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FIFTY - EIGHTH QUARTERLY REPORT ON DRIFTING BUOYS IN THE NORTH ATLANTIC

By Sue Holton
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31st August 2001

This report has not been published.
Permission to quote from it should be obtained from the
Head of Observations Supply Branch.

1. INTRODUCTION

Drifting buoys operated by European countries, the United States, Canada and E.G.O.S. (European Group on Ocean Stations) provide valuable meteorological data in the North Atlantic Ocean. This report is a summary of the performance of these buoys giving information on the number of buoys operating, the accuracy of reported locations and data quality, timeliness and availability. It is compiled by looking at observations received in the Met. Office Meteorological Data Base (Met.D.B.) and by comparisons of observations with background fields from the Met. Office forecast model. Additional information on buoy operations and data quality is extracted from E.G.O.S. Technical Secretariat reports.

2. GENERAL PERFORMANCE

The following few sub-sections describe the general performance of the drifting buoys throughout the quarter.

(a) Location Accuracy

61 out of 64 of the buoys reporting, gave a 'percentage of observations with acceptable positions' greater than 95% (65 out of 67 last quarter).

(b) Data timeliness

(see note 9 of section 6 for definition of terms.)

Timeliness	Last quarter.	This quarter
Very Good	22	22
Good	29	34
Satisfactory	10	4
Poor	1	1
Very poor	5	3
Total no. of buoys	67	64

(c) Data availability

(see note 9 of section 6 for definition of terms.)

Availability	South of 50 deg N		North of 50 deg N	
	Previous Quarter	Present Quarter	Previous Quarter	Present Quarter
Very Good	6	3	9	11
Good	20	19	9	8
Satisfactory	12	11	4	3
Poor	6	7	1	1
Very Poor	0	0	0	0

The total number of buoy days in the quarter was 4717 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 4754) and the number of 'buoy hours' with at least one observation was 97033 (compared with 92943 last quarter). Thus, the mean number of hours per day, for days with at least one observation (averaged over all buoys operating in the area) was 20.57 (last quarter the figure was 19.55).

3. SUMMARY OF PRESSURE PERFORMANCE

(a) Buoy deployments, etc.

North of 50deg N

There were 21 buoys reporting pressure at the beginning of the period. 17 buoys were operating at the end of the period. 3 buoys were deployed during the period (44621, 65516 and 65581). 7 buoys ceased reporting pressure (, 44741, 48581, 64517, 64548, 64698, 65593 and 65600).

South of 50deg N

There were 32 buoys reporting pressure at the beginning of the period. 32 buoys were reporting at the end of the period.

8 buoys were deployed during the period (44721, 44722, 44629, 62511 and 62510).

8 buoys ceased reporting pressure (44616, 44624, 44625, 44721, 44722, 44629, 62510 and 62511).

(b) Data Quality - Pressure

Revised RMS Differences

The technique used to assess the quality of pressure data in this report is based on the Revised RMS differences between the observations and the background field from the Global Forecast Model (see note 8 in Explanatory Notes). For buoys south of 50°N the Revised RMS differences should be less than (or equal to) 2.0 hPa and for buoys north of 50°N they should be below (or equal to) 3.0 hPa. The buoys whose revised RMS differences were found to lie outside these limits have had their performances described as 'suspect' and are included in the section below. Examination of the time-series plots (see Annex B) indicates the performances of these buoys:-

41504 - Pressure data from this buoy became erratic with a negative bias from 09/06/01 until the end of the period.

- 41505 - Data from this buoy showed a negative bias during the whole of the period.
- 44724 - This buoy developed an increasing positive bias from 05/05/01 until it ceased reporting pressure altogether on 14/05/01.
- 61538 - A negative bias of -1.1 was reported from the start of the period until it ceased reporting on 09/04/01.

Biases

14 buoys (excluding those mentioned in the previous section) showed pressure biases greater than 0.5 hPa (pressure biases are determined using the mean value for unflagged data from Annex A). Those buoys whose pressure data showed a bias of greater than 0.5 hPa have had their performance described as 'suspect'.

WMO No.	Buoy bias (hPa)	Period of reports
41639	1.3	01/04 – 30/06
44546	-0.6	01/04 – 30/06
44548	-0.7	01/04 – 30/06
44550	-0.7	01/04 – 30/06
44611	0.7	01/04 – 30/06
44625	-0.6	09/04 – 30/06
44628	0.8	01/04 – 19/04
48581	0.6	01/04 – 07/06
61522	-0.8	01/04 – 12/04
61539	-0.6	01/04 – 21/05
62510	-0.8	27/04 – 30/06
62513	-1.0	01/04 – 03/04
64548	-0.6	01/04 – 26/04
65663	-0.6	01/04 – 30/06

Summary of Pressure Performance

Pressure Summary	Last Quarter	This Quarter
Acceptable	44	46
Suspect – RMS	5	4
Suspect – Bias	18	14
Total no. of buoys	67	64

4) Air Temperatures

The following table shows the mean and standard deviation of observation minus background differences for air temperatures.

(Note : The calculations below exclude the majority of gross errors. However, gross errors within +/-20 °C of the background value are included. Therefore, in some instances, the figures may be slightly misleading.)

Air Temperature				Air Temperature			
WMO No.	Mean	St.Dev	No. of Obs	WMO No.	Mean	St. Dev	No. of Obs
44613	0.76	0.71	2192	44625	15.00	5.73	3
44628	0.16	1.36	560	44743	3.09	3.92	34
44765	0.19	1.55	1940	44772	1.32	1.79	2787
44774	0.28	1.27	4427	48581	-0.82	3.20	454
61538	4.28	2.50	266	61539	2.38	2.96	944
64548	0.07	1.15	1253	65516	0.44	0.84	263
65581	0.60	1.29	103	65593	-0.49	0.66	1866
65595	0.81	1.47	2787	65000	0.62	1.24	3521
65601	0.25	1.24	5071	65602	0.36	1.06	5058
65662	0.60	1.42	3410	65663	0.48	1.53	2402

Summary

Buoys 44625 (15.00), 61538 (4.28), 44743 (3.09) and 61539 (2.38) all showed significant air temperature bias. Also buoy 44625 (5.73), 44743 (3.92) and 48581 (3.20) also showed a significant standard deviations.

Note: Only 3 observations were received from buoy 44625.

(5) Winds

The following table shows the mean and standard deviation of observation minus background differences for wind speed and direction.

WMO No.	Wind Speed (kt)			Wind Direction (deg)		
	Mean	St. Dev.	No. of Obs	Mean	St. Dev.	No. of Obs
41639	8.13	6.11	573	-7.00	30.28	607
41644	-5.67	5.36	7	6.10	0.99	2
44762	-4.83	1.05	3	24.86	125.18	5
62504	0.20	3.34	2330	1.71	28.80	2066

Summary

Buoy 41639 (8.13) showed a significant **wind speed** bias.

Note: Only 3 observations for wind speed and 5 for wind direction were received from Buoy 44762.

Buoys 44762 (24.86) showed a significant **wind direction** bias. Buoy 41639 (30.28), 44762 (125.18) and 62504 (28.80) also showed a significant standard deviation for **wind direction**.

(5) Winds

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6. EXPLANATORY NOTES:

1. Buoy owners are as follows,

CA	- Canada	P	- Portugal
F	- France	UK	- United Kingdom
D	- Germany	US	- United States
N	- Norway	IC	- Iceland
NL	- Netherlands	EG	- EGOS
IR	- Ireland		

2. Number of observations received is the number received at Bracknell in the Meteorological Data Base (Met.DB). If identical reports are received which have originated at different Collecting Centres, the earliest one received at Bracknell is stored in the Met.DB.

3. An observation with valid Time and Date is one that contains no coding errors in the Date/Time group.

4. An acceptable position for an observation is within a distance d of the last acceptable position where $d=vt$ and,

$$v = \text{maximum drift speed} = 1/4 \text{ knot}$$
$$t = \text{time between observations.}$$

5. The percentage of elements present is calculated from the total number of observations received.

6. The delay is (Time of Receipt at Bracknell) - (Time of Observation).

7. The mean number of observations per day is calculated from the total number of observations received divided by the number of days in the period. It therefore includes 'quasi-identical' observations, i.e. those made within a few minutes of one another. For this reason the mean number of hours per day with at least one observation and the % of hour periods without an observation has been included, where an 'hour period' is defined as the period from HH-30 to HH+29 minutes.

8. Mean (OB-BG) is the mean value of (Observation-Background) Pressure, where the Background is the 6-hour forecast from the Global Forecast Model. RMS (OB-BG) is the Root Mean Square value of (Observation- Background) Pressure differences.

Unflagged data are those data used in model analyses.

Flagged data (i.e. unused observations) are those observations of suspect quality and all observations reported by a buoy at a frequency greater than 5 times every 6 hours, with accepted observations being at least one hour apart. Thus, those buoys which report most frequently have a higher percentage of flagged data.

The Mean calculated over Unflagged Data gives an indication of the instrument bias, since any gross errors have been excluded from the calculation.

The Revised RMS is based on all data except for the few that contain gross errors (as indicated on the time-series graphs - see Annex B).

9. The performance categories are defined in the table below.

Performance	Availability (mean no. of obs/day)	Timeliness (median delay in mins)
Very Good	> 35	< 60
Good	25 - 35	60 - 119
Satisfactory	15 - 24	120 - 179
Poor	5 - 14	180 - 239
Very Poor	< 5	> 240

(N.B. WMO requirements state the need for only 4 observations per day from marine stations.)

The pressure quality is assessed from the Revised RMS and the Mean for unflagged data).

Performance	Pressure Quality (in hPa)			
	North of 50 degN		South of 50 degN	
	RMS	MEAN	RMS	MEAN
Acceptable	≤ 3.0	≤ 0.5	≤ 2.0	≤ 0.5
Suspect	> 3.0	> 0.5	> 2.0	> 0.5

Annex A - TABLE OF STATISTICS

WMO No./Country	41504/US	41505/US	41523/US
Argos Id No.	26967	26968	28840
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	23.6	27.8	29.7
Mean Longitude	-66.3	-64.4	-58.4
No. of Obs Received	928	750	1078
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	70.8	77.1	93.6
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	83.6	89.5	94.1
Median delay (min)	30.5	27	30
Number of days	91	91	91
Mean No. of obs/day	10.2	8.2	11.8
No. of Hours with obs	806	682	825
Mean no. of hours/day with obs	8.9	7.5	9.1
% of hour periods without an ob	63.1	68.8	62.2
Mean (Ob-Bg)	0.5	-1.8	0.1
RMS (Ob-Bg)	1.2	2.0	0.7
unflagged data			
Mean (Ob-Bg)	-5.8	-1.8	0.1
RMS (Ob-Bg)	14.3	2.0	0.7
all data			
Revised RMS (Ob-Bg)	8.1	2.1	0.7
% of data flagged	30	6	23
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	41571/US	41572/US	41639/US
Argos Id No.	18905	18906	28846
Period Within Area	01/04 - 30/06	01/04 - 17/05	01/04 - 30/06
Mean Latitude	37.3	25.1	23.1
Mean Longitude	-40.0	-54.6	-63.4
No. of Obs Received	1545	970	736
% of obs with Acceptable Position	98.6	100.0	100.0
% of Present Pressure	98.6	99.6	97.0
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	94.4/ 95.1
Sea-Surface Temp.	97.7	97.4	97.1
Median delay (min)	142	170	72
Number of days	91	47	91
Mean No. of obs/day	17.0	20.6	8.1
No. of Hours with obs	1545	942	724
Mean no. of hours/day with obs	17.0	20.0	8.0
% of hour periods without an ob	29.2	15.9	66.8
Mean (Ob-Bg)	0.2	-0.2	1.3
RMS (Ob-Bg)	0.8	0.5	1.4
unflagged data			
Mean (Ob-Bg)	0.1	-0.2	1.4
RMS (Ob-Bg)	3.0	0.5	1.5
all data			
Revised RMS (Ob-Bg)	0.8	0.5	1.5
% of data flagged	0	3	1
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Acceptable	Poor
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Acceptable	Acceptable	Good
Comments			

Annex A - cont'd

WMO No./Country	41644/US	44546/UK	44548/UK
Argos Id No.	28853	25374	27617
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	30.4	60.4	48.9
Mean Longitude	-42.0	-26.9	-43.4
No. of Obs Received	1139	3351	2121
% of Obs within Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	91.7	88.4	88.4
P. Tendency	0.0	88.4	88.4
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	90.4/ 0.6	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	92.2	88.6	88.4
Median delay (min)	35	77	111
Number of days	91	91	91
Mean No. of obs/day	12.5	36.8	23.3
No. of Hours with obs	833	2178	2055
Mean no. of hours/day with obs	9.2	23.9	22.6
% of hour periods without an ob	61.8	0.3	5.9
Mean (Ob-Bg)	0.3	-0.6	-0.7
RMS (Ob-Bg)	0.7	1.1	1.1
unflagged data			
Mean (Ob-Bg)	0.3	-0.6	-0.7
RMS (Ob-Bg)	0.7	1.3	1.1
all data			
Revised RMS (Ob-Bg)	0.7	1.2	1.1
% of data flagged	26	33	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Very Good	Acceptable
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44549/UK	44550/UK	44610/F
Argos Id No.	22648	23703	12734
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	50.3	50.0	58.6
Mean Longitude	-42.7	-44.5	-21.6
No. of Obs Received	2287	2288	9329
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	91.4	92.9	57.8
P. Tendency	91.2	92.7	57.7
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	91.3	92.9	57.8
Median delay (min)	68	66	134
Number of days	91	91	91
Mean No. of obs/day	25.1	25.1	102.5
No. of Hours with obs	2179	2178	2163
Mean no. of hours/day with obs	23.9	23.9	23.8
% of hour periods without an ob	0.2	0.3	1.0
Mean (Ob-Bg)	-0.5	-0.7	0.4
RMS (Ob-Bg)	1.1	1.1	0.9
unflagged data			
Mean (Ob-Bg)	-0.5	-0.7	0.4
RMS (Ob-Bg)	1.2	1.1	1.2
all data			
Revised RMS (Ob-Bg)	1.2	1.1	1.1
% of data flagged	1	1	96
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Acceptable
Comments			

