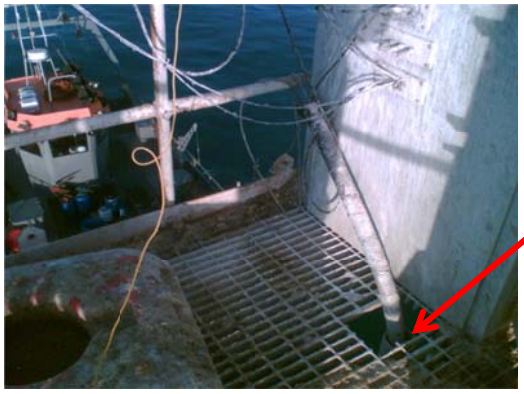
Arun Platform Tide Gauge

Location

OS: 506423E 97778N
WGS84: *Latitude:* 50° 46' 11.3904"N *Longitude:* 00° 29' 31.7360"W

Instrument Type

Valeport 730 (Druck Pressure Transducer)



Benchmarks

Benchmark	*Description*
TGBM = 10.334m above Ordnance Datum Newlyn	Top of transducer pole
TGZ = -3.79m above Ordnance Datum Newlyn	
TGZ = -0.74m above Chart Datum	
TGZ = 14.124m below TGBM	

Datum

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. The Platform leg is approximately 1.2m diameter and some wave reflection and other wave interference can occur. Spring tidal range is 5.2m.

Data Quality

Recovery rate (%)	Sample interval
98	10 minutes

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 2 hours are not interpolated. All data measured prior to the gauge being fully surveyed were adjusted to the correct elevations.

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

Statistics

All times GMT

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	3.22	31-Jan-2010 23:50	-2.56	31-Jan-2010 18:00
February	3.43	03-Feb-2010 01:50	-2.66	01-Feb-2010 18:50
March	3.46	30-Mar-2010 23:50	-2.75	02-Mar-2010 18:30
April	3.23	01-Apr-2010 00:20	-2.50	01-Apr-2010 06:20
May	2.92	01-May-2010 00:20	-2.24	15-May-2010 05:30
June	2.79	12-Jun-2010 23:00	-2.43	16-Jun-2010 07:40
July	3.19	15-Jul-2010 01:00	-2.38	14-Jul-2010 06:40
August	3.18	12-Aug-2010 12:40	-2.69	12-Aug-2010 06:20
September	3.34	10-Sep-2010 12:10	-2.65	10-Sep-2010 06:00
October	3.32	08-Oct-2010 11:00	-2.56	09-Oct-2010 05:30
November	3.15	06-Nov-2010 10:50	-2.43	06-Nov-2010 16:50
December	3.06	05-Dec-2010 10:20	-2.40	25-Dec-2010 19:50

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.32	05-Jan-2010 18:50	-0.42	09-Jan-2010 16:50
February	0.53	28-Feb-2010 18:40	-0.33	11-Feb-2010 20:00
March	0.46	31-Mar-2010 04:20	-0.39	08-Mar-2010 07:50
April	0.31	02-Apr-2010 12:00	-0.38	12-Apr-2010 06:50
May	0.20	30-May-2010 23:50	-0.35	05-May-2010 00:20
June	0.24	12-Jun-2010 18:30	-0.24	16-Jun-2010 14:10
July	0.33	15-Jul-2010 05:30	-0.25	07-Jul-2010 09:00
August	0.42	30-Aug-2010 01:10	-0.29	30-Aug-2010 16:00
September	0.35	16-Sep-2010 03:10	-0.23	30-Sep-2010 04:40
October	0.41	06-Oct-2010 04:40	-0.34	02-Oct-2010 04:10
November	0.64	12-Nov-2010 16:20	-0.25	28-Nov-2010 03:30
December	0.67	16-Dec-2010 18:50	-0.26	25-Dec-2010 22:40

Month	Mean Level	
	No. of days	Elevation (OD)
January	31	0.213
February	28	0.324
March	31	0.199
April	30	0.170
May	31	0.189
June	30	0.210
July	31	0.223
August	31	0.276
September	30	0.276
October	26	0.326
November	30	0.351
December	30	0.282

