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INSTRUCTIONS AND EXAMPLES

TO FIND THE TIMES AND HEIGHTS OF HIGH AND LOW WATERS

Standard Ports

The times and heights of high and low water are tabulated for every day of the year. The zone time used for the predicted times is usually the standard time for the area and is given at the top of each page. Care should be taken to ensure that this is the actual time zone in use on that date, the predicted time being corrected if necessary. Special care is needed for those ports whose time is changed during the year.

The heights are shown in metres referred to the Chart Datum of the port concerned.

Secondary Ports

The times of high and low water are obtained by applying the time differences tabulated in Part III to the daily predictions for the designated Standard Port. The Standard Port to be used is that which appears in bold type at the head of the relevant subsection in Part III. A negative time difference will give an earlier time than that for the Standard Port, and a positive one a later time. The times obtained by applying these corrections are in the time zone shown next above the Secondary Port, *irrespective of the zone time used for the Standard Port predictions.*

The heights of high and low water are obtained by correcting the predictions for the designated Standard Port using the range ratio obtained from the tidal levels data for Standard and Secondary Ports. For places where tides are predominantly semi-diurnal in character the Mean Spring levels are used. In predominantly diurnal areas the calculations are based on Mean Higher High and Mean Lower Low Waters.

Predictions for the Standard Ports include the seasonal variations. Since the same seasonal variations apply to the designated Secondary Ports, they are allowed for in the final result and there is no need to apply them separately when using the method described below. Seasonal variations for all ports are listed in Part IV, and are used only in certain simple prediction programs, as described on page **xxii**.

To obtain a height of high or low water at a Secondary Port the following formula should be used:

$$HL2 = MSL2 + (HL1 - MSL1) * RR$$

where: HL2 - height of high or low water at Secondary Port
MSL2 - Mean Sea Level at Secondary Port
HL1 - predicted height of high or low water at Standard Port
MSL1 - Mean Sea Level at Standard Port
RR - range ratio

All levels (HL1 and 2, MSL1 and 2) are referred to LAT.

LAT has been selected as the datum for all Secondary Ports in these tables, as the majority of smaller scale charts, on which they generally appear, are based on this datum.

The techniques used to obtain the times and heights of high and low water at Secondary Ports are explained in detail in the following instructions and examples.

EXAMPLE 1

Find the times and heights of high and low waters at "Secondary Port" (predominantly semi-diurnal area) on 15th September, using the following extracts:

Extract from Part III

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (in metres, related to LAT)					Pred Datum	
			HAT	MHWS	MHWN	MSL	MLWN		MLWS
91000	STANDARD PORT	(standard port)	8.1	6.8	5.1	4.1	3.1	1.5	0.1
91111	Secondary Port	+0015	7.2	6.1	4.6	3.9	3.2	1.7	

Extract from Table I

Port	HAT	MHWS	MHWN	MSL	MLWN	MLWS	LAT
Standard Port	8.0	6.7	5.0	4.0	3.0	1.4	-0.1

Extract from Part I

STANDARD PORT

SEPTEMBER

	Time	m
15 FR	0323	6.3
	0943	3.8
	1441	5.2
	2121	0.9

Note:

The data used in this example do not refer to the year of these tables nor to any particular ports.

DETAILED INSTRUCTIONS

1. Obtain predicted times and heights of high and low waters at the Standard Port from Part I, enter them in box 1 (times) and 2 (heights).
2. Obtain MSL and spring levels for the Standard Port from Part III, enter them in box 3 (MSL) and 4 (MHWS and MLWS).
3. Subtract the MLWS value from that of MHWS for the Standard Port, enter the result in box 5 (levels range).
4. Obtain the LAT value for the predictions for the Standard Port from Table I, enter it with the opposite sign in box 6.
5. Algebraically add (i.e. add or subtract, depending on the sign) values in boxes 2 and 6 to obtain predicted heights corrected to LAT, enter the results in box 7.
6. Subtract the MSL value for the Standard Port in box 3 from the LAT adjusted predictions in box 7, enter results in box 8. (N.B. the HW column should have positive values, the LW column - negative values.)
7. Obtain data for the Secondary Port from Part III and enter time differences in box 9, MSL in box 10, spring levels in box 11.
8. Subtract the MLWS value from that of MHWS for the Secondary Port, enter the result in box 12 (levels range).
9. Obtain the range ratio by dividing the Secondary Port levels range in box 12 by that of the Standard Port in box 5, enter the result in box 13.

10. Multiply the figures in box 8 by the range ratio in box 13, enter the corresponding products in box 14.
11. Algebraically add the mean time difference for the Secondary Port in box 9 to both predicted times for the Standard Port in box 1, enter the results in box 15. THESE ARE THE TIMES OF HIGH AND LOW WATER FOR THE SECONDARY PORT.
12. Algebraically add the values in box 14 to the MSL value for the Secondary Port in box 10, enter the results in box 16. THESE ARE THE HEIGHTS OF HIGH AND LOW WATER FOR THE SECONDARY PORT.

Standard Port Data	(1) Time		(2) Height		(3) MSL	(4) Levels		(5) Levels Range
	HW	LW	HW	LW		MHWS	MLWS	
(6) - LAT correction								
(7) Predicted Height Adjusted to LAT								
(8) Predicted Height - MSL (7) - (3)								
Secondary Port Data	(9) Mean Time diff.				(10) MSL	(11) Levels		(12) Levels Range
	HW	LW	MHWS	MLWS		MHWS - MLWS		
(14) Calculations (8)*(13)								(13) Range Ratio (12) (5)
Secondary Port Results	(15) Time (1)+(9)		(16) Height (10)+(14)					

The above method produces heights for Secondary Ports referred to LAT. Users will need to apply a suitable correction if another datum is required. Chart Datum for Standard and Secondary Ports is tabulated in Part IV.

Additional blank calculation forms for obtaining the times and heights of high and low water at the Secondary Ports, for both predominantly semi-diurnal and predominantly diurnal areas, are provided at page xvii.

EXAMPLE 2

Find the times and heights of high and low waters at "Secondary Port" (predominantly diurnal area) on 18th November, using the following extracts:

Extract from Part III

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (in metres, related to LAT)						Pred Datum
			HAT	MHHW	MLHW	MSL	MHLW	MLLW	
92000	STANDARD PORT	(standard port)	1.9	1.5	1.0	0.9	0.7	0.2	-0.2
92222	Secondary Port	-0120	2.0	1.7	1.1	1.0	0.9	0.2	

Extract from Table I

Port	HAT	MHHW	MLHW	MSL	MHLW	MLLW	LAT
Standard Port	2.1	1.7	1.2	1.1	0.9	0.4	0.2

Extract from Part I

STANDARD PORT

NOVEMBER

	Time	m
18	0246	1.8
	0918	0.4
	MO 1512	1.4
	2050	0.5

Note:

The data used in this example do not refer to the year of these tables nor to any particular ports.

DETAILED INSTRUCTIONS

1. Obtain predicted times and heights of high and low waters at the Standard Port from Part I, enter them in box 1 (times) and 2 (heights).
2. Obtain MSL and higher high and lower low water levels for the Standard Port from Part III, enter them in box 3 (MSL) and 4 (MHHW and MLLW).
3. Subtract the MLLW value from that of MHHW for the Standard Port, enter the result in box 5 (levels range).
4. Obtain the LAT value for the predictions for the Standard Port from Table I, enter it with the opposite sign in box 6.
5. Algebraically add (i.e. add or subtract, depending on the sign) values in boxes 2 and 6 to obtain predicted heights corrected to LAT, enter the results in box 7.
6. Subtract the MSL value for the Standard Port in box 3 from the LAT adjusted predictions in box 7, enter results in box 8. (N.B. the HW column should have positive values, the LW column - negative values.)
7. Obtain data for the Secondary Port from Part III and enter time differences in box 9, MSL in box 10, higher high and lower low water levels in box 11.
8. Subtract the MLLW value from that of MHHW for Secondary Port, enter the result in box 12 (levels range).

9. Obtain the range ratio by dividing the Secondary Port levels range in box 12 by that of the Standard Port in box 5, enter the result in box 13.
10. Multiply the figures in box 8 by the range ratio in box 13, enter the corresponding products in box 14.
11. Algebraically add the mean time difference for the Secondary Port in box 9 to both predicted times for the Standard Port in box 1, enter the results in box 15. THESE ARE THE TIMES OF HIGH AND LOW WATER FOR THE SECONDARY PORT.
12. Algebraically add the values in box 14 to the MSL value for the Secondary Port in box 10, enter the results in box 16. THESE ARE THE HEIGHTS OF HIGH AND LOW WATER FOR THE SECONDARY PORT.

Standard Port Data	(1) Time		(2) Height		(3) MSL	(4) Levels		(5) Levels Range
	HW	LW	HW	LW		MHHW	MLLW	
(6) - LAT correction								
(7) Predicted Height Adjusted to LAT								
(8) Predicted Height - MSL (7) - (3)								
Secondary Port Data	(9) Mean Time diff.		[REDACTED]		(10) MSL	(11) Levels		(12) Levels Range
	HW	LW				MHHW	MLLW	
(14) Calculations (8)*(13)								(13) Range Ratio (12) (5)
Secondary Port Results	(15) Time (1)+(9)		(16) Height (10)+(14)					

The above method produces heights for Secondary Ports referred to LAT. Users will need to apply a suitable correction if another datum is required. Chart Datum for Standard and Secondary Ports is provided in Part IV.

Additional blank calculation forms for obtaining the times and heights of high and low water at Secondary Ports, for both predominantly semi-diurnal and predominantly diurnal areas, are provided on page xvii.

TO FIND TIMES OR HEIGHTS BETWEEN HIGH AND LOW WATERS

Times and heights between high and low waters of standard and secondary ports can be interpolated by fitting a cosine curve. This interpolation can be accomplished graphically with form AH130 (reproduced on the following pages), the use of which is explained below. This form is a development of the method published in the Admiralty Tide Tables. (The contribution of Capt. R. C. Hope is also acknowledged.)

Form AH130 will give acceptable results, provided that both the following criteria are satisfied:

- (a) The duration of rise or fall is between 5 and 7 hours.
- (b) The tabulated values of the amplitude for shallow water corrections (F4 or F6) shown in Part IV do not exceed 0.02m.

If either of these criteria is not met, the tidal curve is likely to be distorted, and more accurate times or heights can be obtained using one of the tidal prediction methods described in the next section.

Formulae for use with scientific calculators or computers are also provided. The same criteria should be satisfied to obtain acceptable results.

TO FIND HEIGHT FOR A GIVEN TIME:

- (i) *USING FORM AH130:*
(example 3, page xx)

1. Plot the time of high water on the time axis marked HW, and the time of low water on the time axis marked LW. Connect these two points by a straight line called the "time-line".
N.B.: Hours from 0000 to 0700 are repeated on the right hand side of the scale for use when midnight (0000) falls between HW and LW.
2. Choose an appropriate height scale (0-5m or 0-10m) and plot the height of high water on the height axis marked HW, and the height of low water on the axis marked LW. Connect these two points by a straight line called the "height-line".
3. To find the height of tide for a given intermediate time, plot the time on the LW time axis, project it up to the time-line, across to the cosine curve, down to the height-line, and across to the LW height axis, from which the height can be read off.

- (ii) *FORMULA FOR USE WITH CALCULATORS OR COMPUTERS*

If t_1 and h_1 denote the time and height of tide (high or low) immediately preceeding time t and t_2 and h_2 denote the height of the tide (high or low) immediately following, then the height h at time t is given by the following formula:

$$h = h_1 + (h_2 - h_1)(\cos A + 1)/2$$

where $A = \pi[(t - t_1)/(t_2 - t_1) + 1]$ radians

Note 1: On falling tides $(h_2 - h_1)$ will be negative.

Note 2: t , t_1 and t_2 are in decimal hours.

TO FIND TIME FOR A GIVEN HEIGHT:

(i) *USING FORM AH130:*

1. *As above.*

2. *As above.*

3. *To find the time at which a given intermediate height occurs, plot the height on the LW height axis, project it across to the height line, up to the cosine curve, across to the time line, and down to the LW time axis, from which the time can be read off.*

(ii) *FORMULA FOR USE WITH CALCULATORS OR COMPUTERS*

With t_1 , h_1 , t_2 , h_2 defined as above, the intermediate time t when the tide is at a given height h , can be calculated from the following formula:

$$t = t_1 + (t_2 - t_1)(A/\pi - 1)$$

where $A = 2\pi - \arccos [2(h - h_1)/(h_2 - h_1) - 1]$ radians.

Note 1: On falling tides $(h - h_1)$ and $(h_2 - h_1)$ will be negative.

Note 2: t , t_1 and t_2 are in decimal hours.

Note 3: It is presumed that the range of the \cos^{-1} function is $[0, \pi]$.

TABLE I- TIDAL LEVELS AT STANDARD PORTS

PART I: PREDOMINANTLY DIURNAL TIDES

PORT	HAT	MHHW	MLHW	MSL	MHLW	MLLW	LAT	Predictions Computed by	On Behalf of
Albany	1.4	1.1	0.8	0.8	0.7	0.5	0.1	NTF	APA
Alotau	1.3	1.1	★	0.7	★	0.3	0.0	NTF	HYDRO
Anewa Bay	1.8	1.5	★	0.8	★	0.1	0.0	NTF	BCOP
Booby Island	4.4	4.2	2.8	2.4	2.0	0.6	0.0	NTF	QDOT
Bunbury	1.3	0.9	0.7	0.7	0.7	0.4	0.1	NTF	BPA
Cairns	3.5	2.7	1.8	1.7	1.6	0.6	0.0	NTF	QDOT
Carnarvon	1.8	1.3	1.1	0.8	0.6	0.4	-0.2	NTF	WADOT
Cocos Island	1.2	1.2	0.7	0.6	0.4	0.1	0.0	NTF	HYDRO
Denham	1.6	1.3	1.0	0.9	0.8	0.5	0.1	NTF	WADOT
Dreger Harbour	1.5	1.0	★	0.6	★	0.2	0.0	NTF	HYDRO
Eden	1.9	1.7	1.1	0.9	0.7	0.1	-0.1	NTF	MSB
Esperance	1.5	1.1	0.7	0.7	0.6	0.4	0.1	NTF	EPA
Fremantle	1.3	0.9	0.7	0.7	0.7	0.5	0.1	NTF	FPA
Geelong	1.1	0.9	0.6	0.5	0.4	0.0	-0.1	NTF	PGA
Geraldton	1.3	1.0	0.9	0.6	0.4	0.3	0.0	NTF	GPA
Goods Island	4.0	3.8	2.8	2.2	1.6	0.6	0.0	NTF	QDOT
Hobart	2.1	1.9	1.4	1.2	1.1	0.6	0.4	NTF	MBH
Honiara	1.3	1.1	1.0	0.7	0.4	0.3	0.0	NTF	HYDRO
Ince Point	3.7	2.9	2.2	1.8	1.3	0.6	0.0	NTF	AMSA
Karumba	4.7	3.7	3.3	2.1	0.9	0.5	0.0	NTF	QDOT
Lae	1.3	1.1	1.0	0.7	0.3	0.2	0.0	NTF	PWDPNG
Legatt Island	3.4	2.7	1.8	1.7	1.6	0.7	0.0	NTF	AMSA
Madang	1.3	1.3	1.1	0.8	0.5	0.3	0.0	NTF	HYDRO
Melbourne	1.0	0.9	0.6	0.5	0.4	0.1	0.0	NTF	VCA
Milner Bay	2.3	1.7	1.6	1.1	0.5	0.4	0.0	NTF	BHP
Mourilyan	3.4	3.1	2.4	1.7	1.1	0.3	0.0	NTF	QDOT
Port Douglas	3.3	2.6	1.7	1.6	1.5	0.6	0.0	NTF	QDOT
Port Lincoln	2.1	1.7	1.2	1.0	0.8	0.4	0.2	NTF	PCSA
Port Pirie	3.4	2.9	1.9	1.7	1.5	0.5	0.0	NTF	PCSA
Portland	1.2	1.0	0.7	0.5	0.3	0.1	-0.1	NTF	PPA
Rabaul	1.2	1.1	1.0	0.7	0.4	0.3	0.0	NTF	HYDRO
Seeadler Hr	1.2	1.0	★	0.5	★	0.0	-0.2	NTF	HYDRO
Thevenard	2.2	1.7	★	1.0	★	0.3	0.0	NTF	PCSA
Thursday Island	3.8	3.0	2.3	1.8	1.3	0.6	0.0	NTF	QDOT
Turtle Head	3.7	3.1	2.4	1.8	1.1	0.5	0.0	NTF	AMSA
(Hammond Island)									
Twin Island	3.8	2.9	1.9	1.7	1.5	0.5	0.0	NTF	QDOT
Wallaroo	1.9	1.6	1.3	0.9	0.5	0.2	-0.1	NTF	PCSA
Weipa	3.2	2.9	2.2	1.8	1.5	0.7	0.0	NTF	QDOT
Wewak	1.8	1.6	1.1	1.0	0.8	0.4	0.0	NTF	HYDRO
Whyalla	3.2	2.6	1.8	1.5	1.2	0.4	0.0	NTF	PCSA

★ Tide is usually diurnal

ABBREVIATIONS

AMSA	Australian Maritime Safety Authority	EPA	Esperance Port Authority
APA	Albany Port Authority	FPA	Fremantle Port Authority
BCOP	Bougainville Copper Pty. Ltd.	GPA	Geraldton Port Authority
BHP	Broken Hill Proprietary Ltd.	HYDRO	Hydrographer, RAN
BPA	Bunbury Port Authority	MBCH	Marine Bd of Circular Hd, Stanley, Tas
BPAQ	Beach Protection Authority, Queensland	MBH	Marine Board of Hobart
BPATAS	Burnie Port Authority (Tasmania)	MSB	Maritime Services Board, NSW
DPA	Dampier Port Authority	PCSA	Ports Corps, SA

TABLE I - TIDAL LEVELS AT STANDARD PORTS

PART 2: PREDOMINANTLY SEMI-DIURNAL TIDES

PORT	HAT	MHWS	MHWN	MSL	MLWN	MLWS	LAT	Predictions Computed by	On Behalf of
Abbot Point	3.4	2.9	1.9	1.7	1.5	0.5	0.0	NTF	QDOT
Barrow I. (W.L.)	3.7	3.2	2.2	1.8	1.5	0.6	0.1	NTF	WAPET
Barrow I. (T.M.)	4.7	4.1	2.7	2.3	1.9	0.6	-0.1	NTF	WAPET
Brisbane Bar	2.7	2.2	1.8	1.3	0.8	0.4	0.0	NTF	QDOT
Broome	9.6	8.5	5.6	4.5	3.5	0.3	-0.9	NTF	WADOT
Bugatti Reef	3.4	2.5	2.0	1.5	1.0	0.5	0.0	NTF	HYDRO
Bundaberg	3.6	2.9	2.3	1.7	1.1	0.5	0.0	NTF	QDOT
Burnie	3.6	3.2	2.9	1.9	0.9	0.6	0.0	NTF	BPATAS
Cape Domett	8.0	6.9	5.1	4.0	3.0	1.3	-0.1	WADOT	
Cape Voltaire	7.7	6.4	4.3	3.7	3.0	0.9	0.0	NTF	HYDRO
Dampier	5.2	4.5	3.2	2.7	2.2	0.9	0.1	NTF	DPA
Darwin	8.0	6.9	5.0	4.1	3.2	1.4	0.0	NTF	TWNT
Derby	10.5	9.7	7.3	4.9	2.4	0.3	0.0	WADOT	
Devonport	3.4	3.2	2.9	1.9	0.9	0.5	-0.2	NTF	PDA
Exmouth	2.8	2.3	1.7	1.4	1.1	0.5	0.0	NTF	WADOT
Georgetown	3.6	3.3	3.0	2.0	1.1	0.8	0.1	NTF	PLA
Gladstone	4.8	3.9	3.1	2.3	1.5	0.7	0.0	NTF	QDOT
Gove	3.9	3.1	2.6	2.1	1.5	1.0	0.2	NTF	TWNT
Hay Point	7.1	5.8	4.5	3.3	2.2	0.9	0.0	NTF	QDOT
Lucinda	3.8	2.9	2.1	1.8	1.5	0.7	0.0	NTF	QDOT
Mackay	6.6	5.3	4.1	3.0	1.9	0.7	0.0	NTF	QDOT
Newcastle	2.1	1.6	1.3	0.9	0.5	0.3	0.0	NTF	MSB
Norfolk Island	1.9	1.6	1.4	0.9	0.4	0.2	0.0	NTF	HYDRO
Onslow	3.0	2.5	1.8	1.5	1.2	0.6	0.0	NTF	WADOT
Port Adelaide (Inner Harbor)	3.2	2.6	1.6	1.6	1.6	0.5	0.1	NTF	PCSA
Port Adelaide (Outer Harbor)	3.1	2.6	1.6	1.6	1.6	0.6	0.2	NTF	PCSA
Port Hedland	7.8	6.9	4.8	4.1	3.4	1.1	0.2	NTF	PHPA
Port Kembla	2.1	1.5	1.3	0.9	0.6	0.3	0.0	NTF	PWDNSW
Port Moresby	2.9	2.4	1.5	1.5	1.4	0.5	0.0	NTF	HYDRO
Pt. Phillip Hds.	1.8	1.5	1.2	0.9	0.6	0.3	0.0	NTF	VCA
Port Walcott	5.8	5.1	3.4	2.8	2.3	0.4	-0.4	NTF	WADOT
Shute Harbour	3.9	3.3	2.5	1.9	1.2	0.5	0.0	NTF	BPAQ
Stanley	3.9	3.5	3.2	2.2	1.2	0.9	0.2	NTF	MBCH
Sydney	2.1	1.5	1.3	0.9	0.5	0.3	0.0	NTF	MSB
Thevenard I.	2.8	2.4	1.8	1.5	1.2	0.6	0.0	NTF	WAPET
Townsville	4.1	3.1	2.2	1.9	1.6	0.8	0.0	NTF	QDOT
Waddy Point	2.3	1.9	1.2	1.0	0.9	0.2	0.0	NTF	QDOT
Westernport (Stony Point)	3.3	2.9	2.4	1.7	1.0	0.6	0.0	NTF	VCA
Wyndham	8.1	7.5	5.7	4.2	2.6	0.9	-0.3	NTF	WADOT
Yamba	1.9	1.5	1.2	0.9	0.5	0.2	0.0	NTF	MSB
Yampi Sound	11.1	10.1	7.0	5.7	4.4	1.2	0.2	NTF	BHP

NTF National Tidal Facility
 PDA Port of Devonport Authority
 PGA Port of Geelong Authority
 PHPA Port Hedland Port Authority
 PLA Port of Launceston Authority
 PPA Port of Portland Authority
 PWDNSW Dept. of Public Works, NSW

PWDPNG Dept. of Public Works, PNG
 QDOT Queensland Dept. of Transport
 TWNT Dept. of Transport & Works, NT
 VCA Victorian Channels Authority
 WADOT Western Australia Dept. of Transport

PART 1

Tidal Predictions for Standard Ports

IMPORTANT NOTE:

Predictions are in standard time. Add 1 hour when daylight saving is in force.

AUSTRALIA, TORRES STRAIT - INCE POINT

LAT 10° 30' LONG 142° 19'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY				FEBRUARY				MARCH				APRIL											
	Time	m		Time	m		Time	m	Time	m		Time	m	Time	m								
1 TH	0145	1.6	16 FR	0149	1.4	1 SU	0315	1.7	16 MO	0521	1.3	1 SU	0205	2.2	16 MO	0109	2.1	1 WE	0338	2.3	16 TH	0011	2.3
	0503	0.9		0501	1.0		0543	1.4		1141	2.3		0816	1.2		0506	1.4		1730	1.4		0537	1.8
	1411	3.0		1424	2.5		1517	2.6		1804	1.5		1413	2.8		1132	2.3		2047	1.8		0736	1.9
	2209	1.0		2316	1.3		2348	1.1		2208	1.7		2140	1.1		1725	1.3		2323	1.7		1720	0.9
2 FR	0236	1.4	17 SA	0158	1.3	2 MO	0900	2.0	17 TU	0514	1.4	2 MO	0252	2.1	17 TU	0009	2.1	2 TH	0609	2.4	17 FR	0022	2.3
	0524	1.0		0512	1.1		1138	1.9		1041	2.3		0927	1.5		0519	1.5		1524	1.0		0542	1.9
	1459	2.8		1246	2.3		1607	2.1		1803	1.4		1446	2.3		1121	2.2		2148	2.1		0808	2.1
	2320	0.9								2220	1.9		2243	1.3		1733	1.2					1725	0.9
3 SA	0341	1.3	18 SU	0501	1.1	3 TU	0135	1.0	18 WE	0433	1.4	3 TU	0803	2.0	18 WE	1035	2.1	3 FR	0203	1.6	18 SA	0830	2.2
	0529	1.2		1111	2.3		0926	2.4		1020	2.5		1758	1.7		1739	1.1		0853	2.7		1625	0.9
	1552	2.6		1837	1.8		1438	1.8		1752	1.2		2027	1.9		2362	2.0		1547	0.7		2315	2.1
				2015	1.8		2109	2.0		2243	1.9								2230	2.3			
4 SU	0059	0.8	19 MO	0327	1.1	4 WE	0239	0.9	19 TH	0341	1.4	4 WE	0055	1.4	19 TH	0520	1.7	4 SA	0305	1.5	19 SU	0245	1.9
	1009	2.0		1045	2.4		0955	2.7		1017	2.6		0850	2.4		0925	2.3		0926	2.8		0839	2.4
	1201	1.9		1819	1.7		1557	1.2		1734	1.1		1536	1.3		1739	1.0		1613	0.4		1600	0.8
	1703	2.3		2115	1.8		2208	2.0		2305	1.9		2136	2.0		2307	2.1		2301	2.3		2314	2.1
5 MO	0205	0.7	20 TU	0332	1.0	5 TH	0328	0.8	20 FR	0328	1.3	5 TH	0225	1.3	20 FR	0349	1.8	5 SU	0347	1.3	20 MO	0252	1.7
	0956	2.3		1045	2.5		1022	3.0		1022	2.7		0928	2.8		0929	2.4		0948	2.9		0843	2.6
	1418	1.7		1741	1.5		1642	0.9		1718	1.0		1607	0.9		1713	1.0		1641	0.3		1606	0.6
	2000	2.2		2159	1.8		2249	2.0		2316	1.9		2226	2.2		2315	2.1		2324	2.3		2304	2.1
6 TU	0254	0.6	21 WE	0335	1.0	6 FR	0409	0.8	21 SA	0336	1.2	6 FR	0319	1.2	21 SA	0320	1.7	6 MO	0422	1.2	21 TU	0321	1.5
	1015	2.5		1049	2.7		1045	3.1		1028	2.8		0958	3.0		0938	2.6		1009	2.9		0902	2.7
	1530	1.5		1729	1.3		1718	0.7		1721	0.9		1635	0.6		1644	0.8		1709	0.4		1626	0.5
	2107	2.1		2227	1.8		2316	1.9		2302	1.8		2301	2.2		2323	2.0		2332	2.2		2245	2.1
7 WE	0336	0.6	22 TH	0334	1.0	7 SA	0445	0.8	22 SU	0359	1.1	7 SA	0401	1.1	22 SU	0323	1.5	7 TU	0454	1.2	22 WE	0359	1.3
	1038	2.8		1054	2.7		1105	3.2		1033	2.9		1021	3.1		0943	2.7		1033	2.8		0933	2.8
	1627	1.2		1732	1.2		1754	0.5		1733	0.8		1704	0.4		1646	0.7		1736	0.5		1654	0.4
	2154	2.0		2237	1.8		2330	1.9		2246	1.9		2327	2.1		2313	2.0		2335	2.2		2236	2.2
8 TH	0414	0.6	23 FR	0347	0.9	8 SU	0518	0.8	23 MO	0429	1.0	8 SU	0437	1.0	23 MO	0345	1.3	8 WE	0523	1.2	23 TH	0439	1.1
	1057	3.0		1100	2.8		1130	3.3		1048	3.1		1042	3.1		0950	2.9		1059	2.8		1011	2.9
	1715	0.9		1743	1.1		1828	0.5		1757	0.7		1735	0.4		1701	0.6		1801	0.6		1725	0.4
	2230	1.9		2229	1.7		2347	1.8		2301	1.9		2337	2.1		2246	2.0		2346	2.2		2303	2.4
9 FR	0448	0.6	24 SA	0411	0.9	9 MO	0547	0.9	24 TU	0502	0.9	9 MO	0509	1.0	24 TU	0415	1.2	9 TH	0548	1.2	24 FR	0522	1.0
	1116	3.1		1106	2.9		1159	3.2		1114	3.2		1106	3.1		1010	3.0		1122	2.7		1053	2.9
	1758	0.8		1758	1.0		1901	0.6		1827	0.6		1805	0.4		1726	0.5		1820	0.8		1759	0.4
	2304	1.8		2241	1.7					2331	2.0		2345	2.0		2250	2.1					2337	2.6
10 SA	0520	0.7	25 SU	0438	0.9	10 TU	0010	1.8	25 WE	0538	0.8	10 TU	0538	1.0	25 WE	0452	1.0	10 FR	0000	2.2	25 SA	0606	0.9
	1144	3.2		1117	3.0		0611	1.0		1145	3.3		1132	3.1		1042	3.1		0608	1.2		1134	2.8
	1839	0.7		1821	0.9		1229	3.2		1900	0.6		1834	0.6		1757	0.5		1139	2.6		1832	0.5
	2339	1.8		2307	1.8		1933	0.7								2317	2.2		1830	0.9			
11 SU	0549	0.8	26 MO	0508	0.8	11 WE	0033	1.8	26 TH	0006	2.1	11 WE	0000	2.0	26 TH	0530	0.9	11 SA	0012	2.3	26 SU	0015	2.7
	1215	3.3		1139	3.1		0621	1.1		0614	0.8		0602	1.1		1118	3.2		0623	1.3		0651	0.9
	1919	0.7		1851	0.8		1256	3.0		1222	3.3		1159	3.0		1830	0.5		1156	2.4		1215	2.6
				2340	1.8		2002	0.9		1935	0.6		1900	0.8		2352	2.4		1832	1.0		1906	0.6
12 MO	0013	1.7	27 TU	0539	0.8	12 TH	0053	1.8	27 FR	0045	2.2	12 TH	0016	2.0	27 FR	0611	0.8	12 SU	0025	2.3	27 MO	0056	2.8
	0612	0.9		1208	3.2		0426	1.1		0651	0.8		0618	1.1		1158	3.2		0640	1.3		0740	0.9
	1249	3.2		1926	0.8		1317	2.9		1300	3.3		1220	2.9		1904	0.5		1214	2.3		1255	2.4
	1958	0.7					2030	1.1		2013	0.7		1920	0.9					1835	1.1		1940	0.9
13 TU	0045	1.7	28 WE	0017	1.9	13 FR	0108	1.8	28 SA	0124	2.2	13 FR	0031	2.1	28 SA	0030	2.5	13 MO	0041	2.4	28 TU	0138	2.8
	0408	1.0		0608	0.8		0443	1.1		0730	1.0		0619	1.2		0653	0.8		0703	1.4		0634	1.0
	1323	3.1		1243	3.3		1327	2.7		1337	3.1		1234	2.7		1236	3.0		1228	2.1		1333	2.0
	2037	0.8		2004	0.8		2053	1.3		2053	0.9		1932	1.1		1939	0.7		1645	1.1		2015	1.1
14 WE	0113	1.6	29 TH	0057	1.9	14 SA	0122	1.8	29 SU	0045	2.1	14 SA	0045	2.1	29 SU	0109	2.5	14 TU	0054	2.4	29 WE	0225	2.7
	0426	1.0		0447	0.9		0458	1.1		0441	1.2		0441	1.2		0737	0.9		0734	1.5		0945	1.1
	1353	2.9		1320	3.3		1315	2.5		1244	2.6		1244	2.6		1315	2.8		1059	2.0		1412	1.6
	2117	1.0		2045	0.8		2112	1.4		1935	1.2		1935	1.2		2015	0.9		1856	1.0		1713	1.2
15 TH	0133	1.5	30 FR	0138	1.9	15 SU	0127	1.7	30 MO	0100	2.1	15 SU	0100	2.1	30 MO	0149	2.5	15 WE	0045	2.4	30 TH	0324	2.6
	0445	1.0		0515	1.0		0512	1.2		0452	1.3		0452	1.3		0830	1.1		0522	1.7		1146	1.1
	1417	2.7		1358	3.1		1211	2.4		1241													

