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OBSERVATIONS, PLANS AND REQUIREMENTS BRANCH

Quality Evaluation Section

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

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Produced By : S. E. Holton  
Meteorological Office,  
Met O (OPR),  
Room 132,  
London Road,  
Bracknell,  
Berkshire, RG12 2SZ,  
United Kingdom

e-mail : [sholton@meto.gov.uk](mailto:sholton@meto.gov.uk)

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## 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 68 of the buoys reporting, gave a '90% of observations with acceptable positions' greater than 95% (69 out of 73 last quarter).

### (b) Data timeliness

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

Timeliness	Last quarter.	This quarter
Very Good	45	38
Good	15	21
Satisfactory	8	6
Poor	0	2
Very poor	5	1
Total no. of buoys	73	68



(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	13	12	22	16
Good	7	5	5	7
Satisfactory	9	14	5	5
Poor	10	7	2	1
Very Poor	0	1	0	0

The total number of buoy days in the quarter was 4421 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 5159) and the number of 'buoy hours' with at least one observation was 74607 (compared with 88284 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 16.88 (last quarter the figure was 17.11).



### 3. SUMMARY OF PRESSURE PERFORMANCE

#### (a) Buoy deployments, etc.

**Note:** All pressure reports for buoy 44517 during the quarter were erroneous. Hence, no graph is included for this buoy in Annex B. However, the buoy is included in the text and statistics below.

#### North of 50deg N

There were 26 buoys reporting pressure at the beginning of the period. 19 buoys were operating at the end of the period. 3 buoys were deployed during the period (62597, 65601 and 65602). 10 buoys ceased reporting pressure (44614, 44621, 44722, 44766, 44753, 64516, 64518, 65594, 65595 and 65596).

#### South of 50deg N

There were 26 buoys reporting pressure at the beginning of the period. 29 buoys were reporting at the end of the period. 13 buoys were deployed during the period (44611, 44612, 44615, 44617, 44620, 44622, 44623, 44657, 44724, 44725, 44726, 44727 and 44729). 13 buoys ceased reporting pressure (44513, 44516, 41528, 41599, 41853, 44517, 44546, 44625, 44657, 61536, 61537, 62510 and 62554).

(Note: although buoys 44513, 44516 and 62510 ceased reporting pressure, they continued to report other elements until the end of the quarter).

#### (e) 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 difference were found to lie outside these limits have had their performance described as 'suspect' and are included in the section below. Examination of the time-series plots (see Annex B) indicates the performance of these buoys:-

- 41599 - Data from this buoy showed a bias of -1.1 hPa until it ceased reporting on 07/02/00.
- 41853 - Data from this buoy was erratic throughout the period.
- 44513 - Data from this buoy showed a larger than normal scatter at the beginning of the period until it ceased reporting pressure on 05/01/00.



- 44516 - Data from this buoy showed a larger than normal scatter from the start of the period until it ceased reporting pressure on 07/01/00.
- 44517 - All pressure data were gross errors (no graph was plotted) from the start of the quarter until it ceased reporting completely on 29/01/00.
- 44607 - Data from this buoy became erratic during much of February before improving towards the end of the quarter.
- 44657 - Data from this buoy were totally erratic from when it began reporting on 16/02/00 until it ceased on 10/03/00.
- 44766 - Data from this buoy showed a negative bias (of approximately -8 hPa toward the end of its reporting period on 24/02/00.
- 44773 - Data from this buoy became erratic toward the end of January until mid-February, before improving in the latter half of the quarter.
- 61536 - Data from this buoy showed bias of +2.2hPa for the few days it was reporting until it ceased on 05/01/00.
- 61537 - Data from this buoy showed a larger than normal scatter from the beginning of the period until it ceased reporting on 26/02/00.
- 62510 - Data from this buoy developed substantial negative bias of -10hPa from 13/01/00 until it ceased reporting pressure on 24/01/00.
- 62554 - All data were gross errors (apart from one) from the start of the period until it ceased reporting on 02/05/00.
- 64516 - Data from this buoy was erratic from the start of the period until it ceased reporting on 31/01/00.
- 64546 - Data from this buoy became erratic and developed a significant negative bias from late January and for much of February. Data improved toward the end of the quarter.
- 64698 - Data from this buoy was occasionally erratic throughout the period.
- 64699 - Data from this buoy was occasionally erratic throughout the period.
- 65594 - Data from this buoy became erratic towards the end of January until it ceased reporting on 24/02/00.



### Biases

Fourteen 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 also had their performance described as 'suspect'.

WMO No.	Buoy bias (hPa)	Period of reports
44611	0.6	07/03 – 31/03
44721	-0.6	01/01 – 31/03
44722	-0.6	01/01 – 27/03
44724	0.6	07/03 – 31/03
44777	-0.8	01/01 – 31/03
64517	-0.7	01/01 – 31/03
64518	-0.8	01/01 – 05/03
64530	-0.9	01/01 – 31/03
64547	-0.9	01/01 – 31/03
65595	-1.0	01/01 – 26/03
65596	-0.9	01/01 – 26/03
65598	-0.8	01/01 – 31/03
65600	-0.6	01/01 – 31/03
65601	-0.6	20/01 – 31/03

### Summary of Pressure Performance

Pressure Summary	Last Quarter	This Quarter
Acceptable	45	36
Suspect - RMS	13	18
Suspect - Bias	15	14
Total no. of buoys	73	68



#### **(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  $\pm 20$  °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
41521	0.47	1.06	861	44516	-0.46	1.26	2963
44517	0.19	11.42	301	44613	0.71	1.44	2477
44614	-0.15	1.18	2183	44621	-0.21	1.76	2381
44625	0.03	1.32	2217	44626	1.32	0.21	4036
44628	-0.15	1.26	3225	44630	0.15	1.29	4033
44657	1.66	4.62	167	44721	0.21	1.15	5720
44765	0.16	1.31	1486	44766	-0.53	1.40	1617
44773	0.27	3.13	2201	44777	0.24	1.17	5516
61536	1.72	0.80	98	61537	1.41	5.46	1185
62508	-0.24	1.17	2563	62597	-5.99	7.55	89
64529	-0.12	1.38	1201	64530	0.11	1.11	4140
64546	2.38	4.27	1935	64547	0.04	1.21	4194
65594	-0.61	1.57	950	65595	0.22	1.06	4517
65596	1.33	1.69	2596	65598	-0.17	1.14	4245
65600	0.68	1.62	1892	65601	0.06	0.90	376
65602	-0.32	0.55	353				

#### **Summary**

Buoys 44626 (1.32), 44657 (1.66), 61536 (1.72), 61537 (1.41), 62597 (-5.99), 64546 (2.38) and 65596 (1.33) all showed significant air temperature bias.

Buoy 44517 (11.42), 44657 (4.62), 61537 (5.46), 62597 (7.55) and 64546 (4.27) all showed a significant standard deviation.

Buoy 44773 produced a very large number of gross errors during the quarter.



## (5) Winds

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

**Note:** Although Buoy 41644 reported a wind speed during the period, no wind direction was reported. Subsequently no analysis was carried out on this buoy.

WMO No.	Wind Speed (kt)			Wind Direction (deg)		
	Mean	St. Dev.	No. of Obs	Mean	St. Dev.	No. of Obs
41521	-0.61	2.99	827	-9.13	23.05	755
44607	1.48	5.59	1791	3.94	28.30	1742
44657	-6.54	0.83	165	59.58	84.07	131
44721	-2.64	5.20	4410	9.03	25.04	4094
44724	1.22	4.74	489	-13.76	29.63	459
44725	1.62	5.57	303	17.95	87.68	300
44726	0.33	3.52	319	18.51	20.31	298
44727	1.85	4.39	320	25.30	24.85	320
44773	-4.26	7.92	770	0.42	42.91	559
44777	-4.74	4.99	4196	8.24	22.67	4083
62508	0.00	3.11	2766	-4.62	24.66	2502
62510	3.98	4.90	1539	-6.93	27.00	1463
62597	-3.00	4.48	2065	4.15	40.26	1860

### *Summary*

Buoys 44657 (-6.54), 44721 (-2.64), 44773 (-4.26), 44777 (-4.74), 62510 (3.98) and 62597 (-3.00) all showed a significant **wind speed** bias throughout their reporting lives.

Buoy 44657 reported a large number of **wind speed** errors.

Buoys 44724 (-13.76), 44726 (18.51) and 44727 (25.30) all showed a significant **wind direction** bias.

Buoys 44657 (84.07), 44725 (87.68), 44773 (42.91) and 62597 (40.26) all showed significant standard deviations for **wind direction** data.



## 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,
- $v$  = maximum drift speed = 1/4 knot  
 $t$  = 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	$\leq 3.0$	$\leq 0.5$	$\leq 2.0$	$\leq 0.5$
Suspect	$> 3.0$	$> 0.5$	$> 2.0$	$> 0.5$







# Annex A - TABLE OF STATISTICS

WMO No./Country	41521	41528	41599
Argos Id No.			
Period Within Area	01/01 - 31/03	01/01 - 22/02	01/01 - 07/02
Mean Latitude	27.1	34.0	28.5
Mean Longitude	-67.9	-57.6	-38.8
No. of Obs Received	879	519	2116
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	97.8	98.3	91.1
P. Tendency	0.0	0.0	0.0
Air Temperature	98.2	0.0	0.0
Wind Speed/Dir	95.0/ 97.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	97.8	97.1	62.9
Median delay (min)	30	35	249
Number of days	91	53	38
Mean No. of obs/day	9.7	9.8	55.7
No. of Hours with obs	768	498	846
Mean no. of hours/day with obs	8.4	9.4	22.3
% of hour periods without an ob	64.8	60.8	5.3
Mean (Ob-Bg)	-0.1	0.2	-1.1
RMS (Ob-Bg)	0.8	1.0	1.5
<b>unflagged data</b>			
Mean (Ob-Bg)	-0.1	0.1	-1.8
RMS (Ob-Bg)	0.8	1.0	4.8
<b>all data</b>			
Revised RMS (Ob-Bg)	0.8	1.0	3.8
% of data flagged	9	5	59
Operating at end of period	YES	NO	NO
Performance			
Availability	Poor	Poor	Very Good
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Very Good	Very Good	Very Poor
Comments			



# Annex A - cont'd

WMO No./Country	41644	41853	44513/US
Argos Id No.			26237
Period Within Area	01/01 - 31/03	01/01 - 28/03	01/01 - 31/03
Mean Latitude	25.1	34.2	46.9
Mean Longitude	-50.4	-68.6	-41.0
No. of Obs Received	822	760	1062
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	98.7	98.0	5.0
P. Tendency	0.0	27.6	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	97.9/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	98.9	97.0	100.0
Median delay (min)	87	69	34.5
Number of days	91	88	91
Mean No. of obs/day	9.0	8.6	11.7
No. of Hours with obs	819	698	968
Mean no. of hours/day with obs	9.0	7.9	10.6
% of hour periods without an ob	62.5	66.9	55.7
Mean (Ob-Bg)	-0.3	3.1	0.4
RMS (Ob-Bg) <b>unflagged data</b>	0.9	3.6	3.3
Mean (Ob-Bg)	-0.3	4.2	3.3
RMS (Ob-Bg) <b>all data</b>	0.9	5.3	12.0
Revised RMS (Ob-Bg)	1.0	5.3	10.6
% of data flagged	0	63	51
Operating at end of period	YES	NO	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Good	Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44516	44517/US	44546/F
Argos Id No.		26234	14538
Period Within Area	01/01 - 31/03	01/01 - 29/01	01/01 - 01/03
Mean Latitude	49.5	49.8	39.4
Mean Longitude	-26.4	-30.4	-27.0
No. of Obs Received	3473	896	2760
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	6.5	15.2	99.9
P. Tendency	0.0	0.0	99.6
Air Temperature	93.2	37.1	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	97.5	99.3	100.0
Median delay (min)	162	159	183
Number of days	91	29	61
Mean No. of obs/day	38.2	30.9	45.2
No. of Hours with obs	2142	654	1250
Mean no. of hours/day with obs	23.5	22.6	20.5
% of hour periods without an ob	1.9	4.8	14.5
Mean (Ob-Bg)	0.6	0.6	0.5
RMS (Ob-Bg) <b>unflagged data</b>	2.6	2.6	1.0
Mean (Ob-Bg)	12.6	39.9	0.5
RMS (Ob-Bg) <b>all data</b>	21.2	40.2	1.1
Revised RMS (Ob-Bg)	3.3	40.2	1.1
% of data flagged	60	0	58
Operating at end of period	YES	NO	NO
Performance			
Availability	Very Good	Good	Very Good
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Acceptable	Acceptable	Poor
Comments			



# Annex A - cont'd

WMO No./Country	44607/F	44608/F	44610/F
Argos Id No.	6216	14540	12734
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	51.9	38.3	56.1
Mean Longitude	-32.6	-15.8	-34.1
No. of Obs Received	1882	5013	4871
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	99.2	99.7	99.9
P. Tendency	98.1	99.5	99.3
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	97.4/ 97.7	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	98.7	99.7	99.6
Median delay (min)	112	162	149
Number of days	91	91	91
Mean No. of obs/day	20.7	55.1	53.5
No. of Hours with obs	1873	2006	1978
Mean no. of hours/day with obs	20.6	22.0	21.7
% of hour periods without an ob	14.2	8.2	9.4
Mean (Ob-Bg)	0.6	0.0	0.1
RMS (Ob-Bg) <b>unflagged data</b>	2.3	0.9	1.9
Mean (Ob-Bg)	0.1	0.0	0.1
RMS (Ob-Bg) <b>all data</b>	4.7	0.9	2.9
Revised RMS (Ob-Bg)	4.0	0.9	2.5
% of data flagged	6	61	64
Operating at end of period	YES	YES	YES
Performance Availability	Acceptable	Very Good	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Acceptable	Acceptable
Comments			



# Annex A - cont'd

WMO No./Country	44611/UK	44612/UK	44613/UK
Argos Id No.	27616	27619	28467
Period Within Area	07/03 - 31/03	07/03 - 31/03	01/01 - 31/03
Mean Latitude	41.3	39.7	27.5
Mean Longitude	-46.7	-38.1	-36.4
No. of Obs Received	521	497	2582
% of obs with Acceptable Position	100.0	100.0	93.9
% of Present Pressure	99.8	99.8	97.3
P. Tendency	99.2	99.6	94.8
Air Temperature	0.0	0.0	96.9
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	99.4	99.6	0.0
Median delay (min)	100	103	37
Number of days	25	25	91
Mean No. of obs/day	20.8	19.9	28.4
No. of Hours with obs	513	488	1437
Mean no. of hours/day with obs	20.5	19.5	15.8
% of hour periods without an ob	13.6	17.8	34.1
Mean (Ob-Bg)	0.6	0.4	-0.3
RMS (Ob-Bg) <b>unflagged data</b>	1.4	1.3	1.0
Mean (Ob-Bg)	0.6	0.4	-0.8
RMS (Ob-Bg) <b>all data</b>	1.3	1.4	7.5
Revised RMS (Ob-Bg)	1.4	1.3	1.3
% of data flagged	2	2	53
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Acceptable	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44614/UK	44615/UK	44617/UK
Argos Id No.	12375	27620	27621
Period Within Area	01/01 - 06/03	07/03 - 31/03	07/03 - 31/03
Mean Latitude	50.8	38.7	44.4
Mean Longitude	-10.6	-48.2	-44.5
No. of Obs Received	2360	499	512
% of obs with Acceptable Position	98.2	98.8	100.0
% of Present Pressure	92.5	99.8	99.8
P. Tendency	34.2	99.2	99.0
Air Temperature	92.7	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	72.2	100.0	99.4
Median delay (min)	19	95	100
Number of days	66	25	25
Mean No. of obs/day	35.8	20.0	20.5
No. of Hours with obs	964	494	506
Mean no. of hours/day with obs	14.6	19.8	20.2
% of hour periods without an ob	38.4	16.8	14.8
Mean (Ob-Bg)	-0.1	0.2	0.3
RMS (Ob-Bg) <b>unflagged data</b>	1.4	1.1	1.4
Mean (Ob-Bg)	-0.1	0.3	0.3
RMS (Ob-Bg) <b>all data</b>	2.3	1.2	1.5
Revised RMS (Ob-Bg)	1.7	1.2	1.5
% of data flagged	67	2	2
Operating at end of period	NO	YES	YES
Performance			
Availability	Very Good	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Good	Good
Comments			



# Annex A - cont'd

WMO No./Country	44620/UK	44621/UK	44622/UK
Argos Id No.	27622	12372	27623
Period Within Area	15/03 - 31/03	01/01 - 06/03	07/03 - 31/03
Mean Latitude	35.4	50.5	47.0
Mean Longitude	-45.8	-8.7	-44.4
No. of Obs Received	332	2471	518
% of obs with Acceptable Position	98.8	99.0	100.0
% of Present			
Pressure	100.0	97.2	99.6
P. Tendency	98.5	92.9	99.2
Air Temperature	0.0	97.1	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	99.7	98.1	99.4
Median delay (min)	110.5	19	94
Number of days	17	66	25
Mean No. of obs/day	19.5	37.4	20.7
No. of Hours with obs	325	1004	516
Mean no. of hours/day with obs	19.1	15.2	20.6
% of hour periods without an ob	17.5	35.8	13.1
Mean (Ob-Bg)	0.1	0.0	0.4
RMS (Ob-Bg)	1.1	1.3	1.4
<b>unflagged data</b>			
Mean (Ob-Bg)	0.1	-0.9	0.4
RMS (Ob-Bg)	1.2	9.3	1.4
<b>all data</b>			
Revised RMS (Ob-Bg)	1.2	1.1	1.4
% of data flagged	2	66	0
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Very Good	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Good
Comments			



# Annex A - cont'd

WMO No./Country	44623/UK	44625/UK	44626/UK
Argos Id No.	27624	12283	12284
Period Within Area	07/03 - 31/03	01/01 - 08/02	01/01 - 31/03
Mean Latitude	46.5	49.9	48.0
Mean Longitude	-38.6	-7.4	-27.7
No. of Obs Received	511	2335	4185
% of obs with Acceptable Position	100.0	99.9	98.9
% of Present Pressure	100.0	96.0	97.7
P. Tendency	99.8	91.0	93.7
Air Temperature	0.0	95.8	96.9
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	99.4	96.2	97.6
Median delay (min)	102	23	20
Number of days	25	39	91
Mean No. of obs/day	20.4	59.9	46.0
No. of Hours with obs	499	774	1614
Mean no. of hours/day with obs	20.0	19.8	17.7
% of hour periods without an ob	16.0	17.0	26.0
Mean (Ob-Bg)	0.1	0.2	0.2
RMS (Ob-Bg) <b>unflagged data</b>	1.4	1.2	1.4
Mean (Ob-Bg)	0.1	-0.2	-0.1
RMS (Ob-Bg) <b>all data</b>	1.6	6.5	5.5
Revised RMS (Ob-Bg)	1.5	1.2	1.6
% of data flagged	3	72	68
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44627/UK	44628/UK	44630/UK
Argos Id No.	12285	12287	12376
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	45.6	39.5	47.7
Mean Longitude	-34.4	-47.0	-23.0
No. of Obs Received	3970	3322	4194
% of obs with Acceptable Position	99.3	98.6	99.5
% of Present Pressure	97.7	97.6	97.2
P. Tendency	94.7	94.6	93.8
Air Temperature	0.0	97.5	96.7
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	98.1	97.7	0.0
Median delay (min)	20	19	21
Number of days	91	91	91
Mean No. of obs/day	43.6	36.5	46.1
No. of Hours with obs	1608	1552	1582
Mean no. of hours/day with obs	17.7	17.1	17.4
% of hour periods without an ob	26.2	28.9	27.4
Mean (Ob-Bg)	0.1	0.3	0.1
RMS (Ob-Bg) unflagged data	1.4	1.5	1.2
Mean (Ob-Bg)	-0.2	-0.2	-0.4
RMS (Ob-Bg) all data	5.6	7.7	7.2
Revised RMS (Ob-Bg)	1.5	1.5	1.2
% of data flagged	66	61	68
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44657	44721/UK	44722/UK
Argos Id No.		28475	28476
Period Within Area	16/02 - 10/03	01/01 - 31/03	01/01 - 27/03
Mean Latitude	47.5	58.6	56.9
Mean Longitude	-60.7	-15.0	-17.6
No. of Obs Received	263	5962	5220
% of obs with Acceptable Position	100.0	99.6	98.9
% of Present Pressure	100.0	96.7	97.2
P. Tendency	0.0	93.3	94.2
Air Temperature	64.3	96.5	0.0
Wind Speed/Dir	64.3/ 63.5	75.8/ 75.6	0.0/ 0.0
Sea-Surface Temp.	64.3	97.4	90.4
Median delay (min)	26	21	21
Number of days	24	91	87
Mean No. of obs/day	11.0	65.5	60.0
No. of Hours with obs	238	1757	1648
Mean no. of hours/day with obs	9.9	19.3	18.9
% of hour periods without an ob	56.3	19.4	20.7
Mean (Ob-Bg)	0.4	-0.6	-0.6
RMS (Ob-Bg) <b>unflagged data</b>	2.8	2.1	2.1
Mean (Ob-Bg)	123.9	-0.9	-0.8
RMS (Ob-Bg) <b>all data</b>	142.7	5.8	4.6
Revised RMS (Ob-Bg)	18.9	2.1	2.2
% of data flagged	98	76	74
Operating at end of period	NO	YES	NO
Performance			
Availability	Poor	Very Good	Very Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44723/NL	44724/UK	44725/UK
Argos Id No.	16392	27922	27923
Period Within Area	01/01 - 31/03	07/03 - 31/03	07/03 - 31/03
Mean Latitude	45.8	44.0	43.2
Mean Longitude	-37.5	-38.9	-51.3
No. of Obs Received	1746	498	324
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	99.7	99.2	100.0
P. Tendency	98.9	99.4	97.8
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	99.4/ 99.0	96.3/ 96.3
Sea-Surface Temp.	99.2	99.8	98.8
Median delay (min)	103	100	124.5
Number of days	91	25	25
Mean No. of obs/day	19.2	19.9	13.0
No. of Hours with obs	1739	492	322
Mean no. of hours/day with obs	19.1	19.7	12.9
% of hour periods without an ob	20.3	17.0	45.7
Mean (Ob-Bg)	0.2	0.6	-0.1
RMS (Ob-Bg) <b>unflagged data</b>	1.7	1.5	1.2
Mean (Ob-Bg)	0.4	0.6	-0.1
RMS (Ob-Bg) <b>all data</b>	2.5	1.6	1.2
Revised RMS (Ob-Bg)	1.9	1.5	1.2
% of data flagged	2	1	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Acceptable	Poor
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Acceptable
Comments			



# Annex A - cont'd

WMO No./Country	44726/UK	44727/UK	44729/UK
Argos Id No.	27924	27925	25375
Period Within Area	15/03 - 31/03	15/03 - 31/03	16/03 - 31/03
Mean Latitude	35.0	35.3	46.2
Mean Longitude	-51.3	-39.9	-44.3
No. of Obs Received	326	326	322
% of obs with Acceptable Position	100.0	99.7	84.2
% of Present			
Pressure	100.0	100.0	100.0
P. Tendency	97.9	98.8	98.4
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	98.8/ 98.8	99.4/ 99.4	0.0/ 0.0
Sea-Surface Temp.	99.4	98.8	99.4
Median delay (min)	108.5	111.5	101.5
Number of days	17	17	16
Mean No. of obs/day	19.2	19.2	20.1
No. of Hours with obs	323	325	322
Mean no. of hours/day with obs	19.0	19.1	20.1
% of hour periods without an ob	18.0	17.5	14.8
Mean (Ob-Bg)	0.0	0.1	0.3
RMS (Ob-Bg) <b>unflagged data</b>	1.0	1.1	1.4
Mean (Ob-Bg)	-0.1	0.1	0.3
RMS (Ob-Bg) <b>all data</b>	3.1	1.3	1.4
Revised RMS (Ob-Bg)	1.1	1.1	1.4
% of data flagged	1	1	0
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			



# Annex A - cont'd

WMO No./Country	44765/UK	44766/UK	44773/UK
Argos Id No.	28466	28465	12415
Period Within Area	01/01 - 31/03	01/01 - 24/02	01/01 - 31/03
Mean Latitude	31.0	54.6	59.6
Mean Longitude	-55.7	-10.0	-25.3
No. of Obs Received	1536	1725	2476
% of obs with Acceptable Position	77.9	99.0	72.2
% of Present Pressure	97.6	97.7	96.1
P. Tendency	95.6	94.3	93.0
Air Temperature	97.7	94.4	89.3
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	32.2/ 34.0
Sea-Surface Temp.	0.0	66.4	96.8
Median delay (min)	18	19	19
Number of days	91	55	91
Mean No. of obs/day	16.9	31.4	27.2
No. of Hours with obs	1032	738	1279
Mean no. of hours/day with obs	11.3	13.4	14.1
% of hour periods without an ob	52.7	43.3	41.4
Mean (Ob-Bg)	-0.4	-1.3	-1.5
RMS (Ob-Bg) <b>unflagged data</b>	1.1	2.9	3.5
Mean (Ob-Bg)	-0.7	-2.0	-0.2
RMS (Ob-Bg) <b>all data</b>	2.8	7.7	7.2
Revised RMS (Ob-Bg)	1.2	3.5	4.0
% of data flagged	42	71	82
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Good	Good
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	44777/UK	47553	61536
Argos Id No.	12377		
Period Within Area	01/01 - 31/03	01/01 - 29/01	01/01 - 05/01
Mean Latitude	57.6	67.6	38.6
Mean Longitude	-28.0	-58.6	15.1
No. of Obs Received	5817	425	128
% of obs with Acceptable Position	97.5	70.8	100.0
% of Present			
Pressure	96.0	100.0	83.6
P. Tendency	92.0	0.0	0.0
Air Temperature	95.4	0.0	89.8
Wind Speed/Dir	74.1/ 73.9	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	96.8	0.0	92.2
Median delay (min)	20	11	211
Number of days	91	29	5
Mean No. of obs/day	63.9	14.7	25.6
No. of Hours with obs	1766	343	97
Mean no. of hours/day with obs	19.4	11.8	19.4
% of hour periods without an ob	19.1	50.1	12.6
Mean (Ob-Bg)	-0.8	0.3	2.2
RMS (Ob-Bg) <b>unflagged data</b>	2.0	2.4	2.4
Mean (Ob-Bg)	-1.1	0.4	2.1
RMS (Ob-Bg) <b>all data</b>	6.9	2.4	2.3
Revised RMS (Ob-Bg)	2.2	2.4	2.3
% of data flagged	75	33	21
Operating at end of period	YES	NO	NO
Performance			
Availability	Very Good	Poor	Good
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Very Good	Very Good	Poor
Comments			



# Annex A - cont'd

WMO No./Country	61537	62507/F	62508/F
Argos Id No.		10111	5822
Period Within Area	01/01 - 26/02	01/01 - 31/03	01/01 - 31/03
Mean Latitude	40.6	41.2	43.3
Mean Longitude	7.2	-25.7	-17.7
No. of Obs Received	1580	3666	3613
% of obs with Acceptable Position	100.0	97.8	99.1
% of Present			
Pressure	86.7	97.8	96.3
P. Tendency	0.0	91.4	89.4
Air Temperature	78.9	0.0	71.5
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	79.2/ 79.1
Sea-Surface Temp.	95.7	98.0	96.8
Median delay (min)	126	20	20
Number of days	57	91	91
Mean No. of obs/day	27.7	40.3	39.7
No. of Hours with obs	938	1574	1489
Mean no. of hours/day with obs	16.5	17.3	16.4
% of hour periods without an ob	31.1	27.8	31.7
Mean (Ob-Bg)	-1.6	0.0	-0.4
RMS (Ob-Bg) <b>unflagged data</b>	2.6	1.0	1.4
Mean (Ob-Bg)	-28.5	-0.3	-0.6
RMS (Ob-Bg) <b>all data</b>	58.2	4.8	4.7
Revised RMS (Ob-Bg)	7.4	1.0	1.4
% of data flagged	99	65	66
Operating at end of period	NO	YES	YES
Performance			
Availability	Good	Very Good	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Acceptable	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	62509/F	62510/F	62520/F
Argos Id No.	14537	12732	14431
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	46.0	48.6	31.2
Mean Longitude	-7.9	-10.5	-32.4
No. of Obs Received	3305	1822	2926
% of obs with Acceptable Position	100.0	100.0	90.2
% of Present Pressure	99.5	27.6	97.5
P. Tendency	99.2	99.3	91.9
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	86.3/ 87.0	0.0/ 0.0
Sea-Surface Temp.	99.5	99.3	97.2
Median delay (min)	113	112	22
Number of days	91	91	91
Mean No. of obs/day	36.3	20.0	32.2
No. of Hours with obs	1947	1814	1549
Mean no. of hours/day with obs	21.4	19.9	17.0
% of hour periods without an ob	10.9	16.8	29.0
Mean (Ob-Bg)	0.1	0.1	-0.5
RMS (Ob-Bg) <b>unflagged data</b>	1.0	1.5	1.1
Mean (Ob-Bg)	0.2	-4.4	-0.7
RMS (Ob-Bg) <b>all data</b>	1.6	7.6	3.0
Revised RMS (Ob-Bg)	1.1	7.6	1.2
% of data flagged	43	38	57
Operating at end of period	YES	YES	YES
Performance Availability	Very Good	Acceptable	Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	62554/F	62596/NL	62597/UK
Argos Id No.	14430	16391	28478
Period Within Area	01/01 - 05/02	01/01 - 31/03	19/01 - 31/03
Mean Latitude	34.1	56.4	55.2
Mean Longitude	-14.0	-27.0	-23.7
No. of Obs Received	115	1752	2536
% of obs with Acceptable Position	100.0	99.8	100.0
% of Present Pressure	100.0	99.8	93.3
P. Tendency	0.0	97.5	88.3
Air Temperature	0.0	0.0	4.7
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	85.5/ 85.3
Sea-Surface Temp.	100.0	99.3	94.0
Median delay (min)	18	98	44
Number of days	36	91	73
Mean No. of obs/day	3.2	19.3	34.7
No. of Hours with obs	106	1741	1269
Mean no. of hours/day with obs	2.9	19.1	17.4
% of hour periods without an ob	87.6	20.1	26.9
Mean (Ob-Bg)	-0.5	0.5	-0.5
RMS (Ob-Bg) <b>unflagged data</b>	1.1	2.1	1.8
Mean (Ob-Bg)	-97.9	1.0	-0.6
RMS (Ob-Bg) <b>all data</b>	98.4	3.8	2.7
Revised RMS (Ob-Bg)	98.8	2.6	2.0
% of data flagged	0	4	62
Operating at end of period	NO	YES	YES
Performance			
Availability	Very Poor	Acceptable	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	64516/F	64517/F	64518/F
Argos Id No.	14176	14178	14180
Period Within Area	01/01 - 31/01	01/01 - 31/03	01/01 - 05/03
Mean Latitude	66.3	57.7	57.6
Mean Longitude	-54.5	-33.2	-14.1
No. of Obs Received	1344	3662	2531
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	99.9	99.7	99.2
P. Tendency	99.0	99.4	98.6
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.	88.2	99.6	99.0
Median delay (min)	81	95	97
Number of days	31	91	65
Mean No. of obs/day	43.4	40.2	38.9
No. of Hours with obs	715	2038	1414
Mean no. of hours/day with obs	23.1	22.4	21.8
% of hour periods without an ob	2.2	6.7	8.3
Mean (Ob-Bg)	1.2	-0.7	-0.8
RMS (Ob-Bg) <b>unflagged data</b>	2.9	2.2	2.1
Mean (Ob-Bg)	1.8	-0.7	-0.9
RMS (Ob-Bg) <b>all data</b>	6.9	2.5	3.8
Revised RMS (Ob-Bg)	6.0	2.5	2.3
% of data flagged	58	47	45
Operating at end of period	NO	YES	NO
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Good	Good	Good
Comments			



