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QUARTERLY REPORT ON DRIFTING BUOYS IN THE NORTH ATLANTIC

By Sue Holton
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CONTENTS

1. Introduction

Summary of :-

2. General Performance
3. Pressure Performance
4. Air temperatures
5. Winds
6. Explanatory Notes
7. Mean Positions of Buoys

- Annex A - Table of Statistics
Annex B - Time-series plots of pressure
Annex C - Time-series plots of air temperature
Annex D - Time-series plots of wind speed
Annex E - Time-series plots of wind direction
Annex F - Summary table of operational drifting buoys

28th January 2003

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

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

63 out of 68 of the buoys reporting, gave a 'percentage of observations with acceptable positions' greater than 95% (71 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	26	28
Good	39	39
Satisfactory	8	1
Poor	0	0
Very poor	0	0
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	1	1	8	5
Good	17	7	4	11
Satisfactory	22	27	12	10
Poor	7	7	2	0
Very Poor	0	0	0	0

The total number of buoy days in the quarter was 4977 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 5189) and the number of 'buoy hours' with at least one observation was 107190 (compared with 108814 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 21.54 (last quarter the figure was 20.97).

3. SUMMARY OF PRESSURE PERFORMANCE

(a) Buoy deployments, etc.

North of 50deg N

There were 23 buoys reporting at the beginning of the period. 20 buoys were operating at the end of the period. 3 buoys were deployed during the period (44613, 44614 and 62713). 6 buoys ceased reporting (44504, 44743, 44770, 44772, 62502 and 65517).

South of 50deg N

There were 36 buoys reporting at the beginning of the period. 35 buoys were reporting at the end of the period. 6 buoys were deployed during the period (44607, 44612, 44768, 44774, 62599 and 62600). 7 buoys ceased reporting (41523, 41647, 44511, 44625, 44775, 62504 and 62506).

(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 :-

41640 - Pressure from this buoy showed a positive bias throughout out the period.

44504 - Pressure from this buoy was erratic during the period it was reporting.

44511- Pressure from this buoy showed a large scatter toward the end of the period until it ceased reporting pressure on 11/12/02.

44624 - Pressure from this buoy developed an increasing negative scatter until it ceased reporting pressure on 04/11/02.

44743 - Pressure from this buoy developed an increasing negative scatter until it ceased reporting on 14/10/02.

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
41523	0.7	01/10 - 16/10
41531	0.7	01/10 - 31/12
41658	-1.0	01/10 - 31/12
44549	-0.7	01/10 - 31/12
44608	0.7	01/10 - 31/12
44608	0.7	01/10 - 31/12
44610	-0.6	01/10 - 31/12
44627	-0.6	01/10 - 31/12
44768	1.5	20/12 - 31/12
44770	-0.8	01/10 - 05/10
62503	-0.7	01/10 - 31/12
62506	-1.0	01/10 - 05/10
62509	0.7	01/10 - 31/12
62512	0.6	01/10 - 31/12

Summary of Pressure Performance

Pressure Summary	Last Quarter	This Quarter
Acceptable	52	48
Suspect – RMS	4	5
Suspect – Bias	17	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 +/-20 °C of the background value are included. Therefore, in some instances, the figures may be slightly misleading.)

WMO No.	Air Temperature			WMO No.	Air Temperature		
	Mean	St.Dev	No. of Obs		Mean	St. Dev	No. of Obs
44774	-0.32	0.80	186	62599	-0.37	0.66	142
62600	-0.66	0.76	163	64553	1.54	2.44	2145

Summary

Only 4 buoys reported **air temperatures** this quarter. No significant **air temperature bias** or **standard deviation** was indicated.

(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
41531	0.69	3.80	1869	7.68	32.26	1619
41532	0.30	3.15	1935	24.44	25.79	1678
41534	0.45	3.35	1923	21.16	26.82	1616
41647	1.26	3.36	1780	9.19	31.79	1480
41652	6.49	5.62	470	-8.87	41.57	526
44601	-0.05	4.89	1913	3.83	32.81	1784
62502	2.40	4.81	824	-11.39	25.50	812
62711	2.85	5.22	3029	0.22	28.25	2884

Summary

There was a significant **wind speed** bias (6.49) for buoy 41652.

There was also a significant **wind direction** bias (24.44) for buoy 41532 and (21.16) for buoy 41534.

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 availability (mean no. of obs/day) is based on the number of observation reports received. Because observations may have been received both via CLS Argos and a Local User Terminal (LUT) such as Søndre Strømfjord, the overall number of reports received may not represent the number of observations actually available.

As most drifters are reporting hourly measurements, the mean number of observations should not normally exceed 24 which corresponds to category 'satisfactory'.

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

60 N

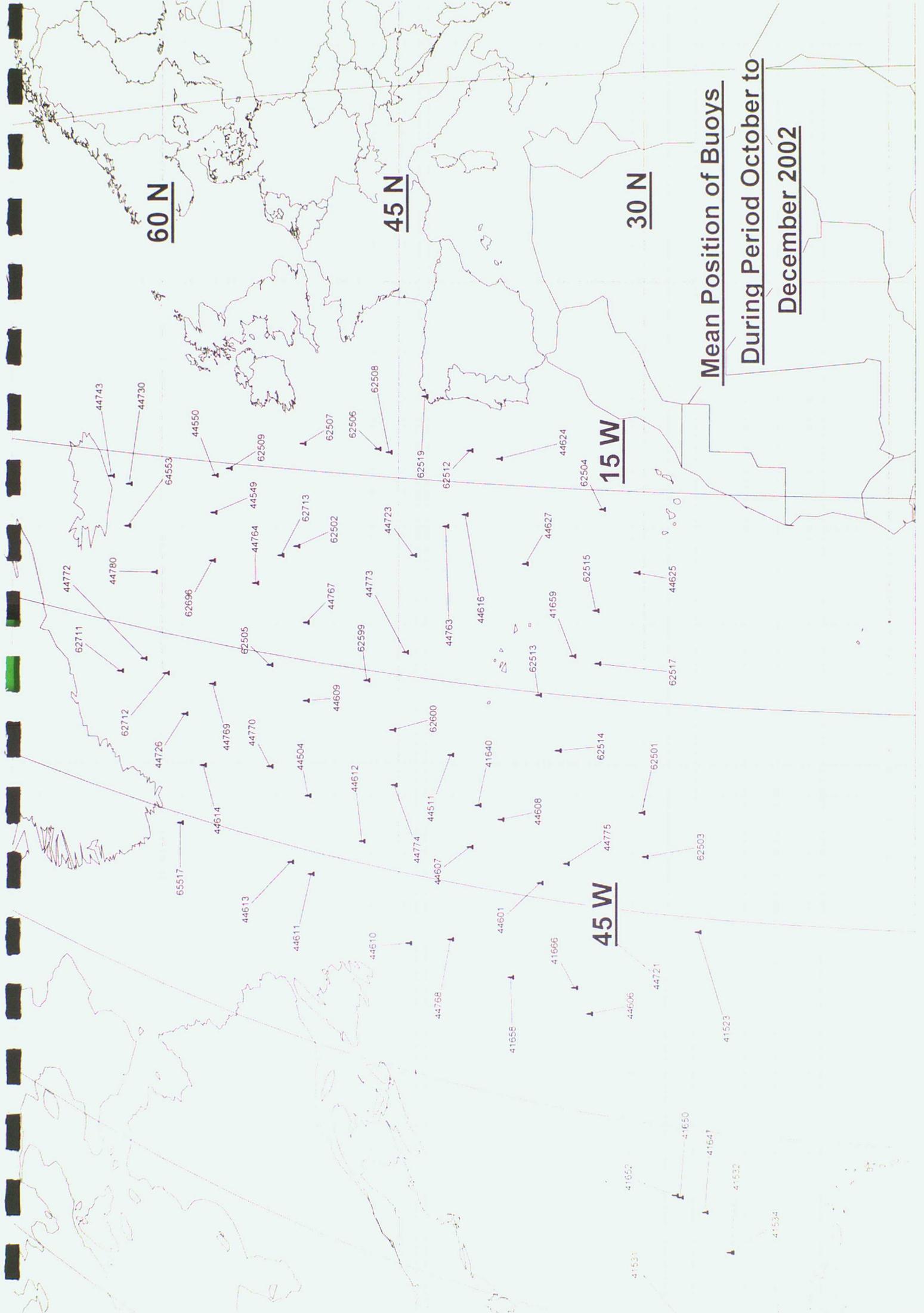
45 N

30 N

Mean Position of Buoys
During Period October to
December 2002

15 W

45 W



Annex A - TABLE OF STATISTICS

WMO No./Country	41523/US	41531	41532
Argos Id No.	28840		
Period Within Area	01/10 - 16/10	01/10 - 31/12	01/10 - 31/12
Mean Latitude	26.7	28.0	24.7
Mean Longitude	-46.0	-73.4	-68.4
No. of Obs Received	208	1982	2042
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	93.8	99.9	100.0
P. Tendency	0.0	99.8	100.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	99.5/ 99.7	99.9/ 99.6
Sea-Surface Temp.	90.9	100.0	99.9
Median delay (min)	33.5	108	113
Number of days	16	92	92
Mean No. of obs/day	13.0	21.5	22.2
No. of Hours with obs	164	1884	1921
Mean no. of hours/day with obs	10.3	20.5	20.9
% of hour periods without an ob	54.9	14.7	13.0
Mean (Ob-Bg)	0.7	0.7	0.4
RMS (Ob-Bg)	0.9	0.9	0.7
unflagged data			
Mean (Ob-Bg)	0.7	0.7	0.3
RMS (Ob-Bg)	0.9	0.9	0.7
all data			
Revised RMS (Ob-Bg)	0.9	0.9	0.7
% of data flagged	37	4	6
Operating at end of period	NO	YES	YES
Performance			
Availability	Poor	Acceptable	Acceptable
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	41534	41640	41647
Argos Id No.			
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 23/12
Mean Latitude	24.8	40.1	26.3
Mean Longitude	-68.4	-38.9	-65.8
No. of Obs Received	2027	2048	1878
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	100.0	100.0	99.7
P. Tendency	99.9	99.9	99.7
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	99.8/ 99.6	0.0/ 0.0	99.6/ 99.4
Sea-Surface Temp.	99.9	99.9	99.8
Median delay (min)	111	101	117
Number of days	92	92	84
Mean No. of obs/day	22.0	22.3	22.4
No. of Hours with obs	1896	1971	1664
Mean no. of hours/day with obs	20.6	21.4	19.8
% of hour periods without an ob	14.1	10.7	17.3
Mean (Ob-Bg)	0.5	1.8	-0.5
RMS (Ob-Bg)	0.8	2.0	0.8
unflagged data			
Mean (Ob-Bg)	0.4	1.9	-0.4
RMS (Ob-Bg)	0.8	2.1	1.0
all data			
Revised RMS (Ob-Bg)	0.8	2.1	1.0
% of data flagged	6	26	13
Operating at end of period	YES	YES	NO
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	41650/US	41652/US	41658/US
Argos Id No.	7776	7897	27064
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	27.8	28.1	38.1
Mean Longitude	-65.0	-64.9	-51.2
No. of Obs Received	2144	1904	2035
% of obs with Acceptable Position	100.0	100.0	99.9
% of Present Pressure	100.0	99.9	100.0
P. Tendency	99.8	100.0	99.2
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	33.2/ 34.3	0.0/ 0.0
Sea-Surface Temp.	100.0	99.8	99.9
Median delay (min)	120	116	104
Number of days	92	92	92
Mean No. of obs/day	23.3	20.7	22.1
No. of Hours with obs	1920	1804	1947
Mean no. of hours/day with obs	20.9	19.6	21.2
% of hour periods without an ob	13.0	18.3	11.8
Mean (Ob-Bg)	0.3	0.0	-1.0
RMS (Ob-Bg)	0.7	0.7	1.4
unflagged data			
Mean (Ob-Bg)	0.2	0.0	-0.8
RMS (Ob-Bg)	0.7	0.7	2.4
all data			
Revised RMS (Ob-Bg)	0.7	0.7	1.6
% of data flagged	11	5	6
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Acceptable	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	41659/US	41666	44504
Argos Id No.	27065		
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 11/12
Mean Latitude	34.3	34.2	50.7
Mean Longitude	-27.1	-51.1	-40.7
No. of Obs Received	2025	2214	1222
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	99.7	99.9	99.9
P. Tendency	99.9	100.0	99.7
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.	100.0	100.0	99.8
Median delay (min)	105	113	56
Number of days	92	92	72
Mean No. of obs/day	22.0	24.1	17.0
No. of Hours with obs	1945	1978	1032
Mean no. of hours/day with obs	21.1	21.5	14.3
% of hour periods without an ob	11.9	10.4	40.2
Mean (Ob-Bg)	0.5	0.1	-0.2
RMS (Ob-Bg)	0.9	0.7	3.5
unflagged data			
Mean (Ob-Bg)	0.5	0.0	-9.9
RMS (Ob-Bg)	0.9	1.7	18.8
all data			
Revised RMS (Ob-Bg)	0.9	0.7	14.7
% of data flagged	4	10	79
Operating at end of period	YES	YES	NO
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44511	44549/UK	44550/UK
Argos Id No.		22648	23703
Period Within Area	01/10 - 11/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	41.8	56.7	56.6
Mean Longitude	-35.5	-19.2	-16.1
No. of Obs Received	917	5365	5074
% of obs with Acceptable Position	99.0	95.9	95.6
% of Present			
Pressure	97.7	99.9	99.9
P. Tendency	98.0	99.9	99.8
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.	98.1	99.9	99.8
Median delay (min)	63	52	53
Number of days	72	92	92
Mean No. of obs/day	12.7	58.3	55.2
No. of Hours with obs	842	2185	2174
Mean no. of hours/day with obs	11.7	23.8	23.6
% of hour periods without an ob	51.1	1.0	1.5
Mean (Ob-Bg)	-0.6	-0.7	-0.2
RMS (Ob-Bg)	1.5	1.1	1.1
unflagged data			
Mean (Ob-Bg)	-3.3	-0.7	-0.2
RMS (Ob-Bg)	7.5	1.1	1.1
all data			
Revised RMS (Ob-Bg)	7.0	1.1	1.1
% of data flagged	35	60	59
Operating at end of period	NO	YES	YES
Performance			
Availability	Poor	Very Good	Very Good
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44601/F	44606/UK	44607/UK
Argos Id No.	32791	19893	19906
Period Within Area	01/10 - 31/12	01/10 - 31/12	08/10 - 31/12
Mean Latitude	36.3	33.3	40.6
Mean Longitude	-43.9	-52.8	-42.1
No. of Obs Received	2153	2717	2159
% of obs with Acceptable Position	100.0	100.0	99.4
% of Present			
Pressure	94.4	99.9	99.9
P. Tendency	94.7	99.6	99.5
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	97.5/ 94.5	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	94.8	99.8	99.7
Median delay (min)	63	70	67
Number of days	92	92	85
Mean No. of obs/day	23.4	29.5	25.4
No. of Hours with obs	2065	2149	1845
Mean no. of hours/day with obs	22.4	23.4	21.7
% of hour periods without an ob	6.5	2.7	9.2
Mean (Ob-Bg)	-0.4	0.3	-0.1
RMS (Ob-Bg)	0.8	0.9	1.1
unflagged data			
Mean (Ob-Bg)	-0.8	0.4	0.0
RMS (Ob-Bg)	5.9	1.1	2.0
all data			
Revised RMS (Ob-Bg)	0.9	1.1	1.4
% of data flagged	2	22	17
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44608	44609	44610/UK
Argos Id No.	20211	20946	21131
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	38.7	50.8	44.4
Mean Longitude	-39.7	-33.2	-50.3
No. of Obs Received	2764	3046	3244
% of obs with Acceptable Position	100.0	100.0	96.5
% of Present			
Pressure	99.9	99.9	100.0
P. Tendency	99.8	99.7	99.7
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.	99.9	99.7	99.9
Median delay (min)	69	70	58
Number of days	92	92	92
Mean No. of obs/day	30.0	33.1	35.3
No. of Hours with obs	2165	2146	2150
Mean no. of hours/day with obs	23.5	23.3	23.4
% of hour periods without an ob	1.9	2.8	2.6
Mean (Ob-Bg)	0.7	0.7	-0.6
RMS (Ob-Bg) unflagged data	1.2	1.3	1.2
Mean (Ob-Bg)	0.8	-0.5	-0.5
RMS (Ob-Bg) all data	1.6	1.8	2.1
Revised RMS (Ob-Bg)	1.6	1.5	1.5
% of data flagged	24	32	35
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44611/UK	44612/UK	44613/UK
Argos Id No.	13695	21334	13696
Period Within Area	01/10 - 31/12	11/12 - 31/12	23/12 - 31/12
Mean Latitude	50.5	47.3	51.8
Mean Longitude	-46.8	-43.3	-46.3
No. of Obs Received	2748	488	204
% of obs with Acceptable Position	96.5	100.0	100.0
% of Present			
Pressure	99.8	100.0	100.0
P. Tendency	99.1	100.0	100.0
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.	99.9	100.0	100.0
Median delay (min)	51	60.5	61
Number of days	92	21	9
Mean No. of obs/day	29.9	23.2	22.7
No. of Hours with obs	2119	486	203
Mean no. of hours/day with obs	23.0	23.1	22.6
% of hour periods without an ob	4.0	3.6	4.7
Mean (Ob-Bg)	-0.1	0.0	-0.5
RMS (Ob-Bg)	1.1	0.9	1.0
unflagged data			
Mean (Ob-Bg)	0.2	0.0	-0.5
RMS (Ob-Bg)	3.1	0.9	1.1
all data			
Revised RMS (Ob-Bg)	1.6	0.9	1.1
% of data flagged	24	0	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44614/UK	44616/UK	44624/UK
Argos Id No.	13697	17149	17151
Period Within Area	23/12 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	57.4	40.9	38.8
Mean Longitude	-40.4	-17.4	-13.1
No. of Obs Received	218	2102	2095
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	100.0	99.7	37.9
P. Tendency	100.0	99.5	38.1
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.	99.5	99.8	100.0
Median delay (min)	60	57	59
Number of days	9	92	92
Mean No. of obs/day	24.2	22.8	22.8
No. of Hours with obs	203	2102	2093
Mean no. of hours/day with obs	22.6	22.8	22.8
% of hour periods without an ob	3.8	4.8	5.2
Mean (Ob-Bg)	0.2	-0.5	-0.2
RMS (Ob-Bg)	1.0	0.9	1.8
unflagged data			
Mean (Ob-Bg)	0.3	-0.5	-3.1
RMS (Ob-Bg)	1.6	0.9	6.1
all data			
Revised RMS (Ob-Bg)	1.6	0.9	6.1
% of data flagged	8	0	29
Operating at end of period	YES	YES	YES
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44625/UK	44627/NL	44721/UK
Argos Id No.	17152	13698	18702
Period Within Area	01/10 - 26/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	30.4	37.2	31.7
Mean Longitude	-20.8	-20.7	-47.4
No. of Obs Received	2394	1979	2157
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present Pressure	99.9	99.9	99.9
P. Tendency	99.6	99.6	99.9
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.	99.8	99.8	100.0
Median delay (min)	69	94	57
Number of days	87	92	92
Mean No. of obs/day	27.5	21.5	23.4
No. of Hours with obs	1980	1979	2152
Mean no. of hours/day with obs	22.8	21.5	23.4
% of hour periods without an ob	5.0	10.4	2.5
Mean (Ob-Bg)	-0.2	-0.6	-0.2
RMS (Ob-Bg)	0.7	0.9	0.6
unflagged data			
Mean (Ob-Bg)	-0.2	-0.6	-0.2
RMS (Ob-Bg)	1.0	0.9	0.6
all data			
Revised RMS (Ob-Bg)	0.7	0.9	0.7
% of data flagged	19	0	0
Operating at end of period	NO	YES	YES
Performance			
Availability	Good	Acceptable	Acceptable
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44723/UK	44726/UK	44730/UK
Argos Id No.	21562	23460	23856
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	44.1	58.6	62.3
Mean Longitude	-20.8	-36.5	-17.7
No. of Obs Received	2070	4350	4352
% of obs with Acceptable Position	100.0	94.4	94.9
% of Present Pressure	99.9	100.0	99.9
P. Tendency	99.8	100.0	99.9
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.	99.6	99.9	95.3
Median delay (min)	62	39	39
Number of days	92	92	92
Mean No. of obs/day	22.5	47.3	47.3
No. of Hours with obs	2062	2180	2177
Mean no. of hours/day with obs	22.4	23.7	23.7
% of hour periods without an ob	6.6	1.3	1.4
Mean (Ob-Bg)	0.3	0.1	-0.2
RMS (Ob-Bg)	1.0	1.0	1.2
unflagged data			
Mean (Ob-Bg)	0.4	0.1	-0.2
RMS (Ob-Bg)	1.2	2.6	1.2
all data			
Revised RMS (Ob-Bg)	1.2	1.1	1.2
% of data flagged	1	50	50
Operating at end of period	YES	YES	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	44743/D	44763/UK	44764/UK
Argos Id No.	4270	17574	23913
Period Within Area	01/10 - 14/10	01/10 - 31/12	01/10 - 31/12
Mean Latitude	63.5	42.1	54.0
Mean Longitude	-17.2	-18.4	-24.5
No. of Obs Received	442	2206	2784
% of obs with Acceptable Position	81.9	100.0	95.6
% of Present			
Pressure	96.4	99.7	100.0
P. Tendency	92.3	99.8	99.7
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.	0.0	99.9	99.7
Median delay (min)	13	59	54
Number of days	14	92	92
Mean No. of obs/day	31.6	24.0	30.3
No. of Hours with obs	236	2127	2094
Mean no. of hours/day with obs	16.9	23.1	22.8
% of hour periods without an ob	25.3	3.7	5.2
Mean (Ob-Bg)	-0.2	0.0	-0.1
RMS (Ob-Bg)	1.4	0.7	1.1
unflagged data			
Mean (Ob-Bg)	-1.5	0.0	0.0
RMS (Ob-Bg)	4.0	0.7	1.7
all data			
Revised RMS (Ob-Bg)	3.7	0.7	1.4
% of data flagged	65	4	25
Operating at end of period	NO	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44767/UK	44768/NL	44769/UK
Argos Id No.	16977	29755	13694
Period Within Area	01/10 - 31/12	20/12 - 31/12	01/10 - 31/12
Mean Latitude	50.8	41.8	56.8
Mean Longitude	-27.0	-49.3	-33.4
No. of Obs Received	2490	244	3007
% of obs with Acceptable Position	95.9	99.6	95.7
% of Present			
Pressure	99.8	100.0	100.0
P. Tendency	99.4	99.6	99.9
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.	99.8	99.6	100.0
Median delay (min)	74	100	40
Number of days	92	12	92
Mean No. of obs/day	27.1	20.3	32.7
No. of Hours with obs	1962	244	2125
Mean no. of hours/day with obs	21.3	20.3	23.1
% of hour periods without an ob	11.1	13.5	3.8
Mean (Ob-Bg)	0.0	1.5	-0.3
RMS (Ob-Bg)	0.9	2.0	1.0
unflagged data			
Mean (Ob-Bg)	0.0	1.6	-0.4
RMS (Ob-Bg)	3.8	2.0	1.2
all data			
Revised RMS (Ob-Bg)	1.1	2.0	1.1
% of data flagged	22	1	29
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	44770/UK	44772/UK	44773/UK
Argos Id No.	16976	16978	21468
Period Within Area	01/10 - 05/10	01/10 - 21/12	01/10 - 31/12
Mean Latitude	53.1	61.3	44.6
Mean Longitude	-39.1	-32.6	-28.2
No. of Obs Received	95	1789	2027
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	100.0	99.9	99.9
P. Tendency	100.0	99.7	99.1
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.	0.0	63.2	99.9
Median delay (min)	88	71	70
Number of days	5	82	92
Mean No. of obs/day	19.0	21.8	22.0
No. of Hours with obs	78	1756	2026
Mean no. of hours/day with obs	15.6	21.4	22.0
% of hour periods without an ob	22.8	9.9	8.2
Mean (Ob-Bg)	-0.8	-0.5	0.5
RMS (Ob-Bg)	1.3	1.0	1.2
unflagged data			
Mean (Ob-Bg)	-0.7	-0.4	0.7
RMS (Ob-Bg)	1.5	1.1	2.6
all data			
Revised RMS (Ob-Bg)	1.5	1.1	1.6
% of data flagged	23	3	2
Operating at end of period	NO	NO	YES
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	44774/D	44775/UK	44780/IR
Argos Id No.	10440	25372	1153
Period Within Area	12/12 - 31/12	01/10 - 18/10	01/10 - 31/12
Mean Latitude	45.3	34.7	60.6
Mean Longitude	-38.5	-42.2	-25.0
No. of Obs Received	235	242	2119
% of obs with Acceptable Position	94.0	100.0	100.0
% of Present			
Pressure	86.0	98.3	84.6
P. Tendency	82.1	93.8	77.4
Air Temperature	84.3	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	74.5	96.7	0.0
Median delay (min)	25	58	32
Number of days	20	18	92
Mean No. of obs/day	11.8	13.4	23.0
No. of Hours with obs	210	242	1469
Mean no. of hours/day with obs	10.5	13.4	16.0
% of hour periods without an ob	54.6	42.0	33.3
Mean (Ob-Bg)	-0.4	-0.3	0.0
RMS (Ob-Bg)	1.2	0.6	0.9
unflagged data			
Mean (Ob-Bg)	-0.5	-0.3	0.0
RMS (Ob-Bg)	1.3	0.6	0.8
all data			
Revised RMS (Ob-Bg)	1.3	0.6	0.8
% of data flagged	17	0	41
Operating at end of period	YES	NO	YES
Performance			
Availability	Poor	Poor	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	62501/F	62502/F	62503/F
Argos Id No.	7139	28700	17926
Period Within Area	01/10 - 31/12	01/10 - 11/11	01/10 - 31/12
Mean Latitude	30.1	51.4	29.9
Mean Longitude	-37.9	-21.1	-41.0
No. of Obs Received	2103	856	2154
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	99.9	99.8	100.0
P. Tendency	99.8	99.1	99.9
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	0.0/ 0.0	99.2/ 99.2	0.0/ 0.0
Sea-Surface Temp.	99.9	99.6	100.0
Median delay (min)	68	62	58
Number of days	92	42	92
Mean No. of obs/day	22.9	20.4	23.4
No. of Hours with obs	2103	853	2153
Mean no. of hours/day with obs	22.9	20.3	23.4
% of hour periods without an ob	4.8	14.4	2.5
Mean (Ob-Bg)	0.3	-0.3	-0.7
RMS (Ob-Bg)	0.7	0.9	0.9
unflagged data			
Mean (Ob-Bg)	0.3	-0.3	-0.7
RMS (Ob-Bg)	0.7	0.9	0.9
all data			
Revised RMS (Ob-Bg)	0.7	0.9	0.9
% of data flagged	0	0	0
Operating at end of period	YES	NO	YES
Performance			
Availability	Acceptable	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	62504/F	62505/F	62506/F
Argos Id No.	17928	17188	17189
Period Within Area	01/10 - 26/10	01/10 - 31/12	01/10 - 05/10
Mean Latitude	32.5	53.1	46.3
Mean Longitude	-16.4	-30.9	-12.9
No. of Obs Received	156	2744	164
% of obs with Acceptable Position	99.4	96.3	100.0
% of Present			
Pressure	99.4	99.9	100.0
P. Tendency	98.7	99.0	100.0
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.	100.0	99.9	100.0
Median delay (min)	79	52	77
Number of days	26	92	5
Mean No. of obs/day	6.0	29.8	32.8
No. of Hours with obs	156	2093	102
Mean no. of hours/day with obs	6.0	22.8	20.4
% of hour periods without an ob	74.6	5.2	12.1
Mean (Ob-Bg)	-0.2	-0.1	-1.0
RMS (Ob-Bg) unflagged data	0.5	1.0	1.1
Mean (Ob-Bg)	-0.2	0.1	-1.0
RMS (Ob-Bg) all data	0.5	2.6	1.1
Revised RMS (Ob-Bg)	0.5	1.2	1.1
% of data flagged	0	24	38
Operating at end of period	NO	YES	NO
Performance			
Availability	Poor	Good	Good
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Very Good	Good
Comments			