AUSTRALIA, TORRES STRAIT - INCE POINT

LAT 10° 30' LONG 142° 19'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

MAY			JUNE			JULY			AUGUST														
Time	m		Time	m		Time	m		Time	m		Time	m										
1 FR	0445 1427 2151	2.4 0.9 2.1	16 SA	0138 1721	2.4 1.0	1 MO	0214 0701 1514 2250	1.8 2.2 0.6 2.3	16 TU	0437 1359 2232	2.3 0.8 1.9	1 WE	0318 0825 1521 2258	1.7 1.9 0.8 2.3	16 TH	0051 0511 1415 2153	1.7 2.0 0.7 2.1	1 SA	0525 1040 1536 2245	1.1 1.7 1.0 2.5	16 SU	0416 1030 1541 2220	0.8 1.8 0.8 2.8
2 SA	0108 0756 1515 2227	1.9 2.5 0.6 2.2	17 SU	0329 1455 2323	2.3 0.9 2.0	2 TU	0312 0824 1545 2311	1.7 2.2 0.6 2.3	17 WE	0111 0625 1443 2221	1.8 2.2 0.6 2.1	2 TH	0404 0915 1545 2305	1.5 1.8 0.8 2.4	17 FR	0245 0839 1504 2215	1.4 1.9 0.6 2.4	2 SU	0527 1057 1543 2251	1.0 1.6 0.9 2.6	17 MO	0457 1103 1622 2244	0.5 1.8 0.7 3.0
3 SU	0244 0836 1545 2257	1.7 2.5 0.5 2.3	18 MO	0012 0542 1501 2259	2.0 2.3 0.8 2.0	3 WE	0352 0903 1610 2318	1.5 2.1 0.6 2.3	18 TH	0238 0803 1523 2232	1.6 2.2 0.5 2.2	3 FR	0442 0949 1557 2306	1.4 1.8 0.8 2.4	18 SA	0356 0937 1546 2236	1.2 1.8 0.6 2.6	3 MO	0541 1054 1600 2300	0.9 1.6 0.9 2.6	18 TU	0532 1120 1700 2310	0.3 1.7 0.7 3.0
4 MO	0329 0904 1613 2318	1.5 2.5 0.4 2.3	19 TU	0200 0741 1523 2245	1.8 2.4 0.6 2.1	4 TH	0428 0933 1630 2320	1.4 2.1 0.6 2.4	19 FR	0340 0856 1600 2239	1.3 2.2 0.5 2.4	4 SA	0514 1009 1605 2315	1.2 1.7 0.8 2.5	19 SU	0450 1016 1626 2257	0.9 1.8 0.6 2.8	4 TU	0557 1045 1625 2310	0.8 1.5 0.9 2.7	19 WE	0608 1134 1733 2340	0.3 1.7 0.7 3.0
5 TU	0405 0932 1640 2326	1.4 2.5 0.4 2.3	20 WE	0254 0824 1551 2243	1.6 2.5 0.5 2.1	5 FR	0500 0957 1643 2329	1.3 2.0 0.7 2.4	20 SA	0434 0943 1636 2255	1.1 2.1 0.5 2.7	5 SU	0543 1019 1619 2325	1.1 1.6 0.8 2.6	20 MO	0536 1049 1703 2323	0.6 1.7 0.6 3.0	5 WE	0615 1100 1654 2327	0.7 1.6 0.8 2.8	20 TH	0643 1157 1803 2317	0.3 1.8 0.7
6 WE	0437 0959 1704 2327	1.3 2.5 0.5 2.3	21 TH	0343 0905 1623 2232	1.4 2.5 0.4 2.3	6 SA	0530 1018 1650 2338	1.3 1.9 0.8 2.5	21 SU	0524 1029 1711 2326	0.9 2.0 0.5 2.9	6 MO	0606 1038 1640 2333	1.0 1.6 0.8 2.6	21 TU	0618 1125 1738 2357	0.5 1.7 0.6 3.1	6 TH	0639 1128 1724 2352	0.7 1.6 0.8 2.9	21 FR	0012 0715 1223 1829	3.0 0.4 1.7 0.8
7 TH	0507 1023 1723 2335	1.3 2.4 0.7 2.3	22 FR	0430 0949 1657 2254	1.2 2.5 0.4 2.5	7 SU	0600 1044 1702 2346	1.2 1.8 0.8 2.6	22 MO	0613 1114 1745	0.7 1.9 0.6	7 TU	0631 1104 1704 2347	1.0 1.6 0.8 2.7	22 WE	0658 1200 1810	0.4 1.7 0.7	7 FR	0709 1200 1754	0.6 1.7 0.7	22 SA	0043 0746 1247 1841	2.9 0.6 1.7 0.9
8 FR	0534 1044 1734 2347	1.3 2.3 0.8 2.4	23 SA	0517 1033 1730 2328	1.0 2.5 0.5 2.7	8 MO	0626 1112 1720 2358	1.2 1.8 0.8 2.6	23 TU	0002 0700 1158 1818	3.0 0.6 1.8 0.7	8 WE	0658 1135 1729	0.9 1.6 0.8	23 TH	0032 0737 1235 1838	3.1 0.5 1.6 0.8	8 SA	0024 0742 1237 1824	3.0 0.6 1.8 0.7	23 SU	0110 0815 1309 1638	2.7 0.8 1.7 1.0
9 SA	0600 1105 1739 2357	1.3 2.2 0.9 2.4	24 SU	0605 1118 1805	0.9 2.3 0.5	9 TU	0655 1142 1540	1.2 1.7 0.9	24 WE	0043 0746 1241 1850	3.1 0.6 1.7 0.8	9 TH	0009 0728 1209 1554	2.8 0.9 1.6 0.8	24 FR	0109 0815 1308 1857	3.0 0.6 1.6 0.9	9 SU	0059 0818 1315 1705	3.0 0.7 1.8 0.8	24 MO	0130 0841 1327 1655	2.6 1.0 1.7 1.0
10 SU	0622 1129 1747	1.3 2.1 0.9	25 MO	0006 0654 1201 1838	2.9 0.8 2.2 0.7	10 WE	0015 0727 1214 1600	2.7 1.1 1.7 0.8	25 TH	0124 0833 1321 1631	3.0 0.6 1.6 1.0	10 FR	0036 0802 1245 1627	2.8 0.9 1.6 0.8	25 SA	0143 0853 1338 1647	2.9 0.7 1.5 0.9	10 MO	0134 0859 1357 1732	2.9 0.7 1.7 0.9	25 TU	0137 0903 1342 1709	2.4 1.2 1.6 1.1
11 MO	0009 0645 1154 1606	2.5 1.3 2.0 1.0	26 TU	0047 0744 1244 1912	3.0 0.8 2.0 0.8	11 TH	0036 0806 1246 1627	2.7 1.1 1.6 0.8	26 FR	0205 0922 1400 1653	2.9 0.7 1.4 1.0	11 SA	0109 0843 1324 1659	2.8 0.9 1.6 0.8	26 SU	0213 0933 1402 1706	2.7 0.9 1.4 1.0	11 TU	0211 0945 1442 1749	2.8 0.8 1.7 1.1	26 WE	0037 0720 1232 1655	2.1 1.2 1.7 1.0
12 TU	0025 0715 1219 1616	2.6 1.3 1.9 0.9	27 WE	0131 0838 1326 1641	3.0 0.8 1.7 1.1	12 FR	0102 0854 1323 1655	2.7 1.1 1.5 0.8	27 SA	0245 0928 1440 1712	2.8 0.8 1.3 1.0	12 SU	0146 0928 1407 1728	2.8 0.9 1.5 0.9	27 MO	0236 0921 1425 1720	2.5 1.0 1.3 1.0	12 WE	0247 0945 1539 1751	2.5 0.9 1.6 1.4	27 TH	0557 1130 1719 2230	1.3 1.5 1.3 2.0
13 WE	0042 0752 1244 1636	2.6 1.4 1.7 0.8	28 TH	0217 0941 1410 1700	2.9 0.9 1.5 1.1	13 SA	0135 0954 1404 1719	2.7 1.1 1.4 0.9	28 SU	0326 1126 1528 1720	2.5 0.9 1.1 1.0	13 MO	0227 1023 1456 1747	2.7 0.9 1.4 1.0	28 TU	0244 1140 1450 1726	2.2 1.2 1.2 1.1	13 TH	0327 1226 2050	2.1 1.0 1.9	28 FR	0558 1016 1644 2207	1.2 1.7 1.3 2.2
14 TH	0056 0842 1055 1657	2.6 1.4 1.6 0.8	29 FR	0309 1058 1508 1712	2.7 0.9 1.2 1.1	14 SU	0223 1113 1500 1734	2.6 1.1 1.2 1.0	29 MO	0406 1323 2226	2.3 0.9 2.0	14 TU	0310 1135 1601 1747	2.5 0.9 1.3 1.2	29 WE	0039 1446 2237	2.0 1.1 2.1	14 FR	0120 0841 1355 2124	1.5 1.8 0.9 2.3	29 SA	0545 1038 1533 2204	1.0 1.8 1.3 2.3
15 FR	0110 1714	2.5 0.9	30 SA	0406 1242 2156 2324	2.5 0.9 1.9 1.9	15 MO	0326 1302 1637 1719	2.5 0.9 1.1 1.1	30 TU	0155 0452 1445 2244	1.9 2.0 0.8 2.2	15 WE	0359 1311 2138	2.3 0.8 1.8	30 TH	0632 0920 1517 2238	1.5 1.6 1.0 2.2	15 SA	0317 0945 1453 2154	1.2 1.8 0.8 2.6	30 SU	0527 1100 1529 2209	0.9 1.8 1.2 2.4
			31 SU	0511 1423 2223	2.4 0.7 2.1							31 FR	0547 1010 1532 2241	1.3 1.7 1.0 2.4				31 MO	0509 1117 1531 2216	0.8 1.7 1.2 2.6			

AUSTRALIA, TORRES STRAIT - INCE POINT

LAT 10° 30' LONG 142° 19'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER											
Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m								
1 TU	0515 1115 1548 2222	0.7 1.7 1.1 2.7	16 WE	0515 1125 1650 2245	0.2 1.9 0.8 2.9	1 TH	0449 1051 1557 2151	0.5 1.8 1.1 2.8	16 FR	0519 1124 1708 2241	0.2 2.1 1.0 2.7	1 SU	0500 1046 1658 2226	0.3 2.3 1.0 2.7	16 MO	0526 1143 1758 2253	0.6 2.4 1.2 2.1	1 TU	0505 1110 1743 2252	0.4 2.8 0.9 2.3	16 WE	0453 1151 1838 2301	0.8 2.8 1.2 1.7
2 WE	0527 1051 1613 2233	0.6 1.6 1.0 2.8	17 TH	0546 1131 1722 2314	0.2 1.9 0.8 2.9	2 FR	0509 1039 1630 2218	0.4 1.9 1.0 2.9	17 SA	0545 1134 1737 2307	0.4 2.1 1.0 2.5	2 MO	0533 1116 1742 2308	0.3 2.5 0.9 2.7	17 TU	0530 1156 1825 2315	0.8 2.5 1.3 2.0	2 WE	0540 1145 1833 2337	0.4 3.0 0.8 2.1	17 TH	0502 1200 1908 2329	0.8 2.8 1.2 1.7
3 TH	0545 1051 1644 2255	0.5 1.7 0.9 2.9	18 FR	0517 1145 1751 2343	0.3 1.9 0.9 2.8	3 SA	0535 1059 1707 2254	0.4 2.0 0.8 2.9	18 SU	0608 1151 1802 2328	0.6 2.1 1.1 2.4	3 TU	0607 1153 1829 2350	0.4 2.6 0.8 2.5	18 WE	0530 1205 1851 2339	0.8 2.5 1.3 1.8	3 TH	0614 1227 1925 2358	0.6 3.1 0.8 1.6	18 FR	0337 1212 1938 2358	0.9 2.8 1.2 1.6
4 FR	0610 1115 1717 2325	0.5 1.8 0.8 3.0	19 SA	0645 1206 1815	0.5 1.9 0.9	4 SU	0606 1130 1747 2332	0.4 2.2 0.8 2.9	19 MO	0621 1206 1824 2345	0.8 2.2 1.2 2.3	4 WE ○	0641 1233 1918	0.5 2.8 0.8	19 TH ●	0358 1217 1919	0.9 2.6 1.4	4 FR ○	0022 0647 1311 2020	1.9 3.0 3.1 0.8	19 SA ●	0346 1227 2012	0.8 2.8 1.2
5 SA	0640 1146 1753	0.5 1.9 0.7	20 SU	0008 0708 1225 1830	2.7 0.7 1.9 1.0	5 MO	0640 1206 1830	0.4 2.3 0.7	20 TU ●	0624 1218 1842	0.9 2.2 1.3	5 TH	0032 0715 1316 2014	2.3 0.7 2.8 0.9	20 FR	0004 0402 1230 1955	1.7 0.8 2.6 1.4	5 SA	0108 0719 1359 2120	1.7 1.0 3.1 0.8	20 SU	0028 0410 1243 2053	1.5 0.8 2.8 1.2
6 SU ○	0000 0713 1222 1830	3.0 0.5 2.0 0.7	21 MO ●	0028 0726 1241 1630	2.5 0.9 1.9 1.1	6 TU ○	0012 0714 1245 1915	2.8 0.5 2.4 0.8	21 WE	0001 0617 1231 1903	2.1 1.0 2.3 1.4	6 FR	0114 0751 1405 2120	2.0 1.0 2.8 1.0	21 SA	0027 0419 1235	1.6 0.8 2.6	6 SU	0157 0445 1451 2230	1.5 1.0 2.9 0.8	21 MO	0100 0435 1302 2146	1.5 0.8 2.8 1.2
7 MO	0036 0747 1301 1911	3.0 0.6 2.0 2.8	22 TU	0040 0732 1255 1643	2.4 1.0 1.9 1.2	7 WE	0050 0749 1327 2005	2.7 0.7 2.4 0.9	22 TH	0017 0431 1243	1.9 0.9 2.3	7 SA	0159 0459 1504 2256	1.6 1.1 2.7 1.0	22 SU	0439 1226	0.7 2.5	7 MO	0256 0500 1547	1.2 1.1 2.8	22 TU	0135 0459 1333	1.3 0.8 2.7
8 TU	0113 0825 1342 1955	2.9 0.7 2.0 0.9	23 WE	0047 0725 1328	2.2 1.2 2.0	8 TH	0129 0828 1413 2110	2.3 0.9 2.4 1.1	23 FR	0442 1215 2015 2235	0.9 2.3 1.6 1.7	8 SU	0301 0505 1620	1.2 1.1 2.5	23 MO	0454 1225	0.8 2.4	8 TU	0002 0935 1041 1651	0.8 1.9 1.9 2.6	23 WE	0037 0221 0514 1429	1.2 1.2 0.9 2.6
9 WE	0149 0906 1426 2053	2.6 0.8 2.0 1.2	24 TH	0514 1203 1710 2310	1.1 1.9 1.4 1.9	9 FR	0207 0915 1512 2250	1.9 1.2 2.3 1.2	24 SA	0454 1149 1722 1916	0.8 2.2 1.7 1.8	9 MO	0108 0924 1152 1830	0.8 1.9 1.8 2.5	24 TU	0501 1244	0.8 2.3	9 WE	0149 1000 1328 1820	0.6 2.2 1.9 2.4	24 TH	0126 0342 0511 1543	1.0 1.1 1.0 2.4
10 TH	0225 1000 1522 2230	2.3 1.1 1.9 1.4	25 FR	0521 1152 1716 2209	1.0 1.5 1.9 1.9	10 SA	0251 0525 1926	1.5 1.2 2.3	25 SU	0503 1155 1723 1950	0.8 2.2 1.8 2.0	10 TU	0237 1000 1405 2000	0.5 2.2 1.6 2.6	25 WE	0312 1248 1349 1650	0.9 2.1 2.1 2.2	10 TH	0249 1030 1450 2004	0.5 2.4 1.7 2.3	25 FR	0200 1056 1246 1704	0.8 2.1 2.0 2.3
11 FR	0301 1129 2011	1.8 1.2 2.1	26 SA	0527 1139 1707 2105	0.9 1.9 1.6 2.1	11 SU	0155 0916 1306 2015	1.0 1.9 1.5 2.5	26 MO	0506 1150 1711 2016	0.8 2.1 1.9 2.1	11 WE ○	0319 1032 1503 2040	0.3 2.3 1.5 2.6	26 TH	0300 1056 1404 1930	0.7 2.1 1.9 2.3	11 FR ○	0326 1055 1538 2051	0.4 2.5 1.6 2.2	26 SA ○	0232 1028 1424 1945	0.7 2.2 1.8 2.2
12 SA	0158 0904 1337 2053	1.3 1.8 1.2 2.4	27 SU	0524 1059 1541 2112	0.8 1.9 1.6 2.2	12 MO ○	0314 1001 1430 2052	0.6 2.1 1.4 2.7	27 TU	0434 1102 1457 2030	0.8 2.1 1.9 2.3	12 TH	0352 1059 1545 2112	0.2 2.4 1.3 2.5	27 FR ○	0312 1048 1441 2007	0.6 2.1 1.7 2.4	12 SA	0356 1110 1618 2126	0.5 2.5 1.4 2.1	27 SU	0304 1031 1521 2038	0.6 2.4 1.6 2.2
13 SU ○	0335 0959 1445 2128	0.8 1.9 1.1 2.7	28 MO	0505 1101 1518 2124	0.8 2.0 1.5 2.4	13 TU	0347 1036 1520 2121	0.3 2.2 1.2 2.8	28 WE ○	0351 1104 1451 2033	0.6 2.1 1.7 2.4	13 FR	0422 1114 1622 2143	0.2 2.4 1.3 2.4	28 SA	0332 1045 1523 2045	0.4 2.2 1.5 2.5	13 SU	0420 1116 1656 2154	0.5 2.6 1.3 2.0	28 MO	0338 1042 1614 2123	0.5 2.6 1.3 2.1
14 MO	0411 1039 1533 2156	0.5 2.0 1.0 2.9	29 TU ○	0434 1113 1517 2131	0.7 1.9 1.4 2.5	14 WE	0419 1103 1600 2146	0.2 2.2 1.1 2.8	29 TH	0356 1101 1508 2047	0.5 2.0 1.5 2.6	14 SA	0449 1119 1656 2210	0.3 2.4 1.2 2.3	29 SU	0400 1038 1608 2125	0.4 2.3 1.3 2.5	14 MO	0438 1124 1731 2216	0.6 2.6 1.3 1.9	29 TU	0413 1050 1704 2207	0.5 2.8 1.1 2.1
15 TU	0443 1108 1614 2219	0.3 2.0 0.9 2.9	30 WE	0437 1112 1531 2135	0.6 1.9 1.3 2.6	15 TH	0449 1118 1635 2214	0.1 2.1 1.0 2.7	30 FR	0409 1052 1538 2113	0.4 2.0 1.3 2.7	15 SU	0511 1128 1728 2233	0.5 2.4 1.2 2.2	30 MO	0432 1043 1655 2208	0.3 2.5 1.1 2.4	15 TU	0446 1138 1805 2236	0.7 2.7 1.2 1.8	30 WE	0447 1112 1754 2252	0.5 3.0 0.9 2.0
						31 SA	0432 1030 1615 2146	0.3 2.1 1.1 2.7										31 TH	0522 1145 1842 2337	0.6 3.2 0.7 1.9			