# Annex A - cont'd

WMO No./Country	64529/D	64530/D	64546/N
Argos Id No.	6669	4272	3675
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	73.5	62.6	61.1
Mean Longitude	23.6	-10.6	-24.6
No. of Obs Received	1405	4596	1989
% of obs with Acceptable Position	98.8	98.8	99.5
% of Present			
Pressure	89.0	90.7	98.1
P. Tendency	81.9	66.9	57.8
Air Temperature	87.0	90.9	97.5
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	77.6	76.2	82.6
Median delay (min)	24	19	18
Number of days	91	91	91
Mean No. of obs/day	15.4	50.5	21.9
No. of Hours with obs	684	1611	940
Mean no. of hours/day with obs	7.5	17.7	10.3
% of hour periods without an ob	68.7	26.1	56.9
Mean (Ob-Bg)	-0.5	-0.9	-2.1
RMS (Ob-Bg) <b>unflagged data</b>	2.1	2.2	3.6
Mean (Ob-Bg)	-0.6	-0.9	-2.0
RMS (Ob-Bg) <b>all data</b>	3.7	4.1	5.4
Revised RMS (Ob-Bg)	3.0	2.5	4.1
% of data flagged	66	73	77
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Very Good	Acceptable
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	64547D	64698/F	64699/F
Argos Id No.	2294	29867	29868
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	63.2	58.8	62.3
Mean Longitude	-9.6	-47.4	-55.5
No. of Obs Received	4683	3054	3024
% of obs with Acceptable Position	98.7	100.0	99.8
% of Present Pressure	90.5	99.6	99.7
P. Tendency	66.7	99.1	99.3
Air Temperature	90.5	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	74.4	99.5	87.3
Median delay (min)	19	49	52
Number of days	91	91	91
Mean No. of obs/day	51.5	33.6	33.2
No. of Hours with obs	1614	2034	2005
Mean no. of hours/day with obs	17.7	22.4	22.0
% of hour periods without an ob	25.8	6.9	8.2
Mean (Ob-Bg)	-0.9	-0.5	0.3
RMS (Ob-Bg) <b>unflagged data</b>	2.1	2.2	2.3
Mean (Ob-Bg)	-0.9	-0.4	0.3
RMS (Ob-Bg) <b>all data</b>	3.7	7.2	4.0
Revised RMS (Ob-Bg)	2.4	5.0	4.0
% of data flagged	73	39	37
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Good	Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	65594/D	65595/NL	65596/IR
Argos Id No.	2295	4229	3038
Period Within Area	01/01 - 24/02	01/01 - 26/03	01/01 - 26/03
Mean Latitude	64.0	62.2	62.8
Mean Longitude	-34.6	-5.8	-5.8
No. of Obs Received	1457	4733	3198
% of obs with Acceptable Position	90.9	99.0	98.8
% of Present			
Pressure	92.8	96.3	95.4
P. Tendency	63.3	93.2	91.6
Air Temperature	65.5	96.2	82.3
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	82.4	77.1	80.2
Median delay (min)	18	18	18
Number of days	55	86	86
Mean No. of obs/day	26.5	55.0	37.2
No. of Hours with obs	779	1458	1439
Mean no. of hours/day with obs	14.2	17.0	16.7
% of hour periods without an ob	40.2	28.8	29.7
Mean (Ob-Bg)	0.3	-1.0	-0.9
RMS (Ob-Bg) <b>unflagged data</b>	2.9	2.2	2.2
Mean (Ob-Bg)	6.9	-0.9	-0.9
RMS (Ob-Bg) <b>all data</b>	15.7	4.5	2.6
Revised RMS (Ob-Bg)	7.9	2.6	2.3
% of data flagged	74	76	64
Operating at end of period	NO	NO	NO
Performance			
Availability	Good	Very Good	Very Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

WMO No./Country	65598/D	65599/UK	65600
Argos Id No.	1298	28477	
Period Within Area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	63.4	63.6	63.0
Mean Longitude	-28.9	-31.2	-23.8
No. of Obs Received	4695	6673	1944
% of obs with Acceptable Position	98.1	99.7	100.0
% of Present Pressure	89.8	97.2	97.6
P. Tendency	62.2	94.4	96.2
Air Temperature	90.9	0.0	97.7
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	77.3	97.5	69.4
Median delay (min)	19	21	19
Number of days	91	91	91
Mean No. of obs/day	51.6	73.3	21.4
No. of Hours with obs	1630	1887	788
Mean no. of hours/day with obs	17.9	20.7	8.7
% of hour periods without an ob	25.3	13.5	63.8
Mean (Ob-Bg)	-0.8	-0.1	-0.6
RMS (Ob-Bg) <b>unflagged data</b>	2.5	2.2	2.5
Mean (Ob-Bg)	-0.9	-0.3	-0.6
RMS (Ob-Bg) <b>all data</b>	4.6	5.1	2.7
Revised RMS (Ob-Bg)	2.9	2.2	2.7
% of data flagged	73	77	68
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Acceptable
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			



# Annex A - cont'd

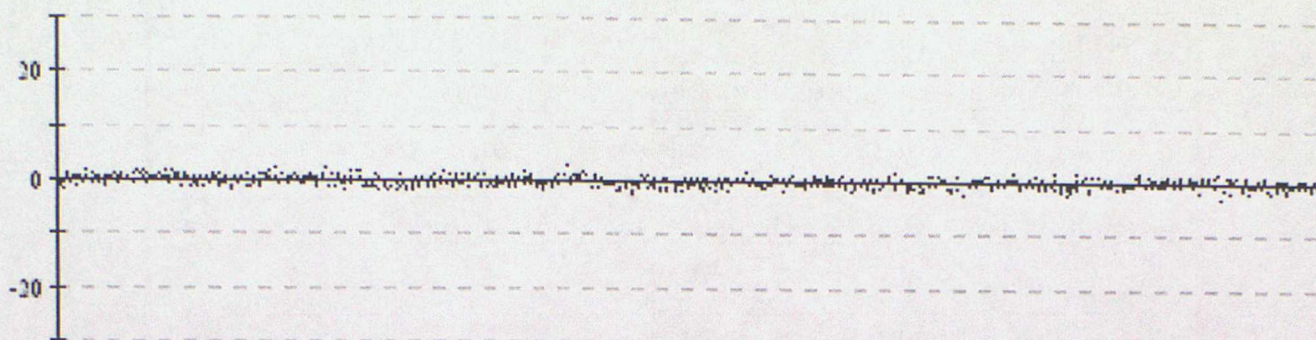
WMO No./Country	65601/D	65602/IR	
Argos Id No.	3039	6667	
Period Within Area	20/03 - 31/03	22/03 - 31/03	
Mean Latitude	59.7	58.2	
Mean Longitude	-32.7	-37.3	
No. of Obs Received	412	373	
% of obs with Acceptable Position	98.5	98.7	
% of Present Pressure	93.2	94.6	
P. Tendency	90.3	92.2	
Air Temperature	91.5	94.9	
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	
Sea-Surface Temp.	83.0	83.9	
Median delay (min)	19	18	
Number of days	12	10	
Mean No. of obs/day	34.3	37.3	
No. of Hours with obs	189	158	
Mean no. of hours/day with obs	15.8	15.8	
% of hour periods without an ob	31.5	30.7	
Mean (Ob-Bg)	-0.6	-0.4	
RMS (Ob-Bg) <b>unflagged data</b>	1.3	1.4	
Mean (Ob-Bg)	-0.5	-3.9	
RMS (Ob-Bg) <b>all data</b>	1.2	17.4	
Revised RMS (Ob-Bg)	1.2	1.3	
% of data flagged	63	69	
Operating at end of period	YES	YES	
Performance			
Availability	Good	Very Good	
Pressure Quality	Suspect	Acceptable	
Timeliness	Very Good	Very Good	
Comments			



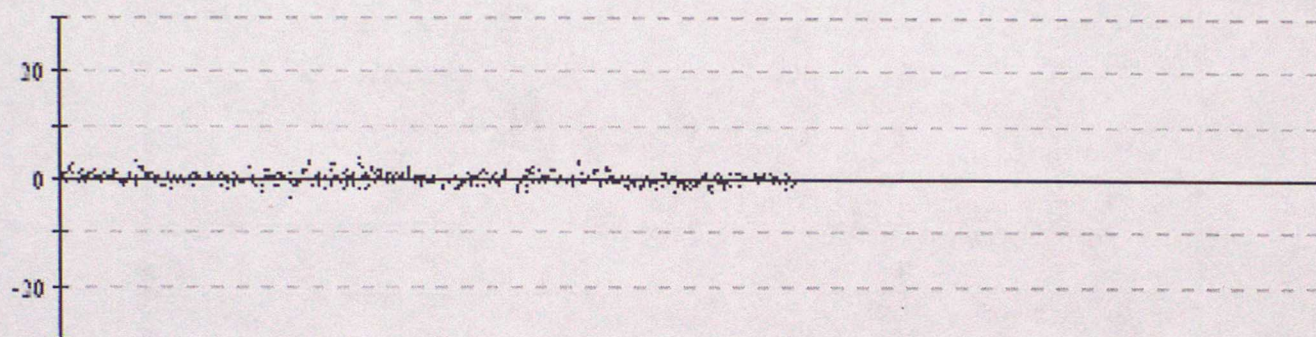
## ANNEX B - TIME SERIES PLOTS OF PRESSURE

Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

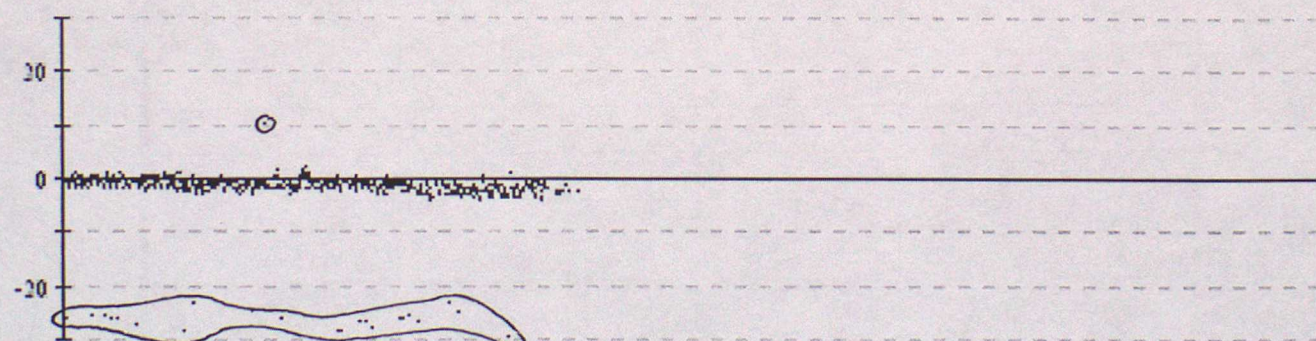
41521 Pressure



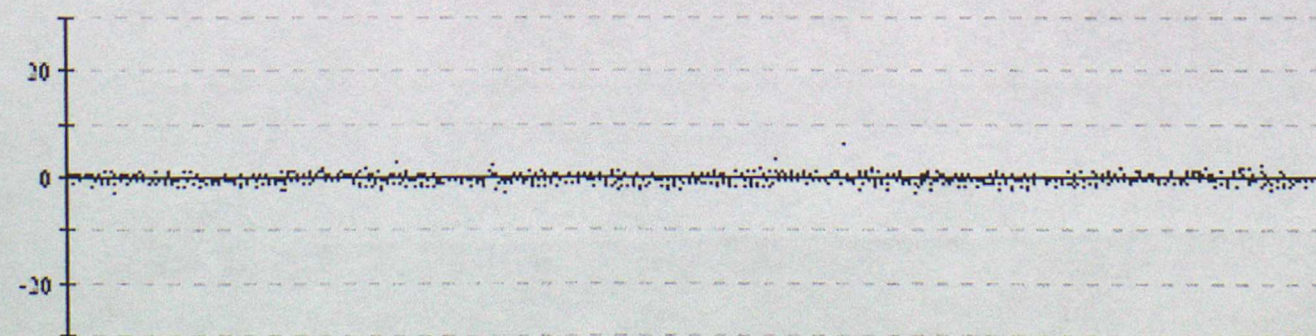
41528 Pressure



41599 Pressure



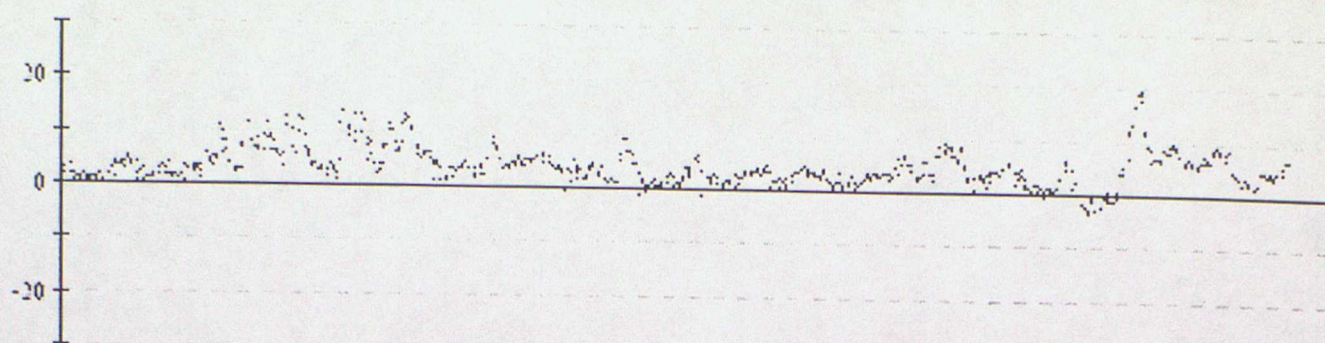
41644 Pressure



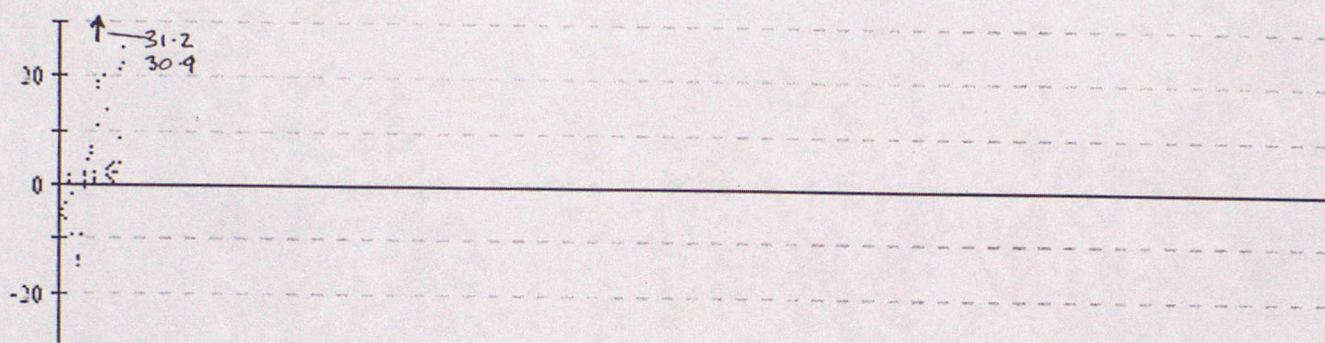


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

41853 Pressure

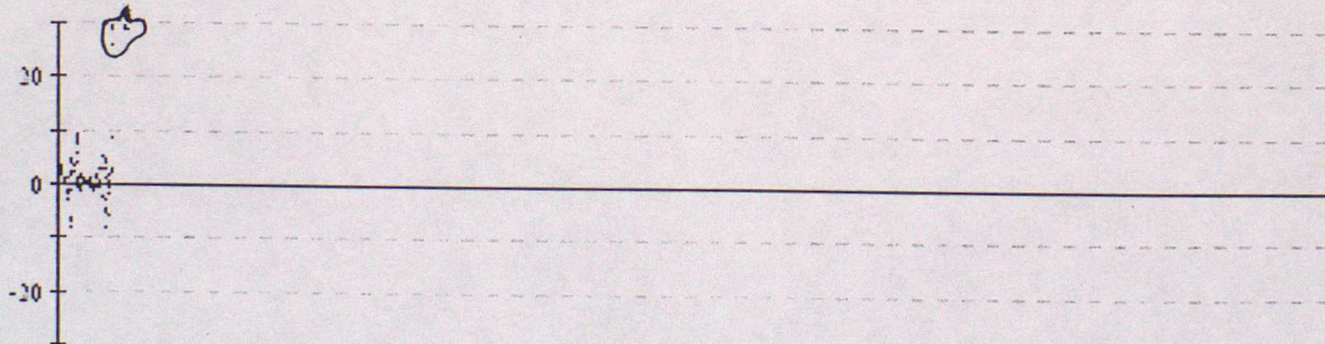


44513 Pressure

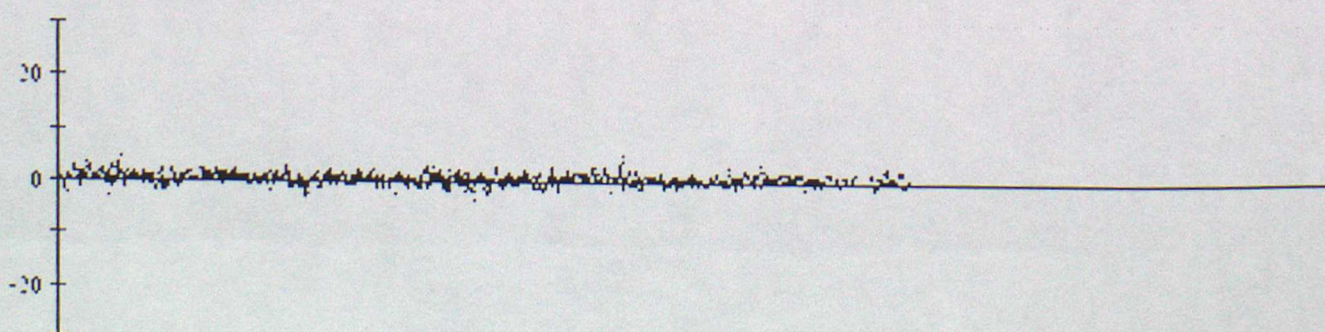


44516 Pressure

65 GROSS ERRORS



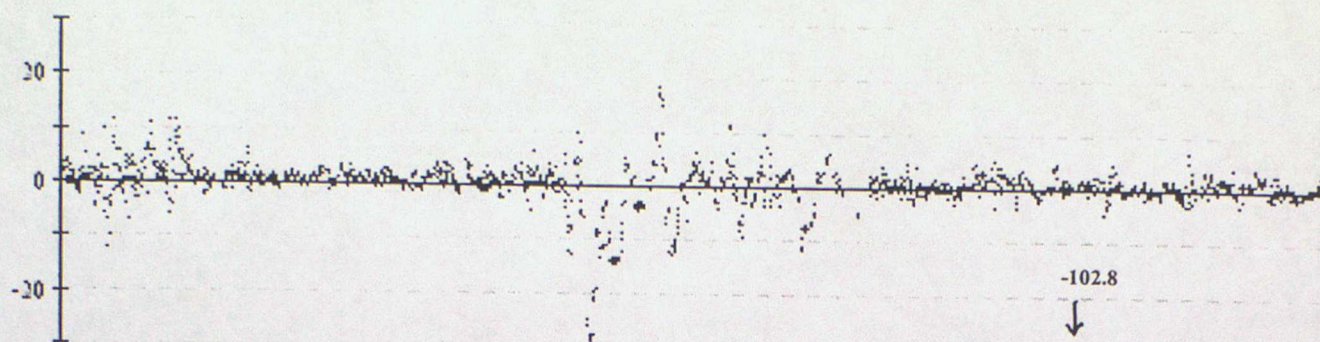
44546 Pressure



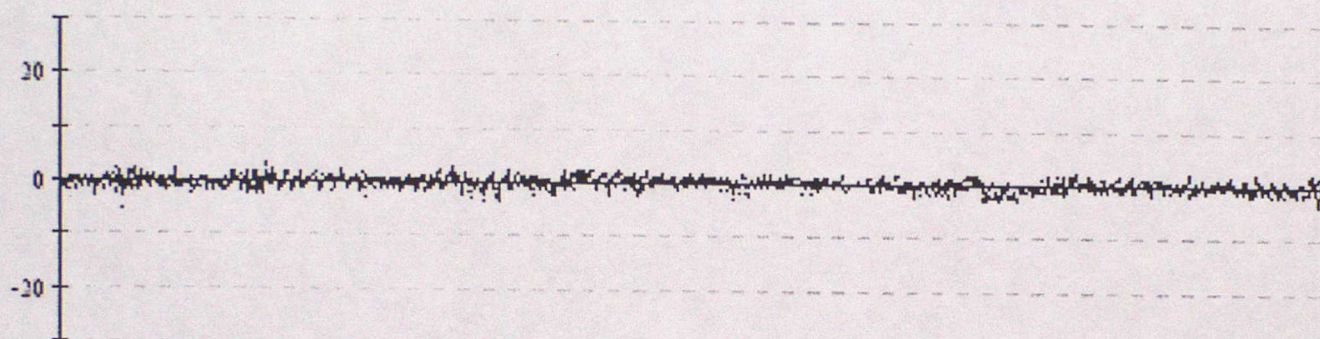


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

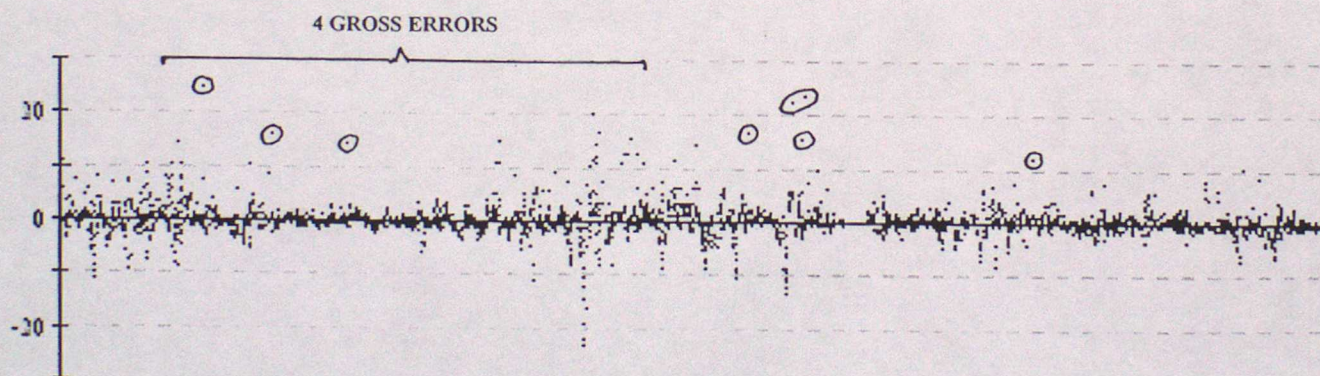
44607 Pressure



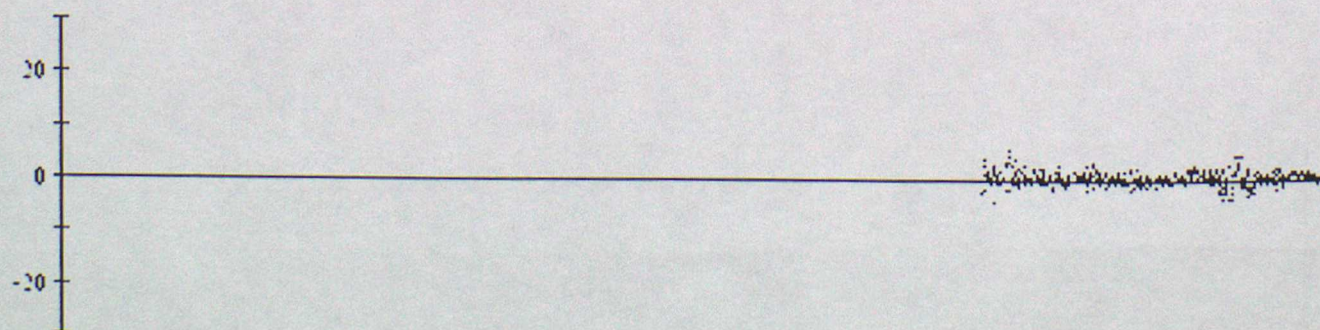
44608 Pressure



44610 Pressure



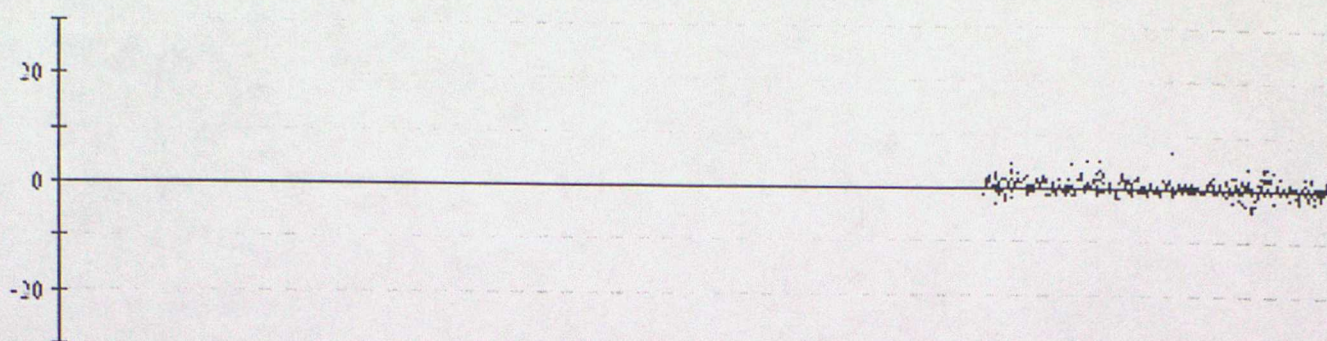
44611 Pressure



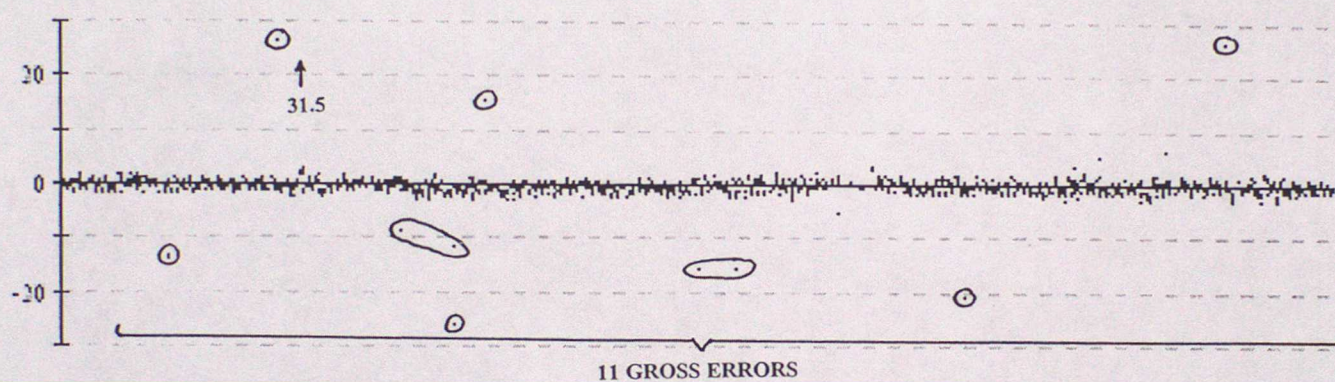


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

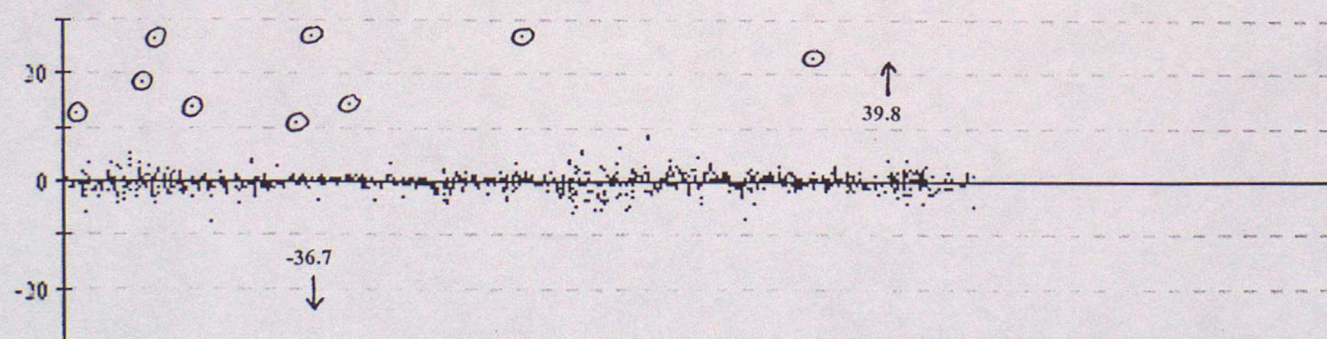
44612 Pressure



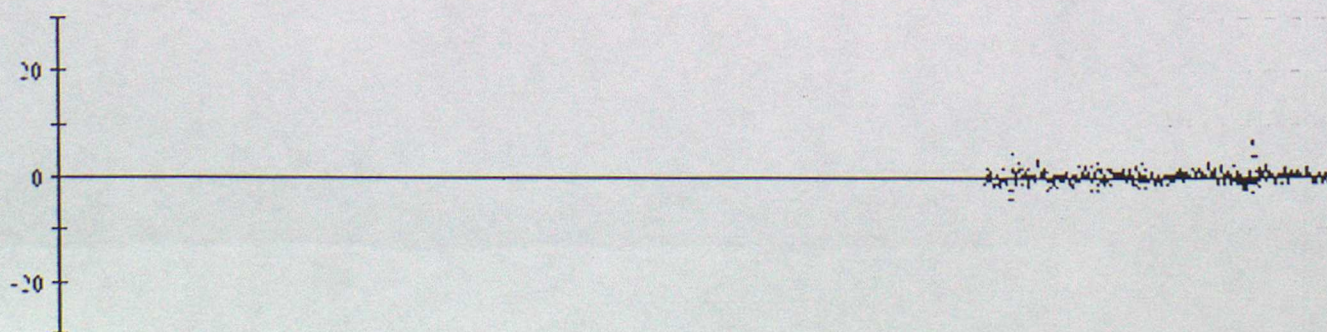
44613 Pressure



44614 Pressure



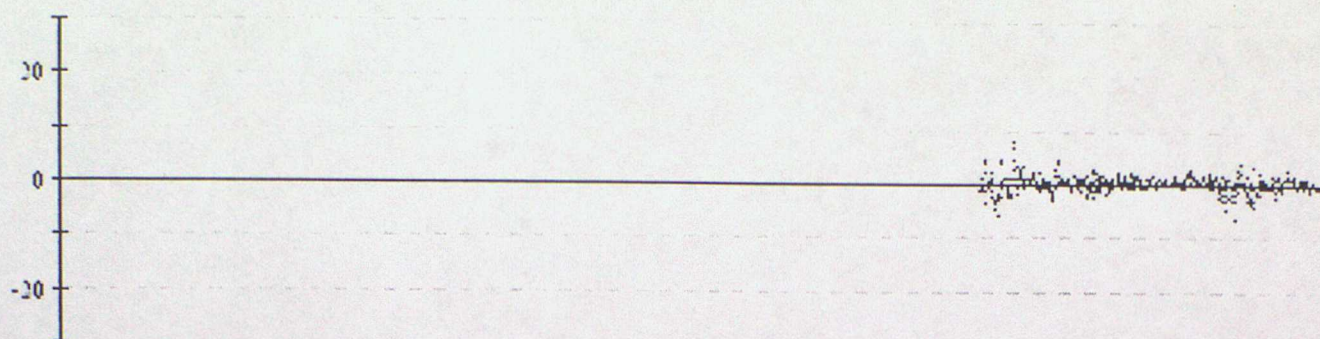
44615 Pressure



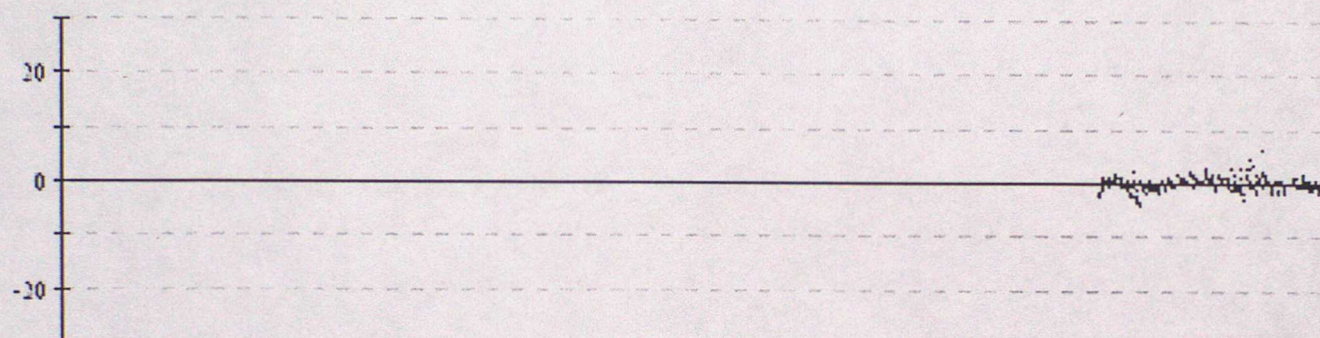


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

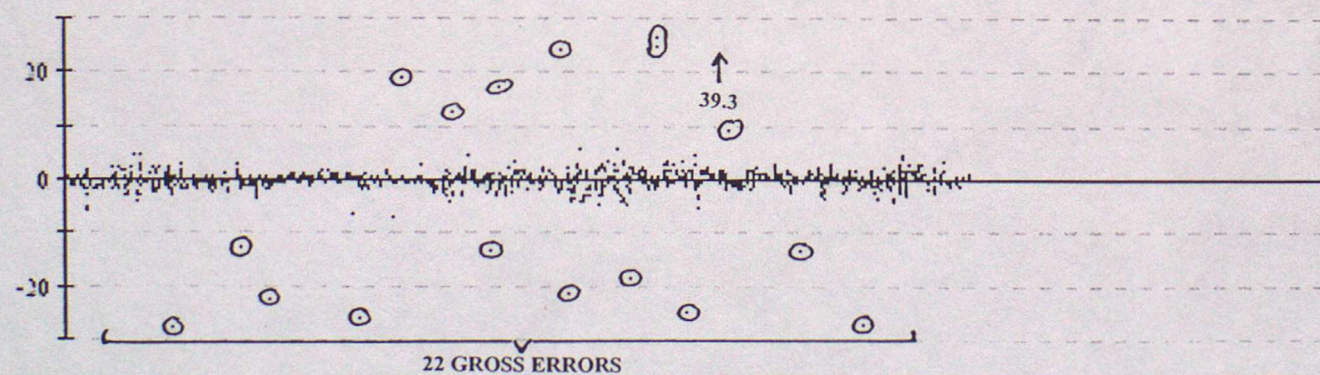
44617 Pressure



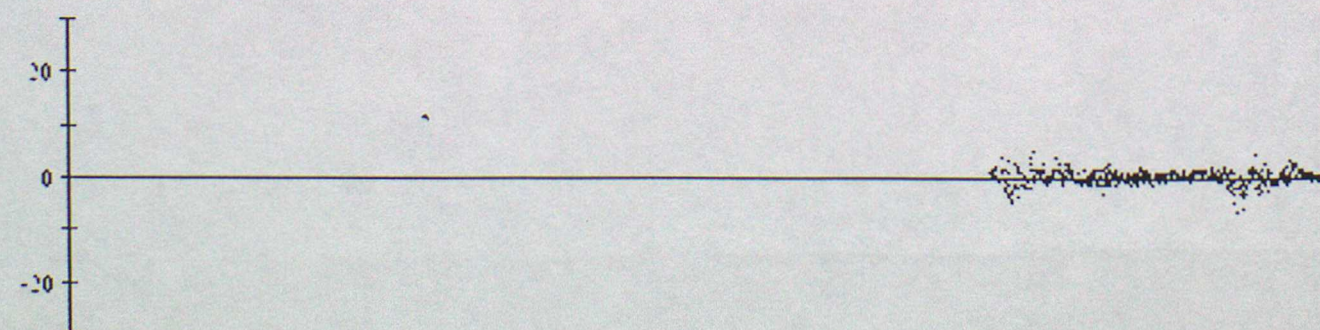
44620 Pressure



44621 Pressure



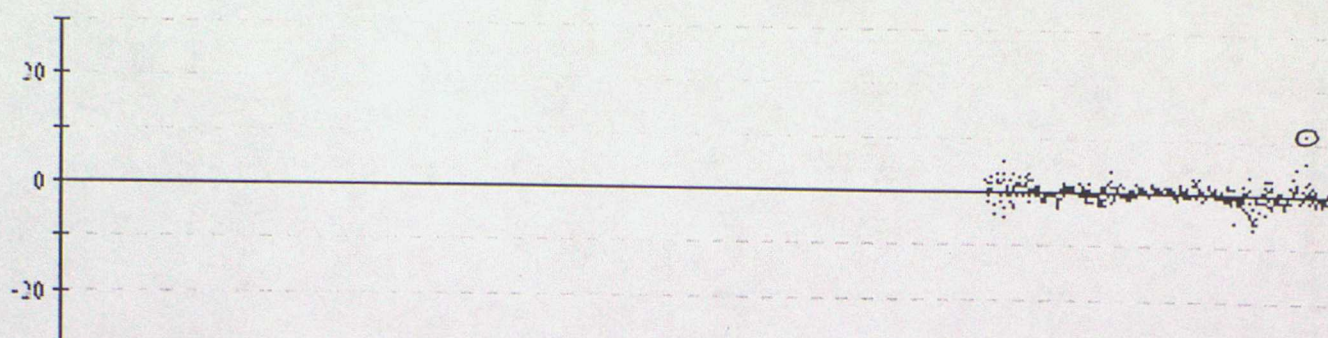
44622 Pressure



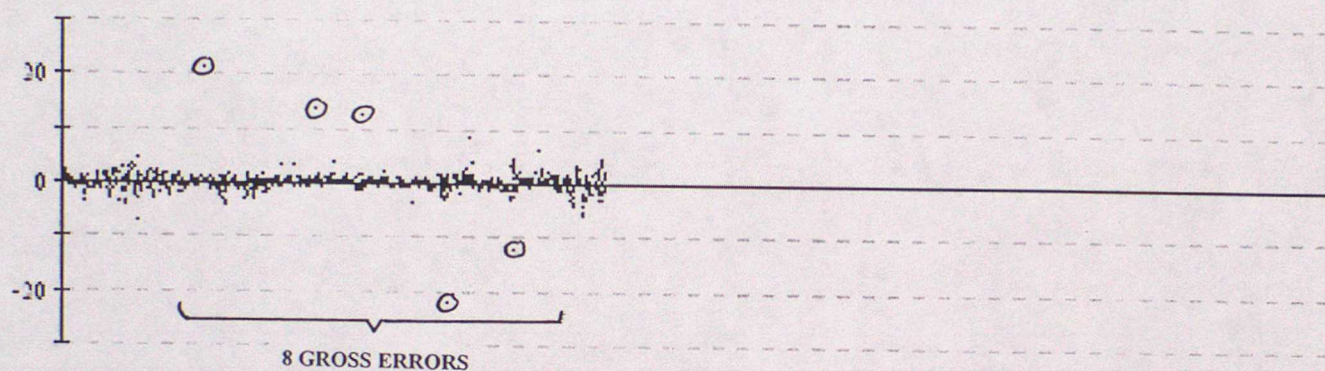


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

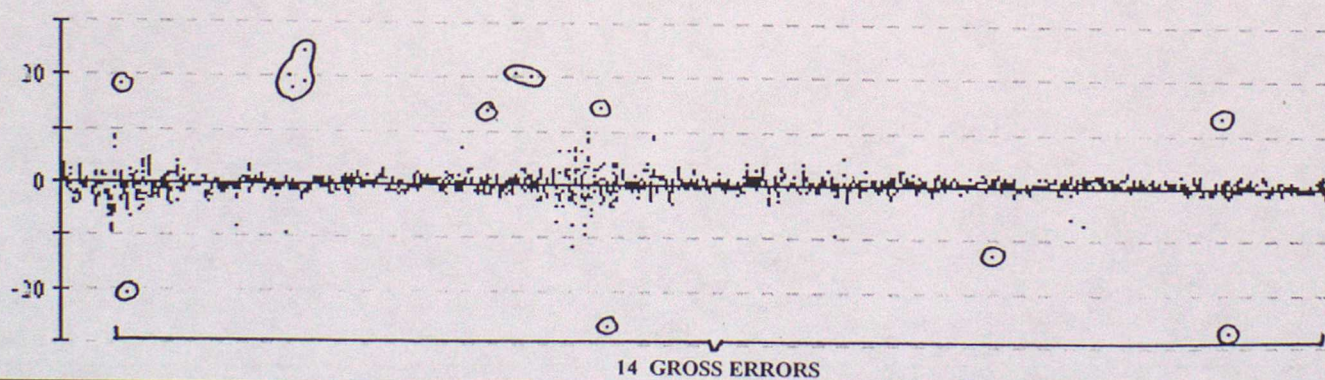
44623 Pressure



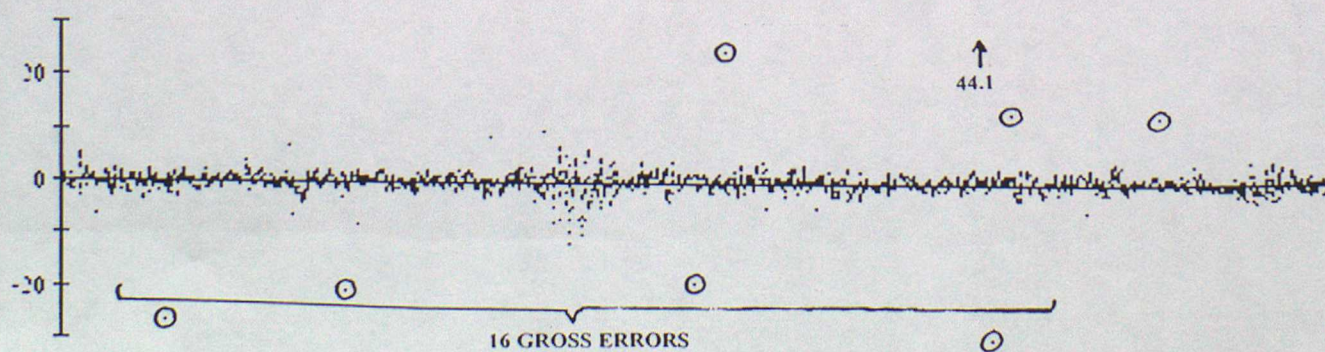
44625 Pressure



