

**2017**

**SOUTH AFRICAN  
TIDE TABLES**

PUBLISHED BY THE HYDROGRAPHER  
SOUTH AFRICAN NAVY  
PRIVATE BAG X1  
TOKAI, 7966

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ISBN 978-0-9869717-8-5



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## PREFACE

1. The tables contained in this publication give daily predictions of the times of heights and high and low water and hourly predictions of heights of the tide for certain ports as well as sunrise, sunset, moonrise and moonset tables.
2. In using these tables it should be remembered that meteorological conditions can cause considerable differences between predicted and actual tides.
  - a. **Atmospheric pressure.** Variations of atmospheric pressure cause the level of the sea to change by approximately 1cm per millibar. Mean atmospheric pressure at sea level on the South African coast is 1017.0mb. Highs of 1040.0mb and lows of 990.0mb are attained very occasionally.
  - b. **Wind.** The effect of wind depends on the topography in question. In general strong onshore winds pile up the water and offshore winds will lower it. Winds blowing along the coast tend to set up long waves which travel along the coast, known as “storm surges”. Variations of water level caused by storm surges of more than 0.3m about the mean tidal curve have been recorded at ports on the SE coast of the Republic.
3. All predicted heights are given in metres above Chart Datum, which is the datum to which all soundings on the largest scale navigational chart of the area have been reduced. Chart datum is now Lowest Astronomical Tide (LAT) in all ports of the Republic of South Africa and Namibia. The relationship between Chart datum and Land Levelling Datum prior to 1 January 1998 is given on page (v). The term Land Levelling Datum used in these tables refers to the datum adopted by the Chief Director, Surveys and Mapping for the Precise Levelling of the Republic of South Africa. It is commonly called Mean Sea Level by land surveyors.
4. The data for Moon Phases, Seasons and Eclipses was supplied by the South African Astronomical Observatory.
5. Rising and setting times for Sun and Moon are those when the upper limbs of these bodies appear to coincide with the horizon. They are those times when the centres of these bodies are 90° from the zenith with allowances made for mean refraction (+ 34') and semi-diameter (+ 16') for the Sun and semi-diameter minus horizontal parallax for the Moon. They are independent of altitude but should be corrected if necessary for dip, the height of eye of the observer above the plane of the horizon.
6. Users are requested to inform this office of any errors or omissions noted.
7. All times given are South African Standard Time (Time Zone -2). Users should remember that Namibia uses Time Zone-1 between April and September.

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## TIDAL LEVELS

The values of Lowest Astronomical Tide (LAT) and Highest Astronomical Tide (HAT) are computed from 19 years' predictions. The Mean Levels are computed from the predictions of a recent year when the moon's average maximum declination was  $23\frac{1}{2}^{\circ}$ . The definitions of the several levels are given below.

- a. **HAT** and **LAT** are the highest and lowest levels respectively which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. These levels will not be reached every year. HAT and LAT are not the extreme levels which can be reached, as storm surges and other meteorological conditions may cause considerably higher and lower levels to occur. **HATOY** and **LATOY** are the HAT and LAT for the year in question.
- b. **MHWS** (Mean High Water Springs). **MLWS** (Mean Low Water Springs). The height of mean high water springs is the average, throughout a year when the average maximum declination of the moon is  $23\frac{1}{2}^{\circ}$ , of the heights of two successive high waters during those periods of 24 hours (approximately once a fortnight) when the range of the tide is greatest. The height of mean low water springs is the average height obtained by the two successive low waters during the same periods.
- c. **MHWN** (Mean High Water Neaps). **MLWN** (Mean Low Water Neaps). The height of mean high water neaps is the average, throughout a year as defined in b. above, of the heights of two successive high waters during those periods (approximately once a fortnight) when the range of the tide is least. The height of mean low water neaps is the average height obtained from the two successive low waters during the same periods.

*Note:* The values of MHWS etc vary from year to year in a cycle of approximately 18.61 years. The mean tidal levels given in this table are computed average values for the whole cycle.

- d. **ML** (Mean Level) as given in this table, is the mean of the heights of MHWS, MHWN, MLWS and MLWN.
- e. **Years of observations.** Tidal predictions of South African ports are generally based on more than twenty years' observations.
- f. **General.** Tides on the Southern African coasts are regular, semi-diurnal and their range seldom exceeds 2.2m

PLACE	LAT	MLWS	MLWN	ML	MHWN	MHWS	HAT
Walvis Bay	0	0.27	0.67	0.98	1.29	1.69	1.97
Lüderitz	0	0.23	0.65	0.94	1.22	1.65	1.99
Port Nolloth	0	0.28	0.78	1.09	1.40	1.91	2.25
Saldanha	0	0.24	0.70	0.99	1.27	1.75	2.03
Cape Town	0	0.25	0.70	0.98	1.26	1.74	2.02
Simon's Town	0	0.24	0.73	1.00	1.29	1.79	2.09
Hermanus	0	0.27	0.75	1.02	1.29	1.78	2.07
Mossel Bay	0	0.26	0.88	1.17	1.46	2.10	2.44
Knysna	0	0.22	0.82	1.06	1.32	1.91	2.21
Port Elizabeth	0	0.21	0.79	1.04	1.29	1.86	2.12
East London	0	0.23	0.78	1.02	1.25	1.82	2.08
Durban	0	0.21	0.87	1.11	1.36	2.01	2.30
Richards Bay	0	0.27	0.97	1.20	1.48	2.11	2.47

