0858	8.5	260									
1505	3.9	120									
2120	8.2	250									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu	0304 0937 1558 2140	7.8 1.2 7.1 3.0	238 37 216 91	16 W	0354 1021	7.5 1.2 7.2 2.8	229 37 219 85	1 F	0402 1022	7.3 1.2 7.3 2.4	223 37 223 73
0337 W	1010 1634 2220	7.6 7.0 3.1	232 213 94	17 Th	0429 1054	7.0 1.7	213 52	2 Sa	0441 1059	6.8 1.7	207 52
0414 Th	1046 1717 2307	7.2 1.6 6.9	219 49 210	18 F	0505 1129	6.3 2.2	192 67	3 Su	0530 1145	6.2 2.3	189 70
0457 F	1129 1808	6.8 6.8	207 207	19 Sa	0012 0547	3.6 5.7	110 174	18 M	0007 0549	3.3 5.2	101 158
0008 Sa	0551 1222 ● 1913	3.5 6.2 2.4	107 189 73	20 W	0128 0649	3.9 5.1	119 155	3 Su	0430 1035	6.8 1.9	207 58
0132 Su	0711 1333 2032	3.7 5.7 2.8	113 174 85	21 M	0329 0856	3.8 4.7	116 143	4 M	0133 0638	3.7 5.5	113 168
0315 M	0901 1502 2153	3.4 5.5 3.1	104 168 94	22 Tu	0506 1104	3.4 4.9	104 143	19 Tu	0133 0718	3.7 4.6	113 140
0442 Tu	1042 1628 2300	2.8 5.7 3.0	85 174 91	23 W	0557 1206	2.8 5.3	85 162	4 M	0519 1119	6.2 2.6	189 79
0545 W	1153 1735 2355	2.1 6.2 2.8	64 189 85	24 Th	0633 1245	2.3 5.8	70 177	19 M	0523 1103	5.5 3.5	168 107
0635 Th	1248 1830	1.4 6.7	43 204	25 F	0025 0703	7.0 1.9	213 58	20 Tu	0523 1728	5.5 6.1	168 186
0042 F	0719 1334 1918	8.2 0.9 7.2	250 27 219	26 Sa	0057 0730	7.3 1.5	223 46	21 W	0020 0635	3.4 5.0	104 152
0125 Sa	0759 1416 ● 2001	8.4 0.5 7.5	256 15 229	27 Su	0127 0756	7.5 1.1	229 34	20 Tu	0020 1221	3.4 3.3	104 125
0205 Su	0837 1455 2041	8.4 0.4 7.6	256 12 232	12 W	0127 0850	7.5 0.5	229 15	21 O	0157 1400	7.5 7.8	235 238
0243 M	0913 1532 2120	8.3 0.5 7.6	253 15 232	28 M	0155 0823	7.7 0.9	223 27	22 W	0140 0825	7.6 0.7	232 21
0319 Tu	0947 1609 2158	8.0 0.7 2.5	244 21 76	13 W	0155 0920	7.7 0.7	235 21	23 Tu	0141 0825	7.7 0.9	235 27
0326 Th	0948 1608 2205	7.6 0.9 2.2	232 27 67	14 Th	0224 0948	7.8 1.1	238 34	24 O	0141 1400	7.7 8.0	232 244
0254 W	0918 1536 2129	7.8 0.8 2.1	238 24 64	15 F	0403 1015	6.9 1.6	210 49	25 W	0141 1510	7.3 7.9	223 241
0326 Th	0948 1608 2205	7.6 7.4 2.2	232 226 67	16 F	0403 1635	6.9 7.1	210 216	26 O	0311 1528	7.3 7.7	223 235
0342 Su	0939 1553 2217	7.4 1.9 1.6	226 58 49	17 F	0326 0948	7.6 0.9	232 27	27 W	0342 1444	7.7 8.5	235 259

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0426 6.9 210		16 Tu 0428 6.3 192		1 W 0528 6.8 207		16 Th 0505 6.5 198		1 Sa 0045 2.7 82		16 Su 0627 7.0 213	
1019 2.5 76		1005 3.4 104		1106 3.8 116		1033 4.2 128		0743 7.0 213		1217 4.4 134	
1633 7.5 229		1616 7.1 216		1709 7.2 219		1631 7.1 216		1344 4.5 137		1756 6.6 201	
2305 2.0 61		2256 2.7 82				2322 2.8 85		1914 6.3 192			
2 Tu 0520 6.4 195		17 W 0513 6.0 183		2 Th 0000 2.5 76		17 F 0602 6.4 195		2 Su 0154 3.1 94		17 M 0036 3.0 91	
1106 3.2 98		1042 4.0 122		0645 6.5 198		1131 4.6 140		0859 7.1 216		0732 7.0 213	
1721 6.9 210		1651 6.6 201		1224 4.4 134		1720 6.6 201		1522 4.4 134		1340 4.4 134	
		2345 3.1 94		1816 6.6 201				2048 6.0 183		1912 6.3 192	
3 W 0008 2.6 79		18 Th 0621 5.7 174		3 F 0118 2.9 88		18 Sa 0018 3.1 94		3 M 0307 3.3 101		18 Tu 0143 3.2 98	
0639 5.8 177		1139 4.5 137		0824 6.4 195		0717 6.4 195		1005 7.3 223		0842 7.2 219	
1217 3.9 119		1743 6.1 186		1420 4.5 137		1259 4.8 146		1638 3.9 119		1511 4.1 125	
1831 6.3 192		1831 6.1 186		1956 6.1 186		1831 6.2 189		2214 6.1 186		2046 6.1 186	
4 Th 0142 2.9 88		19 F 0101 3.4 104		4 Sa 0248 3.0 91		19 Su 0129 3.3 101		4 Tu 0412 3.4 104		19 W 0257 3.3 101	
0843 5.7 174		0817 5.6 171		0952 6.8 207		0840 6.6 201		1056 7.6 232		0949 7.5 229	
1429 4.3 131		1349 4.8 146		1606 4.2 128		1448 4.6 140		1732 3.5 107		1627 3.6 110	
2028 5.9 180		1927 5.7 174		2140 6.1 186		2012 6.0 183		2319 6.3 192		2215 6.3 192	
5 F 0332 2.9 88		20 Sa 0245 3.5 107		5 Su 0404 3.0 91		20 M 0248 3.3 101		5 W 0505 3.4 104		20 Th 0409 3.3 101	
1029 6.2 189		1000 6.1 186		1052 7.2 219		0948 7.0 213		1137 7.8 238		1048 8.0 244	
1629 3.9 119		1603 4.4 134		1711 3.6 110		1610 4.1 125		1814 3.0 91		1727 2.9 88	
2215 6.1 186		2131 5.8 177		2254 6.4 195		2144 6.2 189				2325 6.7 204	
6 Sa 0448 2.5 76		21 Su 0405 3.2 98		6 M 0501 2.8 85		21 Tu 0356 3.1 94		6 Th 0008 6.5 198		21 F 0512 3.1 94	
1128 6.8 207		1054 6.6 201		1135 7.6 232		1041 7.6 232		0548 3.4 104		1139 8.4 256	
1733 3.3 101		1705 3.8 116		1757 3.1 94		1707 3.4 104		1212 8.0 244		1817 2.3 70	
2322 6.6 201		2245 6.2 189		2347 6.7 204		2253 6.5 198		1849 2.7 82			
7 Su 0540 2.1 64		22 M 0458 2.8 85		7 Tu 0544 2.7 82		22 W 0452 2.9 88		7 F 0049 6.7 204		22 Sa 0023 7.1 216	
1209 7.4 226		1132 7.3 223		1211 8.0 244		1125 8.1 247		0625 3.4 104		0607 2.9 88	
1817 2.7 82		1746 3.2 98		1834 2.6 79		1753 2.8 85		1243 8.2 250		1226 8.7 265	
		2335 6.7 204				2348 7.0 213		1920 2.4 73		1903 1.7 52	
8 M 0010 7.0 213		23 Tu 0541 2.4 73		8 W 0028 6.9 210		23 Th 0541 2.6 79		8 Sa 0124 6.8 207		23 M 0114 7.5 229	
0620 1.9 58		1206 7.8 238		0621 2.6 79		1206 8.5 259		0659 3.4 104		0657 2.8 85	
1242 7.8 238		1822 2.5 76		1241 8.2 250		1835 2.1 64		1313 8.3 253		1311 9.0 274	
1853 2.2 67				1906 2.3 70				1950 2.2 67		1947 1.3 40	
9 Tu 0049 7.3 223		24 W 0017 7.2 219		9 Th 0104 7.1 216		24 F 0036 7.4 226		9 Su 0157 7.0 213		24 M 0201 7.8 238	
0654 1.7 52		0619 2.0 61		0653 2.6 79		0626 2.5 76		0731 3.4 104		0745 2.8 85	
1312 8.1 247		1239 8.3 253		1309 8.4 256		1246 8.9 271		1341 8.4 256		1353 9.1 277	
1925 1.9 58		1857 2.0 61		1936 2.1 64		1916 1.6 49		2018 2.0 61		2029 1.1 34	
10 W 0123 7.4 226		25 Th 0056 7.5 229		10 F 0137 7.2 219		25 Sa 0122 7.7 235		10 M 0229 7.1 216		25 Tu 0247 7.9 241	
0724 1.7 52		0655 1.8 55		0722 2.7 82		0710 2.4 73		0802 3.4 104		0830 2.8 85	
1339 8.2 250		1312 8.7 265		1336 8.4 256		1325 9.1 277		1409 8.3 253		1435 9.0 274	
1954 1.7 52		1932 1.5 46		2004 1.9 58		1956 1.3 40		2047 2.0 61		2111 1.0 30	
11 Th 0154 7.5 229		26 F 0135 7.8 238		11 Sa 0207 7.2 219		26 Su 0207 7.8 238		11 Tu 0301 7.1 216		26 W 0332 7.9 241	
0751 1.8 55		0731 1.8 55		0750 2.8 85		0753 2.5 76		0834 3.5 107		0916 3.0 91	
1405 8.3 253		1346 8.9 271		1401 8.4 256		1404 9.1 277		1438 8.2 250		1517 8.7 265	
2022 1.6 49		2009 1.2 37		2032 1.9 58		2038 1.1 34		2116 2.0 61		2152 1.2 37	
12 F 0223 7.4 226		27 Sa 0215 7.9 241		12 Su 0238 7.1 216		27 M 0252 7.8 238		12 W 0333 7.1 216		27 Th 0417 7.8 238	
0817 2.0 61		0808 1.9 58		0817 3.0 91		0836 2.7 82		0907 3.6 110		1002 3.3 101	
1429 8.3 253		1421 8.9 271		1427 8.3 253		1445 9.0 274		1508 8.0 240		1559 8.2 250	
2049 1.6 49		2047 1.1 34		2100 1.9 58		2120 1.2 37		2147 2.1 64		2234 1.6 49	
13 Sa 0252 7.2 219		28 Su 0256 7.8 238		13 M 0309 7.0 213		28 Tu 0339 7.7 235		13 Th 0409 7.1 216		28 F 0504 7.6 232	
0843 2.2 67		0847 2.2 67		0846 3.2 98		0921 3.1 94		0943 3.8 116		1051 3.6 110	
1454 8.1 247		1458 8.8 268		1454 8.1 247		1526 8.6 262		1541 7.8 238		1642 7.6 232	
2117 1.8 55		2127 1.2 37		2130 2.1 64		2205 1.4 43		2221 2.2 67		2317 2.1 64	
14 Su 0321 7.0 213		29 M 0340 7.6 232		14 Tu 0343 6.9 210		29 W 0429 7.5 229		14 F 0448 7.1 216		29 Sa 0554 7.4 226	
0908 2.6 79		0927 2.6 79		0917 3.5 107		1010 3.5 107		1024 4.0 122		1145 4.0 122	
1519 7.9 241		1536 8.4 256		1523 7.9 241		1610 8.1 247		1617 7.5 229		1252 4.2 128	
2146 2.0 61		2211 1.5 46		2202 2.3 70		2252 1.8 55		2258 2.4 73		1827 6.4 195	
15 M 0352 6.7 204		30 Tu 0429 7.2 219		15 W 0420 6.7 204		30 Th 0525 7.3 223		15 Sa 0533 7.0 213		30 0004 2.6 79	
0935 3.0 91		1012 3.2 98		0951 3.8 116		1105 4.0 122		1113 4.2 128		0649 7.2 219	
1546 7.5 229		1619 7.9 241		1555 7.5 229		1659 7.5 229		1700 7.1 216		1252 4.2 128	
2219 2.3 70		2300 2.0 61		2239 2.5 76		2345 2.3 70		2342 2.7 82		1827 6.4 195	
16 F 0629 7.0 213						31 F 0629 7.0 213					
17 W 1214 4.4 134						1214 4.4 134					
18 F 1757 6.9 210						1757 6.9 210					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0056 3.1 94	16 0635 7.2 219	1 Th 0206 4.2 128	16 0137 3.8 116	1 Su 0505 4.3 131	16 0507 3.7 113						
0754 7.0 213	Tu 1248 3.9 119	0914 6.5 198	0826 6.8 207	1105 6.5 198	1105 7.1 216						
1418 4.3 131	1831 6.3 192	1630 3.9 119	1529 3.4 104	1745 3.1 94	1735 2.2 67						
1944 5.9 180	●	2233 5.4 165	2148 5.9 180								
2 Tu 0200 3.6 110	17 0052 3.1 94	2 0352 4.3 131	17 0332 4.0 122	2 M 0009 6.4 195	17 0002 7.4 226						
0904 7.0 213	W 0744 7.1 216	1032 6.7 204	1002 7.0 213	0553 3.9 119	0600 3.1 94						
1551 4.1 125	1417 3.9 119	1734 3.4 104	1655 2.8 85	1150 6.9 210	1158 7.6 232						
2124 5.6 171	2002 6.0 183	2347 5.8 177	2317 6.4 195	1818 2.6 79	1819 1.8 55						
3 W 0315 3.8 116	18 0210 3.5 107	3 Sa 0510 4.1 125	18 0501 3.6 110	3 Tu 0038 6.9 210	18 0040 8.0 244						
1010 7.1 216	0904 7.2 219	1128 7.0 213	1113 7.5 229	0628 3.4 104	0642 2.5 76						
1704 3.7 113	1553 3.5 107	1815 2.9 88	1753 2.2 67	1224 7.3 223	1241 8.0 244						
2252 5.8 177	2150 6.0 183			1846 2.2 67	1856 1.5 46						
4 Th 0425 3.9 119	19 0340 3.6 110	4 Su 0030 6.2 189	19 0014 7.1 216	4 W 0104 7.4 226	19 0115 8.4 256						
1104 7.3 223	F 1019 7.5 229	0601 3.8 116	0602 3.1 94	0658 3.0 91	0719 2.1 64						
1755 3.3 101	1708 2.9 88	1209 7.3 223	1208 7.9 241	1255 7.6 232	1319 8.2 250						
2354 6.0 183	2316 6.4 195	1848 2.5 76	1839 1.6 49	1913 1.9 58	1930 1.4 43						
5 F 0522 3.9 119	20 0458 3.4 104	5 M 0103 6.7 204	20 0058 7.6 232	5 Th 0129 7.8 238	20 0146 8.6 262						
1147 7.6 232	Sa 1122 7.9 241	0640 3.5 107	0650 2.7 82	0726 2.6 79	0753 1.9 58						
1834 2.9 88	1805 2.2 67	1244 7.6 232	1253 8.3 253	1324 7.9 241	1353 8.2 250						
		1916 2.1 64	1919 1.2 37	● 1939 1.6 49	2001 1.5 46						
6 Sa 0040 6.3 192	21 0018 6.9 210	6 Tu 0131 7.0 213	21 0137 8.1 247	6 F 0154 8.1 247	21 0216 8.6 262						
0608 3.7 113	Su 0601 3.1 94	0713 3.3 101	0732 2.3 70	0754 2.3 70	0825 1.8 55						
1224 7.8 238	1215 8.3 253	1314 7.8 238	1333 8.5 259	1353 8.1 247	1426 8.1 247						
1907 2.5 76	1853 1.6 49	1943 1.8 55	1956 1.0 30	2005 1.5 46	2030 1.7 52						
7 Su 0116 6.6 201	22 0109 7.4 226	7 W 0158 7.3 223	22 0213 8.3 253	7 Sa 0220 8.3 253	22 0243 8.6 262						
0647 3.6 110	M 0653 2.8 85	0743 3.0 91	0810 2.1 64	0823 2.1 64	0856 1.9 58						
1257 8.0 244	1302 8.7 265	1343 8.0 244	1411 8.6 262	1422 8.1 247	1457 7.8 238						
1936 2.2 67	1936 1.2 37	● 2009 1.6 49	2030 1.0 30	2033 1.5 46	2057 2.0 61						
8 M 0148 6.9 210	23 0153 7.8 238	8 Th 0224 7.6 232	23 0246 8.4 256	8 Su 0247 8.4 256	23 0311 8.3 253						
0721 3.5 107	Tu 0740 2.6 79	0812 2.8 85	0846 2.1 64	0853 2.0 61	0926 2.1 64						
1328 8.1 247	1345 8.8 268	1411 8.1 247	1446 8.4 256	1454 8.0 244	1527 7.4 226						
● 2004 2.0 61	○ 2016 0.9 27	2034 1.5 46	2102 1.2 37	2102 1.6 49	2124 2.5 76						
9 Tu 0218 7.1 216	24 0234 8.1 247	9 F 0250 7.8 238	24 0318 8.3 253	9 M 0317 8.3 253	24 0337 8.0 244						
0754 3.4 104	W 0823 2.5 76	0842 2.7 82	0920 2.2 67	0926 2.1 64	0957 2.4 73						
1357 8.2 250	1425 8.8 268	1440 8.1 247	1520 8.0 244	1528 7.8 238	1559 7.0 213						
2031 1.8 55	2054 0.9 27	2101 1.5 46	2133 1.6 49	2134 2.0 61	2150 3.0 91						
10 W 0247 7.3 223	25 0313 8.2 250	10 Th 0318 7.9 241	25 0350 8.1 247	10 Tu 0349 8.2 250	25 0405 7.6 232						
0825 3.3 101	0904 2.6 79	0913 2.6 79	0955 2.5 76	1004 2.3 70	1031 2.8 85						
1426 8.2 250	1504 8.6 262	1510 8.0 244	1552 7.6 232	1606 7.4 226	1634 6.5 198						
2059 1.7 52	2131 1.1 34	2130 1.6 49	2202 2.1 64	2209 2.4 73	2218 3.5 107						
11 Th 0317 7.4 226	26 0352 8.1 247	11 F 0348 7.9 241	26 0421 7.7 235	11 W 0427 7.8 238	26 0435 7.1 216						
0857 3.3 101	Sa 0944 2.7 82	0946 2.7 82	1030 2.8 85	1048 2.6 79	1111 3.3 101						
1455 8.1 247	F 1542 8.2 250	1543 7.8 238	1626 7.0 213	1652 6.8 207	1718 5.9 180						
2127 1.7 52	2206 1.5 46	2201 1.8 55	2231 2.7 82	2250 3.1 94	2251 4.1 125						
12 F 0347 7.5 229	27 0429 7.9 241	12 M 0422 7.8 238	27 0453 7.3 223	12 Th 0512 7.4 226	27 0512 6.6 201						
0930 3.3 101	Sa 1025 3.0 91	1024 2.8 85	1109 3.2 98	1145 3.0 91	1211 3.7 113						
1527 7.9 241	1619 7.6 232	1621 7.4 226	1702 6.4 195	1756 6.2 189	1838 5.5 168						
2157 1.8 55	2242 2.0 61	2236 2.2 67	2302 3.3 101	2347 3.7 113	2348 4.7 143						
13 Sa 0420 7.5 229	28 0508 7.6 232	13 Tu 0501 7.6 232	28 0530 6.9 210	13 M 0615 6.8 207	28 0617 6.0 183						
1007 3.4 104	Su 1108 3.4 104	1110 3.1 94	1158 3.7 113	1312 3.4 104	1402 4.0 122						
1601 7.7 235	1658 7.0 213	1705 6.9 210	1749 5.8 177	1944 5.8 177	2134 5.6 171						
2230 2.0 61	2318 2.5 76	2318 2.7 82	● 2339 3.9 119	●							
14 Su 0458 7.4 226	29 0550 7.2 219	14 W 0549 7.3 223	29 0620 6.4 195	14 Sa 0128 4.3 131	29 0255 5.0 152						
1049 3.6 110	M 1157 3.8 116	1210 3.4 104	1318 4.1 125	0758 6.5 198	0844 5.8 177						
1640 7.3 223	1741 6.4 195	1805 6.3 192	1920 5.3 162	1510 3.3 101	1558 3.7 113						
2308 2.3 70	2357 3.1 94	●		2157 6.1 186	2256 6.1 186						
15 M 0542 7.3 223	30 0640 6.8 207	15 Th 0012 3.3 101	30 0047 4.5 137	15 Su 0344 4.3 131	30 0447 4.5 137						
1140 3.8 116	Tu 1304 4.1 125	0654 6.9 210	0752 6.1 186	0951 6.6 201	1025 6.1 186						
1727 6.8 207	1839 5.7 174	1337 3.6 110	1534 4.0 122	1638 2.8 85	1657 3.3 101						
2353 2.7 82	●	1940 5.8 177	2218 5.4 165	2313 6.8 207	2333 6.7 204						
16 W 0047 3.7 113	31 0747 6.6 201	1200 3.6 110	31 0329 4.7 143	31 Sa 0954 6.1 186							
1444 4.2 128	1444 4.2 128	2332 5.9 162	1700 3.6 110	1700 3.6 110							
2023 5.3 162			2332 5.9 180								

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2013

Times and Heights of High and Low Waters

October					November					December																	
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
1 Tu	0533 1118 1735	3.9 6.6 2.8	ft 201 85	16 W	0551 1143 1752	3.1 7.2 2.2	ft 219 67	1 F	0608 1200 1758	2.9 7.1 2.4	ft 216 73	16 Sa	0023 0650 1249 1836	8.3 2.2 7.1 2.6	ft 253 67 216 79	1 Su	0619 1218 1806	2.2 7.0 2.5	ft 67 213 76	16 M	0034 0712 1317 1852	7.9 2.0 6.6 3.0	ft 241 61 201 91				
2 W	0002 0606 1156 1807	7.3 3.4 7.0 2.4	223 104 213 73	17 Th	0017 0630 1226 1829	8.2 2.5 7.6 2.0	250 76 232 61	2 Sa	0020 0640 1238 1833	8.4 2.3 7.5 2.2	256 70 229 67	17 Su	0053 0721 1323 1907	8.5 2.0 7.2 2.7	259 61 219 82	2 M	0026 0658 1302 1849	8.6 1.7 7.3 2.4	262 52 223 73	17 Tu	0104 0741 1350 1924	8.1 1.7 6.7 3.0	247 52 204 91				
3 Th	0029 0635 1229 1837	7.8 2.8 7.4 2.1	238 85 226 64	18 F	0049 0704 1303 1902	8.5 2.1 7.7 2.0	259 64 235 61	3 Su	0052 0713 1315 1908	8.8 1.8 7.7 2.1	268 55 235 64	18 M	0121 0751 1355 1936	8.6 1.8 7.2 2.8	262 55 219 85	3 Tu	0104 0736 1345 1931	8.9 1.2 7.6 2.3	271 37 232 70	18 W	0133 0809 1420 1954	8.1 1.6 6.8 3.0	247 49 207 91				
4 F	0055 0704 1301 1906	8.2 2.4 7.8 1.9	250 73 238 58	19 Sa	0118 0736 1336 1932	8.7 1.9 7.8 2.1	265 58 238 64	4 M	0124 0748 1352 1944	9.0 1.5 7.9 2.1	274 46 241 64	19 Tu	0148 0820 1426 2005	8.5 1.7 7.2 3.0	259 52 219 91	4 W	0142 0816 1429 2013	9.0 0.9 7.7 2.4	274 27 235 73	19 Th	0201 0837 1450 2025	8.1 1.5 6.9 3.0	247 46 210 91				
5 Sa	0122 0733 1332 1935	8.5 2.0 8.0 1.7	259 61 244 52	20 Su	0146 0806 1408 2000	8.8 1.8 7.7 2.3	268 55 235 70	5 Tu	0157 0824 1432 2020	9.1 1.3 7.9 2.3	277 40 241 70	20 W	0214 0848 1458 2033	8.4 1.8 7.1 3.2	256 55 216 98	5 Th	0221 0856 1513 2056	8.9 0.9 7.7 2.7	271 27 235 82	20 F	0228 0905 1521 2056	8.0 1.5 6.9 3.1	244 46 210 94				
6 Su	0150 0803 1405 2005	8.8 1.7 8.1 1.8	268 52 247 55	21 M	0212 0835 1438 2026	8.7 1.8 7.5 2.6	265 40 229 79	6 W	0232 0902 1514 2100	9.0 1.3 7.7 2.7	274 40 235 82	21 Th	0241 0917 1530 2103	8.2 1.9 6.9 3.4	250 58 210 104	6 F	0301 0938 1600 2142	8.7 1.0 7.5 3.0	265 30 229 91	21 Sa	0257 0933 1552 2128	7.8 1.6 6.9 3.3	238 49 210 101				
7 M	0219 0836 1440 2037	8.8 1.6 8.0 2.0	268 49 244 61	22 Tu	0238 0903 1509 2053	8.5 1.9 7.3 2.9	259 58 223 88	7 Th	0309 0944 1600 2143	8.7 1.5 7.4 3.2	265 46 226 98	22 F	0309 0948 1606 2136	7.9 2.1 6.7 3.7	241 64 204 113	7 Sa	0343 1023 1651 2232	8.2 1.3 7.3 3.5	250 40 223 107	22 Su	0326 1003 1627 2204	7.6 1.7 6.8 3.5	232 52 207 107				
8 Tu	0250 0911 1517 2112	8.8 1.6 7.8 2.3	268 49 238 70	23 W	0303 0933 1541 2120	8.2 2.2 6.9 3.3	250 67 238 101	8 F	0350 1030 1655 2233	8.2 1.9 7.0 3.8	250 58 213 116	23 Sa	0339 1022 1648 2215	7.6 2.4 6.5 4.1	232 73 198 125	8 Su	0429 1111 1749 2333	7.6 1.8 7.0 3.9	232 55 213 119	23 M	0358 1036 1706 2246	7.2 1.9 6.7 3.7	219 58 204 113				
9 W	0324 0950 1600 2150	8.5 1.9 7.4 2.9	259 58 226 88	24 Th	0330 1005 1617 2150	7.9 2.5 6.6 3.8	241 76 201 116	9 Sa	0436 1125 1805 2341	7.6 2.3 6.7 4.3	232 70 192 131	24 Su	0412 1102 1740 2306	7.1 2.7 6.3 4.5	216 82 192 137	9 M	0521 1206 1858 2339	6.9 2.3 6.8 3.9	210 70 207 119	24 O	0435 1113 1752 2339	6.8 2.2 6.6 3.9	207 67 201 119				
10 Th	0403 1036 1651 2235	8.1 2.3 6.9 3.5	247 70 210 107	25 F	0359 1042 1702 2226	7.4 2.9 6.2 4.3	226 88 189 131	10 Su	0536 1235 1937	6.9 2.8 6.6	210 85 201	25 M	0454 1151 1849	6.6 3.0 6.3	201 91 192	10 Tu	0053 0628 1312 2017	4.2 6.3 2.8 6.7	128 192 85 204	25 W	0519 1159 1850 O	6.3 2.6 6.5 O	192 79 198 O				
11 F	0448 1133 1802 2339	7.5 2.7 6.4 4.2	229 82 195 128	26 Sa	0433 1130 1810 2323	6.9 3.3 5.9 4.8	210 101 180 146	11 M	0127 0705 1403 2112	4.6 6.3 3.0 6.8	140 192 91 207	26 Tu	0025 0555 1257 2013	4.7 6.1 3.2 6.4	143 186 98 195	11 W	0236 0802 1430 2133	4.2 5.8 3.1 6.9	128 177 94 210	26 Th	0052 0622 1258 2002	4.1 5.8 2.9 6.5	125 177 88 198				
12 Sa	0550 1255 1953 O	6.8 3.1 6.2 O	207 94 189 O	27 Su	0521 1242 2006	6.3 3.6 5.9	192 110 180	12 Tu	0326 0857 1527 2221	4.4 6.1 3.0 7.3	134 186 91 223	27 W	0220 0732 1417 2128	4.7 5.8 3.3 6.7	143 177 101 204	12 Th	0410 0944 1545 2234	3.8 5.7 3.2 7.2	116 174 98 219	27 F	0230 0757 1416 2119	4.0 5.5 3.1 6.8	122 168 94 207				
13 Su	0136 0734 1443 2147	4.7 6.3 3.2 6.5	143 192 98 198	28 M	0135 0659	5.1 5.8	155 177	13 W	0443 1023	3.8 6.3	116 192	28 Th	0354 0918	4.2 5.8	128 177	13 F	0515 1101 1647 2322	3.3 5.9 3.2 7.5	101 180 98 229	28 Sa	0403 0944 1539 2225	3.5 5.5 3.2 7.2	107 168 98 219				
14 M	0348 0932 1609 2254	4.4 6.4 2.9 7.2	134 195 88 219	29 Tu	0356 0912 1546 2241	4.7 5.8 3.5 6.8	143 177 107 207	14 Th	0535 1123 1721 2350	3.2 6.7 2.7 8.1	98 204 82 247	29 F	0454 1034 1631 2308	3.6 6.1 3.0 7.7	110 186 91 235	14 Sa	0601 1157 1736	2.8 6.1 3.1	85 186 94	29 O	0510 1106 1650 2320	2.9 5.9 3.0 7.6	88 180 91 232				
15 Tu	0502 1049 1708 2340	3.7 6.8 2.5 7.7	113 207 76 235	30 W	0455 1029 1640 2317	4.1 6.2 3.1 7.4	125 189 94 226	15 F	0615 1210 1801	2.7 6.9 2.6	82 210 79 241	30 Sa	0539 1130 1721 2348	2.9 6.5 2.7 8.2	88 198 82 250	15 Su	0000 0639 1241 1816	7.7 2.3 6.4 3.1	235 70 195 94	30 M	0601 1206 1748	2.1 6.4 2.7	64 195 82	31 O	0008 0646 1256 1839	8.1 1.4 6.9 2.4	247 43 210 73
31 Th	0534 1119 1722 2350	3.5 6.6 2.7 7.9	107 201 82 241																								

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 Tu	0008 0950	2.6 11.8	80 360	16 W	0145 1022	3.3 10.8	100 330	1 F	0213 1016 1737 2143	4.6 9.5 6.2 6.9	140 290 190 210	16 Sa	0355 0924 1638	6.6 7.9 4.9	200 240 150	1 F	0212 0910 1521 2102	4.9 8.9 5.9 8.2	150 270 180 250	16 Sa	0357 0802 1448 2236	6.6 7.2 4.3 9.2	200 220 130 280
2 W	0040 1022	3.0 11.5	90 350	17 Th	0228 1042 1837 2242	4.6 9.8 5.6 6.2	140 300 170 190	2 Sa	0318 1030 1722 2330	5.6 8.5 5.9 7.5	170 260 180 230	17 Su	0026 0508 0842 1700	8.2 7.5 7.9 4.3	250 230 240 130	2 Sa	0320 0921 1518 2207	5.6 7.9 5.6 8.9	170 240 170 270	17 Su	0524 0718 1507 2334	7.2 7.2 3.9 9.2	220 220 120 280
3 Th	0116 1054	3.3 10.8	100 330	18 F	0305 1049 1837	5.6 8.9 5.2	170 270 160	3 Su	0449 1024 1725	6.6 7.5 5.2	200 230 160	18 M	0216 1728	8.5 4.3	260 130	3 Su	0447 0911 1527 2322	6.2 6.9 4.6 9.5	190 210 140 290	18 M	1527	3.9	120
4 F	0157 1122 2108 2255	4.3 9.8 5.6 5.6	130 300 170 170	19 Sa	0151 0320 1037 1850	6.9 6.9 8.2 4.6	210 210 250 140	4 M	0122 1743	8.5 4.3	260 130	19 Tu	0344 1759	9.2 3.9	280 120	4 M	1547	3.9	120	19 Tu	0039 1546	9.5 3.9	290 120
5 Sa	0243 1143 1951	5.2 8.9 5.6	160 270 170	20 Su	0916 1913	8.2 4.3	250 130	5 Tu	0303 1819	9.5 3.6	290 110	20 W	0435 1834	9.8 3.9	300 120	5 Tu	0048 1620	10.2 3.3	310 100	20 W	0148 1603	9.5 3.9	290 120
●															●								
6 Su	0303 0434 1144 1938	6.6 6.6 7.9 4.9	200 200 240 150	21 M	0525 1942	8.9 3.9	270 120	6 W	0419 1910	10.8 3.0	330 90	21 Th	0511 1915	10.2 3.9	310 120	6 W	0221 1707	10.5 3.0	320 90	21 Th	0253 1616	9.8 3.9	300 120
7 M	0403 1948	8.2 4.3	250 130	22 Tu	0546 2014	9.8 3.6	300 110	7 Th	0520 2013	11.5 2.6	350 80	22 F	0544 2007	10.8 3.9	330 120	7 Th	0345 1812	11.2 3.0	340 90	22 F	0348 1618	10.2 4.3	310 130
8 Tu	0452 2015	9.5 3.3	290 100	23 W	0611 2046	10.5 3.3	320 100	8 F	0612 2121	12.1 2.3	370 70	23 Sa	0615 2108	11.2 3.9	340 120	8 F	0452 1943	11.5 3.3	350 100	23 Sa	0435 1541	10.2 4.6	310 140
9 W	0539 2053	10.8 2.6	330 80	24 Th	0635 2118	10.8 3.3	330 100	9 Sa	0659 2228	12.5 2.3	380 70	24 Su	0647 2212	11.2 3.9	340 120	9 Sa	0547 2121	11.5 3.6	350 110	24 Su	0517 1449 1820 2025	10.2 4.9 4.9 4.9	310 150 150 150
10 Th	0626 2140	12.1 2.0	370 60	25 F	0701 2151	11.5 3.3	350 100	10 Su	0742 2331	12.1 2.6	370 80	25 M	0719 2313	11.2 3.9	340 120	10 Su	0633 2247	11.2 3.6	340 110	25 M	0556 1423 1812 2225	10.2 5.2 5.6 4.9	310 160 170 150
11 F	0712 2229	12.8 1.6	390 50	26 Sa	0727 2224	11.8 3.0	360 90	11 M	0819	11.8	360	26 Tu	0751 1622 1810	10.8 5.6 5.9	330 170 180	11 M	0712 1449 1742 2359	10.5 6.2 6.6 3.9	320 190 200 120	26 Tu	0633 1405 1832 2345	9.8 5.6 6.2 4.9	300 170 190 150
12 Sa	0756 2320	13.1 1.6	400 50	27 Su	0755 2301	11.8 3.0	360 90	12 Tu	0029 0850 1638 1841	3.3 10.8 6.6 6.6	100 330 200 200	27 W	0012 0821 1551 1909	4.3 10.5 6.2 6.6	130 320 190 200	12 Tu	0742 1425 1854 ●	9.8 6.2 7.2 ●	300 190 220 ●	27 W	0706 1351 1903 ●	9.2 5.6 7.2 ●	280 170 220 ●
13 Su	0839	12.8	390	28 M	0824 2342	11.8 3.3	360 100	13 W	0123 0915 1615 2013	3.9 10.2 6.2 6.9	120 310 190 210	28 Th	0111 0848 2004	4.3 9.5 7.2	130 290 220	13 W	0102 0803 1952	4.6 8.9 7.9	140 270 240	28 Th	0055 0733 1341 1940	4.9 8.5 5.6 8.2	150 260 170 250
14 M	0010 0918	1.6	50	29 Tu	0854	11.8	360	14 Th	0214 0930 1613 2131	4.9 9.2 5.9 7.2	150 280 180 220					14 Th	0200 0814 1422 2047	5.2 8.2 5.2 8.5	160 250 160 260	29 F	0204 0753 1336 2024	5.2 7.5 5.2 9.2	160 230 160 280
15 Tu	0059 0953	2.3	70	30 W	0027 0924	3.3	100	15 F	0304 0934 1622 2252	5.6 8.5 5.2 7.9	170 260 160 240					15 F	0256 0815 1432 2141	5.9 7.5 4.9 8.9	180 230 150 270	30 Sa	0317 0801 1340 2114	5.2 6.6 4.6 10.2	160 200 140 310
				31 Th	0117 0952 1827 1945	3.9	120								31 Su	0451 0743 1353 2210	5.6 5.9 3.6 10.8	170 180 110 330					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2013

Times and Heights of High and Low Waters

April					May					June									
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height					
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm				
1 M	1415 2313	3.0 11.2	90 340	16 Tu	1409 2339	3.0 10.2	90 310	1 W	1409 Th	1.6 10.5	50 320	16 Sa	0031 1445	10.2 3.6	310 110	16 Su	1247 1247	3.3 3.3	100 100
2 Tu	1445	2.6	80	17 W	1420	3.3	100	2 Th	0006 1444	11.5 2.3	350 70	17 F	1322 1043	2.6 4.3	80 130	2 Su	0114 0114	9.2 4.3	280 280
3 W	0026 1522	11.2 2.6	340 80	18 Th	0028 1425	10.2 3.3	310 100	3 F	0111 1517	11.2 3.0	340 90	18 Sa	0020 1310	10.2 3.3	310 100	3 M	0148 0005 1802 2016	8.2 4.3 6.6 6.6	250 130 200 200
4 Th	0146 1607	11.2 3.0	340 90	19 F	0122 1418	10.2 3.6	310 110	4 Sa	0215 1501	10.2 4.3	310 130	19 Su	0108 1227	9.8 3.6	300 110	4 Tu	0204 1000 1806	7.2 3.9 7.9	220 120 240
5 F	0304 1710	11.2 3.6	340 110	20 Sa	0220 1353	9.8 3.9	300 120	5 Su	0312 1207	9.5 4.9	290 150	20 M	0157 1137	9.2 3.9	280 120	5 W	1007 1835	3.3 8.9	100 270
6 Sa	0411 1921	10.5 4.3	320 130	21 Su	0316 1317	9.8 4.3	300 130	6 M	0357 1133	8.5 4.9	260 150	21 Tu	0245 1105	8.2 4.3	250 130	6 Th	1022 1907	2.6 9.5	80 290
7 Su	0505 1342	10.2 5.2	310 160	22 M	0408 1249	9.5 4.6	290 140	7 Tu	0428 1123	7.5 4.6	230 140	22 W	0325 1048	7.5 4.3	230 130	7 F	1041 1938	2.3 10.2	70 310
8 M	0547 1301	9.5 5.6	290 170	23 Tu	0452 1229	8.9 4.9	270 150	8 W	0026 0442	6.2 6.9	190 210	23 Th	0006 0351	6.2 6.6	190 200	8 Sa	1102 2007	2.0 10.8	60 330
9 Tu	0618 1248	8.5 5.2	260 160	24 W	0530 1215	8.2 4.9	250 150	9 Th	0208 0435	6.2 6.2	190 190	24 F	0210 0351	5.6 5.6	170 170	9 Su	1123 2035	1.6 10.8	50 330
10 W	0043 0637	5.2 7.9	160 240	25 Th	0032 0559	5.6 7.2	170 220	10 F	1149 2015	3.0 10.2	90 310	25 Sa	1106 1944	2.3 11.2	70 340	10 M	1143 2102	1.6 11.2	50 340
11 Th	0152 0644	5.6 7.2	170 220	26 F	0153 0617	5.6 6.6	170 200	11 Sa	1206 2049	2.3 10.5	70 320	26 Su	1132 2028	1.6 12.1	50 370	11 Tu	1202 2130	1.6 11.2	50 340
12 F	0301 0637	5.9 6.6	180 200	27 Sa	0321 0616	5.2 5.6	160 170	12 Su	1225 2121	2.3 10.8	70 330	27 M	1203 2115	1.0 12.5	30 380	12 W	1219 2159	1.6 11.2	50 340
13 Sa	0427 0604	6.2 6.2	190 190	28 Su	1238 2116	2.6 11.5	80 350	13 M	1242 2152	2.0 10.8	60 330	28 Tu	1239 2204	0.7 12.5	20 380	13 Th	1236 2229	2.0 10.8	60 330
14 Su	1337 2214	3.0 10.2	90 310	29 M	1304 2208	2.0 11.8	60 360	14 Tu	1258 2225	2.3 10.8	70 330	29 W	1317 2253	1.0 11.8	30 360	14 F	1252 2302	2.3 10.5	70 320
15 M	1354 2255	3.0 10.2	90 310	30 Tu	1335 2305	1.6 11.8	50 360	15 W	1310 2259	2.3 10.8	70 330	30 Th	1355 2343	1.6 11.2	50 340	15 Sa	1303 2337	2.6 9.8	80 300
													31 F	1430	2.6	80			

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 0000 M 0815 2354	ft 7.9 4.3 7.2	cm 240 130 220	h m 0722 Tu 1407 1541 O 2315	ft 4.3 5.6 6.9	cm 130 170 210	h m 0708 Th 1716	ft 2.6 8.5	cm 80 260	h m 0540 F 1540	ft 2.6 8.9	cm 80 270
1 M			16 W			1 Th			16 Su		
0819 Tu 1731	3.6 7.2	110 220	0711 W 1539	3.9 6.9	120 210	0745 F 1751	2.3 9.2	70 280	0629 Sa 1646	2.0 9.8	60 300
2 Tu			2 F			2 M			2 M		
0836 W 1754	3.0 8.2	90 250	0720 Th 1629	3.3 8.2	100 250	0824 Sa 1821	2.3 9.5	70 290	0734 Su 1742	1.6 10.5	50 320
3 W			3 Sa			3 Tu			3 Tu		
0859 Th 1824	2.6 9.2	80 280	0745 F 1716	2.6 9.5	80 290	0904 Su 1848	2.3 9.8	70 300	0850 M 1831	1.3 10.8	40 330
4 Th			4 Su			4 W			4 W		
0926 F 1854	2.0 9.8	60 300	0825 Sa 1802	1.6 10.5	50 320	0943 M 1914	2.3 10.2	70 310	1005 Tu 1915	1.3 10.8	40 330
5 F			5 M			5 Th			5 Th		
0954 Sa 1921	1.6 10.2	50 310	0913 Su 1848	1.0 11.2	30 340	1021 Tu 1941	2.3 10.2	70 310	1114 W 1955	1.6 10.2	50 310
6 Sa			6 Tu			6 W			6 F		
1022 Su 1947	1.6 10.5	50 320	1007 M 1932	0.7 11.5	20 350	1100 W 2008	2.3 10.2	70 310	1218 Th 2029	2.0 9.5	60 290
7 Su			7 W			7 Th			7 Sa		
1048 M 2013	1.6 10.8	50 330	1101 Tu 2015	0.7 11.5	20 350	1141 Th 2036	2.3 9.8	70 300	0348 F 1317	5.2 2.6	160 80
●			○			0643 2056	5.6 8.5	170 260	0643 1317	5.6 2.6	170 80
8 M			8 Th			8 Su			8 Su		
1113 Tu 2039	1.6 10.8	50 330	1156 W 2055	0.7 11.2	20 340	1224 F 2104	2.6 9.5	80 290	0336 Sa 1413	4.9 3.3	150 100
9 Tu			9 F			9 M			9 M		
1139 W 2105	1.6 10.8	50 330	1249 Th 2132	1.3 10.5	40 320	1311 Sa 2130	3.0 8.9	90 270	0337 Su 0912	4.6 6.6	140 200
10 W			10 Sa			10 Tu			10 Tu		
1205 Th 2133	2.0 10.5	60 320	1341 F 2203	2.0 9.5	60 290	0524 Su 1404	4.9 3.6	150 110	0347 M 2152	3.9 8.2	120 250
11 Th			11 Su			11 W			11 W		
1235 F 2202	2.3 10.2	70 310	0607 Sa 0805	4.9 4.9	150 150	0502 M 0931	4.9 5.6	150 170	0347 Tu 1143	3.9 7.2	120 220
12 F			1227 1431	8.5 3.0	260 90	0502 M 1505	4.9 4.3	150 130	0404 Tu 1740	3.6 5.9	110 180
1309 Sa 2230	2.6 9.5	80 290	0607 1007	4.6 5.2	150 160	0502 M 2206	4.9 7.2	150 220	0404 Tu 2027	3.6 6.2	110 190
13 Sa			1522 2238	4.3 7.5	130 230	0451 Tu 1056	4.6 6.2	140 190	0404 Tu 1143	3.6 7.2	120 220
1347 Su 2256	3.3 8.9	100 270	0554 M 1213	4.3 5.9	130 180	0451 W 1233	3.9 7.2	120 220	0426 W 1316	3.0 7.5	90 230
14 Su			1618 2230	5.6 6.9	170 210	0452 W 1920	3.9 5.9	120 180	0454 Th 1451	3.0 7.9	90 240
0813 M 1032	4.6 4.6	140 140	O 2117	6.6	200	O 2037	5.9	180	O		
15 M			31 W			31 W			31 Sa		
1040 1430 2315	4.6 4.3 7.9	140 130 240	0611 1445 1818 2117	3.6 6.6 6.6 6.6	110 200 200 200	0508 Th 1414	3.3 7.9	100 240	0525 F 1600	2.6 8.5	80 260
1213 1430 2315	4.6 4.3 7.9	140 130 240	0636 1628	3.3 7.5	100 230	0601 Sa 1647	2.6 8.9	80 270	0522 Su 1611	2.0 10.2	60 310
1227 1431 2238	8.5 3.0	260 90									
1309 Sa 2230	9.5	290									
1347 Su 2256	8.9	270									
1400 M 1032	4.6	140									
1430 M 1430	4.3	130									
1500 M 2315	7.9	240									

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 Tu	0233 1648	3.6 8.9	110 270	16 W	0116 0437	4.6 4.9	140 150	1 F	0006 1653	4.3 7.5	130 230	16 Sa	0647 1406	8.9 5.9	270 180	1 Su	0628 2234	9.2 3.3	280 100	16 M	0724 2244	10.8 2.3	330 70
2 W	0156 1728	3.9 8.9	120 270	17 Th	0034 0539	4.6 5.9	140 180	2 Sa	0645 1225	7.5 5.6	230 170	17 O	0726 2328	9.8 2.6	300 80	2 M	0655 2248	10.2 2.6	310 80	17 O	0757 2309	11.5 2.3	350 70
3 Th	0142 0644 1015 1804	3.9 4.9 4.6 8.5	120 150 140 260	18 F	0021 0628	4.6 7.2	140 220	3 Su	0706 1349	8.5 5.6	260 170	18 M	0803 2348	10.5 2.3	320 70	3 Tu	0731 2312	11.5 2.0	350 60	18 W	0827 2333	11.5 2.3	350 70
4 F	0134 0650 1139 1837	4.3 5.6 4.6 7.9	130 170 140 240	19 Sa	0020 0713	4.3 8.2	130 250	4 M	0737 1521	9.5 5.2	290 160	19 Tu	0838	10.8	330	4 W	0811 2343	12.1 1.3	370 40	19 Th	0854 2356	11.8 2.3	360 70
5 Sa	0126 0710 1249 ● 1905	4.3 6.6 4.6 7.2	130 200 140 220	20 Su	0027 0757	3.6 9.2	110 280	5 Tu	0000 0814	3.0 10.5	90 320	20 W	0009 0911	2.0 11.2	60 340	5 Th	0855	12.8	390	20 F	0921	11.8	360
6 Su	0120 0739 1357	4.3 7.5 4.6	130 230 140 200	21 M	0040 0839	3.0 9.5	90 290	6 W	0017 0857	2.3 11.2	70 340	21 Th	0030 0943	2.0 11.2	60 340	6 F	0018 0940	1.3 12.8	40 390	21 Sa	0016 0947	2.6 11.5	80 350
7 M	0116 0815 1509 1933	3.9 8.5 4.6 5.6	120 260 140 170	22 Tu	0058 0921	2.6 9.8	80 300	7 Th	0041 0945	1.6 11.8	50 360	22 F	0049 1014	2.0 11.2	60 340	7 Sa	0058 1028	1.3 12.5	40 380	22 Su	0034 1014	2.6 11.2	80 340
8 Tu	0119 0858 1642 1915	3.6 9.2 4.9 4.9	110 280 150 150	23 W	0117 1001	2.3 10.2	70 310	8 F	0111 1037	1.3 11.8	40 360	23 Sa	0104 1046	2.3 10.8	70 330	8 Su	0139 1115	1.6 11.8	50 360	23 M	0049 1043	3.3 10.8	100 330
9 W	0129 0947	3.0 9.8	90 300	24 Th	0136 1042	2.3 9.8	70 300	9 Sa	0145 1133	1.3 11.5	40 350	24 Su	0113 1119	2.6 10.5	80 320	9 M	0219 1202	2.6 10.8	80 330	24 ○	0057 1113	3.6 10.5	110 320
10 Th	0149 1043	2.3 10.2	70 310	25 F	0154 1123	2.3 9.8	70 300	10 Su	0222 1233	2.0 11.2	60 340	25 M	0112 1155	3.0 10.2	90 310	10 Tu	0255 1244	3.9 9.8	120 300	25 ○	0031 1142	4.3 9.8	130 300
11 F	0216 1148	2.0 10.5	60 320	26 Sa	0207 1206	2.6 9.8	80 300	11 M	0257 1333	2.6 10.2	80 310	26 ○	0049 1235	3.3 9.8	100 300	11 W	1319 2138	8.9 4.9	270 150	26 Th	1207 2114	8.9 4.9	270 150
12 Sa	0250 1300	1.6 10.5	50 320	27 ○	0211 1253	3.0 9.5	90 290	12 Tu	0315 1431	3.6 9.5	110 290	27 W	1317 2309	9.2 4.3	280 130	12 Th	0536 0645	6.6 6.6	200 200	27 F	1220 2057	8.2 4.6	250 140
13 Su	0330 1416	2.0 10.2	60 310	28 M	0157 1344	3.3 9.5	100 290	13 W	1519 2308	8.5 4.6	260 140	28 Th	1400 2246	8.5 4.3	260 130	13 F	0539 2142	8.2 3.9	250 120	28 Sa	0540 2055	7.9 4.3	240 130
14 M	0421 1526	2.6 9.8	80 300	29 Tu	0117 1437	3.3 9.2	100 280	14 Th	0534 0949	6.6 5.9	200 180	29 F	1437 2233	7.9 4.3	240 130	14 Sa	0613 2158	9.2 3.3	280 100	29 Su	0538 2107	9.2 3.6	280 110
15 Tu	0604 1626	3.6 9.2	110 280	30 W	0039 1528	3.6 8.9	110 270	15 F	0609 1207	7.9 6.2	240 190	30 Sa	0617 1158	7.9 6.9	240 210	15 Su	0650 2220	10.2 2.6	310 80	30 M	0606 2131	10.5 3.0	320 90
				31 Th	0018 1614	3.9 8.2	120 250								31 Tu	0642 2205	11.5 2.3	350 70					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2013

Times and Heights of High and Low Waters

January					February					March													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	1052 2127	3.1 1.1	94 34	16 W	1033 2055	2.6 1.3	79 40	1 F	0914 1832	2.4 1.5	73 46	16 Sa	0622 1555	2.5 1.4	76 43	1 F	0022 0619 0926 1633	2.2 1.9 2.0 1.6	67 58 61 49	16 Sa	0050 1406	2.4 1.4	73 43
2 W	1053 2128	2.9 1.2	88 37	17 Th	0817 2045	2.5 1.4	76 43	2 Sa	0700 1727	2.4 1.4	73 43	17 Su	0649 1549	2.7 1.2	82 37	2 Sa	0108 1532	2.4 1.4	73 43	17 Su	0136 1412	2.4 1.3	73 40
3 Th	1029 2118	2.7 1.3	82 40	18 F	0740 1845	2.7 1.4	82 43	3 Su	0629 1637	2.7 1.2	82 37	18 M	0716 1601	2.8 1.1	85 34	3 Su	0233 1457	2.6 1.2	79 37	18 M	0425 1430	2.5 1.1	76 34
4 F	0915 2047	2.6 1.4	79 43	19 Sa	0745 1711	2.9 1.3	88 40	4 M	0647 1627	3.0 1.0	91 30	19 Tu	0741 1620	2.9 1.0	88 30	4 M	0426 1459	2.7 1.0	82 30	19 Tu	0544 1451	2.5 1.1	76 34
5 Sa	0803 1921	2.7 1.4	82 43	20 Su	0801 1704	3.0 1.1	91 34	5 Tu	0718 1638	3.2 0.8	98 24	20 W	0804 1641	3.0 0.9	91 27	5 Tu	0543 1517	2.9 0.9	88 27	20 W	0630 1513	2.6 1.0	79 30
6 Su	0742 1747	2.9 1.2	88 37	21 M	0820 1717	3.1 1.0	94 30	6 W	0753 1659	3.4 0.7	104 21	21 Th	0826 1702	3.0 0.9	91 27	6 W	0640 1539	3.1 0.8	94 24	21 Th	0705 1532	2.7 1.1	82 34
7 M	0750 1730	3.2 0.9	98 27	22 Tu	0840 1737	3.2 0.9	98 27	7 Th	0829 1723	3.5 0.7	107 21	22 F	0847 1720	3.1 1.0	94 30	7 Th	0728 1602	3.1 0.8	94 24	22 F	0736 1549	2.7 1.1	82 34
8 Tu	0813 1743	3.4 0.7	104 21	23 W	0859 1800	3.3 0.8	101 24	8 F	0905 1747	3.5 0.7	107 21	23 Sa	0907 1736	3.1 1.1	94 34	8 F	0812 1623	3.1 0.9	94 27	23 Sa	0805 1601 2258	2.7 1.2 2.0	82 37 61
9 W	0843 1807	3.7 0.6	113 18	24 Th	0917 1824	3.3 0.8	101 24	9 Sa	0939 1810	3.4 0.9	104 27	24 Su	0926 1747	3.0 1.2	91 37	9 Sa	0851 1642 2304	3.1 1.1 1.9	94 34 58	24 Su	0155 0835 1608 2233	1.9 2.7 1.3 2.1	58 82 40 64
10 Th	0916 1836	3.8 0.5	116 15	25 F	0933 1847	3.3 0.8	101 24	10 Su	1010 1830	3.3 1.0	101 30	25 M	0946 1752	2.9 1.3	88 40	10 Su	0230 0927 1656 2308	1.8 2.9 1.2 2.0	55 88 37 61	25 M	0242 0905 1610 2221	1.8 2.5 1.5 2.2	55 76 46 67
11 F	0950 1906	3.8 0.6	116 18	26 Sa	0948 1907	3.3 0.9	101 27	11 M	1036 1845	3.0 1.2	91 37	26 Tu	0004 0219 1005 1750	1.8 1.7 2.7 1.4	55 52 82 43	11 M	0328 0959 1705 2321	1.8 2.7 1.4 2.2	55 82 43 67	26 Tu	0332 0936 1605 2221	1.8 2.4 1.6 2.3	55 73 49 70
12 Sa	1022 1935	3.7 0.7	113 21	27 Su	1003 1924	3.3 1.0	101 30	12 Tu	1052 1854	2.7 1.3	82 40	27 W	0322 1020 1739 2357	1.8 2.5 1.5 2.1	55 76 46 64	12 Tu	0425 1025 1706 2339	1.8 2.4 1.5 2.3	55 67 52 76	27 W	0428 1008 1550 2232	1.7 2.2 1.7 2.5	52 67 52 76
13 Su	1052 2002	3.5 0.8	107 24	28 M	1017 1934	3.2 1.1	98 34	13 W	1044 1851	2.4 1.5	73 46	28 Th	0429 1023 1716	1.9 2.3 1.6	58 70 49	13 W	0528 1040 1652	1.8 2.1 1.6	55 64 49	28 Th	0537 1041 1520 2253	1.6 1.9 1.7 2.7	49 58 52 82
14 M	1113 2026	3.2 1.0	98 30	29 Tu	1029 1937	3.0 1.2	91 37	14 Th	0852 1819	2.2 1.5	67 46					14 Th	0000 0709 1007 1607	2.4 1.8 1.9 1.6	73 55 58 49	29 F	0724 1110 1411 2322	1.5 1.6 1.5 2.8	46 49 46 85
15 Tu	1119 2044	2.9 1.1	88 34	30 W	1036 1930	2.8 1.3	85 40	15 F	0605 1652	2.4 1.5	73 46					15 F	0023 1442	2.4 1.6	73 49	30 Sa	1209	1.4	43
				31 Th	1023 1911	2.6 1.4	79 43									31 Su	0002 1234	2.9 1.1	88 34				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Djakarta (Tanjungpriok), Java, 2013

Times and Heights of High and Low Waters

April						May						June											
Time		Height		Time		Height		Time		Height		Time		Height		Time		Height					
1 M	0058 0558 1307	2.9 1.0	88 30	16 Tu	1310 2337	1.1 2.7	34 82	1 W	0114 1222	3.0 0.8	91 24	16 Th	1211 2307	1.1 2.8	34 85	1 Sa	1149 2024	1.2 2.7	37 82	16 Su	1020 2055	1.4 2.6	43 79
2 Tu	0228 1338	2.9 0.9	88 27	17 W	1335 2341	1.1 2.6	34 79	2 Th	0224 1253 2222	2.7 0.9 2.4	82 27 73	17 F	1227 2242	1.1 2.6	34 79	2 Su	1157 2027	1.4 2.9	43 88	17 M	0947 2011	1.4 2.7	43 82
3 W	0423 1406	2.8 0.9	85 27	18 Th	1356 2325	1.1 2.5	34 76	3 F	0108 0418 1316 2117	2.3 2.5 1.1 2.5	70 76 34 76	18 Sa	1236 2151	1.3 2.5	40 76	3 M	0516 0834 1145 2041	1.4 1.5 1.4 3.1	43 46 43 94	18 Tu	0703 1959	1.4 2.9	43 88
4 Th	0550 1432	2.8 0.9	85 27	19 F	1412 2246	1.2 2.4	37 73	4 Sa	0243 0605 1333 2105	2.1 2.2 1.2 2.6	64 67 37 79	19 Su	1237 2107	1.4 2.6	43 79	4 Tu	0531 2059	1.2 3.2	37 98	19 W	0538 2009	1.2 3.2	37 98
5 F	0656 1453 2202	2.7 1.1 2.2	82 34 67	20 Sa	0231 0604 1422 2205	2.2 2.3 1.3 2.3	67 70 40 70	5 Su	0341 0731 1343 2111	1.9 2.0 1.4 2.7	58 61 43 82	20 M	1229 2044	1.5 2.7	46 82	5 W	0600 2119	1.0 3.2	30 98	20 Th	0537 2031	0.9 3.4	27 104
6 Sa	0159 0750 1509 2155	2.0 2.6 1.2 2.3	61 79 37 70	21 Su	0250 0706 1426 2138	2.1 2.3 1.4 2.4	64 70 43 73	6 M	0434 0851 1343 2124	1.6 1.8 1.5 2.9	49 55 46 88	21 Tu	0517 0814 1207 2042	1.5 1.6 1.5 2.9	46 49 46 88	6 Th	0632 2137	0.9 3.3	27 101	21 F	0559 2100	0.7 3.6	21 110
7 Su	0302 0838 1520 2200	1.8 2.4 1.4 2.4	55 73 43 73	22 M	0324 0802 1425 2125	1.9 2.1 1.5 2.5	58 64 46 76	7 Tu	0526 1020 1323 2140	1.4 1.7 1.6 3.0	43 52 49 91	22 W	0526 2053	1.3 3.1	40 94	7 F	0705 2153	0.8 3.3	24 101	22 Sa	0629 2133	0.6 3.7	18 113
8 M	0400 0923 1525 2212	1.7 2.2 1.5 2.6	52 67 46 79	23 Tu	0408 0858 1416 2126	1.7 2.0 1.6 2.7	52 61 49 82	8 W	0617 2157	1.3 3.1	40 94	23 Th	0557 2114	1.1 3.3	34 101	8 Sa	0740 2206	0.8 3.3	24 101	23 Su	0704 2208	0.5 3.7	15 113
9 Tu	0459 1008 1519 2228	1.6 2.0 1.6 2.7	49 61 49 82	24 W	0459 1004 1353 2138	1.5 1.8 1.7 2.9	46 55 52 88	9 Th	0709 2212	1.1 3.1	34 94	24 F	0638 2143	0.9 3.5	27 107	9 Su	0815 2217	0.8 3.2	24 98	24 M	0740 2242	0.5 3.6	15 110
10 W	0603 1057 1450 ● 2243	1.5 1.8 1.7 2.7	46 55 52 82	25 Th	0559 2159	1.3 3.1	40 94	10 F	0802 2224	1.1 3.1	34 94	25 Sa	0725 2215	0.7 3.6	21 110	10 M	0850 2227	0.8 3.2	24 98	25 Tu	0816 2313	0.6 3.4	18 104
11 Th	0724 2256	1.5 2.8	46 85	26 F	0709 2227	1.1 3.2	34 98	11 Sa	0856 2233	1.0 3.1	30 94	26 Su	0815 2251	0.6 3.6	18 110	11 Tu	0923 2236	0.9 3.1	27 94	26 W	0849 2336	0.8 3.1	24 94
12 F	0933 2307	1.4 2.8	43 85	27 Sa	0830 2300	1.0 3.3	30 101	12 Su	0948 2242	1.0 3.1	30 94	27 M	0905 2327	0.6 3.5	18 107	12 W	0952 2245	0.9 3.1	27 94	27 Th	0917 2332	0.9 2.8	27 85
13 Sa	1116 2315	1.3 2.8	40 85	28 Su	0951 2339	0.9 3.3	27 101	13 M	1035 2251	1.0 3.0	30 91	28 Tu	0951	0.7	21	13 Th	1015 2249	1.0 2.9	30 88	28 F	0938 2114	1.1 2.5	34 76
14 Su	1204 2321	1.2 2.8	37 85	29 M	1055	0.8	24	14 Tu	1115 2300	1.0 3.0	30 91	29 W	0000 1032	3.2 0.8	98 24	14 F	1028 2240	1.1 2.8	34 85	29 Sa	0950 1942	1.3 2.6	40 79
15 M	1240 2328	1.1 2.7	34 82	30 Tu	0023 1144	3.2 0.8	98 24	15 W	1147 2309	1.0 2.9	30 88	30 Th	0022 1106 2329	2.9 0.9 2.6	88 27 79	15 Sa	1030 2200	1.3 2.6	40 79	30 Su	0942 1938	1.4 2.8	43 85
															31 F	1131 2051	1.1 2.6	34 79					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2013

Times and Heights of High and Low Waters

July					August					September								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time				
h m 0543 M 1953	ft 1.4 3.0	cm 43 91	h m 0555 Tu 1906	ft 1.3 2.8	cm 40 85	h m 0436 Th 2012	ft 0.9 3.1	cm 27 94	h m 0401 F 1911	ft 0.8 3.2	cm 24 98	h m 0423 Su 2023	ft 0.9 2.9	cm 27 88	h m 0343 M 1114			
●														1321 2012				
2 Tu	0507 2015	1.2 3.2	37 98	16 W 17	0505 1916	1.1 3.0	34 91	2 F 2036	0.8 3.2	24 98	16 Sa 17	0421 1953	0.7 3.4	21 104	2 M 2045	1.0 2.9	30 88	17 Tu 1039 1048 1440 2054
3 W	0518 2038	1.0 3.2	30 98	18 Th 1941	0.9 3.3	27 101	3 Sa 2058	0.8 3.2	24 98	18 Su 2032	0.7 3.4	21 104	3 Tu 2104	1.1 2.8	34 85	18 W 1047 1546 2131		
4 Th	0540 2100	0.8 3.3	24 101	19 F 2013	0.7 3.5	21 107	4 Su 2116	0.8 3.2	24 98	19 M 2110	0.7 3.3	21 101	4 W 1208 1422 2122	1.2 1.9 2.7	37 61 82	19 Th 1058 1652 2205		
5 F	0606 2120	0.8 3.3	24 101	20 Sa 2048	0.6 3.6	18 110	5 M 2131	0.9 3.1	27 94	20 Tu 2144	0.9 3.1	27 94	5 Th 1143 1514 2137	1.3 1.9 2.5	40 61 76	20 F 1811 2229		
6 Sa	0633 2138	0.7 3.3	21 101	21 Su 2123	0.5 3.7	15 113	6 Tu 2144	1.0 3.0	30 91	21 W 1221 1509 2215	1.0 1.9 2.8	30 58 85	6 F 1131 1609 2148	1.4 2.1 2.3	43 64 70	21 Sa 1136		
7 Su	0700 2152	0.7 3.3	21 101	22 M 2158	0.6 3.6	18 110	7 W 2155	1.1 2.9	34 88	22 Th 1232 1620 2237	1.2 1.9 2.5	37 64 76	7 Sa 1132 1721 2143	1.5 2.3 2.1	46 70 64	22 Su 1159		
8 M	0726 2203	0.8 3.2	24 98	23 Tu 2230	0.7 3.4	21 104	8 Th 2204	1.2 2.8	37 85	23 F 1257 1743 2237	1.4 2.0 2.2	43 61 67	8 Su 1146	1.6 2.4	49 73	23 M 1224		
●				○														
9 Tu	0750 2213	0.9 3.2	27 98	24 W 2256	0.9 3.1	27 94	9 F 2206	1.3 2.6	40 79	24 Sa 1335	1.5 2.4	46 73	9 M 1214	1.5 2.6	46 79	24 Tu 1251		
10 W	0810 2222	1.0 3.1	30 94	25 Th 2308	1.1 2.7	34 82	10 Sa 2150	1.4 2.4	43 73	25 Su 1433	1.5 2.5	46 76	10 Tu 1259	1.3 2.7	40 82	25 W 1326		
11 Th	0822 2227	1.1 3.0	34 91	26 F 2231	1.2 2.4	37 73	11 Su 2033	1.5 2.3	46 70	26 M 1601	1.4 2.6	43 79	11 W 1416	1.1 2.8	34 85	26 Th 1522		
12 F	0824 2225	1.2 2.8	37 85	27 Sa 1830	1.4 2.4	43 73	12 M 1638	1.5 2.4	46 73	27 Tu 1720	1.2 2.7	37 82	12 Th 1606	0.9 2.9	27 88	27 F 1712		
13 Sa	0814 2201	1.3 2.6	40 79	28 Su 1822	1.5 2.6	46 79	13 Tu 1703	1.3 2.6	40 79	28 W 1815	1.1 2.8	34 85	13 F 1732	0.8 3.0	24 91	28 Sa 1810		
14 Su	0750 2051	1.4 2.5	43 76	29 M 1846	1.4 2.8	43 85	14 W 1746	1.2 2.8	37 85	29 Th 1856	1.0 2.8	30 85	14 Sa 1835	0.7 3.0	21 91	29 Su 1346 1853		
●				○														
15 M	0705 1931	1.4 2.6	43 79	30 Tu 1915	1.2 2.9	37 88	15 Th 1829	0.9 3.1	27 94	30 F 1930	0.9 2.9	27 88	15 Su 1927	0.8 3.0	24 91	30 M 1418 1928		
●				○														
31 W	0418 1944	1.0 3.1	30 94							31 Sa 1958	0.9 2.9	27 88						

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2013

Times and Heights of High and Low Waters

October				November				December							
	Time	Height		Time	Height		Time	Height		Time	Height				
	h m	ft	cm		h m	ft	cm		h m	ft	cm				
1 Tu	0324	1.2	37	16 W	0239	1.3	40	1 F	0131	1.5	46	16 Sa	0952	3.3	101
	1055	2.3	70	0950	2.6	79	0931	2.8	85	1922	1.0	30			
	1452	2.1	64	1618	1.8	55	1757	1.5	46						
	2000	2.4	73	2044	2.0	61	2127	1.6	49						
2 W	0329	1.3	40	17 Th	0240	1.4	43	2 Sa	0058	1.5	46	17 ○	1011	3.3	101
	1036	2.3	70	1000	2.8	85	0938	3.0	91	2006	0.9	27			
	1530	2.0	61	1723	1.6	49	1845	1.3	40						
	2031	2.3	70	2139	1.8	55									
3 Th	0326	1.4	43	18 F	0230	1.5	46	3 Su	0954	3.2	98	18 M	1029	3.3	101
	1024	2.4	73	1016	2.9	88	1941	1.1	34	2051	0.8	24			
	1616	1.9	58	1834	1.4	43									
	2102	2.1	64	2249	1.6	49	●								
4 F	0316	1.5	46	19 Sa	0151	1.5	46	4 M	1018	3.4	104	19 ○	1044	3.3	101
	1020	2.5	76	1034	3.0	91	2042	0.9	27	2135	0.8	24			
	1712	1.7	52	1956	1.3	40									
	2133	1.9	58	○											
5 Sa	0255	1.6	49	20 Su	1053	3.1	94	5 Tu	1047	3.5	107	20 W	1055	3.2	98
	1026	2.7	82	2128	1.2	37	2141	0.7	21	2216	0.8	24			
	1826	1.6	49												
	● 2203	1.7	52												
6 Su	0217	1.6	49	21 M	1110	3.1	94	6 W	1120	3.5	107	21 Th	1103	3.2	98
	1041	2.9	88	2237	1.0	30	2233	0.7	21	2253	0.8	24			
7 M	0053	1.4	43	22 Tu	1124	3.0	91	7 Th	1157	3.4	104	22 F	1108	3.1	94
	1104	3.0	91	2325	1.0	30	2316	0.6	18	2325	0.8	24			
	2333	1.2	37												
8 Tu	1135	3.1	94	23 W	1134	3.0	91	8 F	1234	3.2	98	23 Sa	1110	3.0	91
9 W	0000	1.0	30	24 Th	0003	0.9	27	9 Sa	1306	3.0	91	24 Su	1104	2.9	88
	1215	3.1	94	1139	2.9	88									
10 Th	0031	0.8	24	25 F	0035	0.9	27	10 Su	0021	0.8	24	25 M	0005	1.0	30
	1307	3.1	94	1138	2.8	85	1229	2.7	82	1044	2.8	85			
11 F	0102	0.7	21	26 Sa	0102	0.9	27	11 M	0042	0.9	27	26 ○	0012	1.1	34
	1425	3.0	91	1130	2.7	82	0939	2.6	79	1007	2.7	82			
12 Sa	0130	0.7	21	27 Su	0124	1.0	30	12 Tu	0057	1.1	34	27 ○	0009	1.3	40
	1610	2.8	85	1112	2.7	82	0908	2.7	82	2356	1.4	43			
13 Su	0155	0.8	24	28 M	0140	1.0	30	13 W	0105	1.3	40	28 Sa	0900	2.8	85
	1740	2.7	82	1045	2.6	79	0906	2.9	88	2325	1.4	43			
14 M	0215	0.9	27	29 Tu	0149	1.2	37	14 Th	0102	1.4	43	29 F	0851	3.0	91
	1011	2.4	73	1015	2.5	76	0916	3.0	91	1837	1.3	40			
	1403	2.2	67												
	1850	2.5	76												
15 Tu	0230	1.1	34	30 W	0152	1.3	40	15 F	0036	1.4	43	30 Sa	0856	3.2	98
	0950	2.5	76	0950	2.6	79	0933	3.2	98	1833	1.2	37			
	1515	2.0	61												
	1949	2.3	70												
				31 Th	0146	1.4	43					31 Tu	0925	3.8	116
				0935	2.7	82						1859	0.5	15	
				1721	1.7	52									
				2002	1.8	55									

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Surabaja Strait, Djamuang Reef, Java, 2013

Times and Heights of High and Low Waters

January				February				March						
	Time	Height			Time	Height			Time	Height				
	h m	ft	cm		h m	ft	cm		h m	ft	cm			
1 Tu	0854 2227	1.0 5.9	30 180		16 W	0844 2150	1.6 5.2	50 160	1 F	0754 1830	2.3 4.6	70 140		
2 W	0911 2214	1.3 5.2	40 160		17 Th	0834 2134	2.0 4.9	60 150	2 Sa	0658 1752	2.6 4.6	80 140		
3 Th	0919 2132	1.6 5.2	50 160		18 F	0757 2057	2.3 4.6	70 140	3 Su	0535 1743	2.3 4.9	90 150		
4 F	0904 2047	2.3 4.9	70 150		19 Sa	0704 2000	2.3 4.6	70 140	4 M	0458 1748	2.0 4.9	60 150		
									19 Tu	0436 1518	2.0 5.2	60 160		
5 Sa	0758 2019	2.3 4.9	70 150		20 Su	0621 1901	2.3 4.9	70 150	5 Tu	0458 1805	1.6 5.2	50 160		
									20 W	0445 1558	1.6 5.2	50 160		
6 Su	0632 2007	2.3 5.2	70 160		21 M	0558 1833	2.0 5.2	60 160	6 W	0347 1408	1.6 5.2	50 160		
									21 Th	0320 1350	1.6 5.6	50 170		
7 M	0601 2006	2.0 5.2	60 160		22 Tu	0552 1841	1.6 5.6	50 170	7 Th	0416 1422	1.3 5.2	40 160		
									22 F	0348 1403	1.6 5.2	50 160		
8 Tu	0601 2011	1.3 5.6	40 170		23 W	0558 1908	1.3 5.6	40 170	8 F	0602 1950	0.7 5.6	20 170		
									23 Sa	0542 1952	1.0 5.2	30 160		
9 W	0616 2022	1.0 5.9	30 180		9 Sa	0628 2027	0.7 5.6	20 170	9 Sa	0514 1455	1.3 4.9	40 150		
									24 Su	0438 1338	1.6 4.6	50 140		
10 Th	0638 2037	0.7 5.9	20 180		24 F	0629 2020	0.7 5.9	20 180	10 Su	0653 2100	1.0 5.6	30 170		
									25 M	0623 2146	1.3 4.9	40 150		
										25 M	0540 1503	1.3 4.9	40 150	
11 F	0703 2054	0.3 6.2	10 190		26 Sa	0649 2057	0.7 5.9	20 180	11 M	0715 2127	1.3 5.2	40 160		
									26 Tu	0641 1554	1.6 4.3	50 130		
									11 M	0601 1656	1.6 4.3	50 130		
										26 Tu	0517 1838	2.3 3.6	70 110	
12 Sa	0729 2112	0.3 6.2	10 190		27 Su	0711 2132	0.7 5.9	20 180	12 Tu	0616 1434	2.0 4.3	60 130		
									27 W	0527 1851	2.6 3.9	80 120		
										27 W	0527 1911	2.6 3.3	80 100	
											27 O	0527 2356	2.6 3.6	80 110
13 Su	0755 2129	0.7 5.9	20 180		28 M	0731 2201	1.0 5.6	30 170	13 Th	0655 1431	2.6 4.3	80 130		
									13 W	0617 2010	2.6 3.6	80 110		
										13 W	0617 2257	2.6 3.9	80 120	
											28 Th	0522 1954	3.0 3.0	90 90
14 M	0818 2143	1.0 5.9	30 180		29 Tu	0750 2223	1.3 5.2	40 160	14 Th	0556 2124	3.0 4.3	90 130		
									14 Th	0556 2011	3.0 3.3	90 100		
										29 F	0429 2324	3.3 3.6	100 80	
15 Tu	0836 2151	1.3 5.6	40 170		30 W	0804 2225	1.6 4.9	50 150	15 F	0646 1555	2.6 4.3	80 130		
										15 F	0504 2327	3.0 3.3	90 100	
										30 Sa	1212 2155	4.9 2.3	150 70	
										31 Su	1209 2317	5.2 2.0	160 60	
					31 Th	0809 2117	2.0 4.6	60 140						

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Heights are referred to the chart datum of soundings.

Surabaja Strait, Djamuang Reef, Java, 2013

Times and Heights of High and Low Waters

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Surabaja Strait, Djamuang Reef, Java, 2013

Times and Heights of High and Low Waters

July					August					September														
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time										
h m 0933 M 1938	ft 5.2 2.3	cm 160 70	h m 0752 Tu 1828	ft 4.9 2.3	cm 150 70	h m 0542 Th 1735	ft 4.9 1.6	cm 150 50	h m 0455 F 1650	ft 5.2 1.3	cm 160 40	h m 0335 Su 1659	ft 5.2 1.3	cm 160 40	h m 0152 M 1646									
●																								
2 Tu	0906 1852	4.9 2.0	150 60	16 W	0739 1748	4.9 2.0	150 60	2 F	0554 1742	5.2 1.3	160 40	16 Sa	0532 1713	5.2 1.0	160 30	2 M	0434 1720	5.2 1.3	160 40	17 Tu	0201 1714	4.9 1.6	150 50	
3 W	0835 1833	5.2 1.6	160 50	18 Th	0741 1745	5.2 1.6	160 50	3 Sa	0629 1756	5.6 1.0	170 30	18 Su	0632 1739	5.2 1.0	160 30	3 Tu	0700 1741	4.9 1.3	150 40	18 W	0204 1737	4.9 2.0	150 60	
4 Th	0812 1831	5.2 1.3	160 40	19 F	0751 1758	5.6 1.0	170 30	4 Su	0713 1813	5.6 1.0	170 30	19 M	0733 1806	5.2 1.0	160 30	4 W	0835 1800	4.9 1.6	150 50	19 Th	0159 0712	4.6 4.3	140 130	
5 F	0805 1838	5.6 1.0	170 30	20 Sa	0808 1819	5.6 0.7	170 20	5 M	0758 1833	5.9 1.0	180 30	20 Tu	0822 1832	5.2 1.0	160 30	5 Th	0938 1816	4.6 2.0	140 60	20 F	0144 0717	4.3 3.9	130 120	
●																								
6 Sa	0814 1853	5.9 0.7	180 20	21 Su	0828 1844	5.9 0.7	180 20	6 Tu	0841 1853	5.9 1.0	180 30	21 W	0903 1854	5.2 1.3	160 40	6 F	0231 0545 1030 1827	4.3 3.9 4.6 2.3	130 120 140 70	21 Sa	0119 0740 1132 1731	4.3 3.6 3.6 3.0	130 110 110 90	
7 Su	0834 1911	6.2 0.7	190 20	22 M	0849 1910	5.9 0.7	180 20	7 W	0921 1912	5.6 1.0	170 30	22 Th	0935 1912	4.9 1.6	150 50	7 Sa	0200 0647 1116 1828	4.3 3.9 4.3 2.6	130 120 130 80	22 Su	0047 0817 1234 1620	4.3 3.3 3.3 3.3	130 100 100 100	
●																								
8 M	0859 1931	6.2 0.7	190 20	23 Tu	0910 1936	5.9 0.7	180 20	8 Th	0956 1929	5.6 1.3	170 40	23 F	0958 1918	4.6 2.0	140 60	8 Su	0143 0755 1158 1808	4.3 3.6 3.6 3.0	130 110 110 90	23 M	0019 0914	4.6 3.0	140 90	
●																								
9 Tu	0926 1953	6.2 0.7	190 20	24 W	0929 2000	5.9 1.0	180 30	9 F	1023 1942	5.2 1.6	160 50	24 Sa	1005 1906	4.3 2.6	130 80	9 M	0133 0931 1237 1657	4.6 3.3 3.3 3.0	140 100 100 90	24 Tu	0006 1050	4.9 2.6	150 80	
10 W	0952 2014	6.2 1.0	190 30	25 Th	0943 2019	5.6 1.3	170 40	10 Sa	1038 1945	4.6 2.3	140 70	25 Su	0401 0731 0923 1825	3.9 3.9 3.9 3.0	120 120 120 90	10 Tu	0127 1330	4.6 3.0	140 90	25 W	0008 1238	5.2 2.3	160 70	
11 Th	1014 2033	5.9 1.0	180 30	26 F	0949 2028	5.2 1.6	160 50	11 Su	1005 1932	4.3 2.6	130 80	26 M	0245 1722	4.3 3.0	130 90	11 W	0124 1359	4.9 2.3	150 70	26 Th	0020 1333	5.6 2.0	170 60	
12 F	1026 2048	5.6 1.3	170 40	27 Sa	0943 2019	5.2 2.0	160 60	12 M	0449 1843	4.3 2.6	130 80	27 Tu	0205 1630	4.6 2.6	140 80	12 Th	0124 1435	5.2 2.0	160 60	27 F	0038 1413	5.6 2.0	170 60	
●																								
13 Sa	1019 2054	5.2 2.0	160 60	28 Su	0921 1942	4.9 2.3	150 70	13 Tu	0430 1719	4.6 2.6	140 80	28 W	0154 1609	4.6 2.3	140 70	13 F	0126 1510	5.2 1.6	160 50	28 Sa	0057 1446	5.6 1.6	170 50	
●																								
14 Su	0935 2041	4.9 2.3	150 70	29 M	0838 1845	4.6 2.3	140 70	14 W	0427 1634	4.6 2.3	140 70	29 Th	0204 1609	4.9 2.0	150 60	14 Sa	0133 1544	5.2 1.3	160 40	29 Su	0115 1517	5.6 1.6	170 50	
●																								
15 M	0830 1949	4.9 2.3	150 70	30 Tu	0734 1800	4.6 2.3	140 70	15 Th	0435 1633	4.9 1.6	150 50	30 F	0226 1621	5.2 1.6	160 50	15 Su	0142 1616	5.2 1.3	160 40	30 M	0126 1544	5.2 1.6	160 50	
●																								
31 W	0618 1738	4.6 2.0	140 60																					

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Surabaja Strait, Djamuang Reef, Java, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Tu	0123 1609	4.9 2.0	150 60	16 W	0018 1559	5.2 2.3	160 70	1 F	0709 1146 1426 2246	3.0 3.3 3.0 4.9	90 100 90 150	16 Sa	0725 2208	2.0 5.2	60 160	1 Su	0657 2142	1.6 5.9	50 180	16 M	0713 2101	1.0 5.9	30 180
2 W	0105 1630	4.9 2.3	150 70	17 Th	0012 1610 2358	4.9 2.6 4.9	150 80 150	2 Sa	0705 2241	2.3 5.2	70 160	17 Su	0733 2155	1.6 5.6	50 170	2 M	0716 2148	1.3 5.9	40 180	17 Tu	0729 2113	1.0 6.2	30 190
3 Th	0040 0652 0911 1645	4.6 3.9 3.9 2.3	140 120 120 70	18 F	0736 1153 1555 2337	3.0 3.3 3.3 4.9	90 100 100 150	3 Su	0723 2240	2.0 5.6	60 170	18 M	0749 2153	1.3 5.9	40 180	3 Tu	0742 2157	1.0 6.2	30 190	18 W	0749 2131	0.7 6.2	20 190
4 F	0019 0645 1045 1653	4.6 3.6 3.6 3.0	140 110 110 90	19 Sa	0741 2314	2.6 4.9	80 150	4 M	0751 2242	1.6 5.6	50 170	19 Tu	0811 2201	1.3 6.2	40 190	4 W	0811 2206	0.7 6.2	20 190	19 Th	0811 2152	0.7 6.6	20 200
5 Sa	0005 0707 2356	4.6 3.0 4.9	140 90 150	20 Su	0758 2257	2.3 5.2	70 160	5 Tu	0825 2246	1.3 5.9	40 180	20 W	0837 2216	1.0 6.2	30 190	5 Th	0843 2214	0.7 6.2	20 190	20 F	0834 2212	0.7 6.2	20 190
●																							
6 Su	0742 1410 1539 2351	2.6 3.3 3.3 4.9	80 100 100 150	21 M	0824 2251	2.0 5.6	60 170	6 W	0904 2251	1.3 5.9	40 180	21 Th	0905 2233	1.0 6.2	30 190	6 F	0916 2221	0.7 6.2	20 190	21 Sa	0857 2229	1.0 6.2	30 190
7 M	0827 2349	2.3 5.2	70 160	22 Tu	0857 2256	2.0 5.9	60 180	7 Th	0947 2256	1.0 6.2	30 190	22 F	0936 2251	1.0 6.2	30 190	7 Sa	0949 2225	1.0 6.2	30 190	22 Su	0918 2237	1.0 5.9	30 180
8 Tu	0921 2350	2.0 5.6	60 170	23 W	0937 2309	1.6 5.9	50 180	8 F	1033 2302	1.0 6.2	30 190	23 Sa	1007 2304	1.0 6.2	30 190	8 Su	1019 2226	1.3 5.9	40 180	23 M	0935 2230	1.3 5.6	40 170
9 W	1025 2352	2.0 5.6	60 170	24 Th	1023 2326	1.6 5.9	50 180	9 Sa	1120 2307	1.3 5.9	40 180	24 Su	1038 2309	1.3 5.9	40 180	9 M	1041 2224	1.6 5.6	50 170	24 Tu	0943 2201	1.6 5.2	50 160
10 Th	1137 2355	1.6 5.6	50 170	25 F	1114 2342	1.6 5.9	50 180	10 Su	1207 2310	1.3 5.9	40 180	25 M	1105 2301	1.6 5.6	50 170	10 Tu	1046 2217	2.0 5.6	60 170	25 W	0931 2122	2.0 5.2	60 160
11 F	1243	1.6	50	26 Sa	1204 2356	1.6 5.9	50 180	11 M	1248 2311	1.6 5.6	50 170	26 Tu	1125 2239	2.0 5.2	60 160	11 W	0953 2206	2.3 5.2	70 160	26 Th	0833 2053	2.3 5.2	70 160
12 Sa	0001 1338	5.6 1.6	170 50	27 Su	1251	1.6	50	12 Tu	1320 2308	2.0 5.2	60 160	27 W	1128 2214	2.3 5.2	70 160	12 Th	0803 2149	2.3 5.2	70 160	27 F	0705 2040	2.3 5.2	70 160
●																							
13 Su	0008 1424	5.6 1.6	170 50	28 M	0001 1330 2355	5.6 2.0 5.2	170 60 160	13 W	1334 2300	2.6 5.2	80 160	28 Th	0948 2154	2.6 5.2	80 160	13 F	0714 2129	2.3 5.2	70 160	28 Sa	0625 2039	2.0 5.6	60 170
14 M	0014 1503	5.6 1.6	170 50	29 Tu	1402 2337	2.0 5.2	60 160	14 Th	0821 2246	2.6 5.2	80 160	29 F	0718 2143	2.3 5.2	70 160	14 Sa	0659 2110	2.0 5.6	60 170	29 Su	0622 2045	1.3 5.6	40 170
15 Tu	0018 1535	5.2 2.0	160 60	30 W	1426 2315	2.3 4.9	70 150	15 F	0733 2227	2.6 5.2	80 160	30 Sa	0652 2140	2.0 5.6	60 170	15 Su	0701 2059	1.3 5.6	40 170	30 M	0635 2057	1.0 5.9	30 180
				31 Th	1439 2257	2.6 4.9	80 150								31 Tu	0656 2111	0.7 6.2	20 190					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kutei River Entrance, Muara Bayor, Borneo, 2013

Times and Heights of High and Low Waters

January			February			March					
Time	Height		Time	Height		Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm			
1 Tu	0232	2.0	60	16 W	0256	1.6	50	1 F	0259	1.6	50
	0820	6.9	210	0854	7.9	240	0903	7.9	240		
	1402	2.3	70	1447	2.3	70	1501	2.3	70		
	2028	9.2	280	2100	8.9	270	2108	8.2	250		
2 W	0300	2.3	70	17 Th	0322	2.0	60	2 Sa	0325	2.0	60
	0850	7.2	220	0928	7.5	230	0937	7.9	240		
	1434	2.6	80	1521	3.0	90	1538	3.0	90		
	2057	8.9	270	2126	7.9	240	2136	7.5	230		
3 Th	0328	2.3	70	18 F	0348	2.3	70	3 Su	0353	2.3	70
	0924	7.2	220	1003	7.5	230	1017	7.5	230		
	1510	3.0	90	1555	3.6	110	1621	3.6	110		
	2128	8.2	250	2149	7.2	220	2204	6.9	210		
4 F	0359	2.6	80	19 Sa	0414	2.6	80	4 M	0424	3.0	90
	1004	6.9	210	1043	6.9	210	1112	7.2	220		
	1551	3.3	100	1633	4.3	130	1726	4.6	140		
	2201	7.5	230	2209	6.6	200	2233	5.9	180		
5 Sa	0434	3.0	90	20 Su	0443	3.3	100	5 Tu	0505	3.3	100
	1055	6.9	210	1138	6.6	200	1252	6.9	210		
	1646	3.9	120	1729	4.9	150	2120	4.9	150		
	2241	6.9	210	2219	5.9	180	2317	4.9	150		
6 Su	0519	3.3	100	21 M	0518	3.6	110	6 W	0642	3.9	120
	1211	6.9	210	1332	6.2	190	1532	7.2	220		
	1819	4.6	140	2324	3.9	120	2324	3.9	120		
	2339	5.9	180				1654	6.9	210		
7 M	0625	3.6	110	22 Tu	0644	4.3	130	7 Th	0428	4.9	150
	1405	6.9	210	1609	6.6	200	0935	3.9	120		
	2116	4.6	140				1651	7.9	240		
							2353	3.3	100		
8 Tu	0152	5.2	160	23 W	0010	4.3	130	8 F	0527	5.6	170
	0807	3.6	110	0438	4.9	150	1053	3.3	100		
	1546	7.5	230	0939	4.3	130	1738	8.5	260		
	2257	3.9	120	1705	7.2	220					
9 W	0407	5.2	160	24 Th	0012	3.6	110	9 Sa	0020	2.6	80
	0941	3.3	100	0532	5.2	160	0603	6.6	200		
	1650	8.5	260	1049	3.6	110	1143	2.3	70		
	2347	3.3	100	1739	7.9	240	1815	9.2	280		
10 Th	0515	5.9	180	25 F	0028	3.3	100	10 Su	0047	2.0	60
	1046	3.0	90	0603	5.9	180	0635	7.2	220		
	1738	9.2	280	1131	3.3	100	1223	2.0	60		
				1807	8.5	260	1848	9.5	290		
11 F	0024	2.6	80	26 Sa	0048	2.6	80	11 M	0113	1.6	50
	0600	6.2	190	0629	6.2	190	0705	7.9	240		
	1137	2.3	70	1204	3.0	90	1258	1.6	50		
	1818	9.8	300	1833	8.9	270	1918	9.5	290		
12 Sa	0058	2.0	60	27 Su	0108	2.3	70	12 Tu	0137	1.3	40
	0639	6.9	210	0653	6.9	210	0734	8.2	250		
	1220	2.0	60	1233	2.3	70	1331	1.3	40		
	1855	9.8	300	1859	9.2	280	1946	9.5	290		
13 Su	0130	1.6	50	28 M	0129	2.0	60	13 W	0201	1.3	40
	0715	7.2	220	0717	7.2	220	0802	8.5	260		
	1300	1.6	50	1301	2.0	60	1402	1.6	50		
	1930	9.8	300	1924	9.5	290	2011	9.2	280		
14 M	0200	1.6	50	29 Tu	0150	1.6	50	14 Th	0223	1.3	40
	0748	7.5	230	0741	7.5	230	0829	8.5	260		
	1337	1.6	50	1329	2.0	60	1431	2.0	60		
	2002	9.8	300	1949	9.5	290	2035	8.5	260		
15 Tu	0228	1.6	50	30 W	0212	1.6	50	15 F	0246	1.6	50
	0821	7.9	240	0806	7.9	240	0857	8.5	260		
	1413	2.0	60	1358	2.0	60	1459	2.3	70		
	2032	9.2	280	2015	9.2	280	2056	7.9	240		
31 Th	0235	1.6	50	31 Th	0834	7.9	240				
				1428	2.0	60					
				2041	8.9	270					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kutei River Entrance, Muara Bayor, Borneo, 2013

Times and Heights of High and Low Waters

April						May						June								
Time		Height																		
	h m	ft	cm																	
1 M	0226	2.0	60	16 Tu	0220	2.6	80	1 W	0242	2.3	70	16 Th	0231	3.0	90	1 Sa	0426	3.3	100	
	0855	9.2	280		0851	8.5	260		0925	8.5	260		0908	7.9	240		1056	6.6	200	
	1519	2.6	80		1517	3.3	100		1607	3.0	90		1551	3.0	90		1752	3.0	90	
	2059	6.9	210		2052	6.6	200		2141	5.9	180		2131	5.6	170		●			
2 Tu	0253	2.3	70	17 W	0242	3.0	90	2 Th	0320	3.3	100	17 F	0303	3.3	100	2 Su	0020	5.6	170	
	0932	8.5	260		0919	7.9	240		1012	7.9	240		0944	7.2	220		0558	3.9	120	
	1602	3.3	100		1551	3.6	110		1710	3.6	110		1639	3.3	100		1208	5.9	180	
	2130	6.2	190		2119	5.9	180		●	2245	5.6	170		2226	5.2	160		1908	3.0	90
3 W	0322	3.0	90	18 Th	0303	3.6	110	3 F	0413	3.9	120	18 Sa	0345	3.9	120	3 M	0212	5.9	180	
	1017	7.9	240		0953	7.2	220		1120	6.9	210		1032	6.6	200		0823	3.9	120	
	1705	4.3	130		1643	4.3	130		1854	3.9	120		1749	3.6	110		1353	5.2	160	
	2207	5.6	170		●	2156	5.2	160		●				●		2028	3.0	90		
4 Th	0355	3.9	120	19 F	0324	4.3	130	4 Sa	0117	5.2	160	19 Su	0008	5.2	160	4 Tu	0334	6.2	190	
	1134	6.9	210		1046	6.6	200		0628	4.6	140		0509	4.6	140		1007	3.6	110	
	2017	4.6	140		1916	4.6	140		1329	6.2	190		1155	6.2	190		1527	5.2	160	
	2050	3.9	120		●				2050	3.9	120		1928	3.6	110		2130	2.6	80	
5 F	0134	4.9	150	20 Sa	1348	6.2	190	5 Su	0331	5.9	180	20 M	0227	5.6	170	5 W	0426	6.9	210	
	0548	4.6	140		2144	3.9	120		0923	4.3	130		0803	4.6	140		1104	3.3	100	
	1443	6.6	200		●				1523	6.2	190		1359	5.9	180		1629	5.2	160	
	2219	3.9	120		●				2151	3.3	100		2049	3.3	100		2217	2.6	80	
6 Sa	0427	5.6	170	21 Su	0420	5.9	180	6 M	0423	6.9	210	21 Tu	0337	6.2	190	6 Th	0506	7.5	230	
	0952	4.3	130		0940	4.6	140		1034	3.6	110		0945	3.9	120		1145	2.6	80	
	1617	7.2	220		1543	6.6	200		1625	6.6	200		1527	5.9	180		1713	5.6	170	
	2253	3.3	100		2221	3.6	110		2230	3.0	90		2143	3.0	90		2255	2.3	70	
7 Su	0500	6.6	200	22 M	0442	6.6	200	7 Tu	0459	7.5	230	22 W	0421	7.2	220	7 F	0540	7.9	240	
	1053	3.6	110		1033	3.9	120		1118	3.0	90		1041	3.3	100		1217	2.3	70	
	1704	7.5	230		1633	6.9	210		1706	6.6	200		1625	6.2	190		1749	5.6	170	
	2320	3.0	90		2249	3.0	90		2302	2.6	80		2224	2.3	70		2329	2.0	60	
8 M	0529	7.5	230	23 Tu	0506	7.5	230	8 W	0530	8.2	250	23 Th	0459	7.9	240	8 Sa	0611	8.2	250	
	1133	2.6	80		1110	3.0	90		1153	2.6	80		1125	2.3	70		1247	2.0	60	
	1739	7.9	240		1709	7.5	230		1739	6.9	210		1710	6.6	200		1821	5.6	170	
	2345	2.3	70		2316	2.3	70		2330	2.3	70		2302	2.0	60		●			
9 Tu	0556	8.2	250	24 W	0533	8.2	250	9 Th	0559	8.9	270	24 F	0535	8.5	260	9 Su	0000	1.6	50	
	1206	2.3	70		1144	2.3	70		1224	2.3	70		1205	2.0	60		0639	8.5	260	
	1808	7.9	240		1742	7.9	240		1808	6.9	210		1750	6.6	200		1315	2.0	60	
	2342	2.0	60		●				2356	2.0	60		2337	1.6	50		1851	5.9	180	
10 W	0008	2.0	60	25 Th	0601	8.9	270	10 F	0626	8.9	270	25 Sa	0611	9.2	280	10 M	0030	1.6	50	
	0622	8.9	270		1218	2.0	60		1252	2.0	60		1244	1.3	40		0706	8.5	260	
	1237	2.0	60		1814	7.9	240		1835	6.9	210		1828	6.6	200		1342	1.6	50	
	●	1833	7.9	240	●				●				●				1920	5.9	180	
11 Th	0031	2.0	60	26 F	0009	1.6	50	11 Sa	0021	2.0	60	26 Su	0013	1.3	40	11 Tu	0059	1.6	50	
	0647	9.2	280		0630	9.5	290		0651	9.2	280		0647	9.5	290		0733	8.5	260	
	1304	1.6	50		1252	1.6	50		1319	2.0	60		1322	1.3	40		1409	1.6	50	
	1857	7.9	240		●	1845	7.9	240		1900	6.9	210		1905	6.6	200		1950	5.9	180
12 F	0053	1.6	50	27 Sa	0038	1.3	40	12 Su	0047	2.0	60	27 M	0049	1.3	40	12 W	0128	1.6	50	
	0712	9.5	290		0701	9.8	300		0717	9.2	280		0724	9.8	300		0801	8.2	250	
	1330	2.0	60		1326	1.3	40		1346	2.0	60		1401	1.3	40		1438	1.6	50	
	1920	7.9	240		1916	7.5	230		1926	6.9	210		1943	6.6	200		2021	5.9	180	
13 Sa	0115	1.6	50	28 Su	0107	1.3	40	13 M	0112	2.0	60	28 Tu	0126	1.3	40	13 Th	0158	2.0	60	
	0736	9.5	290		0734	9.8	300		0743	8.9	270		0802	9.5	290		0830	7.9	240	
	1356	2.0	60		1402	1.6	50		1413	2.3	70		1440	1.3	40		1508	1.6	50	
	1943	7.5	230		1948	7.5	230		1953	6.6	200		2022	6.2	190		2054	5.6	170	
14 Su	0136	2.0	60	29 M	0137	1.6	50	14 Tu	0137	2.0	60	29 W	0204	1.6	50	14 F	0230	2.3	70	
	0801	9.2	280		0808	9.8	300		0810	8.9	270		0841	9.2	280		0900	7.5	230	
	1421	2.3	70		1440	2.0	60		1442	2.3	70		1521	1.6	50		1540	2.0	60	
	2005	7.2	220		2022	6.9	210		2021	6.2	190		2103	6.2	190		2131	5.6	170	
15 M	0158	2.0	60	30 Tu	0209	2.0	60	15 W	0203	2.3	70	30 Th	0244	2.0	60	15 Sa	0306	2.6	80	
	0826	8.9	270		0845	9.2	280		0838	8.5	260		0921	8.2	250		0933	7.2	220	
	1448	2.6	80		1520	2.3	70		1514	2.6	80		1604	2.3	70		1617	2.0	60	
	2028	6.9	210		2058	6.6	200		2053	5.9	180		2151	5.9	180		2216	5.6	170	
																31 F	0329	2.6	80	
																	1005	7.5	230	
																	1653	2.6	80	
																	2252	5.6	170	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kutei River Entrance, Muara Bayor, Borneo, 2013

Times and Heights of High and Low Waters

July				August				September				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0512	3.0	90	16 0423	2.3	70	1 Th 0043	4.6	140	16 Su 0654	3.0	90	
1100	5.2	160	Tu 1021	5.6	170	756	3.6	110	F 1105	3.3	100	
1741	2.0	60	1653	1.3	40	1010	3.6	110	1750	2.0	60	
● 2331	5.2	160	1808	2.3	70				Su 1140	2.3	70	
2 Tu 0041	5.2	160	17 0530	3.0	90	2 F 0322	4.9	150	1724	3.9	120	
0647	3.6	110	W 1106	4.6	140	1153	3.0	90	2234	2.6	80	
1153	4.6	140	1745	1.6	50	1552	3.0	90	M 1102	2.0	60	
1843	2.3	70	2100	2.6	80	2042	2.3	70	1654	4.6	140	
3 W 0227	5.6	170	18 Th 0101	5.2	160	3 Sa 0443	5.2	160	2229	2.0	60	
0933	3.6	110	0741	3.3	100	1156	2.3	70	16 0406	5.9	180	
1346	3.9	120	1229	3.9	120	1714	3.6	110	M 1129	1.3	40	
2011	2.6	80	1907	2.0	60	2230	2.0	60	1726	5.6	170	
4 Th 0355	5.9	180	19 F 0256	5.6	170	4 Su 0524	5.9	180	2317	1.3	40	
1106	3.0	90	1014	2.6	80	1213	1.6	50	19 M 0510	6.6	200	
1554	3.9	120	1507	3.6	110	1749	4.3	130	W 1223	0.7	20	
2134	2.3	70	2055	2.0	60	2317	1.6	50	1820	5.6	170	
5 F 0450	6.2	190	20 Sa 0418	6.2	190	5 M 0555	6.6	200	○ 1841	6.2	190	
1148	2.6	80	1120	2.0	60	1233	1.0	30	20 Tu 0551	7.2	220	
1702	4.3	130	1642	3.9	120	1816	4.6	140	W 0625	6.9	210	
2232	2.0	60	2215	1.6	50	2352	1.3	40	Th 1243	0.3	10	
6 Sa 0530	6.9	210	21 Tu 0513	7.2	220	6 Tu 0622	6.9	210	● 1841	6.2	190	
1218	2.0	60	1202	1.3	40	1253	0.7	20	20 F 0630	0.0	0	
1745	4.6	140	1737	4.6	140	1841	4.9	150	W 0638	7.2	220	
2317	1.6	50	2312	1.0	30				Th 1244	0.0	0	
7 Su 0603	7.2	220	22 M 0557	7.9	240	7 W 0022	0.7	20	1852	7.5	230	
1245	1.6	50	1238	0.7	20	0646	7.2	220	20 Sa 0705	7.2	220	
1819	4.9	150	1819	4.9	150	1314	0.3	10	1308	0.0	0	
2353	1.3	40				● 1904	5.6	170	1903	6.6	200	
8 M 0632	7.5	230	23 Tu 0000	0.3	10	8 Th 0050	0.3	10	1919	7.9	240	
1310	1.3	40	0636	8.2	250	0711	7.2	220	21 Sa 0705	0.0	0	
1849	5.2	160	Tu 1311	0.3	10	1335	0.0	0	1330	0.0	0	
● ○	1856	5.6	170	1928	5.9	180	1944	6.9	210	1945	7.9	240
9 Tu 0025	1.3	40	24 W 0042	0.0	0	9 F 0118	0.3	10	23 M 0753	6.6	200	
0659	7.5	230	0712	8.2	250	0735	7.5	230	1345	0.0	0	
1335	1.0	30	1342	0.0	0	1357	0.0	0	1952	7.2	220	
1917	5.2	160	1931	5.9	180	1952	5.9	180	2011	7.9	240	
10 W 0056	1.0	30	25 Th 0122	0.0	0	10 Sa 0145	0.3	10	23 Tu 0753	6.6	200	
0725	7.9	240	0747	8.2	250	0800	7.2	220	1408	0.0	0	
1359	0.7	20	1412	0.0	0	1419	0.0	0	2020	7.2	220	
1944	5.6	170	2006	6.2	190	2018	6.2	190	2051	7.2	220	
11 Th 0125	1.0	30	26 F 0159	0.0	0	11 Su 0214	0.3	10	25 W 0836	5.9	180	
0752	7.9	240	0819	7.9	240	0825	6.9	210	1431	0.3	10	
1423	0.7	20	F 1441	0.0	0	1442	0.0	0	2051	6.9	210	
2012	5.6	170	2039	6.2	190	2046	6.2	190	2104	6.9	210	
12 F 0155	1.0	30	27 Sa 0235	0.3	10	12 M 0245	0.3	10	25 Tu 0836	1.0	30	
0818	7.5	230	0849	7.2	220	0851	6.6	200	1435	1.0	30	
1448	0.7	20	1509	0.0	0	1506	0.3	10	2104	6.9	210	
2041	5.6	170	2114	6.2	190	2117	6.2	190				
13 Sa 0226	1.0	30	28 Su 0311	1.0	30	27 Tu 0317	1.0	30	12 Th 0343	1.6	50	
0846	7.2	220	0917	6.6	200	0906	5.6	170	0921	5.2	160	
1515	0.7	20	1536	0.3	10	1515	0.7	20	1524	1.0	30	
2112	5.6	170	2149	5.9	180	2141	5.9	180	2208	6.2	190	
14 Su 0259	1.3	40	29 M 0347	1.6	50	14 W 0359	1.6	50	27 F 0913	4.6	140	
0915	6.9	210	0943	5.9	180	0947	5.2	160	1511	2.3	70	
1543	1.0	30	1603	1.0	30	1603	1.0	30	● 2203	5.6	170	
2148	5.6	170	2229	5.6	170	● 2242	5.6	170				
15 M 0337	1.6	50	30 Tu 0426	2.3	70	15 Th 0453	2.3	70	13 Sa 0434	2.6	80	
0946	6.2	190	1007	4.9	150	1018	4.3	130	W 0925	4.9	150	
1615	1.0	30	1632	1.3	40	1641	1.3	40	1536	1.0	30	
2232	5.6	170	2318	5.2	160	2358	5.2	160	● 2215	5.6	170	
31 W 0518	3.0	90	31 W 1026	4.3	130	31 Sa 0155	4.3	130	13 O 2314	5.6	170	
			1706	1.6	50							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Kutei River Entrance, Muara Bayor, Borneo, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0431	5.6	170	16 W	0434	6.6	200	1 F	0453	6.6	200
1106	2.3	70		1052	2.0	60		1058	2.0	60	
1714	5.2	160		1705	6.6	200		1719	7.5	230	
2256	2.6	80		2310	2.0	60		2331	2.3	70	
2 W	0503	6.2	190	17 Th	0514	6.9	210	2 Sa	0525	6.9	210
1124	1.6	50		1120	1.6	50		1125	1.6	50	
1731	5.9	180		1735	7.5	230		1746	8.2	250	
2325	2.0	60		2346	1.3	40		○	1812	9.2	280
3 Th	0531	6.6	200	18 F	0547	6.9	210	3 Su	0003	1.6	50
1144	1.3	40		1146	1.3	40		0556	7.2	220	
1752	6.6	200		1803	8.2	250		1152	1.3	40	
2352	1.3	40		●	1813	8.9	270	●	1813	9.2	280
4 F	0557	7.2	220	19 Sa	0018	1.0	30	4 M	0035	1.3	40
1205	1.0	30		0615	7.2	220		0626	7.2	220	
1814	7.2	220		1211	1.0	30		1219	1.0	30	
○	1829	8.5	260	○	1843	9.5	290	1843	9.5	290	
5 Sa	0019	0.7	20	20 Su	0049	1.0	30	5 Tu	0108	1.0	30
0622	7.2	220		0641	7.2	220		0657	7.2	220	
●	1227	0.7	20	1235	1.0	30		1247	1.0	30	
1837	7.9	240		1856	8.9	270		1914	9.5	290	
6 Su	0048	0.3	10	21 M	0117	1.0	30	6 W	0143	1.3	40
0648	7.2	220		0705	6.9	210		0729	6.9	210	
1249	0.3	10		1258	1.0	30		1317	1.3	40	
1902	8.2	250		1922	8.9	270		1948	9.5	290	
7 M	0117	0.3	10	22 Tu	0143	1.3	40	7 Th	0219	2.0	60
0715	7.2	220		0729	6.9	210		0742	6.6	200	
1313	0.3	10		1321	1.0	30		1352	2.3	70	
1930	8.5	260		1947	8.5	260		2023	8.5	260	
8 Tu	0148	0.3	10	23 W	0210	1.6	50	8 F	0258	2.0	60
0742	6.9	210		0753	6.6	200		0837	6.2	190	
1338	0.3	10		1343	1.3	40		1421	2.0	60	
2000	8.5	260		2013	8.2	250		2101	8.5	260	
9 W	0221	0.7	20	24 Th	0237	2.0	60	9 Sa	0341	2.3	70
0810	6.6	200		0816	6.2	190		0918	5.9	180	
1404	0.7	20		1406	1.6	50		1458	2.6	80	
2032	8.2	250		2038	7.9	240		2144	7.9	240	
10 Th	0257	1.3	40	25 F	0306	2.3	70	10 Su	0435	3.0	90
0839	5.9	180		0842	5.9	180		1013	5.2	160	
1431	1.3	40		1428	2.3	70		1544	3.3	100	
2108	7.9	240		2106	7.2	220		●	2241	6.9	210
11 F	0338	2.0	60	26 Sa	0339	3.0	90	11 M	0556	3.6	110
0911	5.2	160		0910	5.2	160		1201	5.2	160	
1501	2.0	60		1450	3.0	90		1716	4.3	130	
2150	6.9	210		2137	6.6	200		●	2304	6.2	190
12 Sa	0434	3.0	90	27 Su	0426	3.6	110	12 Tu	0021	6.2	190
0950	4.6	140		0948	4.6	140		0755	3.6	110	
1535	2.6	80		1510	3.6	110		1447	5.6	170	
●	2253	6.2	190	○	2221	5.9	180	2032	4.3	130	
13 Su	0632	3.6	110	28 M	0620	3.9	120	13 Th	0237	5.9	180
1137	3.9	120		0917	3.3	100		0917	3.6	110	
1645	3.6	110		1557	6.6	200		1557	6.2	190	
14 M	0125	5.6	170	2208	3.6	110		2208	4.6	140	
0930	3.3	100		1613	5.2	160		1639	7.2	220	
1550	4.6	140		2129	4.3	130		2259	3.0	90	
2106	3.6	110		●	2224	3.6	110	●	2331	3.6	110
15 Tu	0337	5.9	180	30 W	0320	5.6	170	14 F	0357	6.2	190
1020	2.6	80		1001	3.0	90		0905	2.6	80	
1633	5.6	170		1632	5.9	180		1713	8.2	250	
2225	2.6	80		2224	3.6	110		2338	2.6	80	
31 Th	0415	6.2	190	31 Th	1032	2.6	80	29 F	0446	6.6	200
1655	6.9	210		1655	6.9	210		1041	2.6	80	
2259	3.0	90		2259	3.0	90		1041	2.6	80	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 1 1227 Tu 2135	ft 2.3 8.9	cm 70 270	h m 16 0456 W 0739	ft 4.9 4.9	cm 150 150	h m 1 0448 F 0819	ft 4.9 5.2	cm 150 160	h m 16 0439 Sa 1145	ft 3.6 6.2	cm 110 190
1344 2140	3.3 8.9	100 270	1340 2124	4.3 7.9	130 240	1612 2142	5.6 6.9	170 210	1257 1945	4.6 6.9	140 210
1306 W 2159	2.6 8.9	80 270	17 0520 Th 0950	4.3 4.9	130 150	17 0518 Su 1301	3.3 6.9	100 210	2 0252 Sa 1416	3.9 5.2	120 160
1347 Th 2222	3.3 8.5	100 260	2 1050 Sa 1439	4.3 4.9	130 150	17 1747 Su 2204	6.2 6.6	190 200	2 0925 Sa 2012	6.2 6.9	190 210
18 0550 F 2302	3.6 7.5	110 230	3 1240 Su 1541	3.3 4.9	100 150	18 0554 M 1920	3.0 6.2	90 190	3 0337 Su 1559	3.3 5.9	100 180
0528 O 2211	3.3 7.2	100 220	3 1614 O 2211	5.9 7.2	180 220	18 2221 O 2221	7.2 6.6	220 200	3 2042 Su 2042	6.6 6.6	200 200
0645 F 0958	4.6 4.6	140 140	4 0601 M 1325	2.6 6.2	80 190	19 0628 Tu 1443	2.6 7.5	80 230	4 0423 M 2045	2.6 6.2	80 190
1435 2242	3.9 8.2	120 250	4 1353 O 2302	6.9 7.5	210 230	19 2232 Tu 2237	6.6 7.2	210 220	19 1304 Tu 2116	3.0 6.6	90 240
0636 Sa 1223	3.9 5.2	120 160	5 0650 Su 1439	3.0 6.6	90 200	20 0701 Tu 1447	2.3 7.9	70 240	5 0510 Tu 1522	2.3 7.9	70 240
1535 O 2302	4.9 7.9	150 240	5 1447 Tu 1820	6.2 6.2	190 190	20 1522 W 1938	6.9 6.9	210 210	5 1318 Tu 1922	6.6 6.2	190 190
0651 Su 1402	3.3 5.9	100 180	6 0720 M 1535	2.3 7.2	70 220	21 0733 Th 1952	2.3 6.9	70 250	6 0558 W 2029	1.6 6.2	50 190
1654 2322	5.9 7.9	180 240	6 1534 W 2324	8.2 6.9	250 210	21 2339 Th 2339	8.2 6.9	250 210	6 1406 W 2252	8.5 6.2	260 190
0717 M 1511	2.3 6.9	70 210	21 1620 Tu 2137	2.3 6.9	70 210	7 0800 Th 2225	1.0 6.9	30 210	22 0805 F 1628	2.0 8.2	60 250
1832 2342	6.6 7.5	200 230	21 1620 Tu 2312	7.5 6.9	230 210	22 2225 Th 2312	8.9 6.9	270 210	7 1449 Th 2118	1.6 5.9	50 180
0749 Tu 1605	1.6 7.5	50 230	23 0817 W 1659	2.0 8.2	60 250	8 0019 F 1700	6.9 9.2	210 280	23 0838 Sa 1659	2.0 8.2	60 250
0002 W 0825	7.5 1.0	230 30	23 1659 W 2328	8.2 6.6	250 200	23 1659 Sa 2328	8.2 6.6	250 200	8 0732 F 2158	1.3 5.9	40 180
1654 2210	8.5 7.2	260 220	24 0846 Th 1735	1.6 8.2	50 250	9 0112 Sa 1741	6.6 9.2	200 280	24 0912 Su 1728	2.3 8.2	70 250
0019 Th 0906	7.2 0.7	220 20	24 0915 F 1808	1.6 8.5	50 260	24 0912 Su 1728	2.3 8.2	70 250	9 0101 Sa 1608	6.2 8.9	190 270
0948 F 1823	0.3 9.5	10 290	25 0915 F 1808	1.6 8.5	50 260	10 0020 Su 1014	6.2 1.3	190 40	10 0208 M 1820	6.2 8.9	190 270
1032 Sa 1906	0.7 9.5	20 290	25 0915 F 1808	1.6 8.5	50 260	10 0020 Su 1014	6.2 1.3	190 40	10 0208 M 1820	6.2 8.9	190 270
27 1018 Su 1911	1.6 8.5	50 260	11 0107 M 1101	5.9 2.0	180 60	26 0032 Tu 1027	5.9 2.6	180 80	11 0317 M 1824	6.2 7.9	190 240
1118 Su 1947	1.0 9.5	30 290	11 0107 M 1858	5.9 8.9	180 270	26 1824 O 1824	5.9 7.9	180 240	11 0955 M 2347	2.6 4.9	190 150
1032 ●	0.7 ●	20 ●	12 0151 Tu 1149	5.6 2.6	170 80	27 0058 W 1110	5.6 3.3	170 100	12 0430 Tu 1851	6.2 7.5	190 230
1118 Su 1947	1.0 9.5	30 290	12 0151 Tu 1149	5.6 2.6	170 80	27 1110 W 1851	5.6 7.5	170 230	12 0430 Tu 1851	6.2 7.5	190 230
1032 ●	0.7 ●	20 ●	13 0234 W 0629	4.9 5.6	150 170	28 0131 Th 1158	5.2 3.9	160 120	13 0025 W 1824	4.6 7.2	140 220
1118 Su 1947	1.0 9.5	30 290	13 0234 W 0629	4.9 5.6	150 170	28 1158 Th 1918	5.2 7.2	160 220	13 0525 W 1824	4.6 7.2	140 220
1205 M 2027	1.6 9.5	50 290	14 0317 Th 1338	4.6 4.3	140 130	14 0106 Th 2044	4.3 7.5	130 230	14 0106 Th 1853	4.3 6.9	130 200
1253 Tu 2105	2.3 9.2	70 280	14 0317 Th 2044	4.6 7.5	140 230	14 0106 Th 1853	4.3 6.9	130 200	15 0149 F 1447	3.9 4.9	120 150
1253 Tu 2105	2.3 9.2	70 280	15 0359 F 1006	3.9 5.9	120 180	15 0149 F 1447	3.9 5.2	120 160	15 0149 F 1407	3.9 5.2	120 160
1253 Tu 2105	2.3 9.2	70 280	15 0359 F 1006	3.9 5.9	120 180	15 0359 F 1115	3.9 7.2	120 220	15 0149 F 1919	3.9 6.6	120 200
1253 Tu 2105	2.3 9.2	70 280	31 1250 Th 2101	3.6 7.9	110 240	31 1250 Th 2101	3.6 7.9	110 240	31 0142 Su 0946	3.0 7.5	90 230

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2013

Times and Heights of High and Low Waters

April					May					June													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 M	0234 1054	2.3 8.2	70 250	16 Tu	0242 1135	2.6 8.2	80 250	1 W	0245 1117	1.3 9.2	40 280	16 Th	0217 1124	2.3 8.5	70 260	1 Sa	0401 1155	2.6 8.9	80 270	16 Su	0248 1123	3.0 7.9	90 240
2 Tu	0329 1150	2.0 8.5	60 260	17 W	0326 1211	2.6 8.2	80 250	2 Th	0340 1159	1.6 9.5	50 290	17 F	0258 1151	2.6 8.5	80 260	2 Su	0009 0459	4.6 3.3	140 100	17 M	0334 1142	3.6 7.9	110 240
3 W	0423 1238	2.0 8.9	60 270	18 Th	0409 1244	2.6 8.2	80 250	3 F	0436 1237	2.0 9.2	60 280	18 Sa	0342 1216	3.0 8.2	90 250	3 M	0141 0559	5.2 4.3	160 130	18 Tu	0100 0428	4.6 4.3	140 130
4 Th	0516 1321	2.0 9.2	60 280	19 F	0452 1312	3.0 8.2	90 250	4 Sa	0532 1312	2.6 8.9	80 270	19 Su	0428 1237	3.3 8.2	100 250	4 Tu	0303 0703	5.6 4.9	170 150	19 W	0232 0533	5.2 4.9	160 150
5 F	0609 1400	2.0 8.9	60 270	20 Sa	0534 1338	3.0 8.2	90 250	5 Su	0108 0628	5.2 3.3	160 100	20 M	0028 0517	4.6 3.6	140 110	5 W	0416 0814	6.2 5.6	190 170	20 Th	0345 0653	5.9 5.6	180 170
6 Sa	0700 1437	5.6 8.9	170 270	21 Su	0006 0617	4.9 3.3	150 100	6 M	0226 0724	5.6 3.9	170 120	21 Tu	0153 0610	4.9 4.3	150 130	6 Th	0521 0940	6.9 6.2	210 190	21 F	0445 0828	6.9 6.2	210 190
7 Su	0145 0752	5.6 3.0	170 90	22 M	0118 0702	5.2 3.6	160 110	7 Tu	0340 0824	5.9 4.9	180 150	22 W	0310 0710	5.6 4.9	170 150	7 F	0619 2211	7.2 1.3	220 40	22 Sa	0539 1018	7.5 6.6	230 200
8 M	0255 0844	5.9 3.6	180 110	23 Tu	0227 0750	5.6 3.9	170 120	8 W	0451 0930	6.6 5.6	200 170	23 Th	0423 0821	6.2 5.6	190 170	8 Sa	0709 2240	7.9 1.3	240 40	23 O	0628 2233	8.2 0.0	250 0
9 Tu	0406 0939	6.2 4.3	190 130	24 W	0338 0844	5.9 4.6	180 140	9 Th	0600 1052	6.9 5.9	210 180	24 F	0533 0949	6.9 6.2	210 190	9 Su	0753 2311	8.2 1.3	250 40	24 M	0715 2318	8.5 0.0	260 0
10 W	0518 1039	6.6 4.9	200 150	25 Th	0453 0947	6.2 5.2	190 160	10 F	0706 2315	7.5 2.0	230 60	25 Sa	0637 1150	7.5 6.6	230 200	10 M	0832 1412	8.2 6.6	250 200	25 Tu	0800 2255	9.2 1.0	280 30
11 Th	0634 1152	6.6 5.6	200 170	26 F	0611 1108	6.9 5.9	210 180	11 Sa	0804 2347	7.9 2.0	240 60	26 Su	0735 2340	8.2 0.7	250 20	11 Tu	0908 0908	8.5 8.5	260 260	26 W	0005 0843	0.3 9.2	10 280
12 F	0001 0749	3.0 7.2	90 220	27 Sa	0729 1303	7.5 6.2	230 190	12 Su	0856 1553	8.2 6.2	250 190	27 M	0827 1011	8.9 9.2	270 280	12 W	0016 0940	1.3 8.5	40 260	27 Th	0055 0924	0.7 9.2	20 280
13 Sa	0038 0901	3.0 7.5	90 230	28 Su	0008 0838	1.6 8.2	50 250	13 M	0022 0939	2.0 8.2	60 250	28 Tu	0027 0915	0.7 9.2	20 280	13 Th	0051 1011	1.6 8.5	50 260	28 F	0147 1004	1.3 8.9	40 270
14 Su	0118 1002	2.6 7.9	80 240	29 M	0058 0938	1.6 8.5	50 260	14 Tu	0059 1018	2.0 8.5	60 260	29 W	0118 1000	0.7 9.5	20 290	14 F	0128 1038	2.0 8.5	60 260	29 Sa	0241 1040	2.3 8.5	70 260
15 M	0159 1052	2.6 7.9	80 240	30 Tu	0150 1030	1.3 9.2	40 280	15 W	0137 1053	2.0 8.5	60 260	30 Th	0211 1041	1.3 9.5	40 290	15 Sa	0206 1102	2.3 8.2	70 250	30 O	0338 1113	3.3 8.2	100 250
													31 F	0305 1120	1.6 9.2	50 280							
														1913 2220	3.9 4.3	120 130							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2013

Times and Heights of High and Low Waters

July				August				September					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 M 0029	4.9	150	16 0313	3.9	120	1 Th 0254	6.6	200	16 0211	6.6	200		
0440	3.9	120	Tu 1050	7.2	220	0736	5.6	170	F 0701	5.6	170		
1142	7.5	230	1838	3.0	90	1140	6.2	190	1057	6.2	190		
1915	2.3	70	●	1935	1.6	50	1854	1.3	40	1854	0.7	20	
2 Tu 0201	5.6	170	17 0126	4.9	150	2 F 0345	6.9	210	17 0259	7.2	220		
0548	4.9	150	W 0423	4.9	150	0857	5.9	180	Sa 0819	5.9	180		
1205	7.2	220	1110	6.9	210	1151	5.9	180	1136	6.2	190		
1945	2.0	60	1900	2.3	70	2007	1.3	40	1936	0.7	20		
3 W 0317	5.9	180	18 0242	5.9	180	3 Sa 0429	7.2	220	18 0343	7.5	230		
0704	5.6	170	0553	5.6	170	1020	5.9	180	Su 0924	5.9	180		
1222	6.9	210	1131	6.9	210	1150	5.9	180	1224	6.2	190		
2014	1.6	50	1931	1.3	40	2038	1.3	40	2021	0.7	20		
4 Th 0420	6.6	200	19 0338	6.6	200	4 Su 0508	7.2	220	19 M 0426	7.9	240		
0829	5.9	180	0729	5.9	180	2109	1.3	40	1020	5.6	170		
1229	6.6	200	1156	6.9	210	●	2107	0.7	20	1320	5.9	180	
2043	1.3	40	2007	0.7	20	●	2107	0.7	20	2104	2.3	70	
5 F 0513	7.2	220	20 0426	7.2	220	5 M 0544	7.5	230	5 0507	7.9	240		
1011	6.2	190	0904	6.2	190	2140	1.3	40	Tu 1111	5.6	170		
1216	6.6	200	1222	6.6	200	●	1421	5.9	180	1421	0.7	20	
2112	1.0	30	2047	0.3	10	●	2154	0.7	20	2219	2.6	80	
6 Sa 0559	7.5	230	21 0511	7.9	240	6 Tu 0618	7.5	230	6 0547	7.9	240		
2141	1.0	30	1038	6.6	200	2212	1.3	40	W 1159	5.2	160		
●	●	●	1252	6.6	200	●	1530	5.6	170	●	2244	1.3	40
●	●	●	2129	0.0	0	●	●	●	●	●	●		
7 Su 0640	7.9	240	22 0555	8.2	250	7 W 0650	7.5	230	22 0627	7.9	240		
2211	1.0	30	1213	6.2	190	2246	1.6	50	Th 1247	4.9	150		
●	●	●	1323	6.2	190	●	1645	5.6	170	1323	2.0	60	
●	●	●	2213	0.0	0	●	2335	2.0	60	●	●	●	
8 M 0717	7.9	240	23 0638	8.5	260	8 Th 0722	7.2	220	23 M 0707	7.5	230		
2241	1.0	30	Tu 2300	0.3	10	●	1335	4.3	130	1809	5.2	160	
●	●	●	●	●	●	●	●	●	●	●	●		
9 Tu 0751	7.9	240	24 0720	8.5	260	9 F 0751	7.2	220	24 0031	2.6	80		
2313	1.0	30	W 2348	0.7	20	●	0745	6.9	210	Sa 0745	3.9	120	
●	●	●	●	●	●	●	●	●	●	●	●		
10 W 0824	8.2	250	25 0802	8.5	260	10 Sa 0000	2.3	70	25 0135	3.6	110		
2346	1.3	40	Th 1521	4.9	150	0819	6.9	210	Su 0823	6.6	200		
●	●	●	1706	4.9	150	●	1512	3.6	110	M 1512	3.6	110	
●	●	●	●	●	●	●	●	●	●	●	●		
11 Th 0855	7.9	240	26 0038	1.3	40	11 Su 0042	3.0	90	26 0249	4.3	130		
●	●	●	0841	8.2	250	0844	6.9	210	M 0859	6.2	190		
●	●	●	1559	4.3	130	1609	4.3	130	1600	3.0	90		
●	●	●	1901	4.6	140	1935	4.6	140	2255	5.9	180		
●	●	●	●	●	●	●	●	●	●	●	●		
12 F 0020	1.6	50	27 0133	2.3	70	12 Sa 0131	3.6	110	27 0415	4.6	140		
0923	7.9	240	0920	7.9	240	0908	6.6	200	Tu 0934	5.9	180		
●	●	●	1637	3.9	120	1630	3.9	120	1645	2.6	80		
●	●	●	2100	4.6	140	●	2158	4.9	150	●	●	●	
●	●	●	●	●	●	●	●	●	●	●	●		
13 Sa 0057	2.0	60	28 0231	3.0	90	13 Tu 0234	4.3	130	28 0013	6.2	190		
0948	7.9	240	0956	7.5	230	0932	6.6	200	W 0544	4.9	150		
●	●	●	1715	3.3	100	1700	3.3	100	1008	5.9	180		
●	●	●	2254	4.9	150	2352	5.2	160	●	1728	2.3	70	
●	●	●	●	●	●	●	●	●	●	●	●		
14 Su 0136	2.6	80	29 0337	3.9	120	14 W 0356	4.9	150	29 0115	6.6	200		
1011	7.5	230	1029	7.2	220	0956	6.2	190	Th 0706	5.2	160		
1850	3.9	120	M 1752	2.6	80	1735	2.3	70	1038	5.6	170		
2048	3.9	120	●	●	●	●	●	●	1808	2.3	70		
●	●	●	●	●	●	●	●	●	●	●	●		
15 M 0220	3.3	100	30 0032	5.6	170	15 Th 0112	5.9	180	30 0205	6.9	210		
1031	7.2	220	0452	4.6	140	0531	5.2	160	Sa 0815	5.2	160		
1826	3.6	110	1058	6.6	200	1024	6.2	190	1106	5.6	170		
2335	4.3	130	●	1828	2.3	70	1813	1.6	50	1845	2.0	60	
●	●	●	●	●	●	●	●	●	●	●	●		
●	●	●	●	●	●	●	●	●	●	●	●		
16 W 0151	5.9	180	31 0614	5.2	160	●	●	●	31 0248	7.2	220		
0948	7.9	240	1122	6.6	200	●	●	●	Sa 0909	5.2	160		
●	●	●	1902	2.0	60	●	●	●	1135	5.6	170		
●	●	●	●	●	●	●	●	●	1921	2.0	60		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2013

Times and Heights of High and Low Waters

October				November				December						
	Time	Height			Time	Height			Time	Height				
	h m	ft cm		h m	ft cm			h m	ft cm		h m	ft cm		
1 Tu	0244	7.5 230		16 W	0235	7.9 240		1 F	0214	7.2 220		16 M	0951 1840	
	0930	4.6 140			0920	3.6 110			0921	3.6 110			1.6 50	
	1314	5.2 160			1442	5.9 180			1543	5.9 180			2.0 60	
	1940	3.0 90			2022	3.3 100			2027	4.9 150			2.3 70	
2 W	0310	7.2 220		17 Th	0306	7.5 230		2 Sa	0232	6.9 210		2 M	0132 0948	
	0945	4.6 140			0950	3.3 100			1020	2.0 60			1.6 50	
	1406	5.2 160			1552	6.2 190			1841	7.9 240			2.9 270	
	2021	3.3 100			2122	3.9 120			O				O	
3 Th	0335	6.9 210		18 F	0334	7.2 220		3 Su	0249	6.9 210		3 Tu	0129 1026	
	1003	4.3 130			1022	3.0 90			1016	2.6 80			1.3 40	
	1502	5.6 170			1702	6.6 200			1759	6.9 210			8.9 270	
	2104	3.6 110			2228	4.9 150			●	5.9 180				
4 F	0358	6.9 210		19 Sa	0358	6.6 200		4 M	0302	6.6 200		4 W	1109 1958	
	1027	4.3 130			1055	2.6 80			1052	2.3 70			9.2 280	
	1604	5.9 180			1814	6.9 210			1937	8.2 250			9.2 280	
	2153	3.9 120			O	2349	5.2 160		●					
5 Sa	0421	6.6 200		20 Su	0416	6.2 190		5 Tu	0100	6.2 190		5 Th	1155 2044	
	1055	3.6 110			1130	2.6 80			0257	6.2 190			9.5 290	
	1714	5.9 180			1924	7.2 220			1134	1.6 50			9.2 280	
	●	2250							2010	8.2 250				
6 Su	0442	6.2 190		21 M	0141	5.6 170		6 W	1221	1.6 50		6 F	1244 2128	
	1130	3.3 100			0417	5.9 180			2107	8.5 260			9.8 300	
	1832	6.2 190			1208	2.3 70			2149	8.9 270			8.9 270	
					2030	7.5 230								
7 M	0002	4.9 150		22 Tu	1247	2.3 70		7 Th	1311	1.3 40		7 Sa	1335 2209	
	0503	5.9 180			2129	7.9 240			2157	9.2 280			9.8 300	
	1212	3.0 90							2225	8.9 270				
	1954	6.9 210							2248	2.0 60				
8 Tu	0143	5.6 170		23 W	1329	2.3 70		8 F	1405	1.6 50		8 Su	1430 2248	
	0521	5.9 180			2219	8.2 250			2243	9.5 290			9.5 290	
	1259	2.6 80							2256	2.6 80				
	2112	7.2 220							2325	8.9 270				
9 W	0408	5.6 170		24 Th	1412	2.6 80		9 Sa	1501	2.0 60		9 M	0647 0944	
	0524	5.6 170			2303	8.2 250			2325	9.5 290			4.6 140	
	1351	2.3 70							1429	3.0 90			3.0 90	
	2218	7.9 240							2324	9.2 280			O	
10 Th	1446	2.0 60		25 F	1456	2.6 80		10 Su	0737	4.6 140		10 Tu	0702 1142	
	2314	8.2 250			2341	8.5 260			0917	4.6 140			4.9 150	
									1558	2.3 70				
									●					
11 F	1543	2.0 60		26 Sa	1541	3.0 90		11 M	0004	9.2 280		11 W	0727 1318	
									0739	4.3 130			5.6 150	
									1117	4.9 150			1.6 2334	
									1657	3.0 90			7.9 240	
12 Sa	0002	8.5 260		27 Su	0014	8.2 250		12 Tu	0040	8.9 270		12 Th	0025 0754	
	0750	4.9 150			1626	3.0 90			0759	3.9 120			8.5 180	
	0908	4.9 150							1249	5.2 160			2.6 1658	
	●	1638							1756	3.6 110			6.2 1735	
										1645	4.3 130			1.6 2351
13 Su	0045	8.5 260		28 M	0044	8.2 250		13 W	0112	8.5 260		13 F	0048 0822	
	0802	4.9 150			0846	4.6 140			0824	3.3 100			7.9 210	
	1052	4.9 150			1124	4.6 140			1409	5.6 170			6.9 210	
	1734	2.0 60			1710	3.3 100			1858	4.3 130			2.0 2002	
14 M	0125	8.5 260		29 Tu	0110	7.9 240		14 Th	0140	8.2 250		14 Sa	0104 0852	
	0825	4.6 140			0845	4.3 130			0851	3.0 90			2.0 1657	
	1216	5.2 160			1235	4.9 150			1523	6.2 190			6.6 2136	
	1829	2.3 70			1755	3.6 110			2004	4.9 150			6.6 200	
15 Tu	0201	8.5 260		30 W	0133	7.9 240		15 F	0203	7.5 230		15 Sa	0104 0847	
	0851	4.3 130			0851	4.3 130			0920	2.6 80			1.6 1752	
	1331	5.6 170			1338	5.2 160			1634	6.9 210			8.2 2156	
	1925	3.0 90			1842	3.9 120			2117	5.6 170			7.2 220	
					31 Th	0155	7.5 230						31 Tu	0038 0924
						0903	3.9 120							1.0 8.5
						1440	5.6 170							30 260
						1931	4.3 130							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pages 172 through 175 intentionally omitted

Davao, Philippines, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0155	-1.0	-30	16 W	0231	-1.0	-30	1 F	0232	-0.7	-20
0807	4.3	130		0844	4.6	140		0844	4.9	150	
1349	0.0	0		1444	-0.3	-10		1448	-0.3	-10	
2001	4.9	150		2049	4.9	150		2056	4.6	140	
2 W	0224	-0.7	-20	17 Th	0303	-0.7	-20	2 Sa	0304	-0.3	-10
0837	4.3	130		0920	4.3	130		0921	4.6	140	
1424	0.0	0		1526	0.0	0		1532	0.0	0	
2035	4.9	150		2125	4.3	130		2136	3.9	120	
3 Th	0256	-0.3	-10	18 F	0337	0.0	0	3 Su	0340	0.3	10
0911	4.3	130		0959	4.3	130		1006	4.3	130	
1504	0.3	10		1612	0.7	20		1628	0.7	20	
2114	4.3	130		2205	3.6	110		2228	3.3	100	
4 F	0332	0.0	0	19 Sa	0414	0.3	10	4 M	0425	0.7	20
0952	3.9	120		1046	3.9	120		1108	3.9	120	
1554	0.7	20		1710	1.0	30		1750	1.0	30	
2201	3.9	120		2253	3.0	90		2349	2.6	80	
5 Sa	0415	0.3	10	20 Su	0502	1.0	30	5 Tu	0535	1.3	40
1044	3.9	120		1154	3.6	110		1242	3.9	120	
1658	0.7	20		1836	1.3	40		1950	1.0	30	
2302	3.3	100									
6 Su	0511	0.7	20	21 M	0016	2.3	70	6 W	0204	2.6	80
1154	3.9	120		0613	1.3	40		0731	1.3	40	
1827	1.0	30		1334	3.3	100		1426	4.3	130	
				2049	1.0	30		2133	0.3	10	
7 M	0028	3.0	90	22 Tu	0251	2.3	70	7 Th	0353	3.0	90
0628	1.0	30		0756	1.3	40		0913	1.0	30	
1321	3.9	120		1457	3.6	110		1541	4.6	140	
2012	0.7	20		2203	0.7	20		2232	-0.3	-10	
8 Tu	0224	3.0	90	23 W	0407	2.6	80	8 F	0447	3.6	110
0801	1.0	30		0926	1.3	40		1018	0.3	10	
1444	4.3	130		1554	3.9	120		1636	5.2	160	
2137	0.0	0		2246	0.3	10		2314	-0.7	-20	
9 W	0354	3.3	100	24 Th	0452	3.0	90	9 Sa	0527	4.3	130
0920	0.7	20		1020	0.7	20		1108	0.0	0	
1549	4.9	150		1637	4.6	140		1722	5.6	170	
2236	-0.7	-20		2319	-0.3	-10		2351	-1.0	-30	
10 Th	0451	3.6	110	25 F	0524	3.6	110	10 Su	0602	4.6	140
1021	0.3	10		1059	0.3	10		1151	-0.7	-20	
1643	5.6	170		1713	4.9	150		1803	5.9	180	
2323	-1.3	-40		2347	-0.7	-20					
11 F	0537	3.9	120	26 Sa	0553	3.9	120	11 M	0026	-1.3	-40
1112	-0.3	-10		1134	0.0	0		0635	4.9	150	
1730	5.9	180		1747	5.2	160		1231	-1.0	-30	
								1841	5.9	180	
12 Sa	0004	-1.6	-50	27 Su	0014	-1.0	-30	12 Tu	0059	-1.3	-40
0617	4.3	130		0621	4.3	130		0707	5.2	160	
1159	-0.7	-20		1207	-0.3	-10		1309	-1.0	-30	
● 1814	6.2	190		1819	5.2	160		1917	5.9	180	
13 Su	0044	-1.6	-50	28 M	0042	-1.0	-30	13 W	0130	-1.3	-40
0656	4.6	140		0649	4.6	140		0738	5.2	160	
1242	-0.7	-20		1238	-0.3	-10		1344	-1.0	-30	
1855	6.2	190		1849	5.6	170		1950	5.6	170	
14 M	0121	-1.6	-50	29 Tu	0109	-1.3	-40	14 Th	0158	-1.0	-30
0733	4.6	140		0717	4.6	140		0808	5.2	160	
1324	-0.7	-20		1307	-0.7	-20		1419	-0.7	-20	
1935	5.9	180		1919	5.6	170		2022	4.9	150	
15 Tu	0157	-1.3	-40	30 W	0135	-1.0	-30	15 F	0226	-0.7	-20
0809	4.6	140		0743	4.9	150		0839	4.9	150	
1404	-0.7	-20		1337	-0.7	-20		1453	0.0	0	
2013	5.6	170		1949	5.2	160		2052	4.6	140	
				31 Th	0202	-1.0	-30				
				0812	4.9	150					
				1411	-0.3	-10					
				2021	5.2	160					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Davao, Philippines, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0214 0.3 10 0833 5.6 170 1504 0.0 0 2109 4.3 130	16 Tu 0214 1.0 30 0831 4.9 150 1503 0.7 20 2112 3.6 110	1 W 0246 1.0 30 0908 5.2 160 1548 0.3 10 2206 3.9 120	16 Th 0228 1.3 40 0843 4.6 140 1517 0.7 20 2141 3.6 110	1 Sa 0458 1.3 40 1106 4.3 130 1731 1.0 30	16 Su 0351 1.3 40 0958 4.3 130 1617 1.0 30 2251 4.3 130						
2 Tu 0252 0.7 20 0919 5.2 160 1558 0.7 20 2204 3.6 110	17 W 0244 1.3 40 0906 4.6 140 1545 1.0 30 2159 3.3 100	2 Th 0343 1.3 40 1009 4.6 140 1654 1.0 30 2324 3.6 110	17 F 0312 1.6 50 0929 4.3 130 1604 1.0 30 2236 3.6 110	2 Su 0013 4.3 130 0626 1.6 50 1235 3.6 110 1844 1.3 40	17 M 0501 1.3 40 1105 3.9 120 1718 1.3 40 2357 4.3 130						
3 W 0341 1.3 40 1019 4.6 140 1713 1.0 30 2330 3.3 100	18 Th 0324 1.6 50 0955 4.3 130 1651 1.3 40 2314 3.3 100	3 F 0507 1.6 50 1132 4.3 130 1819 1.3 40	18 Sa 0414 2.0 60 1031 3.9 120 1710 1.3 40 2347 3.6 110	3 M 0126 4.3 130 0754 1.3 40 1402 3.6 110 1955 1.3 40	18 Tu 0629 1.3 40 1228 3.6 110 1833 1.3 40						
4 Th 0500 2.0 60 1152 4.3 130 1901 1.3 40	19 F 0433 2.0 60 1111 3.9 120 1836 1.6 50	4 Sa 0057 3.6 110 0655 1.6 50 1313 3.9 120 1943 1.3 40	19 Su 0545 2.0 60 1153 3.9 120 1834 1.3 40	4 Tu 0229 4.6 140 0904 1.0 30 1511 3.9 120 2054 1.3 40	19 W 0110 4.6 140 0753 1.0 30 1400 3.6 110 1948 1.3 40						
5 F 0135 3.3 100 0711 2.0 60 1343 4.3 130 2036 1.0 30	20 Sa 0105 3.3 100 0648 2.3 70 1310 3.9 120 2000 1.3 40	5 Su 0215 4.3 130 0828 1.3 40 1435 4.3 130 2048 1.0 30	20 M 0105 3.9 120 0722 1.6 50 1329 3.9 120 1946 1.3 40	5 W 0319 4.9 150 0956 0.3 10 1604 3.9 120 2142 1.0 30	20 Th 0219 4.9 150 0902 0.3 10 1517 3.9 120 2053 1.0 30						
6 Sa 0303 3.9 120 0854 1.3 40 1504 4.6 140 2134 0.7 20	21 Su 0226 3.6 110 0823 1.6 50 1439 4.3 130 2058 1.0 30	6 M 0310 4.6 140 0930 0.7 20 1535 4.6 140 2136 1.0 30	21 Tu 0211 4.6 140 0835 1.0 30 1447 3.9 120 2044 1.0 30	6 Th 0403 5.2 160 1038 0.0 0 1648 4.3 130 2223 0.7 20	21 F 0318 5.2 160 0959 0.3 10 1616 4.3 130 2149 0.7 20						
7 Su 0352 4.3 130 0953 0.7 20 1600 4.9 150 2216 0.3 10	22 M 0316 4.3 130 0922 1.0 30 1534 4.6 140 2142 0.7 20	7 Tu 0353 4.9 150 1016 0.3 10 1623 4.6 140 2216 0.7 20	22 W 0304 4.9 150 0931 0.3 10 1545 4.3 130 2132 0.7 20	7 F 0440 5.2 160 1115 0.3 10 1725 4.3 130 2259 0.7 20	22 Sa 0411 5.9 180 1049 0.7 20 1706 4.6 140 2240 0.3 10						
8 M 0429 4.9 150 1037 0.3 10 1644 5.2 160 2252 0.0 0	23 Tu 0355 4.9 150 1007 0.3 10 1619 4.9 150 2219 0.3 10	8 W 0430 5.6 170 1055 0.0 0 1703 4.9 150 2251 0.3 10	23 Th 0349 5.6 170 1019 0.3 10 1634 4.6 140 2216 0.3 10	8 Sa 0515 5.6 170 1148 0.3 10 1759 4.3 130 2334 0.7 20	23 Su 0500 6.2 190 1135 1.0 30 1752 4.6 140 2328 0.0 0						
9 Tu 0502 5.6 170 1115 -0.3 -10 1723 5.2 160 2324 0.0 0	24 W 0431 5.6 170 1047 0.0 0 1700 5.2 160 2254 0.0 0	9 Th 0504 5.6 170 1131 -0.3 -10 1739 4.9 150 2323 0.3 10	24 F 0433 5.9 180 1103 -0.7 -20 1719 4.9 150 2259 0.0 0	9 Sa 0548 5.6 170 1218 0.7 20 1831 4.3 130	24 M 0547 6.6 200 1219 1.3 40 1836 4.9 150						
10 W 0534 5.9 180 1151 -0.7 -20 1759 5.6 170 2354 -0.3 -10	25 Th 0505 5.9 180 1125 -0.7 -20 1738 5.2 160 2328 0.0 0	10 F 0535 5.9 180 1203 -0.7 -20 1812 4.9 150 2354 0.3 10	25 Sa 0515 6.2 190 1147 -1.0 -30 1802 4.9 150 2341 0.0 0	10 M 0008 0.7 20 0620 5.6 170 1249 -0.7 -20 1903 4.3 130	25 Tu 0015 0.0 0 0632 6.6 200 1302 1.3 40 1918 4.9 150						
11 Th 0603 5.9 180 1224 -0.7 -20 1831 5.2 160	26 F 0540 6.2 190 1204 -1.0 -30 1817 5.2 160 O	11 Sa 0606 5.9 180 1234 -0.7 -20 1844 4.6 140	26 Su 0558 6.6 200 1230 -1.3 -40 1845 4.9 150	11 Tu 0041 0.7 20 0651 5.2 160 1319 -0.3 -10 1936 4.3 130	26 W 0102 0.0 0 0716 6.2 190 1344 -1.0 -30 2001 4.9 150						
12 F 0022 -0.3 -10 0632 5.9 180 1256 -0.7 -20 1901 5.2 160	27 Sa 0004 -0.3 -10 0617 6.6 200 1244 -1.0 -30 1855 5.2 160	12 Su 0025 0.3 10 0636 5.6 170 1305 -0.3 -10 1916 4.6 140	27 M 0024 0.0 0 0641 6.6 200 1313 -1.0 -30 1929 4.9 150	12 W 0112 0.7 20 0721 5.2 160 1349 -0.3 -10 2008 4.3 130	27 Th 0149 0.0 0 0801 5.9 180 1425 -0.7 -20 2045 4.9 150						
13 Sa 0051 0.0 0 0701 5.9 180 1326 -0.3 -10 1931 4.9 150	28 Su 0041 0.0 0 0656 6.6 200 1325 -1.0 -30 1936 4.9 150	13 M 0056 0.7 20 0707 5.6 170 1336 -0.3 -10 1949 4.3 130	28 Tu 0109 0.0 0 0725 6.2 190 1357 -0.7 -20 2014 4.6 140	13 W 0142 1.0 30 0751 4.9 150 1418 0.0 0 2039 4.3 130	28 F 0238 0.3 10 0846 5.2 160 1507 0.0 0 2131 4.6 140						
14 Su 0119 0.3 10 0731 5.6 170 1357 -0.3 -10 2003 4.6 140	29 M 0119 0.0 0 0736 6.2 190 1408 -0.7 -20 2019 4.6 140	14 Tu 0125 0.7 20 0737 5.2 160 1407 0.0 0 2022 4.3 130	29 W 0155 0.3 10 0811 5.9 180 1443 -0.3 -10 2102 4.6 140	14 F 0216 1.0 30 0825 4.9 150 1451 0.3 10 2114 4.3 130	29 Sa 0331 0.7 20 0934 4.6 140 1550 0.3 10 2222 4.6 140						
15 M 0147 0.7 20 0801 5.2 160 1429 0.3 10 2035 3.9 120	30 Tu 0200 0.3 10 0820 5.9 180 1454 0.0 0 2107 4.3 130	15 W 0155 1.0 30 0808 4.9 150 1439 0.3 10 2058 3.9 120	30 Th 0245 0.7 20 0900 5.2 160 1532 0.0 0 2156 4.3 130	15 Sa 0258 1.3 40 0907 4.6 140 1529 0.7 20 2157 4.3 130	30 Su 0433 1.0 30 1029 3.9 120 1639 1.0 30 2322 4.3 130						
				31 F 0344 1.3 40 0956 4.6 140 1626 0.7 20 2300 4.3 130							

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Davao, Philippines, 2013

Times and Heights of High and Low Waters

July				August				September				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0547	1.3	40	16 Tu 0426	1.0	30	1 Th 0058	3.9	120	16 F 0706	1.3	40	
1142	3.3	100	1025	3.6	110	0808	1.3	40	1317	3.0	90	
1739	1.3	40	1626	1.0	30	1422	3.0	90	1838	1.6	50	
●	2307	4.6	140	1923	2.0	60				2133	1.6	50
2 Tu 0034	4.3	130	17 W 0548	1.3	40	2 F 0222	4.3	130	17 Sa 0132	4.6	140	
0714	1.3	40	1144	3.3	100	0925	1.0	30	0839	0.7	20	
1320	3.3	100	1734	1.3	40	1536	3.3	100	1504	3.3	100	
1853	1.6	50				2050	1.6	50	2022	1.6	50	
3 W 0147	4.3	130	18 Th 0025	4.6	140	3 Sa 0322	4.6	140	18 Su 0254	4.9	150	
0837	1.0	30	0723	1.0	30	1013	0.7	20	0943	0.3	0	
1446	3.3	100	1327	3.3	100	1623	3.6	110	1602	3.9	120	
2009	1.6	50	1903	1.3	40	2148	1.3	40	2134	1.0	30	
4 Th 0250	4.6	140	19 F 0149	4.9	150	4 Su 0407	4.9	150	19 M 0353	5.6	170	
0940	0.7	20	0846	0.7	20	1049	0.0	0	1030	-0.3	-10	
1549	3.3	100	1504	3.3	100	1657	3.9	120	1645	4.6	140	
2113	1.3	40	2028	1.3	40	2230	1.0	30	2228	0.3	10	
5 F 0341	4.6	140	20 Sa 0301	5.2	160	5 M 0445	5.2	160	20 Tu 0443	5.9	180	
1026	0.3	10	0950	0.0	0	1118	-0.3	-10	1110	-0.7	-20	
1636	3.6	110	1608	3.9	120	1726	4.3	130	1723	5.2	160	
2202	1.0	30	2135	1.0	30	2306	0.7	20	2314	0.0	0	
●	2351	0.0							●	2351	0.0	
6 Sa 0423	4.9	150	21 Su 0400	5.6	170	6 Tu 0519	5.2	160	21 W 1144	6.2	190	
1104	0.0	0	1041	-0.7	-20	1144	-0.3	-10	1148	-1.0	-20	
1714	3.9	120	1658	4.3	130	1754	4.6	140	1800	5.6	170	
2243	1.0	30	2231	0.3	10	2339	0.3	10	○	2357	-0.3	
7 Su 0500	5.2	160	22 M 0451	6.2	190	7 W 0551	5.6	170	22 Th 0608	6.2	190	
1136	-0.3	-10	1125	-1.0	-30	1211	-0.7	-20	1223	-1.0	-30	
1746	4.3	130	1741	4.6	140	1822	4.9	150	1835	5.9	180	
2320	0.7	20	2321	0.0	0	●						
8 M 0534	5.2	160	23 Tu 0538	6.2	190	8 Th 0011	0.3	10	23 F 0038	-0.7	-20	
1204	-0.3	-10	1207	-1.3	-40	0621	5.6	170	0646	6.2	190	
1817	4.3	130	1821	4.9	150	1238	-0.7	-20	1257	-0.7	-10	
●	2355	0.7	20	○			1849	4.9	150	1845	5.9	180
9 Tu 0607	5.2	160	24 W 0008	-0.3	-10	9 F 0041	0.0	0	24 Sa 0722	-0.3	-10	
1233	-0.7	-20	0621	6.2	190	0649	5.6	170	1328	-0.7	-20	
1847	4.6	140	1246	-1.3	-40	1303	-0.3	-10	1941	5.6	170	
			1900	5.2	160	1916	5.2	160	1945	5.9	180	
10 W 0027	0.3	10	25 Th 0053	-0.3	-10	10 Sa 0110	0.0	0	25 Su 0156	-0.3	-10	
0638	5.2	160	0704	6.2	190	0718	5.6	170	0757	5.2	160	
1301	-0.7	-20	1324	-1.0	-30	1328	-0.3	-10	1357	0.0	0	
1917	4.6	140	1938	5.2	160	1942	5.2	160	2014	5.6	170	
11 Th 0058	0.3	10	26 F 0136	-0.3	-10	11 Su 0143	0.0	0	26 M 0235	0.3	10	
0707	5.2	160	0744	5.9	180	0749	5.2	160	0831	4.6	140	
1328	-0.3	-10	1359	-0.7	-20	1357	0.0	0	1428	0.3	10	
1945	4.6	140	2016	5.2	160	2013	5.2	160	2049	5.2	160	
12 F 0128	0.7	20	27 Sa 0220	0.0	0	12 M 0220	0.3	10	27 Tu 0318	0.7	20	
0736	5.2	160	0823	5.2	160	0823	4.9	150	0907	3.9	120	
1355	-0.3	-10	1434	-0.3	-10	1428	0.3	10	1500	1.0	30	
2013	4.6	140	2054	4.9	150	2048	5.2	160	2128	4.6	140	
13 Sa 0201	0.7	20	28 Su 0306	0.3	10	13 Tu 0303	0.7	20	28 W 0410	1.3	40	
0807	4.9	150	0903	4.6	140	0903	4.3	130	0951	3.3	100	
1424	0.0	0	1508	0.3	10	1503	0.7	20	1536	1.3	40	
2044	4.6	140	2135	4.9	150	2130	4.9	150	○	2218	4.3	
14 Su 0239	0.7	20	29 M 0357	1.0	30	14 W 0358	1.0	30	29 Th 0528	1.6	50	
0844	4.6	140	0945	3.9	120	0954	3.6	110	1104	3.3	100	
1458	0.3	10	1546	1.0	30	1545	1.0	30	1631	2.0	60	
2121	4.6	140	2222	4.6	140	○	2227	4.6	140	2341	3.9	120
15 M 0326	1.0	30	30 Tu 0501	1.3	40	15 Th 0519	1.3	40	30 F 0722	1.6	50	
0928	4.3	130	1040	3.3	100	1114	3.3	100	1356	2.6	80	
1537	0.7	20	1634	1.3	40	1648	1.6	50	1838	2.3	70	
2207	4.6	140	○	2327	4.3	130	2351	4.6	140	○	2326	4.3
31 W 0626	1.3	40	31 W 1216	3.0	90	31 Sa 1745	1.6	50	31 Sa 0146	3.9	120	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Davao, Philippines, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0316 0.7 130	4.3	130		16 W 0333 0.9 150	4.9	150		1 Sa 0407 1.0 140	4.6	140	
0937 0.7 20				W 0945 0.3 10				Sa 1003 0.3 10	0.0	0	
1551 4.3 130				F 1601 5.2 160				F 1617 5.2 160	5.6	170	
2150 1.0 30				2214 0.0 0				Sa 2234 -0.3 -10	-1.0	-30	
								Sa 2321 -1.0 -30			
								Su 2256 -1.0 -30			
2 W 0357 0.3 140	4.6	140		17 Th 0420 1.0 160	5.2	160		2 M 0446 0.0 150	4.9	150	
1009 0.3 10				Th 1024 0.0 0				Sa 1037 0.0 0			
1621 4.9 150				M 1636 5.6 170				F 1650 5.9 180			
2224 0.3 10				2253 -0.3 -10				Su 1725 5.9 180			
								O 2356 -1.0 -30			
3 Th 0433 0.0 160	5.2	160		18 F 0501 0.0 160	5.2	160		3 M 0523 0.0 150	4.9	150	
1040 0.0 0				F 1059 -0.3 -10				Su 1110 -0.3 -10			
1650 5.2 160				M 1710 5.9 180				F 1723 6.2 190			
2257 0.0 0				2331 -0.7 -20				Su 1757 5.9 180			
								O 2347 -1.0 -30			
4 F 0508 0.3 160	5.2	160		19 Sa 0539 0.0 160	5.2	160		4 M 0559 0.0 150	4.9	150	
1110 -0.3 -10				Sa 1132 -0.3 -10				M 1144 -0.3 -10			
1719 5.9 180				Sa 1742 6.2 190				F 1758 6.2 190			
2330 -0.3 -10											
5 Sa 0540 0.3 170	5.6	170		20 Su 0006 0.0 170	-1.0	-30		5 Tu 0025 0.0 170	-1.3	-40	
1138 -0.3 -10				Su 0613 5.2 160				Tu 0637 4.9 150			
1748 6.2 190				Su 1203 -0.3 -10				F 1221 -0.3 -10			
				1813 6.2 190				F 1835 6.2 190			
6 Su 0002 0.6 170	-0.7	-20		21 M 0040 0.0 170	-1.0	-30		6 W 0105 0.0 170	-1.3	-40	
0612 5.6 170				M 0646 4.9 150				W 0710 4.3 130			
1207 -0.3 -10				M 1232 0.0 0				F 1249 0.3 10			
1817 6.2 190				1843 5.9 180				Su 1900 5.6 170			
								O 1911 6.2 190			
7 M 0036 0.6 170	-1.0	-30		22 Tu 0112 0.0 170	-0.7	-20		7 Th 0147 0.0 170	-1.0	-30	
0645 5.2 160				Tu 0718 4.6 140				F 0800 4.6 140			
1237 -0.3 -10				Tu 1302 0.3 10				Su 1339 0.3 10			
1850 6.2 190				Tu 1914 5.6 170				F 1956 5.9 180			
8 Tu 0113 0.7 170	-0.7	-20		23 W 0145 0.0 170	-0.3	-10		8 F 0233 0.0 170	-0.7	-20	
0721 4.9 150				W 0751 4.3 130				W 0717 4.6 140			
1310 0.0 0				W 1332 0.7 20				F 1259 0.0 0			
1925 6.2 190				W 1946 5.2 160				W 1914 6.2 190			
9 W 0153 0.7 170	-0.7	-20		24 Th 0219 0.0 170	0.0	0		9 M 0324 0.0 170	0.0	0	
0759 4.6 140				Th 0826 3.9 120				M 0945 3.6 110			
1345 0.3 10				Th 1402 1.0 30				Su 1520 1.3 40			
2003 5.9 180				Th 2017 4.9 150				F 2140 4.6 140			
10 Th 0237 0.0 170	0.0	0		25 F 0257 0.3 170	0.3	10		10 M 0426 0.3 170	0.3	10	
0844 4.3 130				F 0907 3.6 110				M 1028 3.3 100			
1424 1.0 30				F 1433 1.3 40				F 1558 1.6 50			
2047 5.2 160				F 2052 4.3 130				Su 2207 3.6 110			
11 F 0330 0.3 170	0.3	10		26 Sa 0342 1.0 170	1.0	30		11 W 0455 0.7 170	0.7	20	
0941 3.6 110				Sa 1000 3.3 100				M 1139 3.3 100			
1513 1.3 40				Sa 1515 2.0 60				F 1723 1.6 50			
2144 4.6 140				Sa 2137 3.9 120				Su 2322 3.3 100			
12 Sa 0443 1.0 170	1.0	30		27 Su 0452 1.3 170	1.3	40		12 Tu 0038 1.0 170	1.0	30	
1110 3.3 100				Su 1129 3.0 90				M 0711 1.0 30			
1631 2.0 60				Su 1635 2.3 70				F 1354 3.9 120			
O 2311 4.3 130				O 2253 3.6 110				Su 2009 1.3 40			
13 Su 0625 1.0 170	1.0	30		28 M 0628 1.3 170	1.3	40		13 W 0107 1.0 170	1.0	30	
1314 3.6 110				M 1322 3.3 100				W 0732 1.0 30			
1844 2.0 60				M 1859 2.3 70				F 1409 3.9 120			
14 M 0107 4.3 170	4.3	130		29 Tu 0106 3.3 170	3.3	100		14 F 0317 3.9 170	3.9	120	
0757 1.0 30				Tu 0747 1.3 40				M 0915 0.7 20			
1434 3.9 120				Tu 1424 3.6 110				F 1536 4.9 150			
2029 1.6 50				Tu 2025 1.6 50				Su 2202 0.0 0			
15 Tu 0235 4.6 170	4.6	140		30 W 0232 3.6 170	3.6	110		15 F 0408 4.3 170	4.3	130	
0859 0.7 20				W 0842 1.0 30				M 0959 0.3 10			
1522 4.6 140				M 1507 4.3 130				F 1451 4.6 140			
2129 0.7 20				M 2116 1.0 30				F 2243 -0.3 -10			
31 Th 0324 4.3 170	0.925	20		31 Th 0925 0.7 170	4.3	130		16 F 0338 3.6 170	3.6	110	
				Th 1543 4.9 150				M 0923 0.7 20			
				Th 2157 0.3 10				F 1545 4.9 150			
								F 2213 -0.3 -10			

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Cebu, Philippines, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0040	5.2	160	16 W	0125	4.9	150	1 F	0138	4.3	130
0749	-1.0	-30		0814	-0.7	-20		0802	-0.3	-10	
1357	2.6	80		1419	3.3	100		1412	3.6	110	Sa
1844	1.0	30		1946	0.7	20		2010	0.3	10	1429
										2102	0.3
2 W	0112	5.2	160	17 Th	0201	4.3	130	2 Sa	0214	3.9	120
0816	-0.7	-20		0837	0.0	0		0823	0.0	0	17 Su
1425	3.0	90		1450	3.3	100		1444	3.9	120	1332
1924	1.0	30		2036	0.7	20		2104	0.3	10	2158
										2104	0.7
3 Th	0147	4.6	140	18 F	0237	3.6	110	3 Su	0255	3.0	90
0842	-0.3	-10		0858	0.3	10		0846	0.3	10	18 M
1456	3.0	90		1526	3.6	110		1525	4.3	130	1547
2013	1.0	30		2136	1.0	30	O	2213	0.7	20	2327
										1.0	30
4 F	0225	4.3	130	19 Sa	0314	3.0	90	4 M	0347	2.3	70
0910	0.0	0		0918	0.7	20		0909	0.7	20	19 Tu
1532	3.3	100		1609	3.6	110		1618	4.3	130	1653
2114	1.0	30	O	2255	1.0	30		2357	0.7	20	2200
										0.3	10
5 Sa	0311	3.6	110	20 Su	0401	2.0	60	5 Tu	0515	1.6	50
0939	0.3	10		0938	1.0	30		0931	1.0	30	20 W
1617	3.6	110		1706	3.6	110		1733	4.3	130	1838
2235	1.0	30								1.0	30
6 Su	0411	2.6	80	21 M	0057	1.0	30	6 W	0214	0.3	10
1012	0.7	20		0531	1.6	50		1909	4.6	140	21 Th
1714	3.9	120		1001	1.3	40				1718	
				1819	3.9	120					
7 M	0027	1.0	30	22 Tu	0300	0.7	20	7 Th	0343	-0.3	-10
0547	2.0	60		0926	1.3	40		1046	1.6	50	22 F
1051	1.0	30		1037	1.3	40		1249	1.6	50	1929
1823	4.3	130		1940	3.9	120		2037	4.9	150	
8 Tu	0224	0.3	10	23 W	0401	0.3	10	8 F	0435	-0.7	-20
0822	1.6	50		1039	1.6	50		1105	2.0	60	8 Sa
1149	1.3	40		1309	1.6	50		1449	1.3	40	1430
1937	4.6	140		2047	4.3	130		2143	5.2	160	2050
9 W	0344	-0.3	-10	24 Th	0440	-0.3	-10	9 Sa	0516	-1.0	-30
1015	1.6	50		1106	2.0	60		1130	2.3	70	24 Su
1317	1.6	50		1444	1.6	50		1558	1.0	30	1023
2045	5.2	160		2139	4.6	140		2237	5.6	170	1531
										2142	4.6
10 Th	0441	-1.0	-30	25 F	0513	-0.7	-20	10 M	0551	-1.0	-30
1110	2.0	60		1131	2.3	70		1155	2.6	80	25 M
1440	1.3	40		1543	1.3	40		1651	0.7	20	1040
2144	5.6	170		2221	4.9	150	O	2322	5.6	170	1614
										2320	4.9
11 F	0527	-1.3	-40	26 Sa	0543	-0.7	-20	11 M	0621	-1.0	-30
1148	2.3	70		1156	2.6	80		1220	3.0	90	26 Tu
1545	1.3	40		1627	1.0	30		1737	0.3	10	1651
2236	5.9	180		2258	5.2	160				2352	
										4.9	150
12 Sa	0608	-1.3	-40	27 Su	0610	-1.0	-30	12 Tu	0003	5.2	160
1221	2.3	70		1219	2.6	80		0647	-0.7	-20	12 W
1640	1.0	30		1704	1.0	30		1245	3.3	100	1118
2323	5.9	180	O	2331	5.2	160		1818	0.0	0	1726
										2354	4.6
13 Su	0645	-1.3	-40	28 M	0636	-1.0	-30	13 W	0039	4.9	150
1251	2.6	80		1240	3.0	90		0710	-0.3	-10	13 Th
1728	0.7	20		1738	0.7	20		1309	3.6	110	1208
								1857	0.0	0	1802
14 M	0006	5.9	180	29 Tu	0002	5.2	160	14 Th	0113	4.6	140
0718	-1.3	-40		0659	-1.0	-30		0730	-0.3	-10	14 F
1321	2.6	80		1301	3.0	90		1334	3.9	120	1229
1814	0.7	20		1811	0.7	20		1937	0.0	0	1849
										1.0	-30
15 Tu	0047	5.6	170	30 W	0033	5.2	160	15 F	0143	3.9	120
0747	-1.0	-30		0720	-0.7	-20		0746	0.0	0	0642
1349	3.0	90		1322	3.3	100		1400	3.9	120	0.3
1859	0.7	20		1846	0.3	10		2017	0.3	10	1.0
										1922	-0.3
16 Th	0105	4.9	150	31 Th	0741	-0.7	-20	17	0126	3.3	100
				1345	3.6	110		1925	0.3	10	0638
				1925	0.3	10				1302	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Cebu, Philippines, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0204 3.0 90	16 Tu 0212 2.6 80	1 W 0259 2.3 70	16 Th 0252 2.6 80	1 Sa 0459 3.0 90	16 Su 0400 3.3 100						
0700 1.0 30	0656 1.3 40	0706 1.3 40	0707 1.6 50	0941 2.0 60	0856 2.0 60						
1338 5.6 170	1339 4.9 150	1408 5.2 160	1354 4.9 150	1601 3.9 120	1508 4.3 130						
2051 -0.3 -10	2056 0.0 0	2151 0.0 0	2125 0.3 10	2317 0.7 20	2211 0.7 20						
2 Tu 0248 2.3 70	17 W 0252 2.3 70	2 Th 0407 2.3 70	17 F 0346 2.6 80	2 Su 0610 3.3 100	17 M 0452 3.3 100						
0723 1.0 30	0717 1.3 40	0747 1.6 50	0746 2.0 60	1149 2.0 60	1021 2.0 60						
1420 5.2 160	1414 4.6 140	1504 4.9 150	1437 4.6 140	1733 3.3 100	1609 3.6 110						
2155 0.0 0	2150 0.3 10	2303 0.3 10	2217 0.3 10	2254 1.0 30							
3 W 0350 2.0 60	18 Th 0353 2.0 60	3 F 0553 2.3 70	18 Sa 0500 2.6 80	3 M 0014 1.0 30	18 Tu 0551 3.6 110						
0746 1.3 40	0739 1.6 50	0902 2.0 60	0847 2.3 70	0713 3.6 110	1218 1.6 50						
1515 4.6 140	1500 4.3 130	1623 4.3 130	1533 3.9 120	1353 1.6 50	1743 3.0 90						
2328 0.3 10	2308 0.7 20	2320 0.7 20	1926 3.0 90	1926 3.0 90	2343 1.3 40						
4 Th 0612 1.6 50	19 F 0628 2.0 60	4 Sa 0026 0.7 20	19 Su 0626 2.6 80	4 Tu 0110 1.3 40	19 W 0652 4.3 130						
0759 1.6 50	0744 2.0 60	0731 2.6 80	1049 2.3 70	0805 4.3 130	1409 1.3 40						
1638 4.3 130	1612 3.6 110	1156 2.3 70	1659 3.6 110	1511 1.0 30	1950 2.6 80						
5 F 0123 0.3 10	20 Sa 0051 1.0 30	5 Su 0138 0.7 20	20 M 0026 1.0 30	5 W 0201 1.6 50	20 Th 0041 1.6 50						
0915 2.0 60	0852 2.3 70	0822 3.3 100	0728 3.3 100	0849 4.6 140	0750 4.6 140						
1050 2.0 60	1112 2.3 70	1408 1.6 50	1315 2.0 60	1605 0.3 10	1525 0.7 20						
1843 3.9 120	1813 3.6 110	2004 3.6 110	1854 3.3 100	2205 2.6 80	2132 2.6 80						
6 Sa 0242 0.3 10	21 Su 0208 0.7 20	6 M 0230 1.0 30	21 Tu 0127 1.0 30	6 Th 0245 1.6 50	21 F 0142 1.6 50						
0923 2.6 80	0903 3.0 90	0859 3.9 120	0811 3.6 110	0928 5.2 160	0843 5.2 160						
1404 1.6 50	1403 2.0 60	1520 1.0 30	1443 1.3 40	1647 0.0 0	1622 0.0 0						
2026 3.9 120	2001 3.6 110	2119 3.3 100	2032 3.0 90	2253 2.6 80	2241 2.6 80						
7 Su 0330 0.3 10	22 M 0257 0.7 20	7 Tu 0311 1.0 30	22 W 0216 1.3 40	7 F 0324 1.6 50	22 Sa 0239 2.0 60						
0949 3.3 100	0924 3.3 100	0932 4.3 130	0848 4.3 130	1003 5.6 170	0932 5.9 180						
1522 1.0 30	1511 1.3 40	1610 0.3 10	1540 0.7 20	1723 -0.3 -10	1710 -0.7 -20						
2134 4.3 130	2112 3.6 110	2214 3.3 100	2144 3.3 100	2332 3.0 90	2330 2.6 80						
8 M 0406 0.3 10	23 Tu 0333 0.7 20	8 W 0343 1.0 30	23 Th 0256 1.3 40	8 Sa 0400 1.6 50	23 M 0331 1.6 50						
1015 3.6 110	0947 3.9 120	1002 4.9 150	0923 4.9 150	1036 5.6 170	1020 6.2 190						
1614 0.3 10	1558 0.7 20	1652 -0.3 -10	1628 -0.3 -10	1755 -0.7 -20	1754 -1.0 -30						
2225 4.3 130	2205 3.9 120	2258 3.3 100	2240 3.3 100	●	○						
9 Tu 0436 0.3 10	24 W 0402 0.7 20	9 Th 0412 1.0 30	24 F 0332 1.3 40	9 Sa 0004 3.0 90	24 M 0011 2.6 80						
1040 4.3 130	1010 4.3 130	1639 0.0 0	1728 -0.7 -20	0432 1.6 50	0418 1.6 50						
1656 0.0 0	2250 3.9 120	2335 3.3 100	2327 3.0 90	1108 5.9 180	1106 6.6 200						
2307 4.3 130				1825 -0.7 -20	1835 -1.0 -30						
10 W 0500 0.3 10	25 Th 0428 1.0 30	10 F 0437 1.3 40	25 Sa 0405 1.3 40	10 M 0035 3.0 90	25 Tu 0048 2.6 80						
1105 4.6 140	1035 4.9 150	1058 5.6 170	1035 5.9 180	0502 1.6 50	0505 1.3 40						
1734 -0.3 -10	1718 -0.7 -20	1801 -0.7 -20	1754 -1.0 -30	1138 5.9 180	1150 6.6 200						
● 2344 3.9 120	2331 3.6 110	●	○	1854 -0.7 -20	1914 -1.0 -30						
11 Th 0522 0.7 20	26 F 0452 1.0 30	11 Sa 0008 3.3 100	26 Su 0010 3.0 90	11 Tu 0103 3.0 90	26 W 0124 3.0 90						
1129 4.9 150	1102 5.2 160	0500 1.3 40	0438 1.3 40	0532 1.6 50	0550 1.3 40						
1808 -0.7 -20	1756 -1.0 -30	1125 5.6 170	1113 6.2 190	1207 5.9 180	1233 6.2 190						
○		1831 -0.7 -20	1836 -1.3 -40	1923 -0.7 -20	1952 -0.7 -20						
12 F 0016 3.6 110	27 Sa 0010 3.6 110	12 Su 0038 3.0 90	27 M 0051 3.0 90	12 W 0133 3.0 90	27 Th 0159 3.0 90						
0540 0.7 20	0515 1.0 30	0523 1.3 40	0512 1.3 40	0602 1.6 50	0638 1.3 40						
1153 5.2 160	1133 5.9 180	1152 5.6 170	1153 6.6 200	1237 5.6 170	1316 5.9 180						
1839 -0.7 -20	1835 -1.3 -40	1900 -0.7 -20	1918 -1.3 -40	1953 -0.3 -10	2027 -0.3 -10						
13 Sa 0045 3.3 100	28 Su 0048 3.3 100	13 M 0106 3.0 90	28 Tu 0131 2.6 80	13 W 0204 3.0 90	28 F 0235 3.3 100						
0558 1.0 30	0539 1.0 30	0546 1.3 40	0548 1.3 40	0634 1.6 50	0729 1.3 40						
1217 5.2 160	1206 5.9 180	1219 5.6 170	1234 6.2 190	1309 5.6 170	1359 5.2 160						
1909 -0.7 -20	1917 -1.3 -40	1931 -0.7 -20	2002 -1.0 -30	2025 -0.3 -10	2102 0.0 0						
14 Su 0112 3.3 100	29 M 0127 3.0 90	14 Tu 0136 2.6 80	29 W 0213 2.6 80	14 F 0238 3.0 90	29 Sa 0315 3.3 100						
0616 1.0 30	0605 1.0 30	0610 1.3 40	0628 1.3 40	0711 1.6 50	0826 1.6 50						
1241 5.2 160	1242 5.9 180	1248 5.6 170	1318 5.9 180	1343 5.2 160	1444 4.6 140						
1940 -0.3 -10	2002 -1.0 -30	2004 -0.3 -10	2047 -0.7 -20	2058 0.0 0	2134 0.3 10						
15 M 0140 3.0 90	30 Tu 0209 2.6 80	15 W 0210 2.6 80	30 F 0259 2.6 80	15 Sa 0316 3.0 90	30 Su 0400 3.6 110						
0635 1.0 30	0634 1.3 40	0637 1.3 40	0714 1.6 50	0756 1.6 50	0937 1.6 50						
1308 5.2 160	1322 5.9 180	1319 5.2 160	1404 5.6 170	1422 4.6 140	1533 3.6 110						
2015 0.0 0	2052 -0.7 -20	2042 0.0 0	2134 0.0 0	2133 0.3 10	2207 1.0 30						
			31 F 0353 2.6 80								
			0814 1.6 50								
			1456 4.6 140								
			2224 0.3 10								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Cebu, Philippines, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0453 3.9 120	16 0346 3.9 120	1 Th 0545 4.3 130	16 F 0446 4.9 150	1 Su 0756 4.3 130	16 0025 2.3 70	M 0751 4.6 140	M 1539 0.3 10	M 2206 3.0 90	M 0225 2.3 70	M 0751 4.6 140	M 1539 0.3 10
1113 1.6 50	0956 1.3 40	1431 1.3 40	1309 1.0 30	1557 0.7 20	0751 4.6 140	1113 1.6 50	0956 1.3 40	1557 0.7 20	0751 4.6 140	1113 1.6 50	0956 1.3 40
1637 3.0 90	1537 3.3 100	1914 2.0 60	1914 2.0 60	2235 2.6 80	2235 2.6 80	1630 0.3 10	1630 0.3 10	2248 3.0 90	2248 3.0 90	1620 0.0 0	1620 0.0 0
2242 1.3 40	2142 1.0 30	2116 2.0 60	2116 2.0 60	2214 1.3 40	2214 1.3 40	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100
2 Tu 0555 4.3 130	17 0435 4.3 130	2 0713 4.6 140	17 0619 4.9 150	2 M 0228 2.3 70	17 0241 2.0 60	Tu 0912 4.9 150	W 1010 5.2 160	O 2322 4.3 130	W 1057 5.2 160	W 1723 0.3 10	W 2256 3.9 120
1315 1.6 50	1130 1.3 40	1547 1.0 30	1506 0.7 20	0907 4.6 140	17 0912 4.9 150	1315 1.6 50	1130 1.3 40	0907 4.6 140	1620 0.0 0	1620 0.0 0	1620 0.0 0
1823 2.3 70	1650 2.6 80	2244 2.3 70	2244 2.3 70	1630 0.3 10	1630 0.3 10	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100	2230 3.3 100
2325 1.6 50	2214 1.3 40	2257 1.6 50	2257 1.6 50	2248 3.0 90	2248 3.0 90	2256 3.3 100	2256 3.3 100	2256 3.3 100	2256 3.3 100	2256 3.3 100	2256 3.3 100
3 W 0702 4.3 130	18 0540 4.6 140	3 Sa 0027 2.3 70	18 0800 4.9 150	3 Tu 0334 2.0 60	18 0348 1.3 40	W 1010 5.2 160	W 1654 0.0 0	O 2322 4.3 130	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
1457 1.0 30	1336 1.3 40	0830 4.6 140	1607 0.0 0	0956 4.9 150	18 0956 4.9 150	1457 1.0 30	1336 1.3 40	0956 4.9 150	1723 0.3 10	1723 0.3 10	1723 0.3 10
2042 2.3 70	1912 2.0 60	1629 0.7 20	2244 2.6 80	1658 0.3 10	1658 0.3 10	2307 3.3 100	2307 3.3 100	2307 3.3 100	2307 3.3 100	2307 3.3 100	2307 3.3 100
2257 1.6 50	2257 1.6 50	2256 2.6 80	2256 2.6 80	2318 3.0 90	2318 3.0 90	2307 3.0 90	2307 3.0 90	2307 3.0 90	2307 3.0 90	2307 3.0 90	2307 3.0 90
4 Th 0027 2.0 60	19 0658 4.9 150	4 Su 0231 2.0 60	19 0216 2.0 60	4 W 0418 1.3 40	19 0439 0.7 20	W 1057 5.2 160	W 1748 0.3 10	O 2322 4.3 130	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
0804 4.6 140	1516 0.7 20	0928 4.9 150	0916 5.6 170	1035 5.2 160	1035 5.2 160	1747 0.0 0	1747 0.0 0	1747 0.0 0	1747 0.0 0	1747 0.0 0	1747 0.0 0
1558 0.7 20	2149 2.3 70	1702 0.3 10	2318 3.0 90	1651 -0.3 -10	1651 -0.3 -10	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110
2208 2.3 70	2208 2.3 70	2318 3.0 90	2318 3.0 90	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110	2327 3.6 110
5 F 0142 2.0 60	20 0024 2.0 60	5 M 0335 2.0 60	20 0336 1.6 50	5 Th 0454 1.0 30	20 0522 0.3 10	F 1138 4.9 150	F 1748 0.3 10	O 2347 4.9 150	F 1723 0.3 10	F 2256 3.9 120	F 2256 3.9 120
0858 4.9 150	0814 5.2 160	1012 5.2 160	1014 5.9 180	1110 5.2 160	1110 5.2 160	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120
1641 0.3 10	1619 0.0 0	1730 0.0 0	1728 -0.3 -10	1747 0.0 0	1747 0.0 0	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120	2347 3.9 120
2256 2.6 80	2252 2.3 70	2341 3.0 90	2332 3.3 100	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110
6 Sa 0247 2.0 60	21 0207 2.0 60	6 Tu 0421 1.6 50	21 0433 1.3 40	6 W 0527 0.7 20	21 0601 0.0 0	Sa 1215 4.9 150	Sa 1809 0.7 20	O 2322 4.3 130	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
0943 5.2 160	0920 5.6 170	1050 5.6 170	1103 5.9 180	1142 5.2 160	1142 5.2 160	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130
1717 0.0 0	1706 -0.7 -20	1757 -0.3 -10	1759 -0.3 -10	1807 0.0 0	1807 0.0 0	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130	2322 4.3 130
2330 2.6 80	2329 2.6 80	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110
7 Su 0339 1.6 50	22 0323 2.0 60	7 W 0003 3.3 100	22 0521 0.7 20	7 Sa 0006 4.3 130	22 0012 5.2 160	Su 0638 -0.3 -10	Su 1249 4.3 130	O 1844 1.0 30	M 1319 3.9 120	M 1844 1.0 30	M 2256 3.9 120
1023 5.6 170	1015 6.2 190	0458 1.3 40	1146 5.9 180	0558 0.3 10	0012 5.2 160	1023 5.6 170	1015 6.2 190	0458 1.3 40	1146 5.9 180	0558 0.3 10	0012 5.2 160
1748 -0.3 -10	1747 -0.7 -20	1821 -0.3 -10	1827 -0.3 -10	1826 0.3 10	0638 -0.3 -10	1748 -0.3 -10	1747 -0.7 -20	1827 -0.3 -10	1826 0.3 10	0638 -0.3 -10	0012 5.2 160
2359 3.0 90	2359 3.0 90	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110	2358 3.6 110
8 M 0422 1.6 50	23 0000 3.0 90	8 Th 0025 3.6 110	23 0024 3.9 120	8 Su 0026 4.6 140	23 0037 5.2 160	M 1319 3.9 120	M 1844 1.0 30	O 1901 1.3 40	M 1723 0.3 10	M 2256 3.9 120	M 2256 3.9 120
1058 5.6 170	0422 1.6 50	0532 1.3 40	0603 0.3 10	0631 0.0 0	0037 5.2 160	1058 5.6 170	0422 1.6 50	0532 1.3 40	0603 0.3 10	0631 0.0 0	0037 5.2 160
1817 -0.3 -10	1105 6.2 190	1154 5.6 170	1225 5.6 170	1244 4.9 150	0713 -0.3 -10	1817 -0.3 -10	1105 6.2 190	1154 5.6 170	1225 5.6 170	1244 4.9 150	0713 -0.3 -10
● O 1824 -1.0 -30	O 1824 -1.0 -30	1843 -0.3 -10	1852 0.0 0	1844 0.7 20	0713 -0.3 -10	1824 -1.0 -30	O 1824 -1.0 -30	1843 -0.3 -10	1852 0.0 0	1844 0.7 20	0713 -0.3 -10
9 Tu 0026 3.0 90	24 0030 3.0 90	9 F 0046 3.6 110	24 0050 4.3 130	9 M 0047 4.9 150	24 0102 5.2 160	M 1319 3.9 120	M 1844 1.0 30	O 1901 1.3 40	M 1723 0.3 10	M 2256 3.9 120	M 2256 3.9 120
0458 1.6 50	0512 1.3 40	0604 1.0 30	0644 0.3 10	0706 0.0 0	0102 5.2 160	0458 1.6 50	0512 1.3 40	0604 1.0 30	0644 0.3 10	0706 0.0 0	0102 5.2 160
1131 5.9 180	1150 6.2 190	1223 5.6 170	1301 5.2 160	1315 4.3 130	0748 0.0 0	1131 5.9 180	1150 6.2 190	1223 5.6 170	1301 5.2 160	1315 4.3 130	0748 0.0 0
1843 -0.7 -20	1857 -0.7 -20	1904 0.0 0	1913 0.3 10	1902 0.7 20	1348 3.3 100	1843 -0.7 -20	1857 -0.7 -20	1904 0.0 0	1913 0.3 10	1902 0.7 20	1348 3.3 100
10 W 0052 3.0 90	25 0059 3.3 100	10 Th 0106 3.9 120	25 0116 4.6 140	10 Tu 0112 5.2 160	25 0128 5.2 160	W 1417 3.0 90	W 1844 1.0 30	O 1934 1.6 50	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
0531 1.3 40	0600 1.0 30	0637 0.7 20	0724 0.3 10	0745 0.0 0	0825 0.3 10	0531 1.3 40	0600 1.0 30	0637 0.7 20	0724 0.3 10	0745 0.0 0	0825 0.3 10
1201 5.9 180	1231 6.2 190	1253 5.2 160	1334 4.6 140	1349 3.9 120	1417 3.0 90	1201 5.9 180	1231 6.2 190	1253 5.2 160	1334 4.6 140	1349 3.9 120	1417 3.0 90
1909 -0.7 -20	1927 -0.3 -10	1924 0.0 0	1932 0.7 20	1921 1.0 30	1917 1.3 40	1909 -0.7 -20	1927 -0.3 -10	1924 0.0 0	1932 0.7 20	1921 1.0 30	1917 1.3 40
11 Th 0116 3.3 100	26 0128 3.6 110	11 Su 0127 4.3 130	26 0142 4.9 150	11 W 0142 5.2 160	26 0158 5.2 160	Th 1450 2.6 80	Th 1844 1.0 30	O 1934 1.6 50	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
0604 1.3 40	0645 1.0 30	0712 0.7 20	0805 0.3 10	0829 0.0 0	0907 0.7 20	0604 1.3 40	0645 1.0 30	0712 0.7 20	0805 0.3 10	0829 0.0 0	0907 0.7 20
1231 5.6 170	1311 5.6 170	1324 4.9 150	1405 3.9 120	1426 3.3 100	1450 2.6 80	1231 5.6 170	1311 5.6 170	1324 4.9 150	1405 3.9 120	1426 3.3 100	1450 2.6 80
1934 -0.3 -10	1955 0.0 0	1944 0.3 10	1948 1.0 30	1941 1.3 40	1934 -0.3 -10	1955 0.0 0	1944 0.3 10	1948 1.0 30	1941 1.3 40	1934 -0.3 -10	1934 -0.3 -10
12 F 0141 3.3 100	27 0157 3.9 120	12 M 0151 4.3 130	27 0211 4.9 150	12 Th 0218 5.2 160	27 0234 4.9 150	F 1540 2.3 70	F 1844 1.0 30	O 1948 1.6 50	W 1723 0.3 10	W 2256 3.9 120	W 2256 3.9 120
0638 1.3 40	0732 1.0 30	0751 0.7 20	0848 0.3 10	0925 0.3 10	1004 1.0 30	0638 1.3 40	0732 1.0 30	0751 0.7 20	0848 0.3 10	0925 0.3 10	1004 1.0 30
1301 5.6 170	1349 4.9 150	1357 4.6 140	1436 3.3 100	1511 2.6 80	1540 2.3 70	1301 5.6 170	1349 4.9 150	1357 4.6 140	1436 3.3 100	1511 2.6 80	1540 2.3 70
1959 -0.3 -10	2019 0.3 10	2004 0.7 20	2003 1.3 40	2002 1.3 40	1948 1.6 50	1959 -0.3 -10	2019 0.3 10	2004 0.7 20	2003 1.3 40	2002 1.3 40	1948 1.6 50
13 Sa 0207 3.6 11											

Cebu, Philippines, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0217 2.3 70	16 W 0252 1.6 50	1 F 0347 1.0 30	16 Sa 0436 0.0 0	1 Su 0415 0.0 0	16 M 0513 -0.7 -20						
0830 3.9 120	0901 4.3 130	0948 3.6 110	1042 3.3 100	1024 2.6 80	1123 2.3 70						
1539 0.7 20	1535 0.7 20	1540 1.0 30	1550 1.0 30	1510 1.3 40	1544 1.3 40						
2203 3.3 100	2149 3.9 120	2155 4.6 140	2214 5.2 160	2141 5.2 160	2224 5.2 160						
2 W 0322 1.6 50	17 Th 0352 0.7 20	2 Sa 0428 0.3 10	17 Su 0516 -0.7 -20	2 M 0458 -0.7 -20	17 Tu 0547 -0.7 -20						
0929 4.3 130	1001 4.3 130	1036 3.6 110	1124 3.3 100	1113 2.6 80	1157 2.6 80						
1611 0.7 20	1609 0.7 20	1609 1.0 30	1619 1.3 40	1546 1.3 40	1620 1.3 40						
2223 3.6 110	2218 4.6 140	2220 4.9 150	2244 5.6 170	2218 5.6 170	2258 5.6 170						
3 Th 0406 1.3 40	18 F 0439 0.3 10	3 Su 0506 -0.3 -10	18 M 0551 -0.7 -20	3 Tu 0540 -1.0 -30	18 W 0618 -1.0 -30						
1014 4.6 140	1049 4.3 130	1118 3.6 110	1200 3.0 90	1156 2.6 80	1227 2.6 80						
1638 0.7 20	1638 0.7 20	1634 1.0 30	1646 1.3 40	1620 1.3 40	1654 1.3 40						
2243 4.3 130	2246 4.9 150	● 2247 5.2 160	2313 5.6 170	● 2256 5.9 180	2330 5.6 170						
4 F 0443 0.7 20	19 Sa 0519 -0.3 -10	4 M 0544 -0.7 -20	19 Tu 0624 -0.7 -20	4 W 0620 -1.3 -40	19 Th 0647 -1.0 -30						
1053 4.6 140	1130 3.9 120	1156 3.6 110	1231 3.0 90	1235 2.6 80	1254 2.6 80						
1702 0.7 20	1703 1.0 30	1658 1.3 40	1711 1.3 40	1656 1.3 40	1725 1.0 30						
2304 4.6 140	○ 2313 5.2 160	2316 5.9 180	2342 5.6 170	2335 6.2 190							
5 Sa 0517 0.0 0	20 Su 0556 -0.7 -20	5 Tu 0621 -1.0 -30	20 W 0655 -0.7 -20	5 Th 0701 -1.3 -40	20 F 0000 5.6 170						
1129 4.6 140	1206 3.9 120	1234 3.3 100	1301 2.6 80	1313 2.6 80	0715 -1.0 -30						
● 1723 0.7 20	1725 1.0 30	1722 1.3 40	1736 1.3 40	1733 1.3 40	1322 2.6 80						
2325 4.9 150	2338 5.6 170	2348 5.9 180			1756 1.0 30						
6 Su 0551 -0.3 -10	21 M 0630 -0.7 -20	6 W 0701 -1.0 -30	21 Th 0010 5.6 170	6 F 0016 6.2 190	21 Sa 0030 5.2 160						
1203 4.3 130	1238 3.6 110	1311 3.0 90	0724 -0.7 -20	0741 -1.3 -40	0742 -0.7 -20						
1742 1.0 30	1745 1.0 30	1749 1.3 40	1330 2.6 80	1352 2.6 80	1351 2.6 80						
2347 5.2 160			1802 1.3 40	1813 1.0 30	1829 1.0 30						
7 M 0625 -0.7 -20	22 Tu 0004 5.6 170	7 Th 0023 6.2 190	22 F 0039 5.6 170	7 Sa 0059 5.9 180	22 M 0100 5.2 160						
1236 3.9 120	0702 -0.7 -20	0742 -1.0 -30	0756 -0.3 -10	0823 -1.0 -30	0811 -0.7 -20						
1802 1.0 30	1307 3.3 100	1351 2.6 80	1402 2.6 80	1433 2.6 80	1422 2.6 80						
	1804 1.3 40	1818 1.3 40	1830 1.3 40	1859 1.3 40	1906 1.3 40						
8 Tu 0012 5.6 170	23 W 0030 5.6 170	8 F 0102 5.9 180	23 Sa 0110 5.2 160	8 Su 0144 5.6 170	23 M 0133 4.9 150						
0701 -0.7 -20	0734 -0.3 -10	0828 -0.7 -20	0830 -0.3 -10	0906 -0.7 -20	0841 -0.3 -10						
1311 3.6 110	1336 3.0 90	1436 2.6 80	1440 2.6 80	1521 2.6 80	1456 2.6 80						
1821 1.0 30	1823 1.3 40	1852 1.3 40	1903 1.6 50	1955 1.3 40	1948 1.3 40						
9 W 0042 5.9 180	24 Th 0058 5.6 170	9 Sa 0145 5.6 170	24 Su 0144 4.9 150	9 M 0232 4.9 150	24 Tu 0208 4.6 140						
0741 -0.7 -20	0807 0.0 0	0919 -0.3 -10	0908 0.0 0	0951 0.0 0	0912 0.0 0						
1347 3.3 100	1407 2.6 80	1532 2.3 70	1527 2.6 80	1616 2.6 80	1535 3.0 90						
1843 1.3 40	1845 1.3 40	1935 1.6 50	1942 1.6 50	● 2108 1.6 50	2040 1.3 40						
10 Th 0116 5.9 180	25 F 0128 5.2 160	10 Su 0236 5.2 160	25 M 0223 4.6 140	10 Tu 0329 3.9 120	25 W 0249 3.9 120						
0827 -0.3 -10	0846 0.3 10	1020 0.0 0	0953 0.3 10	1038 0.3 10	0946 0.3 10						
1427 3.0 90	1444 2.6 80	1651 2.3 70	1628 2.6 80	1720 3.0 90	1621 3.0 90						
1907 1.3 40	1909 1.6 50	● 2039 2.0 60	2039 2.0 60	2252 1.6 50	● 2150 1.6 50						
11 F 0155 5.6 170	26 Sa 0202 4.9 150	11 M 0341 4.3 130	26 Tu 0311 3.9 120	11 W 0444 3.3 100	26 Th 0340 3.3 100						
0922 0.0 0	0933 0.7 20	1131 0.3 10	1046 0.7 20	1130 0.7 20	1023 0.7 20						
1520 2.3 70	1539 2.3 70	1827 2.6 80	1743 2.6 80	1828 3.6 110	1715 3.3 100						
1934 1.6 50	1936 2.0 60	2246 2.0 60	● 2217 2.0 60		2331 1.6 50						
12 Sa 0244 5.2 160	27 Su 0244 4.6 140	12 Tu 0515 3.6 110	27 W 0421 3.3 100	12 Th 0059 1.3 40	27 F 0455 2.6 80						
1035 0.3 10	1037 1.0 30	1245 0.7 20	1146 0.7 20	0629 2.6 80	1106 1.0 30						
1650 2.3 70	1722 2.3 70	1938 3.3 100	1853 3.0 90	1227 1.0 30	1817 3.6 110						
● 2006 2.0 60	○ 2012 2.3 70			1929 3.9 120							
13 Su 0351 4.6 140	28 M 0344 3.9 120	13 W 0710 3.3 100	28 Th 0038 2.0 60	13 F 0240 1.0 30	28 Sa 0132 1.0 30						
1215 0.7 20	1204 1.0 30	1347 1.0 30	0607 3.0 90	0821 2.3 70	0656 2.0 60						
1945 2.3 70	1951 2.6 80	2026 3.6 110	1248 1.0 30	1324 1.3 40	1200 1.3 40						
2133 2.3 70	2237 2.6 80	1946 3.6 110	2027 3.9 120	2022 4.3 130	1920 3.9 120						
14 M 0538 4.3 130	29 Tu 0530 3.6 110	14 Th 0250 1.0 30	29 F 0221 1.3 40	14 Sa 0345 0.3 10	29 Su 0303 0.3 10						
1350 0.7 20	1328 1.0 30	0843 3.3 100	0759 2.6 80	0944 2.3 70	0904 2.0 60						
2046 3.0 90	2035 3.0 90	1436 1.0 30	1344 1.3 40	1417 1.3 40	1305 1.3 40						
2118 3.3 100	2103 3.6 110	2106 4.3 130	2027 3.9 120	2107 4.9 150	2019 4.6 140						
15 Tu 0111 2.3 70	30 W 0141 2.3 70	15 F 0349 0.3 10	30 Sa 0325 0.7 20	15 M 0433 -0.3 -10	30 Tu 0405 -0.3 -10						
0737 4.3 130	0729 3.3 100	0950 3.3 100	0922 2.6 80	1041 2.3 70	1024 2.0 60						
1452 0.7 20	1426 1.0 30	1516 1.0 30	1430 1.3 40	1503 1.3 40	1411 1.6 50						
2118 3.3 100	2103 3.6 110	2141 4.9 150	2105 4.6 140	2148 5.2 160	2112 4.9 150						
	31 Th 0258 1.6 50				31 Tu 0453 -0.7 -20						
	0850 3.6 110				1115 2.3 70						
	1507 1.0 30				1509 1.3 40						
	2129 3.9 120				2201 5.6 170						

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Manila, Philippines, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0738 0.3 -10	16 W 0032 3.0 90	1 F 0057 2.3 70	16 Sa 0153 1.6 50	1 F 0018 2.3 70	16 Sa 0113 1.6 50						
1430 1.0 30	0809 -0.3 -10	0737 0.3 10	0723 0.7 20	0616 0.3 10	0557 0.7 20						
1553 1.0 30	1413 1.3 40	1347 1.6 50	1406 2.3 70	1223 2.3 70	1241 2.6 80						
	1812 0.7 20	1923 0.7 20	2127 0.3 10	1843 0.3 10	2000 0.0 0						
2 W 0009 3.3 100	17 Th 0117 2.6 80	2 Sa 0145 2.0 60	17 Su 0237 1.0 30	2 Sa 0107 2.0 60	17 Su 0157 1.3 40						
0807 -0.3 -10	0834 0.0 0	0753 0.3 10	0713 0.7 20	0628 0.7 20	0556 0.7 20						
1443 1.0 30	1441 1.6 50	1422 2.0 60	1448 2.3 70	1256 2.6 80	1314 2.6 80						
1705 1.0 30	1944 1.0 30	2109 0.7 20	2311 0.3 10	1959 0.0 0	2106 0.0 0						
3 Th 0052 3.0 90	18 F 0201 2.0 60	3 Su 0242 1.3 40	18 M 0338 0.7 20	3 Su 0201 1.6 50	18 M 0255 1.0 30						
0834 0.0 0	0849 0.3 10	0802 0.7 20	0633 0.7 20	0637 0.7 20	0533 0.7 20						
1507 1.3 40	1516 2.0 60	1504 2.3 70	1537 2.6 80	1335 2.6 80	1352 2.6 80						
1826 1.0 30	2146 1.0 30	2256 0.3 10	2256 0.3 10	2122 0.0 0	2222 0.0 0						
4 F 0140 2.3 70	19 Sa 0247 1.3 40	4 M 0403 1.0 30	19 Tu 0123 0.3 10	4 M 0309 1.0 30	19 Tu 1435 2.6 80						
0858 0.0 0	0848 0.3 10	0804 0.7 20	1636 2.6 80	0640 0.7 20	2357 0.0 0						
1538 1.6 50	1559 2.0 60	1557 2.6 80		1420 3.0 90							
2031 1.0 30	2358 0.7 20			2253 0.0 0							
5 Sa 0235 2.0 60	20 Su 0344 1.0 30	5 Tu 0045 0.0 0	20 W 0242 0.0 0	5 Tu 0502 0.7 20	20 W 1526 2.6 80						
0919 0.3 10	0827 0.7 20	1701 3.0 90	1742 2.6 80	0617 0.7 20	1515 3.0 90						
1617 2.0 60	1652 2.3 70			0	0						
2301 1.0 30											
6 Su 0352 1.3 40	21 M 0208 0.3 10	6 W 0221 -0.3 -10	21 Th 0325 -0.3 -10	6 W 0032 -0.3 -10	21 Th 0119 0.0 0						
0934 0.7 20	1748 2.6 80	1814 3.3 100	1847 2.6 80	1623 3.3 100	1629 2.6 80						
1704 2.3 70											
7 M 0056 0.3 10	22 Tu 0322 0.0 0	7 Th 0322 -0.7 -20	22 F 0355 -0.3 -10	7 Th 0154 -0.3 -10	22 F 0210 0.0 0						
0603 1.0 30	1844 2.6 80	1923 3.3 100	1944 3.0 90	1744 3.3 100	1741 2.6 80						
0946 0.7 20											
1756 2.6 80											
8 Tu 0228 0.0 0	23 W 0404 -0.3 -10	8 F 0408 -1.0 -30	23 Sa 0418 -0.3 -10	8 F 0251 -0.7 -20	23 Sa 0244 0.0 0						
1850 3.3 100	1934 3.0 90	2026 3.6 110	2035 3.0 90	1908 3.3 100	1856 2.6 80						
9 W 0332 -0.7 -20	24 Th 0436 -0.7 -20	9 Sa 0447 -1.0 -30	24 Su 0438 -0.3 -10	9 Sa 0334 -0.3 -10	24 Su 0309 0.0 0						
1943 3.6 110	2018 3.3 100	1136 0.7 20	1114 1.0 30	1028 1.0 30	1014 1.3 40						
		1259 0.7 20	1336 1.0 30	1204 1.0 30	1251 1.3 40						
		2123 3.6 110	2121 3.0 90	2023 3.3 100	2004 2.6 80						
10 Th 0422 -1.0 -30	25 F 0503 -0.7 -20	10 Su 0521 -0.7 -20	25 M 0457 -0.3 -10	10 Su 0410 -0.3 -10	25 M 0332 0.0 0						
2033 3.9 120	2058 3.3 100	1140 1.0 30	1106 1.0 30	1025 1.3 40	0953 1.3 40						
		1428 0.7 20	1446 0.7 20	1355 1.0 30	1416 1.0 30						
		2215 3.6 110	2205 3.0 90	2125 3.0 90	2104 2.6 80						
11 F 0506 -1.3 -40	26 Sa 0526 -0.7 -20	11 M 0554 -0.7 -20	26 Tu 0517 0.0 0	11 M 0440 0.0 0	26 Tu 0353 0.3 10						
2122 3.9 120	2136 3.3 100	1155 1.0 30	1114 1.3 40	1039 1.3 40	0959 1.6 50						
		1536 0.7 20	1543 0.7 20	1509 0.7 20	1518 0.7 20						
		2303 3.3 100	2249 3.0 90	2219 3.0 90	2157 2.6 80						
12 Sa 0547 -1.3 -40	27 Su 0547 -0.7 -20	12 Tu 0623 -0.3 -10	27 W 0538 0.0 0	12 Tu 0505 0.0 0	27 W 0413 0.3 10						
2210 3.9 120	1232 0.7 20	1214 1.3 40	1131 1.6 50	1058 1.6 50	1017 2.0 60						
	1358 0.7 20	1638 0.3 10	1638 0.3 10	1610 0.3 10	1614 0.3 10						
	2213 3.3 100	2348 3.0 90	2333 2.6 80	2306 2.6 80	2247 2.3 70						
13 Su 0626 -1.0 -30	28 M 0608 -0.7 -20	13 W 0649 0.0 0	28 Th 0559 0.3 10	13 W 0525 0.3 10	28 Th 0432 0.7 20						
1310 0.7 20	1226 1.0 30	1235 1.6 50	1154 2.0 60	1119 2.0 60	1041 2.3 70						
1451 0.7 20	1504 0.7 20	1739 0.3 10	1737 0.3 10	1706 0.3 10	1709 0.0 0						
2258 3.9 120	2251 3.3 100			2350 2.3 70	2336 2.3 70						
				1910 -0.3 -10	1910 -0.3 -10						
14 M 0703 -1.0 -30	29 Tu 0631 -0.3 -10	14 Th 0031 2.6 80		14 Th 0541 0.7 20	29 F 0447 0.7 20						
1328 1.0 30	1236 1.0 30	0708 0.3 10		1143 2.3 70	1110 2.6 80						
1558 0.7 20	1600 0.7 20	1301 2.0 60		1802 0.0 0	1808 0.0 0						
2345 3.6 110	2331 3.0 90	1845 0.3 10									
15 Tu 0738 -0.7 -20	30 W 0655 -0.3 -10	15 F 0112 2.0 60		15 F 0031 2.0 60	30 Sa 0027 2.0 60						
1349 1.0 30	1254 1.3 40	0720 0.3 10		0551 0.7 20	0459 1.0 30						
1702 0.7 20	1656 0.7 20	1331 2.0 60		1210 2.6 80	1144 3.0 90						
		2001 0.3 10		1900 0.0 0	1910 -0.3 -10						
31 Th 0013 3.0 90											
0718 0.0 0											
1318 1.6 50											
1800 0.7 20											

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Manila, Philippines, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 0232 M 0516 1304 2129	ft 1.0 1.0 3.3 -0.3	cm 30 30 100 -10	h m 16 Tu 2143	ft 3.0 0.0	cm 90 0	h m 1 W 2233	ft 3.6 -0.3	cm 110 -10	h m 16 Th 2152	ft 3.3 0.0	cm 100 0
2 1352 Tu 2250	3.3 -0.3	100 -10	17 W 2246	3.0 0.0	90 0	2 Th 2336	3.3 -0.3	100 -10	17 F 2236	3.0 0.3	90 10
3 1450 W	3.3	100	18 Th 2349	3.0 0.0	90 0	3 F 1541	3.0	90	18 Sa 2317	2.6 0.3	80 10
4 0010 Th 1559	-0.3 3.3	-10 100	19 F 1532	2.6	80	4 Sa 0029	0.0	0	19 Su 2353	2.3 0.7	70 20
5 0116 F 1721	-0.3 3.0	-10 90	20 Sa 0041	0.0	0	5 Su 0111	0.3	10	20 M 0703	2.0	60
6 0207 Sa 0922	0.0 1.3	0 40	21 Su 0921	0.3	10	6 M 0143	0.7	20	21 Tu 0719	0.7	20
7 0246 Su 0910	0.0 1.6	0 50	22 M 0835	0.3	10	7 Tu 0204	1.0	30	22 W 0746	1.0	30
8 0316 M 0926	0.3 2.0	10 60	23 Tu 0843	0.7	20	8 W 0859	1.0	30	23 Th 0818	1.0	30
9 0339 Tu 0946	0.7 2.3	20 70	24 W 0904	0.7	20	9 Th 0222	1.3	40	24 F 0853	1.3	40
10 0355 W 1009	0.7 2.6	20 80	25 Th 0931	1.0	30	10 F 0231	1.3	40	25 M 0927	1.3	40
11 0406 Th 1034	1.0 2.6	30 80	26 F 1001	1.0	30	11 Sa 0014	1.3	40	26 Tu 1104	1.3	40
12 0416 F 1100	1.0 3.0	30 90	27 Sa 1036	1.0	30	12 Su 0121	1.3	40	27 W 1138	1.3	40
13 0039 Sa 0425	1.3 1.0	40 30	28 Su 0340	1.3	40	13 M 1127	3.6	110	28 Th 1052	4.3	130
14 0129 Su 0429	1.3 1.0	40 30	29 M 0347	1.0	30	14 Tu 1159	3.6	110	29 W 1922	-1.0	-30
15 0242 M 0404	1.0 1.0	30 30	30 Tu 1242	3.9	120	15 W 1234	3.3	100	30 Th 1228	4.3	130
16 0422 M 1232	3.3	100	31 Tu 2126	-0.7	-20	31 W 2108	0.0	0	31 F 1422	3.3	100
17 0516 M 2047	3.3	100									

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Manila, Philippines, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0500	2.6 80	16 0351	2.6 80	1 Th 0531	3.3 100	16 F 0436	3.6 110	1 Su 0637	3.6 110	16 M 0639	3.9 120
1122	1.6 50	Tu 1014	1.6 50	1454	0.7 20	1340	0.7 20	1539	0.3 10	1506	0.3 10
1613	2.0 60	1525	2.0 60							2153	1.6 50
2213	1.3 40	● 2108	1.3 40							2337	1.6 50
2 Tu 0539	3.0 90	17 0434	3.0 90	2 F 0625	3.6 110	17 Sa 0544	3.9 120	2 M 0731	3.6 110	17 Tu 0752	3.9 120
1322	1.3 40	W 1202	1.3 40	1545	0.3 10	1451	0.3 10	1605	0.3 10	1544	0.3 10
1756	1.3 40	1714	1.6 50							2156	2.0 60
2152	1.3 40	2119	1.3 40								
3 W 0621	3.3 100	18 0523	3.3 100	3 Sa 0716	3.6 110	18 Su 0651	4.3 130	3 Tu 0821	3.6 110	18 W 0132	1.6 50
1456	0.7 20	1350	0.7 20	1622	0.3 10	1540	0.0 0	1627	0.7 20	0858	3.6 110
1950	1.3 40	2118	1.3 40					2250	1.6 50	1617	0.7 20
										2213	2.3 70
4 Th 0704	3.3 100	19 0617	3.6 110	4 Su 0802	3.9 120	19 M 0755	4.3 130	4 W 0123	1.6 50	19 Th 0251	1.3 40
1556	0.3 10	F 1507	0.3 10	1652	0.3 10	1621	0.0 0	0906	3.6 110	0956	3.6 110
						2309	1.6 50	1646	0.7 20	1646	0.7 20
								2243	2.0 60	● 2235	2.3 70
5 F 0746	3.6 110	20 0711	4.3 130	5 M 0844	3.9 120	20 Tu 0025	1.6 50	5 Th 0236	1.6 50	20 F 0355	1.0 30
1640	0.3 10	Sa 1600	0.0 0	1717	0.3 10	0855	4.3 130	0950	3.6 110	1048	3.3 100
						1658	0.0 0	1705	0.7 20	1709	1.0 30
						2313	1.6 50	● 2252	2.0 60	2258	2.6 80
6 Sa 0827	3.9 120	21 0804	4.3 130	6 Tu 0924	3.9 120	21 W 0204	1.3 40	6 F 0334	1.3 40	21 Sa 0454	0.7 20
1715	0.0 0	Su 1644	-0.3 -10	1738	0.3 10	0951	4.3 130	1033	3.6 110	1136	3.0 90
						1732	0.3 10	1724	1.0 30	1727	1.3 40
						○ 2331	2.0 60	2310	2.3 70	2324	3.0 90
7 Su 0904	3.9 120	22 0857	4.6 140	7 W 0019	1.6 50	22 Th 0320	1.3 40	7 Sa 0430	1.3 40	22 Su 0553	0.7 20
1745	0.0 0	M 1725	-0.3 -10	0140	1.6 50	1043	3.9 120	1116	3.3 100	1222	2.6 80
				1002	3.9 120	1804	0.3 10	1742	1.0 30	1738	1.3 40
			●	1759	0.3 10	2353	2.0 60	2333	2.6 80	2353	3.3 100
8 M 0940	3.9 120	23 0948	4.6 140	8 Th 0010	1.6 50	23 F 0428	1.3 40	8 Su 0529	1.0 30	23 M 0652	0.7 20
1812	0.0 0	Tu 1804	-0.3 -10	0255	1.6 50	1133	3.6 110	1201	3.0 90	1310	2.3 70
			○	1040	3.9 120	1832	0.7 20	1758	1.3 40	1741	1.6 50
				1820	0.7 20						
9 Tu 1015	3.9 120	24 0043	1.3 40	9 F 0019	2.0 60	24 Sa 0018	2.3 70	9 M 0000	3.0 90	24 Tu 0024	3.3 100
1837	0.0 0	W 0233	1.3 40	0355	1.6 50	0534	1.0 30	0632	1.0 30	0752	0.7 20
			1040	4.6 140	1119	3.6 110	1221	3.3 100	1250	2.6 80	
			1842	-0.3 -10	1841	0.7 20	1855	1.0 30	1810	1.3 40	
10 W 1050	3.9 120	25 0104	1.6 50	10 Th 0036	2.0 60	25 Su 0047	2.6 80	10 Tu 0033	3.3 100	25 W 0101	3.3 100
1901	0.0 0	0349	1.3 40	0455	1.3 40	0643	1.0 30	0742	0.7 20	0857	0.7 20
		1131	4.3 130	1200	3.6 110	1307	2.6 80	1344	2.3 70		
		1918	0.0 0	1902	1.0 30	1910	1.3 40	1816	1.6 50		
11 Th 1126	3.9 120	26 0128	1.6 50	11 Su 0100	2.3 70	26 M 0119	3.0 90	11 W 0111	3.3 100	26 Th 0142	3.3 100
1926	0.3 10	0502	1.3 40	0601	1.3 40	0757	1.0 30	0856	0.7 20	1011	0.7 20
		1221	3.9 120	1243	3.3 100	M 1354	2.3 70	1454	2.0 60		
		1951	0.3 10	1921	1.0 30	1913	1.3 40	1819	1.6 50		
12 F 0216	1.6 50	27 0156	2.0 60	12 Sa 0128	2.6 80	27 Tu 0157	3.0 90	12 Th 0157	3.6 110	27 F 0230	3.3 100
0402	1.6 50	0619	1.3 40	0720	1.3 40	0916	1.0 30	1017	0.7 20	1141	0.7 20
1204	3.6 110	1310	3.3 100	1331	2.6 80	1450	1.6 50	1651	1.6 50		
1952	0.3 10	2019	0.7 20	1935	1.3 40	1900	1.3 40	1757	1.6 50	●	
13 Sa 0226	1.6 50	28 0228	2.3 70	13 Tu 0202	3.0 90	28 W 0242	3.3 100	13 F 0253	3.6 110	28 Sa 0328	3.3 100
0516	1.6 50	Su 0747	1.3 40	0847	1.3 40	1048	1.0 30	1149	0.3 10	1302	0.7 20
1244	3.3 100	1359	2.6 80	1426	2.3 70	1636	1.3 40				
2016	0.7 20	2038	1.0 30	1944	1.3 40	○ 1746	1.3 40				
14 Su 0248	2.0 60	29 0304	2.6 80	14 Th 0243	3.3 100	29 Th 0334	3.3 100	14 Sa 0402	3.6 110	29 Su 0434	3.3 100
0639	1.6 50	0924	1.3 40	1016	1.0 30	1250	1.0 30	1317	0.3 10	1354	0.7 20
1328	3.0 90	M 1451	2.3 70	1545	1.6 50	○ 1949	1.3 40				
2037	0.7 20	2040	1.3 40								
15 M 0316	2.3 70	30 0347	3.0 90	15 Th 0334	3.3 100	30 F 0434	3.3 100	15 Su 0520	3.9 120	30 M 0542	3.0 90
0823	1.6 50	Tu 1112	1.3 40	1156	1.0 30	1416	0.7 20	1419	0.3 10	1430	0.7 20
1419	2.6 80	1559	1.6 50	1808	1.3 40	1931	1.3 40				
2054	1.0 30	○ 2021	1.3 40								
		31 W 0437	3.3 100	1322	1.0 30	31 Sa 0536	3.3 100				
						1505	0.7 20				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Manila, Philippines, 2013

Times and Heights of High and Low Waters

October					November					December													
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height									
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm									
1 Tu	0650 1457 2144	3.0 0.7 2.0	90 20 60	16 W	0105 0749 1453 2101	1.6 3.0 0.7 2.3	50 90 70 70	1 F	0239 0836 1422 2047	1.0 2.3 1.0 2.6	30 70 40 80	16 Sa	0353 1013 1409 2110	0.3 1.6 1.3 3.3	10 50 40 100	1 Su	0341 0946 1311 2036	0.0 1.3 1.0 3.3	0 40 30 100	16 M	0500 2115	-0.3 3.6	-10 110
2 W	0053 0752 1520 2130	1.6 3.0 0.7 2.0	50 90 20 60	17 Th	0226 0900 1520 2123	1.3 3.0 1.0 2.6	40 90 30 80	2 Sa	0330 0938 1440 2112	0.7 2.0 1.0 3.0	20 60 40 90	17 Su	0442 1111 1417 2139	0.0 1.3 1.3 3.3	0 40 40 100	2 M	0430 1051 1331 2110	-0.3 1.3 1.0 3.6	-10 40 30 110				
3 Th	0212 0849 1539 2138	1.3 3.0 1.0 2.3	40 90 30 70	18 F	0327 1001 1539 2148	1.0 2.6 1.3 3.0	30 80 40 90	3 Su	0420 1033 1454 2140	0.3 2.0 1.3 3.3	10 60 40 100	18 M	0528 1209 1426 2208	-0.3 1.3 1.3 3.6	-10 40 40 110	3 Tu	0517 1154 1350 2147	-0.7 1.0 1.0 3.9	-20 30 30 120				
4 F	0310 0941 1558 2155	1.3 3.0 1.0 2.6	40 90 30 80	19 Sa	0421 1054 1552 2214	0.7 2.3 1.3 3.3	20 70 40 100	4 M	0510 1128 1507 2211	0.0 1.6 1.3 3.6	0 50 40 110	19 Tu	0610 1319 1425 2238	-0.3 1.3 1.3 3.6	-10 40 40 130	4 W	0605 1305 1404 2226	-1.0 1.0 1.0 4.3	-30 30 30 130				
5 Sa	0403 1030 1614 2219	1.0 3.0 1.3 3.0	30 90 40 90	20 Su	0512 1144 1600 2241	0.3 2.0 1.3 3.3	10 60 40 100	5 Tu	0602 1227 1517 2246	-0.3 1.6 1.3 3.9	-10 50 40 120	20 W	0650 2308	-0.3 3.6	-10 110	5 Th	0654 2309	-1.0 3.9	-30 120	20 F	0710 2325	-0.7 3.3	-20 100
6 Su	0455 1118 1628 2246	0.7 2.6 1.3 3.3	20 80 40 100	21 M	0603 1234 1605 2309	0.0 1.6 1.3 3.6	0 50 40 110	6 W	0656 1337 1524 2324	-0.7 1.3 1.3 3.9	-20 40 40 120	21 Th	0730 2340	-0.3 3.6	-10 110	6 F	0743 2357	-1.0 3.9	-30 120	21 Sa	0740 2359	-0.3 3.3	-10 100
7 M	0551 1209 1638 2317	0.3 2.3 1.3 3.6	10 70 40 110	22 Tu	0653 1334 1603 2339	0.0 1.6 1.3 3.6	0 50 40 110	7 Th	0753 2340	-0.7 1.3	-20 40	22 F	0809	-0.3	-10	7 Sa	0833	-0.7	-20	22 Su	0811	-0.3	-10
8 Tu	0649 1305 1645 2353	0.3 2.0 1.6 3.6	10 60 50 110	23 W	0743	0.0	0	8 F	0009 0852	3.9 -0.7	120 -20	23 Sa	0015 0849	3.3 -0.3	100 -10	8 Su	0050 0922	3.6 -0.7	110 -20	23 M	0035 0840	3.0 -0.3	90 -10
9 W	0751 1413 1648	0.0 1.6 1.6	0 50 50	24 Th	0012 0834	3.6 0.0	110 0	9 Sa	0101 0955	3.9 -0.3	120 -10	24 Su	0054 0931	3.0 0.0	90 0	9 M	0149 1010 1734 1857	3.0 -0.3 1.3 1.3	90 40 40 40	24 Tu	0116 0910 1620 1824	2.6 0.0 1.3 1.3	80 0 40 40
10 Th	0034 0858	3.9 0.0	120 0	25 F	0050 0929	3.3 0.3	100 10	10 Su	0203 1058	3.6 -0.3	110 -10	25 M	0139 1013	3.0 0.0	90 0	10 Tu	0253 1052 1752 2234	2.6 0.0 1.6 1.3	80 0 50 40	25 W	0202 0937 1646 2119	2.3 0.3 1.6 1.3	70 10 50 40
11 F	0124 1012	3.9 0.0	120 0	26 Sa	0133 1029	3.3 0.3	100 10	11 M	0315 1154	3.0 0.0	90 0	26 Tu	0234 1053	2.6 0.3	80 10	11 W	0406 1126 1822	2.0 0.3 2.0	60 10 60	26 Th	0259 1001 1720	1.6 0.3 2.0	50 10 60
12 Sa	0224 1131	3.6 0.0	110 0	27 Su	0225 1130	3.0 0.3	90 10	12 Tu	0437 1240 1930	2.6 0.3 2.0	80 10 60	27 W	0344 1130 1902	2.3 0.3 2.0	70 10 60	12 Th	0053 0541 1149 1855	1.0 1.6 0.7 2.3	30 50 20 70	27 F	0002 0427 1023 1759	1.0 1.3 0.7 2.3	30 40 20 70
13 Su	0338 1241	3.6 0.0	110 0	28 M	0328 1223	3.0 0.3	90 10	13 W	0024 0609 1317 1948	1.6 2.3 0.7 2.3	50 70 20 70	28 Th	0027 0512 1202 1911	1.6 2.0 0.7 2.3	50 60 20 70	13 F	0219 0745 1157 1930	0.7 1.3 1.0 2.6	20 40 30 80	28 Sa	0145 0640 1042 1841	0.7 1.0 0.7 2.6	20 30 20 80
14 M	0500 1336 2049 2229	3.3 0.3 2.0 2.0	100 10 60 60	29 Tu	0441 1304 2055 2357	2.6 0.7 2.0 1.6	80 20 60 50	14 Th	0155 0744 1343 2014	1.0 2.0 1.0 2.6	30 60 30 80	29 F	0152 0657 1228 1935	1.0 1.6 0.7 2.6	30 50 20 80	14 Sa	0325 0938 1155 2006	0.3 1.0 1.0 3.0	10 30 30 90	29 Su	0254 0852 1101 1923	0.0 0.7 0.7 3.0	0 20 20 90
15 Tu	0627 1419 2043	3.3 0.3 2.0	100 10 60	30 W	0601 1335 2022	2.6 0.7 2.0	80 20 60	15 F	0259 0906 1400 2041	0.7 2.0 1.0 3.0	20 60 30 90	30 Sa	0250 0831 1251 2004	0.7 1.3 1.0 3.0	20 40 30 90	15 Su	0417 2041	0.0 3.3	0 100	30 M	0346 1039 1118 2006	-0.3 0.7 0.7 3.6	-10 20 20 110
				31 Th	0139 0723 1401 2027	1.3 2.3 0.7 2.3	40 70 20 70									31 Tu	0431 2049	-1.0 3.9	-30 120				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pages 188 through195 intentionally omitted

Guam (Apra Harbor), Mariana Islands, 2013

Times and Heights of High and Low Waters

January				February				March						
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height			
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm			
1 Tu 0347	-0.2	-6	16 W 0439	0.0	0	1 F 0436	0.4	12	16 Sa 0527	0.9	27	1 F 0343	0.5	15
1045	2.4	73	W 1116	2.5	76	F 1101	2.5	76	Sa 1123	2.3	70	F 0946	2.5	76
1635	1.3	40	1736	0.8	24	1735	0.6	18	1832	0.4	12	1618	0.3	9
2125	2.1	64	2251	2.0	61	2316	2.0	61	2223	2.3	70	2223	2.3	70
2 W 0421	0.0	0	17 Th 0520	0.4	12	2 Sa 0515	0.7	21	2 Sa 0421	0.7	21	17 Su 0502	1.1	34
1117	2.4	73	1151	2.4	73	Sa 1135	2.4	73	1017	2.5	76	1028	2.2	67
1721	1.2	37	1832	0.7	21	1829	0.4	12	1705	0.1	3	1739	0.2	6
2215	2.0	61	2358	1.8	55	1926	0.4	12	2323	2.1	64			
3 Th 0457	0.2	6	18 F 0601	0.7	21	3 Su 0030	1.8	55	18 M 0217	1.7	52	18 M 0018	1.9	58
1150	2.4	73	1227	2.4	73	Su 0602	0.9	27	0659	1.4	43	0543	1.3	40
1813	1.0	30	1929	0.6	18	1215	2.4	73	1240	2.1	64	1102	2.1	64
2315	1.9	58	○ 1930	0.2	6	○ 2027	0.3	9	1827	0.3	9			
4 F 0538	0.4	12	19 Sa 0122	1.6	49	4 M 0203	1.8	55	19 Tu 0355	1.7	52	19 Tu 0128	1.8	55
1226	2.4	73	0646	1.0	30	M 0659	1.2	37	0808	1.5	46	0635	1.4	43
1909	0.8	24	1304	2.3	70	1303	2.4	73	1335	2.0	61	1143	2.0	61
○ 2029	0.5	15	0.5	15	2037	0.0	0	2130	0.3	9	1924	0.3	9	
5 Sa 0032	1.7	52	20 Su 0306	1.6	49	5 Tu 0345	1.9	58	20 W 0508	1.8	55	20 W 0251	1.8	55
0626	0.7	21	0740	1.3	40	Tu 0814	1.4	43	0931	1.5	46	0743	1.5	46
1305	2.4	73	1347	2.2	67	1402	2.4	73	1443	2.0	61	1240	1.9	58
○ 2009	0.5	15	2128	0.3	9	2144	-0.2	-6	2229	0.2	6	○ 2027	0.3	9
6 Su 0208	1.7	52	21 M 0442	1.7	52	6 W 0508	2.0	61	21 Th 0555	1.9	58	6 W 0337	2.0	61
0724	1.0	30	0848	1.4	43	0941	1.5	46	1045	1.5	46	0903	1.5	46
1350	2.5	76	1436	2.2	67	1510	2.4	73	1551	2.1	64	1356	1.9	58
2109	0.2	6	2223	0.2	6	2248	-0.4	-12	2320	0.1	3	2120	-0.1	-3
7 M 0349	1.8	55	22 Tu 0549	1.8	55	7 Th 0609	2.2	67	22 F 0630	2.0	61	7 Th 0450	2.1	64
0834	1.2	37	1004	1.5	46	1102	1.5	46	1141	1.4	43	1015	1.4	43
1441	2.5	76	1529	2.2	67	1619	2.5	76	1649	2.2	67	1518	1.9	58
2209	-0.1	-3	2312	0.0	0	2347	-0.5	-15	2347	-0.2	-6	2229	0.3	9
8 Tu 0512	2.0	61	23 W 0635	2.0	61	8 F 0656	2.3	70	23 Sa 0005	0.0	0	8 F 0544	2.2	67
0951	1.4	43	1112	1.5	46	1208	1.4	43	0700	2.2	67	1111	1.2	37
1536	2.5	76	1621	2.2	67	1723	2.5	76	1227	1.3	40	1627	2.0	61
2306	-0.4	-12	2357	-0.1	-3	1741	2.3	70	1741	2.3	70	2320	0.3	9
9 W 0617	2.2	67	24 Th 0711	2.1	64	9 Sa 0040	-0.6	-18	24 Su 0045	-0.1	-3	9 Sa 0626	2.3	70
1107	1.5	46	1207	1.5	46	0737	2.4	73	0728	2.3	70	1156	1.0	30
1632	2.6	79	1710	2.3	70	1304	1.2	37	1306	1.1	34	1726	2.2	67
						1821	2.6	79	1828	2.3	70			
10 Th 0001	-0.7	-21	25 F 0037	-0.2	-6	10 Su 0128	-0.5	-15	25 M 0122	-0.1	-3	10 Su 0023	-0.1	-3
0711	2.4	73	0742	2.2	67	0814	2.5	76	0755	2.4	73	0633	2.3	70
1214	1.5	46	1253	1.4	43	1354	1.1	34	1344	1.0	30	1235	0.8	24
1728	2.6	79	1755	2.3	70	○ 1916	2.6	79	1912	2.4	73	1818	2.3	70
11 F 0052	-0.8	-24	26 Sa 0114	-0.3	-9	11 M 0213	-0.4	-12	26 Tu 0157	0.0	0	11 M 0110	0.0	0
0759	2.5	76	0811	2.3	70	0849	2.6	79	0822	2.4	73	0735	2.5	76
1313	1.4	43	1333	1.4	43	1441	0.9	27	1420	0.8	24	1338	0.7	21
1823	2.7	82	1837	2.4	73	2008	2.5	76	○ 1957	2.4	73	1920	2.5	76
12 Sa 0142	-0.9	-27	27 Su 0149	-0.3	-9	12 Tu 0255	-0.2	-6	27 W 0232	0.1	3	12 Tu 0153	0.1	3
0843	2.6	79	0840	2.3	70	0921	2.6	79	0849	2.5	76	0805	2.5	76
1408	1.3	40	1411	1.3	40	1526	0.7	21	1457	0.6	18	1420	0.5	15
● 1915	2.7	82	○ 1918	2.4	73	2058	2.4	73	2042	2.4	73	● 2010	2.4	73
13 Su 0229	-0.8	-24	28 M 0222	-0.3	-9	13 W 0334	0.1	3	28 Th 0307	0.3	9	13 W 0234	0.3	9
0924	2.6	79	0907	2.4	73	0952	2.5	76	0917	2.5	76	0834	2.5	76
1500	1.2	37	1448	1.2	37	1611	0.6	18	1536	0.4	12	1500	0.3	9
2008	2.6	79	1959	2.4	73	2148	2.3	70	2130	2.4	73	2058	2.4	73
14 M 0314	-0.6	-18	29 Tu 0255	-0.2	-6	14 Th 0412	0.4	12	14 F 0232	0.5	15	14 F 0312	0.5	15
1003	2.6	79	0935	2.4	73	1022	2.5	76	1052	2.4	73	0832	2.5	76
1551	1.1	34	1525	1.1	34	1656	0.5	15	1656	0.5	15	1538	0.2	6
2100	2.4	73	2041	2.3	70	2241	2.1	64	2241	2.3	70	2144	2.3	70
15 Tu 0357	-0.3	-9	30 W 0327	0.0	0	15 F 0449	0.7	21	15 F 0348	0.8	24	15 F 0312	0.5	15
1040	2.6	79	1002	2.5	76	1052	2.4	73	0930	2.4	73	0902	2.4	73
1643	1.0	30	1605	1.0	30	1742	0.5	15	1616	0.2	6	1510	-0.1	-3
2153	2.2	67	2126	2.2	67	2338	1.9	58	2231	2.2	67	2135	2.5	76
			31 Th 0400	0.2	6							31 Su 0413	1.1	34
			1031	2.5	76							0940	2.5	76
			1647	0.8	24							1643	-0.3	-9
			2217	2.1	64							2330	2.3	70

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Guam (Apra Harbor), Mariana Islands, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0502	1.2	37	16 Tu	0528	1.4	43	1 W	0033	2.4	73	16 Th	0019	2.2	67
	1020	2.4	73		1018	2.0	61		0607	1.4	43		0604	1.5	46
	1736	-0.3	-9		1741	0.1	3		1052	2.2	67		1031	1.9	58
									1817	-0.3	-9		1748	0.1	3
2 Tu	0039	2.2	67	17 W	0051	2.0	61	2 Th	0137	2.3	70	17 F	0104	2.2	67
	0600	1.4	43		0621	1.5	46		0718	1.4	43		0702	1.4	43
	1107	2.3	70		1100	2.0	61		1159	2.0	61		1126	1.8	55
	1837	-0.2	-6		1830	0.2	6	O	1918	0.0	0		1834	0.3	9
3 W	0157	2.1	64	18 Th	0152	2.0	61	3 F	0237	2.3	70	18 Sa	0149	2.2	67
	0711	1.5	46		0725	1.5	46		0834	1.2	37		0802	1.3	40
	1207	2.2	67		1156	1.9	58		1326	1.9	58		1239	1.7	52
O	1944	-0.1	-3	O	1926	0.3	9		2022	0.2	6	O	1926	0.4	12
4 Th	0313	2.2	67	19 F	0252	2.0	61	4 Sa	0329	2.3	70	19 Su	0232	2.3	70
	0834	1.4	43		0836	1.4	43		0944	1.0	30		0900	1.1	34
	1327	2.1	64		1313	1.8	55		1505	1.8	55		1408	1.7	58
	2054	0.0	0		2026	0.4	12		2127	0.5	15		2022	0.6	18
5 F	0415	2.2	67	20 Sa	0341	2.1	64	5 Su	0413	2.4	73	20 M	0314	2.3	70
	0954	1.3	40		0941	1.2	37		1044	0.7	21		0953	0.8	24
	1500	2.0	61		1442	1.8	55		1633	1.9	58		1537	1.8	55
	2202	0.1	3		2126	0.5	15		2229	0.7	21		2122	0.8	24
6 Sa	0503	2.3	70	21 Su	0423	2.2	67	6 M	0452	2.4	73	21 Tu	0354	2.4	73
	1059	1.0	30		1034	1.0	30		1134	0.4	12		1042	0.5	15
	1625	2.1	64		1602	1.9	58		1744	2.0	61		1653	1.9	58
	2304	0.2	6		2223	0.5	15		2327	0.9	27		2223	0.9	27
7 Su	0543	2.3	70	22 M	0459	2.3	70	7 Tu	0526	2.4	73	22 W	0433	2.4	73
	1153	0.8	24		1120	0.8	24		1218	0.2	6		1128	0.1	3
	1735	2.2	67		1709	2.0	61		1843	2.1	64		1758	2.1	64
	2359	0.4	12		2316	0.6	18						2324	1.1	34
8 M	0617	2.4	73	23 Tu	0533	2.4	73	8 W	0019	1.0	30	23 Sa	0513	2.5	76
	1238	0.5	15		1202	0.5	15		0558	2.4	73		0623	2.3	70
	1835	2.3	70		1808	2.2	67		1257	0.0	0		1346	-0.3	-9
									1933	2.2	67		2051	2.3	70
9 Tu	0047	0.5	15	24 W	0007	0.7	21	9 Th	0106	1.1	34	24 F	0022	1.2	37
	0648	2.4	73		0606	2.4	73		0630	2.4	73		0554	2.6	79
	1319	0.3	9		1242	0.1	3		1334	-0.1	-3		1259	-0.5	-15
	1927	2.3	70		1902	2.4	73		2017	2.3	70		1952	2.5	76
10 W	0131	0.7	21	25 Th	0055	0.8	24	10 F	0150	1.2	37	25 Sa	0117	1.3	40
	0717	2.4	73		0640	2.5	76		0700	2.3	70		0636	2.6	79
	1357	0.1	3		1323	-0.2	-6		1408	-0.2	-6		1346	-0.7	-21
O	2014	2.4	73		1954	2.5	76	O	2057	2.3	70		2045	2.6	79
11 Th	0212	0.8	24	26 F	0142	0.9	27	11 Sa	0231	1.3	40	26 Su	0211	1.3	40
	0746	2.4	73		0715	2.5	76		0731	2.3	70		0720	2.6	79
	1433	0.0	0		1405	-0.4	-12		1442	-0.3	-9		1434	-0.9	-27
	2058	2.3	70		2046	2.6	79		2136	2.3	70		2137	2.6	79
12 F	0250	1.0	30	27 Sa	0229	1.0	30	12 Su	0310	1.4	43	27 W	0305	1.4	43
	0814	2.4	73		0751	2.6	79		0802	2.2	67		0806	2.6	79
	1508	-0.1	-3		1450	-0.6	-18		1516	-0.2	-6		1523	-0.9	-27
	2140	2.3	70		2139	2.6	79		2215	2.3	70		2229	2.6	79
13 Sa	0328	1.1	34	28 Su	0317	1.2	37	13 M	0349	1.4	43	28 Tu	0400	1.4	43
	0842	2.3	70		0830	2.5	76		0835	2.2	67		0854	2.5	76
	1543	-0.1	-3		1537	-0.6	-18		1551	-0.2	-6		1613	-0.7	-21
	2223	2.2	67		2233	2.5	76		2254	2.3	70		2321	2.6	79
14 Su	0405	1.2	37	29 M	0408	1.3	40	14 Tu	0429	1.4	43	29 W	0459	1.4	43
	0911	2.2	67		0912	2.5	76		0909	2.1	64		0947	2.4	73
	1619	0.0	0		1626	-0.6	-18		1627	-0.1	-3		1704	-0.5	-15
	2307	2.2	67		2332	2.5	76		2336	2.2	67				
15 M	0444	1.3	40	30 Tu	0504	1.4	43	15 W	0514	1.5	46	30 Th	0013	2.5	76
	0943	2.1	64		0958	2.4	73		0947	2.0	61		0601	1.3	40
	1657	0.0	0		1720	-0.5	-15		1706	0.0	0		1046	2.2	67
	2356	2.1	64									1756	-0.2	-6	

