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OBSERVATIONS, PLANS AND REQUIREMENTS BRANCH

THIRTY SEVENTH QUARTERLY REPORT

ON DRIFTING BUOYS

IN THE NORTH ATLANTIC

JANUARY TO MARCH 1996

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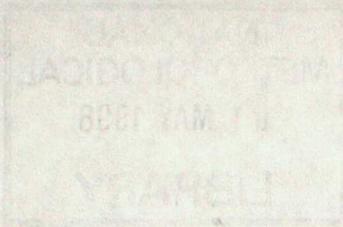
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30th April 1996

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 (covering the approximate area of 25 - 60 deg N and 60 deg W to 10 deg E). 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 similar to last quarter with 36 out of 39 of the buoys reporting having a '% of observations with acceptable positions' greater than 95% (compared to 30 out of 33 last quarter). There were 7 gross errors in location during the quarter, compared with 3 last quarter (see under Data Quality).

(b) Data timeliness

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

Timeliness	Last quarter.	This quarter
Very Good	14	14
Good	6	8
Satisfactory	6	4
Poor	1	5
Very poor	6	8
Total no. of buoys	33	39

(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	1	2	12	14
Good	2	--	2	1
Satisfactory	8	13	2	4
Poor	5	3	1	1
Very Poor	--	1	--	--

The total number of buoy days in the quarter was 2,627, obtained by summing the number of reporting days for each buoy (last quarter the total was 2,373) and the number of 'buoy hours' with at least one observation was 43,703 (compared with 37,850 last quarter). Thus, the mean number of hours per day, for days with at least one observation (averaged over all buoys operating in the area) was 16.64 - last quarter the figure was 15.95.

3. SUMMARY OF PRESSURE PERFORMANCE

NOTE

Although buoys 44616, 44763, 44769, 62694 and 65594 were reporting at the beginning of the period, pressure data failed to reach the Observation Processing Databanks (OPD) until 8/1, 4/1, 2/1, 7/1 and 7/1 respectively.

(a) Buoy deployments, etc.

North of 50deg N

There were 14 buoys reporting pressure at the beginning of the period (this figure includes the buoys in the note above - all of which were north of 50 degN and also 63665 which drifted into the area. However, it excludes buoy 44727 which drifted south of 50 degN during the period. There were 19 buoys reporting at the end. 6 new buoys were deployed during the period (44692, 44767, 44768, 44771, 64934 and 65595). Only one buoy ceased reporting (44742).

South of 50deg N

There were 11 buoys reporting pressure at the beginning of the period. This figure includes buoys 41526 and 41585 which drifted into the reporting area and buoy 44727 which drifted south of 50 degN. There were 14 buoys reporting pressure at the end of the period. (Buoys 44761 and 62507 ceased reporting pressure on 14/3 and the 1/3 respectively but continued reporting other elements until the end of the quarter.) 8 new buoys were deployed (44684, 44911, 62505, 62506, 62507, 62508, 62510 and 62512). 3 buoys ceased reporting (44777, 61527 and 62518).

(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 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:-

- 44684 - This buoy showed a slightly larger than normal standard deviation (2.2) of data from the start of the buoy's life on 28/2 until the end of the period.
(Note : This buoy actually started reporting on 1/2 but only started reporting pressure on 28/2.)
- 44761 - Data from this buoy became totally erratic from the start of March until the data was removed from the GTS on 14/3.
- 44777 - Pressure data became erratic around 27/1 and although it improved slightly towards the end of February it continued to produce a bias of approximately -4.0 hPa until the end of its life on 14/3.
- 62506 - Pressure data was erratic from the 26/2 until 8/3 when it began producing better quality data.
- 62507 - Data was totally erratic from the date of deployment (19/2) until it ceased reporting pressure on 1/3.
- 62694 - The data showed a larger than normal standard deviation of data (5.7) and produced occasional erratic values throughout the period.

Biases

6 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	SOBA	+0.9	-0.4	01/01-31/03
44692	SW of SOBA	-1.0	+0.1	18/03-31/03
44742	SOBA	-0.6	-0.1	01/01-26/01
44911	SW of SOBA	+0.7	0.0	09/03-31/03
62508	N of SCOS	+0.6	+0.1	18/02-31/03
62512	SCOS	+0.6	-0.2	18/02-31/03

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.