AUSTRALIA, EAST COAST - TOWNSVILLE

LAT 19° 15' LONG 146° 50'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY				FEBRUARY				MARCH				APRIL											
Day	Time	m	Day	Time	m	Day	Time	m	Day	Time	m	Day	Time	m									
1 TH	0357	0.6	16 FR	0421	1.1	1 SU	0532	1.0	16 MO	0420	1.6	1 SU	0426	0.8	16 MO	0345	1.4	1 WE	0005	3.1	16 TH	0442	1.9
	1056	3.4		1128	3.0		1208	3.2		1145	2.8		1051	3.5		1022	2.8		0700	1.6		1037	2.3
	1753	1.3		1822	1.8		1923	1.2		1813	1.7		1734	1.0		1805	1.4		1212	2.4		1831	1.4
	2253	2.5		2315	2.2					2318	3.1		2318	3.1		2239	2.6		1915	1.3		2359	2.6
2 FR	0445	0.8	17 SA	0440	1.4	2 MO	0043	2.6	17 TU	0000	2.2	2 MO	0528	1.1	17 TU	0401	1.6	2 TH	0136	2.8	17 FR	0740	1.9
	1145	3.3		1206	2.8		0700	1.4		0432	1.8		1138	3.1		1043	2.6		0911	1.6		1146	2.1
	1858	1.3		1827	1.7		1308	2.9		1225	2.4		1837	1.2		1628	1.5		1421	2.2		1728	1.5
	2357	2.4					2044	1.3		1936	1.8					2319	2.5		2101	1.4			
3 SA	0549	1.1	18 SU	0010	2.0	3 TU	0231	2.5	18 WE	0143	2.1	3 TU	0021	2.8	18 WE	0419	1.8	3 FR	0947	2.9	18 SA	0115	2.6
	1241	3.1		0456	1.6		0855	1.6		0657	2.1		0700	1.5		1111	2.4		1057	1.4		1003	1.8
	2011	1.3		1253	2.6		1445	2.6		1336	2.2		1235	2.7		1659	1.6		1636	2.2		1338	2.0
				2105	1.7		2208	1.2		2129	1.7		1959	1.3					2236	1.3		1952	1.6
4 SU	0114	2.3	19 MO	0211	1.9	4 WE	0429	2.7	19 TH	0549	2.3	4 WE	0201	2.7	19 TH	0021	2.4	4 SA	0508	3.0	19 SU	0333	2.6
	0719	1.3		0507	1.9		1054	1.6		1122	1.9		0904	1.7		0755	2.0		1159	2.4		1101	1.6
	1349	2.9		1401	2.4		1834	2.6		1543	2.2		1424	2.4		1215	2.2		1745	1.2		1551	2.1
	2128	1.2		2226	1.6		2319	1.0		2252	1.5		2137	1.3		1910	1.7		2344	1.2		2140	1.5
5 MO	0307	2.3	20 TU	0545	2.1	5 TH	0542	3.0	20 FR	0556	2.6	5 TH	0415	2.8	20 FR	0248	2.3	5 SU	0556	3.2	20 MO	0445	2.9
	0904	1.5		1029	1.9		1213	1.4		1208	1.7		1104	1.5		1057	1.9		1243	1.0		1141	1.3
	1519	2.8		1531	2.4		1744	2.6		1856	2.3		1641	2.4		1421	2.0		1826	2.6		1856	2.4
	2236	1.0		2313	1.4					2335	1.3		2303	1.2		2106	1.7					2257	1.3
6 TU	0439	2.6	21 WE	0801	2.4	6 FR	0015	0.8	21 SA	0616	2.8	6 FR	0533	3.0	21 SA	0503	2.8	6 MO	0032	1.1	21 TU	0527	3.1
	1043	1.5		1140	1.8		0631	3.2		1241	1.5		1214	1.3		1142	1.7		0630	3.3		1216	1.1
	1636	2.8		1639	2.4		1306	1.2		1739	2.5		1752	2.5		1629	2.2		1318	1.0		1742	2.7
	2333	0.8		2345	1.3		1832	2.7								2243	1.5		1856	2.8		2350	1.1
7 WE	0542	2.9	22 TH	0621	2.6	7 SA	0100	0.7	22 SU	0010	1.1	7 SA	0004	1.0	22 SU	0536	2.8	7 TU	0111	1.0	22 WE	0603	3.3
	1200	1.3		1225	1.7		0711	3.4		0641	3.1		0621	3.3		1215	1.5		0700	3.3		1250	0.8
	1734	2.8		1723	2.5		1350	1.1		1313	1.3		1301	1.1		1721	2.4		1347	0.9		1822	3.0
							1911	2.8		1815	2.7		1836	2.7		2336	1.2		1926	2.9			
8 TH	0021	0.6	23 FR	0012	1.1	8 SU	0198	0.6	23 MO	0042	0.9	8 SU	0050	0.9	23 MO	0606	3.1	8 WE	0141	1.0	23 TH	0034	0.9
	0631	3.1		0644	2.8		0745	3.5		0709	3.3		0657	3.4		1247	1.2		0727	3.3		0638	3.5
	1259	1.2		1300	1.5		1426	1.1		1344	1.2		1340	1.0		1800	2.7		1411	1.0		1323	0.6
	1822	2.8		1758	2.6		1945	2.8		1849	2.9		1910	2.8					1952	2.9		1902	3.3
9 FR	0102	0.5	24 SA	0037	0.9	9 MO	0208	0.6	24 TU	0113	0.6	9 MO	0128	0.8	24 TU	0017	1.0	9 TH	0205	1.0	24 FR	0116	0.7
	0714	3.4		0707	3.0		0816	3.6		0739	3.6		0727	3.5		0637	3.4		0732	3.2		0715	3.6
	1346	1.1		1331	1.4		1458	1.1		1415	1.0		1412	1.0		1318	1.0		1427	1.0		1358	0.5
	1903	2.9		1829	2.7		2015	2.9		1927	3.1		1939	2.9		1837	3.0		2016	3.0		1945	3.5
10 SA	0139	0.4	25 SU	0102	0.8	10 TU	0234	0.6	25 WE	0145	0.4	10 TU	0158	0.8	25 WE	0054	0.7	10 FR	0225	1.1	25 SA	0159	0.6
	0752	3.5		0733	3.2		0847	3.6		0812	3.8		0755	3.5		0710	3.6		0815	3.2		0753	3.6
	1429	1.1		1403	1.3		1526	1.1		1447	0.8		1438	1.0		1349	0.8		1437	1.0		1430	0.4
	1943	2.8		1900	2.8		2045	2.8		2007	3.3		2006	2.9		1915	3.2		2040	3.0		2030	3.7
11 SU	0213	0.4	26 MO	0129	0.6	11 WE	0257	0.7	26 TH	0220	0.3	11 WE	0221	0.8	26 TH	0130	0.5	11 SA	0244	1.1	26 SU	0244	0.7
	0829	3.6		0803	3.5		0918	3.5		0848	3.9		0823	3.4		0744	3.8		0838	3.1		0834	3.5
	1509	1.1		1435	1.2		1550	1.2		1522	0.8		1459	1.1		1421	0.6		1446	1.0		1507	0.4
	2020	2.8		1936	2.9		2113	2.8		2051	3.4		2031	3.0		1956	3.5		2103	3.0		2115	3.7
12 MO	0244	0.5	27 TU	0159	0.4	12 TH	0316	0.8	27 FR	0259	0.3	12 TH	0241	0.9	27 FR	0208	0.4	12 SA	0303	1.2	27 MO	0335	0.8
	0906	3.6		0836	3.6		0947	3.4		0928	3.9		0849	3.4		0821	3.9		0850	3.0		0917	3.3
	1548	1.1		1510	1.1		1811	1.3		1800	0.8		1514	1.1		1455	0.5		1459	1.0		1547	0.5
	2056	2.7		2016	3.0		2139	2.7		2137	3.4		2056	2.9		2040	3.6		2129	3.0		2204	3.6
13 TU	0312	0.6	28 WE	0231	0.3	13 FR	0334	1.0	28 SA	0339	0.5	13 FR	0258	1.0	28 SA	0248	0.4	13 MO	0323	1.4	28 TU	0434	1.0
	0942	3.5		0913	3.7		1016	3.2		1008	3.7		0915	3.3		0900	3.8		0918	2.8		1003	3.0
	1623	1.2		1547	1.0		1630	1.4		1644	0.8		1525	1.2		1531	0.5		1515	1.1		1633	0.7
	2130	2.6		2100	3.1		2205	2.6		2226	3.3		2119	2.9		2126	3.6		2156	2.9		2255	3.5
14 WE	0337	0.7	29 TH	0309	0.3	14 SA	0351	1.2	29 SU	0315	1.1	14 SA	0315	1.1	29 SU	0332	0.6	14 TU	0342	1.5	29 WE	0544	1.3
	1017	3.4		0952	3.8		1045	3.0		0938	3.1		0938	3.1		0942	3.6		0938	2.7		1054	2.6
	1700	1.4		1630	1.0		1650	1.5		1535	1.2		1535	1.2		1612	0.6		1534	1.1		1728	0.9
	2202	2.5		2148	3.0		2233	2.5		2144	2.8		2144	2.8		2214	3.5		2227	2.9		2351	3.2
15 TH	0400	0.9	30 FR	0349	0.5	15 SU	0406	1.4	30 MO	0330	1.3	15 SU	0330	1.3	30 MO	0427	0.9	15 WE	0403	1.7	30 TH	0711	1.5
	1052	3.2		1034	3.7		1113	2.8		1001	3.0		1001	3.0		1025	3.3		1002	2.5		1157	2.2
	1737	1.5		1718	1.1		1717	1.6	</														

AUSTRALIA, EAST COAST - TOWNSVILLE

LAT 19° 15' LONG 146° 50'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

MAY		JUNE		JULY		AUGUST									
Time	m	Time	m	Time	m	Time	m								
1 FR	0107 3.0 0855 1.5 1401 2.0 2016 1.4	16 SA	0723 1.7 1148 2.1 1731 1.3	1 MO	0319 2.7 1049 1.2 1636 2.1 2223 1.5	16 TU	0134 2.9 0922 1.3 1430 2.2 2016 1.4	1 WE	0307 2.5 1053 1.3 1703 2.1 2252 1.7	16 TH	0212 2.7 0949 1.0 1543 2.4 2145 1.5	1 SA	0428 2.2 1124 1.2 1815 2.5	16 SU	0512 2.4 1138 0.7 1804 3.0
2 SA	0259 2.9 1027 1.3 1604 2.1 2155 1.4	17 SU	0051 2.8 0900 1.6 1318 2.0 1909 1.4	2 TU	0429 2.7 1138 1.1 1735 2.3 2332 1.5	17 WE	0256 2.8 1023 1.1 1600 2.3 2152 1.4	2 TH	0420 2.4 1134 1.2 1757 2.3 2359 1.6	17 FR	0345 2.6 1052 0.8 1702 2.6 2325 1.4	2 SU	0030 1.6 0519 2.2 1155 1.1 1840 2.6	17 MO	0045 1.1 0608 2.5 1229 0.6 1849 3.2
3 SU	0425 2.9 1130 1.2 1718 2.3 2311 1.4	18 MO	0217 2.7 1011 1.4 1509 2.1 2051 1.4	3 WE	0515 2.7 1215 1.0 1816 2.5	18 TH	0410 2.9 1115 0.9 1707 2.6 2315 1.3	3 FR	0511 2.4 1205 1.1 1832 2.5	18 SA	0459 2.6 1145 0.7 1803 2.9	3 MO	0104 1.4 0554 2.3 1222 0.9 1904 2.8	18 TU	0131 0.9 0650 2.5 1312 0.5 1927 3.4
4 MO	0519 3.0 1214 1.0 1804 2.5	19 TU	0348 2.9 1101 1.2 1627 2.3 2220 1.3	4 TH	0022 1.4 0551 2.7 1243 1.0 1849 2.6	19 FR	0506 2.9 1200 0.7 1801 2.9	4 SA	0044 1.5 0547 2.5 1230 1.0 1901 2.7	19 SU	0035 1.2 0547 2.6 1233 0.5 1852 3.2	4 TU	0133 1.3 0623 2.4 1248 0.8 1930 3.0	19 WE	0210 0.8 0727 2.6 1348 0.4 2001 3.5
5 TU	0006 1.3 0557 3.0 1249 1.0 1839 2.6	20 WE	0445 3.0 1144 0.9 1721 2.6 2327 1.2	5 FR	0101 1.4 0621 2.7 1305 0.9 1918 2.8	20 SA	0022 1.2 0553 2.9 1242 0.5 1850 3.2	5 SU	0119 1.4 0616 2.5 1252 0.9 1928 2.8	20 MO	0128 1.1 0641 2.7 1315 0.4 1934 3.4	5 WE	0201 1.2 0651 2.5 1315 0.6 1957 3.2	20 TH	0245 0.8 0800 2.7 1421 0.4 2034 3.5
6 WE	0047 1.2 0628 3.0 1317 0.9 1908 2.8	21 TH	0530 3.2 1222 0.7 1809 2.9	6 SA	0133 1.4 0645 2.7 1322 0.9 1945 2.9	21 SU	0117 1.1 0637 2.9 1321 0.4 1935 3.4	6 MO	0150 1.4 0642 2.5 1312 0.8 1953 3.0	21 TU	0213 1.0 0723 2.7 1355 0.4 2014 3.5	6 TH	0230 1.1 0723 2.6 1344 0.5 2027 3.4	21 FR	0315 0.8 0833 2.7 1450 0.5 2106 3.4
7 TH	0121 1.2 0655 3.0 1339 0.9 1935 2.9	22 FR	0021 1.0 0610 3.3 1259 0.5 1853 3.2	7 SU	0202 1.3 0709 2.7 1337 0.8 2010 3.0	22 MO	0206 1.0 0721 2.9 1400 0.3 2019 3.6	7 TU	0219 1.3 0708 2.5 1333 0.7 2019 3.1	22 WE	0254 0.9 0804 2.7 1431 0.3 2052 3.6	7 FR	0300 1.0 0800 2.7 1415 0.4 2100 3.5	22 SA	0344 0.9 0905 2.6 1515 0.6 2137 3.3
8 FR	0148 1.2 0719 3.0 1354 0.9 2000 3.0	23 SA	0111 0.9 0650 3.3 1334 0.4 1938 3.5	8 MO	0230 1.3 0730 2.6 1353 0.8 2036 3.1	23 TU	0254 0.9 0806 2.8 1440 0.3 2102 3.6	8 WE	0248 1.2 0737 2.6 1359 0.6 2049 3.2	23 TH	0333 0.9 0845 2.6 1507 0.4 2130 3.5	8 SA	0334 0.9 0841 2.8 1451 0.4 2134 3.5	23 SU	0408 1.0 0937 2.5 1538 0.8 2207 3.1
9 SA	0213 1.2 0741 2.9 1405 0.9 2025 3.0	24 SU	0159 0.8 0731 3.3 1411 0.3 2023 3.6	9 TU	0259 1.3 0756 2.6 1414 0.7 2104 3.1	24 WE	0341 1.0 0852 2.7 1520 0.4 2145 3.6	9 TH	0320 1.2 0811 2.6 1429 0.5 2121 3.3	24 FR	0413 1.0 0925 2.5 1541 0.5 2206 3.4	9 SU	0411 0.9 0928 2.8 1530 0.4 2213 3.5	24 MO	0430 1.2 1008 2.4 1558 1.0 2235 2.9
10 SU	0236 1.3 0801 2.8 1416 0.9 2050 3.0	25 MO	0248 0.8 0815 3.2 1450 0.3 2109 3.7	10 WE	0330 1.3 0824 2.6 1439 0.7 2136 3.2	25 TH	0430 1.0 0939 2.6 1501 0.5 2229 3.5	10 FR	0357 1.2 0851 2.6 1503 0.5 2157 3.4	25 SA	0451 1.1 1003 2.4 1611 0.7 2242 3.2	10 MO	0454 0.9 1018 2.7 1615 0.6 2254 3.4	25 TU	0451 1.3 1043 2.3 1615 1.3 2303 2.7
11 MO	0301 1.3 0823 2.8 1432 0.9 2116 3.1	26 TU	0340 0.9 0900 2.9 1531 0.4 2156 3.6	11 TH	0409 1.4 0900 2.5 1511 0.7 2211 3.2	26 FR	0523 1.2 1026 2.4 1642 0.8 2312 3.3	11 SA	0438 1.2 0938 2.5 1543 0.6 2236 3.3	26 SU	0531 1.2 1043 2.3 1640 1.0 2316 3.0	11 TU	0545 1.0 1114 2.6 1708 0.9 2338 3.1	26 WE	0519 1.4 1124 2.2 1628 1.5 2332 2.4
12 TU	0330 1.4 0845 2.7 1453 0.9 2145 3.1	27 WE	0437 1.1 0949 2.7 1616 0.6 2244 3.5	12 FR	0455 1.4 0943 2.4 1548 0.8 2251 3.1	27 SA	0622 1.3 1116 2.2 1723 1.0 2356 3.0	12 SU	0527 1.2 1032 2.5 1628 0.7 2318 3.2	27 MO	0617 1.4 1127 2.1 1708 1.2 2352 2.7	12 WE	0647 1.0 1215 2.5 1821 1.2	27 TH	0612 1.5 1220 2.0 1639 1.7
13 WE	0404 1.5 0912 2.5 1518 0.9 2219 3.0	28 TH	0540 1.2 1041 2.4 1706 0.8 2334 3.3	13 SA	0651 1.5 1039 2.3 1633 0.9 2337 3.1	28 SU	0730 1.4 1216 2.0 1809 1.3	13 MO	0623 1.2 1131 2.4 1721 0.9	28 TU	0715 1.5 1220 2.0 1745 1.5	13 TH	0029 2.8 0800 1.1 1338 2.4 1959 1.4	28 FR	0007 2.2 0730 1.5 1429 2.0 2129 1.9
14 TH	0456 1.6 0946 2.4 1549 1.0 2300 2.9	29 FR	0655 1.4 1142 2.2 1801 1.1	14 SU	0657 1.5 1145 2.2 1731 1.1	29 MO	0045 2.8 0843 1.4 1345 1.9 1915 1.5	14 TU	0005 3.1 0729 1.2 1237 2.3 1829 1.1	29 WE	0032 2.5 0832 1.5 1352 1.9 1910 1.7	14 FR	0139 2.5 0920 1.0 1537 2.5 2202 1.5	29 SA	0111 2.0 0920 1.5 1735 2.2 2336 1.7
15 FR	0603 1.7 1035 2.2 1630 1.1 2346 2.8	30 SA	0032 3.0 0819 1.4 1312 2.0 1916 1.3	15 MO	0030 3.0 0811 1.4 1259 2.1 1846 1.2	30 TU	0146 2.6 0954 1.3 1536 2.0 2116 1.7	15 WE	0100 2.9 0839 1.1 1400 2.3 1958 1.4	30 TH	0127 2.3 0948 1.4 1630 2.0 2209 1.8	15 SA	0345 2.3 1036 0.9 1704 2.7 2344 1.3	30 SU	0345 1.9 1034 1.4 1750 2.4
		31 SU	0149 2.8 0941 1.3 1510 2.0 2058 1.5					31 FR	0300 2.2 1045 1.3 1744 2.2 2343 1.7			31 MO	0015 1.5 0501 2.0 1117 1.2 1811 2.6		

AUSTRALIA, EAST COAST - TOWNSVILLE

LAT 19° 15' LONG 146° 50'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER											
Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m								
1 TU	0043 0539 1152 1834	1.4 2.2 1.0 2.8	16 WE	0120 0649 1302 1910	0.8 2.6 0.6 3.3	1 TH	0040 0552 1157 1824	1.1 2.4 0.9 3.1	16 FR	0130 0708 1321 1912	0.7 2.7 0.8 3.2	1 SU	0106 0642 1250 1851	0.5 3.0 0.7 3.4	16 MO	0145 0747 1401 1930	0.7 2.9 1.1 2.9	1 TU	0114 0714 1330 1905	0.3 3.3 0.8 3.2	16 WE	0133 0800 1420 1925	0.8 3.0 1.3 2.7
2 WE	0110 0608 1224 1900	1.2 2.4 0.8 3.1	17 TH	0155 0720 1337 1940	0.7 2.7 0.6 3.4	2 FR	0108 0622 1231 1853	0.9 2.6 0.7 3.3	17 SA	0157 0735 1349 1938	0.7 2.8 0.8 3.1	2 MO	0136 0721 1331 1928	0.4 3.3 0.6 3.5	17 TU	0158 0813 1427 1951	0.7 2.9 1.2 2.8	2 WE	0147 0757 1420 1947	0.2 3.6 0.8 3.2	17 TH	0147 0826 1448 1948	0.7 3.1 1.4 2.6
3 TH	0137 0638 1254 1928	1.0 2.5 0.6 3.3	18 FR	0224 0749 1406 2006	0.7 2.7 0.6 3.3	3 SA	0136 0656 1306 1924	0.7 2.9 0.5 3.5	18 SU	0216 0801 1414 2003	0.7 2.8 0.9 3.0	3 TU	0206 0803 1416 2007	0.2 3.5 0.6 3.4	18 WE	0207 0838 1452 2012	0.7 3.0 1.3 2.7	3 TH	0223 0843 1513 2032	0.2 3.7 0.9 3.0	18 FR	0204 0853 1518 2014	0.7 3.1 1.4 2.6
4 FR	0205 0710 1326 1958	0.9 2.7 0.4 3.5	19 SA	0248 0817 1430 2036	0.8 2.8 0.7 3.2	4 SU	0204 0732 1343 1959	0.5 3.1 0.4 3.6	19 MO	0229 0827 1434 2026	0.8 2.8 1.0 2.9	4 WE	0240 0849 1507 2049	0.2 3.5 0.7 3.2	19 TH	0219 0905 1520 2032	0.7 3.0 1.4 2.6	4 FR	0302 0930 1609 2120	0.2 3.7 1.0 2.8	19 SA	0226 0922 1553 2043	0.7 3.1 1.4 2.5
5 SA	0234 0746 1359 2030	0.7 2.9 0.3 3.6	20 SU	0306 0845 1451 2102	0.9 2.7 0.8 3.1	5 MO	0233 0815 1422 2035	0.4 3.3 0.4 3.6	20 TU	0236 0852 1455 2046	0.8 2.8 1.1 2.8	5 TH	0317 0938 1607 2134	0.3 3.5 0.9 2.9	20 FR	0237 0934 1556 2056	0.7 2.9 1.5 2.4	5 SA	0345 1020 1711 2211	0.4 3.6 1.1 2.5	20 SU	0252 0955 1634 2116	0.7 3.1 1.5 2.4
6 SU	0305 0828 1435 2106	0.6 3.0 0.3 3.6	21 MO	0319 0912 1510 2126	0.9 2.7 1.0 3.0	6 TU	0306 0900 1506 2115	0.4 3.3 0.5 3.4	21 WE	0245 0918 1516 2106	0.8 2.8 1.3 2.6	6 FR	0400 1030 1716 2225	0.4 3.4 1.1 2.6	21 SA	0300 1007 1645 2123	0.8 2.9 1.6 2.3	6 SU	0433 1113 1821 2308	0.6 3.4 1.3 2.2	21 MO	0322 1032 1724 2200	0.7 3.1 1.5 2.3
7 MO	0338 0914 1516 2145	0.6 3.1 0.4 3.5	22 TU	0329 0939 1527 2150	1.0 2.6 1.1 2.8	7 WE	0343 0948 1600 2158	0.4 3.3 0.8 3.1	22 TH	0259 0947 1539 2124	0.9 2.7 1.4 2.5	7 SA	0456 1130 1837 2325	0.7 3.2 1.3 2.2	22 SU	0325 1046 1748 2159	0.9 2.8 1.7 2.1	7 MO	0531 1211 1942 2256	0.9 3.1 1.3 2.2	22 TU	0357 1115 1824 2256	0.9 3.0 1.6 2.2
8 TU	0417 1002 1602 2226	0.6 3.0 0.6 3.3	23 WE	0338 1008 1543 2212	1.1 2.5 1.3 2.6	8 TH	0428 1042 1712 2244	0.6 3.2 1.1 2.8	23 FR	0316 1021 1606 2143	1.0 2.6 1.6 2.3	8 SU	0610 1242 2016	1.0 3.0 1.3	23 MO	0356 1134 1904 2257	1.0 2.7 1.7 2.0	8 TU	0021 0649 1323 2106	2.0 1.2 2.9 1.3	23 WE	0441 1204 1934	1.1 2.9 1.6
9 WE	0505 1057 1703 2310	0.7 2.9 0.9 3.0	24 TH	0352 1044 1556 2230	1.2 2.4 1.6 2.3	9 FR	0527 1143 1837 2340	0.8 3.0 1.3 2.3	24 SA	0338 1102 1800 2205	1.1 2.5 1.8 2.1	9 MO	0102 0747 1426 2153	1.9 1.2 2.9 1.2	24 TU	0440 1234 2049	1.2 2.6 1.6	9 WE	0232 0830 1451 2224	1.9 1.4 2.8 1.2	24 TH	0009 0545 1302 2053	2.1 1.3 2.9 1.4
10 TH	0606 1158 1828	0.9 2.7 1.3	25 FR	0410 1130 1612 2245	1.3 2.3 1.8 2.1	10 SA	0645 1306 2028	1.0 2.8 1.4	25 SU	0402 1157 1943 2243	1.2 2.4 1.8 1.9	10 TU	0333 0924 1554 2304	2.0 1.2 2.9 1.0	25 WE	0037 0626 1354 2204	1.8 1.4 2.6 1.4	10 TH	0415 0956 1605 2322	2.1 1.8 2.4 1.0	25 FR	0137 0730 1415 2201	2.0 1.4 2.8 1.3
11 FR	0001 0722 1322 2015	2.6 1.0 2.6 1.5	26 SA	0435 1236 2031 2306	1.4 2.2 1.9 1.9	11 SU	0115 0827 1509 2221	2.0 1.1 2.8 1.3	26 MO	0438 1315 2226	1.4 2.4 1.7	11 WE	0455 1039 1655 2354	2.2 1.2 3.0 0.8	26 TH	0250 0826 1525 2252	1.9 1.4 2.7 1.2	11 FR	0521 1107 1659	2.3 1.4 2.8	26 SA	0331 0913 1533 2256	2.2 1.5 2.8 1.0
12 SA	0120 0855 1530 2224	2.2 1.1 2.6 1.4	27 SU	0715 1627 2324	1.5 2.2 1.7	12 MO	0402 1000 1635 2332	2.0 1.1 2.9 1.0	27 TU	0113 0744 1533 2306	1.7 1.5 2.5 1.4	12 TH	0545 1138 1738	2.4 1.1 3.0	27 FR	0417 0954 1624 2330	2.1 1.4 2.9 1.0	12 SA	0003 0604 1202 1739	0.9 2.5 1.4 2.8	27 SU	0447 1039 1636 2342	2.5 1.4 2.9 0.8
13 SU	0402 1021 1658 2347	2.1 1.0 2.9 1.2	28 MO	0230 0904 1705 2348	1.8 1.5 2.4 1.5	13 TU	0517 1109 1730	2.3 0.9 3.1	28 WE	0404 0927 1633 2336	1.9 1.4 2.7 1.2	13 FR	0032 0621 1225 1812	0.8 2.6 1.1 3.0	28 SA	0508 1100 1708	2.4 1.2 3.0	13 SU	0036 0638 1245 1812	0.9 2.7 1.3 2.8	28 MO	0542 1149 1727	2.8 1.3 2.9
14 MO	0523 1128 1754	2.3 0.8 3.1	29 TU	0445 1030 1730	1.9 1.3 2.6	14 WE	0020 0603 1202 1811	0.8 2.5 0.8 3.2	29 TH	0455 1038 1712	2.1 1.2 2.9	14 SA	0103 0652 1302 1841	0.7 2.7 1.1 3.0	29 SU	0007 0551 1153 1746	0.7 2.8 1.1 3.2	14 MO	0100 0708 1322 1839	0.8 2.8 1.3 2.7	29 TU	0023 0628 1247 1812	0.6 3.1 1.2 3.0
15 TU	0040 0613 1220 1835	0.9 2.5 0.7 3.3	30 WE	0014 0521 1118 1756	1.3 2.1 1.1 2.9	15 TH	0059 0638 1245 1843	0.7 2.6 0.8 3.2	30 FR	0006 0531 1128 1745	1.0 2.4 1.0 3.1	15 SU	0128 0720 1334 1907	0.7 2.8 1.1 2.9	30 MO	0041 0631 1242 1825	0.5 3.1 0.9 3.2	15 TU	0119 0735 1352 1903	0.8 2.9 1.3 2.7	30 WE	0100 0712 1338 1857	0.4 3.4 1.1 3.0
						31 SA	0036 0606 1210 1817	0.8 2.7 0.8 3.3											31 TH	0138 0754 1427 1941	0.3 3.6 1.0 3.0		

