Milford Waverider Buoy

Location
OS: 427297E 90361N
WGS84: *Latitude:* 50°42'73'' N *Longitude:* 001°36'93'' W

Water Depth
Approx. 10m CD

Instrument Type
Datawell WaveRider Buoy Mk III (from 17 November 2005)
Datawell WaveRider Buoy Mk II

Data Quality

C1(%)	Sample interval
96	30 minutes

Monthly Means *All times GMT*

Month	H_s (m)	T_p (s)	T_z (s)	Direction (°)	SST (°C)	No. of days
January	1.11	9.1	4.3	209	9.7	31
February	0.96	12.3	5.2	211	8.6	28
March	0.67	10.3	4.4	213	9.6	31
April	0.25	10.0	4.1	206	11.2	29
May	0.65	7.1	3.9	216	13.9	31
June	0.55	7.6	4.1	214	16.6	30
July	0.76	5.9	3.8	216	17.6	29
August	0.45	6.1	3.5	217	18.4	27
September	0.46	5.9	3.5	217	17.6	25
October	0.40	8.5	4.5	210	15.2	29
November	0.52	6.2	3.8	214	12.0	30
December	0.92	10.1	4.6	211	9.5	31

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2007

Date/Time	H_s	T_p	T_z	Dir.	Water level elevation * (OD)	Tidal stage (hours re HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
18-Jan-2007 12:00	3.64	11.1	7.0	214	-	HW + 2	1.8	-	-
11-Jan-2007 09:30	3.29	10.5	6.3	221	-	HW + 3	1.3	-	-
12-Feb-2007 10:00	3.21	10.5	6.6	212	-	HW + 4	1.1	-	-
02-Dec-2007 11:30	3.10	9.1	6.0	222	-	HW + 6	1.4	-	-

* *Tidal information is obtained from the nearest recording tide gauge (the gauge on Royal Lymington Yacht Club starting platform). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.*

Year	Annual H_s exceedance* (m)						Annual Maximum H_s (m)	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max}
1996	-	-	-	-	-	-	28-Oct-1996 21:00	4.05
1997	3.08	2.39	2.15	1.97	1.59	1.20	24-Feb-1997 23:00	3.32
1998	2.89	2.47	2.28	2.00	1.66	1.37	27-Oct-1998 13:00	3.21
1999	3.01	2.32	2.11	1.85	1.56	1.29	24-Dec-1999 22:00	3.23
2000	3.90	2.85	2.50	2.19	1.74	1.41	31-Dec-2000 19:00	4.09
2001	3.71	2.63	2.24	1.91	1.52	1.20	01-Jan-2001 00:00	4.07
2002	3.54	2.92	2.61	2.35	1.96	1.62	15-Oct-2002 18:00	4.06
2003	2.82	2.20	2.02	1.76	1.37	1.12	14-Nov-2003 15:00	2.92
2004	3.21	2.49	2.29	2.05	1.69	1.42	31-Jan-2004 17:00	3.44
2005	3.09	1.86	1.72	1.56	1.28	1.05	02-Dec-2005 18:30	3.53
2006	2.89	2.46	2.31	2.10	1.73	1.41	03-Dec-2006 06:30	3.51
2007	3.21	2.53	2.25	2.04	1.74	1.46	18-Jan-2007 12:00	3.64