Annex A - cont'd

WMO No./Country	62507/F	62508/F	62509/F
Argos Id No.	28695	32789	32790
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	51.0	45.6	55.7
Mean Longitude	-12.9	-13.1	-15.4
No. of Obs Received	2650	2075	1996
% of obs with Acceptable Position	96.7	100.0	100.0
% of Present Pressure	99.8	99.5	99.7
P. Tendency	99.5	99.2	99.0
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.	99.5	99.6	99.6
Median delay (min)	54	61	57.5
Number of days	92	92	92
Mean No. of obs/day	28.8	22.6	21.7
No. of Hours with obs	2080	2074	1995
Mean no. of hours/day with obs	22.6	22.5	21.7
% of hour periods without an ob	5.8	6.1	9.6
Mean (Ob-Bg)	-0.5	-0.1	0.7
RMS (Ob-Bg)	1.0	0.9	1.2
unflagged data			
Mean (Ob-Bg)	-0.5	0.0	0.8
RMS (Ob-Bg)	1.1	1.6	2.2
all data			
Revised RMS (Ob-Bg)	1.1	1.2	1.4
% of data flagged	21	1	1
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Acceptable
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Very Good	Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	62512/F	62513/F	62514/F
Argos Id No.	28692	17674	17675
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	40.6	36.4	35.2
Mean Longitude	-12.6	-30.2	-34.1
No. of Obs Received	2961	2119	3206
% of obs with Acceptable Position	94.9	100.0	100.0
% of Present Pressure	99.9	99.9	99.9
P. Tendency	99.5	99.4	99.5
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.	99.6	99.9	99.8
Median delay (min)	73	61	81
Number of days	92	92	92
Mean No. of obs/day	32.2	23.0	34.8
No. of Hours with obs	2039	2118	2159
Mean no. of hours/day with obs	22.2	23.0	23.5
% of hour periods without an ob	7.6	4.1	2.2
Mean (Ob-Bg)	0.6	0.4	0.0
RMS (Ob-Bg)	1.3	0.9	0.8
unflagged data			
Mean (Ob-Bg)	0.6	0.5	0.1
RMS (Ob-Bg)	1.4	1.4	1.4
all data			
Revised RMS (Ob-Bg)	1.4	1.0	1.1
% of data flagged	32	1	36
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Acceptable	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

Annex A - cont'd

WMO No./Country	62515/F	62517/F	62519/F
Argos Id No.	17190	17677	17678
Period Within Area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Mean Latitude	32.9	32.8	43.4
Mean Longitude	-23.7	-27.5	-8.7
No. of Obs Received	2122	2093	2049
% of obs with Acceptable Position	100.0	100.0	100.0
% of Present			
Pressure	99.9	99.9	99.3
P. Tendency	99.9	99.5	98.8
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.	99.8	99.8	99.4
Median delay (min)	61.5	67	63
Number of days	92	92	92
Mean No. of obs/day	23.1	22.8	22.3
No. of Hours with obs	2121	2092	2045
Mean no. of hours/day with obs	23.1	22.7	22.2
% of hour periods without an ob	3.9	5.3	7.4
Mean (Ob-Bg)	0.1	-0.3	0.3
RMS (Ob-Bg)	0.6	0.7	1.0
unflagged data			
Mean (Ob-Bg)	0.1	-0.2	0.5
RMS (Ob-Bg)	0.7	1.4	2.1
all data			
Revised RMS (Ob-Bg)	0.7	0.6	1.1
% of data flagged	0	0	1
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	62599/N	62600/IR	62696/UK
Argos Id No.	3675	10312	18222
Period Within Area	12/12 - 31/12	12/12 - 31/12	01/10 - 31/12
Mean Latitude	47.0	45.4	56.8
Mean Longitude	-30.8	-34.3	-23.2
No. of Obs Received	180	203	3947
% of obs with Acceptable Position	100.0	98.5	95.1
% of Present			
Pressure	85.0	85.7	99.9
P. Tendency	82.8	86.7	99.7
Air Temperature	86.7	88.2	0.0
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	79.4	79.3	99.7
Median delay (min)	24	25	49
Number of days	20	20	92
Mean No. of obs/day	9.0	10.1	42.9
No. of Hours with obs	164	183	2119
Mean no. of hours/day with obs	8.2	9.1	23.0
% of hour periods without an ob	64.7	60.9	4.0
Mean (Ob-Bg)	-0.2	-0.4	-0.2
RMS (Ob-Bg) unflagged data	1.3	1.2	1.1
Mean (Ob-Bg)	-0.5	-0.4	-0.1
RMS (Ob-Bg) all data	4.1	1.4	1.6
Revised RMS (Ob-Bg)	1.4	1.5	1.3
% of data flagged	21	15	46
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Poor	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Annex A - cont'd

WMO No./Country	62711/UK	62712/UK	62713/UK
Argos Id No.	21375	21712	21512
Period Within Area	01/10 - 31/12	01/10 - 31/12	17/12 - 31/12
Mean Latitude	62.9	59.8	52.4
Mean Longitude	-34.2	-33.4	-22.0
No. of Obs Received	3187	2984	325
% of obs with Acceptable Position	100.0	95.5	100.0
% of Present			
Pressure	99.9	99.9	100.0
P. Tendency	99.5	99.5	100.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir	99.8/ 99.8	0.0/ 0.0	0.0/ 0.0
Sea-Surface Temp.	99.8	100.0	99.7
Median delay (min)	84	47	67
Number of days	92	92	15
Mean No. of obs/day	34.6	32.4	21.7
No. of Hours with obs	2082	2100	325
Mean no. of hours/day with obs	22.6	22.8	21.7
% of hour periods without an ob	5.7	4.9	9.2
Mean (Ob-Bg)	0.2	0.3	0.4
RMS (Ob-Bg)	1.0	1.0	1.1
unflagged data			
Mean (Ob-Bg)	0.3	0.4	0.5
RMS (Ob-Bg)	1.8	2.2	1.2
all data			
Revised RMS (Ob-Bg)	1.3	1.5	1.2
% of data flagged	37	30	0
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Acceptable
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Good
Comments			

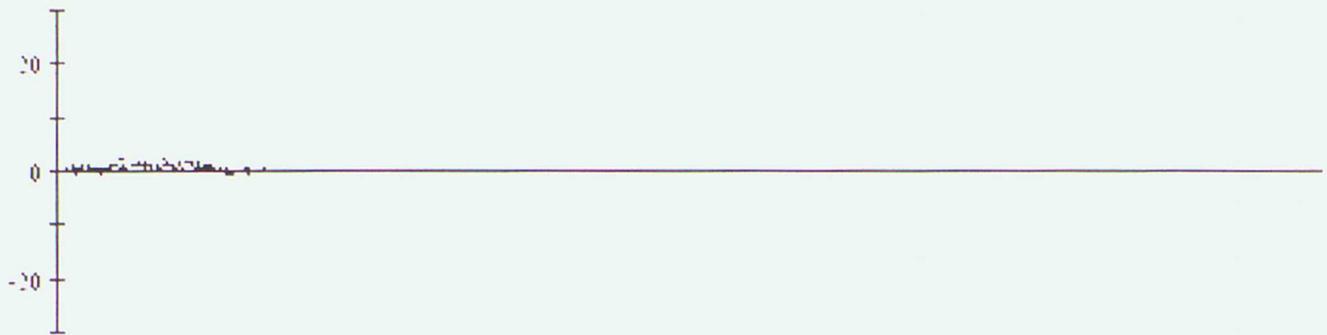
Annex A - cont'd

WMO No./Country	64553/IR	65517/UK	
Argos Id No.	3038	21570	
Period Within Area	01/10 - 31/12	01/10 - 11/10	
Mean Latitude	62.4	58.9	
Mean Longitude	-21.4	-45.8	
No. of Obs Received	2534	238	
% of obs with Acceptable Position	100.0	100.0	
% of Present			
Pressure	88.6	100.0	
P. Tendency	82.2	99.2	
Air Temperature	87.3	0.0	
Wind Speed/Dir	0.0/ 0.0	0.0/ 0.0	
Sea-Surface Temp.	65.2	99.6	
Median delay (min)	26	48.5	
Number of days	92	11	
Mean No. of obs/day	27.5	21.6	
No. of Hours with obs	1645	237	
Mean no. of hours/day with obs	17.9	21.5	
% of hour periods without an ob	25.4	6.7	
Mean (Ob-Bg)	-0.4	0.0	
RMS (Ob-Bg) unflagged data	1.0	1.1	
Mean (Ob-Bg)	-0.4	0.1	
RMS (Ob-Bg) all data	1.0	2.8	
Revised RMS (Ob-Bg)	1.0	1.1	
% of data flagged	44	1	
Operating at end of period	YES	NO	
Performance			
Availability	Good	Acceptable	
Pressure Quality	Acceptable	Acceptable	
Timeliness	Very Good	Very Good	
Comments			