Highest values in 2010			
Extreme		Surge	
Elevation (OD) *(Surge component)*	Date/Time	Value (m)	Date/Time
3.46 (0.17)	30-Mar-2010 23:50	0.67	16-Dec-2010 18:50
3.43 (0.22)	03-Feb-2010 01:50	0.64	12-Nov-2010 16:20
3.42 (0.45)	28-Feb-2010 10:30	0.55	11-Nov-2010 09:10
3.42 (0.27)	28-Feb-2010 23:00	0.53	28-Feb-2010 18:40
3.37 (0.05)	01-Mar-2010 23:50	0.51	25-Feb-2010 18:50
3.34 (-0.02)	10-Sep-2010 12:10	0.47	27-Feb-2010 08:40
3.34 (0.14)	01-Mar-2010 11:20	0.47	08-Nov-2010 09:30
3.34 (0.01)	09-Sep-2010 11:30	0.47	11-Nov-2010 11:50
3.32 (0.02)	08-Oct-2010 11:00	0.46	31-Mar-2010 04:20
3.31 (0.10)	29-Mar-2010 22:50	0.45	23-Feb-2010 03:00

Year	Annual extreme maxima		Annual surge maxima		Z_0 (OD)	Annual recovery rate
	Elevation (OD) *(Surge)*	Date/Time	Value (m)	Date/Time		
2009	3.40 (*0.40*)	09-Feb-2009 23:20	0.85	23-Jan-2009 08:00	0.222	99%
2010	3.46 (*0.17*)	30-Mar-2010 23:50	0.67	16-Dec-2010 18:10	0.253	98%

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.