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Guam (Apra Harbor), Mariana Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m 0141 M 0844 1456 2004	ft 2.4 0.5 1.7 1.0	cm 73 15 52 30	h m 16 Tu 0733 1328 1854	ft 2.4 0.5 1.7 0.9	cm 73 15 52 27	h m 1 Th 0955 1720 2144	ft 2.2 0.2 1.8 1.5	cm 6 6 55 46	h m 16 F 0903 1621 2101	ft 2.3 -0.1 2.0 1.5	cm -3 -3 61 46
1 M 0222 0942 1629 2106	2.4 0.3 1.7 1.3	73 9 52 40	16 W 0831 1502 1956	2.4 1.8 55 1.2	73 9 55 37	1 Th 1049 1812 2253	2.2 1.9 1.5	67 58 46	1 Su 1059 1804 2325	2.0 2.0 1.3	61 61 40
2 Tu 0305 1036 1743 2212	2.4 0.1 1.9 1.4	73 3 58 43	17 W 0118 0831 1502 1956	2.4 0.3 1.8 1.2	73 9 55 37	2 F 0308 1049 1812 2220	2.2 0.1 1.9	67 3 58 46	2 M 0437 1145 1835	2.1 0.1 2.1	64 3 64
3 W 0348 1124 1839 2318	2.3 0.0 2.0 1.5	70 0 61 46	18 Th 0206 1031 1741 2107	2.4 -0.3 2.1 1.4	73 0 64 43	3 Sa 1137 1852 2350	2.2 2.0 1.5	67 61 46	3 Tu 0010 0529 1226 1904	1.2 2.2 0.1 2.2	37 67 3 67
4 Th 1124 1839 2318	2.3 0.0 2.0	70 0 61	19 F 0300 1031 1741 2224	2.5 -0.3 2.1 1.5	76 -9 64 46	4 Su 1220 1925	2.2 2.1	67 64	4 W 0449 0616 1304 1931	1.1 2.3 0.1 2.3	34 70 3 70
5 F 1207 1922	2.3 -0.1 2.1	70 -3 64	20 Sa 1128 1840 2336	2.5 2.3 1.5	76 70 46	5 M 0037 0542 1300 1954	1.4 2.2 -0.1 2.2	43 67 -3 67	5 Th 0126 0701 1340 1957	0.9 2.3 0.2 2.3	27 70 6 70
6 Sa 0516 1248 1959	1.5 -0.2 2.1	46 -6 64	21 Su 1223 1930	2.6 -0.7	79 -21	6 Tu 0119 0626 1336 2022	1.3 2.3 -0.1 2.3	40 70 -3 70	6 W 0123 0652 1347 2019	1.0 2.6 -0.3 2.5	30 79 -9 76
7 Su 0558 1325 2032	1.5 -0.3 2.2	46 -9 67	22 M 0040 0556 1315 2016	1.4 2.7 -0.8	43 82 -24 76	7 W 0157 0708 1410 2049	1.2 2.3 -0.1 2.3	37 70 -3 70	7 Th 0213 0748 1433 2054	0.8 2.6 -0.1 2.5	24 79 -9 76
8 M 1401 ● 2103	1.5 -0.3 2.3	46 -9 70	23 Tu 0138 0652 1405 2058	1.3 2.7 -0.7	40 82 -21 79	8 Th 0234 0750 1443 2116	1.1 2.3 0.0 2.4	34 70 0 73	8 F 0300 0842 1516 2127	0.6 2.5 0.1 2.5	18 76 3 76
9 Tu 0718 1435 2132	1.4 -0.3 2.3	43 -9 70	24 W 0232 0748 1453 2138	1.2 2.6 -0.6 2.6	37 79 -18 79	9 F 0310 0831 1515 2142	1.0 2.3 0.1 2.4	30 70 3 73	9 Sa 0347 0936 1558 2200	0.5 2.4 0.4 2.5	15 73 12 76
10 W 0757 1507 2201	1.4 -0.2 2.3	43 -6 70	25 Th 0325 0843 1538 2216	1.0 2.5 -0.3 2.6	30 76 -9 79	10 Sa 0348 0915 1547 2210	0.9 2.2 0.3 2.4	27 67 9 73	10 Tu 0434 1032 1640 2232	0.4 2.2 0.7 2.4	12 67 21 73
11 Th 1539 2230	1.3 -0.1 2.2	40 -3 73	26 F 0418 0939 1623 2252	0.9 2.4 0.0 2.5	27 73 0 76	11 Su 0427 1004 1621 2239	0.7 2.1 0.5 2.4	21 64 15 73	11 W 0522 1132 1723 2306	0.3 2.0 1.0 2.3	9 61 30 70
12 F 0919 1612 2259	1.2 0.0 2.4	37 0 73	27 Sa 0510 1039 1706 2328	0.7 2.2 0.3 2.5	21 67 9 76	12 M 0511 1058 1659 2311	0.6 2.0 0.7 2.4	18 61 21 73	12 Tu 0612 1241 1810 2342	0.3 1.9 1.2 2.2	9 58 37 67
13 Sa 1006 1645 2329	1.1 0.2 2.4	34 6 73	28 Su 0605 1145 1750 2347	0.6 2.0 0.7 2.4	18 61 27 73	13 Tu 0600 1204 1743 2347	0.4 1.9 0.9 2.4	12 58 55 73	13 W 0706 1403 1905 2012	0.3 1.8 1.4 1.5	9 58 46 43
14 Su 1100 1722	1.0 0.4	30 12	29 M 0004 0701 1302 1837	2.4 0.5 1.8 1.0	73 15 55 30	14 W 0655 1324 1836 1837	0.2 1.9 1.2 1.0	6 58 37 43	29 Th 0026 0805 1530 2012	2.1 0.3 55 46	67 61 37 43
15 M 0639 1206 1804	2.4 1.8 0.7	73 55 21	30 Tu 0043 0759 1435 1930	2.3 0.4 1.7 1.2	70 12 52 37	15 Th 0032 0757 1456 1942	2.3 0.1 1.9 1.4	70 3 58 43	15 F 0122 0906 1638 2126	2.0 0.3 1.9 1.5	61 9 58 46
31 W 0125 0858 1607 2033	2.2 0.3 1.8 1.4	67 9 55 43	31 W 0230 1005 1727 2232	2.0 0.2 2.0 1.4	61 6 61 43	31 Sa 0230 1005 1727 2232	2.0 0.2 2.0 1.4	61 6 61 43	30 M 0310 1008 1706 2259	1.9 0.4 2.1 1.1	58 12 64 34

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Guam (Apra Harbor), Mariana Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0418	2.0	61	16 W 0507	2.1	64	1 F 0555	2.1	64	16 Sa 0034	-0.1	-3
1058	0.4	12	W 1123	0.4	12	F 1142	0.8	24	Sa 0715	2.2	67
1737	2.2	67	W 1742	2.5	76	F 1740	2.4	73	1240	1.2	37
2340	0.9	27							1804	2.5	76
2 W 0515	2.1	64	17 Th 0008	0.4	12	2 Sa 0023	0.1	3	17 Su 0113	-0.3	-9
1143	0.4	12	Th 0610	2.3	70	Sa 0647	2.3	70	2 M 0038	-0.5	-15
1807	2.3	70	Th 1215	0.6	18	Sa 1229	0.9	27	M 0732	2.4	73
			Th 1815	2.5	76	Sa 1813	2.5	76	1249	1.3	40
3 Th 0018	0.7	21	18 F 0052	0.2	6	3 Su 0102	-0.2	-6	1810	2.6	79
0606	2.2	67	F 0706	2.3	70	Su 0736	2.4	73	1802	2.3	70
1225	0.5	15	F 1302	0.8	24	Su 1315	1.0	30	1327	1.3	40
1835	2.4	73	F 1847	2.5	76	● 1847	2.5	76	1837	2.4	73
4 F 0054	0.5	15	19 Sa 0132	0.0	0	4 M 0141	-0.4	-12	3 Tu 0122	-0.7	-21
0654	2.3	70	Sa 0757	2.4	73	M 0826	2.5	76	1844	2.5	76
1305	0.5	15	Sa 1347	0.9	27	M 1401	1.1	34	1411	1.4	43
1904	2.4	73	○ 1918	2.5	76	M 1922	2.5	76	○ 1909	2.4	73
5 Sa 0130	0.3	9	20 Su 0210	-0.2	-6	5 Tu 0223	-0.6	-18	3 ○ 1853	2.6	79
0740	2.4	73	Su 0844	2.4	73	Tu 0916	2.5	76	1904	2.3	70
● 1344	0.7	21	Su 1430	1.1	34	Tu 1448	1.3	40	1534	1.5	46
● 1933	2.4	73	Su 1948	2.4	73	Tu 1959	2.5	76	2015	2.2	67
6 Su 0207	0.1	3	21 M 0248	-0.2	-6	6 W 0308	-0.7	-21	5 Th 0254	-0.9	-27
0822	2.4	73	M 0930	2.4	73	W 1008	2.5	76	W 1004	2.3	70
1424	0.8	24	M 1512	1.2	37	W 1539	1.4	43	Th 1534	1.5	46
2003	2.4	73	M 2018	2.3	70	W 2040	2.5	76	2024	2.6	79
7 M 0245	-0.1	-3	22 Tu 0325	-0.2	-6	7 Th 0356	-0.6	-18	5 Th 1528	1.4	43
0916	2.4	73	Tu 1015	2.3	70	F 1104	2.5	76	2024	2.6	79
1505	1.0	30	Tu 1554	1.3	40	F 1634	1.5	46	2032	2.2	67
2035	2.4	73	Tu 2049	2.2	67	F 2125	2.4	73			
8 Tu 0327	-0.2	-6	23 W 0402	-0.1	-3	8 F 0448	-0.5	-15	6 F 0343	-0.8	-24
1008	2.4	73	W 1102	2.2	67	Sa 1203	2.4	73	21 M 0335	-0.3	-9
1549	1.1	34	W 1638	1.4	43	Sa 1738	1.5	46	Th 1043	2.3	70
2109	2.4	73	W 2122	2.1	64	Sa 2218	2.2	67	Th 1617	1.5	46
9 W 0413	-0.3	-9	24 Th 0442	0.0	0	8 F 0449	0.0	0	6 F 1625	1.4	43
1105	2.3	70	Th 1152	2.1	64	Sa 1206	2.2	67	2116	2.4	73
1638	1.3	40	Th 1728	1.5	46	Sa 1757	1.5	46			
2148	2.3	70	Th 2158	2.0	61	Sa 2211	1.9	58	2111	2.1	64
10 Th 0504	-0.3	-9	25 F 0526	0.1	3	9 M 0543	-0.3	-9	21 M 0346	-0.2	-6
1210	2.3	70	F 1247	2.1	64	24 Sa 0529	0.1	3	Th 1050	2.3	70
1736	1.4	43	F 1827	1.5	46	Sa 1249	2.2	67	Th 1635	1.4	43
2234	2.2	67	F 2242	1.9	58	Sa 1849	1.4	43			
11 F 0602	-0.2	-6	26 Sa 0615	0.2	6	9 M 1856	1.4	43	23 M 0453	0.1	3
1322	2.2	67	Sa 1345	2.1	64	Sa 2323	2.1	64	Th 1155	2.3	70
1847	1.5	46	Sa 1933	1.5	46	Sa 2306	1.8	55	Th 1810	1.2	37
2333	2.1	64	Sa 2341	1.8	55	Sa 2054	1.0	30	2246	1.8	55
12 Sa 0706	-0.1	-3	27 Su 0709	0.3	9	11 M 0048	1.9	58	9 M 0617	0.1	3
1435	2.2	67	Su 1438	2.1	64	M 0745	0.2	6	24 Tu 1318	2.5	76
2006	1.4	43	Su 2040	1.4	43	M 1455	2.4	73	Th 1943	1.0	30
●			○			M 2115	1.0	30	2352	1.7	52
13 Su 0050	2.0	61	28 M 0102	1.7	52	11 M 0614	0.3	9	24 Tu 1229	0.3	9
0814	0.0	0	M 0807	0.5	15	10 Su 0643	-0.1	-3	Th 1903	1.1	34
1536	2.3	70	M 1523	2.2	67	M 1402	2.4	73	2352	1.7	52
2122	1.3	40	M 2138	1.2	37	Su 2004	1.2	37			
14 M 0223	2.0	61	29 Tu 0234	1.7	52	13 W 0404	1.9	58	10 M 0611	0.6	18
0922	0.1	3	Tu 0905	0.6	18	W 0954	0.7	21	Th 1306	2.4	73
1625	2.3	70	Tu 1601	2.2	67	W 1620	2.5	76	W 1958	0.9	27
2227	1.0	30	Tu 2226	0.9	27	W 2307	0.4	12	○ 2051	0.7	21
15 Tu 0353	2.0	61	30 W 0354	1.8	55	W 2229	0.5	15	25 W 0254	1.6	49
1025	0.3	9	W 1001	0.6	18	W 2307	0.4	12	Th 0759	1.0	30
1705	2.4	73	W 1635	2.3	70	W 2353	0.1	3	Th 1429	2.4	73
2321	0.7	21	W 2307	0.7	21	W 2353	0.1	3	2147	0.3	9
31 Th 0459	2.0	61							2147	0.3	9
1053	0.7	21									
1708	2.4	73									
2346	0.4	12									

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Malakal Harbor, Palau Islands, Caroline Islands, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0336	0.7	21	16 W	0425	0.6	18	1 F	0415	1.1	34	
0950	5.7	174	1031	5.9	180	1028	5.8	177	16 Sa	0459	1.8	55
1542	2.4	73	1649	1.7	52	1643	1.4	43	1057	5.5	168	
2129	6.0	183	2231	5.7	174	2245	5.5	168	1740	1.5	46	
									2333	4.7	143	
2 W	0407	0.9	27	17 Th	0503	1.2	37	2 Sa	0450	1.5	46	
1025	5.7	174	1108	5.7	174	1107	5.8	177	17 Su	0532	2.3	70
1620	2.4	73	1737	1.8	55	1734	1.4	43	2 Sa	0956	6.1	186
2211	5.8	177	2317	5.2	158	2339	5.0	152	1832	1.7	52	
									1624	0.7	21	
3 Th	0441	1.2	37	18 F	0542	1.7	52	3 Su	0532	1.9	58	
1102	5.7	174	1147	5.5	168	1152	5.6	171	18 M	0025	4.3	131
1706	2.3	70	1832	1.9	58	1838	1.4	43	0612	2.6	79	
2300	5.5	168							1219	5.0	152	
									3 O	1940	1.8	55
4 F	0519	1.6	49	19 Sa	0009	4.7	143	4 M	0044	4.6	140	
1144	5.6	171	0625	2.2	67	0626	2.4	73	19 Tu	0132	3.9	119
1803	2.2	67	1229	5.3	162	1247	5.4	165	0718	2.9	88	
2357	5.1	155				2001	1.3	40	1316	4.7	143	
									2105	1.8	55	
5 Sa	0605	1.9	58	20 Su	0111	4.3	131	5 Tu	0209	4.2	128	
1232	5.6	171	0718	2.6	79	0750	2.7	82	20 W	0307	3.8	116
1913	2.0	61	1318	5.1	155	1356	5.2	158	0908	3.1	94	
			2047	1.9	58	2133	1.1	34	1432	4.5	137	
									2224	1.6	49	
6 Su	0106	4.7	143	21 M	0230	4.0	122	6 W	0352	4.2	128	
0704	2.3	70	0832	2.9	88	0941	2.8	88	21 Th	0454	3.9	119
1328	5.5	168	1417	4.9	149	1518	5.2	158	1038	2.9	88	
2036	1.7	52	2200	1.7	52	2253	0.6	18	1555	4.6	140	
									2325	1.2	37	
7 M	0231	4.5	137	22 Tu	0410	3.9	119	7 Th	0524	4.5	137	
0826	2.6	79	0956	2.9	88	1107	2.5	76	22 F	0553	4.2	128
1433	5.5	168	1527	4.8	146	1640	5.4	165	1138	2.5	76	
2158	1.2	37	2304	1.3	40	2355	0.2	6	1705	4.8	146	
									0340	4.3	131	
8 Tu	0406	4.5	137	23 W	0535	4.1	125	7 Th	0939	2.8	85	
0958	2.7	82	1107	2.8	85	1210	2.1	64	0745	2.9	88	
1544	5.6	171	1634	4.9	149	1748	5.7	174	1333	5.1	155	
2308	0.6	18	2356	0.9	27				1505	5.0	152	
									2234	0.9	27	
9 W	0530	4.7	143	24 Th	0625	4.4	134	9 Sa	0047	-0.2	-6	
1115	2.6	79	1201	2.5	76	0709	5.3	162	24 Su	0050	0.6	18
1652	5.8	177	1731	5.2	158	1300	1.6	49	0659	5.0	152	
						1843	6.1	186	1300	1.7	52	
									1840	5.5	168	
10 Th	0007	0.1	3	25 F	0039	0.6	18	8 F	0624	4.9	149	
0633	5.1	155	0701	4.7	143	0630	2.1	64	25 Sa	0012	0.9	27
1216	2.3	70	1245	2.2	67	1223	2.1	64	23 Sa	1101	2.4	73
1753	6.1	186	1817	5.5	168	1757	5.2	158	1634	5.1	155	
									2337	0.5	15	
11 F	0058	-0.4	-12	26 Sa	0116	0.3	9	9 Sa	0602	5.0	152	
0722	5.5	168	0731	5.0	152	0709	5.3	162	24 Su	0539	4.7	143
1308	2.0	61	1321	2.0	61	1424	0.9	27	1154	2.0	61	
1846	6.4	195	1856	5.7	174	2013	6.3	192	1744	5.5	168	
									1840	5.5	168	
12 Sa	0144	-0.6	-18	27 Su	0149	0.2	6	10 M	0131	-0.4	-12	
0804	5.8	177	0758	5.3	162	0746	5.7	174	25 Su	0124	0.4	12
1354	1.7	52	1353	1.8	55	1344	1.2	37	0726	5.3	162	
●	1935	6.6	201	O	1932	5.9	180	1333	1.4	43		
									1917	5.8	177	
13 Su	0227	-0.6	-18	28 M	0219	0.2	6	26 Tu	0154	0.4	12	
0843	5.9	180	0825	5.5	168	0922	6.0	183	0718	5.7	174	
1437	1.6	49	1424	1.7	52	1540	0.9	27	0753	5.6	171	
2020	6.6	201	2006	6.1	186	2131	6.0	183	1404	1.1	34	
									0153	6.0	183	
14 M	0307	-0.3	-9	29 Tu	0247	0.3	9	10 F	0356	0.8	24	
0919	6.0	183	0853	5.7	174	0953	5.9	180	0729	5.9	180	
1520	1.6	49	1454	1.6	49	1618	1.0	30	1434	0.9	27	
2103	6.4	195	2041	6.1	186	2209	5.6	171	2029	6.1	186	
									0150	0.2	6	
15 Tu	0346	0.1	3	30 W	0315	0.5	15	27 W	0223	0.4	12	
0955	6.0	183	0922	5.8	177	1024	5.7	174	0749	6.0	183	
1603	1.6	49	1526	1.5	46	1657	1.2	37	1407	0.5	15	
2146	6.1	186	2118	6.0	183	2249	5.2	158	●	2003	6.1	186
									0151	0.4	12	
									1939	6.0	183	
16 Sa	0344	0.8	24	31 Th	0344	5.8	177	14 Th	0256	0.8	24	
0953	5.8	177	1601	1.5	46	0953	5.9	180	0846	6.1	186	
			2159	5.8	177			1515	0.4	12		

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Malakal Harbor, Palau Islands, Caroline Islands, 2013

Times and Heights of High and Low Waters

April				May				June																																																																																				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height																																																																																	
1 M 0415 2.2 67 1011 6.1 186 1702 0.5 15 2323 5.2 158	16 Tu 0427 2.8 85 1016 5.4 165 1707 1.3 40 2329 4.8 146	1 W 0510 2.8 85 1049 5.8 177 1755 0.8 24 2355 5.0 152	16 Th 0452 3.0 91 1034 5.3 162 1724 1.4 43 2355 5.0 152	1 Sa 0058 5.5 168 0731 2.4 73 1253 4.9 149 O 1939 1.7 52	16 Su 0006 5.4 165 0621 2.6 79 1157 4.9 149 1819 1.8 55	17 M 0052 5.4 165 0729 2.4 73 1304 4.6 140 O 1915 2.1 64	2 Tu 0154 5.4 165 0845 2.1 64 1414 4.6 140 2043 2.0 61	2 Su 0154 5.4 165 0845 2.1 64 1414 4.6 140 2043 2.0 61	17 M 0052 5.4 165 0729 2.4 73 1304 4.6 140 O 1915 2.1 64	3 W 0028 4.8 146 0615 2.9 88 1202 5.4 165 O 1922 1.2 37	18 Th 0022 4.6 140 0605 3.2 98 1152 4.9 149 O 1900 1.8 55	18 F 0130 5.1 155 0752 2.8 85 1310 4.9 149 2017 1.5 46	18 Sa 0046 5.0 152 0701 3.0 91 1226 4.7 143 O 1912 1.9 58	3 M 0251 5.4 165 0951 1.7 137 1539 4.5 137 2147 2.2 67	18 Tu 0143 5.4 165 0842 2.0 61 1421 4.4 134 2023 2.3 70	18 W 0239 5.5 168 0952 1.5 46 1545 4.4 134 2141 2.5 76	4 Th 0148 4.6 140 0755 3.0 91 1320 5.0 152 2048 1.3 40	19 F 0126 4.5 137 0740 3.2 98 1300 4.6 140 2018 2.0 61	4 Sa 0240 5.1 155 0915 2.4 73 1440 4.7 143 2129 1.7 52	19 Su 0141 5.0 152 0822 2.7 82 1340 4.5 137 2020 2.0 61	4 Tu 0345 5.5 168 1050 1.3 40 1657 4.5 137 2247 2.3 70	19 W 0239 5.5 168 0952 1.5 46 1545 4.4 134 2141 2.5 76	5 F 0317 4.7 143 0933 2.7 82 1456 4.8 146 2206 1.3 40	20 Sa 0237 4.5 137 0916 2.9 88 1424 4.5 137 2134 1.9 58	5 Su 0344 5.2 158 1023 1.9 58 1609 4.8 146 2232 1.7 52	20 M 0238 5.1 155 0934 2.3 70 1501 4.5 137 2130 2.1 64	5 W 0435 5.5 168 1140 0.8 24 1758 4.7 143 2340 2.3 70	20 Th 0338 5.6 171 1056 0.9 27 1704 4.7 143 2253 2.5 76	6 Sa 0431 4.9 149 1047 2.1 64 1626 5.0 152 2310 1.1 34	21 Su 0343 4.7 143 1025 2.5 76 1547 4.6 140 2236 1.8 55	6 M 0438 5.4 165 1119 1.3 40 1720 4.9 149 2327 1.7 52	21 Tu 0334 5.2 158 1034 1.7 52 1620 4.6 140 2234 2.1 64	6 Th 0521 5.6 171 1224 0.5 152 1845 4.9 149	21 F 0437 5.8 177 1152 0.3 9 1810 5.0 152 2354 2.4 73	7 Su 0525 5.2 158 1143 1.5 46 1736 5.3 162	22 M 0436 5.0 152 1117 1.9 58 1657 4.9 149 2327 1.6 49	7 Tu 0523 5.6 171 1206 0.8 24 1815 5.1 155	22 W 0426 5.5 168 1126 1.0 30 1727 4.9 149 2330 2.1 64	7 F 0027 2.3 70 0602 5.7 174 1304 0.2 6 1924 5.1 155	22 Sa 0533 6.1 186 1242 -0.2 -6 1905 5.4 165	8 M 0001 1.0 30 0607 5.6 171 1229 0.9 27 1829 5.5 168	23 Tu 0520 5.3 162 1200 1.2 37 1753 5.2 158	8 W 0014 1.7 52 0602 5.8 177 1247 0.4 12 1859 5.3 162	23 Th 0515 5.8 177 1213 0.4 12 1823 5.3 162	8 Sa 0107 2.3 70 0640 5.8 177 1340 0.1 3 1958 5.2 158	23 Su 0048 2.3 70 0625 6.4 195 1330 -0.6 -18 O 1953 5.7 174	9 Tu 0045 1.0 30 0642 5.8 177 1310 0.5 15 1913 5.7 174	24 W 0011 1.5 46 0559 5.7 174 1239 0.6 18 1841 5.6 171	9 Th 0055 1.7 52 0637 5.9 180 1324 0.2 6 1937 5.5 168	24 F 0019 2.0 61 0600 6.1 186 1257 -0.1 -3 1913 5.6 171	9 Sa 0143 2.3 70 0714 5.9 180 1413 0.1 3 O 2030 5.3 162	24 M 0137 2.2 67 0714 6.6 201 1415 -0.7 -21 2037 5.8 177	10 W 0123 1.0 30 0714 6.0 183 1346 0.2 6 O 1950 5.8 177	25 Th 0051 1.5 46 0636 6.0 183 1317 0.1 3 1925 5.9 180	10 F 0131 1.8 55 0709 6.0 183 1358 0.1 3 O 2010 5.5 168	25 Sa 0104 2.0 61 0644 6.4 195 1340 -0.5 -15 O 2000 5.8 177	10 M 0217 2.4 73 0748 6.0 183 1445 0.2 6 2101 5.4 165	25 Tu 0224 2.1 64 0802 6.7 204 1500 -0.5 -15 2120 5.9 180	11 Th 0158 1.2 37 0743 6.1 186 1419 0.1 3 2024 5.8 177	26 F 0128 1.5 46 0712 6.3 192 1355 -0.2 -6 O 2007 6.0 183	11 Sa 0204 2.0 61 0739 6.0 183 1430 0.1 3 2043 5.5 168	26 M 0148 2.1 64 0727 6.6 201 1424 -0.6 -18 2045 5.9 180	11 Tu 0249 2.5 76 0821 5.9 180 1516 0.4 12 2133 5.4 165	26 W 0312 2.1 64 0850 6.5 198 1544 -0.2 -6 2203 6.0 183	12 F 0229 1.5 46 0811 6.1 186 1451 0.2 6 2057 5.7 174	27 Sa 0205 1.7 52 0749 6.5 198 1434 -0.3 -9 2051 6.0 183	12 M 0235 2.2 67 0809 6.0 183 1501 0.3 9 2115 5.5 168	27 W 0232 2.2 67 0811 6.6 201 1509 -0.5 -15 2131 5.8 177	12 Th 0321 2.6 79 0855 5.8 177 1548 0.7 21 2207 5.4 165	27 F 0401 2.1 64 0939 6.3 192 1629 0.3 9 2247 5.9 180	13 Sa 0259 1.8 55 0839 6.0 183 1522 0.4 12 2130 5.6 171	28 Su 0243 1.9 58 0827 6.5 198 1516 -0.3 -9 2136 5.9 180	13 M 0305 2.4 73 0840 5.9 180 1533 0.5 15 2150 5.4 165	28 Tu 0318 2.3 70 0857 6.5 198 1555 -0.2 -6 2219 5.8 177	13 Th 0356 2.7 82 0933 5.7 174 1620 0.9 27 2244 5.4 165	28 F 0455 2.2 67 1030 5.8 177 1715 0.9 27 2331 5.8 177	14 Su 0327 2.1 64 0908 5.9 180 1553 0.7 21 2205 5.3 162	29 M 0324 2.2 67 0909 6.4 195 1602 0.0 0 2225 5.6 171	14 Tu 0336 2.7 82 0914 5.8 177 1606 0.8 24 2227 5.2 158	29 W 0410 2.5 76 0946 6.2 189 1645 0.3 9 2310 5.6 171	14 F 0435 2.8 85 1014 5.5 168 1655 1.2 37 2323 5.4 165	29 Sa 0554 2.2 67 1126 5.4 165 1803 1.4 43	15 M 0355 2.5 76 0940 5.7 174 1627 1.0 30 2244 5.1 155	30 Tu 0411 2.5 76 0955 6.2 189 1655 0.4 12 2320 5.4 165	30 W 0509 2.6 79 1041 5.8 177 1739 0.8 24 2309 5.1 155	31 F 0003 5.5 168 0617 2.6 79 1142 5.3 162 1837 1.3 40	31 Sa 0523 2.8 85 1102 5.2 158 1734 1.5 46	30 W 0017 5.7 174 0658 2.1 64 1227 4.9 149 O 1855 1.9 58	15 Th 0157 2.5 76 1157 4.9 149 1819 1.8 55	16 F 0052 5.4 165 0621 2.6 79 1157 4.9 149 1819 1.8 55	16 Su 0006 5.4 165 0621 2.6 79 1157 4.9 149 1819 1.8 55	16 M 0006 5.4 165 0621 2.6 79 1157 4.9 149 1819 1.8 55

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Malakal Harbor, Palau Islands, Caroline Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0104	5.6	171	16 Tu 0007	5.7	174	1 Th 0155	5.3	162	1 Su 0336	5.3	162
0805	2.0	61	0643	2.0	61	0937	1.8	55	1106	1.8	55
1337	4.5	137	1234	4.8	146	1547	4.2	128	1736	4.9	149
1952	2.4	73	● 1825	2.3	70	2126	3.2	98	2318	3.2	98
2 Tu 0155	5.5	168	17 W 0056	5.7	174	2 0301	5.2	158	2 M 0446	5.5	168
0912	1.7	52	0756	1.8	55	1042	1.6	49	1153	1.5	46
1459	4.3	131	1349	4.5	137	1716	4.3	131	1813	5.2	158
2057	2.7	82	1930	2.6	79	2241	3.1	94			
3 W 0250	5.4	165	18 Th 0154	5.6	171	3 Sa 0410	5.3	162	3 Tu 0005	2.8	85
1016	1.4	43	0917	1.4	43	1137	1.3	40	0540	5.8	177
1626	4.2	128	1519	4.4	134	1812	4.6	140	1233	1.3	40
2206	2.8	85	2059	2.9	88	2341	2.9	88	1843	5.6	171
4 Th 0348	5.4	165	19 F 0301	5.7	174	4 Su 0510	5.5	168	4 W 0044	2.4	73
1112	1.1	34	1032	1.0	30	1223	0.9	27	0623	6.1	186
1739	4.4	134	1649	4.6	140	1849	4.9	149	1307	1.1	34
2308	2.8	85	2230	2.9	88				1910	5.9	180
5 F 0443	5.4	165	20 Sa 0411	5.8	177	5 M 0028	2.7	82	5 Th 0117	2.1	64
1202	0.8	24	1136	0.4	12	0559	5.7	174	0701	6.4	195
1831	4.6	140	1802	5.0	152	1301	0.7	21	1337	1.1	34
			2341	2.7	82	1919	5.3	162	● 1936	6.2	189
6 Sa 0002	2.6	79	21 Su 0517	6.1	186	6 Tu 0107	2.4	73	6 F 0148	1.8	55
0534	5.5	168	1231	-0.1	-3	0641	6.0	183	0736	6.5	198
1244	0.5	15	1856	5.4	165	1335	0.6	18	1405	1.2	37
1910	4.9	149				1946	5.5	168	2002	6.5	198
7 Su 0047	2.5	76	22 M 0039	2.4	73	7 W 0141	2.2	67	21 Sa 0221	1.0	30
0617	5.7	174	0616	6.4	195	0717	6.2	189	0820	6.8	207
1322	0.3	9	1319	-0.4	-12	1405	0.6	12	1436	1.5	46
1943	5.1	155	1941	5.7	174	● 2012	5.8	177			
8 M 0126	2.4	73	23 Tu 0128	2.1	64	8 Th 0212	2.1	64	22 Su 0248	1.5	46
0656	5.9	180	0708	6.7	204	0752	6.3	192	0847	6.6	201
1356	0.2	6	1404	-0.4	-12	1434	0.7	21	1459	1.7	52
● 2013	5.3	162	○ 2021	6.0	183	2039	6.0	183	2059	6.7	204
9 Tu 0200	2.4	73	24 W 0215	1.8	55	9 F 0242	2.0	61	9 M 0321	1.4	43
0732	6.0	183	0756	6.8	207	0826	6.3	192	0925	6.4	195
1428	0.3	9	1445	-0.3	-9	1500	0.9	27	1528	2.1	64
2041	5.5	168	2059	6.2	189	2106	6.1	186	2132	6.7	204
10 W 0232	2.4	73	25 Th 0259	1.7	52	10 Sa 0312	2.0	61	10 Tu 0400	1.5	46
0806	6.1	186	0843	6.7	204	0901	6.3	192	1009	6.1	186
1458	0.4	12	1526	0.1	3	1527	1.2	37	1600	2.5	76
2110	5.6	171	2136	6.3	192	2135	6.2	189	2209	6.6	201
11 Th 0304	2.4	73	26 F 0344	1.7	52	11 Su 0345	1.9	58	11 W 0446	1.6	49
0840	6.0	183	0928	6.4	195	0940	6.1	186	1059	5.8	177
1526	0.7	21	1605	0.7	21	1555	1.5	46	1639	2.9	88
2140	5.7	174	2213	6.2	189	2207	6.2	189	2253	6.4	195
12 F 0336	2.4	73	27 Sa 0431	1.7	52	12 M 0424	1.9	58	12 Th 0543	1.7	52
0917	5.9	180	1014	6.0	183	1023	5.8	177	1200	5.4	165
1555	0.9	27	1644	1.2	37	1627	1.9	58	1721	2.8	85
2212	5.7	174	2251	6.1	186	2244	6.2	189	2321	5.9	180
13 Sa 0412	2.4	73	28 Su 0521	1.8	55	13 Tu 0510	1.8	55	27 W 0623	2.1	64
0956	5.7	174	1102	5.5	168	1113	5.5	168	1215	4.9	149
1625	1.2	37	1725	1.8	55	1703	2.3	70	1804	3.2	98
2246	5.8	177	2330	6.0	183	2326	6.1	186	● O		
14 Su 0453	2.3	70	29 M 0615	1.9	58	14 W 0607	1.8	55	29 Th 0006	5.7	174
1041	5.5	168	1155	5.0	152	1213	5.1	155	0731	2.3	70
1659	1.5	46	1807	2.3	70	1749	2.7	82	1323	4.6	140
2324	5.8	177				● O			1911	3.6	110
15 M 0542	2.2	67	30 Tu 0012	5.8	177	15 Th 0016	6.0	183	30 F 0102	5.4	165
1133	5.2	158	0716	2.0	61	0722	1.8	55	0850	2.3	70
1737	1.9	58	1256	4.6	140	1328	4.7	143	1457	4.4	134
			● O 1858	2.8	85	1857	3.1	94	2050	3.7	113
16 M 0562	2.2	67	31 W 0059	5.5	168				31 Th 0215	5.2	158
1133	5.2	158	0825	2.0	61				0105	2.1	64
1737	1.9	58	1411	4.3	131				1638	4.6	140
			2004	3.1	94				2217	3.5	107

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Malakal Harbor, Palau Islands, Caroline Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 Tu	0413 5.4 165	16 W	0502 6.0 183 1132 1.8 55 1738 6.3 192	1 F	0534 5.8 177 1152 2.3 70 1740 6.3 192	16 Sa	0027 1.0 30 0640 5.9 180 1235 2.3 70 1820 6.6 201	1 Su	0602 5.5 168 1159 2.5 76 1740 6.4 195	16 M	0051 0.5 15 0713 5.4 165 1256 2.4 73 1831 6.1 186
2 W	0513 5.7 174	17 Th	0003 1.7 52 0601 6.3 192 1219 1.7 52 1817 6.6 201	2 Sa	0022 1.5 46 0621 6.1 186 1231 2.2 67 1816 6.6 201	17 Su	0107 0.7 21 0720 6.0 183 1314 2.3 70 1854 6.7 204	2 M	0039 0.5 15 0652 5.8 177 1244 2.4 73 1824 6.7 204	17 Tu	0128 0.3 9 0747 5.5 168 1333 2.4 73 1907 6.2 189
3 Th	0016 2.3 70	18 F	0046 1.2 37 0649 6.5 198 1300 1.7 52 1852 6.8 207	3 Su	0059 1.0 30 0704 6.3 192 1307 2.2 67 ● 1851 6.9 210	18 M	0143 0.5 15 0756 6.1 186 1349 2.4 73 ○ 1926 6.7 204	3 Tu	0121 0.1 3 0737 6.1 186 1325 2.4 73 ● 1907 6.9 210	18 W	0203 0.3 9 0818 5.6 171 1407 2.4 73 1941 6.3 192
4 F	0050 1.8 55	19 Sa	0125 0.9 27 0730 6.6 201	4 M	0135 0.6 18 0745 6.5 198 1341 2.3 70 1927 7.1 216	19 Tu	0217 0.5 15 0829 6.1 186 1422 2.6 79 1958 6.7 204	4 W	0202 -0.1 -3 0820 6.2 189 1407 2.4 73 1949 7.1 216	19 Th	0235 0.4 12 0848 5.7 174 1439 2.5 76 2013 6.3 192
5 Sa	0123 1.4 43	20 Su	0201 0.7 21 0807 6.6 201	5 Tu	0212 0.4 12 0826 6.5 198 1417 2.5 76 2004 7.2 219	20 W	0250 0.7 21 0902 6.0 183 1452 2.8 85 2029 6.6 201	5 Th	0245 -0.1 -3 0904 6.2 189 1450 2.5 76 2034 7.0 213	20 F	0306 0.6 18 0918 5.7 174 1509 2.6 79 2046 6.2 189
6 Su	0154 1.1 34	21 M	0235 0.8 24 0842 6.5 198 1442 2.4 73 2023 6.9 210	6 W	0252 0.4 12 0909 6.5 198 1454 2.8 85 2044 7.2 219	21 Th	0322 1.0 30 0935 5.9 180 1523 3.0 91 2102 6.4 195	6 F	0329 0.1 3 0949 6.2 189 1537 2.6 79 2121 6.8 207	21 Sa	0337 0.8 24 0949 5.6 171 1541 2.7 82 2121 6.0 183
7 M	0227 1.0 30	22 Tu	0308 1.0 30 0916 6.3 192	7 Th	0335 0.6 18 0955 6.3 192 1537 3.0 91 2128 7.0 213	22 F	0355 1.3 40 1011 5.7 174 1556 3.3 101 2138 6.2 189	7 Sa	0416 0.5 15 1036 6.0 183 1631 2.7 82 2212 6.4 195	22 Su	0407 1.1 34 1023 5.6 171 1616 2.8 85 2159 5.8 177
8 Tu	0303 1.0 30	23 W	0342 1.3 40 0951 6.0 183	8 F	0424 0.9 27 1047 6.0 183 1630 3.3 101 2218 6.6 201	23 Sa	0431 1.6 49 1050 5.6 171 1635 3.4 104 2218 5.9 180	8 Su	0507 1.0 30 1126 5.9 180 1734 2.8 85 2310 6.0 183	23 M	0439 1.4 43 1059 5.6 171 1657 2.8 85 2242 5.5 168
9 W	0344 1.1 34	24 Th	0417 1.7 52 1030 5.8 177	9 Sa	0521 1.3 40 1145 5.8 177 1739 3.5 107 2318 6.2 189	24 Su	0510 1.9 58 1134 5.5 168 1725 3.5 107 2306 5.6 171	9 M	0602 1.5 46 1220 5.8 177 1846 2.7 82	24 Tu	0513 1.7 52 1138 5.5 168 1746 2.7 82 2332 5.2 158
10 Th	0431 1.3 40	25 F	0458 2.0 61 1115 5.5 168	10 Su	0627 1.7 52 1251 5.7 174 1906 3.4 104 ● 2004 5.9 180	25 M	0556 2.2 67 1223 5.4 165 1833 3.5 107	10 Tu	0016 5.5 168 0704 1.9 58 1317 5.7 174 ● 2004 2.5 76	25 W	0553 2.0 61 1222 5.4 165 1848 2.6 79 ● 2004 2.5 76
11 F	0530 1.6 49	26 Sa	0547 2.3 70 1208 5.3 162	11 M	0032 5.8 177 0741 2.1 64 1402 5.7 174 2035 3.1 94	26 Tu	0004 5.3 162 0652 2.4 73 1317 5.4 165 ● 1954 3.3 101	11 W	0134 5.1 155 0810 2.3 70 1417 5.7 174 2118 2.1 64	26 Th	0032 4.8 146 0641 2.3 70 1311 5.4 165 2003 2.3 70
12 Sa	0644 1.9 58	27 Su	0651 2.6 79 1311 5.2 158	12 Tu	0159 5.5 168 0855 2.3 70 1509 5.8 177 2150 2.6 79	27 W	0114 5.0 152 0758 2.6 79 1414 5.4 165 2111 2.9 88	12 Th	0303 4.8 146 0920 2.6 79 1517 5.7 174 2224 1.7 52	27 F	0145 4.6 140 0746 2.6 79 1407 5.4 165 2121 1.9 58
13 Su	0810 2.1 64	28 M	0043 5.3 162 0806 2.7 82	13 W	0331 5.4 165 1002 2.3 70 1608 6.0 183 2251 2.0 61	28 Th	0235 4.9 149 0908 2.7 82 1511 5.5 168 2214 2.3 70	13 F	0430 4.8 146 1025 2.6 79 1614 5.7 174 2320 1.2 37	28 Sa	0310 4.4 134 0908 2.8 85 1509 5.4 165 2231 1.4 43
14 M	0213 5.7 174	29 Tu	0205 5.2 158 0918 2.7 82	14 Th	0450 5.5 168 1101 2.3 70 1658 6.2 189 2343 1.4 43	29 F	0355 4.9 149 1013 2.7 82 1605 5.7 174 2308 1.7 52	14 Sa	0540 5.0 152 1123 2.6 79 1706 5.8 177	29 Su	0436 4.6 140 1029 2.8 85 1612 5.6 171 2331 0.8 24
15 Tu	0346 5.8 177	30 W	0328 5.2 158 1019 2.6 79	15 F	0551 5.7 174 1151 2.3 70 1741 6.4 195	30 Sa	0505 5.2 158 1110 2.6 79 1654 6.0 183 2355 1.1 34	15 Su	0009 0.8 24 0632 5.2 158 1213 2.5 76 1751 6.0 183	30 M	0547 4.9 149 1134 2.6 79 1712 5.9 180
	1037 1.9 58		1619 5.6 171								31 Tu
1652 6.0 183			2300 2.7 82								0023 0.2 6
2313 2.4 73			31 Th	0438 5.4 165 1109 2.4 73 1702 5.9 180 2343 2.1 64							0643 5.3 162 1228 2.4 73 1806 6.3 192

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Chuuk, Moen Island, Caroline Islands, 2013

Times and Heights of High and Low Waters

January					February					March											
Time		Height			Time		Height			Time		Height			Time		Height				
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu	0435	0.4	12		16 W	0451	0.6	18	1 F	0511	1.1	34		16 Sa	0447	1.4	43	1 F	0410	1.6	49
	0825	0.1	3		0858	0.4	12	1014	0.5	15	1025	0.8	24		1007	0.4	12	16 Sa	0354	1.9	58
	1549	1.9	58		1600	1.6	49	1601	1.3	40	1509	1.1	34		1544	1.3	40	1519	1.1	34	
	2340	-0.1	-3		2308	0.0	0	2251	0.1	3	2200	0.0	0		2151	0.2	6	2110	0.2	6	
2 W	0510	0.5	15		17 Th	0510	0.8	24	2 Sa	0546	1.1	34		17 Su	0508	1.4	43	2 Sa	0435	1.7	52
	0852	0.3	9		0915	0.6	18	1054	0.7	21	1029	0.9	27		1048	0.5	15	17 Su	0411	1.8	55
	1607	1.7	52		1550	1.3	40	1540	1.1	34	1424	1.1	34		1540	1.1	34	1459	1.0	30	
	2357	0.0	0		2302	0.0	0	2234	0.1	3	2156	0.0	0		2140	0.2	6	2111	0.1	3	
3 Th	0556	0.6	18		18 F	0536	0.9	27	3 Su	0638	1.2	37		18 M	0534	1.3	40	3 Su	0501	1.7	52
	0915	0.4	12		0919	0.7	21	2206	0.0	0	1012	1.1	34		1140	0.7	21	18 M	0429	1.8	55
	1618	1.5	46		1516	1.2	37	○			1337	1.2	37		1500	0.9	27	1110	0.9	27	
					2253	0.0	0	○			2152	-0.1	-3		2120	0.1	3	1414	1.0	30	
4 F	0008	0.1	3		19 Sa	0614	0.9	27	4 M	0941	1.3	40		19 Tu	0615	1.2	37	4 M	0533	1.7	52
	0717	0.7	21		0901	0.8	24	2141	-0.1	-3	0913	1.1	34		2102	0.0	0	19 Tu	0449	1.7	52
	0923	0.6	18		1422	1.2	37	○			1310	1.3	40		2145	-0.1	-3	2107	0.1	3	
	1609	1.2	37		2244	0.0	0														
5 Sa	0004	0.1	3		20 Su	1337	1.2	37	5 Tu	1147	1.6	49		20 W	1304	1.5	46	5 Tu	0622	1.6	49
	1443	1.0	30		2235	-0.1	-3	2129	-0.3	-9	2133	-0.1	-3		2054	-0.1	-3	20 W	0514	1.6	49
	2332	0.1	3											○				2058	0.1	3	
6 Su	1159	1.2	37		21 M	1315	1.4	43	6 W	1230	1.8	55		21 Th	1311	1.7	52	6 W	1110	1.6	49
	2227	0.0	0		2223	-0.2	-6	2130	-0.4	-12	2120	0.0	0		2054	-0.2	-6	21 Th	0546	1.4	43
														○				1221	1.4	43	
																		2041	0.2	6	
7 M	1210	1.5	46		22 Tu	1312	1.5	46	7 Th	1306	2.0	61		22 F	1325	1.8	55	7 Th	1217	1.8	55
	2145	-0.2	-6		2209	-0.2	-6	2136	-0.4	-12	2111	0.0	0		2057	-0.2	-6	22 F	1237	1.5	46
														○				2025	0.2	6	
8 Tu	1238	1.8	55		23 W	1321	1.7	52	8 F	1339	2.2	67		23 Sa	0310	0.7	21	8 F	1256	1.9	58
	2139	-0.4	-12		2156	-0.2	-6	2144	-0.4	-12	0613	0.6	18		2059	-0.1	-3	23 Sa	0341	1.0	30
											1343	1.9	58		2058	0.0	0	23 Sa	0603	0.9	27
											2110	0.0	0		2058	0.0	0	1257	1.7	52	
9 W	1310	2.1	64		24 Th	1336	1.8	55	9 Sa	0354	0.5	15		24 Su	0247	0.8	24	9 Sa	0332	0.9	27
	2150	-0.5	-15		2149	-0.2	-6	0646	0.4	12	0702	0.4	12		0647	0.8	24	24 Su	0226	1.1	34
								1409	2.2	67	1405	2.0	61		1328	2.0	61	24 Su	0647	0.8	24
								2151	-0.3	-9	2116	0.0	0		2058	0.0	0	2016	0.2	6	
10 Th	1343	2.3	70		25 F	1355	2.0	61	10 Su	0339	0.6	18		25 M	0251	1.0	30	10 Su	0305	1.0	30
	2208	-0.6	-18		2151	-0.2	-6	0733	0.3	9	0741	0.3	9		0728	0.6	18	25 M	0212	1.3	40
								1436	2.2	67	1427	2.0	61		1356	2.0	61	25 M	0723	0.6	18
								2157	-0.2	-6	2125	0.0	0		2056	0.1	3	2022	0.2	6	
11 F	1415	2.3	70		26 Sa	0310	0.4	12	11 M	0339	0.8	24		26 Tu	0306	1.2	37	11 M	0256	1.2	37
	2227	-0.5	-15		0630	0.2	6	0812	0.3	9	0817	0.3	9		0803	0.5	15	26 Tu	0219	1.5	46
					1416	2.1	64	1501	2.1	64	1451	2.0	61		1420	1.9	58	26 Tu	0759	0.4	12
					2158	-0.2	-6	2201	-0.1	-3	2137	0.0	0		2056	0.2	6	2032	0.3	9	
12 Sa	0422	0.2	6		27 Su	0315	0.5	15	12 Tu	0346	0.9	27		27 W	0325	1.3	40	12 Tu	0258	1.4	43
	0642	0.1	3		0715	0.1	3	0847	0.3	9	0853	0.3	9		0837	0.4	12	27 W	0236	1.7	52
	1445	2.3	70		1438	2.1	64	1521	1.9	58	1513	1.8	55		1442	1.8	55	27 W	0835	0.3	9
	2244	-0.4	-12		2210	-0.2	-6	2204	0.0	0	2147	0.1	3		2058	0.2	6	27 O	2042	0.3	9
13 Su	0421	0.2	6		28 M	0331	0.6	18	13 W	0358	1.1	34		28 Th	0347	1.5	46	13 W	0308	1.6	49
	0726	0.1	3		0754	0.1	3	0918	0.4	12	0930	0.3	9		0908	0.4	12	28 Th	0256	1.9	58
	1513	2.2	67		1501	2.1	64	1535	1.7	52	1532	1.6	49		1501	1.6	49	28 Th	0914	0.3	9
	2258	-0.3	-9		2223	-0.2	-6	2206	0.1	3	2153	0.2	6		2101	0.2	6	2050	0.3	9	
14 M	0426	0.3	9		29 Tu	0352	0.7	21	14 Th	0413	1.3	40		29 F	0322	1.7	52	14 Th	0319	2.0	61
	0802	0.1	3		0829	0.2	6	0946	0.5	15	1541	1.4	43		0938	0.4	12	29 F	0953	0.3	9
	1537	2.0	61		1523	2.0	61	2205	0.1	3	2205	0.1	3		1515	1.4	43	29 F	1524	1.2	37
	2307	-0.2	-6		2237	-0.1	-3								2105	0.2	6	2052	0.4	12	
15 Tu	0437	0.5	15		30 W	0416	0.9	27	15 F	0429	1.3	40		15 F	0337	1.8	55	15 F	1037	2.1	64
	0833	0.3	9		0904	0.2	6	1009	0.6	18	1535	1.2	37		1523	1.2	37	15 F	1034	2.1	64
	1553	1.8	55		1542	1.8	55	2249	0.0	0	2203	0.1	3		2108	0.2	6	15 F	1037	0.3	9
	2310	0.0	0					31	0442	1.0	30							31 Su	0409	2.2	67
								Th	0938	0.3	9							1129	0.5	15	
									1557	1.6	49							1519	0.7	21	
									2254	0.0	0							2028	0.2	6	

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Chuuk, Moen Island, Caroline Islands, 2013

Times and Heights of High and Low Waters

April						May						June							
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0434 2010	2.1 0.1	64 3	16 Tu	0405 2026	2.0 0.2	61 6	1 W	0444 1901	2.1 0.1	64 3	16 Th	0416 1936	2.0 0.4	61 12	1 Sa	0402 1641	1.5 0.5	46 15
2 Tu	0500 2002	2.0 0.0	61 0	17 W	0426 2020	1.9 0.3	58 9	2 Th	0458 1907	1.9 0.2	58 6	17 F	0437 1807	1.8 0.5	55 15	2 Su	0240 1526	1.4 0.6	43 18
3 W	0526 2004	1.8 0.0	55 0	18 Th	0448 1959	1.8 0.3	55 9	3 F	0438 1908	1.6 0.3	49 9	18 Sa	0453 1722	1.6 0.5	49 15	3 M	0145 1448	1.5 0.6	46 18
4 Th	0545 2008	1.6 0.1	49 3	19 F	0508 1930	1.6 0.4	49 12	4 Sa	0323 1857	1.4 0.4	43 12	19 Su	0435 1724	1.4 0.5	43 15	4 Tu	0120 1014	1.6 0.4	49 12
5 F	0433 0640 1145 2008	1.4 1.3 1.6 0.2	43 40 49 6	20 Sa	0502 1911	1.4 0.4	43 12	5 Su	0225 0814 1156 1838	1.5 1.0 1.1 0.5	46 30 34 15	20 M	0141 1735	1.3 0.5	40 15	5 W	0114 0946 1353 1555	1.8 0.3 0.4 0.3	55 9 12 9
6 Sa	0319 0701 1235 2002	1.3 1.1 1.6 0.3	40 34 49 9	21 Su	0237 0652 1205 1906	1.3 1.1 1.4 0.4	40 34 43 12	6 M	0154 0820 1245 1823	1.6 0.8 1.0 0.6	49 24 30 18	21 Tu	0054 0802 1216 1751	1.5 0.8 0.9 0.5	46 27 15 15	6 Th	0120 0946 1406 1644	2.0 0.2 0.4 0.3	61 6 12 9
7 Su	0239 0729 1309 1953	1.3 0.9 1.6 0.4	40 27 49 12	22 M	0140 0711	1.4 0.9	43 27	7 Tu	0142 0837	1.8 0.6	55 18	22 W	0059 0819	1.8 0.5	55 15	7 F	0135 0955	2.1 0.1	64 3
8 M	0220 0758 1336 1947	1.5 0.7 1.5 0.4	46 21 46 12	23 Tu	0134 0743	1.6 0.6	49 18	8 W	0143 0858	1.9 0.4	58 12	23 Th	0118 0851	2.1 0.2	64 6	8 Sa	0154 1010	2.2 0.0	67 0
9 Tu	0216 0827 1400 1946	1.7 0.5 1.4 0.4	52 15 43 12	24 W	0147 0818 1400 1932	1.9 0.4 1.3 0.4	58 12	9 Th	0153 0921 1406 1839	2.1 0.3 0.8 0.4	64 9 24 12	24 F	0144 0929 1455 1836	2.3 0.0 0.6 0.4	70 0 18 12	9 Sa	0216 1029	2.2 0.0	67 0
10 W	0222 0856 1421 ● 1950	1.9 0.4 1.3 0.4	58 12 40 12	25 Th	0207 0857	2.1 0.2	64 6	10 F	0209 0946 1429 1856	2.2 0.2 0.7 0.3	67 6 21 9	25 M	0214 1010 1537 1843	2.5 -0.1 0.5 0.3	76 -3 15 9	10 M	0239 1052 1528 1905	2.3 0.0 0.4 0.2	70 0 12 6
11 Th	0235 0924 1441 1958	2.0 0.4 1.2 0.3	61 12 37 9	26 F	0231 0939	2.3 0.1	70 3	11 Sa	0228 1013	2.3 0.2	70 6	26 Su	0245 1055	2.6 -0.2	79 -6	11 Tu	0303 1116	2.2 0.0	67 0
12 F	0251 0953 1457 2006	2.1 0.4 1.1 0.3	64 12 34 9	27 Sa	0258 1024 1531 1946	2.4 0.1 0.7 0.4	73 3 21 12	12 Su	0248 1042 1509 1928	2.3 0.2 0.6 0.2	70 6 18 6	27 W	0316 1144	2.6 -0.1	79 -3	12 M	0326 1142 1625 1954	2.2 0.1 0.4 0.3	67 3 12 9
13 Sa	0308 1022 1508 2014	2.2 0.4 0.9 0.3	67 12 27 9	13 M	0325 1116	2.5 0.2	76 6	28 Tu	0347 1239	2.5 0.0	76 0	13 Th	0349 1209 1704 2012	2.1 0.2 0.5 0.4	64 6 15 12	13 F	0421 1219	1.8 0.2	55 6
14 Su	0326 1051 1511 2021	2.2 0.5 0.8 0.2	67 15 24 6	14 M	0353 1225	2.4 0.2	73 6	29 Tu	0332 1153	2.2 0.3	67 9	14 F	0414 1349	2.3 0.1	70 3	14 Sa	0410 1236 1806 2018	2.0 0.2 0.5 0.4	61 6 15 12
15 M	0345 1124 1457 2025	2.1 0.6 0.7 0.2	64 18 21 6	15 W	0354 1244 1532 1955	2.1 0.4 0.5 0.3	64 12 15 9	30 Th	0435 1723	2.0 0.3	61 9	15 Sa	0429 1304	1.8 0.3	55 9	30 Su	0338 1155	1.4 0.3	43 9
									31 F	0439 1725	1.8 0.4	55 12							

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Heights are referred to mean lower low water which is the chart datum of soundings.

Chuuk, Moen Island, Caroline Islands, 2013

Times and Heights of High and Low Waters

July				August				September							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m 0216 M 1134	ft 1.3 0.3	cm 40 9	h m 0335 Tu 1128	ft 1.1 0.3	cm 34 9	h m 0051 Th 1007	ft 1.4 0.0	cm 43 0	h m 0908 F 2354	ft -0.1 1.8	cm -3 55				
●			16 W 2223	1.2	37	1 Th	1007	0.0	0	1 Su	0054 0857	1.6 0.0	49 0		
2 Tu	0118 1113	1.4 0.2	43 6	17 W 2327	0.2 1.5	6 46	2 F	0055 0956	-1.6 -0.1	49 -3	17 Sa	0109 0849	1.7 0.1	52 3	
3 W	0059 1049	1.6 0.1	49 3	18 Th	0951	0.0 0	3 Sa	0107 0946	1.7 -0.1	52 -3	18 Su	0038 0910	2.0 -0.3	61 -9	
4 Th	0059 1026	1.7 0.0	52 0	19 F 0931	1.8 -0.2	55 -6	4 Su	0124 0939	1.8 -0.1	55 -3	19 M	0115 0918	2.1 -0.3	64 -9	
5 F	0111 1011	1.8 0.0	55 0	20 Sa	0047 0936	2.1 -0.3	64 -9	5 M	0143 0937	2.0 -0.1	61 -3	20 Tu	0149 0927	2.2 -0.2	67 -6
6 Sa	0128 1006	2.0 -0.1	61 -3	21 Su	0123 0951	2.3 -0.4	70 -12	6 Tu	0203 0941	2.0 0.0	61 0	21 W	0219 0934	2.2 -0.1	67 -3
7 Su	0148 1010 1513 1744	2.1 -0.1 -3 0.2	64 -3 9 6	22 M	0158 1010	2.4 -0.4	73 -12	7 W	0224 0949	2.1 0.0	64 0	22 Th	0246 0939	2.0 0.1	61 3
8 M	0211 1019 1518 ●	2.1 -0.1 -3 0.2	64 -3 12 6	23 Tu	0232 1028	2.4 -0.3	73 -9	8 Th	0246 1000	2.1 0.0	64 0	23 Su	0309 0941	1.8 0.1	55 3
9 Tu	0234 1032 1534 1918	2.2 -0.1 -3 0.2	67 -3 15 6	24 W	0302 1042	2.3 -0.2	70 -6	9 F	0308 1012	2.0 0.0	61 0	24 M	0325 0942	1.6 0.2	49 6
10 W	0257 1047 1556 1954	2.2 -0.1 -3 0.2	67 -3 15 6	25 Th	0329 1052	2.1 0.0	64 0	10 Sa	0327 1022	1.8 0.1	55 3	25 Tu	0333 0940	1.3 0.2	40 6
11 Th	0320 1103 1623 2028	2.1 0.0 0.6 0.3	64 0 18 9	26 F	0349 1056	1.9 0.1	58 3	11 Su	0344 1029	1.6 0.2	49 6	26 W	0330 0915	1.0 0.2	30 6
12 F	0341 1119 1653 2101	2.0 0.1 0.7 0.4	61 3 21 12	27 Sa	0359 1053	1.6 0.2	49 6	12 M	0353 1028	1.4 0.2	43 6	27 Tu	0837 0932	0.0 0.1	0 3
13 Sa	0400 1133 1729 2135	1.9 0.1 0.8 0.6	58 3 24 18	28 Su	0352 1045	1.4 0.2	43 6	13 Tu	0344 1017	1.1 0.2	34 6	28 M	0824 0927	-0.1 0.0	-3 0
14 Su	0414 1142 1817 2211	1.6 0.2 0.9 0.8	49 6 27 24	29 M	0315 1035	1.2 0.2	37 6	14 W	0006 0235	0.8 0.9	24 27	29 Tu	0150 0922	1.0 0.0	30 0
15 M	0415 1143 1938 2300	1.4 0.2 1.0 0.9	43 6 30 27	30 Tu	0204 1025	1.2 0.1	37 3	15 Th	0926 2242	0.0 1.5	0 46	30 Sa	0036 0916	1.3 0.0	40 0
●				31 W	0107 2056	1.1 1.1	40 34	31 Sa	0042 0907	1.4 0.0	43 0				

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Heights are referred to mean lower low water which is the chart datum of soundings.

Chuuk, Moen Island, Caroline Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0037	1.4	43	16 W 0043	1.3	40	1 F 0100	1.0	30	16 Sa 0133	0.5	15
0748	0.2	6	W 0722	0.2	6	F 0648	0.2	6	Sa 0559	0.2	6
1409	1.1	34	1401	1.4	43	1328	1.7	52	1341	2.0	61
1849	0.7	21	1951	0.5	15	2010	0.2	6	2122	0.0	0
2 W 0059	1.5	46	17 Th 0115	1.3	40	2 0135	1.0	30	17 Su 0157	0.4	12
0746	0.2	6	0717	0.2	6	Sa 0700	0.2	6	Su 0613	0.1	3
1352	1.3	40	1357	1.6	49	1347	2.0	61	1357	2.1	64
1917	0.5	15	2021	0.3	9	2045	0.0	0	2146	-0.1	-3
3 Th 0123	1.5	46	18 F 0141	1.1	34	3 Su 0209	0.8	24	18 M 0219	0.4	12
0750	0.2	6	0716	0.2	6	1404	1.8	55	M 1416	2.2	67
1357	1.5	46	1404	1.8	55	● 2123	-0.1	-3	O 2212	-0.1	-3
1948	0.4	12	2051	0.2	6	● 2123	-0.1	-3	● 2234	-0.4	-12
4 F 0148	1.5	46	19 M 0204	1.0	30	4 M 0241	0.6	18	3 Tu 0316	0.2	6
0758	0.2	6	0720	0.2	6	0720	0.1	3	W 0631	0.1	3
1412	1.7	52	1417	2.0	61	1436	2.3	70	1428	2.4	73
2022	0.2	6	O 2121	0.1	3	2206	-0.2	-6	2240	-0.1	-3
5 Sa 0214	1.4	43	20 Su 0225	0.9	27	5 Tu 0309	0.4	12	19 W 0354	0.1	3
0808	0.2	6	0727	0.1	3	0724	0.1	3	4 Th 0640	0.0	0
1432	1.9	58	1434	2.1	64	1504	2.3	70	W 1500	2.4	73
● 2058	0.1	3	2151	0.1	3	2255	-0.1	-3	2317	-0.4	-12
6 Su 0239	1.2	37	21 M 0241	0.7	21	6 W 0330	0.3	9	19 F 0324	0.2	6
0817	0.2	6	0736	0.1	3	0717	0.0	0	0658	0.0	0
1454	2.0	61	1452	2.1	64	1532	2.3	70	Th 1530	2.3	70
2137	0.1	3	2222	0.2	6	2356	0.0	0	2321	-0.2	-6
7 M 0301	1.0	30	22 Tu 0253	0.6	18	7 Th 0330	0.1	3	20 F 0346	0.2	6
0821	0.2	6	0744	0.0	0	0658	0.0	0	0727	0.0	0
1519	2.1	64	1510	2.1	64	1600	2.2	67	1516	2.0	61
2220	0.2	6	2255	0.2	6	● 2345	0.0	0	2340	-0.1	-3
8 Tu 0316	0.8	24	23 W 0254	0.5	15	8 F 0637	-0.1	-3	21 Sa 0410	0.3	9
0817	0.2	6	0751	0.0	0	1624	2.0	61	0752	0.0	0
1544	2.1	64	1529	2.0	61	● 2334	0.3	9	1536	1.9	58
2311	0.3	9	2334	0.3	9	● 1557	1.8	55	2340	-0.1	-3
9 W 0312	0.5	15	24 Th 0236	0.4	12	9 Sa 0631	-0.1	-3	22 M 0439	0.3	9
0803	0.1	3	0754	0.0	0	1639	1.7	52	0815	0.1	3
1610	2.0	61	1547	1.9	58	● 1639	1.7	52	1554	1.8	55
10 Th 0744	0.0	0	25 F 0753	0.0	0	10 Su 0635	-0.1	-3	23 M 0439	0.3	9
1635	1.9	58	1604	1.8	55	1624	1.5	46	0833	0.3	9
● 0731	-0.1	-3	● 0753	0.0	0	● 0635	-0.1	-3	1609	1.6	49
1659	1.7	52	● 1604	1.8	55	● 1624	1.5	46	● 0224	0.3	9
11 F 0731	-0.1	-3	26 Sa 0745	0.1	3	● 0635	-0.1	-3	25 W 0025	0.1	3
1659	1.7	52	1620	1.6	49	● 1624	1.5	46	1603	1.2	37
● 0731	-0.1	-3	● 1620	1.6	49	● 0456	0.3	9	● 0224	0.1	3
1711	1.5	46	● 1631	1.5	46	1513	1.3	40	11 W 0131	0.3	9
● 0729	-0.1	-3	● 1631	1.5	46	1513	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	26 Th 0031	0.2	6
2250	1.4	43	● 1631	1.5	46	1607	1.3	40	1410	1.1	34
1729	-0.1	-3	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37	● 1631	1.5	46	1607	1.3	40	1344	1.3	40
1854	1.2	37	● 1631	1.5	46	● 0456	0.3	9	● 0131	0.3	9
1854	1.2	37</									

Pohnpei Harbor, Caroline Islands, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0520 2.8 85	16 0003 0.4 12	1 F 0605 3.2 98	16 0001 0.8 24	1 F 0507 3.8 116	16 0521 3.9 119						
1042 1.0 30	W 0605 3.0 91	1156 1.1 34	0629 3.2 98	1112 0.7 21	1137 1.2 37						
1712 4.1 125	1142 1.0 30	1757 3.3 101	1229 1.5 46	1713 3.6 110	1718 3.1 94						
2359 0.6 18	1755 3.6 110		1758 2.8 85	2320 0.7 21	2314 1.0 30						
2 W 0555 2.8 85	17 0031 0.7 21	2 0021 0.7 21	17 0015 1.0 30	2 0538 3.7 113	17 0547 3.7 113						
1118 1.2 37	W 0643 2.9 88	Sa 0645 3.1 94	Su 0703 3.0 91	Sa 1151 1.0 30	Su 1206 1.5 46						
1743 3.8 116	1220 1.4 43	1242 1.4 43	1307 1.9 58	1741 3.2 98	1732 2.8 85						
	1821 3.2 98	1826 2.8 85	1755 2.4 73	2344 0.9 27	2327 1.2 37						
3 Th 0030 0.8 24	18 0057 0.9 27	3 Su 0049 1.0 30	18 M 0022 1.2 37	3 Su 0615 3.6 110	18 0613 3.5 107						
0636 2.8 85	F 0727 2.8 85	Su 0739 3.0 91	M 0753 2.8 85	Su 1236 1.3 40	M 1240 1.8 55						
1200 1.4 43	1304 1.7 52	1354 1.7 52	O	Su 1809 2.7 82	M 1739 2.5 76						
1816 3.4 104	1839 2.7 82	1855 2.3 70			2333 1.4 43						
4 F 0105 0.9 27	19 0122 1.1 34	4 M 0124 1.2 37	19 Tu 0009 1.4 43	4 M 0006 1.1 34	19 0644 3.2 98						
0727 2.8 85	Sa 0828 2.7 82	M 0913 2.9 88	Tu 1036 2.7 82	M 0701 3.4 104	Tu 1339 2.1 64						
1255 1.7 52	1418 2.1 64	O	2154 1.5 46	M 1345 1.7 52	Tu 1719 2.2 67						
1854 3.0 91	1840 2.3 70	O		1834 2.2 67	2324 1.6 49						
5 Sa 0147 1.1 34	20 0149 1.3 40	5 Tu 0234 1.5 46	20 W 1243 3.0 91	5 Tu 0027 1.4 43	20 0742 2.9 88						
0842 2.8 85	Su 1019 2.7 82	Tu 1132 3.1 94	W 2041 1.4 43	Tu 0820 3.1 94	W 2128 1.8 55						
1432 2.0 61	O 1948 2.5 76	Tu 1945 1.3 40	O	O	O						
6 Su 0246 1.3 40	21 0237 1.5 46	6 W 0101 1.8 55	21 Th 0231 2.0 61	6 W 0010 1.8 55	21 Th 1119 2.9 88						
1027 2.9 88	M 1216 2.9 88	W 0523 1.5 46	Th 0621 1.8 55	W 1107 3.1 94	W 1946 1.6 49						
1738 1.9 58	2100 1.5 46	1252 3.5 107	1323 3.3 101	1933 1.4 43							
2156 2.1 64		2015 0.9 27	2035 1.1 34								
7 M 0415 1.3 40	22 0112 1.7 52	7 Th 0154 2.1 64	22 F 0224 2.3 70	7 Th 0135 2.1 64	22 0215 2.4 73						
1158 3.3 101	Tu 0503 1.6 49	0651 1.3 40	0716 1.5 46	0534 1.9 58	F 0600 2.2 67						
1920 1.4 43	1309 3.2 98	1342 3.9 119	1352 3.6 110	1241 3.5 107	1238 3.2 98						
	2048 1.2 37	2043 0.6 18	2045 0.9 27	1956 1.1 34	1945 1.4 43						
8 Tu 0024 2.1 64	23 0202 1.9 58	8 F 0229 2.5 76	23 Sa 0236 2.6 79	8 F 0153 2.5 76	23 0153 2.7 82						
0544 1.3 40	W 0631 1.4 43	0745 0.9 27	0754 1.2 37	0658 1.5 46	Sa 0701 1.8 55						
1259 3.7 113	1343 3.5 107	1423 4.2 128	1421 3.9 119	1331 3.8 116	Sa 1318 3.5 107						
2009 1.0 30	2058 1.0 30	2111 0.3 9	2102 0.6 18	2021 0.8 24	1959 1.1 34						
9 W 0137 2.2 67	24 0228 2.1 64	9 Sa 0300 2.8 85	24 Su 0255 2.9 88	9 Sa 0217 2.9 88	24 Su 0204 3.1 94						
0650 1.1 34	Th 0720 1.3 40	0829 0.7 21	0827 1.0 30	0746 1.2 37	Su 0739 1.5 46						
1346 4.1 125	1412 3.7 113	1459 4.4 134	1449 4.1 125	1410 4.1 125	Su 1351 3.8 116						
2047 0.6 18	2113 0.7 21	2139 0.2 6	2122 0.5 15	2045 0.6 18	2019 0.9 27						
10 Th 0226 2.4 73	25 0251 2.3 70	10 Su 0330 3.1 94	25 M 0318 3.2 98	10 Su 0242 3.3 101	25 M 0224 3.4 104						
0742 0.8 24	F 0759 1.1 34	0908 0.5 15	M 0859 0.7 21	Su 0825 0.9 27	M 0813 1.1 34						
1428 4.4 134	1439 4.0 122	1533 4.5 137	1517 4.3 131	1444 4.2 128	M 1423 4.0 122						
2123 0.3 9	2131 0.5 15	O 2206 0.1 3	2144 0.4 12	2109 0.5 15	2042 0.7 21						
11 F 0306 2.6 79	26 0315 2.5 76	11 M 0401 3.3 101	26 Tu 0343 3.5 107	11 M 0309 3.6 110	26 Tu 0248 3.8 116						
0828 0.6 18	Sa 0833 0.9 27	0944 0.4 12	Tu 0931 0.6 18	0901 0.6 18	Tu 0847 0.8 24						
1507 4.6 140	Sa 1507 4.2 128	1605 4.4 134	Tu 1546 4.3 131	1516 4.3 131	Tu 1455 4.1 125						
2157 0.1 3	2152 0.4 12	2233 0.1 3	O 2208 0.3 9	2133 0.5 15	2107 0.6 18						
12 Sa 0343 2.8 85	27 0340 2.7 82	12 Tu 0430 3.5 107	27 W 0409 3.7 113	12 Tu 0335 3.9 119	27 W 0315 4.1 125						
0909 0.5 15	Su 0905 0.7 21	1019 0.4 12	1004 0.5 15	0935 0.5 15	W 0921 0.6 18						
1545 4.7 143	1534 4.3 131	1635 4.2 128	1616 4.2 128	1545 4.2 128	1527 4.1 125						
● 2230 0.1 3	O 2215 0.3 9	2258 0.3 9	2232 0.4 12	● 2157 0.5 15	O 2133 0.6 18						
13 Su 0419 2.9 88	28 0406 2.9 88	13 W 0500 3.5 107	28 Th 0437 3.8 116	13 W 0403 4.0 122	28 Th 0343 4.3 131						
0949 0.5 15	M 0937 0.7 21	1053 0.6 18	1037 0.6 18	0955 0.6 18	W 0955 0.6 18						
1620 4.6 140	1603 4.3 131	1703 3.9 119	1645 3.9 119	1559 4.0 122	1559 4.0 122						
2302 0.1 3	2239 0.2 6	2321 0.4 12	2256 0.5 15	2219 0.5 15	2159 0.6 18						
14 M 0454 3.0 91	29 0433 3.1 94	14 Th 0530 3.5 107									
1027 0.6 18	Tu 1009 0.6 18	1125 0.9 27									
1654 4.4 134	1631 4.2 128	1727 3.6 110									
2333 0.2 6	2304 0.3 9	2343 0.6 18									
15 Tu 0529 3.0 91	30 0501 3.2 98	15 F 0559 3.4 104									
1104 0.8 24	W 1042 0.7 21	1156 1.2 37									
1726 4.1 125	1700 4.0 122	1746 3.1 94									
	2329 0.4 12										
31 Th 0532 3.2 98											
1117 0.9 27											
1728 3.7 113											
2355 0.5 15											

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Pohnpei Harbor, Caroline Islands, 2013

Times and Heights of High and Low Waters

April					May					June				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
1 M 0556 4.0 122 1242 1.4 43 1810 2.6 79 2340 1.4 43	h m ft cm		16 Tu 0543 3.8 116 1233 1.6 49 1746 2.5 76 2308 1.6 49	h m ft cm	1 W 0636 3.9 119 1402 1.5 46 1951 2.4 73	h m ft cm	16 Th 0559 3.7 113 1313 1.4 43 1900 2.4 73 2342 1.9 58	h m ft cm	1 Sa 0216 2.0 61 0832 3.1 94 1548 1.4 43 2247 2.8 85	h m ft cm	16 Su 0056 1.8 55 0709 3.1 94 1415 1.2 37 2103 2.7 82			
2 Tu 0642 3.7 113 1359 1.7 52 1901 2.2 67	h m ft cm		17 W 0613 3.6 110 1328 1.9 58 1822 2.3 70 2317 1.9 58	h m ft cm	2 Th 0022 2.0 61 0743 3.5 107 1543 1.6 49 2229 2.4 73	h m ft cm	17 F 0641 3.5 107 1414 1.6 49 2038 2.4 73	h m ft cm	2 Su 0431 2.1 64 1007 2.8 85 1653 1.4 43 2354 3.1 94	h m ft cm	17 M 0233 2.0 61 0815 2.8 85 1517 1.3 40 2230 2.9 88			
3 W 0001 1.8 55 0756 3.4 104 1658 1.8 55	h m ft cm		18 Th 0658 3.3 101 1535 2.0 61	h m ft cm	3 F 0222 2.3 70 0932 3.2 98 1716 1.6 49	h m ft cm	18 Sa 0048 2.2 67 0746 3.2 98 1534 1.6 49 2242 2.6 79	h m ft cm	3 M 0617 1.9 58 1139 2.6 79 1747 1.4 43	h m ft cm	18 Tu 0449 1.9 58 0959 2.5 76 1628 1.3 40 2342 3.3 101			
4 Th 1027 3.2 98 1836 1.6 49	h m ft cm		19 F 0847 3.0 91 1745 1.8 55	h m ft cm	4 Sa 0004 2.8 85 0517 2.2 67 1121 3.2 98 1812 1.5 46	h m ft cm	19 Su 0332 2.3 70 0933 3.0 91 1649 1.5 46 2348 3.0 91	h m ft cm	4 Tu 0041 3.4 104 0720 1.6 49 1246 2.6 79 1830 1.3 40	h m ft cm	19 W 0630 1.6 49 1146 2.4 73 1736 1.2 37			
5 F 0105 2.5 76 0540 2.1 64 1212 3.4 104 1913 1.3 40	h m ft cm		20 Sa 0057 2.6 79	h m ft cm	5 Su 0045 3.2 98 0638 1.9 58 1230 3.2 98 1850 1.3 40	h m ft cm	20 M 0542 2.1 64 1117 2.9 88 1746 1.4 43	h m ft cm	5 W 0119 3.7 113 0805 1.3 40 1335 2.6 79 1906 1.2 37	h m ft cm	20 Th 0038 3.6 110 0733 1.2 37 1303 2.4 73 1834 1.1 34			
6 Sa 0126 2.9 88 0654 1.8 55 1308 3.7 113 1942 1.1 34	h m ft cm		21 Su 0059 3.0 91	h m ft cm	6 M 0117 3.6 110 0728 1.5 46 1319 3.3 101 1921 1.2 37	h m ft cm	21 Tu 0031 3.4 104 0649 1.7 52 1228 3.0 91 1832 1.2 37	h m ft cm	6 Th 0152 3.9 119 0842 1.1 34 1414 2.6 79 1938 1.1 34	h m ft cm	21 F 0126 4.0 122 0821 0.8 24 1400 2.5 76 1924 0.9 27			
7 Su 0151 3.3 101 0739 1.4 43 1348 3.8 116 2007 1.0 30	h m ft cm		22 M 0120 3.4 104	h m ft cm	7 Tu 0147 3.9 119	h m ft cm	22 W 0110 3.8 116	h m ft cm	7 F 0223 4.1 125 0914 0.9 27	h m ft cm	22 Sa 0210 4.3 131 0905 0.5 15 1449 2.6 79 2011 0.8 24			
8 M 0216 3.7 113 0817 1.1 34 1423 3.9 119 2031 0.9 27	h m ft cm		23 Tu 0147 3.8 116	h m ft cm	8 W 0215 4.2 128	h m ft cm	23 Th 0823 0.9 27	h m ft cm	8 Sa 0252 4.2 128	h m ft cm	23 Su 0252 4.5 137			
9 Tu 0242 4.0 122 0851 0.9 27 1453 3.9 119 2055 0.8 24	h m ft cm		24 W 0216 4.2 128	h m ft cm	9 Th 0243 4.3 131	h m ft cm	24 F 0224 4.5 137	h m ft cm	9 Su 0321 4.3 131	h m ft cm	24 M 0333 4.6 140			
10 W 0308 4.3 131 0924 0.8 24 1522 3.8 116 2118 0.8 24	h m ft cm		25 Th 0247 4.5 137	h m ft cm	10 F 0310 4.5 137	h m ft cm	25 Sa 0303 4.7 143	h m ft cm	10 M 0349 4.3 131	h m ft cm	25 Tu 0414 4.6 140			
11 Th 0335 4.4 134 0955 0.8 24 1549 3.7 113 2140 0.8 24	h m ft cm		26 F 0320 4.7 143	h m ft cm	11 F 0337 4.5 137	h m ft cm	26 Sa 0341 4.8 146	h m ft cm	11 Tu 0417 4.2 128	h m ft cm	26 W 0454 4.4 134			
12 F 0401 4.4 134 1025 0.8 24 1614 3.4 104 2200 0.9 27	h m ft cm		27 Sa 0320 4.7 143	h m ft cm	12 Su 0404 4.4 134	h m ft cm	27 M 0421 4.7 143	h m ft cm	12 W 0445 4.1 125	h m ft cm	27 Th 0533 4.2 128			
13 Sa 0426 4.4 134 1055 1.0 30 1637 3.2 98 2220 1.0 30	h m ft cm		28 Su 0430 4.7 143	h m ft cm	13 M 0430 4.3 131	h m ft cm	28 Tu 0501 4.5 137	h m ft cm	13 F 0515 4.0 122	h m ft cm	28 W 0612 3.8 116			
14 Su 0451 4.2 128 1125 1.2 37 1700 3.0 91 2237 1.2 37	h m ft cm		29 M 0507 4.5 137	h m ft cm	14 Tu 0457 4.2 128	h m ft cm	29 W 0544 4.2 128	h m ft cm	14 F 0547 3.7 113	h m ft cm	29 Sa 0038 1.5 46			
15 M 0516 4.1 125 1156 1.4 43 1722 2.7 82 2254 1.4 43	h m ft cm		30 Tu 0548 4.2 128	h m ft cm	15 W 0526 4.0 122	h m ft cm	30 Th 0630 3.9 119	h m ft cm	15 Sa 0623 3.5 107	h m ft cm	30 Su 0143 1.7 52			
31 F 0723 3.5 107 1440 1.3 40 2114 2.6 79	h m ft cm		31 F 0045 1.8 55	h m ft cm										

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Pohnpei Harbor, Caroline Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0326 1.9 58 0833 2.4 73 1517 1.3 40 2251 2.9 88	h m ft cm	16 Tu 0153 1.7 52 1309 1.2 37 2117 2.9 88	h m ft cm	1 Th 0818 1.6 49 1301 1.8 55 1615 1.7 52	h m ft cm	16 F 0700 1.6 49 1220 1.9 58 1614 1.8 55	h m ft cm	1 Su 0100 3.4 104 0812 1.3 40 1415 2.6 79 1907 1.8 55	h m ft cm	16 M 0057 3.9 119 0749 1.1 34 1353 3.2 98 1922 1.5 46	
	h m ft cm	17 W 0405 1.8 55 0842 2.2 67 1506 1.3 40 2257 3.1 94	h m ft cm	2 F 0038 3.2 98 0826 1.3 40 1358 2.0 61 1811 1.6 49	h m ft cm	17 Sa 0007 3.5 107 0742 1.2 37 1330 2.2 67 1816 1.6 49	h m ft cm	2 M 0133 3.7 113 0824 1.1 34 1425 2.9 88 1943 1.6 49	h m ft cm	17 Tu 0141 4.2 128 0815 0.9 27 1419 3.6 110 2004 1.2 37	
	h m ft cm	18 Th 0634 1.5 46 1125 2.0 61 1645 1.4 43	h m ft cm	3 Sa 0122 3.4 104 0841 1.1 34 1423 2.2 67 1908 1.5 46	h m ft cm	18 Su 0109 3.8 116 0814 0.8 27 1406 2.6 79 1919 1.3 40	h m ft cm	3 Tu 0201 3.9 119 0840 0.9 27 1441 3.2 98 2015 1.3 40	h m ft cm	18 W 0218 4.4 134 0841 0.8 24 1446 3.9 119 2042 0.9 27	
	h m ft cm	19 F 0017 3.5 107 0740 1.1 34 1308 2.1 64 1829 1.2 40	h m ft cm	4 Su 0156 3.7 113 0858 0.8 24 1444 2.4 73 1949 1.3 40	h m ft cm	19 M 0155 4.2 128 0844 0.6 18 1438 3.0 91 2007 1.0 30	h m ft cm	4 W 0229 4.1 125 0859 0.8 24 1501 3.5 107 2045 1.1 34	h m ft cm	19 Th 0252 4.4 134 0907 0.7 21 1514 4.2 128 2117 0.8 24	
5 F 0136 3.6 110 0847 1.0 30 1414 2.1 64 1914 1.2 37	h m ft cm	20 Sa 0115 3.8 116 0823 0.7 21 1404 2.3 70 1915 1.0 30	h m ft cm	5 M 0224 3.9 119 0916 0.7 21 1506 2.6 79 2023 1.1 34	h m ft cm	20 Tu 0234 4.4 134 0913 0.4 12 1509 3.3 101 2048 0.7 21	h m ft cm	5 Th 0257 4.2 128 0920 0.7 21 1524 3.8 116 2116 0.9 27	h m ft cm	20 F 0324 4.3 131 0931 0.7 21 1542 4.4 134 2152 0.8 24	
	h m ft cm	21 Sa 0202 4.2 128 0900 0.4 12 1447 2.6 79 1952 1.1 34	h m ft cm	6 Tu 0252 4.0 122 0936 0.5 12 1528 2.9 88 2055 1.0 30	h m ft cm	21 W 0311 4.5 137 0941 0.3 18 1540 3.6 110 2127 0.6 18	h m ft cm	6 F 0325 4.3 131 0943 0.6 18 1549 4.0 122 2147 0.8 24	h m ft cm	21 Sa 0353 4.2 128 0955 0.8 24 1610 4.5 137 2225 0.9 27	
	h m ft cm	22 Su 0245 4.4 134 0935 0.2 6 1525 2.8 85 2052 0.6 18	h m ft cm	7 M 0319 4.2 128 0957 0.4 12 1552 3.1 94 2126 0.9 27	h m ft cm	22 Th 0345 4.5 137 1009 0.3 9 1611 3.8 116 2204 0.6 18	h m ft cm	7 Sa 0354 4.2 128 1006 0.6 18 1615 4.1 125 2220 0.8 24	h m ft cm	22 Su 0421 3.9 119 1018 0.9 27 1639 4.5 137 2258 1.1 34	
	h m ft cm	23 M 0325 4.5 137 1009 0.1 3 1602 3.0 91 2134 0.6 18	h m ft cm	8 Th 0347 4.2 128 1019 0.4 12 1618 3.3 101 2158 0.8 24	h m ft cm	23 F 0418 4.3 131 1036 0.4 12 1641 3.9 119 2241 0.7 21	h m ft cm	8 Su 0422 4.0 122 1029 0.7 21 1644 4.2 128 2255 1.0 30	h m ft cm	23 M 0446 3.6 110 1038 1.1 34 1706 4.3 131 2332 1.3 40	
9 Tu 0336 4.1 125 1026 0.5 15 1613 2.6 79 2132 0.9 27	h m ft cm	24 W 0403 4.5 137 1042 0.1 3 1637 3.2 98 2215 0.6 18	h m ft cm	9 F 0414 4.1 125 1042 0.4 12 1644 3.4 104 2230 0.8 24	h m ft cm	24 Sa 0448 4.0 122 1101 0.6 18 1712 3.9 119 2316 0.9 27	h m ft cm	9 M 0451 3.7 113 1053 0.9 27 1714 4.1 125 2333 1.2 37	h m ft cm	24 Tu 0509 3.2 98 1055 1.3 40 1733 4.1 125	
	h m ft cm	25 W 0439 4.4 134 1113 0.2 6 1713 3.2 98 2255 0.7 21	h m ft cm	10 Th 0442 4.0 122 1106 0.5 15 1713 3.4 104 2304 1.0 30	h m ft cm	25 Sa 0516 3.7 113 1124 0.8 24 1744 3.8 116 2352 1.2 37	h m ft cm	10 Tu 0520 3.3 101 1115 1.1 34 1748 4.0 122	h m ft cm	25 W 0006 1.7 52 0527 2.9 88 1108 1.5 46 1801 3.8 116	
	h m ft cm	26 Th 0513 4.1 125 1144 0.4 12 1749 3.3 101 2335 0.9 27	h m ft cm	11 F 0510 3.7 113 1131 0.7 21 1744 3.5 107 2341 1.1 34	h m ft cm	26 M 0540 3.2 98 1145 1.0 30 1816 3.6 110	h m ft cm	11 W 0017 1.5 46 0549 2.9 88 1137 1.4 43 1830 3.8 116	h m ft cm	26 Th 0048 2.0 61 0538 2.6 79 1111 1.7 52 1832 3.5 107	
	h m ft cm	27 F 0546 3.7 113 1213 0.6 18 1827 3.2 98 2313 1.1 34	h m ft cm	12 M 0539 3.4 104 1156 0.8 24 1820 3.4 104 2185 3.4 104	h m ft cm	27 Tu 0031 1.6 49 0559 2.8 85 1200 1.3 40 1852 3.4 104	h m ft cm	12 Th 0121 1.8 55 0621 2.5 76 1157 1.6 49 1932 3.5 107	h m ft cm	27 F 0212 2.2 67 0516 2.3 70 1044 2.0 61 1925 3.3 101	
13 Sa 0530 3.7 113 1210 0.7 21 1818 2.9 88 2352 1.3 40	h m ft cm	28 Su 0017 1.2 37 0616 3.2 98 1241 0.9 27 1909 3.1 94	h m ft cm	13 Tu 0025 1.4 43 0609 3.0 91 1222 1.1 34 1906 3.3 101	h m ft cm	28 W 0121 1.9 58 0605 2.4 73 1208 1.5 46 1941 3.1 94	h m ft cm	13 M 0409 2.0 61 0740 2.1 64 1154 2.0 61 2149 3.3 101	h m ft cm	28 Sa 0752 2.0 61 2243 3.1 94	
	h m ft cm	29 Su 0105 1.6 49 0643 2.8 85 1307 1.1 34 2001 3.0 91	h m ft cm	14 W 0128 1.7 52 0641 2.5 76 1252 1.3 40 2016 3.2 98	h m ft cm	29 Th 1145 1.7 52 2144 3.0 91	h m ft cm	14 Sa 0648 1.7 52 1323 2.4 73 1636 2.2 67 2355 3.6 110	h m ft cm	29 Su 0715 1.8 55 1410 2.7 82 1803 2.5 76	
	h m ft cm	30 M 0216 1.9 58 0704 2.3 70 1333 1.3 40 2122 2.9 88	h m ft cm	15 Th 0347 1.9 58 0736 2.0 61 1338 1.6 49 2219 3.2 98	h m ft cm	30 F 0842 1.7 52	h m ft cm	15 Su 0721 1.3 40 1331 2.8 85 1828 1.9 58	h m ft cm	30 M 0013 3.4 104 0721 1.6 49 1345 3.0 91 1855 2.2 67	
	h m ft cm	31 W 1409 1.5 46 2320 3.0 91	h m ft cm		h m ft cm	31 Sa 0009 3.1 94 0808 1.5 46 1423 2.3 70 1813 2.1 64	h m ft cm		h m ft cm		

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Pohnpei Harbor, Caroline Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0056	3.6	110		16 0119	3.9	119		1 0129	3.7	113	
0736	1.4	43	W 0739	1.2	37	F 0733	1.2	37	Sa 0755	1.1	34
1352	3.4	104	1355	4.0	122	1400	4.4	134	1429	4.6	140
1928	1.9	58	1958	1.4	43	2018	1.3	40	2105	1.0	30
2 W 0129	3.9	119	17 0157	4.0	122	2 0207	3.7	113	17 0245	3.3	101
0755	1.2	37	Th 0805	1.1	34	Sa 0802	1.0	30	Su 0822	1.1	34
1409	3.8	116	1422	4.4	134	1429	4.7	143	1458	4.7	143
2000	1.5	46	2034	1.1	34	2054	1.0	30	2138	0.9	27
3 Th 0201	4.0	122	18 0231	4.0	122	3 0243	3.7	113	18 0316	3.2	98
0817	1.0	30	0830	1.0	30	Su 0832	1.0	30	M 0848	1.0	30
1430	4.1	125	1449	4.6	140	1500	4.9	149	1526	4.8	146
2031	1.2	37	2108	1.0	30	● 2132	0.8	24	O 2210	0.9	27
4 F 0231	4.2	128	19 0302	3.9	119	4 M 0320	3.6	110	19 0345	3.0	91
0840	0.9	27	Sa 0854	1.0	30	0902	0.9	27	Tu 0913	1.1	34
1455	4.4	134	1517	4.8	146	1532	5.0	152	1553	4.7	143
2104	1.0	30	O 2142	0.9	27	2210	0.8	24	2241	1.0	30
5 Sa 0303	4.2	128	20 0331	3.8	116	5 Tu 0356	3.4	104	20 0414	2.9	88
0905	0.9	27	Su 0918	1.0	30	0932	1.0	30	W 0937	1.2	37
1522	4.6	140	1544	4.8	146	1607	5.0	152	1620	4.6	140
● 2137	0.9	27	2214	1.0	30	2251	0.8	24	2311	1.1	34
6 Su 0334	4.1	125	21 0358	3.6	110	6 W 0434	3.2	98	21 0443	2.8	85
0931	0.9	27	0940	1.1	34	1002	1.2	37	Th 1000	1.3	40
1550	4.7	143	1612	4.8	146	1643	4.9	149	1646	4.4	134
2213	0.9	27	2246	1.1	34	2336	1.0	30	2343	1.2	37
7 M 0406	3.8	116	22 0424	3.3	101	7 Th 0515	3.0	91	22 0515	2.7	82
0956	1.0	30	Tu 1001	1.2	37	1033	1.4	43	F 1023	1.5	46
1621	4.7	143	1638	4.6	140	1721	4.6	140	1713	4.2	128
2250	1.0	30	2319	1.3	40				7 Sa 0019	0.8	24
8 Tu 0438	3.5	107	23 0449	3.1	94	8 F 0026	1.2	37	0608	2.7	82
1021	1.1	34	1019	1.4	43	0602	2.7	82	Su 1055	1.4	43
1653	4.6	140	1704	4.4	134	1105	1.7	52	1728	3.9	119
2331	1.2	37	2353	1.6	49	1805	4.2	128			
9 W 0511	3.2	98	24 0514	2.8	85	9 Sa 0129	1.5	46	8 Su 0106	1.0	30
1046	1.4	43	1034	1.6	49	0712	2.5	76	0704	2.6	79
1729	4.4	134	1730	4.1	125	1143	2.0	61	1205	1.7	52
						1900	3.8	116	1845	3.7	113
10 Th 0020	1.5	46	25 0032	1.8	55	10 M 0256	1.7	52	9 M 0017	1.3	40
0547	2.8	85	0540	2.6	79	0936	2.5	76	0551	2.6	79
1109	1.6	49	1044	1.9	58	1259	2.4	73	1047	1.7	52
1811	4.1	125	1757	3.9	119	● 2029	3.5	107	1741	3.9	119
11 F 0130	1.8	55	26 0129	2.0	61	11 Tu 0434	1.7	52	23 0023	0.9	27
0639	2.5	76	0622	2.4	73	1143	2.9	88	0621	2.6	79
1128	2.0	61	Sa 1041	2.1	64	M 1627	2.5	76	1129	1.6	49
1911	3.8	116	1834	3.6	110	2230	3.3	101	1756	3.6	110
12 Sa 0351	1.9	58	27 0330	2.1	64	12 Tu 0540	1.6	49	9 Su 0106	1.2	37
2115	3.5	107	Su 1954	3.3	101	1227	3.3	101	0821	2.6	79
●						1815	2.2	67	1314	2.0	61
13 Su 0554	1.8	55	28 0526	1.9	58	1815	2.2	67	1941	3.3	101
1252	2.8	85	M 1327	2.8	85	2356	3.3	101	1829	3.3	101
1654	2.5	76	1650	2.7	82	11 Tu 0434	1.7	52			
2325	3.6	110	2239	3.2	98	1143	2.9	88			
14 M 0639	1.5	46	29 0607	1.8	55	1627	2.5	76			
1306	3.2	98	Tu 1259	3.2	98	1815	2.2	67			
1828	2.1	64	1824	2.4	73	2356	3.3	101			
			2359	3.3	101	1227	3.3	101			
15 Tu 0033	3.8	116	30 0636	1.5	46	1815	2.2	67			
0711	1.3	40	W 1312	3.6	110	2356	3.3	101			
1329	3.6	110	1906	2.0	61	1227	3.3	101			
1918	1.7	52				1815	2.2	67			
						2356	3.3	101			
16 Th 0048	3.5	107				1227	3.3	101			
0705	1.3	40				1815	2.2	67			
1333	4.0	122				2356	3.3	101			
1943	1.6	49				1227	3.3	101			
17 Th 0048	3.5	107				1815	2.2	67			
0705	1.3	40				2356	3.3	101			
1333	4.0	122				1227	3.3	101			
1943	1.6	49				1815	2.2	67			

Time meridian 165° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Heights are referred to the chart datum of soundings which is about 1 foot (30 centimeters) below mean low water springs.

Wake Island, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 0005	-0.4	-12		16 0038	-0.5	-15		1 0043	-0.4	-12	
Tu 0607	2.1	64	W 0647	2.2	67	F 0650	2.3	70	Sa 0717	-0.2	-6
1154	0.0	0	1244	-0.2	-6	1252	-0.2	-6	1330	0.0	0
1808	2.5	76	1852	2.4	73	1900	2.2	67	1926	1.8	55
2 0036	-0.3	-9	17 0110	-0.3	-9	2 0115	-0.3	-9	17 0126	0.0	0
W 0639	2.1	64	Th 0723	2.1	64	Sa 0726	2.2	67	Su 0749	1.9	58
1228	0.0	0	1324	0.0	0	1334	-0.1	-3	1410	0.2	6
1842	2.4	73	1927	2.1	64	1940	2.0	61	2000	1.5	46
3 0109	-0.2	-6	18 0142	-0.1	-3	3 0151	-0.1	-3	18 0155	0.2	6
Th 0715	2.0	61	F 0800	2.0	61	Su 0810	2.1	64	M 0829	1.7	52
1307	0.1	3	1407	0.2	6	1426	0.1	3	1504	0.5	15
1919	2.2	67	2005	1.8	55	2029	1.6	49	O 2045	1.2	37
4 0145	-0.1	-3	19 0215	0.1	3	4 0237	0.2	6	19 0234	0.5	15
F 0756	2.0	61	Sa 0843	1.8	55	M 0908	1.9	58	Tu 0933	1.5	46
1354	0.2	6	1501	0.4	12	M 1542	0.3	9	1650	0.6	18
2004	2.0	61	O 2049	1.5	46	O 2144	1.3	40	2227	1.0	30
5 0229	0.1	3	20 0255	0.4	12	5 0345	0.4	12	20 0357	0.7	21
Sa 0847	1.9	58	Su 0941	1.7	52	Tu 1033	1.8	55	W 1143	1.4	43
1455	0.3	9	1620	0.6	18	1739	0.3	9	1911	0.5	15
O 2102	1.7	52	2158	1.3	40	2354	1.2	37	O 2123	1.2	37
6 0324	0.3	9	21 0356	0.5	15	6 0534	0.5	15	21 0116	1.1	34
Su 0954	1.9	58	M 1110	1.6	49	W 1220	1.9	58	Th 0641	0.7	21
1620	0.4	12	1814	0.6	18	1929	0.1	3	1327	1.6	49
2228	1.5	46	2357	1.1	34	2016	0.3	9	2348	1.1	34
7 0440	0.4	12	22 0539	0.6	18	7 0143	1.3	40	22 0221	1.3	40
M 1119	1.9	58	Tu 1247	1.7	52	Th 0715	0.4	12	F 0759	0.5	15
1806	0.3	9	1944	0.4	12	1343	2.1	64	1422	1.9	58
2035	-0.1	-3	2037	0.2	6	2035	-0.1	-3	2054	0.0	0
8 0017	1.4	43	23 0140	1.2	37	8 0245	1.6	49	23 0258	1.6	49
Tu 0609	0.4	12	W 0716	0.5	15	F 0823	0.1	3	Sa 0844	0.2	6
1243	2.1	64	1355	1.9	58	1442	2.4	73	Sa 1501	2.1	64
1934	0.1	3	2037	0.2	6	2122	-0.4	-12	2126	-0.2	-6
9 0145	1.6	49	24 0237	1.4	43	9 0329	1.9	58	24 0329	1.8	55
W 0726	0.3	9	Th 0817	0.4	12	Sa 0914	-0.2	-6	Sa 0920	0.0	0
1352	2.3	70	1442	2.1	64	1530	2.6	79	Su 1534	2.3	70
2038	-0.2	-6	2116	-0.1	-3	2201	-0.6	-18	2155	-0.4	-12
10 0247	1.7	52	25 0317	1.6	49	10 0408	2.1	64	10 0358	2.1	64
Th 0827	0.1	3	F 0900	0.2	6	Su 0957	-0.4	-12	M 0952	-0.2	-6
1448	2.6	79	1520	2.3	70	1611	2.8	85	1606	2.5	76
2128	-0.4	-12	2149	-0.3	-9	O 2236	-0.7	-21	2223	-0.6	-18
11 0336	1.9	58	26 0350	1.8	55	11 0443	2.3	70	26 0426	2.3	70
F 0918	-0.1	-3	Sa 0936	0.0	0	M 1037	-0.5	-15	Tu 1023	-0.4	-12
1536	2.8	85	Sa 1553	2.4	73	M 1648	2.8	85	1636	2.6	79
2212	-0.6	-18	2220	-0.4	-12	2309	-0.7	-21	O 2251	-0.6	-18
12 0419	2.1	64	27 0421	2.0	61	12 0515	2.4	73	27 0454	2.4	73
Sa 1004	-0.3	-9	Su 1009	-0.1	-3	Tu 1113	-0.6	-18	W 1055	-0.5	-15
1620	2.9	88	1624	2.6	79	1723	2.7	82	1707	2.6	79
O 2252	-0.7	-21	O 2248	-0.5	-15	2339	-0.7	-21	2319	-0.6	-18
13 0458	2.2	67	28 0450	2.1	64	13 0547	2.4	73	28 0523	2.5	76
Su 1046	-0.4	-12	M 1040	-0.2	-6	W 1148	-0.5	-15	Th 1127	-0.6	-18
1701	2.9	88	1654	2.6	79	1755	2.6	79	1738	2.6	79
2329	-0.7	-21	2317	-0.6	-18	2348	-0.6	-18	2309	-0.6	-18
14 0536	2.3	70	29 0519	2.2	67	14 0007	-0.6	-18	14 0519	2.6	79
M 1127	-0.4	-12	Tu 1111	-0.3	-9	F 0617	2.4	73	Th 1128	-0.6	-18
1740	2.9	88	1724	2.7	82	1222	-0.4	-12	1732	2.4	73
2345	-0.6	-18	2345	-0.6	-18	1826	2.4	73	2335	-0.5	-15
15 0004	-0.6	-18	30 0547	2.3	70	15 0034	-0.4	-12	15 0547	2.5	76
Tu 0612	2.3	70	W 1142	-0.3	-9	F 0647	2.3	70	F 1159	-0.5	-15
1206	-0.3	-9	1754	2.6	79	1256	-0.2	-6	1801	2.3	70
1817	2.7	82	1826	2.5	76	1856	2.1	64	2355	-0.4	-12
31 0013	-0.5	-15									
Th 0617	2.3	70									
1215	-0.3	-9									
1826	2.5	76									

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Wake Island, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0029	-0.3	-9	16 Tu	0025	0.1	3	1 W	0100	0.1	3	16 Th	0043	0.3	9
	0644	2.5	76		0644	2.2	67		0722	2.4	73		0703	2.2	67
	1311	-0.4	-12		1316	0.0	0		1401	-0.1	-3		1342	0.1	3
	1915	1.8	55		1913	1.6	49		2010	1.6	49		1946	1.6	49
2 Tu	0106	0.0	0	17 W	0055	0.2	6	2 Th	0153	0.3	9	17 F	0124	0.4	12
	0728	2.3	70		0718	2.0	61		0819	2.1	64		0745	2.0	61
	1403	-0.1	-3		1358	0.2	6		1507	0.1	3		1431	0.3	9
	2006	1.5	46		1956	1.4	43		2124	1.5	46		2040	1.5	46
3 W	0153	0.2	6	18 Th	0132	0.4	12	3 F	0308	0.5	15	18 Sa	0218	0.6	18
	0825	2.0	61		0802	1.8	55		0934	1.9	58		0841	1.8	55
	1515	0.2	6		1458	0.4	12		1630	0.3	9		1533	0.4	12
	2126	1.3	40		2102	1.3	40		2302	1.5	46		2151	1.5	46
4 Th	0306	0.5	15	19 F	0231	0.6	18	4 Sa	0452	0.6	18	19 Su	0337	0.7	21
	0950	1.8	55		0915	1.6	49		1109	1.8	55		1000	1.7	52
	1704	0.3	9		1633	0.5	15		1757	0.3	9		1648	0.4	12
	2336	1.2	37		2253	1.2	37						2313	1.6	49
5 F	0511	0.6	18	20 Sa	0427	0.8	24	5 Su	0028	1.6	49	20 M	0516	0.6	18
	1144	1.7	52		1112	1.5	46		0629	0.5	15		1133	1.7	52
	1849	0.2	6		1811	0.4	12		1237	1.8	55		1802	0.4	12
									1903	0.2	6				
6 Sa	0113	1.5	46	21 Su	0032	1.4	43	6 M	0128	1.9	58	21 Tu	0024	1.8	55
	0657	0.4	12		0626	0.6	18		0737	0.2	6		0640	0.4	12
	1313	1.9	58		1245	1.7	52		1341	1.9	58		1251	1.8	55
	1951	0.0	0		1915	0.2	6		1953	0.1	3		1902	0.2	6
7 Su	0207	1.8	55	22 M	0129	1.7	52	7 Tu	0213	2.1	64	22 W	0121	2.1	64
	0802	0.1	3		0732	0.3	9		0827	0.0	0		0743	0.2	6
	1412	2.1	64		1344	1.9	58		1429	2.0	61		1353	1.9	58
	2034	-0.1	-3		2000	0.1	3		2032	0.0	0		1954	0.1	3
8 M	0247	2.1	64	23 Tu	0211	2.0	61	8 W	0250	2.3	70	23 Th	0209	2.4	73
	0849	-0.1	-3		0820	0.0	0		0909	-0.2	-6		0835	-0.1	-3
	1456	2.2	67		1431	2.1	64		1510	2.1	64		1444	2.1	64
	2109	-0.3	-9		2039	-0.1	-3		2107	-0.1	-3		2039	0.0	0
9 Tu	0321	2.3	70	24 W	0248	2.3	70	9 Th	0324	2.5	76	24 Sa	0253	2.6	79
	0928	-0.3	-9		0901	-0.3	-9		0945	-0.3	-9		0921	-0.4	-12
	1534	2.3	70		1512	2.3	70		1546	2.1	64		1531	2.2	67
	2141	-0.4	-12		2115	-0.3	-9		2140	-0.1	-3		2122	-0.1	-3
10 W	0353	2.5	76	25 Th	0323	2.5	76	10 F	0356	2.6	79	25 Sa	0336	2.8	85
	1004	-0.5	-15		0940	-0.5	-15		1019	-0.4	-12		1006	-0.6	-18
	1608	2.4	73		1551	2.4	73		1619	2.1	64		1615	2.2	67
	2210	-0.4	-12		2150	-0.4	-12		2210	-0.1	-3		2204	-0.2	-6
11 Th	0422	2.6	79	26 F	0359	2.7	82	11 Sa	0427	2.6	79	26 O	0418	2.9	88
	1037	-0.6	-18		1019	-0.7	-21		1051	-0.4	-12		1050	-0.6	-18
	1639	2.3	70		1629	2.4	73		1651	2.1	64		1658	2.2	67
	2238	-0.4	-12		2225	-0.4	-12		2240	-0.1	-3		2245	-0.2	-6
12 F	0451	2.6	79	27 Sa	0435	2.8	85	12 Su	0457	2.6	79	27 W	0501	3.0	91
	1108	-0.6	-18		1059	-0.7	-21		1123	-0.4	-12		1134	-0.6	-18
	1710	2.2	67		1708	2.3	70		1723	2.0	61		1741	2.2	67
	2305	-0.3	-9		2301	-0.4	-12		2310	-0.1	-3		2327	-0.2	-6
13 Sa	0519	2.6	79	28 Su	0513	2.9	88	13 M	0527	2.5	76	28 F	0544	2.5	76
	1139	-0.5	-15		1139	-0.7	-21		1155	-0.3	-9		1218	-0.5	-15
	1739	2.1	64		1747	2.2	67		1755	2.0	61		1825	2.1	64
	2331	-0.2	-6		2338	-0.3	-9		2339	0.0	0		2122	0.1	3
14 Su	0546	2.5	76	29 M	0552	2.8	85	14 Tu	0557	2.4	73	29 W	0629	2.8	85
	1209	-0.4	-12		1222	-0.6	-18		1828	1.8	55		1304	-0.3	-9
	1808	2.0	61		1829	2.0	61		1912	2.0	61		1928	1.9	58
	2358	-0.1	-3												
15 M	0614	2.3	70	30 Tu	0017	-0.1	-3	15 W	0010	0.2	6	30 Sa	0058	0.1	3
	1241	-0.2	-6		0635	2.6	79		0628	2.3	70		0716	2.6	79
	1839	1.8	55		1308	-0.4	-12		1303	0.0	0		1352	-0.1	-3
					1915	1.8	55		1904	1.7	52		2003	1.9	58
16 Su				31 F				16 O	0151	0.3	9	30 Sa	0112	0.4	12
									0808	2.3	70		0727	2.3	70
									1444	0.1	3		1401	0.1	3
									2103	1.8	55		2011	1.9	58

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Wake Island, 2013

Times and Heights of High and Low Waters

July					August					September				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0334 0.6 18 0930 1.8 55 1545 0.5 15 2227 2.0 61	16 Tu 0226 0.5 15 0833 2.0 61 1451 0.4 12 2116 2.1 64	1 Th 0535 0.8 24 1117 1.4 43 1701 0.9 27	16 F 0442 0.7 21 1052 1.6 49 1641 0.8 24 2329 2.2 67	1 Su 0104 2.0 61 0751 0.6 18 1358 1.7 52 1939 0.8 24	16 M 0054 2.3 70 0744 0.3 9 1358 2.0 61 1943 0.5 15									
2 Tu 0455 0.7 21 1043 1.6 49 1650 0.6 18 2343 2.0 61	17 W 0334 0.6 18 0939 1.8 55 1552 0.5 15 2228 2.1 64	2 F 0012 2.0 61 0713 0.7 21 1309 1.5 46 1844 0.9 27	17 Sa 0638 0.6 18 1255 1.6 49 1830 0.7 21	2 M 0201 2.2 67 0833 0.4 12 1438 1.9 58 2026 0.6 18	17 Tu 0159 2.6 79 0832 0.1 3 1442 2.3 70 2035 0.2 6									
3 W 0624 0.7 21 1212 1.5 46 1805 0.7 21	18 Th 0507 0.6 18 1115 1.6 49 1714 0.6 18 2354 2.2 67	3 Sa 0130 2.1 64 0816 0.5 15 1416 1.7 52 1955 0.7 21	18 Su 0102 2.4 73 0758 0.3 9 1409 1.9 58 1948 0.5 15	3 Tu 0242 2.4 73 0906 0.2 6 1510 2.2 67 2103 0.4 12	18 W 0248 2.8 85 0911 0.1 -3 1520 2.6 79 2119 0.0 0									
4 Th 0054 2.1 64 0738 0.5 15 1331 1.6 49 1915 0.6 18	19 F 0647 0.5 15 1258 1.7 52 1842 0.6 18	4 Su 0223 2.3 70 0859 0.3 9 1500 1.9 58 2043 0.5 15	19 M 0209 2.6 79 0851 0.0 0 1500 2.1 64 2045 0.2 6	4 W 0316 2.6 79 0936 0.0 0 1539 2.4 73 2135 0.2 6	19 Th 0329 2.9 88 0945 0.2 -6 1554 2.8 85 2158 0.2 -6									
5 F 0152 2.2 67 0832 0.3 9 1429 1.7 52 2011 0.5 15	20 Sa 0113 2.4 73 0804 0.2 6 1414 1.8 55 1953 0.4 12	5 M 0304 2.5 76 0934 0.1 3 1535 2.1 64 2122 0.4 12	20 Tu 0302 2.9 88 0934 -0.2 -6 1541 2.4 73 2132 0.0 0	5 Th 0348 2.8 85 1004 -0.1 -3 1607 2.6 79 2206 0.0 0	20 F 0407 2.9 88 1017 -0.2 -6 1626 2.9 88 2235 -0.3 -9									
6 Sa 0239 2.4 73 0915 0.2 6 1514 1.8 55 2056 0.4 12	21 Su 0217 2.7 82 0901 -0.1 -3 1509 2.0 61 2051 0.2 6	6 Tu 0339 2.6 79 1005 0.0 0 1606 2.2 67 2156 0.2 6	21 W 0346 3.1 94 1012 -0.3 -9 1618 2.6 79 2214 0.2 -6	6 F 0418 2.9 88 1031 -0.2 -6 1634 2.7 82 2237 -0.1 -3	21 Sa 0441 2.9 88 1047 -0.2 -6 1658 3.0 91 2310 -0.3 -9									
7 Su 0319 2.5 76 0951 0.0 0 1551 2.0 61 2135 0.3 9	22 M 0311 2.9 88 0949 -0.3 -9 1556 2.2 67 2141 0.0 0	7 W 0411 2.8 85 1034 -0.1 -3 1636 2.4 73 2227 0.1 3	22 Th 0426 3.1 94 1046 -0.4 -12 1653 2.8 85 2253 -0.2 -6	7 Sa 0448 2.9 88 1059 -0.2 -6 1703 2.8 85 2308 -0.2 -6	22 Su 0514 2.8 85 1115 -0.1 -3 1728 2.9 88 2343 -0.2 -6									
8 M 0355 2.6 79 1025 -0.1 -3 1625 2.1 64 ● 2210 0.2 6	23 Tu 0358 3.1 94 1031 -0.4 -12 1638 2.4 73 ○ 2226 -0.1 -3	8 Th 0441 2.9 88 1102 -0.2 -6 1704 2.5 76 2258 0.0 0	23 F 0504 3.1 94 1119 -0.3 -9 1727 2.8 85 2331 -0.2 -6	8 Su 0518 2.8 85 1126 -0.2 -6 1732 2.8 85 2340 -0.2 -6	23 M 0545 2.6 79 1143 0.0 0 1757 2.8 85									
9 Tu 0428 2.7 82 1056 -0.2 -6 1657 2.2 67 2243 0.2 6	24 W 0442 3.2 98 1110 -0.4 -12 1717 2.5 76 2309 -0.2 -6	9 F 0511 2.9 88 1129 -0.2 -6 1732 2.6 79 2328 0.0 0	24 Sa 0539 2.9 88 1149 -0.2 -6 1800 2.8 85 2328 0.0 0	9 M 0549 2.7 82 1155 -0.1 -3 1803 2.8 85 2328 0.0 0	24 Tu 0016 0.0 0 0616 2.4 73 1209 0.2 6 1827 2.6 79									
10 W 0500 2.7 82 1127 -0.2 -6 1728 2.2 67 2315 0.1 3	25 Th 0523 3.1 94 1147 -0.4 -12 1755 2.6 79 2350 -0.1 -3	10 Sa 0540 2.8 85 1157 -0.2 -6 1801 2.6 79	25 Su 0007 -0.1 -3 0612 2.7 82 1219 0.0 0 1832 2.7 82	10 Tu 0015 -0.1 -3 0623 2.5 76 1225 0.1 3 1837 2.7 82	25 W 0050 0.2 6 0647 2.1 64 1236 0.4 12 1858 2.4 73									
11 Th 0530 2.7 82 1156 -0.2 -6 1758 2.3 70 2346 0.1 3	26 F 0602 3.0 91 1222 -0.3 -9 1831 2.6 79	11 Su 0000 0.0 0 0610 2.7 82 1225 -0.1 -3 1831 2.6 79	26 M 0043 0.1 3 0645 2.5 76 1247 0.1 3 1904 2.5 76	11 W 0055 0.1 3 0700 2.3 70 1259 0.3 9 1917 2.6 79	26 Th 0128 0.4 12 0721 1.9 58 1305 0.6 18 1934 2.2 67									
12 F 0600 2.7 82 1225 -0.1 -3 1829 2.3 70	27 Sa 0031 0.0 0 0639 2.8 85 1256 -0.1 -3 1908 2.5 76	12 M 0034 0.1 3 0643 2.6 79 1255 0.1 3 1905 2.5 76	27 Tu 0121 0.3 9 0718 2.2 67 1315 0.4 12 1938 2.4 73	12 Th 0143 0.3 9 0745 2.0 61 1340 0.5 15 2009 2.4 73	27 F 0215 0.6 18 0806 1.6 49 1343 0.8 24 ○ 2026 1.9 58									
13 Sa 0019 0.2 6 0631 2.6 79 1256 0.0 0 1902 2.3 70	28 Su 0112 0.1 3 0717 2.5 76 1329 0.1 3 1946 2.4 73	13 Tu 0113 0.2 6 0719 2.3 70 1329 0.2 6 1945 2.4 73	28 W 0203 0.5 15 0754 1.9 58 1346 0.6 18 ○ 2020 2.1 64	13 M 0248 0.5 15 0851 1.7 52 1440 0.8 24 ○ 2125 2.2 67	28 Sa 0335 0.8 24 0932 1.4 43 1453 1.0 30 2209 1.8 55									
14 Su 0054 0.2 6 0705 2.5 76 1328 0.1 3 1938 2.2 67	29 M 0156 0.4 12 0755 2.2 67 1403 0.3 9 2028 2.2 67	14 W 0200 0.3 9 0804 2.0 61 1410 0.4 12 ○ 2036 2.3 70	29 Th 0258 0.8 24 0843 1.6 49 1428 0.8 24 2124 1.9 58	14 Sa 0431 0.7 21 1053 1.5 46 1629 0.9 27 2316 2.1 64	29 Su 0543 0.9 27 1204 1.5 46 1735 1.1 34									
15 M 0136 0.3 9 0744 2.3 70 1406 0.2 6 2021 2.2 67	30 Tu 0247 0.6 18 0838 1.9 58 1441 0.6 18 ○ 2121 2.1 64	15 Th 0304 0.5 15 0906 1.8 55 1508 0.7 21 2149 2.2 67	30 F 0435 0.9 27 1020 1.4 43 1551 1.0 30 2320 1.8 55	15 Su 0631 0.6 18 1253 1.7 52 1828 0.8 24	30 M 0017 1.8 55 0706 0.7 21 1322 1.7 52 1909 0.9 27									
31 W 0355 0.8 24 0938 1.6 49 1534 0.8 24 2236 1.9 58	31 W 0355 0.8 24 0938 1.6 49 1534 0.8 24 2236 1.9 58		31 Sa 0641 0.8 24 1248 1.5 46 1818 1.0 30											

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Wake Island, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0125 0.5 15	2.1	64	16 W 0803 0.2	2.4	73	1 F 0817 0.2	2.2	67	1 Sa 0846 0.1	2.2	67
1403 2.0	61		1417 2.4	73		1427 2.5	76		1504 2.7	82	
1958 0.6	18		2021 0.2	6		2042 0.0	0		2127 -0.2	-6	
2 W 0210 0.3	2.3	70	17 Th 0841 0.0	2.5	76	2 Sa 0852 0.0	2.4	73	17 Su 0920 0.0	2.2	67
1435 2.2	67		1454 2.6	79		1502 2.7	82		1538 2.8	85	
2036 0.3	9		2104 -0.1	-3		2120 -0.2	-6		2203 -0.3	-9	
3 Th 0246 0.1	2.5	76	18 F 0915 0.1	2.6	79	3 Su 0927 0.1	2.5	76	18 M 0952 0.0	2.2	67
1505 2.5	76		1528 2.8	85		1536 2.9	88		1610 2.8	85	
2110 0.1	3		2142 -0.2	-6		2157 -0.4	-12		2236 -0.3	-9	
4 F 0320 0.929	2.6	79	19 Sa 0947 0.1	2.6	79	4 M 1001 0.2	2.5	76	19 Tu 1023 0.0	2.2	67
1534 2.7	82		1600 2.9	88		1611 3.0	91		1641 2.8	85	
2142 -0.1	-3		2217 -0.3	-9		● 2235 -0.5	-15		2309 -0.3	-9	
5 Sa 0352 0.958	2.7	82	20 Su 1017 0.1	2.6	79	5 Tu 1036 0.2	2.5	76	20 W 1054 0.0	2.2	67
1604 2.9	88		1631 3.0	91		1648 3.1	94		1712 2.7	82	
● 2215 -0.3	-9		2250 -0.3	-9		2315 -0.5	-15		2341 -0.2	-6	
6 Su 0425 1028	2.8	85	21 M 1045 0.1	2.5	76	6 W 1112 0.1	2.4	73	21 Th 1124 0.1	2.1	64
1634 3.0	91		1700 2.9	88		1727 3.0	91		1742 2.6	79	
2249 -0.3	-9		2323 -0.2	-6		2356 -0.4	-12		● 1803 2.9	88	
7 M 0458 1058	2.7	82	22 Tu 1113 0.0	2.4	73	7 Th 1150 0.0	2.2	67	7 Sa 1103 0.2	-0.4	-12
1706 3.0	91		1730 2.8	85		1808 2.9	88		● 1145 0.1	-0.1	-3
2325 -0.3	-9		2355 -0.1	-3		1155 0.2	6		1802 2.5	76	
8 Tu 0532 1129	2.6	79	23 W 1141 0.2	2.2	67	8 F 0647 0.2	-0.2	-6	21 Sa 0601 0.1	2.0	61
1740 3.0	91		1759 2.6	79		1233 0.2	6		1146 0.1	2.0	61
1818 2.8	85		1830 2.4	73		1854 0.2	82		1802 2.5	76	
9 W 0003 0609	-0.2	-6	24 Th 0626 0.1	0.1	3	9 Sa 0740 0.1	0.0	0	22 M 0633 0.1	0.2	-6
1202 0.1	3		1209 0.3	9		1323 0.4	12		1230 0.0	0	
1818 2.8	85		1830 2.4	73		1948 0.4	73		1848 0.2	82	
10 Th 0045 0649	-0.1	-3	25 F 0701 0.1	0.3	9	10 Su 0848 0.1	0.2	6	23 Tu 0707 0.1	0.2	-3
1240 0.3	9		1241 0.5	15		1432 0.6	18		1252 0.4	12	
1901 2.6	79		1905 2.2	67		● 2058 0.2	64		1906 0.2	67	
11 F 0135 0739	0.2	6	26 Sa 0746 0.1	0.5	15	11 M 0819 0.1	0.3	9	24 Tu 0745 0.1	0.2	6
1325 0.5	15		1319 0.7	21		1357 0.7	21		1420 0.4	12	
1955 2.4	73		1950 2.0	61		2017 0.9	58		2033 0.1	64	
12 Sa 0242 0852	0.4	12	27 Su 0854 0.1	0.6	18	12 W 1049 0.1	0.5	15	25 W 0830 0.1	0.2	6
1433 0.8	24		1421 0.9	27		1152 0.8	55		1424 0.5	15	
● 2112 2.2	67		● 2102 1.8	55		1754 0.7	21		2033 0.8	55	
13 Su 0420 1050	0.6	18	28 M 1043 0.1	0.7	21	12 Th 1049 0.1	0.5	15	27 F 1044 0.1	0.4	12
1628 0.9	27		1619 1.0	30		1259 0.2	61		1712 0.5	15	
2301 2.1	64		2257 1.7	52		1909 0.4	12		2320 1.5	46	
14 M 0605 1233	0.5	15	29 Tu 1217 0.1	0.7	21	13 F 0725 0.3	0.5	15	27 Th 1044 0.1	0.4	12
1819 0.7	21		1814 0.9	27		1348 0.2	70		1651 0.8	24	
15 Tu 0035 0715	2.2	67	30 W 0655 0.1	1.9	58	2004 0.2	6		2305 1.7	52	
1334 2.1	64		1312 1.9	58		● 2048 0.0	0		● 2117 0.1	-3	
1930 0.5	15		1918 0.6	18							
16 Tu 0126 0740	2.0	61	31 Th 0740 0.3	2.0	61						
1352 2.2	67		1352 2.2	67							
2003 0.3	9		2003 0.3	9							

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Kwajalein Atoll, Marshall Islands, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0016 0.5 -15	16 W 0058 0.5 -15	1 F 0056 0.5 -15	16 Sa 0117 0.0 0	1 F 0001 -0.8 -24	16 Sa 0015 -0.4 -12						
0616 3.6 110	0703 3.8 116	0705 3.9 119	0732 3.6 110	0610 4.5 137	0628 4.2 128						
1208 -0.1 -3	1300 0.0 0	1307 0.0 0	1339 0.5 15	1217 -0.6 -18	1240 -0.1 -3						
1824 4.4 134	1911 4.1 125	1914 4.0 122	1934 3.1 94	1823 4.3 131	1838 3.5 107						
2 W 0048 -0.3 -9	17 Th 0131 -0.2 -6	2 Sa 0130 -0.2 -6	17 Su 0142 0.4 12	2 Sa 0031 -0.6 -18	17 Su 0039 -0.1 -3						
0649 3.5 107	0740 3.5 107	0745 3.7 113	0806 3.2 98	0644 4.4 134	0656 3.8 116						
1242 0.1 3	1338 0.4 12	1350 0.3 9	1417 0.9 27	1254 -0.3 -9	1310 0.3 9						
1857 4.1 125	1944 3.6 110	1954 3.5 107	2003 2.6 79	1857 3.9 119	1904 3.1 94						
3 Th 0122 -0.1 -3	18 F 0204 0.2 6	3 Su 0210 0.2 6	18 M 0212 0.8 24	3 Su 0104 -0.3 -9	18 M 0103 0.3 9						
0727 3.4 104	0820 3.2 98	0835 3.4 104	0853 2.8 85	0722 4.1 125	0725 3.5 107						
1321 0.3 9	1420 0.8 24	1449 0.8 24	1519 1.4 43	1338 0.1 3	1343 0.7 21						
1935 3.8 116	2019 3.0 91	2047 2.9 88	2047 2.1 64	1936 3.3 101	1932 2.7 82						
4 F 0201 0.1 3	19 Sa 0240 0.6 18	4 M 0304 0.6 18	19 Tu 0300 1.2 37	4 M 0142 0.2 6	19 Tu 0130 0.7 21						
0814 3.2 98	0910 2.9 88	0950 3.2 98	1034 2.5 76	0810 3.7 113	0802 3.0 91						
1411 0.6 18	1517 1.2 37	1627 1.1 34	1826 1.5 46	1434 0.6 18	1431 1.1 34						
2021 3.4 104	2104 2.5 76	2220 2.4 73	2359 1.8 55	2028 2.7 82	2010 2.2 67						
5 Sa 0250 0.4 12	20 Su 0329 0.9 27	5 Tu 0435 0.9 27	20 W 0542 1.4 43	5 Tu 0232 0.6 18	20 W 0206 1.1 34						
0916 3.1 94	1028 2.7 82	1143 3.2 98	1306 2.7 82	0919 3.2 98	0907 2.6 79						
1522 1.0 30	1707 1.5 46	1845 0.9 27	2011 1.1 34	1611 1.0 30	1622 1.4 43						
2126 3.0 91	2236 2.1 64			2205 2.2 67	2208 1.8 55						
6 Su 0357 0.6 18	21 M 0459 1.2 37	6 W 0041 2.3 70	21 Th 0204 2.2 67	6 W 0406 1.1 34	21 Th 0357 1.5 46						
1041 3.1 94	1223 2.7 82	0635 0.8 24	0739 1.1 34	1121 3.0 91	1146 2.5 76						
1707 1.1 34	1926 1.3 40	1323 3.5 107	1411 3.1 94	1839 0.9 27	1914 1.2 37						
2304 2.6 79		2010 0.4 12	2048 0.6 18								
7 M 0526 0.7 21	22 Tu 0102 2.1 64	7 Th 0209 2.7 82	22 F 0245 2.6 79	7 Th 0046 2.3 70	22 F 0123 2.1 64						
1218 3.3 101	0651 1.1 34	0757 0.4 12	0829 0.7 21	0630 1.0 30	0657 1.3 40						
1856 0.8 24	1344 3.0 91	1428 4.1 125	1450 3.6 110	1314 3.4 104	1327 2.9 88						
2029 0.9 27	2103 -0.1 -3	2103 -0.1 -3	2117 0.2 6	2002 0.5 15	2006 0.8 24						
8 Tu 0051 2.7 82	23 W 0217 2.3 70	8 F 0303 3.2 98	23 M 0315 3.1 94	8 F 0207 2.8 85	23 M 0211 2.6 79						
0654 0.5 15	0759 0.8 24	0854 0.0 0	0906 0.2 6	0755 0.6 18	0759 0.8 24						
1334 3.8 116	1432 3.4 104	1516 4.5 137	1522 4.0 122	1418 3.8 116	1415 3.3 101						
2011 0.3 9	2107 0.5 15	2145 -0.6 -18	2143 -0.2 -6	2050 0.0 0	2039 0.3 9						
9 W 0208 3.0 91	24 Th 0259 2.7 82	9 Sa 0346 3.7 113	24 Su 0343 3.5 107	9 Sa 0254 3.3 101	24 Su 0243 3.1 94						
0802 0.2 6	0845 0.4 12	0939 -0.4 -12	0938 -0.2 -6	0848 0.1 3	0838 0.3 9						
1433 4.3 131	1509 3.8 116	1558 4.9 149	1552 4.4 134	1504 4.3 131	1450 3.8 116						
2106 -0.2 -6	2138 0.1 3	2221 -0.9 -27	2210 -0.5 -15	2127 -0.4 -12	2108 -0.1 -3						
10 Th 0304 3.3 101	25 F 0333 3.0 91	10 Su 0423 4.1 125	25 M 0411 3.9 119	10 Su 0332 3.8 116	25 M 0313 3.6 110						
0856 -0.2 -6	0922 0.1 3	1019 -0.7 -21	1009 -0.5 -15	0929 -0.3 -9	0913 -0.1 -3						
1522 4.7 143	1542 4.1 125	1635 5.1 155	1621 4.7 143	1543 4.6 140	1523 4.2 128						
2152 -0.7 -21	2206 -0.2 -6	● 2255 -1.0 -30	2237 -0.8 -24	2200 -0.7 -21	2136 -0.5 -15						
11 F 0351 3.7 113	26 Sa 0403 3.4 104	11 M 0458 4.3 131	26 Tu 0439 4.2 128	11 M 0405 4.2 128	26 Tu 0343 4.1 125						
0943 -0.5 -15	0954 -0.2 -6	1056 -0.8 -24	1039 -0.7 -21	1006 -0.6 -18	0946 -0.5 -15						
1606 5.1 155	1612 4.4 134	1710 5.1 155	1650 4.8 146	1617 4.7 143	1555 4.5 137						
2234 -0.9 -27	2234 -0.5 -15	2327 -1.0 -30	○ 2304 -0.9 -27	2230 -0.9 -27	2205 -0.8 -24						
12 Sa 0433 3.9 119	27 Su 0432 3.6 110	12 Tu 0531 4.4 134	27 W 0508 4.4 134	12 Tu 0436 4.5 137	27 W 0413 4.5 137						
1026 -0.7 -21	1025 -0.4 -12	1130 -0.8 -24	1110 -0.8 -24	1040 -0.8 -24	1019 -0.8 -24						
1647 5.2 158	1641 4.6 140	1742 4.9 149	1720 4.8 146	1648 4.7 143	1627 4.6 140						
● 2312 -1.1 -34	○ 2301 -0.7 -21	2357 -0.9 -27	2332 -0.9 -27	● 2258 -0.9 -27	○ 2235 -0.9 -27						
13 Su 0513 4.1 125	28 M 0501 3.9 119	13 W 0602 4.3 131	28 Th 0538 4.5 137	13 M 0506 4.6 140	28 Th 0444 4.8 146						
1107 -0.8 -24	1055 -0.5 -15	1203 -0.6 -18	1143 -0.8 -24	1111 -0.8 -24	1054 -1.0 -30						
1726 5.2 158	1710 4.8 146	1812 4.5 137	1751 4.6 140	1718 4.6 140	1700 4.6 140						
2349 -1.0 -30	2329 -0.8 -24			2325 -0.8 -24	2305 -1.0 -30						
14 M 0551 4.1 125	29 Tu 0530 4.0 122	14 Th 0025 -0.7 -21	27 W 0508 4.4 134	14 M 0534 4.6 140	29 F 0517 4.9 149						
1146 -0.7 -21	1125 -0.6 -18	0632 4.2 128	1040 -0.8 -24	1142 -0.7 -21	1129 -0.9 -27						
1803 4.9 149	1739 4.7 143	1235 -0.3 -9	1648 4.7 143	1745 4.3 137	1733 4.5 137						
2357 -0.7 -21		1840 4.1 125	2351 -0.6 -18	2351 -0.6 -18	2337 -0.9 -27						
15 Tu 0025 -0.8 -24	30 W 0559 4.1 125	15 F 0051 -0.3 -9	1751 4.6 140								
0627 4.0 122	1157 -0.5 -15	0702 3.9 119									
1223 -0.4 -12	1809 4.6 140	1306 0.1 3									
1838 4.6 140		1907 3.6 110									
31 Th 0025 -0.6 -18											
0631 4.0 122											
1230 -0.3 -9											
1840 4.3 131											

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is one-half foot below mean low water springs.

Kwajalein Atoll, Marshall Islands, 2013

Times and Heights of High and Low Waters

April					May					June						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		
1 M	0046	-0.2 -6		16 Tu	0038	0.3 110	1 W	0124	0.3 3.9	16 Th	0058	0.5 107	1 Sa	0333	1.0 3.2	
	0708	4.3 131		0701	3.6 12	W	0754	119	Th	0723	3.5 15	Sa	0953	3.2 18		
	1333	0.0 0		1325	0.4 12		1434	0.3 2.7		1356	0.5 79	1635	0.6 85			
	1931	3.1 94		1918	2.7 82		2037	2.7		1956	2.6	O	2306	2.8 85		
2 Tu	0127	0.2 116		17 W	0108	0.6 101	2 Th	0224	0.8 104	17 F	0142	0.8 98	2 Su	0508	1.1 2.9	
	0758	3.8 116		0737	3.3 101		0901	3.4		0810	3.2 21	Su	1117	2.9 88		
	1433	0.5 15		1411	0.8 24		1555	0.6 76		1451	0.7 76		1750	0.7 21		
	2029	2.6 79		2002	2.4 73		O	2210	2.5		2100	2.5		O	2249	3.0 91
3 W	0222	0.8 101		18 Th	0150	1.0 30	3 F	0358	1.1 94	18 Sa	0245	1.1 91	3 M	0025	3.0 1.0	
	0908	3.3 27		0831	2.9 34		1035	3.1		0915	3.0 24	M	0639	1.0 30		
	1608	0.9 27		1526	1.1 34		1732	0.7 79		1606	0.8 76	1237	2.8 18			
	O	2215	2.2 67	2128	2.1 64		2359	2.6		O	2230	2.5	1853	0.6 18		
4 Th	0403	1.2 91		19 F	0311	1.3 40	4 Sa	0553	1.1 94	19 Su	0423	1.2 88	4 Tu	0125	3.3 0.7	
	1103	3.0 24		1012	2.6 79		1212	3.1		1044	2.9 24	0745	0.7 21			
	1816	0.8 24		1730	1.1 34		1850	0.6 18		1729	0.8 24	1339	2.9 88			
	O	2355	2.2 67	2355	2.2 67						1943	0.4 12	1842	0.4 12		
5 F	0035	2.4 34		20 Sa	0540	1.4 85	5 Su	0114	3.0 24	20 M	0000	2.8 1.1	5 W	0211	3.6 0.4	
	0621	1.1 34		1210	2.8 85		0716	0.8 24		0603	1.1 91	0634	0.4 12			
	1252	3.2 98		1855	0.8 24		1323	3.2 98		1211	3.0 91	1427	3.0 91			
	1935	0.5 15					1943	0.3 9		1837	0.5 15	2024	0.3 9			
6 Sa	0149	2.9 21		21 Su	0113	2.7 30	6 M	0203	3.5 12	21 Tu	0104	3.2 21	6 Th	0249	3.9 0.2	
	0742	0.7 21		0708	1.0 30		0812	0.4 12		0715	0.7 98	0913	0.2 6			
	1357	3.6 110		1320	3.1 94		1414	3.4 104		1318	3.2 98	1507	3.1 94			
	2023	0.1 3		1944	0.4 12		2023	0.1 3		1931	0.2 6	2100	0.1 3			
7 Su	0233	3.4 6		22 M	0158	3.2 15	7 Tu	0241	3.8 3	22 W	0154	3.7 6	7 F	0323	4.1 -0.1	
	0833	0.2 6		0800	0.5 15		0854	0.1 3		0810	0.2 6	0948	-0.1 -3			
	1443	3.9 119		1407	3.5 107		1454	3.6 107		1411	3.5 107	1542	3.2 98			
	2059	-0.2 -6		2022	0.0 0		2057	-0.1 -3		2017	-0.1 -3	2134	-0.1 -3			
8 M	0309	3.9 -6		23 Tu	0235	3.7 0	8 W	0314	4.1 -6	23 Th	0238	4.3 -9	8 Sa	0355	4.3 101	
	0913	-0.2 -6		0842	0.0 0		0930	-0.2 -6		0858	-0.3 113	1020	-0.3 -9			
	1520	4.1 125		1447	3.9 119		1528	3.7 113		1459	3.7 113	1615	3.3 101			
	2131	-0.5 -15		2057	-0.3 -9		2128	-0.3 -9		2100	-0.4 -12	2206	-0.2 -6			
9 Tu	0341	4.3 -12		24 W	0310	4.2 -12	9 Th	0345	4.4 -9	24 F	0321	4.7 -18	9 Su	0427	4.4 -12	
	0948	-0.4 -12		0921	-0.4 -12		1002	-0.3 -9		0943	-0.6 113	1051	-0.4 104			
	1553	4.2 128		1526	4.2 128		1600	3.7 113		1544	3.9 119	1648	3.4 104			
	2200	-0.6 -18		2131	-0.6 -18		2157	-0.4 -12		2142	-0.6 -18	O	2238	-0.2 -6		
10 W	0411	4.5 -24		25 Th	0345	4.7 -24	10 F	0415	4.5 -15	25 Sa	0402	5.0 122	10 O	0458	4.4 -21	
	1021	-0.6 -24		0959	-0.8 -24		1034	-0.5 -15		1027	-0.9 -27	1123	-0.4 104			
	1624	4.2 128		1603	4.3 131		1631	3.7 113		1628	4.0 122	1719	3.4 104			
	O	2227	-0.7 -24	2206	-0.8 -24		O	2226	-0.4 -12		2223	-0.7 -21	2310	-0.1 -3		
11 Th	0439	4.6 -21		26 F	0421	5.0 -30	11 Sa	0444	4.5 -15	26 Su	0444	5.1 -30	11 Tu	0529	4.3 -9	
	1051	-0.7 -21		1038	-1.0 -30		1104	-0.5 -15		1111	-1.0 -30	1154	-0.3 101			
	1653	4.1 125		1641	4.3 131		1701	3.6 110		1711	3.9 119	1751	3.3 101			
	2254	-0.6 -18		O	2241	-0.9 -27		2255	-0.3 -9		2305	-0.7 -21	2341	0.0 0		
12 F	0507	4.6 -18		27 Sa	0458	5.1 -30	12 M	0513	4.4 -12	27 W	0527	5.1 -27	12 W	0600	4.2 -6	
	1121	-0.6 -18		1118	-1.0 -30		1135	-0.4 -12		1155	-0.9 -27	1226	-0.2 -6			
	1721	4.0 122		1720	4.2 128		1731	3.5 107		1756	3.8 116	1824	3.2 98			
	2320	-0.5 -15		2318	-0.8 -24		2324	-0.2 -6		2348	-0.5 -15					
13 Sa	0534	4.5 -15		28 Su	0537	5.0 -24	13 M	0542	4.3 -6	28 Tu	0611	4.9 -18	13 Th	0013	0.1 4.0	
	1150	-0.5 -15		1200	-0.8 -24		1206	-0.2 -6		1241	-0.6 -107	1842	3.5 107			
	1748	3.7 113		1800	3.9 119		1802	3.3 101		1842	3.6 116	1259	0.0 0			
	2345	-0.3 -9		2356	-0.5 -15		2353	0.0 0				1859	3.1 94			
14 Su	0601	4.3 104		29 M	0618	4.8 107	14 Tu	0613	4.1 0	29 W	0033	-0.2 4.5	14 F	0048	0.3 137	
	1220	-0.2 -6		1244	-0.5 -15		1238	0.0 0		0657	4.5 137	0707	3.8 116			
	1816	3.4 104		1844	3.5 107		1834	3.1 94		1329	-0.3 -9	1335	0.1 3			
	O	2202	3.0 91	1933	3.1 94		1911	2.8 85		1932	3.3 101	1939	3.0 91			
15 M	0011	0.0 122		30 Tu	0037	-0.2 134	15 W	0024	0.2 116	30 Th	0122	0.2 125	15 Sa	0128	0.6 125	
	0630	4.0 122		0702	4.4 134		0646	3.8 116		0746	4.1 125	0746	3.6 110			
	1251	0.1 3		1334	-0.1 -3		1314	0.2 6		1422	0.1 3	1417	0.3 9			
	1845	3.0 91		1933	3.1 94		1911	2.8 85		2030	3.0 91	2027	2.9 88			
	O	2202	3.0 91							31 F	0219	0.6 110		29 Sa	0159	0.4 113
											0843	3.6 110			0813	3.7 113
											1524	0.4 12			1441	0.2 6
											2141	2.8 85			2057	3.1 94

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is one-half foot below mean low water springs.

Kwajalein Atoll, Marshall Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0411 1.1 34	16 0249 0.8 24	1 Th 0649 1.3 40	16 0545 1.0 30	1 Su 0151 3.1 94	16 0142 3.7 113						
1009 2.7 82	Tu 0853 3.1 94	Th 1231 2.1 64	F 1144 2.3 70	Su 0827 0.6 18	M 0815 0.0 0						
1636 0.8 24	1517 0.5 15	1819 1.1 34	F 1742 0.9 27	1428 2.6 79	1423 3.3 101						
2322 2.9 88	● 2152 3.2 98			2013 0.7 21	2017 0.2 6						
2 Tu 0548 1.2 37	17 0412 1.0 30	2 F 0115 3.0 91	17 0036 3.4 104	2 M 0231 3.5 107	17 0233 4.2 128						
1136 2.4 73	W 1010 2.7 82	F 0806 0.9 27	Sa 0728 0.6 18	M 0857 0.2 6	Tu 0856 -0.4 -12						
1751 0.9 27	1632 0.7 21	1356 2.3 70	Sa 1329 2.6 79	1458 3.1 94	1503 3.8 116						
	2321 3.2 98	1938 0.9 27	1918 0.6 18	2050 0.3 9	2102 -0.3 -9						
3 W 0041 3.1 94	18 0600 0.9 27	3 Sa 0211 3.3 101	18 0151 3.9 119	3 Tu 0304 3.9 119	18 0315 4.5 137						
0718 1.0 30	Th 1155 2.6 79	Sa 0849 0.5 0	Su 0829 0.0 0	Tu 0924 -0.1 -3	W 0932 -0.7 -21						
1303 2.4 73	1803 0.6 18	1443 2.6 79	Su 1431 3.1 94	1526 3.5 107	1539 4.3 131						
1900 0.8 24		2028 0.6 18	2022 0.1 3	2122 -0.1 -3	2141 -0.6 -18						
4 Th 0142 3.3 101	19 0049 3.5 107	4 Su 0252 3.7 113	19 0245 4.4 134	4 W 0334 4.2 128	19 0351 4.7 143						
0818 0.7 21	F 0730 0.5 15	Su 0921 0.2 6	M 0914 -0.4 -12	W 0950 -0.4 -12	Th 1004 -0.9 -27						
1406 2.6 79	1327 2.8 85	1518 3.0 91	M 1517 3.6 110	1553 3.9 119	1612 4.6 140						
1956 0.6 18	1923 0.4 12	2107 0.2 6	2111 -0.3 -9	2152 -0.4 -12	● 2218 -0.8 -24						
5 F 0228 3.6 110	20 0158 4.0 122	5 M 0326 4.0 122	20 0330 4.8 146	5 Th 0402 4.5 137	20 0425 4.7 143						
0901 0.4 12	Sa 0834 0.0 0	M 0951 -0.1 -3	Tu 0954 -0.8 -24	W 1016 -0.7 -21	F 1035 -0.9 -27						
1452 2.8 85	1433 3.1 94	1549 3.3 101	Tu 1557 4.1 125	1620 4.2 128	1644 4.7 143						
2040 0.4 12	2025 0.0 0	2140 -0.1 -3	2154 -0.7 -21	● 2221 -0.6 -18	2252 -0.9 -27						
6 Sa 0306 3.9 119	21 0253 4.5 137	6 Tu 0357 4.3 131	21 0410 5.0 152	6 F 0431 4.6 140	21 0457 4.6 140						
0936 0.1 3	Su 0925 -0.4 -12	Tu 1018 -0.4 -11	W 1030 -1.0 -30	W 1042 -0.8 -24	Sa 1104 -0.9 -27						
1530 3.0 91	1525 3.5 107	1618 3.6 110	Su 1634 4.3 131	1648 4.4 134	1714 4.7 143						
2118 0.1 3	2117 -0.4 -12	2212 -0.3 -9	○ 2234 -0.9 -27	2251 -0.7 -21	2325 -0.7 -21						
7 Su 0341 4.1 125	22 0341 4.9 149	7 Th 0427 4.5 137	22 0448 5.1 155	7 Sa 0459 4.6 140	22 0528 4.3 131						
1008 -0.1 -3	M 1009 -0.8 -24	W 1046 -0.6 -18	Th 1104 -1.0 -30	Sa 1109 -0.8 -24	Su 1131 -0.7 -21						
1604 3.2 98	1610 3.8 116	1646 3.8 116	Th 1709 4.5 137	1717 4.5 137	1744 4.5 137						
2153 -0.1 -3	2204 -0.6 -18	● 2242 -0.4 -12	2311 -0.9 -27	2322 -0.7 -21	2356 -0.5 -15						
8 M 0414 4.3 131	23 0425 5.1 155	8 Th 0455 4.6 140	23 0523 4.9 149	8 Su 0528 4.5 137	23 0556 3.9 119						
1038 -0.3 -9	Tu 1050 -1.0 -30	1112 -0.6 -18	F 1136 -0.9 -27	1137 -0.7 -21	1157 -0.4 -12						
1635 3.4 104	Tu 1652 4.1 125	1714 4.0 122	F 1743 4.5 137	1747 4.5 137	1813 4.3 131						
● 2226 -0.2 -6	○ 2247 -0.8 -24	2311 -0.5 -15	2347 -0.7 -21	2355 -0.6 -18	1841 3.9 119						
9 Tu 0445 4.4 134	24 0506 5.2 158	9 F 0523 4.6 140	24 0556 4.6 140	9 M 0559 4.2 128	24 0028 -0.1 -3						
1108 -0.4 -12	W 1129 -1.0 -30	1139 -0.6 -12	Sa 1207 -0.7 -21	W 1206 -0.6 -18	Tu 0624 3.5 107						
1706 3.5 107	1732 4.2 128	1743 4.0 122	1816 4.3 131	1819 4.4 134	1223 0.0 0						
2258 -0.2 -6	2329 -0.7 -21	2342 -0.4 -12			1841 3.9 119						
10 W 0515 4.5 137	25 0545 5.0 152	10 Sa 0552 4.5 137	25 0022 -0.4 -12	10 Tu 0031 -0.3 -9	25 0100 0.2 6						
1137 -0.5 -15	Th 1206 -0.9 -27	Sa 1207 -0.6 -18	Su 0627 4.1 125	W 0632 3.8 116	W 0652 3.0 91						
1736 3.6 110	1811 4.1 125	1812 4.0 122	M 1236 -0.4 -12	1237 -0.3 -9	1248 0.4 12						
2328 -0.2 -6			1848 4.1 125	1855 4.1 125	1913 3.5 107						
11 Th 0545 4.4 134	26 0009 -0.5 -15	11 Su 0013 -0.3 -9	26 0056 0.0 0	11 W 0112 0.0 0	26 0136 0.7 21						
1206 -0.4 -12	F 0623 4.7 143	Su 0622 4.2 128	M 0657 3.6 110	W 0710 3.3 101	W 0724 2.5 76						
1807 3.6 110	1242 -0.6 -18	1235 -0.4 -12	M 1304 0.0 0	1313 0.1 3	1316 0.8 24						
	1849 4.0 122	1844 3.9 119	1921 3.7 113	1939 3.7 113	1951 3.0 91						
12 F 0000 -0.1 -3	27 0048 -0.2 -6	12 M 0048 -0.1 -3	27 0132 0.4 12	12 Th 0204 0.5 15	27 0229 1.1 34						
0614 4.3 131	Sa 0659 4.2 128	Sa 0654 3.9 119	Tu 0727 3.1 94	W 0759 2.8 85	F 0809 2.1 64						
1236 -0.3 -9	1317 -0.3 -9	1307 -0.2 -6	1332 0.4 12	1400 0.6 18	F 1355 1.2 37						
1838 3.5 107	1927 3.7 113	1921 3.8 116	1957 3.3 101	2041 3.3 101	● 2100 2.6 79						
13 Sa 0032 0.0 0	28 0129 0.2 6	13 Tu 0128 0.2 6	28 0215 0.9 27	13 M 0327 0.9 27	28 0435 1.3 40						
0645 4.1 125	Su 0735 3.7 113	Tu 0731 3.5 107	W 0801 2.5 76	F 0923 2.3 70	Sa 1046 1.8 55						
1307 -0.2 -6	1352 0.1 3	1343 0.1 3	O 1403 0.8 24	1521 1.0 30	1608 1.5 46						
1913 3.5 107	2008 3.4 104	2006 3.5 107	O 2045 2.9 88	● 2227 3.1 94	2337 2.5 76						
14 Su 0108 0.2 6	29 0213 0.6 18	14 W 0221 0.6 18	29 0323 1.3 40	14 M 0544 0.9 27	29 0659 1.1 34						
0720 3.8 116	M 0813 3.1 94	W 0819 3.0 91	F 0856 2.1 64	Sa 1155 2.3 70	Su 1316 2.2 67						
1341 0.0 0	1429 0.5 15	1431 0.5 15	Th 1457 1.2 37	W 1741 1.1 34	W 1849 1.3 40						
1953 3.4 104	2056 3.1 94	● 2109 3.3 101	2223 2.6 79								
15 M 0152 0.5 15	30 0309 1.0 30	15 Th 0340 0.9 27	30 0606 1.4 43	15 Su 0028 3.3 101	30 0111 2.9 88						
0800 3.5 107	Tu 0859 2.6 79	W 0935 2.5 76	F 1159 1.9 58	W 0721 0.5 15	W 0748 0.7 21						
1423 0.2 6	1515 0.8 24	1547 0.8 24	1732 1.4 43	1330 2.7 82	1358 2.7 82						
2043 3.2 98	● 2203 2.9 88	2247 3.1 94		1918 0.7 21	1946 0.9 27						
16 W 0439 1.3 40	31 0439 1.3 40		31 0043 2.7 82								
1017 2.2 67	W 1017 2.2 67		W 0747 1.0 30								
1630 1.1 34	1630 1.1 34		W 1347 2.2 67								
2344 2.8 85	2344 2.8 85		W 1923 1.1 34								

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is one-half foot below mean low water springs.

Kwajalein Atoll, Marshall Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0157 3.3 101				16 0214 3.9 119				1 0229 3.7 113			
0820 0.3 9				W 0831 -0.2 -6				F 0837 -0.3 -9			
1428 3.2 98				1444 4.0 122				1452 4.2 128			
2024 0.4 12				2049 -0.2 -6				2104 -0.3 -9			
2 W 0232 3.7 113				17 0255 4.1 125				2 0305 4.0 122			
0848 -0.1 -3				Th 0905 -0.5 -15				Sa 0910 -0.5 -15			
1456 3.7 113				1518 4.4 134				1525 4.6 140			
2056 0.0 0				2127 -0.5 -15				2140 -0.6 -18			
3 Th 0303 4.0 122				18 0330 4.2 128				3 Su 0341 4.1 125			
0915 -0.4 -12				F 0936 -0.7 -21				M 1010 -0.8 -24			
1524 4.1 125				1549 4.6 140				1559 4.9 149			
2128 -0.4 -12				2201 -0.7 -21				2216 -0.9 -27			
4 F 0334 4.3 131				19 0403 4.2 128				18 M 1016 -0.8 -24			
0943 -0.7 -21				Sa 1006 -0.7 -21				Tu 1039 -0.4 -12			
1552 4.5 137				1619 4.8 146				1629 4.7 143			
2200 -0.7 -21				O 2234 -0.7 -21				O 2251 -0.5 -15			
5 Sa 0405 4.4 134				20 0434 4.1 125				● 2248 -1.0 -30			
1011 -0.8 -24				Su 1034 -0.7 -21				3 Th 0406 3.9 119			
1622 4.7 143				1649 4.8 146				M 1001 -0.7 -21			
● 2232 -0.8 -24				2305 -0.7 -21				1623 5.1 155			
6 Su 0436 4.5 137				21 0503 3.9 119				O 2248 -1.0 -30			
1040 -0.9 -27				M 1101 -0.6 -18				4 W 0447 3.9 119			
1653 4.8 146				1717 4.6 140				Tu 1041 -0.8 -24			
2306 -0.9 -27				2335 -0.5 -15				1703 5.2 158			
7 M 0508 4.3 131				22 0532 3.7 113				2322 -0.5 -15			
1110 -0.8 -24				Tu 1127 -0.3 -9				2330 -1.0 -30			
1725 4.8 146				1745 4.4 134				2342 -0.4 -12			
2341 -0.7 -21											
8 Tu 0542 4.0 122				23 0006 -0.2 -6							
1142 -0.6 -18				W 0601 3.3 101							
1800 4.7 143				1154 0.0 0							
				1814 4.1 125							
9 W 0020 -0.5 -15				8 F 0104 -0.3 -9							
0619 3.6 110				0702 3.2 98							
1217 -0.3 -9				1252 0.2 6							
1839 4.3 131				1921 4.1 125							
10 Th 0105 -0.1 -3				23 M 0059 0.2 6							
0701 3.2 98				0654 2.9 88							
1256 0.2 6				Sa 1240 0.5 15							
1925 3.9 119				1904 3.6 110							
11 F 0201 0.4 12				23 0227 0.7 21							
0757 2.7 82				10 M 0313 0.5 15							
1347 0.7 21				0925 2.5 76							
2029 3.4 104				1510 1.1 34							
12 Sa 0325 0.8 24				● 2147 3.2 98							
0931 2.3 70				25 0227 0.7 21							
1515 1.1 34				0834 2.4 73							
● 2213 3.1 94				1414 1.1 34							
13 Su 0316 1.1 34				2043 3.0 91							
0923 2.0 61				● 2231 2.9 88							
1453 1.4 43				25 W 0502 0.9 27							
● 2153 2.6 79				0626 2.6 79							
14 Su 0519 1.1 34				1741 1.3 40							
1155 2.2 67				2345 2.8 85							
1732 1.5 46				27 M 0004 2.8 85							
2355 2.7 82				0725 0.5 101							
14 M 0009 3.2 98				13 0052 3.2 98							
0658 0.5 15				0716 0.3 9							
1316 2.9 88				1339 3.5 107							
1909 0.8 24				1949 0.5 15							
15 Tu 0123 3.5 107				31 Th 0150 3.4 104							
0751 0.1 3				0804 0.1 3							
1405 3.5 107				1306 2.6 79							
2005 0.3 9				1859 1.1 34							
16 W 029 0.8 24				2035 0.1 3							
0728 0.5 15				14 0149 3.4 104							
1346 3.2 98				0800 0.1 3							
1948 0.6 18				1421 3.9 119							
17 Th 0150 3.4 104				2035 0.1 3							
0804 0.1 3				14 0215 2.9 88							
1420 3.7 113				0811 0.3 9							
2027 0.2 6				1439 3.9 119							

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is one-half foot below mean low water springs.

Sand Island, Midway Islands, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 1359 1937	0.2 1.4 0.4 1.0	6 43 12 30	16 W 0802 1431 2043	0.3 1.4 0.2 1.2	9 43 6 37	1 F 0207 0751 1424 2112	0.5 1.2 0.1 1.3	15 37 3 40	16 Sa 0306 0839 1510 2159	0.5 1.1 0.1 1.3	15 34 3 40
0039 0724 1359 1937	0.2 1.4 0.4 1.0	6 43 12 30	0140 W 0802 1431 2043	0.3 1.4 0.2 1.2	9 43 6 37	0207 F 0751 1424 2112	0.5 1.2 0.1 1.3	15 37 3 40	0115 F 0647 1310 2002	0.4 1.1 0.0 1.3	12 34 0 40
2 W 0754 1429 2031	0.3 0.9 1.0	9 40 30	17 Th 0839 1513 2141	0.4 0.1 1.2	12 3 37	2 Sa 0258 1505 2210	0.6 0.0 1.3	18 0 40	17 Su 0356 1553 02253	0.6 0.1 1.2	18 3 37
0124 0825 1502 2130	0.3 1.3 0.2 1.1	9 40 6 34	18 F 0328 0916 1555 02240	0.5 1.2 0.1 1.2	15 37 3 37	3 Su 0354 0902 1551 02312	0.6 1.2 0.0 1.3	18 37 0 40	18 M 0450 0952 1640 2350	0.7 1.0 0.1 1.2	21 30 3 37
0307 0857 1540 02232	0.5 1.2 0.1 1.2	15 37 3 37	4 Sa 0427 0954 1639 2340	0.6 1.1 0.1 1.2	18 34 3 37	4 M 0456 0946 1644	0.7 1.1 0.0	21 34 0	19 Tu 0551 1036 1731	0.7 1.0 0.1	21 30 3
0408 0933 1623 2338	0.6 1.2 0.0 1.3	18 37 0 40	5 Sa 0531 1033 1725	0.7 1.0 0.1	21 30 3	5 Tu 0017 0604 1039 1743	1.4 0.8 1.1 -0.1	43 24 34 -3	20 W 0050 0659 1131 1826	1.2 0.7 0.9 0.2	37 21 27 6
0516 1013 1711	0.7 1.1 0.0	21 34 0	6 Su 0042 0643 1117 1814	1.3 0.8 1.0 0.1	40 24 30 3	6 W 0122 0715 1144 1847	1.4 0.7 1.1 0.0	43 21 34 0	21 Th 0148 0807 1238 1924	1.2 0.7 0.9 0.2	37 30 27 6
0044 0630 1101 1806	1.3 0.7 1.1 -0.1	40 21 34 -3	7 M 0142 0758 1207 1905	1.3 0.8 0.9 0.1	40 24 27 3	7 Th 0224 0824 1300 1953	1.4 0.7 1.0 0.0	43 21 30 0	22 F 0241 0905 1349 2020	1.2 0.6 0.9 0.2	37 18 27 6
0149 0744 1159 1905	1.4 0.8 1.0 -0.1	43 24 30 -3	8 Tu 0238 0906 1305 1957	1.3 0.8 0.9 0.1	40 24 27 3	8 F 0319 0925 1419 2058	1.4 0.6 1.0 0.0	43 18 30 0	23 Sa 0326 0951 1457 2114	1.2 0.6 0.9 0.2	37 18 27 6
0249 0852 1307 2005	1.5 0.7 1.0 -0.1	46 21 30 -3	9 W 0327 1001 1408 2047	1.3 0.7 0.9 0.1	40 21 27 3	9 Sa 0409 1018 1534 2159	1.4 0.5 1.1 0.1	43 15 34 3	24 Su 0406 1028 1556 2205	1.2 0.5 1.0 0.2	37 15 30 6
0344 0952 1419 2106	1.5 0.7 1.0 -0.1	46 21 30 -3	10 Th 0410 1045 1509 2134	1.4 0.7 0.9 0.2	43 21 27 6	10 Su 0455 1106 1641 2257	1.4 0.4 1.1 0.1	43 12 34 3	10 M 0441 1100 1650 O 2254	1.2 0.4 1.0 0.2	37 12 30 6
0434 1045 1531 ● 2204	1.6 0.6 1.0 -0.1	49 18 30 -3	11 F 0448 1121 1606 O 2220	1.4 0.6 0.9 0.2	43 18 27 6	11 M 0537 1151 1742 2350	1.4 0.3 1.2 0.2	43 9 37 6	11 M 0423 1033 1739 2342	1.2 0.2 0.3 0.3	37 6 34 6
0520 1134 1639 2301	1.6 0.5 1.1 0.0	49 15 34 0	12 Sa 0522 1153 1659 2304	1.4 0.5 1.0 0.2	43 15 30 6	12 Tu 0616 1232 1837	1.4 0.2 1.2	43 6 37	12 W 0545 1202 1826	1.2 0.2 1.2	37 6 37
0603 1221 1744 2355	1.5 0.4 1.1 0.1	46 12 34 3	13 Su 0553 1222 1749 2348	1.4 0.5 1.0 0.2	43 15 30 6	13 W 0041 0654 1312 1928	0.3 1.3 0.1 1.3	9 40 3 40	13 W 0544 1154 1234 1914	1.1 0.0 0.1 1.3	34 0 3 40
0644 1305 1846	1.5 0.3 1.1	46 9 34	14 M 0623 1249 1838	1.4 0.4 1.1	43 12 34	14 Th 0130 0730 1351 2018	0.4 1.2 0.1 1.3	12 37 3 40	14 Th 0036 0621 1232 1907	0.3 1.0 0.0 1.3	9 30 0 40
0048 0723 1348 1945	0.2 1.5 0.2 1.2	6 46 6 37	15 Tu 0032 0652 1318 1927	0.3 1.3 0.3 1.1	9 40 6 34	15 F 0218 0805 1430 2108	0.4 1.2 0.1 1.3	12 37 3 40	15 F 0121 0656 1309 1950	0.3 1.0 0.0 1.3	9 30 0 40
0118 0721 1349 2018	0.4 1.3 0.2 1.2	12 40 6 37	31 Th 0118 0721 1349 2018	0.4 1.3 0.2 1.2	12 40 6 37				31 Su 0155 0656 1323 2034	0.3 0.9 -0.3 1.3	9 27 -9 40

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0243	0.3	9	16 Tu	0306	0.3	9	1 W	0321	0.1	3	16 Th	0323	0.1	3
	0742	0.9	27		0811	0.7	21		0836	0.7	21		0842	0.5	15
	1412	-0.3	-9		1428	-0.1	-3		1451	-0.2	-6		1438	-0.1	-3
	2125	1.3	40		2124	1.0	30		2151	1.1	34		2124	1.0	30
2 Tu	0333	0.3	9	17 W	0348	0.3	9	2 Th	0414	0.0	0	17 F	0402	0.1	3
	0835	0.9	27		0857	0.6	18		0946	0.7	21		0942	0.6	18
	1507	-0.2	-6		1514	-0.1	-3		1553	-0.1	-3		1530	0.0	0
	2219	1.2	37		2207	1.0	30		2241	1.0	30		2202	0.9	27
3 W	0428	0.3	9	18 Th	0434	0.3	9	3 F	0508	0.0	0	18 Sa	0442	0.0	0
	0936	0.8	24		0953	0.6	18		1102	0.7	21		1049	0.6	18
	1606	-0.1	-3		1606	0.0	0		1702	0.0	0		1630	0.1	3
	2315	1.1	34		2253	0.9	27		2332	0.9	27		2242	0.8	24
4 Th	0527	0.3	9	19 F	0523	0.2	6	4 Sa	0604	-0.1	-3	19 Su	0524	0.0	0
	1048	0.8	24		1100	0.6	18		1221	0.8	24		1159	0.7	21
	1713	0.0	0		1705	0.1	3		1819	0.1	3		1739	0.2	6
					2340	0.9	27						2324	0.8	24
5 F	0013	1.0	30	20 Sa	0612	0.2	6	5 Su	0025	0.8	24	20 M	0607	-0.1	-3
	0628	0.2	6		1214	0.7	21		0658	-0.1	-3		1307	0.8	24
	1208	0.8	24		1812	0.1	3		1336	0.8	24		1854	0.3	9
	1828	0.1	3						1939	0.2	6				
6 Sa	0110	1.0	30	21 Su	0028	0.8	24	6 M	0119	0.7	21	21 Tu	0008	0.7	21
	0728	0.1	3		0700	0.1	3		0748	-0.2	-6		0651	-0.2	-6
	1329	0.9	27		1326	0.7	21		1440	0.9	27		1409	0.9	27
	1944	0.1	3		1923	0.2	6		2053	0.2	6		2007	0.3	9
7 Su	0206	0.9	27	22 M	0116	0.8	24	7 Tu	0211	0.7	21	22 W	0056	0.7	21
	0822	0.1	3		0744	0.0	0		0835	-0.2	-6		0737	-0.3	-9
	1442	0.9	27		1430	0.9	27		1535	1.0	30		1505	1.1	34
	2056	0.2	6		2032	0.2	6		2158	0.2	6		2115	0.3	9
8 M	0257	0.9	27	23 Tu	0202	0.7	21	8 W	0300	0.6	18	23 Th	0146	0.6	18
	0912	0.0	0		0827	-0.1	-3		0918	-0.3	-9		0826	-0.4	-12
	1543	1.0	30		1526	1.0	30		1623	1.1	34		1558	1.2	37
	2200	0.2	6		2136	0.2	6		2253	0.2	6		2214	0.3	9
9 Tu	0345	0.8	24	24 W	0246	0.7	21	9 Th	0346	0.6	18	24 F	0238	0.6	18
	0956	-0.1	-3		0909	-0.2	-6		0959	-0.3	-9		0916	-0.5	-15
	1636	1.1	34		1618	1.1	34		1706	1.1	34		1647	1.3	40
	2256	0.2	6		2232	0.2	6		2341	0.2	6		2306	0.2	6
10 W	0428	0.8	24	25 Th	0330	0.7	21	10 F	0428	0.6	18	25 Sa	0333	0.6	18
	1036	-0.1	-3		0952	-0.3	-9		1037	-0.3	-9		1007	-0.5	-15
	1722	1.1	34		1706	1.2	37		1745	1.1	34		1735	1.3	40
	2346	0.2	6		2324	0.2	6						2355	0.2	6
11 Th	0508	0.8	24	26 F	0414	0.7	21	11 Sa	0022	0.2	6	26 Su	0444	0.3	9
	1115	-0.2	-6		1036	-0.4	-12		0507	0.5	15		1059	-0.5	-15
	1804	1.2	37		1753	1.3	40		1115	-0.3	-9		1822	1.3	40
									1823	1.1	34				
12 F	0030	0.2	6	27 Sa	0012	0.2	6	12 Su	0100	0.2	6	27 M	0041	0.2	6
	0545	0.7	21		0459	0.7	21		0545	0.5	15		0527	0.7	21
	1151	-0.2	-6		1122	-0.4	-12		1153	-0.3	-9		1151	-0.5	-15
	1844	1.2	37		1840	1.3	40		1859	1.1	34		1908	1.3	40
13 Sa	0111	0.2	6	28 Su	0058	0.2	6	13 M	0136	0.2	6	28 F	0128	0.1	3
	0620	0.7	21		0547	0.7	21		0623	0.5	15		0628	0.7	21
	1228	-0.2	-6		1211	-0.5	-15		1232	-0.2	-6		1245	-0.4	-12
	1923	1.2	37		1927	1.3	40		1935	1.1	34		1952	1.2	37
14 Su	0150	0.2	6	29 M	0144	0.2	6	14 Tu	0211	0.2	6	29 W	0215	0.0	0
	0655	0.7	21		0638	0.7	21		0704	0.5	15		0732	0.7	21
	1306	-0.2	-6		1301	-0.4	-12		1311	-0.2	-6		1340	-0.3	-9
	2002	1.1	34		2014	1.2	37		2011	1.1	34		2037	1.2	37
15 M	0228	0.3	9	30 Tu	0231	0.1	3	15 W	0246	0.2	6	30 Sa	0303	0.0	0
	0731	0.7	21		0734	0.7	21		0750	0.5	15		0839	0.7	21
	1346	-0.2	-6		1354	-0.3	-9		1353	-0.1	-3		1438	-0.1	-3
	2042	1.1	34		2102	1.2	37		2047	1.0	30		2121	1.1	34
31 F	0353	-0.1	-3					31 F	0353	-0.1	-3	30 Su	0412	-0.1	-3
									0951	0.8	24		0942	1.0	30
									1540	0.0	0		1526	0.3	9
									2206	1.0	30		2131	1.1	34

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 M 0459	-0.1	-3		16 Tu 0358	0.0	0		1 Th 0556	0.1	3	
1154	1.0	30		1109	1.1	34		1319	1.2	37	
1742	0.5	15		1647	0.6	18		1932	0.7	21	
2258	0.9	27		2149	1.0	30		2356	0.9	27	
2 Tu 0546	-0.1	-3		17 W 0444	-0.1	-3		2 F 0648	0.1	3	
1258	1.1	34		1213	1.2	37		1416	1.2	37	
1858	0.5	15		1755	0.6	18		2040	0.7	21	
2345	0.8	24		2233	1.0	30					
3 W 0635	-0.1	-3		18 Th 0535	-0.2	-6		3 Sa 0054	0.9	27	
1357	1.1	34		1316	1.3	40		0741	0.1	3	
2013	0.5	15		1907	0.7	21		1508	1.3	40	
				2326	0.9	27		2137	0.7	21	
4 Th 0035	0.8	24		19 F 0632	-0.2	-6		4 Su 0157	0.9	27	
0723	-0.1	-3		1417	1.3	40		0833	0.1	3	
1452	1.2	37		2016	0.7	21		1553	1.3	40	
2122	0.5	15						2223	0.6	18	
5 F 0128	0.7	21		20 Sa 0031	0.9	27		5 M 0258	0.9	27	
0810	-0.1	-3		0733	-0.2	-6		0922	0.1	3	
1541	1.2	37		1514	1.4	43		1631	1.3	40	
2218	0.5	15		2118	0.6	18		2300	0.6	18	
6 Sa 0222	0.7	21		21 Su 0143	0.9	27		6 Tu 0356	0.9	27	
0857	-0.1	-3		0835	-0.2	-6		1008	0.2	6	
1624	1.2	37		1605	1.4	43		1705	1.3	40	
2304	0.5	15		2213	0.5	15		● 2333	0.5	15	
7 Su 0316	0.7	21		22 M 0257	1.0	30		6 W 0413	1.2	37	
0942	-0.1	-3		0936	-0.2	-6		1031	0.2	6	
1703	1.3	40		1653	1.4	43		1707	1.4	43	
● 2343	0.5	15		○ 2303	0.4	12		2318	0.3	9	
8 M 0407	0.7	21		23 Tu 0409	1.0	30		7 Th 0448	0.9	27	
1024	0.0	0		1034	-0.1	-3		22 W 0516	1.3	40	
1738	1.3	40		1737	1.4	43		1128	0.2	6	
				2351	0.3	9		1748	1.4	43	
9 Tu 0016	0.4	12		24 W 0517	1.1	34		7 Sa 0609	1.3	40	
0458	0.7	21		1131	0.0	0		1213	0.4	12	
1106	0.0	0		1818	1.4	43		1754	1.2	37	
1810	1.3	40									
10 W 0047	0.4	12		25 Th 0036	0.2	6		8 M 0002	0.2	6	
0547	0.8	24		0621	1.1	34		0613	1.3	40	
1147	0.0	0		1226	0.1	3		1221	0.3	9	
1840	1.2	37		1859	1.4	43		1828	1.3	40	
11 Th 0116	0.3	9		26 F 0121	0.1	3		8 Su 0011	0.2	6	
0636	0.8	24		0722	1.1	34		0653	1.3	40	
1228	0.1	3		1320	0.2	6		1257	0.4	12	
1909	1.2	37		1938	1.3	40		1825	1.1	34	
12 F 0144	0.3	9		27 Sa 0205	0.0	0		9 Th 0045	0.1	3	
0725	0.8	24		0821	1.2	37		0707	1.3	40	
1311	0.2	6		1414	0.3	9		1312	0.4	12	
1938	1.2	37		2018	1.2	37		1907	1.3	40	
13 Sa 0213	0.2	6		28 W 0249	0.0	0		9 M 0045	0.1	3	
0817	0.9	27		0919	1.2	37		0739	1.4	43	
1357	0.3	9		1510	0.4	12		1342	0.5	15	
2007	1.1	34		2057	1.2	37		1858	1.1	34	
14 Su 0244	0.1	3		29 O 0333	0.0	0		24 Tu 0126	0.1	3	
0910	1.0	30		1018	1.2	37		0816	1.4	43	
1448	0.4	12		1608	0.5	15		1433	0.5	15	
2038	1.1	34		○ 2137	1.1	34		1948	1.0	30	
15 M 0318	0.0	0		30 Tu 0419	0.0	0		25 W 0207	0.1	3	
1008	1.1	34		1117	1.2	37		0901	1.4	43	
1544	0.5	15		1711	0.6	18		1518	0.6	18	
● 2111	1.0	30		2219	1.0	30		2028	1.0	30	
31 W 0506	0.0	0						25 Th 0251	0.1	3	
1218	1.2	37						0948	1.3	40	
1820	0.7	21						1605	0.6	18	
2304	0.9	27						○ 2112	0.9	27	

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2013

Times and Heights of High and Low Waters

October				November				December				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 0135	1.0	30	16 W 0214	1.1	34	1 F 0314	1.2	37	16 Sa 0403	1.3	40	
0741	0.4	12	0826	0.4	12	0920	0.5	15	0339	1.4	43	
1404	1.1	34	1420	1.1	34	1422	0.9	27	0955	0.6	18	
2027	0.4	12	2039	0.1	3	2049	0.0	0	1410	0.9	27	
									2052	-0.2	-6	
2 W 0239	1.0	30	17 Th 0318	1.2	37	2 Sa 0402	1.3	40	2 M 0428	1.5	46	
0842	0.4	12	0934	0.4	12	1016	0.5	15	1121	0.5	15	
1447	1.1	34	1510	1.0	30	1505	0.9	27	1604	0.8	24	
2106	0.3	9	2126	0.0	0	2129	-0.1	-3	2218	-0.1	-3	
									● 2141	-0.2	-6	
3 Th 0334	1.1	34	18 F 0413	1.3	40	3 Su 0448	1.4	43	3 Tu 0514	1.5	46	
0939	0.4	12	1033	0.4	12	1106	0.4	12	1205	0.4	12	
1526	1.1	34	1557	1.0	30	1548	0.9	27	1647	0.8	24	
2142	0.3	9	2209	0.0	0	● 2211	-0.1	-3	2257	-0.1	-3	
										2232	-0.2	-6
4 F 0423	1.2	37	19 Sa 0501	1.4	43	4 M 0533	1.5	46	4 W 0559	1.6	49	
1031	0.4	12	1125	0.4	12	1153	0.4	12	1245	0.4	12	
1602	1.0	30	1640	1.0	30	1632	0.9	27	1728	0.8	24	
● 2216	0.2	6	2250	0.0	0	2255	-0.2	-6	2336	0.0	0	
										2324	-0.2	-6
5 Sa 0508	1.3	40	20 Su 0545	1.4	43	5 Tu 0617	1.5	46	5 W 0644	1.4	43	
1119	0.4	12	1212	0.4	12	1237	0.4	12	1322	0.4	12	
1637	1.0	30	1721	0.9	27	1718	0.9	27	1808	0.8	24	
2251	0.1	3	2329	0.0	0	2342	-0.2	-6				
6 Su 0551	1.4	43	21 M 0626	1.4	43	6 W 0702	1.5	46	6 Th 0016	0.0	0	
1205	0.4	12	1255	0.4	12	1321	0.4	12	0720	1.4	43	
1712	1.0	30	1800	0.9	27	1808	0.9	27	1357	0.4	12	
2328	0.0	0							1851	0.8	24	
									● 1901	1.0	30	
7 M 0635	1.5	46	22 Tu 0008	0.0	0	7 Th 0030	-0.2	-6	21 F 0016	-0.1	-3	
1249	0.4	12	0706	1.4	43	0747	1.5	46	0726	1.5	46	
1749	1.0	30	1336	0.4	12	1406	0.4	12	1348	0.3	9	
			1837	0.9	27	1903	0.9	27	1901	1.0	30	
8 Tu 0009	-0.1	-3	23 W 0047	0.0	0	8 F 0122	-0.1	-3	22 Sa 0056	0.1	3	
0720	1.5	46	0746	1.4	43	0833	1.4	43	0755	1.3	40	
1334	0.5	15	1415	0.4	12	1454	0.3	9	1432	0.4	12	
1829	1.0	30	1916	0.9	27	2004	0.9	27	1938	0.8	24	
									● 2118	1.0	30	
9 W 0052	-0.1	-3	24 Th 0128	0.0	0	9 Sa 0217	0.0	0	23 Su 0207	0.1	3	
0807	1.5	46	0826	1.3	40	0919	1.3	40	0851	1.4	43	
1419	0.5	15	1455	0.5	15	1544	0.3	9	1509	0.4	12	
1913	1.0	30	1958	0.9	27	● 2113	0.9	27	2031	0.8	24	
										2118	1.0	30
10 Th 0140	-0.1	-3	25 F 0211	0.1	3	10 Su 0318	0.1	3	24 M 0223	0.2	6	
0855	1.4	43	0907	1.3	40	1007	1.3	40	0906	1.2	37	
1507	0.5	15	1537	0.5	15	1637	0.2	6	1547	0.3	9	
2004	1.0	30	2047	0.8	24	2229	1.0	30	2131	0.8	24	
									● 2232	1.1	34	
11 F 0232	0.0	0	26 Sa 0257	0.2	6	11 M 0426	0.3	9	9 W 0308	0.3	9	
0947	1.4	43	0950	1.2	37	1057	1.2	37	0934	1.3	40	
1559	0.5	15	1622	0.5	15	1731	0.1	3	1612	0.1	3	
● 2104	1.0	30	● 2146	0.8	24	2350	1.0	30	● 2232	1.1	34	
12 Sa 0331	0.1	3	27 Su 0350	0.3	9	12 Tu 0543	0.4	12	10 Th 0415	0.4	12	
1040	1.3	40	1034	1.1	34	1148	1.1	34	1019	1.2	37	
1656	0.4	12	1709	0.4	12	1825	0.1	3	1703	0.0	0	
2216	1.0	30	2255	0.8	24				● 2345	1.1	34	
										● 2314	1.1	34
13 Su 0437	0.2	6	28 M 0450	0.3	9	13 W 0107	1.1	34	11 W 0529	0.5	15	
1136	1.2	37	1119	1.1	34	0705	0.5	15	1107	1.1	34	
1755	0.4	12	1758	0.4	12	1242	1.0	30	1754	0.0	0	
2337	1.0	30				1918	0.0	0				
14 M 0551	0.3	9	29 Tu 0009	0.9	27	14 Th 0215	1.2	37	12 F 0153	1.2	37	
1232	1.2	37	0557	0.4	12	0823	0.5	15	0747	0.6	18	
1853	0.3	9	1206	1.0	30	1336	0.9	27	1229	0.9	27	
			1844	0.3	9	2007	0.0	0	1917	0.0	0	
15 Tu 0059	1.1	34	30 W 0119	1.0	30	15 F 0313	1.3	40	14 Sa 0248	1.3	40	
0710	0.3	9	0709	0.4	12	0932	0.5	15	0855	0.6	18	
1327	1.1	34	1252	1.0	30	1429	0.9	27	1318	0.9	27	
1948	0.2	6	1927	0.2	6	2053	-0.1	-3	2003	-0.1	-3	
			31 Th 0221	1.1	34							
			0818	0.5	15							
			1338	0.9	27							
			2008	0.1	3							

Nawiliwili, Kauai Island, Hawaii, 2013

Times and Heights of High and Low Waters

January				February				March					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 Tu	0607	1.8	55	16 W	0013	0.4	12	0050	0.6	18	0234	0.7	21
1311	0.2	6		0645	1.5	46	0629	1.3	40	0631	0.9	27	
1843	0.8	24		1339	0.1	3	1331	0.0	0	1348	0.1	3	
2344	0.4	12		2027	1.1	34	2051	1.3	40	2205	1.3	40	
2 W	0637	1.7	52	17 Th	0117	0.7	21	0219	0.7	21	1442	0.1	3
1349	0.2	6		0715	1.3	40	0659	1.0	30	2322	1.4	43	
2004	0.9	27		1419	0.1	3	1418	0.0	0	●			
				2153	1.2	37	2219	1.4	43				
3 Th	0044	0.6	18	18 F	0254	0.8	24	0442	0.7	21	1551	0.2	6
0710	1.5	46		0741	1.0	30	0734	0.8	24	M			
1430	0.1	3		1503	0.1	3	1516	-0.1	-3				
2138	1.1	34		●	2311	1.4	43	2334	1.6	49			
4 F	0212	0.8	24	19 Sa	1552	0.1	3	1622	-0.1	-3	0021	1.5	46
0748	1.3	40								Tu	0834	0.5	15
1515	0.1	3								M	1129	0.6	18
●	2259	1.3	40							Tu	1701	0.1	3
5 Sa	0418	0.9	27	20 Su	0013	1.5	46	0034	1.8	55	0106	1.6	49
0837	1.1	34								W	0836	0.4	12
1603	0.0	0								Tu	1130	0.6	18
										Tu	1728	-0.2	-6
6 Su	0002	1.6	49	21 M	0100	1.7	52	0124	2.0	61	0143	1.7	52
0634	0.8	24								Th	0846	0.4	12
0954	0.9	27								W	1247	0.7	21
1655	-0.1	-3								Th	1828	-0.2	-6
										W	1849	0.0	0
7 M	0054	1.9	58	22 Tu	0140	1.8	55	0208	2.1	64	0215	1.7	52
0758	0.6	18								F	0859	0.3	9
1124	0.8	24								Th	1345	0.8	24
1747	-0.2	-6								W	1923	-0.3	-9
										Th	1932	-0.1	-3
8 Tu	0140	2.1	64	23 W	0215	1.9	58	0248	2.1	64	0244	1.8	55
0848	0.5	15								Sa	0936	0.2	6
1239	0.7	21								F	1435	0.9	27
1838	-0.3	-9								Sa	2013	-0.1	-3
										W	1906	-0.1	-3
9 W	0224	2.3	70	24 Th	0246	1.9	58	0326	2.1	64	0312	1.8	55
0928	0.4	12								Sa	1004	0.1	3
1339	0.7	21								F	1521	1.0	30
1928	-0.4	-12								Sa	2059	-0.2	-6
										W	●		
10 Th	0306	2.4	73	25 F	0316	2.0	61	0401	2.0	61	0339	1.7	52
1004	0.3	9								Su	1004	0.0	0
1433	0.8	24								M	1643	1.1	34
2016	-0.4	-12								Tu	2145	-0.1	-3
										W	2233	0.0	0
11 F	0346	2.4	73	26 Sa	0344	2.0	61	0433	1.9	58	0406	1.6	49
1040	0.2	6								Th	1101	0.0	0
1524	0.8	24								W	1653	1.2	37
●	2103	-0.3	-9							Th	2229	0.0	0
										W	●		
12 Sa	0426	2.3	70	27 Su	0412	2.0	61	0504	1.7	52	0433	1.5	46
1115	0.2	6								W	1130	0.0	0
1615	0.9	27								Tu	1740	1.2	37
2149	-0.2	-6								W	2316	0.2	6
										Tu	2316	0.2	6
13 Su	0503	2.2	67	28 M	0439	1.9	58	0533	1.5	46	0502	1.3	40
1150	0.1	3								Th	1200	0.0	0
1708	0.9	27								W	1832	1.2	37
2234	0.0	0								Th	1126	-0.1	-3
										W	1805	1.4	43
14 M	0539	2.0	61	29 Tu	0506	1.8	55	0006	0.4	12	0435	1.1	34
1225	0.1	3								Th	0559	1.2	37
1805	1.0	30								W	1231	0.0	0
2322	0.2	6								Th	1931	1.3	40
										W	2043	1.3	40
15 Tu	0613	1.8	55	30 W	0533	1.6	49	0106	0.6	18	0005	0.4	12
1301	0.1	3								F	0621	1.0	30
1911	1.0	30								W	1306	0.0	0
										W	2347	0.4	12
										W	1251	0.0	0
										Th	1930	1.2	37
31 Th	0600	1.5	46										

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 <i>M</i>	0305	0.4	12	16	0340	0.4	12	1	0407	0.2	6	16	0333	0.3	9
	0649	0.6	18	<i>Tu</i>	0650	0.5	15	<i>W</i>	0915	0.6	18	<i>Th</i>	0856	0.6	18
	1259	0.0	0		1242	0.2	6		1351	0.2	6		1304	0.4	12
	2106	1.7	52		2057	1.4	43		2136	1.6	49		2044	1.4	43
2 <i>Tu</i>	0454	0.4	12	17	0505	0.4	12	2	0503	0.1	3	17	0417	0.2	6
	0847	0.5	15	<i>W</i>	0922	0.5	15	<i>Th</i>	1054	0.7	21	<i>F</i>	1036	0.7	21
	1412	0.1	3		1352	0.3	9		1525	0.4	12		1428	0.5	15
	2221	1.6	49		2203	1.4	43	<i>O</i>	2237	1.5	46	<i>O</i>	2135	1.3	40
3 <i>W</i>	0603	0.3	9	18	0546	0.3	9	3	0545	0.1	3	18	0452	0.2	6
	1049	0.6	18	<i>Th</i>	1108	0.6	18	<i>F</i>	1205	0.9	27	<i>Sa</i>	1141	0.9	27
	1542	0.2	6		1523	0.4	12		1703	0.4	12		1608	0.6	18
	2327	1.6	49	<i>O</i>	2301	1.3	40		2332	1.4	43		2227	1.2	37
4 <i>Th</i>	0643	0.2	6	19	0611	0.3	9	4	0619	0.0	0	19	0525	0.1	3
	1207	0.7	21	<i>F</i>	1207	0.8	24	<i>Sa</i>	1258	1.2	37	<i>Su</i>	1228	1.1	34
	1711	0.2	6		1651	0.4	12		1828	0.5	15		1740	0.6	18
					2349	1.3	40					2318	1.1	34	
5 <i>F</i>	0021	1.6	49	20	0633	0.2	6	5	0020	1.2	37	20	0557	-0.1	-3
	0713	0.1	3	<i>Sa</i>	1250	1.0	30	<i>Su</i>	0648	-0.1	-3	<i>M</i>	1309	1.4	43
	1303	0.9	27		1803	0.4	12		1341	1.4	43		1858	0.5	15
	1825	0.2	6						1935	0.4	12				
6 <i>Sa</i>	0107	1.5	46	21	0030	1.3	40	6	0102	1.1	34	21	0006	1.0	30
	0740	0.0	0	<i>Su</i>	0657	0.0	0	<i>M</i>	0715	-0.2	-6	<i>Tu</i>	0630	-0.2	-6
	1348	1.2	37		1328	1.2	37		1419	1.6	49		1349	1.7	52
	1925	0.2	6		1904	0.3	9		2031	0.4	12		2002	0.4	12
7 <i>Su</i>	0146	1.4	43	22	0107	1.2	37	7	0140	1.0	30	22	0054	0.9	27
	0805	-0.1	-3	<i>M</i>	0723	-0.1	-3	<i>Tu</i>	0741	-0.2	-6	<i>W</i>	0705	-0.3	-9
	1428	1.3	40		1405	1.4	43		1454	1.7	52		1429	1.9	58
	2018	0.2	6		1959	0.3	9		2119	0.3	9		2100	0.4	12
8 <i>M</i>	0221	1.3	40	23	0143	1.2	37	8	0215	0.9	27	23	0140	0.9	27
	0829	-0.1	-3	<i>Tu</i>	0751	-0.2	-6	<i>W</i>	0808	-0.2	-6	<i>Th</i>	0743	-0.4	-12
	1506	1.5	46		1443	1.6	49		1527	1.8	55		1510	2.1	64
	2105	0.2	6		2051	0.2	6		2203	0.3	9		2153	0.3	9
9 <i>Tu</i>	0253	1.2	37	24	0219	1.1	34	9	0248	0.8	24	24	0226	0.8	24
	0854	-0.2	-6	<i>W</i>	0822	-0.3	-9	<i>Th</i>	0836	-0.2	-6	<i>F</i>	0823	-0.4	-12
	1541	1.6	49		1523	1.8	55		1600	1.9	58		1553	2.2	67
	2150	0.2	6		2143	0.2	6	<i>O</i>	2244	0.3	9	<i>O</i>	2245	0.2	6
10 <i>W</i>	0323	1.1	34	25	0256	1.0	30	10	0320	0.7	21	10	0412	0.6	18
	0919	-0.2	-6	<i>Th</i>	0855	-0.4	-12	<i>F</i>	0905	-0.2	-6	<i>Sa</i>	0905	-0.4	-12
	1617	1.7	52		1605	2.0	61		1633	1.9	58		1638	2.3	70
	2234	0.2	6	<i>O</i>	2236	0.2	6		2325	0.3	9		2338	0.2	6
11 <i>Th</i>	0352	1.0	30	26	0334	0.9	27	11	0353	0.7	21	11	0404	0.7	21
	0945	-0.2	-6	<i>F</i>	0931	-0.4	-12	<i>Sa</i>	0936	-0.2	-6	<i>Su</i>	0949	-0.4	-12
	1652	1.7	52		1649	2.0	61		1709	1.9	58		1725	2.3	70
	2320	0.3	9		2332	0.2	6						1756	1.9	58
12 <i>F</i>	0421	0.8	24	27	0415	0.8	24	12	0008	0.3	9	12	0107	0.3	9
	1013	-0.2	-6	<i>Sa</i>	1010	-0.4	-12	<i>Su</i>	0427	0.6	18	<i>M</i>	0500	0.6	18
	1730	1.7	52		1738	2.1	64		1008	-0.1	-3		1035	-0.3	-9
									1746	1.8	55		1813	2.2	67
13 <i>Sa</i>	0008	0.3	9	28	0033	0.2	6	13	0055	0.3	9	13	0126	0.2	6
	0449	0.7	21	<i>Su</i>	0501	0.7	21	<i>M</i>	0504	0.6	18	<i>Tu</i>	0607	0.6	18
	1043	-0.1	-3		1053	-0.3	-9		1043	0.0	0		1126	-0.1	-3
	1811	1.7	52		1831	2.0	61		1825	1.7	52		1903	2.0	61
14 <i>Su</i>	0103	0.4	12	29	0141	0.3	9	14	0146	0.4	12	14	0221	0.2	6
	0517	0.6	18	<i>M</i>	0559	0.6	18	<i>Tu</i>	0551	0.5	15	<i>W</i>	0731	0.6	18
	1116	0.0	0		1141	-0.2	-6		1121	0.1	3		1223	0.1	3
	1857	1.6	49		1928	1.9	58		1908	1.6	49		1954	1.8	55
15 <i>M</i>	0210	0.4	12	30	0256	0.3	9	15	0241	0.3	9	15	0314	0.1	3
	0550	0.6	18	<i>Tu</i>	0723	0.5	15	<i>W</i>	0705	0.5	15	<i>Th</i>	0908	0.7	21
	1154	0.1	3		1238	0.0	0		1205	0.2	6		1334	0.4	12
	1953	1.5	46		2031	1.8	55		1954	1.5	46		2046	1.6	49
												31	0403	0.1	3
												<i>F</i>	1038	0.9	27
												<i>F</i>	1506	0.6	18
												<i>O</i>	2139	1.4	43

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2013

Times and Heights of High and Low Waters

July			August			September					
Time	Height		Time	Height		Time	Height		Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0426 1219 1912 2226	0.0	0	16 Tu 0328 1128 1744 2057	0.0	0	1 Th 0516 1320 2055	0.2	6	16 F 0454 1252 2006	0.0	0
	1.6	49		1.6	49		1.9	58		2.1	64
	0.8	24		0.9	27		0.6	18		0.6	18
	0.9	27		1.0	30						
2 Tu 0508 1306 2029 2334	0.0	0	17 W 0420 1224 1928 2232	0.0	0	2 F 0027 0607 1357 2112	0.8	24	17 Sa 0014 0558 1339 2036	0.8	24
	1.7	52		1.8	55		0.1	3		2.2	67
	0.7	21		0.7	21		1.9	58		1.9	58
	0.8	24		0.8	24		0.6	18		0.5	15
3 W 0549 1346 2112	0.0	0	18 Th 0514 1313 2023 2359	-0.1	-3	3 Sa 0116 0652 1431 2129	0.8	24	18 Su 0116 0656 1421 2106	0.9	27
	1.9	58		2.0	61		0.1	3		2.3	70
	0.6	18		0.6	18		2.0	61		0.4	12
				0.8	24		0.5	15			
4 Th 0033 0628 1421 2141	0.7	21	19 F 0608 1359 2104	-0.2	-6	4 Su 0156 0732 1501 2147	0.9	27	19 M 0208 0749 1500 2135	1.1	34
	-0.1	-3		2.2	67		0.0	0		-0.1	-3
	2.0	61		0.5	15		2.0	61		2.2	67
	0.5	15					0.5	15		0.3	9
5 F 0123 0707 1455 2205	0.7	21	20 Sa 0108 0701 1442 2140	0.8	24	5 M 0233 0810 1529 2207	1.0	30	20 Tu 0257 0839 1537 2204	1.2	37
	-0.1	-3		-0.3	-9		0.0	0		-0.1	-3
	2.0	61		2.3	70		2.0	61		2.2	67
	0.5	15		0.4	12		0.4	12		0.2	6
6 Sa 0205 0745 1526 2228	0.7	21	21 Su 0206 0752 1524 2215	0.8	24	6 Tu 0309 0847 1556 2229	1.0	30	21 W 0344 0927 1611 2234	1.3	40
	-0.1	-3		-0.3	-9		0.0	0		0.0	0
	2.1	64		2.4	73		2.0	61		2.0	61
	0.4	12		0.3	9		0.4	12		0.2	6
7 Su 0243 0821 1557 ● 2253	0.8	24	22 M 0300 0842 1604 ○ 2250	0.9	27	7 W 0347 0924 1622 2254	1.1	34	22 Th 0432 1015 1644 2305	1.4	43
	-0.1	-3		-0.3	-9		0.1	3		0.2	6
	2.1	64		2.4	73		1.9	58		1.8	55
	0.4	12		0.3	9		0.3	9		0.1	3
8 M 0321 0857 1627 2319	0.8	24	23 Tu 0352 0930 1643 2325	1.0	30	8 Th 0426 1003 1648 2321	1.1	34	23 Su 0521 1104 1716 2336	1.5	46
	-0.1	-3		-0.2	-6		0.2	6		0.4	12
	2.1	64		2.2	67		1.8	55		1.6	49
	0.4	12		0.2	6		0.3	9		0.1	3
9 Tu 0359 0933 1656 2347	0.8	24	24 W 0446 1018 1720	1.1	34	9 F 0510 1044 1714 2351	1.2	37	24 Sa 0613 1158 1745	1.5	46
	0.0	0		0.0	0		0.3	9		0.6	18
	2.0	61		2.1	64		1.7	52		1.2	37
	0.3	9					0.2	6		0.7	21
10 W 0441 1010 1724	0.8	24	25 Th 0000 0544 1108 1755	0.2	6	10 Sa 0600 1131 1740	1.3	40	25 Su 0009 0711 1302 1813	0.2	6
	0.1	3		1.1	34		0.5	15		1.6	49
	1.9	58		0.2	6		1.6	49		0.7	21
				1.9	58		1.6	49		0.8	24
11 Th 0017 0529 1048 1751	0.3	9	26 F 0036 0646 1203 1829	0.1	3	11 Su 0023 0659 1229 1807	0.2	6	26 M 0045 0819 1430 1838	0.2	6
	0.9	27		1.2	37		1.3	40		1.6	49
	0.2	6		0.4	12		0.7	21		0.9	27
	1.8	55		1.6	49		1.4	43		1.0	30
12 F 0048 0625 1132 1819	0.3	9	27 Sa 0113 0758 1307 1902	0.1	3	12 M 0100 0812 1348 1836	0.2	6	27 Tu 0128 0937 1213 ○ 2134	0.3	9
	0.9	27		1.3	40		1.4	43		1.6	49
	0.4	12		0.7	21		0.8	24		0.7	21
	1.7	52		1.4	43		1.2	37		0.8	24
13 Sa 0122 0734 1226 1848	0.2	6	28 Su 0153 0917 1437 1934	0.1	3	13 Tu 0145 0935 1546 1911	0.1	3	28 W 0223 1053 1940 2140	0.4	12
	1.0	30		1.4	43		1.6	49		1.7	58
	0.6	18		0.9	27		0.9	27		0.6	18
	1.5	46		1.1	34		1.0	30		0.8	24
14 Su 0159 0857 1340 1919	0.2	6	29 M 0237 1036 1713 ○ 2009	0.2	6	14 W 0240 1054 1823 ○ 2031	0.1	3	29 Sa 0333 1155 1953 2326	0.4	12
	1.1	34		1.5	46		1.7	52		1.7	52
	0.8	24		0.9	27		0.8	24		0.5	15
	1.3	40		1.0	30		0.9	27		1.2	37
15 M 0241 1019 1528 ● 1957	0.1	3	30 Tu 0327 1143	0.2	6	15 Th 0345 1159 1931 2248	0.1	3	30 F 0445 1244 2007	0.4	12
	1.3	40		1.6	49		1.9	58		1.8	55
	0.9	27					0.7	21		0.6	18
	1.1	34					1.2	37		0.4	12
31 W 0421 1237 2033 2320	0.2	6	31 W 1237 2033 2320	0.2	6	31 Sa 0547 1323 2021	0.9	27	31 Sa 0026 1323 2021	0.3	9
	1.8	55		0.7	21		1.9	58		1.0	30
	0.7	21		0.8	24		0.6	18		0.2	6
	0.8	24								0.5	15

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2013

Times and Heights of High and Low Waters

October					November					December					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 Tu	0135	1.3 40		16 W	0207 0758	1.7 0.5	1 F	0228 0837	1.9 0.5	16 Sa	0312 1429	2.1 1.0	1 Su	0251 1400	2.2 0.9
	0706	0.4 12		1353	1.6 49	1.5 40	1353	1.3 40	1.5 30	2017	-0.1 -3	1400	2000	-0.3 -9	
	1340	1.7 52		2002	0.1 3		1957	-0.1 -3		2017	-0.1 -3	2000	2026	-0.1 -3	
	1956	0.3 9													
2 W	0208	1.5 46		17 Th	0246 0849	1.8 0.5	2 Sa	0304 0926	2.1 0.5	17 Su	0345 1033	2.2 0.5	2 M	0332 1023	2.4 0.4
	0751	0.4 12		1427	1.4 43	1.5 37	1428	1.2 37	1.5 27	1503	0.9 27	1446	1524	0.8 24	
	1408	1.6 49		2028	0.0 0		2029	-0.1 -3		2047	-0.1 -3	2041	2100	-0.1 -3	
	2018	0.2 6													
3 Th	0243	1.6 49		18 F	0323 0937	2.0 0.5	3 Su	0343 1016	2.2 0.5	18 M	0419 1114	2.2 0.5	3 Tu	0414 1111	2.5 0.4
	0835	0.4 12		1500	1.3 40	1.5 34	1505	1.1 34	1.5 27	2119	0.0 0	2124	2135	0.0 0	
	1436	1.6 49		O	2055	0.0 0	●	2104	-0.2 -6						
	2043	0.1 3													
4 F	0318	1.8 55		19 Sa	0400 1023	2.1 0.5	4 M	0425 1108	2.3 0.5	19 Tu	0454 1156	2.2 0.5	4 W	0458 1200	2.4 0.4
	0919	0.4 12		1531	1.2 37	1.5 30	1544	1.0 30	1.5 24	1612	0.8 24	1627	1640	0.8 24	
	1505	1.5 46		2123	0.0 0		2142	-0.2 -6		2152	0.1 3	2209	2210	-0.2 -1	
	2110	0.1 3													
5 Sa	0356	1.9 58		20 Su	0436 1110	2.1 0.5	5 Tu	0510 1206	2.3 0.5	20 W	0530 1240	2.1 0.5	5 Th	0544 1251	2.4 0.3
	1006	0.4 12		1601	1.1 34	1.5 34	1628	0.9 27	1.5 24	1650	0.8 24	1729	1726	0.8 24	
	1535	1.4 43		2152	0.1 3		2223	-0.1 -3		2226	0.2 6	2257	2246	0.2 6	
	2140	0.0 0													
6 Su	0437	2.0 61		21 M	0514 1200	2.1 0.6	6 W	0600 1309	2.3 0.5	21 Th	0608 1329	2.0 0.5	6 F	0631 1344	2.2 0.3
	1057	0.5 15		1632	0.9 27	1.8 24	1722	0.8 24	1.8 21	1738	0.7 21	1846	1846	0.8 24	
	1606	1.2 37		2222	0.1 3		2308	0.0 0		2302	0.3 9	2351	2325	0.2 12	
	2213	0.0 0													
7 M	0523	2.1 64		22 Tu	0555 1256	2.0 0.6	7 Th	0654 1420	2.2 0.5	22 F	0648 1421	1.9 0.5	7 Sa	0719 1437	2.0 0.3
	1154	0.6 18		1705	0.9 27	1.8 21	1839	0.7 21	1.8 21	1849	0.7 21	2344	2344	0.4 12	
	1640	1.1 34		2255	0.2 6										
	2249	0.0 0													
8 Tu	0615	2.0 61		23 W	0641 1405	1.9 0.7	8 F	0002 0754	0.2 2.0	23 Sa	0732 1513	1.7 0.5	8 Su	0056 0810	0.5 1.8
	1303	0.6 18		1745	0.8 24	1.5 24	1530	0.4 12	1.5 24	2040	0.7 21	2200	2118	0.5 27	
	1720	1.0 30		2333	0.4 12		2031	0.8 24							
	2331	0.1 3													
9 W	0715	2.0 61		24 Th	0734 1532	1.8 0.6	9 Sa	0110 0857	0.4 1.9	24 Su	0038 0818	0.6 1.6	9 M	0224 0903	0.7 1.5
	1430	0.7 21		1905	0.7 21		1629	0.4 12	1.2 12	1557	0.4 12	2228	2245	0.1 1.1	
	1814	0.8 24					●	2220	0.9 27						
10 Th	0023	0.2 6		25 F	0020 0836	0.5 1.7	10 Su	0241 1000	0.6 1.7	25 M	0159 0907	0.8 1.5	10 Tu	0420 0959	0.8 1.3
	0826	2.0 61		1648	0.6 18	1.5 18	1714	0.3 18	1.3 18	1633	0.3 9	2336	2347	0.1 1.4	
	1612	0.6 18		2133	0.7 21		2339	1.1 34	1.1 34	○					
	2004	0.7 21													
11 F	0131	0.3 9		26 Sa	0129 0940	0.6 1.6	11 M	0426 1058	0.7 1.6	26 Tu	0346 0958	0.9 1.4	11 W	0023 0620	1.5 0.8
	0940	1.9 58		1728	0.6 18	1.5 18	1750	0.2 6	1.5 6	1705	0.2 6	1734	1639	1.1 0.0	
	1725	0.5 15													
	2216	0.8 24		○	2309	0.9 27									
12 Sa	0300	0.5 15		27 Su	0304 1039	0.7 1.6	12 Tu	0035 0601	1.4 0.7	27 W	0021 0528	1.3 0.9	12 Th	0110 0747	1.8 0.7
	1048	1.9 58		1753	0.5 15	1.5 15	1149	1.5 46	1.5 46	1050	1.3 40	1737	1723	1.0 -0.1	
	1808	0.4 12													
	2340	1.0 30													
13 Su	0434	0.5 15		28 M	0004 0438	1.0 0.7	13 W	0121 0716	1.7 0.7	28 Th	0100 0649	1.6 0.8	13 F	0150 0846	1.9 0.6
	1146	1.8 55		1127	1.5 46	1.5 46	1235	1.3 40	1.2 37	1140	1.2 37	1810	1723	1.0 -0.1	
	1841	0.3 9		1815	0.4 12		1851	0.0 0		1810	0.0 0				
14 M	0038	1.2 37		29 Tu	0044 0553	1.2 0.7	14 Th	0201 0817	1.9 0.6	29 F	0136 0752	1.8 0.7	14 Sa	0226 0929	2.1 0.6
	0555	0.5 15		1208	1.5 46	1.5 46	1316	1.2 37	1.2 34	1228	1.1 34	1844	1856	0.8 -0.3	
	1234	1.8 55		1837	0.3 9		1920	0.0 0		1844	-0.1 -3				
	1909	0.2 6													
15 Tu	0125	1.5 46		30 W	0119 0654	1.5 0.6	15 F	0237 0907	2.0 0.6	30 Sa	0213 0845	2.1 0.6	15 Su	0259 1004	2.1 0.5
	0701	0.5 15		1244	1.4 43	1.4 43	1353	1.1 34	1.0 30	1314	1.0 30	1921	1952	-0.1 -3	
	1316	1.7 52		1901	0.2 6		1948	-0.1 -3							
	1936	0.1 3													
31 Tu	0153	1.7 52		31 Th	0153 0747	1.7 0.6	31 W	0153 1318	1.7 1.4	31 Sa	0320 1440	2.4 0.8	31 Su	0320 1440	2.4 0.8
	0747	0.6 18		1318	1.4 43	1.4 43	1928	0.0 0					2029	-0.4 -12	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

January					February					March						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0626	2.0	61	16 W	0054	0.4	12	1 F	0125	0.5	15	16 F	0030	0.3	9	
	1338	0.1	3	0711	1.6	49	0707	1.3	40	0744	0.8	24	0605	1.2	37	
	1920	0.9	27	1411	0.0	0	1356	-0.1	-3	1421	0.1	3	1225	-0.2	-6	
	2051	1.2	37	2102	1.4	43	2210	1.4	43	1920	1.6	49	1955	1.5	46	
2 W	0012	0.4	12	17 Th	0209	0.7	21	2 Sa	0300	0.6	18	17 Su	0533	0.6	18	
	0702	1.8	55	0750	1.3	40	0753	1.1	34	0844	0.7	21	0646	1.0	30	
	1416	0.1	3	1452	0.0	0	1443	-0.1	-3	1516	0.1	3	1306	-0.1	-3	
	2031	1.0	30	2207	1.3	40	2218	1.6	49	2321	1.5	46	2027	1.6	49	
3 Th	0119	0.6	18	18 F	0354	0.8	24	3 Su	0503	0.6	18	18 M	0710	0.5	15	
	0742	1.6	49	0833	1.1	34	0857	0.8	24	1027	0.6	18	0739	0.8	24	
	1456	0.0	0	1536	0.0	0	1540	-0.1	-3	1623	0.1	3	1357	-0.1	-3	
	2147	1.2	37	2318	1.5	46	2331	1.8	55	2142	1.7	52	2212	1.5	46	
4 F	0254	0.8	24	19 Sa	0601	0.7	21	4 M	0649	0.5	15	19 Tu	0021	1.6	49	
	0829	1.4	43	0931	0.9	27	1031	0.7	21	0755	0.4	12	0903	0.6	18	
	1539	0.0	0	1623	0.0	0	1644	-0.2	-6	1158	0.6	18	1504	0.0	0	
	2259	1.5	46							1728	0.1	3	2259	1.8	55	
5 Sa	0454	0.8	24	20 Su	0016	1.6	49	5 Tu	0032	2.0	61	20 W	0108	1.7	52	
	0929	1.1	34	0735	0.6	18	0753	0.3	9	0825	0.3	9	1052	0.5	15	
	1626	-0.1	-3	1051	0.7	21	1202	0.6	18	1257	0.6	18	1624	0.0	0	
	1713	0.0	0	1713	0.0	0	1749	-0.2	-6	1824	0.0	0	1148	0.6	18	
6 Su	0001	1.8	55	21 M	0104	1.8	55	6 W	0126	2.1	64	21 Th	0147	1.8	55	
	0640	0.7	21	0827	0.5	15	0838	0.1	3	0850	0.2	6	0850	0.2	6	
	1044	0.9	27	1208	0.7	21	1313	0.7	21	1341	0.7	21	1219	0.6	18	
	1716	-0.2	-6	1801	0.0	0	1850	-0.3	-9	1912	-0.1	-3	1742	-0.1	-3	
7 M	0054	2.0	61	22 Tu	0144	1.9	58	7 Th	0213	2.3	70	22 F	0221	1.9	58	
	0755	0.5	15	0902	0.4	12	0916	0.0	0	0913	0.1	3	0807	0.0	0	
	1201	0.8	24	1306	0.6	18	1411	0.8	24	1419	0.8	24	1321	0.8	24	
	1807	-0.3	-9	1846	-0.1	-3	1945	-0.3	-9	1955	-0.1	-3	1849	-0.1	-3	
8 Tu	0143	2.3	70	23 W	0219	2.0	61	8 F	0256	2.3	70	23 Sa	0936	0.0	0	
	0850	0.3	9	0930	0.3	9	0951	-0.1	-3	1045	1.0	30	0841	-0.1	-3	
	1309	0.7	21	1352	0.7	21	1501	0.9	27	2035	-0.1	-3	1411	1.0	30	
	1858	-0.4	-12	1927	-0.1	-3	2036	-0.3	-9	2116	-0.1	-3	1947	-0.1	-3	
9 W	0229	2.4	73	24 Th	0252	2.1	64	9 Sa	0336	2.3	70	24 Su	0323	1.9	58	
	0936	0.1	3	0956	0.2	6	1024	-0.1	-3	1000	0.0	0	0911	-0.2	-6	
	1409	0.7	21	1432	0.7	21	1548	1.0	30	1533	1.1	34	1455	1.2	37	
	1948	-0.4	-12	2006	-0.2	-6	2125	-0.3	-9	2116	-0.1	-3	2039	-0.2	-6	
10 Th	0313	2.5	76	25 F	0323	2.1	64	10 M	0414	2.2	67	10 Su	0353	1.9	58	
	1018	0.0	0	1021	0.1	3	1056	-0.2	-6	1025	-0.1	-3	0940	-0.2	-6	
	1504	0.8	24	1510	0.8	24	1633	1.2	37	1611	1.2	37	1536	1.3	40	
	2038	-0.4	-12	2043	-0.2	-6	2213	-0.2	-6	2158	-0.1	-3	2127	-0.1	-3	
11 F	0356	2.6	79	26 Sa	0353	2.1	64	11 M	0450	2.0	61	11 Tu	0424	1.8	55	
	1058	-0.1	-3	1047	0.1	3	1128	-0.2	-6	1051	-0.1	-3	1008	-0.2	-6	
	1556	0.8	24	1548	0.9	27	1719	1.3	40	1652	1.4	43	1616	1.5	46	
	2126	-0.3	-9	2120	-0.2	-6	2300	0.0	0	2242	0.0	0	2214	0.0	0	
12 Sa	0437	2.5	76	27 Su	0423	2.1	64	12 Tu	0524	1.8	55	12 W	0455	1.6	49	
	1137	-0.1	-3	1114	0.0	0	1159	-0.1	-3	1120	-0.2	-6	1036	-0.2	-6	
	1648	0.9	27	1628	0.9	27	1806	1.3	40	1735	1.5	46	1655	1.6	49	
	2214	-0.2	-6	2158	-0.1	-3	2350	0.2	6	2332	0.1	3	2300	0.0	0	
13 Su	0517	2.3	70	28 M	0453	2.1	64	13 W	0558	1.5	46	13 Th	0529	1.5	46	
	1215	-0.1	-3	1142	0.0	0	1230	-0.1	-3	1824	1.6	49	1103	-0.2	-6	
	1741	1.0	30	1710	1.0	30	1856	1.4	43	1735	1.6	49	1717	1.9	58	
	2303	0.0	0	2239	0.0	0	2348	0.2	6	2348	0.2	6	2345	0.1	3	
14 M	0556	2.1	64	29 Tu	0524	1.9	58	14 Th	0045	0.4	12	14 F	0524	1.2	37	
	1253	-0.1	-3	1211	0.0	0	0631	1.3	40	1131	-0.1	-3	1106	-0.3	-9	
	1838	1.0	30	1757	1.1	34	1303	0.0	0	1816	1.6	49	1805	1.9	58	
	2355	0.2	6	2324	0.2	6	1952	1.4	43							
15 Tu	0634	1.9	58	30 W	0556	1.8	55	15 F	0153	0.5	15	15 F	0040	0.3	9	
	1332	-0.1	-3	1242	-0.1	-3	0705	1.1	34	0557	1.0	30	0550	0.9	27	
	1941	1.1	34	1849	1.2	37	1339	0.0	0	1200	-0.1	-3	1144	-0.2	-6	
							2056	1.4	43	1902	1.6	49	1859	1.9	58	
31 Th	0017	0.3	9										31 Su	0200	0.2	6
	0629	1.6	49										0641	0.7	21	
	1317	-0.1	-3										1228	-0.2	-6	
	1951	1.3	40										2001	1.9	58	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

April						May						June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm
1 <i>M</i>	0326	0.2 6	16	0354	0.3 9	1	0419	0.0 0	16	0354	0.1 3	1	0507	-0.1 -3	16	0408	0.0 0
	0753	0.6 18	<i>Tu</i>	0822	0.5 15	<i>W</i>	0951	0.6 18	<i>Th</i>	0932	0.6 18	<i>Sa</i>	1205	1.3 40	<i>Su</i>	1108	1.2 37
	1324	0.0 0		1308	0.2 6		1426	0.2 6		1336	0.4 12		1736	0.6 18		1618	0.7 21
	2111	1.8 55		2104	1.5 46		2145	1.7 52		2100	1.6 49		2255	1.2 37	<i>O</i>	2142	1.3 40
2 <i>Tu</i>	0453	0.2 6	17	0500	0.2 6	2	0514	-0.1 -3	17	0437	0.1 3	2	0545	-0.2 -6	17	0447	-0.1 -3
	0935	0.5 15	<i>W</i>	1005	0.5 15	<i>Th</i>	1119	0.8 24	<i>F</i>	1052	0.8 24	<i>Su</i>	1255	1.6 49	<i>M</i>	1202	1.5 46
<i>O</i>	1440	0.1 3		1424	0.3 9		1605	0.4 12	<i>O</i>	1508	0.5 15		1903	0.6 18		1800	0.7 21
	2224	1.8 55		2208	1.5 46	<i>O</i>	2248	1.6 49		2153	1.5 46		2349	1.1 34		2241	1.1 34
3 <i>W</i>	0600	0.1 3	18	0548	0.2 6	3	0559	-0.1 -3	18	0514	0.0 0	3	0620	-0.2 -6	18	0526	-0.2 -6
	1117	0.6 18	<i>Th</i>	1128	0.6 18	<i>F</i>	1224	1.1 34	<i>Sa</i>	1150	1.0 30	<i>M</i>	1337	1.8 55	<i>Tu</i>	1250	1.8 55
	1614	0.2 6		1559	0.4 12		1739	0.4 12		1646	0.6 18		2010	0.5 15		1921	0.6 18
	2331	1.7 52	<i>O</i>	2306	1.5 46		2345	1.5 46		2247	1.4 43					2345	1.0 30
4 <i>Th</i>	0647	0.0 0	19	0623	0.1 3	4	0636	-0.2 -6	19	0547	-0.1 -3	4	0040	0.9 27	19	0608	-0.3 -9
	1229	0.8 24	<i>F</i>	1222	0.8 24	<i>Sa</i>	1313	1.3 40	<i>Su</i>	1236	1.3 40	<i>Tu</i>	0652	-0.2 -6	<i>W</i>	1335	2.1 64
	1740	0.2 6		1723	0.4 12		1856	0.4 12		1811	0.5 15		1414	1.9 58		2026	0.4 12
				2357	1.4 43				2339	1.3 40		2104	0.4 12				
5 <i>F</i>	0029	1.7 52	20	0652	0.0 0	5	0036	1.3 40	20	0620	-0.2 -6	5	0127	0.8 24	20	0047	0.9 27
	0725	-0.1 -3	<i>Sa</i>	1304	1.1 34	<i>Su</i>	0708	-0.2 -6	<i>M</i>	1316	1.6 49	<i>W</i>	0723	-0.2 -6	<i>Th</i>	0651	-0.4 -12
	1322	1.0 30		1831	0.3 9		1355	1.6 49		1922	0.4 12		1447	2.1 64		1419	2.3 70
	1852	0.1 3					2000	0.3 9					2148	0.3 9		2121	0.2 6
6 <i>Sa</i>	0117	1.6 49	21	0041	1.4 43	6	0121	1.2 37	21	0030	1.1 34	6	0210	0.7 21	21	0146	0.8 24
	0757	-0.2 -6	<i>Su</i>	0719	-0.1 -3	<i>M</i>	0737	-0.2 -6	<i>Tu</i>	0653	-0.3 -9	<i>Th</i>	0754	-0.2 -6	<i>F</i>	0736	-0.4 -12
	1406	1.3 40		1341	1.3 40		1431	1.8 55		1356	1.9 58		1520	2.1 64		1504	2.5 76
	1952	0.1 3		1930	0.2 6		2053	0.3 9		2023	0.3 9		2226	0.2 6		2210	0.1 3
7 <i>Su</i>	0200	1.5 46	22	0122	1.4 43	7	0201	1.1 34	22	0120	1.0 30	7	0250	0.7 21	22	0243	0.7 21
	0825	-0.2 -6	<i>M</i>	0746	-0.2 -6	<i>Tu</i>	0805	-0.3 -9	<i>W</i>	0727	-0.4 -12	<i>F</i>	0826	-0.2 -6	<i>Sa</i>	0822	-0.4 -12
	1445	1.5 46		1418	1.6 49		1505	1.9 58		1437	2.1 64		1552	2.2 67		1549	2.6 79
	2044	0.1 3		2023	0.2 6		2141	0.2 6		2119	0.2 6		2303	0.2 6		2257	0.0 0
8 <i>M</i>	0237	1.4 43	23	0202	1.3 40	8	0239	0.9 27	23	0209	0.9 27	8	0330	0.7 21	23	0338	0.7 21
	0852	-0.2 -6	<i>Tu</i>	0814	-0.3 -9	<i>W</i>	0832	-0.3 -9	<i>Th</i>	0804	-0.4 -12	<i>Sa</i>	0858	-0.2 -6	<i>Su</i>	0910	-0.4 -12
	1522	1.7 52	<i>F</i>	1455	1.8 55		1538	2.0 61		1519	2.3 70		1625	2.2 67		1633	2.6 79
	2132	0.1 3		2115	0.1 3		2224	0.2 6		2212	0.1 3	<i>O</i>	2338	0.2 6	<i>O</i>	2343	0.0 0
9 <i>Tu</i>	0313	1.3 40	24	0242	1.2 37	9	0315	0.8 24	24	0258	0.8 24	9	0409	0.6 18	24	0434	0.7 21
	0919	-0.3 -9	<i>W</i>	0845	-0.3 -9	<i>Th</i>	0859	-0.2 -6	<i>F</i>	0843	-0.5 -15	<i>Su</i>	0932	-0.1 -3	<i>M</i>	0959	-0.3 -9
	1557	1.8 55		1535	2.0 61		1610	2.1 64		1602	2.4 73		1659	2.1 64		1718	2.5 76
<i>O</i>	2218	0.1 3		2206	0.0 0	<i>O</i>	2306	0.1 3		2305	0.0 0						
10 <i>W</i>	0346	1.2 37	25	0323	1.1 34	10	0352	0.8 24	25	0348	0.7 21	10	0015	0.1 3	25	0029	-0.1 -3
	0944	-0.2 -6	<i>Th</i>	0917	-0.4 -12	<i>F</i>	0928	-0.2 -6	<i>Sa</i>	0925	-0.5 -15	<i>M</i>	0451	0.6 18	<i>Tu</i>	0533	0.8 24
	1631	1.9 58		1617	2.2 67		1644	2.1 64		1648	2.5 76		1006	-0.1 -3		1050	-0.2 -6
	2303	0.1 3	<i>O</i>	2300	0.0 0		2348	0.1 3		2358	0.0 0		1733	2.1 64		1803	2.4 73
11 <i>Th</i>	0420	1.0 30	26	0405	0.9 27	11	0429	0.7 21	26	0442	0.7 21	11	0053	0.1 3	26	0114	-0.1 -3
	1011	-0.2 -6	<i>F</i>	0953	-0.4 -12	<i>Sa</i>	0957	-0.2 -6	<i>M</i>	1010	-0.4 -12	<i>W</i>	0537	0.6 18	<i>Tu</i>	0637	0.9 27
	1707	1.9 58		1701	2.2 67		1719	2.0 61		1735	2.4 73		1043	0.0 0		1145	0.1 3
	2349	0.1 3		2356	0.0 0								1809	2.0 61		1848	2.1 64
12 <i>F</i>	0454	0.9 27	27	0452	0.8 24	12	0033	0.1 3	27	0053	-0.1 -3	12	0133	0.1 3	27	0159	-0.1 -3
	1038	-0.1 -3	<i>Sa</i>	1032	-0.4 -12	<i>Su</i>	0509	0.6 18	<i>M</i>	1029	-0.1 -3	<i>W</i>	0631	0.6 18	<i>Th</i>	0749	1.0 30
	1744	1.8 55		1749	2.2 67		1757	2.0 61		1824	2.3 70		1122	0.2 6		1248	0.3 9
													1845	1.9 58		1932	1.9 58
13 <i>Sa</i>	0038	0.2 6	28	0058	0.0 0	13	0120	0.2 6	28	0148	-0.1 -3	13	0212	0.1 3	28	0243	-0.1 -3
	0530	0.7 21	<i>Su</i>	0544	0.7 21	<i>M</i>	0555	0.6 18	<i>Tu</i>	0650	0.6 18	<i>W</i>	0734	0.7 21	<i>F</i>	0906	1.1 34
	1107	-0.1 -3		1114	-0.3 -9		1103	0.0 0		1151	-0.1 -3		1208	0.3 9		1405	0.6 18
	1824	1.8 55		1842	2.2 67		1837	1.9 58		1915	2.2 67		1923	1.8 55		2018	1.6 49
14 <i>Su</i>	0134	0.2 6	29	0204	0.0 0	14	0211	0.2 6	29	0243	-0.1 -3	14	0252	0.1 3	29	0328	-0.1 -3
	0611	0.6 18	<i>M</i>	0648	0.6 18	<i>Tu</i>	0651	0.5 15	<i>W</i>	0811	0.7 21	<i>F</i>	0848	0.8 24	<i>Sa</i>	1024	1.3 40
	1139	0.0 0		1204	-0.1 -3		1142	0.1 3		1255	0.2 6		1309	0.5 15		1543	0.7 21
	1910	1.7 52		1939	2.0 61		1921	1.8 55		2008	1.9 58		2004	1.6 49		2107	1.3 40
15 <i>M</i>	0240	0.3 9	30	0314	0.0 0	15	0304	0.2 6	30	0335	-0.1 -3	15	0330	0.0 0	30	0411	-0.1 -3
	0704	0.5 15	<i>Tu</i>	0812	0.5 15	<i>W</i>	0804	0.5 15	<i>Th</i>	0939	0.8 24	<i>Sa</i>	1003	1.0 30	<i>Su</i>	1132	1.5 46
	1217	0.1 3		1305	0.1 3		1229	0.3 9		1416	0.4 12		1433	0.7 21		1734	0.8 24
	2003	1.6 49		2041	1.9 58		2009	1.7 52		2103	1.7 52		2049	1.5 46		2202	1.1 34
									31	0424	-0.1 -3						
									<i>F</i>	1100	1.1 34						
									<i>F</i>	1555	0.6 18						
									<i>O</i>	2158	1.5 46						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
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Honolulu, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

July			August			September					
Time	Height		Time	Height		Time	Height		Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0453 1227 1909 2304	-0.1	-3	16 Tu 0352 1126 1800 2201	0.0	0	1 Th 0543 1325 2044	0.1	3	16 F 0515 1253 2006	0.0	0
	1.7	52		1.7	52		2.0	61		2.2	67
	0.7	21		0.7	21		0.5	15		0.4	12
	0.9	27		1.0	30						
2 Tu 0534 1313 2017	-0.1	-3	17 W 0442 1223 1924 2320	-0.1	-3	2 F 0055 0631 1403 2113	0.8	24	17 Sa 0041 0619 1343 2045	0.9	27
	1.9	58		2.0	61		1.1	3		2.4	73
	0.6	18		0.6	18		2.1	64		0.2	6
				0.8	24		0.4	12		0.3	9
3 W 0007 0613 1352 2105	0.8	24	18 Th 0535 1314 2023	-0.2	-6	3 Sa 0142 0714 1437 2139	0.8	24	18 Su 0141 0718 1428 2121	1.0	30
	-0.1	-3		2.2	67		0.0	0		2.4	73
	2.0	61		0.4	12		2.1	64		0.1	3
	0.5	15					0.3	9			
4 Th 0103 0652 1428 2141	0.7	21	19 F 0034 0628 1402 2111	0.8	24	4 Su 0221 0754 1509 2204	0.9	27	19 M 0234 0812 1510 2155	1.1	34
	-0.1	-3		-0.3	-9		0.0	0		-0.1	-3
	2.1	64		2.4	73		2.2	67		2.4	73
	0.4	12		0.3	9		0.3	9		0.1	3
5 F 0151 0729 1501 2213	0.7	21	20 Sa 0139 0721 1448 2153	0.8	24	5 M 0259 0832 1539 2229	1.0	30	20 Tu 0322 0904 1550 2228	1.3	40
	-0.1	-3		-0.3	-9		0.0	0		-0.1	-3
	2.2	67		2.5	76		2.2	67		2.3	70
	0.3	9		0.1	3		0.2	6		0.0	0
6 Sa 0234 0806 1533 2242	0.7	21	21 Su 0236 0813 1532 2233	0.8	24	6 Tu 0336 0910 1608 2254	1.0	30	21 W 0410 0954 1628 2301	1.4	43
	-0.1	-3		-0.3	-9		0.0	0		0.0	0
	2.2	67		2.6	79		2.1	64		2.2	67
	0.2	6		0.0	0		0.2	6		0.0	0
7 Su 0313 0842 1605 2312	0.7	21	22 M 0330 0904 1615 O	0.9	27	7 W 0414 0947 1637 2321	1.1	34	22 Th 0457 1045 1705 2333	1.5	46
	-0.1	-3		-0.3	-9		0.1	3		0.1	3
	2.2	67		2.5	76		2.1	64		1.9	58
	0.2	6		0.0	0		0.2	6		0.0	0
8 M 0352 0918 1636 2341	0.8	24	23 Tu 0423 0955 1656 2349	1.0	30	8 Th 0454 1027 1706 2348	1.2	37	23 Su 0545 1138 1741 2355	1.6	49
	-0.1	-3		-0.2	-6		0.2	6		0.3	9
	2.2	67		2.4	73		2.0	61		1.7	52
	0.2	6		0.0	0		0.1	3		0.1	3
9 Tu 0433 0954 1707	0.8	24	24 W 0517 1047 1736	1.1	34	9 F 0537 1110 1737	1.3	40	24 Sa 0006 0636 1237 1817	0.1	3
	0.0	0		0.0	0		0.3	9		0.7	52
	0.0	0		2.2	67		1.8	55		0.6	15
	2.2	67					1.8	55		1.2	37
10 W 0012 0516 1032 1739	0.2	6	25 Th 0027 0614 1141 1816	0.0	0	10 Sa 0017 0626 1200 1809	0.1	3	25 Su 0040 0731 1346 1856	0.1	3
	0.9	27		1.2	37		1.4	43		1.7	52
	0.1	3		0.2	6		0.5	15		0.6	18
	2.1	64		2.0	61		1.7	52		1.0	30
11 Th 0043 0605 1112 1810	0.1	3	26 F 0105 0714 1241 1855	0.0	0	11 Su 0049 0721 1303 1844	0.1	3	26 W 0117 0833 1516 1942	0.2	6
	0.9	27		1.3	40		1.5	46		1.9	58
	0.2	6		0.4	12		0.6	18		0.6	18
	2.0	61		1.7	52		1.5	46		1.2	37
12 F 0116 0659 1159 1843	0.1	3	27 Sa 0144 0821 1354 1935	0.0	0	12 M 0126 0825 1426 1927	0.1	3	27 Tu 0201 0944 1708 2052	0.3	9
	1.0	30		1.4	43		1.6	49		1.7	52
	0.4	12		0.7	21		0.8	24		0.5	15
	1.8	55		1.4	43		1.2	37		0.8	24
13 Sa 0150 0801 1259 1919	0.1	3	28 Su 0225 0933 1530 2020	0.1	3	13 Tu 0210 0938 1617 2025	0.1	3	28 F 0257 1055 1838 2231	0.3	9
	1.1	34		1.5	46		1.7	52		1.7	52
	0.6	18		0.8	24		0.8	24		0.6	18
	1.6	49		1.2	37		1.5	46		1.0	30
14 Su 0226 0911 1420 2000	0.1	3	29 M 0310 1044 1727 O	0.1	3	14 W 0304 1051 1806 2152	0.1	3	29 Th 0406 1157 1928 2354	0.4	12
	1.3	40		1.6	49		1.9	58		1.8	55
	0.7	21		0.8	24		0.7	21		0.5	15
	1.4	43		1.0	30		0.9	27		0.3	9
15 M 0306 1022 1609 2052	0.0	0	30 Tu 0359 1148 1906 2236	0.1	3	15 Th 0408 1157 1917 2325	0.1	3	30 F 0514 1247 2001 2028	0.3	9
	1.5	46		1.8	55		2.1	64		0.2	6
	0.8	24		0.7	21		0.5	15		0.2	6
	1.2	37		0.8	24		0.8	24		0.4	12
31 W 0451 1241 2005 2354	0.1	3				31 Sa 0050 0612 1328 2028	0.9	27			
	1.9	58		0.6	18		0.3	9		1.9	58
	0.6	18		0.8	24		1.9	58		0.4	12
	0.8	24		0.8	24		0.4	12		0.3	9

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
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Honolulu, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0151	1.4	43	16 W 0223	1.8	55	1 F 0239	2.0	61	16 Sa 0322	2.3	70
0731	0.4	12	0824	0.3	9	0900	0.4	12	1012	0.4	12
1351	1.8	55	1410	1.7	52	1417	1.4	43	1457	1.0	30
2019	0.2	6	2025	0.0	0	2020	-0.1	-3	2041	-0.1	-3
2 W 0225	1.6	49	17 Th 0301	2.0	61	2 0316	2.2	67	17 Su 0356	2.3	70
0816	0.3	9	0915	0.3	9	0949	0.3	9	1054	0.3	9
1423	1.8	55	1448	1.5	46	1456	1.2	37	1535	0.9	27
2043	0.1	3	2053	-0.1	-3	2051	-0.2	-6	2110	-0.1	-3
3 Th 0259	1.7	52	18 F 0338	2.1	64	3 Su 0355	2.4	73	18 M 0429	2.3	70
0900	0.3	9	1003	0.3	9	1039	0.3	9	1136	0.3	9
1455	1.7	52	1524	1.4	43	1537	1.1	34	1614	0.8	24
2107	0.0	0	2120	0.0	0	● 2125	-0.2	-6	2141	0.0	0
4 F 0334	1.9	58	19 Sa 0414	2.2	67	4 M 0437	2.5	76	19 Tu 0504	2.3	70
0945	0.3	9	1051	0.3	9	1133	0.3	9	1220	0.3	9
1528	1.6	49	1600	1.2	37	1622	1.0	30	1654	0.8	24
● 2134	0.0	0	2148	0.0	0	2202	-0.2	-6	2213	0.1	3
5 Sa 0412	2.1	64	20 Su 0450	2.2	67	5 Tu 0522	2.5	76	20 W 0541	2.2	67
1032	0.3	9	1139	0.4	12	1230	0.3	9	1305	0.3	9
1602	1.4	43	1637	1.1	34	1711	0.9	27	1740	0.7	21
2203	0.0	0	2216	0.1	3	2243	-0.1	-3	2246	0.2	6
6 Su 0452	2.2	67	21 M 0528	2.2	67	6 W 0611	2.4	73	21 Th 0620	2.1	64
1124	0.4	12	1229	0.4	12	1333	0.3	9	1354	0.3	9
1640	1.3	40	1715	0.9	27	1812	0.8	24	1835	0.7	21
2235	0.0	0	2246	0.1	3	2330	0.0	0	2324	0.3	9
7 M 0537	2.2	67	22 Tu 0609	2.1	64	7 Th 0705	2.3	70	22 F 0702	2.0	61
1222	0.4	12	1326	0.4	12	1440	0.2	6	1445	0.3	9
1721	1.1	34	1800	0.8	24	1930	0.7	21	1948	0.7	21
2311	0.0	0	2318	0.3	9						
8 Tu 0628	2.2	67	23 W 0654	2.0	61	8 F 0026	0.2	6	23 Sa 0008	0.5	15
1331	0.4	12	1431	0.5	15	0804	2.2	67	0747	1.9	58
1811	0.9	27	1857	0.7	21	1545	0.2	6	1534	0.3	9
2353	0.1	3	2356	0.4	12	2109	0.8	24	2118	0.8	24
9 W 0726	2.2	67	24 Th 0745	1.9	58	9 Sa 0142	0.4	12	24 0111	0.6	18
1452	0.5	15	1541	0.5	15	0907	2.0	61	0835	1.7	52
1919	0.8	24	2022	0.7	21	1641	0.1	3	1618	0.2	6
						● 2245	1.0	30	2242	1.0	30
10 Th 0045	0.2	6	25 F 0046	0.5	15	10 Su 0321	0.6	18	25 M 0243	0.8	24
0832	2.1	64	0844	1.8	55	1010	1.8	55	0927	1.6	49
1617	0.4	12	1644	0.4	12	1728	0.1	3	1655	0.2	6
2057	0.7	21	2209	0.8	24	2356	1.3	40	● 2342	1.2	37
11 F 0157	0.3	9	26 Sa 0204	0.6	18	11 M 0503	0.7	21	26 Tu 0429	0.8	24
0944	2.0	61	0946	1.7	52	1110	1.7	52	1022	1.4	43
1724	0.3	9	1730	0.4	12	1807	0.0	0	1718	-0.1	-3
● 2243	0.8	24	● 2328	0.9	27						
12 Sa 0331	0.4	12	27 Su 0345	0.7	21	12 Tu 0049	1.5	46	27 W 0026	1.4	43
1052	2.0	61	1045	1.7	52	0629	0.6	18	0600	0.8	24
1813	0.2	6	1805	0.3	9	1205	1.5	46	1114	1.4	43
						1841	-0.1	-3	1800	0.0	0
13 Su 0000	1.0	30	28 M 0018	1.1	34	13 W 0133	1.8	55	28 Th 0105	1.7	52
0504	0.5	15	0513	0.7	21	0739	0.6	18	0711	0.7	21
1153	2.0	61	1135	1.6	49	1254	1.4	43	1206	1.2	37
1852	0.1	3	1833	0.2	6	1913	-0.1	-3	1832	-0.1	-3
14 M 0056	1.3	40	29 Tu 0056	1.3	40	14 Th 0212	2.0	61	29 F 0142	2.0	61
0622	0.4	12	0622	0.6	18	0837	0.5	15	0810	0.5	15
1244	1.9	58	1220	1.6	49	1338	1.2	37	1256	1.1	34
1926	0.0	0	1859	0.1	3	1943	-0.1	-3	1906	-0.2	-6
15 Tu 0142	1.6	49	30 W 0131	1.6	49	15 F 0248	2.2	67	30 Sa 0220	2.2	67
0727	0.4	12	0719	0.6	18	0927	0.4	12	0903	0.4	12
1330	1.8	55	1300	1.5	46	1419	1.1	34	1344	1.0	30
1956	0.0	0	1924	0.1	3	2012	-0.1	-3	1942	-0.3	-9
			31 Th 0204	1.8	55						
			0811	0.5	15						
			1339	1.5	46						
			1951	0.0	0						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

April			May			June												
Time	Height		Time	Height		Time	Height		Time	Height								
h m 0142 0409 1148 2017	ft 1.1 1.2 0.0 2.0	cm 34 37 0 61	h m 16 2004	ft 0.3 1.8	cm 9 55	h m 1 W 0352 0619 1236 2050	ft 0.8 0.9 0.3 2.0	cm 24 27 9 61	h m 16 Th 1129 1948	ft 0.5 1.8	cm 15 55	h m 1 Sa 0413 1106 1531 2125	ft 0.3 1.3 1.0 1.6	cm 9 40 30 49				
1 M Tu O			17 W 1215 2120	ft 0.5 1.7	cm 15 52	2 Th 0441 0914 1414 O 2150	ft 0.6 0.9 0.6 1.9	cm 18 27 18 58	17 F 0358 0807 1240 O 2039	ft 0.7 0.9 0.7 1.8	cm 21 27 21 55	2 Su 0449 1207 1718 2207	ft 0.2 1.6 1.1 1.5	cm 6 49 34 46				
3 W O	1445 2252	0.3 2.0	18 Th 1402 2217	ft 0.6 1.7	cm 18 52	3 F 0513 1101 1559 2239	ft 0.5 1.1 0.7 1.8	cm 15 34 21 55	18 Sa 0423 1021 1433 2126	ft 0.6 1.0 0.9 1.7	cm 18 30 27 52	3 M M Tu O	0521 1250 1837 2244	0.0 1.8 1.1 1.4	0 55 34 43			
4 Th Tu W	0612 1041 1621 2339	0.7 1.0 0.4 2.0	19 F 0549 1042 1549 2258	ft 0.7 1.0 0.7 1.8	cm 21 30 24 55	4 Sa 0540 1202 1721 2318	ft 0.3 1.4 0.8 1.7	cm 9 43 24 52	19 Su 0448 1127 1620 2211	ft 0.4 1.3 0.9 1.6	cm 12 40 27 49	4 Tu W Tu O	0549 1324 1935 2320	-0.1 2.0 1.1 1.3	-3 61 34 40			
5 F W	0630 1151 1732	0.5 1.3 0.4	20 Sa 0556 1139 1703 2332	ft 0.6 1.2 0.6 1.8	cm 18 37 18 55	5 Su 0605 1247 1824 2350	ft 0.1 1.7 0.8 1.6	cm 3 52 24 49	20 M M W M	0515 1213 1741 2252	0.2 1.6 0.9 1.6	6 49 27 49	5 W Th W Th	0617 1355 2019 2355	-0.2 2.2 1.0 1.2	-6 67 30 37		
6 Sa O	0016 0651 1241 1827	2.0 0.4 1.5 0.4	21 Su 0612 1221 1800	ft 0.4 1.5 0.6	cm 12 46 18	6 M M Tu M	0629 1325 1916	ft 0.0 1.9 0.8	0 58 24	21 Tu W Tu Tu	0545 1254 1846 2333	-0.1 2.0 0.9 1.5	-3 61 27 46	6 Th Tu W Th	0646 1424 2056	-0.2 2.3 1.0	-6 70 30	
7 Su O	0047 0713 1322 1914	1.9 0.2 1.7 0.4	22 M M Tu O	0002 0634 1301 1851	ft 1.8 0.2 1.8 0.6	cm 55 6 55 18	7 Tu W Tu O	0019 0653 1359 2001	ft 1.5 -0.1 2.1 0.8	46 -3 64 24	22 W F Tu W	0618 1336 1943 2130	-0.3 2.3 0.9 0.9	-9 70 27 27	7 F Tu W Tu	0029 0715 1454 2129	1.2 -0.3 2.4 0.9	37 73 82 27
8 M Tu W	0114 0735 1400 1956	1.9 0.1 1.9 0.5	23 Tu W Tu O	0032 0659 1341 1939	ft 1.7 0.0 2.0 0.6	cm 52 0 61 18	8 W Tu W O	0046 0718 1431 2043	ft 1.5 -0.2 2.2 0.8	46 -6 67 24	23 Th Tu Tu O	0013 0653 1418 2037	1.5 -0.5 2.5 0.9	46 -15 76 27	8 Sa Tu O	0104 0745 1524 2203	1.2 -0.3 2.4 0.9	37 -9 73 27
9 Tu O	0138 0759 1436 2036	1.8 -0.1 2.0 0.6	24 W Tu W O	0103 0728 1422 2027	ft -0.2 -0.2 2.2 0.6	cm 52 -6 67 18	9 Th W Tu O	0112 0743 1503 2123	ft 1.4 -0.2 2.3 0.9	43 -6 70 27	24 F Tu W O	0053 0732 1501 2130	1.4 -0.6 2.6 0.8	43 -18 79 24	9 Tu W Tu O	0138 0816 1555 2238	1.2 -0.3 2.4 0.9	37 -9 73 27
10 W O	0202 0822 1512 2116	1.7 -0.1 2.1 0.7	25 Th W Tu O	0134 0759 1505 2117	ft 1.6 -0.4 2.4 0.7	cm 49 -12 73 21	10 F Tu W M	0138 0810 1536 2203	ft 1.3 -0.3 2.3 0.9	40 -9 70 27	25 Tu W Tu M	0134 0848 1627 2316	1.1 -0.6 2.3 0.9	34 -6 70 27	25 W Tu W Tu	0308 0927 1656 2345	1.2 -0.4 2.6 0.6	37 -12 79 18
11 Th O	0224 0847 1547 2156	1.6 -0.1 2.1 0.8	26 F Tu W O	0205 0834 1551 2211	ft 1.5 -0.4 2.5 0.8	cm 46 -12 76 24	11 Tu F W O	0203 0837 1610 2246	ft 1.2 -0.2 2.3 0.9	37 -6 70 27	26 Tu W Tu W	0217 0853 1633 2321	1.2 -0.6 2.7 0.8	37 -18 82 24	26 W Tu W Tu	0250 0919 1700 2358	1.1 -0.1 2.3 0.8	34 -3 70 24
12 F O	0245 0912 1625 2238	1.4 -0.1 2.1 0.9	27 Sa Tu W O	0237 0911 1640 2312	ft 1.4 -0.4 2.5 0.9	cm 43 -12 76 27	12 Tu W Tu M	0229 0907 1647 2335	ft 1.2 -0.2 2.2 1.0	37 -6 67 30	27 W Tu W M	0303 0937 1721 1733	1.2 -0.4 2.6 2.2	37 -12 67	27 Th Tu W Tu	0331 0951 1627 1813	1.0 0.1 2.3 2.1	18 34 64 64
13 Sa O	0304 0938 1705 2328	1.3 -0.1 2.0 1.0	28 Tu W Tu O	0310 0951 1735	ft 1.3 -0.3 2.4	cm 40 -9 73	13 M Tu W O	0254 0937 1727	ft 1.1 0.0 2.1	34 0 64	28 F Tu W O	0023 0357 1024 1810	0.8 1.0 -6 2.4	24 30 6 73	28 F Tu W O	0125 0651 1145 1848	0.5 1.1 0.6 1.9	15 34 82 58
14 Su O	0319 1006 1752	1.2 0.0 1.9	29 M Tu W O	0027 0345 1035 1835	ft 1.0 1.1 -0.2 2.3	cm 30 34 -6 70	14 Tu W Tu M	0036 0319 1009 1811	ft 0.9 1.0 0.1 2.0	27 30 3 61	29 Sa Tu W O	0130 0510 1112 1901	0.7 0.9 0.1 2.2	21 27 15 58	29 Sa Tu W O	0217 0856 1254 1921	0.4 1.2 1.0 1.7	12 37 30 52
15 M	0039 0322 1037 1850	1.0 1.1 0.2 1.8	30 Tu W Tu O	0208 0430 1127 1942	ft 0.9 1.0 0.1 2.1	cm 27 30 3 64	15 W Tu W O	0405 1858	ft 0.3 1.9	9	30 Sa Tu W O	0235 0700 1211 2039	0.6 0.9 0.5 1.8	18 27 15 55	30 Su Tu W O	0216 0734 1152 2039	0.6 1.0 0.7 1.8	6 30 21 52
							31 F Tu W O	0330 0920 1335 2039	ft 0.5 1.0 0.8 1.8	15 30 24 55								