AUSTRALIA, EAST COAST - NEWCASTLE

LAT 32° 56' LONG 151° 47'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

MAY			JUNE			JULY			AUGUST														
Time	m		Time	m		Time	m		Time	m		Time	m										
1 FR	0629 1235 1809	0.4 1.4 0.7	16 SA	0537 1142 1711 2337	0.5 1.4 0.7 1.7	1 MO	0049 0741 1359 1931	1.6 0.6 1.3 0.8	16 TU	0011 0659 1315 1853	1.7 0.4 1.4 0.7	1 WE	0054 0732 1400 1948	1.5 0.6 1.4 0.8	16 TH	0050 0723 1349 1948	1.6 0.4 1.5 0.6	1 SA	0156 0811 1455 2120	1.2 0.6 1.4 0.7	16 SU	0255 0853 1533 2218	1.3 0.5 1.6 0.5
2 SA	0033 0725 1336 1906	1.7 0.5 1.3 0.8	17 SU	0629 1235 1804	0.5 1.3 0.7	2 TU ☉	0143 0829 1456 2037	1.5 0.6 1.4 0.8	17 WE ☉	0108 0753 1415 2001	1.6 0.4 1.5 0.7	2 TH ☉	0145 0818 1454 2055	1.4 0.6 1.4 0.8	17 FR ☉	0154 0818 1450 2103	1.5 0.4 1.6 0.6	2 SU	0303 0906 1552 2231	1.2 0.6 1.5 0.7	17 MO	0414 0958 1638 2328	1.2 0.5 1.7 0.4
3 SU ☉	0130 0827 1442 2012	1.6 0.6 1.3 0.8	18 MO	0029 0724 1335 1908	1.7 0.5 1.3 0.7	3 WE	0241 0916 1552 2145	1.4 0.6 1.4 0.8	18 TH	0214 0848 1515 2115	1.6 0.4 1.5 0.6	3 FR	0246 0907 1548 2205	1.3 0.6 1.4 0.7	18 SA	0304 0915 1553 2221	1.4 0.4 1.6 0.5	3 MO	0413 1002 1647 2331	1.2 0.6 1.5 0.6	18 TU	0523 1100 1737	1.3 0.5 1.7
4 MO	0231 0923 1547 2122	1.5 0.6 1.3 0.8	19 TU ☉	0130 0822 1440 2019	1.6 0.5 1.4 0.7	4 TH	0342 1003 1642 2250	1.4 0.6 1.5 0.8	19 FR	0322 0943 1615 2228	1.5 0.4 1.6 0.6	4 SA	0350 0957 1640 2309	1.3 0.6 1.5 0.7	19 SU	0416 1014 1653 2331	1.4 0.5 1.7 0.5	4 TU	0515 1056 1737	1.2 0.6 1.6	19 WE	0024 0621 1156 1829	0.4 1.3 0.5 1.8
5 TU	0336 1015 1643 2231	1.5 0.6 1.4 0.8	20 WE	0238 0920 1544 2132	1.6 0.5 1.5 0.7	5 FR	0439 1049 1727 2345	1.4 0.6 1.5 0.7	20 SA	0430 1037 1711 2336	1.5 0.5 1.7 0.5	5 SU	0450 1045 1727	1.3 0.6 1.6	20 MO	0524 1111 1749	1.3 0.5 1.8	5 WE	0021 0608 1145 1822	0.5 1.3 0.5 1.7	20 TH	0112 0711 1246 1915	0.3 1.4 0.5 1.8
6 WE	0435 1101 1730 2330	1.5 0.6 1.5 0.7	21 TH	0346 1015 1641 2242	1.6 0.4 1.6 0.6	6 SA	0530 1130 1807	1.4 0.6 1.6	21 SU	0532 1130 1804	1.5 0.4 1.8	6 MO	0002 0544 1130 1810	0.6 1.3 0.6 1.7	21 TU	0032 0626 1231 1842	0.4 1.4 0.5 1.9	6 TH	0104 0656 1231 1906	0.4 1.3 0.5 1.9	21 FR	0153 0755 1332 1958	0.3 1.4 0.4 1.8
7 TH	0527 1142 1810	1.5 0.6 1.5	22 FR	0450 1107 1734 2345	1.6 0.4 1.7 0.5	7 SU	0031 0616 1210 1845	0.6 1.4 0.6 1.7	22 MO	0037 0632 1221 1856	0.4 1.5 0.4 1.9	7 TU	0048 0632 1214 1851	0.5 1.3 0.5 1.7	22 WE	0124 0721 1256 1930	0.3 1.4 0.4 1.9	7 FR	0145 0741 1317 1949	0.3 1.4 0.4 1.8	22 SA ●	0230 0835 1415 2037	0.3 1.4 0.4 1.8
8 FR	0017 0611 1219 1845	0.7 1.5 0.5 1.6	23 SA	0548 1158 1825	1.6 0.3 1.8	8 MO	0113 0700 1247 1921	0.5 1.4 0.5 1.7	23 TU	0132 0730 1312 1945	0.3 1.5 0.4 2.0	8 WE	0129 0718 1255 1930	0.4 1.3 0.5 1.8	23 TH ●	0211 0811 1345 2016	0.3 1.4 0.4 1.9	8 SA ○	0224 0825 1403 2032	0.2 1.4 0.4 1.9	23 SU	0304 0913 1454 2114	0.3 1.4 0.4 1.7
9 SA	0059 0652 1253 1920	0.6 1.5 0.5 1.7	24 SU	0045 0645 1246 1915	0.4 1.6 0.3 1.9	9 TU	0152 0743 1324 1957	0.5 1.4 0.5 1.8	24 WE ●	0224 0825 1401 2034	0.3 1.5 0.5 2.0	9 TH	0209 0802 1337 2012	0.4 1.4 0.5 1.8	24 FR	0254 0858 1430 2100	0.3 1.4 0.5 1.9	9 SU	0305 0910 1450 2116	0.2 1.5 0.3 1.9	24 MO	0337 0948 1532 2148	0.3 1.4 0.5 1.6
10 SU	0137 0730 1326 1953	0.5 1.5 0.5 1.7	25 MO	0141 0743 1335 2004	0.3 1.6 0.4 2.0	10 WE ○	0230 0825 1401 2034	0.4 1.5 0.5 1.8	25 TH	0313 0917 1449 2120	0.3 1.5 0.5 2.0	10 FR ○	0248 0847 1420 2053	0.3 1.4 0.5 1.9	25 SA	0334 0941 1515 2140	0.3 1.4 0.5 1.8	10 MO	0347 0957 1541 2202	0.1 1.5 0.3 1.9	25 TU	0408 1024 1612 2222	0.3 1.4 0.5 1.6
11 MO	0214 0809 1359 2026	0.5 1.5 0.5 1.8	26 TU ●	0234 0839 1424 2053	0.3 1.6 0.4 2.0	11 TH	0309 0908 1441 2113	0.4 1.4 0.5 1.8	26 FR	0400 1006 1537 2205	0.3 1.4 0.5 1.9	11 SA	0330 0932 1506 2135	0.3 1.4 0.5 1.9	26 SU	0413 1021 1557 2217	0.3 1.4 0.5 1.7	11 TU	0431 1045 1633 2250	0.2 1.6 0.4 1.8	26 WE	0439 1100 1653 2258	0.4 1.4 0.5 1.5
12 TU ○	0250 0848 1432 2100	0.4 1.5 0.5 1.8	27 WE	0328 0934 1513 2142	0.2 1.5 0.5 2.0	12 FR	0350 0952 1523 2153	0.4 1.4 0.6 1.8	27 SA	0445 1053 1623 2246	0.3 1.4 0.6 1.8	12 SU	0413 1018 1554 2219	0.3 1.4 0.5 1.9	27 MO	0448 1100 1638 2253	0.4 1.4 0.6 1.6	12 WE	0515 1134 1730 2341	0.2 1.6 0.4 1.6	27 TH	0513 1137 1738 2336	0.4 1.4 0.6 1.4
13 WE	0328 0929 1507 2135	0.4 1.4 0.6 1.8	28 TH	0420 1028 1601 2229	0.3 1.5 0.5 1.9	13 SA	0433 1038 1608 2235	0.4 1.4 0.6 1.8	28 SU	0528 1138 1709 2328	0.4 1.4 0.7 1.7	13 MO	0457 1107 1645 2305	0.3 1.5 0.5 1.8	28 TU	0523 1140 1722 2330	0.4 1.4 0.6 1.5	13 TH	0604 1227 1831	0.3 1.6 0.5	28 FR	0548 1218 1829	0.5 1.4 0.6
14 TH	0408 1010 1545 2213	0.4 1.4 0.6 1.8	29 FR	0512 1119 1650 2315	0.3 1.4 0.6 1.8	14 SU	0519 1127 1658 2321	0.4 1.4 0.6 1.8	29 MO	0609 1223 1757	0.5 1.4 0.7	14 TU	0544 1157 1740 2355	0.3 1.5 0.5 1.7	29 WE	0600 1222 1810	0.5 1.4 0.7	14 FR	0037 0656 1325 1940	1.5 0.4 1.6 0.5	29 SA	0021 0630 1306 1928	1.3 0.5 1.4 0.6
15 FR	0451 1054 1625 2252	0.5 1.4 0.6 1.7	30 SA	0602 1211 1740	0.4 1.4 0.7	15 MO	0608 1218 1752	0.4 1.4 0.7	30 TU	0009 0649 1309 1849	1.6 0.5 1.4 0.8	15 WE	0632 1251 1840	0.3 1.5 0.6	30 TH	0011 0638 1307 1904	1.4 0.5 1.4 0.7	15 SA ○	0141 0752 1428 2059	1.4 0.4 1.6 0.5	30 SU ○	0116 0718 1401 2037	1.2 0.6 1.4 0.7
			31 SU	0001 0652 1303 1833	1.7 0.5 1.3 0.8							31 FR ○	0058 0722 1359 2008	1.3 0.5 1.4 0.7				31 MO	0224 0817 1503 2152	1.1 0.6 1.4 0.6			

AUSTRALIA, EAST COAST - NEWCASTLE

LAT 32° 56' LONG 151° 47'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER			
Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m
1 TU 0340 0922 1506 2257	1.1 0.6 1.5 0.5	16 WE 0517 1052 1721	1.3 0.6 1.6	1 TH 0420 0957 1627 2311	1.2 0.6 1.5 0.4	16 FR 0547 1137 1747	1.4 0.6 1.5	1 SU 0537 1133 1745	1.5 0.4 1.6	16 MO 0005 0632 1248 1839	0.4 1.6 0.5 1.4	1 TU 0559 1217 1817	1.7 0.4 1.5	16 WE 0634 1307 1851	1.6 0.5 1.3
2 WE 0447 1026 1702 2349	1.2 0.6 1.6 0.4	17 TH 0006 0610 1149 1813	0.4 1.3 0.5 1.6	2 FR 0516 1058 1722 2358	1.3 0.5 1.6 0.3	17 SA 0015 0629 1225 1830	0.4 1.4 0.5 1.5	2 MO 0005 0624 1230 1837	0.2 1.7 0.3 1.7	17 TU 0038 0707 1328 1918	0.4 1.6 0.5 1.4	2 WE 0019 0648 1315 1915	0.2 1.9 0.2 1.5	17 TH 0035 0711 1346 1933	0.5 1.7 0.4 1.3
3 TH 0544 1121 1753	1.3 0.5 1.7	18 FR 0048 0653 1238 1857	0.3 1.4 0.5 1.7	3 SA 0605 1152 1812	1.4 0.4 1.7	18 SU 0049 0705 1307 1910	0.4 1.5 0.5 1.5	3 TU 0049 0711 1324 1930	0.2 1.8 0.2 1.7	18 WE 0111 0740 1404 1956	0.4 1.7 0.4 1.4	3 TH 0108 0738 1411 2012	0.3 2.0 0.2 1.5	18 FR 0112 0747 1424 2015	0.5 1.7 0.4 1.3
4 FR 0039 0631 1212 1840	0.3 1.3 0.4 1.8	19 SA 0126 0732 1320 1936	0.3 1.4 0.4 1.6	4 SU 0041 0650 1244 1900	0.2 1.5 0.3 1.8	19 MO 0120 0739 1345 1945	0.4 1.5 0.4 1.5	4 WE 0135 0759 1417 2024	0.2 1.9 0.2 1.6	19 TH 0143 0813 1440 2034	0.4 1.7 0.4 1.4	4 FR 0157 0829 1505 2108	0.3 2.0 0.1 1.5	19 SA 0148 0824 1501 2056	0.5 1.8 0.3 1.3
5 SA 0115 0716 1300 1925	0.2 1.4 0.4 1.8	20 SU 0159 0809 1400 2013	0.3 1.5 0.4 1.6	5 MO 0123 0736 1334 1949	0.1 1.7 0.2 1.8	20 TU 0150 0811 1421 2021	0.4 1.6 0.4 1.5	5 TH 0221 0847 1513 2119	0.2 1.9 0.1 1.6	20 FR 0215 0846 1517 2114	0.5 1.7 0.4 1.4	5 SA 0246 0918 1558 2203	0.3 2.0 0.1 1.4	20 SU 0227 0901 1540 2137	0.5 1.8 0.3 1.3
6 SU 0156 0801 1347 2011	0.1 1.5 0.3 1.9	21 MO 0229 0843 1437 2047	0.3 1.5 0.4 1.6	6 TU 0206 0822 1427 2039	0.1 1.8 0.2 1.8	21 WE 0219 0843 1457 2056	0.4 1.6 0.4 1.4	6 FR 0309 0937 1608 2215	0.3 2.0 0.1 1.5	21 SA 0250 0922 1556 2154	0.5 1.7 0.4 1.3	6 SU 0337 1008 1650 2257	0.4 2.0 0.2 1.4	21 MO 0306 0939 1619 2220	0.5 1.8 0.3 1.3
7 MO 0237 0846 1437 2056	0.1 1.6 0.2 1.9	22 TU 0259 0915 1514 2120	0.3 1.5 0.4 1.5	7 WE 0250 0909 1520 2131	0.1 1.8 0.1 1.7	22 TH 0249 0915 1533 2132	0.4 1.6 0.4 1.4	7 SA 0359 1028 1705 2313	0.4 1.9 0.2 1.4	22 SU 0327 0959 1636 2237	0.5 1.7 0.4 1.3	7 MO 0429 1057 1742 2351	0.5 1.9 0.3 1.3	22 TU 0348 1018 1700 2304	0.5 1.8 0.3 1.3
8 TU 0319 0932 1530 2145	0.1 1.7 0.2 1.8	23 WE 0328 0947 1551 2155	0.3 1.5 0.4 1.5	8 TH 0335 0958 1616 2225	0.2 1.8 0.2 1.6	23 FR 0320 0948 1612 2212	0.4 1.6 0.4 1.4	8 SU 0451 1119 1804	0.5 1.8 0.3	23 MO 0406 1037 1720 2323	0.6 1.7 0.4 1.3	8 TU 0521 1145 1833	0.6 1.8 0.3	23 WE 0433 1100 1745 2353	0.6 1.7 0.3 1.3
9 WE 0403 1021 1624 2236	0.1 1.7 0.2 1.7	24 TH 0358 1021 1630 2231	0.4 1.5 0.4 1.4	9 FR 0423 1048 1715 2322	0.3 1.8 0.2 1.5	24 SA 0354 1023 1653 2253	0.5 1.6 0.4 1.3	9 MO 0012 0546 1212 1904	1.3 0.6 1.7 0.3	24 TU 0450 1118 1808	0.6 1.6 0.4	9 WE 0045 0615 1232 1923	1.3 0.7 1.6 0.4	24 TH 0524 1145 1831	0.6 1.7 0.3
10 TH 0449 1111 1722 2330	0.2 1.7 0.3 1.5	25 FR 0430 1057 1713 2311	0.4 1.5 0.5 1.3	10 SA 0514 1141 1817	0.4 1.8 0.3	25 SU 0430 1101 1739 2339	0.5 1.6 0.5 1.2	10 TU 0115 0646 1308 2006	1.3 0.7 1.6 0.4	25 WE 0015 0541 1205 1900	1.2 0.7 1.6 0.4	10 TH 0142 0715 1324 2013	1.3 0.7 1.5 0.5	25 FR 0045 0620 1235 1921	1.3 0.6 1.6 0.4
11 FR 0538 1203 1825	0.3 1.7 0.4	26 SA 0505 1135 1800 2356	0.5 1.5 0.5 1.2	11 SU 0022 0609 1237 1925	1.3 0.5 1.7 0.4	26 MO 0513 1144 1830	0.6 1.5 0.5	11 WE 0222 0752 1410 2106	1.3 0.7 1.5 0.5	26 TH 0112 0641 1300 1956	1.2 0.7 1.5 0.4	11 FR 0241 0818 1419 2101	1.3 0.8 1.4 0.5	26 SA 0144 0724 1333 2015	1.4 0.6 1.5 0.4
12 SA 0029 0630 1301 1935	1.4 0.4 1.6 0.4	27 SU 0545 1219 1856	0.5 1.6 0.6	12 MO 0130 0710 1339 2036	1.2 0.6 1.6 0.4	27 TU 0031 0602 1233 1929	1.2 0.7 1.5 0.5	12 TH 0329 0902 1515 2200	1.3 0.7 1.4 0.5	27 FR 0215 0748 1403 2053	1.3 0.7 1.5 0.4	12 SA 0338 0927 1521 2149	1.3 0.8 1.3 0.5	27 SU 0245 0835 1440 2111	1.4 0.6 1.5 0.4
13 SU 0135 0730 1404 2053	1.3 0.5 1.6 0.5	28 MO 0650 0634 1312 2000	1.2 0.6 1.4 0.6	13 TU 0245 0819 1447 2145	1.2 0.7 1.5 0.4	28 WE 0135 0704 1333 2032	1.2 0.7 1.5 0.5	13 FR 0427 1012 1616 2247	1.3 0.7 1.4 0.5	28 SA 0818 0900 1512 2148	1.4 0.7 1.5 0.4	13 SU 0430 1034 1621 2234	1.4 0.7 1.3 0.5	28 MO 0345 0950 1551 2207	1.5 0.6 1.4 0.4
14 MO 0253 0837 1514 2209	1.2 0.6 1.6 0.5	29 TU 0156 0736 1415 2111	1.1 0.7 1.4 0.6	14 WE 0400 0931 1556 2245	1.2 0.7 1.5 0.4	29 TH 0245 0816 1442 2134	1.2 0.7 1.5 0.4	14 SA 0515 1114 1711 2329	1.4 0.6 1.4 0.5	29 SU 0415 1010 1618 2241	1.5 0.6 1.5 0.3	14 MO 0515 1134 1716 2317	1.5 0.6 1.3 0.5	29 TU 0443 1103 1700 2301	1.6 0.5 1.4 0.4
15 TU 0413 0946 1622 2314	1.2 0.6 1.6 0.4	30 WE 0312 0847 1524 2216	1.1 0.7 1.5 0.5	15 TH 0500 1039 1657 2334	1.3 0.6 1.5 0.4	30 FR 0350 0929 1549 2230	1.3 0.6 1.5 0.4	15 SU 0555 1205 1758	1.5 0.6 1.4	30 MO 0509 1116 1719 2330	1.6 0.5 1.5 0.3	15 TU 0556 1224 1806 2358	1.6 0.6 1.3 0.5	30 WE 0538 1210 1804 2355	1.8 0.4 1.4 0.4
				31 SA 0447 1034 1649 2318	1.4 0.6 1.6 0.3									31 TH 0630 1310 1905	1.9 0.3 1.4

AUSTRALIA, EAST COAST - SYDNEY (FORT DENISON)

LAT 33° 51' LONG 151° 14'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY			FEBRUARY			MARCH			APRIL															
Time	m		Time	m		Time	m		Time	m		Time	m											
1 TH	0326 0955 1631 2234	0.4 1.9 0.2 1.4	16 FR	0407 1027 1700 2306	0.5 1.7 0.4 1.3	1 SU	0500 1118 1744 2359	0.3 1.8 0.2 1.5	16 MO	0502 1109 1724 2343	0.5 1.5 0.4 1.4	1 SU	0356 1014 1630 2243	0.2 1.8 0.2 1.7	16 MO	0400 1007 1612 2227	0.4 1.5 0.4 1.5	1 WE	0539 1146 1738	0.3 1.5 0.4	16 TH	0503 1101 1645 2311	0.5 1.3 0.6 1.8	
2 FR	0416 1042 1719 2327	0.4 1.8 0.2 1.4	17 SA	0447 1102 1733 2345	0.5 1.8 0.4 1.3	2 MO	0559 1212 1833	0.4 1.6 0.3	17 TU	0545 1147 1800	0.6 1.4 0.5	2 MO	0451 1104 1716 2334	0.2 1.7 0.2 1.7	17 TU	0440 1043 1644 2303	0.5 1.4 0.5 1.5	2 TH	0003 0641 1245 1831	1.7 0.4 1.3 0.6	17 FR	0549 1147 1727 2357	0.5 1.3 0.6 1.6	
3 SA	0511 1132 1809	0.4 1.8 0.2	18 SU	0530 1140 1810	0.6 1.5 0.4	3 TU	0055 0701 1309 1827	1.5 0.4 1.5 0.4	18 WE	0026 0635 1232 1841	1.4 0.6 1.3 0.5	3 TU	0549 1159 1805	0.3 1.5 0.4	18 WE	0522 1122 1718 2343	0.5 1.4 0.5 1.5	3 FR	0100 0747 1352 1932	1.6 0.5 1.2 0.7	18 SA	0642 1242 1817	0.5 1.2 0.7	
4 SU	0022 0609 1226 1901	1.4 0.5 1.6 0.3	19 MO	0030 0617 1222 1849	1.3 0.6 1.4 0.5	4 WE	0155 0812 1415 2025	1.5 0.5 1.3 0.5	19 TH	0115 0734 1327 1931	1.4 0.6 1.2 0.6	4 WE	0029 0652 1257 1858	1.6 0.4 1.4 0.5	19 TH	0609 1206 1758	0.6 1.3 0.6	4 SA	0204 0658 1506 2043	1.6 0.5 1.2 0.7	19 SU	0050 0743 1345 1920	1.5 0.6 1.2 0.7	
5 MO	0120 0712 1325 1956	1.4 0.5 1.5 0.3	20 TU	0117 0713 1311 1936	1.3 0.7 1.3 0.5	5 TH	0259 0930 1530 2129	1.5 0.5 1.2 0.5	20 FR	0213 0845 1434 2032	1.4 0.7 1.1 0.6	5 TH	0128 0801 1404 1958	1.6 0.5 1.3 0.6	20 FR	0030 0703 1259 1846	1.5 0.6 1.2 0.6	5 SU	0312 1004 1619 2154	1.5 0.5 1.2 0.7	20 MO	0154 0848 1456 2034	1.5 0.5 1.2 0.7	
6 TU	0220 0823 1430 2054	1.5 0.5 1.4 0.4	21 WE	0212 0817 1410 2029	1.3 0.7 1.2 0.6	6 FR	0405 1048 1646 2232	1.6 0.5 1.2 0.5	21 SA	0315 1000 1549 2141	1.4 0.6 1.1 0.6	6 FR	0233 0918 1522 2107	1.5 0.5 1.2 0.6	21 SA	0125 0809 1404 1948	1.4 0.6 1.2 0.7	6 MO	0418 1102 1717 2259	1.5 0.5 1.3 0.7	21 TU	0303 0952 1603 2149	1.5 0.5 1.3 0.6	
7 WE	0323 0940 1542 2152	1.5 0.5 1.3 0.4	22 TH	0309 0930 1517 2127	1.4 0.7 1.2 0.6	7 SA	0509 1156 1752 2330	1.6 0.5 1.2 0.5	22 SU	0418 1105 1659 2244	1.5 0.5 1.2 0.6	7 SA	0343 1033 1640 2216	1.5 0.5 1.2 0.6	22 SU	0230 0921 1519 2103	1.4 0.6 1.2 0.7	7 TU	0515 1150 1803 2352	1.5 0.5 1.4 0.6	22 WE	0411 1048 1702 2255	1.6 0.4 1.4 0.5	
8 TH	0425 1055 1652 2249	1.6 0.5 1.3 0.4	23 FR	0406 1042 1627 2223	1.4 0.6 1.2 0.6	8 SU	0604 1249 1845	1.7 0.4 1.3	23 MO	0516 1200 1757 2340	1.6 0.4 1.3 0.5	8 SU	0449 1137 1742 2318	1.5 0.5 1.2 0.6	23 MO	0338 1028 1631 2215	1.5 0.5 1.2 0.6	8 WE	0602 1230 1842	1.5 0.5 1.4	23 TH	0511 1140 1755 2355	1.7 0.3 1.6 0.4	
9 FR	0523 1202 1757 2343	1.7 0.4 1.3 0.4	24 SA	0500 1141 1728 2315	1.5 0.5 1.2 0.5	9 MO	0023 0653 1333 1930	0.5 1.7 0.3 1.3	24 TU	0609 1248 1846	1.7 0.3 1.4	9 MO	0545 1228 1830	1.6 0.4 1.3	24 TU	0443 1125 1730 2317	1.6 0.4 1.3 0.5	9 TH	0037 0544 1304 1916	0.6 1.5 0.4 1.5	24 FR	0607 1229 1845	1.7 0.2 1.7	
10 SA	0617 1259 1854	1.7 0.3 1.3	25 SU	0549 1231 1820	1.6 0.4 1.3	10 TU	0109 0736 1412 2010	0.5 1.7 0.3 1.4	25 WE	0030 0658 1333 1933	0.4 1.8 0.2 1.5	10 TU	0012 0633 1308 1911	0.5 1.6 0.4 1.4	25 WE	0540 1215 1821	1.7 0.3 1.5	10 FR	0116 0720 1335 1948	0.5 1.5 0.4 1.6	25 SA	0051 0700 1315 1932	0.3 1.8 0.2 1.8	
11 SU	0033 0707 1347 1944	0.4 1.8 0.3 1.3	26 MO	0003 0636 1316 1908	0.5 1.7 0.3 1.3	11 WE	0150 0815 1446 2046	0.4 1.7 0.3 1.4	26 TH	0121 0746 1417 2019	0.3 1.9 0.1 1.6	11 WE	0056 0715 1343 1946	0.5 1.6 0.4 1.4	26 TH	0013 0632 1302 1909	0.4 1.8 0.2 1.6	11 SA	0153 0756 1404 2019	0.5 1.5 0.4 1.6	26 SU	0145 0754 1401 2020	0.2 1.7 0.2 1.9	
12 MO	0120 0752 1430 2028	0.4 1.8 0.3 1.4	27 TU	0049 0721 1400 1954	0.4 1.8 0.2 1.4	12 TH	0229 0851 1519 2120	0.4 1.7 0.3 1.4	27 FR	0211 0834 1501 2106	0.2 1.9 0.1 1.6	12 TH	0135 0751 1415 2019	0.5 1.6 0.4 1.5	27 FR	0106 0724 1347 1956	0.3 1.8 0.1 1.7	12 SU	0229 0831 1433 2050	0.4 1.5 0.4 1.6	27 MO	0240 0847 1447 2108	0.2 1.7 0.3 2.0	
13 TU	0204 0834 1511 2110	0.4 1.8 0.3 1.4	28 WE	0136 0807 1443 2041	0.3 1.9 0.2 1.5	13 FR	0306 0926 1550 2154	0.4 1.7 0.3 1.4	28 SA	0302 0923 1545 2154	0.2 1.9 0.1 1.7	13 FR	0212 0826 1445 2051	0.4 1.6 0.4 1.5	28 SA	0159 0815 1432 2043	0.2 1.9 0.1 1.8	13 MO	0304 0906 1503 2122	0.4 1.5 0.4 1.8	28 TU	0334 0942 1534 2157	0.2 1.6 0.3 1.9	
14 WE	0246 0914 1548 2149	0.4 1.8 0.3 1.4	29 TH	0224 0853 1527 2128	0.3 1.9 0.1 1.5	14 SA	0344 1000 1621 2229	0.4 1.6 0.4 1.4	14 SA	0247 0900 1513 2122	0.4 1.6 0.4 1.5	14 SA	0247 0900 1513 2122	0.4 1.6 0.4 1.5	29 SU	0251 0905 1517 2130	0.2 1.8 0.2 1.8	14 TU	0342 0943 1535 2156	0.4 1.4 0.5 1.8	29 WE	0430 1036 1623 2246	0.2 1.5 0.4 1.9	
15 TH	0327 0951 1624 2227	0.5 1.7 0.3 1.3	30 FR	0314 0940 1611 2215	0.3 1.9 0.1 1.5	15 SU	0422 1033 1621 2304	0.5 1.5 0.4 1.4	15 SU	0323 0932 1542 2154	0.4 1.6 0.4 1.5	15 SU	0323 0932 1542 2154	0.4 1.6 0.4 1.5	30 MO	0345 0958 1602 2219	0.2 1.7 0.2 1.8	15 WE	0421 1021 1609 2231	0.4 1.4 0.5 1.8	30 TH	0526 1132 1713 2338	0.3 1.4 0.5 1.8	
			31 SA	0406 1029 1657 2306	0.3 1.9 0.1 1.5				31 TU	0441 1050 1649 2310	0.2 1.6 0.3 1.8													

AUSTRALIA, EAST COAST - SYDNEY (FORT DENISON)

