

Herne Bay Tide Gauge

Location

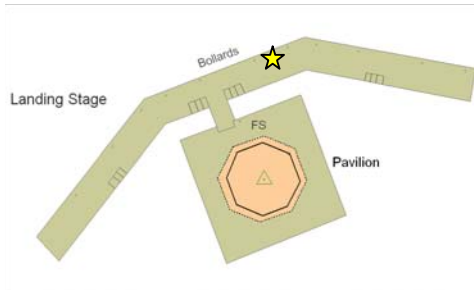
OS: 616895E 169377N

WGS84 *Latitude:* 51° 22.919196' N *Longitude:* 01° 6.9335907' E

NE front of Herne Bay Pier (the pier head is now detached from the shore)

Instrument Type

Etrometa Step Gauge



Benchmarks

TGBM 616894.912E 169376.689N 5.524 OD Steel pin

TGZ = -3.510m above Ordnance Datum Newlyn

TGZ = -0.790m above Admiralty Chart Datum

TGZ = 9.034m below TGBM

Datum information

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Herne Bay is -2.72m (Admiralty Tide Tables, Supplementary Table III).

Survey information

The site was last surveyed on 26 November 2004. All data prior to this date were re-adjusted to the new level.

Site characteristics

The old pier head is now detached from the shore. Some wave reflection from the dolphin legs can occur. There are no nearby estuaries. Spring tidal range is 4.9m.

Measurements

Prior to 01 May 2008, the step gauge measuring burst was 10 minutes at 2.56Hz, every 10 minutes, with the time stamp for the 10 minute average at the centre of the burst. From 00:00Z 01 May 2008, the measuring burst is 1 minute at 2.56Hz, every 10 minutes, time stamped at the start of the burst.

Data Quality

C1 (%)	Sample interval	Missing data
70	10 minutes	1Jan – 02 Mar, 22-24 Mar, 29 Mar, 04 Apr, 08-10 Apr, 01 May, 01 Jul, 01 Oct, 01 Dec

Residuals and Elevations

Residuals and Elevations (OD and CD) for the whole year are shown in Figures 1 to 3 respectively.

Statistics

All times GMT

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	-	-	-	-
February	-	-	-	-
March	1.38	04-Mar-2008 00:10	-0.97	10-Mar-2008 14:50
April	0.88	27-Apr-2008 07:40	-2.24	16-Apr-2008 11:50
May	0.60	26-May-2008 09:20	-0.70	01-May-2008 04:40
June	0.51	23-Jun-2008 10:10	-0.55	22-Jun-2008 11:40
July	0.66	21-Jul-2008 16:20	-0.55	06-Jul-2008 23:10
August	0.54	10-Aug-2008 16:00	-0.73	09-Aug-2008 20:00
September	0.52	23-Sep-2008 07:10	-0.57	11-Sep-2008 17:40
October	1.00	03-Oct-2008 22:10	-1.29	04-Oct-2008 22:50
November	1.43	21-Nov-2008 12:30	-1.17	08-Nov-2008 16:50
December	1.22	20-Dec-2008 15:00	-1.86	13-Dec-2008 08:50

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	-	-	-	-
February	-	-	-	-
March	3.14	21-Mar-2008 11:50	-2.75	10-Mar-2008 08:50
April	2.71	06-Apr-2008 00:10	-2.52	07-Apr-2008 07:00
May	2.68	08-May-2008 01:50	-2.40	06-May-2008 06:30
June	2.72	06-Jun-2008 01:40	-2.22	07-Jun-2008 21:20
July	2.81	21-Jul-2008 02:00	-2.47	06-Jul-2008 21:20
August	2.74	04-Aug-2008 02:00	-2.47	03-Aug-2008 20:20
September	2.72	30-Sep-2008 12:30	-2.55	01-Sep-2008 20:00
October	2.96	16-Oct-2008 12:40	-2.66	04-Oct-2008 21:30
November	2.89	16-Nov-2008 14:10	-2.37	13-Nov-2008 18:20
December	2.64	17-Dec-2008 15:40	-2.89	13-Dec-2008 06:00

