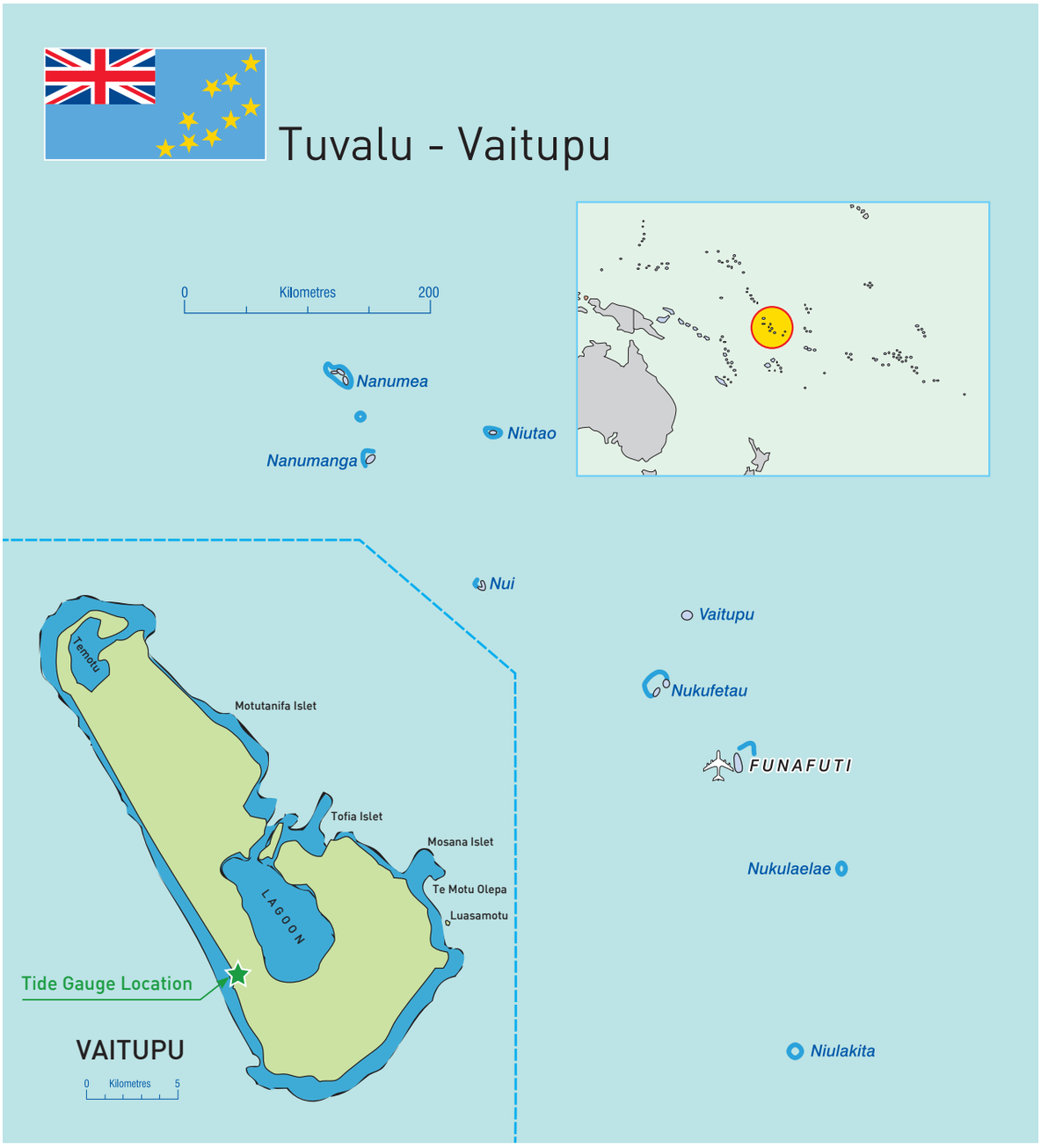
Tuvalu - Vaitupu

2023 Tide Predictions Calendar

Climate and Oceans Support Program in the Pacific

A Pacific Islands Program supported by the Australian Government



Meteorological and seasonal effects

Tide predictions are based on the effects of the gravitational forces exerted by the moon, the sun, and the rotation of the earth, as well as average seasonal changes.

The actual tide height will be a combination of these effects and the weather conditions at the time. The effects of the weather are not included in tide predictions.

10 highest tides for 2023			10 lowest tides for 2023		
Date	Time	Height (m)	Date	Time	Height (m)
20-Feb	17:14	3.32	31-Aug	11:05	1.05
21-Feb	17:54	3.3	01-Sep	11:45	1.06
21-Mar	16:53	3.27	03-Aug	12:10	1.07
22-Jan	17:27	3.26	02-Aug	11:27	1.07
19-Feb	16:30	3.25	29-Sep	10:38	1.1
23-Jan	18:13	3.25	30-Aug	10:25	1.11
22-Mar	17:31	3.23	30-Sep	11:15	1.12
20-Mar	16:14	3.23	20-Feb	23:33	1.13
21-Jan	16:40	3.21	04-Aug	12:53	1.13
01-Sep	5:28	3.21	22-Jan	23:52	1.13

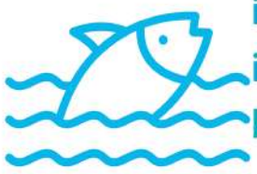
Climate and Oceans Support Program in the Pacific

Women in Ocean

Women in Ocean is the theme for the 2023 Tide Prediction Calendar cover photos. The theme recognises the role of women in ocean related activities related to livelihood, economic empowerment and in a professional capacity.

Data collected by the Pacific Community in 2017 estimates there are 16,000 people employed in maritime sector in the region and less than 10% of them are women, employed predominately in support, administrative and mid-level management roles.

Of these 10%, 5% are employed in the shipping companies, agents, supply and freight supply chain companies, less than 2% are employed as female seafarers serving in the national fleets and less than 1% serve in foreign going vessels.



A study on the role that women play in fisheries published in early 2020 found that, around the world, women bring in about 2.9 million metric tons of fish, worth nearly $5.6 billion, each year.

In Fiji, the Solomon Islands and Vanuatu alone, women reportedly provide around 80% of the seafood catch for their communities' annual subsistence needs.

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Climate and Oceans Support Program in the Pacific

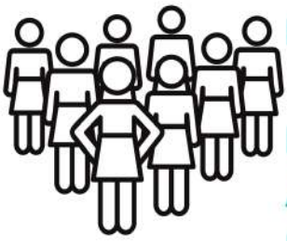
Pacific Community
Communauté du Pacifique

Climate and Oceans Support Program in the Pacific

Women in Ocean

It has been a 25 year journey of recording stories of women in fisheries led by the Pacific Community's Coastal Fisheries Programme.

Women in Fisheries Information Bulletins (spc.int) WWW



PacWIMA is a collective regional platform and network for the empowerment and advancement of women in the Pacific maritime sector.

PacWIMA has ten established State Women In Maritime Association (StateWIMA)s in Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. They have focal points in FSM, Niue, RMI and Palau

State WIMAs – Home (pacwima.com)

WWW pacwima@gmail.com

The Empowering Women for the Ocean Decade Programme will enhance capacity to explore and promote women's empowerment and gender equality in the conduct of ocean science and in science-dependent governance systems.

The Ocean Decade - The Science we need for the Ocean we want WWW

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Climate and Oceans Support Program in the Pacific

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Tides and Extreme Tide Events

What causes tides?

Tides are the daily rise and fall of sea levels, caused mainly by the gravitational pull of the moon as it revolves around the earth. Tides are also affected by the earth's rotation and the gravitational pull of the sun.

Figure 1. Low and high tide in Suva, Fiji.
Photo: Molly Powers-Tora (201 8).

What are spring tides and neap tides?

Spring and neap tides are part of the normal tidal cycle and occur regularly, usually twice per month.

Spring tides are very high tides and very low tides that occur during full and new moon phases, when the gravitational forces of the sun and moon combine to exert a stronger pull on the oceans.

During the moon's quarter phases each month, the sun and moon are at right angles, and the gravitational forces cancel each other out, resulting in lower high tides and higher low tides called neap tides.

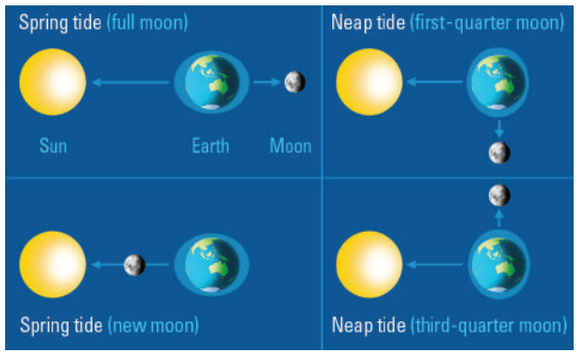

Figure 2. Spring and neap tides occur every month and correspond with the phases of the moon.
Source: www.moononly.com

What are king tides?