Gross errors

The observations that appear to lie outside the expected distribution - the 'gross' errors (see Time-series graphs) - have been ringed. (The erroneous observations which occurred towards the end of the life of buoys 44761 and 62507 have not been included in this section.) The observations have been individually examined to see whether the errors lie with the pressure, location or the background field. Out of 231 occasions the results are as follows -

ERROR	NUMBER LAST QUARTER	NUMBER THIS QUARTER	COLLECTING CENTRE
bg field	0	0	-----
location	0	4	Oslo
location	3	0	Sondre Stromfjord
location	0	3	Toulouse
location	0	0	Unknown
location	0	0	US Air Force
pressure	84	90	Oslo
pressure	0	58	Sondre Stromfjord
pressure	33	74	Toulouse
pressure	0	2	US Air Force
pressure	0	0	Unknown
Total no. of buoy hours	37,850	43,703	

During the quarter 224 gross pressure errors were transmitted as compared to 177 last quarter. The number of gross location errors from the Local User Terminals was similar to last quarter (7 compared to 3 last quarter).

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.)

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev	No. of Obs	Mean	St. Dev.	No. of Obs
25565	0.4(0.3)	1.1(1.1)	1819 (18)	---	---	---
41526	-0.1(0.0)	0.8(1.2)	711 (216)	0.1(-0.9)	0.5(9.8)	730 (159)
41585	-0.3(0.0)	1.2(1.7)	927 (198)	0.1(-0.4)	1.0(11.4)	962 (167)
44613	0.2(0.8)	1.6(2.1)	3832 (435)	-0.3(0.1)	0.6(6.2)	3646 (386)
44616	0.3(-0.1)	2.0(1.3)	4863 (24)	-0.2(0.3)	0.9(2.6)	5139 (13)
44684	3.8(0.0)	4.2(2.5)	285 (90)	1.2(0.6)	0.7(8.0)	146 (104)
44692	2.7(0.2)	4.1(2.6)	152 (75)	---	---	---
44727	-0.4(-0.3)	1.3(1.1)	3764 (168)	-0.3(-0.6)	0.8(6.3)	3612 (155)
44728	-0.2(-0.1)	1.6(1.2)	4741 (27)	0.0(0.3)	0.6(2.3)	4566 (17)
44742	---	---	---	0.3(1.7)	0.7(3.0)	964 (14)
44760	0.0(0.2)	1.3(1.2)	1206 (183)	-0.9(-1.2)	0.9(3.8)	1472 (116)
44761	---	---	---	-0.4(-0.4)	0.7(3.5)	1927 (55)
44763	0.3(-0.2)	1.0(2.2)	4877 (24)	-0.4(0.0)	0.9(3.8)	4921 (35)
44765	-0.2(-0.3)	1.7(1.0)	4648 (42)	-0.3(1.2)	0.7(2.7)	2868 (30)
44767	0.2(-0.6)	1.0(2.0)	2767 (33)	0.4(-0.5)	1.0(3.2)	2754 (54)
44768	0.0(0.1)	1.3(1.3)	3356 (15)	0.3(0.2)	0.6(2.5)	3307 (14)
44769	---	---	---	0.0(1.1)	0.7(2.6)	4805 (55)
44770	0.0(0.0)	1.0(1.0)	1926 (231)	-0.8(-0.9)	0.7(4.0)	1919 (142)
44771	0.9(-1.0)	1.7(1.8)	1177 (54)	1.1(-0.6)	1.0(2.9)	1219 (74)