LAT 33° 51' LONG 151° 14'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

MAY				JUNE				JULY				AUGUST																													
	Time	m		Time	m		Time	m	Time	m	Time	m	Time	m																											
1	0624	0.4	16	0532	0.5	1	0050	1.6	16	0011	1.7	1	0055	1.5	16	0050	1.6	1	0156	1.2	16	0252	1.3																		
FR	1230	1.3	SA	1133	1.3	MO	0742	0.5	TU	0658	0.4	WE	0735	0.5	TH	0723	0.3	SA	0812	0.6	SU	0852	0.5	SU	1530	1.6															
	1805	0.6		1706	0.6		1355	1.3		1309	1.4		1358	1.3		1345	1.5		1452	1.4		2212	1.6		2212	0.5															
				2335	1.7		1930	0.8		1847	0.6		1945	0.8		1944	0.6		2116	0.7																					
2	0031	1.7	17	0624	0.5	2	0144	1.5	17	0108	1.6	2	0146	1.4	17	0153	1.5	2	0300	1.2	17	0409	1.2	17	0409	1.2															
SA	0725	0.5	SU	1228	1.3	TU	0831	0.6	WE	0752	0.4	TH	0821	0.6	FR	0817	0.4	SU	0907	0.6	MO	0957	0.5	MO	0957	0.5	MO	0957	0.5												
	1331	1.3		1800	0.7	○	1451	1.3	○	1410	1.4	○	1451	1.3	○	1446	1.5		1550	1.4		1635	1.6		1635	1.6		1635	1.6												
	1904	0.7					2034	0.8		1956	0.6		2052	0.8		2059	0.6		2227	0.6		2322	0.4		2322	0.4		2322	0.4												
3	0130	1.6	18	0028	1.6	3	0241	1.4	18	0212	1.6	3	0245	1.3	18	0301	1.4	3	0409	1.2	18	0518	1.2	18	0518	1.2	18	0518	1.2												
○	0825	0.5	MO	0720	0.5	WE	0920	0.6	TH	0847	0.4	FR	0909	0.6	SA	0915	0.4	MO	1003	0.6	TU	1059	0.5	TU	1059	0.5	TU	1059	0.5	TU	1059	0.5									
	1436	1.3		1329	1.3		1545	1.4		1511	1.5		1545	1.4		1548	1.6		1645	1.5		1735	1.7		1735	1.7		1735	1.7		1735	1.7									
	2010	0.8		1901	0.7		2141	0.8		2109	0.6		2201	0.7		2215	0.5		2327	0.6																					
4	0231	1.5	19	0129	1.6	4	0339	1.4	19	0318	1.5	4	0347	1.3	19	0413	1.3	4	0510	1.2	19	0619	0.4	19	0619	0.4	19	0619	0.4	19	0619	0.4									
MO	0922	0.6	TU	0820	0.5	TH	1006	0.6	FR	0943	0.4	SA	0959	0.6	SU	1014	0.4	TU	1056	0.5	WE	1154	0.4	WE	1154	0.4	WE	1154	0.4	WE	1154	0.4	WE	1154	0.4						
	1541	1.3	○	1433	1.3		1636	1.4		1610	1.6		1637	1.5		1649	1.7		1734	1.6		1828	1.7		1828	1.7		1828	1.7		1828	1.7		1828	1.7						
	2119	0.8		2013	0.7		2245	0.7		2222	0.5		2304	0.7		2326	0.4																								
5	0334	1.5	20	0235	1.6	5	0434	1.4	20	0425	1.5	5	0446	1.3	20	0520	1.3	5	0615	0.5	20	0705	1.3	20	0705	1.3	20	0705	1.3	20	0705	1.3	20	0705	1.3						
TU	1015	0.6	WE	0918	0.4	FR	1050	0.6	SA	1036	0.4	SU	1045	0.5	MO	1110	0.4	WE	1202	1.2	TH	1245	0.4	TH	1245	0.4	TH	1245	0.4	TH	1245	0.4	TH	1245	0.4	TH	1245	0.4			
	1637	1.3		1536	1.4		1722	1.5		1706	1.7		1725	1.5		1746	1.8		1819	1.7		1914	1.7		1914	1.7		1914	1.7		1914	1.7		1914	1.7		1914	1.7			
	2226	0.7		2126	0.6		2340	0.7		2330	0.5		2358	0.6					1819	1.7																					
6	0430	1.4	21	0342	1.6	6	0525	1.4	21	0528	1.5	6	0540	1.3	21	0628	0.4	6	0659	0.4	21	0749	1.4	21	0749	1.4	21	0749	1.4	21	0749	1.4	21	0749	1.4						
WE	1101	0.5	TH	1014	0.4	SA	1130	0.5	SU	1129	0.4	MO	1130	0.5	TU	1203	1.3	TH	1229	1.3	FR	1330	0.4	FR	1330	0.4	FR	1330	0.4	FR	1330	0.4	FR	1330	0.4	FR	1330	0.4			
	1724	1.4		1634	1.5		1803	1.6		1800	1.8		1807	1.6		1840	1.8		1901	1.7		1955	1.7		1955	1.7		1955	1.7		1955	1.7		1955	1.7		1955	1.7			
	2323	0.7		2236	0.6																																				
7	0521	1.4	22	0445	1.6	7	0626	0.6	22	0632	0.4	7	0643	0.5	22	0716	1.4	7	0733	1.3	22	0829	1.4	22	0829	1.4	22	0829	1.4	22	0829	1.4	22	0829	1.4						
TH	1142	0.5	FR	1106	0.3	SU	1208	0.5	MO	1220	0.4	TU	1212	0.5	WE	1254	0.4	FR	1314	0.4	SA	1412	0.4	SA	1412	0.4	SA	1412	0.4	SA	1412	0.4	SA	1412	0.4	SA	1412	0.4			
	1805	1.5		1729	1.7		1841	1.6		1853	1.9		1847	1.7		1929	1.9		1945	1.8		2033	1.7		2033	1.7		2033	1.7		2033	1.7		2033	1.7		2033	1.7			
				2340	0.4																																				
8	0011	0.6	23	0545	1.6	8	0108	0.5	23	0128	0.3	8	0124	0.4	23	0208	0.3	8	0220	0.2	23	0302	0.3	23	0302	0.3	23	0302	0.3	23	0302	0.3	23	0302	0.3	23	0302	0.3			
FR	0605	1.5	SA	1156	0.3	MO	0655	1.4	TU	0725	1.5	WE	0712	1.3	TH	0805	1.4	SA	0817	1.4	○	0905	1.4	○	0905	1.4	○	0905	1.4	○	0905	1.4	○	0905	1.4	○	0905	1.4	○	0905	1.4
	1218	0.5		1820	1.8		1245	0.5		1310	0.4		1252	0.5		1342	0.4		1400	0.3		1451	0.4		1451	0.4		1451	0.4		1451	0.4		1451	0.4		1451	0.4		1451	0.4
	1841	1.6					1917	1.7		1943	2.0		1927	1.8		2014	1.9		2029	1.9		2110	1.7		2110	1.7		2110	1.7		2110	1.7		2110	1.7		2110	1.7		2110	1.7
9	0053	0.6	24	0039	0.3	9	0146	0.5	24	0220	0.3	9	0204	0.4	24	0251	0.3	9	0302	0.2	24	0335	0.3	24	0335	0.3	24	0335	0.3	24	0335	0.3	24	0335	0.3	24	0335	0.3			
SA	0646	1.5	SU	0642	1.6	TU	0736	1.4	WE	0818	1.4	TH	0755	1.3	FR	0851	1.4	SU	0902	1.5	MO	0941	1.4	MO	0941	1.4	MO	0941	1.4	MO	0941	1.4	MO	0941	1.4	MO	0941	1.4	MO	0941	1.4
	1251	0.5		1245	0.3		1321	0.5		1359	0.4		1333	0.4		1428	0.4		1447	0.3		1530	0.4		1530	0.4		1530	0.4		1530	0.4		1530	0.4		1530	0.4		1530	0.4
	1915	1.6		1910	1.9		1953	1.8		2030	2.0		2007	1.8		2056	1.8		2113	1.9		2145	1.6		2145	1.6		2145	1.6		2145	1.6		2145	1.6		2145	1.6		2145	1.6
10	0131	0.5	25	0135	0.3	10	0225	0.4	25	0309	0.2	10	0245	0.3	25	0332	0.3	10	0345	0.1	25	0407	0.3	25	0407	0.3	25	0407	0.3	25	0407	0.3	25	0407	0.3	25	0407	0.3			
SU	0725	1.5	MO	0737	1.6	WE	0816	1.4	TH	0910	1.4	FR	0838	1.4	SA	0933	1.4	MO	0949	1.5	TU	1016	1.4	TU	1016	1.4	TU	1016	1.4	TU	1016	1.4	TU	1016	1.4	TU	1016	1.4	TU	1016	1.4
	1323	0.5		1332	0.3	○	1358	0.5		1446	0.4		1416	0.4		1512	0.4		1537	0.3		1609	0.4		1609	0.4															

AUSTRALIA, SOUTH COAST - WESTERN PORT (STONY POINT)

LAT 38° 22' LONG 145° 13'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY			FEBRUARY			MARCH			APRIL														
Time	m		Time	m		Time	m		Time	m		Time	m										
1 TH	0245 0619 1430 2019	2.9 0.9 2.5 0.2	16 FR	0332 0916 1528 2115	2.9 0.7 2.5 0.3	1 SU	0355 0935 1606 2145	2.9 0.5 2.7 0.2	16 MO	0415 1007 1631 2214	2.7 0.5 2.5 0.5	1 SU	0241 0821 1500 2041	2.8 0.5 2.8 0.3	16 MO	0309 0859 1533 2117	2.6 0.5 2.6 0.6	1 WE	0351 0938 1638 2210	2.8 0.1 3.1 0.5	16 TH	0337 0929 1621 2200	2.6 0.4 2.9 0.8
2 FR	0331 0908 1522 2108	3.0 0.8 2.5 0.2	17 SA	0411 0959 1611 2157	2.8 0.8 2.5 0.4	2 MO	0438 1022 1659 2234	3.0 0.3 2.8 0.3	17 TU	0445 1039 1707 2246	2.7 0.4 2.6 0.6	2 MO	0330 0914 1558 2133	2.9 0.3 2.9 0.3	17 TU	0341 0932 1610 2151	2.6 0.4 2.7 0.6	2 TH	0436 1025 1726 2257	2.8 0.0 3.1 0.6	17 FR	0411 1003 1657 2234	2.6 0.3 2.9 0.8
3 SA	0415 0954 1613 2156	3.0 0.6 2.6 0.2	18 SU	0445 1036 1650 2235	2.8 0.5 2.5 0.5	3 TU	0520 1108 1750 2323	2.9 0.2 2.8 0.4	18 WE	0514 1110 1742 2318	2.7 0.4 2.6 0.6	3 TU	0416 1001 1650 2223	2.9 0.2 3.0 0.4	18 WE	0412 1004 1644 2223	2.6 0.4 2.7 0.7	3 FR	0519 1111 1812 2343	2.8 0.1 3.0 0.6	18 SA	0445 1038 1732 2309	2.6 0.3 2.9 0.8
4 SU	0457 1039 1702 2244	3.0 0.5 2.6 0.3	19 MO	0515 1110 1729 2309	2.7 0.5 2.4 0.6	4 WE	0600 1153 1842	2.9 0.2 2.8	19 TH	0542 1141 1817 2352	2.6 0.4 2.6 0.7	4 WE	0500 1048 1741 2312	2.9 0.1 3.0 0.4	19 TH	0442 1036 1718 2256	2.6 0.3 2.7 0.7	4 SA	0601 1155 1855	2.7 0.1 2.9	19 SU	0519 1115 1806 2345	2.5 0.4 2.8 0.8
5 MO	0536 1123 1754 2330	2.9 0.4 2.6 0.4	20 TU	0545 1142 1806 2343	2.7 0.5 2.4 0.6	5 TH	0610 1207 1834	0.5 2.8 2.7	20 FR	0612 1213 1856	2.6 0.3 2.5	5 TH	0542 1133 1830 2359	2.8 0.0 2.9 0.5	20 FR	0512 1109 1753 2330	2.6 0.3 2.7 0.7	5 SU	0628 1228 1938	0.7 2.6 2.8	20 MO	0555 1150 1845	2.5 0.4 2.7
6 TU	0615 1207 1847	2.8 0.4 2.6	21 WE	0613 1213 1845	2.8 0.5 2.4	6 FR	0658 1222 1321 2028	0.7 2.7 0.2 2.7	21 SA	0628 1245 1936	0.8 2.5 2.5	6 FR	0623 1217 1917	2.8 0.1 2.8	21 SA	0544 1142 1830	2.6 0.3 2.7	6 MO	0112 0729 1322 2022	0.7 2.5 0.4 2.6	21 TU	0622 1228 1925	0.9 2.4 0.4 2.7
7 WE	0618 1251 1944	0.5 2.8 0.3 2.6	22 TH	0617 1245 1926	0.7 2.6 2.4	7 SA	0147 0806 1409 2124	0.8 2.5 0.3 2.6	22 SU	0106 0719 1322 2024	0.9 2.4 0.4 2.4	7 SA	0644 1301 2005	0.6 2.7 2.7	22 SU	0004 0616 1215 1908	0.8 2.3 0.5 2.6	7 TU	0158 0817 1408 2110	0.8 2.3 0.6 2.4	22 WE	0102 0720 1311 2010	0.9 2.4 0.5 2.6
8 TH	0107 0737 1337 2043	0.7 2.6 0.3 2.6	23 FR	0654 1215 1319 2012	0.8 2.5 0.5 2.4	8 SU	0241 0858 1502 2225	0.9 2.4 0.4 2.5	23 MO	0148 0802 1405 2119	1.0 2.4 0.4 2.4	8 SU	0130 0748 1346 2056	0.8 2.5 0.3 2.6	23 MO	0642 1252 1950	0.8 2.4 2.5	8 WE	0249 0916 1503 2206	0.9 2.2 0.8 2.3	23 TH	0148 0819 1403 2104	0.9 2.4 0.6 2.5
9 FR	0200 0824 1428 2146	0.9 2.5 0.3 2.6	24 SA	0136 0753 1359 2105	1.0 2.4 0.5 2.4	9 MO	0343 1000 1604 2330	1.0 2.3 0.4 2.5	24 TU	0240 0857 1459 2224	1.1 2.3 0.5 2.4	9 MO	0220 0836 1436 2151	0.9 2.4 0.5 2.5	24 TU	0122 0736 1333 2041	0.9 2.4 2.4 2.5	9 TH	0349 1028 1612 2309	0.9 2.1 0.9 2.3	24 FR	0245 0832 1509 2209	0.9 2.4 0.7 2.5
10 SA	0300 0920 1526 2252	1.0 2.5 0.4 2.6	25 SU	0223 0838 1445 2205	1.1 2.3 0.5 2.4	10 TU	0452 1112 1712	1.0 2.2 0.5	25 WE	0345 1006 1606 2335	1.1 2.2 0.5 2.5	10 TU	0316 0938 1535 2253	0.9 2.2 0.6 2.4	25 WE	0210 0831 1426 2141	1.0 2.3 0.5 2.5	10 FR	0458 1142 1728	0.9 2.2 0.9	25 SA	0357 1054 1830 2320	0.8 2.5 0.8 2.5
11 SU	0409 1025 1631 2359	1.0 2.4 0.4 2.7	26 MO	0320 0934 1541 2312	1.2 2.3 0.5 2.4	11 WE	0633 1225 1820	2.6 1.0 0.5	26 TH	0502 1126 1726	1.1 2.3 0.5	11 WE	0422 1050 1645 2358	1.0 2.2 0.7 2.4	26 TH	0311 0944 1533 2250	1.0 2.3 0.6 2.5	11 SA	0010 0601 1247 1835	2.3 0.8 2.3 0.9	26 SU	0513 1215 1755	0.7 2.7 0.9
12 MO	0521 1137 1738	1.0 2.4 0.4	27 TU	0430 1042 1648	1.2 2.2 0.5	12 TH	0132 0710 1330 1921	2.6 0.9 2.3 0.5	27 FR	0645 1245 1840	2.6 0.9 2.4 0.4	12 TH	0533 1206 1758	1.0 2.2 0.7	27 FR	0427 1106 1657	0.9 2.4 0.6	12 SU	0103 0658 1342 1930	2.4 0.7 2.4 0.9	27 MO	0630 1230 1908	2.6 0.5 2.9 0.8
13 TU	0100 0631 1245 1841	2.8 1.0 2.4 0.3	28 WE	0019 0545 1156 1759	2.5 1.1 2.3 0.4	13 FR	0223 0806 1426 2015	2.7 0.8 2.4 0.5	28 SA	0146 0725 1358 1944	2.7 0.7 2.6 0.4	13 FR	0658 1313 1902	2.4 0.9 2.3 0.7	28 SA	0002 0546 1230 1817	2.5 0.8 2.5 0.6	13 MO	0147 0740 1427 2013	2.4 0.8 2.8 0.8	28 TU	0134 0725 1433 2008	2.7 0.3 3.0 0.8
14 WE	0158 0734 1347 1938	2.8 0.9 2.4 0.3	29 TH	0122 0653 1307 1902	2.7 1.0 2.4 0.3	14 SA	0307 0853 1514 2100	2.7 0.6 2.4 0.5	14 SA	0149 0735 1408 1956	2.7 0.7 2.4 0.6	29 SU	0110 0655 1344 1927	2.6 0.6 2.7 0.6	14 TU	0227 0818 1507 2051	2.5 0.5 2.7 0.8	29 WE	0231 0820 1530 2103	2.7 0.2 3.2 0.7			
15 TH	0248 0829 1441 2030	2.9 0.8 2.4 0.3	30 FR	0218 0753 1412 2000	2.8 0.8 2.5 0.3	15 SU	0344 0932 1554 2139	2.7 0.5 2.5 0.5	15 SU	0232 0820 1454 2040	2.5 0.5 2.6 0.6	30 MO	0209 0755 1449 2026	2.7 0.4 2.9 0.5	15 WE	0302 0854 1545 2125	2.6 0.4 2.8 0.8	30 TH	0323 0912 1821 2153	2.8 0.1 3.2 0.7			
			31 SA	0309 0846 1511 2054	2.9 0.6 2.6 0.2							31 TU	0302 0847 1546 2120	2.8 0.2 3.1 0.5									

		MAY				JUNE				JULY				AUGUST											
	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m									
1	0305	3.2	16	0230	2.8	1	0422	2.9	16	0334	2.9	1	0442	2.8	16	0414	3.0	1	0534	2.7	16	0554	3.1		
FR	0938	-0.1	SA	0902	0.3	MO	1045	0.2	TU	1007	0.2	WE	1058	0.4	TH	1040	0.2	SA	1143	0.7	SU	1211	0.4		
	1551	3.3		1517	3.0		1658	3.1		1617	3.1		1706	3.0		1644	3.2		1742	2.8		1804	3.2		
	2211	0.4		2133	0.7		2318	0.5		2241	0.6		2330	0.6		2314	0.3								
2	0358	3.1	17	0312	2.8	2	0509	2.8	17	0424	2.9	2	0525	2.7	17	0507	3.0	2	0012	0.5	17	0041	0.1		
SA	1027	0.0	SU	0945	0.2	TU	1127	0.4	WE	1052	0.2	TH	1136	0.5	FR	1129	0.3	SU	0615	2.6	MO	0647	3.0		
	1640	3.2		1558	3.0		1738	3.0		1700	3.1		1743	2.9		1730	3.2		1223	0.7		1303	0.5		
	2259	0.5		2215	0.7					2326	0.5					1819	2.8		1819	2.8		1854	3.1		
3	0447	3.1	18	0355	2.9	3	0001	0.6	18	0514	2.9	3	0010	0.6	18	0002	0.3	3	0053	0.5	18	0133	0.1		
SU	1113	0.1	MO	1026	0.2	WE	0554	2.7	TH	1138	0.3	FR	0607	2.6	SA	0601	3.0	MO	0659	2.6	TU	0742	2.9		
	1725	3.1		1639	3.0		1208	0.5		1745	3.1		1216	0.7		1219	0.4		1305	0.8		1358	0.6		
	2345	0.5		2258	0.7		1816	2.9					1818	2.9		1817	3.2		1859	2.8		1946	3.1		
4	0535	2.9	19	0439	2.9	4	0044	0.6	19	0014	0.4	4	0049	0.6	19	0054	0.2	4	0136	0.5	19	0227	0.1		
MO	1157	0.2	TU	1108	0.3	TH	0637	2.7	FR	0606	2.9	SA	0649	2.6	SU	0656	3.0	TU	0745	2.6	WE	0837	2.9		
	1808	3.0		1720	3.0		1249	0.6		1228	0.4		1258	0.8		1313	0.5		1351	0.8		1454	0.7		
				2341	0.6		1854	2.8		1830	3.1		1856	2.8		1906	3.2		1941	2.8		2041	3.0		
5	0030	0.5	20	0526	2.9	5	0125	0.6	20	0104	0.4	5	0131	0.6	20	0147	0.2	5	0222	0.4	20	0324	0.2		
TU	0621	2.8	WE	1153	0.3	FR	0722	2.6	SA	0700	2.9	SU	0734	2.6	MO	0753	2.9	WE	0833	2.6	TH	0934	2.8		
	1241	0.4		1802	3.1		1332	0.8		1321	0.5		1342	0.8		1409	0.6		1441	0.9		1554	0.7		
	1849	2.9					1933	2.8		1919	3.1		1936	2.8		1959	3.1		2028	2.8		2139	2.9		
6	0115	0.6	21	0026	0.5	6	0208	0.7	21	0159	0.3	6	0215	0.6	21	0243	0.1	6	0312	0.4	21	0422	0.2		
WE	0706	2.7	TH	0615	2.9	SA	0809	2.6	SU	0800	2.9	MO	0822	2.6	TU	0852	2.9	TH	0925	2.7	FR	1032	2.8		
	1325	0.6		1241	0.3		1419	0.9		1419	0.6		1430	0.9		1508	0.7		1534	0.9		1656	0.7		
	1930	2.8		1847	3.1		2015	2.7		2013	3.1		2019	2.8		2055	3.1		2119	2.8		2239	2.8		
7	0159	0.7	22	0116	0.5	7	0253	0.6	22	0257	0.2	7	0301	0.5	22	0341	0.1	7	0405	0.3	22	0522	0.3		
TH	0752	2.6	FR	0709	2.9	SU	0900	2.5	MO	0903	3.0	TU	0914	2.6	WE	0953	2.9	FR	1020	2.7	SA	1130	2.8		
	1410	0.7		1334	0.4		1509	0.9		1522	0.7		1520	1.0		1611	0.7		1631	0.8		1758	0.7		
	2013	2.7		1937	3.1		2101	2.7		2112	3.1		2107	2.7		2155	3.0		2215	2.8		2340	2.8		
8	0245	0.7	23	0212	0.4	8	0341	0.6	23	0358	0.2	8	0351	0.5	23	0442	0.1	8	0500	0.3	23	0620	0.3		
FR	0842	2.5	SA	0809	2.9	MO	0955	2.6	TU	1009	3.0	WE	1008	2.6	TH	1054	2.9	SA	1116	2.8	SU	1226	2.8		
	1459	0.8		1434	0.5		1602	1.0		1629	0.7		1615	1.0		1716	0.7		1731	0.8		1855	0.6		
	2059	2.6		2032	3.1		2151	2.7		2214	3.1		2159	2.8		2257	3.0		2315	2.9					
9	0332	0.7	24	0312	0.3	9	0430	0.6	24	0500	0.1	9	0443	0.4	24	0543	0.2	9	0559	0.2	24	0038	2.8		
SA	0936	2.5	SU	0915	3.0	TU	1049	2.6	WE	1115	3.0	TH	1101	2.7	FR	1155	2.9	SU	1212	2.9	MO	0713	0.4		
	1551	0.9		1540	0.6		1657	1.0		1737	0.7		1710	0.9		1820	0.7		1831	0.7		1316	2.8		
	2147	2.6		2133	3.1		2243	2.7		2316	3.1		2252	2.8		2359	2.9					1945	0.6		
10	0422	0.7	25	0416	0.2	10	0521	0.5	25	0604	0.1	10	0535	0.3	25	0642	0.2	10	0014	3.0	25	0131	2.8		
SU	1032	2.6	MO	1025	3.0	WE	1143	2.7	TH	1218	3.1	FR	1155	2.8	SA	1252	3.0	MO	0656	0.1	TU	0800	0.4		
	1646	0.9		1649	0.6		1752	1.0		1843	0.7		1807	0.9		1919	0.7		1305	3.0		1402	2.8		
	2239	2.6		2237	3.1		2335	2.7					2345	2.8					1930	0.5		2029	0.5		
11	0513	0.6	26	0522	0.1	11	0612	0.4	26	0019	3.0	11	0629	0.2	26	0058	2.9	11	0113	3.0	26	0219	2.8		
MO	1128	2.6	TU	1134	3.1	TH	1233	2.8	FR	0704	0.1	SA	1246	2.9	SU	0736	0.2	TU	0751	0.1	WE	0841	0.4		
	1741	0.9		1800	0.6		1845	0.9		1317	3.1		1903	0.8		1345	3.0		1357	3.1		1443	2.8		
	2330	2.7		2342	3.1					1942	0.7					2012	0.6		2026	0.4		2107	0.5		
12	0602	0.5	27	0627	0.0	12	0023	2.6	27	0119	3.0	12	0039	2.9	27	0153	2.8	12	0211	3.1	27	0302	2.7		
TU	1220	2.7	WE	1241	3.2	FR	0701	0.3	SA	0759	0.1	SU	0721	0.2	MO	0825	0.3	WE	0845	0.1	TH	0919	0.5		
	1833	0.9		1906	0.6		1320	2.9		1412	3.1		1335	3.0		1433	3.0		1448	3.2		1519	2.8		
							1936	0.8		2035	0.6		1957	0.7		2058	0.6		2118	0.2		2144	0.5		
13	0017	2.7	28	0045	3.1	13	0111	2.8	28	0215	3.0	13	0132	2.9	28	0245	2.8	13	0309	3.1	28	0343	2.7		
WE	0650	0.4	TH	0728	0.0	SA	0750	0.3	SU	0848	0.1	MO	0813	0.1	TU	0909	0.3	TH	0937	0.2	FR	0956	0.5		
	1308	2.8		1342	3.2		1406	2.9		1501	3.1		1424	3.0		1516	2.9		1538	3.2		1554	2.8		
	1921	0.8		2005	0.6		2024	0.8		2124	0.6		2048	0.6		2141	0.6		2209	0.1		2219	0.4		
14	0103	2.8	29	0144	3.1	14	0159	2.9	29	0308	2.9	14	0226	3.0	29	0330	2.8	14	0405	3.1	29	0422	2.7		
TH	0736	0.4	FR	0822	0.0	SU	0837	0.2	MO	0934	0.2	TU	0902	0.1	WE	0949	0.4	FR	1029	0.2	SA	1032	0.6		
	1353	2.9		1437	3.2		1451	3.0		1546	3.1		1511	3.1		1556	2.9		1627	3.2		1629	2.8		
	2007	0.8		2059	0.5		2111	0.7		2209	0.6		2137	0.5		2219	0.5		2259	0.1		2256	0.4		
15	0146	2.8	30	0240	3.1	15	0246	2.9	30	0357	2.8	15	0320	3.0	30	0414	2.7	15	0500	3.1	30	0500	2.7		
FR	0820	0.3	SA	0914	0.0	MO	0922	0.2	TU	1017	0.3	WE	0951	0.2	TH	1028	0.5	SA	1119	0.9	SU	1110	0.6		
	1435	2.9																							

AUSTRALIA, SOUTH COAST - PORTLAND

LAT 38° 21' LONG 141° 37'