ANNEX B - TIME SERIES PLOTS OF PRESSURE

Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

41523 Pressure



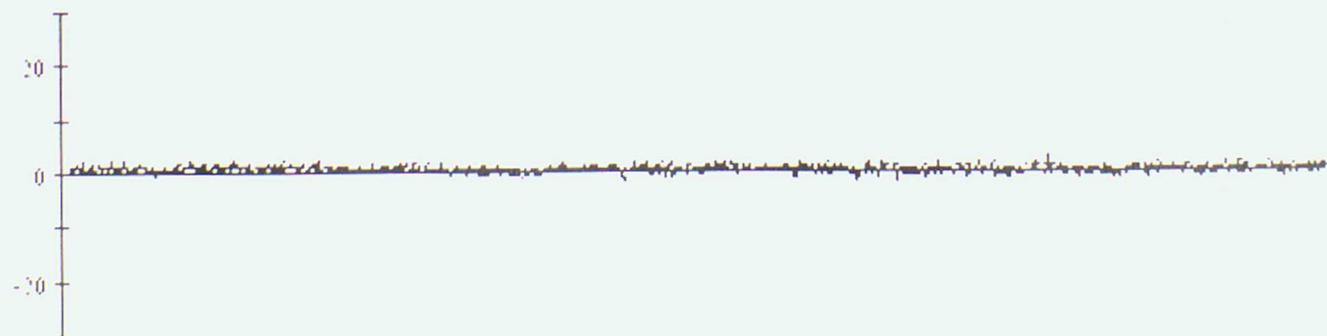
41531 Pressure



41532 Pressure

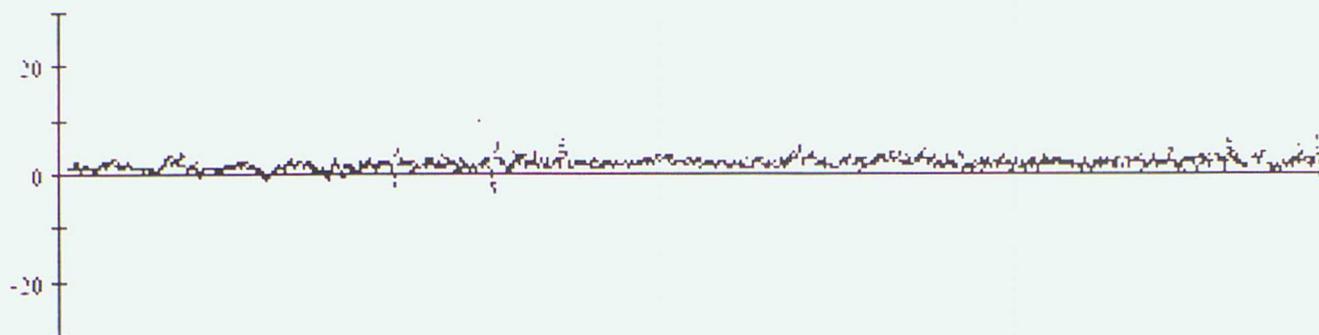


41534 Pressure

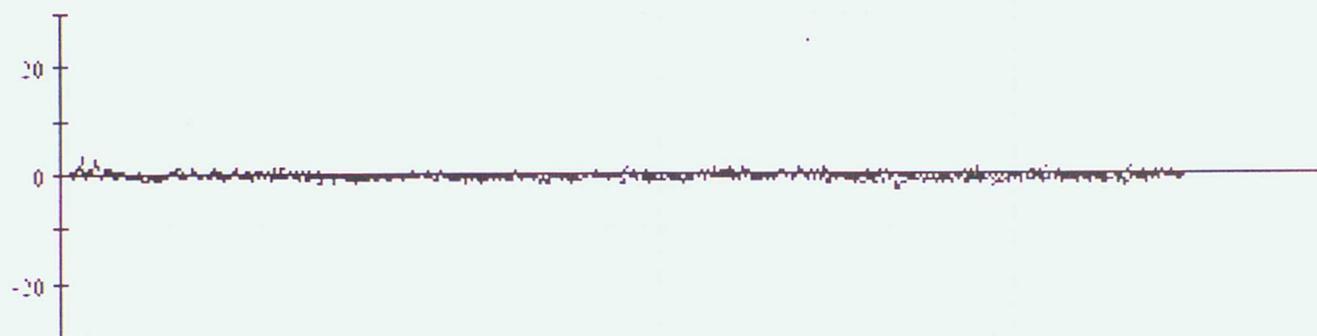


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

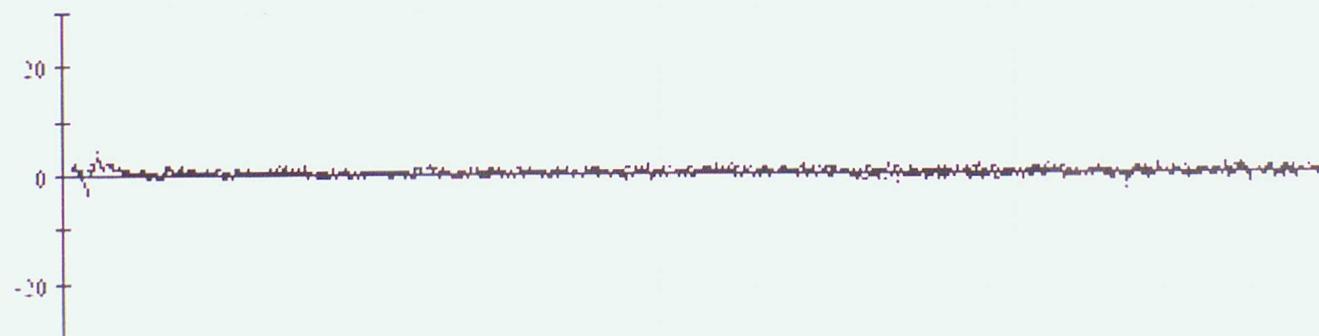
41640 Pressure



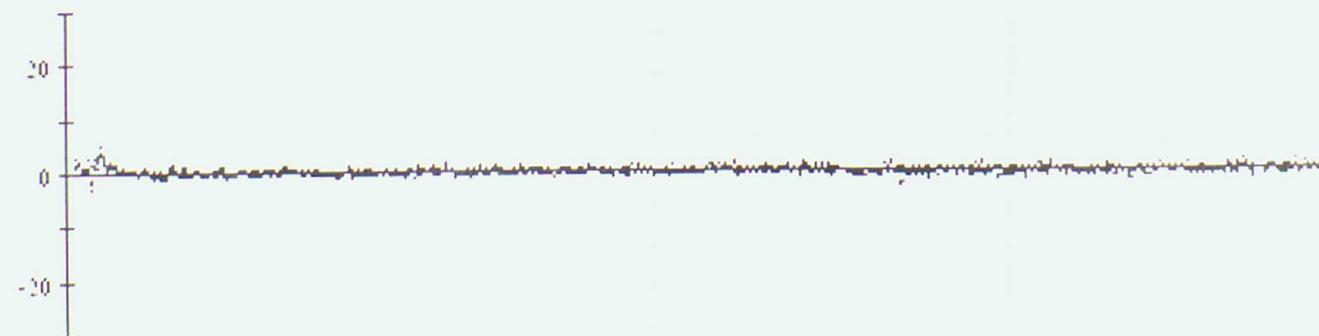
41647 Pressure



41650 Pressure

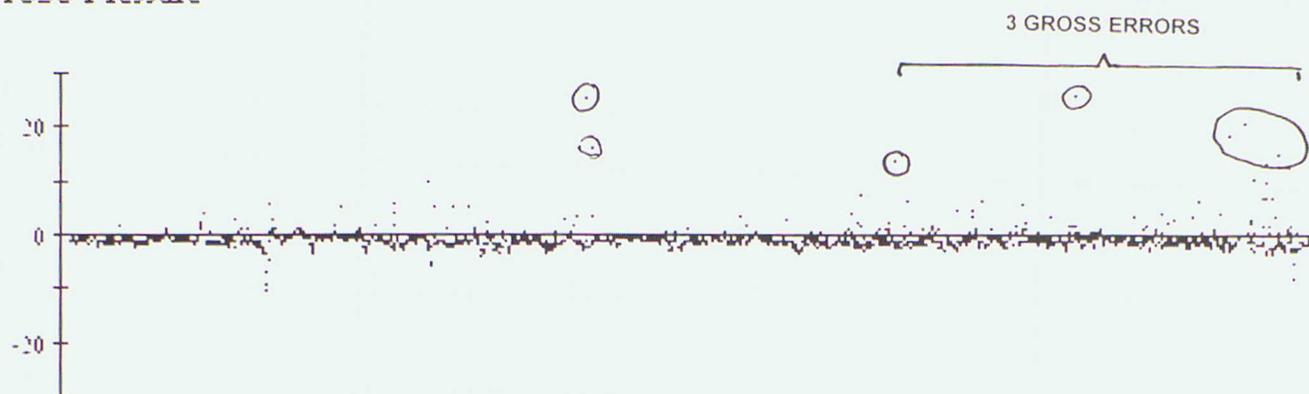


41652 Pressure

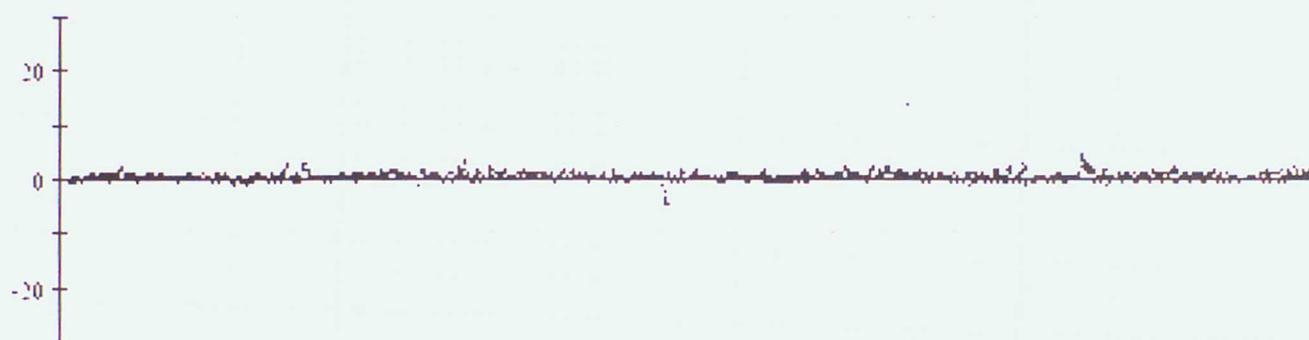


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

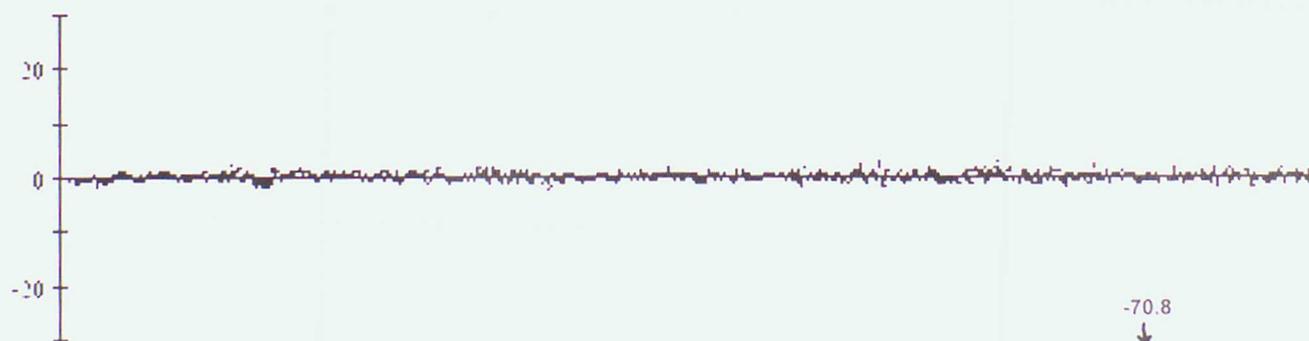
41658 Pressure



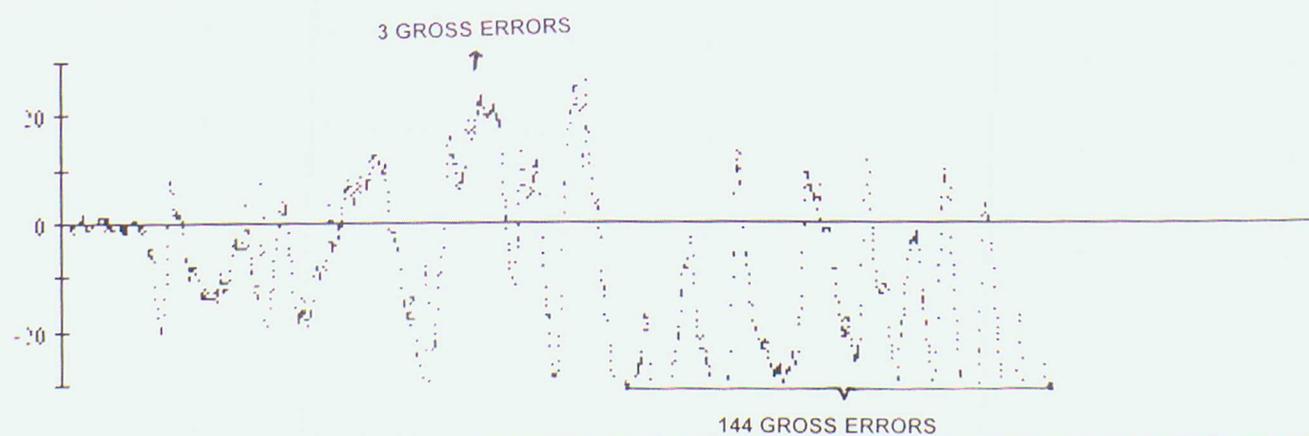
41659 Pressure



41666 Pressure

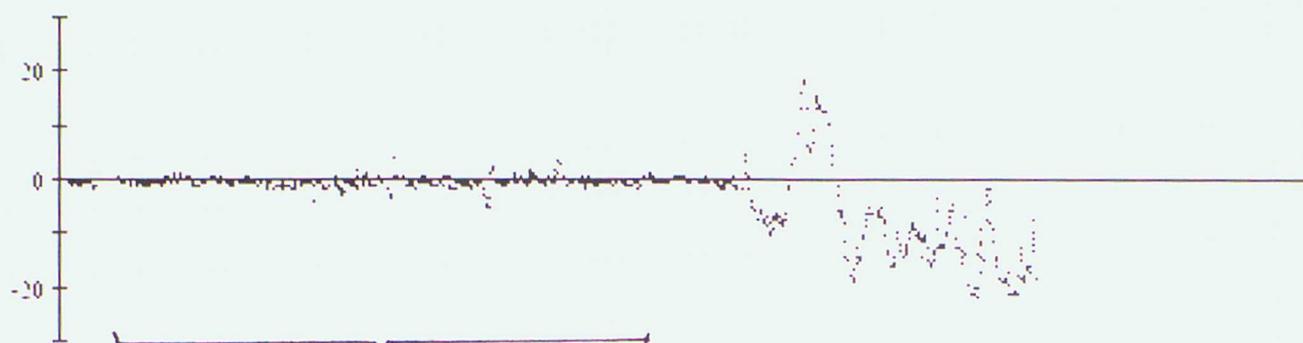


44504 Pressure



Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

44511 Pressure



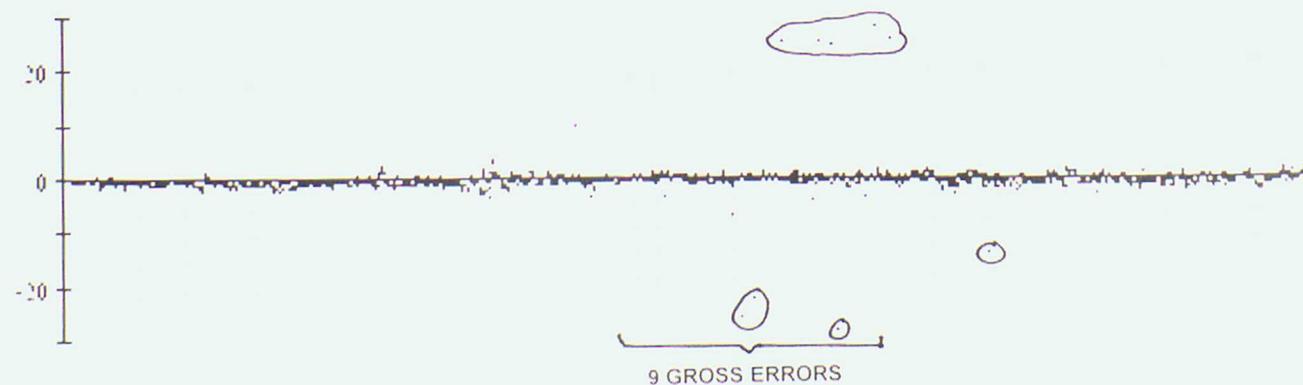
44549 Pressure