The term king tide is commonly used to describe an especially high spring tide. King tides occur a few times every year, when the gravitational pull of the sun and moon upon the earth is strongest.

This happens when the moon is closest to the earth in its monthly orbit. When this coincides with a spring tide, it will produce an especially high tide, or king tide.

In the Pacific, the highest king tides often occur during the months from November to March, when the earth is also closest to the sun in its annual orbit.

What do I need to know about king tides?

King tides are a natural part of the tidal cycle and are predictable. A king tide can cause coastal flooding, even on a clear, sunny day.

When king tides coincide with cyclones, floods or storms, water levels can rise significantly, potentially causing damage to property and the coastline. The actual height reached by a king tide will depend on the local weather and ocean conditions on the day.

It is also important to know that king tides have always occurred and are not a result of sea level rise.

Figure 3. Strong southeasterly winds and currents combine to create higher than normal tides in Levuka, Fiji.
Photo: Molly Powers-Tora (2013).

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Tides and Extreme Tide Events

How are tides predicted?

The time and approximate heights of tides are very predictable. They follow the laws of physics and can be calculated with mathematical formulas.

By observing and recording tides at a single location over many years, we can gain a better understanding of tides and sea level changes over time.

The Pacific Sea Level and Geodetic Monitoring Project has been recording sea level and weather statistics at 13 Pacific countries for more than 25 years.

These observations tell a story about the sea levels at these locations, such as: How high was the highest tide in Apia? What effect does El Niño have on sea levels in Kiribati? All of this information is also used to verify and improve tide predictions.

Figure 4. Technicians working on the Cook Islands tide gauge, which has been monitoring sea level and weather conditions in Rarotonga for over 25 years.
Photo: Stamy Criticos (2012).

Why are some tides higher or lower than predicted?

Tide levels can vary from predicted levels for a number of reasons, including:

1. Geography: The shape of bays and other coastal geography can magnify or otherwise influence water levels.
2. Weather: Wind speed and direction, air temperature, barometric pressure and other weather conditions can greatly affect water levels.
3. Waves: Both nearby and faraway events such as storms, landslides and earthquakes can create large waves that lead to coastal flooding.
4. Climate drivers: El Niño or La Niña conditions in the Pacific can raise or lower sea level by as much as 50 cm.
5. Sea-level rise: Through assessing observations and research, the Intergovernmental Panel on Climate Change (IPCC) concluded that global average sea levels have been rising at a rate of about 3 mm per year since 1993. Levels were 225 mm higher in 2012 compared to 1880. Sea-level rise can contribute to higher tides, but the rates are not the same at all locations.

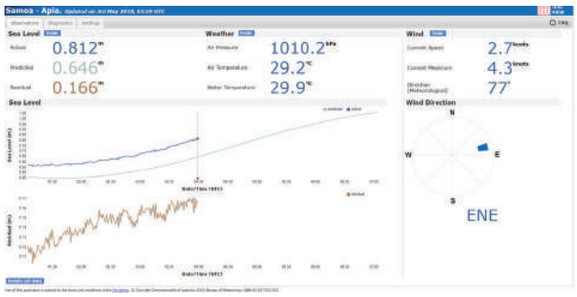


Figure 5. Predicted vs actual sea level at the Apia tide gauge Samoa, 3 May 2018.

The **Pacific Sea Level and Geodetic Monitoring Project** provides sea level and meteorological information for 13 countries and tide predictions for 25 locations in the Pacific region. It is an important resource for those involved in disaster mitigation and adaptation planning, coastal development, and the shipping, fishing and tourism industries.

To access tide calendars, wave and weather maps, and climate data for your location visit:
www.bom.gov.au/pacific/index.shtml

For Real-Time Display of tide gauge data, visit: http://www.bom.gov.au/cosppac/rtdd/q1c7o0hj48yu/

Tides and Sea Level for Coastal Development and Safe Navigation

What is a Tide Datum?

A Tide Datum is a fixed level against which sea level can be measured in a given location. A tide station datum was established when the sea level monitoring station featured in this calendar was first installed. The tide predictions in this calendar are all relative to Tide Prediction Datum.

Why do we need a Tide Datum?

Tide records must be referenced to a common datum to ensure consistency. This is important if the tide gauges are moved or in the event they are damaged or destroyed. In this case, tide readings from replacement gauges can be referenced to the same datum as before and continue to contribute to our understanding of tides.

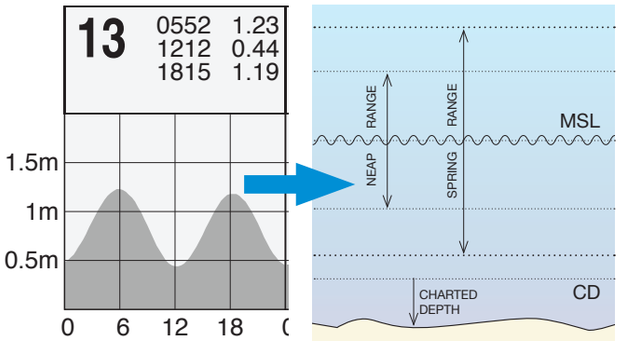


Figure 1. How does THIS..... relate to THIS?

Figure 2. An elevation sign from Tarawa, Kiribati
Photo: Wandering Ken, 2011.

What is the relationship between tides and sea level?

When the range of highest and lowest tides are averaged over a long period (usually at least 19 years), we can establish Mean Sea Level. Mean Sea Level (MSL) is an important reference level, as all heights on land are measured in metres or feet above mean sea level as in Figure 2.

All sea level monitoring stations are tide gauges, but not all tide gauges can accurately measure changes in sea level. The Pacific Sea Level and Geodetic Monitoring stations include specialised weather, ocean, and land monitoring sensors that have been operating since 1991, allowing us to measure the extent to which sea level is affected by natural variability and man-made climate change at those locations.

Who uses this information?

Makers of maps and nautical charts, land surveyors, and geospatial specialists need this information to ensure the accuracy of their maps and charts. Coastal developers need it as well, to ensure roads, bridges, wharfs, sea walls, buildings and other infrastructure are built at an appropriate height above sea level.

It is especially important for the safety of navigation in ports and coastal areas, so ships can avoid running aground. The depths marked on a nautical chart are in relation to a Chart Datum. Every chart indicates the datum to which it refers, as in Figure 3.

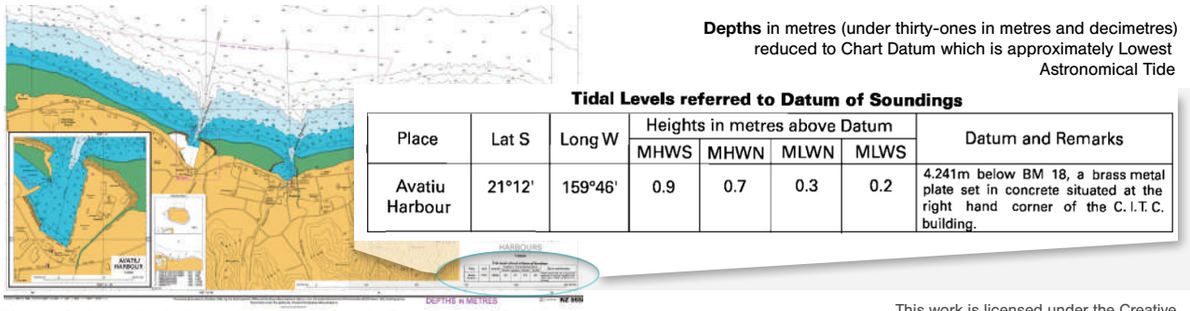


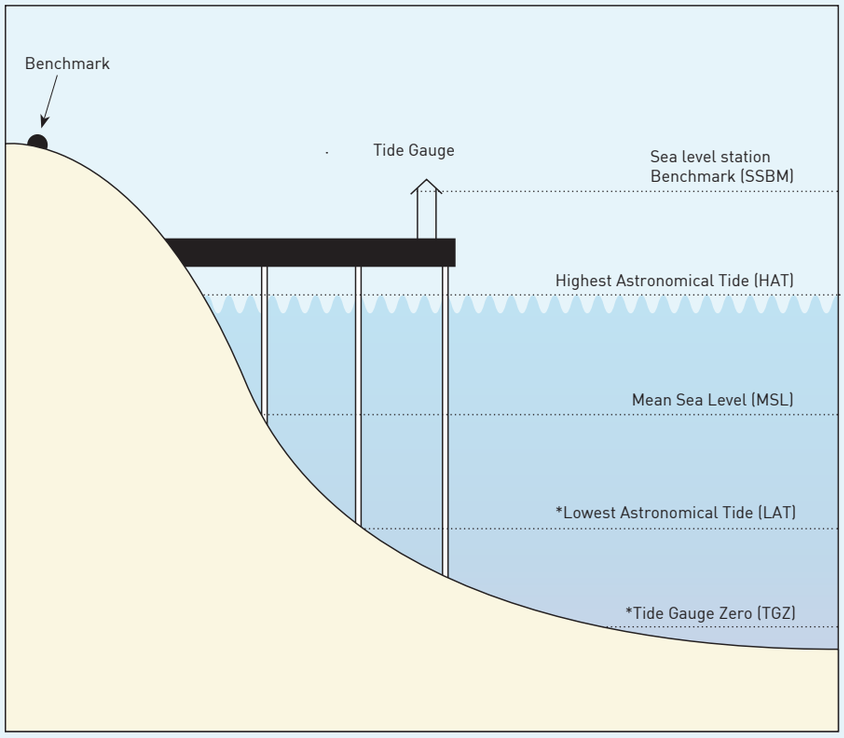
Figure 3. A nautical chart of Avatiu Harbor in Rarogtonga, Cook Islands. Zooming into the key, we can see Chart Datum for this chart is about the same as Lowest Astronomical Tide.