44626 Pressure



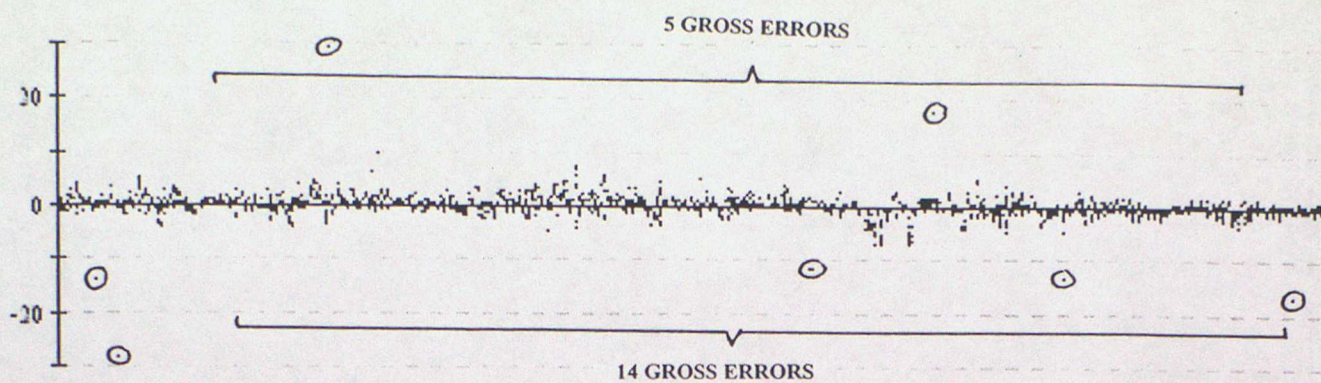
44627 Pressure



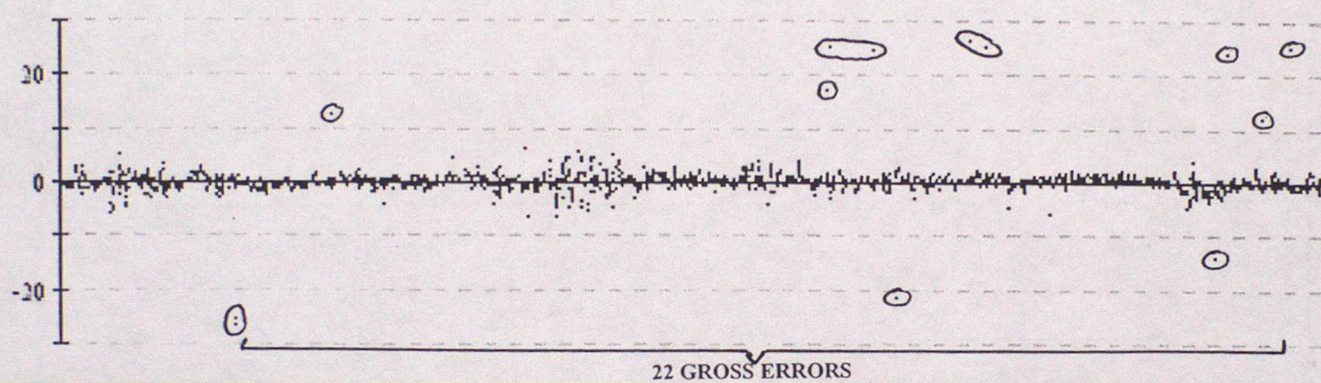


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

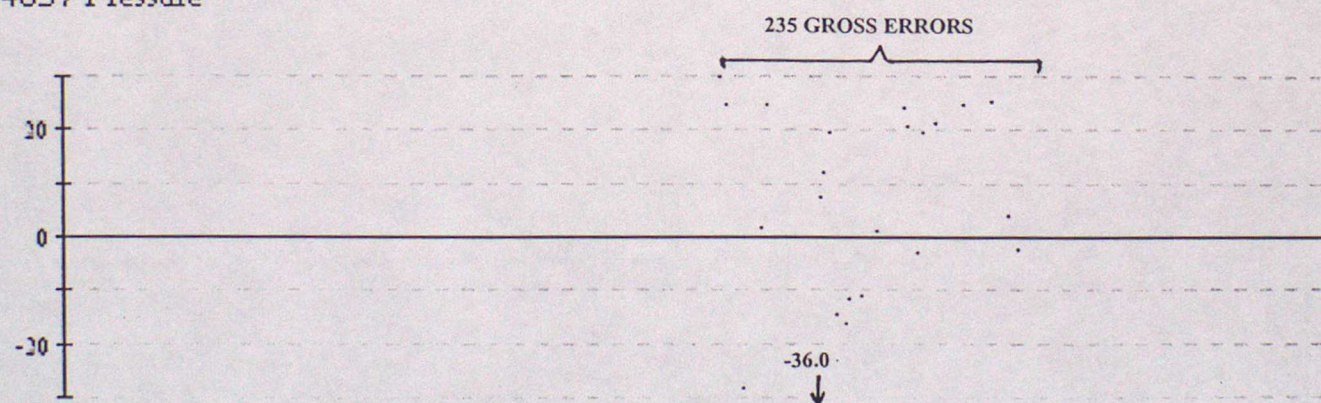
44628 Pressure



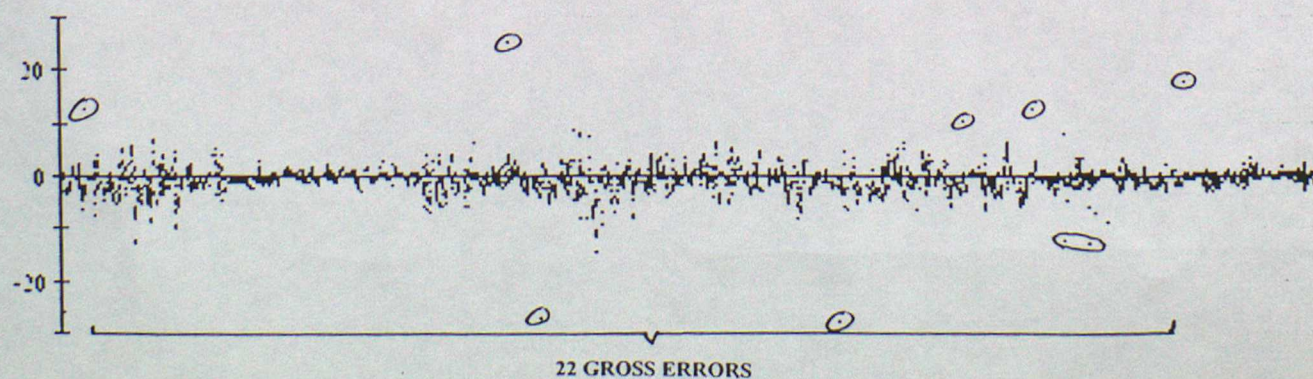
44630 Pressure



44657 Pressure



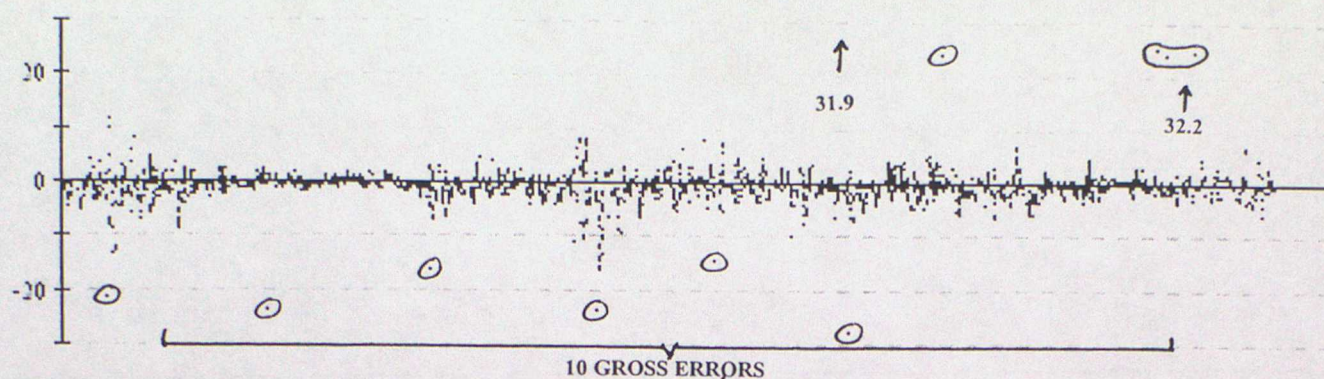
44721 Pressure



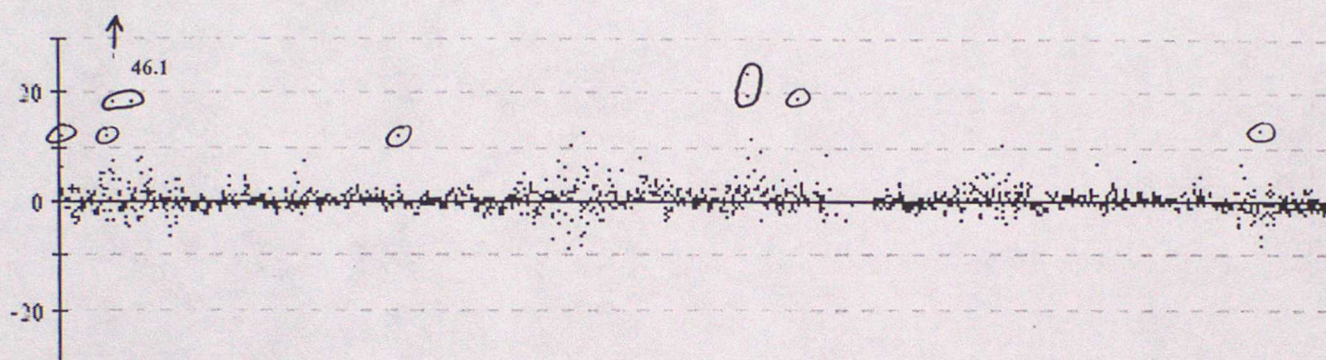


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

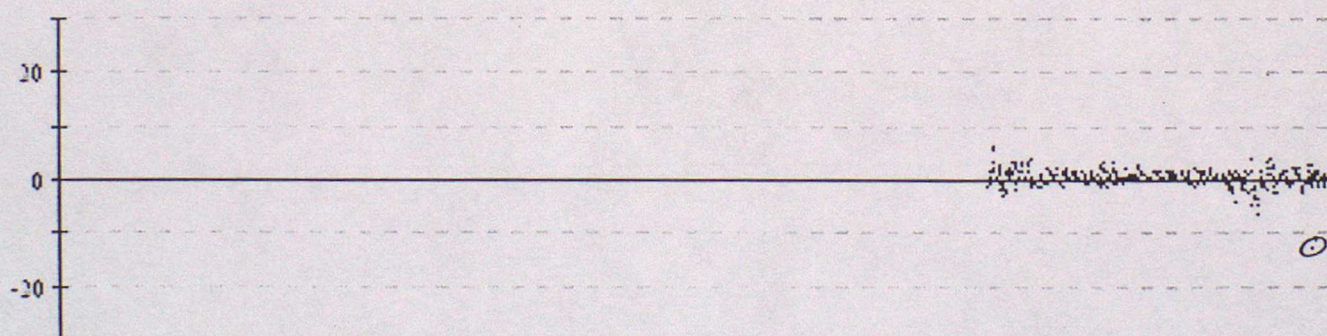
44722 Pressure



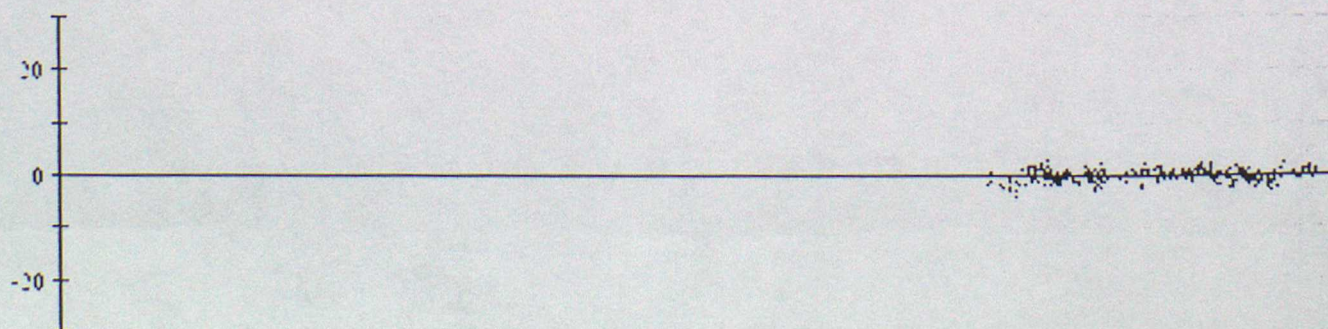
44723 Pressure



44724 Pressure



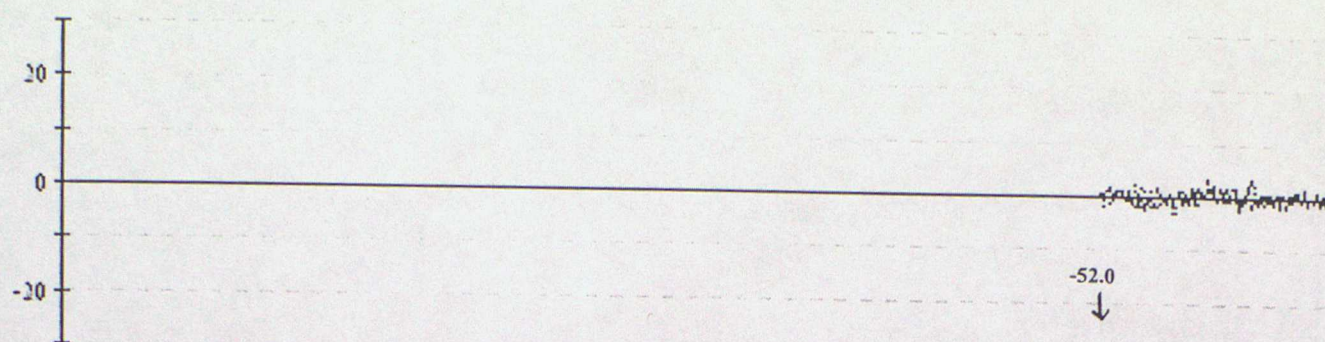
44725 Pressure



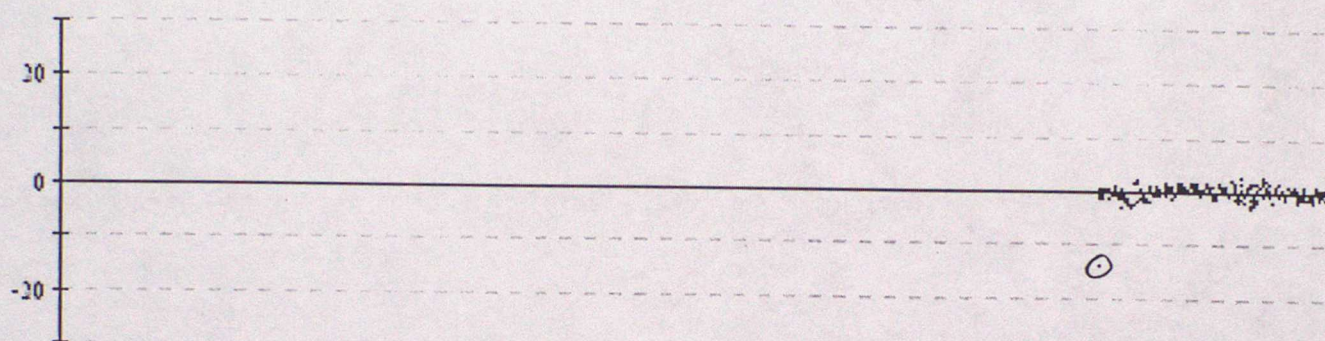


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

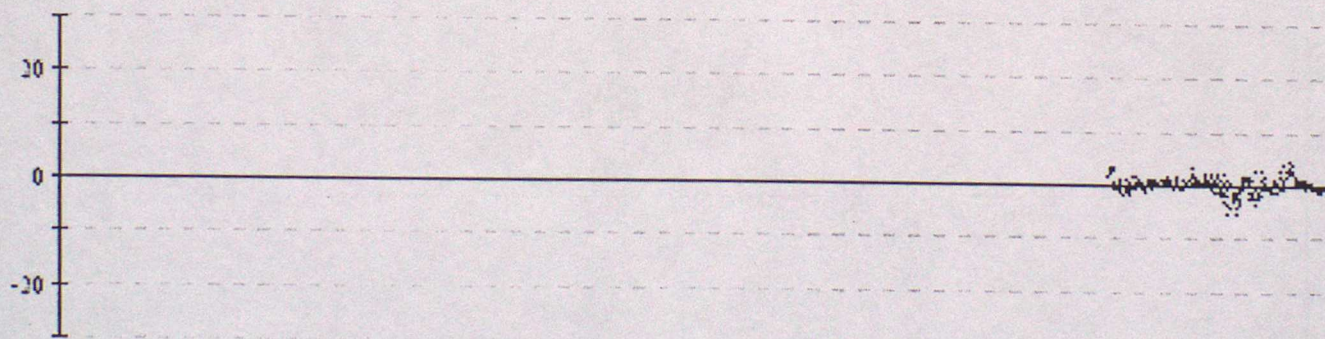
44726 Pressure



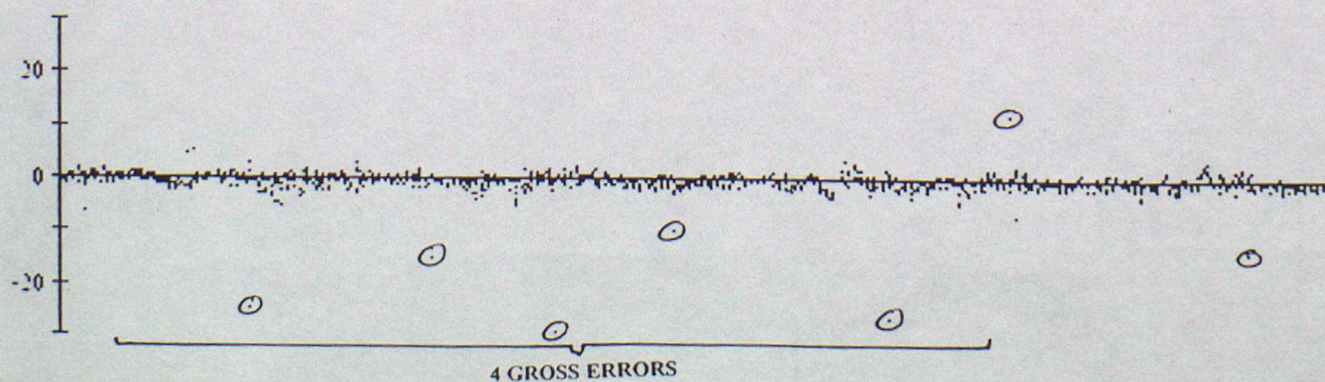
44727 Pressure



44729 Pressure



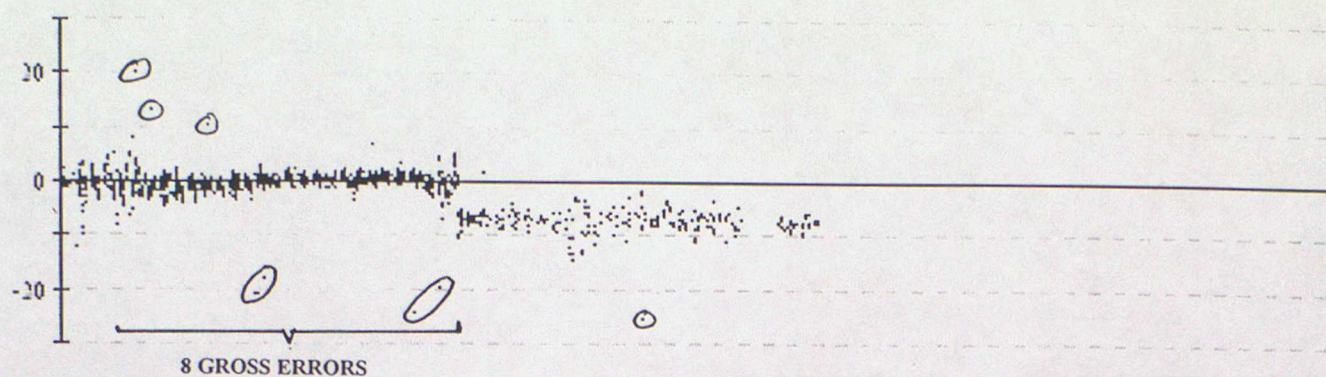
44765 Pressure



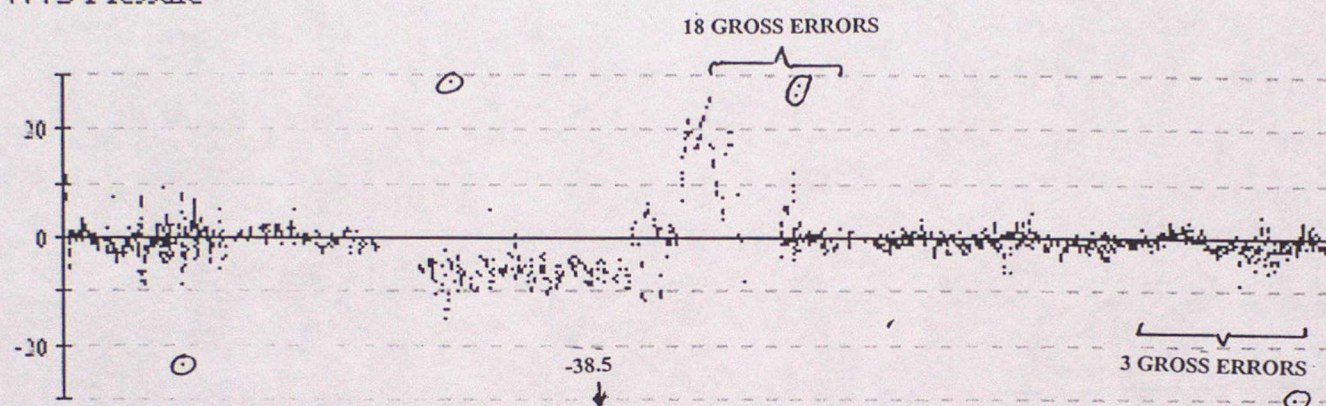


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

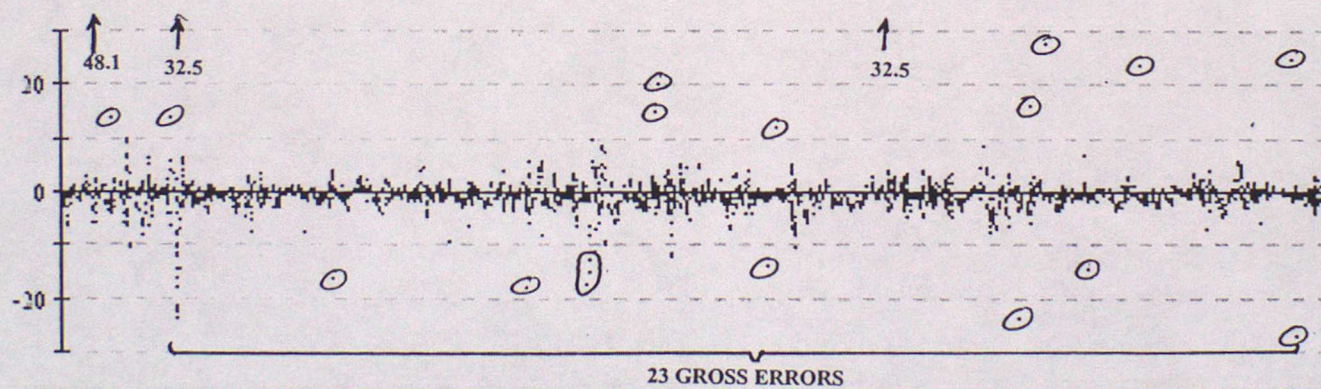
44766 Pressure



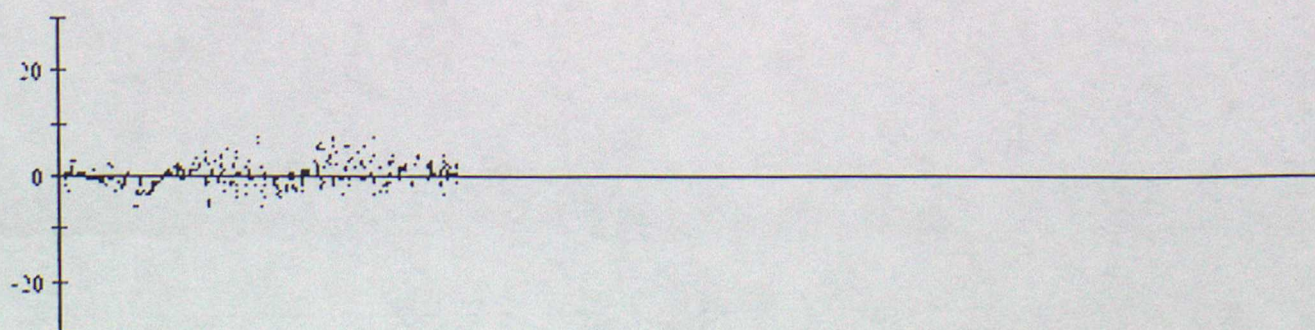
44773 Pressure



44777 Pressure



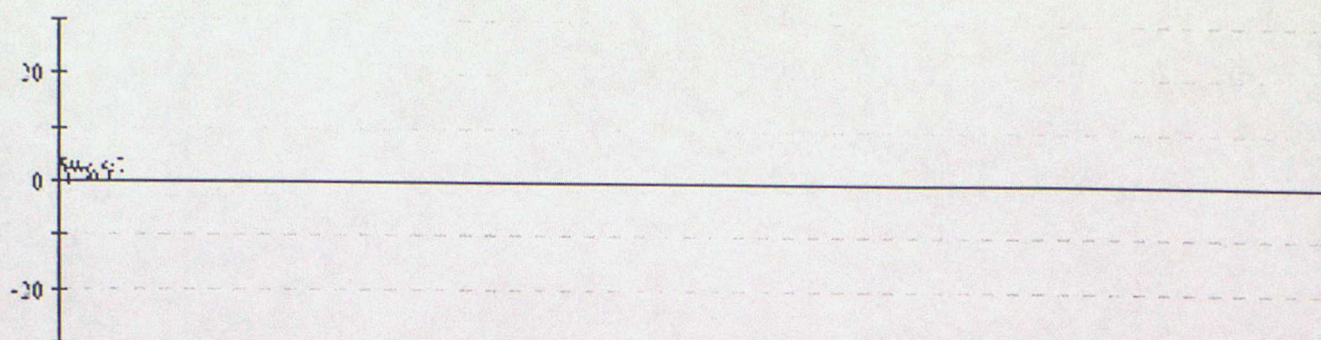
47553 Pressure



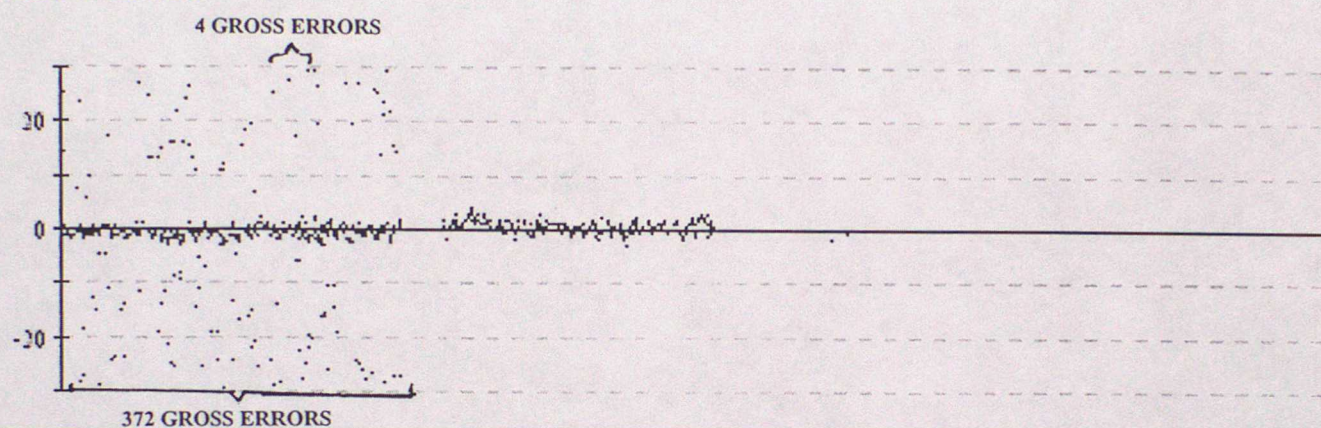


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

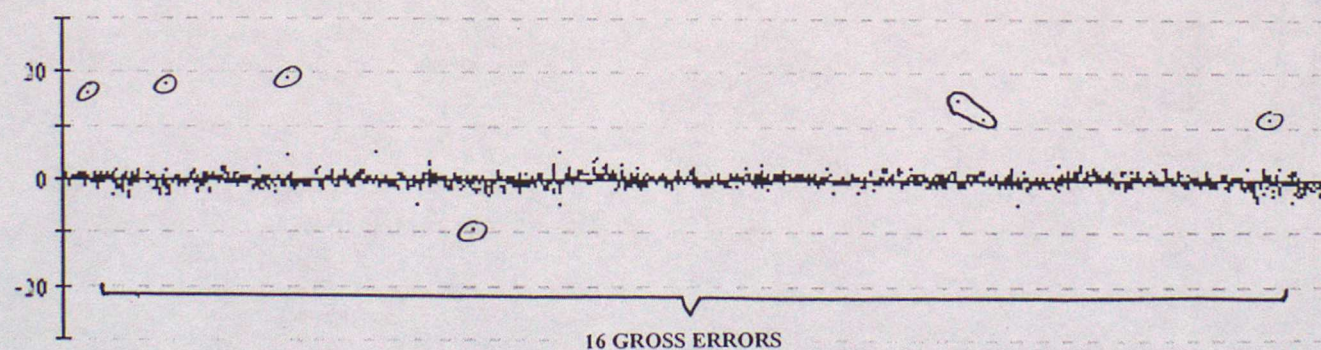
### 61536 Pressure



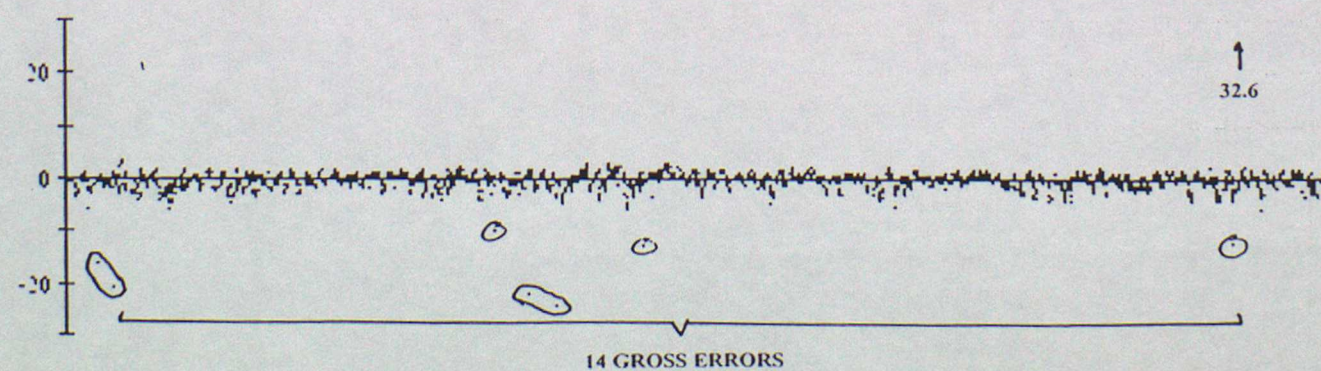
### 61537 Pressure



### 62507 Pressure



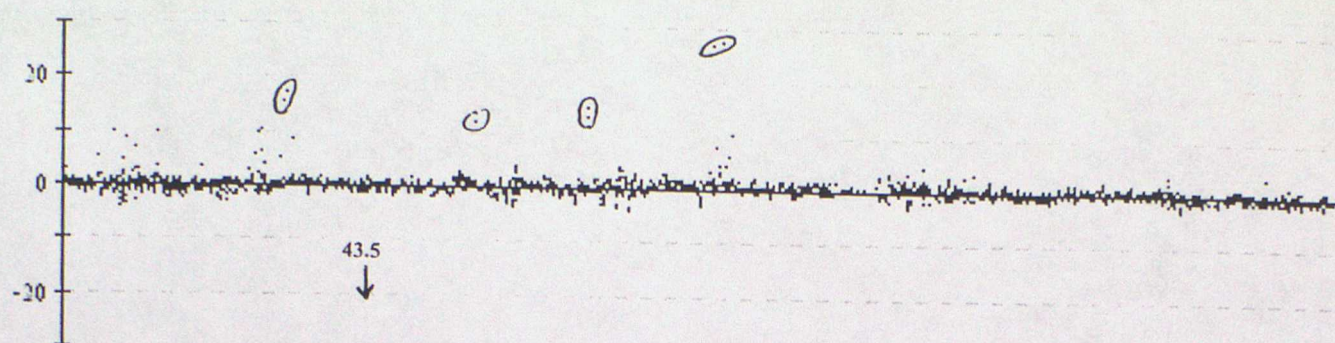
### 62508 Pressure



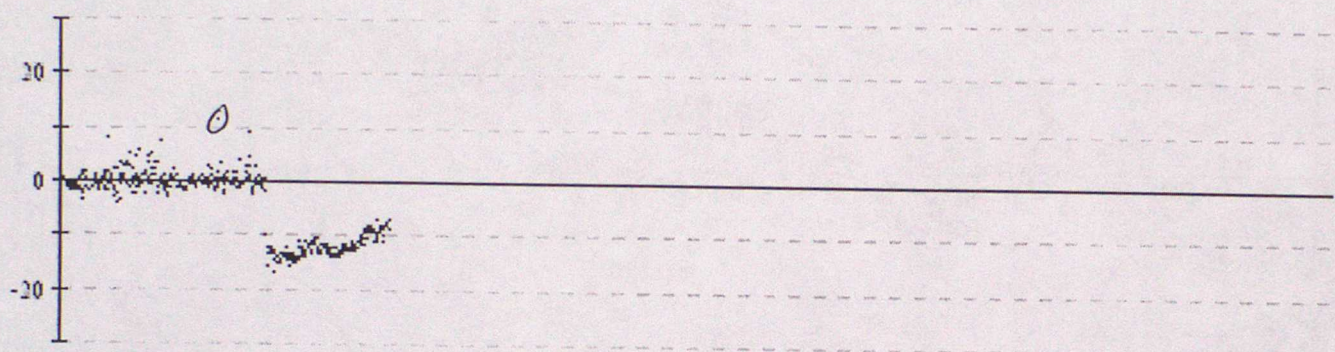


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