44550 Pressure

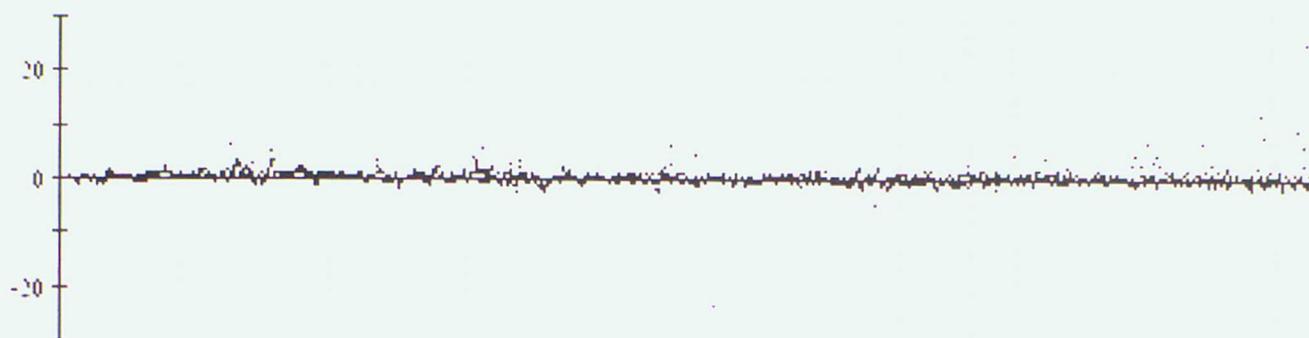


44601 Pressure

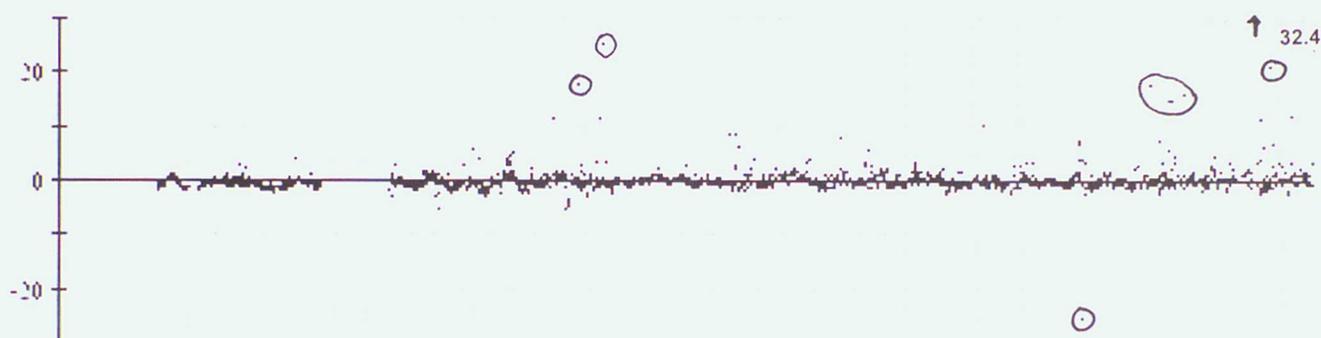


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

44606 Pressure



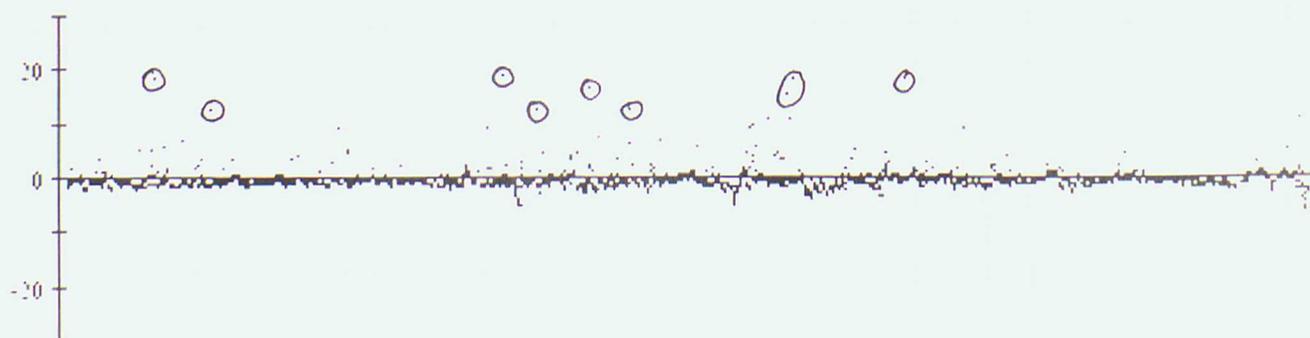
44607 Pressure



44608 Pressure

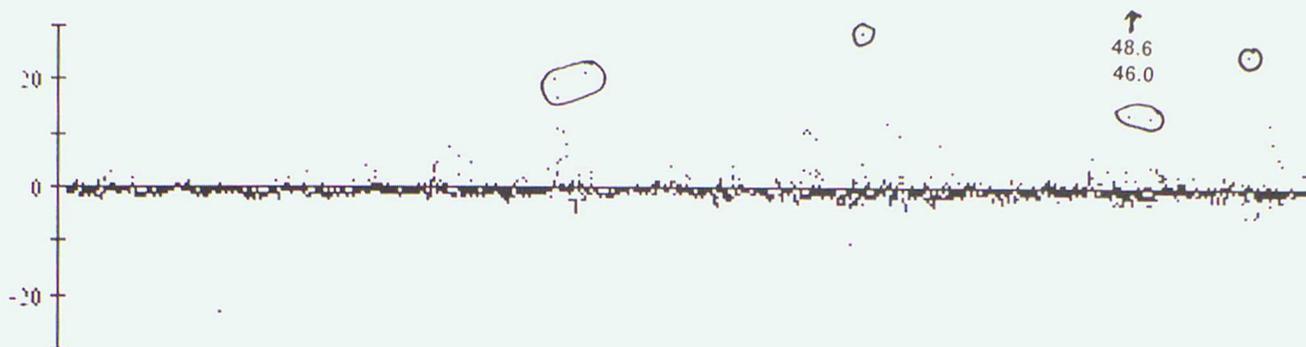


44609 Pressure

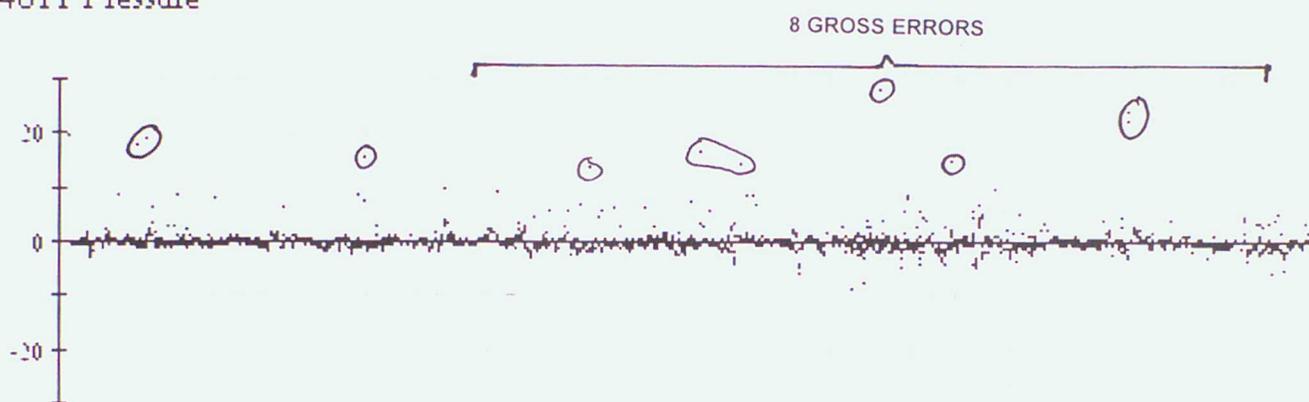


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

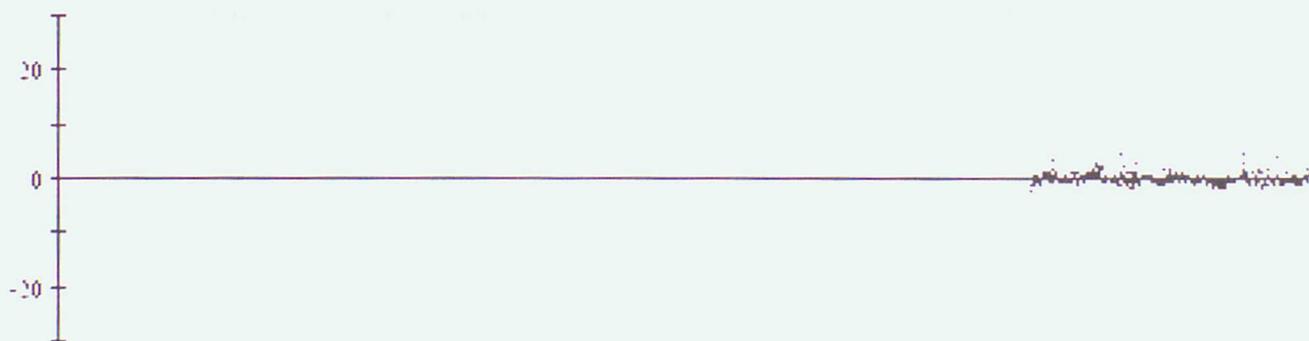
44610 Pressure



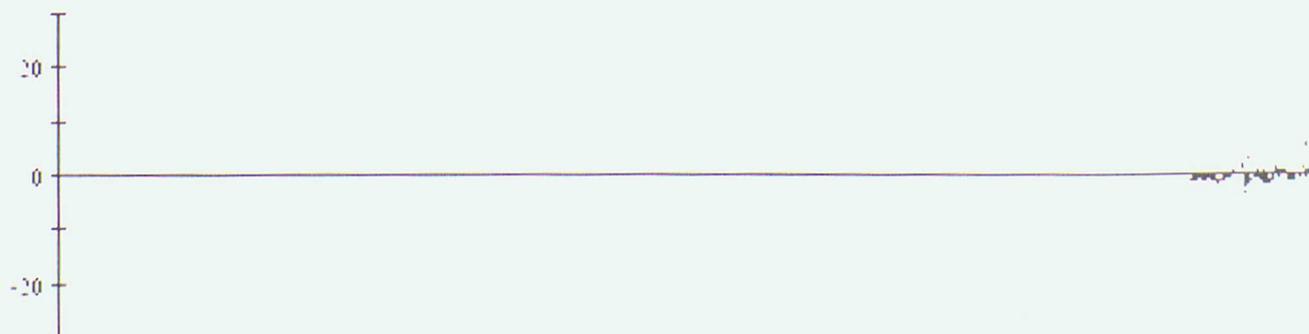
44611 Pressure



44612 Pressure

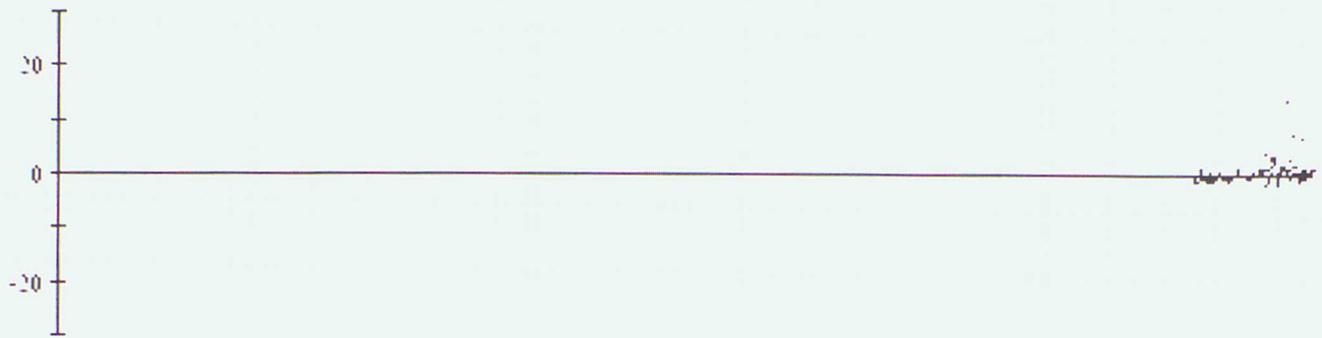


44613 Pressure

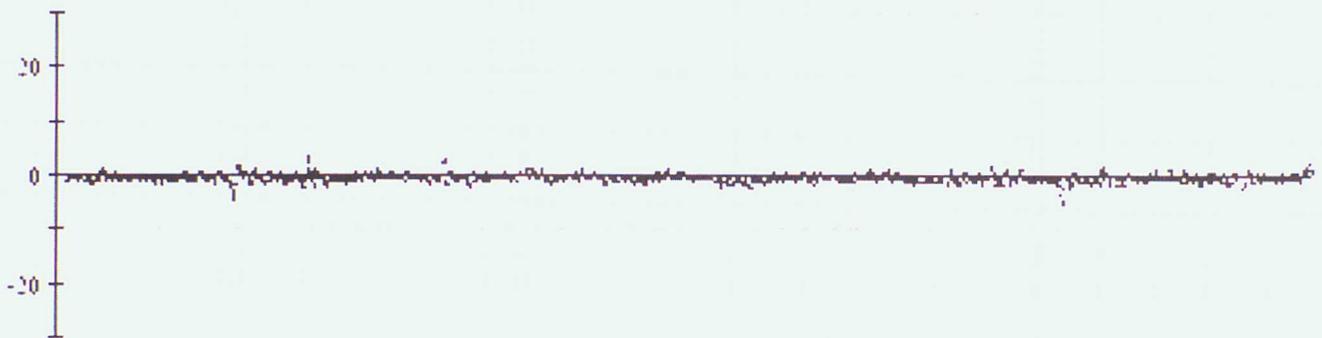


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

44614 Pressure



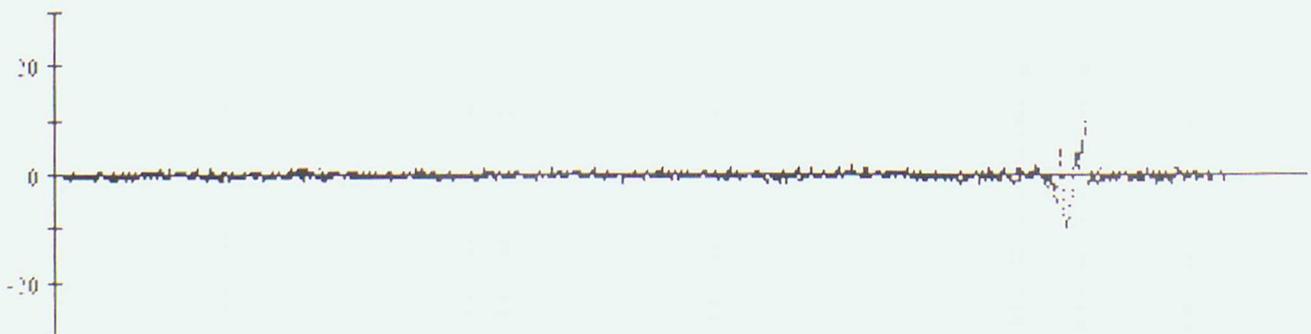
44616 Pressure



44624 Pressure

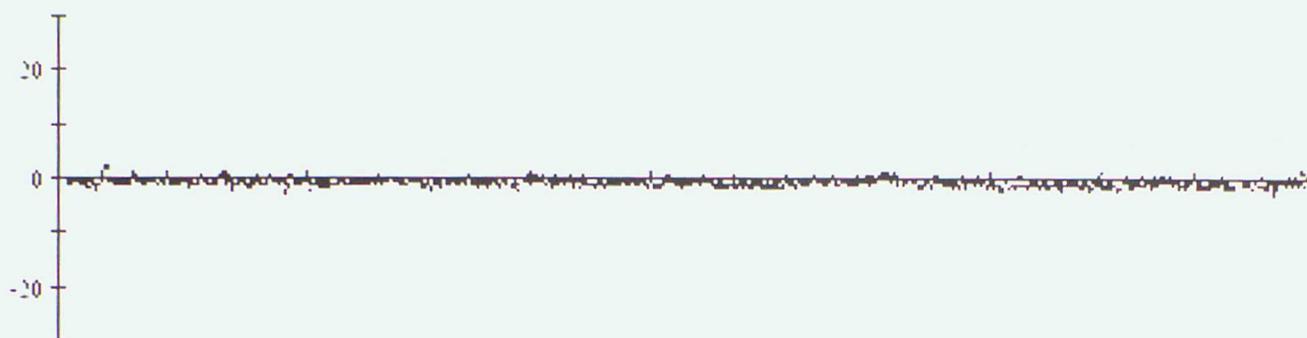


44625 Pressure

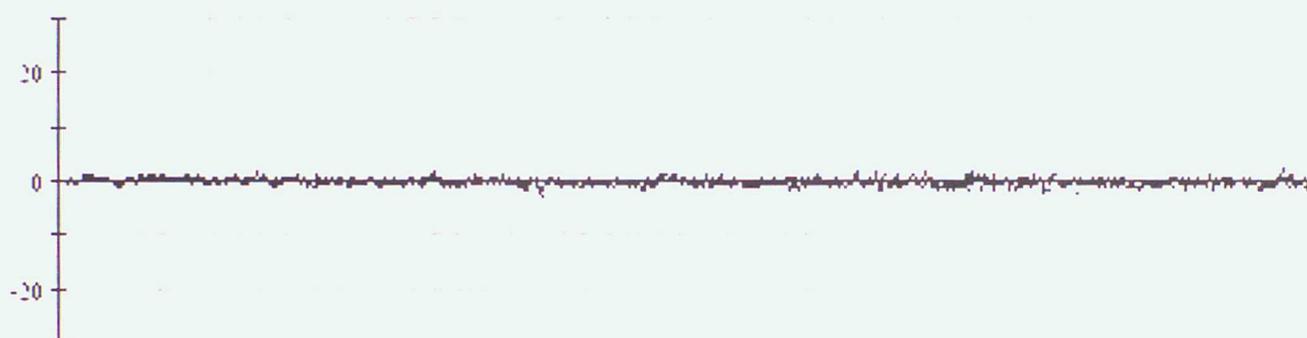


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