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

July			August			September						
Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0355 1205 1754 2030	0.1	3	16 Tu 0238 1054 1557 1918	0.1	3	1 Th 0446 1300 1918 2228	0.1	3	16 Su 0414 1221 1918 2228	-0.1	-3	
	1.7	52					1300	2.0	61			
	1.2	37										
	1.3	40										
2 Tu 0437 1246	0.0	0	17 W 0337 1154 1824 2035	0.0	0	2 F 0532 1326 2018 2330	0.0	0	17 Sa 0518 1259 1938 2344	-0.2	-6	
	1.9	58										
3 W 0515 1318 2013 2228	0.0	0	18 Th 0434 1239 1922 2210	-0.2	-6	3 Sa 0611 1350 2026	-0.1	-3	18 Su 0612 1335 2003	-0.3	-9	
	2.1	64										
	1.0	30										
	1.1	34										
4 Th 0551 1346 2036 2324	-0.1	-3	19 F 0528 1319 1959 2327	-0.4	-12	4 Su 0017 0647 1413 2040	1.2	37	19 M 0042 0700 1408 2030	1.4	43	
	2.2	67										
	1.0	30										
	1.1	34										
5 F 0625 1413 2056	-0.2	-6	20 Sa 0618 1358 2033	-0.5	-15	5 M 0058 0720 1435 2058	1.3	40	20 Tu 0134 0745 1439 2059	1.5	46	
	2.3	70										
	1.0	30										
6 Sa 0011 0658 1439 2117	1.2	37	21 Su 0030 0706 1436 2107	1.3	40	6 Tu 0136 0752 1458 2119	1.4	43	21 W 0222 0827 1509 2129	1.6	49	
	-0.2	-6										
	2.4	73										
	0.9	27										
7 Su 0054 0731 1505 ● 2140	1.2	37	22 M 0126 0751 1512 ○ 2141	1.3	40	7 W 0214 0823 1521 2143	1.4	43	22 Th 0309 0908 1536 2159	1.7	52	
	-0.3	-9										
	2.4	73										
	0.9	27										
8 M 0134 0803 1532 2206	1.2	37	23 M 0219 0835 1547 2217	1.4	43	8 Th 0254 0855 1544 2210	1.4	43	23 Su 0357 0948 1601 2230	1.7	52	
	-0.3	-9										
	2.4	73										
	0.8	24										
9 Tu 0213 0835 1559 2234	1.2	37	24 W 0312 0918 1620 2254	1.4	43	9 F 0336 0927 1606 2238	1.5	46	24 M 0448 1029 1622 2302	1.7	52	
	-0.2	-6										
	2.3	70										
	0.7	21										
10 W 0253 0906 1625 2305	1.2	37	25 Th 0407 0959 1651 2332	1.4	43	10 Sa 0423 1002 1651 2310	1.4	43	25 Tu 0546 1114 1637 2337	1.6	49	
	-0.1	-3										
	2.3	70										
	0.7	21										
11 Th 0337 0937 1651 2338	1.2	37	26 F 0508 1041 1719	1.3	40	11 Su 0520 1042 1719	1.4	43	26 W 0704 1218 1734	1.5	46	
	0.1	3										
	2.2	67										
	0.6	18										
12 F 0428 1010 1717	1.2	37	27 Sa 0013 0622 1125	0.3	9	12 M 0637 1134 1709	1.4	43	27 Th 0019 0904 1742	0.3	9	
	0.3	9										
	2.1	64										
13 Sa 0014 0532 1046 1742	0.5	15	28 Su 0058 0805 1225 1757	0.3	9	13 Tu 0036 0830 1318 1720	0.2	6	28 W 0121 1057 1843 2121	0.4	12	
	1.1	34										
	0.6	18										
	1.9	58										
14 Su 0055 0702 1132 1809	0.4	12	29 M 0150 1024 1520 ○ 1735	0.3	9	14 W 0140 1027 1735	0.1	3	29 Sa 0252 1150 1845 2304	0.4	15	
	1.2	37										
	0.9	27										
	1.7	52										
15 M 0143 0907 1256 ● 1838	0.3	9	30 Tu 0250 1147	0.2	6	15 Th 0259 1135	0.0	0	30 Sa 0415 1224 1939 2250	0.3	9	
	1.3	40										
	1.2	37										
	1.6	49										

Moku O Loe, Oahu Island, Hawaii, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0024	1.4	43	16 W 0104	1.8	55	1 F 0129	2.0	61	1 Sa 0219	2.3	70
0613	0.4	12	0654	0.5	15	0724	0.7	21	0833	0.9	27
1242	1.9	58	1246	1.9	58	1237	1.6	49	1255	1.4	43
1904	0.4	12	1911	0.0	0	1906	-0.3	-9	1928	-0.3	-9
2 W 0058	1.6	49	17 Th 0143	2.0	61	2 Sa 0205	2.2	67	17 Su 0251	2.4	73
0651	0.3	9	0739	0.5	15	0809	0.7	21	0913	0.9	27
1304	1.9	58	1313	1.8	55	1307	1.6	49	1322	1.3	40
1923	0.2	6	1935	-0.2	-6	1936	-0.4	-12	1955	-0.3	-9
3 Th 0133	1.8	55	18 F 0220	2.2	67	3 Su 0245	2.4	73	18 M 0323	2.4	73
0728	0.4	12	0821	0.6	18	0856	0.7	21	0952	0.9	27
1327	1.9	58	1338	1.6	49	1337	1.5	46	1349	1.3	40
1945	0.0	0	2000	-0.2	-6	2008	-0.5	-15	2023	-0.3	-9
4 F 0209	2.0	61	19 Sa 0257	2.2	67	4 M 0327	2.5	76	19 Tu 0357	2.4	73
0807	0.4	12	0903	0.7	21	0945	0.8	24	1033	0.9	27
1351	1.8	55	1401	1.5	46	1408	1.4	43	1416	1.2	37
2010	-0.1	-3	2026	-0.3	-9	2043	-0.5	-15	2052	-0.2	-6
5 Sa 0247	2.1	64	20 Su 0333	2.3	70	5 Tu 0412	2.5	76	20 W 0432	2.3	70
0847	0.5	15	0945	0.8	24	1041	0.9	27	1118	0.9	27
1415	1.7	52	1423	1.4	43	1440	1.3	40	1442	1.1	34
2038	-0.2	-6	2052	-0.2	-6	2121	-0.4	-12	2122	-0.1	-3
6 Su 0329	2.2	67	21 M 0410	2.2	67	6 W 0502	2.4	73	21 Th 0509	2.2	67
0931	0.7	21	1029	0.9	27	1148	1.0	30	1213	0.9	27
1440	1.6	49	1443	1.3	40	1513	1.2	37	1508	1.0	30
2109	-0.2	-6	2118	-0.1	-3	2202	-0.3	-9	2151	0.1	3
7 M 0414	2.2	67	22 Tu 0451	2.1	64	7 Th 0558	2.3	70	22 Sa 0622	2.3	70
1020	0.8	24	1122	1.0	30	1319	0.9	27	1324	0.9	27
1504	1.5	46	1457	1.2	37	1551	1.0	30	1536	1.0	30
2142	-0.2	-6	2146	0.0	0	2249	0.0	0	2222	0.2	6
8 Tu 0507	2.1	64	23 W 0536	2.0	61	8 F 0701	2.2	67	23 Sa 0631	2.0	61
1122	1.0	30	1240	1.0	30	2348	0.3	9	24 Su 0710	2.1	64
1525	1.3	40	1455	1.1	34	2348	0.3	9	1447	0.5	15
2220	-0.1	-3	2215	0.1	3	2256	0.5	15	2018	1.0	30
9 W 0612	2.1	64	24 Th 0632	1.9	58	9 Sa 0808	2.1	64	9 M 0717	1.8	55
1302	1.1	34	2248	0.3	9	1612	0.7	21	1544	0.7	21
1536	1.2	37	1612	0.7	21	2018	0.8	24	1936	0.8	24
2307	0.0	0	2215	0.1	3	2238	0.7	21	2344	0.7	21
10 Th 0733	2.0	61	25 F 0742	1.8	55	10 Su 0118	0.6	18	25 M 0806	1.7	52
0902	2.0	61	2337	0.5	15	0911	1.9	58	1611	0.6	18
26	0.8	21	1810	0.7	21	1647	0.5	15	2235	1.0	30
1214	1.0	30	2104	0.8	24	2236	1.1	34	2355	1.6	49
11 F 0013	0.2	6	26 Sa 0858	1.7	52	11 M 0316	0.8	24	10 Tu 0240	1.0	30
0902	2.0	61	1810	0.7	21	1005	1.8	55	0847	1.6	49
26	0.8	21	2104	0.8	24	1716	0.3	9	1624	0.2	6
1214	1.0	30	2345	1.4	43	2345	1.4	43	2355	1.6	49
12 Sa 0155	0.4	12	27 Su 0129	0.7	21	12 Tu 0454	0.8	24	11 O 0458	1.2	37
1013	2.0	61	0957	1.7	52	1049	1.7	52	0853	1.5	46
1746	0.7	21	1739	0.7	21	1743	0.1	3	0935	1.5	46
2214	1.0	30	2259	1.0	30	1647	0.5	15	1701	0.0	0
13 Su 0343	0.4	12	28 M 0335	0.8	24	11 M 0116	0.8	24	26 W 0253	1.3	40
1105	2.0	61	1038	1.7	52	0606	0.8	24	0751	1.5	46
1803	0.5	15	1744	0.5	15	1125	1.6	49	1559	0.1	3
2329	1.2	37	2344	1.2	37	1810	-0.1	-3	1559	0.1	3
14 M 0502	0.4	12	29 Th 0454	0.7	21	14 Tu 0111	2.0	61	25 W 0006	1.0	30
1144	2.0	61	1111	1.7	52	0703	0.9	27	0708	1.6	49
1824	0.3	9	1758	0.3	9	1157	1.5	46	1512	0.3	9
15 Tu 0021	1.5	46	30 W 0019	1.5	46	1836	-0.2	-6	2316	1.4	43
0603	0.4	12	0550	0.7	21	1801	-0.2	-6	2316	1.4	43
1217	1.9	58	1140	1.7	52	1837	-0.3	-9	1813	-0.5	-15
1847	0.1	3	1816	0.1	3	1902	-0.3	-9	1857	-0.6	-18
31 Th 0053	1.8	55	31 Th 0639	0.7	21	31 Th 0639	0.7	21	31 Tu 0234	2.7	82
1208	1.7	52	1208	1.7	52	1840	-0.1	-3	1305	1.3	40
1840	-0.1	-3	1840	-0.1	-3				1941	-0.7	-21

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0456	2.4	73	16 W	0524	2.1	64	1 F	0507	1.9	58				
1142	0.6	18		1215	0.4	12	Sa	1203	0.2	6	16 Sa	0455	1.5	46	
1633	1.3	40		1812	1.4	43		1843	1.5	46	1 F	1217	0.3	9	
2217	0.3	9		2321	0.8	24		2344	1.0	30	Sa	2019	1.4	43	
2 W	0524	2.3	70	17 Th	0547	1.9	58	2 Sa	0529	1.7	52	17 Sa	0429	1.7	52
1221	0.6	18		1258	0.4	12		1253	0.1	3	Su	0420	1.3	40	
1737	1.2	37		1944	1.3	40		2039	1.5	46		1312	0.3	9	
2254	0.6	18								O	2304	1.6	49		
3 Th	0554	2.1	64	18 F	0007	1.1	34	3 Su	0128	1.3	40	18 M	1448	0.3	9
1308	0.5	15		0604	1.6	49		0547	1.5	46	3 Su	0005	1.0	30	
1911	1.2	37		1350	0.4	12		1402	0.1	3	Su	0447	1.4	43	
2346	0.9	27		2214	1.5	46		2245	1.8	55	M	1203	0.0	0	
4 F	0627	1.9	58	19 Sa	0212	1.3	40	4 M	1526	0.0	0	18 M	2107	1.1	34
1403	0.3	9		0601	1.4	43		2352	2.1	64	Tu	0004	1.8	55	
2125	1.4	43		1455	0.3	9				Tu	1623	0.3	9		
O				2351	1.7	52				M	1312	0.1	3		
5 Sa	0130	1.2	37	20 Su	1603	0.2	6	5 Tu	0714	1.0	30	19 Tu	1305	0.4	12
0708	1.7	52						Tu	0921	1.1	34	2253	1.6	49	
1504	0.2	6						1642	-0.1	-3	O				
2306	1.7	52													
6 Su	0437	1.3	40	21 M	0031	1.9	58	6 W	0037	2.4	73	21 O	0701	0.7	21
0814	1.5	46		1659	0.1	3		0729	0.8	24	W	0749	0.9	27	
1604	0.0	0						1112	1.1	34	Tu	1055	1.0	30	
										Tu	1723	0.1	3		
7 M	0003	2.1	64	22 Tu	0101	2.1	64	7 Th	0116	2.6	79	22 F	0124	2.2	67
0628	1.2	37		0759	1.0	30		0753	0.7	21	W	0752	0.6	18	
0945	1.3	40		1055	1.1	34		1218	1.3	40	Tu	1236	1.3	40	
1700	-0.2	-6		1745	0.0	0		1835	-0.4	-12	Th	1845	-0.1	-3	
8 Tu	0047	2.4	73	23 W	0128	2.3	70	8 F	0150	2.7	82	23 Sa	0146	2.3	70
0722	1.0	30		0808	0.9	27		0819	0.5	15	Sa	0807	0.5	15	
1105	1.3	40		1154	1.2	37		1310	1.4	43		1314	1.5	46	
1752	-0.4	-12		1824	-0.2	-6		1920	-0.5	-15		1919	-0.2	-6	
9 W	0128	2.7	82	24 Th	0153	2.4	73	9 Sa	0223	2.7	82	24 Sa	0122	2.4	73
0802	0.8	24		0824	0.8	24		0847	0.4	12	Su	0827	0.3	9	
1209	1.3	40		1238	1.3	40		1356	1.6	49		1350	1.6	49	
1839	-0.6	-18		1859	-0.3	-9	O	2002	-0.5	-15		1953	-0.2	-6	
10 Th	0206	2.9	88	25 F	0218	2.5	76	10 Su	0254	2.7	82	10 M	0152	2.4	73
0839	0.7	21		0843	0.7	21		0915	0.2	6	Tu	0849	0.2	6	
1303	1.4	43		1317	1.4	43		1439	1.7	52	M	1426	1.7	52	
1924	-0.7	-21		1932	-0.3	-9		2041	-0.3	-9	O	2026	-0.1	-3	
11 F	0244	2.9	88	26 Sa	0242	2.5	76	11 M	0323	2.5	76	11 M	0219	2.3	70
0914	0.6	18		0905	0.6	18		0943	0.2	6	Tu	0913	0.1	3	
1352	1.5	46		1353	1.4	43		1520	1.8	55		1504	1.8	55	
2007	-0.6	-18		2004	-0.3	-9		2118	-0.1	-3		2101	0.0	0	
12 Sa	0320	2.9	88	27 Su	0307	2.6	79	12 Tu	0349	2.4	73	12 W	0320	2.2	67
0949	0.5	15		0930	0.5	15		1012	0.1	3	W	0940	0.0	0	
1439	1.5	46		1430	1.5	46		1602	1.8	55	Tu	1544	1.9	58	
2048	-0.5	-15		2035	-0.3	-9		2154	0.2	6		2138	0.2	6	
13 Su	0354	2.8	85	28 M	0332	2.5	76	13 W	0414	2.1	64	13 Th	0344	2.1	64
1024	0.4	12		0955	0.4	12		1040	0.1	3	Tu	1008	-0.1	-3	
1526	1.5	46		1508	1.5	46		1645	1.7	52		1628	1.9	58	
2128	-0.3	-9		2107	-0.1	-3		2229	0.4	12		2217	0.4	12	
14 M	0427	2.6	79	29 Tu	0356	2.5	76	14 Th	0434	1.9	58	14 Th	0330	1.8	55
1100	0.4	12		1023	0.3	9		1109	0.1	3	F	1049	-0.1	-3	
1615	1.5	46		1548	1.6	49		1733	1.6	49		1624	2.0	61	
2206	0.0	0		2139	0.1	3		2304	0.7	21		2221	0.5	15	
15 Tu	0457	2.4	73	30 W	0420	2.3	70	15 F	0450	1.7	52	15 F	0350	1.6	49
1137	0.4	12		1052	0.3	9		1140	0.2	6	Tu	1015	-0.1	-3	
1708	1.4	43		1633	1.5	46		1835	1.5	46		1704	1.9	58	
2243	0.4	12		2214	0.3	9		2344	1.0	30		2258	0.8	24	
	31 Th	0444	2.1	64											
	1125	0.2	6												
	1728	1.5	46												
	2253	0.6	18												

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0048 1.0 30		16 Tu 0126 0.9 27		1 W 0259 0.7 21		16 Th 0227 0.8 24		1 Sa 0353 0.3 9		16 Su 0240 0.4 12	
0424 1.2 37		0333 1.0 30		0605 0.8 24		0505 0.9 27		1036 1.3 40		0913 1.2 37	
1131 -0.1 -3		1103 0.2 6		1218 0.2 6		1118 0.4 12		1515 1.0 30		1312 1.0 30	
1942 1.9 58		1932 1.7 52		2027 2.0 61		1929 1.8 55		2117 1.7 52		1948 1.7 52	
2 Tu 1239 0.1 3		17 W 1154 0.4 12		2 0416 0.6 18		17 F 0334 0.7 21		2 Su 0435 0.1 3		17 M 0327 0.2 6	
2120 1.9 58		2100 1.7 52		0852 0.8 24		0736 0.8 24		1144 1.6 49		1049 1.5 46	
●		1358 0.5 15		2135 1.9 58		1223 0.6 18		1702 1.0 30		1529 1.2 37	
3 W 0552 0.7 21		18 Th 1342 0.5 15		3 F 0458 0.4 12		18 Sa 0411 0.5 15		3 M 0510 0.0 0		18 Tu 0412 0.0 0	
0756 0.8 24		2209 1.7 52		1048 1.1 34		1006 1.0 30		1229 1.9 58		1146 1.8 55	
1429 0.3 9				1550 0.6 18		1421 0.8 24		1819 1.0 30		1725 1.1 34	
2237 2.0 61				2230 1.8 55		2119 1.7 52		2251 1.4 43		2145 1.5 46	
4 Th 0600 0.6 18		19 F 0545 0.6 18		4 Sa 0530 0.2 6		19 Su 0440 0.3 9		4 Tu 0543 -0.1 -3		19 W 0457 -0.2 -6	
1040 0.9 27		1041 0.9 27		1150 1.4 43		1116 1.3 40		1305 2.1 64		1232 2.2 67	
1615 0.3 9		1545 0.6 18		1714 0.7 21		1613 0.9 27		1914 0.9 27		1841 1.0 30	
2330 2.0 61		2254 1.7 52		2314 1.8 55		2209 1.7 52		2332 1.4 43		2247 1.4 43	
5 F 0620 0.4 12		20 Sa 0552 0.5 15		5 Su 0557 0.0 0		20 M 0509 0.1 3		5 W 0613 -0.2 -6		20 Th 0541 -0.4 -12	
1148 1.2 37		1137 1.2 37		1234 1.7 52		1201 1.7 52		1337 2.3 70		1314 2.5 76	
1728 0.3 9		1701 0.5 15		1816 0.6 18		1733 0.8 24		1957 0.9 27		1937 0.9 27	
		2330 1.8 55		2351 1.7 52		2254 1.6 49				2344 1.4 43	
6 Sa 0009 2.0 61		21 Su 0608 0.3 9		6 M 0623 -0.1 -3		21 Tu 0540 -0.1 -3		6 Th 0010 1.3 40		21 F 0625 -0.6 -18	
0643 0.2 6		1217 1.5 46		1311 2.0 61		1242 2.0 61		0644 -0.3 -9		1356 2.7 82	
1235 1.5 46		1757 0.5 15		1906 0.6 18		1836 0.8 24		1408 2.4 73		2025 0.8 24	
1823 0.2 6						2337 1.6 49		2033 0.8 24			
7 Su 0042 2.0 61		22 M 0001 1.8 55		7 Tu 0023 1.6 49		22 W 0614 -0.4 -12		7 F 0045 1.3 40		22 Sa 0038 1.4 43	
0706 0.0 0		0630 0.0 0		0649 -0.2 -6		1322 2.3 70		0715 -0.4 -12		0710 -0.7 -21	
1314 1.8 55		1254 1.8 55		1344 2.2 67		1930 0.7 21		1439 2.5 76		1437 2.9 88	
1909 0.2 6		1846 0.4 12		1949 0.6 18				2107 0.8 24		2109 0.7 21	
8 M 0111 2.0 61		23 Tu 0032 1.8 55		8 W 0052 1.5 46		23 Th 0649 -0.6 -18		8 Sa 0120 1.3 40		23 Su 0129 1.4 43	
0729 -0.1 -3		0656 -0.2 -6		0715 -0.3 -9		1403 2.6 79		0746 -0.4 -12		0754 -0.7 -21	
1350 2.0 61		1331 2.1 64		1416 2.3 70		2020 0.7 21		1510 2.5 76		1519 2.9 88	
1949 0.2 6		1931 0.4 12		2028 0.6 18				2141 0.8 24		2153 0.6 18	
9 Tu 0137 1.9 58		24 W 0103 1.8 55		9 Th 0120 1.5 46		24 F 0059 1.5 46		9 Su 0154 1.2 37		24 M 0219 1.4 43	
0753 -0.2 -6		0724 -0.4 -12		0741 -0.4 -12		0727 -0.7 -21		0817 -0.4 -12		0838 -0.7 -21	
1424 2.2 67		1410 2.3 70		1448 2.4 73		1445 2.7 82		1542 2.5 76		1559 2.9 88	
● 2027 0.3 9		2016 0.4 12		2105 0.6 18		2110 0.6 18		2217 0.7 21		2237 0.6 18	
10 W 0203 1.8 55		25 Th 0135 1.7 52		10 F 0148 1.4 43		25 Sa 0141 1.4 43		10 M 0227 1.2 37		25 Tu 0310 1.3 40	
0817 -0.3 -9		0755 -0.5 -15		0808 -0.4 -12		0807 -0.8 -24		0848 -0.3 -9		0921 -0.5 -15	
1458 2.2 67		1451 2.5 76		1520 2.4 73		1529 2.8 85		1614 2.4 73		1640 2.8 85	
2104 0.4 12		2103 0.4 12		2143 0.7 21		2200 0.6 18		2254 0.7 21		2321 0.5 15	
11 Th 0227 1.6 49		26 F 0208 1.6 49		11 Sa 0215 1.3 40		26 Su 0223 1.3 40		11 Tu 0302 1.2 37		26 W 0405 1.3 40	
0842 -0.3 -9		0829 -0.6 -18		0836 -0.4 -12		0848 -0.7 -21		0919 -0.2 -6		1005 -0.2 -6	
1532 2.3 70		1534 2.6 79		1554 2.4 73		1614 2.8 85		1647 2.4 73		1719 2.6 79	
2141 0.5 15		2151 0.5 15		2222 0.7 21		2252 0.6 18		2333 0.7 21			
12 F 0250 1.5 46		27 Sa 0241 1.5 46		12 Su 0242 1.2 37		27 M 0308 1.2 37		12 W 0340 1.1 34		27 Th 0008 0.5 15	
0907 -0.3 -9		0904 -0.6 -18		0905 -0.3 -9		0930 -0.6 -18		0949 0.0 0		0507 1.2 37	
1607 2.2 67		1620 2.5 76		1630 2.3 70		1701 2.7 82		1719 2.3 70		1050 0.2 6	
2219 0.6 18		2245 0.7 21		2305 0.8 24		2349 0.6 18				1756 2.3 70	
13 Sa 0311 1.4 43		28 Su 0315 1.3 40		13 M 0308 1.1 34		28 Tu 0359 1.1 34		13 Th 0016 0.7 21		28 F 0056 0.4 12	
0933 -0.2 -6		0943 -0.5 -15		0934 -0.2 -6		1014 -0.3 -9		0425 1.0 30		0625 1.2 37	
1644 2.1 64		1711 2.4 73		1709 2.2 67		1749 2.5 76		1021 0.2 6		1138 0.6 18	
2301 0.8 24		2349 0.8 24		2356 0.8 24				1752 2.2 67		1833 2.1 64	
14 Su 0329 1.3 40		29 M 0352 1.1 34		14 Tu 0334 1.0 30		29 W 0052 0.6 18		14 F 0102 0.7 21		29 Sa 0148 0.4 12	
1000 -0.1 -3		1025 -0.3 -9		1005 0.0 0		0504 1.0 30		0529 1.0 30		0808 1.3 40	
1727 2.0 61		1808 2.3 70		1751 2.1 64		1102 0.0 0		1057 0.4 12		1242 0.9 27	
2353 0.9 27						1839 2.3 70		1826 2.0 61		1909 1.8 55	
15 M 0341 1.1 34		30 Tu 0113 0.8 24		15 W 0102 0.9 27		30 F 0159 0.6 18		15 Sa 0151 0.6 18		30 Su 0242 0.3 9	
1029 0.0 0		0438 1.0 30		0406 1.0 30		0636 0.9 27		0706 1.0 30		1007 1.4 43	
1820 1.8 55		1113 -0.1 -3		1037 0.2 6		1159 0.4 12		1145 0.7 21		1434 1.2 37	
		1914 2.1 64		1837 1.9 58		1931 2.1 64		1903 1.9 58		1949 1.6 49	
						31 F 0301 0.4 12					
						0844 1.0 30					
						1320 0.7 21					
						● 2024 1.9 58					

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2013

Times and Heights of High and Low Waters

July			August			September						
Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0335 1131 1708 2039	0.2	6	16 Tu 0219 1019 1517 1918	0.2	6	1 Th 0436 1242 1945 2237	0.2	6	16 Su 0403 1205 1900 2234	0.1	3	
	1.7	52					1242	2.1	64			
	1.3	40					1945	1.1	34			
	1.4	43					2237	1.2	37			
2 Tu 0423 1221 1846 2145	0.1	3	17 W 0322 1132 1753 2042	0.1	3	2 F 0527 1311 1954 2340	0.1	3	17 M 0511 1246 1924 2348	-0.1	-3	
	1.9	58					1311	2.3	70			
	1.2	37					1954	1.0	30			
	1.3	40					2340	1.2	37			
3 W 0507 1257 1935 2250	0.0	0	18 Th 0424 1222 1900 2219	-0.1	-3	3 Sa 0609 1338 2009	0.0	0	18 Su 0606 1323 1951	-0.2	-6	
	2.1	64					1338	2.4	73			
	1.1	34					2009	0.9	27			
	1.2	37										
4 Th 0546 1329 2005 2343	-0.1	-3	19 F 0521 1304 1941 2335	-0.3	-9	4 Su 0026 0646 1403 2027	1.3	40	19 M 0044 0655 1357 2020	1.6	49	
	2.3	70					0646	-0.1	-3			
	1.0	30					1403	2.5	76			
	1.2	37					2027	0.8	24			
5 F 0623 1358 2032	-0.2	-6	20 Sa 0613 1344 2017	-0.5	-15	5 M 0105 0720 1427 2048	1.5	46	20 Tu 0133 0740 1429 2049	1.8	55	
	2.4	73					0720	-0.2	-6			
	0.9	27					1427	2.5	76			
							2048	0.7	21			
6 Sa 0028 0658 1426 2057	1.3	40	21 Su 0036 0701 1422 2052	1.4	43	6 Tu 0142 0752 1451 2111	1.6	49	21 W 0218 0822 1500 2118	1.9	58	
	-0.3	-9					0752	-0.2	-6			
	2.5	76					1451	2.6	79			
	0.8	24					2111	0.6	18			
7 Su 0108 0732 1454 ● 2124	1.3	40	22 M 0129 0746 1459 ○ 2127	1.5	46	7 W 0218 0823 1515 2136	1.6	49	22 Th 0302 0902 1528 2148	2.0	61	
	-0.3	-9					0823	-0.1	-3			
	2.6	79					1515	2.5	76			
	0.8	24					2136	0.5	15			
8 M 0146 0804 1522 2152	1.3	40	23 Tu 0220 0830 1534 2202	1.6	49	8 Th 0255 0854 1538 2202	1.7	52	23 F 0346 0942 1555 2218	2.0	61	
	-0.3	-9					0854	0.0	0			
	2.6	79					1538	2.5	76			
	0.7	21					2202	0.4	12			
9 Tu 0223 0836 1549 2221	1.4	43	24 W 0309 0912 1608 2237	1.6	49	9 F 0334 0926 1601 2229	1.7	52	24 Sa 0432 1021 1618 2249	2.0	61	
	-0.2	-6					0926	0.2	6			
	2.5	76					1601	2.3	70			
	0.7	21					2229	0.4	12			
10 W 0300 0906 1616 2251	1.4	43	25 Th 0400 0954 1640 2314	1.6	49	10 Sa 0416 1000 1623 2259	1.7	52	25 Su 0522 1103 1637 2322	1.9	58	
	-0.1	-3					1000	0.5	15			
	2.5	76					1623	2.2	67			
	0.6	18					2259	0.3	9			
11 Th 0340 0937 1642 2323	1.3	40	26 F 0454 1035 1709 2352	1.6	49	11 Su 0506 1037 1646 2334	1.7	52	26 M 0624 1154 1648 2322	1.8	55	
	0.0	0					1037	0.7	21			
	2.4	73					1646	2.0	61			
	0.6	18					2334	0.3	9			
12 F 0425 1008 1707 2357	1.3	40	27 Sa 0555 1119 1735	1.5	46	12 M 0610 1124 1707	1.7	52	27 Tu 0000 0757 1347 ● 1618	0.4	12	
	0.3	9					1124	1.0	30			
	2.2	67					1707	1.8	55			
	0.5	15										
13 Sa 0520 1043 1733	1.3	40	28 Su 0033 0716 1212 1756	0.3	9	13 Tu 0019 0745 1246 1727	0.3	9	28 W 0055 1012 1822 ● 1618	0.5	15	
	0.5	15					0745	1.7	52			
	2.1	64					1246	1.3	40			
							1727	1.6	49			
14 Su 0036 0635 1127 1800	0.4	12	29 M 0122 0913 1357 ○ 1806	0.4	12	14 W 0119 0950 1806	0.2	6	29 Th 0228 1129 ● 1806	0.5	15	
	1.3	40					0950	1.8	55			
	0.8	24										
	1.9	58										
15 M 0123 0822 1240 ● 1832	0.3	9	30 Tu 0223 1107	0.4	12	15 Th 0241 1114	0.2	6	30 Su 0404 1209 1918 2252	0.5	15	
	1.4	43					1107	1.8	55			
	1.2	37										
	1.7	52										
			31 W 0333 1205	0.3	9				31 Sa 0507 1238 1919 2346	0.4	12	
									1238	2.2	67	
									1919	0.9	27	
									2346	1.3	40	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2013

Times and Heights of High and Low Waters

October				November				December				
	Time	Height			Time	Height			Time	Height		
	h m	ft cm		h m	ft cm			h m	ft cm			
1 Tu	0020	1.7 52		16 W	0053	2.1 64		1 F	0117	2.3 70		
	0609	0.5 15		0646	0.5 15			0714	0.7 21		16 Sa	
	1237	2.2 67		1242	2.2 67			1237	1.9 58		0202	
	1859	0.5 15		1903	0.0 0			1901	-0.2 -6		0815	
2 W	0053	1.9 58		17 Th	0131	2.3 70		2 Sa	0152	2.6 79		
	0647	0.4 12		0730	0.5 15			0757	0.7 21		0234	
	1300	2.2 67		1311	2.1 64			1308	1.9 58		0853	
	1918	0.3 9		1929	-0.1 -3			1931	-0.3 -9		1330	
3 Th	0126	2.1 64		18 F	0207	2.5 76		3 Su	0230	2.7 82		
	0723	0.4 12		0811	0.6 18			0841	0.7 27		0307	
	1324	2.2 67		1338	2.0 61			1340	1.8 55		0930	
	1941	0.1 3		O	1955	-0.2 -6		●	2003	-0.4 -12		1358
4 F	0201	2.3 70		19 Sa	0242	2.6 79		4 M	0311	2.8 85		
	0800	0.5 15		0850	0.7 21			0927	0.8 24		0340	
	1349	2.2 67		1404	1.9 58			1412	1.7 52		1009	
	●	2006	0.0 0	2021	-0.2 -6			2038	-0.4 -12		1022	
5 Sa	0237	2.4 73		20 Su	0317	2.6 79		5 Tu	0354	2.8 85		
	0839	0.5 15		0929	0.8 24			1018	0.9 27		0415	
	1415	2.1 64		1428	1.7 52			1445	1.6 49		1101	
	2033	-0.1 -3		2047	-0.1 -3			2114	-0.3 -9		1051	
6 Su	0316	2.5 76		21 M	0353	2.5 76		6 W	0442	2.7 82		
	0920	0.7 21		1009	0.9 27			1118	1.0 30		0452	
	1441	1.9 58		1450	1.6 49			1521	1.4 43		1140	
	2103	-0.2 -6		2114	0.0 0			2154	-0.2 -6		1145	
7 M	0359	2.5 76		22 Tu	0431	2.4 73		7 Th	0536	2.6 79		
	1005	0.8 24		1055	1.0 30			1235	1.0 30		0532	
	1507	1.8 55		1510	1.4 43			1604	1.2 37		1241	
	2136	-0.1 -3		2141	0.1 3			2239	0.1 3		1553	
8 Tu	0447	2.4 73		23 W	0514	2.3 70		8 F	0637	2.4 73		
	1100	1.0 30		1153	1.1 34			1416	1.0 30		0615	
	1532	1.6 49		1523	1.3 40			1717	1.1 34		1402	
	2212	0.0 0		2210	0.2 6			2337	0.4 12		1646	
9 W	0546	2.3 70		24 Th	0606	2.1 64		9 Sa	0746	2.3 70		
	1217	1.2 37		2242	0.4 12			1541	0.8 24		0702	
	1555	1.4 43			1959	1.0 30			1912	1.0 30		1515
	2256	0.1 3						●	2342	0.8 24		2342
10 Th	0702	2.2 67		25 F	0715	2.0 61		10 Su	0755	1.9 58		
	2356	0.3 9		2328	0.7 21			0855	2.2 67		0227	
									1629	0.6 18		0840
									2218	0.6 18		1608
11 F	0835	2.2 67		26 Sa	0838	1.9 58		11 M	0307	0.9 27		
				1752	0.9 27			0955	2.1 64		0106	
				2037	1.0 30			1703	0.4 12		0855	
	●								2328	1.6 49		2210
12 Sa	0138	0.5 15		27 Su	0117	0.8 24		12 Tu	0445	0.9 27		
	0956	2.2 67		0946	1.9 58			1044	2.0 61		0355	
	1729	0.8 24		1727	0.8 24			1733	0.2 6		0941	
	2208	1.2 37		2250	1.2 37						1654	
13 Su	0333	0.6 18		28 M	0330	0.9 27		13 W	0015	2.0 58		
	1053	2.3 70		1032	2.0 61			0555	0.9 27		0522	
	1750	0.6 18		1735	0.6 18			1124	1.9 58		1028	
	2323	1.5 46		2335	1.5 46			1801	0.0 0		1723	
14 M	0456	0.6 18		29 Tu	0449	0.9 27		14 Th	0054	2.2 67		
	1136	2.3 70		1107	2.0 61			0649	0.9 27		0624	
	1814	0.4 12		1751	0.5 15			1159	1.8 55		1112	
									1829	-0.1 -3		1755
15 Tu	0012	1.8 55		30 W	0009	1.8 55		15 F	0129	2.5 76		
	0556	0.5 15		0544	0.8 24			0734	0.9 27		0033	
	1211	2.3 70		1138	2.0 61			1230	1.7 52		0624	
	1838	0.2 6		1811	0.2 6			1856	-0.2 -6		1112	
31 Tu	0043	2.1 64		31 Th	0631	0.8 24		14 Sa	0127	2.4 73		
				1208	2.0 61			0750	1.0 30		0726	
				1834	0.0 0			1158	1.4 43		1123	
									1832	-0.2 -6		1808

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2013

Times and Heights of High and Low Waters

January					February					March							
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height			
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm			
1 Tu	0537	2.6 79		16 W	0613 1300	2.3 0.2	70 6		1 F	0002 0605	0.6 2.0	18 61	16 Sa	0114 0617	1.0 1.5	30 46	
	1223	0.5 15			1915	1.6	49			1253	0.1	3		1315	0.2	6	
	1743	1.4 43				1937	1.8	55			2053	1.7	52				
	2318	0.4 12															
2 W	0610	2.4 73		17 Th	0038 0646	0.8 2.0	24 61		2 Sa	0110 0642	0.9 1.7	27 52	17 Su	0303 1414	1.1 0.3	34 9	
	1303	0.4 12			1344	0.2	6			1344	0.1	3		2233	1.8	55	
	1847	1.4 43			2035	1.6	49			2108	1.9	58					
3 Th	0007	0.6 67		18 F	0148 0719	1.1 1.7	34 52		3 Su	0300 0733	1.1 1.5	34 46	18 M	1535 2348	0.3 1.9	9 58	
	0646	2.2 67			1435	0.3	9			1449	0.0	0					
	1349	0.3 9															
	2009	1.5 46															
4 F	0116	0.9 61		19 Sa	0348 0801	1.2 1.5	37 46		4 M	0521 0900	1.1 1.3	34 40	19 Tu	0708 1023	0.9 1.0	27 30	
	0729	2.0 61			1533	0.3	9			1604	-0.1	6					
	1441	0.2 6			2332	1.9	58			2355	2.3	70					
	2144	1.7 52															
5 Sa	0301	1.1 55		20 Su	0610 0914	1.2 1.3	37 40		5 Tu	0645 1046	0.9 1.2	27 37	20 W	0036 0730	2.1 0.8	64 24	
	0823	1.8 55			1634	0.2	6			1716	-0.2	-6					
	1538	0.1 3															
	2307	2.0 61															
6 Su	0504	1.1 49		21 M	0028 0719	2.1 1.0	64 30		6 W	0049 0733	2.6 0.6	79 18	21 Th	0112 0750	2.2 0.6	67 18	
	0935	1.6 -3			1047	1.2	37			1206	1.3	40					
	1637	-0.1 -3			1729	0.1	3			1817	-0.3	-9					
7 M	0010	2.4 30		22 Tu	0109 0754	2.3 0.9	70 27		7 Th	0134 0811	2.8 0.4	85 43	22 F	0143 0812	2.3 0.5	70 15	
	0635	1.0 30			1157	1.2	37			1306	1.4	43					
	1053	1.4 43			1817	0.0	0			1911	-0.4	-12					
	1733	-0.3 -9															
8 Tu	0102	2.7 24		23 W	0143 0821	2.4 0.8	73 24		8 F	0215 0845	2.9 0.3	88 9	23 Sa	0211 0835	2.4 0.3	73 9	
	0736	0.8 24			1248	1.3	40			1357	1.6	49					
	1203	1.4 43			1858	-0.1	-3			1959	-0.5	-15					
	1826	-0.4 -12															
9 W	0148	2.9 18		24 Th	0213 0846	2.5 0.6	76 18		9 Sa	0252 0918	2.9 0.1	88 3	24 Sa	0211 0835	2.5 0.2	76 6	
	0824	0.6 18			1330	1.4	43			1443	1.8	55					
	1303	1.5 46			1936	-0.2	-6			2043	-0.4	-12					
	1916	-0.6 -18															
10 Th	0231	3.1 15		25 F	0243 0912	2.6 0.5	79 15		10 Su	0327 0950	2.8 0.0	85 0	25 M	0306 0925	2.5 0.0	76 0	
	0906	0.5 46			1408	1.5	46			1527	1.9	58					
	1357	1.5 46			2011	-0.3	-9			2125	-0.3	-9					
	2004	-0.6 -18															
11 F	0312	3.2 9		26 Sa	0311 0938	2.7 0.4	82 12		11 M	0359 1022	2.7 0.0	82 0	26 Tu	0334 0953	2.5 -0.1	76 -3	
	0945	0.3 49			1445	1.6	49			1610	2.0	61					
	1447	1.6 49			2045	-0.3	-9			2206	-0.1	-3					
	2050	-0.6 -18															
12 Sa	0351	3.1 9		27 Su	0339 1005	2.7 0.3	82 9		12 Tu	0430 1054	2.5 0.0	76 0	27 W	0324 1022	2.3 -0.1	70 -6	
	1024	0.3 52			1522	1.6	49			1654	2.0	61					
	1535	1.7 52															
	2134	-0.4 -12															
13 Su	0429	3.0 6		28 M	0407 1034	2.7 0.3	82 9		13 W	0459 1125	2.3 0.0	70 0	28 Th	0432 1054	2.2 -0.2	67 -6	
	1102	0.2 52			1601	1.7	52			1739	1.9	58					
	1624	1.7 52			2154	-0.1	-3			2328	0.4	12					
	2217	-0.2 -6															
14 M	0506	2.8 6		29 Tu	0435 1104	2.6 0.2	79 6		14 Th	0527 1158	2.0 0.0	61 0	14 F	0419 1029	1.9 -0.2	58 -6	
	1140	0.2 52			1643	1.7	52			1829	1.8	55					
	1715	1.7 52			2231	0.1	3										
	2301	0.1 3															
15 Tu	0540	2.5 6		30 W	0504 1136	2.5 0.1	76 3		15 F	0014 0552	0.7 1.7	21 52	15 F	0446 1104	1.7 -0.1	52 -3	
	1220	0.2 6			1730	1.7	52			1233	0.1	3					
	1810	1.7 52			2312	0.3	9			1930	1.8	55					
	2346	0.4 12															
31 Th	0533	2.3 1.7		31 Th	0533 1212	2.3 0.1	70 3							31 Su	0024 0518	0.6 1.4	18 43
					1826	1.7	52								1139	-0.3	-9
															1901	2.3	70

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0145	0.7	21	16	0207	0.8	24	1	0307	0.4	12	16	0237	0.6	18
	0609	1.1	34	Tu	0558	1.0	30	W	0757	1.0	30	Th	0717	0.9	27
	1233	-0.1	-3		1212	0.2	6		1331	0.2	6		1234	0.4	12
	2017	2.2	67		2005	1.9	58		2059	2.2	67		2006	2.0	61
2 Tu	0331	0.7	21	17	0344	0.7	21	2	0416	0.3	9	17	0334	0.5	15
	0733	1.0	30	W	0727	0.9	27	Th	0948	1.1	34	F	0900	1.0	30
	1348	0.1	3		1319	0.4	12		1504	0.4	12		1352	0.6	18
	2140	2.1	64		2118	1.8	55	O	2204	2.1	64	O	2101	1.9	58
3 W	0502	0.6	18	18	0454	0.6	18	3	0508	0.2	6	18	0420	0.3	9
	0940	1.0	30	Th	0941	0.9	27	F	1114	1.3	40	Sa	1030	1.2	37
	1525	0.2	6		1456	0.5	15		1637	0.5	15		1528	0.7	21
	2253	2.1	64	O	2223	1.8	55		2300	2.0	61		2155	1.8	55
4 Th	0556	0.4	12	19	0533	0.5	15	4	0549	0.0	0	19	0459	0.2	6
	1117	1.2	37	F	1108	1.1	34	Sa	1214	1.7	52	Su	1133	1.5	46
	1655	0.2	6		1628	0.5	15		1753	0.5	15		1657	0.8	24
	2350	2.2	67		2314	1.9	58		2348	1.9	58		2247	1.8	55
5 F	0634	0.2	6	20	0603	0.3	9	5	0623	-0.1	-3	20	0535	-0.1	-3
	1220	1.5	46	Sa	1202	1.4	43	Su	1301	1.9	58	M	1222	1.9	58
	1804	0.2	6		1737	0.5	15		1853	0.5	15		1809	0.7	21
					2356	1.9	58						2336	1.7	52
6 Sa	0035	2.2	67	21	0631	0.1	3	6	0028	1.8	55	21	0611	-0.3	-9
	0706	0.0	0	Su	1245	1.7	52	M	0654	-0.2	-6	Tu	1306	2.2	67
	1308	1.7	52		1832	0.4	12		1340	2.2	67		1910	0.6	18
	1900	0.1	3						1944	0.5	15				
7 Su	0113	2.1	64	22	0034	1.9	58	7	0104	1.7	52	22	0022	1.3	40
	0735	-0.1	-3	M	0659	-0.1	-3	Tu	0723	-0.3	-9	W	0648	-0.5	-15
	1349	2.0	61		1324	2.0	61		1415	2.4	73		1349	2.5	76
	1947	0.1	3		1922	0.3	9		2027	0.5	15		2004	0.5	15
8 M	0146	2.1	64	23	0110	1.9	58	8	0137	1.6	49	23	0108	1.6	49
	0803	-0.2	-6	Tu	0729	-0.3	-9	W	0751	-0.4	-12	Th	0727	-0.6	-18
	1427	2.2	67		1404	2.3	70		1449	2.5	76		1432	2.8	85
	2030	0.2	6		2010	0.2	6		2108	0.5	15		2056	0.4	12
9 Tu	0217	2.0	61	24	0146	1.9	58	9	0209	1.5	46	24	0153	1.5	46
	0830	-0.3	-9	W	0801	-0.5	-15	Th	0820	-0.4	-12	F	0807	-0.8	-24
	1502	2.4	73		1444	2.6	79		1522	2.6	79		1516	3.0	91
	2110	0.2	6		2057	0.2	6	O	2146	0.5	15	O	2147	0.3	9
10 W	0246	1.8	55	25	0223	1.8	55	10	0241	1.4	43	25	0239	1.4	43
	0857	-0.4	-12	Th	0835	-0.6	-18	F	0849	-0.4	-12	Sa	0849	-0.8	-24
	1537	2.4	73		1526	2.7	82		1555	2.6	79		1602	3.0	91
	2149	0.3	9	O	2146	0.2	6		2225	0.5	15		2239	0.3	9
11 Th	0315	1.7	52	26	0301	1.7	52	11	0314	1.3	40	26	0327	1.4	43
	0924	-0.4	-12	F	0912	-0.7	-21	Sa	0920	-0.4	-12	Su	0933	-0.7	-21
	1611	2.4	73		1611	2.8	85		1630	2.5	76		1648	3.0	91
	2228	0.4	12		2237	0.3	9		2306	0.5	15		2332	0.3	9
12 F	0343	1.5	46	27	0341	1.5	46	12	0347	1.2	37	27	0011	0.5	15
	0952	-0.3	-9	Sa	0951	-0.6	-18	W	0951	-0.3	-9	M	1020	-0.5	-15
	1647	2.4	73		1658	2.8	85		1706	2.4	73		1737	2.9	88
	2310	0.5	15		2333	0.4	12		2350	0.5	15				
13 Sa	0412	1.4	43	28	0424	1.3	40	13	0423	1.1	34	28	0027	0.3	9
	1021	-0.2	-6	Su	1033	-0.5	-15	M	1024	-0.1	-3	Tu	0517	1.2	37
	1726	2.3	70		1750	2.7	82		1746	2.3	70		1109	-0.3	-9
	2356	0.6	18										1827	2.7	82
14 Su	0441	1.2	37	29	0036	0.5	15	14	0039	0.6	18	29	0126	0.3	9
	1052	-0.1	-3	M	0515	1.2	37	Tu	0504	1.0	30	W	0627	1.1	34
	1809	2.1	64		1121	-0.3	-9		1100	0.0	0		1205	0.0	0
					1847	2.5	76		1828	2.2	67		1919	2.4	73
15 M	0051	0.7	21	30	0149	0.5	15	15	0135	0.6	18	30	0226	0.3	9
	0514	1.1	34	Tu	0622	1.0	30	W	0557	1.0	30	Sa	0754	1.1	34
	1127	0.1	3		1217	-0.1	-3		1141	0.2	6		1312	0.4	12
	1901	2.0	61		1951	2.3	70		1915	2.1	64		2012	2.2	67
													31	0324	0.2
													F	0931	1.3
													W	1436	0.7
													O	2107	2.0
														6	61

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2013

Times and Heights of High and Low Waters

July			August			September						
Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0407 0.1 3 1137 1.9 58 1734 1.1 34 2151 1.4 43	16 Tu 0300 0.1 3 1028 1.9 58 1611 1.2 37 2046 1.6 49		1 Th 0508 0.2 6 1251 2.3 70 1939 0.9 27 2338 1.2 37		16 F 0439 0.0 0 1217 2.6 79 1902 0.8 24 2329 1.4 43	1 Su 0027 1.5 46 0625 0.2 6 1324 2.5 76 1952 0.6 18		16 M 0041 1.8 55 0637 0.1 3 1319 2.7 82 1945 0.3 9				
			2 Tu 0454 0.0 0 1231 2.1 64 1856 1.0 30 2253 1.3 40	17 W 0359 -0.1 -3 1138 2.2 67 1758 1.1 34 2205 1.4 43		2 F 0559 0.1 3 1327 2.4 73 2007 0.8 24	17 Sa 0545 -0.2 -6 1305 2.8 85 1942 0.6 18		2 M 0107 1.6 49 0705 0.1 3 1352 2.5 76 2015 0.5 15	17 Tu 0129 2.0 61 0727 0.0 0 1355 2.7 82 2015 0.1 3		
3 W 0539 -0.1 -3 1313 2.3 70 1948 0.9 27 2350 1.3 40	18 Th 0458 -0.2 -6 1234 2.5 76 1908 0.9 27 2323 1.4 43		3 Sa 0033 1.3 40 0643 0.0 0 1359 2.5 76 2032 0.7 21	18 Su 0035 1.5 46 0642 -0.3 -9 1347 2.9 88 2017 0.4 12		3 Tu 0143 1.8 55 0742 0.1 3 1419 2.6 79 2039 0.4 12		18 W 0213 2.3 70 0813 0.1 3 1429 2.6 79 2045 0.0 0				
			4 Th 0620 -0.1 -3 1349 2.5 76 2026 0.8 24	19 F 0555 -0.4 -12 1323 2.8 85 1959 0.7 21		4 Su 0116 1.4 43 0721 -0.1 -3 1428 2.6 79 2057 0.6 18	19 M 0129 1.7 52 0733 -0.3 -9 1426 3.0 91 2051 0.3 9		4 W 0219 2.0 61 0817 0.1 3 1446 2.6 79 2104 0.2 6	19 Th 0254 2.5 76 0857 0.2 6 1501 2.5 76 2115 -0.1 -3		
5 F 0040 1.3 40 0658 -0.2 -6 1421 2.6 79 2058 0.7 21	20 Sa 0031 1.4 43 0649 -0.5 -15 1407 3.0 91 2042 0.5 15		5 M 0155 1.5 46 0757 -0.1 -3 1456 2.7 82 2122 0.5 15	20 Tu 0218 1.9 58 0820 -0.3 -9 1502 2.9 88 2125 0.1 3		5 Th 0254 2.1 64 0852 0.1 3 1512 2.5 76 2130 0.1 3		20 F 0335 2.6 79 0939 0.3 9 1531 2.3 70 2145 -0.1 -3				
			6 Sa 0124 1.3 40 0735 -0.3 -9 1452 2.6 79 2128 0.6 18	21 Su 0129 1.5 46 0739 -0.6 -18 1449 3.1 94 2122 0.4 12		6 Tu 0232 1.6 49 0832 -0.1 -6 1523 2.7 82 2148 0.4 12	21 W 0305 2.1 64 0905 -0.2 -6 1537 2.8 85 2158 0.1 3		6 F 0331 2.2 67 0929 0.2 6 1540 2.4 73 2158 0.1 3	21 Sa 0415 2.6 79 1021 0.5 15 1600 2.1 64 2215 0.0 0		
7 Su 0204 1.3 40 0810 -0.3 -9 1523 2.7 82 ● 2157 0.5 15	22 M 0222 1.6 49 0827 -0.6 -18 1530 3.1 94 ○ 2201 0.3 9		7 W 0309 1.7 52 0905 -0.1 -3 1550 2.7 82 2216 0.3 9	22 Th 0350 2.2 67 0948 0.0 0 1610 2.6 79 2231 0.0 0		7 Sa 0410 2.3 70 1008 0.4 12 1608 2.3 70 2228 0.0 0		22 Su 0456 2.5 76 1105 0.7 21 1629 1.9 58 2245 0.1 3				
			8 M 0243 1.4 43 0845 -0.3 -9 1553 2.7 82 2228 0.5 15	23 Tu 0313 1.7 52 0914 -0.5 -15 1609 3.0 91 2240 0.2 6		8 Th 0347 1.8 55 0939 0.0 0 1617 2.6 79 2244 0.3 9	23 F 0436 2.2 67 1032 0.3 9 1641 2.4 73 2305 0.1 3		8 Su 0453 2.3 70 1052 0.6 18 1637 2.1 64 2301 0.0 0	23 M 0540 2.4 73 1155 0.9 27 1657 1.7 52 2318 0.2 6		
9 Tu 0321 1.4 43 0918 -0.2 -6 1622 2.7 82 2259 0.4 12	24 W 0404 1.8 55 1000 -0.3 -9 1646 2.9 88 2318 0.1 3		9 F 0426 1.8 55 1015 0.2 6 1644 2.5 76 2314 0.2 6	24 Sa 0523 2.2 67 1117 0.5 15 1711 2.1 64 2339 0.1 3		9 M 0543 2.3 70 1144 0.8 24 1709 1.9 58 2339 0.1 3		24 Tu 0630 2.3 70 1257 1.1 34 1726 1.5 46 2356 0.4 12				
			10 W 0401 1.4 43 0952 -0.1 -3 1652 2.6 79 2331 0.4 12	25 Th 0456 1.8 55 1045 0.0 0 1722 2.6 79 2357 0.1 3		10 Sa 0510 1.8 55 1054 0.4 12 1712 2.3 70 2347 0.2 6	25 Su 0615 2.1 64 1208 0.8 24 1741 1.9 58		10 Tu 0643 2.3 70 1252 1.0 30 1746 1.6 49	25 W 0734 2.1 64 1436 1.2 37 1804 1.3 40		
11 Th 0443 1.4 43 1027 0.1 3 1721 2.5 76	26 F 0552 1.8 55 1133 0.4 12 1757 2.3 70		11 Su 0601 1.9 58 1140 0.7 21 1742 2.1 64	26 M 0016 0.2 6 0716 2.0 61 1312 1.1 34 1810 1.6 49		11 W 0028 0.2 6 0800 2.2 67 1437 1.1 34 1839 1.4 43		26 Th 0048 0.5 15 0858 2.0 61 1652 1.0 30 ○ 1945 1.1 34				
			12 F 0004 0.4 12 0530 1.4 43 1104 0.3 9 1751 2.4 73	27 Sa 0038 0.1 3 0654 1.8 55 1227 0.7 21 1831 2.0 61		12 M 0025 0.2 6 0705 1.9 58 1240 1.0 30 1816 1.8 55	27 Tu 0100 0.3 9 0835 2.0 61 1459 1.2 37 ○ 1845 1.4 43		12 Th 0133 0.2 6 0931 2.3 70 1644 1.1 34 ○ 2024 1.2 37	27 F 0212 0.7 21 1021 2.1 64 1751 1.0 30 2212 1.2 37		
13 Sa 0040 0.3 9 0626 1.4 43 1148 0.6 18 1823 2.2 67	28 Su 0121 0.2 6 0808 1.8 55 1335 1.0 30 1905 1.8 55		13 Tu 0111 0.2 6 0826 1.9 58 1413 1.2 37 1900 1.6 49	28 W 0159 0.4 12 1008 2.0 61 1735 1.1 34 2005 1.2 37		13 F 0301 0.3 9 1051 2.4 73 1756 0.9 27 2224 1.3 40		28 Sa 0351 0.7 21 1120 2.1 64 1820 0.8 24 2328 1.4 43				
			14 Su 0120 0.3 9 0736 1.5 46 1246 0.8 24 1859 2.0 61	29 M 0210 0.2 6 0936 1.8 55 1520 1.2 37 ○ 1947 1.5 46		14 W 0211 0.1 3 0959 2.1 64 1627 1.2 37 ○ 2014 1.4 43	29 Th 0318 0.5 15 1124 2.1 64 1840 1.0 30 2218 1.2 37		14 Sa 0428 0.2 6 1151 2.6 79 1838 0.7 21 2344 1.5 46	29 Su 0505 0.6 18 1203 2.2 67 1843 0.7 21		
15 M 0206 0.2 6 0901 1.6 49 1412 1.1 34 ● 1944 1.8 55	30 Tu 0307 0.2 6 1102 2.0 61 1736 1.2 37 2052 1.3 40		15 Th 0325 0.1 3 1117 2.3 70 1807 1.0 30 2200 1.3 40	30 F 0437 0.4 12 1215 2.2 67 1908 0.9 27 2337 1.3 40		15 Su 0539 0.1 3 1239 2.7 82 1913 0.5 15		30 M 0015 1.6 49 0559 0.5 15 1237 2.3 70 1905 0.5 15				
			31 W 0409 0.2 6 1205 2.1 64 1859 1.1 34 2224 1.2 37			31 Sa 0538 0.3 9 1253 2.3 70 1931 0.8 24						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2013

Times and Heights of High and Low Waters

October					November					December											
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height							
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm							
1 Tu	0053	1.8 55		16 W	0126 0724	2.3 0.4	70	1 F	0147 0751	2.5 0.6	76	16 Sa	0233 0853	2.8 0.7	85						
	0643	0.4 12			1319	2.3	70		1322	2.1	64		0213 1352	2.9 1.7	88	16 Su	0835 1330	0.7 1.7	21		
	1307	2.4 73			1938	0.0	0		1939	-0.2	-6		1946	-0.5	-15	M	1409	1.5	46		
	1928	0.3 9											O	2015	-0.2	-6					
2 W	0128	2.1 64		17 Th	0206 0809	2.6 0.4	79	2 Sa	0225 0836	2.8 0.6	85	17 Su	0307 0932	2.9 0.7	88	17 Tu	0328 1003	2.9 0.6	88		
	0723	0.4 12			1352	2.2	67		1357	2.0	61		0923 1425	0.6 1.7	18		1445	1.5	46		
	1335	2.4 73			2007	-0.1	-3		2011	-0.3	-9		O	2034	-0.2	-6		2049	-0.2	-6	
3 Th	0203	2.3 9		18 F	0243 0852	2.7 0.5	82	3 Su	0304 0922	3.0 0.6	91	18 M	0341 1011	2.9 0.7	88	18 W	0359 1036	2.8 0.6	85		
	0802	0.3 0			1424	2.1	64		1434	1.9	58		1458	1.6	49		1522	1.4	43		
	1404	2.4 73			O	2035	-0.2	-6		●	2046	-0.4	-12		2105	-0.2	-6		2122	-0.2	-6
4 F	0239	2.5 15		19 Sa	0319 0934	2.8 0.6	85	4 M	0346 1011	3.0 0.6	91	19 Tu	0415 1051	2.8 0.7	85	19 W	0422 1101	3.2 0.5	98		
	0842	0.4 12			1454	2.0	61		1513	1.8	55		1532	1.5	46		1559	1.4	43		
	1433	2.3 70			2104	-0.2	-6		2124	-0.4	-12		2137	-0.1	-3		2155	0.0	0		
5 Sa	0317	2.6 12		20 Su	0356 1015	2.8 0.7	85	5 Tu	0432 1104	3.1 0.7	94	20 W	0451 1133	2.7 0.8	82	20 Th	0508 1153	3.1 0.5	94		
	0923	0.4 67			1524	1.8	55		1554	1.6	49		1608	1.4	43		1640	1.4	43		
	1504	2.2 67			2133	-0.1	-3		2205	-0.3	-9		2210	0.1	3		2228	0.1	3		
6 Su	0357	2.7 15		21 M	0433 1058	2.7 0.8	82	6 W	0521 1203	3.0 0.7	91	21 Th	0529 1220	2.6 0.8	79	21 F	0556 1248	2.9 0.5	88		
	1008	0.5 61			1554	1.6	49		1642	1.5	46		1649	1.3	40		1726	1.3	40		
	1536	2.0 61			2203	0.0	0		2250	-0.1	-3		2244	0.2	6		2303	0.3	9		
7 M	0441	2.7 21		22 Tu	0512 1145	2.6 0.9	79	7 Th	0615 1312	2.8 0.8	85	22 F	0610 1314	2.5 0.8	76	22 Sa	0645 1346	2.7 0.5	82		
	1057	0.7 21			1625	1.5	46		1743	1.3	40		1740	1.2	37		1823	1.3	40		
	1610	1.8 55			2235	0.2	6		2343	0.1	3		2323	0.4	12		2343	0.6	18		
8 Tu	0530	2.7 24		23 W	0556 1243	2.5 1.0	76	8 F	0716 1428	2.7 0.7	82	23 Sa	0654 1413	2.3 0.8	70	23 M	0642 1350	2.3 0.5	70		
	1155	0.8 49			1701	1.3	40		1911	1.2	37		1855	1.2	37		1939	1.3	40		
	1648	1.6 49			2311	0.3	9						●	2044	1.5	46					
9 W	0629	2.6 30		24 Th	0647 1359	2.3 1.0	70	9 Sa	0051 0821	0.4 2.5	12	24 Su	0012 0743	0.7 2.2	21	24 Tu	0155 0832	0.8 2.2	24		
	1311	1.0 30			1749	1.2	37		1540	0.6	18		1512	0.7	21		1437	0.4	12		
	1735	1.4 43			2355	0.5	15		●	2104	1.3	40		2039	1.2	37		2112	1.5	46	
10 Th	0739	2.5 30		25 F	0749 1533	2.2 1.0	67	10 Su	0221 0927	0.7 2.4	21	25 M	0124 0836	0.9 2.1	27	25 W	0336 1601	1.0 0.6	30		
	1451	1.0 37			1925	1.1	34		1637	0.5	15		1637	1.6	18		1528	0.3	9		
	1852	1.2 37							2241	1.6	49		O	2218	1.4	43		2239	1.7	52	
11 F	0108	0.3 73		26 Sa	0102 0859	0.7 2.1	21	11 M	0400 1027	0.8 2.2	24	26 Tu	0303 0930	1.0 2.0	30	26 Th	0516 1026	1.1 1.8	34		
	0900	2.4 27			1639	0.9	27		1721	0.3	9		1641	0.4	12		1618	0.1	3		
	1624	0.9 27			O	2140	1.2	37		2348	1.9	58		2323	1.7	52		2343	2.0	61	
12 Sa	0242	0.5 73		27 Su	0240 1004	0.9 2.1	27	12 Tu	0524 1119	0.8 2.1	24	27 W	0439 1023	1.1 1.9	34	27 Th	0538 1012	1.1 1.6	49		
	1015	2.4 21			1718	0.7	21		1758	0.1	3		1717	0.2	6		1708	0.0	0		
	1723	0.7 21			2303	1.4	43						●	1757	0.0	0					
13 Su	0417	0.5 73		28 M	0414 1055	0.9 2.1	27	13 W	0039 0631	2.2 0.8	67	28 Th	0011 0554	2.0 1.0	30	28 Sa	0113 0734	2.5 0.9	76		
	1115	2.4 15			1747	0.5	15		1203	2.0	61		1113	1.9	58		1119	1.5	46		
	1804	0.5 15			2354	1.7	52		1832	0.0	0		1753	0.0	0		1756	-0.3	-9		
	2351	1.7 52											O	1829	-0.2	-6					
14 M	0533	0.5 73		29 Tu	0524 1136	0.8 2.1	24	14 Th	0121 0725	2.5 0.8	76	29 F	0052 0654	2.4 0.9	73	14 Sa	0150 0818	2.7 0.8	82		
	1203	2.4 9			1813	0.4	12		1242	1.9	58		1200	1.8	55		1220	1.5	46		
	1837	0.3 9							1903	-0.1	-3		1829	-0.2	-6		1843	-0.4	-12		
15 Tu	0043	2.0 73		30 W	0034 0618	2.0 0.7	61	15 F	0158 0811	2.7 0.7	82	30 Sa	0132 0747	2.7 0.8	82	30 M	0224 0856	2.8 0.8	85		
	0633	0.5 15			1212	2.1	64		1318	1.8	55		1245	1.8	55		1314	1.5	46		
	1244	2.4 73			1840	0.2	6		1933	-0.2	-6		1906	-0.4	-12		1930	-0.6	-18		
	1908	0.1 3			31	0111 0706	2.3 0.7	70								31 Tu	0244 0917	3.1 0.5	94		
					Th	1247 1247	2.1 64										1406	1.6	49		
						1909	0.0	0								2016	-0.7	-21			

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2013

Times and Heights of High and Low Waters

January					February					March						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0138	0.2	6	16 W	0241	0.3	9	1 F	0256	0.2	6	16 Sa	0337	0.4	12	
	0750	2.3	70	0842	2.0	61	0853	1.9	58	0926	1.4	43	0756	1.9	58	
	1415	-0.1	-3	1457	0.0	0	1503	-0.1	-3	1522	0.2	6	1359	-0.3	-9	
	2035	2.0	61	2130	2.0	61	2143	2.1	64	2210	1.8	55	2028	2.3	70	
2 W	0221	0.3	9	17 Th	0329	0.4	12	2 Sa	0355	0.3	9	17 Su	0438	0.5	15	
	0830	2.1	64	0923	1.7	52	0946	1.6	49	1019	1.2	37	0840	1.7	52	
	1453	0.0	0	1534	0.1	3	1552	0.0	0	1609	0.4	12	1439	-0.2	-6	
	2122	2.0	61	2217	1.9	58	2244	2.0	61	2313	1.6	49	2117	2.1	64	
3 Th	0313	0.4	12	18 F	0429	0.6	18	3 Su	0515	0.4	12	18 M	0612	0.6	18	
	0915	1.9	58	1010	1.5	46	1058	1.4	43	1140	1.1	34	0934	1.5	46	
	1536	0.1	3	1618	0.3	9	1659	0.2	6	1728	0.5	15	1528	0.0	0	
	2217	2.0	61	● 2313	1.8	55	● 2358	2.0	61	2332	1.9	58	2216	2.0	61	
4 F	0420	0.5	15	19 Sa	0550	0.7	21	4 M	0655	0.4	12	19 Tu	0035	1.6	49	
	1013	1.7	52	1114	1.3	40	1232	1.3	40	0753	0.5	15	0455	0.2	6	
	1630	0.2	6	1717	0.5	15	1829	0.3	9	1326	1.1	34	M 1047	1.3	40	
	● 2322	2.0	61							1916	0.5	15	● 2335	1.5	46	
5 Sa	0547	0.6	18	20 Su	0021	1.8	55	5 Tu	0120	2.0	61	20 W	0157	1.7	52	
	1127	1.5	46	0726	0.6	18	0821	0.2	6	0858	0.3	9	0633	0.2	6	
	1739	0.2	6	1241	1.2	37	1408	1.3	40	1448	1.2	37	Tu 1225	1.2	37	
				1838	0.5	15	1959	0.2	6	2033	0.4	12	Tu 1817	0.3	9	
6 Su	0033	2.1	64	21 M	0133	1.8	55	6 W	0234	2.2	67	21 Th	0259	1.8	55	
	0721	0.5	15	0840	0.5	15	0924	-0.1	-3	0941	0.1	3	0100	1.8	55	
	1254	1.5	46	1411	1.2	37	1522	1.5	46	1540	1.4	43	0802	0.1	3	
	1858	0.2	6	1957	0.5	15	2109	0.1	3	2126	0.2	6	1402	1.3	40	
7 M	0145	2.3	70	22 Tu	0237	1.9	58	7 Th	0335	2.3	70	22 F	0345	2.0	61	
	0837	0.2	6	0931	0.3	9	1013	-0.3	-9	1017	-0.1	-3	0219	1.9	58	
	1418	1.5	46	1517	1.3	40	1617	1.8	55	1619	1.6	49	Th 0904	-0.1	-3	
	2012	0.2	6	2057	0.4	12	2206	-0.1	-3	2209	0.1	3	1512	1.6	49	
8 Tu	0249	2.4	73	23 W	0328	2.0	61	8 F	0426	2.4	73	23 Sa	0424	2.1	64	
	0936	0.0	0	1011	0.1	3	1056	-0.4	-12	1048	-0.2	-6	0321	2.0	61	
	1528	1.6	49	1605	1.5	46	1703	2.0	61	1654	1.8	55	0952	-0.3	-9	
	2115	0.0	0	2145	0.2	6	2254	-0.2	-6	2247	-0.1	-3	1603	1.8	55	
9 W	0346	2.6	79	24 Th	0410	2.2	67	9 Sa	0510	2.5	76	24 Su	0459	2.2	67	
	1026	-0.3	-9	1045	0.0	0	1134	-0.5	-15	1119	-0.4	-12	0410	2.2	67	
	1625	1.8	55	1644	1.6	49	1745	2.1	64	1727	2.0	61	1032	-0.4	-12	
	2211	-0.1	-3	2226	0.1	3	● 2338	-0.3	-9	2324	-0.2	-6	1645	2.0	61	
10 Th	0436	2.7	82	25 F	0447	2.3	70	10 Su	0550	2.5	76	25 M	0533	2.3	70	
	1111	-0.4	-12	1117	-0.2	-6	1209	-0.6	-18	1148	-0.5	-15	0453	2.2	67	
	1714	2.0	61	1719	1.8	55	1823	2.3	70	1800	2.2	67	M 1108	-0.5	-15	
	2300	-0.2	-6	2303	0.0	0				O			1723	2.2	67	
11 F	0522	2.8	85	26 Sa	0521	2.4	73	11 M	0018	-0.3	-9	26 Tu	0000	-0.3	-9	
	1153	-0.5	-15	1147	-0.3	-9	0628	2.4	73	0606	2.3	70	0531	2.2	67	
	1800	2.1	64	1752	1.9	58	1243	-0.5	-15	1219	-0.5	-15	0615	2.2	67	
	● 2347	-0.2	-6	○ 2339	-0.1	-3	1859	2.3	70	1834	2.3	70	● 2344	-0.4	-12	
12 Sa	0606	2.7	82	27 Su	0554	2.4	73	12 Tu	0057	-0.2	-6	27 W	0036	-0.3	-9	
	1232	-0.5	-15	1217	-0.3	-9	0703	2.3	70	0641	2.2	67	0002	-0.3	-9	
	1843	2.2	67	1825	2.0	61	1315	-0.4	-12	1250	-0.5	-15	0606	2.2	67	
							1934	2.3	70	1909	2.4	73	Tu 1211	-0.5	-15	
13 Su	0031	-0.2	-6	28 M	0014	-0.1	-3	13 W	0134	-0.1	-3	28 Th	0115	-0.1	-3	
	0646	2.6	79	0626	2.4	73	0737	2.1	64	1345	-0.3	-9	0002	-0.3	-9	
	1310	-0.5	-15	1246	-0.4	-12	2009	2.2	67	1323	-0.4	-12	0623	2.1	64	
	1925	2.2	67	1858	2.1	64	1946	2.4	73	1946	2.4	73	1223	-0.5	-15	
14 M	0114	-0.1	-3	29 Tu	0049	-0.1	-3	14 Th	0212	0.0	0	29 F	0111	-0.3	-9	
	0725	2.5	76	0658	2.4	73	0811	1.9	58	1415	-0.1	-3	0712	1.9	58	
	1346	-0.4	-12	1317	-0.4	-12	2044	2.1	64	2044	2.1	64	1310	-0.3	-9	
	2005	2.2	67	1933	2.2	67							1932	2.2	67	
15 Tu	0156	0.1	3	30 W	0127	0.0	0	15 F	0251	0.2	6	15 F	0145	-0.2	-6	
	0804	2.3	70	0733	2.3	70	0846	1.7	52	1446	0.0	0	0744	1.8	55	
	1422	-0.2	-6	1349	-0.3	-9	2011	2.2	67	2123	1.9	58	1338	-0.2	-6	
	2047	2.1	64									2005	2.1	64		
31 Th	0208	0.1	3	31 Th	0810	2.1	64						31 Su	0234	-0.3	-9
				1424	-0.2	-6							0835	1.6	49	
				2053	2.2	67							1423	-0.1	-3	
													2058	2.1	64	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2013

Times and Heights of High and Low Waters

April			May			June						
Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 M 0331 0.1 -3 0934 1.4 43 1517 0.1 3 2158 1.9 58	16 Tu 0320 0.1 3 0927 1.3 40 1500 0.3 9 2139 1.7 52		1 W 0426 -0.1 -3 1046 1.4 43 1630 0.3 9 2250 1.7 52			16 Th 0344 0.1 3 1007 1.4 43 1539 0.4 12 2201 1.7 52			1 Sa 0600 0.0 0 1241 1.8 55 1905 0.5 15			16 Su 0448 0.1 3 1133 1.8 55 1742 0.5 15 2326 1.5 46
	2 Tu 0442 0.0 0 1049 1.3 40 1631 0.3 9 2312 1.8 55	17 W 0418 0.2 6 1032 1.2 37 1604 0.5 15 2243 1.5 46	2 Th 0538 0.0 0 1206 1.5 46 1805 0.4 12 2305 1.6 49			17 F 0441 0.1 3 1113 1.4 43 1657 0.5 15 2305 1.6 49			2 Su 0037 1.4 43 0700 0.1 3 1342 1.9 58 2015 0.4 12			17 M 0549 0.1 3 1237 1.9 58 1907 0.4 12
	3 W 0610 0.1 3 1221 1.3 40 1815 0.4 12	18 Th 0535 0.3 9 1154 1.2 37 1740 0.5 15 2243 1.5 46	3 F 0006 1.6 49 0650 0.0 0 1320 1.6 49 1933 0.4 12 2305 1.6 49			18 Sa 0544 0.1 3 1221 1.6 49 1828 0.5 15			3 M 0147 1.4 43 0755 0.1 3 1433 2.0 61 2110 0.2 6			18 Tu 0040 1.5 46 0654 0.1 3 1339 2.1 64 2019 0.2 6
	4 Th 0037 1.7 52 0731 0.0 0 1348 1.4 43 1949 0.3 9	19 F 0001 1.5 46 0653 0.2 6 1312 1.4 43 1916 0.5 15	4 Sa 0121 1.6 49 0750 0.0 0 1421 1.8 55 2040 0.2 6			19 Su 0016 1.5 46 0648 0.1 3 1323 1.8 55 1945 0.4 12			4 Tu 0247 1.4 43 0843 0.1 3 1517 2.1 64 2154 0.1 3			19 W 0154 1.5 46 0757 0.0 0 1437 2.3 70 2119 0.0 0
5 F 0155 1.7 52 0833 -0.1 -3 1452 1.7 52 2057 0.1 3	20 Sa 0116 1.5 46 0754 0.1 3 1414 1.6 49 2025 0.3 9		5 Su 0226 1.6 49 0840 -0.1 -3 1509 2.0 61 2131 0.1 3			20 M 0126 1.5 46 0745 0.0 0 1418 2.0 61 2047 0.1 3			5 W 0339 1.4 43 0925 0.1 3 1557 2.2 67 2233 -0.1 -3			20 Th 0301 1.6 49 0856 -0.1 -3 1531 2.5 76 2211 -0.2 -6
	6 Sa 0258 1.8 55 0920 -0.2 -6 1540 1.9 58 2148 0.0 0	21 Su 0218 1.6 49 0842 0.0 0 1502 1.9 58 2117 0.1 3	6 M 0320 1.6 49 0922 -0.1 -3 1549 2.1 64 2213 -0.1 -3			21 Tu 0229 1.6 49 0837 -0.1 -3 1508 2.2 67 2139 -0.1 -3			6 Th 0422 1.5 46 1005 0.0 0 1633 2.3 70 2308 -0.2 -6			21 F 0401 1.7 52 0950 -0.2 -6 1621 2.7 82 2259 -0.4 -12
	7 Su 0348 1.9 58 1000 -0.3 -9 1620 2.1 64 2231 -0.2 -6	22 M 0311 1.7 52 0923 -0.2 -6 1544 2.1 64 2203 -0.2 -6	7 Tu 0405 1.6 49 0959 -0.2 -6 1625 2.3 70 2251 -0.2 -6			22 W 0326 1.7 52 0925 -0.2 -6 1554 2.5 76 2227 -0.3 -9			7 F 0502 1.5 46 1042 0.0 0 1708 2.3 70 2342 -0.2 -6			22 Sa 0456 1.8 55 1042 -0.3 -9 1710 2.7 82 2345 -0.5 -15
	8 M 0430 1.9 58 1035 -0.3 -9 1655 2.3 70 2309 -0.3 -9	23 Tu 0358 1.8 55 1003 -0.3 -9 1624 2.3 70 2245 -0.3 -9	8 W 0445 1.7 52 1034 -0.2 -6 1659 2.3 70 2325 -0.3 -9			23 Th 0418 1.7 52 1012 -0.3 -9 1640 2.6 79 2313 -0.5 -15			8 Sa 0539 1.6 49 1117 0.0 0 1742 2.3 70 2305 1.6 49			23 Su 0547 1.9 58 1131 -0.3 -9 1757 2.7 82 2345 0.5 -15
9 Tu 0508 1.9 58 1107 -0.4 -12 1728 2.3 70 2344 -0.3 -9	24 W 0442 1.9 58 1041 -0.4 -12 1704 2.5 76 2327 -0.5 -15	9 Th 0521 1.7 52 1107 -0.2 -6 1731 2.3 70 2359 -0.3 -9	24 F 0508 1.8 55 1057 -0.4 -12 1725 2.7 82 2358 -0.6 -18			24 O 0015 -0.3 -9 0615 1.6 49 1152 0.0 0 1816 2.3 70			9 Su 0015 -0.3 -9 0615 1.6 49 1152 0.0 0 1842 2.7 82			24 M 0030 -0.6 -18 0636 1.9 58 1219 0.2 -6 1842 2.7 82
	10 W 0543 1.9 58 1138 -0.3 -9 1759 2.4 73	25 Th 0525 1.9 58 1120 -0.5 -15 1744 2.6 79	10 F 0556 1.6 49 1139 -0.2 -6 1803 2.3 70			25 Sa 0557 1.8 55 1143 -0.4 -12 1810 2.7 82			10 M 0048 -0.3 -9 0650 1.6 49 1227 0.0 0 1850 2.3 70			25 Tu 0114 -0.6 -18 0724 2.0 61 1308 -0.1 -3 1928 2.5 76
	11 Th 0017 -0.4 -12 0617 1.8 55 1208 -0.3 -9 1829 2.3 70	26 F 0010 -0.6 -18 0609 1.9 58 1200 -0.5 -15 1826 2.6 79	11 Sa 0032 -0.3 -9 0631 1.6 49 1212 -0.1 -3 1835 2.3 70			26 Su 0043 -0.6 -18 0646 1.8 55 1229 -0.3 -9 1856 2.6 79			11 Tu 0122 -0.2 -6 0727 1.6 49 1303 0.1 3 1925 2.2 67			26 W 0157 -0.5 -15 0814 2.0 61 1358 0.0 0 2013 2.3 70
	12 F 0050 -0.3 -9 0649 1.7 52 1238 -0.2 -6 1900 2.2 67	27 Sa 0053 -0.6 -18 0654 1.8 55 1242 -0.4 -12 1909 2.5 76	12 Su 0105 -0.3 -9 0706 1.6 49 1245 0.0 0 1909 2.2 67			27 M 0129 -0.6 -18 0736 1.8 55 1317 -0.2 -6 1943 2.5 76			12 W 0156 -0.2 -6 0806 1.6 49 1341 0.2 6 2001 2.1 64			27 Th 0241 -0.3 -9 0904 2.0 61 1451 0.2 6 2059 2.1 64
13 Sa 0123 -0.3 -9 0723 1.6 49 1308 -0.1 -3 1933 2.1 64	28 Su 0138 -0.5 -15 0742 1.7 52 1326 -0.3 -9 1955 2.4 73	13 M 0139 -0.2 -6 0743 1.5 46 1319 0.1 3 1945 2.0 61	28 Tu 0216 -0.5 -15 0829 1.7 52 1409 0.0 0 2032 2.2 67			13 Th 0232 -0.1 -3 0849 1.6 49 1424 0.3 9 2040 2.0 61			13 F 0232 -0.1 -3 0849 1.6 49 1424 0.3 9 2148 1.8 55			28 O 0325 -0.2 -6 0957 1.9 58 1550 0.4 12 2148 1.8 55
	14 Su 0157 -0.2 -6 0758 1.5 46 1340 0.0 0 2008 2.0 61	29 M 0227 -0.4 -12 0834 1.6 49 1415 -0.1 -3 2046 2.2 67	14 Tu 0216 -0.1 -3 0823 1.4 43 1357 0.2 6 2024 1.9 58			29 W 0306 -0.3 -9 0927 1.7 52 1507 0.2 6 2124 2.0 61			14 F 0311 0.0 0 0937 1.7 52 1516 0.4 12 2126 1.8 55			29 Sa 0412 0.0 0 1053 1.9 58 1701 0.5 15 2244 1.6 49
	15 M 0235 0.0 0 0838 1.4 43 1416 0.2 6 2049 1.8 55	30 Tu 0322 -0.2 -6 0935 1.5 46 1514 0.2 6 2143 1.9 58	15 W 0257 0.0 0 0911 1.4 43 1442 0.3 9 2108 1.8 55			30 Th 0400 -0.2 -6 1029 1.7 52 1617 0.4 12 2222 1.8 55			15 Sa 0356 0.0 0 1032 1.7 52 1621 0.5 15 2220 1.7 52			30 Su 0505 0.2 6 1153 1.9 58 1823 0.6 18 2349 1.4 43
						31 F 0459 -0.1 -3 1135 1.7 52 1740 0.5 15 2327 1.6 49						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Johnston Island, 2013

Times and Heights of High and Low Waters

July						August						September					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm
1 M	0604	0.3 58	16 Tu	0501	0.2 64	1 Th	0143	1.3 15	16 F	0122	1.5 12	1 Su	0319	1.7 52	16 M	0330	2.1 6
	1255	1.9 58		1156	2.1 64		0734	0.5 15		0719	0.4 15		0910	0.5 15		0930	0.2 6
	1942	0.5 15		1834	0.5 15		1417	2.0 61		1359	2.3 70		1528	2.2 67		1541	2.5 76
							2111	0.4 12		2049	0.2 6		2158	0.2 6		2203	-0.1 -3
2 Tu	0103	1.3 9	17 W	0006	1.5 6	2 F	0253	1.4 15	17 Sa	0241	1.7 52	2 M	0359	1.9 58	17 Tu	0415	2.4 73
	0707	0.3 9		0614	0.2 6		0837	0.5 15		0834	0.2 73		0952	0.3 0		1018	0.0 0
	1354	2.0 61		1307	2.2 67		1510	2.1 64		1502	2.4 0		1606	2.3 3		1626	2.5 -6
	2045	0.4 12		1957	0.3 9		2153	0.3 9		2142	0.0 0		2229	0.1 3		2241	-0.2 -6
3 W	0214	1.3 9	18 Th	0131	1.5 6	3 Sa	0344	1.5 9	18 Su	0342	1.9 3	3 Tu	0433	2.1 64	18 W	0455	2.6 79
	0806	0.3 9		0730	0.2 6		0927	0.3 9		0934	0.1 79		1029	0.2 73		1100	-0.1 -3
	1446	2.1 64		1414	2.3 70		1553	2.2 67		1556	2.6 79		1641	2.4 73		1706	2.6 79
	2134	0.3 9		2103	0.1 3		2228	0.1 3		2227	-0.2 -6		2259	0.0 0		2316	-0.2 -6
4 Th	0315	1.4 9	19 F	0247	1.6 3	4 Su	0425	1.7 6	19 M	0432	2.1 -3	4 W	0506	2.2 67	19 Th	0532	2.7 82
	0857	0.3 9		0839	0.1 3		1009	0.2 6		1026	-0.1 -3		1104	0.1 3		1140	-0.1 -3
	1532	2.2 67		1514	2.5 76		1631	2.3 70		1643	2.7 82		1713	2.5 76		1744	2.5 76
	2214	0.1 3		2157	-0.1 -3		2301	0.0 0		2308	-0.3 -9		2328	-0.1 -3		2349	-0.2 -6
5 F	0403	1.4 6	20 Sa	0351	1.7 -3	5 M	0501	1.8 3	20 Tu	0517	2.3 -3	5 Th	0538	2.4 73	20 F	0607	2.7 82
	0943	0.2 6		0939	-0.1 -3		1046	0.1 3		1112	-0.1 -3		1139	0.0 0		1217	-0.1 -3
	1613	2.2 67		1608	2.6 79		1705	2.4 73		1726	2.7 82		1745	2.5 76		1820	2.4 73
	2251	0.0 0		2245	-0.3 -9		2331	-0.1 -3		2345	-0.4 -12		2357	-0.2 -6			
6 Sa	0444	1.5 3	21 Su	0445	1.9 82	6 Tu	0534	2.0 1	21 W	0558	2.5 -1	6 F	0610	2.5 76	21 Sa	0021	-0.1 82
	1023	0.1 3		1032	-0.2 2.7		1122	0.1 82		1155	-0.1 82		1214	0.0 76		0640	2.7 0
	1650	2.3 70		1657	2.7 82		1738	2.5 76		1806	2.7 82		1818	2.5 76		1253	0.0 70
	2324	-0.1 -3		2329	-0.5 -15		●									1854	2.3 70
7 Su	0522	1.6 3	22 M	0534	2.1 6	7 W	0001	-0.2 6	22 Th	0021	-0.4 -12	7 Sa	0027	-0.2 -6	22 Su	0052	0.0 0
	1101	0.1 3		1122	-0.2 -6		0607	2.1 64		0637	2.5 76		0644	2.6 79		0714	2.6 79
	1725	2.4 73		1743	2.8 85		1156	0.1 3		1236	-0.1 -3		1251	0.0 0		1329	0.1 3
	● 2357	-0.2 -6		○			1809	2.5 76		1844	2.5 76		1853	2.3 70		1929	2.1 64
8 M	0557	1.7 3	23 Tu	0011	-0.5 67	8 Th	0030	-0.2 67	23 F	0055	-0.3 76	8 Su	0059	-0.1 79	23 M	0122	0.2 73
	1137	0.1 3		0620	2.2 67		0640	2.2 67		0714	2.5 76		0720	2.6 79		0748	2.4 73
	1759	2.4 73		1209	-0.2 -6		1231	0.1 3		1317	0.0 0		1330	0.1 3		1406	0.3 9
				1826	2.7 82		1841	2.4 73		1921	2.3 70		1930	2.2 67		2005	1.9 58
9 Tu	0028	-0.2 -3	24 W	0050	-0.5 70	9 F	0059	-0.2 70	24 Sa	0128	-0.1 73	9 M	0133	0.0 6	24 Tu	0154	0.3 67
	0632	1.8 55		0704	2.3 70		0713	2.2 67		0752	2.4 73		0800	2.5 6		0825	2.2 12
	1212	0.1 3		1254	-0.1 -3		1307	0.1 3		1357	0.2 6		1414	0.2 6		1447	0.4 12
	1831	2.4 73		1907	2.6 79		1914	2.3 70		1957	2.1 64		2012	2.0 61		2046	1.7 52
10 W	0059	-0.2 -6	25 Th	0129	-0.4 70	10 Sa	0129	-0.1 70	25 Su	0201	0.0 70	10 Tu	0212	0.1 73	25 W	0230	0.5 64
	0706	1.8 55		0747	2.3 70		0749	2.3 6		0830	2.3 6		0847	2.4 58		0909	2.1 18
	1248	0.1 3		1339	0.0 0		1346	0.2 6		1439	0.4 12		1507	0.4 12		1538	0.6 18
	1904	2.3 70		1948	2.4 73		1949	2.2 67		2035	1.9 58		2104	1.8 55		2138	1.5 46
11 Th	0130	-0.2 -6	26 F	0206	-0.3 67	11 Su	0202	-0.1 70	26 M	0235	0.2 67	11 W	0259	0.3 67	26 Th	0317	0.7 21
	0742	1.9 58		0830	2.2 67		0829	2.3 6		0911	2.2 67		0945	2.2 67		1008	1.9 58
	1325	0.2 6		1426	0.2 6		1431	0.3 9		1526	0.5 15		1617	0.5 15		1654	0.7 21
	1937	2.2 67		2029	2.1 64		2030	2.0 61		2118	1.7 52		2213	1.6 49		2255	1.4 43
12 F	0202	-0.2 -6	27 Sa	0244	-0.1 64	12 M	0240	0.0 67	27 Tu	0313	0.4 61	12 Th	0404	0.5 64	27 F	0433	0.8 55
	0821	1.9 58		0915	2.1 64		0916	2.2 67		1001	2.0 61		1058	2.1 64		1127	1.8 55
	1405	0.3 9		1516	0.4 12		1525	0.4 12		1628	0.7 21		1750	0.5 15		1834	0.7 21
	2013	2.1 64		2111	1.9 58		2119	1.8 55		● 2214	1.5 46		● 2345	1.5 46			
13 Sa	0236	-0.1 -3	28 Su	0323	0.1 61	13 Tu	0326	0.2 67	28 W	0404	0.6 58	13 F	0539	0.6 12	28 Sa	0032	1.4 27
	0903	2.0 61		1003	2.0 61		1013	2.2 67		1104	1.9 58		1224	2.1 64		0627	0.9 55
	1452	0.4 12		1614	0.6 18		1636	0.5 15		1800	0.8 24		1923	0.4 12		1254	1.8 55
	2055	1.9 58		2159	1.6 49		2223	1.6 49		2334	1.3 40					1949	0.6 18
14 Su	0315	0.0 0	29 M	0407	0.3 61	14 W	0426	0.3 64	29 Th	0525	0.7 55	14 Sa	0121	1.6 49	29 Su	0152	1.6 49
	0953	2.0 61		1058	2.0 61		1123	2.1 64		1224	1.8 55		0719	0.5 15		0751	0.7 21
	1550	0.5 15		1729	0.7 21		1809	0.5 15		1935	0.7 21		1344	2.2 67		1402	1.9 58
	2145	1.8 55		● 2259	1.4 43		● 2348	1.5 46					2030	0.2 6		2039	0.5 15
15 M	0402	0.1 3	30 Tu	0503	0.5 21	15 Th	0548	0.4 12	30 F	0112	1.3 67	15 Su	0235	1.9 58	30 M	0245	1.8 55
	1050	2.0 61		1202	1.9 58		1243	2.2 67		0705	0.7 21		0833	0.4 12		0847	0.6 18
	1704	0.5 15		1858	0.7 21		1940	0.4 12		1343	1.9 58		1449	2.3 70		1453	2.1 64
	● 2248	1.6 49								2039	0.6 18		2121	0.1 3		2116	0.3 9
			31 W	0017	1.3 15				31 Sa	0228	1.5 18						
				0617	0.5 15					0818	0.6 18						
				1312	1.9 58					1443	2.0 61						
				2015	0.6 18					2122	0.4 12						

Johnston Island, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0326 0.4 12 0930 0.4 12	16 W 0353 0.1 3 1007 0.1 3	1 F 0403 0.0 0 1026 0.0 0	16 Sa 0441 0.0 0 1109 0.0 0	1 Su 0418 0.0 0 1051 -0.2 -6	16 M 0457 0.0 0 1130 -0.1 -3						
1534 2.2 67 2150 0.2 6	1607 2.3 70 2211 0.0 0	1621 2.2 67 2220 0.0 0	1706 2.0 61 2252 0.1 3	1646 2.0 61 2236 -0.1 -3	1729 1.8 55 2309 0.1 3						
2 W 0401 0.2 6 1008 0.2 6	17 Th 0431 0.0 0 1047 0.0 0	2 Sa 0441 0.1 3 1105 -0.1 -3	17 Su 0514 0.0 0 1143 -0.1 -3	2 M 0502 0.0 0 1134 -0.3 -9	17 Tu 0531 0.0 0 1202 -0.1 -3						
1611 2.3 70 2222 0.0 0	1647 2.3 70 2246 0.0 0	1702 2.2 67 2257 -0.1 -3	1742 2.0 61 2325 0.1 3	1733 2.1 64 2320 -0.1 -3	1804 1.9 58 2343 0.1 3						
3 Th 0435 0.1 3 1045 0.1 3	18 F 0505 0.1 3 1124 -0.1 -3	3 Su 0519 0.0 0 1145 -0.2 -6	18 M 0547 0.0 0 1216 -0.1 -3	3 Tu 0545 0.0 0 1217 -0.4 -12	18 W 0604 0.0 0 1234 -0.1 -3						
1647 2.4 73 2253 -0.1 -3	1723 2.3 70 2318 0.0 0	1743 2.2 67 2335 -0.1 -3	1816 2.0 61 2358 0.2 6	1819 2.1 64 2343 -0.1 -3	1837 1.9 58 2343 0.1 3						
4 F 0508 0.1 3 1121 -0.1 -3	19 Sa 0538 0.0 0 1158 -0.1 -3	4 M 0559 0.0 0 1226 -0.2 -6	19 Tu 0619 0.0 0 1248 0.0 0	4 W 0005 0.0 0 0629 2.9 88	19 Th 0017 0.0 0 0637 2.5 76						
1722 2.4 73 2325 -0.1 -3	1758 2.2 67 2350 0.0 0	1826 2.2 67 2350 0.0 0	1850 1.9 58 1907 2.1 64	1301 -0.4 -12 1911 1.9 58	1305 -0.1 -3 1911 1.9 58						
5 Sa 0542 0.1 3 1158 -0.1 -3	20 Su 0610 0.0 0 1232 0.0 0	5 Tu 0015 0.0 0 0640 2.9 88	20 W 0031 0.0 0 0653 2.5 76	5 Th 0051 0.0 0 0715 2.8 85	20 F 0051 0.0 0 0709 2.4 73						
1758 2.4 73 2358 -0.1 -3	1832 2.1 64	1309 -0.2 -6 1911 2.1 64	1322 0.0 0 1926 1.8 55	1346 -0.3 -9 1957 2.1 64	1336 -0.1 -3 1947 1.9 58						
6 Su 0618 0.1 3 1237 -0.1 -3	21 M 0020 0.1 3 0642 2.6 79	6 W 0058 0.0 0 0725 2.7 82	21 Th 0105 0.3 9 0727 2.4 73	6 F 0140 0.1 3 0802 2.6 79	21 Sa 0127 0.3 9 0742 2.3 70						
1836 2.3 70	1306 0.0 0	1355 -0.1 -3 2002 2.0 61	1357 0.1 3 2005 1.8 55	1433 -0.2 -6 2051 2.0 61	1409 0.0 0 2025 1.9 58						
7 M 0033 -0.1 -3 0656 2.8 85	22 Tu 0052 0.2 6 0715 2.5 76	7 Th 0145 0.2 6 0813 2.5 76	22 F 0141 0.5 15 0804 2.2 67	7 Sa 0234 0.3 9 0852 2.3 70	22 Su 0205 0.4 12 0818 2.1 64						
1318 0.0 0 1918 2.1 64	1340 0.2 6 1942 1.9 58	1447 0.1 3 2059 1.9 58	1435 0.3 9 2050 1.7 52	1523 0.0 0 2150 2.0 61	1444 0.1 3 2108 1.9 58						
8 Tu 0111 0.0 0 0738 2.7 82	23 W 0124 0.4 12 0751 2.3 70	8 F 0240 0.4 12 0909 2.3 70	23 Sa 0223 0.6 18 0846 2.1 64	8 Su 0338 0.5 15 0947 2.1 64	23 M 0250 0.5 15 0858 2.0 61						
1403 0.1 3 2004 2.0 61	1418 0.3 9 2022 1.7 52	1547 0.2 6 2208 1.8 55	1519 0.4 12 2143 1.7 52	1619 0.1 3 2256 2.0 61	1523 0.2 6 2158 1.9 58						
9 W 0153 0.2 6 0826 2.5 76	24 Th 0200 0.5 15 0831 2.1 64	9 Sa 0351 0.6 18 1015 2.1 64	24 M 0317 0.7 21 0937 1.9 58	9 Tu 0458 0.7 21 1052 1.8 55	24 Tu 0346 0.7 21 0946 1.8 55						
1456 0.2 6 2100 1.8 55	1503 0.5 15 2112 1.6 49	1658 0.3 9 2327 1.8 55	1612 0.4 12 2247 1.7 52	1722 0.3 9 2256 2.0 61	1610 0.3 9 2256 1.9 58						
10 Th 0245 0.4 12 0924 2.3 70	25 F 0245 0.7 21 0922 2.0 61	10 Su 0525 0.7 21 1131 1.9 58	25 M 0431 0.8 24 1039 1.8 55	10 Tu 0006 2.0 61 0631 0.7 21	25 W 0502 0.7 21 1049 1.6 49						
1603 0.4 12 2213 1.7 52	1600 0.6 18 2218 1.5 46	1814 0.3 9 2357 1.8 55	1715 0.5 15 2357 1.8 55	1206 1.7 52 1829 0.4 12	1708 0.3 9 2357 1.8 55						
11 F 0355 0.6 18 1037 2.1 64	26 Sa 0350 0.8 24 1028 1.8 55	11 M 0046 2.0 61 0702 0.7 21	26 Tu 0606 0.8 24 1153 1.7 52	11 W 0113 2.1 64 0752 0.6 18	26 Th 0002 2.0 61 0634 0.7 21						
1729 0.5 15 2344 1.7 52	1717 0.7 21 2341 1.6 49	1251 1.9 58 1921 0.3 9	1823 0.5 15 2114 0.3 9	1324 1.6 49 1932 0.4 12	1206 1.5 46 1819 0.3 9						
12 Sa 0537 0.7 21 1202 2.0 61	27 Su 0530 0.9 27 1147 1.8 55	12 Tu 0152 2.1 64 0815 0.5 15	27 W 0102 2.0 61 0729 0.7 21	12 Th 0212 2.2 67 0854 0.4 12	27 F 0110 2.1 64 0756 0.5 15						
1855 0.4 12	1838 0.6 18	1401 1.9 58 2016 0.3 9	1306 1.7 52 2106 0.1 3	1433 1.6 49 2027 0.3 9	1328 1.5 46 1931 0.3 9						
13 Su 0112 1.8 55 0716 0.6 18	28 M 0100 1.7 52 0708 0.8 24	13 W 0245 2.3 70 0910 0.4 12	28 Th 0159 2.2 67 0831 0.5 15	13 F 0301 2.3 70 0942 0.3 9	28 Sa 0213 2.3 70 0900 0.2 6						
1323 2.1 64 2001 0.3 9	1303 1.8 55 1938 0.5 15	1459 1.9 58 2101 0.2 6	1412 1.8 55 2018 0.3 9	1529 1.6 49 2114 0.3 9	1441 1.6 49 2035 0.2 6						
14 M 0219 2.0 61 0828 0.5 15	29 Tu 0159 1.9 58 0814 0.7 21	14 Th 0328 2.5 76 0955 0.2 6	29 F 0248 2.4 73 0922 0.2 6	14 Sa 0344 2.4 73 1022 0.1 3	29 Su 0309 2.5 76 0952 0.0 0						
1429 2.1 64 2052 0.1 3	1405 1.9 58 2025 0.4 12	1547 2.0 61 2141 0.1 3	1508 1.8 55 2106 0.1 3	1614 1.7 52 2156 0.2 6	1542 1.7 52 2131 0.0 0						
15 Tu 0311 2.3 70 0922 0.3 9	30 W 0245 2.2 67 0903 0.4 12	15 F 0406 2.6 79 1034 0.1 3	30 Sa 0334 2.6 79 1008 0.0 0	15 Su 0422 2.5 76 1057 0.0 0	30 M 0401 2.7 82 1039 -0.2 -6						
1522 2.2 67 2134 0.0 0	1455 2.0 61 2105 0.2 6	1629 2.0 61 2218 0.1 3	1559 1.9 58 2152 0.0 0	1654 1.8 55 2233 0.2 6	1636 1.9 58 2223 -0.1 -3						
16 F 0449 2.8 85 1123 0.4 12	31 Th 0325 2.4 73 0946 0.2 6	17 G 0449 2.8 85 1539 2.1 64	18 H 0325 2.4 73 2143 0.1 3	19 I 0449 2.8 85 2311 0.2 6	20 J 0449 2.8 85 2311 0.2 6						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Papeete Harbor, Tahiti Island, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0218	0.7	21	16	0249	0.8	24	1 Tu	0248	0.7	21
	0825	0.1	3	W	0850	0.1	3		0845	0.2	6
	1414	0.6	18		1440	0.7	21	Sa	0831	0.2	6
	2020	0.0	0		2055	0.0	0		1431	0.7	21
									1424	0.6	18
									2041	0.1	3
									2048	0.1	3
2 W	0246	0.7	21	17	0316	0.6	18	16	0247	0.6	18
	0850	0.2	6	Th	0909	0.2	6	16	0831	0.2	6
	1432	0.6	18		1455	0.6	18	Sa	1424	0.6	18
	2044	0.1	3		2117	0.1	3		2041	0.1	3
									2008	-0.1	-3
3 Th	0317	0.7	21	18	0341	0.5	15	2 Sa	0223	0.8	24
	0916	0.3	9	F	0917	0.3	9		0819	0.1	3
	1449	0.5	15		1453	0.5	15	Su	1354	0.5	15
	2110	0.1	3	O	2130	0.2	6		2003	0.2	6
4 F	0357	0.6	18	19	0356	0.4	12	2 Tu	0237	0.5	15
	0947	0.3	9	Sa	0806	0.3	9		0858	0.2	6
	1456	0.5	15		1314	0.4	12	Su	1440	0.6	18
	O	2144	0.2		1951	0.2	6		2107	0.2	6
					1756	0.3	9				
					2354	0.3	9				
5 Sa	0546	0.5	15		2354	0.4	12				
					2353	0.4	12				
					2353	0.4	12				
6 Su	0215	0.3	9	20	0449	0.2	6	3 Sa	0240	0.6	18
	1010	0.5	15	Su	1121	0.5	15		0829	0.2	6
	1648	0.3	9		1737	0.2	6	M	1235	0.4	12
	2207	0.4	12		2306	0.4	12		1827	0.2	6
									2044	0.1	3
7 M	0409	0.2	6	21	0503	0.2	6	3 Tu	0126	0.4	12
	1044	0.6	18	M	1121	0.5	15		0642	0.2	6
	1657	0.2	6		1729	0.1	3	Su	1425	0.6	18
	2243	0.6	18		2319	0.5	15		2044	0.1	3
8 Tu	0452	0.1	3	22	0523	0.1	3	4 O	0245	0.5	15
	1113	0.7	21	Th	1135	0.6	18		0543	0.2	6
	1719	0.1	3		1740	0.0	0	M	1147	0.5	15
	2316	0.7	21		2338	0.6	18		1742	0.1	3
									2331	0.5	15
9 W	0528	0.0	0	23	0544	0.0	0	4 Tu	0228	0.3	9
	1142	0.7	21	W	1152	0.6	18		0627	0.3	9
	1744	0.0	0		1755	0.0	0	Su	1227	0.4	12
	2348	0.8	24		1806	0.7	21		1750	0.3	9
									2336	0.6	18
10 Th	0601	-0.1	-3	24	0605	-0.1	-3	5 Sa	0129	0.4	12
	1210	0.8	24	Th	1210	0.7	21		0627	0.3	9
	1811	-0.1	-3		1813	-0.1	-3	M	1140	0.6	18
									2259	0.4	12
11 F	0019	0.9	27	25	0018	0.7	21	6 W	0509	0.2	6
	0633	-0.2	-6		0625	-0.1	-3		0543	0.0	0
	1237	0.8	24		1229	0.7	21	Th	1147	0.6	18
	O	1838	-0.1	-3	1830	-0.1	-3		1744	0.0	0
									2348	0.7	21
12 Sa	0050	0.9	27	26	0038	0.8	24	7 Th	0513	0.0	0
	0703	-0.2	-6	W	0707	-0.1	-3		1200	0.7	21
	1304	0.8	24		1306	0.8	24	F	1757	-0.1	-3
	1906	-0.2	-6		1907	-0.2	-6				
13 Su	0121	0.9	27	27	0059	0.9	27	7 Tu	0557	-0.1	-3
	0732	-0.1	-3	Th	0727	-0.1	-3		1200	0.7	21
	1331	0.8	24		1324	0.8	24	Su	1757	-0.1	-3
	1935	-0.2	-6		1926	-0.2	-6				
14 M	0151	0.9	27	28	0120	0.9	27	7 Th	0513	0.0	0
	0800	-0.1	-3	W	0727	-0.1	-3		1120	0.6	18
	1356	0.8	24		1336	0.9	27	Su	1710	0.1	3
	2002	-0.1	-3		1944	-0.2	-6		2315	0.7	21
15 Tu	0221	0.8	24	29	0141	0.9	27	7 O	0513	0.0	0
	0826	0.0	0	Th	0748	-0.1	-3		1120	0.6	18
	1419	0.7	21		1342	0.8	24	Su	1712	0.1	3
	2029	-0.1	-3		1945	-0.1	-3				
16 Sa	0226	0.8	24	30	0203	0.9	27	8 Tu	0525	0.1	3
	0827	0.1	3	W	0808	0.0	0		1127	0.5	15
	1416	0.7	21		1359	0.8	24	Su	1712	0.1	3
	2027	-0.1	-3		2006	-0.1	-3				
17 Th	0226	0.8	24	31	0226	0.8	24	9 Th	0526	0.0	0
	0827	0.1	3		1416	0.7	21		1127	0.6	18
	2027	0.0	0		2027	0.0	0	Su	1717	0.0	0
									2324	0.7	21
18 F	0226	0.8	24								
	0827	0.1	3								
	1416	0.7	21								
	2027	0.0	0								

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Papeete Harbor, Tahiti Island, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0223	0.6	18	16	0159	0.5	15	1	0253	0.4	12	16	0227	0.4	12
	0816	0.1	3	Tu	0755	0.1	3	W	0852	0.2	6	Sa	0715	0.4	12
	1425	0.6	18	Tu	1407	0.5	15	W	1551	0.5	15	Sa	1330	0.3	9
	2041	0.2	6		2004	0.2	6		2317	0.2	6		2047	0.6	18
2 Tu	0229	0.5	15	17	0132	0.4	12	2	0308	0.3	9	2	0332	0.3	9
	0812	0.2	6	W	0723	0.2	6	Th	0926	0.2	6	Su	0913	0.5	15
	1432	0.5	15		1337	0.4	12		2038	0.5	15		1513	0.2	6
O	2038	0.3	9		1844	0.3	9	O					2153	0.6	18
3 W	0046	0.4	12	18	0548	0.2	6	3	0351	0.2	6	3	0417	0.2	6
	0610	0.3	9	Th	1146	0.4	12	F	0945	0.4	12	M	1005	0.6	18
	1214	0.4	12		1642	0.3	9		1515	0.2	6		1608	0.1	3
	1639	0.3	9	O	2236	0.5	15		2145	0.6	18		2235	0.7	21
4 Th	0445	0.2	6	19	0500	0.2	6	4	0417	0.1	3	4	0451	0.1	3
	1050	0.5	15	F	1057	0.4	12	Sa	1011	0.5	15	Tu	1042	0.6	18
	1621	0.2	6		1625	0.2	6		1600	0.1	3		1649	0.0	0
	2228	0.6	18		2235	0.6	18		2222	0.7	21		2309	0.7	21
5 F	0452	0.1	3	20	0457	0.1	3	5	0443	0.1	3	5	0520	0.1	3
	1053	0.6	18	Sa	1053	0.5	15	Su	1038	0.6	18	W	1115	0.7	21
	1640	0.1	3		1635	0.1	3		1634	0.0	0	M	1609	0.1	3
	2252	0.8	24		2249	0.7	21		2254	0.8	24		2338	0.7	21
6 Sa	0511	0.0	0	21	0507	0.0	0	6	0508	0.0	0	6	0546	0.0	0
	1110	0.7	21	Su	1102	0.6	18	M	1103	0.7	21	Tu	1043	0.6	18
	1704	0.0	0		1652	0.0	0		1705	0.0	0		1641	0.0	0
	2318	0.9	27		2307	0.8	24		2322	0.8	24		2303	0.8	24
7 Su	0532	-0.1	-3	22	0523	0.0	0	7	0533	0.0	0	7	0005	0.7	21
	1130	0.8	24	M	1117	0.7	21	Tu	1128	0.8	24	F	0611	0.0	0
	1729	-0.1	-3		1712	0.0	0		1734	-0.1	-3	Sa	1205	0.8	24
	2343	0.9	27		2328	0.9	27		2349	0.9	27		1818	-0.1	-3
8 M	0554	-0.1	-3	23	0541	0.0	0	8	0556	0.0	0	8	0030	0.7	21
	1151	0.8	24	Tu	1135	0.8	24	W	1153	0.8	24	Sa	0636	-0.1	-3
	1753	-0.2	-6		1735	-0.1	-3		1800	-0.1	-3	M	1239	0.7	21
	2351	0.9	27		2351	0.9	27		2359	0.8	24	O	1853	-0.1	-3
9 Tu	0007	1.0	30	24	0601	-0.1	-3	9	0013	0.8	24	9	0054	0.7	21
	0615	-0.1	-3	W	1156	0.8	24	Th	0618	-0.1	-3	Su	0659	-0.1	-3
	1212	0.9	27		1759	-0.1	-3		1217	0.8	24		1306	0.7	21
O	1817	-0.2	-6		1826	-0.1	-3	O	1826	-0.1	-3		1914	-0.1	-3
10 W	0030	0.9	27	25	0015	0.9	27	10	0036	0.8	24	10	0118	0.7	21
	0635	-0.1	-3	Th	0622	-0.1	-3	F	0640	-0.1	-3	M	0722	-0.1	-3
	1233	0.9	27		1219	0.8	24		1241	0.8	24		1332	0.7	21
	1840	-0.2	-6	O	1825	-0.2	-6		1850	-0.1	-3		1940	0.0	0
11 Th	0052	0.9	27	26	0039	0.9	27	11	0058	0.7	21	11	0141	0.6	18
	0655	-0.1	-3	F	0645	-0.1	-3	Sa	0701	-0.1	-3	Tu	0745	0.0	0
	1253	0.8	24		1244	0.9	27		1304	0.7	21		1359	0.7	21
	1902	-0.2	-6		1853	-0.2	-6		1913	-0.1	-3		2007	0.0	0
12 F	0112	0.8	24	27	0105	0.9	27	12	0119	0.7	21	12	0204	0.6	18
	0713	-0.1	-3	Sa	0709	-0.1	-3	Su	0721	0.0	0	W	0808	0.0	0
	1312	0.8	24		1311	0.8	24		1328	0.7	21		1428	0.6	18
	1923	-0.1	-3		1922	-0.1	-3		1937	0.0	0		2036	0.1	3
13 Sa	0130	0.7	21	28	0131	0.8	24	13	0139	0.6	18	13	0227	0.5	15
	0729	0.0	0	Su	0733	0.0	0	M	0741	0.0	0	Th	0832	0.1	3
	1331	0.7	21		1340	0.8	24		1352	0.6	18		1500	0.6	18
	1941	-0.1	-3		1954	0.0	0		2000	0.0	0		2108	0.2	6
14 Su	0145	0.7	21	29	0158	0.7	21	14	0158	0.5	15	14	0250	0.5	15
	0744	0.0	0	M	0759	0.0	0	Tu	0801	0.0	0	F	0842	0.1	3
	1348	0.6	18		1412	0.7	21		1417	0.6	18		1513	0.7	21
	1957	0.0	0		2028	0.1	3		2025	0.1	3		2131	0.2	6
15 M	0157	0.6	18	30	0226	0.6	18	15	0216	0.5	15	15	0315	0.5	15
	0754	0.1	3	Tu	0825	0.1	3	W	0819	0.1	3	Sa	0934	0.2	6
	1402	0.6	18		1449	0.6	18		1447	0.5	15		1644	0.5	15
	2009	0.1	3		2110	0.2	6		2054	0.2	6		2309	0.3	9
												31	0419	0.4	12
												F	1043	0.2	6
												O	1825	0.5	15

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Papeete Harbor, Tahiti Island, 2013

Times and Heights of High and Low Waters

July					August					September				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0215 0.3 9 0715 0.4 12 1420 0.2 6 2141 0.5 15	16 Tu 0315 0.4 12 1036 0.3 9 2100 0.5 15		1 Th 0513 0.2 6 1100 0.5 15 1708 0.1 3 2322 0.6 18		16 F 0454 0.2 6 1037 0.5 15 1652 0.1 3 2307 0.6 18		1 Su 0524 0.0 0 1129 0.7 21 1738 -0.1 -3 2341 0.7 21		16 M 0500 0.0 0 1111 0.8 24 1727 -0.1 -3 2327 0.8 24					
	2 Tu 0414 0.3 9 0948 0.5 15 1601 0.2 6 2236 0.6 18		2 F 0525 0.1 3 1123 0.6 18 1732 0.0 0 2340 0.6 18		17 Sa 0500 0.1 3 1100 0.7 21 1717 0.0 0 2325 0.7 21		2 M 0538 -0.1 -3 1146 0.8 24 1756 -0.1 -3 2357 0.7 21		17 Tu 0524 -0.1 -3 1137 0.9 27 1750 -0.1 -3 2348 0.8 24					
	3 W 0452 0.2 6 1041 0.5 15 1650 0.1 3 2311 0.6 18		3 Sa 0542 0.0 0 1145 0.6 18 1754 -0.1 -3 2359 0.7 21		18 Su 0520 0.0 0 1127 0.8 24 1743 -0.1 -3 2346 0.7 21		3 Tu 0555 -0.1 -3 1204 0.9 27 1814 -0.1 -3		18 W 0549 -0.2 -6 1203 1.0 30 1813 -0.1 -3					
	4 Th 0521 0.1 3 1117 0.6 18 1726 0.0 0 2339 0.6 18		4 Su 0601 -0.1 -3 1206 0.7 21 1815 -0.1 -3		19 M 0543 -0.1 -3 1155 0.9 27 1809 -0.1 -3		4 W 0013 0.8 24 0612 -0.2 -6 1223 0.9 27 1832 -0.1 -3		19 Th 0010 0.9 27 0614 -0.2 -6 1228 1.0 30 1835 -0.1 -3					
5 F 0546 0.0 0 1147 0.6 18 1755 0.0 0	20 Sa 0529 0.0 0 1132 0.7 21 1747 -0.1 -3 2355 0.7 21		5 M 0018 0.7 21 0619 -0.1 -3 1227 0.8 24 1836 -0.1 -3		20 Tu 0010 0.8 24 0609 -0.2 -6 1223 1.0 30 1835 -0.2 -6		5 Th 0030 0.8 24 0630 -0.2 -6 1243 0.9 27 1851 -0.1 -3		20 F 0032 0.9 27 0639 -0.2 -6 1253 1.0 30 1856 -0.1 -3					
Sa 0610 0.0 0 1214 0.7 21 1822 -0.1 -3	21 Su 0556 0.0 0 1204 0.8 24 1819 -0.1 -3		6 Tu 0037 0.7 21 0638 -0.1 -3 1248 0.8 24 1856 -0.1 -3		21 W 0034 0.9 27 0635 -0.2 -6 1250 1.0 30 1900 -0.1 -3		6 F 0047 0.8 24 0649 -0.2 -6 1303 0.9 27 1909 -0.1 -3		21 Sa 0053 0.9 27 0703 -0.2 -6 1315 0.9 27 1916 -0.1 -3					
7 Su 0029 0.7 21 0633 -0.1 -3 1239 0.7 21 ● 1847 -0.1 -3	22 M 0023 0.8 24 0624 -0.1 -3 1236 0.9 27 ○ 1850 -0.1 -3		7 W 0056 0.8 24 0657 -0.1 -3 1309 0.9 27 1917 -0.1 -3		22 Th 0057 0.9 27 0702 -0.2 -6 1318 1.0 30 1924 -0.1 -3		7 Sa 0104 0.8 24 0708 -0.2 -6 1323 0.9 27 1927 0.0 0		22 Su 0114 0.8 24 0725 -0.1 -3 1335 0.8 24 1933 0.0 0					
8 M 0051 0.7 21 0654 -0.1 -3 1304 0.7 21 1912 -0.1 -3	23 Tu 0051 0.8 24 0653 -0.1 -3 1308 0.9 27 1920 -0.1 -3		8 Th 0114 0.8 24 0716 -0.1 -3 1330 0.9 27 1937 -0.1 -3		23 F 0120 0.9 27 0728 -0.2 -6 1343 0.9 27 1946 0.0 0		8 Su 0121 0.8 24 0728 -0.1 -3 1343 0.8 24 1945 0.0 0		23 M 0132 0.8 24 0745 -0.1 -3 1351 0.7 21 1946 0.0 0					
9 Tu 0113 0.7 21 0716 -0.1 -3 1328 0.8 24 1936 -0.1 -3	24 W 0119 0.8 24 0722 -0.2 -6 1339 0.9 27 1949 -0.1 -3		9 F 0132 0.8 24 0735 -0.1 -3 1351 0.9 27 1956 0.0 0		24 Sa 0142 0.8 24 0753 -0.1 -3 1407 0.8 24 2006 0.0 0		9 M 0138 0.8 24 0749 -0.1 -3 1403 0.7 21 2001 0.1 3		24 Tu 0147 0.7 21 0800 0.0 0 1401 0.6 18 1952 0.1 3					
10 W 0134 0.7 21 0737 -0.1 -3 1352 0.8 24 1959 0.0 0	25 Th 0145 0.8 24 0751 -0.1 -3 1410 0.9 27 2017 0.0 0		10 Sa 0149 0.8 24 0755 -0.1 -3 1413 0.8 24 2016 0.1 3		25 Su 0201 0.8 24 0816 -0.1 -3 1428 0.7 21 2021 0.1 3		10 Tu 0155 0.7 21 0810 0.0 0 1421 0.6 18 2013 0.1 3		25 W 0155 0.6 18 0806 0.1 3 1355 0.5 15 1939 0.2 6					
11 Th 0155 0.7 21 0758 -0.1 -3 1416 0.8 24 2023 0.0 0	26 F 0211 0.8 24 0821 -0.1 -3 1441 0.8 24 2043 0.1 3		11 Su 0205 0.7 21 0815 0.0 0 1436 0.7 21 2034 0.1 3		26 M 0217 0.7 21 0835 0.0 0 1443 0.6 18 2029 0.2 6		11 W 0210 0.6 18 0828 0.1 3 1431 0.5 15 2010 0.2 6		26 Th 0142 0.5 15 0740 0.2 6 1258 0.4 12 ● 1836 0.2 6					
12 F 0214 0.7 21 0820 0.0 0 1443 0.7 21 2047 0.1 3	27 Sa 0235 0.7 21 0849 0.0 0 1511 0.7 21 2107 0.2 6		12 M 0221 0.7 21 0837 0.0 0 1458 0.6 18 2049 0.2 6		27 Tu 0224 0.6 18 0844 0.1 3 1441 0.4 12 ● 2010 0.2 6		12 Th 0211 0.5 15 0828 0.3 9 1344 0.4 12 ● 1843 0.3 9		27 F 0033 0.4 12 0556 0.2 6 1116 0.4 12 2318 0.2 6					
13 Sa 0234 0.6 18 0843 0.0 0 1511 0.7 21 2112 0.2 6	28 Su 0257 0.6 18 0918 0.1 3 1540 0.6 18 2127 0.3 9		13 Tu 0234 0.6 18 0858 0.1 3 1519 0.5 15 2053 0.3 9		28 W 0203 0.5 15 0816 0.2 6 1326 0.4 12 1831 0.3 9		13 F 0042 0.4 12 0548 0.3 9 1036 0.4 12 1649 0.2 6		28 Sa 0453 0.2 6 1046 0.5 15 1659 0.1 3 2300 0.5 15					
14 Su 0252 0.6 18 0908 0.1 3 1544 0.6 18 2140 0.3 9	29 M 0311 0.5 15 0945 0.2 6 1614 0.4 12 ● 2128 0.3 9		14 W 0235 0.5 15 0912 0.2 6 1522 0.4 12 ● 1916 0.3 9		29 Th 0025 0.4 12 0608 0.3 9 1122 0.4 12 1718 0.2 6		14 Sa 0432 0.2 6 1027 0.6 18 1648 0.1 3 2254 0.6 18		29 F 0445 0.1 3 1049 0.6 18 1702 0.0 0 2303 0.6 18					
15 M 0309 0.5 15 0939 0.2 6 1634 0.5 15 ● 2219 0.3 9	30 Tu 0250 0.4 12 1012 0.3 9 2314 0.4 12		15 Th 0047 0.4 12 0643 0.3 9 1042 0.4 12 1635 0.2 6 2303 0.5 15		30 F 0515 0.2 6 1105 0.5 15 1713 0.1 3 2319 0.5 15		15 Su 0440 0.1 3 1047 0.7 21 1705 0.0 0 2308 0.7 21		30 M 0454 0.0 0 1102 0.7 21 1714 0.0 0 2314 0.7 21					
	31 W 0531 0.3 9 1035 0.4 12 1641 0.2 6 2306 0.5 15				31 Sa 0513 0.1 3 1114 0.6 18 1723 0.0 0 2327 0.6 18									

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Papeete Harbor, Tahiti Island, 2013

Times and Heights of High and Low Waters

October			November			December						
Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 1118 0.8 24 1730 -0.1 -3 2328 0.7 21	16 W 0501 -0.1 -3 1117 0.9 27 1729 -0.1 -3 2325 0.8 24		1 F 0516 -0.1 -3 1132 0.9 27 1742 -0.1 -3 2337 0.8 24			16 Sa 0542 -0.1 -3 1155 0.9 27 1801 -0.1 -3 2359 0.8 24			1 Su 0530 -0.1 -3 1145 0.8 24 1752 0.0 0 2352 0.8 24			16 M 0002 0.7 21 0612 -0.1 -3 1221 0.7 21 1825 -0.1 -3
2 W 1136 0.9 27 1747 -0.1 -3 2344 0.8 24	17 Th 0528 -0.2 -6 1143 1.0 30 1752 -0.1 -3 2348 0.9 27		2 Sa 0540 -0.1 -3 1155 0.9 27 1803 -0.1 -3 2359 0.8 24			17 Su 0609 -0.1 -3 1220 0.8 24 1823 -0.1 -3 O			2 M 0600 -0.1 -3 1212 0.8 24 1817 -0.1 -3 ●			17 Tu 0029 0.7 21 0638 -0.1 -3 1244 0.7 21 1847 -0.1 -3
3 Th 1156 0.9 27 1805 -0.1 -3	18 F 0554 -0.2 -6 1208 0.9 27 1813 -0.1 -3 O		3 Su 0605 -0.2 -6 1218 0.9 27 1824 -0.1 -3 ●			18 M 0024 0.8 24 0634 -0.1 -3 1242 0.8 24 1845 -0.1 -3			3 Tu 0021 0.8 24 0632 -0.1 -3 1240 0.8 24 1844 -0.1 -3			18 W 0055 0.7 21 0703 -0.1 -3 1306 0.7 21 1910 -0.1 -3
4 F 1216 1.0 30 ● 1824 -0.1 -3	19 Sa 0011 0.9 27 0619 -0.2 -6 1231 0.9 27 1834 -0.1 -3		4 M 0023 0.8 24 0631 -0.2 -6 1243 0.8 24 1847 -0.1 -3			19 Tu 0049 0.7 21 0659 -0.1 -3 1304 0.7 21 1906 -0.1 -3			4 W 0052 0.8 24 0704 -0.1 -3 1309 0.8 24 1913 -0.1 -3			19 Th 0120 0.7 21 0728 -0.1 -3 1328 0.7 21 1931 -0.1 -3
5 Sa 1237 0.9 27 1843 -0.1 -3	20 Su 0033 0.9 27 0643 -0.2 -6 1253 0.8 24 1854 -0.1 -3		5 Tu 0049 0.8 24 0700 -0.1 -3 1308 0.8 24 1911 0.0 0			20 W 0113 0.7 21 0723 0.0 0 1324 0.6 18 1926 0.0 0			5 Th 0126 0.8 24 0739 -0.1 -3 1339 0.7 21 1943 0.0 0			20 F 0145 0.7 21 0752 0.0 0 1349 0.6 18 1953 0.0 0
6 Su 1258 0.9 27 1902 -0.1 -3	21 M 0054 0.8 24 0705 -0.1 -3 1312 0.7 21 1912 0.0 0		6 W 0117 0.8 24 0730 0.0 0 1334 0.7 21 1936 0.0 0			21 Th 0138 0.6 18 0746 0.0 0 1343 0.6 18 1946 0.0 0			6 F 0202 0.8 24 0815 0.0 0 1411 0.6 18 2016 0.0 0			21 Sa 0210 0.7 21 0816 0.1 3 1409 0.6 18 2014 0.0 0
7 M 1320 0.8 24 1921 0.0 0	22 Tu 0114 0.7 21 0726 -0.1 -3 1328 0.6 18 1927 0.0 0		7 Th 0148 0.7 21 0802 0.1 3 1400 0.6 18 2001 0.1 3			22 F 0203 0.6 18 0809 0.1 3 1359 0.5 15 2004 0.1 3			7 Sa 0242 0.7 21 0856 0.1 3 1444 0.6 18 2053 0.1 3			22 Su 0237 0.6 18 0841 0.1 3 1427 0.5 15 2035 0.1 3
8 Tu 1341 0.7 21 1939 0.0 0	23 W 0133 0.6 18 0743 0.0 0 1341 0.5 15 1939 0.1 3		8 F 0225 0.6 18 0841 0.2 6 1426 0.5 15 2028 0.2 6			23 Sa 0230 0.5 15 0833 0.2 6 1409 0.4 12 2019 0.2 6			8 Su 0333 0.6 18 0949 0.3 9 1524 0.5 15 2143 0.2 6			23 M 0306 0.6 18 0907 0.2 6 1442 0.5 15 2058 0.2 6
9 W 1400 0.6 18 1955 0.1 3	24 Th 0149 0.6 18 0755 0.1 3 1343 0.5 15 1940 0.1 3		9 Sa 0317 0.5 15 0954 0.3 9 1444 0.4 12 2059 0.3 9			24 Su 0307 0.5 15 0903 0.3 9 1341 0.4 12 2011 0.3 9			9 M 0501 0.5 15 1157 0.3 9 1656 0.4 12 2358 0.3 9			24 Tu 0344 0.5 15 0939 0.3 9 1444 0.4 12 2122 0.2 6
10 Th 1409 0.5 15 1958 0.2 6	25 F 0156 0.5 15 0750 0.2 6 1311 0.4 12 1906 0.2 6		10 Su 0741 0.5 15 1533 0.3 9 2118 0.4 12			25 M 0853 0.4 12 1651 0.2 6 2212 0.3 9			10 Tu 0811 0.5 15 1520 0.3 9 2047 0.4 12			25 W 0513 0.5 15 2309 0.3 9 O
11 F 1302 0.4 12 ● 1827 0.3 9	26 Sa 0122 0.4 12 0612 0.3 9 1107 0.4 12 O 1723 0.2 6 2316 0.4 12		11 M 0237 0.3 9 0918 0.6 18 1556 0.2 6 2146 0.5 15			26 Tu 0240 0.2 6 0934 0.5 15 1619 0.2 6 2159 0.4 12			11 W 0248 0.2 6 0939 0.6 18 1608 0.2 6 2151 0.5 15			26 Th 0948 0.5 15 1651 0.3 9 2201 0.4 12
12 Sa 1623 0.2 6 2225 0.5 15	27 Su 0413 0.3 9 1013 0.5 15 1638 0.2 6 2233 0.4 12		12 Tu 0333 0.2 6 0959 0.7 21 1622 0.1 3 2214 0.6 18			27 W 0329 0.2 6 1001 0.6 18 1629 0.2 6 2214 0.5 15			12 Th 0354 0.1 3 1024 0.7 21 1641 0.1 3 2230 0.6 18			27 F 0341 0.2 6 1024 0.6 18 1651 0.2 6 2229 0.5 15
13 Su 1626 0.1 3 2225 0.6 18	28 M 0404 0.2 6 1016 0.6 18 1637 0.1 3 2233 0.5 15		13 W 0410 0.1 3 1032 0.8 24 1647 0.0 0 2241 0.7 21			28 Th 0401 0.1 3 1026 0.7 21 1646 0.1 3 2235 0.6 18			13 F 0437 0.0 0 1059 0.7 21 1710 0.1 3 2304 0.7 21			28 Sa 0427 0.1 3 1053 0.7 21 1707 0.1 3 2257 0.6 18
14 M 1644 0.0 0 2242 0.7 21	29 Tu 0416 0.1 3 1031 0.7 21 1649 0.0 0 2244 0.6 18		14 Th 0443 0.0 0 1102 0.9 27 1713 0.0 0 2308 0.8 24			29 F 0431 0.0 0 1052 0.8 24 1707 0.1 3 2258 0.7 21			14 Sa 0512 0.0 0 1129 0.7 21 1736 0.0 0 2334 0.7 21			29 Su 0502 0.0 0 1120 0.7 21 1728 0.0 0 2326 0.7 21
15 Tu 1706 0.0 0 2303 0.8 24	30 W 0434 0.0 0 1049 0.8 24 1705 0.0 0 2259 0.7 21		15 F 0513 -0.1 -3 1130 0.9 27 1737 0.0 0 2334 0.8 24			30 Sa 0500 0.0 0 1118 0.8 24 1729 0.0 0 2324 0.7 21			15 Su 0543 -0.1 -3 1156 0.7 21 1801 0.1 3 2355 0.8 24			30 M 0535 -0.1 -3 1148 0.7 21 1752 0.0 0 2355 0.8 24
31 Th 1723 0.0 0 2317 0.8 24	31 W 0454 0.0 0 1110 0.9 27 1723 0.0 0 2317 0.8 24											

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to mean lower low water which is the chart datum of soundings.

Apia, Samoa Islands, 2013

Times and Heights of High and Low Waters

January					February					March					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 Tu	0245	0.3	9	16 W	0353	0.1	3	1 F	0336	0.4	12	16 Sa	0458	0.7	21
	0842	2.7	82		0950	2.9	88		0946	2.9	88		1056	2.7	82
	1447	0.6	18		1617	0.4	12		1606	0.5	15		1745	0.8	24
	2054	3.0	91		2208	2.9	88		2208	2.8	85		2320	2.3	70
2 W	0325	0.4	12	17 Th	0447	0.3	9	2 Sa	0430	0.5	15	17 Su	0559	0.8	24
	0926	2.7	82		1045	2.8	85		1043	2.9	88		1156	2.6	79
	1535	0.7	21		1720	0.6	18		1714	0.6	18		1855	0.9	27
	2141	2.9	88		2304	2.6	79		2310	2.7	82				
3 Th	0410	0.5	15	18 F	0545	0.5	15	3 Su	0535	0.5	15	18 M	0027	2.2	67
	1017	2.7	82		1145	2.7	82		1148	2.9	88		0704	0.9	27
	1631	0.7	21		1827	0.7	21		1831	0.6	18		1301	2.5	76
	2234	2.8	85									O	2000	0.8	24
4 F	0503	0.5	15	19 Sa	0006	2.4	73	4 M	0020	2.6	79	19 Tu	0136	2.2	67
	1113	2.8	85		0646	0.7	21		0648	0.5	15		0805	0.9	27
	1739	0.7	21		1248	2.6	79		1258	3.0	91		1402	2.6	79
	2335	2.7	82		1935	0.8	24		1947	0.4	12		2055	0.7	21
5 Sa	0605	0.5	15	20 Su	0113	2.3	70	5 Tu	0133	2.6	79	20 W	0236	2.3	70
	1215	2.8	85		0746	0.7	21		0800	0.4	12		0857	0.8	24
	1851	0.6	18		1349	2.6	79		1406	3.1	94		1452	2.7	82
					2036	0.7	21		2053	0.3	9		2140	0.6	18
6 Su	0041	2.7	82	21 M	0217	2.3	70	6 W	0242	2.8	85	21 Th	0323	2.4	73
	0711	0.5	15		0841	0.7	21		0904	0.3	9		0941	0.7	21
	1319	3.0	91		1443	2.7	82		1509	3.3	101		1535	2.9	88
	2001	0.5	15		2128	0.6	18		2152	0.0	0		2219	0.5	15
7 M	0149	2.7	82	22 Tu	0311	2.3	70	7 Th	0343	2.9	88	22 F	0403	2.6	79
	0815	0.4	12		0929	0.7	21		1001	0.1	3		1020	0.6	18
	1422	3.2	98		1529	2.8	85		1606	3.5	107		1614	3.0	91
	2105	0.2	6		2212	0.5	15		2244	-0.2	-6		2254	0.3	9
8 Tu	0253	2.8	85	23 W	0355	2.4	73	8 F	0437	3.1	94	23 Sa	0439	2.7	82
	0915	0.2	6		1010	0.6	18		1053	-0.1	-3		1056	0.4	12
	1522	3.4	104		1608	2.9	88		1658	3.7	113		1650	3.1	94
	2202	0.0	0		2251	0.4	12		2332	-0.3	-9		2327	0.2	6
9 W	0353	3.0	91	24 Th	0434	2.5	76	9 Sa	0527	3.3	101	24 Su	0514	2.9	88
	1011	0.0	0		1048	0.5	15		1143	-0.2	-6		1131	0.3	101
	1617	3.6	110		1644	3.0	91		1746	3.7	113		1727	3.3	101
	2256	-0.2	-6		2326	0.3	9						2359	0.1	3
10 Th	0448	3.1	94	25 F	0509	2.6	79	10 Su	0018	-0.3	-9	25 M	0550	3.0	91
	1104	-0.1	-3		1123	0.4	12		0613	3.3	101		1205	0.2	6
	1710	3.7	113		1719	3.1	94		1230	-0.2	-6		1804	3.3	101
	2346	-0.3	-9		2359	0.2	6		● 1832	3.7	113				
11 F	0540	3.3	101	26 Sa	0544	2.7	82	11 M	0103	-0.3	-9	26 Tu	0032	0.1	3
	1155	-0.2	-6		1157	0.4	12		0658	3.3	101		0626	3.2	98
	1800	3.8	116		1754	3.2	98		1317	-0.1	-3		1242	0.2	6
									1917	3.5	107		○ 1842	3.4	104
12 Sa	0036	-0.4	-12	27 Su	0031	0.1	3	12 Tu	0147	-0.2	-6	27 W	0039	-0.1	-3
	0630	3.3	101		0619	2.8	85		0743	3.3	101		0635	3.4	104
	1245	-0.2	-6		1231	0.3	9		1404	0.0	0		1257	0.0	0
	● 1849	3.8	116		○ 1830	3.3	101		2001	3.3	101		1853	3.4	104
13 Su	0124	-0.4	-12	28 M	0104	0.1	3	13 W	0231	0.0	0	28 Th	0143	0.1	3
	0720	3.3	101		0655	2.9	88		0827	3.1	94		0747	3.2	98
	1335	-0.1	-3		1306	0.3	9		1452	0.2	6		1404	0.2	6
	1938	3.7	113		1907	3.3	101		2045	3.1	94		2007	3.2	98
14 M	0213	-0.3	-9	29 Tu	0137	0.1	3	14 Th	0316	0.2	6	14 F	0159	0.2	6
	0809	3.2	98		0732	3.0	91		0913	3.0	91		0756	3.2	98
	1427	0.0	0		1342	0.3	9		1543	0.4	12		1425	0.3	9
	2026	3.4	104		1946	3.2	98		2132	2.8	85		2015	3.0	91
15 Tu	0302	-0.1	-3	30 W	0212	0.2	6	15 F	0405	0.5	15	15 F	0240	0.4	12
	0859	3.1	94		0813	3.0	91		1002	2.8	85		0837	3.0	91
	1520	0.2	6		1423	0.4	12		1640	0.6	18		1512	0.5	15
	2116	3.2	98		2028	3.1	94		2222	2.5	76		2058	2.8	85
31 Th				31 Th	0251	0.3	9					31 Su	0257	0.3	9
					0857	3.0	91						0907	3.3	101
					1510	0.4	12						1543	0.3	9
					2115	3.0	91						2140	2.9	88

Time meridian 195° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Apia, Samoa Islands, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
1 M	0358	0.4	12	16	0426	1.0	30	1	0457	0.4	12	16	0439	0.9	27
	1007	3.2	98	Tu	1023	2.7	82	W	1100	3.1	94	Sa	0658	0.3	9
	1652	0.4	12		1722	0.8	24		1748	0.2	6	Th	1035	2.6	79
	2246	2.8	85		2301	2.3	70		2345	2.8	85	Su	1251	2.7	82
2 Tu	0509	0.6	18	17	0528	1.0	30	2	0610	0.5	15	2	0133	2.7	82
	1115	3.1	94	W	1119	2.6	79	2	1209	3.0	91	Su	0802	0.3	9
	1806	0.4	12		1822	0.8	24	2	1855	0.2	6	M	1355	2.6	79
	2358	2.7	82									Th	2026	0.2	6
3 W	0625	0.6	18	18	0002	2.3	70	3	0054	2.8	85	3	0231	2.8	85
	1227	3.1	94	Th	0632	1.0	30	3	0720	0.4	12	M	0901	0.3	9
	1918	0.4	12		1218	2.6	79	3	1317	3.0	91	Sa	1225	2.5	76
3 O					1918	0.8	24	3	1958	0.2	6	O	1911	0.6	18
4 Th	0112	2.8	85	19	0101	2.4	73	4	0159	2.9	88	4	0321	2.8	85
	0737	0.5	15	F	0731	1.0	30	4	0824	0.3	9	Tu	0953	0.2	6
	1338	3.1	94		1315	2.6	79	4	1420	3.0	91		1543	2.5	76
	2022	0.3	9	4	2007	0.7	21	4	2053	0.2	6		2203	0.2	6
5 F	0219	2.9	88	20	0154	2.5	76	5	0255	3.0	91	5	0405	2.9	88
	0841	0.4	12	Sa	0822	0.8	24	5	0920	0.3	9	W	1040	0.2	6
	1441	3.2	98		1408	2.7	82	5	1516	3.0	91	M	1415	2.7	82
	2118	0.1	3		2051	0.6	18	5	2143	0.1	3	Su	2046	0.3	9
6 Sa	0316	3.0	91	21	0240	2.7	82	6	0345	3.0	91	21	0402	3.3	101
	0937	0.2	6	Su	0908	0.6	18	6	1011	0.2	6	F	1040	-0.2	-6
	1537	3.3	101		1456	2.9	88	6	1605	2.9	88		1631	2.9	88
	2207	0.1	3		2131	0.4	12	6	2228	0.2	6		2247	-0.2	-6
7 Su	0406	3.2	98	22	0324	2.9	88	7	0428	3.1	94	22	0454	3.5	107
	1027	0.1	3	M	0951	0.4	12	7	1057	0.1	3	Sa	1131	-0.4	-12
	1625	3.3	101		1541	3.0	91	7	1649	2.9	88		1725	3.0	91
	2252	0.0	0		2209	0.3	9	7	2309	0.2	6		2339	-0.3	-9
8 M	0450	3.3	101	23	0406	3.1	94	8	0508	3.2	98	8	0000	0.3	9
	1113	0.1	3	Tu	1033	0.2	6	8	1140	0.1	3	Sa	0558	3.0	91
	1709	3.3	101		1626	3.2	98	8	1729	2.9	88		1239	0.1	3
	2334	0.0	0		2249	0.1	3	8	2347	0.2	6		1822	2.5	76
9 Tu	0531	3.3	101	24	0449	3.4	104	9	0545	3.2	98	9	0036	0.3	9
	1157	0.1	3	W	1116	0.0	0	9	1220	0.2	6	M	0633	3.0	91
	1750	3.2	98		1711	3.3	101	9	1807	2.8	85	Su	1316	0.1	3
					2330	0.0	0	9				O	1900	2.5	76
10 W	0013	0.1	3	25	0533	3.5	107	10	0024	0.3	9	10	0112	0.4	12
	0610	3.3	101	Th	1201	-0.1	-3	10	0622	3.1	94	M	0710	2.9	88
	1238	0.1	3		1758	3.3	101	10	1259	0.2	6	Sa	1354	0.2	6
	1830	3.1	94					10	1844	2.7	82	O	1938	2.5	76
11 Th	0051	0.2	6	26	0013	0.0	0	11	0101	0.4	12	11	0149	0.4	12
	0647	3.3	101	F	0619	3.6	110	11	0658	3.1	94	11	0748	2.9	88
	1319	0.2	6		1248	-0.1	-3	11	1339	0.3	9	W	1431	0.2	6
	1908	3.0	91		1846	3.3	101	11	1923	2.6	79		2018	2.4	73
12 F	0129	0.3	9	27	0100	0.0	0	12	0138	0.5	15	12	0228	0.5	15
	0725	3.2	98	Sa	0707	3.6	110	12	0736	3.0	91	12	0828	2.8	85
	1401	0.3	9		1339	-0.1	-3	12	1419	0.4	12	M	1510	0.3	9
	1948	2.8	85		1937	3.2	98	12	2003	2.5	76	Su	2100	2.4	73
13 Sa	0207	0.5	15	28	0150	0.1	3	13	0217	0.6	18	13	0309	0.6	18
	0805	3.1	94	Su	0758	3.6	110	13	0816	2.9	88	13	0910	2.7	82
	1444	0.5	15		1434	-0.1	-3	13	1502	0.4	12	M	1551	0.4	12
	2029	2.7	82		2031	3.1	94	13	2046	2.5	76	Su	2145	2.4	73
14 Su	0248	0.7	21	29	0246	0.2	6	14	0259	0.7	21	14	0355	0.6	18
	0847	2.9	88	M	0854	3.5	107	14	0859	2.8	85	14	0956	2.6	79
	1531	0.6	18		1534	0.0	0	14	1547	0.5	15	14	1636	0.4	12
	2114	2.5	76		2131	2.9	88	14	2133	2.4	73	14	2234	2.4	73
15 M	0333	0.8	24	30	0348	0.3	9	15	0346	0.8	24	15	0448	0.7	21
	0932	2.8	85	Tu	0954	3.3	101	15	0945	2.7	82	15	1046	2.5	76
	1624	0.7	21		1640	0.1	3	15	1636	0.6	18	15	1724	0.4	12
	2205	2.4	73		2235	2.8	85	15	2223	2.3	70	15	2326	2.4	73
								31	0549	0.3	9	31	1145	2.9	88
								31	1828	0.1	3	31	1857	0.2	6

Time meridian 195° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Apia, Samoa Islands, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0101	2.6	79	16 Tu 0616	0.5	15	1 Th 0225	2.5	76	1 Su 0322	2.7	82
0737	0.3	9	1207	2.4	73	0909	0.4	12	1004	0.4	12
1325	2.3	70	1834	0.3	9	1455	2.1	64	1550	2.5	76
1955	0.3	9	●			2112	0.5	15	2207	0.5	15
2 Tu 0202	2.6	79	17 W 0045	2.6	79	2 0314	2.6	79	2 M 0400	2.9	88
0839	0.3	9	0726	0.3	9	0956	0.3	9	1039	0.3	9
1426	2.3	70	1313	2.4	73	1542	2.2	67	1625	2.6	79
2049	0.3	9	1939	0.2	6	2156	0.4	12	2243	0.4	12
3 W 0255	2.6	79	18 Th 0148	2.8	85	3 Sa 0355	2.7	82	3 Tu 0436	3.0	91
0933	0.3	9	0832	0.2	6	1037	0.2	6	1112	0.2	6
1521	2.2	67	1419	2.5	76	1622	2.3	70	1659	2.8	85
2138	0.3	9	2041	0.1	3	2235	0.3	9	2317	0.3	9
4 Th 0342	2.7	82	19 F 0249	3.0	91	4 Su 0432	2.8	85	4 W 0511	3.1	94
1020	0.2	6	0931	-0.1	-3	1113	0.1	3	1143	0.1	3
1606	2.3	70	1520	2.6	79	1657	2.4	73	1733	2.9	88
2221	0.3	9	2139	-0.1	-3	2312	0.3	9	2351	0.2	6
5 F 0422	2.7	82	20 Sa 0346	3.3	101	5 M 0507	2.9	88	5 Th 0547	3.1	94
1102	0.1	3	1026	-0.3	-9	1146	0.1	3	1215	0.1	3
1646	2.3	70	1617	2.8	85	1731	2.5	76	1808	3.0	91
2300	0.3	9	2233	-0.2	-6	2346	0.2	6	○ 1853	3.4	104
6 Sa 0458	2.8	85	21 Su 0440	3.4	104	6 Tu 0541	3.0	91	6 W 0003	-0.4	-12
1140	0.1	3	1118	-0.5	-15	1219	0.0	0	0605	3.6	110
1723	2.4	73	1711	3.0	91	1805	2.6	79	1236	-0.5	-15
2337	0.2	6	2326	-0.4	-12	○ 1832	3.3	101	● 1845	3.1	94
7 Su 0534	2.9	88	22 M 0532	3.6	110	7 W 0019	0.2	6	21 Tu 0003	-0.4	-12
1216	0.0	0	1208	-0.6	-18	0616	3.0	91	0623	3.2	98
1759	2.4	73	1802	3.1	94	1251	0.0	0	1247	0.1	3
● 1834	2.5	76	○ 1853	3.1	94	● 1840	2.7	82	○ 1836	3.3	101
8 M 0012	0.2	6	23 Tu 0018	-0.4	-12	8 Th 0053	0.2	6	22 Sa 0051	-0.4	-12
0608	2.9	88	0623	3.6	110	0652	3.0	91	0652	3.5	107
1250	0.0	0	1257	-0.6	-18	1323	0.0	0	1321	-0.4	-12
● 1834	2.5	76	○ 1853	3.1	94	1916	2.7	82	1918	3.3	101
9 Tu 0047	0.2	6	24 W 0109	-0.4	-12	9 F 0128	0.2	6	23 Su 0140	-0.2	-6
0644	2.9	88	0712	3.5	107	0729	3.0	91	0739	3.3	101
1324	0.0	0	1346	-0.6	-18	1356	0.1	3	1408	-0.2	-6
1911	2.5	76	1943	3.1	94	1954	2.7	82	2005	3.2	98
10 W 0121	0.3	9	25 Th 0201	-0.3	-9	10 Sa 0206	0.2	6	8 Su 0142	0.2	6
0720	2.9	88	0802	3.4	104	0809	2.9	88	0744	3.0	91
1358	0.1	3	1436	-0.4	-12	1431	0.1	3	1400	0.2	6
1948	2.5	76	2034	3.0	91	2035	2.7	82	2007	3.1	94
11 Th 0157	0.3	9	26 F 0255	-0.2	-6	11 Su 0249	0.3	9	23 M 0142	0.3	9
0758	2.8	85	0853	3.1	94	0853	2.7	82	0826	3.1	94
1433	0.1	3	1528	-0.2	-6	1512	0.2	6	1455	0.0	0
2027	2.5	76	2126	2.9	88	2122	2.7	82	2053	3.0	91
12 F 0236	0.4	12	27 Sa 0352	0.0	0	12 M 0340	0.4	12	26 Tu 0324	0.2	6
0838	2.7	82	0946	2.8	85	0942	2.6	79	0915	2.8	85
1509	0.2	6	1622	0.0	0	1600	0.3	9	1546	0.2	6
2109	2.5	76	2221	2.7	82	2214	2.7	82	2144	2.8	85
13 Sa 0318	0.4	12	28 Su 0454	0.2	6	13 Tu 0441	0.5	15	27 W 0324	0.2	6
0921	2.6	79	1043	2.6	79	1039	2.5	76	0922	2.8	85
1550	0.3	9	1720	0.2	6	1700	0.4	12	1536	0.5	15
2155	2.5	76	2321	2.6	79	2315	2.7	82	2151	3.0	91
14 Su 0408	0.5	15	29 M 0601	0.4	12	14 W 0554	0.5	15	25 Tu 0321	0.4	12
1010	2.5	76	1145	2.3	70	1145	2.4	73	0922	2.8	85
1637	0.3	9	1822	0.4	12	1810	0.4	12	1501	0.6	15
2246	2.5	76	● 1923	0.5	15	● 1922	0.4	12	2255	2.7	82
15 M 0508	0.5	15	30 W 0024	2.5	76	15 Th 0022	2.8	85	25 W 0450	0.7	21
1105	2.4	73	0709	0.4	12	0709	0.4	12	1030	2.4	73
1732	0.3	9	1252	2.2	67	1256	2.4	73	1701	0.9	27
2344	2.5	76	● 1923	0.5	15	1922	0.4	12	2255	2.7	82
16 W 0128	0.4	12	31 W 0128	2.5	76	14 Th 0554	0.5	15	27 F 0700	0.8	24
0813	0.4	12	0813	0.4	12	0741	0.6	18	1242	2.3	70
1358	2.1	64	1358	2.1	64	1324	2.2	67	1911	1.0	30
2021	0.5	15	2021	0.5	15	1949	0.7	21	●		

Time meridian 195° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Apia, Samoa Islands, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0323	2.9	88	16 W 0356	3.4	104	1 F 0407	3.1	94	1 Su 0511	3.1	94
1000	0.4	12	W 1023	0.0	0	F 1030	0.3	9	Sa 1128	0.3	9
1549	2.8	85	1622	3.4	104	1629	3.4	104	1728	3.4	104
2212	0.5	15	2247	0.1	3	2258	0.3	9	1649	3.6	110
									2323	0.0	0
2 W 0401	3.0	91	17 Th 0444	3.4	104	2 Sa 0450	3.2	98	2 M 0515	3.2	98
1033	0.3	9	Th 1107	0.0	0	Sa 1108	0.2	6	1129	0.1	3
1625	3.0	91	1706	3.5	107	1711	3.5	107	1207	0.4	12
2247	0.4	12	2333	0.0	0	2340	0.1	3	1806	3.4	104
3 Th 0439	3.2	98	18 F 0528	3.4	104	3 Su 0534	3.3	101	18 0044	0.2	6
1106	0.3	9	F 1149	0.1	3	Su 1149	0.2	6	M 0630	2.9	88
1700	3.2	98	1748	3.5	107	1754	3.6	110	1245	0.5	15
2323	0.3	9				O 1844	3.3	101	1825	3.8	116
4 F 0517	3.2	98	19 Sa 0017	0.1	3	4 M 0024	0.1	3	3 Tu 0010	-0.1	-3
1140	0.2	6	Sa 0610	3.3	101	M 0620	3.3	101	W 0065	3.3	101
1738	3.3	101	1230	0.2	6	M 1232	0.2	6	1216	0.0	0
			O 1828	3.5	107	● 1840	3.7	113	1307	0.0	0
5 Sa 0001	0.2	6	20 Su 0101	0.2	6	5 Tu 0112	0.0	0	1915	3.8	116
0557	3.3	101	Su 0651	3.1	94	Tu 0709	3.3	101	1000	-0.2	-6
1215	0.2	6	Su 1310	0.3	9	Tu 1319	0.2	6	0655	3.3	101
● 1817	3.4	104	1908	3.4	104	Tu 1929	3.7	113	1825	3.8	116
6 Su 0041	0.1	3	21 M 0144	0.3	9	6 W 0203	0.1	3	19 0139	0.3	9
0639	3.3	101	M 0732	3.0	91	W 0800	3.2	98	W 0724	2.7	82
1254	0.2	6	M 1351	0.5	15	W 1412	0.3	9	Th 1336	0.6	18
1859	3.5	107	1949	3.2	98	W 2022	3.6	110	1934	3.1	94
7 M 0125	0.2	6	22 Tu 0230	0.5	15	7 Th 0300	0.2	6	19 0216	0.4	12
0724	3.2	98	Tu 0816	2.8	85	Th 0857	3.1	94	W 0803	2.7	82
1336	0.3	9	Tu 1434	0.7	21	M 1511	0.4	12	F 1414	0.7	21
1945	3.4	104	Tu 2032	3.1	94	M 2119	3.5	107	2012	3.0	91
8 Tu 0214	0.2	6	23 W 0318	0.6	18	8 F 0403	0.3	9	21 0253	0.4	12
0813	3.1	94	W 0902	2.6	79	W 0959	3.0	91	Sa 0843	2.6	79
1425	0.4	12	W 1521	0.9	27	W 1618	0.5	15	F 1453	0.8	24
2036	3.4	104	W 2119	2.9	88	W 2222	3.3	101	2052	2.9	88
9 W 0310	0.3	9	24 Th 0411	0.8	24	9 Sa 0510	0.3	9	21 0253	0.4	12
0908	2.9	88	Th 0953	2.5	76	Sa 1106	2.9	88	W 0843	2.6	79
1522	0.5	15	Th 1616	1.0	30	Sa 1730	0.6	18	F 1453	0.8	24
2134	3.3	101	Th 2210	2.8	85	Sa 2330	3.2	98	2022	3.1	94
10 Th 0415	0.4	12	25 F 0510	0.9	27	10 M 0618	0.4	12	22 0333	0.5	15
1011	2.8	85	F 1050	2.4	73	Su 1216	2.9	88	Su 0926	2.6	79
1629	0.6	18	F 1718	1.1	34	Su 1843	0.6	18	Sa 1537	0.8	24
2238	3.2	98	F 2306	2.7	82	● 1931	0.5	15	2135	2.8	85
11 F 0527	0.5	15	26 Sa 0609	0.9	27	11 M 0040	3.1	94	23 0415	0.6	18
1121	2.8	85	Sa 1152	2.4	73	M 0723	0.3	9	W 1045	3.0	91
1745	0.7	21	Sa 1822	1.1	34	M 1323	3.0	91	Th 1627	0.9	27
2349	3.1	94				M 1951	0.5	15	2223	2.7	82
12 Sa 0640	0.4	12	27 Su 0005	2.6	79	12 Tu 0146	3.1	94	24 0501	0.7	21
1233	2.8	85	Su 0705	0.9	27	Tu 0822	0.3	9	W 1102	2.5	76
1900	0.6	18	Su 1251	2.5	76	Tu 1424	3.1	94	Th 1725	0.9	27
			● 1921	1.1	34	Tu 2051	0.4	12	2316	2.6	79
13 Su 0100	3.2	98	28 M 0102	2.7	82	13 W 0247	3.1	94	24 0501	0.7	21
0746	0.3	9	M 0755	0.8	24	W 0915	0.3	9	W 1102	2.5	76
1342	2.9	88	M 1343	2.6	79	M 1517	3.2	98	Th 1725	0.9	27
2007	0.5	15	M 2012	0.9	27	M 2145	0.3	9	2316	2.6	79
14 M 0206	3.2	98	29 Tu 0154	2.8	85	14 Th 0340	3.1	94	24 0501	0.7	21
0844	0.2	6	Tu 0838	0.7	21	Th 1003	0.2	6	W 1045	0.5	15
1442	3.1	94	Tu 1428	2.8	85	Th 1605	3.3	101	W 1429	2.9	88
2106	0.3	9	Tu 2057	0.8	24	Th 2234	0.2	6	W 2104	0.6	18
15 Tu 0304	3.3	101	30 W 0241	2.9	88	15 F 0427	3.1	94	13 0323	2.8	85
0936	0.1	3	W 0917	0.6	18	W 0958	0.3	9	W 0943	0.4	12
1535	3.3	101	W 1509	3.0	91	W 1648	3.4	104	F 1548	3.1	94
2158	0.1	3	W 2138	0.6	18	W 2320	0.2	6	W 2222	0.3	9
			31 Th 0325	3.0	91				28 0840	0.5	15
			Th 0953	0.5	15				Sa 1446	3.1	94
			Th 1549	3.2	98				Sa 2127	0.4	12
			Th 2218	0.4	12				28 0216	2.7	82

Time meridian 195° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2013

Times and Heights of High and Low Waters

January			February			March					
Time	Height		Time	Height		Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm			
1 Tu	0257	0.2	6	16	0341	-0.3	-9	1	0347	0.2	6
	0914	4.0	122	W	1004	4.7	143	F	1007	4.4	134
	1507	0.9	27		1611	0.4	12	Sa	1617	0.6	18
	2110	4.2	128		2214	4.5	137		2220	4.1	125
2 W	0336	0.2	6	17	0431	0.0	0	2	0432	0.4	12
	0955	4.1	125	Th	1055	4.6	140	Sa	1054	4.4	134
	1553	1.0	30		1708	0.5	15	Su	1711	0.6	18
	2154	4.1	125		2309	4.1	125		2315	3.9	119
3 Th	0416	0.3	9	18	0521	0.4	12	3	0523	0.5	15
	1039	4.2	128	F	1148	4.4	134	Su	1147	4.4	134
	1642	0.9	27		1807	0.7	21		1812	0.5	15
	2242	4.0	122					18	0030	3.4	104
4 F	0501	0.4	12	19	0007	3.8	116	3	0411	0.3	9
	1126	4.2	128	Sa	0614	0.7	21	Su	1029	4.6	140
	1736	0.9	27	M	1242	4.3	131		1252	3.9	119
	2336	3.8	116	O	1907	0.8	24		1925	0.8	24
5 Sa	0550	0.5	15	20	0109	3.6	110	4	0132	3.3	101
	1217	4.3	131	Su	0709	0.9	27	Tu	0725	1.2	37
	1835	0.8	24		1337	4.1	125	M	1245	4.5	137
					2008	0.8	24	O	1916	0.4	12
6 Su	0037	3.8	116	21	0211	3.4	104	4	0505	0.5	15
	0645	0.6	18	M	0805	1.1	34	Tu	1125	4.5	137
	1311	4.4	134		1430	4.1	125	M	1754	0.2	6
	1938	0.6	18		2105	0.7	21	O	1907	0.8	24
7 M	0143	3.8	116	22	0311	3.4	104	5	0126	3.7	113
	0744	0.6	18	Tu	0900	1.1	34	Su	0724	0.7	21
	1409	4.6	140		1521	4.1	125	M	1347	4.5	137
	2040	0.3	9		2157	0.6	18		2022	0.2	6
8 Tu	0249	3.8	116	23	0404	3.4	104	6	0233	3.3	101
	0845	0.6	18	W	0951	1.1	34	Tu	0823	1.2	37
	1507	4.8	146		1608	4.2	128	M	1444	3.9	119
	2140	0.0	0		2242	0.5	15	O	2119	0.7	21
9 W	0352	4.0	122	24	0451	3.5	107	6	0006	3.8	116
	0946	0.4	12	Th	1037	1.1	34	Tu	0607	0.6	18
	1604	5.0	152		1652	4.2	128	M	1226	4.4	134
	2237	-0.3	-9		2324	0.4	12	O	1859	0.2	6
10 Th	0451	4.2	128	25	0533	3.7	113	7	0223	3.8	116
	1045	0.3	9	F	1120	1.0	30	Tu	0917	1.1	34
	1700	5.2	158		1732	4.3	131	M	1534	3.9	119
	2332	-0.5	-15					O	2207	0.6	18
11 F	0547	4.5	137	26	0002	0.2	6	7	0328	3.5	107
	1142	0.2	6	Sa	0613	3.8	116	Tu	0821	0.6	18
	1754	5.3	162		1201	0.9	27	M	1620	4.1	125
					1811	4.4	134	O	2249	0.4	12
12 Sa	0024	-0.7	-21	27	0039	0.1	3	7	0223	3.8	116
	0641	4.6	140	Su	0650	4.0	122	Tu	1006	1.0	30
	1236	0.1	3		1241	0.8	24	M	1620	4.1	125
	● 1846	5.3	162	O	1849	4.5	137	O	2233	-0.2	-6
13 Su	0114	-0.8	-24	28	0115	0.1	3	8	0459	3.7	113
	0732	4.8	146	M	0727	4.1	125	Th	1051	0.9	27
	1330	0.0	0		1320	0.7	21	Sa	1703	4.2	128
	1938	5.3	162		1927	4.5	137		2328	0.3	9
14 M	0204	-0.7	-21	29	0151	0.0	0	9	0459	4.2	128
	0823	4.8	146	Tu	0805	4.2	128	Sa	1118	0.1	3
	1423	0.1	3		1401	0.7	21	M	1214	0.6	18
	2030	5.1	155		2006	4.4	134	O	1822	4.4	134
15 Tu	0253	-0.6	-18	30	0227	0.1	3	10	0516	4.4	134
	0913	4.8	146	W	0843	4.3	131	Su	1227	4.8	146
	1517	0.2	6		1443	0.6	18	M	1710	4.2	128
	2121	4.8	146		2047	4.4	134	O	2326	0.1	3
16 F	0306	0.1	3	31	0306	0.1	3	11	0603	4.6	140
	0924	4.4	134	Th	0924	4.4	134	Tu	1209	0.0	0
	1528	0.6	18		1528	0.6	18	M	1816	4.8	146
	2131	4.2	128		2131	4.2	128	O	1753	4.3	131

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2013

Times and Heights of High and Low Waters

April					May					June					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 M	0354	0.2 6		16	0421	0.9 27	1	0442	0.2 6	16	0437	0.9 27	1	0026	4.1 125
	1009	4.6 140	Tu	1033	3.7 113		W	1052	4.4 134	Th	1044	3.6 110	Sa	0636	0.2 6
	1637	-0.2 -6		1704	0.5 15		1722	-0.4 -12		1715	0.3 9	Su	1240	4.0 122	
	2253	4.0 122		2318	3.3 101		2345	4.0 122		2334	3.3 101	O	1859	-0.2 -6	
2 Tu	0453	0.4 12	17	0511	1.0 30	2	0547	0.3 9	17	0529	1.0 30	2	0126	4.1 125	
	1108	4.5 137	W	1123	3.6 110	Th	1156	4.3 131	F	1134	3.4 104	Su	0741	0.2 6	
	1738	-0.1 -3		1756	0.6 18	O	1824	-0.3 -9		1802	0.4 12		1344	3.8 116	
	2357	3.9 119											1957	0.0 0	
3 W	0557	0.5 15	18	0012	3.2 98	3	0049	4.0 122	18	0024	3.4 104	3	0223	4.1 125	
	1211	4.3 131	Th	0606	1.1 34	F	0654	0.4 12	Sa	0623	1.0 30	M	0842	0.2 6	
	1843	0.0 0		1218	3.5 107		1302	4.1 125		1227	3.4 104	Tu	1446	3.7 113	
O				1849	0.6 18		1926	-0.1 -3	O	1851	0.4 12		2052	0.2 6	
4 Th	0105	3.8 116	19	0107	3.3 101	4	0151	4.1 125	19	0113	3.5 107	4	0316	4.1 125	
	0706	0.5 15	F	0703	1.1 34	Sa	0800	0.3 9	Su	0718	0.9 27	Tu	0939	0.1 3	
	1318	4.3 131		1313	3.5 107		1406	4.0 122		1322	3.4 104		1543	3.6 110	
	1948	0.0 0	O	1942	0.6 18		2026	-0.1 -3		1940	0.4 12		2144	0.3 9	
5 F	0210	3.9 119	20	0200	3.4 104	5	0250	4.1 125	20	0202	3.7 113	5	0404	4.1 125	
	0813	0.5 15	Sa	0759	1.0 30	Su	0902	0.2 6	M	0813	0.7 21	W	1030	0.0 0	
	1424	4.3 131		1408	3.5 107		1508	4.0 122		1417	3.5 107	Th	1636	3.5 107	
	2050	-0.1 -3		2031	0.5 15		2121	0.0 0		2029	0.3 9		2232	0.4 12	
6 Sa	0311	4.1 125	21	0248	3.6 110	6	0343	4.2 128	21	0250	3.9 119	6	0449	4.1 125	
	0916	0.3 9	Su	0852	0.8 24	M	0958	0.1 3	Tu	0906	0.4 12	Th	1116	-0.1 -3	
	1525	4.3 131		1500	3.6 110		1604	3.9 119		1512	3.6 110		1723	3.5 107	
	2146	-0.1 -3		2118	0.4 12		2212	0.1 3		2118	0.2 6		2316	0.4 12	
7 Su	0406	4.3 131	22	0334	3.8 116	7	0431	4.3 131	22	0337	4.2 128	7	0530	4.1 125	
	1013	0.2 6	M	0942	0.6 18	Tu	1049	0.0 0	W	0958	0.1 3	F	1158	-0.1 -3	
	1621	4.3 131		1549	3.8 116		1655	3.9 119		1605	3.8 116		1807	3.5 107	
	2237	-0.1 -3		2202	0.2 6		2258	0.1 3		2208	0.1 3		2358	0.4 12	
8 M	0455	4.4 134	23	0417	4.1 125	8	0515	4.4 134	23	0425	4.5 137	8	0610	4.1 125	
	1105	0.0 0	Tu	1029	0.3 9	W	1135	-0.1 -3	Th	1048	-0.3 -9	Sa	1239	-0.2 -6	
	1712	4.4 134		1637	4.0 122		1742	3.9 119		1658	3.9 119		1848	3.5 107	
	2324	-0.1 -3		2246	0.1 3		2341	0.2 6		2258	-0.1 -3	O			
9 Tu	0540	4.5 137	24	0500	4.4 134	9	0556	4.4 134	24	0513	4.7 143	9	0038	0.5 15	
	1153	-0.1 -3	W	1115	0.0 0	Th	1218	-0.2 -6	F	1139	-0.6 -18	Su	0649	4.1 125	
	1800	4.3 131		1724	4.1 125		1826	3.8 116		1750	4.1 125		1318	-0.2 -6	
	1845	4.3 131		2330	0.0 0					2348	-0.2 -6	O	1929	3.5 107	
10 W	0007	-0.1 -3	25	0543	4.6 140	10	0022	0.3 9	25	0602	4.9 149	10	0118	0.5 15	
	0622	4.6 140	Th	1202	-0.3 -9	F	0635	4.3 131	Sa	1230	-0.8 -24	M	0727	4.0 122	
	1238	-0.1 -3		1812	4.3 131		1300	-0.2 -6		1843	4.2 128		1356	-0.2 -6	
	1845	4.3 131				O	1908	3.8 116					2009	3.5 107	
11 Th	0049	0.0 0	26	0015	-0.1 -3	11	0103	0.4 12	26	0040	-0.2 -6	11	0158	0.6 18	
	0703	4.5 137	F	0628	4.8 146	Sa	0714	4.2 128	Su	0653	5.0 152	Tu	0806	3.9 119	
	1321	-0.1 -3		1250	-0.5 -15		1340	-0.2 -6		1321	-1.0 -30		1435	-0.1 -3	
	1928	4.2 128	O	1901	4.3 131		1950	3.7 113		1937	4.3 131		2049	3.5 107	
12 F	0129	0.2 6	27	0102	-0.2 -6	12	0142	0.5 15	27	0134	-0.2 -6	12	0239	0.6 18	
	0743	4.4 134	Sa	0715	4.9 149	Su	0753	4.1 125	M	0745	5.0 152	W	0846	3.8 116	
	1403	-0.1 -3		1339	-0.7 -21		1420	-0.1 -3		1414	-1.0 -30		1515	0.0 0	
	2011	4.0 122		1952	4.3 131		2032	3.6 110		2032	4.3 131		2130	3.5 107	
13 Sa	0210	0.3 9	28	0152	-0.2 -6	13	0223	0.6 18	28	0229	-0.2 -6	13	0321	0.7 21	
	0822	4.3 131	Su	0804	4.9 149	M	0833	4.0 122	Tu	0840	4.9 149	F	0926	3.7 113	
	1445	0.0 0		1430	-0.7 -21		1502	0.0 0		1508	-1.0 -30		1555	0.1 3	
	2055	3.8 116		2046	4.3 131		2115	3.5 107		2128	4.3 131		2212	3.5 107	
14 Su	0251	0.5 15	29	0245	-0.1 -3	14	0305	0.7 21	29	0327	-0.1 -3	14	0405	0.8 24	
	0903	4.1 125	M	0857	4.8 146	Tu	0914	3.8 116	W	0936	4.7 143	F	1009	3.6 110	
	1529	0.2 6		1525	-0.7 -21		1544	0.1 3		1604	-0.8 -24		1636	0.2 6	
	2140	3.6 110		2142	4.2 128		2159	3.4 104		2226	4.2 128		2256	3.5 107	
15 M	0334	0.7 21	30	0341	0.1 3	15	0350	0.8 24	30	0427	0.0 0	15	0453	0.8 24	
	0947	3.9 119	Tu	0952	4.6 140	W	0958	3.7 113	Th	1035	4.4 134	Sa	1055	3.5 107	
	1615	0.3 9		1622	-0.6 -18		1629	0.2 6		1702	-0.6 -18		1719	0.2 6	
	2227	3.4 104		2242	4.1 125		2246	3.3 101		2326	4.2 128		2342	3.5 107	
									31	0531	0.1 3				
									F	1137	4.2 128				
										1800	-0.4 -12		O		

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0054	4.1	125	16 0606	0.5	15	1 Th 0211	3.7	113	16 0114	4.0	122
0714	0.2	6	Tu 1209	3.3	101	0843	0.3	9	F 0746	0.0	0
1318	3.6	110	1818	0.3	9	1451	3.2	98	1359	3.4	104
1925	0.2	6	●			2045	0.7	21	1958	0.4	12
2 Tu 0151	4.0	122	17 0042	3.9	119	2 0305	3.7	113	17 0217	4.2	128
0816	0.2	6	W 0705	0.3	9	0937	0.2	6	Sa 0849	-0.2	-6
1420	3.4	104	1311	3.3	101	1546	3.2	98	1504	3.6	110
2021	0.4	12	1915	0.3	9	2138	0.7	21	2102	0.2	6
3 W 0245	4.0	122	18 0138	4.0	122	3 Sa 0355	3.7	113	18 0318	4.4	134
0914	0.2	6	0807	0.1	3	1025	0.2	6	Su 0949	-0.4	-12
1519	3.3	101	1415	3.4	104	1635	3.2	98	1605	3.9	119
2115	0.5	15	2015	0.3	9	2226	0.6	18	2203	0.0	0
4 Th 0336	3.9	119	19 0236	4.2	128	4 Su 0440	3.8	116	19 M 0417	4.6	140
1006	0.1	3	F 0907	-0.2	-6	1108	0.1	3	M 1044	-0.6	-18
1613	3.3	101	1519	3.5	107	1718	3.3	101	1700	4.1	125
2205	0.5	15	2115	0.1	3	2309	0.6	18	2300	-0.2	-6
5 F 0422	3.9	119	20 0334	4.4	134	5 M 0521	3.9	119	20 0512	4.7	143
1053	0.0	0	Sa 1005	-0.5	-15	1148	0.0	0	Tu 1136	-0.8	-24
1701	3.3	101	1619	3.7	113	1757	3.5	107	1752	4.4	134
2251	0.5	15	2215	0.0	0	2349	0.5	15	2354	-0.4	-12
6 Sa 0506	3.9	119	21 0430	4.6	140	6 Tu 0600	4.0	122	21 W 0605	4.8	146
1136	-0.1	-3	Su 1101	-0.8	-24	1224	-0.1	-3	W 1226	-0.9	-27
1745	3.4	104	1716	4.0	122	1834	3.6	110	1841	4.5	137
2334	0.5	15	2312	-0.2	-6	●			○		
7 Su 0546	4.0	122	22 0525	4.8	146	7 M 0028	0.4	12	22 Th 0046	-0.5	-15
1216	-0.1	-3	1154	-1.0	-30	0637	4.0	122	Sa 0656	4.8	146
1825	3.4	104	1810	4.2	128	1300	-0.2	-6	Th 1314	-0.8	-24
● 1904	3.5	107	○ 1902	4.4	134	1911	3.7	113	1930	4.6	140
8 M 0014	0.5	15	23 0008	-0.4	-12	8 Th 0106	0.3	9	23 F 0137	-0.5	-15
0625	4.0	122	0619	4.9	149	0714	4.0	122	W 0746	4.7	143
1254	-0.2	-6	Tu 1246	-1.1	-34	1335	-0.2	-6	1401	-0.7	-21
● 1904	3.5	107	○ 1902	4.4	134	1947	3.8	116	2017	4.6	140
9 Tu 0053	0.5	15	24 0102	-0.4	-12	9 F 0145	0.3	9	24 Sa 0228	-0.4	-12
0703	4.0	122	0712	4.9	149	0752	4.0	122	0836	4.5	137
1331	-0.2	-6	1336	-1.1	-34	1411	-0.1	-3	1448	-0.5	-15
1942	3.5	107	1954	4.5	137	2024	3.9	119	2105	4.5	137
10 W 0133	0.5	15	25 0156	-0.5	-15	10 Sa 0225	0.3	9	25 Su 0319	-0.3	-9
0741	4.0	122	0805	4.8	146	0831	3.9	119	Tu 0927	4.2	128
1407	-0.2	-6	1426	-1.0	-30	1447	-0.1	-3	W 1536	-0.2	-6
2020	3.6	110	2045	4.5	137	2102	3.9	119	2153	4.3	131
11 Th 0212	0.5	15	26 0250	-0.4	-12	11 M 0307	0.3	9	26 M 0411	-0.1	-3
0819	3.9	119	0857	4.6	140	0912	3.8	116	1019	3.9	119
1444	-0.1	-3	F 1516	-0.8	-24	1526	0.0	0	1625	0.1	3
2058	3.6	110	2136	4.5	137	2143	4.0	122	2244	4.1	125
12 F 0253	0.5	15	27 0345	-0.3	-9	12 M 0353	0.3	9	12 Th 0519	0.0	0
0857	3.8	116	0951	4.3	131	0958	3.7	113	1134	3.6	110
1521	-0.1	-3	1607	-0.5	-15	1609	0.1	3	1718	0.4	12
2137	3.7	113	2228	4.3	131	2227	4.0	122	2337	3.9	119
13 Sa 0335	0.5	15	28 0442	-0.1	-3	13 Tu 0443	0.3	9	28 W 0604	0.3	9
0938	3.7	113	1047	4.0	122	1049	3.5	107	1215	3.3	101
1600	0.0	0	1659	-0.2	-6	1657	0.3	9	1814	0.7	21
2218	3.7	113	2322	4.2	128	2317	4.0	122	●		
14 Su 0421	0.6	18	29 0540	0.1	3	14 W 0539	0.2	6	29 Th 0034	3.7	113
1023	3.6	110	1146	3.7	113	1148	3.4	104	0705	0.4	12
1641	0.1	3	1754	0.2	6	1752	0.4	12	1317	3.2	98
2302	3.7	113	●			●			1914	0.8	24
15 M 0511	0.5	15	30 0018	4.0	122	15 Th 0013	4.0	122	30 F 0133	3.6	110
1113	3.4	104	0642	0.2	6	0641	0.2	6	0805	0.4	12
1727	0.2	6	1247	3.4	104	1252	3.4	104	1418	3.1	94
2350	3.8	116	1850	0.4	12	1853	0.4	12	2013	0.9	27
16 Sa 0115	0.6	18	31 0743	0.3	9	31 W 0230	3.6	110	31 Sa 0901	0.4	12
0743	0.3	9	1350	3.2	98	1513	3.2	98	1513	0.6	24
1949	0.6	18	1949	0.6	18	2108	0.8	24	2108	0.8	24

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu 0332	3.7	113		16 W 0351	4.3	131		1 Sa 0423	3.9	119	
0951	0.4	12		1005	-0.1	-3		12 F 1027	0.4	12	
1604	3.7	113		1624	4.5	137		13 Sa 1641	4.4	134	
2208	0.7	21		2238	-0.1	-3		2300	0.2	6	
								2359	-0.1	-3	
2 W 0416	3.8	116		17 Th 0445	4.4	134		17 Su 0521	4.1	125	
1031	0.3	9		1054	-0.1	-3		1118	0.4	12	
1643	3.9	119		1711	4.7	143		1733	4.7	143	
2250	0.4	12		2328	-0.2	-6		2359	-0.1	-3	
3 Th 0458	3.9	119		18 F 0535	4.4	134		18 M 0042	-0.1	-3	
1109	0.2	6		1141	-0.1	-3		0653	4.1	125	
1721	4.1	125		1756	4.7	143		1244	0.6	18	
2330	0.2	6						○ 1855	4.6	140	
4 F 0539	4.1	125		19 Sa 0015	-0.3	-9		19 Tu 0123	-0.1	-3	
1147	0.1	3		0623	4.4	134		0736	4.0	122	
1758	4.3	131		1225	0.0	0		1326	0.7	21	
				○ 1838	4.7	143		1935	4.5	137	
5 Sa 0011	0.0	0		20 Su 0059	-0.3	-9		20 W 0204	0.0	0	
0620	4.2	128		0709	4.3	131		0818	3.9	119	
1225	0.1	3		1308	0.2	6		1408	0.8	24	
● 1837	4.5	137		1920	4.6	140		2016	4.3	131	
								2009	5.2	158	
6 Su 0052	-0.1	-3		21 M 0143	-0.3	-9		21 Th 0246	0.1	3	
0702	4.2	128		0754	4.1	125		0902	3.8	116	
1306	0.0	0		1351	0.3	9		1451	0.9	27	
1917	4.6	140		2002	4.5	137		2058	4.1	125	
								2104	5.0	152	
7 M 0136	-0.3	-9		22 Tu 0227	-0.2	-6		22 F 0238	-0.7	-21	
0747	4.2	128		0840	4.0	122		0858	4.6	140	
1348	0.1	3		1435	0.5	15		1456	0.2	6	
2000	4.6	140		2044	4.3	131		2110	4.1	125	
8 Tu 0221	-0.3	-9		23 W 0312	0.0	0		23 Th 0328	0.2	6	
0834	4.1	125		0926	3.8	116		0946	3.8	116	
1434	0.2	6		1520	0.7	21		1536	1.0	30	
2046	4.6	140		2129	4.1	125		2141	4.0	122	
								2201	4.8	146	
9 W 0311	-0.3	-9		24 Th 0358	0.2	6		24 M 0457	0.5	15	
0926	4.0	122		1015	3.6	110		1120	3.7	113	
1525	0.3	9		1608	0.9	27		1713	0.5	15	
2137	4.5	137		2216	3.8	116		2317	3.7	113	
10 Th 0405	-0.2	-6		25 F 0447	0.4	12		25 Tu 0544	0.6	18	
1022	3.9	119		1106	3.5	107		1209	3.7	113	
1621	0.4	12		1700	1.1	34		1810	1.3	40	
2233	4.4	134		2308	3.7	113		○ 1908	0.5	15	
11 F 0503	-0.1	-3		26 Sa 0539	0.5	15		26 M 0025	4.3	131	
1124	3.9	119		1200	3.4	104		0649	0.0	0	
1724	0.5	15		1756	1.2	37		M 1317	4.3	131	
2335	4.2	128						1927	0.5	15	
								○ 1905	1.2	37	
12 Sa 0606	-0.1	-3		27 Su 0003	3.5	107		26 Tu 0009	3.6	110	
1230	3.9	119		0633	0.6	18		0632	0.7	21	
1832	0.6	18		1255	3.4	104		1257	3.8	116	
●				○ 1855	1.2	37		1905	1.2	37	
13 Su 0042	4.2	128		28 M 0100	3.5	107		27 F 0104	3.5	107	
0710	0.0	0		0725	0.7	21		0750	0.1	3	
1335	4.0	122		1347	3.5	107		1416	4.4	134	
1940	0.5	15		1951	1.1	34		2032	0.4	12	
14 M 0148	4.2	128		29 Tu 0156	3.5	107		14 Th 0336	4.1	125	
0813	-0.1	-3		0815	0.7	21		0942	0.2	6	
1437	4.1	125		1435	3.7	113		1602	4.6	140	
2045	0.3	9		2044	1.0	30		2225	0.1	3	
15 Tu 0252	4.2	128		30 W 0248	3.6	110		15 F 0431	4.1	125	
0911	-0.1	-3		0901	0.6	18		1031	0.3	9	
1533	4.3	131		1519	3.9	119		1649	4.7	143	
2144	0.1	3		2131	0.7	21		2314	0.0	0	
31 Th 0336	3.7	113									
0944	0.5	15									
1601	4.2	128									
2216	0.5	15									

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pago Pago, 2013

Times and Heights of High and Low Waters

January					February					March					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0353	0.2	6	16 W	0507	0.0	0	1 F	0458	0.1	3	16 Sa	0003	2.1	64
	1000	2.3	70	1127	2.6	79	1115	2.6	79	0615	0.4	12			
	1559	0.4	12	1736	0.2	6	1730	0.3	9	1242	2.3	70			
	2216	2.4	73	2344	2.5	76	2342	2.4	73	1901	0.5	15			
2 W	0438	0.2	6	17 Th	0604	0.2	6	2 Sa	0555	0.1	3	17 Su	0103	2.0	61
	1049	2.3	70	1227	2.5	76	1215	2.6	79	0712	0.5	15			
	1652	0.4	12	1839	0.3	9	1836	0.2	6	1340	2.2	67			
	2307	2.4	73							● 2001	0.5	15			
3 Th	0528	0.2	6	18 F	0045	2.3	70	3 Su	0046	2.4	73	18 M	0202	1.9	58
	1142	2.4	73	0701	0.3	9	0657	0.1	3	0808	0.5	15			
	1751	0.4	12	1326	2.4	73	1318	2.7	82	1434	2.3	70			
				● 1942	0.4	12	● 1943	0.1	3	2055	0.4	12			
4 F	0004	2.4	73	19 Sa	0144	2.1	64	4 M	0152	2.4	73	19 Tu	0255	2.0	61
	0622	0.2	6	0757	0.4	12	0759	0.0	0	0857	0.4	12			
	1239	2.5	76	1422	2.4	73	1421	2.9	88	1521	2.3	70			
	● 1854	0.3	9	2040	0.4	12	2047	0.0	0	2141	0.3	9			
5 Sa	0105	2.4	73	20 Su	0240	2.1	64	5 Tu	0256	2.5	76	20 W	0340	2.0	61
	0718	0.1	3	0848	0.4	12	0900	-0.1	-3	0942	0.4	12			
	1338	2.7	82	1512	2.4	73	1521	3.0	91	1603	2.4	73			
	1958	0.2	6	2131	0.3	9	2147	-0.2	-6	2222	0.2	6			
6 Su	0206	2.4	73	21 M	0330	2.0	61	6 W	0355	2.6	79	21 Th	0421	2.1	64
	0816	0.0	0	0933	0.4	12	0958	-0.3	-9	1022	0.3	9			
	1437	2.8	85	1557	2.4	73	1617	3.2	98	1642	2.5	76			
	2059	0.0	0	2216	0.3	9	2242	-0.4	-12	2259	0.1	3			
7 M	0307	2.5	76	22 Tu	0413	2.1	64	7 Th	0450	2.8	85	22 F	0459	2.3	70
	0913	-0.2	-6	1014	0.3	9	1053	-0.4	-12	1100	0.2	6			
	1534	3.1	94	1636	2.5	76	1711	3.3	101	1719	2.6	79			
	2158	-0.2	-6	2255	0.2	6	2334	-0.5	-15	2335	0.0	0			
8 Tu	0405	2.7	82	23 W	0453	2.1	64	8 F	0542	2.9	88	23 Sa	0536	2.4	73
	1009	-0.3	-9	1052	0.2	6	1145	-0.5	-15	1138	0.1	3			
	1629	3.2	98	1714	2.6	79	1802	3.3	101	1756	2.7	82			
	2253	-0.4	-12	2332	0.1	3				● 1833	2.8	85			
9 W	0501	2.8	85	24 Th	0530	2.2	67	9 Sa	0024	-0.5	-15	24 Su	0011	0.0	0
	1104	-0.4	-12	1129	0.2	6	0633	3.0	91	0614	2.5	76			
	1723	3.4	104	1750	2.6	79	1237	-0.5	-15	1217	0.0	0			
	2348	-0.5	-15				● 1852	3.3	101						
10 Th	0556	2.9	88	25 F	0008	0.1	3	10 Su	0112	-0.5	-15	25 M	0048	-0.1	-3
	1158	-0.5	-15	0607	2.3	70	0723	3.0	91	0653	2.6	79			
	1816	3.5	107	1206	0.1	3	1327	-0.4	-12	1257	0.0	0			
				1826	2.7	82	1941	3.2	98	○ 1913	2.8	85			
11 F	0041	-0.6	-18	26 Sa	0044	0.0	0	11 M	0200	-0.4	-12	10 Su	0004	-0.4	-12
	0649	2.9	88	0644	2.4	73	0812	2.9	88	0653	2.6	79			
	1252	-0.5	-15	1244	0.1	3	1418	-0.3	-9	1257	0.0	0			
	● 1909	3.4	104	○ 1903	2.7	82	2029	3.0	91	○ 1913	2.8	85			
12 Sa	0133	-0.6	-18	27 Su	0121	0.0	0	12 Tu	0247	-0.3	-9	26 M	0127	-0.1	-3
	0743	3.0	91	0723	2.4	73	0902	2.8	85	0733	2.7	82			
	1346	-0.5	-15	1322	0.1	3	1509	-0.1	-3	1340	-0.1	-3			
	2002	3.3	101	1940	2.7	82	2119	2.8	85	1954	2.8	85			
13 Su	0225	-0.5	-15	28 M	0159	0.0	0	13 W	0336	-0.1	-3	28 Th	0253	-0.1	-3
	0837	2.9	88	0802	2.5	76	0953	2.7	82	0904	2.8	85			
	1440	-0.3	-9	1403	0.1	3	1603	0.1	3	1517	0.0	0			
	2055	3.2	98	2020	2.7	82	2210	2.5	76	2130	2.6	79			
14 M	0318	-0.4	-12	29 Tu	0238	0.0	0	14 Th	0426	0.1	3	14 F	0208	-0.1	-3
	0932	2.8	85	0844	2.5	76	1046	2.5	76	0817	2.8	85			
	1537	-0.2	-6	1447	0.2	6	1659	0.3	9	1427	0.0	0			
	2150	3.0	91	2102	2.6	79	2304	2.3	70	2040	2.7	82			
15 Tu	0412	-0.2	-6	30 W	0320	0.0	0	15 F	0519	0.3	9	15 F	0344	0.2	6
	1029	2.7	82	0929	2.5	76	1143	2.4	73	1005	2.5	76			
	1635	0.0	0	1535	0.2	6	1759	0.4	12	1622	0.3	9			
	2246	2.7	82	2149	2.6	79				2225	2.2	67			
31 Th	0407	0.1	3									31 Su	0421	-0.1	-3
	1019	2.5	76									1040	2.9	88	
	1629	0.2	6									1706	-0.1	-3	
	2242	2.5	76									2320	2.5	76	

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pago Pago, 2013

Times and Heights of High and Low Waters

April						May						June											
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm				
1 M	0525 1145 1814	0.0 2.8 -0.1	0 85 -3	16 Tu	0537 1203 1828	0.6 2.2 0.4	18 67 12	1 W	0015 0619 1236 1904	2.6 0.0 2.9 -0.2	79 0 88 -6	16 Th	0547 1207 1831	0.6 2.2 0.4	18 67 12	1 Sa	0200 0810 1418 2036	2.7 0.1 2.6 0.0	82 3 79 0	16 Su	0046 0655 1305 1922	2.3 0.5 2.3 0.2	70 15 70 6
2 Tu	0028 0632 1252 ● 1921	2.5 0.0 2.8 -0.1	76 0 85 -3	17 W	0033 0634	1.9 0.6	58 18	2 Th	0120 0725 1340 ● 2005	2.6 0.0 2.8 -0.1	79 0 85 -3	17 F	0040 0641 1258 ● 1919	2.1 0.6 2.2 0.3	64 18 67 9	2 Su	0256 0908 1514 2127	2.7 0.1 2.5 0.0	82 3 76 0	17 M	0138 0751 1400 2012	2.5 0.3 2.4 0.1	76 9 73 3
3 W	0135 0738 1357 ● 2024	2.5 0.0 2.9 -0.1	76 0 88 -3	18 Th	0127 0729 1349 ● 2009	2.0 0.6 2.2 0.4	61 18 67 12	3 F	0222 0828 1440 2101	2.7 0.0 2.8 -0.1	82 0 85 -3	18 Sa	0129 0734 1348 2005	2.2 0.5 2.3 0.3	67 15 70 9	3 M	0347 1001 1604 2213	2.7 0.1 2.4 0.1	82 3 73 3	18 Tu	0230 0848 1456 2104	2.7 0.1 2.5 0.0	82 3 76 0
4 Th	0237 0841 1457 2121	2.6 -0.1 2.9 -0.2	79 -3 88 -6	19 F	0216 0819 1436 2053	2.1 0.5 2.3 0.3	64 15 70 9	4 Sa	0317 0925 1535 2151	2.7 0.0 2.7 -0.1	82 0 82 -3	19 Su	0217 0826 1437 2050	2.4 0.4 2.4 0.1	73 12 73 3	4 Tu	0432 1048 1649 2254	2.7 0.1 2.4 0.1	82 3 73 3	19 W	0323 0943 1551 2157	2.9 -0.1 2.6 -0.2	88 -3 79 -6
5 F	0334 0938 1552 2212	2.7 -0.1 2.9 -0.2	82 -3 88 -6	20 Sa	0300 0906 1520 2134	2.3 0.3 2.4 0.2	70 9 73 6	5 Su	0408 1017 1624 2237	2.8 0.0 2.7 -0.1	85 0 82 -3	20 M	0304 0917 1526 2136	2.6 0.2 2.5 0.0	79 6 76 0	5 W	0514 1131 1730 2332	2.7 0.1 2.3 0.2	82 3 70 6	20 Th	0416 1038 1646 2250	3.1 -0.3 2.7 -0.3	94 -9 82 -9
6 Sa	0425 1031 1642 2259	2.8 -0.2 2.9 -0.2	85 -6 88 -6	21 Su	0343 0951 1604 2215	2.5 0.2 2.6 0.0	76 6 79 0	6 M	0453 1105 1710 2318	2.8 0.0 2.6 0.0	85 0 79 0	21 Tu	0351 1007 1616 2224	2.8 0.0 2.6 -0.2	85 0 79 -6	6 Th	0552 1210 1809	2.7 0.1 2.2	82 3 67	21 F	0509 1133 1741 2344	3.3 -0.4 2.8 -0.5	101 -12 85 -15
7 Su	0512 1119 1728 2342	2.9 -0.2 2.9 -0.2	88 -6 88 -6	22 M	0425 1036 1648 2257	2.7 0.0 2.7 -0.1	82 0 82 -3	7 Tu	0535 1148 1752 2357	2.8 0.0 2.5 0.0	85 0 76 0	22 W	0440 1058 1707 2313	3.0 -0.2 2.8 -0.3	91 -6 85 -9	7 F	0009 0629 1249 1847	0.2 2.6 0.1 2.2	6 79 3 67	22 Sa	0603 1227 1836	3.4 -0.6 2.9	104 -18 88
8 M	0555 1205 1812	2.9 -0.2 2.8	88 -6 85	23 Tu	0509 1122 1733 2341	2.9 -0.2 2.8 -0.2	88 -6 85 -6	8 W	0614 1230 1832	2.8 0.0 2.4	85 0 73	23 Th	0529 1150 1759	3.2 -0.4 2.8	98 -12 85	8 Sa	0045 0706 1327 ● 1926	0.2 2.6 0.1 2.2	6 79 3 67	23 Su	0039 0657 1322 ○ 1932	-0.5 3.5 -0.6 2.9	-15 107 -18 88
9 Tu	0023 0637 1249 ● 1855	-0.1 2.9 -0.1 2.7	-3 88 -3 82	24 W	0554 1210 1821	3.0 -0.3 2.9	91 -9 88	9 Th	0035 0653 1310 ● 1911	0.1 2.7 0.0 2.3	3 82 0 70	24 F	0004 0621 1244 ○ 1853	-0.4 3.3 -0.5 2.9	-12 101 -15 88	9 Su	0123 0745 1407 2007	0.2 2.6 0.1 2.2	6 79 3 67	24 M	0135 0753 1418 2029	-0.5 3.5 -0.6 2.9	-15 107 -18 88
10 W	0103 0718 1332 1936	0.0 2.8 -0.1 2.5	0 85 -3 76	25 Th	0028 0642 1301 ● 1911	-0.3 3.2 -0.4 2.9	-9 98 -12 88	10 F	0112 0732 1351 1952	0.2 2.6 0.1 2.2	6 79 3 67	25 Sa	0057 0714 1339 1949	-0.4 3.4 -0.6 2.9	-12 104 -18 88	10 M	0203 0824 1448 2049	0.3 2.5 0.2 2.1	9 76 6 64	25 Tu	0232 0850 1515 2128	-0.4 3.4 -0.5 2.9	-12 104 -15 88
11 Th	0142 0800 1415 2019	0.1 2.7 0.0 2.4	3 82 0 73	26 F	0117 0732 1354 2005	-0.4 3.2 -0.4 2.8	-12 98 -12 85	11 Sa	0151 0812 1433 2034	0.2 2.5 0.1 2.2	6 76 3 67	26 Tu	0152 0810 1436 2047	-0.4 3.4 -0.5 2.8	-12 104 -15 85	11 Tu	0245 0906 1530 2133	0.4 2.4 0.2 2.1	12 73 6 64	26 W	0332 0948 1613 2229	-0.3 3.2 -0.4 2.8	-9 98 -12 85
12 F	0223 0842 1500 2103	0.2 2.6 0.1 2.2	6 79 3 67	27 Sa	0210 0826 1450 2102	-0.3 3.2 -0.4 2.8	-9 98 -12 85	12 Su	0232 0854 1517 2119	0.3 2.5 0.2 2.1	9 76 6 64	27 W	0250 0908 1535 2148	-0.4 3.3 -0.5 2.8	-12 101 -15 85	12 Th	0329 0949 1614 2219	0.4 2.4 0.3 2.1	12 73 9 64	27 Th	0434 1048 1712 2331	-0.2 3.0 -0.3 2.8	-6 91 -9 85
13 Sa	0306 0927 1548 2150	0.3 2.4 0.2 2.1	9 73 6 64	28 Su	0306 0924 1550 2203	-0.3 3.1 -0.3 2.7	-9 94 -9 82	13 M	0316 0939 1604 2207	0.4 2.4 0.3 2.0	12 73 9 61	28 F	0351 1008 1636 2251	-0.3 3.2 -0.4 2.7	-9 98 -12 82	13 Th	0415 1034 1658 2306	0.5 2.3 0.3 2.1	15 70 9 64	28 F	0538 1149 1812 ● 1911	0.0 2.8 -0.1 0.0	0 85 -3 0
14 Su	0352 1015 1639 2242	0.4 2.3 0.3 2.0	12 70 9 61	29 M	0407 1025 1654 2308	-0.2 3.1 -0.3 2.6	-6 94 -9 79	14 Tu	0403 1026 1652 2257	0.5 2.3 0.3 2.0	15 70 9 61	29 W	0455 1111 1738 2356	-0.2 3.0 -0.3 2.7	-6 91 -9 82	14 F	0505 1121 1744 2356	0.5 2.3 0.3 2.2	15 70 9 67	29 Sa	0033 0643 1252 ● 1911	2.7 0.1 2.6 0.0	82 3 79 0
15 M	0442 1107 1733 2337	0.5 2.2 0.4 1.9	15 67 12 58	30 Tu	0512 1130 1759	-0.1 3.0 -0.2 2.6	-3 91 -6 79	15 W	0454 1116 1742 2349	0.5 2.2 0.4 2.0	15 67 12 61	30 Th	0601 1215 1841	-0.1 2.9 -0.2	-3 88 -6 82	15 Sa	0559 1212 1832	0.5 2.3 0.3	15 70 9	30 Su	0134 0747 1353 2008	2.7 0.2 2.4 0.1	82 6 73 3
									31 F	0100 0706 1318 ● 1940	2.7 0.0 2.7 -0.1			82 0 82 -3									

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pago Pago, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0231 2.6 79	16 0107 2.5 76	1 Th 0342 2.5 76	16 0247 2.9 88	1 Su 0429 2.5 76	16 0425 3.2 98						
0847 0.2 6	Tu 0725 0.3 9	Th 1001 0.3 9	F 0912 -0.1 -3	Su 1045 0.2 6	M 1045 -0.4 -12						
1450 2.3 70	1334 2.3 70	1601 2.1 64	1521 2.6 79	1646 2.2 67	1656 2.9 88						
2100 0.2 6	1944 0.1 3	2202 0.3 9	2124 -0.2 -6	2248 0.2 6	2302 -0.4 -12						
2 Tu 0323 2.6 79	17 0205 2.7 82	2 F 0423 2.5 76	17 0344 3.1 94	2 M 0505 2.6 79	17 0516 3.2 98						
0940 0.2 6	W 0826 0.1 3	1042 0.2 6	1008 -0.3 -9	1120 0.1 3	1133 -0.4 -12						
1541 2.2 67	1434 2.4 73	1641 2.1 64	1617 2.7 82	1722 2.4 73	1745 3.0 91						
2147 0.2 6	2041 0.0 0	2241 0.3 9	2220 -0.4 -12	2325 0.1 3	2353 -0.4 -12						
3 W 0409 2.6 79	18 0302 2.9 88	3 Sa 0501 2.5 76	18 0439 3.3 101	3 Tu 0541 2.6 79	18 0605 3.2 98						
1028 0.2 6	0926 -0.1 -3	1119 0.1 3	1102 -0.5 -15	1155 0.0 0	1220 -0.4 -12						
1627 2.2 67	1533 2.6 79	1718 2.2 67	1711 2.9 88	1758 2.5 76	1833 3.1 94						
2229 0.2 6	2137 -0.2 -6	2317 0.2 6	2315 -0.5 -15								
4 Th 0450 2.6 79	19 0358 3.1 94	4 Su 0537 2.6 79	19 0531 3.4 104	4 W 0002 0.1 3	19 0042 -0.4 -12						
1109 0.2 6	F 1022 -0.3 -9	1155 0.1 3	M 1153 -0.5 -15	0617 2.7 82	0652 3.1 94						
1707 2.2 67	1630 2.7 82	1754 2.2 67	1803 3.0 91	1230 0.0 0	1306 -0.3 -9						
2307 0.2 6	2233 -0.4 -12	2354 0.2 6		1835 2.6 79	O 1920 3.0 91						
5 F 0528 2.6 79	20 0453 3.3 101	5 M 0613 2.6 79	20 0007 -0.5 -15	5 Th 0040 0.0 0	20 0132 -0.3 -9						
1148 0.1 3	Sa 1117 -0.5 -15	1230 0.1 3	Tu 0623 3.4 104	0654 2.7 82	0740 2.9 88						
1745 2.2 67	1725 2.8 85	1830 2.3 70	O 1243 -0.6 -18	1307 0.0 0	1352 -0.2 -6						
2343 0.2 6	2328 -0.5 -15		O 1854 3.1 94	1913 2.6 79	2008 2.9 88						
6 Sa 0605 2.6 79	21 0547 3.4 104	6 Tu 0030 0.1 3	21 0100 -0.5 -15	6 F 0121 0.0 0	21 0221 -0.2 -6						
1224 0.1 3	Su 1211 -0.6 -104	0649 2.7 82	W 0714 3.3 101	0734 2.7 82	0829 2.7 82						
1822 2.2 67	1819 3.0 91	1306 0.0 0	1332 -0.5 -15	1346 0.0 0	1439 0.0 0						
● 1900 2.2 67	O 1914 3.0 91	1907 2.4 73	1945 3.0 91	1955 2.7 82	2057 2.8 85						
7 Su 0020 0.2 6	22 0023 -0.5 -15	7 W 0108 0.1 3	22 0152 -0.4 -12	7 Sa 0204 0.0 0	22 0313 0.0 0						
0641 2.6 79	M 0640 3.5 107	0725 2.7 82	W 0805 3.1 94	0817 2.6 79	0919 2.5 76						
1301 0.1 3	1304 -0.6 -18	1342 0.0 0	Th 1422 -0.4 -12	1428 0.0 0	1528 0.1 3						
● 1900 2.2 67	O 1914 3.0 91	1946 2.4 73	2036 3.0 91	2039 2.7 82	2148 2.6 79						
8 M 0057 0.2 6	23 0118 -0.5 -15	8 Th 0147 0.2 6	23 0246 -0.3 -9	8 Su 0252 0.1 3	23 0407 0.2 6						
0718 2.6 79	Tu 0734 3.4 104	0803 2.6 79	F 0857 2.9 88	0904 2.5 76	1012 2.3 70						
1338 0.1 3	1357 -0.6 -18	1420 0.1 3	1513 -0.2 -6	1514 0.1 3	1620 0.3 9						
1938 2.2 67	2008 3.0 91	2026 2.4 73	2130 2.8 85	2128 2.7 82	2243 2.4 73						
9 Tu 0136 0.2 6	24 0213 -0.5 -15	9 F 0229 0.2 6	24 0342 -0.1 -3	9 M 0345 0.1 3	24 0505 0.3 9						
0755 2.6 79	W 0828 3.3 101	0844 2.6 79	Sa 0950 2.7 82	0957 2.4 73	1110 2.1 64						
1416 0.1 3	1450 -0.5 -15	1500 0.1 3	Sa 1605 0.0 0	1606 0.1 3	1716 0.4 12						
2018 2.2 67	2104 3.0 91	2108 2.4 73	2225 2.7 82	2223 2.6 79	2341 2.3 70						
10 W 0215 0.3 9	25 0310 -0.3 -9	10 Th 0314 0.3 9	25 0440 0.1 3	10 Tu 0445 0.1 3	25 0605 0.4 12						
0834 2.5 76	Su 0923 3.1 94	0927 2.5 76	Su 1047 2.4 73	1057 2.3 70	1211 2.0 61						
1455 0.1 3	1545 -0.3 -9	1543 0.2 6	Su 1701 0.2 6	1705 0.1 3	1815 0.5 15						
2059 2.2 67	2201 2.9 88	2155 2.5 76	2324 2.5 76	2324 2.6 79							
11 Th 0257 0.3 9	26 0409 -0.1 -3	11 Su 0404 0.3 9	26 0542 0.2 6	11 W 0550 0.1 3	26 0041 2.2 67						
0915 2.5 76	F 1020 2.9 88	1016 2.4 73	M 1147 2.2 67	1202 2.3 70	0705 0.4 12						
1536 0.2 6	F 1641 -0.2 -6	1631 0.2 6	M 1759 0.3 9	1808 0.1 3	1310 1.9 58						
2142 2.3 70	2300 2.7 82	2246 2.5 76	W 1808 0.1 3	1914 0.5 15							
12 F 0342 0.4 12	27 0511 0.0 0	12 M 0501 0.3 9	27 0024 2.4 73	12 Th 0029 2.7 82	27 0137 2.2 67						
0957 2.4 73	Sa 1120 2.6 79	1112 2.3 70	Tu 0645 0.3 9	0657 0.1 3	0759 0.4 12						
1618 0.2 6	1739 0.0 0	1725 0.2 6	1250 2.1 64	1309 2.4 73	1404 2.0 61						
2228 2.3 70		2344 2.5 76	O 1859 0.4 12	1913 0.1 3	2007 0.5 15						
13 Sa 0431 0.4 12	28 0001 2.6 79	13 Tu 0603 0.3 9	28 0124 2.3 70	13 W 0133 2.8 85	28 0227 2.3 70						
1044 2.3 70	Su 0615 0.2 6	1213 2.3 70	W 0746 0.4 12	0801 0.0 0	0846 0.3 9						
1704 0.3 9	1221 2.4 73	1824 0.2 6	1350 2.0 61	1412 2.5 76	1451 2.1 64						
2317 2.3 70	1838 0.2 6	O 1955 0.4 12	1955 0.4 12	2016 0.0 0	2054 0.4 12						
14 Su 0525 0.4 12	29 0102 2.5 76	14 W 0045 2.6 79	29 0220 2.3 70	14 Sa 0235 2.9 88	29 0312 2.3 70						
1136 2.3 70	M 0719 0.3 9	0708 0.2 6	W 0841 0.3 9	0900 -0.2 -6	0928 0.3 9						
1754 0.2 6	1323 2.2 67	1318 2.3 70	Th 1443 2.0 61	1511 2.6 79	1532 2.2 67						
O 1847 0.2 6	O 1936 0.3 9	1925 0.1 3	2046 0.4 12	2115 -0.2 -6	2136 0.3 9						
15 M 0011 2.4 73	30 0201 2.5 76	15 Th 0147 2.7 82	30 0308 2.4 73	15 Su 0332 3.1 94	30 0351 2.4 73						
0624 0.4 12	0820 0.3 9	0812 0.0 0	F 0928 0.3 9	0955 -0.3 -9	0928 0.3 9						
1234 2.3 70	1422 2.1 64	1421 2.4 73	1529 2.1 64	1605 2.8 85	1610 2.3 70						
O 1847 0.2 6	2030 0.3 9	2026 0.0 0	2131 0.4 12	2210 -0.3 -9	2215 0.2 6						
	31 0254 2.5 76	W 0914 0.3 9	31 0351 2.4 73	Sa 1008 0.2 6							
	1515 2.1 64	1515 0.3 9	31 0351 2.4 73	1609 2.1 64							
	2119 0.3 9	2119 0.3 9		2210 0.3 9							

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pago Pago, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0429 0.1 3	16 W 0500 0.1 3	1 F 0513 0.1 3	16 Sa 0011 0.1 3	1 Su 0534 0.1 3	16 O 0035 0.0 0	16 M 0634 2.3 70	16 Tu 1113 0.0 0	16 O 1853 2.7 82	16 M 1232 0.1 3	16 Tu 1310 0.2 6	16 O 1930 2.6 79
1041 1.0 3	1114 -0.3 -9	1120 -0.1 -3	0613 2.5 76	1138 -0.3 -9	0634 2.3 70	0625 2.8 85	0713 2.2 67	0725 2.8 85	1228 -0.4 -12	1321 -0.4 -12	1349 0.2 6
1646 2.5 76	1728 3.0 91	1732 2.9 88	1216 0.0 0	1755 3.2 98	1155 0.1 3	1336 0.2 6	1321 0.4 -12	1349 0.2 6	1429 0.3 9	1429 0.3 9	2009 2.6 79
2253 0.1 3	2339 -0.3 -9	2349 -0.2 -6	1835 2.8 85	1915 2.7 82	1905 3.1 94	1956 2.6 79	1939 3.3 101	1846 3.3 101	1907 0.4 -12	1939 0.3 101	2049 2.5 76
2 W 0506 2.6 79	17 Th 0547 2.9 88	2 F 0558 2.7 82	17 Su 0053 0.1 3	2 M 0017 0.4 -12	17 O 0113 0.0 0	17 W 0752 2.2 67	17 Tu 0713 2.2 67	17 O 1930 2.6 79	17 M 1310 0.2 6	17 Tu 1349 0.2 6	17 O 2009 2.6 79
1117 0.0 0	1157 -0.2 -6	1203 -0.2 -6	0655 2.4 73	0017 0.4 -12	0113 0.0 0	0152 0.1 3	0152 0.1 3	0152 0.1 3	0232 0.1 3	0232 0.1 3	0232 0.1 3
1724 2.6 79	1813 3.0 91	1817 3.0 91	1256 0.1 3	0625 2.8 85	0719 2.8 85	0752 2.2 67	0752 2.2 67	0752 2.2 67	0833 2.2 67	0833 2.2 67	0833 2.2 67
2332 0.0 0	0	0	1915 2.7 82	1905 3.1 94	1956 2.6 79	1939 3.3 101	1939 3.3 101	1939 3.3 101	1429 0.3 9	1429 0.3 9	1429 0.3 9
3 Th 0544 2.7 82	18 F 0026 -0.2 -6	3 Su 0036 -0.3 -9	18 M 0136 0.0 0	3 Tu 0110 -0.5 -15	18 W 0152 0.1 3	18 Th 0752 2.2 67	18 Tu 1349 0.2 6	18 O 2009 2.6 79	19 W 0833 2.2 67	19 Th 1429 0.3 9	19 Tu 2049 2.5 76
1154 -0.1 -3	0632 2.8 85	0645 2.7 82	0736 2.3 70	0126 -0.3 -9	0218 0.1 3	0204 -0.5 -15	0232 0.1 3	0232 0.1 3	0232 0.1 3	0232 0.1 3	0232 0.1 3
1802 2.8 85	1240 -0.1 -3	1250 -0.3 -9	1336 0.2 6	0736 2.7 82	0819 2.2 67	0815 2.8 85	0833 2.2 67	0833 2.2 67	0833 2.2 67	0833 2.2 67	0833 2.2 67
● 1843 2.8 85	1857 2.9 88	● 1905 3.1 94	1956 2.6 79	1417 0.3 9	2039 2.5 76	1417 -0.4 -12	2035 3.3 101	2035 3.3 101	2035 3.3 101	2035 3.3 101	2035 3.3 101
4 F 0013 -0.1 -3	19 Sa 0112 -0.2 -6	4 M 0126 -0.3 -9	19 Tu 0218 0.1 3	4 W 0204 -0.5 -15	19 O 0232 0.1 3	19 Th 0833 2.2 67	19 Tu 1429 0.3 9	19 O 2049 2.5 76	19 W 0833 2.2 67	19 Th 1429 0.3 9	19 Tu 2049 2.5 76
0625 2.7 82	0717 2.6 79	0736 2.7 82	0819 2.2 67	0218 0.1 3	0913 0.2 6	0301 -0.5 -15	0313 0.2 6	0313 0.2 6	0313 0.2 6	0313 0.2 6	0313 0.2 6
1233 -0.1 -3	1323 0.0 0	1339 -0.3 -9	1417 0.3 9	0302 0.2 6	0913 0.2 6	0301 -0.5 -15	0313 0.2 6	0313 0.2 6	0313 0.2 6	0313 0.2 6	0313 0.2 6
● 1843 2.8 85	1940 2.8 85	1956 3.1 94	2039 2.5 76	0904 2.1 64	1501 0.4 12	1516 -0.3 -9	1512 0.4 12	1512 0.4 12	1512 0.4 12	1512 0.4 12	1512 0.4 12
5 Sa 0057 -0.1 -3	20 Su 0158 -0.1 -3	5 Tu 0220 -0.3 -9	20 W 0302 0.2 6	5 Th 0301 -0.5 -15	20 O 0313 0.2 6	20 F 0915 2.1 64	20 Tu 1512 0.4 12	20 O 2131 2.4 73	20 W 0915 2.1 64	20 Th 1512 0.4 12	20 Tu 2131 2.4 73
0708 2.7 82	0802 2.5 76	0830 2.7 82	0904 2.1 64	0913 0.2 6	2123 2.4 73	2134 3.2 98	2134 3.2 98	2134 3.2 98	2134 3.2 98	2134 3.2 98	2134 3.2 98
1315 -0.1 -3	1406 0.1 3	1434 -0.2 -6	1501 0.4 12	1516 -0.3 -9	2211 2.3 70	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94
1927 2.9 88	2025 2.7 82	2051 3.1 94	2123 2.4 73	2134 3.2 98	2211 2.3 70	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94
6 Su 0144 -0.1 -3	21 M 0245 0.0 0	6 W 0317 -0.3 -9	21 Th 0349 0.2 6	6 F 0401 -0.4 -12	21 O 0355 0.3 9	21 Sa 1000 2.1 64	21 Tu 1557 0.5 15	21 O 2216 2.3 70	21 W 1000 2.1 64	21 Th 1557 0.5 15	21 Tu 2216 2.3 70
0754 2.7 82	0848 2.3 70	0929 2.6 79	0952 2.0 61	1015 2.8 85	1015 2.8 85	1015 2.8 85	1015 2.8 85	1015 2.8 85	1015 2.8 85	1015 2.8 85	1015 2.8 85
1401 -0.1 -3	1450 0.2 6	1532 -0.1 -3	1549 0.5 15	1619 -0.2 -6	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94
2015 2.9 88	2112 2.5 76	2151 3.0 91	2211 2.3 70	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94	2235 3.1 94
7 M 0235 -0.1 -3	22 Tu 0334 0.2 6	7 Th 0419 -0.2 -6	22 F 0437 0.3 9	7 Sa 0502 -0.3 -9	22 O 0439 0.3 9	22 Su 1047 2.1 64	22 M 1646 0.6 18	22 O 2302 2.2 67	22 W 1646 0.6 18	22 Th 2302 2.2 67	22 Tu 2302 2.2 67
0846 2.6 79	0937 2.1 64	1032 2.6 79	1043 2.0 61	1119 2.7 82	1119 2.7 82	1119 2.7 82	1119 2.7 82	1119 2.7 82	1119 2.7 82	1119 2.7 82	1119 2.7 82
1452 -0.1 -3	1539 0.4 12	1635 -0.1 -3	1640 0.5 15	1724 -0.1 -3	2301 2.2 67	2339 2.9 88	2339 2.9 88	2339 2.9 88	2339 2.9 88	2339 2.9 88	2339 2.9 88
2108 2.9 88	2202 2.4 73	2254 3.0 91	2301 2.2 67	2339 2.9 88	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67
8 Tu 0331 -0.1 -3	23 W 0427 0.3 9	8 F 0523 -0.2 -6	23 Sa 0527 0.4 12	8 M 0605 -0.2 -6	23 O 0525 0.4 12	23 Th 1739 0.6 18	23 Tu 2352 2.2 67	23 O 2352 2.2 67	23 W 1739 0.6 18	23 Th 2352 2.2 67	23 Tu 2352 2.2 67
0943 2.5 76	1031 2.0 61	1139 2.6 79	1135 2.0 61	1224 2.7 82	1224 2.7 82	1224 2.7 82	1224 2.7 82	1224 2.7 82	1224 2.7 82	1224 2.7 82	1224 2.7 82
1548 0.0 0	1631 0.5 15	1742 0.0 0	1734 0.6 18	1831 0.0 0	1831 0.0 0	1831 0.0 0	1831 0.0 0	1831 0.0 0	1831 0.0 0	1831 0.0 0	1831 0.0 0
2206 2.8 85	2255 2.3 70	2359 2.9 88	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67	2353 2.2 67
9 W 0432 0.0 0	24 Th 0522 0.4 12	9 Sa 0627 -0.2 -6	24 Su 0617 0.4 12	9 M 0043 2.8 85	24 O 0613 0.4 12	24 Th 1835 0.6 18	24 Tu 2352 2.2 67	24 O 2352 2.2 67	24 W 1835 0.6 18	24 Th 2352 2.2 67	24 Tu 2352 2.2 67
1045 2.4 73	1127 1.9 58	1245 2.6 79	1228 2.0 61	1327 2.8 85	1327 2.8 85	1327 2.8 85	1327 2.8 85	1327 2.8 85	1327 2.8 85	1327 2.8 85	1327 2.8 85
1650 0.1 3	1727 0.6 18	1849 0.0 0	1849 0.6 18	1937 0.0 0	1937 0.0 0	1937 0.0 0	1937 0.0 0	1937 0.0 0	1937 0.0 0	1937 0.0 0	1937 0.0 0
2309 2.8 85	2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67	● 2351 2.2 67
10 Th 0538 0.0 0	25 F 0617 0.4 12	10 Su 0730 -0.2 -6	25 M 0045 2.2 67	10 Tu 0147 2.7 82	25 W 0045 2.2 67	25 Th 0701 0.3 9	25 Tu 1319 2.3 70	25 O 1932 0.5 15	25 W 1319 2.3 70	25 Th 2028 0.3 9	25 Tu 2028 0.3 9
1152 2.4 73	1225 1.9 58	1348 2.7 82	1317 2.1 64	1427 2.8 85	1427 2.8 85	1427 2.8 85	1427 2.8 85	1427 2.8 85	1427 2.8 85	1427 2.8 85	1427 2.8 85
1756 0.1 3	1825 0.6 18	1954 0.0 0	1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18	● 1923 0.6 18
● 1903 0.0 0	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18	● 1921 0.6 18
12 Sa 0120 2.8 85	27 Su 0139 2.2 67	12 Tu 0921 -0.2 -6	27 W 0835 0.2 6	12 O 0341 2.5 76	27 Th 0234 2.3 70	27 F 0842 0.1 3	27 Tu 1502 2.7 82	27 O 2122 0.1 3	27 W 1502 2.7 82	27 Th 2122 0.1 3	27 Tu 2122 0.1 3
0748 -0.1 -3	0758 0.4 12	1539 2.1 64	1539 2.9 88	1611 2.8 85	1611 2.8 85	1611 2.8 85	1611 2.8 85	1611 2.8 85	1611 2.8 85	1611 2.8 85	1611 2.8 85
1402 2.6 79	1407 2.1 64	2111 0.5 15	2149 -0.1 -3	2102 0.3 9	2228 0.0 0	2228 0.0 0	2228 0.0 0	2228 0.0 0	2228 0.0 0	2228 0.0 0	2228 0.0 0
2006 0.0 0	0	0	0	0	0	0	0	0	0	0	0
13 Su 0222 2.9 88	28 M 0225 2.3 70	13 W 1009 -0.1 -3	28 Th 0919 0.1 3	13 O 0430 2.4 73	28 F 0328 2.4 73	28 Sa 0934 -0.1 -3	28 Tu 1553 2.9 88	28 O 2215 -0.1 -3	28 W 1553 2.9 88	28 Th 2215 -0.1 -3	28 Tu 2215 -0.1 -3
0846 -0.2 -6	0841 0.3 9	1450 2.2 67	1627 2.9 88	1534 2.7 82	1534 2.7 82	1534 2.7 82	1534 2.7 82	1534 2.7 82	1534 2.7 82	1534 2.7 82	1534 2.7 82
1500 2.7 82	1506 0.4 12	2056 0.4 12	2240 -0.1 -3	2150 0.1 3	2314 0.0 0	2314 0.0 0	2314 0.0 0	2314 0.0 0	2314 0.0 0	2314 0.0 0	2314 0.0 0
2105 -0.1 -3	2105 0.4 12	2139 0.3 9	2327 -0.1 -3	2238 -0.1 -3	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0
14 M 0319 3.0 91	29 Tu 0308 2.4 73	14 F 1054 2.7 82	29 W 1003 0.0 0	14 O 0515 2.4 73	29 Th 0422 2.6 79	29 F 1025 0.2 -6	29 Tu 1644 3.1 94	29 O 2308 -0.3 -9	29 W 1644 3.1 94	29 Th 2308 -0.3 -9	29 Tu 2308 -0.3 -9
0939 -0.3 -9	0921 0.2 6	1530 2.4 73	1712 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88	1619 2.9 88
1553 2.9 88	1553 2.9 88	2139 0.3 9	2327 -0.1 -3	2238 -0.1 -3	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0	2356 0.0 0
2200 -0.2 -6	-6	0	0	0	0	0	0	0	0	0	0
15 Tu 0411 3.0 91	30 W 0349 2.5 76	15 F 1136 2.6 79	30 Sa 0445 2.5 76	15 O 0555 2.3 70	30 Th 0422 2.6 79	30 F 1025 0.2 -6	30 Tu 1644 3.1 94	30 O 2308 -0.3 -9	30 W 1644 3.1 94	30 Th 2308 -0.3 -9	30 Tu 2308 -0.3 -9

Wellington, New Zealand, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0128 2.3 70	16 W 0209 1.6 50	1 F 0236 2.0 60	16 Sa 0337 2.0 60	1 F 0120 2.0 60	16 Sa 0219 2.0 60						
0733 4.9 150	0823 5.6 170	0841 5.2 160	0946 5.2 160	0727 5.2 160	0827 4.9 150						
1408 2.3 70	1451 1.6 50	1505 2.0 60	1604 2.0 60	1348 2.0 60	1445 2.0 60						
2006 4.9 150	2049 5.6 170	2107 5.2 160	2206 5.2 160	1953 5.2 160	2046 5.2 160						
2 W 0213 2.3 70	17 Th 0305 1.6 50	2 Sa 0326 2.0 60	17 Su 0428 2.0 60	2 Sa 0215 2.0 60	17 Su 0311 2.0 60						
0818 5.2 160	0918 5.6 170	0931 5.2 160	1035 5.2 160	0820 5.2 160	0917 4.9 150						
1450 2.3 70	1543 1.6 50	1550 2.0 60	1649 2.0 60	1438 2.0 60	1532 2.0 60						
2049 4.9 150	2142 5.6 170	2155 5.2 160	2255 5.2 160	2044 5.2 160	2135 5.2 160						
3 Th 0259 2.3 70	18 F 0400 1.6 50	3 Su 0416 2.0 60	18 M 0515 2.0 60	3 Su 0309 1.6 50	18 M 0400 2.0 60						
0904 5.2 160	1012 5.6 170	1020 5.2 160	1121 4.9 150	0912 5.2 160	1004 4.9 150						
1532 2.0 60	1633 1.6 50	1635 2.0 60	1732 2.0 60	1527 2.0 60	1616 2.0 60						
2132 4.9 150	2234 5.6 170	2245 5.6 170	2341 5.2 160	2136 5.6 170	2221 5.2 160						
4 F 0345 2.0 60	19 Sa 0453 2.0 60	4 M 0507 1.6 50	19 Tu 0558 2.0 60	4 M 0402 1.6 50	19 Tu 0444 2.0 60						
0951 5.2 160	1103 5.2 160	1110 5.6 170	1205 4.9 150	1003 5.6 170	1048 4.9 150						
1613 2.0 60	1720 2.0 60	1721 1.6 50	1813 2.0 60	1616 1.6 50	1657 2.3 70						
2216 5.2 160	2325 5.2 160	2336 5.6 170		2228 5.6 170	2305 5.2 160						
5 Sa 0432 2.0 60	20 Su 0543 2.0 60	5 Tu 0557 1.6 50	20 W 0024 5.2 160	5 Tu 0453 1.6 50	20 W 0525 2.0 60						
1038 5.2 160	1152 5.2 160	1201 5.6 170	0639 2.3 70	1055 5.6 170	1129 4.9 150						
1655 2.0 60	1804 2.0 60	1810 1.6 50	1247 4.9 150	1705 1.6 50	1737 2.3 70						
2303 5.2 160			1853 2.3 70	2321 5.9 180	2346 5.2 160						
6 Su 0521 2.0 60	21 M 0013 5.2 160	6 W 0029 5.6 170	21 Th 0106 5.2 160	6 W 0544 1.6 50	21 Th 0603 2.3 70						
1127 5.2 160	0629 2.0 60	0648 1.6 50	0717 2.3 70	1146 5.6 170	1209 4.9 150						
1739 2.0 60	1239 4.9 150	1254 5.6 170	1328 4.9 150	1755 1.6 50	1816 2.3 70						
2352 5.6 170	1847 2.0 60	1901 1.6 50	1932 2.3 70								
7 M 0611 1.6 50	22 Tu 0100 5.2 160	7 Th 0123 5.9 180	22 F 0146 5.2 160	7 Th 0014 5.9 180	22 F 0026 5.2 160						
1217 5.2 160	0713 2.3 70	0741 1.6 50	0756 2.3 70	0635 1.6 50	0640 2.3 70						
1826 1.6 50	1324 4.9 150	1348 5.6 170	1410 4.9 150	1238 5.6 170	1248 4.9 150						
	1929 2.3 70	1954 1.6 50	2014 2.3 70	1847 1.6 50	1855 2.3 70						
8 Tu 0045 5.6 170	23 W 0144 5.2 160	8 F 0218 5.9 180	23 Sa 0228 5.2 160	8 F 0108 5.9 180	23 Sa 0106 5.2 160						
0703 1.6 50	0756 2.3 70	0836 1.6 50	0837 2.3 70	0726 1.6 50	0717 2.3 70						
1311 5.6 170	1408 4.9 150	1445 5.6 170	1455 4.6 140	1332 5.6 170	1329 4.9 150						
1917 1.6 50	2011 2.3 70	2051 1.6 50	2057 2.3 70	1940 1.6 50	1936 2.3 70						
9 W 0140 5.6 170	24 Th 0227 4.9 150	9 Sa 0315 5.9 180	24 Su 0311 5.2 160	9 Sa 0202 5.9 180	24 Su 0148 5.2 160						
0757 1.6 50	0838 2.3 70	0934 1.6 50	0922 2.3 70	0819 1.6 50	0757 2.3 70						
1407 5.6 170	1453 4.6 140	1543 5.6 170	1542 4.6 140	1427 5.6 170	1414 4.9 150						
2011 1.6 50	2054 2.3 70	2149 1.6 50	2145 2.3 70	2035 1.6 50	2020 2.3 70						
10 Th 0236 5.9 180	25 F 0309 4.9 150	10 Su 0411 5.9 180	25 M 0358 5.2 160	10 Su 0257 5.6 170	25 M 0233 5.2 160						
0855 1.6 50	0922 2.3 70	1034 1.6 50	1012 2.3 70	0914 1.6 50	0841 2.3 70						
1505 5.6 170	1539 4.6 140	1642 5.6 170	1631 4.9 150	1524 5.6 170	1501 4.9 150						
2110 1.6 50	2139 2.3 70	2249 1.6 50	2235 2.3 70	2132 1.6 50	2109 2.0 60						
11 F 0334 5.9 180	26 Sa 0352 4.9 150	11 M 0509 5.6 170	26 Tu 0447 5.2 160	11 M 0352 5.6 170	26 Tu 0322 5.2 160						
0955 1.6 50	1010 2.3 70	1134 1.6 50	1106 2.3 70	1011 2.0 60	0930 2.3 70						
1605 5.6 170	1626 4.6 140	1739 5.6 170	1722 4.9 150	1620 5.2 160	1553 4.9 150						
2210 1.6 50	2226 2.3 70	2349 1.6 50	2329 2.3 70	2230 1.6 50	2201 2.0 60						
12 Sa 0432 5.9 180	27 Su 0437 4.9 150	12 Tu 0606 5.6 170	27 W 0539 5.2 160	12 Tu 0448 5.6 170	27 W 0415 5.2 160						
1057 1.6 50	1100 2.3 70	1234 1.6 50	1201 2.3 70	1109 2.0 60	1025 2.3 70						
1705 5.6 170	1714 4.6 140	1835 5.6 170	1812 4.9 150	1716 5.2 160	1646 4.9 150						
● 2311 1.6 50	○ 2314 2.3 70			● 2329 2.0 60	○ 2258 2.0 60						
13 Su 0531 5.9 180	28 M 0524 4.9 150	13 W 0048 1.6 50	28 Th 0024 2.0 60	13 W 0544 5.2 160	28 Th 0510 5.2 160						
1159 1.6 50	1152 2.3 70	0703 5.6 170	0633 5.2 160	1207 2.0 60	1123 2.3 70						
1803 5.6 170	1801 4.6 140	1331 2.0 60	1256 2.3 70	1811 5.2 160	1739 5.2 160						
		1930 5.6 170	1903 4.9 150		2357 2.0 60						
14 M 0012 1.6 50	29 Tu 0004 2.3 70	14 Th 0147 1.6 50	14 W 0759 5.2 160	1303 2.0 60	1221 2.0 60						
0629 5.9 180	0612 4.9 150	1425 2.0 60	1424 5.2 160	1904 5.2 160	1834 5.2 160						
1259 1.6 50	1243 2.3 70	2024 5.2 160									
1900 5.6 170	1848 4.9 150										
15 Tu 0111 1.6 50	30 W 0055 2.3 70	15 F 0243 2.0 60	15 W 0854 5.2 160	1355 2.0 60	30 Sa 0056 2.0 60						
0726 5.9 180	0701 5.2 160	1516 2.0 60	1516 5.2 160	1956 5.2 160	0703 5.2 160						
1357 1.6 50	1332 2.3 70	2116 5.2 160									
1955 5.6 170	1934 4.9 150										
	31 Th 0145 2.3 70										
	0751 5.2 160										
	1419 2.3 70										
	2020 4.9 150										

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Wellington, New Zealand, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0251 1.6 50	16 0330 2.3 70	1 W 0328 1.3 40	16 0339 2.3 70	1 Sa 0456 1.3 40	16 0424 2.3 70	16 Su 1026 4.9 150	16 1026 4.9 150	1 M 0456 1.3 40	16 0424 2.3 70	16 Su 1026 4.9 150	16 1026 4.9 150
0853 5.6 170	Tu 0930 4.9 150	W 0927 5.6 170	Th 0937 4.9 150	Sa 1056 5.6 170	17 1109 4.9 150	17 M 1723 2.3 70	17 1109 4.9 150	17 1056 5.6 170	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1505 1.6 50	1539 2.3 70	1538 1.6 50	1544 2.3 70	1711 1.6 50	1638 2.3 70	17 1109 4.9 150	17 1109 4.9 150	17 1109 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2117 5.6 170	2144 4.9 150	2153 5.9 180	2149 4.9 150	O 2326 5.6 170	2243 5.2 160	17 1109 4.9 150	17 1109 4.9 150	17 1109 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2 Tu 0346 1.6 50	17 0412 2.3 70	2 Th 0422 1.3 40	17 0418 2.3 70	2 Sa 0548 1.6 50	17 0503 2.0 60	17 M 1723 2.3 70	17 0503 2.0 60	2 Th 0422 1.3 40	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0946 5.6 170	W 1013 4.9 150	1020 5.6 170	1017 4.9 150	Su 1150 5.6 170	1109 4.9 150	17 1723 2.3 70	17 1723 2.3 70	17 1723 2.3 70	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1558 1.6 50	1621 2.3 70	1633 1.6 50	1625 2.3 70	1806 1.6 50	1638 2.3 70	O 2329 5.2 160	O 2329 5.2 160	O 2329 5.2 160	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2211 5.9 180	2227 4.9 150	2249 5.9 180	2231 4.9 150						16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
3 W 0439 1.3 40	18 0451 2.3 70	3 F 0514 1.3 40	18 0456 2.3 70	3 M 0021 5.6 170	18 0544 2.0 60	18 Tu 1154 5.2 160	18 0544 2.0 60	3 M 0021 5.6 170	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1038 5.6 170	Th 1053 4.9 150	1114 5.6 170	1057 4.9 150	0638 1.6 50	1154 5.2 160	18 1810 2.0 60	18 1810 2.0 60	18 1810 2.0 60	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1650 1.6 50	1700 2.3 70	1727 1.6 50	1707 2.3 70	1245 5.6 170	1723 2.3 70	O 1901 1.6 50	O 1901 1.6 50	O 1901 1.6 50	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
O 2305 5.9 180	2308 4.9 150	2344 5.9 180	2313 4.9 150	1901 1.6 50	1901 1.6 50				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
4 Th 0530 1.3 40	19 0529 2.3 70	4 Sa 0606 1.6 50	19 0533 2.3 70	4 Tu 0115 5.2 160	19 0627 2.0 60	19 W 0627 2.0 60	19 0627 2.0 60	4 Tu 0115 5.2 160	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1131 5.6 170	F 1132 4.9 150	1208 5.6 170	1138 4.9 150	0728 2.0 60	1243 5.2 160	19 1859 2.0 60	19 1859 2.0 60	19 1859 2.0 60	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1742 1.6 50	O 1740 2.3 70	1821 1.6 50	1749 2.3 70	1338 5.2 160	1859 2.0 60				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
5 F 0000 5.9 180	20 0605 2.3 70	5 Su 0039 5.6 170	20 0611 2.0 60	5 W 0207 5.2 160	20 0108 5.2 160	20 Th 0714 2.0 60	20 0108 5.2 160	5 W 0207 5.2 160	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0621 1.6 50	Sa 1211 4.9 150	0656 1.6 50	M 1221 4.9 150	0817 2.0 60	1335 5.2 160	20 1335 5.6 170	20 1335 5.6 170	20 1335 5.6 170	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1223 5.6 170	1820 2.3 70	1302 5.6 170	1834 2.0 60	1429 5.2 160	2045 2.0 60	O 1952 1.6 50	O 1952 1.6 50	O 1952 1.6 50	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1834 1.6 50		1915 1.6 50							16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
6 Sa 0054 5.9 180	21 0030 5.2 160	6 M 0132 5.6 170	21 0043 5.2 160	6 Th 0257 4.9 150	21 0202 5.2 160	21 F 0806 1.6 50	21 0202 5.2 160	6 Th 0257 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0712 1.6 50	Su 0643 2.0 60	0747 1.6 50	Tu 0653 2.0 60	0905 2.0 60	0806 1.6 50	21 1430 5.6 170	21 1430 5.6 170	21 1430 5.6 170	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1317 5.6 170	1253 4.9 150	1355 5.6 170	1308 5.2 160	1519 5.2 160	1519 5.2 160	O 2047 1.6 50	O 2047 1.6 50	O 2047 1.6 50	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1928 1.6 50	1903 2.3 70	2009 2.0 60	1922 2.0 60	2136 2.3 70					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
7 Su 0147 5.6 170	22 0113 5.2 160	7 Tu 0225 5.2 160	22 0132 5.2 160	7 F 0347 4.9 150	22 0259 5.6 170	22 Sa 0902 1.6 50	22 0259 5.6 170	7 F 0347 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0803 1.6 50	M 0723 2.0 60	0837 2.0 60	W 0738 2.0 60	0953 2.3 70	1527 5.9 180	22 1527 5.9 180	22 1527 5.9 180	22 1527 5.9 180	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1411 5.6 170	1338 4.9 150	1449 5.2 160	1359 5.2 160	1606 5.2 160	2225 2.3 70	O 2146 1.6 50	O 2146 1.6 50	O 2146 1.6 50	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2022 1.6 50	1948 2.0 60	2103 2.0 60	2013 2.0 60	2225 2.3 70					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
8 M 0241 5.6 170	23 0200 5.2 160	8 W 0317 5.2 160	23 0225 5.2 160	8 Sa 0435 4.9 150	23 0357 5.6 170	23 Su 1001 1.6 50	23 0357 5.6 170	8 Sa 0435 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0855 2.0 60	Tu 0807 2.0 60	0928 2.0 60	Th 0829 2.0 60	1040 2.3 70	1624 5.9 180	23 1624 5.9 180	23 1624 5.9 180	23 1624 5.9 180	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1506 5.2 160	1427 5.2 160	1540 5.2 160	1453 5.6 170	1651 5.2 160	2315 2.3 70	O 2247 1.6 50	O 2247 1.6 50	O 2247 1.6 50	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2117 2.0 60	2038 2.0 60	2156 2.0 60	2109 1.6 50	2315 2.3 70					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
9 Tu 0335 5.2 160	24 0251 5.2 160	9 Th 0409 4.9 150	24 0321 5.2 160	9 M 0523 4.6 140	24 0456 5.6 170	24 M 1101 1.6 50	24 0456 5.6 170	9 M 0523 4.6 140	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0949 2.0 60	W 0856 2.0 60	1020 2.3 70	0925 2.0 60	1127 2.3 70	1127 2.3 70	O 2348 1.3 40	O 2348 1.3 40	O 2348 1.3 40	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1600 5.2 160	1520 5.2 160	1631 5.2 160	1549 5.6 170	1736 5.2 160					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
2213 2.0 60	2133 2.0 60	2249 2.3 70	2208 1.6 50	O 2247 1.6 50					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
10 W 0429 5.2 160	25 0346 5.2 160	10 F 0500 4.9 150	25 0420 5.2 160	10 M 0004 2.3 70	25 0555 5.6 170	25 Tu 1201 1.3 40	25 0555 5.6 170	10 M 0004 2.3 70	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1045 2.0 60	Th 0952 2.0 60	1110 2.3 70	1024 1.6 50	0610 4.6 140	1213 2.3 70	25 1819 5.9 180	25 1819 5.9 180	25 1819 5.9 180	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1653 5.2 160	F 1615 5.2 160	1719 5.2 160	1646 5.9 180	1213 2.3 70	1820 4.9 150				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
● 2309 2.0 60	O 2321 2.0 60	● 2342 2.3 70	O 2309 1.6 50	1820 4.9 150					16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
11 Th 0523 5.2 160	26 0444 5.2 160	11 F 1051 2.0 60	26 0519 5.6 170	11 Tu 0655 4.6 140	26 0049 1.3 40	26 W 0652 5.6 170	26 0049 1.3 40	11 Tu 0655 4.6 140	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1139 2.3 70	1711 5.6 170	1711 5.6 170	1200 2.3 70	1124 1.6 50	1258 2.3 70	26 1301 1.3 40	26 1301 1.3 40	26 1301 1.3 40	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1746 5.2 160	O 2332 1.6 50	O 2332 1.6 50	1807 5.2 160	1743 5.9 180	1258 2.3 70	O 1917 5.9 180	O 1917 5.9 180	O 1917 5.9 180	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
12 F 0005 2.0 60	27 0542 5.2 160	12 Su 1151 2.0 60	27 0011 1.6 50	12 W 0739 4.6 140	27 0148 1.3 40	27 Th 0748 5.6 170	27 0148 1.3 40	12 W 0739 4.6 140	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0616 4.9 150	Sa 1250 5.6 170	1250 5.6 170	1248 2.3 70	1224 1.6 50	1343 2.3 70	27 1400 1.3 40	27 1400 1.3 40	27 1400 1.3 40	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1232 2.3 70	1904 5.9 180	1904 5.9 180	1853 4.9 150	1841 5.9 180	1947 4.9 150				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1836 5.2 160				1841 5.9 180	1947 4.9 150				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
13 Sa 0100 2.3 70	28 0033 1.6 50	13 M 0727 4.9 150	28 0112 1.3 40	13 Th 0822 4.6 140	28 0246 1.3 40	28 F 0844 5.6 170	28 0246 1.3 40	13 Th 0822 4.6 140	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0708 4.9 150	Su 0640 5.6 170	1250 5.6 170	1334 2.3 70	1323 1.6 50	1427 2.3 70	28 1458 1.3 40	28 1458 1.3 40	28 1458 1.3 40	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1323 2.3 70	1250 5.6 170	1250 5.6 170	1334 2.3 70	1398 5.9 180	2031 4.9 150				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
1926 5.2 160	1904 5.9 180	1904 5.9 180	1939 4.9 150	1938 5.9 180	2031 4.9 150				16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
14 Su 0153 2.3 70	29 0134 1.6 50	14 Tu 0813 4.9 150	29 0211 1.3 40	14 F 0903 4.9 150	29 0341 1.3 40	29 Sa 0940 5.6 170	29 0341 1.3 40	14 F 0903 4.9 150	16 0424 2.3 70	16 1026 4.9 150	16 1026 4.9 150
0758 4.9 150	Su 0833 1.6 50	1411 2.3 70	1419 2.3 70</td								

