Arun Platform Tide Gauge

Location

OS: 506423E 97778N

WGS84: *Latitude:* 50° 46' 11.3904"N *Longitude:* 00° 29' 31.7360"W

Instrument

Valeport 730 (Druck Pressure Transducer)

Benchmarks

Benchmark		*Description*
TGBM	10.334m OD	Top of transducer pole

TGZ = -3.79m above Ordnance Datum
TGZ = 0.74m below Chart Datum
TGZ = 14.124m below TGBM

Datum information

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Littlehampton and Bognor Regis is -3.05m (Admiralty Tide Tables, Supplementary Table III).

Survey information

The site was surveyed on 09 October 2008.

Site characteristics

The Platform is approximately 3.7km offshore, with no other nearby structures. Spring tidal range is ~5m. The Platform leg is approximately 1.2m diameter and some wave reflection and other wave interference can occur.

Data Quality

C1 (%)	Sample interval	Missing data
99	10 minutes	None

Residuals and Elevations

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

Service history

The gauge became operational on 01 August 2008.

Measurements

The pressure transducer samples at 2Hz. Tidal elevations are derived, every 10 minutes, as the 40 second average of the 2Hz readings. The time stamp is the start of the measuring burst. Although the time stamp is accurate, the instrument has to be started manually after servicing and it is not always possible to start exactly on a 10 minute integer. Measurements are interpolated to the hour and 10 minute intervals, if the original time series is not on the hour. Missing data exceeding 3 hours are not interpolated. All data measured prior to the gauge being fully surveyed were adjusted to the correct elevations.

Statistics *All times GMT*

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.85	23-Jan-2009 08:00	-0.40	06-Jan-2009 03:00
February	0.53	09-Feb-2009 18:50	-0.34	01-Feb-2009 11:10
March	0.36	08-Mar-2009 19:20	-0.41	20-Mar-2009 06:10
April	0.24	27-Apr-2009 10:20	-0.33	21-Apr-2009 18:00
May	0.28	17-May-2009 15:50	-0.36	03-May-2009 15:10
June	0.23	10-Jun-2009 23:50	-0.25	22-Jun-2009 19:20
July	0.22	15-Jul-2009 02:20	-0.21	26-Jul-2009 02:00
August	0.21	26-Aug-2009 14:10	-0.24	15-Aug-2009 07:30
September	0.34	09-Sep-2009 15:20	-0.40	10-Sep-2009 10:30
October	0.48	04-Oct-2009 06:20	-0.26	17-Oct-2009 08:40
November	0.70	29-Nov-2009 15:40	-0.40	14-Nov-2009 21:20
December	0.56	06-Dec-2009 08:40	-0.30	18-Dec-2009 08:50

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	3.17	13-Jan-2009 00:10	-2.49	13-Jan-2009 18:50
February	3.40	09-Feb-2009 23:20	-2.70	11-Feb-2009 18:30
March	3.08	13-Mar-2009 00:30	-2.71	11-Mar-2009 17:30
April	2.99	10-Apr-2009 23:50	-2.47	08-Apr-2009 16:30
May	2.88	25-May-2009 23:40	-2.45	27-May-2009 06:50
June	2.95	26-Jun-2009 13:50	-2.53	24-Jun-2009 05:50
July	3.09	23-Jul-2009 12:10	-2.62	25-Jul-2009 07:20
August	3.13	22-Aug-2009 12:20	-2.72	22-Aug-2009 06:00
September	3.22	20-Sep-2009 12:00	-2.68	21-Sep-2009 06:10
October	3.14	07-Oct-2009 12:30	-2.49	18-Oct-2009 04:30
November	3.23	04-Nov-2009 11:40	-2.16	18-Nov-2009 17:50
December	3.11	06-Dec-2009 01:40	-2.24	18-Dec-2009 18:00

Month	Mean Level	
	No. of days	Elevation (OD)
January	31	0.224
February	28	0.170
March	31	0.152
April	30	0.159
May	31	0.128
June	30	0.190
July	31	0.232
August	31	0.191
September	30	0.164
October	31	0.233
November	30	0.439
December	31	0.370