Annex A - cont'd

WMO No./Country	44611/UK	44612/UK	44613/UK
Argos Id No.	27616	27619	28467
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	44.7	37.5	34.4
Mean Longitude	-3.2	-28.4	-28.2
No. of Obs Received	2315	3639	2295
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	82.2	94.0	97.4
P. Tendency	81.6	94.0	95.5
Air Temperature	0.0	0.0	97.5
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	82.4	93.9	0.0
Median delay (min)	80	114	53.5
Number of days	91	91	91
Mean No. of obs/day	25.4	40.0	25.2
No. of Hours with obs	2157	2182	1630
Mean no. of hours/day with obs	23.7	24.0	17.9
% of hour periods without an ob	1.2	0.1	25.3
Mean (Ob-Bg)	0.7	0.0	0.4
RMS (Ob-Bg)	1.0	0.6	0.7
unflagged data			
Mean (Ob-Bg)	0.7	0.0	0.4
RMS (Ob-Bg)	1.0	0.6	0.7
all data			
Revised RMS (Ob-Bg)	1.0	0.6	0.7
% of data flagged	1	40	39
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Very Good	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44616/UK	44620/UK	44621/UK
Argos Id No.	17149	27622	17150
Period Within Area	09/04 - 30/06	01/04 - 30/06	09/04 - 30/06
Mean Latitude	46.7	27.2	55.0
Mean Longitude	-48.6	-41.7	-45.2
No. of Obs Received	2074	2228	2090
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	93.2	95.2	91.6
P. Tendency	92.7	95.2	91.1
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	92.9	95.2	91.7
Median delay (min)	73	93.5	63
Number of days	83	91	83
Mean No. of obs/day	25.0	24.5	25.2
No. of Hours with obs	1989	2177	1985
Mean no. of hours/day with obs	24.0	23.9	23.9
% of hour periods without an ob	0.2	0.3	0.4
Mean (Ob-Bg)	0.0	0.1	0.0
RMS (Ob-Bg)	0.8	0.5	1.0
unflagged data			
Mean (Ob-Bg)	0.0	0.1	0.0
RMS (Ob-Bg)	0.9	1.2	1.4
all data			
Revised RMS (Ob-Bg)	0.9	0.5	1.1
% of data flagged	1	1	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44623/UK	44624/UK	44625/UK
Argos Id No.	27624	17151	17153
Period Within Area	01/04 - 30/06	09/04 - 30/06	09/04 - 30/06
Mean Latitude	34.9	43.8	46.3
Mean Longitude	-23.4	-43.5	-51.6
No. of Obs Received	2279	2588	2578
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	90.7	93.6	94.4
P. Tendency	90.4	93.5	94.1
Air Temperature	0.0	0.0	0.1
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	90.5	80.0	94.1
Median delay (min)	85	90	86
Number of days	91	83	83
Mean No. of obs/day	25.0	31.2	31.1
No. of Hours with obs	2170	1987	1988
Mean no. of hours/day with obs	23.8	23.9	24.0
% of hour periods without an ob	0.6	0.1	0.2
Mean (Ob-Bg)	0.3	-0.2	-0.6
RMS (Ob-Bg)	0.6	0.8	1.1
unflagged data			
Mean (Ob-Bg)	0.3	-0.2	-0.6
RMS (Ob-Bg)	0.6	0.9	1.4
all data			
Revised RMS (Ob-Bg)	0.6	0.9	1.1
% of data flagged	1	21	20
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Good
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44628/UK	44629/UK	44721/UK
Argos Id No.	12287	18388	18702
Period Within Area	01/04 - 19/04	09/04 - 30/06	09/04 - 30/06
Mean Latitude	29.4	42.9	38.3
Mean Longitude	-16.0	-43.7	-41.6
No. of Obs Received	605	2066	2204
% of obs with Acceptable Position	89.8	100.0	100.0
% of Present			
Pressure	97.7	67.1	92.4
P. Tendency	93.6	66.8	92.0
Air Temperature	96.4	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	97.4	62.4	92.3
Median delay (min)	26	79	96
Number of days	19	83	83
Mean No. of obs/day	31.8	24.9	26.6
No. of Hours with obs	336	1984	1984
Mean no. of hours/day with obs	17.7	23.9	23.9
% of hour periods without an ob	25.5	0.3	0.3
Mean (Ob-Bg)	0.8	-0.5	0.0
RMS (Ob-Bg) unflagged data	1.0	1.0	0.8
Mean (Ob-Bg)	0.5	-0.5	0.0
RMS (Ob-Bg) all data	6.7	1.1	0.8
Revised RMS (Ob-Bg)	1.1	1.1	0.9
% of data flagged	55	1	7
Operating at end of period	NO	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44722/UK	44724/UK	44725/UK
Argos Id No.	18706	27922	27923
Period Within Area	09/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	39.8	33.6	50.1
Mean Longitude	-35.6	-16.4	-41.5
No. of Obs Received	2428	2216	2298
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	93.1	39.4	87.2
P. Tendency	92.9	39.1	86.9
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	93.2	84.7	87.1
Median delay (min)	94.5	109	77
Number of days	83	91	91
Mean No. of obs/day	29.3	24.4	25.3
No. of Hours with obs	1984	2123	2170
Mean no. of hours/day with obs	23.9	23.3	23.8
% of hour periods without an ob	0.4	2.8	0.6
Mean (Ob-Bg)	-0.2	0.4	-0.2
RMS (Ob-Bg)	0.7	0.7	0.8
unflagged data			
Mean (Ob-Bg)	-0.2	7.7	-0.2
RMS (Ob-Bg)	1.1	15.9	0.8
all data			
Revised RMS (Ob-Bg)	0.9	4.8	0.8
% of data flagged	16	23	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44729/UK	44741/UK	44743/UK
Argos Id No.	25375	25373	12414
Period Within Area	01/04 - 30/06	01/04 - 09/05	01/04 - 04/04
Mean Latitude	46.8	60.1	49.7
Mean Longitude	-9.3	-44.4	-1.6
No. of Obs Received	2705	965	34
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	84.1	91.0	100.0
P. Tendency	83.9	91.2	100.0
Air Temperature	0.0	0.0	100.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	84.0	91.4	100.0
Median delay (min)	97	53.5	26
Number of days	91	39	4
Mean No. of obs/day	29.7	24.7	8.5
No. of Hours with obs	2141	912	25
Mean no. of hours/day with obs	23.5	23.4	6.3
% of hour periods without an ob	1.9	0.1	67.1
Mean (Ob-Bg)	0.5	0.3	0.2
RMS (Ob-Bg)	0.8	1.0	0.5
unflagged data			
Mean (Ob-Bg)	0.5	0.3	-1.2
RMS (Ob-Bg)	0.8	1.0	8.9
all data			
Revised RMS (Ob-Bg)	0.9	1.0	0.6
% of data flagged	17	2	53
Operating at end of period	YES	NO	NO
Performance			
Availability	Good	Acceptable	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44761/UK	44762/UK	44765/UK
Argos Id No.	27615	19073	28466
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	53.1	45.4	36.3
Mean Longitude	-21.2	-7.8	-36.0
No. of Obs Received	3417	2230	2019
% of obs with Acceptable Position	100.0	100.0	93.2
% of Present Pressure	90.5	77.2	97.8
P. Tendency	90.4	77.0	94.6
Air Temperature	0.0	0.0	97.9
Wind Speed/Dir	0.0/ 0.0	0.2/ 0.2	0.0/ 0.0
Sea-Surface Temp.	90.5	77.4	0.0
Median delay (min)	94	98	17
Number of days	91	91	91
Mean No. of obs/day	37.5	24.5	22.2
No. of Hours with obs	2177	2088	1305
Mean no. of hours/day with obs	23.9	22.9	14.3
% of hour periods without an ob	0.3	4.4	40.1
Mean (Ob-Bg)	-0.1	0.4	0.2
RMS (Ob-Bg) unflagged data	0.8	0.7	0.7
Mean (Ob-Bg)	-0.2	0.3	-0.7
RMS (Ob-Bg) all data	0.8	2.8	11.0
Revised RMS (Ob-Bg)	0.8	0.9	0.7
% of data flagged	35	1	47
Operating at end of period	YES	YES	YES
Performance Availability	Very Good	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	· Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44770/UK	44771/UK	44772/UK
Argos Id No.	21627	25377	12412
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 28/06
Mean Latitude	56.9	54.8	44.2
Mean Longitude	-13.7	-32.4	-4.7
No. of Obs Received	5814	2279	3367
% of obs with Acceptable Position	100.0	100.0	99.1
% of Present			
Pressure	19.3	86.0	96.8
P. Tendency	14.0	85.8	92.6
Air Temperature	0.0	0.0	83.7
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	19.6	86.0	0.8
Median delay (min)	90	75	24
Number of days	91	91	89
Mean No. of obs/day	63.9	25.0	37.8
No. of Hours with obs	2126	2158	1632
Mean no. of hours/day with obs	23.4	23.7	18.3
% of hour periods without an ob	2.7	1.2	23.1
Mean (Ob-Bg)	0.3	0.1	0.2
RMS (Ob-Bg) unflagged data	0.8	0.8	0.7
Mean (Ob-Bg)	0.2	0.1	-0.3
RMS (Ob-Bg) all data	1.9	0.9	6.8
Revised RMS (Ob-Bg)	0.7	0.9	0.8
% of data flagged	38	1	59
Operating at end of period	YES	YES	NO
Performance			
Availability	Very Good	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44774/UK	44775/UK	44776/UK
Argos Id No.	12286	25372	25371
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	47.1	41.0	49.5
Mean Longitude	-21.0	-48.9	-35.2
No. of Obs Received	4600	2360	2361
% of obs with Acceptable Position	99.1	100.0	100.0
% of Present			
Pressure	97.8	90.4	88.5
P. Tendency	94.3	90.3	88.1
Air Temperature	97.5	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	98.0	90.3	88.4
Median delay (min)	19	87.5	71
Number of days	91	91	91
Mean No. of obs/day	50.5	25.9	25.9
No. of Hours with obs	1796	2177	2174
Mean no. of hours/day with obs	19.7	23.9	23.9
% of hour periods without an ob	17.7	0.3	0.5
Mean (Ob-Bg)	0.0	-0.2	-0.1
RMS (Ob-Bg)	0.9	0.9	1.0
unflagged data			
Mean (Ob-Bg)	-0.5	-0.1	-0.3
RMS (Ob-Bg)	7.9	0.9	6.5
all data			
Revised RMS (Ob-Bg)	1.1	1.0	1.2
% of data flagged	67	4	3
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44778/UK	48581/US	61522/US
Argos Id No.	25370	1301	12675
Period Within Area	01/04 - 30/06	01/04 - 07/06	01/04 - 12/04
Mean Latitude	45.5	64.6	38.1
Mean Longitude	-36.7	-60.2	14.2
No. of Obs Received	2277	861	121
% of obs with Acceptable Position	100.0	97.6	100.0
% of Present			
Pressure	92.1	99.8	98.3
P. Tendency	92.1	43.0	0.0
Air Temperature	0.0	71.7	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	92.1	0.0	97.5
Median delay (min)	74	80	34
Number of days	91	68	12
Mean No. of obs/day	25.0	12.7	10.1
No. of Hours with obs	2178	861	115
Mean no. of hours/day with obs	23.9	12.7	9.6
% of hour periods without an ob	0.3	47.2	57.7
Mean (Ob-Bg)	0.0	0.6	-0.8
RMS (Ob-Bg) unflagged data	0.8	1.6	1.1
Mean (Ob-Bg)	0.0	0.6	-0.8
RMS (Ob-Bg) all data	0.9	2.2	1.0
Revised RMS (Ob-Bg)	0.9	2.2	1.1
% of data flagged	1	5	4
Operating at end of period	YES	NO	NO
Performance			
Availability	Good	Poor	Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	61538/US	61539/US	62501/F
Argos Id No.	27088	27102	7139
Period Within Area	01/04 - 09/04	01/04 - 21/05	01/04 - 30/06
Mean Latitude	45.5	45.1	39.1
Mean Longitude	9.2	12.3	-17.7
No. of Obs Received	314	1220	2234
% of obs with Acceptable Position	71.3	100.0	100.0
% of Present Pressure	96.5	92.4	83.0
P. Tendency	0.0	0.0	82.7
Air Temperature	96.2	91.1	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	97.5	91.3	83.0
Median delay (min)	137	188	117.5
Number of days	9	51	91
Mean No. of obs/day	34.9	23.9	24.5
No. of Hours with obs	204	1016	2115
Mean no. of hours/day with obs	22.7	19.9	23.2
% of hour periods without an ob	0.5	16.7	3.2
Mean (Ob-Bg)	-1.1	-0.6	0.3
RMS (Ob-Bg)	1.3	1.0	0.7
unflagged data			
Mean (Ob-Bg)	-17.9	-0.6	0.3
RMS (Ob-Bg)	18.6	1.0	0.7
all data			
Revised RMS (Ob-Bg)	18.6	1.0	0.7
% of data flagged	95	15	1
Operating at end of period	NO	NO	YES
Performance			
Availability	Good	Acceptable	Acceptable
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Acceptable	Poor	Good
Comments	Suspect Position		

Annex A - cont'd

WMO No./Country	62503/F	62504/F	62505/F
Argos Id No.	17926	17928	17929
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	37.3	39.4	39.3
Mean Longitude	-19.0	-22.6	-12.1
No. of Obs Received	2296	2734	2720
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	90.5	89.1	85.0
P. Tendency	90.4	89.0	84.9
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	88.7/ 88.4	0.0/ 0.0
Sea-Surface Temp.	90.5	89.0	85.0
Median delay (min)	87	106	106
Number of days	91	91	91
Mean No. of obs/day	25.2	30.0	29.9
No. of Hours with obs	2173	2176	2169
Mean no. of hours/day with obs	23.9	23.9	23.8
% of hour periods without an ob	0.5	0.4	0.7
Mean (Ob-Bg)	-0.2	-0.1	0.2
RMS (Ob-Bg) unflagged data	0.6	0.6	0.7
Mean (Ob-Bg)	-0.2	-0.1	0.2
RMS (Ob-Bg) all data	0.6	0.6	0.7
Revised RMS (Ob-Bg)	0.6	0.6	0.7
% of data flagged	1	19	16
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	62510/F	62511/F	62513/F
Argos Id No.	26748	26751	12731
Period Within Area	27/04 - 30/06	18/04 - 30/06	01/04 - 03/04
Mean Latitude	42.3	38.6	49.3
Mean Longitude	-20.6	-21.0	-10.5
No. of Obs Received	1761	2481	45
% of obs with Acceptable Position	100.0	99.8	100.0
% of Present Pressure	85.5	85.5	84.4
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	42.9	42.8	46.7
Median delay (min)	460	502	387
Number of days	65	74	3
Mean No. of obs/day	27.1	33.5	15.0
No. of Hours with obs	1072	1377	40
Mean no. of hours/day with obs	16.5	18.6	13.3
% of hour periods without an ob	30.5	22.2	37.5
Mean (Ob-Bg)	-0.8	-0.4	-1.0
RMS (Ob-Bg) unflagged data	1.1	0.7	1.8
Mean (Ob-Bg)	-0.8	-0.2	-0.8
RMS (Ob-Bg) all data	1.1	7.3	1.7
Revised RMS (Ob-Bg)	1.1	0.7	1.7
% of data flagged	33	35	22
Operating at end of period	YES	YES	NO
Performance			
Availability	Good	Good	Acceptable
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Very Poor	Very Poor	Very Poor
Comments			

Annex A - cont'd

WMO No./Country	62514/F	62596/N	64517/F
Argos Id No.	7119	16391	14178
Period Within Area	01/04 - 30/06	01/04 - 30/06	01/04 - 20/04
Mean Latitude	56.9	62.6	56.2
Mean Longitude	-13.6	-33.7	-13.3
No. of Obs Received	2365	2244	980
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	81.8	90.2	76.5
P. Tendency	81.6	90.0	76.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	81.7	89.9	76.5
Median delay (min)	76	77	94
Number of days	91	91	20
Mean No. of obs/day	26.0	24.7	49.0
No. of Hours with obs	2149	2155	462
Mean no. of hours/day with obs	23.6	23.7	23.1
% of hour periods without an ob	1.6	1.3	1.5
Mean (Ob-Bg)	0.1	-0.2	-0.5
RMS (Ob-Bg)	0.8	0.8	0.9
unflagged data			
Mean (Ob-Bg)	0.1	-0.2	-0.5
RMS (Ob-Bg)	1.0	1.3	0.9
all data			
Revised RMS (Ob-Bg)	0.9	0.8	0.9
% of data flagged	1	1	51
Operating at end of period	YES	YES	NO
Performance			
Availability	Good	Acceptable	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	64548/N	64698/F	65516/N
Argos Id No.	1153	29867	3677
Period Within Area	01/04 - 26/04	01/04 - 24/05	20/06 - 30/06
Mean Latitude	60.8	62.3	60.7
Mean Longitude	-1.5	-29.7	-35.3
No. of Obs Received	1500	2487	305
% of obs with Acceptable Position	98.2	100.0	100.0
% of Present Pressure	93.3	73.8	91.5
P. Tendency	89.5	73.4	25.6
Air Temperature	87.9	0.0	92.1
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	73.8	73.9	67.5
Median delay (min)	17	52	20
Number of days	26	54	11
Mean No. of obs/day	57.7	46.1	27.7
No. of Hours with obs	494	1287	199
Mean no. of hours/day with obs	19.0	23.8	18.1
% of hour periods without an ob	19.1	0.2	22.9
Mean (Ob-Bg)	-0.6	-0.3	-0.4
RMS (Ob-Bg) unflagged data	1.1	0.8	0.7
Mean (Ob-Bg)	-0.6	-0.3	-0.4
RMS (Ob-Bg) all data	3.3	0.9	0.7
Revised RMS (Ob-Bg)	1.2	0.9	0.7
% of data flagged	73	41	43
Operating at end of period	NO	NO	YES
Performance			
Availability	Very Good	Very Good	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	65581/IR	65593/US	65595/NL
Argos Id No.	6666	4228	4229
Period Within Area	23/06 - 30/06	01/04 - 28/04	01/04 - 30/06
Mean Latitude	58.9	58.8	56.3
Mean Longitude	-39.5	-37.7	-39.3
No. of Obs Received	128	1940	3005
% of obs with Acceptable Position	100.0	98.2	99.8
% of Present			
Pressure	88.3	96.9	94.2
P. Tendency	84.4	53.0	88.6
Air Temperature	90.6	96.9	94.3
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	80.5	82.2	69.2
Median delay (min)	30.5	16	21
Number of days	8	28	91
Mean No. of obs/day	16.0	69.3	33.0
No. of Hours with obs	101	558	1608
Mean no. of hours/day with obs	12.6	19.9	17.7
% of hour periods without an ob	46.3	14.3	26.3
Mean (Ob-Bg)	-0.5	-0.3	-0.1
RMS (Ob-Bg)	0.8	1.0	0.9
unflagged data			
Mean (Ob-Bg)	-0.6	-0.4	-0.2
RMS (Ob-Bg)	0.8	3.6	2.2
all data			
Revised RMS (Ob-Bg)	0.8	1.1	1.0
% of data flagged	32	77	54
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Very Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	65600/N	65602/IR	65662/D
Argos Id No.	3676	6667	9307
Period Within Area	01/04 - 21/05	01/04 - 30/06	01/04 - 30/06
Mean Latitude	60.8	59.2	58.4
Mean Longitude	-6.5	-29.2	-36.1
No. of Obs Received	3646	5362	3693
% of obs with Acceptable Position	98.8	98.9	97.7
% of Present Pressure	98.0	95.8	92.8
P. Tendency	62.4	93.9	88.8
Air Temperature	97.5	95.9	94.3
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	80.4	86.0	82.6
Median delay (min)	17	17	18
Number of days	51	91	91
Mean No. of obs/day	71.5	58.9	40.6
No. of Hours with obs	1054	1834	1583
Mean no. of hours/day with obs	20.7	20.2	17.4
% of hour periods without an ob	13.0	15.9	27.4
Mean (Ob-Bg)	-0.5	-0.4	-0.4
RMS (Ob-Bg) unflagged data	0.9	0.9	1.0
Mean (Ob-Bg)	-0.5	-0.4	-0.4
RMS (Ob-Bg) all data	2.8	2.0	1.9
Revised RMS (Ob-Bg)	0.9	1.1	1.1
% of data flagged	77	73	65
Operating at end of period	NO	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Acceptable	Very Good
Comments			

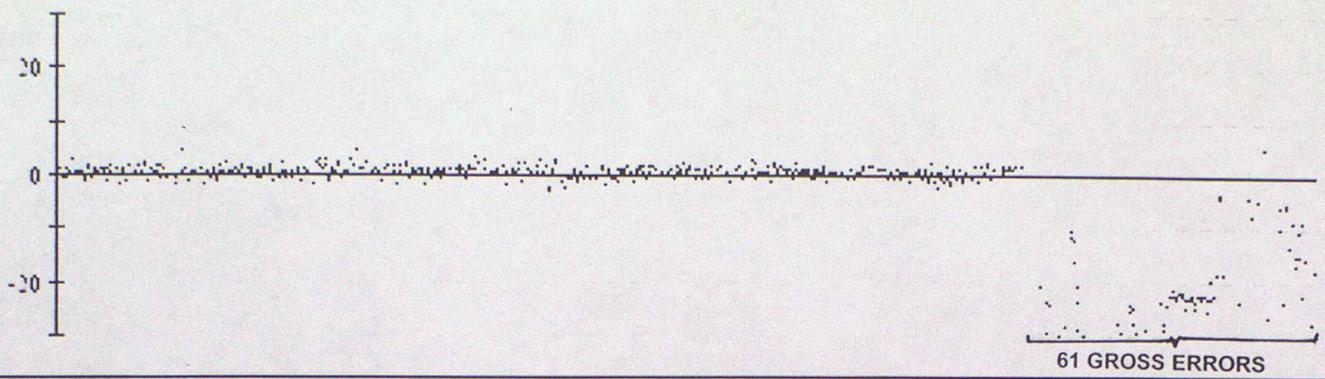
Annex A - cont'd

WMO No./Country	65663/D
Argos Id No.	9308
Period Within Area	01/04 - 30/06
Mean Latitude	52.1
Mean Longitude	-36.1
No. of Obs Received	2562
% of obs with Acceptable Position	98.4
% of Present	
Pressure	93.6
P. Tendency	90.6
Air Temperature	95.3
Wind Speed/Dir	0.0/ 0.0
Sea-Surface Temp.	81.7
Median delay (min)	17
Number of days	91
Mean No. of obs/day	28.2
No. of Hours with obs	1386
Mean no. of hours/day with obs	15.2
% of hour periods without an ob	36.4
Mean (Ob-Bg)	-0.6
RMS (Ob-Bg)	1.0
unflagged data	
Mean (Ob-Bg)	-0.6
RMS (Ob-Bg)	2.6
all data	
Revised RMS (Ob-Bg)	1.4
% of data flagged	57
Operating at end of period	YES
Performance	
Availability	Good
Pressure Quality	Suspect
Timeliness	Very Good
Comments	