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
44773	-0.2(-0.3)	2.3(0.8)	3314 (117)	-0.3(0.2)	1.4(6.8)	3193 (98)
44774	0.3(-1.3)	1.5(1.8)	4473 (57)	0.6(-0.7)	1.2(3.2)	4331 (78)
44777	---	---	---	-0.2(-1.2)	0.3(3.8)	688 (118)
44911	---	---	---	3.2(0.3)	2.0(8.5)	44 (96)
61527	-0.4(0.6)	2.1(1.8)	1362 (384)	-1.3(-0.7)	3.1(2.6)	1491 (413)
62501	---	---	---	-0.1(0.1)	0.3(6.9)	1948 (98)
62503	---	---	---	0.0(-0.1)	0.2(7.0)	1704 (314)
62504	---	---	---	-0.3(-0.1)	0.3(6.2)	1738 (406)
62505	---	---	---	0.3(-0.2)	0.2(6.0)	854 (231)
62506	0.2(-0.1)	0.9(0.8)	590 (183)	0.2(0.1)	0.2(5.4)	680 (160)
62507	---	---	---	-0.7(-0.2)	0.3(5.8)	571 (255)
62508	---	---	---	-0.4(0.1)	0.2(5.5)	360 (154)
62510	---	---	---	0.1(-0.2)	0.2(5.9)	537 (242)
62512	---	---	---	-0.3(-0.5)	0.3(6.1)	507 (252)
62518	---	---	---	-0.4(-0.1)	0.4(5.9)	693 (438)
62694	1.2(0.5)	2.5(1.0)	4812 (14)	-0.1(0.9)	2.8(1.4)	2933 (10)
63665	2.2(0.5)	4.5(1.6)	1464 (94)	---	---	---
64934	---	---	---	---	---	---
65594	0.0(0.3)	1.5(1.1)	4877 (11)	-0.1(1.2)	1.3(1.5)	5149 (14)
65595	0.3(0.4)	0.7(1.4)	627 (9)	-0.1(0.8)	0.4(1.3)	410 (12)

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

Buoys 44684 (3.8), 44692 (2.7), 62694 (1.2) (this bias was particularly evident towards the end of the report period) and 63665 (2.2) all showed significant air temperature biases.

Buoy 44684 (1.2), 44771(1.1), 44911 (3.2) and 61527 (-1.3) all showed significant sea surface temperature biases. Data for buoy 61527 became very erratic at the start of February until the end of the buoy's life on 6/3. Data from buoy 44761 tended to fluctuate by up to 1°C for much of the quarter, depending on which LUT (Sondre Stromfjord or Toulouse) the data was being sent through. Data for buoy 62694 showed a negative bias (of approximately -4°C) throughout much of February and then the bias drifted to a positive value of approximately +2.5°C by the end of the period.

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 : Although in Annex A, it quotes buoy 44771 as having 81.0 % of wind speeds present, no analysis was carried out on the majority of the data because it was not accompanied by a wind direction. There were in fact only two complete wind observations. Thus, figures for this buoy have not been included in the table overleaf.)

WMO No.	Period	Wind Speed (kn)		Wind Direction (deg)		No. of Obs
		Mean	St. Dev.	Mean	St. Dev.	
41526	01/01-31/03	-6.4(3.4)	4.8(8.7)	4.6(-0.1)	16.6(35.0)	669 (185)
41585	01/01-31/03	-3.1(4.0)	5.5(8.8)	6.1(0.4)	55.8(35.5)	338 (202)
44613	01/01-31/03	-3.7(4.2)	6.0(7.3)	-3.7(0.2)	23.8(29.8)	3437 (408)
44616	01/01-31/03	-25.0(2.4)	13.1(4.6)	-0.1(1.6)	66.8(22.6)	56 (14)
44742	01/01-26/01	-6.1(4.4)	8.9(7.9)	1.3(-9.3)	18.0(40.0)	848 (12)
62501	01/01-31/03	1.2(2.6)	4.4(5.4)	-11.2(3.3)	22.3(35.2)	932 (99)
62505	19/02-31/03	17.4(3.2)	12.4(5.4)	-28.0(0.7)	19.8(31.5)	445 (241)
62506	19/02-31/03	-11.4(2.5)	5.6(5.0)	23.8(1.3)	14.8(32.8)	193 (169)
62518	01/01-10/02	0.2(4.3)	4.4(7.2)	-0.7(-1.1)	23.4(29.8)	652 (467)

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

All buoys except 62501 and 62518 showed a significant wind speed bias, with all except buoy 62505 showing a negative bias.

Both buoys 62505 (-28 deg) and 62506 (+23.8 deg) showed a significant wind direction bias. Buoys 41585 and 44616 showed a significant standard deviation of wind direction.

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,
 $v = \text{maximum drift speed} = 1/4 \text{ knot}$
 $t = \text{time between observations.}$
5. The percentage of elements present is calculated from the total number of observations received.
6. The delay is (Time of Receipt at Bracknell) - (Time of Observation).
7. The mean number of observations per day is calculated from the total number of observations received divided by the number of days in the period. It therefore includes 'quasi-identical' observations, i.e. those made within a few minutes of one another. For this reason the mean number of hours per day with at least one observation and the % of hour periods without an observation has been included, where an 'hour period' is defined as the period from HH-30 to HH+29 minutes.