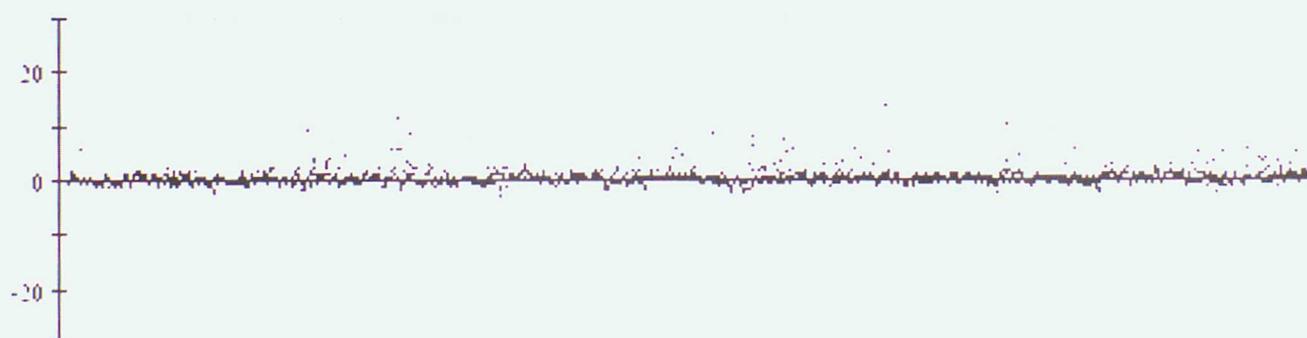
44627 Pressure



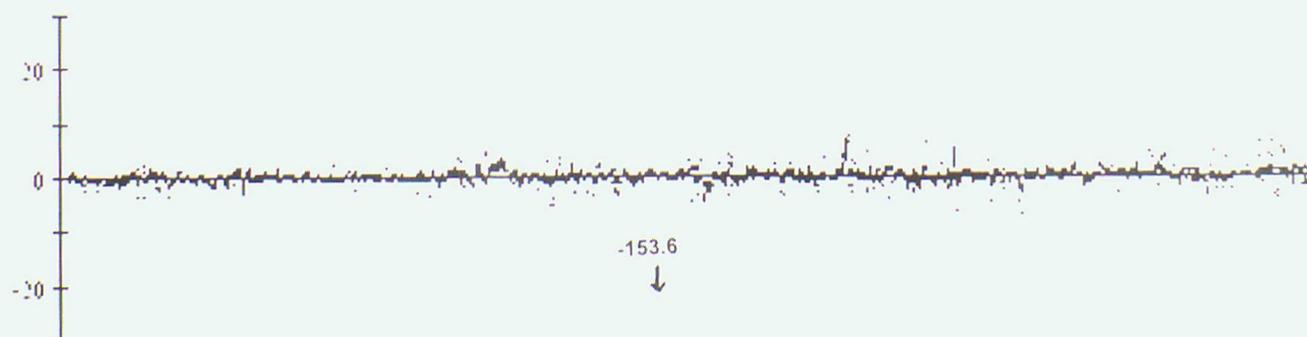
44721 Pressure



44723 Pressure

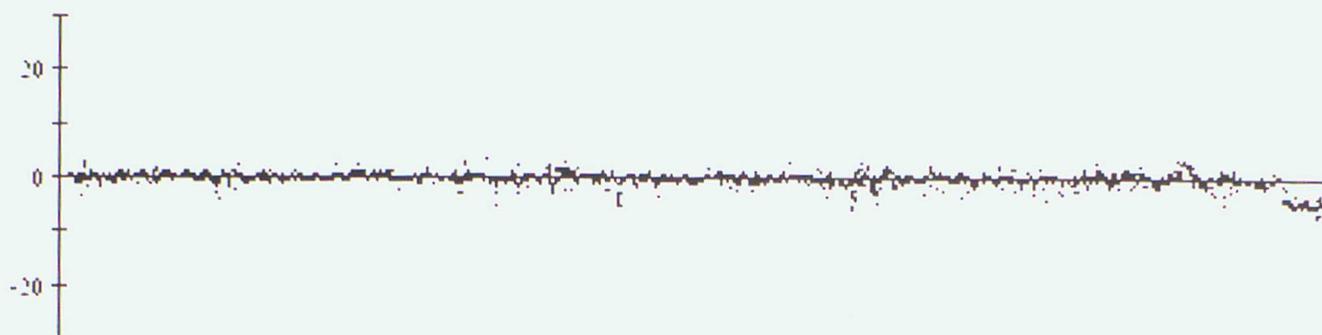


44726 Pressure

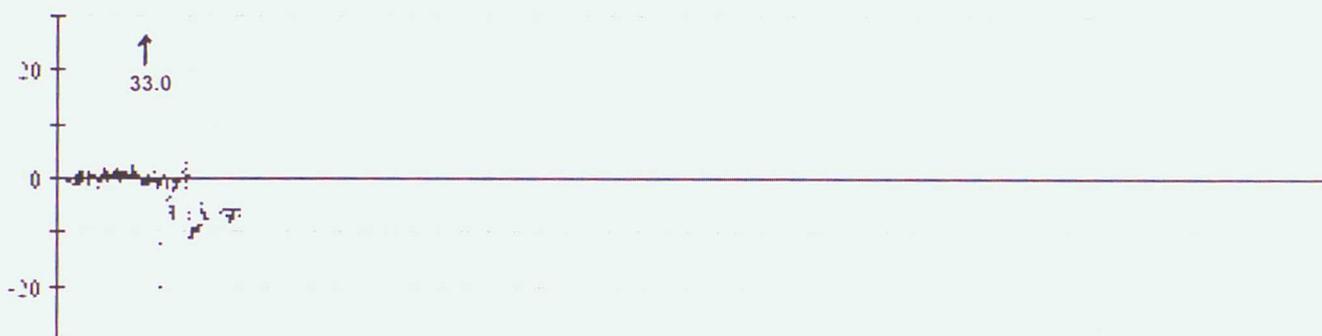


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

44730 Pressure



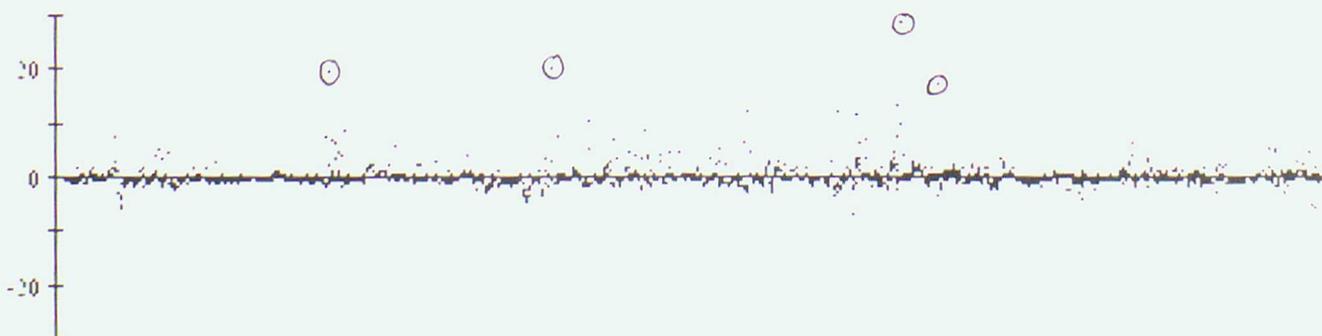
44743 Pressure



44763 Pressure

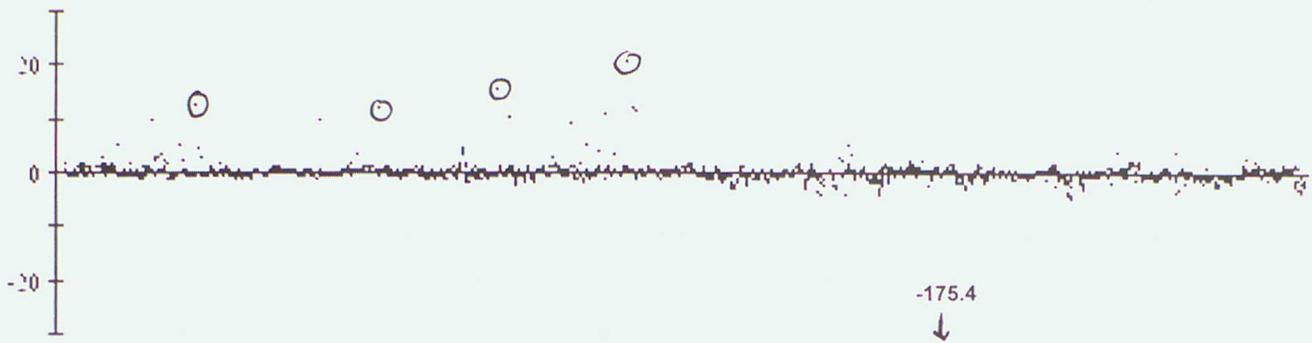


44764 Pressure

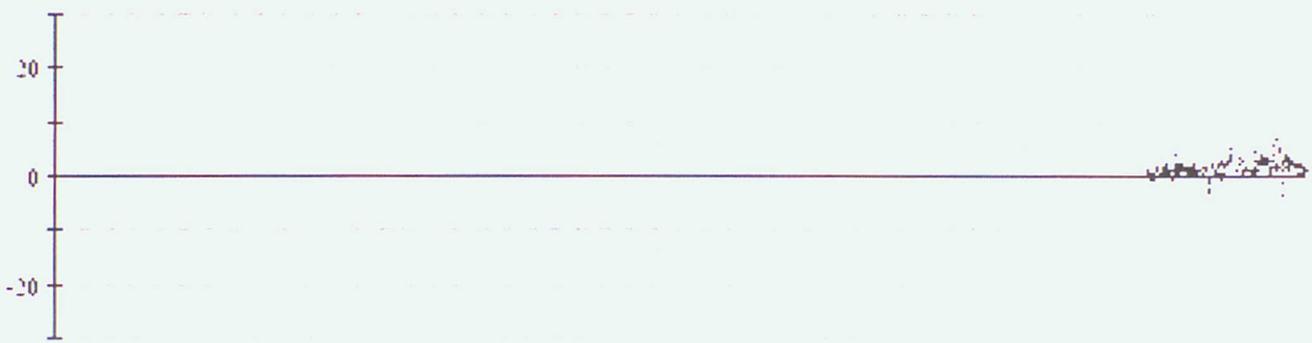


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

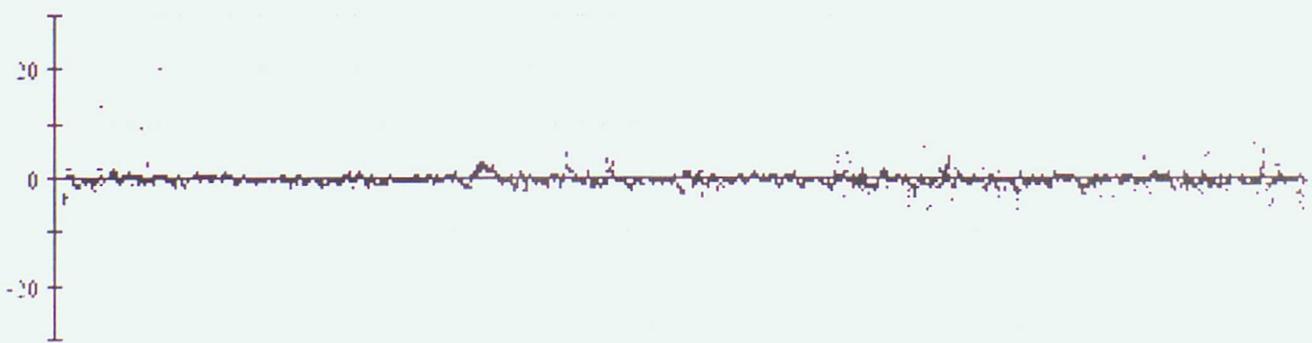
44767 Pressure



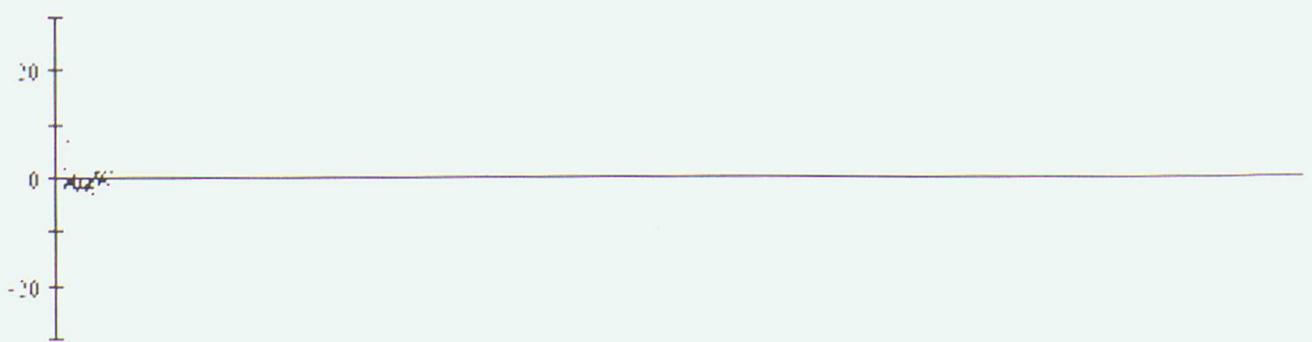
44768 Pressure



44769 Pressure



44770 Pressure

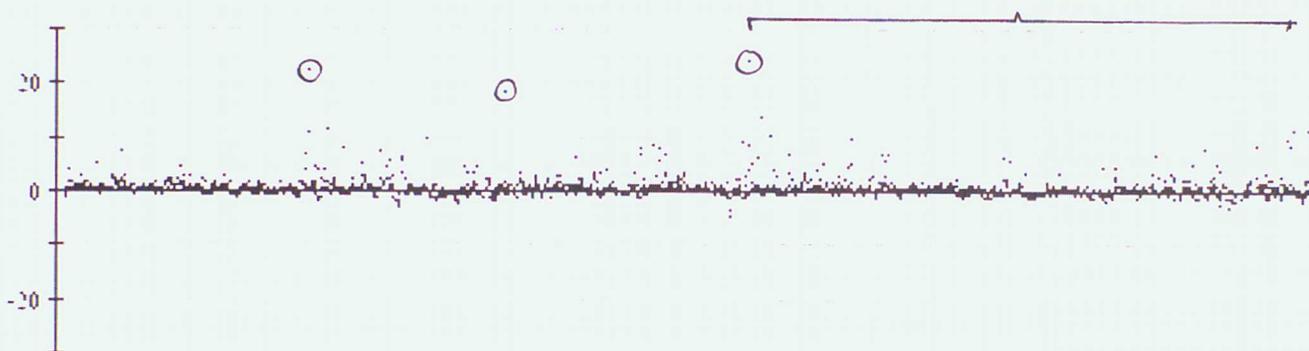


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

44772 Pressure



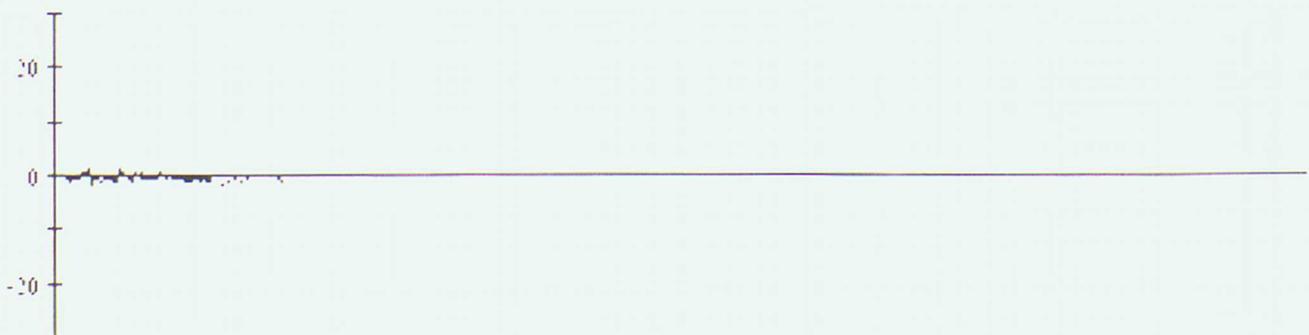
44773 Pressure



44774 Pressure

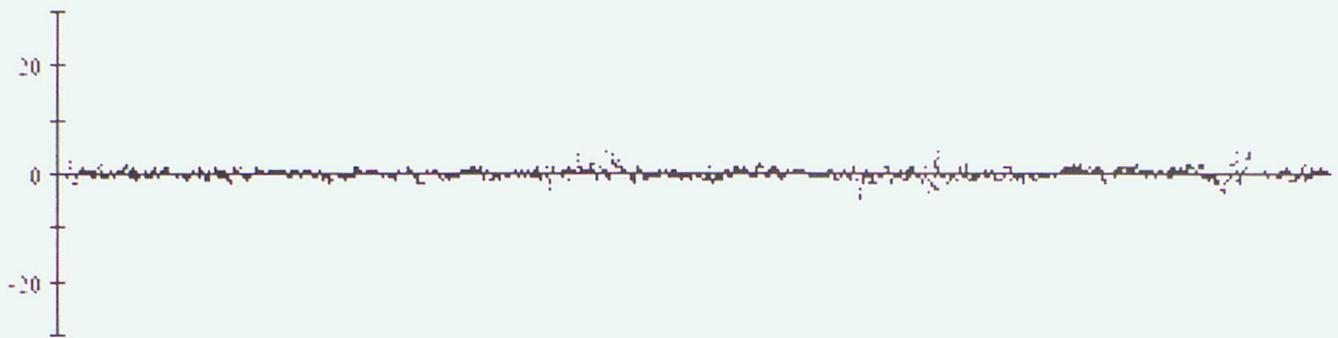


44775 Pressure

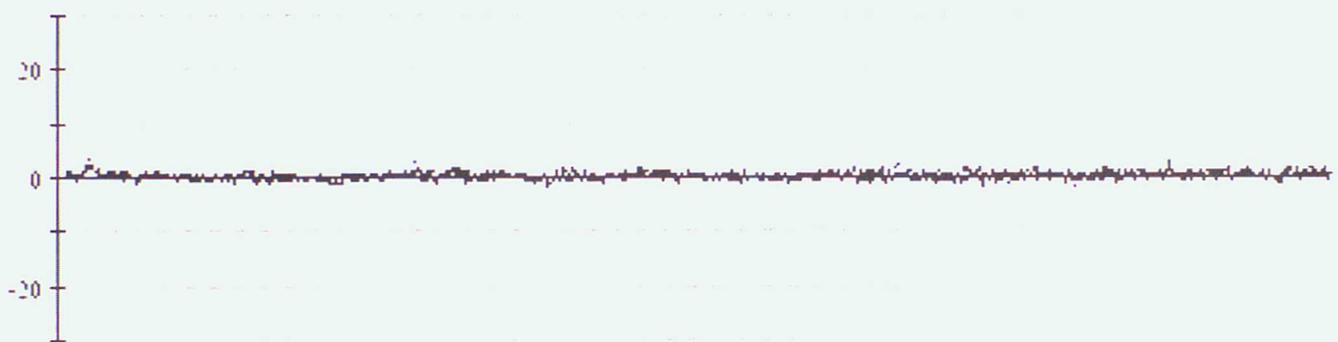


