

Teignmouth Pier Tide Gauge

Location

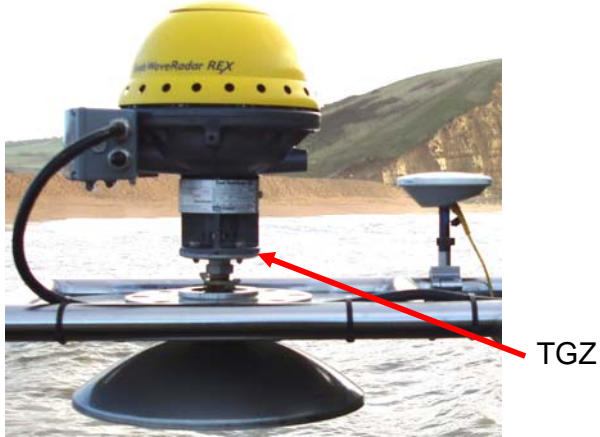
OS: 294370E 72631N

WGS84 Latitude: 50° 32' 37.904" N

Longitude: 03° 29' 31.720" W

Instrument

Rosemount WaveRadar Rex



Benchmarks

Benchmark

OS Co-ordinates

Description

TGBM

6.613 OD

Top of S/S horizontal frame bar

TGZ = 6.688m above Ordnance Datum Newlyn

TGZ = 9.338m above Admiralty Chart Datum

TGZ = 0.075m above TGBM

Datum information

All elevations are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Teignmouth Approaches is -2.65m (Admiralty Tide Tables, Supplementary Table III).

Survey information

The site was last surveyed on 29 May 2008.

Site Characteristics

The Pier is on open coast. Spring tidal range is 3.9m.

Service history

The radar was installed on 01 May 2008. No re-calibration of the instrument is required.

Measurements

The Rex is a Frequency Modulated Continuous Wave radar, sampling at 4Hz. Tidal elevations are derived, every 10 minutes, as the one minute average of the 4Hz readings. The time stamp is the start of the measuring burst.

Data Quality

C1 (%)	Sample interval	Missing days
95 (since deployment)	10 minutes	03-05 Aug, 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	-	-	-	-
April	-	-	-	-
May	-	-	-	-
June	-	-	-	-
July	0.51	05-Jul-2008 15:30	-0.32	23-Jul-2008 05:20
August	0.42	18-Aug-2008 14:00	-0.28	29-Aug-2008 11:00
September	0.60	05-Sep-2008 07:20	-0.30	26-Sep-2008 10:10
October	0.50	30-Oct-2008 11:40	-0.28	24-Oct-2008 08:00
November	0.48	10-Nov-2008 14:40	-0.40	24-Nov-2008 22:30
December	0.65	04-Dec-2008 05:20	-0.42	20-Dec-2008 06:10

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	-	-	-
May	-	-	-	-
June	-	-	-	-
July	2.56	04-Jul-2008 19:10	-1.81	22-Jul-2008 02:00
August	2.48	18-Aug-2008 19:20	-2.02	31-Aug-2008 00:10
September	2.55	01-Sep-2008 19:40	-2.15	18-Sep-2008 01:30
October	2.43	30-Oct-2008 06:30	-2.03	17-Oct-2008 00:40
November	2.25	15-Nov-2008 07:20	-2.05	14-Nov-2008 00:10
December	2.42	14-Dec-2008 07:10	-2.04	15-Dec-2008 13:40

Month	Mean Sea Level	
	No. of days	MSL (OD)
January	-	-
February	-	-
March	-	-
April	-	-
May	-	-
June	-	-
July	27	0.316
August	28	0.329
September	30	0.315
October	30	0.328
November	30	0.302
December	30	0.237

10 Highest Values in 2008			
Surge		Extreme	
Value (m)	Date/Time	Elevation (OD) (surge component)	Date/Time
0.65	04-Dec-2008 05:20	2.56 (0.24)	04-Jul-2008 19:10
0.60	05-Sep-2008 07:20	2.56 (0.21)	05-Jul-2008 20:00
0.54	05-Sep-2008 17:00	2.55 (0.10)	01-Sep-2008 19:40
0.51	05-Jul-2008 15:30	2.48 (0.18)	18-Aug-2008 19:20
0.50	30-Oct-2008 11:40	2.43 (0.39)	30-Oct-2008 06:30
0.48	10-Nov-2008 14:40	2.42 (0.10)	14-Dec-2008 07:10
0.48	05-Sep-2008 04:30	2.41 (0.08)	02-Sep-2008 20:00
0.47	10-Nov-2008 10:20	2.41 (0.22)	13-Dec-2008 06:30
-	-	2.40 (0.09)	16-Oct-2008 19:40
-	-	2.39 (0.04)	15-Oct-2008 18:50