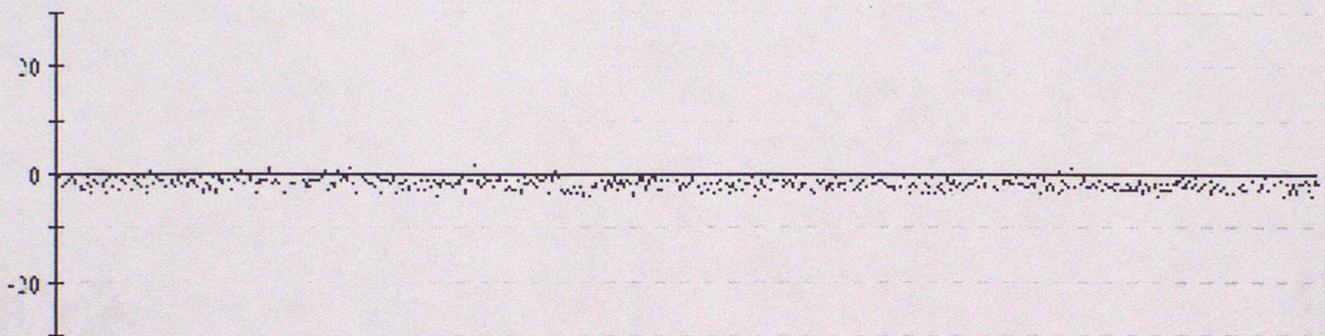
ANNEX B - TIME SERIES PLOTS OF PRESSURE

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

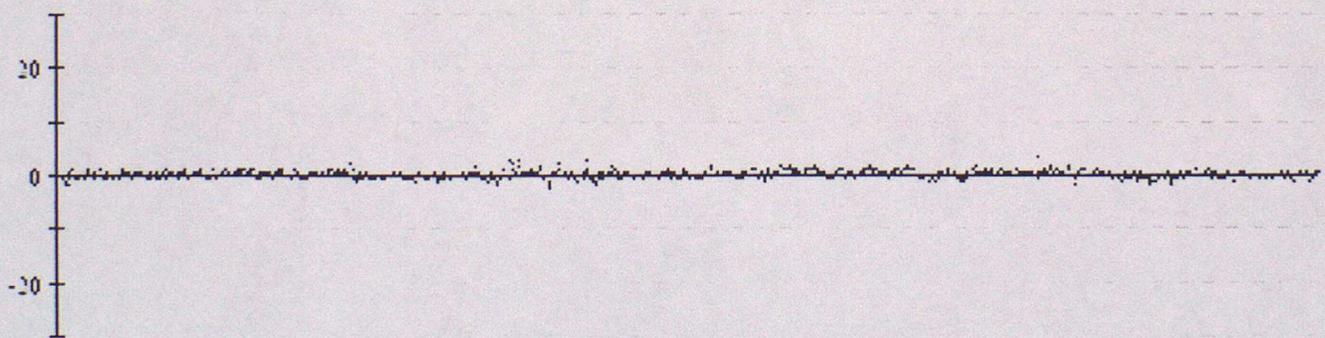
41504 Pressure



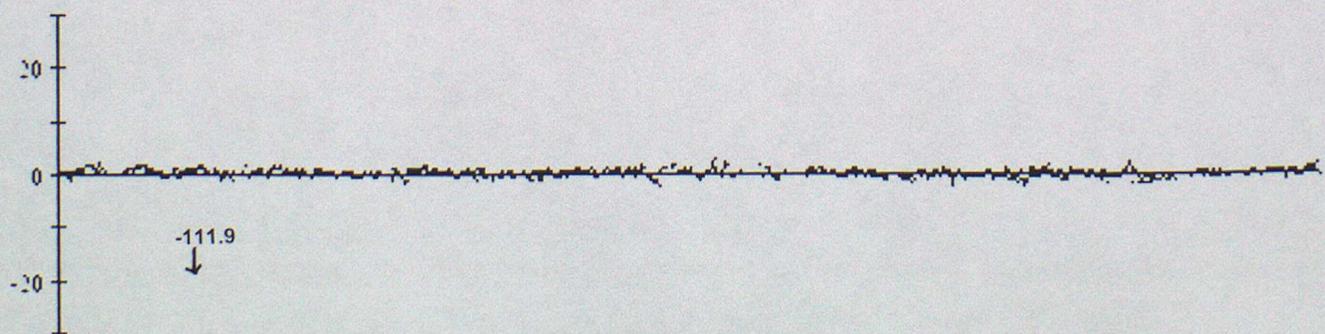
41505 Pressure



41523 Pressure

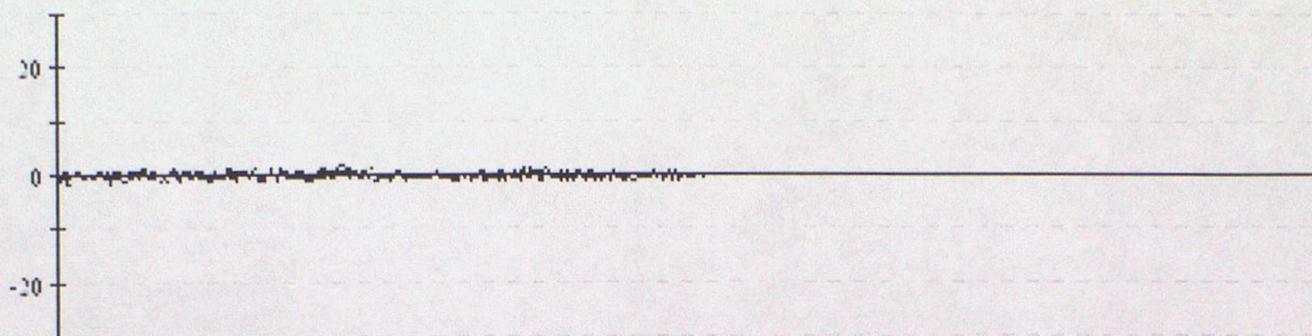


41571 Pressure

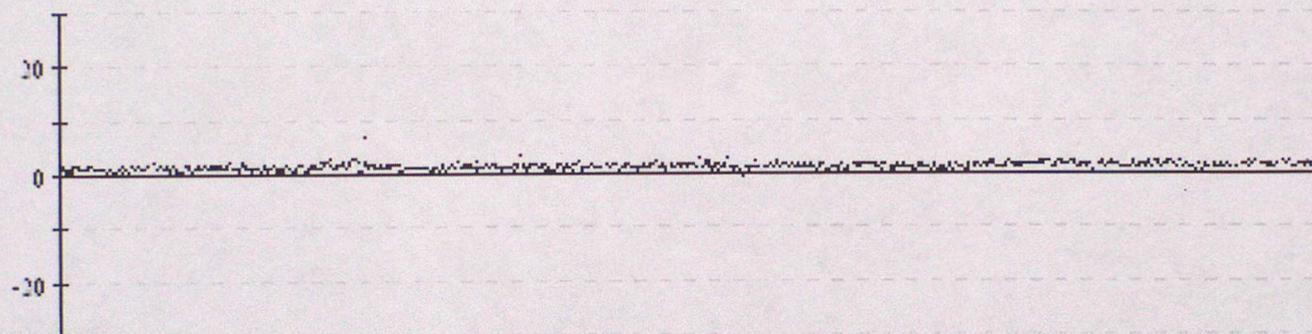


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

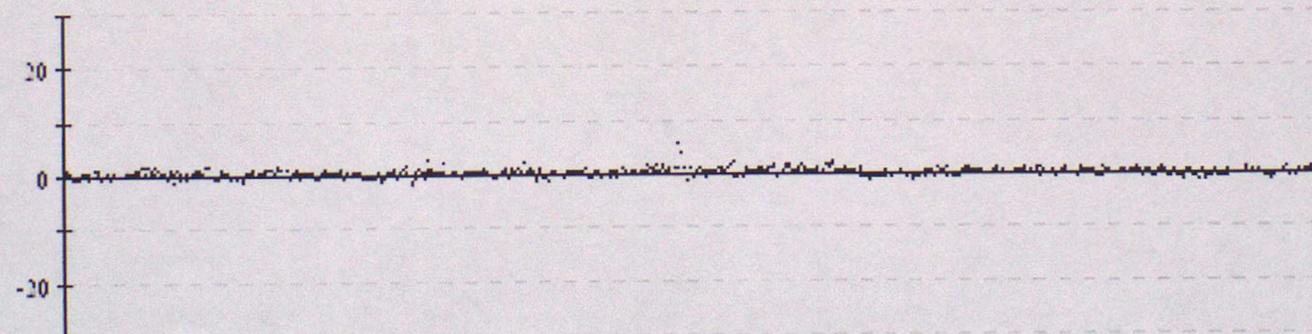
41572 Pressure



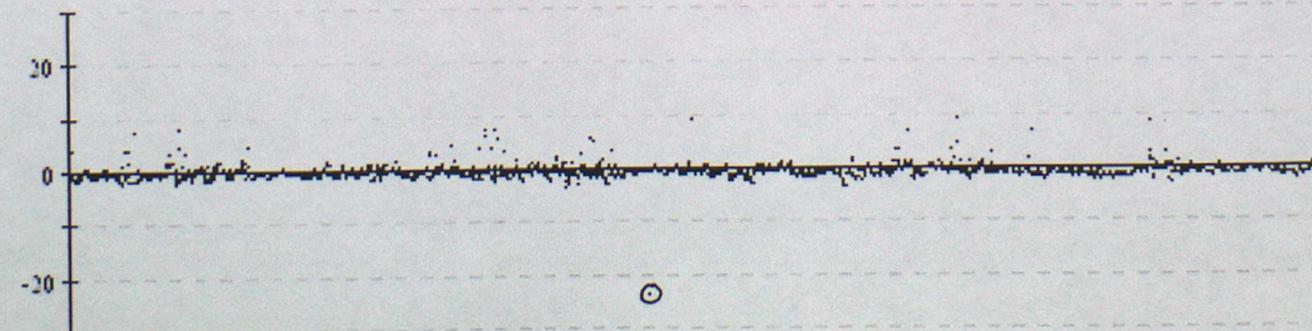
41639 Pressure



41644 Pressure

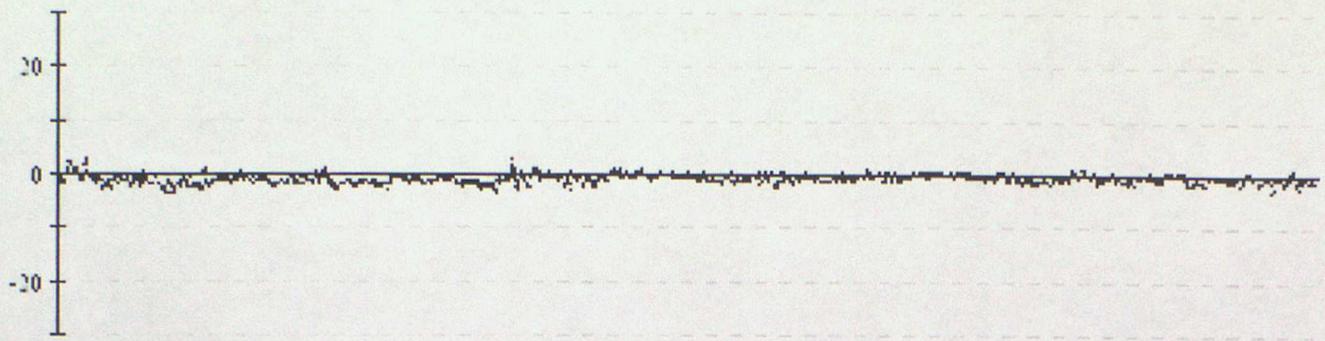


44546 Pressure

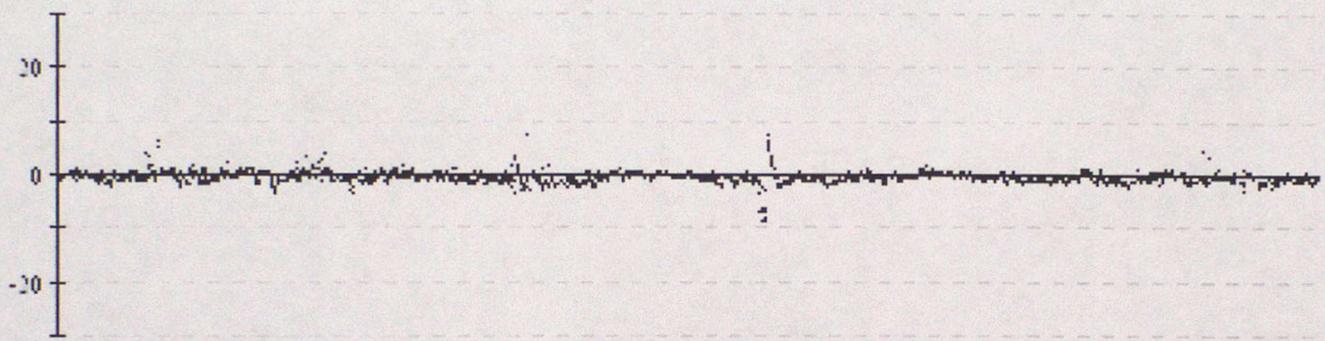


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

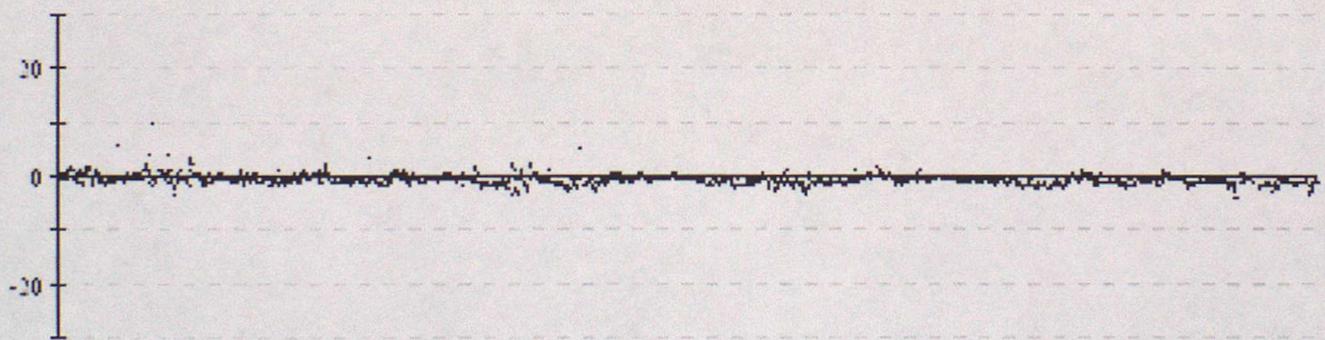
44548 Pressure



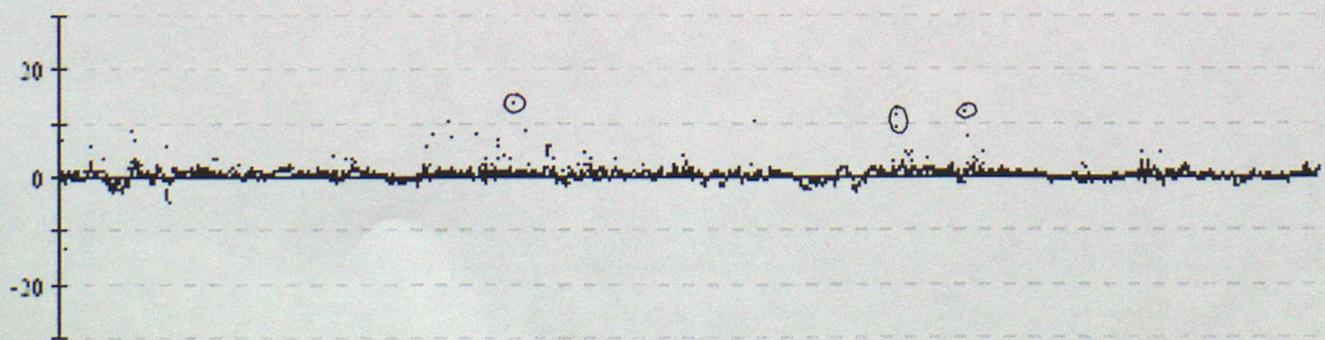
44549 Pressure



44550 Pressure

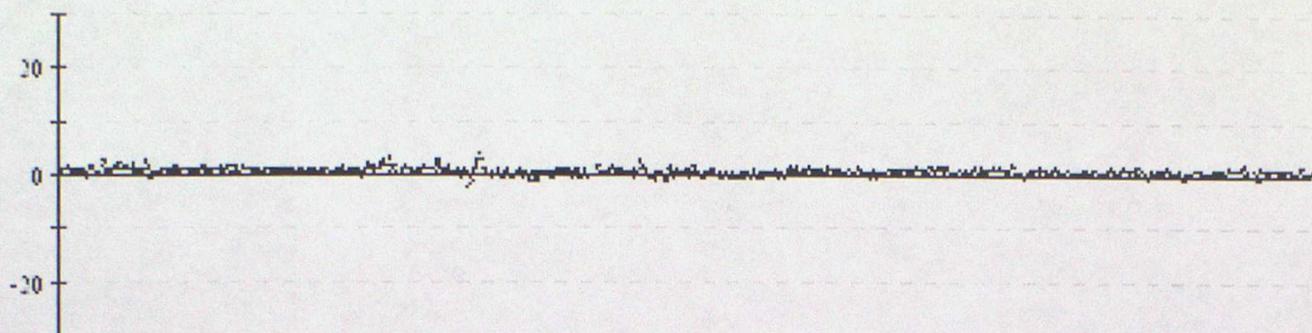


44610 Pressure

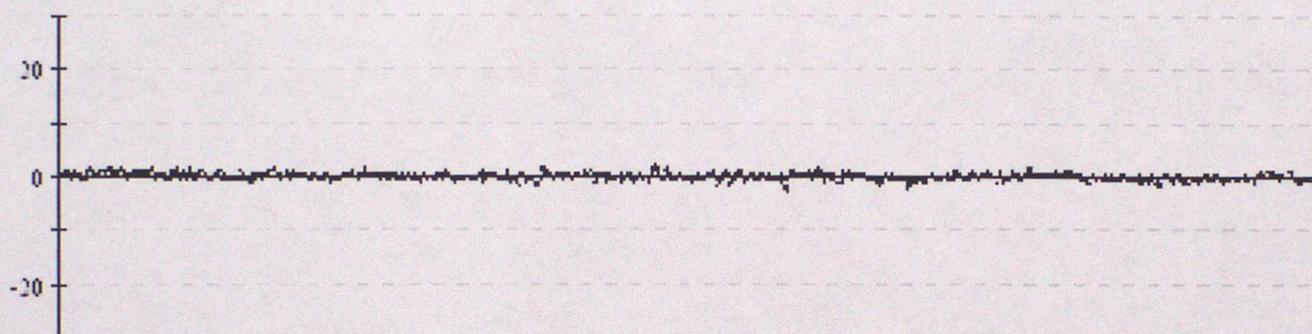


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

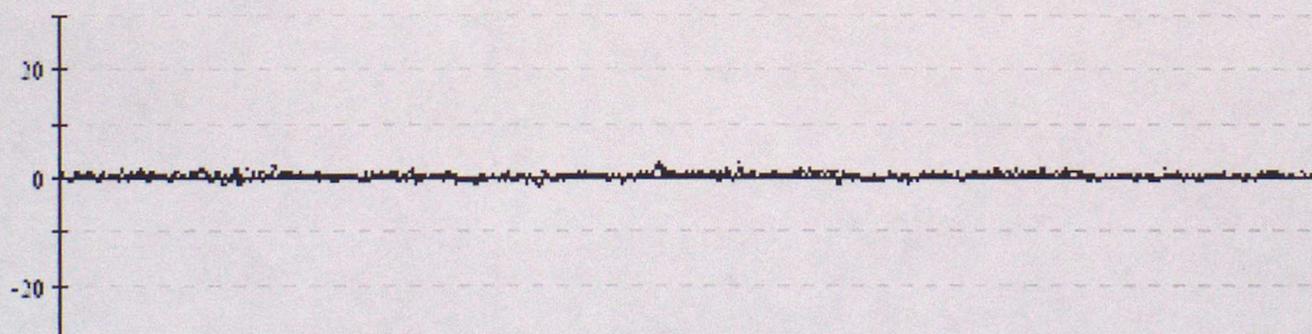
44611 Pressure



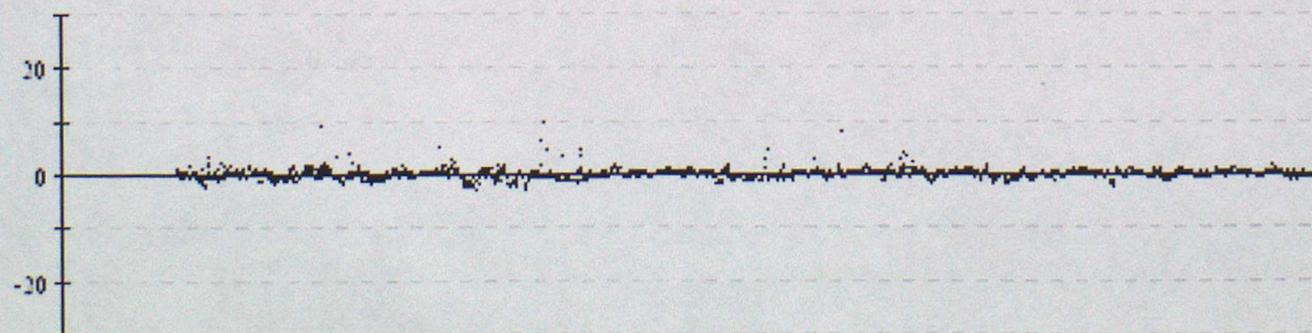
44612 Pressure



44613 Pressure