** i.e. 5 % of the H_s values measured in 2004 exceeded 1.69m*

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

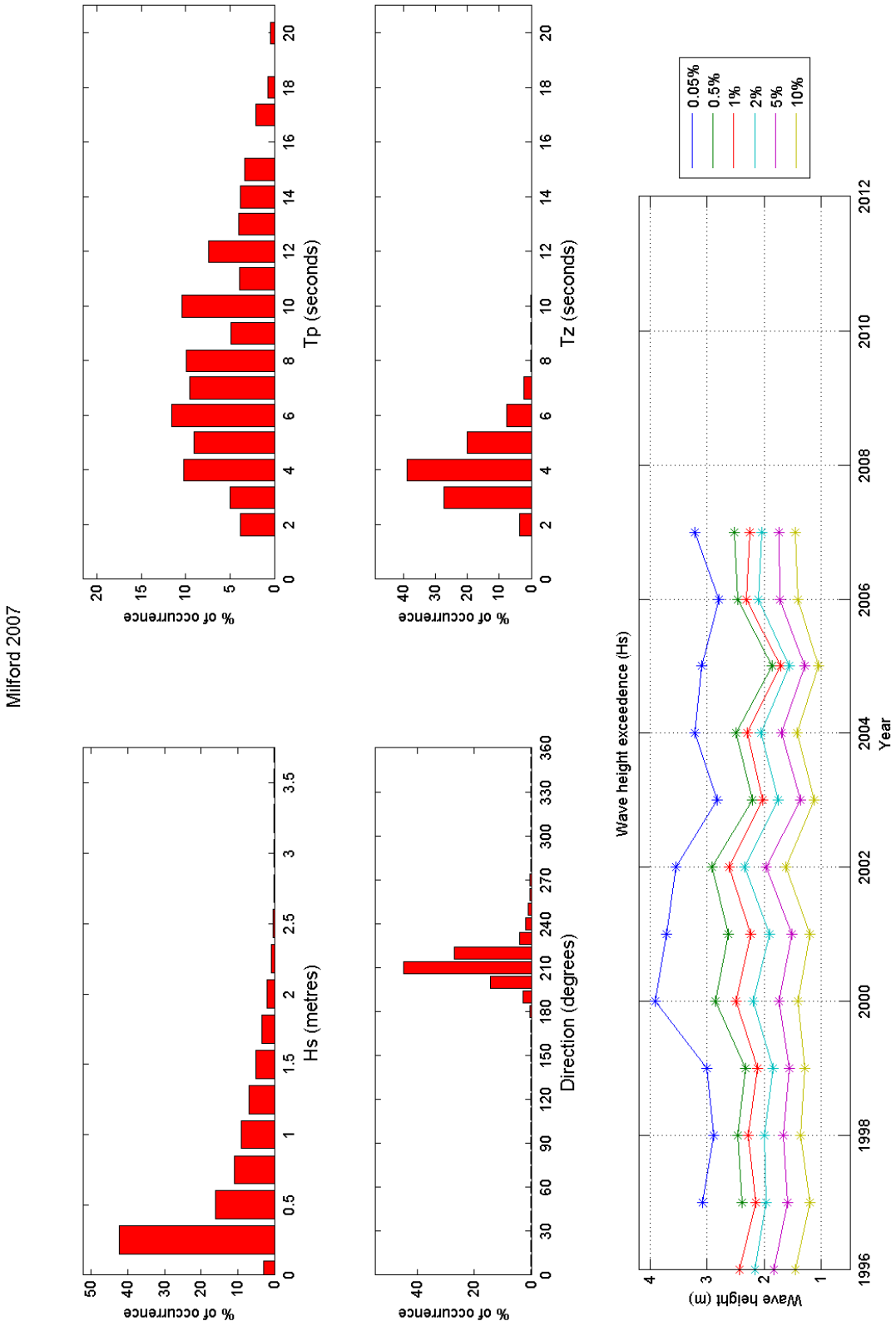
- Percentage of occurrence of H_s, and T_z for 2007
- Percentage wave height exceedance (all recorded years) – note that the statistics for 1996 were based on measurements from May to December only
- Joint distribution of all parameters for 2007, given both as number of observations and as percentage of occurrence – note that measurement of T_p began in December 2004
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms above a given threshold, for 2007 and for all years. Storms are defined by the Peaks-over-Threshold method. The highest H_s of each storm event is shown.
- Annual time series of H_s (red line is storm threshold)