Highest values in 2009			
Surge		Extreme	
Value (m)	Date/Time	Elevation (OD) (surge component)	Date/Time
0.85	23-Jan-2009 08:00	3.40 (0.40)	09-Feb-2009 23:20
0.70	29-Nov-2009 15:40	3.23 (0.36)	04-Nov-2009 11:40
0.69	23-Jan-2009 05:10	3.22 (-0.01)	20-Sep-2009 12:00
0.68	29-Nov-2009 18:40	3.21 (0.39)	16-Nov-2009 10:30
0.67	29-Nov-2009 03:10	3.19 (0.03)	12-Feb-2009 00:40
0.66	19-Jan-2009 06:40	3.18 (0.23)	10-Feb-2009 11:20
0.64	14-Nov-2009 01:00	3.17 (0.14)	13-Jan-2009 00:10
0.63	23-Nov-2009 20:00	3.15 (0.02)	11-Feb-2009 00:00
0.62	14-Nov-2009 13:10	3.15 (0.06)	14-Jan-2009 01:10
0.56	04-Nov-2009 09:20	3.14 (0.34)	07-Oct-2009 12:30

Year	Annual surge maxima		Annual extreme maxima		Z_0 (OD)	Annual recovery rate (C1)
	Value (m)	Date	Elevation (OD) (surge component)	Date		
2008	-	-	-	-	-	-
2009	0.85	23-Jan-2009 08:00	3.40 (0.40)	09-Feb-2009 23:20	0.222	99%

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 Level is calculated as the average of all readings for the given month. The annual Z_0 is the value of Mean Sea Level derived by the harmonic analysis of the year's data. These 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.