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

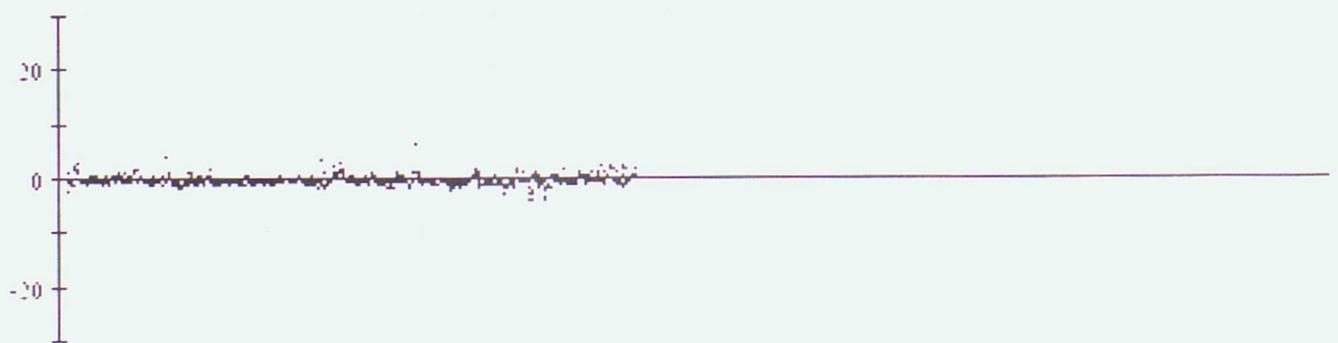
44780 Pressure



62501 Pressure



62502 Pressure

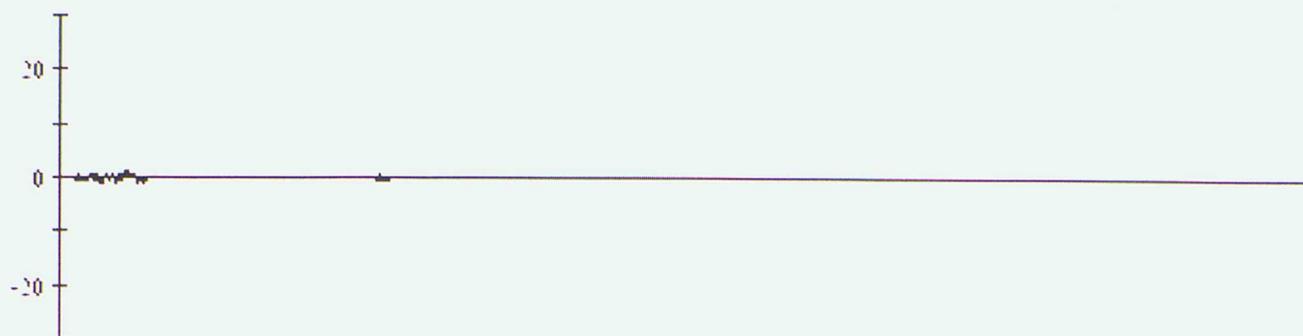


62503 Pressure

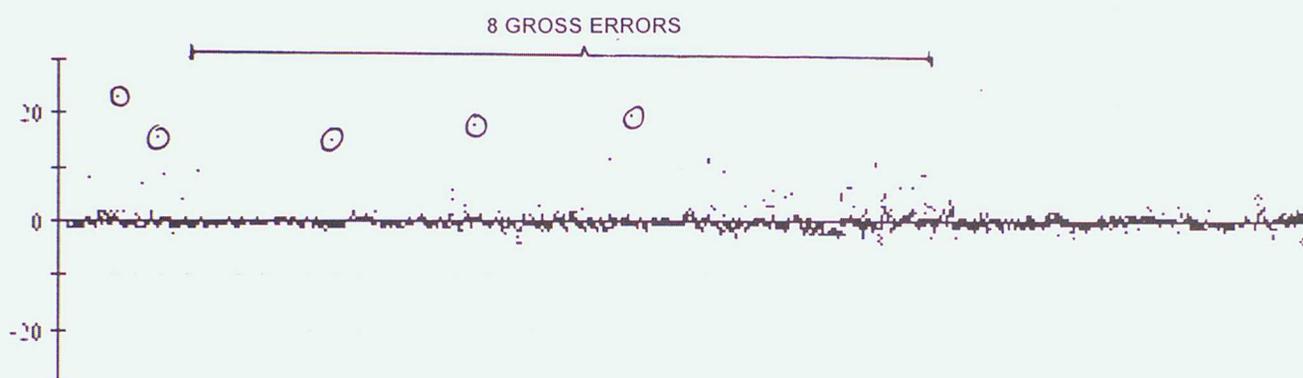


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

62504 Pressure



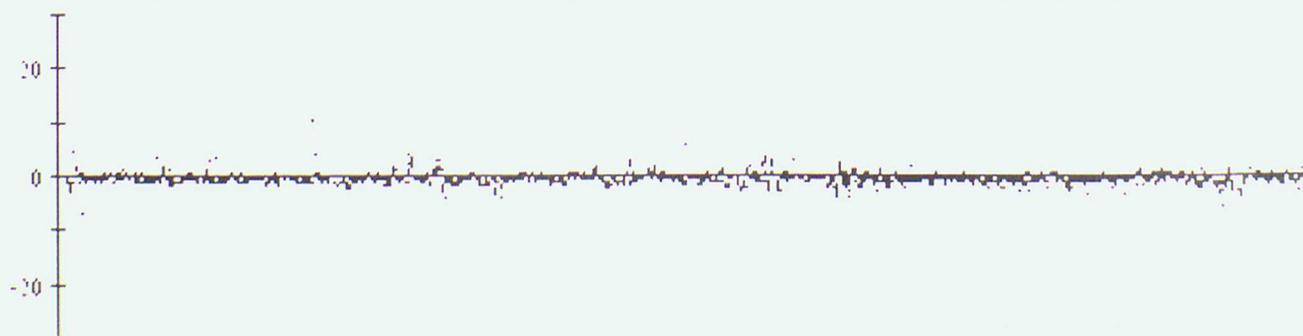
62505 Pressure



62506 Pressure

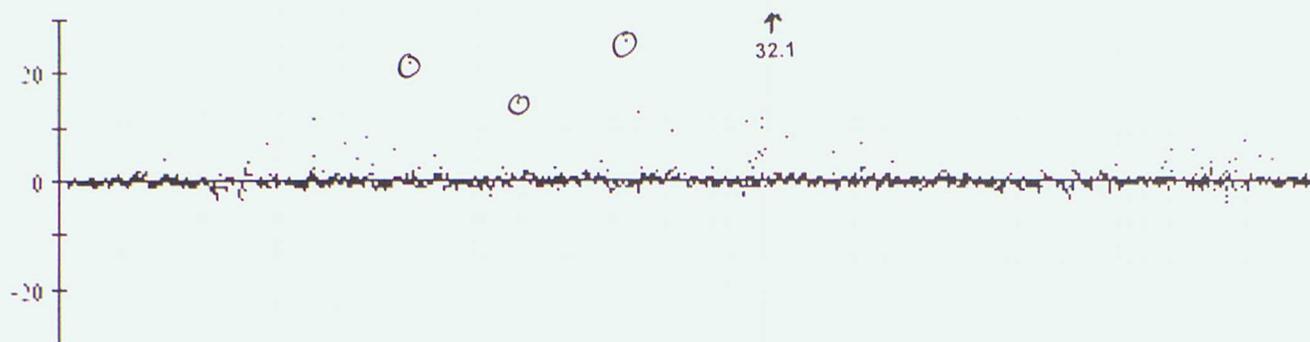


62507 Pressure

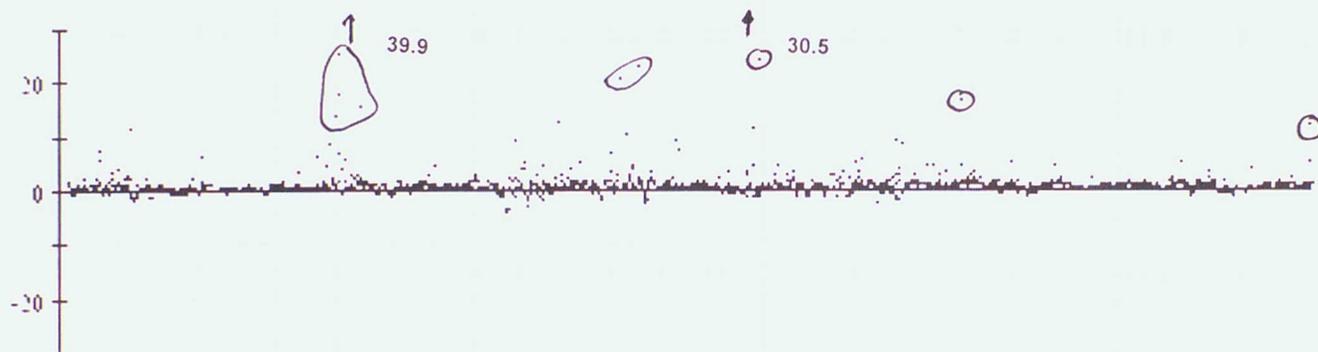


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

62508 Pressure



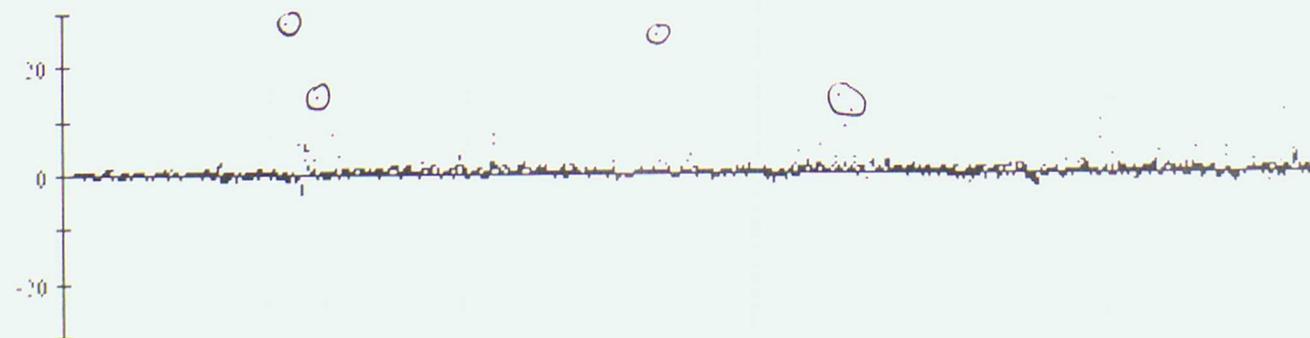
62509 Pressure



62512 Pressure

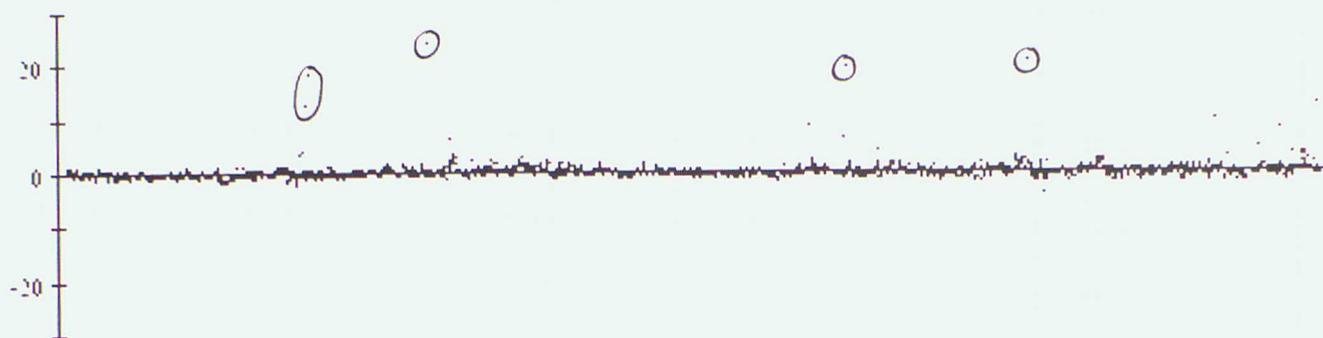


62513 Pressure

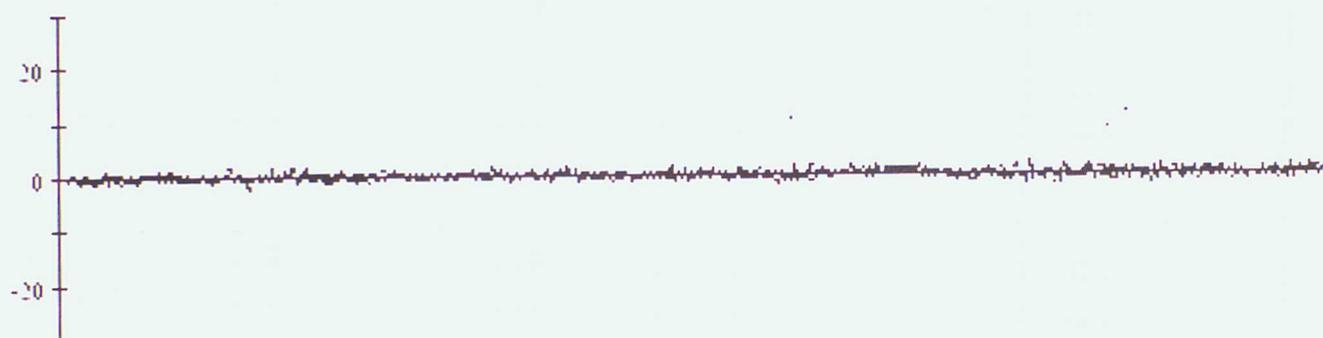


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

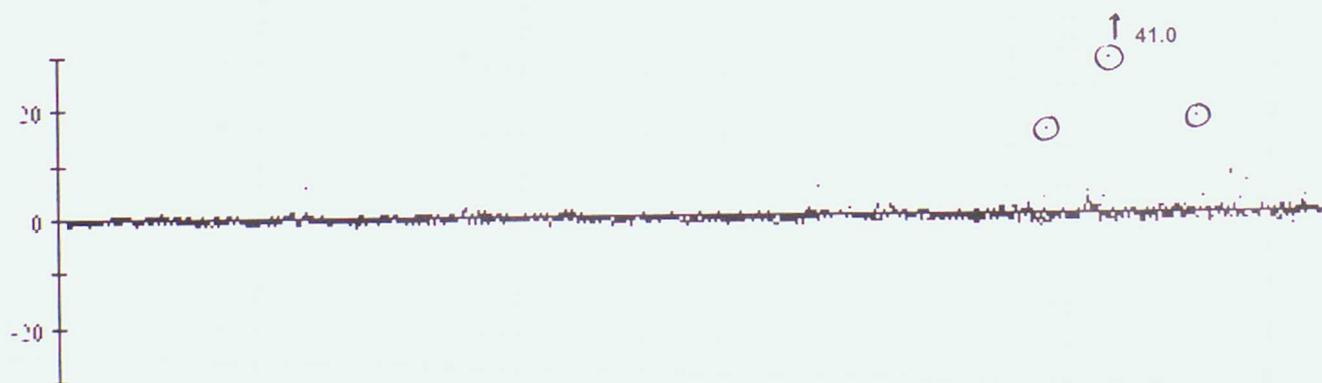
62514 Pressure



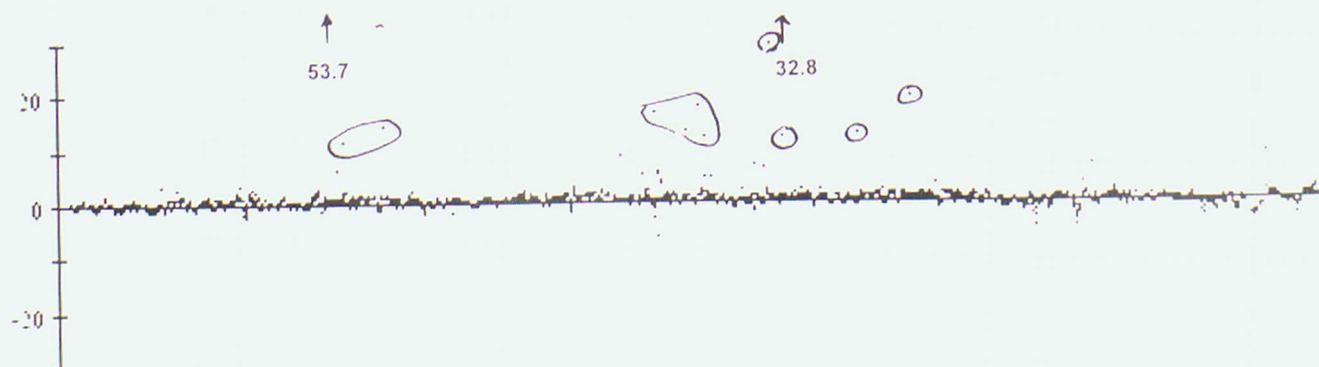
62515 Pressure



62517 Pressure

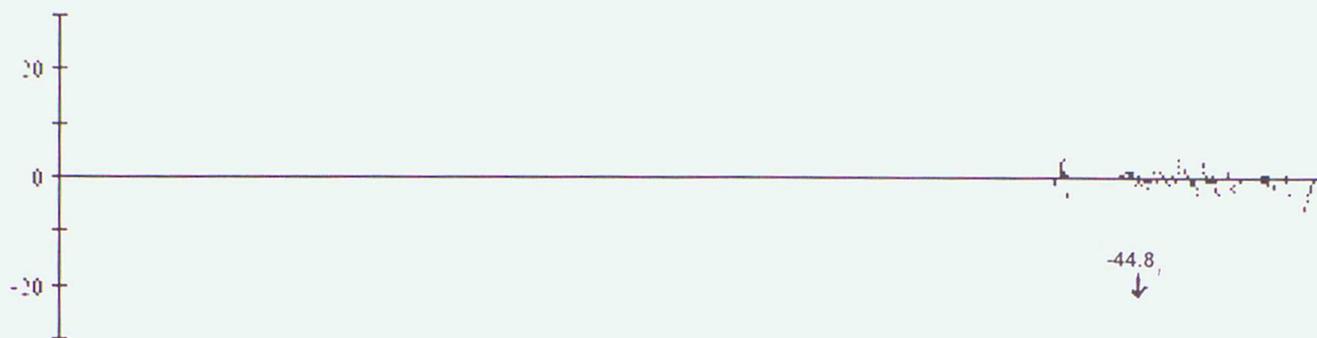