Month	Mean Sea Level	
	No. of days	MSL (OD)
January	-	-
February	-	-
March	24	0.234
April	26	0.155
May	30	0.142
June	30	0.119
July	30	0.151
August	31	0.113
September	30	0.127
October	30	0.231
November	30	0.225
December	30	0.086

10 Highest Values in 2008			
Surge		Extreme	
Value (m)	Date/Time	Elevation (OD) (surge component)	Date/Time
1.43	21-Nov-2008 12:30	3.14 (0.70)	21-Mar-2008 11:50
1.38	04-Mar-2008 00:10	2.96 (0.17)	16-Oct-2008 12:40
1.22	20-Dec-2008 15:00	2.92 (0.09)	09-Mar-2008 13:20
1.18	22-Nov-2008 02:20	2.91 (0.22)	17-Oct-2008 01:10
1.14	20-Dec-2008 14:00	2.89 (0.36)	16-Nov-2008 14:10
1.10	22-Nov-2008 01:30	2.87 (0.04)	11-Mar-2008 02:00
1.00	03-Oct-2008 22:10	2.81 (0.60)	18-Nov-2008 15:40
0.95	03-Oct-2008 22:40	2.81 (0.42)	21-Jul-2008 02:00
0.94	22-Dec-2008 04:10	2.80 (0.35)	21-Jul-2008 14:10
0.90	22-Dec-2008 03:00	2.80 (0.21)	15-Nov-2008 13:30

Year	Annual surge maxima		Annual extreme maxima		Annual Mean Sea Level (OD)	Recovery rate (C1)
	Value (m)	Date	Elevation (OD) (surge component)	Date		
1996	1.29	12-Sep-1996 20:30	3.11 (0.54)	13-Nov-1996 00:50	0.116	60%
1997	1.23	18-Feb-1997 17:40	3.16 (0.66)	11-Apr-1997 15:00	0.073	88%
1998	1.39	11-Mar-1998 18:40	3.35 (0.52)	08-Oct-1998 13:40	0.123	90%
1999	1.87	05-Feb-1999 11:00	3.15 (0.55)	27-Nov-1999 14:50	0.124	76%
2000	1.78	30-Jan-2000 03:40	3.20 (0.51)	22-Jan-2000 12:50	0.113	84%
2001	1.71	08-Nov-2001 14:30	3.28 (0.65)	08-Feb-2001 12:00	0.163	91%
2002	1.68	27-Oct-2002 22:10	3.14 (0.39)	07-Nov-2002 01:10	0.142	99%
2003	1.61	30-Jan-2003 18:00	3.09 (0.61)	08-Oct-2003 23:30	0.172	100%
2004	1.81	08-Feb-2004 21:10	3.35 (0.77)	13-Nov-2004 00:20	0.153	96%
2005	1.78	25-Nov-2005 01:10	3.35 (1.19)	16-Dec-2005 12:40	0.140	84%
2006	1.95	31-Oct-2006 22:20	3.18 (0.40)	07-Oct-2006 11:40	0.143	87%
2007	2.52	09-Nov-2007 06:50	3.35 (0.76)	25-Nov-2007 11:50	0.170	97%
2008	1.43	21-Nov-2008 12:30	3.14 (0.70)	21-Mar-2008 11:50	0.152	70%

General

The time series of 10 minute tidal elevations for one year is quality-checked in accordance with ESEAS guidelines, flagged and archived. The archived time series is continuous and monotonic, with missing data given as 9999. The missing data shown are days where the entire 24 hours of data are missing.

Monthly **extreme maxima/minima** are the maximum and minimum water levels from all measured data for that month. Monthly **surge maxima/minima** (residuals) are calculated in a similar manner from the time series of residuals. Residuals are derived as the measured tidal elevation minus the predicted tidal elevation.

Tidal predictions were produced using TASK2000. The monthly Mean Sea Level is calculated as the average of all readings for the given month. The annual MSL is the average of all readings for the given year. These average values should not be used for any purpose without consideration of the recovery rate.