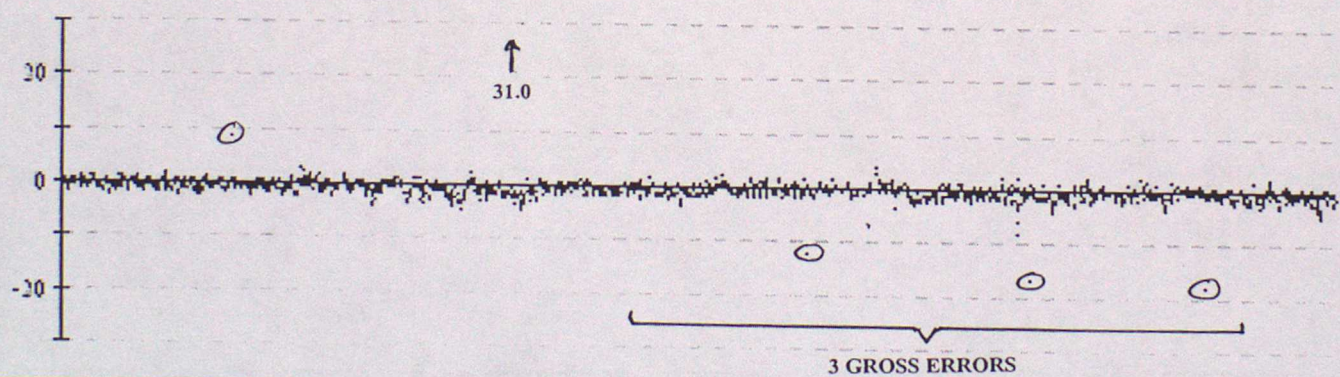
62509 Pressure



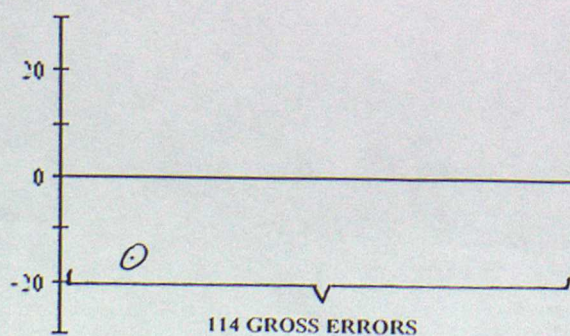
62510 Pressure



62520 Pressure



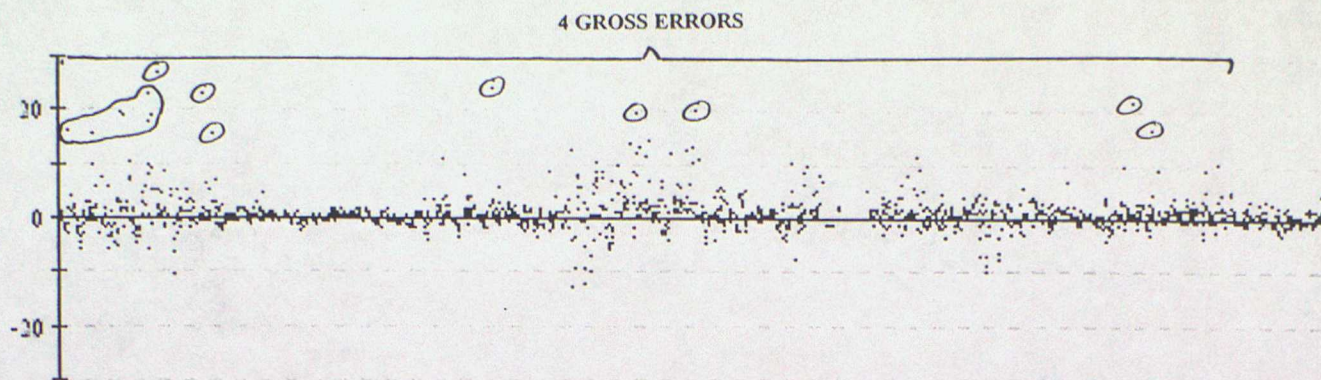
62554 Pressure



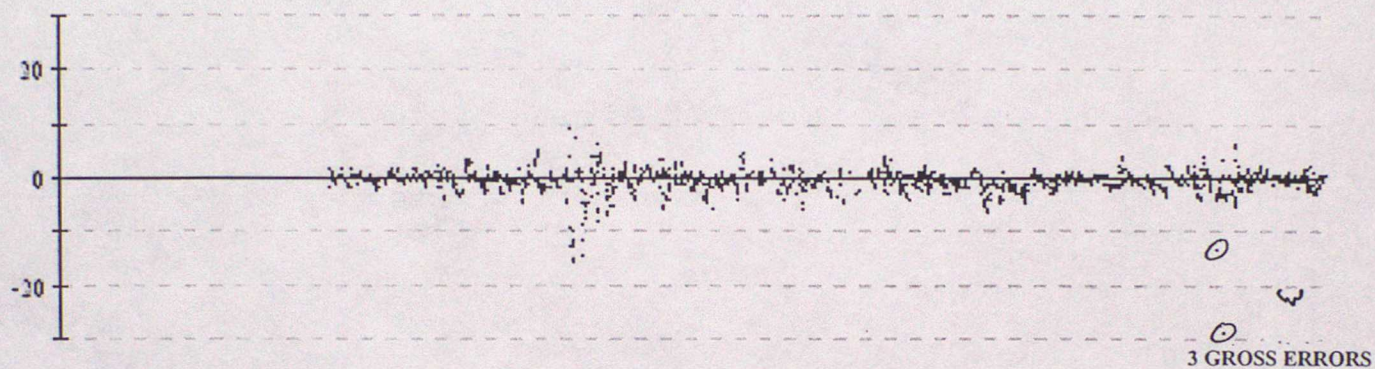


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

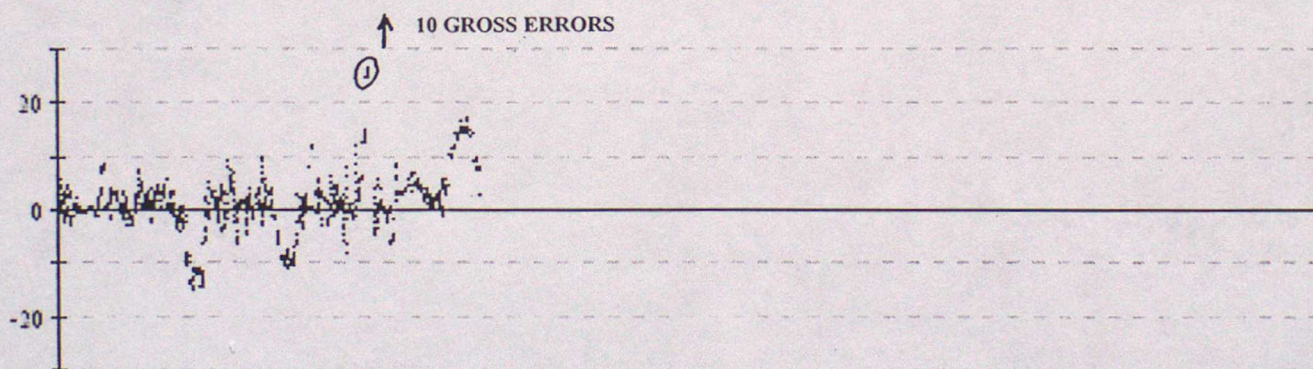
62596 Pressure



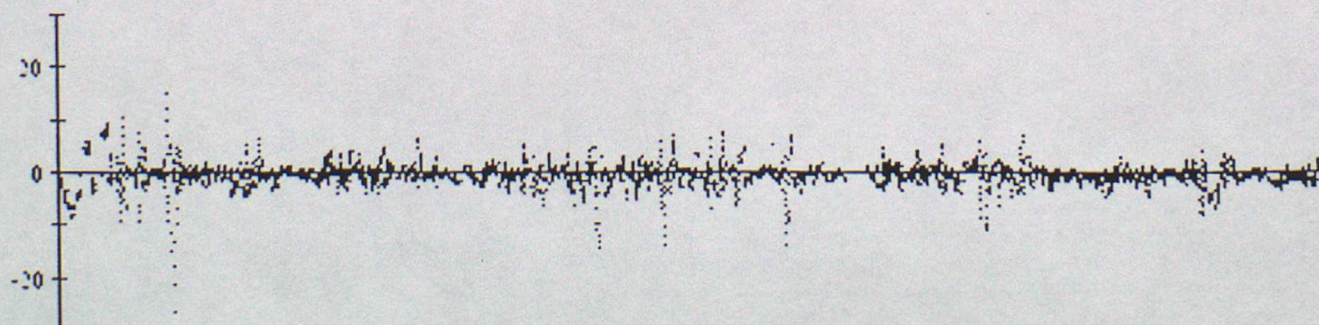
62597 Pressure



64516 Pressure

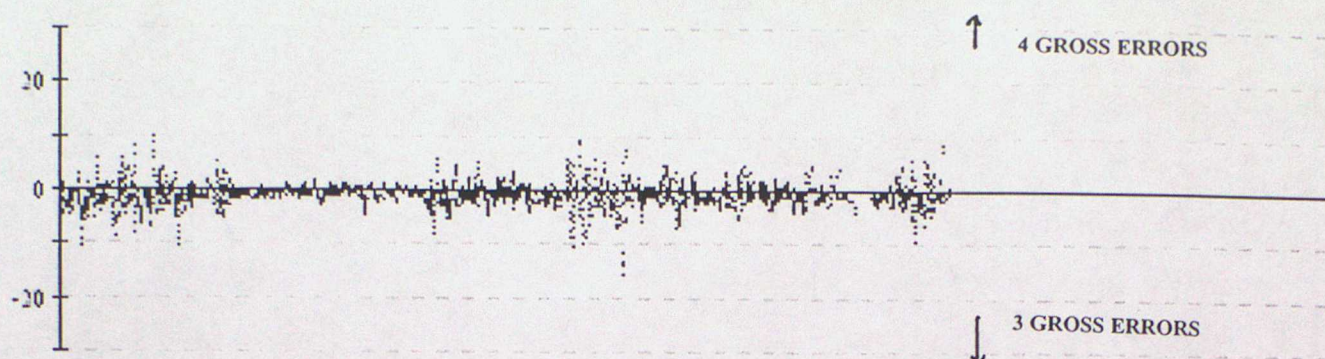


64517 Pressure

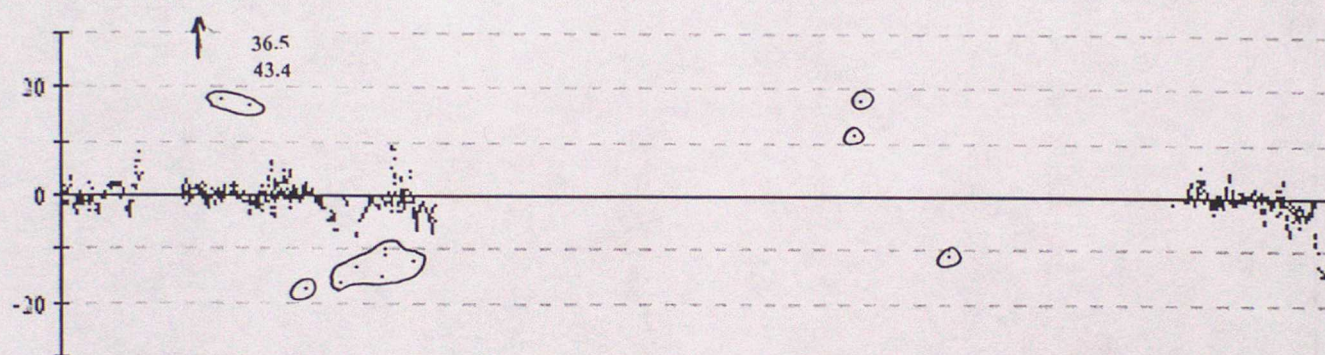




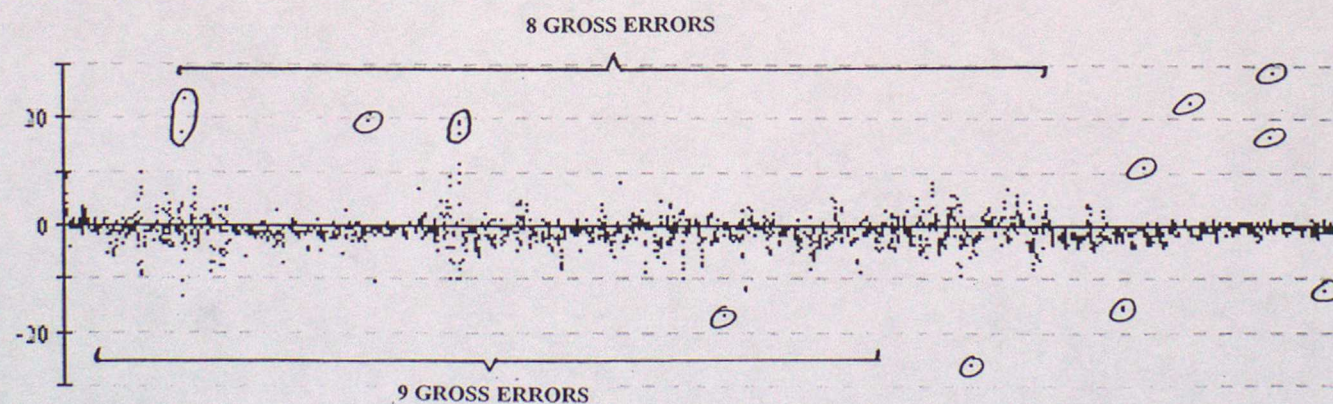
64518 Pressure



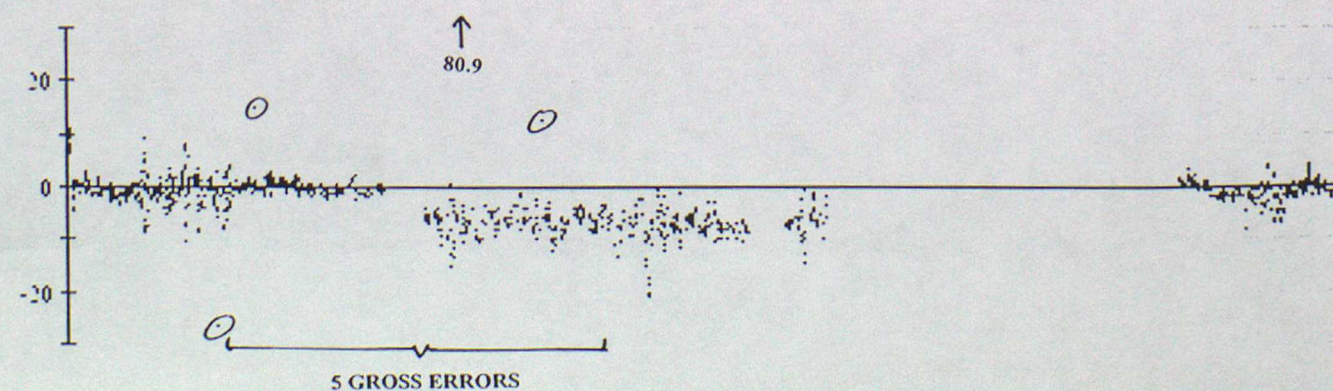
64529 Pressure



64530 Pressure



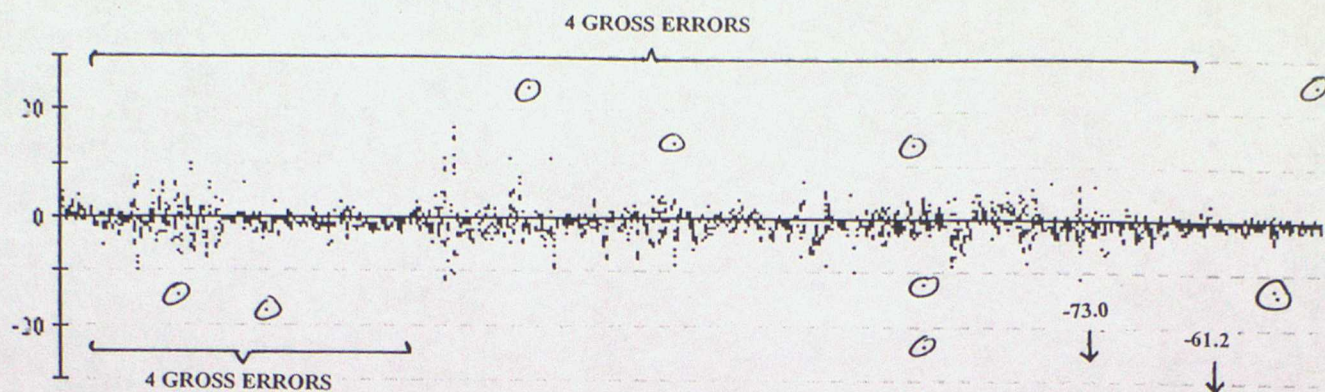
64546 Pressure



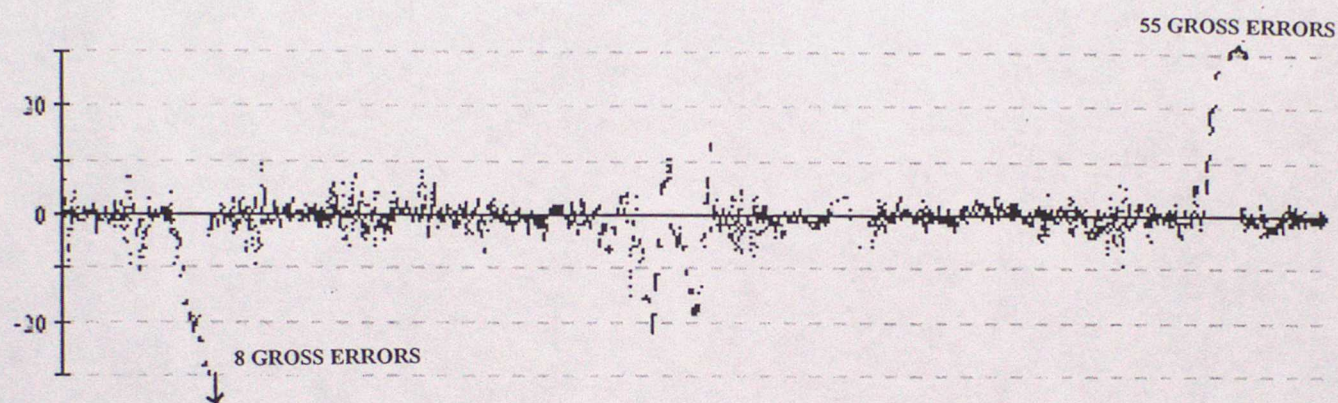


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

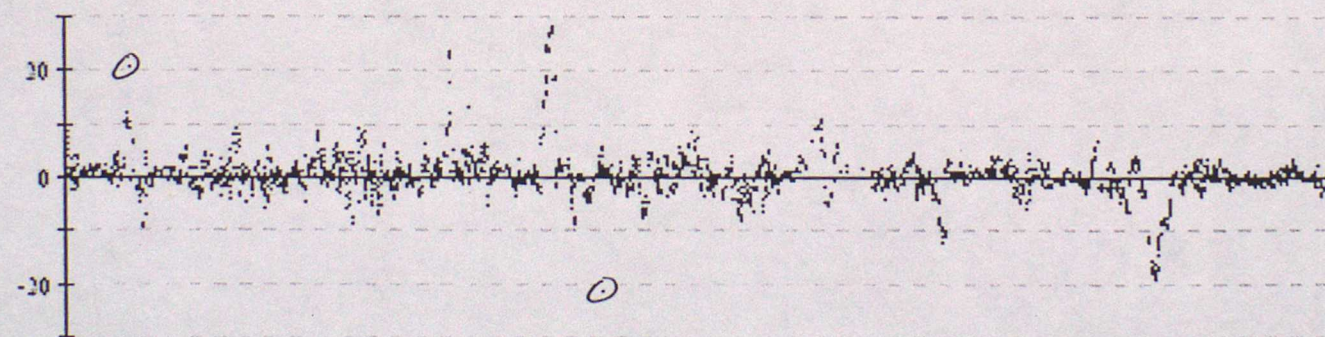
64547 Pressure



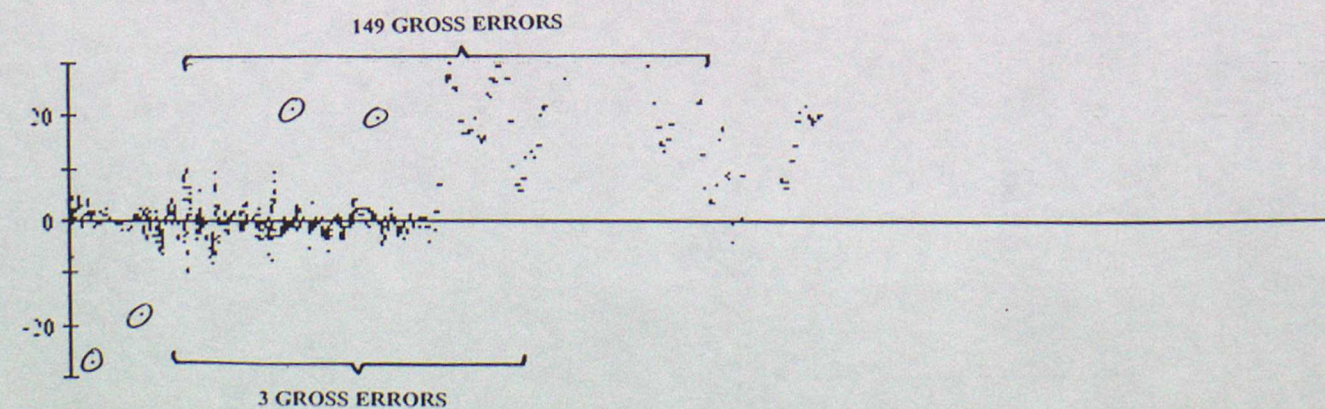
64698 Pressure



64699 Pressure



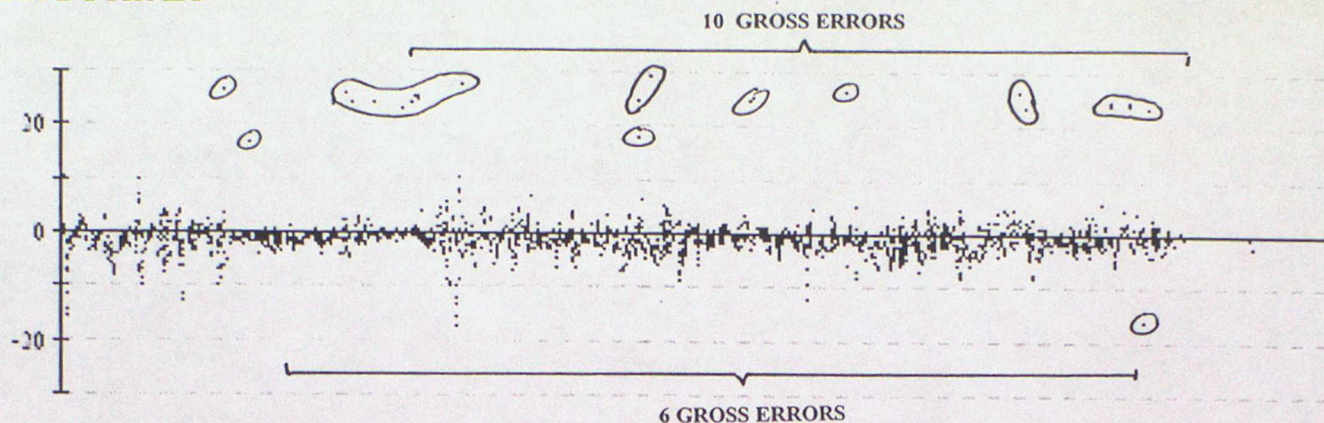
65594 Pressure



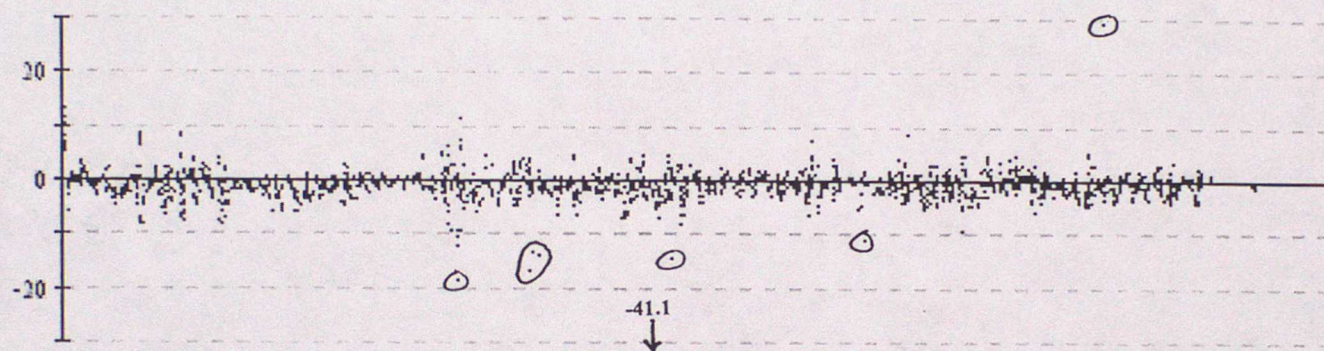


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

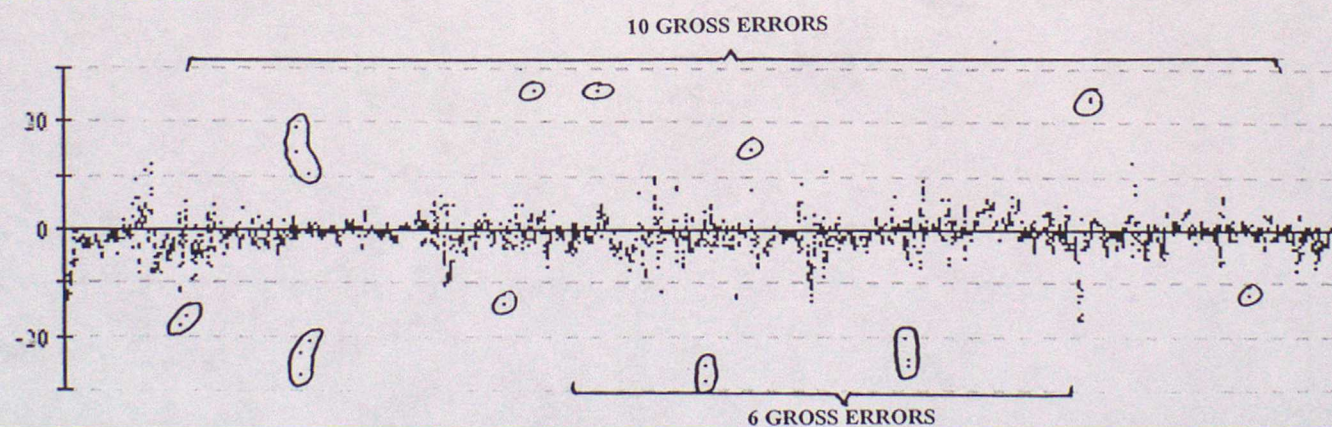
65595 Pressure



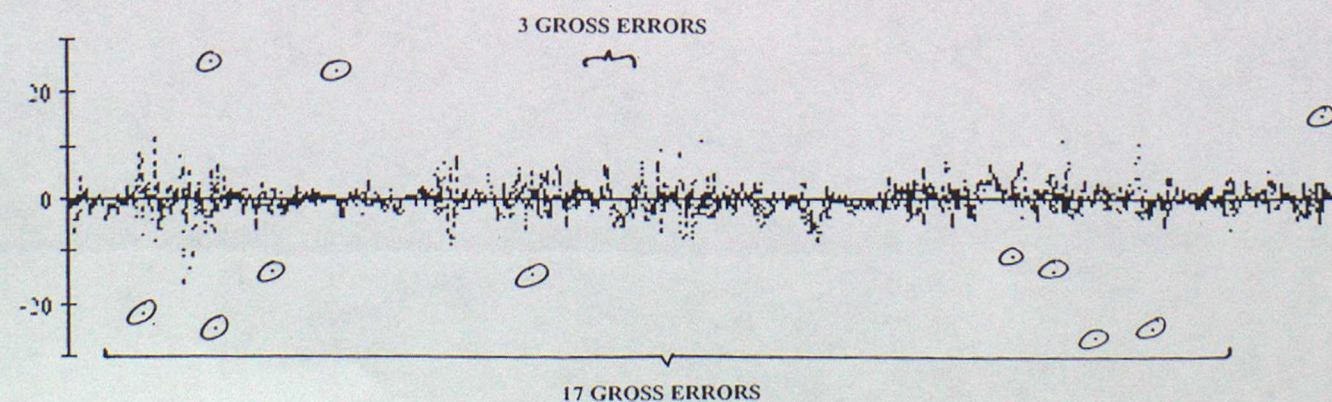
65596 Pressure



65598 Pressure



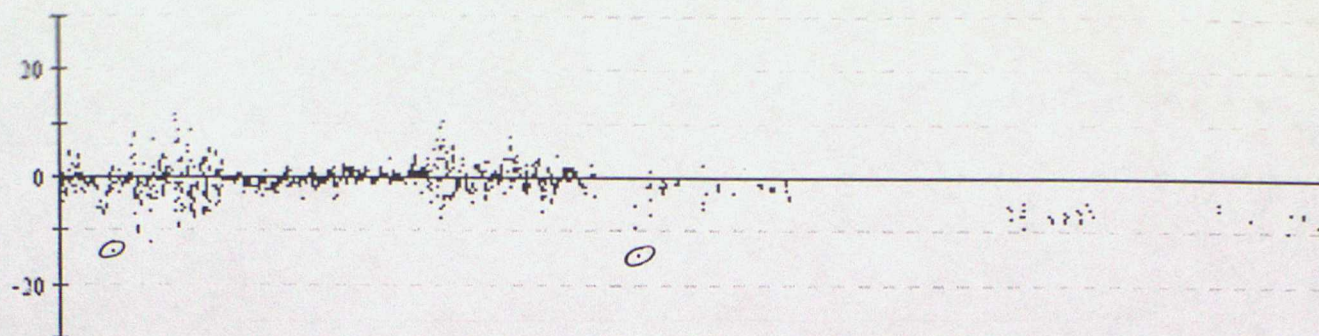
65599 Pressure



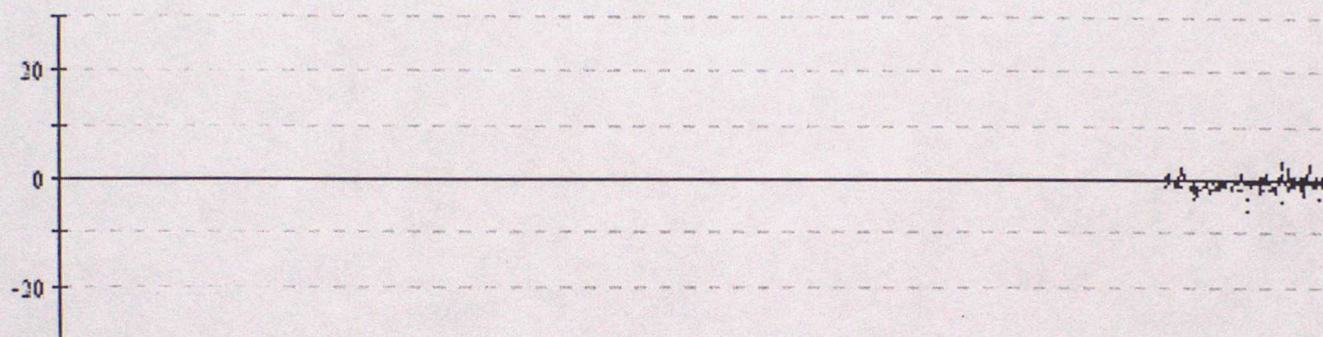


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

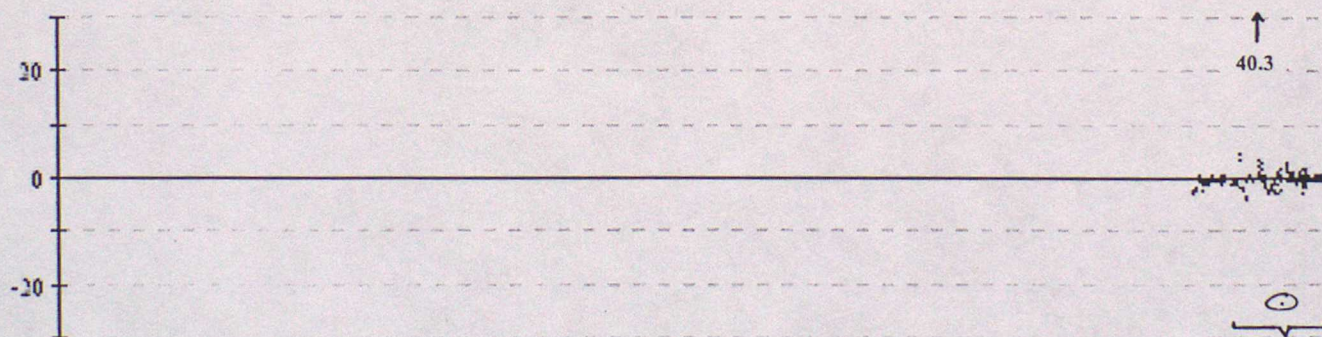
65600 Pressure



65601 Pressure



65602 Pressure



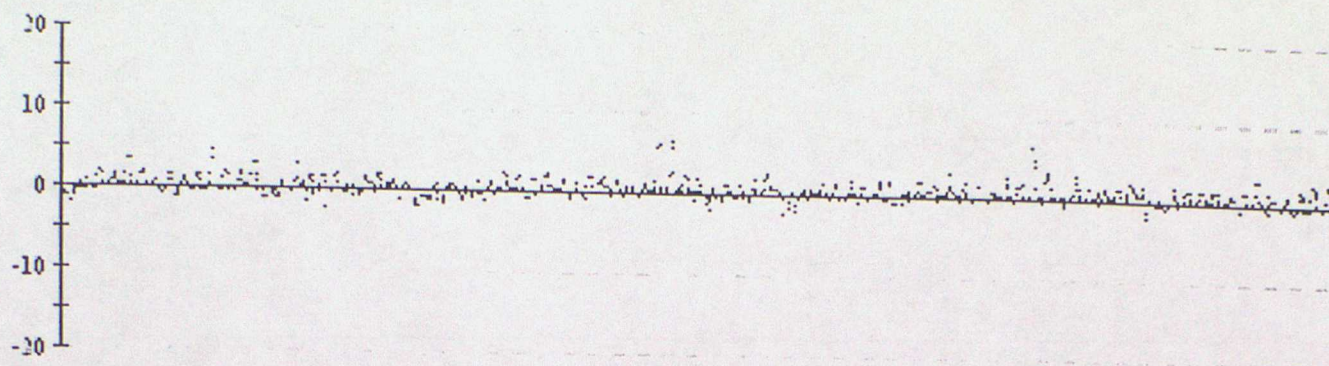
40.3  
17 GROSS ERRORS



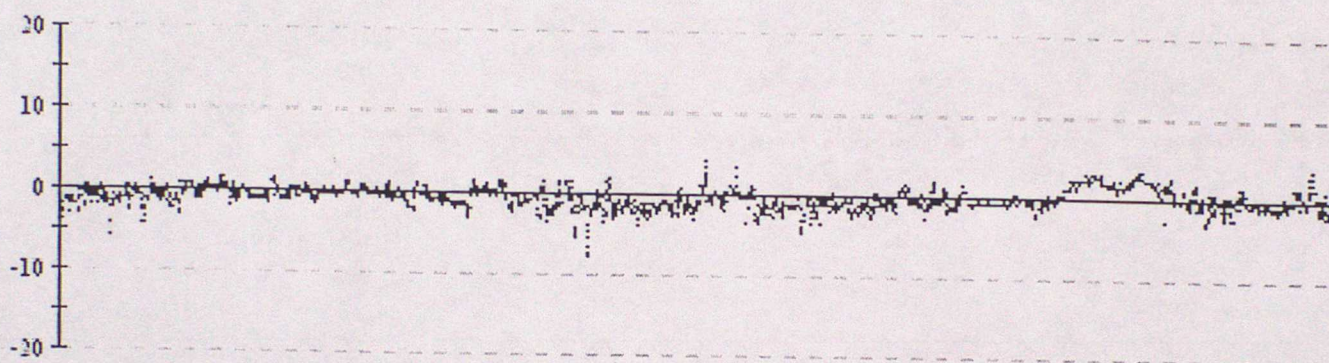
## ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