Acknowledgement

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

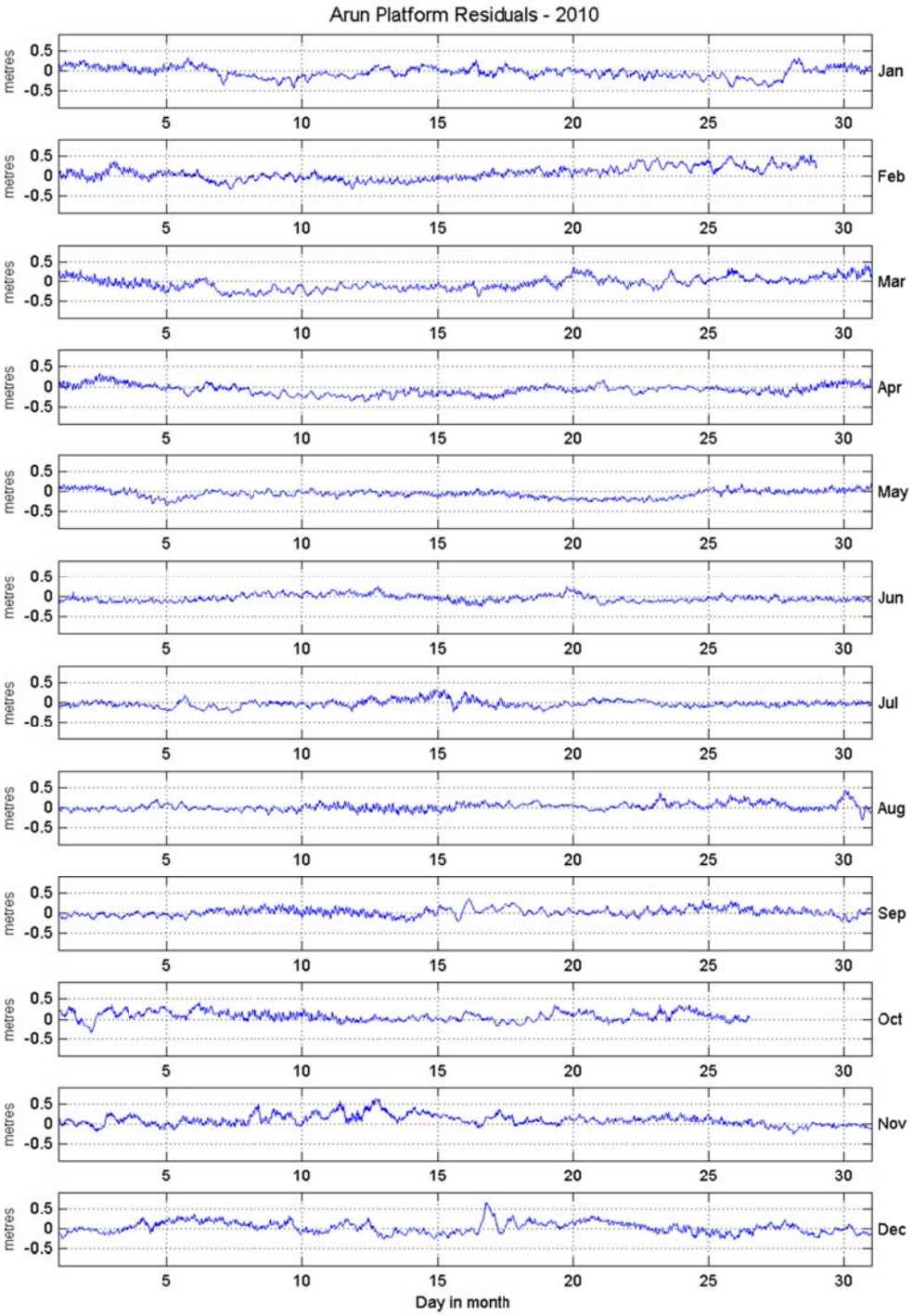


Figure 1: Arun Platform residuals for 2010

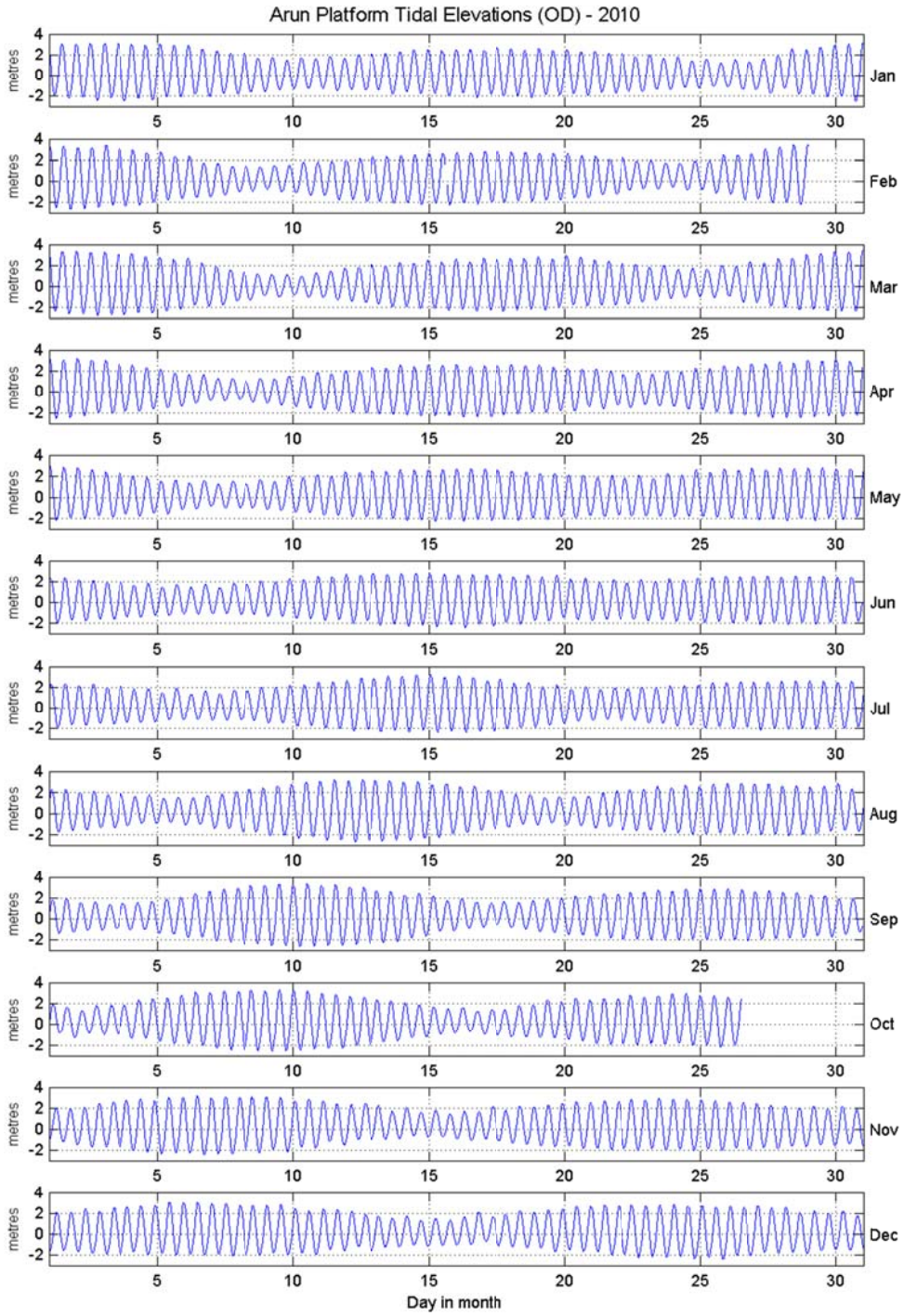