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

Unflagged data are those data used in model analyses.

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

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

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

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

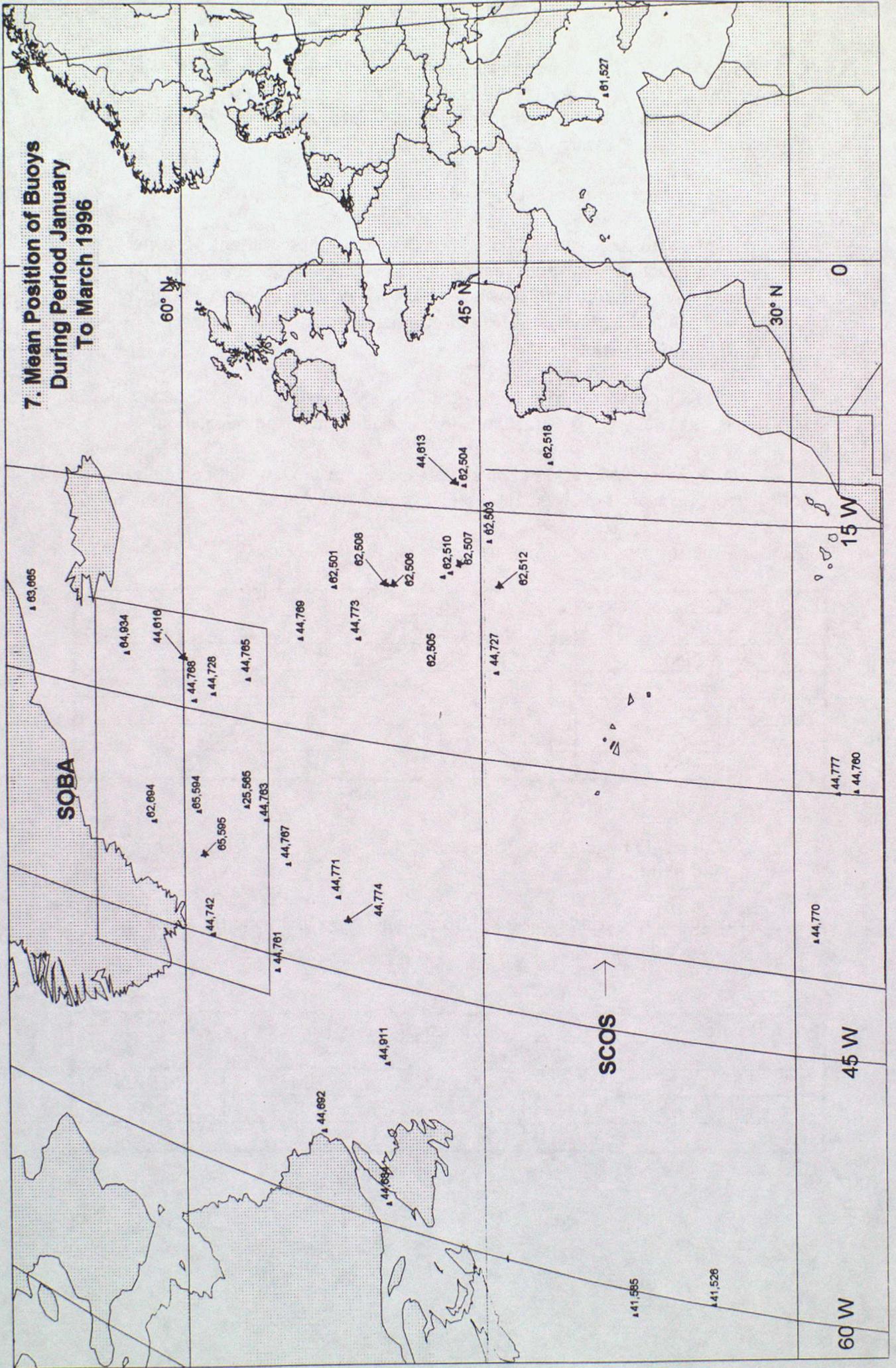
Performance	Availability (mean no. of obs/day)	Timeliness (median delay in mins)
Very Good	> 35	< 60
Good	25 - 35	60 - 119
Satisfactory	15 - 24	120 - 179
Poor	5 - 14	180 - 239
Very Poor	< 5	> 240