How do the predicted water levels on this calendar relate to chart depths in my country?

The tide predictions in this calendar are not intended to be used directly with hydrographic charts, as the prediction datum and hydrographic chart datum may not coincide. However, the tidal levels listed below are provided to help put the tide predictions into context for use with other information.

Vaitupu

The diagram below shows the predicted heights of key tide components based on averages of the data available.



HAT	3.330m
MSL	2.144m
LAT	1m
TGZ	0m

Useful Tide Definitions

The water levels to the left are calculated using actual observations/data over many years.

Highest Astronomical Tide

The highest tide level predicted over 19 years under normal weather conditions

Mean Sea Level

The average level of the sea surface over a period of time (preferably at least 19 years)

Lowest Astronomical Tide

The lowest tide level predicted over 19 years under normal weather conditions

Tide Gauge Zero

The datum of sea level observations measured by a tide gauge

Prediction Datum

The datum of tide predictions and tidal levels listed in this tide calendar

For more information about Tide Datum and Sea Level Monitoring,
you can email: cosppac@spc.int or tides@bom.gov.au

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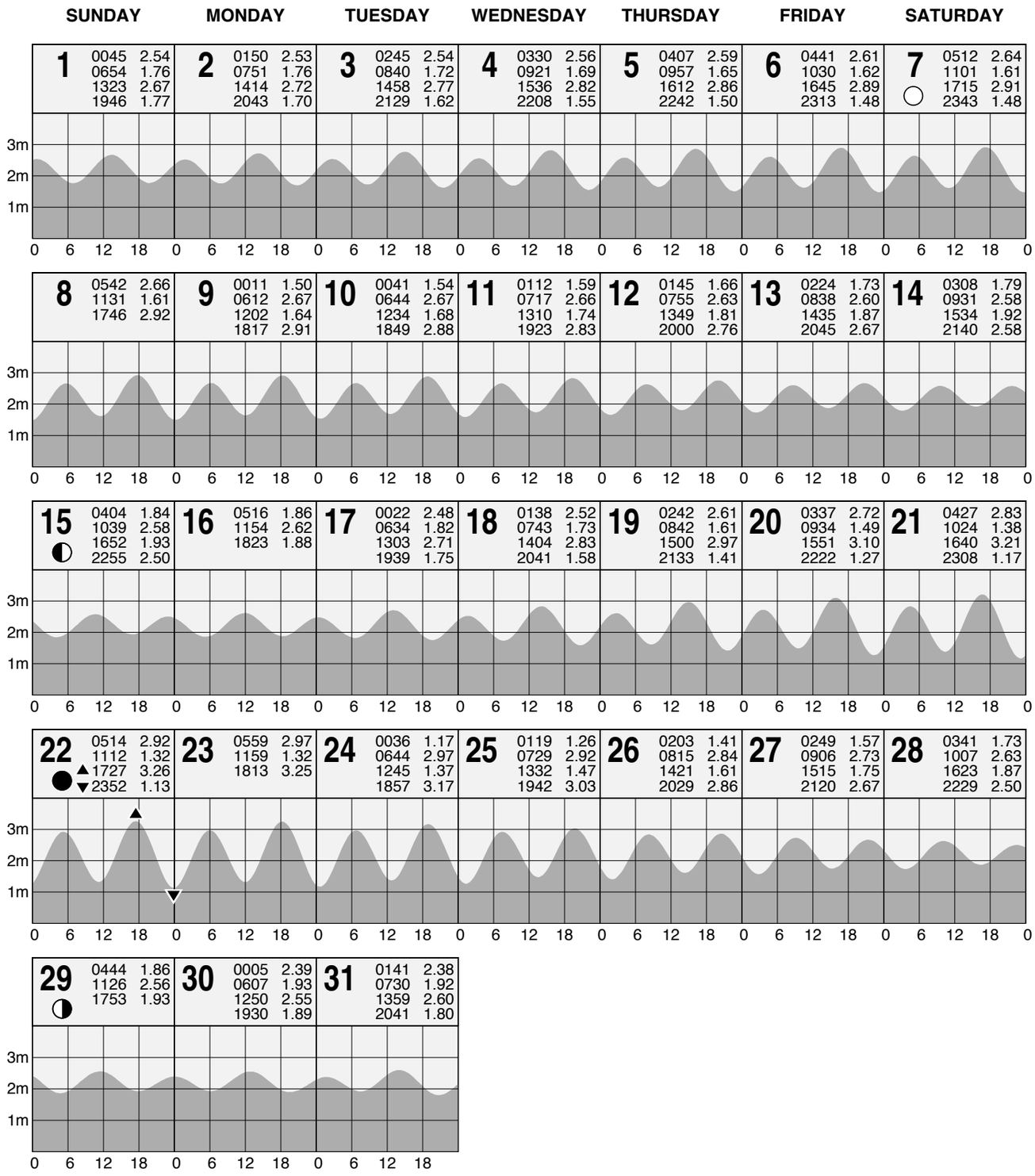
TIDAL PREDICTIONS FOR TUVALU - VAITUPU

JANUARY 2023 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

FEBRUARY 2023 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 0246 2.43 0830 1.86 1451 2.68 2127 1.70	**2** 0331 2.50 0915 1.79 1530 2.76 2201 1.61	**3** 0404 2.57 0950 1.72 1604 2.84 2231 1.54	**4** 0433 2.65 1021 1.66 1634 2.92 2258 1.50
5 0500 2.72 1050 1.61 1703 2.98 2323 1.47	**6** ○ 0526 2.78 1117 1.58 1730 3.01 2348 1.47	**7** 0552 2.83 1146 1.58 1759 3.03	**8** 0015 1.49 0619 2.85 1215 1.59 1827 3.00	**9** 0042 1.53 0648 2.85 1247 1.63 1857 2.95	**10** 0112 1.58 0720 2.82 1322 1.69 1930 2.86	**11** 0144 1.65 0755 2.77 1402 1.75 2005 2.74
12 0219 1.73 0838 2.71 1451 1.83 2051 2.60	**13** 0304 1.82 0935 2.64 1600 1.90 2200 2.46	**14** ◐ 0411 1.90 1100 2.61 1744 1.91 2349 2.39	**15** 0553 1.92 1235 2.66 1927 1.79	**16** 0132 2.45 0729 1.83 1353 2.79 2036 1.61	**17** 0242 2.59 0836 1.68 1454 2.96 2128 1.42	**18** 0333 2.76 0930 1.51 1545 3.12 2212 1.27
19 0418 2.92 1017 1.37 1630 3.25 2253 1.16	**20** ● △1714 3.32 ▼2333 1.13 0500 3.05 1101 1.28	**21** 0540 3.12 1144 1.26 1754 3.30	**22** 0012 1.17 0618 3.12 1226 1.30 1834 3.21	**23** 0050 1.28 0657 3.06 1307 1.41 1913 3.05	**24** 0128 1.43 0735 2.94 1350 1.56 1951 2.85	**25** 0205 1.61 0815 2.80 1435 1.73 2031 2.63
26 0245 1.78 0901 2.64 1532 1.88 2123 2.43	**27** ◑ 0336 1.94 1010 2.51 1701 1.99 2313 2.29	**28** 0506 2.04 1206 2.46 1915 1.97				

▲ Highest tide of the month
▼ Lowest tide of the month
△ Highest tide of the year

