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OBSERVATIONS, PLANS AND REQUIREMENTS BRANCH

Quality Evaluation Section

FORTIETH QUARTERLY REPORT

ON DRIFTING BUOYS

IN THE NORTH ATLANTIC

OCTOBER TO DECEMBER 1996

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24th February 1997

This report has not been published.
Permission to quote from it should be obtained from the
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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 Bank (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

The location accuracy was very good with 61 out of 63 of the buoys reporting having a '% of observations with acceptable positions' greater than 95% (compared to 52 out of 56 last quarter).

(b) Data timeliness

(see note 9 of section 5 for definition of terms.)

Timeliness	Last quarter.	This quarter
Very Good	19	23
Good	12	17
Satisfactory	14	7
Poor	1	7
Very poor	10	9
Total no. of buoys	56	63

(c) Data availability

(see note 9 of section 5 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	--	--	15	14
Good	3	2	3	3
Satisfactory	18	13	4	6
Poor	7	8	3	17
Very Poor	1	--	2	--

The total number of buoy days in the quarter was 4,353[obtained by summing the number of reporting days for each buoy] (last quarter the total was 3,851) and the number of 'buoy hours' with at least one observation was 60,953 (compared with 60,052 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 14.00 (last quarter the figure was 15.59).

3. SUMMARY OF PRESSURE PERFORMANCE

NOTE

Although buoys 41529(S), 41530(S), 44616(N), 44763(N), 44765(N), 44767(N), 44772(N), 65594(N), 65595(N) and 65598(N) were reporting at the beginning of the period, pressure data failed to reach the Observation Processing Databanks (OPD) until 2/10, 3/10, 7/10, 13/10, 4/10, 9/10, 6/10, 8/10, 5/10 and 2/10 respectively.

(N) - North of 50 degN

(S) - South of 50 degN

(a) Buoy deployments, etc.

North of 50deg N

There were 21 buoys reporting pressure at the beginning of the period. This figure includes buoy 44780 which was not included in the last report. The figure also includes the buoys from the note above which were North of 50 degN (N). 31 buoys were reporting at the end of the period. 19 new buoys were deployed during the period (42624, 44726, 44764, 44776, 44849, 44850, 44910, 44917, 44918, 44919, 44923, 44924, 46764, 64513, 64514, 64561, 65562 and 65596). This figure also includes buoy 44728 which, although reporting other elements at the beginning of the period, did not report pressure until 15/10. 9 buoys ceased reporting (25565, 44769, 44771, 44774, 44775, 44917, 64513 and 64514). This figure also includes 62910 which ceased reporting pressure on 18/11, but continued to supply other elements in a limited number of reports between then and the end of the reporting period.

South of 50deg N

There were 19 buoys reporting pressure at the beginning of the period. This figure includes buoys 41529 and 41530 which were not included in the last report. The figure also includes the buoys from the note above which were South of 50 degN (S). Also included are buoys 44513 and 44743 which were North of 50deg in the previous period, but have drifted South. 20 buoys were reporting at the end of the period. 4 new buoys were deployed (56513, 61521, 61522, and 62551). 3 buoys ceased reporting (56513, 61526, and 62516).

(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 degN the Revised RMS differences should be less than 2.0 hPa and for buoys north of 50 degN they should be below 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:-

- 42624 - LFPV mistakenly transmitted this buoy with this WMO No. until it was corrected to 44624 on 9th January 1997. Data had a bias of -1.4hPa throughout its short life within the report period.
- 44617 - Data became totally erratic from 10/12 until the end of the reporting period.
- 44728 - This buoy reported briefly from 15/10 to 18/10, when all data were erroneous. It began reporting pressure again from 30/12 when data improved to a more accurate level.
- 44743 - Pressure data were slightly erratic during the early part of the reporting period.
- 44923 - This buoy reported a large number of gross errors from the start of its life on 31/10 until the end of the reporting period.
- 46764 - Data from this buoy became erratic towards the end of the reporting period.
- 56513 - This buoy only reported from 28/11 to 4/12, during which time all data were erroneous.

- 62507 - This buoy showed a slight bias of +0.4hPa throughout the period, and data were slightly erratic towards the end of the reporting period.
- 62516 - Pressure data became erroneous from 22/10 until the end of the buoy's life on 1/12.
- 62518 - This buoy showed a bias of -0.6hPa, and data had a larger than normal scatter throughout the reporting period.
- 62910 - Data were irregular and became erroneous towards the end of its reporting life on 18/11.
- 65594 - Data were erroneous from 3/11 to 6/11, and there was also a large number of gross errors throughout the reporting period.

Biases

7 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.	Position	Buoy bias (hPa)	Ship bias (hPa)	Period of reports
44616	N of UK	+0.9	-0.1	01/10 - 31/12
44764	S of SOBA	-0.9	+0.3	31/12 - 31/12
44766	SE of SOBA	-0.6	-0.3	01/10 - 31/12
61522	E of SPAIN	-1.4	+0.5	03/12 - 31/12
61526	E of SPAIN	-0.8	+0.4	01/10 - 26/10
65596	SOBA	-0.6	+0.4	11/12 - 31/12
65598	SOBA	-0.6	+0.7	01/10 - 31/12

The ship bias represents the mean pressure biases reported from ships within a radius of 500 nautical miles of the mean position of each buoy.

(4) Air Temperatures and Sea Surface Temperatures

The following table shows the mean and standard deviation of observation minus background differences for air temperatures and sea surface temperatures. Figures in brackets are for the observations from voluntary observing ships within a radius of about 500 nautical miles of the mean position of each buoy.

(Note : The calculations below include gross errors. Therefore, in some instances, the figures may be slightly misleading.)

(see tables on following pages)

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev	No. of Obs	Mean	St. Dev.	No. of Obs
25565	-0.3(0.2)	0.8(4.8)	605 (415)	--	--	--
41529	0.3(-0.3)	1.1(4.7)	795 (214)	1.1(-1.0)	0.3(3.4)	14 (182)
41530	0.0(-0.3)	0.9(4.7)	913 (204)	0.5(-1.0)	0.9(3.3)	934 (167)
42624	-0.7(-0.5)	0.7(2.5)	8 (215)	--	--	--
44513	-0.6(-0.2)	1.2(5.2)	922 (151)	-0.6(-1.0)	1.4(2.9)	1001 (132)
44614	0.6(0.8)	2.3(1.8)	3475 (38)	-0.0(-0.8)	1.3(2.3)	3546 (32)
44616	0.1(0.3)	1.6(4.5)	4940 (467)	-0.3(-0.1)	1.1(7.9)	5930 (361)
44617	14.2(0.0)	6.6(1.6)	291 (109)	-1.0(-0.3)	1.5(2.7)	1334 (92)
44726	0.4(0.1)	1.6(1.7)	1158 (66)	-0.5(-0.6)	1.2(3.0)	1184 (61)
44728	-0.3(0.3)	2.0(1.4)	3263 (205)	1.6(-0.4)	1.6(6.0)	3384 (185)
44743	---	---	---	-0.7(-1.2)	1.6(3.2)	1496 (107)
44760	0.3(0.2)	1.6(3.2)	1017 (299)	-0.4(0.5)	1.4(3.0)	1326 (220)
44763	0.4(0.2)	1.4(1.4)	4948 (84)	-0.4(-0.7)	0.6(11.8)	5283 (74)
44764	-0.8(0.1)	0.9(1.8)	10 (43)	--	--	--
44765	-0.2(0.1)	2.7(1.1)	4784 (127)	0.8(-0.9)	2.0(7.7)	3229 (113)
44766	3.1(0.2)	3.0(1.5)	1484 (104)	-0.1(0.0)	0.5(9.3)	864 (89)
44767	0.1(0.2)	1.3(1.3)	4940 (89)	0.2(-0.6)	0.9(11.4)	5474 (79)
44769	---	---	---	-1.5(-0.1)	2.4(8.6)	2184 (297)
44770	0.3(0.4)	1.0(1.4)	1774 (217)	-0.3(0.5)	1.0(2.9)	1798 (177)

Statistics of (ob-bg) differences for buoys reporting this
quarter and all ships within 500 nautical miles

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev	No. of Obs	Mean	St. Dev.	No. of Obs
44771	0.0(0.9)	1.9(4.7)	2867 (461)	-0.6(-0.0)	2.2(6.2)	2856 (413)
44772	-0.7(0.1)	1.5(1.3)	4892 (144)	-0.3(-0.3)	0.5(9.1)	3314 (124)
44774	0.5(0.8)	3.5(4.1)	1028 (640)	-0.1(-0.2)	1.6(5.9)	1084 (579)
44775	-0.3(0.3)	2.1(1.9)	600 (55)	0.4(-0.9)	2.2(3.2)	633 (52)
44776	31.9(-0.4)	7.7(2.3)	364 (106)	-0.5(-1.2)	2.0(2.7)	1572 (98)
44777	36.8(0.4)	3.3(1.9)	250 (29)	-0.3(-1.5)	1.1(3.2)	2525 (26)
44778	-0.2(0.4)	1.9(2.3)	2265 (38)	0.5(-0.6)	1.3(2.7)	2373 (31)
44780	-0.2(0.1)	0.8(1.9)	1171 (58)	-0.2(-0.6)	0.6(3.3)	1245 (55)
44849	---	---	---	---	---	---
44850	---	---	---	4.7(-0.3)	0.1(1.8)	119 (89)
44910	---	---	---	3.9(-0.1)	1.9(1.5)	226 (100)
44911	---	---	---	-0.1(-1.4)	0.5(2.9)	3 (109)
44917	---	---	---	4.6(-0.2)	0.3(1.0)	305 (90)
44918	---	---	---	4.4(-0.3)	0.3(1.1)	316 (89)
44919	---	---	---	5.0(-0.1)	0.3(1.2)	276 (95)
44923	---	---	---	6.5(-0.1)	3.8(0.7)	211 (75)
44924	---	---	---	4.6(-0.3)	0.2(1.2)	212 (95)
46764	---	---	---	--	--	--
56513	---	---	---	7.6(0.2)	10.4(6.4)	36 (219)

Statistics of (ob-bg) differences for buoys reporting this
quarter and all ships within 500 nautical miles

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev	No. of Obs	Mean	St. Dev.	No. of Obs
61521	1.3(0.7)	2.6(2.7)	486 (385)	-0.1(-0.0)	0.3(3.1)	652 (350)
61522	-0.1(0.7)	1.1(2.7)	521 (396)	-0.3(-0.1)	0.2(3.0)	675 (345)
61526	-1.0(0.7)	2.1(2.8)	195 (447)	-3.3(-0.1)	1.7(3.0)	300 (385)
61527	0.4(0.3)	1.6(4.4)	415 (307)	-0.6(-0.4)	2.0(4.6)	553 (287)
62503	---	---	---	0.0(-0.6)	0.3(3.5)	1726 (434)
62504	---	---	---	0.0(-0.7)	0.3(4.1)	1711 (403)
62507	---	---	---	-0.3(-0.4)	0.5(2.5)	1074 (150)
62508	---	---	---	--	--	--
62510	---	---	---	0.1(-0.6)	0.5(3.7)	1064 (384)
62513	---	---	---	0.2(-0.4)	0.8(5.8)	919 (252)
62515	---	---	---	-0.1(-0.6)	0.3(7.7)	1187 (250)
62516	2.0(1.0)	4.2(4.8)	771 (446)	-0.5(-0.3)	0.4(4.6)	1246 (404)
62517	0.7(0.8)	4.0(5.3)	1239 (320)	-0.2(-0.4)	0.3(7.1)	1905 (294)
62518	---	---	---	-0.2(0.1)	0.3(6.7)	1621 (166)
62551	---	---	---	0.0(-0.3)	0.2(5.2)	189 (542)
62910	---	---	---	0.5(-0.8)	0.6(1.7)	6 (36)
64513	5.1(0.8)	7.1(4.6)	449 (471)	-0.1(-0.1)	0.3(6.2)	611 (423)
64514	-0.1(0.5)	1.0(4.7)	900 (485)	0.3(-0.3)	0.3(7.7)	1012 (384)

Statistics of (ob-bg) differences for buoys reporting this
quarter and all ships within 500 nautical miles

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev	No. of Obs	Mean	St. Dev.	No. of Obs
64561	2.7(0.9)	4.2(1.9)	883 (12)	-0.0(-2.2)	1.8(3.1)	964 (15)
65562	4.8(0.8)	2.4(5.9)	444 (252)	-0.0(-0.4)	0.6(8.0)	270 (224)
65594	0.0(0.3)	1.6(2.2)	4932 (22)	-0.1(-1.8)	1.0(3.3)	5395 (21)
65595	-2.6(0.9)	1.9(2.6)	4826 (17)	-0.2(-1.2)	0.6(3.1)	3230 (17)
65596	-0.3(0.8)	0.8(2.7)	203 (30)	-0.6(-1.3)	0.6(2.5)	101 (31)
65598	-0.4(0.9)	2.6(1.9)	4734 (13)	-0.2(-2.9)	0.8(3.0)	3108 (14)
65599	-0.1(-0.2)	2.3(5.3)	3343 (147)	0.0(-1.1)	1.2(2.9)	2009 (129)

Statistics of (ob-bg) differences for buoys reporting this
quarter and all ships within 500 nautical miles

Buoys 44766(3.1) (bias developed mid-way through the period), 61521(1.3), 61526(-1.0), 65562(4.8) and 65595(-2.6) all showed significant air temperature biases.

Buoy 44617 (14.2) produced erroneous air temperature data until it ceased reporting (towards the end of October). Data from buoy 44776(31.9) and 44777(36.8) were erroneous throughout the period. Data from buoys 62516(2.0) and 62517(0.7) were erratic through the first half of the period. Data from buoy 64513(5.1) became erroneous towards the end of its life on 1/12. Data from buoy 64561(2.7) became erroneous towards the end of the period.

Buoys 41529(1.1), 44617(-1.0), 44728(1.6), 44850(4.7), 44910(3.9), 44917(4.6), 44918(4.4), 44919(5.0), 44923(6.5), 44924(4.6), 56513(7.6) and 61526(-3.3) showed a significant sea surface temperature bias (Note : Buoys 41529 and 56513 produced only a limited number of reports).

Data from buoy 44769(-1.5) became erroneous towards the end of its life on 7/11.

(5) Winds

The following table shows the mean and standard deviation of observation minus background differences for wind speed and direction. Figures in brackets are for the observations from voluntary observing ships within a radius of about 500 nautical miles of the mean position of each buoy (Note - it is not known what proportion of the ships' winds were measured rather than estimated visually using the Beaufort Scale). The statistics for this report can be compared with those for ships and the relative quality of the wind data from each buoy can be assessed.

(Note : Annex A quotes buoy 44617 as having 1.5% of wind speeds present and buoy 44771 as having 66.3% of wind speeds present. However, in both cases no analysis was carried out on the data because the speed reports were not accompanied by wind directions. The limited number of speed observations from 44617 also appeared to be consistently reporting as 40 knots.)

WMO No.	Period	Wind Speed (kn)		Wind Direction (deg)		No. of Obs
		Mean	St. Dev.	Mean	St. Dev.	
41529	01/10 - 31/12	-1.0(3.3)	4.0(6.6)	-1.1(-2.0)	23.0(32.0)	862(207)
41530	01/10 - 31/12	-1.9(3.4)	4.2(6.7)	4.4(-2.8)	22.2(32.8)	896(193)
42624	31/12 - 31/12	-7.2(3.5)	-7.7(6.1)	26.8(-2.9)	11.3(34.5)	9118)
44513	01/10 - 31/12	-11.4(3.8)	5.3(6.2)	24.1(-2.6)	19.0(33.0)	639(144)
44726	04/11 - 31/12	-3.1(3.4)	6.5(6.9)	-1.8(0.4)	25.5(21.0)	1099(63)
44775	01/10 - 28/10	23.3(2.8)	9.2(7.0)	2.7(2.0)	73.0(22.2)	83(53)
44776	15/10 - 31/12	-5.9(3.9)	9.8(6.2)	26.0(-1.9)	27.1(31.8)	1185(102)
62516	01/10 - 01/12	0.0(4.8)	4.9(7.6)	-12.3(-3.5)	16.8(29.7)	810(429)
62518	01/10 - 31/12	0.0(3.9)	5.1(7.6)	-11.8(-4.4)	22.1(31.5)	1139(206)
62551	10/12 - 31/12	0.1(3.9)	4.5(6.9)	2.5(-2.8)	25.6(27.6)	194(599)

Statistics of (ob-bg) differences for buoys reporting this quarter and all ships within 500 nautical miles

Buoys 42624, 44513, 44726 and 44776 showed a significant negative wind speed bias (Note : buoy 42624 produced only a limited number of observations). Wind speed data from buoy 44775 were erroneous from the beginning of the period until it ceased reporting on 28/10.

Buoys 42624, 44513, 44776, 62516 and 62518 all showed a significant wind direction bias (Note : buoy 42624 produced only a limited number of observations)..

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	??	- unknown

2. Number of observations received is the number received at Bracknell in the Meteorological Data Bank (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).

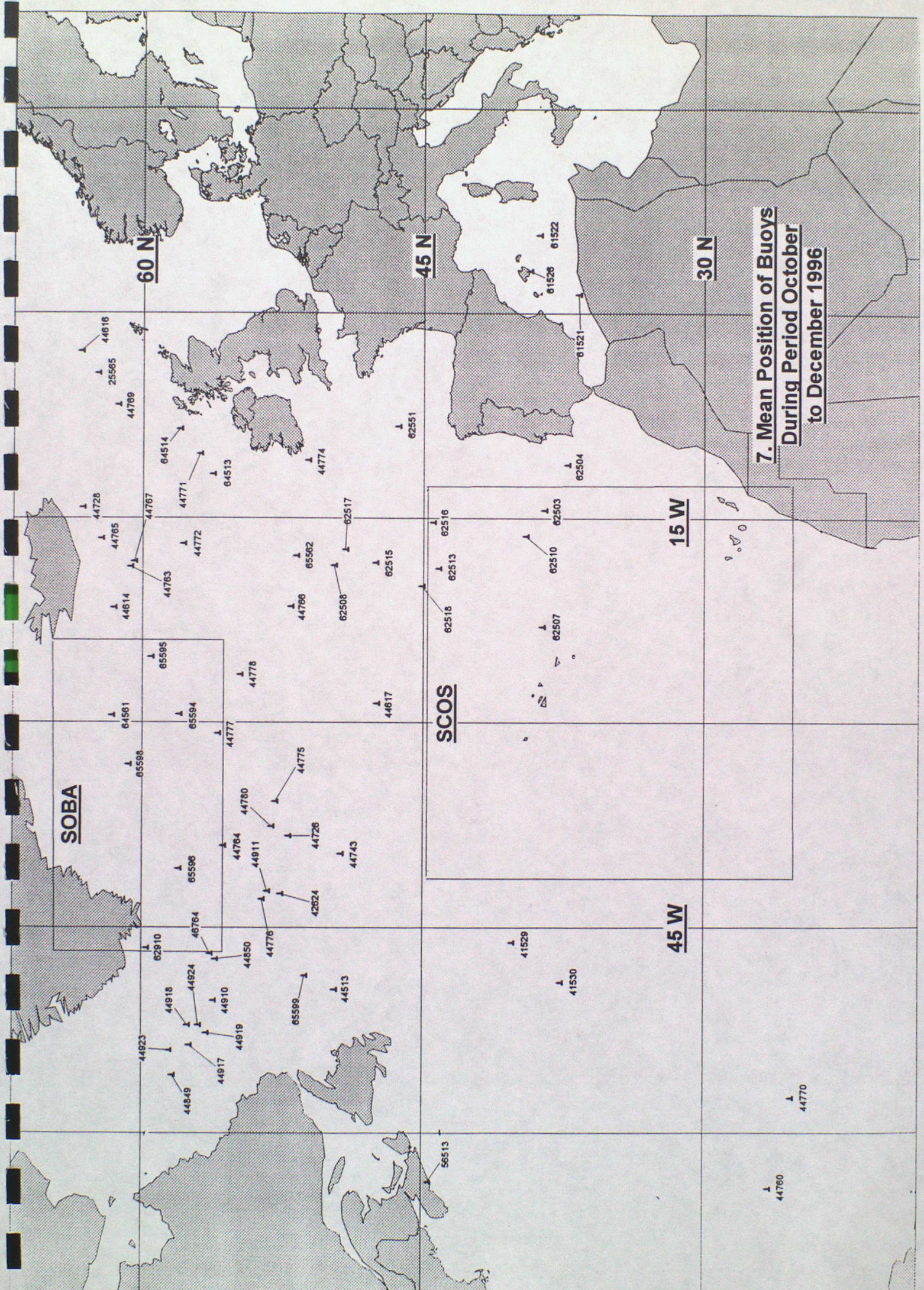
9. The performance categories are defined in the table below.

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	< 3.0	< 0.5	< 2.0	< 0.5
Suspect	> 3.0	> 0.5	> 2.0	> 0.5



7. Mean Position of Buoys
During Period October
to December 1996

ANNEX A - TABLE OF STATISTICS

Wmo No./Country	25565/UK	41529/US	41530/US
Argos Id No.	1639	????	????
Period within area	01/10 - 19/12	01/10 - 31/12	01/10 - 31/12
Area	N of UK	W of SCOS	W of SCOS
Mean Latitude	62.5	40.2	37.6
Mean Longitude	-4.4	-46.1	-49.0
No. of obs received	797	959	970
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	95.7	88.9	97.2
% of Present			
Pressure	79.3	93.4	94.9
P. Tendency	71.3	0.0	0.0
Air Temperature	76.4	81.2	93.2
Wind Speed/Dir.	0.0/0.0	90.9/90.9	94.2/94.3
Sea-surface Temp.	0.0	1.3	95.1
Median delay(min)	17	140	110
Number of days	80	92	92
Mean no. of obs/day	10.0	10.4	10.5
No. of hours with obs	579	826	847
Mean no. of hours/day with obs	7.2	9.0	9.2
% of hour periods without an ob	63.8	62.6	61.6
Mean (Ob-Bg)	-0.2	0.0	0.0
RMS (Ob-Bg)	1.8	1.2	1.1
unflagged data			
Mean (Ob-Bg)	-0.2	-0.1	0.0
RMS (Ob-Bg)	1.8	1.2	1.0
all data			
Revised RMS (Ob-Bg)	1.8	1.2	1.0
% of data flagged	33	15	14
Operating at end of period	NO	YES	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Satisfactory	Good
Comments			

ANNEX A - Cont.

Wmo No./Country	42624/US	44513/US	44614/UK
Argos Id.No.	????	????	1256
Period within area	31/12 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	S of SOBA	SW of SOBA	E of SOBA
Mean Latitude	52.6	49.7	61.6
Mean Longitude	-42.5	-49.5	-21.6
No. of obs received	10	1035	3647
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	100.0	100.0	99.1
% of Present			
Pressure	100.0	94.7	96.8
P. Tendency	100.0	0.0	80.7
Air Temperature	100.0	94.9	96.1
Wind Speed /Dir.	100.0/100.0	81.1/92.5	0.0/0.0
Sea-surface Temp.	0.0	94.9	96.7
Median delay(Min)	70	15	147
Number of days	1	92	92
Mean no. of obs/day	10.0	11.3	39.6
No. of hours with obs	10	951	1705
Mean no. of hours/day with obs	10.0	10.3	18.5
% of hour periods without an ob	54.2	56.9	22.8
Mean (Ob-Bg)	-1.4	-0.2	0.1
RMS (Ob-Bg)	2.2	1.4	1.8
unflagged data			
Mean (Ob-bg)	-1.4	-0.2	-3.2
RMS (Ob-Bg)	2.2	1.3	19.1
all data			
Revised RMS (Ob-Bg)	3.2	1.3	2.2
% of data flagged	11	8	63
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Poor	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Very Good	Satisfactory
Comments			

ANNEX A - Cont.

Wmo No./Country	44616/UK	44617/UK	44726/UK
Argos Id. No.	3318	1255	2955
Period within area	01/10 - 31/12	01/10 - 31/12	04/11 - 31/12
Area	N of UK	N of SCOS	S of SOBA
Mean Latitude	63.4	47.5	52.2
Mean Longitude	-2.8	-28.6	-38.3
No. of obs received	3647	1314	1209
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.1	98.4	99.9
% of Present			
Pressure	96.8	88.9	96.7
P. Tendency	80.7	74.7	82.9
Air Temperature	96.1	23.5	96.1
Wind Speed/Dir.	0.0/0.0	1.5/0.0	96.0/94.9
Sea-surface Temp.	96.7	97.4	97.5
Median delay(min)	12	194	52
Number of days	92	92	58
Mean no. of obs/day	59.5	14.3	20.9
No. of hours with obs	1842	1038	812
Mean no. of hours/day with obs	20.0	11.3	14.0
% of hour periods without an ob	16.6	53.0	41.7
Mean (Ob-Bg)	0.9	0.4	0.0
RMS (Ob-Bg)	1.6	1.9	1.6
unflagged data			
Mean (Ob-bg)	0.8	-1.7	-0.6
RMS (Ob-Bg)	3.2	9.1	7.9
all data			
Revised RMS (Ob-Bg)	1.5	6.3	1.8
% of data flagged	72	37	40
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Poor	Satisfactory
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Poor	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44728/UK	44743/UK	44760/UK
Argos Id.No.	3024	1248	2947
Period within area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	E of SOBA	N of SCOS	W of SCOS
Mean Latitude	63.3	49.4	26.5
Mean Longitude	-14.2	-39.6	-64.1
No. of obs received	3439	1486	1326
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	98.1	98.5	100.0
% of Present			
Pressure	2.5	70.1	99.7
P. Tendency	68.5	31.2	98.5
Air Temperature	96.7	0.0	99.3
Wind Speed /Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	97.4	98.0	99.4
Median delay(Min)	16	32	393
Number of days	92	92	92
Mean no. of obs/day	37.4	16.2	14.4
No. of hours with obs	1641	1127	1170
Mean no. of hours/day with obs	17.8	12.3	12.7
% of hour periods without an ob	25.7	48.8	47.0
Mean (Ob-Bg)	-	-0.1	0.1
RMS (Ob-Bg)	-	1.6	0.9
unflagged data			
Mean (Ob-bg)	37.0	-0.9	-0.6
RMS (Ob-Bg)	51.9	5.8	9.9
all data			
Revised RMS (Ob-Bg)	4.4	3.4	1.9
% of data flagged	100	24	10
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Satisfactory	Poor
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	44763/UK	44764/UK	44765/NL
Argos Id No.	3098	????	4178
Period within area	01/10 - 31/12	31/12 - 31/12	01/10 - 31/12
Area	E of SOBA	S of SOBA	E of SOBA
Mean Latitude	60.7	55.7	62.3
Mean Longitude	-18.6	-39.0	-16.5
No. of obs received	5816	15	5272
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	98.5	100.0	98.8
% of Present			
Pressure	99.0	86.7	95.7
P. Tendency	96.1	93.3	92.1
Air Temperature	98.5	100.0	95.3
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	91.8	0.0	62.2
Median delay(min)	198	16	188
Number of days	92	1	92
Mean no. of obs/day	63.2	15.0	57.3
No. of hours with obs	1890	13	1813
Mean no. of hours/day with obs	20.5	13.0	19.7
% of hour periods without an ob	14.4	45.8	17.9
Mean (Ob-Bg)	0.1	-0.9	-0.4
RMS (Ob-Bg)	1.8	1.7	1.8
unflagged data			
Mean (Ob-bg)	-0.2	-1.0	-0.6
RMS (Ob-Bg)	5.5	1.5	4.4
all data			
Revised RMS (Ob-Bg)	1.9	1.2	1.9
% of data flagged	73	36	72
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Satisfactory	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Poor	Very Good	Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	44766/D	44767/UK	44769/UK
Argos Id.No.	1298	3013	1253
Period within area	01/10 - 31/12	01/10 - 31/12	01/10 - 07/11
Area	SE of SOBA	E of SOBA	N of UK
Mean Latitude	52.1	60.5	61.4
Mean Longitude	-21.5	-18.2	-6.7
No. of obs received	1514	5586	2214
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	97.8	96.8	95.7
% of Present			
Pressure	98.7	99.1	97.3
P. Tendency	95.1	95.7	93.5
Air Temperature	97.4	98.4	0.0
Wind Speed /Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	56.9	98.6	97.8
Median delay(Min)	91	163	22
Number of days	92	92	38
Mean no. of obs/day	16.5	60.7	58.3
No. of hours with obs	1023	1875	760
Mean no. of hours/day with obs	11.1	20.4	20.0
% of hour periods without an ob	53.7	15.1	16.7
Mean (Ob-Bg)	-0.6	0.0	0.1
RMS (Ob-Bg)	1.7	1.8	1.6
unflagged data			
Mean (Ob-bg)	-0.6	-0.2	1.5
RMS (Ob-Bg)	1.8	4.9	9.3
all data			
Revised RMS (Ob-Bg)	1.8	2.0	1.7
% of data flagged	42	73	75
Operating at end of period	YES	YES	NO
Performance			
Availability	Satisfactory	Very Good	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Good	Satisfactory	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44770/UK	44771/UK	44772/D
Argos Id.No.	3035	2954	6667
Period within area	01/10 - 31/12	01/10 - 23/11	01/10 - 31/12
Area	W of SCOS	W of UK	E of SOBA
Mean Latitude	25.3	57.0	57.9
Mean Longitude	-57.5	-10.3	-16.9
No. of obs received	1809	2899	5327
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.2	99.2
% of Present			
Pressure	99.4	99.1	98.2
P. Tendency	98.8	76.6	95.2
Air Temperature	99.3	98.3	97.7
Wind Speed/Dir.	0.0/0.0	66.3/0.0	0.0/0.0
Sea-surface Temp.	99.4	98.2	63.1
Median delay(min)	32	197	23
Number of days	92	54	92
Mean no. of obs/day	19.7	53.7	57.9
No. of hours with obs	1298	1058	1783
Mean no. of hours/day with obs	14.1	19.6	19.4
% of hour periods without an ob	41.2	18.4	19.3
Mean (Ob-Bg)	0.3	-0.1	-0.2
RMS (Ob-Bg)	1.0	1.6	1.7
unflagged data			
Mean (Ob-bg)	0.2	-0.5	-0.3
RMS (Ob-Bg)	1.7	7.2	2.5
all data			
Revised RMS (Ob-Bg)	1.1	1.7	1.7
% of data flagged	38	71	73
Operating at end of period	YES	NO	YES
Performance			
Availability	Satisfactory	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Poor	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44774/UK	44775/UK	44776/UK
Argos Id. No.	3162	1260	2957
Period within area	01/10 - 26/10	01/10 - 28/10	15/10 - 31/12
Area	SW of EIRE	S of SOBA	S of SOBA
Mean Latitude	51.2	52.9	53.6
Mean Longitude	-10.8	-35.8	-42.9
No. of obs received	1108	659	1637
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.7	100.0	97.1
% of Present			
Pressure	99.6	96.5	96.2
P. Tendency	95.3	80.3	85.2
Air Temperature	94.1	94.2	22.1
Wind Speed /Dir.	0.0/0.0	12.9/12.9	85.0/90.3
Sea-surface Temp.	96.9	94.7	95.2
Median delay(Min)	190	75	139
Number of days	26	28	78
Mean no. of obs/day	42.6	23.5	21.0
No. of hours with obs	458	409	1137
Mean no. of hours/day with obs	17.6	14.6	14.6
% of hour periods without an ob	26.6	39.1	23.1
Mean (Ob-Bg)	0.0	-0.3	-0.1
RMS (Ob-Bg)	1.3	1.7	1.5
unflagged data			
Mean (Ob-bg)	-0.2	-0.8	-0.4
RMS (Ob-Bg)	3.8	9.2	4.3
all data			
Revised RMS (Ob-Bg)	2.2	2.2	2.0
% of data flagged	67	44	40
Operating at end of period	NO	NO	YES
Performance			
Availability	Very Good	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Poor	Good	Satisfactory
Comments			

ANNEX A - Cont.

Wmo No./Country	44777/UK	44778/UK	44780/UK
Argos Id No.	14733	1258	1257
Period within area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	SOBA	S of SOBA	S of SOBA
Mean Latitude	56.0	54.8	53.1
Mean Longitude	-30.8	-26.5	-37.6
No. of obs received	2594	2415	1293
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.0	99.8	100.0
% of Present			
Pressure	96.5	95.6	91.6
P. Tendency	80.6	79.3	5.6
Air Temperature	9.3	95.0	92.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	96.5	96.4	93.1
Median delay(min)	77	21	16
Number of days	92	92	92
Mean no. of obs/day	28.2	26.3	14.1
No. of hours with obs	1494	1435	1120
Mean no. of hours/day with obs	16.2	15.6	12.2
% of hour periods without an ob	32.3	35.0	49.3
Mean (Ob-Bg)	-0.2	-0.4	-0.4
RMS (Ob-Bg)	1.6	1.6	1.6
unflagged data			
Mean (Ob-bg)	-0.6	-0.8	-0.4
RMS (Ob-Bg)	6.9	6.8	1.6
all data			
Revised RMS (Ob-Bg)	1.7	2.2	1.6
% of data flagged	52	50	17
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44849/??	44850/??	44910/??
Argos Id No.	????	????	????
Period within area	26/11 - 31/12	16/11 - 31/12	02/10 - 31/12
Area	W of SOBA	W of SOBA	W of SOBA
Mean Latitude	58.4	56.1	56.2
Mean Longitude	-55.8	-47.3	-50.3
No. of obs received	393	445	586
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	100.0	100.0	100.0
% of Present			
Pressure	100.0	98.2	92.0
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed /Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	0.0	26.7	38.4
Median delay(Min)	971	62	212
Number of days	36	45	91
Mean no. of obs/day	10.9	9.9	6.4
No. of hours with obs	340	385	501
Mean no. of hours/day with obs	9.4	8.6	5.5
% of hour periods without an ob	60.7	64.4	77.1
Mean (Ob-Bg)	0.1	0.3	-0.2
RMS (Ob-Bg)	1.7	1.6	1.4
unflagged data			
Mean (Ob-bg)	0.1	-3.7	-0.2
RMS (Ob-Bg)	2.1	29.1	1.4
all data			
Revised RMS (Ob-Bg)	2.1	1.7	1.4
% of data flagged	17	15	17
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Poor	Good	Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	44911/US	44917/US	44918/US
Argos Id No.	466	????	????
Period within area	01/10 - 31/12	31/10 - 25/11	31/10 - 31/12
Area	S of SOBA	W of SOBA	W of SOBA
Mean Latitude	53.3	57.5	57.6
Mean Longitude	-42.3	-53.6	-52.1
No. of obs received	784	308	677
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	95.1	100.0
% of Present			
Pressure	85.6	56.5	99.1
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	0.4	99.7	46.1
Median delay(min)	373	235	47
Number of days	92	26	62
Mean no. of obs/day	8.5	11.9	10.9
No. of hours with obs	657	267	583
Mean no. of hours/day with obs	7.1	10.3	9.4
% of hour periods without an ob	70.3	57.2	60.8
Mean (Ob-Bg)	-0.1	0.1	-0.2
RMS (Ob-Bg)	1.3	1.4	1.4
unflagged data			
Mean (Ob-bg)	-0.2	0.1	-0.2
RMS (Ob-Bg)	1.5	1.4	1.4
all data			
Revised RMS (Ob-Bg)	1.5	1.4	1.4
% of data flagged	12	20	15
Operating at end of period	YES	NO	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Poor	Poor	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44919/??	44923/??	44924/??
Argos Id.No.	????	????	????
Period within area	31/10 - 31/12	31/10 - 31/12	31/10 - 31/12
Area	W of SOBA	W of SOBA	W of SOBA
Mean Latitude	56.6	58.6	57.0
Mean Longitude	-52.7	-54.0	-52.1
No. of obs received	582	614	594
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	96.9	100.0
% of Present			
Pressure	98.5	98.0	98.5
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	47.5	36.3	37.2
Median delay(min)	30	165	101
Number of days	62	62	62
Mean no. of obs/day	9.4	9.9	9.6
No. of hours with obs	508	501	507
Mean no. of hours/day with obs	8.2	8.1	8.2
% of hour periods without an ob	65.9	66.3	65.9
Mean (Ob-Bg)	0.2	0.1	0.0
RMS (Ob-Bg)	1.4	1.6	1.4
unflagged data			
Mean (Ob-bg)	-8.0	-60.8	0.0
RMS (Ob-Bg)	41.5	113.2	1.4
all data			
Revised RMS (Ob-Bg)	1.4	3.1	1.4
% of data flagged	19	48	18
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Satisfactory	Good
Comments			

ANNEX A - Cont.