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

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

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

7. Mean Position of Buoys
During Period January
To March 1996



ANNEX A - TABLE OF STATISTICS

Wmo No./ Country ¹	25565/UK	41526/US	41585/US
Argos Id.No.	1639	5575	23640
Period within area	01/01-31/03	01/01-31/03	01/01-31/03
Area	SOBA	W of SCOS	W of SCOS
Mean Latitude	56.8	34.0	37.8
Mean Longitude	-35.7	-59.9	-61.4
No. of obs received ²	2010	764	1019
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	100.0	100.0	100.0
% of Presents			
Pressure	92.8	92.0	91.9
P. Tendency	89.0	0.0	0.0
Air Temperature	92.1	91.4	91.4
Wind Speed/Dir.	0.0/0.0	89.9/89.9	34.5/34.5
Sea-surface temp.	0.0	91.6	91.5
Median delay (min) ⁶	19.0	74.0	62.0
Number of days	91.0	91.0	91.0
Mean no. of obs/day	22.1	8.4	11.2
No. of hours with obs	1469.0	757.0	915.0
Mean no. of hours/day with obs	16.1	8.3	10.1
% of hour periods without an ob ⁷	32.9	65.4	57.9
Mean (Ob-Bg)	0.0	0.0	-0.2
RMS (Ob-Bg) unflagged data	1.8	1.0	1.3
Mean (Ob-Bg)	-0.1	0.0	-0.2
RMS (Ob-Bg) all data	2.4	1.0	1.3
Revised RMS (Ob-Bg) ⁸	2.4	1.0	1.3
% of data flagged ⁹	37.0	1.0	13.0
Operating at end of period	YES	YES	YES
Performances			
Availability	Satisfactory	Poor	Poor
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Good	Good
Comments			

Wmo No./ Country ¹	44613/UK	44616/UK	44684/CA
Argos Id.No.	3324	3318	977
Period within area	01/01-31/03	01/01-31/03	01/02-31/03
Area	N of SCOS	SOBA	SW of SOBA
Mean Latitude	46.2	60.0	49.8
Mean Longitude	-13.4	-26.7	-58.7
No. of obs received ²	3914	5517	540
% of obs with valid Time and Dates ³	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	98.9	91.4	95.4
% of Presents			
Pressure	99.1	98.9	62.0
P. Tendency	95.4	94.1	0.0
Air Temperature	97.2	97.4	53.9
Wind Speed/Dir.	96.6/96.4	5.3/8.3	0.0/0.0
Sea-surface temp.	97.3	97.6	26.1
Median delay (min) ⁶	38.0	31.0	32.0
Number of days	91.0	91.0	60.0
Mean no. of obs/day	43.0	60.6	9.0
No. of hours with obs	1635.0	1934.0	519.0
Mean no. of hours/day with obs	18.0	21.3	8.7
% of hour periods without an ob ⁷	25.0	11.3	63.8
Mean (Ob-Bg)	-0.3	0.9	0.1
RMS (Ob-Bg) unflagged datas	1.4	1.8	1.8
Mean (Ob-bg)	-0.4	0.7	0.0
RMS (Ob-Bg) all datas	3.9	3.4	2.2
Revised RMS (Ob-Bg) ⁸	1.7	1.6	2.2
% of data flagged ⁹	64.0	72.0	72.0
Operating at end of period	YES	YES	YES
Performance ⁹			
Availability	Very Good	Very Good	Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			

Wmo No./ Country ¹	44692/CA	44727/UK	44728/UK
Argos Id.No.	972	2974	3024
Period within area	18/03-31/03	01/01-31/03	01/01-31/03
Area	SW of SOBA	SCOS	SOBA
Mean Latitude	53.0	44.3	58.5
Mean Longitude	-55.4	-24.7	-28.7
No. of obs received ²	170	3848	4910
% of obs with valid Time and Dates ³	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	98.8	99.0	99.5
% of Presents			
Pressure	91.2	99.4	98.4
P. Tendency	0.0	95.3	93.9
Air Temperature	94.1	97.9	96.9
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface temp.	0.0	98.0	97.2
Median delay (min) ⁵	210.0	98.0	35.0
Number of days	14.0	91.0	91.0
Mean no. of obs/day	12.1	42.3	54.0
No. of hours with obs	79.0	1667.0	1806.0
Mean no. of hours/day with obs	5.6	18.3	19.8
% of hour periods without an ob ⁷	76.7	23.8	17.5
Mean (Ob-Bg)	-1.0	-0.2	0.2
RMS (Ob-Bg) unflagged datas	1.8	1.4	1.5
Mean (Ob-bg)	-1.1	-0.4	0.1
RMS (Ob-Bg) all datas	2.5	4.7	3.7
Revised RMS (Ob-Bg) ⁸	1.7	1.4	1.6
% of data flagged ⁸	9.0	64.0	70.0
Operating at end of period	YES	YES	YES
Performances ⁹			
Availability	Poor	Very Good	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Poor	Good	Very Good
Comments			