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

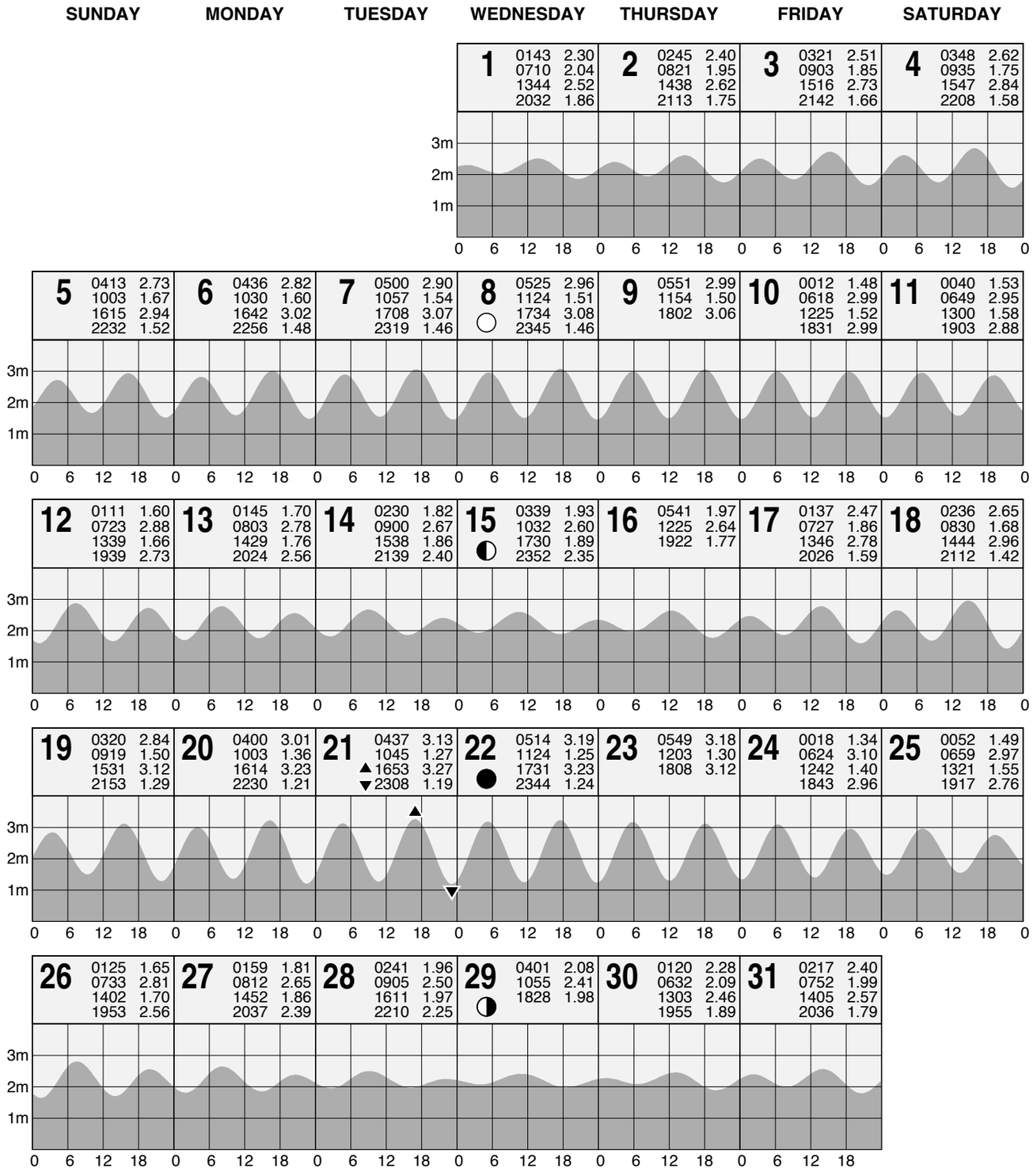
Disclaimer: These tide predictions are supplied in good faith and are believed to be correct. They are not necessarily related to a local hydrographic chart datum.

No warranty is given in respect to errors, omissions, or suitability for any purpose.

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

MARCH 2023 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

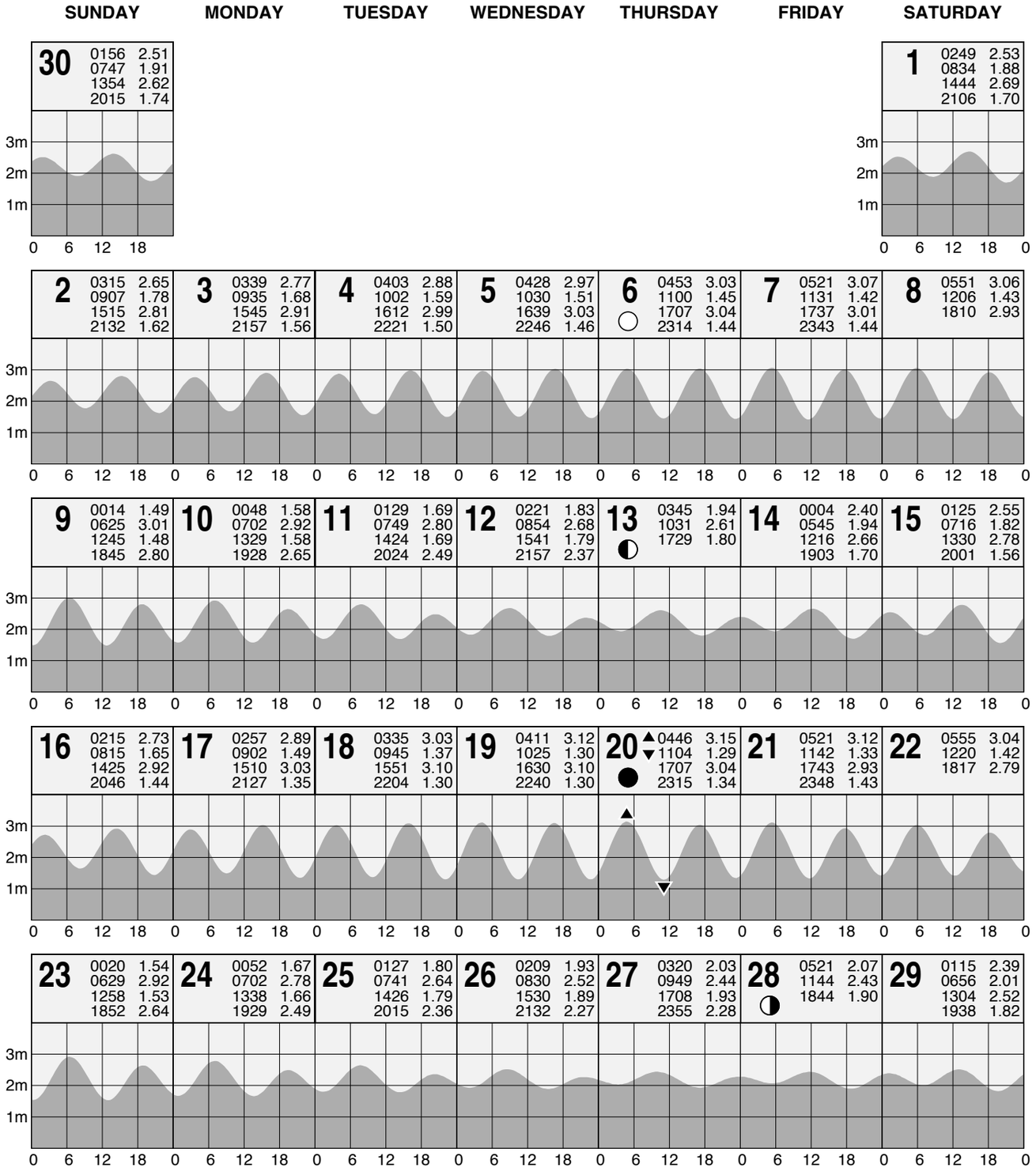
◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

APRIL 2023

Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

MAY 2023 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 0228 2.64 0826 1.80 1431 2.72 2045 1.67	**2** 0256 2.75 0859 1.69 1504 2.81 2115 1.59	**3** 0323 2.86 0930 1.58 1536 2.87 2143 1.52	**4** 0351 2.96 1002 1.47 1608 2.91 2212 1.46	**5** 0421 3.03 1037 1.39 1641 2.92 2244 1.42	**6** ▲0455 3.07 ▼1114 1.35 ○ 1716 2.89 2318 1.42
7 0530 3.06 1154 1.35 1756 2.81 2356 1.47	**8** 0611 3.01 1238 1.39 1840 2.70	**9** 0038 1.55 0656 2.92 1330 1.48 1932 2.58	**10** 0129 1.67 0751 2.81 1430 1.57 2040 2.47	**11** 0232 1.78 0900 2.70 1544 1.65 2211 2.43	**12** 0356 1.86 1028 2.65 1710 1.67 2346 2.49	**13** ◐ 0533 1.84 1155 2.67 1829 1.63
14 0055 2.62 0653 1.75 1303 2.74 1928 1.56	**15** 0145 2.75 0752 1.63 1359 2.81 2015 1.49	**16** 0229 2.86 0841 1.51 1446 2.86 2058 1.44	**17** 0308 2.95 0926 1.42 1530 2.87 2136 1.42	**18** 0345 3.00 1007 1.37 1610 2.85 2214 1.42	**19** 0423 3.01 1047 1.35 1647 2.80 2249 1.45	**20** ● 0459 2.99 1126 1.37 1725 2.72 2323 1.50
21 0533 2.92 1204 1.43 1800 2.63 2357 1.58	**22** 0608 2.84 1242 1.50 1836 2.54	**23** 0030 1.66 0644 2.75 1320 1.59 1915 2.46	**24** 0107 1.76 0722 2.66 1402 1.69 2000 2.39	**25** 0151 1.85 0808 2.57 1453 1.77 2059 2.35	**26** 0248 1.94 0905 2.50 1556 1.83 2218 2.34	**27** 0406 1.99 1019 2.47 1712 1.85 2344 2.39
28 ◑ 0533 1.98 1141 2.48 1820 1.83	**29** 0044 2.48 0644 1.91 1246 2.53 1911 1.78	**30** 0128 2.59 0735 1.81 1336 2.59 1952 1.71	**31** 0205 2.69 0817 1.70 1419 2.66 2029 1.63			