Wmo No./Country	46764/??	56513/??	61521/US
Argos Id.No.	????	????	????
Period within area	03/12 - 31/12	28/11 - 04/12	03/12 - 31/12
Area	W of SOBA	W of SCOS	SE of SPAIN
Mean Latitude	56.4	44.7	36.7
Mean Longitude	-46.9	-63.6	1.4
No. of obs received	226	36	710
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	99.4
% of Present			
Pressure	100.0	97.2	94.6
P. Tendency	0.0	5.6	0.0
Air Temperature	0.0	0.0	94.2
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	0.0	97.2	98.6
Median delay(min)	741	13	432
Number of days	29	7	29
Mean no. of obs/day	7.8	5.1	24.5
No. of hours with obs	205	36	527
Mean no. of hours/day with obs	7.1	5.1	18.2
% of hour periods without an ob	70.6	78.6	24.3
Mean (Ob-Bg)	0.6	-	-0.3
RMS (Ob-Bg)	1.9	-	1.2
unflagged data			
Mean (Ob-bg)	1.2	-34.5	-0.4
RMS (Ob-Bg)	3.6	34.5	1.2
all data			
Revised RMS (Ob-Bg)	3.7	34.1	1.2
% of data flagged	21	100	24
Operating at end of period	YES	NO	YES
Performance			
Availability	Poor	Poor	Good
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Poor	Very Good	Very Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	61522/US	61526/US	61527/US
Argos Id No.	7207	????	????
Period within area	03/12 - 31/12	01/10 - 26/10	01/10 - 31/12
Area	E of SPAIN	E of SPAIN	N of SCOS
Mean Latitude	38.8	39.3	35.5
Mean Longitude	5.7	3.1	23.0
No. of obs received	732	300	644
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.7	100.0	100.0
% of Present			
Pressure	98.0	94.7	97.4
P. Tendency	0.0	0.0	0.0
Air Temperature	97.8	96.7	98.4
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	99.3	96.3	93.8
Median delay(min)	598	555	606
Number of days	29	26	92
Mean no. of obs/day	25.2	11.5	7.0
No. of hours with obs	542	270	528
Mean no. of hours/day with obs	18.7	10.4	5.7
% of hour periods without an ob	22.1	56.7	76.1
Mean (Ob-Bg)	-1.4	-0.8	-0.1
RMS (Ob-Bg)	1.8	1.3	1.1
unflagged data			
Mean (Ob-bg)	-1.5	-0.9	-0.1
RMS (Ob-Bg)	1.9	1.4	1.0
all data			
Revised RMS (Ob-Bg)	1.9	1.4	1.1
% of data flagged	47	6	25
Operating at end of period	YES	NO	YES
Performance			
Availability	Good	Poor	Poor
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Poor	Very Poor	Very Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	62503/F	62504/F	62507/F
Argos Id No.	14427	14428	5793
Period within area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	SCOS	W of SCOS	SCOS
Mean Latitude	38.5	37.3	38.6
Mean Longitude	-14.4	-11.1	-23.0
No. of obs received	1713	1691	1818
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.9	100.0	100.0
% of Present			
Pressure	97.0	97.1	55.4
P. Tendency	91.3	90.8	60.2
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.	97.3	97.8	60.2
Median delay(min)	81	62	21
Number of days	92	92	92
Mean no. of obs/day	18.6	18.4	19.8
No. of hours with obs	1325	1323	1465
Mean no. of hours/day with obs	14.4	14.4	15.9
% of hour periods without an ob	40.0	40.1	33.7
Mean (Ob-Bg)	-0.4	-0.4	0.4
RMS (Ob-Bg)	1.2	1.1	2.0
unflagged data			
Mean (Ob-bg)	-0.4	-0.4	0.6
RMS (Ob-Bg)	1.2	1.1	2.4
all data			
Revised RMS (Ob-Bg)	1.2	1.1	2.4
% of data flagged	29	29	37
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Good	Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62508/F	62510/F	62513/F
Argos Id No.	5792	5797	5798
Period within area	01/10 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	N of SCOS	SCOS	SCOS
Mean Latitude	49.8	39.5	44.2
Mean Longitude	-18.5	-16.3	-18.7
No. of obs received	2010	1800	1638
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	100.0
% of Present			
Pressure	100.0	100.0	100.0
P. Tendency	64.1	60.1	57.0
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.	0.0	60.2	56.9
Median delay(min)	69	100	79
Number of days	92	92	92
Mean no. of obs/day	21.9	19.6	17.8
No. of hours with obs	1588	1397	1384
Mean no. of hours/day with obs	17.3	15.2	15.0
% of hour periods without an ob	28.1	36.7	37.3
Mean (Ob-Bg)	0.3	-0.1	0.4
RMS (Ob-Bg)	1.4	1.1	1.3
unflagged data			
Mean (Ob-bg)	0.3	-0.1	0.4
RMS (Ob-Bg)	1.5	1.2	1.3
all data			
Revised RMS (Ob-Bg)	1.5	1.2	1.3
% of data flagged	28	33	23
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62515/F	62516/F	62517/F
Argos Id.No.	14426	5790	10118
Period within area	01/10 - 31/12	01/10 - 01/12	01/10 - 31/12
Area	N of SCOS	SCOS	N of SCOS
Mean Latitude	47.6	44.5	49.2
Mean Longitude	-18.3	-15.3	-17.3
No. of obs received	1900	1236	1912
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	100.0
% of Present			
Pressure	99.9	77.3	96.2
P. Tendency	63.3	77.3	89.9
Air Temperature	0.0	62.2	64.7
Wind Speed/Dir.	0.0/0.0	68.8/69.2	0.0/0.0
Sea-surface Temp.	63.4	97.2	96.7
Median delay(min)	98	60	48
Number of days	92	62	92
Mean no. of obs/day	20.7	19.9	20.8
No. of hours with obs	1539	932	1414
Mean no. of hours/day with obs	16.7	15.0	15.4
% of hour periods without an ob	30.3	37.4	36.0
Mean (Ob-Bg)	-0.1	-0.9	-0.1
RMS (Ob-Bg) unflagged data	1.3	2.2	1.4
Mean (Ob-bg)	-0.1	1.1	-0.1
RMS (Ob-Bg) all data	1.4	7.3	1.4
Revised RMS (Ob-Bg)	1.4	6.5	1.4
% of data flagged	27	48	36
Operating at end of period	YES	NO	YES
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Good	Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62518/F	62551/??	62910/??
Argos Id No.	15534	????	????
Period within area	01/10 - 31/12	10/12 - 31/12	01/10 - 31/12
Area	SCOS	NE of SCOS	SOBA
Mean Latitude	45.1	46.4	59.8
Mean Longitude	-20.0	-8.3	-46.5
No. of obs received	1986	370	484
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	100.0
% of Present			
Pressure	30.4	97.6	99.6
P. Tendency	0.0	54.3	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	79.3/80.0	53.0/53.0	0.0/0.0
Sea-surface Temp.	92.7	54.3	0.8
Median delay(min)	80	131	604
Number of days	92	22	92
Mean no. of obs/day	21.6	16.8	5.3
No. of hours with obs	1922	337	432
Mean no. of hours/day with obs	20.9	15.3	4.7
% of hour periods without an ob	13.0	36.2	80.4
Mean (Ob-Bg)	-0.6	-0.2	-0.1
RMS (Ob-Bg)	2.4	1.1	1.8
unflagged data			
Mean (Ob-bg)	-0.6	-0.2	-1.0
RMS (Ob-Bg)	2.7	1.1	4.4
all data			
Revised RMS (Ob-Bg)	2.7	1.1	4.4
% of data flagged	5	9	30
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Poor
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Good	Satisfactory	Very Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	64513/??	64514/??	64561/??
Argos Id.No.	????	????	1247
Period within area	16/10 - 01/12	16/10 - 14/12	27/11 - 31/12
Area	NW of EIRE	NW of UK	SOBA
Mean Latitude	56.3	58.1	61.7
Mean Longitude	-11.8	-8.5	-29.5
No. of obs received	599	979	1042
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	99.9
% of Present			
Pressure	92.7	98.1	93.7
P. Tendency	0.0	0.0	73.5
Air Temperature	79.8	97.7	91.4
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	96.5	98.8	94.6
Median delay(min)	143	11	66
Number of days	47	60	35
Mean no. of obs/day	12.7	16.3	29.8
No. of hours with obs	530	823	627
Mean no. of hours/day with obs	11.3	13.7	17.9
% of hour periods without an ob	53.0	42.9	25.4
Mean (Ob-Bg)	0.1	0.0	-0.3
RMS (Ob-Bg)	1.9	1.7	1.9
unflagged data			
Mean (Ob-bg)	0.2	0.0	-0.6
RMS (Ob-Bg)	1.9	1.7	6.0
all data			
Revised RMS (Ob-Bg)	1.9	1.6	2.4
% of data flagged	19	27	53
Operating at end of period	NO	NO	YES
Performance			
Availability	Poor	Satisfactory	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Satisfactory	Very Good	Good
Comments			

ANNEX A - Cont.

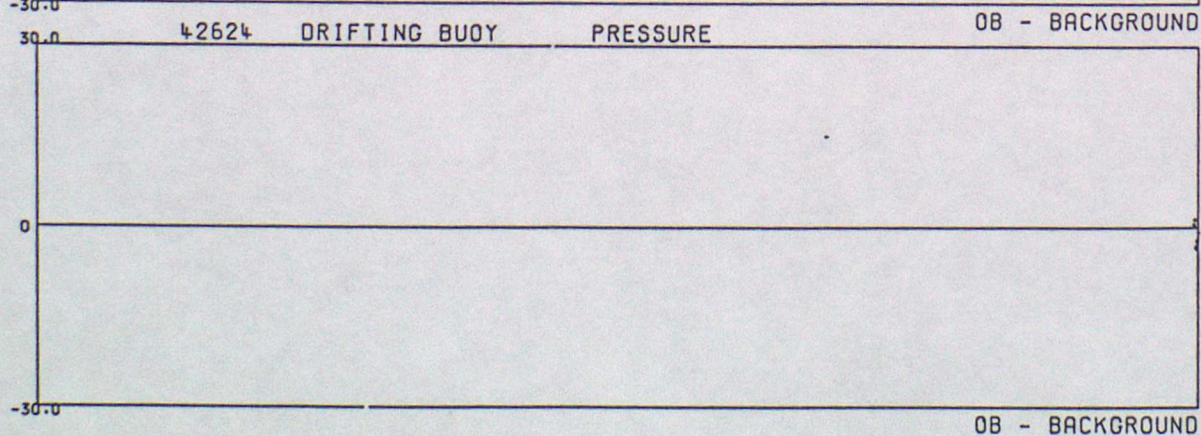
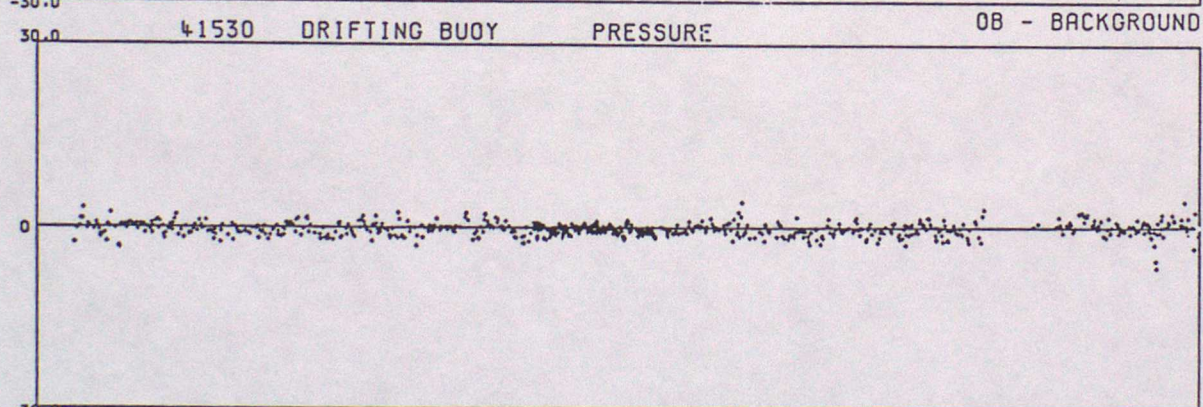
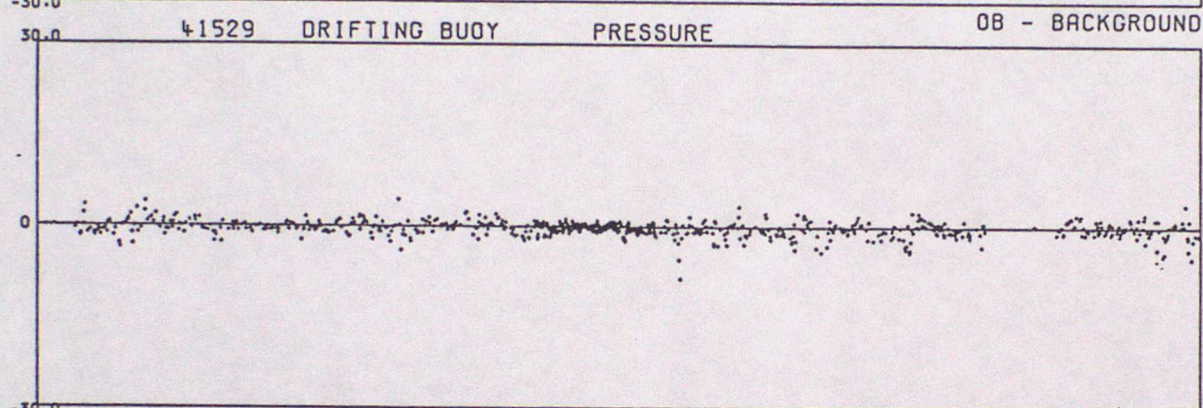
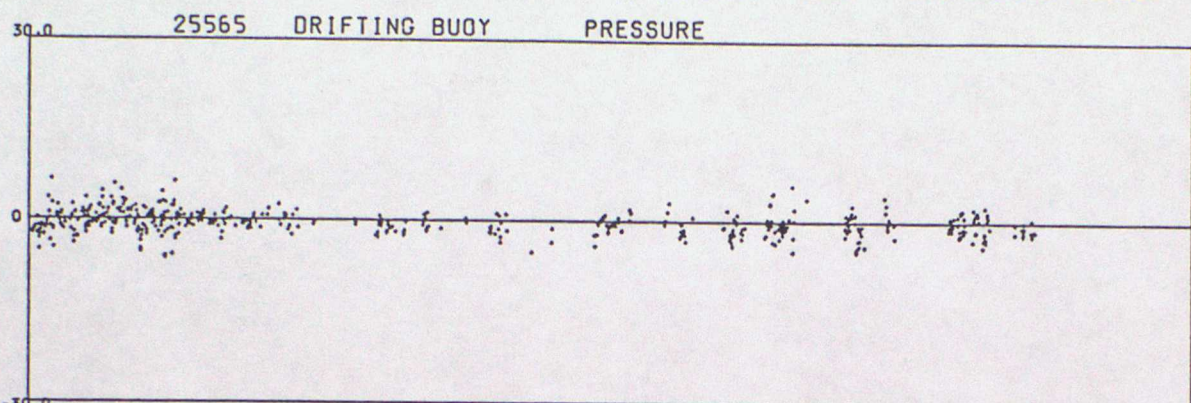
Wmo No./Country	65562/N	65594/UK	65595/IR
Argos Id. No.	????	1252	3038
Period within area	14/11 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	N of SCOS	SOBA	SOBA
Mean Latitude	51.8	58.1	59.6
Mean Longitude	-17.8	-29.4	-25.2
No. of obs received	432	5496	5282
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	93.5	98.6	99.3
% of Present			
Pressure	99.3	99.0	97.2
P. Tendency	96.1	96.1	92.9
Air Temperature	99.3	98.5	96.3
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	61.8	98.7	62.3
Median delay(min)	48	49	21
Number of days	48	92	92
Mean no. of obs/day	9.0	59.7	57.4
No. of hours with obs	353	1817	1788
Mean no. of hours/day with obs	7.4	19.8	19.4
% of hour periods without an ob	69.4	17.7	19.0
Mean (Ob-Bg)	-0.5	-0.1	-0.3
RMS (Ob-Bg)	1.3	1.6	1.8
unflagged data			
Mean (Ob-bg)	-0.7	-0.6	-0.5
RMS (Ob-Bg)	3.2	5.9	3.5
all data			
Revised RMS (Ob-Bg)	1.6	3.2	1.8
% of data flagged	28	73	73
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Very Good	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

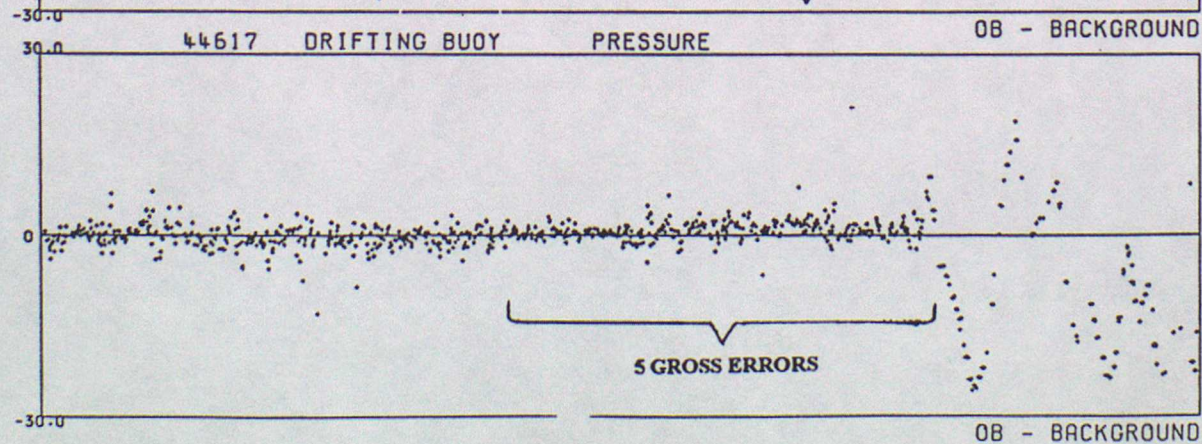
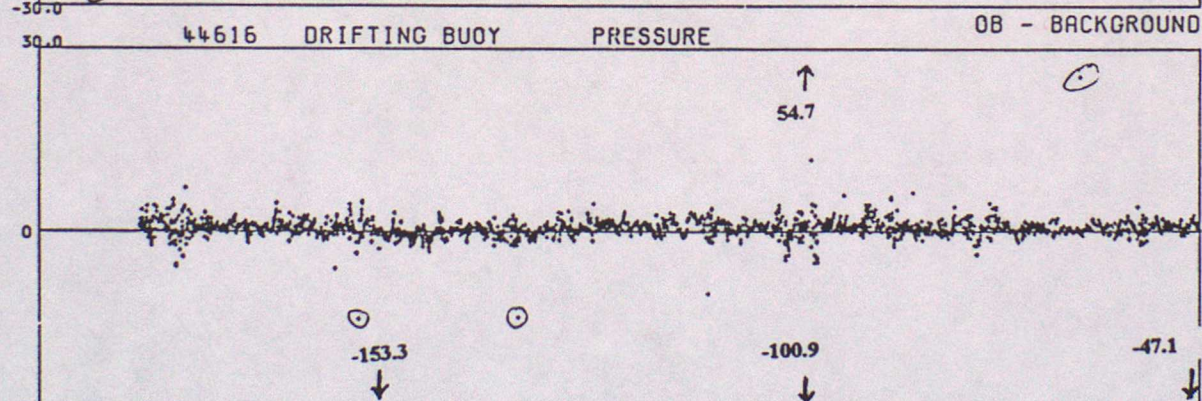
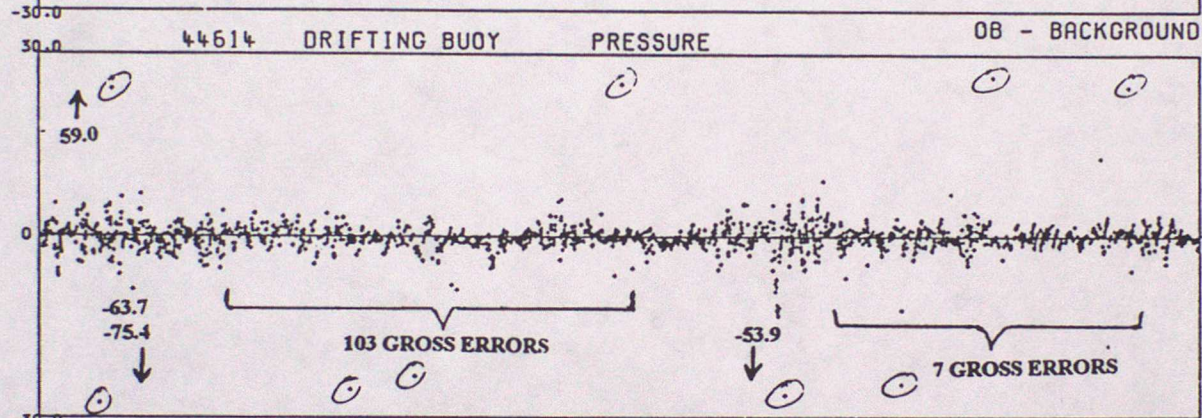
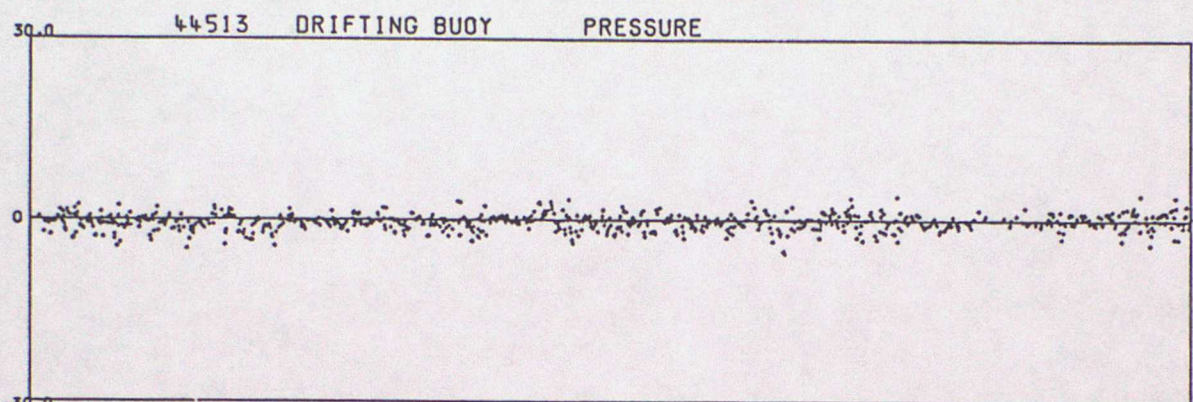
Wmo No./Country	65596/??	65598/N	65599/D
Argos Id No.	????	3678	9308
Period within area	11/12 - 31/12	01/10 - 31/12	01/10 - 31/12
Area	SOBA	SOBA	SW of SOBA
Mean Latitude	58.1	60.8	51.3
Mean Longitude	-40.7	-33.1	-48.5
No. of obs received	208	5094	3516
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.5	99.2	99.1
% of Present			
Pressure	100.0	95.5	92.9
P. Tendency	52.9	90.2	92.8
Air Temperature	100.0	94.6	94.9
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	48.6	62.3	59.2
Median delay(min)	44	88	21
Number of days	21	92	92
Mean no. of obs/day	9.9	55.4	38.2
No. of hours with obs	172	1762	1552
Mean no. of hours/day with obs	8.2	19.2	16.9
% of hour periods without an ob	65.9	20.2	29.7
Mean (Ob-Bg)	-0.6	-0.6	-0.2
RMS (Ob-Bg)	1.7	1.8	1.6
unflagged data			
Mean (Ob-bg)	-0.5	-0.7	-0.3
RMS (Ob-Bg)	1.8	3.6	3.5
all data			
Revised RMS (Ob-Bg)	1.8	2.1	1.7
% of data flagged	28	73	64
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Very Good	Very Good
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Good	Very Good
Comments			

ANNEX B - TIME SERIES PLOTS OF PRESSURE

DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

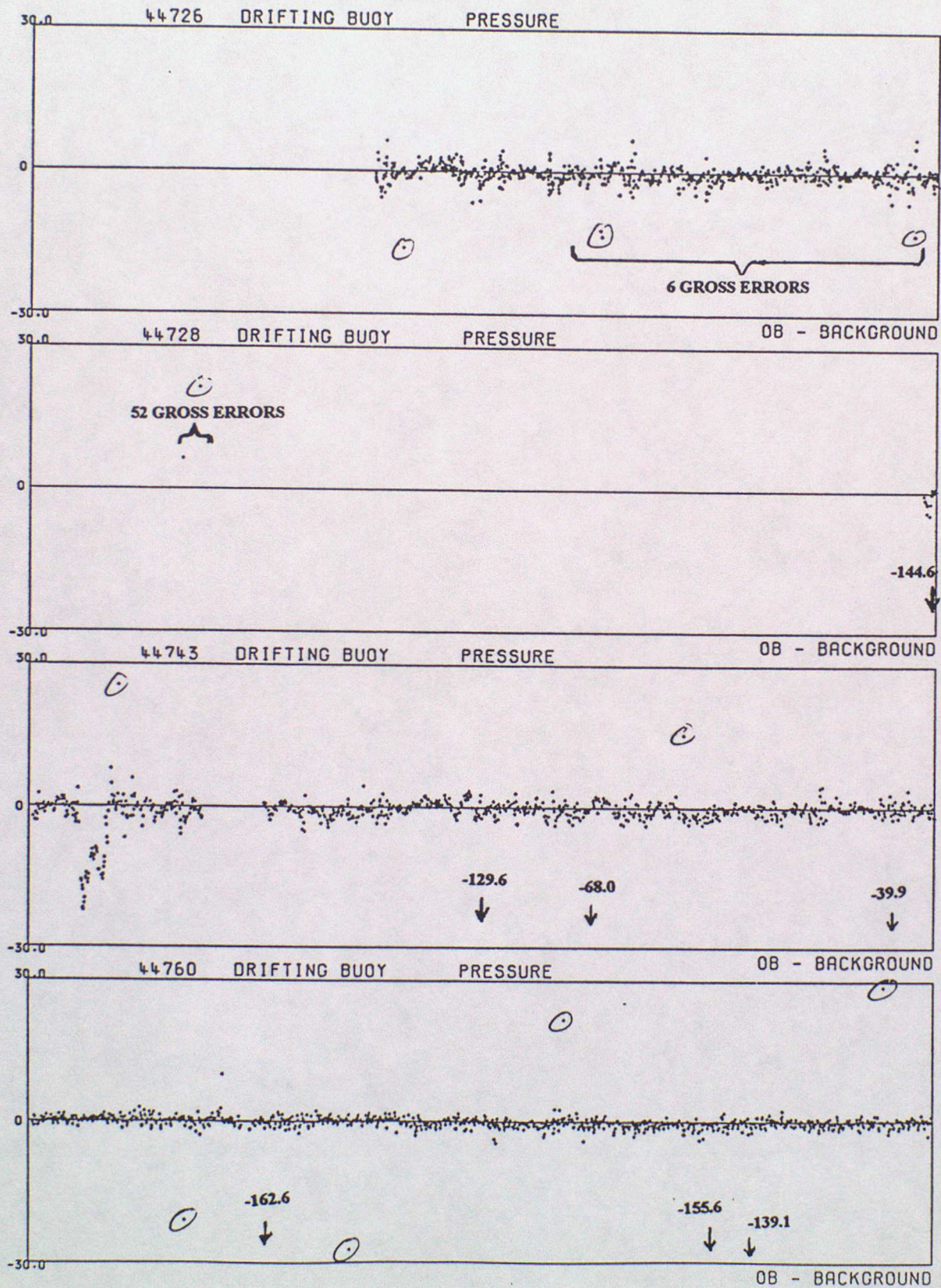


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

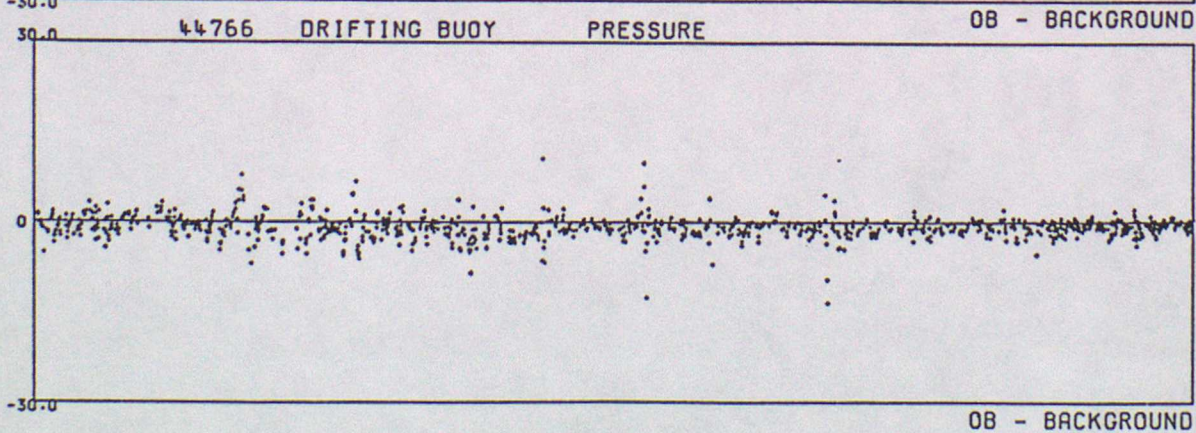
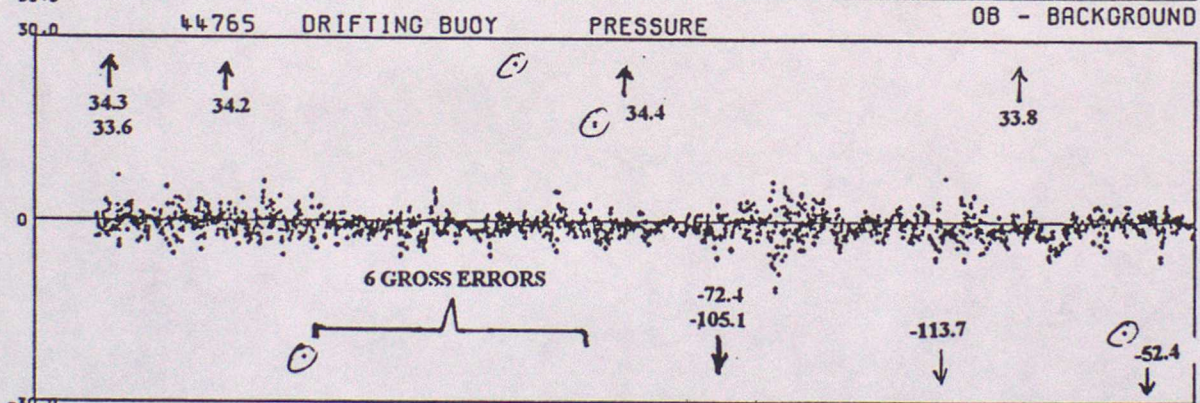
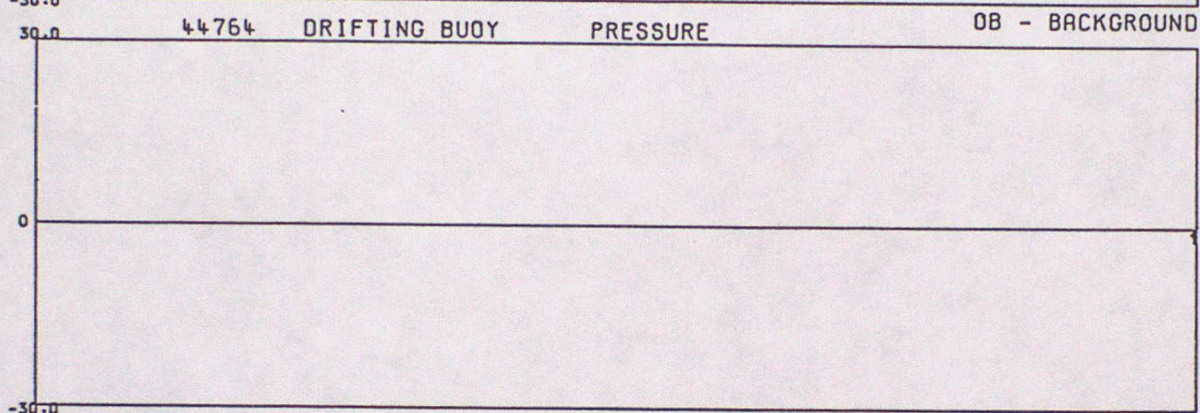
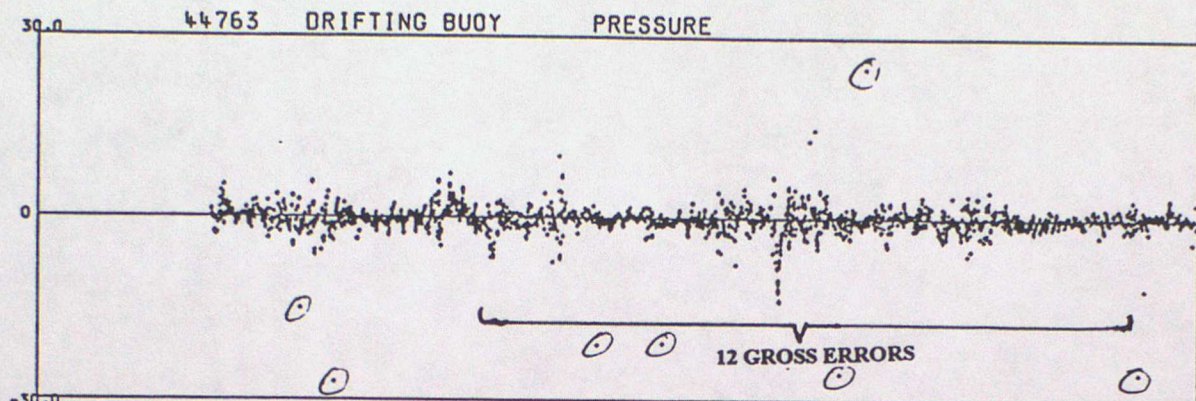