Wellington, New Zealand, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0526	1.6	50	16 Tu 0436	2.0	60	1 Th 0026	5.2	160	16 F 0546	1.6	50
1130	5.6	170	1043	5.2	160	0637	2.0	60	1203	5.6	170
1748	1.6	50	1702	2.0	60	1248	5.2	160	1824	1.6	50
			● 2306	5.2	160	1905	2.0	60			
2 Tu 0001	5.2	160	17 W 0519	2.0	60	2 F 0115	4.9	150	17 Sa 0028	5.2	160
0616	1.6	50	1131	5.2	160	0722	2.0	60	0636	1.6	50
1224	5.6	170	1750	2.0	60	1335	5.2	160	1257	5.6	170
1842	2.0	60	2355	5.2	160	1950	2.3	70	1916	1.6	50
3 W 0053	5.2	160	18 Th 0605	2.0	60	3 Sa 0201	4.9	150	18 Su 0122	5.6	170
0705	2.0	60	1222	5.6	170	0806	2.3	70	0729	1.6	50
1316	5.2	160	1841	1.6	50	1420	5.2	160	1352	5.9	180
1933	2.0	60				2034	2.3	70	2010	1.6	50
4 Th 0144	4.9	150	19 F 0047	5.2	160	4 Su 0247	4.9	150	19 M 0218	5.6	170
0752	2.0	60	0654	1.6	50	0849	2.3	70	0825	1.6	50
1405	5.2	160	1315	5.6	170	1503	5.2	160	1448	5.9	180
2022	2.0	60	1933	1.6	50	2118	2.3	70	2106	1.6	50
5 F 0233	4.9	150	20 Sa 0141	5.2	160	5 M 0332	4.6	140	20 Tu 0316	5.6	170
0838	2.0	60	0746	1.6	50	0933	2.3	70	0923	1.3	40
1452	5.2	160	1410	5.9	180	1545	4.9	150	1545	5.9	180
2109	2.3	70	2028	1.6	50	2203	2.3	70	2205	1.6	50
6 Sa 0320	4.9	150	21 Su 0238	5.6	170	6 Tu 0417	4.6	140	21 W 0415	5.6	170
0923	2.3	70	0842	1.6	50	1018	2.3	70	1023	1.3	40
1537	5.2	160	1506	5.9	180	1628	4.9	150	1642	5.9	180
2155	2.3	70	2126	1.6	50	2250	2.3	70	○ 2305	1.6	50
7 Su 0406	4.9	150	22 M 0336	5.6	170	7 W 0503	4.6	140	22 Th 0512	5.6	170
1008	2.3	70	0941	1.3	40	1104	2.3	70	1122	1.3	40
1620	5.2	160	1603	5.9	180	1712	4.9	150	1740	5.9	180
2242	2.3	70	2226	1.6	50	● 2338	2.3	70			
8 M 0452	4.6	140	23 Tu 0435	5.6	170	8 Th 0548	4.6	140	23 F 0005	1.6	50
1053	2.3	70	1041	1.3	40	1151	2.3	70	0609	5.6	170
1703	4.9	150	1701	5.9	180	1758	4.9	150	1222	1.6	50
● 2329	2.3	70	○ 2327	1.6	50				1837	5.6	170
9 Tu 0538	4.6	140	24 W 0533	5.6	170	9 F 0026	2.3	70	24 Sa 0103	1.6	50
1138	2.3	70	1141	1.3	40	0632	4.9	150	0704	5.6	170
1746	4.9	150	1759	5.9	180	1239	2.3	70	1321	1.6	50
						1845	4.9	150	1934	5.6	170
10 W 0016	2.3	70	25 Th 0027	1.3	40	10 Sa 0114	2.3	70	25 Su 0158	1.6	50
0622	4.6	140	0630	5.6	170	0717	4.9	150	0759	5.6	170
1224	2.3	70	1240	1.3	40	1328	2.3	70	1419	1.6	50
1830	4.9	150	1857	5.9	180	1933	4.9	150	2029	5.6	170
11 Th 0103	2.3	70	26 F 0126	1.3	40	11 Su 0200	2.3	70	26 M 0252	1.6	50
0706	4.6	140	0726	5.6	170	0801	4.9	150	0852	5.6	170
1309	2.3	70	1340	1.3	40	1417	2.3	70	1515	1.6	50
1914	4.9	150	1954	5.9	180	2021	5.2	160	2124	5.2	160
12 F 0149	2.3	70	27 Sa 0222	1.6	50	12 M 0244	2.3	70	27 Tu 0343	1.6	50
0749	4.9	150	0822	5.6	170	0847	4.9	150	0945	5.6	170
1355	2.3	70	1438	1.6	50	1506	2.0	60	1608	1.6	50
2000	4.9	150	2051	5.6	170	2109	5.2	160	2216	5.2	160
13 Sa 0232	2.3	70	28 Su 0317	1.6	50	13 Tu 0328	2.0	60	28 W 0431	2.0	60
0831	4.9	150	0917	5.6	170	0933	5.2	160	1037	5.2	160
1441	2.3	70	1536	1.6	50	1555	2.0	60	1659	2.0	60
2045	4.9	150	2148	5.6	170	2157	5.2	160	○ 2306	5.2	160
14 Su 0314	2.3	70	29 M 0410	1.6	50	14 W 0413	2.0	60	29 Th 0518	2.0	60
0914	4.9	150	1011	5.6	170	1021	5.2	160	1126	5.2	160
1528	2.3	70	1632	1.6	50	1644	2.0	60	1747	2.0	60
2131	4.9	150	2242	5.6	170	● 2246	5.2	160	2353	4.9	150
15 M 0355	2.3	70	30 Tu 0501	1.6	50	15 Th 0458	2.0	60	30 F 0603	2.0	60
0958	4.9	150	1105	5.6	170	1111	5.6	170	1214	5.2	160
1614	2.3	70	1726	2.0	60	1734	1.6	50	1831	2.0	60
2218	5.2	160	○ 2335	5.2	160	2336	5.2	160			
			31 W 0549	2.0	60				31 Sa 0646	2.0	60
			1158	5.2	160				1259	5.2	160
			1817	2.0	60				1913	2.3	70

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Wellington, New Zealand, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0125	4.9	150	16 W 0144	5.6	170	1 F 0215	4.9	150	1 Su 0231	5.2	160
0731	2.3	70	0755	1.6	50	0826	2.3	70	0846	2.0	60
1342	4.9	150	1415	5.6	170	1437	4.9	150	1458	5.2	160
1952	2.3	70	2030	1.6	50	2043	2.3	70	2101	2.0	60
2 W 0209	4.9	150	17 Th 0240	5.6	170	2 Sa 0306	4.9	150	2 M 0326	5.6	170
0816	2.3	70	0853	1.6	50	0919	2.0	60	0944	2.0	60
1426	4.9	150	1511	5.6	170	1530	5.2	160	1555	5.2	160
2035	2.3	70	2126	2.0	60	2136	2.0	60	2159	2.0	60
3 Th 0256	4.9	150	18 F 0337	5.6	170	3 Su 0359	5.2	160	3 Tu 0422	5.6	170
0903	2.3	70	0951	1.6	50	1015	2.0	60	1044	1.6	50
1514	4.9	150	1607	5.2	160	1626	5.2	160	1654	5.2	160
2123	2.3	70	2223	2.0	60	2233	2.0	60	2259	1.6	50
4 F 0345	4.9	150	19 Sa 0432	5.6	170	4 M 0453	5.2	160	4 W 0518	5.9	180
0954	2.3	70	1050	2.0	60	1114	2.0	60	1145	1.6	50
1604	4.9	150	1703	5.2	160	1722	5.2	160	1752	5.6	170
2216	2.3	70	○ 2319	2.0	60	● 2331	2.0	60	2358	1.6	50
5 Sa 0435	4.9	150	20 Su 0526	5.6	170	5 Tu 0546	5.6	170	5 Th 0615	5.9	180
1047	2.0	60	1147	2.0	60	1212	1.6	50	1245	1.6	50
1656	5.2	160	1757	5.2	160	1818	5.2	160	1849	5.6	170
● 2310	2.3	70				1913	4.9	150			
6 Su 0525	5.2	160	21 M 0013	2.0	60	6 W 0027	2.0	60	6 F 0056	1.6	50
1142	2.0	60	0618	5.2	160	0640	5.6	170	0711	5.9	180
1750	5.2	160	1243	2.0	60	1310	1.6	50	1343	1.3	40
			1850	5.2	160	1913	5.6	170	1944	5.6	170
7 M 0004	2.0	60	22 Tu 0105	2.0	60	7 Th 0122	1.6	50	7 Sa 0153	1.3	40
0616	5.2	160	0709	5.2	160	0735	5.9	180	0808	5.9	180
1238	2.0	60	1336	2.0	60	1406	1.6	50	1444	2.3	70
1843	5.2	160	1941	5.2	160	2006	5.6	170	2043	4.9	150
8 Tu 0057	2.0	60	23 W 0154	2.0	60	8 F 0216	1.6	50	8 Sa 0250	1.3	40
0707	5.2	160	0757	5.2	160	0829	5.9	180	0904	5.9	180
1333	1.6	50	1427	2.0	60	1500	1.3	40	1526	2.0	60
1936	5.2	160	2030	4.9	150	2059	5.6	170	2125	4.9	150
9 W 0149	2.0	60	24 Th 0240	2.0	60	9 Sa 0310	1.6	50	9 M 0346	1.3	40
0758	5.6	170	0845	5.2	160	0923	5.9	180	1000	5.9	180
1427	1.6	50	1514	2.0	60	1553	1.3	40	1627	1.3	40
2028	5.6	170	2115	4.9	150	2152	5.6	170	2206	4.9	150
10 Th 0239	1.6	50	25 F 0324	2.0	60	10 M 0403	1.3	40	10 W 0413	2.3	70
0850	5.6	170	0930	5.2	160	1018	5.9	180	1018	5.2	160
1519	1.6	50	1558	2.0	60	1645	1.3	40	1643	2.3	70
2119	5.6	170	2159	4.9	150	○ 2244	5.6	170	2245	4.9	150
11 F 0330	1.6	50	26 Sa 0407	2.3	70	11 M 0457	1.3	40	11 W 0454	2.3	70
0942	5.9	180	1014	5.2	160	1113	5.9	180	1059	4.9	150
1611	1.6	50	1639	2.0	60	1736	1.3	40	1719	2.3	70
2210	5.6	170	2241	4.9	150	2338	5.6	170	○ 2325	4.9	150
12 Sa 0421	1.6	50	27 Su 0448	2.3	70	12 Tu 0551	1.6	50	12 W 0535	2.3	70
1035	5.9	180	1056	5.2	160	1208	5.9	180	1141	4.9	150
1702	1.3	40	1717	2.0	60	1827	1.6	50	1757	2.0	60
● 2302	5.6	170	○ 2321	4.9	150				1900	1.6	50
13 Su 0512	1.6	50	28 M 0529	2.3	70	13 W 0032	5.6	170	13 Th 0535	2.3	70
1129	5.9	180	1137	5.2	160	0646	1.6	50	0618	2.3	70
1752	1.3	40	1755	2.3	70	1303	5.6	170	1225	5.2	160
2354	5.6	170				1919	1.6	50	1836	2.0	60
14 M 0605	1.6	50	29 Tu 0001	4.9	150	14 Th 0127	5.6	170	29 F 0050	4.9	150
1224	5.9	180	0610	2.3	70	0742	1.6	50	0704	2.0	60
1843	1.6	50	1218	4.9	150	1358	5.6	170	1312	5.2	160
			1832	2.3	70	2011	1.6	50	1919	2.0	60
15 Tu 0048	5.6	170	30 W 0043	4.9	150	15 F 0223	5.6	170	30 Sa 0139	5.2	160
0659	1.6	50	0652	2.3	70	0838	2.0	60	0753	2.0	60
1319	5.6	170	1301	4.9	150	1453	5.2	160	1403	5.2	160
1936	1.6	50	1912	2.3	70	2105	2.0	60	2007	2.0	60
			31 Th 0127	4.9	150						
			0737	2.3	70						
			1347	4.9	150						
			1955	2.3	70						

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0330	2.0	60	16 W	0416	1.3	40	1 F	0429	2.0	60
0956	10.2	310		1047	11.5	350		16 Sa	0522	2.3	70
1558	2.3	70		1648	1.3	40		1748	10.2	310	
2219	9.8	300		2308	10.8	330		17 Sa	1150	2.3	70
								17 F	1551	1.6	50
2 W	0410	2.0	60	17 Th	0504	1.6	50	16 Tu	0324	1.6	50
1036	10.2	310		1135	10.8	330		0949	10.8	330	
1639	2.3	70		1736	1.6	50		1551	1.6	50	
2300	9.8	300		2356	10.2	310		2216	10.8	330	
								16 Sa	1036	10.5	320
3 Th	0451	2.0	60	18 F	0553	2.3	70	16 F	0408	2.3	70
1117	10.2	310		1223	10.5	320		1036	11.1	310	
1722	2.3	70		1824	2.0	60		1235	10.8	330	
2342	9.8	300						1712	2.3	70	
								2335	9.8	300	
4 F	0535	2.3	70	19 W	0044	9.8	300	17 Sa	0409	1.6	50
1201	10.2	310		0644	2.6	80		1034	10.8	330	
1807	2.3	70		1311	9.8	300		1636	1.6	50	
				1912	2.3	70		2301	10.8	330	
5 Sa	0028	9.8	300	20 Su	0135	9.5	290	17 F	0456	1.6	50
0624	2.3	70		0738	3.3	100		1121	10.8	330	
1249	10.2	310		1401	9.5	290		1723	1.6	50	
1856	2.3	70		2004	2.6	80		2350	10.5	320	
6 Su	0120	9.5	290	21 M	0229	9.2	280	18 Sa	0534	3.0	90
0720	2.6	80		0835	3.6	110		1159	9.8	300	
1341	9.8	300		1452	9.2	280		1753	2.6	80	
1950	2.3	70		2058	3.0	90					
7 M	0218	9.5	290	22 Tu	0327	8.9	270	19 F	0105	9.2	280
0821	2.6	80		0933	3.6	110		0711	3.6	110	
1438	9.8	300		1546	8.9	270		1329	9.2	280	
2050	2.3	70		2154	3.0	90		1928	3.3	100	
8 Tu	0323	9.8	300	23 W	0425	8.9	270	20 F	0157	9.2	280
0924	2.6	80		1028	3.6	110		0806	3.9	120	
1539	9.8	300		1641	8.9	270		1421	8.9	270	
2154	2.0	60		2248	3.0	90		2024	3.6	110	
9 W	0428	10.2	310	24 Th	0519	9.2	280	21 F	0253	8.9	270
1028	2.3	70		1120	3.6	110		0902	3.9	120	
1644	10.2	310		1735	8.9	270		1517	8.9	270	
2257	1.6	50		2339	3.0	90		2123	3.6	110	
10 Th	0531	10.5	320	25 F	0607	9.2	280	22 F	0350	9.2	280
1128	2.0	60		1207	3.3	100		0957	3.6	110	
1748	10.2	310		1825	9.2	280		1615	8.9	270	
2358	1.3	40						2221	3.3	100	
11 F	0629	10.8	330	26 Sa	0025	2.6	80	23 F	0443	9.2	280
1227	1.6	50		0652	9.5	290		1049	3.3	100	
1849	10.5	320		1251	3.0	90		1711	9.2	280	
				1911	9.2	280		2313	3.0	90	
12 Sa	0054	1.0	30	27 Su	0107	2.3	70	24 F	0443	9.2	280
0725	11.5	350		0733	9.8	300		0954	2.3	70	
1322	1.3	40		1332	3.0	90		1717	10.2	310	
1946	10.8	330		1955	9.5	290		2325	2.0	60	
13 Su	0148	0.7	20	28 M	0148	2.3	70	25 F	0533	9.5	290
0817	11.5	350		0813	10.2	310		1138	3.0	90	
1416	1.0	30		1413	2.6	80		1803	9.5	290	
2040	11.2	340		2036	9.8	300					
14 M	0239	0.7	20	29 Tu	0227	2.0	60	26 F	0001	2.6	80
0908	11.8	360		0852	10.5	320		0620	9.8	300	
1508	1.0	30		1453	2.3	70		1225	2.6	80	
2131	11.2	340		2116	10.2	310		1851	10.2	310	
15 Tu	0328	1.0	30	30 W	0306	2.0	60	27 F	0047	2.3	70
0958	11.5	350		0931	10.5	320		0706	10.5	320	
1559	1.0	30		1534	2.0	60		1311	2.0	60	
2220	11.2	340		2156	10.2	310		1938	10.5	320	
				31 Th	0347	1.6	50	28 F	0131	2.0	60
				1012	10.5	320		0752	10.8	330	
				1615	2.0	60		1356	1.6	50	
				2237	10.5	320		2023	10.8	330	

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2013

Times and Heights of High and Low Waters

April				May				June								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
1 M 0440 1104 1705 2335	h m 1.6 10.8 1.3 11.2	ft 50 330 40 340	cm 50 290 80 300	16 Tu 1126 1718 2344	h m 0503 1143 1742	ft 3.0 10.8 1.6	cm 90 330 50 300	16 W 0521 Th 1138 1728 2356	h m 1.6 9.5 3.0 9.8	ft 50 290 90 300	cm 100 290 90 300					
	0534 1157 1757	2.0 10.8 1.6	60 330 50		0016 W 1208 1801	11.2 9.2 3.0	340 280 90		0602 F 1220 1814	3.3 9.2 3.0	100 280 90					
	0030 0631 1252 1854	10.8 2.3 10.5 2.0	330 70 320 60		0028 Th 0635 1253 1849	9.5 3.6 110 9.2 3.3	290 110 310 280 100		0041 Sa 0650 1307 1904	9.5 3.3 100 9.2 100	290 100 300 280 100					
	0129 0732 1351 1956	10.5 2.3 10.2 2.3	320 70 310 70		0116 F 0726 1342 1942	9.2 3.6 110 8.9 3.6	280 110 310 270 110		0129 Sa 0818 1438 2045	9.5 2.3 300 9.8 2.6	290 100 300 280 100					
5 F 0231 0835 1454 2102	0209 0819 1436 2039	10.2 2.6 9.8 2.6	310 80 80 80	5 Sa 0312 0918 1539 2148	h m 0.2 2.3 9.8 2.6	ft 310 70 300 80	cm 310 70 300 80	20 M 0220 0832 1453 2057	h m 9.5 3.0 9.2 3.3	ft 290 90 280 100	cm 300 90 280 100					
	0334 0937 1558 2207	10.2 2.6 9.8 2.6	310 80 300 80		0410 M 1015 1639	10.2 2.3 9.8	310 70 300		0220 Tu 0926 1552	9.5 3.0 9.5	290 90 290					
	0433 1036 1700 2307	10.2 2.3 9.8 2.3	310 70 300 70		0410 M 1015 1639	10.2 2.3 9.8	310 70 300		0314 Tu 1132 1800	9.5 2.3 9.8	290 70 300					
	0357 1007 1631 2233	9.5 3.3 9.2 3.0	280 100 280 90		0410 M 1015 1639	10.2 2.3 9.8	310 70 300		0527 Th 1132 1800	9.8 2.3 9.8	300 70 300					
7 Su 0433 1036 1700 2307	0357 1007 1631 2233	9.5 3.3 9.2 3.0	290 100 280 90	7 Tu 0504 1109 1735 2338	h m 10.2 2.3 10.2 2.6	ft 310 70 310 80	cm 310 70 310 80	21 F 0433 1047 1719 2318	h m 9.5 3.0 9.5 3.0	ft 290 90 290 90	cm 310 70 320 70					
	0408 1021 1650 2250	9.8 2.6 9.8 2.6	300 80 300 80		0408 W 1021 1650	9.8 2.6 9.8	300 80 300		0000 F 0616 1219	3.0 9.8 2.3	90 300 70	22 Sa 1145 1817	10.5 10.8	320 330		
	0449 1059 1726 2325	10.5 2.6 9.8 2.6	320 80 300 80		0504 W 1116 1826	10.2 2.3 10.2	310 70 310		0045 Sa 0703 1303	3.0 9.8 2.3	90 300 70	23 Su 1241 1931	1.6 10.2	50 350		
	0540 1149 1818	10.2 2.3 10.2	310 70 310		0526 Th 1246 1913	2.6 2.0 10.2	80 60 310		0026 F 1210 1841	2.6 1.6 10.8	80 50 330	24 Su 1344 2012	1.3 10.2	40 360		
10 W 0049 0711 1312 1938	0014 0631 1239 1908	2.3 10.5 2.0 10.5	70 320 60 320	10 Th 0110 0731 1329 1957	h m 2.3 10.5 2.0 10.8	ft 70 320 60 330	cm 80 300 60 350	25 M 0037 0655 1303 1933	h m 1.6 10.8 1.3 11.5	ft 50 330 40 350	cm 50 300 40 350	25 Tu 0208 0830 1423 2051	h m 3.0 9.8 2.3 10.2	ft 90 300 70 310	cm 40 340 20 360	
	0104 0919 1526 1957	2.3 2.3 2.0 11.2	70 70 60 340		0110 F 0731 1329	2.6 10.2 2.0 10.5	80 310 60 320		0060 F 1210 1841	10.5 1.6 10.8	320 50 330		24 M 0127 0748 1344 2012	1.3 9.8 2.3 10.2	40 340 20 360	
	0114 0631 1239 1908	2.3 10.5 2.0 10.8	70 320 60 330		0110 F 0731 1329	2.6 10.2 2.0 10.5	80 310 60 320		0037 M 0655 1303	1.6 10.8 1.3 11.5	50 330 40 350		25 Tu 0208 0830 1423 2051	1.3 9.8 2.3 10.2	40 340 20 360	
	0152 0722 1328 1957	2.3 10.8 1.3 11.2	50 330 40 340		0152 F 0815 1411	2.6 10.2 2.0 10.5	80 310 60 320		0129 M 0750 1355	1.3 11.2 1.0 11.8	40 340 30 360		21 Tu 0248 0911 1501 2129	3.0 9.8 2.3 10.2	90 300 70 310	26 W 0258 0922 1520 2152
12 F 0218 0842 1439 2105	0152 0813 1417 2046	2.3 10.5 2.0 10.5	50 320 60 320	12 Tu 0233 0857 1450 2117	h m 1.6 9.8 2.0 11.5	ft 50 300 60 350	cm 80 300 60 320	27 W 0222 0845 1447 2117	h m 1.3 11.2 0.7 10.5	ft 40 340 20 360	cm 40 340 20 360	27 Th 0328 0950 1539 2207	h m 3.0 9.5 2.3 10.2	ft 90 290 70 310	cm 30 340 20 360	
	0242 0904 1506 2136	1.3 11.2 1.0 11.5	40 340 30 350		0313 M 0937 1529 2156	2.6 9.8 2.3 10.2	80 300 70 310		0316 Tu 0939 1538 2210	1.3 11.2 1.0 11.8	40 340 30 360		28 F 0446 1107 1704 2337	1.3 11.2 1.3 11.5	40 340 20 350	
	0333 0956 1556 2227	1.3 11.2 1.0 11.5	40 340 30 350		0353 Tu 1017 1607 2234	3.0 9.8 10.2	90 300 310		0410 W 1033 1631 2303	1.3 11.2 1.0 11.5	40 340 30 350			24 M 0449 1109 1659 2326	3.0 9.5 2.6 9.8	90 290 80 300
	0425 1049 1648 2320	1.6 11.2 1.3 11.5	50 340 40 350		0435 W 1057 1647 2314	3.0 9.5 2.6 9.8	90 290 80 300		0505 Th 1127 1725 2358	1.3 10.8 1.6 11.2	40 330 30 340		29 M 0532 1151 1659 2326	3.0 9.5 2.6 9.8	90 290 80 300	
15 M 0421 1046 1638 2303	0425 1049 1648 2320	2.6 9.8 2.3 10.2	80 300 70 310	15 Tu 1057 1647 2314	h m 9.5 9.5 1.3 11.5	ft 290 290 40 350	cm 300 300 80 350	31 F 1222 1821	h m 10.5 2.0	ft 320 60	cm 300 60		30 W 0602 1222 1821	1.6 10.5 2.0	50 320 60	
	0425 1049 1648 2320	1.6 11.2 1.3 11.5	50 340 40 350		0435 W 1057 1647 2314	3.0 9.5 2.6 9.8	90 290 80 300		0505 Th 1127 1725 2358	1.3 10.8 1.6 11.2	40 330 30 340			30 W 0602 1222 1821	1.6 10.5 2.0	50 320 60
	0425 1049 1648 2320	1.6 11.2 1.3 11.5	50 340 40 350		0435 W 1057 1647 2314	3.0 9.5 2.6 9.8	90 290 80 300		0505 Th 1127 1725 2358	1.3 10.8 1.6 11.2	40 330 30 340			30 W 0602 1222 1821	1.6 10.5 2.0	50 320 60
	0425 1049 1648 2320	1.6 11.2 1.3 11.5	50 340 40 350		0435 W 1057 1647 2314	3.0 9.5 2.6 9.8	90 290 80 300		0505 Th 1127 1725 2358	1.3 10.8 1.6 11.2	40 330 30 340			30 W 0602 1222 1821	1.6 10.5 2.0	50 320 60

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0123	10.5	320	16 0026	10.2	310	1 Th 0235	9.5	290	16 Su 0147	9.8	300
0727	2.3	70	Tu 0632	2.3	70	0840	3.0	90	F 0756	2.3	70
1348	9.8	300	1255	9.5	290	1508	9.2	280	1429	9.8	300
1953	2.6	80	● 1854	2.6	80	2115	3.3	100	2032	2.6	80
2 Tu 0217	10.2	310	17 W 0115	9.8	300	2 0329	9.2	280	17 M 0444	8.9	270
0822	2.3	70	0723	2.3	70	0936	3.0	90	1049	3.0	90
1446	9.5	290	1350	9.5	290	1606	9.2	280	1714	9.2	280
2052	3.0	90	1951	3.0	90	2211	3.6	110	2318	3.3	100
3 W 0310	9.8	300	18 Th 0208	9.8	300	3 Sa 0424	9.2	280	3 Tu 0536	8.9	270
0917	2.6	80	0820	2.3	70	1031	3.0	90	1137	2.6	80
1543	9.5	290	1450	9.8	300	1700	9.2	280	1800	9.5	290
2150	3.3	100	2053	2.6	80	2303	3.3	100	2239	2.3	70
4 Th 0404	9.5	290	19 0307	9.8	300	4 Su 0517	9.2	280	4 W 0003	3.0	90
1011	2.6	80	0921	2.3	70	1122	3.0	90	0624	9.2	280
1640	9.5	290	1554	9.8	300	1749	9.5	290	1221	2.6	80
2243	3.3	100	2156	2.6	80	2350	3.3	100	1843	9.8	300
5 F 0456	9.5	290	20 0410	10.2	310	5 M 0608	9.2	280	5 Th 0045	2.6	80
1103	2.6	80	1024	2.0	60	1209	2.6	80	0708	9.5	290
1732	9.5	290	1657	10.2	310	1834	9.5	290	1302	2.3	70
2333	3.3	100	2256	2.3	70	20 0601	10.5	320	● 1923	10.2	310
6 Sa 0547	9.5	290	21 W 0513	10.2	310	6 Tu 0034	3.0	90	6 F 0126	2.3	70
1151	2.6	80	1125	1.6	50	0654	9.2	280	0750	9.8	300
1820	9.8	300	1757	10.8	330	1251	2.3	70	1342	2.0	60
2355	1.6	50	2355	1.6	50	1916	9.8	300	2003	10.2	310
7 Su 0018	3.3	100	22 M 0615	10.5	320	7 W 0116	3.0	90	21 Sa 0158	1.0	30
0636	9.5	290	1223	1.3	40	0738	9.5	290	0823	11.2	340
1236	2.6	80	1853	11.2	340	1331	2.3	70	1420	1.0	30
1904	9.8	300	● 1955	10.2	310	20 0128	1.0	30	2045	11.2	340
8 M 0102	3.0	90	23 Th 0052	1.3	40	8 Th 0155	2.6	80	22 Su 0244	1.0	30
0722	9.5	290	0714	10.8	330	0818	9.8	300	0909	11.2	340
1318	2.3	70	Tu 1318	1.0	30	1409	2.0	60	1505	1.3	40
● 1945	9.8	300	○ 1947	11.5	350	2033	10.2	310	2131	10.8	330
9 Tu 0143	3.0	90	24 W 0146	1.0	30	9 F 0235	2.3	70	23 M 0329	1.0	30
0804	9.5	290	0810	11.2	340	0858	9.8	300	0953	10.8	330
1357	2.3	70	1411	0.7	20	1448	2.0	60	1549	1.6	50
2024	10.2	310	2040	11.8	360	2112	10.5	320	2216	10.5	320
10 W 0222	2.6	80	25 Th 0240	1.0	30	10 Sa 0314	2.3	70	24 Tu 0412	1.3	40
0845	9.5	290	0903	11.5	350	0936	10.2	310	0412	1.3	40
1435	2.3	70	1501	0.7	20	1527	2.0	60	0952	10.5	320
2102	10.2	310	2131	11.8	360	2151	10.5	320	1036	10.5	320
11 Th 0302	2.6	80	26 F 0332	1.0	30	11 Su 0354	2.0	60	25 W 1119	10.2	310
0924	9.8	300	0955	11.2	340	1016	10.2	310	1361	1.6	50
1514	2.3	70	1551	1.0	30	1608	2.0	60	2244	10.5	320
2140	10.2	310	2222	11.5	350	2232	10.5	320	2254	10.5	320
12 F 0341	2.6	80	27 Sa 0423	1.0	30	12 M 0435	2.0	60	10 0411	1.6	50
1003	9.8	300	1044	11.2	340	1058	10.2	310	1036	10.5	320
1552	2.3	70	1641	1.3	40	1651	2.0	60	1631	1.6	50
2218	10.2	310	2312	11.2	340	2315	10.2	310	2254	10.5	320
13 Sa 0421	2.6	80	28 Su 0513	1.3	40	13 Tu 0519	2.0	60	11 0456	1.6	50
1042	9.8	300	1134	10.8	330	1142	10.2	310	1122	10.5	320
1632	2.3	70	1731	2.0	60	1738	2.3	70	1719	2.0	60
2258	10.2	310	● 1842	3.0	90	2331	10.5	320	2342	10.2	310
14 Su 0502	2.3	70	29 M 0002	10.8	330	14 W 0001	10.2	310	12 0544	1.6	50
1123	9.8	300	0602	1.6	50	0605	2.0	60	1213	10.2	310
1715	2.3	70	1224	10.2	310	1232	9.8	300	1813	2.3	70
2340	10.2	310	1824	2.3	70	● 1830	2.6	80	2312	10.5	320
15 M 0546	2.3	70	30 Tu 0052	10.2	310	15 0052	9.8	300	27 0030	9.2	280
1207	9.5	290	0653	2.3	70	0657	2.3	70	0624	2.6	80
1802	2.6	80	1316	9.8	300	1327	9.8	300	1252	9.2	280
● 1919	3.0	90	● 1929	2.6	80	1929	2.6	80	● 1858	3.3	100
31 W 0143	9.8	300	31 W 0745	2.6	80	14 0016	9.5	290	28 0118	8.9	270
1411	9.5	290	1411	9.5	290	0704	2.6	80	0637	2.0	60
2017	3.3	100	2017	3.3	100	1332	9.2	280	1345	8.9	270
						1938	3.3	100	● 1912	2.3	70
						● 1842	3.0	90	● 1912	2.3	70
						31 Sa 0251	8.9	270	28 0118	8.9	270
						0856	3.3	100	0714	3.0	90
						1527	8.9	270	1345	8.9	270
						2134	3.6	110	1954	3.6	110

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2013

Times and Heights of High and Low Waters

October				November				December				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu 0405	8.5	260	16 W 0430	9.8	300	1 F 0512	9.2	280	16 Sa 0604	10.2	310	
1009	3.3	100	W 1038	2.0	60	1110	2.6	80	Sa 1205	2.3	70	
1631	9.2	280	1701	10.5	320	1725	9.5	290	1824	10.2	310	
2238	3.3	100	2305	1.6	50	2334	2.3	70	1739	9.8	300	
2 W 0500	8.9	270	17 Th 0530	10.2	310	17 Sa 0654	10.2	310	2 M 0621	10.2	310	
1101	3.0	90	1134	2.0	60	1158	2.3	70	1252	2.0	60	
1720	9.2	280	1756	10.5	320	1813	9.8	300	1912	10.2	310	
2326	3.0	90	2358	1.6	50	18	0027	1.6	50	● 1927	10.8	330
3 Th 0550	9.2	280	18 F 0625	10.5	320	3 Su 0021	2.0	60	18 M 0113	1.6	50	
1147	2.6	80	1226	1.6	50	0650	10.2	310	1337	2.0	60	
1805	9.5	290	1847	10.8	330	1245	2.0	60	○ 1958	10.2	310	
4 F 0011	2.3	70	19 Sa 0049	1.3	40	1902	10.5	320	3 Tu 0042	1.3	40	
0636	9.8	300	0715	10.5	320	1331	1.3	40	1308	1.6	50	
1231	2.3	70	1313	1.6	50	1419	1.3	40	● 1927	10.8	330	
1849	9.8	300	○ 1935	10.8	330	● 1951	10.5	320	2021	10.8	330	
5 Sa 0054	2.0	60	20 Su 0136	1.3	40	5 Tu 0155	1.0	30	5 W 0236	1.6	50	
0720	10.2	310	0802	10.8	330	0824	11.2	340	5 Th 0223	0.7	20	
1314	2.0	60	1358	1.6	50	1419	1.3	40	0904	10.5	320	
● 1932	10.2	310	2022	10.5	320	2040	10.8	330	1500	2.3	70	
6 Su 0137	1.6	50	21 M 0220	1.3	40	6 W 0243	0.7	20	2124	9.8	300	
0803	10.5	320	0846	10.8	330	0911	11.2	340	6 Th 0223	0.7	20	
1356	1.6	50	1442	1.6	50	1508	1.0	30	0943	10.2	310	
2016	10.5	320	2106	10.5	320	2130	10.8	330	1541	2.3	70	
7 M 0220	1.3	40	22 Tu 0302	1.3	40	21	0316	1.6	50	2204	9.8	300
0846	10.8	330	0928	10.5	320	0943	10.2	310	6 F 0313	0.7	20	
1440	1.3	40	1524	2.0	60	1558	1.3	40	0944	11.8	360	
2101	10.8	330	2149	10.2	310	2221	10.8	330	1543	1.0	30	
8 Tu 0304	1.0	30	23 W 0342	1.6	50	8 F 0420	1.0	30	2206	11.2	340	
0931	10.8	330	1009	10.5	320	1051	11.2	340	2218	9.5	290	
1526	1.3	40	1606	2.3	70	1651	1.3	40	6 Th 0328	2.0	60	
2148	10.8	330	2231	9.8	300	2314	10.5	320	0956	10.2	310	
9 W 0349	1.0	30	24 Th 0423	2.0	60	9 Sa 0511	1.3	40	1556	2.6	80	
1017	10.8	330	1049	10.2	310	1145	10.8	330	21	0406	2.3	70
1613	1.3	40	1649	2.6	80	1747	1.6	50	0944	11.5	350	
2236	10.5	320	2313	9.5	290	23	0433	2.3	70	1636	2.6	80
10 Th 0436	1.3	40	25 F 0503	2.3	70	8 F 0420	1.0	30	2256	9.5	290	
1106	10.8	330	1131	9.8	300	1051	11.2	340	21	0445	2.3	70
1705	1.6	50	1733	3.0	90	1651	1.3	40	1111	9.8	300	
2327	10.5	320	2355	9.2	280	2314	10.5	320	1716	2.6	80	
11 F 0527	1.3	40	26 Sa 0546	2.6	80	9 Sa 0514	2.6	80	2335	9.5	290	
1159	10.5	320	1215	9.5	290	1145	9.5	290	24	0526	2.6	80
1800	2.0	60	1821	3.3	100	1747	3.0	90	M 1152	9.8	300	
12 Sa 0021	10.2	310	27 Su 0040	8.9	270	1051	1.3	40	Tu 1758	2.6	80	
0621	1.6	50	0633	3.0	90	1009	2.3	70	25	0016	9.2	280
1256	10.2	310	1303	9.2	280	1441	10.2	310	0610	3.0	90	
● 1859	2.0	60	● 1912	3.3	100	2047	2.0	60	1235	9.5	290	
13 Su 0119	9.8	300	28 M 0129	8.5	260	1206	2.3	70	1843	2.6	80	
0722	2.0	60	0726	3.3	100	1441	10.2	310	10 F 0246	9.8	300	
1358	10.2	310	1355	8.9	270	2013	3.0	90	0755	3.0	90	
2002	2.3	70	2006	3.3	100	1541	10.2	310	1412	9.5	290	
14 M 0221	9.8	300	29 Tu 0223	8.5	260	2243	2.0	60	2121	2.3	70	
0828	2.3	70	0824	3.3	100	1018	2.3	70	2024	2.6	80	
1501	10.2	310	1449	8.9	270	1638	10.2	310	1046	9.5	290	
2105	2.3	70	2100	3.3	100	2243	2.0	60	0955	3.0	90	
15 Tu 0326	9.8	300	30 W 0320	8.5	260	1051	9.8	300	1607	9.5	290	
0935	2.3	70	0923	3.3	100	1114	2.3	70	2222	2.3	70	
1603	10.2	310	1543	9.2	280	1732	10.2	310	1054	2.6	80	
2207	2.0	60	2154	3.0	90	2337	2.0	60	1708	9.8	300	
31 Th 0418	8.9	270	31	0418	8.9	270	1019	3.0	90	2321	2.0	60
1634	9.2	280	Th 1019	3.0	90	1634	9.2	280	1151	2.0	60	
2245	2.6	80	2245	2.6	80	2245	2.6	80	1808	10.2	310	

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dreger Harbor, New Guinea, 2013

Times and Heights of High and Low Waters

January				February				March				
	Time	Height			Time	Height			Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 Tu	0634	2.0	60	16 W	0635	2.3	70	1 F	0624	3.0	90	
	0928	2.0	60		0954	2.0	60		16	0550	3.0	90
	1621	3.6	110		1631	3.0	90	Sa	1213	2.0	60	
	2348	1.0	30		2330	1.0	30		1606	2.3	70	
2 W	0705	2.3	70	17 Th	0638	2.6	80	2 Sa	0642	3.0	90	
	1009	2.0	60		1046	2.3	70		17	0604	3.0	90
	1637	3.3	100		1554	2.6	80	Su	1259	2.0	60	
					2332	1.0	30		1536	2.3	70	
3 Th	0002	1.0	30	18 F	0646	2.6	80	3 Su	0700	3.0	90	
	0745	2.3	70		1136	2.3	70		18	0624	3.0	90
	1058	2.3	70		1552	2.6	80	M	2216	1.3	40	
	1639	3.0	90		2336	1.3	40	O	2251	1.0	30	
4 F	0008	1.0	30	19 Sa	0659	3.0	90	4 M	0715	3.0	90	
	0835	2.6	80		1235	2.3	70		19	0651	3.0	90
	1157	2.3	70		1513	2.6	80	Tu	2147	1.0	30	
	1637	3.0	90		O	2320	1.3	40		2156	1.3	40
5 Sa	0005	1.3	40	20 Su	0728	3.0	90	5 Tu	0702	3.0	90	
	0933	2.6	80		2246	1.0	30		20	0733	3.0	90
	2348	1.3	40						Tu	2131	1.0	30
	O									O		
6 Su	1040	3.0	90	21 M	0815	3.0	90	6 W	1223	3.0	90	
	2314	1.3	40		2214	1.0	30		21	1307	3.0	90
7 M	1149	3.0	90	22 Tu	1241	3.0	90	7 Th	1326	3.3	100	
	2226	1.0	30		2218	1.0	30		22	1341	3.0	90
8 Tu	1242	3.3	100	23 W	1317	3.3	100	8 F	1413	3.3	100	
	2232	0.7	20		2229	1.0	30		23	1412	3.3	100
9 W	1328	3.6	110	24 Th	1348	3.3	100	9 Sa	1452	3.6	110	
	2256	0.3	10		2232	0.7	20		24	0439	2.3	70
10 Th	1410	3.6	110	25 F	1418	3.3	100	10 Sa	1526	3.6	110	
	2322	0.3	10		2234	0.7	20		25	0433	2.6	80
11 F	1448	3.6	110	26 Sa	0521	2.0	60	11 M	1552	3.3	100	
	2345	0.3	10		0635	2.0	60		26	0440	2.6	80
12 Sa	1521	3.6	110	11 M	1447	3.6	110	12 O	1522	3.3	100	
	2359	0.7	20		2247	0.7	20		27	0453	2.6	80
13 Su	1548	3.6	110	12 O	0513	2.0	60	12 W	0553	2.3	70	
	2356	0.7	20		0747	2.0	60		27	0452	3.0	90
14 M	1613	3.6	110	13 W	0522	2.3	70	13 W	0457	2.0	60	
	2338	1.0	30		0839	2.0	60		27	0452	3.0	90
15 Tu	1632	3.3	100	14 Tu	0536	2.3	70	14 Th	0452	3.0	90	
	2331	1.0	30		0925	2.0	60		29	0437	3.0	90
16 Th	0607	2.6	80	15 F	0532	2.6	80	14 Th	1057	1.6	50	
	1052	2.0	60		1009	2.0	60		29	1055	1.3	40
17 O	1639	3.0	90		1622	3.3	100		1646	2.6	80	
	2320	1.0	30		2315	1.0	30		2200	1.6	50	
18 O	0607	2.6	80	15 F	0540	3.0	90	15 F	0444	3.3	100	
	1052	2.0	60		1135	2.0	60		1703	2.3	70	
19 O	1639	3.0	90		1632	2.6	80		2208	1.6	50	
	2320	1.0	30		2256	1.3	40		31	0455	3.6	110
20 O	0607	2.6	80						Sa	1208	1.3	40
	1052	2.0	60						Su	1720	2.0	60
21 O	1639	3.0	90							2112	1.6	50
	2320	1.0	30									

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dreger Harbor, New Guinea, 2013

Times and Heights of High and Low Waters

April				May				June							
	Time	Height		Time	Height		Time	Height		Time	Height				
	h m	ft	cm		h m	ft	cm		h m	ft	cm				
1 M	0507	3.6	110	16 Tu	0450	3.6	110	1 W	0418	3.6	110	16 Th	0452	3.6	110
	1250	1.6	50		1239	1.6	50		1346	1.6	50		1301	1.3	40
	1652	2.0	60		1755	2.0	60								
	2057	1.6	50		2117	2.0	60								
2 Tu	0503	3.6	110	17 W	0512	3.6	110	2 Th	0418	3.6	110	17 F	0503	3.3	100
	1347	1.6	50		1321	1.6	50		1448	1.6	50		1342	1.6	50
	1556	1.6	50		1756	2.0	60		1545	1.6	50				
	2032	1.3	40		1958	2.0	60		1845	1.6	50				
3 W	0459	3.6	110	18 Th	0524	3.3	100	3 F	0418	3.3	100	18 Sa	0501	3.3	100
	2023	1.3	40		1429	2.0	60		1930	1.6	50		1429	1.6	50
					1543	2.0	60								
4 Th					1942	1.6	50								
	0506	3.3	100	19 F	0528	3.3	100	4 Sa	0354	3.3	100	19 Su	0421	3.0	90
	2043	1.3	40		1928	1.6	50		1944	2.0	60		1521	2.0	60
5 F	0455	3.3	100	20 Sa	0519	3.0	90	5 Su	0333	3.0	90	20 M	0139	3.0	90
	2104	1.3	40		1944	1.6	50		1009	2.3	70		1623	2.0	60
									1256	2.3	70				
									1934	2.0	60				
6 Sa	0439	3.0	90	21 Su	0333	3.0	90	6 M	0253	3.0	90	21 Tu	0123	3.3	100
	0954	2.6	80		2002	1.6	50		1016	2.0	60		0957	2.0	60
	1309	2.6	80						1506	2.3	70				
	2115	1.6	50						1859	2.3	70				
7 Su	0419	3.0	90	22 M	0246	3.0	90	7 Tu	0227	3.3	100	22 W	0136	3.3	100
	1005	2.3	70		0928	2.3	70		1032	1.6	50		0958	1.6	50
	1410	2.6	80		1337	2.6	80		1546	2.3	70				
	2107	1.6	50		2008	2.0	60		1854	2.3	70				
8 M	0349	3.0	90	23 Tu	0235	3.3	100	8 W	0231	3.3	100	23 Th	0156	3.6	110
	1011	2.0	60		0935	2.0	60		1046	1.3	40		1021	1.3	40
	1500	2.6	80		1434	2.6	80		1621	2.3	70				
	2102	2.0	60		1957	2.0	60		1855	2.3	70				
9 Tu	0339	3.0	90	24 W	0246	3.3	100	9 Th	0239	3.6	110	24 F	0221	3.9	120
	1021	2.0	60		0958	1.6	50		1051	1.3	40		1051	1.0	30
	1543	2.6	80		1527	2.6	80		1652	2.3	70				
	2052	2.0	60		2008	2.0	60		1913	2.3	70				
10 W	0339	3.3	100	25 Th	0303	3.6	110	10 F	0249	3.6	110	25 Sa	0250	3.9	120
	1037	1.6	50		1024	1.3	40		1059	1.3	40		1124	1.0	30
	1616	2.6	80		1618	2.3	70		1715	2.3	70				
	2048	2.0	60		2022	2.0	60		1939	2.0	60				
11 Th	0340	3.3	100	26 F	0324	3.6	110	11 Sa	0304	3.6	110	26 Su	0319	3.9	120
	1054	1.6	50		1052	1.3	40		1116	1.0	30		1158	1.0	30
	1644	2.6	80		1708	2.3	70		1733	2.3	70				
	2054	2.0	60		2022	2.3	70		2006	2.0	60				
12 F	0347	3.6	110	27 Sa	0347	3.9	120	12 Su	0320	3.9	120	27 M	0347	3.9	120
	1113	1.3	40		1124	1.0	30		1136	1.0	30		1230	1.0	30
	1708	2.3	70						1754	2.0	60				
	2105	2.0	60						2034	2.0	60				
13 Sa	0359	3.6	110	28 Su	0408	3.9	120	13 M	0339	3.9	120	28 F	0412	3.9	120
	1133	1.3	40		1158	1.0	30		1152	1.3	40		1254	1.0	30
	1732	2.3	70												
	2121	2.0	60												
14 Su	0411	3.6	110	29 M	0428	3.9	120	14 Tu	0402	3.9	120	29 W	0428	3.6	110
	1151	1.3	40		1231	1.3	40		1204	1.3	40		1304	1.3	40
	1749	2.0	60												
	2136	2.0	60												
15 M	0428	3.6	110	30 Tu	0439	3.6	110	15 W	0429	3.6	110	30 Th	0341	3.6	110
	1210	1.3	40		1306	1.3	40		1227	1.3	40		1308	1.3	40
	1751	2.0	60												
	2133	2.0	60												

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dreger Harbor, New Guinea, 2013

Times and Heights of High and Low Waters

July				August				September					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m 0232 M 2329	ft 2.6 1.3 3.0	cm 80 40 90	16 Tu 2145	0222 0418 1153	2.6 2.6 1.3	80 80 40	1 Th 2032	1.0 3.0	30 90	16 F 1850	1.0 3.0	30 90	
1 M 2329	1106 Tu	1.3 40	17 W 2258	1117 2.6 3.0	1.3 40	90	2 F Sa	1003 1016	1.0 1.0	30 30	17 Sa 0952	1.0 0.7	30 20
3 W 1021	0002 1021	3.0 1.3	18 Th 1015	1015 1.3	40	40	3 Sa 1016	0045 1013	3.0 0.7	90 20	18 Tu 0143 0929 1604 1935	3.3 1.0 2.6 2.3	100 30 80 70
4 Th 1024	0033 1024	3.3 1.0	19 F 1005 1011	0005 1.0	100	100	4 Su 1018	0121 1034	3.3 0.7	100 20	19 W 0213 0939 1556 2018	3.3 1.3 2.6 2.0	100 40 80 60
5 F 1038	0100 1038	3.3 1.0	20 Sa 1033	0056 0.7	110	110	5 M 1010 1654 1836	0153 1.0 2.3 2.0	3.3 1.0 70 60	100	20 Th 0242 0944 1606 ● 2057	3.3 1.3 3.0 2.0	100 40 90 50
6 Sa 1044	0128 1044	3.6 1.0	21 Su 1101	0141 0.7	110	110	6 Tu 1021 1643 1944	0223 1.0 2.3 2.0	3.6 1.0 70 60	100	21 F 0309 0945 1621 ○ 2055	3.3 1.3 3.0 2.3	100 50 90 50
7 Su 1037	0158 1037	3.6 1.0	22 M 1127	0222 0.7	110	110	7 W 1035 1651 ● 2033	0251 1.0 2.3 2.0	3.6 1.0 70 60	100	22 Sa 0326 1040 1726 2128	3.3 1.3 2.6 2.0	100 40 80 60
8 M 1724 ● 1920	0227 1050 1724 2.0 60	3.6 1.0 2.0 60	23 Tu 1147	0259 0.7	110	110	8 Th 1040 1707 2117	0315 1.0 2.6 2.0	3.6 1.0 80 60	110	23 F 0352 1023 1707 2205	3.0 1.3 2.6 2.0	90 40 80 60
9 Tu 1732 2011	0254 1109 1732 2.0 60	3.6 1.0 2.3 70 60	24 W 1151	0331 1.0	110	110	9 F 1043 1722 2159	0340 1.0 2.6 2.0	3.3 1.0 80 60	100	24 M 0413 1021 1705 2242	3.0 1.3 3.0 2.0	90 40 100 60
10 W 1122 1751 2055	0319 1122 1.0 2.3 70 60	3.6 1.0 2.3 70 60	25 Th 1134	0358 1.0	100	100	10 Sa 1054 1737 2241	0404 1.0 3.0 2.0	3.3 1.0 90 60	100	25 F 0429 1024 1713 2317	2.6 1.3 3.0 2.0	80 40 90 60
11 Th 1812 2138	0344 1125 1.0 2.3 70 60	3.6 1.0 2.3 70 60	26 F 1119	0420 1.3	100	100	11 Su 1103 1753 2325	0425 1.3 3.0 2.0	3.0 1.3 90 60	100	26 M 0405 1030 1724 2354	2.3 1.3 3.3 2.0	70 50 100 100
12 F 1836 2221	0410 1136 1.0 2.6 80 70	3.6 1.0 2.6 80 70	27 Sa 1117	0428 1.3	90	90	12 M 1105 1816 2244	0439 1.3 2.6 2.3	3.0 1.3 80 70	90	27 W 0345 1037 1736	2.3 1.3 3.3	70 40 100
13 Sa 1904 2308	0432 1153 1.0 2.6 80 70	3.3 1.0 2.6 80 70	28 Su 1116	0328 1.3	80	80	13 Tu 1103 1822 2334	0017 1.3 3.0	2.0 1.3 90	60	28 F 0038 0328 1025 ● 1756	2.0 2.0 1.3 3.3	60 40 40 100
14 Su 1943	0443 1203 1.3 2.6 80 80	3.0 1.3 2.6 80 80	29 M 1120	0331 1.3	80	80	14 W 1047 ● 1843	0135 1.3 3.0	2.0 1.3 90	60	29 Th 1006 1821	1.3 3.3	40 100
15 M 2038	0011 0437 1202 ● 2038	2.3 3.0 1.3 3.0	30 Tu 1852	1113 3.0	40	40	15 Th 1836	1023 3.0	1.3 90	40	30 F 0929 1853	1.3 3.0	40 90
			31 W 1930	1039 3.0	40	40					31 Sa 2013 2205	0931 3.0	1.3 90

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dreger Harbor, New Guinea, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 Tu	0043 2.6 80	16 W	0129 2.6 80	1 F	0201 2.3 70	16 Sa	1421 3.6 110	1 Su	1403 3.6 110	16 M	1413 3.6 110
0827 1.3 40	0820 1.6 50	0820 1.6 50	0706 2.0 60	0724 2.0 60	0615 2.0 60	2242 1.0 30	2228 1.0 30	2228 1.0 30	2254 1.0 30	2254 1.0 30	
1535 2.6 80	1532 3.0 90	1532 3.0 90	1420 3.3 100	1437 3.6 110	1432 3.6 110						
2031 2.3 70	2204 2.0 60	2137 1.6 50	2155 1.3 40	2245 1.0 30	2256 1.0 30						
2 W	0125 3.0 90	17 Th	0220 2.6 80	2 Sa	0245 2.3 70	17 Su	0433 2.0 60	2 M	1432 3.9 120	17 Tu	1436 3.6 110
0834 1.3 40	0807 2.0 60	0807 2.0 60	0724 2.0 60	0739 2.0 60	0653 2.0 60	2254 0.7 20	2258 0.7 20	2258 0.7 20	2258 0.7 20	O	
1507 3.0 90	1509 3.0 90	1509 3.0 90	1437 3.6 110	1458 3.6 110	1448 3.6 110						
2039 2.0 60	2204 1.6 50	2216 1.6 50	2216 1.0 30	● 2216 1.0 30	2256 1.0 30						
3 Th	0201 3.0 90	18 F	0305 2.6 80	3 Su	0328 2.3 70	18 M	0456 2.0 60	3 Tu	1501 3.9 120	18 W	0535 2.0 60
0834 1.6 50	0758 2.0 60	0758 2.0 60	0739 2.0 60	0739 2.0 60	0653 2.0 60			2320 0.7 20	0656 2.0 60	0656 2.0 60	
1507 3.0 90	1509 3.3 100	1509 3.3 100	1458 3.6 110	1458 3.6 110	1448 3.6 110				2313 0.7 20	1500 3.6 110	
2055 2.0 60	2216 1.6 50	2216 1.6 50	● 2216 1.0 30	● 2216 1.0 30	● 2256 1.0 30						
4 F	0234 3.0 90	19 Sa	0344 2.3 70	4 M	0411 2.0 60	19 Tu	0511 2.0 60	4 W	1529 3.9 120	19 Th	0538 2.0 60
0834 1.6 50	0759 2.0 60	0759 2.0 60	0741 2.0 60	0741 2.0 60	0728 2.0 60	0728 2.0 60	0728 2.0 60	2345 0.7 20	0747 2.0 60	0747 2.0 60	
1520 3.3 100	1512 3.3 100	1512 3.3 100	1520 3.9 120	1520 3.9 120	1507 3.6 110				1522 3.6 110	2328 1.0 30	
2119 1.6 50	O 2231 1.3 40	O 2231 1.3 40	2242 1.0 30	2242 1.0 30	2311 1.0 30						
5 Sa	0307 2.6 80	20 Su	0414 2.3 70	5 Tu	0455 2.0 60	20 W	0529 2.0 60	5 Th	1555 3.9 120	20 F	0555 2.0 60
0846 1.6 50	0808 2.0 60	0808 2.0 60	0730 2.0 60	0730 2.0 60	0800 1.6 50	0800 1.6 50	0800 1.6 50	1615 3.6 110	0829 2.0 60	0829 2.0 60	
1536 3.3 100	1520 3.6 110	1520 3.6 110	1542 3.9 120	1542 3.9 120	1526 3.9 120				1543 3.6 110	2332 1.0 30	
● 2149 1.3 40	2245 1.3 40	2245 1.3 40	2310 1.0 30	2310 1.0 30	2324 1.0 30						
6 Su	0338 2.6 80	21 M	0439 2.0 60	6 W	0541 2.0 60	21 Th	0553 2.0 60	6 F	0005 0.7 20	21 Sa	0621 2.0 60
0859 1.6 50	0823 1.6 50	0823 1.6 50	0708 2.0 60	0708 2.0 60	0828 1.6 50	0828 1.6 50	0828 1.6 50	1615 3.6 110	0905 2.0 60	0905 2.0 60	
1552 3.6 110	1534 3.6 110	1534 3.6 110	1602 3.9 120	1602 3.9 120	1547 3.9 120				1606 3.6 110	2341 1.0 30	
2222 1.3 40	2301 1.3 40	2301 1.3 40	2341 1.0 30	2341 1.0 30	2333 1.0 30						
7 M	0407 2.3 70	22 Tu	0501 2.0 60	7 Th	1616 3.9 120	22 F	1611 3.6 110	7 Sa	0015 1.0 30	22 Su	0652 2.0 60
0902 1.6 50	0841 1.6 50	0841 1.6 50	1616 3.9 120	1616 3.9 120	1608 3.6 110	2352 1.0 30	1608 3.6 110	1608 3.6 110	0936 2.0 60	0936 2.0 60	
1609 3.6 110	1549 3.6 110	1549 3.6 110	2319 1.3 40	2319 1.3 40	2333 1.0 30				1628 3.6 110		
2256 1.3 40	2319 1.3 40	2319 1.3 40	● 2319 1.0 30	● 2319 1.0 30	● 2333 1.0 30						
8 Tu	0432 2.3 70	23 W	0520 2.0 60	8 F	0012 1.0 30	23 Sa	1633 3.6 110	8 Su	0026 1.0 30	23 M	0000 1.0 30
0900 1.6 50	0900 1.6 50	0900 1.6 50	1612 3.6 110	1612 3.6 110	1550 3.3 100	1550 3.3 100	1550 3.3 100	1550 3.3 100	0735 2.3 70	0735 2.3 70	
1626 3.6 110	1606 3.6 110	1606 3.6 110	2338 1.3 40	2338 1.3 40	2319 1.0 30				1001 2.0 60	1001 2.0 60	
2331 1.3 40	2338 1.3 40	2338 1.3 40	● 2338 1.0 30	● 2338 1.0 30	● 2319 1.0 30				1642 3.3 100	1642 3.3 100	
9 W	0452 2.0 60	24 Th	0526 2.0 60	9 Sa	0045 1.3 40	24 Su	0021 1.3 40	9 M	0036 1.3 40	24 Tu	0021 1.0 30
0856 1.6 50	0908 1.6 50	0908 1.6 50	1611 3.6 110	1611 3.6 110	1647 3.3 100	1647 3.3 100	1647 3.3 100	1556 3.3 100	0839 2.3 70	0839 2.3 70	
1639 3.6 110	1627 3.6 110	1627 3.6 110	1649 3.6 110	1649 3.6 110	1649 3.3 100				1026 2.3 70	1026 2.3 70	
● 1643 3.6 110	● 1649 3.6 110	● 1649 3.6 110	● 1649 3.3 100	● 1649 3.3 100	● 1649 3.3 100				1643 3.0 90	1643 3.0 90	
10 Th	0009 1.3 40	25 F	0003 1.3 40	10 Su	0119 1.3 40	25 M	0055 1.3 40	10 Tu	0033 1.3 40	25 W	0033 1.3 40
0455 2.0 60	0532 2.0 60	0532 2.0 60	1618 3.3 100	1618 3.3 100	1650 3.3 100	1650 3.3 100	1650 3.3 100	1540 3.0 90	1638 3.0 90	1638 3.0 90	
0848 1.6 50	0905 1.6 50	0905 1.6 50	1649 3.6 110	1649 3.6 110	1646 1.6 50				1133 2.6 80	1133 2.6 80	
1643 3.6 110	1649 3.6 110	1649 3.6 110	● 1649 3.3 100	● 1649 3.3 100	● 1649 3.3 100						
11 F	0054 1.6 50	26 Sa	0039 1.3 40	11 M	0151 1.6 50	26 Tu	0131 1.3 40	11 W	0028 1.3 40	26 Th	0031 1.3 40
0409 1.6 50	0551 1.6 50	0551 1.6 50	0755 1.6 50	0755 1.6 50	0440 1.6 50	1641 3.0 90	1500 3.0 90	1500 3.0 90	1133 2.6 80	1133 2.6 80	
0832 1.3 40	1705 3.3 100	1705 3.3 100	1705 3.3 100	1705 3.3 100	0646 1.6 50						
1644 3.6 110	1705 3.3 100	1705 3.3 100	● 1705 3.3 100	● 1705 3.3 100	● 1705 3.3 100						
12 Sa	0210 1.6 50	27 Su	0130 1.6 50	12 Tu	0210 2.0 60	27 W	0159 1.6 50	12 Th	1357 3.0 90	27 F	0014 1.3 40
0307 1.6 50	0457 1.6 50	0457 1.6 50	0617 1.6 50	0617 1.6 50	0515 2.0 60	1417 3.0 90	1417 3.0 90	2233 1.3 40	1205 3.0 90	1205 3.0 90	
0803 1.3 40	1711 3.3 100	1711 3.3 100	1711 3.3 100	1711 3.3 100	1543 3.0 90				2322 1.3 40	2322 1.3 40	
● 1653 3.3 100	● 1711 3.3 100	● 1711 3.3 100	● 1711 3.0 90	● 1711 3.0 90	● 1543 3.0 90						
13 Su	0814 1.3 40	28 M	0638 1.6 50	13 W	0150 2.0 60	28 Th	0141 1.6 50	13 F	1316 3.0 90	28 Sa	1236 3.3 100
1652 3.3 100	1706 3.0 90	1706 3.0 90	1502 3.0 90	1502 3.0 90	1321 3.0 90	2242 1.6 50	2242 1.6 50	2232 1.0 30	2222 1.0 30	2222 1.0 30	
● 1653 3.3 100	● 1706 3.0 90	● 1706 3.0 90	● 1502 3.0 90	● 1502 3.0 90	● 1321 3.0 90	● 2242 1.6 50	● 2242 1.6 50	● 2232 1.0 30	● 2222 1.0 30	● 2222 1.0 30	
● 1653 3.3 100	● 1706 3.0 90	● 1706 3.0 90	● 1502 3.0 90	● 1502 3.0 90	● 1321 3.0 90						
14 M	0829 1.3 40	29 Tu	0659 1.6 50	14 Th	1413 3.0 90	29 F	1321 3.3 100	14 Sa	1334 1.0 30	29 Su	1309 3.3 100
1633 3.0 90	1557 3.0 90	1557 3.0 90	2227 1.6 50	2227 1.6 50	2203 1.3 40	2203 1.3 40	2203 1.3 40	2246 1.0 30	2246 1.0 30	2246 1.0 30	
2158 2.3 70	2157 3.0 90	2157 3.0 90	1413 3.0 90	1413 3.0 90	1321 3.3 100						
● 2158 2.3 70	● 2157 3.0 90	● 2157 3.0 90	● 1413 3.0 90	● 1413 3.0 90	● 1321 3.3 100						
15 Tu	0020 2.6 80	30 W	0704 1.6 50	15 F	1411 3.3 100	30 Sa	1340 3.6 110	15 Su	1353 1.0 30	30 M	1344 3.6 110
0829 1.6 50	1429 3.0 90	1429 3.0 90	2239 1.3 40	2239 1.3 40	2208 1.3 40	2208 1.3 40	2208 1.3 40	2257 1.0 30	2257 1.0 30	2257 1.0 30	
1611 3.0 90	2150 2.0 60	2150 2.0 60	1411 3.3 100	1411 3.3 100	1340 3.6 110						
2159 2.3 70	2124 2.0 60	2124 2.0 60	2124 1.6 50	2124 1.6 50	2124 1.3 40						
16 Th	0108 2.3 70	31 Th	0652 1.6 50								
1410 3.3 100	1410 3.3 100	1410 3.3 100	2124 2.0 60	2124 2.0 60	2124 1.6 50						
2124 2.0 60	2124 2.0 60	2124 2.0 60	● 2124 2.0 60	● 2124 2.0 60	● 2124 1.6 50						
● 2124 2.0 60	● 2124 2.0 60	● 2124 2.0 60	● 2124 1.6 50	● 2124 1.6 50	● 2124 1.3 40						

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Darwin, Australia, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu	0222	8.2	250	16 W	0318	5.6	170	1 F	0321	5.6	170	
0754	21.0	640		W 0855	22.3	680		Sa 0905	22.0	670		
1422	4.6	140		1509	4.9	150		M 1503	6.2	190		
2054	23.6	720		2130	24.3	740		2119	23.6	720		
2 W	0259	7.9	240	17 Th	0359	5.9	180	2 Sa	0358	5.9	180	
0831	20.7	630		W 0940	21.3	650		Sa 0947	21.3	650		
1451	5.2	160		1538	6.9	210		M 1534	7.5	230		
2121	23.3	710		2157	23.0	700		2147	22.6	690		
3 Th	0339	7.9	240	18 F	0440	6.6	200	3 Su	0439	6.2	190	
0912	20.3	620		W 1024	19.7	600		Su 1035	20.3	620		
1520	6.6	200		1602	8.9	270		M 1611	9.5	290		
2150	22.6	690		2221	21.3	650	O	2219	21.3	650		
4 F	0422	7.9	240	19	0522	7.5	230	4 M	0524	6.9	210	
0959	19.4	590		W 1113	18.4	560		Tu 1134	19.0	580		
1554	8.2	250		1628	10.8	330		M 1703	11.5	350		
2222	21.7	660	O	2247	19.7	600		2300	19.7	600		
5 Sa	0510	7.9	240	20 Su	0610	8.5	260	5 Tu	0624	7.5	230	
1056	18.7	570		W 1214	17.1	520		Su 1257	18.0	550		
1639	9.8	300		1729	12.8	390		Tu 1835	13.1	400		
2300	20.7	630		2324	18.0	550		W 2011	14.4	440		
6 Su	0603	7.9	240	21 M	0711	9.2	280	6 W	0005	18.0	550	
1207	17.7	540		W 1345	16.4	500		Th 0754	7.9	240		
1745	11.5	350		1910	14.1	430		M 1501	18.4	560		
2348	19.4	590						2048	13.5	410		
7 M	0711	7.9	240	22 Tu	0035	16.7	510	7 Th	0208	17.4	530	
1338	17.7	540		W 0834	9.2	280		F 0934	7.2	220		
1919	12.8	390		1552	17.4	530		1630	20.3	620		
	2122	14.1	430					2227	12.1	370		
8 Tu	0057	18.7	570	23 W	0239	16.1	490	8 F	0348	18.4	560	
0834	7.2	220		W 0958	8.5	260		Th 1047	5.6	170		
1525	19.0	580		1654	19.0	580		M 1728	22.3	680		
2105	12.8	390		2305	12.8	390		2331	10.2	310		
9 W	0229	18.4	560	24 Th	0358	17.1	520	9 Sa	0453	20.3	620	
0952	5.6	170		W 1055	7.2	220		Sa 1142	4.3	130		
1640	21.0	640		1734	20.7	630		1815	24.0	730		
2227	11.8	360		2343	11.5	350						
10 Th	0348	19.4	590	25 F	0447	18.0	550	10 Su	0019	8.2	250	
1054	4.3	130		W 1136	6.2	190		Su 0548	21.7	660		
1739	22.6	690		1809	21.7	660		M 1228	3.0	90		
2329	10.5	320					O	1856	25.3	770		
11 F	0449	20.7	630	26 Sa	0013	10.5	320	11 M	0102	6.6	200	
1147	3.0	90		W 0526	19.4	590		Tu 0638	23.0	700		
1828	24.3	740		Sa 1212	5.2	160		M 1307	2.6	80		
	1841	23.0	700					1931	25.6	780		
12 Sa	0021	8.9	270	27 Su	0040	9.5	290	12 Tu	0140	5.2	160	
0542	21.7	660		W 0602	20.3	620		Tu 0723	24.0	730		
1234	2.0	60		1245	4.3	130		M 1342	3.0	90		
●	1913	25.6	780	O	1911	23.6	720		2002	25.9	790	
13 Su	0109	7.5	230	28 M	0109	8.5	260	12 W	0120	5.9	180	
0633	22.6	690		W 0638	21.3	650		W 0709	23.0	700		
1317	1.6	50		1314	3.9	120		1326	4.3	130		
1953	25.9	790		1940	24.3	740		1936	24.9	760		
14 M	0153	6.6	200	29 Tu	0139	7.5	230	14 Th	0253	4.3	130	
0722	23.3	710		W 0714	22.0	670		W 0842	23.6	720		
1357	2.0	60		Tu 1342	3.9	120		M 1443	5.2	160		
2028	25.9	790		2006	24.6	750		2053	24.3	740		
15 Tu	0236	5.9	180	30 W	0211	6.6	200	15 F	0326	4.9	150	
0810	23.0	700		W 0749	22.3	680		W 0919	22.6	690		
1434	3.3	100		1408	4.3	130		1507	6.9	210		
2100	25.6	780		2031	24.6	750		2113	23.3	710		
31 Th	0245	5.9	180									
	0826	22.3	680									
	1435	4.9	150									
	2054	24.3	740									

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Darwin, Australia, 2013

Times and Heights of High and Low Waters

April				May				June												
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height									
1 M 0313 0926 1514 2058	h m 3.0 23.6 8.2 22.3	ft 90 720 250 680	cm 180 660 300 590	16 Tu 0320 0938 1514 2058	h m 5.9 21.7 9.8 19.4	ft 180 660 300 590	cm 120 690 290 600	16 W 0341 1006 1604 2139	h m 3.9 22.6 9.5 19.7	ft 120 640 300 550	cm 200 640 300 550									
	0354 1011 1557 2138	4.3 22.3 9.8 20.3	130 680 300 620		0431 1057 1715 2247	5.9 21.0 10.5 18.0	180 640 320 550		0409 1029 1638 2211	7.9 20.0 10.8 17.1	240 610 330 520									
	0442 1105 1658 0232	6.2 20.3 11.5 18.4	190 620 350 560		0437 1056 1651 2215	8.5 19.0 12.1 16.4	240 580 370 500		0456 1115 1748 2324	9.2 19.0 10.8 16.1	280 580 330 490									
	0542 1217 1847	7.9 19.0 12.5	240 580 380		0532 1154 1828 2351	9.8 18.0 12.8 15.1	300 550 390 460		0029 0648 1314 2017	17.1 9.5 19.0 9.8	520 290 580 300									
5 F 0014 0709 1358 2048	014 9.2 18.4 11.5	16.7 280 560 350	510	20 Sa 0646 1314 2019	10.8 17.4 12.1	330 530 370	530	20 M 0212 0816 1433 2130	17.4 10.2 19.0 8.2	530 310 580 250	20 W 0403 1003 1321 2024	19.4 10.8 18.0 9.5	590 330 550 290							
	0232 0855 1529 2207	17.1 9.2 19.4 9.5	520 280 590 290		0214 0820 1448 2135	15.4 10.8 18.0 10.5	470 330 550 320		0329 0937 1538 2225	18.7 9.8 19.4 6.9	570 300 590 210	0233 0832 1433 2126	17.1 10.8 18.4 7.9	520 310 560 240						
	0352 1014 1629 2300	18.7 8.5 20.7 7.5	570 260 630 230		0336 0943 1550 2223	17.1 10.2 19.4 8.9	520 310 590 270		0430 1039 1628 2310	20.3 9.2 20.0 5.6	620 280 610 170	0233 0832 1433 2126	17.1 10.8 18.4 7.9	520 310 560 240						
	0451 1110 1713 2341	20.7 7.5 22.0 5.9	630 230 670 180		0428 1040 1633 2303	19.0 8.9 20.7 6.9	580 270 630 210		0522 1126 1706 2347	21.7 8.9 20.7 4.6	660 270 630 140	0443 1044 1623 2306	20.7 9.2 20.7 4.3	630 280 630 130						
9 Tu 0541 1152 1750	0541 1152 1750	22.3 6.9 22.6	680 210 690	24 W 0514 1124 1711 2343	21.0 7.9 22.0 4.9	640 240 670 150	690	24 Th 0606 1203 1738	22.6 8.2 21.0	690 250 640	24 M 0027 0703 1706 2351	4.3 22.6 21.7 2.6	130 690 660 80	24 O 1814	0018 0658 1247 1814	1.6 24.3 8.5 22.3	50 740 650 680			
	0018 0624 1227 ● 1819	4.6 23.3 6.6 23.3	140 710 200 710		0558 1203 1746	23.0 6.9 23.0	700 210 700	10 F 0020 0645 1236 ● 1807	3.9 23.3 7.9 21.3	120 710 240 650		0623 0645 1236 ● 1807	24.0 23.3 7.9 21.3	730 710 230 650	0059 0735 1216 ● 1847	3.9 22.6 7.5 20.3	120 690 680 620	0105 0743 1333 1904	1.3 24.9 6.6 22.6	40 760 200 690
	0050 0702 1258 1845	3.9 24.0 6.2 23.3	120 730 190 710		0020 0640 1239 ● 1818	3.3 24.3 6.6 23.6	100 740 200 720	11 Th 0051 0719 1304 ● 1836	3.6 23.6 7.9 21.7	110 720 240 660		0034 0709 1257 1828	1.6 24.9 7.2 23.0	50 760 220 700	0130 0804 1345 1921	4.3 22.6 8.2 20.3	130 690 250 620	0150 0824 1420 1954	1.3 24.9 5.9 22.3	40 760 180 680
	0121 0736 1327 1910	3.3 24.3 6.6 23.0	100 740 200 700		0058 0721 1313 1851	2.0 25.3 6.2 24.0	60 770 190 730	12 F 0121 0750 1332 1906	3.6 23.6 7.9 21.3	110 720 240 650		0117 0752 1339 1911	1.0 25.3 6.9 23.0	30 770 250 700	0203 0832 1417 1956	4.3 22.3 8.2 20.3	130 680 250 620	0234 0903 1509 2046	2.0 24.6 5.9 22.0	60 750 180 670
13 Sa 0807 1353 1935	0150 24.0 7.2 22.6	3.3 730 220 690	100 730 220 690	28 Su 0135 0801 1349 1927	1.3 25.3 6.6 23.6	40 770 200 720	13 M 0151 0820 1400 1937	3.9 23.0 8.2 21.0	120 700 250 640	28 Tu 0201 0834 1423 2009	1.3 24.9 6.9 20.3	40 760 210 620	28 Th 0235 0901 1453 2047	4.9 22.0 8.2 21.3	150 670 250 650	28 M 0319 0940 1559 2140	3.6 23.6 5.9 21.0	110 720 180 640		
	0219 0837 1418 2001	3.9 23.3 7.9 22.0	120 710 240 670		0215 0840 1428 2006	1.6 24.9 7.2 23.0	50 760 220 700	14 Tu 0222 0848 1430 2009	4.6 22.6 8.5 20.3	140 690 260 620	0245 0915 1512 2047	2.3 24.3 7.5 21.3	70 740 230 650	0308 0931 1534 2112	5.9 21.7 8.5 19.0	180 660 260 580	0402 1017 1651 2237	5.6 22.3 6.6 19.7	170 680 200 600	
	0249 0906 1445 2028	4.6 22.6 8.9 20.7	140 690 270 630		0257 0921 1512 2048	2.6 24.0 8.2 21.7	80 730 250 660	15 W 0255 0919 1504 2043	5.6 22.0 9.2 19.4	170 670 280 590	0331 0958 1608 2144	3.6 23.0 7.9 20.0	110 700 240 610	0343 1003 1621 2200	6.9 21.0 8.9 18.0	210 640 270 550	0447 1054 1745 2338	7.5 20.7 7.2 18.4	230 630 220 660	
	0421 1042 1712 2252	5.6 21.7 8.5 18.7	170 660 260 570		0421 1042 1712 2252	5.6 21.7 8.5 18.7	170 660 260 570	0421 1042 1712 2252	5.6 21.7 8.5 18.7	170 660 260 570	0421 1042 1712 2252	5.6 21.7 8.5 18.7	170 660 260 570	0402 1017 1651 2237	5.6 22.3 6.6 19.7	170 680 200 600				

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Darwin, Australia, 2013

Times and Heights of High and Low Waters

July				August				September							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 M	0536	9.5	290	16	0432	8.5	260	1 Th	0109	16.7	510	16	0017	18.0	550
	1133	19.4	590	Tu	1036	20.0	610		0657	12.5	380	Su	1040	11.8	360
	1845	7.5	230		1732	7.2	220		1221	15.7	480		1550	15.7	480
			● 2335		18.0	550		2003	8.5	260		2204	8.5	260	
2 Tu	0046	17.4	530	17	0526	10.2	310	2 F	0253	17.1	520	2 M	0440	18.7	570
	0636	11.2	340	W	1120	18.7	570		0850	12.8	390		1112	10.5	320
	1223	17.7	540		1830	7.2	220		1428	15.1	460		1635	17.1	520
	1950	7.9	240						2127	8.2	250		2255	7.2	220
3 W	0208	17.4	530	18	0048	17.7	540	3 Sa	0419	18.0	550	3 Tu	0517	20.0	610
	0754	12.1	370	Th	0640	11.5	350		1046	11.5	350		1137	8.9	270
	1337	16.7	510		1220	17.7	540		1553	16.1	490		1711	18.7	570
	2100	7.5	230		1943	6.9	210		2232	7.2	220		2334	6.2	190
4 Th	0332	18.0	550	19	0222	18.0	550	4 Su	0509	19.4	590	4 W	0550	21.3	650
	0926	11.8	360	F	0817	11.8	360		1130	10.5	320	M	0447	20.7	630
	1502	16.7	510		1348	17.4	530		1641	17.4	530		1056	9.2	280
	2203	6.9	210		2106	6.2	190		2318	6.2	190		1628	19.0	580
5 F	0439	19.0	580	20	0354	19.4	590	5 M	0548	20.7	630	5 Th	0009	5.2	160
	1045	11.2	340	Sa	0947	11.2	340		1200	9.5	290		0620	22.3	680
	1604	17.1	520		1520	18.0	550		1719	18.4	560		1230	6.2	190
	2253	6.2	190		2218	4.9	150		2356	5.2	160		1820	21.3	650
6 Sa	0529	20.3	620	21	0501	21.0	640	6 Tu	0623	21.7	660	6 W	0626	24.0	730
	1134	10.2	310	Su	1057	9.8	300		1226	8.2	250	M	1233	5.6	170
	1648	18.0	550		1625	19.4	590		1754	19.7	600		1814	22.6	690
	2334	5.6	170		2317	3.3	100					O			
7 Su	0609	21.3	650	22	0557	22.6	690	7 W	0030	4.6	140	7 Th	0043	2.6	80
	1209	9.5	290	M	1153	8.2	250		0654	22.3	680	Sa	0109	4.6	140
	1726	18.7	570		1720	21.0	640		1252	7.2	220		0714	23.6	720
								● 1828	20.7	630		1314	3.9	120	
8 M	0011	4.9	150	23	0009	2.3	70	8 Th	0101	4.3	130	8 Su	0135	4.6	140
	0645	22.0	670	Tu	0645	24.0	730		0723	23.0	700	M	0739	24.9	760
	1238	8.9	270		1242	6.6	200		1321	6.6	200		1352	3.0	90
	● 1800	19.7	600	O	1812	22.0	670		1903	21.3	650		1946	24.0	730
9 Tu	0045	4.3	130	24	0055	1.6	50	9 F	0130	3.9	120	9 M	0158	3.3	100
	0718	22.3	680	W	0728	24.9	760		0749	23.3	710	Sa	0808	24.6	750
	1305	8.2	250		1328	5.2	160		1351	5.6	170		1430	3.0	90
	1835	20.3	620		1902	23.0	700		1937	21.7	660		2027	23.6	720
10 W	0116	4.3	130	25	0139	1.6	50	10 Sa	0157	4.3	130	10 Tu	0232	5.9	180
	0747	22.6	690		0807	25.3	770		0813	23.3	710		0828	22.6	690
	1334	7.5	230		1411	4.6	140		1424	4.9	150		1506	3.3	100
	1910	20.7	630		1952	23.0	700		2013	22.0	670		2106	22.6	690
11 Th	0147	4.3	130	26	0220	2.3	70	11 Su	0224	4.9	150	11 W	0302	7.2	220
	0815	22.6	690		0841	24.9	760		0836	23.0	700	M	0856	21.7	660
	1406	6.9	210		1454	4.3	130		1458	4.9	150		1542	4.3	130
	1946	20.7	630		2040	22.6	690		2049	21.7	660		2144	21.3	650
12 F	0217	4.6	140	27	0258	3.6	110	12 M	0253	5.9	180	12 W	0345	8.9	270
	0841	22.6	690	Sa	0912	24.0	730		0900	22.3	680		0928	20.3	620
	1442	6.9	210		1536	4.3	130		1535	4.9	150		1618	5.6	170
	2022	20.7	630		2126	22.0	670		2128	21.0	640		2224	19.7	600
13 Sa	0246	5.2	160	28	0335	5.6	170	13 Tu	0324	6.9	210	13 W	0357	9.8	300
	0907	22.3	680	Su	0942	22.6	690		0927	21.7	660		1009	18.0	550
	1519	6.6	200		1619	4.9	150		1614	5.2	160		1657	7.2	220
	2101	20.0	610		2212	20.7	630		2214	20.3	620		● 2310	18.4	560
14 Su	0317	6.2	190	29	0409	7.5	230	14 W	0402	8.5	260	14 Th	0439	11.5	350
	0933	21.7	660	M	1009	21.0	640		0957	20.3	620		1016	17.4	530
	1559	6.9	210		1703	6.2	190		1658	6.2	190		1748	8.5	260
	2145	19.7	600		2301	19.0	580		● 2308	19.0	580				
15 M	0350	7.2	220	30	0445	9.5	290	15 Th	0452	10.2	310	15 F	0010	17.1	520
	1002	21.0	640	Tu	1037	19.4	590		1036	18.7	570		0603	12.8	390
	1643	6.9	210		1750	7.2	220		1753	6.9	210		1109	15.4	470
	2235	19.0	580		● 2355	17.7	540					1902	9.5	290	
16 W	0536	11.5	350	31	0536	11.5	350	16 Sa	0145	16.4	500	16 Su	0136	18.0	550
	1113	17.4	530	W	1113	17.4	530		0813	13.1	400		0808	12.1	370
	1848	8.2	250		1848	8.2	250		1354	14.4	440		2040	9.5	290

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Darwin, Australia, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0349	18.0	550	16 W 0349	20.3	620	1 F 0411	20.0	610	1 Su 0400	20.0	610
1032	10.2	310	1030	7.2	220	1049	6.6	200	1051	4.6	140
1616	17.1	520	1625	20.3	620	1704	20.7	630	1722	22.3	680
2220	8.9	270	2237	7.5	230	2306	8.5	260	2315	9.5	290
2 W 0431	19.4	590	17 Th 0439	21.3	650	2 Sa 0449	21.0	640	2 M 0445	21.0	640
1100	8.5	260	1114	5.2	160	1125	4.6	140	1134	3.0	90
1653	19.0	580	1716	22.0	670	1743	22.3	680	1807	24.0	730
2303	7.5	230	2324	6.9	210	2345	7.5	230	2359	8.5	260
3 Th 0506	20.7	630	18 F 0520	22.3	680	3 Su 0524	22.0	670	3 Tu 0527	22.0	670
1129	6.9	210	1153	3.6	110	1201	3.0	90	1219	3.9	120
1728	20.7	630	1802	23.3	710	1823	24.0	730	1853	23.6	720
2341	6.6	200	●			●					
4 F 0537	22.0	670	19 W 0004	6.6	200	4 M 0020	7.2	220	4 W 0040	7.9	240
1200	5.2	160	0553	22.6	690	0558	23.0	700	0607	22.6	690
1804	22.0	670	1227	2.6	80	1236	2.0	60	1255	1.0	30
●			○ 1842	24.3	740	1902	24.9	760	1932	25.6	780
5 Sa 0014	5.9	180	20 Su 0038	6.2	190	5 Tu 0054	6.9	210	5 Th 0121	7.5	230
0607	23.0	700	0622	23.0	700	0630	23.3	710	0649	23.0	700
1231	3.9	120	1259	2.3	70	1312	1.3	40	1335	1.0	30
● 1840	23.3	710	1919	24.6	750	1940	25.3	770	2009	24.0	730
6 Su 0045	5.6	170	21 M 0110	6.6	200	6 W 0130	6.9	210	6 F 0204	7.5	230
0636	23.3	710	0650	22.6	690	0705	23.3	710	0733	22.6	690
1303	2.6	80	1330	2.3	70	1349	1.3	40	1417	1.6	50
1916	24.3	740	1953	24.3	740	2018	24.9	760	2053	25.3	770
7 M 0114	5.6	170	22 Tu 0139	7.2	220	7 Th 0208	7.2	220	7 Sa 0251	7.5	230
0702	23.6	720	0718	22.3	680	0742	22.6	690	0820	22.0	670
1335	2.0	60	1400	3.0	90	1428	2.0	60	1434	4.9	150
1950	24.3	740	2024	23.6	720	2058	24.3	740	2107	22.3	680
8 Tu 0144	5.9	180	23 W 0208	7.9	240	8 F 0251	8.2	250	8 Su 0343	7.9	240
0730	23.6	720	0745	21.7	660	0824	21.7	660	0913	20.7	630
1409	2.0	60	1430	3.9	120	1511	3.3	100	1505	6.2	190
2026	24.3	740	2055	22.6	690	2142	23.3	710	2139	21.7	660
9 W 0217	6.6	200	24 Th 0237	8.9	270	9 Sa 0341	9.2	280	9 M 0442	8.2	250
0801	22.6	690	0814	20.3	620	0911	20.0	610	1014	19.4	590
1446	2.6	80	1500	5.2	160	1558	5.2	160	1635	7.2	220
2104	23.6	720	2127	21.7	660	2230	22.0	670	2302	22.0	670
10 Th 0255	7.9	240	25 W 0308	9.8	300	10 M 0445	9.8	300	10 F 0429	10.5	320
0834	21.7	660	0844	19.0	580	1011	18.4	560	0952	17.1	520
1526	3.6	110	1533	6.6	200	1654	7.5	230	1621	9.2	280
2147	22.3	680	2203	20.3	620	● 2327	20.7	630	2256	19.7	600
11 F 0339	9.2	280	26 Sa 0348	10.8	330	11 M 0608	10.2	310	11 Tu 0547	8.5	260
0914	20.0	610	0917	17.4	530	1142	16.7	510	1129	18.0	550
1612	5.2	160	1614	8.5	260	1807	9.2	280	1734	9.5	290
2239	20.7	630	2245	19.0	580	● 2347	18.7	570	● 2352	20.3	620
12 Sa 0437	10.8	330	27 W 0451	11.8	360	12 Tu 0035	19.7	600	12 F 0651	10.8	330
1004	18.0	550	1003	15.7	480	0739	9.5	290	0813	7.9	240
1709	7.2	220	1712	9.8	300	1335	16.7	510	1425	17.7	540
● 2343	19.4	590	● 2340	18.0	550	1936	10.2	310	1840	11.5	350
13 Su 0609	11.8	360	28 M 0626	12.1	370	13 W 0151	19.4	590	12 Th 0052	19.4	590
1130	16.1	490	1141	14.4	440	0859	8.2	250	0813	7.9	240
1831	8.9	270	1831	11.2	340	1503	18.4	560	1425	16.4	500
●			●			2101	10.5	320	2008	11.8	360
14 M 0110	18.7	570	29 Tu 0052	17.4	530	14 Th 0301	19.4	590	13 Th 0050	18.4	560
0806	11.2	340	0813	11.5	350	0959	6.6	200	0807	9.8	300
1355	16.1	490	1428	15.1	460	1609	20.0	610	1425	16.4	500
2012	9.2	280	2004	11.2	340	2209	9.8	300	2126	11.2	340
15 Tu 0242	19.0	580	30 W 0220	17.7	540	15 F 0357	20.0	610	15 Sa 0307	19.0	580
0933	9.2	280	0927	10.2	310	1048	5.2	160	1006	6.6	200
1524	18.0	550	1540	16.7	510	1703	21.7	660	1635	20.3	620
2136	8.5	260	2125	10.5	320	2301	9.2	280	2226	10.5	320
31 Th 0326	18.7	570	● 31 Th 1011	8.2	250						
1011	8.2	250	1624	18.7	570						
2222	9.5	290	2222	9.5	290						

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Townsville, Australia, 2013

Times and Heights of High and Low Waters

January					February					March					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1 Tu	0409	3.6	110	16 W	0536	4.3	130	1 F	0512	5.2	160	16 Sa	0144	7.5	230
	1130	9.8	300	1221	9.8	300	1216	9.2	280	0918	6.6	200	1055	9.8	300
	1826	5.2	160	1954	4.6	140	1923	4.9	150	1312	7.2	220	1705	3.9	120
	2303	7.2	220				2147	5.2	160	2331	9.2	280	2331	9.2	280
2 W	0439	4.6	140	17 Th	0106	7.5	230	2 Sa	0104	7.5	230	17 Su	0528	8.2	250
	1213	9.2	280	0659	5.6	170	0747	5.9	180	1152	6.2	190	1142	9.2	280
	1930	5.2	160	1318	8.5	260	1318	8.5	260	1709	6.9	210	1815	4.3	130
				2116	4.6	140	2046	4.6	140	2311	4.9	150			
3 Th	0019	6.9	210	18 F	0314	7.5	230	3 Su	0336	7.9	240	18 M	0604	8.9	270
	0532	5.2	160	0941	6.2	190	0958	5.9	180	1238	5.2	160	0751	5.9	180
	1306	8.9	270	1505	7.9	240	1454	8.2	250	1803	7.5	230	1248	8.2	250
	2043	4.9	150	2238	4.3	130	●	2211	4.3	130	●			1951	4.6	140
4 F	0206	6.9	210	19 Sa	0517	8.2	250	4 M	0510	9.2	280	19 Tu	0001	4.3	130
	0819	5.9	180	1139	5.9	180	1129	5.2	160	0629	9.5	290	1002	5.9	180
	1413	8.5	260	1658	7.5	230	1630	8.2	250	1309	4.9	150	1444	7.5	230
	2152	4.3	130	●	2339	3.9	120	2316	3.3	100	1833	7.9	240	2138	4.6	140
5 Sa	0419	7.5	230	20 Su	0614	8.9	270	5 Tu	0600	10.2	310	20 W	0036	3.9	120
	1009	5.6	170	1241	5.2	160	1226	4.6	140	0653	9.8	300	1125	4.9	150
	1532	8.5	260	1758	7.9	240	1734	8.9	270	1333	4.6	140	1638	7.9	240
	●	2248	3.6	110				1857	8.2	250	●	2301	3.9	120	
6 Su	0521	8.5	260	21 M	0024	3.6	110	6 W	0007	2.6	80	21 Th	0104	3.6	110
	1129	5.2	160	0647	9.5	290	0640	11.2	340	0716	10.5	320	1219	4.3	130
	1637	8.9	270	1323	4.9	150	1311	3.6	110	1354	4.6	140	1739	8.9	270
	2334	3.0	90	1837	7.9	240	1821	9.5	290	1917	8.5	260	2358	3.0	90
7 M	0606	9.8	300	22 Tu	0057	3.3	100	7 Th	0049	2.0	60	22 F	0126	3.3	100
	1226	4.6	140	0715	10.2	310	0716	12.1	370	0739	10.8	330	1301	3.3	100
	1730	9.2	280	1354	4.6	140	1351	3.3	100	1413	4.3	130	1822	9.5	290
				1906	8.2	250	1904	10.2	310	1933	8.9	270			
8 Tu	0015	2.0	60	23 W	0123	3.0	90	8 F	0127	1.3	40	23 Sa	0801	11.2	340
	0646	10.8	330	0740	10.5	320	0752	12.8	390	1429	2.6	80	1430	4.3	130
	1315	3.9	120	1419	4.6	140	1429	2.6	80	1944	10.5	320	1951	9.2	280
	1817	9.5	290	1928	8.2	250	1944	10.5	320				1900	10.2	310
9 W	0054	1.3	40	24 Th	0144	3.0	90	9 Sa	0203	1.0	30	24 Su	0824	11.2	340
	0725	11.8	360	0805	10.8	330	0828	13.1	400	1505	2.6	80	1411	2.6	80
	1359	3.3	100	1440	4.6	140	1505	2.6	80	2026	10.8	330	1937	10.8	330
	1903	9.8	300	1947	8.5	260	1947	8.5	260						
10 Th	0132	0.7	20	25 F	0203	2.6	80	10 Su	0239	1.0	30	25 M	0227	2.6	80
	0804	12.8	390	0829	10.8	330	0905	13.1	400	0848	11.5	350	0848	11.5	350
	1441	3.0	90	1500	4.6	140	1542	2.6	80	1507	3.6	110	1443	2.3	70
	1949	10.2	310	2005	8.5	260	●	2107	10.8	330	2039	9.8	300	2015	11.2	340
11 F	0211	0.3	10	26 Sa	0222	2.6	80	11 M	0314	1.3	40	26 Tu	0250	2.6	80
	0845	13.1	400	0855	11.2	340	0943	12.5	380	0914	11.5	350	0839	12.1	370
	1524	2.6	80	1520	4.6	140	1618	3.0	90	1527	3.6	110	1512	2.6	80
	2036	10.5	320	2025	8.9	270	2150	10.5	320	○	2112	10.2	310	2053	11.2	340
12 Sa	0251	0.3	10	27 Su	0243	2.6	80	12 Tu	0347	2.3	70	27 W	0316	3.0	90
	0927	13.1	400	0921	11.2	340	1018	11.8	360	0943	11.2	340	0912	11.8	360
	1609	3.0	90	1543	4.6	140	1656	3.6	110	1551	3.6	110	1540	3.0	90
	●	2122	10.2	310	○	2051	8.9	270	2232	9.8	300	●	2131	10.8	330
13 Su	0331	1.0	30	28 M	0306	2.6	80	13 W	0418	3.3	100	28 Th	0346	3.6	110
	1009	12.8	390	0949	11.2	340	1054	10.5	320	1016	10.8	330	0943	10.8	330
	1655	3.0	90	1609	4.6	140	1737	4.3	130	1622	3.6	110	1606	3.3	100
	2210	9.8	300	2123	8.9	270	2317	9.2	280	2237	9.8	300	2209	10.5	320
14 M	0411	1.6	50	29 Tu	0330	3.0	90	14 Th	0450	4.6	140	14 F	0357	4.3	130
	1051	12.1	370	1019	10.8	330	1128	9.2	280	1828	4.9	150	1011	9.8	300
	1745	3.6	110	1638	4.6	140							1629	3.9	120
	2258	9.2	280	2201	8.9	270							2249	9.8	300
15 Tu	0451	3.0	90	30 W	0356	3.6	110	15 F	0011	8.2	250	15 F	0426	5.2	160
	1134	10.8	330	1051	10.5	320	0534	5.9	180	1207	8.2	250	1037	8.9	270
	1843	4.3	130	1716	4.6	140	1951	5.2	160				1649	4.6	140
	2353	8.2	250	2248	8.5	260							2334	8.9	270
31 Th	0427	4.3	130	31 Th	1129	9.8	300								
	1812	4.9	150	1812	4.9	150	2346	8.2	250						

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Townsville, Australia, 2013

Times and Heights of High and Low Waters

April				May				June															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
M 1 0031 0801 1241 1916	h m 9.8 5.6 7.5 4.3	ft 300 170 230 130	cm 0031 0801 1241 1916	W 16 Tu 1145 1739 1927	h m 0109 1145 1739 5.9 5.9 180 180	ft 8.2 5.9 5.9 5.9	cm 250 180 180 180	W 1 Th 0151 0922 1434 2036	h m 10.2 4.3 7.5 4.3	ft 310 130 230 130	cm 260 160 180 170	Sa 1 Su 0402 1100 1652 2311	h m 9.5 3.0 8.5 4.6	ft 290 90 260 140	cm 0237 130 210 170	W 16 M 1019 1619 2159	h m 8.2 4.3 6.9 5.6	ft 250 130 210 170	cm 0237 130 210 170				
Tu 2 0224 0951 1449 2108	h m 9.5 5.2 7.2 4.6	ft 290 160 220 140	cm 0224 0951 1449 2108	O 17 W 1144 1737 2217	h m 0348 1035 1607	ft 8.2 3.6 7.9	cm 250 160 200 180	F 2 Th 0333 1035 1653 2154	h m 10.2 3.6 6.6 5.6	ft 310 110 200 170	cm 260 150 200 170	O 2 Su 0505 1153 1753	h m 9.5 2.6 9.2	ft 290 80 280	cm 0344 120 240 160	M 17 O 1056 1713 2317	h m 8.5 7.9	ft 260 240 160	cm 0344 120 240 160				
W 3 0418 1106 1631 O	h m 9.8 4.3 7.9 3.9	ft 300 130 240 120	cm 0418 1106 1631 O	O 18 Th 1200 1753 2316	h m 0458 1132 1713	ft 8.9 3.3 8.5	cm 270 100 220 160	F 3 Sa 0444 1125 1723 2303	h m 10.5 4.6 7.2 5.2	ft 320 140 220 160	cm 270 140 220 160	M 18 Tu 0020 0552 1237 1840	h m 4.6 9.2 2.6 9.5	ft 140 280 80 290	cm 260 100 80 290	W 18 Tu 0435 1132 1754	h m 8.5 3.3	ft 260 100 270	cm 0435 100 270				
Th 4 0520 1159 1731 2345	h m 10.8 3.6 8.9 3.6	ft 330 110 270 110	cm 330 110 270 110	F 4 Th 0529 1219 1809 2355	h m 9.2 4.6 7.5 4.9	ft 280 140 230 150	cm 320 80 280 150	O 4 Sa 0534 1218 1804	h m 10.5 2.6 9.2	ft 320 80 280	cm 320 80 280	W 19 Tu 0113 0631 1313 1920	h m 4.3 8.9 2.6 9.8	ft 130 270 80 300	cm 150 270 80 300	M 19 W 0013 0518 1205 1833	h m 4.9 8.9 2.3 9.8	ft 150 270 70 300	cm 150 270 70 300				
F 5 0602 1242 1815	h m 11.2 3.0 9.5	ft 340 90 290	cm 340 90 290	O 20 Sa 0553 1238 1826	h m 9.8 3.9 8.2	ft 300 120 250	cm 300 120 250	W 5 Sa 0024 0614 1257 1845	h m 3.9 10.5 2.6 9.8	ft 120 320 80 300	cm 120 320 80 300	M 20 W 0156 0704 1342 1955	h m 4.3 8.9 2.6 10.2	ft 130 270 80 310	cm 130 270 80 310	W 20 Th 0101 0600 1240 1912	h m 4.3 9.2 1.6 10.8	ft 130 280 50 330	cm 130 280 50 330				
Sa 6 0033 0638 1318 1853	h m 3.0 11.5 2.6 10.2	ft 90 350 80 310	cm 90 350 80 310	W 21 Su 0026 0616 1257 1845	h m 4.3 10.2 3.6 8.9	ft 130 310 110 270	cm 130 310 110 270	M 6 M 0111 0647 1330 1923	h m 3.6 10.2 2.3 10.5	ft 110 310 70 320	cm 110 310 70 320	W 21 Th 0232 0735 1406 2027	h m 4.3 8.5 2.6 10.5	ft 130 260 80 320	cm 130 260 80 320	W 21 F 0145 0643 1317 1953	h m 3.6 9.5 1.0 11.8	ft 110 290 30 360	cm 110 290 30 360				
Su 7 0113 0710 1351 1929	h m 3.0 11.5 2.3 10.8	ft 90 350 70 330	cm 90 350 70 330	W 22 M 0056 0638 1316 1909	h m 3.9 10.5 3.0 9.8	ft 120 320 90 300	cm 120 320 90 300	O 7 Tu 0149 0718 1358 1958	h m 120 300 2.3 330	ft 120 300 70 330	cm 120 300 70 330	F 7 Th 0031 0625 1304 1922	h m 4.6 10.2 2.0 10.8	ft 140 310 60 330	cm 140 310 60 330	W 22 Sa 0304 0801 1424 2058	h m 4.6 8.2 2.6 10.5	ft 140 250 80 320	cm 140 250 80 320	M 22 O 0229 0730 1357 2036	h m 3.0 9.8 0.7 12.5	ft 90 300 20 380	cm 90 300 20 380
M 8 0148 0741 1419 2005	h m 3.0 11.5 2.3 10.8	ft 90 350 70 330	cm 90 350 70 330	W 8 Tu 0125 0702 1336 1937	h m 3.6 10.8 2.6 10.5	ft 110 330 80 320	cm 110 330 80 320	O 8 Th 0224 0748 1421 2033	h m 120 290 80 330	ft 120 290 80 330	cm 120 290 80 330	F 8 Sa 0149 0701 1333 2001	h m 3.6 10.2 1.3 11.5	ft 110 310 40 350	cm 110 310 40 350	W 8 O 0333 0825 1444 2129	h m 4.6 7.9 3.0 10.5	ft 140 240 90 320	cm 140 240 90 320	M 23 O 0315 0820 1441 2121	h m 3.0 9.8 0.3 12.8	ft 90 300 10 390	cm 90 300 10 390
Tu 9 0220 0812 1444 2041	h m 3.0 11.2 2.6 11.2	ft 90 340 80 340	cm 90 340 80 340	W 9 Tu 0156 0730 1358 2011	h m 3.3 10.8 2.0 11.2	ft 100 330 60 340	cm 100 330 60 340	O 9 Th 0257 0815 1440 2107	h m 100 280 80 330	ft 100 280 80 330	cm 100 280 80 330	F 9 Sa 0242 0742 1408 2043	h m 3.3 10.2 1.0 12.1	ft 100 310 30 370	cm 100 310 30 370	W 9 O 0401 0848 1507 2200	h m 4.9 7.5 3.0 10.2	ft 150 290 90 310	cm 150 290 90 310	M 24 M 0404 0912 1528 2207	h m 2.6 9.5 0.7 12.8	ft 80 290 20 390	cm 80 290 20 390
W 10 0251 0841 1506 2117	h m 3.6 10.5 2.6 10.8	ft 110 320 80 330	cm 110 320 80 330	O 10 Th 0232 0804 1425 2051	h m 3.3 10.8 1.6 11.8	ft 100 330 50 360	cm 100 330 50 360	F 10 Sa 0329 0840 1458 2141	h m 100 260 90 320	ft 100 310 30 380	cm 100 310 30 380	W 10 O 0433 0914 1533 2233	h m 4.9 7.2 3.3 9.8	ft 150 220 100 300	cm 150 220 100 300	M 25 Tu 0456 1007 1617 2254	h m 3.0 9.2 1.0 12.1	ft 90 280 30 370	cm 90 280 30 370				
Th 11 0323 0908 1524 2153	h m 4.3 9.8 3.0 10.5	ft 130 300 90 300	cm 130 300 90 300	W 11 F 0314 0843 1459 2136	h m 3.3 10.5 1.6 11.8	ft 100 320 50 360	cm 100 320 50 360	O 11 Sa 0404 0902 1518 2215	h m 100 250 330 310	ft 100 300 30 380	cm 100 250 330 310	F 11 Tu 0412 0919 1534 2218	h m 3.3 9.8 1.0 12.5	ft 100 300 30 380	cm 100 300 30 380	W 11 Tu 0513 0945 1601 2308	h m 5.2 6.9 3.6 9.5	ft 160 210 110 290	cm 160 210 110 290	M 26 W 0552 1104 1709 2343	h m 3.0 8.9 2.0 11.5	ft 90 270 60 350	cm 90 270 60 350
F 12 0356 0931 1541 2230	h m 4.9 8.9 3.6 9.8	ft 150 270 110 300	cm 150 270 110 300	O 12 Sa 0444 0926 1541 2251	h m 5.2 7.5 3.6 9																		

Townsville, Australia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0439	8.2	250	16 0239	7.9	240	1 Th 0113	4.3	130	16 0003	4.3	130
1129	3.0	90	Tu 1006	3.6	110	0626	7.5	240	F 0504	7.9	240
1747	8.9	270	1644	7.9	240	1241	3.0	90	1131	2.6	80
● 2301	5.2	160	1904	9.5	290	1814	10.2	310	1928	10.2	310
2 Tu 0022	4.9	150	17 0400	7.9	240	2 0149	3.9	120	2 M 0208	3.6	110
0541	8.2	250	W 1058	3.0	90	0658	7.5	230	17 Sa 0050	3.6	110
1218	2.6	80	1740	8.9	270	1313	2.6	80	0555	8.5	260
1839	9.2	280	1932	9.8	300	1952	11.2	340	1217	1.6	50
3 W 0117	4.6	140	18 0007	4.6	140	3 Sa 0217	3.9	120	18 Su 0130	3.0	90
0626	7.9	240	0501	8.2	250	0725	7.5	230	0638	9.2	280
1258	2.6	80	Th 1143	2.3	70	1339	2.6	80	1259	1.0	30
1917	9.8	300	1824	9.8	300	1958	10.2	310	1930	12.1	370
4 Th 0158	4.3	130	19 0057	3.9	120	4 Su 0239	3.9	120	19 M 0208	2.3	70
0702	7.9	240	0551	8.5	260	0746	7.9	240	0721	9.8	300
1330	2.6	80	1226	1.6	50	1358	2.6	80	1339	0.7	20
1949	10.2	310	1904	10.8	330	2022	10.5	320	2006	12.5	380
5 F 0232	4.3	130	20 0140	3.3	100	5 M 0258	3.9	120	20 Tu 0244	2.0	60
0731	7.9	240	0638	9.2	280	0804	7.9	240	0803	10.2	310
1354	2.6	80	1307	1.0	30	1417	2.6	80	1417	0.7	20
2017	10.2	310	1944	11.8	360	2047	10.5	320	2044	12.5	380
6 Sa 0300	4.3	130	21 0222	2.6	80	6 Tu 0316	3.9	120	21 W 0321	1.6	50
0756	7.5	230	0725	9.5	290	0823	7.9	240	0847	10.5	320
1414	2.6	80	1349	0.3	10	1436	2.6	80	1458	1.0	30
2045	10.5	320	2024	12.5	380	2112	10.5	320	○ 2122	12.5	380
7 Su 0323	4.3	130	22 0303	2.3	70	7 W 0335	3.9	120	22 Th 0359	2.0	60
0817	7.5	230	0813	9.8	300	0846	8.2	250	0932	10.2	310
1433	2.6	80	M 1432	0.3	10	1458	2.6	80	1538	1.6	50
2112	10.5	320	2106	12.8	390	● 2138	10.5	320	2200	11.5	350
8 M 0345	4.6	140	23 0346	2.0	60	8 Th 0357	3.9	120	23 F 0439	2.3	70
0839	7.5	230	0902	9.8	300	0914	8.2	250	1019	9.5	290
1455	2.6	80	Tu 1514	0.3	10	1521	3.0	90	1620	2.6	80
● 2140	10.5	320	○ 2147	12.8	390	2204	10.2	310	2238	10.5	320
9 Tu 0409	4.6	140	24 0431	2.3	70	9 F 0421	3.9	120	24 Sa 0524	3.0	90
0903	7.5	230	0951	9.8	300	0950	7.9	240	1108	8.9	270
1519	3.0	90	1559	1.0	30	1545	3.3	100	1710	3.9	120
2209	10.2	310	2230	12.1	370	2233	9.8	300	2315	9.2	280
10 W 0437	4.6	140	25 0520	2.6	80	10 Sa 0453	3.9	120	25 Su 0619	3.6	110
0933	7.5	230	1042	9.2	280	1035	7.9	240	1207	8.2	250
1544	3.3	100	1646	2.0	60	1613	3.9	120	1826	5.2	160
2239	9.8	300	2313	11.2	340	2305	9.2	280	2357	7.9	240
11 Th 0514	4.9	150	26 0614	3.0	90	11 Su 0540	4.3	130	26 M 0737	4.3	130
1009	7.2	220	1138	8.5	260	1129	7.5	230	1337	7.5	230
1609	3.6	110	F 1738	3.3	100	1652	4.6	140	2043	5.9	180
2311	9.5	290	2357	9.8	300	2344	8.5	260	2120	5.2	160
12 F 0558	4.9	150	27 0718	3.6	110	12 M 0648	4.3	130	27 Tu 0101	6.6	200
1058	6.9	210	1244	7.9	240	1238	7.2	220	0916	4.3	130
1637	4.3	130	1851	4.6	140	1905	5.6	170	1605	7.9	240
2346	9.2	280	● 2301	5.6	170	2320	5.2	160	2320	4.6	140
13 Sa 0654	4.9	150	28 0048	8.5	260	13 Tu 0037	7.9	240	28 W 0434	6.6	200
1200	6.6	200	0835	3.6	110	0805	4.3	130	1038	3.9	120
1715	4.9	150	1424	7.5	230	1424	7.5	230	1734	8.5	260
2051	5.6	170	2107	5.9	180	● 2107	5.9	180	○ 2353	3.6	110
14 Su 0028	8.5	260	29 0213	7.5	230	14 0158	7.2	220	29 Th 0019	4.6	140
0757	4.6	140	0955	3.6	110	0926	3.9	120	0544	6.9	210
1317	6.6	200	M 1620	7.9	240	1630	8.2	250	1136	3.6	110
1916	5.6	170	2307	5.6	170	● 2301	5.2	160	1811	9.2	280
15 M 0123	8.2	250	30 0425	7.2	220	15 Th 0352	7.2	220	30 F 0056	4.3	130
0905	4.3	130	Tu 1106	3.3	100	1036	3.3	100	0619	7.2	220
1516	6.9	210	1746	8.5	260	1731	9.2	280	1217	3.3	100
2114	5.9	180	● 1832	9.2	280	1839	9.5	290	1835	11.2	340
16 W 0026	8.5	260	31 0026	4.9	150	W 0541	7.2	220	31 Sa 0125	3.9	120
0541	7.2	220	1200	3.0	90	1250	3.0	90	0646	7.5	230
1200	3.0	90	1832	9.2	280	1904	9.8	300	1250	2.0	60

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Townsville, Australia, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0130	3.3	100	16 W 0128	1.6	50	1 F 0126	2.3	70	1 Su 0120	1.3	40
0705	8.2	250	0706	10.2	310	0725	9.8	300	0743	10.8	330
1311	3.0	90	1323	2.3	70	1342	3.3	100	1412	3.6	110
1912	10.2	310	1919	11.2	340	1914	10.2	310	1921	9.8	300
2 W 0147	3.0	90	17 Th 0159	1.3	40	2 Sa 0144	1.6	50	2 M 0149	1.0	30
0723	8.9	270	0744	10.5	320	0754	10.5	320	0822	11.8	360
1333	3.0	90	1401	2.6	80	1414	3.3	100	1455	3.3	100
1932	10.2	310	1951	10.8	330	1943	10.2	310	2002	9.8	300
3 Th 0202	2.6	80	18 F 0227	1.6	50	3 Su 0206	1.3	40	3 Tu 0224	0.7	20
0743	9.2	280	0822	10.8	330	0830	10.8	330	0905	12.1	370
1356	3.0	90	1437	3.0	90	1453	3.3	100	1545	3.3	100
1954	10.5	320	2024	10.2	310	● 2019	9.8	300	● 2057	7.9	240
4 F 0217	2.3	70	19 W 0252	2.0	60	4 M 0234	1.3	40	4 W 0304	0.7	20
0809	9.5	290	0900	10.5	320	0912	11.2	340	1004	10.2	310
1420	3.0	90	1517	3.6	110	1542	3.6	110	1642	4.9	150
2018	10.5	320	○ 2055	9.5	290	2100	9.5	290	2121	7.5	230
5 Sa 0234	2.3	70	20 Su 0315	2.3	70	5 Tu 0310	1.3	40	5 Th 0351	1.3	40
0841	9.8	300	0940	10.2	310	1000	11.2	340	1043	11.8	360
● 1449	3.0	90	1559	4.3	130	1644	3.9	120	1741	3.6	110
● 2047	10.2	310	2124	8.5	260	2149	8.9	270	2241	8.5	260
6 Su 0256	2.0	60	21 M 0335	3.0	90	6 W 0354	2.0	60	6 Th 0446	2.0	60
0920	10.2	310	1021	9.8	300	1054	10.8	330	1125	9.2	280
1527	3.6	110	1651	4.9	150	1755	4.3	130	1849	5.6	170
2121	9.8	300	2149	7.5	230	2248	8.2	250	2217	6.2	190
7 M 0326	2.0	60	22 Tu 0353	3.3	100	7 Th 0454	2.6	80	22 F 0352	3.6	110
1006	9.8	300	1106	9.2	280	1155	10.2	310	1125	9.2	280
1628	4.3	130	1800	5.6	170	1916	4.6	140	1849	5.6	170
2202	8.9	270	2213	6.9	210				2217	6.2	190
8 Tu 0405	2.6	80	23 W 0411	4.3	130	8 F 0000	7.2	220	8 Sa 0442	4.9	150
1101	9.5	290	1159	8.5	260	0619	3.3	100	1325	8.2	250
1753	4.9	150	2010	5.9	180	1312	9.8	300	2228	5.2	160
2254	8.2	250	2237	5.9	180	2046	4.3	130			
9 W 0503	3.3	100	24 Th 0429	4.9	150	9 Sa 0144	6.9	210	24 M 0443	5.9	180
1206	9.2	280	1320	7.9	240	0759	3.9	120	10755	5.6	170
1925	4.9	150	2304	5.2	160	1453	9.8	300	1456	8.2	250
						2203	3.6	110	2301	4.6	140
10 Th 0004	7.2	220	25 F 0506	5.6	170	10 Su 0337	7.2	220	25 M 0517	6.6	200
0644	3.6	110	0829	5.2	160	0936	3.9	120	0959	5.6	170
1339	8.9	270	1533	8.2	250	1610	10.2	310	1602	8.5	260
2114	4.9	150	2328	4.6	140	● 2303	3.0	90	2326	4.3	130
11 F 0156	6.6	200	26 Sa 0522	6.2	190	11 M 0448	8.2	250	10 Tu 0426	8.2	250
0829	3.9	120	1009	4.9	150	1051	3.6	110	1034	4.6	140
1538	9.2	280	1641	8.5	260	1706	10.2	310	1636	9.5	290
2235	3.9	120	2351	4.3	130	2353	2.3	70	● 2330	2.6	80
12 Sa 0401	7.2	220	27 Su 0543	6.9	210	12 Tu 0541	8.9	270	12 W 0557	7.9	240
1002	3.6	110	1103	4.6	140	1152	3.3	100	1142	4.9	150
1647	9.8	300	1716	8.9	270	1749	10.2	310	1716	9.2	280
● 2332	3.0	90	○						1814	9.2	280
13 Su 0504	7.9	240	28 M 0012	3.6	110	13 W 0035	2.0	60	12 Th 0018	2.3	70
1108	3.0	90	0604	7.5	230	0624	9.8	300	0622	9.8	300
1734	10.5	320	1143	4.3	130	1243	3.3	100	1247	4.3	130
			1743	9.2	280	1826	10.2	310			
14 M 0016	2.3	70	29 Tu 0032	3.3	100	14 Th 0111	1.6	50	14 F 0033	2.6	80
0550	8.9	270	0623	7.9	240	0702	10.2	310	0643	9.2	280
1200	2.6	80	1215	3.9	120	1327	3.3	100	1256	4.3	130
1812	10.8	330	1806	9.5	290	1859	9.8	300	1812	9.5	290
15 Tu 0054	2.0	60	30 W 0050	3.0	90	15 F 0141	1.6	50	15 Sa 0055	2.0	60
0629	9.5	290	0641	8.5	260	0739	10.5	320	0711	10.2	310
1244	2.3	70	1244	3.6	110	1406	3.6	110	1332	3.6	110
1847	11.2	340	1828	9.8	300	1932	9.5	290	1844	9.8	300
31 Th 0109	2.6	80	○								
0702	9.2	280									
1312	3.6	110									
1850	9.8	300									

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Brisbane Bar, Australia, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 0524	1.3	40		16 0026	6.6	200		16 0116	6.6	200	
Tu 1149	7.5	230	W	0626	1.6	50	F	0636	2.0	60	Sa 0725
1824	1.6	50		1243	7.5	230		1317	6.2	190	
				1919	1.3	40		1939	2.0	60	
2 0005	5.9	180		17 0111	6.6	200		2 0013	7.2	220	
W 0604	1.6	50	Th	0711	2.0	60	Sa	0725	2.3	70	Su 0815
1225	7.5	230		1321	6.9	210		1400	5.6	170	
1900	1.6	50		1956	1.6	50		2023	2.3	70	
3 0050	5.9	180		18 0200	6.2	190		3 0059	7.2	220	
Th 0647	2.0	60	F	0800	2.6	80	Su	0827	2.6	80	M 0926
1304	7.2	220		1402	6.2	190		1502	5.2	160	
1941	1.6	50		2037	2.0	60	O	2046	1.6	50	O 2123
4 0142	5.9	180		19 0257	6.2	190		4 0154	7.2	220	
F 0740	2.3	70	Sa	0900	3.0	90	M	0947	2.6	80	Tu 1057
1350	6.9	210		1451	5.9	180		1628	4.9	150	
2028	1.6	50	O	2127	2.0	60		2239	2.6	80	
5 0243	6.2	190		20 0406	6.2	190		5 0304	6.9	210	
Sa 0846	2.6	80	Su	1018	3.3	100	Tu	0447	6.9	210	W 0945
1446	6.6	200		1555	5.2	160		1117	2.6	80	Tu 1522
2125	1.6	50		2227	2.0	60		1652	5.6	170	
6 0357	6.2	190		21 0517	6.2	190		6 0425	6.9	210	
Su 1004	2.6	80	M	1141	3.0	90	W	0602	7.2	220	W 1114
1554	6.2	190		1712	5.2	160		1242	2.3	70	Th 1712
2230	1.6	50		2331	2.0	60		1812	5.9	180	
7 0512	6.9	210		22 0619	6.6	200		7 0544	7.2	220	
M 1128	2.6	80	Tu	1250	3.0	90	Th	0026	1.3	40	21 0433
1708	6.2	190		1821	5.2	160		0709	7.9	240	W 1124
2336	1.3	40									
8 0620	7.2	220		23 0030	2.0	60		8 0132	1.0	30	
Tu 1248	2.3	70	W	0710	7.2	220		Sa 0803	7.5	230	
1818	5.9	180		1343	2.6	80	F	0805	8.2	250	M 1436
				1915	5.6	170		1446	1.3	40	
9 0041	1.0	30		24 0120	1.6	50		23 0139	1.6	50	
W 0722	7.9	240	Th	0754	7.5	230		Sa 0841	7.5	230	
1358	2.0	60		1427	2.3	70		1535	1.3	40	
1925	6.2	190		2000	5.9	180		2110	6.6	200	
10 0142	1.0	30		25 0204	1.3	40		24 0223	1.3	40	
Th 0817	8.2	250	F	0834	7.5	230		Sa 0941	1.3	40	
1459	1.3	40		1507	2.0	60		0229	1.0	30	
2026	6.2	190		2039	5.9	180		0854	8.5	260	
11 0237	0.7	20		26 0244	1.3	40		9 0223	1.3	40	
F 0909	8.5	260	Sa	0910	7.9	240		Su 0841	7.5	230	
1552	1.3	40		1544	2.0	60		1039	1.0	30	
2121	6.6	200		2117	6.2	190		1618	1.0	30	
12 0328	0.7	20		27 0322	1.0	30		10 0319	0.7	20	
Sa 0956	8.9	270	Su	0945	7.9	240		0938	8.5	260	
1641	1.0	30		1618	1.6	50		1618	1.0	30	
● 2211	6.6	200	O	2153	6.2	190		2155	6.9	210	
13 0416	0.7	20		28 0359	1.0	30		25 0305	1.3	40	
Su 1041	8.9	270	M	1019	7.9	240		0917	7.9	240	
1724	1.0	30		1652	1.6	50		1549	1.6	50	
2258	6.6	200		2230	6.6	200		2133	6.9	210	
14 0501	0.7	20		29 0437	1.0	30		27 0425	1.0	30	
M 1123	8.5	260	Tu	1053	7.9	240		1047	8.2	250	
1805	1.0	30		1726	1.6	50		1207	7.2	220	
2343	6.6	200		2309	6.6	200		1833	1.3	40	
15 0543	1.0	30		30 0514	1.3	40		14 0604	1.6	50	
Tu 1203	8.2	250	W	1127	7.9	240		0643	2.0	60	
1843	1.3	40		1758	1.3	40		1241	6.6	200	
				2348	6.6	200		1904	1.6	50	
31 0553	1.6	50		31 0553	1.6	50					
Th	1201	7.5	230	Th	1832	1.3	40				

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Brisbane Bar, Australia, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0047 0722 1259 1902	h m 7.9 2.0 5.9 1.6	ft 240 60 180 50	cm 0045 0713 1252 1852	16 Tu 0045 0713 1252 1852	h m 7.2 2.6 5.2 2.3	ft 220 80 160 70	cm 240 60 180 60	1 W 0131 0827 1403 1951	h m 7.9 2.0 5.9 2.0	ft 240 60 180 60	cm 240 80 160 80
	0047 0722 1259 1902	h m 7.9 2.0 5.9 1.6	ft 240 60 180 50	16 Tu 0045 0713 1252 1852	h m 7.2 2.6 5.2 2.3	ft 220 80 160 70	cm 240 60 180 60	1 W 0131 0827 1403 1951	h m 7.9 2.0 5.9 2.0	ft 240 60 180 60	cm 240 80 160 80
	0142 0828 1403 2001	h m 7.5 2.3 5.6 2.0	ft 230 70 170 60	17 W 0129 0803 1345 1942	h m 6.9 3.0 5.2 2.6	ft 210 90 160 80	cm 230 60 160 70	2 Th 0232 0931 1517 2105	h m 7.5 2.0 5.9 2.3	ft 230 60 180 70	cm 230 80 160 80
	0248 0945 1524 2117	h m 7.2 2.3 5.6 2.3	ft 220 70 170 70	18 Th 0224 0909 1458 2050	h m 6.6 3.0 4.9 3.0	ft 200 90 150 90	cm 220 60 180 90	3 F 0338 1034 1632 2225	h m 7.2 2.0 5.9 2.3	ft 220 60 180 70	cm 220 70 170 90
4 Th 0404 1101 1648 2243	0404 1101 1648 2243	h m 7.2 2.3 5.6 2.3	ft 220 70 170 70	19 F 0331 1022 1622 2211	h m 6.6 2.6 5.2 3.0	ft 200 80 160 90	cm 200 60 160 90	4 Sa 0447 1133 1739 2341	h m 7.2 1.6 6.6 2.3	ft 220 50 200 70	cm 200 70 180 80
	0519 1208 1800	h m 7.2 2.0 6.2	ft 220 60 190	20 Sa 0439 1126 1731 2326	h m 6.6 2.6 5.6 2.6	ft 200 80 170 80	cm 200 60 170 80	5 Su 0549 1227 1836	h m 6.9 1.6 6.9	ft 210 50 210	cm 210 60 200
	0002 0624 1305 1859	h m 2.0 7.5 1.6 6.6	ft 60 230 50 200	21 Su 0541 1220 1826	h m 6.9 2.0 6.2	ft 210 60 190	cm 210 60 190	6 M 0046 0644 1315 1925	h m 2.3 6.9 1.3	ft 70 210 40 220	cm 70 200 40 220
	0108 0718 1353 1949	h m 1.6 7.5 1.3 7.2	ft 50 230 40 220	22 M 0030 0633 1308 1914	h m 2.3 6.9 1.6 6.9	ft 70 210 50 210	cm 70 210 50 210	7 Tu 0142 0732 1356 2008	h m 2.0 6.9 1.3 7.5	ft 60 210 40 230	cm 60 210 40 230
8 M 0203 0804 1434 2033	0203 0804 1434 2033	h m 1.6 7.5 1.3 7.5	ft 50 230 40 230	23 Tu 0126 0721 1352 1959	h m 2.0 7.2 1.3 7.2	ft 60 220 40 220	cm 60 220 40 220	8 W 0231 0815 1433 2048	h m 2.0 6.6 1.3 7.9	ft 60 200 40 240	cm 60 200 40 240
	0250 0846 1511 2112	h m 1.6 7.2 1.3 7.5	ft 50 220 40 230	24 W 0218 0806 1434 2044	h m 1.6 7.2 1.0 7.9	ft 50 220 30 240	cm 50 220 30 240	9 Th 0314 0854 1506 2124	h m 2.0 6.6 1.3 7.9	ft 60 200 40 240	cm 60 200 40 240
	0333 0923 1543 2149	h m 1.6 7.2 1.3 7.9	ft 50 220 40 240	25 Th 0308 0851 1515 2128	h m 1.3 7.2 1.0 8.2	ft 40 220 30 250	cm 40 220 30 250	10 F 0354 0930 1537 2159	h m 2.0 6.2 1.3 7.9	ft 60 190 40 240	cm 60 190 40 270
	0412 0958 1613 2224	h m 1.6 6.9 1.3 7.9	ft 50 210 40 240	26 F 0357 0936 1555 2213	h m 1.3 7.2 1.0 8.5	ft 40 220 30 260	cm 40 220 30 260	11 Th 0430 1004 1607 2233	h m 2.0 6.2 1.3 7.9	ft 60 190 40 240	cm 60 190 40 270
12 F 0448 1031 1641 2258	0448 1031 1641 2258	h m 1.6 6.6 1.3 7.9	ft 50 200 40 240	27 Sa 0446 1022 1635 2259	h m 1.3 6.9 1.0 8.5	ft 40 210 30 260	cm 40 210 30 260	12 M 0504 1037 1638 2307	h m 2.0 5.9 1.3 7.9	ft 60 200 40 240	cm 60 200 40 270
	0522 1103 1709 2332	h m 2.0 6.2 1.3 7.5	ft 60 190 40 230	28 Su 0536 1110 1716 2346	h m 1.3 6.6 1.0 8.5	ft 40 200 30 260	cm 40 200 30 260	13 M 0538 1112 1710 2341	h m 2.0 5.9 1.6 7.5	ft 60 180 50 230	cm 60 180 50 230
	0557 1136 1739	h m 2.0 5.9 1.6	ft 60 180 50	29 M 0628 1201 1800	h m 1.6 6.2 1.3	ft 50 190 40	cm 50 190 40	14 Tu 0612 1148 1746	h m 2.3 5.6 2.0	ft 70 170 60	cm 70 170 60
	0007 0632 1211 1813	h m 7.5 2.3 5.6 2.0	ft 230 70 170 60	30 Tu 0018 0650 1230 1824	h m 7.5 2.3 5.6 2.3	ft 230 70 170 70	cm 230 70 170 70	15 W 0115 0809 1350 1939	h m 8.2 1.6 6.2 2.0	ft 250 50 190 60	cm 250 50 190 60
15 M 0007 0632 1211 1813	0007 0632 1211 1813	h m 7.5 2.3 5.6 2.0	ft 230 70 170 60	31 F 0208 0725 1258 1850	h m 8.2 1.6 5.9 1.6	ft 230 50 190 50	cm 230 50 190 50	16 Sa 0110 0750 1347 1940	h m 7.2 2.0 5.6 2.6	ft 220 60 170 80	cm 220 60 170 80
	0142 0828 1403 2001	h m 7.5 2.3 5.6 2.0	ft 230 70 170 60	32 Su 0156 0839 1449 2044	h m 6.9 2.0 5.9 2.6	ft 210 60 180 80	cm 210 60 180 80	17 M 0252 0936 1559 2159	h m 6.6 2.0 6.2 2.6	ft 200 60 190 80	cm 200 60 190 80
	0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	33 O 0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	cm 210 50 190 80	18 O 0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	cm 210 50 190 80
	0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	34 O 0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	cm 210 50 190 80	19 O 0227 0911 1524 2125	h m 6.9 1.6 6.2 2.6	ft 210 50 190 80	cm 210 50 190 80

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Brisbane Bar, Australia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 M 0323	6.2	190		16 0213	6.6	200		1 M 0416	5.6	170	
1002	1.6	50	Tu 0851	1.6	50	Th 1108	2.0	60	F 1032	1.6	50
1630	6.6	200	1520	6.2	190	1758	6.6	200	1724	7.2	220
2239	3.0	90	● 2128	2.6	80						
2 Tu 0425	5.9	180	17 0318	6.2	190	2 F 0036	2.6	80	17 0005	2.3	70
1056	1.6	50	W 0952	1.6	50	607	5.2	160	Sa 0536	5.6	170
1734	6.6	200	1634	6.6	200	1209	1.6	50	1146	1.3	40
2355	3.0	90	2251	2.6	80	1851	6.9	210	1833	7.5	230
3 W 0531	5.6	170	18 0432	5.9	180	3 Sa 0129	2.3	70	18 0116	1.6	50
1151	1.6	50	Th 1058	1.3	40	0702	5.2	160	Su 0647	5.9	180
1830	7.2	220	1744	7.2	220	1302	1.6	50	1254	1.0	30
						1937	7.2	220	1932	8.2	250
4 Th 0059	2.6	80	19 0012	2.3	70	4 Su 0213	2.0	60	19 0215	1.3	40
0631	5.6	170	0545	5.9	180	0747	5.6	170	M 0749	6.2	190
1242	1.6	50	1205	1.3	40	1347	1.3	40	1357	0.7	20
1918	7.2	220	1848	7.5	230	2017	7.5	230	2024	8.2	250
5 F 0151	2.3	70	20 0125	2.0	60	5 M 0251	2.0	60	20 0306	1.0	30
0723	5.6	170	0652	5.9	180	0826	5.9	180	Tu 0842	6.6	200
1328	1.3	40	1307	1.0	30	1428	1.3	40	1451	0.7	20
2002	7.5	230	1947	8.2	250	2054	7.5	230	2111	8.5	260
6 Sa 0236	2.0	60	21 0227	1.3	40	6 Tu 0327	1.6	50	21 0351	0.7	20
0808	5.6	170	0755	6.2	190	0902	5.9	180	W 0931	6.9	210
1409	1.3	40	1406	0.7	20	1506	1.0	30	1541	0.7	20
2041	7.5	230	2040	8.5	260	2128	7.5	230	● 2154	8.2	250
7 Su 0316	2.0	60	22 0323	1.0	30	7 W 0400	1.6	50	22 0432	0.7	20
0847	5.9	180	0853	6.2	190	0938	6.2	190	Th 1016	6.9	210
1447	1.3	40	1501	0.7	20	1543	1.0	30	1627	0.7	20
2117	7.9	240	2129	8.9	270	● 2201	7.9	240	2235	8.2	250
8 M 0352	2.0	60	23 0413	1.0	30	8 Th 0432	1.3	40	23 0510	0.7	20
0923	5.9	180	0945	6.6	200	1013	6.2	190	W 1058	6.9	210
1523	1.3	40	Tu 1552	0.7	20	1620	1.0	30	1710	1.0	30
● 2152	7.9	240	○ 2216	8.9	270	2233	7.5	230	2313	7.5	230
9 Tu 0426	2.0	60	24 0459	1.0	30	9 F 0505	1.3	40	24 0544	1.0	30
0958	5.9	180	1035	6.6	200	1051	6.6	200	Sa 1141	6.9	210
1558	1.3	40	1640	0.7	20	1657	1.3	40	1752	1.3	40
2225	7.9	240	2300	8.5	260	2306	7.5	230	2351	7.2	220
10 W 0458	1.6	50	25 0542	1.0	30	10 Sa 0536	1.3	40	25 0617	1.0	30
1033	5.9	180	1122	6.6	200	1129	6.6	200	Su 1223	6.9	210
1634	1.3	40	1727	1.0	30	1735	1.6	50	1833	2.0	60
2258	7.9	240	2341	8.2	250	2339	7.2	220			
11 Th 0531	1.6	50	26 0622	1.0	30	11 Su 0609	1.3	40	26 0026	6.6	200
1110	5.9	180	1209	6.6	200	1210	6.6	200	M 0650	1.3	40
1710	1.3	40	1812	1.3	40	1815	1.6	50	1306	6.6	200
2330	7.5	230							1917	2.3	70
12 F 0604	1.6	50	27 0023	7.5	230	12 M 0014	6.9	210	27 0104	5.9	180
1150	6.2	190	0700	1.0	30	0643	1.3	40	Tu 0725	1.6	50
1748	1.6	50	1255	6.6	200	1254	6.6	200	1354	6.6	200
			1858	2.0	60	1901	2.0	60	2010	2.6	80
13 Sa 0004	7.5	230	28 0103	6.9	210	13 Tu 0054	6.6	200	27 0130	5.6	170
0638	1.6	50	0739	1.3	40	0723	1.3	40	Th 0746	1.6	50
1232	6.2	190	1344	6.6	200	1346	6.6	200	1430	6.9	210
1830	2.0	60	1948	2.3	70	1957	2.3	70	2107	2.3	70
14 Su 0040	7.2	220	29 0146	6.2	190	14 W 0144	5.9	180	28 0148	5.2	160
0716	1.6	50	0820	1.6	50	0813	1.6	50	Sa 0809	2.0	60
1318	6.2	190	1439	6.2	190	1451	6.6	200	1451	6.2	190
1917	2.3	70	2048	2.6	80	● 2111	2.6	80	● 2120	3.0	90
15 M 0122	6.9	210	30 0235	5.6	170	15 Th 0252	5.6	170	13 0243	5.2	160
0758	1.6	50	0907	1.6	50	0918	1.6	50	W 0855	1.6	50
1413	6.2	190	1544	6.2	190	1607	6.6	200	1547	6.9	210
2015	2.6	80	● 2202	3.0	90	2239	2.6	80	● 2236	2.3	70
16 31 0339	5.2	160	W 1005	2.0	60				13 0236	4.9	150
			1654	6.6	200				1133	2.0	60
			2326	3.0	90				1816	6.6	200

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Brisbane Bar, Australia, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0059	2.0	60	16 W 0126	1.0	30	1 F 0134	1.0	30	1 Su 0138	1.0	30
0651	5.6	170	0723	6.9	210	0743	6.9	210	0801	7.5	230
1250	1.6	50	1333	1.3	40	1358	1.6	50	1428	1.6	50
1905	6.9	210	1937	7.2	220	1946	6.9	210	2001	6.6	200
2 W 0139	1.3	40	17 Th 0210	0.7	20	2 Sa 0215	1.0	30	2 M 0224	0.7	20
0732	6.2	190	0810	7.2	220	0825	7.5	230	0849	8.2	250
1338	1.6	50	1425	1.3	40	1447	1.3	40	1521	1.3	40
1945	7.2	220	2022	7.2	220	2029	6.9	210	2052	6.6	200
3 Th 0216	1.3	40	18 F 0250	0.7	20	3 Su 0254	0.7	20	3 Tu 0309	0.3	10
0812	6.6	200	0852	7.5	230	0908	7.9	240	0936	8.5	260
1423	1.3	40	1512	1.3	40	1535	1.3	40	1614	1.3	40
2023	7.2	220	2102	6.9	210	● 2112	6.9	210	● 2143	6.6	200
4 F 0252	1.0	30	19 Sa 0325	0.7	20	4 M 0333	0.7	20	4 W 0353	0.3	10
0851	6.9	210	0931	7.5	230	0952	8.2	250	1023	8.5	260
1507	1.0	30	1555	1.3	40	1623	1.3	40	1656	1.6	50
2100	7.2	220	○ 2140	6.6	200	2157	6.6	200	2227	5.9	180
5 Sa 0328	0.7	20	20 Su 0357	0.7	20	5 Tu 0412	0.7	20	5 W 0427	1.0	30
0930	7.2	220	1009	7.5	230	1036	8.2	250	1058	7.5	230
● 1550	1.0	30	1635	1.3	40	1712	1.3	40	1731	2.0	60
2138	7.2	220	2216	6.6	200	2243	6.6	200	2301	5.6	170
6 Su 0403	0.7	20	21 M 0427	1.0	30	6 W 0452	0.7	20	21 Th 0458	1.3	40
1010	7.5	230	1046	7.5	230	1122	8.2	250	1132	7.5	230
1633	1.0	30	1713	1.6	50	1802	1.3	40	1805	2.0	60
2216	6.9	210	2250	6.2	190	2332	6.2	190	2336	5.6	170
7 M 0437	0.7	20	22 Tu 0456	1.0	30	7 Th 0534	1.0	30	7 F 0525	0.7	20
1051	7.5	230	1122	7.5	230	1211	7.9	240	1200	8.5	260
1717	1.3	40	1749	2.0	60	1856	1.6	50	1848	1.3	40
2256	6.6	200	2324	5.9	180				2326	6.2	190
8 Tu 0513	0.7	20	23 W 0526	1.3	40	8 F 0026	5.9	180	8 Sa 0016	5.2	160
1135	7.5	230	1158	7.2	220	0622	1.3	40	0610	2.0	60
1803	1.6	50	1826	2.0	60	1303	7.9	240	1247	6.9	210
2339	6.2	190	2359	5.2	160	1955	1.6	50	1922	2.3	70
9 W 0551	1.0	30	24 Th 0600	1.6	50	9 Sa 0127	5.6	170	9 M 0102	5.2	160
1221	7.5	230	1236	6.9	210	0719	1.6	50	0654	2.3	70
1854	2.0	60	1906	2.3	70	1401	7.5	230	1330	6.9	210
10 Th 0028	5.9	180	25 F 0040	4.9	150	2058	1.6	50	2010	2.3	70
0634	1.3	40	0638	2.0	60	10 M 0239	5.6	170	2032	1.3	40
1314	7.2	220	1320	6.6	200	0828	2.0	60	2126	1.6	50
1955	2.0	60	1955	2.6	80	1504	7.2	220	1435	7.2	220
11 F 0128	5.2	160	26 Sa 0131	4.9	150	● 2202	1.6	50	2126	1.6	50
0729	1.6	50	0728	2.3	70	10 Su 0239	5.6	170	2015	2.0	60
1416	7.2	220	1412	6.6	200	0828	2.0	60	0327	5.9	180
2109	2.0	60	2058	2.6	80	1504	7.2	220	0922	2.3	70
12 Sa 0245	5.2	160	27 Su 0242	4.6	140	10 M 0239	5.6	170	1535	6.9	210
0840	2.0	60	0832	2.6	80	0828	2.0	60	● 2222	1.3	40
1528	6.9	210	1514	6.2	190	1504	7.2	220	2107	2.0	60
● 2225	2.0	60	○ 2210	2.6	80	2202	2.0	60			
13 Su 0411	5.2	160	28 M 0409	4.9	150	12 Tu 0507	6.2	190	25 W 0158	4.9	150
1003	2.0	60	0952	2.6	80	1103	2.0	60	0749	2.6	80
1642	7.2	220	1621	6.2	190	1715	6.9	210	1420	6.6	200
2335	1.6	50	2313	2.3	70	1815	6.9	210	2107	2.3	70
14 M 0527	5.9	180	29 Tu 0520	5.2	160	14 Th 0051	1.0	30	● 2222	1.3	40
1122	1.6	50	1108	2.6	80	0702	6.9	210	0624	6.6	200
1748	7.2	220	1722	6.6	200	1316	1.6	50	1232	2.3	70
15 Tu 0035	1.3	40	30 W 0005	2.0	60	1908	6.6	200	1817	6.6	200
0629	6.2	190	0613	5.9	180	15 F 0137	1.0	30	1400	1.3	40
1233	1.3	40	1211	2.3	70	0749	7.5	230	0624	6.6	200
1847	7.2	220	1814	6.6	200	1410	1.6	50	1232	2.3	70
31 Th 0051	1.3	40				1905	6.6	200	1817	6.6	200
0659	6.6	200				1955	6.6	200	1817	6.6	200
1306	2.0	60							1817	6.6	200
1902	6.9	210							1817	6.6	200

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sydney, Australia, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu	0404	1.6	50	16 W	0517	1.3	40	1 F	0522	1.6	50
Tu	1027	5.6	170	W	1130	5.2	160	F	1130	4.9	150
1700	1.0	30		1757	1.0	30		1746	1.3	40	
2307	4.6	140									
2 W	0448	1.6	50	17 Th	0012	4.9	150	2 Sa	0009	4.9	150
W	1106	5.2	160	Th	0610	1.6	50	Sa	0616	1.6	50
1739	1.3	40		1215	4.9	150		1218	4.6	140	
2352	4.6	140		1838	1.3	40		1831	1.3	40	
3 Th	0537	2.0	60	18 F	0100	4.6	140	3 Su	0102	4.9	150
Th	1149	5.2	160	F	0705	2.0	60	Su	0719	2.0	60
1820	1.3	40		1301	4.3	130		1315	4.3	130	
				1920	1.6	50	O	1924	1.6	50	
4 F	0041	4.6	140	19 Sa	0151	4.6	140	4 M	0202	4.9	150
F	0631	2.0	60	Sa	0807	2.3	70	M	0833	2.0	60
1238	4.9	150		1355	3.9	120		1427	4.3	130	
1905	1.3	40	O	2007	2.0	60		2027	1.6	50	
5 Sa	0134	4.6	140	20 Su	0246	4.6	140	5 Tu	0311	5.2	160
Sa	0735	2.0	60	Su	0917	2.3	70	Tu	0955	1.6	50
1335	4.6	140		1500	3.6	110		1548	3.9	120	
O	1958	1.3	40		2100	2.0	60		2138	1.6	50
6 Su	0233	4.9	150	21 M	0345	4.6	140	6 W	0359	4.6	140
Su	0848	2.0	60	M	1030	2.3	70	W	1053	2.0	60
1444	4.3	130		1613	3.6	110		1647	3.6	110	
2056	1.3	40		2200	2.0	60		2223	2.3	70	
7 M	0335	5.2	160	22 Tu	0443	4.9	150	7 Th	0526	5.9	180
M	1006	1.6	50	Tu	1133	2.0	60	Th	1213	1.0	30
1559	4.3	130		1718	3.6	110		1809	4.3	130	
2158	1.3	40		2255	2.0	60		2350	1.3	40	
8 Tu	0438	5.6	170	23 W	0534	4.9	150	8 F	0624	5.9	180
Tu	1118	1.3	40	W	1224	1.6	50	F	1307	0.7	20
1712	4.3	130		1812	3.9	120		1904	4.6	140	
2300	1.3	40		2345	2.0	60					
9 W	0538	5.9	180	24 Th	0620	5.2	160	9 Sa	0047	1.0	30
W	1223	1.0	30	Th	1305	1.6	50	Sa	0717	6.2	190
1816	4.6	140		1856	3.9	120		1355	0.7	20	
2359	1.3	40						1954	4.9	150	
10 Th	0635	6.2	190	25 F	0030	1.6	50	10 Su	0140	1.0	30
Th	1319	0.7	20	F	0701	5.6	170	Su	0807	6.2	190
1915	4.6	140		1342	1.3	40		1440	0.7	20	
				1934	4.3	130	O	2040	4.9	150	
11 F	0055	1.0	30	26 Sa	0110	1.6	50	11 M	0230	1.0	30
F	0730	6.6	200	Sa	0740	5.6	170	M	0854	6.2	190
1412	0.3	10		Sa	1416	1.3	40		1521	0.7	20
2008	4.9	150			2011	4.3	130		2125	5.2	160
12 Sa	0149	1.0	30	27 Su	0149	1.3	40	12 Tu	0319	1.0	30
Sa	0822	6.6	200	Su	0815	5.9	180	Tu	0939	5.9	180
1500	0.3	10		Su	1449	1.0	30		1600	0.7	20
O	2100	4.9	150						2208	5.2	160
13 Su	0242	1.0	30	28 M	0228	1.3	40	12 W	0251	1.0	30
Su	0912	6.6	200	M	0852	5.9	180	W	0906	5.6	170
1547	0.3	10		M	1522	1.0	30		1523	1.0	30
2148	4.9	150			2122	4.6	140		2132	5.2	160
14 M	0334	1.0	30	29 Tu	0307	1.3	40	12 Tu	0251	1.0	30
M	1000	6.2	190	Tu	0929	5.9	180	W	0906	5.6	170
1632	0.7	20		Tu	1556	1.0	30		1523	1.0	30
2237	4.9	150			2200	4.9	150				
15 Tu	0426	1.3	40	30 W	0349	1.3	40	13 Th	0407	1.0	30
Tu	1045	5.9	180	W	1006	5.6	170	Th	0947	5.6	170
1715	0.7	20		W	1630	1.0	30		1559	1.0	30
2324	4.9	150			2240	4.9	150		2213	5.2	160
16 O	0433	1.3	40	31 Th	0433	1.3	40	13 Th	0335	1.0	30
O	1046	5.2	160	Th	1046	5.2	160	Th	0947	5.6	170
				Th	1706	1.0	30		1559	1.0	30
					2322	4.9	150		2136	5.6	170

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sydney, Australia, 2013

Times and Heights of High and Low Waters

April					May					June				
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm
1 M	0605	1.3 40		16 Tu	0615 2.0 60		1 W	0011 5.9 180		16 Sa	0156 5.2 160		16 Su	0045 4.9 150
	1206	4.6 140		1214 3.9 120			0702 1.3 40			0632 2.0 60			0726 1.6 50	
	1750	1.6 50		1745 2.3 70			1306 4.6 140			1237 4.3 130			1347 4.6 140	
							1845 2.0 60			1807 2.6 80			1935 2.6 80	
2 Tu	0023	5.6 170		17 W	0017 4.9 150		2 Th	0114 5.6 170		17 F	0031 4.9 150		17 Su	0300 4.9 150
	0711	1.3 40		0708 2.0 60			0807 1.3 40			0723 2.0 60			0815 1.6 50	
	1311	4.3 130		1308 3.9 120			1415 4.6 140			1332 4.3 130			1443 4.6 140	
							1956 2.3 70			1906 2.6 80			2045 2.3 70	
3 W	0128	5.6 170		18 Th	0112 4.9 150		3 F	0221 5.2 160		18 Sa	0126 4.9 150		18 Tu	0244 4.6 140
	0822	1.3 40		0807 2.0 60			0908 1.3 40			0815 2.0 60			0906 1.6 50	
	1424	4.3 130		1412 3.9 120			1522 4.6 140			1432 4.3 130			1540 4.9 150	
							2110 2.3 70			2014 2.6 80			2156 2.3 70	
4 Th	0240	5.2 160		19 F	0214 4.9 150		4 Sa	0330 5.2 160		19 Su	0227 4.9 150		19 Tu	0350 4.6 140
	0932	1.3 40		0908 2.0 60			1004 1.6 50			0907 2.0 60			0959 1.6 50	
	1540	4.3 130		1521 3.9 120			1622 4.9 150			1530 4.6 140			1635 5.2 160	
							2221 2.0 60			2124 2.6 80			2302 2.0 60	
5 F	0352	5.2 160		20 Sa	0320 4.9 150		5 Su	0432 4.9 150		20 M	0329 4.9 150		20 W	0454 4.6 140
	1035	1.3 40		1003 2.0 60			1055 1.6 50			0956 1.6 50			1052 1.3 40	
	1645	4.6 140		1621 4.3 130			1715 4.9 150			1623 4.9 150			1729 5.9 180	
							2325 2.0 60			2229 2.3 70				
6 Sa	0457	5.2 160		21 Su	0420 4.9 150		6 M	0528 4.9 150		21 Tu	0428 4.9 150		21 F	0003 1.3 40
	1130	1.3 40		1051 1.6 50			1140 1.6 50			1043 1.6 50			0555 4.6 140	
	1741	4.9 150		1710 4.6 140			1802 5.2 160			1712 5.2 160			1145 1.3 40	
													1822 6.2 190	
7 Su	0552	5.2 160		22 M	0512 4.9 150		7 Tu	0020 1.6 50		22 W	0523 4.9 150		22 Sa	0100 1.0 30
	1216	1.3 40		1134 1.6 50			0617 4.9 150			1129 1.3 40			0654 4.9 150	
	1829	5.2 160		1753 4.9 150			1221 1.6 50			1759 5.6 170			1239 1.3 40	
							1845 5.6 170						1915 6.6 200	
8 M	0031	1.3 40		23 Tu	0600 5.2 160		8 W	0107 1.6 50		23 Th	0022 1.6 50		23 Su	0155 0.7 20
	0642	5.2 160		1214 1.3 40			0703 4.9 150			0617 4.9 150			0750 4.9 150	
	1259	1.3 40		1833 5.2 160			1259 1.6 50			1215 1.3 40			1332 1.3 40	
							1924 5.6 170			1845 6.2 190			2007 6.9 210	
9 Tu	0120	1.3 40		24 W	0045 1.3 40		9 Th	0150 1.6 50		24 F	0115 1.0 30		24 Su	0247 1.6 50
	0727	5.2 160		0646 5.2 160			0745 4.6 140			0711 4.9 150			0846 4.9 150	
	1336	1.3 40		1253 1.3 40			1333 1.6 50			1302 1.3 40			1427 1.0 30	
							2000 5.9 180			1933 6.6 200			2100 6.9 210	
10 W	0205	1.3 40		25 Th	0132 1.0 30		10 F	0230 1.3 40		25 Sa	0207 1.0 30		25 Tu	0340 0.3 10
	0810	5.2 160		0733 5.2 160			0826 4.6 140			0805 4.9 150			0941 4.9 150	
	1412	1.3 40		1334 1.0 30			1408 1.6 50			1351 1.3 40			1522 1.3 40	
							2035 5.9 180			2023 6.6 200			2152 6.6 200	
11 Th	0246	1.3 40		26 F	0220 1.0 30		11 Sa	0307 1.3 40		26 Su	0300 0.7 20		26 W	0432 0.7 20
	0850	4.9 150		0822 5.2 160			0904 4.6 140			0900 4.9 150			1035 4.9 150	
	1445	1.3 40		1417 1.0 30			1442 2.0 60			1443 1.3 40			1618 1.3 40	
							2110 5.9 180			2114 6.9 210			2244 6.6 200	
12 F	0328	1.3 40		27 Sa	0312 0.7 20		12 Su	0345 1.6 50		27 M	0354 0.7 20		27 W	0523 0.7 20
	0930	4.9 150		0914 5.2 160			0943 4.6 140			0956 4.9 150			1130 4.9 150	
	1517	1.6 50		1503 1.3 40			1516 2.0 60			1536 1.3 40			1715 1.6 50	
							2145 5.9 180			2206 6.6 200			2335 5.9 180	
13 Sa	0407	1.3 40		28 Su	0404 0.7 20		13 M	0423 1.6 50		28 Tu	0450 0.7 20		28 F	0615 1.0 30
	1008	4.6 140		1007 4.9 150			1022 4.3 130			1053 4.9 150			1224 4.9 150	
	1550	2.0 60		1552 1.3 40			1553 2.0 60			1631 1.6 50			1815 2.0 60	
							2222 5.6 170			2300 6.6 200				
14 Su	0447	1.6 50		29 M	0500 1.0 30		14 Tu	0503 1.6 50		29 W	0546 1.0 30		29 F	0029 5.6 170
	1046	4.3 130		1103 4.9 150			1103 4.3 130			1151 4.9 150			0704 1.3 40	
	1624	2.0 60		1644 1.6 50			1632 2.3 70			1730 1.6 50			1320 4.9 150	
							2300 5.6 170			2356 6.2 190			1916 2.0 60	
15 M	0530	1.6 50		30 Tu	0600 1.0 30		15 W	0545 2.0 60		30 Th	0644 1.0 30		30 Sa	0124 4.9 150
	1128	4.3 130		1202 4.6 140			1148 4.3 130			1250 4.6 140			0753 1.6 50	
	1701	2.3 70		1741 2.0 60			1716 2.3 70			1832 2.0 60			1416 4.9 150	
							2344 5.2 160			31 0054 5.6 170			2025 2.3 70	
										31 F	0740 1.3 40			
										1352 4.6 140				
										1940 2.3 70				

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sydney, Australia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0223 4.6 140	16 0107 4.6 140	1 Th 0357 3.6 110	16 0310 3.9 120	1 Su 0527 3.9 120	16 0523 4.3 130						
0843 1.6 50	Tu 0730 1.6 50	0942 2.0 60	0902 1.6 50	1103 2.0 60	1110 1.3 40						
1514 4.9 150	1403 4.9 150	1626 4.9 150	1545 5.2 160	1733 4.9 150	1738 5.6 170						
2136 2.3 70	● 2015 2.0 60	2316 2.0 60	2233 1.3 40								
2 Tu 0327 4.3 130	17 0211 4.3 130	2 F 0500 3.6 110	17 0427 3.9 120	2 M 0015 1.6 50	17 0013 0.7 20						
0931 2.0 60	W 0824 1.6 50	1037 2.0 60	1012 1.6 50	0612 3.9 120	0616 4.9 150						
1610 4.9 150	1503 4.9 150	1719 4.9 150	1652 5.6 170	1152 1.6 50	1208 1.0 30						
2245 2.3 70	2132 2.0 60		2338 1.0 30	1817 5.2 160	1831 5.9 180						
3 W 0430 3.9 120	18 0323 4.3 130	3 Sa 0007 2.0 60	18 0533 4.3 130	3 Tu 0051 1.3 40	18 0100 0.7 20						
1021 2.0 60	0925 1.6 50	0554 3.9 120	1116 1.3 40	0650 4.3 130	0704 4.9 150						
1701 5.2 160	1606 5.2 160	1129 2.0 60	1752 5.9 180	1234 1.6 50	1302 1.0 30						
2345 2.0 60	2245 1.6 50	1805 5.2 160		1856 5.2 160	1920 5.9 180						
4 Th 0527 3.9 120	19 0435 4.3 130	4 Su 0048 1.6 50	19 0033 0.7 20	4 W 0125 1.0 30	19 0142 0.7 20						
1108 2.0 60	F 1027 1.6 50	0639 3.9 120	0630 4.6 140	0726 4.6 140	0749 5.2 160						
1749 5.2 160	1707 5.9 180	1214 1.6 50	1215 1.0 30	1315 1.3 40	1352 0.7 20						
	2350 1.3 40	1846 5.2 160	1846 6.2 190	1932 5.2 160	2007 5.6 170						
5 F 0032 2.0 60	20 0542 4.6 140	5 M 0125 1.3 40	20 0123 0.3 10	5 Th 0157 1.0 30	20 0222 0.7 20						
0616 4.3 130	Sa 1127 1.3 40	0718 4.3 130	0722 4.9 150	0800 4.6 140	0833 5.6 170						
1153 2.0 60	1805 6.2 190	1255 1.6 50	1310 1.0 30	1353 1.3 40	1441 0.7 20						
1831 5.6 170		1924 5.6 170	1938 6.2 190	● 2008 5.6 170	2052 5.2 160						
6 Sa 0114 1.6 50	21 0048 1.0 30	6 Tu 0200 1.3 40	21 0210 0.3 10	6 F 0228 1.0 30	21 0301 0.7 20						
0700 4.3 130	Su 0642 4.6 140	0754 4.3 130	0812 4.9 150	0835 4.9 150	0915 5.6 170						
1235 2.0 60	1224 1.0 30	1333 1.6 50	1403 0.7 20	1432 1.0 30	1528 1.0 30						
1911 5.6 170	1900 6.6 200	2000 5.6 170	● 2027 6.2 190	2045 5.2 160	2135 4.9 150						
7 Su 0150 1.6 50	22 0141 0.7 20	7 W 0231 1.0 30	22 0254 0.3 10	7 Th 0300 1.0 30	22 0338 1.0 30						
0741 4.3 130	M 0737 4.9 150	0830 4.6 140	0859 5.2 160	0912 4.9 150	0957 5.6 170						
1314 2.0 60	1320 1.0 30	1412 1.3 40	1455 0.7 20	1514 1.0 30	1614 1.0 30						
1947 5.9 180	1953 6.6 200	● 2035 5.6 170	2114 5.9 180	2124 5.2 160	2217 4.6 140						
8 M 0226 1.3 40	23 0231 0.3 10	8 Th 0303 1.0 30	23 0336 0.7 20	8 Su 0335 1.0 30	23 0415 1.3 40						
0818 4.3 130	Tu 0830 4.9 150	0904 4.6 140	0945 5.2 160	0950 5.2 160	1037 5.2 160						
1352 1.6 50	1415 1.0 30	1450 1.3 40	1545 1.0 30	1559 1.0 30	1700 1.3 40						
● 2024 5.9 180	○ 2045 6.6 200	2110 5.6 170	2200 5.6 170	2205 4.9 150	2300 4.3 130						
9 Tu 0300 1.3 40	24 0320 0.3 10	9 F 0336 1.0 30	24 0416 0.7 20	9 M 0412 1.0 30	24 0451 1.6 50						
0856 4.3 130	W 0922 4.9 150	0941 4.6 140	1030 5.2 160	1032 5.2 160	1117 5.2 160						
1430 1.6 50	1509 1.0 30	1530 1.3 40	1635 1.0 30	1646 1.3 40	1746 1.6 50						
2059 5.9 180	2134 6.6 200	2146 5.6 170	2245 5.2 160	2250 4.9 150	2344 3.9 120						
10 W 0334 1.3 40	25 0407 0.3 10	10 Th 0409 1.0 30	25 0457 1.0 30	10 Tu 0452 1.3 40	25 0530 2.0 60						
0932 4.6 140	Th 1012 5.2 160	1019 4.9 150	1115 5.2 160	1118 5.2 160	1200 4.9 150						
1509 1.6 50	1602 1.0 30	1613 1.3 40	1726 1.3 40	1740 1.3 40	1837 1.6 50						
2134 5.9 180	2223 6.2 190	2225 5.2 160	2329 4.6 140	2340 4.6 140							
11 Th 0408 1.3 40	26 0453 0.7 20	11 M 0445 1.0 30	26 0535 1.3 40	11 W 0538 1.3 40	26 0031 3.6 110						
1011 4.6 140	1101 4.9 150	1100 4.9 150	1200 4.9 150	1209 5.2 160	0615 2.0 60						
1548 2.0 60	F 1656 1.3 40	1659 1.6 50	1818 1.6 50	1841 1.3 40	1248 4.6 140						
2211 5.6 170	2311 5.6 170	2306 4.9 150			1935 2.0 60						
12 F 0444 1.3 40	27 0537 1.0 30	12 M 0523 1.3 40	27 0015 4.3 130	12 Th 0038 4.3 130	27 0130 3.6 110						
1050 4.6 140	Sa 1151 4.9 150	1145 4.9 150	0616 1.6 50	0632 1.6 50	0711 2.3 70						
1630 2.0 60	1751 1.6 50	1750 1.6 50	1247 4.9 150	1308 5.2 160	1345 4.6 140						
2248 5.2 160	2359 4.9 150	2352 4.6 140	1915 2.0 60	1952 1.6 50	2041 2.0 60						
13 Sa 0520 1.3 40	28 0621 1.3 40	13 Tu 0605 1.3 40	28 0105 3.9 120	13 W 0147 3.9 120	28 0240 3.6 110						
1132 4.6 140	Su 1242 4.9 150	1235 4.9 150	0702 2.0 60	0737 1.6 50	0819 2.3 70						
1716 2.0 60	1849 2.0 60	1849 2.0 60	1340 4.6 140	1416 4.9 150	1452 4.6 140						
2329 5.2 160			● 2021 2.0 60	● 2109 1.3 40	2146 2.0 60						
14 Su 0600 1.3 40	29 0048 4.6 140	14 W 0046 4.3 130	29 0207 3.6 110	14 Sa 0307 3.9 120	29 0351 3.6 110						
1218 4.6 140	Th 0706 1.6 50	0655 1.6 50	0758 2.0 60	0851 1.6 50	0930 2.3 70						
1808 2.0 60	M 1334 4.9 150	1331 4.9 150	1440 4.6 140	1530 5.2 160	1558 4.6 140						
	1952 2.0 60	● 2000 2.0 60	2131 2.0 60	2219 1.3 40	2243 1.6 50						
15 M 0014 4.9 150	30 0144 4.3 130	15 Th 0153 4.3 130	30 0320 3.6 110	15 Su 0421 4.3 130	30 0450 3.9 120						
0642 1.6 50	Tu 0754 2.0 60	0754 1.6 50	0902 2.0 60	1004 1.6 50	1032 2.0 60						
1308 4.6 140	1430 4.9 150	1436 4.9 150	1544 4.6 140	1639 5.2 160	1654 4.6 140						
1907 2.3 70	● 2102 2.3 70	2118 1.6 50	2237 2.0 60	2320 1.0 30	2329 1.6 50						
	31 0247 3.9 120		31 0430 3.6 110								
	W 0846 2.0 60		31 1007 2.0 60								
	1529 4.9 150		1644 4.9 150								
	2214 2.3 70		2330 1.6 50								

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sydney, Australia, 2013

Times and Heights of High and Low Waters

October				November				December															
	Time	Height			Time	Height			Time	Height													
	h m	ft cm		h m	ft cm			h m	ft cm														
1 Tu	0536 1126 1741	4.3 130 1.6 50 4.9 150		16 W	0557 1201 1814	4.9 150 1.3 40 5.2 160		1 F	0615 1229 1829	5.2 160 1.3 40 4.9 150		16 Su	0037 0703 1332 1928	1.3 40 5.6 170 1.0 30 4.6 140		16 M	0624 1256 1850	5.9 180 1.0 30 4.6 140		16 Tu	0048 0721 1400 1952	1.6 50 5.6 170 1.3 40 4.3 130	
2 W	0007 0615 1211 1822	1.3 40 4.6 140 1.6 50 4.9 150		17 Th	0030 0644 1254 1901	1.0 30 5.2 160 1.0 30 5.2 160		2 Sa	0033 0654 1314 1914	1.0 30 5.6 170 1.0 30 4.9 150		17 Su	0115 0743 1415 2011	1.3 40 5.6 170 1.0 30 4.6 140		2 M	0040 0711 1345 1942	1.0 30 6.2 190 0.7 20 4.9 150		17 Tu	0127 0759 1437 2031	1.6 50 5.6 170 1.3 40 4.3 130	
3 Th	0042 0652 1253 1901	1.0 30 4.9 150 1.3 40 5.2 160		18 F	0110 0726 1343 1947	1.0 30 5.6 170 1.0 30 4.9 150		3 Su	0112 0735 1400 ● 2000	1.0 30 5.9 180 0.7 20 4.9 150		18 M	0152 0820 1454 ○ 2050	1.3 40 5.9 180 1.0 30 4.3 130		3 Tu	0127 0759 1435 ● 2033	1.0 30 6.2 190 0.7 20 4.9 150		18 W	0203 0834 1512 2108	1.6 50 5.9 180 1.0 30 4.3 130	
4 F	0115 0728 1333 1940	1.0 30 4.9 150 1.0 30 5.2 160		19 Sa	0148 0807 1428 ○ 2030	1.0 30 5.6 170 1.0 30 4.9 150		4 M	0152 0818 1447 2047	1.0 30 5.9 180 0.7 20 4.9 150		19 Tu	0228 0857 1531 2130	1.6 50 5.9 180 1.0 30 4.3 130		4 W	0216 0847 1527 2127	1.0 30 6.6 200 0.3 10 4.9 150		19 Th	0240 0910 1546 2145	1.6 50 5.6 170 1.3 40 4.3 130	
5 Sa	0149 0804 1415 ● 2021	1.0 30 5.2 160 1.0 30 5.2 160		20 Su	0225 0846 1511 2112	1.0 30 5.6 170 1.0 30 4.6 140		5 Tu	0236 0903 1537 2138	1.0 30 6.2 190 0.7 20 4.9 150		20 W	0303 0932 1609 2209	1.6 50 5.6 170 1.3 40 4.3 130		5 Th	0308 0938 1619 2221	1.0 30 6.6 200 0.3 10 4.9 150		20 F	0318 0945 1621 2223	1.6 50 5.6 170 1.3 40 4.3 130	
6 Su	0225 0843 1500 2104	1.0 30 5.6 170 0.7 20 4.9 150		21 M	0300 0924 1552 2153	1.3 40 5.6 170 1.0 30 4.6 140		6 W	0323 0952 1630 2232	1.0 30 6.2 190 0.7 20 4.6 140		21 Th	0341 1009 1647 2249	1.6 50 5.6 170 1.3 40 4.3 130		6 F	0402 1030 1713 2317	1.3 40 6.6 200 0.7 20 4.6 140		21 Sa	0357 1021 1658 2302	2.0 60 5.6 170 1.3 40 4.3 130	
7 M	0302 0924 1546 2150	1.0 30 5.6 170 0.7 20 4.9 150		22 Tu	0335 1001 1633 2233	1.6 50 5.6 170 1.3 40 4.3 130		7 Th	0414 1043 1725 2330	1.3 40 6.2 190 0.7 20 4.6 140		22 F	0420 1046 1728 2332	2.0 60 5.2 160 1.3 40 3.9 120		7 Sa	0500 1124 1807	1.3 40 6.2 190 0.7 20		22 Su	0438 1059 1735 2345	2.0 60 5.2 160 1.3 40 4.3 130	
8 Tu	0345 1009 1637 2240	1.0 30 5.9 180 1.0 30 4.6 140		23 W	0412 1039 1715 2315	1.6 50 5.2 160 1.3 40 3.9 120		8 F	0510 1138 1825	1.6 50 5.9 180 1.0 30		23 Sa	0503 1128 1812	2.0 60 5.2 160 1.6 50		8 Su	0015 0600 1220 1903	4.6 140 1.6 50 5.6 170 1.0 30		23 M	0523 1139 1815	2.0 60 4.9 150 1.3 40	
9 W	0430 1058 1732 2335	1.3 40 5.6 170 1.0 30 4.3 130		24 Th	0450 1119 1800	2.0 60 4.9 150 1.6 50		9 Sa	0030 0611 1237 1928	4.3 130 1.6 50 5.6 170 1.0 30		24 Su	0020 0553 1213 1900	3.9 120 2.3 70 4.9 150 1.6 50		9 M	0115 0704 1319 1959	4.6 140 1.6 50 5.2 160 1.0 30		24 Tu	0031 0614 1223 1859	4.3 130 2.3 70 4.9 150 1.6 50	
10 Th	0521 1151 1834	1.3 40 5.6 170 1.0 30		25 F	0001 0535 1203 1851	3.9 120 2.0 60 4.9 150 1.6 50		10 Su	0136 0719 1342 ○ 2030	4.3 130 2.0 60 5.2 160 1.0 30		25 M	0114 0650 1304 1951	3.9 120 2.3 70 4.6 140 1.6 50		10 Tu	0217 0815 1423 ○ 2054	4.6 140 2.0 60 4.9 150 1.3 40		25 W	0122 0711 1314 ○ 1946	4.3 130 2.3 70 4.6 140 1.6 50	
11 F	0036 0619 1252 1944	4.3 130 1.6 50 5.2 160 1.3 40		26 Sa	0055 0629 1255 1948	3.6 110 2.3 70 4.6 140 2.0 60		11 M	0245 0832 1451 2130	4.6 140 2.0 60 4.9 150 1.3 40		26 Tu	0212 0755 1402 ○ 2044	4.3 130 2.3 70 4.6 140 1.6 50		11 W	0318 0928 1530 2147	4.9 150 2.0 60 4.6 140 1.3 40		26 Th	0217 0816 1414 2038	4.6 140 2.3 70 4.3 130 1.6 50	
12 Sa	0146 0729 1400 ● 2054	3.9 120 2.0 60 5.2 160 1.3 40		27 Su	0158 0733 1355 ○ 2048	3.6 110 2.3 70 4.6 140 2.0 60		12 Tu	0347 0945 1559 2224	4.6 140 2.0 60 4.9 150 1.3 40		27 W	0311 0904 1506 2135	4.3 130 2.3 70 4.6 140 1.6 50		12 Th	0416 1039 1634 2237	4.9 150 2.0 60 4.3 130 1.6 50		27 F	0315 0929 1521 2133	4.6 140 2.0 60 4.3 130 1.6 50	
13 Su	0301 0845 1514 2159	4.3 130 2.0 60 5.2 160 1.0 30		28 M	0304 0845 1501 2145	3.9 120 2.3 70 4.6 140 1.6 50		13 W	0445 1054 1700 2313	4.9 150 1.6 50 4.9 150 1.3 40		28 Th	0404 1011 1608 2224	4.6 140 2.0 60 4.6 140 1.3 40		13 F	0510 1143 1733 2324	5.2 160 1.6 50 4.3 130 1.6 50		28 Sa	0411 1039 1629 2229	4.9 150 2.0 60 4.3 130 1.3 40	
14 M	0409 0958 1621 2255	4.3 130 1.6 50 5.2 160 1.0 30		29 Tu	0403 0953 1603 2233	4.3 130 2.3 70 4.6 140 1.6 50		14 Th	0534 1154 1754 2357	5.2 160 1.3 40 4.6 140 1.3 40		29 F	0453 1111 1705 2309	4.9 150 2.0 60 4.6 140 1.3 40		14 Sa	0558 1236 1825	5.2 160 1.6 50 4.3 130		29 Su	0505 1142 1732 2323	5.2 160 1.3 40 4.3 130 1.3 40	
15 Tu	0507 1103 1721 2345	4.6 140 1.3 40 5.2 160 1.0 30		30 W	0453 1051 1657 2316	4.3 130 2.0 60 4.6 140 1.3 40		15 F	0620 1246 1843	5.6 170 1.3 40 4.6 140 1.3 40		30 Sa	0539 1204 1759 2354	5.2 160 1.3 40 4.6 140 1.3 40		15 Su	0008 0641 1321 1911	1.6 50 5.6 170 1.3 40 4.3 130		30 M	0559 1238 1831 1927	5.9 180 1.0 30 4.6 140 4.6 140	
				31 Th	0535 1143 1744 2355	4.9 150 1.6 50 4.9 150 1.3 40							31 Tu	0016 0651 1331 1927	1.3 40 6.2 190 0.7 20 4.6 140								

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Phillip, Point Lonsdale, Australia, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0232	5.2	160	16 W	0307	5.6	170	1 F	0317	5.2	160	
0822	2.0	60	0852	1.0	30	0913	1.0	30	16 Sa	0356	5.2	160
1424	4.3	130	1515	4.9	150	1534	4.9	150	0956	0.7	20	
2019	1.0	30	2100	0.7	20	2115	1.3	40	1635	4.9	150	
									2201	1.3	40	
2 W	0307	5.2	160	17 Th	0349	5.2	160	2 Sa	0351	5.2	160	
0858	1.6	50	0940	1.0	30	0948	1.0	30	17 Su	0429	4.9	150
1505	4.6	140	1607	4.9	150	1616	4.9	150	1033	0.7	20	
2052	1.0	30	2145	1.0	30	2153	1.3	40	1715	4.9	150	
									2237	1.6	50	
3 Th	0341	5.2	160	18 F	0427	5.2	160	3 Su	0426	4.9	150	
0933	1.3	40	1023	1.0	30	1025	0.7	20	18 M	0500	4.9	150
1545	4.6	140	1658	4.9	150	1700	4.9	150	1108	0.7	20	
2126	1.0	30	2225	1.3	40	●	2233	1.3	40	1756	4.6	140
									2314	1.6	50	
4 F	0415	5.2	160	19 Sa	0503	4.9	150	4 M	0500	4.9	150	
1007	1.3	40	1103	0.7	20	1102	0.7	20	19 Tu	0534	4.6	140
1628	4.6	140	1747	4.6	140	1747	4.6	140	1144	1.0	30	
2203	1.3	40	●	2303	1.6	50	2315	1.6	50	1836	4.3	130
									2351	2.0	60	
5 Sa	0448	4.9	150	20 Su	0537	4.9	150	5 Tu	0539	4.9	150	
1042	1.0	30	1143	1.0	30	1144	0.7	20	20 W	0609	4.3	130
1713	4.6	140	1838	4.6	140	1840	4.6	140	1220	1.0	30	
●	2244	1.6	50		2342	2.0	60	5 W	1922	4.3	130	
									2301	1.6	50	
6 Su	0523	4.9	150	21 M	0612	4.6	140	6 Th	0000	2.0	60	
1119	1.0	30	1220	1.0	30	0622	4.6	140	21 W	0031	2.3	70
1802	4.6	140	1929	4.3	130	1229	0.7	20	1127	0.7	20	
2328	1.6	50				1942	4.6	140	1824	4.6	140	
									2345	2.0	60	
7 M	0601	4.9	150	22 Tu	0023	2.0	60	7 F	0049	2.3	70	
1200	1.0	30	0649	4.3	130	0714	4.6	140	22 Th	0117	2.3	70
1900	4.6	140	1301	1.0	30	1321	0.7	20	1213	0.7	20	
						2053	4.3	130	1348	1.3	40	
									2115	3.9	120	
8 Tu	0015	2.0	60	23 W	0108	2.3	70	8 F	0148	2.3	70	
0645	4.6	140	0732	4.3	130	0818	4.3	130	0840	3.6	110	
1247	1.0	30	1348	1.3	40	1428	1.0	30	1448	1.6	50	
2006	4.6	140	2116	4.3	130	2206	4.3	130	2218	3.9	120	
									2031	4.3	130	
9 W	0109	2.3	70	24 Th	0201	2.6	80	9 Sa	0303	2.6	80	
0738	4.6	140	0824	3.9	120	0940	4.3	130	0953	3.6	110	
1343	0.7	20	1445	1.3	40	1548	1.0	30	1604	1.6	50	
2119	4.6	140	2215	4.3	130	2315	4.6	140	2317	4.3	130	
									2142	4.3	130	
10 Th	0214	2.6	80	25 F	0310	2.6	80	10 Su	0430	2.3	70	
0841	4.3	130	0926	3.9	120	1103	4.3	130	0459	2.6	80	
1450	0.7	20	1554	1.3	40	1708	1.0	30	1107	3.9	120	
2231	4.6	140	2314	4.3	130	●			1720	1.6	50	
										2247	4.3	130
11 F	0330	2.6	80	26 Sa	0431	2.6	80	11 M	0016	4.9	150	
0955	4.3	130	1033	3.9	120	0548	2.0	60	0604	2.0	60	
1607	0.7	20	1700	1.3	40	1215	4.6	140	1212	3.9	120	
2338	4.9	150				1815	1.0	30	1816	1.3	40	
										2348	4.6	140
12 Sa	0450	2.6	80	27 Su	0006	4.3	130	12 Tu	0111	4.9	150	
1115	4.3	130	0544	2.6	80	0653	1.6	50	0054	4.6	140	
1721	0.7	20	1137	3.9	120	1318	4.6	140	0651	1.6	50	
●			○	1758	1.3	40	1912	1.0	30	1306	4.3	130
									1901	1.3	40	
13 Su	0038	4.9	150	28 M	0051	4.6	140	13 W	0159	5.2	160	
0603	2.0	60	0639	2.3	70	0746	1.3	40	0135	4.9	150	
1224	4.6	140	1233	3.9	120	1415	4.9	150	0730	1.3	40	
1826	0.7	20	1845	1.0	30	2000	1.0	30	1355	4.6	140	
									1941	1.3	40	
14 M	0132	5.2	160	29 Tu	0130	4.9	150	14 Th	0242	5.2	160	
0705	1.6	50	0723	2.0	60	0834	1.0	30	0834	1.0	30	
1325	4.6	140	1324	4.3	130	1505	4.9	150	1505	4.9	150	
1922	0.7	20	1925	1.0	30	2045	1.0	30	1944	1.3	40	
										1944	1.3	40
15 Tu	0222	5.6	170	30 W	0207	4.9	150	15 F	0320	5.2	160	
0801	1.3	40	0801	1.6	50	0917	0.7	20	0211	4.9	150	
1421	4.9	150	1409	4.6	140	1552	4.9	150	0807	1.0	30	
2014	0.7	20	2001	1.0	30	2125	1.3	40	1450	5.2	160	
									2025	1.3	40	
			31 Th	0243	4.9	150						
			0837	1.3	40							
			1453	4.6	140							
			2038	1.0	30							

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Phillip, Point Lonsdale, Australia, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0301	4.9	150	16 Tu 0321	4.9	150	1 W 0323	4.9	150	1 Sa 0455	4.9	150
0858	0.3	10	0926	1.0	30	W 0922	0.7	20	Sa 1045	1.3	40
1551	5.6	170	1611	5.2	160	1623	5.6	170	Th 1615	5.2	160
2123	1.6	50	2146	2.0	60	2151	2.0	60	2200	2.0	60
2 Tu 0341	4.9	150	17 W 0356	4.6	140	2 Th 0410	4.9	150	2 Su 0558	4.9	150
0942	0.3	10	1000	1.0	30	F 1010	0.7	20	1829	1.6	50
1635	5.2	160	1643	4.9	150	1710	5.6	170	1734	5.2	160
2205	1.6	50	2221	2.0	60	2238	2.0	60	2324	2.0	60
3 W 0423	4.9	150	18 Th 0431	4.6	140	3 F 0500	4.9	150	3 M 0015	1.6	50
1027	0.7	20	1034	1.3	30	1058	1.0	30	Sa 0709	4.6	140
1721	5.2	160	1717	4.9	150	1759	5.2	160	1220	2.0	60
● 2248	1.6	50	● 2257	2.0	60	2328	2.0	60	1916	4.9	150
4 Th 0508	4.9	150	19 F 0510	4.3	130	4 Sa 0556	4.6	140	4 Tu 0109	1.6	50
1112	0.7	20	1107	1.3	40	1146	1.3	40	19 Su 0530	4.3	130
1811	4.9	150	1756	4.9	150	1850	4.9	150	1311	2.3	70
2334	2.0	60	2333	2.0	60	2346	2.0	60	2006	4.9	150
5 F 0558	4.6	140	20 Sa 0551	4.3	130	5 Su 0021	2.0	60	5 W 0205	1.6	50
1159	1.0	30	1142	1.6	50	0705	4.6	140	9 M 0619	4.3	130
1907	4.6	140	1838	4.6	140	1238	1.6	50	1147	2.0	60
6 Sa 0025	2.0	60	21 Su 0012	2.3	70	6 M 0122	2.0	60	20 M 0619	4.3	130
0659	4.3	130	0640	4.3	130	0825	4.6	140	1846	4.9	150
1251	1.3	40	1220	1.6	50	1335	2.0	60	2059	4.6	140
2010	4.6	140	1926	4.6	140	2043	4.6	140	1933	4.6	140
7 Su 0125	2.0	60	22 M 0057	2.3	70	7 Tu 0230	2.0	60	21 Tu 0028	2.0	60
0817	4.3	130	0740	3.9	120	0937	4.6	140	0717	4.3	130
1354	1.6	50	1308	2.0	60	1443	2.3	70	1235	2.3	70
2114	4.6	140	2020	4.3	130	2140	4.6	140	1933	4.6	140
8 M 0242	2.0	60	23 Tu 0151	2.3	70	8 W 0338	1.6	50	23 Th 0028	2.0	60
0941	4.3	130	0852	3.9	120	1044	4.6	140	0940	4.6	140
1511	2.0	60	1408	2.3	70	1558	2.6	80	1440	2.6	80
2216	4.6	140	2119	4.3	130	2236	4.6	140	2126	4.6	140
9 Tu 0402	2.0	60	24 W 0256	2.0	60	9 Th 0440	1.6	50	23 Sa 0214	1.6	50
1055	4.6	140	1010	4.3	130	1145	4.9	150	0940	4.6	140
1630	2.0	60	1521	2.3	70	1709	2.6	80	1556	3.0	90
2315	4.6	140	2221	4.3	130	2329	4.6	140	2229	4.6	140
10 W 0511	1.6	50	25 Th 0405	1.6	50	10 F 0532	1.3	40	24 M 0424	1.6	50
1201	4.6	140	1120	4.6	140	1239	5.2	160	0631	1.3	40
1741	2.0	60	1641	2.6	80	1807	2.6	80	1338	5.2	160
●			2319	4.6	140	●			2332	4.6	140
11 Th 0008	4.6	140	26 F 0509	1.3	40	11 Sa 0016	4.6	140	10 M 0023	4.6	140
0606	1.3	40	1221	4.9	150	0619	1.3	40	0631	1.3	40
1259	4.9	150	F 1751	2.3	70	1325	5.2	160	1338	5.2	160
1836	2.0	60	O			1854	2.3	70	1907	2.6	80
12 F 0055	4.6	140	27 Sa 0014	4.6	140	12 Su 0100	4.6	140	10 Tu 0023	4.6	140
0652	1.0	30	0604	1.0	30	0701	1.0	30	0602	1.0	30
1347	5.2	160	1315	5.2	160	1404	5.2	160	1324	5.6	170
1921	2.0	60	1845	2.3	70	1934	2.3	70	1845	2.3	70
13 Sa 0136	4.9	150	28 Su 0104	4.9	150	13 M 0138	4.6	140	11 Tu 0106	4.6	140
0734	1.0	30	0655	0.7	20	0741	1.0	30	0714	1.3	40
1430	5.2	160	1404	5.6	170	1439	5.6	170	1413	5.2	160
2000	2.0	60	1933	2.0	60	2012	2.3	70	1948	2.6	80
14 Su 0213	4.9	150	29 M 0152	4.9	150	14 Tu 0215	4.6	140	11 W 0108	4.9	150
0813	1.0	30	0745	0.7	20	0819	1.0	30	0701	0.7	20
1506	5.2	160	1451	5.9	180	1511	5.6	170	1415	5.9	180
2037	2.0	60	2019	2.0	60	2048	2.3	70	1941	2.0	60
15 M 0247	4.9	150	30 Tu 0238	4.9	150	15 W 0252	4.6	140	11 F 0228	4.6	140
0850	1.0	30	0833	0.7	20	0856	1.3	40	0829	1.3	40
1539	5.2	160	1537	5.9	180	1543	5.2	160	1518	5.6	170
2112	2.0	60	2105	2.0	60	2124	2.0	60	2103	2.3	70
16 M 0450	4.9	150	31 F 0400	4.9	150	16 F 0218	5.2	160	11 O 0228	4.6	140
1028	1.0	30	0956	1.0	30	0813	0.7	20	0850	1.0	30
1717	5.2	160	1656	5.6	170	1522	5.9	180	1551	5.9	180
2220	2.0	60	2230	1.6	50	2049	2.0	60	2130	1.6	50

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Phillip, Point Lonsdale, Australia, 2013

Times and Heights of High and Low Waters

July				August				September								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 M	0551	4.9	150	16 Tu	0454	4.9	150	1 Th	0008	1.3	40	16 Su	0612	4.9	150	
1113	2.0	60	1027	2.0	60	0716	4.6	140	F	1135	2.3	70	M	0808	4.3	130
1759	5.2	160	1707	5.2	160	1208	2.3	70	1759	4.9	150	Su	1303	2.6	80	
2357	1.3	40	● 2301	1.6	50	1841	4.9	150				1301	4.3	130		
2 Tu	0653	4.9	150	17 W	0540	4.9	150	2 F	0050	1.3	40	2 M	0139	1.6	50	
1156	2.3	70	1108	2.0	60	0809	4.6	140	17	0002	1.0	30	Tu	0904	4.3	130
1841	4.9	150	1744	4.9	150	1252	2.6	80	Sa	0710	4.6	140	1400	2.6	80	
			2340	1.3	40	1925	4.6	140		1221	2.3	70	2032	3.9	120	
3 W	0043	1.3	40	18 Th	0633	4.6	140	3 Sa	0136	1.6	50	18 Su	0052	1.0	30	
0752	4.6	140	1152	2.3	70	0902	4.6	140	0816	4.6	140	Tu	0240	1.6	50	
1241	2.6	80	1824	4.9	150	1343	3.0	90	1315	2.6	80	1003	4.3	130		
1925	4.9	150				2015	4.3	130	1947	4.6	140	1513	2.6	80		
4 Th	0130	1.6	50	19 F	0023	1.3	40	4 Su	0231	1.6	50	19 M	0152	1.0	30	
0849	4.6	140	0734	4.6	140	0959	4.3	130	0929	4.6	140	0356	2.0	60		
1330	2.6	80	1242	2.6	80	1446	3.0	90	1423	2.6	80	1100	4.3	130		
2012	4.6	140	1912	4.9	150	2114	4.3	130	2101	4.6	140	1640	2.6	80		
5 F	0223	1.6	50	20 Sa	0114	1.3	40	5 M	0336	1.6	50	20 Tu	0307	1.3	40	
0946	4.6	140	0842	4.6	140	1055	4.6	140	1038	4.6	140	0507	1.6	50		
1429	3.0	90	1338	3.0	90	1603	3.0	90	1545	2.6	80	1150	4.6	140		
2103	4.6	140	2009	4.6	140	2216	4.3	130	2227	4.6	140	● 2354	4.3	130		
6 Sa	0320	1.6	50	21 Su	0214	1.3	40	6 Tu	0442	1.6	50	21 W	0428	1.3	40	
1043	4.6	140	0953	4.9	150	1147	4.6	140	1141	4.9	150	0601	1.6	50		
1537	3.0	90	1446	3.0	90	1717	3.0	90	1706	2.3	70	1233	4.6	140		
2159	4.3	130	2116	4.6	140	2319	4.3	130	○ 2342	4.6	140	1830	2.0	60		
7 Su	0420	1.6	50	22 M	0325	1.0	30	7 W	0539	1.6	50	22 Th	0539	1.0	30	
1137	4.9	150	1101	4.9	150	1233	4.6	140	1238	5.2	160	0046	4.6	140		
1648	3.0	90	1604	3.0	90	1815	2.6	80	1814	2.0	60	0645	1.6	50		
2256	4.3	130	2235	4.6	140	●						1314	4.9	150		
8 M	0515	1.6	50	23 Tu	0440	1.0	30	8 Th	0015	4.3	130	23 Su	0047	4.9	150	
1226	4.9	150	1205	5.2	160	0627	1.3	40	0638	1.0	30	0722	1.6	50		
1750	3.0	90	1720	2.6	80	1313	4.9	150	1329	5.2	160	1351	4.9	150		
● 2349	4.3	130	○ 2350	4.9	150	1902	2.3	70	1912	1.3	40	1945	1.3	40		
9 Tu	0605	1.3	40	24 W	0548	1.0	30	9 F	0105	4.6	140	24 Sa	0145	5.2	160	
1308	4.9	150	1302	5.2	160	0708	1.3	40	0730	1.0	30	0800	1.6	50		
1842	2.6	80	1828	2.3	70	1349	4.9	150	1415	5.2	160	1429	4.9	150		
						1942	2.0	60	2002	1.0	30	2021	1.0	30		
10 W	0039	4.6	140	25 Th	0055	4.9	150	10 Sa	0150	4.6	140	10 Tu	0240	5.2	160	
0649	1.3	40	0649	1.0	30	0745	1.3	40	0817	1.3	40	0259	5.2	160		
1345	5.2	160	1354	5.6	170	1424	5.2	160	1457	5.2	160	0837	1.6	50		
1926	2.6	80	1927	2.0	60	2018	1.6	50	2049	1.0	30	1504	4.9	150		
11 Th	0125	4.6	140	26 F	0154	5.2	160	11 Su	0233	4.9	150	11 W	0330	5.2	160	
0730	1.3	40	0745	1.0	30	0819	1.3	40	0900	1.3	40	0915	1.6	150		
1419	5.2	160	1442	5.6	170	1459	5.2	160	M	1535	5.2	160	1612	4.9	150	
2006	2.3	70	2022	1.6	50	2053	1.6	50	2132	1.0	30	2137	0.7	20		
12 F	0208	4.6	140	27 Sa	0250	5.2	160	12 M	0314	4.9	150	12 Tu	0415	5.2	160	
0806	1.3	40	0835	1.0	30	0855	1.6	50	0941	1.6	50	0421	5.2	160		
1453	5.2	160	1526	5.6	170	1532	5.2	160	1612	5.2	160	0501	4.9	150		
2044	2.0	60	2114	1.3	40	2128	1.3	40	2213	1.0	30	1030	2.0	60		
13 Sa	0249	4.6	140	28 Su	0345	5.2	160	13 Tu	0355	4.9	150	13 W	0500	4.9	150	
0840	1.3	40	0922	1.3	40	0932	1.6	50	1019	1.6	50	1036	2.0	60		
1526	5.2	160	1607	5.6	170	1606	5.2	160	1646	4.9	150	1657	4.9	150		
2119	2.0	60	2201	1.0	30	2202	1.3	40	○ 2252	1.0	30	○ 2259	0.7	20		
14 Su	0330	4.9	150	29 M	0438	5.2	160	14 W	0437	4.9	150	14 Th	0544	4.9	150	
0913	1.6	50	1006	1.6	50	1012	2.0	60	1058	2.0	60	1119	2.0	60		
1600	5.2	160	1646	5.6	170	1641	5.2	160	1722	4.9	150	1741	4.6	140		
2153	1.6	50	2245	1.0	30	● 2240	1.0	30	2330	1.0	30	2344	1.0	30		
15 M	0411	4.9	150	30 Tu	0530	4.9	150	15 Th	0522	4.9	150	15 Su	0628	4.6	140	
0948	1.6	50	1047	2.0	60	1052	2.0	60	1136	2.0	60	0648	4.6	140		
1632	5.2	160	1724	5.2	160	1717	4.9	150	1800	4.6	140	0707	4.3	130		
2227	1.6	50	● 2328	1.0	30	2318	1.0	30				0008	1.3	40		
			31 W	0624	4.9	150				31 Sa	0715	4.3	130	0707	4.3	130
			1128	2.0	60				1217	2.3	70	1229	2.3	70		
			1801	4.9	150				1842	4.3	130	1856	3.9	120		

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Phillip, Point Lonsdale, Australia, 2013

Times and Heights of High and Low Waters

October				November				December									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm						
1 Tu	0051	1.6	50	16 W	0120	1.6	50	1 F	0156	2.3	70	16 Su	0217	2.6	80		
0802	4.3	130	0838	4.3	130	0859	4.3	130	0326	2.3	70	0900	4.3	130			
1318	2.3	70	1403	2.0	60	1441	2.0	60	1006	1.3	40	1453	1.3	40			
1958	3.9	120	2108	4.3	130	2155	3.9	120	1610	1.3	40	2226	4.6	140			
									2316	4.9	150						
2 W	0144	2.0	60	17 Th	0235	2.0	60	2 Sa	0308	2.3	70	17 Su	0441	2.3	70		
0901	3.9	120	0942	4.3	130	0958	4.3	130	1102	4.3	130	1002	4.3	130			
1421	2.3	70	1525	1.6	50	1550	1.6	50	1707	1.0	30	1600	1.0	30			
2112	3.9	120	2224	4.6	140	2301	4.3	130				2330	4.9	150			
												O					
3 Th	0250	2.0	60	18 F	0357	2.0	60	3 Su	0430	2.3	70	18 M	0013	4.9	150		
1001	3.9	120	1042	4.6	140	1056	4.3	130	0544	2.3	70	1106	4.3	130			
1543	2.3	70	1637	1.3	40	1653	1.3	40	1154	4.3	130	1703	0.7	20			
2227	3.9	120	2330	4.9	150	●			O	1757	1.0	30	●				
4 F	0414	2.0	60	19 Sa	0510	2.0	60	4 M	0000	4.9	150	19 Tu	0102	5.2	160		
1058	4.3	130	1138	4.6	140	0536	2.3	70	0634	2.0	60	0526	0026	5.2	160		
1658	2.0	60	1735	1.0	30	1150	4.3	130	1240	4.6	140	0654	0553	2.3	70		
2331	4.3	130	O			1745	1.0	30	1842	0.7	20	1255	1207	4.3	130		
												1900	1801	1.0	30		
5 Sa	0526	2.0	60	20 Su	0030	4.9	150	5 Tu	0051	5.2	160	20 W	0145	5.2	160		
1147	4.3	130	0609	2.0	60	0627	2.0	60	0716	2.0	60	0646	0118	5.6	170		
1748	1.6	50	1228	4.6	140	1241	4.6	140	1322	4.6	140	1303	0207	5.2	160		
●			1825	1.0	30	1832	0.7	20	1923	0.7	20	1855	0737	2.0	60		
												1941	1417	4.3	130		
6 Su	0026	4.6	140	21 M	0121	5.2	160	6 W	0139	5.6	170	21 Sa	0222	5.2	160		
0615	2.0	60	0657	1.6	50	0713	2.0	60	0756	2.0	60	0815	0233	5.2	160		
1233	4.6	140	1313	4.9	150	1329	4.6	140	1401	4.6	140	1417	0815	2.0	60		
1830	1.3	40	1909	0.7	20	1918	0.3	10	2001	0.7	20	2018	1417	4.3	130		
7 M	0114	4.9	150	22 Tu	0206	5.6	170	7 Th	0224	5.6	170	22 F	0256	5.2	160		
0657	1.6	50	0738	1.6	50	0757	1.6	50	0833	1.6	50	0825	0254	5.6	170		
1316	4.6	140	1353	4.9	150	1415	4.9	150	1439	4.6	140	1445	0853	5.2	160		
1908	1.0	30	1949	0.7	20	2004	0.3	10	2039	1.0	30	2036	0305	1.6	50		
													2053	1456	4.6	140	
8 Tu	0159	5.2	160	23 W	0245	5.6	170	8 F	0309	5.6	170	23 Sa	0328	5.2	160		
0737	1.6	50	0816	1.6	50	0840	1.6	50	0910	1.6	50	0914	0340	5.6	170		
1358	4.9	150	1430	4.9	150	1459	4.9	150	1516	4.6	140	1535	0929	5.2	160		
1948	0.7	20	2029	0.7	20	2051	0.3	10	2115	1.0	30	2126	1534	1.6	50		
													2126	1534	4.6	140	
9 W	0242	5.6	170	24 Th	0321	5.2	160	9 Sa	0353	5.6	170	24 M	0400	5.2	160		
0816	1.6	50	0853	1.6	50	0925	1.6	50	0945	1.6	50	1003	0424	5.6	170		
1438	4.9	150	1505	4.6	140	1545	4.9	150	1554	4.3	130	1627	0408	5.2	160		
2030	0.7	20	2106	0.7	20	2138	0.7	20	2148	1.0	30	2215	1003	1.6	50		
													2158	1003	4.6	140	
10 Th	0324	5.6	170	25 F	0354	5.2	160	10 Su	0437	5.2	160	25 W	0432	4.9	150		
0858	1.6	50	0930	1.6	50	1011	1.3	40	1021	1.6	50	1053	0508	5.2	160		
1517	4.9	150	1541	4.6	140	1632	4.6	140	1632	4.3	130	1724	0441	4.9	150		
2112	0.7	20	2142	1.0	30	2226	0.7	20	2221	1.3	40	2303	1037	1.3	40		
													O	2231	1.3	40	
11 F	0406	5.2	160	26 Sa	0427	4.9	150	11 M	0523	5.2	160	26 W	0507	4.9	150		
0939	1.6	50	1005	1.6	50	1059	1.3	40	1057	1.6	50	1144	0553	4.9	150		
1558	4.9	150	1617	4.6	140	1725	4.6	140	1715	4.3	130	1830	0515	4.9	150		
2156	0.7	20	2217	1.0	30	2315	1.0	30	2256	1.6	50	2352	1111	1.3	40		
														2309	1111	4.6	140
12 Sa	0449	5.2	160	27 Su	0500	4.9	150	12 Tu	0612	4.9	150	27 M	0544	4.6	140		
1022	1.6	50	1042	2.0	60	1150	1.3	40	1133	1.6	50	1146	0551	4.6	140		
1642	4.6	140	1656	4.3	130	1829	4.3	130	1802	3.9	120	1830	0551	4.6	140		
O	2241	0.7	20	O	2252	1.3	40	2333	1.6	50	2351	1146	1.3	40			
13 Su	0536	4.9	150	28 M	0538	4.6	140	13 W	0006	1.3	40	28 F	0625	4.6	140		
1106	1.6	50	1119	2.0	60	0707	4.6	140	1214	1.6	50	1321	0631	4.6	140		
1730	4.6	140	1738	4.3	130	1247	1.3	40	1859	3.9	120	2048	1226	4.6	140		
2328	1.0	30	2329	1.6	50	1948	4.3	130				2048	1930	4.3	130		
14 M	0630	4.6	140	29 Tu	0619	4.6	140	14 Th	0104	2.0	60	29 F	0018	2.0	60		
1155	2.0	60	1159	2.0	60	0806	4.6	140	0710	4.3	130	0827	0040	2.3	70		
1827	4.3	130	1827	3.9	120	1353	1.3	40	1259	1.6	50	1431	0717	4.3	130		
						2105	4.3	130	2005	3.9	120	2151	0812	4.3	130		
15 Tu	0019	1.3	40	30 W	0008	1.6	50	15 F	0211	2.3	70	30 M	0245	2.6	80		
0731	4.6	140	0706	4.3	130	0907	4.3	130	0802	4.3	130	0924	0138	2.6	80		
1252	2.0	60	1244	2.0	60	1503	1.3	40	1352	1.6	50	1534	0812	4.3	130		
1941	4.3	130	1927	3.9	120	2214	4.6	140	2117	4.3	130	2252	1410	1.0	30		
			31 Th	0056	2.0	60							31 Tu	0246	2.6	80	
			1337	4.3	130								1516	0915	4.3	130	
			2040	3.9	120								2258	1516	4.6	140	

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2013

Times and Heights of High and Low Waters

January				February				March					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 Tu	0002	1.6	50	16 W	0022	1.6	50	1 F	0100	1.3	40		
0615	8.2	250	0627	7.5	230	0655	7.2	220	16 Sa	0107	1.3	40	
1247	0.7	20	1247	1.0	30	1308	0.7	20	1254	0.7	20		
1850	6.6	200	1855	6.9	210	1924	7.5	230	1924	7.9	240		
2 W	0033	1.6	50	17 Th	0050	1.6	50	2 Sa	0129	1.6	50		
0641	7.9	240	0650	7.2	220	0718	6.9	210	17 Su	0133	1.6	50	
1311	0.7	20	1302	1.0	30	1324	1.0	30	17 Sa	0718	6.6	200	
1916	6.6	200	1922	7.2	220	1948	7.5	230	1236	1.0	30		
3 Th	0104	2.0	60	18 F	0120	2.0	60	3 Su	0159	2.0	60		
0708	7.5	230	0713	6.9	210	0740	6.2	190	18 M	0201	2.0	60	
1333	1.0	30	1321	1.0	30	1339	1.3	40	18 Su	0739	5.9	180	
1946	6.9	210	1951	7.5	230	● O	2016	7.5	230	1246	1.0	30	
4 F	0139	2.0	60	19 M	0153	2.0	60	4 M	0234	2.3	70		
0737	6.9	210	0740	6.6	200	0802	5.6	170	19 Tu	0234	2.6	80	
1357	1.0	30	1344	1.0	30	1352	1.6	50	19 M	0758	5.2	160	
2020	6.9	210	● O	2025	7.2	220	2048	6.9	210	1256	1.3	40	
5 Sa	0222	2.3	70	20 Su	0233	2.6	80	5 Tu	0321	3.3	100		
0810	6.2	190	0808	5.9	180	0809	4.6	140	20 W	0318	3.3	100	
1424	1.6	50	1411	1.6	50	1347	2.3	70	5 Tu	0751	4.6	140	
● O	2102	6.6	200	2106	6.9	210	2128	6.2	190	21 W	0725	5.6	170
6 Su	0318	3.0	90	21 M	0325	3.3	100	6 W	1107	3.0	90		
0850	5.2	160	0835	4.9	150	1207	2.6	80	6 W	0223	3.0	90	
1453	2.3	70	1434	2.3	70	21	1107	4.6	140	21 Th	0236	3.0	90
2200	6.6	200	2204	6.2	190	Th	1810	4.6	140	21 Th	0750	4.9	150
7 M	0503	3.3	100	22 Tu	0549	3.9	120	7 Th	0301	5.6	170		
0950	4.3	130	0749	3.9	120	1054	2.0	60	22 F	0324	5.9	180	
1512	3.3	100	1410	3.3	100	1744	4.9	150	22 F	0547	4.3	130	
2352	5.9	180				2203	3.9	120	22 F	1032	2.0	60	
8 Tu	0919	3.0	90	23 W	0116	5.9	180	7 Th	1700	5.2	160		
1715	4.3	130	1007	2.6	80	8 F	1106	1.0	30	7 Th	1911	5.2	160
1928	3.9	120	1653	4.6	140	1734	5.6	170	2357	4.9	150		
			2049	3.9	120	2236	3.0	90	8 F	1056	5.2	160	
9 W	0236	6.6	200	24 Th	0318	6.6	200	23 Sa	0405	6.6	200		
1018	1.6	50	1031	1.6	50	1106	1.3	40	24 Su	0433	7.2	220	
1701	4.9	150	1649	5.2	160	1734	6.2	190	9 Sa	0411	6.2	190	
2123	3.6	110	2153	3.3	100	2236	2.3	70	24 Su	1048	1.3	40	
10 Th	0345	7.2	220	24 M	0405	7.2	220	9 Sa	1712	5.9	180		
1057	1.0	30	1056	1.0	30	1141	0.7	20	2236	2.6	80		
1724	5.2	160	1708	5.9	180	1745	6.2	190	24 Su	1012	2.0	60	
2213	3.0	90	2226	2.6	80	● O	2317	2.0	60	2214	2.6	80	
11 F	0428	7.9	240	26 Sa	0437	7.5	230	10 M	0455	7.5	230		
1128	0.7	20	1118	0.7	20	1141	0.7	20	10 Su	0435	6.9	210	
1742	5.6	170	1724	6.2	190	1745	6.2	190	25 M	0413	6.9	210	
2244	2.6	80	2249	2.3	70	2333	1.6	50	1030	1.0	30		
12 Sa	0458	8.2	250	27 Su	0501	7.9	240	11 M	1117	0.7	20		
1152	0.7	20	1136	0.7	20	1141	0.7	20	1644	6.9	210		
1754	5.6	170	1739	6.6	200	1748	6.6	200	2235	2.0	60		
● O	2308	2.3	70	● O	2310	2.0	60	● O	2329	1.3	40		
13 Su	0522	8.2	250	12 Tu	0536	7.5	230	11 Tu	0513	7.9	240		
1209	0.7	20	1152	0.7	20	1158	1.0	30	11 M	0454	7.2	220	
1803	5.9	180	1755	6.6	200	1757	6.9	210	1045	1.0	30		
2331	2.0	60	2334	1.6	50	2353	1.3	40	1655	7.5	230		
14 M	0544	7.9	240	14 Th	0016	1.3	40	● O	2309	1.6	50		
1223	1.0	30	1210	0.3	10	0612	7.2	220	2256	1.3	40		
1815	6.2	190	1814	6.9	210	1220	0.7	20					
2355	1.6	50				1835	7.5	230					
15 Tu	0605	7.9	240	15 F	0042	1.3	40						
1235	1.0	30	0607	8.2	250	0633	7.2	220	14 Th	0533	7.2	220	
1833	6.6	200	1231	0.3	10	1236	0.7	20	1134	1.0	30		
			1836	7.2	220	1859	7.9	240	1747	8.2	250		
16 Sa	0031	1.3	40	16 Sa	0001	1.3	40	15 F	0002	1.0	30		
	0631	7.9	240	16 W	0607	8.2	250	15 F	0553	7.2	220		
	1250	0.7	20	1231	0.3	10	1150	1.0	30	1149	1.3	40	
	1900	7.2	220	1836	7.2	220	1809	8.2	250	1809	8.5	260	
17 Th	0031	1.3	40	31 Th	0031	1.3	40	31 Th	0040	1.0	30		
	0631	7.9	240	1250	0.7	20	1250	0.7	20	0622	6.2	190	
	1900	7.2	220	1900	7.2	220	1900	8.2	250	1203	1.3	40	
									1831	8.5	260		

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2013

Times and Heights of High and Low Waters

April					May					June							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time			
1 M 0104 0638 1213 1850	1.3 5.9 1.6 8.2	40 180 50 250	16 Tu 0104 0651 1228 1859	1.3 6.2 1.6 8.2	40 190 50 250	1 W 0118 0650 1209 1858	2.0 5.6 2.3 7.9	60 170 70 240	16 Th 0124 0717 1249 1914	1.6 6.2 2.6 8.2	50 190 80 250	1 Sa 0155 0808 1338 1958	2.6 6.2 3.3 6.6	80 190 100 200	16 Su 0215 0832 1417 2020	2.0 6.6 3.3 7.2	60 200 100 220
	0121 0652 1223 1909	2.0 5.6 1.6 7.9	17 W 0126 0712 1250 1921	1.6 6.2 2.0 7.9	50 190 60 240	2 Th 0133 0710 1233 1922	2.3 5.2 2.6 7.5	70 160 80 230	17 F 0151 0749 1321 1945	2.0 6.2 3.0 7.5	60 190 90 230	2 Su 0229 0908 1446 2046	2.6 5.9 3.9 5.9	80 180 120 180	17 M 0255 0927 1525 2117	2.3 6.6 3.6 6.2	70 200 110 190
	0137 0704 1237 1929	2.3 5.2 2.0 7.5	18 Th 0152 0737 1313 1947	2.0 5.9 2.6 7.2	60 180 80 220	3 F 0154 0739 1301 1948	3.0 5.2 3.0 6.6	90 160 90 200	18 Sa 0227 0835 1404 2027	2.3 5.9 3.3 6.9	70 180 100 210	3 M 0322 1052 1753 2247	3.3 5.9 4.6 4.9	100 180 140 150	18 Tu 0350 1045 1723 2254	3.0 6.6 3.9 5.2	90 200 120 160
	0156 0713 1246 1944	3.0 4.9 2.3 6.6	19 F 0227 0811 1335 2020	2.6 5.2 3.3 6.6	80 160 100 200	4 Sa 0227 0830 1325 2006	3.3 4.9 3.9 5.2	100 150 120 160	19 Su 0324 0959 1531 2150	3.0 5.6 4.3 5.9	90 170 130 180	4 Tu 0522 1310 2042	3.6 6.6 3.6	110 200 110	19 W 0520 1238 2001	3.3 6.9 3.3	100 210 100
5 F 0212 0629 1207 1853	3.6 4.3 3.0 5.6	110 130 90 170	20 Sa 0335 0943 1322 2202	3.6 4.6 4.3 5.2	110 140 130 160	5 Su 0553 1514 2112	3.9 5.2 4.3	120 160 130	20 M 0514 1237 1916	3.3 5.9 4.3	100 180 130	5 W 0158 0737 1429 2133	4.9 3.6 7.2 2.6	150 110 220 80	20 Th 0145 0723 1414 2126	5.2 3.6 7.5 2.6	160 110 230 80
	0031 0350 1015 1654 2206	4.6 4.9 3.0 5.2 3.6	21 Sa 0813 1524 2105	3.3 5.6 3.9	100 170 120	6 M 0223 0829 1505 2136	4.9 3.3 6.2 3.0	150 100 190 90	21 Tu 0055 0726 1414 2053	5.2 3.3 6.6 3.0	160 100 200 90	6 Th 0317 0843 1517 2209	5.6 3.0 7.9 2.0	170 90 240 60	21 F 0332 0841 1515 2218	5.6 3.3 8.2 1.6	170 100 250 50
	0347 1002 1624 2213	5.9 2.3 6.2 2.6	22 M 0246 0907 1536 2140	5.9 2.6 6.6 2.6	180 80 200 80	7 Tu 0321 0907 1530 2202	5.6 3.0 7.2 2.3	170 90 220 70	22 W 0246 0835 1505 2143	5.9 3.0 7.5 2.0	180 90 230 60	7 F 0400 0925 1552 2239	5.9 3.0 8.5 1.6	180 90 260 50	22 Sa 0427 0933 1559 2300	5.9 3.3 8.5 1.3	180 100 260 40
	0409 1014 1627 2232	6.6 2.0 6.9 2.0	23 M 0337 0938 1558 2211	6.6 2.0 7.2 2.0	200 60 220 60	8 W 0353 0934 1553 2227	6.2 2.3 7.9 1.6	190 70 240 50	23 Th 0343 0919 1540 2223	6.2 2.6 8.2 1.3	190 80 250 40	8 Sa 0432 0957 1623 2306	6.2 2.6 8.9 1.3	190 80 270 40	23 Su 0504 1009 1635 2334	5.9 3.0 8.9 1.3	180 90 270 40
9 Tu 1027 1636 2250	6.9 1.6 7.5	210 50 230	24 W 0410 1003 1617 2238	6.9 2.0 7.9 1.3	210 60 240 40	9 Th 0418 0955 1615 2249	6.6 2.3 8.5 1.3	200 70 260 40	24 F 0423 0950 1610 2257	6.2 2.6 8.9 1.0	190 80 270 30	9 Su 0459 1026 1651 2333	6.6 2.3 8.9 1.3	200 70 270 40	24 M 0532 1040 1706	5.9 3.0 8.9	180 90 270
	0444 1036 1647 2306	6.9 1.6 7.9 1.3	25 W 0437 1023 1636 2305	6.9 1.6 8.5 1.0	210 50 260 30	10 Th 0440 1015 1637 2313	6.6 2.0 8.9 1.3	200 60 270 40	25 Sa 0454 1016 1639 2330	6.2 2.6 9.2 1.0	190 80 280 30	10 M 0526 1055 1720	6.6 2.3 9.2	200 70 280	25 Tu 0004 0553 1109 1736	1.3 5.9 2.6 8.9	40 180 80 270
	0458 1046 1701 2325	6.9 1.3 8.5 1.0	26 Th 0500 1042 1656 2333	6.9 1.6 8.9 1.0	210 50 270 30	11 Sa 0503 1038 1702 2338	6.6 2.0 8.9 1.0	200 60 270 30	26 F 0522 1042 1708 2338	6.2 2.6 9.2 30	190 80 280 30	11 Tu 0000 0553 1124 1749	1.3 6.6 2.3 8.9	40 200 70 270	26 W 0030 0615 1139 1804	1.3 5.9 2.6 8.5	40 180 80 260
	0515 1101 1721 2348	6.9 1.3 8.5 1.0	27 F 0524 1101 1722	6.6 1.6 8.9	210 50 270	12 Sa 0529 1104 1730	6.6 2.0 9.2	200 60 280	27 M 0002 0548 1108 1739	1.0 5.9 2.6 9.2	30 180 80 280	12 W 0026 0622 1155 1817	1.3 6.6 2.3 8.9	40 200 70 270	27 Th 0051 0637 1208 1829	1.6 6.2 2.6 8.2	50 190 80 250
13 Sa 1122 1747	6.9 1.3 8.9	210 40 270	28 Sa 0004 0550 1122 1749	1.0 6.2 2.0 8.9	30 190 60 270	13 M 0006 0557 1132 1758	1.3 6.6 2.0 8.9	40 200 60 270	28 Tu 0034 0614 1134 1808	1.3 5.9 2.6 8.9	40 180 80 270	13 Th 0053 0650 1224 1843	1.3 6.6 2.3 8.5	40 200 70 260	28 F 0107 0700 1238 1853	2.0 6.6 2.6 7.9	60 200 80 240
	0015 0603 1146 1813	1.0 6.6 1.3 8.9	29 M 0034 0614 1140 1815	1.3 5.9 2.0 8.9	40 180 60 270	14 Tu 0033 0625 1158 1825	1.3 6.6 2.0 8.9	40 200 60 270	29 W 0100 0638 1157 1834	1.6 5.6 2.6 8.2	50 170 80 250	14 F 0118 0718 1254 1909	1.6 6.6 2.6 8.2	50 200 80 250	29 Sa 0121 0728 1310 1918	2.0 6.6 2.6 7.5	60 200 80 230
	0040 0628 1207 1837	1.3 6.6 1.6 8.5	30 Tu 0100 0633 1154 1837	1.6 5.6 2.3 8.5	50 170 70 260	15 W 0059 0651 1223 1849	1.6 6.2 2.3 8.5	50 190 70 260	30 Th 0120 0700 1222 1858	2.0 5.9 2.6 7.9	60 180 80 240	15 Sa 0144 0751 1330 1940	1.6 6.6 3.0 7.9	50 200 90 240	30 Su 0139 0802 1350 1949	2.0 6.9 3.0 6.9	60 210 90 210
	0638 1213 1850 1909	5.9 1.6 8.2 7.9				31 F 0135 0728 1254 1925	2.3 5.9 3.0 7.5	70 180 90 230									

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0205 2.0 60	16 0216 2.0 60	1 Th 0231 2.6 80	16 0201 2.6 80	1 Su 1453 5.9 180	16 0506 5.2 160						
0846 7.2 220	Tu 0846 7.2 220	0944 6.9 210	0923 6.6 200	2204 2.6 80	0940 3.9 120						
1441 3.3 100	1453 3.0 90	1618 4.3 130	1657 4.3 130	1453 6.9 210	1542 6.6 200						
2026 6.2 190	2035 6.6 200	2049 4.6 140	1902 4.3 130	2220 2.0 60	2220 2.0 60						
2 Tu 0241 2.3 70	17 0248 2.3 70	2 0301 3.3 100	17 0108 3.3 100	2 M 0420 5.2 160	17 0439 5.9 180						
0944 6.9 210	W 0936 7.2 220	1144 6.2 190	1328 5.9 180	0931 3.6 110	1004 3.0 90						
1557 3.9 120	1604 3.6 110	2141 3.6 110	2225 2.6 80	1543 6.9 210	1611 7.2 220						
2119 5.2 160	2126 5.2 160			2222 2.0 60	2236 1.3 40						
3 W 0331 3.0 90	18 0326 3.0 90	3 Sa 0358 4.6 140	18 0520 4.9 150	3 Tu 0430 6.2 190	18 0445 6.6 200						
1111 6.6 200	Th 1052 6.6 200	0737 4.3 130	0907 4.3 130	1004 2.6 80	1029 2.0 60						
1905 4.3 130	1910 3.9 120	1448 6.6 200	1533 6.9 210	1614 7.5 230	1636 7.5 230						
2335 4.6 140	2355 4.3 130	2209 2.6 80	2238 1.6 50	2242 1.3 40	2251 1.3 40						
4 Th 0510 3.6 110	19 0426 3.9 120	4 Su 0414 5.2 160	19 0503 5.6 170	4 W 0446 6.6 200	19 0453 6.9 210						
1328 6.9 210	F 1333 6.9 210	0921 3.6 110	1002 3.3 100	1028 2.0 60	1048 1.6 50						
2117 3.3 100	2140 3.0 90	1545 7.5 230	1616 7.9 240	1637 7.9 240	1652 7.5 230						
5 F 0255 4.9 150	20 0416 4.9 150	5 M 0440 6.2 190	20 0514 6.2 190	5 Th 0459 6.9 210	20 0458 7.2 220						
0801 3.6 110	Sa 0829 4.3 130	1003 3.0 90	1034 2.6 80	1047 1.6 50	1103 1.3 40						
1453 7.5 230	1513 7.5 230	1621 8.2 250	1646 8.2 250	1655 8.2 250	1703 7.5 230						
2203 2.3 70	2231 2.0 60	2301 1.3 40	2322 1.0 30	2310 1.0 30	2305 1.3 40						
6 Sa 0359 5.6 170	21 0454 5.6 170	6 Tu 0502 6.6 200	21 0524 6.6 200	6 F 0511 7.2 220	21 0506 7.5 230						
0912 3.3 100	Su 0940 3.6 110	1030 2.6 80	1056 2.3 70	1106 1.3 40	1120 1.3 40						
1544 8.2 250	1606 8.2 250	1647 8.5 260	1706 8.2 250	1711 8.2 250	1715 7.2 220						
2238 2.0 60	2308 1.3 40	2320 1.3 40	2334 1.3 40	2324 1.0 30	2313 1.3 40						
7 Su 0435 6.2 190	22 0520 5.9 180	7 W 0519 6.6 200	22 0529 6.6 200	7 Sa 0525 7.5 230	22 0522 7.9 240						
0955 3.0 90	M 1022 3.3 100	1052 2.3 70	1114 2.0 60	1128 1.3 40	1140 1.3 40						
1620 8.5 260	1642 8.5 260	1708 8.5 260	1721 7.9 240	1731 7.9 240	1732 7.2 220						
2306 1.6 50	2336 1.3 40	● 2336 1.3 40	2343 1.3 40	2341 1.0 30	2327 1.3 40						
8 M 0503 6.2 190	23 0538 5.9 180	8 Th 0534 6.9 210	23 0537 6.9 210	8 Su 0546 7.9 240	23 0544 8.2 250						
1026 2.6 80	Tu 1051 2.6 80	1114 2.0 60	1133 1.6 50	1155 1.3 40	1204 1.3 40						
1649 8.9 270	1710 8.5 260	1727 8.5 260	1736 7.9 240	1753 7.5 230	1753 6.9 210						
● 2329 1.3 40	○ 2357 1.3 40	2353 1.0 30	2351 1.3 40	1817 7.2 220	2346 1.3 40						
9 Tu 0525 6.6 200	24 0550 6.2 190	9 F 0552 7.2 220	24 0551 7.2 220	9 M 0000 1.0 30	24 0610 8.2 250						
1053 2.3 70	W 1116 2.6 80	1140 1.6 50	1155 1.6 50	0610 7.9 240	1228 1.3 40						
1715 8.9 270	1732 8.5 260	1749 8.5 260	1753 7.5 230	1224 1.3 40	1753 6.9 210						
2351 1.3 40				1817 7.2 220	2346 1.3 40						
10 W 0548 6.6 200	25 0013 1.3 40	10 Th 0012 1.0 30	25 0002 1.3 40	10 Tu 0018 1.3 40	25 0005 1.3 40						
1120 2.3 70	0602 6.6 200	0615 7.2 220	0613 7.5 230	0634 7.9 240	0636 8.2 250						
1740 8.9 270	1141 2.3 70	1209 1.6 50	1220 1.6 50	1251 1.6 50	1252 1.6 50						
	1754 8.2 250	1814 8.2 250	1814 7.2 220	1838 6.9 210	1838 6.6 210						
11 Th 0014 1.3 40	26 0026 1.6 50	11 Su 0033 1.3 40	26 0017 1.3 40	11 W 0031 1.3 40	26 0026 1.3 40						
0612 6.9 210	0619 6.6 200	0640 7.5 230	0638 7.9 240	0657 7.9 240	0700 7.9 240						
1149 2.0 60	F 1207 2.3 70	1239 2.0 60	1245 2.0 60	1315 2.0 60	1315 2.0 60						
1805 8.9 270	1815 7.9 240	1838 7.9 240	1836 6.9 210	1855 6.2 190	1859 6.2 190						
12 F 0038 1.3 40	27 0039 1.6 50	12 M 0054 1.3 40	27 0034 1.3 40	12 Th 0043 1.6 50	27 0048 1.6 50						
0638 6.9 210	Sa 0642 7.2 220	0706 7.5 230	0704 7.9 240	0720 7.9 240	0724 7.5 230						
1220 2.3 70	1236 2.3 70	1309 2.0 60	1311 2.0 60	1339 2.3 70	1341 2.3 70						
1831 8.5 260	1837 7.5 230	1902 7.5 230	1857 6.6 200	1912 5.9 180	1921 5.6 170						
13 Sa 0102 1.3 40	28 0052 1.6 50	13 Tu 0112 1.3 40	28 0055 1.3 40	13 M 0057 2.0 60	28 0110 2.3 70						
0706 7.2 220	Su 0707 7.5 230	0732 7.5 230	0732 7.9 240	0745 7.2 220	0751 6.9 210						
1252 2.3 70	1304 2.3 70	1339 2.3 70	1339 2.3 70	1406 3.0 90	1413 3.0 90						
1858 8.2 250	1859 7.2 220	1925 6.9 210	● 1921 6.2 190	● 1923 5.2 160	1938 4.9 150						
14 Su 0125 1.3 40	29 0109 1.3 40	14 Th 0130 1.6 50	29 0119 1.6 50	14 M 0104 2.3 70	29 0124 3.0 90						
0735 7.2 220	M 0737 7.5 230	0801 7.5 230	0801 7.5 230	0813 6.6 200	0820 5.9 180						
1325 2.3 70	1335 2.6 80	1414 2.6 80	1411 3.0 90	1439 3.9 120	1513 3.9 120						
1925 7.9 240	1924 6.9 210	● 1950 6.2 190	1942 5.9 180	1819 4.3 130	1831 4.3 130						
15 M 0149 1.6 50	30 0131 1.6 50	15 Th 0149 2.0 60	30 0143 2.3 70	15 Su 0019 3.0 90	30 1431 5.2 160						
0807 7.2 220	Tu 0810 7.5 230	0836 7.2 220	0836 6.9 210	0803 5.2 160	2132 3.0 90						
1404 2.6 80	1412 3.0 90	1459 3.3 100	1455 3.6 110	1203 4.9 150	1506 5.2 160						
1957 7.2 220	● 1952 6.6 200	2013 5.2 160	1951 4.9 150	1506 5.2 160	2230 2.6 80						
31 W 0159 2.0 60	31 W 0851 7.2 220		31 0154 3.0 90	31 0933 5.9 180							
1458 3.3 100	1458 3.3 100		31 0154 3.0 90	31 2308 3.6 110							
2023 5.6 170											

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0353	5.2	160	16 W 0354	5.9	180	1 F 0333	7.2	220	16 Sa 0337	7.5	230
0921	3.6	110	0947	2.6	80	0951	1.6	50	1016	1.3	40
1523	6.2	190	1551	6.2	190	1555	6.6	200	1613	6.2	190
2147	2.3	70	2154	2.0	60	2145	2.0	60	2145	2.0	60
2 W 0359	6.2	190	17 Th 0402	6.9	210	2 0355	7.5	230	17 Su 0359	7.9	240
0948	2.6	80	1011	1.6	50	1018	1.0	30	1039	1.0	30
1554	6.9	210	1614	6.9	210	1622	6.9	210	1634	6.2	190
2207	1.6	50	2210	1.6	50	2206	1.6	50	2205	2.0	60
3 Th 0415	6.9	210	18 F 0414	7.5	230	3 Su 0416	8.2	250	18 M 0421	8.2	250
1013	1.6	40	1032	1.3	40	1045	0.7	20	1101	0.7	20
1619	7.5	230	1632	6.9	210	1645	6.9	210	1654	6.2	190
2225	1.3	40	2221	1.6	50	● 2225	1.6	50	○ 2225	1.6	50
4 F 0430	7.5	230	19 Sa 0426	7.9	240	4 M 0436	8.5	260	19 Tu 0445	8.5	260
1034	1.3	40	1049	1.0	30	1112	0.7	20	1124	0.7	20
1639	7.5	230	1645	6.9	210	1708	6.6	200	1716	6.6	200
2239	1.3	40	○ 2230	1.6	50	2245	1.6	50	2250	1.6	50
5 Sa 0442	7.5	230	20 Su 0439	8.2	250	5 Tu 0501	8.5	260	20 W 0513	8.5	260
1054	1.0	30	1107	1.0	30	1141	0.7	20	1149	0.7	20
1656	7.5	230	1659	6.6	200	1733	6.2	190	1743	6.6	200
● 2253	1.3	40	2242	1.3	40	2308	1.6	50	2317	1.6	50
6 Su 0458	8.2	250	21 M 0458	8.5	260	6 W 0529	8.5	260	21 Th 0541	8.5	260
1117	1.0	30	1128	1.0	30	1212	1.0	30	1217	1.0	30
1715	7.2	220	1718	6.6	200	1759	5.9	180	1810	6.2	190
2309	1.3	40	2301	1.3	40	2329	2.0	60	2346	1.6	50
7 M 0519	8.2	250	22 Tu 0523	8.5	260	7 Th 0556	8.5	260	22 F 0609	8.2	250
1145	1.0	30	1153	1.0	30	1241	1.3	40	1243	1.0	30
1738	6.9	210	1743	6.6	200	1821	5.6	170	1838	6.2	190
2329	1.3	40	2324	1.3	40	2346	2.0	60	2355	2.3	70
8 Tu 0544	8.2	250	23 W 0551	8.5	260	8 F 0621	7.9	240	23 Sa 0012	2.0	60
1214	1.0	30	1219	1.0	30	1303	1.6	50	0636	7.9	230
1802	6.6	200	1809	6.6	200	1840	5.2	160	1306	1.3	40
2346	1.6	50	2348	1.6	50	1904	6.2	190	1904	5.6	170
9 W 0609	8.2	250	24 Th 0617	8.2	250	9 Sa 0001	2.3	70	24 M 0039	2.3	70
1240	1.3	40	1243	1.3	40	0643	7.5	230	0700	7.5	230
1822	6.2	190	1833	6.2	190	1319	2.0	60	1331	1.6	50
2359	1.6	50				1859	5.2	160	1932	5.9	180
10 Th 0631	7.9	240	25 F 0012	1.6	50	10 Su 0021	2.3	70	25 M 0109	2.6	80
1302	2.0	60	0641	7.9	240	0706	6.9	210	0728	6.9	210
1838	5.6	170	1306	1.6	50	1336	2.6	80	1401	2.0	60
			1856	5.9	180	● 1925	5.2	160	2011	5.9	180
11 F 0010	2.0	60	26 Sa 0034	2.0	60	11 M 0047	3.0	90	10 Tu 0121	3.0	90
0652	7.5	230	0705	7.5	230	0732	6.2	190	0736	6.2	190
1319	2.3	70	1331	2.0	60	1401	3.0	90	1356	2.0	60
1852	5.2	160	1921	5.6	170	2007	4.9	150	○ 2030	5.9	180
12 Sa 0024	2.0	60	27 Su 0100	2.3	70	12 Tu 0117	3.6	110	12 W 0149	3.0	90
0713	7.2	220	0732	6.9	210	0754	5.2	160	0803	6.2	190
1338	3.0	90	1403	2.6	80	1446	3.6	110	1443	2.3	70
● 1905	4.9	150	○ 1954	5.2	160				○ 2115	5.6	170
13 Su 0036	2.6	80	28 M 0128	3.0	90	13 W 0255	4.6	140	11 W 0300	3.6	110
0735	6.2	190	0804	5.9	180	0901	3.9	120	0903	5.6	170
1358	3.6	110	1455	3.3	100	1427	4.6	140	1559	3.0	90
1845	4.3	130	2107	4.6	140	2008	3.3	100	2326	5.2	160
14 M 0009	3.3	100	29 Tu 0152	3.9	120	14 Th 0242	5.9	180	29 F 0140	5.9	180
0706	5.2	160	0935	4.9	150	0921	3.0	90	0835	3.0	90
1256	4.6	140	Tu 1931	3.6	110	1517	5.2	160	1433	5.2	160
1531	4.6	140				2053	3.0	90	2015	3.0	90
2152	3.3	100									
15 Tu 0426	5.2	160	30 W 0241	5.2	160	15 F 0310	6.9	210	30 Sa 0243	6.9	210
0933	3.6	110	0839	3.6	110	0950	2.0	60	0928	2.0	60
1526	5.6	170	1430	5.2	160	1548	5.9	180	1535	5.6	170
2138	2.6	80	2044	2.6	80	2123	2.3	70	2105	2.6	80
			31 Th 0307	6.2	190						
			0919	2.6	80						
			1521	6.2	190						
			2119	2.0	60						

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0329 1016 1612 2138	5.2 0.7 3.3 1.3	160 20 100 40	16 W 1015 1611 2203	4.6 0.7 3.6 1.3	140 20 110 40	1 F 0408 1028 1639 2246	4.3 0.7 3.9 1.3	130 20 120 40	16 F 0406 1011 1642 2256	3.6 0.3 4.3 1.6	110 10 130 50
2 W	0354 1037 1637 2209	4.9 0.7 3.3 1.3	150 20 100 40	17 Th 0358 1025 1639 2233	4.3 0.7 3.6 1.6	130 20 110 50	2 Sa 0425 1038 1703 2319	3.6 0.7 3.9 1.6	110 20 120 60	2 Sa 0352 0952 1613 2239	3.9 0.3 4.6 1.3	120 10 140 40
3 Th	0418 1058 1705 2244	4.6 0.7 3.3 1.6	140 20 100 50	18 F 0418 1041 1711 2308	3.6 0.7 3.6 2.0	110 20 110 60	3 Su 0437 1042 1732 2358	3.3 0.7 3.9 2.3	100 20 120 70	3 Su 0405 0955 1635 2307	3.3 0.7 4.6 1.6	100 20 140 50
4 F	0440 1117 1737 2327	3.9 1.0 3.3 2.0	120 30 100 60	19 Sa 0430 1058 1748 2349	3.3 0.7 3.6 2.3	100 20 110 70	4 M 0314 1037 1809	2.6 1.0 3.6	80 30 110	4 M 0411 0957 1659 2337	3.0 0.7 4.3 2.3	90 20 130 70
5 Sa	0459 1134 1821	3.3 1.3 3.3	100 40 100	20 Su 0326 1109 1839	3.0 1.0 3.6	90 30 110	5 Tu 1011 2228	1.0 3.6	30 110	5 Tu 0227 0954 1727	2.6 1.0 3.9	80 30 120
6 Su	0032 0449 1139 2126	2.6 2.6 1.3 3.3	80 80 40 100	21 M 1053 2220	1.3 3.6	40 110	6 W 0909 W	1.0 30	30 80	21 Th 0934 1755 1950 2159	1.0 3.6 3.3 3.3	50 100 100 100
7 M	1044 2300	1.6 3.9	50 120	22 Tu 1008 2338	1.3 3.9	40 120	7 Th 0009 0830 1459 1637	4.3 0.7 2.3 2.3	130 20 80 70	22 Th 0023 0828 1413 1824	3.9 1.3 2.6 2.0	120 40 80 60
8 Tu	0842	1.3	40	23 W 0830 1437 1618	1.3 2.0 2.0	40 60 60	8 F 0104 0830 1441 1911	4.6 0.7 2.3 2.0	140 20 70 60	23 Sa 0100 0805 1410 1916	4.3 1.0 3.0 1.6	130 30 90 50
9 W	0001 0817 1434 1644	4.6 1.0 2.0 2.0	140 30 60 60	24 Th 0026 0814 1411 1747	4.3 1.0 2.3 2.0	130 30 70 60	9 Sa 0142 0843 1445 1949	4.9 0.7 2.6 1.3	150 20 80 40	24 Sa 0130 0817 1422 1949	4.6 0.7 3.3 1.3	140 20 100 40
10 Th	0051 0835 1443 1800	4.9 0.7 2.3 1.6	150 20 70 50	25 F 0104 0822 1421 1859	4.6 1.0 2.6 1.6	140 30 80 50	10 Su 0212 0857 1456 ● 2020	4.9 0.7 3.0 1.0	150 20 90 30	25 M 0159 0836 1438 2020	4.9 0.3 3.6 1.0	150 10 100 40
11 F	0134 0859 1500 1912	5.2 0.3 2.3 1.6	160 10 70 50	26 Sa 0137 0838 1438 1944	4.9 0.7 3.0 1.3	150 20 90 40	11 M 0236 0909 1509 2049	4.9 0.7 3.3 1.0	150 20 100 30	26 Tu 0227 0855 1456 ○ 2049	4.9 0.3 3.9 0.7	150 10 120 20
12 Sa	0210 0919 1517 ● 2001	5.2 0.3 2.6 1.3	160 10 80 40	27 Su 0207 0858 1458 ○ 2020	5.2 0.3 3.0 1.0	160 20 90 30	12 Tu 0255 0923 1520 2115	4.6 0.7 3.6 0.7	140 20 110 20	27 W 0252 0914 1515 2117	4.9 0.3 4.3 0.7	150 20 120 20
13 Su	0239 0937 1532 2038	5.2 0.7 2.6 1.0	160 20 80 30	28 M 0236 0919 1517 2051	5.2 0.3 3.3 1.0	160 20 100 30	13 W 0311 0936 1533 2139	4.6 0.3 3.9 1.0	140 10 120 30	13 W 0315 0930 1533 2145	4.6 0.3 4.6 0.7	130 20 140 20
14 M	0301 0952 1542 2108	4.9 0.7 3.0 1.0	150 20 90 30	29 Tu 0302 0940 1538 2120	5.2 0.3 3.6 0.7	160 10 110 20	14 Th 0327 0945 1552 2203	4.3 0.3 4.3 1.0	130 10 130 30	14 Th 0255 0902 1507 2130	4.3 0.3 4.6 0.7	120 20 140 20
15 Tu	0319 1004 1552 2135	4.9 0.7 3.3 1.0	150 20 100 30	30 W 0326 0958 1557 2148	4.9 0.3 3.6 1.0	150 10 110 30	15 F 0346 0957 1616 2228	3.9 0.3 4.3 1.3	120 10 140 40	15 F 0312 0914 1528 2153	3.9 0.3 4.9 1.0	110 20 150 30
				31 Th 0348 1014 1618 2216	4.6 0.3 3.9 1.0	140 10 120 30				31 Su 0335 0910 1547 2232	3.3 0.7 5.2 1.3	100 20 160 40