▲ Highest tide of the month
▼ Lowest tide of the month

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

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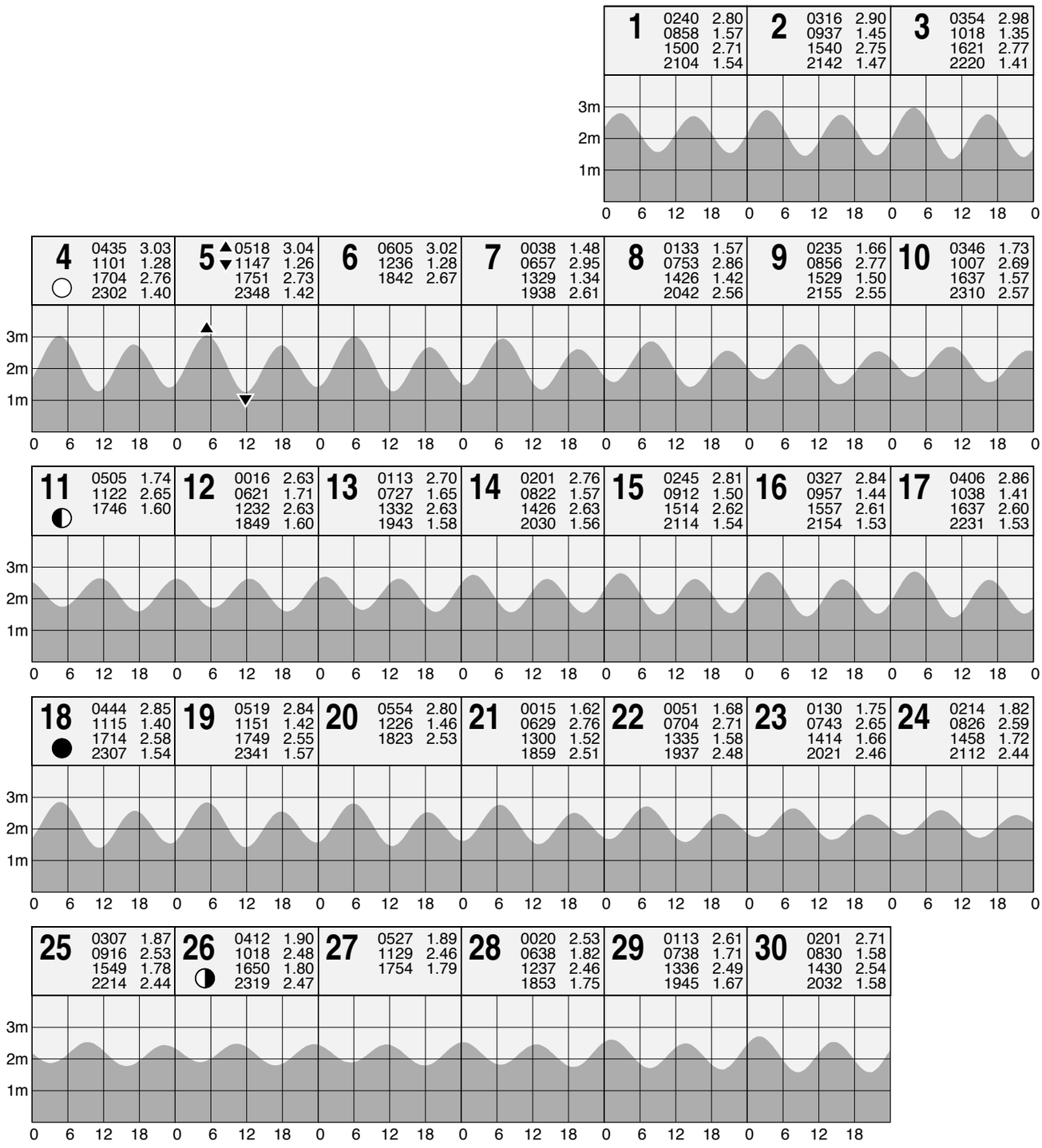
Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

JUNE 2023 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 0240 2.80 0858 1.57 1500 2.71 2104 1.54	**2** 0316 2.90 0937 1.45 1540 2.75 2142 1.47	**3** 0354 2.98 1018 1.35 1621 2.77 2220 1.41
4 ○ 0435 3.03 1101 1.28 1704 2.76 2302 1.40	**5** ▲ 0518 3.04 ▼ 1147 1.26 1751 2.73 2348 1.42	**6** 0605 3.02 1236 1.28 1842 2.67	**7** 0038 1.48 0657 2.95 1329 1.34 1938 2.61	**8** 0133 1.57 0753 2.86 1426 1.42 2042 2.56	**9** 0235 1.66 0856 2.77 1529 1.50 2155 2.55	**10** 0346 1.73 1007 2.69 1637 1.57 2310 2.57
11 ◐ 0505 1.74 1122 2.65 1746 1.60	**12** 0016 2.63 0621 1.71 1232 2.63 1849 1.60	**13** 0113 2.70 0727 1.65 1332 2.63 1943 1.58	**14** 0201 2.76 0822 1.57 1426 2.63 2030 1.56	**15** 0245 2.81 0912 1.50 1514 2.62 2114 1.54	**16** 0327 2.84 0957 1.44 1557 2.61 2154 1.53	**17** 0406 2.86 1038 1.41 1637 2.60 2231 1.53
18 ● 0444 2.85 1115 1.40 1714 2.58 2307 1.54	**19** 0519 2.84 1151 1.42 1749 2.55 2341 1.57	**20** 0554 2.80 1226 1.46 1823 2.53	**21** 0015 1.62 0629 2.76 1300 1.52 1859 2.51	**22** 0051 1.68 0704 2.71 1335 1.58 1937 2.48	**23** 0130 1.75 0743 2.65 1414 1.66 2021 2.46	**24** 0214 1.82 0826 2.59 1458 1.72 2112 2.44
25 0307 1.87 0916 2.53 1549 1.78 2214 2.44	**26** ◑ 0412 1.90 1018 2.48 1650 1.80 2319 2.47	**27** 0527 1.89 1129 2.46 1754 1.79	**28** 0020 2.53 0638 1.82 1237 2.46 1853 1.75	**29** 0113 2.61 0738 1.71 1336 2.49 1945 1.67	**30** 0201 2.71 0830 1.58 1430 2.54 2032 1.58	



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

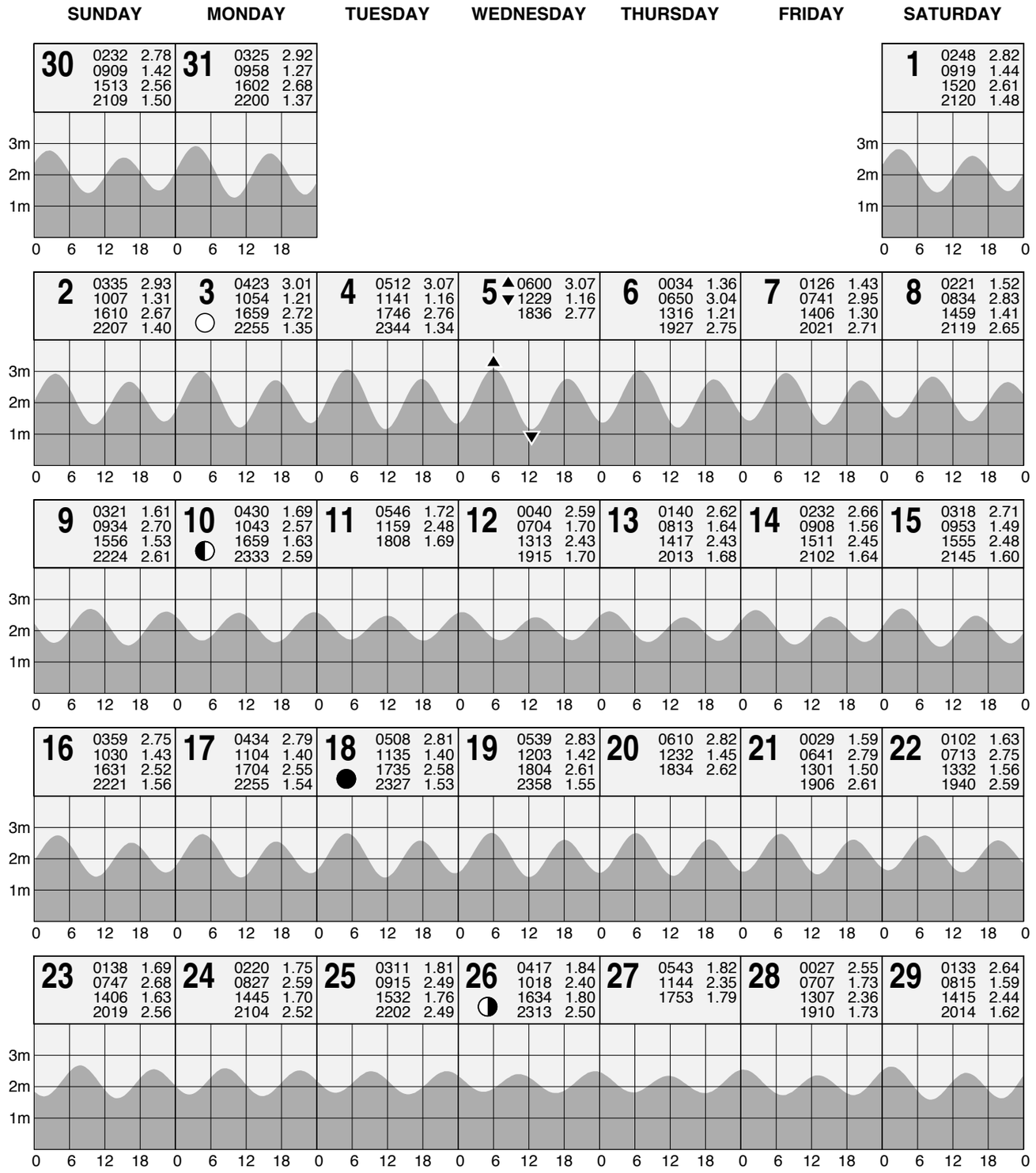
○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