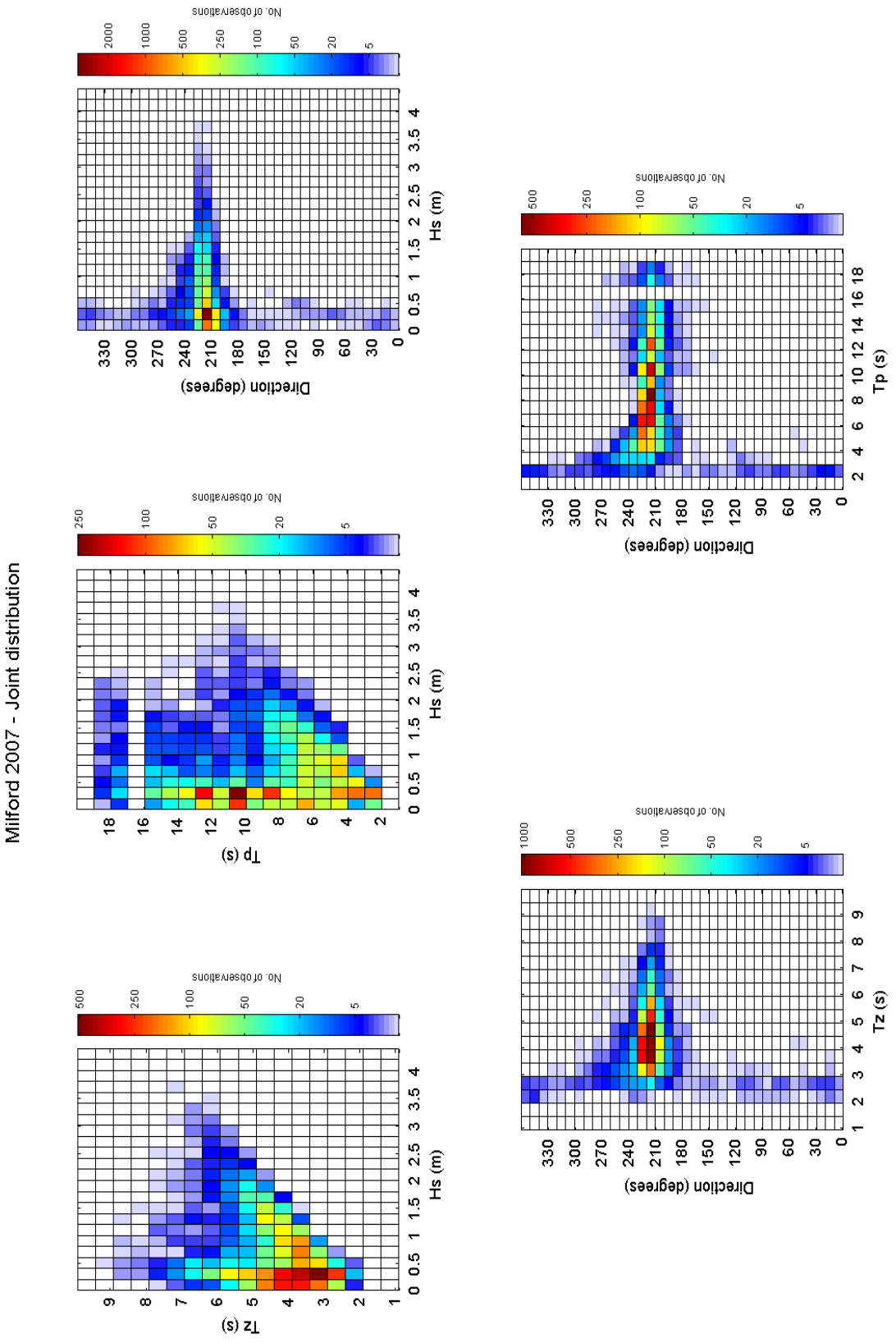
General

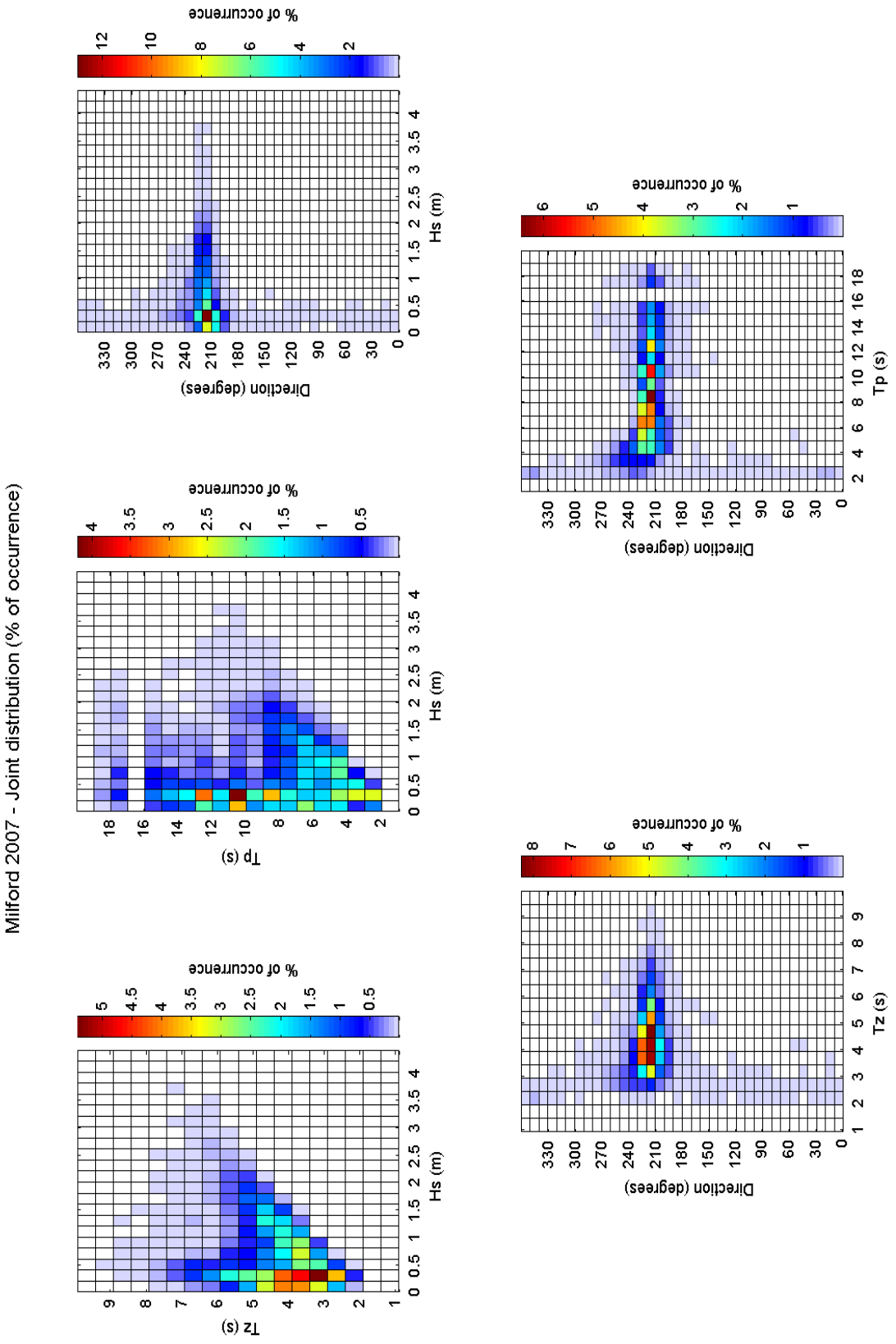
The buoy was first deployed in May 1996. The buoy was badly damaged in early October 2005 and was replaced with a directional wave buoy on 17 November 2005.