Wmo No./ Country ¹	44742/UK	44760/UK	44761/UK
Argos Id No.	2953	2947	14736
Period within area	01/01-26/01	01/01-31/03	01/01-31/03
Area	SOBA	SCOS	S of SOBA
Mean Latitude	58.6	26.8	55.3
Mean Longitude	-44.8	-29.8	-45.9
No. of obs received ²	1018	1525	2641
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	94.7	98.2	99.9
% of Presents			
Pressure	98.9	98.5	83.6
P. Tendency	97.2	95.7	51.7
Air Temperature	0.0	97.6	0.0
Wind Speed/Dir.	98.5/98.4	0.0/0.0	0.0/0.0
Sea-surface temp.	99.3	97.7	76.8
Median delay (min) ⁶	177.0	437.0	354.0
Number of days	26.0	91.0	91.0
Mean no. of obs/day	39.2	16.8	29.0
No. of hours with obs	346.0	1189.0	1649.0
Mean no. of hours/day with obs	13.3	13.1	18.1
% of hour periods without an ob ⁷	44.6	45.4	24.6
Mean (Ob-Bg)	-0.6	-0.1	0.0
RMS (Ob-Bg)	1.6	1.1	1.9
unflagged data			
Mean (Ob-bg)	-0.9	-0.2	-3.8
RMS (Ob-Bg)	5.0	3.3	11.9
all data			
Revised RMS (Ob-Bg) ⁸	1.6	1.2	11.9
% of data flagged ⁸	71.0	26.0	57.0
Operating at end of period	NO	YES	YES
Performance ⁹			
Availability	Very Good	Satisfactory	Good
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Satisfactory	Very Poor	Very Poor
Comments			

Wmo No./ Country ¹	44763/UK	44765/NL	44767/UK
Argos Id.No.	3098	4178	3013
Period within area	01/01-31/03	01/01-31/03	07/02-31/03
Area	SOBA	SOBA	S of SOBA
Mean Latitude	55.8	56.7	54.7
Mean Longitude	-36.3	-27.3	-38.8
No. of obs received ²	5233	4920	2812
% of obs with valid Time and Dates ³	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	99.2	99.3	99.3
% of Presents			
Pressure	99.0	94.9	99.0
P. Tendency	95.3	91.9	94.2
Air Temperature	97.6	94.1	97.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface temp.	97.8	61.5	96.9
Median delay (min) ⁶	102.0	85.0	173.0
Number of days	91.0	91.0	54.0
Mean no. of obs/day	57.5	54.1	52.1
No. of hours with obs	1833.0	1826.0	1031.0
Mean no. of hours/day with obs	20.1	20.1	19.1
% of hour periods without an ob ⁷	16.3	16.3	20.4
Mean (Ob-Bg)	0.2	-0.3	0.0
RMS (Ob-Bg)	1.6	1.6	1.7
unflagged datas			
Mean (Ob-bg)	0.1	-0.5	-0.1
RMS (Ob-Bg)	2.5	4.5	3.7
all datas			
Revised RMS (Ob-Bg) ⁸	1.6	1.7	1.8
% of data flagged ⁸	71.0	71.0	69.0
Operating at end of period	YES	YES	YES
Performances ⁹			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Satisfactory
Comments			