OB - BACKGROUND

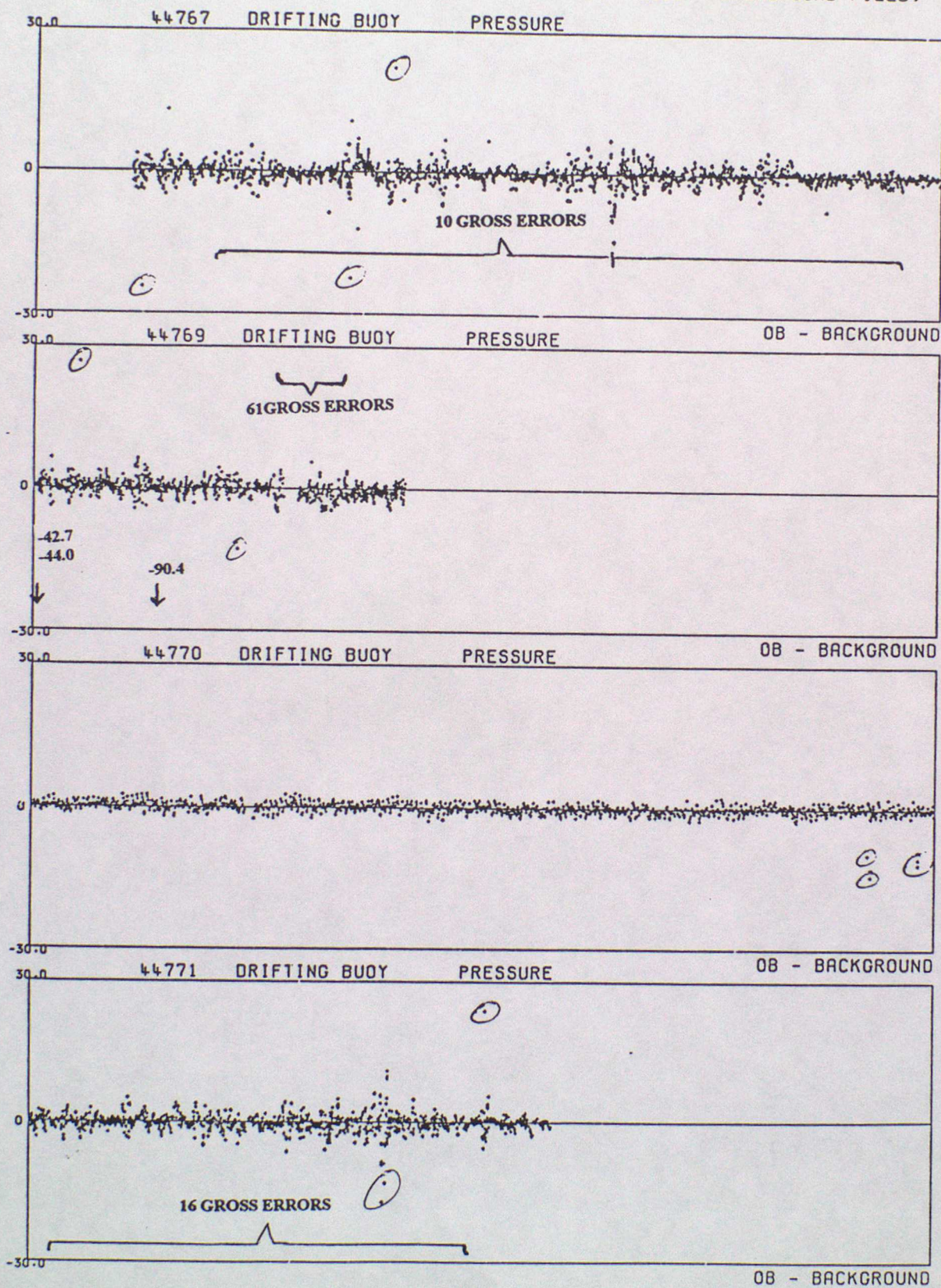
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



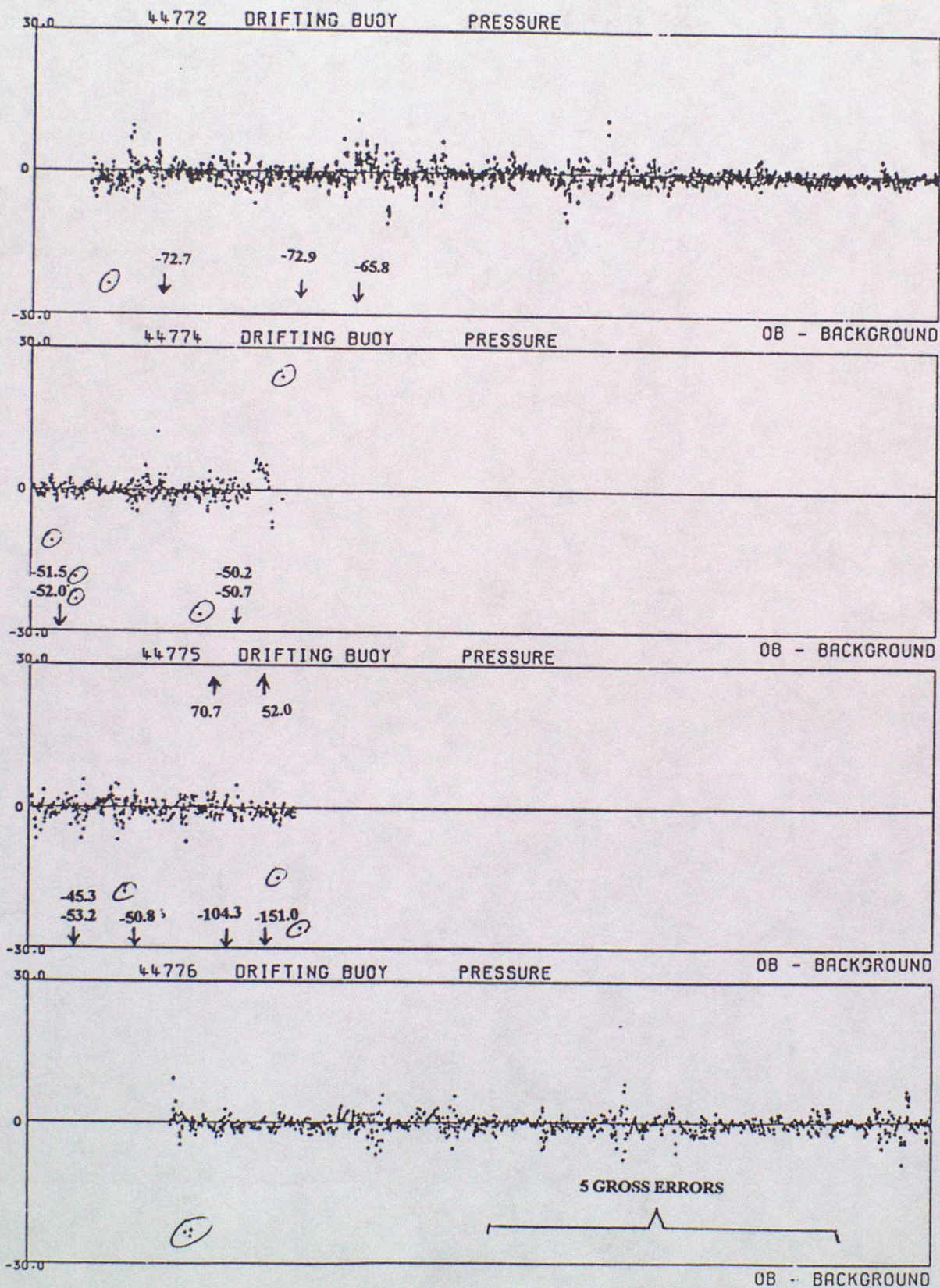
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



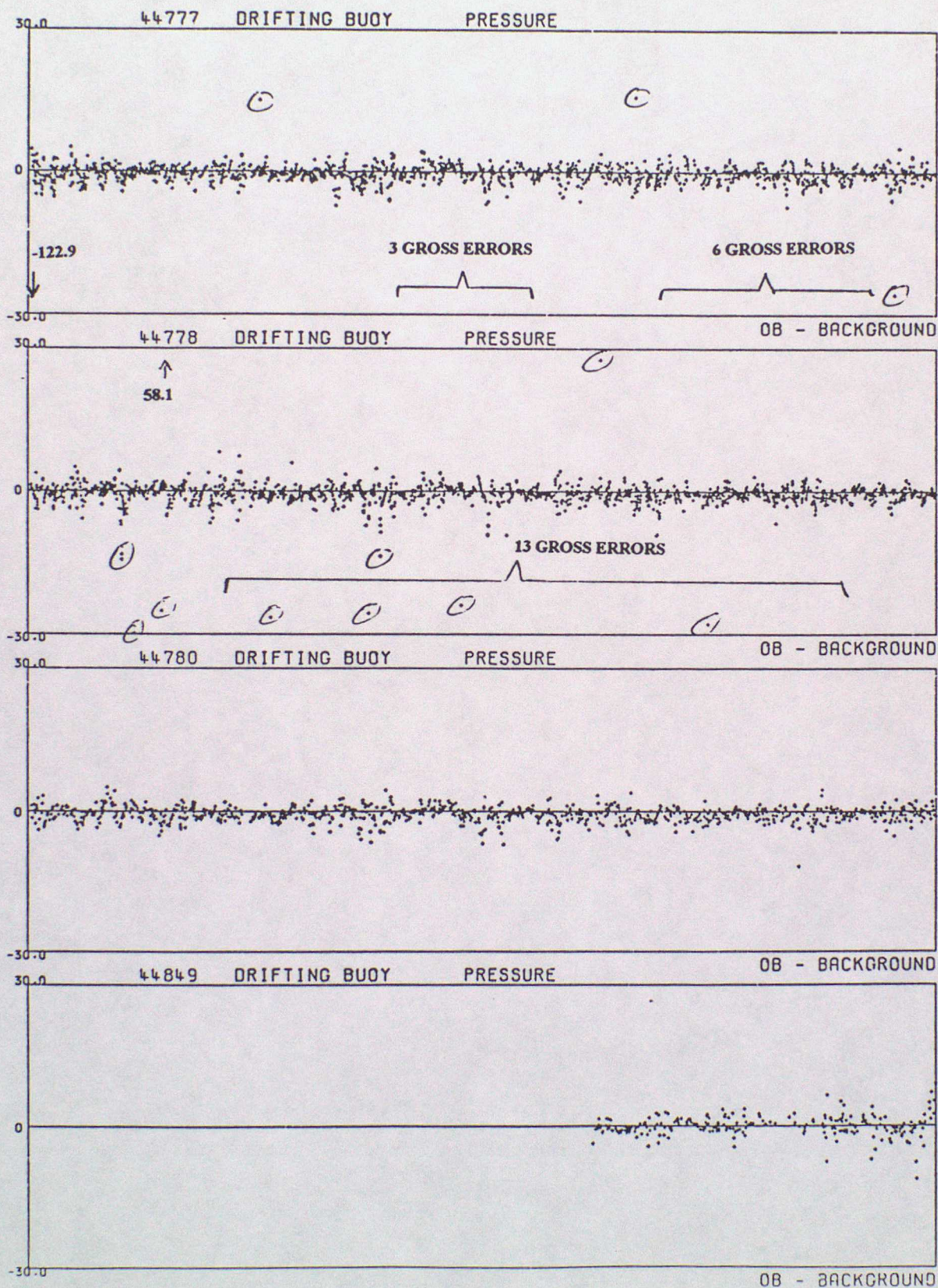
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



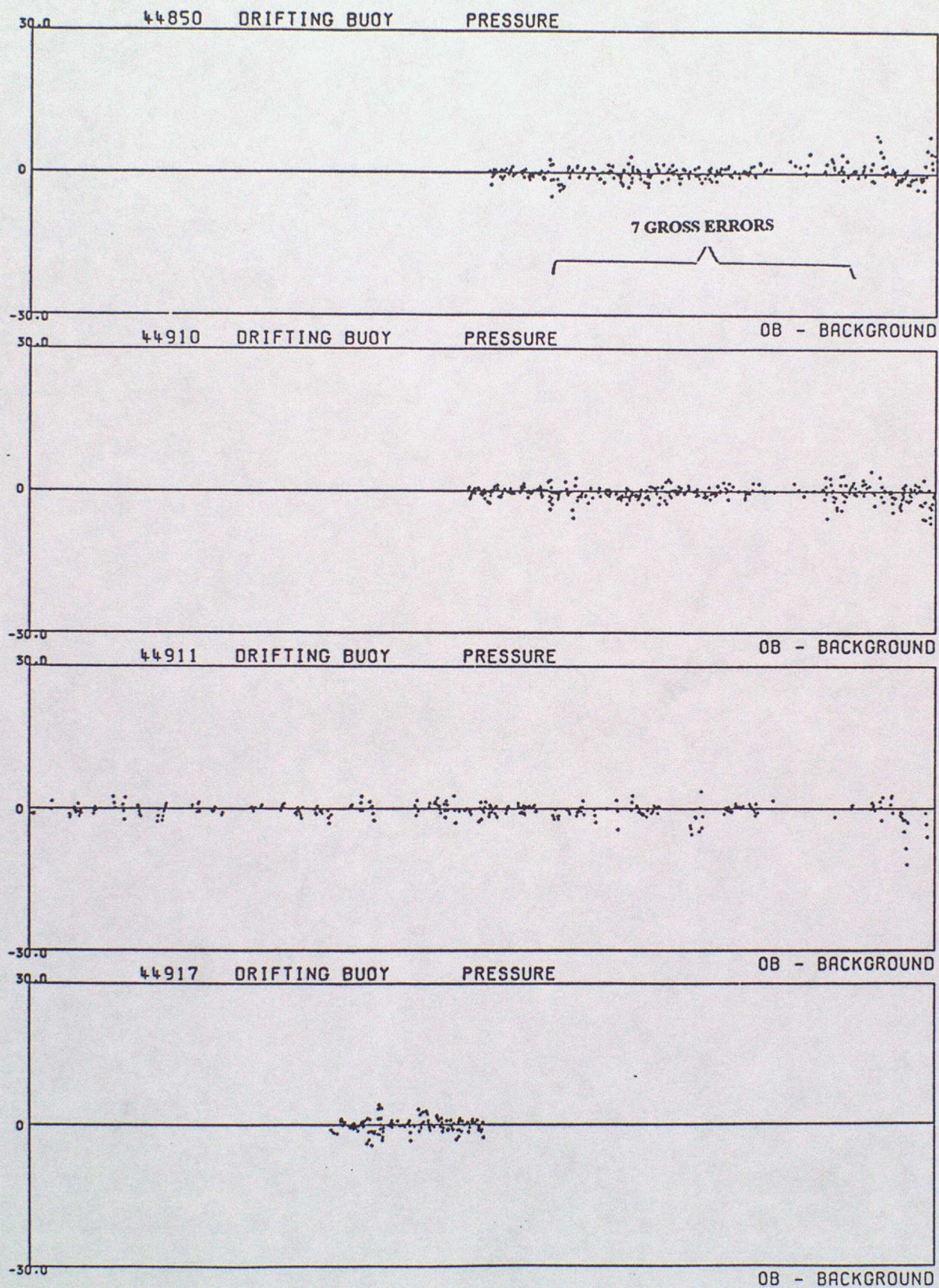
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

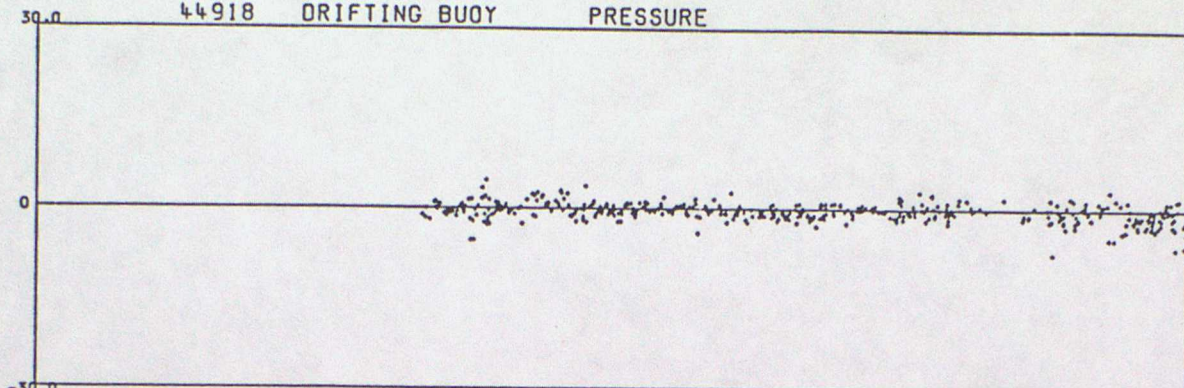


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



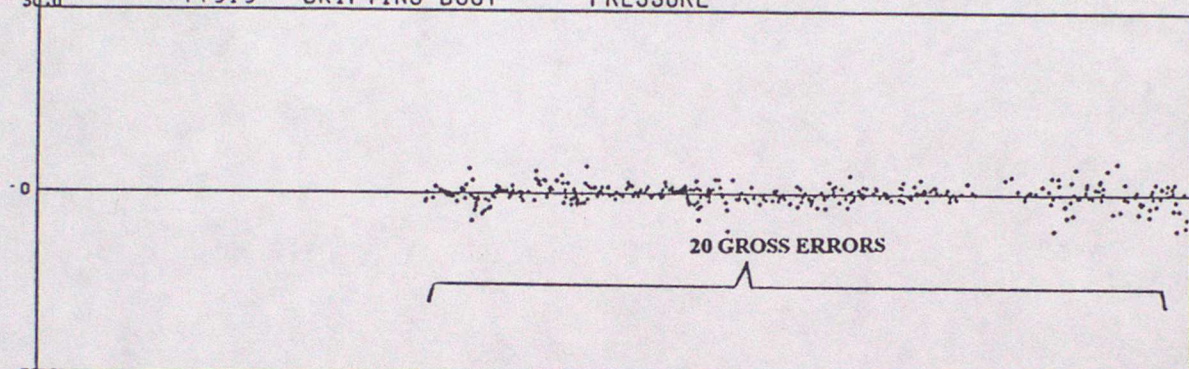
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

44918 DRIFTING BUOY PRESSURE



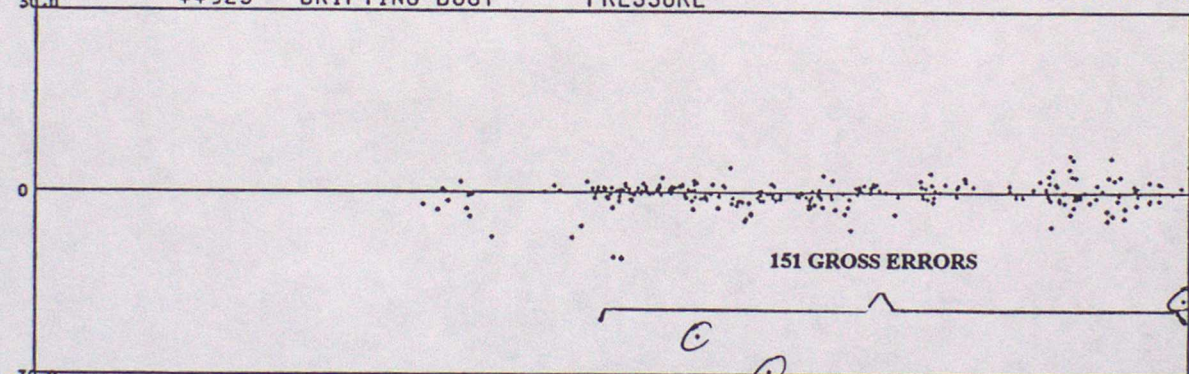
44919 DRIFTING BUOY PRESSURE

OB - BACKGROUND



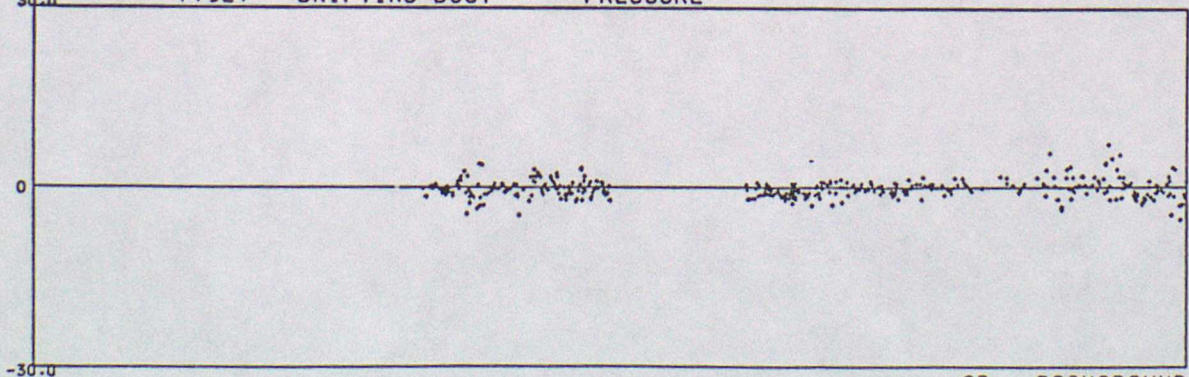
44923 DRIFTING BUOY PRESSURE

OB - BACKGROUND

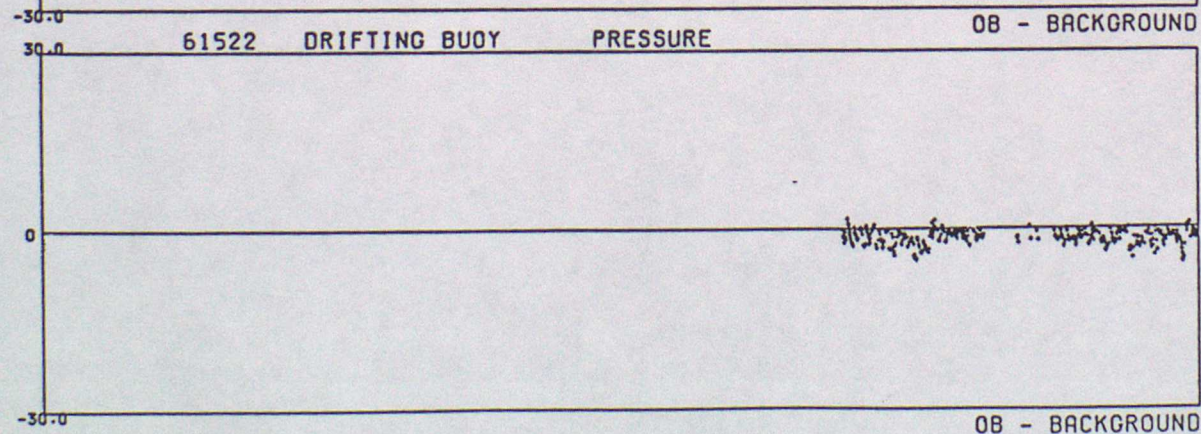
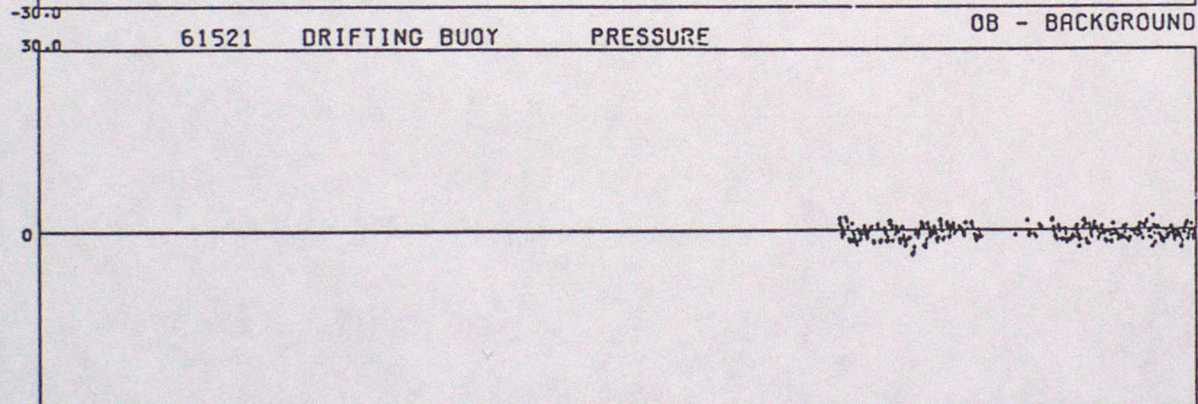
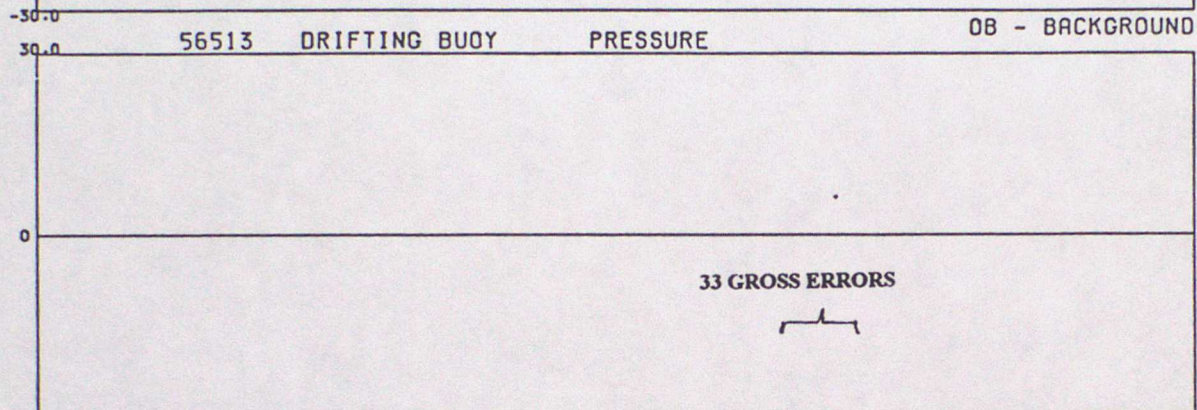
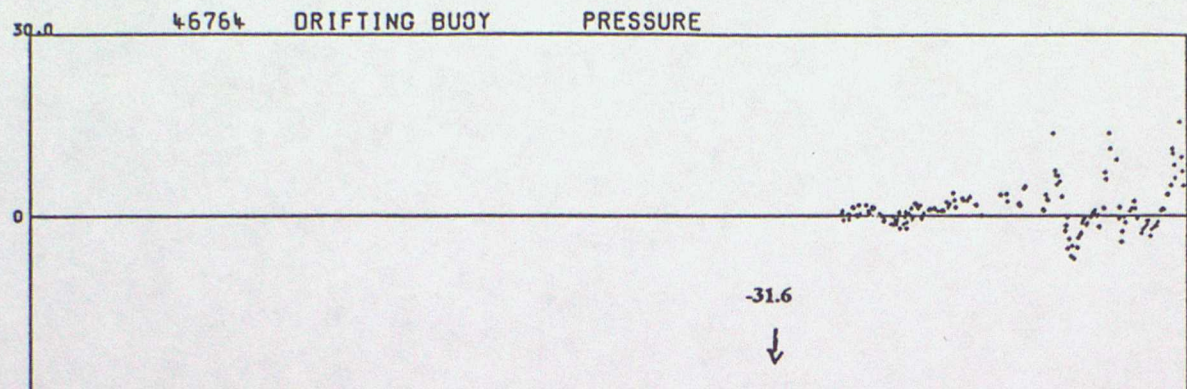


44924 DRIFTING BUOY PRESSURE

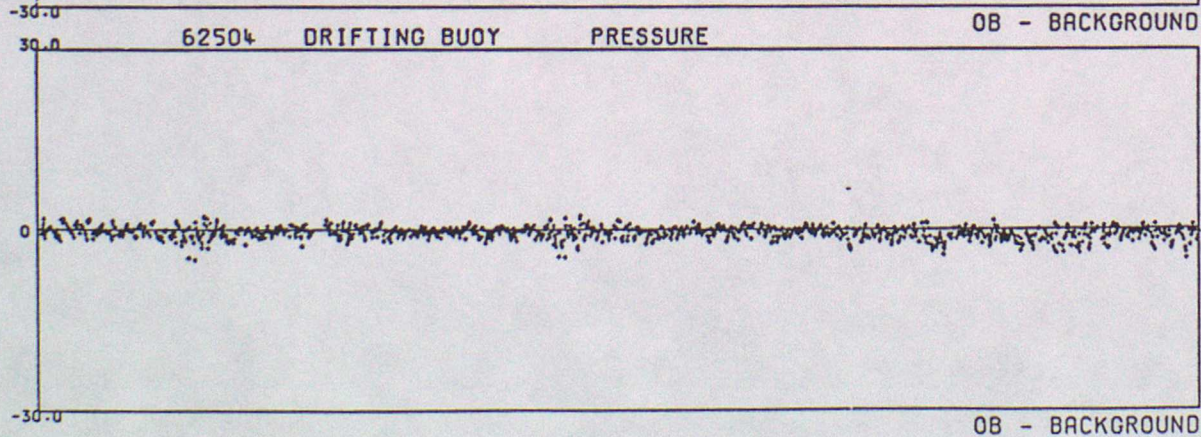
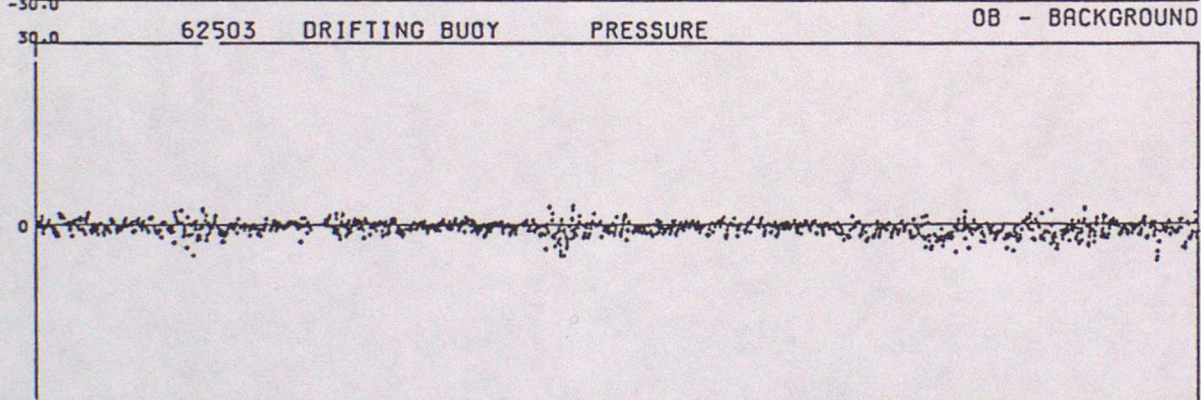
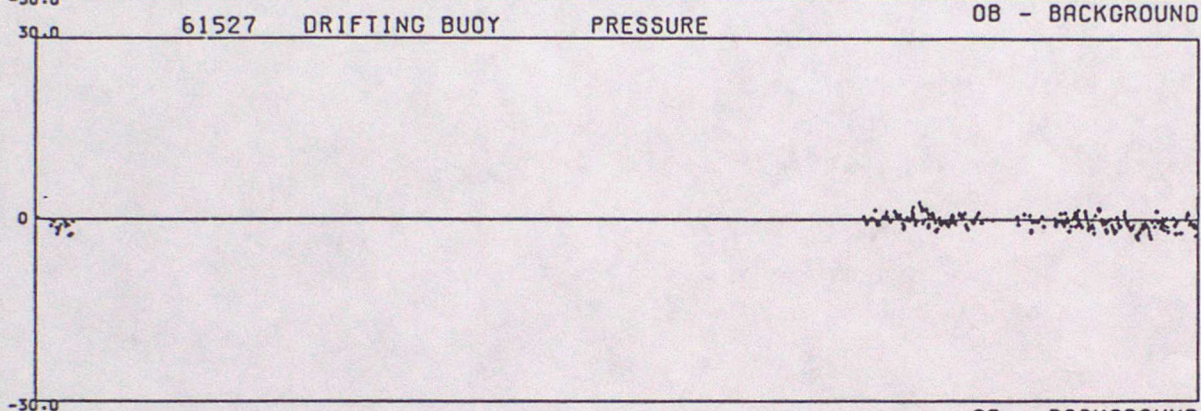
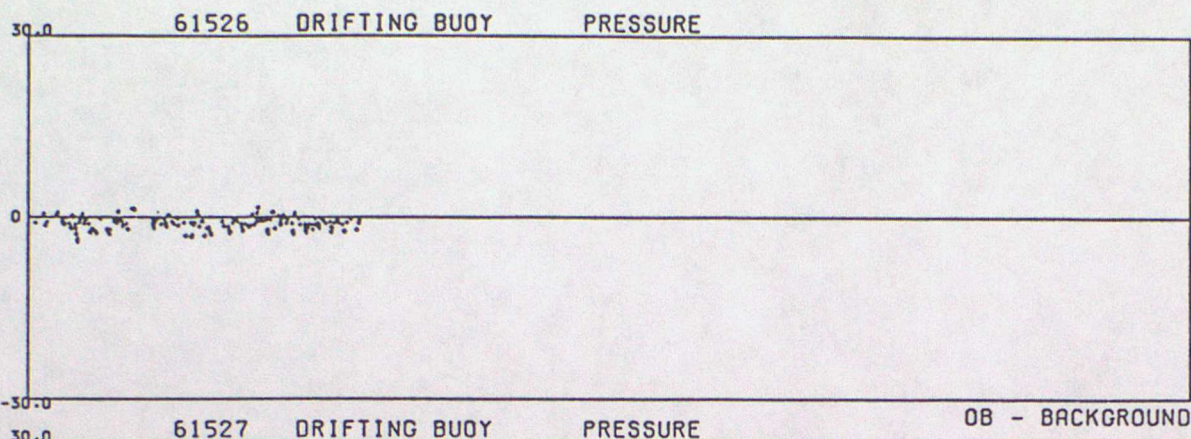
OB - BACKGROUND