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2013

Times and Heights of High and Low Waters

April				May				June					
	Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		
1 <i>M</i>	0345	3.0 90		16 0403	3.0 90		1 0343	2.6 80		16 0429	3.0 90		
	0912	0.7 20	Tu	0930	1.0 30	W	0851	1.3 40	Th	0931	2.0 60	Sa	
	1610	4.9 150		1617	4.9 150		1618	4.9 150		1628	4.9 150		
	2259	2.0 60		2301	1.6 50		2327	2.3 70		2327	2.0 60	O	
2 <i>Tu</i>	0348	2.6 80	17 W	0420	3.0 90	2 Th	0142	2.6 80	17 F	0500	3.0 90	2 Su	
	0917	1.0 30		0938	1.3 40		0858	1.6 50		0941	2.0 60		0009
	1635	4.6 140		1641	4.6 140		1644	4.3 130		1653	4.6 140		0715
	2327	2.3 70		2333	2.0 60	O						0902	
3 <i>W</i>	0151	2.6 80	18 Th	0428	2.6 80	3 F	0843	2.0 60	18 Sa	0008	2.3 70	3 M	
	0918	1.0 30		0936	1.6 130		1701	3.6 130		0550	3.0 90		1124
	1701	4.3 130		1705	4.3 130					0941	2.6 80	O	
O			O							1721	3.9 120		
4 <i>Th</i>	0858	1.3 40	19 F	0916	2.0 60	4 Sa	0634	2.3 70	19 Su	0127	2.3 70	4 Tu	
	1720	3.6 110		1728	3.6 110		1620	3.3 100		1803	3.6 110		0302
												1144	
5 <i>F</i>	0758	1.6 50	20 Sa	0645	2.0 60	5 Su	0548	2.3 70	20 M	0401	2.3 70	5 W	
	1702	3.0 90		1747	3.3 100		1249	3.3 100		1155	3.6 110		0413
	1854	3.0 90		1844	3.3 100		1852	2.6 80		1753	3.0 90		1209
	2347	3.3 100		2157	3.3 100		2346	3.0 90		2157	3.3 100		1929
6 <i>Sa</i>	0711	1.6 50	21 Su	0624	2.0 60	6 M	0553	2.0 60	21 Tu	0454	2.3 70	6 Th	
	1347	3.0 90		1308	3.3 100		1238	3.9 120		1205	4.3 130		0043
	1857	2.3 70		1826	2.6 80		1909	2.3 70		1838	2.3 70		0510
				2349	3.6 110							1236	
7 <i>Su</i>	0034	3.6 110	22 M	0636	1.6 50	7 Tu	0030	3.3 100	22 W	0005	3.3 100	7 F	
	0713	1.3 40		1300	3.6 110		0607	2.0 60		0536	2.0 60		0121
	1328	3.3 100		1854	2.0 60		1251	4.6 140		1228	4.6 140		0601
	1918	2.0 60					1928	2.0 60		1916	2.0 60		1304
8 <i>M</i>	0105	3.6 110	23 Tu	0040	3.6 110	8 W	0102	3.3 100	23 Th	0102	3.3 100	8 Sa	
	0722	1.3 40		0656	1.3 40		0632	1.6 50		0612	2.0 60		0154
	1334	3.9 120		1313	4.3 130		1309	4.9 150		1257	5.2 160		0645
	1939	1.3 40		1926	1.6 50		1951	1.6 50		1953	1.3 40		1334
9 <i>Tu</i>	0131	3.9 120	24 W	0119	3.9 120	9 Th	0131	3.3 100	24 F	0147	3.3 100	9 Su	
	0735	1.3 40		0719	1.3 40		0659	1.6 50		0641	2.0 60		0223
	1347	4.3 130		1332	4.9 150		1329	5.2 160		1327	5.6 170		0723
	2003	1.3 40		1959	1.0 30		2015	1.3 40		2029	1.0 30	O	1404
10 <i>W</i>	0154	3.9 120	25 Th	0154	3.9 120	10 F	0158	3.3 100	25 Sa	0224	3.0 90	10 O	
	0751	1.0 30		0740	1.3 40		0725	1.3 40		0707	1.6 50		0251
	1403	4.9 150		1355	5.2 160		1353	5.6 170		1357	5.9 180		0756
	2028	1.0 30		2032	1.0 30		2041	1.3 40		2105	1.0 30		1433
11 <i>Th</i>	0216	3.6 110	26 F	0224	3.6 110	11 Sa	0224	3.3 100	26 Su	0255	3.0 90	11 Tu	
	0808	1.0 30		0758	1.3 40		0749	1.3 40		0730	1.6 50		0317
	1420	5.2 160		1418	5.6 170		1418	5.6 170		1426	5.9 180		0827
	2053	1.0 30		2103	1.0 30		2107	1.3 40		2138	1.3 40		1501
12 <i>F</i>	0237	3.6 110	27 Sa	0251	3.3 100	12 Su	0250	3.3 100	27 M	0319	2.6 80	12 O	
	0825	0.7 20		0812	1.0 30		0813	1.3 40		0751	1.6 50		0343
	1441	5.2 160		1441	5.6 170		1445	5.9 180		1453	5.9 180		0854
	2117	1.0 30		2133	1.0 30		2133	1.3 40		2208	1.3 40		1528
13 <i>Sa</i>	0258	3.6 110	28 Su	0310	3.0 90	13 M	0315	3.3 100	28 Tu	0331	2.6 80	13 Th	
	0841	0.7 20		0822	1.0 30		0835	1.3 40		0809	1.6 50		0409
	1505	5.6 170		1505	5.9 180		1511	5.6 170		1519	5.6 170		0921
	2142	1.0 30		2203	1.3 40		2159	1.3 40		2235	1.6 50		1554
14 <i>Su</i>	0321	3.6 110	29 M	0322	3.0 90	14 Tu	0339	3.3 100	29 W	0339	2.6 80	14 F	
	0858	0.7 20		0830	1.0 30		0856	1.3 40		0829	1.6 50		0947
	1528	5.2 160		1528	5.6 170		1537	5.6 170		1544	5.2 160		1620
	2206	1.3 40		2232	1.6 50		2226	1.6 50		2258	2.0 60		2247
15 <i>M</i>	0343	3.3 100	30 Tu	0332	2.6 80	15 W	0404	3.3 100	30 Th	0359	2.6 80	15 Sa	
	0915	1.0 30		0839	1.3 40		0915	1.6 50		0854	2.0 60		0508
	1553	5.2 160		1553	5.2 160		1602	5.2 160		1610	4.9 150		1018
	2232	1.3 40		2259	2.0 60		2255	1.6 50		2317	2.3 70		1646
												0434	
												0920	
												1635	
												2338	

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M	0610	3.6	110	16	0554	3.9	120	1 Th	0926	3.9	120
	1149	3.0	90		1159	2.6	80		2231	2.0	60
	1603	3.6	110		1712	3.6	110				
	2348	2.0	60	●	2341	2.0	60	16 F	0936	3.9	120
2 Tu	0755	3.9	120	17 W	0650	3.9	120	2 M	1041	3.0	90
					2341	2.0	60		0604	2.3	70
3 W	0018	2.0	60	18 Th	1008	4.3	130	3 Tu	0142	3.3	100
	1042	4.3	130		2152	2.0	60		0700	2.0	60
	2332	2.3	70	3 Sa	0230	2.6	80	18 Su	0413	2.6	80
4 Th	1135	4.6	140		0347	2.6	80		1238	4.6	140
	2001	2.3	70		1212	4.6	140		2006	1.0	30
					2000	1.6	50	18 M	0239	2.6	80
5 F	0105	2.6	80	4 Su	0149	2.6	80	19 M	0217	3.0	90
	0415	2.3	70		0518	2.3	70		0643	2.3	70
	1216	4.9	150		1251	4.9	150		1321	4.9	150
	1958	2.0	60		2006	1.6	50		2022	1.0	30
6 Sa	0135	3.0	90	5 M	0200	3.0	90	4 W	0155	3.6	110
	0524	2.3	70		0640	2.0	60		0733	1.3	40
	1252	5.2	160		1325	4.9	150		1343	4.9	150
	2012	1.6	50		2022	1.3	40		2014	1.0	30
7 Su	0201	3.0	90	20 Sa	0223	2.6	80	5 Th	0213	3.9	120
	0626	2.0	60		0403	2.6	80		0803	1.0	30
	1326	5.6	170		1228	4.9	150		1410	4.9	150
	2034	1.6	50		2017	1.3	40	●	2034	1.0	30
8 M	0226	3.3	100	21 Tu	0226	2.6	80	6 F	0232	4.3	130
	0719	2.0	60		0524	2.3	70		0833	1.0	30
	1358	5.6	170		1317	5.6	170		1436	4.9	150
●	2057	1.3	40		2042	1.0	30		2053	0.7	20
9 Tu	0251	3.3	100	6 Tu	0217	3.3	100	21 W	0237	3.3	100
	0800	1.6	50		0731	1.6	50		0806	1.3	40
	1429	5.6	170		1355	5.2	160		1424	5.2	160
	2121	1.3	40		2041	1.0	30	○	2055	1.0	30
10 W	0314	3.6	110	22 M	0244	3.0	90	7 M	0237	3.6	110
	0834	1.6	50		0647	2.0	60		0836	1.3	40
	1458	5.6	170		1358	5.6	170		1446	4.9	150
	2145	1.3	40		2106	1.0	30		2109	1.0	30
11 Th	0338	3.6	110	●	2102	1.0	30	22 Th	0252	3.6	110
	0905	1.6	50		2126	1.3	40		0936	1.3	40
	1524	5.6	170					7 Sa	0252	4.3	130
	2207	1.3	40						0900	0.7	20
12 F	0401	3.6	110	23 Th	0304	3.0	90	22 Su	0252	3.6	110
	0934	1.6	50		0751	2.0	60		0928	0.7	20
	1548	5.2	160		1432	5.6	170		1521	4.3	130
	2228	1.3	40		2126	1.3	40		2124	0.7	20
13 Sa	0424	3.9	120	8 Th	0258	3.6	110	23 M	0304	3.9	120
	1004	2.0	60		0839	1.3	40		0903	1.0	30
	1611	4.9	150		1450	5.2	160		1501	4.6	140
	2247	1.3	40		2124	1.0	30		2121	1.0	30
14 Su	0450	3.9	120	9 F	0321	3.0	90	24 Th	0315	4.3	130
	1035	2.0	60		0831	1.6	50		0928	1.0	30
	1634	4.6	140		1458	5.6	170		1515	3.9	120
	2307	1.6	50		2143	1.3	40		2131	1.0	30
15 M	0519	3.9	120	10 Sa	0335	3.3	100	24 M	0332	4.6	140
	1112	2.3	70		0903	1.6	50		0954	1.0	30
	1655	4.3	130		1516	5.2	160		1539	1.0	30
	2326	1.6	50		2157	1.3	40		2134	1.0	30
16 Th	0343	3.6	110	11 Su	0400	4.3	130	25 W	0354	4.9	150
	0931	1.6	50		1002	1.3	40		1021	1.3	40
	1531	4.9	150		1557	4.6	140		1554	3.6	110
	2208	1.3	40		2214	1.0	30		2140	1.0	30
17 F	0357	3.9	120	12 M	0422	4.3	130	10 Tu	0352	4.9	150
	0956	1.6	50		1030	1.6	50		1025	1.3	40
	1549	4.6	140		1616	4.3	130		1554	3.3	100
	2216	1.3	40		2226	1.3	40		2132	1.0	30
18 Sa	0421	4.3	130	13 Tu	0446	4.3	130	26 Th	0421	4.6	140
	1023	2.0	60		1101	2.0	60		1052	2.0	60
	1608	4.3	130		1630	3.6	110		1605	3.0	90
	2226	1.3	40		2234	1.3	40		2138	1.3	40
19 Su	0452	4.3	130	14 W	0513	4.3	130	27 F	0446	4.3	130
	1054	2.3	70		1137	2.3	70		1123	2.3	70
	1623	3.9	120		1633	3.3	100		1418	2.6	80
	2244	1.3	40	●	2235	1.3	40	●	2129	1.6	50
20 M	0527	4.3	130	15 Th	0546	3.9	120	28 Sa	0509	3.6	110
	1129	2.6	80		2218	1.6	50		2052	1.6	50
	1612	3.3	100					13 F	0507	4.3	130
	2301	1.3	40						2114	1.3	40
21 W	0609	3.9	120	16 F	0520	3.9	120	29 M	0530	3.3	100
	2302	1.6	50		1143	2.6	80		0748	3.0	90
					1422	3.0	90		0940	3.3	100
					2208	1.6	50		1911	1.6	50
22 M	0653	3.6	110	17 Sa	1100	3.6	110	30 W	0206	3.0	90
	1932	1.3	40		1955	2.0	60		0633	2.6	80
									1143	3.3	100
									1855	1.6	50

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2013

Times and Heights of High and Low Waters

October				November				December						
	Time	Height			Time	Height			Time	Height				
	h m	ft cm		h m	ft cm			h m	ft cm					
1 Tu	0114	3.0 90		16 W	0102 0704	3.3 100 1.6 50		1 F	0047 0712	4.3 130 1.3 40		16 Su	0049 0744	4.6 140 1.0 30
	0633	2.3 70			1251	3.6 110			1304	3.3 100			1327	3.0 90
	1224	3.6 110			1859	1.3 40			1851	1.3 40			1833	1.3 40
	1903	1.3 40										1822	1.3 40	
2 W	0113	3.3 100		17 Th	0109 0727	3.9 120 1.3 40		2 Sa	0107 0742	4.6 140 1.0 30		2 M	0107 0806	5.2 160 0.7 20
	0657	1.6 50			1318	3.6 110			1338	3.6 110			1352	3.0 90
	1254	3.9 120			1911	1.3 40			1914	1.0 30			1901	1.0 30
	1918	1.0 30										1852	1.3 40	
3 Th	0123	3.9 120		18 F	0123 0750	4.3 130 1.0 30		3 Su	0130 0813	4.9 150 0.7 20		3 Tu	0138 0831	5.6 170 0.3 10
	0724	1.3 40			1343	3.6 110			1409	3.3 100			1416	3.0 90
	1324	4.3 130			1927	1.0 30		●	1934	1.0 30		●	1927	1.0 30
	1937	1.0 30										1920	1.3 40	
4 F	0140	4.3 130		19 Sa	0139 0815	4.6 140 0.7 20		4 M	0155 0844	5.2 160 0.3 10		4 W	0208 0855	5.6 170 0.3 10
	0753	1.0 30			1404	3.3 100			1436	3.3 100			1439	3.0 90
	1353	4.3 130			1944	1.0 30			1951	1.0 30			1951	1.0 30
	1958	1.0 30		○								1945	1.0 30	
5 Sa	0201	4.6 140		20 Su	0157 0839	4.9 150 0.7 20		5 Tu	0220 0915	5.6 170 0.3 10		5 W	0226 0921	5.2 160 0.7 20
	0822	0.7 20			1424	3.3 100			1500	3.0 90			1503	3.0 90
	1420	4.3 130			2000	1.0 30			2005	1.0 30			2016	1.0 30
	2016	0.7 20										2008	1.0 30	
6 Su	0222	4.9 150		21 M	0218 0904	5.2 160 0.7 20		6 W	0244 0945	5.6 170 0.7 20		6 F	0305 1018	5.2 160 1.0 30
	0851	0.3 10			1443	3.3 100			1517	2.6 80			1528	3.0 90
	1444	3.9 120			2015	0.7 20			2017	1.0 30			2041	1.0 30
	2032	0.7 20										2028	1.3 40	
7 M	0243	4.9 150		22 Tu	0241 0927	5.2 160 0.7 20		7 Th	0309 1013	5.2 160 1.0 30		7 F	0330 1011	4.9 150 1.0 30
	0919	0.7 20			1505	3.3 100			1530	2.3 70			1554	3.0 90
	1506	3.6 110			2032	0.7 20			2026	1.0 30			2103	1.3 40
	2043	0.7 20										2049	1.3 40	
8 Tu	0305	5.2 160		23 W	0307 0950	5.2 160 1.0 30		8 F	0334 1042	4.9 150 1.3 40		8 Su	0345 1037	4.9 150 1.0 30
	0947	0.7 20			1527	3.0 90			1543	2.3 70			1622	2.6 80
	1523	3.3 100			2051	1.0 30			2035	1.3 40			2121	1.3 40
	2051	1.0 30										2112	1.6 50	
9 W	0326	5.2 160		24 Th	0333 1016	4.9 150 1.0 30		9 Sa	0359 1109	4.6 140 1.6 50		9 M	0410 1106	4.6 140 1.6 50
	1014	1.0 30			1550	3.0 90			1558	2.0 60			1654	2.6 80
	1536	3.0 90			2108	1.0 30			2040	1.3 40			2112	2.0 60
	2055	1.0 30										2133	2.0 60	
10 Th	0350	4.9 150		25 F	0358 1042	4.6 140 1.3 40		10 Su	0423 1138	3.9 120 2.0 60		10 M	0433 1137	3.9 120 1.6 50
	1042	1.6 50			1611	2.6 80			1344	2.3 70			1740	2.6 80
	1544	2.6 80			2117	1.3 40		○	2009	1.6 50			2130	2.3 70
	2058	1.0 30										2130	2.3 70	
11 F	0414	4.6 140		26 Sa	0422 1113	4.3 130 1.6 50		11 M	0438 1824	3.3 100 2.0 60		26 W	0453 1220	3.6 110 2.0 60
	1111	2.0 60			1628	2.3 70			1344	2.3 70			1537	2.0 60
	1355	2.3 70			2113	1.6 50		○	2009	1.6 50			1647	1.6 50
	2055	1.3 40										2312	3.3 100	
12 Sa	0439	3.9 120		27 Su	0444 1152	3.9 120 2.0 60		12 Tu	0234 1718	3.0 90 2.0 60		12 W	0455 1451	3.0 90 2.0 60
	1148	2.3 70			1415	2.3 70			2338	3.3 100			2347	3.6 110
	1318	2.6 80		○	2041	2.0 60						2358	4.3 130	
	2015	1.3 40										2358	4.3 130	
13 Su	0500	3.6 110		28 M	0500 1754	3.3 100 2.0 60		28 W	0656 0907	2.6 80 2.6 80		13 F	0758 1231	2.0 60 2.0 60
	1920	1.6 50			1149	2.6 80			1623	2.0 60			1537	2.0 60
					1730	2.0 60			2347	3.6 110			2358	4.3 130
												2358	4.3 130	
14 M	0251	3.0 90		29 Tu	0205 0711	3.0 90 3.0 90		14 Th	0019 0704	3.6 110 1.6 50		29 F	0639 1204	2.0 60 2.6 80
	0657	3.0 90			1002	3.0 90			1230	2.6 80			1709	1.6 50
	1123	3.3 100			1751	1.6 50			1743	1.6 50				
	1843	1.3 40												
15 Tu	0118	3.0 90		30 W	0036 0630	3.3 100 2.3 70		15 F	0031 0723	4.3 130 1.3 40		30 Sa	0009 0706	4.3 130 1.3 40
	0643	2.3 70			1146	3.0 90			1300	2.6 80			1255	2.6 80
	1217	3.3 100			1807	1.6 50			1805	1.3 40			1748	1.6 50
	1847	1.3 40		31 Th	0034 0645	3.6 110 1.6 50							1743	1.6 50
					1228	3.3 100								
					1828	1.3 40								

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Hedland, Australia, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0051	21.3	650	16 W	0130	22.3	680	1 F	0139	21.7	660	16 Sa	0208	20.7	630
0701	3.6	110	0734	2.6	80	0742	3.6	110	0807	4.6	140	0712	2.6	80	
1319	20.7	630	1353	22.3	680	1358	22.0	670	1421	21.7	660	1326	22.6	690	
1912	5.6	170	1952	4.3	130	2000	4.6	140	2027	5.6	170	1910	3.0	90	
2 W	0121	21.0	640	17 Th	0203	21.7	660	2 Sa	0208	21.0	640	2 Sa	0124	22.3	680
0729	3.9	120	0806	3.6	110	0810	4.3	130	0832	6.2	190	0721	3.0	90	
1347	20.7	630	1424	21.7	660	1424	21.7	660	1446	20.3	620	1336	23.3	710	
1943	5.9	180	2027	5.2	160	2033	5.6	170	2056	7.2	220	1941	3.3	100	
3 Th	0150	20.7	630	18 F	0234	20.3	620	3 Su	0239	19.7	600	3 Su	0151	21.3	650
0758	4.6	140	0838	5.2	160	0841	5.9	180	0855	8.2	250	0750	3.9	120	
1415	20.7	630	1454	20.7	630	1455	20.7	630	1513	18.7	570	1402	22.6	690	
2017	6.6	200	2102	6.6	200	● 2111	6.6	200	● 2128	8.9	270	2013	4.3	130	
4 F	0222	19.7	600	19 Sa	0307	18.7	570	4 M	0314	18.4	560	4 M	0220	20.3	620
0830	5.6	170	0908	6.9	210	0915	7.5	230	0919	9.8	300	0820	5.6	170	
1447	20.0	610	1526	19.4	590	1533	19.4	590	1545	17.1	520	1432	21.7	660	
2054	7.2	220	● 2141	8.2	250	2159	8.2	250	2218	10.8	330	2047	5.9	180	
5 Sa	0257	18.7	570	20 Su	0341	17.1	520	5 Tu	0402	16.4	500	5 W	0416	14.4	440
0905	6.6	200	0940	8.9	270	0959	9.5	290	0945	11.8	360	0852	7.5	230	
1524	19.4	590	1604	18.0	550	1630	18.0	550	1653	15.4	470	1508	20.0	610	
● 2140	8.2	250	2234	9.8	300	2332	9.8	300	● 2131	7.9	240	● 2122	9.8	300	
6 Su	0341	17.4	530	21 M	0426	15.1	460	6 W	0536	14.8	450	6 Th	0116	11.5	350
0947	8.2	250	1021	10.8	330	1138	11.2	340	0837	13.8	420	0933	9.5	290	
1613	18.4	560	1701	16.4	500	1828	17.1	520	1352	12.8	390	1559	17.7	540	
2245	9.2	280	2029	15.7	480	2029	17.7	540	2023	15.4	470	2251	9.8	300	
7 M	0446	15.7	480	22 Tu	0025	10.8	330	7 Th	0135	9.5	290	7 Th	0326	10.2	310
1048	9.8	300	0629	13.8	420	0825	15.1	460	1000	15.4	470	1113	11.5	350	
1729	17.7	540	1229	12.1	370	1401	11.2	340	1539	11.2	340	2137	17.1	520	
2245	9.2	280	1918	15.7	480	2029	17.7	540	2023	15.4	470	2030	11.8	360	
8 Tu	0030	9.2	280	23 W	0228	10.5	320	8 F	0319	8.2	250	8 F	0405	8.5	260
0641	15.1	460	0915	14.4	440	0957	17.1	520	1027	17.1	520	1027	16.5	350	
1241	10.5	320	1448	11.5	350	1539	9.2	280	1615	9.2	280	1411	11.5	350	
1913	17.7	540	2055	16.7	510	2151	19.4	590	2218	18.7	570	2037	17.1	520	
9 W	0200	8.5	260	24 Th	0342	8.9	270	9 Sa	0416	5.9	180	9 Sa	0314	8.5	260
0834	15.7	480	1011	16.1	490	1042	19.0	580	1052	18.7	570	0947	17.4	530	
1416	10.2	310	1552	10.2	310	1631	6.9	210	1644	7.5	230	1536	9.2	280	
2037	18.7	570	2152	18.0	550	2243	21.0	640	2251	20.0	610	2150	19.0	580	
10 Th	0319	6.9	210	25 F	0422	7.5	230	10 Su	0456	3.9	120	10 M	0501	5.2	160
0955	17.4	530	1043	17.4	530	1121	21.0	640	1119	20.3	620	1027	19.4	590	
1535	8.5	260	1630	8.9	270	1712	4.9	150	1713	5.9	180	1620	6.6	200	
2147	20.0	610	2232	19.4	590	● 2327	22.3	680	2323	21.3	650	2235	20.7	600	
11 F	0418	5.2	160	26 Sa	0454	5.9	180	11 M	0534	2.6	80	11 O	0527	3.9	120
1047	19.0	580	1112	18.7	570	1157	22.3	680	1147	21.7	660	1102	21.3	650	
1632	6.9	210	1702	7.5	230	1749	3.6	110	1741	4.6	140	1657	4.6	140	
2244	21.7	660	2307	20.3	620	● 2355	22.3	680	● 2355	22.3	680	2313	22.0	670	
12 Sa	0504	3.6	110	27 Su	0522	4.9	150	12 Tu	0005	23.3	710	12 W	0514	3.3	100
1130	20.7	630	1141	20.0	610	0608	2.0	60	1215	22.3	680	1135	22.6	690	
1719	5.2	160	1732	6.2	190	1231	23.0	700	1810	3.3	100	1732	3.3	100	
● 2332	22.6	690	○ 2340	21.3	650	1824	3.0	90	● 2348	22.6	690	● 2332	22.0	670	
13 Su	0546	2.3	70	28 M	0551	3.9	120	13 W	0040	23.3	710	13 Th	0026	22.6	80
1209	21.7	660	1209	21.0	640	0640	2.0	60	1243	23.3	710	1207	23.3	710	
1800	4.3	130	1801	5.2	160	1302	23.3	710	1840	3.0	90	1804	2.6	80	
2244	21.7	660	1857	2.6	80	1857	2.6	80	1840	3.0	90	1850	2.0	60	
14 M	0014	23.0	700	29 Tu	0012	22.0	670	14 Th	0112	22.6	690	14 F	0021	23.0	700
0624	2.0	60	0618	3.3	100	0711	2.3	70	0740	3.3	100	0617	2.6	80	
1247	22.3	680	1238	21.7	660	1330	23.3	710	1835	2.3	70	1236	23.6	720	
1840	3.6	110	1830	4.6	140	1929	3.3	100	1835	2.3	70	1818	2.0	60	
15 Tu	0054	23.0	700	30 W	0042	22.3	680	15 F	0141	22.0	670	15 F	0050	22.6	690
0700	2.0	60	0646	3.0	90	0740	3.3	100	1356	22.6	690	0645	3.0	90	
1321	22.6	690	1305	22.0	670	1859	4.3	130	1958	4.3	130	1302	23.3	710	
1916	3.6	110	1930	4.3	130	● 31	0111	22.0	670	● 31	0106	22.3	680		
2244	21.7	660	1332	22.3	680	Th	0713	3.0	90	Th	0700	3.3	100		
1800	4.3	130	1930	4.3	130	1930	4.3	130	1930	4.3	130	1314	23.6	720	
2244	21.7	660	1923	2.6	80	1923	2.6	80	1923	2.6	80	1850	2.0	60	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Hedland, Australia, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0136	21.3	650	16 Tu 0142	19.7	600	1 W 0202	20.0	610	1 Sa 0330	18.7	570
0731	4.3	130	0736	6.6	200	0759	6.2	190	0941	8.2	250
1344	22.6	690	1348	20.7	630	1412	21.0	640	1547	18.0	550
1956	3.9	120	1957	6.2	190	2029	5.6	170	2205	7.9	240
2 Tu 0207	20.3	620	17 W 0208	18.7	570	2 0243	18.7	570	2 Su 0429	17.7	540
0804	5.9	180	0801	7.9	240	0845	7.9	240	1051	9.2	280
1416	21.3	650	1414	19.4	590	1457	19.4	590	1655	16.7	510
2033	5.9	180	2024	7.5	230	2119	7.5	230	2317	9.2	280
3 W 0243	18.7	570	18 Th 0238	17.4	530	3 F 0336	17.4	530	3 M 0553	17.1	520
0842	7.9	240	0829	9.2	280	0947	9.5	290	0905	9.8	300
1456	19.7	600	1444	18.0	550	1555	17.7	540	1515	17.1	520
2119	7.9	240	2059	9.2	280	2230	9.2	280	2133	9.2	280
4 Th 0332	16.7	510	19 F 0317	16.1	490	4 Sa 0457	16.4	500	4 Tu 0402	16.4	500
0933	9.8	300	0907	10.8	330	1123	10.5	320	1011	10.8	330
1552	17.7	540	1525	16.4	500	1731	16.1	490	1619	16.1	490
2241	9.8	300	2155	10.8	330				2250	10.2	310
5 F 0503	15.4	470	20 Sa 0432	14.8	450	5 Su 0019	9.8	300	5 M 0538	15.7	480
1129	11.5	350	1041	12.1	370	0704	16.4	500	1214	10.8	330
1751	16.1	490	1704	15.1	460	1322	10.2	310	1820	15.4	470
6 Sa 0106	10.5	320	21 Su 0044	11.2	340	6 M 0201	9.5	290	6 Tu 0049	10.2	310
0803	15.7	480	0732	15.1	460	0829	17.7	540	0719	16.7	510
1403	10.8	330	1336	11.5	350	1443	8.5	260	1342	9.8	300
2027	16.7	510	1958	15.7	480	2104	17.4	530	2000	16.1	490
7 Su 0248	8.9	270	22 M 0217	10.2	310	7 Tu 0303	8.2	250	7 F 0049	10.2	310
0917	17.7	540	0847	16.7	510	0921	19.0	580	0823	18.0	550
1517	8.5	260	1452	9.8	300	1533	6.9	210	1444	7.9	240
2134	18.4	560	2107	17.1	520	2152	18.7	570	2106	17.4	530
8 M 0338	7.2	220	23 Tu 0310	8.5	260	8 W 0347	6.9	210	23 Th 0300	8.2	250
0959	19.7	600	0929	18.4	560	1001	20.3	620	0914	19.4	590
1600	6.6	200	1536	7.9	240	1612	5.6	170	1534	6.2	190
2216	20.0	610	2152	18.7	570	2230	19.7	600	2156	19.0	580
9 Tu 0416	5.6	170	24 W 0348	7.2	220	9 Th 0424	6.2	190	24 F 0347	6.6	200
1034	21.0	640	1004	20.0	610	1037	21.3	650	0959	21.0	640
1636	4.9	150	1611	5.9	180	1647	4.6	140	1618	4.3	130
2254	21.0	640	2230	20.0	610	2305	20.3	620	2240	20.0	610
10 W 0449	4.6	140	25 Th 0423	5.6	170	10 F 0458	5.6	170	25 Sa 0430	5.6	170
1107	22.3	680	1039	21.7	660	1110	21.7	660	1043	22.0	670
1710	3.6	110	1647	3.9	120	1720	3.9	120	1700	3.0	90
2327	21.7	660	2306	21.3	650	2336	20.7	630	2322	21.0	640
11 Th 0522	3.9	120	26 F 0457	4.6	140	11 Sa 0529	5.2	160	11 M 0543	5.6	170
1139	23.0	700	1113	22.6	690	1141	22.0	670	1043	22.0	670
1741	3.0	90	1721	2.6	80	1751	3.6	110	1700	2.3	70
2358	22.0	670	2341	22.0	670				1741	2.3	70
12 F 0552	3.9	120	27 Sa 0532	3.6	110	12 Su 0007	20.7	630	27 M 0002	21.3	650
1207	23.0	700	1148	23.6	720	0559	5.2	160	0553	4.3	130
1811	3.0	90	1757	2.0	60	1211	22.0	670	1207	23.3	710
						1819	3.6	110	1821	2.0	60
13 Sa 0027	21.7	660	28 Su 0017	22.0	670	13 M 0035	20.7	630	28 Tu 0042	21.3	650
0620	3.9	120	0607	3.6	110	0627	5.6	170	0634	4.3	130
1234	23.0	700	1223	23.6	720	1238	21.7	660	1249	23.0	700
1839	3.3	100	1833	2.0	60	1847	4.3	130	1902	2.6	80
14 Su 0053	21.3	650	29 M 0052	22.0	670	14 Tu 0102	20.3	620	29 W 0121	21.0	640
0647	4.6	140	0643	3.9	120	0654	5.9	180	0716	4.6	140
1259	22.3	680	1257	23.3	710	1305	21.3	650	1330	22.3	680
1905	3.9	120	1909	2.6	80	1914	4.9	150	1943	3.6	110
15 M 0118	20.7	630	30 Tu 0126	21.0	640	15 W 0128	19.7	600	30 Sa 0201	20.3	620
0711	5.6	170	0720	4.9	150	0721	6.6	200	0759	5.6	170
1324	21.7	660	1332	22.6	690	1332	20.7	630	1412	21.0	640
1931	4.9	150	1947	3.9	120	1942	5.6	170	2025	4.9	150
									31 F 0243	19.4	590
									0846	6.9	210
									1456	19.7	600
									2112	6.6	200

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Port Hedland, Australia, 2013

Times and Heights of High and Low Waters

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Hedland, Australia, 2013

Times and Heights of High and Low Waters

October				November				December							
	Time	Height			Time	Height			Time	Height					
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm				
1 Tu	0253	10.8	330	16 W	0249	8.2	250	1 F	0324	7.5	230	16 Sa	0353	5.2	160
	0857	15.4	470		0907	17.4	530		0940	17.7	540		0319	6.6	200
	1512	9.2	280		1509	7.2	220		1533	7.2	220		0945	18.0	550
	2132	16.7	510		2131	19.0	580		2147	19.7	600		1529	7.5	230
2 W	0333	8.9	270	17 Th	0336	6.2	190	2 Sa	0357	5.6	170	17 Su	0430	3.9	120
	0940	17.1	520		0954	19.4	590		1016	19.4	590		1027	19.4	590
	1545	7.5	230		1552	5.6	170		1606	5.9	180		1612	6.2	190
	2200	18.4	560		2209	20.7	630		2219	21.0	640		2223	21.7	660
3 Th	0402	6.9	210	18 F	0414	4.3	130	3 Su	0430	3.9	120	18 M	0505	3.3	100
	1013	18.7	570		1033	20.7	630		1050	20.3	620		1124	20.7	630
	1613	5.9	180		1628	4.3	130		1639	4.9	150		1715	4.9	150
	2228	19.7	600		2244	22.0	670		●	2252	22.3	680		2324	22.0	670
4 F	0430	4.9	150	19 Sa	0449	2.6	80	4 M	0503	2.6	80	19 Tu	0538	3.0	90
	1044	20.0	610		1108	21.3	650		1124	21.3	650		1156	20.7	630
	1642	4.6	140		1702	3.6	110		1714	3.9	120		1747	4.9	150
	2256	21.0	640		○	2316	22.6	690		2326	23.0	700		2355	22.0	670
5 Sa	0458	3.6	110	20 Su	0523	2.0	60	5 Tu	0538	1.6	50	20 W	0608	3.0	90
	1115	21.0	640		1141	21.7	660		1158	21.7	660		1225	20.7	630
	1710	3.6	110		1734	3.3	100		1748	3.6	110		1817	5.2	160
	●	2324	22.3		2347	23.0	700								
6 Su	0528	2.3	70	21 M	0555	2.0	60	6 W	0000	23.3	710	21 Th	0025	21.7	660
	1146	21.7	660		1212	21.7	660		0613	1.3	40		0638	3.3	100
	1739	3.0	90		1805	3.6	110		1233	21.7	660		1253	20.3	620
	2353	22.6	690						1824	3.9	120		1845	5.9	180
7 M	0558	1.6	50	22 Tu	0016	22.6	690	7 Th	0034	23.0	700	22 F	0053	21.0	640
	1217	22.0	670		0624	2.0	60		0649	2.0	60		0705	4.3	130
	1809	3.0	90		1240	21.0	640		1307	21.0	640		1321	20.0	610
					1833	4.3	130		1859	4.6	140		1913	6.6	200
8 Tu	0022	23.0	700	23 W	0043	22.0	670	8 F	0109	22.3	680	23 Sa	0120	20.3	620
	0630	1.3	40		0652	3.0	90		0725	3.0	90		0732	4.9	150
	1247	21.7	660		1306	20.3	620		1342	20.3	620		1348	19.4	590
	1840	3.3	100		1900	5.2	160		1938	5.6	170		1942	7.5	230
9 W	0050	22.6	690	24 Th	0109	21.3	650	9 Sa	0147	21.0	640	24 Su	0148	19.4	590
	0702	2.0	60		0720	3.9	120		0805	4.6	140		0801	6.2	190
	1316	21.0	640		1332	19.7	600		1421	19.0	580		1418	18.4	560
	1911	3.9	120		1926	6.2	190		2022	7.2	220		2013	8.5	260
10 Th	0119	22.0	670	25 F	0135	20.0	610	10 Su	0229	19.4	590	25 M	0220	18.4	560
	0734	3.0	90		0746	5.2	160		0851	6.2	190		0832	7.2	220
	1346	20.0	610		1359	18.4	560		1509	17.7	540		1453	17.4	530
	1943	5.2	160		1952	7.5	230		○	2117	8.9	270		2052	9.5	270
11 F	0151	21.0	640	26 Sa	0201	19.0	580	11 M	0324	17.7	540	26 W	0257	17.1	520
	0809	4.6	140		0814	6.9	210		0950	8.2	250		0911	8.5	260
	1420	18.4	560		1429	17.4	530		1616	16.7	510		1540	16.7	510
	2019	7.2	220		2021	9.2	280		2239	10.2	310		○	2149	10.5	320
12 Sa	0229	19.4	590	27 Su	0231	17.4	530	12 Tu	0443	16.1	490	27 W	0351	15.7	480
	0851	6.9	210		0846	8.5	260		1119	9.5	290		1008	9.8	300
	1505	16.7	510		1507	16.1	490		1812	16.4	500		1657	15.7	480
	●	2106	9.2		○	2058	10.5	320					2349	11.2	340
13 Su	0320	17.4	530	28 M	0311	15.7	480	13 W	0042	9.8	300	28 Th	0539	14.8	450
	0954	8.9	270		0933	10.2	310		0656	15.7	480		1207	10.8	330
	1620	15.4	470		1616	14.8	450		1313	9.5	290		1855	16.1	490
	2242	10.8	330		2242	11.8	360		1951	17.4	530				
14 M	0456	15.4	470	29 Tu	0442	14.4	440	14 Th	0215	8.5	260	29 F	0128	10.2	310
	1208	9.8	300		1217	11.2	340		0836	16.7	510		0744	15.4	470
	1911	15.4	470		1919	14.8	450		1432	8.5	260		1339	10.2	310
									2054	18.7	570		2007	17.4	530
15 Tu	0121	10.5	320	30 W	0132	11.2	340	15 F	0311	6.9	210	30 Sa	0230	8.5	260
	0744	15.7	480		0750	14.8	450		0933	18.0	550		0855	16.4	500
	1408	8.9	270		1358	10.2	310		1524	7.2	220		1441	8.9	270
	2044	17.1	520		2032	16.4	500		2138	20.0	610		2058	19.0	580
31 Th	0243	9.5	290	31 Th	0858	16.1	490								
					1455	8.9	270								
					2114	18.0	550								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mergui, Burma, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0025	16.8	513	16 W	0110	17.0	518	1 F	0110	16.2	494	16 F	0028	17.5	533
0649	0.6	17	0730	0.1	2	0733	0.3	10	0741	2.0	61	0648	-1.2	-38	
1248	15.6	477	1330	15.7	480	1331	15.8	481	1340	14.1	430	1245	17.5	534	
1856	1.4	42	1944	1.7	51	1947	1.5	46	1959	3.5	106	1902	-0.4	-11	
2 W	0053	16.3	496	17 Th	0138	15.5	473	2 Sa	0138	15.2	463	17 Sa	0055	16.6	507
0719	1.0	32	0757	1.4	43	0759	1.3	41	0801	3.3	102	0714	-0.3	-9	
1319	15.2	464	1357	14.5	443	1402	14.9	454	1402	12.8	389	1312	16.7	509	
1928	2.1	65	2012	3.1	96	2020	2.7	82	2025	4.9	149	1931	0.7	22	
3 Th	0124	15.5	472	18 F	0206	13.9	425	3 Su	0212	13.9	425	18 M	0220	11.3	345
0749	1.8	54	0822	2.9	87	0832	2.6	79	0827	4.8	146	0740	1.0	29	
1351	14.6	445	1425	13.3	405	1442	13.8	421	1436	11.4	346	1340	15.6	475	
2004	3.1	93	2043	4.6	140	● 2104	4.0	121	● 2108	6.3	192	2002	2.1	64	
4 F	0158	14.5	442	19 Sa	0237	12.3	376	4 M	0258	12.5	382	19 Tu	0308	9.8	298
0823	2.6	80	0849	4.3	130	0915	4.0	121	0914	6.3	192	1701	10.1	307	
1430	13.9	424	1503	12.0	365	1545	12.7	386	1701	10.1	307	1415	14.2	433	
2046	4.0	123	● 2128	5.9	180	2216	5.2	158	2040	3.6	111	2026	5.6	171	
5 Sa	0242	13.4	409	20 Su	0324	10.8	330	5 Tu	0416	11.2	340	20 W	0015	6.9	210
0904	3.5	108	0932	5.6	170	1040	5.2	160	0625	9.3	284	0847	4.2	127	
1524	13.2	403	1628	10.9	332	1746	12.1	370	1231	6.8	207	1511	12.6	385	
● 2143	4.9	150	2329	6.7	204	1916	10.8	330	● 2145	5.2	160	2155	6.9	211	
6 Su	0341	12.4	377	21 M	0530	9.8	300	6 W	0031	5.3	161	21 Th	0350	10.8	330
1004	4.4	135	1137	6.4	196	0639	11.0	334	0755	10.5	319	1030	9.4	287	
1645	12.8	391	1841	11.0	336	1312	5.0	153	1401	5.6	170	1808	7.2	219	
2319	5.3	163	1933	13.2	401	1933	13.2	401	2020	12.2	373	1937	11.7	358	
7 M	0512	11.7	358	22 Tu	0116	6.1	186	7 Th	0209	3.9	119	22 F	0249	4.3	130
1150	4.8	146	0716	10.3	313	0816	12.3	376	0850	12.0	366	0710	10.7	326	
1831	13.3	405	1324	5.9	179	1437	3.4	105	1456	4.0	123	1317	6.3	193	
1954	12.0	366	1954	12.0	366	2044	14.9	453	2105	13.8	420	1920	12.6	385	
8 Tu	0106	4.6	141	23 W	0222	4.9	150	8 F	0318	2.0	61	23 Sa	0331	2.7	83
0704	12.1	369	0822	11.3	345	0922	14.2	432	0931	13.6	415	0815	12.0	366	
1333	4.0	123	1427	4.7	144	1539	1.6	49	1538	2.5	75	1423	4.7	143	
1949	14.5	441	2044	13.2	403	2141	16.6	505	2143	15.2	464	2030	13.4	407	
9 W	0222	3.2	99	24 Th	0311	3.7	112	9 Sa	0410	0.2	5	24 Su	0407	1.2	38
0823	13.3	404	0911	12.5	382	1013	15.9	484	1628	0.0	0	0911	14.4	440	
1444	2.8	84	1515	3.5	107	2228	17.9	546	2220	16.5	503	1527	1.8	56	
2053	15.9	485	2127	14.4	440	● 2309	18.6	568	● 2327	17.9	547	2127	16.2	493	
10 Th	0324	1.7	51	25 F	0352	2.5	75	10 Su	0455	-1.2	-38	25 M	0442	-0.1	-3
0927	14.6	446	0952	13.7	418	1055	17.2	523	1055	17.2	523	0956	16.2	493	
1545	1.3	41	1556	2.3	70	1711	-1.1	-33	1654	-0.2	-5	1612	0.2	7	
2149	17.3	526	2204	15.6	474	● 2309	18.6	568	2255	17.4	531	2210	17.5	532	
11 F	0419	0.2	5	26 Sa	0428	1.3	40	11 M	0533	-2.0	-61	26 Tu	0434	-0.9	-27
1020	15.9	486	1028	14.8	452	1133	17.8	543	1115	17.4	530	1016	17.1	520	
1637	0.1	3	1634	1.2	36	1749	-1.5	-45	1727	-1.0	-30	1630	0.0	0	
2238	18.3	557	2240	16.5	504	2346	18.7	570	● 2327	17.9	547	2248	18.1	551	
12 Sa	0506	-1.0	-30	27 Su	0504	0.3	9	26 Tu	0516	-1.1	-34	26 O	0414	0.1	3
1108	16.9	516	1102	15.8	481	1205	17.8	543	1115	17.4	530	1016	17.1	520	
1722	-0.7	-22	1711	0.3	9	1821	-1.2	-37	1727	-1.1	-35	1630	0.0	0	
● 2323	18.9	575	● 2313	17.2	525	2358	18.0	548	● 2323	18.1	552	2230	17.4	530	
13 Su	0550	-1.6	-50	28 M	0536	-0.5	-15	28 Th	0549	-1.7	-52	27 W	0451	-1.0	-31
1150	17.4	531	1134	16.5	503	0636	-1.5	-46	1147	17.9	546	1051	18.2	554	
1804	-1.0	-30	1744	-0.3	-9	1235	17.3	527	1801	-1.3	-40	1708	-1.0	-30	
2344	17.6	536	1850	-0.4	-11	1850	17.6	537	2358	18.0	548	● 2305	18.0	548	
14 M	0004	18.8	573	29 Tu	0607	-0.9	-28	14 Th	0045	17.1	521	28 Th	0525	-1.7	-51
0627	-1.6	-50	1205	16.9	514	0702	-0.5	-16	1217	17.9	547	1125	18.8	572	
1227	17.3	528	1817	-0.4	-13	1259	16.4	500	1832	-1.1	-33	1743	-1.4	-42	
1841	-0.6	-17	1916	0.8	24	1916	0.8	24	2353	17.6	537	2340	18.1	551	
15 Tu	0039	18.1	553	30 W	0014	17.5	533	15 F	0109	15.8	481	14 Th	0610	-1.0	-32
0700	-1.0	-31	0636	-0.9	-28	0723	0.7	21	1220	17.6	535	1157	18.8	572	
1300	16.7	510	1235	16.8	513	1320	15.3	467	1825	-0.2	-7	1817	-1.2	-37	
1913	0.4	12	1848	-0.1	-4	1938	2.1	64	1849	0.7	22	1042	16.8	511	
31 Th	0042	17.0	519	31 Th	0704	-0.5	-14				30 Sa	0011	17.7	538	
			1303	16.4	501						0629	-1.2	-36		
			1917	0.6	17						1228	18.2	556		
											1848	-0.5	-15		

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mergui, Burma, 2013

Times and Heights of High and Low Waters

April				May				June							
	Time	Height			Time	Height			Time	Height					
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm				
1 <i>M</i>	0112	15.6	474	16 <i>Tu</i>	0106	13.8	422	1 <i>W</i>	0151	14.4	438	16 <i>Sa</i>	0128	13.7	419
	0727	1.3	40		0712	3.1	93		0802	3.4	105		0956	5.8	177
	1328	16.0	488		1312	14.5	442		1411	15.0	458		1335	14.5	443
	1952	2.2	66		1935	3.9	119		2040	3.8	115		2004	4.4	135
2 <i>Tu</i>	0145	14.1	429	17 <i>W</i>	0134	12.8	389	2 <i>Th</i>	0244	13.0	397	17 <i>F</i>	0208	12.9	393
	0759	3.0	91		0738	4.2	129		0853	5.1	155		0811	5.2	157
	1406	14.5	441		1342	13.4	407		1514	13.6	415		1420	13.5	413
	2034	3.8	117		2011	5.1	155		2146	5.0	152		2051	5.3	161
3 <i>W</i>	0232	12.5	380	18 <i>Th</i>	0215	11.6	353	3 <i>F</i>	0406	12.1	369	18 <i>Sa</i>	0308	12.2	371
	0842	4.8	147		0816	5.6	170		1020	6.3	191		0911	6.2	189
	1508	12.8	391		1430	12.1	370		1645	12.8	390		1528	12.7	387
	2146	5.3	163		2112	6.2	190		2323	5.4	165		2207	5.9	179
4 <i>Th</i>	0403	11.1	338	19 <i>F</i>	0341	10.6	323	4 <i>Sa</i>	0553	12.2	373	19 <i>Su</i>	0442	12.0	366
	1019	6.4	194		0932	6.9	209		1217	6.1	187		1049	6.7	203
	1709	12.0	365		1623	11.3	343		1822	13.0	396		1702	12.4	379
	2356	5.6	172		2333	6.5	198						2353	5.6	172
5 <i>F</i>	0624	11.3	344	20 <i>Sa</i>	0603	10.9	332	5 <i>Su</i>	0057	4.8	146	20 <i>M</i>	0621	12.9	392
	1250	6.0	182		1210	6.8	208		0719	13.4	408		1238	6.0	182
	1859	12.8	389		1828	11.8	360		1340	4.9	150		1838	13.1	398
									1937	13.9	424				
6 <i>Sa</i>	0138	4.4	133	21 <i>Su</i>	0112	5.4	164	6 <i>M</i>	0202	3.7	112	21 <i>Tu</i>	0116	4.6	140
	0754	13.0	395		0726	12.4	377		0816	14.8	451		0730	14.3	436
	1413	4.2	129		1337	5.4	166		1436	3.6	110		1349	4.6	140
	2011	14.3	435		1941	13.2	401		2030	14.9	453		1947	14.2	432
7 <i>Su</i>	0240	2.7	82	22 <i>M</i>	0211	3.9	118	7 <i>Tu</i>	0253	2.7	82	22 <i>W</i>	0215	3.3	101
	0849	14.8	451		0819	14.2	432		0900	15.9	486		0823	15.9	484
	1505	2.5	76		1433	3.7	114		1521	2.6	78		1444	3.1	95
	2103	15.7	478		2033	14.6	446		2115	15.6	474		2043	15.3	467
8 <i>M</i>	0327	1.2	38	23 <i>Tu</i>	0258	2.3	70	8 <i>W</i>	0334	2.0	60	23 <i>Th</i>	0307	2.0	62
	0931	16.3	497		0903	15.9	485		0939	16.7	510		0912	17.3	526
	1549	1.1	35		1519	2.1	65		1600	1.9	57		1535	1.8	55
	2145	16.7	508		2119	16.0	487		2156	16.0	487		2132	16.3	498
9 <i>Tu</i>	0406	0.3	9	24 <i>W</i>	0341	0.9	27	9 <i>Th</i>	0412	1.6	48	24 <i>F</i>	0353	1.0	30
	1009	17.3	528		0945	17.4	531		1016	17.2	523		0957	18.3	559
	1627	0.3	10		1603	0.8	23		1638	1.5	47		1621	0.8	23
	2223	17.2	523		2202	17.0	518		2233	16.1	491		2220	17.1	520
10 <i>W</i>	0441	-0.2	-5	25 <i>Th</i>	0421	-0.2	-7	10 <i>F</i>	0445	1.4	43	25 <i>Sa</i>	0440	0.2	7
	1042	17.8	542		1024	18.5	564		1048	17.3	527		1042	19.1	581
	1702	0.0	1		1644	-0.3	-8		1711	1.5	45		1706	0.1	2
	2257	17.2	523		2241	17.7	538		2305	16.0	489		2305	17.5	533
11 <i>Th</i>	0513	-0.2	-6	26 <i>F</i>	0501	-0.9	-27	11 <i>Sa</i>	0516	1.4	43	26 <i>Su</i>	0522	-0.1	-3
	1113	17.8	542		1102	19.1	583		1118	17.2	524		1125	19.3	588
	1734	0.2	5		1723	-0.8	-24		1742	1.6	49		1750	-0.2	-5
	2327	16.8	513		2320	17.8	544		2336	15.8	483		2349	17.5	533
12 <i>F</i>	0542	0.1	3	27 <i>Sa</i>	0539	-1.0	-30	12 <i>M</i>	0544	1.6	48	27 <i>W</i>	0604	0.1	2
	1140	17.5	533		1139	19.2	584		1146	17.0	517		1207	19.1	581
	1801	0.6	18		1801	-0.7	-22		1808	1.9	57		1831	0.1	3
	2356	16.3	497		2358	17.6	535						1852	2.4	73
13 <i>Sa</i>	0605	0.6	19	28 <i>Su</i>	0614	-0.5	-16	13 <i>M</i>	0004	15.6	474	28 <i>Tu</i>	0031	17.1	520
	1204	17.0	517		1215	18.7	570		0610	1.9	58		0643	0.8	23
	1827	1.2	37		1838	-0.1	-4		1211	16.6	506		1248	18.4	560
									1834	2.3	69		1912	0.8	25
14 <i>Su</i>	0019	15.6	476	29 <i>M</i>	0034	16.8	512	14 <i>Tu</i>	0031	15.1	460	29 <i>W</i>	0723	1.8	56
	0628	1.3	39		0649	0.5	14		0635	2.4	72		1327	17.3	528
	1227	16.3	496		1250	17.8	542		1236	16.1	490		1952	1.9	57
	1849	2.0	61		1914	0.9	28		1900	2.8	86				
15 <i>M</i>	0042	14.8	451	30 <i>Tu</i>	0110	15.7	479	15 <i>W</i>	0057	14.5	442	30 <i>Th</i>	0154	15.3	467
	0649	2.1	63		0723	1.8	56		0700	3.1	94		0804	3.2	97
	1248	15.5	472		1327	16.5	503		1303	15.4	469		1411	16.0	488
	1910	2.9	88		1952	2.3	70		1928	3.5	108		2036	3.1	96
												31 <i>F</i>	0242	14.2	434
												0853	4.6	141	
												1503	14.6	446	
												2128	4.3	132	

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mergui, Burma, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0403	13.2	403	16 Tu 0256	14.3	436	1 Th 0617	12.0	367	1 Su 0458	13.2	401
1026	6.4	196	0912	5.3	162	1248	7.3	221	0805	13.4	408
1630	12.7	386	1510	13.8	426	1849	11.5	349	1430	5.4	165
2248	6.0	183	● 2132	5.0	152	F 1747	12.2	371	2030	13.3	406
2 Tu 0533	12.8	390	17 W 0400	13.7	418	2 0103	6.9	210	2 M 0237	5.1	155
1203	6.7	205	1024	6.1	185	0734	12.9	393	0847	14.8	452
1803	12.2	372	1623	13.0	395	1401	6.2	190	1510	4.0	122
			2254	5.6	172	2001	12.4	377	2110	14.8	450
3 W 0022	6.2	190	18 Th 0542	13.7	418	3 Sa 0211	5.9	179	3 Tu 0318	3.6	111
0657	13.2	402	1214	6.0	183	0829	14.0	428	0924	16.2	493
1323	6.2	189	1812	12.9	392	1454	5.1	155	1546	2.7	83
1920	12.5	381				2051	13.5	411	2145	16.1	491
4 Th 0137	5.7	175	19 F 0049	5.4	164	4 Su 0300	4.7	144	4 W 0355	2.4	72
0759	14.0	426	0713	14.6	446	0912	15.2	463	0910	17.3	528
1423	5.3	162	1342	5.0	152	1536	4.0	121	1539	1.9	57
2020	13.2	402	1944	13.7	418	2134	14.6	445	2141	16.8	511
5 F 0233	5.0	151	20 Sa 0211	4.3	131	5 M 0341	3.6	110	5 Th 0431	1.3	39
0849	14.9	453	0822	16.0	488	0949	16.3	496	1000	18.8	574
1512	4.5	136	1451	3.5	108	1613	2.9	89	1627	0.3	10
2110	14.0	426	2053	15.0	457	2210	15.6	476	2227	18.2	554
6 Sa 0321	4.2	127	21 Su 0315	2.9	88	6 Tu 0419	2.6	79	6 W 0506	0.5	15
0931	15.6	477	0921	17.5	533	1024	17.2	524	1044	19.8	603
1556	3.7	112	1550	2.0	61	1647	2.0	60	1709	-0.7	-21
2152	14.7	448	2152	16.4	499	2244	16.5	504	● 2308	19.0	580
7 Su 0400	3.4	103	22 M 0410	1.5	46	7 W 0452	1.7	53	7 Th 0444	0.1	4
1009	16.4	499	1014	18.8	572	1057	17.9	546	1123	20.0	611
1633	3.0	90	1642	0.6	18	1719	1.2	37	1746	-1.0	-30
2230	15.4	468	2242	17.6	536	● 2316	17.2	525	2344	19.2	586
8 M 0437	2.7	83	23 Tu 0459	0.4	12	8 Th 0526	1.1	35	8 Su 0526	-0.5	-15
1044	17.0	518	1102	19.7	600	1127	18.3	559	1137	18.7	571
1708	2.3	71	1727	-0.4	-12	1750	0.7	22	1758	-0.1	-2
● 2304	15.9	485	○ 2327	18.4	560	2347	17.6	537	2354	18.7	569
9 Tu 0511	2.2	66	24 W 0543	-0.2	-6	9 F 0558	0.9	27	9 M 0603	-0.4	-12
1116	17.5	532	1144	20.0	609	1157	18.4	560	1158	19.6	598
1739	1.8	56	1808	-0.8	-23	1819	0.6	18	1819	-0.6	-18
2336	16.3	498									
10 W 0543	1.8	55	25 Th 0007	18.6	567	10 Sa 0017	17.7	538	10 Su 0045	17.8	544
1146	17.7	539	0622	-0.1	-4	0629	1.0	32	0704	1.5	47
1810	1.6	48	1222	19.7	599	1227	18.0	549	1257	17.3	527
			1845	-0.4	-13	1849	0.9	28	1914	1.7	52
11 Th 0005	16.6	505	26 F 0043	18.2	555	11 M 0045	17.4	529	11 Su 0110	16.6	506
0614	1.7	52	0659	0.6	18	0659	1.6	50	0730	3.0	92
1215	17.7	538	1257	18.7	570	1253	17.3	528	M 1323	15.7	479
1839	1.5	47	1917	0.5	15	1916	1.6	49	1935	3.2	97
12 F 0035	16.5	503	27 Sa 0116	17.4	529	12 M 0112	16.7	510	12 Tu 0133	15.2	464
0645	2.0	60	0731	1.8	56	0730	2.5	77	0754	4.6	139
1243	17.3	527	1328	17.3	528	1321	16.4	499	1347	14.1	430
1907	1.8	56	1947	1.8	55	1944	2.6	78	1957	4.7	142
13 Sa 0104	16.2	494	28 Su 0145	16.2	493	13 Th 0141	15.9	485	13 W 0157	13.7	419
0716	2.6	78	0802	3.3	101	0801	3.6	111	0820	6.1	186
1312	16.7	508	1359	15.7	479	1352	15.2	464	1416	12.5	380
1937	2.4	74	2015	3.3	101	2013	3.7	112	● 2023	6.2	189
14 Su 0135	15.7	478	29 M 0216	14.8	452	14 W 0218	14.9	455	29 Th 0230	12.2	373
0748	3.4	103	0834	4.9	150	0839	4.9	148	0908	7.6	231
1344	15.8	482	1432	14.0	428	1434	13.9	425	1517	10.9	333
2008	3.2	98	2044	4.9	148	● 2053	4.9	150	2115	7.6	233
15 M 0211	15.0	458	30 Tu 0254	13.4	409	15 Th 0312	13.8	422	30 F 0520	11.2	340
0825	4.4	133	0918	6.4	196	0939	6.1	185	1208	8.0	243
1420	14.8	452	1517	12.4	379	1539	12.7	386	1817	10.8	328
2044	4.1	125	● 2127	6.3	192	2202	6.1	187			
16 Sa 0407	12.2	372							31 0029	7.8	238
1054	7.5	228							0706	12.0	366
1701	11.3	344							1338	6.8	208
2312	7.3	222							1938	11.9	362

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mergui, Burma, 2013

Times and Heights of High and Low Waters

October				November				December			
	Time	Height			Time	Height			Time	Height	
	h m	ft cm		h m	ft cm			h m	ft cm		
1 Tu	0206	5.4	165	16 W	0234	3.1	94	1 F	0257	2.5	77
	0813	14.3	435		0833	16.4	500		0935	16.3	498
	1434	4.2	127		1456	2.0	60		1550	1.5	45
	2039	14.9	454		2101	17.3	527		2155	17.7	541
2 W	0249	3.8	115	17 Th	0321	1.6	48	2 Sa	0339	1.2	37
	0853	15.7	480		0917	17.6	535		1014	16.5	503
	1512	2.7	82		1538	0.9	27		1628	1.3	40
	2115	16.5	502		2141	18.4	561		2230	17.8	543
3 Th	0328	2.3	70	18 F	0402	0.6	18	3 Su	0420	0.2	6
	0929	17.0	519		0957	18.1	553		1049	16.4	500
	1550	1.4	42		1617	0.3	10		1701	1.4	43
	2150	17.8	542		2217	18.9	576		2302	17.6	535
4 F	0406	1.0	31	19 Sa	0440	0.2	7	4 M	0459	-0.3	-10
	1006	18.0	548		1035	18.2	554		1122	16.1	490
	1626	0.4	12		1652	0.3	8		1732	1.7	52
	2226	18.8	572		2251	18.9	575		2330	17.2	523
5 Sa	0442	0.1	4	20 Su	0515	0.4	11	5 Tu	0537	-0.4	-12
	1041	18.5	565		1109	17.8	542		1134	17.7	541
	1701	-0.2	-7		1725	0.7	20		1751	0.1	2
	2259	19.3	587		2322	18.4	560		2350	18.9	577
6 Su	0519	-0.3	-8	21 M	0546	0.9	27	6 W	0615	0.1	3
	1116	18.6	567		1140	17.1	521		1211	17.2	523
	1736	-0.3	-10		1751	1.3	40		1827	0.9	26
	2333	19.3	587		2349	17.6	537		21	0622	2.1	64
7 M	0553	-0.2	-5	22 Tu	0612	1.7	52	7 Th	0615	1.0	30
	1149	18.2	556		1207	16.2	494		1218	15.1	461
	1807	0.1	3		1815	2.2	66		1822	2.7	81
	2333	19.3	587		2349	17.6	537		21	0649	-0.1	-3
8 Tu	0004	18.8	572	23 W	0012	16.7	510	8 F	0102	18.1	551
	0627	0.5	15		0636	2.6	80		0652	1.0	30
	1219	17.4	531		1231	15.3	465		1248	16.2	493
	1838	1.0	31		1838	3.1	94		1902	2.1	63
9 W	0034	17.9	545	24 Th	0034	15.7	480	9 Sa	0142	15.5	471
	0657	1.5	47		0659	3.6	110		0812	3.6	109
	1250	16.3	497		1255	14.2	433		1415	13.7	417
	1907	2.3	70		1859	4.1	125		2027	5.1	155
10 Th	0104	16.7	508	25 F	0055	14.7	448	10 Su	0239	14.0	426
	0731	2.9	89		0723	4.7	142		0911	4.9	148
	1323	15.0	456		1321	13.1	399		1528	12.7	386
	1940	3.8	117		1924	5.2	160		2143	6.3	193
11 F	0140	15.2	463	26 Sa	0123	13.5	411	11 M	0404	12.9	394
	0811	4.4	135		0755	5.8	177		1038	5.5	169
	1405	13.5	410		1401	11.9	363		1713	12.6	383
	2020	5.5	167		2002	6.6	200		2339	6.4	194
12 Sa	0234	13.6	416	27 Su	0209	12.2	371	12 Tu	0546	13.0	395
	0912	5.9	180		0853	6.9	211		1218	5.1	155
	1525	12.1	369		1534	11.0	334		1846	13.6	415
	2143	7.0	212		2121	7.7	236		21	0223	6.9	210
13 Su	0428	12.6	385	28 M	0416	11.3	343	13 W	0110	5.2	157
	1111	6.4	196		1125	7.2	218		0707	13.8	422
	1743	12.1	370		1758	11.4	348		1331	4.0	121
	2015	15.6	477		2042	16.3	497		1947	15.1	460
14 M	0012	6.7	205	29 Tu	0010	7.4	225	14 Th	0209	3.6	111
	0624	13.3	406		0624	11.9	364		0805	14.9	455
	1259	5.3	161		1257	6.0	183		1425	2.8	86
	1917	13.7	418		1912	12.9	393		2034	16.4	500
15 Tu	0140	5.0	152	30 W	0124	5.8	178	15 F	0257	2.4	72
	0740	14.9	453		0728	13.3	406		0853	15.8	482
	1405	3.5	108		1351	4.5	137		1510	2.0	60
	2015	15.6	477		2001	14.6	446		2115	17.3	527
31 Th	0213	4.1	126	31 Th	0216	14.8	450				
					1436	3.0	92				
					2042	16.3	497				

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Rangoon, Burma, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0139	1.8	54	16 W 0238	1.4	42	1 F 0249	1.5	46	16 Sa 0323	1.9	57
0628	18.1	551	0716	18.2	556	0721	17.7	540	0810	16.2	495
1421	1.0	30	1506	0.7	21	1508	0.8	23	1518	1.9	58
1854	17.5	532	1944	17.9	546	1948	18.2	555	2025	16.6	507
2 W 0215	2.0	61	17 Th 0313	1.8	55	2 Sa 0325	1.5	45	17 Su 0346	2.5	77
0701	17.7	539	0800	17.2	525	0803	16.9	516	0850	14.8	451
1451	1.0	32	1534	1.2	38	1537	1.0	32	1537	3.1	93
1933	17.4	531	2029	17.2	524	2033	17.7	540	2106	15.4	468
3 Th 0252	2.2	67	18 F 0348	2.4	74	3 Su 0403	1.7	52	18 M 0416	3.4	104
0739	17.1	521	0846	15.9	486	0852	15.8	482	0942	13.2	403
1522	1.2	37	1600	2.2	66	1609	1.8	54	1606	4.4	135
2014	17.3	528	2114	16.2	495	2121	16.8	513	2201	14.0	426
4 F 0330	2.3	71	19 W 0428	3.2	98	4 M 0453	2.2	68	19 Tu 0519	4.3	131
0824	16.4	499	0937	14.5	441	0955	14.4	439	1109	12.0	366
1552	1.5	47	1630	3.4	103	1659	2.9	87	1711	5.7	174
2100	17.1	520	2204	15.1	461	2228	15.7	478	2332	13.1	398
5 Sa 0418	2.5	77	20 Su 0523	4.0	121	5 Tu 0617	2.8	84	20 W 0725	4.3	130
0916	15.5	471	1042	13.0	397	1138	13.4	407	1303	12.0	367
1632	2.1	64	1720	4.6	140	1829	3.7	114	1923	5.9	179
2154	16.6	505	2312	14.2	432						
6 Su 0522	2.8	84	21 M 0652	4.2	127	6 W 0014	15.1	459	21 Th 0122	13.4	408
1026	14.4	440	1221	12.3	376	0805	2.4	74	0855	3.3	102
1734	2.8	84	1845	5.2	159	1329	13.7	418	1422	13.1	400
2307	16.1	490				2015	3.6	110	2059	4.8	147
7 M 0654	2.7	82	22 Tu 0045	13.9	425	7 Th 0147	15.7	480	22 F 0232	14.5	442
1205	14.0	426	0824	3.5	107	0933	1.6	48	0959	2.4	72
1901	3.1	94	1351	12.8	389	1442	15.0	457	1515	14.5	441
			2017	4.9	149	2140	2.8	85	2203	3.6	109
8 Tu 0038	16.1	491	23 W 0202	14.6	444	8 F 0250	16.9	515	23 Sa 0319	15.7	480
0825	2.1	63	0935	2.5	77	1041	0.8	25	1053	1.6	50
1334	14.5	442	1454	13.8	420	1534	16.3	498	1555	15.8	481
2028	2.8	86	2129	4.0	122	2247	1.9	58	2253	2.5	77
9 W 0152	16.8	513	24 Th 0257	15.5	472	9 Sa 0338	18.0	548	24 Su 0355	16.9	514
0944	1.3	41	1035	1.7	51	1138	0.5	14	1137	1.2	37
1441	15.6	474	1541	14.9	453	1616	17.5	533	1622	16.9	515
2143	2.3	70	2226	3.0	91	2342	1.3	40	2335	1.8	56
10 Th 0251	17.7	540	25 F 0340	16.4	501	10 Su 0419	18.7	571	25 M 0425	17.7	540
1050	0.8	25	1123	1.1	34	1225	0.4	11	1214	1.0	31
1532	16.6	506	1617	15.9	484	1651	18.3	557	1643	17.7	541
2250	1.7	53	2312	2.1	65	●					
11 F 0341	18.5	565	26 Sa 0416	17.3	526	11 M 0029	1.0	32	26 Tu 0013	1.5	47
1147	0.6	17	1202	0.8	25	0458	19.1	583	0449	18.3	558
1618	17.5	533	1646	16.7	509	1305	0.4	12	1244	1.0	30
2346	1.3	41	2352	1.6	48	1722	18.7	570	1705	18.4	561
12 Sa 0426	19.1	582	27 W 0446	17.9	545	13 W 0147	1.1	33	27 Tu 0050	1.5	46
1236	0.5	14	1234	0.8	23	0513	19.1	583	0516	18.6	567
1658	18.1	552	1709	17.4	529	1338	0.5	15	1315	1.0	30
●			○			1754	18.8	573	1730	18.8	574
13 Su 0036	1.1	34	28 M 0026	1.3	41	13 W 0612	18.8	573	28 Th 0127	1.5	47
0509	19.4	590	0513	18.3	558	1409	0.6	18	0545	18.7	569
1319	0.4	12	1305	0.8	23	1829	18.6	568	1345	1.0	29
1738	18.5	563	1730	17.8	543	1802	19.1	581	1802	19.1	581
14 M 0119	1.0	32	29 Tu 0059	1.4	42	14 Th 0223	1.2	37	14 W 0050	1.4	44
0550	19.3	589	0538	18.4	562	0651	18.2	555	0516	18.5	563
1358	0.4	12	1335	0.8	25	1437	0.8	23	1338	1.1	33
1818	18.5	565	1757	18.1	552	1908	18.2	556	1802	18.8	573
15 Tu 0200	1.1	35	30 W 0135	1.5	45	15 F 0255	1.5	45	15 Th 0204	1.4	44
0633	18.9	577	0607	18.4	561	0731	17.4	530	0629	18.0	550
1434	0.5	14	1407	0.8	24	1500	1.1	35	1403	1.1	34
1900	18.3	559	1829	18.3	557	1947	17.6	536	1838	18.5	563
31 Th 0213	1.5	47									
0642	18.1	553									
1438	0.7	22									
1907	18.3	559									

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Rangoon, Burma, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0311	1.3	41	16 Tu 0252	1.7	51	1 W 0339	1.8	56	1 Sa 0459	3.1	96
0742	17.4	530	0755	15.9	484	0838	16.9	515	1031	17.0	519
1459	1.8	56	1428	2.8	84	1526	3.2	99	1716	4.9	148
2002	18.3	559	1958	16.6	506	2050	17.5	533	2246	16.3	497
2 Tu 0345	1.6	49	17 W 0312	2.3	69	2 Th 0424	2.4	73	2 Su 0559	3.8	117
0839	16.2	494	0837	14.9	453	0950	16.0	488	1142	16.7	508
1536	2.8	85	1456	3.9	119	1623	4.2	129	1840	5.0	153
2056	17.0	517	2040	15.4	468	2201	16.2	493	2222	16.2	493
3 W 0428	2.4	72	18 Th 0342	3.2	99	3 F 0525	3.1	93	3 M 0007	15.6	476
0949	14.9	454	0935	13.9	425	1111	15.5	471	0708	4.2	129
1630	4.0	123	1540	5.2	157	1747	4.9	149	1254	16.8	511
● O 2207	15.4	470	● O 2141	14.2	433	2328	15.3	465	2003	4.7	142
4 Th 0543	3.1	96	19 F 0442	4.2	128	4 Sa 0646	3.3	102	4 Tu 0126	15.7	478
1129	14.1	429	1054	13.5	413	1235	15.6	475	0815	4.3	131
1807	5.0	151	1704	5.9	181	1926	4.7	142	1352	17.3	527
2355	14.5	443	2306	13.6	415	2326	14.9	454	2113	4.1	124
5 F 0725	3.1	95	20 Sa 0617	4.5	137	5 Su 0100	15.2	464	5 W 0226	16.2	494
1312	14.5	442	1218	14.0	426	0803	3.2	97	0914	4.2	127
1959	4.5	138	1858	5.6	172	1346	16.3	498	1436	17.9	545
6 Sa 0133	15.0	458	21 Su 0039	14.0	427	2049	3.8	117	2212	3.6	109
0847	2.4	74	0749	4.0	122	6 M 0209	15.9	485	21 Th 0312	16.8	511
1422	15.7	480	1330	15.1	460	0907	2.9	87	0921	3.7	114
2120	3.4	104	2029	4.5	138	1436	17.3	528	1429	19.2	585
7 Su 0234	16.2	493	22 M 0152	15.1	460	2154	3.1	93	2226	3.3	101
0953	1.8	55	0900	3.2	97	21 Tu 0050	15.4	468	21 F 0216	17.1	521
1507	17.1	520	1424	16.4	501	0752	3.7	113	0921	3.7	114
2224	2.5	75	2138	3.4	104	1324	17.1	520	1514	18.4	560
8 M 0319	17.3	526	23 Tu 0243	16.3	497	2048	3.7	114	2301	3.2	99
1047	1.5	46	1000	2.5	75	7 Tu 0258	16.7	510	0351	17.3	526
1542	18.1	551	1505	17.7	539	1003	2.6	80	0901	3.1	95
2315	2.0	60	2235	2.6	79	1512	18.1	552	1551	18.7	571
9 Tu 0356	18.0	548	24 W 0323	17.4	530	2246	2.6	79	2343	3.1	94
1131	1.5	45	1052	2.0	60	1129	2.5	77	● O 0426	17.6	537
1610	18.7	569	1538	18.7	570	1615	18.9	575	1130	3.4	104
2357	1.8	55	2324	2.2	66	2330	2.5	75	1627	19.0	579
10 W 0428	18.3	557	25 Th 0357	18.1	553	10 Sa 0006	2.4	74	● O 0426	17.6	537
1207	1.6	48	1135	1.7	52	0443	17.8	544	24 Sa 0331	18.0	549
1638	18.9	577	1609	19.5	593	1201	2.5	75	0506	2.4	73
● O 1647	19.0	578	1647	19.0	578	1647	19.0	578	1543	19.8	603
11 Th 0033	1.9	57	26 F 0009	2.0	62	11 Tu 0040	2.4	73	2344	2.5	76
0500	18.3	558	0431	18.6	567	0517	17.8	544	9 Su 0021	3.0	91
1236	1.7	51	1214	1.6	50	1228	2.3	71	0500	17.8	544
1708	19.0	578	1643	19.9	608	1720	19.0	580	1203	3.1	96
12 F 0106	1.9	58	27 Sa 0053	2.0	61	10 Tu 0012	18.6	566	1702	19.3	587
0535	18.1	552	0507	18.8	573	0443	17.8	544	24 M 0020	3.1	94
1303	1.6	50	1251	1.6	50	1201	2.5	75	0439	19.2	586
1741	18.9	576	1722	20.2	616	1753	19.0	579	1214	3.2	97
13 Sa 0138	1.8	55	28 Su 0137	1.9	57	10 Sa 0006	2.4	74	1648	21.0	639
0610	17.8	543	0550	18.7	571	0443	17.8	544	25 W 0020	3.1	92
1328	1.6	49	1328	1.7	53	1201	2.5	75	0524	19.6	597
1815	18.7	570	1807	20.1	613	1722	20.2	616	1259	3.1	96
14 Su 0209	1.6	49	29 M 0220	1.7	52	1753	19.0	579	1732	21.1	642
0644	17.4	530	0641	18.4	561	27 Tu 0112	2.2	68	26 W 0154	2.9	88
1350	1.6	50	1406	2.0	60	0550	17.7	541	0610	19.7	601
1850	18.3	559	1857	19.7	599	1255	2.2	66	1342	3.2	99
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1320	2.2	66	1804	19.4	590
0720	16.7	510	0735	17.7	541	1827	18.8	573	1820	20.9	637
1409	2.0	61	1443	2.5	75	1934	17.6	535	1802	19.6	598
1924	17.7	538	1949	18.7	571	2033	18.5	565	2026	17.5	532
13 F 0106	1.9	58	27 W 0249	2.1	63	31 Tu 0412	2.5	77	27 Th 0235	2.8	84
0535	18.1	552	0724	18.6	566	0249	2.1	63	0700	19.7	599
1303	1.6	50	1432	3.0	90	0825	18.1	552	1423	3.4	105
1741	18.9	576	1901	18.3	558	1934	19.5	595	1809	20.4	623
13 Sa 0138	1.8	55	14 Tu 0210	1.8	55	1934	19.5	595	1909	20.4	623
0610	17.8	543	0700	17.2	524	2033	18.5	565	2026	17.5	532
1328	1.6	49	1344	2.4	74	31 F 0412	2.5	77	29 W 0350	3.1	93
1815	18.7	570	1901	18.3	558	0927	17.6	535	0846	18.9	577
14 Su 0209	1.6	49	1934	17.6	535	1608	4.2	128	1550	4.4	134
0644	17.4	530	1949	18.7	571	2136	17.4	530	2055	18.5	565
1350	1.6	50	1949	18.7	571	31 F 0412	2.5	77	29 M 0350	3.1	93
1850	18.3	559	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7	538	1949	18.7	571	0927	17.6	535	0846	18.9	577
15 M 0233	1.5	45	30 Tu 0300	1.6	50	1608	4.2	128	1550	4.4	134
0720	16.7	510	0735	17.7	541	2136	17.4	530	2055	18.5	565
1409	2.0	61	1443	2.5	75	31 F 0412	2.5	77	29 M 0350	3.1	93
1924	17.7</										

Rangoon, Burma, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0510 1038 1747 2305	h m 4.6 17.5 5.7 16.1	ft 141 533 173 490	cm 161 533 173 490	16 Tu 0406 0913 1633 2134	h m 4.1 18.6 4.9 17.2	ft 126 568 150 524	cm 126 568 150 524	1 Th 0616 1202 1940 1859	h m 7.6 16.2 6.6 5.8	ft 231 495 202 176	cm 231 495 202 176
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		16 F 0016 0720 1245 2038	h m 6.3 6.6 5.2 5.2	ft 193 532 505 179		0137 0836 1354 2128	h m 15.6 7.8 16.6 5.9	ft 477 238 505 179
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		17 Sa 0016 0720 1245 2038	h m 16.2 6.6 17.7 5.2	ft 494 200 539 159		0237 0941 1444 2226	h m 16.8 6.7 17.7 5.2	ft 512 203 540 159
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		17 M 0237 0941 1444 2226	h m 16.8 6.7 17.7 5.2	ft 512 203 540 159		0141 0855 1355 2140	h m 17.3 5.9 18.2 4.4	ft 527 180 556 134
2 Tu 0607 1147 1909	5.5 16.9 5.8	169 515 176	169 515 176	2 W 0452 1012 1748 2255	0102 0746 1324 2059	15.2 7.7 16.5 5.9	464 234 504 181	2 M 0016 0720 1245 2038	0016 0720 1245 2038	16.2 6.6 17.7 5.2	494 200 539 159
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		2 F 0320 1006 1510 2302	h m 17.1 6.1 18.3 4.7	ft 522 182 508 138		0237 0941 1444 2226	h m 16.8 6.7 17.7 5.2	ft 512 203 540 159
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		2 Sa 0145 0855 1358 2158	h m 17.1 6.0 18.7 4.5	ft 522 182 571 138		0320 1006 1522 2315	h m 17.9 5.6 18.8 4.8	ft 547 172 573 147
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		2 O 0351 1116 1551 2354	h m 17.1 5.0 19.9 4.7	ft 522 152 598 142		0320 1101 1522 2335	h m 19.9 4.2 20.4 3.8	ft 606 127 622 117
3 W 0030 0718 1300 2027	15.5 6.0 16.9 5.4	472 184 515 164	472 184 515 164	3 Th 0605 1134 1922	0214 0904 1424 2205	15.9 7.0 17.4 5.2	486 214 530 158	3 Tu 0145 0855 1358 2158	0145 0855 1358 2158	17.1 6.0 18.7 4.5	522 182 571 138
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		3 Sa 0320 1006 1522 2315	h m 17.9 6.0 18.8 4.8	ft 547 182 573 147		0320 1101 1522 2335	h m 19.9 4.2 20.4 3.8	ft 606 127 622 117
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		3 O 0351 1116 1551 2354	h m 18.9 5.0 19.6 4.7	ft 577 152 598 142		0354 1149 1600	h m 20.6 3.9 20.9	ft 629 120 636
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		4 W 0034 0733 1259 2052	h m 16.3 5.4 18.2 4.6	ft 515 164 555 140		0351 1116 1551 2354	h m 18.9 5.0 19.6 4.7	ft 577 152 598 142
5 F 0244 0931 1449 2234	16.3 5.6 17.9 4.2	496 170 547 129	496 170 547 129	5 M 0154 0858 1408 2209	0349 1055 1548 2346	17.1 5.3 19.1 4.1	520 162 583 125	5 Tu 0334 1110 1536 2357	0334 1110 1536 2357	19.6 4.5 20.9 4.0	597 137 636 122
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		5 Sa 0415 1151 1617 2020	h m 19.7 4.7 20.2 615	ft 601 142 615 ●		0415 1151 1617 2020	h m 19.7 4.7 20.2 615	ft 601 142 615 ●
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		6 O 0025 0436 1225 1642	h m 4.6 20.2 4.6 20.5	ft 140 617 141 624		0050 0453 1307 1711	h m 4.2 21.0 4.2 20.6	ft 127 639 128 629
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		6 W 0025 0436 1225 1642	h m 4.6 20.2 4.6 20.5	ft 140 617 141 624		0050 0453 1307 1711	h m 4.2 21.0 4.2 20.6	ft 127 639 128 629
7 Su 0410 1111 1609	17.7 4.5 19.1	538 136 583	538 136 583	7 M 0345 1114 1549	0021 0446 1207 ●	4.4 19.3 4.6 20.2	133 587 139 616	7 Th 0041 0444 1243 1650	0041 0444 1243 1650	4.1 20.9 4.2 21.5	124 638 129 656
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		7 Sa 0055 0459 1300 1709	h m 4.6 20.5 4.7 20.5	ft 141 626 143 626		0055 0459 1300 1709	h m 4.6 20.5 4.7 20.5	ft 141 626 143 626
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		7 O 0055 0459 1300 1709	h m 4.6 20.5 4.7 20.5	ft 141 626 143 626		0122 0527 1343 1750	h m 4.3 20.7 4.3 20.2	ft 130 631 131 615
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		8 W 0050 0453 1307 1711	h m 4.2 21.0 4.2 20.6	ft 141 626 142 624		0151 0606 1418 1830	h m 4.3 20.3 4.3 19.6	ft 127 639 128 629
8 M 0005 0443 1148 ●	3.7 18.2 4.1 19.6	113 554 124 596	113 554 124 650	8 Th 0011 0427 1206 ●	0050 0506 1239 1709	4.4 19.7 4.6 20.4	135 599 139 623	8 Tu 0118 0517 1323 1729	0118 0517 1323 1729	4.2 21.1 4.3 21.3	127 642 132 650
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		8 Sa 0152 0553 1402 1810	h m 4.2 20.9 4.5 20.9	ft 129 637 137 636		0126 0528 1339 1744	h m 4.6 20.7 4.7 20.4	ft 140 632 144 623
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		8 O 0158 0560 1417 1823	h m 4.5 20.7 4.6 20.1	ft 137 632 140 <br;>614</br;>		0151 0606 1418 1830	h m 4.3 20.3 4.3 19.6	ft 131 619 131 596
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		9 W 0058 0506 1251 1711	h m 3.7 19.9 3.8 21.5	ft 112 620 117 656		0158 0560 1417 1823	h m 4.5 20.7 4.6 20.1	ft 137 632 140 614
10 W 0108 0538 1248 1739	3.6 18.8 3.9 20.0	111 574 118 609	111 574 118 609	10 Th 0139 0544 1334 1754	0149 0558 1347 1808	4.5 20.1 4.8 20.3	136 612 614 619	10 Tu 0224 0634 1439 1854	0224 0634 1439 1854	4.3 20.5 4.6 20.2	131 626 141 615
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		10 Sa 0149 0558 1347 1808	h m 4.5 20.1 4.8 20.3	ft 136 612 614 619		0229 0649 1452 1906	h m 4.4 20.5 4.4 19.6	ft 135 626 144 596
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		10 O 0224 0634 1439 1854	h m 4.3 20.5 4.6 20.2	ft 131 626 141 615		0241 0726 1508 1952	h m 4.8 18.8 4.6 17.6	ft 146 574 141 536
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		11 W 0217 0626 1415 1838	h m 3.6 20.5 4.1 21.0	ft 109 626 124 639		0300 0733 1525 1955	h m 4.6 20.0 4.5 18.6	ft 139 610 136 567
12 F 0208 0635 1354 1837	3.6 19.0 4.2 19.7	111 580 129 600	111 580 129 600	12 M 0252 0710 1454 1925	0250 0710 1454 1925	4.2 20.3 4.3 20.2	129 618 132 616	12 Tu 0317 0800 1536 2024	0317 0800 1536 2024	5.0 19.1 5.4 165	155 580 165 546
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		12 Sa 0253 0717 1424 1844	h m 4.5 19.9 4.7 20.0	ft 137 608 149 611		0331 0821 1502 2055	h m 5.1 19.0 4.9 17.4	ft 155 580 160 529
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		12 O 0253 0717 1424 1844	h m 4.5 19.9 4.9 20.2	ft 137 608 149 585		0331 0821 1502 2055	h m 5.1 19.0 4.9 17.4	ft 155 580 160 529
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		12 W 0255 0717 1424 1844	h m 4.5 19.9 4.9 20.2	ft 137 608 149 585		0325 0853 1606 2149	h m 6.8 16.2 6.3 15.2	ft 206 495 192 462
13 Sa 0239 0709 1428 1913	3.6 19.1 4.4 19.3	110 582 134 589	110 582 134 589	13 Tu 0323 0758 1531 2015	0319 0758 1531 2015	4.3 19.7 4.8 19.2	130 601 146 584	13 Th 0338 0845 1606 ●	0338 0845 1606 ●	5.9 17.8 6.2 16.4	181 544 189 501
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		13 Sa 0323 0758 1531 2015	h m 3.9 19.7 4.8 19.2	ft 119 601 146 584		0414 0921 1704 2221	h m 6.0 17.7 5.6 16.2	ft 182 541 172 495
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		13 O 0323 0758 1531 2015	h m 3.9 19.7 4.8 19.2	ft 119 601 146 584		0414 0921 1704 2221	h m 6.0 17.7 5.6 16.2	ft 182 541 172 495
	0539 1104 17.5 17.2	16.2 5.8 17.7 15.9	193 532 505 179		13 W 0323 0758 1531 2015	h m 3.9 19.7 4.8 19.2	ft 119 601 146 584		0414 0921 1704 2221	h m 6.0 17.7 5.6 16.2	ft 182 541 172 495
14 Su 0307 0747 1503 1952	3.6 19.1 4.5 18.8	110 582 137 574	110 582 137 574	14 M 0352 0847 1608 2106	0348 0840 1613 ●	4.5 18.9 5.4 17.8	1				

Rangoon, Burma, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0153	16.5	502	16 W 0223	18.6	566	1 F 0235	18.3	558	1 Su 0241	18.4	560
0902	6.5	198	0952	4.0	121	1009	3.5	106	1028	1.8	56
1408	16.7	510	1437	18.5	563	1456	17.7	541	1511	17.3	526
2136	5.3	161	2212	3.4	105	2224	3.3	102	2232	2.1	64
2 W 0240	17.7	541	17 Th 0302	19.6	597	2 Sa 0312	19.3	587	2 M 0325	19.2	584
0959	5.3	162	1046	3.3	102	1100	2.9	88	1122	1.5	46
1450	17.9	546	1516	19.3	588	1530	18.6	566	1551	18.0	548
2229	4.7	142	2302	3.3	101	2311	2.9	89	2325	1.8	55
3 Th 0315	18.9	575	18 F 0335	20.2	616	3 Su 0345	19.9	608	3 Tu 0405	19.8	602
1046	4.5	136	1131	3.1	96	1144	2.7	81	1211	1.4	43
1524	18.9	576	1551	19.7	600	1602	19.1	582	1629	18.5	563
2314	4.2	129	2344	3.4	104	● 2353	2.8	84	●		
4 F 0343	19.7	601	19 Sa 0405	20.4	622	4 M 0419	20.4	622	4 W 0012	1.7	53
1128	4.0	123	1210	3.2	99	1227	2.6	80	0445	20.0	611
1552	19.6	598	1624	19.7	601	1638	19.4	590	1258	1.4	43
2352	4.0	122	○			1727	18.1	551	1710	18.7	570
5 Sa 0408	20.3	620	20 Su 0018	3.5	108	5 Tu 0033	2.8	84	5 Th 0055	1.8	55
1206	3.9	119	0436	20.3	619	0454	20.6	628	0527	20.1	612
1619	20.0	610	1246	3.4	103	1311	2.6	80	1343	1.4	42
●			1659	19.5	594	1716	19.4	590	1757	18.7	569
6 Su 0025	3.9	119	21 M 0049	3.6	110	6 W 0110	2.9	87	6 F 0138	2.0	61
0436	20.7	631	0511	20.1	612	0536	20.5	625	0613	19.8	602
1245	3.9	119	1321	3.4	103	1353	2.6	78	1426	1.3	41
1649	20.1	614	1736	19.1	583	1801	19.1	582	1848	18.4	561
7 M 0059	3.9	119	22 Tu 0118	3.6	109	7 Th 0148	3.1	93	7 Sa 0220	2.3	70
0508	20.9	637	0547	19.8	602	0622	20.1	612	0643	18.2	554
1326	3.9	119	1353	3.3	100	1434	2.5	77	1425	2.0	60
1726	20.0	611	1814	18.7	569	1853	18.6	566	1915	17.0	517
8 Tu 0133	3.9	119	23 W 0145	3.6	110	8 F 0227	3.4	104	8 Sa 0209	3.1	96
0547	20.8	635	0626	19.3	587	0711	19.3	587	0718	17.3	528
1406	3.8	115	1421	3.2	97	1515	2.7	81	1450	2.3	71
1808	19.7	601	1853	18.0	549	1953	17.8	543	1953	16.3	498
9 W 0207	4.0	121	24 Th 0208	3.9	118	9 Sa 0308	4.0	121	9 M 0352	3.2	99
0632	20.5	624	0701	18.5	564	0809	18.1	551	0755	16.3	497
1444	3.7	112	1445	3.3	101	1556	3.1	93	1515	3.0	90
1857	19.1	581	1932	17.2	524	2101	17.0	518	2038	15.8	481
10 Th 0242	4.3	130	25 F 0229	4.5	137	10 M 0402	4.7	143	25 W 0316	4.7	142
0720	19.7	600	0738	17.4	531	0917	16.8	512	0841	15.3	465
1519	3.8	115	1504	3.8	117	1651	3.6	110	1551	3.7	114
1952	18.1	553	2016	16.2	494	● 2219	16.4	500	2130	15.4	469
11 F 0319	4.9	148	26 Sa 0255	5.5	167	11 M 0515	5.2	159	26 Tu 0411	5.2	160
0813	18.5	564	0822	16.1	491	1039	15.7	480	0942	14.4	440
1559	4.3	130	1533	4.7	144	1804	4.0	121	1646	4.4	133
2059	17.0	519	2112	15.3	467	2344	16.3	497	● 2234	15.3	466
12 Sa 0407	5.7	175	27 Su 0338	6.6	200	12 Tu 0650	5.0	153	27 W 0531	5.3	162
0920	17.1	521	0922	14.9	455	1211	15.5	472	1059	14.0	428
1659	5.0	151	1625	5.7	173	1925	3.8	117	1800	4.5	137
● 2227	16.2	493	● 2225	14.9	453	2346	15.6	476	1948	3.4	105
13 Su 0527	6.5	198	28 M 0456	7.2	220	13 W 0102	16.9	515	28 Th 0704	4.6	141
1054	16.1	491	1043	14.3	435	0818	4.1	125	1224	14.4	439
1832	5.2	157	1753	6.0	184	1330	16.0	489	1919	4.1	124
			2344	15.1	460	2034	3.4	104			
14 M 0008	16.3	496	29 Tu 0641	6.9	210	14 Th 0159	17.8	543	29 F 0056	16.4	501
0714	6.2	189	1210	14.5	443	0927	3.1	95	0823	3.5	107
1236	16.3	496	1919	5.6	171	1426	16.9	516	1334	15.3	466
2002	4.6	139				2133	3.1	93	2030	3.3	101
15 Tu 0128	17.3	527	30 W 0056	16.0	488	15 F 0242	18.6	568	30 Sa 0153	17.4	531
0843	5.1	155	0808	5.7	174	1024	2.5	75	0931	2.5	76
1348	17.3	528	1322	15.5	472	1507	17.7	538	1427	16.3	498
2113	3.9	118	2030	4.8	147	2224	2.9	87	2135	2.6	79
			31 Th 0151	17.2	524						
			0914	4.5	136						
			1414	16.7	508						
			2131	4.0	121						

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sagar, Hooghly River, India, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0632	3.8	116	16 W 0039	16.0	489	1 F 0036	15.8	481	16 F 0104	14.3	435
1209	14.9	454	W 0720	3.2	99	722	2.5	76	734	3.6	109
1832	3.9	118	1257	15.1	460	1303	15.4	468	1320	14.0	428
			1925	4.0	122	1927	3.3	102	1944	4.8	145
2 W 0019	15.7	480	17 Th 0114	15.2	463	0112	15.3	466	0135	13.3	406
0706	3.9	118	0748	3.9	118	0754	2.8	86	0759	4.4	133
1246	14.8	451	1330	14.4	440	1341	14.9	455	1353	13.1	399
1905	4.2	129	1954	4.9	148	2006	4.0	123	2017	5.8	176
3 Th 0054	15.5	472	18 F 0148	14.3	435	0153	14.5	443	0211	12.2	372
0739	4.0	121	0815	4.5	138	0831	3.4	103	0836	5.3	163
1323	14.7	448	1405	13.7	417	1426	14.2	434	1439	12.0	365
1942	4.7	143	2027	5.8	176	2057	4.9	149	2109	6.8	208
4 F 0134	15.1	461	19 W 0224	13.3	404	0245	13.5	410	0306	11.0	334
0814	4.1	126	0847	5.2	160	0924	4.2	127	0937	6.3	193
1405	14.5	441	1448	12.8	391	1534	13.4	408	1619	11.2	340
2028	5.2	159	2110	6.7	205	2207	5.7	175	2253	7.5	229
5 Sa 0219	14.5	443	20 Su 0313	12.1	370	0403	12.3	376	0504	10.2	311
0858	4.4	134	0933	6.1	185	1044	4.9	149	1136	6.7	204
1459	14.1	431	1556	12.0	366	1716	13.1	400	1830	11.5	350
2126	5.8	176	2222	7.5	229	2354	6.0	182			
6 Su 0316	13.8	420	21 M 0429	11.2	341	0550	12.0	366	0110	6.9	210
0958	4.8	146	1055	6.7	203	1229	4.9	149	0708	10.7	325
1614	13.8	422	1740	11.7	358	1848	13.8	421	1322	6.0	182
2242	6.2	188							1944	12.6	383
7 M 0438	13.1	399	22 Tu 0022	7.5	229	0144	5.2	158	0226	5.7	174
1116	5.0	153	0612	10.9	332	0725	12.7	386	0810	11.8	359
1743	14.0	428	1241	6.5	198	1403	4.1	125	1431	5.0	151
			1919	12.4	378	2000	15.0	456	2030	13.7	417
8 Tu 0016	6.0	184	23 W 0155	6.7	205	0303	3.9	120	0316	4.6	139
0607	13.1	398	0744	11.5	350	0832	13.8	422	0850	12.9	392
1247	4.7	144	1401	5.7	174	1515	3.1	94	1521	4.0	122
1901	14.8	452	2016	13.4	407	2058	16.0	489	2105	14.6	445
9 W 0148	5.3	161	24 Th 0256	5.7	174	0357	2.8	85	0353	3.6	110
0725	13.6	416	0835	12.3	376	0923	14.9	455	0923	13.8	422
1409	4.0	122	1500	4.8	147	1609	2.3	69	1600	3.2	99
2006	15.9	484	2058	14.2	434	2144	16.8	511	2135	15.3	467
10 Th 0303	4.3	130	25 F 0340	4.8	146	0441	2.0	61	0424	2.8	86
0829	14.5	443	0913	13.2	401	1006	15.7	478	0950	14.8	450
1517	3.2	97	1545	4.1	124	1652	1.8	54	1632	2.6	79
2102	16.8	512	2132	14.9	455	2226	17.1	521	2204	15.9	485
11 F 0401	3.3	100	26 Sa 0414	4.1	124	0517	1.6	49	0453	2.1	64
0924	15.4	469	0944	13.9	423	1044	16.1	490	1019	15.6	475
1613	2.5	76	Sa 1620	3.5	106	1729	1.7	53	1702	2.1	63
2152	17.4	531	2201	15.5	471	2303	16.9	516	2232	16.3	498
12 Sa 0447	2.6	78	27 Su 0444	3.5	106	0550	1.6	50	0523	1.5	47
1013	16.0	488	1012	14.5	442	1119	16.1	490	1052	16.2	494
1659	2.1	64	1650	3.0	91	1802	2.0	62	1734	1.7	53
● 2237	17.6	537	○ 2228	15.8	483	2336	16.5	502	2304	16.5	503
13 Su 0531	2.2	68	28 M 0513	3.0	90	0619	2.0	60	0555	1.2	38
1058	16.2	495	1044	15.1	459	1151	15.8	482	1127	16.5	503
1740	2.1	64	1720	2.6	80	1830	2.6	78	1806	1.7	53
2319	17.4	530	2257	16.1	491				2338	16.4	499
14 M 0611	2.3	70	29 Tu 0544	2.5	77	0007	15.8	482	0525	1.7	53
1141	16.1	491	1117	15.5	471	0646	2.4	74	1020	16.0	488
1818	2.5	77	1751	2.5	75	1223	15.4	468	1708	2.0	62
			2328	16.2	493	1855	3.2	97	● 2238	16.4	500
15 Tu 0000	16.8	512	30 W 0618	2.3	71	0037	15.1	460	0452	1.7	53
0648	2.7	82	1152	15.6	476	0710	3.0	90	0452	1.9	59
1220	15.6	477	1822	2.6	78	1251	14.8	450	1023	17.1	522
1854	3.2	98	1853	2.9	87	1919	3.9	119	1735	2.3	69
16 F 0651	2.3	71	31 Th 0002	16.1	490				2307	16.0	489
1227	15.6	475	1227	15.6	475				2307	16.8	513
1853	2.9	87	1853	2.9	87				14 0545	2.0	60
									1119	16.0	487
17 F 0651	2.3	71							1800	2.6	80
1227	15.6	475							2334	15.6	474
1853	2.9	87							1119	16.0	487
									1119	16.0	487
18 F 0609	2.3	69							1146	15.6	477
1139	17.2	525							1824	3.1	94
1822	2.1	65							1824	2.1	65
2355	16.1	491							1824	16.1	491
31 Su 0637	1.6	50							1220	16.6	505
1220	16.6	505							1859	2.9	87
1859	2.9	87									

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sagar, Hooghly River, India, 2013

Times and Heights of High and Low Waters

April				May				June								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 M	0036	15.2	464	16 Tu	0028	13.8	421	1 W	0117	14.4	440					
0712	2.6	78	0650	4.3	131	0742	4.5	137	0045	13.9	423					
1303	15.6	475	1245	14.4	438	1349	15.0	458	0701	5.5	167					
1940	3.8	117	1917	5.4	164	2029	5.2	158	1300	14.7	448					
									1936	6.0	183					
2 Tu	0122	14.1	430	17 W	0103	13.0	397	2 Th	0220	13.5	410					
0754	3.7	113	0722	5.2	159	0841	5.7	173	17 F	0128	13.4	408				
1354	14.4	439	1323	13.5	413	1501	14.1	430	0742	6.3	191					
2032	4.9	150	1956	6.2	189	○	2141	5.8	177	1345	14.2	432				
									2024	6.4	196					
3 W	0219	12.9	393	18 Th	0146	12.2	373	3 F	0341	12.8	391	18 Sa	0224	13.0	397	
0850	5.0	151	0805	6.2	188	1005	6.4	196	0840	6.9	210					
1509	13.3	406	1414	12.8	390	1622	13.7	418	1446	13.7	419					
○	2148	5.8	177	2306	5.9	181	○	2130	6.6	201						
4 Th	0352	11.9	364	19 F	0256	11.5	352	4 Sa	0510	12.9	392	19 Su	0341	13.0	395	
1020	5.9	179	0919	6.9	211	1138	6.5	197	0958	7.2	219					
1649	13.0	395	1544	12.3	376	1741	13.8	420	1608	13.6	415					
2338	5.8	178	2230	7.0	213				2249	6.4	194					
5 F	0539	12.0	365	20 Sa	0447	11.5	352	5 Su	0021	5.6	172	20 M	0511	13.5	411	
1209	5.8	176	1104	7.0	214	0635	13.5	412	1127	6.9	211					
1819	13.5	411	1726	12.7	387	1259	6.0	184	1728	13.9	425					
						1851	14.2	433								
6 Sa	0109	5.1	156	21 Su	0010	6.3	193	6 M	0130	5.2	159	21 Tu	0009	5.7	174	
0711	12.9	394	0620	12.4	379	0735	14.4	438	0622	14.5	442					
1338	5.0	152	1240	6.3	193	1408	5.4	165	1245	6.2	188					
1927	14.4	438	1836	13.5	413	1944	14.7	447	1834	14.6	446					
7 Su	0220	4.2	128	22 M	0126	5.3	162	7 Tu	0228	4.7	144	22 W	0120	4.9	148	
0807	14.1	429	0721	13.7	418	0818	15.1	461	0719	15.7	478					
1444	4.1	125	1349	5.3	163	1458	4.9	149	1352	5.2	160					
2017	15.1	461	1931	14.5	442	2027	15.0	458	1930	15.5	471					
8 M	0311	3.4	105	23 Tu	0224	4.2	129	8 W	0312	4.3	131	23 Th	0221	4.0	121	
0848	15.0	457	0805	15.0	457	0851	15.7	479	0805	16.8	513					
1531	3.5	106	1442	4.4	133	1536	4.5	138	1446	4.4	133					
2100	15.6	476	2014	15.4	469	2105	15.3	466	2019	16.3	496					
9 Tu	0351	3.0	90	24 W	0310	3.2	99	9 Th	0346	4.0	121	9 Sa	0417	3.1	95	
0922	15.6	477	0843	16.2	494	0923	16.1	491	0847	17.8	544					
1608	3.1	96	1525	3.5	107	1606	4.3	132	1533	3.6	110					
2136	15.9	484	2053	16.2	494	2137	15.5	471	2105	17.0	517					
10 W	0421	2.7	82	25 Th	0349	2.4	72	10 F	0415	3.7	113	25 Sa	0356	2.5	75	
0951	16.0	489	0918	17.2	525	0951	16.4	499	0930	18.5	565					
1638	3.1	94	1605	2.9	87	1632	4.3	130	1617	3.1	95					
●	2207	15.9	484	2132	16.8	513	●	2208	15.5	472	2151	17.4	530			
11 Th	0447	2.6	79	26 F	0425	1.7	52	11 Sa	0440	3.6	109	26 M	0437	2.2	66	
1018	16.2	494	0954	17.9	547	1018	16.4	501	1012	18.8	573					
1703	3.1	96	1643	2.4	73	1658	4.3	130	1703	2.9	89					
2236	15.7	478	2212	17.1	522	2236	15.4	470	2238	17.4	529					
12 F	0510	2.6	80	27 Sa	0500	1.4	43	12 Su	0504	3.5	108	27 W	0517	2.3	70	
1045	16.2	494	1033	18.2	555	1045	16.4	499	1058	18.5	565					
1728	3.3	102	1723	2.3	71	1724	4.4	134	1750	3.1	96					
2302	15.4	469	2253	17.0	518	2305	15.2	464	2325	16.9	515					
13 Sa	0534	2.8	84	28 Su	0537	1.6	49	13 M	0528	3.7	112	28 Tu	0559	2.9	89	
1113	16.0	488	1116	17.9	546	1117	16.1	492	1148	17.8	544					
1752	3.6	111	1804	2.7	82	1752	4.6	140	1837	3.7	112					
2330	15.0	457	2338	16.4	500	2336	14.9	453								
14 Su	0556	3.0	92	29 M	0615	2.3	69	14 Tu	0556	4.1	125	29 W	0644	3.9	118	
1142	15.6	476	1202	17.2	523	1149	15.7	480	1240	16.9	516					
1817	4.0	123	1848	3.4	103	1824	5.0	152	1926	4.4	134					
2358	14.5	441														
15 M	0622	3.5	108	15 Tu	0009	14.4	439	30 W	0109	15.3	466	15 Sa	0107	14.7	448	
1212	15.1	459	0657	3.3	100	0627	4.7	144	0730	4.9	150					
1846	4.6	141	1251	16.1	492	1223	15.2	464	1336	15.9	486					
			1934	4.3	130	1858	5.5	168	2016	5.1	156					
									31 F	0206	14.5	443				
									0825	6.0	182					
									1436	15.1	460					
									2112	5.8	176					

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sagar, Hooghly River, India, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0321	14.2	433	16 0207	15.4	469	1 Th 0507	13.4	408	16 0415	14.7	449
0946	7.5	230	Tu 0827	6.5	198	1141	8.4	255	F 1045	7.2	218
1552	13.9	425	1423	15.2	462	1748	12.7	387	1656	13.8	422
2215	7.0	212	● 2101	5.7	173				2331	6.3	192
2 Tu 0436	13.8	422	17 0311	15.0	457	2 F 0004	7.6	231	17 0553	15.4	469
1108	7.9	241	W 0936	7.0	212	0646	14.0	428	Sa 1234	6.4	194
1707	13.4	408	1537	14.5	441	1313	7.6	231	1834	14.6	445
2330	7.2	218	2215	6.0	183	1915	13.4	408			
3 W 0605	14.0	427	18 0444	15.1	459	3 Sa 0125	6.8	207	18 0106	5.4	166
1230	7.7	234	Th 1107	7.0	212	0742	15.1	460	Su 0710	16.7	508
1831	13.4	408	1712	14.3	437	1413	6.6	200	1357	5.1	155
			2348	5.8	177	2006	14.3	437	1946	15.9	485
4 Th 0047	6.9	210	19 0607	15.8	483	4 Su 0225	5.8	178	19 0221	4.3	132
0712	14.7	447	F 1241	6.2	190	0825	16.0	489	M 0808	18.0	548
1344	7.0	214	1834	14.9	455	1458	5.6	171	1458	3.8	117
1933	13.9	423				2044	15.2	464	2039	17.2	523
5 F 0154	6.3	192	20 0113	5.1	154	5 M 0310	5.1	154	20 0319	3.4	103
0802	15.5	471	Sa 0717	17.0	518	0900	16.8	511	Tu 0858	18.9	576
1436	6.3	192	1359	5.2	157	1532	4.9	150	1546	3.0	90
2020	14.5	443	1944	16.0	487	2116	15.9	486	2122	18.1	552
6 Sa 0246	5.6	170	21 0223	4.1	126	6 Tu 0346	4.5	137	21 0406	2.8	85
0842	16.2	493	Su 0815	18.1	553	0928	17.3	526	W 0940	19.4	590
1517	5.6	172	1502	4.1	125	1602	4.4	135	1625	2.5	76
2059	15.2	462	2040	17.0	519	2143	16.5	503	○ 2202	18.6	567
7 Su 0327	5.0	152	22 0323	3.3	101	7 W 0415	4.1	126	22 0447	2.6	80
0917	16.7	509	M 0905	19.0	580	0953	17.6	535	Th 1020	19.3	587
1549	5.2	158	1554	3.2	98	1628	4.0	123	1701	2.5	77
2131	15.6	477	○ 2129	17.9	545	● 2210	17.0	517	2238	18.6	568
8 M 0400	4.6	139	23 0412	2.8	84	8 Th 0442	3.9	118	23 0521	2.9	89
0946	17.0	519	Tu 0951	19.5	594	1018	17.7	540	F 1055	18.7	571
1618	4.9	148	1638	2.8	84	1656	3.8	115	1734	2.9	89
● 2159	16.0	489	2215	18.3	558	2239	17.3	526	2314	18.2	556
9 Tu 0428	4.3	131	24 0456	2.7	81	9 F 0509	3.8	115	24 0554	3.5	108
1011	17.2	525	W 1035	19.4	592	1047	17.7	540	Sa 1130	17.9	546
1645	4.6	141	1721	2.7	83	1728	3.6	111	1805	3.6	109
2228	16.3	496	2258	18.3	557	2312	17.4	529	2347	17.6	536
10 W 0455	4.2	127	25 0536	3.0	90	10 Sa 0539	3.9	118	25 0623	4.4	133
1039	17.3	526	Th 1116	18.9	576	1118	17.6	535	Su 1201	17.0	517
1715	4.5	136	1801	3.1	95	1801	3.7	113	1833	4.3	132
2259	16.4	499	2340	17.8	543	2346	17.3	526			
11 Th 0522	4.2	128	26 0614	3.6	111	11 M 0609	4.2	129	26 0018	16.8	512
1109	17.2	523	1157	18.0	550	1150	17.2	525	W 0648	5.2	160
1749	4.5	136	F 1837	3.8	115	1834	3.9	120	M 1232	16.0	487
2334	16.3	497							1859	5.1	156
12 F 0554	4.5	136	27 0019	17.1	522	12 M 0020	17.0	517	11 W 0037	17.0	519
1141	16.9	516	Sa 0649	4.6	139	0641	4.7	144	0704	5.0	153
1823	4.6	139	1236	17.1	520	1226	16.8	511	1250	15.9	486
			1911	4.6	140	1905	4.3	132	1924	4.8	147
13 Sa 0009	16.1	492	28 0056	16.3	498	13 M 0055	16.6	505	12 W 0048	17.0	519
0626	4.9	150	Su 0721	5.5	169	0715	5.3	163	0716	6.9	209
1215	16.6	507	1313	16.0	488	1305	16.1	491	1306	13.9	424
1856	4.8	146	1942	5.4	165	1942	4.9	148	1926	6.9	209
14 Su 0044	15.9	486	29 0133	15.5	472	14 W 0137	15.9	485	12 M 0126	14.1	429
0658	5.4	165	M 0754	6.5	199	0801	6.1	186	0758	5.9	239
1250	16.3	497	1352	14.9	455	1354	15.2	464	1356	12.8	391
1929	5.0	153	○ 2014	6.3	191	● 2031	5.6	170	○ 2018	7.9	242
15 M 0121	15.7	479	30 0215	14.6	444	15 Th 0235	15.1	461	13 W 0229	13.0	396
0737	5.9	181	0836	7.5	229	0905	6.9	209	Sa 0915	8.6	262
1331	15.8	482	1441	13.8	421	1504	14.2	433	1545	12.0	367
2009	5.3	162	2059	7.1	217	2145	6.3	192	2157	8.6	263
16 W 0320	13.7	417	31 0320	13.7	417				13 W 0455	12.8	390
0946	8.3	254	W 0946	8.3	254				Su 1140	8.3	252
1601	12.9	393	1601	12.9	393				1755	12.5	382
2219	7.8	237	2219	7.8	237						

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Sagar, Hooghly River, India, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0127	6.9	209	16 W 0209	5.2	158	1 F 0228	5.5	168	1 Su 0239	5.1	156
0720	14.9	454	W 0744	16.5	502	F 0757	15.7	479	Sa 0807	15.3	467
1357	5.9	180	1430	4.4	134	1445	4.4	135	1530	4.5	138
1955	15.1	459	2020	16.8	513	2029	16.9	514	2113	16.8	511
2 W 0221	5.8	176	17 Th 0301	4.4	135	2 Sa 0311	4.7	143	2 M 0328	4.3	130
0801	15.9	484	0829	17.0	519	0835	16.4	501	0853	16.1	491
1442	4.9	149	1514	3.9	118	1526	3.7	112	1542	3.1	95
2030	16.2	493	2056	17.5	533	2102	17.8	542	2122	18.0	549
3 Th 0303	4.9	149	18 F 0343	4.0	123	3 Su 0347	4.0	123	3 Tu 0413	3.6	109
0834	16.6	507	0908	17.3	524	0913	17.0	519	M 0959	15.7	480
1518	4.1	125	1551	3.6	110	1601	3.1	93	1632	4.2	127
2058	17.1	521	2129	17.8	544	● 2136	18.5	564	2214	17.0	517
4 F 0337	4.2	129	19 W 0417	3.9	120	4 M 0424	3.5	108	4 W 0456	3.1	96
0904	17.2	525	0942	17.2	525	0950	17.4	531	Tu 1031	15.7	478
1550	3.4	105	1620	3.6	109	1637	2.7	81	1658	4.2	127
2125	17.9	545	○ 2158	17.9	547	2213	18.9	575	2242	16.8	512
5 Sa 0407	3.7	114	20 Su 0446	4.1	124	5 Tu 0502	3.3	101	5 W 0525	4.9	148
0934	17.7	539	1015	17.0	518	1031	17.5	532	1100	15.5	472
● 1619	3.0	90	1646	3.7	113	1713	2.7	81	1723	4.3	131
2155	18.5	564	2227	17.8	542	2254	18.7	571	2313	16.5	502
6 Su 0439	3.4	103	21 M 0512	4.4	133	6 W 0544	3.4	105	6 Th 0542	3.1	93
1006	17.9	546	1044	16.6	505	1114	17.1	521	1112	16.9	514
1650	2.7	81	1712	3.9	120	1751	3.1	95	1749	2.7	83
2228	18.8	573	2255	17.4	530	2338	18.1	552	2337	18.0	549
7 M 0512	3.3	100	22 Tu 0537	4.7	144	7 Th 0626	3.9	120	7 Sa 0027	17.2	524
1041	17.8	543	1112	16.1	490	1200	16.3	498	M 0717	3.8	117
1724	2.7	83	1737	4.3	132	1832	3.9	120	1254	15.6	476
2306	18.7	569	2326	16.9	514	2345	16.0	489	1920	4.4	133
8 Tu 0548	3.5	108	23 W 0604	5.2	158	8 F 0027	17.2	523	8 Su 0119	16.2	494
1119	17.4	529	1142	15.5	471	0712	4.7	143	0805	4.5	137
1758	3.2	97	1803	4.9	149	1252	15.4	469	1348	14.8	452
2346	18.1	551	2356	16.2	493	1918	5.0	153	2012	5.4	164
9 W 0625	4.1	126	24 Th 0630	5.7	175	9 Sa 0120	16.0	489	9 M 0216	15.2	464
1201	16.6	505	1213	14.8	450	0802	5.5	167	0855	5.2	157
1835	4.0	122	1832	5.6	172	1350	14.5	441	1447	14.1	431
10 Th 0028	17.2	523	25 F 0029	15.4	469	2014	6.1	187	○ 2114	6.3	191
0704	5.0	151	0701	6.4	195	10 M 0226	15.0	457	24 Tu 0116	14.7	448
1247	15.6	475	1249	14.0	426	0907	6.1	187	0758	5.2	157
1917	5.1	154	1906	6.6	200	1506	13.8	420	1346	13.8	420
11 F 0116	16.0	489	26 Sa 0105	14.5	442	○ 2131	7.0	214	○ 2114	6.3	191
0753	5.9	180	0740	7.2	219	11 M 0346	14.3	437	25 W 0156	14.2	433
1342	14.5	441	1334	13.2	401	1029	6.4	195	0837	5.4	165
2011	6.2	190	1949	7.5	230	1634	13.7	417	1434	13.5	411
2309	7.2	218	2309	7.2	218	2309	7.2	218	○ 2056	6.5	198
12 Sa 0221	14.9	453	27 W 0155	13.6	415	12 Tu 0508	14.2	434	26 Th 0246	13.6	415
0901	6.8	206	0838	7.8	239	1146	6.1	187	0928	5.6	172
1506	13.5	412	1445	12.5	381	1802	14.2	434	1538	13.3	405
● 2134	7.2	219	○ 2104	8.3	254	2311	7.7	234	2203	6.9	209
13 Su 0401	14.3	435	28 M 0322	13.0	396	12 W 0344	13.3	404	27 F 0354	13.1	399
1047	6.9	210	1006	8.0	244	1026	6.9	210	1036	5.7	175
1655	13.5	412	1640	12.5	381	1654	13.2	402	1702	13.5	411
2328	7.1	217	2253	8.4	257	1910	15.1	460	2326	6.8	207
14 M 0536	14.7	447	14 W 0510	13.2	403	14 F 0145	6.0	184	28 Th 0344	13.3	406
1218	6.2	188	1150	7.4	225	0722	15.0	457	1147	6.4	195
1831	14.5	442	1809	13.4	408	1359	5.2	159	1808	14.0	428
1935	15.8	481	1909	14.6	445	1959	15.9	484	1934	14.4	440
15 Tu 0057	6.2	190	30 W 0031	7.6	232	15 F 0244	5.4	165	1307	6.8	206
0650	15.6	475	0621	14.0	427	0810	15.3	467	0652	13.3	405
1331	5.2	159	1302	6.4	194	1450	4.8	147	1317	5.9	180
1935	15.8	481	1909	14.6	445	2038	16.4	501	1934	14.4	440
16 Th 0138	6.5	198	31 Th 0715	14.9	454	14 F 0036	7.0	213	1422	5.5	169
1359	5.3	163	1359	5.3	163	0618	13.8	421	1422	5.5	169
1953	15.8	482	1953	15.8	482	1300	5.6	171	2021	15.0	457

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Madras, India, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm		h m	ft	cm		h m	ft	cm		
1 Tu	0448	1.0	31	16 W	0530	0.7	20	1 F	0532	0.3	8	16 Sa
Tu	1037	3.3	101	W	1133	3.2	98	F	1140	3.1	94	Sa
	1628	1.0	32		1730	1.0	32		1733	0.8	24	
	2251	3.9	119		2343	3.5	106		2337	3.2	99	
2 W	0525	1.0	30	17 Th	0610	0.8	25	2 Sa	0611	0.3	10	2 Sa
	1119	3.3	100	Th	1221	3.0	92	Sa	1231	3.0	90	Su
	1709	1.2	37		1817	1.3	39		1822	1.0	30	
	2326	3.8	115									
3 Th	0604	1.0	30	18 F	0025	3.1	96	3 Su	0021	3.0	92	18 M
	1208	3.2	99	F	0652	1.0	30	Su	0700	0.4	13	M
	1754	1.4	43		1317	2.9	87		1333	2.8	86	
					1910	1.5	46	O	1927	1.2	36	O
4 F	0007	3.6	110	19 Sa	0112	2.8	86	4 M	0119	2.8	84	19 Tu
	0648	1.0	30	Sa	0741	1.1	34	M	0805	0.6	17	1316
	1306	3.2	97		1422	2.7	83		1450	2.8	84	
	1849	1.6	48	O	2027	1.7	51		2100	1.3	40	O
5 Sa	0055	3.4	104	20 Su	0208	2.5	77	5 Tu	0239	2.5	75	20 W
	0740	1.0	31	Su	0844	1.2	37	Tu	0928	0.6	19	0720
	1416	3.2	97		1543	2.6	80		1620	2.8	85	1436
	2001	1.7	53		2157	1.7	53		2234	1.2	37	2127
6 Su	0158	3.2	98	21 M	0322	2.3	70	6 W	0424	2.4	72	21 Th
	0846	1.0	30	M	0959	1.2	38		1045	0.6	17	0857
	1531	3.2	98		1708	2.7	82		1740	3.0	92	1613
	2129	1.8	54		2326	1.6	50					2312
7 M	0312	3.1	93	22 Tu	0459	2.2	68	7 Th	0003	1.0	29	22 F
	0957	0.9	28	Tu	1108	1.1	35		0557	2.5	76	1042
	1649	3.4	103		1811	2.8	86		1157	0.4	13	1729
	2251	1.6	50						1841	3.3	101	
8 Tu	0438	3.0	91	23 W	0034	1.4	44	8 F	0109	0.6	19	23 Sa
	1105	0.8	24	W	0608	2.3	70		0659	2.8	84	0604
	1757	3.6	110		1205	1.0	29		1259	0.3	8	1156
					1855	3.0	92		1928	3.6	109	1819
9 W	0005	1.4	42	24 Th	0119	1.2	37	9 Sa	0157	0.3	9	24 Su
	0558	3.1	94	Th	0653	2.5	75	Sa	0748	3.0	92	0649
	1205	0.6	19		1250	0.8	23		1348	0.1	3	1245
	1852	3.9	119		1927	3.2	98		2009	3.7	114	1857
10 Th	0109	1.0	32	25 F	0154	1.0	31	10 Su	0237	0.1	3	25 M
	0700	3.3	100	F	0730	2.6	80	Su	0830	3.2	97	0724
	1300	0.5	14		1327	0.6	17		1432	0.0	1	1323
	1938	4.1	126		1957	3.4	104	O	2047	3.8	116	1930
11 F	0201	0.8	23	26 Sa	0223	0.8	24	11 M	0314	0.0	0	11 Tu
	0752	3.4	105	Sa	0802	2.8	85	M	0908	3.3	100	1358
	1351	0.3	10		1359	0.4	13		1511	0.1	2	2001
	2022	4.3	131		2025	3.5	108		2122	3.7	114	
12 Sa	0249	0.5	16	27 Su	0251	0.6	19	12 Tu	0349	0.0	0	27 W
	0839	3.5	108	Su	0834	3.0	90	Tu	0945	3.3	100	0832
	1437	0.3	10		1432	0.4	11		1548	0.2	6	1434
	2103	4.3	132	O	2054	3.7	112		2157	3.6	109	2034
13 Su	0331	0.4	13	28 M	0321	0.5	15	13 W	0421	0.1	2	28 Th
	0922	3.5	108	M	0908	3.1	94		1021	3.2	97	0908
	1521	0.4	12		1504	0.3	10		1626	0.3	10	1511
	2142	4.2	129		2124	3.7	113		2231	3.3	102	2110
14 M	0413	0.4	13	29 Tu	0352	0.4	11	14 Th	0454	0.2	5	29 F
	1004	3.5	106	Tu	0943	3.2	97		1058	3.1	93	0945
	1604	0.6	18		1538	0.4	11		1702	0.5	16	1552
	2223	4.0	123		2155	3.7	112		2305	3.1	94	2148
15 Tu	0452	0.5	16	30 W	0424	0.3	9	15 F	0526	0.3	9	30 Sa
	1048	3.3	102	W	1019	3.2	98		1137	2.9	87	1026
	1647	0.8	24		1614	0.5	14		1742	0.8	23	1634
	2302	3.8	115		2227	3.6	110		2339	2.8	85	2228
				31 Th	0457	0.3	8					31 Su
				Th	1058	3.1	96					1111
					1652	0.6	18					1722
					2301	3.4	105					2315

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Madras, India, 2013

Times and Heights of High and Low Waters

April					May					June													
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time									
1 M 0532 1200 1817	0.1 3.2 0.7	ft cm 21	4 99 21	16 Tu 0527 1157 1821 2351	0.7 3.0 1.1 2.4	ft cm 20 92 34 74	20 92 34 74	1 W 0012 0617 1250 1927	3.0 0.8 3.5 1.0	ft cm 90 23 107 29	90 23 107 29	16 Th 0540 1214 1848	1.0 3.3 1.2	ft cm 31 102 37	31 102 37	1 Sa 0222 0815 1434 2110	2.9 1.4 3.3 1.1	ft cm 89 44 101 35	89 44 101 35	16 Su 0107 0652 1309 1949	2.9 1.3 3.3 1.0	ft cm 87 40 100 30	87 40 100 30
	0.9 0.4 3.1	ft cm 27	83 13 93 27	2 Tu 0007 0622 1257 1926	2.7 0.4 3.1 0.9	ft cm 27 87 101 32	27 87 101 32	2 Th 0123 0721 1358 2037	2.7 1.1 3.3 1.0	ft cm 83 33 98 39	83 33 98 39	2 Su 0336 0932 1539 2213	2.9 1.6 3.1 1.2	ft cm 89 49 95 36	89 49 95 36	17 M 0213 0752 1404 2049	2.9 1.5 3.1 1.0	ft cm 87 45 96 29	87 45 96 29				
	1.0 2.9 2.9	ft cm 30	75 22 89 30	3 W 0113 0728 1411 2049	2.5 0.7 2.9 1.0	ft cm 75 22 89 30	2.5 1.1 2.7 1.4	3 Th 0035 0643 1334 2018	2.3 1.1 2.7 1.4	ft cm 69 34 83 42	69 34 83 42	18 Sa 0138 0720 1352 2036	2.6 1.4 3.1 1.3	ft cm 79 44 95 39	91 50 91 36	18 Tu 0324 0908 1508 2152	2.9 1.6 3.0 0.9	ft cm 89 48 92 27	89 48 92 27				
4 Th 0246 0854 1536 2221	2.3 1.0 2.9	ft cm 29	69 29 87 29	19 F 0158 0751 1450 2142	2.1 1.3 2.7 1.3	ft cm 65 40 81 41	65 40 81 41	4 Sa 0413 1007 1624 2305	2.7 1.4 3.1 1.0	ft cm 83 44 96 32	83 44 96 32	19 Su 0258 0833 1457 2141	2.7 1.6 3.1 1.2	ft cm 81 49 93 37	95 48 89 22	19 W 0435 1027 1617 2255	3.1 1.5 3.0 0.7	ft cm 94 47 91 22	94 47 91 22				
	1.0 2.9 2.9	ft cm 24	71 31 89 24	5 F 0431 1027 1659 2342	2.3 1.0 2.9 0.8	ft cm 71 31 89 24	2.2 1.4 2.7 1.2	5 Sa 0350 0927 1606 2259	2.2 1.4 2.7 1.2	ft cm 67 44 82 37	67 44 82 37	20 M 0530 1127 1730	2.9 1.4 3.1	ft cm 89 43 96	86 50 93	5 W 0005 0643 1603 2242	1.1 3.3 1.5 32	ft cm 33 100 45 89	101 43 92 17				
	0.8 2.9 2.9	ft cm 37	2259 1.2 37	6 Sa 0554 1150 1805	2.6 1.0 3.1	ft cm 79 29 94	2.5 1.4 42	6 M 0003 0627 1229 1825	1.0 3.1 1.3 3.2	ft cm 75 96 40 97	75 96 40 97	21 Tu 0523 1108 1708 2339	3.1 1.5 3.1 0.8	ft cm 94 47 95 25	30 104 41 90	21 F 0048 0724 1338 1920	1.0 3.4 1.3 3.0	ft cm 30 104 41 90	109 36 96 22				
7 Su 0039 0649 1249 1855	0.6 2.9 0.8 3.2	ft cm 18	79 88 24 98	22 M 0611 1201 1805	2.8 1.2 3.0	ft cm 86 38 92	86 38 92	7 Tu 0048 0710 1317 1909	0.9 3.3 1.2 3.2	ft cm 26 102 36 97	26 102 36 97	22 W 0619 1211 1807	3.4 1.4 3.2	ft cm 104 42 98	26 107 38	22 Sa 0124 0758 1415 1954	0.9 3.5 1.2 3.0	ft cm 26 107 38 91	11 117 28 100				
	0.8 3.1 0.7 3.3	ft cm 14 96 21 101	22 23 23 101	8 M 0036 0655 1250 1849	0.7 3.2 1.0 3.2	ft cm 22 97 32 98	22 97 32 98	8 W 0124 0745 1357 1944	0.8 3.5 1.1 3.2	ft cm 23 107 33 98	18 107 35 103	23 Th 0028 0706 1306 1900	0.6 3.7 1.1 3.4	ft cm 18 113 35 103	22 110 35 92	23 Su 0158 0830 1449 2027	0.7 3.6 1.1 3.0	ft cm 22 110 35 92	6 123 20 104				
	0.3 3.3 0.6 3.3	ft cm 10 102	10 W 0113 0733 1334 1930	0.5 3.5 0.7 3.4	14 107 21 103	14 107 21 103	14 107 21 103	9 Tu 0155 0818 1432 2016	0.7 3.6 1.0 3.2	ft cm 20 111 31 98	20 111 31 98	24 F 0114 0749 1357 1949	0.4 3.9 1.0 3.5	ft cm 11 120 29 107	19 112 32 92	24 M 0230 0900 1521 2100	0.6 3.7 1.0 3.0	ft cm 19 112 32 92	5 127 15 106				
10 W 0226 0836 1447 2039	0.3 3.5 0.6 3.3	ft cm 8	25 106 17 101	25 Th 0149 0811 1415 2011	0.2 3.8 0.7 3.5	ft cm 7 115 21 107	7 115 21 107	10 F 0225 0849 1504 2047	0.6 3.7 1.0 3.2	ft cm 18 112 30 97	18 112 30 97	25 Sa 0201 0833 1446 2037	0.2 4.1 0.8 3.6	ft cm 7 126 23 109	7 112 30 92	25 M 0303 0932 1553 2134	0.6 3.7 1.0 3.0	ft cm 18 112 30 92	6 128 13 104				
	0.2 3.5 0.6 3.3	ft cm 7	25 26 26 2051	11 Th 0254 0907 1519 2110	0.2 3.5 0.6 3.2	ft cm 2 120 17 98	2 120 17 98	11 Sa 0254 0919 1536 2119	0.6 3.7 1.0 3.1	ft cm 17 112 30 95	17 112 30 95	26 Tu 0247 0917 1536 2127	0.2 4.2 0.7 3.6	ft cm 5 129 20 109	19 113 29 91	26 W 0335 1003 1628 2210	0.6 3.7 1.0 3.0	ft cm 19 113 29 91	10 125 13 101				
	0.2 3.5 0.6 3.3	ft cm 7	26 27 27 2136	12 F 0322 0938 1552 2141	0.2 3.5 0.6 3.1	ft cm 2 123 16 95	2 123 16 95	12 Sa 0325 0950 1610 2152	0.6 3.6 1.0 3.1	ft cm 17 111 30 93	17 111 30 93	27 M 0334 1002 1628 2217	0.2 4.2 0.6 3.5	ft cm 7 129 19 106	20 112 29 90	27 W 0409 1037 1705 2247	0.7 3.7 1.0 3.0	ft cm 20 112 29 90	16 120 17 97				
13 Sa 0352 1010 1626 2212	0.3 3.4 0.7 3.0	ft cm 9	28 104 1633 2223	13 M 0349 1014 1633 2223	0.0 4.0 0.5 3.4	ft cm 1 122 17 103	1 122 17 103	13 W 0357 1024 1645 2227	0.6 3.6 1.0 3.0	ft cm 18 110 31 90	18 110 31 90	28 Tu 0421 1049 1720 2309	0.4 4.1 0.7 3.3	ft cm 12 126 20 101	24 110 29 89	28 Th 0444 1112 1742 2327	0.8 3.6 1.0 2.9	ft cm 24 110 29 89	24 112 29 89				
	0.3 3.4 0.7 3.0	ft cm 9	28 29 29 2315	14 Su 0423 1044 1701 2244	0.4 3.3 1.0 2.8	ft cm 11 101 25 85	6 118 20 97	14 M 0430 1059 1725 2315	0.7 3.5 1.1 3.2	ft cm 21 107 33 97	21 107 33 97	29 F 0512 1140 1814 1909	0.6 4.0 0.8 0.9	ft cm 19 121 23 96	29 107 23 87	29 M 0042 0638 1257 1926	3.1 1.0 3.4 0.9	ft cm 93 32 104 26	93 32 104 26				
	0.5 3.1 1.0 2.6	ft cm 15	29 30 30 1822	15 Tu 0522 1153 1804 2343	0.5 3.7 3.4 2.7	ft cm 14 113 105 83	14 113 105 83	15 W 0505 1134 1804 2343	0.9 3.4 1.1 2.7	ft cm 26 105 35 83	26 105 35 83	30 Th 0008 0605 1235 1909	3.1 0.9 3.8 0.9	ft cm 96 28 115 27	87 40 104 31	30 Sa 0142 0737 1351 2019	2.9 1.3 3.1 1.0	ft cm 89 40 95 31	89 40 95 31				
31 F 0113 0706 1333 2008	3.0 1.2 3.5 1.0	ft cm 91 37 108 31	91 37 108 31	31 F 0113 0706 1333 2008	3.0 1.2 3.5 1.0	ft cm 91 37 108 31	91 37 108 31	31 F 0113 0706 1333 2008	3.0 1.2 3.5 1.0	ft cm 91 37 108 31	91 37 108 31	31 F 0113 0706 1333 2008	3.0 1.2 3.5 1.0	ft cm 91 37 108 31	91 37 108 31								

Time meridian $82^{\circ} 30' E.$ 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Madras, India, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0247 2.8 86	16 0130 2.9 87	1 Th 0428 2.5 75	16 0325 2.8 85	1 Su 0605 2.7 82	16 0550 3.4 105						
0847 1.5 46	Tu 0716 1.2 37	Th 1040 1.5 46	F 0941 1.3 39	Su 1231 1.3 40	M 1219 1.0 29						
1449 2.9 87	1320 3.0 92	1623 2.2 66	F 1527 2.5 77	1819 2.4 74	1822 3.2 98						
2118 1.1 34	2004 0.7 20	2244 1.0 32	2204 0.7 21								
2 Tu 0359 2.8 84	17 0239 2.8 86	2 F 0546 2.6 78	17 Sa 0454 3.0 90	2 M 0019 1.0 31	17 0025 0.9 27						
1003 1.6 49	W 0832 1.3 41	1200 1.4 43	1108 1.1 34	0648 2.9 89	Tu 0643 3.7 113						
1553 2.6 80	1423 2.8 86	1744 2.2 67	1711 2.6 79	1312 1.1 34	1310 0.7 22						
2220 1.1 35	2112 0.7 20	2349 0.9 28	2318 0.6 18	1859 2.7 82	1913 3.5 107						
3 W 0513 2.8 85	18 0355 2.9 88	3 Sa 0639 2.7 83	18 Su 0605 3.2 98	3 Tu 0102 0.9 26	18 W 0117 0.7 22						
1120 1.6 48	0957 1.4 42	1257 1.2 38	1227 0.9 26	0720 3.2 97	W 0728 3.9 119						
1706 2.5 77	1541 2.7 82	1838 2.3 71	1825 2.8 86	1344 0.9 28	1351 0.6 17						
2322 1.1 33	2224 0.6 18			1933 3.0 90	1954 3.8 115						
4 Th 0615 2.9 89	19 0515 3.1 93	4 Su 0041 0.8 23	19 M 0027 0.4 13	4 W 0135 0.7 21	19 0201 0.6 19						
1227 1.5 45	F 1116 1.2 38	0719 2.9 89	0700 3.5 107	0749 3.4 103	W 0806 4.0 122						
1810 2.5 77	1711 2.7 82	1338 1.0 32	1324 0.6 22	1412 0.7 22	Th 1426 0.5 15						
	2330 0.5 14	1919 2.5 76	1920 3.1 95	2004 3.2 98	O 2030 3.9 120						
5 F 0015 1.0 29	20 0621 3.3 101	5 M 0120 0.6 18	20 Tu 0123 0.3 8	5 Th 0206 0.6 18	20 0240 0.6 18						
0703 3.1 93	Sa 1229 1.0 30	0749 3.1 95	0745 3.8 115	0816 3.5 108	W 0842 4.0 121						
1319 1.3 41	1828 2.9 87	1412 0.9 26	1411 0.3 10	1439 0.6 18	M 1500 0.5 15						
1857 2.6 79		1952 2.7 82	2006 3.4 103	2034 3.4 104	2104 4.0 121						
6 Sa 0059 0.8 24	21 0032 0.3 9	6 Tu 0154 0.5 14	21 W 0211 0.2 5	6 F 0236 0.5 16	21 0315 0.7 20						
0740 3.2 98	Su 0714 3.6 110	0818 3.3 101	0826 3.9 119	0844 3.6 111	W 0917 3.9 118						
1358 1.2 36	1333 0.7 21	1442 0.7 21	1451 0.2 6	1507 0.5 14	Th 1531 0.6 17						
1935 2.7 82	1927 3.1 94	2025 2.9 88	2047 3.5 107	2105 3.5 108	2139 3.9 119						
7 Su 0137 0.6 19	22 0128 0.1 4	7 W 0225 0.4 11	22 Th 0253 0.2 5	7 Sa 0308 0.5 15	22 0352 0.8 24						
0811 3.3 102	M 0801 3.8 117	0846 3.4 105	0905 3.9 120	0915 3.7 112	W 0950 3.7 113						
1432 1.0 31	1426 0.4 13	1510 0.6 17	1529 0.2 5	1536 0.4 11	M 1603 0.7 21						
2009 2.8 85	O 2016 3.3 100	2056 3.0 92	2127 3.6 109	2141 3.6 110	2214 3.8 115						
8 M 0211 0.5 16	23 0219 0.1 2	8 Th 0257 0.3 10	23 F 0334 0.2 7	8 Su 0342 0.6 17	23 0428 1.0 29						
0840 3.4 105	Tu 0844 4.0 122	0914 3.5 107	0942 3.8 116	0946 3.6 111	W 1026 3.5 106						
1503 0.9 27	Tu 1512 0.2 7	1539 0.4 13	1604 0.2 7	1607 0.4 11	M 1637 0.8 25						
● 2043 2.9 88	2103 3.4 103	2129 3.1 95	2204 3.5 107	2217 3.6 110	2249 3.6 109						
9 Tu 0243 0.5 14	24 0307 0.1 2	9 F 0329 0.3 10	24 Sa 0413 0.4 12	9 M 0420 0.7 20	24 0506 1.1 35						
0910 3.5 108	W 0927 4.0 123	0943 3.5 108	1020 3.6 110	1021 3.5 108	W 1101 3.2 98						
1534 0.8 23	1555 0.2 5	1610 0.4 12	1640 0.4 12	1642 0.4 12	Tu 1712 1.0 31						
2115 3.0 90	2148 3.4 103	2203 3.2 97	2242 3.3 102	2257 3.5 107	2329 3.4 103						
10 W 0315 0.4 13	25 0352 0.2 5	10 Th 0403 0.4 12	25 Su 0452 0.6 18	10 Tu 0501 0.8 25	25 0549 1.3 41						
0941 3.6 110	Th 1009 3.9 120	1014 3.5 107	1057 3.3 102	1101 3.4 103	W 1137 3.0 91						
1606 0.7 21	1637 0.2 6	1641 0.3 10	1715 0.5 16	1722 0.5 15	M 1750 1.2 38						
2150 3.0 91	2231 3.3 101	2240 3.1 96	2323 3.2 97	2342 3.4 103							
11 Th 0349 0.5 14	26 0435 0.4 11	11 Su 0438 0.5 16	26 M 0533 0.8 25	11 W 0547 1.0 31	26 0014 3.1 96						
1012 3.6 110	F 1049 3.7 114	1047 3.4 104	1134 3.1 94	1144 3.2 97	Th 0636 1.6 48						
1640 0.6 19	1716 0.3 10	1715 0.4 11	1753 0.7 21	1807 0.7 21	1218 2.8 84						
2227 3.0 92	2316 3.2 97	2319 3.1 95			1832 1.4 44						
12 F 0424 0.6 17	27 0519 0.6 18	12 M 0516 0.7 21	27 Tu 0007 3.0 90	12 Th 0035 3.2 99	27 0110 3.0 90						
1044 3.5 108	Sa 1132 3.5 106	1122 3.3 100	0617 1.1 33	0646 1.2 37	W 0744 1.7 53						
1713 0.6 18	1756 0.5 15	1750 0.4 12	1215 2.8 85	1239 3.0 90	M 1321 2.5 77						
2305 3.0 91			1834 0.9 27	1907 0.9 27	O 1933 1.7 51						
13 Sa 0501 0.7 21	28 0003 3.0 92	13 Tu 0003 3.0 92	28 W 0059 2.7 83	13 M 0144 3.1 95	28 0230 2.8 86						
1116 3.5 106	Su 0604 0.8 25	0558 0.9 26	0710 1.3 40	0808 1.4 42	W 0917 1.8 56						
1749 0.6 18	1215 3.2 97	1201 3.1 95	1300 2.5 76	1357 2.7 83	M 1507 2.5 75						
2346 3.0 90	1838 0.7 20	1834 0.5 14	O 1924 1.1 33	2029 1.1 33	2117 1.8 54						
14 Su 0539 0.9 26	29 0053 2.9 87	14 W 0056 2.9 89	29 Th 0205 2.5 77	14 M 0310 3.1 94	29 0359 2.8 86						
1151 3.3 102	M 0655 1.1 33	0652 1.0 32	0827 1.5 46	0939 1.4 42	W 1045 1.8 54						
1825 0.6 19	1302 2.9 87	1249 2.9 88	1405 2.3 69	1541 2.7 82	Su 1647 2.6 78						
● 1924 0.9 26	O 1924 0.6 18	O 1928 0.6 18	2042 1.2 38	2156 1.1 34	2247 1.7 53						
15 M 0034 2.9 88	30 0152 2.7 81	15 Th 0204 2.8 86	30 F 0332 2.4 74	15 Su 0440 3.2 98	30 0513 3.0 91						
0622 1.0 31	0757 1.3 40	0809 1.2 38	1002 1.6 48	1108 1.2 37	W 1149 1.6 49						
1231 3.2 97	1354 2.6 78	1357 2.7 81	1543 2.1 65	1716 2.9 88	M 1750 2.9 87						
1909 0.6 19	2022 1.0 30	2043 0.7 21	2207 1.3 39	2318 1.0 32	2350 1.6 48						
	31 0303 2.5 77		31 0504 2.5 76								
	W 0914 1.5 45		Sa 1129 1.5 46								
	1457 2.3 70		1720 2.2 67								
	2132 1.1 33		2323 1.2 36								

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Madras, India, 2013

Times and Heights of High and Low Waters

October				November				December				
	Time	Height		Time	Height		Time	Height		Time	Height	
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	
1	0604	3.2 98	16	0019	1.5 45	1	0039	1.8 54	16	0135	1.6 50	
Tu	1232	1.4 43	W	0624	3.9 120	F	0632	3.8 116	Sa	0724	3.9 120	
	1834	3.2 97		1246	1.1 34		1248	1.2 38		1330	1.3 39	
				1900	4.0 123		1912	4.3 130		1954	4.5 137	
2	0035	1.4 43	17	0109	1.3 40	2	0116	1.6 48	2	0211	1.6 48	
W	0642	3.4 105	Th	0707	4.0 123	Sa	0710	4.0 121	Su	0758	3.9 120	
	1306	1.2 37		1326	1.0 31		1321	1.0 32		1359	1.2 38	
	1907	3.5 107		1938	4.2 129		1947	4.5 138	O	2025	4.5 137	
3	0112	1.2 37	18	0149	1.2 37	3	0154	1.4 43	18	0243	1.5 47	
Th	0714	3.6 111	F	0745	4.1 125	Su	0747	4.1 125	M	0830	3.9 118	
	1334	1.0 31		1358	1.0 29		1357	0.9 27		1429	1.2 37	
	1938	3.8 115		2012	4.4 133	●	2023	4.7 143		2056	4.5 136	
4	0142	1.1 33	19	0225	1.2 36	4	0232	1.3 40	19	0315	1.5 47	
F	0744	3.8 116	Sa	0819	4.1 124	M	0826	4.2 127	Tu	0903	3.8 116	
	1401	0.8 25		1427	1.0 25		1434	0.8 29		1501	1.2 38	
	2011	4.0 123	O	2044	4.4 134		2101	4.8 145		2128	4.4 134	
5	0215	1.0 30	20	0258	1.2 37	5	0314	1.2 38	20	0349	1.6 48	
Sa	0815	3.9 119	Su	0851	4.0 121	Tu	0908	4.2 127	W	0935	3.7 113	
	1430	0.7 21		1458	1.0 30		1515	0.9 26		1534	1.3 41	
●	2043	4.2 128		2115	4.3 132		2143	4.7 144		2200	4.3 131	
6	0249	0.9 28	21	0332	1.3 39	6	0402	1.3 39	21	0426	1.6 49	
Su	0847	4.0 121	M	0924	3.8 117	W	0955	4.1 124	Th	1010	3.6 109	
	1503	0.6 19		1529	1.1 33		1600	1.0 30		1607	1.5 45	
	2119	4.3 130		2149	4.2 128		2228	4.6 140		2234	4.2 127	
7	0327	1.0 29	22	0407	1.4 42	7	0452	1.3 41	22	0504	1.7 51	
M	0924	3.9 120	Tu	0957	3.6 111	Th	1044	3.9 118	F	1048	3.4 105	
	1538	0.6 19		1602	1.2 37		1648	1.2 38		1642	1.6 50	
	2157	4.2 129		2223	4.0 123		2318	4.4 135		2311	4.0 123	
8	0409	1.0 31	23	0445	1.5 46	8	0549	1.5 45	23	0544	1.8 54	
Tu	1004	3.8 117	W	1033	3.5 106	F	1142	3.7 112	Sa	1130	3.3 101	
	1619	0.7 22		1637	1.4 42		1743	1.5 47		1722	1.8 56	
	2241	4.1 125		2259	3.9 118					2349	3.9 118	
9	0455	1.1 35	24	0525	1.7 51	9	0015	4.2 129	24	0629	1.8 56	
W	1049	3.6 111	Th	1109	3.3 100	Sa	0653	1.6 49	Su	1222	3.2 98	
	1702	0.9 28		1712	1.6 48		1253	3.5 107		1807	2.0 62	
	2327	3.9 120		2339	3.7 113		1850	1.8 56	●	1947	2.0 61	
10	0549	1.3 41	25	0610	1.8 55	10	0121	4.0 123	25	0035	3.7 114	
Th	1140	3.4 105	F	1151	3.1 95	Su	0804	1.7 51	M	0720	1.9 58	
	1753	1.1 35		1750	1.8 55	●	1418	3.4 105		1335	3.2 97	
						○	2013	2.1 63		1906	2.2 68	
11	0025	3.8 115	26	0024	3.5 107	11	0237	3.9 119	26	0133	3.6 109	
F	0653	1.5 46	Sa	0704	2.0 60	M	0918	1.7 52	Tu	0820	1.9 59	
	1246	3.2 98		1250	3.0 90		1545	3.5 108		1456	3.2 99	
	1857	1.4 44		1841	2.0 62		2142	2.1 65	○	2026	2.4 72	
12	0135	3.6 110	27	0127	3.4 103	12	0352	3.8 117	27	0243	3.5 106	
Sa	0812	1.6 49	Su	0816	2.0 62	Tu	1028	1.6 50	W	0927	1.8 56	
	1415	3.1 94		1426	2.9 89		1659	3.8 115		1609	3.4 105	
●	2023	1.7 51		○	1958	2.2 67		2302	2.1 63		2155	2.3 71
13	0258	3.6 109	28	0244	3.3 101	13	0501	3.9 118	28	0350	3.5 106	
Su	0938	1.6 48	M	0938	2.0 62	W	1129	1.5 47	Th	1027	1.7 52	
	1555	3.2 97		1556	3.1 93		1758	4.0 122		1712	3.7 114	
	2155	1.7 53		2142	2.3 69					2305	2.2 67	
14	0420	3.6 111	29	0359	3.3 102	14	0005	1.9 58	29	0454	3.5 108	
M	1057	1.4 44	Tu	1045	1.9 58	F	0558	3.9 119	Th	1119	1.5 45	
	1716	3.4 104		1706	3.3 101		1217	1.4 44		1801	4.0 123	
	2316	1.6 50		2302	2.1 65		1843	4.2 129				
15	0529	3.8 115	30	0502	3.5 106	15	0055	1.8 54	30	0001	2.0 60	
Tu	1200	1.3 39	W	1136	1.7 52	F	0645	3.9 120	Sa	0550	3.7 112	
	1815	3.7 114		1757	3.6 111		1256	1.4 42		1205	1.2 37	
				2357	2.0 60		1921	4.4 134		1845	4.3 131	
			31	0551	3.6 111							
			Th	1214	1.5 45							
				1836	4.0 121							

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0415	2.5	77	16 W	0431	2.5	77	1 F	0437	2.3	69				
1015	0.5	16		1052	0.4	12		1050	0.3	9	Sa	1105	0.4	12	
1641	2.1	64		1711	2.3	70		1722	2.3	70		1748	2.2	66	
2207	0.7	22		2258	0.9	26		2311	0.8	24		2324	0.9	27	
2 W	0437	2.4	74	17 Th	0500	2.4	72	2 Sa	0454	2.1	65	17 Su	0528	2.0	60
1043	0.5	16		1118	0.5	14		1122	0.4	11		1128	0.5	16	
1713	2.1	64		1746	2.2	68		1758	2.2	67		1826	2.0	61	
2245	0.8	25		2328	1.0	30		2350	1.0	31		2352	1.0	32	
3 Th	0500	2.3	70	18 F	0528	2.2	66	3 Su	0513	2.0	61	18 M	0550	1.7	53
1115	0.5	16		1145	0.6	17		1158	0.5	16		1152	0.7	55	
1748	2.1	64		1828	2.1	64		1843	2.1	64		1916	1.8	56	
2326	1.0	30		2358	1.1	35	○					2333	0.9	27	
4 F	0518	2.2	66	19 Sa	0558	2.0	60	4 M	0041	1.2	38	4 Tu	0030	1.2	38
1152	0.6	18		1211	0.7	21		0531	1.8	55		0537	1.5	46	
1831	2.1	63		1918	2.0	60		1239	0.7	22		1220	0.9	22	
	○							2000	1.9	59		2054	1.7	52	
5 Sa	0015	1.2	36	20 Su	0035	1.3	40	5 Tu	0213	1.4	44	5 W	0205	1.4	44
0541	2.0	61		0631	1.7	53		0543	1.6	48		0305	1.4	44	
1233	0.7	21		1245	0.9	26		1352	1.0	30		1315	1.1	35	
○ 1939	2.0	62		2031	1.9	57		2303	2.0	60		2328	1.8	54	
6 Su	0122	1.4	42	21 M	0158	1.5	45	6 W	0848	1.3	40	6 Th	0735	1.0	32
0607	1.8	55		0726	1.5	46		1150	1.3	41		1233	1.4	43	
1331	0.9	26		1337	1.0	32		1631	1.1	33		1831	1.1	33	
2131	2.0	62		2230	1.9	57						2200	1.8	54	
7 M	0326	1.5	46	22 Tu	0700	1.3	39	7 Th	0030	2.2	66	7 F	0037	2.0	60
0654	1.6	49		1016	1.4	42		0718	1.1	33		0750	0.9	27	
1500	1.0	29		1703	1.1	34		1307	1.6	50		1315	1.6	50	
2328	2.2	67						1818	0.9	28		1911	0.9	28	
8 Tu	0628	1.3	41	23 W	0003	2.0	62	8 F	0116	2.4	72	8 Sa	0018	1.9	59
1116	1.5	46		0733	1.1	33		0741	0.8	25		0805	0.7	22	
1646	1.0	29		1230	1.5	46		1346	1.9	58		1345	1.9	57	
				1828	1.0	31		1916	0.8	23		1937	0.8	23	
9 W	0033	2.4	74	24 Th	0054	2.2	68	9 Sa	0152	2.5	76	9 Su	0150	2.3	71
0711	1.1	34		0801	0.9	27		0807	0.6	18		0816	0.6	18	
1250	1.7	51		1320	1.7	51		1420	2.1	65		1415	2.1	63	
1807	0.9	26		1909	0.9	27		2000	0.6	18		2000	0.6	18	
10 Th	0120	2.6	79	25 F	0131	2.4	73	10 Su	0222	2.6	79	10 M	0220	2.4	74
0745	0.9	27		0824	0.8	23		0837	0.4	13		0828	0.5	14	
1341	1.9	58		1358	1.8	56		1450	2.3	71		1443	2.2	68	
1907	0.7	22		1941	0.8	23	●	2039	0.5	15		2024	0.5	15	
11 F	0158	2.7	83	26 Sa	0205	2.5	77	11 M	0250	2.6	80	11 Tu	0248	2.5	75
0818	0.7	22		0841	0.6	19		0905	0.3	9		0843	0.3	10	
1420	2.1	63		1430	2.0	61		1518	2.4	74		1511	2.4	72	
1954	0.6	19		2005	0.7	20		2113	0.5	14		2050	0.4	13	
12 Sa	0231	2.8	85	27 Su	0237	2.6	79	12 Tu	0316	2.6	79	12 W	0315	2.5	75
0850	0.6	17		0856	0.5	16		0933	0.2	6		0905	0.2	7	
1458	2.2	68		1501	2.1	64		1546	2.5	76		1537	2.5	75	
● 2037	0.6	18		○ 2031	0.6	18		2143	0.5	15		2118	0.4	12	
13 Su	0303	2.8	85	28 M	0307	2.6	79	13 W	0343	2.5	77	13 Th	0337	2.4	73
0922	0.4	13		0911	0.5	14		0958	0.2	6		0930	0.2	5	
1531	2.3	70		1530	2.2	67		1615	2.5	75		1603	2.5	76	
2116	0.6	18		2100	0.5	16		2211	0.6	17		2150	0.4	13	
14 M	0333	2.7	83	29 Tu	0333	2.6	78	14 Th	0409	2.5	75	14 F	0322	2.4	73
0954	0.4	11		0930	0.4	11		1022	0.2	7		1045	0.3	9	
1605	2.4	72		1558	2.3	69		1645	2.4	74		2235	0.6	19	
2154	0.6	19		2130	0.5	16									
15 Tu	0403	2.6	80	30 W	0358	2.5	76	15 F	0435	2.3	71	15 F	0348	2.3	71
1024	0.4	11		0954	0.3	9									
1637	2.4	72		1626	2.3	70									
2228	0.7	22		2201	0.6	17									
	31 Th	0418	2.4	73											
		1022	0.3	8											
		1652	2.3	70											
		2235	0.7	20											

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0428 2.0 61 1039 0.4 12 1713 2.4 72 2324 0.8 24	h m ft cm	16 Tu 0456 1.8 56 1031 0.6 17 1724 2.2 66 2315 0.7 22	h m ft cm	1 W 0511 1.8 55 1109 0.7 22 1737 2.2 66	h m ft cm	16 Th 0530 1.6 49 1052 0.6 19 1741 2.0 60 2343 0.6 18	h m ft cm	1 Sa 0046 0.5 16 0720 1.6 50 1307 1.0 31 1852 1.6 50	h m ft cm	16 Su 0005 0.3 8 0652 1.5 46 1216 0.7 21 1818 1.5 47	
	0454 1.9 57	17 W 0526 1.7 51 1100 0.7 21 1758 2.0 60 2352 0.9 26	0007 0.8 24	2 Th 0601 1.7 51 1156 1.0 29 1820 1.9 59	0013 0.8 47	17 F 0613 1.5 47 1133 0.8 24 1816 1.8 55	0145 0.6 18	2 Su 0848 1.6 49 1513 1.1 35 1956 1.4 44	0050 0.3 10	17 M 0758 1.5 46 1322 0.9 26 1856 1.4 42	
	1113 0.6 19	1113 0.9 27	0007 1.0 30	3 F 0600 1.5 47 0720 1.6 48 1313 1.2 37 1924 1.7 52	0028 0.7 21	18 Sa 0716 1.5 45 1228 1.0 29 1903 1.6 49	0309 0.7 20	3 M 1035 1.7 51 1722 1.0 32 2135 1.3 41	0146 0.4 12	18 Tu 0930 1.5 47 1501 1.0 29 2011 1.2 37	
	1746 2.2 66	1833 1.9 59	0007 1.0 30	4 Sa 0043 1.0 31 0720 1.4 42 1631 1.3 34 2126 1.5 47	0245 1.0 30	19 Su 0126 0.8 23 0903 1.5 46 1400 1.1 34 2037 1.5 45	0439 0.6 19	4 Tu 1146 1.8 56 1830 0.9 27 2320 1.3 41	0301 0.5 14	19 W 1105 1.7 52 1715 0.9 28 2233 1.1 35	
4 Th 0624 1.5 46 1248 1.2 36 2005 1.7 52	0111 1.2 36	19 F 0043 1.0 31 0720 1.4 42 1230 1.1 34 2022 1.6 49	0245 1.0 30	19 Sa 0126 0.8 23 0903 1.5 46 1400 1.1 34 2037 1.5 45	0126 0.8 23	4 Tu 1146 1.8 56 1830 0.9 27 2320 1.3 41	0439 0.6 19	19 W 1105 1.7 52 1715 0.9 28 2233 1.1 35			
	1200 1.5 47	1456 1.3 39	0215 1.1 34	5 Su 0441 0.9 27	0441 0.9 27	20 M 0246 0.8 24	0545 0.6 17	5 W 1233 2.0 60	0426 0.4 13	20 Th 1213 1.9 58	
	1707 1.3 39	2243 1.6 49	0215 1.1 34	5 Su 1158 1.8 56	1158 1.8 56	20 M 1050 1.7 51	1916 0.7 22	5 W 1916 0.7 22	0426 0.4 13	20 Th 1837 0.7 22	
	2333 1.7 53	2243 1.6 49	0215 1.1 34	5 Su 1803 1.1 33	1803 1.1 33	20 M 1633 1.1 34	0545 0.6 17	20 W 1233 2.0 60	0426 0.4 13	20 Th 1837 0.7 22	
6 Sa 1245 1.8 56 1828 1.0 32	0558 1.0 31	21 Su 0533 1.0 32	0546 0.8 23	6 M 0416 0.7 22	0416 0.7 22	6 Th 0028 1.4 43	0013 1.2 37	21 F 0539 0.4 11	0013 1.2 37	21 F 0539 0.4 11	
	1245 1.8 56	1200 1.7 52	0215 1.1 34	6 M 1239 2.1 63	1239 2.1 63	6 Th 0633 0.5 14	0633 0.5 14	21 F 1305 2.1 64	0539 0.4 11	21 F 1305 2.1 64	
	1828 1.0 32	1822 1.1 34	0215 1.1 34	6 M 1854 0.9 27	1854 0.9 27	6 Th 1311 2.1 64	1311 2.1 64	21 F 1926 0.5 16	1305 2.1 64	21 F 1926 0.5 16	
	1828 1.0 32	1822 1.1 34	0215 1.1 34	7 Tu 0026 1.7 52	0026 1.7 52	7 W 0524 0.6 18	0116 1.5 46	22 Sa 0116 1.3 41	0116 1.3 41	22 Sa 0639 0.3 8	
7 Su 1315 2.1 64 1911 0.9 26	0033 1.9 57	22 M 0000 1.7 53	0026 1.7 52	7 Tu 0631 0.6 18	0631 0.6 18	7 W 1245 2.2 66	0116 1.5 46	22 Sa 0639 0.3 8	0116 1.3 41	22 Sa 0639 0.3 8	
	0639 0.8 24	1243 2.0 61	0000 1.7 53	7 M 1309 2.2 68	1309 2.2 68	7 W 1856 0.8 24	0713 0.4 12	22 Sa 1348 2.2 68	0639 0.3 8	22 Sa 1348 2.2 68	
	1315 2.1 64	1852 0.9 28	0000 1.7 53	7 M 1931 0.7 22	1931 0.7 22	7 W 1345 2.2 67	0713 0.4 12	22 Sa 2005 0.4 11	1348 2.2 68	22 Sa 2005 0.4 11	
	1911 0.9 26	1852 0.9 28	0000 1.7 53	8 Tu 0046 1.9 57	0046 1.9 57	8 W 0709 0.5 14	0156 1.6 48	23 Su 0205 1.5 45	0116 1.3 41	23 Su 0731 0.2 5	
8 M 1341 2.3 71 1946 0.7 20	0109 2.0 62	23 Tu 0631 0.7 21	0105 1.8 55	8 W 0709 0.5 14	0709 0.5 14	8 Th 0616 0.5 14	0156 1.6 48	23 Su 0731 0.2 5	0205 1.5 45	23 Su 1428 2.3 71	
	0713 0.6 17	1318 2.3 69	0046 1.9 57	23 Tu 1339 2.4 73	1339 2.4 73	8 Th 1326 2.4 72	0746 0.4 11	23 Su 1428 2.3 71	0205 1.5 45	23 Su 1428 2.3 71	
	1341 2.3 71	1920 0.7 22	0046 1.9 57	23 Tu 1935 0.6 19	1935 0.6 19	8 Th 2054 0.4 11	2054 0.4 11	24 O 2043 0.2 7	0248 1.6 48	24 O 2043 0.2 7	
	1946 0.7 20	1920 0.7 22	0046 1.9 57	9 Tu 0124 2.0 60	0124 2.0 60	9 W 0741 0.4 12	0233 1.6 49	24 M 0820 0.1 4	0248 1.6 48	24 M 0820 0.1 4	
9 Tu 1407 2.5 76 2018 0.6 17	0139 2.1 65	24 W 0701 0.5 15	0139 1.9 58	9 Th 0741 0.4 12	0741 0.4 12	9 F 0701 0.3 10	0233 1.6 49	24 M 1503 2.3 71	0248 1.6 48	24 M 1503 2.3 71	
	0743 0.4 13	1350 2.5 75	0124 2.0 60	24 W 1407 2.5 75	1407 2.5 75	9 F 1403 2.5 77	1403 2.5 77	24 M 2120 0.3 9	0248 1.6 48	24 M 2120 0.3 9	
	1407 2.5 76	1950 0.6 18	0124 2.0 60	24 W 2033 0.5 15	2033 0.5 15	9 F 2011 0.5 15	2011 0.5 15	25 O 2120 0.3 9	0248 1.6 48	25 O 2120 0.3 9	
	2018 0.6 17	1950 0.6 18	0124 2.0 60	10 Th 0213 1.9 59	0213 1.9 59	10 F 0745 0.2 7	0311 1.6 50	25 Tu 0905 0.1 4	0328 1.7 51	25 Tu 0905 0.1 4	
10 W 0811 0.3 10 ● 2046 0.5 14	0205 2.2 67	25 Th 0733 0.4 11	0158 2.0 62	10 F 0809 0.4 11	0213 1.9 59	10 M 0745 0.2 7	0311 1.6 50	25 Tu 0905 0.1 4	0328 1.7 51	25 Tu 0905 0.1 4	
	0811 0.3 10	1424 2.6 80	0158 2.0 62	10 F 1435 2.5 77	1435 2.5 77	10 M 1439 2.6 79	0843 0.3 9	25 Tu 1539 2.3 69	0328 1.7 51	25 Tu 1539 2.3 69	
	● 2046 0.5 14	2022 0.5 15	0158 2.0 62	10 F 2100 0.5 14	2100 0.5 14	10 O 2048 0.4 12	2141 0.3 8	25 Tu 2158 0.0 1	0328 1.7 51	25 Tu 2158 0.0 1	
	● 2046 0.5 14	2022 0.5 15	0158 2.0 62	11 Th 0245 1.9 59	0245 1.9 59	11 Su 0826 0.2 6	0345 1.6 49	26 W 0948 0.2 5	0407 1.7 52	26 W 0948 0.2 5	
11 Th 1458 2.6 80 2113 0.5 14	0233 2.2 68	26 F 0807 0.3 8	0230 2.1 63	11 Sa 0833 0.4 11	0245 1.9 59	11 Su 0826 0.2 6	0345 1.6 49	26 W 1611 2.2 67	0407 1.7 52	26 W 1611 2.2 67	
	0837 0.3 8	1456 2.7 83	0230 2.1 63	11 Sa 1505 2.5 76	1505 2.5 76	11 Su 1515 2.6 79	0909 0.3 9	26 W 1611 2.2 67	0407 1.7 52	26 W 1611 2.2 67	
	1458 2.6 80	2056 0.4 13	0230 2.1 63	11 O 2124 0.4 13	2124 0.4 13	11 O 2126 0.3 10	0909 0.3 9	26 W 2233 0.0 0	0407 1.7 52	26 W 2233 0.0 0	
	2113 0.5 14	2056 0.4 13	0230 2.1 63	12 F 0316 1.9 58	0316 1.9 58	12 W 0907 0.2 7	0420 1.6 49	27 Th 1030 2.0 62	0446 1.7 53	27 Th 1030 2.0 62	
12 F 0901 0.3 8 1526 2.6 80 2135 0.5 14	0301 2.2 68	27 Sa 0843 0.2 6	0300 2.1 63	12 Su 0858 0.4 12	0316 1.9 58	12 W 0907 0.2 7	0420 1.6 49	27 Th 1030 2.0 62	0446 1.7 53	27 Th 1030 2.0 62	
	0901 0.3 8	1526 2.7 83	0300 2.1 63	12 Su 1535 2.5 75	1535 2.5 75	12 W 1548 2.5 77	0939 0.3 10	27 Th 1043 2.1 64	0446 1.7 53	27 Th 1043 2.1 64	
	1526 2.6 80	2131 0.4 13	0300 2.1 63	12 Su 2146 0.4 13	2146 0.4 13	12 W 2203 0.3 9	0939 0.3 10	27 Th 1643 2.0 62	0446 1.7 53	27 Th 1643 2.0 62	
	2135 0.5 14	2131 0.4 13	0300 2.1 63	12 F 2146 0.4 13	2146 0.4 13	12 W 2228 0.2 7	0939 0.3 10	27 Th 2307 0.0 0	0446 1.7 53	27 Th 2307 0.0 0	
13 Sa 0922 0.3 9 1554 2.6 78 2158 0.5 15	0330 2.2 66	28 Su 0916 0.2 7	0328 2.0 62	13 M 0922 0.4 12	0348 1.9 57	13 Tu 0948 0.3 10	0405 1.8 56	28 F 1111 0.4 12	0526 1.7 52	28 F 1111 0.4 12	
	0922 0.3 9	1558 2.7 81	0328 2.0 62	13 M 1607 2.4 72	1607 2.4 72	13 Tu 1622 2.4 73	1622 2.4 73	28 F 1715 1.9 58	0526 1.7 52	28 F 1715 1.9 58	
	1554 2.6 78	2207 0.5 14	0328 2.0 62	13 M 2211 0.4 13	2211 0.4 13	13 Tu 2243 0.3 10	1656 2.0 61	28 F 1734 0.0 1	0526 1.7 52	28 F 1734 0.0 1	
	2158 0.5 15	2243 0.6 17	0328 2.0 62	13 M 2237 0.5 14	2237 0.5 14	13 Tu 2320 0.4 11	1656 2.0 61	28 F 1746 1.7 52	0526 1.7 52	28 F 1746 1.7 52	
14 Su 0945 0.4 11 1622 2.5 75 2220 0.5 16	0358 2.1 64	29 M 0954 0.3 10	0400 2.0 60	14 Tu 0948 0.5 14	0422 1.8 55	14 W 1031 0.5 14	0445 1.8 55	29 F 1046 0.4 13	0607 1.7 51	29 F 1046 0.4 13	
	0945 0.4 11	1630 2.5 77	0400 2.0 60	14 Tu 1639 0.5 14	1639 0.5 14	14 W 1656 2.2 68	1656 2.2 68	29 F 1724 1.9 57	0607 1.7 51	29 F 1724 1.9 57	
	1622 2.5 75	2243 0.6 17	0400 2.0 60	14 Tu 2237 0.5 14	2237 0.5 14	14 W 2320 0.4 11	1656 2.0 61	29 F 2328 0.2 7	0607 1.7 51	29 F 2328 0.2 7	
	2220 0.5 16	2243 0.6 17	0400 2.0 60	15 W 2307 0.5 16	2307 0.5 16	15 Th 1115 0.7 20	0530 1.7 53	30 Sa 1128 0.5 16	0016 0.1 3	30 Sa 1128 0.5 16	

Colombo, Sri Lanka, 2013

Times and Heights of High and Low Waters

July					August					September						
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 M	0056	0.2	7	16	0016	0.0	-1	1	0124	0.3	9	16	0120	0.2	7	
	0748	1.5	46	Tu	0707	1.5	45	Th	0924	1.2	38	F	0916	1.3	40	
	1343	0.9	26	Tu	1250	0.6	18		1750	0.7	22		1545	0.8	24	
	1907	1.3	40	O	1805	1.3	39		2050	0.8	25		1901	0.8	25	
2 Tu	0145	0.3	10	17	0101	0.1	3	2	0307	0.5	14	17	0313	0.4	13	
	0903	1.5	45	W	0818	1.4	44	2	1113	1.3	40	Sa	1137	1.4	44	
	1607	0.9	28	Tu	1407	0.8	23	F	1901	0.5	16	Sa	1828	0.6	18	
	2011	1.1	34		1839	1.1	33		2337	0.8	25					
3 W	0300	0.4	13	18	0205	0.2	7	3	0552	0.4	13	18	0020	0.9	28	
	1037	1.5	45	Th	1011	1.4	44	3	1224	1.4	44	Sa	0526	0.4	12	
	1807	0.8	24		1620	0.8	25		1939	0.3	10		1243	1.6	49	
	2158	1.0	31		2015	0.9	27						1905	0.3	10	
4 Th	0448	0.5	14	19	0339	0.3	10	4	0056	1.0	30	19	0116	1.2	37	
	1154	1.6	49	F	1150	1.6	49	4	0652	0.3	9	M	0641	0.2	7	
	1907	0.6	19		1831	0.6	19		1311	1.6	49		1326	1.8	54	
	2352	1.0	32						2009	0.2	5		1939	0.1	3	
5 F	0605	0.4	12	20	0001	0.9	28	5	0139	1.1	35	20	0156	1.5	45	
	1246	1.7	53	Sa	0518	0.3	9	5	0730	0.2	6	Tu	0733	0.1	3	
	1948	0.4	13		1252	1.8	55		M	1348	1.7	53		1401	1.9	57
					1920	0.4	12			2031	0.1	2		2011	-0.1	-3
6 Sa	0101	1.1	35	21	0115	1.1	35	6	0215	1.3	40	21	0230	1.7	51	
	0656	0.3	10	Su	0633	0.2	6	6	0800	0.1	3	W	0816	0.0	0	
	1328	1.9	57		1337	1.9	59		Tu	1422	1.8	56		1433	1.9	59
	2020	0.3	9		1958	0.2	6			2048	0.0	-1	O	2043	-0.2	-7
7 Su	0148	1.2	38	22	0203	1.3	41	7	0248	1.4	43	22	0301	1.8	55	
	0735	0.3	8	M	0731	0.1	2	7	0824	0.0	0	Th	0854	-0.1	-2	
	1403	2.0	60		1416	2.0	62		W	1454	1.9	57		1501	1.9	59
	2048	0.2	5	O	2031	0.0	0			2113	-0.3	-10		2113	-0.2	-7
8 M	0228	1.3	41	23	0245	1.5	46	8	0318	1.5	46	23	0333	1.9	58	
	0805	0.2	6	Tu	0820	0.0	0	8	0850	0.0	-1	Th	0930	-0.1	-2	
	1439	2.0	61		1452	2.1	63		W	1524	1.8	56		1530	1.9	58
	2111	0.1	3		2107	-0.1	-4			2120	-0.2	-6		2143	-0.4	-11
9 Tu	0303	1.4	43	24	0320	1.6	50	9	0348	1.6	48	24	0403	1.9	58	
	0833	0.1	4	W	0903	0.0	-1	9	0918	-0.1	-2	Sa	1001	0.0	0	
	1511	2.0	62		1524	2.0	62		F	1550	1.8	55		1558	1.8	56
	2130	0.0	1		2139	-0.2	-7			2143	-0.3	-8		2211	-0.3	-10
10 W	0337	1.5	45	25	0356	1.7	53	10	0416	1.6	50	25	0433	1.9	57	
	0901	0.1	3	Th	0943	0.0	0	10	0948	-0.1	-2	Sa	1031	0.1	2	
	1543	2.0	61		1554	2.0	60		M	1613	1.7	52		1626	1.7	52
	2148	0.0	-1		2213	-0.3	-9			2209	-0.3	-9		2235	-0.3	-8
11 Th	0409	1.5	46	26	0430	1.7	53	11	0445	1.6	50	11	0516	1.8	56	
	0931	0.1	3	F	1020	0.1	2	11	1022	0.0	0	W	1116	0.4	11	
	1611	1.9	58		1622	1.9	57		Su	1633	1.6	49		1648	1.4	44
	2211	-0.1	-2		2243	-0.3	-9		M	1654	1.6	48		2313	0.0	1
12 F	0439	1.5	46	27	0503	1.7	53	12	0513	1.6	50	12	0552	1.7	52	
	1003	0.1	3	Sa	1056	0.2	5	12	1058	0.1	3	Th	1201	0.6	17	
	1637	1.8	55		1652	1.7	53			1724	1.4	43		1713	1.3	40
	2235	-0.1	-3		2313	-0.2	-7			2307	-0.3	-8		2352	0.3	8
13 Sa	0511	1.5	47	28	0539	1.7	51	13	0546	1.6	49	13	0616	1.5	46	
	1037	0.2	5	Su	1128	0.3	9	13	1135	0.3	8	W	1154	0.5	14	
	1701	1.7	52		1722	1.6	48		Tu	1711	1.4	42		1756	1.2	37
	2305	-0.1	-4		2341	-0.2	-5			2343	-0.2	-5		O	2350	0.2	5
14 Su	0543	1.5	47	29	0616	1.6	48	14	0626	1.5	46	14	0705	1.3	41	
	1115	0.3	8	M	1201	0.4	13	14	1222	0.5	14	Th	1233	0.6	19	
	1722	1.6	48		1752	1.4	43			1731	1.2	37		1835	1.0	31
	2337	-0.1	-3	O									O	1805	0.8	25
15 M	0620	1.5	46	30	0009	0.0	-1	15	0024	0.0	1	15	0322	0.7	22	
	1158	0.4	12	Tu	0700	1.4	44	15	0724	1.4	43	Th	0822	1.2	37	
	1741	1.4	44		1239	0.6	18			1328	0.7	21		1401	0.8	24
					1828	1.2	37			1800	1.0	32		2011	0.8	25
				31	0041	0.1	4	31	0124	0.6	17					
				W	0758	1.3	40	31	1026	1.2	37	Sa	1846	0.6	18	
					1337	0.7	22			2333	0.9	26				
					1913	1.0	30									

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0015 0631 0722 1215 1854	1.4 0.7 2.2 1.6 0.5	42 639 8.23 50 16	16 W 0043 0639 0718 1237 1837	1.9 0.8 2.3 1.8 0.5	59 23 56 14	1 F 0054 0701 0730 1300 1839	2.2 0.8 0.6 1.9 0.5	68 23 16 59	16 M 0118 0741 0813 1316 1916	2.6 0.8 0.7 2.0 0.5	78 23 21 62
2 W 0052 0701 1256 1909	1.6 0.6 1.8 0.4	50 17 1311 1911	2.2 0.6 1.9 0.3	67 17 59 9	74 19 61 12	2 Sa 0128 1335 1909	2.4 2.0 0.4	74 19 12	2 M 0146 1350 1948	2.7 2.1 0.5	81 21 15
3 Th 0124 0724 1331 1926	1.9 0.4 1.9 0.3	57 18 0752 1341	2.4 0.5 2.0 0.2	72 14 6	79 14 63 10	3 Su 0200 0800 1407	2.6 0.5 2.1	79 16 63	3 Tu 0216 0841 1422	2.7 0.6 2.1	83 19 64
4 F 0154 0748 1401 1946	2.1 0.3 1.9 0.1	63 19 0824 1411	2.5 0.4 2.1 0.2	76 12 5	82 12 63 9	4 M 0231 0831 1437	2.7 0.5 2.1	82 15 63	4 W 0246 0909 1456	2.7 0.6 2.1	83 18 65
5 Sa 0224 0816 1431 2011	2.2 0.2 2.0 0.0	68 20 0854 1439	2.5 0.4 2.1 0.2	77 11 6	83 11 63 9	5 Tu 0303 0907 1507	2.7 0.5 2.0	83 15 62	5 Th 0326 0933 1530	2.9 0.6 2.1	87 18 63
6 Su 0254 0845 1458 2041	2.3 0.2 1.9 0.0	71 21 0920 1509	2.5 0.4 2.0 0.2	77 12 7	82 12 62 7	6 W 0335 0943 1537	2.7 0.5 2.0	82 19 61	6 F 0358 1015 1620	2.8 0.6 2.1	84 18 65
7 M 0322 0916 1522 2111	2.4 0.2 1.9 0.0	72 22 0945 1541	2.5 0.4 2.0 0.3	75 13 10	79 18 60 17	7 Th 0407 1020 1611	2.6 0.6 1.9	79 19 59	7 Sa 0431 1054 1639	2.6 0.7 2.1	80 18 61
8 Tu 0352 0950 1546 2143	2.4 0.3 1.8 0.1	72 23 1009 1613	2.4 0.5 1.9 0.4	72 15 13	74 21 57 13	8 F 0441 1100 1650	2.4 0.7 1.9	74 21 57	8 Sa 0505 1133 1718	2.4 0.7 1.8	74 22 56
9 W 0422 1026 1611 2216	2.3 0.4 1.7 0.2	69 24 1035 1646	2.2 0.6 1.7 0.6	68 12 17	69 25 25 31	9 M 0516 1145 1741	2.3 0.8 1.8	69 25 54	9 M 0539 1218 1850	2.2 0.8 2.0	68 21 61
10 Th 0454 1105 1641 2254	2.2 0.6 1.6 0.4	66 25 0511 1105	2.1 0.7 1.6 0.7	64 21 21	63 29 49 52	10 Su 0558 1239 1900	2.1 1.0 1.7	63 29 52	10 Tu 0601 1207 1907	2.0 0.9 1.7	62 27 52
11 F 0530 1150 1718 2335	2.0 0.7 1.5 0.7	60 26 0548 1141	1.9 0.8 1.5 0.9	58 25 45 27	39 56 31 53	11 M 0046 0656 1403	1.3 1.8 1.0	39 56 31	11 W 0003 0648 1301	1.2 1.8 1.0	46 56 31
12 Sa 0616 1252 1822 20	1.8 0.9 1.3 1.3	54 27 0641 1233	1.7 1.0 1.4	53 29 42	43 52 30 60	12 Tu 0335 0843 1558	1.4 1.7 1.0	43 52 30	12 Th 0456 0816 1420	1.5 1.7 1.0	45 51 31
13 Su 0737 1454 2245	1.6 1.0 1.3	29 28 0016 0809	1.1 1.6	33 48 49	38 52 26	13 W 0531 1052 1711	1.2 1.7 0.9	38 52 26	13 F 0424 1013 1554	1.4 1.7 1.0	43 51 31
14 M 0352 1030 1703	1.1 1.5 0.9	34 29 0250 1009	1.2 1.6	38 47 48	67 32 55	14 Th 0015 0628 1158	2.2 1.0 1.8	67 32 55	14 Sa 0607 1133 1705	1.2 1.7 0.9	70 38 27
15 Tu 0003 0548 1152 1758	1.7 1.0 1.7 0.7	51 30 0605 1130	1.1 1.7	33 29 52	73 27 25	15 F 0048 0707 1801	2.4 0.9 0.7	73 27 22	15 Su 0024 0643 1228	2.4 1.1 1.8	72 29 56
						31 Th 0016 0635 1220	2.0 0.9 1.8	60 28 56			
						1811 0635 1220	0.7 0.9 1.8	21 28 56			
						1811 0.7 21					

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bombay, India, 2013

Times and Heights of High and Low Waters

January				February				March							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0224	14.8	450	16 W	0308	15.5	473	1 F	0305	14.7	448				
0838	4.7	143	0930	3.3	100	0922	2.8	84	16 Sa	0330	12.7	388			
1419	12.7	386	1540	13.0	397	1533	13.2	401	1 F	0945	3.8	116			
2007	3.2	98	2113	4.2	128	2121	4.5	136	16 Sa	1636	11.5	350			
2 W	0258	14.6	445	17 Th	0345	14.4	440	2 Sa	2144	6.8	206				
0915	4.5	137	1007	3.8	116	1001	2.9	88	17 Su	0237	14.5	443			
1501	12.4	378	1632	12.0	366	1627	12.6	383	17 Sa	1019	4.5	138			
2047	4.0	121	2152	5.7	175	2212	5.6	172	18 Su	1728	10.7	325			
3 Th	0331	14.2	434	18 F	0420	13.3	404	3 Su	2235	7.7	236				
0954	4.4	134	1047	4.4	134	0416	13.2	402	18 M	0420	10.7	327			
1550	12.0	366	1729	11.1	339	1048	3.2	98	18 Su	1112	5.2	158			
2133	4.9	149	2234	7.1	217	1735	11.9	363	18 M	1837	10.2	310			
4 F	0409	13.7	418	19 M	0452	12.1	368	○	2310	6.8	206				
1039	4.3	131	1133	4.9	150	0456	12.3	374	19 O	2359	8.4	256			
1647	11.6	354	1835	10.5	321	1225	5.5	169	19 Su	0313	13.8	420			
2227	5.9	181	○	2339	8.2	249	1900	11.6	353	19 M	0928	1.9	58		
5 Sa	0447	13.1	399	20 W	0526	11.1	337	5 Tu	0028	7.6	231	19 Su	1611	13.4	407
1130	4.2	127	1231	5.2	158	0553	11.4	348	20 O	0216	8.4	256			
1804	11.4	347	Su	2011	10.5	319	Tu	0643	9.2	281	20 Su	0432	11.7	356	
○	2331	6.9	209	1300	3.6	110	1343	5.4	165	20 W	1113	3.6	110		
6 Su	0533	12.5	380	2138	11.0	335	2030	11.8	361	○	1834	11.7	357		
1231	3.9	119	21 M	0125	8.6	263	2154	11.0	334	20 O	0432	9.6	294		
1932	11.6	353	0621	10.2	312	6 W	0216	7.7	234	20 W	1127	5.8	176		
2138	11.0	335	1335	5.1	156	0735	11.0	335	21 M	0526	10.7	325			
7 M	0052	7.5	229	2148	12.7	387	1423	3.2	99	21 Th	0551	9.0	274		
0633	11.9	364	2229	11.7	358	2233	11.8	360	21 W	1237	4.2	127			
1340	3.4	103	7 Tu	0340	8.3	254	2243	13.9	423	21 Su	2003	11.6	355		
2054	12.2	373	0740	9.8	298	2258	6.9	211	22 M	0101	8.0	245			
8 Tu	0224	7.6	232	1439	4.7	144	0911	11.4	347	22 Th	0756	9.1	277		
0755	11.7	357	W	0915	9.9	301	1534	2.5	77	22 F	1411	5.7	174		
1446	2.7	82	1539	4.2	127	1427	1.7	53	22 O	2128	11.4	346			
2204	13.3	405	2306	12.5	381	2329	15.0	457	23 M	0350	6.4	196			
9 W	0347	7.1	217	2337	13.2	402	0447	5.7	175	23 Th	0925	10.0	304		
0917	12.0	365	24 M	0520	7.0	212	1027	12.5	380	23 Sa	1520	5.1	154		
1548	1.8	56	1024	10.4	318	1637	1.7	53	23 O	2210	12.2	373			
2257	14.4	440	1630	3.5	107	2329	15.0	457	24 M	0423	5.3	162			
10 Th	0455	6.3	191	2337	13.2	402	0536	4.5	137	24 Th	1014	11.1	338		
1033	12.7	387	25 F	0546	6.3	193	1127	13.6	415	24 Sa	1612	4.4	134		
1646	1.1	33	1106	11.1	339	1732	1.1	35	24 O	2247	13.1	398			
2344	15.5	472	1711	3.0	90	0008	15.8	483	25 M	0454	4.2	129			
11 F	0550	5.2	160	○	1818	1.0	30	0008	3.4	104	25 Th	1057	12.2	373	
1134	13.6	414	26 Sa	0004	13.8	420	1219	14.5	441	25 Su	1119	13.7	417		
1741	0.5	16	0612	5.7	175	1818	1.0	30	26 M	1158	12.9	392			
2134	2.5	11	1143	11.8	360	○	1219	14.5	441	26 Th	1755	2.6	78		
12 Sa	0027	16.3	497	1744	2.5	76	0008	15.8	483	26 Tu	1207	14.5	442		
0641	4.3	131	27 W	0031	14.3	435	0047	16.2	495	26 M	1800	2.2	68		
1227	14.3	436	0637	5.2	157	0702	2.7	81	27 O	0025	14.6	444			
○	1831	0.4	11	1216	12.5	381	1349	14.7	449	27 M	0556	2.6	78		
13 Su	0109	16.7	509	○	1814	2.2	68	1936	2.0	62	27 Th	1136	13.3	406	
0727	3.5	108	28 M	0058	14.7	448	27 W	0124	16.1	492	27 F	1732	3.4	105	
1318	14.7	447	0707	4.5	138	0741	2.3	70	28 O	0022	15.3	466			
1917	0.7	21	1251	13.1	398	1349	14.7	449	28 M	0632	2.0	60			
14 M	0150	16.7	509	1844	2.1	65	1901	2.4	74	28 Th	1216	14.2	434		
0811	3.1	94	29 Tu	0126	15.0	457	0234	14.8	452	28 Sa	1811	3.2	99		
1405	14.5	442	0738	3.9	119	0848	2.6	78	○	1839	2.5	77			
1958	1.5	45	1326	13.5	411	1513	13.4	409	29 M	0557	2.2	67			
15 Tu	0230	16.3	497	1916	2.3	69	2039	4.3	132	29 Th	0631	1.3	41		
0851	3.0	92	30 W	0155	15.2	462	0305	13.8	422	29 Sa	1256	15.0	456		
1452	13.9	425	0810	3.3	101	0916	3.1	95	30 M	0134	14.5	443			
2037	2.7	83	1403	13.6	416	1554	12.5	380	30 Th	0744	0.5	16			
2134	2.7	83	1953	2.7	82	1909	5.6	171	30 Sa	1421	15.4	469			
2134	3.4	105	31 Th	0228	15.1	459	○	1943	3.8	117	31 M	0214	14.1	430	
2134	2.9	88	1446	13.5	413	0844	2.9	88	31 Th	0707	0.7	22			
2134	3.4	105	2034	3.4	105	1446	13.5	413	31 F	1338	15.4	469			

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bombay, India, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0254	13.4	407	16 Tu 0255	11.3	343	1 W 0341	12.3	376	1 Sa 0001	5.1	155
0905	1.6	49	0858	4.0	122	0948	3.0	90	0558	11.3	344
1559	14.1	430	1602	12.2	371	1647	13.9	425	1148	5.7	173
2159	5.6	171	2204	6.9	210	2310	5.8	177	1813	12.9	394
2 Tu 0340	12.3	376	17 W 0331	10.5	319	2 0449	11.4	347	2 Su 0106	5.0	152
0954	2.8	84	0941	5.0	152	1051	4.3	130	0722	11.1	339
1659	13.1	399	1646	11.5	349	1746	13.1	399	1304	6.4	196
2307	6.5	198	2305	7.4	225	●			1911	12.3	374
3 W 0436	11.2	341	18 Th 0412	9.7	297	3 F 0030	5.9	181	3 M 0207	4.6	141
1057	3.9	120	1043	5.8	178	0611	10.7	327	0851	11.5	352
1810	12.3	374	1751	11.0	335	1211	5.2	160	1417	6.7	205
●						1849	12.5	382	2014	11.8	361
4 Th 0044	6.9	209	19 F 0021	7.5	229	4 Sa 0145	5.5	169	4 Tu 0302	4.1	124
0607	10.4	316	0515	9.2	280	0744	10.8	329	0952	12.2	373
1224	4.8	146	1157	6.3	193	1333	5.7	174	1525	6.7	204
1927	11.9	364	1905	11.0	334	1959	12.3	376	2123	11.6	354
5 F 0214	6.4	194	20 Sa 0148	7.1	215	5 Su 0250	4.8	145	5 W 0348	3.5	108
0748	10.4	317	0713	9.2	281	0912	11.6	353	0759	10.4	318
1355	4.9	150	1320	6.4	194	1444	5.7	174	1342	6.7	203
2048	12.3	374	2013	11.4	347	2109	12.4	379	2009	11.9	364
6 Sa 0322	5.3	162	21 Su 0252	6.1	186	6 M 0342	3.8	117	6 Th 0429	3.1	95
0920	11.3	345	0843	10.1	307	1009	12.6	384	0908	11.5	351
1506	4.6	139	1435	6.0	183	1546	5.5	168	1452	6.4	196
2152	12.9	394	2111	12.0	366	2207	12.6	385	2106	12.3	375
7 Su 0413	4.1	125	22 M 0337	4.9	149	7 Tu 0425	3.0	92	7 F 0505	2.8	85
1021	12.6	384	0945	11.3	344	1055	13.4	409	1157	13.6	414
1606	4.1	126	1535	5.5	167	1641	5.4	165	1550	6.1	185
2240	13.6	414	2200	12.7	386	2254	12.8	389	2158	12.7	388
8 M 0453	3.0	91	23 Tu 0415	3.7	112	8 W 0501	2.5	76	8 Sa 0536	2.6	79
1109	13.6	416	1031	12.6	383	1135	13.9	425	1231	13.7	419
1658	3.9	118	1623	5.0	153	1729	5.4	165	1840	6.1	186
2321	14.0	426	2241	13.3	404	2332	12.7	388	●		
9 Tu 0530	2.2	68	24 W 0450	2.5	77	9 Th 0533	2.2	67	9 Su 0015	12.0	365
1151	14.3	437	1115	13.7	419	1214	14.2	432	0607	2.4	74
1742	3.9	118	1709	4.7	142	1810	5.5	167	1737	5.3	163
2357	14.0	427	2320	13.7	418	2334	13.6	414	1913	5.9	180
10 W 0602	1.8	55	25 Th 0524	1.5	46	10 F 0003	12.6	385	10 M 0536	0.6	19
1230	14.6	445	1158	14.7	448	0601	2.1	63	0638	2.4	74
1821	4.1	125	1753	4.4	134	1249	14.2	434	1341	14.0	426
●			2357	14.0	427	● 1847	5.5	169	1946	5.7	174
11 Th 0028	13.8	420	26 F 0601	0.8	23	11 Sa 0033	12.6	383	11 M 0046	12.2	372
0632	1.7	51	1241	15.4	470	0629	2.0	62	0638	2.4	74
1308	14.6	444	1839	4.2	129	1324	14.2	433	1341	14.0	426
1855	4.4	135	○			1920	5.5	169	1946	5.7	174
12 F 0057	13.5	410	27 Sa 0036	14.2	433	12 Su 0102	12.5	381	12 W 0148	12.2	373
0659	1.7	52	0640	0.3	9	0658	2.1	65	0709	0.3	9
1344	14.4	438	1328	15.8	482	1400	14.1	430	1404	16.1	492
1927	4.8	145	1926	4.2	128	1955	5.5	169	2015	4.4	135
13 Sa 0125	13.1	398	28 Su 0116	14.2	432	13 M 0132	12.3	376	27 Th 0148	12.2	373
0726	1.9	58	0722	0.3	8	0729	2.5	76	0741	3.0	92
1419	14.0	428	1414	15.9	484	1435	13.8	422	1447	13.8	421
1959	5.1	156	2014	4.4	134	2031	5.7	174	2052	5.6	171
14 Su 0153	12.6	383	29 M 0200	13.9	423	14 Tu 0204	12.0	366	29 F 0245	13.6	415
0753	2.3	71	0807	0.7	22	0802	3.1	95	0848	1.8	54
1453	13.5	413	1502	15.5	473	1509	13.5	410	1541	15.5	471
2034	5.6	171	2107	4.8	146	2109	6.0	183	2157	4.6	141
15 M 0222	12.0	365	30 Tu 0247	13.3	404	15 W 0239	11.5	350	30 F 0342	12.9	392
0823	3.1	93	0855	1.7	51	0838	3.9	119	0941	3.1	93
1526	12.9	393	1552	14.8	452	1543	12.9	393	1630	14.7	447
2114	6.2	190	2203	5.3	162	2152	6.4	196	2256	4.9	150
16 M 0446	12.0	365	31 F 0446	12.0	365	31 F 0446	12.0	365	31 F 1038	4.5	136
1112	6.1	186	1720	13.8	420	1720	13.8	420	1720	13.8	389
●											

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bombay, India, 2013

Times and Heights of High and Low Waters

July				August				September							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 M	0018	4.7	144	16	0520	11.2	341	1 Th	0117	5.2	157	16	0024	3.8	117
0649	11.1	337	Tu	1102	6.4	195	0855	10.7	325	F	0738	11.3	345		
1227	7.1	216	Tu	1724	12.1	370	1451	7.9	242	1328	7.3	224			
1829	11.8	359	●	2358	4.3	130	1941	9.7	295	1904	10.8	328			
2 Tu	0117	4.8	146	17	0641	11.2	340	2 F	0217	4.9	149	17	0142	3.5	108
0815	11.1	337	W	1213	7.0	214	0957	11.2	342	Sa	0857	11.9	364		
1347	7.5	229	W	1817	11.7	356	1609	7.4	225	1456	6.9	209			
1923	11.0	336					2108	9.7	297	2038	11.0	336			
3 W	0213	4.6	140	18	0102	3.9	118	3 Sa	0317	4.4	134	18	0254	2.9	88
0928	11.5	350	Th	0802	11.5	351	1040	11.9	362	Su	1001	13.0	396		
1506	7.5	228	Th	1337	7.3	221	1653	6.7	205	1602	5.8	178			
2029	10.6	324	Th	1928	11.5	349	2217	10.2	312	2158	11.9	364			
4 Th	0306	4.2	129	19	0207	3.2	99	4 Su	0408	3.8	117	19	0357	2.1	64
1020	12.1	368	F	0917	12.3	375	1115	12.5	380	M	1052	14.1	431		
1619	7.2	218	F	1456	7.0	213	1725	6.1	187	1657	4.6	141			
2143	10.6	322	F	2046	11.6	354	2259	10.8	330	2301	13.1	400			
5 F	0354	3.8	115	20	0308	2.4	74	5 M	0451	3.3	100	20	0454	1.4	43
1103	12.6	383	Sa	1019	13.4	407	1146	13.0	397	Tu	1138	15.1	461		
1710	6.8	206	Sa	1607	6.4	194	1752	5.6	171	1746	3.4	105			
2241	10.8	330	Sa	2201	12.2	373	2336	11.5	350	2355	14.1	431			
6 Sa	0436	3.3	102	21	0408	1.6	48	6 Tu	0527	2.9	87	21	0545	1.1	33
1139	13.0	396	Sa	1111	14.4	440	Tu	1215	13.5	410	W	1220	15.7	479	
1749	6.4	196	Su	1709	5.4	166	Tu	1819	5.1	156	W	1831	2.6	78	
2322	11.2	341								O					
7 Su	0515	3.0	91	22	0506	0.9	27	7 W	0009	12.0	367	22	0043	14.7	449
1213	13.3	406	M	1158	15.4	468	W	0556	2.6	80	Th	0630	1.2	37	
1821	6.1	186	M	1805	4.5	136	W	1244	13.8	421	Th	1300	15.8	482	
2358	11.6	355	○				●	1849	4.6	140	Th	1915	2.0	62	
8 M	0548	2.7	82	23	0004	14.0	427	8 Th	0040	12.6	383	23	0129	14.8	451
1245	13.6	415	Tu	0558	0.5	15	Th	0623	2.5	77	F	0711	1.8	54	
1852	5.7	175	Tu	1243	16.0	488	Th	1312	14.0	428	Su	1339	15.5	471	
●			Tu	1855	3.6	110	Th	1919	4.1	124	Th	1956	1.9	58	
9 Tu	0029	12.1	368	24	0054	14.6	445	9 F	0110	13.0	395	9 M	0211	14.4	439
0618	2.5	77	F	0647	0.5	16	F	0653	2.6	79	Sa	0747	2.7	83	
1316	13.8	422	F	1327	16.2	495	F	1342	14.2	433	Sa	1419	14.7	449	
1922	5.4	165	F	1944	3.0	91	F	1950	3.5	108	Su	2032	2.2	66	
10 W	0059	12.4	377	25	0142	14.7	448	10 Sa	0143	13.2	401	10 Tu	0253	13.6	416
0646	2.6	78	Th	0732	1.1	33	Sa	0726	2.9	88	Tu	0823	3.9	120	
1347	14.0	427	Th	1410	16.0	489	Sa	1416	14.2	432	Th	1456	13.7	418	
1953	5.1	155	Th	2027	2.7	82	Sa	2023	3.1	96	Th	2105	2.8	85	
11 Th	0130	12.6	383	26	0229	14.3	437	11 Su	0221	13.1	400	11 W	0337	13.1	398
0715	2.8	84	F	0814	2.1	64	Su	0806	3.5	106	W	0929	5.4	164	
1417	14.0	428	F	1453	15.5	471	Su	1452	13.9	424	W	1540	12.4	377	
2024	4.8	146	F	2110	2.8	86	Su	2100	3.0	91	W	2138	3.6	110	
12 F	0202	12.5	382	27	0317	13.6	414	12 M	0305	12.8	391	12 Tu	0424	11.6	354
0748	3.2	97	F	0854	3.5	106	M	0851	4.3	132	Tu	0942	6.5	199	
1450	14.0	426	F	1536	14.5	442	M	1531	13.4	408	Th	1603	11.4	346	
2057	4.6	139	F	2150	3.3	100	M	2138	3.1	95	Th	2215	4.5	137	
13 Sa	0239	12.3	376	28	0407	12.6	383	13 Tu	0355	12.3	375	13 W	0517	10.7	326
0826	3.8	116	Su	0937	5.0	152	Tu	0942	5.3	163	W	1039	7.5	230	
1524	13.7	418	Su	1616	13.3	406	Th	1608	12.7	386	W	1635	10.3	314	
2134	4.5	136	Su	2232	4.0	121	Th	2222	3.4	104	○	2307	5.2	160	
14 Su	0324	12.0	365	29	0503	11.5	352	14 W	0455	11.7	357	29 Th	0625	10.1	308
0910	4.6	140	W	1027	6.4	196	W	1042	6.4	194	Th	1725	9.4	288	
1602	13.3	405	W	1657	12.1	368	W	1648	11.9	362	Th	1756	10.1	307	
2216	4.4	135	W	2320	4.6	141	○	2316	3.7	113	Th	1909	10.3	313	
15 M	0415	11.5	352	30	0607	10.8	328	15 Th	0614	11.3	344	15 Su	0014	5.6	172
1001	5.5	168	Th	1135	7.5	230	Th	1153	7.2	218	F	0756	10.1	307	
1642	12.7	388	Th	1739	11.0	334	Th	1738	11.2	340	Th	1420	8.0	245	
2302	4.4	134	Th				○			Th	1857	9.0	274		
			31	0016	5.1	155				31	0127	5.6	170		
			W	0726	10.4	318				Sa	0920	10.6	322		
			W	1308	8.0	245				W	1547	7.3	224		
			W	1832	10.1	308				W	2036	9.2	280		

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Bombay, India, 2013

Times and Heights of High and Low Waters

October				November				December			
	Time	Height			Time	Height			Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm
1 Tu	0305	5.4	165	16	0337	4.4	133	1 F	0412	5.5	169
	0946	11.7	356	W	1002	13.2	403		1018	12.6	383
	1604	5.3	161		1622	3.0	92		1635	2.9	87
	2211	10.9	331		2249	13.6	415		2304	13.4	408
2 W	0355	4.8	145	17	0430	4.0	122	2 Sa	0453	5.1	156
	1025	12.4	379	Th	1050	13.7	418		1059	13.0	396
	1637	4.3	130		1704	2.1	64		1709	2.0	60
	2249	11.9	363		2333	14.5	441		2342	14.3	436
3 Th	0437	4.2	129	18	0518	3.9	118	3 Su	0534	4.8	147
	1101	13.1	398	F	1132	13.9	424		1137	13.4	407
	1709	3.3	102		1743	1.6	49		1743	1.2	38
	2324	12.9	392								
4 F	0513	3.9	119	19	0014	14.8	452	4 M	0022	15.0	458
	1134	13.5	411	Sa	0601	4.0	123		0617	4.6	140
	1740	2.5	77		1209	13.7	419		1215	13.6	414
					O	1816	1.5	45		1819	0.8	23
5 Sa	0000	13.7	417	20	0052	14.8	452	5 Tu	0103	15.5	473
	0549	3.7	113	Su	0639	4.3	132		0701	4.5	136
	1207	13.7	419		1241	13.4	408		1256	13.7	417
	● 1812	1.8	55		1846	1.6	49		1859	0.7	20
6 Su	0036	14.3	436	21	0129	14.6	445	6 W	0146	15.7	478
	0624	3.6	111	M	0714	4.7	143		0748	4.5	136
	1239	13.9	423		1313	13.0	395		1341	13.6	414
	1846	1.3	39		1916	1.9	58		1943	1.0	29
7 M	0114	14.7	449	22	0204	14.2	433	7 Th	0232	15.5	473
	0703	3.7	114	Tu	0749	5.1	154		0837	4.7	142
	1316	13.8	422		1346	12.4	379		1428	13.2	403
	1921	1.0	32		1945	2.5	75		2030	1.7	52
8 Tu	0155	14.9	453	23	0239	13.6	416	8 F	0319	15.0	458
	0747	4.1	124	W	0826	5.5	168		0931	5.0	153
	1356	13.5	413		1421	11.8	360		1521	12.6	383
	2000	1.2	37		2017	3.2	99		2123	2.8	86
9 W	0240	14.6	445	24	0315	13.0	395	9 Sa	0408	14.3	435
	0834	4.6	141	Th	0907	6.1	186		1032	5.4	165
	1438	13.0	397		1455	11.1	338		1624	11.7	358
	2042	1.8	56		2052	4.2	129		2222	4.1	125
10 Th	0327	14.0	426	25	0351	12.2	371	10 M	0503	13.5	410
	0927	5.4	165	Sa	0955	6.7	204		1144	5.6	171
	1524	12.2	373		1533	10.3	314		1743	11.1	338
	2130	2.8	85		2137	5.3	161		O	2334	5.2	160
11 F	0421	13.1	400	26	0433	11.4	348	11 M	0602	12.8	390
	1031	6.2	188	Sa	1052	7.2	219		1302	5.4	164
	1619	11.3	345		1616	9.6	292		1910	11.0	335
	2230	3.9	119		2234	6.2	189		O	2357	7.3	222
12 Sa	0527	12.3	376	27	0530	10.9	332	12 Tu	0100	5.9	180
	1156	6.6	201	W	1203	7.3	224		0708	12.4	378
	1739	10.6	322		1724	9.1	276		1410	4.7	143
	● 2348	4.8	146		O	2346	6.8	206		2045	11.6	354
13 Su	0639	11.9	363	28	0636	10.7	327	13 W	0216	6.0	183
	1328	6.3	192	M	1327	7.0	213		0820	12.3	376
	1917	10.4	318		1915	9.2	279		1509	3.8	116
										2152	12.7	386
14 M	0121	5.1	154	29	0109	6.9	210	14 Th	0323	5.8	177
	0754	12.0	366	Tu	0742	11.0	334		0927	12.5	380
	1439	5.4	165		1432	6.1	187		1559	3.0	90
	2050	11.2	341		2044	9.9	303		2240	13.6	416
15 Tu	0235	4.8	146	30	0226	6.6	200	15 F	0421	5.6	170
	0906	12.6	383	W	0841	11.5	349		1023	12.6	385
	1535	4.2	128		1519	5.0	153		1642	2.3	70
	2158	12.4	379		2142	11.1	338		2323	14.3	437
31 Th	0324	6.0	184	31	0324	6.0	184				
	0933	12.0	367	Th	0933	12.0	367				
	1600	3.9	119		1600	3.9	119				
	2225	12.3	374		2225	12.3	374				

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0110	9.8	300	16 W 0130	10.2	310	1 F 0141	9.8	300	16 Sa 0201	8.9	270
0703	3.3	100	0756	1.6	50	0800	1.6	50	0847	2.0	60
1236	8.2	250	1333	7.9	240	1348	7.9	240	1449	7.2	220
1856	1.6	50	1942	2.0	60	1953	3.0	90	2027	4.3	130
2 W 0139	9.8	300	17 Th 0206	9.5	290	2 Sa 0214	9.5	290	17 Su 0231	8.2	250
0741	3.0	90	0842	2.0	60	0846	1.6	50	0930	2.3	70
1314	7.9	240	1423	7.2	220	1439	7.5	230	1552	6.6	200
1933	2.0	60	2025	3.0	90	2040	3.6	110	2116	5.2	160
3 Th 0211	9.5	290	18 F 0243	9.2	280	3 Su 0250	9.2	280	18 M 0303	7.5	290
0825	3.0	90	0930	2.3	70	0940	1.3	40	0817	0.7	20
1358	7.5	230	1524	6.9	210	1548	6.9	210	1422	7.9	240
2015	3.0	90	2112	3.9	120	2138	4.3	130	2230	5.6	170
4 F 0246	9.2	280	19 M 0320	8.5	260	4 M 0334	8.9	270	19 Tu 0341	7.2	220
0914	2.6	80	1022	2.3	70	1043	1.3	40	1121	2.6	80
1454	7.2	220	1652	6.2	190	1730	6.9	210	1947	6.9	210
2104	3.6	110	2208	4.9	150	2251	4.9	150	2119	4.6	140
5 Sa 0327	9.2	280	20 Su 0359	7.9	240	5 Tu 0433	8.2	250	20 W 0036	5.9	180
1011	2.3	70	1119	2.6	80	1154	1.0	30	0449	6.9	210
1612	6.9	210	1855	6.6	200	1925	7.2	220	1231	2.6	80
2203	4.3	130	2334	5.6	170	2032	7.2	220	2032	4.9	150
6 Su 0414	8.9	270	21 M 0450	7.2	220	6 W 0028	4.9	150	21 Th 0148	5.6	170
1115	2.0	60	1221	2.6	80	0551	7.9	240	0629	6.6	200
1805	6.9	210	2010	6.9	210	1305	0.7	20	1331	2.3	70
2317	4.9	150				2029	7.9	240	2106	7.9	240
7 M 0513	8.5	260	22 Tu 0106	5.6	170	7 Th 0154	4.6	140	22 F 0238	4.9	150
1222	1.3	40	0601	6.9	210	0711	7.9	240	0745	6.9	210
1942	7.2	220	1319	2.3	70	1407	0.0	0	1421	2.0	60
			2057	7.5	230	2118	8.5	260	2138	8.5	260
8 Tu 0046	5.2	160	23 W 0217	5.6	170	8 F 0301	3.9	120	23 Sa 0318	4.3	130
0621	8.2	250	0713	6.9	210	0825	7.9	240	0847	7.2	220
1325	0.7	20	1408	2.0	60	1503	-0.3	-10	1506	1.6	50
2043	8.2	250	2135	8.2	250	2201	9.2	280	2209	8.9	270
9 W 0205	4.9	150	24 Th 0312	4.9	150	9 Sa 0357	3.0	90	24 Su 0355	3.6	110
0728	8.2	250	0815	7.2	220	0930	8.2	250	0940	7.9	240
1422	0.0	0	1452	1.6	50	1554	-0.3	-10	1547	1.3	40
2135	8.9	270	2211	8.5	260	2240	9.8	300	2239	9.2	280
10 Th 0313	4.3	130	25 M 0356	4.6	140	10 F 0445	2.3	70	10 W 0430	3.0	90
0832	8.5	260	0910	7.5	230	1025	8.5	260	1025	8.5	260
1517	-0.7	-20	1534	1.0	30	1640	-0.3	-10	1626	1.3	40
2220	9.5	290	2245	9.2	280	2317	10.2	310	2308	9.5	290
11 F 0411	3.6	110	26 Sa 0433	3.9	120	11 M 0529	1.6	50	11 Tu 0504	2.3	70
0934	8.5	260	0958	7.9	240	1113	8.9	270	1105	8.9	270
1609	-0.7	-20	1614	1.0	30	1722	0.0	0	1703	1.3	40
2302	10.2	310	2318	9.5	290	2351	10.2	310	2337	9.8	300
12 Sa 0501	3.0	90	27 Su 0507	3.6	110	12 Tu 0610	1.3	40	12 W 0538	1.6	50
1029	8.9	270	1040	8.2	250	1155	8.9	270	1143	9.2	280
1656	-1.0	-30	1652	0.7	20	1801	0.7	20	1738	1.3	40
2340	10.5	320	2347	9.8	300				2317	9.8	300
13 Su 0546	2.3	70	28 M 0538	3.0	90	13 W 0025	10.2	310	13 Th 0006	9.8	300
1119	8.9	270	1119	8.5	260	0649	1.0	30	0613	1.3	40
1740	-0.7	-20	1728	0.7	20	1237	8.9	270	1219	9.2	280
						1837	1.6	50	1812	2.0	60
14 M 0018	10.5	320	29 Tu 0015	9.8	300	14 Th 0058	9.8	300	14 W 0538	1.6	50
0629	2.0	60	0609	2.6	80	0728	1.3	40	1143	9.2	280
1204	8.9	270	1155	8.5	260	1317	8.2	250	1738	2.0	60
1821	0.0	0	1802	1.0	30	1912	2.3	70	2349	9.8	300
15 Tu 0054	10.5	320	30 W 0043	10.2	310	15 F 0130	9.5	290	15 Th 0019	9.5	290
0711	1.6	50	0642	2.0	60	0807	1.3	40	0650	1.0	30
1248	8.5	260	1231	8.5	260	1400	7.9	240	1258	8.9	270
1902	1.0	30	1836	1.3	40	1948	3.3	100	1843	3.3	100
16 Th 0111	10.2	310	31 Th 0719	2.0	60						
			1307	8.5	260						
			1912	2.0	60						

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2013

Times and Heights of High and Low Waters

April					May					June								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time				
1 M 0104 0749 1410 2004	9.2 0.3 8.5 3.9	280 10 260 120	16 Tu 0103 0751 1438 2022	7.9 2.3 8.2 5.2	240 70 250 160	1 W 0126 0824 1505 2110	8.2 1.0 9.2 4.3	250 30 280 130	16 Th 0120 0803 1503 2111	7.5 2.6 8.9 5.2	230 80 270 160	1 Sa 0410 1009 1640 2327	7.2 3.0 9.2 3.3	220 90 280 100	16 Su 0309 0919 1554 2238	7.2 3.9 9.2 3.9	220 120 280 120	
	0142 0844 1513 2110	8.5 1.0 8.2 4.6	260 30 250 140	17 W 0138 0833 1535 2131	7.5 2.6 7.9 5.6	230 80 240 170	2 Th 0228 0925 1610 2231	7.5 1.6 8.9 4.3	230 50 270 130	17 F 0211 0850 1551 2217	7.2 3.3 8.9 150	220 100 270 150	2 Su 0536 1117 1737	7.2 3.9 8.9	220 120 270	17 M 0434 1021 1643 2342	6.9 4.6 8.9 3.3	210 140 270 100
	0232 0947 1633 2235	7.9 1.3 7.9 4.6	240 40 240 140	18 Th 0225 0927 1641 2302	6.9 3.3 7.9 5.6	210 100 240 170	3 F 0410 1033 1715 2350	7.2 2.6 8.5 3.6	220 80 260 110	18 Sa 0326 0952 1642 2326	6.9 3.9 8.5 4.6	210 120 260 140	3 M 0034 0650 1228 1832	2.6 7.5 4.3 8.9	80 230 130 270	18 Tu 0604 1140 1736	7.2 4.9 8.9	220 150 270
	0358 1059 1754	7.2 1.6 7.9	220 50 240	19 F 0341 1038 1745	6.6 3.6 7.9	200 110 240	4 Sa 0545 1145 1817	7.2 3.0 8.9	220 90 270	19 Su 0503 1108 1734	6.9 4.3 8.9	210 130 270	4 Tu 0130 0753 1332	2.0 7.9 4.6	60 240 140	19 W 0042 0717 1257	2.3 7.5 5.2	70 230 160
5 F 0007 0543 1214 1903	4.3 7.2 2.0 8.2	130 220 60 250	20 Sa 0019 0527 1157 1839	4.9 6.6 3.9 8.2	150 200 120 250	5 Su 0057 0702 1254 1912	3.0 7.5 3.3 8.9	90 230 100 270	20 M 0025 0629 1224 1824	3.6 7.2 4.6 8.9	110 220 140 270	5 W 0217 0849 1430 2008	1.6 8.5 4.6 8.5	50 260 140 260	20 Th 0135 0818 1401 1923	1.6 8.2 4.9 9.2	50 250 150 280	
6 Sa 0119 0707 1322 1957	3.6 7.5 2.0 8.5	110 230 60 260	21 Su 0110 0653 1304 1924	4.3 7.2 3.9 8.5	130 220 120 260	6 M 0152 0805 1354 1959	2.3 8.2 3.6 8.9	70 250 110 270	21 Tu 0115 0736 1326 1911	3.0 7.9 4.6 9.2	90 240 140 280	6 Th 0259 0940 1525 2051	1.3 8.9 4.6 8.5	40 270 140 260	21 F 0224 0914 1459 2017	0.7 8.9 4.9 9.2	20 270 150 280	
7 Su 0215 0815 1419 2043	2.6 7.9 2.0 8.9	80 240 60 270	22 M 0150 0757 1357 2005	3.3 7.9 3.6 8.9	100 240 110 270	7 Tu 0238 0901 1448 2043	1.6 8.5 3.6 8.9	50 260 110 270	22 W 0159 0834 1419 1957	2.0 8.5 4.6 9.2	60 260 140 280	7 F 0338 1026 1615 2131	1.0 9.2 4.6 8.2	30 280 140 250	22 Sa 0314 1006 1555 2113	0.0 9.5 4.6 9.2	0 290 140 280	
8 M 0304 0913 1510 2125	1.6 8.5 2.3 9.2	50 260 70 280	23 Tu 0229 0853 1444 2046	2.3 8.5 3.6 9.2	70 260 110 280	8 W 0321 0951 1538 2123	1.0 8.9 3.9 8.9	30 270 120 270	23 Th 0243 0928 1510 2044	1.0 9.2 4.3 9.5	30 280 130 290	8 Sa 0416 1108 1700 2209	1.0 9.5 4.6 8.2	30 290 140 250	23 Su 0403 1053 1646 2209	-0.3 9.8 3.9 9.2	-10 300 120 280	
9 Tu 0349 1004 1556 2203	1.3 8.9 2.3 9.2	40 270 70 280	24 W 0309 0945 1529 2127	1.6 8.9 3.3 9.5	50 270 100 290	9 Th 0401 1037 1624 2200	0.7 9.5 3.9 8.9	20 290 120 270	24 F 0328 1019 1600 2133	0.3 9.5 4.3 9.5	10 290 130 290	9 Su 0451 1146 1739 2245	1.0 9.5 4.6 8.2	30 290 140 250	24 M 0451 1136 1733 2301	-0.7 10.2 3.6 9.2	-20 310 110 280	
10 W 0430 1048 1639 ● 2238	0.7 9.2 2.6 9.2	20 280 80 280	25 Th 0352 1032 1613 2208	1.0 9.5 3.3 9.5	30 290 100 290	10 F 0438 1118 1707 ● 2233	0.7 9.5 4.3 8.5	20 290 130 260	25 Sa 0415 1105 1648 ● 2221	-0.3 10.2 3.9 9.5	-10 310 120 290	10 M 0526 1223 1814 2320	1.0 9.8 4.6 8.2	30 300 140 250	25 Tu 0537 1217 1819 2350	-0.7 10.5 3.3 9.2	-20 320 100 280	
11 Th 0508 1129 1718 2310	0.7 9.5 3.3 9.2	20 290 100 280	26 F 0434 1115 1656 ● 2247	0.3 9.8 3.3 9.8	10 300 100 300	11 Sa 0512 1156 1744 2304	0.7 9.5 4.6 8.5	20 290 130 260	26 Su 0501 1148 1734 2307	-0.3 10.2 3.9 9.5	-10 310 120 290	11 Tu 0600 1257 1846 2355	1.3 9.8 4.6 8.2	40 300 140 250	26 W 0621 1258 1905 2350	0.0 10.5 3.0 9.2	0 320 90 280	
12 F 0541 1206 1752 2339	0.7 9.5 3.6 8.9	20 290 110 270	27 Sa 0517 1156 1737 2325	0.0 10.2 3.6 9.8	0 310 110 300	12 M 0544 1232 1818 2334	1.0 9.5 4.6 8.2	30 290 140 250	27 W 0546 1230 1820 2351	-0.3 10.5 3.9 9.2	-10 320 120 280	12 Tu 0634 1328 1920 2355	1.6 9.5 4.6 8.2	50 290 140 250	27 Th 0038 1070 1340 1955	8.5 0.7 10.2 3.0	260 20 310 90	
13 Sa 0613 1242 1823	1.0 9.2 4.3	30 280 130	28 Su 0600 1236 1820	-0.3 10.2 3.6	-10 310 110	13 M 0616 1307 1850	1.3 9.5 4.9	40 290 150	28 Tu 0631 1313 1908	-0.3 10.2 3.6	-10 310 110	13 Th 0032 1078 1400 1958	7.9 2.0 9.5 4.6	240 60 290 140	28 F 0130 0754 1424 2051	8.2 1.3 9.8 3.0	250 40 300 90	
14 Su 0005 0643 1317 1855	8.5 1.3 8.9 4.6	260 40 270 140	29 M 0003 0643 1318 1906	9.5 0.0 9.8 3.9	290 0 300 120	14 Tu 0006 0649 1343 1927	8.2 1.6 10.2 4.9	250 50 310 150	29 W 0037 0718 1400 2003	8.9 0.3 10.2 3.6	270 10 310 110	14 F 0114 0746 1433 2044	7.5 2.6 9.5 4.3	230 80 290 130	29 Sa 0233 0847 1511 2152	7.5 2.3 9.5 3.0	230 70 290 90	
15 M 0033 0715 1354 1932	8.2 1.6 8.5 4.9	250 50 260 150	30 Tu 0042 0730 1406 2001	8.9 0.3 9.5 4.3	270 10 290 130	15 W 0041 0724 1420 2013	7.9 2.3 8.9 5.2	240 70 300 160	30 Th 0129 0809 1450 2107	8.2 1.3 9.8 3.6	250 40 300 110	15 Sa 0203 0828 1511 2138	7.2 3.3 9.2 4.3	220 100 280 130	30 Su 0351 0945 1600 2257	7.2 3.3 8.9 2.6	220 100 270 80	
									31 F 0238 0907 1544 ● 2217	7.5 2.0 9.5 3.6	230 60 290 110							

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2013

Times and Heights of High and Low Waters

July						August						September							
Time		Height		Time		Height		Time		Height		Time		Height		Time		Height	
1 M	0516	7.2	220	16	0402	7.2	220	1	0032	2.6	80	16	0639	7.2	220	1	0152	3.0	90
	1050	4.3	130	Tu	0946	4.6	140	F	0727	7.2	220		1206	4.9	150	Su	0836	7.9	240
	1654	8.5	260	O	1559	8.9	270		1303	5.2	160		1731	7.9	240		1436	4.6	140
2 Tu	0004	2.6	80	17	0534	7.2	220	2	0136	2.3	70	17	0047	1.3	40	2	0234	2.6	80
	0634	7.2	220	W	1057	4.9	150	F	0821	7.5	230	Sa	0745	7.9	240	M	0909	8.2	250
	1204	4.9	150		1654	8.5	260		1408	5.2	160		1335	4.6	140		1511	3.9	120
	1752	8.2	250						1919	7.2	220		1850	7.9	240		2043	7.5	230
3 W	0107	2.3	70	18	0007	2.0	60	3	0223	2.0	60	18	0154	1.0	30	3	0311	2.0	60
	0740	7.5	230	Th	0700	7.5	230	Sa	0905	8.2	250	Su	0835	8.5	260		0940	8.5	260
	1316	5.2	160		1231	5.2	160		1500	4.6	140		1438	3.9	120		1544	3.3	100
	1849	7.9	240		1757	8.5	260		2014	7.2	220		2000	8.2	250		2128	7.9	240
4 Th	0158	2.0	60	19	0113	1.3	40	4	0303	1.6	50	19	0249	0.3	10	4	0346	2.0	60
	0836	8.2	250	F	0804	8.2	250	Su	0945	8.5	260	M	0920	8.9	270		1011	8.9	270
	1418	5.2	160		1348	4.9	150		1543	4.3	130		1531	3.0	90		1616	3.0	90
	1942	7.9	240		1901	8.5	260		2103	7.5	230		2103	8.5	260		2210	8.5	260
5 F	0242	1.6	50	20	0210	0.7	20	5	0340	1.6	50	20	0339	0.0	0	5	0420	1.6	50
	0926	8.5	260	Sa	0858	8.5	260	M	1021	8.9	270	Tu	1003	9.5	290		1040	9.2	280
	1514	4.9	150		1451	4.6	140		1621	3.9	120		1619	2.3	70		1646	2.3	70
	2030	7.9	240		2004	8.5	260		2148	7.9	240		2200	8.9	270		2248	8.9	270
6 Sa	0322	1.3	40	21	0303	0.0	0	6	0415	1.3	40	21	0425	0.0	0	6	0452	1.6	50
	1010	8.9	270	Su	0947	9.2	280	Tu	1055	9.2	280		1042	9.8	300	M	1109	9.2	280
	1603	4.6	140		1547	3.9	120		1655	3.6	110		1704	1.6	50		1717	2.0	60
	2116	7.9	240		2106	8.9	270		2228	8.2	250		2250	9.2	280		2324	9.2	280
7 Su	0359	1.3	40	22	0353	-0.3	-10	7	0449	1.3	40	22	0507	0.3	10	7	0524	2.0	60
	1050	9.2	280	M	1032	9.8	300	W	1126	9.2	280	Th	1120	9.8	300		1138	9.5	290
	1646	4.3	130		1637	3.3	100		1726	3.0	90		1745	1.0	30		1749	1.6	50
	2159	7.9	240	O	2205	8.9	270		2306	8.5	260		2335	9.2	280		2359	9.2	280
8 M	0435	1.0	30	23	0441	-0.3	-10	8	0522	1.3	40	23	0547	0.7	20	8	0556	2.3	70
	1127	9.5	290	Tu	1114	10.2	310	Th	1154	9.5	290		1155	9.8	300		1206	9.5	290
	1723	4.3	130		1723	2.6	80		1756	2.6	80		1826	1.0	30		1823	1.3	40
	2239	8.2	250		2258	9.2	280		2341	8.9	270						1220	8.9	270
9 Tu	0510	1.0	30	24	0525	-0.3	-10	9	0554	1.6	50	24	0017	9.2	280	9	0032	8.9	270
	1201	9.5	290	W	1153	10.2	310	F	1221	9.5	290	Sa	0625	1.6	50		0630	2.6	80
	1756	3.9	120		1807	2.0	60		1826	2.6	80		1230	9.5	290		1235	9.2	280
	2315	8.2	250		2345	9.2	280					1905	1.0	30		1900	1.3	40	
10 W	0544	1.3	40	25	0607	0.0	0	10	0015	8.9	270	25	0059	8.9	270	10	0107	8.5	260
	1232	9.8	300	Th	1230	10.2	310	Sa	0625	2.0	60		0703	2.3	70		0707	3.3	100
	1827	3.6	110		1850	2.0	60		1248	9.5	290		1304	9.2	280		1305	8.9	270
	2351	8.2	250						1858	2.3	70		1946	1.3	40		2009	2.3	70
11 Th	0618	1.6	50	26	0031	8.9	270	11	0051	8.5	260	26	0144	8.2	250	11	0149	8.2	250
	1300	9.8	300	F	0649	1.0	30	Su	0659	2.6	80	M	0741	3.3	100		0751	3.9	120
	1858	3.6	110		1308	10.2	310		1317	9.2	280		1336	8.5	260		1339	8.5	260
	2351	3.3	100		1935	2.0	60		1935	2.3	70		2028	2.0	60		2031	1.6	50
12 F	0027	8.2	250	27	0119	8.5	260	12	0129	8.2	250	27	0235	7.5	230	12	0247	7.5	230
	0651	2.0	60	Sa	0732	1.6	50	M	0737	3.3	100		0745	4.3	130		0847	4.6	140
	1328	9.5	290		1347	9.5	290		1349	9.2	280		1409	7.9	240		1421	7.9	240
	1931	3.3	100		2024	2.0	60		2018	2.3	70		2115	2.3	70		2131	1.6	50
13 Sa	0106	8.2	250	28	0212	7.9	240	13	0217	7.5	230	28	0345	6.9	210	13	0422	7.2	220
	0726	2.6	80	Su	0819	3.0	90	Tu	0821	3.9	120		0922	4.9	150		0959	4.9	150
	1358	9.5	290		1427	9.2	280		1425	8.9	270		1445	7.2	220		1524	7.5	230
	2011	3.3	100		2117	2.3	70		2109	2.3	70		2211	3.0	90		2246	2.0	60
14 Su	0150	7.9	240	29	0317	7.2	220	14	0325	7.2	220	29	0536	6.6	200	14	0602	7.2	220
	0806	3.3	100	M	0914	3.9	120	W	0916	4.6	140		1110	5.6	170		1140	4.9	150
	1433	9.2	280		1511	8.5	260		1511	8.2	250		1537	6.6	200		1711	7.2	220
	2057	3.3	100	O	2215	2.6	80		2210	2.0	60		2327	3.3	100				
15 M	0246	7.5	230	30	0441	6.9	210	15	0459	6.9	210	30	0709	6.9	210	15	0014	2.0	60
	0851	3.9	120	Tu	1020	4.6	140	Th	1024	4.9	150		1246	5.6	170		0714	7.9	240
	1512	9.2	280		1600	7.9	240		1612	7.9	240		1720	6.2	190		1314	4.3	130
	2152	3.0	90		2320	2.6	80		2325	2.0	60						1846	7.2	220

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0148	3.3	100	16 W 0200	2.3	70	1 F 0229	3.6	110	1 Su 0248	4.3	130
0816	7.9	240	0811	8.9	270	0830	8.9	270	0831	8.9	270
1427	3.9	120	1441	2.0	60	1445	2.0	60	1500	0.7	20
2017	7.2	220	2050	8.5	260	2129	8.5	260	2203	9.2	280
2 W 0231	3.0	90	17 Th 0253	2.3	70	2 Sa 0312	3.6	110	2 M 0339	3.9	120
0847	8.2	250	0853	9.2	280	0909	9.2	280	0918	9.2	280
1457	3.0	90	1527	1.0	30	1526	1.3	40	1547	0.0	0
2104	7.9	240	2140	8.9	270	2213	9.2	280	2247	9.5	290
3 Th 0309	2.6	80	18 F 0341	2.3	70	3 Su 0354	3.3	100	3 Tu 0427	3.9	120
0919	8.9	270	0933	9.2	280	0947	9.2	280	1004	9.2	280
1528	2.3	70	1610	0.7	20	1608	0.7	20	1634	-0.3	-10
2148	8.5	260	2226	9.2	280	● 2255	9.5	290	● 2328	9.8	300
4 F 0345	2.6	80	19 Sa 0425	2.3	70	4 M 0435	3.3	100	4 W 0512	3.6	110
0953	9.2	280	1010	9.2	280	1025	9.5	290	1049	9.2	280
1602	1.6	50	1649	0.3	10	1650	0.0	0	1719	-0.7	-20
2229	9.2	280	○ 2308	9.5	290	2334	9.8	300			
5 Sa 0420	2.3	70	20 Su 0505	2.6	80	5 Tu 0515	3.3	100	5 W 0007	10.2	310
1025	9.2	280	1044	9.2	280	1103	9.5	290	0607	3.3	100
1638	1.0	30	1725	0.3	10	1732	0.0	0	1123	8.2	250
● 2308	9.5	290	2346	9.5	290	1800	1.0	30	1802	-0.3	-10
6 Su 0455	2.6	80	21 M 0540	3.3	100	6 W 0011	9.8	300	6 Th 0046	10.2	310
1057	9.5	290	1115	8.9	270	0555	3.3	100	0638	3.0	90
1716	0.7	20	1756	0.7	20	1140	9.5	290	1214	8.9	270
2344	9.5	290				1813	0.0	0	1847	0.0	0
7 M 0530	2.6	80	22 Tu 0022	9.2	280	7 Th 0049	9.5	290	7 Sa 0126	9.8	300
1129	9.5	290	0611	3.6	110	0637	3.3	100	0725	3.0	90
1753	0.3	10	1144	8.5	260	1216	9.2	280	1258	8.5	260
			1825	1.0	30	1857	0.3	10	1934	0.7	20
8 Tu 0018	9.5	290	23 W 0057	8.9	270	8 F 0129	9.2	280	8 Su 0209	9.5	290
0606	3.0	90	0640	4.3	130	0723	3.6	110	0818	3.0	90
1200	9.5	290	1213	8.2	250	1254	8.5	260	1348	7.9	240
1832	0.3	10	1854	1.6	50	1945	0.7	20	2026	1.6	50
9 W 0053	9.2	280	24 Th 0132	8.2	250	9 Sa 0217	8.9	270	9 M 0257	9.2	280
0645	3.3	100	0712	4.6	140	0819	3.9	120	0920	3.0	90
1232	9.2	280	1242	7.9	240	1338	7.9	240	1458	7.2	220
1914	0.7	20	1926	2.3	70	2042	1.6	50	● 2124	2.3	70
10 Th 0132	8.5	260	25 F 0211	7.9	240	10 Su 0319	8.5	260	10 W 0350	8.9	270
0730	3.9	120	0751	4.9	150	0929	3.9	120	1028	3.0	90
1306	8.5	260	1312	7.2	220	1446	6.9	210	1639	6.6	200
2003	1.0	30	2002	2.6	80	● 2148	2.3	70	2229	3.3	100
11 F 0224	8.2	250	26 Sa 0302	7.5	230	11 M 0432	8.2	250	11 W 0451	8.5	260
0827	4.3	130	0846	5.2	160	1051	3.9	120	1140	2.6	80
1347	7.9	240	1348	6.9	210	1655	6.6	200	1820	6.9	210
2102	1.6	50	2049	3.3	100	2301	3.0	90	● 2219	4.3	130
12 Sa 0345	7.5	230	27 Su 0417	7.2	220	12 Tu 0542	8.2	250	12 W 0505	7.9	240
0940	4.6	140	1000	5.2	160	1212	3.3	100	1136	3.9	120
1449	7.2	220	1445	6.2	190	1835	6.9	210	1801	6.6	200
● 2214	2.0	60	● 2156	3.9	120	2340	4.6	140	2340	4.6	140
13 Su 0517	7.5	230	28 M 0531	7.2	220	13 W 0019	3.3	100	1248	2.0	60
1114	4.3	130	1138	5.2	160	0644	8.2	250	1935	7.5	230
1702	6.6	200	1651	5.9	180	1320	2.3	70	2034	7.9	240
2336	2.3	70	2320	4.3	130	1944	7.5	230	● 2124	2.3	70
14 M 0630	7.9	240	29 Tu 0629	7.5	230	14 Th 0129	3.3	100	1428	1.6	50
1245	3.6	110	1247	4.6	140	0736	8.5	260	1347	1.6	50
1843	7.2	220	1848	6.6	200	1413	1.6	50	2023	7.9	240
15 Tu 0056	2.3	70	30 W 0042	4.3	130	15 F 0228	3.6	110	1414	1.6	50
0725	8.2	250	0713	7.9	240	0822	8.5	260	0744	8.5	260
1349	2.6	80	1329	3.6	110	1500	1.0	30	0840	8.2	250
1953	7.9	240	1950	7.2	220	2132	8.9	270	2115	8.5	260
			31 Th 0142	3.9	120				2212	8.9	270
			0752	8.2	250						
			1407	2.6	80						
			2041	7.9	240						

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2013

Times and Heights of High and Low Waters

January				February				March					
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height		
h m	ft	cm		h m	ft	cm		h m	ft	cm			
1 Tu 0005 0727 1339 1912	9.8 0.3 8.5 4.6	300 10 260 140		16 W 0106 0810 1405 2030	9.5 0.0 9.5 3.0	290 0 290 90		1 F 0113 0748 1355 2024	9.2 1.0 9.8 2.6	280 30 300 80			
2 W 0042 0752 1405 1955	9.8 0.7 8.9 4.3	300 20 270 130		2 Sa 0149 0842 1438 2116	8.9 0.7 9.5 2.6	270 20 290 80		2 Sa 0156 0819 1428 2117	8.5 1.6 9.8 2.3	260 50 300 70			
3 Th 0121 0820 1434 2043	9.5 0.7 9.2 3.6	290 20 280 110		3 Su 0234 0913 1513 2206	7.9 1.3 9.5 2.6	240 40 290 80		3 Su 0246 0855 1506 2220	7.5 2.3 9.8 2.0	250 70 310 60			
4 F 0204 0853 1507 2138	8.9 1.3 9.2 3.3	270 40 280 100		4 M 0324 0945 1551 2304	7.2 2.3 9.2 2.6	220 70 300 80		4 M 0349 0940 1552 2336	6.6 3.0 9.8 2.0	230 90 310 60			
5 Sa 0254 0931 1548 2244	7.9 2.0 9.5 3.0	240 60 290 90		5 Tu 0434 1022 1637	6.2 3.0 8.9	190 90 270		5 W 0535 1039 1654	5.9 3.9 9.5	180 120 290			
6 Su 0400 1018 1638 2359	6.9 2.6 9.5 2.6	210 80 290 80		6 W 0014 0628 1107 1736	2.6 5.6 3.9 8.9	80 170 120 270		6 W 0047 0747 1121 1731	2.6 5.9 4.9 8.2	80 180 250 40			
7 M 0547 1115 1742	6.2 3.3 9.5	190 100 290		7 Th 0138 0810 1202 1848	2.3 5.9 4.6 8.5	70 180 140 260		7 Th 0226 0904 1322 1951	0.7 6.9 4.9 9.2	50 210 170 280			
8 Tu 0121 0753 1221 1856	1.6 6.2 3.9 9.5	50 190 120 290		8 F 0256 0915 1306 1954	2.0 6.6 5.2 8.9	60 200 160 270		8 Sa 0333 0955 1448 2100	0.0 7.5 4.6 9.8	40 230 140 300			
9 W 0241 0911 1332 2005	1.0 6.9 4.6 9.8	30 210 140 300		9 Sa 0352 1004 1412 2045	1.3 7.2 5.2 9.2	40 220 160 280		9 Su 0427 1037 1603 2156	-0.7 8.2 4.3 9.8	-20 250 130 300			
10 Th 0348 1008 1446 2105	0.0 7.5 4.6 10.2	0 230 140 310		10 Su 0435 1043 1515 2127	1.0 7.5 5.2 9.2	30 230 160 280		10 M 0513 1114 1705 2245	-0.7 8.9 3.6 10.2	-20 270 310 310			
11 F 0444 1056 1600 2159	-0.7 8.2 4.6 10.5	-20 250 140 320		11 M 0510 1117 1609 2205	0.7 7.9 5.2 9.5	20 240 240 290		11 M 0555 1149 1757 2331	-0.7 9.2 3.0 10.2	-20 280 90 310			
12 Sa 1139 1708 2249	-1.0 8.5 4.3 10.5	-30 260 130 320		12 W 0540 1147 1655 2241	0.7 8.2 4.9 9.5	20 250 150 290		12 W 0633 1223 1843 2346	-0.3 9.5 2.6 9.5	-10 290 80 290			
13 Su 1219 1807 2336	-1.3 3.9 10.5	-40 120 320		13 W 0607 1213 1737 2317	0.7 8.5 4.6 9.8	20 260 140 300		13 W 0014 0706 1255 1926	9.8 0.0 9.8 2.3	300 0 300 70			
14 M 0659 1256 1859	-1.0 9.2 3.6	-30 280 110		14 Th 0632 1237 1816 2354	0.7 8.9 4.3 9.8	20 270 130 300		14 Th 0056 0738 1326 2008	9.2 0.7 9.8 2.0	280 20 300 60			
15 Tu 0022 0736 1332 1945	10.2 -0.7 9.2 3.3	310 -20 280 100		15 W 0656 1301 1856	0.7 9.2 3.6	20 280 110		15 F 0137 0806 1356 2049	8.5 1.3 9.8 2.0	260 40 300 60			
				31 Th 0032 0720 1326 1938	9.5 0.7 9.5 3.0	290 20 290 90					31 Su 0107 0652 1250 2003	8.5 3.0 10.8 0.7	260 90 330 20