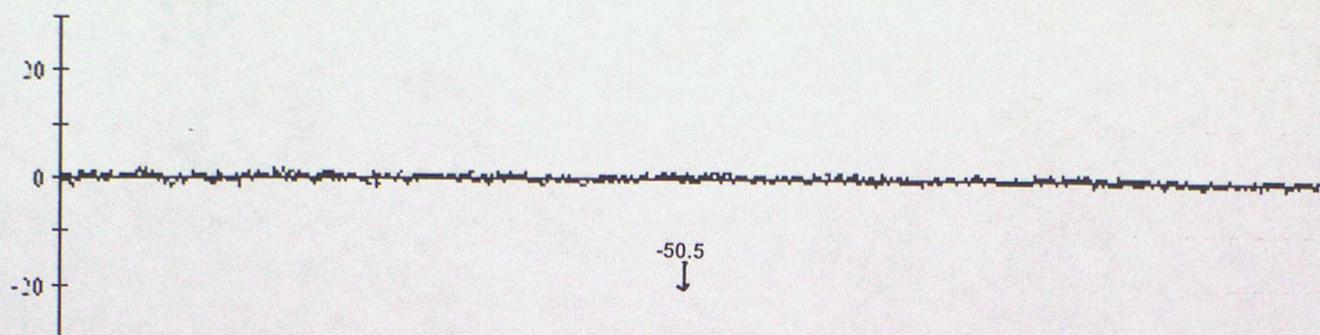


44616 Pressure

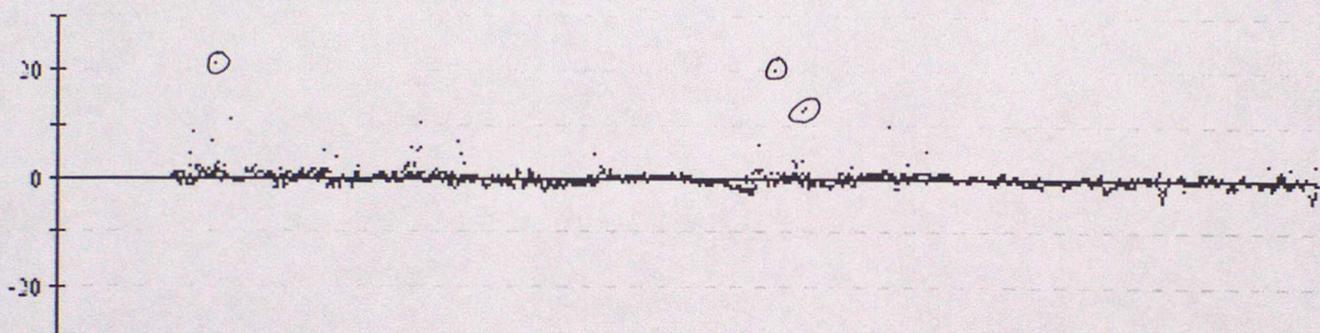


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

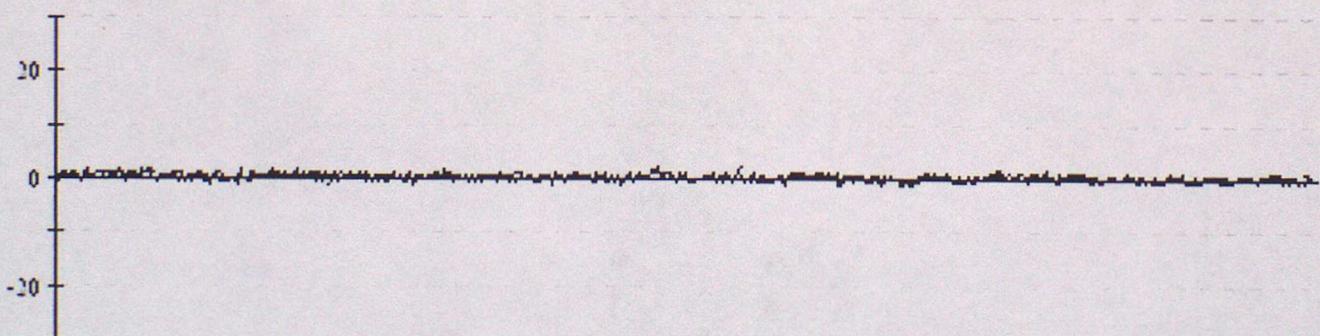
44620 Pressure



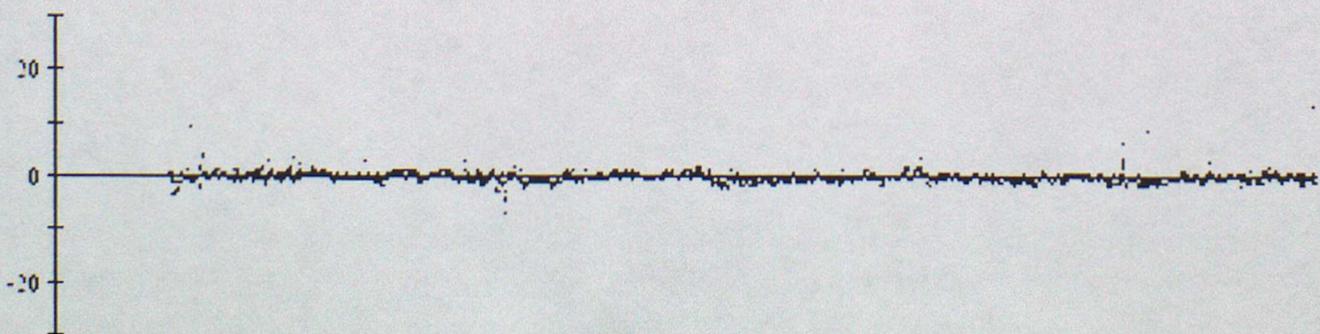
44621 Pressure



44623 Pressure

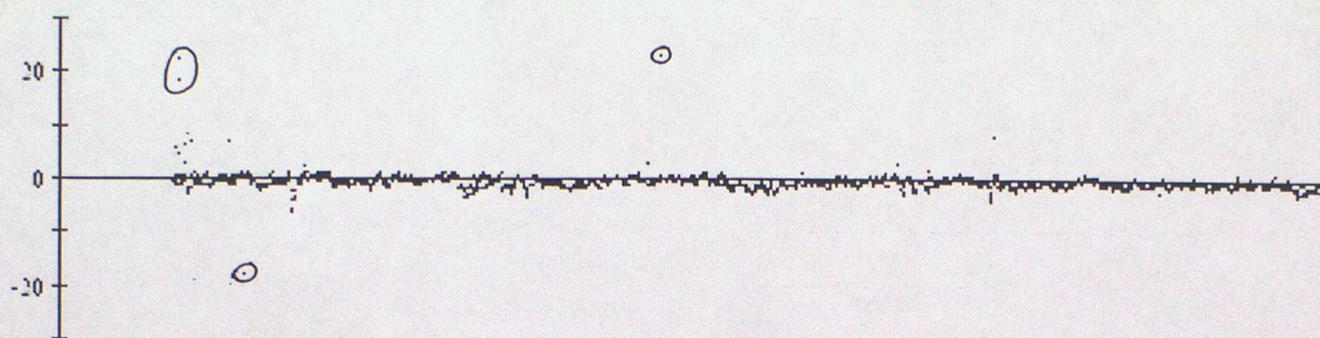


44624 Pressure

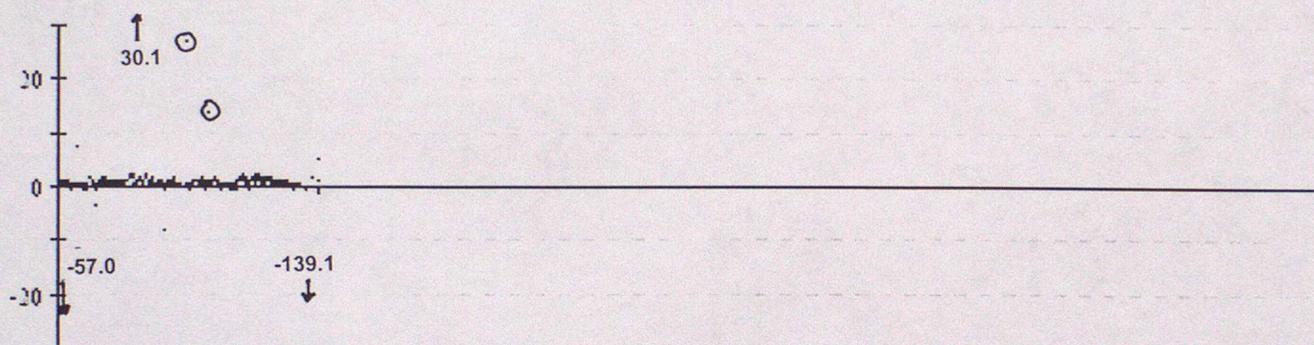


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

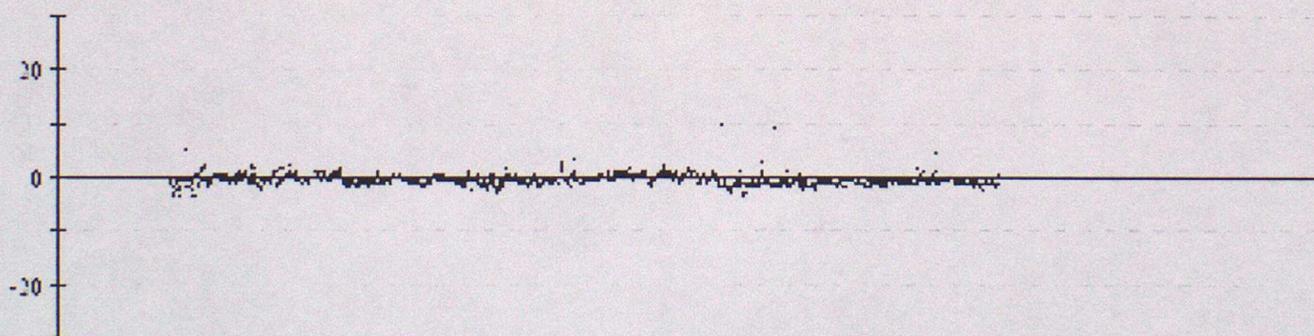
44625 Pressure



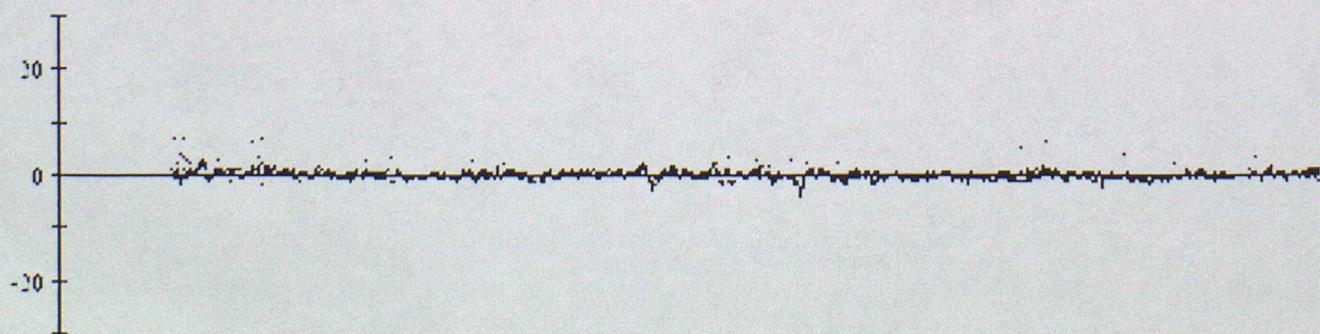
44628 Pressure



44629 Pressure



44721 Pressure

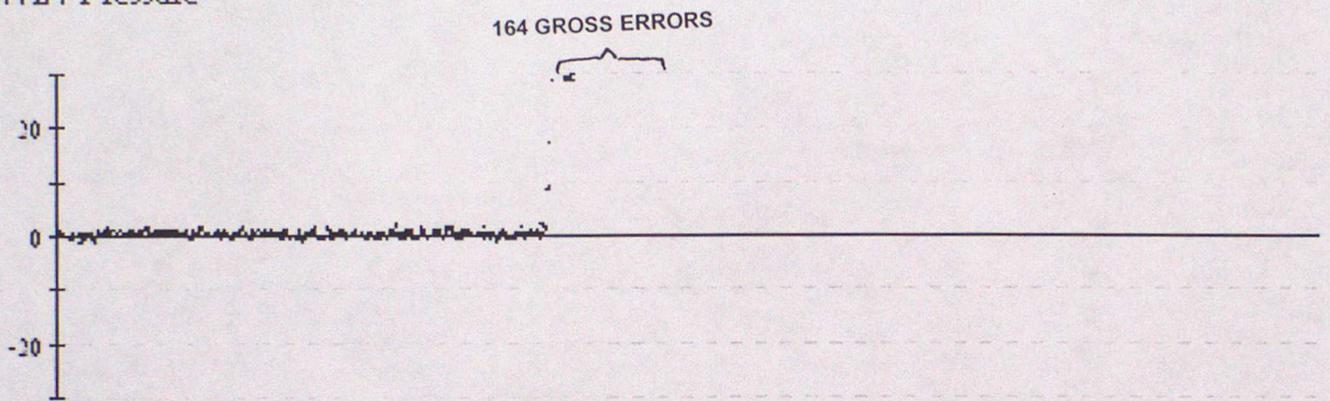


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

44722 Pressure



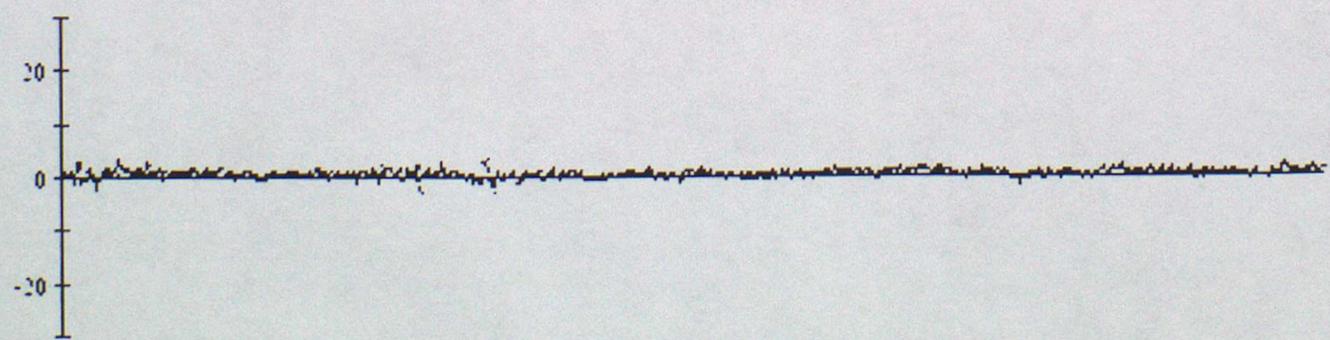
44724 Pressure



44725 Pressure

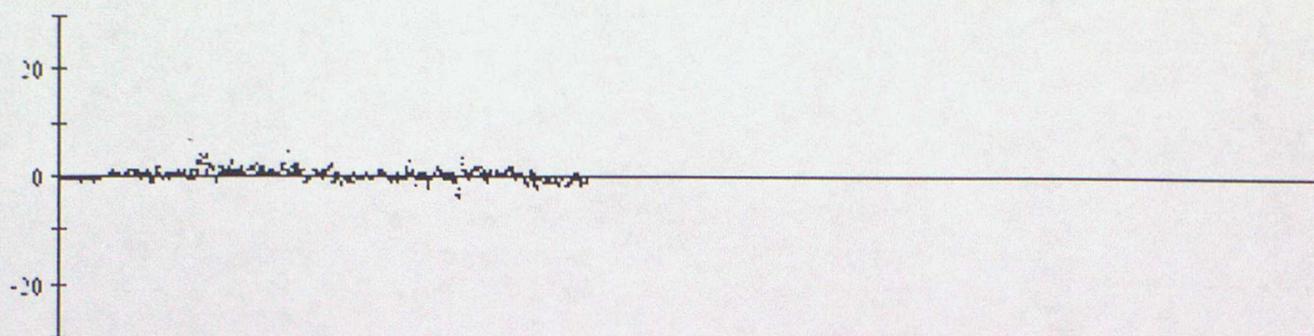


44729 Pressure



Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

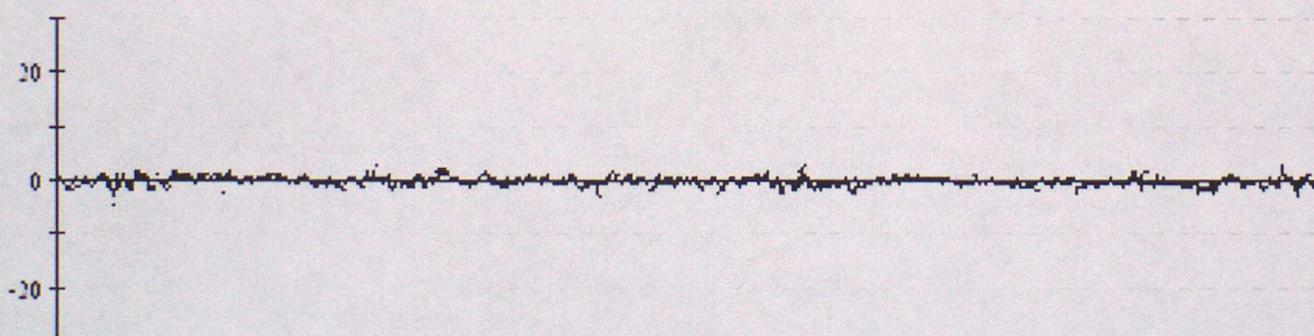
44741 Pressure



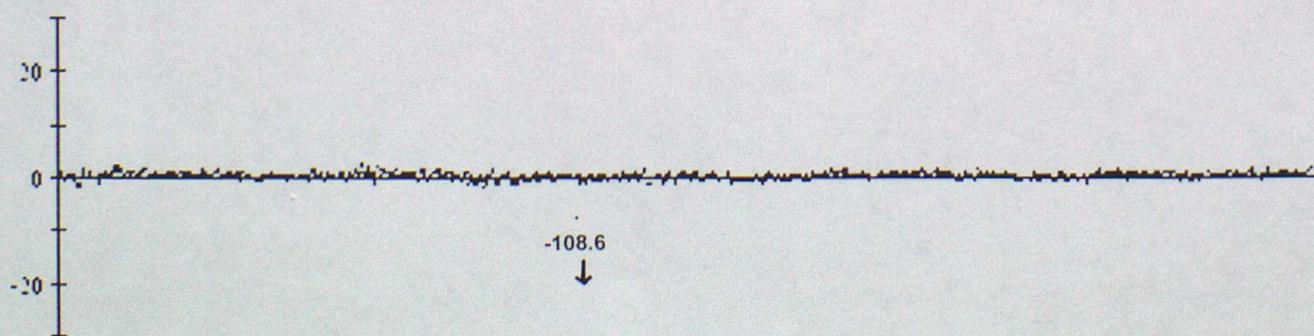
44743 Pressure



44761 Pressure

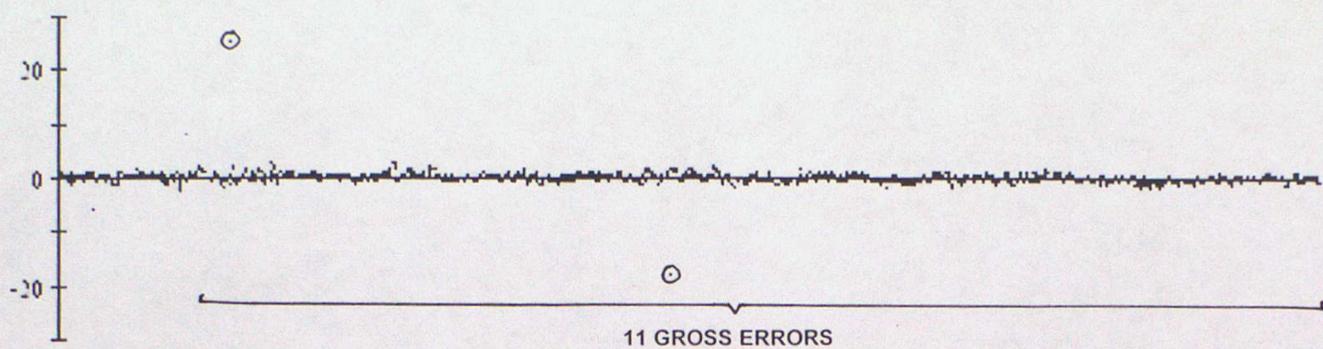


44762 Pressure

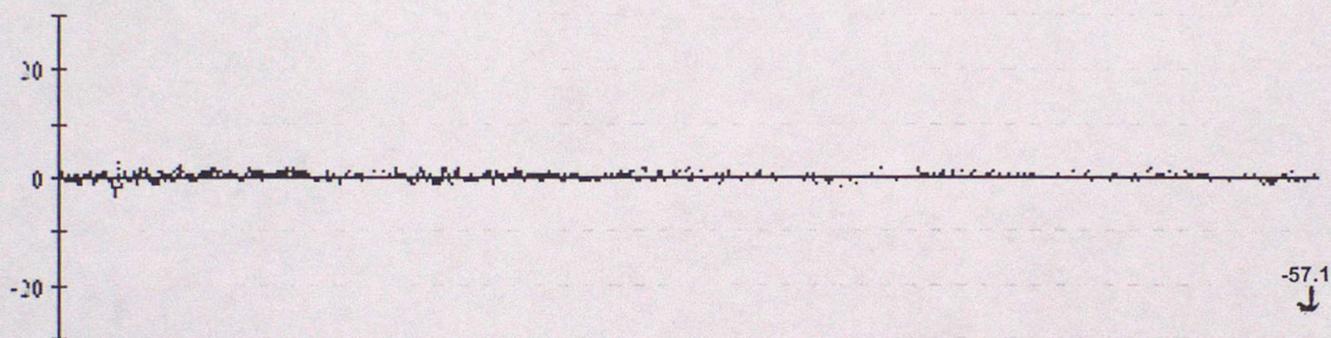