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

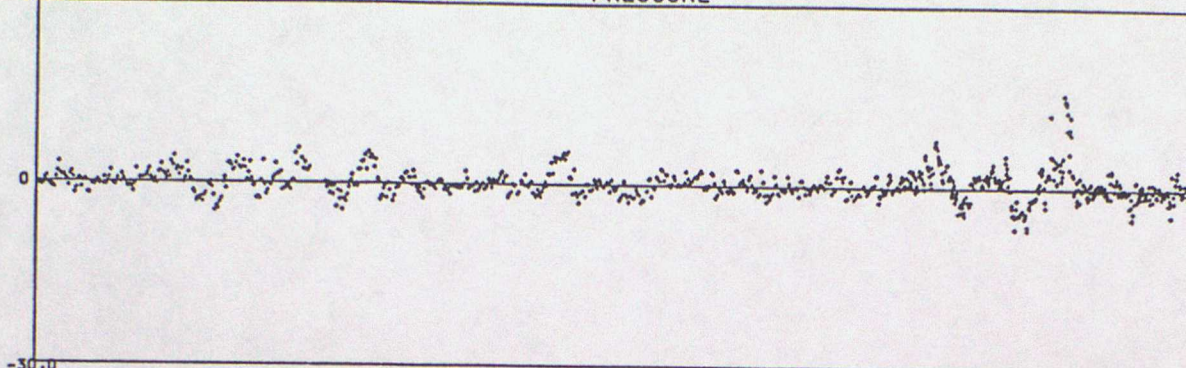


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

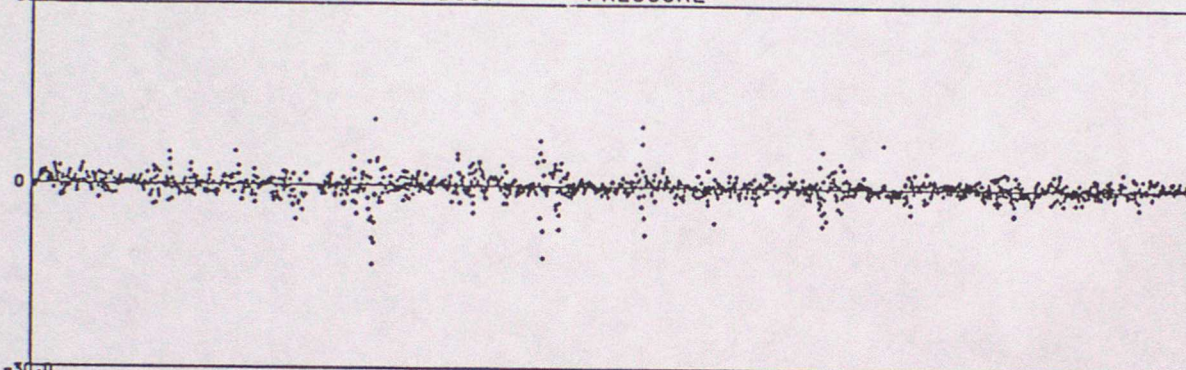


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD,

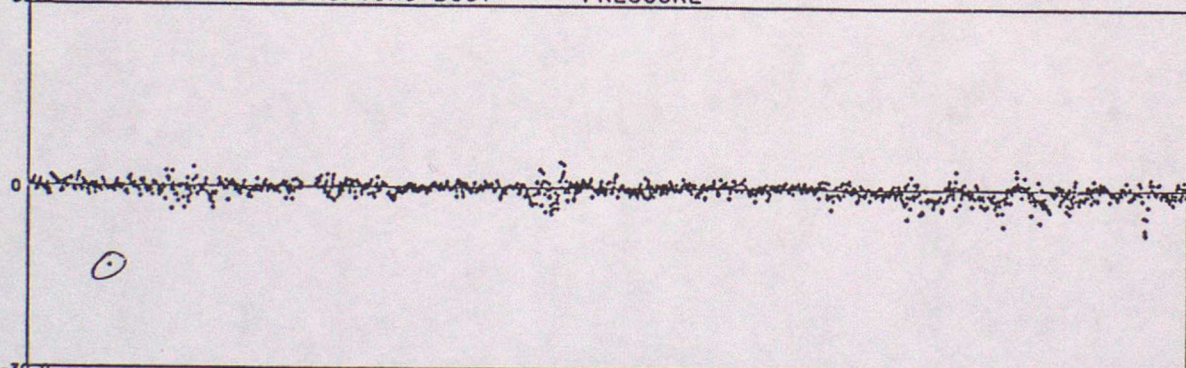
30.0 62507 DRIFTING BUOY PRESSURE



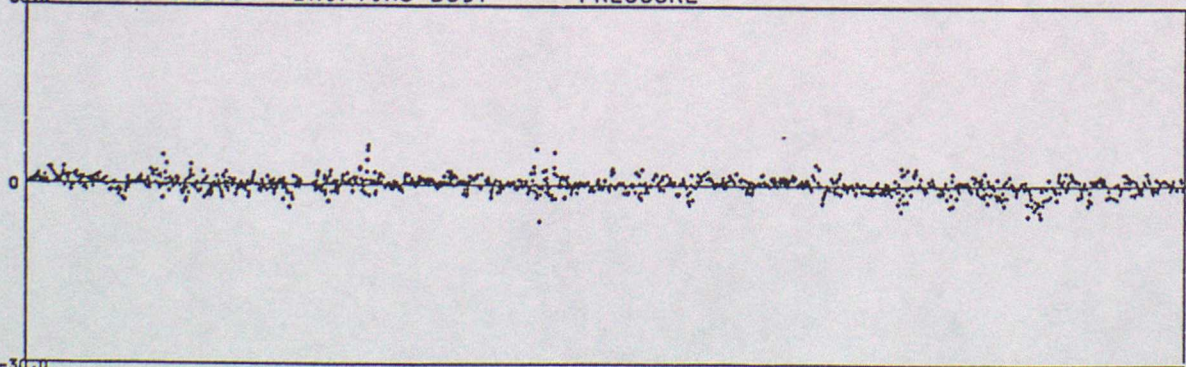
30.0 62508 DRIFTING BUOY PRESSURE OB - BACKGROUND



30.0 62510 DRIFTING BUOY PRESSURE OB - BACKGROUND

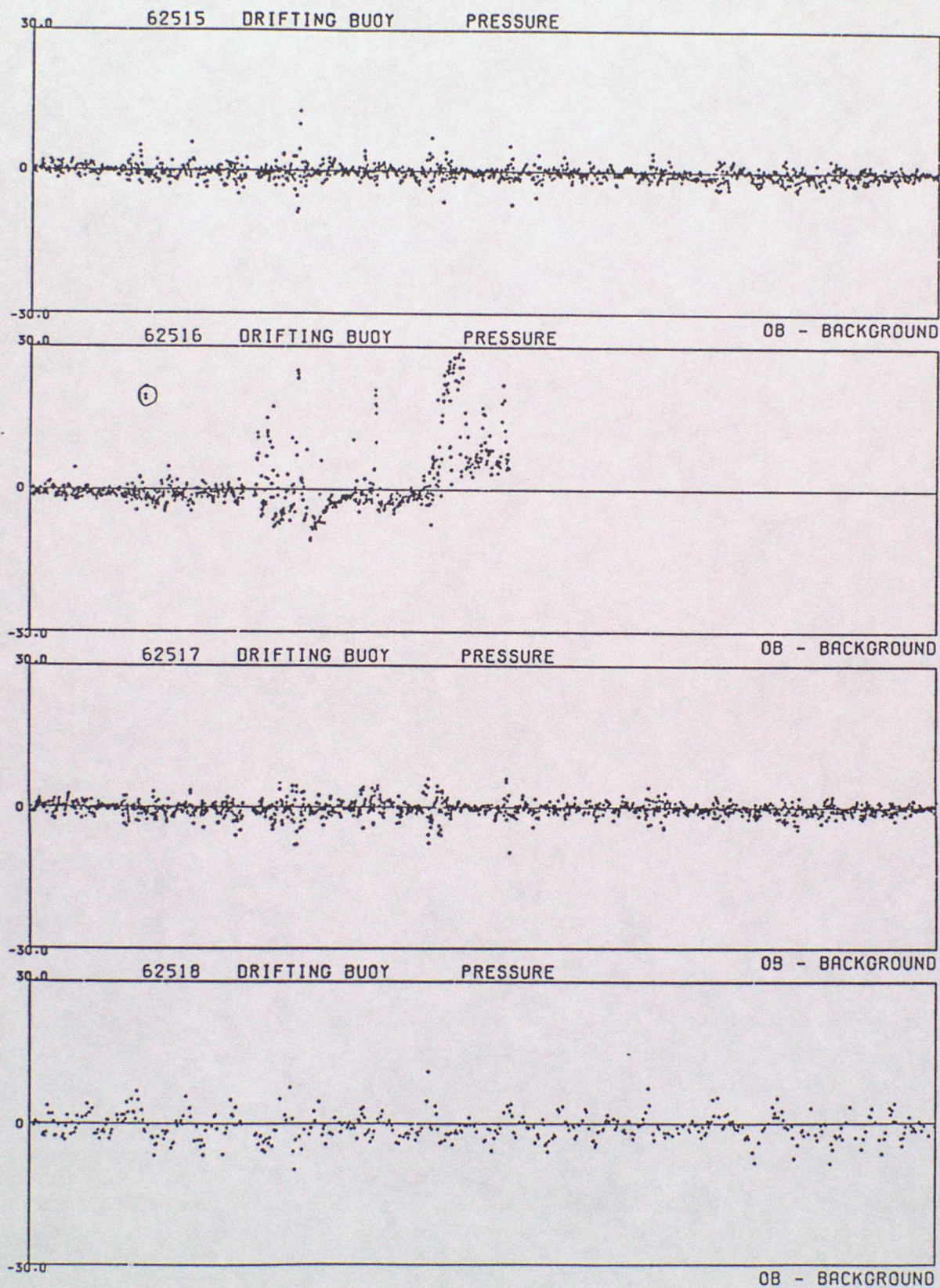


30.0 62513 DRIFTING BUOY PRESSURE OB - BACKGROUND

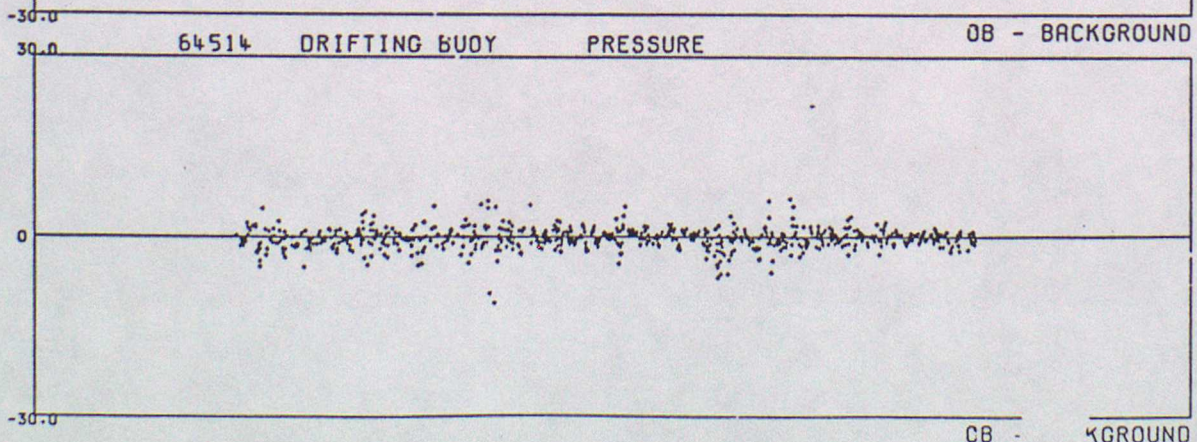
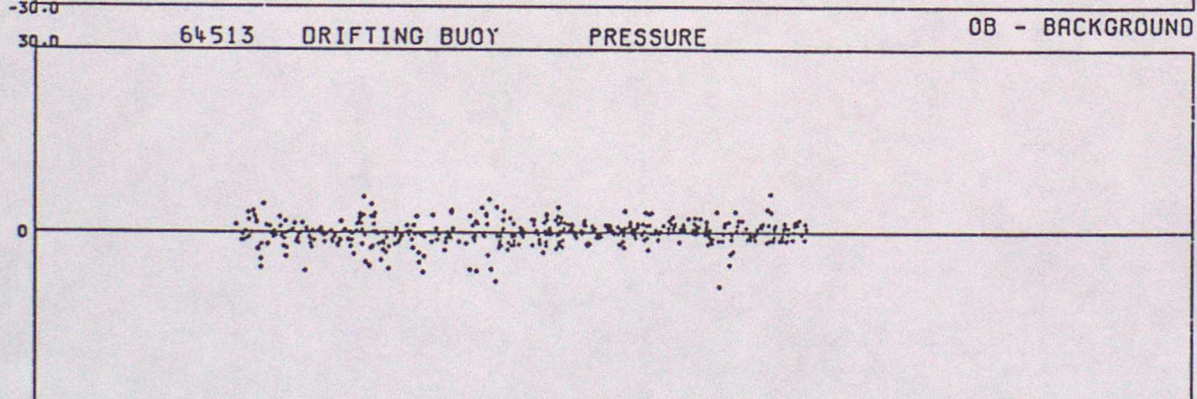
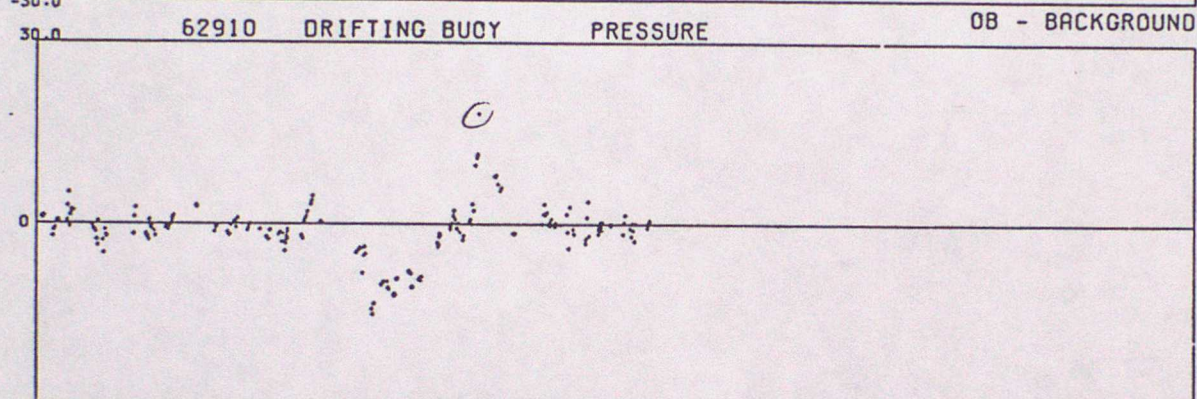
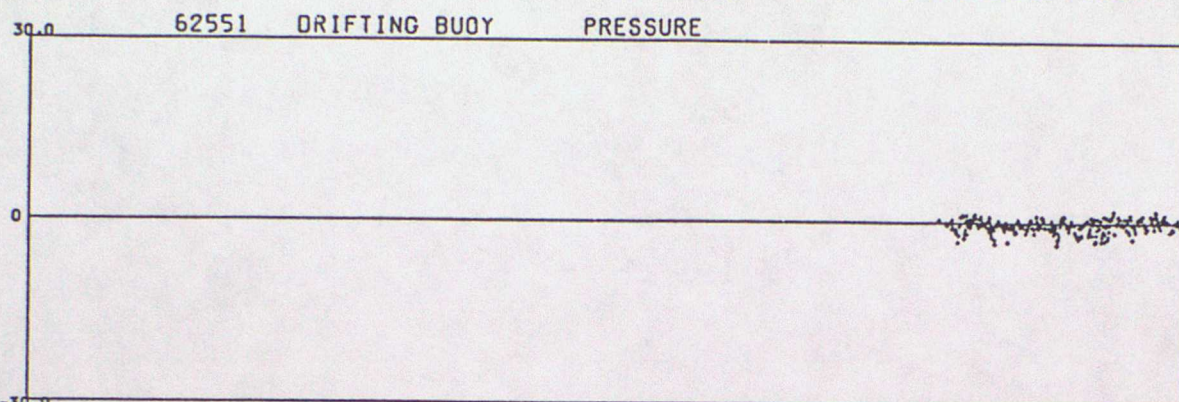


OB - BACKGROUND

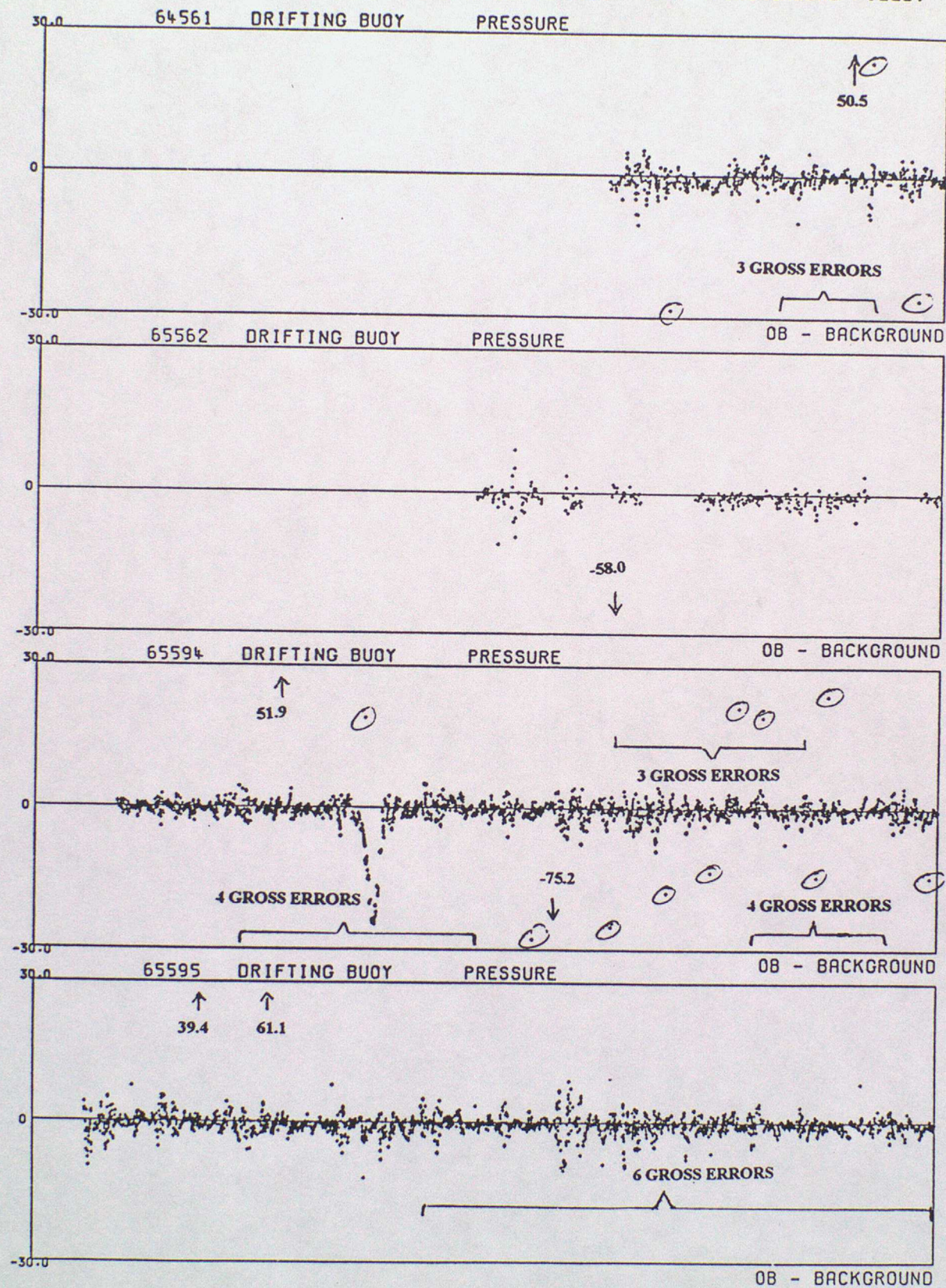
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



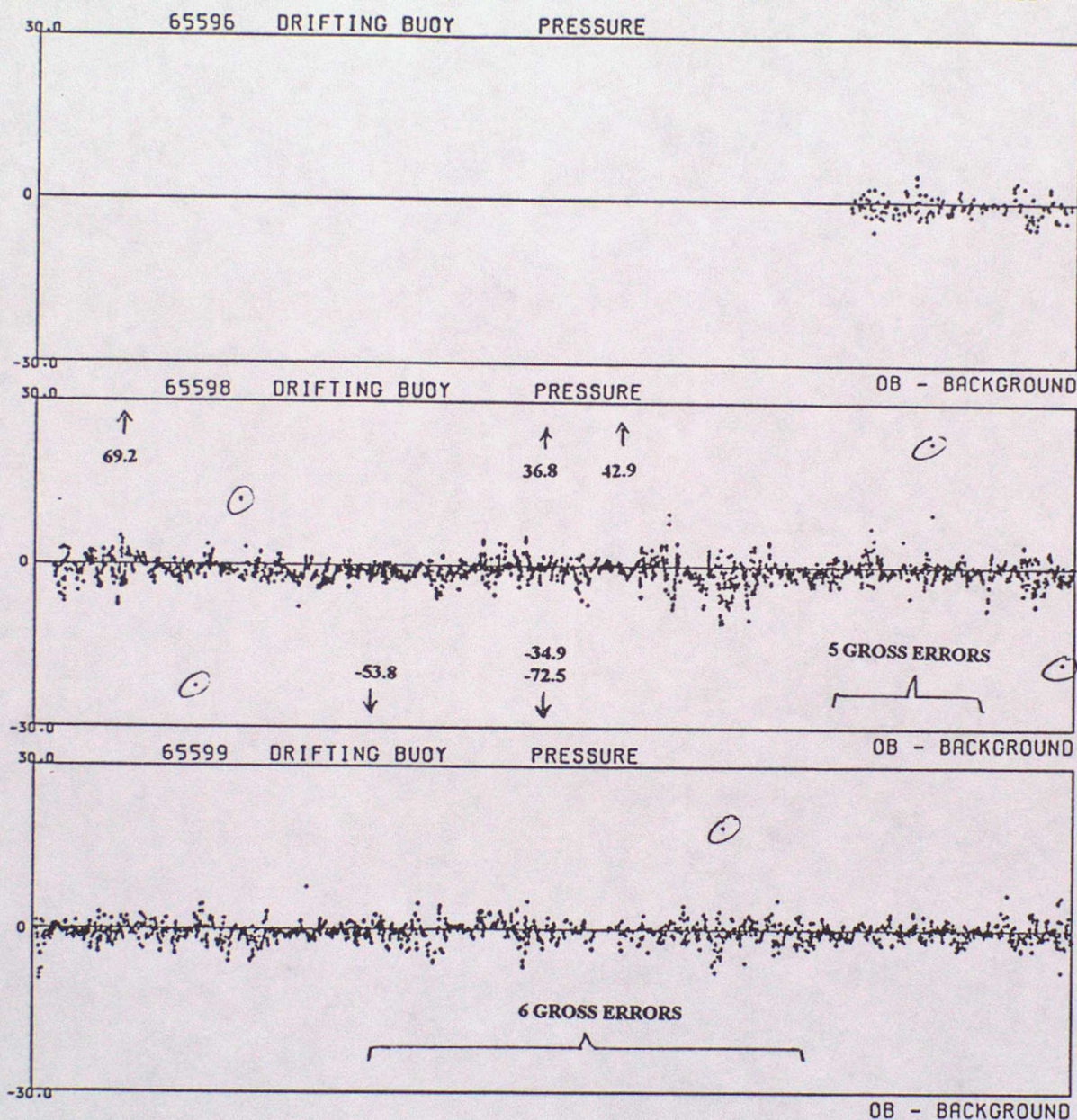
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (ORS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

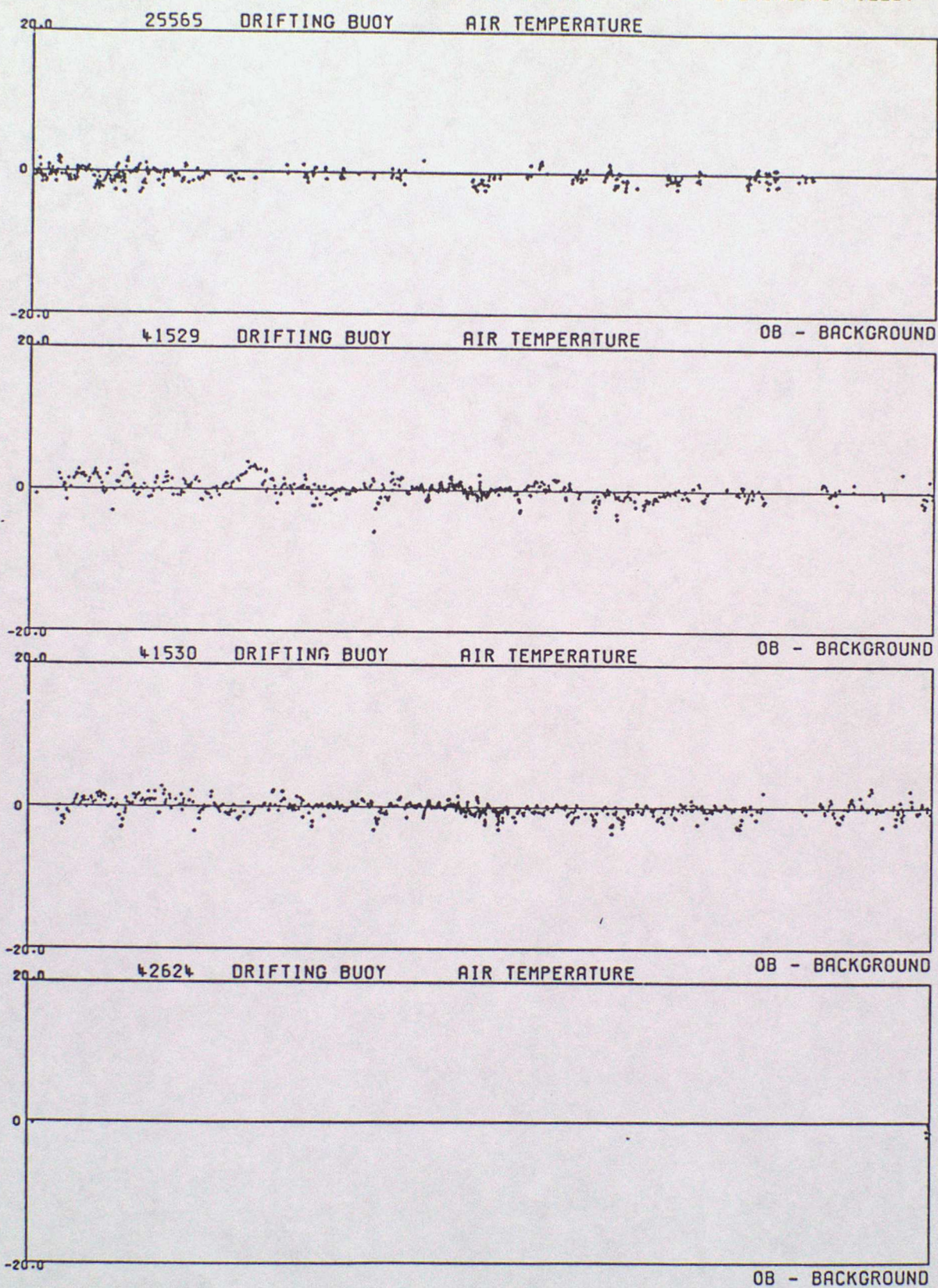


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

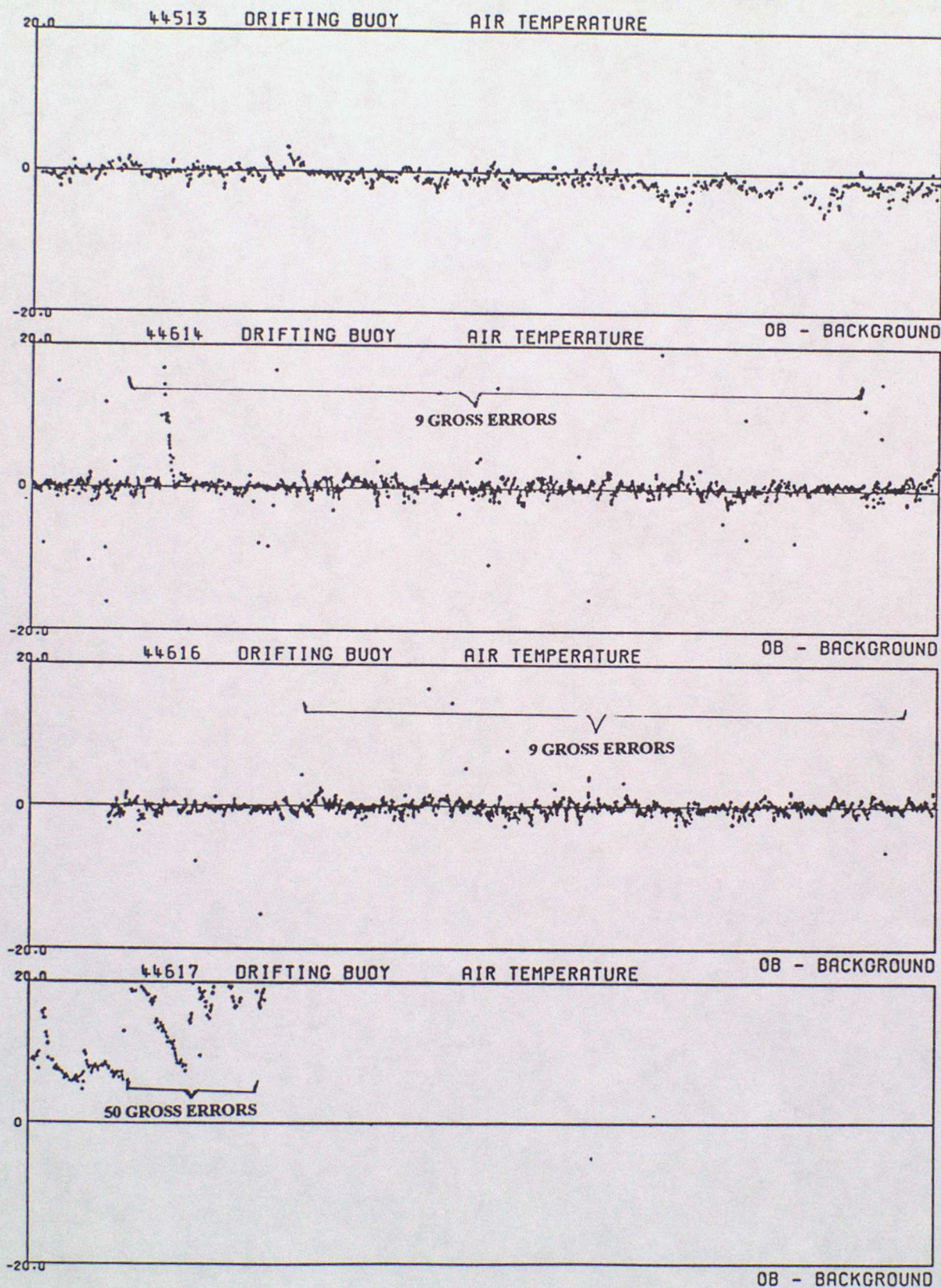


ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

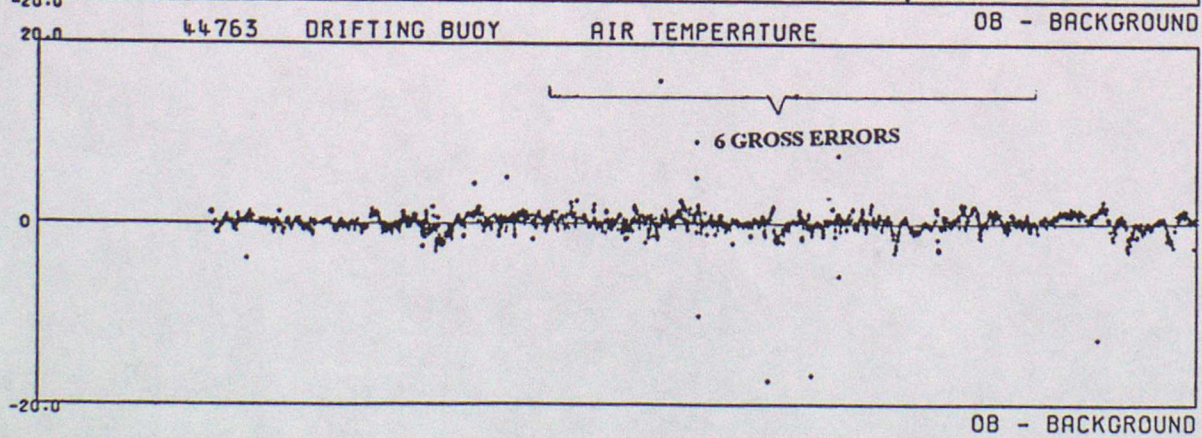
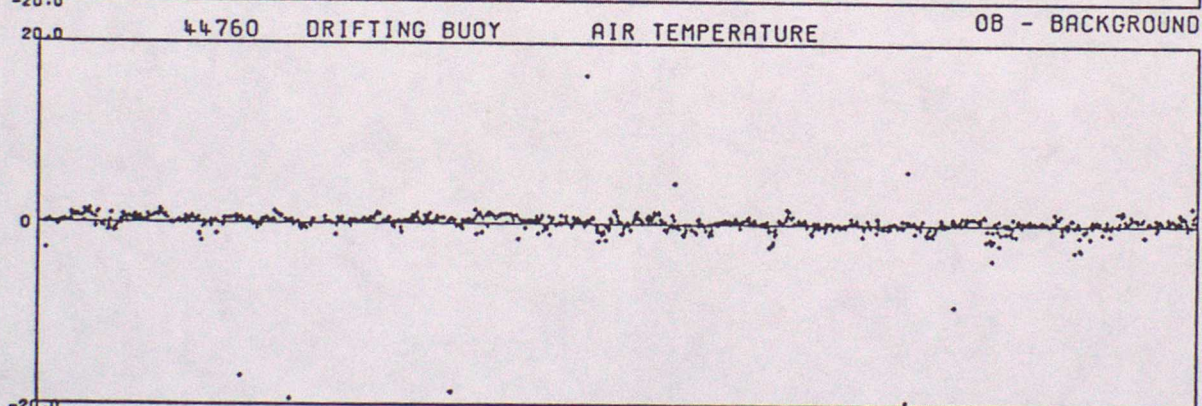
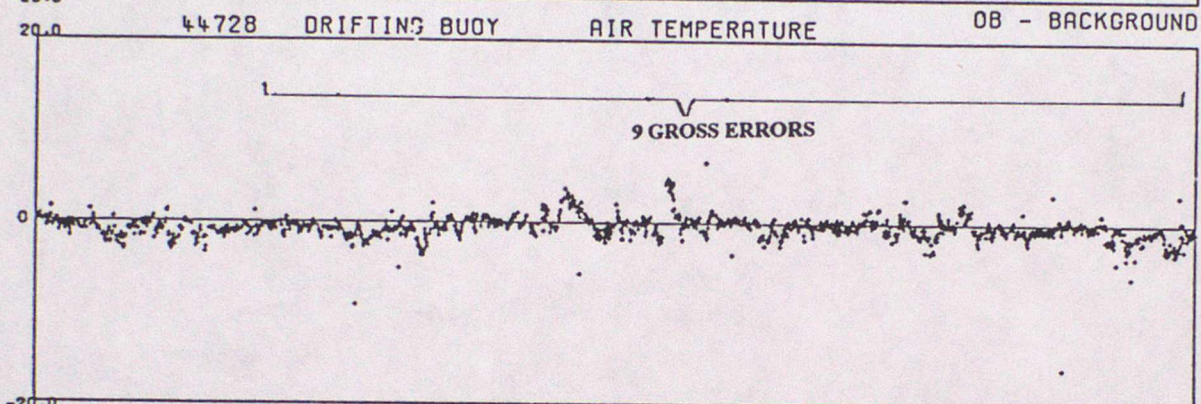
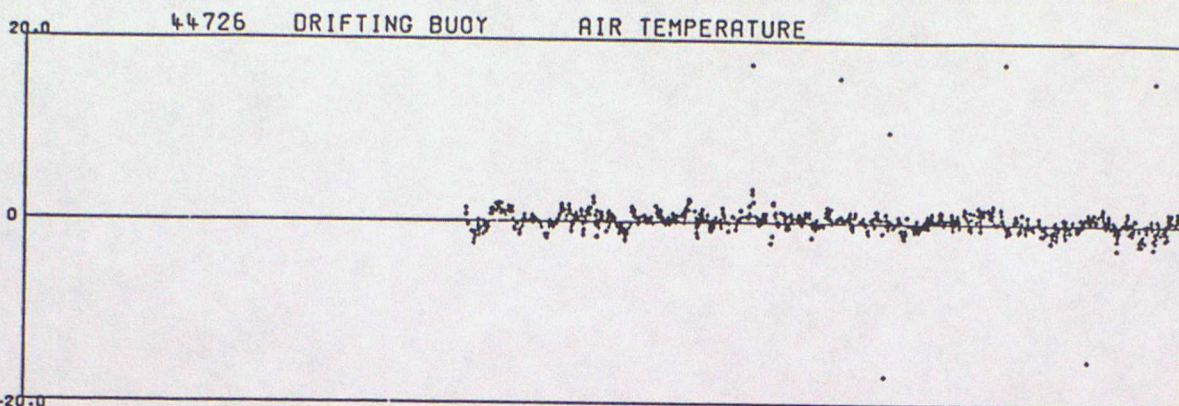
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