JULY 2023 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

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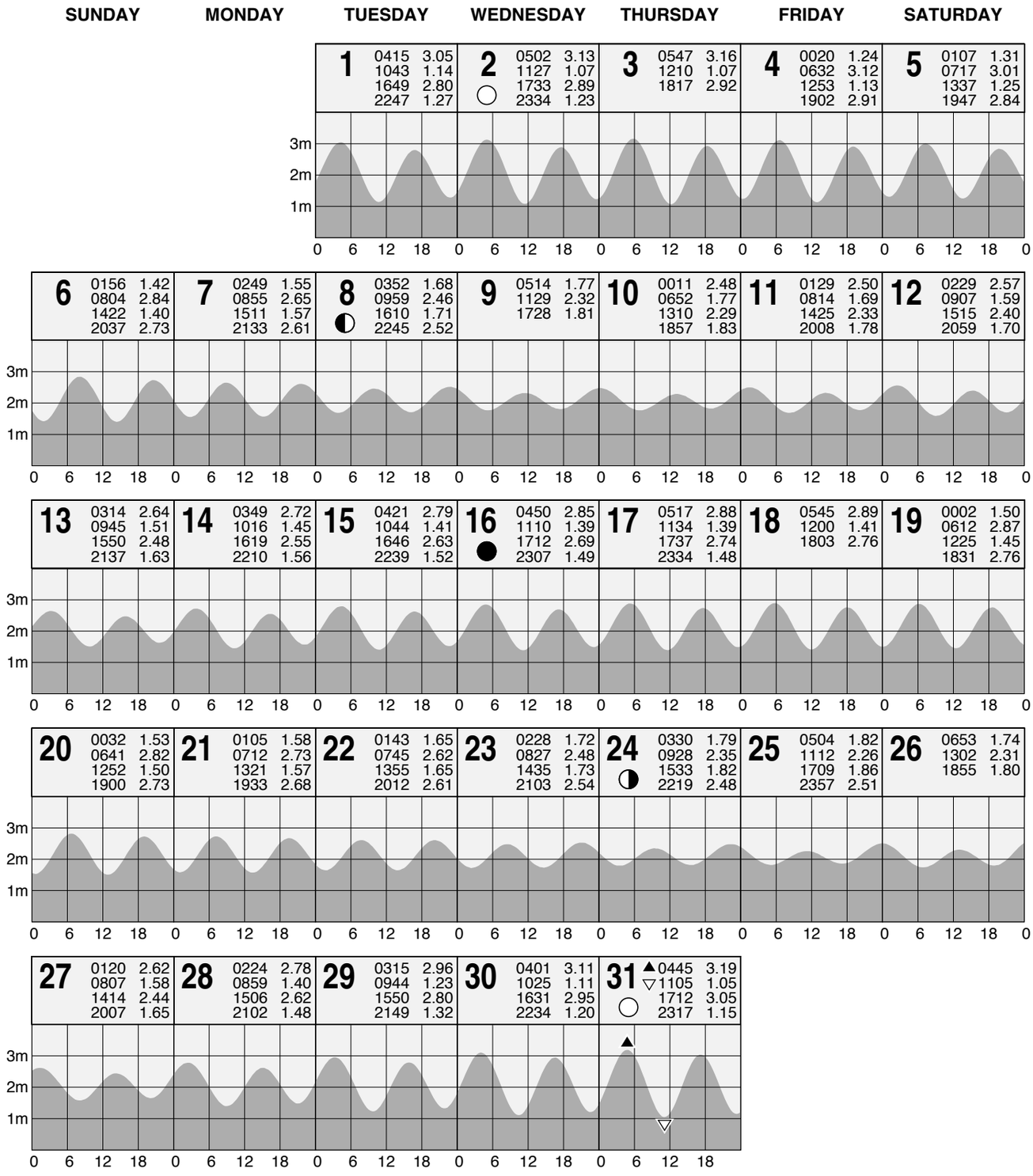
TIDAL PREDICTIONS FOR TUVALU - VAITUPU

AUGUST 2023 Local Standard Time



▲ Highest tide of the month
▼ Lowest tide of the month
▽ Lowest tide of the year

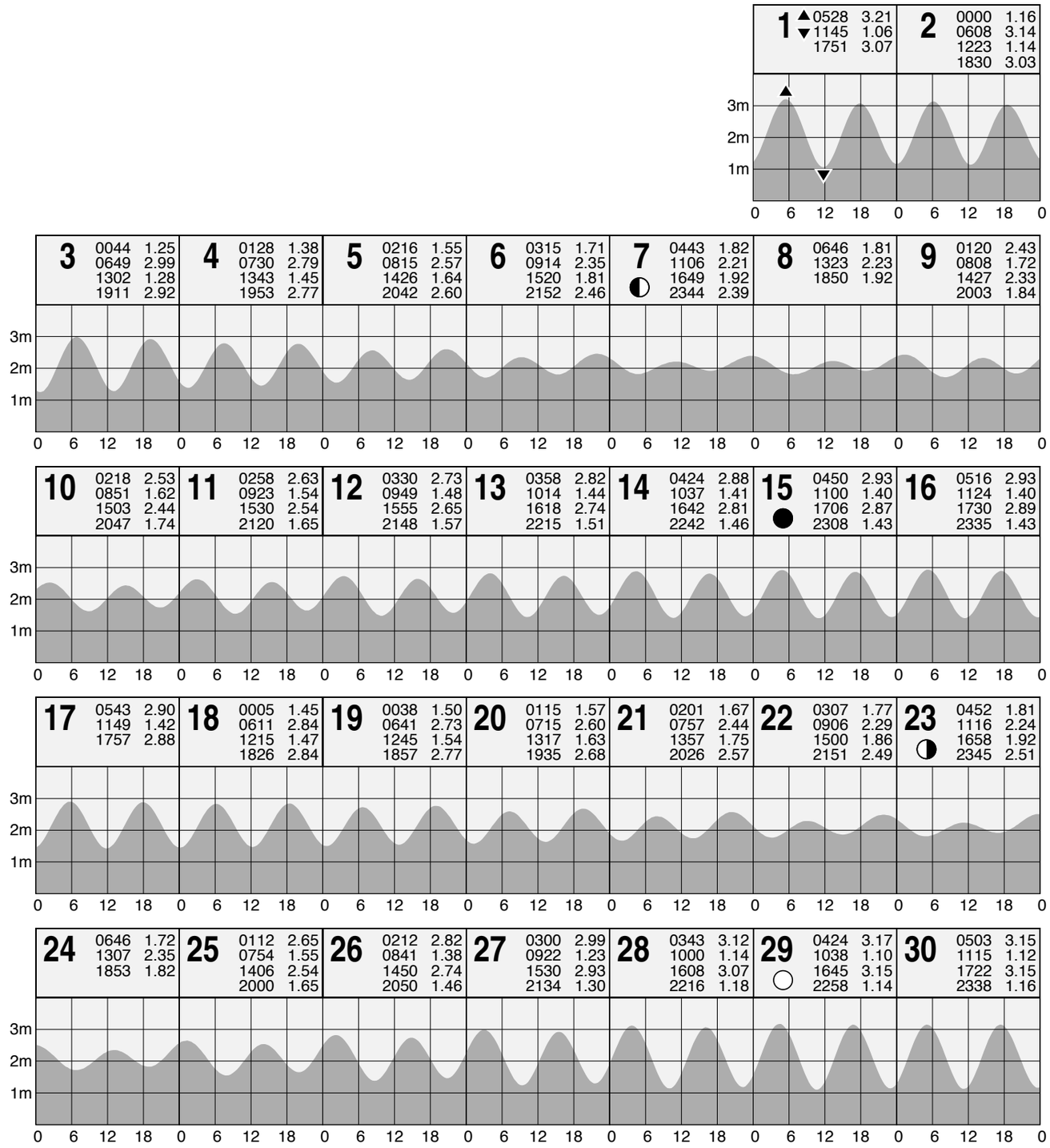
● New moon
◑ First quarter
○ Full moon
◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