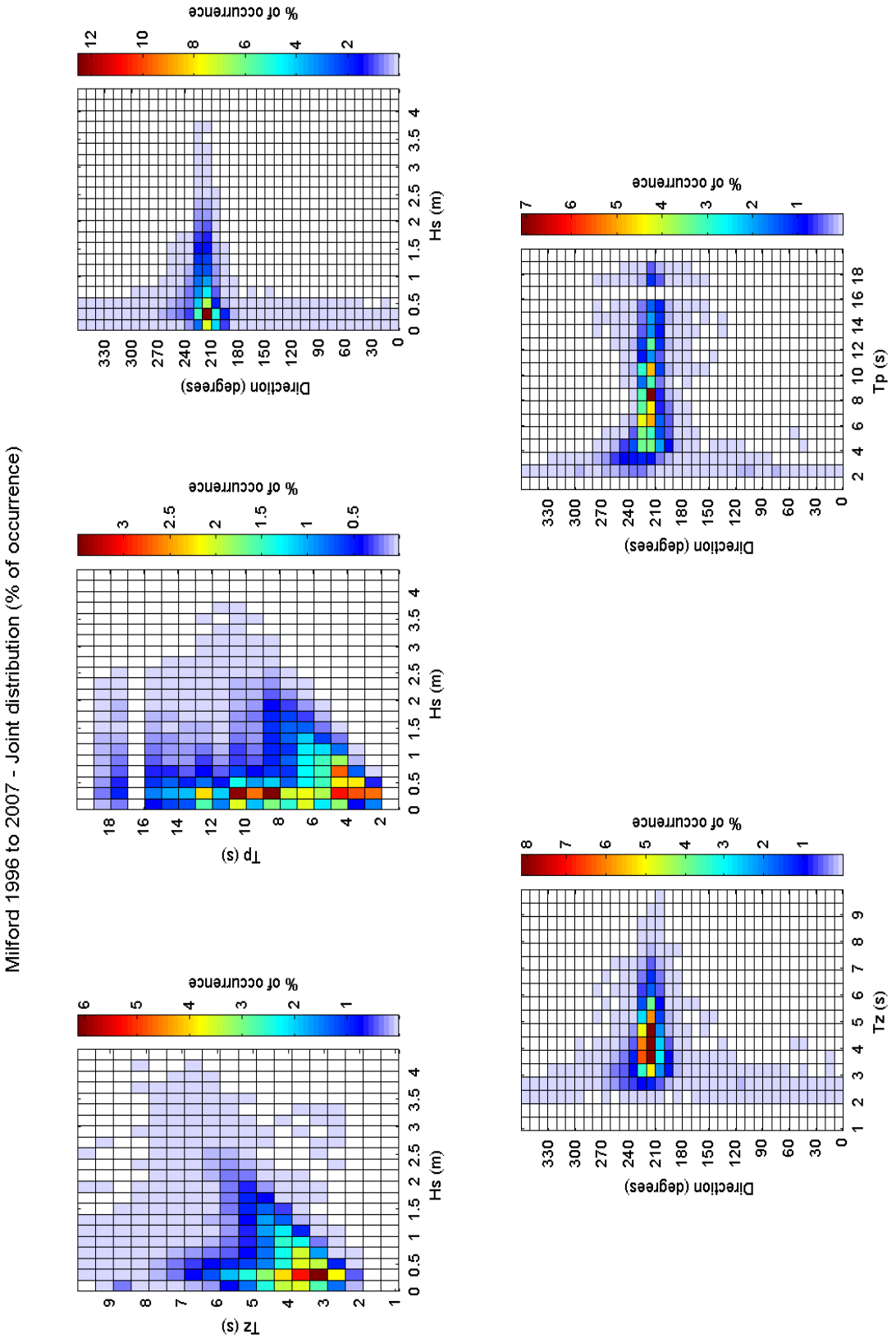
Acknowledgements