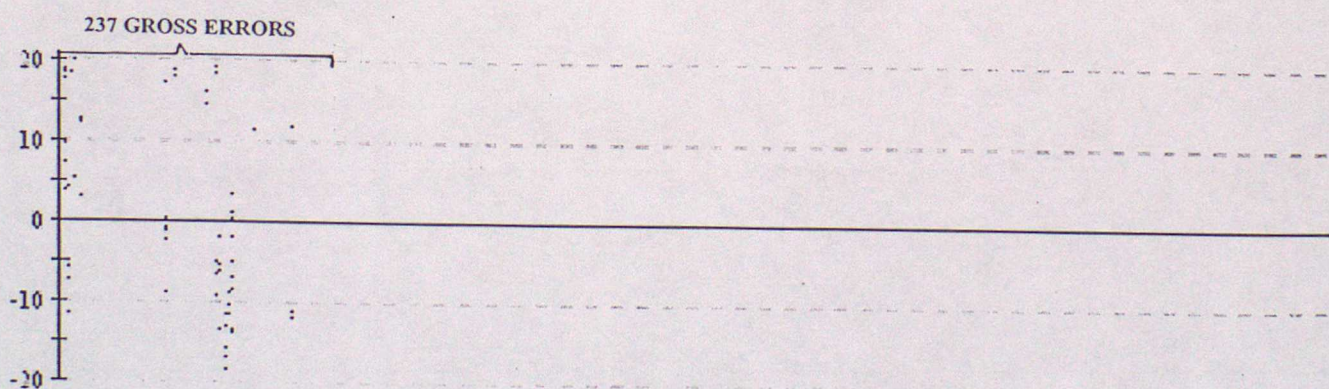
41521 Air Temperature



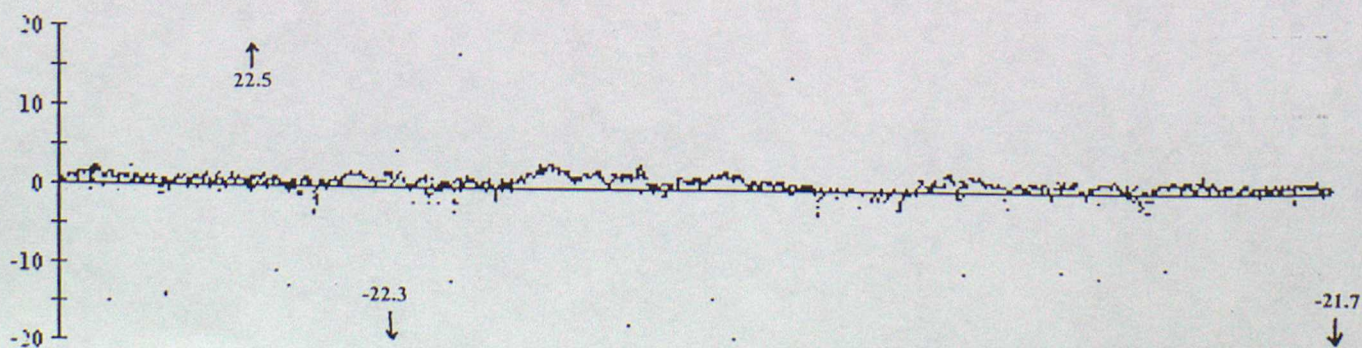
44516 Air Temperature



44517 Air Temperature

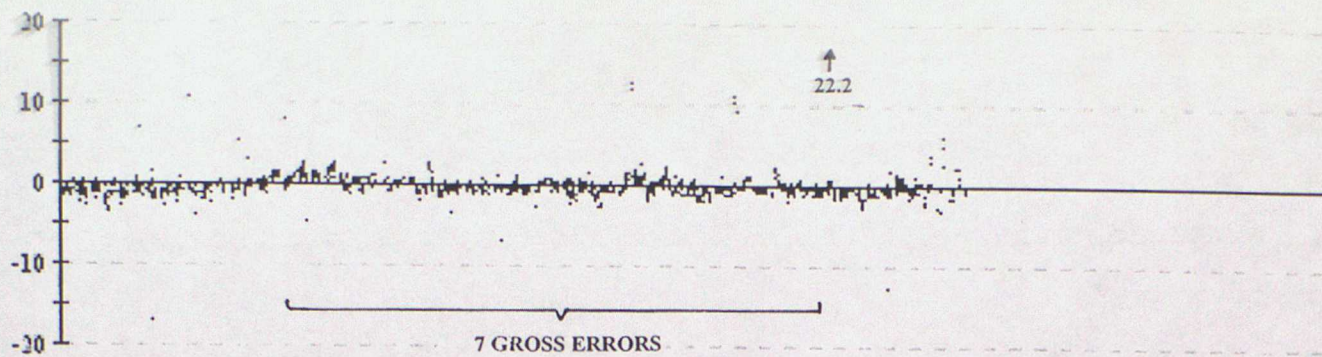


44613 Air Temperature

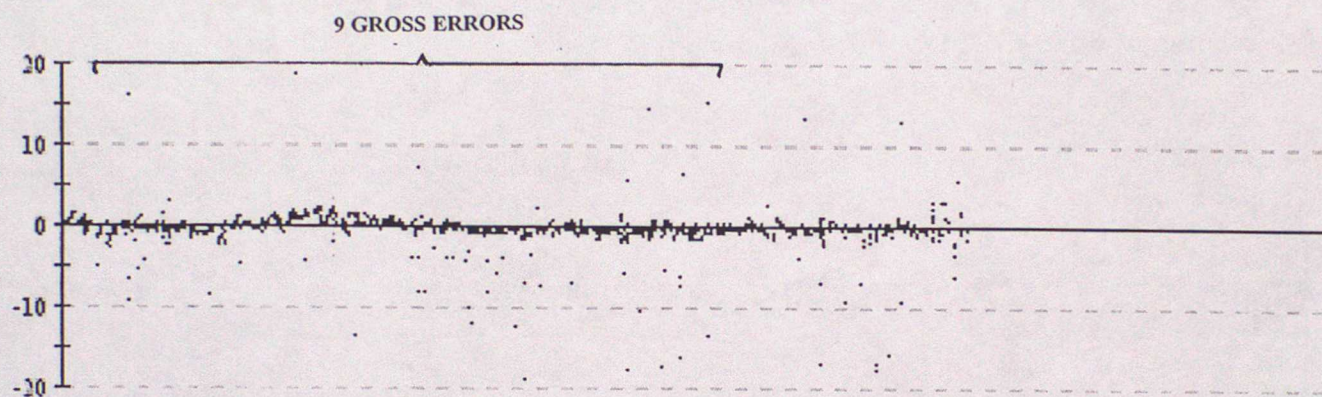




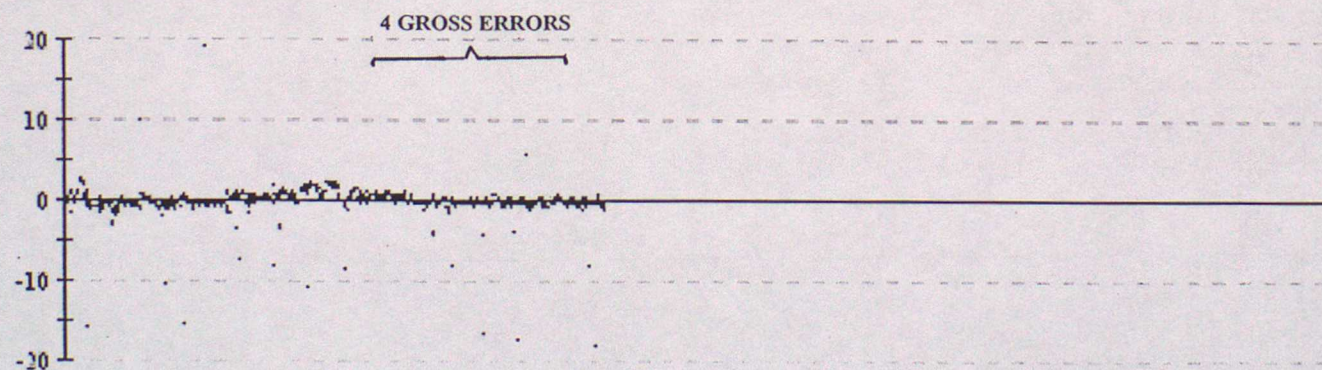
44614 Air Temperature



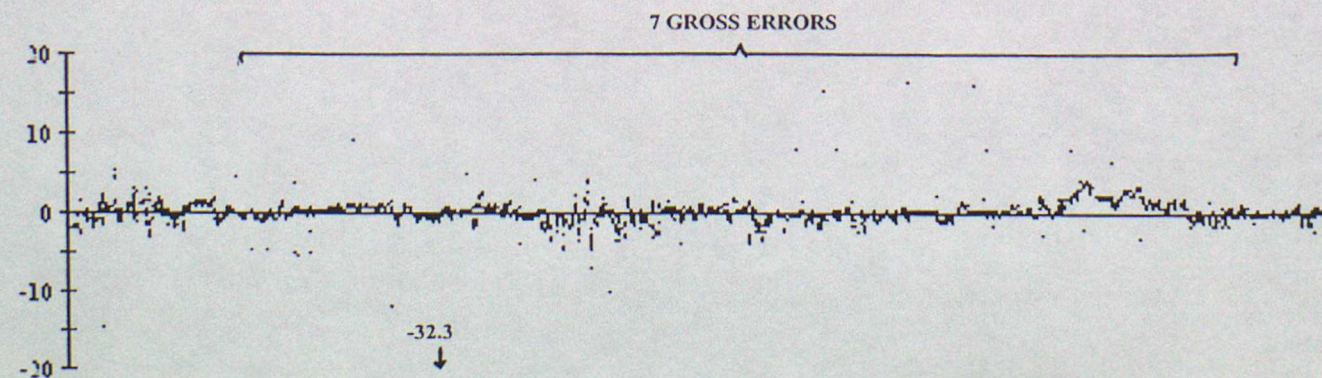
44621 Air Temperature



44625 Air Temperature



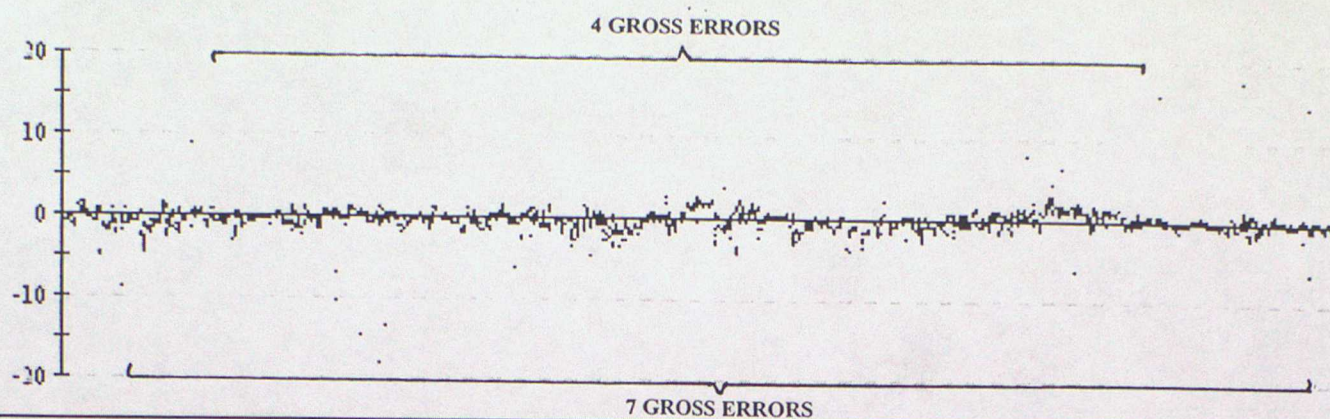
44626 Air Temperature



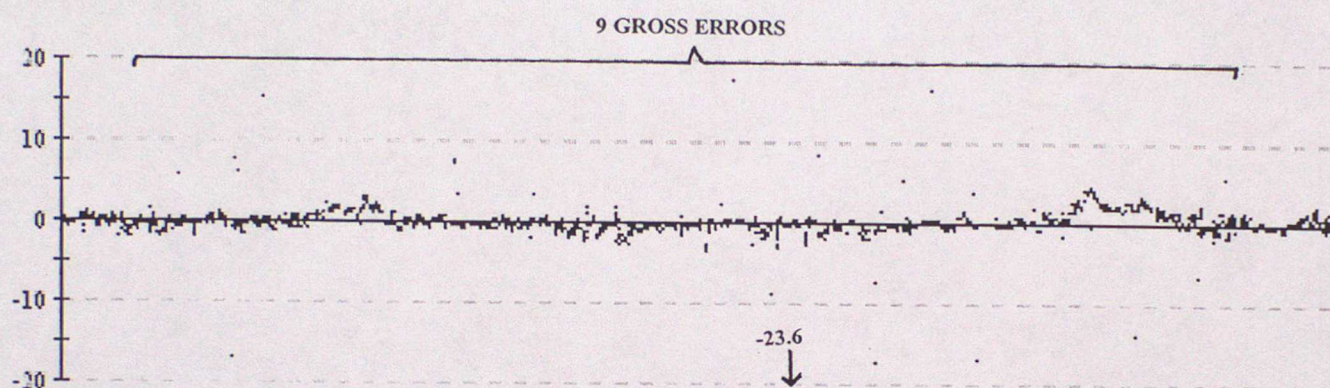


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

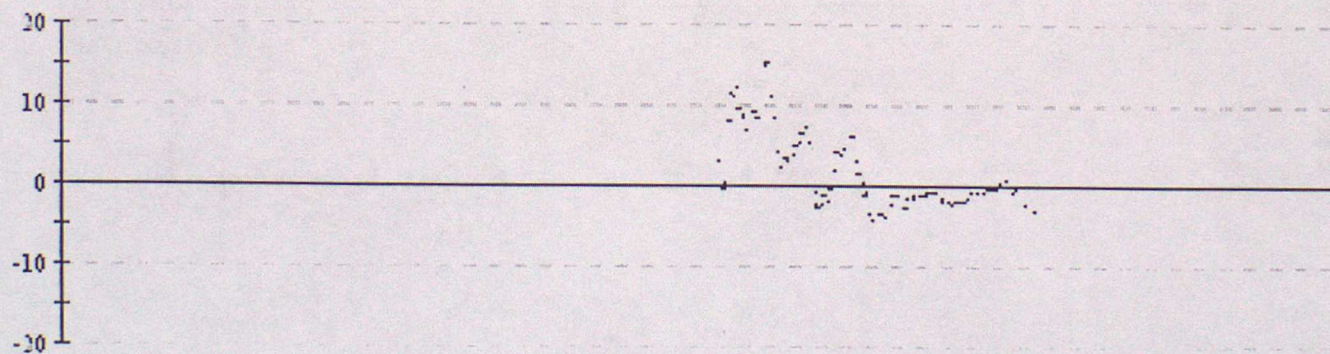
44628 Air Temperature



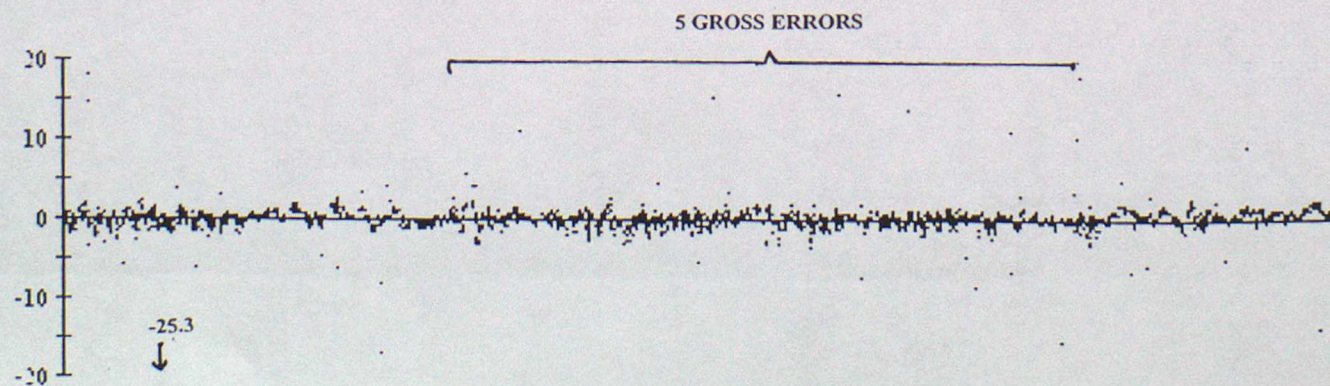
44630 Air Temperature



44657 Air Temperature



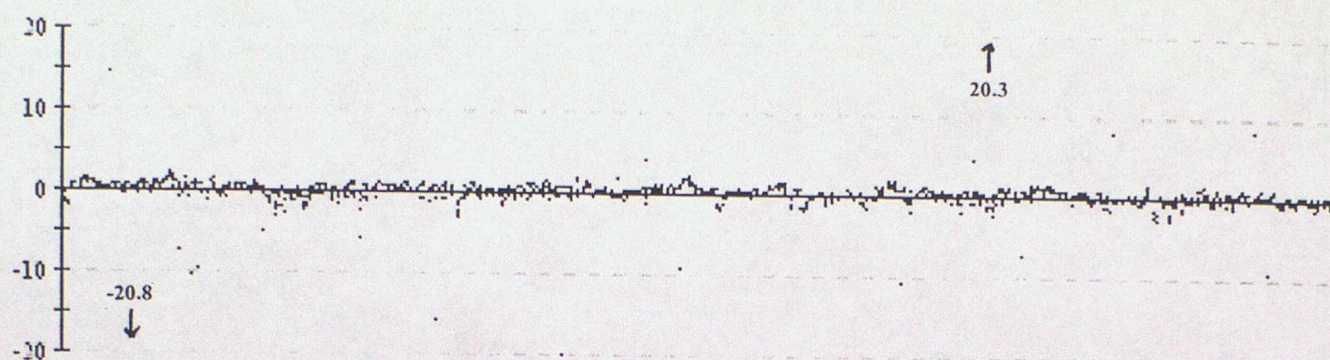
44721 Air Temperature



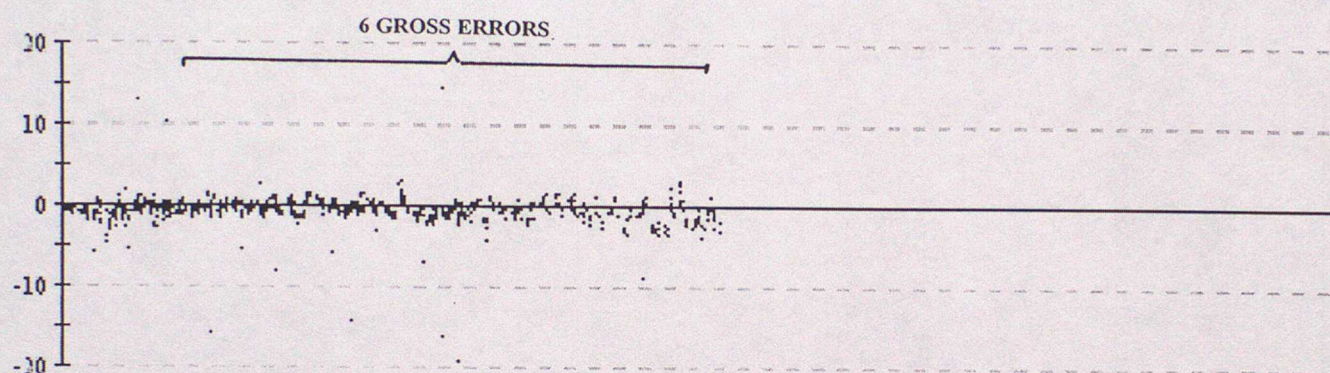


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

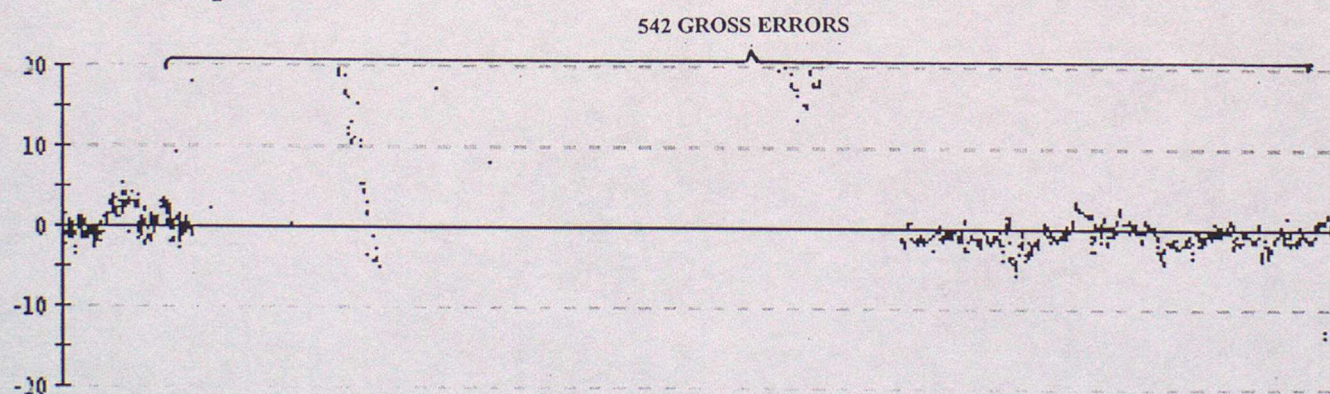
#### 44765 Air Temperature



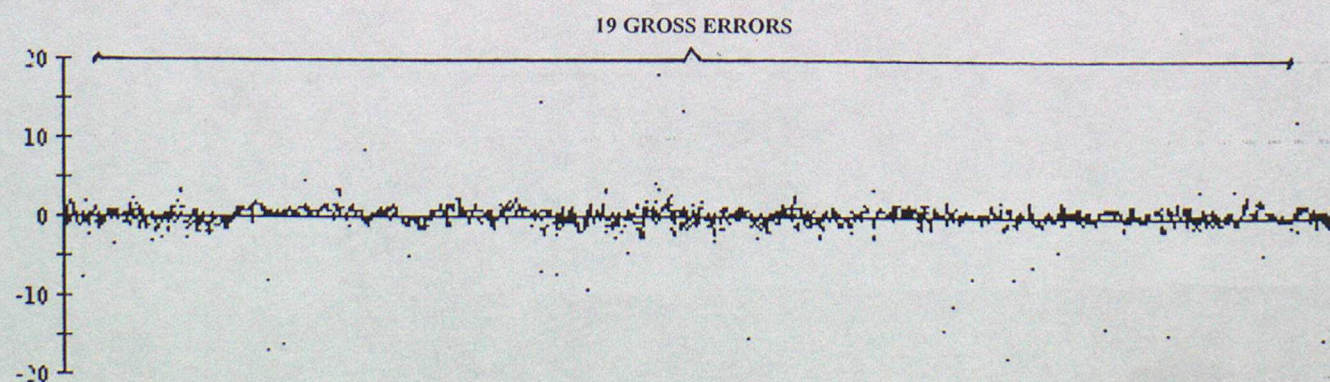
#### 44766 Air Temperature



#### 44773 Air Temperature



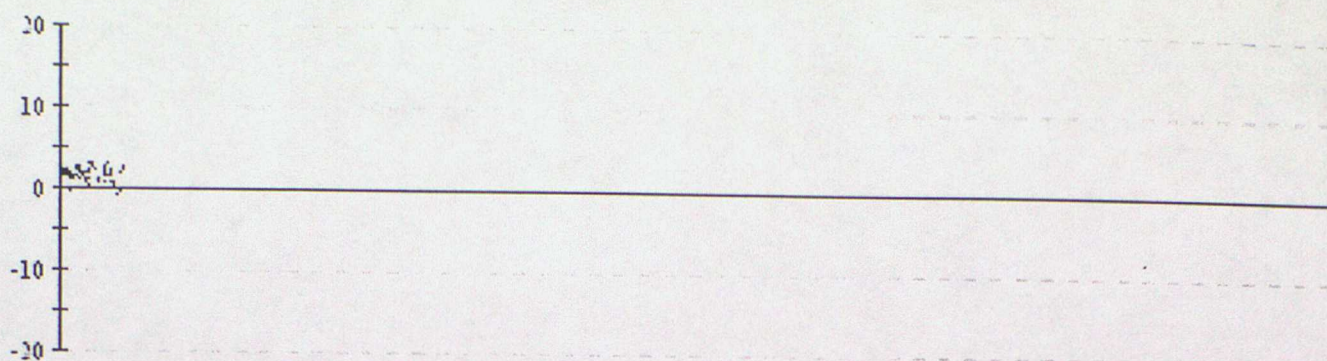
#### 44777 Air Temperature



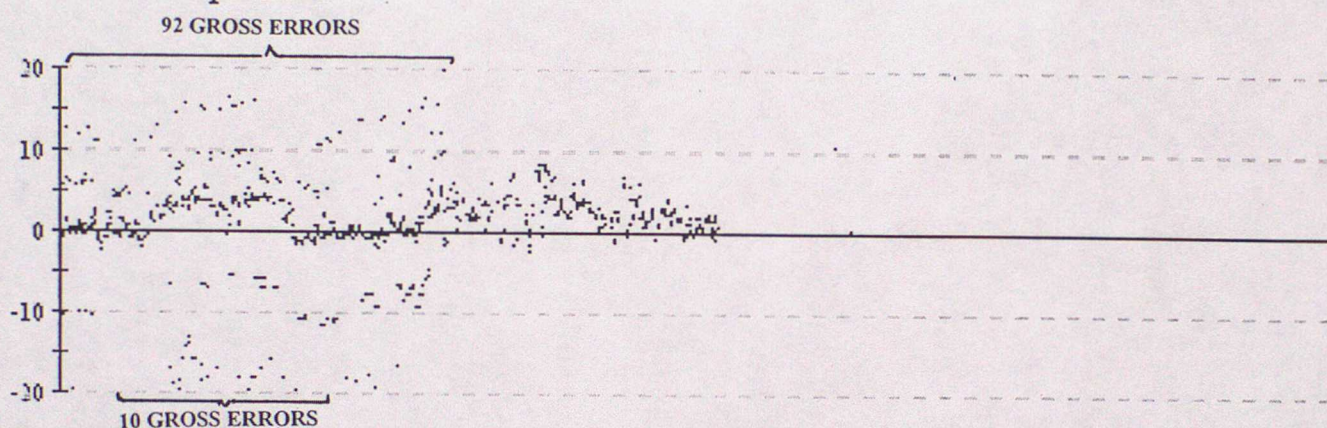


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