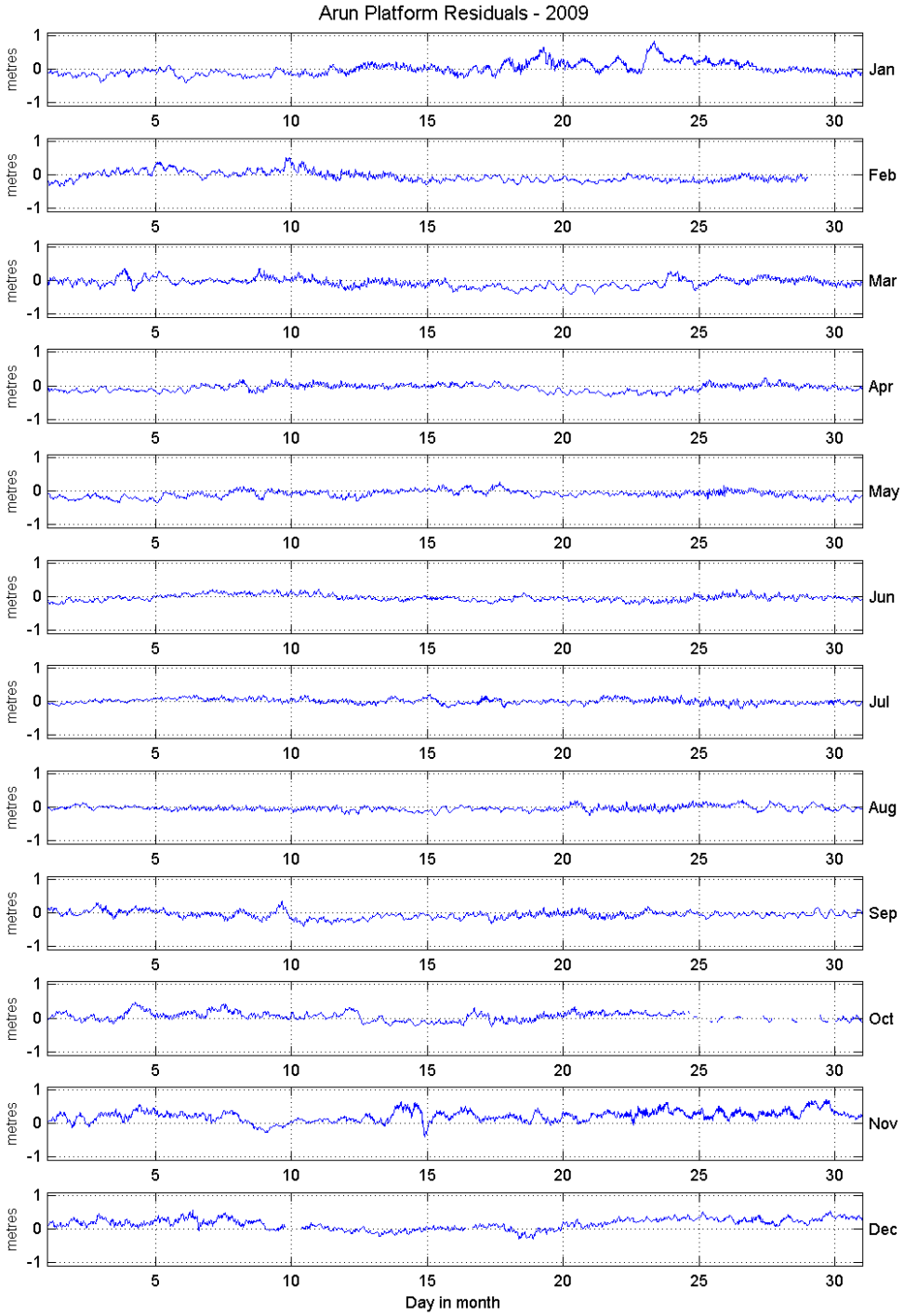

Figure 1 Residuals for 2009

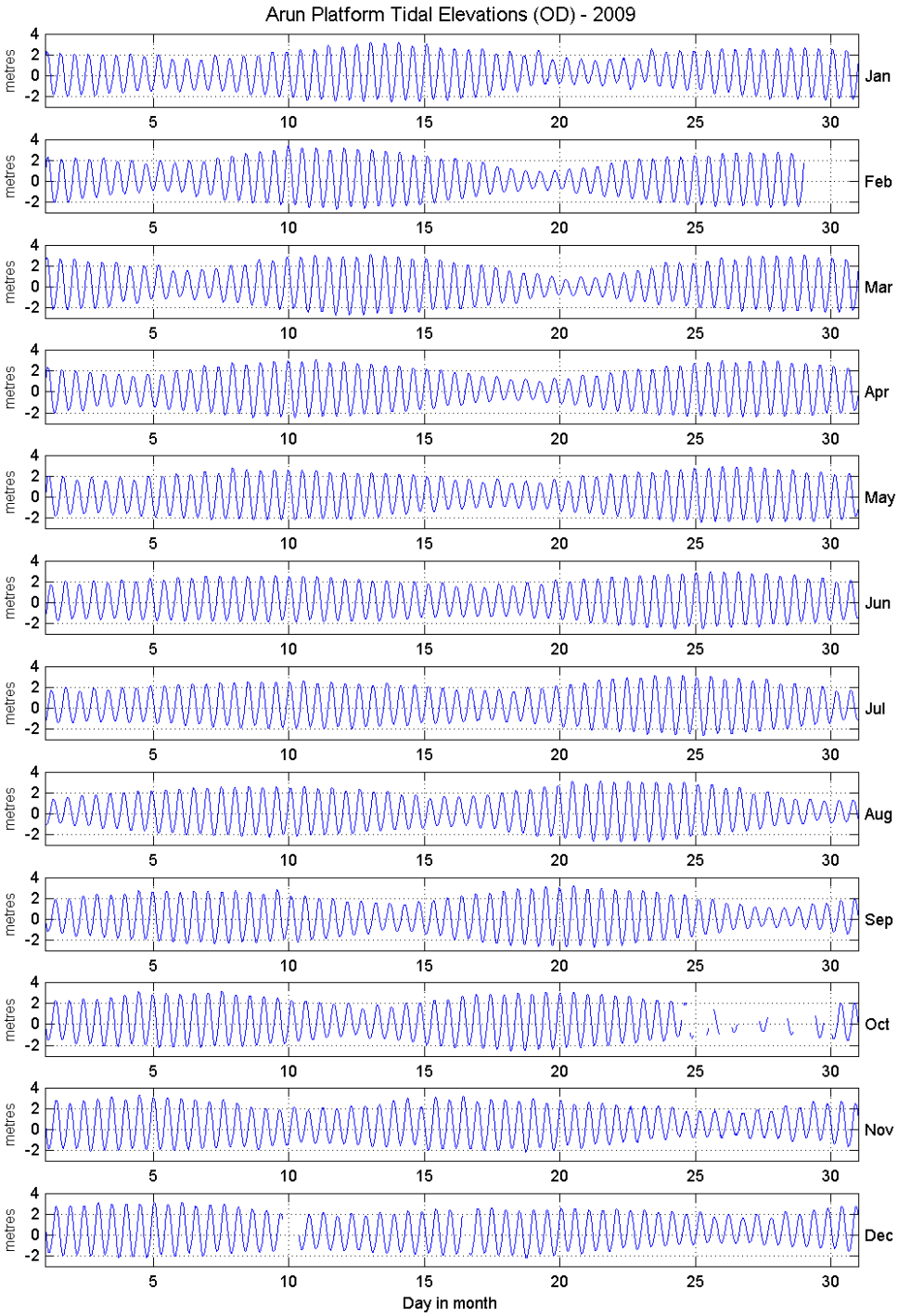

Figure 2 Tidal elevations