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

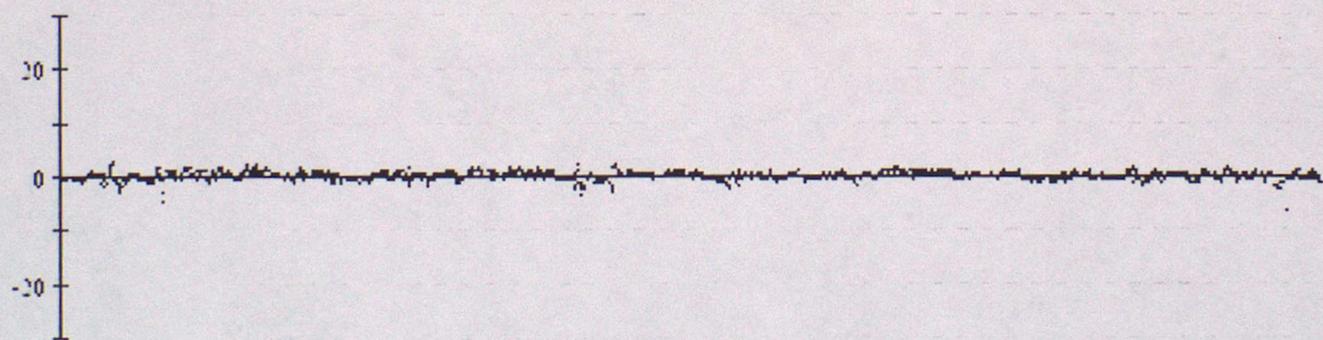
44765 Pressure



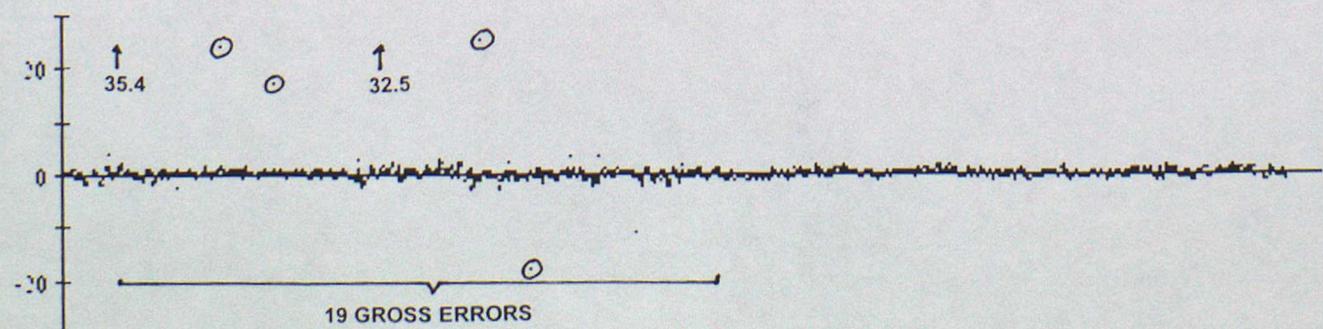
44770 Pressure



44771 Pressure

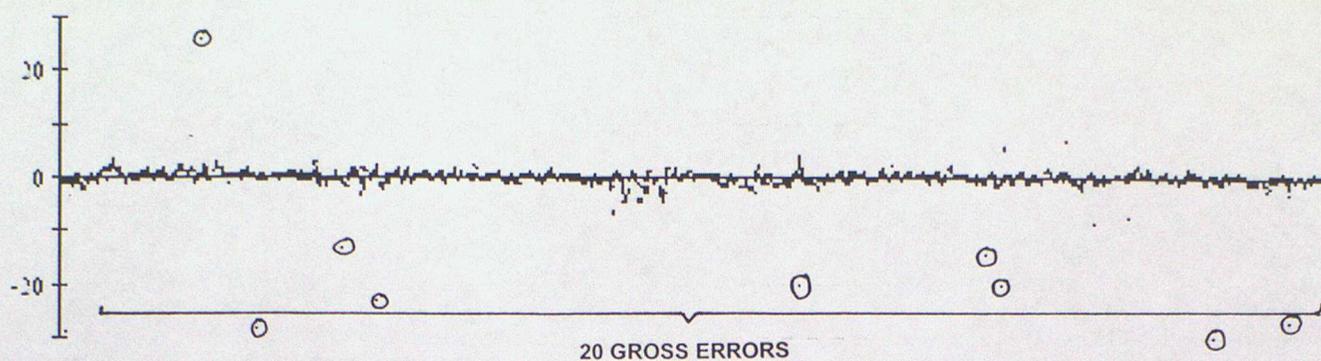


44772 Pressure

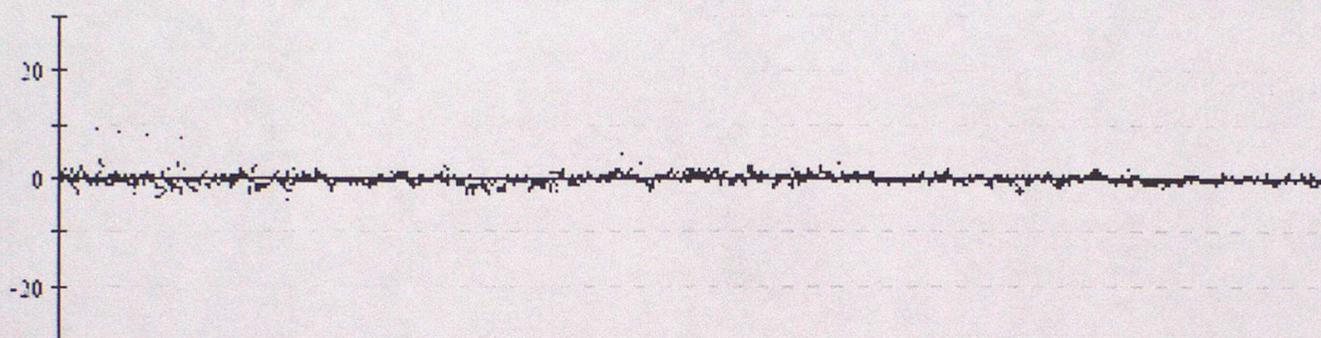


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

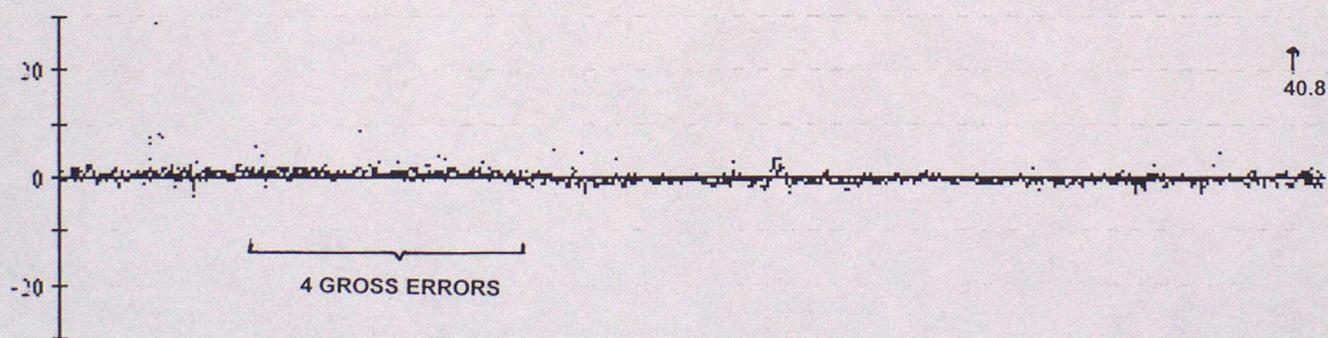
44774 Pressure



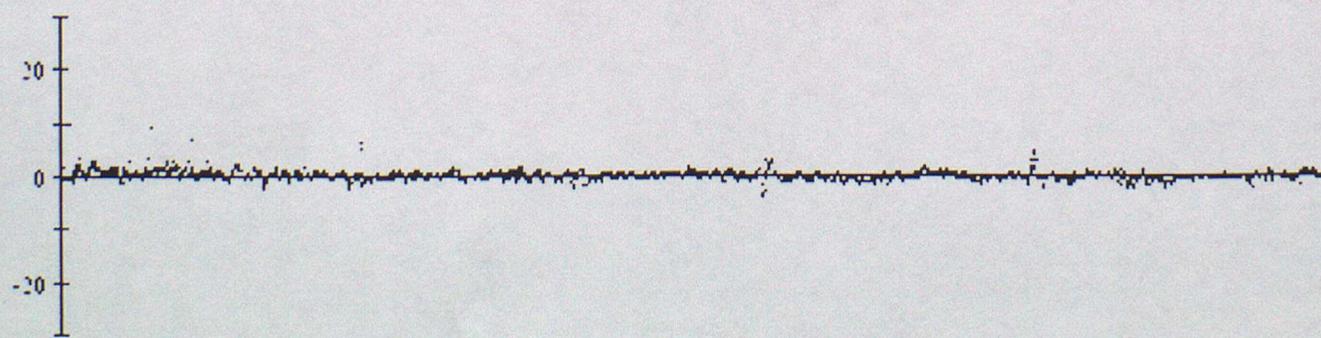
44775 Pressure



44776 Pressure



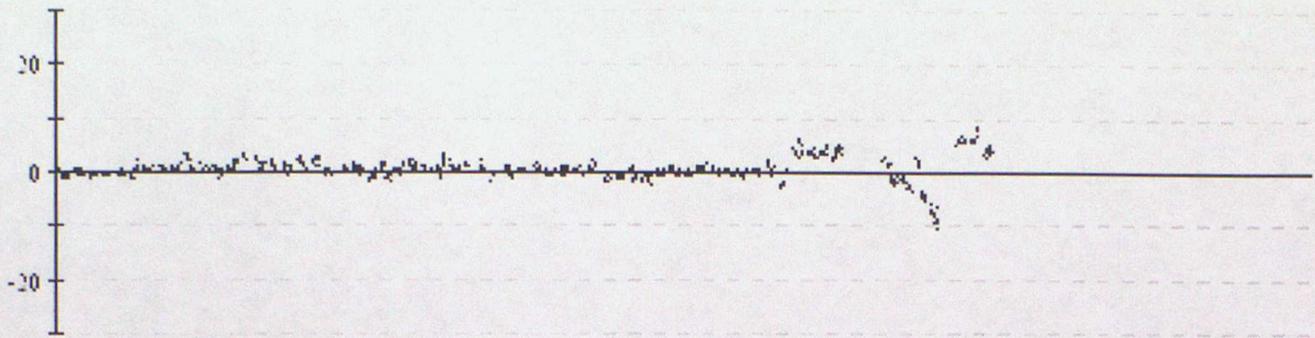
44778 Pressure



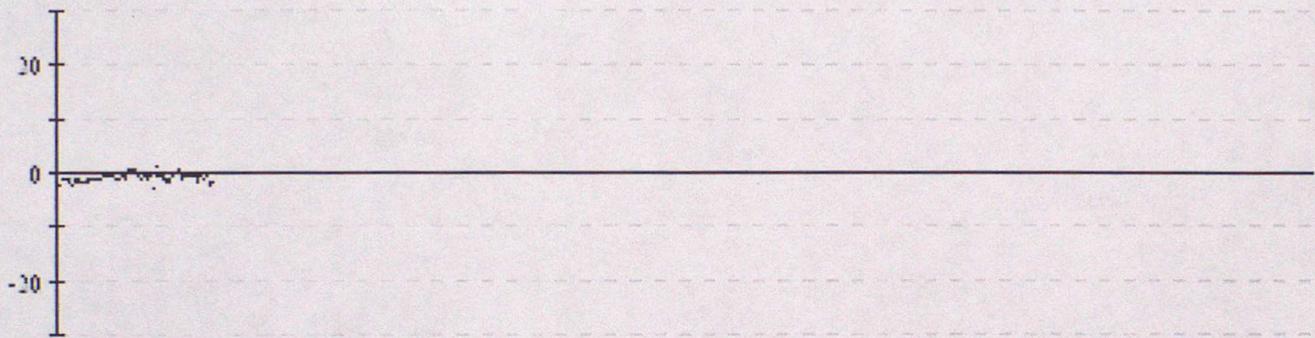
ANNEX B - TIME SERIES PLOTS OF PRESSURE

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

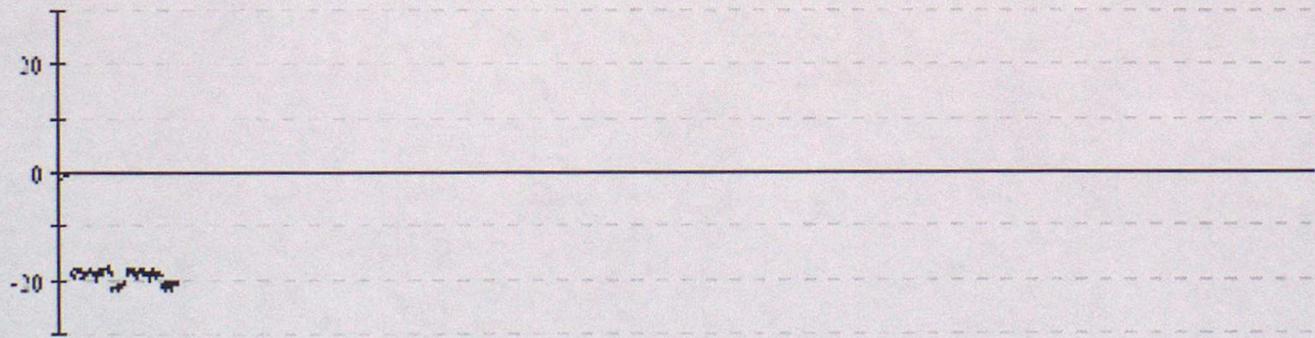
48581 Pressure



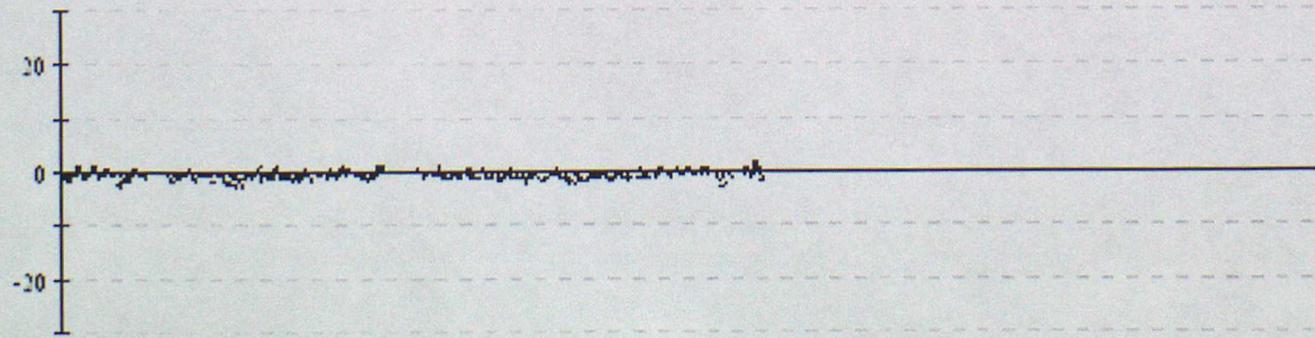
61522 Pressure



61538 Pressure

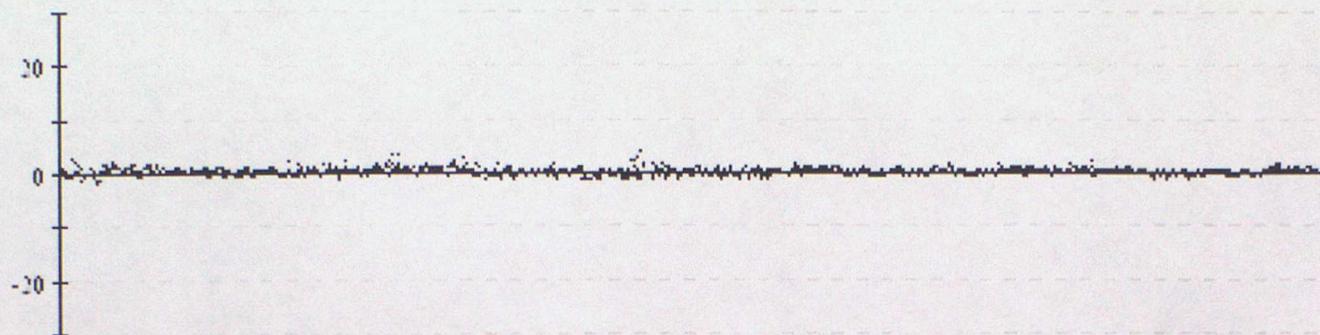


61539 Pressure

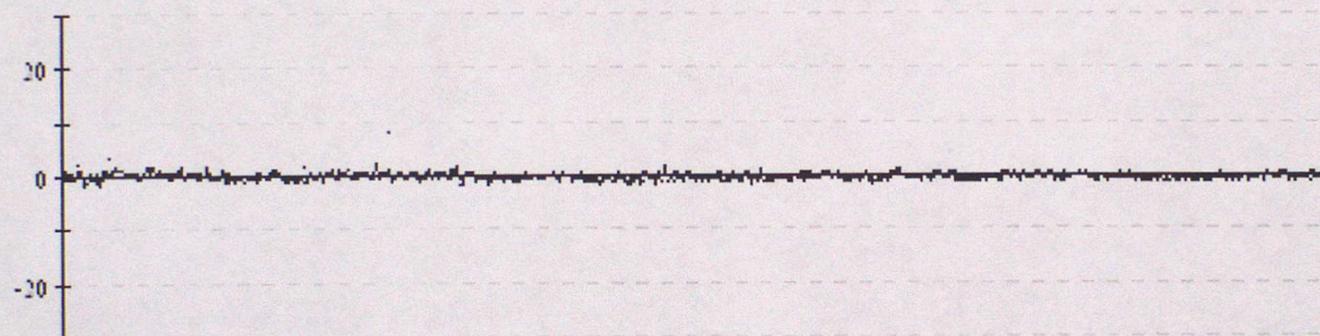


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

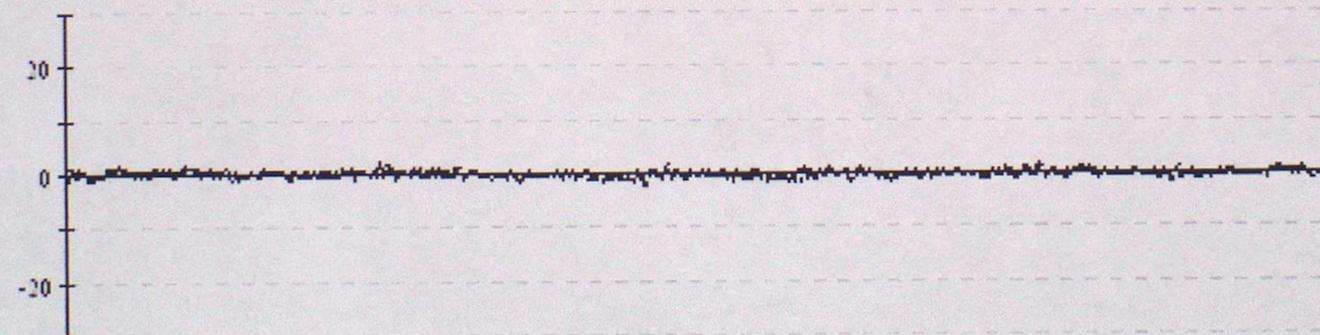
62501 Pressure



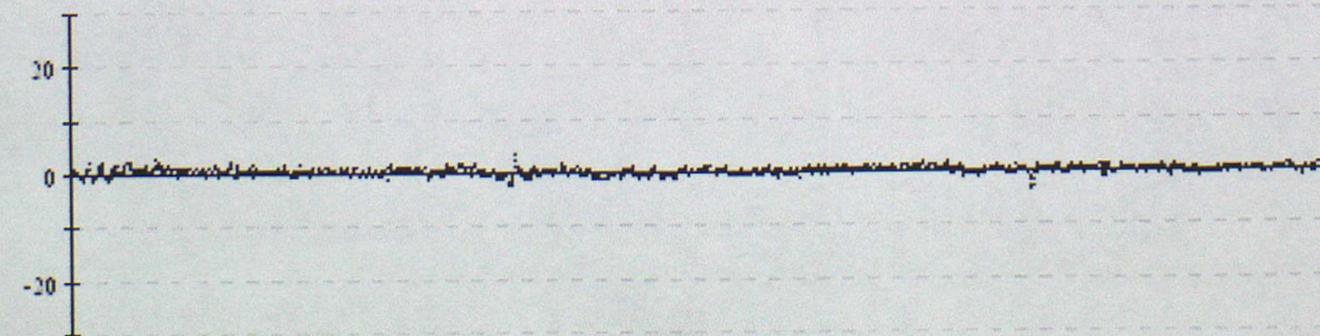
62503 Pressure



62504 Pressure

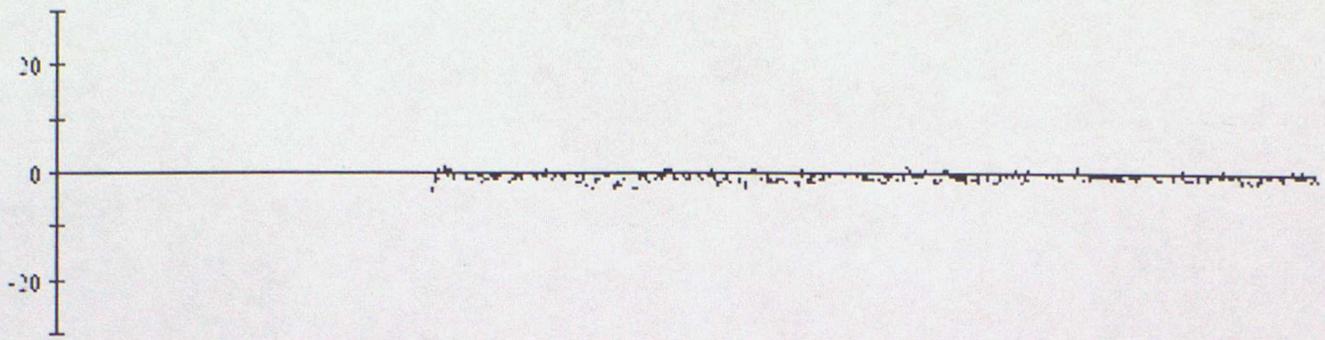


62505 Pressure

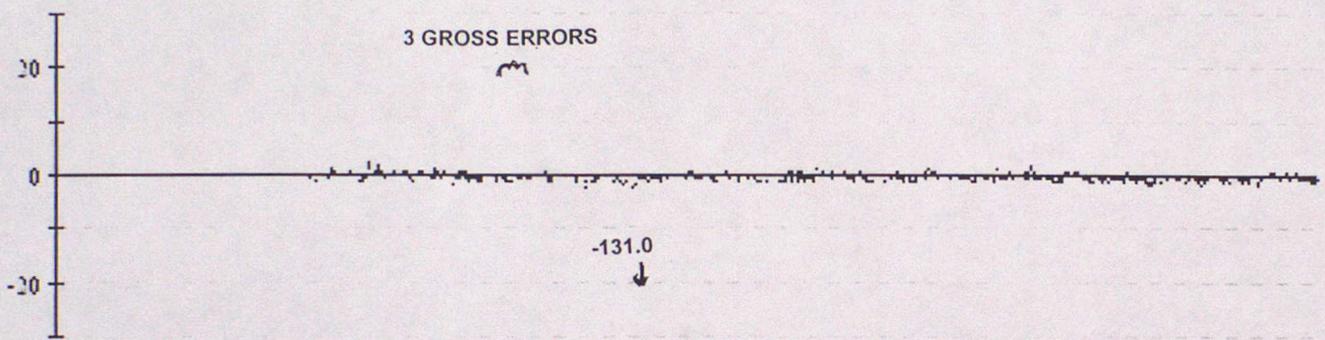