TIME ZONE -1000

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY				FEBRUARY				MARCH				APRIL											
Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m	Time	m								
1 TH	0201 0905 1258 1854	1.1 0.4 0.5 0.1	16 FR	0209 0848 1345 1936	1.0 0.3 0.6 0.1	1 SU	0230 0922 1416 2007	0.9 0.3 0.6 0.2	16 MO	0229 0855 1447 2037	0.8 0.2 0.7 0.2	1 SU	0147 0809 1346 1956	0.9 0.3 0.7 0.2	16 MO	0143 0800 1407 2014	0.8 0.2 0.8 0.2	1 WE	0122 0738 1438 2049	0.7 0.1 1.0 0.4	16 TH	0136 0747 1441 2102	0.7 0.1 1.0 0.4
2 FR	0227 0921 1327 1920	1.0 0.4 0.5 0.1	17 SA	0231 0908 1420 2003	0.9 0.3 0.6 0.2	2 MO	0241 0914 1455 2031	0.8 0.2 0.7 0.3	17 TU	0243 0912 1517 2100	0.8 0.1 0.7 0.3	2 MO	0155 0817 1416 2022	0.8 0.2 0.8 0.3	17 TU	0158 0815 1432 2038	0.8 0.1 0.8 0.3	2 TH	0137 0800 1513 2110	0.7 0.0 0.9 0.5	17 FR	0150 0823 1508 2129	0.7 0.1 1.0 0.5
3 SA	0249 0937 1401 1948	1.0 0.4 0.5 0.2	18 SU	0253 0930 1456 2030	0.9 0.2 0.6 0.2	3 TU	0252 0926 1539 2064	0.8 0.2 0.7 0.4	18 WE	0253 0928 1549 2121	0.8 0.1 0.7 0.4	3 TU	0203 0826 1449 2045	0.8 0.1 0.8 0.4	18 WE	0210 0829 1458 2101	0.7 0.1 0.8 0.3	3 FR	0152 0828 1549 2126	0.7 0.1 0.9 0.5	18 SA	0203 0823 1536 2157	0.7 0.1 0.9 0.5
4 SU	0308 0954 1443 2017	0.9 0.3 0.6 0.2	19 MO	0311 0951 1533 2055	0.8 0.2 0.6 0.3	4 WE	0300 0942 1632 2115	0.7 0.1 0.7 0.5	19 TH	0302 0944 1629 2138	0.7 0.1 0.7 0.4	4 WE	0215 0840 1528 2102	0.8 0.1 0.8 0.4	19 TH	0221 0844 1526 2124	0.7 0.1 0.8 0.4	4 SA	0204 0858 1631 2144	0.7 0.1 0.8 0.6	19 SU	0207 0849 1615 2230	0.6 0.2 0.8 0.6
5 MO	0325 1013 1534 2044	0.8 0.3 0.6 0.3	20 TU	0323 1013 1616 2115	0.8 0.2 0.8 0.4	5 TH	0255 1005 1752 2121	0.7 0.1 0.6 0.6	20 FR	0302 1000 1725 2146	0.7 0.1 0.6 0.5	5 TH	0223 0901 1611 2117	0.7 0.1 0.8 0.5	20 FR	0231 0900 1558 2144	0.7 0.1 0.8 0.5	5 SU	0212 0927 1727 2204	0.7 0.2 0.7 0.6	20 MO	0143 0900 1703	0.6 0.2 0.8
6 TU	0335 1032 1646 2103	0.7 0.3 0.5 0.5	21 WE	0331 1035 1717 2128	0.7 0.2 0.5 0.5	6 FR	0230 1035	0.7 0.1	21 SA	0229 1016	0.6 0.2	6 FR	0226 0929 1703 2130	0.7 0.1 0.7 0.6	21 SA	0234 0918 1637 2159	0.6 0.1 0.7 0.5	6 MO	0133 0950 2345	0.6 0.3 0.6	21 TU	0659 1930 2005 2115	0.3 0.7 0.7 0.7
7 WE	0327 1054	0.7 0.3	22 TH	0329 1058	0.7 0.2	7 SA	0122 1115	0.7 0.2	22 SU	0049 1030	0.7 0.2	7 SA	0219 0858 1836 2100	0.7 0.1 0.6 0.6	22 SU	0208 0932 1745 2155	0.6 0.2 0.7 0.6	7 TU	0912 2313	0.4 0.7	22 WE	0821 2317	0.3 0.7
8 TH	0230 1129	0.7 0.2	23 FR	0228 1124	0.6 0.2	8 SU	0038 1232	0.8 0.2	23 MO	0023 1015	0.7 0.2	8 SU	0135 1028	0.7 0.2	23 MO	0030 0936 2359	0.6 0.2 0.7	8 WE	0639 1215 1657 2333	0.4 0.5 0.4 0.7	23 TH	0650 1258 1700 2337	0.4 0.5 0.5 0.7
9 FR	0031 1306	0.7 0.2	24 SA	0027 1206	0.7 0.2	9 MO	0031 1637	0.8 0.2	24 TU	0031 0917 1307 1636	0.8 0.3 0.3 0.3	9 MO	0031 1047	0.7 0.3	24 TU	0910	0.3	9 TH	0622 1203 1745 2356	0.3 0.6 0.4 0.7	24 FR	0820 1222 1754 2352	0.4 0.6 0.4 0.7
10 SA	0022 1505	0.8 0.2	25 SU	0020 1513	0.8 0.2	10 TU	0037 0810 1143 1732	0.9 0.4 0.4 0.2	25 WE	0045 0822 1217 1736	0.9 0.3 0.4 0.2	10 TU	0015 0810 1142 1651	0.7 0.4 0.4 0.3	25 WE	0010 0804 1320 1649	0.8 0.3 0.4 0.4	10 FR	0616 1220 1818	0.3 0.7 0.3	25 SA	0807 1221 1833	0.4 0.8 0.4
11 SU	0022 1628	0.9 0.2	26 MO	0030 1636	0.9 0.2	11 WE	0055 0803 1219 1814	0.9 0.3 0.5 0.1	26 TH	0100 0815 1233 1818	0.9 0.3 0.5 0.2	11 WE	0016 0725 1203 1742	0.8 0.3 0.5 0.2	26 TH	0023 0732 1233 1745	0.8 0.3 0.5 0.3	11 SA	0015 0829 1241 1846	0.8 0.3 0.8 0.3	26 SU	0004 0809 1240 1907	0.7 0.3 0.9 0.4
12 MO	0040 0832 1035 1719	1.0 0.4 0.4 0.1	27 TU	0048 0842 1146 1728	0.9 0.3 0.4 0.2	12 TH	0115 0758 1249 1848	0.9 0.3 0.6 0.1	27 FR	0117 0807 1255 1854	0.9 0.3 0.6 0.2	12 TH	0032 0716 1227 1818	0.8 0.3 0.6 0.2	27 FR	0035 0718 1232 1825	0.8 0.3 0.6 0.3	12 SU	0034 0845 1303 1918	0.8 0.2 0.9 0.3	27 MO	0011 0817 1305 1936	0.7 0.3 1.0 0.4
13 TU	0103 0830 1146 1800	1.0 0.4 0.5 0.1	28 WE	0109 0845 1218 1808	1.0 0.3 0.4 0.1	13 FR	0132 0803 1319 1919	0.9 0.3 0.6 0.1	28 SA	0134 0804 1320 1927	0.9 0.3 0.7 0.2	13 FR	0050 0715 1251 1851	0.8 0.3 0.7 0.2	28 SA	0048 0709 1251 1900	0.8 0.3 0.7 0.3	13 MO	0053 0701 1328 1944	0.8 0.2 0.8 0.3	28 TU	0015 0827 1330 2001	0.7 0.2 1.1 0.5
14 WE	0126 0825 1230 1836	1.0 0.4 0.5 0.1	29 TH	0131 0846 1245 1843	1.0 0.3 0.5 0.1	14 SA	0151 0819 1348 1947	0.9 0.2 0.7 0.1	14 SA	0108 0727 1315 1920	0.8 0.2 0.7 0.2	29 SU	0100 0712 1315 1931	0.8 0.3 0.8 0.3	14 TU	0109 0717 1352 2010	0.7 0.2 1.0 0.3	29 WE	0028 0839 1368 2028	0.7 0.1 1.1 0.5			
15 TH	0147 0829 1309 1907	1.0 0.3 0.6 0.1	30 FR	0154 0847 1314 1915	1.0 0.3 0.5 0.1	15 SU	0211 0837 1418 2013	0.9 0.2 0.7 0.2	15 SU	0125 0743 1341 1947	0.8 0.2 0.8 0.2	30 MO	0107 0719 1340 2000	0.7 0.2 0.9 0.3	15 WE	0123 0732 1415 2036	0.7 0.2 1.0 0.4	30 TH	0045 0700 1427 2050	0.7 0.1 1.1 0.5			
			31 SA	0215 0853 1344 1942	1.0 0.3 0.6 0.1							31 TU	0111 0727 1408 2025	0.7 0.1 1.0 0.4									

AUSTRALIA, NORTH-WEST COAST - BROOME

LAT 18° 00' LONG 122° 13'

TIME ZONE -0800

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

JANUARY		FEBRUARY		MARCH		APRIL																	
Time	m	Time	m	Time	m	Time	m																
1 TH	0623 1218 1839	0.1 8.2 0.9	16 FR	0024 0655 1250 1906	8.4 0.4 8.2 1.0	1 SU	0053 0725 1318 1944	9.0 -0.1 8.8 0.3	16 MO	0102 0726 1320 1940	8.3 0.6 8.2 0.9	1 SU	0003 0635 1222 1854	9.3 -0.5 9.3 -0.4	16 MO	0015 0639 1229 1853	8.5 0.4 8.6 0.4	1 WE	0054 0718 1306 1940	9.0 0.0 9.2 0.1	16 TH	0044 0700 1250 1918	8.2 0.9 8.4 0.7
2 FR	0024 0700 1254 1915	8.7 0.2 8.2 0.9	17 SA	0054 0722 1319 1936	8.2 0.7 8.0 1.2	2 MO	0129 0759 1352 2018	8.7 0.3 8.6 0.7	17 TU	0128 0747 1345 2004	8.0 1.0 8.0 1.2	2 MO	0038 0708 1256 1928	9.3 -0.4 9.3 -0.2	17 TU	0040 0701 1252 1916	8.4 0.5 8.5 0.5	2 TH	0130 0749 1342 2013	8.4 0.7 8.6 0.8	17 FR	0111 0724 1316 1945	7.9 1.2 8.1 1.1
3 SA	0100 0735 1330 1951	8.5 0.4 8.1 1.1	18 SU	0123 0748 1348 2002	8.0 1.0 7.8 1.5	3 TU	0206 0831 1430 2054	8.1 0.8 8.1 1.3	18 WE	0154 0810 1413 2030	7.6 1.4 7.6 1.7	3 TU	0113 0740 1330 2000	9.0 0.0 9.0 0.2	18 WE	0105 0723 1316 1940	8.2 0.8 8.3 0.8	3 FR	0208 0821 1419 2046	7.6 1.5 7.7 1.8	18 SA	0139 0745 1345 2013	7.4 1.7 7.6 1.7
4 SU	0139 0811 1410 2030	8.2 0.9 7.9 1.5	19 MO	0151 0813 1417 2030	7.5 1.4 7.4 1.9	4 WE	0246 0906 1511 2134	7.4 1.6 7.5 2.1	19 TH	0222 0833 1441 2058	7.0 2.0 7.1 2.3	4 WE	0148 0811 1405 2033	8.4 0.6 8.5 0.9	19 TH	0130 0745 1342 2005	7.8 1.2 7.9 1.3	4 SA	0250 0855 1501 2127	6.7 2.5 6.8 2.8	19 SU	0212 0815 1418 2046	6.9 2.4 7.0 2.4
5 MO	0220 0848 1452 2112	7.6 1.4 7.5 2.0	20 TU	0221 0837 1448 2059	7.0 1.9 7.0 2.4	5 TH	0333 0947 1600 2231	6.5 2.4 6.8 2.9	20 FR	0252 0859 1513 2133	6.3 2.7 6.5 3.0	5 TH	0226 0842 1442 2108	7.6 1.4 7.7 1.6	20 FR	0158 0807 1408 2031	7.3 1.8 7.4 1.9	5 SU	0345 0940 1606 2254	5.8 3.4 5.9 3.6	20 MO	0251 0850 1502 2136	6.2 3.0 6.3 3.1
6 TU	0307 0931 1541 2204	7.0 2.0 7.0 2.5	21 WE	0254 0905 1525 2135	6.5 2.5 6.5 2.9	6 FR	0445 1051 1722	5.7 3.2 6.1	21 SA	0333 0933 1603 2243	5.6 3.4 5.9 3.6	6 FR	0307 0915 1525 2151	6.7 2.4 6.8 2.8	21 SA	0227 0831 1437 2102	6.7 2.4 6.8 2.8	6 MO	0529 1208 1823	5.2 4.0 5.4	21 TU	0357 0957 1635 2345	5.6 3.7 5.7 3.5
7 WE	0406 1028 1647 2327	6.3 2.7 6.6 3.0	22 TH	0336 0942 1615 2233	5.8 3.1 6.1 3.5	7 SA	0035 0651 1300 1926	3.3 5.3 5.6 6.0	22 SU	0512 1113 1818	5.0 4.0 5.5	7 SA	0404 1004 1633 2346	5.7 3.4 5.9 3.6	22 SU	0302 0900 1518 2151	6.0 3.2 6.1 3.3	7 TU	0200 0824 1437 2041	3.5 5.6 3.5 5.9	22 WE	0614 1248 1904	5.5 3.8 5.8
8 TH	0543 1155 1819	5.8 3.1 6.4	23 FR	0450 1046 1746	5.2 3.7 5.7	8 SU	0238 0851 1454 2107	2.9 5.8 3.2 6.5	23 MO	0146 0818 1407 2028	3.4 5.2 3.7 6.0	8 SU	0611 1235 1901	5.1 3.9 5.6	23 MO	0408 1002 1701	5.3 3.9 5.5	8 WE	0311 0915 1530 2128	2.8 6.4 2.7 6.7	23 TH	0146 0811 1430 2033	3.0 2.1 2.9 6.6
9 FR	0118 0729 1334 1954	2.9 5.8 3.1 6.6	24 SA	0105 0709 1320 1936	3.5 5.1 3.8 5.9	9 MO	0343 0948 1557 2200	2.1 6.6 2.4 7.2	24 TU	0308 0925 1526 2131	2.7 6.1 2.9 6.8	9 MO	0232 0850 1454 2104	3.3 5.6 3.4 6.2	24 TU	0050 0718 1331 1950	3.6 5.2 3.9 5.8	9 TH	0350 0949 1606 2201	2.1 7.1 2.0 7.3	24 FR	0300 0906 1529 2126	2.2 7.1 1.9 7.5
10 SA	0247 0853 1500 2108	2.3 6.3 2.7 7.1	25 SU	0232 0852 1444 2057	3.0 5.6 3.3 6.4	10 TU	0428 1029 1642 2238	1.4 7.3 1.8 7.8	25 WE	0400 1005 1617 2214	1.8 7.0 2.0 7.7	10 TU	0335 0940 1549 2150	2.5 6.5 2.6 6.9	25 WE	0237 0858 1504 2108	2.9 6.1 3.0 6.7	10 FR	0423 1018 1638 2231	1.7 7.7 1.4 7.8	25 SA	0350 0947 1615 2209	1.4 8.0 0.9 8.2
11 SU	0346 0949 1600 2200	1.6 6.9 2.1 7.6	26 MO	0330 0942 1543 2146	2.2 6.3 2.6 7.1	11 WE	0506 1102 1719 2312	0.9 7.8 1.2 8.2	26 TH	0443 1041 1700 2252	0.9 7.8 1.1 8.4	11 WE	0415 1015 1629 2225	1.7 7.2 1.8 7.6	26 TH	0336 0941 1558 2154	2.0 7.1 1.9 7.6	11 SA	0453 1045 1708 2300	1.1 8.1 0.9 8.1	26 SU	0434 1025 1658 2247	0.7 8.7 0.2 8.7
12 MO	0434 1033 1647 2242	1.0 7.4 1.6 8.1	27 TU	0415 1021 1630 2228	1.5 7.0 1.9 7.8	12 TH	0540 1133 1753 2342	0.5 8.1 0.8 8.4	27 FR	0522 1115 1741 2329	0.2 8.5 0.4 9.0	12 TH	0449 1045 1702 2256	1.1 7.8 1.2 8.1	27 FR	0420 1017 1641 2232	1.1 8.0 0.9 8.4	12 SU	0521 1112 1736 2327	0.8 8.4 0.8 8.3	27 MO	0514 1100 1737 2325	0.2 9.2 -0.3 8.9
13 TU	0515 1112 1729 2318	0.8 7.8 1.2 8.3	28 WE	0457 1057 1714 2305	0.8 7.7 1.3 8.4	13 FR	0610 1202 1823	-0.3 8.3 0.6	28 SA	0600 1149 1818	-0.3 9.0 -0.1	13 FR	0520 1113 1733 2324	-0.7 8.2 0.8 8.4	28 SA	0500 1052 1721 2309	-0.3 8.7 0.1 9.0	13 MO	0548 1137 1802 2353	0.6 8.6 0.4 8.4	28 TU	0551 1136 1814	0.0 8.4 -0.5
14 WE	0551 1146 1805 2352	0.4 8.1 0.9 8.5	29 TH	0537 1132 1754 2342	0.2 8.2 0.7 8.8	14 SA	0010 0638 1230 1850	8.5 0.3 8.4 0.6	14 SA	0548 1140 1802 2350	0.5 8.5 0.5 8.5	14 SA	0548 1140 1802 2350	0.5 8.5 0.5 8.5	29 SU	0538 1126 1759 2345	-0.2 9.3 -0.4 9.3	14 TU	0613 1200 1828	0.8 8.7 0.3	29 WE	0001 0626 1211 1848	-8.9 0.0 9.4 -0.3
15 TH	0625 1219 1838	0.3 8.2 0.9	30 FR	0615 1207 1832	-0.1 8.6 0.4	15 SU	0037 0702 1256 1915	8.5 0.4 8.4 0.7	15 SU	0615 1204 1829	0.4 8.6 0.4	15 SU	0615 1204 1829	0.4 8.6 0.4	30 MO	0614 1159 1834	-0.4 9.6 -0.6	15 WE	0017 0637 1225 1853	8.3 0.7 8.6 0.4	30 TH	0038 0700 1246 1822	8.7 0.3 8.0 0.2
			31 SA	0017 0651 1242 1906	9.0 -0.2 8.8 0.2						31 TU	0019 0646 1232 1908	9.3 -0.3 9.5 -0.4										

AUSTRALIA, NORTH-WEST COAST - CAPE VOLTAIRE (KRAIT BAY)

LAT 14° 15' LONG 125° 36'

TIME ZONE -0800

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

YEAR 1998

MAY			JUNE			JULY			AUGUST														
Day	Time	m	Day	Time	m	Day	Time	m	Day	Time	m												
1 FR	0120 0725 1330 1959	6.0 1.2 6.7 1.1	16 SA	0101 0704 1304 1933	5.9 1.6 6.6 1.2	1 MO	0233 0831 1434 2106	5.3 2.1 5.5 1.9	16 TU	0208 0812 1413 2045	5.6 1.9 5.9 1.6	1 WE	0251 0851 1448 2112	5.3 2.2 5.1 2.0	16 TH	0239 0850 1448 2110	5.9 1.6 5.6 1.5	1 SA	0319 0928 1517 2126	5.1 2.5 4.5 2.5	16 SU	0340 1011 1605 2205	5.5 2.2 4.3 2.5
2 SA	0200 0801 1407 2039	5.5 1.7 6.1 1.6	17 SU	0133 0734 1336 2007	5.7 1.9 6.3 1.6	2 TU	0321 0918 1519 2155	4.9 2.6 4.9 2.4	17 WE	0254 0859 1500 2133	5.4 2.2 5.4 1.9	2 TH	0339 0934 1529 2152	5.0 2.6 4.7 2.4	17 FR	0325 0941 1538 2157	5.6 2.0 5.0 2.0	2 SA	0405 1027 1618 2217	4.8 2.9 4.1 2.9	17 MO	0446 1156 1751 2356	4.9 2.7 3.8 2.9
3 SU	0243 0841 1449 2126	5.0 2.3 5.4 2.3	18 MO	0209 0807 1412 2046	5.4 2.2 5.9 2.0	3 WE	0423 1024 1625 2308	4.6 3.0 4.4 2.7	18 TH	0351 1002 1603 2238	5.2 2.5 4.9 2.3	3 FR	0428 1038 1630 2253	4.8 3.0 4.3 2.8	18 SA	0422 1052 1646 2301	5.3 2.4 4.4 2.4	3 MO	0524 1223 1823 2399	4.6 3.1 3.9 4.0	18 TU	0637 1429 2039 2540	4.7 2.4 4.0 4.0
4 MO	0338 0931 1545 2240	4.6 2.8 4.7 2.8	19 TU	0254 0851 1500 2142	5.1 2.6 5.3 2.4	4 TH	0549 1215 1806	4.5 3.2 4.2	19 FR	0505 1136 1733	5.0 2.6 4.6	4 SA	0542 1218 1809	4.6 3.1 4.0	19 SU	0536 1236 1827	5.1 2.5 4.1	4 TU	0029 0704 1421 2023	3.2 4.6 2.7 4.2	19 WE	0226 0833 1535 2144	2.8 4.9 1.9 4.5
5 TU	0511 1117 1730	4.2 3.3 4.3	20 WE	0402 1005 1619 2318	4.7 2.9 4.8 2.7	5 FR	0048 0721 1408 1952	2.9 4.6 2.9 4.3	20 SA	0003 0629 1319 1910	2.4 5.1 2.4 4.5	5 SU	0028 0705 1403 1952	3.0 4.7 2.9 4.2	20 MO	0039 0706 1424 2016	2.6 5.1 2.2 4.2	5 WE	0221 0826 1522 2128	3.0 5.0 2.2 4.6	20 TH	0333 0935 1615 2219	2.3 5.4 1.4 5.0
6 WE	0056 0730 1403 1955	2.9 4.3 3.2 4.3	21 TH	0548 1218 1819	4.7 3.0 4.6	6 SA	0212 0827 1504 2057	2.7 5.0 2.5 4.6	21 SU	0130 0745 1438 2030	2.3 5.4 2.0 4.7	6 MO	0159 0814 1504 2101	2.9 5.0 2.4 4.5	21 TU	0220 0829 1530 2130	2.5 5.3 1.7 4.6	6 TH	0323 0921 1604 2208	2.6 5.5 1.7 5.1	21 FR	0416 1016 1716 2249	1.7 5.8 1.0 5.5
7 TH	0231 0848 1508 2103	2.7 4.8 2.7 4.7	22 FR	0107 0723 1401 1955	2.5 5.0 2.5 4.9	7 SU	0302 0909 1540 2138	2.4 5.4 2.1 5.0	22 MO	0240 0845 1533 2129	2.1 5.8 1.5 5.0	7 TU	0300 0903 1545 2146	2.6 5.4 1.9 4.9	22 WE	0328 0930 1616 2217	2.1 5.7 1.3 5.0	7 TH	0407 1005 1641 2244	2.1 6.0 1.2 5.5	22 SA	0451 1051 1717 2318	1.3 6.1 0.7 5.9
8 FR	0316 0925 1543 2140	2.3 5.3 2.2 5.1	23 SA	0221 0827 1502 2058	2.1 5.6 1.8 5.3	8 MO	0340 0942 1611 2212	2.2 5.8 1.7 5.3	23 TU	0334 0936 1619 2217	1.8 6.2 1.0 5.3	8 WE	0345 0944 1621 2223	2.3 5.8 1.5 5.3	23 TH	0416 1016 1656 2256	1.7 6.1 0.9 5.4	8 SA	0445 1045 1716 2318	1.6 6.4 0.8 5.9	23 SU	0524 1124 1746 2348	1.0 6.4 0.5 6.2
9 SA	0348 0953 1611 2210	2.0 5.7 1.8 5.5	24 SU	0313 0915 1549 2145	1.7 6.1 1.2 5.6	9 TU	0413 1013 1642 2244	1.9 6.2 1.3 5.6	24 WE	0421 1021 1700 2300	1.5 6.5 0.7 5.6	9 TH	0423 1021 1656 2259	2.0 6.2 1.1 5.6	24 FR	0458 1058 1731 2332	1.4 6.3 0.6 5.7	9 SA	0523 1123 1752 2353	1.2 6.7 0.5 6.2	24 MO	0555 1155 1815	0.8 6.5 0.5
10 SU	0417 1019 1638 2238	1.7 6.1 1.4 5.8	25 MO	0357 0958 1631 2229	1.4 6.6 0.7 5.9	10 WE	0445 1044 1713 2315	1.7 6.4 1.0 5.8	25 TH	0503 1103 1740 2341	1.3 6.7 0.5 5.8	10 FR	0500 1058 1731 2333	1.7 6.5 0.9 5.8	25 SA	0535 1135 1805	1.1 6.5 0.5	10 MO	0600 1200 1827	0.8 6.8 0.4	25 TU	0017 0625 1225 1843	6.3 0.7 6.4 0.6
11 MO	0445 1045 1705 2306	1.5 6.4 1.1 6.0	26 TU	0437 1037 1711 2309	1.1 6.9 0.4 6.0	11 TH	0516 1115 1745 2346	1.6 6.6 0.9 5.9	26 FR	0544 1145 1818	1.1 6.7 0.5	11 SA	0535 1134 1807	1.4 6.6 0.7	26 SU	0007 0611 1211 1838	6.0 0.9 6.5 0.5	11 MO	0028 0637 1237 1900	6.5 0.6 6.8 0.4	26 WE	0045 0654 1254 1909	6.4 0.8 6.2 0.8
12 TU	0512 1112 1733 2335	1.4 6.7 0.9 6.1	27 WE	0516 1117 1750 2349	1.0 7.1 0.3 6.1	12 FR	0549 1147 1818	1.5 6.7 0.8	27 SA	0019 0623 1224 1855	5.9 1.1 6.6 0.6	12 SU	0008 0612 1212 1843	6.0 1.3 6.7 0.6	27 MO	0041 0645 1245 1909	5.1 0.9 6.4 0.6	12 WE	0102 0714 1314 1934	6.6 0.6 6.6 0.5	27 TH	0114 0722 1320 1933	6.3 1.0 6.0 1.1
13 WE	0540 1139 1802	1.4 6.8 0.8	28 TH	0555 1157 1829	0.9 7.1 0.4	13 SA	0019 0622 1220 1853	5.9 1.5 6.7 0.9	28 SU	0058 0700 1301 1930	5.9 1.2 6.4 0.8	13 MO	0044 0649 1248 1918	6.0 1.2 6.6 0.7	28 TU	0114 0717 1317 1938	6.1 1.1 6.2 0.9	13 WE	0138 0751 1350 2008	6.5 0.8 6.2 0.8	28 TH	0139 0748 1345 1955	6.1 1.3 5.6 1.5
14 TH	0003 0607 1206 1832	6.1 1.4 6.8 0.8	29 FR	0030 0634 1236 1908	6.0 1.1 6.9 0.6	14 SA	0054 0656 1255 1928	5.9 1.6 6.6 1.0	29 SU	0136 0737 1338 2005	5.8 1.4 6.1 1.1	14 MO	0120 0727 1327 1954	6.1 1.2 6.4 0.9	29 TU	0145 0749 1347 2006	5.9 1.4 5.8 1.2	14 WE	0215 0830 1428 2042	6.3 1.1 5.6 1.3	29 TH	0203 0815 1410 2015	5.9 1.7 5.3 1.9
15 FR	0032 0635 1234 1902	6.1 1.5 6.8 1.0	30 SA	0110 0713 1315 1946	5.8 1.3 6.5 1.0	15 MO	0130 0732 1332 2004	5.8 1.7 6.3 1.3	30 TU	0213 0814 1414 2038	5.6 1.7 5.6 1.5	15 WE	0158 0807 1406 2031	6.0 1.4 6.0 1.1	30 TH	0215 0819 1416 2031	5.7 1.7 5.4 1.6	15 SA	0253 0914 1510 2117	6.0 1.7 5.0 1.8	30 SU	0228 0842 1435 2036	5.5 2.1 4.9 2.3
			31 SU	0150 0751 1354 2025	5.6 1.6 6.0 1.4							31 MO	0246 0851 1445 2057	5.4 2.1 5.0 2.1				31 TU	0256 0915 1509 2100	5.2 2.6 4.4 2.8			

AUSTRALIA, TORRES STRAIT - HAMMOND ROCK

LAT 10°30' S LONG 142°13' E

TIDAL STREAM PREDICTIONS (RATES IN KNOTS)