The above levels are referred to CHART DATUM

## 2017

Port	LATOY			HATOY		
	Height	Time	Date	Height	Time	Date
Walvis Bay	0.074	0932	26 May	1.883	0409	29 Mar
Lüderitz	0.034	0929	26 May	1.856	0359	29 Mar
Port Nolloth	0.066	0928	26 May	2.134	0357	29 Mar
Saldanha	0.050	0952	27 Apr	1.952	0359	29 Mar
Cape Town	0.059	0957	27 Apr	1.939	0404	29 Mar
Simon's Town	0.043	0953	27 Apr	1.991	0359	29 Mar
Hermanus	0.098	0935	26 May	2.009	1511	40 Nov
Mossel Bay	0.065	1017	27 Apr	2.335	0405	27 Apr
Knysna	0.052	1033	27 Apr	2.116	0431	27 Apr
Port Elizabeth	0.046	2153	04 Nov	2.069	0429	29 Mar
East London	0.071	2201	04 Nov	2.026	0413	27 Apr
Durban	0.066	2254	29 Mar	2.218	0434	29 Mar
Richards Bay	0.067	2259	29 Mar	2.364	1550	04 Nov

The above levels are all referred to Chart Datums.

### HEIGHTS OF CHART DATUM RELATIVE TO LAND LEVELLING DATUM IN SOUTH AFRICA AND NAMIBIA

Port	Up to 31 Dec 1978	1 Jan 1979 to 31 Dec 1997	1 Jan 1998 to 31 Dec 2002	1 Jan 2003 onwards
Walvis Bay	-0.913	-0.900	-0.966	-0.966
Lüderitz	-0.865*	-0.900	-0.935	-1.055
Port Nolloth	-0.718*	-0.900	-1.075	-0.925
Saldanha	-0.582	-0.900	-0.975	-0.865
Cape Town	-0.829	-0.900	-0.975	-0.825
Simon's Town	-0.651	-0.900	-1.003	-0.843
Hermanus	-0.619	-0.900	-0.978	-0.788
Mossel Bay	-0.761	-0.900	-1.163	-0.933
Knysna	-0.625	-0.900	-1.048	-0.788
Port Elizabeth	-0.838	-0.900	-1.026	-0.836
East London	-0.762	-0.900	-1.006	-0.716
Durban	-0.838	-0.900	-1.113	-0.913
Richards Bay	-0.900	-0.900	-1.205	-1.015

\*In use until 1 January 1994.

## 2017 SEASONS

		d	h	m		d	h	m
Equinoxes :	MAR	20	12	28	SEP	22	22	02
Solstices:	JUN	21	06	24	DEC	21	18	28

Good Friday – 14 April

### ECLIPSES

Penumbral Lunar Eclipse**	11 Feb
Partial Solar Eclipse**	26 Feb
Partial Lunar Eclipse**	07 Aug
Total Solar Eclipse*	21 Aug

\*\* Partially visible in SA

\* Not visible in SA

### MOON PHASES

New Moon				First Quarter				Full Moon				Last Quarter			
	d	h	m		d	h	m		d	h	m		d	h	m
				Jan	05	21	47	Jan	12	13	34	Jan	20	00	13
Jan	28	02	07	Feb	04	06	19	Feb	11	04	33	Feb	18	21	33
Feb	26	16	58	Mar	05	13	32	Mar	12	16	54	Mar	20	17	58
Mar	28	04	57	Apr	03	20	39	Apr	11	08	08	Apr	19	11	57
Apr	26	14	16	May	03	04	47	May	10	23	42	May	19	02	33
May	25	21	44	Jun	01	14	42	Jun	09	15	10	Jun	17	13	33
Jun	24	04	31	Jul	01	02	51	Jul	09	06	06	Jul	16	21	26
Jul	23	11	45	Jul	30	17	23	Aug	07	20	11	Aug	15	03	15
Aug	21	20	30	Aug	29	10	13	Sep	06	09	03	Sep	13	08	25
Sep	20	07	30	Sep	28	04	53	Oct	05	20	40	Oct	12	14	25
Oct	19	21	12	Oct	28	00	22	Nov	04	07	23	Nov	10	22	36
Nov	18	13	42	Nov	26	19	03	Dec	03	17	47	Dec	10	09	51
Dec	18	08	30	Dec	26	11	20								

Note : These times are Terrestrial Dynamical Time (TDT) plus 2 hrs. This corresponds to SA standard time within 3 minutes.

### MOON AT PERIGEE

Date	Hour	Date	Hour
Jan 10	08	Jul 21	19
Feb 06	16	Aug 18	15
Mar 03	09	Sep 13	18
Mar 30	14	Oct 09	08
Apr 27	18	Nov 06	02
May 26	03	Dec 04	11
Jun 23	13		