The TGBM was surveyed on 26 November 2004 and the resulting elevation of the TGZ was found to be -3.510 OD, which is 0.050m lower than the TGZ which has been used since 1996. All tidal data from 1996 to 2005 inclusive were re-adjusted by -0.050m, to conform with the new TGZ.

Acknowledgements

Tidal predictions were produced using the TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (PSMSL), Proudman Oceanographic Laboratory.

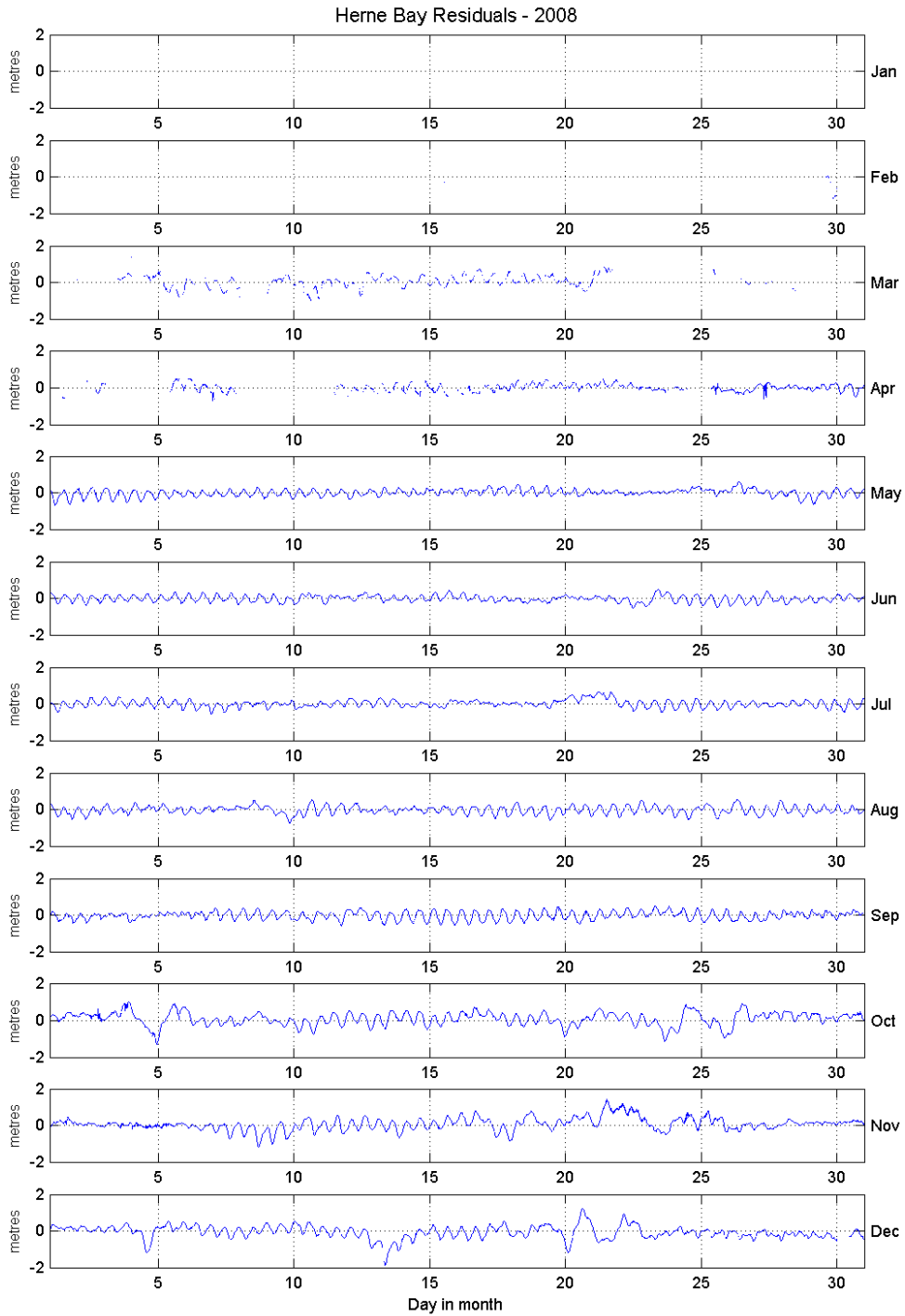