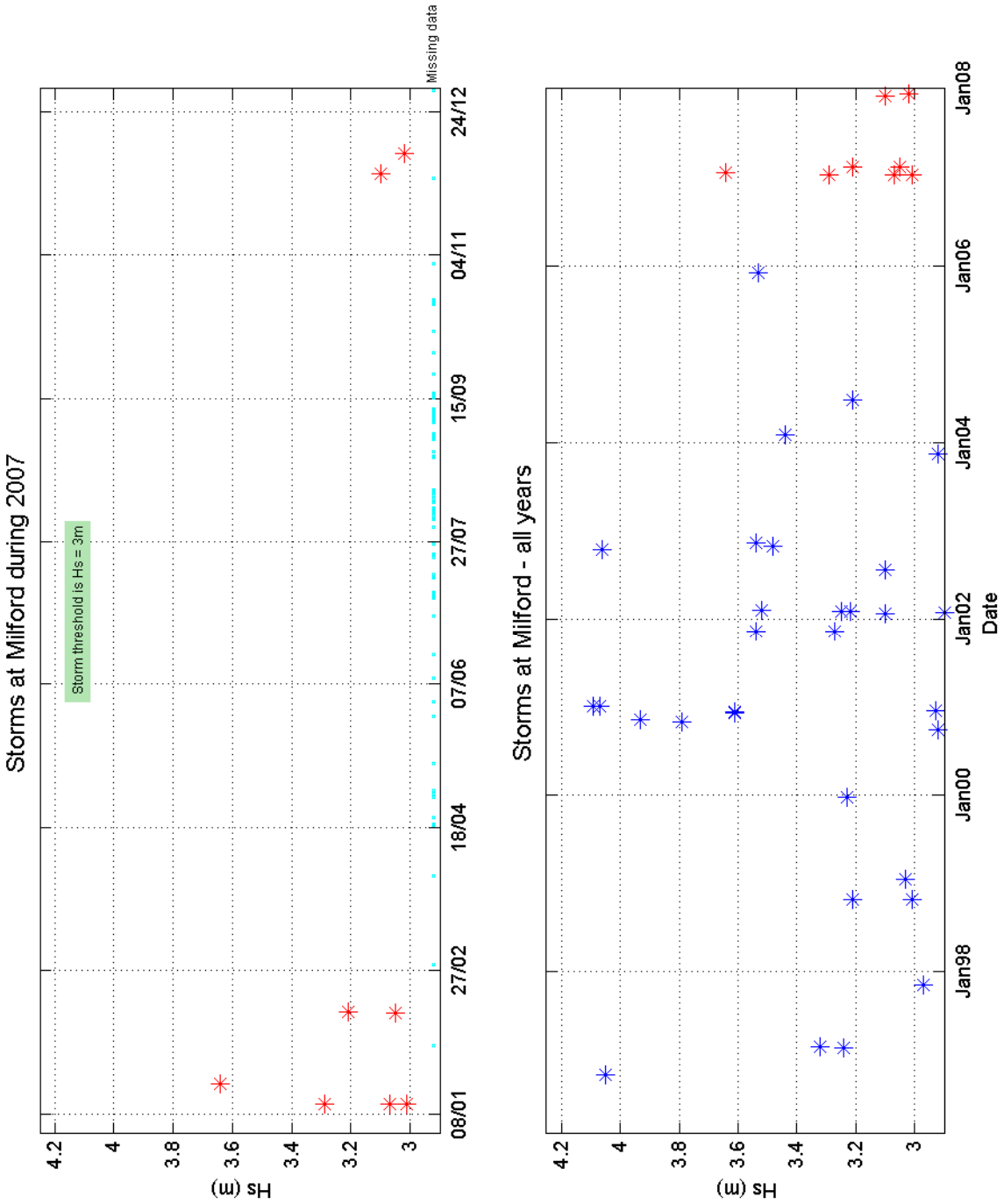
TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.