62519 Pressure

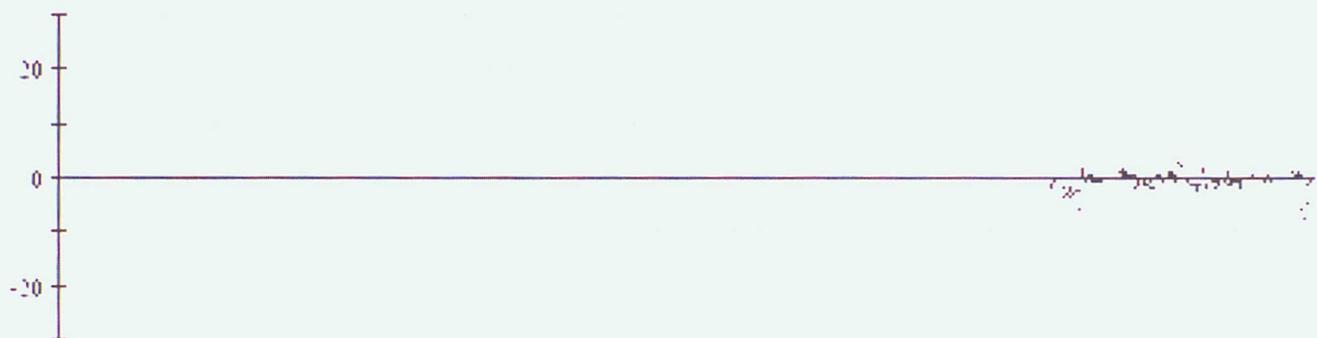


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

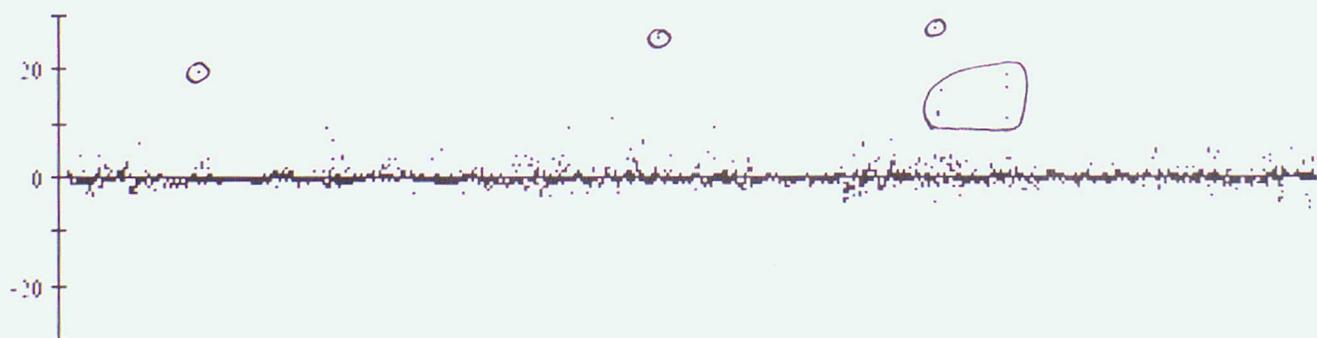
62599 Pressure



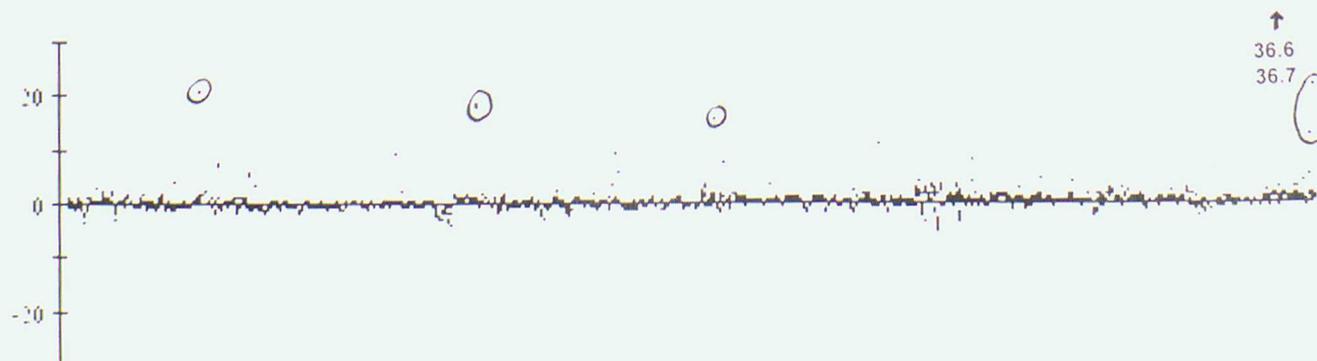
62600 Pressure



62696 Pressure

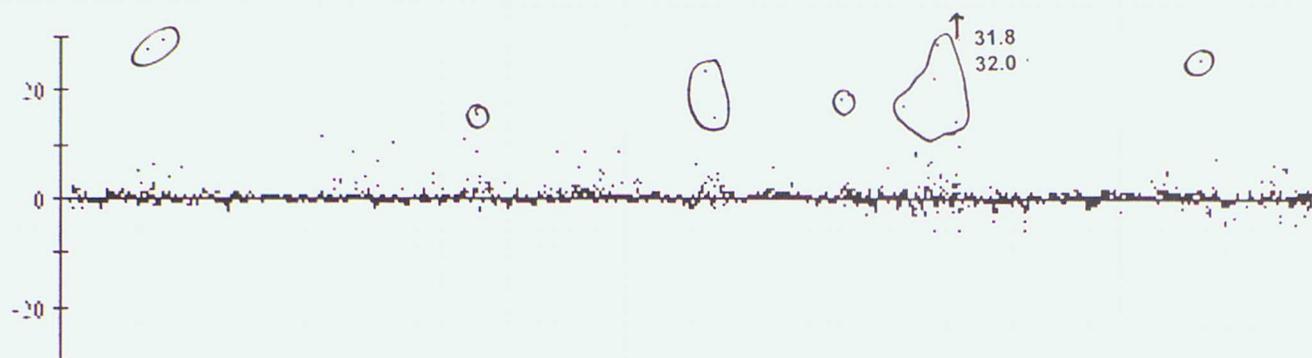


62711 Pressure

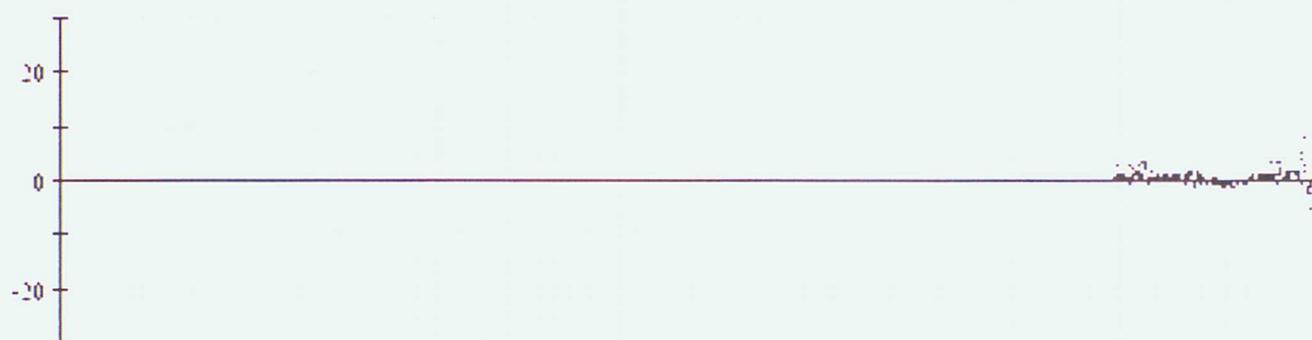


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

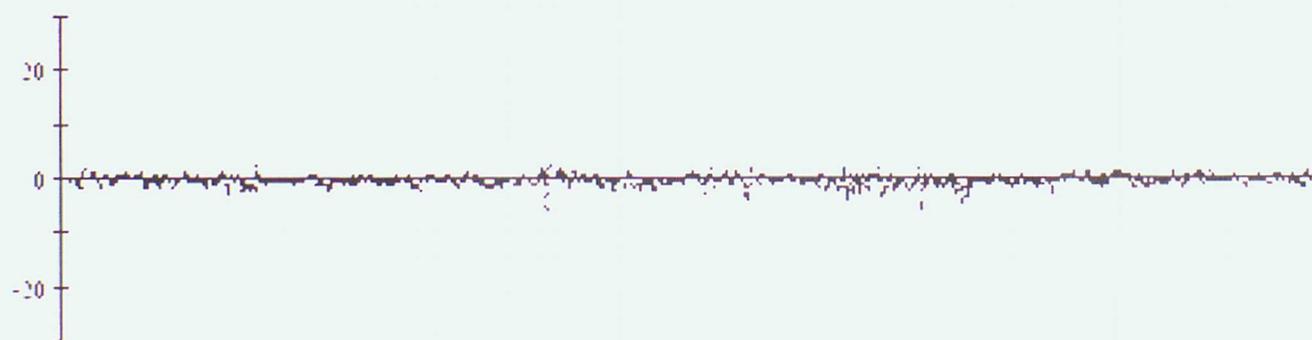
62712 Pressure



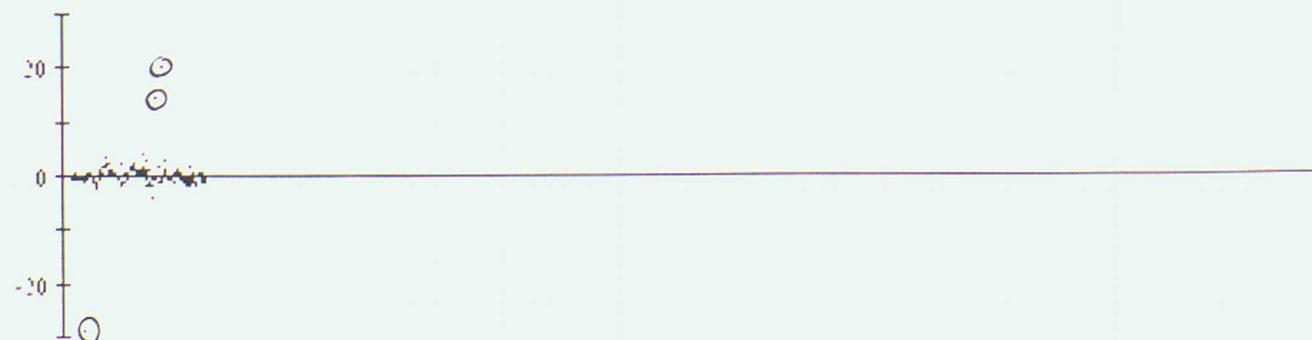
62713 Pressure



64553 Pressure



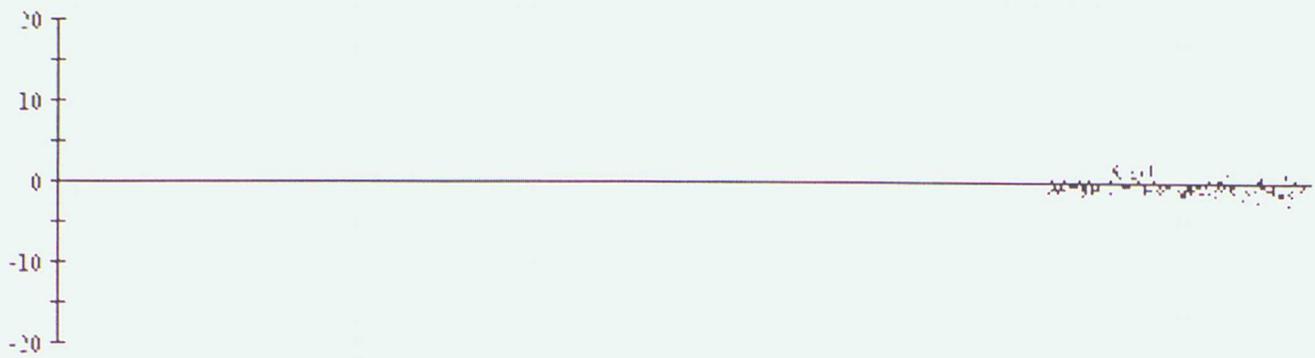
65517 Pressure



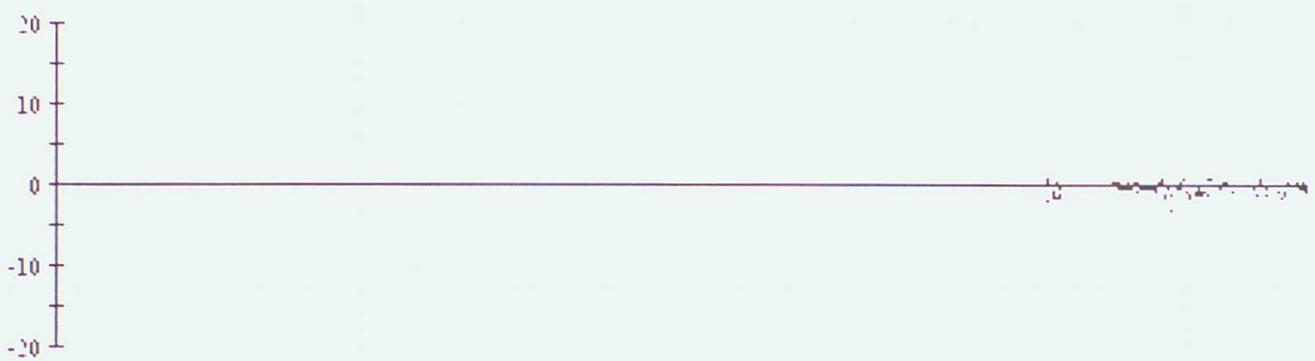
ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

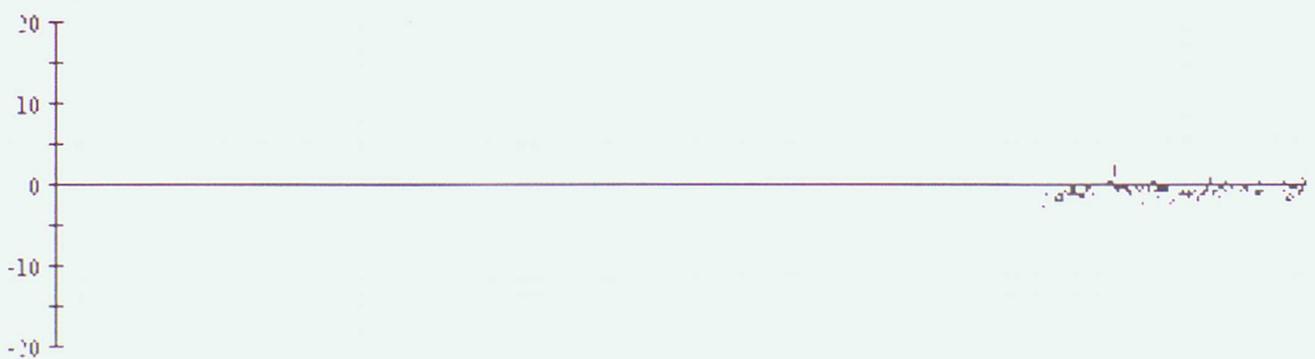
44774 Air Temperature



62599 Air Temperature



62600 Air Temperature



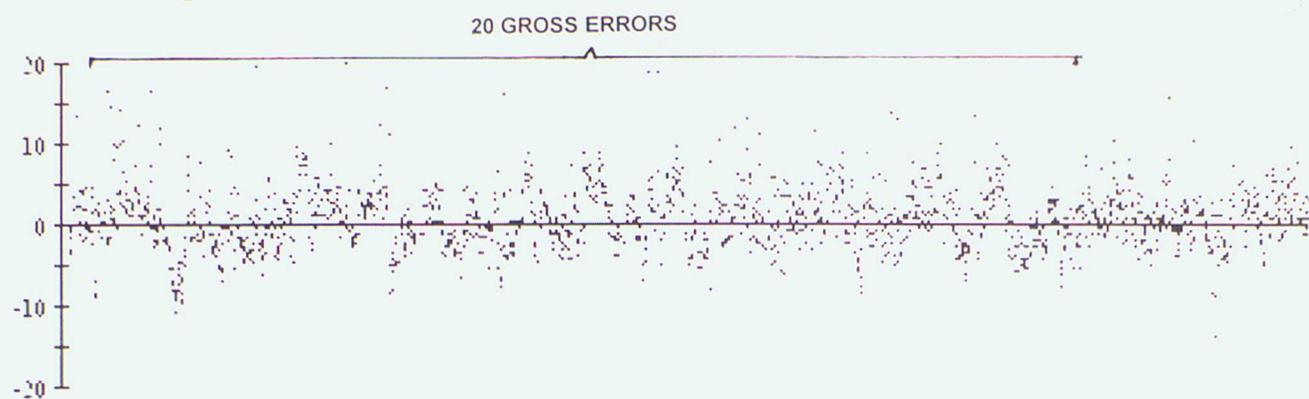
64553 Air Temperature



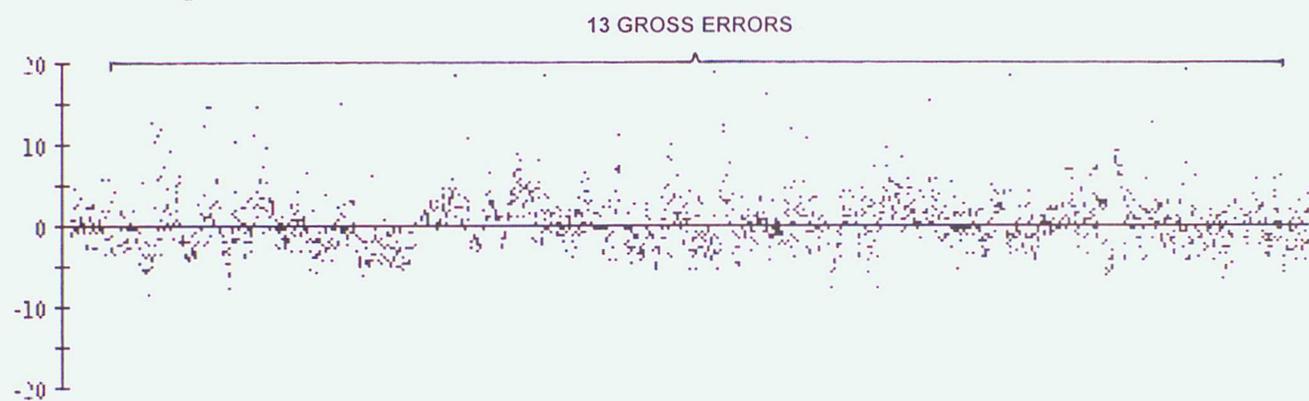
ANNEX D - TIME SERIES PLOTS OF WIND SPEED

Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

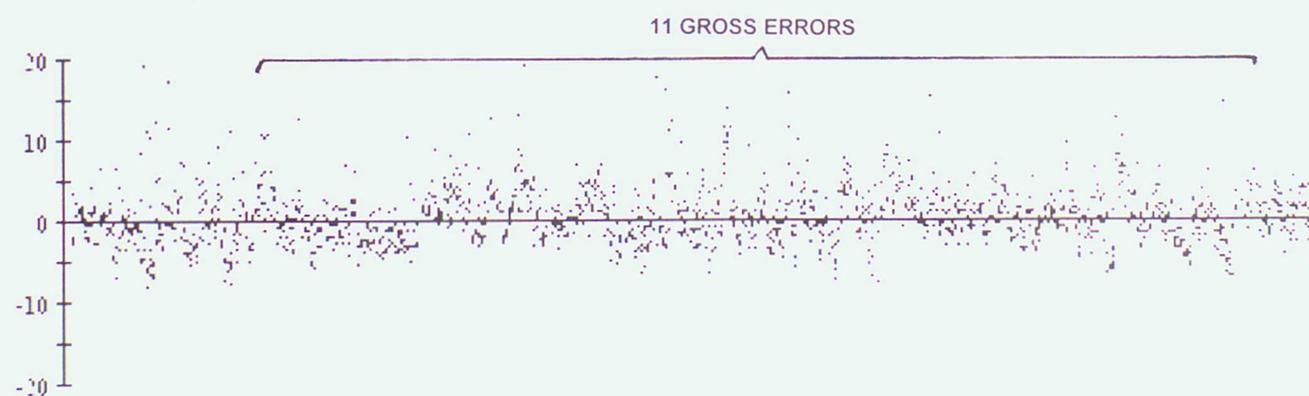
41531 Wind speed



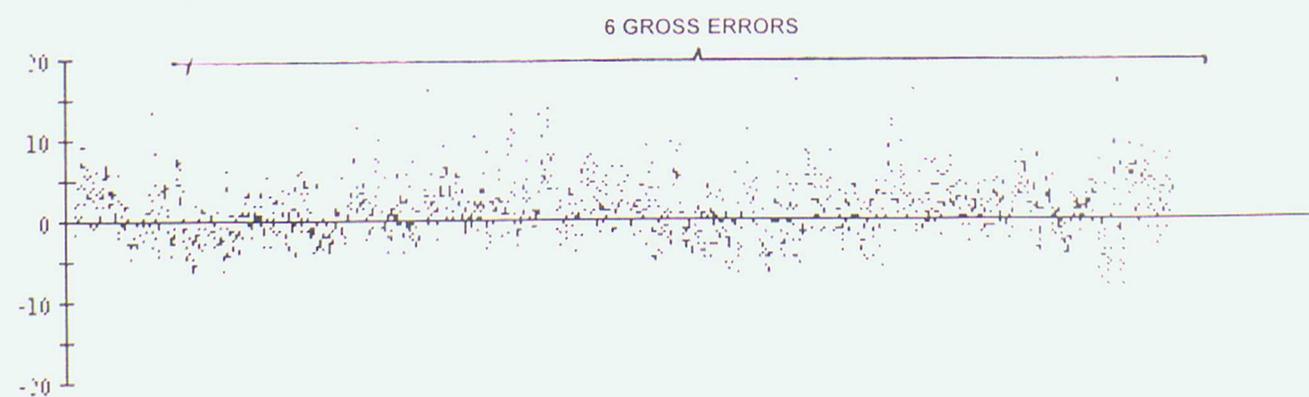
41532 Wind speed



41534 Wind speed

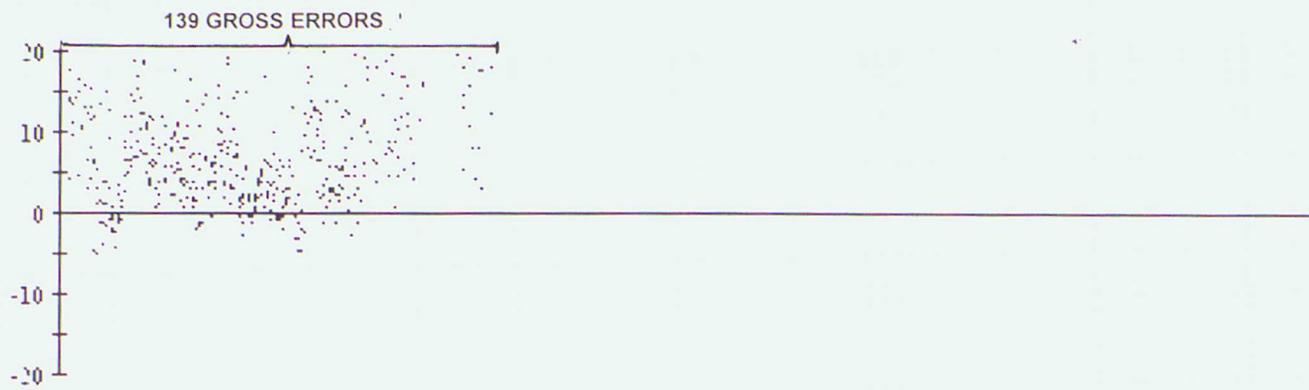


41647 Wind speed

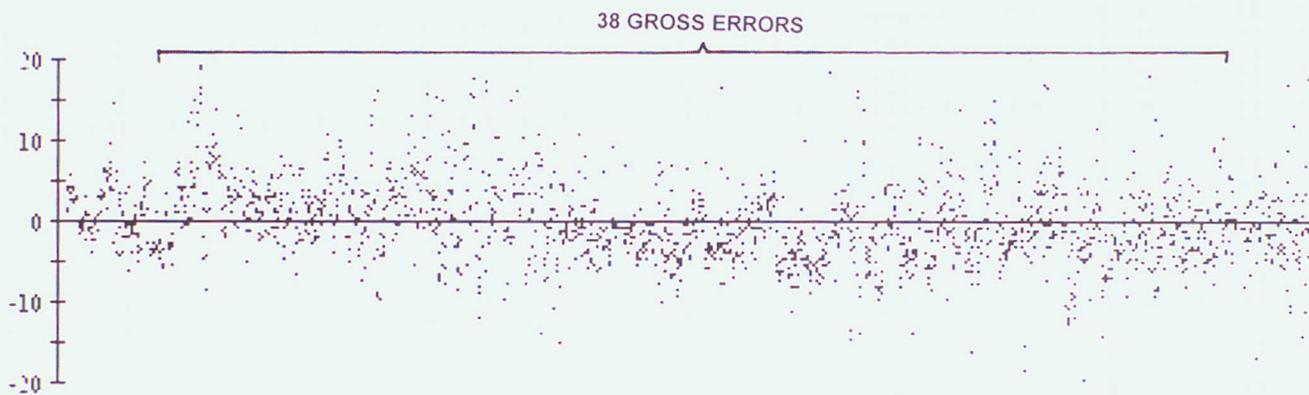


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

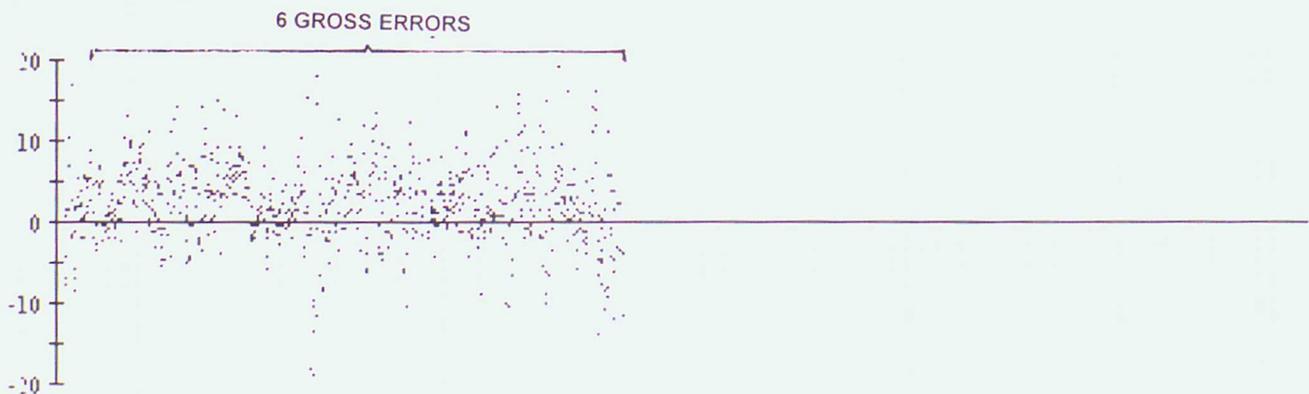
41652 Wind speed



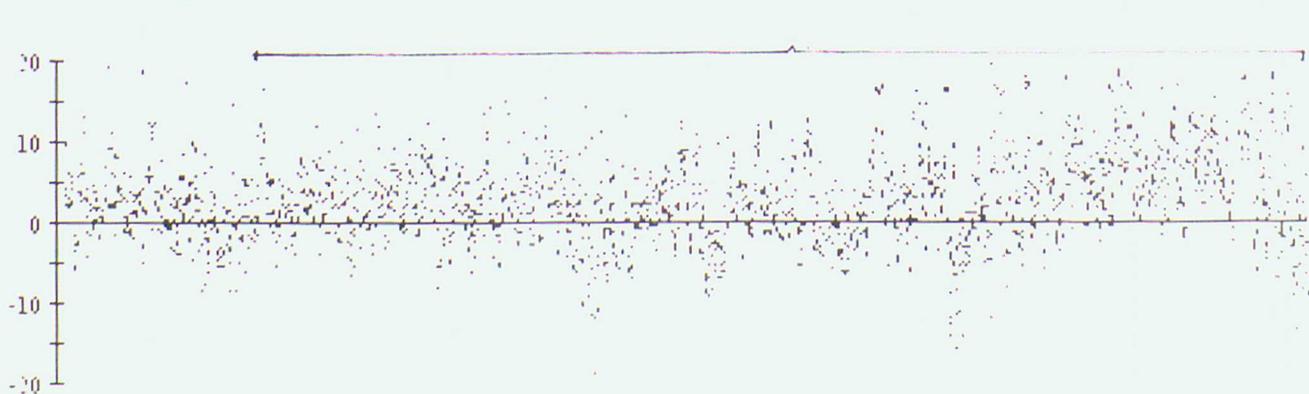
44601 Wind speed



62502 Wind speed



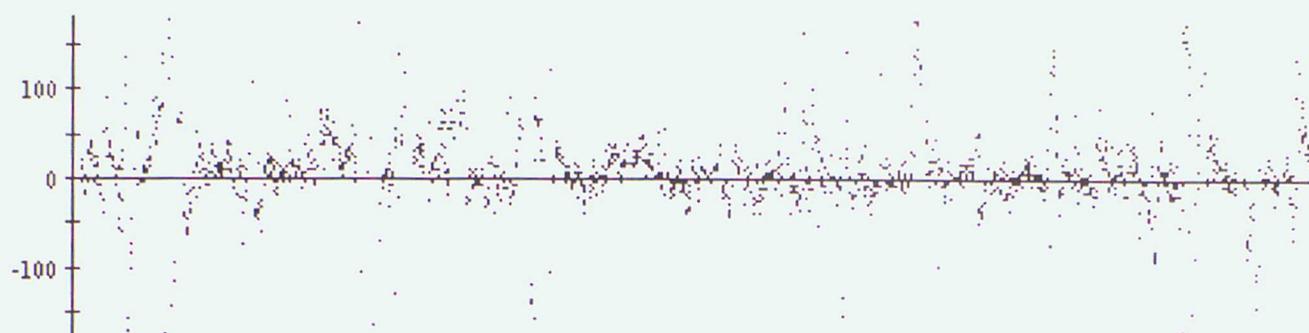
62711 Wind speed



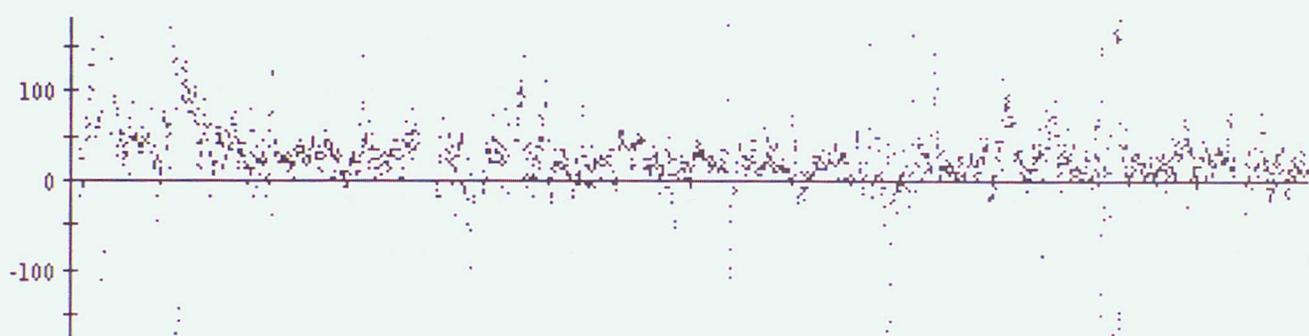
ANNEX E - TIME SERIES PLOTS OF WIND DIRECTION

Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

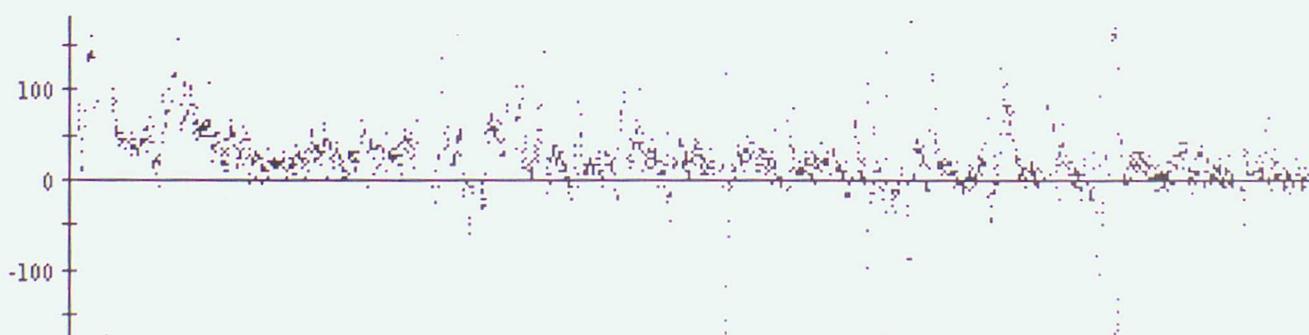
41531 Wind direction



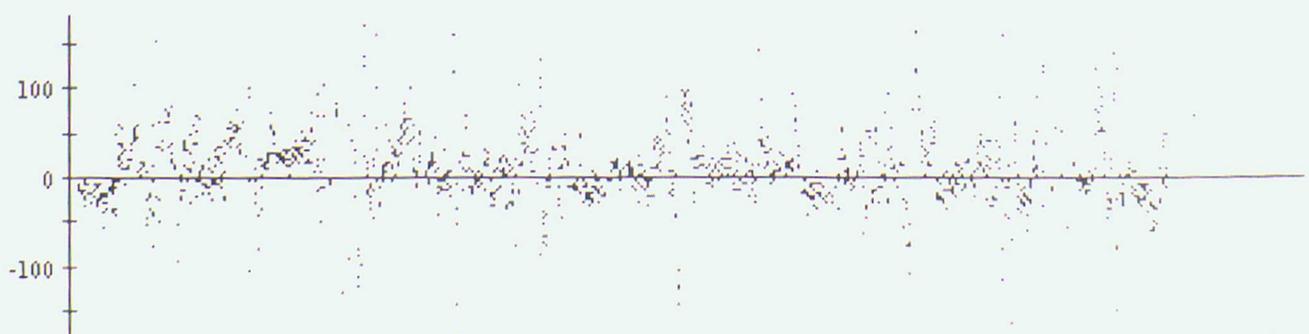
41532 Wind direction



41534 Wind direction

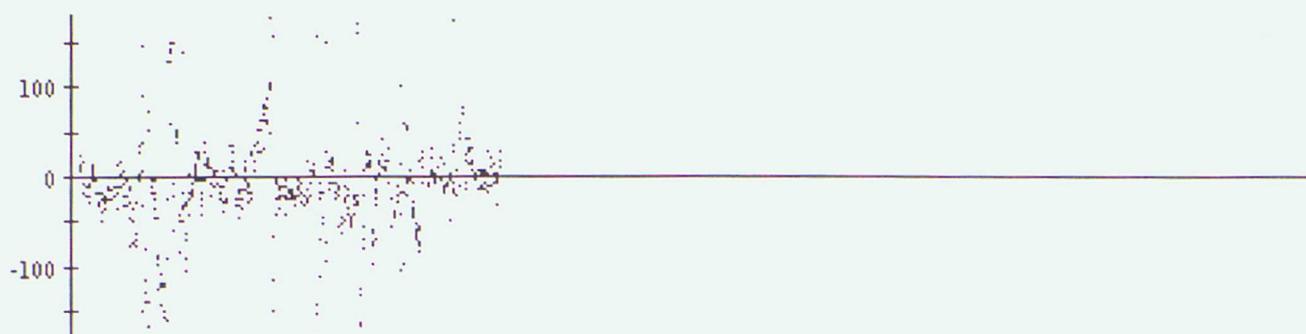


41647 Wind direction

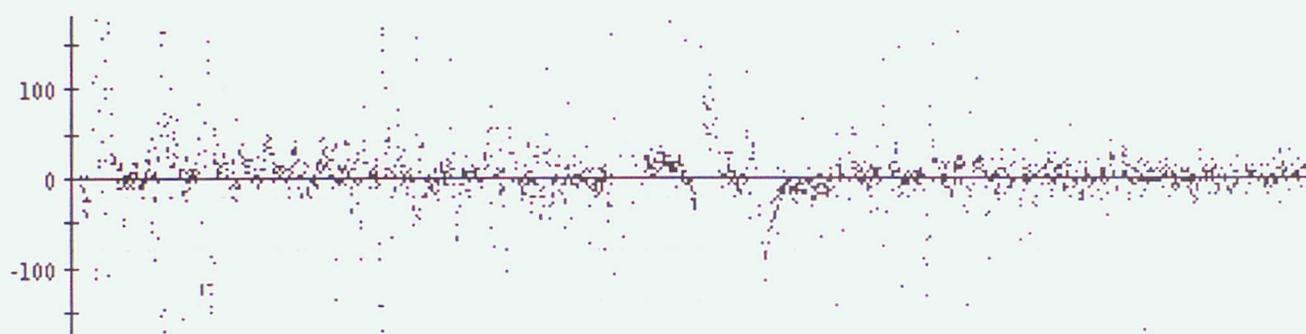


Data from 00z on 01/10/2002 to 23z on 31/12/2002 (OBS - Background field)

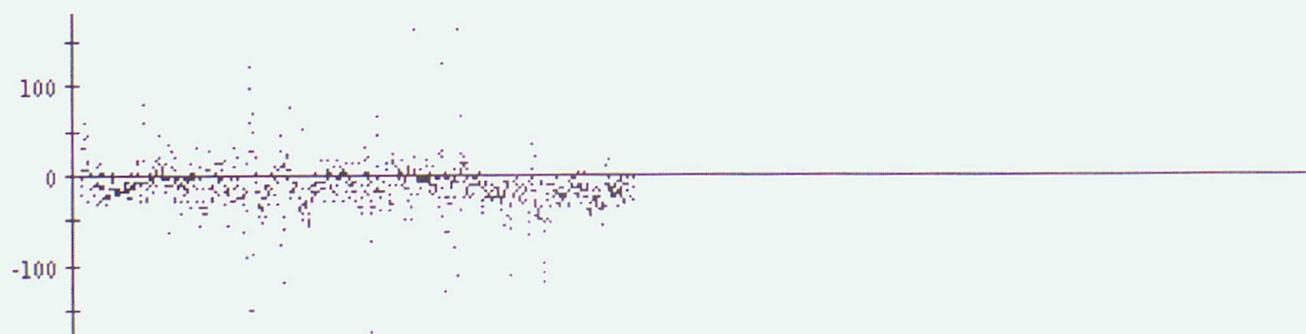
41652 Wind direction



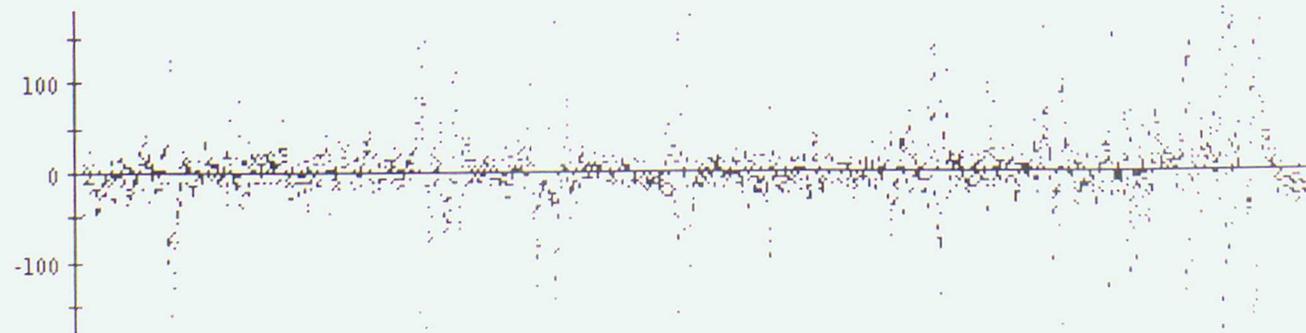
44601 Wind direction



62502 Wind direction



62711 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	
41523			*					*	01/10 - 16/10
41531			*	*		*	*	*	01/10 - 31/12
41532			*	*		*	*	*	01/10 - 31/12
41534			*	*		*	*	*	01/10 - 31/12
41640			*	*				*	01/10 - 31/12
41647			*	*		*	*	*	01/10 - 23/12
41650			*	*				*	01/10 - 31/12
41652			*	*		*	*	*	01/10 - 31/12
41658			*	*				*	01/10 - 31/12
41659			*	*				*	01/10 - 31/12
41666			*	*				*	01/10 - 31/12
44504			*	*				*	01/10 - 11/12
44511			*	*				*	01/10 - 11/12
44549			*	*				*	01/10 - 31/12
44550			*	*				*	01/10 - 31/12
44601			*	*		*	*	*	01/10 - 31/12
44606			*	*				*	01/10 - 31/12
44607			*	*				*	08/10 - 31/12
44608			*	*				*	01/10 - 31/12
44609			*	*				*	01/10 - 31/12
44610			*	*				*	01/10 - 31/12
44611			*	*				*	01/10 - 31/12
44612			*	*				*	11/12 - 31/12
44613			*	*				*	23/12 - 31/12
44614			*	*				*	23/12 - 31/12
44616			*	*				*	01/10 - 31/12
44624			*	*				*	01/10 - 31/12
44625			*	*				*	01/10 - 26/12
44627			*	*				*	01/10 - 31/12
44721			*	*				*	01/10 - 31/12
44723			*	*				*	01/10 - 31/12
44726			*	*				*	01/10 - 31/12
44730			*	*				*	01/10 - 31/12
44743			*	*				*	01/10 - 14/10
44763			*	*				*	01/10 - 31/12
44764			*	*				*	01/10 - 31/12

ANNEX F - CONT'd

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
44767			*	*				*	01/10 - 31/12
44768			*	*				*	20/12 - 31/12
44769			*	*				*	01/10 - 31/12
44770			*	*					01/10 - 05/10
44772			*	*				*	01/10 - 21/12
44773			*	*				*	01/10 - 31/12
44774			*	*	*			*	12/12 - 31/12
44775			*	*				*	01/10 - 18/10
44780			*	*					01/10 - 31/12
62501			*	*				*	01/10 - 31/12
62502			*	*		*	*	*	01/10 - 11/11
62503			*	*				*	01/10 - 31/12
62504			*	*				*	01/10 - 26/10
62505			*	*				*	01/10 - 31/12
62506			*	*				*	01/10 - 05/10
62507			*	*				*	01/10 - 31/12
62508			*	*				*	01/10 - 31/12
62509			*	*				*	01/10 - 31/12
62512			*	*				*	01/10 - 31/12
62513			*	*				*	01/10 - 31/12
62514			*	*				*	01/10 - 31/12
62515			*	*				*	01/10 - 31/12
62517			*	*				*	01/10 - 31/12
62519			*	*				*	01/10 - 31/12
62599			*	*	*			*	12/12 - 31/12
62600			*	*	*			*	12/12 - 31/12
62696			*	*				*	01/10 - 31/12
62711			*	*		*	*	*	01/10 - 31/12
62712			*	*				*	01/10 - 31/12
62713			*	*				*	17/12 - 31/12
64553			*	*	*			*	01/10 - 31/12
65517			*	*				*	01/10 - 11/10