Year	Annual surge maxima		Annual extreme maxima		Annual Mean Sea Level (OD)	Recovery rate (C1)
	Value (m)	Date	Elevation (OD) (surge component)	Date		
2008	0.65	04-Dec-2008 05:20	2.56 (0.24)	04-Jul-2008 19:10	0.304	95

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.

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.

Acknowledgements

Tidal predictions were produced using the TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (PSMSL), Proudman Oceanographic Laboratory. The Rex is mounted on Teignmouth Pier by kind permission of the Pier owners.

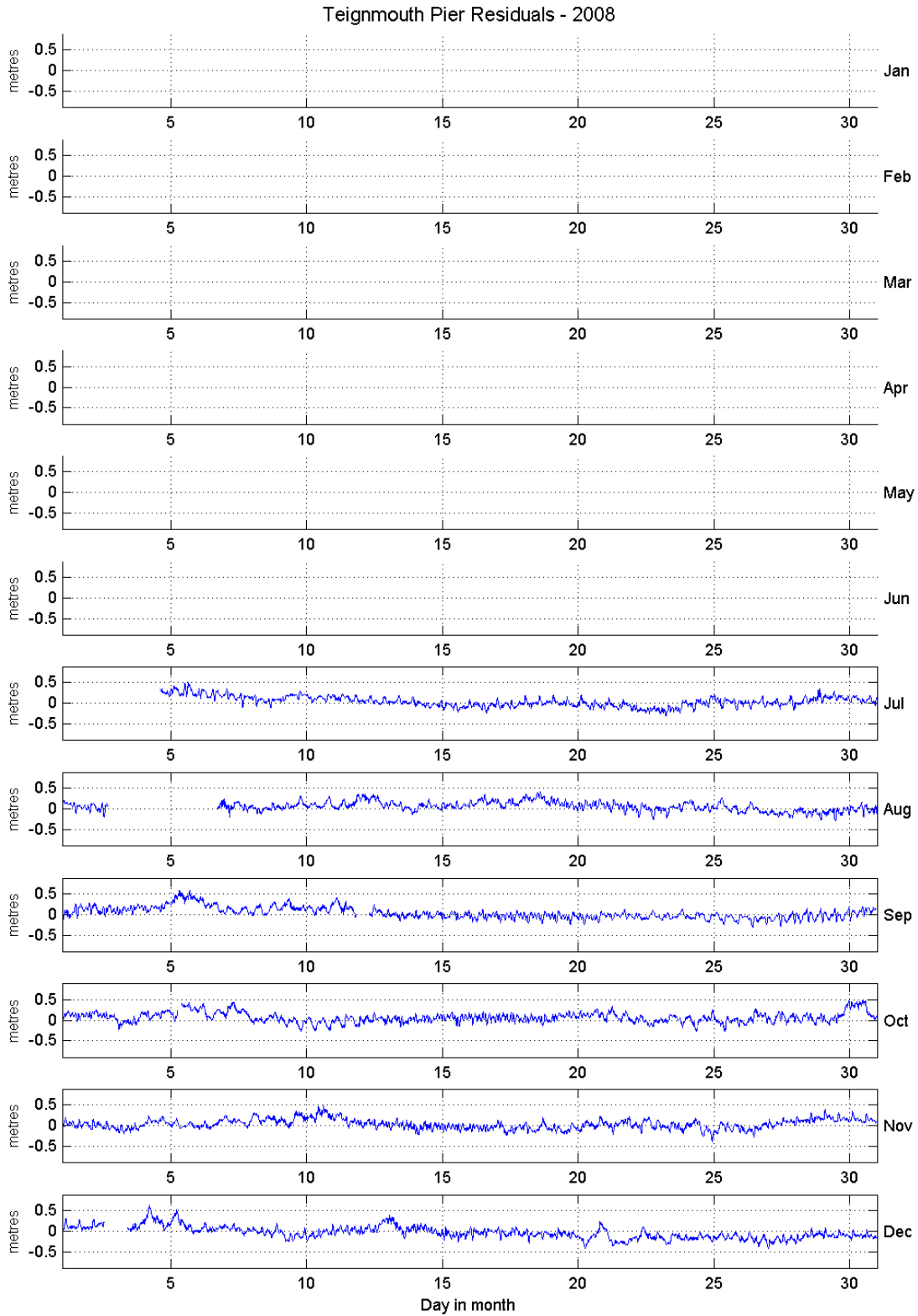


Figure 1 Residuals for 2008

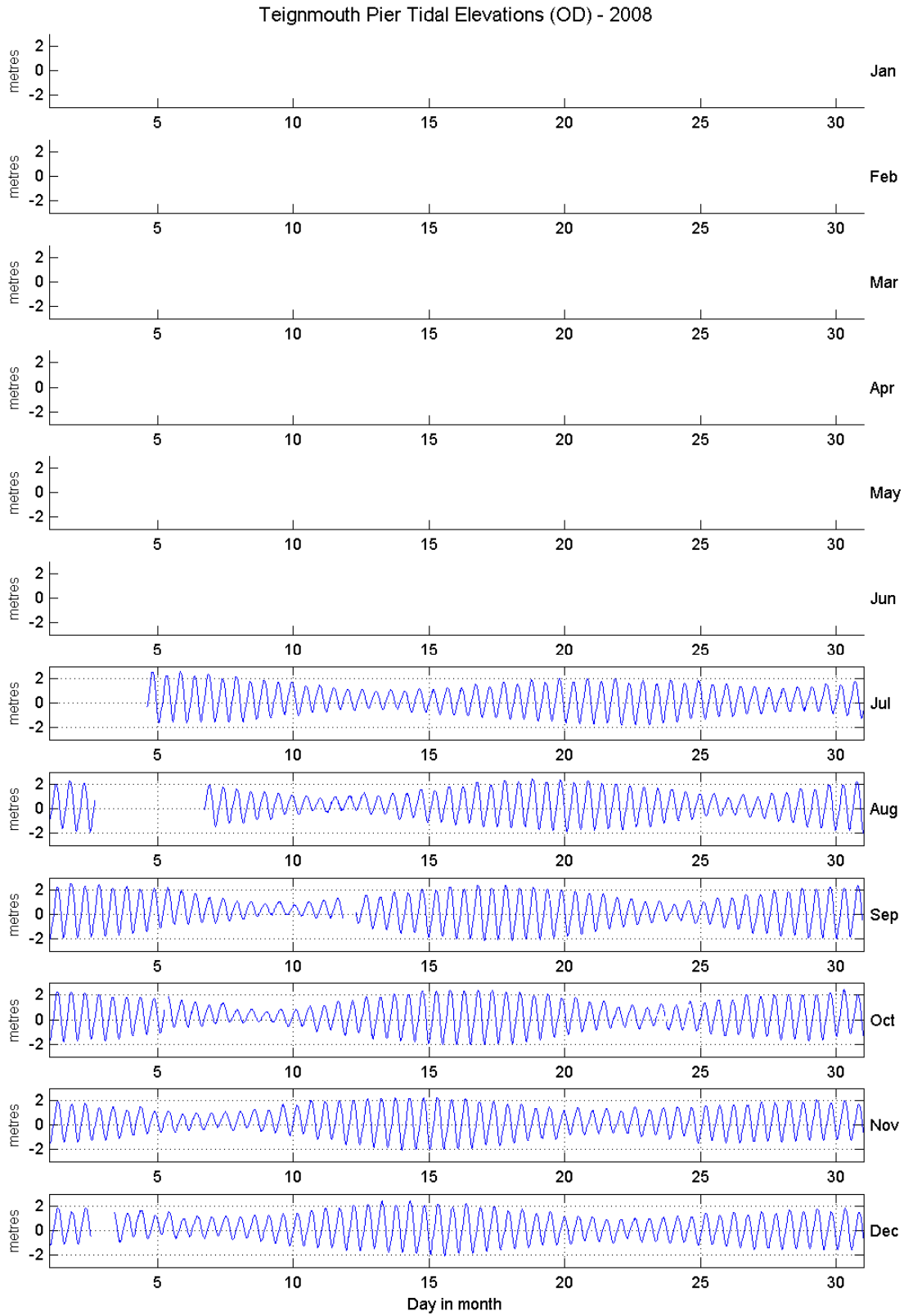


Figure 2 Tidal elevations relative to Ordnance Datum for 2008

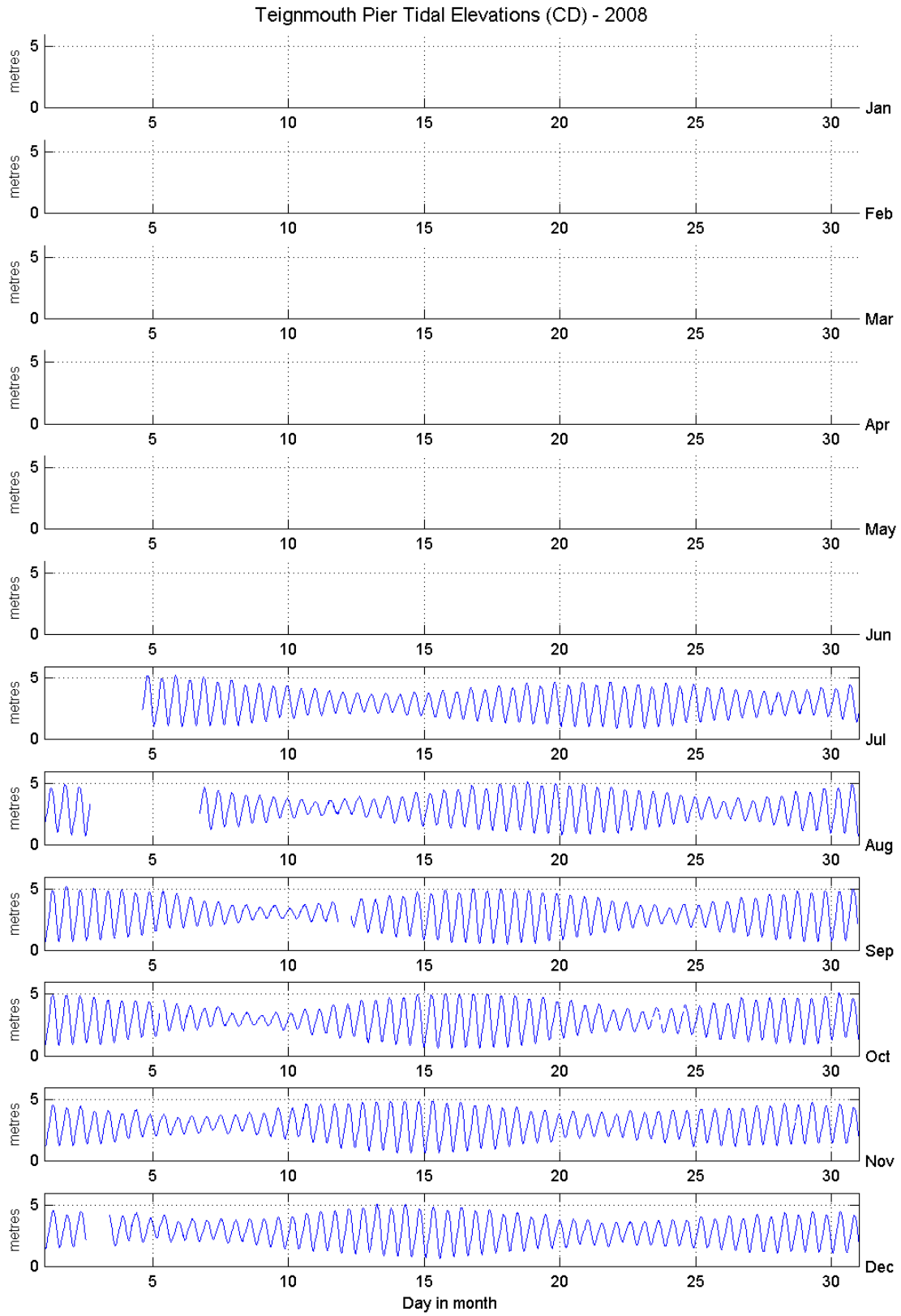


Figure 3 Tidal elevations relative to Chart Datum for 2008