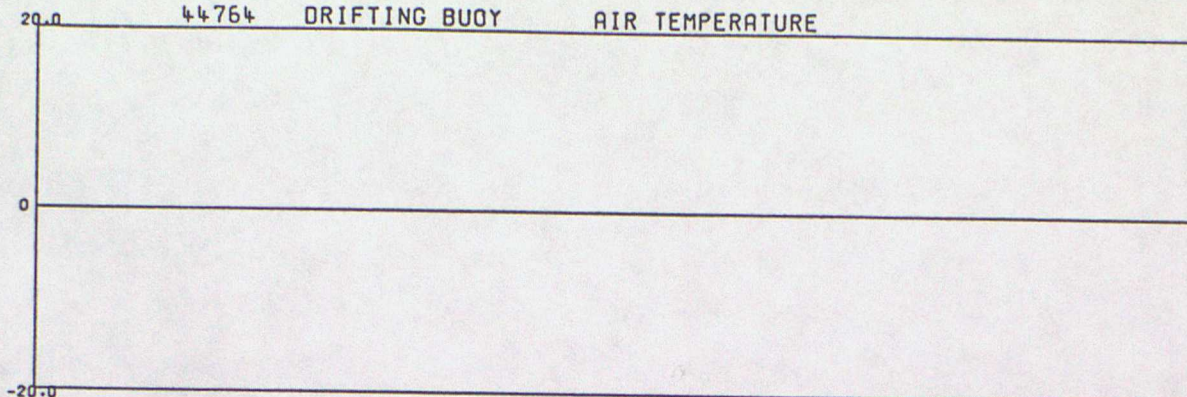


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



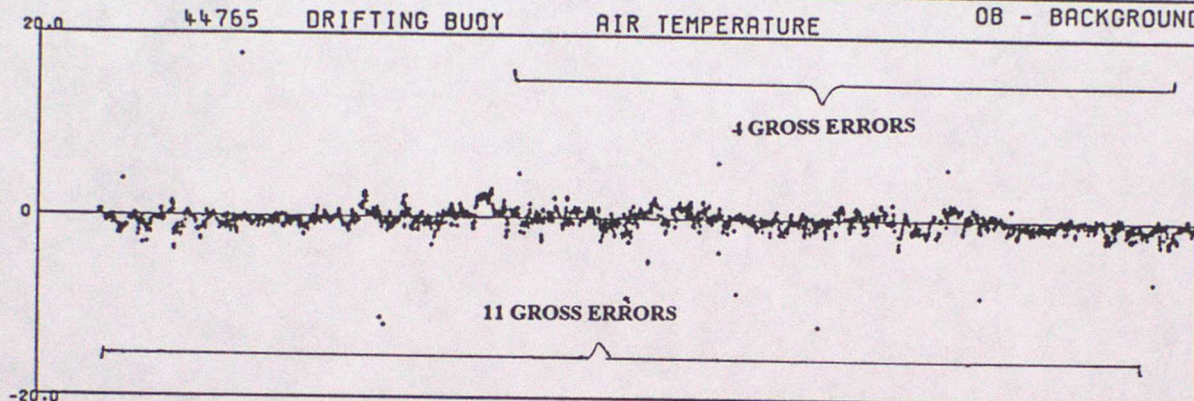
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

44764 DRIFTING BUOY AIR TEMPERATURE



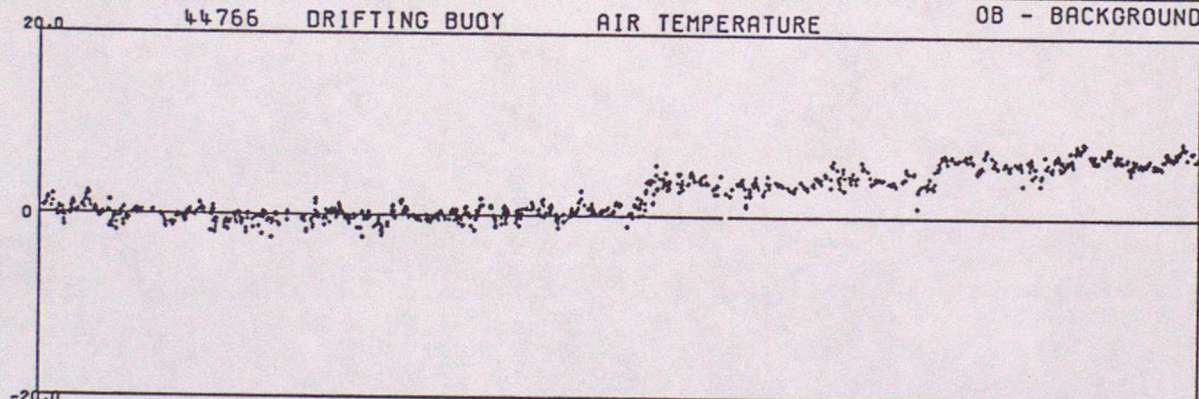
44765 DRIFTING BUOY AIR TEMPERATURE

OB - BACKGROUND



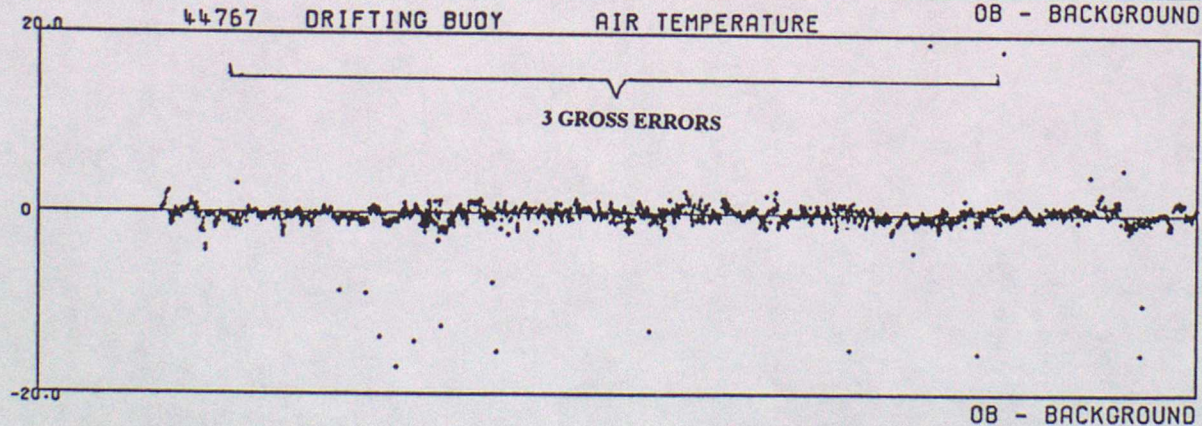
44766 DRIFTING BUOY AIR TEMPERATURE

OB - BACKGROUND



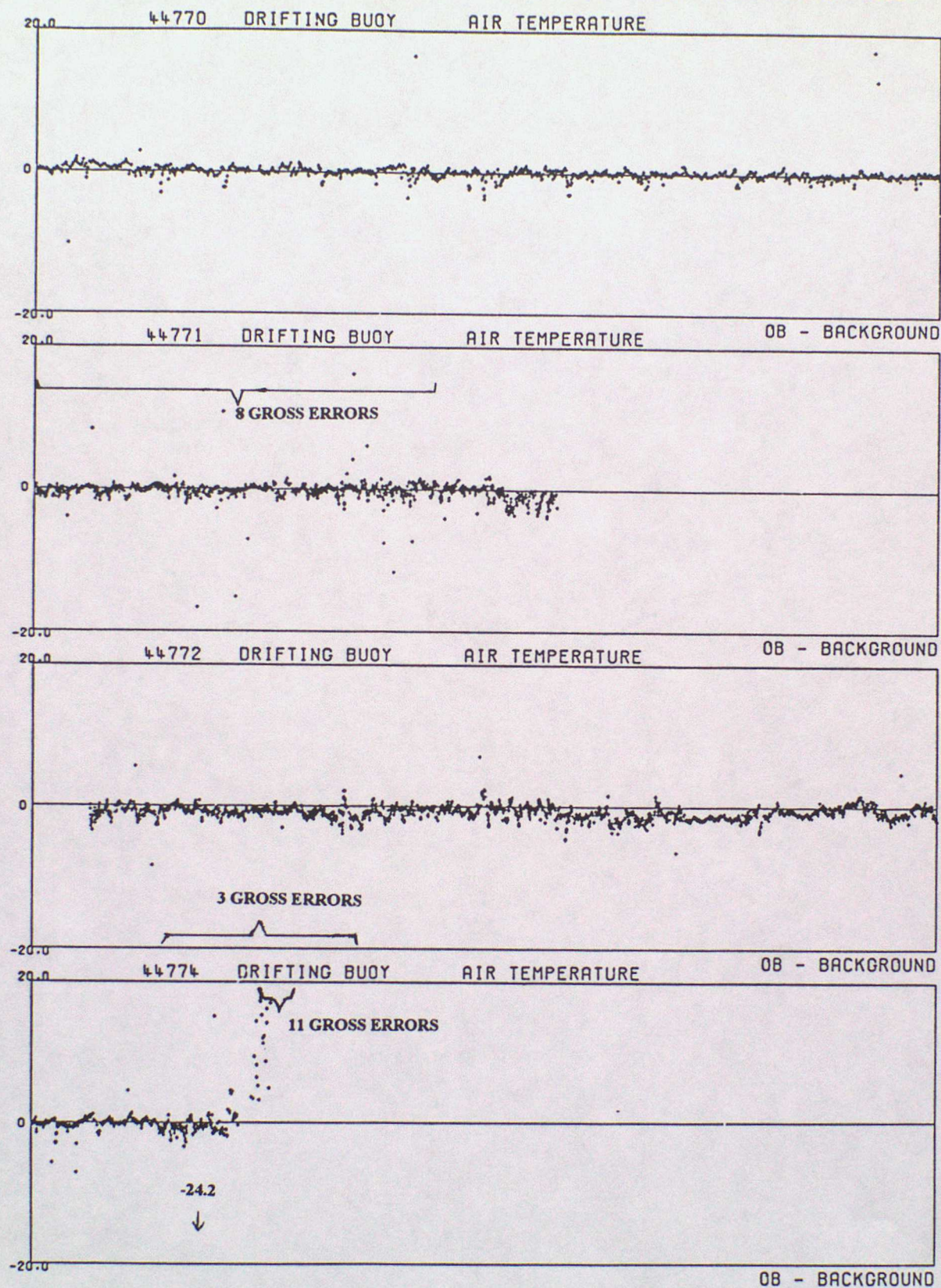
44767 DRIFTING BUOY AIR TEMPERATURE

OB - BACKGROUND

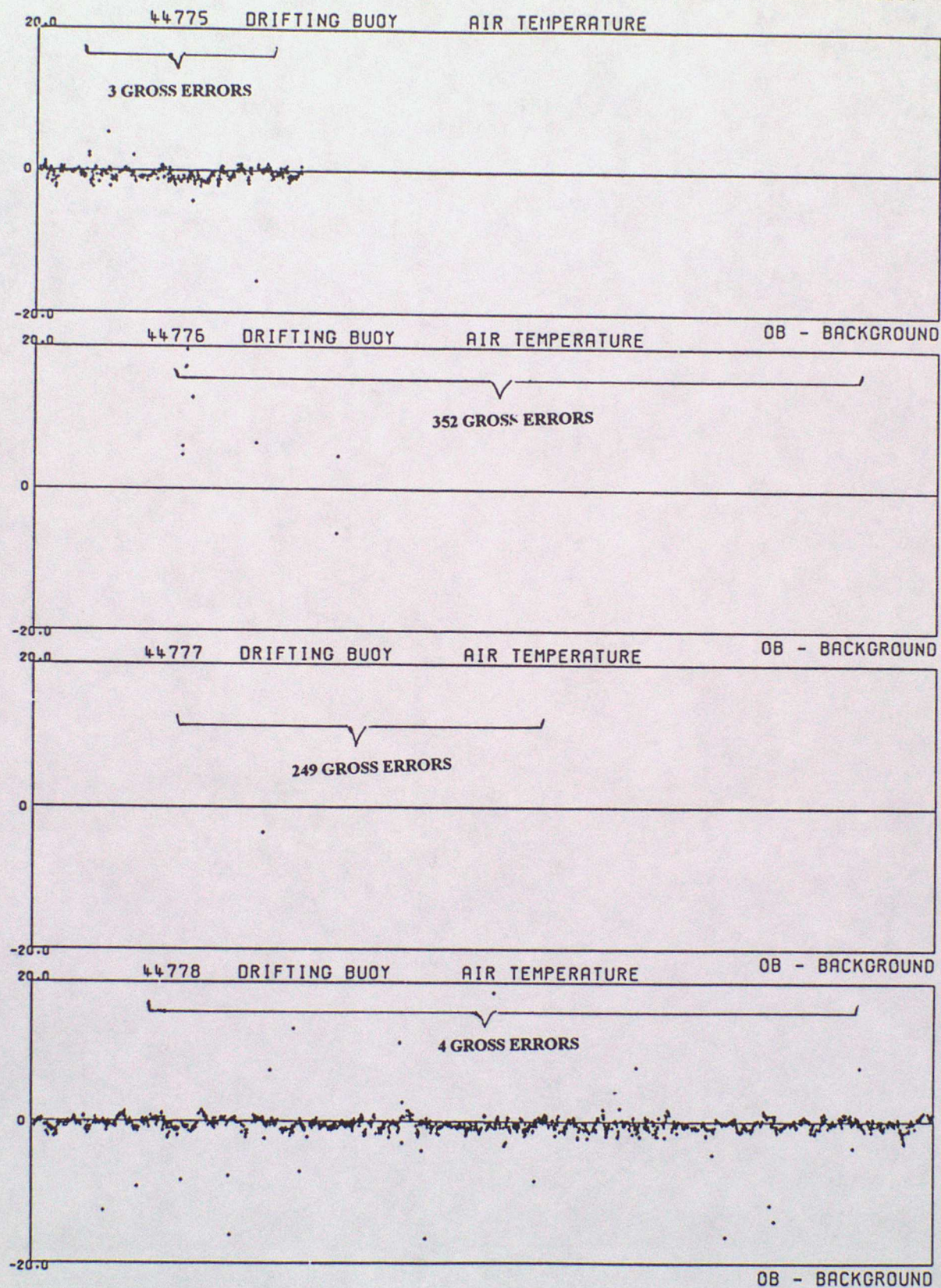


OB - BACKGROUND

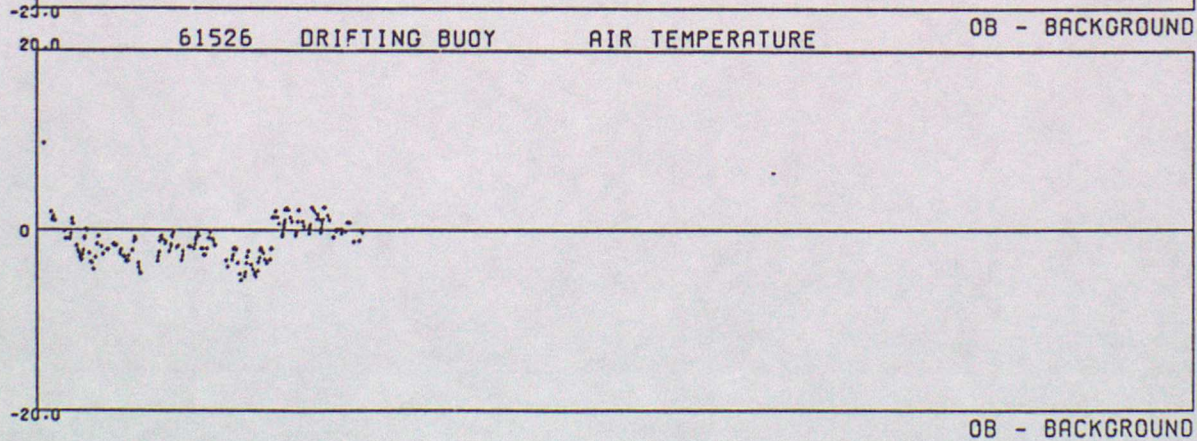
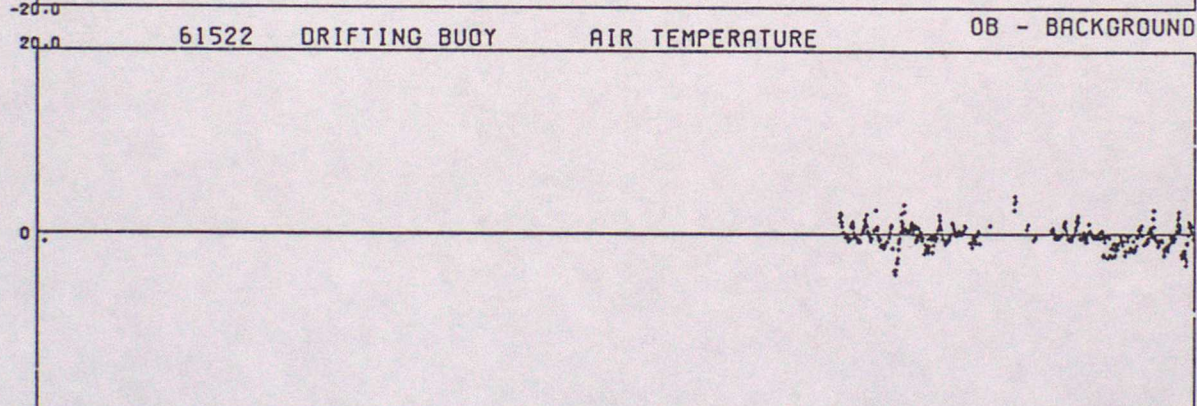
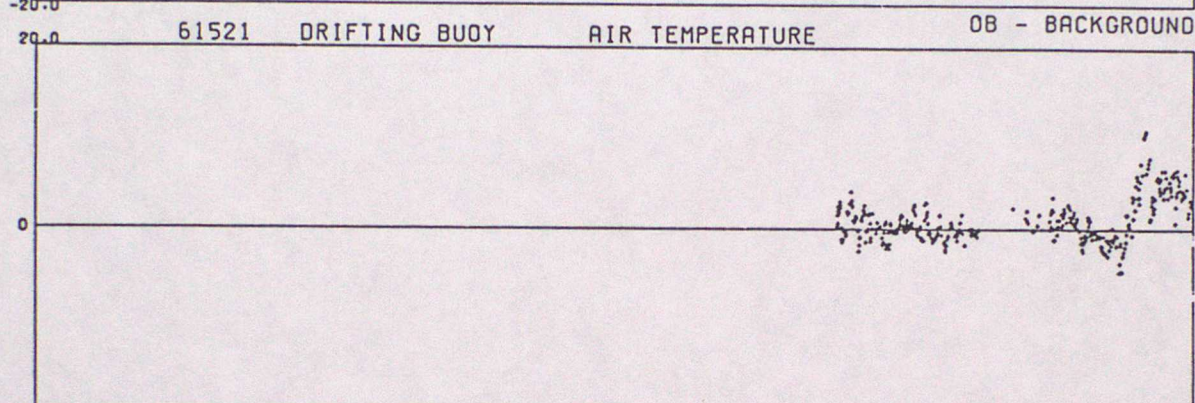
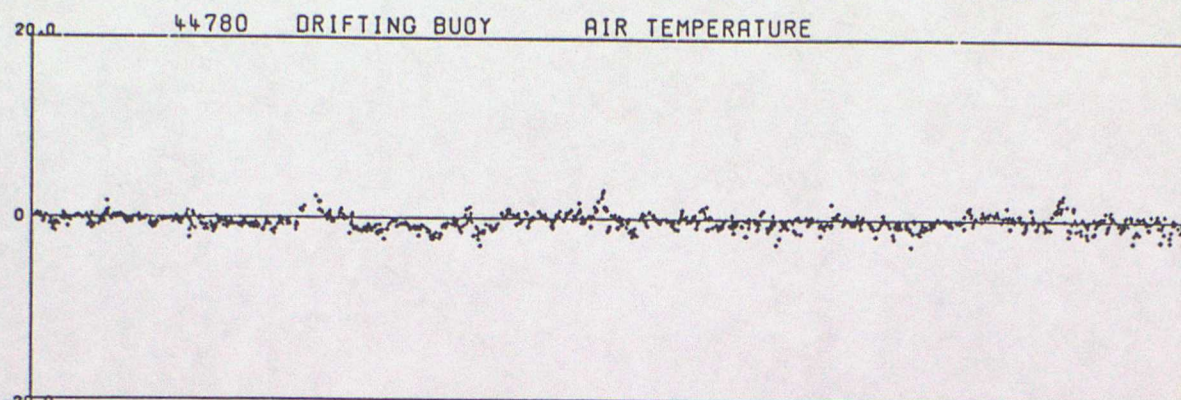
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



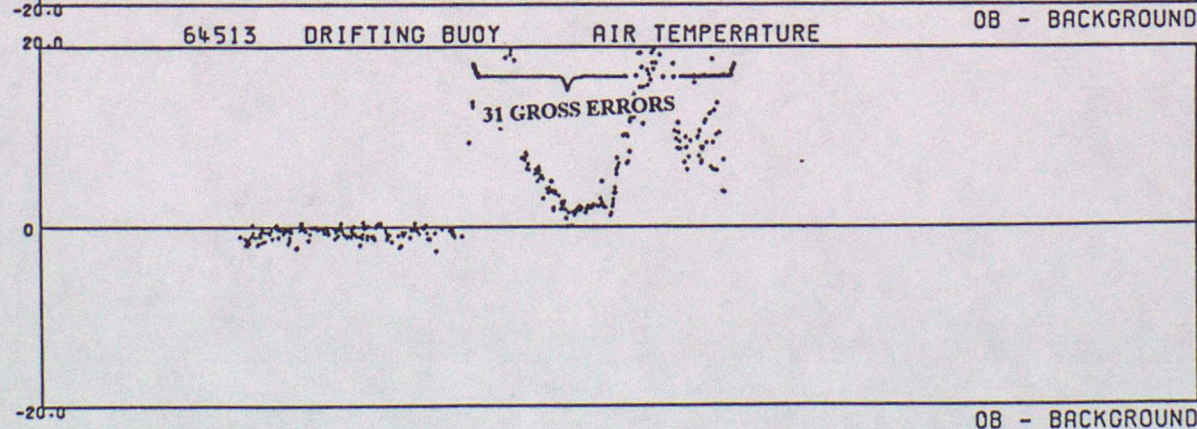
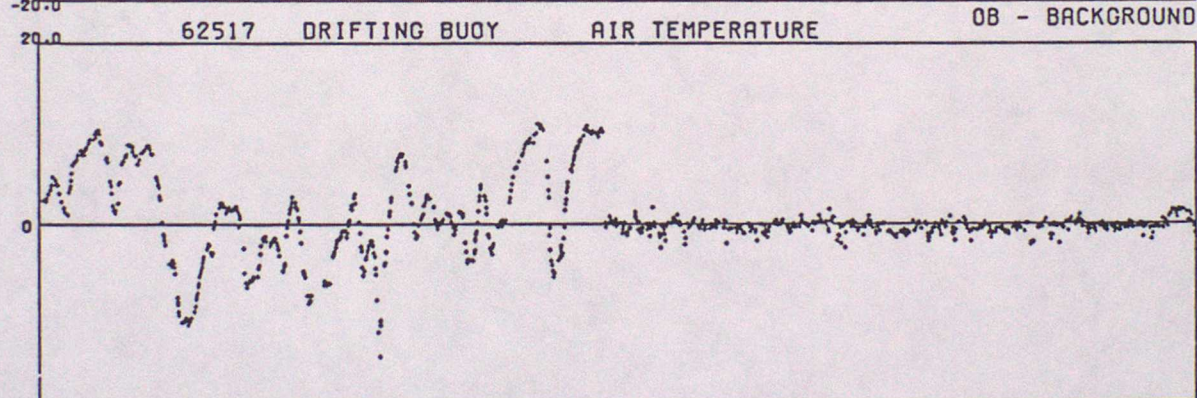
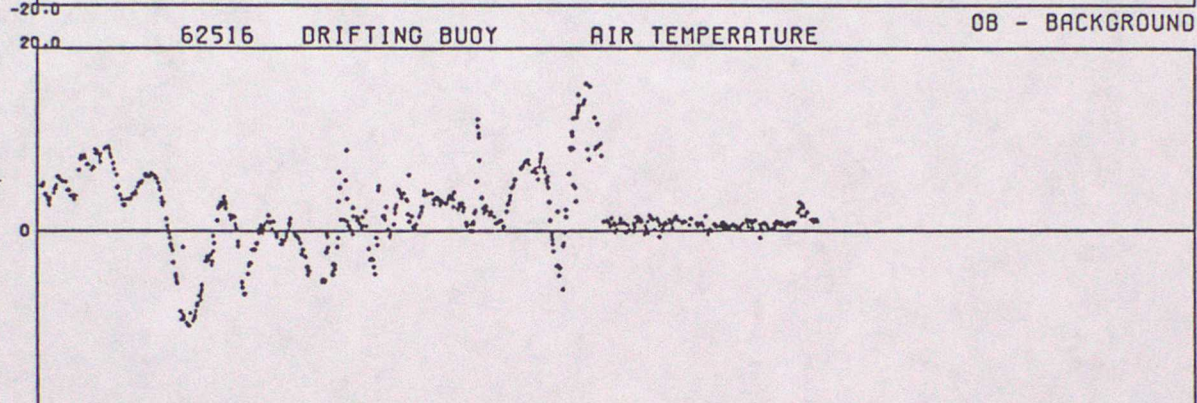
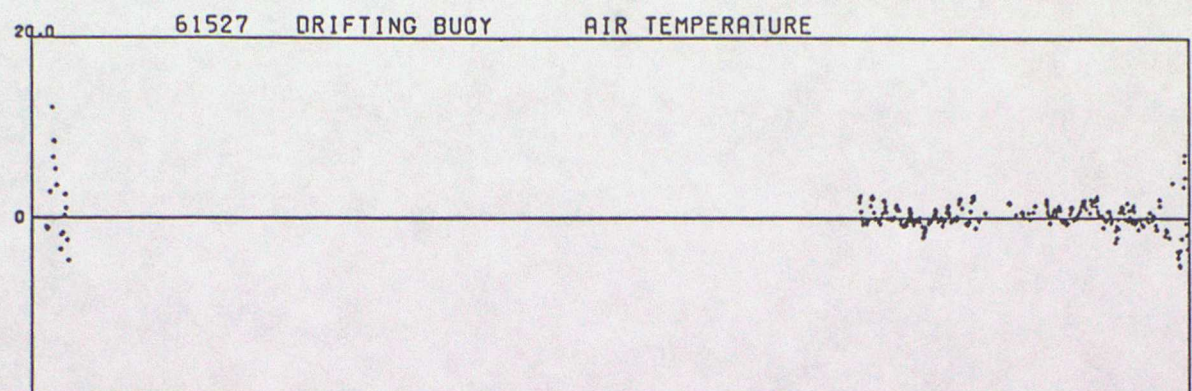
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



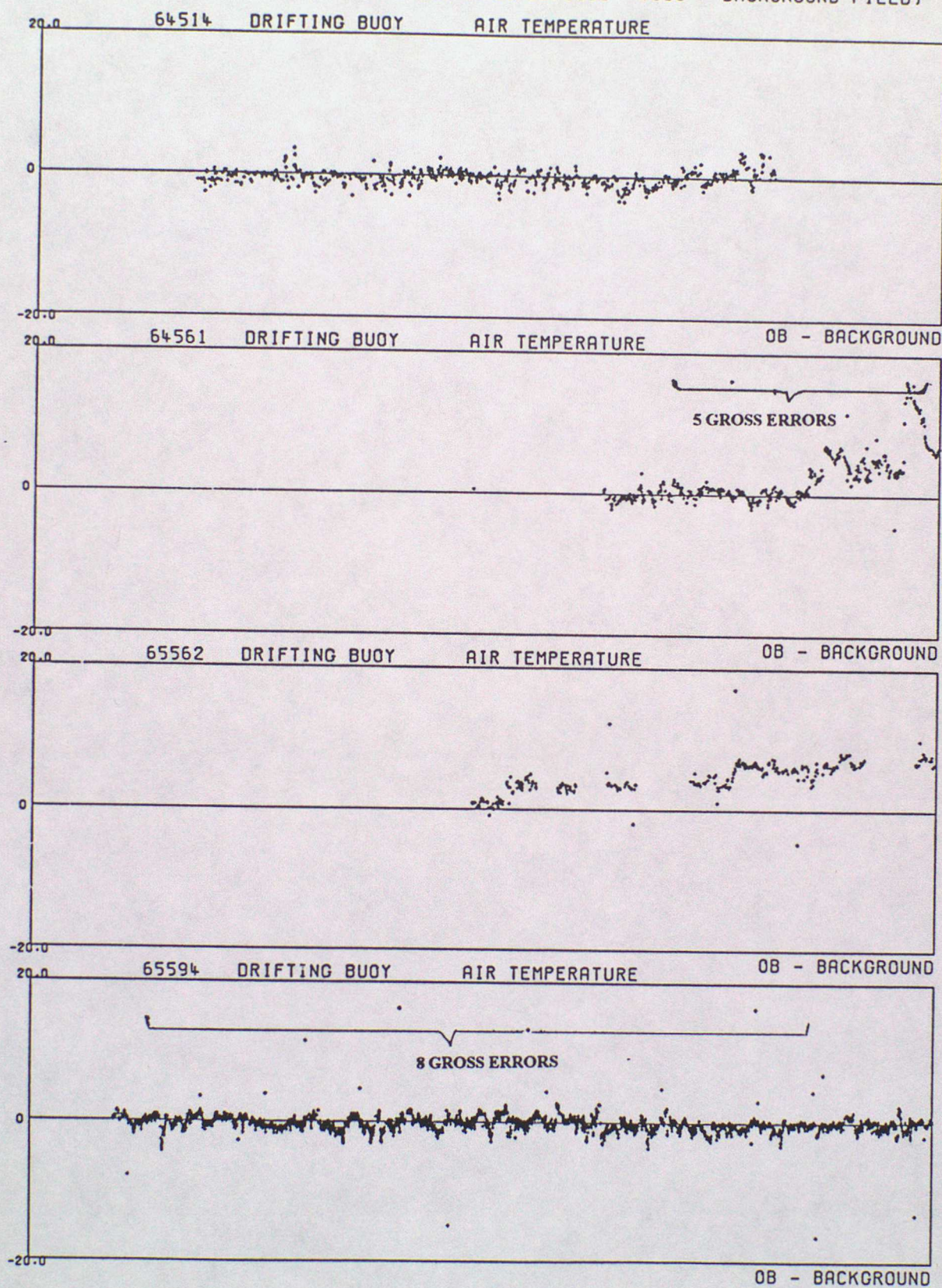
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



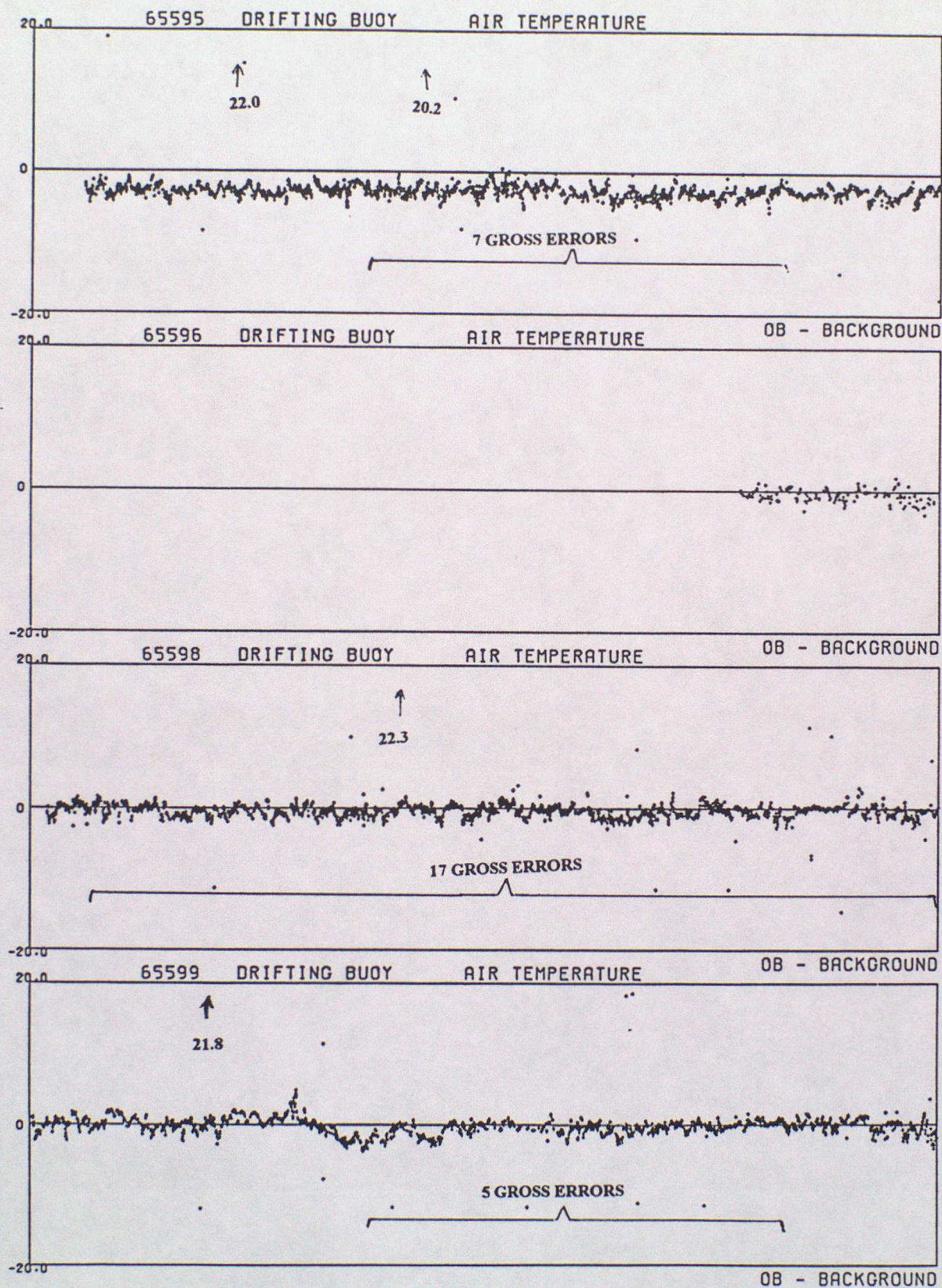
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