relative to Ordnance Datum for 2009

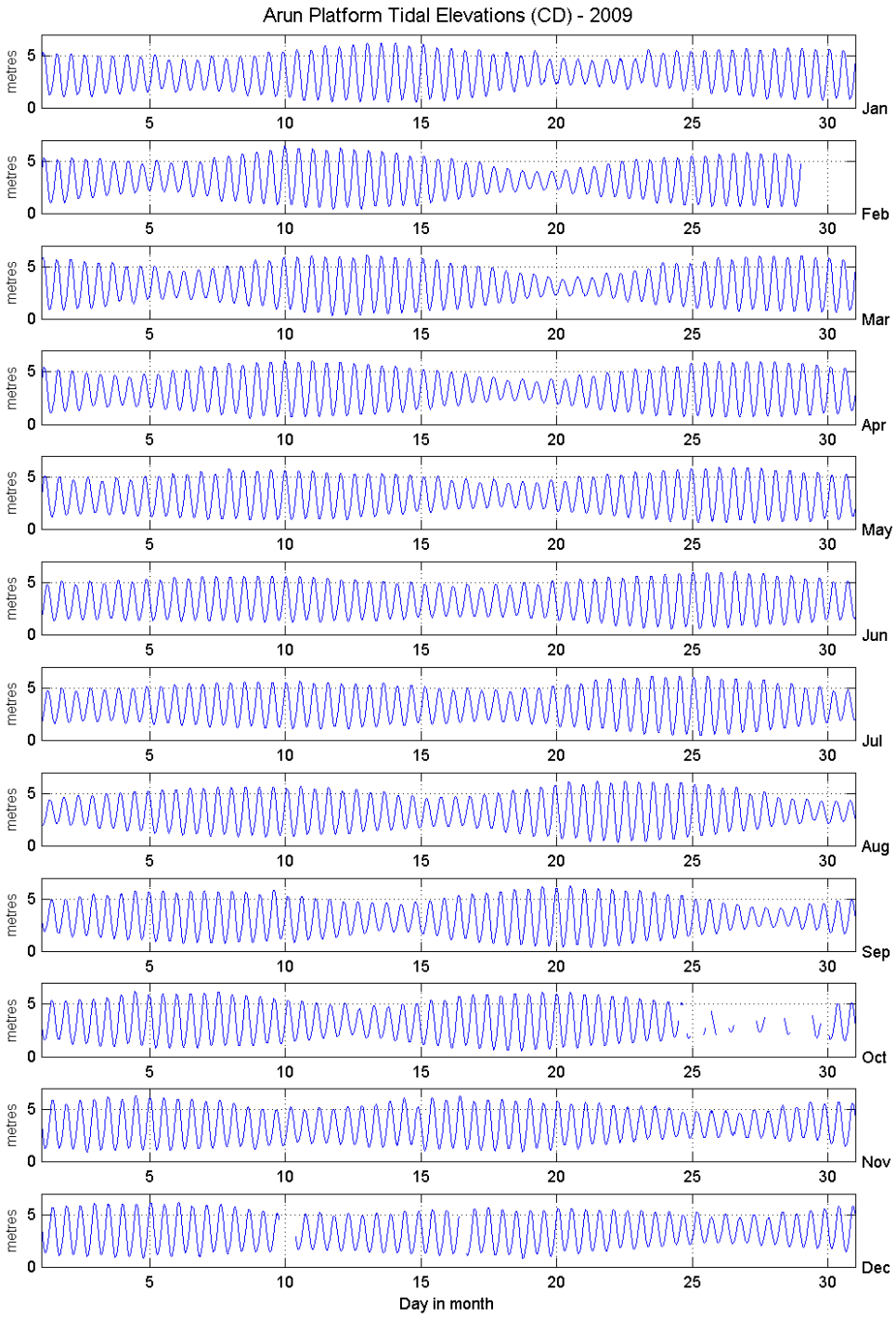

Figure 3 Tidal elevations relative to Chart Datum for 2009