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0154 8.2 250	16 0235 7.5 230	1 W 0249 7.9 240	16 0300 7.9 240	1 Sa 0419 8.5 260	16 0332 8.9 270						
0731 3.3 100	Tu 0756 4.3 130	W 0819 4.6 140	Th 0816 5.2 160	Sa 1027 4.3 130	Su 0936 4.9 150						
1327 10.5 320	1337 9.8 300	1352 10.2 310	1341 9.5 290	1536 8.2 250	1445 8.9 270						
2055 0.7 20	2116 1.6 50	2141 0.3 10	2120 1.6 50	2254 1.6 50	O 2152 2.3 70						
2 Tu 0246 7.5 230	17 0322 7.2 220	2 Th 0348 7.5 230	17 0342 7.9 240	2 Su 0518 8.5 260	17 0413 8.9 270						
0815 3.9 120	W 0834 4.9 150	0922 4.6 140	0905 5.2 160	1138 4.3 130	M 1039 4.6 140						
1407 10.2 310	1408 9.2 280	1442 9.2 280	1418 9.2 280	1705 7.2 220	1543 7.9 240						
2153 0.7 20	2159 2.0 60	O 2236 1.0 30	2159 2.0 60	2345 2.6 80	2237 3.0 90						
3 W 0352 6.9 210	18 0424 6.9 210	3 F 0459 7.5 230	18 0431 7.9 240	3 M 0620 8.9 270	18 0505 9.2 280						
0912 4.3 130	0924 5.2 160	1035 4.9 150	1005 5.2 160	1255 3.6 110	Tu 1150 4.3 130						
1454 9.5 290	1444 8.9 270	1546 8.2 250	1504 8.5 260	1857 7.2 220	1713 7.2 220						
O 2300 1.0 30	O 2249 2.3 70	2335 1.3 40	O 2244 2.3 70	2330 3.6 110	2330 3.6 110						
4 Th 0526 6.6 200	19 0553 6.9 210	4 Sa 0617 7.9 240	19 0532 7.9 240	4 Tu 0038 3.3 100	19 0606 9.5 290						
1028 4.9 150	1029 5.6 170	1156 4.6 140	1114 5.2 160	0716 9.2 280	W 1306 3.3 100						
1558 8.5 260	1530 8.2 250	1731 7.5 230	1609 7.5 230	1412 3.0 90	1919 6.9 210						
5 F 0012 1.3 40	20 0711 7.2 220	5 Su 0037 2.0 60	20 0632 8.2 250	5 W 0132 3.6 110	20 0027 3.9 120						
0706 6.9 210	1145 5.6 170	0719 8.2 250	M 1226 4.6 140	0805 9.8 300	Th 0709 9.8 300						
1159 4.9 150	1649 7.5 230	1320 3.9 120	1800 7.2 220	1517 2.3 70	1422 2.6 80						
1746 7.9 240		1924 7.5 230		2117 7.5 230	2044 7.2 220						
6 Sa 0124 1.3 40	21 0044 2.6 80	6 M 0136 2.3 70	21 0028 3.0 90	6 Th 0223 4.3 130	21 0127 4.6 140						
0808 7.5 230	Su 0758 7.9 240	0808 8.9 270	Tu 0723 8.9 270	0848 10.2 310	F 0806 10.5 320						
1332 4.3 130	1302 4.9 150	1435 3.0 90	1338 3.9 120	1611 1.6 50	1529 1.6 50						
1940 7.9 240	1859 7.2 220	2036 7.9 240	1948 7.2 220	2206 7.9 240	2146 7.9 240						
7 Su 0227 1.3 40	22 0137 2.6 80	7 Tu 0229 2.6 80	22 0121 3.3 100	7 F 0311 4.6 140	22 0228 4.9 150						
0852 8.5 260	M 0833 8.2 250	0848 9.5 290	W 0807 9.5 290	0927 10.5 320	Sa 0859 10.8 330						
1450 3.6 110	1410 4.3 130	1535 2.3 70	1443 3.0 90	1658 1.3 40	1629 0.7 20						
2050 8.5 260	2019 7.9 240	2130 8.2 250	2057 7.9 240	2252 8.2 250	2239 8.2 250						
8 M 0320 1.3 40	23 0224 2.6 80	8 W 0316 3.0 90	23 0212 3.6 110	8 Sa 0357 4.9 150	23 0331 4.9 150						
0929 9.2 280	Tu 0904 8.9 270	0925 10.2 310	0847 10.2 310	1004 10.5 320	Su 0948 11.2 340						
1550 2.6 80	1507 3.3 100	1625 1.6 50	1542 2.0 60	1741 1.0 30	1722 0.0 0						
2143 8.9 270	2115 8.2 250	2217 8.5 260	2153 8.2 250	O 2334 8.5 260	O 2328 8.9 270						
9 Tu 0404 1.6 50	24 0307 2.6 80	9 Th 0358 3.3 100	24 0301 3.9 120	9 Su 0441 5.2 160	24 0435 4.9 150						
1003 9.5 290	0933 9.5 290	0959 10.5 320	F 0927 10.8 330	1038 10.8 330	M 1036 11.5 350						
1640 2.0 60	1558 2.3 70	1710 1.0 30	1637 1.0 30	1819 0.7 20	1812 -0.3 -10						
2229 9.2 280	2203 8.5 260	2301 8.5 260	2244 8.5 260								
10 W 0444 2.0 60	25 0347 3.0 90	10 F 0437 3.6 110	25 0352 4.3 130	10 M 0015 8.5 260	25 0013 9.2 280						
1036 10.2 310	1004 10.2 310	1033 10.5 320	Sa 1007 11.2 340	0522 5.2 160	0538 4.9 150						
1725 1.3 40	1646 1.6 50	1753 0.7 20	1729 0.3 10	1112 10.5 320	1123 11.5 350						
O 2312 9.2 280	O 2249 8.9 270	O 2343 8.5 260	O 2333 8.5 260	1854 1.0 30	1857 -0.7 -20						
11 Th 0520 2.3 70	26 0427 3.3 100	11 Sa 0514 3.9 120	26 0444 4.6 140	11 Tu 0053 8.5 260	26 0057 9.2 280						
1107 10.2 310	1037 10.5 320	1105 10.5 320	Su 1048 11.5 350	0602 5.6 170	0636 4.6 140						
1807 1.0 30	1735 1.0 30	1833 0.7 20	1820 -0.3 -10	1144 10.5 320	1209 11.2 340						
2353 8.9 270	2335 8.9 270			1924 1.0 30	1939 -0.3 -10						
12 F 0553 2.6 80	27 0508 3.6 110	12 Su 0024 8.5 260	27 0021 8.9 270	12 W 0127 8.5 260	27 0137 9.5 290						
1139 10.5 320	Sa 1112 10.8 330	0549 4.6 140	0538 4.6 140	0640 5.6 170	0730 4.3 130						
1848 1.0 30	1823 0.3 10	1137 10.5 320	1131 11.5 350	1216 10.5 320	1255 10.8 330						
		1910 0.7 20	1907 -0.3 -10	1951 1.0 30	2019 0.0 0						
13 Sa 0033 8.5 260	28 0022 8.9 270	13 M 0105 8.5 260	28 0108 8.9 270	13 Th 0159 8.5 260	28 0216 9.5 290						
0624 3.3 100	Su 0551 3.9 120	0624 4.6 140	0634 4.6 140	0718 5.6 170	F 0821 4.3 130						
1209 10.5 320	1149 11.2 340	1208 10.5 320	1215 11.2 340	1248 10.2 310	1341 10.2 310						
1925 1.0 30	1911 0.0 0	1944 1.0 30	1953 -0.3 -10	2017 1.3 40	2057 0.7 20						
14 Su 0114 8.2 250	29 0109 8.5 260	14 Tu 0143 8.2 250	29 0154 8.9 270	14 F 0228 8.5 260	29 0254 9.5 290						
0654 3.6 110	M 0636 3.9 120	0659 4.9 150	0730 4.6 140	0758 5.2 160	Sa 0912 3.9 120						
1239 10.2 310	1228 11.2 340	1238 10.2 310	1259 10.8 330	1323 9.8 300	1428 9.2 280						
2002 1.0 30	2000 0.0 0	2016 1.0 30	2038 -0.3 -10	2043 1.6 50	2134 1.3 40						
15 M 0154 7.9 240	30 0157 8.2 250	15 W 0221 8.2 250	30 0240 8.9 270	15 Sa 0258 8.9 270	30 0334 9.5 290						
0724 3.9 120	Tu 0725 4.3 130	0735 5.2 160	0826 4.6 140	0843 5.2 160	Su 1007 3.9 120						
1308 10.2 310	1309 10.8 330	1309 9.8 300	1345 10.2 310	1401 9.5 290	1522 8.2 250						
2038 1.3 40	2049 0.0 0	2047 1.3 40	2122 0.3 10	2114 2.0 60	O 2212 2.3 70						
31 F 0327 8.5 260											
0924 4.6 140											
1436 9.2 280											
O 2207 1.0 30											
32 F 0337 8.5 260											
0936 4.6 140											
1543 7.9 240											
2237 3.0 90											

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0420	9.5	290	16 0320	9.8	300	1 Th 0507	9.2	280	16 0416	9.8	300
1108	3.6	110	Tu 1006	3.9	120	1302	3.3	100	F 1215	2.6	80
1634	7.2	220	1525	7.9	240	1933	6.6	200	1847	6.6	200
2254	3.0	90	● 2151	3.3	100	2347	4.9	150	2322	4.9	150
2 Tu 0513	9.5	290	17 0404	9.8	300	2 0625	9.2	280	2 0146	5.6	170
1220	3.6	110	W 1117	3.6	110	1427	3.0	90	17 0535	9.5	290
1820	6.9	210	1646	7.2	220	2048	7.2	220	Sa 1342	2.0	60
2341	3.9	120	2243	3.9	120	2026	7.2	220	1448	2.6	80
3 W 0617	9.5	290	18 0502	9.8	300	3 Sa 0053	5.6	170	1644	7.9	240
1341	3.0	90	Th 1238	3.0	90	0741	9.2	280	18 0046	5.2	160
1956	6.9	210	1858	6.6	200	1532	2.3	70	Su 0716	9.8	300
			2346	4.6	140	2140	7.5	230	1458	1.3	40
4 Th 0035	4.6	140	19 0617	10.2	310	4 Su 0204	5.6	170	3 Tu 0255	5.6	170
0719	9.5	290	F 1402	2.3	70	0839	9.5	290	18 0331	3.6	110
1457	2.6	80	2037	7.2	220	1620	2.0	60	W 0931	9.8	300
2103	7.2	220				2222	8.2	250	1616	2.3	70
5 F 0133	4.9	150	20 0057	4.9	150	5 M 0310	5.6	170	2223	8.9	270
0814	9.8	300	Sa 0735	10.2	310	0924	9.8	300	3 Tu 0907	9.2	280
1556	2.0	60	1517	1.3	40	1658	1.6	50	16 0146	4.6	140
2156	7.9	240	2139	7.9	240	2258	8.5	260	1647	0.3	10
6 Sa 0231	5.2	160	21 0212	5.2	160	6 Tu 0405	5.6	170	5 Th 0430	4.6	140
0901	10.2	310	Su 0842	10.8	330	1003	10.2	310	20 0517	2.0	60
1644	1.3	40	1617	0.7	20	1731	1.6	50	W 1107	10.2	310
2241	8.2	250	2229	8.5	260	2329	8.9	270	M 1738	1.6	50
7 Su 0327	5.6	170	22 0327	5.2	160	21 0436	3.9	120	● 2314	9.5	290
0941	10.5	320	M 0939	11.2	340	1027	10.8	330	20 0517	2.0	60
1725	1.3	40	1709	0.0	0	1731	0.3	10	W 1107	10.2	310
2321	8.5	260	○ 2313	8.9	270	2247	9.2	280	M 1739	2.3	70
8 M 0419	5.6	170	23 0436	4.9	150	7 Th 0450	5.2	160	5 Th 1024	9.8	300
1019	10.5	320	Tu 1030	11.2	340	1039	10.2	310	1714	2.3	70
1800	1.0	30	1756	-0.3	-10	1759	1.6	50	● 2314	9.5	290
● 2358	8.9	270	2354	9.5	290	2358	10.2	310	20 0517	2.0	60
9 Tu 0505	5.6	170	24 0538	4.3	130	8 Th 0528	4.9	150	21 0603	1.6	50
1053	10.5	320	W 1119	11.2	340	1113	10.5	320	Sa 1150	10.2	310
1832	1.0	30	1838	-0.3	-10	1823	1.6	50	1815	2.0	60
10 W 0031	8.9	270	25 0032	9.8	300	10 0044	9.5	290	2354	10.5	320
0546	5.6	170	Th 0631	3.9	120	0639	4.3	130	21 0646	1.3	40
1127	10.5	320	1206	11.2	340	1222	10.2	310	Su 1231	9.8	300
1858	1.3	40	1917	0.0	0	1907	2.0	60	1848	2.6	80
11 Th 0100	8.9	270	26 0108	9.8	300	11 0108	9.8	300	23 0026	10.5	320
0623	5.6	170	F 0720	3.6	110	0716	3.6	110	M 0726	1.3	40
1200	10.5	320	1250	10.5	320	1259	10.2	310	1313	9.2	280
1921	1.3	40	1953	0.7	20	1932	2.0	60	1919	3.0	90
12 F 0125	9.2	280	27 0142	10.2	310	12 M 0134	10.2	310	24 0058	10.5	320
0659	5.2	160	Sa 0806	3.3	100	0757	3.3	100	W 0806	1.3	40
1234	10.5	320	1334	10.2	310	1338	9.5	290	Tu 1354	8.9	270
1943	1.3	40	2026	1.3	40	2000	2.3	70	1950	3.6	110
13 Sa 0149	9.5	290	28 0216	10.2	310	12 Th 0207	10.2	310	25 0129	10.2	310
0737	4.6	140	Su 0852	3.0	90	0911	2.3	70	W 0846	1.6	50
1309	10.2	310	1418	9.2	280	1449	8.2	250	M 1437	8.2	250
2007	1.6	50	2058	2.0	60	2053	3.3	100	2022	3.9	120
14 Su 0215	9.5	290	29 0250	10.2	310	13 Th 0207	10.2	310	26 0200	9.8	300
0818	4.3	130	M 0940	3.3	100	0941	3.0	90	Th 0929	2.0	60
1348	9.8	300	1505	8.2	250	1516	7.9	240	1527	7.5	230
2035	2.0	60	○ 2131	2.6	80	● 2115	3.6	110	2059	4.6	140
15 M 0244	9.8	300	30 0327	9.8	300	15 Th 0321	10.5	320	27 0233	9.5	290
0907	3.9	120	Tu 1034	3.3	100	1051	2.6	80	F 1019	2.3	70
1431	8.9	270	1605	7.2	220	1634	6.9	210	M 1635	7.2	220
2109	2.6	80	2207	3.6	110	2210	4.3	130	○ 2146	5.2	160
			31 0411	9.5	290				28 0311	8.9	270
			W 1140	3.3	100				Sa 1119	3.0	90
			1740	6.6	200				1819	6.9	210
			2252	4.3	130				2249	5.6	170
									29 0403	8.2	250
									M 0548	7.5	230
									1336	3.0	90
									2032	7.9	240

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0124	5.6	170	16 W 0216	3.6	110	1 F 0253	3.6	110	1 Su 0320	2.0	60
0742	7.9	240	0825	8.5	260	0905	7.9	240	0938	7.5	230
1431	3.0	90	1445	2.0	60	1440	3.3	100	1430	3.9	120
2108	8.5	260	2059	9.2	280	2112	9.5	290	2101	10.2	310
2 W 0232	4.9	150	17 Th 0322	2.6	80	2 Sa 0342	2.6	80	2 M 0414	1.0	30
0842	8.2	250	0923	8.9	270	0952	8.2	250	1028	7.9	240
1513	2.6	80	1535	2.0	60	1521	3.6	110	1522	4.3	130
2137	8.9	270	2137	9.8	300	2142	9.8	300	2142	10.5	320
3 Th 0323	4.3	130	18 F 0415	1.6	50	3 Su 0428	1.6	50	3 Tu 0505	0.3	10
0928	8.5	260	1012	9.2	280	1036	8.5	260	1116	8.2	250
1548	2.6	80	1619	2.3	70	1601	3.6	110	1616	4.6	140
2203	9.2	280	2211	10.2	310	● 2214	10.5	320	● 2224	10.8	330
4 F 0406	3.6	110	19 Sa 0503	1.3	40	4 M 0513	1.0	30	4 W 0555	-0.3	-10
1008	9.2	280	1057	9.2	280	1120	8.5	260	1202	8.5	260
1619	3.0	90	1700	2.6	80	1643	3.9	120	1712	4.6	140
2228	9.5	290	○ 2245	10.5	320	2248	10.8	330	2307	10.8	330
5 Sa 0446	3.0	90	20 Su 0547	0.7	20	5 Tu 0600	0.7	20	5 Th 0642	-0.7	-20
1047	9.2	280	1140	9.2	280	1205	8.9	270	1247	8.5	260
1650	3.0	90	1737	3.3	100	1727	4.3	130	1811	4.6	140
● 2254	10.2	310	2318	10.5	320	2325	10.8	330	2351	10.8	330
6 Su 0526	2.3	70	21 M 0630	0.7	20	6 W 0646	0.0	0	6 F 0727	-1.0	-30
1127	9.2	280	1222	9.2	280	1250	8.9	270	1331	8.9	270
1721	3.3	100	1813	3.6	110	1814	4.3	130	1908	4.6	140
2321	10.5	320	2351	10.5	320						
7 M 0607	1.6	50	22 Tu 0710	0.7	20	7 Th 0004	10.8	330	7 Sa 0036	10.5	320
1207	9.2	280	1303	8.9	270	0733	0.0	0	0811	-0.7	-20
1755	3.3	100	1848	3.9	120	1336	8.5	260	1412	8.2	250
2352	10.8	330				1904	4.6	140	1939	4.9	150
8 Tu 0650	1.0	30	23 W 0023	10.5	320	8 F 0045	10.8	330	8 Sa 0028	9.8	300
1249	9.2	280	0748	0.7	20	0820	0.0	0	0804	0.7	20
1831	3.6	110	1344	8.5	260	1424	8.5	260	1412	8.2	250
			1922	4.3	130	1958	4.6	140	1938	4.9	150
9 W 0026	10.8	330	24 Th 0055	10.2	310	9 Sa 0129	10.2	310	9 M 0133	9.2	280
0735	1.0	30	0825	1.0	30	0909	0.0	0	0835	-0.3	-10
1334	8.9	270	1426	8.2	250	1515	8.2	250	1449	8.2	250
1910	3.9	120	1957	4.6	140	2058	4.6	140	2020	4.9	150
10 Th 0103	10.8	330	25 F 0127	9.8	300	10 Su 0217	9.5	290	10 M 0208	8.5	260
0823	0.7	20	0902	1.3	40	1000	0.7	20	0939	1.6	50
1422	8.2	250	1511	7.9	240	1615	7.9	240	1610	7.9	240
1955	4.3	130	2038	4.9	150	● 2207	4.6	140	● 2158	4.9	150
11 F 0142	10.5	320	26 Sa 0159	9.2	280	11 M 0315	8.5	260	26 Tu 0250	7.9	240
0917	1.0	30	0942	2.0	60	1056	1.3	40	1018	2.3	70
1518	7.9	240	1605	7.5	230	1724	8.2	250	1700	7.9	240
2050	4.6	140	2126	5.2	160	2323	4.3	130	2300	4.9	150
12 Sa 0228	9.8	300	27 Su 0234	8.5	260	12 Tu 0440	7.5	230	27 W 0345	7.2	220
1018	1.3	40	1027	2.3	70	1155	2.0	60	1104	2.6	80
1631	7.5	230	1715	7.5	230	1834	8.2	250	1757	8.2	250
● 2200	4.9	150	● 2227	5.6	170						
13 Su 0324	8.9	270	28 M 0319	7.9	240	13 W 0043	3.6	110	28 Th 0008	4.3	130
1127	1.6	50	1119	2.6	80	0642	7.2	220	0522	6.6	200
1806	7.5	230	1833	7.5	230	1256	2.3	70	1155	3.0	90
2325	4.9	150	2337	5.2	160	1931	8.9	270	1851	8.5	260
14 M 0452	8.2	250	29 Tu 0429	7.2	220	14 Th 0202	3.0	90	29 F 0117	3.6	110
1238	1.6	50	1214	3.0	90	0810	7.5	230	0726	6.6	200
1925	7.9	240	1930	7.9	240	1354	2.6	80	1248	3.6	110
						2017	9.5	290	1939	9.2	280
15 Tu 0054	4.6	140	30 W 0050	4.9	150	15 F 0307	2.0	60	30 Sa 0222	3.0	90
0700	7.9	240	0642	6.9	210	0911	7.9	240	0842	6.9	210
1346	2.0	60	1308	3.0	90	1447	3.0	90	1449	4.3	130
2017	8.5	260	2010	8.5	260	2058	9.8	300	2021	9.5	290
			31 Th 0157	4.3	130						
			0809	7.2	220						
			1357	3.3	100						
			2043	8.9	270						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Al Ahmandi, Kuwait, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1	0054	9.5	290	16	0206	9.5	290	1	0212	9.2	280
Tu	0759	1.6	50	W	0838	1.6	50	F	0823	2.6	80
	1453	7.9	240		1525	8.9	270		1504	9.2	280
	1941	4.9	150		2049	3.9	120		2054	3.9	120
2	0132	9.2	280	17	0254	8.9	270	2	0301	8.5	260
W	0827	1.6	50	Th	0913	2.3	70	Sa	0857	3.3	100
	1522	8.2	250		1559	8.9	270		1537	9.5	290
	2024	4.9	150		2142	4.3	130		2149	3.6	110
3	0214	8.9	270	18	0345	8.2	250	3	0359	7.5	230
Th	0857	2.0	60	F	0948	3.0	90	Su	0935	3.9	120
	1553	8.5	260		1634	8.9	270		1615	9.8	300
	2113	4.6	140		2243	4.3	130	O	2255	3.6	110
4	0301	8.2	250	19	0442	7.2	220	4	0514	6.9	210
F	0932	2.6	80	Sa	1024	3.9	120	M	1019	4.6	140
	1627	8.5	260		1712	9.2	280		1701	9.8	300
	2211	4.3	130	O	2356	4.3	130				
5	0359	7.5	230	20	0557	6.6	200	5	0018	3.3	100
Sa	1011	3.0	90	Su	1103	4.6	140	Tu	0701	6.6	200
	1706	8.9	270		1756	8.9	270		1116	5.2	160
O	2320	4.3	130						1758	9.8	300
6	0512	6.9	210	21	0120	3.9	120	6	0153	2.6	80
Su	1057	3.9	120	M	0741	6.2	190	W	0903	6.6	200
	1751	9.2	280		1152	5.2	160		1235	5.9	180
					1847	8.9	270		1907	9.8	300
7	0042	3.6	110	22	0241	3.6	110	7	0314	2.3	70
M	0655	6.6	200	Tu	0933	6.6	200	Th	1026	7.2	220
	1155	4.6	140		1304	5.9	180		1412	5.9	180
	1843	9.5	290		1944	8.9	270		2023	9.8	300
8	0209	3.0	90	23	0345	3.0	90	8	0416	1.6	50
Tu	0851	6.6	200	W	1052	6.9	210	F	1121	7.5	230
	1306	4.9	150		1431	6.2	190		1534	5.9	180
	1941	9.5	290		2041	9.2	280		2134	10.2	310
9	0322	2.3	70	24	0433	2.6	80	9	0505	1.3	40
W	1021	6.9	210	Th	1139	7.2	220	Sa	1204	8.2	250
	1425	5.6	170		1538	6.2	190		1636	5.2	160
	2042	9.8	300		2133	9.2	280		2237	10.2	310
10	0423	1.6	50	25	0513	2.3	70	10	0547	1.0	30
Th	1126	7.2	220	F	1212	7.5	230	Su	1240	8.5	260
	1536	5.6	170		1628	6.2	190		1728	4.6	140
	2142	10.2	310		2218	9.5	290	O	2333	10.2	310
11	0516	1.0	30	26	0547	2.0	60	11	0624	1.3	40
F	1218	7.9	240	Sa	1239	7.9	240	M	1312	8.9	270
	1638	5.2	160		1707	5.9	180		1815	4.3	130
O	2239	10.5	320		2258	9.5	290				
12	0603	0.7	20	27	0616	1.6	50	12	0024	10.2	310
Sa	1302	8.2	250	Su	1304	8.2	250	Tu	0657	1.3	40
	1733	4.9	150		1741	5.6	170		1341	8.9	270
	2334	10.5	320	O	2335	9.8	300		1858	3.6	110
13	0645	0.7	20	28	0642	1.6	50	13	0112	9.8	300
Su	1341	8.2	250	M	1327	8.5	260	W	0729	2.0	60
	1823	4.6	140		1814	5.2	160		1408	9.2	280
									1942	3.6	110
14	0026	10.5	320	29	0011	9.8	300	14	0157	9.2	280
M	0725	0.7	20	Tu	0704	2.0	60	F	0800	2.6	80
	1418	8.5	260		1350	8.5	260		1435	9.2	280
	1911	4.3	130		1848	4.9	150		2025	3.3	100
15	0117	10.2	310	30	0049	9.8	300	15	0242	8.9	270
Tu	0802	1.0	30	W	0728	2.0	60	F	0830	3.3	100
	1452	8.5	260		1412	8.9	270		1502	9.5	290
	1959	4.3	130		1926	4.3	130		2111	3.3	100
				31	0129	9.5	290				
				Th	0754	2.3	70				
					1437	9.2	280				
					2007	3.9	120				

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Al Ahmandi, Kuwait, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0322 4.3 130 0810 9.5 290 1415 1.0 30	ft cm 7.5 230 4.3 150 9.5 260 1.0 30	16 Tu 0355 0822 1410 2138	ft cm 6.9 210 4.9 150 8.5 260 1.6 50	1 W 0428 0903 1448 2212	ft cm 7.2 220 4.6 140 8.5 260 0.3 10	16 Th 0420 0849 1420 2152	ft cm 6.9 210 5.2 160 7.9 230 1.6 50	1 Sa 0556 1119 1705 2344	ft cm 7.9 240 4.3 130 7.2 220 2.0 60	16 Su 0459 1017 1548 2233	ft cm 7.9 240 4.9 150 7.5 230 2.6 80
2 Tu 0427 4.9 150 0859 9.2 280 1501 1.0 30	ft cm 7.2 220 5.2 160 8.2 250 2.0 60	17 W 0446 0900 1443 2230	ft cm 6.6 200 5.2 160 8.2 250 2.0 60	2 Th 0532 1010 1551 2316	ft cm 7.2 220 4.9 150 7.9 240 1.0 30	17 F 0506 0942 1505 2237	ft cm 6.9 210 5.2 160 7.5 230 2.0 60	2 Su 0647 1243 1832	ft cm 7.9 240 3.9 120 6.6 200	17 M 0538 1124 1655 2317	ft cm 8.2 250 4.6 140 6.9 210 3.3 100
3 W 0543 5.2 160 1000 8.9 270 1556 1.3 40	ft cm 6.9 210 5.6 170 7.5 230 2.3 70	18 Th 0548 0952 1525 2330	ft cm 6.6 200 5.6 170 7.5 230 2.3 70	3 F 0637 1130 1708	ft cm 7.2 220 4.9 150 7.2 220 2.3 70	18 Sa 0555 1046 1601 2326	ft cm 7.2 220 5.2 160 6.9 210 2.3 70	3 M 0040 0735 1406 2004	ft cm 2.6 80 8.2 250 3.3 100 6.6 200	18 Tu 0621 1241 1825	ft cm 8.5 260 3.9 120 6.2 190
4 Th 0709 5.6 170 1119 8.2 250	ft cm 6.9 210 5.6 170 7.2 250	19 F 0700 1106 1622	ft cm 6.6 200 5.6 170 7.2 220	4 Sa 0023 0738 1304 1841	ft cm 1.3 40 7.2 220 4.3 130 6.9 210	19 Su 0645 1205 1715	ft cm 7.2 220 4.9 150 6.6 200	4 Tu 0138 0820 1513 2126	ft cm 3.3 100 8.5 260 3.0 90 6.6 200	19 W 0009 0705 1358 2012	ft cm 3.6 110 8.9 270 3.3 100 6.2 190
5 F 0059 7.2 220 0826 5.2 160 1300 7.9 240	ft cm 1.3 40 7.2 220 5.2 160 7.9 240	20 Sa 0036 0802 1249 1744	ft cm 2.3 70 6.9 210 5.6 170 6.6 200	5 Su 0129 0830 1428 2017	ft cm 2.0 60 7.5 230 3.6 110 6.6 200	20 M 0019 0730 1330 1857	ft cm 2.6 80 7.5 230 4.3 130 6.2 190	5 W 0233 0901 1607 2237	ft cm 3.9 120 8.5 260 2.3 70 6.6 200	20 Th 0111 0752 1502 2141	ft cm 4.3 130 9.2 280 2.6 80 6.6 200
6 Sa 0213 7.5 230 0923 4.9 150 1435 7.5 230	ft cm 1.6 50 7.5 230 4.9 150 7.5 230	21 Su 0140 0847 1420 1936	ft cm 2.6 80 7.2 220 4.9 150 6.6 200	6 M 0227 0913 1532 2136	ft cm 2.3 70 7.9 240 3.0 90 6.9 210	21 Tu 0116 0811 1436 2038	ft cm 3.0 90 7.9 240 3.6 110 6.2 190	6 Th 0324 0939 1652 2336	ft cm 4.3 130 8.9 270 2.0 60 6.9 210	21 F 0217 0840 1558 2253	ft cm 4.6 140 9.5 290 1.6 50 6.9 210
7 Su 0312 7.9 240 1006 3.9 120 1542 7.5 230	ft cm 1.6 50 7.9 240 3.9 120 7.5 230	22 M 0232 0923 1517 2105	ft cm 2.6 80 7.5 230 3.9 120 6.6 200	7 Tu 0317 0949 1622 2242	ft cm 2.6 80 8.2 250 2.3 70 6.9 210	22 W 0211 0848 1528 2153	ft cm 3.3 100 8.2 250 2.6 80 6.6 200	7 F 0411 1015 1731	ft cm 4.6 140 8.9 270 1.6 50	22 Sa 0319 0930 1650 2353	ft cm 4.9 150 9.8 300 1.0 30 7.2 220
8 M 0359 8.2 250 1041 3.0 90 1633 7.9 240	ft cm 2.0 60 8.2 250 3.0 90 7.9 240	23 Tu 0316 0952 1600 2209	ft cm 2.6 80 7.9 240 3.3 100 6.9 210	8 W 0401 1022 1704 2338	ft cm 3.3 100 8.5 260 1.6 50 7.2 220	23 Th 0303 0924 1613 2257	ft cm 3.6 110 8.9 270 1.6 50 6.9 210	8 Sa 0024 0453 1049 1806	ft cm 7.2 220 4.9 150 8.9 270 1.3 40	23 M 0418 1020 1739	ft cm 4.9 150 9.8 300 0.7 20 O
9 Tu 0439 8.5 260 1111 2.3 70 1716 7.9 240	ft cm 2.3 70 8.5 260 2.3 70 7.9 240	24 W 0354 1020 1638 2304	ft cm 3.0 90 8.5 260 2.3 70 7.2 220	9 Th 0441 1052 1741	ft cm 3.6 110 8.5 260 1.3 40 7.2 220	24 F 0352 1002 1657 2354	ft cm 3.9 120 9.2 280 1.0 30 7.2 220	9 Su 0105 0531 1121 1839	ft cm 7.2 220 4.9 150 8.9 270 1.3 40	24 M 0046 0512 1112 1827	ft cm 7.5 230 4.9 150 10.2 310 0.3 10
10 W 0515 8.5 260 1138 2.0 60 ●	ft cm 2.6 80 8.5 260 2.0 60	25 Th 0431 1048 1716 2356	ft cm 3.3 100 8.9 270 1.3 40 7.5 230	10 F 0028 0518 1120 1815	ft cm 7.2 220 3.9 120 8.5 260 1.0 30	25 M 0439 0518 1042 1815	ft cm 4.3 130 9.5 290 0.3 10 O	10 Th 0139 0606 1152 1911	ft cm 7.5 230 5.2 160 8.9 270 1.3 40	25 Tu 0134 0606 1204 1915	ft cm 7.9 240 4.6 140 10.2 310 0.3 10
11 Th 0026 3.3 100 0547 8.9 270 1203 1.6 50	ft cm 7.9 240 3.3 100 8.9 270 1.6 50	26 F 0509 1118 1754	ft cm 3.3 100 9.2 280 0.7 20	11 M 0111 0553 1147 1847	ft cm 7.2 220 4.3 130 8.5 260 1.0 30	26 Su 0049 0527 1125 1829	ft cm 7.5 230 4.3 130 9.5 290 0.0 0	11 Tu 0211 0639 1223 1943	ft cm 7.5 230 5.2 160 8.9 270 1.3 40	26 W 0219 0658 1258 2001	ft cm 8.2 250 4.6 140 10.2 310 0.3 10
12 F 0111 3.6 110 0619 8.9 270 1227 1.3 40	ft cm 7.9 240 3.6 110 8.9 270 1.3 40	27 M 0047 0547 1152 1836	ft cm 7.9 240 3.6 110 9.2 280 0.3 10	12 Su 0149 0626 1213 1920	ft cm 7.2 220 4.6 140 8.5 260 1.0 30	27 W 0141 0616 1210 1918	ft cm 7.5 230 4.3 130 9.5 290 -0.3 -10	12 Th 0242 0713 1256 2015	ft cm 7.5 230 5.2 160 8.9 270 1.3 40	27 F 0302 0751 1352 2046	ft cm 8.2 250 4.3 130 9.5 290 0.7 20
13 Sa 0152 3.9 120 0650 8.9 270 1250 1.3 40	ft cm 7.5 230 3.9 120 8.9 270 1.3 40	28 Su 0140 0629 1228 1922	ft cm 7.9 240 3.9 120 9.5 290 0.0 0	13 M 0224 0658 1241 1954	ft cm 7.2 220 4.6 140 8.5 260 1.0 30	28 Th 0232 0707 1259 2010	ft cm 7.9 240 4.3 130 9.5 290 0.0 0	13 F 0314 0750 1331 2046	ft cm 7.5 230 4.9 150 8.5 260 1.6 50	28 M 0344 0847 1447 2130	ft cm 8.2 250 4.3 130 9.2 280 1.3 40
14 Su 0231 4.3 130 0719 8.9 270 1315 1.3 40	ft cm 7.5 230 4.3 130 8.9 270 1.3 40	29 M 0233 0715 1309 2014	ft cm 7.5 230 4.3 130 9.2 280 0.0 0	14 Tu 0300 0731 1310 2031	ft cm 7.2 220 4.9 150 8.5 260 1.0 30	29 W 0322 0802 1352 2103	ft cm 7.9 240 4.3 130 9.2 280 0.3 10	14 Th 0347 0831 1410 2119	ft cm 7.5 230 4.9 150 8.2 250 2.0 60	29 F 0426 0947 1546 2214	ft cm 8.5 260 4.3 130 8.2 250 2.0 60
15 M 0311 4.6 140 0750 8.5 260 1341 1.3 40	ft cm 7.2 220 4.6 140 8.5 260 1.3 40	30 Tu 0329 0805 1342 2110	ft cm 7.5 230 4.6 140 8.2 250 0.0 0	15 W 0338 0807 1344 2110	ft cm 7.2 220 4.9 150 8.5 260 1.3 40	30 Th 0413 0901 1449 2156	ft cm 7.5 230 4.3 130 8.5 260 0.7 20	15 F 0422 0920 1455 2154	ft cm 7.5 230 4.9 150 7.9 240 1.3 40	30 M 0508 1054 1650 2259	ft cm 8.5 260 4.3 130 7.5 230 3.0 90
16 M 0311 4.6 140 0750 8.5 260 1341 1.3 40	ft cm 7.2 220 4.6 140 8.5 260 1.3 40	31 F 1005 1553 2249	ft cm 4.3 130 7.9 240 1.3 40	31 O 1005 1553 2249	ft cm 7.5 230 4.3 130 7.9 240 1.3 40						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Al Ahmandi, Kuwait, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0552	8.9	270	16 0440	9.2	280	1 Th 0626	9.2	280	16 Su 0145	6.6	200
1211	3.9	120	Tu 1050	4.3	130	1412	3.6	110	F 0735	8.2	250
1808	6.9	210	1642	7.2	220	2058	6.6	200	2015	6.6	200
2348	3.6	110	● 2229	3.9	120				2355	5.6	170
2 Tu 0639	8.9	270	17 W 0522	9.2	280	2 0046	5.9	180	17 M 0308	6.2	190
1334	3.6	110	1205	3.9	120	0723	9.2	280	0848	8.5	260
1939	6.6	200	1810	6.6	200	1520	3.0	90	1613	2.3	70
			2319	4.6	140	2223	6.9	210	2310	7.9	240
3 W 0042	4.3	130	18 Th 0610	9.5	290	3 Sa 0210	6.2	190	3 Tu 0401	5.9	180
0727	8.9	270	1329	3.3	100	0823	9.2	280	0744	9.8	300
1448	3.3	100	2003	6.6	200	1612	2.6	80	1538	1.6	50
2111	6.6	200				2317	7.2	220	2245	7.5	230
4 Th 0143	4.9	150	19 F 0022	4.9	150	4 Su 0321	6.2	190	4 W 0440	5.2	160
0815	9.2	280	0706	9.8	300	0918	9.2	280	0859	9.8	300
1549	2.6	80	1447	2.6	80	1654	2.3	70	1630	1.3	70
2230	6.9	210	2142	6.6	200	2354	7.5	230	2330	7.9	240
5 F 0246	5.6	170	20 Sa 0141	5.6	170	5 M 0414	6.2	190	20 Th 0514	4.6	140
0902	9.2	280	0807	9.8	300	1006	9.2	280	1006	10.2	310
1638	2.3	70	1551	2.0	60	1730	2.0	60	1714	1.0	30
2330	7.2	220	2254	7.2	220				●		
6 Sa 0343	5.6	170	21 Su 0259	5.6	170	6 Tu 0022	7.9	240	21 W 0008	8.2	250
0946	9.2	280	0909	10.2	310	0455	5.9	180	0501	4.6	140
1719	2.0	60	1646	1.3	40	1048	9.5	290	1106	10.2	310
			2349	7.5	230	1800	2.0	60	○ 1753	1.3	40
7 Su 0015	7.5	230	22 M 0407	5.2	160	7 W 0048	8.2	250	21 F 0019	8.5	260
0431	5.6	170	1009	10.5	320	0530	5.6	170	0545	3.9	120
1027	9.2	280	1734	1.0	30	1126	9.5	290	1152	8.9	270
1755	2.0	60	● ○			1827	2.0	60	1808	2.3	70
8 M 0051	7.5	230	23 Tu 0035	7.9	240	8 Th 0111	8.5	260	21 Sa 0039	8.9	270
0512	5.6	170	0504	4.9	150	0603	5.2	160	0617	3.6	110
1104	9.5	290	1107	10.5	320	1202	9.5	290	1232	8.9	260
● 1827	1.6	50	1818	0.7	20	1850	2.0	60	1832	2.6	80
9 Tu 0121	7.9	240	24 W 0116	8.2	250	9 F 0132	8.5	260	9 M 0123	9.5	290
0547	5.6	170	0557	4.6	140	0636	4.9	150	0721	3.3	100
1139	9.5	290	1202	10.5	320	1238	9.5	290	1341	9.5	290
1857	1.6	50	1859	0.7	20	1913	2.3	70	1939	2.3	70
10 W 0148	7.9	240	25 Th 0153	8.5	260	10 Sa 0153	8.9	270	25 Tu 0212	9.5	290
0620	5.2	160	0647	4.3	130	0710	4.3	130	0807	3.0	90
1212	9.5	290	1255	10.2	310	1315	9.2	280	1429	8.9	270
1924	1.6	50	1938	1.0	30	1936	2.6	80	2012	3.0	90
11 Th 0214	7.9	240	26 F 0229	8.9	270	11 Su 0216	9.2	280	10 Tu 0215	9.5	290
0654	5.2	160	0737	3.9	120	0749	3.9	120	0811	2.3	70
1247	9.5	290	1347	9.8	300	1356	8.9	270	1447	7.9	240
1949	2.0	60	2016	1.6	50	2003	3.0	90	2002	3.9	120
12 F 0239	8.2	250	27 Sa 0303	8.9	270	12 M 0241	9.2	280	11 W 0242	9.5	290
0730	4.9	150	0828	3.9	120	0832	3.9	120	0855	3.0	90
1323	9.2	280	1438	9.2	280	1442	8.5	260	M 1519	8.2	250
2015	2.0	60	2054	2.3	70	2034	3.3	100	2046	3.9	120
13 Sa 0306	8.2	250	28 Su 0338	9.2	280	12 Th 0244	9.5	290	11 W 0222	9.5	290
0810	4.9	150	0922	3.9	120	0923	3.6	110	0901	2.3	70
1402	8.9	270	1532	8.5	260	1536	7.9	240	1546	7.2	220
2042	2.3	70	2131	3.0	90	2109	3.9	120	2042	4.6	140
14 Su 0334	8.5	260	29 W 0413	9.2	280	14 W 0347	9.5	290	11 M 0243	9.5	290
0855	4.6	140	1023	3.9	120	1024	3.3	100	0737	3.9	120
1446	8.5	260	1630	7.5	230	1644	7.2	220	1815	6.6	200
2113	2.6	80	● O 2209	3.9	120	● O 2151	4.6	140	● O 2129	4.9	150
15 M 0405	8.9	270	30 Tu 0452	9.2	280	15 Th 0430	9.8	300	14 Th 0424	8.9	270
0948	4.6	140	1133	3.9	120	1139	3.3	100	1242	2.0	60
1538	7.9	240	1740	6.9	210	1817	6.6	200	2015	6.9	210
2148	3.3	100	2250	4.6	140	2243	5.2	160	2239	5.9	180
			31 W 0536	9.2	280				31 Sa 0615	8.5	260
			1252	3.9	120				1432	3.0	90
			1913	6.6	200				2156	6.9	210
			2339	5.2	160						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Al Ahmandi, Kuwait, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0251	5.6	170	16 W 0312	3.9	120	1 F 0351	3.3	100	16 Sa 0445	1.6	50
0813	7.2	220	0904	7.5	230	1000	6.6	200	1117	7.2	220
1520	2.3	70	1526	2.0	60	1538	3.3	100	1620	3.6	110
2210	7.5	230	2209	8.2	250	2202	8.2	250	2233	8.9	270
2 W 0342	4.9	150	17 Th 0407	3.0	90	2 0427	2.3	70	17 Su 0526	1.0	30
0923	7.2	220	1013	7.5	230	1052	6.9	210	1209	7.2	220
1559	2.3	70	1610	2.3	70	1614	3.3	100	1701	3.9	120
2237	7.9	240	2242	8.5	260	2229	8.5	260	2304	8.9	270
3 Th 0420	4.3	130	18 F 0453	2.0	60	3 Su 0502	1.6	50	18 M 0602	1.0	30
1016	7.5	230	1113	7.9	240	1141	7.2	220	1255	7.5	230
1630	2.6	80	1649	2.6	80	1649	3.6	110	1738	4.3	130
2301	8.2	250	2312	8.5	260	● 2258	8.9	270	2334	8.9	270
4 F 0453	3.3	100	19 Sa 0533	1.6	50	4 M 0537	1.0	30	19 Tu 0636	0.7	20
1102	7.9	240	1206	7.9	240	1229	7.5	230	1334	7.5	230
1658	2.6	80	1726	3.0	90	1727	3.6	110	1814	4.6	140
2323	8.5	260	○ 2340	8.9	270	2329	9.2	280	2348	9.8	300
5 Sa 0524	2.6	80	20 Su 0611	1.0	30	5 Tu 0615	0.3	10	20 W 0003	8.9	270
1146	7.9	240	1254	7.9	240	1317	7.5	230	0709	1.0	30
● 2345	8.9	270	1800	3.6	110	1806	3.9	120	1411	7.2	220
6 Su 0557	2.0	60	21 M 0007	8.9	270	6 W 0004	9.5	290	21 Th 0033	8.5	260
1229	8.2	250	0647	1.0	30	0657	0.0	0	0743	1.0	30
1755	3.3	100	1338	7.5	230	1408	7.5	230	1446	7.2	220
1834	3.9	120	1834	3.9	120	1849	4.3	130	1921	4.9	150
7 M 0009	9.2	280	22 Tu 0034	8.9	270	7 Th 0044	9.2	280	22 F 0033	8.5	260
0631	1.3	40	0722	1.0	30	0744	0.0	0	0743	1.0	30
1315	7.9	240	1419	7.5	230	1500	7.5	230	1522	7.2	220
1827	3.6	110	1906	4.3	130	1937	4.3	130	1957	4.9	150
8 Tu 0037	9.2	280	23 W 0100	8.9	270	8 F 0127	9.2	280	23 Sa 0133	8.2	250
0710	1.0	30	0759	1.0	30	0837	0.0	0	0856	1.3	40
1403	7.9	240	1500	7.2	220	1556	7.2	220	1601	7.2	220
1903	3.9	120	1940	4.6	140	2031	4.6	140	2037	4.9	150
9 W 0108	9.5	290	24 Th 0128	8.5	260	9 Sa 0218	8.9	270	24 M 0208	7.9	240
0754	0.7	20	0838	1.3	40	0935	0.3	10	0935	1.6	50
1457	7.5	230	1543	6.9	210	1656	7.2	220	1644	7.2	220
1944	4.3	130	2015	4.9	150	2135	4.6	140	2126	5.2	160
10 Th 0145	9.5	290	25 F 0157	8.2	250	10 Su 0317	8.2	250	25 W 0249	7.5	230
0845	0.7	20	0922	1.6	50	1037	0.7	20	1018	2.0	60
1558	7.2	220	1632	6.9	210	1759	7.2	220	1731	7.2	220
2031	4.6	140	2055	5.2	160	● 2250	4.6	140	● 2226	5.2	160
11 F 0228	9.2	280	26 Sa 0230	7.9	240	11 M 0429	7.5	230	26 Tu 0340	6.9	210
0946	1.0	30	1013	2.0	60	1143	1.3	40	1103	2.6	80
1708	6.9	210	1730	6.6	200	M 1901	7.2	220	1821	7.2	220
2129	4.9	150	2147	5.6	170	1956	7.5	230	2342	4.9	150
12 Sa 0321	8.5	260	27 Su 0310	7.5	230	12 Tu 0020	4.6	140	27 W 0449	6.6	200
1056	1.0	30	1110	2.0	60	0558	6.9	210	1154	3.0	90
1828	6.9	210	1836	6.6	200	1250	1.6	50	1909	7.5	230
● 2244	5.2	160	● 2300	5.6	170	1956	7.5	230	1952	8.5	260
13 Su 0429	8.2	250	28 M 0404	6.9	210	13 W 0152	3.9	120	12 O 0129	3.6	110
1213	1.3	40	1214	2.3	70	0738	6.6	200	0725	6.6	200
1946	6.9	210	1939	6.9	210	1353	2.3	70	1305	3.3	100
2135	7.9	240	2104	7.5	230	2043	7.9	240	1952	8.5	260
14 M 0020	5.2	160	29 Tu 0042	5.2	160	14 Th 0905	3.0	90	29 F 0225	3.9	120
0556	7.5	230	0527	6.2	190	1448	2.6	80	0821	5.9	180
1330	1.3	40	1319	2.6	80	2123	8.2	250	1349	3.6	110
2045	7.2	220	2026	7.2	220	2030	8.2	250	2030	8.2	250
15 Tu 0159	4.6	140	30 W 0214	4.9	150	15 F 0359	2.3	70	14 O 0225	2.3	70
0738	7.2	220	0728	6.2	190	1016	6.9	210	1014	6.6	200
1434	1.6	50	1414	2.6	80	1537	3.3	100	1502	4.3	130
2131	7.9	240	2104	7.5	230	2159	8.5	260	2122	8.9	270
16 Th 0310	3.9	120	31 Th 0858	6.2	190				14 O 0349	2.3	70
			1459	3.0	90				1014	6.6	200
			2135	7.9	240				1502	4.3	130

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ras At Tannurah, Persian Gulf, Saudi Arabia, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0113	2.2	67	16 W 0159	1.5	46	1 F 0148	1.4	43	16 Sa 0235	1.3	40
0653	6.0	183	0744	6.5	198	0749	6.2	189	0841	6.0	183
1259	0.9	27	1351	0.7	21	1342	1.0	30	1435	1.8	55
1930	6.6	201	2019	6.9	210	2011	6.5	198	2054	5.9	180
2 W 0144	2.1	64	17 Th 0240	1.5	46	2 Sa 0222	1.3	40	17 Su 0314	1.5	46
0729	6.0	183	0829	6.2	189	0832	6.1	186	0926	5.6	171
1330	1.0	30	1432	1.2	37	1419	1.4	43	1516	2.3	70
2003	6.5	198	2058	6.5	198	2049	6.2	189	2132	5.5	168
3 Th 0216	2.0	61	18 F 0322	1.6	49	3 Su 0304	1.3	40	18 M 0400	1.7	52
0808	5.9	180	0917	5.8	177	0922	5.9	180	1018	5.2	158
1405	1.1	34	1515	1.8	55	1504	1.9	58	1607	2.8	85
2039	6.4	195	2140	6.0	183	2134	5.9	180	2217	5.1	155
4 F 0253	1.9	58	19 M 0409	1.7	52	4 M 0356	1.4	43	19 Tu 0458	1.9	58
0852	5.8	177	1009	5.4	165	1022	5.6	171	1127	4.9	149
1444	1.4	43	1603	2.3	70	1601	2.5	76	1726	3.2	98
2119	6.2	189	2225	5.6	171	2228	5.6	171	2321	4.7	143
5 Sa 0338	1.8	55	20 Su 0501	1.8	55	5 Tu 0502	1.5	46	20 W 0609	2.0	61
0944	5.6	171	1111	5.1	155	1138	5.5	168	1300	4.8	146
1531	1.8	55	1703	2.8	85	1725	3.0	91	1916	3.3	101
2205	5.9	180	2318	5.1	155	2341	5.3	162	2212	5.5	168
6 Su 0432	1.8	55	21 M 0601	1.9	58	6 W 0622	1.5	46	21 Th 0048	4.6	140
1045	5.5	168	1228	4.9	149	1308	5.5	168	0725	1.9	58
1630	2.3	70	1826	3.1	94	1924	3.1	94	1428	5.0	152
2300	5.7	174							2043	3.1	94
7 M 0536	1.7	52	22 Tu 0027	4.9	149	7 Th 0107	5.2	158	22 F 0206	4.7	143
1200	5.5	168	0706	1.9	58	0744	1.3	40	0831	1.7	52
1747	2.7	82	1353	5.0	152	1433	5.9	180	1525	5.4	165
			2002	3.2	98	2101	2.9	88	2139	2.8	85
8 Tu 0008	5.5	168	23 W 0142	4.8	146	8 F 0227	5.5	168	23 M 0304	5.0	152
0647	1.5	46	0810	1.8	55	0856	0.9	27	0924	1.4	43
1322	5.7	174	1504	5.3	162	1539	6.4	195	1606	5.7	174
1923	2.9	88	2118	3.1	94	2205	2.5	76	2219	2.4	73
9 W 0125	5.5	168	24 Th 0245	4.9	149	9 Sa 0332	5.9	180	24 Su 0349	5.4	165
0758	1.2	37	0906	1.5	46	0956	0.6	18	1006	1.1	34
1440	6.1	186	1555	5.6	171	1631	6.8	207	1639	6.0	183
2055	2.8	85	2211	2.8	85	2255	2.0	61	2253	2.1	64
10 Th 0237	5.7	174	25 F 0335	5.2	158	10 M 0426	6.3	192	25 M 0427	5.7	174
0904	0.9	27	0953	1.3	40	1046	0.3	9	1043	0.8	24
1545	6.6	201	1635	5.9	180	1716	7.1	216	1709	6.3	192
2206	2.6	79	2251	2.6	79	● 2337	1.6	49	2323	1.8	55
11 F 0340	6.0	183	26 Sa 0417	5.4	165	11 M 0514	6.6	201	26 Tu 0503	6.0	183
1002	0.5	15	1033	1.0	30	1131	0.2	6	1116	0.7	21
1641	7.1	216	1709	6.2	189	1757	7.3	223	1738	6.5	198
● 2303	2.3	70	2324	2.3	70				2351	1.5	46
12 Sa 0435	6.3	192	27 Su 0453	5.7	174	12 Tu 0015	1.3	40	12 W 0538	6.3	192
1054	0.2	6	1108	0.8	24	0558	6.7	204	1147	0.7	21
1730	7.4	226	1739	6.4	195	1211	0.3	9	1808	6.6	201
2352	2.0	61	○ 2355	2.1	64	1835	7.2	219			
13 Su 0526	6.6	201	28 M 0527	5.9	180	13 W 0051	1.1	34	13 Th 0019	1.2	37
1143	0.1	3	1140	0.7	21	0640	6.7	204	0614	6.5	198
1815	7.5	229	1808	6.5	198	1249	0.5	15	1218	0.7	21
						1911	7.0	213	1839	6.7	204
14 M 0036	1.7	52	29 Tu 0023	1.9	58	14 Th 0126	1.1	34			
0613	6.7	204	0601	6.1	186	0720	6.6	201			
1227	0.1	3	1210	0.6	18	1324	0.9	27			
1858	7.5	229	1836	6.6	201	1945	6.7	204			
15 Tu 0118	1.6	49	30 W 0050	1.7	52	15 F 0200	1.1	34			
0659	6.7	204	0634	6.2	189	0800	6.3	192			
1310	0.4	12	1239	0.6	18	1359	1.3	40			
1939	7.3	223	1906	6.7	204	2019	6.4	195			
			31 Th 0118	1.5	46						
			0710	6.2	189						
			1309	0.8	24						
			1937	6.6	201						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ras At Tannurah, Persian Gulf, Saudi Arabia, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0138 0.8 24	16 0156 1.4 43	1 W 0219 1.0 30	16 0211 1.6 49	1 Sa 0408 1.7 52	16 0304 1.9 58						
0807 6.8 207	Tu 0824 6.1 186	W 0856 6.9 210	Th 0843 6.3 192	Sa 1040 6.6 201	Su 0936 6.4 195						
1402 2.2 67	Tu 1422 2.7 88	1515 2.8 85	1455 2.9 88	1718 2.5 76	1559 2.7 82						
2012 6.2 189	2021 5.6 171	2059 6.1 186	2040 5.7 174	2256 5.9 180	2150 5.8 177						
2 Tu 0226 1.0 30	17 0238 1.6 49	2 Th 0319 1.3 40	17 0254 1.8 55	2 Su 0514 2.1 64	17 0350 2.2 67						
0901 6.5 198	W 0907 5.8 177	0957 6.6 201	0926 6.1 186	1142 6.3 192	1021 6.2 189						
1459 2.6 79	1511 3.0 91	1630 2.9 88	1547 3.0 91	1821 2.4 73	1651 2.6 79						
2104 5.9 180	2104 5.4 165	2203 5.8 177	2128 5.5 168	2247 5.8 177							
3 W 0324 1.3 40	18 0327 1.8 55	3 F 0427 1.6 49	18 0343 1.9 58	3 M 0008 5.8 177	18 0445 2.5 76						
1004 6.1 186	0958 5.6 171	1106 6.3 192	1015 5.9 180	0623 2.5 76	1114 6.1 186						
1617 3.0 91	1615 3.1 94	1749 2.8 85	1646 2.9 88	1245 6.1 186	1748 2.4 73						
2208 5.5 168	2157 5.1 155	2317 5.6 171	2225 5.3 162	1920 2.2 67	2354 5.8 177						
4 Th 0436 1.5 46	19 0426 2.0 61	4 Sa 0543 1.9 58	19 0439 2.1 64	4 Tu 0121 5.8 177	19 0550 2.7 82						
1120 5.9 180	F 1100 5.3 162	1219 6.1 186	1110 5.7 174	0734 2.7 82	1214 6.0 183						
1759 3.1 94	1734 3.1 94	1900 2.5 76	1747 2.8 85	1345 6.0 183	1849 2.2 67						
2327 5.3 162	2304 4.9 149		2329 5.3 162	2014 2.0 61							
5 F 0601 1.7 52	20 0534 2.1 64	5 Su 0035 5.6 171	20 0541 2.3 70	5 W 0226 6.0 183	20 0106 6.0 183						
1246 5.8 177	Sa 1212 5.2 158	0659 2.0 61	1210 5.7 174	0839 2.8 85	0703 3.0 91						
1928 2.8 85	1849 3.0 91	1328 6.1 186	1847 2.5 76	1439 6.0 183	1319 6.0 183						
		2001 2.2 67		2102 1.8 55	1949 1.9 58						
6 Sa 0052 5.3 162	21 0020 4.9 149	6 M 0148 5.7 174	21 0038 5.4 165	6 Th 0322 6.2 189	21 0217 6.4 195						
0723 1.6 49	Su 0644 2.1 64	0807 2.0 61	0646 2.3 70	0936 2.9 88	0819 3.0 91						
1402 6.0 183	1321 5.3 162	1426 6.1 186	1311 5.7 174	1526 6.0 183	1423 6.2 189						
2035 2.4 73	1950 2.6 79	2053 1.9 58	1941 2.2 67	2145 1.7 52	2047 1.6 49						
7 Su 0207 5.6 171	22 0130 5.2 158	7 Tu 0249 6.0 183	22 0145 5.7 174	7 F 0410 6.4 195	22 0322 6.8 207						
0832 1.5 46	M 0746 1.9 58	0906 2.0 61	0750 2.4 73	1024 2.9 88	0929 3.0 91						
1500 6.2 189	1417 5.6 171	1515 6.2 189	1408 5.9 180	1608 6.1 186	1523 6.5 198						
2126 1.9 58	2039 2.2 67	2136 1.6 49	2032 1.8 55	2223 1.6 49	2143 1.2 37						
8 M 0308 6.0 183	23 0229 5.5 168	8 W 0341 6.3 192	23 0246 6.2 189	8 Sa 0452 6.6 201	23 0420 7.3 223						
0929 1.3 40	0841 1.8 55	0955 2.1 64	0850 2.4 73	1105 2.9 88	1032 2.9 88						
1547 6.4 195	Tu 1503 5.8 177	1557 6.2 189	1500 6.2 189	1646 6.1 186	1619 6.8 207						
2209 1.5 46	2121 1.8 55	2214 1.4 43	2119 1.4 43	2258 1.5 46	2236 0.9 27						
9 Tu 0358 6.3 192	24 0320 6.0 183	9 Th 0425 6.5 198	24 0341 6.7 204	9 Su 0529 6.8 207	24 0513 7.7 235						
1016 1.3 40	W 0930 1.7 52	1038 2.2 67	0947 2.3 70	1141 2.9 88	1129 2.7 82						
1628 6.5 198	1545 6.1 186	1635 6.2 189	1550 6.4 195	1721 6.2 189	1711 7.0 213						
2245 1.2 37	2200 1.4 43	2248 1.3 40	2206 1.1 34	2332 1.5 46	2328 0.7 21						
10 W 0442 6.5 198	25 0407 6.5 198	10 F 0505 6.6 201	25 0433 7.1 216	10 M 0604 6.9 210	25 0603 7.9 241						
1056 1.3 40	Th 1015 1.6 49	1115 2.3 70	1041 2.3 70	1215 2.9 88	1221 2.6 79						
1704 6.5 198	1625 6.4 195	1710 6.3 192	1638 6.6 201	1755 6.2 189	1802 7.2 219						
2318 1.1 34	O 2237 1.1 34	2320 1.2 37	2252 0.8 24								
11 Th 0522 6.7 204	26 0452 6.9 210	11 Sa 0542 6.7 204	26 0523 7.5 229	11 Tu 0005 1.4 43	26 0018 0.7 21						
1131 1.5 46	F 1058 1.6 49	1149 2.4 73	1133 2.4 73	0637 6.9 210	0652 8.0 244						
1738 6.5 198	1705 6.6 201	1743 6.2 189	1726 6.8 207	1248 2.9 88	1312 2.5 76						
2348 1.0 30	2316 0.8 24	2351 1.2 37	2339 0.7 21	1828 6.3 192	1851 7.2 219						
12 F 0559 6.7 204	27 0537 7.2 219	12 Su 0617 6.8 207	27 0613 7.7 235	12 W 0038 1.4 43	27 0107 0.8 24						
1204 1.7 52	Sa 1142 1.8 55	1222 2.5 76	1225 2.4 73	0739 7.9 241							
1810 6.4 195	1746 6.7 204	1815 6.2 189	1814 6.9 210	1321 2.9 88							
	2356 0.6 18			1902 6.3 192							
13 Sa 0018 1.0 30	28 0623 7.4 226	13 M 0023 1.3 40	28 0028 0.6 18	13 Th 0112 1.5 46	28 0156 1.1 34						
0635 6.7 204	Su 1227 2.0 61	0652 6.7 204	0703 7.7 235	0744 6.8 207	0826 7.7 235						
1236 1.9 58	1828 6.7 204	1256 2.6 79	1319 2.5 76	1356 2.9 88	1451 2.4 73						
1841 6.3 192		1848 6.1 186	1903 6.9 210	1938 6.2 189	2033 6.9 210						
14 Su 0048 1.1 34	29 0039 0.6 18	14 Tu 0056 1.3 40	29 0118 0.8 24	14 F 0147 1.6 49	29 0246 1.5 46						
0710 6.6 201	M 0710 7.4 226	0727 6.6 201	0753 7.6 232	0818 6.7 204	0914 7.3 223						
1308 2.2 67	1316 2.2 67	1331 2.8 85	1414 2.6 79	1433 2.8 85	1543 2.4 73						
1912 6.1 186	1914 6.6 201	1922 6.0 183	1955 6.7 204	2017 6.1 186	2127 6.6 201						
15 M 0120 1.2 37	30 0126 0.7 21	15 W 0132 1.4 43	30 0211 1.0 30	15 Sa 0224 1.7 52	30 0338 2.0 61						
0745 6.4 195	Tu 0801 7.2 219	0803 6.5 198	0846 7.3 223	0855 6.5 198	1004 6.9 210						
1343 2.4 73	1411 2.5 76	1411 2.9 88	1513 2.6 79	1513 2.8 85	1637 2.4 73						
1945 5.9 180	2004 6.4 195	1959 5.9 180	2050 6.5 198	2100 6.0 183	2226 6.2 189						
				31 0307 1.3 40							
				F 0941 7.0 213							
				1615 2.6 79							
				O 2150 6.2 189							

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ras At Tannurah, Persian Gulf, Saudi Arabia, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0435	2.5	76	16 0310	2.3	70	1 Th 0003	5.8	177	16 0443	3.6	110
1058	6.4	195	Tu 0941	6.6	201	611	3.8	116	F 1104	6.1	186
1734	2.4	73	1602	2.4	73	1210	5.7	174	1739	2.4	73
2332	6.0	183	● 2214	6.2	189	1846	2.6	79	16 2027	5.9	180
2 Tu 0540	3.0	91	17 0401	2.7	82	2 0127	5.8	177	Su 0825	3.8	116
1156	6.1	186	W 1030	6.3	192	F 0741	3.9	119	1355	5.6	171
1833	2.4	73	1659	2.4	73	1324	5.7	174	2016	2.6	79
			2319	6.1	186	1952	2.6	79	16 0812	3.4	104
3 W 0046	5.8	177	18 0506	3.2	98	3 Sa 0241	6.0	183	M 1342	6.2	189
0654	3.3	101	Th 1131	6.2	189	0857	3.8	116	2010	2.0	61
1300	5.9	180	1807	2.3	70	1429	5.8	177	16 0137	6.5	198
1932	2.3	70				2050	2.4	73	Tu 0813	3.4	104
4 Th 0200	5.9	180	19 0037	6.2	189	4 Su 0337	6.3	192	M 1342	6.2	189
0811	3.5	107	0632	3.5	107	0952	3.5	107	2109	2.3	70
1402	5.8	177	1244	6.1	186	1521	6.0	183	17 0246	6.9	210
2028	2.2	67	1919	2.1	64	2139	2.1	64	Tu 0913	2.9	88
5 F 0304	6.1	186	20 0158	6.5	198	5 M 0420	6.6	201	M 1449	5.9	180
0918	3.5	107	0806	3.5	107	1033	3.3	101	2112	1.7	52
1457	5.9	180	1400	6.2	189	1604	6.2	189	● 2250	1.4	43
2117	2.1	64	2028	1.8	55	2220	1.9	58			
6 Sa 0356	6.4	195	21 0310	6.9	210	6 Tu 0455	6.8	207	5 Th 0453	6.9	210
1011	3.4	104	0926	3.4	104	1107	3.1	94	1103	2.5	76
1545	6.0	183	1507	6.5	198	1641	6.5	198	1649	6.8	207
2201	1.9	58	2130	1.4	43	2256	1.7	52	● 2302	1.6	49
7 Su 0439	6.6	201	22 0410	7.4	226	7 W 0526	7.0	213	20 0505	7.6	232
1054	3.3	101	M 1028	3.1	94	1137	2.8	85	F 1119	1.7	52
1626	6.2	189	1606	6.9	210	1715	6.7	204	1717	7.6	232
2240	1.7	52	○ 2226	1.1	34	● 2328	1.6	49	2330	1.5	46
8 M 0516	6.8	207	23 0502	7.8	238	8 Th 0554	7.1	216	6 F 0521	7.0	213
1130	3.1	94	Tu 1121	2.7	82	1206	2.6	79	1131	2.2	67
1702	6.3	192	1659	7.3	223	1747	6.8	207	1722	7.0	213
● 2316	1.6	49	2317	0.9	27	2358	1.5	46	2332	1.6	49
9 Tu 0549	7.0	213	24 0549	8.0	244	9 F 0622	7.2	219	21 0543	7.5	229
1202	3.0	91	W 1208	2.4	73	1233	2.5	76	1154	1.5	46
1736	6.4	195	1748	7.5	229	1820	6.9	210	1759	7.7	235
2349	1.5	46									
10 W 0620	7.0	213	25 0005	0.8	24	10 M 0027	1.5	46	22 0008	1.7	52
1233	2.9	88	0634	8.1	247	0650	7.2	219	Su 0619	7.4	226
1809	6.5	198	1252	2.2	67	1259	2.3	70	1228	1.5	46
			1836	7.6	232	1853	7.0	213	1839	7.6	232
11 Th 0020	1.5	46	26 0050	0.9	27	11 Su 0056	1.7	52	23 0044	2.0	61
0650	7.1	216	0717	8.0	244	0720	7.2	219	0653	7.2	219
1302	2.8	85	F 1335	2.1	64	1328	2.2	67	M 1301	1.6	49
1842	6.6	201	1923	7.5	229	1929	7.0	213	1918	7.4	226
12 F 0051	1.5	46	27 0134	1.3	40	12 M 0126	1.9	58	24 0119	2.4	73
0719	7.1	216	0759	7.7	235	0751	7.1	216	W 0728	6.9	210
1331	2.7	82	1417	2.1	64	1359	2.2	67	1336	1.8	55
1916	6.6	201	2009	7.2	219	2009	6.9	210	1957	7.1	216
13 Sa 0121	1.6	49	28 0218	1.7	52	13 Tu 0200	2.2	67	25 0156	2.8	85
0750	7.0	213	0840	7.3	223	0827	6.9	210	W 0803	6.5	198
1402	2.6	79	1501	2.2	67	1437	2.2	67	1413	2.0	61
1953	6.5	198	2058	6.9	210	2055	6.7	204	2039	6.7	204
14 Su 0154	1.7	52	29 0303	2.3	70	14 W 0240	2.6	79	27 0331	3.6	110
0823	6.9	210	0923	6.9	210	0908	6.7	204	F 0928	5.8	177
1436	2.5	76	M 1548	2.3	70	1524	2.2	67	1552	2.6	79
2033	6.5	198	○ 2150	6.5	198	● 2149	6.5	198	● 2225	5.9	180
15 M 0229	2.0	61	30 0352	2.9	88	15 Th 0332	3.1	94	28 0447	3.8	116
0859	6.8	207	Tu 1010	6.4	195	0958	6.4	195	F 0940	6.3	192
1515	2.4	73	1640	2.5	76	1624	2.3	70	1602	2.3	70
2119	6.3	192	2250	6.1	186	2256	6.3	192	2244	6.4	195
31 W 0452	3.4	104	1104	6.0	183				2342	5.7	174
			1740	2.6	79						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Ras At Tannurah, Persian Gulf, Saudi Arabia, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0214	5.9	180	16 W 0222	6.6	201	1 F 0244	6.0	183	1 Su 0237	5.8	177
0832	3.2	98	W 0851	2.4	73	1 F 0903	2.1	64	1 Su 0900	1.4	43
1412	5.7	174	1438	6.5	198	1 M 1506	6.2	189	1 M 1524	6.4	195
2027	2.4	73	2058	2.0	61	1 F 2115	2.2	67	1 M 2131	2.5	76
2 W 0301	6.1	186	17 Th 0314	6.8	207	2 Sa 0325	6.2	189	2 M 0327	6.0	183
0915	2.8	85	Th 0937	1.9	58	2 Sa 0941	1.7	52	2 M 0945	1.1	34
1501	6.1	186	1532	6.9	210	2 M 1551	6.6	201	2 M 1614	6.8	207
2114	2.1	64	2150	1.9	58	2 M 2159	2.2	67	2 M 2224	2.4	73
3 Th 0338	6.4	195	18 F 0359	6.9	210	3 Su 0403	6.4	195	3 Tu 0415	6.3	192
0951	2.4	73	F 1017	1.6	49	3 Su 1017	1.4	43	3 Tu 1030	0.8	24
1542	6.4	195	F 1619	7.2	219	3 Su 1634	7.0	213	3 Tu 1702	7.3	223
2155	1.9	58	2235	1.9	58	3 M 2241	2.1	64	3 M 2314	2.4	73
4 F 0411	6.6	201	19 Sa 0439	7.0	213	4 M 0442	6.6	201	4 W 0502	6.5	198
1023	2.1	64	Sa 1053	1.4	43	4 M 1053	1.1	34	4 W 1114	0.6	18
1620	6.8	207	Sa 1702	7.4	226	4 M 1716	7.4	226	4 W 1750	7.5	229
2231	1.8	55	O 2314	2.0	61	4 M 2322	2.2	67	4 W 1827	6.8	207
5 Sa 0443	6.8	207	20 Su 0516	7.0	213	5 Tu 0521	6.8	207	5 Th 0003	2.3	70
1053	1.8	55	Su 1126	1.3	40	5 Tu 1131	1.0	30	5 Th 0548	6.7	204
1657	7.1	216	Su 1742	7.4	226	5 Tu 1759	7.6	232	5 Th 1200	0.5	15
2305	1.8	55	2351	2.2	67	5 W 1840	7.0	213	5 Th 1837	7.7	235
6 Su 0515	6.9	210	21 M 0551	6.9	210	6 W 0005	2.3	70	6 F 0052	2.3	70
1123	1.6	49	M 1158	1.3	40	6 W 0603	6.8	207	6 F 0636	6.7	204
1734	7.4	226	M 1819	7.4	226	6 W 1211	0.9	27	6 F 1248	0.5	15
2339	1.9	58	1844	7.6	232	6 W 1844	7.6	232	6 F 1925	7.6	232
7 M 0548	7.0	213	22 Tu 0025	2.4	73	7 Th 0050	2.5	76	7 Sa 0144	2.3	70
1155	1.4	43	Tu 0624	6.7	204	7 Th 0646	6.8	207	7 Sa 0726	6.6	201
1813	7.5	229	Tu 1230	1.4	43	7 Th 1255	1.0	30	7 Sa 1337	0.7	21
1854	7.6	232	Tu 1856	7.2	219	7 Th 1932	7.5	229	7 Sa 2014	7.4	226
8 Tu 0014	2.1	64	23 W 0059	2.6	79	8 F 0140	2.7	82	8 Su 0238	2.3	70
0623	7.0	213	W 0658	6.5	198	8 F 0734	6.6	201	8 Su 0819	6.4	195
1229	1.4	43	W 1303	1.6	49	8 F 1343	1.1	34	8 Su 1430	1.0	30
1854	7.6	232	W 1933	7.0	213	8 F 2024	7.3	223	8 Su 2106	7.0	213
9 W 0051	2.4	73	24 Th 0135	2.9	88	9 Sa 0239	2.9	88	9 M 0336	2.3	70
0701	6.9	210	Th 0733	6.3	192	9 Sa 0827	6.3	192	9 M 0916	6.1	186
1307	1.4	43	Th 1339	1.8	55	9 Sa 1439	1.4	43	9 M 1527	1.4	43
1939	7.4	226	Th 2012	6.7	204	9 Sa 2120	7.0	213	9 O 2200	6.6	201
10 Th 0134	2.7	82	25 F 0216	3.1	94	10 M 0349	3.0	91	10 W 0438	2.2	67
0744	6.7	204	F 0810	6.0	183	10 M 0928	6.0	183	10 Tu 1020	5.8	177
1351	1.6	49	F 1420	2.0	61	10 M 1543	1.8	55	10 Tu 1631	1.9	58
2029	7.2	219	F 2054	6.4	195	10 M 2224	6.6	201	10 W 2300	6.3	192
11 F 0226	3.1	94	26 Sa 0306	3.3	101	11 M 0506	2.9	88	11 W 0543	2.1	64
0833	6.4	195	Sa 0854	5.7	174	11 M 1039	5.8	177	11 W 1131	5.6	171
1445	1.8	55	Sa 1509	2.3	70	11 M 1658	2.1	64	11 W 1744	2.3	70
2127	6.8	207	Sa 2144	6.1	186	11 M 2334	6.4	195	11 W 2240	5.6	171
12 Sa 0337	3.4	104	27 Su 0410	3.4	104	12 Tu 0621	2.7	82	12 W 0005	5.9	180
0933	6.1	186	Su 0947	5.4	165	12 Tu 1157	5.7	174	12 Th 0647	1.9	58
1552	2.1	64	Su 1608	2.5	76	12 Tu 1818	2.3	70	12 Th 1249	5.6	171
2237	6.5	198	Su 2243	5.8	177	12 Tu 2342	5.6	171	12 Th 1902	2.6	79
13 Su 0512	3.5	107	28 M 0524	3.4	104	13 W 0046	6.2	189	13 Th 0528	2.7	82
1048	5.9	180	M 1054	5.2	158	13 W 0726	2.3	70	13 Th 1109	5.2	158
1715	2.3	70	M 1717	2.6	79	13 W 1314	5.9	180	13 Th 1716	2.4	73
2358	6.4	195	M 2352	5.6	171	13 W 1933	2.3	70	13 Th 2342	5.6	171
14 M 0645	3.3	101	29 Tu 0635	3.2	98	14 Th 0150	6.2	189	14 F 0043	5.5	168
1213	5.8	177	Tu 1209	5.2	158	14 Th 0822	1.9	58	14 F 0722	2.2	67
1841	2.3	70	Tu 1827	2.6	79	14 Th 1422	6.2	189	14 F 1327	5.5	168
15 Tu 0118	6.4	195	30 W 0101	5.6	171	15 F 0245	6.3	192	15 Sa 0142	5.6	171
0756	2.9	88	W 0734	2.9	88	15 F 0910	1.6	49	15 Sa 0813	1.8	55
1332	6.1	186	W 1319	5.4	165	15 F 1518	6.5	198	15 Sa 1429	5.9	180
1956	2.1	64	W 1932	2.5	76	15 F 2039	2.3	70	15 Sa 2033	2.6	79
16 Th 0157	5.8	177	31 Th 0822	2.5	76						
1841	2.3	70	31 Th 1417	5.8	177						
2027	2.3	70	31 Th 2027	2.3	70						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Salman, Bahrain, Persian Gulf, 2013

Times and Heights of High and Low Waters

January				February				March				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0141	2.6	80	16 W	0231	1.6	50	1 F	0227	1.6	50	
0722	7.5	230	0815	7.9	240	0815	7.5	230	16 Sa	0313	1.6	50
1350	1.6	50	1446	1.3	40	1441	1.3	40	1 F	0906	6.9	210
1957	7.2	220	2049	7.5	230	2041	7.5	230	1523	2.0	60	
									2125	6.9	210	
2 W	0215	2.6	80	17 Th	0313	2.0	60	2 Sa	0305	1.6	50	
0756	7.5	230	0858	7.5	230	0857	7.2	220	17 Su	0948	6.2	190
1424	1.6	50	1526	1.6	50	1519	1.6	50	17 Sa	1557	2.3	70
2030	7.2	220	2130	7.2	220	2123	7.2	220	17 F	2207	6.6	200
3 Th	0251	2.6	80	18 F	0355	2.3	70	3 Su	0349	2.0	60	
0833	7.2	220	0942	6.9	210	0946	6.9	210	18 M	1037	5.6	170
1501	1.6	50	1605	2.0	60	1604	2.0	60	18 Su	1637	3.0	90
2108	7.2	220	2214	6.9	210	2214	6.9	210	18 F	2259	6.2	190
4 F	0331	2.6	80	19 M	0440	2.3	70	4 M	0441	2.0	60	
0916	7.2	220	1031	6.2	190	1045	6.6	200	19 Tu	0529	2.6	80
1543	2.0	60	1648	2.6	80	1657	2.3	70	19 Sa	1143	5.2	160
2153	7.2	220	2305	6.6	200	2316	6.9	210	19 F	1733	3.3	100
5 Sa	0418	2.6	80	20 Su	0532	2.6	80	5 Tu	0546	2.3	70	
1007	6.9	210	1129	5.9	180	1159	6.2	190	20 W	0007	5.9	180
1631	2.3	70	1738	3.0	90	1807	3.0	90	20 Tu	0648	3.0	90
2247	6.9	210							20 F	1034	6.2	190
									20 W	1641	2.6	80
6 Su	0514	2.6	80	21 M	0005	6.2	190	6 W	007	5.9	180	
1109	6.6	200	0636	3.0	90	0708	2.3	70	21 Th	0130	5.6	170
1729	2.6	80	1244	5.6	170	1327	5.9	180	21 F	0824	2.6	80
2351	6.9	210	1846	3.3	100	1939	3.0	90	21 Tu	1442	5.2	160
									21 W	2051	3.3	100
7 M	0620	2.6	80	22 Tu	0116	5.9	180	7 Th	0153	6.6	200	
1223	6.2	190	0755	3.0	90	0840	2.0	60	22 F	0244	5.9	180
1842	3.0	90	1409	5.2	160	1454	6.2	190	22 Th	0932	2.3	70
									22 F	2114	5.6	170
8 Tu	0103	6.9	210	23 W	0225	5.9	180	8 F	0307	6.9	210	
0736	2.3	70	0909	2.6	80	0955	1.6	50	23 Sa	1020	2.0	60
1346	6.2	190	1522	5.6	170	1603	6.6	200	23 Su	1631	5.9	180
2006	3.0	90	2132	3.3	100	2223	2.3	70	23 F	2239	2.6	80
									23 W	2106	2.6	80
9 W	0216	6.9	210	24 Th	0325	6.2	190	9 Sa	0410	7.5	230	
0854	2.0	60	1005	2.3	70	1053	1.0	30	24 M	0428	6.6	200
1504	6.6	200	1618	5.9	180	1658	7.2	220	24 F	1059	1.6	50
2127	2.6	80	2226	3.0	90	2316	2.0	60	24 Su	1709	6.6	200
									24 W	2317	2.3	70
10 Th	0322	7.2	220	25 M	0414	6.6	200	10 F	0503	7.9	240	
1003	1.6	50	1049	2.0	60	1141	0.7	20	10 Sa	1134	1.3	40
1611	6.9	210	1702	6.2	190	1745	7.5	230	10 M	1740	6.9	210
2234	2.3	70	2309	2.6	80	●			10 O	2351	2.0	60
									10 W	0507	6.9	210
11 F	0421	7.9	240	26 M	0002	1.6	50	11 F	0542	7.2	220	
1102	1.3	40	1126	1.6	50	0549	8.2	250	11 Sa	1208	1.0	30
1708	7.2	220	1738	6.6	200	1225	0.7	20	11 M	1809	7.2	220
● 2330	2.0	60	2345	2.6	80	1825	7.5	230	11 O	2341	1.3	40
									11 W	0450	7.5	230
12 Sa	0514	8.2	250	27 W	0532	6.9	210	12 F	0534	7.9	240	
1153	1.0	30	1159	1.6	50	0632	8.2	250	12 Th	1202	0.7	20
1759	7.5	230	1810	6.9	210	1304	0.7	20	12 Tu	1802	7.5	230
									12 O	1837	7.2	220
13 Su	0019	2.0	60	13 W	0123	1.3	40	13 F	0024	1.6	50	
0602	8.2	250	0604	7.2	220	0712	7.9	240	13 Sa	1239	1.0	30
1241	0.7	20	1231	1.3	40	1341	1.0	30	13 M	1807	7.5	230
1844	7.9	240	1837	6.9	210	1938	7.5	230	13 O	1835	7.5	230
									13 W	1907	7.5	230
14 M	0105	1.6	50	14 Tu	0050	2.3	70	14 F	0044	1.3	40	
0648	8.2	250	0635	7.5	230	0750	7.9	240	14 Th	0646	7.5	230
1325	0.7	20	1302	1.3	40	1416	1.0	30	14 Sa	1313	1.0	30
1927	7.9	240	1904	7.2	220	2013	7.5	230	14 M	1907	7.5	230
									14 W	2055	1.0	30
15 Tu	0149	1.6	50	15 W	0121	2.0	60	15 F	0237	1.6	50	
0732	8.2	250	0706	7.5	230	0828	7.2	220	15 Th	0130	1.3	40
1406	1.0	30	1333	1.3	40	1450	1.6	50	15 Sa	0725	7.5	230
2008	7.9	240	1932	7.2	220	2048	7.2	220	15 M	1345	1.3	40
									15 O	1938	7.5	230
16 Th	0152	2.0	60	31 Th	0152	2.0	60					
0739	7.5	230	0739	7.5	230							
1406	1.3	40	1406	1.3	40							
2004	7.5	230	2004	7.5	230							

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Salman, Bahrain, Persian Gulf, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0230 1.3 40	16 Tu 0240 2.0 60	1 W 0314 1.6 50	16 Th 0255 2.3 70	1 Sa 0503 2.3 70	16 Su 0359 2.6 80						
0835 7.2 220	0849 6.6 200	0928 7.2 220	0912 6.9 210	1127 7.5 230	1016 7.2 220						
1452 2.0 60	1457 3.0 90	1545 3.0 90	1525 3.3 100	1744 3.3 100	1638 3.6 110						
2046 7.5 230	2051 6.9 210	2132 7.5 230	2109 6.9 210	2330 7.2 220	2219 7.2 220						
2 Tu 0318 1.3 40	17 W 0319 2.3 70	2 Th 0412 2.0 60	17 F 0339 2.6 80	2 Su 0608 2.6 80	17 M 0449 3.0 90						
0928 6.9 210	0934 6.2 190	1034 6.9 210	1001 6.6 200	1233 7.2 220	1110 7.2 220						
1541 2.3 70	1539 3.3 100	1648 3.0 90	1615 3.6 110	1850 3.3 100	1733 3.3 100						
2139 7.2 220	2135 6.6 200	2235 7.2 220	2157 6.9 210	2318 6.9 210							
3 W 0414 1.6 50	18 Th 0406 2.3 70	3 F 0521 2.3 70	18 Sa 0431 2.6 80	3 M 0043 6.9 210	18 Tu 0547 3.0 90						
1033 6.6 200	1030 5.9 180	1149 6.9 210	1058 6.6 200	0714 3.0 90	1209 7.2 220						
1641 3.0 90	1633 3.3 100	1803 3.3 100	1714 3.6 110	1335 7.2 220	1835 3.3 100						
2243 6.9 210	2229 6.2 190	2350 6.9 210	2255 6.6 200	1954 3.0 90							
4 Th 0524 2.0 60	19 F 0507 2.6 80	4 Sa 0639 2.3 70	19 Su 0532 3.0 90	4 Tu 0154 6.9 210	19 W 0026 6.9 210						
1153 6.2 190	1141 5.9 180	1306 6.9 210	1202 6.6 200	0818 3.0 90	0653 3.3 100						
1800 3.3 100	1746 3.6 110	1920 3.0 90	1820 3.6 110	1431 7.2 220	1313 7.2 220						
2337 5.9 180				2053 3.0 90	1940 3.0 90						
5 F 0000 6.6 200	20 Sa 0625 2.6 80	5 Su 0110 6.9 210	20 M 0002 6.6 200	5 W 0257 6.9 210	20 Th 0138 6.9 210						
0654 2.3 70	1259 5.9 180	0753 2.3 70	0641 3.0 90	0915 3.0 90	0804 3.3 100						
1323 6.2 190	1909 3.6 110	1412 6.9 210	1306 6.9 210	1520 7.5 230	1414 7.5 230						
1934 3.0 90		2027 3.0 90	1925 3.3 100	2144 2.6 80	2045 2.6 80						
6 Sa 0126 6.6 200	21 Su 0055 5.9 180	6 M 0222 6.9 210	21 Tu 0113 6.6 200	6 Th 0352 6.9 210	21 F 0248 7.2 220						
0820 2.0 60	0743 2.6 80	0855 2.3 70	0750 3.0 90	1005 3.0 90	0913 3.3 100						
1438 6.6 200	1407 6.2 190	1506 7.2 220	1404 6.9 210	1603 7.5 230	1513 7.9 240						
2051 2.6 80	2019 3.3 100	2123 2.6 80	2026 3.0 90	2229 2.6 80	2147 2.3 70						
7 Su 0242 6.9 210	22 M 0207 6.2 190	7 Tu 0323 7.2 220	22 W 0220 6.9 210	7 F 0440 6.9 210	22 Th 0351 7.5 230						
0925 1.6 50	0847 2.3 70	0947 2.3 70	0852 2.6 80	1049 3.0 90	1016 3.0 90						
1535 6.9 210	1500 6.6 200	1552 7.5 230	1457 7.2 220	1643 7.5 230	1607 8.2 250						
2149 2.3 70	2115 2.6 80	2210 2.3 70	2122 2.6 80	2309 2.3 70	2244 2.0 60						
8 M 0343 7.2 220	23 Tu 0306 6.6 200	8 W 0414 7.2 220	23 Th 0319 7.2 220	8 Sa 0522 7.2 220	23 M 0449 7.9 240						
1016 1.6 50	0939 2.0 60	1032 2.3 70	0948 2.6 80	1128 3.0 90	1113 3.0 90						
1621 7.2 220	1544 6.9 210	1632 7.5 230	1545 7.5 230	1719 7.5 230	1659 8.5 260						
2236 2.0 60	2202 2.3 70	2252 2.0 60	2213 2.0 60	2345 2.3 70	2338 1.6 50						
9 Tu 0433 7.5 230	24 W 0357 7.2 220	9 Th 0458 7.2 220	24 F 0414 7.5 230	9 Sa 0559 7.2 220	24 M 0543 8.2 250						
1059 1.3 40	1026 2.0 60	1111 2.3 70	1040 2.3 70	1205 3.3 100	1206 2.6 80						
1701 7.5 230	1624 7.2 220	1708 7.5 230	1632 8.2 250	1753 7.5 230	1750 8.9 270						
2317 1.6 50	2246 2.0 60	2329 2.0 60	2302 1.6 50								
10 W 0516 7.5 230	25 Th 0442 7.5 230	10 F 0537 7.2 220	25 Sa 0505 7.9 240	10 M 0019 2.3 70	25 Tu 0029 1.6 50						
1137 1.3 40	1109 1.6 50	1147 2.3 70	1130 2.3 70	0632 7.2 220	0634 8.2 250						
1735 7.5 230	1703 7.9 240	1741 7.5 230	1717 8.2 250	1240 3.3 100	1258 2.6 80						
2353 1.3 40	2328 1.6 50	●	2350 1.6 50	1825 7.5 230	1838 8.9 270						
11 Th 0554 7.5 230	26 F 0525 7.9 240	11 Sa 0003 2.0 60	26 Su 0554 8.2 250	11 Tu 0052 2.3 70	26 W 0119 1.3 40						
1212 1.3 40	1152 1.6 50	0611 7.2 220	1219 2.3 70	0705 7.2 220	0724 8.5 260						
1807 7.5 230	1741 7.9 240	1222 2.6 80	1803 8.5 260	1315 3.3 100	1347 2.6 80						
		1811 7.5 230		1857 7.5 230	1927 8.9 270						
12 F 0028 1.3 40	27 Sa 0009 1.3 40	12 Su 0644 7.2 220	27 M 0038 1.3 40	12 W 0125 2.3 70	27 Th 0207 1.6 50						
0629 7.5 230	0608 7.9 240	1255 2.6 80	0643 8.2 250	0737 7.2 220	0813 8.5 260						
1245 1.6 50	1234 1.6 50	1842 7.5 230	1308 2.3 70	1350 3.3 100	1437 2.6 80						
1837 7.5 230	1820 8.2 250	1849 8.5 260	1849 8.5 260	1931 7.5 230	2017 8.5 260						
13 Sa 0101 1.3 40	28 Su 0052 1.0 30	13 M 0717 7.2 220	28 Tu 0127 1.3 40	13 W 0159 2.3 70	28 F 0255 1.6 50						
0702 7.2 220	0653 7.9 240	1329 3.0 90	0734 8.2 250	0811 7.2 220	0903 8.2 250						
1317 2.0 60	1317 2.0 60	1915 7.5 230	1357 2.6 80	1427 3.3 100	1526 2.6 80						
1907 7.5 230	1902 8.2 250	1949 7.5 230	1938 8.5 260	2006 7.5 230	2108 8.2 250						
14 Su 0133 1.6 50	29 M 0136 1.3 40	14 Tu 0142 2.0 60	29 W 0217 1.6 50	14 F 0235 2.3 70	29 Th 0344 2.0 60						
0735 6.9 210	0740 7.9 240	0752 6.9 210	0826 8.2 250	0848 7.2 220	0955 7.9 240						
1349 2.3 70	1402 2.3 70	1404 3.0 90	1449 2.6 80	1506 3.6 110	1617 3.0 90						
1939 7.2 220	1947 8.2 250	1949 7.5 230	2029 8.2 250	2045 7.5 230	2201 7.9 240						
15 M 0205 1.6 50	30 Tu 0222 1.3 40	15 W 0217 2.3 70	30 Th 0309 1.6 50	15 Sa 0315 2.6 80	30 Su 0434 2.6 80						
0810 6.9 210	0831 7.5 230	0829 6.9 210	0922 7.9 240	0929 7.2 220	1049 7.9 240						
1421 2.6 80	1450 2.6 80	1442 3.3 100	1543 3.0 90	1549 3.6 110	1712 3.0 90						
2013 7.2 220	2037 7.9 240	2026 7.2 220	2123 7.9 240	2129 7.2 220	2300 7.5 230						
			31 F 0404 2.0 60								
			1022 7.5 230								
			1642 3.0 90								
			2223 7.5 230								

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Salman, Bahrain, Persian Gulf, 2013

Times and Heights of High and Low Waters

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mina Salman, Bahrain, Persian Gulf, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0257	6.2	190	16 W 0308	7.2	220	1 F 0336	6.9	210	16 Su 0415	7.5	230
0905	3.6	110	W 0924	2.6	80	F 0954	2.6	80	Sa 1038	2.0	60
1453	6.6	200	1518	7.5	230	1550	6.9	210	1646	7.2	220
2129	2.6	80	2151	2.0	60	2213	2.3	70	2258	2.3	70
2 W 0344	6.6	200	17 Th 0358	7.5	230	2 Sa 0415	7.5	230	2 M 0417	7.5	230
0953	3.3	100	1015	2.3	70	1035	2.3	70	17 Su 0454	7.9	240
1545	6.9	210	1613	7.9	240	1634	7.2	220	1048	1.6	50
2212	2.3	70	2238	1.6	50	2256	2.0	60	1727	7.2	220
3 Th 0423	7.2	220	18 F 0441	7.9	240	3 Su 0451	7.9	240	2338	2.3	70
1033	2.6	80	1059	1.6	50	1115	1.6	50	M 1155	1.6	50
1627	7.2	220	1659	7.9	240	1715	7.5	230	1805	7.2	220
2251	2.0	60	2320	1.6	50	● 2337	2.0	60	●		
4 F 0456	7.5	230	19 Sa 0518	8.2	250	4 M 0526	7.9	240	19 Tu 0014	2.3	70
1109	2.3	70	1139	1.6	50	1154	1.3	40	0601	7.9	240
1705	7.5	230	1741	7.9	240	1755	7.9	240	1229	1.6	50
2327	2.0	60	○ 2358	1.6	50	1838	7.2	220	1824	7.9	240
5 Sa 0527	7.9	240	20 Su 0553	8.2	250	5 Tu 0017	2.0	60	20 W 0048	2.6	80
1144	2.0	60	1216	1.3	40	0603	8.2	250	W 0633	7.5	230
1740	7.9	240	1819	7.9	240	1234	1.3	40	1301	1.6	50
●			1836	7.9	240	1836	7.9	240	1911	7.2	220
6 Su 0002	1.6	50	21 M 0034	2.0	60	6 W 0058	2.3	70	21 Th 0122	2.6	80
0556	7.9	240	0625	8.2	250	0642	8.2	250	0705	7.5	230
1218	1.6	50	1251	1.6	50	1315	1.3	40	1333	1.6	50
1814	7.9	240	1854	7.5	230	1919	7.9	240	1944	7.2	220
7 M 0038	1.6	50	22 Tu 0109	2.3	70	7 Th 0141	2.3	70	22 F 0122	2.6	80
0627	8.2	250	0657	7.9	240	0723	8.2	250	0738	7.2	220
1253	1.6	50	1325	1.6	50	1358	1.3	40	1406	2.0	60
1850	7.9	240	1929	7.5	230	2006	7.9	240	2019	6.9	210
8 Tu 0113	2.0	60	23 W 0143	2.6	80	8 F 0226	2.6	80	23 Sa 0232	3.0	90
0701	8.2	250	0729	7.9	240	0809	8.2	250	0813	7.2	220
1330	1.6	50	1358	2.0	60	1445	1.6	50	1441	2.0	60
1929	7.9	240	2004	7.2	220	2059	7.5	230	2058	6.9	210
9 W 0151	2.3	70	24 Th 0217	3.0	90	9 Sa 0317	3.0	90	24 Su 0312	3.3	100
0739	8.2	250	0803	7.5	230	0900	7.9	240	0851	6.9	210
1409	1.6	50	1433	2.0	60	1538	2.0	60	1520	2.3	70
2013	7.9	240	2043	6.9	210	2158	7.2	220	2142	6.6	200
10 Th 0231	2.6	80	25 F 0253	3.3	100	10 Tu 0416	3.3	100	25 M 0358	3.3	100
0822	7.9	240	0840	7.2	220	0959	7.2	220	0936	6.6	200
1454	2.0	60	1511	2.3	70	1640	2.3	70	1606	2.6	80
2103	7.5	230	2127	6.6	200	● 2308	6.9	210	● 2235	6.6	200
11 F 0318	3.0	90	26 Sa 0335	3.6	110	11 M 0525	3.3	100	26 Tu 0454	3.6	110
0911	7.5	230	0923	6.9	210	1109	6.9	210	1029	6.2	190
1546	2.0	60	1555	2.6	80	1754	2.3	70	1703	2.6	80
2203	6.9	210	2222	6.2	190	2337	6.2	190	2337	6.2	190
12 Sa 0414	3.3	100	27 Su 0429	3.6	110	12 Tu 0026	6.9	210	27 W 0559	3.6	110
1011	7.2	220	1015	6.2	190	0643	3.3	100	1135	6.2	190
1651	2.3	70	1653	3.0	90	1231	6.9	210	1811	3.0	90
● 2318	6.6	200	● 2332	5.9	180	1914	2.6	80	1947	2.6	80
13 Su 0527	3.6	110	28 M 0542	3.9	120	13 W 0758	3.0	90	12059	6.9	210
1124	6.9	210	1122	6.2	190	1352	6.9	210	0722	2.6	80
1813	2.6	80	1809	3.0	90	2026	2.3	70	1321	6.6	200
14 M 0046	6.6	200	29 Tu 0051	6.2	190	14 Th 0241	7.2	220	29 F 0147	6.6	200
0658	3.6	110	0704	3.9	120	0901	2.6	80	0812	3.0	90
1250	6.9	210	1243	5.9	180	1501	6.9	210	1404	6.2	190
1943	2.3	70	1929	3.0	90	2125	2.3	70	2033	3.0	90
15 Tu 0206	6.9	210	30 W 0200	6.2	190	15 F 0331	7.5	230	30 Sa 0242	6.9	210
0821	3.3	100	0813	3.6	110	0953	2.0	60	0909	2.6	80
1411	7.2	220	1400	6.2	190	1557	7.2	220	1507	6.6	200
2055	2.3	70	2034	2.6	80	2215	2.3	70	2132	2.6	80
31 Th 0253	6.6	200	31 Th 0908	3.0	90						
			1501	6.6	200						
			2127	2.6	80						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musay'id Outer Channel Entrance, Qatar, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu	0006 0734 1506 1852	1.6 6.2 2.3 3.0	50 190 70 90	16 W	0154 0821	2.3 6.2	70 190	1 F	0211 0800	2.3 5.2	70 160
	1538 1949	2.0 3.0	60 90		1544 2129	2.0 3.6	60 110		1531 2126	1.6 3.6	50 110
	1613 2140	2.0 3.3	60 100						1556 2323	2.0 4.6	60 140
2 W	0054 0805 1538 1949	2.0 5.9 2.0 3.0	60 180 60 90	17 Th	0243 0846	2.6 5.6	80 170	2 Sa	0306 0808	2.6 4.9	80 150
	0834 1621 2315	5.6 2.0 3.9	170 60 120		1609 2249	1.3 3.9	40 120		0738 1626	4.3 2.0	130 60
3 Th	0149 0834 1613 2140	2.3 5.6 2.0 3.3	70 170 60 100	18 F	0335 0904 1659	3.3 5.2 2.0	100 160 60	3 Su	0408 0821 1651	3.3 4.6 1.3	100 140 40
	0834 1651 2328	5.6 1.6 3.6	170 50 110						180443 M0545 0719 1652	4.6 3.9 3.9 2.0	140 120 120 60
4 F	0254 0857 1651 2328	3.0 5.2 1.6 3.6	90 160 50 110	4 M	0101 0434 0904 1737	4.3 3.9 4.6 2.0	130 120 140 60	4 M	0024 0527 0846 1736	4.6 3.6 4.3 1.3	140 110 130 40
	0909 1731	4.9 1.6	150 50	19 Sa	0220 0557 0756 1816	4.6 4.3 4.3 2.0	140 130 130 60	19 Tu	0152 1716	4.9 2.0	150 60
5 Sa	0402 0909 1731	3.3 4.9 1.6	100 150 50	5 Tu	0144 0737 0857 1827	4.9 3.9 3.9 1.3	150 120 120 40	4 M	0429 0756 1613 2346	3.3 3.9 1.3 4.9	100 120 40 150
	0514 0934	3.6 4.6	110 140	20 W	0220 0557 0756 1827	4.6 4.3 4.3 1.3	140 130 130 40	5 Tu	0600 0823 1701	3.3 3.6 1.3	100 110 40
6 Su	0152 0514 0934	4.3 3.6 4.6	130 110 140	21 M	0306 1855	5.2 2.0	160 60	20 W	0017 1514	5.2 2.3	160 70
	1815	1.3	40	6 W	0242 1924	5.6 1.3	170 40	21 Th	0320 1856	5.6 2.0	170 60
7 M	0234 0706 1019 1902	4.9 3.9 4.3 1.3	150 120 130 40	22 Tu	0342 1931	5.6 2.0	170 60	6 W	0101 1756	5.2 1.6	160 50
	1019 1902	4.3 1.3	130 40	7 Th	0330 1059 1316 2027	6.2 3.0 3.3 1.3	190 90 100 40	21 Th	0243 1754	5.2 2.0	160 60
8 Tu	0312 0955 1149 1952	5.6 3.9 3.9 1.3	170 120 120 40	8 F	0412 2005	5.9 2.0	180 80	22 Sa	0351 1210 1334 2005	5.6 3.0 3.0 2.0	170 90 90 60
	1100 1319 2046	3.6 3.6 1.0	110 110 30	23 W	0413 1132 1430 2130	6.6 2.6 3.3 1.3	200 80 100 40	7 Th	0205 0959 1142 1901	5.9 3.0 3.0 1.6	180 90 90 50
9 W	0351 1100 1319 2046	6.2 3.6 3.6 1.0	190 110 110 30	9 Sa	0439 1247 1338 2041	5.9 3.0 3.0 1.6	180 90 90 50	8 F	0419 1204 1443 2113	5.9 2.6 3.0 2.0	180 80 90 50
	0514 1228 1529 2235	7.2 2.6 3.6 1.0	220 80 110 30	10 Th	0504 1250 1443 2124	6.2 3.0 3.0 1.6	190 90 90 50	23 Sa	0447 1210 1538 2212	5.9 2.6 3.3 1.6	180 80 100 50
10 Th	0432 1145 1428 2141	6.9 3.3 3.6 1.0	210 100 110 30	10 M	0534 1243 1640 2321	6.9 2.0 3.3 1.3	210 60 100 40	9 Sa	0447 1210 1538 2212	6.2 2.6 3.3 1.6	190 70 100 50
	0514 1228 1529 2235	7.2 2.6 3.6 1.0	220 80 110 30	11 M	0527 1303 1536 2210	6.2 2.6 3.0 1.6	190 80 90 50	10 M	0514 1219 1629 2303	5.9 2.3 3.3 1.6	180 70 100 50
11 F	0514 1228 1529 2235	7.2 2.6 3.6 1.0	220 80 110 30	11 M	0611 1317 1746	6.6 2.0 3.6	200 60 110	26 M	0542 1239 1718 2352	5.6 2.0 3.6 1.6	170 60 110 50
	0555 1309 1626 2326	7.5 2.6 3.3 1.3	230 80 100 40	12 Sa	0550 1317 1624 2257	6.2 2.6 3.0 1.6	190 80 90 50	11 M	0505 1206 1713 2319	5.9 2.0 3.6 1.6	180 60 110 50
12 Sa	0555 1309 1626 2326	7.5 2.6 3.3 1.3	230 80 100 40	12 Tu	0010 0645 1350 1849	1.6 6.2 2.0 3.6	50 190 60 110	26 Tu	0428 1118 1700 2301	5.2 2.0 3.9 2.3	160 60 120 70
	0555 1309 1626 2326	7.5 2.6 3.3 1.3	230 80 100 40	13 W	0010 0645 1350 1849	1.6 6.2 2.0 3.6	50 190 60 110	12 Tu	0538 1234 1759 1844	5.6 1.6 3.9 4.3	170 50 120 130
13 Su	0636 1350 1724	7.2 2.3 3.3	220 70 100	13 W	0058 0714 1421 1949	1.6 5.9 1.6 3.9	50 180 50 120	13 W	0007 0637 1340 1906	2.0 5.2 1.6 3.9	180 60 100 120
	0636 1350 1724	7.2 2.3 3.3	220 70 100	14 M	0145 0737 1452 2050	2.3 5.2 1.6 3.9	70 160 50 120	14 Th	0054 0627 1329 1929	2.0 4.9 1.6 4.6	170 60 110 140
14 M	0016 0714 1430 1832	1.3 7.2 2.0 3.3	40 220 60 100	15 Tu	0640 1354 1759	5.9 2.0 3.3	180 60 100	15 F	0232 0754 1525 2200	2.6 4.9 1.6 4.3	80 150 50 120
	0105 0750 1507 2004	2.0 6.9 2.0 3.6	60 210 60 110	30 W	0031 0709 1423 1850	1.6 5.9 2.0 3.3	50 180 60 100	30 Sa	0138 0615 1335 2016	2.6 4.6 1.3 4.9	80 140 40 150
15 Tu	0105 0750 1507 2004	2.0 6.9 2.0 3.6	60 210 60 110	31 Th	0120 0737 1456 1959	2.0 5.6 1.6 3.6	60 170 50 110	31 Su	0235 0639 1412 2100	2.6 4.3 1.3 5.6	80 130 40 170

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musay'id Outer Channel Entrance, Qatar, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0339 3.0 90	16 Tu 0422 3.3 100	1 W 0501 3.0 90	16 Th 0457 3.0 90	1 Sa 0643 2.6 80	16 Su 0516 2.6 80						
0711 3.9 120	0642 3.3 100	0754 3.3 100	0730 3.3 100	1431 3.9 120	2143 5.9 180						
1452 1.6 50	1323 2.3 70	1504 2.3 70	1237 2.6 80	1644 3.9 120							
2204 5.9 180	2149 5.6 170	2239 6.6 200	2130 6.2 190	2333 6.2 190							
2 Tu 0452 3.0 90	17 W 0541 3.3 100	2 0622 2.6 80	17 F 0540 3.0 90	2 0733 2.3 70	17 M 0557 2.6 80						
0750 3.6 110	0626 3.3 100	0904 3.0 90	0830 3.3 100	1519 4.6 140	1442 4.3 130						
1536 1.6 50	1329 2.3 70	1557 2.6 80	1200 3.0 90	1811 4.3 130	1645 4.3 130						
2314 5.9 180	2240 5.6 170	2339 6.6 200	2208 5.9 180		2207 5.6 170						
3 W 0627 3.0 90	18 Th 1334 2.6 80	3 F 0733 2.6 80	18 Sa 0620 3.0 90	3 M 0012 5.6 170	18 Tu 0641 2.3 70						
0842 3.3 100	2340 5.6 170	1411 3.3 100	2249 5.6 170	0812 2.3 70	1505 4.9 150						
1626 2.0 60		1701 3.0 90		1553 5.2 160							
●	●			2016 4.6 140							
4 Th 0022 5.9 180	19 F 1226 3.0 90	4 Sa 0036 6.2 190	19 Su 0700 2.6 80	4 Tu 0046 4.9 150	19 W 0726 2.0 60						
0817 2.6 80		0825 2.3 70	1556 3.9 120	0846 2.0 60	1530 5.6 170						
1010 3.0 90		1515 3.6 110	1635 3.9 120	1621 5.6 170	2041 4.9 150						
1726 2.3 70		1822 3.3 100	2333 5.6 170	2218 4.3 130	2342 4.9 150						
5 F 0124 5.9 180	20 Sa 0038 5.6 170	5 Su 0128 5.6 170	20 M 0739 2.3 70	5 W 0120 4.6 140	20 Th 0811 2.0 60						
0909 2.3 70	0903 2.6 80	0906 2.0 60	1525 4.3 130	0917 2.0 60	1559 6.6 200						
1422 3.0 90	1503 3.3 100	1551 4.3 130	1832 4.3 130	1650 5.9 180	2215 4.6 140						
1840 2.3 70	1608 3.3 100	2013 3.6 110		2323 3.9 120							
6 Sa 0219 5.9 180	21 Su 0129 5.2 160	6 M 0211 5.2 160	21 Tu 0020 5.2 160	6 Th 0157 4.3 130	21 F 0051 4.9 150						
0949 2.3 70	0905 2.6 80	0939 2.0 60	0819 2.3 70	0947 2.0 60	0857 1.6 50						
1524 3.3 100	1526 3.6 110	1623 4.6 140	1548 4.9 150	1719 6.2 190	1634 7.2 220						
2015 2.6 80	1859 3.3 100	2138 3.6 110	2038 4.3 130		2319 4.3 130						
7 Su 0307 5.6 170	22 M 0212 5.2 160	7 Tu 0245 4.9 150	22 W 0109 5.2 160	7 F 0013 3.9 120	22 Sa 0203 4.6 140						
1024 2.0 60	0923 2.3 70	1007 2.0 60	0900 2.0 60	0237 4.3 130	0943 1.6 50						
1608 3.6 110	1555 3.9 120	1655 5.2 160	1617 5.6 170	1016 2.0 60	1712 7.5 230						
2130 2.6 80	2047 3.3 100	2244 3.3 100	2200 4.3 130	1746 6.6 200							
8 M 0348 5.2 160	23 Tu 0251 5.2 160	8 W 0311 4.6 140	23 Th 0158 4.9 150	8 Sa 0055 3.6 110	23 Su 0011 3.9 120						
1054 1.6 50	0952 2.0 60	1033 1.6 50	0940 1.6 50	0317 3.9 120	0307 4.6 140						
1647 4.3 130	1627 4.6 140	1726 5.6 170	1651 6.2 190	1039 2.0 60	1030 1.6 50						
2230 2.3 70	2201 3.3 100	2338 3.3 100	2306 3.9 120	● 1811 6.9 210	1752 8.2 250						
9 Tu 0421 4.9 150	24 W 0325 4.9 150	9 Th 0337 4.3 130	24 F 0246 4.9 150	9 Su 0131 3.6 110	24 M 0101 3.6 110						
1121 1.6 50	1027 1.6 50	1058 1.6 50	1020 1.6 50	0358 3.9 120	0404 4.3 130						
1724 4.6 140	1702 5.2 160	1756 5.9 180	1728 6.9 210	1051 2.0 60	1116 1.6 50						
2322 2.3 70	2300 3.0 90			1832 6.9 210	1833 8.2 250						
10 W 0446 4.6 140	25 Th 0357 4.9 150	10 F 0026 3.3 100	25 Sa 0004 3.6 110	10 M 0204 3.6 110	25 Tu 0148 3.3 100						
1146 1.6 50	1103 1.6 50	0406 3.9 120	0333 4.6 140	0438 3.9 120	0459 4.3 130						
1800 4.9 150	1740 5.6 170	1123 1.6 50	1101 1.6 50	1101 2.0 60	1204 2.0 60						
●	2356 3.0 90	1824 6.2 190	1809 7.5 230	1854 6.9 210	1916 8.2 250						
11 Th 0010 2.6 80	26 F 0427 4.9 150	11 Sa 0112 3.3 100	26 Su 0101 3.6 110	11 Tu 0236 3.3 100	26 W 0235 3.0 90						
0507 4.6 140	1140 1.3 40	0437 3.9 120	0421 4.6 140	0519 3.6 110	0555 4.3 130						
1211 1.6 50	1821 6.2 190	1141 2.0 60	1142 1.6 50	1126 2.0 60	1252 2.3 70						
1834 5.2 160		1851 6.2 190	1852 7.9 240	1919 6.9 210	1958 8.2 250						
12 F 0058 2.6 80	27 Sa 0051 3.0 90	12 Su 0156 3.3 100	27 M 0155 3.3 100	12 W 0307 3.3 100	27 Th 0321 3.0 90						
0530 4.3 130	0457 4.6 140	0509 3.9 120	0509 4.3 130	0601 3.6 110	0657 3.9 120						
1235 1.6 50	1218 1.3 40	1149 2.0 60	1225 1.6 50	1158 2.3 70	1342 2.6 80						
1909 5.6 170	1905 6.6 200	1918 6.6 200	1937 7.9 240	1948 6.9 210	2038 7.5 230						
13 Sa 0144 3.0 90	28 Su 0149 3.0 90	13 M 0240 3.3 100	28 Tu 0250 3.3 100	13 Th 0335 3.3 100	28 M 0407 2.6 80						
0553 3.9 120	0533 4.3 130	0540 3.6 110	0600 3.9 120	0645 3.6 110	0842 3.9 120						
1253 1.6 50	1256 1.3 40	1159 2.0 60	1308 2.0 60	1232 2.6 80	1434 3.3 100						
1945 5.6 170	1953 6.9 210	1948 6.6 200	2023 7.9 240	2018 6.6 200	2115 7.2 220						
14 Su 0233 3.0 90	29 M 0248 3.0 90	14 Tu 0325 3.3 100	29 W 0347 3.0 90	14 F 0405 3.0 90	29 Sa 0454 2.6 80						
0613 3.6 110	0614 3.9 120	0612 3.6 110	0654 3.9 120	0733 3.6 110	1133 3.9 120						
1305 2.0 60	1336 1.6 50	1217 2.3 70	1355 2.3 70	1304 3.0 90	1529 3.6 110						
2023 5.9 180	2044 6.9 210	2020 6.6 200	2111 7.5 230	2049 6.6 200	2147 6.6 200						
15 M 0324 3.3 100	30 Tu 0351 3.0 90	15 W 0411 3.3 100	30 Th 0445 3.0 90	15 Sa 0438 3.0 90	30 M 0539 2.6 80						
0629 3.6 110	0700 3.6 110	0647 3.3 100	0758 3.6 110	0836 3.6 110	1345 4.6 140						
1314 2.0 60	1418 2.0 60	1236 2.3 70	1444 2.6 80	1307 3.3 100	1634 4.3 130						
2104 5.9 180	2139 6.9 210	2054 6.2 190	2159 7.2 220	2118 6.2 190	2213 5.9 180						
			31 F 0546 2.6 80								
			1224 3.6 110								
			1540 3.3 100								
			● 2247 6.6 200								

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musay'id Outer Channel Entrance, Qatar, 2013

Times and Heights of High and Low Waters

July				August				September				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
1 M 0624 1447 1806 2237	h m 2.3 5.2 4.9 5.2	ft 70 160 150 160	cm 70 150 140 160	16 Tu 1339 1648 2056	h m 0503 1422 1845 2125	ft 2.3 5.6 4.9 4.9	cm 70 170 150 150	1 Th 1519	h m 0648 1411 2235	ft 2.6 6.2 3.6	cm 80 190 110	
2 Tu 0708 1528 2203 2259	17 W 0547 1422 1845 2125	2.3 5.6 4.9 4.9	70 170 150 150	2 F 0733 1553	0.730 2.6	80	17 Sa 0647 1458 2235	2.0 6.9 210	2 M 0145 0738 1557 2340	3.3 2.6 6.2 3.0	100 80 190 90	
	18 W 0635 1457	2.3 6.2	70 190	3 Sa 0816 1623	2.6 6.9	80 210	18 Su 0021 0751 1542 2303	3.6 2.0 7.2 3.3	110 60 220 100	3 Tu 0303 0901 1625 2348	3.3 2.6 6.2 3.0	100 80 190 90
	19 F 0726 1533 2244	2.3 6.9 4.3	70 200 130	4 Su 0852 1649	2.3 6.9	70 210	19 M 0206 0859 1624 2337	3.6 2.0 7.5 3.0	110 60 230 90	4 W 0356 0959 1651 2355	3.6 2.6 6.2 2.6	110 80 190 80
	20 F 0006 0820 1611 2323	2.3 6.9 7.5 3.9	70 210 230 120	5 M 0042 0230 0927 1712	3.6 3.6 2.3	110 110 70 210	20 Tu 0320 1000 1704	3.9 2.0 7.5	120 60 230	5 Th 0439 1049 1718 ●	3.9 2.3 5.9	120 70 180 ●
6 Sa 0052 0146 0937 1725	21 Su 0150 0915 1650	3.9 3.9 2.3 6.9	120 120 70 210	6 Tu 0051 0325 1006 1734	3.3 3.6 2.3 6.9	100 110 70 210	21 W 0012 0430 1056 ○	2.6 3.9 2.0 7.2	80 120 60 220	6 F 0011 0520 1138 1745	2.6 4.3 2.3 5.9	80 130 70 180
7 Su 0110 0243 1000 1748	22 M 0003 0302 1009 ○	3.6 3.9 2.0 7.2	110 120 60 220	7 W 0101 0414 1048 ●	3.3 3.6 2.3 6.6	100 110 70 200	22 Th 0046 0534 1147 1756	2.6 4.3 2.0 6.6	80 130 60 210	7 Sa 0037 0604 1226 1811	2.3 4.6 2.6 5.6	70 140 80 170
8 M 0130 0333 1018 ●	23 Tu 0043 0403 1102 1810	3.6 3.9 2.0 7.2	110 120 50 250	8 Th 0110 0501 1132 1822	3.0 3.9 2.3 6.6	90 120 70 200	23 F 0118 0632 1238 1851	2.3 4.6 2.3 6.6	70 140 60 200	8 Su 0107 0653 1315 1834	2.0 4.9 2.6 5.2	60 150 80 160
9 Tu 0149 0420 1045 1828	24 W 0123 0503 1153 1850	3.6 3.9 2.0 7.2	110 120 60 220	9 F 0127 0548 1218 1849	3.0 3.9 2.3 6.2	90 120 70 190	24 Sa 0150 0729 1328 1918	2.3 4.9 2.6 5.9	70 150 80 180	9 M 0140 0746 1407 1845	2.0 4.9 3.0 4.9	60 150 100 150
10 W 0206 0506 1122 1852	25 Th 0202 0609 1243 1927	3.3 3.9 2.3 6.9	100 120 70 210	10 Sa 0152 0639 1304 1916	2.6 4.3 2.6 5.9	80 130 80 180	25 Su 0223 0829 1421 1937	2.3 4.9 3.3 5.2	70 150 100 160	10 Tu 0213 0844 1505 1853	2.0 5.2 3.3 4.6	60 160 100 140
11 Th 0223 0551 1202 1919	26 F 0240 0727 1333 2001	3.3 3.9 2.3 6.9	100 120 70 210	11 Su 0222 0740 1354 1937	2.3 4.3 3.0 5.6	70 130 90 170	26 M 0256 0935 1519 1946	2.3 5.2 3.6 4.9	70 160 110 150	11 W 0247 0948 1616 1914	2.0 5.6 3.6 4.3	60 170 110 130
12 F 0244 0637 1246 1948	27 Sa 0317 0848 1425 2029	3.0 3.9 2.6 6.6	90 120 80 200	12 M 0256 0854 1447 1940	2.3 4.6 3.3 5.2	70 140 100 160	27 Tu 0330 1058 1632 1925	2.3 5.2 4.3 4.6	70 160 130 140	12 Th 0325 1102 1753 ○	2.0 5.9 3.9 120	60 180 120 ●
13 Sa 0312 0730 1334 2015	28 Su 0356 1025 1522 2049	3.0 3.9 3.0 6.2	90 120 90 190	13 Tu 0332 1012 1549 1948	2.3 4.9 3.9 4.9	70 150 120 150	28 W 0401 1218 ● ○	2.6 5.6 170	80	13 M 0411 1220 2133 2257	2.0 5.9 3.3 3.3	60 180 100 100
14 Su 0345 0850 1430 2033	29 M 0436 1217 1630 ○	2.6 3.9 3.6 5.9	80 120 110 180	14 W 0412 1145 1714 ●	2.0 5.2 4.3 4.6	60 160 130 140	29 Th 0424 1324 180 ○	2.6 5.9 180	80	14 Sa 0506 1325 2133 2257	2.0 6.2 3.3 3.3	60 190 100 100
15 M 0422 1044 1535 2038	30 Tu 0518 1341 1810 1947	2.3 4.3 3.9 5.6	70 130 120 150	15 Th 0456 1314 1936 2015	2.0 5.9 4.3 4.3	60 180 130 130	30 F 0412 1415 1415 2015	2.6 6.2 190	80	15 Su 0612 1419 2158	2.3 6.6 2.6	70 200 80
	31 W 0602 1438	2.6 5.9	80 180				31 Sa 0435 1455	2.6 6.2	80			

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Musay'id Outer Channel Entrance, Qatar, 2013

Times and Heights of High and Low Waters

October				November				December			
	Time	Height			Time	Height			Time	Height	
	h m	ft cm		h m	ft cm			h m	ft cm		
1 Tu	0334	3.3 100		16 W	0358	3.9 120		1 F	0422	4.6 140	
	0645	3.3 100			0900	3.0 90			0949	3.6 110	
	1454	5.9 180			1510	5.6 170			1442	4.9 150	
	2231	2.6 80			2226	1.6 50			2204	2.0 60	
2 W	0400	3.6 110		17 Th	0433	4.3 130		2 Sa	0452	5.2 160	
	0841	3.0 90			1006	3.0 90			1048	3.3 100	
	1528	5.6 170			1547	5.2 160			1514	4.6 140	
	2239	2.3 70			2254	1.6 50			2238	1.6 50	
3 Th	0430	3.9 120		18 F	0509	4.9 150		3 Su	0525	5.6 170	
	0954	3.0 90			1103	2.6 80			1142	3.3 100	
	1559	5.6 170			1616	4.9 150			1546	4.6 140	
	2256	2.3 70			2321	1.6 50			2313	1.6 50	
4 F	0501	4.6 140		19 Sa	0546	5.2 160		4 M	0602	6.2 190	
	1048	3.0 90			1155	2.6 80			1236	3.0 90	
	1628	5.2 160			1640	4.6 140			1621	4.3 130	
	2323	2.0 60			2347	1.6 50			2348	1.3 40	
5 Sa	0534	4.9 150		20 Su	0622	5.6 170		5 Tu	0642	6.6 200	
	1139	2.6 80			1245	3.0 90			1330	3.0 90	
	1654	4.9 150			1703	4.3 130			1659	3.9 120	
	2354	1.6 50									
6 Su	0611	5.2 160		21 M	0013	1.6 50		6 W	0024	1.6 50	
	1230	2.6 80			0658	5.9 180			0725	6.9 210	
	1717	4.9 150			1336	3.0 90			1427	3.0 90	
					1727	3.9 120			1742	3.9 120	
7 M	0027	1.6 50		22 Tu	0035	2.0 60		7 Th	0101	1.6 50	
	0652	5.6 170			0734	6.2 190			0811	6.9 210	
	1323	3.0 90			1428	3.0 90			1527	3.0 90	
	1736	4.6 140			1749	3.6 110			1831	3.6 110	
8 Tu	0100	1.6 50		23 W	0044	2.0 60		8 F	0140	2.0 60	
	0739	5.9 180			0811	6.2 190			0902	6.9 210	
	1419	3.0 90			1525	3.3 100			1632	2.6 80	
	1759	4.3 130			1805	3.3 100			1929	3.3 100	
9 W	0133	1.6 50		24 Th	0035	2.3 70		9 Sa	0225	2.3 70	
	0829	6.2 190			0849	6.2 190			0955	6.9 210	
	1522	3.3 100			1634	3.3 100			1748	2.6 80	
	1830	3.9 120			1758	3.3 100			2050	3.0 90	
10 Th	0208	1.6 50		25 F	0013	2.3 70		10 Su	0320	2.6 80	
	0925	6.2 190			0930	6.2 190			1052	6.6 200	
	1635	3.3 100							1903	2.3 70	
	1908	3.6 110									
11 F	0246	2.0 60		26 Sa	0007	2.3 70		11 M	0211	3.0 90	
	1028	6.2 190			1014	5.9 180			0422	3.0 90	
	1817	3.0 90							1149	6.2 190	
	2006	3.3 100							1956	2.0 60	
12 Sa	0335	2.3 70		27 Su	0003	2.6 80		12 Tu	0258	3.6 110	
	1136	6.2 190			1103	5.9 180			0533	3.3 100	
	2000	2.6 80			2053	2.6 80			1242	5.6 170	
	2155	3.0 90							2038	1.6 50	
13 Su	0435	2.3 70		28 M	1154	5.6 170		13 W	0332	3.9 120	
	1239	6.2 190			2057	2.6 80			0721	3.6 110	
	2043	2.3 70							1329	5.2 160	
									2114	1.6 50	
14 M	0241	3.0 90		29 Tu	1245	5.6 170		14 Th	0403	4.6 140	
	0546	2.6 80			2103	2.3 70			0910	3.6 110	
	1336	6.2 190							1407	4.9 150	
	2120	2.0 60							2144	1.6 50	
15 Tu	0322	3.3 100		30 W	0345	3.6 110		15 F	0435	4.9 150	
	0720	3.0 90			0617	3.6 110			1023	3.3 100	
	1426	5.9 180			1330	5.2 160			1437	4.6 140	
	2154	2.0 60			2111	2.3 70			2212	1.6 50	
31 Th	0357	4.3 130									
	0824	3.6 110									
	1408	5.2 160									
	2133	2.0 60									

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Jebel Ali, United Arab Emirates, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0312	4.6	140	16 W 0347	5.2	160	1 F 0335	4.9	150	1 F 0414	5.2	160
0806	2.6	80	W 0912	2.0	60	F 0926	1.6	50	Sa 1026	1.6	50
Tu 1423	5.6	170	1529	5.6	170	1529	4.9	150	1628	3.9	120
2123	0.7	20	2159	0.7	20	2141	1.0	30	2156	1.6	50
2 W 0342	4.6	140	17 Th 0425	5.2	160	2 Sa 0410	4.9	150	2 Sa 0447	4.9	150
0851	2.3	70	1005	2.3	70	1018	1.6	50	Su 1129	2.0	60
1458	5.6	170	1612	4.9	150	1614	4.6	140	1712	3.6	110
2153	0.7	20	2230	1.3	40	2210	1.3	40	2219	2.0	60
3 Th 0413	4.6	140	18 F 0503	5.2	160	3 Su 0451	5.2	160	18 M 0526	4.9	150
0940	2.3	70	1106	2.3	70	1122	1.6	50	M 1305	2.0	60
1538	4.9	150	1658	4.3	130	1708	3.9	120	1813	3.0	90
2226	1.0	30	2259	1.6	50	2247	1.6	50	2249	2.3	70
4 F 0450	4.6	140	19 M 0544	4.9	150	4 M 0539	5.2	160	4 Tu 0615	4.6	140
1036	2.3	70	1231	2.3	70	1247	1.6	50	Tu 1437	2.0	60
1625	4.6	140	1754	3.6	110	1826	3.3	100	2006	2.6	80
2301	1.3	40	2328	2.0	60	2338	2.0	60	2336	2.6	80
5 Sa 0532	4.9	150	20 Su 0628	4.9	150	5 Tu 0640	4.9	150	20 W 0719	4.6	140
1142	2.3	70	1418	2.3	70	1432	1.3	40	W 1552	1.6	50
1724	4.3	130	1912	3.3	100	2025	3.3	100	W 2241	3.0	90
2341	1.6	50							5 Tu 0509	5.2	160
6 Su 0620	4.9	150	21 M 0003	2.3	70	6 W 0050	2.3	70	6 W 0615	4.9	150
1309	2.0	60	0719	4.9	150	0757	5.2	160	W 1409	1.3	40
1846	3.6	110	1550	2.0	60	1556	1.0	30	2018	3.3	100
			2142	3.0	90	2207	3.3	100			
7 M 0030	2.0	60	22 Tu 0100	2.6	80	7 Th 0221	2.6	80	21 Th 0104	3.0	90
0717	5.2	160	0823	4.9	150	F 0919	5.2	160	Th 0835	4.6	140
1500	1.6	50	1648	1.6	50	1658	0.7	20	1646	1.3	40
2039	3.3	100	2302	3.3	100	2316	3.6	110	2321	3.3	100
8 Tu 0130	2.3	70	23 W 0234	3.0	90	8 F 0342	2.6	80	23 Sa 0420	2.6	80
0826	5.2	160	0930	4.9	150	1029	5.6	170	Sa 1040	5.2	160
1617	1.0	30	1728	1.3	40	1750	0.3	10	1757	0.7	20
2210	3.6	110	2347	3.6	110				2342	4.3	130
9 W 0240	2.3	70	24 Th 0342	3.0	90	9 Sa 0006	4.3	130	9 Su 0021	3.9	120
0937	5.6	170	1025	5.2	160	0445	2.3	70	Su 0505	2.3	70
1715	0.7	20	1802	1.0	30	1129	5.9	180	1126	5.2	160
2320	3.9	120				1835	0.0	0	1827	0.7	20
10 Th 0346	2.6	80	25 F 0022	3.6	110	10 Su 0048	4.6	140	10 M 0048	4.3	130
1039	5.9	180	0432	2.6	80	0541	2.0	60	M 0546	2.0	60
1806	0.0	0	1110	5.6	170	1223	5.9	180	1208	5.6	170
			1832	0.7	20	● 1914	0.0	0	O 1856	0.7	20
11 F 0017	4.3	130	26 Sa 0054	3.9	120	11 M 0126	4.9	150	11 Tu 0113	4.6	140
0445	2.3	70	0516	2.6	80	0635	1.6	50	11 Tu 0625	1.6	50
1136	6.2	190	Sa 1150	5.6	170	M 1311	5.9	180	1247	5.6	170
● 1852	-0.3	-10	1901	0.3	10	1950	0.0	0	1925	0.7	20
12 Sa 0107	4.6	140	27 Su 0123	4.3	130	12 Tu 0201	4.9	150	12 W 0137	4.9	150
0541	2.3	70	0556	2.3	70	0725	1.6	50	W 0706	1.6	50
1228	6.2	190	1227	5.9	180	1354	5.9	180	1326	5.6	170
1935	-0.3	-10	O 1930	0.3	10	2022	0.3	10	1952	0.7	20
13 Su 0150	4.9	150	28 M 0150	4.3	130	13 W 0235	5.2	160	13 Th 0747	1.3	40
0636	2.3	70	0636	2.3	70	0812	1.3	40	1404	5.6	170
1317	6.6	200	1303	5.9	180	1434	5.6	170	1407	5.6	170
2015	-0.3	-10	1958	0.3	10	2050	0.7	20	1947	1.0	30
14 M 0230	4.9	150	29 Tu 0215	4.6	140	14 Th 0309	5.2	160	14 Tu 0137	4.9	150
0730	2.3	70	0716	2.0	60	0856	1.3	40	W 0706	1.6	50
1403	6.2	190	1339	5.9	180	1512	5.2	160	1326	5.6	170
2051	0.0	0	2026	0.3	10	2115	1.0	30	1952	0.7	20
15 Tu 0309	5.2	160	30 W 0239	4.6	140	15 F 0341	5.2	160	15 Th 0201	5.2	160
0822	2.0	60	0757	2.0	60	0939	1.6	50	0802	1.0	30
1446	5.9	180	1414	5.6	170	1549	4.6	140	1420	5.2	160
2126	0.3	10	2052	0.7	20	2136	1.3	40	2011	1.3	40
			31 Th 0305	4.9	150				1401	5.2	160
			0840	1.6	50				1407	0.7	20
			1450	5.2	160				1414	5.6	170
			2117	1.0	30				1420	5.2	160

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Jebel Ali, United Arab Emirates, 2013

Times and Heights of High and Low Waters

April				May				June								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 M	0310	5.6	170	16	0317	5.2	160	1 W	0341	5.9	180					
Tu	1008	0.7	20	1012	1.0	30	W	1108	0.7	20	Th	1035	1.3	40		
	1610	4.3	130	1632	3.9	120		1718	4.3	130		1707	4.3	130		
	2109	2.0	60	2116	2.6	80		2153	3.0	90		2144	3.0	90		
2 Tu	0354	5.6	170	17	0348	4.9	150	2 Th	0439	5.6	170	17 F	0354	5.2	160	
	1113	0.7	20	1059	1.3	40		1209	1.0	30		1121	1.3	40		
	1712	3.9	120	1725	3.6	110		1827	4.3	130		1758	4.3	130		
	2156	2.3	70	2154	2.6	80	○	2307	3.0	90		2240	3.3	100		
3 W	0449	5.2	160	18	0429	4.9	150	3 F	0552	5.2	160	18 Sa	0445	4.9	150	
	1227	1.0	30	1200	1.3	40		1312	1.3	40		1211	1.6	140		
	1832	3.6	110	1831	3.6	110		1939	4.3	130		1853	4.3	130		
○	2300	2.6	80	○	2247	3.0	90					○	2351	3.3	100	
4 Th	0602	4.9	150	19	0531	4.6	140	4 Sa	0056	3.0	90	19 Su	0556	4.6	140	
	1344	1.0	30	1310	1.6	50		0715	4.9	150		1303	1.6	50		
	2007	3.6	110	1951	3.6	110		1417	1.6	50		1948	4.6	140		
								2047	4.6	140						
5 F	0041	3.0	90	20	0007	3.3	100	5 Su	0305	3.0	90	20 M	0121	3.0	90	
	0730	4.9	150	Sa	0651	4.3	130		0843	4.6	140		0720	4.3	130	
	1458	1.3	40	1419	1.6	50		1516	1.6	50		1356	2.0	60		
	2132	3.9	120	2109	3.9	120		2145	4.9	150		2043	4.6	140		
6 Sa	0248	2.6	80	21	0214	3.0	90	6 M	0424	2.3	70	21 Tu	0309	2.6	80	
	0900	4.9	150	Su	0814	4.3	130		1000	4.6	140		0846	4.3	130	
	1601	1.0	30	1517	1.6	50		1605	2.0	60		1448	2.0	60		
	2227	4.3	130	2159	4.3	130		2231	5.2	160		2132	4.9	150		
7 Su	0410	2.3	70	22	0342	2.6	80	7 Tu	0515	2.0	60	22 Tu	0419	2.3	70	
	1014	4.9	150	M	0927	4.6	140		1102	4.6	140		0958	4.6	140	
	1652	1.3	40	1603	1.6	50		1644	2.0	60		1535	2.0	60		
	2310	4.6	140	2237	4.6	140		2311	5.2	160		2218	5.6	170		
8 M	0508	2.0	60	23	0436	2.3	70	8 W	0557	1.6	50	23 Th	0511	1.6	50	
	1114	4.9	150	Tu	1027	4.6	140		1154	4.6	140		1100	4.6	140	
	1733	1.3	40	1642	1.6	50		1717	2.3	70		1618	2.0	60		
	2347	4.9	150	2311	4.9	150		2348	5.6	170		2302	5.9	180		
9 Tu	0555	1.6	50	24	0522	1.6	50	9 Th	0636	1.3	40	24 Sa	0559	1.0	30	
	1205	4.9	150	W	1121	4.9	150		1238	4.6	140		1155	4.6	140	
	1808	1.3	40	1717	1.6	50		1746	2.3	70		1659	2.3	70		
				2344	5.2	160					2345	6.2	190			
10 W	0022	5.2	160	25	0606	1.0	30	10 F	0023	5.6	170	10 Sa	0647	0.7	20	
	0638	1.3	40	Th	1210	4.9	150		0712	1.0	30		1248	4.9	150	
	1250	4.9	150	1750	1.6	50		1317	4.6	140		1740	2.3	70		
●	1838	1.6	50	○	1813	2.3	70		●	1813	2.3	70	○	1848	3.0	90
11 Th	0056	5.2	160	26	0018	5.6	170	11 Sa	0057	5.9	180	11 Tu	0029	6.2	190	
	0717	1.0	30	F	0651	0.7	20		0747	1.0	30		0735	1.0	30	
	1329	4.9	150	1259	4.9	150		1352	4.6	140		1344	4.6	140		
	1903	1.6	50	1821	1.6	50		1843	2.3	70		1811	3.0	90		
12 F	0128	5.6	170	27	0055	5.9	180	12 Su	0820	1.0	30	12 M	0101	6.2	190	
	0755	1.0	30	Sa	0737	0.3	10		1426	4.6	140		0806	1.0	30	
	1405	4.9	150	1345	4.9	150		1914	2.6	80		1416	4.6	140		
	1926	1.6	50	1853	2.0	60		1912	2.6	80		1848	3.0	90		
13 Sa	0158	5.6	170	28	0132	6.2	190	13 M	0156	5.9	180	13 Th	0227	5.9	180	
	0830	0.7	20	Su	0825	0.3	10		0852	1.0	30		0909	0.3	10	
	1439	4.6	140	1432	4.9	150		1501	4.3	130		1519	4.9	150		
	1949	2.0	60	1930	2.0	60		1947	2.6	80		2002	2.6	80		
14 Su	0225	5.6	170	29	0211	6.2	190	14 Tu	0221	5.6	170	14 W	0244	6.6	200	
	0903	1.0	30	M	0915	0.3	10		0922	1.0	30		0959	0.3	10	
	1513	4.3	130	1521	4.6	140		1538	4.3	130		1612	4.9	150		
	2016	2.0	60	2011	2.3	70		2022	2.6	80		2057	3.0	90		
15 M	0251	5.2	160	30	0253	6.2	190	15 W	0247	5.6	170	15 Th	0333	6.2	190	
	0935	1.0	30	Tu	1009	0.3	10		0956	1.0	30		1050	0.7	20	
	1550	3.9	120	1615	4.6	140		1620	4.3	130		1707	4.9	150		
	2044	2.3	70	2057	2.6	80		2100	3.0	90		2159	3.0	90		
											31	0430	5.9	180		
											F	1141	1.3	40		
											1803	4.9	150			
											○	2314	3.3	100		

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Jebel Ali, United Arab Emirates, 2013

Times and Heights of High and Low Waters

July				August				September									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm						
1 M	0032	3.0	90	16 Tu	0452	4.6	140	1 Th	0322	2.3	70	16 Su	0151	2.0	60		
0621	4.6	140	1110	2.0	60	0926	3.6	110	0742	3.6	110	0436	1.6	50			
1231	2.3	70	1752	5.6	170	1254	3.3	100	1210	3.0	90	1115	3.9	120			
1905	5.6	170	●	2004	5.6	170	1920	5.6	170	2132	5.2	160	1523	3.6	110		
2 Tu	0229	3.0	90	17 W	0024	2.6	80	2 F	0434	2.0	60	17 Sa	0321	1.6	50		
0743	4.3	130	0600	4.3	130	1048	3.9	120	0929	3.9	120	0513	1.3	40			
1319	2.6	80	1155	2.3	70	1431	3.3	100	1343	3.0	90	1143	4.3	130			
2000	5.6	170	1844	5.6	170	2112	5.6	170	2042	5.9	180	1616	3.3	100			
3 W	0404	2.6	80	18 Th	0206	2.3	70	3 Sa	0520	1.6	50	18 Su	0427	1.0	30		
0929	3.9	120	0745	3.9	120	1135	3.9	120	1043	4.3	130	0543	1.3	40			
1411	3.0	90	1252	2.6	80	1534	3.3	100	1515	3.0	90	1209	4.6	140			
2059	5.6	170	1948	5.9	180	2212	5.6	170	2155	5.9	180	1700	3.0	90			
4 Th	0501	2.0	60	19 F	0341	2.0	60	4 Su	0553	1.3	40	19 M	0521	0.7	20		
1048	3.9	120	0927	3.9	120	1211	4.3	130	1135	4.6	140	0611	1.0	30			
1504	3.3	100	1402	3.0	90	1623	3.3	100	1622	2.6	80	1234	4.9	150			
2156	5.9	180	2100	5.9	180	2258	5.9	180	2258	6.2	190	2352	5.9	180			
5 F	0543	1.6	50	20 Sa	0446	1.3	40	5 M	0621	1.3	40	20 Tu	0607	0.7	20		
1143	4.3	130	1043	4.3	130	1241	4.6	140	1219	4.9	150	0639	1.0	30			
1552	3.3	100	1514	3.0	90	1706	3.3	100	1720	2.3	70	1258	5.2	160			
2245	5.9	180	2207	6.2	190	2338	6.2	190	2354	6.6	200	1818	2.3	70			
6 Sa	0616	1.3	40	21 Su	0539	0.7	20	6 Tu	0648	1.0	30	21 W	0649	0.3	10		
1226	4.3	130	1143	4.6	140	1309	4.6	140	1747	3.0	90	0030	5.9	180			
1635	3.3	100	1617	3.0	90	●	●	●	●	●	●	0706	1.0	30			
2327	6.2	190	2306	6.6	200	○	○	○	○	○	○	1322	5.2	160			
7 Su	0647	1.3	40	22 M	0626	0.3	10	7 W	0015	6.2	190	22 Th	0046	6.6	200		
1301	4.6	140	1234	4.9	150	0715	1.0	30	0727	0.7	20	0108	5.9	180			
1715	3.0	90	1714	2.6	80	1335	4.9	150	1337	5.6	170	0732	1.3	40			
●	1753	3.0	90	1810	2.6	80	1904	2.6	80	1906	2.0	60	1346	5.6	170		
8 M	0004	6.2	190	23 Tu	0001	6.9	210	8 Th	0050	6.2	190	23 Su	0134	6.6	200		
0715	1.0	30	0710	0.3	10	0741	1.0	30	0802	0.7	20	0145	5.9	180			
1332	4.6	140	1321	5.2	160	1359	4.9	150	1413	5.9	180	0755	1.3	40			
●	1753	3.0	90	1810	2.6	80	1904	2.6	80	1956	1.6	50	1411	5.6	170		
9 Tu	0038	6.2	190	24 W	0054	6.9	210	9 F	0124	6.2	190	9 Sa	0217	6.2	190		
0744	1.0	30	0751	0.3	10	0808	1.0	30	0833	1.0	30	0222	5.6	170			
1401	4.6	140	1403	5.6	170	1423	5.2	160	1448	5.9	180	0814	1.6	50			
1833	3.0	90	1905	2.3	70	1944	2.3	70	2045	1.6	50	1440	5.9	180			
10 W	0110	6.2	190	25 Th	0142	6.9	210	10 Sa	0158	5.9	180	10 Tu	0259	5.9	180		
0812	1.0	30	0830	0.3	10	0832	1.3	40	0901	1.6	50	0300	5.2	160			
1430	4.9	150	1443	5.6	170	1447	5.2	160	1523	5.9	180	0835	2.0	60			
1913	3.0	90	2000	2.3	70	2026	2.3	70	2134	1.6	50	1512	5.9	180			
11 Th	0141	6.2	190	26 F	0229	6.6	200	11 Su	0232	5.9	180	11 W	0344	4.6	140		
0839	1.0	30	0907	0.7	20	0855	1.3	40	0924	2.0	60	0903	2.0	60			
1458	4.9	150	1523	5.9	180	1514	5.6	170	1558	5.9	180	1551	5.9	180			
1954	3.0	90	2054	2.3	70	2110	2.3	70	2228	2.0	60	2252	1.6	50			
12 F	0212	6.2	190	27 Sa	0313	6.2	190	12 M	0308	5.6	170	12 Tu	0421	4.6	140		
0906	1.3	40	0943	1.3	40	0917	1.6	50	0940	2.3	70	0438	4.3	130			
1526	4.9	150	1603	5.9	180	1546	5.6	170	1634	5.6	170	0946	3.0	90			
2037	3.0	90	2149	2.3	70	2200	2.0	60	2334	2.0	60	1706	4.9	150			
13 Sa	0244	5.9	180	28 Su	0359	5.6	170	13 Tu	0349	4.9	150	13 W	0510	3.9	120		
0934	1.3	40	1017	1.6	50	0941	2.0	60	0959	2.6	80	0557	3.9	120			
1555	5.2	160	1643	5.9	180	1625	5.6	170	1714	5.6	170	1031	2.6	80			
2123	2.6	80	2250	2.6	80	2258	2.0	60	●	●	●	1741	5.6	170			
14 Su	0319	5.6	170	29 M	0448	4.9	150	14 W	0439	4.6	140	14 Th	0054	2.3	70		
1003	1.6	50	1049	2.3	70	1014	2.3	70	0617	3.6	110	0135	1.6	50			
1628	5.2	160	1726	5.6	170	1711	5.6	170	1025	3.0	90	0745	3.6	110			
2213	2.6	80	●	●	●	●	●	●	1803	5.2	160	1152	3.0	90			
15 M	0401	5.2	160	30 Tu	0006	2.6	80	15 Th	0012	2.0	60	15 Sa	0221	2.3	70		
1034	1.6	50	0544	4.3	130	0548	3.9	120	0928	3.3	100	0257	1.3	40			
1707	5.2	160	1119	2.6	80	1101	2.6	80	1105	3.3	100	0930	3.9	120			
2312	2.6	80	1810	5.6	170	1808	5.6	170	1905	5.2	160	1356	3.3	100			
			31 W	0141	2.6	80				31 Sa	0342	2.0	60	30 M	0331	1.6	50
			0702	3.6	110				1040	3.6	110	1037	3.9	120	1006	3.6	110
			1152	3.0	90				1355	3.6	110	1027	3.3	100	1159	3.6	110
			1902	5.6	170				2020	5.2	160	1810	4.9	150	2047	4.9	150

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Mina Jebel Ali, United Arab Emirates, 2013

Times and Heights of High and Low Waters

October				November				December							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0418	1.6	50	16 W	0425	1.3	40	1 F	0428	1.6	50				
1102	4.3	130	1046	4.9	150	1100	5.2	160	16 Sa	0504	2.3	70			
1608	3.0	90	1653	2.0	60	1720	1.6	50	170 Sa	1128	5.6	170			
2152	4.9	150	2248	5.2	160	2308	4.9	150	1823	1.0	30				
2 W	0454	1.3	40	17 Th	0511	1.3	40	2 Sa	0503	1.6	50				
1126	4.6	140	1124	5.2	160	1131	5.6	170	17 Su	0028	4.6	140			
1651	2.6	80	1741	1.6	50	1800	1.3	40	18 M	0536	2.3	70			
2244	5.2	160	2342	5.2	160	2356	4.9	150	1833	0.7	10				
3 Th	0525	1.3	40	18 F	0549	1.3	40	●	1901	0.7	20				
1151	4.9	150	1200	5.6	170	Su	1202	5.9	180	1841	1.0	30			
1731	2.3	70	1825	1.3	40	●	1841	1.0	30	18 M	0110	4.6	140		
2329	5.2	160	●	●	●	M	0605	2.3	70	1937	0.7	20			
4 F	0556	1.3	40	19 Sa	0031	5.2	160	4 M	0042	4.9	150				
1216	5.2	160	0622	1.6	50	0603	2.0	60	19 Tu	0147	4.6	140			
1809	1.6	50	1235	5.9	180	1236	6.2	190	20 Sa	0634	2.6	80			
●	●	●	○	1906	1.0	30	1923	0.7	20	20 Tu	1312	5.9	180		
5 Sa	0012	5.6	170	20 Su	0115	5.2	160	●	2011	0.7	20	21 Sa	0213	4.6	140
0625	1.3	40	0651	2.0	60	0633	2.0	60	20 M	0605	2.3	70			
1242	5.6	170	1309	5.9	180	Tu	1311	6.2	190	22 Sa	0221	4.6	140		
●	1848	1.3	40	1946	1.0	30	2008	0.3	10	22 M	0651	2.3	70		
6 Su	0054	5.6	170	21 M	0154	4.9	150	6 W	0213	4.9	150				
0651	1.6	50	0714	2.0	60	0707	2.3	70	21 Th	0736	4.3	130			
1309	5.9	180	1341	5.9	180	1348	6.6	200	22 F	0704	2.6	80			
1929	1.0	30	2024	0.7	20	2055	0.3	10	22 Th	1410	5.6	170			
7 M	0135	5.2	160	22 Tu	0231	4.6	140	●	2113	0.7	20	23 F	0257	4.9	150
0714	1.6	50	0736	2.3	70	7 Th	0747	2.3	70	23 Sa	0740	2.6	80		
1339	5.9	180	1411	5.9	180	1428	6.2	190	24 M	1419	6.6	200			
2012	1.0	30	2101	1.0	30	2145	0.3	10	24 Th	2132	0.0	0			
8 Tu	0215	5.2	160	23 W	0307	4.6	140	8 F	0351	4.6	140				
0736	2.0	60	0800	2.3	70	0832	2.6	80	23 Sa	0411	4.3	130			
1410	6.2	190	1438	5.6	170	1513	5.9	180	24 M	0948	3.0	90			
2058	0.7	20	2137	1.0	30	2240	0.7	20	24 Th	1505	5.2	160			
9 W	0258	4.9	150	24 Th	0345	4.3	130	9 Sa	0451	4.6	140				
0805	2.0	60	0828	2.6	80	0926	3.0	90	24 Sa	0456	4.3	130			
1445	6.2	190	1505	5.6	170	1606	5.6	170	25 M	1049	3.0	90			
2150	1.0	30	2215	1.3	40	2338	1.0	30	25 Th	1702	5.2	160			
10 Th	0346	4.6	140	25 F	0428	3.9	120	10 Sa	0532	4.9	150				
0840	2.3	70	0857	3.0	90	1038	3.0	90	26 F	0457	4.6	140			
1526	5.9	180	1535	5.2	160	1716	5.2	160	26 Sa	0923	2.6	80			
2250	1.0	30	2300	1.3	40	●	2349	1.3	40	27 M	1520	4.9	150		
11 F	0447	4.3	130	26 Su	0522	3.9	120	11 M	0546	4.3	130				
0925	2.6	80	0933	3.0	90	0638	3.0	90	27 Th	0000	1.3	40			
1617	5.6	170	1613	4.9	150	1716	4.6	140	27 W	0626	4.9	150			
2358	1.0	30	2354	1.6	50	●	2349	1.3	40	28 O	1111	2.6	80		
12 Sa	0606	3.9	120	27 Su	0630	3.6	110	12 M	0624	3.3	100				
1026	3.0	90	1024	3.3	100	1712	4.6	140	28 Th	1224	3.0	90			
1726	5.2	160	1712	4.6	140	●	2010	4.6	140	28 O	1649	4.3	130		
●	●	●	●	●	●	●	1856	3.9	120	29 O	2340	1.3	40		
13 Su	0111	1.3	40	28 M	0055	1.6	50	13 W	0142	1.3	40				
0737	3.9	120	0753	3.9	120	0916	4.9	150	28 Sa	0040	1.6	50			
1203	3.3	100	1154	3.6	110	1606	2.3	70	29 F	0734	4.3	130			
1854	4.9	150	1833	4.3	130	2134	4.6	140	29 Th	0821	5.2	160			
14 M	0225	1.3	40	29 Tu	0200	1.6	50	27 W	1324	3.0	90				
0904	4.3	130	0911	3.9	120	1006	5.2	160	29 Sa	1558	2.3	70			
1427	3.0	90	1439	3.3	100	1659	2.0	60	29 O	1418	2.3	70			
2024	4.9	150	1958	4.3	130	2243	4.6	140	29 Th	1932	3.6	110			
15 Tu	0331	1.3	40	30 W	0259	1.6	50	14 F	0227	2.0	60				
1003	4.6	140	0954	4.6	140	1049	5.6	170	30 M	0330	2.6	80			
1555	2.6	80	1553	3.0	90	1743	1.3	40	30 Th	1057	5.6	170			
2143	5.2	160	2114	4.6	140	2339	4.6	140	30 Sa	1817	1.0	30			
31 Th	0347	1.6	50	31 Th	1028	4.9	150	15 F	0414	2.6	80				
1640	2.3	70	1640	2.3	70	1640	2.3	70	31 M	0311	2.3	70			
2215	4.6	140	2215	4.6	140	2215	4.6	140	31 Th	1059	5.9	180			

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Aden, Yemen, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0352	4.3	130	16 W 0521	3.3	100	1 F 0502	3.0	90	1 F 0612	3.0	90
0855	6.2	190	1040	5.6	170	1033	5.6	170	1214	4.9	150
1542	1.6	50	1642	2.6	80	1607	3.0	90	1611	4.3	130
2238	6.9	210	2322	7.2	220	2256	7.5	230	2302	6.9	210
2 W 0439	3.9	120	17 Th 0618	3.3	100	2 Sa 0601	2.6	80	17 Su 0712	3.0	90
0939	5.9	180	1141	4.9	150	1140	5.2	160	1356	4.6	140
1607	2.0	60	1706	3.3	100	1634	3.6	110	1532	4.6	140
2308	6.9	210	2352	6.9	210	2336	7.5	230	2323	6.6	200
3 Th 0533	3.6	110	18 F 0722	3.0	90	3 Su 0711	2.3	70	18 M 0824	3.0	90
1032	5.6	170	1300	4.6	140	1322	4.9	150	2355	6.2	190
1633	2.6	80	1702	3.9	120	1708	4.3	130	●		
2342	7.2	220	●			●					
4 F 0637	3.3	100	19 Sa 0022	6.9	210	4 M 0029	7.2	220	19 Tu 0937	2.6	80
1145	4.9	150	0832	3.0	90	0827	2.0	60	1332	5.2	160
1705	3.3	100	●			1557	4.9	150	1712	4.6	140
●			●			1811	4.9	150	2355	7.2	220
5 Sa 0024	7.2	220	20 Su 0057	6.6	200	5 Tu 0138	7.2	220	20 W 0141	5.9	180
0748	3.0	90	0944	2.6	80	0943	1.6	50	1035	2.3	70
1327	4.6	140	●			1736	5.6	170	1850	5.6	170
1747	3.9	120	●			2108	5.2	160	2234	5.2	160
6 Su 0115	7.2	220	21 M 0147	6.2	190	6 W 0259	7.2	220	21 Th 0324	5.9	180
0901	2.3	70	1041	2.3	70	1050	1.0	30	1119	2.0	60
1551	4.6	140	●			1822	6.2	190	1848	5.9	180
1900	4.3	130	●			2248	4.9	150	2336	4.9	150
7 M 0215	7.2	220	22 Tu 0253	6.2	190	7 Th 0417	7.2	220	22 F 0433	6.2	190
1008	1.3	40	1122	2.0	60	1145	0.7	20	1155	2.0	60
1734	5.2	160	1944	5.6	170	1900	6.9	210	1900	6.2	190
2105	4.9	150	●			●			●		
8 Tu 0320	7.5	230	23 W 0356	6.2	190	8 F 0000	4.6	140	23 Sa 0016	4.6	140
1107	0.7	20	1157	1.6	50	0524	7.2	220	0526	6.2	190
1831	5.9	180	1930	5.9	180	1234	0.3	10	1228	1.6	50
2239	4.9	150	2343	5.2	160	1934	7.2	220	1915	6.6	200
9 W 0424	7.5	230	24 Th 0450	6.6	200	9 Sa 0058	3.9	120	24 Su 0050	3.9	120
1159	0.0	0	1228	1.3	40	0623	7.5	230	0613	6.6	200
1916	6.6	200	1941	6.2	190	1318	0.3	10	1258	1.6	50
2353	4.6	140	●			2006	7.5	230	1934	6.9	210
10 Th 0524	7.9	240	25 F 0029	4.9	150	10 M 0147	3.6	110	25 W 0121	3.6	110
1248	-0.3	-10	0537	6.6	200	0716	7.5	230	0656	6.9	210
1956	7.2	220	1259	1.3	40	1358	0.7	20	1328	1.6	50
●			1958	6.6	200	●			1956	7.2	220
11 F 0056	4.3	130	26 Sa 0109	4.6	140	11 M 0232	3.0	90	26 Tu 0154	3.0	90
0621	7.9	240	0621	6.9	210	0805	7.2	220	0737	6.9	210
1333	-0.3	-10	1329	1.0	30	1434	1.3	40	1357	1.6	50
2034	7.5	230	2018	6.9	210	2104	7.9	240	2021	7.5	230
12 Sa 0153	3.9	120	27 Su 0143	4.3	130	12 Tu 0315	2.6	80	27 W 0228	2.6	80
0714	7.5	230	0701	6.9	210	0851	6.9	210	0818	6.9	210
1416	-0.3	-10	1357	1.0	30	1507	1.6	50	1427	2.0	60
2110	7.5	230	●			2131	7.5	230	2047	7.9	240
13 Su 0245	3.6	110	28 M 0217	3.9	120	13 W 0357	2.6	80	12 Tu 0213	2.3	70
0806	7.5	230	0740	6.9	210	0936	6.6	200	0805	6.9	210
1457	0.3	10	1425	1.3	40	1536	2.6	80	1407	2.3	70
2144	7.5	230	2105	7.2	220	2157	7.5	230	2019	7.9	240
14 M 0336	3.6	110	29 Tu 0252	3.6	110	14 Th 0439	2.6	80	13 W 0250	2.0	60
0856	6.9	210	0818	6.9	210	1022	5.9	180	0846	6.9	210
1535	1.0	30	1453	1.6	50	1600	3.3	100	1456	2.6	80
2218	7.5	230	2130	7.2	220	2222	7.2	220	2114	7.9	240
15 Tu 0428	3.3	100	30 W 0330	3.3	100	15 F 0523	2.6	80	2043	7.5	230
0947	6.2	190	0858	6.6	200	1112	5.2	160	1437	3.0	90
1610	1.6	50	1519	2.0	60	1614	3.6	110	1400	3.0	90
2250	7.5	230	2155	7.5	230	2243	6.9	210	2007	8.2	250
31 Th 0413	3.0	90	●			●			14 Th 0324	2.0	60
0941	6.2	190	1544	2.3	70	●			0927	6.6	200
●			2223	7.5	230	●			1502	3.3	100

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Aden, Yemen, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0513 1204 1656 2238	h m 1.3 5.9 4.6 7.2	ft 40 180 140 220	cm 40 180 150 220	16 Tu 0501 1221 1633 2155	h m 2.3 5.6 4.9 6.2	ft 70 170 150 190	cm 70 200 140 190	1 W 0555 1311 1853 2346	h m 1.6 6.6 4.6 6.2	ft 50 200 140 190	cm 50 190 140 170
	0616 1332 1822 2341	1.6 5.9 4.9 6.6	50 180 150 200	17 W 0546 1341 1746 2230	2.6 5.6 5.2 5.9	ft 80 170 160 180	cm 80 200 130 180	2 Th 0659 1422 2037 0●	2.3 6.6 4.3	ft 70 200 130 160	cm 70 190 140 160
	0728 1509 2017	2.0 6.2 4.9	60 190 150	18 Th 0643 1504 2017 0●	3.0 5.9 5.2 5.2	ft 90 180 160 160	cm 90 210 160 160	3 F 0132 0809 1525 2159	5.6 2.6 6.9 3.9	ft 170 80 210 120	cm 170 80 210 120
	0117 0846 1622 2207	6.2 2.3 6.6 4.6	190 70 200 140	19 F 0752 1552 2151	3.0 5.9 4.6	ft 90 180 140	cm 90 210 140	4 Sa 0327 0920 1615 2259	5.6 3.3 6.9 3.3	ft 170 100 210 110	cm 170 100 210 110
5 F 0316 1000 1709 2314	0.316 1000 6.9 3.9	5.9 2.3 210 120	180 70 210 120	20 Sa 0207 0900 1623 2240	5.2 3.3 6.2 3.9	ft 160 100 190 120	cm 160 100 190 120	5 Su 0500 1023 1654 2345	5.9 3.6 7.2 2.6	ft 180 110 220 80	cm 180 110 220 80
	0448 1100 1746	6.2 2.6 7.2	190 80 220	21 Sa 0350 0958 1649 2317	5.2 3.3 6.6 3.3	ft 160 100 200 100	cm 160 100 200 100	6 M 0604 1114 1727	5.9 3.9 7.2	ft 180 120 220	cm 180 120 220
	0001 0553 1149 1817	3.3 6.6 3.0 7.5	100 200 90 230	22 Su 0502 1047 1718 2352	5.6 3.3 7.2 2.6	ft 170 100 220 80	cm 170 100 220 80	7 Tu 0023 0652 1157 1756	2.0 6.2 4.3 7.2	ft 60 190 120 220	cm 60 190 120 220
	0041 0645 1230 1844	2.6 6.6 3.0 7.5	80 200 90 230	23 M 0557 1131 1749	6.2 3.3 7.5	ft 190 100 230	cm 190 100 230	8 W 0058 0732 1234 1822	1.6 6.2 4.3 7.2	ft 50 190 130 220	cm 50 190 130 220
9 Tu 0118 0728 1306 1908	0.118 6.9 3.3 7.5	2.0 6.9 100 230	60 210 100 230	24 W 0028 0646 1214 1822	2.0 6.6 3.3 7.9	ft 60 200 100 240	cm 60 200 100 240	9 Th 0130 0807 1308 1849	1.6 6.6 6.6 7.2	ft 50 200 140 220	cm 50 200 140 220
	0152 0807 1338 ● 1933	2.0 6.9 3.6 7.5	60 210 110 230	25 W 0107 0733 1255 1857	1.0 6.9 3.6 8.2	ft 30 210 110 250	cm 30 210 110 250	10 F 0200 0840 1340 ● 1915	1.3 6.6 4.6 7.2	ft 40 200 140 220	cm 40 200 140 220
	0224 0843 1407 1957	1.6 6.6 3.9 7.5	50 200 120 230	26 F 0147 0821 1338 1934	0.7 6.9 3.6 8.2	ft 20 210 110 250	cm 20 210 110 250	11 Th 0229 0913 1411 1940	1.3 6.6 4.6 7.2	ft 40 200 140 220	cm 40 200 140 220
	0254 0920 1432 2019	1.6 6.6 3.9 7.5	50 200 120 230	27 F 0230 0911 1424 2012	0.3 6.9 3.9 8.2	ft 10 210 120 250	cm 10 210 120 250	12 M 0256 0948 1443 2006	1.3 6.2 4.6 6.9	ft 40 220 140 210	cm 40 220 140 210
13 Sa 0323 0957 1457 2040	0.323 6.2 4.3 7.2	50 190 130 220	10 Tu 0316 1003 1514 2054	0.3 6.9 4.3 7.9	10 M 0324 1025 1519 2034	1.6 6.2 4.9 6.9	50 190 150 210	28 W 0353 1051 1622 2140	0.3 7.2 4.3 7.2	10 Th 0353 1107 1622 2140	10 W 0333 1035 1558 2057
	0352 1038 1522 2102	2.0 5.9 4.6 6.9	60 180 140 210	29 M 0405 1100 1612 2139	0.3 6.9 4.6 7.5	ft 10 210 120 230	cm 10 210 120 230	14 Tu 0354 1104 1601 2106	1.6 6.2 4.9 6.6	ft 50 220 130 200	cm 50 220 130 200
	0424 1124 1552 2127	2.0 5.9 4.9 6.6	60 180 150 200	15 W 0428 1146 1653 2141	2.0 6.2 4.9 5.9	ft 60 190 150 180	cm 60 190 150 180	30 Th 0534 1237 1854 2355	1.6 6.9 3.9 5.9	ft 50 210 120 180	cm 50 210 120 180
	0442 1132 1332 2018	2.3 6.9 6.9 3.6	70 210 210 110	31 F 0628 1332 2018	2.3 6.9 3.6	ft 70 210 210	cm 70 210 210	● O	2.3 6.9 3.6	ft 70 210 210	cm 70 210 210

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.

Aden, Yemen, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0300	4.6	140	16 0031	4.6	140	1 Th 0720	4.9	150	16 0437	4.9	150
0728	4.3	130	Tu 0533	3.3	100	0849	4.9	150	F 0819	4.6	140
1407	6.6	200	Tu 1239	6.9	210	1434	5.6	170	F 1417	6.6	200
2159	2.3	70	● 2014	2.3	70	2310	2.0	60	2211	1.0	30
2 Tu 0549	4.9	150	17 0227	4.6	140	2 0724	5.2	160	17 0541	5.6	170
0828	4.6	140	W 0631	3.9	120	1033	4.9	150	Sa 1005	4.3	130
1453	6.2	190	1335	6.9	210	1545	5.6	170	1542	6.6	200
2255	2.0	60	2126	1.6	50	2348	1.6	50	2314	0.7	20
3 W 0656	5.2	160	18 0437	4.6	140	3 Sa 0718	5.2	160	18 0624	5.9	180
0939	4.9	150	0811	4.3	130	1136	4.6	140	Su 1126	3.9	120
1538	6.2	190	1440	6.9	210	1644	5.9	180	1659	6.6	200
2338	1.6	50	2231	1.0	30						
4 Th 0729	5.2	160	19 0551	5.2	160	4 Su 0021	1.6	50	19 0007	0.3	10
1046	4.9	150	0951	4.6	140	0723	5.6	170	M 0701	6.6	200
1623	6.2	190	1550	7.2	220	1220	4.3	130	1228	3.3	90
			2329	0.3	10	1733	5.9	180	1803	6.9	210
5 F 0014	1.6	50	20 0641	5.9	180	5 M 0051	1.3	40	5 0054	0.3	10
0740	5.6	170	1113	4.3	130	0739	5.9	180	Tu 0736	6.9	210
1141	4.9	150	1657	7.2	220	M 1256	3.9	120	1319	2.6	80
1705	6.6	200				1817	6.2	190	1859	7.2	220
6 Sa 0046	1.3	40	21 0021	0.0	0	6 Tu 0120	1.3	40	21 0137	0.3	10
0752	5.9	180	Su 0723	6.6	200	0801	6.2	190	W 0809	7.2	220
1227	4.6	140	1222	3.9	120	1330	3.6	110	1406	2.3	70
1746	6.6	200	1758	7.5	230	1857	6.2	190	○ 1951	6.9	210
7 Su 0116	1.3	40	22 0109	-0.3	-10	7 W 0148	1.3	40	22 0217	1.0	30
0812	5.9	180	M 0802	6.9	210	0825	6.2	190	Th 0841	7.2	220
1308	4.6	140	1322	3.6	110	1402	3.3	100	1450	2.0	60
1825	6.6	200	○ 1856	7.5	230	● 1935	6.6	200	2040	6.9	210
8 M 0145	1.0	30	23 0155	-0.3	-10	8 Th 0216	1.3	40	23 0254	1.3	40
0836	6.2	190	0840	7.2	220	0849	6.6	200	F 0912	7.2	220
1346	4.3	130	Tu 1416	3.3	100	1436	3.0	90	1534	1.6	50
● 1903	6.6	200	1950	7.2	220	2012	6.2	190	2128	6.2	190
9 Tu 0213	1.0	30	24 0238	0.0	0	9 F 0244	1.3	40	24 0329	2.0	60
0903	6.2	190	0917	7.2	220	0913	6.6	200	Sa 0942	6.9	210
1423	4.3	130	1509	3.0	90	1511	3.0	90	1617	1.6	50
1940	6.6	200	2043	6.9	210	2049	6.2	190	2216	5.9	180
10 W 0242	1.0	30	25 0319	0.7	20	10 Th 0312	1.6	50	25 0400	2.6	80
0930	6.6	200	0954	7.2	220	0935	6.6	200	Su 1010	6.9	210
1500	3.9	120	1600	2.6	80	1549	2.6	80	1702	2.0	60
2016	6.6	200	2136	6.6	200	2129	5.9	180	2307	5.2	160
11 Th 0310	1.3	40	26 0358	1.3	40	11 Su 0338	2.3	70	26 0428	3.3	100
0957	6.6	200	1030	7.2	220	1000	6.9	210	Tu 0400	2.6	80
1538	3.9	120	F 1653	2.6	80	1632	2.3	70	1010	6.9	210
2053	6.2	190	2230	5.9	180	2213	5.6	170	1702	2.0	60
12 F 0339	1.6	50	27 0436	2.0	60	12 M 0400	2.6	80	27 0007	4.9	150
1022	6.6	200	Sa 1105	6.9	210	1030	6.9	210	Tu 0448	3.9	120
1619	3.6	110	1748	2.6	80	1724	2.3	70	1054	6.2	190
2133	5.9	180	2328	5.2	160	2309	5.2	160	1847	2.3	70
13 Sa 0406	2.0	60	28 0511	3.0	90	13 Tu 0423	3.0	90	28 0133	4.3	130
1048	6.6	200	Su 1138	6.6	200	1107	6.6	200	W 0407	4.3	130
1705	3.3	100	1849	2.6	80	1826	2.0	60	1118	5.9	180
2218	5.6	170							○ 1958	2.6	80
14 Su 0431	2.3	70	29 0038	4.6	140	14 W 0025	4.6	140	29 1157	5.6	170
1117	6.6	200	0543	3.6	110	0455	3.6	110	Th 2118	2.6	80
1759	3.3	100	M 1211	6.2	190	1155	6.6	200	● 1938	2.0	60
2315	4.9	150	○ 1958	2.6	80						
15 M 0458	3.0	90	30 0220	4.3	130	15 Th 0230	4.6	140	30 0649	4.9	150
1153	6.6	200	0609	4.3	130	0555	4.3	130	F 0839	4.9	150
1903	2.6	80	Tu 1244	6.2	190	1258	6.6	200	1326	5.2	160
			2112	2.3	70	2057	1.6	50	2225	2.3	70
31 W 1329	5.9	180							31 0628	5.2	160
			W 2220	2.3	70				Sa 1053	4.6	140
									1514	5.2	160
									2310	2.0	60

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Aden, Yemen, 2013

Times and Heights of High and Low Waters

October				November				December								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 Tu	0542	5.9	180	16 W	0550	6.9	210	1 F	0528	6.9	210					
1148	3.3	100	W 1219	2.0	60	Sa 1216	1.3	40	Sa 0606	7.2	220					
1719	5.2	160	1832	6.2	190	1841	5.9	180	Sa 1315	1.0	30					
2332	2.6	80				2358	3.3	100	2003	6.6	200					
2 W	0604	6.2	190	17 Th	0009	2.6	80	2 Sa	0559	7.2	220					
1214	2.6	80	Th 0622	7.2	220	Sa 1250	1.0	30	17 Su	0101	4.3	130				
1804	5.6	170	1257	1.3	40	1923	6.2	190	16 M	0022	4.3	130				
			1918	6.6	200				Su 1230	0.3	10					
3 Th	0006	2.3	70	18 F	0050	3.0	90	3 Su	0038	3.6	110	16 M	0556	6.9	210	
0625	6.6	200	F 0650	7.2	220	Su 0631	7.5	230	17 Tu	0136	4.3	130				
1243	2.0	60	1333	1.0	30	1327	0.3	10	17 M	0658	7.9	240				
1845	6.2	190	2000	6.6	200	● 2006	6.6	200	18 Tu	1346	0.7	20				
									18 Su	2037	6.6	200				
4 F	0039	2.6	80	19 Sa	0126	3.3	100	4 M	0120	3.6	110	19 M	0011	4.3	130	
0650	6.9	210	0716	7.2	220	Tu 0705	7.5	230	19 Tu	0210	4.6	140	19 W	0156	4.3	130
1313	1.6	50	1407	1.0	30	1406	0.0	0	Tu 0723	6.9	210	19 Th	0232	4.6	140	
1925	6.2	190	○ 2039	6.6	200	2051	6.6	200	Tu 1445	1.0	30	19 F	0734	6.6	200	
5 Sa	0112	2.6	80	20 Su	0159	3.6	110	5 Tu	0203	3.6	110	20 Tu	0251	4.3	130	
0715	7.2	220	Su 0740	7.2	220	Tu 0742	7.5	230	20 W	0244	4.6	140	20 W	0311	4.6	140
1346	1.0	30	Su 1440	1.0	30	1448	0.0	0	Th 0750	6.6	200	20 F	0808	6.6	200	
● 2007	6.6	200	2116	6.2	190	2139	6.9	210	1512	1.0	30	20 M	1516	1.3	40	
6 Su	0145	2.6	80	21 M	0230	3.9	120	6 W	0251	3.9	120	21 Tu	1522	-0.3	-10	
0741	7.2	220	M 0802	6.9	210	W 1511	1.0	30	2230	6.6	200	21 Th	0815	7.5	230	
1423	0.7	20	2154	6.2	190				2216	6.2	190	21 F	1516	1.3	40	
2050	6.6	200							2220	7.2	220	21 W	2219	6.6	200	
7 M	0220	3.0	90	22 Tu	0259	3.9	120	7 Th	0345	4.3	130	22 M	0351	4.6	140	
0810	7.2	220	Tu 0824	6.6	200	Th 0907	7.2	220	22 F	0402	4.6	140	22 W	0842	6.2	190
1503	0.7	20	1540	1.3	40	1622	0.3	10	Th 0819	6.6	200	22 Sa	1541	1.6	50	
2135	6.2	190	2233	5.9	180	2327	6.6	200	1538	1.3	40	22 Th	2247	6.6	200	
8 Tu	0257	3.3	100	23 W	0328	4.3	130	8 F	0451	4.3	130	23 M	0350	4.3	130	
0843	7.2	220	W 0846	6.2	190	0959	6.6	200	23 Tu	0402	4.6	140	23 W	0959	5.6	170
1547	0.7	20	1610	1.6	50	1717	1.0	30	Th 0921	5.6	170	23 Th	1629	2.3	70	
2227	6.2	190	2317	5.6	170				Sa 1636	2.0	60	23 F	2348	6.6	200	
9 W	0339	3.9	120	24 Th	0401	4.6	140	9 Sa	0029	6.6	200	24 M	0054	7.2	220	
0921	6.9	210	Th 0910	5.9	180	Sa 1642	2.0	60	24 Tu	0010	6.2	190	24 W	0626	3.9	120
1637	0.7	20	1642	2.0	60	1106	5.9	180	Sa 0603	4.6	140	24 Th	1055	4.9	150	
2328	5.9	180				1817	1.6	50	Su 0959	5.2	160	24 F	1656	3.0	90	
10 Th	0433	4.3	130	25 F	0009	5.6	170	10 M	0137	6.6	200	25 Tu	0024	6.6	200	
1006	6.6	200	F 0448	4.6	140	Su 0750	4.3	130	25 W	0055	6.2	190	25 W	0733	3.6	110
1735	1.3	40	0935	5.6	170	M 1242	5.2	160	Tu 0724	4.3	130	25 Th	1223	4.6	140	
			1720	2.3	70	○ 1925	2.3	70	Tu 1109	4.6	140	25 O	1729	3.3	100	
11 F	0043	5.6	170	26 Sa	0116	5.2	160	11 M	0242	6.6	200	26 Tu	0148	6.9	210	
0549	4.6	140	0620	4.9	150	0930	3.6	110	26 W	0858	3.0	90	26 W	0107	6.6	200
1106	6.2	190	Sa 0957	5.2	160	M 1445	4.9	150	Tu 1438	4.9	150	26 Th	0841	3.0	90	
1842	1.6	50	1812	2.6	80	2038	3.0	90	○ 1751	3.0	90	26 F	1420	4.3	130	
12 Sa	0212	5.6	170	27 Su	0230	5.6	170	12 Tu	0339	6.9	210	27 Tu	0242	6.9	210	
0731	4.6	140	Su 0825	4.6	140	Tu 1037	2.6	80	27 W	0944	3.3	100	27 W	0157	6.9	210
1232	5.6	170	1018	4.6	140	1636	5.2	160	Th 1510	4.6	140	27 Th	0943	2.3	70	
● 1959	2.0	60	○ 1923	3.0	90	2149	3.6	110	2008	3.6	110	27 F	1635	4.6	140	
13 Su	0332	5.9	180	28 M	0326	5.6	170	13 Th	0426	6.9	210	27 Th	1950	4.3	130	
0932	3.9	120	M 1024	4.3	130	W 1125	2.0	60	28 Tu	0310	6.6	200	28 Tu	0157	6.9	210
1430	5.2	160	1357	4.6	140	1750	5.6	170	Th 1030	2.6	80	28 W	1037	1.6	50	
2118	2.3	70	2037	3.3	100	2250	3.9	120	28 F	1148	1.6	50	28 Th	1751	5.2	160
14 M	0430	6.2	190	29 Tu	0404	5.9	180	14 Th	0505	6.9	210	28 F	2129	4.6	140	
1049	3.3	100	Tu 1047	3.6	110	1205	1.6	50	29 W	1111	2.0	60	29 Tu	0348	7.2	220
1621	5.6	170	1556	4.6	140	1843	5.9	180	Th 1752	5.2	160	29 W	1126	0.7	20	
2228	2.3	70	2141	3.3	100	2340	3.9	120	2222	4.3	130	29 Th	1838	5.9	180	
15 Tu	0513	6.6	200	30 W	0433	6.2	190	15 F	0538	7.2	220	29 F	2249	4.6	140	
1138	2.6	80	1114	3.0	90	1241	1.0	30	30 Sa	0433	7.2	220	30 M	0444	7.5	230
1736	5.9	180	1708	4.9	150	1926	6.2	190	Sa 1150	1.0	30	30 Tu	1213	0.0	0	
2323	2.6	80	2233	3.3	100				1839	5.9	180	30 W	1919	6.6	200	
			31 Th	0500	6.6	200			2318	4.3	130	30 Th	2356	4.6	140	
			1144	2.3	70							31 Tu	1257	-0.3	-10	
			1757	5.6	170							31 Tu	1958	6.9	210	
			2318	3.3	100											

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suez, Egypt, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0124	5.9	179	16 W 0248	6.5	199	1 F 0218	6.1	186	16 Sa 0405	5.8	177
0741	2.2	66	W 0852	1.5	47	0839	2.0	62	Sa 0956	2.5	75
1343	6.3	192	1507	6.6	202	1433	6.3	192	M 1616	5.6	171
2005	2.1	63	2118	1.5	46	2101	1.8	55	2218	2.4	73
2 W 0201	5.9	179	17 Th 0345	6.2	190	2 Sa 0305	6.0	183	17 Su 0501	5.5	167
0820	2.2	68	0946	2.0	60	0926	2.2	66	1048	2.8	86
1420	6.2	190	1601	6.2	189	1520	6.1	185	1715	5.2	160
2045	2.1	63	2213	1.9	57	2148	1.9	58	2316	2.7	83
3 Th 0243	5.8	178	18 F 0445	5.9	181	3 Su 0400	5.8	178	18 M 0605	5.2	159
0905	2.3	71	1045	2.4	73	1020	2.4	72	1152	3.1	94
1501	6.1	186	1700	5.8	176	1615	5.8	177	1822	5.0	152
2130	2.1	65	2313	2.3	69	2246	2.0	62			
4 F 0331	5.8	176	19 Sa 0550	5.6	172	4 M 0505	5.7	174	19 Tu 0026	2.9	88
0954	2.5	75	1150	2.8	84	1128	2.5	75	0713	5.1	156
1548	5.9	181	1805	5.4	165	1722	5.6	170	1307	3.2	97
2220	2.2	67	●						1933	4.9	149
5 Sa 0428	5.7	173	20 Su 0020	2.6	79	5 Tu 0000	2.1	64	20 W 0137	2.9	89
1050	2.6	79	0658	5.5	167	0620	5.7	174	0815	5.2	158
1645	5.8	176	1303	3.0	91	1246	2.4	74	1413	3.1	94
● 2318	2.3	69	1915	5.2	158	1839	5.5	167	2037	5.0	151
6 Su 0533	5.7	173	21 M 0131	2.8	84	6 W 0118	2.0	61	21 Th 0233	2.8	85
1200	2.7	81	0803	5.4	165	0737	5.8	178	0907	5.3	163
1748	5.7	173	1415	3.1	93	1405	2.2	67	1503	2.9	88
			2020	5.1	156	1958	5.6	170	2128	5.1	156
7 M 0026	2.2	67	22 Tu 0231	2.8	85	7 Th 0231	1.7	53	22 F 0318	2.6	79
0645	5.8	176	0901	5.5	167	0845	6.1	187	0950	5.5	169
1313	2.5	77	1507	3.0	91	1511	1.8	56	1543	2.7	81
1900	5.7	173	2118	5.2	157	2109	5.8	178	2207	5.3	162
8 Tu 0137	2.0	62	23 W 0318	2.7	83	8 F 0333	1.4	43	23 Sa 0358	2.4	73
0754	6.0	183	0948	5.6	170	0946	6.5	197	1024	5.8	176
1420	2.3	69	1546	2.9	88	1607	1.5	45	1618	2.4	74
2009	5.8	177	2205	5.2	160	2211	6.2	188	2241	5.5	169
9 W 0243	1.7	53	24 Th 0354	2.6	80	9 Sa 0428	1.1	35	24 Su 0433	2.2	66
0856	6.3	193	1026	5.7	174	1041	6.8	206	1054	6.0	183
1522	1.9	58	1618	2.7	83	1658	1.2	36	1652	2.2	67
2115	6.1	185	2241	5.3	163	2307	6.5	197	2309	5.7	175
10 Th 0341	1.4	44	25 F 0426	2.5	76	10 Su 0518	1.0	31	25 M 0507	2.0	61
0954	6.7	204	1058	5.8	178	1131	7.0	213	1122	6.2	189
1616	1.5	47	1648	2.5	77	1746	1.0	31	1728	2.0	61
2215	6.3	193	2313	5.5	168	● 2358	6.7	203	○ 2337	6.0	182
11 F 0435	1.1	35	26 Sa 0458	2.3	71	11 M 0607	1.0	30	26 Tu 0543	1.9	57
1050	7.0	213	1126	6.0	183	1220	7.1	215	1150	6.4	195
1709	1.2	37	1720	2.3	71	1833	1.0	30	1801	1.8	56
● 2313	6.6	201	2339	5.7	173				● 2346	6.6	200
12 Sa 0528	1.0	30	27 Su 0531	2.2	66	12 Tu 0048	6.7	205	12 W 0007	6.2	188
1141	7.2	220	1152	6.2	188	0654	1.1	33	0618	1.8	54
1758	1.0	31	1752	2.1	65	1307	7.0	213	1220	6.5	199
●			○			1918	1.1	34	1837	1.7	51
13 Su 0007	6.8	206	28 M 0005	5.8	177	13 W 0135	6.7	203	28 Th 0039	6.3	193
0618	0.9	28	0605	2.0	62	0739	1.3	41	0656	1.7	52
1233	7.3	222	1218	6.3	193	1352	6.8	207	1254	6.6	201
1848	0.9	28	1828	2.0	60	2001	1.3	41	1916	1.6	49
14 M 0101	6.8	207	29 Tu 0033	6.0	182	14 W 0224	6.5	197	14 Th 0115	6.5	198
0709	1.0	30	0643	1.9	59	0824	1.7	51	0715	1.7	51
1324	7.2	219	1246	6.4	196	1439	6.5	197	1330	6.5	198
1939	1.0	30	1903	1.8	56	2046	1.7	51	1933	1.7	53
15 Tu 0154	6.7	205	30 W 0103	6.1	185	15 F 0313	6.2	188	15 M 0156	6.3	192
0801	1.2	37	0718	1.9	58	0909	2.1	63	0752	1.9	59
1415	7.0	212	1318	6.5	197	1526	6.0	184	1409	6.2	190
2028	1.2	36	1941	1.8	54	2131	2.0	62	2011	2.0	61
31 Th 0139	6.1	187									
0758	1.9	59									
1354	6.4	196									
2018	1.8	54									

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suez, Egypt, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0235	6.4 195	16 Tu 0322	5.4 166	1 W 0330	6.3 191	16 Th 0324	5.3 162	1 Sa 0533	5.7 173	16 Su 0416	5.0 152
0854	1.7 53	0915	2.6 80	0948	1.5 47	0930	2.3 70	1150	1.3 41	1037	1.8 56
1456	6.2 189	1539	5.3 163	1603	6.0 183	1550	5.2 160	1816	5.8 177	1654	5.1 155
2122	1.7 51	2143	2.7 82	2226	1.6 49	2205	2.5 75			2320	2.1 63
2 Tu 0337	6.2 188	17 W 0411	5.3 161	2 0439	6.0 183	17 F 0415	5.2 158	2 Su 0037	1.5 45	17 M 0511	4.9 150
0954	1.9 58	1003	2.7 83	1056	1.7 51	1022	2.4 72	0641	5.5 168	1133	1.9 57
1601	5.9 180	1633	5.2 158	1716	5.9 179	1646	5.2 158	1301	1.5 45	1750	5.2 157
2228	1.8 55	2241	2.8 84	2341	1.7 52	2303	2.5 76	1922	5.8 176		
3 W 0446	5.9 181	18 Th 0511	5.2 157	3 F 0550	5.8 178	18 Sa 0511	5.1 156	3 M 0146	1.5 47	18 Tu 0020	2.0 61
1105	2.0 62	1103	2.8 86	1211	1.7 53	1120	2.4 72	0748	5.4 165	0609	4.9 150
1716	5.7 173	1739	5.1 156	1831	5.8 178	1745	5.2 158	1407	1.6 48	1233	1.8 55
○ 2346	1.9 58	2346	2.8 85					2026	5.7 175	1846	5.2 160
4 Th 0601	5.8 177	19 F 0615	5.2 157	4 Sa 0056	1.7 52	19 Su 0005	2.4 74	4 Tu 0246	1.6 48	19 W 0120	1.8 56
1224	2.1 63	1209	2.8 86	0701	5.8 177	0609	5.2 157	0850	5.4 164	0705	5.0 153
1837	5.6 172	1843	5.2 157	1324	1.7 53	1222	2.4 72	1505	1.7 51	1331	1.7 51
				1941	5.9 180	1841	5.3 162	2120	5.7 175	1943	5.5 167
5 F 0105	1.9 57	20 Sa 0054	2.7 82	5 Su 0205	1.6 50	20 M 0105	2.3 71	5 W 0339	1.6 50	20 Th 0216	1.6 49
0716	5.8 178	0713	5.2 160	0809	5.8 178	0703	5.2 160	0945	5.3 162	0803	5.2 158
1341	1.9 59	1313	2.7 83	1430	1.7 52	1320	2.3 69	1552	1.8 56	1428	1.4 44
1952	5.8 176	1939	5.3 161	2043	6.0 183	1933	5.5 167	2209	5.7 173	2035	5.7 174
6 Sa 0218	1.7 52	21 Su 0152	2.5 77	6 M 0303	1.6 49	21 Tu 0200	2.1 65	6 Th 0422	1.8 54	21 F 0309	1.3 40
0824	6.0 183	0803	5.4 165	0909	5.9 179	0752	5.4 165	1033	5.3 161	0858	5.4 164
1446	1.8 54	1409	2.5 77	1524	1.7 52	1413	2.1 63	1631	2.0 61	1522	1.2 36
2058	6.0 182	2028	5.5 168	2139	6.1 186	2020	5.7 174	2252	5.6 170	2130	6.0 182
7 Su 0316	1.5 47	22 M 0241	2.3 70	7 Tu 0356	1.6 50	22 W 0248	1.9 58	7 F 0458	1.9 58	22 Sa 0358	1.0 30
0924	6.2 188	0848	5.6 172	1001	5.9 180	0841	5.6 171	1115	5.2 159	0954	5.6 171
1543	1.6 50	1458	2.3 71	1613	1.8 55	1501	1.8 56	1705	2.2 66	1615	0.9 28
2154	6.2 189	2107	5.8 176	2228	6.1 187	2107	6.0 183	2328	5.5 167	2222	6.2 189
8 M 0409	1.5 45	23 Tu 0324	2.1 64	8 W 0439	1.7 53	23 Th 0335	1.7 51	8 Sa 0526	2.0 61	23 Su 0448	0.7 21
1016	6.3 193	0926	5.9 180	1048	5.9 180	0926	5.8 178	1150	5.2 157	1050	5.8 178
1630	1.6 48	1539	2.1 64	1654	2.0 60	1548	1.6 49	1733	2.2 68	1707	0.7 22
2245	6.4 194	2146	6.1 185	2311	6.1 185	2152	6.3 191	●		2316	6.4 194
9 Tu 0454	1.5 46	24 W 0405	1.9 57	9 Th 0516	1.9 58	24 F 0420	1.4 43	9 Su 0000	5.4 165	24 M 0539	0.5 14
1103	6.4 195	1005	6.1 187	1131	5.8 178	1015	6.1 185	0552	2.0 62	1146	6.0 183
1713	1.6 57	1620	1.9 57	1728	2.1 65	1635	1.4 42	1222	5.1 156	1801	0.6 17
2330	6.4 195	2224	6.3 193	2350	6.0 182	2241	6.5 197	1803	2.2 68		
10 W 0535	1.6 50	25 Th 0446	1.7 51	10 F 0550	2.1 63	25 Sa 0505	1.2 36	10 M 0028	5.3 163	25 Tu 0011	6.4 196
1146	6.4 194	1045	6.4 194	1209	5.7 175	1105	6.2 190	0622	2.0 60	0631	0.3 9
●	1.8 55	1701	1.7 51	1800	2.3 70	1724	1.2 36	1250	5.1 156	1243	6.1 186
○ 2307	6.6 200	●		●		2331	6.6 202	1837	2.2 66	1858	0.5 15
11 Th 0011	6.4 194	26 F 0528	1.5 46	11 F 0024	5.9 179	26 Su 0554	1.0 30	11 Tu 0056	5.3 163	26 W 0105	6.4 194
0613	1.8 56	1126	6.5 199	0618	2.2 67	1156	6.3 193	0654	1.9 57	0726	0.2 7
1228	6.3 191	1746	1.5 45	1243	5.6 172	1815	1.0 32	1320	5.2 157	1341	6.1 186
1828	2.0 61	2350	6.7 204	1831	2.4 73			1915	2.1 64	1954	0.6 17
12 F 0050	6.2 190	27 Sa 0613	1.4 42	12 Su 0056	5.7 175	27 M 0024	6.7 203	12 W 0126	5.3 162	27 Th 0203	6.2 190
0646	2.0 62	1211	6.6 201	0648	2.2 68	0645	0.9 27	0731	1.8 55	0820	0.3 9
1305	6.1 187	1831	1.4 42	1315	5.5 169	1252	6.4 194	1352	5.2 158	1441	6.0 184
1901	2.2 66			1903	2.4 74	1911	1.0 30	1956	2.0 62	2054	0.7 21
13 Sa 0126	6.1 185	28 Su 0039	6.8 206	13 M 0128	5.6 172	28 Tu 0120	6.6 201	13 Th 0201	5.3 161	28 F 0301	6.0 182
0720	2.2 67	0700	1.3 40	0722	2.3 69	0739	0.8 25	0815	1.7 53	0918	0.5 14
1341	5.9 181	1301	6.6 200	1346	5.5 167	1350	6.3 192	1430	5.2 158	1543	5.9 179
1935	2.3 71	1922	1.3 41	1941	2.4 74	2007	1.0 31	2043	2.0 61	2156	0.9 27
14 Su 0203	5.9 179	29 M 0131	6.7 203	14 Tu 0201	5.5 169	29 W 0218	6.4 196	14 F 0241	5.2 159	29 Sa 0403	5.6 172
0754	2.4 72	0750	1.3 40	0800	2.3 69	0837	0.9 26	0858	1.7 53	1018	0.7 22
1416	5.7 175	1356	6.4 196	1422	5.4 165	1452	6.2 188	1513	5.2 157	1648	5.7 173
2013	2.5 75	2016	1.4 42	2024	2.4 74	2109	1.1 33	2131	2.0 62	2301	1.1 34
15 M 0241	5.7 173	30 Tu 0228	6.5 198	15 W 0239	5.4 165	30 Th 0320	6.2 189	15 Sa 0326	5.1 155	30 Su 0509	5.3 162
0831	2.5 76	0846	1.4 43	0843	2.3 69	0937	1.0 30	0946	1.8 55	1124	1.0 31
1456	5.5 169	1456	6.2 190	1503	5.3 162	1558	6.0 184	1600	5.1 156	1754	5.5 168
2054	2.6 78	2118	1.5 45	2113	2.4 74	2215	1.2 38	2224	2.1 63	●	
31 F 0424	5.9 181										
1041	1.1 35										
1707	5.9 179										
○ 2326	1.4 42										

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suez, Egypt, 2013

Times and Heights of High and Low Waters

July				August				September										
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height							
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm							
1 M	0013	1.3	40	16 Tu	0424	4.7	143	1 Th	0200	1.6	50	16 Su	0020	1.4	44			
0616	5.0	153		1050	1.4	43	0805	4.3	130	0924	4.3	132						
1233	1.3	40		1709	4.9	150	1413	1.7	52	1239	1.2	37						
1900	5.4	164	●	2341	1.7	51	2033	4.8	145	1858	5.0	152						
2 Tu	0122	1.5	45	17 W	0526	4.6	140	2 F	0256	1.6	50	17 Sa	0133	1.2	36			
0724	4.9	148	1152	1.4	43	0905	4.3	130	0726	4.5	137							
1341	1.5	46	1811	5.0	152	1503	1.7	53	1354	1.0	31							
2001	5.3	161				2122	4.8	145	2003	5.2	159							
3 W	0228	1.5	47	18 Th	0046	1.6	48	3 Sa	0337	1.6	48	18 W	0237	0.8	25			
0830	4.8	145	0631	4.6	140	0954	4.3	132	0835	4.8	146	1026	0411	0.3	10			
1441	1.6	50	1300	1.3	40	1543	1.7	53	1456	0.7	21	1635	0.5	16				
2100	5.2	159	1915	5.2	157	2203	4.8	145	2103	5.5	168	2239	6.1	187				
4 Th	0320	1.6	49	19 F	0150	1.3	40	4 Su	0407	1.5	47	19 M	0331	0.4	13			
0926	4.7	143	0737	4.7	144	1033	4.4	135	0937	5.2	158	1101	0433	1.2	38			
1531	1.8	54	1405	1.1	34	1615	1.7	49	1552	0.4	13	1650	0.4	43				
2148	5.2	157	2015	5.4	164	2237	4.8	147	2200	5.8	177	2300	5.2	160				
5 F	0403	1.7	51	20 Sa	0248	1.0	29	5 M	0435	1.4	44	20 Tu	0422	0.1	3			
1016	4.7	143	0841	5.0	151	1105	4.5	138	1033	5.5	169	1126	0505	1.1	34			
1609	1.9	57	1505	0.8	25	1645	1.6	49	1645	0.2	6	1724	0526	1.3	40			
2230	5.1	155	2113	5.6	172	2305	4.9	149	2252	6.0	184	2326	0541	0.7	20			
6 Sa	0435	1.7	52	21 Su	0343	0.6	18	6 Tu	0501	1.3	40	21 W	0511	-0.1	-4			
1056	4.7	142	0943	5.2	160	1133	4.7	142	1126	5.8	177	1152	0537	1.0	30			
1641	1.9	59	1601	0.5	16	1715	1.5	46	1735	0.1	4	1758	0562	1.2	38			
2303	5.0	153	2209	5.9	180	●	2331	5.0	153	○	2343	6.1	187	2354	0624	5.5	168	
7 Su	0501	1.7	52	22 M	0435	0.2	7	7 W	0531	1.1	35	22 Th	0600	-0.2	-6			
1130	4.7	143	1041	5.5	169	1158	4.8	146	1216	6.0	182	1220	0613	0.9	28			
1709	1.9	59	1656	0.3	9	1748	1.4	42	1824	0.2	6	1835	0626	5.5	167			
2333	5.0	153	○	2303	6.1	186	2356	5.1	156				1333	0707	0.7	22		
8 M	0528	1.6	50	23 Tu	0526	0.0	0	8 Th	0605	1.0	31	23 Su	0031	6.1	185			
1200	4.7	144	1135	5.8	176	1222	5.0	151	0646	-0.1	-3	0648	0145	5.5	171			
1739	1.8	56	1748	0.2	5	1824	1.3	40	1307	6.0	182	1254	0748	1.0	32			
●			2356	6.2	189				1915	0.4	11	1915	1420	5.7	174			
9 Tu	0000	5.1	154	24 W	0616	-0.2	-5	9 F	0024	5.2	158	24 Sa	0122	5.9	179			
0556	1.5	46	1231	5.9	181	0639	1.0	29	0733	0.1	4	0728	0231	5.5	167			
1226	4.8	147	1843	0.2	5	1250	5.1	155	1400	5.8	178	1333	0831	1.4	44			
1813	1.7	53				1901	1.2	38	2005	0.7	20	1956	1509	5.4	164			
10 W	0026	5.1	156	25 Th	0050	6.2	188	10 Sa	0054	5.2	159	25 Tu	0213	5.5	169			
0630	1.4	42	0707	-0.2	-5	0716	0.9	27	0822	0.5	14	0809	0324	4.9	148			
1252	4.9	150	1326	6.0	182	1324	5.2	157	1452	5.6	171	1418	0918	1.8	55			
1850	1.6	50	1935	0.3	8	1941	1.3	39	2056	1.0	31	2043	1603	5.1	154			
11 Th	0054	5.2	157	26 F	0145	6.0	183	11 Su	0130	5.2	157	26 W	0230	5.1	156			
0705	1.3	39	0800	0.0	-1	0756	0.9	28	0911	0.9	27	0856	0424	4.5	137			
1322	5.0	152	1422	5.9	179	1401	5.2	157	M	1548	5.3	161	1011	0535	2.1	65		
1930	1.6	48	2031	0.5	14	2024	1.3	40	2150	1.4	42	1513	1703	4.8	147			
12 F	0128	5.2	157	27 Sa	0239	5.7	174	12 M	0209	5.0	153	27 ○	0328	4.8	147			
0745	1.2	37	0852	0.2	7	0837	1.0	30	1005	1.3	40	2245	0535	4.3	131			
1356	5.1	154	1520	5.7	173	1445	5.1	155	1648	5.0	151		1118	0648	2.4	72		
2013	1.5	47	2130	0.8	23	2111	1.4	43	2252	1.7	52		1809	1233	4.7	143		
13 Sa	0203	5.1	155	28 Su	0337	5.3	162	13 Tu	0254	4.9	148	28 ○	0509	4.4	133			
0826	1.2	37	0948	0.6	18	0922	1.1	33	1109	1.7	51	2231	0439	4.6	140			
1435	5.1	154	1620	5.4	165	1537	5.0	152	1752	4.7	143		1107	0648	4.3	130		
2056	1.6	48	2231	1.1	33	2203	1.5	46					1731	1233	2.4	74		
14 Su	0245	5.0	152	29 M	0439	4.9	150	14 W	0348	4.6	141	29 ○	0003	1.9	59			
0909	1.3	39	1048	1.0	30	1016	1.2	37	0622	4.1	126	2048	0116	2.3	71			
1518	5.0	152	1724	5.2	157	1637	4.9	149	1220	1.9	59		0752	0724	4.4	134		
2145	1.6	50	○	2339	1.4	42	○	2307	1.5	47	1858	4.6	139		1337	0843	4.6	141
15 M	0331	4.8	147	30 Tu	0546	4.6	139	15 Th	0454	4.4	135	30 F	0116	2.0	60			
0958	1.3	41	1156	1.3	41	1124	1.3	39	0733	4.1	125	15 Su	0724	4.7	144			
1611	5.0	151	1830	4.9	150	1746	4.9	148	1331	2.0	61	1346	0209	2.1	65			
2239	1.7	52							1958	4.6	139	1956	0843	4.2	147			
			31 W	0050	1.6	48			31 Sa	0216	1.9	58						
			0656	4.3	132				0835	4.2	127							
			1307	1.6	48				1426	1.9	59							
			1935	4.8	146				2048	4.7	142							

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Suez, Egypt, 2013

Times and Heights of High and Low Waters

October				November				December				
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Tu	0252	1.9	58	16 W	0311	1.0	30	1 F	0330	1.9	58	
0924	4.9	149	W 0926	5.9	181	0948	5.9	179	Sa 1052	6.5	198	
1509	2.0	60	1537	1.1	35	1554	2.0	62	1700	1.8	56	
2126	5.2	160	2139	6.1	187	2150	5.9	181	2305	6.1	187	
2 W	0328	1.7	52	17 Th	0400	0.9	26	2 Sa	0407	1.7	51	
0958	5.2	158	1016	6.2	189	1020	6.2	188	17 Su	0511	1.7	52
1546	1.8	55	1626	1.1	34	1631	1.8	56	1737	2.0	61	
2158	5.4	166	2230	6.2	190	2224	6.1	187	O 2345	6.0	184	
3 Th	0403	1.5	46	18 F	0445	0.9	26	3 Su	0445	1.5	46	
1026	5.4	166	1103	6.4	194	1054	6.4	196	M 1213	1.9	58	
1622	1.6	50	1709	1.2	36	1711	1.7	52	1811	2.2	66	
2226	5.6	172	2315	6.2	190	● 2301	6.3	192	● 2328	6.6	200	
4 F	0437	1.3	41	19 Sa	0526	1.0	30	4 M	0522	1.4	42	
1054	5.7	173	1146	6.4	196	1131	6.6	202	19 Tu	0022	5.9	180
1658	1.5	47	1750	1.3	41	1750	1.6	48	1201	2.1	64	
2256	5.8	177	O 2358	6.1	187	2343	6.4	195	1820	1.4	42	
5 Sa	0511	1.2	37	20 Su	0603	1.2	37	5 Tu	0605	1.3	39	
1122	5.9	180	1230	6.3	193	1215	6.7	205	W 0648	5.8	176	
● 1733	1.4	44	1830	1.6	48	1835	1.5	46	Th 1320	6.1	186	
2326	5.9	181	● 1907	1.8	56	1913	2.4	73	1911	1.3	39	
6 Su	0546	1.1	34	21 M	0039	6.0	182	6 W	0026	6.4	194	
1154	6.1	185	0641	1.5	45	0648	1.2	38	21 Th	0131	5.6	171
1811	1.4	43	1309	6.2	188	1300	6.7	205	0722	2.4	72	
● 1907	1.8	56	1922	1.5	45	1352	5.9	181	1348	2.5	75	
7 M	0001	6.0	183	22 Tu	0118	5.7	174	7 Th	0116	6.3	191	
0624	1.1	33	0716	1.7	53	0739	1.3	40	22 F	0205	5.5	167
1231	6.2	188	1348	5.9	181	1352	6.6	202	0800	2.5	76	
1852	1.4	42	1945	2.1	63	2015	1.5	46	1428	5.8	177	
8 Tu	0041	5.9	181	23 W	0200	5.4	166	8 F	0213	6.1	185	
0705	1.1	33	0754	2.0	62	0833	1.5	45	0843	2.6	79	
1315	6.1	187	1430	5.7	173	1448	6.4	196	1505	5.6	172	
1935	1.4	44	2022	2.3	69	2113	1.6	49	2113	2.6	79	
9 W	0126	5.8	177	24 Th	0241	5.2	157	9 Sa	0316	5.8	178	
0750	1.2	36	0833	2.3	69	0937	1.7	51	0933	2.7	83	
1401	6.0	184	1513	5.4	165	1554	6.2	188	1554	5.5	168	
2026	1.5	46	2105	2.5	75	2218	1.7	52	2203	2.7	81	
10 Th	0216	5.5	169	25 F	0331	4.9	150	10 Su	0431	5.6	172	
0841	1.3	41	0920	2.5	76	1050	1.8	56	1050	2.9	87	
1458	5.8	178	1603	5.2	158	1705	6.0	182	1648	5.4	165	
2122	1.6	50	2156	2.6	79	● 2333	1.8	54	2303	2.7	83	
11 F	0318	5.3	161	26 Sa	0431	4.7	144	11 M	0552	5.6	171	
0943	1.5	47	1018	2.7	82	1209	1.9	59	1120	2.9	89	
1605	5.6	171	1701	5.1	154	1818	5.9	180	1750	5.4	164	
2231	1.7	52	2258	2.7	82	● 2333	1.8	54	● 2303	2.7	83	
12 Sa	0435	5.1	154	27 Su	0545	4.7	143	12 Tu	0050	1.7	52	
1100	1.7	51	1126	2.8	85	0707	5.7	175	0641	5.2	160	
1720	5.5	167	1805	5.0	153	1326	1.9	58	1243	2.9	88	
● 2350	1.7	52	● O	●	●	1930	5.9	181	1848	5.4	166	
13 Su	0600	5.0	153	28 M	0005	2.7	81	27 W	0007	2.7	82	
1222	1.7	52	0654	4.8	146	0816	6.0	182	0641	5.2	160	
1835	5.5	168	1237	2.8	84	1431	1.8	54	1243	2.9	88	
● 2046	1.5	46	1905	5.1	156	2033	6.0	184	1941	5.6	170	
14 M	0107	1.5	46	29 Tu	0111	2.5	77	14 Th	0258	1.5	45	
0720	5.2	159	0750	5.0	152	0915	6.2	190	0826	5.7	175	
1339	1.5	47	1339	2.6	80	1528	1.7	52	1437	2.6	78	
1945	5.7	174	1956	5.3	161	2130	6.1	187	2030	5.8	176	
15 Tu	0215	1.2	38	30 W	0203	2.3	71	15 F	0348	1.4	44	
0828	5.6	170	0837	5.2	160	1007	6.4	195	0907	6.0	184	
1443	1.3	40	1430	2.4	74	1616	1.7	53	1522	2.3	71	
2046	5.9	181	2039	5.5	168	2220	6.2	188	2113	6.0	183	
31 Th	0248	2.1	64	● 31	0915	5.6	170	● 31	0400	1.6	50	
1513	2.2	67	1516	2.2	67	2116	5.7	175	Tu 1009	6.7	203	
2116	5.7	175	● 2116	5.7	175	● 2116	5.7	175	Tu 1631	1.7	52	
									2226	6.3	193	

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dar Es Salaam, Tanzania, 2013

Times and Heights of High and Low Waters

January				February				March					
	Time	Height			Time	Height			Time	Height			
	h m	ft cm		h m	ft cm		h m	ft cm	h m	ft cm			
1	0609	11.5 350		16	0042	2.0 60		16	0053	2.0 60			
Tu	1224	1.6 50	W	0654	11.5 350	F	0700	10.8 330	1	0139	3.0 90		
	1837	10.8 330		1304	1.3 40	Sa	1307	1.6 50		0740	9.8 300		
				1925	11.2 340		1927	11.5 350		1345	2.6 80		
										2008	10.2 310		
2	0029	2.6 80	17	0126	2.6 80	2	0133	2.6 80	2	0221	3.6 110		
W	0642	11.2 340	Th	0734	10.5 320	Sa	0737	10.2 310	Sa	0815	8.9 270		
	1256	2.0 60		1343	2.3 70		1343	2.0 60		1420	3.6 110		
	1911	10.8 330		2007	10.5 320		2010	10.8 330	O	2051	9.5 290		
										2152	8.9 270		
3	0108	3.0 90	18	0212	3.3 100	3	0221	3.3 100	3	0312	4.6 140		
Th	0719	10.5 320	F	0816	9.5 290	Su	0820	9.2 280	M	0859	7.9 280		
	1331	2.3 70		1423	3.0 90		1425	3.0 90		1504	4.6 140		
	1951	10.5 320		2054	9.8 300	O	2103	10.2 310		1947	11.5 350		
										2039	10.5 320		
4	0153	3.3 100	19	0305	4.3 130	4	0321	3.9 120	4	0434	5.2 160		
F	0800	9.8 300	Sa	0904	8.5 260	M	0919	8.2 250	Tu	1033	7.2 220		
	1411	2.6 80		1509	3.6 110		1520	3.6 110		1619	5.2 160		
	2040	10.2 310	O	2151	9.2 280		2216	9.8 300		2342	8.5 260		
										2039	10.5 320		
5	0248	3.9 120	20	0414	4.9 150	5	0453	4.6 140	5	0646	5.2 160		
Sa	0851	9.2 280	Su	1013	7.5 230	Tu	1059	7.5 230	W	1304	7.2 220		
	1459	3.3 100		1608	4.6 140		1647	4.3 130		1843	5.6 170		
O	2141	9.8 300		2311	8.9 270		2356	9.5 290			2150	9.8 300	
										2218	8.5 260		
6	0359	4.3 130	21	0552	4.9 150	6	0654	4.3 130	6	0427	4.6 140		
Su	1000	8.2 250	M	1155	7.2 220	W	1300	7.9 240	Th	0813	4.6 140		
	1604	3.6 110		1738	4.9 150		1851	4.3 130		1423	7.9 240		
	2258	9.8 300								2005	4.6 140		
										2339	9.2 280		
7	0536	4.3 130	22	0046	8.9 270	7	0132	10.2 310	22	0222	9.5 290		
M	1137	7.9 240	Tu	0733	4.6 140	Th	0818	3.3 100	F	0855	3.6 110		
	1730	3.9 120		1340	7.5 230		1427	8.9 270		1504	8.9 270		
				1920	4.9 150		2018	3.6 110		2051	3.9 120		
										2039	3.9 120		
8	0024	10.2 310	23	0155	9.5 290	8	0239	11.2 340	23	0303	10.5 320		
Tu	0707	3.6 110	W	0836	3.9 120	F	0911	2.3 70	Sa	0926	2.6 80		
	1312	8.2 250		1444	8.2 250		1521	9.8 300		1535	9.8 300		
	1900	3.6 110		2024	4.3 130		2113	2.6 80		2126	3.0 90		
										2020	3.9 120		
9	0139	10.8 330	24	0245	10.2 310	9	0329	11.8 360	24	0336	11.2 340		
W	0816	3.0 90	Th	0916	3.3 100	Sa	0952	1.3 40	Su	0953	2.0 60		
	1425	9.2 280		1525	8.9 270		1603	11.2 340		1602	10.8 330		
	2012	3.0 90		2108	3.6 110		2157	1.6 50		2157	2.3 70		
										2112	2.6 80		
10	0239	11.8 360	25	0323	10.8 330	10	0412	12.5 380	25	0406	11.8 360		
Th	0909	2.0 60	F	0948	2.3 70	Su	1028	0.7 20	M	1019	1.3 40		
	1519	9.8 300		1557	9.5 290		1640	11.8 360		1629	11.5 350		
	2107	2.3 70		2143	3.0 90	O	2236	1.0 30	O	2226	1.6 50		
										2153	1.6 50		
11	0329	12.5 380	26	0356	11.5 350	11	0450	12.8 390	26	0435	12.1 370		
F	0952	1.0 30	Sa	1017	2.0 60	M	1101	0.3 10	Tu	1044	1.0 30		
	1605	10.8 330		1625	10.2 310		1716	12.5 380		1656	12.1 370		
O	2154	1.6 50		2214	2.3 70		2313	1.0 30		2256	1.3 40		
										2229	1.3 40		
12	0414	12.8 390	27	0425	11.8 360	12	0526	12.8 390	27	0505	12.5 380		
Sa	1032	0.7 20	Su	1043	1.3 40	Tu	1134	0.3 10	W	1111	0.7 20		
	1647	11.5 350		1652	10.8 330		1750	12.5 380		1725	12.5 380		
	2237	1.0 30	O	2244	2.0 60		2348	1.0 30		2327	1.0 30		
										2302	1.0 30		
13	0455	13.1 400	28	0454	12.1 370	13	0601	12.1 370	28	0536	12.1 370		
Su	1111	0.3 10	M	1110	1.0 30	W	1206	0.7 20	Th	1139	0.7 20		
	1726	11.8 360		1720	11.2 340		1824	12.1 370		1756	12.8 390		
	2318	1.0 30		2313	1.6 50					2334	1.0 30		
										2308	1.0 30		
14	0536	12.8 390	29	0524	12.1 370	14	0024	1.3 40	29	0543	12.1 370		
M	1148	0.3 10	Tu	1136	1.0 30	F	0634	11.5 350	Th	1143	1.0 30		
	1805	11.8 360		1748	11.5 350		1239	1.3 40		1801	12.8 390		
				2343	1.6 50		1857	11.8 360					
15	0000	1.3 40	30	0554	12.1 370	15	0101	2.0 60	15	0005	1.3 40		
Tu	0615	12.1 370	W	1204	1.0 30	F	0707	10.8 330	M	0613	11.5 350		
	1226	1.0 30		1818	11.8 360		1311	2.0 60		1213	1.6 50		
	1844	11.5 350		1851	11.5 350		1932	11.2 340		1831	12.1 370		
31	0016	1.6 50	31	0626	11.5 350				31	0022	1.3 40		
	1234	1.3 40	Th	1234	1.3 40				Su	0628	11.2 340		
				1851	11.5 350					1225	1.6 50		
										1848	12.5 380		

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dar Es Salaam, Tanzania, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0105 2.0 60	16 0125 3.3 100	1 W 0147 2.6 80	16 0144 3.6 110	1 Sa 0328 3.6 110	16 0237 3.6 110						
0710 10.5 320	Tu 0723 9.5 290	W 0801 9.8 300	Th 0749 9.2 280	Sa 1000 9.8 300	0856 9.5 290						
1306 2.3 70	1321 3.9 120	1354 3.6 110	1343 4.3 130	1607 4.6 140	1502 4.3 130						
1933 11.8 360	1938 10.2 310	2020 10.8 330	1958 10.2 310	2223 9.5 290	2107 9.5 290						
2 Tu 0153 3.0 90	17 0205 3.9 120	2 Th 0245 3.6 110	17 0227 3.9 120	2 Su 0436 3.9 120	17 0327 3.9 120						
0759 9.5 290	W 0801 8.9 270	0907 9.5 290	0837 8.9 270	1119 9.8 300	0957 9.5 290						
1354 3.3 100	1400 4.6 140	1501 4.3 130	1434 4.9 150	1736 4.6 140	1611 4.6 140						
2026 10.8 330	2020 9.5 290	2128 10.2 310	2048 9.5 290	2344 9.2 280	2213 8.9 270						
3 W 0251 3.9 120	18 0255 4.6 140	3 F 0357 4.3 130	18 0319 4.3 130	3 M 0553 4.3 130	18 0431 3.9 120						
0906 8.9 270	0900 8.2 250	1029 9.2 280	0941 8.9 270	1238 9.8 300	1111 9.5 290						
1456 4.3 130	1457 5.2 160	1631 4.9 150	1542 5.2 160	1859 4.3 130	1737 4.6 140						
2138 9.8 300	2124 8.9 270	2259 9.5 290	2155 9.2 280	2339 8.5 260							
4 Th 0414 4.6 140	19 0409 5.2 160	4 Sa 0526 4.3 130	19 0426 4.6 140	4 Tu 0103 8.9 270	19 0544 3.9 120						
1042 8.2 250	F 1036 7.9 240	1206 9.5 290	1100 8.9 270	0708 3.9 120	1227 10.2 310						
1634 5.2 160	1629 5.9 180	1820 4.9 150	1712 5.2 160	1343 10.5 320	1857 3.9 120						
2324 9.2 280	2304 8.9 270		2322 8.9 270	2007 3.9 120							
5 F 0612 4.6 140	20 0548 5.2 160	5 Su 0032 9.5 290	20 0541 4.6 140	5 W 0211 9.2 280	20 0100 8.9 270						
1242 8.9 270	Sa 1220 8.5 260	0654 4.3 130	M 1217 9.5 290	0808 3.9 120	0655 3.6 110						
1849 4.9 150	1830 5.6 170	1324 10.2 310	1839 4.6 140	1436 10.8 330	1334 10.8 330						
2100 3.9 120		1939 4.3 130		2100 3.3 100	2000 3.3 100						
6 Sa 0108 9.5 290	21 0039 9.2 280	6 M 0147 9.8 300	21 0042 9.2 280	6 Th 0304 9.5 290	21 0207 9.5 290						
0742 3.9 120	Su 0705 4.6 140	0758 3.6 110	Tu 0648 3.9 120	0856 3.3 100	0757 3.0 90						
1401 9.8 300	1328 9.2 280	1421 10.8 330	1320 10.5 320	1519 11.2 340	1430 11.8 360						
2007 3.9 120	1938 4.6 140	2037 3.3 100	1940 3.9 120	2142 3.0 90	2053 2.3 70						
7 Su 0219 10.2 310	22 0142 9.8 300	7 Tu 0244 10.2 310	22 0144 9.5 290	7 F 0345 9.8 300	22 0302 10.2 310						
0836 3.3 100	M 0755 3.9 120	0846 3.3 100	0742 3.3 100	0935 3.0 90	0850 2.3 70						
1453 10.8 330	1413 10.5 320	1506 11.5 350	1411 11.5 350	1556 11.5 350	1519 12.5 380						
2100 3.0 90	2023 3.6 110	2122 2.6 80	2029 3.0 90	2217 2.3 70	2139 1.6 50						
8 M 0309 11.2 340	23 0228 10.5 320	8 W 0328 10.5 320	23 0236 10.2 310	8 Sa 0421 10.2 310	23 0350 10.8 330						
0917 2.6 80	Tu 0832 3.0 90	0925 2.6 80	0829 2.6 80	1010 3.0 90	0938 1.6 50						
1533 11.8 360	1451 11.5 350	1544 12.1 370	1455 12.1 370	1629 11.8 360	1604 13.1 400						
2141 2.3 70	2101 2.6 80	2159 2.3 70	2112 2.0 60	2249 2.3 70	2222 1.0 30						
9 Tu 0349 11.5 350	24 0308 11.2 340	9 Th 0405 10.8 330	24 0321 10.8 330	9 Su 0452 10.2 310	24 0434 11.2 340						
0952 2.0 60	W 0907 2.3 70	0959 2.3 70	F 0911 2.0 60	1042 2.6 80	1023 1.3 40						
1608 12.5 380	1526 12.5 380	1617 12.5 380	1537 13.1 400	1659 11.8 360	1647 13.1 400						
2216 1.6 50	2137 1.6 50	2233 2.0 60	2154 1.3 40	2319 2.0 60	2304 1.0 30						
10 W 0423 11.8 360	25 0345 11.5 350	10 Th 0437 11.2 340	25 0403 11.2 340	10 M 0523 10.5 320	25 0518 11.5 350						
1023 1.6 50	F 0941 1.6 50	1031 2.3 70	0953 1.6 50	1113 2.6 80	1108 1.3 40						
1639 12.8 390	1601 13.1 400	1648 12.5 380	1618 13.5 410	1729 11.8 360	1731 13.1 400						
2248 1.3 40	O 2213 1.3 40	2303 2.0 60	O 2234 1.0 30	2348 2.3 70	2347 1.0 30						
11 Th 0455 11.8 360	26 0422 11.8 360	11 Sa 0508 10.8 330	26 0445 11.5 350	11 Tu 0553 10.5 320	26 0602 11.5 350						
1053 1.6 50	1015 1.3 40	1100 2.3 70	1034 1.3 40	1142 3.0 90	1154 1.6 50						
1709 12.8 390	F 1637 13.5 410	1718 12.5 380	1659 13.5 410	1758 11.8 360	1815 12.5 380						
2318 1.3 40	2250 1.0 30	2333 2.0 60	2316 1.0 30								
12 F 0525 11.5 350	27 0459 11.8 360	12 Su 0538 10.8 330	27 0528 11.5 350	12 M 0017 2.3 70	27 0031 1.3 40						
1121 1.6 50	1051 1.3 40	1129 2.6 80	1117 1.6 50	0623 10.2 310	0647 11.5 350						
1738 12.8 390	1714 13.8 420	1747 12.1 370	1742 13.1 400	1213 3.0 90	1243 2.0 60						
2348 1.6 50	2329 1.0 30			1827 11.5 350	1900 11.8 360						
13 Sa 0555 11.2 340	28 0538 11.8 360	13 M 0004 2.3 70	28 0000 1.3 40	13 Th 0553 10.5 320	26 0602 11.5 350						
1149 2.0 60	Su 1130 1.3 40	0608 10.5 320	Tu 0612 11.2 340	1142 3.0 90	1154 1.6 50						
1807 12.1 370	1754 13.5 410	1159 3.0 90	1204 2.0 60	1758 11.8 360	1815 12.5 380						
		1816 11.8 360	1826 12.8 390	1859 11.2 340	1948 11.2 340						
14 Su 0019 2.0 60	29 0011 1.3 40	14 Tu 0035 2.6 80	29 0047 1.6 50	14 F 0120 3.0 90	29 0202 2.3 70						
0623 10.8 330	M 0619 11.2 340	0639 10.2 310	0701 10.8 330	0729 9.8 300	0825 10.5 320						
1218 2.6 80	1212 2.0 60	1230 3.3 100	1254 2.6 80	1324 3.6 110	1428 3.3 100						
1835 11.8 360	1836 12.8 390	1846 11.2 340	1915 11.8 360	1935 10.5 320	2040 10.2 310						
15 M 0051 2.6 80	30 0056 2.0 60	15 W 0108 3.0 90	30 0137 2.3 70	15 Sa 0156 3.3 100	30 0252 3.0 90						
0652 10.2 310	Tu 0706 10.5 320	0711 9.8 300	0754 10.5 320	0808 9.8 300	0920 10.2 310						
1248 3.3 100	1259 2.6 80	1303 3.9 120	1350 3.3 100	1408 3.9 120	1530 3.9 120						
1905 11.2 340	1924 11.8 360	1918 10.8 330	2009 11.2 340	2016 9.8 300	2139 9.2 280						
			31 0230 3.0 90								
			F 0853 10.2 310								
			1452 3.9 120								
			O 2110 10.2 310								

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dar Es Salaam, Tanzania, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0346	3.6	110	16 0240	3.0	90	1 Th 0509	4.9	150	16 F 0407	4.3	130
1026	9.8	300	Tu 0908	9.8	300	1215	8.9	270	1104	9.5	290
1644	4.6	140	1524	3.9	120	1851	4.6	140	1753	4.3	130
2250	8.5	260	● 2122	8.9	270						
2 Tu 0451	4.3	130	17 W 0334	3.6	110	2 0058	7.5	230	17 Sa 0000	7.9	240
1144	9.5	290	1016	9.8	300	0648	4.9	150	0554	4.3	130
1808	4.6	140	1644	4.3	130	1332	9.2	280	1247	9.8	300
			2242	8.2	250	2010	4.3	130	1928	3.6	110
3 W 0012	8.2	250	18 Th 0449	3.9	120	3 0215	8.2	250	18 Su 0136	8.5	260
0609	4.3	130	1140	9.8	300	0803	4.3	130	0733	3.6	110
1301	9.5	290	1820	4.3	130	1429	9.8	300	1402	10.5	320
1931	4.3	130				2059	3.6	110	2031	2.6	80
4 Th 0135	8.2	250	19 F 0022	8.2	250	4 Su 0304	8.9	270	19 M 0240	9.8	300
0728	4.3	130	0617	3.9	120	0852	3.6	110	0837	2.6	80
1404	9.8	300	1305	10.2	310	1511	10.5	320	1457	11.5	350
2036	3.9	120	1939	3.6	110	2134	3.0	90	2117	2.0	60
5 F 0239	8.5	260	20 Sa 0146	8.9	270	5 M 0339	9.5	290	20 Tu 0328	10.8	330
0828	3.9	120	0738	3.3	100	0929	3.0	90	0924	1.6	50
1454	10.5	320	1412	11.2	340	1545	10.8	330	1542	12.1	370
2122	3.3	100	2040	2.6	80	2203	2.3	70	2155	1.0	30
6 Sa 0326	9.2	280	21 Su 0249	9.5	290	6 Tu 0409	10.2	310	21 O 0408	11.8	360
0913	3.6	110	0840	2.6	80	1001	2.6	80	1006	1.0	30
1535	10.8	330	1506	11.8	360	1615	11.5	350	1623	12.8	390
2159	2.6	80	2129	1.6	50	2230	2.0	60	● 2231	0.7	20
7 Su 0403	9.5	290	22 M 0339	10.5	320	7 W 0437	10.8	330	22 Th 0446	12.5	380
0951	3.0	90	0931	1.6	50	1030	2.0	60	1044	0.7	20
1609	11.2	340	1553	12.5	380	1643	11.8	360	1700	12.8	390
2230	2.3	70	○ 2210	1.0	30	● 2255	1.6	50	2305	0.3	10
8 M 0434	10.2	310	23 Tu 0423	11.5	350	8 Th 0504	11.2	340	23 F 0522	12.8	390
1024	2.6	80	1015	1.3	40	1059	2.0	60	1122	0.7	20
1639	11.5	350	1636	12.8	390	1711	11.8	360	1736	12.5	380
● 2259	2.0	60	2250	0.7	20	2320	1.3	40	2339	0.7	20
9 Tu 0503	10.5	320	24 W 0504	11.8	360	9 F 0531	11.5	350	24 M 0558	12.5	380
1054	2.6	80	1058	1.0	30	1128	1.6	50	1159	1.0	30
1708	11.8	360	1717	12.8	390	1739	11.8	360	1812	11.8	360
2326	2.0	60	2328	0.7	20	2347	1.3	40			
10 W 0532	10.5	320	25 Th 0544	12.1	370	10 Sa 0600	11.5	350	25 Tu 0014	1.0	30
1123	2.3	70	1140	1.0	30	1158	1.6	50	0634	12.1	370
1737	11.8	360	1758	12.5	380	1809	11.5	350	1238	1.6	50
2353	2.0	60							1846	10.8	330
11 Th 0600	10.8	330	26 F 0007	0.7	20	11 M 0015	1.3	40	10 Tu 0014	1.6	50
1153	2.3	70	0624	12.1	370	0630	11.5	350	0634	12.1	370
1806	11.5	350	1224	1.3	40	1232	2.0	60	1244	2.0	60
			1838	11.8	360	1840	11.2	340	1849	10.5	320
12 F 0020	2.0	60	27 Sa 0047	1.3	40	12 M 0046	1.6	50	10 Tu 0014	1.6	50
0630	10.8	330	0706	11.5	350	0703	11.5	350	0634	12.1	370
1224	2.6	80	1308	2.0	60	1309	2.3	70	1244	2.0	60
1835	11.2	340	1919	11.2	340	1914	10.5	320	1849	10.5	320
13 Sa 0050	2.0	60	28 Su 0127	2.0	60	13 Tu 0121	2.3	70	27 W 0126	2.6	80
0701	10.8	330	0749	11.2	340	0742	10.8	330	0749	10.5	320
1259	2.6	80	1355	3.0	90	1353	3.0	90	1402	3.6	110
1908	10.8	330	2002	10.2	310	1955	9.5	290	2000	8.9	270
14 Su 0122	2.3	70	29 M 0210	2.6	80	14 W 0200	2.6	80	12 Th 0131	3.0	90
0736	10.5	320	0835	10.2	310	0829	10.5	320	0801	10.5	320
1338	3.0	90	1446	3.6	110	1447	3.6	110	1420	3.6	110
1944	10.2	310	● 2049	9.2	280	● 2046	8.9	270	● 2024	8.9	270
15 M 0157	2.6	80	30 Tu 0256	3.6	110	15 F 0251	3.6	110	12 Th 0131	3.0	90
0817	10.2	310	0929	9.5	290	0934	9.8	300	0907	9.8	300
1425	3.6	110	1549	4.3	130	1603	4.3	130	1536	4.3	130
2027	9.5	290	2150	8.2	250	2204	7.9	240	2150	7.9	240
16 W 0352	4.3	130							13 Th 0224	3.6	110
1042	8.9	270							0907	9.8	300
1712	4.9	150							1654	5.2	160
2316	7.5	230							2316	7.5	230
17 Sa 0018	7.2	220									
0608	5.2	160									
1257	8.9	270									
1937	4.6	140									

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Dar Es Salaam, Tanzania, 2013

Times and Heights of High and Low Waters

October				November				December							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm				
1 Tu	0152	9.2	280	16 W	0206	10.5	320	1 F	0220	11.2	340				
0752	4.3	130	0816	3.0	90	0832	2.3	70	16 Sa	0309	11.8	360			
1404	9.8	300	1428	10.8	330	1441	10.8	330	1535	10.8	330				
2017	3.3	100	2035	2.6	80	2038	2.3	70	2126	2.3	70				
2 W	0228	10.2	310	17 Th	0251	11.5	350	2 Sa	0345	12.5	380				
0830	3.3	100	0900	2.0	60	0907	1.6	50	17 Su	0924	2.0	60			
1441	10.5	320	1512	11.2	340	1517	11.5	350	1455	10.5	320				
2047	2.6	80	2112	2.0	60	2111	1.6	50	2044	2.0	60				
3 Th	0259	11.2	340	18 F	0329	12.5	380	3 Su	0418	12.5	380				
0903	2.3	70	0937	1.3	40	0942	1.0	30	18 M	1031	1.3	40			
1514	11.2	340	1549	11.8	360	1552	11.8	360	1642	10.8	330				
2115	2.0	60	2146	1.6	50	● 2144	1.3	40	2231	2.0	60				
4 F	0329	11.8	360	19 Sa	0403	12.8	390	4 M	0404	13.5	410				
0934	1.6	50	1011	1.0	30	1017	0.7	20	19 Tu	1102	1.6	50			
1544	11.8	360	1623	11.8	360	1627	11.8	360	1712	10.8	330				
2143	1.3	40	○ 2217	1.3	40	2218	1.0	30	2301	2.3	70				
5 Sa	0359	12.5	380	20 Su	0436	12.8	390	5 Tu	0440	13.5	410				
1005	1.0	30	1044	1.0	30	1054	0.7	20	20 W	0519	12.1	370			
1615	12.1	370	1655	11.5	350	1703	11.5	350	5 Th	1133	1.6	50			
● 2212	1.0	30	2247	1.3	40	2254	1.3	40	1742	10.5	320				
6 Su	0429	13.1	400	21 M	0507	12.8	390	6 W	0548	11.8	360				
1037	0.7	20	1115	1.3	40	1132	1.0	30	21 Th	1204	2.3	70			
1646	12.1	370	1725	11.2	340	1742	11.2	340	1812	10.2	310				
2242	1.0	30	2317	2.0	60	2333	1.6	50	6 F	0550	12.8	390			
7 M	0501	13.1	400	22 Tu	0537	12.1	370	21 F	0548	11.8	360				
1110	0.7	20	1147	1.6	50	1214	1.6	50	21 Th	1208	1.0	30			
1718	11.8	360	1755	10.8	330	1825	10.8	330	1823	11.2	340				
2314	1.0	30	2347	2.3	70	2333	1.6	50	21 F	0605	11.5	350			
8 Tu	0535	13.1	400	23 W	0607	11.8	360	7 W	0517	13.1	410				
1146	1.0	30	1220	2.3	70	0643	11.8	360	7 Th	1133	1.6	50			
1753	11.2	340	1824	10.2	310	1302	2.3	70	1742	10.5	320				
2348	1.6	50	1916	10.2	310	1916	9.5	290	2330	2.6	80				
9 W	0612	12.5	380	24 Sa	0017	3.0	90	8 Sa	0001	3.0	90				
1225	1.6	50	0636	10.8	330	0617	11.2	340	22 F	0015	2.0	60			
1832	10.5	320	1254	3.3	100	1214	1.6	50	22 Th	0635	10.8	330			
1918	2.0	60	1854	9.5	290	1825	10.8	330	1252	1.6	50				
10 Th	0027	2.3	70	25 M	0051	3.9	120	8 Su	0016	2.0	60				
0654	11.8	360	0709	10.2	310	0649	10.5	320	22 F	0022	3.0	90			
1311	2.6	80	1333	3.9	120	1311	3.3	100	22 Th	0635	10.8	330			
1918	9.8	300	1932	8.9	270	1918	9.5	290	1903	1.0	30				
11 F	0114	3.0	90	26 Sa	0131	4.6	140	9 Sa	0016	3.0	90				
0745	10.8	330	0752	9.2	280	0736	10.8	330	24 M	0057	3.3	100			
1405	3.6	110	1422	4.6	140	1357	3.0	90	24 Th	0708	10.5	320			
2019	8.9	270	2030	8.2	250	2019	9.5	290	1345	2.3	70				
12 Sa	0213	3.9	120	25 Tu	0213	3.9	120	9 Su	0208	3.6	110				
0852	9.8	300	0841	9.8	300	0841	9.8	300	24 Tu	0138	3.9	120			
1520	4.3	130	1504	3.9	120	1504	3.9	120	24 Th	0745	9.8	300			
● 2147	8.5	260	● 2137	9.2	280	● 2137	9.2	280	1441	3.0	90				
13 Su	0343	4.9	150	26 W	0339	4.6	140	2004	8.9	270	● 2113	9.8	300		
1027	9.2	280	0752	9.2	280	0752	9.2	280	2024	9.5	290	24 F	0227	4.3	130
1709	4.6	140	1422	4.6	140	1422	4.6	140	0319	4.3	130				
2337	8.5	260	2030	8.2	250	2030	9.2	280	0319	4.3	130				
14 M	0551	4.9	150	27 M	0229	5.2	160	25 Tu	0201	4.6	140				
1217	9.2	280	0855	8.5	260	0855	9.2	280	0935	9.2	280				
1847	3.9	120	1536	4.9	150	1536	4.9	150	1547	3.6	110				
1949	3.3	100	● 2202	7.9	240	● 2202	7.9	240	2228	9.8	300				
15 Tu	0107	9.5	290	27 W	0529	4.6	140	● 2106	9.2	280	2120	9.5	290		
0719	3.9	120	1027	8.5	260	1145	9.2	280	2120	9.5	290				
1333	9.8	300	1716	4.9	150	1802	4.3	130	2120	9.5	290				
1949	3.3	100	2346	8.2	250	1914	3.6	110	2120	9.5	290				
16 F	0407	5.6	170	13 W	0036	9.8	300	27 F	0441	5.2	160				
1027	9.2	280	1035	8.5	260	0656	3.9	120	1027	8.5	260				
1709	4.6	140	1716	4.9	150	1306	9.5	290	1227	8.5	260				
2337	8.5	260	2346	8.2	250	1914	3.6	110	1827	3.9	120				
17 F	0551	4.9	150	14 Th	0139	10.5	320	27 Th	0441	5.2	160				
1217	9.2	280	1215	8.5	260	0757	3.3	100	1027	8.5	260				
1847	3.9	120	1834	4.6	140	1407	9.8	300	1708	4.6	140				
1949	3.3	100	1924	3.9	120	2006	3.0	90	2343	9.2	280				
18 M	0056	9.2	280	15 F	0227	11.5	350	27 F	0441	5.2	160				
0709	4.3	130	0709	4.3	130	0844	2.6	80	1027	8.5	260				
1317	9.5	290	1317	9.5	290	1455	10.2	310	1227	8.5	260				
1949	3.3	100	1924	3.9	120	2049	2.6	80	1827	3.9	120				
19 M	0142	10.2	310	31 Th	0754	3.3	100	2028	3.3	100	2351	9.8	300		
0916	3.3	100	1403	10.2	310	1403	10.2	310	1440	9.2	280	2351	9.8	300	
1528	10.5	320	2003	3.0	90	2003	3.0	90	1440	9.5	290	2351	9.8	300	

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beira, Mozambique, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 0044	4.3	130	16 0126	3.3	100	1 0110	3.3	100	1 0036	2.6	80
Tu 0635	20.0	610	W 0707	20.7	630	F 0718	20.7	630	F 0632	22.6	690
1301	3.9	120	1333	4.6	140	1330	3.6	110	1253	2.6	80
1844	20.3	620	1929	20.0	610	1932	21.0	640	1842	23.0	700
2 0059	3.9	120	17 0152	4.3	130	2 0133	3.9	120	2 0058	3.0	90
W 0703	19.7	600	Th 0740	19.4	590	Sa 0752	19.4	590	Sa 0701	21.7	660
1321	4.3	130	1351	5.6	170	1357	4.9	150	1317	3.3	100
1915	20.0	610	2001	18.7	570	2010	19.4	590	1913	22.0	670
3 0119	4.3	130	18 0216	5.6	170	3 0204	5.2	160	3 0121	3.6	110
Th 0734	19.0	580	F 0815	18.0	550	Su 0836	17.7	540	Su 0734	20.0	610
1344	4.6	140	1409	6.6	200	1433	6.6	200	1342	4.9	150
1951	19.4	590	2040	17.1	520	O 2103	17.7	540	1949	20.0	610
4 0147	4.6	140	19 0244	6.9	210	4 0246	6.9	210	4 0147	5.2	160
F 0814	18.0	550	Sa 0901	16.4	500	M 0948	15.7	480	M 0812	18.0	550
1417	5.6	170	1432	8.2	250	1531	8.5	260	1412	6.6	200
2038	18.0	550	O 2136	15.7	480	2226	16.1	490	O 2036	18.0	550
5 0226	5.9	180	20 0330	8.5	260	5 0401	8.9	270	5 0221	7.2	220
Sa 0913	16.7	510	Su 1007	15.1	460	Tu 1150	14.8	450	Tu 0914	15.7	480
1505	6.9	210	1515	9.5	290	1823	9.5	290	1457	8.9	270
O 2144	16.7	510	2307	14.4	440				2154	15.7	480
6 0323	7.2	220	21 0549	9.5	290	6 0022	15.4	470	6 0318	9.5	290
Su 1042	15.4	470	M 1143	14.4	440	W 0742	8.9	270	W 1124	14.4	440
1637	8.2	250	1909	10.2	310	1341	15.7	480	1806	10.2	310
2315	16.1	490				2013	8.2	250	2113	8.2	250
7 0526	8.2	250	22 0053	14.8	450	7 0159	16.7	510	7 0000	15.1	460
M 1228	15.4	470	Tu 0743	8.5	260	Th 0902	6.9	210	Th 0748	9.5	290
1854	8.2	250	1321	15.1	460	1451	17.7	540	1330	15.4	470
			2035	8.5	260	2117	6.2	190	2006	8.5	260
8 0052	16.4	500	23 0213	15.7	480	8 0302	18.7	570	8 0148	16.4	500
Tu 0743	7.5	230	W 0848	7.2	220	F 0955	5.2	160	Sa 0855	7.5	230
1354	16.7	510	1430	16.4	500	1539	19.7	600	1440	17.4	530
2018	6.9	210	2126	7.2	220	2209	4.6	140	2104	6.6	200
9 0210	17.7	540	24 0305	17.4	530	9 0350	20.3	620	9 0250	18.4	560
W 0859	5.9	180	Th 0937	5.9	180	Sa 1040	3.9	120	Sa 0940	5.6	170
1457	18.4	560	1517	17.7	540	1620	21.0	640	1524	19.7	600
2123	5.6	170	2208	5.9	180	2253	3.3	100	2150	4.6	140
10 0310	19.4	590	25 0346	19.0	580	10 0430	21.7	660	10 0334	20.3	620
Th 0959	4.6	140	F 1020	4.6	140	Su 1119	3.3	100	Su 1020	4.3	130
1547	19.7	600	1556	19.0	580	1657	22.0	670	1602	21.0	640
2218	4.3	130	2246	4.9	150	O 2333	2.6	110	O 2323	3.6	110
11 0359	20.7	630	26 0421	20.0	610	11 0507	22.3	680	11 0411	21.7	660
F 1050	3.6	110	Sa 1058	3.9	120	M 1154	2.6	80	M 1056	3.3	100
1631	20.7	630	Sa 1630	20.3	620	1732	22.3	680	1636	22.3	680
O 2307	3.3	100	2319	4.3	130				O 2309	2.6	80
12 0442	21.3	650	27 0454	20.7	630	12 0007	2.0	60	12 0445	22.6	690
Sa 1134	3.0	90	Su 1132	3.3	100	Tu 0541	22.6	690	Tu 1130	3.0	90
1712	21.3	650	1702	21.0	640	1224	3.0	90	1709	23.0	700
2349	2.6	80	O 2348	3.6	110	1804	22.3	680	2344	2.3	70
13 0523	22.0	670	28 0525	21.3	650	13 0038	2.3	70	13 0518	22.6	690
Su 1212	3.0	90	M 1201	3.0	90	W 0613	22.3	680	W 1200	3.0	90
1750	21.7	660	1732	21.7	660	1250	3.3	100	1740	23.0	700
						1834	22.0	670	1811	23.3	710
14 0026	2.3	70	29 0012	3.3	100	14 0104	3.0	90	14 0014	2.3	70
M 0600	22.0	670	Tu 0553	21.7	660	F 0642	21.7	660	F 0548	22.6	690
1244	3.0	90	1226	3.0	90	1310	3.9	120	1226	3.3	100
1825	21.3	650	1801	22.0	670	1901	21.3	650	1809	22.6	690
15 0058	2.6	80	30 0032	3.3	100	15 0127	3.6	110	15 0041	3.0	90
Tu 0634	21.3	650	W 0621	21.7	660	F 0710	20.7	630	F 0617	22.0	670
1311	3.6	110	1247	3.0	90	1325	4.9	150	1247	3.9	120
1858	20.7	630	1829	22.3	680	1928	20.0	610	1835	21.7	660
			31 0050	3.0	90				31 0049	3.0	90
			Th 0649	21.7	660				Su 0648	21.7	660
			1308	3.0	90				1308	3.6	110
			1859	22.0	670				1859	21.7	660