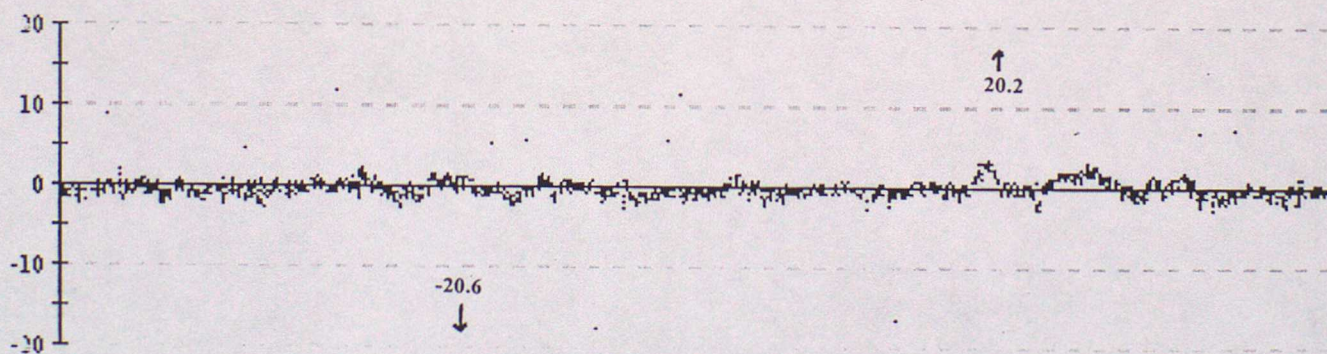
### 61536 Air Temperature



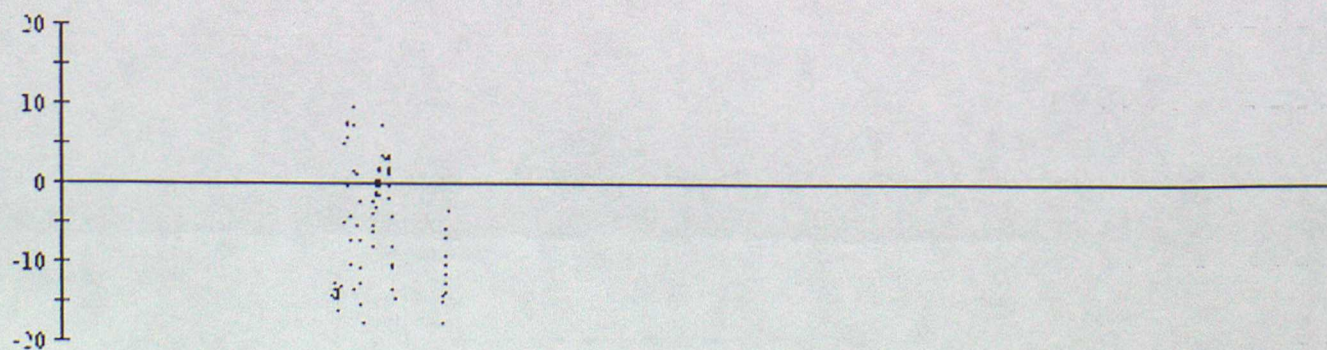
### 61537 Air Temperature



### 62508 Air Temperature



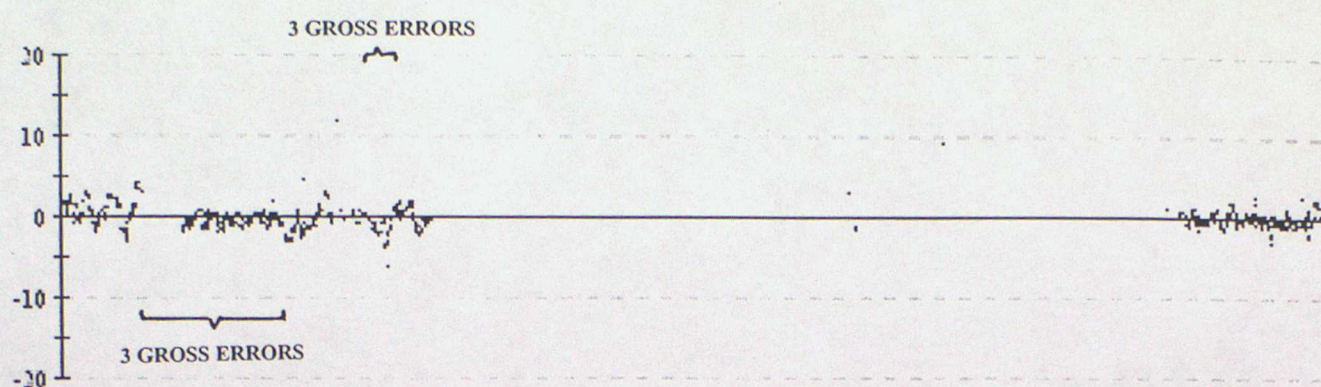
### 62597 Air Temperature



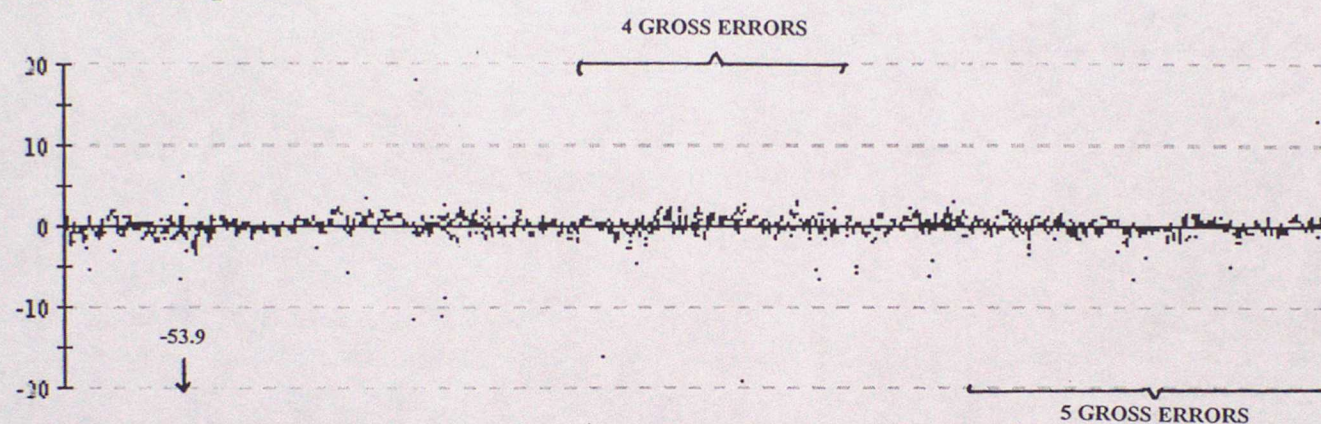


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

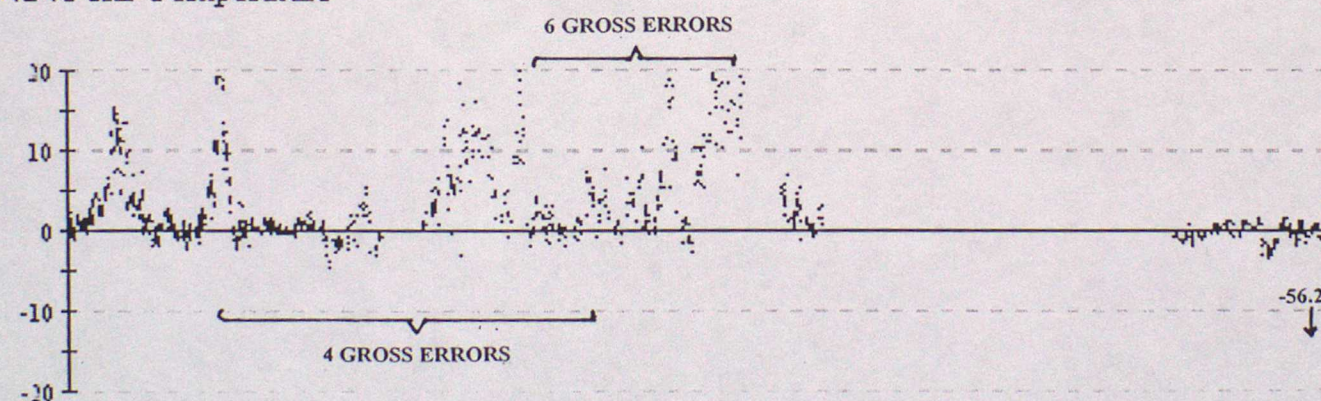
64529 Air Temperature



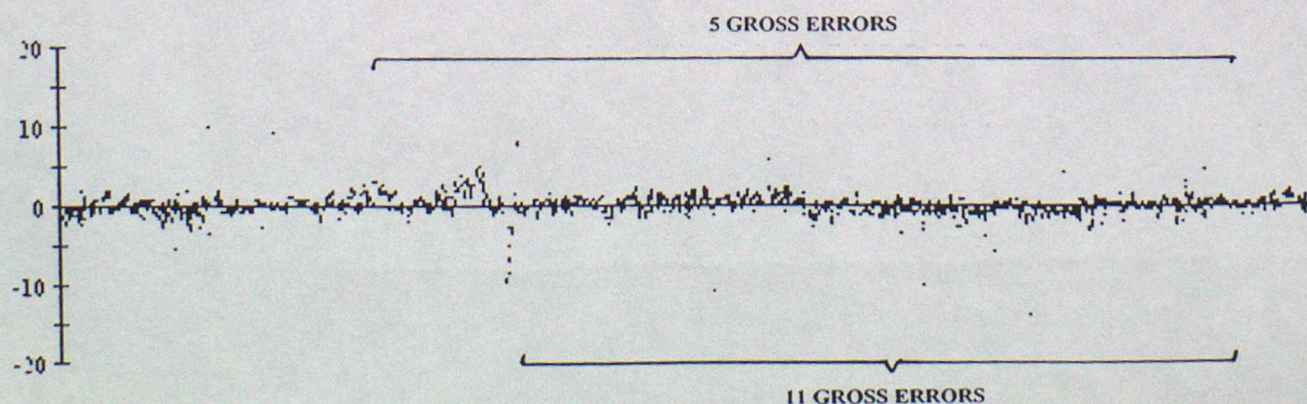
64530 Air Temperature



64546 Air Temperature



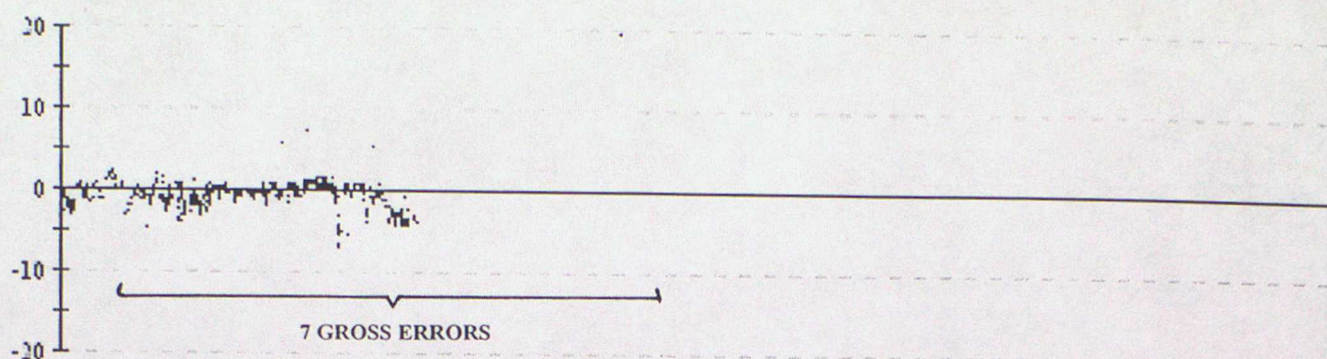
64547 Air Temperature



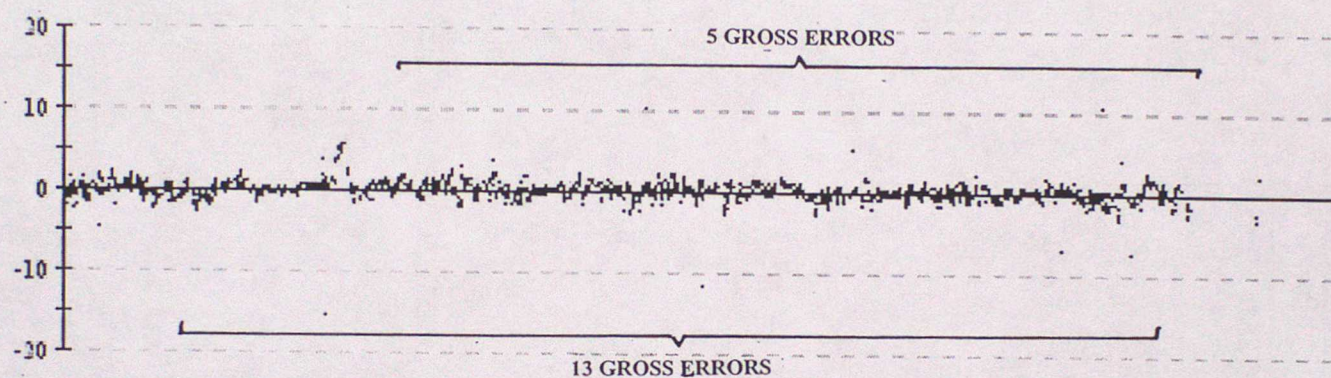


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

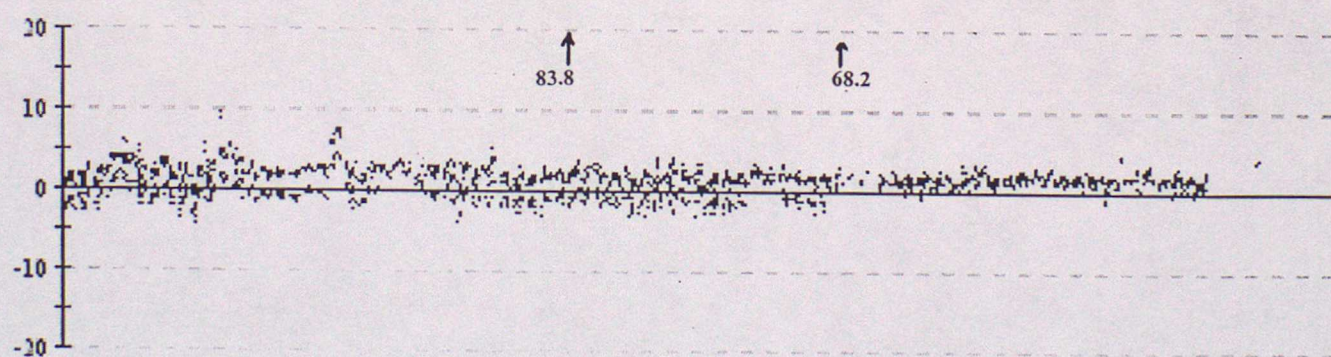
65594 Air Temperature



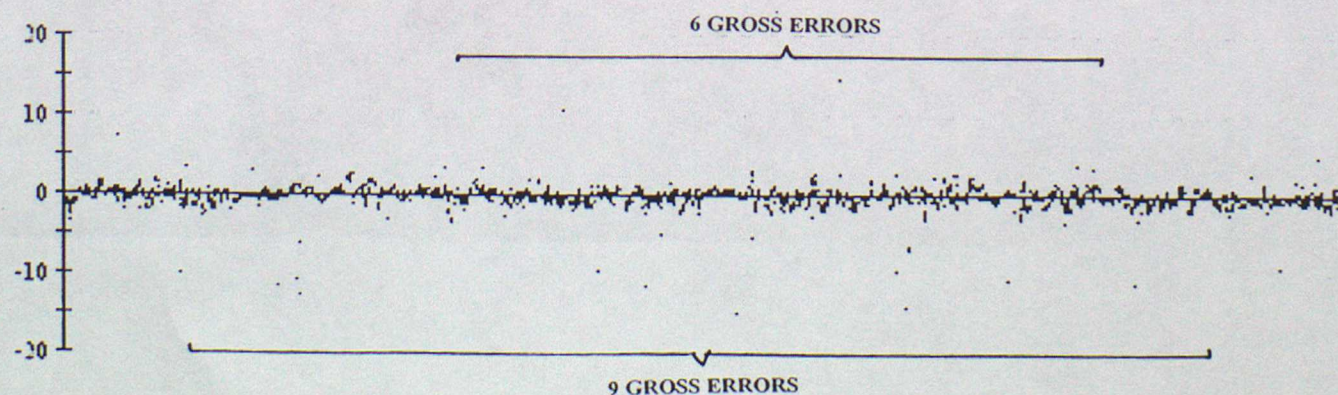
65595 Air Temperature



65596 Air Temperature



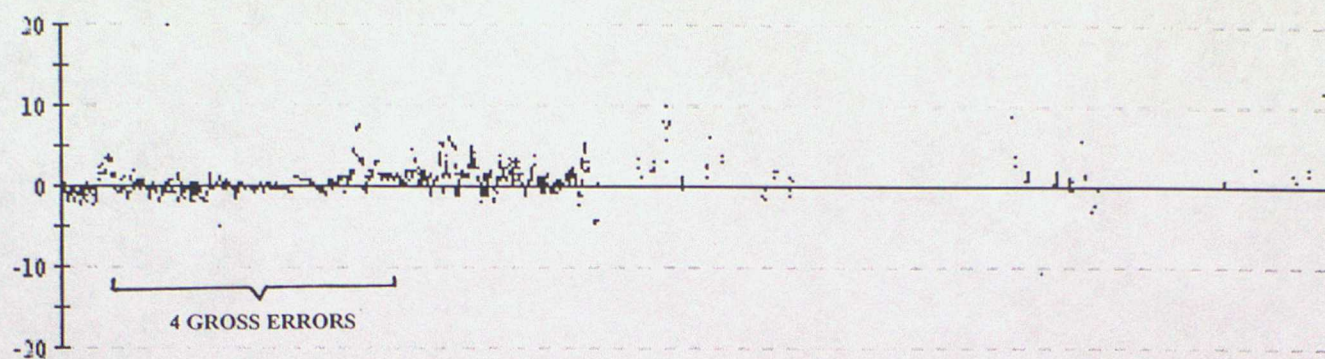
65598 Air Temperature



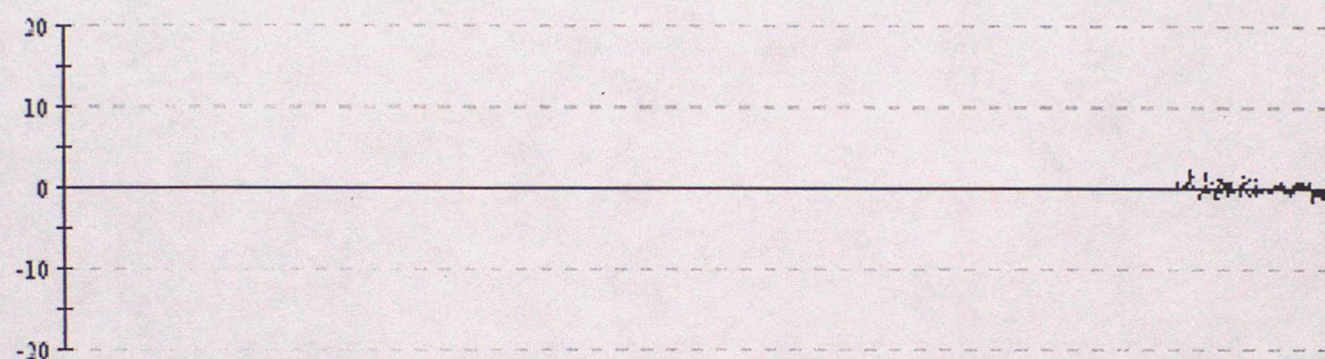


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

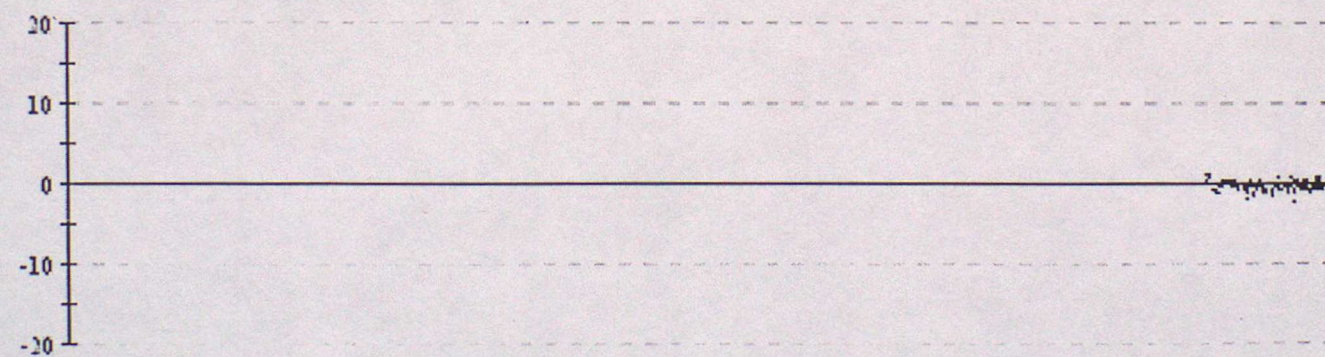
### 65600 Air Temperature



### 65601 Air Temperature



### 65602 Air Temperature

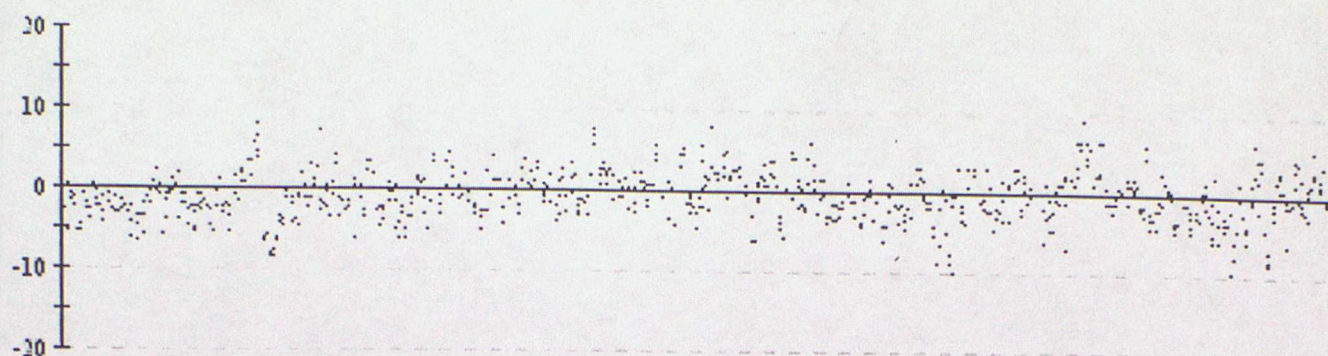




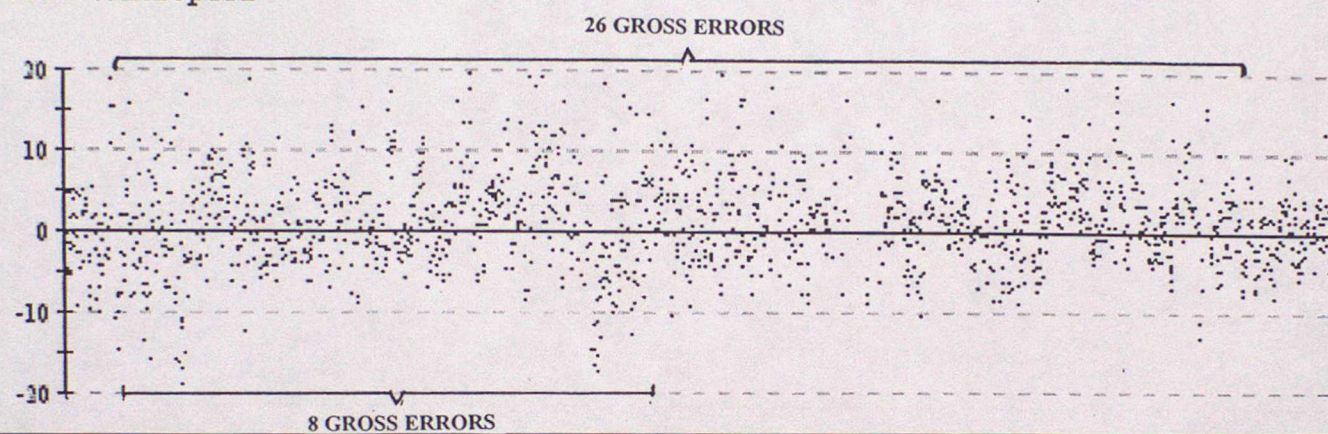
## ANNEX D - TIME SERIES PLOTS OF WIND SPEED

Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

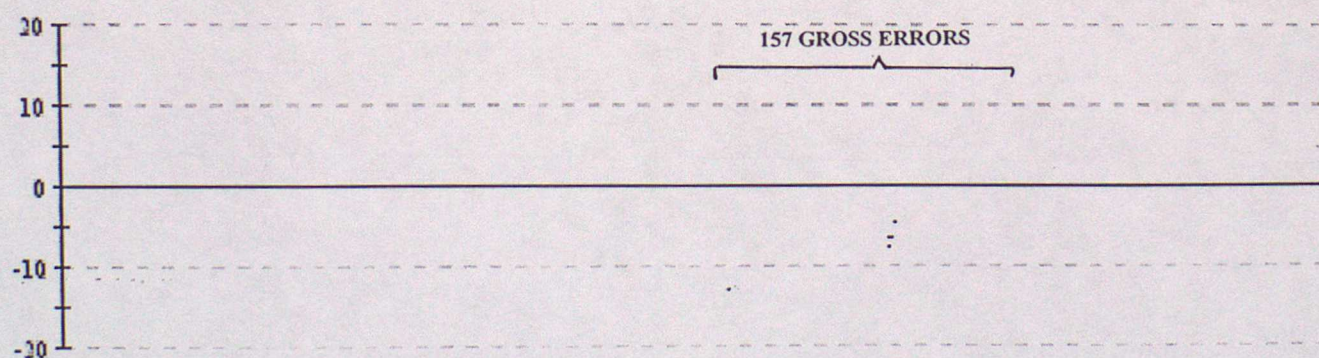
41521 Wind speed



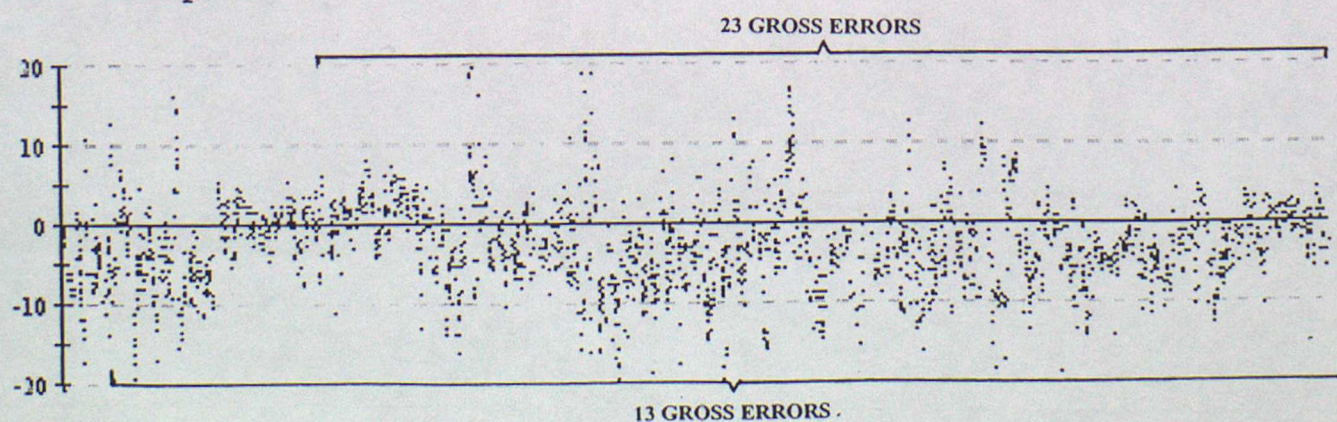
44607 Wind speed



44657 Wind speed

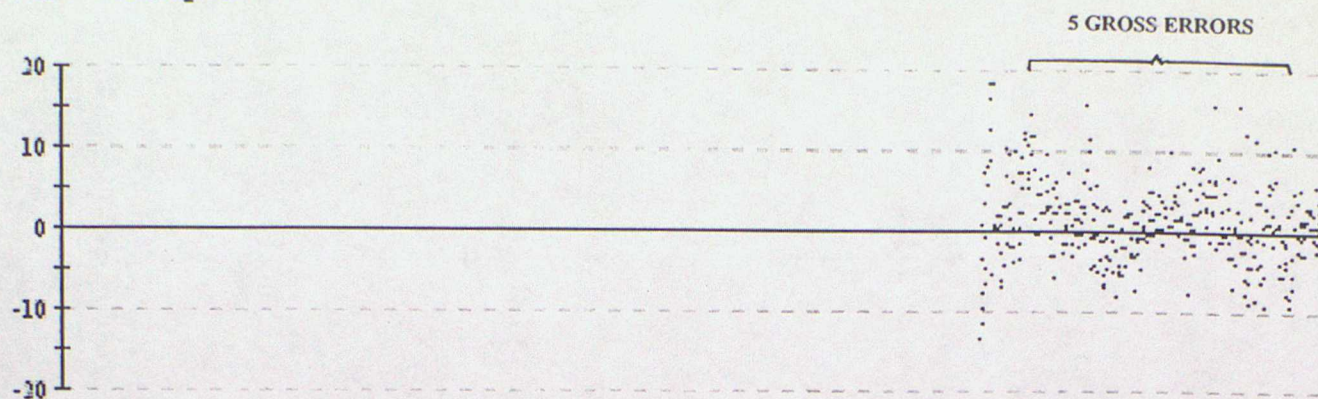


44721 Wind speed

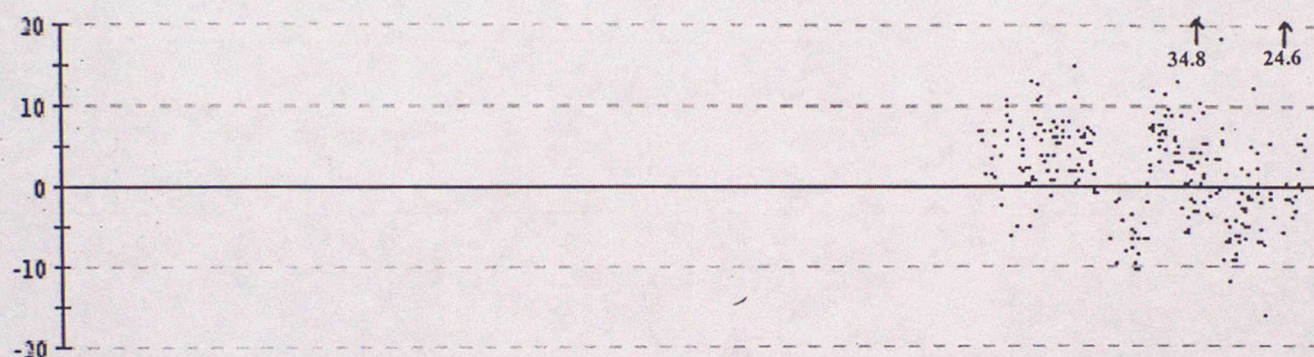




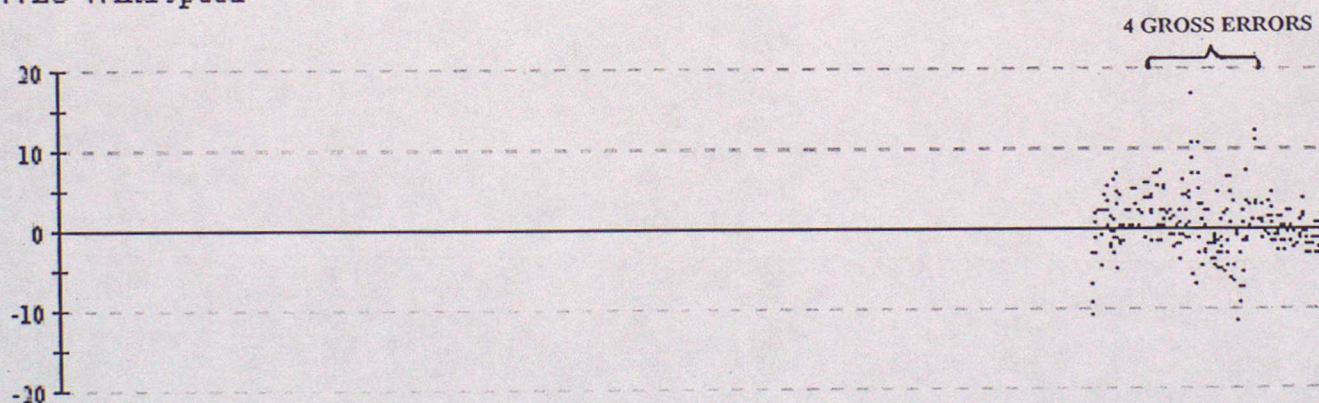
44724 Wind speed



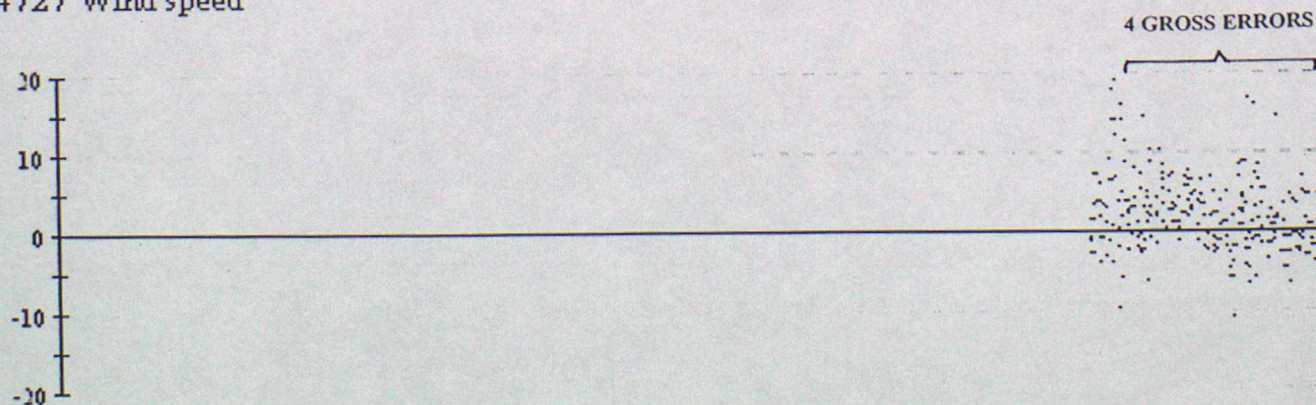
44725 Wind speed



44726 Wind speed



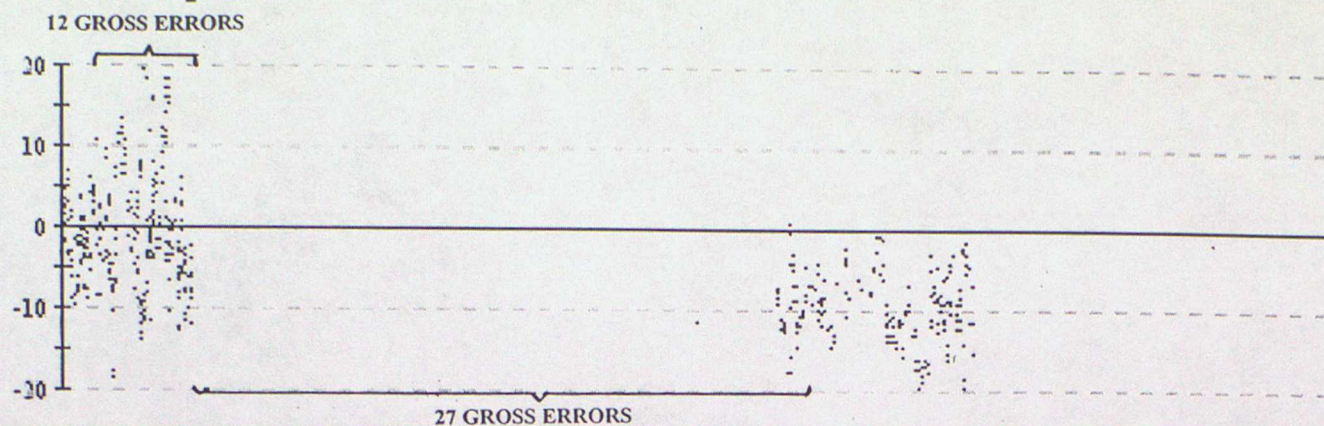
44727 Wind speed



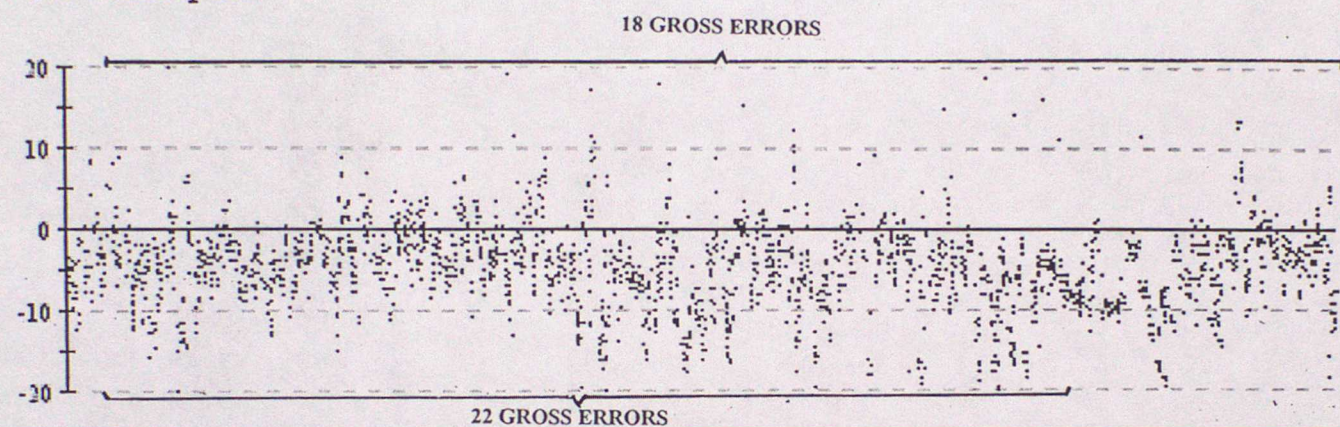


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

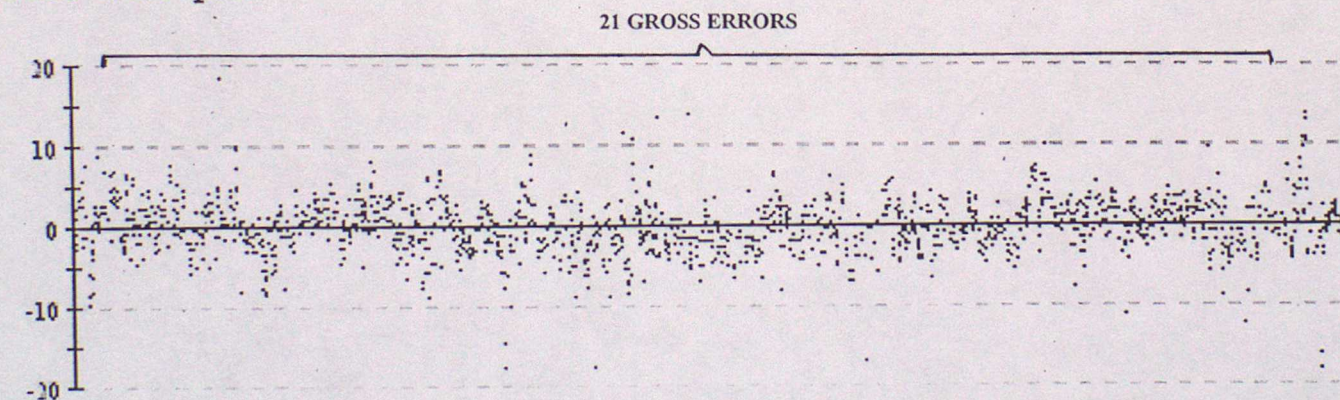
44773 Wind speed



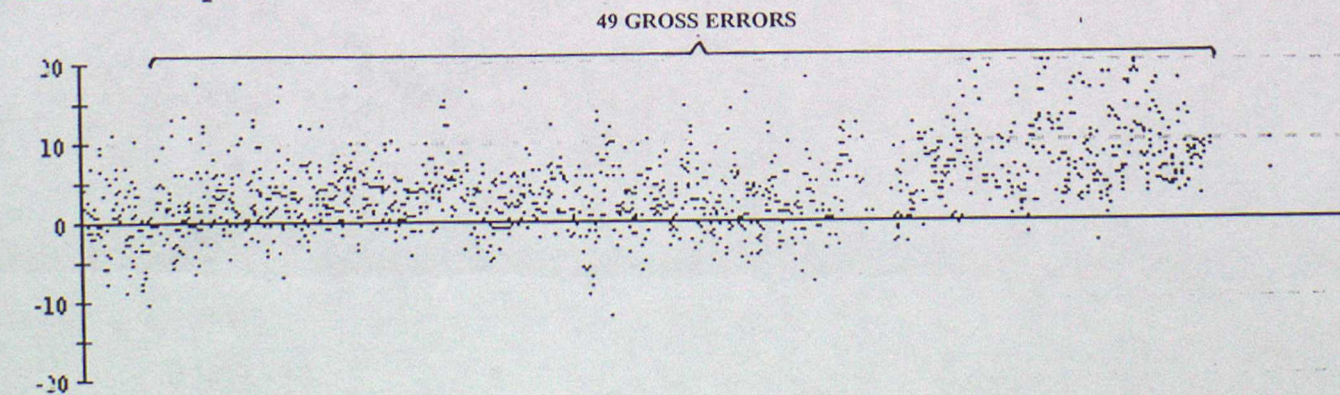
44777 Wind speed



62508 Wind speed



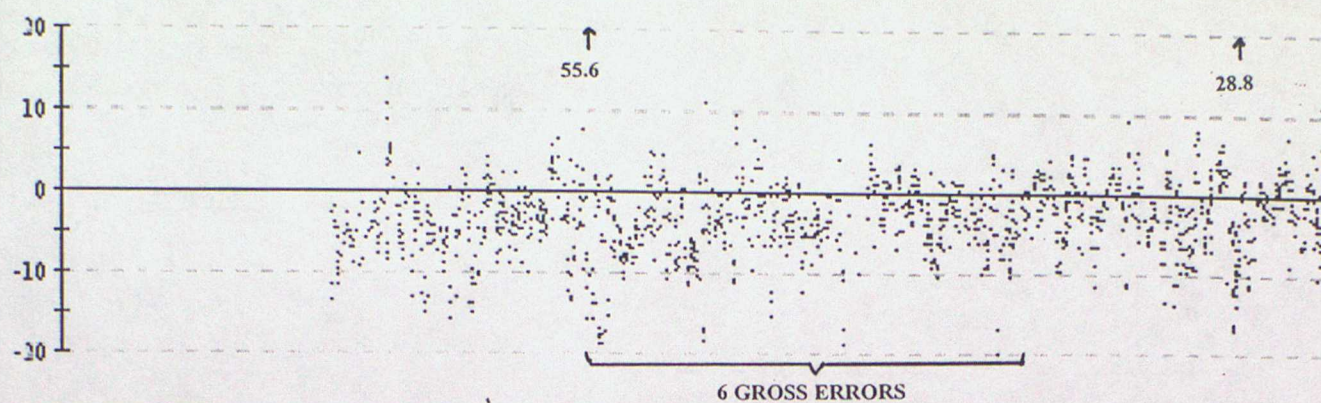
62510 Wind speed





Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

62597 Wind speed

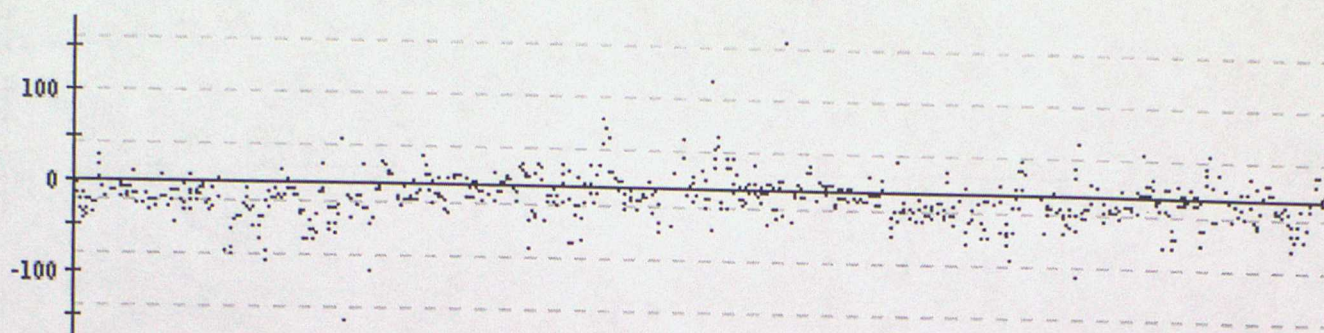




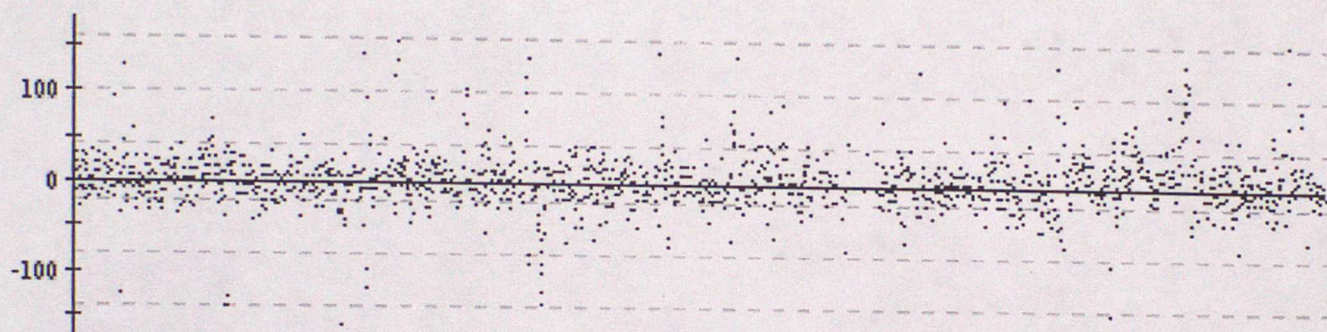
## ANNEX E - TIME SERIES PLOTS OF WIND DIRECTION

Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

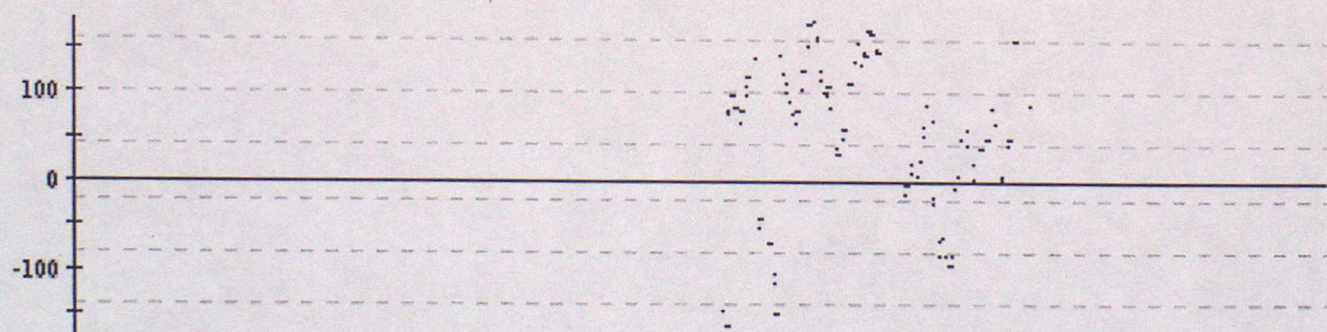
41521 Wind direction



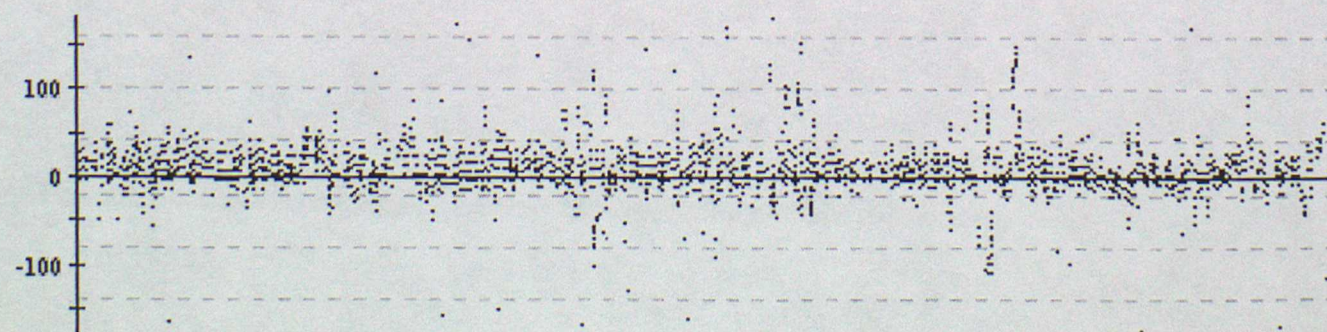
44607 Wind direction



44657 Wind direction

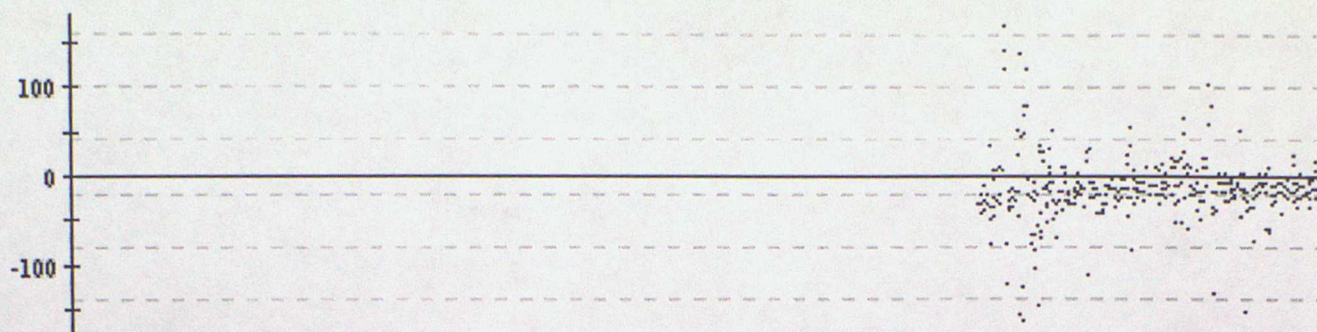


44721 Wind direction

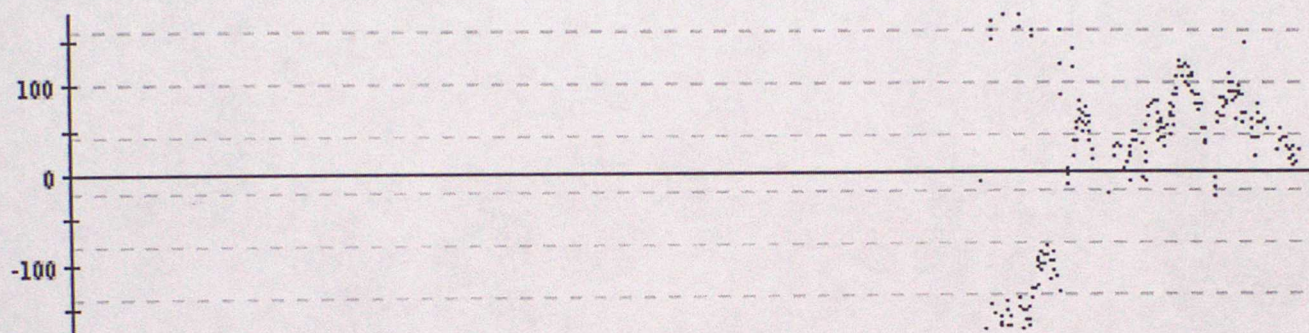




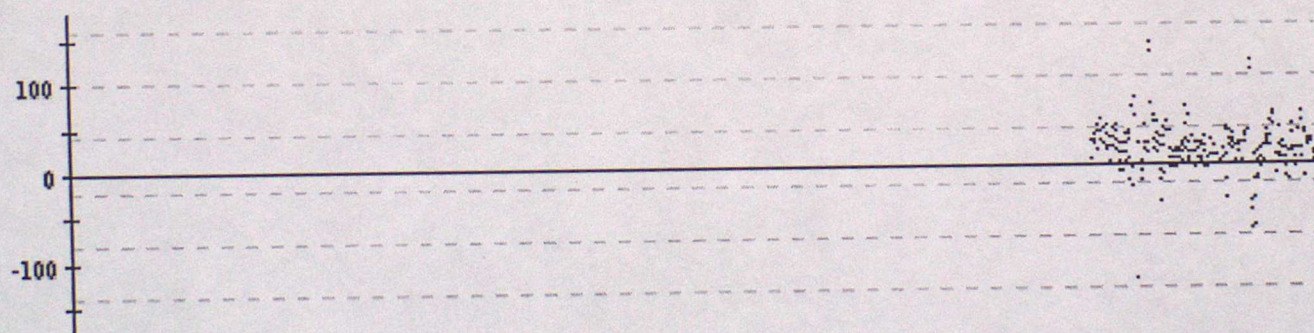
44724 Wind direction



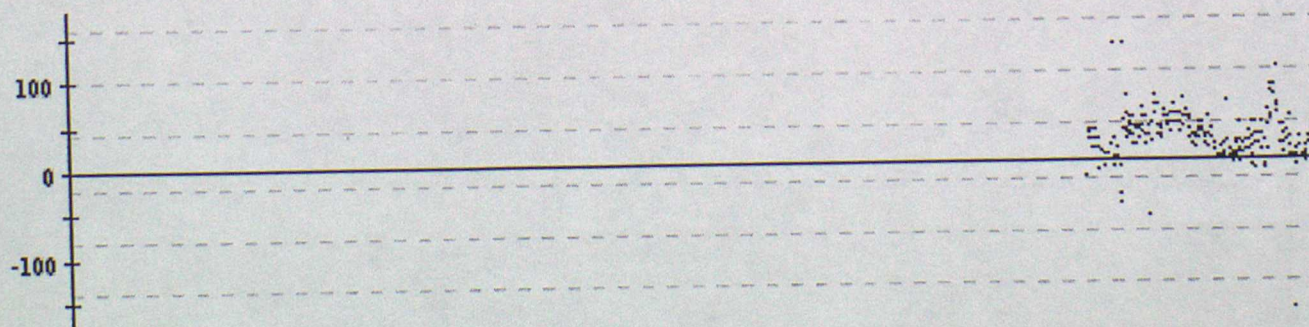
44725 Wind direction



44726 Wind direction



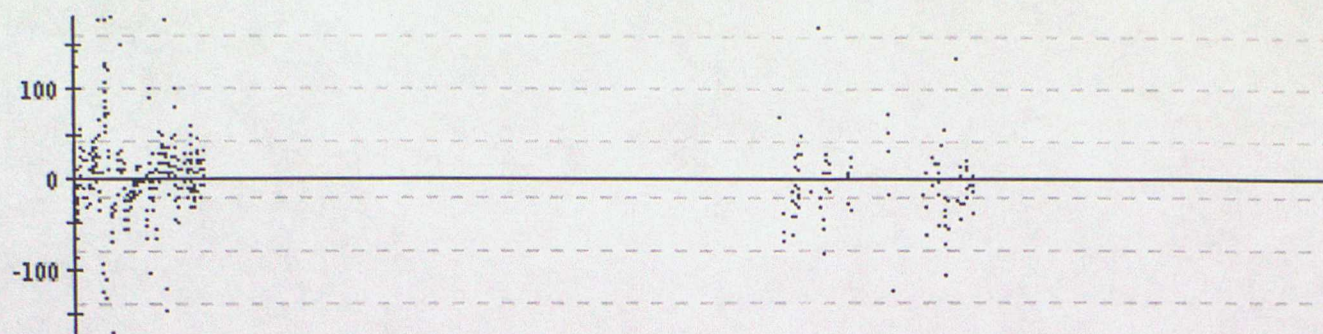
44727 Wind direction



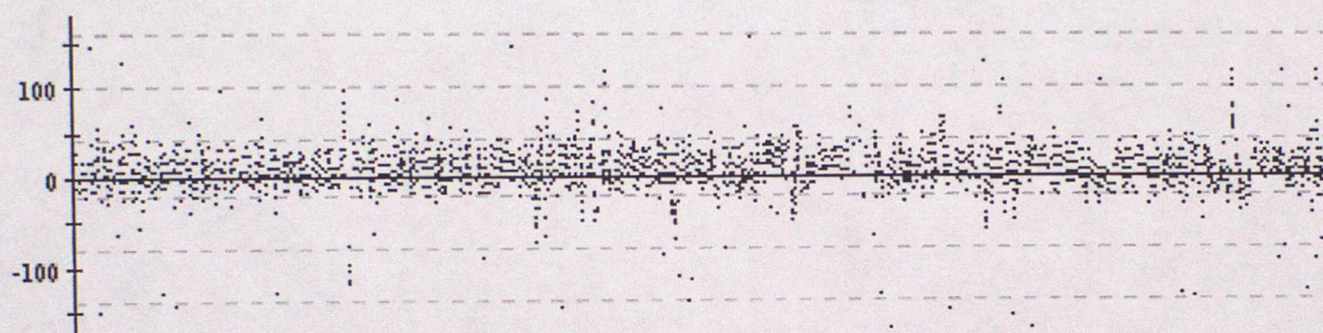


Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

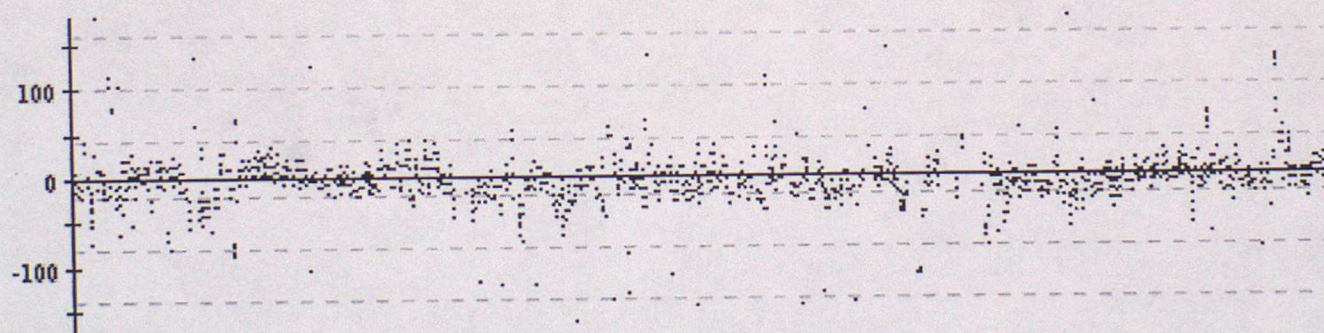
44773 Wind direction



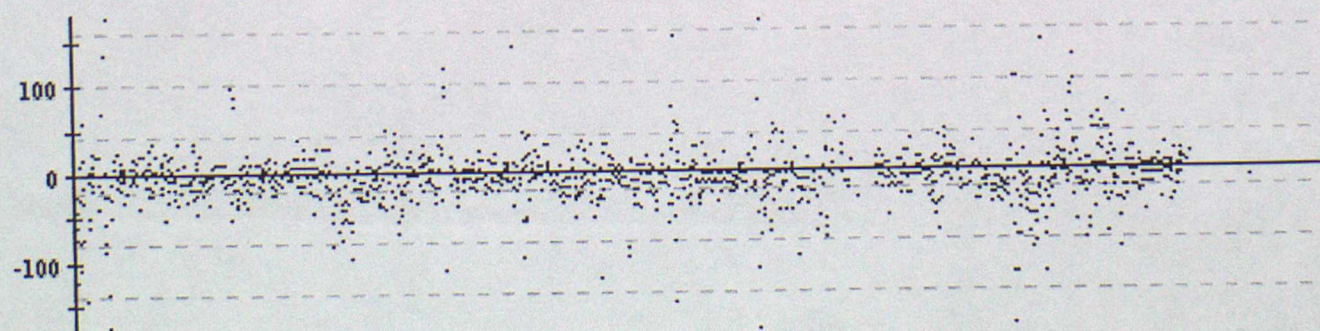
44777 Wind direction



62508 Wind direction



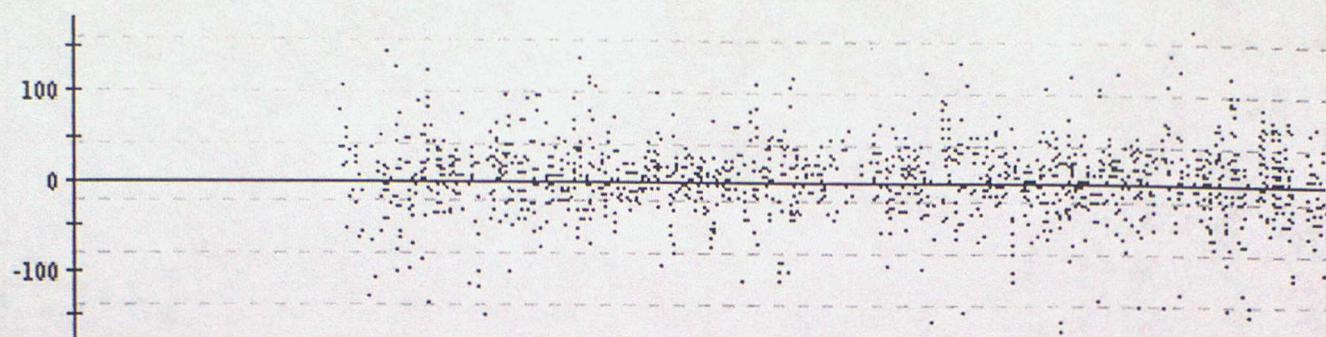
62510 Wind direction





Data from 00z on 01/01/2000 to 23z on 31/03/2000 (OBS - Background field)

62597 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	
41521			*		*	*	*	*	01/01 - 31/03
41528			*					*	01/01 - 22/02
41599			*					*	01/01 - 07/02
41644			*			*		*	01/01 - 31/03
41853			*	*				*	01/01 - 28/03
44513	26237	US	*					*	01/01 - 31/03
44516			*		*			*	01/01 - 31/03
44517	26234	US	*		*			*	01/01 - 29/01
44546	14538	F	*	*				*	01/01 - 01/03
44607	6216	F	*	*		*	*	*	01/01 - 31/03
44608	14540	F	*	*				*	01/01 - 31/03
44610	12734	F	*	*				*	01/01 - 31/03
44611	27616	UK	*	*				*	07/03 - 31/03
44612	27619	UK	*	*				*	07/03 - 31/03
44613	28467	UK	*	*	*				01/01 - 31/03
44614	12375	UK	*	*	*			*	01/01 - 06/03
44615	27620	UK	*	*				*	07/03 - 31/03
44617	27621	UK	*	*				*	07/03 - 31/03
44620	27622	UK	*	*				*	15/03 - 31/03
44621	12372	UK	*	*	*			*	01/01 - 06/03
44622	27623	UK	*	*				*	07/03 - 31/03
44623	27624	UK	*	*				*	07/03 - 31/03
44625	12283	UK	*	*	*			*	01/01 - 08/02
44626	12284	UK	*	*	*			*	01/01 - 31/03
44627	12285	UK	*	*				*	01/01 - 31/03
44628	12287	UK	*	*	*			*	01/01 - 31/03
44630	12376	UK	*	*	*				01/01 - 31/03
44657			*		*	*	*	*	16/02 - 10/03
44721	28475	UK	*	*	*	*	*	*	01/01 - 31/03
44722	28476	UK	*	*				*	01/01 - 27/03
44723	16392	NL	*	*				*	01/01 - 31/03
44724	27922	UK	*	*		*	*	*	07/03 - 31/03
44725	27923	UK	*			*	*	*	07/03 - 31/03
44726	27924	UK	*	*		*	*	*	15/03 - 31/03
44727	27925	UK	*	*		*	*	*	15/03 - 31/03
44729	25375	UK	*	*				*	16/03 - 31/03



# ANNEX F - CONT'd

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
44765	28466	UK	*	*	*				01/01 - 31/03
44766	28465	UK	*	*	*			*	01/01 - 24/02
44773	12415	UK	*	*	*	*	*	*	01/01 - 31/03
44777	12377	UK	*	*	*	*	*	*	01/01 - 31/03
47553			*						01/01 - 29/01
61536			*		*			*	01/01 - 05/01
61537			*		*			*	01/01 - 26/02
62507	10111	F	*	*				*	01/01 - 31/03
62508	5822	F	*	*	*	*	*	*	01/01 - 31/03
62509	14537	F	*	*				*	01/01 - 31/03
62510	12732	F	*	*		*	*	*	01/01 - 31/03
62520	14431	F	*	*				*	01/01 - 31/03
62554	14430	F	*					*	01/01 - 05/02
62596	16391	NL	*	*				*	01/01 - 31/03
62597	28478	UK	*	*	*	*	*	*	19/01 - 31/03
64516	14176	F	*	*				*	01/01 - 31/01
64517	14178	F	*	*				*	01/01 - 31/03
64518	14180	F	*	*				*	01/01 - 05/03
64529	6669	D	*	*	*			*	01/01 - 31/03
64530	4272	D	*	*	*			*	01/01 - 31/03
64546	3675	N	*	*	*			*	01/01 - 31/03
64547	2294	D	*	*	*			*	01/01 - 31/03
64698	29867	F	*	*				*	01/01 - 31/03
64699	29868	F	*	*				*	01/01 - 31/03
65594	2295	D	*	*	*			*	01/01 - 24/02
65595	4229	NL	*	*	*			*	01/01 - 26/03
65596	3038	IR	*	*	*			*	01/01 - 26/03
65598	1298	D	*	*	*			*	01/01 - 31/03
65599	28477	UK	*	*				*	01/01 - 31/03
65600			*	*	*			*	01/01 - 31/03
65601	3039	D	*	*	*			*	20/03 - 31/03
65602	6667	IR	*	*	*			*	22/03 - 31/03