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

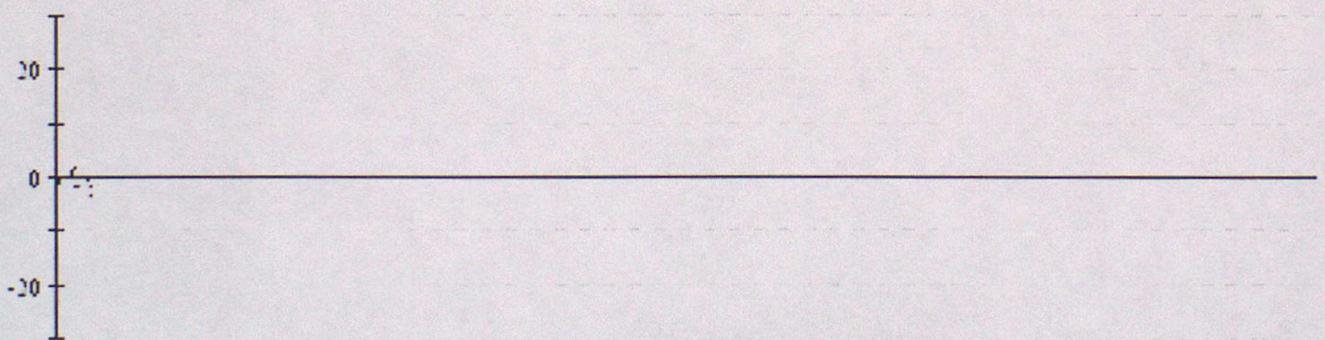
62510 Pressure



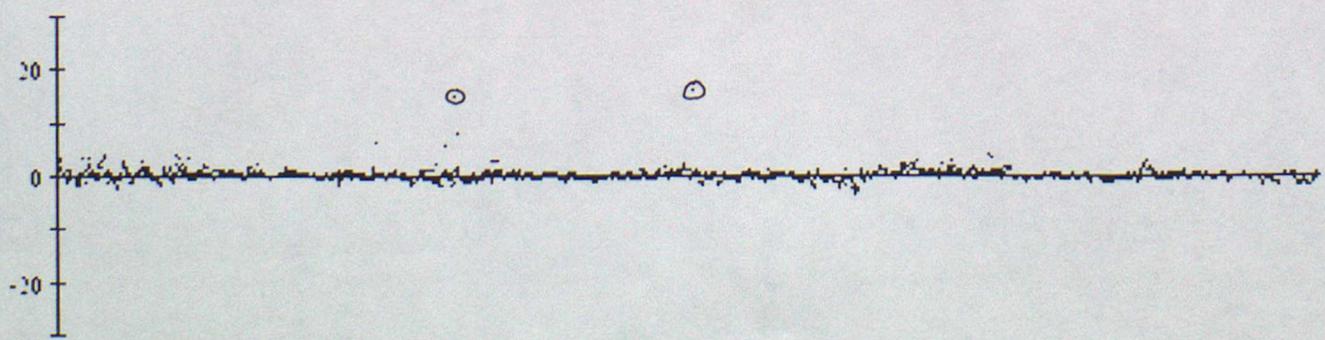
62511 Pressure



62513 Pressure

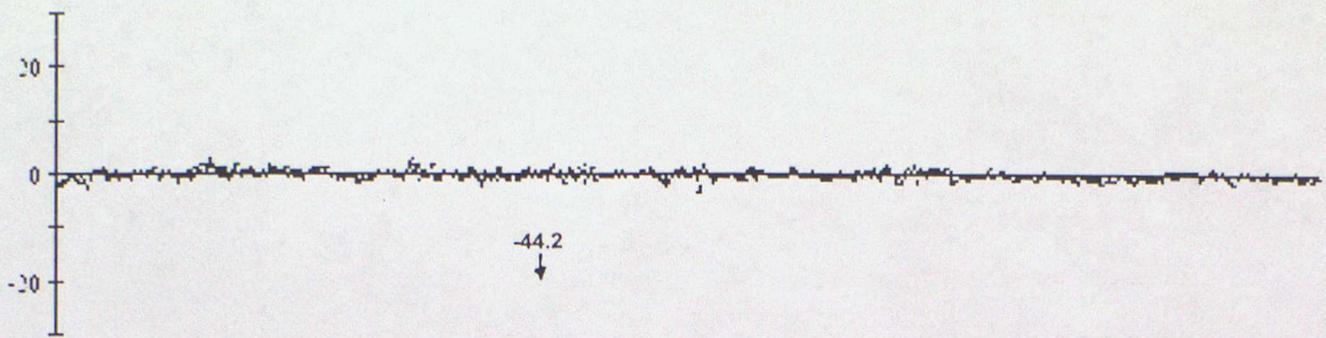


62514 Pressure

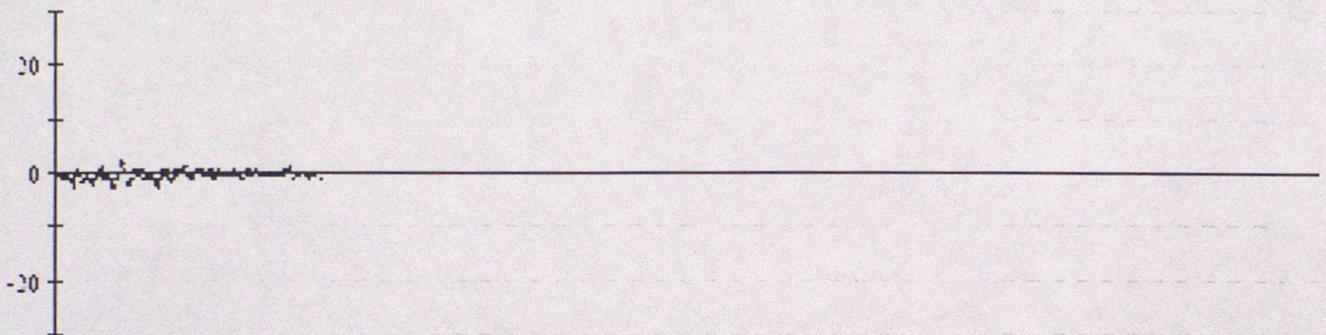


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

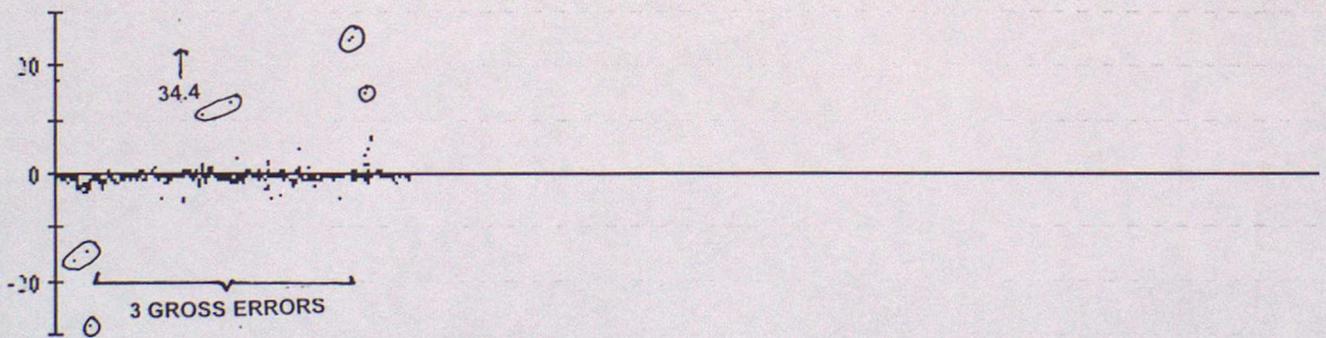
62596 Pressure



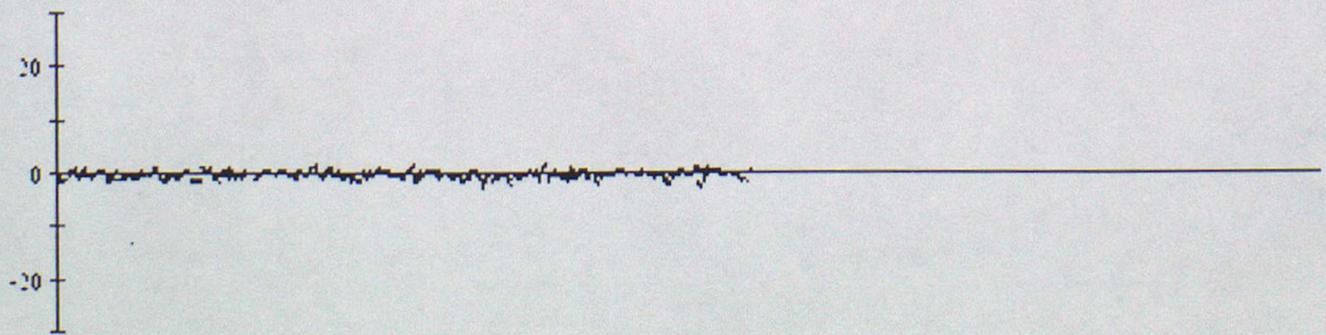
64517 Pressure



64548 Pressure

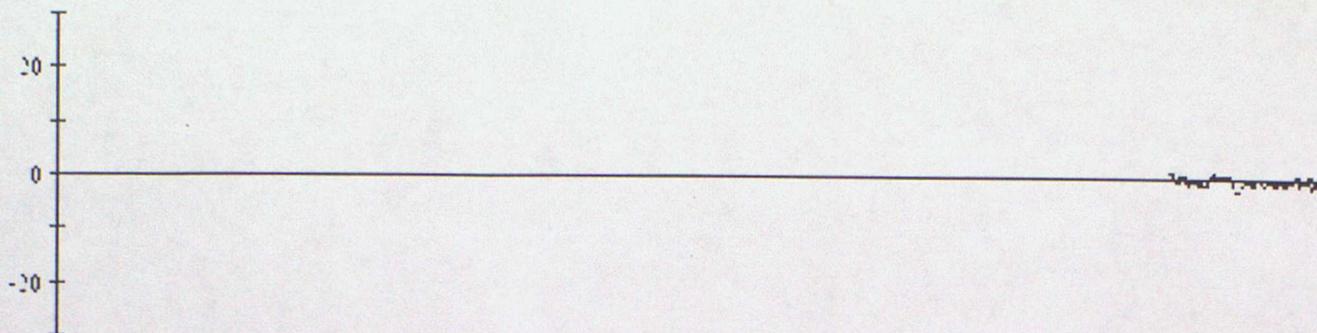


64698 Pressure



Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

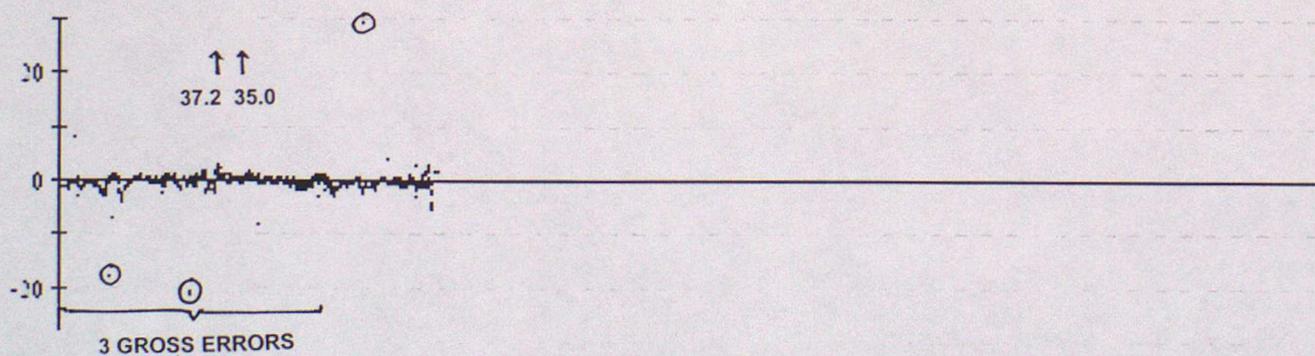
65516 Pressure



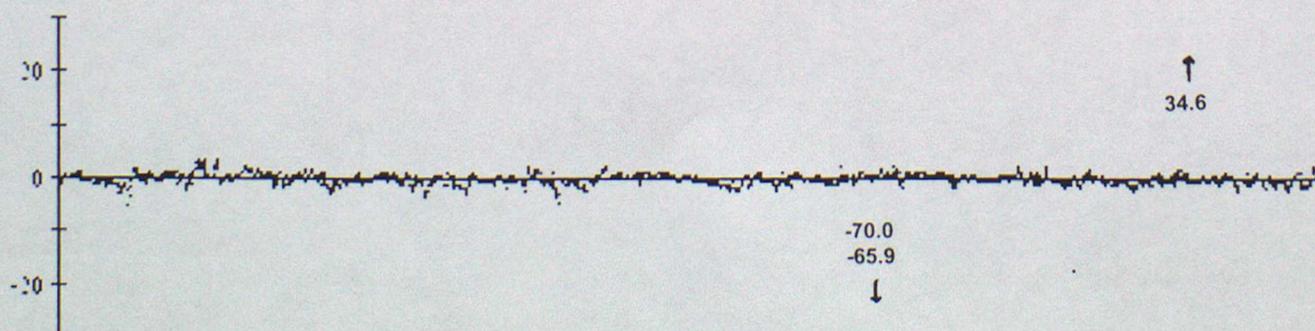
65581 Pressure



65593 Pressure

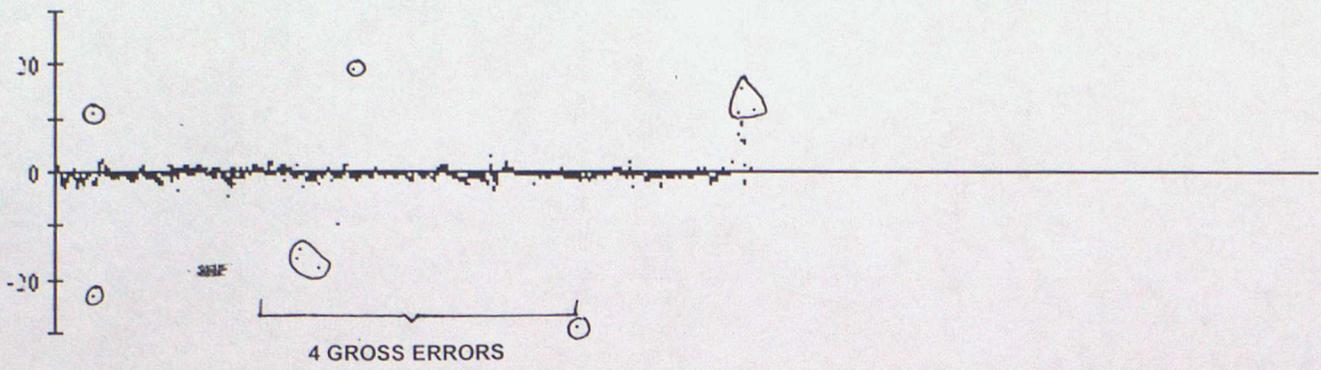


65595 Pressure

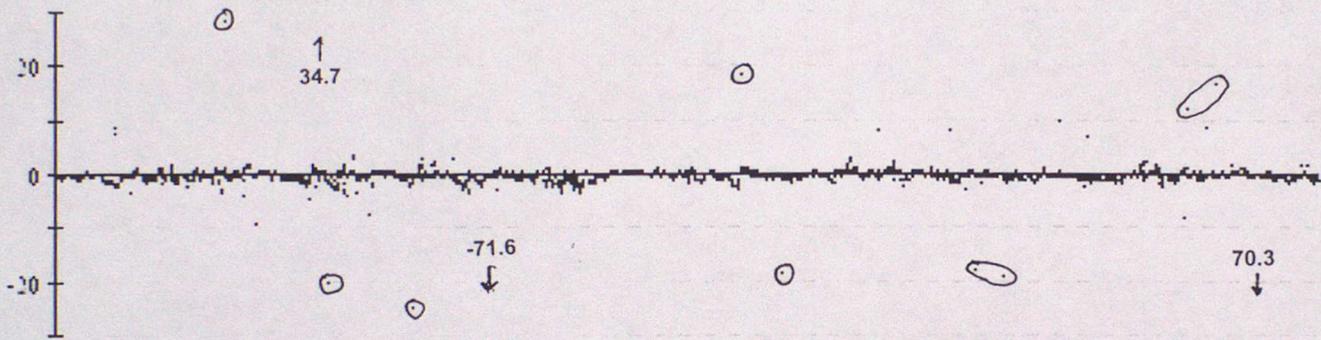


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

65600 Pressure



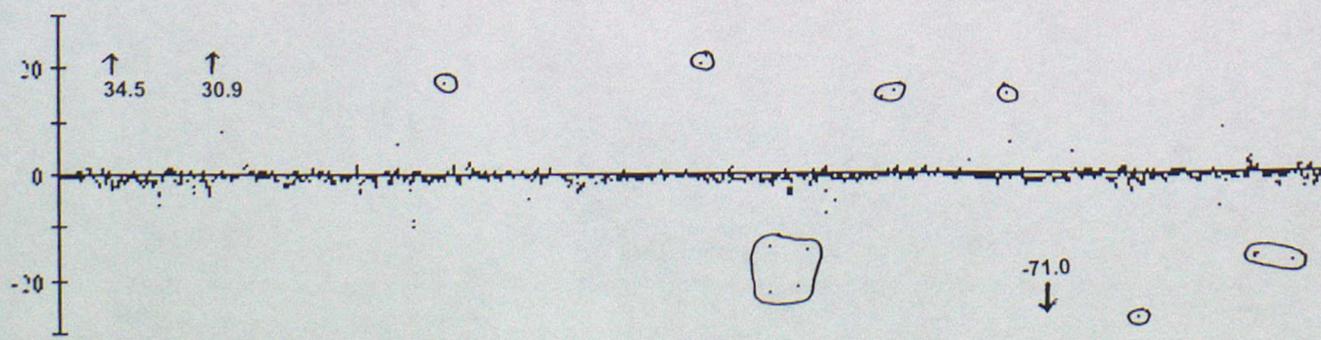
65602 Pressure



65662 Pressure



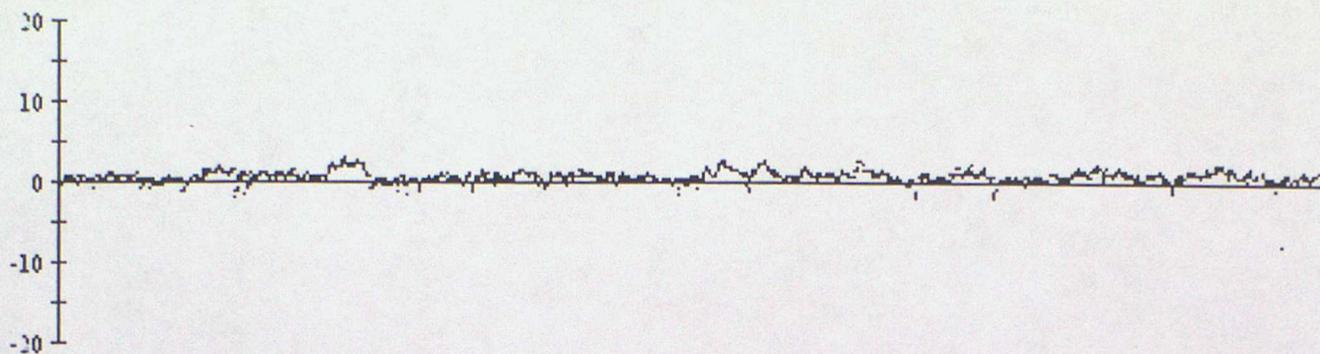
65663 Pressure



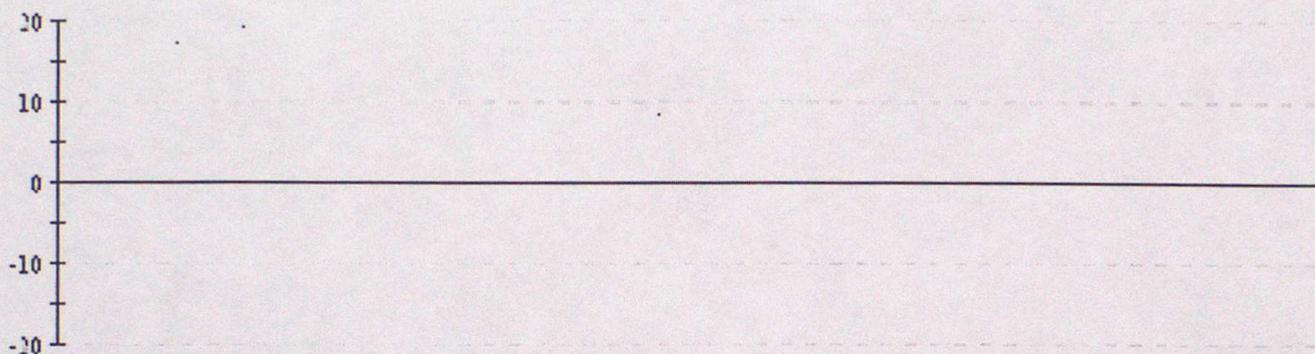
ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