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beira, Mozambique, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 M 0115	3.9	120		16 Tu 0124	5.9	180		1 W 0149	5.9	180	
0722	20.0	610	Tu	0714	18.0	550	W	0804	17.4	530	Th
1336	4.9	150		1308	6.6	200		1415	6.6	200	
1937	20.0	610		1926	17.4	530		2023	17.7	540	
2 Tu 0141	5.6	170		17 W 0139	6.9	210		2 0224	7.5	230	
0802	17.7	540		0744	16.7	510		17 Th 0201	6.9	210	
1406	6.9	210		1326	7.2	220		0909	15.7	480	
2024	17.7	540		1954	15.7	480		1507	8.2	250	
3 W 0213	7.5	230		18 Th 0203	8.2	250		2134	15.7	480	
0907	15.7	480		0831	15.1	460		3 F 0331	9.2	280	
1453	8.9	270		1357	8.5	260		1041	14.8	450	
2142	15.7	480		2105	14.1	430		1706	9.2	280	
4 Th 0310	9.8	300		19 F 0253	9.8	300		2308	15.1	460	
1106	14.4	440		1013	13.8	420		4 Sa 0630	9.2	280	
1747	10.2	310		1453	10.2	310		1218	15.1	460	
2339	15.1	460		2340	13.8	420		1858	8.2	250	
5 F 0727	9.5	290		20 Sa 0636	9.8	300		19 0419	8.9	270	
1303	15.1	460		1211	14.1	430		19 Su 0509	14.8	450	
1942	8.5	260		1927	9.8	300		1634	8.9	270	
6 Sa 0123	16.1	490		21 Su 0748	15.1	460		20 0000	15.1	460	
0830	7.5	230		0748	8.2	250		0629	8.2	250	
1414	17.1	520		1329	15.7	480		1225	15.4	470	
2038	6.6	200		2018	7.9	240		1901	7.9	240	
7 Su 0226	18.0	550		21 M 0113	15.1	460		20 0157	17.1	520	
0912	5.9	180		0748	8.2	250		0840	5.6	170	
1459	19.0	580		1329	15.7	480		1433	18.0	550	
2122	4.9	150		2058	6.2	190		2058	4.6	140	
8 M 0309	19.7	600		22 M 0210	17.1	520		21 0245	18.0	550	
0950	4.6	140		0834	6.6	200		0926	4.9	150	
1535	20.7	630		1422	18.0	550		1517	19.0	580	
2202	3.6	110		2058	6.2	190		2145	3.9	120	
9 Tu 0345	21.0	640		23 Tu 0254	19.0	580		22 0328	19.0	580	
1027	3.6	110		0915	4.9	150		0830	5.2	160	
1610	22.0	670		1504	20.0	610		1333	17.1	520	
2241	3.0	90		2138	4.9	150		2004	6.2	190	
10 W 0419	22.0	670		23 W 0333	20.7	630		21 0245	18.0	550	
1102	3.3	100		0956	3.6	110		0926	4.9	150	
1643	22.3	680		1544	21.3	650		1517	19.0	580	
2317	2.6	80		2219	3.6	110		2145	3.9	120	
11 Th 0452	22.3	680		25 Th 0411	21.7	660		22 0329	19.0	580	
1135	3.3	100		1038	3.0	90		0954	3.6	110	
1715	22.3	680		1622	22.3	680		1543	20.0	610	
2351	2.6	80		2259	3.0	90		2229	3.6	110	
12 F 0524	22.0	670		25 Sa 0411	21.7	660		23 0416	19.7	600	
1204	3.6	110		1038	3.0	90		0921	4.3	130	
1745	22.0	670		1622	22.3	680		1515	19.7	600	
2317	2.6	80		2259	3.0	90		2315	3.3	100	
11 Th 0452	22.3	680		26 F 0448	22.3	680		24 0407	19.4	590	
1135	3.3	100		1119	2.6	80		0921	3.9	120	
1715	22.3	680		1700	23.0	700		1515	20.3	620	
2351	2.6	80		2338	2.6	80		2149	3.9	120	
12 F 0524	22.0	670		26 M 0526	22.3	680		25 Sa 0502	20.7	630	
1204	3.6	110		1157	2.6	80		1113	3.6	110	
1745	22.0	670		1737	23.0	700		1653	21.0	640	
2317	2.6	80						2331	3.0	90	
13 Sa 0021	3.0	90		28 M 0015	2.6	80		26 M 0512	21.0	640	
0554	21.7	660		0603	21.7	660		1147	3.9	120	
1229	3.9	120		1233	3.0	90		1726	20.7	630	
1814	21.3	650		1814	22.3	680					
14 Su 0047	3.9	120		29 M 0048	3.3	100		28 Tu 0050	3.0	90	
0622	20.7	630		0640	20.7	630		0635	20.0	610	
1247	4.9	150		1306	3.6	110		1239	4.9	150	
1839	20.0	610		1852	21.0	640		1826	19.4	590	
15 M 0108	4.9	150		30 Tu 0119	4.3	130		1847	20.3	620	
0648	19.4	590		0719	19.0	580		1229	2.6	80	
1258	5.6	170		1339	4.9	150		1930	19.0	580	
1903	18.7	570		1932	19.4	590					
16 Sa 0227	5.9	180						1806	21.3	650	
0852	16.1	490						1844	18.4	560	
1429	6.2	190									
1526	6.6	200						1844	18.4	560	
2127	15.7	480									

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beira, Mozambique, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 M 0334	7.5	230	16 0246	5.2	160	1 Th 0549	8.9	270	16 0457	7.9	240
1025	15.1	460	Tu 0916	16.7	510	12 1212	14.1	430	F 1131	15.1	460
1638	7.5	230	1455	5.6	170	1857	7.9	240	1811	8.2	250
2246	15.1	460	● 2156	15.7	480						
2 Tu 0514	8.2	250	17 0349	6.6	200	2 F 0036	14.1	430	2 M 0231	16.1	490
1141	14.8	450	W 1031	15.7	480	0749	7.9	240	0717	7.2	220
1815	7.5	230	1609	6.9	210	1338	15.1	460	1312	15.7	480
			2329	15.1	460	2014	6.9	210	2013	6.9	210
3 W 0002	14.8	450	18 0543	7.2	220	3 Sa 0154	15.1	460	18 0208	16.1	490
0702	7.5	230	1202	15.4	470	0852	6.6	200	0835	5.6	170
1258	15.4	470	1829	7.2	220	1439	16.4	500	1427	17.4	530
1932	6.6	200				2110	5.6	170	2118	5.2	160
4 Th 0117	15.4	470	19 0103	15.4	470	4 Su 0251	16.4	500	4 W 0349	19.0	580
0810	6.6	200	F 0726	6.6	200	0941	5.2	160	0933	4.3	130
1403	16.4	500	1328	16.4	500	1525	17.7	540	1521	19.0	580
2032	5.6	170	2010	6.2	190	2158	4.6	140	2210	3.9	120
5 F 0218	16.4	500	20 0218	16.7	510	5 M 0335	17.7	540	5 Th 0422	20.0	610
0905	5.6	170	Sa 0841	5.2	160	1024	4.6	140	1024	3.0	90
1456	17.4	530	1436	17.7	540	1604	18.7	570	1606	20.3	620
2125	4.6	140	2122	4.9	150	2241	3.6	110	2256	3.0	90
6 Sa 0308	17.4	530	21 0316	18.0	550	6 Tu 0413	18.7	570	21 0434	20.7	630
0955	4.9	150	Su 0944	3.9	120	1103	3.9	120	W 1109	2.0	60
1540	18.4	560	1532	19.0	580	1639	19.7	600	1647	21.3	650
2215	3.9	120	2222	3.6	110	● 2319	3.0	90	○ 2336	2.3	70
7 Su 0351	18.0	550	22 0406	19.4	590	7 W 0447	19.4	590	22 0512	21.0	640
1041	4.3	130	M 1040	3.0	90	1136	3.3	100	Th 1148	1.6	50
1620	19.0	580	1620	20.3	620	1712	20.0	610	1724	21.7	660
2301	3.6	110	○ 2313	3.0	90	2351	2.6	80			
8 M 0430	18.7	570	23 0451	20.0	610	8 Th 0519	20.0	610	23 0010	2.3	70
1122	3.9	120	Tu 1128	2.3	70	1203	3.0	90	0547	21.3	650
1657	19.4	590	1703	21.0	640	1742	20.3	620	F 1223	1.6	50
● 2340	3.3	100	2356	2.3	70				1758	21.7	660
9 Tu 0506	19.0	580	24 0532	20.3	620	9 F 0019	2.6	80	24 0040	2.6	80
1157	3.6	110	W 1210	1.6	50	0548	20.3	620	Sa 0620	21.0	640
1731	19.4	590	1744	21.0	640	1224	3.0	90	1253	2.0	60
						1809	20.3	620	1830	21.0	640
10 W 0014	3.0	90	25 0033	2.3	70	10 M 0041	2.6	80	9 M 0041	2.3	70
0538	19.0	580	Th 0611	20.3	620	0617	20.3	620	W 0624	21.3	650
1224	3.6	110	1246	1.6	50	1242	3.0	90	1242	2.6	80
1802	19.4	590	1822	21.0	640	1836	20.3	620	1844	20.7	630
11 Th 0041	3.3	100	26 0104	2.6	80	11 Sa 0645	20.3	620	25 0105	3.0	90
0608	19.0	580	0647	20.0	610	1259	3.0	90	0651	20.0	610
1244	3.6	110	F 1318	2.3	70	1904	20.0	610	1320	3.0	90
1830	19.4	590	1857	20.3	620				1900	19.7	600
12 F 0102	3.3	100	27 0131	3.3	100	12 M 0122	3.0	90	10 Tu 0104	2.6	80
0637	19.0	580	Sa 0721	19.4	590	0716	19.7	600	0656	20.7	630
1259	3.9	120	1346	3.0	90	1320	3.3	100	1305	3.0	90
1857	19.0	580	1932	19.4	590	1935	19.0	580	1915	19.7	600
13 Sa 0121	3.6	110	28 0153	4.3	130	11 M 0125	3.9	120	11 W 0129	3.6	110
0706	19.0	580	0756	18.4	560	0721	19.0	580	0731	19.4	590
1314	3.9	120	1413	4.3	130	1259	3.0	90	1331	3.9	120
1925	18.7	570	2008	18.0	550	1904	20.0	610	1952	18.0	550
14 Su 0140	3.9	120	29 0214	5.2	160	12 M 0141	4.9	150	10 Th 0144	7.2	220
0739	18.4	560	0835	17.1	520	0752	17.7	540	0816	17.7	540
1336	3.9	120	M 1442	5.6	170	1405	5.2	160	1405	5.6	170
1959	17.7	540	○ 2050	16.7	510	2005	17.4	530	● 2046	16.1	490
15 M 0207	4.6	140	30 0238	6.6	200	12 F 0141	4.9	150	27 0144	7.2	220
0821	17.7	540	0926	15.4	470	0932	14.1	430	0828	14.8	450
1409	4.6	140	Tu 1523	7.2	220	1515	8.5	260	F 1422	8.2	250
2047	16.7	510	2147	15.1	460	2203	13.8	420	○ 2102	14.1	430
13 W 0319	7.9	240	31 0735	9.2	280						
1040	10.4	440	W 1040	14.4	440						
1655	8.2	250	1655	8.2	250						
2305	14.1	430	2305	14.1	430						

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Beira, Mozambique, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0158	15.4	470	16 W 0230	18.0	550	1 F 0245	18.7	570	1 Sa 0324	20.0	610
0851	6.6	200	W 0853	4.6	140	0918	4.6	140	0951	3.3	100
1437	17.1	520	1444	19.0	580	1516	19.7	600	1537	20.3	620
2102	5.6	170	2125	4.6	140	2138	3.9	120	2217	3.9	120
2 W 0243	17.4	530	17 Th 0311	19.7	600	2 Sa 0324	20.3	620	17 Su 0401	20.7	630
0924	5.2	160	0936	3.3	100	0957	3.6	110	1033	3.0	90
1513	18.7	570	1524	20.3	620	1553	21.0	640	1613	21.0	640
2138	4.3	130	2204	3.6	110	2218	3.3	100	O 2257	3.6	110
3 Th 0320	19.0	580	18 F 0348	21.0	640	3 Su 0402	21.3	650	18 M 0437	21.0	640
0958	4.3	130	1017	2.3	70	1036	3.0	90	1113	2.6	80
1547	20.3	620	1600	21.3	650	1629	21.7	660	1648	21.0	640
2214	3.3	100	2242	3.0	90	● 2259	2.6	80	2333	3.6	110
4 F 0354	20.3	620	19 W 0423	21.7	660	4 M 0439	22.0	670	4 Tu 0511	21.0	640
1031	3.3	100	Sa 1056	2.0	60	1115	2.6	80	1150	3.0	90
1619	21.3	650	1634	21.7	660	1706	22.0	670	1721	20.7	630
2249	2.6	80	O 2317	3.0	90	2338	2.3	70	W 1734	21.7	660
5 Sa 0427	21.3	650	20 Su 0457	21.7	660	5 Tu 0516	22.3	680	5 Th 0006	3.9	120
1104	2.6	80	1132	2.0	60	1152	2.6	80	W 0544	20.3	620
1652	22.0	670	1707	21.7	660	1742	21.7	660	1222	3.3	100
● 2323	2.3	70	2350	3.0	90	1753	20.3	620	1813	21.0	640
6 Su 0500	22.0	670	21 M 0529	21.3	650	6 W 0014	2.6	80	6 Th 0047	2.6	80
1135	2.3	70	1206	2.6	80	0553	22.0	670	0615	19.7	600
1724	22.0	670	1739	21.3	650	1227	3.0	90	1250	4.3	130
2355	2.0	60				1819	21.0	640	1823	19.4	590
7 M 0533	22.3	680	22 Tu 0019	3.6	110	7 Th 0049	3.0	90	21 Sa 0053	4.9	150
1203	2.3	70	0600	20.7	630	0631	21.0	640	W 0643	18.7	570
1756	22.0	670	1235	3.3	100	1259	3.6	110	1312	4.9	150
			1809	20.3	620	1857	19.7	600	1852	18.7	570
8 Tu 0024	2.3	70	23 W 0042	4.3	130	8 F 0122	3.9	120	23 Sa 0106	5.6	170
0606	22.0	670	0628	19.7	600	0711	19.7	600	0710	17.7	540
1230	2.6	80	1300	4.3	130	1329	4.9	150	1330	5.9	180
1828	21.0	640	1837	19.4	590	1938	18.4	560	1921	17.4	530
9 W 0053	3.0	90	24 Th 0058	4.9	150	9 Sa 0157	5.2	160	24 M 0118	6.2	190
0640	21.0	640	0656	18.4	560	0757	18.0	550	W 0738	16.4	500
1257	3.3	100	1320	5.2	160	1402	6.2	190	1348	6.9	210
1902	19.7	600	1906	18.0	550	2033	16.4	500	1956	16.4	500
10 Th 0121	3.9	120	25 F 0110	5.9	180	10 Tu 0242	6.9	210	25 W 0140	6.9	210
0717	19.7	600	0722	17.1	520	0900	16.4	500	0820	15.4	470
1324	4.6	140	1338	6.6	200	1449	8.2	250	1418	7.9	240
1941	18.0	550	1937	16.7	510	● 2154	15.1	460	O 2051	15.1	460
11 F 0153	5.2	160	26 Sa 0125	6.9	210	11 M 0405	8.2	250	26 Tu 0218	7.9	240
0802	17.7	540	0754	15.4	470	1028	15.1	460	W 0943	14.1	430
1356	6.2	190	Sa 1359	7.9	240	1711	9.2	280	Tu 1518	8.9	270
2036	16.1	490	2021	15.1	460	2332	14.8	450	● 2051	15.4	470
12 Sa 0237	7.2	220	27 W 0151	8.2	250	12 Tu 0615	8.2	250	27 Tu 0328	7.5	230
0911	15.7	480	0903	13.8	420	1202	15.4	470	0947	15.7	480
1445	8.2	250	1441	9.2	280	1916	8.2	250	1539	8.9	270
● 2215	14.4	440	O 2148	13.8	420	2353	14.8	450	2238	15.4	470
13 Su 0428	8.9	270	28 M 0239	9.5	290	13 W 0057	15.7	480	11 O 0504	8.2	250
1056	14.8	450	1118	13.5	410	0733	6.6	200	W 1107	15.1	460
1814	9.2	280	1808	9.8	300	1320	16.4	500	1804	9.2	280
			2342	13.8	420	2013	6.9	210	2218	14.4	440
14 M 0011	14.4	440	29 Tu 0710	9.5	290	14 F 0159	17.4	530	11 Tu 0217	17.4	530
0656	8.2	250	1254	14.4	440	0825	5.2	160	W 0749	7.2	220
1241	15.4	470	1932	8.2	250	1415	18.0	550	F 1357	17.1	520
1954	7.5	230				2057	5.2	160	2016	6.2	190
15 Tu 0136	16.1	490	30 W 0106	15.1	460	15 F 0245	19.0	580	14 Sa 0109	16.1	490
0805	6.2	190	0804	7.5	230	0909	3.9	120	W 0840	5.6	170
1355	17.1	520	1354	16.1	490	1459	19.4	590	1446	18.7	570
2044	5.9	180	2018	6.6	200	2137	4.6	140	30 Su 0208	17.7	540
			31 Th 0841	6.2	190				15 Tu 0303	18.7	570
			1438	18.0	550				W 0931	4.3	130
			2058	5.2	160				1517	19.0	580
									2200	4.9	150
									31 Tu 0326	20.0	610
									1009	4.3	130
									1600	20.7	630
									2231	3.6	110

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Durban, South Africa, 2013

Times and Heights of High and Low Waters

January						February						March							
Time		Height		Time		Height		Time		Height		Time		Height		Time		Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 Tu	0550	6.1	187	16 W	0017	0.8	24	1 F	0023	1.0	29	16 Sa	0046	1.5	45	1 F	0544	6.9	209
	1151	1.4	43		0639	6.3	191		0640	6.3	192		0703	5.6	171		1150	0.9	27
	1758	6.0	182		1241	1.4	44		1246	1.5	46		1311	2.0	60		1758	6.4	196
					1845	5.8	176		1851	5.8	177		1910	5.2	159				
2 W	0009	1.1	33	17 Th	0050	1.2	36	2 Sa	0058	1.3	40	17 Su	0116	2.0	61	2 Sa	0003	0.8	23
	0624	6.0	183		0714	5.8	178		0719	5.9	181		0735	5.1	156		0618	6.5	199
	1227	1.6	50		1317	1.9	57		1326	1.9	58		1347	2.5	75		1225	1.2	37
	1833	5.7	175		1918	5.3	163		1932	5.4	164		1945	4.7	143		1833	6.0	184
3 Th	0044	1.3	40	18 F	0124	1.6	50	3 Su	0139	1.8	54	18 M	0153	2.6	78	3 Su	0037	1.2	37
	0703	5.8	177		0751	5.4	164		0807	5.5	167		0819	4.6	141		0655	6.0	184
	1307	1.9	58		1357	2.3	70		1418	2.3	71		1441	2.9	89		1303	1.7	51
	1913	5.4	165		1954	4.9	149		2025	4.9	149		2042	4.2	129		1912	5.5	168
4 F	0123	1.6	49	19 Sa	0202	2.2	66	4 M	0235	2.3	70	19 Tu	0300	3.1	94	4 M	0117	1.8	54
	0749	5.5	169		0836	4.9	150		0918	5.1	154		1006	4.2	129		0740	5.5	167
	1356	2.2	68		1449	2.7	82		1537	2.7	83		1658	3.2	97		1350	2.2	68
	2001	5.1	154		2045	4.4	135		2159	4.5	136		2352	4.0	123		2003	5.0	151
5 Sa	0211	2.0	60	20 Su	0256	2.7	81	5 Tu	0416	2.7	83	20 W	0615	3.2	97	5 Tu	0212	2.4	73
	0848	5.3	161		0951	4.6	139		1114	4.9	148		1243	4.4	134		0847	4.9	149
	1502	2.5	76		1617	3.0	91		1750	2.7	83		1909	2.9	87		1502	2.8	84
○	2109	4.7	143		2228	4.1	125									2140	4.5	136	
6 Su	0320	2.3	71	21 M	0448	3.0	91	6 W	0021	4.6	140	21 Th	0132	4.5	137	6 W	0403	2.9	89
	1010	5.1	156		1150	4.5	137		0630	2.6	78		0733	2.7	83		1101	4.6	140
	1635	2.6	80		1821	2.9	87		1257	5.2	158		1344	4.9	149		1737	2.9	88
	2250	4.5	138						1925	2.2	68		1959	2.3	71				
7 M	0459	2.5	75	22 Tu	0047	4.3	130	7 Th	0142	5.2	158	22 F	0213	5.1	154	7 Th	0019	4.6	141
	1145	5.2	159		0649	2.8	86		0746	2.0	62		0814	2.2	68		0635	2.7	81
	1815	2.4	73		1312	4.8	146		1401	5.7	173		1422	5.4	164		1253	4.9	150
					1934	2.5	76		2020	1.6	50		2034	1.8	56		1917	2.4	72
8 Tu	0032	4.8	146	23 W	0152	4.7	143	8 F	0235	5.9	179	23 Sa	0244	5.6	170	8 F	0135	5.3	161
	0636	2.2	67		0749	2.5	75		0838	1.4	44		0846	1.8	54		0743	2.1	63
	1302	5.5	169		1402	5.2	157		1450	6.2	188		1453	5.8	178		1354	5.5	168
	1929	1.9	59		2018	2.0	62		2103	1.0	32		2104	1.4	42		2008	1.7	52
9 W	0144	5.3	161	24 Th	0232	5.2	157	9 Sa	0318	6.4	196	24 Su	0312	6.1	185	9 Sa	0222	5.9	181
	0745	1.8	54		0829	2.0	62		0921	1.0	30		0916	1.3	41		0829	1.5	45
	1403	6.0	182		1439	5.5	169		1531	6.6	200		1523	6.2	190		1438	6.0	183
	2024	1.4	43		2053	1.6	50		2141	0.6	19		2132	1.0	29		2047	1.1	35
10 Th	0238	5.8	178	25 F	0304	5.6	170	10 Su	0356	6.8	208	25 M	0341	6.5	197	10 Su	0301	6.5	197
	0839	1.3	40		0903	1.7	51		0959	0.7	21		0945	1.0	31		0906	1.0	31
	1453	6.4	194		1512	5.9	180		1609	6.8	206		1552	6.5	199		1515	6.4	196
	2110	1.0	29		2124	1.3	39		2216	0.4	11		2201	0.7	20		2122	0.7	22
11 F	0325	6.3	193	26 Sa	0334	5.9	181	11 M	0432	7.0	214	26 Tu	0410	6.8	207	11 M	0336	6.8	208
	0926	0.9	28		0934	1.4	42		1035	0.6	18		1015	0.8	24		0940	0.7	22
	1539	6.6	202		1542	6.2	188		1643	6.8	207		1622	6.7	205		1549	6.7	203
	2152	0.6	18		2153	1.0	30		2249	0.3	8		2230	0.4	13		2154	0.5	14
12 Sa	0408	6.7	204	27 Su	0402	6.3	191	12 Tu	0506	7.0	214	27 W	0440	7.0	213	12 Tu	0408	7.0	213
	1010	0.7	22		1004	1.1	35		1108	0.7	20		1046	0.7	20		1012	0.6	17
	1621	6.7	205		1611	6.4	195		1716	6.7	204		1653	6.8	207		1621	6.7	205
	2232	0.4	12		2222	0.8	23		2320	0.4	11		2259	0.4	12		2224	0.4	11
13 Su	0449	6.9	209	28 M	0432	6.5	198	13 W	0537	6.8	208	28 Th	0511	7.0	213	13 W	0439	7.0	213
	1050	0.7	21		1034	1.0	31		1139	0.9	26		1118	0.7	21		1043	0.6	18
	1701	6.7	204		1641	6.5	198		1746	6.4	196		1725	6.7	203		1651	6.7	203
	2309	0.4	11		2251	0.6	19		2350	0.6	19		2330	0.5	15		2253	0.5	14
14 M	0528	6.8	208	29 Tu	0502	6.6	202	14 Th	0607	6.5	198	29 F	0467	6.8	207	14 Th	0507	6.8	207
	1129	0.8	25		1105	1.0	30		1210	1.1	35		1814	6.1	185		1112	0.7	22
	1738	6.5	198		1712	6.5	199									1719	6.5	197	
	2344	0.5	15		2321	0.6	18									2321	0.7	21	
15 Tu	0604	6.6	202	30 W	0533	6.6	202	15 F	0018	1.0	31	30 F	0534	6.5	198	30 Sa	0524	6.9	210
	1205	1.1	33		1137	1.0	32		0635	6.1	185		1239	1.5	47		1140	1.0	30
	1812	6.2	188		1743	6.4	195		1841	5.7	173					1745	6.2	188	
					2351	0.7	22								2348	1.0	31		
				31 Th	0606	6.5	199									31 Su	0600	6.5	198
					1210	1.2	37										1209	1.0	32
					1816	6.2	188										1821	6.1	185

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Durban, South Africa, 2013

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0024 0640 1248 1904	h m 1.2 5.9 1.6 5.5	ft 38 181 48 169	cm 161 58 58 156	16 Tu 0022 0630 1243 1852	h m 1.8 5.3 1.9 5.1	ft 56 161 58 156	cm 159 159 158 158	1 W 0111 0728 1334 2007	h m 1.9 5.2 1.9 5.2	ft 57 159 59 158	cm 154 154 153 153
	0024	0640	1248	1904	0057	2.3	70	0045	2.1	64	
	0109	0728	1337	2001	0707	4.9	148	0653	5.1	154	
	0109	0728	1337	2001	1443	2.4	72	1306	2.0	61	
2 Tu 0109 0728 1337 2001	0109	0728	2.1	65	1937	4.7	144	1924	5.0	153	
	0109	0728	1337	2001	2137	4.9	148	2226	5.0	152	
	0109	0728	1337	2001	0146	2.8	84	0132	2.4	74	
	0211	0840	1451	2147	0803	4.4	135	0242	2.7	83	
3 W 0211 0840 1451 2147	0211	0840	1451	2147	1018	4.5	137	0246	2.7	72	
	0211	0840	1451	2147	1423	2.8	85	0856	4.4	135	
	0211	0840	1451	2147	2056	4.4	133	1511	2.6	80	
	0211	0840	1451	2147	0146	2.8	84	2155	4.7	142	
4 Th 0415 1050 1714	0415	1050	1714	2147	0328	3.1	94	0425	2.8	85	
	0415	1050	1714	2147	0959	4.2	127	0704	2.1	63	
	0415	1050	1714	2147	1630	3.0	90	1822	2.3	70	
	0415	1050	1714	2147	2322	4.4	134	1318	4.9	150	
5 F 0001 0623 1234 1850	0001	0623	1234	1850	0554	2.9	89	0138	5.4	166	
	0001	0623	1234	1850	1204	4.4	135	0750	1.7	53	
	0001	0623	1234	1850	1819	2.7	81	1406	5.2	160	
	0001	0623	1234	1850	0041	4.9	149	2006	1.8	54	
6 Sa 0112 0725 1333 1943	0112	0725	1333	1943	0658	2.4	74	0143	5.9	180	
	0112	0725	1333	1943	1305	4.9	150	0803	1.4	42	
	0112	0725	1333	1943	1913	2.2	66	1418	5.7	175	
	0112	0725	1333	1943	0126	5.6	171	2021	1.3	40	
7 Su 0159 0808 1416 2022	0159	0808	1416	2022	0740	1.9	57	0254	5.8	177	
	0159	0808	1416	2022	1347	5.4	166	0904	1.2	37	
	0159	0808	1416	2022	1953	1.6	50	1507	6.2	188	
	0159	0808	1416	2022	0126	5.4	166	2109	1.0	29	
8 M 0236 0844 1453 2057	0236	0844	1453	2057	0203	6.0	183	0327	5.9	180	
	0236	0844	1453	2057	0816	1.3	41	0937	1.0	32	
	0236	0844	1453	2057	1424	5.9	180	1551	5.9	179	
	0236	0844	1453	2057	2029	1.1	35	2150	1.3	39	
9 Tu 0310 0916 1526 2128	0310	0916	1526	2128	0239	6.5	198	0358	6.0	182	
	0310	0916	1526	2128	0851	0.9	27	0409	6.6	201	
	0310	0916	1526	2128	1500	6.3	192	1020	0.5	15	
	0310	0916	1526	2128	2104	0.8	23	1638	6.7	204	
10 W 0341 0947 1557 2158	0341	0947	1557	2158	0314	6.9	209	0429	5.9	181	
	0341	0947	1557	2158	0927	0.6	17	0946	0.5	16	
	0341	0947	1557	2158	1537	6.6	201	1601	6.5	199	
	0341	0947	1557	2158	2140	0.5	15	2203	0.6	139	
11 Th 0411 1017 1626 2227	0411	1017	1626	2227	0415	6.3	191	0459	5.9	179	
	0411	1017	1626	2227	1003	0.4	12	1028	0.5	15	
	0411	1017	1626	2227	1614	6.7	204	1645	6.6	201	
	0411	1017	1626	2227	2217	0.4	12	2247	0.7	20	
12 F 0438 1045 1654 2256	0438	1045	1654	2256	0429	7.0	213	0530	5.8	176	
	0438	1045	1654	2256	1040	0.4	13	1141	1.2	36	
	0438	1045	1654	2256	1653	6.7	203	1729	6.5	197	
	0438	1045	1654	2256	2255	0.5	16	2332	0.9	27	
13 Sa 0505 1114 1722 2324	0505	1114	1722	2324	0509	6.7	205	0546	6.2	190	
	0505	1114	1722	2324	1119	0.6	19	1153	0.9	26	
	0505	1114	1722	2324	1734	6.4	196	1815	6.2	190	
	0505	1114	1722	2324	2336	0.9	26	2336	1.4	44	
14 Su 0532 1142 1749 2352	0532	1142	1749	2352	0550	6.3	192	0019	1.2	38	
	0532	1142	1749	2352	1159	1.0	30	0632	5.8	177	
	0532	1142	1749	2352	1817	6.1	185	1238	1.2	36	
	0532	1142	1749	2352	0550	6.3	192	1904	5.9	180	
15 M 0559 1211 1819	0559	1211	1819	2121	0020	1.3	40	0110	1.7	51	
	0559	1211	1819	2121	0635	5.8	176	0722	5.4	164	
	0559	1211	1819	2121	1243	1.4	44	1326	1.6	48	
	0559	1211	1819	2121	1906	5.6	172	1959	5.5	168	
16 Su 0814 1421 2121	0814	1421	2121	2121	0819	5.0	151	0208	2.1	64	
	0814	1421	2121	2121	1421	2.0	61	0819	5.0	151	
	0814	1421	2121	2121	2105	5.2	158	1421	2.0	61	
	0814	1421	2121	2121	0208	2.1	64	2105	5.2	158	

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Durban, South Africa, 2013

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
1 M 0336 2.5 76	16 0225 2.3 69	1 Th 0541 2.8 86	16 0444 2.7 83	1 Su 0128 4.8 145	16 0121 5.3 161						
0944 4.5 136	Tu 0833 4.8 147	1222 4.3 130	1130 4.5 137	0740 2.3 70	0736 1.8 55						
1547 2.5 77	Tu 1438 2.2 68	1830 2.9 89	1743 2.8 84	1359 5.1 155	1354 5.9 179						
2240 4.8 146	O 2117 5.1 156			2002 2.2 68	2003 1.6 48						
2 Tu 0502 2.6 80	17 0338 2.5 76	2 0049 4.6 140	17 0012 4.9 150	2 M 0207 5.2 159	17 0209 5.8 178						
1121 4.4 133	W 0955 4.6 139	F 0710 2.5 77	Sa 0643 2.4 73	0816 1.8 56	Tu 0818 1.2 37						
1727 2.7 82	1603 2.5 77	1337 4.7 143	1309 5.1 154	1429 5.6 171	Tu 1434 6.5 198						
	2248 5.0 153	1938 2.6 78	1916 2.2 68	2034 1.8 54	2042 1.0 32						
3 W 0005 4.8 146	18 0518 2.5 76	3 Sa 0146 5.0 151	18 0128 5.4 165	3 Tu 0239 5.7 173	18 0249 6.3 192						
0626 2.5 75	Th 1145 4.6 141	0800 2.1 64	0748 1.8 167	0846 1.4 43	W 0855 0.7 22						
1249 4.5 138	Th 1752 2.5 75	1420 5.2 157	1406 5.7 175	1457 6.1 185	W 1511 6.9 211						
1852 2.5 77		2020 2.1 65	2012 1.6 49	2102 1.4 42	2118 0.7 21						
4 Th 0111 5.0 151	19 0020 5.2 159	4 Su 0227 5.3 163	19 0222 5.9 181	4 W 0307 6.0 184	19 0325 6.6 201						
0728 2.2 66	F 0649 2.2 66	0837 1.7 52	M 0835 1.2 37	0914 1.0 31	W 0930 0.4 13						
1349 4.9 149	1311 5.1 154	1452 5.6 170	1451 6.4 194	1524 6.4 196	Th 1545 7.1 217						
1949 2.2 68	1915 2.1 63	2053 1.7 53	2057 1.1 33	2130 1.0 32	O 2152 0.5 14						
5 F 0200 5.2 159	20 0131 5.6 171	5 M 0259 5.7 173	20 0306 6.4 195	5 Th 0335 6.3 193	20 0359 6.7 204						
0814 1.8 55	Sa 0753 1.6 50	0909 1.3 41	Tu 0915 0.7 21	0942 0.7 22	F 1002 0.3 9						
1432 5.2 160	1411 5.6 172	1521 5.9 181	1531 6.9 209	1551 6.7 205	1617 7.2 218						
2031 1.9 58	2015 1.5 47	2124 1.4 44	2137 0.7 21	2158 0.8 25	2224 0.5 14						
6 Sa 0240 5.5 168	21 0227 6.0 184	6 Tu 0330 6.0 182	21 0346 6.7 203	6 F 0404 6.5 199	21 0432 6.6 202						
0851 1.5 46	Su 0844 1.1 32	0938 1.0 32	W 0952 0.4 11	1009 0.6 17	Sa 1033 0.4 12						
1507 5.6 170	1501 6.2 189	1549 6.2 190	1609 7.2 218	1619 6.9 211	1648 7.0 212						
2106 1.6 50	2105 1.1 33	● 2153 1.2 36	O 2214 0.5 15	2227 0.7 21	2255 0.6 18						
7 Su 0314 5.7 175	22 0316 6.4 195	7 W 0359 6.2 189	22 0422 6.8 207	7 Th 0433 6.6 201	22 0502 6.4 196						
0924 1.2 38	M 0928 0.7 22	1007 0.8 25	1027 0.2 7	Sa 1038 0.5 15	Su 1103 0.6 19						
1538 5.8 178	1545 6.7 203	1617 6.5 197	1644 7.2 219	1649 7.0 212	1717 6.6 202						
2138 1.4 43	O 2150 0.8 23	2222 1.0 31	2250 0.5 15	2257 0.7 21	2325 0.9 26						
8 M 0346 5.9 180	23 0400 6.6 202	8 Th 0427 6.3 193	23 0457 6.7 204	8 Su 0504 6.5 199	23 0532 6.1 187						
0955 1.0 32	Tu 1010 0.4 13	1035 0.7 21	1100 0.3 9	1107 0.6 17	M 1132 1.0 30						
1608 6.0 184	Tu 1627 6.9 211	1645 6.6 201	1718 7.0 214	1719 6.8 208	1744 6.2 189						
● 2209 1.3 39	2232 0.6 18	2251 1.0 29	2323 0.7 20	2328 0.8 25	2354 1.2 36						
9 Tu 0416 6.0 183	24 0442 6.7 204	9 F 0456 6.4 194	24 0530 6.5 197	9 M 0535 6.3 193	24 0600 5.8 176						
1025 0.9 28	W 1048 0.3 10	1103 0.7 20	Sa 1132 0.5 16	1138 0.8 24	Tu 1200 1.4 44						
1637 6.2 188	1707 7.0 214	1714 6.6 202	1750 6.7 204	1752 6.6 200	1811 5.7 174						
2240 1.2 37	2312 0.6 19	2321 1.0 30	2355 1.0 29								
10 W 0446 6.1 185	25 0521 6.6 200	10 Sa 0526 6.3 192	25 0601 6.1 186	10 Tu 0001 1.1 33	25 0023 1.6 49						
1055 0.9 27	Th 1125 0.4 12	1132 0.8 23	Su 1202 1.0 29	0609 6.0 183	W 0630 5.3 163						
1706 6.2 190	1745 6.9 210	1745 6.6 200	1820 6.2 190	1211 1.2 36	1230 2.0 60						
2310 1.2 37	2350 0.8 25	2352 1.1 34	1827 6.1 187	1827 6.1 187	1839 5.2 159						
11 Th 0516 6.0 184	26 0558 6.3 192	11 Su 0557 6.1 186	26 0026 1.3 41	11 W 0038 1.5 46	26 0056 2.1 63						
1125 0.9 28	F 1201 0.6 19	1202 1.0 29	M 0631 5.7 173	0647 5.6 170	Th 0703 4.9 149						
1737 6.2 190	1822 6.6 200	1817 6.3 193	1232 1.4 44	1249 1.7 52	1304 2.5 76						
2341 1.3 40			1849 5.7 174	1908 5.6 170	1915 4.7 143						
12 F 0547 5.9 181	27 0027 1.1 35	12 M 0025 1.3 41	27 0059 1.8 55	12 Th 0121 2.0 61	27 0138 2.6 78						
1155 1.0 32	Sa 0633 5.9 181	0631 5.8 178	Tu 0702 5.2 159	0734 5.1 154	W 0752 4.4 134						
1809 6.1 186	1235 1.0 31	1235 1.3 39	1303 2.0 61	1338 2.3 71	1357 3.1 93						
	1858 6.1 187	1852 6.0 184	1920 5.2 157	● 2005 5.0 152	O 2019 4.2 129						
13 Sa 0014 1.5 45	28 0104 1.5 47	13 Tu 0102 1.7 51	28 0135 2.3 70	13 M 0223 2.5 77	28 0300 3.0 91						
0620 5.8 176	Su 0708 5.5 168	0708 5.4 166	W 0739 4.7 143	F 0855 4.6 139	Sa 1005 4.1 125						
1227 1.2 38	1309 1.5 46	1312 1.7 52	1341 2.6 78	1508 2.9 88	1659 3.3 101						
1843 5.9 181	1934 5.6 171	1934 5.6 171	O 2002 4.6 141	2156 4.6 139	2322 4.1 125						
14 Su 0050 1.7 51	29 0142 2.0 61	14 W 0147 2.1 64	29 0228 2.8 84	14 M 0429 2.8 86	29 0550 3.0 90						
0656 5.5 168	M 0745 5.0 153	0756 5.0 152	Th 0840 4.2 129	Sa 1133 4.6 139	Su 1235 4.5 136						
1302 1.5 47	1346 2.0 62	1400 2.2 68	1448 3.1 95	1753 2.8 86	1849 2.9 88						
1922 5.7 173	O 2016 5.1 155	● 2032 5.1 156	2138 4.2 128								
15 M 0132 2.0 60	30 0229 2.4 74	15 Th 0251 2.5 77	30 0428 3.1 93	15 Su 0010 4.8 145	30 0052 4.5 138						
0738 5.2 158	Tu 0833 4.6 139	0912 4.6 139	F 1143 4.1 125	0636 2.4 74	0702 2.5 76						
1343 1.9 57	1435 2.6 79	1521 2.7 82	1805 3.2 97	1302 5.2 158	1324 5.0 153						
2011 5.4 165	2117 4.6 141	2211 4.8 146		1914 2.2 67	1933 2.4 72						
	31 0341 2.8 85		31 0022 4.3 131								
	W 1000 4.2 128		Sa 0645 2.8 85								
	1610 3.0 91		1318 4.6 139								
	2309 4.4 134		1923 2.8 84								

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Durban, South Africa, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0136	5.0	153	16 W 0149	5.6	171	1 F 0206	5.7	173	1 Su 0216	5.7	175
0742	2.0	61	W 0754	1.3	41	Sa 0809	1.3	39	Sa 0817	1.2	37
1356	5.5	169	1411	6.4	194	F 1420	6.4	194	M 1430	6.5	197
2005	1.8	56	2021	1.1	35	2034	1.0	32	2047	0.9	28
2 W 0209	5.5	168	17 Th 0228	6.0	183	2 Sa 0241	6.1	185	2 M 0258	6.1	186
0814	1.5	46	0831	1.0	29	Sa 0843	0.9	27	Su 0858	0.9	27
1425	6.1	185	1447	6.7	204	F 1453	6.8	206	M 1511	6.7	205
2034	1.4	42	2056	0.8	25	2107	0.7	21	O 2127	0.6	19
3 Th 0239	5.9	181	18 F 0304	6.3	192	3 Su 0316	6.4	194	3 Tu 0340	6.4	195
0843	1.1	33	0905	0.7	21	M 0917	0.6	19	W 1011	1.2	37
1453	6.5	198	1520	6.9	209	Su 1528	7.0	212	1620	6.1	187
2103	1.0	30	2128	0.6	19	● 2142	0.5	15	2231	0.9	27
4 F 0308	6.3	192	19 Sa 0337	6.4	195	4 M 0352	6.5	199	4 W 0422	6.5	199
0912	0.7	22	0938	0.6	18	Tu 0953	0.5	16	Tu 1021	1.1	33
1522	6.9	209	1551	6.8	208	M 1604	7.0	213	1631	6.2	189
2132	0.7	21	O 2159	0.6	17	2218	0.4	13	2242	0.9	26
5 Sa 0339	6.5	199	20 Su 0409	6.4	195	5 Tu 0429	6.6	200	5 W 0454	6.0	183
0942	0.5	15	1009	0.7	20	Tu 1030	0.6	18	Tu 1052	1.2	37
1552	7.1	215	1621	6.7	204	1642	6.8	208	W 1659	6.0	183
● 2203	0.5	15	2230	0.6	19	2255	0.6	17	2312	1.0	31
6 Su 0410	6.7	203	21 M 0439	6.3	191	6 W 0509	6.4	196	6 Th 0506	6.5	199
1013	0.4	13	1038	0.8	25	Tu 1110	0.8	25	Th 1107	0.8	25
1624	7.1	215	1649	6.4	195	1723	6.5	197	W 1719	6.5	198
2235	0.5	15	2259	0.8	25	2334	0.8	25	2331	0.7	20
7 M 0444	6.6	201	22 Tu 0509	6.1	185	7 Th 0552	6.1	187	7 Sa 0014	0.9	28
1045	0.5	16	1108	1.1	34	F 1152	1.2	38	Su 0638	6.1	186
1657	6.9	210	1717	6.1	185	1806	6.0	183	1240	1.5	46
2308	0.6	19	2329	1.1	33	2343	1.2	37	1851	5.7	173
8 Tu 0518	6.4	195	23 W 0538	5.8	176	8 F 0017	1.2	37	8 Su 0059	1.3	39
1120	0.8	24	1137	1.5	45	Tu 0639	5.7	175	M 0649	5.6	170
1733	6.6	200	1745	5.7	174	Sa 1240	2.1	64	1252	2.0	62
2344	0.9	28	2359	1.4	43	1835	5.2	157	1855	5.3	161
9 W 0556	6.1	185	24 Th 0608	5.4	166	9 Sa 0105	1.7	51	9 M 0149	1.7	52
1157	1.2	37	1208	1.9	58	Sa 0736	5.3	162	W 0729	5.3	163
1811	6.1	185	1814	5.3	161	1341	2.3	69	1438	2.4	72
● 2023	0.5	15	1857	4.9	148	1957	4.9	150	● 2044	4.8	146
10 Th 0022	1.4	42	25 F 0031	1.8	55	10 M 0207	2.1	65	10 Tu 0250	2.1	64
0638	5.6	171	0643	5.1	155	Su 0856	5.0	152	W 0822	5.1	155
1239	1.8	54	1243	2.3	71	1511	2.7	81	1433	2.6	79
1856	5.5	167	1850	4.9	148	● 2126	4.6	139	O 2020	4.5	136
11 F 0108	1.9	58	26 Sa 0110	2.2	68	11 M 0337	2.4	74	11 W 0240	2.5	77
0731	5.1	155	0728	4.7	143	Tu 1041	5.0	151	11 Th 0926	4.6	141
1335	2.4	73	1332	2.8	86	M 1705	2.6	80	Tu 1552	2.9	89
1958	4.9	148	1942	4.4	135	2310	4.6	139	2156	4.3	131
12 Sa 0213	2.4	74	27 Su 0209	2.7	81	12 Tu 0522	2.4	72	11 W 0413	2.4	72
0901	4.7	142	0847	4.4	133	Tu 1204	5.2	160	11 Th 1111	5.1	154
1518	2.9	88	1512	3.1	96	1824	2.3	69	W 1733	2.5	77
● 2151	4.5	136	● 2129	4.1	126	2336	4.5	136	2339	4.5	138
13 Su 0414	2.7	82	28 M 0404	2.9	88	13 W 0028	4.9	148	12 Th 0415	2.6	80
1119	4.8	145	1110	4.4	134	Tu 0635	2.0	62	12 W 1224	5.2	159
1744	2.7	83	1742	3.0	91	1301	5.6	172	Th 1734	2.6	79
2352	4.7	142	2343	4.3	131	1917	1.9	57	2344	4.5	138
14 M 0610	2.4	72	29 Tu 0557	2.7	81	14 Th 0123	5.2	159	12 F 0546	2.4	72
1240	5.3	161	1228	4.9	148	Tu 0726	1.7	51	27 F 0414	2.6	78
1857	2.2	66	1847	2.5	77	Sa 1346	6.0	182	11 F 1104	5.0	152
15 Tu 0101	5.1	156	30 W 0048	4.7	144	1959	1.4	44	11 W 1222	5.3	161
0711	1.8	56	0654	2.2	67	15 F 0207	5.6	170	Sa 1850	2.2	67
1331	5.9	179	1312	5.4	164	Tu 0808	1.3	41	13 W 0233	5.4	165
1943	1.6	49	1927	2.0	61	1424	6.2	190	Sa 0734	1.6	49
● 2023	1.5	46	2002	1.5	46	2035	1.1	34	1405	5.7	173
31 Th 0131	5.2	159	31 Th 0734	1.7	53	1426	1.8	55	2019	1.6	48
1347	5.9	180	1347	5.9	180	1926	1.8	55	2056	1.3	39
2002	1.5	46	2002	1.5	46	1937	1.9	58	31 Th 0849	1.1	35

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Diego Garcia Island, 2013

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0502 0.6 18	16 W 0541 0.5 15	1 F 0546 0.5 15	16 Sa 0000 0.9 27	1 F 0452 5.5 168	16 Sa 0508 5.1 155						
1712 4.9 149	W 1149 4.8 146	F 1158 4.7 143	Sa 0608 4.6 140	1103 -0.1 -3	1120 0.4 12						
2324 0.5 15	1757 4.8 146	1807 4.7 143	1222 1.0 30	1713 5.3 162	1727 4.7 143						
			1829 4.1 125	2317 0.3 9	2328 0.8 24						
2 W 0534 0.7 21	17 Th 0004 0.7 21	2 Sa 0013 0.7 21	17 Su 0029 1.3 40	2 Sa 0525 5.3 162	17 Su 0535 4.7 143						
1748 4.7 143	0614 4.7 143	Sa 0624 4.7 143	0640 4.2 128	1138 0.2 6	1148 0.8 24						
2359 0.7 21	1225 0.9 27	1240 0.8 24	1258 1.4 43	1748 4.9 149	1756 4.3 131						
	1833 4.4 134	1851 4.3 131	1906 3.7 113	2351 0.6 18	2356 1.2 37						
3 Th 0610 0.9 27	18 F 0039 1.1 34	3 Su 0055 1.2 37	18 M 0104 1.8 55	3 Su 0601 4.9 149	18 M 0604 4.3 131						
1220 4.6 140	0650 4.3 131	Su 0709 4.3 131	0720 3.7 113	1218 0.6 34	1221 1.2 37						
1830 4.4 134	1306 1.3 40	1334 1.2 37	1351 1.9 58	1829 4.4 134	1829 3.9 119						
	1914 3.9 119	O 1949 3.8 116	O 2007 3.2 98								
4 F 0039 1.0 30	19 Sa 0118 1.6 49	4 M 0153 1.7 52	19 Tu 0203 2.3 70	4 M 0031 1.1 34	19 Tu 0027 1.6 49						
0653 4.4 134	0734 3.9 119	M 0816 3.9 119	0839 3.3 101	0644 4.4 134	0638 3.9 119						
1309 1.1 34	1358 1.6 49	1458 1.6 49	1602 2.2 67	1308 1.1 34	1302 1.7 52						
1922 4.1 125	O 2011 3.5 107	2128 3.4 104	2311 3.0 91	1922 3.8 116	O 1915 3.4 104						
5 Sa 0131 4.1 125	20 Su 0213 2.0 61	5 Tu 0337 2.0 61	20 W 0518 2.4 73	5 Tu 0124 1.7 52	20 W 0113 2.1 64						
0748 4.1 125	0838 3.5 107	1011 3.7 113	1142 3.3 101	0745 3.9 119	0734 3.4 104						
1415 1.4 43	1525 1.9 58	1708 1.6 49	1830 1.9 58	1427 1.7 52	1426 2.1 64						
O 2035 3.7 113	2156 3.2 98	2344 3.5 107	O 2058 3.4 104	2117 3.0 91							
6 Su 0244 3.9 119	21 M 0401 2.3 70	6 W 0550 1.9 58	21 Th 0059 3.4 104	6 W 0309 2.1 64	21 Th 0338 2.4 73						
0909 3.9 119	1034 3.4 104	1208 3.9 119	0657 2.0 61	0949 3.5 107	1027 3.2 98						
1550 1.5 46	1732 1.9 58	1843 1.2 37	1301 3.7 113	1653 1.8 55	1733 2.1 64						
2219 3.6 110			1924 1.4 43	2334 3.4 104							
7 M 0428 3.9 119	22 Tu 0009 3.3 101	7 Th 0105 4.0 122	22 F 0140 3.9 119	7 Th 0544 2.0 61	22 F 0011 3.3 101						
1051 3.9 119	0608 2.2 67	0708 1.4 43	0740 1.5 46	1204 3.8 116	0617 2.1 64						
1732 1.4 43	1219 3.6 110	1318 4.4 134	1343 4.2 128	1836 1.4 43	1225 3.5 107						
	1853 1.6 49	1941 0.7 21	1959 1.0 30		1847 1.6 49						
8 Tu 0000 1.6 49	23 W 0116 3.7 113	8 F 0156 4.5 137	23 Sa 0210 4.3 131	8 F 0056 3.9 119	23 Sa 0103 3.7 113						
0604 1.6 49	0714 1.8 55	0759 0.9 27	0811 1.1 34	0701 1.4 43	0707 1.6 49						
1217 4.2 128	1318 3.9 119	1407 4.9 149	1415 4.6 140	1312 4.3 131	1313 4.0 122						
1848 1.0 30	1940 1.2 37	2024 0.3 9	2028 0.6 18	1931 0.9 27	1927 1.2 37						
9 W 0109 1.2 37	24 Th 0157 4.0 122	9 Sa 0236 4.9 149	24 Su 0237 4.7 143	9 Sa 0144 4.5 137	24 Su 0136 4.2 128						
0710 1.2 37	0755 1.4 43	0840 0.4 12	0839 0.7 67	0749 0.9 27	0741 1.1 34						
1319 4.6 140	1358 4.3 131	1448 5.3 162	1445 5.0 152	1358 4.8 146	1348 4.5 137						
1943 0.5 15	2016 0.8 24	2102 0.0 0	2055 0.3 9	2011 0.5 15	1958 0.8 24						
10 Th 0200 0.8 24	25 F 0229 4.4 134	10 Su 0311 5.3 162	25 M 0303 5.0 152	10 Su 0220 4.9 149	25 M 0205 4.7 143						
0802 0.8 24	0828 1.1 34	0916 0.1 3	0906 0.3 9	0826 0.4 12	0811 0.6 18						
1409 5.0 152	1431 4.6 140	1524 5.5 168	1513 5.3 162	1435 5.2 158	1419 4.9 149						
2029 0.1 3	2046 0.5 15	● 2135 -0.2 -6	2122 0.1 3	2045 0.2 6	2027 0.4 12						
11 F 0243 0.4 12	26 Sa 0257 4.7 143	11 M 0344 5.4 165	26 Tu 0328 5.3 162	11 M 0252 5.2 158	26 Tu 0233 5.0 152						
0846 0.4 12	0857 0.8 24	0949 -0.1 -3	0933 0.0 0	0859 0.1 3	0840 0.2 6						
1453 5.3 162	Sa 1501 4.9 149	M 1557 5.6 171	Tu 1541 5.5 168	M 1508 5.4 165	Tu 1449 5.3 162						
2110 -0.1 -3	2114 0.3 9	2207 -0.2 -6	O 2149 -0.1 -3	2116 0.0 0	2056 0.1 3						
12 Sa 0322 0.2 6	27 Su 0324 4.9 149	12 Tu 0414 5.5 168	27 W 0355 5.5 168	12 Tu 0322 5.4 165	27 W 0301 5.4 165						
0925 0.2 6	0925 0.5 15	1021 -0.1 -3	1002 -0.1 -3	0929 -0.1 -3	0909 -0.1 -3						
1533 5.5 168	1530 5.1 155	1629 5.5 168	1610 5.5 168	1538 5.5 168	1519 5.5 168						
● 2148 -0.2 -6	O 2141 0.1 3	2236 -0.1 -3	2217 -0.1 -3	● 2144 0.0 0	● 2125 0.0 0						
13 Su 0359 0.1 3	28 M 0350 5.1 155	13 W 0443 5.4 165	28 Th 0423 5.5 168	13 W 0350 5.5 168	28 Th 0330 5.6 171						
1003 0.1 3	0953 0.3 9	1051 0.0 0	1031 -0.2 -6	0958 -0.2 -6	0940 -0.3 -9						
1611 5.5 168	1558 5.3 162	1659 5.3 162	1640 5.5 168	1606 5.5 168	1550 5.6 171						
2224 -0.2 -6	2209 0.1 3	2305 0.2 6	2246 0.0 0	2211 0.0 0	2155 -0.1 -3						
14 M 0434 0.1 3	29 Tu 0417 5.2 158	14 Th 0512 5.2 158	14 Th 0416 5.5 168	14 Th 0400 5.6 171							
1039 0.1 3	1021 0.2 6	1121 0.2 6	1026 -0.1 -3	1012 -0.3 -9							
1647 5.4 165	1627 5.3 162	1728 5.0 152	1633 5.3 162	1622 5.5 168							
2258 0.0 0	2237 0.1 3	2332 0.5 15	2237 0.2 6	2226 0.0 0							
15 Tu 0507 1.1 9	30 W 0444 5.2 158	15 F 0540 5.0 152	15 F 0442 5.3 162	15 F 0433 5.6 171							
1114 0.3 9	1050 0.2 6	1151 0.6 18	1053 0.1 3	1046 -0.2 -6							
1722 5.1 155	1658 5.3 162	1757 4.6 140	1700 5.0 152	1657 5.3 162							
2331 0.3 9	2306 0.2 6		2302 0.5 15	2300 0.3 9							
16 Sa 0507 1.1 9	31 Th 0514 5.2 158			31 Th 0507 5.3 162							
1123 0.2 6	1123 0.2 6			1123 0.1 3							
1731 5.1 155	1731 5.1 155			1734 4.9 149							
2338 0.4 12	2338 0.4 12			2336 0.7 21							

Time meridian 90° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Diego Garcia Island, 2013

Times and Heights of High and Low Waters

April				May				June											
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height								
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm								
1 M	0545	4.9	149	16 Tu	0541	4.4	134	1 W	0017	1.1	34	1 Sa	0222	1.5	46	16 O	0122	1.4	43
1204	0.6	18	Tu	1158	1.1	34	W	0629	4.4	134	Th	0607	4.2	128	Sa	0841	3.8	116	
1816	4.4	134	Tu	1809	4.0	122		1252	1.1	34		1226	1.3	40	Sa	1500	1.6	49	
								1910	4.0	122		1841	3.9	119	O	2124	3.8	116	
2 Tu	0019	1.1	34	17 W	0009	1.5	46	2 Th	0119	1.5	46	17 F	0048	1.6	49	2 Su	0351	1.6	49
1256	1.1	34		0618	4.0	122		0737	3.9	119		0659	3.8	116		1014	3.7	113	
1912	3.9	119		1239	1.5	46		1406	1.5	46		1320	1.6	49	M	1629	1.7	52	
				1855	3.6	110		2033	3.7	113		1942	3.7	113		2249	3.8	116	
3 W	0117	1.7	52	18 Th	0057	1.9	58	3 F	0253	1.8	55	18 Sa	0157	1.8	55	3 M	0517	1.5	46
0737	3.9	119		0712	3.6	110		0919	3.6	110		0814	3.6	110		1138	3.8	116	
1416	1.7	52		1346	1.9	58		1553	1.7	52		1440	1.8	55		1745	1.6	49	
○ O	2047	3.4	104	○ O	2017	3.3	101		2223	3.6	110		2108	3.6	110		2358	4.0	122
4 Th	0305	2.0	61	19 F	0234	2.2	67	4 Sa	0447	1.7	52	19 Su	0333	1.9	58	4 Tu	0621	1.3	40
0941	3.5	107		0905	3.3	101		1110	3.7	113		0957	3.5	107		1239	4.0	122	
1633	1.8	55		1556	2.1	64		1730	1.6	49		1617	1.8	55		1842	1.5	46	
2309	3.5	107		2237	3.3	101		2347	3.9	119		2239	3.7	113					
5 F	0526	1.9	58	20 Sa	0459	2.1	64	5 Su	0606	1.4	43	20 M	0504	1.6	49	5 W	0050	4.2	128
1147	3.8	116		1119	3.5	107		1222	4.1	125		1125	3.8	116		0710	1.0	30	
1813	1.5	46		1742	1.8	55		1833	1.3	40		1736	1.6	49		1326	4.2	128	
											2348	4.0	122		1926	1.3	40		
6 Sa	0031	3.9	119	21 Su	0001	3.7	113	6 M	0043	4.2	128	21 Tu	0609	1.2	37	6 Th	0131	4.5	137
0641	1.4	43		0613	1.6	49		0658	1.0	30		1226	4.2	128		0750	0.8	24	
1254	4.2	128		1226	3.9	119		1312	4.4	134		1832	1.3	40		1404	4.4	134	
1908	1.1	34		1838	1.4	43		1918	1.1	34					2003	1.1	34		
7 Su	0119	4.4	134	22 M	0048	4.1	125	7 Tu	0124	4.5	137	22 W	0041	4.4	134	7 F	0207	4.6	140
0728	0.9	27		0659	1.1	34		0738	0.7	21		0659	0.8	24		0824	0.6	18	
1339	4.7	143		1310	4.4	134		1350	4.6	140		1315	4.5	137		1437	4.6	140	
1948	0.7	21		1918	1.0	30		1954	0.8	24		1919	0.9	27		2036	0.9	27	
8 M	0155	4.8	146	23 Tu	0125	4.6	140	8 W	0159	4.8	146	23 Th	0125	4.8	146	8 Sa	0240	4.8	146
0805	0.5	15		0736	0.6	18		0812	0.4	12		0743	0.3	9		0856	0.4	12	
1415	5.0	152		1347	4.8	146		1424	4.8	146		1358	4.9	149		1508	4.7	143	
2022	0.4	12		1953	0.6	18		2026	0.7	21		2001	0.6	18		2107	0.8	24	
9 Tu	0227	5.1	155	24 W	0159	5.0	152	9 Th	0230	5.0	152	24 F	0207	5.1	155	9 Su	0311	4.9	149
0837	0.2	6		0811	0.2	6		0843	0.3	9		0824	0.0	24		0926	0.4	12	
1446	5.2	158		1422	5.1	155		1454	4.9	149		1438	5.1	155		1538	4.7	143	
2051	0.3	9		2027	0.3	9		2055	0.6	18		2041	0.4	12		2138	0.8	24	
10 W	0256	5.3	162	25 Th	0232	5.3	162	10 F	0259	5.1	155	25 Sa	0247	5.4	165	10 M	0341	4.9	149
0906	0.0	0		0845	-0.1	-3		0912	0.2	6		0904	-0.2	-6		0956	0.4	12	
1515	5.3	162		1457	5.4	165		1523	5.0	152		1518	5.3	162		1608	4.8	146	
● 2119	0.2	6		2101	0.2	6		● 2123	0.6	18		○ 2120	0.3	9		2208	0.8	24	
11 Th	0323	5.3	162	26 F	0306	5.5	168	11 Sa	0327	5.1	155	26 Su	0327	5.5	168	11 Tu	0412	4.9	149
0934	0.0	0		0920	-0.3	-9		0940	0.2	6		0945	-0.2	-6		1027	0.4	12	
1543	5.3	162		1532	5.5	168		1551	4.9	149		1558	5.3	162		1638	4.7	143	
2145	0.3	9		○ 2135	0.1	3		2151	0.6	18		2201	0.3	9		2239	0.8	24	
12 F	0349	5.3	162	27 Sa	0341	5.6	171	12 M	0355	5.0	152	27 W	0408	5.4	165	12 Th	0444	4.8	146
1001	0.0	0		0956	-0.3	-9		1009	0.3	9		1026	-0.1	-3		1058	0.5	15	
1609	5.1	155		1608	5.4	165		1619	4.8	146		1639	5.2	158		1709	4.6	140	
2211	0.4	12		2211	0.2	6		2219	0.7	21		2242	0.4	12		2312	0.9	27	
13 Sa	0415	5.2	158	28 Tu	0417	5.5	168	13 M	0424	4.9	149	13 W	0451	5.2	158	13 Th	0517	4.6	140
1028	0.2	6		1034	-0.2	-6		1038	0.4	12		1108	0.1	3		1132	0.7	21	
1636	5.0	152		1646	5.2	158		1649	4.7	143		1722	4.9	149		1743	4.5	137	
2237	0.6	18		2248	0.4	12		2249	0.9	27		2326	0.6	18		2348	1.1	34	
14 Su	0442	5.0	152	29 M	0456	5.3	162	14 Tu	0454	4.7	143	14 W	0535	4.9	149	14 F	0555	4.4	134
1055	0.4	12		1114	0.1	3		1110	0.7	21		1153	0.5	15		1209	1.0	30	
1704	4.7	143		1726	4.9	149		1721	4.4	134		1808	4.6	140		1822	4.3	131	
2304	0.8	24		2329	0.7	21		2322	1.1	34					1309	1.1	34		
15 M	0510	4.7	143	30 Tu	0539	4.9	149	15 W	0528	4.5	137	15 Th	0014	0.9	27	15 Sa	0030	1.2	37
1125	0.7	21		1158	0.6	18		1144	0.9	27		0625	4.5	137		0639	4.2	128	
1734	4.4	134		1813	4.4	134		1757	4.2	128		1244	0.9	27		1253	1.2	37	
2334	1.1	34									1900	4.3	131		1908	4.1	125		
											31 F	0111	1.3	40					
											0724	4.1	125						
											1344	1.3	40						
											2004	4.0	122						

Time meridian 90° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Diego Garcia Island, 2013

Times and Heights of High and Low Waters

July				August				September								
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height					
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm					
1 M	0247	1.6	49	16 Tu	0142	1.2	37	1 Th	0450	1.9	58	16 Su	0041	3.7	113	
0905	3.6	110	0757	3.9	119	1128	3.3	101	0408	1.7	52	0038	4.2	128		
1514	1.8	55	1404	1.6	49	1729	2.2	67	1045	3.5	107	0658	1.0	30		
2136	3.7	113	● 2024	4.0	122	2346	3.5	107	1653	2.0	61	1320	3.8	116		
									2318	3.8	116	1921	1.6	49		
2 Tu	0413	1.7	52	17 W	0258	1.5	46	2 F	0626	1.7	52	2 M	0126	4.1	125	
1038	3.5	107	0921	3.6	110	1251	3.6	110	0559	1.4	43	0741	1.1	34		
1644	2.0	61	1528	1.8	55	1850	1.9	58	1225	3.8	116	1352	4.3	131		
2303	3.7	113	2153	3.9	119				1829	1.6	49	1954	1.1	34		
3 W	0540	1.6	49	18 Th	0437	1.5	46	3 Sa	0056	3.8	116	18 Su	0042	4.3	131	
1204	3.6	110	1106	3.7	113	0721	1.3	40	0708	0.9	27	0811	0.7	21		
1805	1.9	58	1711	1.8	55	1339	3.9	119	1325	4.3	131	1420	4.6	140		
			2330	4.0	122	1938	1.5	46	1928	1.0	30	2023	0.7	21		
4 Th	0016	3.9	119	19 F	0606	1.2	37	4 Su	0142	4.2	128	4 M	0138	4.8	146	
0645	1.4	43	1230	4.0	122	0800	1.0	30	0756	0.5	15	0838	0.4	12		
1305	3.8	116	1833	1.5	46	1413	4.3	131	1409	4.8	146	1445	4.9	149		
1904	1.6	49				2013	1.2	37	2013	0.5	15	2049	0.4	12		
5 F	0110	4.1	125	20 Sa	0045	4.4	134	5 M	0217	4.5	137	20 Tu	0222	5.2	158	
0733	1.1	34	0712	0.8	24	0832	0.7	21	0837	0.1	3	0904	0.2	6		
1350	4.1	125	1331	4.4	134	1443	4.6	140	1447	5.2	158	1510	5.2	158		
1948	1.4	43	1933	1.0	30	2044	0.9	27	2052	0.1	3	● 2116	0.1	3		
6 Sa	0152	4.4	134	21 Su	0142	4.8	146	6 Tu	0248	4.8	146	21 W	0301	5.5	168	
0811	0.8	24	0803	0.4	12	0901	0.4	12	0913	-0.1	-3	0930	0.1	3		
1426	4.4	134	1418	4.8	146	1510	4.8	146	1522	5.4	165	1536	5.3	162		
2024	1.1	34	2021	0.6	18	2112	0.6	18	○ 2128	-0.1	-3	2143	0.0	0		
7 Su	0228	4.6	140	22 M	0230	5.2	158	7 W	0317	5.0	152	22 Th	0337	5.6	171	
0845	0.6	18	0848	0.1	3	0928	0.3	9	0947	-0.2	-6	0957	0.1	3		
1457	4.6	140	1500	5.1	155	1536	5.0	152	1554	5.5	168	1602	5.4	165		
2057	0.9	27	2104	0.3	9	● 2139	0.4	12	2202	-0.2	-6	2211	-0.1	-3		
8 M	0301	4.8	146	23 Tu	0312	5.4	165	8 Th	0345	5.2	158	23 Su	0411	5.6	171	
0916	0.5	15	0928	-0.1	-3	0955	0.2	6	1019	-0.1	-3	1025	0.1	3		
1527	4.7	143	1539	5.3	162	1602	5.1	155	1626	5.5	168	1631	5.4	165		
● 2127	0.8	24	○ 2144	0.1	3	2207	0.3	9	2234	-0.1	-3	2241	0.0	0		
9 Tu	0331	4.9	149	24 W	0352	5.5	168	9 F	0413	5.2	158	24 Sa	0443	5.4	165	
0945	0.4	12	1006	-0.2	-6	1022	0.2	6	1049	0.1	3	1054	0.3	9		
1555	4.8	146	1616	5.4	165	1629	5.2	158	1656	5.3	162	1701	5.2	158		
2157	0.7	21	2222	0.0	0	2235	0.2	6	2306	0.1	3	2315	0.2	6		
10 W	0401	5.0	152	25 Th	0431	5.5	168	10 Sa	0442	5.2	158	25 M	0514	5.1	155	
1014	0.3	9	1042	-0.1	-3	1049	0.3	9	1119	0.4	12	1127	0.6	18		
1624	4.9	149	1652	5.3	162	1657	5.1	155	1726	5.0	152	1736	4.9	149		
2226	0.6	18	2259	0.1	3	2305	0.3	9	2338	0.5	15	2352	0.5	15		
11 Th	0431	5.0	152	26 F	0508	5.3	162	11 Su	0513	5.0	152	11 W	0524	4.9	149	
1043	0.4	12	1118	0.2	6	1119	0.4	12	1119	0.4	12	1205	1.0	30		
1652	4.9	149	1727	5.1	155	1727	5.0	152	1756	4.6	140	1816	4.5	137		
2256	0.6	18	2336	0.3	9	2339	0.4	12	2338	0.5	15	1826	3.9	119		
12 F	0502	4.9	149	27 Sa	0544	5.0	152	12 M	0547	4.8	146	12 Tu	0011	0.9	27	
1113	0.5	15	1152	0.5	15	1152	0.7	21	0618	4.2	128	0652	4.0	122		
1723	4.8	146	1802	4.8	146	1802	4.8	146	1219	1.3	40	1254	1.5	46		
2329	0.7	21							1829	4.2	128	● 1912	4.0	122		
13 Sa	0536	4.8	146	28 Su	0013	0.7	21	28 W	0048	1.3	40	13 F	0147	1.5	46	
1146	0.7	21	0622	4.5	137	0627	4.4	134	0657	3.7	113	0811	3.5	107		
1756	4.7	143	1228	0.9	27	1231	1.1	34	1256	1.8	55	1420	2.0	61		
			1839	4.5	137	1844	4.5	137	● 1911	3.8	116	2054	3.6	110		
14 Su	0005	0.8	24	29 M	0054	1.1	34	29 W	0105	1.1	34	14 Th	0354	1.8	55	
0614	4.5	137	0703	4.1	125	0718	4.0	122	0758	3.3	101	1037	3.4	104		
1222	0.9	27	1307	1.4	43	1322	1.5	46	1357	2.2	67	1651	2.0	61		
1834	4.5	137	● 1921	4.1	125	● 1940	4.1	125	2029	3.3	101	2317	3.7	113		
15 M	0048	1.0	30	30 Tu	0143	1.5	46	15 Th	0214	1.5	46	15 Su	0339	2.1	64	
0659	4.2	128	0755	3.6	110	0837	3.6	110	1037	3.1	94	1217	3.8	116		
1306	1.2	37	1357	1.8	55	1443	1.9	58	1648	2.4	73	1825	1.5	46		
1921	4.2	128	2018	3.7	113	2114	3.7	113	2315	3.3	101					
			31 W	0256	1.8	55				31 Sa	0604	1.9	58			
			0920	3.3	101				1234	3.4	104					
			1523	2.2	67				1835	2.0	61					
			2153	3.5	107											

Time meridian 90° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Diego Garcia Island, 2013

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 Tu 0057	4.0	122	16 W 0112	4.6	140	1 F 0131	4.7	143	16 Su 0207	4.8	146
0709	1.2	37	0722	0.8	24	0736	0.8	24	0809	0.7	21
1319	4.2	128	1329	4.8	146	1341	4.9	149	1414	5.0	152
1924	1.1	34	1940	0.5	15	1953	0.3	9	2028	0.2	6
2 W 0131	4.4	134	17 Th 0151	5.0	152	2 Sa 0205	5.0	152	17 M 0221	5.0	152
0740	0.9	27	0758	0.5	15	0808	0.5	15	0822	0.5	15
1347	4.6	140	1404	5.1	155	1413	5.2	158	1428	5.3	162
1954	0.7	21	2015	0.1	3	2026	0.0	0	2046	-0.1	-3
3 Th 0202	4.8	146	18 F 0225	5.2	158	3 Su 0238	5.2	158	3 Tu 0259	5.2	158
0809	0.5	15	0830	0.3	9	0840	0.3	9	0909	0.5	15
1414	5.0	152	1435	5.3	162	1445	5.4	165	1513	5.2	158
2022	0.3	9	2046	-0.1	-3	● 2059	-0.2	-6	2127	0.1	3
4 F 0231	5.2	158	19 Sa 0257	5.3	162	4 M 0311	5.4	165	19 Tu 0338	5.0	152
0836	0.3	9	0900	0.2	6	0913	0.2	6	0938	0.6	18
1441	5.2	158	1504	5.4	165	1519	5.5	168	1542	5.1	155
2050	0.0	0	○ 2116	-0.1	-3	2133	-0.3	-9	2156	0.2	6
5 Sa 0259	5.4	165	20 Su 0326	5.3	162	5 Tu 0345	5.4	165	20 W 0406	4.9	149
0904	0.1	3	0928	0.2	6	0947	0.2	6	1006	0.7	21
1509	5.4	165	1532	5.4	165	1554	5.5	168	1611	5.0	152
● 2119	-0.2	-6	2144	-0.1	-3	2210	-0.2	-6	2225	0.4	12
6 Su 0329	5.5	168	21 M 0354	5.2	158	6 W 0422	5.2	158	21 Th 0435	4.7	143
0933	0.1	3	0955	0.4	12	1024	0.3	9	1036	0.8	24
1538	5.5	168	1559	5.3	162	1631	5.3	162	1640	4.8	146
2150	-0.3	-9	2212	0.1	3	2248	0.0	0	2255	0.6	18
7 M 0400	5.4	165	22 Tu 0421	5.0	152	7 Th 0500	5.0	152	22 F 0539	4.8	146
1003	0.1	3	1022	0.5	15	1103	0.6	18	1145	0.7	21
1608	5.5	168	1627	5.1	155	1712	5.0	152	1755	4.8	146
2222	-0.2	-6	2240	0.3	9	2330	0.4	12	2326	0.3	9
8 Tu 0433	5.3	162	23 W 0449	4.7	143	8 F 0544	4.6	140	8 Sa 0540	4.3	131
1035	0.3	9	1049	0.8	24	1148	1.0	30	1143	1.3	40
1642	5.3	162	1655	4.8	146	1759	4.6	140	1749	4.2	128
2257	0.1	3	2310	0.7	21	● 1759	4.6	140	1835	3.9	119
9 W 0508	4.9	149	24 Th 0519	4.4	134	9 Sa 0020	0.9	27	24 Su 0006	1.2	37
1110	0.6	18	1119	1.1	34	0636	4.2	128	0620	4.0	122
1719	5.0	152	1726	4.4	134	1244	1.4	43	1226	1.6	49
2337	0.5	15	2343	1.1	34	1859	4.1	125	1835	3.9	119
10 Th 0549	4.5	137	25 F 0554	4.0	122	10 Su 0125	1.4	43	10 M 0553	1.5	46
1151	1.0	30	1154	1.5	46	0748	3.8	116	0713	3.7	113
1802	4.5	137	1802	4.0	122	1405	1.7	52	1326	1.8	55
● 2029	3.7	113	● 2029	3.7	113	● 2029	3.7	113	1940	3.6	110
11 F 0025	1.0	30	26 Sa 0023	1.5	46	11 M 0302	1.7	52	26 Tu 0203	1.8	55
0640	4.0	122	0639	3.6	110	0933	3.6	110	0830	3.5	107
1244	1.5	46	1242	1.9	58	1600	1.8	55	1457	1.9	58
1901	4.0	122	1854	3.6	110	2226	3.7	113	● 2120	3.4	104
12 Sa 0135	1.5	46	27 Su 0126	1.9	58	12 Tu 0450	1.7	52	11 W 0343	1.8	55
0801	3.5	107	0756	3.3	101	1111	3.8	116	1007	3.7	113
1416	1.9	58	1414	2.2	67	1733	1.5	46	1640	1.8	55
● 2047	3.6	110	● 2042	3.2	98	2352	4.0	122	2302	3.6	110
13 Su 0338	1.8	55	28 M 0331	2.1	64	13 W 0604	1.4	43	27 Th 0342	1.9	58
1017	3.5	107	1016	3.3	101	1216	4.2	128	1009	3.6	110
1638	1.9	58	1642	2.1	64	1833	1.0	30	1640	1.8	55
2304	3.7	113	2302	3.4	104	● 1833	1.0	30	● 1856	1.1	34
14 M 0533	1.6	49	29 Tu 0525	1.9	58	14 Th 0049	4.3	131	14 F 0010	3.9	119
1154	3.9	119	1144	3.6	110	0655	1.1	34	0615	1.5	46
1807	1.4	43	1759	1.7	52	1302	4.5	137	1224	4.2	128
● 2047	3.6	110	● 2042	3.2	98	1918	0.7	21	1844	1.0	30
15 Tu 0022	4.2	128	30 W 0012	3.8	116	15 F 0132	4.6	140	15 Sa 0100	4.3	131
0637	1.1	34	0622	1.5	46	0735	0.9	27	0702	1.1	34
1249	4.3	131	1232	4.0	122	1340	4.8	146	1309	4.6	140
1900	0.9	27	1844	1.2	37	1955	0.4	12	1927	0.5	15
● 31 Th 0055	4.2	128	● 31 Th 0702	1.1	34	● 31 Th 0702	1.1	34	● 31 Th 0702	1.1	34
● 31 Th 0702	1.1	34	● 31 Th 1308	4.5	137	● 31 Th 1308	4.5	137	● 31 Th 1308	4.5	137
● 31 Th 1920	0.7	21	● 31 Th 1920	0.7	21	● 31 Th 1920	0.7	21	● 31 Th 1920	0.7	21

Time meridian 90° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

TABLE 2. - TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions for the reference stations in table 1. The following pages list the places called "subordinate stations" for which such predictions can be made, and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference station which is listed in table 2 in boldface type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index to stations at the end of this volume will assist in locating a particular station.

Time differences.—To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Differences, Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added; a minus (-) sign indicates that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date, apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an a.m. tide it may be necessary to use the preceding day's p.m. tide at the reference station (or to obtain a p.m. tide it may be necessary to use the following day's a.m. tide). For example, if a high water at a reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hour earlier, the high water at the subordinate station will occur at 2100 on July 16. For the second case, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. The necessary allowance for change in date when the international date line is crossed is included in the time difference. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Summer or daylight-saving time is not used in the tide tables.

Height differences.—The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicates that the difference should be added to the height at the reference station, and a minus (-) sign indicates that it should be subtracted. All height differences, ranges, and levels in Table 2 are in feet but may be converted to centimeters by the use of table 6.

Ratio. — For some stations, use of predicted height difference would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given (*). Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown. For some subordinate stations there is given in parentheses a ratio as well as a correction in feet. In those instances, each predicted high and low water at the reference station should first be multiplied by the ratio and then the correction in feet is added to or subtracted from each product as indicated.

As an example, at Porto Grande, the values in the time and height difference columns in Table 2 are given as -1 02, -0 13, and (*0.73 + 0.7) as referred to the reference station at Hong Kong. If we assume that the tide predictions in column (1) below are those of Hong Kong on a particular day,

TABLE 2. - TIDAL DIFFERENCES AND OTHER CONSTANTS

application of the time and height corrections in columns (2) and (3) would result in the tide predictions for Chino Bay in column (4).

(1)	(2)	(3)	(4)		
Time h.m.	Height ft.	Time Corrections	Height Corrections	Time h.m.	Height centimeters
0230	3.6	-0 ^h 13 ^m	x0.73 + 0.7	0217	3.3
0926	7.2	-1 ^h 02 ^m	x0.73 + 0.7	0824	183
1645	1.0	-0 ^h 13 ^m	x0.73 + 0.7	1632	43
2318	4.3	-1 ^h 02 ^m	x0.73 + 0.7	2216	116

Range. —The *mean range* is the difference in height between mean high water (MHW) and mean low water (MLW). The *spring range* is the average semidiurnal range occurring semimonthly as a result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The *diurnal range* is the difference in height between mean higher high water and mean lower low water. Mean higher high water is the average of the higher of the two high water and mean lower low water is the average of the lower of the two low waters. the *tropic range*, which is given for some stations, is the increased diurnal range occurring semimonthly when the effects of the Moon's maximum-declination is greatest.

Caution. —For stations where the tide is chiefly diurnal the time difference and the height differences and ratios are intended primarily for predicting the higher high and lower low waters. When the lower high water and the higher low water at the reference station are nearly the same height the corresponding tides often cannot be obtained satisfactorily by means of the tidal differences.

Datum. — The datum of the predictions obtained through the height differences or ratios is also the datum of the largest scale chart for the locality. To obtain the depth at the time of high or low water, the predicted height should be added to the depth on the chart unless such height is negative (-), when it should be subtracted. To find the height at times between high and low water see table 3. On some foreign charts the depths are given in meters and in such cases the heights of the tide can be converted to centimeters by the use of table 6. Chart datums for the Hawaiian and Philippines Islands is *mean lower low water*. For the rest of the area covered by these tables the datums generally used are approximately *mean low water springs*, *Indian spring low water*, or the *lowest possible low water*.

Mean Tide Level (Half-Tide Level). The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart datum.

NOTE¹.— Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

NOTE².— *Place Names.* - For the convenience of the mariner, places names are chosen to correspond to the place names on National Imagery and Mapping Agency nautical charts. The place names are also reviewed by the United States Board on Geographic Names.

NOTE³.— Subordinate locations referencing the Philippines of Jolo, San Fernando Harbor, and Legaspi Port were included only for future considerations, See the IMPORTANT NOTICE on page VI.

This edition includes an extensive revision of the tidal information for locations along the coast of mainland China. All such place names now use the new spelling convention. Where applicable, place names from the 1994 edition appear in hard brackets [] after the new spelling.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	SIBERIA, Arctic Ocean <1> Time meridian, 120° E			North	East	h m	h m	ft	ft	ft	
on Pusan, p.48											
1	Domashnii I., Severnaya Zemlya	79° 30'	91° 08'	+6 38	+6 48	*0.26	*0.29	0.7	1.0	0.6	
3	Zarya Road	76° 08'	95° 08'	+5 30	+5 43	(*0.46+0.3)		1.3	1.7	1.3	
5	Bonevi Island	76° 10'	95° 10'	+4 01	+4 14	(*0.46+0.1)		1.3	1.8	1.1	
7	Dzhekmman Island	76° 25'	95° 06'	+4 25	+4 55	(*0.46+0.3)		1.3	1.8	1.3	
9	Russki Island	77° 11'	96° 24'	+5 16	+5 32	(*0.39+0.3)		1.1	1.5	1.1	
	Time meridian, 120° E										
11	Taimyra River mouth	76° 15'	98° 52'	+5 47	+6 11	(*0.54+0.4)		1.5	2.0	1.5	
13	Cape Olovyanyy, Shokalskogo Strait	78° 56'	99° 56'	+4 24	+4 34	(*0.36+0.1)		1.0	1.4	0.9	
15	Gansena (Hansen) Island	77° 31'	102° 30'	+5 59	+6 09	*0.17 *0.14		0.5	0.6	0.4	
17	Cape Chelyuskina	77° 43'	104° 17'	+3 28	+3 59	*0.34 *0.34		0.9	1.2	0.8	
19	Samuila I., Komsomolskoi Pravdy Island	77° 25'	106° 54'	+2 48	+3 23	*0.40 *0.40		1.0	1.4	0.9	
21	Starokadomskogo Island	78° 14'	105° 58'	+3 32	+3 51	(*0.61+0.2)		1.7	2.1	1.5	
23	Pronchishchevoi Bay	75° 34'	113° 22'	-6 37	-6 36	+1.4 +0.9		3.3	4.4	3.3	
	Time meridian, 135° E										
25	Preobrazheniya Island	74° 40'	112° 45'	-3 41	-3 28	+0.7 +0.4		3.1	4.4	2.7	
27	Mali (Small) Begichev Island	74° 18'	111° 04'	-2 32	-2 19	+1.4 +0.6		3.6	5.1	3.1	
29	Nordvik Bay <2>	74° 01'	111° 40'	-2 54	-2 48	(*2.14+0.7)		6.0	8.5	5.2	
	Time meridian, 120° E										
31	Khara-Tumus Peninsula	74° 01'	110° 06'	-3 27	-2 36	+0.4 +0.4		2.8	3.6	2.5	
33	Kozhevnikova Bay	73° 26'	109° 42'	+1 15	+1 36	(*0.68+0.5)		1.9	2.6	1.9	
35	Syndaska Bay entrance	73° 14'	108° 09'	+1 40	+1 56	+0.8 +0.7		2.9	3.9	2.9	
37	Cape Bolshaya Karga	73° 11'	106° 22'	+2 44	+3 53	(*0.82+0.6)		2.3	3.1	2.3	
39	Kresty Peninsula, Khatanga River	72° 45'	105° 15'	+6 20	+8 08	*0.60 *0.60		1.6	2.1	1.3	
	Time meridian, 135° E										
41	Cape Khorgo, Anabarski Bay	73° 31'	113° 24'	-2 04	-1 42	(*1.50+0.4)		4.2	6.0	3.6	
43	Bykovskoe, Lena River mouth	71° 59'	129° 09'	---	---	---		0.5	0.7	0.4	
45	Bulunkan Bay, Tiksi Bay	71° 40'	128° 58'	+1 58	+2 08	*0.34 *0.34		0.9	1.2	0.8	
	Time meridian, 150° E										
47	Omoloi River entrance	71° 14'	132° 10'	+4 09	+4 33	(*0.39+0.2)		1.1	1.4	1.0	
49	Yana River mouth	71° 31'	136° 25'	---	---	---		Negligible			
51	Kotel'nyy Island Polar Station	75° 58'	137° 59'	+4 47	+5 03	(*0.50+0.4)		1.4	1.9	1.4	
53	Nerpalakh Lagoon, Kotel'nyy Island	75° 22'	137° 10'	+5 27	+5 25	*0.20 *0.20		0.5	0.8	0.5	
55	Cape Medvezhi, Kotel'nyy Island	74° 38'	139° 04'	+1 07	+1 23	*0.26 *0.26		0.6	0.8	0.6	
	Bolshoi Lyakhovski Island										
57	Kigylakh Peninsula	73° 26'	139° 55'	---	---	---		0.4	0.5	0.3	
59	Cape Shalaurova	73° 12'	143° 34'	-5 24	-5 10	*0.34 *0.34		0.9	1.1	0.8	
	Time meridian, 180° E										
61	Chetyrekhstolbovoi I., Medvezhi Island	70° 38'	162° 30'	---	---	---		Negligible			
63	Kolyma River mouth	69° 38'	162° 00'	---	---	---		Negligible			
65	Ayon Island	69° 53'	167° 52'	---	---	---		Negligible			
67	Cape Shelagiski	70° 05'	170° 34'	---	---	---		Negligible			
	Time meridian, 195° E										
69	Cape Billingsa	69° 53'	176° 06'	+5 37	+5 50	*0.20 *0.20		0.5	0.8	0.5	
71	Wrangell Island	70° 58'	181° 27'	+3 53	+4 06	*0.57 *0.71		1.5	2.1	1.3	
73	Cape Shmidt	68° 55'	180° 31'	+5 42	+5 58	(*0.61+0.4)		1.7	2.2	1.7	
75	Kolychino Polar Station	67° 04'	186° 13'	---	---	---		0.3	0.4	0.3	
77	Cape Serdtse-Kamen	66° 57'	188° 22'	---	---	---		0.3	0.4	0.2	
79	Cape Uelen	66° 10'	190° 10'	---	---	---		0.4	0.5	0.4	
	Bering Sea										
81	Alera Bay, Penkegnei Bay	64° 49'	187° 05'	-0 54	-0 50	*0.26 *0.29		0.7	0.9	0.6	
83	Plover Bay, Provideniya Bay	64° 22'	186° 38'	-2 03	-1 46	(*0.82+0.2)		2.3	2.9	1.9	
85	Emma Bay, Provideniya Bay	64° 25'	186° 47'	-2 16	-2 06	(*0.82+0.3)		2.3	3.1	2.0	
87	Cape Razdeleny, Kresta Bay	66° 11'	181° 00'	+0 55	+1 09	+5.8 +1.9		6.7	8.4	6.0	
89	Engaugin Bay, Kresta Bay	66° 09'	180° 26'	+0 52	+0 56	+5.4 +1.4		6.8	8.5	5.5	
	Anadyr Bay										
91	Russkaya Koshka Spit	64° 35'	178° 31'	+2 48	+2 52	+2.6 +0.7		4.7	6.0	3.8	
93	Salomatova Spit	64° 38'	178° 01'	+3 19	+3 27	+3.1 +0.9		5.0	6.3	4.1	
95	Melkaya Bay	64° 47'	177° 34'	+4 15	+4 25	+1.7 +0.6		3.9	5.3	3.3	
97	Anadyr River entrance	64° 44'	177° 26'	+3 37	+3 47	+1.0 +0.3		3.5	4.4	2.8	
99	Strelka Spit, Anadyr Gulf	64° 25'	178° 15'	+4 22	+5 11	+0.1 +0.2		2.7	3.6	2.3	
101	Ugolnaya Bay	63° 04'	179° 23'	+4 04	+4 14	*0.49 *0.57		1.3	1.7	1.1	
	Time meridian, 180° E										
103	Anastasii Bay †	61° 25'	172° 56'	-1 00	-0 29	+1.0 +0.9		4.6	5.4	4.8	
105	Imatra Bay, Glubokaya Bay †	61° 00'	172° 07'	-0 55	-0 37	(*0.96+0.8)		4.3	5.0	4.4	
107	Cape Olyutorski †	59° 55'	170° 20'	-0 29	-0 23	(*0.84+0.8)		3.8	4.5	4.0	
	Kamchatka										
109	Lavora Harbor †	60° 23'	167° 04'	-1 14	-0 35	(*0.80+1.2)		3.6	4.2	4.2	
111	Sibir Harbor †	60° 27'	166° 14'	-0 39	-0 33	+1.3 +1.0		4.8	5.6	5.0	
113	Cape Kryugera †	56° 01'	161° 57'	-0 21	-0 18	(*0.87+1.0)		3.9	4.7	4.3	
115	Nikolski, Bering Island †	55° 12'	165° 59'	-1 17	-0 10	(*0.82+1.2)		3.7	4.4	4.3	
117	Morzhovaya Bay †	53° 14'	159° 57'	+0 01	+0 32	(*0.91+0.9)		4.1	5.1	4.4	
119	Petropavlovsk †	53° 01'	158° 39'	+1 23	+0 55	(*0.93+1.0)		4.2	4.9	4.5	
121	Tarya Bay †	52° 55'	158° 30'	+1 33	+1 05	+0.9 +0.9		4.4	5.1	4.7	
123	Akhoment Bay †	52° 26'	158° 28'	+1 08	+0 40	(*0.89+0.9)		4.0	4.7	4.3	
125	Vestnik Bay †	51° 33'	157° 42'	+1 43	+1 15	(*0.84+0.9)		3.8	4.4	4.1	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
	SIBERIA, Sea of Okhotsk Time meridian, 180° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Paramushir Island, p.8											
127	Kamchatka—cont. Golygina River entrance †	51° 53'	156° 31'	+1 28	+1 34	+1.3	+1.0	4.8	5.6	5.0	
129	Ust Bolsheretsk, Bolshaya River †	52° 46'	156° 14'	+4 35	+4 21	+1.6	+1.1	5.0	5.8	5.2	
131	Kompakova River entrance †	54° 40'	155° 42'	+3 43	+3 49	(*2.98+2.7)		13.4	15.7	14.0	
133	Oblukovina River entrance †	55° 19'	155° 34'	+4 53	+4 59	(*2.36+1.9)		10.6	12.3	10.9	
on Musi River, p.152											
135	Cape Astronomicheski †	62° 23'	164° 28'	-10 42	-9 27	*3.14	*2.72	24.1	30.1	17.8	
137	Penjinski Bay Matugin Point †	61° 41'	160° 15'	+8 10	+9 18	+13.4	+2.7	18.0	22.2	13.5	
139	Gizhiga River entrance †	61° 58'	160° 24'	+8 08	+10 26	+12.8	+2.1	18.0	22.2	14.0	
141	Nayakhanskaya Bay †	61° 54'	159° 00'	+8 15	+10 04	+11.6	+1.4	17.5	21.7	13.1	
143	Time meridian, 165° E Udacha Bay †	59° 13'	155° 10'	+9 23	+7 11	+3.2	+0.8	9.7	13.5	8.2	
on Moji, p.36											
145	Ola Anchorage, Tauiskaya Bay	59° 34'	151° 16'	+0 12	+0 24	*1.50	*1.50	6.9	8.9	7.4	
147	Nagaeva Bay, Tauiskaya Bay	59° 31'	150° 41'	-0 09	-0 18	*1.89	*1.89	8.7	11.3	9.4	
149	Time meridian, 150° E Okhotsk	59° 21'	143° 10'	+3 02	+2 55	*1.50	*1.50	6.9	8.9	7.4	
on Brisbane Bar, p.284											
151	Ayan Bay	56° 27'	138° 09'	+3 33	+3 25	+2.2	+1.3	5.9	7.9	5.7	
153	Udskaya Bay	54° 42'	135° 18'	+7 08	+6 59	+2.7	+1.0	6.7	9.5	5.8	
155	Levyazhyba Bay, Feklistov Island	54° 54'	136° 46'	+6 37	+6 29	(*2.50+0.7)		12.5	16.4	10.5	
157	Abrek Bay, Little Shantar Island	54° 24'	137° 37'	+6 50	+6 42	(*2.12+0.2)		10.6	13.5	8.5	
on Jolo, p.172											
159	Baldukov Island †	53° 18'	141° 28'	-1 41	-1 40	+2.7	+1.2	4.3	5.4	2.8	
Time meridian, 165° E											
Sakhalin Island											
161	Cape Tamlevo †	53° 21'	141° 46'	-0 24	-0 25	+2.3	+1.1	4.0	5.0	2.6	
163	Baikal Bay †	53° 32'	142° 14'	+0 12	+0 10	+2.6	+1.1	4.3	5.3	2.7	
165	Kuegda Bay †	54° 19'	142° 36'	+1 06	+1 05	(*0.61+0.5)		1.7	2.2	1.2	
on Yamato Wan, p.12											
167	Urkt Bay entrance †	53° 34'	143° 04'	-1 12	+3 44	+0.1	0.0	3.2	4.0	2.4	
169	Kyakrvo Anchorage †	52° 52'	143° 19'	-0 12	+4 46	+0.4	+0.3	3.2	4.4	2.7	
171	Chaivo Bay †	52° 23'	143° 12'	+3 11	+6 07	+0.8	+0.5	3.4	4.8	3.1	
173	Niski Bay †	51° 58'	143° 11'	+3 07	+8 01	+1.4	+0.2	4.3	5.3	3.2	
175	Luniski Bay entrance †	51° 18'	143° 30'	+5 33	+6 59	*0.42	*0.42	1.3	1.8	1.1	
KARAFUTO, Sakhalin Island											
177	Mys Popova †	49° 03'	144° 24'	-0 25	-0 25	(*0.50+0.2)		1.5	2.0	1.4	
179	Tyuleniy †	48° 30'	144° 38'	-0 55	-0 58	(*0.87+0.1)		2.6	3.1	2.2	
181	Mys Obshirnyy †	48° 42'	144° 39'	-0 45	-1 04	*0.87	*0.87	2.6	3.1	2.1	
183	Noto †	49° 07'	144° 15'	-0 36	-1 02	*0.97	*0.97	2.9	3.3	2.3	
185	Ozero Nevskoye †	49° 19'	143° 19'	-0 14	-0 49	*0.93	*0.93	2.8	3.2	2.2	
187	Shikuka †	49° 14'	143° 08'	-0 10	-0 49	*0.97	*0.97	2.9	3.4	2.3	
189	Higashi Chutoru †	48° 38'	142° 48'	-0 03	-0 32	(*0.93+0.1)		2.8	3.3	2.3	
191	Buruny †	48° 06'	142° 34'	-0 09	-0 31	*0.87	*0.87	2.6	3.0	2.1	
193	Sakayehama †	47° 25'	142° 49'	-0 13	-0 30	(*0.90-0.1)		2.7	3.1	2.1	
195	Noho Misaki †	47° 15'	143° 01'	-0 25	-0 25	(*0.83+0.1)		2.5	3.1	2.1	
197	Onto Numa †	46° 52'	143° 08'	+1 51	+1 51	(*0.47+0.1)		1.4	1.8	1.2	
199	Tomunai Hakuchi †	46° 51'	143° 10'	-0 24	-0 22	(*0.83+0.1)		2.5	3.1	2.1	
201	Airo Wan †	46° 49'	143° 25'	-0 23	-0 17	*0.87	*0.87	2.6	3.2	2.1	
203	Mys Menaputsy †	46° 23'	143° 35'	-0 56	-0 39	(*0.93+0.1)		2.8	3.4	2.3	
205	Tobuchi Ko †	46° 30'	143° 20'	+0 32	+0 54	(*0.83+0.1)		2.5	3.1	2.1	
207	OTOMARI †	46° 39'	142° 45'	Daily predictions				3.0	3.7	2.4	
209	Nishi Notoro Misaki, East coast †	45° 54'	142° 05'	+0 30	+1 15	(*0.93+0.2)		2.8	3.6	2.4	
211	Nishi Notoro Misaki, West coast †	45° 54'	142° 05'	+1 18	+2 04	(*0.60+0.1)		1.8	2.3	1.5	
213	Soni Misaki †	46° 03'	141° 55'	+2 53	---	(*0.40+0.1)		1.2	1.6	1.1	
215	Kaiba To (Todo Shima) †	46° 15'	141° 16'	---	---	---	---	0.5	--	0.4	
217	Tokombo Road †	46° 40'	141° 51'	---	---	---	---	0.8	--	0.7	
219	Port Kholmsk †	41° 03'	142° 02'	---	---	---	---	0.7	--	0.6	
221	Nodasan (Noda) †	47° 26'	141° 58'	---	---	---	---	0.7	--	0.6	
on Pusan, p.48											
223	Yatsu Misaki	48° 08'	142° 10'	-11 47	-11 39	(*0.29+0.2)		0.8	1.0	0.8	
225	Ushiro Wan	48° 54'	141° 58'	-10 55	-10 46	(*0.57+0.2)		1.6	2.1	1.4	
227	Toro Numa	49° 10'	142° 04'	-10 40	-10 32	(*0.71+0.1)		2.0	2.6	1.6	
229	Lesogorsk	49° 27'	142° 07'	-10 13	-10 05	(*0.71+0.1)		2.0	2.6	1.6	
231	Mys Polevogo	49° 46'	142° 09'	-10 22	-10 13	+0.1	+0.1	2.8	3.7	2.2	
233	Anbetsu	49° 59'	142° 10'	-10 20	-10 12	+0.5	+0.1	3.2	4.1	2.4	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	SIBERIA, Sakhalin Island Time meridian, 165° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Pusan, p.48											
235	Gulf of Tartary Pilevo Bay	50° 02'	142° 09'	-10 03	-9 59	+0.5	+0.2	3.1	3.9	2.5	
237	Alexandrovski	50° 54'	142° 08'	-10 03	-9 57	+2.3	+0.5	4.6	6.3	3.5	
239	Viyakhtu Bay	51° 35'	141° 54'	-9 52	-9 48	+4.1	+1.0	5.9	7.4	4.7	
241	Cape Tik	51° 44'	141° 41'	-9 48	-9 38	+3.6	+0.9	5.5	6.9	4.4	
243	Cape Pogobi, Strait of Tartary	52° 13'	141° 39'	-7 52	-7 48	+1.2	+0.3	3.7	4.6	2.9	
on Jolo, p.172											
245	Gulf of Amur Time meridian, 150° E	52° 52'	141° 14'	+4 55	+4 55	(*0.54+0.7)		1.5	1.9	1.3	
247	Amur River entrance †	53° 08'	140° 45'	+6 15	+6 15	(*0.32+2.7)		0.9	1.1	3.1	
249	Nikolayevsk, Amur River †	52° 49'	141° 12'	+4 50	+4 50	(*0.71+0.9)		2.0	2.5	1.7	
251	Uyuzyut Island †	52° 40'	141° 17'	+5 10	+5 10	(*0.93+1.1)		2.6	3.3	2.1	
on Pusan, p.48											
253	Cape Lazareva	52° 14'	141° 31'	-8 50	-8 10	+1.3	+0.9	3.2	4.1	3.2	
Gulf of Tartary											
255	Cape Muraveva	52° 09'	141° 33'	-9 38	-9 21	+1.4	+0.4	3.8	4.7	3.0	
257	Cape Chikacheva	51° 47'	141° 11'	-10 20	-10 16	+3.3	+0.8	5.3	6.7	4.2	
259	Cape Sushcheva	51° 42'	141° 07'	-10 58	-10 55	+2.2	+0.6	4.4	5.5	3.5	
261	Taba Bay	51° 37'	140° 53'	-10 42	-10 38	+3.1	+0.8	5.1	6.4	4.1	
263	Zaliv Chikhacheva	51° 27'	140° 50'	-10 37	-10 33	+3.1	+0.8	5.1	6.4	4.1	
265	Starika Bay	50° 08'	140° 34'	-10 30	-10 26	+0.9	+0.3	3.4	4.3	2.7	
267	Datta Bay	49° 17'	140° 24'	-10 17	-10 13	*0.68	*0.71	1.9	2.4	1.5	
269	Vanina Bay	49° 06'	140° 17'	-10 08	-10 04	*0.46	*0.46	1.3	1.6	1.0	
271	Sovetskaya Harbor	48° 59'	140° 17'	-10 00	-9 51	(*0.43+0.2)		1.2	1.6	1.1	
273	Vetrychnui Point	48° 08'	139° 43'	---	---	---	---	0.2	--	0.3	
Japan Sea											
275	Tyutikha Bay	44° 21'	135° 51'	---	---	---	---	0.4	0.6	1.1	
277	St. Vladimir Bay	43° 53'	135° 27'	---	---	---	---	0.5	0.6	1.2	
279	Olga Bay	43° 43'	135° 15'	---	---	---	---	0.5	0.6	1.2	
281	Syaukhui Bay	42° 54'	133° 53'	---	---	---	---	0.6	0.7	1.4	
283	Nakhodka Bay, America Bay	42° 49'	132° 54'	---	---	---	---	0.5	0.7	1.3	
285	Sukhodol Bay, Ussuri Bay	43° 10'	132° 22'	---	---	---	---	0.5	0.7	1.3	
287	Vladivostok	43° 07'	131° 54'	---	---	---	---	0.6	0.7	1.4	
289	Reineke Island, Peter the Great Bay	42° 55'	133° 44'	---	---	---	---	0.6	0.7	1.4	
291	Slavyanski Bay	42° 52'	131° 23'	---	---	---	---	0.5	0.7	1.3	
293	Furugelma Island	42° 28'	130° 56'	---	---	---	---	0.6	0.7	1.5	
295	Posiet, Gulf of Posiet	42° 39'	130° 48'	---	---	---	---	0.6	0.7	1.4	
CHISHIMA RETTO Time meridian, 165° E											
on Paramushir Island, p.8											
297	Shumshu	50° 50'	156° 30'	+0 40	+0 40	*0.85	*0.85	3.8	4.8	3.4	
299	Kotomari Zaki †	50° 39'	156° 24'	-0 20	-0 20	*0.91	*0.91	4.1	5.0	3.5	
301	Kozyrevskoye †	50° 43'	156° 12'	+1 20	+1 20	+0.2	+0.2	4.5	5.7	3.9	
303	Araido To †	50° 50'	155° 39'	+1 55	+1 55	+1.2	+0.3	5.4	6.7	4.4	
305	Banjo Zaki †	50° 45'	156° 08'	+1 35	+1 35	+0.6	+0.2	4.9	6.1	4.1	
307	Yotsuwa †	50° 17'	155° 55'	-0 25	-0 25	*0.89	*0.80	4.1	4.9	3.4	
309	PARAMUSHIR ISLAND †	50° 11'	155° 39'	Daily predictions				4.5	5.2	3.8	
311	Mys Kapustnyy †	50° 04'	155° 13'	+1 25	+1 25	+0.3	+0.2	4.6	5.7	3.9	
313	Kujira Wan †	50° 17'	155° 20'	+1 30	+1 30	+0.2	+0.1	4.6	5.6	4.0	
315	Kakumabetsu Wan †	50° 23'	155° 35'	+1 40	+1 40	+0.9	+0.2	5.2	6.5	4.3	
on Yamato Wan, p.12											
317	Kuroishi Wan, Onekutan To †	49° 29'	154° 50'	+0 07	+0 18	+0.1	0.0	3.2	4.1	2.6	
on Paramushir Island, p.8											
319	Shiomii Wan, Onekutan To	49° 31'	154° 44'	+1 20	+1 20	*0.89	*0.89	3.9	4.9	3.5	
321	Kharimkotan	49° 10'	154° 29'	+1 10	+1 10	*0.80	*0.80	3.5	4.3	3.2	
323	Higashi Ura, Shasukotan To	48° 47'	154° 05'	+0 25	+0 25	*0.80	*0.80	3.4	4.1	3.0	
325	Otome Wan, Shasukotan To	48° 47'	154° 03'	+1 00	+1 00	*0.89	*0.89	3.9	4.9	3.5	
on Yamato Wan, p.12											
327	YAMATO WAN, Matsuwa To	48° 05'	153° 16'	Daily predictions				3.1	3.9	2.6	
329	Ushishiro To	47° 32'	152° 49'	+0 05	+0 05	+0.5	+0.1	3.5	4.4	3.0	
331	Bukhta Broutona, Shimushiru To	47° 09'	152° 15'	+1 00	+1 00	*0.84	*0.84	2.6	3.3	2.1	
333	Shimushiru Wan, Shimushiru To	46° 52'	151° 52'	+0 20	+0 20	+0.3	+0.1	3.3	4.3	2.7	
335	Suna Wan, Kita Jima	46° 32'	150° 54'	+0 20	+0 20	*0.90	*0.75	2.9	3.5	2.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
	CHISHIMA RETTO—cont. Time meridian, 165° E	North	East	h m	h m	ft	ft	ft	ft	ft	
				on Paramushir Island, p.8							
337	Uruppu To										
339	Yosinohama	46° 12'	150° 31'	+0 15	+0 15	*0.58	*0.58	2.6	3.0	2.2	
	Garan Zaki	45° 48'	149° 56'	+0 15	+0 15	*0.67	*0.60	3.1	3.6	2.5	
				on Otomari, p.4							
341	Tokotan Wan	45° 51'	149° 44'	-0 15	-0 15	+0.1	+0.1	3.0	3.8	2.5	
343	Tsurigane Wan	46° 06'	150° 10'	-0 15	-0 15	*0.87	*0.87	2.6	3.3	2.1	
				on Paramushir Island, p.8							
345	Yetorofu Jima										
347	Zaliv Kasatka	44° 56'	147° 38'	+0 30	+0 30	*0.69	*0.60	3.2	3.7	2.8	
	Kodnyy	44° 43'	147° 21'	+0 25	+0 25	(*0.78+0.2)		3.5	4.2	3.2	
				on Otomari, p.4							
349	Naibo Wan	44° 46'	147° 12'	-0 15	-0 15	*0.95	*0.95	2.8	3.5	2.3	
351	Kitovyy	45° 15'	147° 53'	-0 20	-0 20	*0.90	*0.90	2.7	3.4	2.2	
353	Shamambe Byochi	45° 20'	148° 01'	-0 20	-0 20	*0.97	*0.97	2.8	3.6	2.3	
355	Shibetoro	45° 30'	148° 37'	-0 15	-0 15	*0.87	*0.87	2.6	3.2	2.1	
357	Moyoro Wan	45° 26'	148° 51'	-0 25	-0 25	*0.90	*0.78	2.8	3.2	2.1	
				on Paramushir Island, p.8							
359	Kunashiri Jima										
361	Yuzhno Kurilsk	44° 02'	145° 51'	+0 15	+0 15	*0.73	*0.70	3.3	3.8	2.9	
363	Tomari Wan	43° 44'	145° 27'	+0 50	+0 50	*0.78	*0.78	3.5	4.1	3.0	
365	Shakotan Ko, Shikotan Jima	43° 52'	146° 49'	+0 30	+0 30	*0.67	*0.67	3.1	3.5	2.6	
367	Taraku Jima	43° 38'	146° 21'	+0 25	+0 25	*0.73	*0.73	3.2	3.8	2.8	
	Suisho To	43° 25'	145° 54'	+0 35	+0 35	*0.80	*0.80	3.6	4.1	2.9	
				on Kamaisi, p.16							
	JAPAN										
	Hokkaido										
	Time meridian, 135° E										
369	Rausu Hakuchi	44° 01'	145° 12'	-0 47	-0 47	(*0.65+0.4)		1.5	2.0	2.3	
371	Nemuro Ko	43° 20'	145° 35'	-0 32	-0 34	+0.1	0.0	2.4	3.1	2.9	
373	Hanasaki	43° 17'	145° 35'	-0 07	-0 05	-0.3	-0.1	2.1	2.7	2.7	
375	Ochiishi Wan	43° 10'	145° 31'	-0 22	-0 25	-0.1	0.0	2.2	2.9	2.8	
377	Kiritappu Jima, Hamanaka Wan	43° 04'	145° 10'	-0 28	-0 30	-0.2	-0.1	2.2	2.8	2.7	
379	Akkeshi Wan	43° 02'	144° 51'	-0 23	-0 25	-0.2	-0.2	2.3	2.9	2.7	
381	Kushiro Ko	42° 58'	144° 22'	-0 08	-0 15	0.0	0.0	2.3	3.0	2.9	
383	Rubeshibetsu Saki	42° 12'	143° 20'	-0 26	-0 28	-0.2	-0.1	2.2	2.7	2.7	
385	Utaro	41° 58'	143° 12'	-0 16	-0 18	0.0	-0.1	2.4	3.1	2.8	
387	Muroran Ko	42° 19'	140° 58'	-0 29	-0 19	+0.6	+0.3	2.6	3.6	3.3	
389	Usu Wan, Iburu Wan	42° 31'	140° 46'	-0 14	-0 16	+0.3	0.0	2.6	3.5	3.0	
391	Mori Ko, Iburu Wan	42° 07'	140° 36'	-0 19	-0 21	0.0	-0.1	2.4	3.2	2.8	
393	Usujiri Wan	41° 56'	140° 57'	-0 15	-0 17	-0.2	-0.1	2.2	2.9	2.7	
395	Shiokubi Saki	41° 43'	140° 58'	+0 16	+0 14	0.0	0.0	2.3	3.0	2.9	
397	Hakodate Ko	41° 47'	140° 43'	+0 00	+0 10	(*0.74-0.2)		1.7	2.3	1.9	
399	Wakimoto	41° 34'	140° 26'	+0 09	+0 07	(*0.65-0.1)		1.5	2.0	1.8	
401	Yoshioka	41° 27'	140° 14'	+0 38	+0 35	(*0.48-0.1)		1.1	1.4	1.3	
403	Fukuyama Byochi	41° 26'	140° 07'	---	---	---	---	0.5	---	0.7	
405	Kamome Jima, Yesashi Ko	41° 52'	140° 06'	---	---	---	---	0.5	---	0.8	
407	Aonai Wan, Okushiri Shima	42° 04'	139° 27'	---	---	---	---	0.5	---	0.7	
409	Setana Ko	42° 28'	139° 50'	---	---	---	---	0.4	---	0.7	
411	Sutsu Ko	42° 47'	140° 16'	---	---	---	---	0.4	---	0.6	
413	Iwanai Byochi	42° 59'	140° 30'	---	---	---	---	0.5	---	0.6	
415	Kamo Misaki	43° 20'	140° 21'	---	---	---	---	0.4	---	0.6	
417	Otaru Ko	43° 13'	141° 01'	---	---	---	---	0.4	---	0.5	
419	Moye	43° 36'	141° 23'	---	---	---	---	0.4	---	0.6	
421	Rumoi Ko	43° 57'	141° 39'	---	---	---	---	0.3	---	0.5	
423	Tomamai	44° 19'	141° 39'	---	---	---	---	0.4	---	0.6	
425	Rishiri To	45° 14'	141° 14'	---	---	---	---	0.4	---	0.6	
427	Wakkana Ko	45° 25'	141° 41'	---	---	---	---	0.4	---	0.6	
429	Soya Misaki	45° 31'	141° 57'	---	---	---	---	0.5	---	0.6	
				on Otomari, p.4							
431	Esashi Byochi	44° 56'	142° 35'	-2 35	-2 35	*0.80	*0.80	2.4	2.9	1.9	
433	Ornu Ko	44° 35'	142° 58'	-2 30	-2 30	(*0.83+0.1)		2.5	3.2	2.1	
435	Monbetsu Byochi	44° 21'	143° 22'	-2 58	-2 46	*0.97	*0.97	2.8	3.4	2.4	
437	Abashiri Byochi	44° 01'	144° 16'	-2 15	-2 15	*0.90	*0.90	2.7	3.4	2.2	
439	Koiseboi	44° 02'	144° 56'	-2 30	-2 30	*0.87	*0.87	2.6	3.2	2.1	
				on Naha, p.44							
	Honshu, North Coast										
441	Tappi Saki	41° 15'	140° 21'	-3 53	-3 53	(*0.24+0.2)		1.0	1.4	1.1	
443	Mimmaya, Mimmaya Wan	41° 12'	140° 26'	-4 07	-4 08	*0.24	*0.24	1.0	1.4	0.9	
445	Aomori Ko, Mutsu Kaiwan	40° 50'	140° 44'	-4 11	-4 12	*0.34	*0.34	1.4	2.0	1.3	
447	Shiranai Wan, Mutsu Kaiwan	40° 57'	140° 58'	-4 09	-4 10	*0.32	*0.32	1.3	1.8	1.2	
449	Ominato Ko, Mutsu Kaiwan	41° 15'	141° 09'	-4 12	-3 49	*0.32	*0.28	1.4	2.0	1.2	
451	Oma	41° 32'	140° 54'	-4 09	-4 10	*0.37	*0.37	1.5	2.0	1.5	
453	Ohata	41° 24'	141° 10'	-4 11	-4 12	(*0.49+0.4)		2.0	2.6	2.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	JAPAN Honshu, East Coast Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Kamaisi, p.16											
455	Shiruya	41° 24'	141° 27'	-0 12	-0 15	+0.4	+0.2	2.5	3.2	3.2	
457	Tomari	41° 05'	141° 24'	-0 10	-0 13	+0.1	-0.1	2.5	3.2	2.9	
459	Hachinohe Ko	40° 32'	141° 33'	-0 16	-0 15	-0.2	-0.1	2.2	2.9	2.7	
461	Kuji Wan	40° 11'	141° 49'	-0 10	-0 13	+0.1	0.0	2.4	3.1	2.9	
463	Miyako Ko <3>	39° 38'	141° 58'	+0 00	+0 06	-0.2	-0.1	2.2	2.9	2.7	
465	Yamada Ko	39° 28'	141° 58'	-0 09	-0 11	-0.1	-0.1	2.3	3.0	2.8	
467	KAMAIISI	39° 16'	141° 54'	Daily predictions				2.3	3.0	2.9	
469	Kesennuma Wan	38° 53'	141° 37'	+0 02	+0 00	-0.1	-0.1	2.3	3.0	2.8	
471	Oginohama Ko	38° 23'	141° 26'	+0 08	+0 06	+0.4	+0.1	2.6	3.4	3.1	
473	Same Ura, Nobiru Wan	38° 21'	141° 10'	+0 14	+0 12	+0.2	+0.1	2.4	3.3	3.0	
475	Hirakata Wan	36° 51'	140° 48'	+0 11	+0 08	-0.1	-0.1	2.3	3.0	2.8	
477	Choshi Ko (inside)	35° 44'	140° 50'	+0 48	+0 45	*0.65	*0.65	1.5	1.9	1.9	
479	Nagasaki, Inubo Saki	35° 42'	140° 52'	+0 45	+0 43	+0.1	0.0	2.4	3.2	2.9	
on Yokohama, p.20											
481	Katsuura Wan	35° 08'	140° 18'	-0 43	-0 35	*0.78	*0.80	2.7	3.5	3.0	
483	Kamogawa, Kamogawa Wan	35° 06'	140° 06'	-0 31	-0 22	(*0.74+0.2)		2.6	3.5	3.0	
485	Otohama	34° 55'	139° 56'	-0 31	-0 22	(*0.74+0.1)		2.6	3.4	2.9	
Honshu, South Coast											
487	Tokyo Wan	35° 01'	139° 51'	-0 22	-0 14	*0.83	*0.83	2.9	3.9	3.2	
489	Tateyama Wan	35° 14'	139° 43'	-0 12	-0 04	(*0.83+0.1)		2.9	3.8	3.3	
491	Uraga Ko	35° 17'	139° 40'	-0 04	-0 04	*0.91	*0.91	3.2	4.3	3.5	
493	YOKOHAMA <4>	35° 26'	139° 40'	Daily predictions				3.5	4.7	3.8	
495	Shinagawa, Tokyo Ko	35° 37'	139° 45'	+0 02	+0 11	0.0	-0.1	3.6	4.8	3.7	
497	Chiba	35° 36'	140° 07'	-0 06	+0 02	+0.4	+0.1	3.8	5.1	4.0	
499	Aburatsubo <5>	35° 09'	139° 37'	-0 08	+0 00	(*0.77+0.1)		2.7	3.6	3.0	
501	Koto Wan	35° 13'	139° 37'	-0 23	-0 14	*0.80	*0.80	2.8	3.7	3.0	
503	Ajiro Ko	35° 03'	139° 05'	-0 21	-0 12	(*0.77+0.1)		2.7	3.5	3.0	
505	Shimoda Ko <6>	34° 40'	138° 57'	+0 05	+0 14	*0.86	*0.86	3.0	3.9	3.3	
507	Merakoura Ko	34° 40'	138° 47'	+0 23	+0 31	*0.85	*0.85	3.0	3.9	3.2	
509	Tago Minato	34° 48'	138° 46'	+0 25	+0 33	(*0.89-0.1)		3.1	4.2	3.3	
511	Eno Ura	35° 01'	138° 53'	+0 32	+0 41	*0.80	*0.80	2.8	3.8	3.0	
513	Shimizu Ko	35° 00'	138° 30'	+0 32	+0 36	*0.85	*0.85	3.0	4.1	3.2	
515	Omai Saki	34° 36'	138° 13'	+0 18	+0 27	*0.89	*0.85	3.2	4.3	3.3	
517	Shino Shima, Mikawa Wan	34° 41'	137° 00'	+0 54	+1 03	+0.8	0.0	4.3	5.8	4.2	
519	Gamagori, Mikawa Wan	34° 49'	137° 14'	+0 56	+1 04	+1.3	+0.1	4.7	6.3	4.5	
521	Nagoya Ko, Iseno Umi	35° 05'	136° 53'	+1 01	+1 05	(*1.40-0.6)		4.9	6.8	4.7	
523	Yokkaichi Ko, Iseno Umi	34° 57'	136° 38'	+1 01	+1 10	+1.0	0.0	4.5	6.0	4.3	
525	Tsu Ko, Iseno Umi	34° 43'	136° 32'	+0 59	+1 07	+1.2	+0.1	4.6	6.2	4.4	
527	Toba Ko	34° 29'	136° 51'	+0 54	+1 08	+0.3	-0.1	3.9	5.3	3.9	
529	Matoya Ko	34° 22'	136° 52'	+0 40	+0 49	*0.89	*0.85	3.2	4.3	3.3	
531	Hamashima, Ago Wan	34° 17'	136° 45'	+0 49	+0 58	*0.91	*0.85	3.3	4.4	3.4	
533	Gokasho Ko	34° 19'	136° 40'	+0 31	+0 39	*0.91	*0.85	3.3	4.5	3.4	
535	Hikimotu Ura, Owashi Wan	34° 05'	136° 15'	+0 44	+0 49	*0.93	*0.90	3.3	4.5	3.5	
537	Katsuura Wan	33° 37'	135° 57'	+0 42	+0 51	*0.91	*0.85	3.3	4.3	3.4	
539	Urakami Ko	33° 33'	135° 54'	+0 44	+0 53	-0.4	-0.3	3.4	4.5	3.4	
541	Kushimoto, Fukuro Ko	33° 28'	135° 46'	+0 53	+1 02	*0.91	*0.85	3.3	4.5	3.4	
543	Susami	33° 33'	135° 30'	+0 56	+1 05	-0.1	-0.1	3.5	4.7	3.7	
545	Tanabe Ko	33° 43'	135° 22'	+0 47	+0 56	-0.1	-0.3	3.7	4.8	3.6	
547	Mio	33° 53'	135° 05'	+0 50	+0 58	-0.2	-0.2	3.5	4.7	3.6	
Nampo Shotō (Southern Islands)											
549	Habu Ko, O Shima	34° 41'	139° 26'	-0 28	-0 20	(*0.77+0.2)		2.7	3.5	3.1	
551	Shikine Shima	34° 19'	139° 13'	+0 06	+0 15	(*0.80+0.2)		2.8	3.8	3.2	
553	Kaminato Hakuchi, Hachijo Jima	33° 08'	139° 48'	-0 05	+0 04	(*0.66+0.2)		2.3	3.1	2.7	
555	Tori Shima	30° 29'	140° 19'	+0 39	+0 47	(*0.63+0.1)		2.2	3.0	2.5	
557	Muko Jima, Ogasawara Gunto	27° 41'	142° 08'	+0 50	+0 50	(*0.63-0.1)		2.2	2.8	2.3	
559	Futami Ko, Ogasawara Gunto <7>	27° 05'	142° 11'	+0 47	+0 55	*0.57	*0.57	2.0	2.8	2.2	
561	Okimura, Ogasawara Gunto	26° 38'	142° 09'	+0 05	+1 13	(*0.63-0.1)		2.2	2.8	2.3	
563	Ishino, Kita Iwo Jima, Kazan Retto	25° 26'	141° 18'	+1 39	+1 39	*0.51	*0.51	1.8	2.3	1.9	
565	Nishi, Iwo Jima, Kazan Retto	24° 48'	141° 18'	+1 35	+1 43	*0.51	*0.51	1.8	2.3	1.9	
Shikoku, South Coast											
567	Kannoura Ko	33° 33'	134° 18'	-1 25	-1 25	-0.5	0.0	3.6	4.8	3.6	
569	Muroto Saki	33° 17'	134° 09'	-1 22	-1 23	0.0	+0.1	4.0	5.2	3.9	
571	Urado Ko	33° 30'	133° 34'	-1 15	-1 12	*0.92	*0.92	3.6	4.8	3.6	
573	Susaki Ko <8>	33° 24'	133° 17'	-1 19	-1 20	-0.3	0.0	3.8	5.0	3.7	
Naikai (Inland Sea)											
on Yokohama, p.20											
575	Kii Suido	33° 55'	135° 05'	+1 08	+1 17	-0.3	-0.2	3.4	4.6	3.5	
577	Hii Wan	34° 07'	135° 08'	+1 15	+1 23	-0.2	-0.1	3.4	4.8	3.6	
579	Wakanoura Wan	34° 11'	135° 11'	+1 44	+1 46	(*0.89+0.2)		3.1	4.3	3.6	
581	Tachibana Ura	33° 52'	134° 39'	+0 55	+1 04	-0.4	-0.3	3.4	4.5	3.4	
583	Komatsushima Ko	34° 01'	134° 36'	+1 03	+1 11	*0.87	*0.85	3.1	4.2	3.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	JAPAN Naikai (Inland Sea)–cont. Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Kobe, p.24											
585	Tomoga Shima, Tomogashima Suido	34° 17'	135° 00'	-0 46	-0 44	+0.6	+0.1	3.0	4.5	3.4	
587	Yura Ko, Tomogashima Suido	34° 16'	134° 57'	-0 48	-0 48	0.0	-0.1	2.6	3.6	3.0	
589	Sumoto	34° 20'	134° 54'	-0 27	-0 42	*0.98	*0.98	2.4	3.4	3.0	
591	Osaka Ko	34° 39'	135° 26'	-0 06	-0 11	+0.2	+0.1	2.6	3.7	3.2	
593	KOBE	34° 41'	135° 12'			Daily predictions		2.5	3.6	3.1	
595	Karumo Jima	34° 39'	135° 10'	+0 05	-0 04	+0.1	+0.1	2.5	3.4	3.2	
597	Akashi Ko, Akashi Seto <10>	34° 39'	135° 00'	---	+0 48	*0.67	*0.67	--	2.4	2.2	
599	E Saki, Awaji, Akashi Seto <11>	34° 36'	134° 59'	---	+0 55	*0.65	*0.65	--	2.3	2.2	
on Sakate, p.28											
601	Murotsu, Awaji	34° 31'	134° 52'	+0 19	+0 23	(*0.64+0.5)		1.8	2.2	2.6	
603	Ei, Awaji	34° 28'	134° 50'	+0 19	+0 09	(*0.68+0.4)		1.9	2.2	2.6	
605	Anaga Ura, Awaji	34° 16'	134° 40'	+0 29	+0 37	(*0.86+0.2)		2.4	2.6	3.0	
607	Ajiro, Naruto	34° 14'	134° 38'	+0 53	+0 57	*0.92	*0.89	2.6	3.1	3.0	
on Yokohama, p.20											
609	Fukura Ura, Awaji	34° 15'	134° 42'	+1 29	+1 36	(*0.94-0.1)		3.3	4.5	3.5	
on Kobe, p.24											
611	Tosadomari, Muyano Seto	34° 11'	134° 37'	-0 11	-0 19	+0.1	0.0	2.6	3.6	3.1	
613	Kita-tomariura, Muyano Seto <10>	34° 14'	134° 35'	---	+1 46	-1.2	-0.3	--	2.8	2.4	
615	Aziro	34° 14'	134° 38'	+4 31	+4 18	0.0	-0.1	2.6	3.4	3.0	
on Sakate, p.28											
617	Hikeda, Harima Nada	34° 14'	134° 24'	+0 22	+0 23	*0.93	*0.93	2.6	2.8	3.1	
619	SAKATE, Shodo Shima	34° 27'	134° 19'			Daily predictions		2.8	3.1	3.3	
621	Ikeda Wan, Shodo Shima	34° 29'	134° 12'	-0 11	-0 06	+1.0	+0.2	3.6	4.5	3.9	
623	Takasago Ko	34° 45'	134° 49'	-0 29	-0 25	(*0.75+0.4)		2.1	2.5	2.9	
625	Shikama Ko	34° 47'	134° 41'	-0 24	-0 28	(*0.82+0.6)		2.3	2.4	3.3	
627	Ie Shima	34° 41'	134° 32'	-0 16	-0 16	(*0.82+0.2)		2.3	2.5	2.9	
629	O-O Wan	34° 47'	134° 28'	-0 20	-0 16	(*0.93+0.2)		2.6	3.1	3.3	
631	Otabu Shima	34° 41'	134° 18'	-0 12	-0 08	-0.1	-0.1	2.8	3.3	3.2	
633	Ushimado Ko	34° 36'	134° 09'	-0 01	+0 03	+0.8	+0.1	3.5	4.4	3.8	
635	Kogushi, Okayama Suido	34° 36'	134° 02'	+0 01	+0 05	+1.0	+0.1	3.7	4.6	3.9	
on Kure, p.32											
637	Bisan Seto	34° 27'	133° 58'	+1 29	+1 26	(*0.67+0.4)		5.0	6.2	4.8	
639	Nao Shima	34° 26'	134° 03'	+1 25	+1 46	(*0.56+0.6)		4.2	5.0	4.3	
641	Takamatsu Ko	34° 21'	134° 02'	+1 25	+1 26	(*0.60+0.4)		4.5	5.3	4.4	
643	Nabe Shima	34° 23'	133° 50'	+1 40	+1 37	(*0.84+0.3)		6.3	8.1	5.8	
645	Shimotsui	34° 26'	133° 48'	+1 32	+1 28	(*0.80+0.3)		6.0	7.8	5.6	
647	Awashima, Awa Shima	34° 16'	133° 38'	+1 46	+1 46	+0.2	0.0	7.7	9.6	6.7	
649	Tomo Tsu, Bingo Nada	34° 23'	133° 23'	+1 25	+1 26	+0.5	0.0	8.0	9.9	6.8	
651	Tachibana, Mekari Seto	34° 21'	133° 12'	+1 25	+1 21	+0.1	+0.1	7.5	9.7	6.7	
653	Onomichi Seto	34° 24'	133° 12'	+1 16	+1 13	+0.1	0.0	7.6	9.2	6.6	
655	Itosaki, Miura Wan	34° 23'	133° 06'	+1 08	+1 04	-0.3	-0.1	7.3	9.2	6.4	
657	Setoda, Iuchi Jima	34° 18'	133° 05'	+0 49	+0 46	-0.2	-0.2	7.5	9.6	6.4	
659	Tadanomi, Miura Seto	34° 20'	132° 59'	+0 31	+0 27	+0.6	+0.3	7.8	10.3	7.0	
661	Takahama, Hiuchi Nada	33° 59'	133° 21'	+1 24	+1 20	+0.5	+0.1	7.9	10.4	6.9	
663	Imabari, Kurushima Kaikyo	34° 04'	133° 00'	+1 06	+1 03	-0.3	0.0	7.2	9.4	6.4	
665	Hashihama, Kurushima Kaikyo	34° 07'	132° 58'	+0 28	+0 22	+0.3	+0.1	7.7	9.9	6.8	
667	Mitarai, Osaki Shimo Shima	34° 11'	132° 52'	+0 11	+0 08	+0.3	+0.1	7.7	10.1	6.8	
669	Koyo, Aki Nada	34° 14'	132° 43'	+0 16	+0 13	-1.0	-0.2	6.7	8.9	6.0	
671	Mutsuki Seto, Naka Shima	33° 59'	132° 38'	-0 21	-0 25	-0.7	-0.1	6.9	9.0	6.2	
Hiroshima Wan											
673	Karoto Koseto	34° 04'	132° 33'	-0 13	-0 16	(*0.88+0.1)		6.6	8.7	5.9	
675	Ondo Seto	34° 12'	132° 32'	-0 04	-0 08	(*0.88+0.1)		6.6	8.6	5.9	
677	KURE	34° 14'	132° 33'			Daily predictions		7.5	9.9	6.6	
679	Yeta Uchi	34° 15'	132° 28'	-0 05	-0 09	0.0	+0.1	7.4	9.8	6.6	
681	Nasami Seto	34° 15'	132° 23'	-0 18	-0 21	-0.8	-0.1	6.8	9.3	6.1	
683	Hiroshima Ko (Ujina Ko)	34° 21'	132° 28'	-0 09	-0 13	-0.2	0.0	7.3	9.7	6.5	
685	Itsuku Shima	34° 18'	132° 19'	-0 09	-0 13	-0.2	0.0	7.3	9.6	6.5	
687	Shimminato	34° 11'	132° 14'	-0 12	-0 15	-0.8	-0.1	6.8	9.1	6.1	
689	Moro Shima Suido	33° 57'	132° 28'	-0 35	-0 38	-0.5	0.0	7.0	9.1	6.3	
691	Yashiro Jima	33° 55'	132° 18'	-0 09	-0 13	(*0.88+0.1)		6.6	8.8	5.9	
693	Obatake Seto	33° 57'	132° 10'	-0 50	-0 53	(*0.85+0.2)		6.4	8.5	5.8	
Iyo Nada											
695	Okikamuro Shima	33° 51'	132° 22'	-0 41	-0 44	(*0.85+0.2)		6.4	8.3	5.8	
697	Kaminoseki Kaikyo	33° 50'	132° 07'	-0 58	-1 02	(*0.79+0.2)		5.9	8.0	5.4	
699	Mitsugahama Hakuchi	33° 52'	132° 42'	-0 31	-0 33	-0.4	0.0	7.1	9.3	6.4	
701	Ao Shima	33° 44'	132° 29'	-0 55	-0 59	(*0.88+0.2)		6.6	8.7	6.0	
703	Nagahama Ko	33° 37'	132° 29'	-1 16	-1 20	(*0.85+0.1)		6.4	8.5	5.7	
705	Mitsukuye Ko	33° 27'	132° 14'	-1 12	-1 15	(*0.83+0.3)		6.2	8.2	5.8	
707	Saganoseki	33° 15'	131° 53'	-1 16	-1 19	(*0.52+0.6)		3.9	5.1	4.0	
709	Beppu Ko	33° 17'	131° 30'	-1 20	-1 24	(*0.59+0.4)		4.4	5.7	4.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
on Naha, p.44											
on Kure, p.32											
on Moji, p.36											
on Hong Kong, p.120											
on Naha, p.44											
on Moji, p.36											
on Hong Kong, p.120											
711	JAPAN Naikai (Inland Sea)–cont. Time meridian, 135° E	33° 27'	132° 24'	+0 10	+0 09	+0.5	+0.3	4.3	5.7	4.3	
713	Bungo Suido Yawatahama Ko	33° 20'	132° 23'	+0 08	+0 07	+0.4	+0.2	4.3	5.7	4.2	
715	Okuchi Wan	33° 10'	132° 16'	+0 00	-0 01	+0.1	+0.2	4.0	5.3	4.0	
717	Hiburi Shima	33° 12'	132° 27'	+0 03	+0 03	+0.4	+0.3	4.2	5.6	4.2	
719	Mizugaura, Uwajima Wan	33° 14'	132° 33'	+0 05	+0 04	(0.90+0.8)	3.7	5.2	4.3		
721	Uwajima Ko	33° 01'	132° 30'	-0 47	-0 47	0.0	+0.1	4.0	5.2	3.9	
723	Kashiba	32° 54'	132° 42'	-1 08	-1 08	-0.2	0.0	3.9	5.2	3.8	
725	Sukumo Ko	32° 59'	131° 54'	-0 05	-0 02	(0.80+0.3)	3.3	4.4	3.4		
727	Katsura, Saeki Wan	33° 14'	131° 53'	+0 35	+0 26	+0.1	+0.2	4.0	5.4	4.0	
on Naha, p.44											
on Kure, p.32											
on Moji, p.36											
on Hong Kong, p.120											
729	Suo Nada Hirne Shima	33° 44'	131° 38'	-0 48	-0 47	(*0.84+0.2)	6.3	8.5	5.7		
731	Kakaji	33° 41'	131° 31'	-0 45	-0 49	-0.8	-0.1	6.8	9.1	6.1	
733	Unoshima Ko	33° 38'	131° 08'	-0 52	-0 56	+0.5	+0.2	7.8	10.4	6.9	
735	Tokuyama Wan	34° 01'	131° 49'	-1 02	-1 01	(*0.84+0.4)	6.3	8.5	5.9		
737	Mitajiri Ko	34° 02'	131° 35'	-0 54	-0 58	(*0.84+0.1)	6.3	8.5	5.6		
739	Ube Ko	33° 56'	131° 15'	-0 52	-0 51	+0.6	+0.3	7.8	10.5	7.0	
on Moji, p.36											
741	Shimonoseki Kaikyo Aohama, Kyushu	33° 57'	131° 01'	-0 47	-0 47	+0.6	+0.1	8.0	10.8	6.9	
743	Iwakuro, Honshu	33° 58'	130° 59'	-0 37	-0 41	+0.3	+0.1	7.7	10.4	6.8	
on Moji, p.36											
745	Shimonoseki, Honshu	33° 58'	130° 57'	+0 00	+0 00	*1.07	*1.07	5.4	7.2	4.4	
747	Isakimachi	33° 57'	130° 55'	+0 09	+0 02	*1.02	*1.02	4.7	6.4	4.1	
749	Moji, Kyushu	33° 57'	130° 58'	<i>Daily predictions</i>				4.59	6.56	4.27	
751	Tanokubi	33° 55'	130° 55'	+0 35	+0 22	*0.74	*0.74	3.4	4.8	3.0	
753	Haidomari	33° 57'	130° 53'	+0 38	+0 39	*0.59	*0.59	2.7	3.8	2.6	
755	Wakamatsu Ko	33° 55'	130° 49'	+0 54	+0 48	*0.59	*0.59	2.7	3.7	2.6	
Honshu, Northwest Coast											
757	Yoshimo	34° 05'	130° 52'	+0 46	+0 39	*0.50	*0.50	2.3	3.2	2.3	
759	Kottai	34° 19'	130° 54'	+1 05	+0 58	*0.52	*0.52	2.4	3.2	2.4	
761	Yuya Wan (Aburatani Wan)	34° 24'	130° 57'	+1 11	+1 04	*0.39	*0.39	1.8	2.5	1.9	
on Hong Kong, p.120											
763	Senzaki Ko	34° 24'	131° 12'	+1 07	+1 17	*0.39	*0.32	1.5	2.0	1.7	
765	Hagi Ko	34° 26'	131° 25'	+1 27	+1 37	*0.36	*0.32	1.3	1.8	1.6	
767	Esaki Ko	34° 38'	131° 39'	+2 05	+2 15	*0.26	*0.25	0.9	1.2	1.2	
769	Hamada Ko (Tono Ura entrance) <12>	34° 55'	132° 04'	+2 41	+2 50	*0.20	*0.18	0.7	0.9	0.9	
771	Sagi Ura	35° 27'	132° 41'	---	---	---	---	0.5	---	---	
773	Kaka Ura	35° 35'	133° 03'	---	---	---	---	0.5	---	---	
775	Sakai Ko, Miho Wan	35° 33'	133° 14'	---	---	---	---	0.3	---	---	
777	Yonago Nakami	35° 26'	133° 19'	---	---	---	---	0.3	---	---	
779	Hiotsu Ura, Dozen, Oki Retto	36° 05'	133° 04'	---	---	---	---	0.4	---	---	
781	Saigo Ko, Dogo, Oki Retto	36° 12'	133° 20'	---	---	---	---	0.5	---	---	
783	Shibayama Ko	35° 40'	134° 40'	---	---	---	---	0.5	---	---	
785	Ine Ko, Wakasa Wan	35° 40'	135° 17'	---	---	---	---	0.5	---	---	
787	Maizuru Ko, Wakasa Wan <13>	35° 27'	135° 19'	---	---	---	---	0.5	---	---	
789	Tsuruga Ko, Wakasa Wan <14>	35° 40'	136° 04'	---	---	---	---	0.5	---	---	
791	Mikuni Ko	36° 15'	136° 08'	---	---	---	---	0.5	---	---	
793	Wajima Ko	37° 24'	136° 54'	---	---	---	---	0.5	---	0.6	
795	Nanao, Nanao Wan	37° 03'	136° 58'	---	---	---	---	0.5	---	---	
797	Fushiki Ko, Toyama Wan	36° 48'	137° 04'	---	---	---	---	0.5	---	---	
799	Naoetsu Ko	37° 11'	138° 15'	---	---	---	---	0.5	---	---	
801	Niigata Ko	37° 57'	139° 04'	---	---	---	---	0.4	---	---	
803	Ogi Ko, Sado Shima	37° 49'	138° 17'	---	---	---	---	0.5	---	---	
805	Ryo Zu Ko, Sado Shima	38° 05'	138° 26'	---	---	---	---	0.5	---	---	
807	Kamo Ko	38° 46'	139° 44'	---	---	---	---	0.4	---	---	
809	Tsuchizaki	39° 45'	140° 03'	---	---	---	---	0.4	---	---	
811	Funakawa Wan	39° 53'	139° 52'	---	---	---	---	0.5	---	---	
813	Iwasaki	40° 35'	139° 54'	---	---	---	---	0.4	---	---	
815	Fuka Ura	40° 39'	139° 55'	---	---	---	---	0.4	---	---	
817	Kodomari Wan	41° 08'	140° 18'	---	---	---	---	0.6	---	---	
Kyushu, East Coast											
819	Inokushi Ko <15>	32° 48'	131° 54'	-1 07	-1 07	(*0.88+0.2)	3.6	4.8	3.6		
821	Todoro Ko	32° 30'	131° 41'	-1 04	-1 04	*0.97	*0.97	3.9	5.3	3.8	
823	Hososhima <16>	32° 26'	131° 40'	-0 51	-0 43	*0.90	*0.90	3.6	4.8	3.5	
825	Mimitsu	32° 20'	131° 37'	-0 57	-0 58	*0.92	*0.92	3.7	4.9	3.6	
827	Uchiumi <17>	31° 45'	131° 28'	-1 07	-1 07	(*0.93+0.2)	3.8	5.0	3.8		
829	Tonoura	31° 31'	131° 22'	-1 09	-1 09	(*0.95+0.2)	3.9	5.2	3.9		
831	Fukushima Inamachi, Ariake Wan	31° 27'	131° 12'	-0 59	-1 00	-0.1	0.0	4.0	5.3	3.8	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	JAPAN Kyushu, South Coast Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Naha, p.44											
833	Odomari Wan	31° 01'	130° 41'	-0 24	-0 25	+1.3	+0.4	5.0	6.6	4.7	
835	Yamagawa Ko, Kagoshima Kaiwan	31° 12'	130° 38'	-0 02	-0 02	+1.9	+0.5	5.5	7.3	5.1	
837	Furue Ko, Kagoshima Kaiwan	31° 23'	130° 46'	-0 02	-0 02	+2.1	+0.5	5.7	7.5	5.2	
839	Kagoshima Ko, Kagoshima Kaiwan	31° 36'	130° 34'	-0 01	+0 07	+2.1	+0.7	5.5	7.5	5.3	
841	Bono Tsu, Tomari Ura	31° 16'	130° 13'	+0 09	+0 08	+1.6	+0.4	5.3	7.1	4.9	
on Sasebo, p.40											
843	Nakagawara Ura <18>	31° 51'	129° 51'	-0 40	-0 42	(*0.90+0.3)		5.5	7.3	5.2	
845	Akune	32° 01'	130° 11'	-0 47	-0 49	-0.2	0.0	5.9	7.8	5.3	
847	Fukuro Oki, Yatsushiro Kai	32° 11'	130° 22'	+0 15	+0 14	+1.7	+0.4	7.4	9.9	6.4	
849	Kaga Shima, Yatsushiro Kai	32° 31'	130° 33'	+0 19	+0 18	+2.7	+0.6	8.2	11.0	7.0	
851	Yanagino Seto, Yatsushiro Kai	32° 33'	130° 25'	+0 19	+0 18	+2.9	+0.5	8.5	11.3	7.1	
853	Misumi Ko, Misumi No Seto	32° 37'	130° 27'	+0 24	+0 22	*1.39	*1.22	8.9	11.8	7.3	
855	Ushibuka, Amakusa Shimo Shima	32° 12'	130° 01'	-0 32	-0 34	+0.1	+0.1	6.1	8.1	5.5	
857	Sakitsu Wan, Amakusa Shimo Shima	32° 19'	130° 01'	-0 36	-0 38	0.0	+0.1	6.0	8.2	5.4	
859	Tomioka Wan, Amakusa Shimo Shima	32° 32'	130° 02'	-0 24	-0 26	+1.1	+0.3	6.9	9.3	6.1	
861	Kuchinotsu Wan	32° 36'	130° 11'	+0 23	+0 21	+1.7	+0.4	7.4	9.7	6.4	
863	Shimabara, Shimabara Kaiwan	32° 47'	130° 23'	+0 32	+0 30	*1.58	*1.26	10.4	13.6	8.1	
865	Miike Ko, Shimabara Kaiwan	33° 01'	130° 25'	+0 36	+0 37	*1.76	*1.57	11.2	14.9	9.2	
867	Kabashima Suido	32° 34'	129° 47'	-0 25	-0 27	+0.1	0.0	6.2	8.2	5.4	
869	Fukahori	32° 41'	129° 49'	-0 26	-0 23	+0.1	+0.2	6.0	8.3	5.5	
871	Nagasaki Ko <19>	32° 43'	129° 51'	-0 24	-0 26	-0.6	-0.1	5.6	7.5	5.0	
873	Terashima Suido	33° 02'	129° 38'	-0 12	-0 14	+0.1	+0.1	6.1	8.3	5.5	
875	Omodake	33° 05'	129° 41'	-0 06	-0 08	+0.4	+0.2	6.3	8.5	5.7	
877	SASEBO <20>	33° 10'	129° 43'	Daily predictions				6.1	8.4	5.4	
879	Kogushi Wan, Omura Wan	33° 04'	129° 49'	+2 51	+2 49	(*0.26+0.1)		1.6	1.9	1.5	
881	Omura, Omura Wan	32° 54'	129° 57'	+2 55	+2 53	(*0.28+0.2)		1.7	2.2	1.7	
883	Kusudomari	33° 13'	129° 35'	-0 05	-0 07	0.0	+0.1	6.0	8.1	5.4	
885	Shijiki Wan, Hirado Shima	33° 12'	129° 23'	+0 19	+0 18	-0.3	0.0	5.8	7.7	5.2	
887	Usuka Wan, Hirado Shima	33° 23'	129° 32'	+0 42	+0 40	*0.88	*0.88	5.4	7.3	4.7	
Goto Retto											
889	Me Shima, Danjo Gunto	32° 00'	128° 21'	-0 21	-0 22	(*0.85+0.7)		5.2	7.1	5.3	
891	Tamano Ura, Fukaye Jima	32° 37'	128° 37'	+0 07	+0 05	-0.1	+0.1	5.9	8.1	5.4	
893	Fukaye, Fukaye Jima	32° 42'	128° 51'	+0 04	+0 02	-0.3	0.0	5.8	7.8	5.2	
895	Wakamatsu Ura, Wakamatsu Shima	32° 53'	129° 01'	+0 21	+0 20	-0.1	0.0	6.0	8.0	5.3	
897	Arikawa Wan, Nakadori Shima	32° 59'	129° 07'	+0 08	+0 07	*0.87	*0.87	5.3	7.1	4.7	
899	Kono Ura, Uku Shima	33° 16'	129° 05'	+0 25	+0 24	-0.7	-0.2	5.6	7.6	4.9	
Kyushu, Northwest Coast											
901	Kazamoto Ura, Iki Shima	33° 51'	129° 41'	+0 22	+0 15	*0.96	*0.96	4.4	5.9	3.8	
903	Gono Ura, Iki Shima	33° 45'	129° 41'	+0 26	+0 19	*1.05	*1.05	4.8	6.6	4.2	
905	Mikuriya, Imari Wan	33° 22'	129° 40'	+0 07	+0 01	*1.18	*1.18	5.4	7.6	5.0	
907	Kariya Ko	33° 29'	129° 50'	+0 25	+0 18	*1.00	*1.00	4.6	6.2	4.2	
909	Yobuko Ko <21>	33° 33'	129° 53'	+0 06	+0 00	*0.94	*0.94	4.3	6.1	3.9	
911	Fukuoka Wan	33° 36'	130° 23'	+0 41	+0 35	*0.87	*0.87	4.0	5.6	3.7	
913	Konomato Ura	33° 51'	130° 29'	+0 41	+0 35	*0.72	*0.72	3.3	4.5	3.1	
915	Iwaya	33° 56'	130° 41'	+0 45	+0 38	*0.59	*0.59	2.7	3.7	2.7	
Tsushima											
917	Mikata, Aso Wan	34° 18'	129° 16'	+0 33	+0 31	(*0.79-0.4)		4.8	6.5	3.9	
919	Tsuna Shima	34° 25'	129° 16'	+0 33	+0 31	(*0.72-0.4)		4.4	6.0	3.5	
921	Sasuna Ko	34° 39'	129° 23'	+0 16	+0 14	*0.51	*0.43	3.3	4.5	2.7	
on Moji, p.36											
923	Ajirō, Nishitomari Wan	34° 39'	129° 29'	-0 19	-0 25	*0.54	*0.54	2.5	3.5	1.9	
925	Oshika	34° 31'	129° 26'	-0 16	-0 23	*0.63	*0.63	2.9	4.0	2.2	
927	Miura Wan	34° 18'	129° 23'	-0 16	-0 23	*0.76	*0.76	3.5	4.8	2.8	
929	Izuhara Ko	34° 12'	129° 17'	-0 10	-0 23	*0.83	*0.83	3.8	5.4	3.0	
Nansei Shoto (Southwestern Islands)											
931	Nishinoomote Wan, Tanega Shima	30° 44'	130° 59'	-0 24	-0 24	+0.5	+0.2	4.4	5.8	4.2	
933	O Ura, Tanega Shima	30° 27'	130° 58'	-0 52	-0 53	0.0	0.0	4.1	5.4	3.9	
935	Isso, Yaku Shima	30° 27'	130° 30'	-0 07	-0 08	+0.7	+0.2	4.6	6.1	4.3	
937	Kuchinoerabu Shima	30° 28'	130° 11'	-0 08	-0 09	+0.7	+0.2	4.6	6.2	4.3	
939	Nakano Shima	29° 50'	129° 51'	-0 15	-0 16	+0.1	0.0	4.2	5.5	3.9	
941	Takara Shima	29° 09'	129° 12'	+0 10	+0 10	-0.1	0.0	4.0	5.3	3.8	
943	Somachi Hakuchi, Kikai Jima Amami O Shima	28° 20'	130° 00'	+0 30	+0 30	(*0.76+0.3)		3.1	4.3	3.3	
945	Sumiyo Wan	28° 14'	129° 25'	-0 36	-0 37	0.0	0.0	4.1	5.2	3.9	
947	Koniya	28° 09'	129° 18'	-0 10	-0 11	-0.1	0.0	4.0	5.4	3.8	
949	Nishikomi	28° 14'	129° 10'	-0 08	-0 09	+0.1	0.0	4.2	5.5	3.9	
951	Uken, Yakiuchi Wan	28° 18'	129° 14'	-0 04	-0 05	0.0	0.0	4.1	5.4	3.9	
953	Kasari Wan	28° 27'	129° 39'	-0 04	-0 05	+0.1	-0.1	4.3	5.6	3.9	
955	Uke Shima	28° 02'	129° 14'	-0 24	-0 26	0.0	+0.1	4.0	5.3	3.9	
957	Sammura Wan, Tokuno Shima	27° 52'	128° 58'	-0 32	-0 32	*0.93	*0.93	3.8	5.0	3.6	
959	Wadomari, Okinoyerabu Jima	27° 24'	128° 40'	-0 31	-0 31	*0.90	*0.90	3.6	4.7	3.5	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	JAPAN Nansei Shoto (Southwestern Islands)—cont. Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Naha, p.44											
961	Gakiya, Iheya Jima	27° 03'	127° 58'	-0 09	-0 10	*0.90	*0.90	3.8	5.0	3.5	
963	Okinawa Shima	26° 33'	128° 02'	-0 39	-0 39	0.0	0.0	4.1	5.5	3.9	
965	Sukku, Ora Wan	26° 12'	127° 46'	-0 44	-0 42	-0.1	-0.1	4.1	5.4	3.7	
967	Yonabaru, Buckner Bay	26° 12'	127° 40'			Daily predictions		4.1	5.6	3.9	
969	NAHA	26° 38'	127° 53'	+0 11	+0 11	-0.2	-0.2	4.1	5.4	3.7	
971	Sesoko Byochi	26° 40'	128° 01'	-0 07	-0 08	*0.93	*0.93	3.8	5.0	3.6	
973	Unten Ko	26° 40'	128° 01'	-0 07	-0 08	*0.93	*0.93	3.8	5.0	3.6	
975	Zamami Jima, Kerama Kaikyo	26° 13'	127° 18'	-0 06	-0 07	-0.1	-0.1	4.1	5.4	3.8	
977	Gima Ko, Kume Shima	26° 20'	126° 44'	-0 07	-0 07	-0.1	-0.1	4.1	5.4	3.8	
979	Minami Daito Jima	25° 49'	131° 14'	-0 35	-0 35	*0.81	*0.81	3.3	4.4	3.2	
981	Miyako Hakuchi, Miyako Jima	24° 48'	125° 17'	+0 08	+0 07	*0.90	*0.90	3.8	4.9	3.5	
983	Ishigaki, Ishigaki Shima	24° 20'	124° 10'	+0 03	+0 02	(0.83+0.2)		3.4	4.4	3.4	
985	Funauke, Iriomote Jima	24° 20'	123° 44'	+0 19	+0 18	(0.83+0.2)		3.3	4.4	3.4	
987	Yonakuni Jima	24° 26'	123° 00'	-0 03	-0 03	(0.76+0.2)		3.1	4.2	3.2	
	Kobi Sho, Sento Shosho	25° 56'	123° 41'	+0 44	+0 43	(0.80+0.4)		3.3	4.5	3.5	
on Pusan, p.48											
989	KOREA Korea, Japan Sea	42° 20'	130° 25'	---	---	---	---	0.5	---	0.7	
991	Unggi-hang	41° 59'	130° 00'	---	---	---	---	0.5	---	0.7	
993	Sajin-man	41° 12'	129° 44'	---	---	---	---	0.5	---	0.7	
995	Taeryanghwा-man	40° 40'	129° 13'	---	---	---	---	0.6	---	0.8	
997	Songjin-hang	40° 12'	128° 39'	---	---	---	---	0.5	---	0.7	
999	Ch'aho-hang	40° 01'	128° 12'	---	---	---	---	0.6	---	0.7	
1001	Sinp'o-hang	39° 49'	127° 38'	---	---	---	---	0.6	---	0.7	
1003	Sohojin-hang	39° 10'	127° 26'	---	---	---	---	0.6	---	0.7	
1005	Wonsan-hang, Yonghung-man	38° 44'	128° 12'	---	---	---	---	0.5	---	0.7	
1007	Changjon-hang	37° 54'	128° 50'	---	---	---	---	0.5	---	0.6	
1009	Chumun-jang	37° 29'	130° 54'	---	---	---	---	0.3	---	0.4	
1011	Ullung-do	37° 04'	129° 26'	---	---	---	---	0.4	---	0.5	
1013	Chukpyon-man	36° 30'	129° 27'	---	---	---	---	0.3	---	0.4	
1015	Ch'uksan-hand	36° 03'	129° 23'	---	---	---	---	0.3	---	0.4	
1017	Yongil-man	35° 30'	129° 23'	-0 52	-0 44	(0.46+0.1)		1.3	1.8	1.1	
1019	Ulsan	35° 28'	129° 25'	-1 00	-0 52	(0.43+0.2)		1.2	1.7	1.1	
1021	PUSAN	35° 06'	129° 02'			Daily predictions		2.8	4.0	2.1	
1023	Yong-do	35° 05'	129° 03'	-0 11	-0 03	0.0	-0.1	2.9	3.9	2.1	
1025	Yong-song-man, Kadok-to	35° 01'	128° 49'	+0 07	+0 15	*1.50	*1.50	4.1	5.6	3.2	
1027	Ch'onsong-man	35° 10'	128° 34'	+0 10	+0 18	*1.60	*1.60	4.4	6.1	3.4	
1029	Masan-man	35° 06'	128° 29'	+0 08	+0 16	*1.74	*1.74	4.8	6.6	3.7	
1031	Unp'ung-p'o, Chinhae-man	34° 53'	128° 28'	+0 20	+0 29	*1.80	*1.80	5.0	6.8	3.8	
1033	Hyonnaeryang-haehyop, Chinhae-man	34° 50'	128° 43'	+0 03	+0 11	*1.54	*1.54	4.3	5.7	3.3	
on Ch'ang Chiang Approach, p.92											
1035	Choguri-man, Koje-do	34° 43'	128° 36'	-1 10	-1 23	(*0.63-1.6)		5.4	7.3	4.4	
1037	Koje-man, Koje-do	34° 50'	128° 35'	-1 08	-1 20	(*0.67-1.7)		5.8	7.8	4.7	
1039	Ch'ungmu-hang	34° 51'	128° 25'	-0 49	-1 12	(*0.67-1.7)		5.8	8.1	4.7	
1041	Yokchi-do	34° 39'	128° 16'	-0 59	-1 11	(*0.71-1.9)		6.1	8.2	4.9	
1043	Wis-som, Saryang-do	34° 51'	128° 14'	-1 01	-1 13	(*0.74-1.9)		6.4	8.7	5.2	
1045	Kosong-man	34° 55'	128° 21'	-0 55	-1 07	(*0.77-2.2)		6.6	8.8	5.2	
1047	Mijo-man, Namhae-do	34° 43'	128° 03'	-1 04	-1 16	(*0.74-1.8)		6.4	8.8	5.3	
1049	Samch'onp'o	34° 56'	128° 04'	-1 00	-1 12	(*0.77-2.1)		6.6	8.9	5.3	
1051	Ch'ojon-ni	35° 03'	128° 03'	-0 31	-0 43	-3.9	-2.9	7.6	10.4	6.2	
1053	P'yousan-ni, Namhae-do	34° 46'	127° 51'	-0 59	-1 11	-4.4	-3.0	7.2	10.0	5.9	
1055	Yosu	34° 45'	127° 46'	-0 43	-1 08	-4.3	-3.1	7.4	10.2	5.9	
1057	Kwangyang-man	34° 51'	127° 45'	-0 40	-0 53	-3.7	-2.9	7.8	10.7	6.3	
1059	Noryang-ni	34° 57'	127° 53'	-0 43	-0 55	-3.9	-2.9	7.6	10.4	6.2	
1061	Chobal-to, Yojia-man	34° 38'	127° 34'	-0 18	-0 31	-3.3	-2.7	8.0	11.0	6.6	
1063	Tonae-hae, Komun-do	34° 01'	127° 19'	-0 21	-0 34	(*0.77-1.6)		6.6	9.0	5.8	
1065	Sonjuk-to, Sonjuk-yolto	34° 17'	127° 22'	-0 01	-0 13	(*0.79-1.6)		6.8	9.4	6.0	
1067	Sayang-do, Naro-yolto	34° 28'	127° 27'	-0 35	-0 47	-3.7	-2.7	7.6	10.2	6.4	
1069	Kogum-sudo	34° 30'	127° 09'	-0 02	-0 14	-3.0	-2.4	8.0	10.9	6.9	
1071	Mafo-sudo	34° 26'	126° 51'	+0 20	+0 07	-2.7	-2.4	8.3	11.5	7.1	
1073	Wando	34° 18'	126° 46'	+1 09	+1 09	-3.8	-2.5	7.3	9.9	6.5	
1075	Soan-hang, Soan-do	34° 09'	126° 38'	+0 44	+0 31	-3.9	-2.6	7.3	9.8	6.4	
KOREA, Yellow Sea											
1077	Sangch'uja-do, Ch'uja-kundo	33° 57'	126° 17'	+1 24	+1 12	(*0.70-1.3)		6.0	7.9	5.4	
	Cheju-do	33° 30'	126° 55'	-0 03	-0 16	(*0.56-0.9)		4.8	6.5	4.5	
1079	Udo-sudo	33° 14'	126° 33'	-0 08	-0 21	(*0.65-1.2)		5.6	7.5	5.0	
1081	Sogwi-p'o	33° 18'	126° 09'	+1 02	+0 50	(*0.63-1.0)		5.4	7.1	5.0	
1083	Ch'agwi-do	33° 31'	126° 32'	+0 56	+0 54	(*0.59-1.1)		5.1	6.9	4.6	
1085	Cheju Harbor	33° 31'	126° 35'	+0 54	+0 41	(*0.56-0.8)		4.8	6.4	4.6	
1087	Hwabuk-ni	34° 21'	126° 29'	+1 23	+1 11	-3.6	-2.5	7.5	9.9	6.6	
1089	Oran-ni, Maro-hae	34° 27'	126° 25'	+1 24	+1 12	-2.8	-2.4	8.2	10.8	7.0	
1091	Sangma-do, Samma-do	34° 18'	126° 03'	+3 40	+3 01	(*0.72-1.9)		6.2	8.1	5.0	
1093	Hachodo	34° 32'	126° 03'	+3 08	+2 56	(*0.90-2.0)		7.7	9.9	6.6	
1095	Hat'ae-do, Naju-kundo	34° 30'	126° 12'	+4 02	+3 50	-3.1	-2.5	8.0	10.3	6.8	
1097	Chin-do	34° 32'	126° 21'	+1 40	+2 03	-3.7	-2.7	7.6	10.0	6.4	
1099	Baikpachin	34° 35'	126° 18'	+3 50	+3 21	-3.6	-3.0	8.0	10.0	6.3	
1101	Usuyong										

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
KOREA, Yellow Sea—cont. Time meridian, 135° E											
1103	Siha-do	34° 42'	126° 15'	+4 28	+3 36	-2.5	-2.5	8.6	10.6	7.1	
1105	Mokp'o	34° 47'	126° 23'	+5 26	+4 36	-3.0	-3.3	8.9	11.2	6.5	
1107	Yongsan-dong	34° 53'	126° 32'	+6 02	+5 50	*0.88	*0.60	9.0	11.2	7.7	
1109	Taeuhksan-do, Taehuksan-kundo	34° 41'	125° 26'	+4 01	+3 49	*0.68	*0.43	7.2	9.2	5.9	
1111	Pigum-sudo, Naju-kundo	34° 43'	125° 56'	+3 40	+3 28	-2.4	-2.5	8.7	11.2	7.2	
1113	Chaun-do, Naju-kundo	34° 53'	126° 06'	+4 08	+3 56	-0.8	-2.2	10.0	12.8	8.1	
1115	Imja-do	35° 03'	126° 05'	+4 31	+4 19	-0.9	-2.4	10.1	13.5	8.0	
on Ch'ang Chiang Approach, p.92											
1117	Hamp'yong-man	35° 09'	126° 21'	-2 35	-2 30	(*0.63+0.7)	13.1	16.6	10.3		
1119	Anma-do, Anma-kundo	35° 21'	126° 01'	-2 28	-2 23	(*0.57+0.5)	11.8	15.1	9.2		
1121	Kogunsan-kundo	35° 49'	126° 24'	-1 58	-1 53	(*0.69+0.5)	14.3	18.4	11.0		
1123	Chuk-to, Kunsan-hang	36° 02'	126° 32'	-1 50	-1 46	(*0.72+0.7)	15.0	19.6	11.6		
1125	Kunsan, Kum-gang	35° 59'	126° 43'	-1 36	-0 54	*0.73 *0.75	15.1	19.0	11.2		
1127	Ochongdo	36° 07'	125° 59'	-1 44	-1 39	(*0.64+0.8)	13.2	17.3	10.5		
1129	Oeyon-do, Oeyon-yolto	36° 13'	126° 04'	-1 36	-1 32	(*0.60+1.1)	12.5	16.7	10.2		
1131	So-do, Ch'onsu-man	36° 24'	126° 26'	-1 10	-1 06	(*0.77+0.6)	15.9	20.8	12.3		
1133	Mohang-ni	36° 47'	126° 08'	-0 57	-0 52	(*0.74+0.7)	15.4	20.0	11.9		
1135	Umo-do	37° 02'	126° 27'	-0 27	-0 23	*0.91 *0.98	18.4	23.7	13.9		
1137	Asan	36° 58'	126° 47'	+0 02	+0 02	+0.3 +0.3	20.7	27.4	15.5		
1139	Soya-do, So-sudo	37° 14'	126° 10'	-0 15	-0 11	(*0.85+0.6)	17.6	22.9	13.5		
1141	Taemui-do, (Marie Fortunee Arch.)	37° 23'	126° 27'	-0 09	-0 04	-0.8 +0.3	19.6	25.6	14.9		
1143	INCH'ON, Yom-ha	37° 28'	126° 37'	Daily predictions				20.7	27.1	15.2	
1145	Yongjong-do, Yom-ha	37° 30'	126° 34'	+0 06	+0 06	+0.4 +0.4	20.7	27.2	15.6		
1147	Sinan-ni, Yom-ha	37° 40'	126° 32'	+0 55	---	+1.2 ---	---	---	---		
1149	Chumun-do, Songmo-sudo	37° 39'	126° 15'	+0 15	+0 20	(*0.92+0.4)	19.0	24.8	14.4		
1151	Taeyonp'yong-do, Yonp'yong-yolto	37° 40'	125° 43'	+0 14	+0 18	(*0.76+0.5)	15.7	20.3	12.1		
1153	Mu-do, Haeju-man	37° 44'	125° 35'	+0 16	+0 20	(*0.72+0.9)	15.0	19.7	11.8		
1155	Haeju, Haeju-man	38° 00'	125° 42'	+0 44	+0 49	(*0.82+0.5)	16.9	22.0	13.0		
1157	Tungsan-got	37° 41'	125° 22'	+0 21	+0 25	(*0.62+1.1)	12.8	16.8	10.5		
1159	Sunwi-do, Sunwido-myoji	37° 45'	125° 20'	+0 31	+0 36	(*0.53+1.1)	10.9	14.3	9.2		
on Dalian, p.60											
1161	Kirin-do	37° 50'	125° 03'	-4 22	-4 26	*1.41 *1.55	9.4	12.4	8.1		
1163	Taech'ong-do, Taech'ong-kundo	37° 50'	124° 43'	-4 02	-4 05	+1.4 +0.8	7.5	9.7	6.8		
1165	Wollae-do	38° 03'	124° 49'	-3 59	-4 02	+1.3 +0.7	7.5	9.5	6.7		
1167	Ch'angam-dong	38° 07'	124° 43'	-3 24	-3 28	+1.6 +0.8	7.7	10.0	6.9		
1169	Monggum-do	38° 11'	124° 47'	-2 28	-2 31	+1.9 +0.8	8.0	10.1	7.0		
1171	Chin po Ki	38° 27'	124° 56'	-2 15	-2 19	*1.41 *1.45	9.6	12.3	8.0		
on Namp'o-Hang, p.56											
1173	Taedong-gang										
	Sok-iō	38° 38'	125° 00'	-0 40	-0 44	-1.9 -0.2	11.0	14.0	8.9		
1175	P'i-do	38° 41'	125° 11'	-0 27	-0 24	+1.0 +0.1	13.6	16.8	10.5		
1177	NAMP'O-HANG	38° 43'	125° 24'	Daily predictions				12.7	15.6	10.0	
1179	Ch'ol-do	38° 39'	125° 38'	+0 20	+0 24	+1.7 +0.2	14.2	17.9	10.9		
1181	Kyomip'o	38° 44'	125° 38'	+0 31	+0 30	(*1.21-0.3)	15.4	19.3	11.8		
1183	Sokhojung	38° 57'	125° 38'	+1 16	+2 05	+1.6 +0.4	13.9	16.9	11.0		
1185	P'yongyang	39° 01'	125° 45'	+3 01	+4 52	(*0.18+0.6)	2.3	3.0	2.4		
1187	Sokhae-dong	38° 31'	125° 40'	+0 06	+0 28	(*1.31-0.4)	16.6	20.5	12.7		
1189	Unmu-do	39° 25'	125° 07'	+0 08	+0 11	*1.23 *1.23	15.6	20.0	12.3		
1191	Nap-to	39° 16'	124° 43'	-0 07	-0 03	+1.2 +0.4	13.5	17.6	10.8		
1193	Taehwa-do	39° 27'	124° 37'	+0 06	+0 09	*1.10 *1.10	13.8	17.6	11.0		
1195	Ka-do	39° 31'	124° 40'	+0 10	+0 13	(*1.15-0.2)	14.6	18.5	11.3		
Yalu River and Approach											
1197	Suun-do	39° 42'	124° 25'	+0 11	+0 19	+2.0 +0.3	14.4	18.2	11.1		
1199	Tasa-do	39° 48'	124° 25'	+0 17	+0 39	(*1.19-0.3)	15.1	19.3	11.6		
1201	Shinto Islands	39° 48'	124° 16'	+0 28	+0 32	(*1.17-0.2)	14.9	19.2	11.5		
1203	Yongamp'o	39° 56'	124° 21'	+1 38	+1 41	-1.7 -0.2	11.2	14.0	9.0		
CHINA, Yellow Sea, North Shore Time meridian, 120° E											
1205	Yalu River and Approach—cont.										
	Zhaoshigou [Chao-shin-kou]	39° 53'	124° 12'	-0 52	+0 08	(*1.09+0.7)	13.5	17.4	11.5		
1207	Dandong [Tan-tung]	40° 07'	124° 24'	+1 21	+3 20	(*0.59-0.3)	8.5	8.9	4.9		
1209	Dalu Dao [Talu Tao]	39° 45'	123° 45'	-0 47	-0 26	(*1.01+0.7)	12.5	15.7	10.8		
CHINA, Liaoning, South Coast											
1211	Dayang He										
	Shishanzi	39° 58'	123° 40'	+0 06	+1 25	(*1.07+1.0)	8.2	8.9	6.6		
1213	Dagushan [Takushan Road]	39° 46'	123° 33'	-0 59	-1 03	(*1.92-0.3)	13.1	15.4	9.8		
1215	Shicheng Liedao	39° 32'	123° 05'	-1 06	-1 09	(*1.62+0.7)	10.8	13.8	9.2		
1217	Xiaowangjia Dao	39° 27'	123° 04'	-1 16	-1 09	(*1.60+0.0)	10.8	13.8	8.5		
1219	Waichangshan Liedao	39° 03'	122° 45'	-0 52	-0 55	(*1.21+0.0)	8.2	10.2	6.6		
1221	Zhangzi Dao [Changtze Tao, Blonde Group]	39° 14'	122° 40'	-0 54	-0 54	(*1.29+0.7)	8.5	10.8	7.5		
1223	Lichangshan Liedao	39° 16'	122° 35'	-0 43	-0 46	(*1.35+0.3)	9.2	11.5	7.5		
1225	Xiaochangshan Dao	39° 12'	122° 18'	-0 29	-0 32	(*1.34+0.3)	10.5	10.8	7.5		

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	CHINA, Liaoning, South Coast—cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Dalian, p.60											
1227	Changjiang Ao	39° 05'	122° 03'	-0 22	-0 26	(*1.18+0.0)		7.9	9.8	6.2	
1229	Dagukou [Ta-ku K'ou, Dairen Wan]	38° 58'	121° 50'	-0 06	-0 09	(*1.03+0.3)		6.9	8.5	5.9	
1231	Sanshan Dao	38° 53'	121° 49'	-0 32	-0 32	(*1.01-0.3)		6.9	8.5	6.3	
1233	DALIAN [Dairen Ko]	38° 55'	121° 40'			Daily predictions		6.6	8.5	6.3	
1235	Yuyan	38° 34'	121° 19'	+1 07	+1 03	(*0.92-0.3)		6.2	7.9	4.6	
CHINA, Gulfs of Liaodong and Bohai											
1237	Yangtouwa [Yang-tou Wan]	38° 47'	121° 08'	+1 15	+1 16	(*0.61+0.7)		5.3	5.6	3.9	
1239	Yingchengzi Wan [Eijoshi Wan, Yingchengtze]	38° 58'	121° 19'	+2 26	+2 02	(*0.59+0.7)		5.3	5.6	3.9	
1241	Hulutao [Hu-Li-T'ao, Pulantien Chiang]	39° 16'	121° 36'	+3 11	+2 36	(*0.65+0.7)		5.9	6.2	4.3	
1243	Pulanadian Changshan Dao	39° 19'	121° 40'	+3 40	+3 07	(*0.69+0.7)		5.9	6.6	4.3	
1245	Boqi Dao [Pochi Tao, Pulantien Chiang]	39° 23'	121° 45'	+3 59	+3 43	(*0.74+0.7)		6.2	6.9	4.6	
1247	Xizhong Dao	39° 23'	121° 14'	+3 51	+3 06	(*0.53+1.0)		4.9	5.9	3.9	
1249	Changxing Dao [Changhing Tao, Fuchou Bay]	39° 39'	121° 28'	+5 21	+5 00	(*0.58+1.3)		5.3	5.9	4.3	
1251	Bayuquan	40° 18'	122° 05'	+6 44	+6 56	(*1.22+0.0)		9.8	10.2	6.2	
	Liao He										
1253	Sidaogou [Bar Signal Station, Liao Ho]	40° 38'	122° 10'	+8 04	+8 46	(*1.22+0.3)		9.5	9.8	6.6	
1255	Yingkou Neigang	40° 40'	122° 13'	+7 43	+8 25	(*1.26+0.0)		9.8	10.2	6.9	
1257	Bar	40° 32'	122° 04'	+8 11	+8 06	(*1.13+0.7)		8.9	9.5	6.6	
1259	Changshansi [Chang-shan-ssu Chiao]	40° 23'	120° 35'	+8 06	+7 30	(*0.63+0.7)		5.3	5.6	3.9	
on Qinhuangdao, p.64											
1261	Ninghai	39° 58'	119° 48'	-1 20	+1 20	(*0.99+0.0)		2.6	3.9	2.6	
1263	Qinhuangdao	39° 55'	119° 37'			Daily predictions		2.6	3.6	3.0	
1265	Dapu He (Bar)	39° 40'	119° 21'	+2 41	+1 00	(*1.39-1.3)		3.6	4.3	3.0	
on Tanggu, p.68											
1267	Daqinghekuo	39° 10'	118° 52'	-1 22	-1 22	(*0.43+1.3)		4.6	5.3	4.6	
	Caojidian Tan										
1269	Off Choushui Gou	38° 58'	119° 26'	-2 06	-1 50	(*0.26+2.6)		2.6	2.6	4.6	
1271	Caojidian	38° 57'	118° 31'	-0 19	-0 40	(*0.63+1.0)		6.2	6.9	5.9	
1273	Nangoutuo	39° 00'	118° 34'	-0 41	-0 25	(*0.53+1.6)		4.9	5.3	5.9	
1275	Nanbao	39° 03'	118° 19'	+0 05	+0 30	(*0.52+1.0)		4.9	5.3	4.9	
1277	Jianhekou	39° 14'	118° 04'	-0 15	-0 12	(*1.04+0.0)		9.8	10.5	8.2	
	Hai He										
1279	Bar	38° 56'	117° 50'	+0 02	-0 01	(*0.90+1.0)		8.5	9.2	7.9	
1281	TANGGU (Xinggang)	39° 00'	117° 43'			Daily predictions		9.5	10.2	7.9	
1283	Dagu	39° 00'	117° 43'	+0 07	+0 31	(*0.77+2.0)		7.2	7.2	7.9	
	Qi He										
1285	Bar	38° 34'	117° 35'	+1 01	+0 34	(*0.82+2.0)		7.9	8.2	8.2	
1287	Qikou	38° 36'	117° 43'	+0 03	+0 19	(*1.03+0.0)		9.8	10.5	8.2	
1289	Off Chengkou	38° 27'	118° 26'	+0 56	-0 11	(*0.56+2.3)		5.9	6.6	6.6	
1291	Dakou He (Bar)	38° 15'	117° 51'	+0 43	+0 37	(*0.95+0.3)		9.2	9.8	7.9	
1293	Dongfeng Gang	38° 15'	118° 10'	+2 17	+2 15	(*0.71+0.0)		6.9	7.2	5.6	
1295	Wanwangoukou	38° 11'	118° 27'	+1 24	+0 03	(*0.62-0.3)		6.6	7.2	4.3	
1297	Huanghekou (east)	38° 09'	118° 52'	+2 34	-0 31	(*0.20+1.6)		3.0	3.6	3.0	
on Dalian, p.60											
1299	Tianshuiogukou	37° 43'	119° 05'	+13 11	+13 34	(*0.50-0.3)		4.3	4.6	2.3	
	Laizhou Wan										
1301	Xiaqinghekuo	37° 20'	119° 03'	+10 41	+10 25	(*0.47+0.3)		3.9	4.6	3.0	
1303	Weihekou	37° 11'	119° 31'	+13 15	+14 22	(*0.53+0.0)		4.6	4.9	3.0	
1305	Huhekuo	37° 19'	119° 48'	+12 04	+11 48	(*0.47+0.3)		3.9	4.6	3.0	
1307	Longkou	37° 39'	120° 19'	+13 45	+13 35	(*0.43+0.0)		3.6	3.9	2.3	
1309	Jimu Dao (Gaojiao) [Mu-chi-tao Chiao]	37° 41'	120° 13'	+12 23	+12 13	(*0.47+0.3)		3.9	4.3	3.0	
	Miaodao Liedao										
1311	Beihuangcheng Dao	38° 22'	120° 54'	+0 27	+0 28	(*0.60+0.0)		4.3	5.3	3.3	
on Yantai, p.72											
1313	Tuoji Dao	38° 10'	120° 45'	+0 18	+0 19	(*0.70-0.7)		3.6	4.6	3.0	
1315	Tangluanzi [Tanglwian Anchorage, Miao-tao Group]	37° 59'	120° 41'	-0 12	-0 28	(*0.72-0.7)		3.6	4.6	3.0	
1317	Nanchangshan Dao	37° 55'	120° 43'	+0 11	-0 09	(*0.69-0.3)		3.6	4.6	3.0	
1319	Penglai	37° 50'	120° 44'	+0 18	+0 22	(*0.65+0.0)		3.3	4.3	3.3	
1321	Bajiao	37° 39'	121° 08'	+0 04	+0 00	(*0.98-0.3)		5.3	6.2	4.3	
1323	YANTAI [Chefoo Harbor]	37° 33'	121° 23'			Daily Predictions		5.3	6.6	4.9	
1325	Kongdong Dao	37° 33'	121° 30'	+0 10	+0 04	(*0.98-0.3)		5.3	6.2	4.6	
1327	Yangma Dao [White Rock Point]	37° 29'	121° 38'	+0 30	+0 32	(*0.81-0.3)		5.3	5.6	3.6	
1329	Chu Dao	37° 34'	122° 05'	+0 10	+0 07	(*0.90-0.3)		4.6	5.9	3.9	
1331	Jiming Dao (Wangjia Zhuang)	37° 25'	122° 28'	+0 34	+1 01	(*0.74+0.3)		4.9	5.3	3.9	
on Tanggu, p.68											
1333	Hailu Dao	37° 27'	122° 40'	+8 11	+8 30	(*0.33+0.3)		3.6	4.3	3.0	
1335	Malan Wan [Malan Cove]	37° 25'	122° 39'	+8 33	+8 31	(*0.38+0.7)		4.3	4.9	3.6	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
CHINA, Shandong, Southeast Coast Time meridian, 120° E											
1337	Chengshan Jiao [Dove Cove, Jungcheng Bay]	37° 23'	122° 40'	+8 56	+9 18	(*0.32+0.3)		3.6	4.3	3.0	
1339	Lido Wan [Lito Bay]	37° 16'	122° 33'	+9 50	+9 40	(*0.46-0.7)		4.9	5.6	3.0	
on Tanggu, p.68											
1341	Jinghai Jiao [Chinghai Point]	36° 51'	122° 11'	-1 52	-2 26	(*0.72+1.0)		7.5	7.9	6.6	
1343	Guiongzui [Niao-tsui Head]	36° 45'	121° 38'	-1 41	-2 08	(*0.84+0.3)		7.5	9.5	6.9	
1345	Haiyang [Haiyanghsein]	36° 41'	121° 14'	-1 08	-1 32	(*0.85+0.3)		8.5	9.2	6.9	
1347	Quinlyan [Jiaozhou Wan]	36° 15'	121° 23'	-1 10	-1 25	(*0.72+0.3)		6.6	8.2	5.9	
1349	Nu Dao [Star Reef, Lao Shan Bay]	36° 23'	120° 50'	-0 24	-0 57	(*0.90-0.3)		9.2	9.5	6.6	
1351	Dongjia Wan [Tung-chai Harbor]	36° 06'	120° 32'	-0 05	-0 37	(*0.96-0.7)		9.8	10.2	6.9	
1353	Mai Dao	36° 04'	120° 25'	-0 12	-0 15	(*0.90+0.0)		7.9	9.8	7.2	
1355	Qingdao (Qianhai)	36° 03'	120° 19'	-0 05	-0 09	(*0.93+0.7)		8.2	10.5	7.9	
1357	Huang Dao	36° 05'	120° 19'	-0 07	-0 03	(*0.98+0.0)		8.5	10.8	7.5	
1359	QINGDAO (DA GANG) [Chingtao, Kaochou Wan]	36° 05'	120° 19'			Daily predictions		8.9	11.2	7.9	
1361	Tangdao Wan	35° 55'	120° 09'	+0 13	+0 06	(*0.91+0.7)		7.9	10.5	7.9	
1363	Lingshan Dao	35° 46'	120° 10'	+0 21	+0 08	(*0.86+0.7)		7.5	9.5	7.5	
1365	Huangjiatang Wan [Huangchiatang Wan]	35° 32'	119° 45'	+0 39	+0 07	(*0.93-0.3)		8.2	10.5	6.9	
1367	Shiju Suo	35° 25'	119° 35'	+1 07	+0 54	(*1.09+0.3)		9.5	12.1	8.9	
on Qingdao, p.76											
1369	Pingshan Dao	35° 08'	119° 54'	-0 21	-0 41	(*0.75+0.0)		8.2	10.5	7.2	
CHINA, East Coast											
1371	Qinshan Dao	34° 52'	119° 17'	-0 04	+0 03	(*1.02-0.7)		11.2	14.4	9.2	
1373	LIANYUN GANG	34° 45'	119° 28'			Daily predictions		10.8	14.1	9.5	
1375	Kaishan Dao	34° 32'	119° 52'	+0 20	+0 16	(*0.85+1.0)		10.8	11.5	8.9	
1377	Kuataokou	34° 04'	120° 22'	+1 54	+2 41	(*0.57-0.3)		7.2	7.9	4.9	
1379	Xinyang Gang	33° 37'	120° 28'	+5 41	+6 46	(*0.52+1.6)		5.9	7.2	6.6	
1381	Chenjiawu	33° 06'	121° 13'	+5 34	+5 22	(*1.00+0.3)		11.2	14.4	9.8	
1383	Off Chuanshui Gang	32° 58'	121° 07'	+6 26	+6 04	(*1.22+0.3)		13.1	17.1	11.8	
1385	Xiaoyangkou	32° 33'	120° 59'	+4 27	+3 55	(*0.69+3.0)		7.5	9.8	9.5	
1387	Lusi	32° 08'	121° 35'	+6 11	+5 41	(*1.06+0.0)		11.8	16.1	10.2	
on Liyun Gang, p.80											
1389	Tongsha Shazui	31° 06'	122° 01'	-1 57	-2 21	(*1.21+0.7)		9.2	11.8	8.5	
1391	She Shan	31° 25'	122° 14'	-1 38	-2 26	(*1.09+0.3)		8.2	11.2	7.5	
1393	ZHONGJUN, CHANGJIANG APPROACH	31° 07'	121° 54'			Daily predictions, p.88		8.5	11.8	7.5	
1395	Jiuduan Beacon	31° 16'	121° 43'	-0 50	-1 20	(*1.05+0.7)		7.9	10.5	7.5	
1397	Hengsha	31° 17'	121° 51'	-0 49	-1 01	(*1.11-0.3)		8.2	11.2	6.9	
on Wusong, p.84											
1399	Changjiangkou	31° 06'	122° 01'	-1 57	-2 21	(*1.21+0.7)		9.2	11.8	8.5	
1401	Tongsha Shazui	31° 25'	122° 14'	-1 38	-2 26	(*1.09+0.3)		8.2	11.2	7.5	
1403	ZHONGJUN, CHANGJIANG APPROACH	31° 07'	121° 54'			Daily predictions, p.88		8.5	11.8	7.5	
1405	Jiuduan Beacon	31° 16'	121° 43'	-0 50	-1 20	(*1.05+0.7)		7.9	10.5	7.5	
1407	Hengsha	31° 17'	121° 51'	-0 49	-1 01	(*1.11-0.3)		8.2	11.2	6.9	
1409	Chongming Dao	31° 30'	121° 40'	-0 40	-0 49	(*1.15-0.7)		8.5	9.8	6.9	
1411	Laomihung	31° 28'	121° 44'	-0 38	-0 47	(*1.12-0.7)		8.2	11.2	6.9	
1413	Qixiao Gang	31° 28'	121° 47'	-0 22	-0 30	(*1.12-0.7)		8.2	11.2	6.6	
1415	Shixiao Gang	31° 32'	121° 38'	+0 28	+0 23	(*0.95-0.7)		6.9	9.5	5.6	
1417	Bao Zhen	31° 22'	121° 35'	-0 06	-0 21	(*1.05-0.7)		7.9	10.5	6.6	
1419	Huangpu Jiang	31° 24'	121° 31'	-0 41	-0 45	(*0.83+0.7)		7.5	9.8	6.6	
1421	Gaoqiao	31° 15'	121° 29'	+0 55	+1 06	*0.80	--	6.2	8.2	5.9	
1423	WUSONG [Shanghai, Wusung Bar]	31° 12'	121° 30'	+0 55	+1 06	*0.80	--	--	--	--	
1425	Shanghai Gang [Shanghai, Huangpu River]	31° 12'	121° 30'								
1427	Jianyuan Dock	31° 12'	121° 30'								
1429	Chang Jiang	31° 46'	120° 56'	+2 58	+3 02	(*0.82-0.7)		6.2	8.2	4.9	
1431	Xulijing	31° 57'	120° 18'	+5 14	+5 36	(*0.68-0.7)		4.9	6.9	3.9	
1433	Hangzhou Wan	30° 44'	121° 22'	-0 10	-0 38	(*1.61-1.0)		11.8	15.7	10.2	
1435	Jinshanlui	30° 36'	121° 05'	+0 43	-0 04	(*1.97-2.0)		14.8	19.4	11.5	
1437	Zhapu	30° 25'	120° 32'	+1 59	+4 46	(*1.69+0.0)		12.8	16.7	11.2	
1439	Haining	30° 49'	122° 38'	-1 22	-1 22	*0.73	*0.72	8.6	11.7	9.6	
1441	CH'ANG CHIANG APPROACH (Side Saddle) <41>	28° 05'	121° 17'	-1 03	-1 04	(*0.80-0.2)		13.1	17.1	10.8	
on Naha, p.44											
1443	KEELUNG (CHI-LUNG CHIANG) <25>	25° 09'	121° 45'			Daily predictions, p.112		1.5	2.4	1.9	
1445	Su-ao Kang	24° 35'	121° 52'	-1 13	-1 13	(*0.78+0.2)		3.2	4.2	3.2	
1447	Hua-lien Kang	23° 58'	121° 37'	-1 15	-1 15	*0.83	*0.83	3.4	4.5	3.2	
1449	Ch'eng-kuang-ao Po-ti	23° 08'	121° 24'	-1 19	-1 20	*0.86	*0.83	3.6	4.8	3.3	
1451	Tu-lan Wan	22° 50'	121° 11'	-1 17	-1 17	*0.76	*0.76	3.1	4.1	3.0	
1453	Nan-liao Wan, Lu Tao	22° 40'	121° 28'	-1 22	-1 22	*0.73	*0.72	3.0	4.1	2.8	
1455	Pa-tai Wan, Lan Yu	22° 02'	121° 34'	-1 03	-1 04	(*0.80-0.2)		3.3	4.4	2.9	
on Hong Kong, p.120											
1443	Ta-pan-lieh Mao-ti	21° 58'	120° 45'	-2 55	-2 46	*0.59	*0.57	2.0	2.6	2.6	
1445	Ch'e-ch'eng Po-ti	22° 04'	120° 42'	-2 31	-2 21	*0.51	*0.54	1.6	2.1	2.3	
1447	Tung-kang Po-ti	22° 28'	120° 26'	-1 31	-1 22	*0.48	*0.46	1.6	1.9	2.1	
1449	Kao-hsiung <26>	22° 37'	120° 16'	-1 16	-1 07	*0.38	*0.39	1.2	1.5	1.7	
1451	An-p'ing Kang	23° 00'	120° 09'	-0 09	+0 00	*0.43	*0.39	1.5	1.9	1.9	
1453	Ting-t'ou-o-shan	23° 06'	120° 04'	+0 45	+0 54	*0.54	*0.43	2.1	2.3	2.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	P'ENG-HU CH'UN-TAO Time meridian, 120° E (Pescadores Islands)			North	East	h m	h m	ft	ft		
1455	Ch'i-mei Yu	23° 13'	119° 25'	+0 07	+0 11	(*0.62+0.5)		3.8	4.5	3.7	
1457	Pa-chao Yu	23° 22'	119° 31'	-0 04	+0 00	*0.72	*0.72	4.2	4.9	3.7	
1459	Tung-p'an Hsu	23° 31'	119° 31'	+0 06	+0 10	+0.1	+0.1	6.1	7.1	5.2	
1461	PENGHU (MA-KUNG KANG)	23° 33'	119° 34'			Daily predictions		6.1	7.1	5.1	
1463	Pei-liao	23° 36'	119° 40'	-0 01	+0 03	+1.1	+0.1	7.1	8.9	5.7	
1465	Hsiao-men Hsu, Niu-kung Wan	23° 39'	119° 31'	+0 21	+0 24	*1.31	*1.20				
1467	Chi-pei Tao	23° 44'	119° 36'	+0 13	+0 16	*1.30	*1.10	8.3	10.1	6.4	
	TAIWAN, West Coast—cont.					on PengHu (Ma-Kung Kang), p.108					
1469	Pu-tai Po-ti	23° 23'	120° 09'	-0 29	-0 25	*0.72	*0.72	4.2	5.0	3.7	
1471	Hai-k'ou Po-ti	23° 42'	120° 10'	+0 12	+0 15	+1.5	-0.2	7.8	9.4	5.7	
1473	Fang-yuan Po-ti	23° 55'	120° 18'	+0 12	+0 15	(*1.61-1.1)		9.8	11.8	7.1	
1475	T'u-ko-k'u Kang	24° 11'	120° 29'	+0 02	+0 06	(*1.67-1.3)		10.2	12.4	7.2	
1477	Ta-an Kang	24° 23'	120° 34'	-0 06	-0 03	(*2.00-1.5)		12.0	15.0	8.7	
1479	Hou-lung Po-ti	24° 37'	120° 45'	-0 05	-0 01	(*1.85-1.2)		11.3	14.3	8.2	
1481	Tan-shui Kang	25° 11'	121° 26'	-0 14	-0 10	+0.9	0.0	7.0	8.8	5.5	
	CHINA, East Coast—cont.					on Xiamen, p.100					
1483	Shizhen (Zhongwai Yu)	24° 33'	118° 30'	-0 55	-0 42	(*0.99+0.0)		12.5	15.7	10.8	
1485	Wutongdao	24° 32'	118° 11'	-0 04	-0 03	(*1.03-0.3)		12.8	15.7	10.8	
1487	Dadan Dao [Amoy, outer harbor]	24° 23'	118° 10'	-0 04	+0 02	(*0.99-0.3)		12.5	15.1	10.8	
1489	XIAMEN [Amoy, inner harbor]	24° 27'	118° 04'			Daily predictions		12.5	15.7	10.8	
1491	Qianyan [Knob Rock]	23° 55'	117° 52'	+0 07	+0 12	(*0.80-1.0)		11.5	11.8	7.9	
						on Shantou, p.104					
1493	Nanao Dao (Yunao Wan)	23° 24'	117° 03'	-0 46	-0 34	(*1.17-0.3)		5.3	5.9	4.9	
1495	SHANTOU (MAYU) [Swatow, Double Island]	23° 20'	116° 45'			Daily predictions		4.3	4.9	4.6	
1497	Dahao	23° 15'	116° 55'	-0 11	+0 21	(*0.74-0.3)		3.3	4.3	3.0	
1499	Biaojiao	23° 15'	116° 45'	+0 09	-0 05	(*1.04+0.0)		4.6	5.6	4.6	
1501	Dahao Dock	23° 15'	116° 45'	+0 15	-0 19	(*0.87-0.3)		3.9	4.9	3.6	
1503	Haimen Wan	23° 11'	116° 37'	+0 26	-0 27	(*0.73+0.3)		3.3	4.3	3.6	
	CHINA, South Coast										
1505	Shibeshan Jiao	22° 56'	116° 29'	-0 09	-0 26	(*0.74-0.3)		3.3	3.9	3.0	
						on Hong Kong, p.120					
1507	Mirs Bay										
1509	Peng Chau	22° 33'	114° 26'	+0 03	-0 04	-0.6	-0.3	3.0	5.3	4.0	
1511	Jones Cove	22° 28'	114° 20'	-0 27	-0 16	-0.4	-0.1	3.0	4.9	4.2	
1513	Tide Cove	22° 24'	114° 12'	-0 12	-0 15	-0.2	+0.1	3.0	5.3	4.4	
1515	Port Shelter	22° 23'	114° 17'	-0 33	-0 27	-0.4	-0.1	3.0	5.3	4.2	
1517	Hong Kong Island										
1519	Taitam Bay	22° 14'	114° 14'	-0 07	-0 07	-0.6	-0.1	2.8	4.6	4.1	
1521	Aberdeen Harbor	22° 15'	114° 09'	-0 04	-0 01	-0.6	-0.1	2.8	4.6	4.1	
1523	HONG KONG	22° 18'	114° 12'			Daily predictions		3.3	5.1	4.5	
1525	Canton River approach										
1521	Wen Wei Rock	21° 49'	113° 56'	+0 08	+0 21	(*0.88-1.0)		2.2	4.5	3.0	
1523	Wai-ling-ting	22° 06'	114° 02'	+0 11	+0 01	-0.4	-0.3	3.2	5.0	4.1	
1525	Kapshui Mun	22° 21'	114° 03'	+0 16	+0 06	+0.5	+0.4	3.4	5.8	4.9	
1527	West Brother	22° 20'	113° 58'	+0 53	+0 52	+0.7	+0.3	3.7	5.9	5.0	
1529	Macao Harbor	22° 11'	113° 33'	+0 45	+0 49	+3.3	+3.0	3.6	5.5	7.6	
	Zhu Jiang					on Huangpu, p.116					
1531	Sishengwei	22° 55'	113° 36'	-0 59	-1 07	(*1.01+0.3)		7.2	8.2	5.6	
1533	Sanshakou	22° 53'	113° 31'	-0 49	-0 51	(*0.97+0.7)		6.9	7.9	5.6	
1535	Nizhouou	22° 54'	113° 34'	-0 35	-0 56	(*1.03+0.7)		7.2	8.2	6.2	
1537	Haixin	22° 58'	113° 32'	-0 46	-0 54	(*0.99+0.7)		7.2	8.2	5.9	
1539	Dasheng	23° 03'	113° 32'	-0 14	-0 20	(*0.96+0.3)		6.9	7.5	5.3	
1541	Chisha (Lighthouse)	23° 03'	113° 30'	+0 07	-0 27	(*1.00+0.0)		6.9	7.9	5.3	
1543	HUANGPU	23° 06'	113° 27'			Daily predictions		6.9	7.9	5.3	
1545	Bazhou	23° 07'	113° 22'	+0 43	+0 14	(*0.90+0.3)		6.2	7.2	4.9	
						on Haikou, p.124					
1547	Leizhou Bandao										
1549	Chikanzi (Hongkan Wan)	20° 19'	110° 24'	+1 13	+0 05	(*0.79+0.3)		3.6	4.3	4.6	
	Haian	20° 16'	110° 13'	+0 04	+0 04	(*0.87+1.0)		4.3	5.6	5.6	
	Hainan Island										
	Hainan Dao North Coast										
1551	Dengmai Wan	19° 57'	110° 07'	-1 15	-0 25	(*1.32+0.3)		6.2	9.2	6.6	
1553	HAIKOU (XIUYING)	20° 01'	110° 16'	+0 52	+0 30	(*0.65+1.3)		4.6	6.6	4.9	
1555	Haikoushi (Hai-k'ou, Hoihow)	20° 03'	110° 20'	+2 05	+1 05	(*0.73+0.3)		3.3	4.3	4.6	
1557	Puqian	20° 02'	110° 34'	+2 30	+1 13	(*0.79-0.3)		3.6	4.3	4.3	
1559	Dongxicun	20° 02'	110° 37'					3.9	4.3	3.9	