SEPTEMBER 2023 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 ▲0528 3.21 ▼1145 1.06 1751 3.07	**2** 0000 1.16 0608 3.14 1223 1.14 1830 3.03
3 0044 1.25 0649 2.99 1302 1.28 1911 2.92	**4** 0128 1.38 0730 2.79 1343 1.45 1953 2.77	**5** 0216 1.55 0815 2.57 1426 1.64 2042 2.60	**6** 0315 1.71 0914 2.35 1520 1.81 2152 2.46	**7** 0443 1.82 1106 2.21 1649 1.92 ◐ 2344 2.39	**8** 0646 1.81 1323 2.23 1850 1.92	**9** 0120 2.43 0808 1.72 1427 2.33 2003 1.84
10 0218 2.53 0851 1.62 1503 2.44 2047 1.74	**11** 0258 2.63 0923 1.54 1530 2.54 2120 1.65	**12** 0330 2.73 0949 1.48 1555 2.65 2148 1.57	**13** 0358 2.82 1014 1.44 1618 2.74 2215 1.51	**14** 0424 2.88 1037 1.41 1642 2.81 2242 1.46	**15** 0450 2.93 1100 1.40 1706 2.87 ● 2308 1.43	**16** 0516 2.93 1124 1.40 1730 2.89 2335 1.43
17 0543 2.90 1149 1.42 1757 2.88	**18** 0005 1.45 0611 2.84 1215 1.47 1826 2.84	**19** 0038 1.50 0641 2.73 1245 1.54 1857 2.77	**20** 0115 1.57 0715 2.60 1317 1.63 1935 2.68	**21** 0201 1.67 0757 2.44 1357 1.75 2026 2.57	**22** 0307 1.77 0906 2.29 1500 1.86 2151 2.49	**23** 0452 1.81 1116 2.24 ◑ 1658 1.92 2345 2.51
24 0646 1.72 1307 2.35 1853 1.82	**25** 0112 2.65 0754 1.55 1406 2.54 2000 1.65	**26** 0212 2.82 0841 1.38 1450 2.74 2050 1.46	**27** 0300 2.99 0922 1.23 1530 2.93 2134 1.30	**28** 0343 3.12 1000 1.14 1608 3.07 2216 1.18	**29** 0424 3.17 1038 1.10 ○ 1645 3.15 2258 1.14	**30** 0503 3.15 1115 1.12 1722 3.15 2338 1.16



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

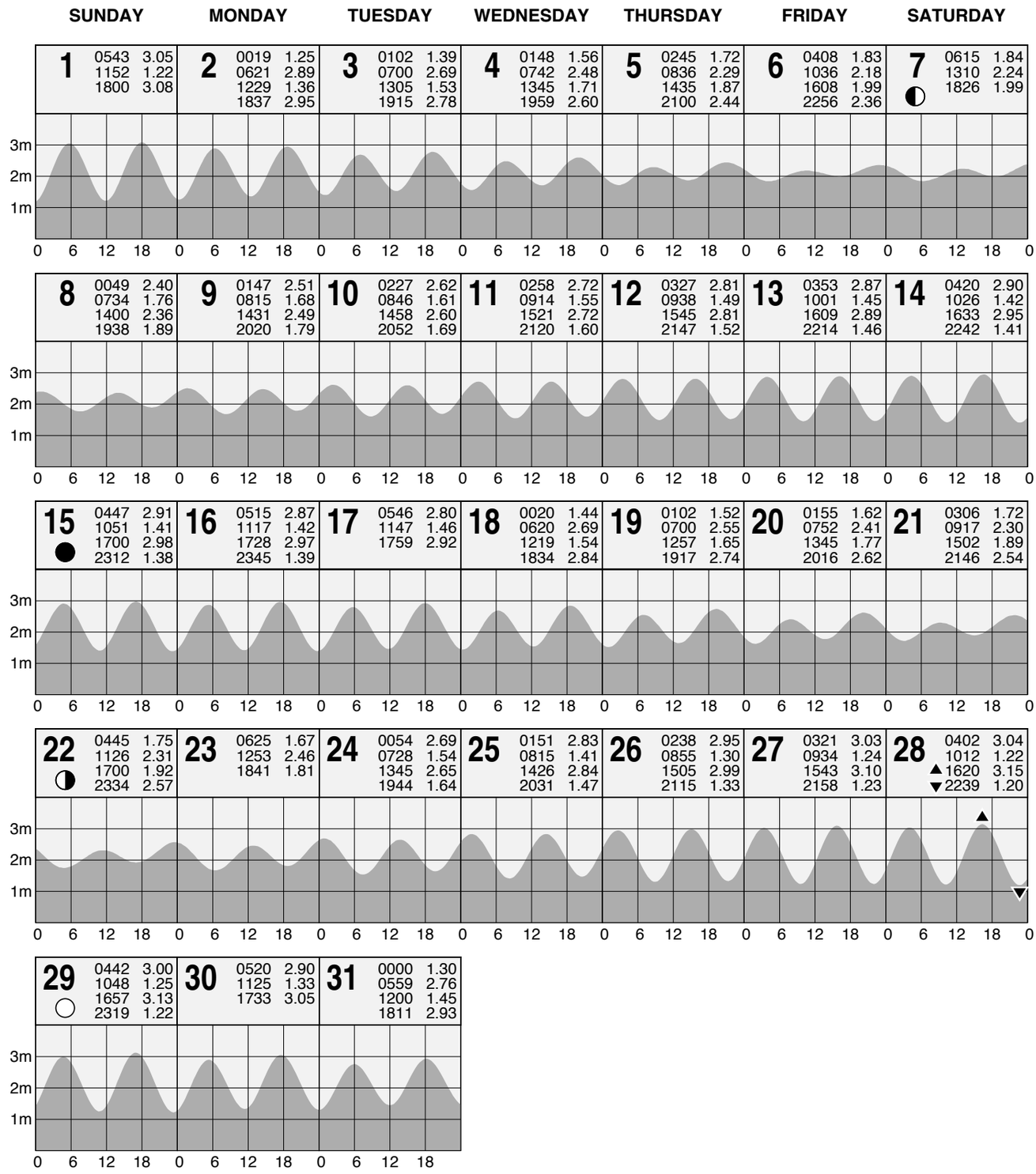
○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

OCTOBER 2023 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

NOVEMBER 2023 Local Standard Time

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 0043 1.42 0637 2.60 1236 1.59 1848 2.78	**2** 0127 1.56 0719 2.44 1315 1.74 1930 2.63	**3** 0218 1.70 0812 2.31 1403 1.88 2022 2.50	**4** 0325 1.81 0937 2.23 1519 1.99 2142 2.40
5 ◐ 0459 1.86 1156 2.26 1715 2.02 2334 2.40	**6** 0627 1.83 1304 2.38 1845 1.96	**7** 0050 2.47 0721 1.77 1343 2.50 1935 1.87	**8** 0139 2.57 0759 1.71 1414 2.61 2014 1.77	**9** 0216 2.66 0830 1.64 1441 2.72 2046 1.67	**10** 0249 2.73 0858 1.58 1508 2.82 2116 1.57	**11** 0320 2.78 0925 1.52 1535 2.91 2147 1.48
12 0351 2.82 0953 1.47 1603 2.97 2220 1.41	**13** ● 0422 2.82 1022 1.44 1634 3.01 2254 1.36	**14** 0456 2.80 1054 1.44 1708 3.01 2331 1.35	**15** 0532 2.74 1130 1.47 1745 2.98	**16** 0014 1.38 0614 2.66 1209 1.54 1828 2.91	**17** 0100 1.45 0702 2.56 1256 1.64 1917 2.82	**18** 0157 1.54 0803 2.46 1354 1.76 2020 2.72
19 0303 1.62 0925 2.42 1510 1.85 2139 2.65	**20** ◑ 0424 1.66 1101 2.46 1645 1.87 2309 2.64	**21** 0545 1.64 1218 2.57 1813 1.79	**22** 0025 2.70 0651 1.58 1314 2.72 1919 1.67	**23** 0125 2.77 0743 1.50 1400 2.85 2013 1.54	**24** 0216 2.82 0828 1.44 1441 2.96 2100 1.42	**25** 0302 2.85 0910 1.40 1521 3.03 2145 1.34
26 0346 2.84 0949 1.38 ▲1600 3.06 ▼2227 1.31	**27** ○ 0428 2.80 1028 1.40 1639 3.04 2309 1.31	**28** 0507 2.74 1105 1.45 1717 2.99 2349 1.36	**29** 0546 2.66 1142 1.52 1755 2.91	**30** 0029 1.44 0625 2.57 1218 1.62 1831 2.81		