44613 Air Temperature

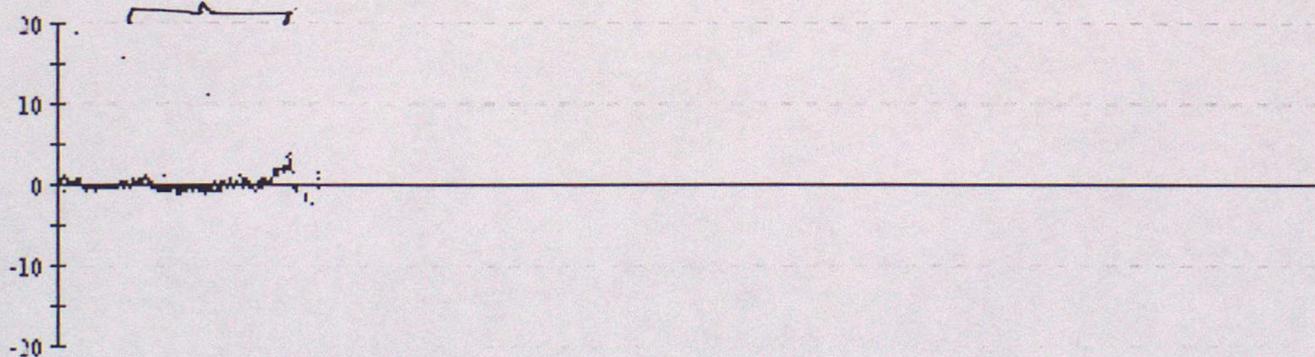


44625 Air Temperature

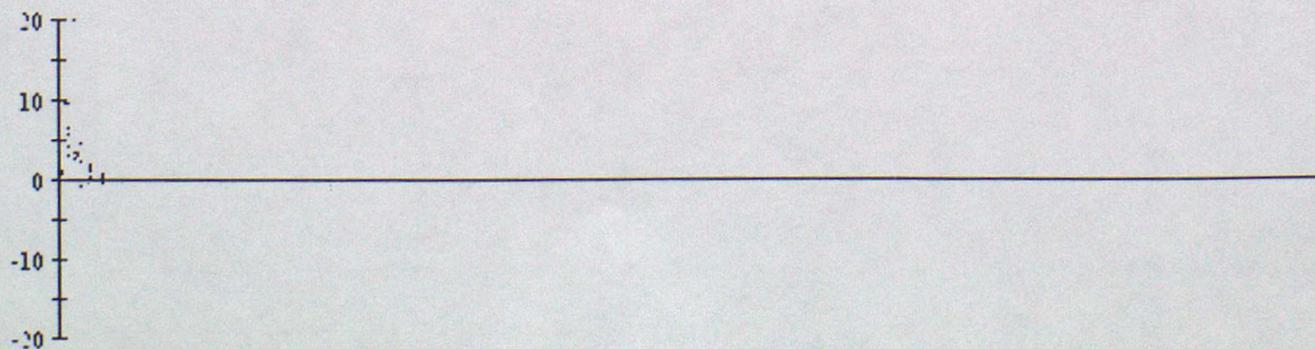


44628 Air Temperature

3 GROSS ERRORS

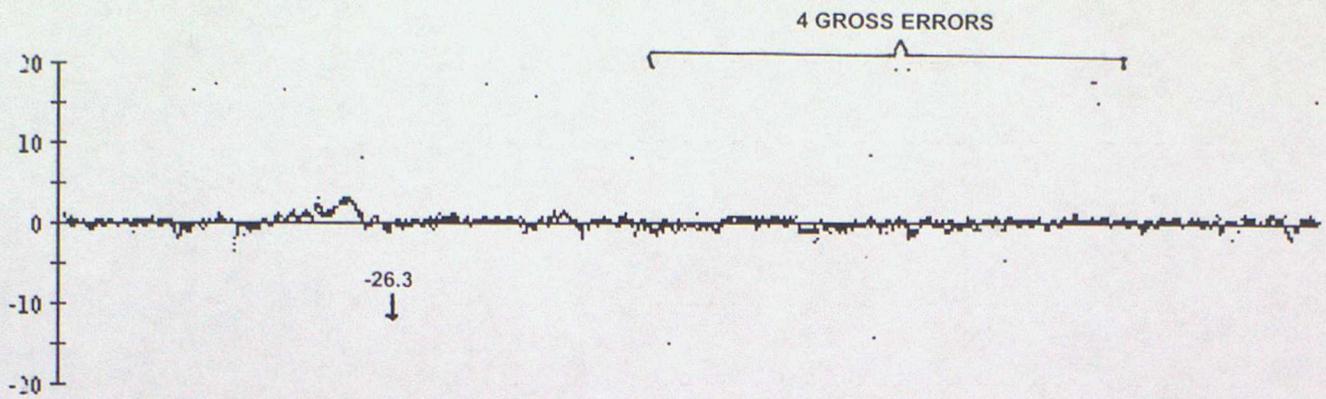


44743 Air Temperature

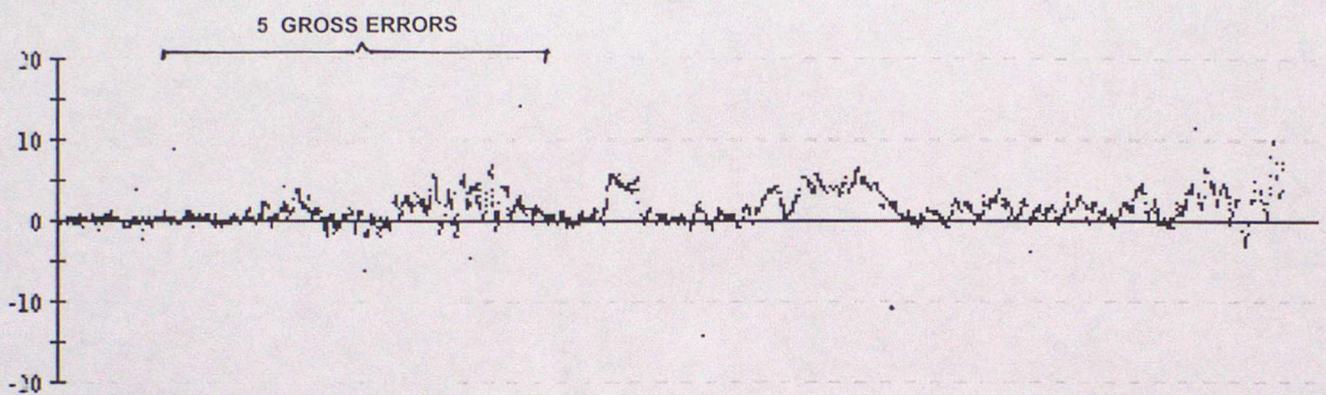


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

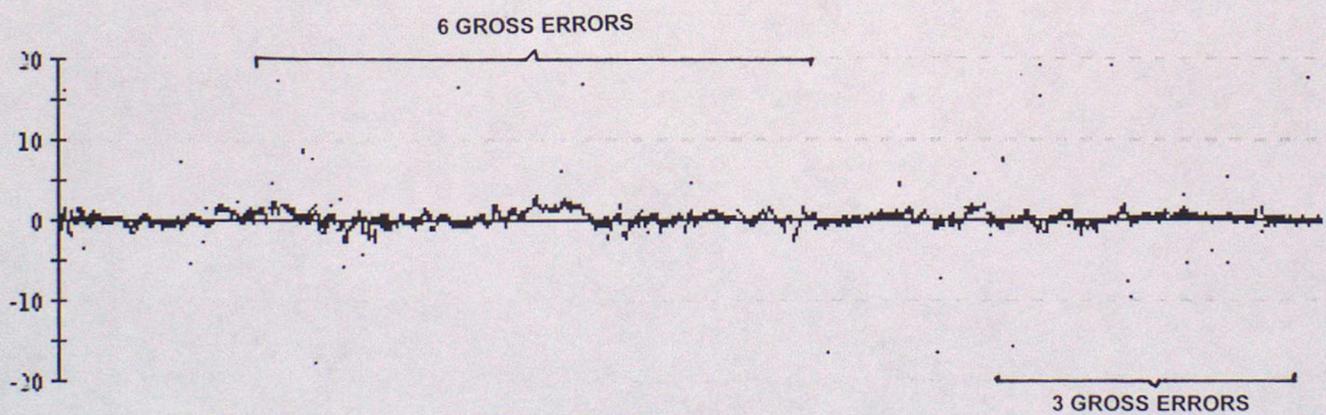
44765 Air Temperature



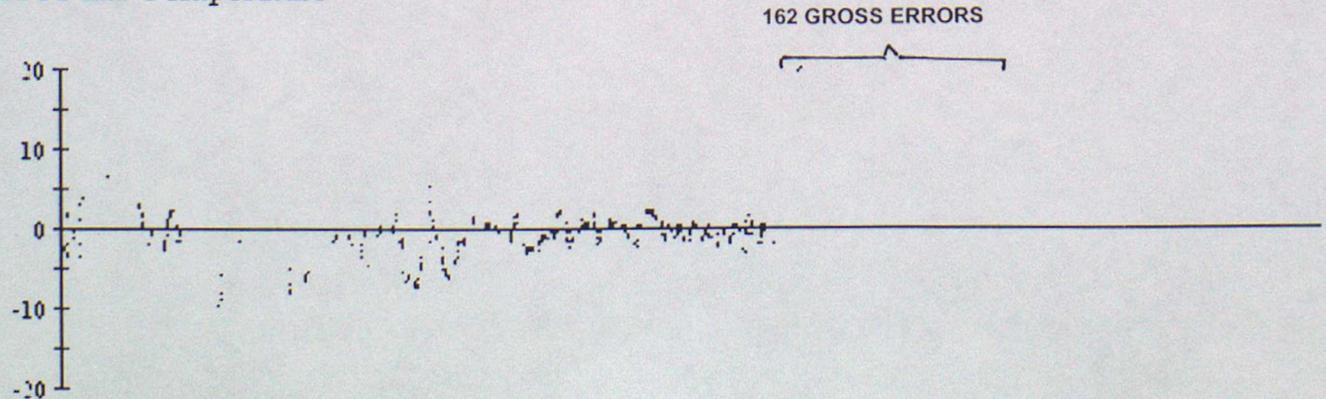
44772 Air Temperature



44774 Air Temperature

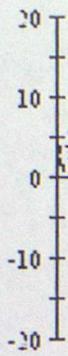


48581 Air Temperature

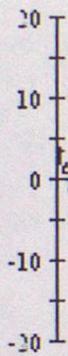


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

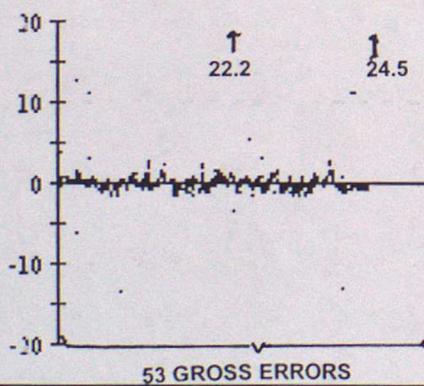
61538 Air Temperature



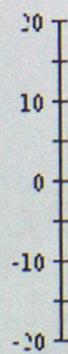
61539 Air Temperature



64548 Air Temperature

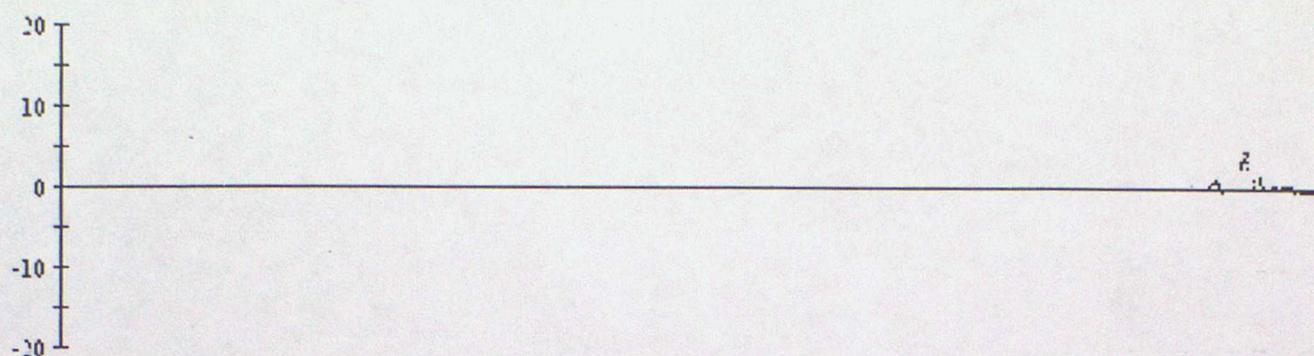


65516 Air Temperature

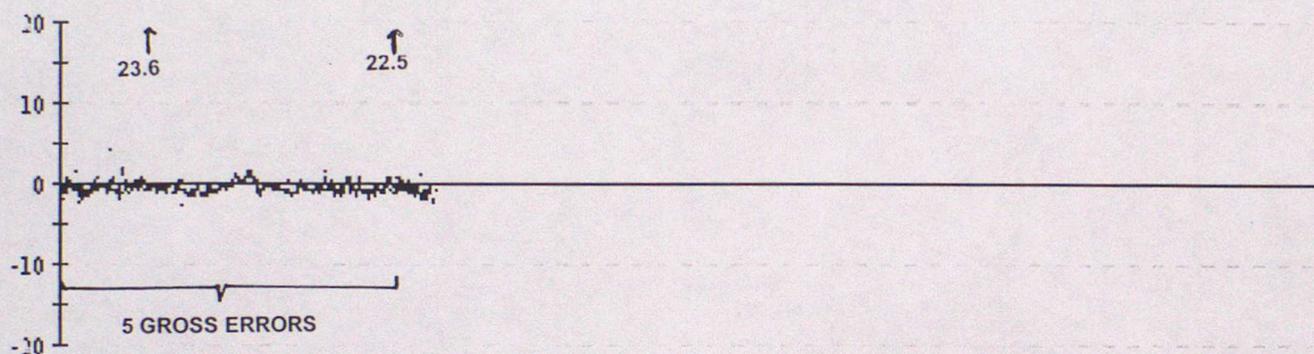


Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

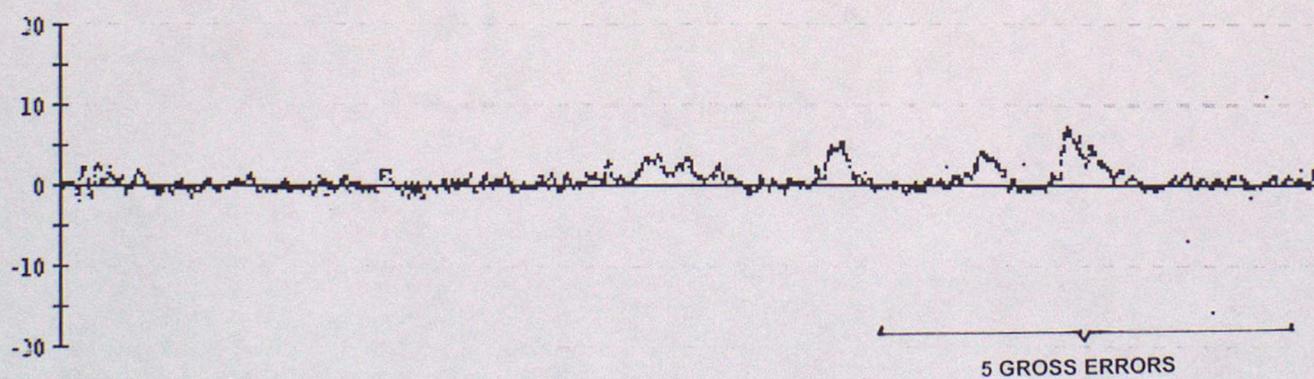
65581 Air Temperature



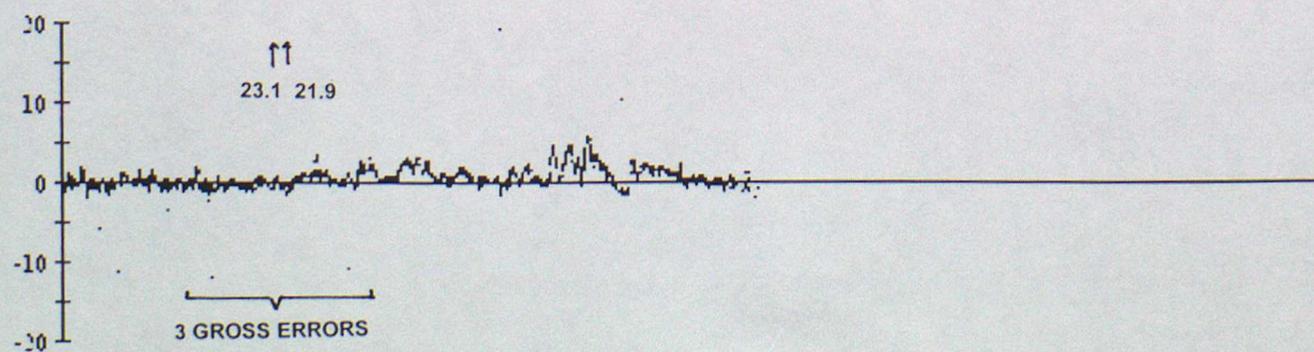
65593 Air Temperature



65595 Air Temperature



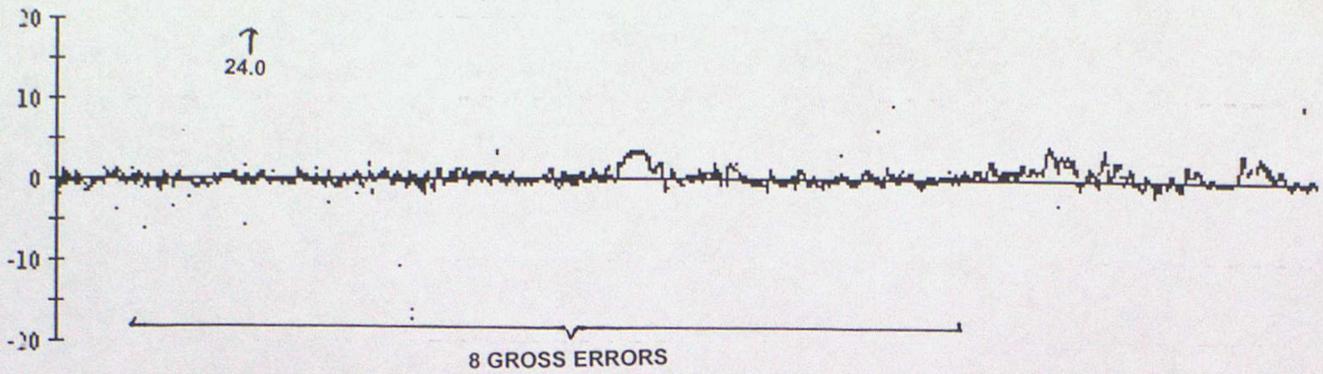
65600 Air Temperature



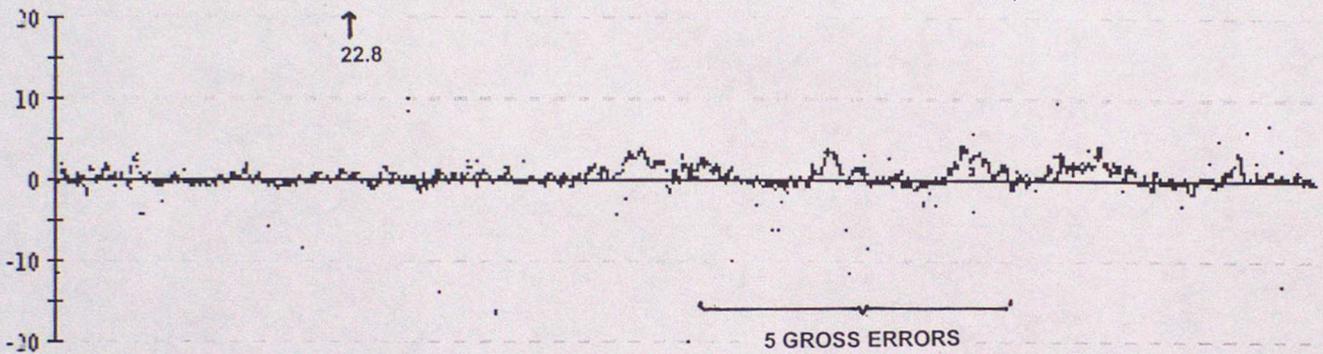
ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