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TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	CHINA Hainan Island—cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
				on Beihai, p.128							
1561	Hainan Dao, West Coast Yinggehai	18° 30'	108° 43'	-5 30	-6 14	(*0.38-0.3)		3.6	4.9	2.3	
	CHINA, South Coast—cont.			on Haikou, p.124							
1563	Reizhou Bandao Kuwei Jiao	20° 13'	109° 56'	-1 51	-0 21	(*1.14+0.7)		5.6	7.9	6.2	
				on Beihai, p.128							
1565	Beibu Wan Weizhou Dao	21° 02'	109° 07'	-0 19	-0 07	(*0.91+0.3)		8.5	12.5	7.9	
1567	BEIHAII	21° 29'	109° 05'			Daily predictions		9.5	13.1	8.5	
1569	Off Beihai	21° 29'	108° 59'	-0 02	+0 04	(*1.11+0.3)		10.5	14.4	9.5	
1571	Dafeng Jiang	21° 38'	108° 52'	+0 15	+0 31	(*0.98-0.3)		9.2	13.1	7.9	
1573	Sanniang Wan	21° 38'	108° 47'	-0 10	-0 03	(*0.99+1.6)		9.2	13.1	10.2	
	VIETNAM Time meridian, 105° E			on Paramushir Island, p.8				Diurnal	Tropic		
1575	Lochuc San §	21° 15'	107° 57'	-1 48	-1 41	(*0.74+0.5)		7.8	10.8	7.8	
1577	Cu Xu, Kao Tao §	20° 59'	107° 45'	-1 55	-1 11	(*0.68-0.3)		7.2	10.2	6.4	
1579	Tsieng Mun §	21° 08'	107° 37'	-1 40	-0 59	*0.68 *0.68		7.2	10.2	6.8	
1581	Cai Bau, Cai Bau Island §	21° 07'	107° 30'	+0 18	-1 32	+1.2 +0.9		6.8	10.8	7.1	
1583	Campha Port §	21° 02'	107° 22'	+0 06	-1 44	+1.1 +0.9		6.7	9.6	7.1	
1585	Norway Islands §	20° 37'	107° 09'	+0 05	-0 29	+0.1 +0.1		6.5	9.7	6.2	
1587	Hon Gai, Halong Bay §	20° 57'	107° 04'	+0 21	-0 09	+2.9 +1.7		7.7	11.4	8.4	
1589	Cat Ba, Isle de la Cat Ba §	20° 43'	107° 03'	+0 05	-0 24	(*0.97+0.7)		6.3	9.3	6.6	
1591	DO SON (Hon Dau) §	20° 40'	106° 49'			Daily predictions, p.132		6.5	9.7	6.1	
1593	Cua Namtrieu §	20° 46'	106° 50'	+0 00	+0 44	-0.1 -0.1		6.5	9.7	6.0	
1595	Haiphong, Cua Cam §	20° 52'	106° 40'	+1 11	+1 04	*0.97 *0.97		6.1	9.0	6.0	
1597	Bach Long Vi Island §	20° 08'	107° 43'	-0 23	-2 11	(*0.95+0.6)		6.2	9.2	6.4	
1599	Balat River entrance §	20° 18'	106° 32'	-0 47	+0 12	(*0.95+0.5)		6.2	9.2	6.3	
1601	Hon Ne §	19° 55'	106° 00'	-1 00	+0 07	+0.2 +0.2		6.5	9.3	6.5	
1603	Hon Me §	19° 23'	105° 55'	-1 05	+0 46	-0.1 -0.3		6.7	8.6	6.2	
1605	Hon Nieu §	18° 48'	105° 46'	-1 27	+1 00	*0.93 *0.93		6.1	7.8	6.0	
1607	Hoi River entrance §	18° 46'	105° 45'	-0 14	+1 45	*0.72 *0.69		4.8	6.4	4.8	
1609	Sot River entrance §	18° 28'	105° 55'	-1 14	+1 39	(*0.54+0.7)		3.5	4.5	4.0	
1611	Vung Chua Bay §	17° 56'	106° 30'	-1 12	+1 21	*0.39 *0.34		2.7	3.4	2.5	
1613	Nhat Le River entrance §	17° 30'	106° 37'	-1 12	+1 21	*0.32 *0.28		2.2	2.8	2.0	
				on Manila, p.184							
1615	Paracel Islands <27> †	16° 33'	111° 37'	-1 20	-1 16	+2.1 +2.1		3.1	3.8	3.9	
1617	Chon May Bay <27> †	16° 20'	108° 01'	+0 29	-0 29	(*0.48+1.8)		1.6	2.0	2.5	
1619	Da Nang <27> †	16° 07'	108° 13'	-0 12	-0 57	(*0.70+1.9)		2.3	2.7	3.0	
1621	Culae Cham <27> †	15° 57'	108° 30'	-0 27	-0 36	(*0.85+2.2)		2.8	3.5	3.6	
1623	Dung Quat Bay <27> †	15° 24'	108° 45'	-0 38	-0 30	+2.2 +2.1		3.4	4.4	3.9	
1625	Tam Quan <27> †	14° 35'	109° 04'	-0 51	-0 31	+2.2 +2.2		3.2	4.3	4.0	
1627	Qui Nhon <27> †	13° 45'	109° 13'	-0 53	-0 29	+2.8 +2.5		3.6	4.5	4.3	
1629	Vung Xuan Dai <27> †	13° 23'	109° 16'	-0 54	-0 39	+2.3 +2.3		3.2	4.3	4.1	
1631	Vung Ro <27> †	12° 52'	109° 25'	-1 01	-0 42	+2.6 +2.5		3.4	4.6	4.3	
1633	Port Van <27> †	12° 40'	109° 23'	-1 03	-0 45	+2.6 +2.5		3.4	4.6	4.3	
1635	Nha Trang, Baie de <27> †	12° 15'	109° 13'	-1 15	-0 46	+2.7 +2.4		3.6	4.6	4.3	
1637	Cam Ranh Bay <27> †	11° 53'	109° 12'	-1 18	-0 53	+2.4 +1.9		3.8	4.8	4.1	
1639	Mui Dinh <27> †	11° 22'	109° 01'	-0 39	-0 30	+1.7 +1.4		3.6	4.8	3.3	
1641	Pointe Lagan <27> †	11° 10'	108° 42'	-0 50	-0 23	+5.3 +4.5		4.1	5.2	6.8	
1643	Poulo Cecir de Mer <27> †	10° 32'	108° 56'	-0 36	-0 24	+3.5 +3.4		3.4	4.2	5.3	
1645	Phan Thiet <27> †	10° 55'	108° 06'	+0 13	+0 14	+5.7 +4.7		4.3	5.8	7.0	
				on Mui Vung Tau, p.136				Mean	Diurnal		
1647	Mui Ke Ga	10° 42'	107° 59'	-1 28	-1 27	(*0.59+2.5)		3.0	5.1	7.2	
1649	Mui Ba Kiem	10° 30'	107° 30'	-0 31	-0 31	(*0.85+0.8)		5.0	7.3	7.5	
				on Saigon River							
1651	MUI VUNG TAU	10° 20'	107° 05'			Daily predictions		5.9	8.6	7.9	
1653	Coral Bank	10° 37'	106° 51'	+0 51	+1 23	(*0.97+1.6)		5.6	8.3	9.3	
1655	Ho Chi Minh City	10° 46'	106° 42'	+2 10	+2 39	-0.4 <28>		6.9	8.6	7.5	
1657	Nha Be River entrance	10° 23'	106° 48'	+0 28	+1 25	0.0 0.0		5.9	8.6	7.9	
1659	Cua Tieu entrance	10° 15'	106° 47'	+0 43	+0 42	(*1.10-0.3)		6.6	9.5	8.4	
1661	My Tho, Cua Tieu	10° 21'	106° 21'	+1 30	+2 49	-1.3 --		--	--	--	
1663	Hau Giang River entrance	9° 24'	106° 27'	+0 40	+1 00	0.0 0.0		5.9	8.6	7.9	
1665	Mac Bat, Hau Giang River	9° 43'	106° 09'	+1 30	+2 29	+0.9 --		--	--	--	
1667	Con Son	8° 41'	106° 36'	+0 33	+0 33	-0.4 -0.4		5.9	8.7	7.5	
1669	Cau Lon River entrance	8° 39'	104° 45'	--	--	-- --		--	--	2.9	
1671	Pulau Panjang, Gulf of Siam	9° 18'	103° 28'	--	--	-- --		--	--	2.5	
1673	Rai Island, Gulf of Siam	9° 50'	104° 40'	--	--	-- --		--	--	2.1	
				on Musi River, p.152				Diurnal	Tropic		
1675	Ha Tien †	10° 22'	104° 28'	-4 09	-4 16	*0.36 <29>		2.2	2.7	2.5	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
	CAMBODIA Time meridian, 105° E			on Do Son, p.132							
1677	Phumi Phsar Ream Bay §	10° 30'	103° 36'	+0 48	+1 03	(*0.26+0.9)		1.7	2.2	2.5	
	on Manila, p.184										
1679	Cone Island <27> †	11° 26'	103° 00'	-11 17	-9 54	+1.2	+1.2	3.2	4.5	3.0	
	on Bangkok Bar, p.140										
1681	Chong Samet †	12° 35'	101° 26'	+0 43	-0 52	-2.8	-0.7	5.7	6.7	5.4	
1683	Sattahip †	12° 39'	100° 55'	-0 10	-0 48	-1.5	+1.0	5.3	6.2	6.8	
1685	<i>Chao Phraya River</i>										
1687	BANGOK BAR †	13° 30.0'	100° 59.3'	+0 04	<i>Daily predictions</i> (0.90+0.8)			7.8	9.1	7.7	
1689	Entrance †	13° 32'	100° 35'	+2 00	+2 00	*0.93	*0.88	7.0	8.2	7.7	
	Bangkok †	13° 44'	100° 30'					7.4	8.6	7.0	
	on Chuuk, p.204										
1691	Ko Lak §	11° 48'	99° 49'	-5 23	-1 14	*2.0	*2.0	3.8	4.9	6.2	
1693	Chumphon §	10° 27'	99° 15'	---	-1 42	*1.7	*1.7	3.2	3.9	3.5	
1695	Ko Prap §	9° 16'	99° 26'	-3 59	-3 34	*2.3	*2.3	4.4	5.5	5.7	
	on Singapore, p.144										
1697	Lakon Roads	8° 33'	100° 03'	-0 59	-0 59	(*0.28+1.0)		1.6	1.9	2.5	
1699	Songkhla	7° 13'	100° 36'	-1 11	-1 13	(*0.26+1.8)		1.5	1.7	3.2	
	on Barito River, p.168										
	on Barito River, p.168										
1701	Trengganu †	5° 21'	103° 08'	+2 41	+2 32	*0.84	*0.84	4.9	6.0	3.4	
	on Singapore, p.144										
1703	<i>SINGAPORE (Tanjong Pagar)</i>										
1705	Pulau Bukum	1° 15.7'	103° 51.1'	+0 01	+0 13	+0.5	+0.1	6.1	8.1	5.6	
1707	Malacca	1° 14'	103° 46'	-3 10	-2 52	*0.74	*0.67	4.4	5.9	3.8	
1709	Port Kelang	2° 11'	102° 15'	-5 38	-5 23	(*1.68-1.2)		9.6	13.6	7.6	
1711	Bagan Datoh	3° 00'	101° 23'	-7 07	-6 44	+0.7	+0.6	5.8	7.8	5.9	
1713	Lumut, Dinding River	4° 00'	100° 45'	-7 21	-7 17	-0.5	+0.4	4.8	7.7	5.2	
	on Belawan Channel, p.148										
1715	Pinang (Georgetown)	5° 25'	100° 21'	-1 22	-1 07	+0.1	+0.3	4.3	6.2	5.1	
	THAILAND, West Coast										
	Time meridian, 105° E										
1717	Pulau Lela	6° 44'	99° 42'	-2 34	-2 43	+2.2	+0.4	6.3	9.0	6.2	
1719	Puket Harbor	7° 51'	98° 24'	-3 14	-2 57	+0.5	-0.8	5.8	8.5	4.7	
1721	Ao Kaulak	8° 36'	98° 15'	-3 28	-3 24	+0.1	-0.6	5.2	7.2	4.6	
	on Davao, p.176										
	on Davao, p.176										
1723	<i>Sumatra Island, Malacca Strait</i>										
1725	Sabang Bay, Poelau We	5° 53'	95° 19'	+4 00	+4 03	(*0.77+0.7)		3.3	4.7	2.6	
1727	Uleelheue	5° 34'	95° 17'	+4 48	+4 50	(*0.70+1.5)		3.0	4.0	3.3	
1729	Sigli	5° 23'	95° 58'	+4 23	+4 25	(*0.60+1.8)		2.6	3.9	3.3	
1731	Lhokseumawe	5° 11'	97° 09'	+4 27	+4 29	(*0.79+1.3)		3.4	4.9	3.3	
1733	Idi	4° 58'	97° 47'	+5 27	+5 29	(*0.79+1.3)		3.4	4.8	3.3	
	on Belawan Channel, p.148										
1735	Sembilan Channel, Aroe Bay	4° 08'	98° 15'	-0 37	-0 37	+0.1	-0.1	4.7	6.6	4.9	
1737	BELAWAN CHANNEL	3° 50'	98° 43'	+1 56	+1 56	Daily predictions		4.5	6.2	4.9	
1739	Tanjong Tiram	3° 14'	99° 35'			-0.3	-0.9	5.1	7.0	4.3	
	on Mergui, p.308										
1741	Asahan River entrance	3° 01'	99° 52'	+5 40	+5 33	(*0.59+1.5)		7.3	10.2	6.9	
1743	Berembang, Sungi Panai	2° 37'	100° 07'	+6 22	+6 14	(*0.69+0.9)		8.5	11.4	7.2	
1745	Labuhanbilik, Sungai Panai	2° 31'	100° 10'	+6 45	+6 37	(*0.73+0.6)		9.0	12.4	7.2	
1747	Bagan-siapapi, Sungi Rokan	2° 09'	100° 48'	+7 09	+7 02	-0.3	-0.2	12.3	17.3	8.9	
	on Ch'ang Chiang Approach, p.92										
1749	Bengkalis	1° 28'	102° 06'	-2 22	-2 35	*0.60	*0.53	5.6	7.8	5.6	
1751	Siak River entrance	1° 15'	105° 10'	-1 31	-1 44	*0.58	*0.57	5.1	7.2	5.6	
1753	Selat-pandjang	1° 01'	102° 42'	+0 11	-0 02	(*0.86-2.1)		7.4	10.2	6.2	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
INDONESIA—cont. Time meridian, 105° E											
1755	<i>Sumatra Island, Malacca Strait—cont.</i>										
1757	Balai Point, Gelam Strait	0° 59'	103° 26'	-7 33	-7 30	(*1.32+2.2)		5.8	8.1	5.6	
1759	Pulo Kenipaian, Gelam Strait	0° 55'	103° 20'	-7 17	-7 14	+3.9	+1.5	6.7	8.7	5.2	
1761	Bandung, Pulo Mendol	0° 32'	103° 18'	-6 50	-6 47	(*1.74+2.5)		7.5	10.5	6.9	
	Pulo Muda, Kampar River	0° 22'	102° 53'	-5 04	-5 02	(*2.14+1.5)		9.2	12.3	6.9	
on Davao, p.176											
1763	<i>Bojan, Bulan Strait</i>		1° 01'	103° 55'	-4 45	-4 48	*1.32	*1.32	4.4	5.4	
1765	Oeban Point, Bintan Island	1° 04'	104° 13'	-5 31	-5 33	*1.77	*1.44	6.3	6.9	4.9	
1767	Tandjungpinang, Bintan Island	0° 55'	104° 26'	-4 35	-4 37	*1.42	*1.67	4.6	5.5	3.9	
1769	Dendang, Kidjang Strait	0° 51'	104° 37'	-5 06	-5 09	*1.40	*1.67	4.5	5.5	4.1	
on Kamaisi, p.16											
1771	<i>Sungaiuntung</i>		0° 18'	103° 36'	-9 00	-8.51	+1.6	-0.4	7.1	8.0	
on Hong Kong, p.120											
1773	<i>Sumatra, East Coast</i>		South	East	on Mui Vung Tau, p.136						
1775	Pulo Berelas, Berhalia Strait	0° 30'	104° 02'	-11 42	-11 42	(*0.93-0.7)		8.0	9.7	6.6	
1777	Kwala Ladjau, Indragiri River	0° 24'	103° 34'	-10 25	-10 25	+0.7	+0.1	9.2	10.4	8.2	
1779	Tembilahan, Indragiri River	0° 19'	103° 14'	-8 42	-8 42	+3.3	+0.4	11.5	12.6	9.8	
	Kwala Niur	1° 00'	103° 49'	-10 50	-10 50	+0.4	+0.3	8.7	10.1	8.2	
on Musi River, p.152											
1781	Tandjung Butun, Linga Island †	0° 15'	104° 36'	+0 38	-2 09	*0.69	*0.59	5.3	7.2	4.6	
1783	Kotadabok, Singkep Island †	0° 30'	104° 34'	-0 06	-1 42	(*0.73+0.2)		5.3	7.2	5.3	
1785	Pulo Berhalia, Berhalia Strait †	0° 52'	104° 24'	-2 49	-1 29	-1.0	-1.1	7.4	9.4	6.2	
1787	Chebia, Tudjuh Islands †	1° 13'	105° 16'	-0 22	-1 14	*0.75	*0.72	5.6	8.0	4.9	
1789	Sungai Merawang ent., Bangka Island †	2° 05'	106° 10'	-0 07	-1 50	*0.59	*0.59	4.2	6.3	3.9	
1791	Klabat Bay, Bangka Island †	1° 42'	105° 42'	+1 02	+0 03	*0.77	*0.69	5.9	8.4	4.9	
1793	Sungai Kampa, Bangka Island †	1° 45'	105° 24'	-0 04	-0 22	*0.90	*0.79	6.9	9.7	5.6	
1795	MUSI RIVER (outer bar) †	2° 14'	104° 56'	<i>Daily predictions</i>				7.3	10.0	6.2	
1797	Soengsang, Palembang River †	2° 22'	104° 54'	+0 42	+1 09	0.0	-0.2	7.5	10.2	6.2	
1799	Perajin, Palembang River †	2° 56'	104° 53'	+3 44	+4 17	*0.83	*0.83	6.1	8.3	5.3	
1801	Palembang, Palembang River †	2° 59'	104° 43'	+4 12	+4 56	*0.75	*0.66	5.7	7.8	4.6	
1803	Tandjung Kelian, Bangka Strait †	2° 05'	105° 07'	+0 03	+0 12	-0.2	-0.3	7.4	10.3	6.2	
1805	Muritok, Bangka Island †	2° 05'	105° 10'	-0 13	+0 09	0.0	-0.3	7.6	10.5	6.2	
1807	Nangka Island, Bangka Strait †	2° 23'	105° 46'	-0 12	+0 48	*1.12	*0.97	8.6	10.7	6.9	
1809	Besar Island, Bangka Strait †	2° 53'	106° 08'	-0 12	+0 19	*0.86	*0.86	5.8	8.1	5.9	
on Surabaya Strait, p.160											
1811	Dapur Island, Banka Island §	3° 08'	106° 31'	+11 43	+14 02	+0.8	-0.1	4.6	6.3	3.9	
1813	Tjelaka, Liat Island §	2° 52'	107° 01'	+11 59	+13 00	+0.7	-0.4	4.8	6.9	3.6	
1815	Tulangbawang River entrance §	4° 25'	105° 51'	+11 39	+13 42	*0.85	*0.62	3.5	4.0	3.0	
Time meridian, 120° E											
1817	<i>Gaspar Strait</i>		3° 19'	107° 13'	+13 52	+14 09	+0.3	+0.3	3.7	5.3	
1819	Simedang Island §	2° 45'	107° 38'	+13 01	+13 51	+2.1	+0.6	5.2	7.5	4.9	
1821	Tandjungpandan, Belitung Island §	2° 32'	107° 37'	+13 13	+13 26	+1.2	+0.4	4.5	6.7	4.3	
Time meridian, 105° E											
1823	<i>Sumatra, Sunda Strait</i>		5° 52'	105° 31'	+1 45	+1 48	(*0.51+1.0)		2.2	3.0	
1825	Bangkai Anchorage, Sebuku Island	5° 27'	105° 16'	+1 56	+1 58	(*0.53+1.3)		2.3	3.1	2.6	
on Davao, p.176											
1827	Kotaagung, Semangka Bay	5° 30'	104° 37'	+1 20	+1 21	*0.54	*0.54	2.3	3.2	2.6	
on Kutei River Ent., p.164											
1829	<i>Sumatra, West Coast</i>		5° 28'	102° 22'	+0 23	+0 23	*0.49	*0.49	2.2	2.8	
1831	Enggano Bay, Enggano Island	3° 47'	102° 15'	+1 02	+1 02	*0.49	*0.49	2.3	3.1	2.3	
1833	Sawangtungku, North Pagai Island	2° 47'	100° 13'	+0 20	+0 21	*0.49	*0.49	2.3	3.0	2.3	
1835	Siberut Bay, Siberut Island	1° 35'	99° 13'	+0 19	+0 19	*0.49	*0.49	2.2	2.8	2.3	
1837	Padang	0° 58'	100° 21'	+0 23	+0 23	*0.52	*0.45	2.6	3.4	2.3	
1839	Telo Island, Batoe Islands	0° 04'	98° 17'	+0 02	+0 02	(*0.38+0.6)		1.8	2.6	2.3	
on Davao, p.176											
1841	Ajerbangis	0° 12'	99° 22'	-0 08	-0 08	*0.48	*0.48	2.0	2.8	2.3	
1843	Natal	0° 33'	99° 06'	+0 20	+0 21	*0.48	*0.48	2.0	2.8	2.3	
1845	Telukdalem, Nias Island	0° 34'	97° 49'	-0 02	-0 02	(*0.34+0.7)		1.6	2.1	2.3	
1847	Simanari Bay, Nias Island	1° 24'	97° 11'	+0 06	+0 06	(*0.32+0.8)		1.5	2.2	2.3	
1849	Sibolga, Sibolga Bay	1° 45'	98° 46'	+0 06	+0 06	(*0.26+1.1)		1.2	1.7	2.3	
1851	Barus	2° 01'	98° 23'	+0 08	+0 09	(*0.40+0.5)		1.9	2.7	2.3	
1853	Singkil	2° 17'	97° 47'	+0 39	+0 39	(*0.34+0.7)		1.6	2.3	2.3	
1855	Sinabang Bay, Pulo Simalur	2° 30'	96° 23'	+0 08	+0 09	*0.26	*0.26	1.0	1.4	1.3	
1857	Tapaktuan	3° 15'	97° 11'	+0 52	+0 52	*0.23	*0.14	1.3	1.8	1.0	
1859	Meulaboh	4° 08'	96° 08'	+1 12	+1 12	*0.20	*0.20	0.8	1.2	1.0	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	INDONESIA—cont. Time meridian, 105° E			North	East	h m	h m	ft	ft	ft	
on Kutei River Ent., p.164											
1861	Sumatra, West Coast—cont. Tjalang Bay	4° 37'	95° 35'	+1 53	+1 54	*0.22	*0.18	1.1	1.6	1.0	
1863	Pulau Raja	4° 52'	95° 23'	---	---	---	---	0.4	0.6	0.7	
1865	Pulau Rusa	5° 17'	95° 12'	+2 50	+2 50	*0.26	*0.18	1.4	1.9	1.1	
on Jakarta, p.156											
1867	Java DJAKARTA (Tandjungpriok) §	6° 06'	106° 53'	---	---	Daily predictions	---	2.0	2.6	2.0	
1869	Tjirebon	6° 43'	108° 34'	---	---	(0.92+0.3)	---	1.9	2.0	2.0	
1871	Semarang §	6° 58'	110° 25'	+10 44	+9 15	(*0.85+0.3)	---	1.7	2.2	2.0	
on Surabaja Strait, p.160											
1873	Rembang §	6° 42'	111° 20'	+0 31	-0 10	*0.66	*0.62	2.5	3.7	2.3	
1875	Udjung Pangah §	6° 54'	112° 34'	-0 14	+0 38	(0.92+0.3)	3.4	4.9	3.5		
1877	SURABAJA STRAIT (Djamuang Reef) §	6° 56'	112° 44'	---	---	Daily predictions	---	3.7	5.3	3.6	
1879	Sembilangan, Surabaja Strait §	7° 03'	112° 41'	+1 39	-0 58	+0.5	+0.3	3.9	5.1	3.9	
on Hong Kong, p.120											
1881	Surabaja, Surabaja Strait	7° 13'	112° 44'	+1 55	+2 04	+0.6	+0.3	5.8	6.7	4.9	
1883	Surabaja Strait, east entrance	7° 20'	112° 52'	+1 34	+1 43	+1.0	-0.2	6.6	7.4	4.9	
1885	Pasuruan, Madura Strait	7° 38'	112° 55'	+1 31	+1 40	+1.5	+0.2	6.7	7.4	5.3	
1887	Gading, Madura Island	7° 12'	112° 55'	+1 39	+1 49	+1.0	-0.2	6.7	7.3	4.9	
1889	Kaliangket, Madura Island	7° 03'	113° 56'	+0 25	+0 34	0.0	+0.2	5.1	5.9	4.6	
on Manila, p.184											
1891	Sapudi Island, Sapudi Strait †	7° 05'	114° 16'	-0 01	-0 23	+2.1	+1.5	3.9	4.8	3.6	
1893	Pulau Karangmas, Madura Strait †	7° 41'	114° 26'	-0 22	-0 43	+1.8	+1.3	3.8	4.7	3.3	
1895	Tabuan Island, Bali Strait †	8° 02'	114° 28'	-0 45	-1 00	(*0.88+2.9)	---	2.9	3.6	4.3	
on Belawan Channel, p.148											
1897	Banjuwangi, Bali Strait	8° 13'	114° 23'	-4 19	-4 19	(*0.80+1.3)	3.6	4.9	5.2		
1899	Tjilatjap	7° 44'	109° 00'	-5 25	-5 25	*0.76 *0.65	3.7	5.0	3.6		
1901	Genteng Bay	7° 24'	106° 24'	-5 53	-5 54	(0.60+0.4)	2.7	3.7	3.3		
1903	Labuhan, Sunda Strait	6° 22'	105° 49'	-6 22	-6 22	*0.49 *0.38	2.5	3.2	2.3		
1905	Tandjung Tjikoneng, Sunda Strait	6° 04'	105° 53'	-6 33	-6 33	(*0.40-0.7)	1.8	2.4	1.3		
Time meridian, 120° E											
1907	Bali Benoa	8° 45'	115° 13'	-3 36	-3 37	-0.2	-0.9	5.2	7.0	4.3	
on Hong Kong, p.120											
1909	Buleleng	8° 06'	115° 05'	+2 10	+2 20	-1.7	-0.7	2.3	3.0	3.3	
Time meridian, 105° E											
1911	Lombok Ampenan †	8° 34'	116° 04'	-0 55	-0 51	(*0.85+2.2)	2.8	3.6	3.6		
1913	Labuan, Tring Bay †	8° 43'	116° 03'	-0 35	-1 06	+2.0 +1.2	3.8	4.7	3.6		
Time meridian, 120° E											
1915	Sumbawa Bima Bay	8° 27'	118° 43'	+2 05	+1 52	(*0.41+0.7)	2.5	3.1	3.0		
1917	Sape Bay	8° 34'	119° 02'	+1 32	+1 19	(*0.57+0.7)	3.5	4.5	3.9		
on Belawan Channel, p.148											
1919	Sumba Sendikari Bay	9° 46'	119° 37'	-3 52	-3 52	+1.4	-0.8	6.7	9.4	5.2	
1921	Nangamesi Bay	9° 38'	120° 15'	-3 12	-3 12	+1.1	-0.4	6.0	8.3	5.2	
Flores Island											
1923	Tuluk Perapat	8° 47'	119° 50'	-3 05	-3 06	+2.3	+0.4	6.4	8.4	6.2	
1925	Ende Bay	8° 47'	121° 24'	-3 17	-3 17	+1.9	+0.2	6.2	8.6	5.9	
Alor Island											
1927	Kalabahi	8° 14'	124° 31'	-1 40	-1 40	-0.3	-0.9	5.1	6.7	4.3	
Timor											
1929	Kupang Bay	10° 10'	123° 34'	-3 05	-3 05	*0.75	*0.73	3.4	4.8	3.6	
1931	Atapupu	9° 00'	124° 52'	-2 31	-2 31	*0.90	*0.85	4.2	5.8	4.3	
Time meridian, 135° E											
1933	Tanimbar Islands Ritabel Bay, Larat Island	7° 09'	131° 43'	+0 49	+0 49	*0.90	*0.85	4.2	5.2	4.3	
1935	Moluccas Islands Dobo, Wamar Island, Aru Islands	5° 45'	134° 13'	+0 23	+0 23	*0.90	*0.81	4.3	5.4	4.3	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	INDONESIA—cont. Time meridian, 135° E	South	East	h m	h m	ft	ft	ft	ft		
				on Shatt Al Arab, p.336							
1937	Moluccas Islands—cont. Naira, Banda Islands	4° 32'	129° 53'	+3 13	+3 03	(*0.67+0.5)		4.1	5.3	4.3	
1939	Ambon Bay, Ambon Island	3° 41'	128° 11'	+3 20	+3 08	(*0.56+0.4)		3.4	4.4	3.6	
1941	Namlea, Kajeli Bay, Buru Island	3° 16'	127° 06'	+2 58	+2 46	(*0.39+1.4)		2.4	3.1	3.6	
				on Shantou, p.104							
1943	Taniwel, Seram Island	2° 51'	128° 28'	+0 44	+1 17	*0.64	*0.61	2.2	3.0	3.6	
1945	Sanana, Sula Sanana, Sula Islands	2° 03'	125° 59'	+1 11	+1 43	*0.64	*0.61	2.2	2.8	3.6	
		North	East	on Belawan Channel, p.148							
1947	Galela Bay, Halmahera Island	1° 49'	127° 51'	-7 04	-7 04	(*0.67+0.3)		3.0	4.3	3.6	
				on Kutei River Ent., p.164							
1949	Ternate, Halmahera Island	0° 47'	127° 23'	+0 13	+0 13	(*0.47+0.8)		2.2	3.3	3.0	
1951	Taruna Bay, Sangi Island	3° 37'	125° 29'	+0 16	+0 16	*0.84	*0.84	3.9	5.7	3.9	
		South	East	on Surabaja Strait, p.160				Diurnal	Tropic		
1953	Time meridian, 120° E Celebes (Sulawesi) Makasar §	5° 09'	119° 24'	-1 37	+0 24	(*0.59+0.5)		2.2	3.0	2.6	
				on Shatt Al Arab, p.336				Mean	Spring		
1955	Kolaka, Gulf of Boni	4° 04'	121° 36'	+2 09	+1 57	*0.67	*0.70	4.0	4.9	3.9	
1957	Tampunawu, Muna Island	5° 13'	122° 18'	+2 14	+2 02	(*0.67+0.8)		4.1	5.0	4.6	
1959	Baubau, Buton Island	5° 28'	122° 37'	+2 10	+1 58	*0.66	*0.66	3.8	4.7	3.9	
1961	Lasolo Bay	3° 43'	122° 19'	+2 52	+2 40	(*0.57+0.6)		3.5	4.5	3.9	
				on Shantou, p.104							
1963	Lingkobu	2° 04'	121° 32'	-1 18	-0 45	-2.1	-2.2	3.4	4.3	3.6	
1965	Teluk Lamala, Peling Strait	0° 54'	123° 09'	-0 08	+0 24	*0.58	*0.56	2.0	2.7	3.3	
		North	East	on Kutei River Ent., p.164				Diurnal	Tropic		
1967	Poso	1° 22'	120° 45'	-1 56	-1 55	(*0.45+0.5)		2.1	3.0	2.6	
				on Jolo, p.172				Mean	Spring		
1969	Gorontalo River entrance †	0° 30'	123° 03'	---	---	---	---	2.9	--	2.6	
				on Kutei River Ent., p.164				Mean	Spring		
1971	Lembeh Strait	1° 27'	125° 12'	-0 48	-0 48	*0.58	*0.50	2.9	4.2	2.6	
1973	Manado	1° 30'	124° 50'	-0 23	-0 22	*0.87	*0.82	4.2	6.1	3.9	
1975	Tolitoli Bay	1° 02'	120° 49'	-0 37	-0 36	(*0.72+0.6)		3.4	5.2	3.9	
		South	East								
1977	Donggala	0° 40'	119° 44'	-0 37	-0 36	*0.84	*0.84	3.9	5.8	3.9	
		North	East								
1979	Borneo, East Coast Bakipit, Darvel Bay	4° 57'	118° 35'	-0 21	-0 21	*0.75	*0.64	3.8	5.4	3.3	
1981	Lahad Datu, Darvel Bay	5° 02'	118° 20'	-0 27	-0 37	*0.74	*0.59	3.8	5.0	3.2	
1983	Semporna, Darvel Bay	4° 29'	118° 37'	-0 28	-0 19	*0.74	*0.59	3.8	5.2	3.2	
1985	Tawau	4° 15'	117° 53'	+0 02	-0 26	+0.9	-0.1	5.7	8.0	5.0	
1987	Lingkas, Tarakan Island	3° 17'	117° 35'	-0 49	-0 48	+1.9	+0.1	6.5	9.3	5.6	
1989	Biwan Mouth, Kajan River	2° 55'	117° 42'	+0 01	+0 02	*1.29	*1.29	6.0	8.7	5.9	
1991	Tandjungselor, Kahan River	2° 49'	117° 22'	+2 11	+2 11	*0.46	*0.36	2.4	3.4	2.0	
1993	Kasseimouth, Berau River	2° 10'	117° 52'	-0 06	-0 05	*1.30	*1.23	6.3	9.1	5.9	
1995	Haji Bank, Beraoe River	2° 11'	117° 32'	+1 30	+2 14	0.0	-0.6	5.3	7.4	4.3	
1997	Miang Besar, Sangkulirang Bay	0° 45'	118° 00'	-0 39	-0 39	*0.86	*0.86	4.0	5.8	3.9	
1999	Sangkulirang, Sangkulirang River	0° 59'	117° 59'	-0 17	-0 16	-0.2	-1.1	5.6	8.4	3.9	
		South	East								
2001	KUTEI RIVER ENTRANCE	0° 42'	117° 30'	Daily predictions				4.7	6.8	4.6	
2003	Samarinda, Kutei River	0° 30'	117° 08'	+1 18	+1 18	(*0.68+1.2)		3.2	4.6	4.3	
2005	Balik Papan	1° 16'	116° 48'	-0 43	-0 43	+0.3	-0.2	5.2	7.9	4.6	
2007	Tanahgrogot, Pasir River	1° 55'	116° 12'	+0 55	+0 55	+0.4	-0.3	5.4	7.8	4.6	
2009	Aru Bank	2° 15'	116° 40'	-0 49	-0 48	(*0.32+0.5)		1.5	2.3	2.0	
2011	Pamukon Bay	2° 36'	116° 30'	-0 38	-0 37	+0.1	-0.1	4.9	7.1	4.6	
2013	Klumpeng Bay	3° 01'	116° 13'	-1 10	-1 09	*0.99	*0.99	4.4	6.7	4.6	
2015	Kampung Baru, Laut Strait	3° 25'	116° 01'	-0 19	-0 18	(*0.72+1.0)		3.4	5.1	4.3	
				on Barito River, p.168				Diurnal	Tropic		
2017	Borneo, South Coast BARITO RIVER (outer bar) †	3° 34'	114° 29'	Daily predictions				5.9	7.5	4.3	
2019	Banjermasin, Martapura River †	3° 20'	114° 36'	+1 17	+1 14	(*0.93+0.3)		5.5	7.0	4.3	
2021	Pangkon, Kahajan River †	3° 04'	114° 10'	+1 29	+1 59	(*0.95+0.8)		5.6	6.9	4.9	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
	INDONESIA—cont. Time meridian, 120° E	South	East	h m	h m	ft	ft	ft	ft	ft	
on Barito River, p.168											
2023	Borneo, South Coast—cont. Pegatan, Mendawai River †	3° 17'	113° 21'	+0 05	+0 29	+0.5	+0.1	6.3	7.8	4.3	
2025	Sampit Bay †	3° 00'	113° 03'	+0 16	+0 57	+0.8	+0.1	6.6	8.0	4.6	
2027	Pembuang River entrance †	3° 25'	112° 34'	+0 17	+0 25	(*0.64+1.5)		3.8	4.8	4.3	
on Jolo, p.172											
2029	Sungai Aru Tobal, Kumai Bay †	3° 10'	111° 48'	-0 03	-0 03	+1.4	+1.0	3.2	4.0	2.3	
2031	Lurah, Kota Waringin River entrance †	2° 54'	111° 26'	-0 30	-0 30	+2.5	+2.2	3.1	3.8	3.3	
2033	Djelai River entrance †	2° 59'	110° 44'	-0 04	-0 04	(*0.57+1.0)		1.6	1.9	1.6	
on Jakarta, p.156											
2035	Borneo, West Coast Pawan River entrance	1° 46'	109° 54'	-0 02	-0 46	(*2.20-0.8)		4.4	6.2	3.6	
2037	Sukadana, Sukadana Bay §	1° 14'	109° 57'	-0 31	-0 21	(*2.30-0.7)		4.6	6.4	3.9	
on Musi River, p.152											
2039	Pontianak, Little Kapuas River §	0° 01'	109° 20'	-0 20	-0 09	(*0.38+0.2)		2.8	3.8	2.6	
on Cebu, p.180											
2041	Kapuas-ketjil River entrance	0° 05'	109° 08'	-1 07	-0 34	*0.48	*0.45	3.6	4.9	3.0	
on Cebu, p.180											
2043	Pamangkat, Sambas-besar River	1° 11'	108° 59'	+5 45	+5 43	(*0.55+0.7)		1.8	2.1	2.0	
on Darwin, p.276											
MALAYSIA Sarawak and Sabah											
2045	Borneo, northwest coast Tandjung Datu	2° 05'	109° 39'	-1 42	-1 47	*0.41	*0.30	6.2	7.2	5.2	
2047	Kuching, Sarawak River	1° 34'	110° 21'	-1 18	-0 56	*0.72	*0.72	9.7	12.1	9.9	
2049	Pulau Lakei	1° 45'	110° 30'	-1 52	-1 53	*0.71	*0.86	8.6	11.1	10.2	
on Manila, p.184											
2051	Kuala Similajau §	3° 31'	113° 18'	-0 19	+0 18	+2.2	+1.8	3.7	5.0	3.8	
2053	Kuala Niah §	3° 58'	113° 42'	+0 18	+1 03	+2.1	+1.7	3.7	5.1	3.7	
2055	Miri †	4° 23'	113° 59'	+0 27	+1 09	+2.1	+1.8	3.6	4.8	3.7	
2057	Baram River entrance †	4° 35'	113° 59'	+0 08	+0 29	+1.4	+1.4	3.2	4.2	3.1	
2059	Sapo Point, Brunei Bay †	5° 00'	115° 08'	+0 50	+0 30	+3.6	+2.0	4.9	6.0	4.6	
2061	Sipitang, Brunei Bay †	5° 05'	115° 33'	+0 22	+0 24	+3.4	+2.0	4.7	5.8	4.5	
2063	Victoria Harbor, Labuan Island †	5° 16'	115° 15'	+0 26	+0 19	+3.9	+2.6	4.6	5.8	5.0	
2065	Kuala Papar, Kimanis Bay †	5° 45'	115° 54'	-0 09	-0 03	+2.1	+1.5	3.9	4.9	3.5	
2067	Kota Kinabalu †	5° 59'	116° 04'	+0 19	+0 17	+2.4	+1.6	4.1	5.2	3.7	
2069	Kudat, Marudu Bay †	6° 53'	116° 51'	+0 21	+0 00	+2.9	+1.7	4.5	5.6	4.0	
on Cebu, p.180											
2071	Tigabu Island	6° 53'	117° 29'	-0 13	-0 15	(*0.94+1.7)		2.8	4.8	3.9	
2073	Lankayan Island	6° 30'	117° 55'	-0 18	-0 19	(*0.90+1.9)		2.8	4.6	4.0	
2075	Sandakan	5° 50'	118° 07'	-0 01	-0 20	+1.2	+1.2	3.1	5.1	3.6	
on Davao, p.176											
2077	PHILIPPINE ISLANDS Sulu Islands	4° 47'	119° 25'	+0 06	+0 14	*0.70	*0.70	3.1	3.8	1.7	
2079	Tumindao Channel	5° 02'	119° 46'	+0 07	+0 16	*0.74	*0.74	3.3	4.2	1.8	
2081	Port Bongao, Tawitawi Island	5° 04'	119° 53'	+0 05	-0 08	*0.80	*0.80	3.4	4.4	2.0	
2083	Batu Batu Bay, Tawitawi Island	5° 02'	120° 06'	+0 15	-0 15	+0.4	-0.1	4.8	5.6	2.6	
2085	Baranang Island	5° 08'	120° 14'	+0 26	+0 27	+0.7	-0.1	5.1	5.9	2.7	
2087	Gallo Malo Channel, south entrance	5° 13'	120° 19'	+0 25	+0 20	*0.80	*0.80	3.4	4.4	2.0	
2089	Tandugan Channel, Tawitawi Island	5° 12'	120° 30'	-0 34	-0 17	*0.61	*0.61	2.6	3.4	1.5	
2091	Maimbung, Jolo Island	5° 55'	121° 01'	-0 08	+0 45	*0.72	*0.72	3.2	3.9	1.7	
on Jolo, p.172											
2093	Tataan Pass, Tawitawi Island †	5° 15'	119° 57'	-0 31	-0 31	*0.86	*0.86	--	2.4	1.0	
2095	Basbas Channel, Tawitawi Island †	5° 21'	120° 13'	-0 39	-0 39	*0.89	*0.89	--	2.5	1.2	
2097	Lahatlahat Island †	5° 39'	120° 17'	-0 33	-0 33	*0.93	*0.93	--	2.6	1.3	
2099	Pearl Bank †	5° 51'	119° 44'	+1 12	+1 12	+0.6	0.0	--	3.4	1.7	
2101	Pangutaran Island †	6° 15'	120° 30'	+1 25	+1 25	+0.7	0.0	--	3.5	1.7	
2103	Port Siasi, Siasi Island †	5° 33'	120° 49'	-1 33	-1 33	+1.3	0.0	--	4.1	2.0	
2105	Banting, Tapul Island †	5° 42'	120° 53'	-1 29	-0 58	+0.3	0.0	--	3.1	1.3	
2107	JOLO, Jolo Island †	6° 04'	121° 00'	-1 55	-1 55	*0.86	*0.86	--	2.8	0.9	
2109	Tulayan Island †	6° 01'	121° 19'	-1 55	-1 55	*0.86	*0.86	--	2.4	1.0	
2111	Dassalan Island †	6° 44'	121° 28'	+0 20	+0 20	+0.5	0.0	--	3.3	1.6	
on Davao, p.176											
2113	Capual Island	6° 01'	121° 25'	-0 15	+0 24	*0.89	*0.89	3.9	4.9	2.2	
2115	Simisa Island	5° 58'	121° 34'	-0 02	-0 01	*0.78	*0.78	3.5	4.2	1.9	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Diurnal		
				High Water	Low Water	High Water	Low Water				
	PHILIPPINE ISLANDS Sulu Islands—cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Davao, p.176											
2117	Bulan Island	6° 09'	121° 50'	-0 07	+0 04	*0.91	*0.91	4.0	4.7	2.2	
2119	Linawan Island	6° 19'	121° 56'	-0 29	-0 12	*0.78	*0.78	3.5	4.1	1.9	
2121	Balas, Basilan Island	6° 41'	122° 08'	+0 13	+0 20	*0.83	*0.83	3.6	4.3	2.0	
2123	Bojelebung, Basilan Island	6° 31'	122° 12'	+0 11	-0 17	+0.2	0.0	4.5	5.2	2.5	
2125	Amoylo, Basilan Island	6° 26'	122° 08'	-0 08	+0 52	+0.9	-0.2	5.4	6.2	2.8	
on Jolo, p.172											
2127	Port Holland, Basilan Island †	6° 33'	121° 52'	-1 49	-1 49	+0.2	0.0	--	3.0	1.3	
2129	Isabela, Basilan Island †	6° 42'	121° 58'	+0 01	+0 01	*0.79	*0.79	--	2.2	1.1	
Mindanao Island											
2131	Zamboanga †	6° 54'	122° 04'	-1 54	-1 54	+0.5	0.0	--	3.3	1.4	
on Cebu, p.180											
2133	Sibuco Bay	7° 19'	122° 04'	-0 40	-0 40	*0.76	*0.76	2.5	4.0	1.8	
2135	Panabutan Bay	7° 35'	122° 08'	-0 40	-0 40	*0.76	*0.76	2.5	4.1	1.8	
2137	Port Santa Maria	7° 46'	122° 07'	-0 40	-0 40	*0.76	*0.76	2.5	4.2	1.8	
2139	Dapitan	8° 40'	123° 25'	-0 40	-0 40	*0.79	*0.79	2.6	4.4	1.9	
2141	Murcielagos	8° 38'	123° 34'	-0 08	-0 13	*0.85	*0.85	2.8	4.2	2.0	
2143	Plaridel (Langaran)	8° 37'	123° 43'	-0 25	-0 25	*0.79	*0.79	2.6	4.1	1.9	
<i>Iligan Bay</i>											
2145	Oroqueta	8° 29'	123° 48'	-0 15	-0 15	*0.82	*0.82	2.7	4.0	1.8	
2147	Jiminez	8° 20'	123° 51'	-0 05	-0 05	*0.82	*0.82	2.7	4.1	1.8	
2149	Misamis	8° 09'	123° 51'	+0 00	-0 04	*0.88	*0.88	2.9	4.4	2.0	
2151	Iligan	8° 14'	124° 14'	-0 10	-0 10	*0.79	*0.79	2.6	4.2	2.0	
2153	Macabalan Pt., Macajalar Bay	8° 30'	124° 40'	-0 15	-0 15	*0.82	*0.82	2.7	4.2	1.8	
2155	Canauyon Anchorage	9° 00'	124° 51'	-0 15	-0 15	*0.79	*0.79	2.6	4.1	1.8	
2157	Mambajao, Camiguin Island	9° 15'	124° 43'	-0 15	-0 15	*0.76	*0.76	2.5	4.1	1.8	
2159	Nasipit Harbor, Butuan Bay	8° 59'	125° 20'	-0 13	-0 21	*0.82	*0.71	2.8	4.1	1.9	
2161	Agusan River ent., Butuan Bay	9° 00'	125° 31'	-0 09	-0 13	*0.72	*0.57	2.5	3.8	1.6	
on Manila, p.184											
2163	Surigao †	9° 48'	125° 29'	+0 45	+0 45	+0.1	0.0	--	3.4	1.7	
2165	Dingat, Dinagat Island †	9° 58'	125° 35'	+0 20	+0 20	+0.1	0.0	--	3.4	1.7	
2167	Melgar, Dinagat Island †	10° 04'	125° 31'	+0 00	+0 00	+0.1	0.0	--	3.4	1.7	
2169	San Roque, Dinagat Island †	10° 06'	125° 29'	-0 20	-0 20	+0.2	0.0	--	3.5	1.8	
on Legaspi Port, p.192											
2171	Malinao Inlet, Dinagat Island	10° 15'	125° 38'	+0 40	+0 40	*0.88	*0.88	3.2	4.0	2.2	
2173	Gaas Bay, Dinagat Island	10° 11'	125° 39'	+0 40	+0 40	*0.88	*0.88	3.2	4.0	2.2	
2175	Cuyomonjan, Talavera Island	9° 45'	125° 41'	+0 40	+0 40	+0.1	+0.1	3.8	4.6	2.5	
2177	Tayanan, Kangbangyo Island	9° 54'	125° 54'	+0 35	+0 35	-0.1	0.0	3.7	4.4	2.4	
2179	Port Pilar, Siargao Island	9° 52'	126° 06'	+0 25	+0 25	*0.86	*0.86	3.2	4.0	2.1	
2181	San Miguel, East Bugas Island	9° 44'	126° 02'	+0 30	+0 30	*0.88	*0.88	3.2	4.1	2.2	
2183	Sohuton Bay, Bucas Grande Island	9° 36'	125° 55'	+0 30	+0 30	+0.1	+0.1	3.8	4.6	2.5	
2185	Tugas Point	9° 29'	125° 57'	+0 20	+0 20	+0.1	+0.1	3.8	4.6	2.5	
2187	Dahikan Bay	9° 27'	125° 56'	+0 27	+0 22	+0.2	+0.2	3.8	4.7	2.6	
2189	Buenavista, General Island	9° 25'	126° 00'	+0 20	+0 20	+0.1	+0.1	3.8	4.6	2.5	
2191	Tandag	9° 05'	126° 12'	+0 15	+0 15	+0.2	+0.1	3.9	4.7	2.6	
2193	Hinatuan	8° 22'	126° 20'	+0 15	+0 15	+0.3	+0.1	4.0	4.9	2.6	
2195	Caraga Bay	7° 17'	126° 35'	+0 10	+0 10	+0.4	+0.1	4.1	5.0	2.6	
2197	Mati, Pujada Bay	6° 57'	126° 13'	+0 10	+0 10	+0.2	0.0	4.0	4.8	2.5	
on Davao, p.176											
2199	<i>Davao Gulf</i>										
2201	Lavigan Anchorage	6° 18'	126° 11'	+0 04	+0 04	-0.1	+0.1	4.1	4.9	2.4	
2203	Sigaboy Island	6° 38'	126° 04'	+0 04	+0 05	0.0	+0.1	4.2	5.0	2.5	
2205	DAVAO	7° 05'	125° 38'					4.3	5.1	2.5	
2207	Malalag	6° 36'	125° 25'	+0 04	+0 04	-0.1	+0.1	4.1	4.9	2.4	
2209	Malita	6° 25'	125° 37'	-0 04	-0 06	0.0	+0.2	4.1	5.1	2.5	
2211	Sarangani Island	5° 25'	125° 27'	-0 01	+0 06	0.0	0.0	4.3	5.2	2.4	
2213	Sarangani Bay	5° 50'	125° 12'	+0 03	+0 06	+0.2	0.0	4.5	5.3	2.5	
2215	Port Lebak	6° 32'	124° 03'	+0 07	+0 10	+0.7	0.0	5.0	5.8	2.8	
Cotabato, Mindanao River	7° 13'	124° 15'	+1 01	+1 42	*0.67	*0.67	3.0	3.5	1.6		
<i>Illana Bay</i>											
2217	Polloc Harbor	7° 21'	124° 13'	+0 14	+0 14	+0.4	-0.1	4.8	5.6	2.6	
2219	Port Baras	7° 38'	124° 01'	+0 14	+0 14	+0.5	0.0	4.8	5.6	2.7	
2221	Tukuran	7° 51'	123° 35'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7	
2223	Pagadian	7° 49'	123° 27'	+0 19	+0 19	+0.6	0.0	4.9	5.7	2.8	
2225	Port Sambuluan	7° 32'	123° 24'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7	
2227	Limbug Cove	7° 28'	123° 24'	+0 19	+0 19	+0.4	0.0	4.7	5.5	2.6	
2229	Maligay Bay	7° 32'	123° 15'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7	
2231	Margosatubig, Dumanquilas Bay	7° 35'	123° 10'	+0 11	+0 15	+0.2	-0.1	4.6	5.3	2.5	
2233	Port Sibulan	7° 26'	122° 53'	+0 19	+0 19	+0.6	0.0	4.9	5.8	2.8	
2235	Taba Bay, Sibuguey Bay	7° 35'	122° 47'	+0 24	+0 24	+0.8	0.0	5.1	6.0	2.8	
2237	Ticauan Point, Sibuguey Bay	7° 45'	122° 44'	+0 24	+0 24	+0.9	0.0	5.2	6.1	2.9	
2239	Port Banga, Sibuguey Bay	7° 31'	122° 25'	+0 24	+0 24	+0.7	0.0	5.0	5.9	2.8	
2241	Landang, Sacol Island	6° 57'	122° 15'	+0 17	+0 20	-0.7	-0.2	3.8	4.6	2.0	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Diurnal		
				High Water	Low Water	High Water	Low Water				
	PHILIPPINE ISLANDS Palawan and Vicinity Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Manila, p.184											
2243	Balabac, Balabac Island †	8° 00'	117° 04'	+0 10	+0 10	+1.0	0.0	--	4.3	2.1	
2245	Secam Island, N. Balabac Strait †	8° 11'	117° 01'	+0 10	+0 10	+0.7	0.0	--	4.0	2.0	
2247	Tagbita Bay †	8° 42'	117° 20'	-0 24	+0 17	+0.5	0.0	--	3.8	1.9	
2249	Eran Bay †	9° 05'	117° 42'	+0 05	+0 05	+0.7	0.0	--	4.0	2.0	
2251	Ulugan Bay †	10° 06'	118° 47'	-0 05	-0 05	+0.7	0.0	--	4.0	2.0	
2253	Port Barton †	10° 28'	119° 08'	-0 10	-0 10	+0.7	0.0	--	4.0	2.0	
2255	Boayan Island †	10° 34'	119° 11'	-0 05	+0 01	+0.4	0.0	--	3.7	1.8	
2257	Bolalo Bay, Malampaya Sound †	10° 56'	119° 14'	-0 07	-0 14	0.0	0.0	--	3.3	1.6	
2259	Alligator Bay, Malampaya Sound †	10° 52'	119° 17'	-0 04	+0 02	+0.2	0.0	--	3.5	1.8	
2261	Bacuit †	11° 11'	119° 23'	+0 20	-0 29	*0.97	*0.97	--	3.2	1.6	
2263	Northwest Bay, Linapacan Island †	11° 28'	119° 46'	-0 05	-0 05	+0.8	0.0	--	4.1	2.0	
2265	San Nicolas, Linapacan Island †	11° 27'	119° 49'	-0 05	-0 05	+0.9	0.0	--	4.2	2.1	
2267	San Miguel, Linapacan Island †	11° 30'	119° 52'	+0 10	+0 10	+1.1	0.0	--	4.4	2.2	
2269	Batas Island †	11° 10'	119° 36'	+0 10	+0 10	+1.3	0.0	--	4.6	2.3	
2271	Taytay †	10° 50'	119° 31'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3	
2273	Paly Island †	10° 42'	119° 42'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3	
2275	Aracell, Dumaran Island †	10° 33'	119° 59'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3	
2277	Tinitian, Green Island Bay †	10° 04'	119° 12'	+0 40	+0 40	+1.1	0.0	--	4.4	2.2	
2279	Puerto Princesa †	9° 44'	118° 43'	+0 05	+0 05	+1.1	0.0	--	4.4	2.2	
2281	Island Bay †	9° 06'	118° 07'	+0 15	+0 15	+0.8	0.0	--	4.1	2.0	
2283	Sir J. Brooke Point †	8° 46'	117° 50'	+0 10	+0 10	+0.9	0.0	--	4.2	2.1	
2285	Cuyo, Cuyo Island †	10° 51'	121° 00'	+0 05	+0 05	+1.2	0.0	--	4.5	2.2	
2287	Halsey Harbor, Culion Island †	11° 47'	119° 58'	+0 05	+0 05	+0.7	0.0	--	4.0	2.0	
2289	Culion, Culion Island †	11° 53'	120° 01'	+0 05	+0 05	+1.2	0.0	--	4.5	2.2	
2291	Coron, Busuanga Island †	12° 01'	120° 12'	+0 10	+0 10	+1.2	0.0	--	4.5	2.2	
2293	Apo Island, Mindoro Strait †	12° 40'	120° 24'	-0 05	-0 05	+0.3	0.0	--	3.6	1.8	
on Cebu, p.180											
2295	Cagayan Anchorage, Cagayan Island	9° 35'	121° 14'	-0 29	-0 37	*0.80	*0.80	2.6	4.0	1.9	
2297	Cagayan Sulu Island	6° 59'	118° 32'	-3 00	-3 00	*0.80	*0.80	2.7	4.2	2.1	
Panay and Guimaras Islands											
2299	Aniniy	10° 26'	121° 55'	-0 25	-0 25	*0.95	*0.95	3.0	4.9	2.3	
2301	San Jose	10° 44'	121° 56'	-0 30	-0 30	*0.88	*0.88	2.7	4.6	2.1	
2303	Tibiao	11° 17'	122° 02'	-0 35	-0 35	+0.3	+0.1	3.5	5.4	2.5	
2305	Borocay Island	11° 57'	121° 56'	-0 25	-0 25	+0.3	0.0	3.6	5.3	2.5	
2307	Aclan River entrance	11° 44'	122° 22'	-0 05	-0 05	+0.3	0.0	3.6	5.3	2.5	
2309	Port Batan	11° 36'	122° 30'	+0 00	+0 00	+0.4	0.0	3.7	5.4	2.5	
2311	Libas (Capiz Landing)	11° 36'	122° 43'	+0 00	+0 00	+0.4	+0.1	3.6	5.4	2.6	
2313	Estancia	11° 28'	123° 09'	+0 15	+0 15	+1.8	+0.2	4.9	6.9	3.4	
2315	Concepcion	11° 13'	123° 06'	+0 15	+0 15	+1.9	+0.2	5.0	7.0	3.4	
2317	Banate	11° 00'	122° 49'	+0 25	+0 25	+2.0	+0.2	5.1	7.1	3.4	
2319	Navalas, Guimaras Island	10° 44'	122° 41'	+0 15	+0 15	+1.3	+0.2	4.4	6.4	3.1	
2321	Inampuligan I., Guimaras Island	10° 27'	122° 43'	-0 10	-0 10	0.0	0.0	3.3	5.1	2.3	
2323	Lugmayan Point, Guimaras Island	10° 25'	122° 32'	-0 20	-0 20	*0.85	*0.85	2.7	4.5	2.0	
2325	Liloilo	10° 42'	122° 34'	+0 05	+0 05	+0.3	+0.1	3.5	5.4	2.6	
2327	Miagao	10° 38'	122° 14'	-0 20	-0 20	*0.88	*0.88	2.7	4.6	2.2	
Negros Island											
2329	Cadiz	10° 57'	123° 19'	+0 30	+0 30	+1.6	+0.1	4.8	6.6	3.2	
2331	Himugaan River entrance	10° 57'	123° 24'	+0 25	+0 25	+1.3	+0.1	4.5	6.3	3.0	
2333	Danao River entrance	10° 49'	123° 33'	+0 15	+0 15	+0.7	0.0	4.0	5.8	2.7	
2335	San Carlos	10° 29'	123° 25'	+0 15	+0 15	+0.8	0.0	4.1	5.8	2.7	
2337	Calagcalag Bay	9° 49'	123° 08'	+0 10	+0 10	+0.4	0.0	3.7	5.4	2.6	
2339	Bais	9° 36'	123° 08'	+0 10	+0 10	+0.3	0.0	3.6	5.3	2.5	
2341	Dumaguete	9° 18'	123° 18'	-0 25	-0 25	*0.92	*0.71	3.2	4.8	2.1	
2343	Larena, Siquijor Island	9° 15'	123° 35'	-0 25	-0 25	*0.80	*0.71	2.7	4.2	1.8	
2345	Port Bonbonon	9° 03'	123° 07'	-0 30	-0 30	*0.88	*0.71	3.0	4.5	2.0	
2347	Campomanes Bay	9° 42'	122° 25'	-0 30	-0 30	*0.90	*0.71	3.1	4.5	2.0	
2349	Himamaylan	10° 06'	122° 52'	-0 30	-0 30	0.0	0.0	3.3	5.0	2.3	
2351	Bacolod	10° 40'	122° 57'	+0 10	+0 10	+1.0	+0.1	4.2	6.1	2.9	
Cebu Island											
2353	Moalboal	9° 56'	123° 24'	+0 10	+0 10	+0.4	0.0	3.7	5.5	2.6	
2355	Barili Bay	10° 07'	123° 29'	+0 10	+0 10	+0.4	0.0	3.7	5.5	2.6	
2357	Balamban Bay	10° 30'	123° 43'	+0 10	+0 10	+0.6	0.0	3.9	5.7	2.6	
2359	Tuburan	10° 44'	123° 49'	+0 15	+0 15	+0.7	+0.1	3.9	5.8	2.7	
2361	Medellin	11° 08'	123° 58'	+0 20	+0 20	+0.9	0.0	4.2	6.0	2.8	
2363	Bantayan, Bantayan Island	11° 10'	123° 43'	+0 20	+0 20	+0.9	0.0	4.2	6.0	2.8	
2365	Bogo Bay	11° 04'	124° 00'	+0 20	+0 20	+0.4	0.0	3.7	5.4	2.6	
2367	Carmen	10° 35'	124° 01'	+0 10	+0 10	+0.3	0.0	3.6	5.3	2.5	
2369	CEBU, Fort San Pedro	10° 18'	123° 54'	+0 10	<i>Daily predictions</i>		3.3	5.1	2.3		
2371	Carcar Bay	10° 05'	123° 39'	-0 05	-0 05	0.0	0.0	3.3	5.0	2.3	
2373	Boljoon	9° 38'	123° 29'	-0 15	-0 15	*0.91	*0.91	3.0	4.5	2.1	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Diurnal		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
	PHILIPPINE ISLANDS Bohol Island Time meridian, 120° E			on Cebu, p.180							
2375	Maribojoc	9° 44'	123° 50'	-0 15	-0 15	*0.91	*0.91	3.0	4.6	2.1	
2377	Tubigon	9° 57'	123° 58'	-0 10	-0 10	0.0	0.0	3.3	5.1	2.3	
2379	Ubay	10° 04'	124° 28'	+0 00	+0 00	+0.1	0.0	3.4	5.1	2.4	
2381	Cogton Bay	9° 50'	124° 31'	-0 15	-0 15	*0.76	*0.76	2.5	4.0	1.8	
2383	Garcia Hernandez	9° 37'	124° 18'	-0 20	-0 20	*0.79	*0.79	2.6	4.1	1.8	
	LeYTE ISLAND										
2385	Liloan, Sogod Bay	10° 09'	125° 07'	-0 40	-0 40	*0.76	*0.76	2.5	4.1	1.8	
2387	Maasin	10° 08'	124° 50'	-0 15	-0 15	*0.91	*0.91	3.0	4.6	2.1	
2389	Baybay	10° 41'	124° 48'	+0 00	+0 00	+0.6	0.0	3.9	5.6	2.6	
2391	Ormoc	11° 00'	124° 36'	+0 05	+0 05	+0.6	0.0	3.9	5.6	2.6	
2393	Palompon	11° 03'	124° 23'	+0 10	+0 10	+0.5	0.0	3.8	5.6	2.6	
2395	Genuruan Island, Biliran Island	11° 42'	124° 21'	+0 05	+0 05	+0.5	0.0	3.8	5.5	2.6	
2397	Poro Island, Biliran Strait	11° 28'	124° 29'	+0 10	+0 10	+0.5	0.0	3.8	5.5	2.6	
2399	Carigara	11° 18'	124° 41'	+0 15	+0 15	+0.2	0.0	3.5	5.2	2.4	
2401	Canauay Island, Janabatas Channel	11° 26'	124° 51'	+0 15	+0 15	*0.97	*0.97	3.2	4.8	2.2	
2403	Santa Rita I., San Juanico Strait	11° 26'	124° 58'	+0 24	+0 06	*0.88	*0.88	2.9	4.3	2.0	
2405	Uban Point, San Juanico Strait	11° 22'	124° 59'	-1 10	-1 10	*0.67	*0.67	2.2	3.6	1.5	
				on Jolo, p.172							
2407	Tacloban, San Juanico Strait †	11° 15'	125° 00'	-1 25	-1 25	*0.82	*0.82	--	2.3	0.9	
2409	Abuyog †	10° 45'	125° 01'	-1 40	-1 40	*0.79	*0.79	--	2.2	0.8	
2411	Hinunangan †	10° 24'	125° 12'	-0 20	-0 20	*0.82	*0.82	--	2.3	0.9	
	SAMAR ISLAND			on Cebu, p.180							
2413	Talalora	11° 32'	124° 50'	+0 15	+0 15	-0.1	-0.2	3.4	4.9	2.2	
2415	Parasan Harbor, Daram Island	11° 42'	124° 45'	+0 10	+0 10	+0.2	-0.2	3.7	5.2	2.4	
2417	Catbalogan	11° 47'	124° 53'	+0 10	+0 10	+0.2	-0.2	3.7	5.2	2.4	
2419	Santo Nino, Santo Nino Island	11° 56'	124° 27'	+0 05	+0 05	0.0	-0.2	3.5	4.8	2.2	
2421	Calbayog	12° 04'	124° 35'	+0 05	+0 05	*0.82	*0.82	2.7	4.1	1.8	
				on Manila, p.184							
2423	Maubo †	12° 26'	124° 19'	+0 25	+0 25	*0.73	*0.73	--	2.4	1.2	
				on Davao, p.176							
2425	Biri Island	12° 39'	124° 22'	-0 20	-0 08	*0.46	*0.46	2.0	2.4	1.1	
2427	Talisay Island	12° 39'	124° 25'	+0 13	+0 15	*0.58	*0.58	2.5	2.9	1.5	
				on Legaspi Port, p.192							
2429	Catarman River entrance	12° 31'	124° 39'	+0 24	+0 21	*0.93	*0.93	3.6	4.2	2.2	
2431	Laoang, Laoang Island	12° 34'	125° 01'	+0 23	+0 20	+0.1	0.0	3.9	4.6	2.4	
2433	Helm Harbor, Gamay Bay	12° 18'	125° 21'	+0 15	+0 18	+0.3	0.0	4.1	4.8	2.5	
2435	Hilaban Island	12° 02'	125° 34'	+0 13	+0 16	+0.1	+0.1	3.8	4.7	2.5	
2437	Andis Island, Port Borongan	11° 39'	125° 29'	+0 17	+0 20	+0.3	+0.1	4.0	4.9	2.6	
2439	Matarinao Bay	11° 14'	125° 35'	+0 19	+0 18	+0.4	+0.1	4.1	5.0	2.6	
2441	Guiluan	11° 02'	125° 43'	+0 30	+0 01	*0.51	*0.51	2.1	2.6	1.1	
	MASBATE ISLAND			on Cebu, p.180							
2443	Port Cataingan	12° 00'	124° 00'	+0 00	+0 00	-0.1	-0.2	3.4	4.6	2.2	
2445	Nin Bay	12° 14'	123° 17'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5	
2447	Port Barrera	12° 30'	123° 22'	+0 05	+0 05	+0.3	0.0	3.6	5.3	2.5	
2449	Masbate	12° 22'	123° 37'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5	
2451	Dimasalang, Naro Bay	12° 12'	123° 51'	+0 00	+0 00	+0.1	-0.1	3.5	5.0	2.4	
	TICAO AND BURIAS ISLANDS										
2453	Port San Miguel, Ticao Island	12° 40'	123° 35'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5	
2455	San Jacinto, Ticao Island	12° 34'	123° 44'	+0 00	+0 00	*0.95	*0.95	3.2	4.6	2.2	
2457	Batuang Bay, Ticao Island	12° 25'	123° 47'	+0 10	+0 10	*0.80	*0.80	2.6	3.9	1.9	
2459	Port Boca Engano, Burias Island	12° 47'	123° 19'	+0 05	+0 05	+0.4	0.0	3.7	5.3	2.6	
2461	San Pascual, Burias Island	13° 08'	122° 59'	+0 00	+0 00	+0.7	+0.1	3.9	5.6	2.8	
	ROMBLON AND VICINITY										
2463	Cangouac Point, Sibuyan Island	12° 30'	122° 30'	-0 25	-0 25	+0.7	+0.1	3.9	5.8	2.7	
2465	Romblon, Romblon Island	12° 35'	122° 16'	-0 05	-0 05	+0.5	+0.1	3.7	5.5	2.6	
2467	Guimbiravan, Tablas Island	12° 10'	122° 02'	+0 00	+0 00	+0.7	+0.1	3.9	5.6	2.8	
2469	Loc, Tablas Island	12° 16'	122° 00'	-0 07	-0 08	+0.3	+0.1	3.5	5.2	2.5	
2471	Port Concepcion, Maestre de Campo I.	12° 55'	121° 44'	-0 10	-0 10	+0.1	+0.1	3.3	5.1	2.4	
	MARINDUQUE ISLAND										
2473	Port Balanacan	13° 32'	121° 52'	-0 10	-0 10	*0.95	*0.95	3.0	4.9	2.3	
2475	Santa Cruz Harbor	13° 30'	122° 04'	+0 00	+0 00	*0.98	*0.98	3.1	5.0	2.4	
2477	Torrijos	13° 19'	122° 05'	-0 05	-0 05	+0.1	+0.1	3.3	5.2	2.4	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Diurnal		
				High Water	Low Water	High Water	Low Water				
	PHILIPPINE ISLANDS Mindoro Island Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
	on Cebu, p.180										
2479	Port Galera	13° 31'	120° 58'	-0 30	-0 30	*0.75	*0.75	2.2	4.0	1.9	
2481	Calapan Bay	13° 26'	121° 11'	-0 20	-0 20	*0.90	*0.90	2.8	4.7	2.2	
2483	Mansalay	12° 31'	121° 26'	-0 10	-0 10	+0.1	+0.1	3.3	5.1	2.4	
	on Manila, p.184										
2485	Mangarin †	12° 21'	121° 06'	+0 05	+0 05	+0.4	0.0	--	3.7	1.8	
2487	Sablayan †	12° 50'	120° 46'	-0 05	-0 05	+0.3	0.0	--	3.6	1.8	
2489	Paluan †	13° 25'	120° 28'	-0 10	-0 10	+0.3	0.0	--	3.6	1.8	
2491	Port Tilig, Lubang Island †	13° 49'	120° 12'	-0 10	-0 10	+0.2	0.0	--	3.5	1.7	
	Luzon Island, West Coast										
2493	Anilao, Balayan Bay †	13° 46'	120° 55'	+0 14	+0 20	+0.4	0.0	--	3.7	1.7	
2495	Corregidor Island, Manila Bay †	14° 23'	120° 36'	-0 10	-0 10	0.0	0.0	--	3.3	1.6	
2497	Cavite, Manila Bay †	14° 29'	120° 55'	+0 14	+0 13	*0.97	*0.97	--	3.2	1.6	
2499	MANILA, Pasig River entrance †	14° 35'	120° 58'	Daily predictions				--	3.3	1.6	
2501	Olongapo, Subic Bay †	14° 49'	120° 17'	-0 04	+0 03	*0.91	*0.91	--	3.0	1.5	
2503	Port Silangan †	14° 46'	120° 07'	-0 20	-0 20	*0.91	*0.91	--	3.0	1.5	
2505	Port Masinloc †	15° 31'	119° 55'	-0 31	-0 34	*0.85	*0.85	--	2.8	1.4	
2507	Santa Cruz †	15° 46'	119° 54'	-0 41	-0 42	*0.82	*0.82	--	2.7	1.3	
	on San Fernando Harbor, p.188										
2509	Bolinao, Lingayen Gulf §	16° 24'	119° 54'	+0 07	-0 51	+0.3	0.0	--	2.5	1.2	
2511	Sual, Lingayen Gulf §	16° 04'	120° 06'	+0 17	-0 47	+0.3	0.0	--	2.5	1.2	
2513	Santo Tomas, Lingayen Gulf §	16° 17'	120° 23'	+0 11	-0 47	+0.3	0.0	--	2.5	1.2	
2515	SAN FERNANDO HARBOR §	16° 37'	120° 18'	Daily predictions				--	2.2	1.1	
2517	Solvec Cove §	17° 27'	120° 27'	-0 35	-1 09	+0.1	0.0	--	2.3	1.1	
2519	Salomague §	17° 47'	120° 25'	-1 18	-1 34	*0.91	*0.91	--	2.0	1.0	
2521	Laoag River entrance §	18° 13'	120° 31'	-1 30	-1 46	*0.86	*0.86	--	1.9	0.9	
2523	Nagabungan Bay §	18° 29'	120° 34'	-1 32	+4 13	*0.91	*0.91	--	2.0	1.0	
	on Legaspi Port, p.192										
2525	Claveria Bay	18° 37'	121° 06'	+1 25	+1 05	*0.37	*0.37	1.5	2.1	0.8	
2527	Aparri, Cagayan River	18° 21'	121° 38'	+0 34	+0 44	*0.71	*0.71	2.7	3.5	1.7	
2529	Camalaniugan, Cagayan River	18° 17'	121° 40'	+0 44	+0 53	*0.74	*0.74	2.8	3.6	1.8	
2531	Port San Vicente	18° 31'	122° 08'	-0 03	-0 07	*0.79	*0.79	2.9	3.6	1.9	
2533	Port San Pio Quinto, Camiguin Island	18° 54'	121° 52'	+0 34	+0 32	*0.70	*0.70	2.7	3.2	1.6	
2535	Musa Bay, Fuga Island	18° 52'	121° 17'	+0 47	+0 44	*0.47	*0.47	1.8	2.3	1.0	
2537	Calayan Island	19° 16'	121° 30'	+0 05	-0 01	*0.71	*0.71	2.7	3.4	1.5	
2539	Babuyan Island	19° 34'	121° 56'	+0 16	+0 08	*0.79	*0.79	3.2	3.8	1.8	
2541	Basco, Batan Island	20° 27'	121° 58'	+0 55	+1 06	*0.53	*0.53	2.0	2.5	1.3	
	on Legaspi Port, p.192										
2543	Patunungan Bay	18° 24'	122° 18'	+0 05	+0 01	*0.84	*0.84	3.2	3.9	2.0	
2545	Divilican Bay	17° 25'	122° 14'	-0 26	-0 29	*0.84	*0.84	3.2	3.8	2.0	
2547	Port Bicobian	17° 17'	122° 25'	+0 35	+0 26	*0.88	*0.88	3.4	4.0	2.1	
2549	Diapitan Bay	16° 24'	122° 13'	+0 18	+0 14	*0.87	*0.87	3.3	4.0	2.1	
2551	Casiguran Bay	16° 14'	122° 08'	+0 06	+0 02	-0.1	-0.1	3.7	4.4	2.3	
2553	Baler Bay	15° 45'	121° 35'	+0 12	+0 16	-0.1	0.0	3.7	4.4	2.3	
2555	Umiray River ent., Dingalan Bay	15° 12'	121° 26'	+0 12	+0 10	-0.2	-0.1	3.7	4.3	2.2	
2557	Hook Bay, Polillo Island	14° 57'	121° 50'	+0 10	+0 13	0.0	0.0	3.8	4.5	2.4	
2559	Burdeos Bay, Polillo Island	14° 54'	121° 58'	+0 22	+0 20	0.0	-0.1	3.9	4.5	2.3	
2561	Polillo, Polillo Island	14° 43'	121° 56'	+0 10	+0 06	+0.3	0.0	4.1	4.8	2.5	
	Lamon Bay										
2563	Port Lampon	14° 40'	121° 37'	+0 23	+0 20	+0.4	0.0	4.2	4.9	2.6	
2565	Sangirin Bay	14° 12'	121° 55'	+0 22	+0 16	+0.7	0.0	4.5	5.2	2.7	
2567	Atimonan	14° 00'	121° 55'	+0 24	+0 19	+0.7	0.0	4.5	5.2	2.7	
2569	Apat Bay	14° 01'	122° 19'	+0 25	+0 20	+0.7	0.0	4.5	5.2	2.7	
2571	Capalonga	14° 20'	122° 29'	+0 19	+0 12	+0.3	0.0	4.1	4.9	2.5	
2573	Port Jose Panganiban	14° 18'	122° 41'	+0 21	+0 17	+0.4	0.0	4.2	4.9	2.6	
2575	Guintina Island, Calagua Islands	14° 25'	122° 56'	+0 08	+0 11	+0.3	0.0	4.1	4.9	2.5	
2577	Mercedes	14° 07'	123° 01'	+0 26	+0 24	+0.2	0.0	4.0	4.8	2.5	
2579	Cabgan Island, San Miguel Bay	13° 46'	123° 16'	+0 25	+0 26	+1.4	+0.2	5.0	5.9	3.2	
2581	Sisiran Bay	13° 56'	123° 39'	+0 23	+0 27	+0.2	0.0	4.0	4.8	2.5	
2583	Tabgon Bay	13° 50'	123° 49'	+0 21	+0 23	+0.3	+0.1	4.0	4.8	2.6	
2585	Hitoma, Catanduanes Island	13° 47'	124° 08'	+0 18	+0 19	+0.2	0.0	4.0	4.8	2.5	
2587	Port Anajao, Catanduanes Island	13° 57'	124° 20'	+0 13	+0 14	+0.1	0.0	3.9	4.7	2.4	
2589	Virac, Catanduanes Island	13° 35'	124° 14'	+0 25	+0 15	+0.4	0.0	4.2	5.0	2.6	
2591	Tabaco, Tabaco Bay	13° 22'	123° 44'	+0 07	+0 05	+0.1	0.0	3.9	4.7	2.4	
2593	Batan Island	13° 14'	124° 03'	+0 04	+0 03	+0.1	-0.1	4.0	4.7	2.4	
2595	LEGASPI PORT, Albay Gulf	13° 09'	123° 45'	Daily predictions				3.8	4.6	2.4	
2597	Gubat	12° 55'	124° 08'	-0 04	+0 02	-0.1	0.0	3.7	4.5	2.3	
2599	San Bernardino Island	12° 45'	124° 17'	-0 12	+0 00	*0.72	*0.72	2.6	3.4	1.8	
	on Cebu, p.180										
2601	Butag Bay	12° 37'	123° 56'	+0 00	+0 00	*0.82	*0.82	2.7	3.9	1.9	
2603	Bagatao Island	12° 50'	123° 48'	+0 05	+0 05	+0.1	0.0	3.4	5.0	2.4	
2605	Sorsogon	12° 58'	124° 00'	+0 30	+0 30	*0.88	*0.88	3.0	4.1	2.0	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Diurnal		
				High Water	Low Water	High Water	Low Water				
	PHILIPPINE ISLANDS Luzon Island, South Coast—cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft	
2607	Pasacao, Ragay Gulf	13° 30'	123° 02'	+0 00	+0 00	+0.2	0.0	3.5	5.2	2.4	
2609	Guinayangan, Ragay Gulf	13° 54'	122° 27'	+0 15	+0 15	+0.6	+0.1	3.8	5.7	2.7	
2611	Port Pusgo	13° 31'	122° 36'	+0 00	+0 00	+0.7	0.0	4.0	5.5	2.7	
2613	Aguasa Bay	13° 17'	122° 31'	+0 00	+0 00	+0.2	+0.1	3.4	5.3	2.5	
2615	Catanauan	13° 36'	122° 19'	+0 00	+0 00	+0.1	+0.1	3.3	5.2	2.4	
2617	Pitogo	13° 47'	122° 05'	+0 00	+0 00	*0.92	*0.92	2.9	4.8	2.2	
2619	Tayabas River entrance	13° 54'	121° 36'	+0 05	+0 05	*0.95	*0.95	3.0	4.8	2.3	
	NORTHERN MARIANAS ISLANDS Time meridian, 150° E			on Cebu, p.180							
2621	Pagan Island	18° 08'	145° 46'	+0 05	+0 01	*0.94	*0.94	1.3	1.9	1.5	
2623	Tanapag Harbor, Saipan Island	15° 13.6'	145° 44.2'	+0 21	+0 15	*0.92	*1.00	1.46	2.20	1.34	
2625	Saipan Harbor, Saipan Island	15° 12'	145° 43'	+0 02	+0 07	*0.80	*0.80	1.3	1.9	1.2	
2627	Tinian Island	14° 58'	145° 37'	-0 02	-0 23	*0.74	*0.33	1.5	1.8	1.0	
2629	Rota Island	14° 08'	145° 08'	-0 03	-0 06	*0.94	*0.94	1.2	2.1	1.5	
2631	APRA HARBOR, GUAM	13° 26.5'	144° 39.2'			Daily predictions		1.6	2.4	1.4	
	PALAU Time meridian, 135° E			on Malakal Harbor, p.200							
2633	Shonian Harbor	7° 03'	134° 16'	+0 07	-0 13	*0.89	*1.00	3.3	4.4	3.3	
2635	Koror	7° 21'	134° 29'	-0 07	-0 04	-0.1	0.0	3.8	5.0	3.5	
2637	MALAKAL HARBOR	7° 20'	134° 28'			Daily predictions		3.9	5.1	3.6	
2639	West Passage	7° 30'	134° 31'	-0 21	-0 41	-0.1	0.0	3.8	4.8	3.5	
	FEDERATED STATES of MICRONESIA Time meridian, 150° E										
2641	Ngulu Islands	8° 18'	137° 29'	+0 40	+0 19	*0.77	*0.77	3.0	3.8	2.8	
2643	Tomil Harbor, Yap Island	9° 30'	138° 08'	+0 35	+0 14	(*0.74+0.5)		2.9	3.7	3.2	
2645	Ulithi Islands	10° 02'	139° 46'	+0 34	+0 13	(*0.67+0.2)		2.6	3.4	2.6	
				on Guam, p.196							
2647	Woleai Islands	7° 22'	143° 54'	+0 21	+0 17	(*0.80+0.6)		1.4	1.6	1.7	
2649	Ifalik Atoll	7° 15'	144° 27'	-0 54	-0 13	*1.00	*1.33	1.5	1.8	1.6	
2651	Lamotrek Atoll	7° 28'	146° 23'	+0 11	+0 07	(*0.71+0.7)		1.2	1.3	1.7	
				on Chuuk, p.204							
2653	Pulap Atoll §	7° 38'	149° 25'	-0 53	+0 43	*0.74	*0.74	1.4	1.9	1.4	
2655	Namonuto Atoll §	8° 35'	149° 39'	-1 23	+0 21	*0.69	*0.69	1.3	1.9	1.2	
2657	Moen Island, Truk Islands §	7° 27'	151° 51'	+0 10	+0 11	*0.85	*0.85	1.6	2.1	1.6	
2659	CHUUK, Moen Island §	7° 26.8'	151° 50.8'			Daily predictions		1.40	1.84	0.83	
2661	Dublon Island, Truk Islands §	7° 22'	151° 53'	+0 02	+0 30	*1.07	*1.07	1.5	2.0	1.5	
	Time meridian, 165° E										
2663	Nomwin Atoll, Hall Islands §	8° 27'	151° 47'	-0 08	+0 20	*0.80	*0.80	1.5	1.9	1.5	
2665	Murilo Atoll, Hall Islands §	8° 36'	152° 15'	-0 28	+0 00	*0.85	*0.85	1.6	1.9	1.7	
2667	Losap Atoll §	6° 54'	152° 44'	-0 03	+0 25	*0.80	*0.80	1.5	2.0	1.5	
2669	Namoluk Atoll §	5° 54'	153° 08'	-0 01	+0 27	*0.80	*0.80	1.5	2.0	1.5	
2671	Satawan Anchorage, Nomoi Islands §	5° 20'	153° 44'	-0 03	+0 25	*0.96	*0.96	1.8	2.1	2.0	
	Time meridian, 150° E			on Pohnpei Harbor, p.208							
2673	Marcus Island	24° 17'	153° 58'	-0 19	-0 19	(*0.65+0.3)		1.5	2.2	1.7	
	Time meridian, 165° E										
2675	Oroluk Lagoon	7° 37'	155° 10'	+0 23	+0 20	(*0.70+0.3)		1.6	2.2	1.9	
2677	Ant Islands (Tauenai Channel)	6° 46'	158° 00'	+1 04	0.0	+0.3		2.0	3.0	2.4	
2679	POHNPEI HARBOR, Pohnpei Island	6° 59'	158° 13'			Daily predictions		2.3	3.4	2.3	
2681	Metalanim Harbor, Pohnpei Island	6° 52'	158° 21'	+0 09	+0 06	+0.4	+0.2	2.5	3.7	2.6	
	Time meridian, 180° E			on Kwajalein Atoll, p.216							
2683	Lele Harbor, Kusaie Island	5° 20'	163° 01'	+0 01	+0 00	(*0.91+0.3)		3.2	4.6	3.0	
	MARSHALL ISLANDS										
2685	WAKE ISLAND (U.S.)	19° 17.4'	166° 37.1'			Daily predictions, p.212		2.02	2.36	1.13	
2687	Ujelang Atoll	9° 46'	160° 58'	+0 04	+0 03	(*0.80+0.2)		2.8	3.9	2.6	
2689	Enewetak	11° 21'	162° 21'	-0 07	-0 03	(*0.77+0.3)		2.7	3.9	2.6	
2691	Bikini Atoll	11° 36'	165° 33'	-0 19	-0 19	0.0	0.0	3.4	4.9	3.0	
2693	Enirikku Island, Bikini Atoll	11° 30'	165° 20'	-0 15	-0 16	*0.85	*0.85	2.9	4.2	2.6	
2695	Rongelap Island, Rongelap Atoll	11° 09'	166° 54'	-0 07	-0 07	*0.96	*0.96	3.3	4.7	2.9	
2697	Rongerik Atoll	11° 23'	167° 31'	-0 14	-0 15	+0.1	0.0	3.6	5.0	3.0	
2699	Ujae Atoll	9° 02'	165° 36'	-0 10	-0 10	0.0	0.0	3.5	5.0	3.0	
2701	Kwajalein Atoll (Namur Island)	9° 24'	167° 29'	-0 02	-0 05	0.0	0.0	3.5	5.0	3.0	
2703	KWAJALEIN ATOLL (Kwajalein I.)	8° 44.2'	167° 44.3'			Daily predictions		3.6	3.9	1.9	
2705	Ailinglapalap Atoll	7° 17'	168° 45'	+0 08	+0 07	+0.4	+0.3	3.6	5.2	3.3	
2707	Jaluit Atoll (SE Pass)	5° 55'	169° 39'	-0 12	-0 08	-0.1	-0.1	3.5	4.9	2.9	
2709	Ebon (Boston) Atoll	4° 36'	168° 41'	-0 10	-0 10	+0.1	+0.1	3.4	4.8	3.0	

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TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	MARSHALL ISLANDS—cont. Time meridian, 180° E	North	East	h m	h m	ft	ft	ft	ft	ft	
2711	Taongi Atoll	14° 34'	168° 57'	-0 20	-0 20	0.0	0.0	3.3	4.7	3.0	
2713	Bikar (Dawson) Atoll	12° 15'	170° 08'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0	
2715	Ailuk Atoll	10° 13'	169° 59'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0	
2717	Likiep Atoll	9° 49'	169° 19'	+0 00	-0 01	+0.1	0.0	3.6	5.0	3.0	
2719	Wotje Atoll	9° 28'	170° 14'	-0 11	-0 11	-0.2	-0.2	3.4	4.7	2.8	
2721	Erikub Atoll	9° 12'	169° 55'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0	
2723	Maloelap Atoll	8° 43'	171° 14'	-0 04	-0 05	+0.1	-0.1	3.7	5.1	3.0	
2725	Majuro Atoll	7° 07'	171° 22'	-0 05	-0 06	+0.3	+0.1	3.7	5.3	3.2	
2727	Arno Atoll	7° 08'	171° 42'	-0 04	-0 05	+0.6	-0.1	4.2	5.7	3.2	
2729	Port Rhin, Mili Atoll	6° 14'	171° 48'	+0 04	+0 04	+0.7	0.0	4.2	5.9	3.3	
	HAWAIIAN ISLANDS Time meridian, 165° W	North	West	on Honolulu, p.228				Mean Diurnal			
2731	SAND ISLAND, MIDWAY ISLANDS	28° 12.7'	177° 21.6'	Daily predictions, p.220				0.9	1.3	0.7	
2733	Lisianski Island	26° 04'	173° 58'	---	---	---	---	0.5	0.8	0.3	
	Time meridian, 150° W										
2735	Laysan Island	25° 46'	171° 45'	+1 02	+1 12	*0.53	*0.50	0.7	1.0	0.4	
2737	East Island, French Frigate Shoals	23° 47'	166° 13'	+0 03	+0 08	*0.73	*0.73	0.9	1.4	0.6	
2739	Nonopapa, Niihau Island	21° 52'	160° 14'	-0 16	-0 11	*0.77	*0.77	1.0	1.6	0.7	
	Kauai Island			on Nawiliwili, p.224							
2741	Waimea Bay	21° 57'	159° 40'	+0 07	+0 18	*0.86	*0.91	1.0	1.6	0.7	
2743	Port Allen, Hanapepe Bay	21° 54.2'	159° 35.5'	-0 15	-0 10	*1.01	*1.00	1.24	1.84	0.82	
2745	NAWILIWILI	21° 57.3'	159° 21.4'	Daily predictions				1.22	1.83	0.81	
2747	Hanamaulu Bay	22° 00'	159° 20'	+0 10	+0 04	*1.00	*0.91	0.0	1.2	1.8	
2749	Hanalei Bay	22° 13'	159° 30'	-1 01	-1 22	*1.07	*0.91	1.3	1.8	0.8	
	Oahu Island			on Honolulu, p.228							
2751	Haleiwa, Waialua Bay †	21° 36'	158° 07'	-1 02	-2 05	*0.80	*0.80	—	1.6	0.7	
2753	Waianae	21° 27'	158° 12'	+0 20	+0 18	*0.93	*1.00	1.2	1.8	0.8	
2755	Pearl Harbor Entrance, Bishop Point	21° 19.8'	157° 58.0'	+0 15	+0 06	*1.00	*0.88	1.30	1.66	0.79	
2757	Pearl Harbor, Ford Island Ferry	21° 22.1'	157° 56.4'	+0 16	+0 08	*1.03	*0.88	1.35	1.73	0.82	
2759	HONOLULU	21° 18.5'	157° 52.0'	Daily predictions				1.28	1.64	0.80	
2761	Hanauma Bay	21° 17'	157° 42'	-0 59	-0 45	*1.00	*1.00	1.3	1.9	0.8	
				on Moku O Loe, p.232							
2763	Waimanalo	21° 20'	157° 42'	+0 11	+0 05	*0.88	*0.75	1.1	1.8	0.8	
2765	MOKU O LOE	21° 26.2'	157° 47.6'	Daily predictions				1.5	2.1	1.0	
2767	Waikane, Kaneohe Bay	21° 30'	157° 51'	-0 22	-0 04	*1.13	*1.00	1.4	2.2	1.1	
2769	Laie Bay	21° 39'	157° 56'	-0 21	-0 32	*1.00	*0.75	1.3	2.2	0.9	
	Molokai Island			on Honolulu, p.228							
2771	Kolo	21° 06'	157° 12'	+0 05	+0 01	0.0	0.0	1.3	2.0	0.8	
2773	Kaunakakai	21° 05.1'	157° 01.9'	-0 10	-0 14	*1.13	*1.25	1.42	1.82	0.91	
2775	Kamalo Harbor	21° 03'	156° 53'	-0 37	-0 16	+0.1	0.0	1.4	2.1	0.9	
2777	Pukoo Harbor	21° 04'	156° 48'	-1 03	-0 48	+0.1	0.0	1.4	2.1	0.9	
2779	Kaumalapau, Lanai Island	20° 47'	157° 00'	+0 02	+0 03	+0.2	0.0	1.5	2.2	0.9	
	Kahoolawe Island			on Kahului, p.236							
2781	Kuheiia Bay	20° 36'	156° 36'	-0 09	-0 09	+0.2	0.0	1.5	2.1	0.9	
2783	Smuggler Cove	20° 31'	156° 41'	-0 15	+0 03	+0.2	0.0	1.5	2.2	0.9	
	Maui Island			on Kahului, p.236							
2785	KAHULUI	20° 53.9'	156° 28.3'	Daily predictions				1.6	2.3	1.1	
2787	Hana	20° 46'	155° 59'	+0 40	+0 18	*1.05	*0.54	1.8	2.5	1.1	
2789	Makena	20° 39'	156° 27'	+1 21	+1 09	*0.73	*0.54	1.2	1.8	0.8	
2791	Kihei, Maalaea Bay	20° 47'	156° 28'	+1 52	+1 19	*0.94	*0.54	1.6	2.3	1.0	
2793	Lahaina	20° 53'	156° 41'	+1 18	+1 01	*0.89	*0.81	1.4	2.2	1.0	
	Hawaii Island			on Hilo, p.240							
2795	Mahukona	20° 11'	155° 54'	+0 38	+0 42	*0.80	*0.67	1.4	2.1	0.9	
2797	Kawaihae	20° 02.4'	155° 49.9'	+1 01	+0 57	*0.83	*0.60	1.46	2.14	0.91	
2799	Kailua Kona	19° 39'	156° 00'	+0 38	+0 37	*0.80	*0.67	1.4	2.1	0.9	
2801	Napoopo, Kealakekua Bay	19° 28'	155° 55'	+0 48	+0 47	*0.80	*0.67	1.4	2.1	0.9	
2803	Honuapo	19° 05'	155° 33'	+0 38	+0 33	*1.01	*1.00	1.7	2.5	1.1	
2805	HILO	19° 43.8'	155° 03.4'	Daily predictions				1.67	2.40	1.13	
2807	JOHNSTON ATOLL	16° 44.3'	169° 31.8'	Daily predictions, p.244				1.9	2.2	1.1	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	HAWAIIAN ISLANDS—cont. Time meridian, 150° W	North	West	h m	h m	ft	ft	ft	ft	ft	
2809	Palmyra Island	5° 53'	162° 05'	+1 19	+1 13	+0.6	-0.2	2.0	2.7	1.0	
2811	Howland Island	0° 48'	176° 38'	+3 48	+3 46	+4.2	+0.4	5.0	6.2	3.1	
	Time meridian, 105° W	South	West	on Honolulu, p.228							
2813	Easter Island (Chile)	27° 09'	109° 27'	-1 43	-1 35	*0.86	*0.86	1.5	1.9	1.5	
	FRENCH POLYNESIA Time meridian, 142° 30' W			on Pago Pago, p.260							
2815	<i>Marquesas Islands</i> Taio Hae Bay, Nuku Hiva Island	8° 56'	140° 06'	-3 31	-3 28	*1.56	*1.56	3.2	3.8	2.4	
2817	Vai Tahu, Tahu Ata Island	9° 56'	139° 06'	-5 03	-4 58	*1.44	*1.44	2.5	3.1	2.4	
	Time meridian, 135° W			on Papeete, p.248							
2819	Tuamotu Archipelago Mangareva Island	23° 08'	134° 58'	-4 50	-4 47	*0.86	*0.86	1.8	2.3	1.3	
2821	Time meridian, 150° W			on Pago Pago, p.260							
2821	Hao (Bow or La Harpe) Island	18° 04'	140° 59'	-5 15	-5 10	*1.05	*1.05	1.9	2.4	1.7	
2823	Rahiroa (Rangiroa) Island	14° 57'	147° 44'	-2 57	-2 54	*1.01	*1.01	1.7	2.1	1.7	
	Society Islands			on Papeete, p.248							
2825	PAPEETE HARBOR, Tahiti Island <30>	17° 32'	149° 34'			Daily predictions		0.8	1.1	0.5	
2827	Papeari Harbor, Tahiti Island <30>	17° 45'	149° 22'	--	--	*0.31	*0.31	0.8	1.1	0.5	
2829	Borabora Island <30>	16° 30'	151° 46'	--	--	--	--	0.5	0.7	--	
	Tubuai or Asutral Islands			on Pago Pago, p.260							
2831	Rapa (Oparo) Island	27° 36'	144° 17'	+4 53	+4 59	*1.05	*1.05	1.9	2.4	1.7	
2833	Tubuai Island	23° 22'	149° 28'	+7 51	+7 54	*1.05	*1.05	1.9	2.4	1.7	
	COOK ISLANDS			on Pago Pago, p.260							
2835	Penrhyn (Tongareva) Island	9° 00'	157° 59'	-0 34	-0 05	*0.62	*0.62	0.7	0.8	1.3	
2837	Manihiki	10° 25'	161° 01'	+2 15	+2 51	*0.43	*0.43	0.3	0.4	1.0	
2839	Aitutaki Island	18° 51'	159° 47'	+2 00	+1 59	*0.82	*0.82	1.2	1.4	1.5	
2841	Avarua, Rarotonga	21° 12'	159° 46'	+2 14	+2 05	*0.74	*0.74	1.8	2.2	1.0	
	Time meridian, 165° W			on Pago Pago, p.260							
2843	Pukapuka	10° 52'	165° 53'	+0 05	+0 38	*0.77	*0.77	1.0	1.2	1.5	
2845	Time meridian, local			on Apia, p.252							
	Suwarro (Suvarov) Island	13° 13'	163° 09'	+1 04	+0 58	*0.86	*0.86	1.4	1.9	1.5	
	TOKELAU			on Apia, p.252							
	Time meridian, 165° W			on Apia, p.252							
2847	Fakaofo Island	9° 23'	171° 15'	-0 50	-0 47	*1.05	*1.05	1.9	2.4	1.7	
	SAMOA			on Apia, p.252							
	Time meridian, 195° E			on Apia, p.252							
2849	Asau Harbor, Savaii Island	13° 30'	172° 38'	-0 03	-0 32	+0.2		3.1	3.9	1.6	
2851	APIA (Observatory), Upolu Island	13° 48'	171° 46'			Daily predictions		2.6	3.2	1.6	
	AMERICAN SAMOA			on Pago Pago, p.260							
	Time meridian, 165° W			on Pago Pago, p.260							
2853	PAGO PAGO Harbor, Tutuila Island	14° 16.8'	170° 41.4'			Daily predictions		2.51	2.72	1.32	
2855	Tau Island, Manua Islands	14° 13'	169° 32'	-0 25	-0 24	*1.43	*1.00	3.7	4.6	1.8	
2857	Niue Island (N.Z.)	19° 02'	169° 55'	+0 48	+0 47	*1.36	*1.36	2.2	2.4	2.4	
	Time meridian, 180° E			on Apia, p.252							
2859	Wallis Islands (France)	13° 22'	176° 11'	-0 48	-1 01	(*1.42+0.5)		3.7	4.6	2.8	
	TONGA			on Apia, p.252							
	Time meridian, 195° E			on Apia, p.252							
2861	Neiafu	18° 39'	186° 01'	+0 54	+0 29	+1.9	+1.5	3.0	3.4	3.3	
2863	Lifuka Island	19° 48'	185° 39'	+0 31	+0 05	+1.7	+1.4	2.9	3.2	3.2	
2865	Nomuka	20° 16'	185° 12'	+0 59	+0 34	+1.8	+1.1	3.3	3.8	3.1	
2867	Nukualofa	21° 08'	184° 48'	+0 59	+0 37	+1.8	+0.9	3.5	4.0	3.0	
	Time meridian, 180° E			on Suva, p.256							
2869	Raoul or Sunday Island	29° 15'	182° 03'	-1 02	-1 30	+1.9	+1.5	3.0	3.3	3.3	
	FIJI			on Suva, p.256							
2871	Tailevu, Viti Levu Island	17° 39'	178° 35'	+0 00	-0 06	+0.8	+1.0	3.6	4.4	3.0	
2873	Nandi Waters, Viti Levu	17° 45'	177° 26'	-0 03	-0 08	+1.3	+1.0	4.1	4.9	3.3	
2875	Ngaloa Harbor, Kandavu Island	19° 05'	178° 11'	-0 07	+0 01	+0.8	+0.2	4.4	5.1	2.6	
2877	Matuku Island	19° 10'	179° 45'	-0 04	-0 01	+0.7	+1.1	3.4	4.1	3.0	
2879	Totoya Island	18° 59'	180° 07'	+1 00	+0 51	+0.9	+0.9	3.8	4.1	3.0	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		South	East	h m	h m	ft	ft	ft	ft	ft	
FIJI-cont. Time meridian, 180° E											
2881	Moala Island	18° 32'	179° 58'	-0 49	-0 38	+1.2	+0.6	4.4	4.9	3.0	
2883	SUVA HARBOR, Viti Levu Island	18° 09'	178° 26'			Daily predictions		3.82	4.27	2.15	
2885	Ngau Island	18° 00'	179° 14'	+0 14	-0 12	+0.4	+0.8	3.4	3.7	2.7	
2887	Nairai Island	17° 48'	179° 23'	-0 11	+0 08	-0.1	+0.3	3.4	3.7	2.2	
2889	Levuka, Ovalau Island	17° 41'	178° 51'	-0 14	-0 12	+0.9	+1.1	3.6	4.3	3.1	
2891	Nandi, Vanua Levu Island	16° 58'	178° 47'	+0 01	+0 09	+0.3	+0.9	3.2	3.9	2.7	
on Suva, p.256											
2893	Rotumah Island	12° 29'	177° 07'	-0 15	+0 00	(*0.81+1.0)		3.5	4.7	2.9	
TUVALU											
2895	Fongafale, Funafuti Atoll	8° 32'	179° 12'	-0 37	-0 30	+0.2	+0.4	4.1	5.6	2.8	
KIRIBATI Time meridian, 150° W											
2897	<i>Line Islands</i>										
2899	Christmas Island	1° 59'	157° 28'	+0 49	+0 39	+0.7	0.0	1.9	2.3	1.2	
	Fanning Island	3° 51'	159° 22'	+2 38	+2 39	+0.4	+0.4	1.2	1.6	1.2	
	<i>South</i>		<i>West</i>		on Pago Pago, p.260						
2901	Caroline Island	10° 00'	150° 14'	-3 17	-3 13	*0.54	*0.54	0.9	1.1	0.9	
Time meridian, 165° W											
2903	<i>Phoenix Islands</i>										
	Canton Island	2° 48'	171° 43'	-0 22	-0 20	*1.28	*1.28	2.5	3.4	2.1	
Time meridian, 180° E											
2905	<i>Gilbert Islands</i>										
2907	Makin Atoll	3° 02'	172° 48'	+0 12	+0 15	+0.7	-0.1	4.3	6.1	3.3	
2909	Tarawa Atoll	1° 22'	172° 56'	+0 19	+0 21	+0.8	-0.1	4.4	6.2	3.3	
	Abemama Atoll	0° 28'	173° 50'	+0 27	+1 03	+0.7	-0.1	4.3	6.1	3.3	
2911	Nonouti Atoll	0° 40'	174° 27'	-0 05	-0 05	+1.0	+0.1	4.4	6.2	3.5	
Time meridian, 165° E											
2913	Ocean Island	0° 52'	169° 35'	-0 21	-0 18	+0.5	+0.3	3.7	5.2	3.4	
NEW ZEALAND, South Island Time meridian, 180° E											
2915	Paterson Inlet, Stewart Island	46° 54'	168° 07'	-5 42	-5 37	-1.9	+0.6	5.5	6.4	5.2	
2917	Akaroa	43° 48'	172° 55'	-3 31	-3 12	*0.65	*0.33	5.8	6.3	3.5	
2919	Timaru	44° 24'	171° 15'	-4 24	-4 13	*0.72	*1.00	5.3	5.8	4.5	
2921	Oamaru	45° 06'	170° 58'	-4 06	-3 55	*0.66	*1.06	4.6	5.3	4.2	
2923	Otago Harbor entrance	45° 47'	170° 44'	-4 33	-3 50	*0.58	*0.33	5.1	5.6	3.2	
2925	Port Chalmers, Otago Harbor	45° 49'	170° 39'	-3 35	-3 23	*0.58	*0.33	5.1	5.7	3.2	
2927	Dunedin, Otago Harbor	45° 53'	170° 33'	-3 00	-2 11	-4.0	-1.2	5.2	5.7	3.2	
2929	Nugget Point	46° 26'	169° 48'	-4 52	-4 32	-2.4	+0.5	5.1	5.8	4.9	
2931	Waipapa Point	46° 39'	168° 51'	-5 17	-5 11	-1.3	+0.6	6.1	6.8	5.5	
2933	Bluff	46° 36'	168° 20'	-5 34	-5 27	-1.4	+0.5	6.1	7.2	5.4	
2935	New River	46° 32'	168° 15'	-5 56	-5 49	-1.1	-0.1	7.0	7.9	5.2	
2937	Colac Bay	46° 22'	167° 54'	-7 16	-6 56	-2.6	-0.2	5.6	6.8	4.4	
2939	Preservation Inlet	46° 04'	166° 41'	+4 59	+5 08	-2.9	-0.6	5.7	6.7	4.0	
2941	Dusky Sound	45° 47'	166° 32'	+4 49	+4 58	-3.1	-0.4	5.3	6.4	4.0	
2943	Deep Cove	45° 27'	167° 10'	+4 42	+4 49	-3.6	-0.3	4.7	5.4	3.9	
2945	Bligh Sound	44° 53'	167° 32'	+4 29	+4 38	-3.2	-0.3	5.1	6.1	4.0	
2947	Milford Sound	44° 40'	167° 56'	+4 24	+4 33	-3.2	-0.3	5.1	6.1	4.0	
2949	Jackson's Bay	43° 59'	168° 37'	+4 09	+4 18	-3.1	-0.4	5.3	6.4	4.0	
2951	Haast River entrance	43° 50'	169° 03'	+3 59	+4 08	-3.1	-0.4	5.3	6.4	4.0	
2953	Bruce Bay	43° 35'	169° 36'	+3 49	+3 58	-3.0	-0.5	5.5	6.6	4.0	
2955	Okarito	43° 13'	170° 11'	+3 44	+3 53	-2.9	-0.5	5.6	6.7	4.1	
2957	Hokitika Bar	42° 43'	170° 58'	+3 39	+3 48	-2.9	-0.6	5.7	7.0	4.0	
2959	Greymouth	42° 26'	171° 13'	+3 34	+3 43	-2.8	-0.7	5.9	7.3	4.0	
2961	Westport	41° 44'	171° 36'	+3 29	+3 38	-0.1	+0.1	7.8	9.8	5.8	
2963	West Haven Inlet	40° 35'	172° 32'	+2 24	+2 33	-1.1	-0.6	7.5	9.0	4.9	
2965	Motupipi River entrance	40° 50'	172° 51'	+1 48	+1 41	*1.43	*1.28	11.7	14.0	8.2	
2967	Astrolabe Road	40° 58'	173° 03'	+1 53	+1 46	+4.5	+0.2	12.3	15.4	8.2	
2969	Nelson	41° 16'	173° 16'	+2 13	+2 06	+1.2	+0.2	9.0	11.6	6.5	
2971	Croixilles Harbor	41° 05'	173° 42'	+1 58	+1 51	+2.4	+0.1	10.3	12.1	7.1	
2973	Greville Harbor, D'Urville Island	40° 52'	173° 48'	+2 17	+2 20	-0.4	-0.6	8.2	10.8	5.3	
2975	Stephens Island	40° 40'	174° 01'	+1 43	+1 36	-2.2	-0.3	6.1	7.0	4.6	
2977	Elmslie Bay	40° 56'	173° 51'	+1 23	+1 06	-1.8	-1.5	7.7	8.9	4.2	
2979	Pelorus Sound entrance	40° 55'	173° 59'	+1 13	+0 46	-2.4	-0.5	6.1	7.2	4.4	
2981	Queen Charlotte Sound entrance	41° 07'	174° 17'	+1 16	+0 53	-5.7	-1.2	3.5	4.7	2.4	
2983	Picton, Queen Charlotte Sound	41° 17'	174° 00'	+1 20	+0 50	-5.8	-1.3	3.5	4.8	2.3	

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	NEW ZEALAND, South Island—cont. Time meridian, 180° E	South	East	h m	h m	ft	ft	ft	ft	ft	
on Wellington, p.264											
2985	Cape Campbell	41° 44'	174° 15'	+0 38	+0 35	+1.1	0.0	4.3	4.6	3.5	
2987	Kaikoura Peninsula	42° 24'	173° 42'	+0 13	+0 15	+1.3	-0.1	4.6	4.9	3.5	
2989	Lyttelton	43° 37'	172° 43'	-0 17	-0 15	+1.7	-1.1	6.0	6.4	3.2	
NEW ZEALAND, North Island											
2991	Gisborne	38° 41'	178° 02'	+1 05	+1 08	+1.5	+0.3	4.4	4.8	3.8	
2993	Clyde, Wairoa River	39° 03'	177° 26'	+1 00	+0 51	+0.8	-0.5	4.5	4.8	3.0	
2995	Napier	39° 29'	176° 55'	+0 58	+0 49	+0.7	-0.5	4.4	4.6	3.0	
2997	Cape Palliser	41° 37'	175° 17'	+0 10	+0 10	+0.2	-0.1	3.5	3.7	3.0	
2999	WELLINGTON	41° 17'	174° 47'				Daily predictions	3.2	3.4	2.9	
on Auckland, p.268											
3001	Porirua Harbor	41° 04'	174° 51'	+2 05	+2 02	-4.6	0.0	3.4	4.8	3.5	
3003	Manawatu River entrance	40° 28'	175° 13'	+1 43	+1 36	-2.9	-0.2	5.3	6.8	4.3	
3005	Wanganui River entrance	39° 57'	174° 49'	+2 38	+2 31	-1.9	+0.5	5.6	7.2	5.1	
3007	Opunake Bay	39° 28'	173° 51'	+1 58	+1 51	+0.1	+0.2	7.9	10.1	6.0	
3009	Port Taranaki	39° 04'	174° 02'	+2 21	+2 39	+0.5	+0.1	8.4	10.6	6.1	
3011	Waitara River entrance	38° 59'	174° 14'	+2 22	+2 40	+0.9	+0.5	8.4	10.5	6.5	
3013	Kawhia	38° 04'	174° 49'	+2 39	+2 57	-0.6	-0.5	7.9	10.0	5.3	
3015	Raglan	37° 48'	174° 53'	+2 47	+3 05	-0.6	-0.6	8.0	10.2	5.2	
3017	Waikato River	37° 24'	174° 45'	+2 17	+2 35	+1.5	+0.9	8.6	10.9	7.0	
3019	Manukau Harbor entrance	37° 03'	174° 31'	+2 49	+2 48	-0.3	+0.4	7.3	9.0	5.9	
3021	Cornwallis, Manukau Harbor	37° 00'	174° 36'	+2 52	+3 10	+0.7	+0.6	8.1	10.0	6.5	
3023	Onehunga, Manukau Harbor	36° 56'	174° 47'	+3 21	+3 30	+2.1	+1.1	9.0	11.1	7.4	
3025	Pouto Point, Kaipara Harbor	36° 22'	174° 11'	+3 07	+3 25	+0.4	+0.5	7.9	9.9	6.2	
3027	Martins Bay, Hokianga River	35° 32'	173° 23'	+2 22	+2 40	+0.2	-0.3	8.5	10.8	5.8	
3029	Cape Maria van Diemen	34° 29'	172° 38'	+1 47	+2 05	-2.1	-0.5	6.4	7.4	4.5	
3031	Parangarenga	34° 32'	173° 00'	+0 50	+0 50	-2.2	0.0	5.8	6.9	4.7	
3033	Awanui River	34° 54'	173° 18'	+0 50	+0 30	-3.9	-1.3	5.4	6.3	3.2	
3035	Whangaroa	35° 02'	173° 47'	+0 20	+0 20	-2.7	-0.1	5.4	6.2	4.4	
3037	Port Russell	35° 16'	174° 07'	+0 12	+0 12	-2.4	0.0	5.6	6.4	4.6	
3039	Whangarei Heads	35° 49'	174° 30'	+0 20	+0 20	-2.3	-0.1	5.8	6.7	4.6	
3041	Port Whangarei, railway wharf	35° 45'	174° 20'	+0 40	+0 40	-1.1	+0.3	6.6	7.7	5.4	
3043	Bon Accord Harbor, Kauai Island	36° 27'	174° 50'	+0 15	+0 25	-1.0	-0.1	7.1	8.0	5.2	
3045	Nagle Cove, Great Barrier Island	36° 09'	175° 21'	-0 24	-0 11	-2.6	-0.4	5.8	6.6	4.3	
3047	AUCKLAND	36° 51'	174° 46'			Daily predictions		8.0	9.2	5.8	
3049	Waiheke	36° 47'	175° 09'	-0 06	-0 06	-0.4	0.0	7.6	8.6	5.6	
3051	Coromandel	36° 46'	175° 30'	-0 15	-0 15	+0.6	+0.2	8.4	9.7	6.2	
3053	Mercury Bay	36° 50'	175° 43'	-0 20	-0 20	-3.0	+0.2	4.8	5.4	4.4	
3055	Tauranga Harbor entrance	37° 39'	176° 11'	-0 12	-0 01	-3.9	-0.6	4.7	5.2	3.6	
3057	Ohia	37° 59'	177° 07'	+0 17	-0 03	-3.7	-0.6	4.9	5.3	3.7	
3059	East Cape	37° 41'	178° 33'	-0 55	-0 45	-3.3	+0.2	4.5	5.0	4.2	
NEW CALEDONIA Time meridian, 165° E											
on Yokohama, p.20											
3061	Port Goro, Toemo Island	22° 20'	167° 01'	+2 06	+2 07	(*0.57+0.5)		2.0	2.6	2.7	
3063	Noumea	22° 16'	166° 27'	+3 05	+3 16	(*0.83+0.8)		2.9	3.8	4.0	
3065	Port Neupi	21° 21'	164° 58'	+3 11	+3 35	(*0.89+0.3)		3.1	4.0	3.7	
3067	Paagoumene	20° 29'	164° 11'	+3 10	+3 18	(*0.91-0.2)		3.2	4.1	3.3	
3069	Loyalty Islands Shepenehe Anchorage	20° 47'	167° 08'	+1 23	+1 23	+0.3	-0.4	4.2	5.4	3.7	
VANUATU											
3071	Vila Harbor, Efate Island	17° 44'	168° 19'	+0 49	+0 59	(*0.80-0.7)		2.8	3.5	2.3	
3073	Havannah Harbor, Efate Island	17° 35'	168° 15'	+0 55	+0 59	*0.70 *0.70		2.4	3.0	2.6	
3075	Port Sandwich, Malekula Island	16° 26'	167° 47'	+0 03	+0 11	(*0.80-0.7)		2.8	3.8	2.3	
3077	Tangoa Island	15° 35'	166° 59'	+1 07	+1 11	*0.56 *0.50		2.1	2.6	2.1	
3079	Espirito Santo Island, Pekoa Chan	15° 31'	167° 10'	+0 23	+0 28	*0.76 *0.65		2.9	3.6	2.8	
3081	Aesi	15° 26'	167° 14'	-0 22	-0 15	*0.80 *0.70		3.0	3.8	2.9	
3083	Port Patteson, Banks Islands	13° 51'	167° 34'	+1 31	+1 31	+0.55 *0.45		2.1	2.6	2.0	
SOLOMON ISLANDS											
Santa Cruz Islands Manevai Bay											
3085		11° 38'	166° 55'	-0 14	-0 14	*0.55 *0.45		2.1	2.6	2.0	
on Dreger Harbor, p.272											
3087	Kukum, Guadalcanal Island §	9° 25'	160° 01'	+0 25	+0 00	-2.5	-2.5	1.6	2.3	1.4	
3089	Port Purvis, Florida Island §	9° 09'	160° 15'	+1 30	+0 15	-2.0	-2.3	2.0	2.3	1.7	
3091	Tulagi Island §	9° 06'	160° 09'	+0 38	-0 35	-2.0	-2.3	2.0	2.3	1.7	
on Cebu, p.180											
3093	Auki Harbor, Malaita Island	8° 47'	160° 42'	-7 20	-7 10	(*0.88+0.6)		2.9	4.1	2.6	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
		South	East	h m	h m	ft	ft	ft	ft	ft	
	on Dreger Harbor, p.272										
3095	Karunohu Island §	8° 30'	157° 58'	+0 14	+1 05	-2.4	-2.3	1.6	2.3	1.5	
3097	Nususonga, New Georgia Island §	8° 20'	157° 15'	-0 01	+1 56	-2.7	-2.7	1.7	2.4	1.2	
3099	Gizo Harbor, New Georgia Group §	8° 06'	156° 51'	-0 40	+1 22	-2.0	-1.8	1.5	2.2	1.9	
	on Chuuk, p.204										
3101	Kokopo, New Britain Island §	4° 21'	152° 17'	+0 23	+0 48	-2.1	-2.1	1.7	2.4	1.8	
3103	Rabaul, New Britain Island §	4° 12'	152° 12'	-0 24	+0 18	-2.7	-2.7	1.5	2.1	1.0	
3105	Bagaterre Haven, New Ireland I §	2° 47'	151° 00'	-8 49	-6 46	-2.7	-2.7	1.7	2.4	1.2	
3107	West Harbor, New Hanover Island §	2° 28'	149° 58'	-9 04	-7 01	-2.8	-2.8	1.6	2.3	1.1	
	on Djakarta, p.156										
3109	Emirau Island §	1° 40'	149° 55'	-0 39	-0 23	*1.17	*1.17	1.7	2.2	2.0	
	on Townsville, p.280										
3113	Finsch Harbor §	6° 33'	147° 52'	-0 12	-0 40	-1.8	-1.8	1.7	2.2	2.0	
3115	DREGER HARBOR §	6° 39'	147° 53'			<i>Daily predictions</i>		1.7	2.4	3.8	
3117	East Ape (Goschen Strait) §	10° 14'	150° 53'	-1 43	+0 04	-2.5	-2.4	1.6	2.3	1.4	
3119	Blakeney Island §	10° 25'	151° 13'	-1 37	+1 28	-1.8	-2.0	--	2.6	1.9	
	on Mean Spring										
3121	South Cape	10° 43'	150° 16'	-0 03	-0 19	(*0.48+1.2)		2.6	3.7	3.7	
3123	Dedele Point	10° 14'	148° 43'	+0 21	+0 21	*0.78	*0.78	4.2	6.0	4.1	
3125	Port Moresby	9° 29'	147° 08'	+0 17	-0 04	(*0.67+1.2)		3.6	5.2	4.8	
	on Darwin, p.276										
3127	Fly River entrance	8° 42'	143° 37'	+2 55	+2 47	*0.54	*0.43	7.9	11.2	7.0	
	on Mean Spring										
3129	Merauke	8° 29'	140° 23'	+1 36	+1 50	+7.2	+4.5	8.4	10.7	11.0	
	on Bangkok Bar, p.140										
3131	Digul River entrance §	7° 07'	138° 45'	-7 00	-7 03	*1.94	*1.65	15.9	19.3	14.5	
	on Mean Spring										
3133	Etna Bay	3° 56'	134° 40'	-8 36	-8 36	-0.4	-0.1	5.4	6.7	4.9	
	on Yokohama, p.20										
3135	Sekar Bay, Berau Gulf	2° 42'	132° 25'	-0 36	-0 28	(*0.74+2.1)		2.6	3.3	4.9	
	on Mean Spring										
3137	Wasian River entrance, Berau Gulf	2° 13'	133° 33'	-5 20	-5 17	+1.4	+0.3	9.8	12.3	9.2	
3139	Modan, Berau Gulf	2° 23'	133° 54'	-5 21	-5 18	+5.6	+1.3	13.0	16.4	11.8	
	on Yokohama, p.20										
3141	Saonek, Dampier Strait	0° 27'	130° 46'	+1 53	+2 02	(*0.94+0.3)		3.3	4.5	3.9	
3143	Manokwari	0° 52'	134° 05'	+1 50	+1 59	-0.2	-0.1	3.4	4.6	3.6	
3145	Mios Woendi Lagoon, Schouten Islands	1° 16'	136° 23'	+1 52	+1 44	*0.95	*0.95	3.3	4.2	3.6	
3147	Kajo Bay	2° 32'	140° 44'	+1 51	+1 59	(*0.51+1.1)		1.8	2.0	3.0	
	on Mean Spring										
	on Yokohama, p.20										
3149	Tapa Bay, Bynoe Harbor	12° 27'	130° 36'	-0 04	-0 04	*0.88	*0.90	11.6	16.8	12.0	
3151	East Point, Bynoe Harbor	12° 35'	130° 34'	+0 04	+0 04	*0.91	*0.96	11.9	17.0	12.6	
3153	Night Cliff, Point Darwin	12° 23'	130° 50'	+0 06	+0 06	-1.6	-0.5	12.3	17.6	12.6	
3155	DARWIN	12° 28'	130° 51'			<i>Daily predictions</i>		13.4	18.8	13.6	
3157	Cape Hotham	12° 03'	131° 17'	+1 14	+1 14	*0.64	*0.67	8.3	11.2	8.8	
	on Mean Spring										
3159	Time meridian, 120° E										
3161	Cape Keith, Melville Island	11° 36'	131° 28'	+0 03	+0 03	*0.54	*0.55	7.2	9.6	7.4	
3161	Cape Don Boat Harbor	11° 19'	131° 46'	-1 02	-1 19	*0.33	*0.33	4.0	5.6	4.6	
3163	Arnhem Bay	12° 11'	136° 06'	+4 15	+4 10	(*0.85-3.0)		11.4	13.6	8.6	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	AUSTRALIA, East Coast Time meridian, 150° E	South	East	h m	h m	ft	ft	ft	ft	ft	
on Townsville, p.280											
3165	Thursday Island, Torres Strait <31>	10° 35'	142° 13'	---	---	---	---	---	6.1	--	
3167	Tern Island	11° 00'	142° 45'	+1 38	+1 36	+1.1	+0.9	5.6	8.4	6.3	
3169	Hannibal Island	11° 36'	142° 56'	+1 02	+1 01	0.0	0.0	5.4	8.0	5.3	
3171	Piper Island	12° 15'	143° 15'	+0 27	+0 28	*0.86	*0.96	4.4	6.6	4.7	
3173	Restoration Island	12° 37'	143° 28'	+0 23	+0 23	(*0.70+1.0)	3.8	5.8	4.7		
3175	Flinders Islands	14° 10'	144° 15'	+0 15	+0 15	(*0.78+1.9)	4.2	6.2	6.0		
3177	Low Wooded Isle	15° 05'	145° 24'	-0 12	-0 12	(*0.72+1.0)	3.9	5.8	4.8		
3179	Cooktown	15° 28'	145° 15'	+0 10	+0 10	(*0.72+0.4)	3.9	5.8	4.2		
3181	Low Isles	16° 23'	145° 34'	+0 00	+0 00	(*0.70+1.1)	3.8	5.6	4.8		
3183	Cairns	16° 55'	145° 47'	-0 02	-0 02	(*0.76+0.6)	4.1	6.0	4.6		
3185	Green Island	16° 46'	145° 58'	-0 18	-0 18	(*0.72+0.7)	3.9	5.6	4.5		
3187	High Island	17° 10'	146° 01'	-0 06	-0 06	(*0.72+0.7)	3.9	5.8	4.5		
3189	North Barnard Island	17° 41'	146° 11'	-0 04	-0 04	(*0.76+0.9)	4.1	6.0	4.9		
3191	Dunk Island	17° 56'	146° 09'	-0 06	-0 06	(*0.81+2.3)	4.4	6.4	6.6		
3193	Dungeness (Lucinda)	18° 31'	146° 19'	+0 15	+0 15	+0.3	0.0	5.7	8.0	5.5	
3195	TOWNSVILLE	19° 15'	146° 50'	<i>Daily predictions</i>				5.4	7.6	5.3	
3197	Bowen	20° 01'	148° 15'	+0 52	+0 52	-0.2	0.0	5.2	7.0	5.2	
on Brisbane Bar, p.284											
3199	Hook Island	20° 04'	148° 56'	+1 10	+1 05	+1.9	+1.0	5.9	7.9	5.4	
3201	Molle Island	20° 15'	148° 50'	+1 23	+1 18	*1.36	*1.43	6.7	8.8	5.4	
3203	East Repulse Island	20° 35'	148° 53'	+1 39	+1 34	(*1.82+2.0)	9.1	12.1	9.1		
3205	Carlisle Island	20° 47'	149° 18'	+1 26	+1 21	(*1.88+2.0)	9.4	12.7	9.3		
3207	St. Bees Island	20° 54'	149° 27'	+1 31	+1 26	(*2.10+1.7)	10.5	14.1	9.9		
3209	Refuge Bay, Scafell Island	20° 52'	149° 37'	+1 26	+1 21	(*1.96+2.5)	9.8	13.1	10.1		
3211	Mackay, Queensland	21° 07'	149° 14'	+1 35	+1 30	(*2.44+0.3)	12.2	16.0	9.8		
3213	Sarina Inlet	21° 24'	149° 20'	+1 43	+1 38	(*2.58+1.1)	12.9	16.8	11.2		
3215	Dove Point, Shoalwater Bay	22° 14'	150° 28'	+0 58	+0 53	(*2.58+0.8)	12.9	17.1	10.9		
3217	High Peak Island	21° 57'	150° 41'	+0 40	+0 35	(*2.00+0.8)	10.0	13.4	8.6		
3219	Port Clinton, Coral Sea	22° 32'	150° 45'	+0 15	+0 10	*1.84 *1.64	9.5	12.8	7.1		
3221	Tryon Island	23° 15'	151° 47'	-0 38	-0 43	+1.9 +1.1	5.8	7.6	5.4		
3223	Port Alma, Fitzroy River	23° 34'	150° 52'	-0 10	-0 15	(*1.88+1.2)	9.4	12.5	8.5		
3225	Gladstone, Port Curtis	23° 50'	151° 15'	-0 10	-0 15	+4.2 +1.4	7.8	10.2	6.7		
3227	Lady Musgrave Island	23° 54'	152° 23'	-1 25	-1 25	0.0 +0.6	4.4	5.9	4.2		
3229	Pancake Creek	24° 01'	151° 45'	-0 56	-1 02	+2.3 +1.1	6.2	8.2	5.6		
3231	Lady Elliot Island	24° 07'	152° 43'	-1 19	-1 19	0.0 +0.8	4.2	5.6	4.3		
3233	Burnett Heads	24° 46'	152° 23'	-0 41	-0 41	+1.1 +0.9	5.2	6.6	4.9		
3235	Urangan Jetty	25° 17'	152° 55'	-0 48	-0 48	+3.5 +0.7	7.8	10.2	6.0		
3237	Mary River, Middle Bank	25° 30'	152° 52'	+0 20	+1 00	+3.2 +0.1	8.1	10.5	5.6		
3239	BRISBANE BAR	27° 19'	153° 10'	<i>Daily predictions</i>				5.0	5.9	4.0	
3241	Ballina	28° 52'	153° 35'	-0 59	-0 58	(*0.46+0.7)	2.3	2.9	2.5		
3243	Iluka	29° 25'	153° 22'	-1 15	-1 15	(*0.56+0.8)	2.8	3.6	3.0		
3245	Lord Howe Island	31° 32'	159° 04'	-1 25	-1 20	-0.6 +0.3	4.1	5.3	3.8		
3247	Norfolk Island	29° 04'	167° 56'	-1 17	-1 29	-1.3 -0.4	4.1	5.0	2.9		
Time meridian, 150° E											
on Sydney, p.288											
3249	Coffs Harbor	30° 18'	153° 09'	-0 22	-0 20	0.0 -0.1	3.7	4.7	3.0		
3251	Port Macquarie bar	31° 26'	152° 56'	+0 12	+0 11	-0.3 -0.1	3.2	4.0	2.8		
3253	Nelson's Bay	32° 43'	152° 09'	+0 16	+0 17	+0.1 +0.3	3.4	4.2	3.2		
3255	Newcastle	32° 56'	151° 45'	-0 04	-0 09	0.0 +0.2	3.4	4.2	3.1		
3257	SYDNEY (Fort Denison)	33° 51'	151° 14'	<i>Daily predictions</i>				3.6	4.5	3.0	
3259	Port Kembla	34° 29'	150° 55'	+0 00	+0 00	-0.4 -0.2	3.4	4.0	2.7		
3261	Moruya River bar	35° 54'	150° 08'	+0 10	+0 10	-0.4 +0.1	3.1	3.9	2.9		
3263	Eden	37° 04'	149° 54'	+0 00	+0 00	-0.8 -0.1	2.9	3.6	2.5		
3265	Gabo Island	37° 34'	149° 55'	-0 10	-0 01	+0.2 +1.2	2.6	3.0	3.7		
Tasmania											
on Port Phillip, p.292											
3267	Stack Island	40° 36'	144° 47'	+0 46	+1 32	(*1.81-1.1)	5.6	6.2	4.1		
3269	Devonport	41° 09'	146° 23'	-0 14	+0 32	+4.8 +0.1	7.8	8.5	5.4		
3271	Port Dalrymple entrance	41° 04'	146° 48'	-0 34	+0 12	(*2.26-1.1)	7.0	8.0	5.5		
3273	Launceston, Tamar River	41° 26'	147° 08'	+1 26	+3 17	(*3.13-0.9)	9.7	10.8	8.2		
on Hong Kong, p.120											
3275	Parsons Bay	43° 06'	147° 45'	+11 22	+11 31	(*0.52+0.8)	1.7	1.8	3.1		
3277	Hobart	42° 53'	147° 20'	+11 09	+11 14	(*0.55+0.9)	1.8	1.9	3.4		
on Port Adelaide, p.296											
3279	Bramble Cove, Port Davey	43° 19'	146° 00'	-3 40	-3 40	(*0.19+1.4)	0.9	1.1	2.3		
on Port Phillip, p.292											
3281	Rabbit Island	38° 55'	146° 31'	+0 01	+0 47	*1.47 *1.00	5.2	6.0	4.0		
3283	Winter Cove, Kent Islands	39° 28'	147° 21'	-0 34	+0 12	*1.67 *1.07	6.0	7.0	4.5		
3285	Great Glennie Island	39° 05'	146° 14'	-0 24	+0 22	*1.67 *1.07	6.0	6.8	4.5		
3287	Venus Bay	38° 40'	145° 44'	+0 00	---	+2.3 --	---	---	---		
3289	Mussel Rock, Westernport	38° 27'	145° 15'	+0 25	-0 10	*1.94 *1.94	6.0	7.5	5.6		
3291	PORT PHILLIP (Point Lonsdale)	38° 18'	144° 37'	+0 25	<i>Daily predictions</i>				3.1	3.9	
3293	Queenscliff, Port Phillip	38° 19'	144° 40'	+0 24	+0 24	*0.61 *0.61	1.9	2.1	1.8		

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	AUSTRALIA, South Coast—cont. Time meridian, 150° E	South	East	h m	h m	ft	ft	ft	ft	ft	
3295	Melbourne (Williamstown)	37° 52'	144° 55'	+2 58	+3 41	(*0.55+0.2)		1.7	1.9	1.8	
3297	Geelong, Port Phillip	38° 07'	144° 25'	+3 22	+3 22	*0.60 *0.60		1.8	2.0	1.8	
3299	Port Campbell	38° 38'	143° 00'	-1 18	-0 53	(*0.45+0.4)		1.4	2.0	1.7	
3301	Warrnambool	38° 24'	142° 29'	+0 20	+0 20	(*0.52+0.7)		1.6	2.4	2.2	
				on Port Phillip, p.292							
3303	Portland	38° 21'	141° 37'	-4 47	-4 48	(*0.28+0.7)		1.3	1.7	2.0	
	Time meridian, 142° 30' E										
3305	Port MacDonnell	38° 04'	140° 42'	-5 16	-5 14	*0.62 *0.62		2.9	4.1	3.0	
3307	Kingston	36° 50'	139° 51'	-3 59	-4 15	(*0.47+0.9)		1.6	2.2	3.2	
3309	Second Valley	35° 31'	138° 13'	-0 25	-0 26	*0.63 *0.67		2.9	4.0	3.1	
3311	Hog Bay, Kangaroo Island	35° 44'	137° 57'	-1 16	-0 59	(*0.53+1.3)		2.2	3.1	3.8	
3313	PORT ADELAIDE	34° 51'	138° 30'	Daily predictions				4.7	6.6	4.8	
3315	Port Wakefield	34° 16'	138° 06'								
3317	PORT LINCOLN	34° 43'	135° 52'					2.2	3.1	2.9	
3319	Ardrossan, Gulf of St. Vincent	34° 26'	137° 55'	-0 23	-0 15	+1.4 +1.4		5.5	7.8	5.8	
3321	Edithburgh, Gulf of St. Vincent	35° 05'	137° 45'	-0 52	-0 48	*0.79 *0.79		3.7	5.2	3.8	
3323	Port Victoria, Spencer Gulf	34° 30'	137° 27'	-2 37	-2 37	*0.59 *0.59		2.8	4.0	2.8	
3325	Wallaroo, Spencer Gulf	33° 55'	137° 37'	+0 28	+0 34	*0.59 *0.59		2.7	3.8	2.9	
3327	Port Pirie, Spencer Gulf	33° 10'	138° 01'	+2 40	+2 48	+0.8 +0.2		5.3	7.4	5.3	
3329	Port Augusta, Spencer Gulf	32° 30'	137° 46'	+3 08	+3 16	+1.2 -0.1		6.0	8.4	5.3	
3331	Coffin Bay	34° 30'	135° 20'	-4 32	-4 26	*0.70 *0.67		3.4	4.8	3.3	
3333	Port Eyre	32° 00'	132° 27'	-5 17	-5 17	*0.70 *0.67		3.4	4.8	3.3	
	Time meridian, 120° E			on Djakarta, p.156							
3335	Albany, Princess Royal Harbor †	35° 02'	117° 53'	+12 28	+12 11	(*0.85+0.4)				2.1	
	AUSTRALIA, West and Northwest Coasts										
3337	Bunbury Harbor §	33° 19'	115° 39'	+11 04	+10 43	+1.0 +1.6				3.3	
3339	Fremantle, Swan River entrance †	32° 03'	115° 45'	+10 52	+10 20	(*0.81+0.5)				2.1	
3341	Champion Bay †	28° 47'	114° 35'	+10 41	+9 51	-1.3 -0.8				0.9	
				on Davao, p.176							
3343	Carnarvon, Shark Bay	24° 52'	113° 39'	+5 08	+4 51	(*0.49+2.3)		2.1	2.9	3.5	
3345	Red Cliff Bay, Shark Bay	25° 48'	113° 40'	+7 32	+7 30	(*0.63+1.6)		2.7	3.5	3.2	
3347	Learmonth, Exmouth Gulf	22° 11'	114° 05'	+5 17	+5 19	+2.7 +2.1		4.9	6.8	4.9	
3349	Long Island	21° 38'	114° 41'	+4 34	+4 28	(*0.84+1.3)		3.6	5.0	3.4	
3351	Beadon Point	21° 38'	115° 06'	+4 58	+4 48	+1.0 +1.1		4.2	5.8	3.5	
				on Port Hedland, p.304							
3353	Large Islet	21° 18'	115° 30'	+0 23	+0 28	(*0.51+0.9)		6.7	9.7	5.9	
3355	Trimouille Island, Monte Bello Islands	20° 23'	115° 33'	-0 04	+0 02	(*0.42+1.5)		5.6	8.1	5.7	
3357	Point Samson	20° 38'	117° 12'	-0 27	-0 16	(*0.81+1.3)		10.7	15.3	9.3	
3359	PORT HEDLAND	20° 18'	118° 35'	Daily predictions				13.2	19.0	9.9	
3361	Broome	18° 00'	122° 13'	-0 22	-0 12	*1.41 *1.41		18.4	27.2	14.0	
3363	Red Bluff	17° 04'	122° 19'	+0 01	+0 10	(*1.08+0.7)		14.3	21.6	11.4	
3365	Pender Bay	16° 42'	122° 43'	+0 15	+0 15	(*1.23-1.2)		16.2	23.4	11.0	
3367	Karrakatta Bay	16° 22'	123° 02'	+0 05	+0 51	(*1.26-0.6)		16.6	23.6	11.9	
3369	Bedford Island	16° 09'	123° 19'	+0 43	+0 48	(*1.41+0.2)		18.6	26.8	14.2	
3371	Cockatoo Island	16° 05'	123° 35'	+0 21	+0 26	(*1.44+1.4)		19.0	27.3	15.7	
3373	Hall Point, Kid Islet	15° 40'	124° 24'	+0 17	+0 22	(*1.54-0.9)		20.3	29.4	14.3	
3375	Prince Frederick Harbor	15° 05'	125° 18'	+0 00	+0 00	*1.48 *1.48		19.5	28.1	14.8	
3377	Baudin Island	14° 08'	125° 36'	-0 23	-0 18	+1.5 +1.5		13.0	18.8	11.4	
3379	Troughton Island	13° 46'	126° 08'	-0 35	-0 35	*1.10 *1.10		14.5	20.9	11.0	
				on Port Adelaide, p.296							
3381	Geranium Hbr., Napier Broome Bay	13° 56'	126° 35'	-6 45	-7 21	0.0 -0.5		5.2	7.5	4.5	
				on Darwin, p.276							
3383	Reveley Island	14° 22'	127° 50'	-0 49	-0 54	*0.80 *0.80		10.7	14.6	11.0	
3385	Lacrosse I., Cambridge Gulf	14° 45'	128° 20'	-0 22	-0 28	-1.3 -0.3		12.4	16.9	12.8	
				on Apia, p.252							
3387	Chatham Islands	43° 55'	183° 23'	-0 27	-0 27	*1.50 *1.50		3.4	3.9	2.6	
3389	Auckland Island	50° 52'	166° 05'	+6 56	+6 11	*1.10 *1.10		2.5	3.2	1.9	
3391	Perseverance Harbor, Campbell Island	52° 34'	169° 07'	+7 47	+7 25	*1.30 *1.30		3.0	3.5	2.3	
3393	Macquarie Island	54° 31'	158° 58'	+6 26	+5 58	*0.93 *0.93		1.9	2.4	1.8	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	Islands, Bay of Bengal Time meridian, 82° 30' E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Mergui, p.308											
3395	<i>Nicobar Islands</i> Galathaea Bay	6° 47'	93° 51'	-2 08	-2 17	(*0.27+0.5)		3.4	4.6	3.0	
3397	Nankauri Harbor	8° 02'	93° 33'	-1 50	-1 58	(*0.29+1.7)		3.6	5.0	4.3	
3399	Car Nicobar	9° 10'	92° 50'	-2 05	-2 05	(*0.31+0.5)		3.8	5.3	3.3	
3401	<i>Andaman Islands</i> Sisters Island	11° 09'	92° 44'	-1 54	-1 49	(*0.35+0.3)		4.3	5.8	3.5	
3403	Port Blair	11° 41'	92° 46'	-1 38	-1 42	(*0.35+0.3)		4.4	6.1	3.5	
3405	Port Cornwallis	13° 19'	93° 03'	-1 03	-1 17	(*0.41+0.9)		5.1	7.2	4.6	
BURMA <32> Time meridian, 97° 30' E											
3407	Pulo Besin	9° 59'	98° 29'	-0 32	-0 43	(*0.67+1.1)		8.3	11.5	7.2	
3409	Hastings harbor	10° 07'	98° 17'	-0 35	-0 42	*0.60 *0.52		7.7	10.8	5.4	
3411	Lanbi Island	10° 46'	98° 18'	-0 24	-0 36	*0.73 *0.76		9.0	12.5	6.7	
3413	Owen Island	11° 12'	98° 15'	-0 24	-0 36	(*0.69+0.9)		8.5	11.9	7.2	
3415	Pigeon Island	11° 47'	98° 13'	-0 32	-0 44	*0.69 *0.69		8.6	12.0	6.3	
3417	MÉRGUI	12° 26'	98° 36'			Daily predictions		12.4	17.5	9.1	
3419	Padaw Sound	12° 37'	98° 25'	-0 17	-0 17	-0.2 +1.5		10.7	15.1	9.8	
3421	Myinkwa Aw, Tavoy R. entrance	13° 33'	98° 08'	-0 11	-0 16	(*0.78+1.1)		9.7	13.6	8.2	
3423	Heinze Bok (Long Island)	14° 24'	97° 47'	+0 31	+0 31	(*0.72+1.0)		8.9	12.6	7.6	
3425	Wa Kyun	15° 12'	97° 44'	+1 44	+1 46	(*0.78+4.4)		9.7	14.0	11.5	
3427	Double Island	15° 52'	97° 35'	+3 17	+3 43	0.0 +0.5		11.9	17.2	9.4	
3429	Kyaikkami, Moulmein River	16° 05'	97° 34'	+4 02	+4 15	+2.0 0.0		14.4	20.0	10.1	
on Rangoon, p.312											
3431	Moulmein, Moulmein River <33>	16° 29'	97° 37'	-0 53	-0 03	-6.0 <34>		9.5	12.2	6.2	
on Mergui, p.308											
3433	Elephant Point, Rangoon River	16° 28'	96° 19'	+5 26	+5 52	+3.7 +2.1		14.0	18.9	12.0	
3435	RANGOON, Rangoon River	16° 46'	96° 10'			Daily predictions		13.4	17.0	10.3	
on Mergui, p.308											
3437	China Bakir (Old Lighthouse)	16° 17'	96° 12'	+5 04	+5 05	(*0.82+1.1)		10.2	14.2	8.6	
3439	Pymbong Beacon	15° 47'	95° 31'	+0 42	+0 33	(*0.35+1.2)		4.3	6.2	4.4	
on Sagar, p.316											
3441	Diamond Island, Bassein River	15° 52'	94° 17'	+0 14	+0 00	*0.48 *0.46		4.8	6.5	4.7	
3443	Bassein, Bassein River <35>	16° 47'	94° 47'	+4 34	+4 53	*0.52 *0.54		4.9	5.7	5.2	
3445	Chaungtha River entrance	16° 57'	94° 26'	-0 23	-0 36	*0.42 *0.32		4.6	6.4	3.9	
3447	Andrew Bay	18° 21'	94° 21'	-0 26	-0 42	*0.47 *0.34		5.2	7.2	4.3	
3449	Searle Point, Cheduba Island	18° 55'	93° 37'	-0 03	-0 15	+0.56 *0.48		5.8	8.0	5.3	
3451	Kyaukpyu, Ramree Island	19° 26'	93° 33'	-0 06	-0 33	*0.58 *0.40		6.5	9.0	5.3	
3453	Sittwe	20° 08'	92° 54'	+0 13	-0 05	*0.48 *0.28		5.6	7.6	4.2	
3455	St. Martins Island	20° 37'	92° 19'	-0 12	-0 31	*0.62 *0.56		6.3	8.8	6.0	
BANGLADESH <36> Time meridian, 90° E											
3457	Cox's Bazar	21° 27'	91° 59'	+0 47	+0 26	*0.67 *0.52		7.2	8.9	6.2	
3459	Pusur River	21° 43'	89° 33'	+0 19	+0 12	*0.61 *0.64		5.7	7.5	6.1	
3461	Kutubdia Island	21° 52'	91° 50'	+1 45	+1 44	*0.76 *0.44		8.9	11.0	6.7	
3463	Chittagong	22° 20'	91° 50'	+3 37	+4 06	*0.80 *0.42		9.6	11.9	6.9	
INDIA <36> Bay of Bengal Time meridian, 82° 30' E											
3465	Matla River Approach	20° 58'	88° 35'	-0 22	-0 42	*0.63 *0.54		6.5	8.8	6.0	
3467	SAGAR, Hooghly River	21° 39'	88° 03'			Daily predictions		9.7	14.1	9.9	
3469	Diamond Harbor, Hooghly River	22° 11'	88° 11'	+1 35	+2 34	*1.11 *0.88		12.0	16.0	10.4	
3471	Calcutta (Garden Reach) Hooghly River	22° 33'	88° 18'	+3 56	+5 38	*1.06 *1.00		10.6	13.7	10.3	
3473	Shortt Island	20° 47'	87° 04'	-0 31	-0 36	*0.63 *0.52		6.6	9.0	5.9	
3475	Chandbali	20° 46'	86° 44'	+1 22	+1 58	*0.54 +0.52		5.3	6.4	5.3	
on Madras, p.320											
3477	False Point	20° 25'	86° 47'	+0 35	+0 31	(*2.04+0.8)		4.9	6.8	5.1	
3479	Gopalpur	19° 16'	84° 55'	+0 05	+0 05	*1.52 *1.52		3.7	5.2	3.2	
3481	Vizagapatam	17° 41'	83° 17'	+0 06	+0 05	+0.9 0.0		3.3	4.6	2.6	
3483	Cocanada	16° 56'	82° 15'	+0 17	+0 27	+1.1 +0.2		3.3	4.4	2.8	
3485	Sacramento Shoal	16° 36'	82° 19'	+0 03	+0 18	+0.7 +0.1		3.0	4.0	2.5	
3487	MADRAS	13° 06'	80° 18'			Daily predictions		2.4	3.2	2.1	
3489	Cuddalore	11° 43'	79° 47'	-0 01	+0 05	-0.3 +0.2		1.9	2.5	2.1	
3491	Negapatam	10° 45'	79° 51'	+0 19	+0 36	*0.55 +0.33		1.5	2.0	1.1	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time	Height	Mean	Spring			
		North	East	h m	h m	ft	ft	ft	ft	
on Colombo, p.324										
3493	Pamban Channel, Gulf of Mannar	9° 16'	79° 12'	-0 07	-0 09	+0.1	+0.1	1.4	1.9	1.3
3495	Tuticorin, Gulf of Mannar	8° 48'	78° 10'	-0 15	-0 15	+0.8	+0.6	1.6	2.3	1.9
3497	Sri Lanka Point Pedro	9° 50'	80° 14'	-5 46	-5 42	0.0	-0.1	1.5	2.0	1.2
3499	Trincomalee	8° 33'	81° 13'	-5 54	-5 50	0.0	0.0	1.2	1.7	1.3
3501	Galle	6° 02'	80° 13'	+0 14	+0 19	*0.89	*0.89	1.2	1.8	1.1
3503	COLOMBO	6° 57'	79° 51'	Daily predictions				1.4	2.0	1.2
3505	Jaffna	9° 39'	80° 01'	+0 57	+1 13	(*0.71+0.4)		1.0	1.4	1.3
Arabian Sea										
3507	Quilon	8° 53'	76° 34'	-1 43	-1 52	+1.1	+0.8	1.7	2.3	2.2
3509	Cochin	9° 58'	76° 15'	-2 22	-2 24	+0.8	+0.6	1.6	2.0	1.9
3511	Beyapore	11° 10'	75° 48'	-2 34	-2 32	+2.0	+1.3	2.1	2.7	2.9
on Karachi, p.332										
3513	Calicut	11° 15'	75° 46'	+0 43	+0 20	(*0.40+1.3)		2.3	2.9	3.5
3515	Tellicherry	11° 45'	75° 29'	+0 29	+0 28	(*0.48+0.8)		2.8	3.1	3.4
3517	Cannanore	11° 51'	75° 22'	+0 31	+0 22	(*0.47+0.7)		2.7	3.2	3.2
3519	Mangalore	12° 51'	74° 50'	+0 43	+0 38	(*0.48+0.5)		2.8	3.5	3.1
3521	Malpe	13° 21'	74° 41'	+0 09	+0 01	(*0.55+0.4)		3.2	4.0	3.4
3523	Bhatkal	13° 58'	74° 32'	+0 36	+0 38	*0.43	*0.40	2.6	3.5	2.3
3525	Karwar Bay	14° 48'	74° 06'	+0 22	+0 10	*0.67	*0.67	3.8	4.9	3.7
3527	Mormugao	15° 25'	73° 48'	+0 18	+0 08	*0.66	*0.60	4.0	5.2	3.5
on Bombay, p.328										
3529	Rajapur River entrance	16° 37'	73° 20'	-1 00	-1 00	*0.56	*0.72	4.2	5.7	5.0
3531	BOMBAY (Apollo Bandar)	18° 55'	72° 50'	Daily predictions				8.7	11.8	8.4
3533	Bassein	19° 18'	72° 48'	+0 30	+1 04	-0.9	-0.8	8.6	11.1	7.5
3535	Dahanu	19° 58'	72° 43'	+1 40	+1 40	+1.1	+0.7	9.1	12.4	9.3
3537	Bhavnagar, Gulf of Cambay	21° 45'	72° 14'	+5 03	+5 41	*2.40	*1.90	22.9	29.0	19.1
3539	Port Albert Victor, Gulf of Cambay	20° 57'	71° 32'	+3 06	+2 49	*0.71	*0.62	6.5	8.7	5.8
3541	Navabadar	20° 45'	71° 05'	+1 20	+1 10	(*0.44+2.2)		3.8	5.4	5.9
on Karachi, p.332										
3543	Porbandar	21° 38'	69° 37'	+0 14	+0 17	(*0.79+1.6)		4.6	6.0	5.9
on Bombay, p.328										
3545	Gulf of Kutch Okha Point	22° 28'	69° 05'	+0 54	+0 46	*0.84	*0.68	8.0	9.8	6.7
3547	Navinar Point	22° 45'	69° 43'	+1 57	+2 06	+4.9	+0.6	13.0	15.5	11.1
3549	Kandla	23° 02'	70° 14'	+2 39	+3 08	+7.8	-0.2	16.7	19.4	12.2
3551	Khori Creek	22° 58'	70° 14'	+2 28	+2 58	+7.4	+0.1	16.0	18.2	12.1
3553	Hanthal Point	22° 56'	70° 21'	+2 33	+3 20	+5.6	-0.2	14.5	16.8	11.1
3555	Navlakhi	22° 58'	70° 27'	+3 02	+3 33	+9.2	+0.4	17.5	20.2	13.2
3557	Navi Wat	23° 05'	70° 20'	+3 09	+3 55	+7.2	+0.1	15.8	17.6	12.0
on Karachi, p.332										
3559	Kori Creek entrance	23° 31'	68° 21'	+0 25	+0 25	+0.4	0.0	6.2	8.1	5.6
on Madras, p.320										
3561	Suvarniva Atoll, Maldives Islands	0° 50'	73° 09'	+5 10	+5 10	0.0	+0.2	2.2	2.9	2.2
on Colombo, p.324										
3563	Horsburgh Atoll, Maldives Islands	4° 54'	72° 57'	-1 50	-1 35	(*0.86+1.1)		1.2	1.7	2.1
3565	Ihavandu, Maldives Islands	6° 57'	72° 55'	-2 32	-2 24	+1.1	+0.9	1.6	2.3	2.2
3567	Minicoy Island	8° 16'	73° 01'	-2 50	-2 41	+2.3	+1.7	2.0	2.5	3.2
Time meridian, 82° 30' E										
3569	Kardamum Island, Laccadive Islands	11° 13'	72° 46'	+1 15	+1 15	(*0.38+1.3)		1.8	2.9	3.4
3571	Cherbaniani Reef, Laccadive Islands	12° 21'	71° 53'	+0 25	+0 25	(*0.45+1.6)		2.2	3.4	4.0
PAKISTAN Time meridian, 75° E										
3573	Indus River Delta Hajamro River mouth	24° 06'	67° 19'	+0 00	+0 00	+1.0	+0.2	6.6	8.6	6.0
3575	Jhari Creek	24° 44'	67° 19'	0 30	1 02	+1.6	+0.7	—	—	—
3577	Port Muhammad Bin Qasim	24° 47'	67° 21'	0 23	0 23	+2.3	+1.0	—	—	—
3579	Hasan Point	24° 47'	67° 14'	0 13	0 15	+1.6	+0.7	—	—	—
3581	Bundal Island	24° 42'	67° 08'	+0 00	+0 00	+1.0	+0.3	—	—	—
3583	Ghizri Creek	24° 46'	67° 06'	-0 02	0 01	+0.7	+0.3	—	—	—
3585	KARACHI	24° 48'	66° 58'	Daily predictions				5.8	7.6	5.4

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	PAKISTAN-cont. Time meridian, 75° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Colombo, p.324											
3587	Sonmiani Harbor	25° 23'	66° 33'	-0 50	-0 50	0.0	-0.2	6.0	7.8	5.3	
3589	Ormara	25° 11'	64° 41'	-0 08	-0 10	*0.86	*0.72	5.3	7.0	4.5	
3591	Pasni	25° 12'	63° 30'	+0 09	+0 08	+0.2	+0.9	5.1	6.6	6.0	
3593	Gwatar Bay	25° 09'	61° 33'	+0 35	+0 35	(*0.90+0.2)		5.2	6.8	5.1	
on Hong Kong, p.120											
3595	Chah Bahar	25° 17'	60° 37'	-1 47	-1 43	+0.7	+0.7	—	—	—	
3597	Ras Tang	25° 21'	59° 54'	-1 38	-1 43	+0.7	+1.6	—	—	—	
3599	Koksar	25° 32'	58° 50'	-1 42	-1 38	-0.3	+0.7	—	—	—	
3601	Khalji-e Jask	25° 38'	57° 46'	-1 42	-1 40	-1.0	-0.3	—	—	—	
3603	Jask Bay, Gulf of Oman	25° 39'	57° 45'	-1 20	-1 20	(*0.93+0.3)		5.4	7.0	5.3	
3605	Ras al Kuh	25° 47'	57° 19'	-1 34	-1 31	-0.7	-0.3	—	—	—	
3607	Gonari Creek	26° 18'	57° 06'	-0 36	-0 28	+1.0	+0.3	—	—	—	
3609	Bandar-e Sirk	26° 31'	57° 05'	-0 46	-0 37	+1.3	+0.3	—	—	—	
3611	Hengam, Persian Gulf	26° 41'	55° 54'	-0 02	+0 06	-1.0	-0.4	5.2	6.7	4.7	
3613	Bandar Abbas, Persian Gulf	27° 11'	56° 17'	-0 40	-0 40	+1.5	+0.6	6.7	9.4	6.5	
on Shatt Al Arab, p.336											
3615	Jazirat Farur, Persian Gulf	26° 15'	54° 31'	-9 30	-9 12	-0.3	-0.4	3.4	5.1	4.1	
3617	Bushahr, Persian Gulf	28° 59'	50° 51'	-0 44	-0 37	*0.64	*0.43	2.7	4.5	2.6	
3619	Jazirat Kharg, Persian Gulf	29° 16'	50° 20'	-0 39	-0 41	*0.87	*0.96	2.6	4.4	4.0	
on Shatt Al Arab, p.336											
3621	SHATT AL ARAB (outer bar)	29° 50'	48° 43'	<i>Daily predictions</i>				6.1	8.5	5.7	
3623	Basra Reach <37>	30° 31'	47° 51'	+5 38	+6 41	(*0.54+2.0)		3.3	3.9	5.1	
3625	Abadan	30° 20'	48° 16'	+2 50	+3 45	-3.3	+0.7	—	—	—	
3627	Al Faw	29° 58'	48° 29'	+1 00	+1 00	0.0	+1.0	—	—	—	
on Mina Al Ahmadi, p.340											
3629	Um Qasr	30° 01'	47° 57'	+1 52	+2 01	+5.5	+1.5	10.1	12.8	9.3	
3631	Um Al-Aseed (Beacon No. 12)	29° 56'	48° 02'	+1 20	+1 10	+4.6	+1.3	—	—	—	
3633	Warba Spit	29° 59'	48° 09'	+1 20	+1 13	+3.7	+0.7	9.1	12.2	8.0	
3635	Ras al Barshah (Beacon No. 2)	29° 33'	48° 14'	+0 41	+0 43	+1.3	+1.3	—	—	—	
3637	Mina ad Dawhah	29° 23'	47° 48'	+1 09	+1 03	+1.6	+1.0	—	—	—	
3639	Ash Shuwaykh	29° 21'	47° 55'	+1 11	+1 07	+1.6	+1.6	—	—	—	
3641	Kuwait	29° 21'	47° 56'	+1 12	+1 08	+1.4	+0.9	6.6	8.9	6.9	
3643	Fahayhil	29° 04'	48° 10'	+1 12	+0 46	(*0.78+0.6)		4.5	6.6	5.0	
on Mina Al Ahmadi, p.340											
3645	Jazirat Auhah	29° 22'	48° 26'	-0 12	-0 14	+0.3	+0.7	—	—	—	
3647	MINA AL AHMADI	29° 04'	48° 10'	<i>Daily Predictions</i>				—	—	—	
3649	Ras al Qulai'ah	28° 52'	48° 17'	+0 00	+0 16	-1.6	-0.3	—	—	—	
3651	Jazirat Kubbar	29° 04'	48° 30'	-0 12	-0 19	-1.3	+0.3	—	—	—	
3653	Jazirat Qaruh	28° 49'	48° 47'	-0 37	-0 13	-2.3	0.0	—	—	—	
3655	Jazirat Umm al Maradim	28° 41'	48° 39'	-0 15	+0 08	-3.0	0.0	—	—	—	
3657	Ras al Khafji	28° 25'	48° 31'	-0 04	+0 19	-3.3	-0.3	—	—	—	
on Yamato Wan, p.12											
3659	Ras Al Mishab †	28° 07'	48° 37'	+8 40	+7 58	+1.2	+0.3	4.0	4.7	3.5	
3661	Safaniya †	28° 00'	48° 46'	+8 39	+8 29	+1.0	+0.2	3.9	4.8	3.5	
on Bangkok Bar, p.140											
3663	Munifah <38> †	27° 35'	48° 54'	+10 27	+10 51	(*0.46–0.8)		3.6	4.3	2.7	
on Mina Salman, p.348											
3665	Fasht Gharibah	26° 59'	50° 13'	-0 30	-0 42	-2.6	-1.3	—	—	—	
3667	Abu Sa'fah	26° 57'	50° 30'	-0 35	-0 40	-2.0	-0.7	—	—	—	
3669	RAS AT TANNURAH	26° 38'	50° 10'	<i>Daily predictions, p.344</i>				4.2	5.3	4.2	
3671	Dawhat at Tarut	26° 39'	50° 02'	-0 31	-0 07	-1.6	-1.0	—	—	—	
3673	Ad Dammam (K.A.A.P.)	26° 30'	50° 12'	-0 25	-0 28	-0.3	0.0	—	—	—	
3675	Al Kubar	26° 17'	50° 13'	-0 10	-0 20	-3.9	-0.7	—	—	—	
on Mina Salman, p.348											
BAHRAIN, Persian Gulf											
3677	Malik Fahd Causway	26° 11'	50° 20'	+0 25	+0 20	-4.3	-1.0	—	—	—	
3679	Khawr Fasht	26° 20'	50° 26'	-0 02	+0 11	-1.3	-0.3	—	—	—	
3681	Al Manarnah Harbor	26° 14'	50° 35'	-0 18	-0 25	-0.3	+0.2	4.4	5.8	4.1	
3683	MINA SALMAN, Bahrain Island	26° 13'	50° 36'	<i>Daily Predictions</i>				4.9	6.4	4.2	
3685	Sitra	26° 10'	50° 40'	+0 05	+0 05	-0.3	0.0	—	—	—	
3687	Bahrain Approach Bouy	26° 22'	50° 47'	-0 17	-0 13	-1.0	-0.7	—	—	—	
3689	Ras Ashraiq	25° 59'	51° 00'	+0 15	+0 02	*0.62	*0.76	2.8	3.5	2.7	
3691	Jabal Fuwaira	26° 03'	51° 22'	-0 49	-1 10	(*0.61+0.3)		3.0	3.8	2.9	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	QATAR, Persian Gulf Time meridian, 45° E	North	East	h m	h m	ft	ft	ft	ft	ft	
on Mina Salman, p.348											
3693	Ra's 'Ushayriq	25° 59'	51° 00'	+0 22	+0 22	-3.6	-1.0	--	--	--	
3695	Ar Ru'ays	26° 10'	51° 11'	-0 11	-0 06	-2.3	-1.0	--	--	--	
on Musay'id, p.352											
3697	Al Wakrah	25° 10'	51° 37'	-0 03	+0 15	-1.3	-0.7	--	--	--	
3699	Musay'id Harbour	24° 54'	51° 39'	+0 50	+0 40	0.0	0.0	--	--	--	
3701	OUTER CHANNEL ENTRANCE	25° 02'	51° 39'	<i>Daily predictions</i>				--	--	--	
3703	Khawr al Udayd	24° 42'	51° 27'	+1 00	+0 50	+0.3	0.0	--	--	--	
3705	Ras Abu Qumayvis	24° 34'	51° 30'	+1 03	+1 00	+0.7	+0.3	--	--	--	
3707	Jazirat Halul	25° 40'	52° 25'	-1 16	-1 17	-2.0	-0.7	--	--	--	
UNITED ARAB EMIRATES, Persian Gulf Time meridian, 60° E											
3709	Jazair Ghaghah	24° 24'	51° 33'	+2 18	+2 17	+0.7	0.0	--	--	--	
on Surabaja Strait, p.160											
3711	Jazirat Yas §	24° 17'	52° 37'	-10 51	-10 53	*0.86	*0.86	3.2	4.5	3.1	
3713	Jazirat Das §	25° 09'	52° 53'	-11 08	-11 04	(*0.68+0.7)	(*0.68+0.7)	2.5	3.5	3.1	
on Mina Jebel Ali, p.356											
3715	Ras Zubayyah	24° 20'	54° 10'	+1 24	+1 34	+1.0	+1.0	--	--	--	
on Mina Al Ahmadi, p.340											
3717	Sir Abu Nu'ayr	25° 13'	54° 13'	-10 30	-10 40	-3.3	0.0	--	--	--	
3719	Umm an Nar	24° 26'	54° 30'	-8 11	-8 12	-4.3	0.0	--	--	--	
3721	Mina Zayed Approaches	24° 38'	54° 17'	-10 32	-10 34	-2.0	0.0	--	--	--	
3723	Mina Zayed	24° 31'	54° 09'	-10 12	-10 09	-2.0	0.0	--	--	--	
3725	Umm ad Dalkh	24° 35'	54° 09'	-10 28	-10 33	-2.3	+0.3	--	--	--	
on Mina Jebel Ali, p.356											
3727	Khawr Ghurabi	24° 49'	54° 43'	+0 16	+0 18	-0.7	0.0	--	--	--	
3729	Khawr Ghanadah	24° 50'	54° 46'	+0 36	+0 35	-0.3	-0.3	--	--	--	
3731	MINA JEBEL ALI	25° 00'	55° 03'	<i>Daily predictions</i>				--	--	--	
3733	Mina Rashid	25° 15'	55° 16'	-0 11	-0 15	0.0	0.0	--	--	--	
3735	Dubayy (Al Maktoum Bridge)	25° 15'	55° 19'	+0 16	+0 07	+0.3	0.0	--	--	--	
3737	Ash Sharqaah	25° 22'	55° 23'	-0 16	-0 22	+0.7	+0.3	--	--	--	
3739	Ajman	25° 25'	55° 26'	+0 10	+0 00	+0.3	+0.7	--	--	--	
3741	Umm al Qaywayn	25° 35'	55° 35'	-0 23	-0 34	+0.3	+0.3	--	--	--	
on Karachi, p.332											
3743	Ras al Khaymah	25° 49'	55° 57'	+0 35	+0 45	-1.3	+1.0	--	--	--	
3745	Mina Saqr	25° 58'	56° 03'	+0 35	+0 45	-1.0	+0.7	--	--	--	
OMAN											
3747	Strait of Hormoz	26° 09'	56° 09'	+0 25	+0 34	-0.7	+0.7	--	--	--	
3749	Bukha	26° 12'	56° 24'	+0 15	+0 22	-0.7	+0.7	--	--	--	
3751	Ghubbat Dabshun	26° 12'	56° 15'	+0 10	+0 15	-0.3	+1.0	--	--	--	
3753	Khasab	26° 22'	56° 22'	+0 05	+0 10	-0.7	+0.7	--	--	--	
3755	Khawr al Quway	26° 21'	56° 22'	+0 09	-0 03	(*0.84+1.1)	4.9	6.4	5.6		
3757	Little Quoin I	26° 29'	56° 32'	-0 04	-0 21	(*0.95-0.6)	5.5	7.0	4.5		
3759	Masqat, Gulf of Oman	23° 37'	58° 36'	-1 07	-1 03	(*0.79+0.5)	4.6	6.1	4.8		
3761	Ras Dillah	26° 08'	56° 29'	-0 30	-0 30	+0.7	+1.3	--	--	--	
3763	Khawr Niad (Khawr Habalayn)	26° 08'	56° 24'	-0 35	-0 35	-0.3	+0.7	--	--	--	
3765	Mina Daba	25° 39'	56° 16'	-0 50	-0 50	+0.3	+1.0	--	--	--	
3767	Ras al Hadd	22° 31'	59° 48'	-0 54	-0 54	(*0.72+1.5)	4.2	5.8	5.4		
3769	Rounders Bay, Masira Island	20° 13'	58° 38'	-1 04	-1 05	(*0.69+0.7)	4.0	5.2	4.4		
on Aden, p.360											
3771	Marbat	16° 59'	54° 42'	+1 16	+1 16	(*0.92+0.1)	3.3	4.9	4.2		
3773	YEMEN	14° 31'	49° 08'	-0 10	+0 00	(*0.75+0.7)	2.4	4.0	4.1		
3775	Time meridian, 45° E	12° 47'	44° 59'	<i>Daily predictions</i>				3.6	5.3	4.5	
SAUDI ARABIA, Red Sea											
3777	Perim, Bab el Mandeb Strait	12° 39'	43° 24'	+0 03	+0 10	(*0.78+1.0)	2.8	4.4	4.5		
3779	Al Mukha	13° 19'	43° 14'	+4 53	+4 53	(*0.39+0.2)	1.4	2.2	2.0		
on Suez, p.364											
3781	Kamaran Passage	15° 17'	42° 38'	+1 48	+1 53	-1.1	+0.4	2.3	2.8	3.4	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h m	h m	ft	ft	ft	ft	ft	
	SAUDI ARABIA, Red Sea—cont. Time meridian, 45° E			on Aden, p.360							
3783	Juddah	21° 28'	39° 11'	+11 25	+11 25	--	--	0.5	--	--	
	Time meridian, local			on Suez, p.364							
3785	Sherm Rabegh	22° 45'	38° 58'	-5 00	-5 00	(*0.34+1.5)		1.3	1.6	2.8	
3787	Aqaba, Gulf of Aqaba	29° 31'	35° 00'	-5 12	-5 07	(*0.53+0.5)		2.0	2.6	2.5	
	EGYPT to ERITREA <39>										
3789	Gulf of Suez At Tur	28° 14'	33° 37'	-2 37	-2 33	--	--	0.6	0.7	--	
3791	SUEZ	29° 56'	32° 33'	Daily predictions		3.8	4.7	3.7			
3793	Zafarana	29° 06'	32° 40'	+0 00	+0 04	-1.2	-0.2	2.8	3.5	3.0	
3795	Ras Gharib	28° 21'	33° 06'	-0 21	+0 02	*0.30	*0.22	1.3	1.7	1.0	
3797	Ashrafi Island	27° 47'	33° 43'	-5 38	-5 34	*0.29	*0.39	0.9	1.2	1.2	
3799	Shadwan Island	27° 27'	34° 02'	-5 37	-5 33	*0.45	*0.45	1.7	2.0	1.7	
3801	Al Qusayr	26° 06'	34° 17'	-5 48	-5 44	*0.40	*0.40	1.5	1.8	1.5	
3803	Muhammad Qol	20° 54'	37° 10'	-4 59	-5 23	--	--	0.4	0.4	1.2	
3805	Port Sudan	19° 36'	37° 15'	--	--	--	--	0.1	--	0.5	
3807	Trinkitat	18° 41'	37° 45'	--	--	--	--	0.1	--	0.5	
	Time meridian, 45° E										
3809	Harmil Island	16° 29'	40° 11'	+2 00	+2 42	*0.25	*0.28	0.9	1.1	1.0	
3811	Massaua	15° 37'	39° 28'	+2 38	+2 43	(*0.63-0.8)		2.4	3.1	1.5	
3813	Assab	13° 00'	42° 44'	--	--	--	--	0.8	1.6	1.0	
	REPUBLIC OF DJIBOUTI			on Aden, p.360							
3815	Djibouti, Gulf of Aden	11° 35'	43° 08'	+0 05	+0 04	+1.3	+1.3	3.6	5.4	5.8	
	SOMALIA										
3817	Zeila, Gulf of Aden	11° 24'	43° 28'	+0 00	+0 00	+0.8	+0.8	3.6	5.3	5.3	
3819	Berbera, Gulf of Aden	10° 26'	45° 01'	+0 03	+0 02	+0.6	+0.6	3.6	5.6	5.1	
3821	Cape Guardafui (Ras Asir)	11° 50'	51° 16'	-1 40	-1 40	*0.90	*0.85	3.4	5.0	4.0	
				on Pohnpei Harbor, p.208							
3823	Obbia	5° 21'	48° 32'	-11 23	-11 25	+1.0	-0.3	3.6	5.3	2.6	
				on Dar Es Salaam, p.368							
3825	Warsheik	2° 18'	45° 48'	+0 03	+0 06	*0.57	*0.58	4.3	5.8	2.9	
3827	Mogadishu	2° 02'	45° 21'	-0 11	-0 07	*0.63	*0.75	4.6	6.3	3.2	
3829	Brava	1° 06'	44° 02'	-0 12	-0 10	*0.71	*0.83	5.2	7.1	3.6	
3831	Giuba River	0° 15'	42° 38'	+0 14	+0 17	*0.95	*1.33	6.7	9.0	5.0	
3833	Chisimao	0° 22'	42° 33'	-0 15	-0 12	*0.74	*0.83	5.4	7.5	3.7	
3835	Rirakau River entrance	1° 17'	41° 54'	-0 09	-0 07	*0.89	*1.00	6.5	9.0	4.5	
	KENYA and TANGANYIKA										
3837	Malindi	3° 13'	40° 08'	-0 14	-0 13	(*0.89+1.8)		6.7	9.5	6.2	
3839	Port Mombasa (Kilindini)	4° 04'	39° 40'	-0 09	-0 08	(*1.03+1.0)		7.7	10.4	6.1	
3841	Wasin Island	4° 39'	39° 21'	-0 11	-0 12	(*1.05+1.0)		7.9	10.9	6.3	
3843	Mkoani, Pemba Island	5° 21'	39° 38'	-0 14	-0 14	(*1.05+0.6)		7.9	10.9	5.8	
3845	Mesale Island, Pemba Island	5° 14'	39° 36'	-0 16	-0 12	(*1.08+0.6)		8.1	11.2	6.0	
3847	Mkokotoni Harbor, Zanzibar Island	5° 52'	39° 16'	-0 13	-0 14	(*1.09+0.9)		8.2	11.3	6.4	
3849	Zanzibar, Zanzibar Island	6° 09'	39° 11'	-0 21	-0 19	(*1.16+1.0)		8.7	12.3	6.8	
3851	DAR ES SALAAM	6° 50'	39° 17'	Daily Predictions				7.5	10.6	5.0	
3853	Lindi River	9° 59'	39° 45'	+0 07	+0 09	*0.97	*1.33	6.8	9.4	5.0	
	MOZAMBIQUE										
	Time meridian, 30° E										
3855	Tunghi Bay	10° 45'	40° 35'	-1 16	-1 14	+2.8	+2.2	8.1	11.3	7.5	
3857	Porto de Mocimboa	11° 20'	40° 22'	-1 04	-0 56	+4.1	+3.0	8.6	12.0	8.5	
3859	Ibo	12° 21'	40° 35'	-1 30	-1 24	+3.1	+0.6	8.3	11.7	7.7	
3861	Porto Amelia	12° 58'	40° 29'	-1 13	-0 59	+2.9	+2.0	8.4	11.7	7.4	
3863	Porto de Mozambique	15° 02'	40° 44'	-1 00	-0 56	+2.9	+2.0	8.4	11.8	7.4	
3865	Antonio Enes	16° 14'	39° 54'	-0 17	-0 05	+2.8	+2.0	8.3	11.7	7.4	
3867	Porto de Quelimane	18° 00'	36° 54'	-0 30	-0 14	+3.6	+2.5	8.6	12.2	8.0	
				on Beira, p.372							
3869	Porto do Chinde	18° 32'	36° 30'	-0 38	-0 31	-7.5	-2.3	8.0	11.1	6.8	
3871	BEIRA, Pungo River	19° 49'	34° 50'	-0 19	-0 37	-0.5	+0.2	13.2	18.6	11.7	
3873	Ilha de Chiloane	20° 37'	34° 53'	-0 18	-0 23	*0.67	*0.71	12.5	17.6	11.6	
3875	Bartolomeu Dias	21° 10'	35° 07'	-0 39	-0 33	*0.67	*0.71	8.6	12.0	7.9	
3877	Bahia de Bazaruto	21° 39'	35° 26'					8.7	12.5	8.0	

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	MOZAMBIQUE—cont. Time meridian, 30° E	South	East	h m	h m	ft	ft	ft	ft	ft	
on Durban, p.376											
3879	Inhambane Bay	23° 44'	35° 24'	+0 29	+0 48	+3.7	+2.0	5.6	8.0	6.4	
3881	Porto de Inhambane	23° 51'	35° 23'	+1 12	+1 23	+4.1	+1.4	6.6	9.0	6.3	
3883	Inhampura	25° 11'	33° 31'	+0 35	+1 09	(*0.62+1.2)		2.4	3.4	3.4	
3885	Maputo	25° 58'	32° 34'	+0 47	+0 54	(*1.79+0.2)		7.0	9.8	6.6	
SOUTH AFRICA <40>											
3887	Richards Bay	28° 47'	32° 05'	+0 00	-0 02	+0.1	-0.1	4.1	5.9	3.6	
3889	DURBAN	29° 52'	31° 03'			Daily predictions		3.9	5.6	3.6	
3891	East London	33° 02'	27° 55'	+0 02	+0 01	+0.3	+0.4	3.8	5.4	3.9	
3893	Port Elizabeth	33° 58'	25° 38'	+0 00	-0 02	-0.1	+0.1	3.7	5.2	3.6	
INDIAN OCEAN ISLANDS Madagascar Time meridian, 45° E											
3895	Hellville, Nosi Be	13° 24'	48° 18'	-0 17	-0 14	+2.7	+2.0	8.2	11.2	7.3	
3897	Baie du Courier	12° 11'	49° 08'	-0 29	-0 25	+0.3	+1.6	6.2	8.4	5.9	
3899	Diego Suarez	12° 16'	49° 18'	-0 41	-0 38	(*0.61+1.3)		4.6	6.2	4.4	
3901	Mangerivry Bay (Port Leven)	12° 48'	49° 49'	-0 49	-1 01	(*0.53+1.4)		4.0	5.2	4.1	
3903	Vohemar	13° 21'	50° 01'	-1 21	-1 18	(*0.41+1.4)		3.1	4.2	3.5	
3905	Maroantsetra	15° 27'	49° 49'	-0 51	-0 49	(*0.40+0.9)		3.0	4.2	2.9	
on Colombo, p.324											
3907	Fenerive	17° 22'	49° 24'	-0 19	-0 06	+2.1	+1.8	1.7	2.3	3.2	
3909	Tamatave	18° 09'	49° 26'	-0 13	-0 09	+0.8	+0.7	1.5	2.0	2.0	
on Dar Es Salaam, p.368											
3911	Fort Dauphin	25° 01'	47° 00'	+4 10	+4 41	(*0.19+0.4)		1.4	2.0	1.4	
3913	Androka	25° 04'	44° 07'	+1 10	+1 13	(*0.75+3.4)		5.6	8.0	7.2	
3915	Tulear	23° 21'	43° 40'	+0 46	+0 50	(*0.77+3.0)		5.8	8.4	6.9	
3917	Cap Ankaranana	20° 29'	44° 07'	+0 30	+0 33	+3.0	+2.6	7.9	11.3	7.8	
3919	Nosi Maroantaly	18° 25'	43° 56'	+0 26	+0 30	+3.4	+2.3	8.6	12.1	7.8	
3921	Majunga	15° 44'	46° 19'	-0 12	-0 09	+5.4	+3.8	9.1	12.7	9.6	
Lesser Islands											
3923	Moroni, Comoro Island	11° 41'	43° 15'	+0 24	+0 26	*1.03	--	--	--	--	
3925	Zaudzi, Ile Mayotte	12° 47'	45° 16'	-0 04	+0 00	+3.5	+2.8	8.2	11.2	8.1	
Time meridian, 60° E											
3927	Point des Galets, Reunion Island	20° 55'	55° 17'	-2 49	-2 40	(*0.34+0.3)		1.2	1.6	1.6	
3929	Port Louis, Mauritius Island	20° 09'	57° 29'	-3 58	-3 49	(*0.31+0.8)		1.1	1.6	2.0	
on Apia, p.252											
3931	Cargados Carajos Shoal	16° 49'	59° 31'	-4 44	-5 12	*1.20	*1.20	2.8	4.0	2.0	
3933	Rodriguez Island	19° 40'	63° 26'	-6 31	-7 00	*1.60	*1.60	3.8	4.7	2.7	
Time meridian, local											
3935	Providence Island	9° 13'	51° 01'	+1 36	+1 40	(*0.72+0.3)		5.4	7.8	3.9	
3937	Port Victoria, Seychelle Islands	4° 37'	55° 27'	+0 18	+0 25	(*0.39+1.4)		2.9	4.0	3.4	
Time meridian, 75° E											
3939	DIEGO GARCIA ISLAND, Chagos Archipelago. . .	7° 21'	72° 28'			Daily predictions, p.380		3.8	5.5	3.3	
Time meridian, 97° 30' E											
3941	Port Refuge, Cocos Islands	12° 05'	96° 53'	-0 39	-0 36	(*0.42+1.3)		1.8	2.4	2.3	
3943	Christmas Island	10° 25'	105° 43'	+1 48	+1 46	(*0.60+2.1)		2.6	3.4	3.6	
Time meridian, 75° E											
3945	Amsterdam Island	37° 50'	77° 33'	-5 25	-5 22	*0.51	*0.31	2.3	3.3	1.6	
3947	St. Paul Island	38° 43'	77° 35'	-2 54	-2 52	(*0.72+1.0)		2.8	3.9	3.6	
Kerguelen Island											
3949	Betsy Cove	49° 09'	70° 12'	-3 06	-2 55	-0.9	-0.2	3.2	4.6	3.0	
3951	Baie du Morbihan	49° 21'	70° 13'	-4 38	-4 36	+0.3	+0.4	3.8	5.1	3.9	
3953	Observatory Bay	49° 25'	69° 53'	-4 32	-4 30	-0.2	+0.1	3.6	5.2	3.5	
on Mui Vung Tau, p.136											
3955	Heard Island (Atlas Cove)	53° 01'	73° 23'	-1 56	-1 56	*0.31	*0.31	1.8	2.3	2.4	

Endnotes can be found at the end of table 2.

TABLE 2 – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Diurnal	Tropic		
				High Water	Low Water	High Water	Low Water				
	ANTARCTICA Time meridian, local	South	East	h m	h m	ft	ft	ft	ft	ft	
on Cebu, p.180											
3957	Gauss Station, Wilhelm II Coast	66° 02'	89° 38'	+2 00	+1 52	--	--	2.8	3.3	--	
3959	Mc Donald Bay	66° 33'	93° 01'	+1 03	+1 01	--	--	3.6	4.3	--	
3961	Wilkes Station	66° 15'	110° 31'	+0 58	+1 03	--	--	3.6	4.2	--	
on Jolo, p.172											
3963	Pointe Geologie, Adelie Coast †	66° 41'	139° 55'	+3 47	+4 42	--	--	3.7	4.5	--	
3965	Cape Margerie (Port Martin) †	66° 50'	141° 25'	+3 38	+4 19	--	--	3.8	5.2	--	
3967	Cade Denison, George V Coast †	67° 00'	142° 40'	+3 25	+4 21	--	--	3.9	4.7	--	
on Do Son, p.132											
3969	Cape Armitage, Ross Island §	77° 49'	166° 45'	-3 47	-4 15	--	--	2.2	3.1	--	
3971	Scott Base, Ross Sea §	77° 52'	166° 48'	-4 34	-4 49	--	--	2.7	3.9	5.5	
ANTARCTIC PENINSULA											
3973	Marguerite Bay (East Base) †	68° 12'	67° 03'	+5 50	+6 43	--	--	3.8	4.1	--	
on Yamato Wan, p.12											
3975	Lent Islands, Graham Land †	66° 53'	66° 48'	-11 16	-10 48	--	--	3.6	4.1	--	
3977	Ferin Head, Graham Land †	66° 01'	65° 21'	-11 15	-10 47	--	--	3.8	4.4	--	
3979	Argentine Islands (Stella Creek) †	65° 15'	64° 16'	-10 52	-10 43	--	--	4.6	5.4	--	
3981	Port Circoncision †	65° 10'	64° 14'	-10 35	-10 41	--	--	3.8	4.5	--	
3983	Port Charcot, Booth Island †	65° 04'	64° 02'	-10 55	-11 04	--	--	3.5	4.1	--	
3985	Lemaire Channel, De Gerlache Strait †	64° 47'	62° 43'	-10 32	-11 03	--	--	4.1	4.8	--	
3987	Neko Harbor †	64° 48'	62° 23'	-9 26	-10 01	--	--	4.4	5.1	--	
3989	Nansen Island, De Gerlache Strait †	64° 33'	61° 57'	-10 18	-11 14	--	--	5.0	5.7	--	
3991	Melchior Harbor, Dallman Bay †	64° 20'	62° 59'	-10 34	-11 04	--	--	4.1	4.8	4.0	
on Yokohama, p.20											
3993	Puerto Soberania	62° 29'	59° 38'	+13 12	+13 19	+1.3	+1.2	5.1	5.5	5.0	
3995	Shackleton Base, Vahsel Bay	77° 59'	37° 10'	-10 12	-10 03	--	--	6.2	--	--	

Endnotes can be found at the end of table 2.

ENDNOTES

* RATIO. If the ratio is accompanied by a correction factor multiply the heights of the high and low waters at the reference station by the ratio and then apply the correction factor. See note and example on pages 385 and 386.

† The tide at this location is chiefly diurnal.

§ The tide at this location is diurnal.

<1> For other places in Siberia, Arctic Ocean, see "Tide Tables, Europe and West Coast of Africa."

<2> Apply differences to predictions for Pusan 2 days earlier than the date desired.

<3> There is a seiche at Miyako Ko with a period of about 22 minutes and a range of about 1 foot.

<4> At YOKOHAMA, winds from the south may raise the level of the water 1 foot above normal.

<5> There is a seiche at Aburatsubo with a period of about 15 minutes and a range of about 1 foot during storms.

<6> There is a seiche at Shimoda Ko with a period of about 16 minutes. When the barometric pressure is low, the range is about 0.7 foot.

<7> There is a seiche at Futami Ko with a period of 16 to 20 minutes and a range of about 1 foot.

<8> There are seiches at Susaki Ko with periods of 18 to 40 minutes and ranges of about 0.7 foot.

<9> In Izumi Nada with a strong SW wind and a falling barometer, sea level may rise as much as 2 feet.

<10> Tide is frequently diurnal. Apply height ratios to HHW and LLW, and time difference to LLW only. Diurnal range is given.

<11> Tide is frequently diurnal. Apply height ratios to HHW and LLW, and time difference to LLW only. HHW occurs about 14 hours after LLW. Diurnal range is given.

<12> There is a seiche at Hamada Ko with a period of about 12 minutes and range of about 0.7 foot.

<13> There are seiches at Maizuru Ko with periods from 16 to 90 minutes and ranges up to 3 feet during storms.

<14> There are seiches at Tsuruga Ko with periods from 10 to 65 minutes and ranges of about 0.7 foot.

<15> There is a seiche in nearby Kamae Ko, with a period of about 20 minutes and a range of up to 1 foot.

<16> There is a seiche in Hososhima with a period of about 10 minutes and ranges of up to 0.7 foot in calm weather and 2 feet during storms.

<17> There is a seiche at Uchiumi with a period of about 10 minutes and a range of up to 1.3 feet.

<18> A seiche occurs in Nakagawara Ura before and after rough weather. During late spring or early summer, when there is a heavy sea in the offing the range may be 2 to 3 feet.

<19> A seiche occurs in Nagasaki Ko with a period of about 35 minutes and may have a range of up to 2 feet. The most pronounced oscillations usually occur with two localized low pressure areas.

<20> Sasebo has a seiche with periods from 64 to 83 minutes and may have ranges as much a 0.7 foot.

<21> There is a seiche in Yobuko Ko with a period of about 10 minutes which may have a range as much as 1 foot.

<25> Mean and diurnal ranges given.

<26> There is a marked seiche at Kao-hsiung with a period of 13 to 25 minutes.

<27> Seasonal height corrections-May through August, subtract 0.6 foot; November through January, add 0.6 foot.

<28> Low water heights at Mui Vung Tau.	10	8	6	4	2	0	-2
Corresponding LW heights at Ho Chi Minh City	8.4	6.3	4.5	3.1	2.0	0.9	0.0

<29> Heights of low waters are about 1.5 feet.

<30> Except near times of the moon's quadrature when the range of tide is negligible the high waters occur about noon and midnight and the low waters about 6 a.m. and 6 p.m.

<31> Predictions through differences for stations in Torres Strait are not feasible. Diurnal range given for Thursday Island.

- <32> Bores occur in the following estuaries immediately after low water when the range of tide is large.
Sittang River: Information is meager.
Pegu River: Bore is said to reach a height of 3 feet.
- <33> Neap difference, -3.7; Spring difference, -0.5.
- <34> Seasonal height corrections— December through April, -0.7; July through September, +1.0.
- <35> Seasonal height corrections— December through April, -1.0; May, -0.5; June, +0.2; July, +1.2; August and September, +2.0; October, +1.0.
- <36> Bores occur in the following estuaries immediately after low water when the range of tide is large.
Meghna River: In the outer channel the bore is particularly dangerous March through October.
Hooghly River: The bore commences near Diamond Harbor but is of little importance until it enters the narrow reaches above Hooghly Point; it may attain a height of 4 feet at Kidderpore and 5 feet above that place.
Cambay Channel and Mahi River.
- <37> Seasonal corrections to be applied to predictions for Basra Reach are: Jan., -0.9; Feb., -0.4; Mar., +0.5; Apr., +1.6; May, +2.3; June, +1.9; July, +0.8; Aug., -0.6; Sept., -1.3; Oct., -1.4; Nov., -1.3; Dec., -1.1.
- <38> Seasonal corrections to be applied to predictions for Munifah are: Jan., -0.2; Feb., -0.3; Mar., -0.4; Apr., -0.3; May, -0.1; June, +0.2; July, +0.4; Aug., +0.4; Sept., +0.3; Oct., +0.1; Nov., 0.0; Dec., -0.1.
- <39> For places on the Mediterranean Sea, see "Tide Tables, Europe and West Coast of Africa."
- <40> For places on the south and west coast, see "Tide Tables, Europe and West Coast of Africa."
- <41> Predictions at this station are not intended for use in navigating Ch'ang Chiang Approach. They are intended only for use in computing tides at designated Table 2 stations in Korea and Sumatra.

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of table 3 may contain sufficient explanation for finding the height of tide at any time, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0735 at Namp'o-hang, Korea, on a day when the predicted tides from table 1 are given as:

Low Water		High Water	
Time h.m.	Height ft	Time h.m.	Height ft
0418	2.5	1105	4.4
1721	3.6	2324	15.2

An inspection of the above example shows that the desired time falls between the two morning tides

The duration of rise is $11^{\text{h}} 05^{\text{m}} - 4^{\text{h}} 18^{\text{m}} = 6^{\text{h}} 47^{\text{m}}$.

The time after low water for which the height is required is $7^{\text{h}} 35^{\text{m}} - 4^{\text{h}} 18^{\text{m}} = 3^{\text{h}} 17^{\text{m}}$.

The range of tide is $20.5 - 2.5 = 18.0$ feet.

The duration of rise or fall in table 3 is given in heavy-faced type for each 20 minutes from $4^{\text{h}} 00^{\text{m}}$ to $10^{\text{h}} 40^{\text{m}}$. The nearest tabular value to $6^{\text{h}} 47^{\text{m}}$, the above duration of rise, is $6^{\text{h}} 40^{\text{m}}$; and on the horizontal line of $6^{\text{h}} 40^{\text{m}}$, the nearest tabular time to $3^{\text{h}} 17^{\text{m}}$ after low water for which the height is required is $3^{\text{h}} 20^{\text{m}}$. Following down the column in which this $3^{\text{h}} 20^{\text{m}}$ is found to its intersection with the line of the range 18.0 feet, the correction is 9.0 feet, which being reckoned from low water, must be added, making $2.5 + 9.0 = 11.5$ feet or 351 centimeters which is the required height above the chart datum for Namp'o-hang.

Example 2.—Find the height of the tide at 1045 at Manilla, Philippines on a day when the predicted tides from table 1 are given as:

High Water		Low Water	
Time h.m.	Height ft	Time h.m.	Height ft
0728	4.2	1633	-0.9

The duration of fall is $16^{\text{h}} 33^{\text{m}} - 07^{\text{h}} 28^{\text{m}} = 9^{\text{h}} 05^{\text{m}}$.

The time after high water for which the height is required is $10^{\text{h}} 45^{\text{m}} - 7^{\text{h}} 28^{\text{m}} = 3^{\text{h}} 17^{\text{m}}$.

The range of tide is $4.2 - (-0.9) = 5.1$ feet.

Entering table 3 at the duration of fall of $9^{\text{h}} 00^{\text{m}}$, which is the nearest value to $9^{\text{h}} 05^{\text{m}}$, the nearest value on the horizontal line to $3^{\text{h}} 17^{\text{m}}$ is $3^{\text{h}} 18^{\text{m}}$ after high water. Following down this column to its intersection with a range of 5.0 feet which is the nearest tabular value to 5.1 feet, one obtains 1.5 which, being calculated from high water, must be subtracted from it. The approximate height at $10^{\text{h}} 45^{\text{m}}$ is, therefore, $4.2 - 1.5 = 2.7$ feet or 82 centimeters.

When the duration of rise or fall is greater than $10^{\text{h}} 40^{\text{m}}$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or fall is less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in table 2 predictions of the high and low waters for the day in question should be obtained by the use of the difference given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing example.

GRAPHIC METHOD

If the height of the tide is required for a number of times on a certain day the full tide curve for the day may be obtained by the *one-quarter, one-tenth rule*. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution.—Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at 10^h 45^m could be determined as shown below.

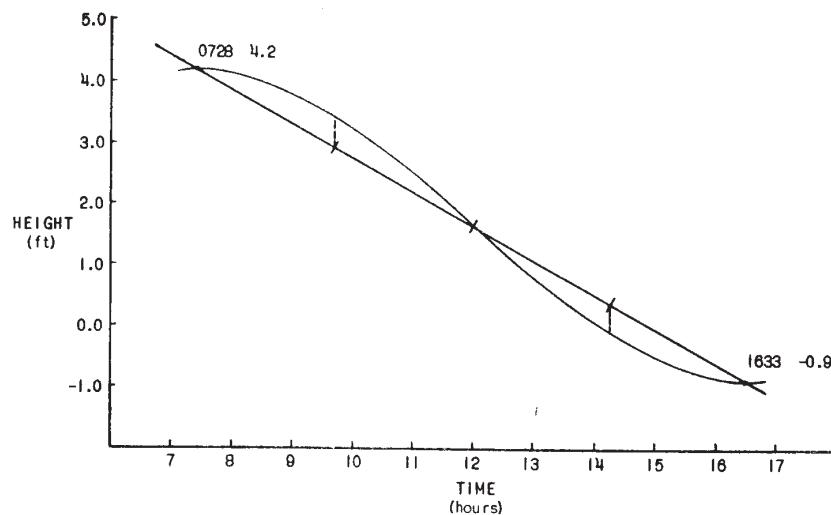


TABLE 3.—HEIGHT OF TIDE AT ANYTIME

		Time from the nearest high water or low water																	
		Duration of rise or fall, see footnote																	
		Correction to height																	
Ft.		Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.
0.5		0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1.0		0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9
1.5		0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
2.0		0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
2.5		0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.5
3.0		0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5	1.6	1.8	1.9
3.5		0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.3
4.0		0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.5
4.5		0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.4	2.6	2.7
5.0		0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5	2.8	3.0	3.2
5.5		0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8	3.0	3.2	3.4
6.0		0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.5	3.7
6.5		0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.8	4.0
7.0		0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5	3.8	4.1	4.4
7.5		0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8	4.2	4.6	4.9
8.0		0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.4	4.8	5.2
8.5		0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2	4.6	5.0	5.4
9.0		0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.4	4.8	5.2	5.6
9.5		0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8	5.2	5.6	6.0
10.0		0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0	5.4	5.8	6.2
10.5		0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2	5.7	6.2	6.7
11.0		0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.7	2.3	2.8	3.3	3.8	4.4	4.9	5.5	6.0	6.5	7.0
11.5		0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.8	2.3	2.9	3.4	4.0	4.6	5.1	5.8	6.4	6.9	7.5
12.0		0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.5	3.0	3.6	4.1	4.8	5.4	6.0	6.6	7.2	7.8
12.5		0.0	0.1	0.3	0.5	0.8	1.2	1.6	2.6	3.1	3.7	4.3	5.0	5.6	6.2	6.8	7.4	8.0	8.6
13.0		0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5	7.2	7.9	8.7
13.5		0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8	7.5	8.2	9.0
14.0		0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0	7.7	8.4	9.2
14.5		0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2	7.9	8.7	9.5
15.0		0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5	8.3	9.1	9.9
15.5		0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8	8.6	9.4	10.2
16.0		0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0	8.8	9.6	10.4
16.5		0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2	9.0	9.8	10.6
17.0		0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5	9.3	10.1	10.9
17.5		0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.7	9.5	10.3	11.1
18.0		0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0	9.8	10.6	11.4
18.5		0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2	10.1	11.0	11.9
19.0		0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5	10.4	11.3	12.2
19.5		0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.6	10.5	11.4	12.3
20.0		0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	8.9	9.8	10.7	11.6	12.5

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low, add the correction.

TABLE 4.—LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is $90^{\circ} 50', 34'$ having been allowed for horizontal refraction and $16'$ for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The value obtained from table 4 may be converted to standard time by means of table 5, which follows it.

TABLE 4.-SUNRISE AND SUNSET, 2013

Date	0°		5° N.		10° N.		15° N.		20° N.		25° N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan.	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 42	06 35	17 32	06 45	17 22
	06 02	18 10	06 10	18 01	06 19	17 53	06 28	17 44	06 37	17 35	06 46	17 26
	06 04	18 12	06 12	18 04	06 20	17 56	06 29	17 47	06 37	17 39	06 47	17 29
	06 06	18 13	06 14	18 06	06 22	17 58	06 30	17 50	06 38	17 42	06 47	17 33
	06 08	18 15	06 15	18 08	06 22	18 01	06 30	17 53	06 38	17 45	06 46	17 37
	06 09	18 16	06 16	18 09	06 23	18 03	06 30	17 56	06 37	17 48	06 45	17 41
	06 10	18 17	06 16	18 11	06 22	18 05	06 29	17 58	06 36	17 51	06 43	17 44
Feb.	06 11	18 17	06 16	18 12	06 22	18 06	06 28	18 00	06 34	17 54	06 41	17 48
	06 11	18 18	06 16	18 13	06 21	18 08	06 26	18 02	06 32	17 57	06 38	17 51
	06 11	18 18	06 15	18 13	06 20	18 09	06 24	18 04	06 29	17 59	06 34	17 54
	06 10	18 17	06 14	18 13	06 18	18 09	06 22	18 06	06 26	18 02	06 30	17 57
	06 10	18 16	06 13	18 13	06 16	18 10	06 19	18 07	06 23	18 04	06 26	18 00
Mar.	06 09	18 15	06 11	18 13	06 14	18 11	06 16	18 08	06 19	18 05	06 22	18 03
	06 08	18 14	06 09	18 12	06 11	18 11	06 13	18 09	06 15	18 07	06 17	18 05
	06 06	18 13	06 08	18 12	06 09	18 11	06 10	18 10	06 11	18 09	06 12	18 08
	06 05	18 12	06 05	18 11	06 06	18 11	06 06	18 11	06 07	18 10	06 07	18 10
	06 04	18 10	06 03	18 10	06 03	18 11	06 03	18 11	06 02	18 12	06 02	18 12
	06 02	18 09	06 01	18 10	06 00	18 11	05 59	18 12	05 58	18 13	05 57	18 14
Apr.	06 01	18 07	05 59	18 09	05 57	18 11	05 55	18 12	05 54	18 14	05 52	18 16
	05 59	18 06	05 57	18 08	05 54	18 10	05 52	18 13	05 49	18 16	05 46	18 19
	05 58	18 04	05 55	18 07	05 52	18 10	05 49	18 14	05 45	18 17	05 42	18 21
	05 56	18 03	05 53	18 07	05 49	18 11	05 45	18 14	05 41	18 19	05 37	18 23
	05 55	18 02	05 51	18 06	05 47	18 11	05 42	18 15	05 37	18 20	05 32	18 25
	05 54	18 01	05 50	18 06	05 45	18 11	05 39	18 16	05 34	18 22	05 28	18 28
May	05 54	18 00	05 48	18 06	05 43	18 12	05 37	18 17	05 31	18 24	05 24	18 30
	05 53	18 00	05 47	18 06	05 41	18 12	05 35	18 19	05 28	18 25	05 21	18 33
	05 53	18 00	05 46	18 06	05 40	18 13	05 33	18 20	05 26	18 27	05 18	18 35
	05 53	18 00	05 46	18 07	05 39	18 14	05 31	18 21	05 24	18 29	05 15	18 38
	05 53	18 00	05 46	18 08	05 38	18 15	05 30	18 23	05 22	18 31	05 13	18 40
	05 54	18 01	05 46	18 08	05 38	18 16	05 29	18 25	05 21	18 33	05 11	18 43
June	05 55	18 02	05 47	18 10	05 38	18 19	05 29	18 28	05 20	18 37	05 10	18 47
	05 56	18 03	05 47	18 12	05 39	18 20	05 30	18 29	05 20	18 39	05 10	18 49
	05 57	18 04	05 48	18 13	05 39	18 22	05 30	18 31	05 20	18 41	05 10	18 51
	05 58	18 05	05 49	18 14	05 40	18 23	05 31	18 32	05 21	18 42	05 11	18 52
	05 59	18 06	05 50	18 15	05 41	18 24	05 32	18 33	05 22	18 43	05 12	18 53
	06 00	18 07	05 51	18 16	05 43	18 25	05 34	18 34	05 24	18 43	05 14	18 54
July	06 01	18 08	05 53	18 17	05 44	18 25	05 35	18 34	05 26	18 44	05 15	18 54
	06 02	18 09	05 54	18 17	05 45	18 26	05 37	18 34	05 27	18 43	05 17	18 53
	06 02	18 10	05 54	18 17	05 46	18 25	05 38	18 34	05 29	18 43	05 20	18 52
	06 03	18 10	05 55	18 17	05 48	18 25	05 40	18 33	05 31	18 41	05 22	18 51
	06 03	18 10	05 56	18 17	05 49	18 24	05 41	18 32	05 33	18 40	05 24	18 48
	06 03	18 10	05 56	18 17	05 49	18 23	05 42	18 30	05 35	18 38	05 27	18 46
Aug.	06 03	18 09	05 56	18 16	05 50	18 22	05 43	18 28	05 37	18 35	05 29	18 43
	06 02	18 09	05 56	18 14	05 51	18 20	05 45	18 26	05 38	18 32	05 31	18 39
	06 01	18 08	05 56	18 13	05 51	18 18	05 45	18 24	05 40	18 29	05 34	18 35
	06 00	18 07	05 56	18 11	05 51	18 16	05 46	18 21	05 41	18 26	05 36	18 31
	05 59	18 06	05 55	18 09	05 51	18 13	05 47	18 17	05 42	18 22	05 38	18 26
	05 58	18 04	05 54	18 07	05 51	18 11	05 47	18 14	05 44	18 18	05 40	18 22
Sept.	05 56	18 03	05 53	18 05	05 51	18 08	05 48	18 11	05 45	18 13	05 42	18 17
	05 54	18 01	05 52	18 03	05 50	18 05	05 48	18 07	05 46	18 09	05 43	18 11
	05 53	17 59	05 51	18 00	05 50	18 02	05 49	18 03	05 47	18 04	05 45	18 06
	05 51	17 57	05 50	17 58	05 50	17 58	05 49	17 59	05 48	18 00	05 47	18 01
	05 49	17 56	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55
	05 47	17 54	05 48	17 53	05 49	17 52	05 49	17 51	05 50	17 51	05 51	17 50
Oct.	05 46	17 52	05 47	17 51	05 49	17 49	05 50	17 48	05 51	17 46	05 53	17 45
	05 44	17 51	05 46	17 49	05 48	17 46	05 51	17 44	05 53	17 42	05 55	17 40
	05 43	17 49	05 46	17 47	05 48	17 44	05 51	17 41	05 54	17 38	05 57	17 35
	05 42	17 48	05 45	17 45	05 49	17 41	05 52	17 38	05 56	17 34	06 00	17 30
	05 41	17 48	05 45	17 44	05 49	17 39	05 53	17 35	05 58	17 31	06 02	17 26
	05 40	17 47	05 45	17 42	05 50	17 38	05 55	17 33	06 00	17 28	06 05	17 22
Nov.	05 40	17 47	05 45	17 42	05 51	17 36	05 56	17 31	06 02	17 25	06 08	17 19
	05 40	17 47	05 46	17 41	05 52	17 35	05 58	17 29	06 04	17 23	06 11	17 16
	05 41	17 48	05 47	17 41	05 54	17 35	06 00	17 28	06 07	17 21	06 15	17 14
	05 41	17 49	05 48	17 42	05 55	17 35	06 02	17 27	06 10	17 20	06 18	17 12
	05 43	17 50	05 50	17 42	05 57	17 35	06 05	17 27	06 13	17 19	06 22	17 11
	05 44	17 51	05 52	17 44	06 00	17 36	06 08	17 28	06 16	17 19	06 25	17 10
Dec.	05 46	17 53	05 54	17 45	06 02	17 37	06 10	17 28	06 19	17 20	06 29	17 10
	05 48	17 55	05 56	17 47	06 05	17 38	06 13	17 30	06 22	17 21	06 32	17 11
	05 50	17 58	05 59	17 49	06 07	17 40	06 16	17 31	06 25	17 22	06 35	17 12
	05 52	18 00	06 01	17 51	06 10	17 43	06 19	17 33	06 28	17 24	06 38	17 14
	05 55	18 02	06 04	17 54	06 12	17 45	06 21	17 36	06 31	17 26	06 41	17 16
	05 57	18 05	06 06	17 56	06 15	17 48	06 24	17 39	06 33	17 29	06 43	17 19
Jan.	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

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Date	30° N.		32° N.		34° N.		36° N.		38° N.		40° N.	
	Rise h. m.	Set h. m.										
Jan.	06 56	17 11	07 01	17 07	07 05	17 02	07 11	16 57	07 16	16 51	07 22	16 46
	06 57	17 15	07 01	17 11	07 06	17 06	07 11	17 01	07 16	16 56	07 22	16 50
	06 57	17 19	07 01	17 15	07 06	17 10	07 11	17 06	07 16	17 00	07 21	16 55
	06 56	17 23	07 01	17 19	07 05	17 15	07 10	17 10	07 14	17 06	07 20	17 00
	06 55	17 28	06 59	17 24	07 03	17 20	07 08	17 15	07 12	17 11	07 17	17 06
	06 53	17 32	06 57	17 28	07 01	17 25	07 05	17 21	07 09	17 16	07 14	17 12
	06 51	17 36	06 54	17 33	06 58	17 30	07 01	17 26	07 05	17 22	07 09	17 18
Feb.	06 48	17 41	06 51	17 38	06 54	17 35	06 57	17 31	07 01	17 28	07 04	17 24
	06 44	17 45	06 47	17 42	06 50	17 39	06 52	17 36	06 56	17 33	06 59	17 30
	06 40	17 49	06 42	17 46	06 45	17 44	06 47	17 41	06 50	17 39	06 53	17 36
	06 35	17 53	06 37	17 51	06 39	17 49	06 41	17 46	06 44	17 44	06 46	17 42
	06 30	17 56	06 32	17 55	06 34	17 53	06 35	17 51	06 37	17 49	06 39	17 47
Mar.	06 25	18 00	06 26	17 59	06 27	17 57	06 29	17 56	06 30	17 54	06 32	17 53
	06 19	18 03	06 20	18 02	06 21	18 01	06 22	18 00	06 23	17 59	06 24	17 58
	06 13	18 06	06 14	18 06	06 14	18 05	06 15	18 05	06 16	18 04	06 16	18 04
	06 07	18 10	06 08	18 09	06 08	18 09	06 08	18 09	06 08	18 09	06 08	18 09
	06 01	18 13	06 01	18 13	06 01	18 13	06 01	18 13	06 00	18 14	06 00	18 14
	05 55	18 16	05 55	18 16	05 54	18 17	05 53	18 18	05 53	18 18	05 52	18 19
Apr.	05 49	18 19	05 48	18 20	05 47	18 21	05 46	18 22	05 45	18 23	05 44	18 24
	05 43	18 22	05 42	18 23	05 41	18 25	05 39	18 26	05 38	18 28	05 36	18 29
	05 38	18 25	05 36	18 27	05 34	18 28	05 32	18 30	05 30	18 32	05 28	18 34
	05 32	18 28	05 30	18 30	05 28	18 32	05 26	18 34	05 23	18 37	05 21	18 39
	05 27	18 31	05 24	18 33	05 22	18 36	05 19	18 39	05 16	18 42	05 13	18 45
	05 22	18 34	05 19	18 37	05 16	18 40	05 13	18 43	05 10	18 46	05 07	18 50
May	05 17	18 37	05 14	18 40	05 11	18 44	05 07	18 47	05 04	18 51	05 00	18 55
	05 13	18 41	05 10	18 44	05 06	18 48	05 02	18 51	04 58	18 55	04 54	19 00
	05 09	18 44	05 06	18 48	05 02	18 51	04 58	18 56	04 53	19 00	04 49	19 05
	05 06	18 47	05 02	18 51	04 58	18 55	04 53	19 00	04 49	19 04	04 44	19 09
	05 03	18 50	04 59	18 54	04 55	18 59	04 50	19 04	04 45	19 09	04 40	19 14
	05 01	18 53	04 57	18 58	04 52	19 02	04 47	19 07	04 42	19 13	04 36	19 18
	05 00	18 56	04 55	19 01	04 50	19 06	04 45	19 11	04 39	19 16	04 34	19 22
June	04 59	18 59	04 54	19 03	04 49	19 08	04 44	19 14	04 38	19 19	04 32	19 25
	04 58	19 01	04 53	19 06	04 48	19 11	04 43	19 16	04 37	19 22	04 31	19 28
	04 59	19 03	04 54	19 08	04 48	19 13	04 43	19 18	04 37	19 24	04 31	19 31
	04 59	19 04	04 54	19 09	04 49	19 14	04 43	19 20	04 37	19 26	04 31	19 32
	05 00	19 05	04 55	19 10	04 50	19 15	04 45	19 21	04 39	19 26	04 32	19 33
	05 02	19 05	04 57	19 10	04 52	19 15	04 46	19 21	04 41	19 27	04 34	19 33
July	05 04	19 05	04 59	19 10	04 54	19 15	04 49	19 20	04 43	19 26	04 37	19 32
	05 07	19 04	05 02	19 09	04 57	19 14	04 52	19 19	04 46	19 24	04 40	19 30
	05 09	19 03	05 05	19 07	05 00	19 12	04 55	19 17	04 50	19 22	04 44	19 28
	05 12	19 00	05 08	19 05	05 03	19 09	04 58	19 14	04 53	19 19	04 48	19 24
	05 15	18 58	05 11	19 02	05 06	19 06	05 02	19 11	04 57	19 15	04 52	19 20
	05 18	18 55	05 14	18 58	05 10	19 02	05 06	19 07	05 01	19 11	04 57	19 16
Aug.	05 21	18 51	05 17	18 54	05 14	18 58	05 10	19 02	05 06	19 06	05 01	19 10
	05 24	18 47	05 21	18 50	05 17	18 53	05 14	18 57	05 10	19 00	05 06	19 04
	05 27	18 42	05 24	18 45	05 21	18 48	05 18	18 51	05 14	18 54	05 11	18 58
	05 30	18 37	05 27	18 39	05 24	18 42	05 22	18 45	05 19	18 48	05 15	18 51
	05 33	18 32	05 30	18 34	05 28	18 36	05 26	18 38	05 23	18 41	05 20	18 44
	05 35	18 26	05 33	18 28	05 32	18 30	05 29	18 32	05 27	18 34	05 25	18 36
Sept.	05 38	18 20	05 37	18 21	05 35	18 23	05 33	18 25	05 32	18 26	05 30	18 28
	05 41	18 14	05 40	18 15	05 38	18 16	05 37	18 17	05 36	18 19	05 34	18 20
	05 43	18 08	05 43	18 08	05 42	18 09	05 41	18 10	05 40	18 11	05 39	18 12
	05 46	18 01	05 46	18 02	05 45	18 02	05 45	18 03	05 44	18 03	05 44	18 04
	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55
	05 52	17 49	05 52	17 49	05 52	17 48	05 53	17 48	05 53	17 48	05 53	17 47
	06 15	17 12	06 17	17 09	06 20	17 06	06 24	17 03	06 27	17 00	06 30	16 56
Oct.	05 58	17 37	05 59	17 36	06 00	17 35	06 01	17 34	06 02	17 32	06 03	17 31
	06 01	17 31	06 02	17 30	06 04	17 28	06 05	17 27	06 07	17 25	06 08	17 23
	06 04	17 26	06 06	17 24	06 08	17 22	06 09	17 20	06 12	17 18	06 14	17 16
	06 07	17 21	06 09	17 19	06 12	17 16	06 14	17 14	06 16	17 12	06 19	17 09
	06 11	17 16	06 13	17 14	06 16	17 11	06 19	17 08	06 22	17 05	06 25	17 02
	06 19	17 08	06 22	17 05	06 25	17 02	06 28	16 59	06 32	16 55	06 36	16 51
Nov.	06 23	17 05	06 26	17 02	06 30	16 58	06 33	16 54	06 37	16 50	06 42	16 46
	06 27	17 03	06 30	16 59	06 34	16 55	06 39	16 51	06 43	16 47	06 47	16 42
	06 31	17 01	06 35	16 57	06 39	16 53	06 43	16 49	06 48	16 44	06 53	16 39
	06 35	17 00	06 39	16 56	06 44	16 51	06 48	16 47	06 53	16 42	06 58	16 37
	06 39	17 00	06 43	16 55	06 48	16 51	06 53	16 46	06 58	16 41	07 04	16 35
	06 43	17 00	06 47	16 56	06 52	16 51	06 57	16 46	07 03	16 40	07 08	16 35
Dec.	06 46	17 01	06 51	16 56	06 56	16 52	07 01	16 46	07 07	16 41	07 12	16 35
	06 50	17 03	06 54	16 58	06 59	16 53	07 05	16 48	07 10	16 42	07 16	16 36
	06 52	17 05	06 57	17 00	07 02	16 55	07 07	16 50	07 13	16 44	07 19	16 39
	06 54	17 08	06 59	17 03	07 04	16 58	07 09	16 53	07 15	16 47	07 21	16 42
	06 56	17 11	07 01	17 07	07 05	17 02	07 11	16 57	07 16	16 51	07 22	16 45

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

Date	42° N.		44° N.		46° N.		48° N.		50° N.		52° N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan.	07 28	16 39	07 35	16 33	07 42	16 26	07 50	16 18	07 58	16 09	08 08	15 59
	07 28	16 44	07 35	16 38	07 42	16 31	07 49	16 23	07 57	16 15	08 07	16 05
	07 27	16 49	07 33	16 43	07 40	16 36	07 47	16 29	07 55	16 21	08 04	16 12
	07 25	16 55	07 31	16 49	07 37	16 43	07 44	16 36	07 52	16 28	08 00	16 20
	07 22	17 01	07 28	16 56	07 34	16 50	07 40	16 43	07 47	16 36	07 55	16 28
	07 18	17 07	07 23	17 02	07 29	16 57	07 35	16 51	07 41	16 44	07 49	16 37
	07 14	17 14	07 18	17 09	07 23	17 04	07 29	16 59	07 35	16 53	07 41	16 46
Feb.	07 08	17 20	07 13	17 16	07 17	17 11	07 22	17 07	07 27	17 01	07 33	16 56
	07 02	17 27	07 06	17 23	07 10	17 19	07 14	17 15	07 19	17 10	07 24	17 05
	06 56	17 33	06 59	17 30	07 03	17 26	07 06	17 23	07 10	17 19	07 15	17 14
	06 49	17 39	06 52	17 37	06 54	17 34	06 58	17 31	07 01	17 27	07 05	17 23
	06 41	17 45	06 44	17 43	06 46	17 41	06 48	17 38	06 51	17 36	06 54	17 33
Mar.	06 33	17 51	06 35	17 50	06 37	17 48	06 39	17 46	06 41	17 44	06 43	17 42
	06 25	17 57	06 26	17 56	06 28	17 55	06 29	17 54	06 31	17 52	06 32	17 51
	06 17	18 03	06 18	18 02	06 18	18 02	06 19	18 01	06 20	18 00	06 21	17 59
	06 08	18 09	06 09	18 09	06 09	18 09	06 09	18 08	06 09	18 08	06 09	18 08
	06 00	18 14	06 00	18 15	05 59	18 15	05 59	18 16	05 58	18 16	05 58	18 17
	05 51	18 20	05 50	18 21	05 50	18 22	05 49	18 23	05 47	18 24	05 46	18 25
Apr.	05 43	18 26	05 41	18 27	05 40	18 29	05 38	18 30	05 37	18 32	05 35	18 34
	05 34	18 31	05 32	18 33	05 30	18 35	05 28	18 37	05 26	18 40	05 23	18 42
	05 26	18 37	05 24	18 39	05 21	18 42	05 18	18 45	05 15	18 48	05 12	18 51
	05 18	18 42	05 15	18 45	05 12	18 48	05 09	18 52	05 05	18 56	05 01	19 00
	05 10	18 48	05 07	18 51	05 03	18 55	04 59	18 59	04 55	19 03	04 50	19 08
	05 03	18 53	04 59	18 57	04 55	19 01	04 50	19 06	04 45	19 11	04 40	19 17
May	04 56	18 59	04 52	19 03	04 47	19 08	04 42	19 13	04 36	19 19	04 30	19 25
	04 50	19 04	04 45	19 09	04 40	19 14	04 34	19 20	04 28	19 26	04 21	19 33
	04 44	19 10	04 38	19 15	04 33	19 21	04 27	19 27	04 20	19 34	04 12	19 41
	04 39	19 15	04 33	19 20	04 27	19 27	04 20	19 33	04 13	19 41	04 05	19 49
	04 34	19 20	04 28	19 26	04 21	19 32	04 14	19 40	04 06	19 48	03 58	19 56
	04 30	19 24	04 24	19 31	04 17	19 38	04 09	19 45	04 01	19 54	03 52	20 03
	04 27	19 28	04 21	19 35	04 13	19 42	04 05	19 50	03 57	19 59	03 47	20 09
June	04 25	19 32	04 18	19 39	04 11	19 47	04 02	19 55	03 53	20 04	03 43	20 14
	04 24	19 35	04 17	19 42	04 09	19 50	04 01	19 59	03 51	20 08	03 41	20 19
	04 24	19 37	04 17	19 45	04 09	19 53	04 00	20 01	03 50	20 11	03 39	20 22
	04 24	19 39	04 17	19 46	04 09	19 54	04 00	20 03	03 51	20 13	03 40	20 24
	04 26	19 40	04 18	19 47	04 10	19 55	04 02	20 04	03 52	20 13	03 41	20 24
	04 28	19 39	04 20	19 47	04 13	19 54	04 04	20 03	03 54	20 13	03 44	20 23
July	04 30	19 38	04 23	19 45	04 16	19 53	04 07	20 02	03 58	20 11	03 48	20 21
	04 34	19 37	04 27	19 43	04 20	19 51	04 11	19 59	04 02	20 08	03 52	20 18
	04 38	19 34	04 31	19 40	04 24	19 47	04 16	19 55	04 08	20 04	03 58	20 13
	04 42	19 30	04 36	19 36	04 29	19 43	04 22	19 50	04 14	19 58	04 04	20 07
	04 47	19 26	04 41	19 32	04 34	19 38	04 27	19 45	04 20	19 52	04 11	20 01
	04 51	19 21	04 46	19 26	04 40	19 32	04 34	19 38	04 27	19 45	04 19	19 53
Aug.	04 57	19 15	04 51	19 20	04 46	19 25	04 40	19 31	04 34	19 37	04 27	19 44
	05 02	19 09	04 57	19 13	04 52	19 18	04 47	19 23	04 41	19 29	04 35	19 35
	05 07	19 02	05 03	19 06	04 58	19 10	04 54	19 15	04 48	19 20	04 43	19 26
	05 12	18 54	05 08	18 58	05 05	19 02	05 00	19 06	04 56	19 10	04 51	19 15
	05 17	18 47	05 14	18 50	05 11	18 53	05 07	18 57	05 03	19 00	04 59	19 05
	05 22	18 38	05 20	18 41	05 17	18 44	05 14	18 47	05 11	18 50	05 07	18 54
Sept.	05 28	18 30	05 26	18 32	05 23	18 34	05 21	18 37	05 18	18 39	05 15	18 42
	05 33	18 22	05 31	18 23	05 29	18 25	05 28	18 27	05 26	18 29	05 23	18 31
	05 38	18 13	05 37	18 14	05 36	18 15	05 34	18 16	05 33	18 18	05 31	18 19
	05 43	18 04	05 43	18 05	05 42	18 05	05 41	18 06	05 40	18 07	05 40	18 08
	05 48	17 55	05 48	17 55	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56
	05 54	17 47	05 54	17 46	05 55	17 46	05 55	17 45	05 55	17 45	05 56	17 44
Oct.	05 59	17 38	06 00	17 37	06 01	17 36	06 02	17 35	06 03	17 34	06 04	17 33
	06 05	17 30	06 06	17 28	06 08	17 27	06 09	17 25	06 11	17 23	06 13	17 21
	06 10	17 22	06 12	17 20	06 14	17 17	06 16	17 15	06 19	17 13	06 21	17 10
	06 16	17 14	06 18	17 11	06 21	17 09	06 24	17 06	06 27	17 03	06 30	16 59
	06 22	17 06	06 25	17 03	06 28	17 00	06 31	16 57	06 35	16 53	06 39	16 49
	06 28	16 59	06 31	16 56	06 35	16 52	06 39	16 48	06 43	16 44	06 48	16 39
Nov.	06 34	16 53	06 38	16 49	06 42	16 45	06 47	16 40	06 51	16 35	06 57	16 30
	06 40	16 47	06 44	16 42	06 49	16 38	06 54	16 33	07 00	16 27	07 06	16 21
	06 46	16 42	06 51	16 37	06 56	16 32	07 02	16 26	07 08	16 20	07 15	16 13
	06 52	16 37	06 58	16 32	07 03	16 26	07 09	16 20	07 16	16 13	07 23	16 06
	06 58	16 34	07 04	16 28	07 10	16 22	07 17	16 15	07 24	16 08	07 32	16 00
	07 04	16 31	07 10	16 25	07 17	16 18	07 24	16 11	07 31	16 04	07 40	15 55
Dec.	07 09	16 29	07 16	16 23	07 23	16 16	07 30	16 09	07 38	16 01	07 47	15 51
	07 14	16 28	07 21	16 22	07 28	16 15	07 36	16 07	07 44	15 59	07 54	15 49
	07 19	16 29	07 25	16 22	07 33	16 15	07 41	16 07	07 49	15 58	07 59	15 48
	07 22	16 30	07 29	16 23	07 37	16 16	07 45	16 08	07 53	15 59	08 03	15 49
	07 25	16 32	07 32	16 25	07 39	16 18	07 48	16 10	07 56	16 01	08 06	15 51
	07 27	16 35	07 34	16 28	07 41	16 21	07 49	16 13	07 58	16 04	08 08	15 54
Jan.	07 28	16 39	07 35	16 33	07 42	16 25	07 50	16 17	07 58	16 09	08 08	15 59

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

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Date	54° N.		56° N.		58° N.		60° N.		62° N.		64° N.		
	Rise h. m.	Set h. m.											
Jan.	08 19	15 49	08 31	15 36	08 45	15 22	09 02	15 05	09 23	14 45	09 49	14 18	
	08 17	15 55	08 29	15 43	08 43	15 30	08 59	15 14	09 18	14 54	09 43	14 30	
	08 14	16 02	08 25	15 51	08 38	15 38	08 53	15 23	09 11	15 05	09 34	14 43	
	08 09	16 11	08 20	16 00	08 32	15 48	08 46	15 34	09 02	15 18	09 23	14 58	
	08 03	16 20	08 13	16 10	08 24	15 59	08 37	15 46	08 52	15 31	09 10	15 13	
	07 56	16 29	08 05	16 20	08 15	16 10	08 27	15 59	08 40	15 46	08 57	15 29	
	07 48	16 39	07 56	16 31	08 05	16 22	08 16	16 12	08 28	16 00	08 42	15 46	
Feb.	07 40	16 49	07 47	16 42	07 55	16 34	08 04	16 25	08 14	16 15	08 27	16 02	
	07 30	16 59	07 36	16 53	07 43	16 46	07 51	16 38	08 00	16 29	08 11	16 19	
	07 20	17 09	07 25	17 04	07 31	16 58	07 38	16 52	07 45	16 44	07 54	16 35	
	07 09	17 19	07 13	17 15	07 18	17 10	07 24	17 05	07 30	16 58	07 38	16 51	
	06 58	17 29	07 01	17 26	07 05	17 22	07 10	17 17	07 15	17 12	07 21	17 07	
Mar.	06 46	17 39	06 49	17 36	06 52	17 33	06 55	17 30	06 59	17 26	07 04	17 22	
	06 34	17 49	06 36	17 47	06 38	17 45	06 40	17 43	06 43	17 40	06 46	17 37	
	06 22	17 58	06 23	17 57	06 24	17 56	06 26	17 55	06 27	17 54	06 29	17 52	
	06 10	18 08	06 10	18 08	06 10	18 08	06 10	18 07	06 11	18 07	06 11	18 07	
	05 57	18 17	05 57	18 18	05 56	18 19	05 55	18 20	05 54	18 21	05 54	18 22	
	05 45	18 27	05 44	18 28	05 42	18 30	05 40	18 32	05 38	18 34	05 36	18 37	
Apr.	05 33	18 36	05 30	18 38	05 28	18 41	05 25	18 44	05 22	18 47	05 18	18 51	
	05 20	18 45	05 17	18 49	05 14	18 52	05 10	18 56	05 06	19 01	05 00	19 06	
	05 08	18 55	05 04	18 59	05 00	19 03	04 55	19 09	04 49	19 14	04 43	19 21	
	04 57	19 04	04 52	19 09	04 46	19 15	04 40	19 21	04 33	19 28	04 25	19 36	
	04 45	19 13	04 39	19 19	04 33	19 26	04 26	19 33	04 17	19 42	04 08	19 52	
	04 34	19 23	04 27	19 29	04 20	19 37	04 12	19 46	04 02	19 56	03 50	20 07	
May	04 23	19 32	04 16	19 40	04 07	19 48	03 58	19 58	03 46	20 10	03 33	20 23	
	04 13	19 41	04 05	19 50	03 55	19 59	03 44	20 10	03 32	20 24	03 16	20 39	
	04 04	19 50	03 55	19 59	03 44	20 10	03 32	20 23	03 17	20 37	03 00	20 55	
	03 55	19 58	03 45	20 09	03 34	20 21	03 20	20 34	03 04	20 51	02 44	21 12	
	03 48	20 06	03 37	20 18	03 24	20 31	03 09	20 46	02 51	21 04	02 28	21 27	
	03 41	20 14	03 29	20 26	03 15	20 40	02 59	20 56	02 39	21 17	02 14	21 43	
	03 36	20 20	03 23	20 33	03 08	20 48	02 51	21 06	02 29	21 28	02 00	21 57	
June	03 31	20 26	03 18	20 40	03 03	20 55	02 44	21 14	02 20	21 38	01 49	22 10	
	03 29	20 31	03 15	20 45	02 59	21 01	02 39	21 21	02 14	21 46	01 39	22 21	
	03 27	20 34	03 13	20 48	02 56	21 05	02 36	21 25	02 10	21 51	01 33	22 29	
	03 27	20 36	03 13	20 50	02 56	21 07	02 36	21 28	02 09	21 54	01 31	22 32	
	03 29	20 36	03 15	20 51	02 58	21 07	02 37	21 28	02 11	21 54	01 33	22 31	
	03 32	20 35	03 18	20 49	03 01	21 06	02 41	21 25	02 16	21 51	01 40	22 26	
July	03 36	20 33	03 22	20 46	03 06	21 02	02 47	21 21	02 23	21 45	01 50	22 18	
	03 41	20 29	03 28	20 42	03 13	20 57	02 55	21 15	02 32	21 37	02 02	22 07	
	03 47	20 24	03 35	20 36	03 21	20 50	03 04	21 07	02 43	21 27	02 16	21 54	
	03 54	20 17	03 43	20 29	03 30	20 42	03 14	20 57	02 55	21 16	02 31	21 39	
	04 02	20 10	03 51	20 20	03 39	20 32	03 25	20 47	03 08	21 03	02 46	21 24	
	04 10	20 02	04 00	20 11	03 49	20 22	03 36	20 35	03 21	20 50	03 02	21 08	
Aug.	04 19	19 52	04 10	20 01	04 00	20 11	03 48	20 22	03 34	20 36	03 18	20 52	
	04 27	19 42	04 19	19 50	04 10	19 59	04 00	20 09	03 48	20 21	03 34	20 35	
	04 36	19 32	04 29	19 39	04 21	19 47	04 12	19 55	04 02	20 06	03 49	20 18	
	04 45	19 21	04 39	19 27	04 32	19 34	04 24	19 41	04 15	19 50	04 04	20 01	
	04 54	19 09	04 49	19 15	04 43	19 20	04 36	19 27	04 28	19 34	04 19	19 43	
	05 03	18 58	04 59	19 02	04 54	19 07	04 48	19 12	04 42	19 18	04 34	19 25	
Sept.	05 12	18 45	05 08	18 49	05 04	18 53	05 00	18 57	04 55	19 02	04 49	19 08	
	05 21	18 33	05 18	18 36	05 15	18 39	05 12	18 42	05 08	18 46	05 03	18 50	
	05 30	18 21	05 28	18 23	05 26	18 25	05 23	18 27	05 21	18 29	05 18	18 32	
	05 39	18 08	05 38	18 09	05 36	18 10	05 35	18 12	05 34	18 13	05 32	18 15	
	05 48	17 56	05 47	17 56	05 47	17 56	05 47	17 56	05 46	17 57	05 46	17 57	
	05 57	17 44	05 57	17 43	05 58	17 42	05 59	17 41	05 59	17 40	06 00	17 39	
Oct.	06 06	17 31	06 07	17 30	06 09	17 28	06 10	17 26	06 12	17 24	06 15	17 22	
	06 15	17 19	06 17	17 17	06 20	17 14	06 22	17 11	06 26	17 08	06 29	17 04	
	06 24	17 07	06 27	17 04	06 31	17 01	06 35	16 57	06 39	16 52	06 44	16 47	
	06 34	16 56	06 38	16 52	06 42	16 47	06 47	16 42	06 53	16 36	06 59	16 30	
	06 43	16 44	06 48	16 40	06 53	16 34	07 00	16 28	07 06	16 21	07 14	16 13	
	06 53	16 34	06 59	16 28	07 05	16 22	07 12	16 14	07 20	16 06	07 30	15 56	
Nov.	07 03	16 24	07 09	16 17	07 17	16 10	07 25	16 01	07 35	15 52	07 46	15 40	
	07 12	16 14	07 20	16 07	07 28	15 58	07 38	15 49	07 49	15 38	08 02	15 25	
	07 22	16 06	07 30	15 57	07 40	15 48	07 51	15 37	08 03	15 24	08 18	15 09	
	07 32	15 58	07 41	15 49	07 51	15 38	08 03	15 26	08 17	15 12	08 34	14 55	
	07 41	15 51	07 51	15 41	08 02	15 30	08 15	15 16	08 31	15 01	08 50	14 42	
	07 49	15 46	08 00	15 35	08 12	15 22	08 27	15 08	08 44	14 51	09 05	14 30	
Dec.	07 57	15 41	08 09	15 30	08 22	15 17	08 37	15 01	08 56	14 43	09 19	14 19	
	08 04	15 39	08 16	15 27	08 30	15 13	08 46	14 57	09 06	14 37	09 31	14 11	
	08 10	15 37	08 22	15 25	08 37	15 11	08 54	14 54	09 15	14 33	09 42	14 06	
	08 14	15 38	08 27	15 25	08 42	15 11	08 59	14 53	09 21	14 32	09 49	14 04	
	08 17	15 40	08 30	15 27	08 45	15 12	09 02	14 55	09 24	14 33	09 53	14 05	
	08 19	15 43	08 32	15 31	08 46	15 16	09 03	14 59	09 25	14 38	09 53	14 10	
Jan.	1	08 19	15 48	08 31	15 36	08 45	15 22	09 02	15 05	09 23	14 45	09 49	14 18

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

Date	66° N.		68° N.		70° N.		72° N.		74° N.		76° N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan.	10 27	13 40	Rises 3 Jan	11 20	12 52	Sun does not rise until January	10 54	13 29	11 34	12 52	10 34	13 54
	10 17	13 55		09 42	14 44	10 19	14 07	09 55	14 34	10 49	13 41	08 59
	10 04	14 13		09 21	15 07	09 50	14 38	10 23	15 07	09 59	14 32	08 23
	09 49	14 31		15 29	15 07	10 34	13 54	10 23	15 07	09 19	15 11	08 05
	09 33	14 50		15 21	15 07	10 34	13 54	10 23	15 07	08 45	15 45	07 46
	09 16	15 10		15 28	17 00	07 36	16 52	07 45	16 42	08 12	16 16	07 28
	08 59	15 29		15 21	15 07	09 50	14 38	10 34	13 54	08 33	15 55	08 59
Feb.	5	08 41	15 48	08 59	15 30	09 23	15 06	09 55	14 34	10 49	13 41	11 04
	10	08 23	16 06	08 38	15 51	08 57	15 32	09 23	15 07	09 59	14 32	13 26
	15	08 05	16 25	08 17	16 12	08 33	15 57	08 53	15 37	09 19	15 11	09 59
	20	07 46	16 42	07 56	16 32	08 09	16 20	08 24	16 05	08 45	15 45	09 13
	25	07 28	17 00	07 36	16 52	07 45	16 42	07 57	16 31	08 12	16 16	08 33
Mar.	2	07 09	17 17	07 15	17 11	07 22	17 04	07 31	16 55	07 42	16 45	07 56
	7	06 50	17 34	06 54	17 30	06 59	17 25	07 05	17 19	07 12	17 12	07 22
	12	06 31	17 50	06 33	17 48	06 36	17 44	06 39	17 43	06 43	17 39	06 48
	17	06 12	18 07	06 12	18 07	06 13	18 06	06 13	18 06	06 14	18 05	06 15
	22	05 52	18 23	05 51	18 25	05 49	18 26	05 47	18 29	05 45	18 32	05 42
	27	05 33	18 39	05 30	18 43	05 26	18 47	05 22	18 52	05 16	18 58	05 08
Apr.	1	05 14	18 56	05 09	19 01	05 03	19 07	04 55	19 15	04 46	19 25	04 34
	6	04 55	19 12	04 47	19 20	04 39	19 28	04 29	19 39	04 15	19 53	03 58
	11	04 35	19 29	04 26	19 39	04 15	19 50	04 01	20 04	03 43	20 23	03 19
	16	04 16	19 46	04 04	19 58	03 50	20 12	03 33	20 31	03 09	20 55	02 35
	21	03 56	20 04	03 42	20 18	03 25	20 36	03 02	20 59	02 31	21 33	01 40
	26	03 37	20 21	03 20	20 39	02 59	21 01	02 30	21 31	01 45	22 20	.. ..
May	1	03 17	20 40	02 57	21 01	02 30	21 28	01 52	22 10	00 25	.. ..	.. ..
	6	02 57	20 59	02 33	21 24	01 59	21 59	01 00	23 08	.. ..	.. ..	.. ..
	11	02 38	21 18	02 08	21 49	01 22	22 38	.. ..	.. ..	.. ..	.. ..	.. ..
	16	02 18	21 38	01 41	22 17	00 18	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	21	01 58	21 59	01 09	22 51	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	26	01 37	22 21	00 14	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
June	31	01 16	22 43	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	5	00 54	23 07	Sun rises 12 June	Sun sets 17 July	Sun rises 16 May	Sun sets 27 July	Sun rises 8 May	Sun sets 4 August	Sun rises 1 May	Sun sets 11 August	Sun rises 25 April Sun sets 17 August
	10	00 28	23 38									
	15	.. ..	.. ..							
	20	.. ..	.. ..							
	25	.. ..	.. ..							
	30	00 08	23 46									
July	5	00 48	23 16	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	10	01 13	22 53	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	15	01 36	22 32	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	20	01 58	22 12	00 58	23 06	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	25	02 18	21 51	01 36	22 31	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	30	02 38	21 31	02 05	22 03	01 08	22 55	.. ..	.. ..	.. ..	.. ..	.. ..
Aug.	4	02 58	21 12	02 31	21 38	01 51	22 15	01 37	23 32	.. ..	.. ..	.. ..
	9	03 16	20 52	02 54	21 13	02 24	21 42	01 20	22 26	.. ..	.. ..	.. ..
	14	03 34	20 32	03 16	20 50	02 52	21 13	02 18	21 45	01 20	22 37	.. ..
	19	03 52	20 13	03 36	20 28	03 17	20 46	02 51	21 11	02 14	21 46	01 00
	24	04 09	19 53	03 56	20 06	03 41	20 21	03 20	20 40	02 53	21 06	02 11
	29	04 26	19 34	04 15	19 44	04 03	19 56	03 47	20 11	03 26	20 31	02 57
Sept.	3	04 42	19 14	04 34	19 22	04 24	19 32	04 12	19 43	03 56	19 58	03 35
	8	04 58	18 55	04 52	19 01	04 45	19 08	04 36	19 17	04 24	19 27	04 09
	13	05 14	18 36	05 10	18 40	05 05	18 44	04 59	18 50	04 51	18 58	04 41
	18	05 30	18 16	05 27	18 19	05 25	18 21	05 21	18 24	05 17	18 28	05 11
	23	05 46	17 57	05 45	17 58	05 44	17 58	05 43	17 59	05 42	17 59	05 41
	28	06 01	17 38	06 03	17 37	06 04	17 35	06 06	17 33	06 08	17 31	06 11
Oct.	3	06 17	17 19	06 20	17 16	06 24	17 12	06 28	17 07	06 34	17 02	06 41
	8	06 33	17 00	06 38	16 55	06 44	16 49	06 51	16 42	07 00	16 32	07 12
	13	06 50	16 41	06 57	16 34	07 05	16 26	07 15	16 16	07 28	16 03	07 45
	18	07 07	16 22	07 15	16 13	07 26	16 02	07 40	15 49	07 57	15 31	08 20
	23	07 24	16 04	07 35	15 52	07 48	15 39	08 06	15 21	08 28	14 58	09 01
	28	07 41	15 45	07 55	15 31	08 12	15 14	08 33	14 53	09 03	14 22	09 51
Nov.	2	07 59	15 27	08 15	15 10	08 36	14 50	09 04	14 22	09 46	13 40	.. ..
	7	08 18	15 09	08 37	14 49	09 02	14 24	09 39	13 47	10 48	12 38	.. ..
	12	08 36	14 51	08 59	14 28	09 31	13 56	10 23	13 04	.. ..	.. ..	.. ..
	17	08 55	14 34	09 23	14 06	10 04	13 25	.. ..	.. ..	.. ..	.. ..	.. ..
	22	09 14	14 17	09 48	13 44	10 46	12 45	.. ..	.. ..	.. ..	.. ..	.. ..
	27	09 33	14 02	10 14	13 21	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Dec.	2	09 51	13 48	10 43	12 55	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	7	10 07	13 36	11 20	12 23	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	12	10 21	13 26	Sun does not rise after 8 December	Sun does not rise after 25 November	Sun does not rise after 15 November	Sun does not rise after 8 November	Sun does not rise after 1 November				
	17	10 31	13 22									
	22	10 35	13 22									
	27	10 34	13 28									
Jan.	1	10 28	13 40	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

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Date	0°		5° S.		10° S.		15° S.		20° S.		25° S.	
	Rise h. m.	Set h. m.										
Jan.	06 00	18 07	05 51	18 16	05 43	18 25	05 34	18 34	05 24	18 43	05 14	18 53
	06 02	18 10	05 54	18 18	05 45	18 26	05 37	18 35	05 27	18 44	05 17	18 54
	06 04	18 12	05 56	18 20	05 48	18 28	05 40	18 36	05 31	18 45	05 21	18 55
	06 06	18 13	05 59	18 21	05 51	18 29	05 43	18 37	05 34	18 46	05 25	18 55
	06 08	18 15	06 00	18 22	05 53	18 30	05 45	18 37	05 37	18 45	05 29	18 54
	06 09	18 16	06 02	18 23	05 55	18 30	05 48	18 37	05 40	18 44	05 32	18 53
	06 10	18 17	06 04	18 23	05 57	18 30	05 51	18 36	05 44	18 43	05 36	18 51
Feb.	06 11	18 17	06 05	18 23	05 59	18 29	05 53	18 35	05 47	18 41	05 40	18 48
	06 11	18 18	06 06	18 23	06 00	18 28	05 55	18 33	05 49	18 39	05 43	18 45
	06 11	18 18	06 06	18 22	06 02	18 26	05 57	18 31	05 52	18 36	05 46	18 41
	06 10	18 17	06 06	18 21	06 03	18 25	05 58	18 29	05 54	18 33	05 49	18 38
	06 10	18 16	06 06	18 19	06 03	18 23	06 00	18 26	05 56	18 30	05 52	18 33
Mar.	06 09	18 15	06 06	18 18	06 04	18 20	06 01	18 23	05 58	18 26	05 55	18 29
	06 08	18 14	06 06	18 16	06 04	18 18	06 02	18 20	06 00	18 22	05 58	18 24
	06 06	18 13	06 05	18 14	06 04	18 15	06 03	18 16	06 01	18 18	06 00	18 19
	06 05	18 12	06 05	18 12	06 04	18 12	06 04	18 13	06 03	18 13	06 02	18 14
	06 04	18 10	06 04	18 10	06 04	18 09	06 04	18 09	06 04	18 09	06 05	18 09
	06 02	18 09	06 03	18 08	06 04	18 07	06 05	18 06	06 06	18 05	06 07	18 04
Apr.	06 01	18 07	06 02	18 05	06 04	18 04	06 05	18 05	06 07	18 00	06 09	17 58
	05 59	18 06	06 01	18 03	06 04	18 01	06 06	17 59	06 08	17 56	06 11	17 53
	05 58	18 04	06 01	18 01	06 04	17 58	06 07	17 55	06 10	17 52	06 13	17 49
	05 56	18 03	06 00	17 59	06 04	17 56	06 07	17 52	06 11	17 48	06 15	17 44
	05 55	18 02	06 00	17 58	06 04	17 53	06 08	17 49	06 13	17 44	06 18	17 39
	05 54	18 01	05 59	17 56	06 04	17 51	06 09	17 46	06 14	17 41	06 20	17 35
May	05 54	18 00	05 59	17 55	06 05	17 49	06 10	17 44	06 16	17 38	06 22	17 32
	05 53	18 00	05 59	17 54	06 05	17 48	06 11	17 42	06 18	17 35	06 25	17 28
	05 53	18 00	05 59	17 53	06 06	17 47	06 13	17 40	06 20	17 33	06 27	17 25
	05 53	18 00	06 00	17 53	06 07	17 46	06 14	17 39	06 22	17 31	06 30	17 23
	05 53	18 00	06 00	17 53	06 08	17 45	06 16	17 37	06 24	17 29	06 32	17 21
	05 53	18 01	06 01	17 53	06 09	17 45	06 17	17 37	06 26	17 28	06 35	17 19
	05 54	18 01	06 02	17 53	06 10	17 45	06 19	17 37	06 28	17 28	06 37	17 18
June	05 55	18 02	06 03	17 54	06 12	17 45	06 20	17 37	06 29	17 28	06 39	17 18
	05 56	18 03	06 04	17 55	06 13	17 46	06 22	17 37	06 31	17 28	06 41	17 18
	05 57	18 04	06 05	17 56	06 14	17 47	06 23	17 38	06 33	17 28	06 43	17 18
	05 58	18 05	06 07	17 57	06 15	17 48	06 24	17 39	06 34	17 29	06 44	17 19
	05 59	18 06	06 08	17 58	06 16	17 49	06 25	17 40	06 35	17 30	06 45	17 20
	06 00	18 07	06 09	17 59	06 17	17 50	06 26	17 41	06 36	17 32	06 46	17 22
July	06 01	18 08	06 09	18 00	06 18	17 51	06 27	17 43	06 36	17 33	06 46	17 24
	06 02	18 09	06 10	18 01	06 18	17 53	06 27	17 44	06 36	17 35	06 45	17 26
	06 02	18 10	06 10	18 02	06 18	17 54	06 26	17 46	06 35	17 37	06 44	17 28
	06 03	18 10	06 10	18 02	06 18	17 55	06 26	17 47	06 34	17 39	06 43	17 30
	06 03	18 10	06 10	18 03	06 17	17 56	06 25	17 48	06 33	17 41	06 41	17 32
	06 03	18 10	06 10	18 03	06 16	17 57	06 23	17 50	06 31	17 42	06 38	17 35
Aug.	06 03	18 09	06 09	18 03	06 15	17 57	06 21	17 51	06 28	17 44	06 35	17 37
	06 02	18 09	06 08	18 03	06 13	17 58	06 19	17 52	06 25	17 46	06 32	17 39
	06 01	18 08	06 06	18 03	06 12	17 58	06 17	17 53	06 22	17 47	06 28	17 41
	06 00	18 07	06 05	18 02	06 09	17 58	06 14	17 53	06 19	17 49	06 24	17 43
	05 59	18 06	06 03	18 02	06 07	17 58	06 11	17 54	06 15	17 50	06 19	17 45
	05 58	18 04	06 01	18 01	06 04	17 58	06 07	17 54	06 11	17 51	06 15	17 47
Sept.	05 56	18 03	05 59	18 00	06 01	17 57	06 04	17 55	06 07	17 52	06 10	17 49
	05 54	18 01	05 56	17 59	05 58	17 57	06 00	17 55	06 02	17 53	06 05	17 51
	05 53	17 59	05 54	17 58	05 55	17 57	05 56	17 55	05 58	17 54	05 59	17 53
	05 51	17 57	05 51	17 57	05 52	17 56	05 53	17 56	05 53	17 55	05 54	17 55
	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 48	17 57
	05 47	17 54	05 47	17 55	05 46	17 55	05 45	17 56	05 44	17 57	05 43	17 58
Oct.	05 46	17 52	05 44	17 54	05 43	17 55	05 41	17 57	05 40	17 59	05 38	18 00
	05 44	17 51	05 42	17 53	05 40	17 55	05 38	17 57	05 35	18 00	05 33	18 03
	05 43	17 49	05 40	17 52	05 37	17 55	05 34	17 58	05 31	18 01	05 28	18 05
	05 42	17 48	05 38	17 52	05 35	17 56	05 31	17 59	05 27	18 03	05 23	18 07
	05 41	17 48	05 37	17 52	05 33	17 56	05 28	18 00	05 24	18 05	05 19	18 10
	05 40	17 47	05 36	17 52	05 31	17 57	05 26	18 02	05 21	18 07	05 15	18 13
Nov.	05 40	17 47	05 35	17 52	05 29	17 58	05 24	18 04	05 18	18 10	05 11	18 16
	05 40	17 47	05 34	17 53	05 28	17 59	05 22	18 06	05 15	18 12	05 08	18 19
	05 41	17 48	05 34	17 54	05 28	18 01	05 21	18 08	05 14	18 15	05 06	18 23
	05 41	17 49	05 34	17 56	05 27	18 03	05 20	18 10	05 12	18 18	05 04	18 26
	05 43	17 50	05 35	17 57	05 28	18 05	05 20	18 13	05 12	18 21	05 03	18 30
	05 44	17 51	05 36	17 59	05 28	18 07	05 20	18 15	05 11	18 24	05 02	18 34
Dec.	05 46	17 53	05 38	18 01	05 29	18 10	05 21	18 18	05 12	18 27	05 02	18 37
	05 48	17 55	05 39	18 04	05 31	18 12	05 22	18 21	05 13	18 31	05 03	18 41
	05 50	17 58	05 41	18 06	05 33	18 15	05 24	18 24	05 14	18 34	05 04	18 44
	05 52	18 00	05 44	18 09	05 35	18 17	05 26	18 27	05 16	18 36	05 05	18 47
	05 55	18 02	05 46	18 11	05 37	18 20	05 28	18 29	05 18	18 39	05 08	18 50
	05 57	18 05	05 49	18 14	05 40	18 22	05 31	18 32	05 21	18 41	05 10	18 52
Jan.	06 00	18 07	05 51	18 16	05 43	18 24	05 34	18 34	05 24	18 43	05 14	18 53

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

Date	30° S.		32° S.		34° S.		36° S.		38° S.		40° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan.	05 02	19 05	04 58	19 10	04 52	19 15	04 47	19 20	04 41	19 26	04 35	19 32
	05 06	19 05	05 01	19 10	04 56	19 15	04 51	19 20	04 46	19 26	04 39	19 32
	05 10	19 05	05 06	19 10	05 01	19 15	04 56	19 20	04 50	19 25	04 45	19 31
	05 15	19 05	05 10	19 09	05 06	19 14	05 01	19 19	04 56	19 24	04 50	19 29
	05 19	19 03	05 15	19 08	05 10	19 12	05 06	19 16	05 01	19 21	04 56	19 26
	05 23	19 01	05 20	19 05	05 15	19 09	05 11	19 13	05 07	19 18	05 02	19 23
	05 28	18 59	05 24	19 02	05 20	19 06	05 17	19 10	05 12	19 14	05 08	19 18
Feb.	05 32	18 55	05 29	18 59	05 25	19 02	05 22	19 06	05 18	19 09	05 14	19 13
	05 36	18 52	05 33	18 54	05 30	18 57	05 27	19 01	05 24	19 04	05 20	19 07
	05 40	18 47	05 38	18 50	05 35	18 52	05 32	18 55	05 29	18 58	05 26	19 01
	05 44	18 43	05 42	18 45	05 40	18 47	05 37	18 49	05 35	18 52	05 32	18 54
	05 48	18 37	05 46	18 39	05 44	18 41	05 42	18 43	05 40	18 45	05 38	18 47
Mar.	05 52	18 32	05 50	18 33	05 49	18 35	05 47	18 36	05 45	18 38	05 44	18 40
	05 55	18 26	05 54	18 27	05 53	18 28	05 52	18 30	05 50	18 31	05 49	18 32
	05 58	18 20	05 58	18 21	05 57	18 22	05 56	18 23	05 55	18 23	05 54	18 24
	06 02	18 15	06 01	18 15	06 01	18 15	06 01	18 15	06 00	18 16	06 00	18 16
	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08
	06 08	18 02	06 08	18 02	06 09	18 01	06 09	18 01	06 10	18 00	06 10	18 00
Apr.	06 11	17 56	06 11	17 56	06 12	17 55	06 13	17 54	06 14	17 53	06 15	17 52
	06 14	17 51	06 15	17 49	06 16	17 48	06 17	17 47	06 19	17 45	06 20	17 44
	06 17	17 45	06 18	17 43	06 20	17 42	06 21	17 40	06 23	17 38	06 25	17 36
	06 20	17 39	06 22	17 37	06 24	17 35	06 26	17 33	06 28	17 31	06 30	17 29
	06 23	17 34	06 25	17 32	06 27	17 30	06 30	17 27	06 32	17 24	06 35	17 22
	06 26	17 29	06 28	17 27	06 31	17 24	06 34	17 21	06 37	17 18	06 40	17 15
May	06 29	17 25	06 32	17 22	06 35	17 19	06 38	17 16	06 41	17 12	06 45	17 09
	06 32	17 21	06 35	17 17	06 39	17 14	06 42	17 11	06 46	17 07	06 50	17 03
	06 35	17 17	06 39	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 55	16 58
	06 38	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 55	16 58	06 59	16 53
	06 42	17 11	06 46	17 07	06 50	17 03	06 54	16 59	06 59	16 54	07 04	16 49
	06 44	17 09	06 49	17 05	06 53	17 01	06 58	16 56	07 03	16 51	07 08	16 46
	06 47	17 08	06 52	17 04	06 56	16 59	07 01	16 54	07 06	16 49	07 12	16 43
June	06 50	17 07	06 54	17 03	06 59	16 58	07 04	16 53	07 09	16 47	07 15	16 42
	06 52	17 07	06 57	17 02	07 02	16 57	07 07	16 52	07 12	16 47	07 18	16 41
	06 54	17 07	06 59	17 02	07 04	16 57	07 09	16 52	07 14	16 47	07 20	16 41
	06 55	17 08	07 00	17 03	07 05	16 58	07 10	16 53	07 16	16 47	07 22	16 41
	06 56	17 09	07 01	17 04	07 06	16 59	07 11	16 54	07 17	16 49	07 23	16 43
	06 57	17 11	07 01	17 06	07 06	17 01	07 11	16 56	07 17	16 51	07 23	16 45
July	06 56	17 13	07 01	17 08	07 06	17 04	07 11	16 58	07 16	16 53	07 22	16 47
	06 56	17 15	07 00	17 11	07 05	17 06	07 10	17 01	07 15	16 56	07 21	16 50
	06 54	17 18	06 59	17 14	07 03	17 09	07 08	17 04	07 13	16 59	07 18	16 54
	06 52	17 21	06 56	17 17	07 01	17 12	07 05	17 08	07 10	17 03	07 15	16 58
	06 50	17 23	06 54	17 20	06 58	17 16	07 02	17 11	07 06	17 07	07 11	17 02
	06 47	17 26	06 50	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 07
Aug.	06 43	17 29	06 46	17 26	06 50	17 23	06 54	17 19	06 57	17 15	07 02	17 11
	06 39	17 32	06 42	17 29	06 45	17 26	06 49	17 23	06 52	17 19	06 56	17 16
	06 35	17 35	06 37	17 32	06 40	17 30	06 43	17 27	06 46	17 24	06 49	17 20
	06 30	17 38	06 32	17 36	06 34	17 33	06 37	17 31	06 40	17 28	06 43	17 25
	06 24	17 41	06 26	17 39	06 28	17 37	06 31	17 34	06 33	17 32	06 36	17 30
	06 19	17 43	06 20	17 42	06 22	17 40	06 24	17 38	06 26	17 36	06 28	17 34
Sept.	06 13	17 46	06 14	17 45	06 16	17 43	06 17	17 42	06 19	17 40	06 20	17 39
	06 07	17 49	06 08	17 48	06 09	17 47	06 10	17 46	06 11	17 45	06 12	17 44
	06 01	17 51	06 01	17 51	06 02	17 50	06 03	17 50	06 03	17 49	06 04	17 48
	05 54	17 54	05 55	17 54	05 55	17 54	05 55	17 53	05 56	17 53	05 56	17 53
	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 58
	05 42	18 00	05 42	18 00	05 41	18 01	05 40	18 01	05 40	18 02	05 39	18 03
Oct.	05 36	18 03	05 35	18 03	05 34	18 04	05 33	18 05	05 32	18 06	05 31	18 07
	05 30	18 06	05 29	18 07	05 27	18 08	05 26	18 10	05 25	18 11	05 23	18 13
	05 24	18 09	05 23	18 10	05 21	18 12	05 19	18 14	05 17	18 16	05 15	18 18
	05 19	18 12	05 17	18 14	05 15	18 16	05 13	18 18	05 10	18 21	05 08	18 23
	05 13	18 16	05 11	18 18	05 09	18 20	05 06	18 23	05 04	18 26	05 01	18 29
	05 09	18 19	05 06	18 22	05 03	18 25	05 00	18 28	04 57	18 31	04 54	18 34
Nov.	05 04	18 23	05 01	18 26	04 58	18 29	04 55	18 33	04 51	18 36	04 48	18 40
	05 01	18 27	04 57	18 31	04 54	18 34	04 50	18 38	04 46	18 42	04 42	18 46
	04 57	18 31	04 54	18 35	04 50	18 39	04 46	18 43	04 42	18 47	04 37	18 52
	04 55	18 35	04 51	18 39	04 47	18 44	04 42	18 48	04 38	18 53	04 33	18 58
	04 53	18 40	04 49	18 44	04 44	18 48	04 40	18 53	04 35	18 58	04 29	19 03
	04 52	18 44	04 47	18 48	04 43	18 53	04 38	18 58	04 32	19 03	04 27	19 09
Dec.	04 51	18 48	04 47	18 53	04 42	18 58	04 37	19 03	04 31	19 08	04 25	19 14
	04 51	18 52	04 47	18 57	04 42	19 02	04 36	19 07	04 31	19 13	04 24	19 19
	04 52	18 55	04 47	19 00	04 42	19 05	04 37	19 11	04 31	19 17	04 25	19 23
	04 54	18 58	04 49	19 03	04 44	19 09	04 38	19 14	04 32	19 20	04 26	19 27
	04 56	19 01	04 51	19 06	04 46	19 11	04 40	19 17	04 34	19 23	04 28	19 29
	04 59	19 03	04 54	19 08	04 49	19 13	04 43	19 19	04 37	19 25	04 31	19 31
Jan.	05 02	19 05	04 57	19 10	04 52	19 15	04 47	19 20	04 41	19 26	04 35	19 32

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

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Date	42° S.		44° S.		46° S.		48° S.		50° S.		52° S.	
	Rise h. m.	Set h. m.										
Jan.	04 28	19 39	04 21	19 46	04 13	19 54	04 05	20 02	03 55	20 12	03 45	20 22
	04 33	19 38	04 26	19 45	04 19	19 53	04 10	20 01	04 01	20 10	03 51	20 20
	04 38	19 37	04 32	19 44	04 24	19 51	04 16	19 59	04 08	20 08	03 58	20 17
	04 44	19 35	04 38	19 41	04 31	19 48	04 23	19 56	04 15	20 04	04 06	20 13
	04 50	19 32	04 44	19 38	04 38	19 44	04 31	19 51	04 23	19 59	04 15	20 07
	04 57	19 28	04 51	19 33	04 45	19 39	04 39	19 46	04 31	19 53	04 24	20 01
	05 03	19 23	04 58	19 28	04 53	19 33	04 47	19 39	04 40	19 46	04 33	19 53
Feb.	05 10	19 17	05 05	19 22	05 00	19 27	04 55	19 32	04 49	19 38	04 42	19 44
	05 16	19 11	05 12	19 15	05 08	19 20	05 03	19 24	04 58	19 30	04 52	19 35
	05 23	19 05	05 19	19 08	05 15	19 12	05 11	19 16	05 07	19 20	05 02	19 25
	05 29	18 57	05 26	19 00	05 23	19 04	05 19	19 07	05 15	19 11	05 11	19 15
	05 36	18 50	05 33	18 52	05 30	18 55	05 27	18 58	05 24	19 01	05 21	19 04
Mar.	05 42	18 42	05 40	18 44	05 37	18 46	05 35	18 48	05 33	18 51	05 30	18 53
	05 48	18 33	05 46	18 35	05 45	18 37	05 43	18 38	05 41	18 40	05 39	18 42
	05 54	18 25	05 53	18 26	05 51	18 27	05 50	18 28	05 49	18 29	05 48	18 31
	05 59	18 17	05 59	18 17	05 58	18 17	05 58	18 18	05 57	18 18	05 56	18 19
	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08
	06 11	17 59	06 11	17 59	06 12	17 58	06 12	17 57	06 13	17 57	06 14	17 56
Apr.	06 16	17 51	06 17	17 50	06 18	17 49	06 19	17 47	06 21	17 46	06 22	17 44
	06 22	17 42	06 23	17 41	06 25	17 39	06 27	17 37	06 29	17 35	06 31	17 33
	06 27	17 34	06 29	17 32	06 31	17 30	06 34	17 28	06 36	17 25	06 39	17 22
	06 32	17 26	06 35	17 24	06 38	17 21	06 41	17 18	06 44	17 15	06 47	17 11
	06 38	17 19	06 41	17 16	06 44	17 12	06 48	17 09	06 52	17 05	06 56	17 01
	06 43	17 12	06 47	17 08	06 51	17 04	06 55	17 00	06 59	16 56	07 04	16 51
May	06 49	17 05	06 53	17 01	06 57	16 56	07 02	16 52	07 07	16 47	07 12	16 41
	06 54	16 59	06 59	16 54	07 03	16 49	07 08	16 44	07 14	16 38	07 20	16 32
	06 59	16 53	07 04	16 48	07 09	16 43	07 15	16 37	07 21	16 31	07 28	16 24
	07 04	16 48	07 10	16 43	07 15	16 37	07 21	16 31	07 28	16 24	07 36	16 17
	07 09	16 44	07 15	16 38	07 21	16 32	07 27	16 25	07 35	16 18	07 43	16 10
	07 14	16 40	07 20	16 34	07 26	16 28	07 33	16 21	07 41	16 13	07 49	16 04
June	07 18	16 38	07 24	16 31	07 31	16 24	07 38	16 17	07 46	16 09	07 55	16 00
	07 21	16 36	07 28	16 29	07 35	16 22	07 42	16 14	07 51	16 06	08 00	15 57
	07 24	16 35	07 31	16 28	07 38	16 21	07 46	16 13	07 55	16 04	08 04	15 54
	07 27	16 34	07 33	16 28	07 41	16 20	07 49	16 12	07 58	16 03	08 07	15 53
	07 28	16 35	07 35	16 28	07 42	16 21	07 51	16 13	07 59	16 04	08 09	15 54
	07 29	16 36	07 36	16 30	07 43	16 22	07 51	16 14	08 00	16 05	08 10	15 55
July	07 28	16 41	07 35	16 35	07 42	16 28	07 50	16 20	07 58	16 11	08 08	16 02
	07 26	16 45	07 33	16 38	07 40	16 31	07 47	16 24	07 55	16 16	08 05	16 07
	07 24	16 48	07 30	16 42	07 37	16 36	07 44	16 29	07 52	16 21	08 00	16 12
	07 20	16 53	07 26	16 47	07 33	16 41	07 39	16 34	07 47	16 26	07 55	16 18
	07 16	16 57	07 22	16 52	07 28	16 46	07 34	16 39	07 41	16 33	07 49	16 25
	07 11	17 02	07 16	16 57	07 22	16 51	07 28	16 46	07 34	16 39	07 41	16 32
Aug.	07 06	17 07	07 10	17 02	07 15	16 57	07 21	16 52	07 27	16 46	07 33	16 40
	07 00	17 12	07 04	17 08	07 08	17 03	07 13	16 58	07 19	16 53	07 24	16 47
	06 53	17 17	06 57	17 13	07 01	17 09	07 05	17 05	07 10	17 00	07 15	16 55
	06 46	17 22	06 49	17 19	06 53	17 15	06 56	17 11	07 00	17 07	07 05	17 03
	06 38	17 27	06 41	17 24	06 44	17 21	06 47	17 18	06 51	17 15	06 54	17 11
	06 30	17 32	06 33	17 30	06 35	17 27	06 38	17 25	06 40	17 22	06 44	17 19
Sept.	06 22	17 37	06 24	17 35	06 26	17 34	06 28	17 32	06 30	17 29	06 32	17 27
	06 13	17 42	06 15	17 41	06 16	17 40	06 18	17 38	06 19	17 37	06 21	17 35
	06 05	17 48	06 06	17 47	06 07	17 46	06 07	17 45	06 09	17 44	06 10	17 43
	05 56	17 53	05 56	17 52	05 57	17 52	05 57	17 52	05 58	17 52	05 58	17 51
	05 47	17 58	05 47	17 58	05 47	17 58	05 47	17 59	05 47	17 59	05 46	17 59
	05 39	18 03	05 38	18 04	05 37	18 05	05 36	18 06	05 36	18 07	05 35	18 08
Oct.	05 30	18 09	05 29	18 10	05 28	18 11	05 26	18 13	05 25	18 14	05 23	18 16
	05 22	18 14	05 20	18 16	05 18	18 18	05 16	18 20	05 14	18 22	05 11	18 25
	05 13	18 20	05 11	18 22	05 09	18 25	05 06	18 27	05 03	18 30	05 00	18 33
	05 05	18 26	05 03	18 29	05 00	18 32	04 56	18 35	04 53	18 38	04 49	18 42
	04 58	18 32	04 54	18 35	04 51	18 39	04 47	18 42	04 43	18 47	04 39	18 51
	04 50	18 38	04 47	18 42	04 43	18 46	04 38	18 50	04 34	18 55	04 28	19 00
Nov.	04 44	18 44	04 40	18 48	04 35	18 53	04 30	18 58	04 25	19 04	04 19	19 10
	04 38	18 50	04 33	18 55	04 28	19 00	04 22	19 06	04 16	19 12	04 10	19 19
	04 32	18 57	04 27	19 02	04 21	19 08	04 15	19 14	04 09	19 21	04 01	19 28
	04 28	19 03	04 22	19 09	04 16	19 15	04 09	19 22	04 02	19 29	03 54	19 37
	04 24	19 09	04 18	19 15	04 11	19 22	04 04	19 29	03 56	19 37	03 47	19 46
	04 21	19 15	04 14	19 21	04 07	19 28	04 00	19 36	03 51	19 45	03 42	19 54
Dec.	04 19	19 20	04 12	19 27	04 05	19 35	03 57	19 43	03 48	19 52	03 38	20 01
	04 18	19 25	04 11	19 32	04 03	19 40	03 55	19 48	03 46	19 58	03 36	20 08
	04 18	19 30	04 11	19 37	04 03	19 45	03 54	19 53	03 45	20 03	03 34	20 14
	04 19	19 33	04 12	19 41	04 04	19 49	03 55	19 57	03 45	20 07	03 35	20 18
	04 21	19 36	04 14	19 43	04 06	19 51	03 57	20 00	03 47	20 10	03 37	20 21
	04 24	19 38	04 17	19 45	04 09	19 53	04 00	20 02	03 51	20 11	03 40	20 22
Jan.	04 28	19 39	04 21	19 46	04 13	19 54	04 05	20 02	03 55	20 12	03 45	20 22

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 2013

Date	54° S.		56° S.		58° S.		60° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1-----	03 33	20 34	03 19	20 48	03 03	21 04	02 43	21 23
6-----	03 39	20 32	03 26	20 45	03 11	21 00	02 52	21 19
11-----	03 47	20 28	03 34	20 41	03 20	20 55	03 02	21 12
16-----	03 56	20 23	03 44	20 35	03 30	20 48	03 14	21 04
21-----	04 05	20 17	03 54	20 27	03 42	20 40	03 27	20 54
26-----	04 15	20 09	04 05	20 19	03 53	20 30	03 40	20 43
31-----	04 25	20 01	04 16	20 10	04 06	20 20	03 54	20 31
Feb. 5-----	04 35	19 51	04 27	19 59	04 18	20 08	04 08	20 18
10-----	04 46	19 41	04 39	19 48	04 31	19 56	04 22	20 05
15-----	04 56	19 31	04 50	19 37	04 43	19 43	04 35	19 51
20-----	05 06	19 20	05 01	19 25	04 55	19 30	04 49	19 37
25-----	05 17	19 08	05 12	19 12	05 08	19 17	05 02	19 22
Mar. 2-----	05 27	18 56	05 23	19 00	05 19	19 03	05 15	19 07
7-----	05 36	18 44	05 34	18 47	05 31	18 49	05 28	18 52
12-----	05 46	18 32	05 44	18 34	05 43	18 35	05 40	18 37
17-----	05 56	18 20	05 55	18 20	05 54	18 21	05 53	18 22
22-----	06 05	18 07	06 05	18 07	06 05	18 07	06 05	18 07
27-----	06 14	17 55	06 15	17 54	06 16	17 53	06 17	17 52
Apr. 1-----	06 24	17 43	06 25	17 41	06 27	17 39	06 29	17 37
6-----	06 33	17 31	06 35	17 28	06 38	17 25	06 41	17 22
11-----	06 42	17 19	06 45	17 15	06 49	17 12	06 53	17 07
16-----	06 51	17 07	06 55	17 03	07 00	16 58	07 05	16 53
21-----	07 00	16 56	07 05	16 51	07 11	16 45	07 17	16 39
26-----	07 09	16 45	07 15	16 39	07 22	16 33	07 29	16 25
May 1-----	07 18	16 35	07 25	16 28	07 33	16 21	07 41	16 12
6-----	07 27	16 25	07 35	16 18	07 43	16 09	07 53	15 59
11-----	07 36	16 16	07 44	16 08	07 54	15 58	08 05	15 47
16-----	07 44	16 08	07 53	15 59	08 04	15 48	08 16	15 36
21-----	07 52	16 01	08 02	15 51	08 13	15 40	08 26	15 26
26-----	07 59	15 55	08 10	15 44	08 22	15 32	08 36	15 17
31-----	08 05	15 50	08 17	15 38	08 30	15 25	08 45	15 10
June 5-----	08 11	15 46	08 23	15 34	08 36	15 20	08 53	15 04
10-----	08 15	15 44	08 28	15 31	08 42	15 17	08 59	15 00
15-----	08 19	15 42	08 31	15 30	08 46	15 15	09 03	14 58
20-----	08 21	15 43	08 33	15 30	08 48	15 15	09 06	14 58
25-----	08 21	15 44	08 34	15 32	08 48	15 17	09 06	14 59
30-----	08 20	15 47	08 33	15 35	08 47	15 20	09 04	15 03
July 5-----	08 18	15 51	08 30	15 39	08 44	15 25	09 01	15 09
10-----	08 15	15 56	08 26	15 45	08 40	15 32	08 55	15 16
15-----	08 10	16 02	08 21	15 51	08 34	15 39	08 48	15 24
20-----	08 04	16 09	08 14	15 59	08 26	15 47	08 40	15 34
25-----	07 57	16 17	08 07	16 07	08 17	15 56	08 30	15 44
30-----	07 49	16 24	07 58	16 16	08 08	16 06	08 19	15 54
Aug. 4-----	07 40	16 33	07 48	16 25	07 57	16 16	08 07	16 06
9-----	07 31	16 41	07 38	16 34	07 46	16 26	07 55	16 17
14-----	07 21	16 50	07 27	16 43	07 34	16 36	07 42	16 28
19-----	07 10	16 58	07 15	16 53	07 21	16 47	07 28	16 40
24-----	06 59	17 07	07 03	17 02	07 08	16 57	07 14	16 52
29-----	06 47	17 16	06 51	17 12	06 55	17 08	07 00	17 03
Sept. 3-----	06 35	17 24	06 38	17 21	06 41	17 18	06 45	17 15
8-----	06 23	17 33	06 25	17 31	06 27	17 29	06 30	17 26
13-----	06 11	17 42	06 12	17 41	06 13	17 39	06 15	17 38
18-----	05 58	17 51	05 59	17 50	05 59	17 50	06 00	17 50
23-----	05 46	18 00	05 46	18 00	05 45	18 01	05 45	18 01
28-----	05 33	18 09	05 32	18 10	05 31	18 11	05 30	18 13
Oct. 3-----	05 21	18 18	05 19	18 20	05 17	18 22	05 14	18 25
8-----	05 09	18 27	05 06	18 30	05 03	18 34	04 59	18 37
13-----	04 57	18 37	04 53	18 41	04 49	18 45	04 44	18 50
18-----	04 45	18 46	04 40	18 51	04 35	18 56	04 29	19 02
23-----	04 34	18 56	04 28	19 02	04 22	19 08	04 15	19 15
28-----	04 23	19 06	04 16	19 13	04 09	19 20	04 01	19 29
Nov. 2-----	04 12	19 16	04 05	19 24	03 56	19 32	03 47	19 42
7-----	04 02	19 26	03 54	19 35	03 45	19 44	03 34	19 55
12-----	03 53	19 36	03 44	19 46	03 33	19 56	03 21	20 09
17-----	03 45	19 46	03 35	19 57	03 23	20 08	03 10	20 22
22-----	03 38	19 56	03 27	20 07	03 14	20 20	02 59	20 35
27-----	03 32	20 05	03 20	20 17	03 06	20 31	02 50	20 47
Dec. 2-----	03 27	20 13	03 14	20 26	03 00	20 40	02 42	20 58
7-----	03 24	20 20	03 11	20 33	02 55	20 49	02 36	21 08
12-----	03 22	20 26	03 08	20 40	02 52	20 56	02 32	21 16
17-----	03 22	20 30	03 08	20 44	02 51	21 01	02 31	21 22
22-----	03 24	20 33	03 10	20 47	02 53	21 04	02 32	21 25
27-----	03 28	20 34	03 13	20 48	02 57	21 05	02 36	21 25
Jan. 1-----	03 33	20 34	03 19	20 48	03 03	21 04	02 43	21 23

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 5.—REDUCTION OF LOCAL MEAN TIME TO STANDARD TIME

Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time	Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time	Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time
° ′ ° ′	Minutes	° ′ ° ′	Minutes	°	Hours
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	4	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15° , use the first part of the table. For greater differences use both parts thus: $47^\circ 23'$ is equivalent to $45^\circ + 2^\circ 23'$, the correction for 45° is 3 hours, the correction for $2^\circ 23'$ is 10 minutes; therefore the total correction for the difference in longitude $47^\circ 23'$ is 3 hours and 10 minutes.

TABLE 6. — CONVERSION OF FEET TO CENTIMETERS

Feet	Tenths of a Foot										Feet
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0	0	3	6	9	12	15	18	21	24	27	0
1	30	34	37	40	43	46	49	52	55	58	1
2	61	64	67	70	73	76	79	82	85	88	2
3	91	94	98	101	104	107	110	113	116	119	3
4	122	125	128	131	134	137	140	143	146	149	4
5	152	155	158	162	165	168	171	174	177	180	5
6	183	186	189	192	195	198	201	204	207	210	6
7	213	216	219	223	226	229	232	235	238	241	7
8	244	247	250	253	256	259	262	265	268	271	8
9	274	277	280	283	287	290	293	296	299	302	9
10	305	308	311	314	317	320	323	326	329	332	10
11	335	338	341	344	347	351	354	357	360	363	11
12	366	369	372	375	378	381	384	387	390	393	12
13	396	399	402	405	408	411	415	418	421	424	13
14	427	430	433	436	439	442	445	448	451	454	14
15	457	460	463	466	469	472	475	479	482	485	15
16	488	491	494	497	500	503	506	509	512	515	16
17	518	521	524	527	530	533	536	539	543	546	17
18	549	552	555	558	561	564	567	570	573	576	18
19	579	582	585	588	591	594	597	600	604	607	19
20	610	613	616	619	622	625	628	631	634	637	20
21	640	643	646	649	652	655	658	661	664	668	21
22	671	674	677	680	683	686	689	692	695	698	22
23	701	704	707	710	713	716	719	722	725	728	23
24	732	735	738	741	744	747	750	753	756	759	24
25	762	765	768	771	774	777	780	783	786	789	25
26	792	796	799	802	805	808	811	814	817	820	26
27	823	826	829	832	835	838	841	844	847	850	27
28	853	856	860	863	866	869	872	875	878	881	28
29	884	887	890	893	896	899	902	905	908	911	29
30	914	917	920	924	927	930	933	936	939	942	30
31	945	948	951	954	957	960	963	966	969	972	31
32	975	978	981	985	988	991	994	997	1000	1003	32
33	1006	1009	1012	1015	1018	1021	1024	1027	1030	1033	33
34	1036	1039	1042	1045	1049	1052	1055	1058	1061	1064	34
35	1067	1070	1073	1076	1079	1082	1085	1088	1091	1094	35
36	1097	1100	1103	1106	1109	1113	1116	1119	1122	1125	36
37	1128	1131	1134	1137	1140	1143	1146	1149	1152	1155	37
38	1158	1161	1164	1167	1170	1173	1177	1180	1183	1186	38
39	1189	1192	1195	1198	1201	1204	1207	1210	1213	1216	39
40	1219	1222	1225	1228	1231	1234	1237	1241	1244	1247	40
41	1250	1253	1256	1259	1262	1265	1268	1271	1274	1277	41
42	1280	1283	1286	1289	1292	1295	1298	1301	1305	1308	42
43	1311	1314	1317	1320	1323	1326	1329	1332	1335	1338	43
44	1341	1344	1347	1350	1353	1356	1359	1362	1366	1369	44
45	1372	1375	1378	1381	1384	1387	1390	1393	1396	1399	45
46	1402	1405	1408	1411	1414	1417	1420	1423	1426	1430	46
47	1433	1436	1439	1442	1445	1448	1451	1454	1457	1460	47
48	1463	1466	1469	1472	1475	1478	1481	1484	1487	1490	48
49	1494	1497	1500	1503	1506	1509	1512	1515	1518	1521	49
50	1524	1527	1530	1533	1536	1539	1542	1545	1548	1551	50

Feet to Meters = Centimeters divided by 100 (from above table)

Example: 09.40 feet = (287 centimeters) / (100) = 02.87 meters.

1 Meter = 100 centimeters

1 Meter = 3.2808399 feet

1 Foot = 0.30480061 meters

1 Foot = 30.480061 centimeters

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.

Tide Tables, East Coast of North and South America (Including Greenland).

Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).

Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.

Tidal Current Tables, Pacific Coast of North America and Asia.

GLOSSARY OF TERMS

ANNUAL INEQUALITY—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.

APOGEAN TIDES OR TIDAL CURRENTS—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).

AUTOMATIC TIDE GAGE—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height versus corresponding time of the tide is recorded.

BENCH MARK (BM)—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.

CHART DATUM—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.

CURRENT—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.

CURRENT DIFFERENCE—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.

CURRENT ELLIPSE—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.

CURRENT METER—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.

DATUM (vertical)—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.

DAYLIGHT SAVING TIME—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.

DIURNAL—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.

DIURNAL INEQUALITY—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as

GLOSSARY OF TERMS

defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called *second ebb* after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called *first flood*; it then decreases, reaching a *minimum flood* near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called *second flood* after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an *agger*.

DURATION OF FLOOD AND DURATION OF EBB—Duration of flood is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the

mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression *maximum ebb* is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression *maximum flood* is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GREENWICH INTERVAL—An interval referred to the transit of the Moon over the meridian of Greenwich as distinguished from the local interval which is referred to the Moon's transit over the local meridian. The relation in hours between Greenwich and local intervals may be expressed by the formula:

$$\text{Greenwich interval} = \text{local interval} + 0.069 L$$

where L is the west longitude of the local meridian in degrees. For east longitude, L is to be considered negative.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level*.

GLOSSARY OF TERMS

HARMONIC ANALYSIS—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.

HARMONIC CONSTANTS—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.

HARMONIC CONSTITUENT—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A \cos (at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A unit of speed, one international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

LOW WATER (LW)—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed

upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.

LOWER HIGH WATER (LHW)—The lower of the two high waters of any tidal day.

LOWER LOW WATER (LLW)—The lower of the two low waters of any tidal day.

LUNAR DAY—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

LUNAR INTERVAL—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is $0.069 L$, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.

LUNICURRENT INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval and strength of ebb interval*, which may be abbreviated to *flood interval and ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

LUNITIDAL INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to high water interval (HWI). Similarly the *mean low water lunitidal interval* is abbreviated to *low water interval (LWI)*. The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

MEAN HIGH WATER (MHW)—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

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MEAN HIGHER HIGH WATER (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

MEAN HIGHER HIGH WATER LINE (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

MEAN LOW WATER (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN LOW WATER SPRINGS (MLWS)—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).

MEAN LOWER LOW WATER (MLLW)—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

MEAN RANGE OF TIDE (Mn)—The difference in height between mean high water and mean low water.

MEAN RIVER LEVEL—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.

MEAN SEA LEVEL (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

MEAN TIDE LEVEL (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

MIXED TIDE—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NATIONAL TIDAL DATUM EPOCH—The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal datums. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present National Tidal Datum Epoch is 1960 through 1978. It is reviewed annually for possible revision and must be actively considered for revision every 25 years.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (Np) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called *neap low water* or *low water neaps* (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (Pn) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range. For

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other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables and Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a

reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water or mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water or mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can

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be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding time or height for the subordinate station.

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (G_c), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (S_c) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (M_c) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (T_{cHHW}), *tropic lower high water* (T_{cLHW}), *tropic higher low water* (T_{cHLW}), and *tropic lower low water* (T_{cLLW}).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

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ASTRONOMICAL DATA, 2013

January			
	d	h	m
E	3	06	..
●	5	03	58
S	9	16	..
P	10	10	27
●	11	19	44
E	15	21	..
●	18	23	45
A	22	10	53
N	23	06	..
O	27	04	38
E	30	12	..

February			
	d	h	m
●	3	13	56
S	6	01	..
P	7	12	10
●	10	07	20
E	12	08	..
●	17	20	31
A	19	06	31
N	19	14	..
O	25	20	26
E	26	19	..

March			
	d	h	m
●	4	21	53
S	5	07	..
P	5	23	21
E	11	18	..
●	11	19	51
N	18	22	..
A	19	03	14
●	19	17	27
Q _m	20	11	02
E	26	04	..
○	27	09	27
P	31	03	56

April			
	d	h	m
S	1	12	..
●	3	04	37
E	8	01	..
●	10	09	35
N	15	06	..
A	15	22	23
●	18	12	31
E	22	14	..
○	25	19	57
P	27	19	49
S	28	19	..

May			
	d	h	m
●	2	11	14
E	5	06	..
●	10	00	28
N	12	13	..
A	13	13	32
●	18	04	35
E	19	23	..
○	25	04	25
P	26	01	46
S	26	05	..
●	31	18	58

June			
	d	h	m
E	1	12	..
●	8	15	56
N	8	20	..
A	9	21	41
E	16	07	..
●	16	17	24
Q _j	21	05	04
S	22	17	..
P	23	11	11
○	23	11	32
E	28	20	..
●	30	04	54

July			
	d	h	m
N	6	03	..
A	7	00	37
●	8	07	14
E	13	14	..
●	16	03	18
S	20	04	..
P	21	20	28
○	22	18	16
E	26	06	..
●	29	17	43

August			
	d	h	m
N	2	10	..
A	3	08	54
●	6	21	51
E	9	21	..
●	14	10	56
S	16	13	..
P	19	01	27
○	21	01	45
E	22	16	..
●	28	09	35
N	29	18	..
A	30	23	47

September			
	d	h	m
●	5	11	36
E	6	03	..
●	12	17	08
S	12	19	..
P	15	16	35
E	19	02	..
○	19	11	13
Q _s	22	20	44
N	26	02	..
●	27	03	55
A	27	18	18

October			
	d	h	m
E	3	11	..
●	5	00	35
S	10	00	..
P	10	23	07
●	11	23	02
E	16	10	..
○	18	23	38
N	23	10	..
A	25	14	26
●	26	23	40
E	30	20	..

November			
	d	h	m
●	3	12	50
S	6	07	..
P	6	09	29
●	10	05	57
E	12	16	..
○	17	15	16
N	19	18	..
A	22	09	51
●	25	19	28
E	27	06	..

December			
	d	h	m
●	3	00	22
S	3	17	..
P	4	10	16
●	9	15	12
E	9	22	..
N	17	01	..
○	17	09	28
A	19	23	50
Q _d	21	17	11
E	24	15	..
●	25	13	48
S	31	05	..

LUNAR DATA

- -- new Moon
 - -- first quarter
 - -- full Moon
 - -- last quarter
- A -- Moon in apogee
 P -- Moon in perigee
 N -- Moon farthest north of Equator
 E -- Moon on Equator
 S -- Moon farthest south of Equator

SOLAR DATA

- Q_m -- March equinox
 Q_j -- June solstice
 Q_s -- September equinox
 Q_d -- December solstice

Greenwich mean time (GMT) or universal time (UT) is the mean solar time on the Greenwich meridian reckoned in days of 24 mean solar hours written as 00^h at midnight and 12^h at noon. To convert the above times to those of other standard time meridians, add 1 hour for each 15° of east longitude of the desired meridian and subtract 1 hour for each 15° of west longitude. This table was compiled from data supplied by the Nautical Almanac Office, United States Naval Observatory.