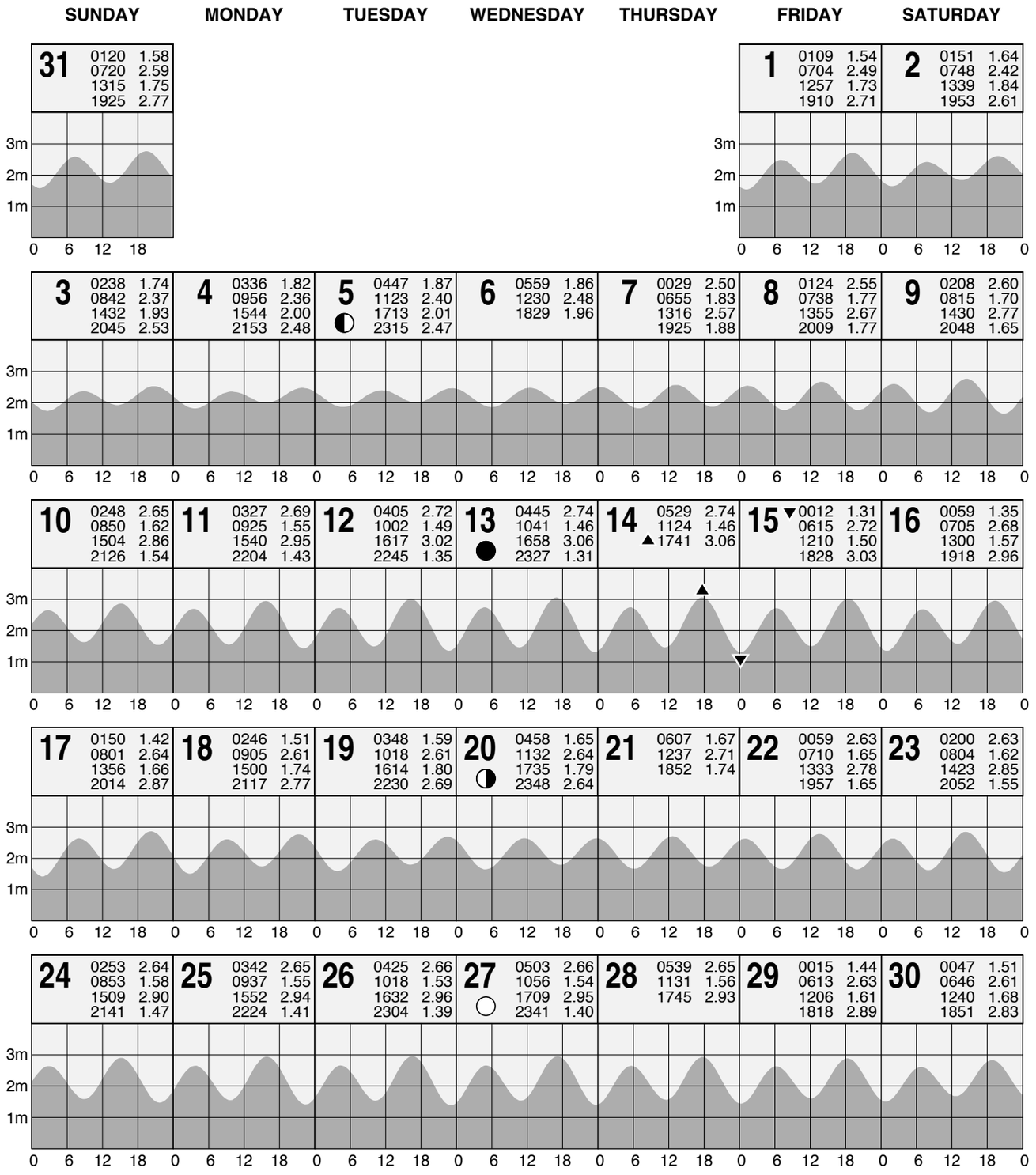
▲ Highest tide of the month
▼ Lowest tide of the month

● New moon
◑ First quarter
○ Full moon
◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

TIDAL PREDICTIONS FOR TUVALU - VAITUPU

DECEMBER 2023 Local Standard Time



▲ Highest tide of the month

▼ Lowest tide of the month

● New moon

◑ First quarter

○ Full moon

◐ Last quarter

Prediction datum is 4.493 metres below TUVA CGPS

Climate and Oceans Support Program in the Pacific

WELCOME TO THE HOME OF PACIFIC TIDES

What is the Pacific Tides App?

A simple way to access reliable tide and moon phase forecasts for Pacific Island countries from your mobile phone.

How do I download the App on my mobile device?

The app is free to download for iPhone or Android devices. Simply, search "Pacific Tides" in the Apple App Store or Google Play Store.

What information is on the Pacific Tides App?

The same tide and moon phase predictions in the annual calendars developed under the Climate and Oceans Support Program for the Pacific (COSPPac) are now available in your pocket on the App.

Do I need internet to access the App?

Initially you will need an internet connection (wifi or cellular data) to download the predictions for any station. Once downloaded, you can seamlessly view forecasts offline.

How many (days/months/years) of data can we find on the App?

The app holds an unlimited amount of data. The Gridview feature allows the user to view all predicted data stored on their device for a given station. Users can download more data using the Downloader.

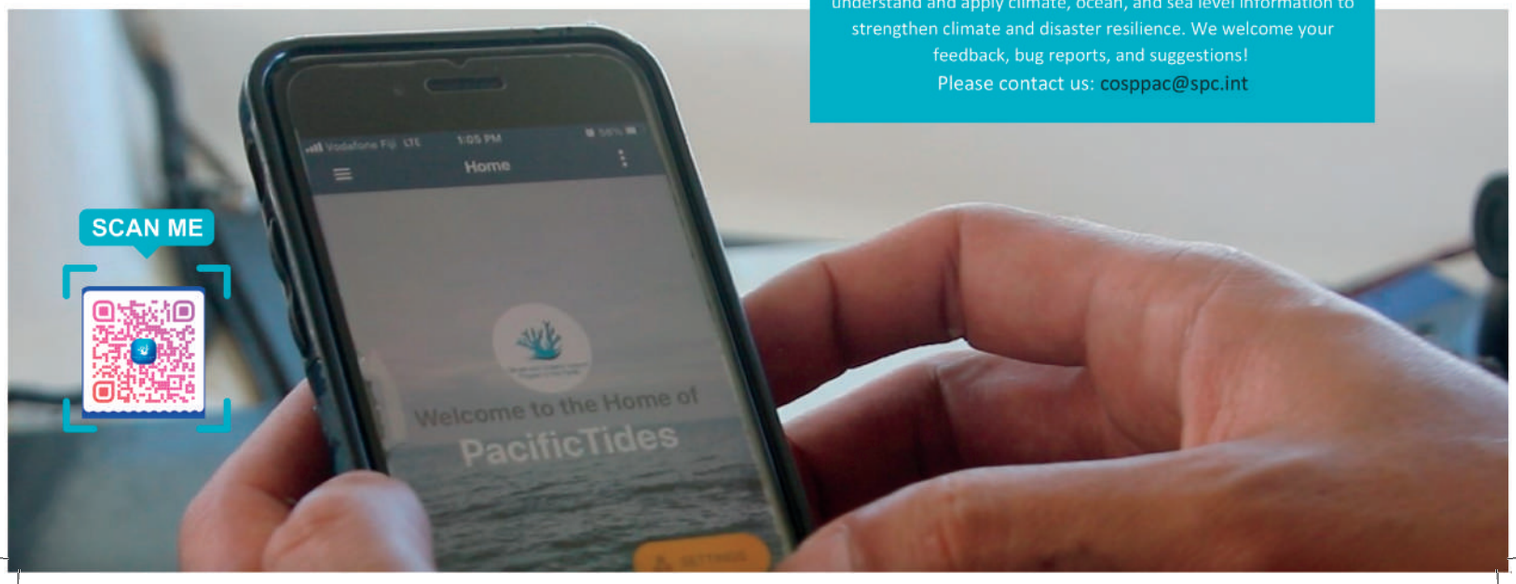
Who can use this App?

The app is designed for coastal communities in the Pacific lincluding fishing groups, tourism providers, the shipping and maritime sector, divers, surfers and other ocean going people in mind.

More Information

The COSPPac project aims to help Pacific Islanders to access, understand and apply climate, ocean, and sea level information to strengthen climate and disaster resilience. We welcome your feedback, bug reports, and suggestions!

Please contact us: cosppac@spc.int



Further Information:

Climate and Oceans Support Program in the Pacific (COSPPac)

Geoscience, Energy and Maritime Division

Pacific Community Private Mail Bag, Suva, Fiji

Email: cosppac@spc.int

Website: www.spc.int

Australian AID

Climate and Oceans Support Program in the Pacific

Pacific Community
Communauté du Pacifique