TIME ZONE -1000

POSITIVE (+) DIRECTION 080° NEGATIVE DIRECTION (-) 260°

YEAR 1998

JANUARY						FEBRUARY						MARCH											
Slack			Maximum			Slack			Maximum			Slack			Maximum								
Time	Time	Rate	Time	Time	Rate	Time	Time	Rate	Time	Time	Rate	Time	Time	Rate	Time	Time	Rate						
1 TH	0429 1205 1607 2314	0131 0804 1405 1952	-4.4 5.9 -1.9 5.0	16 FR	0008 0539 1354 1717	0255 0929 1534 2116	-3.3 5.5 -1.1 4.1	1 SU	0005 0544 1316 1739	0255 0921 1527 2129	-4.6 6.7 -2.5 6.2	16 MO	0114 0533 1415 1710	0323 0940 1542 2140	-1.5 3.9 -0.6 3.5	1 SU	0444 1146 1646 2352	0150 0811 1416 2022	-5.5 7.2 -4.0 7.1	16 MO	0225 0500 1209 1656	0830 0830 1432 2038	-2.3 3.7 -1.9 3.7
2 FR	0514 1252 1654	0215 0850 1452 2040	-4.4 5.9 -1.8 5.0	17 SA	0054 0608 1447 1738	0332 1006 1612 2154	-2.5 4.8 -0.8 3.6	2 MO	0106 0635 1414 1840	0350 1016 1627 2232	-4.0 6.3 -2.4 5.8	17 TU	0204 0538 1457 1724	0350 1003 1610 2215	-0.8 3.4 -0.3 3.1	2 MO	0532 1234 1742	0242 0900 1508 2118	-5.1 6.8 -3.9 6.8	17 TU	0024 0512 1226 1715	0246 0847 1450 2102	-1.8 3.2 -1.7 3.3
3 SA	0005 0602 1345 1747	0305 0941 1545 2136	-4.2 5.7 -1.8 4.8	18 SU	0146 0630 1551 1754	0409 1044 1652 2236	-1.7 4.1 -0.3 3.1	3 TU	0218 0731 1519 1852	0455 1119 1734 2349	-3.2 5.8 -2.3 5.4	18 WE	0318 0526 1551 1743	0422 1031 1646 2302	-0.2 3.0 -0.2 2.8	3 TU	0054 0625 1330 1843	0338 0954 1606 2223	-4.4 6.2 -3.7 6.2	18 WE	0059 0521 1244 1741	0308 0904 1513 2131	-1.3 2.8 -1.5 3.0
4 SU	0105 0656 1445 1850	0401 1038 1646 2243	-3.8 5.5 -1.7 4.6	19 MO	0250 0647 1226 1751	0450 1123 1737 2329	-0.9 3.6 0.0 2.7	4 WE	0345 0836 1630 2115	0610 1231 1852 2415	-2.5 5.3 -2.4 5.4	19 TH	0508 1113 1700 1823	03 2.6 -0.1	4 WE	0206 0723 1433 1954	0443 1057 1714 2339	-3.5 5.4 -3.3 5.6	19 TH	0143 0538 1309 1815	0335 0927 1543 2212	-0.8 2.5 -1.4 2.6	
5 MO	0216 0756 1551 2008	0507 1144 1758	-3.3 5.2 -1.8	20 TU	0423 0653	0539 1210 1833	-0.3 3.2 0.1	5 TH	0520 0949 1738 2242	0115 0744 1348 2011	5.3 -2.1 5.1 -2.7	20 FR	0016 0622 1217 1747	2.6 0.6 2.4 -0.2	5 TH	0333 0830 1545 2115	0600 1210 1831 2415	-2.6 4.7 -3.2	20 FR	0251 0347 1907	0414 0959 1628 2314	-0.4 2.1 -1.2 2.3	
6 TU	0341 0902 1656 2133	0000 0623 1255 1914	4.5 -2.8 5.1 -2.1	21 WE	0037 0642 1305 1915 1956	2.5 0.2 2.9 0.0	6 FR	0647 1107 1841	0241 0857 1502 2123	5.7 -2.0 5.2 -3.3	21 SA	0150 0756 1340 1818 2209	2.7 0.6 2.5 -0.7	6 FR	0508 0949 1702 2240	0105 0728 1331 1964	5.4 -2.2 4.4 -3.3	21 SA	0516 1055 1739	0.0 -1.8			
7 WE	0511 1014 1756 2258	0126 0744 1406 2027	4.7 -2.6 5.2 -2.7	22 TH	0156 0757 1404 1912 2156	2.6 0.3 2.9 -0.4	7 SA	0000 0800 1219 1837	0354 1008 1606 2224	6.3 -2.3 5.5 -4.0	22 SU	0304 0908 1448 1848 2335	3.3 0.3 2.9 -1.5	7 SA	0634 1113 1814 2359	0221 0852 1450 2110	5.6 -2.2 4.5 -3.7	22 SU	0044 0653 1226 1806 2203	2.3 0.1 1.8 -1.5			
8 TH	0634 1125 1850	0245 0900 1513 2132	5.2 -2.8 5.4 -3.5	23 FR	0302 0902 1456 1924 2316	3.0 0.2 3.1 -0.9	8 SU	0106 0858 1320 2027	0456 1108 1701 2317	6.9 -2.5 5.7 -4.4	23 MO	0356 0959 1106 1922	4.0 -0.4 3.6 -2.4	8 SU	0743 1227 1915	0345 1002 2213	6.0 -2.6 4.8 -4.2	23 MO	0700 0945 1719 2326	0212 0821 1358 2030	-0.3 2.2 -2.2		
9 FR	0012 0745 1230 1940	0356 1006 1612 2230	5.9 -2.8 5.7 -4.2	24 SA	0830 1015 1942	0353 0953 2201	3.6 0.0 3.4 -1.5	9 MO	0202 0949 1411 2113	0548 1159 1749 2313	7.2 -2.6 5.8	24 TU	0040 0858 1224 1959	0439 1041 1629 2249	4.8 -1.1 4.5 -3.4	9 MO	0103 0837 1326 2008	0445 1100 1653 2306	6.4 -2.9 5.1 -4.5	24 TU	0720 1124 1819	0315 0922 2130	3.4 -1.1 3.0 -3.2
10 SA	0115 0848 1328 2028	0457 1107 1704 2322	6.6 -2.9 5.9 -4.7	25 SU	0017 0923 1145 2005	0433 1033 1619 2239	4.2 -0.4 3.9 -2.3	10 TU	0004 0251 1035 1454 2157	-4.6 7.3 -2.6 5.8	25 WE	0133 0919 1122 2038	0519 1121 1713 2333	5.7 -1.9 5.4 -4.3	10 TU	0159 0924 1415 2055	0535 1147 1740 2352	6.6 -3.1 5.2 -4.6	25 WE	0030 0748 1231 1912	0404 1010 1601 2222	4.3 -2.1 4.0 -4.2	
11 SU	0211 0945 1419 2114	0551 1200 1753	7.1 -3.0 5.9	26 MO	0108 0938 1244 2032	0511 1111 1657 2316	4.9 -0.9 4.5 -3.1	11 WE	0333 1117 1530 2237	0046 0715 1322 1911	-4.5 7.0 -2.4 5.6	26 TH	0223 0949 1415 2121	0600 1201 1757	6.4 -2.7 6.2	11 WE	0245 1003 1455	0618 1227 1820	6.5 -3.1 5.2	26 TH	0124 0821 1327 2001	0449 1054 1652 2311	5.2 -3.1 6.0 -5.1
12 MO	0301 1037 1504 2158	0010 0641 1248 1838	-5.0 7.3 -2.8 5.8	27 TU	0155 1001 1334 2105	0547 1147 1734 2355	5.6 -1.4 5.1 -3.8	12 TH	0409 1157 1600 2316	0125 0752 1357 1945	-4.1 6.5 -2.0 5.2	27 FR	0310 1024 1504 2207	0017 0641 1244 1843	-5.1 7.0 -3.3 6.8	12 TH	0324 1038 1528 2215	0032 0655 1301 1856	-4.4 6.1 -2.9 5.1	27 FR	0214 0857 1418 2052	0533 1138 1740 2358	5.9 -4.1 6.0 -6.8
13 TU	0346 1127 1545 2241	0055 0727 1333 1920	-5.0 7.2 -2.5 5.5	28 WE	0240 1030 1421 2143	0625 1225 1815	6.2 -1.8 5.7	13 FR	0440 1233 1624 2354	0159 0824 1427 2015	-3.5 5.9 -1.6 4.8	28 SA	0357 1102 1555 2257	0102 0725 1329 1930	-5.5 7.2 -3.8 7.1	13 FR	0356 1108 1555 2250	0107 0726 1330 1926	-4.0 5.5 -2.7 4.8	28 SA	0301 0935 1508 2143	0616 1223 1829	6.4 -4.9 6.6
14 WE	0429 1215 1620 2324	0137 0810 1415 2000	-4.6 6.8 -2.1 5.1	29 TH	0324 1104 1507 2225	0035 0704 1305 1857	-4.4 6.7 -2.2 6.2	14 SA	0503 1307 1642	0230 0852 1454	-2.9 5.2 -1.2 4.4	29 SA	0423 1132 1617 2322	0136 0752 1354 1952	-3.5 4.9 -2.4 4.4	29 SU	0349 1017 1800 2235	0046 0701 1308 1919	-6.2 6.6 -5.4 7.0				
15 TH	0506 1303 1651	0216 0850 1456 2039	-4.1 6.2 -1.6 4.6	30 FR	0409 1143 1555 2312	0118 0746 1348 1943	-4.8 7.0 -2.5 6.4	15 SU	0032 0522 1341 1657	0257 0917 1518 2112	-2.1 4.5 -0.9 3.9	30 SU	0444 1152 1637 2353	0202 0813 1414 2015	-2.9 4.2 -2.1 4.0	30 MO	0438 1101 1853 2332	0136 0748 1358 2012	-6.1 6.5 -5.8 6.9				
31 SA	0455 1227 1645	0832 1435 2032	-4.9 7.0 -2.6 6.4	31 TU	0204 0832 1435 2032	-4.9 7.0 -2.6 6.4	31 TU	0529 1149 1749	0229 0838 1450	-5.6 6.0 -5.5 6.5													

THESE PREDICTIONS DO NOT INCLUDE NON-TIDAL FLOWS WHICH CAN AFFECT RATES AND DIRECTION OF THE TIDAL STREAMS

PART II

Tidal Streams

-

Predictions

&

Diagrams

IMPORTANT NOTE:

Predictions are in standard time. Add 1 hour when daylight saving is in force.

PART III

Secondary Ports

-

Time Differences

&

Tidal Levels

TORRES STRAIT

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred Datum	Remarks
			MHHW	MLHW	MSL	MHLW	MLLW		
TZ -1000 (EST)									
58100	TWIN I.		2.9	1.9	1.7	1.5	0.5	0.0	
58140	INCE POINT		2.9	2.2	1.8	1.3	0.6	0.0	
57930	BRAMBLE CAY	-0228	3.0	2.0	1.8	1.6	0.6		s
57932	UNNAMED CAY	-0203	3.2	2.2	1.9	1.7	0.7		s
57935	STEPHENS ISLET	-0210	3.0	2.0	1.7	1.5	0.5		s
57940	DARNLEY I.	-0346	2.8	2.0	1.7	1.4	0.6		s
57945	EAST CAY	-0304	3.0	1.8	1.6	1.4	0.2		s
57980	RENNEL I.	-0310	2.9	1.7	1.7	1.6	0.4		
57987	MAER I.	-0311	2.4	1.4	1.4	1.3	0.3		
57990	AUREED I.	-0148	3.2	1.9	1.8	1.8	0.4		
58000	DUNGENESS REEF	-0056	2.9	1.8	1.7	1.7	0.5		
58010	ZAGAI I.	-0025	2.9	1.8	1.6	1.5	0.3		
58015	YAM I.	-0018	3.2	2.0	2.0	1.9	0.7		
58020	SAIBAI I.	+0129	2.9	2.5	1.8	1.2	0.7		
58025	PHIPI REEF	+0057	3.0	2.5	1.9	1.4	0.8		
58030	GABBA I.	+0019	3.1	2.1	1.8	1.6	0.6		
58070	COCONUT I.	-0130	3.2	2.1	2.0	1.8	0.8		s
58073	POLL I.	-0132	3.1	1.9	1.9	1.8	0.6		
58075	KIRKCALDIE REEF	-0106	2.9	2.0	1.8	1.6	0.7		
58080	SUARJI I.	-0015	3.0	1.9	1.8	1.6	0.5		
58090	HAWKESBURY I.	+0100	4.0	2.9	2.3	1.7	0.7		
58110	EAST STRAIT I.	-0007	2.9	2.0	1.7	1.4	0.5		
58131	MOA I.	+0012	2.9	2.2	1.7	1.2	0.5		
58190	ROUND I.	+0044	3.3	2.5	1.9	1.3	0.5		
58260	PAPOU POINT	-0016	2.7	1.9	1.6	1.4	0.6		
58300	TARILAG I.	+0101	3.1	2.3	1.8	1.3	0.5		
58330	HARRINGTON REEF	-0130	3.5	2.4	2.2	2.0	0.8		s
58340	HERALD CAMP	+0122	4.0	2.8	2.3	1.7	0.5		
58360	RED I.	+0019	2.8	2.2	1.7	1.2	0.6		
58390	POSSESSION I.	-0006	2.5	1.9	1.4	1.0	0.4		
58470	ALBANY I.	-0053	3.1	1.9	1.8	1.7	0.5		
58485	TRIANGLE REEF	-0240	2.1	1.4	1.3	1.1	0.5		s
58490	TURTLE HEAD I.	-0144	3.5	2.2	2.1	2.0	0.7		
58170	THURSDAY I.		3.0	2.3	1.8	1.3	0.6	0.0	
58180	TURTLE HEAD		3.1	2.4	1.8	1.2	0.5	0.0	
58200	GOODS I.		3.8	2.7	2.2	1.6	0.6	0.0	

AUSTRALIA - EAST COAST

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred	Remarks
			MHHW	MLHW	MSL	MHLW	MLLW	Datum	
TZ -1000 (EST)									
59060	CAIRNS		2.7	1.8	1.7	1.6	0.6	0.0	
58890	LIZARD I.	-0001	2.5	1.6	1.5	1.4	0.5		
58894	EAST PETHERBRIDGE I.	+0012	2.6	1.7	1.6	1.5	0.6		
58896	NORTH DIRECTION I.	+0007	2.4	1.5	1.4	1.4	0.5		
58900	CAPE FLATTERY	+0004	2.4	1.5	1.5	1.4	0.5		
58903	RIBBON REEF NO. 9	-0002	2.3	1.4	1.3	1.3	0.4		
58910	LOW WOODED ISLE	-0003	2.6	1.5	1.5	1.5	0.4		
58920	CAPE BEDFORD	+0006	2.2	1.4	1.3	1.3	0.4		
58940	COOKTOWN	+0003	2.3	1.7	1.5	1.3	0.7		as
58955	CRUISER PASS	-0007	2.3	1.3	1.3	1.3	0.3		
58990	BAILAY CREEK	+0018	2.3	1.4	1.3	1.3	0.4		
59030	LOW ISLETS	-0003	2.6	1.7	1.6	1.6	0.7		
59035	HOLMES REEF	-0009	2.2	1.5	1.4	1.2	0.5		s
59055	EUSTON REEF	-0027	2.4	1.5	1.5	1.5	0.5		
59070	GREEN I.	-0013	2.6	1.6	1.6	1.5	0.6		
59090	FITZROY I.	-0023	2.5	1.5	1.5	1.5	0.6		
59100	SUDBURY CAY	-0004	2.5	1.6	1.5	1.4	0.5		
59120	HIGH I.	-0008	2.5	1.6	1.5	1.5	0.6		
59130	RUSSELL I.	-0021	2.3	1.9	1.3	0.8	0.4		as
59140	MOURILYAN Hr.		2.8	1.8	1.7	1.6	0.7	0.0	
59133	PEART REEF	-0005	2.4	1.8	1.6	1.4	0.7		as
59137	NATHAN REEF	-0006	2.3	1.7	1.6	1.2	0.7		as
59150	NORTH BARNARD I.	+0008	2.9	1.8	1.8	1.7	0.6		
59151	EDDY REEF	-0008	2.6	1.7	1.5	1.4	0.5		
			MHWS	MHWN	MSL	MLWN	MLWS		
59200	LUCINDA		3.0	2.1	1.9	1.6	0.8	0.0	
59250	TOWNSVILLE		3.1	2.2	1.9	1.6	0.8	0.0	
59155	UNNAMED REEF No. 1	-0009	2.6	1.7	1.6	1.5	0.5		d
59160	FLINDERS REEF	-0018	2.3	1.7	1.5	1.3	0.7		o
59170	DUNK I.	+0004	2.6	1.9	1.6	1.4	0.7		
59178	BARNETT PATCHES	-0005	2.6	1.6	1.6	1.5	0.5		d
59180	GOOLD I.	-0008	3.0	1.8	1.8	1.8	0.5		d
59185	CARDWELL	+0003	3.1	2.2	1.9	1.6	0.8		o
59188	BRITOMART REEF	-0017	2.6	1.9	1.7	1.4	0.6		o
59193	DIP REEF	-0023	2.3	1.6	1.4	1.3	0.5		
59210	JOHN BREWER REEF	+0004	2.5	1.6	1.5	1.4	0.4		d

AUSTRALIA - EAST COAST

1998

PORT No.	PORT NAME	MEAN TIME	TIDAL LEVELS (metres, ref. to LAT)					Pred	Remarks
		DIFFERENCE	MHWS	MHWN	MSL	MLWN	MLWS	Datum	
TZ -1000 (EST)									
59250	TOWNSVILLE		3.1	2.2	1.9	1.6	0.8	0.0	
59215	CURACOA I.	-0019	2.6	1.8	1.5	1.3	0.5		
59220	JAGUAR REEF	-0014	2.4	1.4	1.4	1.3	0.3		d
59230	RATTLESNAKE I.	-0007	2.8	1.6	1.5	1.4	0.2		d
59260	CAPE FERGUSON	-0004	3.1	2.3	2.0	1.7	0.9		
59270	CAPE BOWLING GREEN	0000	2.6	1.8	1.4	1.0	0.2		
59272	STANLEY REEF	+0023	2.7	1.7	1.5	1.4	0.4		d
59274	KENNEDY REEF	+0013	2.3	1.8	1.4	1.0	0.5		
59280	UNNAMED REEF No. 2	-0004	2.5	1.6	1.5	1.3	0.4		d
59290	CAPE UPSTART	+0009	2.5	1.9	1.4	0.9	0.3		
59320	BOWEN	+0039	2.8	2.2	1.8	1.4	0.8		a
59335	TIDEWAY REEF	+0113	2.9	2.2	1.6	1.1	0.4		
59340	HAYMAN I.	+0052	3.3	2.6	1.9	1.3	0.6		a
59360	DOUBLE BAY	+0056	3.0	2.4	1.8	1.2	0.6		
59380	MOLLE I.	+0114	3.2	2.4	1.8	1.2	0.4		
59400	HOOK I.	+0104	2.9	2.3	1.8	1.2	0.6		
59402	BORDER I.	+0121	3.1	2.4	1.8	1.2	0.6		
59406	HASLEWOOD I.	+0119	3.2	2.5	1.9	1.3	0.6		
59435	THOMAS I.	+0121	4.0	3.1	2.3	1.5	0.6		
59438	CREDLIN REEF	+0121	4.1	3.1	2.3	1.5	0.5		
59440	EAST REPULSE I.	+0138	4.5	3.6	2.7	1.7	0.8		
59300	ABBOT POINT		2.9	1.9	1.7	1.5	0.5	0.0	d
59410	SHUTE HARBOUR		3.3	2.5	1.9	1.2	0.5	0.0	
59450	BUGATTI REEF		2.5	2.0	1.5	1.0	0.5	-0.1	
57750	CATO I.	-0200	1.7	1.3	1.0	0.7	0.4		
57810	MARION REEF	-0123	2.3	1.4	1.2	0.9	0.0		d
57820	MELLISH REEF	-0224	1.3	0.7	0.7	0.6	0.1		d
57840	EAST DIAMOND I.	-0119	1.8	1.1	1.1	1.0	0.3		d
57850	WILLIS I.	-0108	2.2	1.3	1.3	1.3	0.5		d
59190	PITH REEF	-0107	2.5	1.7	1.5	1.4	0.6		
59191	RIB REEF	-0035	2.8	1.7	1.6	1.6	0.5		d
59451	CREAL REEF	+0023	3.5	2.5	1.9	1.4	0.4		
59510	MACKAY OUTER Hr.		5.3	4.1	3.0	1.9	0.7	0.0	

AUSTRALIA - EAST COAST

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred Datum	Remarks
			MHWS	MHWN	MSL	MLWN	MLWS		
TZ -1000 (EST)									
59980	BRISBANE BAR		2.2	1.8	1.2	0.7	0.3	0.0	
59965	TANGALOOMA POINT	-0006	2.0	1.6	1.1	0.7	0.3		a
59970	BRIBIE I., BONGAREE	+0020	1.9	1.5	1.1	0.6	0.3		a
60000	BRISBANE PORT OFF.	+0035	2.2	1.8	1.3	0.8	0.4		a
60040	RUNAWAY BAY	-0031	1.2	0.9	0.6	0.3	0.2		a
60050	GOLD COAST SEAWAY	-0115	1.4	1.1	0.7	0.4	0.1		
60060	NERANG R. (BUNDALL)	-0018	1.4	0.9	0.8	0.7	0.2		d
60070	POINT DANGER	-0127	1.6	1.3	1.0	0.6	0.3		
60071	TWEED R.	-0115	1.4	1.1	0.8	0.5	0.2		
60075	KINGSCLIFF	-0108	1.3	1.1	0.8	0.4	0.2		
60080	BRUNSWICK HEADS	-0110	1.5	1.2	0.9	0.5	0.2		
60090	BALLINA	-0114	1.4	1.1	0.8	0.5	0.2		
57715	ELIZABETH REEF	-0140	1.9	1.7	1.2	0.8	0.5		
60130	YAMBA		1.5	1.2	0.9	0.5	0.2	0.0	
60170	N.W. SOLITARY I.	0000	1.6	1.2	0.9	0.6	0.2		
60180	COFFS HARBOUR	-0003	1.6	1.3	0.9	0.6	0.3		
60200	SOUTH WEST ROCKS	+0100	1.3	0.8	0.7	0.6	0.1		d
60220	PORT MACQUARIE	+0020	1.3	1.1	0.7	0.4	0.2		
60230	CAMDEN HAVEN	+0019	1.1	0.9	0.6	0.3	0.2		
60235	CROWDY HEAD	-0002	1.6	1.3	0.9	0.5	0.3		
60240	HARRINGTON INLET	+0015	1.4	0.9	0.7	0.6	0.1		d
60250	FORSTER	0000	1.5	1.3	0.9	0.5	0.3		
60310	NEWCASTLE		1.5	1.3	0.9	0.5	0.3	0.0	
60270	BROUGHTON I.	-0005	1.6	1.3	0.9	0.5	0.2		
60290	PORT STEPHENS	+0003	1.6	1.4	1.0	0.6	0.3		
60315	SWANSEA	-0002	1.3	1.1	0.8	0.4	0.2		
60370	SYDNEY		1.5	1.3	0.9	0.5	0.3	0.0	
60320	GOSFORD	+0219	0.8	0.5	0.4	0.3	-0.1		d
60325	ETTALONG	+0033	0.9	0.8	0.5	0.2	0.1		
60330	LITTLE PATONGA	+0006	1.6	1.3	0.9	0.5	0.3		
60340	PITTWATER	+0001	1.6	1.3	0.9	0.5	0.2		
60390	BOTANY BAY	+0004	1.6	1.3	1.0	0.6	0.3		
60400	PORT HACKING	0000	1.5	1.3	0.9	0.5	0.3		
60440	JERVIS BAY	-0003	1.5	1.3	0.9	0.6	0.3		
60460	ULLADULLA HARBOUR	-0001	1.5	1.3	0.9	0.5	0.3		
60470	BATEMANS BAY	-0001	1.5	1.2	0.9	0.5	0.3		
60480	MORUYA	+0029	1.3	1.1	0.8	0.5	0.3		

AUSTRALIA - SOUTH EAST COAST AND TASMANIA

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred	Remarks
			MHWS	MHWN	MSL	MLWN	MLWS	Datum	
TZ -1000 (EST)									
60420	PORT KEMBLA		1.5	1.3	0.9	0.6	0.3	0.0	
60530	EDEN		1.7	1.1	1.0	0.8	0.2	0.1	d
60500	BERMAGUI	+0007	1.3	1.1	0.8	0.4	0.2		
60550	GABO I.	-0004	1.2	1.1	0.8	0.5	0.3		
60562	POINT HICKS	+0007	1.3	1.1	0.8	0.5	0.3		
60570	LAKES ENTRANCE	+0026	1.1	0.7	0.6	0.6	0.2		d
60710	STONY POINT		2.8	2.4	1.7	1.0	0.6	0.1	
60590	PORT WELSHPOOL	+0050	2.6	1.7	1.4	1.1	0.2		d
60610	RABBIT I.	-0037	2.4	2.0	1.5	1.0	0.6		
60730	PORT PHILLIP HEADS		1.5	1.2	0.9	0.6	0.3	0.0	
60670	WARATAH BAY	0000	2.5	2.1	1.5	0.8	0.4		
60790	LORNE	-0014	2.2	1.8	1.4	0.9	0.5		
			MHHW	MLHW	MSL	MHLW	MLLW		
60770	GEELONG		1.0	0.7	0.6	0.5	0.1	0.1	
60780	MELBOURNE		0.9	0.5	0.5	0.4	0.1	0.0	
			MHWS	MHWN	MSL	MLWN	MLWS		
60900	STANLEY		3.3	3.0	2.0	1.0	0.7	-0.2	
60875	THREE HUMMOCKS	+0044	2.3	2.1	1.3	0.6	0.3		
60910	BURNIE		3.2	2.9	1.9	0.9	0.6	0.0	
60930	DEVONPORT		3.2	2.9	1.9	0.9	0.6	0.2	
60650	GREAT GLENNIE I.	+0003	2.2	2.0	1.2	0.4	0.2		
60815	DEAL I.	-0028	2.0	1.9	1.2	0.6	0.4		
60830	SURPRISE BAY	-0032	1.5	0.9	0.8	0.7	0.1		d
60840	GRASSY	-0014	1.5	0.9	0.8	0.8	0.1		d
60870	STACK I.	+0112	2.0	1.8	1.0	0.3	0.1		
61030	BIG RIVER COVE	-0008	2.7	2.4	1.6	0.8	0.6		
61090	LADY BARRON Hr.	-0024	1.6	1.4	0.9	0.5	0.3		
60950	GEORGETOWN		3.1	2.9	1.9	0.9	0.7	-0.1	
60970	LAUNCESTON	+0052	3.9	3.7	2.4	1.1	0.9		

AUSTRALIA - TASMANIA AND SOUTH COAST

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred	Remarks
			MHHW	MLHW	MSL	MHLW	MLLW	Datum	
TZ -1000 (EST)									
61220	HOBART		1.5	1.0	0.8	0.7	0.2	-0.4	
61110	SWAN I.	+0055	1.4	1.3	0.8	0.3	0.2		s
61120	EDDYSTONE POINT	+0002	1.3	0.8	0.6	0.5	0.0		
61135	FALMOUTH	+0009	1.4	0.8	0.8	0.8	0.2		
61150	BICHENO	-0011	1.6	1.0	1.0	1.0	0.3		
61155	COLES BAY	+0003	1.2	0.8	0.7	0.6	0.1		
61170	SPRING BAY	-0002	1.3	0.8	0.7	0.7	0.2		
61180	PIRATES BAY	-0008	1.1	0.5	0.5	0.5	0.0		
61200	PARSONS BAY	+0002	1.2	0.8	0.6	0.5	0.0		
61210	IMPRESSION BAY	+0003	1.3	0.8	0.6	0.5	0.0		
61270	MAATSUYKER I.	+0024	1.2	0.7	0.6	0.5	0.0		
61280	BRAMBLE COVE	+0051	0.8	0.7	0.5	0.3	0.2		
61300	CAPE SORELL, PILOT B		1.0	0.8	0.6	0.3	0.1		
61310	GRANVILLE HARBOUR		1.2	1.0	0.7	0.5	0.3		
61320	PIEMAN R.		1.1	0.8	0.6	0.4	0.2		
61410	PORTLAND		1.0	0.8	0.6	0.4	0.2	0.1	
61360	PORT CAMPBELL	+0013	1.1	0.8	0.6	0.5	0.2		
61380	WARRNAMBOOL	0000	0.9	0.5	0.5	0.5	0.1		
TZ -0930 (CST)									
61600	ADELAIDE OUTER Hr.		2.3	1.3	1.3	1.3	0.3	-0.2	s
61520	EMU BAY	-0050	1.3	0.9	0.8	0.6	0.2		
61530	KINGSCOTE	-0101	1.4	0.9	0.8	0.7	0.1		
61540	AMERICAN R.	-0024	1.4	0.9	0.8	0.6	0.2		
61550	HOG BAY	-0053	1.4	1.0	0.8	0.6	0.2		
61561	CAPE JERVIS	-0026	1.3	0.8	0.7	0.6	0.1		
61570	SECOND VALLEY	-0008	1.7	1.1	1.0	0.9	0.3		
61580	PORT NOARLUNGA	-0011	1.9	1.1	1.1	1.1	0.3		
61583	PORT STANVAC	-0006	2.1	1.3	1.3	1.3	-0.4		s
61590	BRIGHTON	-0003	2.0	1.2	1.1	1.1	0.3		s
61650	ARDROSSAN	-0003	2.9	1.6	1.6	1.6	0.4		s
61670	PORT VINCENT	-0029	2.3	1.3	1.2	1.1	0.1		
61680	WOOL BAY	+0007	2.7	1.9	1.9	1.9	1.1		
61690	EDITHBURGH	-0031	2.0	1.1	1.1	1.1	0.3		
61610	ADELAIDE INNER Hr.		2.4	1.4	1.4	1.4	0.3	-0.2	s