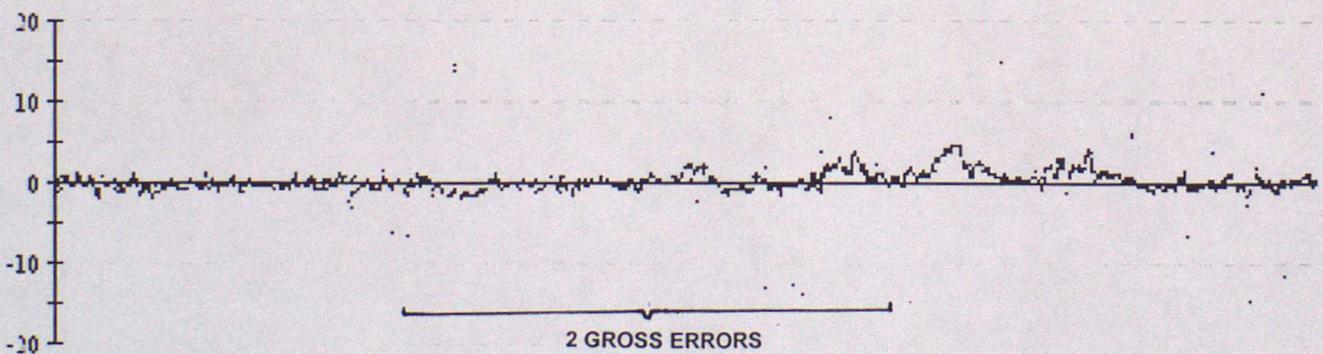
65602 Air Temperature



65662 Air Temperature



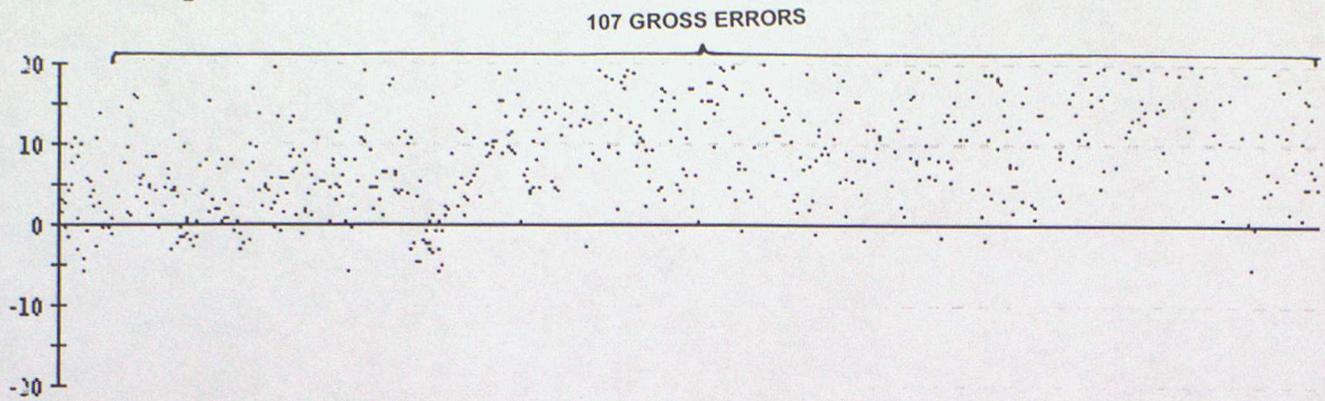
65663 Air Temperature



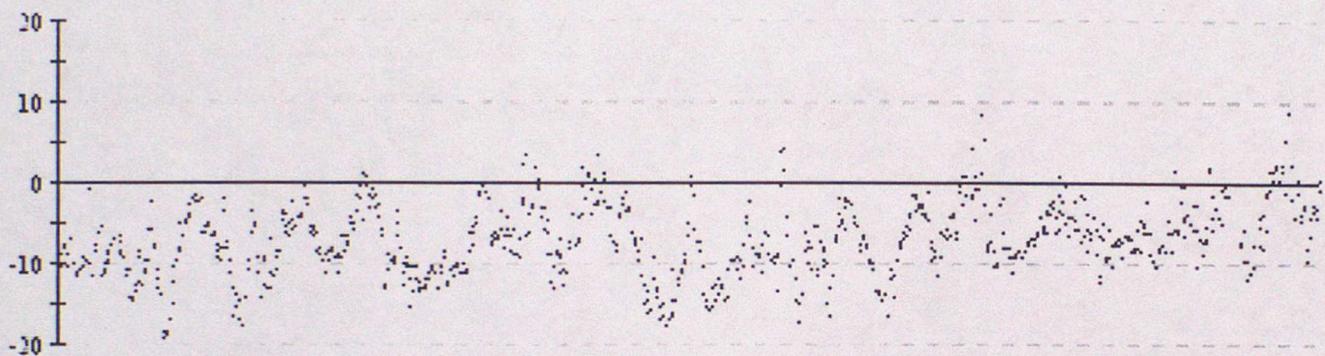
ANNEX D - TIME SERIES PLOTS OF WIND SPEED

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

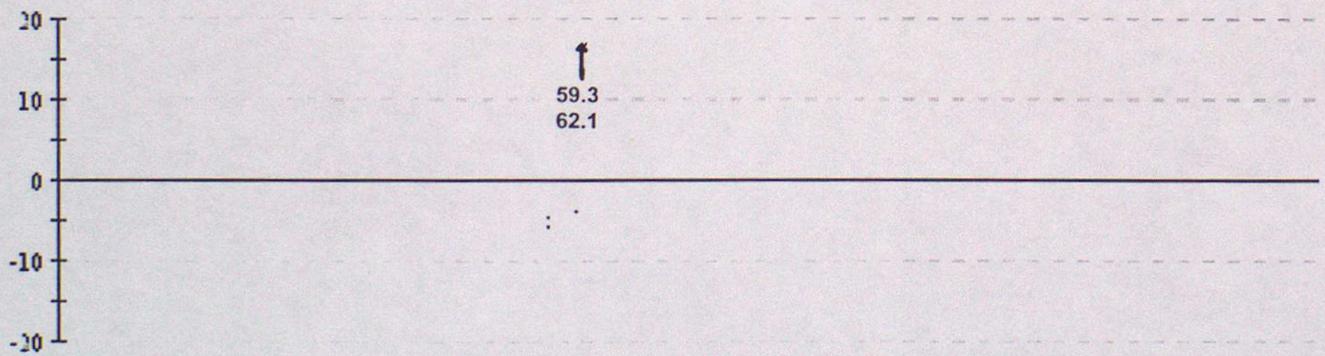
41639 Wind speed



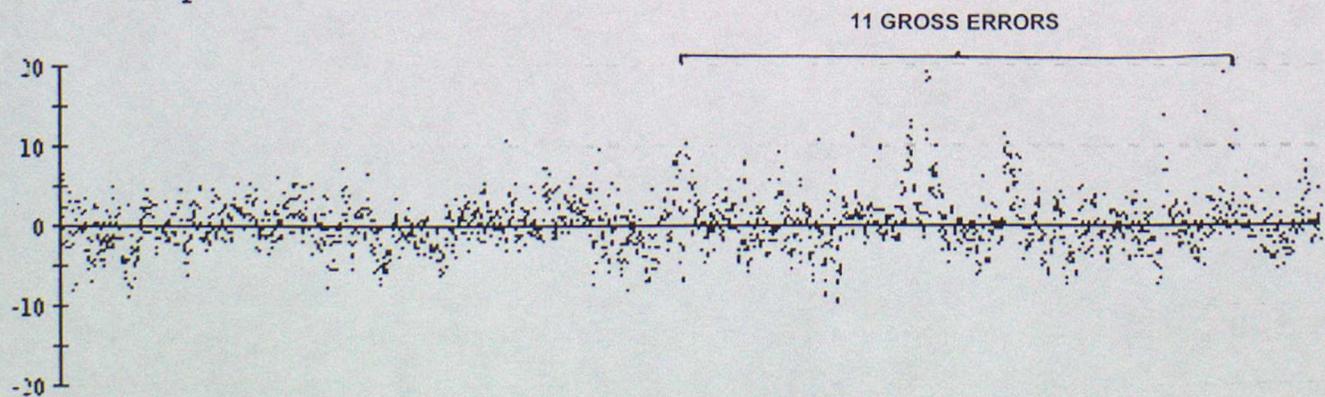
41644 Wind speed



44762 Wind speed



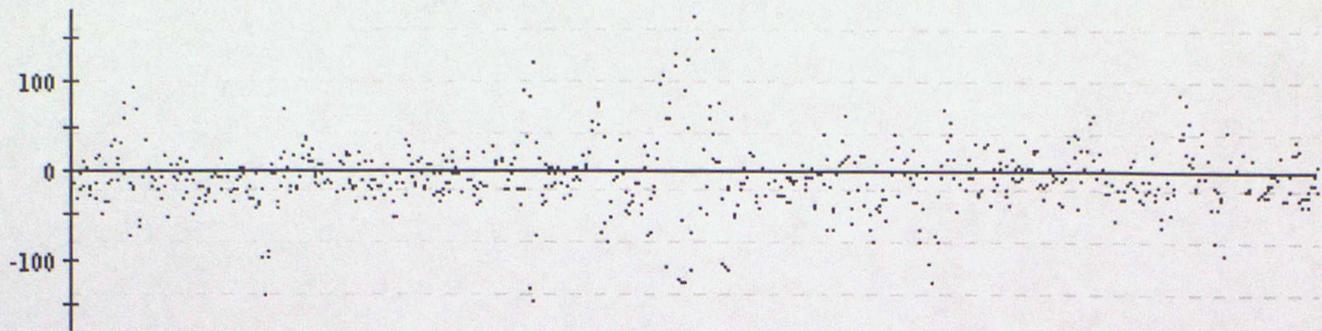
62504 Wind speed



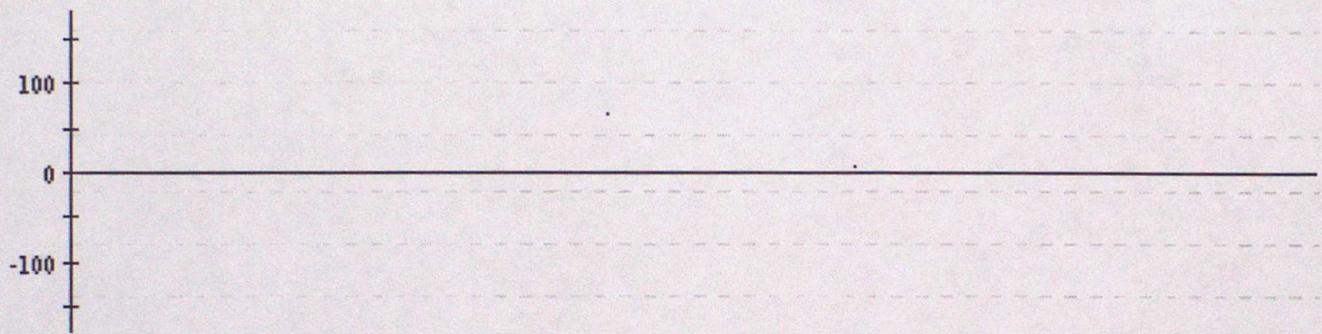
ANNEX E - TIME SERIES PLOTS OF WIND DIRECTION

Data from 00z on 01/04/2001 to 23z on 30/06/2001 (OBS - Background field)

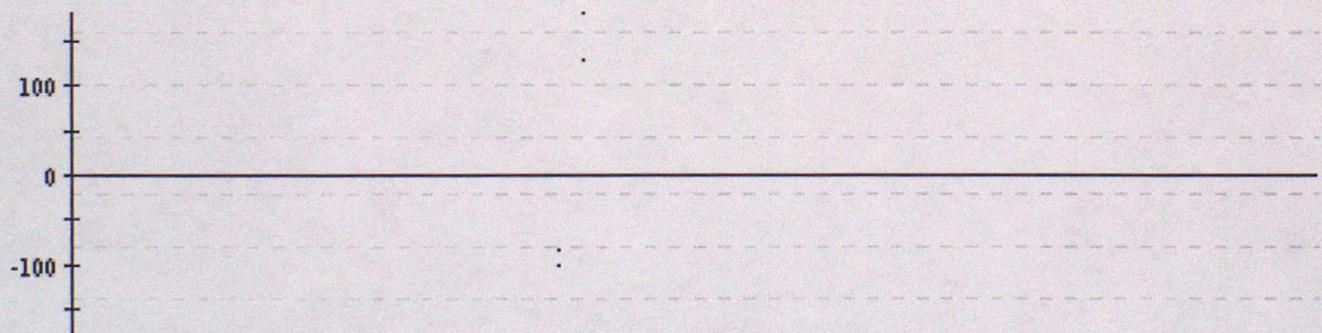
41639 Wind direction



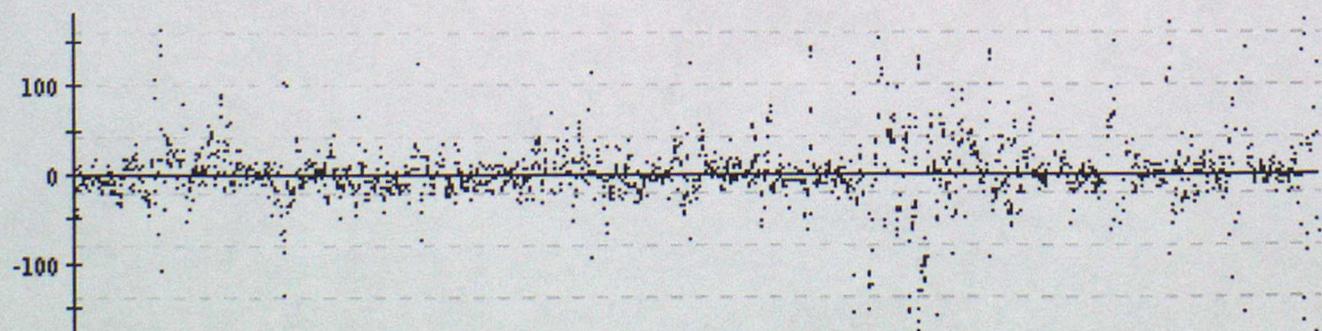
41644 Wind direction



44762 Wind direction



62504 Wind direction



ANNEX F - SUMMARY TABLE OF OPERATIONAL DRIFTING BUOYS

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
41504	26967	UK	*					*	01/04 - 30/06
41505	26968	UK	*					*	01/04 - 30/06
41523	28840	UK	*					*	01/04 - 30/06
41571	18905	UK	*					*	01/04 - 30/06
41572	18906	US	*					*	01/04 - 17/05
41639	28846	US	*			*	*	*	01/04 - 30/06
41644	28853	US	*			*	*	*	01/04 - 30/06
44546	25374	UK	*	*				*	01/04 - 30/06
44548	27617	UK	*	*				*	01/04 - 30/06
44549	22648	UK	*	*				*	01/04 - 30/06
44550	23703	UK	*	*				*	01/04 - 30/06
44610	12734	F	*	*				*	01/04 - 30/06
44611	27616	UK	*	*				*	01/04 - 30/06
44612	27619	UK	*	*				*	01/04 - 30/06
44613	28467	UK	*	*	*				01/04 - 30/06
44616	17149	UK	*	*				*	09/04 - 30/06
44620	27622	UK	*	*				*	01/04 - 30/06
44621	17150	UK	*	*				*	09/04 - 30/06
44623	27624	UK	*	*				*	01/04 - 30/06
44624	17151	UK	*	*				*	09/04 - 30/06
44625	17153	UK	*	*	*			*	09/04 - 30/06
44628	12287	UK	*	*	*			*	01/04 - 19/04
44629	18388	UK	*	*				*	09/04 - 30/06
44721	18702	UK	*	*				*	09/04 - 30/06
44722	18706	UK	*	*				*	09/04 - 30/06
44725	27923	UK	*	*				*	01/04 - 30/06
44729	25375	UK	*	*				*	01/04 - 30/06
44741	25373	UK	*	*				*	01/04 - 09/05
44743	12414	UK	*	*	*			*	01/04 - 04/04

ANNEX F - CONT'd

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
44774	12286	UK	*	*	*			*	01/04 - 30/06
44775	25372	UK	*	*				*	01/04 - 30/06
44776	25371	UK	*	*				*	01/04 - 30/06
44778	25370	UK	*	*				*	01/04 - 30/06
48581	1301	US	*	*	*				01/04 - 07/06
61522	12675	US	*					*	01/04 - 12/04
61538	27088	US	*		*			*	01/04 - 09/04
61539	27102	US	*		*			*	01/04 - 21/05
62501	7139	F	*	*				*	01/04 - 30/06
62503	17926	F	*	*				*	01/04 - 30/06
62504	17928	F	*	*		*	*	*	01/04 - 30/06
62505	17929	F	*	*				*	01/04 - 30/06
62510	26748	F	*					*	27/04 - 30/06
62511	26751	F	*					*	18/04 - 30/06
62513	12731	F	*					*	01/04 - 03/04
62514	7119	F	*	*				*	01/04 - 30/06
62596	16391	N	*	*				*	01/04 - 30/06
64517	14178	F	*	*				*	01/04 - 20/04
64548	1153	N	*	*	*			*	01/04 - 26/04
64698	29867	F	*	*				*	01/04 - 24/05
65516	3677	N	*	*	*			*	20/06 - 30/06
65581	6666	IR	*	*	*			*	23/06 - 30/06
65593	4228	US	*	*	*			*	01/04 - 28/04
65595	4229	NL	*	*	*			*	01/04 - 30/06
65600	3676	N	*	*	*			*	01/04 - 21/05
65602	6667	IR	*	*	*			*	01/04 - 30/06
65662	9307	D	*	*	*			*	01/04 - 30/06
65663	9308	D	*	*	*			*	01/04 - 30/06