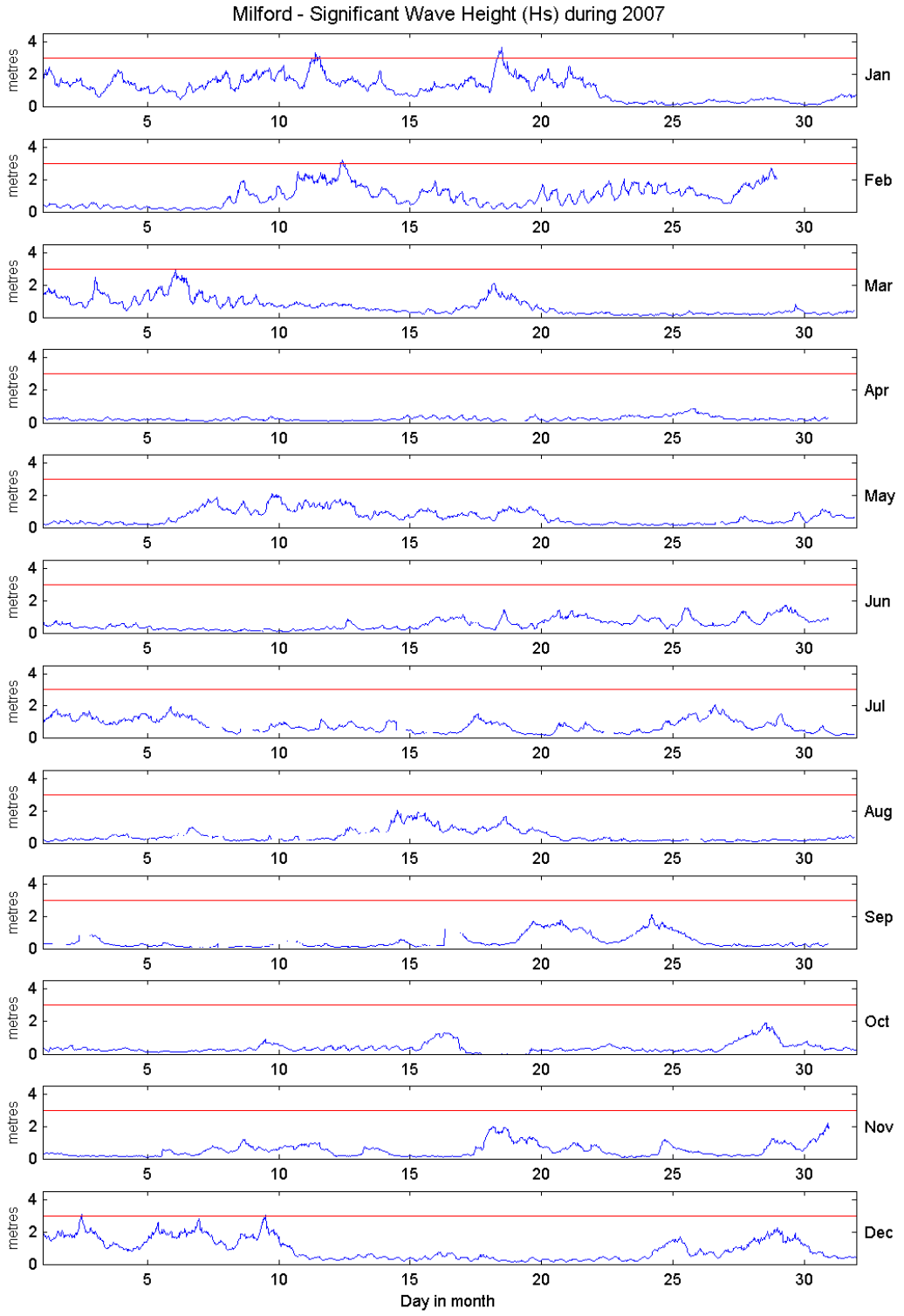

Milford 2007
% of occurrence
Hs (metres)
Tp (seconds)
Tz (seconds)
Direction (degrees)
Wave height exceedence (Hs)
Wave height (m)
Year
0.05%
0.5%
1%
2%
5%
10%


Milford 2007 - Joint distribution
Direction (degrees)
Hs (m)
No. of observations
Tp (s)
Tz (s)


Milford 2007 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
Tp (s)
Tz (s)
% of occurrence


Milford 1996 to 2007 - Joint distribution (% of occurrence)
Direction (degrees)
Hs (m)
% of occurrence
Tp (s)
Tz (s)


Storms at Milford during 2007
Storm threshold is Hs = 3m
Missing data
Hs (m)
4.2
4
3.8
3.6
3.4
3.2
3
08/01
27/02
18/04
07/06
27/07
15/09
04/11
24/12
Storms at Milford - all years
Hs (m)
Jan98
Jan00
Jan02
Jan04
Jan06
Jan08
Date


Milford - Significant Wave Height (Hs) during 2007
metres
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
2
4
5
10
15
20
25
30
Day in month