AUSTRALIA - WEST COAST

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred Datum	Remarks
			MHWS	MHWN	MSL	MLWN	MLWS		
TZ -0800 (WST)									
62550	PORT WALCOTT		5.5	3.8	3.2	2.7	0.8	0.4	a
62590	PORT HEDLAND		6.8	4.7	4.0	3.3	0.9	-0.2	a
62610	BEDOUT ISLET	+0028	6.3	3.8	3.4	2.9	0.4		
62650	BROOME		9.4	6.4	5.3	4.3	1.1	0.8	a
62630	LAGRANGE BAY	-0007	8.1	5.2	4.2	3.3	0.3		
62680	RED BLUFF	+0025	7.3	4.6	4.1	3.5	0.8		
62780	DERBY		9.7	7.3	4.9	2.4	0.0	0.0	a
62860	YAMPI SOUND		9.9	6.8	5.4	4.1	1.0	-0.2	a
62730	SCOTT REEF	-0108	3.7	2.3	2.1	1.8	0.5		
62740	ASHMORE REEF	-0040	3.8	2.6	2.1	1.7	0.5		
62750	KARRAKATTA BAY	+0028	8.0	5.5	4.5	3.5	1.0		
62751	SUNDAY I.	+0045	7.2	5.2	4.0	2.8	0.9		
62840	BEDFORD I.	+0004	9.7	5.9	5.5	5.0	1.2		
62880	MACLEAY I.	+0002	9.2	5.4	4.7	4.0	0.2		
62890	ADELE I.	-0021	6.4	4.9	3.4	1.8	0.4		
62910	SHALE I.	+0016	11.9	8.5	6.6	4.7	1.3		a
62920	HALL POINT	-0011	9.2	5.8	4.8	3.8	0.4		
62930	DEGERANDO I.	-0013	8.1	5.3	4.3	3.4	0.6		
62940	WHITE I.	-0037	8.1	5.0	4.3	3.6	0.5		
63021	LYNHER BANK	-0040	5.1	3.2	2.7	2.3	0.4		
63001	CAPE VOLTAIRE		6.5	4.3	3.7	3.1	0.9	0.0	
62900	BROWSE I.	-0022	4.9	3.0	2.5	1.9	0.0		
62960	SKUA No 4 WELL	0000	2.3	1.7	1.4	1.1	0.5		
62980	JABIRU	+0022	3.3	2.4	2.0	1.5	0.6		
62990	NORTH MARET I.	-0010	7.5	4.6	4.2	3.8	0.8		
63000	BAUDIN I.	0000	6.4	4.2	3.6	2.9	0.7		
63002	DILLON SHOAL	+0036	3.0	2.2	1.9	1.5	0.7		
63010	PORT WARRENDER	+0021	7.0	4.2	3.8	3.4	0.6		
63011	TROUGHTON I.	+0015	4.4	2.9	2.5	2.2	0.7		
63012	CASSINI I.	-0012	6.3	3.8	3.4	3.1	0.6		
63020	JAR I.	-0116	2.9	1.9	1.5	1.1	0.1		
63022	HEYWOOD SHOAL	-0004	4.9	3.0	2.6	2.3	0.4		
63023	PEE SHOAL	+0013	3.4	2.2	1.9	1.6	0.4		
63028	VAN CLOON SHOAL	+0012	2.8	1.7	1.6	1.5	0.4		d

AUSTRALIA - NORTH WEST COAST

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred Datum	Remarks
			MHWS	MHWN	MSL	MLWN	MLWS		
TZ -0800 (WST)									
63001	CAPE VOLTAIRE		6.5	4.3	3.7	3.1	0.9	0.0	
63030	GERANIUM HARBOUR	-0044	2.7	1.5	1.4	1.3	0.1		d
63035	NAPIER BROOME BAY	-0033	2.6	1.8	1.4	1.0	0.2		o
63050	CAPE DOMETT		6.9	5.2	4.1	3.1	1.4	0.1	o
63040	LESUEUR I.	+0033	2.8	2.0	1.5	0.9	0.1		d
63041	CAPE WHISKEY	+0106	4.4	2.7	2.6	2.4	0.8		d
63042	REVELEY I.	+0115	4.8	2.8	2.6	2.4	0.5		d
63060	LACROSSE I.	+0001	6.2	5.0	3.9	2.9	1.7		
63100	PELICAN I.	-0011	6.9	5.5	4.3	3.0	1.6		
63090	WYNDHAM		7.7	6.0	4.5	2.9	1.2	0.3	o
63070	ADOLPHUS I.	-0103	7.4	5.7	4.4	3.2	1.3		o
63080	PENDER POINT	-0017	7.5	5.8	4.5	3.0	1.3		o
TZ -0930 (CST)									
63230	DARWIN		6.9	5.0	4.1	3.2	1.3	0.0	
63093	THE BOXERS	-0220	3.1	2.1	1.9	1.7	0.6		d
63107	CALDER SHOAL	+0056	3.1	1.8	1.8	1.8	0.5		d
63108	EVANS SHOAL	-0324	2.7	1.7	1.5	1.4	0.4		d
63110	TURTLE POINT	+0122	6.0	4.4	3.4	2.4	0.8		
63160	PEARCE POINT	+0104	6.6	4.8	3.7	2.6	0.8		
63167	JONES POINT	+0029	6.5	5.2	4.0	2.8	1.5		
63190	DALY R.	-0054	6.5	4.7	3.7	2.7	0.9		
63192	GOODRICH BANK	-0250	3.6	2.3	2.1	1.9	0.6		d
63193	NORTH PERON I.	+0003	6.1	4.0	3.6	3.1	1.0		d
63197	FISH REEF	-0020	6.1	4.4	3.7	3.0	1.3		
63200	TAPA BAY	-0019	6.5	4.6	3.9	3.2	1.3		
63210	BURGE POINT	-0010	6.5	4.7	3.9	3.1	1.3		
63217	LYNEDOCH BANK	+0254	2.1	1.7	1.4	1.0	0.6		
63220	NIGHT CLIFF	-0001	6.8	4.7	4.0	3.3	1.2		
63250	CAPE HOTHAM	+0058	4.1	3.5	2.6	1.7	1.0		
63280	TWO HILLS BAY	+0132	3.7	2.8	2.1	1.5	0.6		
63290	NEWBY SHOAL	-0110	4.6	2.8	2.8	2.8	1.0		d
63300	CAMP POINT	+0111	3.9	3.3	2.4	1.5	0.8		
63330	ST. ASAPH BAY	-0009	4.0	3.0	2.3	1.6	0.6		
63335	SNAKE BAY	-0220	3.0	1.9	1.8	1.6	0.5		d
63340	ECHO SHOAL	-0456	2.6	1.6	1.5	1.4	0.4		d
63360	CAPE DON	-0020	2.9	1.9	1.8	1.7	0.7		d

AUSTRALIA - NORTH COAST AND GULF OF CARPENTARIA

1998

PORT No.	PORT NAME	MEAN TIME DIFFERENCE	TIDAL LEVELS (metres, ref. to LAT)					Pred Datum	Remarks
			MHWS	MHWN	MSL	MLWN	MLWS		
TZ -0930 (CST)									
63230	DARWIN		6.9	5.0	4.1	3.2	1.3	0.0	
63370	PORT ESSINGTON	-0146	2.6	1.6	1.6	1.5	0.5		d
63390	CAPE CROKER	-0137	2.4	1.5	1.4	1.3	0.5		d
63393	MONEY SHOAL	-0130	2.3	1.4	1.4	1.3	0.5		d
63395	NORTH CAPE CROKER	-0230	2.4	1.4	1.4	1.4	0.4		d
63397	CAPE COCKBURN	-0033	3.0	1.8	1.8	1.7	0.5		d
63400	NEW YEAR I.	-0059	2.3	1.3	1.3	1.3	0.3		d
63401	HOGMANAY SHOAL	-0026	3.0	1.8	1.8	1.8	0.6		d
63406	AURARI BAY	+0009	2.7	1.7	1.6	1.4	0.5		d
63410	NORTH GOULBURN I.	-0001	2.7	1.7	1.6	1.5	0.5		d
63430	ENTRANCE I.	+0112	3.9	3.1	2.5	2.0	1.1		
63440	YABOOMA	+0135	4.8	3.8	3.0	2.3	1.3		
63480	GOVE HARBOUR		2.9	2.4	1.8	1.3	0.8	-0.2	
63443	HUTCHISON R.	-0108	5.3	3.9	3.1	2.3	1.0		
63445	NW CROCODILE I.	-0123	4.4	3.5	2.8	2.0	1.1		
63447	W. OF CAPE WESSEL	-0117	3.8	2.9	2.4	1.8	0.9		
63450	GULUWURU I.	+0004	3.3	2.7	2.0	1.4	0.8		
63455	HOPEFUL BAY	-0106	3.8	2.4	2.2	1.9	0.5		d
63462	TWO ISLAND BAY	-0103	3.6	2.8	2.3	1.8	0.9		
63470	MALLISON I.	+0109	4.7	4.0	2.6	1.2	0.6		
63483	TRUANT I.	+0001	3.4	2.2	1.9	1.7	0.5		d
MHHW MLHW MSL MHLW MLLW									
63511	MILNER BAY		1.7	1.6	1.1	0.5	0.4	0.0	
63500	CAPE GREY	-0033	1.8	1.1	1.1	1.1	0.4		
63508	HAWK I.	-0047	1.5	0.9	0.9	0.9	0.3		
63510	PORT LANGDON	-0103	1.6	1.0	1.0	1.0	0.4		
63512	ROSE R.	-0134	2.4	1.8	1.3	0.8	0.2		
63517	WEST I.	-0029	2.8	2.1	1.7	1.3	0.6		
63520	CENTRE I.	-0031	2.9	2.1	1.8	1.4	0.6		
TZ -1000 (EST)									
63580	KARUMBA		3.7	3.4	2.1	0.8	0.4	0.0	
63540	MORNINGTON I.	+0032	2.9	2.6	1.8	1.0	0.7		
63560	SWEERS I.	-0020	4.2	3.9	2.3	0.8	0.5		
63585	STAATEN R.	-0128	4.1	4.0	2.6	1.2	1.0		
63587	NASSAU R. OFFSHORE		2.4	2.3	1.5	0.7	0.6		

PORT INDEX

(Standard Ports in capital letters)

<i>Port</i>	<i>No.</i>	<i>Port</i>	<i>No.</i>
ABBOT POINT	59300	Bowen	59320
ADELAIDE (INNER HARBOR)	61610	Bramble Cay	57930
ADELAIDE (OUTER HARBOR)	61600	Bramble Cove	61280
Adele Island	62890	Bribie Island	59970
Adelie Land (Port Martin)	20130	Brighton	61590
Admiralty Islands (Seeadler Harbour)	56130	Brisbane Port Office	60000
Adolphus Island	63070	BRISBANE BAR	59980
Aigura Point	55910	Bristow Island	55445
ALBANY	62120	Britomart Reef	59188
Albany Island	58470	Broad Sound	59580-59590
Althorpe Island	61825	Broken Bay	60320-62340
ALOTAU	55830	BROOME	62650
Ambitle Island	56300	Broughton Island	60270
American River	61540	Browse Island	62900
ANEWA BAY	56340	Brunswick Heads	60080
Archer River	63610	Buccaneer Archipelago	62840-62880
Ardrossan	61650	Buena Vista	56748
Arno Bay	61860	BUGATTI REEF	59450
Ashmore Reef (West Islet)	62740	BUNBURY	62190
Aurari Bay	63406	BUNDABERG	59820
Aureed Island	57990	Bungana Island	56710
Ava Point	55640	Bunker Bay	62185
Bailay Creek	58990	Burke (Suarji) Island	58080
Ballina	60090	BURNIE	60910
Bampfield Head	58280	Busselton	62180
Barnett Patches	59178	Cairncross Island	58570
BARROW ISLAND -		CAIRNS	59060
TANKER MOORING	62491	Caloundra Head	59960
BARROW ISLAND -		Camden Haven	60230
WAPET LANDING	62490	Camp Point	63300
Basilaki	55670	Cape Bedford	58920
Bass Strait	60610-61090	Cape Bowling Green	59270
Batemans Bay	60470	Cape Cockburn	63397
Baudin Island	63000	Cape Crocker	63390
Beachport	61450	Cape Deliverance	55780
Bedford Islands	62840	CAPE DOMETT	63050
Bedout Island	62610	Cape Don (Christies Bay)	63360
Bell Cay	59550	Cape Elizabeth	61770
Bermagui	60500	Cape Ferguson	59260
Bicheno	61150	Cape Flattery	58900
Big River Cove	61030	Cape Grenville	58610
Bina Harbour	56760	Cape Grey	63500
Bismarck Archipelago	56130-56240	Cape Hamelin	62158
Blackett Strait	56470	Cape Hotham	63250
Blacksmith Island	59443	Cape Jervis	61561
Blakeney Island	55675	Cape Legendre	62541
Blanche Port	61980	Cape Melville	58830
Bonarra Island	56620	Cape Sorell (Pilot Bay)	61300
BOOBY ISLAND	58230	Cape Upstart	59290
Boonlye Point	59880	CAPE VOLTAIRE	63001
Bootless Inlet	55581	Cape Wessel (West of)	63447
Border Island	59402	Cape Whiskey	63041
Botany Bay	60390	Cardwell	59185
Bougainville Island	56340-56350	Carlisle Island	59460

Port	No.	Port	No.
CARNARVON	62370	East Petherbridge Island	58894
Carter Reef	58885	East Repulse Island	59440
Casey (Wilkes)	20120	East Strait Island	58110
Cassini Island	63012	Easter Group	62300
Cato Island	57750	Echo Shoal	63340
Centre Island	63520	Eddy Reef	59151
Cervantes	62260	Eddystone Point	61120
Chambers Bay	63248	EDEN	60530
Chapman Island	58680	Eden Reef	58770
Choiseul Island	56360-56380	Edithburgh	61690
Christine Reef	63260	Elbow Point	59890
Christmas Island	46290	Eleonora Bay	56175
Cid Harbour	59390	Elizabeth Reef	57715
Clews Point	59770	Elliot Heads	59830
Coconut Island	58070	Elliston	61950
COCOS ISLANDS - PORT REFUGE	46280	Emu Bay - S. Australia	61520
Coffs Harbour	60180	Endeavour Strait	58280-58470
Coles Bay	61155	Entrance Island	63430
Commonwealth Bay	20140	ESPERANCE	62080
Cooktown	58940	Ettalong	60325
Coral Bay	62398	Eucla	62040
Cowaramup	62170	Euston Reef	59055
Crab Island	58281	Evans Shoal	63108
Creal Reef	59451	EXMOUTH	62435
Credlin Reef	59438	Falmouth	61135
Creech Reef	58740	Fife Island	58750
Crowdy Head	60235	Finsch Harbour	56000
Cruiser Pass	58955	Fish Reef	59055
Cullen Point	63650	Fitzroy Island	59090
Curacoa Island	59215	Flinders Bay	62150
Daly River	63190	Flinders Islands	58800
DAMPIER	62540	Flinders Reef	59160
Darnley Island	57940	Flock Pigeon Island	59580
Daru	55440	Florida Island	56690-56750
DARWIN	63230	Forster	60250
Davis	20100	Fortescue Road	62520
Daw Island	62055	Foul Bay	56202
Deal Island	60815	FREMANTLE	62230
Dedele Point	55610	Freycinet Estuary	62340
Degerando Island	62930	Furneaux Group	61010-61090
Delami Island	55630	Gabba Island	58030
DENHAM	62341	Gabo Island	60550
Depuch Island	62570	Gannet Cay	59551
DERBY	62780	Gatcombe Head	59740
DEVONPORT	60930	GEELONG	60770
Dillon Shoal	63002	GEORGETOWN	60950
Dip Reef	59193	GERALDTON	62290
Double Bay	59360	Geranium Harbour	63030
DREGER HARBOUR	55990	Gizo Anchorage	56460
Duchateau Islands	55710	GLADSTONE	59750
Dugong Island	58072	Goaribari Island	55480
Duke of York Group	56220-56230	Gold Coast Seaway	60050
Dungeness Reef	58000	Goodrich Bank	63192
Dunk Island	59170	GOODS ISLAND	58200
East Cape	55850	Goold Island	59180
East Cay	57945	Goose Island - W.A.	62060
East Diamond Islet	57840	Gosford	60320

Port	No.	Port	No.
GOVE HARBOUR	63480	Kerema	55540
Grassy	60840	Kieta Harbour	56350
Great Glennie Island	60650	Kikori	55510
Great North-East Channel	57930-58020	Kimbe	56180
Green Island	59070	King Island	60820-60840
Greenly Island	61945	King Sound	62750-62790
Gulf of Carpentaria	63480-63630	Kingscliff	60075
Guluwuru Island	63450	Kingscote	61530
Hall Point	62920	Kingston	61470
Ham Reef	58690	Kirkcaldie Reef	58075
Hamelin Pool	62350	Kokopo	56210
Hannibal Island	58590	KOOLAN ISLAND	62860
Harrington Inlet	60240	KRAIT BAY	63001
Harrington Reef	58330	Kumul Tanker Mooring	55515
Haslewood Island	59406	Lacrosse Island	63060
Hati Lawi Harbour	55750	Lady Barron Harbour	61090
Hauy Islet	62541	Lady Elliot Island	59790
Hawk Island	63508	Lady Musgrave Island	59780
Hawkesbury Island	58090	LAE	55980
HAY POINT	59511	Lakes Entrance	60570
Hayman Island	59340	Lagrange Bay	62630
Heard Island	20090	Laminaria	63004
Herald Camp	58340	Lancelin	62250
Heron Island	59700	Large Islet	62480
Heywood Shoal	63022	Launceston	60970
Hicks Island	58615	Learmonth	62440
High Island	59120	Leeman	62280
High Peak Island	59620	LEGGATT ISLAND	58865
Hillarys	62237	Lesueur Island	63040
HOBART	61220	Little Patonga	60330
Hog Bay	61550	Lizard Island	58890
Hogmannay Shoal	63401	Lolomo Passage	56540
Holmes Reef	59035	Long Island	57800
HONIARA	56670	Lord Howe Island	57720
Hook Island	59400	Lorne	60790
Hopeful Bay	63455	Louisiade Archipelago	55670-55880
Hutchison River	63443	Low Islets	59030
Imperieuse Reef	62593	Low Wooded Isle	58910
Impression Bay	61210	LUCINDA	59200
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Jabiru	62980	Lynher Bank	63021
Jaguar Reef	59220	Maatsuyker Island	61270
Jar Island	63020	MACKAY OUTER HARBOUR	59510
Jervis Bay	60440	Mackleay Island	62880
John Brewer Reef	59210	Macquarie Island	65300
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Jubilee Reef	58700	Maer Island	57987
Jurien Bay	62270	Mallison Island	63470
Kalbarri	62320	MANUS ISLAND	56130
Kaligola Point	55600	Marion Reef	57810
Kanapu Island	55960	Marovo Lagoon	56510
Kangaroo Island	61510-61560	Marquis Island	59610
Karrakatta Bay	62750	Mary Ann Haven	62100
KARUMBA	63580	Mawson	20080
Katurasele	56361	Mbungana Island	56710
Kavieng Harbour	56240	McEwin Islet	59590
Kennedy Reef	59274	MELBOURNE	60780

<i>Port</i>	<i>No.</i>	<i>Port</i>	<i>No.</i>
Mellish Reef	57820	Pearce Point	63160
Melville Island	63300-63350	Pearson Island	61960
Merauke	55420	Peart Reef	59133
MERSEY RIVER (DEVONPORT)	60930	Pee Shoal	63023
Michaelmas Island	59050	Pelican Island (Qld)	58761
Middle Island	59540	Pelican Island (W.A.)	63100
MILNER BAY	63511	Pelsaert Island	62285
Misima	55690	Pender Point	63080
Moa Island	58131	Pennefather River	63630
Molle Island	59380	Penrith Island	59500
Mongo Passage	56520	Phipi Reef	58025
Monkey Mia	62360	Pieman River	61320
MOOLOOLABA	59950	Pilot Bay, Cape Sorell	61300
Money Shoal	63393	Piper Island	58650
Moreton Bay	59960-60030	Pipon Islands	58820
Mornington Island	63540	Pirates Bay	61180
Morris Island	58730	Pith Reef	59190
Moruya	60480	Pitt Bay	55670
MOURILYAN HARBOUR	59140	Pittwater	60340
Munro Reef	58840	Point Danger	60070
Napier Broome Bay	63035	Point Hicks	60562
Nathan Reef	59137	Point Jenny	63195
Native Point	63196	POINT LONSDALE	60730
Nerang River	60060	Point Murat	62430
New Britain	56180-56210	Point Stuart	63249
New Georgia Group	56450-56540	Poll Island	58073
New Year Island	63400	Pondalow Bay	61740
Newby Shoal	63290	PORT ALMA	59690
NEWCASTLE	60310	Port Augusta	61830
Night Cliff	63220	Port Broughton	61790
Night Island	58710	Port Campbell	61360
Noosa Head	59940	Port Clinton	59650
NORFOLK ISLAND	57700	Port Curtis	59740-59750
Normanby River	58870	Port Denison	62275
North Cape Crocker	63395	PORT DOUGLAS	59040
North Island	62305	Port Essington	63370
North Barnard Islands	59150	Port Eyre	62020
North Direction Island	58896	Port Gregory	62310
North Goulburn Island	63410	Port Hacking	60400
North Maret Island	62990	PORT HEDLAND	62590
North Peron Island	63193	Port Jackson	60360-60370
North Sandy Island	62510	PORT KEMBLA	60420
North West Crocodile Island	63445	Port Langdon	63510
North West Island	62501	PORT LINCOLN	61900
North West Solitary Island	60170	Port MacDonnell	61430
Norwegian Bay	62410	Port Macquarie	60220
Nuakata Island	55840	Port-Martin	20130
Nugu Island	56690	PORT MORESBY	55580
Nususonga	56480	Port Noarlunga	61580
Omati	55490	Port Neill	61880
One Tree Island	59710	Port Phillip	60730-60780
ONSLow	62470	PORT PHILLIP HEADS	60730
Oro Bay	55951	PORT PIRIE	61800
Osbourne Islet	59605	Port Romily	55520
Papou Point	58260	Port Stanvac	61583
Papua New Guinea	55440-56240	Port Stephens	60290
Parsons Bay	61200	Port Turton	61750

Port	No.	Port	No.
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Port Vincent	61670	Snake Bay	63335
PORT WALCOTT	62550	Solomon Islands	56320-56780
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Port Welshpool	60590	South West Rocks	60200
PORTLAND	61410	Spencer Gulf	61750-61900
Portland Roads	58660	Spring Bay	61170
Possession Island	58390	Square Reef	59342
Prince of Wales Channel	58140-58200	Stack Island	60870
Proudfoot Shoal	58240	Staaten River	63585
RABAU	56200	STANLEY	60900
Rabbit Island	60610	Stanley Reef	59272
Raine Island	58540	Steamboat Island	62521
Rattlesnake Island	59230	Stenhouse Bay	61730
Red Bluff	62680	Stephens Island	57935
Red Island	58360	Stone Island	56120
Red Wallis Island	58283	STONY POINT	60710
Redcliff	61820	Suarji Island	58080
Reef Point	59612	Sudbury Cay	59100
Reevesby Island	61888	Sunday Island	62751
Rennel Island	57980	Surprise Bay	60830
Restoration Island	58670	Swallows Landing	59065
Reveley Island	63042	Swan Island	61110
Rib Reef	59191	Swansea	60315
Ribbon Reef No. 9	58903	Sweers Island	63560
Robe	61460	SYDNEY - FORT DENISON	60370
Rose River	63512	Tangalooma Point	59965
Ross Island	20180	Tantabiddi	62420
Rosslyn Bay	59670	Tarilag Island	58300
Rottnest Island	62235	Taylors Landing	61920
Round Island	58190	Tapa Bay	63200
Runaway Bay	60040	The Boxers	63093
Russell Island	59130	THEVENARD	62000
Saibai Island	58020	THEVENARD ISLAND	62475
St. Asaph Bay	63330	Thistle Island (East of)	61925
St. Bees Island	59480	Thomas Island	59435
St. Francis Island	62010	Thousand Ships Bay	56780
Samarai Island	55660	Three Hummocks	60875
Sandfly Passage	56750	THURSDAY ISLAND	58170
Santa Isabel Island	56780	Tideway Reef	59335
Sarina Inlet	59520	Torres Strait	58080-58470
Scawfell Island	59490	TOWNSVILLE	59250
Scott Reef	62730	Triangle Reef	58485
Second Valley	61570	Trimouille Island	62500
SEEADLER HARBOUR	56130	Troughton Island	63011
Sepik River	56060	Truant Island	63483
Serrurier Island	62460	Tryon Islet	59720
Shale Island	62910	Tufi Harbour	55940
Sharp Island	55871	TURTLE HEAD	58180
Shelbourne Bay	58600	Turtle Head Island	58490
Shelf Edge Mooring	61937	Turtle Point	63110
Shoalwater Bay	59610	Tweed River	60071
Sholl Island	62522	TWIN ISLAND	58100
Shortland Island	55671	Two Hills Bay	63280
SHUTE HARBOUR	59410	Two Island Bay	63462
Sir Charles Hardy Islands	58630	Two Rocks Marina	62240
Sir Edward Pellew Group (Centre I.)	63520	Ulladulla	60460

Port	No.	Port	No.
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Umbo Island	56020		
Ungowa	59870		
Unnamed Cay	57932		
Unnamed Reef No.1	59155		
Unnamed Reef No.2	59280		
Unnamed Reef No.3	58720		
Uramu Island	55481		
Urangan	59850		
Useless Loop	62345		
Van Cloon Shoal	63028		
Vanimo	56100		
Varzin Passage	58233		
Victor Harbour	61490		
Viru	56490		
Vivonne Bay	61510		
Vrilya Point	58565		
WADDY POINT	59840		
Wagina Island	56380		
WALLAROO	61780		
Waratah Bay	60670		
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WEWAK	56070		
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WHYALLA	61840		
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Willis Islands	57850		
Windy Harbour	62140		
Withnell Point	62330		
Woodlark Island	55870		
Wool Bay	61680		
WYNDHAM	63090		
Yabooma Island	63440		
Yam Island	58015		
YAMBA	60130		
YAMPI SOUND	62860		
Zagai Island	58010		