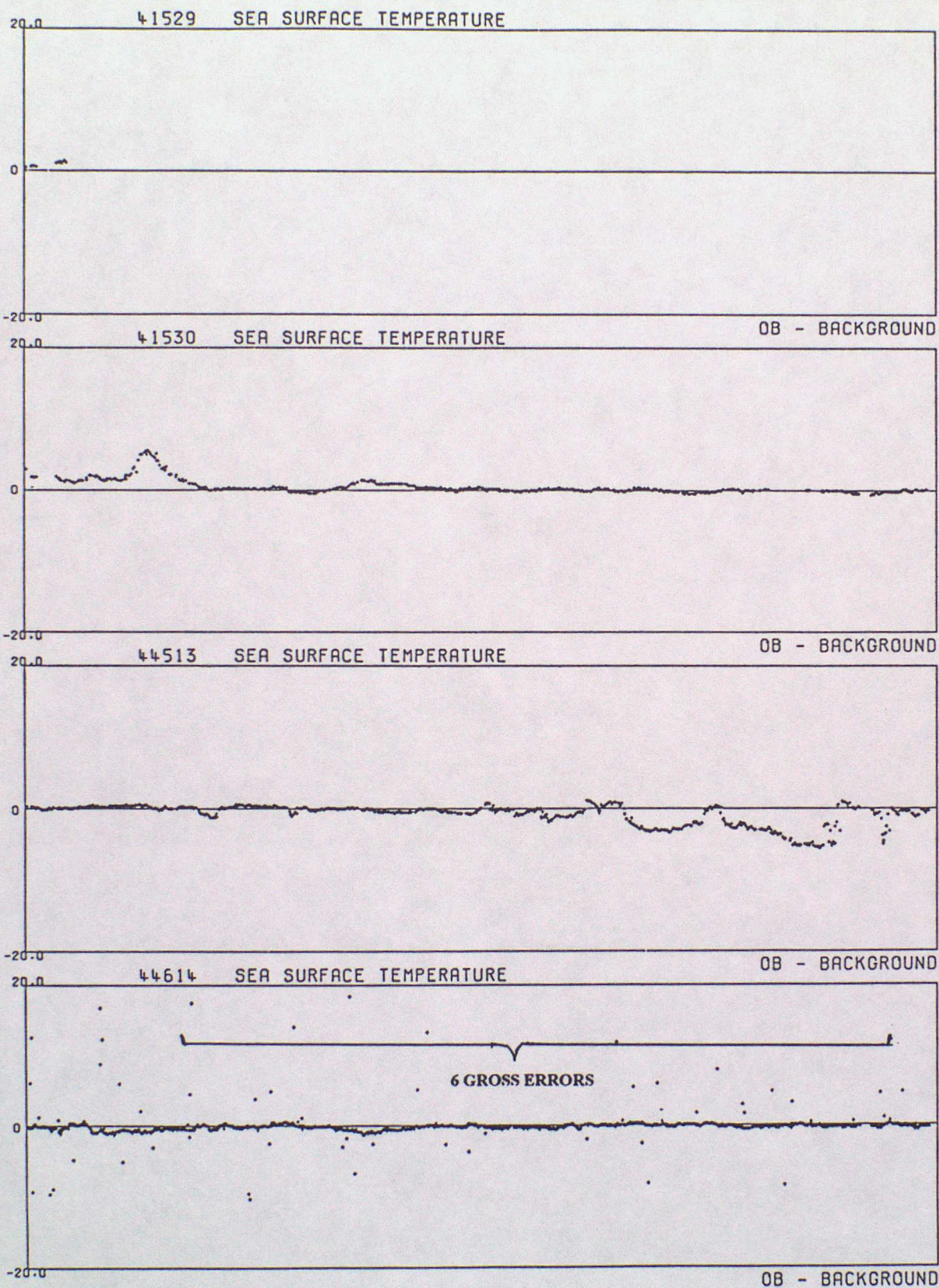


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

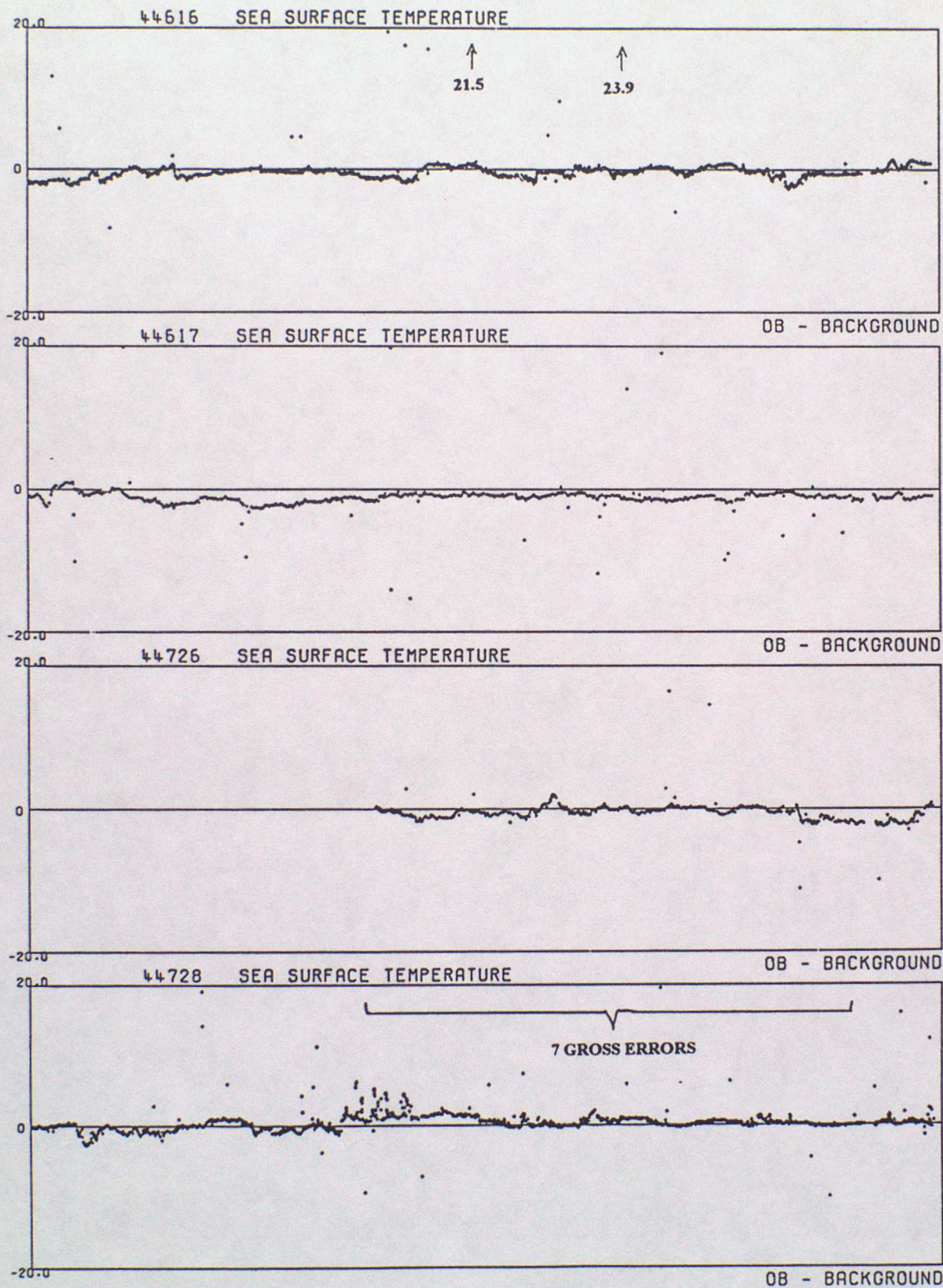


ANNEX D - TIME SERIES PLOTS OF SEA SURFACE TEMPERATURE

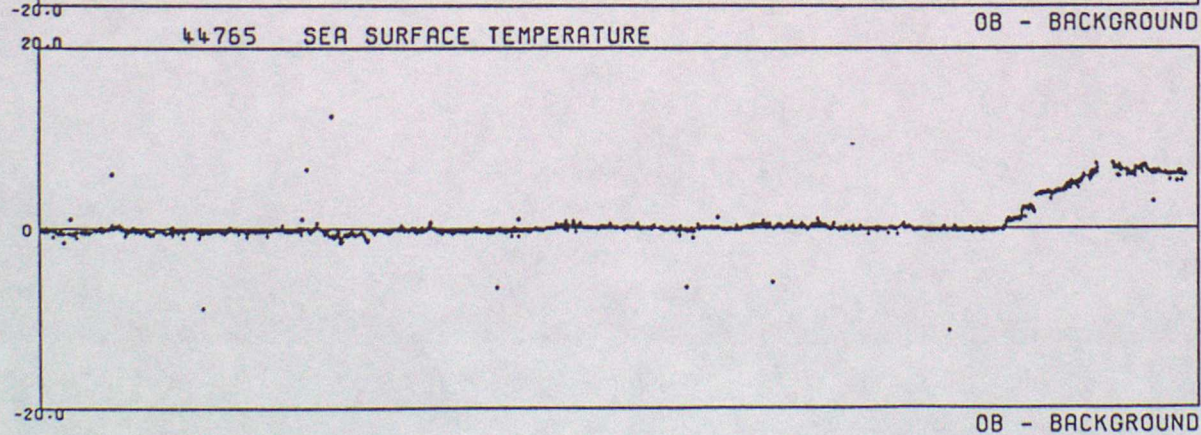
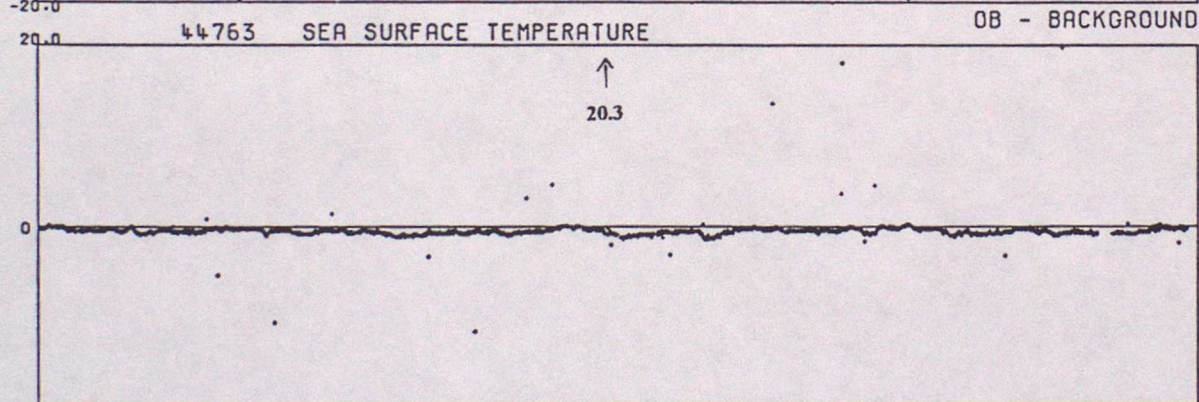
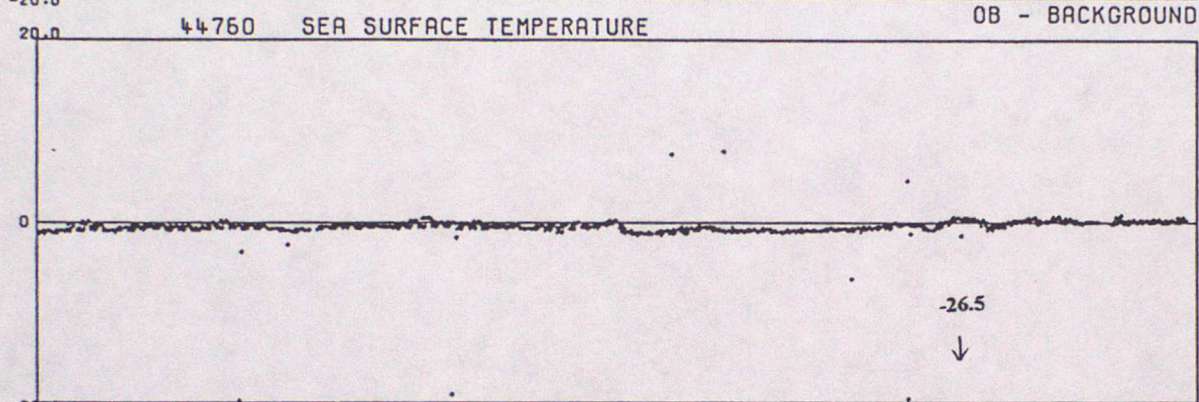
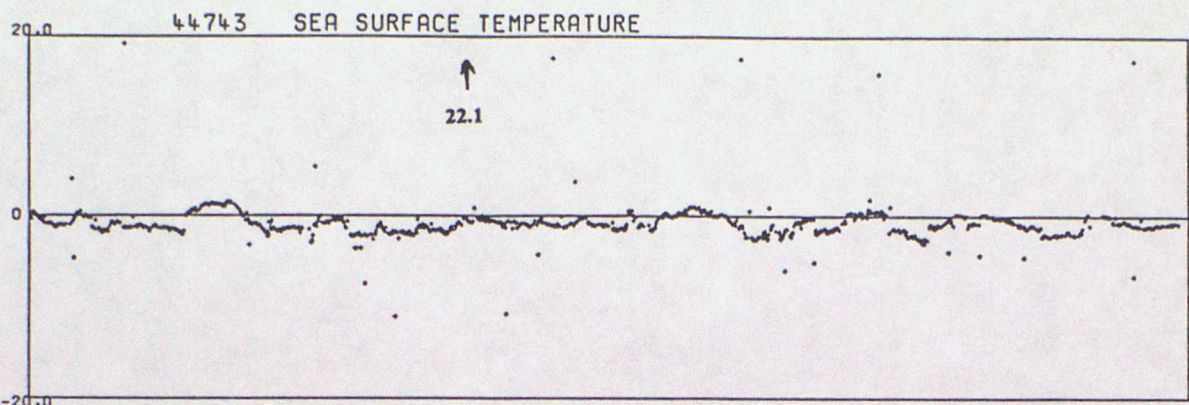
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



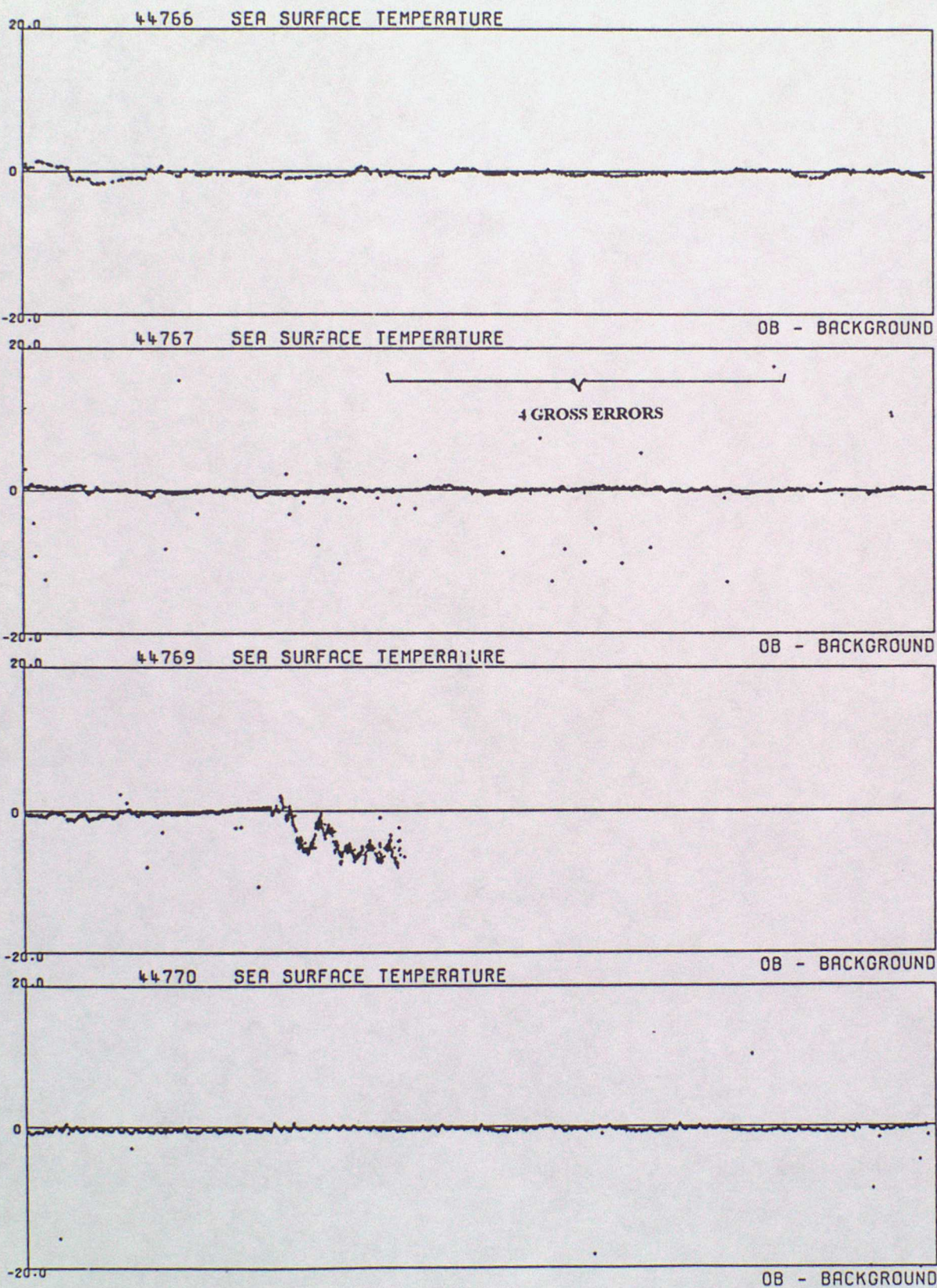
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



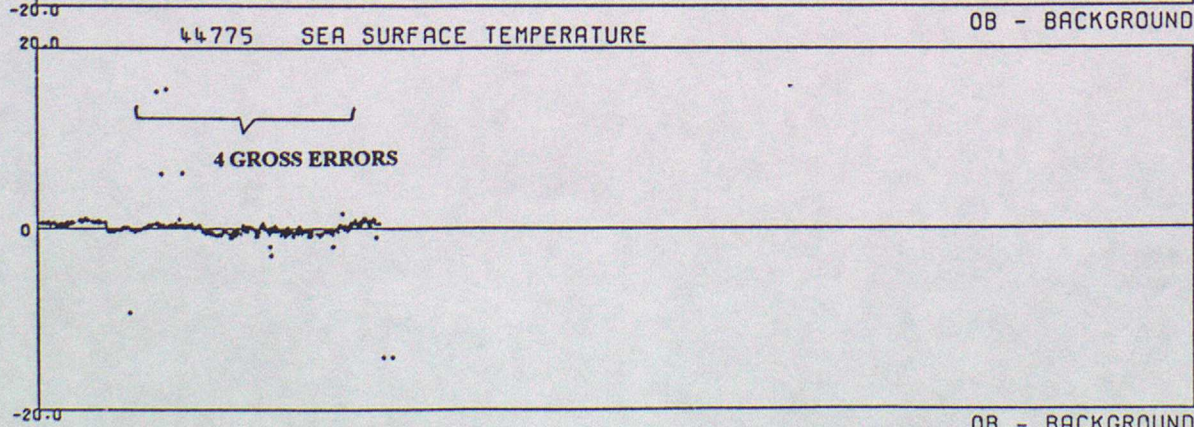
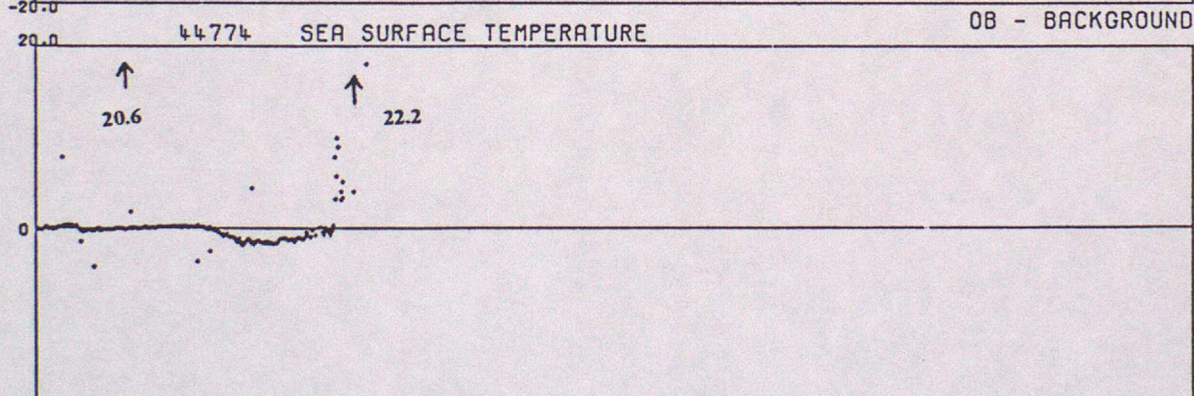
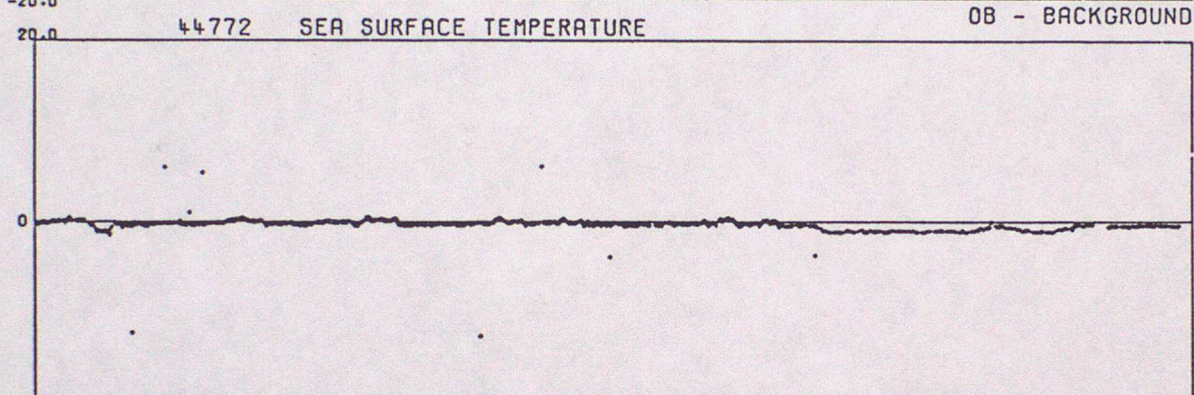
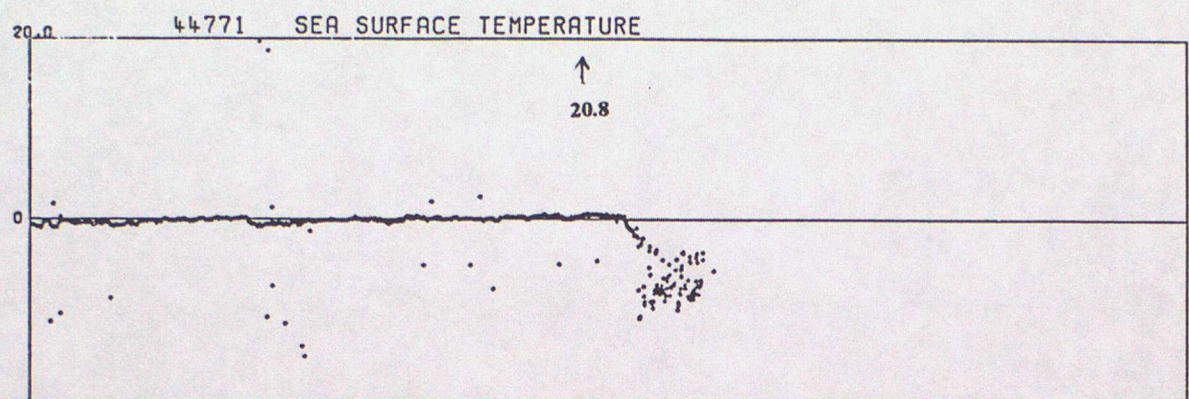
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

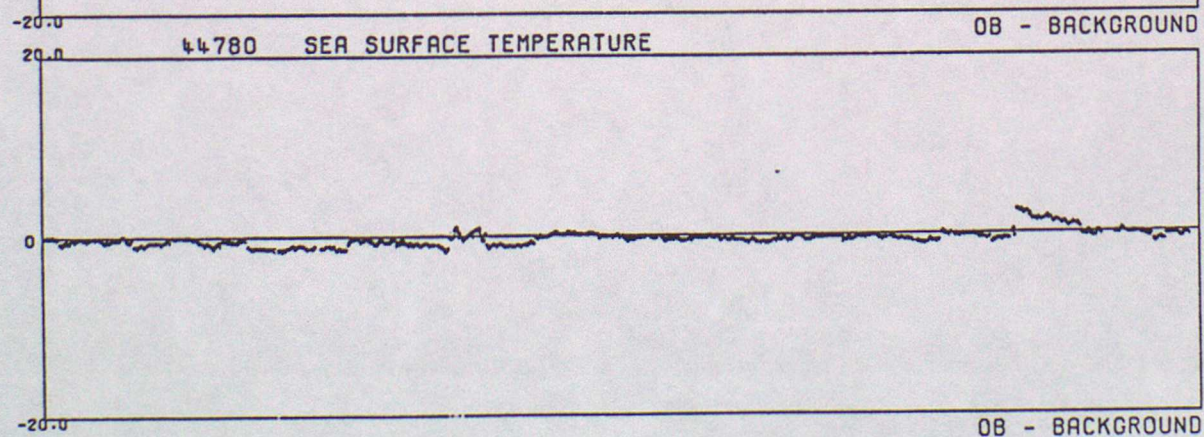
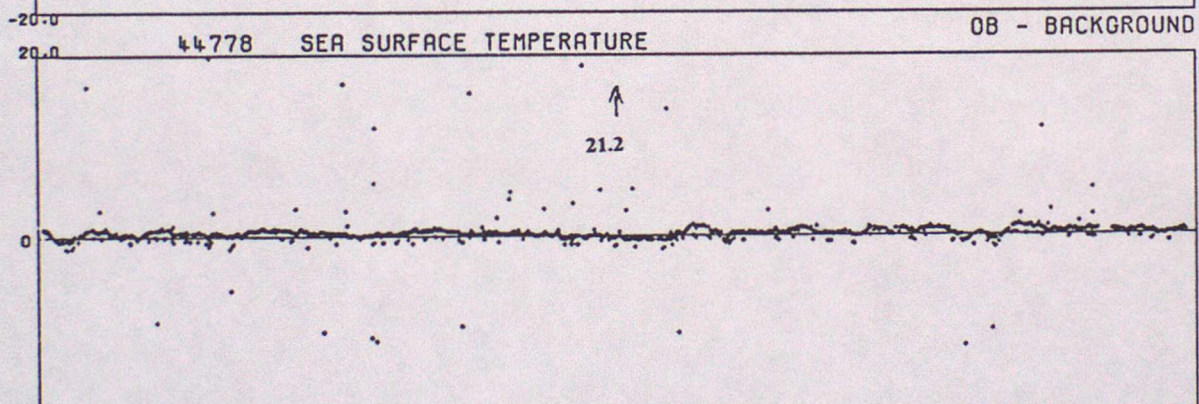
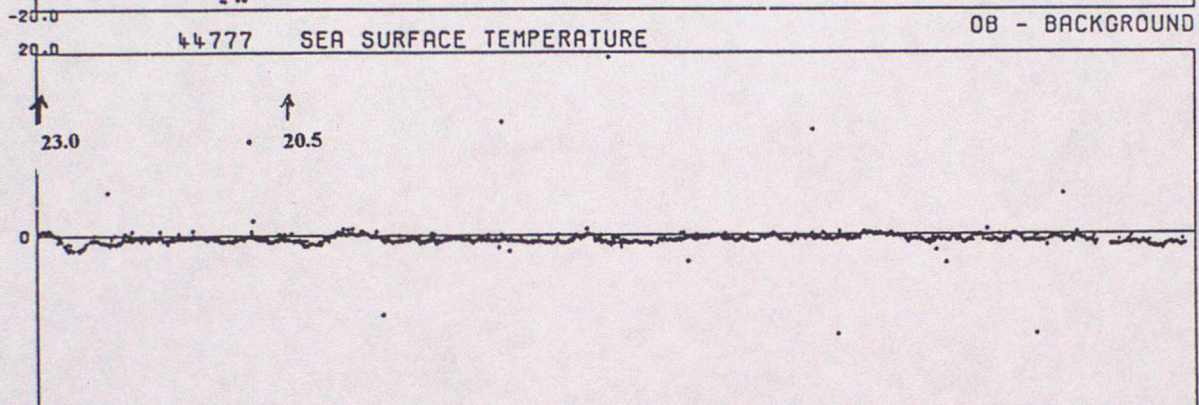
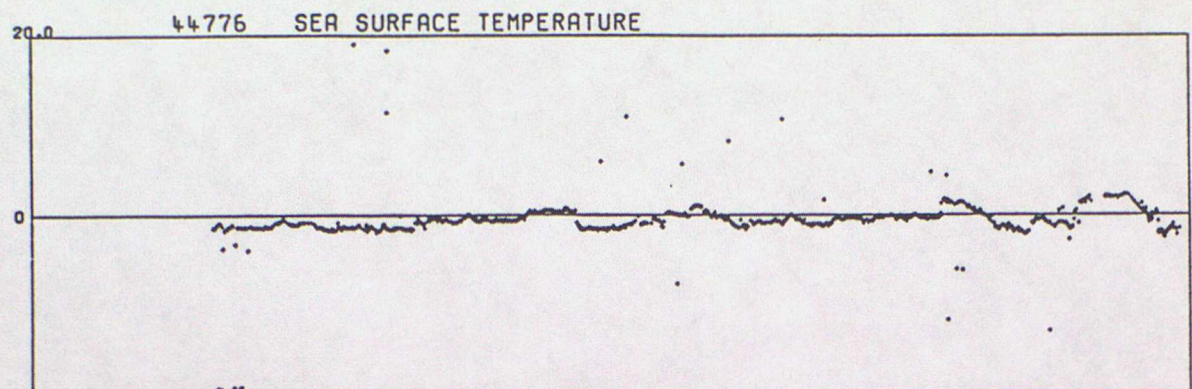


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

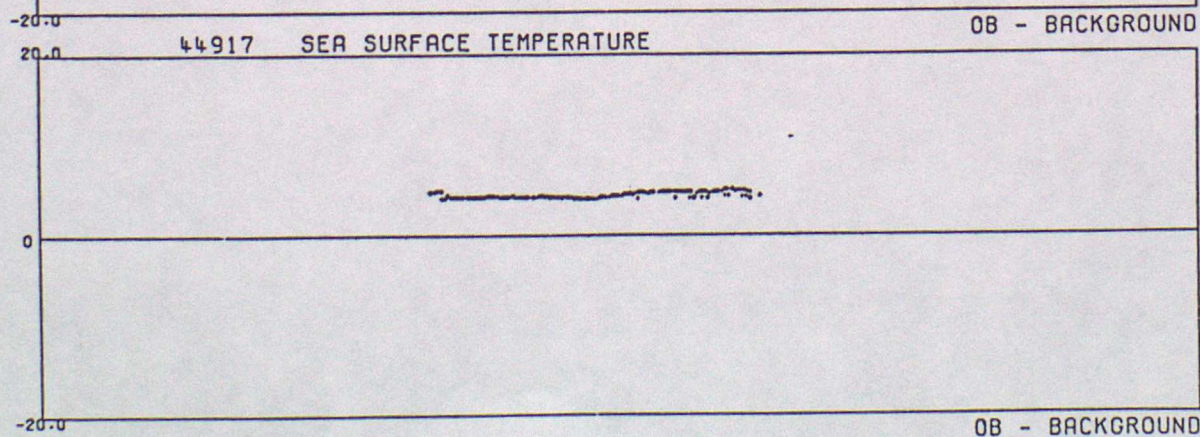
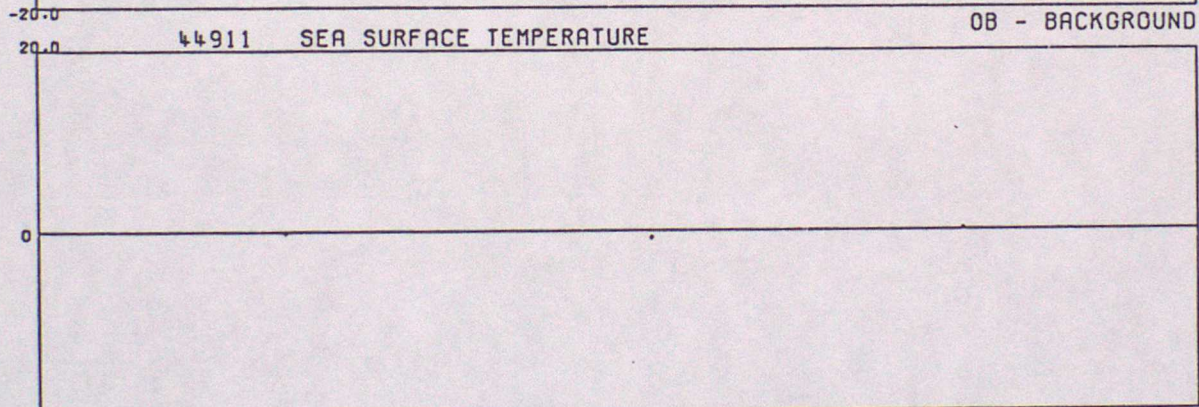
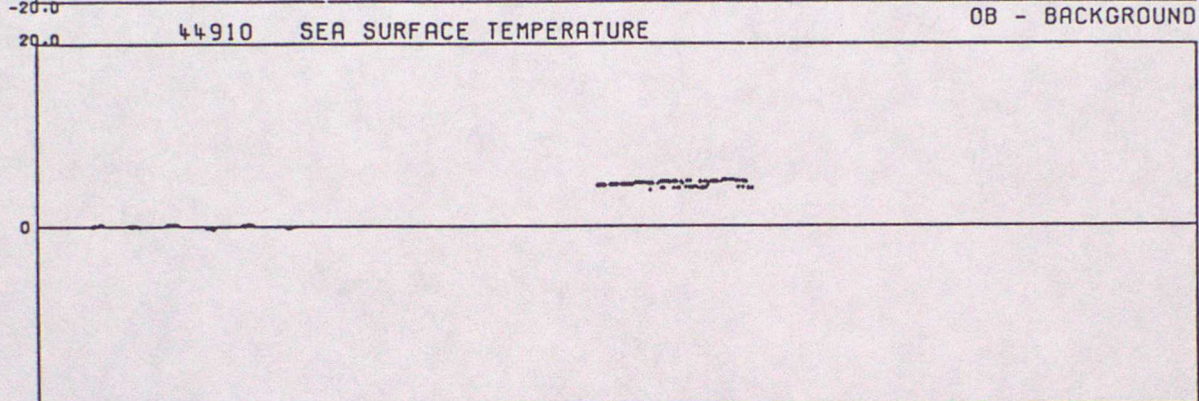
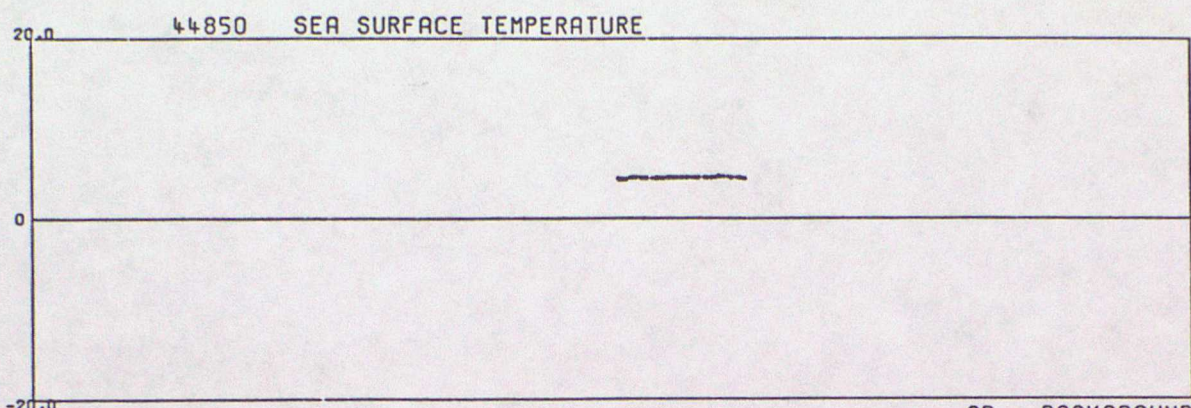