Figure 2: Arun Platform tidal elevations for 2010 relative to Ordnance Datum

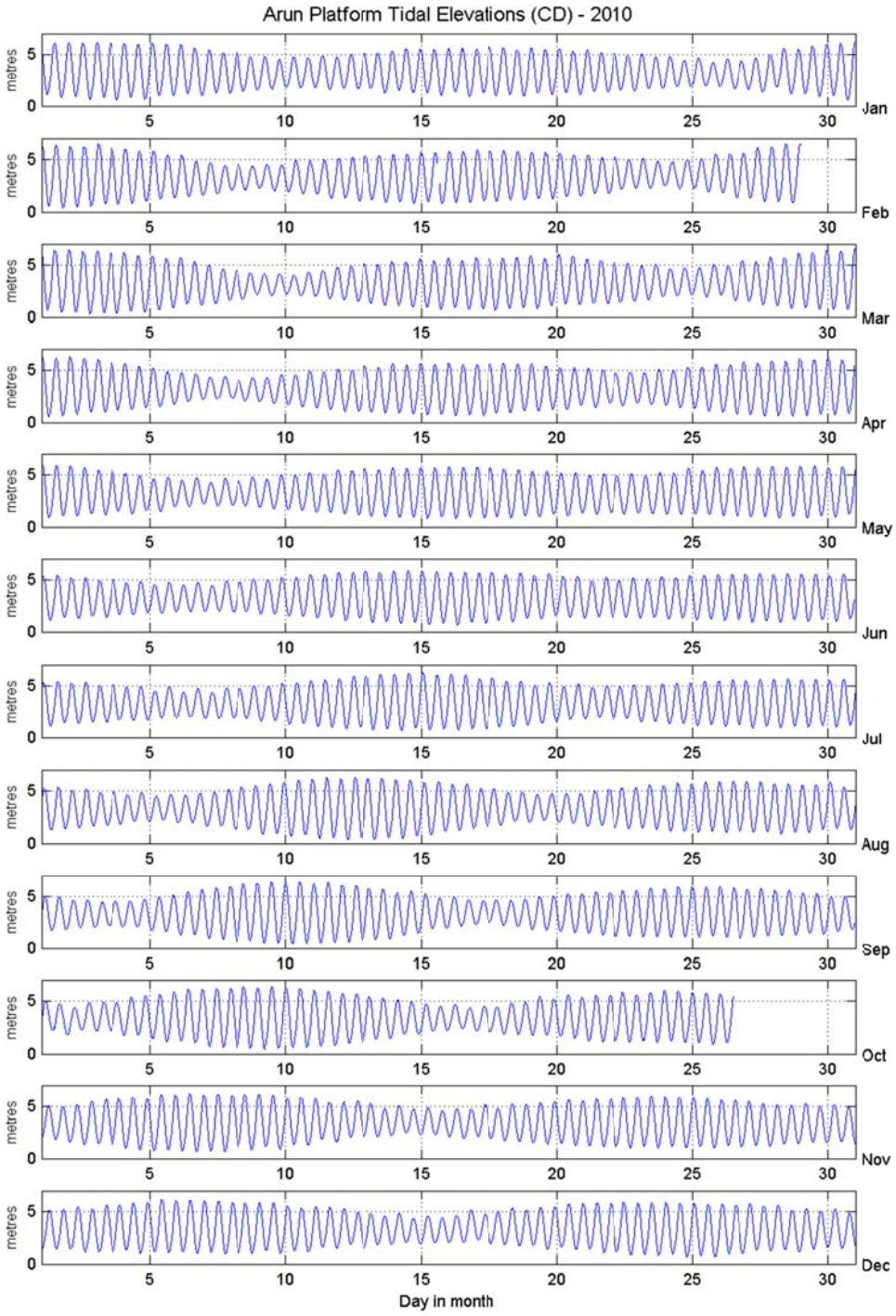


Figure 3: Arun Platform tidal elevations for 2010 relative to Chart Datum