Figure 1 Residuals for 2008

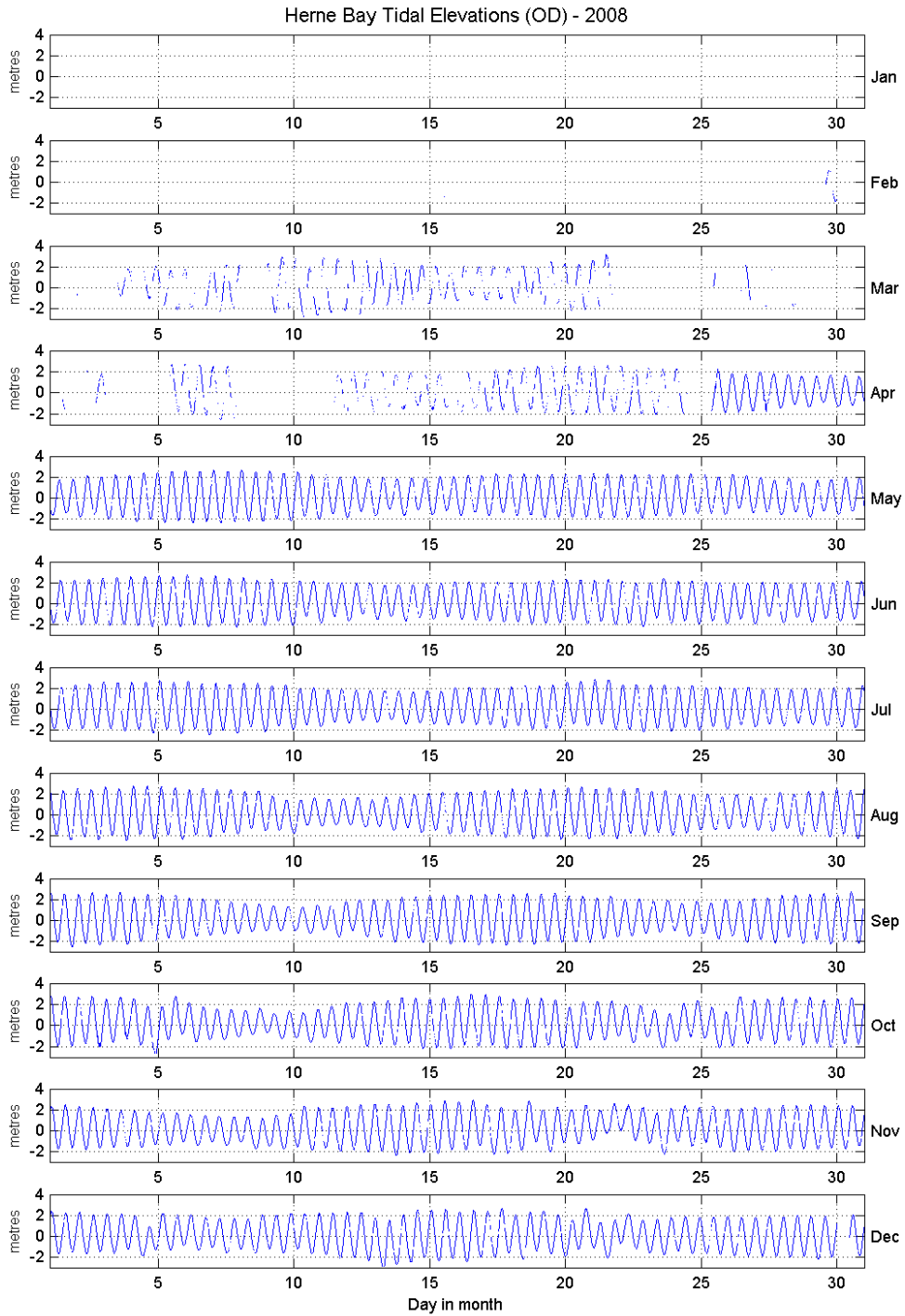


Figure 2 Tidal elevations relative to Ordnance Datum for 2008

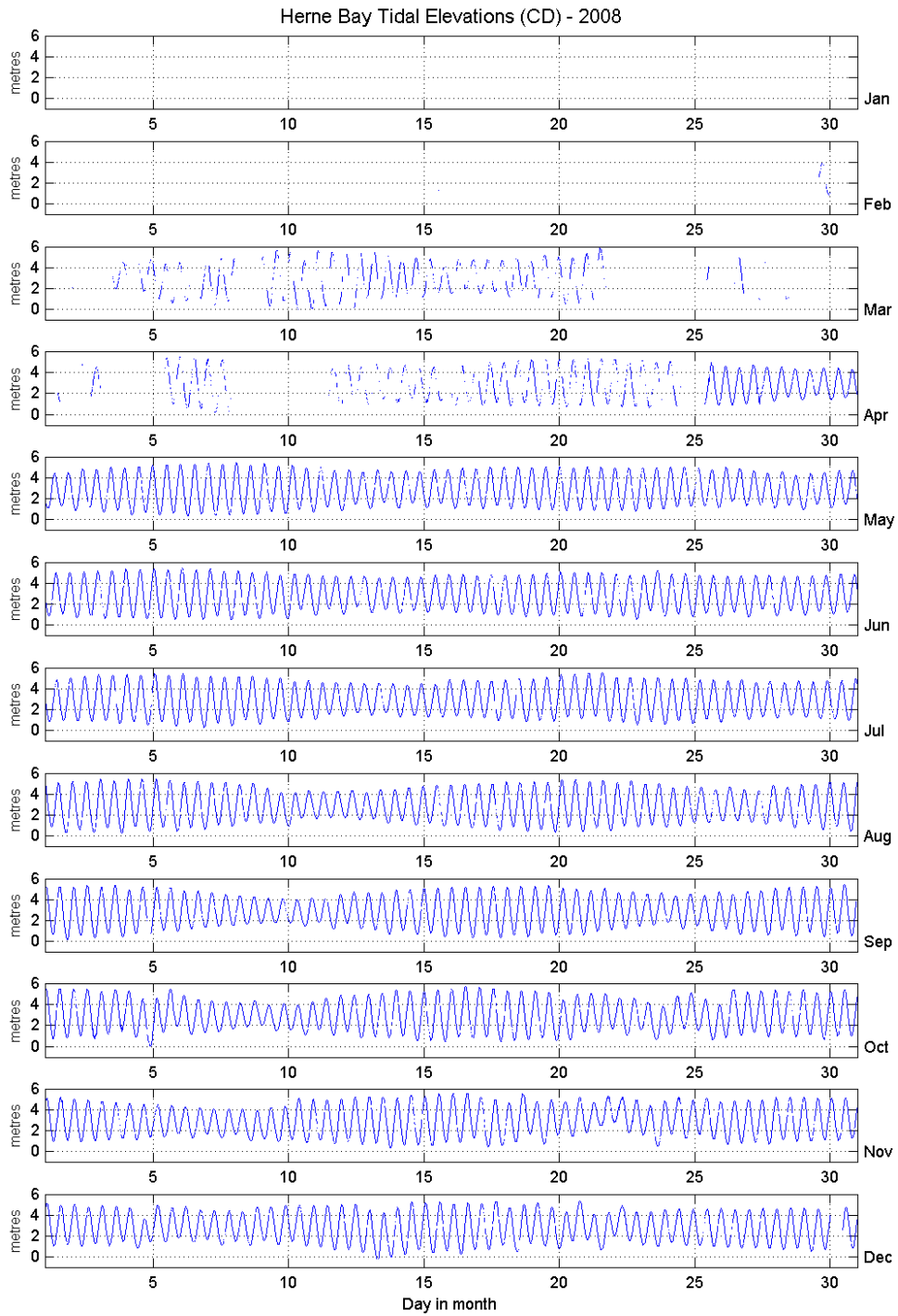


Figure 3 Tidal elevations relative to Chart Datum for 2008