OB - BACKGROUND

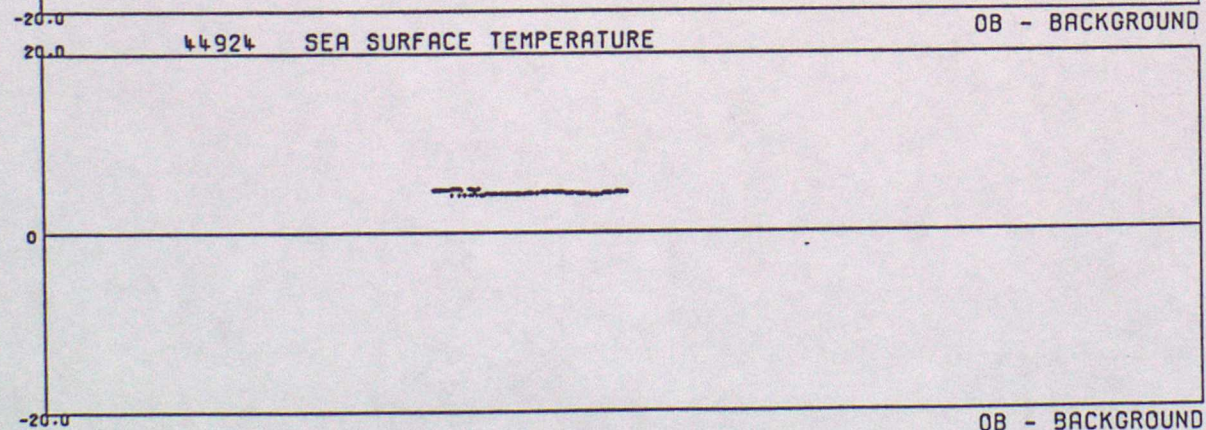
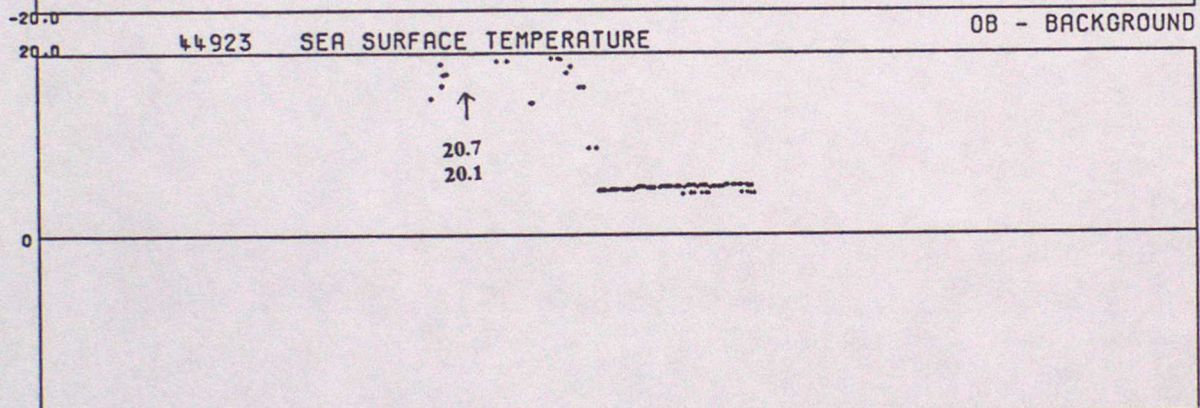
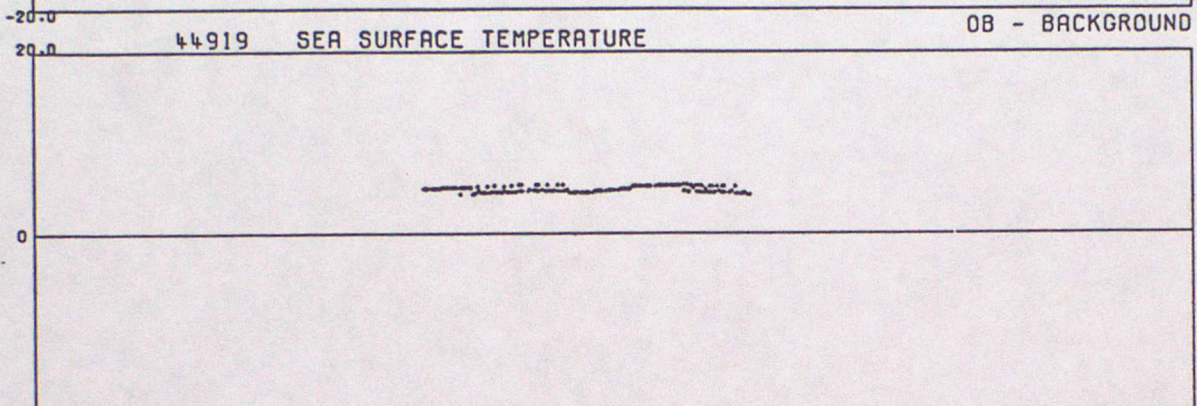
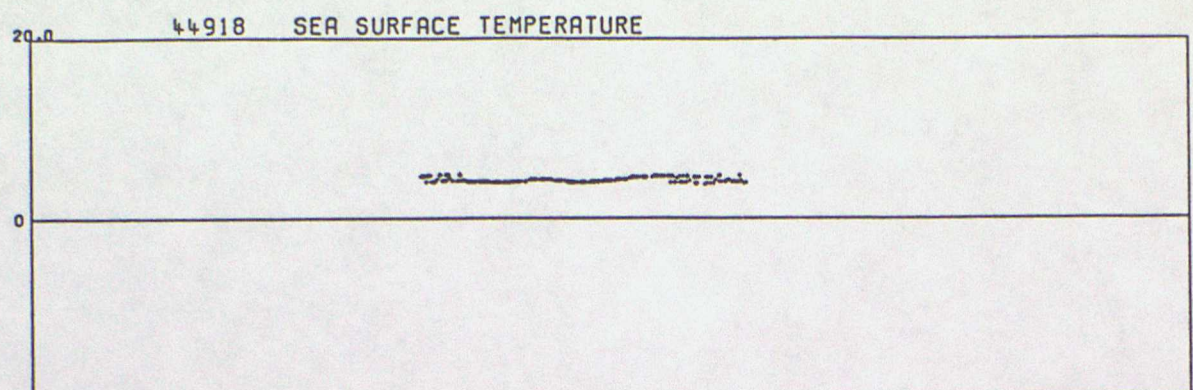
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



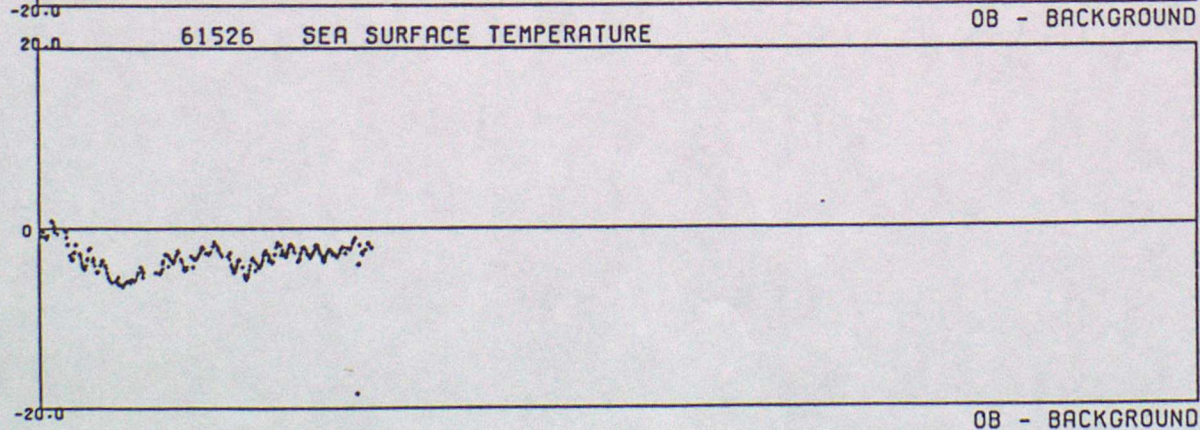
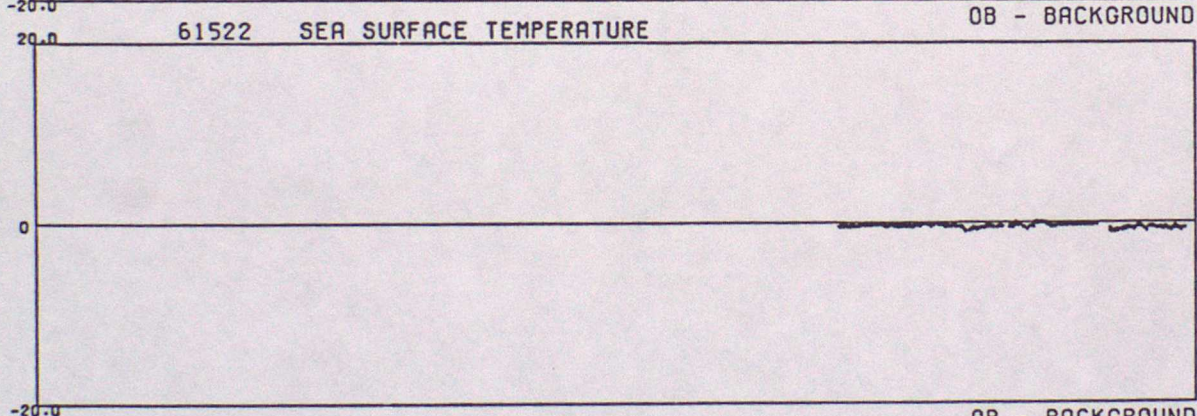
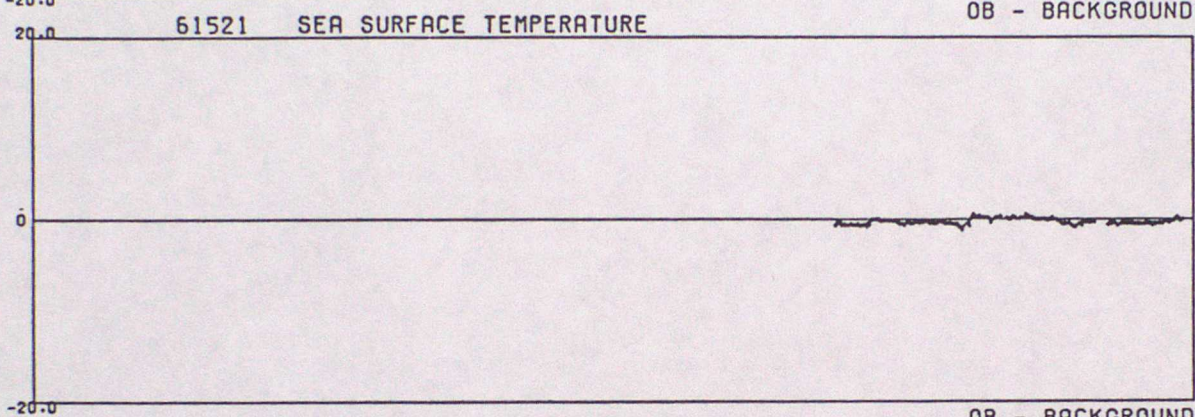
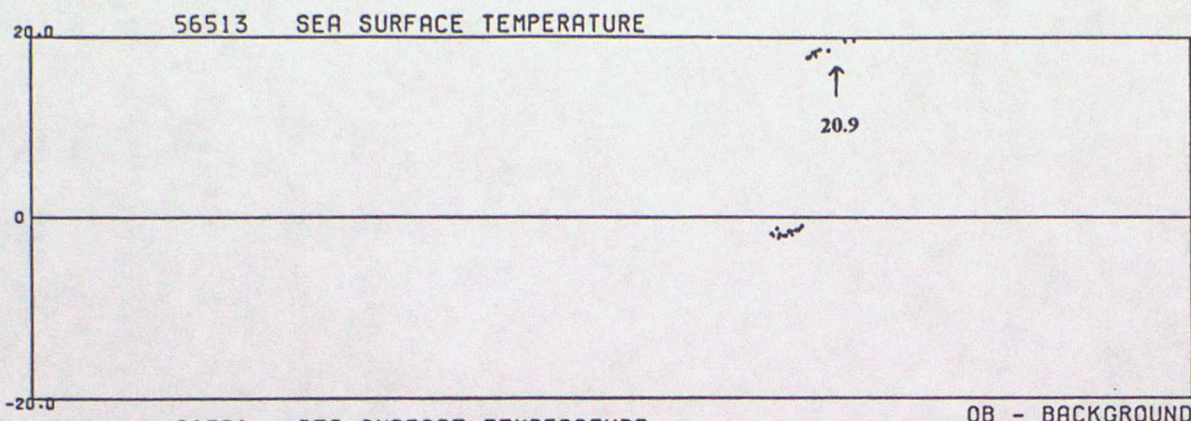
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



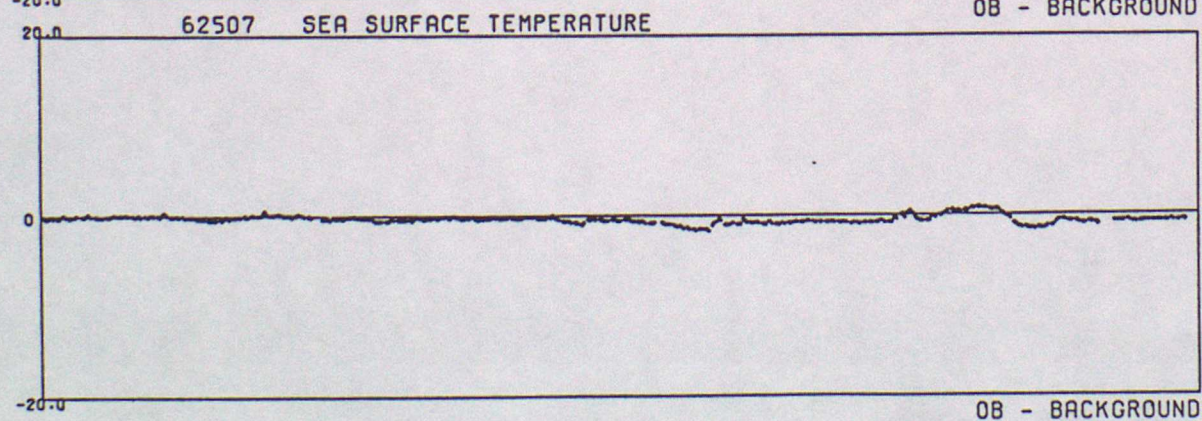
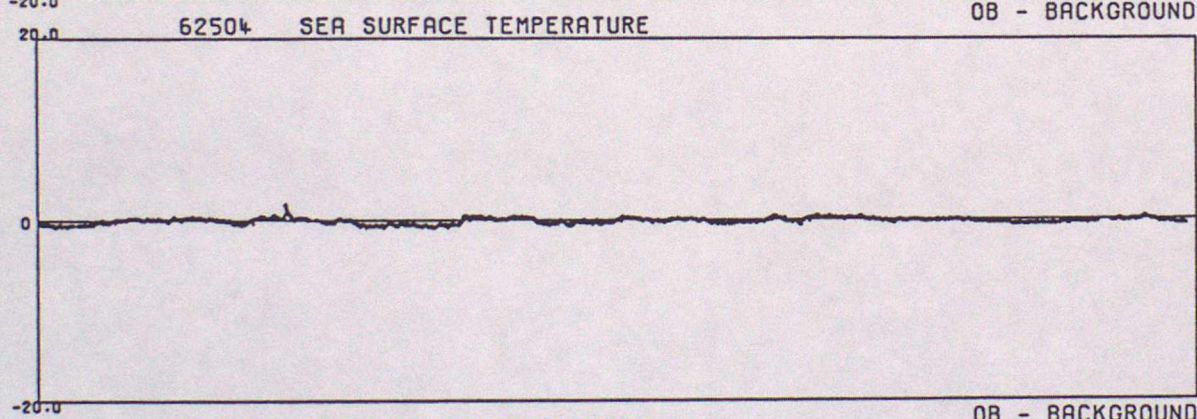
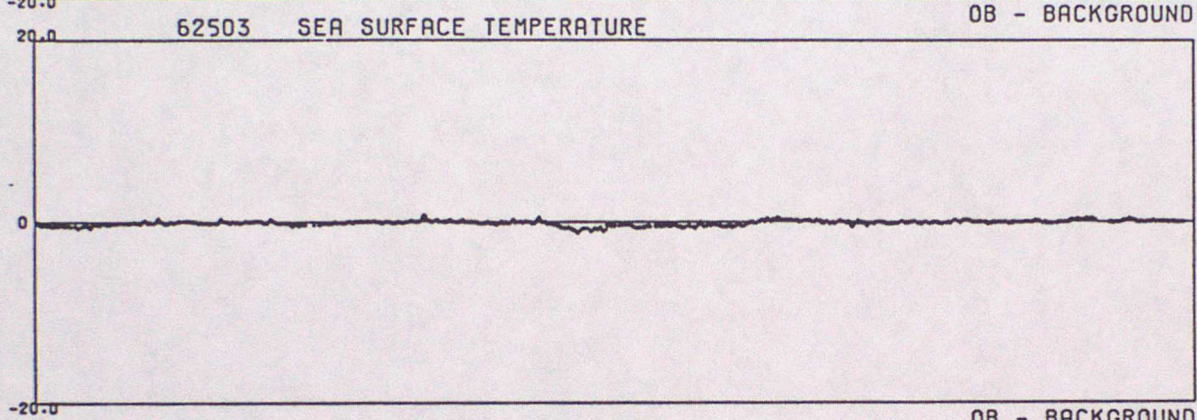
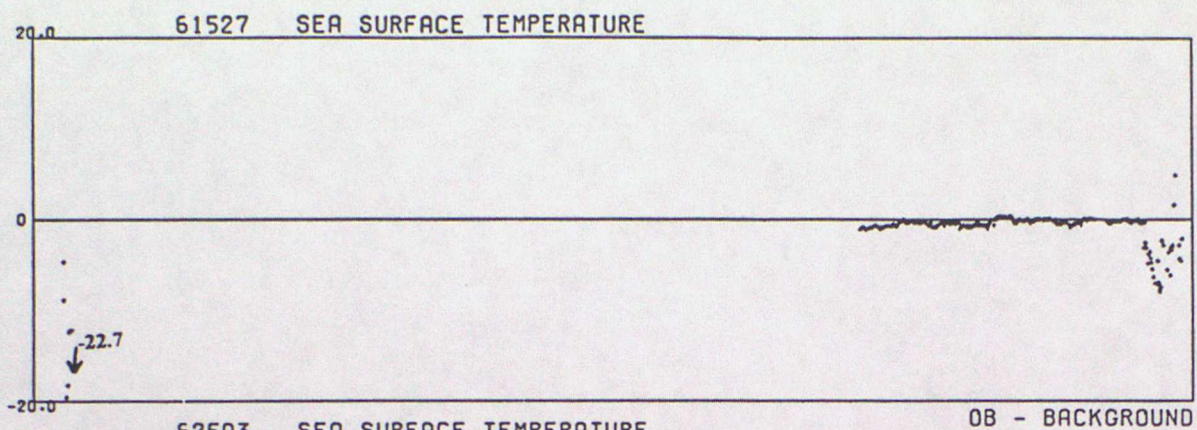
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



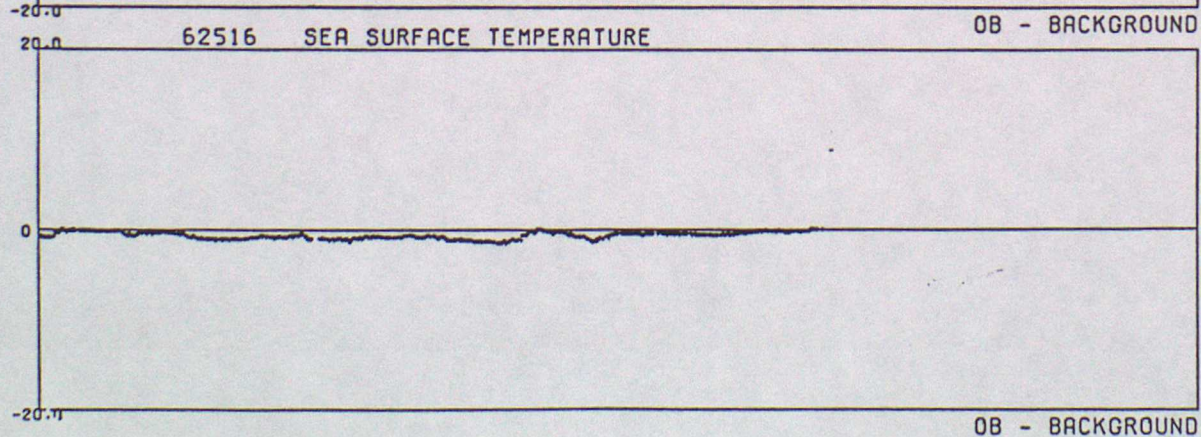
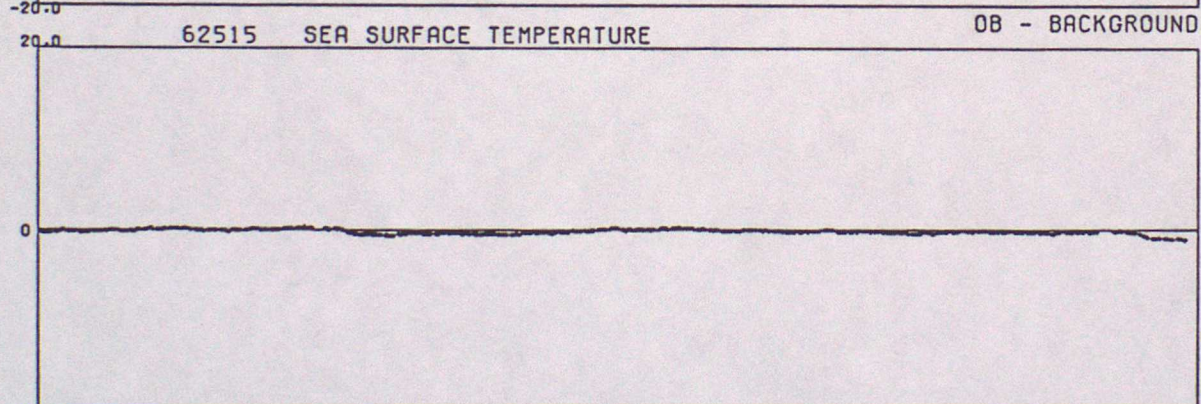
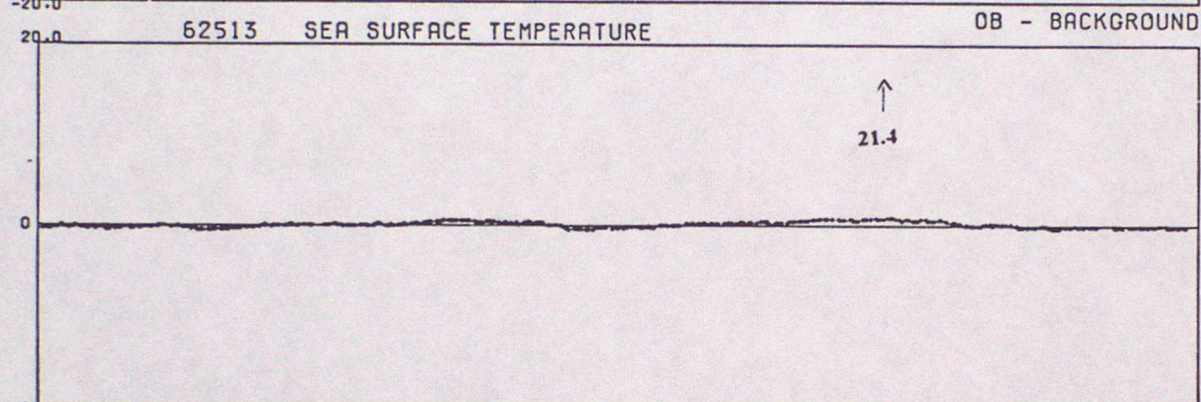
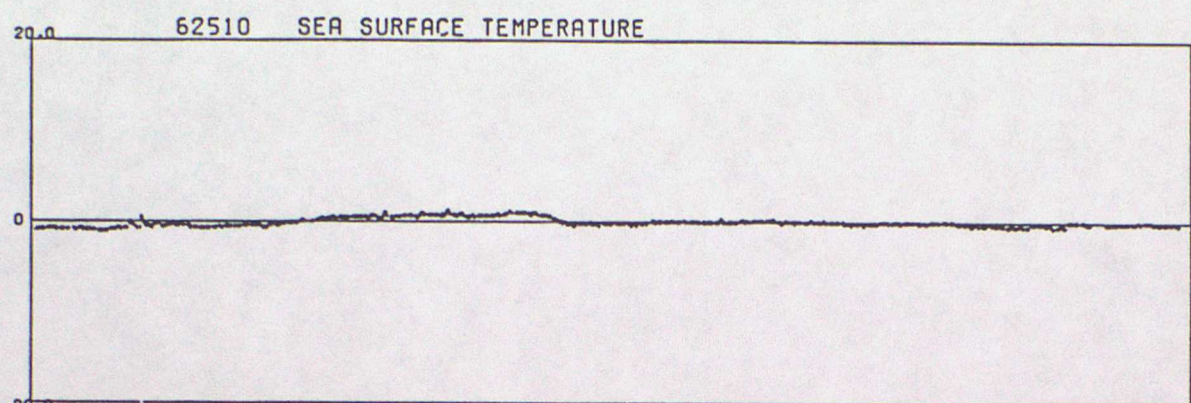
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



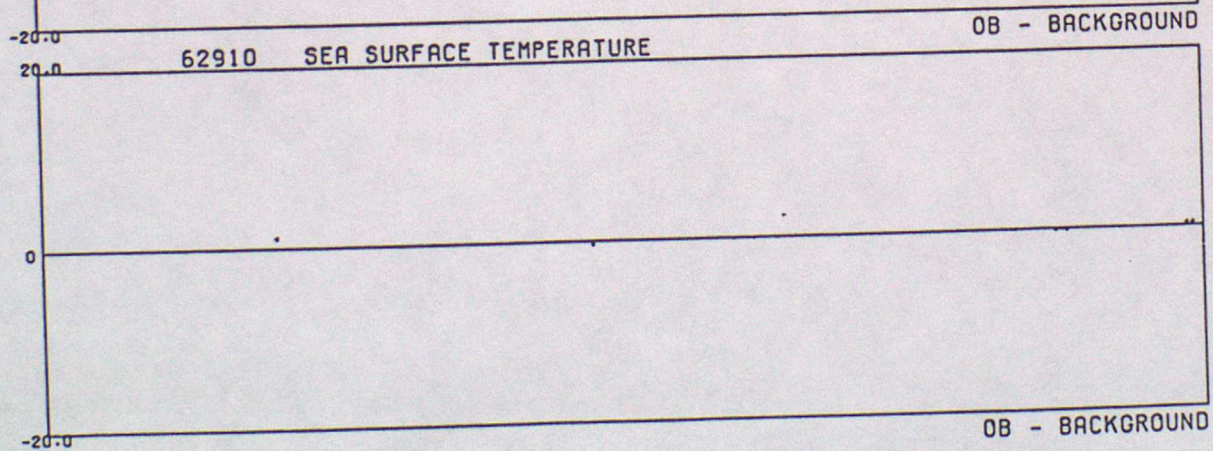
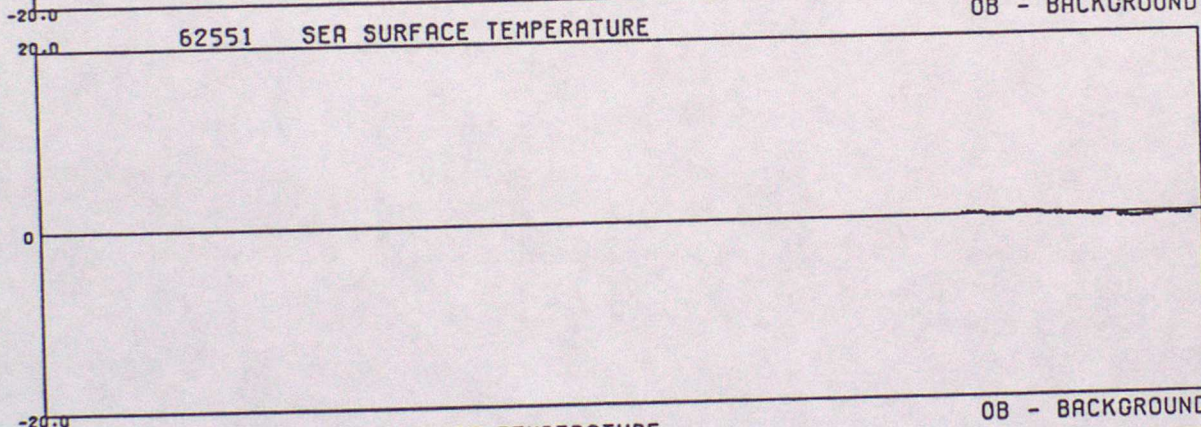
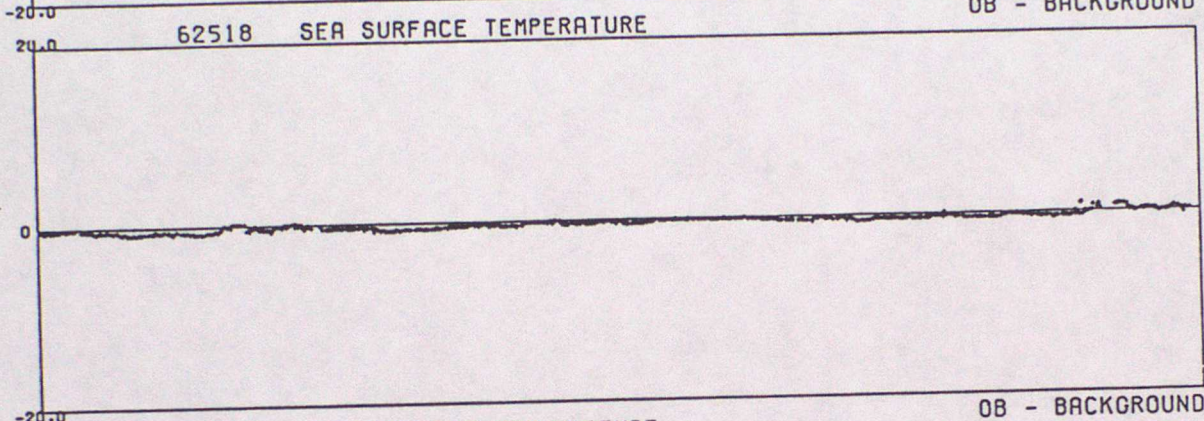
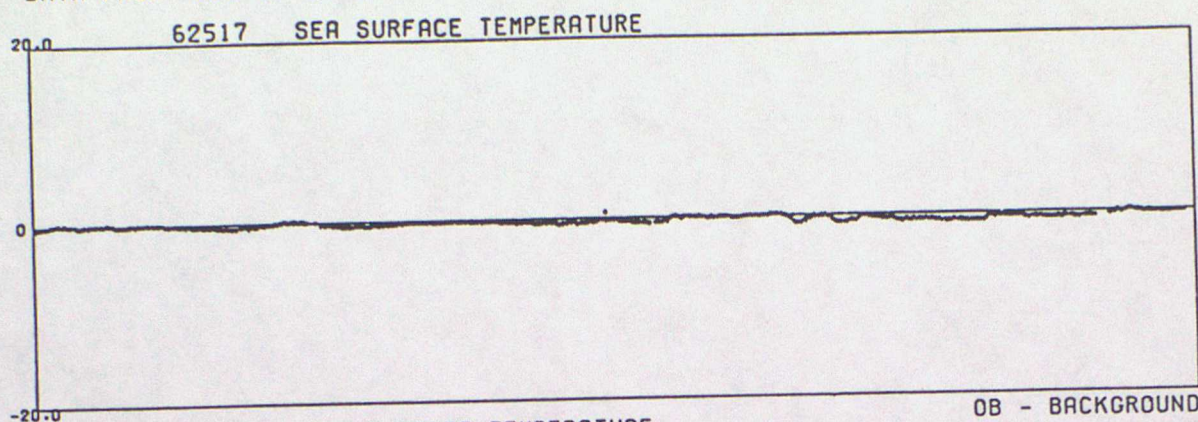
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



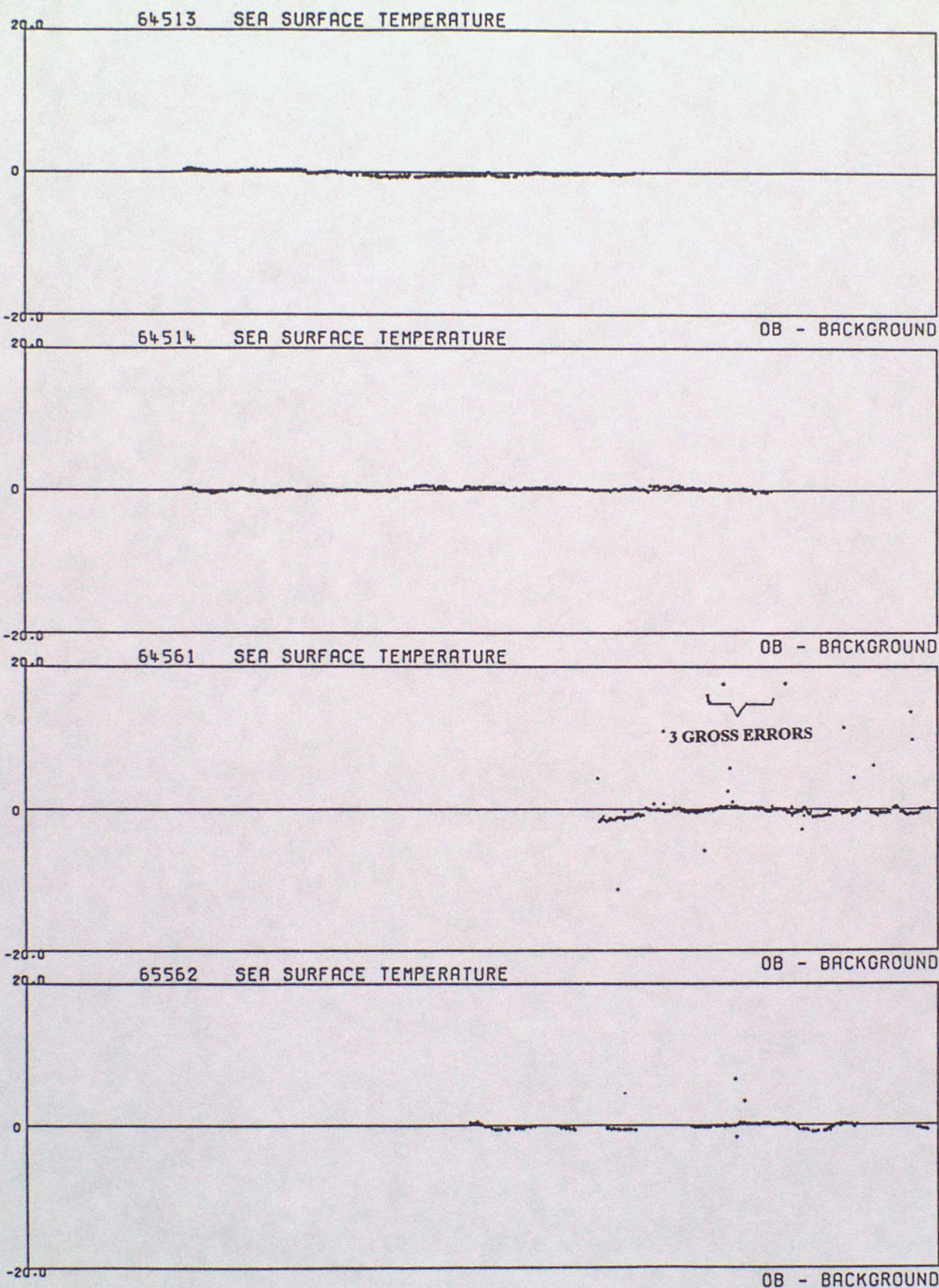
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



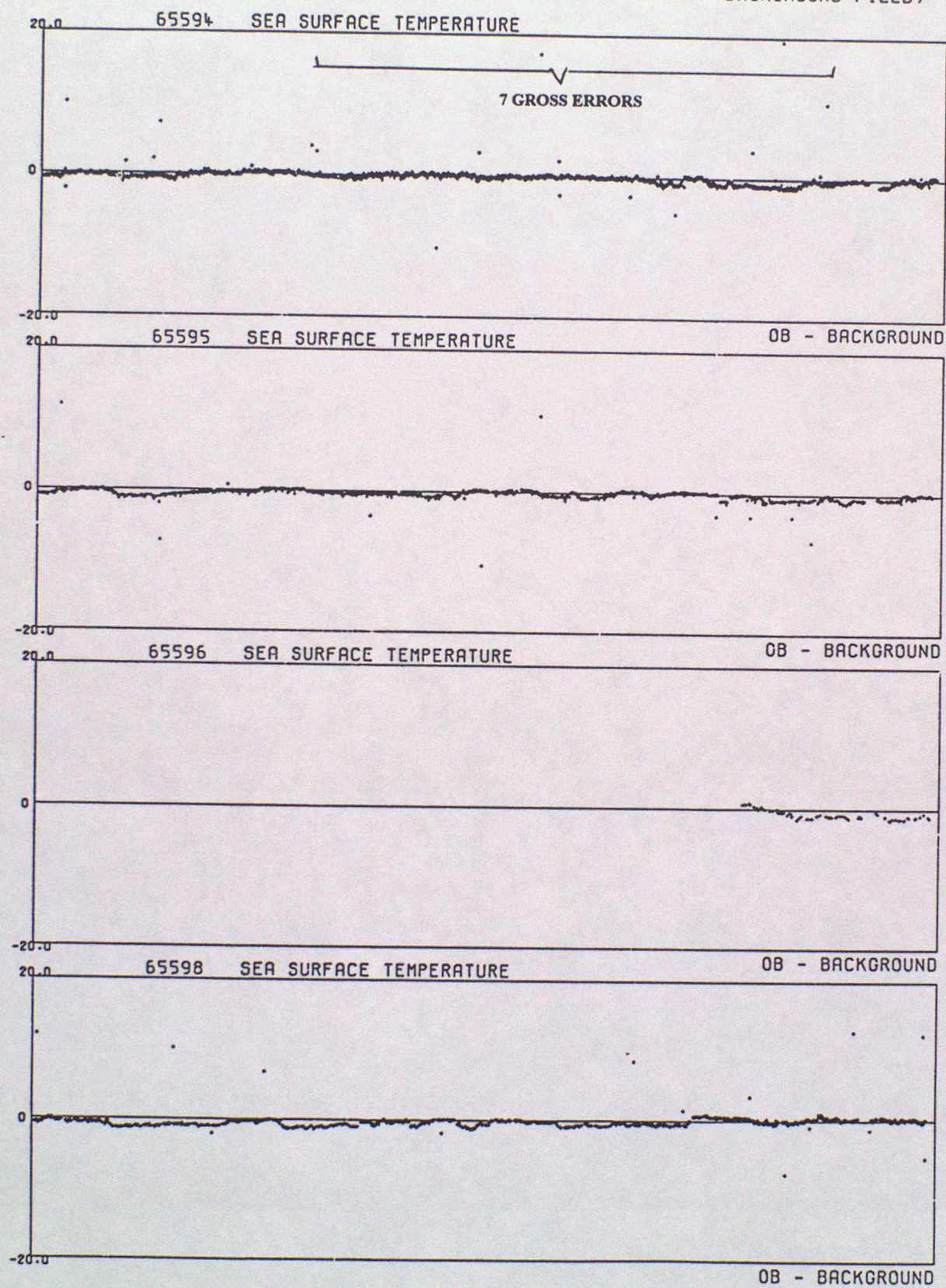
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)

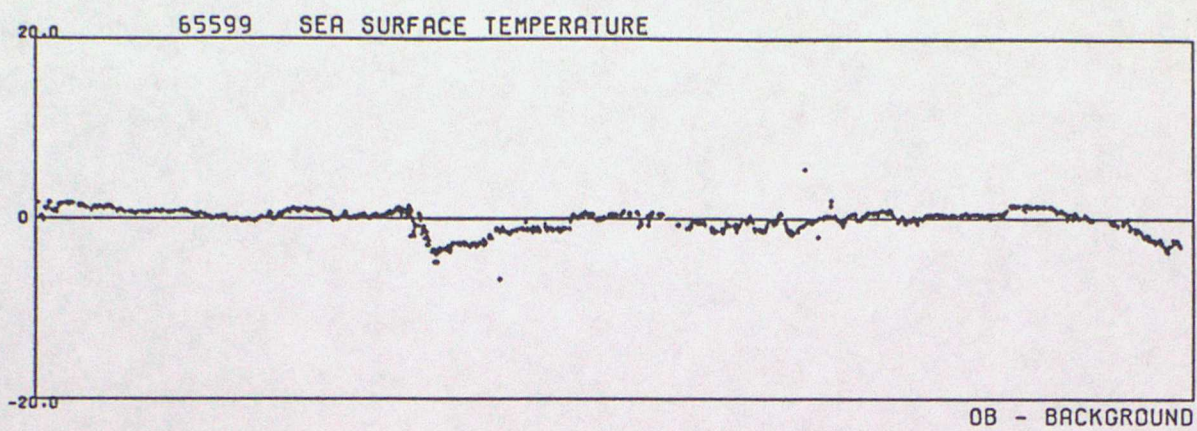


DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



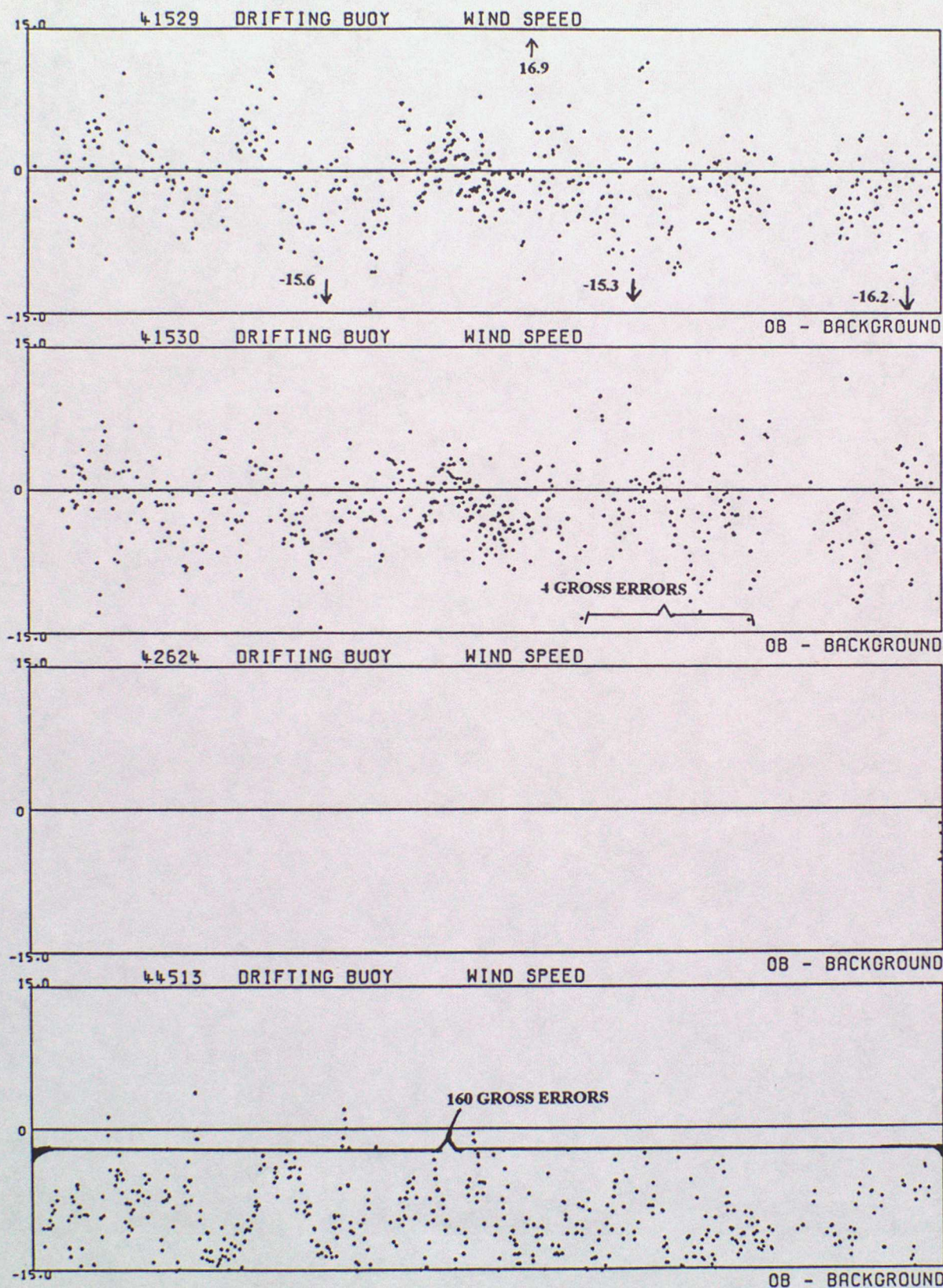
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



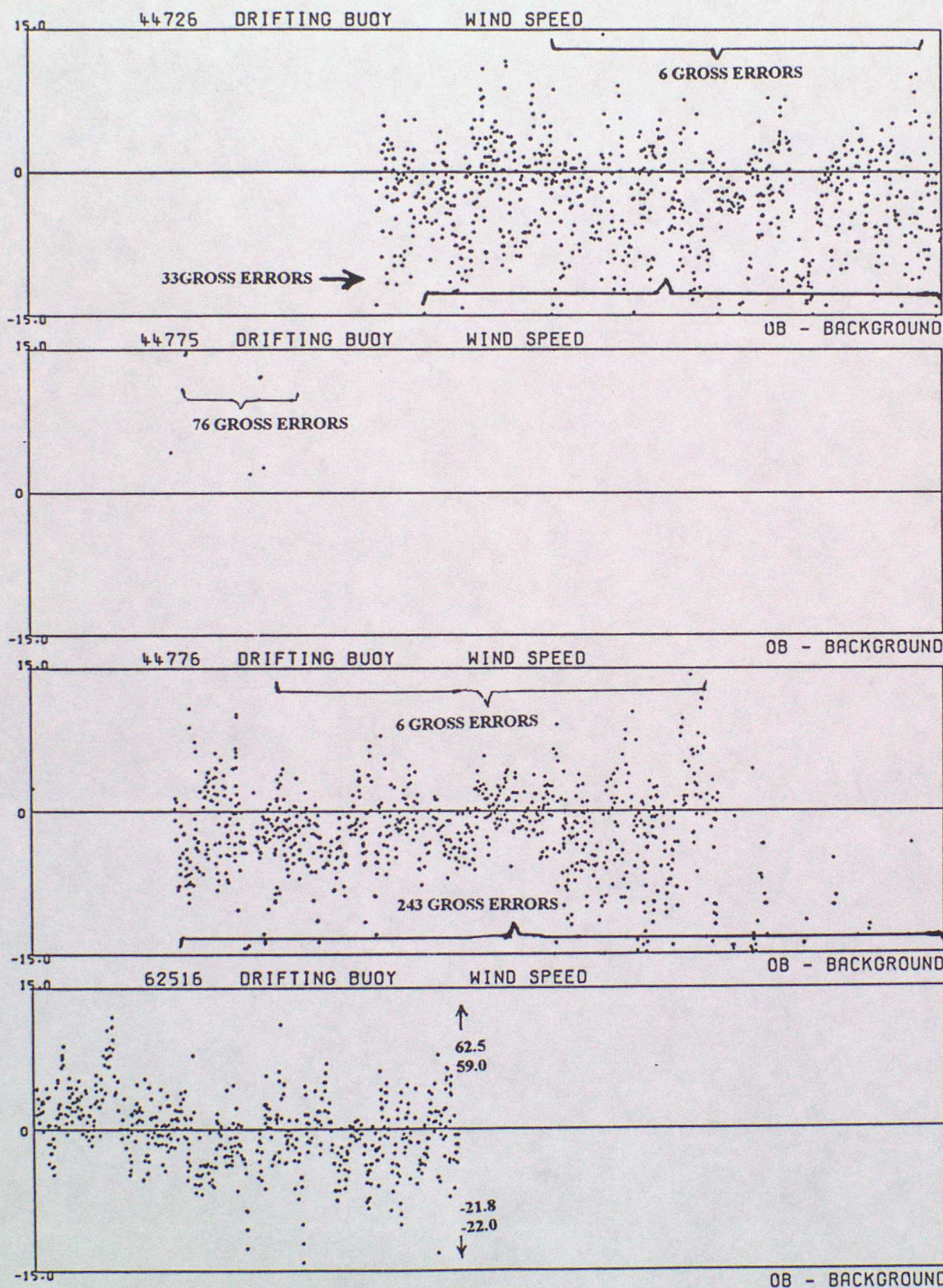


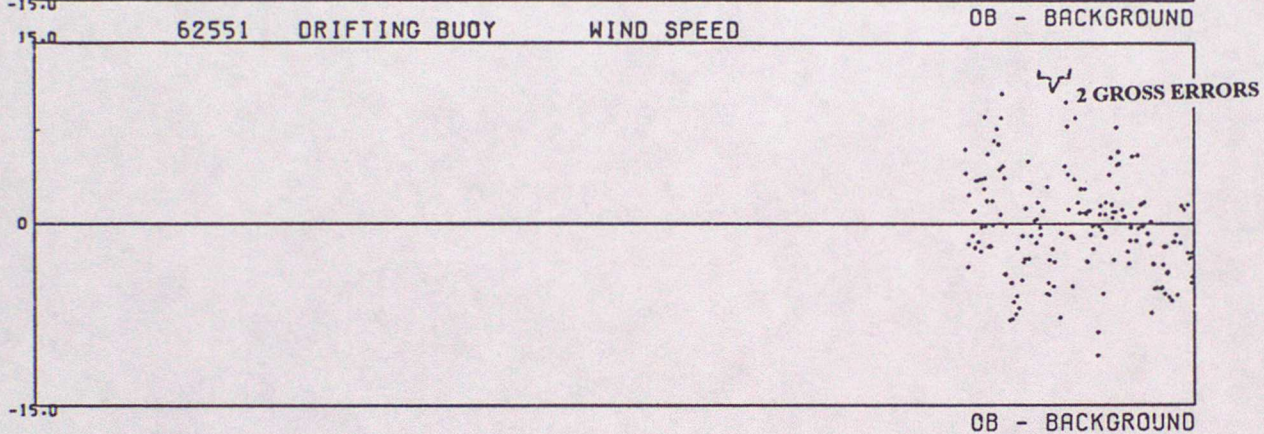
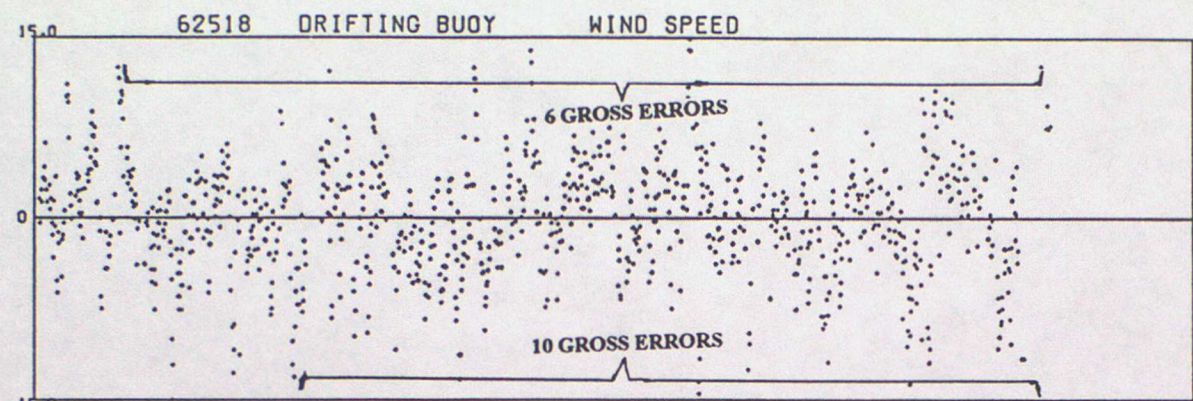
ANNEX E - TIME SERIES PLOTS OF WIND SPEED

DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



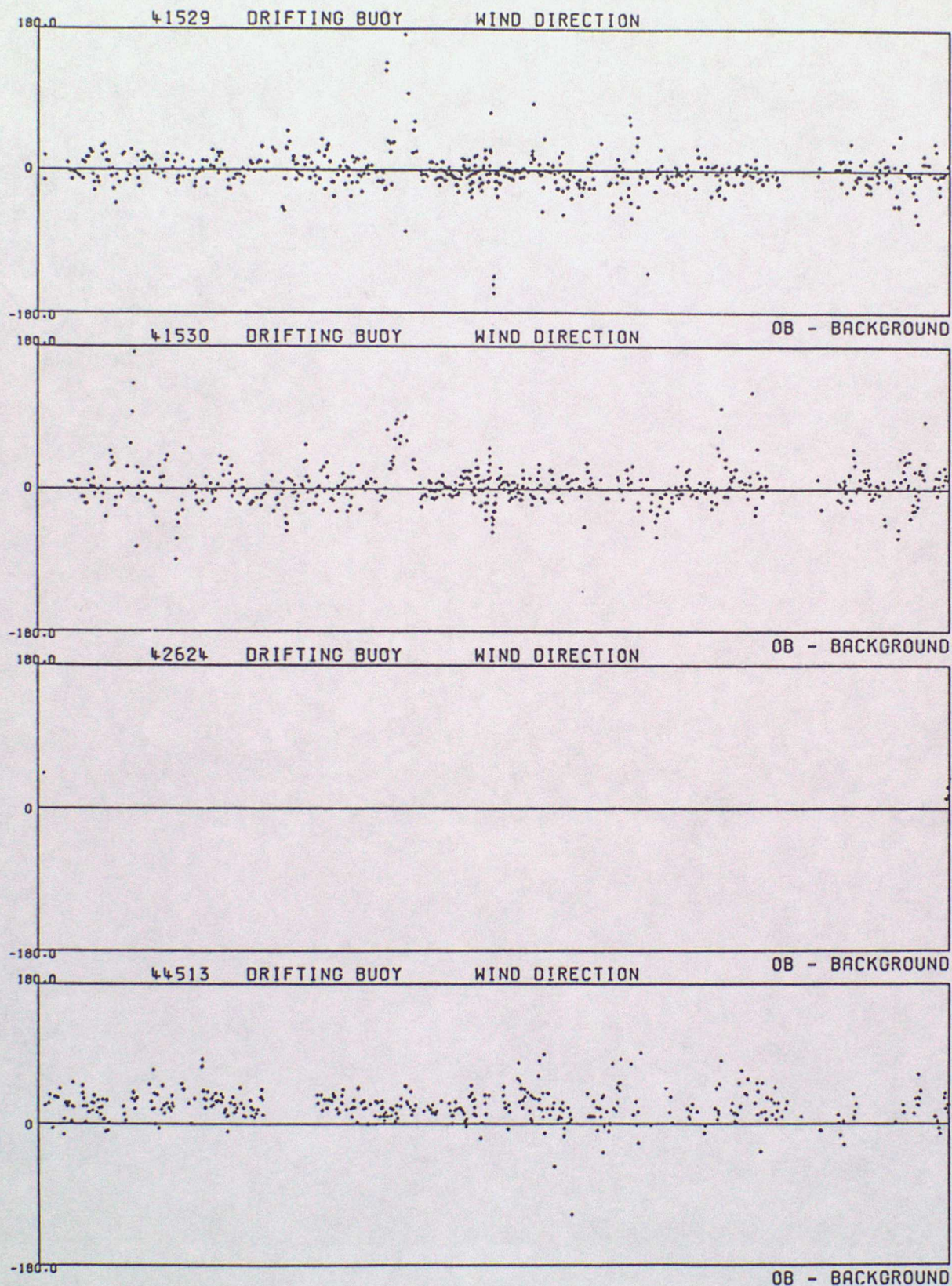
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



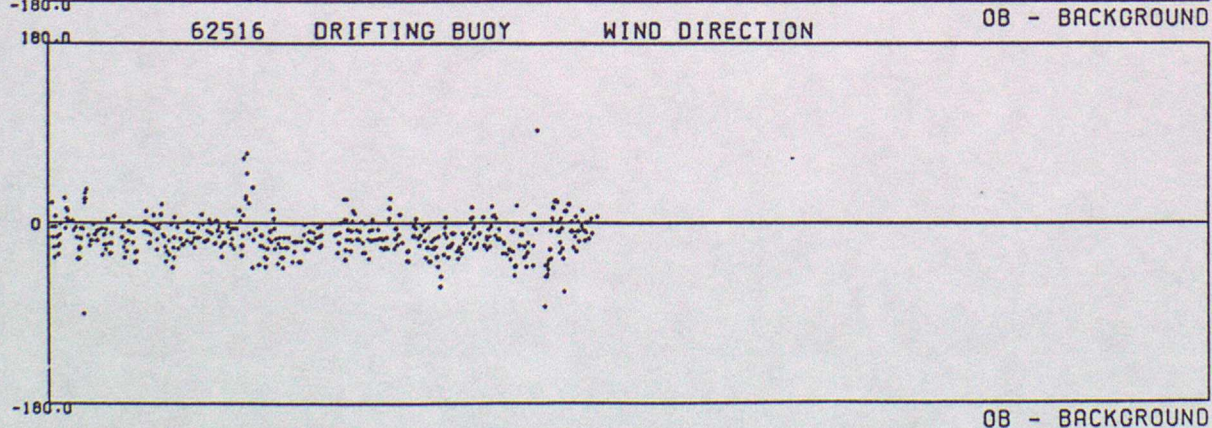
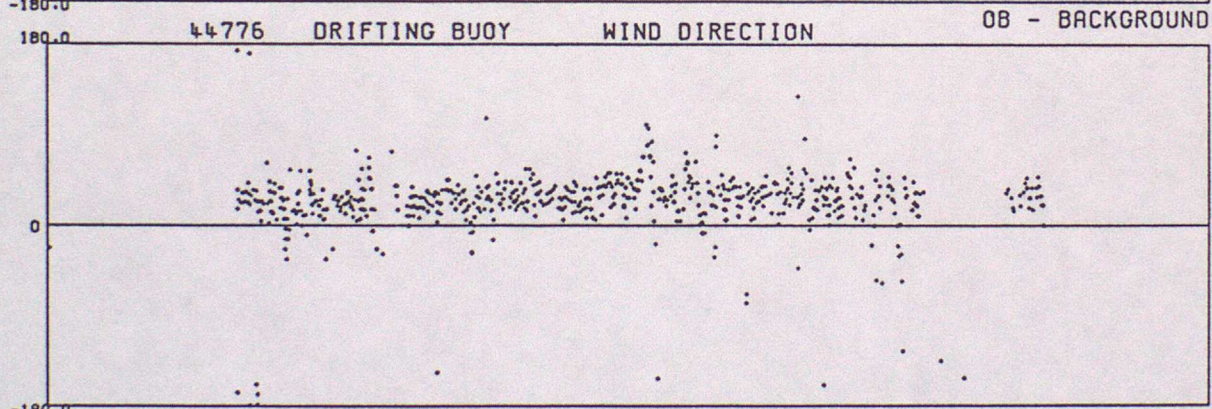
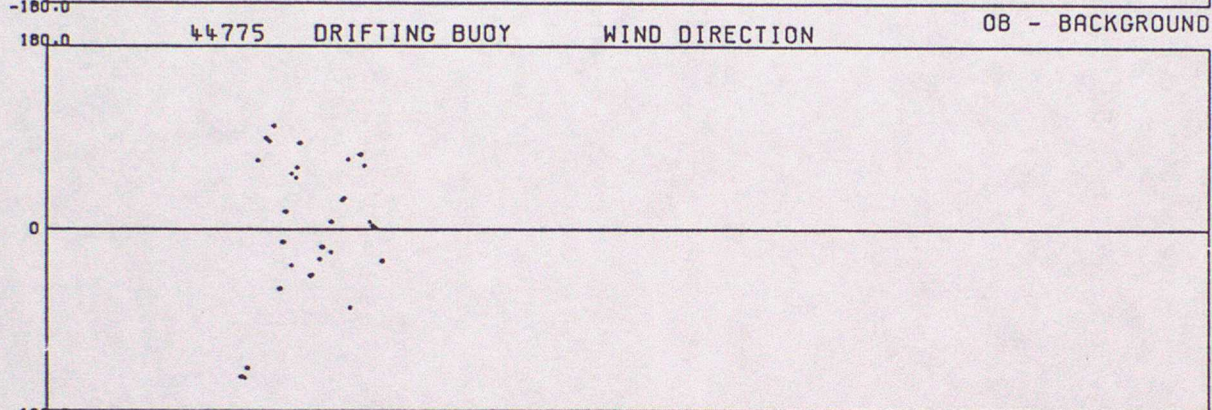
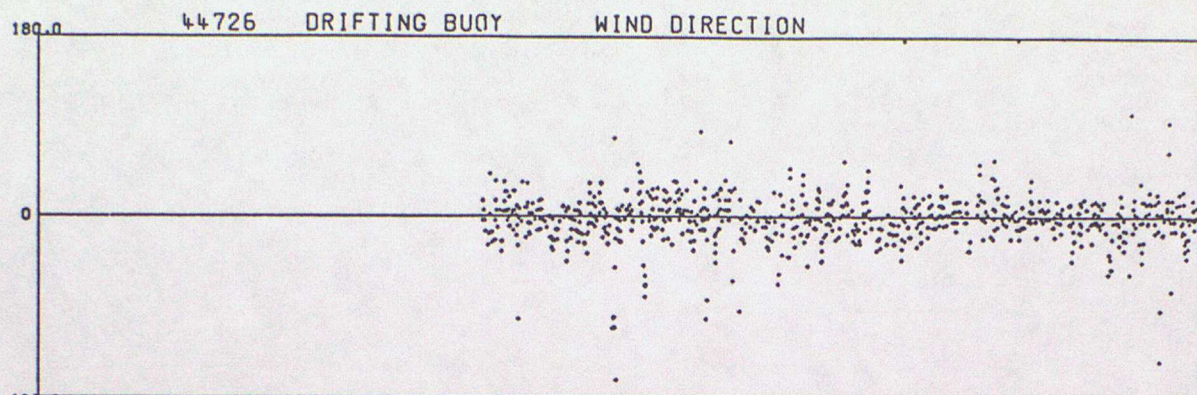


ANNEX F - TIME SERIES PLOTS OF WIND DIRECTION

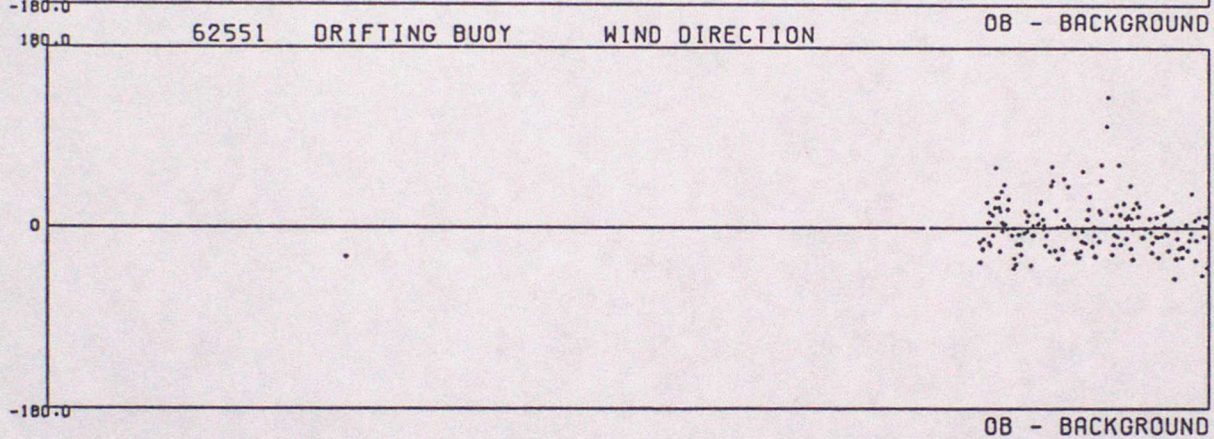
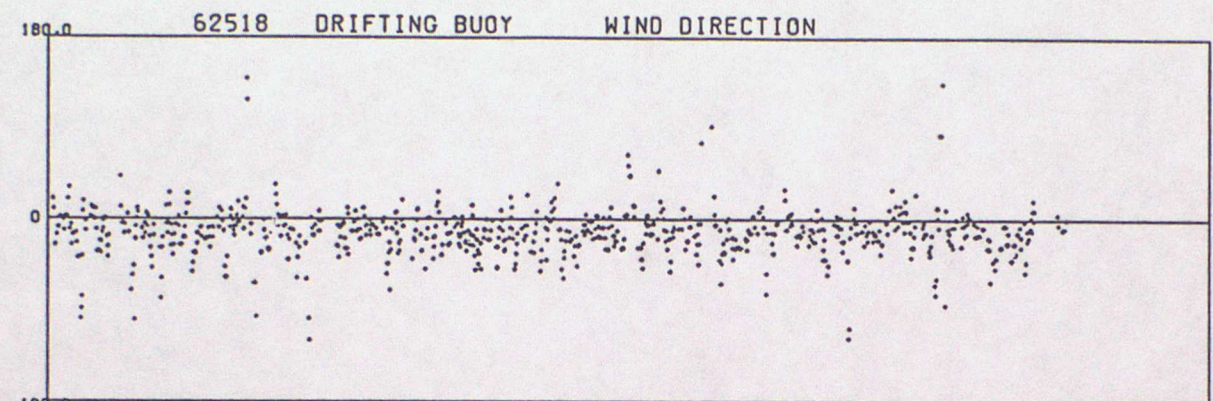
DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/10/1996 TO 23Z ON 31/12/1996 (OBS - BACKGROUND FIELD)



OB - BACKGROUND



ANNEX G - SUMMARY TABLE OF OPERATIONAL DRIFTING BUOYS

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
25565	1639	UK	*	*	*				01/10 - 19/12
41529	????	US	*		*	*	*	*	01/10 - 31/12
41530	????	US	*		*	*	*	*	01/10 - 31/12
42624	????	US	*	*	*	*	*		31/12 - 31/12
44513	????	US	*		*	*	*	*	01/10 - 31/12
44614	1256	UK	*	*	*			*	01/10 - 31/12
44616	3318	UK	*	*	*			*	01/10 - 31/12
44617	1255	UK	*	*	*	*		*	01/10 - 31/12
44726	2955	UK	*	*	*	*	*	*	04/11 - 31/12
44728	3024	UK	*	*	*			*	01/10 - 31/12 *
44743	1248	UK	*	*				*	01/10 - 31/12
44760	2947	UK	*	*	*			*	01/10 - 31/12
44763	3098	UK	*	*	*			*	01/10 - 31/12
44764	????	UK	*	*	*				31/12 - 31/12
44765	4178	NL	*	*	*			*	01/10 - 31/12
44766	1298	D	*	*	*			*	01/10 - 31/12
44767	3013	UK	*	*	*			*	01/10 - 31/12
44769	1253	UK	*	*				*	01/10 - 07/11
44770	3035	UK	*	*	*			*	01/10 - 31/12
44771	2954	UK	*	*	*	*		*	01/10 - 23/11
44772	6667	D	*	*	*			*	01/10 - 31/12
44774	3162	UK	*	*	*			*	01/10 - 26/10
44775	1260	UK	*	*	*	*	*	*	01/10 - 28/10
44776	2957	UK	*	*	*	*	*	*	15/10 - 31/12
44777	14733	UK	*	*	*			*	01/10 - 31/12
44778	1258	UK	*	*	*			*	01/10 - 31/12
44780	1257	UK	*	*	*			*	01/10 - 31/12
44849	????	??	*						26/11 - 31/12
44850	????	??	*					*	16/11 - 31/12
44910	????	??	*					*	02/12 - 31/12
44911	466	US	*					*	01/10 - 31/12
44917	????	US	*					*	31/10 - 25/11

KEY

PP - Pressure
 TT - Air Temperature
 DD - Wind Direction
 Pt - Pressure tendency
 FF - Wind Speed
 SST - Sea Surface Temperature

+ - Pressure ceased reporting before the end of the period
 but other elements continued to report.

* - Pressure not reporting at the start of the period,
 but other elements being reported

ANNEX G - Cont.

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
44918	????	US	*					*	31/10 - 31/12
44919	????	??	*					*	31/10 - 31/12
44923	????	??	*					*	31/10 - 31/12
44924	????	??	*					*	31/10 - 31/12
46764	????	??	*						03/12 - 31/12
56513	????	??	*	*				*	28/11 - 04/12
61521	????	US	*		*			*	03/12 - 31/12
61522	7207	US	*		*			*	03/12 - 31/12
61526	????	US	*		*			*	01/10 - 26/10
61527	????	US	*		*			*	01/10 - 31/12
62503	14427	F	*	*				*	01/10 - 31/12
62504	14428	F	*	*				*	01/10 - 31/12
62507	5793	F	*	*				*	01/10 - 31/12
62508	5792	F	*	*					01/10 - 31/12
62510	5797	F	*	*				*	01/10 - 31/12
62513	5798	F	*	*				*	01/10 - 31/12
62515	14426	F	*	*				*	01/10 - 31/12
62516	5790	F	*	*	*	*	*	*	01/10 - 01/12
62517	10118	F	*	*	*			*	01/10 - 31/12
62518	15534	F	*			*	*	*	01/10 - 31/12
62551	????	??	*	*		*	*	*	10/12 - 31/12
62910	????	??	*					*	01/10 - 31/12 +
64513	????	??	*		*			*	16/10 - 01/12
64514	????	??	*		*			*	16/10 - 14/12
64561	1247	??	*	*	*			*	27/11 - 31/12
65562	????	N	*	*	*			*	14/11 - 31/12
65594	1252	UK	*	*	*			*	01/10 - 31/12
35595	3038	IR	*	*	*			*	01/10 - 31/12
65596	????	??	*	*	*			*	11/12 - 31/12
65598	3678	N	*	*	*			*	01/10 - 31/12
65599	9308	D	*	*	*			*	01/10 - 31/12

KEY

PP - Pressure
 TT - Air Temperature
 DD - Wind Direction
 Pt - Pressure tendency
 FF - Wind Speed
 SST - Sea Surface Temperature

- + - Pressure ceased reporting before the end of the period but other elements continued to report.
- * - Pressure not reporting at the start of the period, but other elements being reported