Wmo No./ Country ¹	44768/UK	44769 UK	44770/UK
Argos Id No	1251	1253	3035
Period within area	06/02-31/03	01/01-31/03	01/01-31/03
Area	SOBA	S of SOBA	SCOS
Mean Latitude	59.5	54.0	28.9
Mean Longitude	-29.4	-24.1	-38.4
No. of obs received ²	3383	5133	2001
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	99.4	99.4	96.4
% of Presents			
Pressure	99.1	99.1	98.9
P. Tendency	93.8	95.3	96.7
Air Temperature	96.7	0.0	98.8
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface temp.	96.9	97.7	98.8
Median delay (min) ⁶	256.0	191.0	336.0
Number of days	55.0	91.0	91.0
Mean no. of obs/day	61.5	56.4	22.0
No. of hours with obs	1161.0	1849.0	1311.0
Mean no. of hours/day with obs	21.1	20.3	14.4
% of hour periods without an ob ⁷	12.1	15.4	40.0
Mean (Ob-Bg)	0.4	0.1	0.1
RMS (Ob-Bg)	1.6	1.7	0.9
unflagged data			
Mean (Ob-bg)	-1.0	0.0	-0.2
RMS (Ob-Bg)	10.2	3.0	5.5
all data			
Revised RMS (Ob-Bg) ⁸	1.7	1.7	1.0
% of data flagged ⁸	73.0	72.0	41.0
Operating at end of period	YES	YES	YES
Performance ⁹			
Availability	Very Good	Very Good	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Poor	Poor	Very Poor
Comments			

Wmo No. / Country ₁	44771/??	44773/UK	44774/UK
Argos Id No.	????	3132	3162
Period within area	07/03-31/03	01/01-31/03	01/01-31/03
Area	S of SOBA	SE of SOBA	S of SOBA
Mean Latitude	52.2	51.1	51.8
Mean Longitude	-40.2	-23.6	-41.6
No. of obs received ₂	1246	3425	4562
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ₄	98.6	99.1	99.5
% of Presents			
Pressure	99.7	98.6	99.3
P. Tendency	94.6	92.7	95.8
Air Temperature	97.0	96.6	98.2
Wind Speed/Dir.	81.0/0.2	0.0/0.0	0.0/0.0
Sea-surface temp.	96.9	96.6	98.4
Median delay (min) ₆	224.0	15.0	28.0
Number of days	25.0	91.0	91.0
Mean no. of obs/day	49.8	37.6	50.1
No. of hours with obs	479.0	1551.0	1762.0
Mean no. of hours/day with obs	19.2	17.0	19.4
% of hour periods without an ob ₇	20.0	29.2	19.2
Mean (Ob-Bg)	-0.1	0.0	-0.1
RMS (Ob-Bg)	1.5	1.7	1.8
unflagged data₈			
Mean (Ob-bg)	-0.2	-0.2	-0.1
RMS (Ob-Bg)	1.8	4.8	3.4
all data₈			
Revised RMS (Ob-Bg) ₈	1.6	2.0	1.7
% of data flagged ₈	68.0	62.0	69.0
Operating at end of period	YES	YES	YES
Performances			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Poor	Very Good	Very Good
Comments			

Wmo No./ Country ¹	44777/UK	44911/US	61527/US
Argos Id. No.	14733	466	3749
Period within area	01/01-14/03	09/03-31/03	01/01-06/03
Area	SCOS	SW of SOBA	W of Italy
Mean Latitude	27.8	49.8	38.8
Mean Longitude	-30.0	-49.9	9.8
No. of obs received ²	1324	121	1606
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	100.0	69.4	100.0
% of Presents			
Pressure	99.8	68.6	98.3
P. Tendency	56.3	0.0	0.0
Air Temperature	0.0	0.0	98.4
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface temp.	56.3	31.4	98.3
Median delay (min) ⁶	323.0	594.0	235.0
Number of days	74.0	23.0	66.0
Mean no. of obs/day	17.9	5.3	24.3
No. of hours with obs	1112.0	101.0	1297.0
Mean no. of hours/day with obs	15.0	4.4	19.7
% of hour periods without an ob ⁷	37.5	81.7	17.9
Mean (Ob-Bg)	-1.1	0.7	-0.5
RMS (Ob-Bg) unflagged data ⁸	2.0	1.7	1.2
Mean (Ob-bg)	-4.1	0.7	-0.5
RMS (Ob-Bg) all data ⁸	7.1	1.7	1.2
Revised RMS (Ob-Bg) ⁸	7.1	1.7	1.2
% of data flagged ⁸	51.0	26.0	23.0
Operating at end of period	NO	YES	NO
Performances			
Availability	Satisfactory	Very Poor	Satisfactory
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Poor	Very Poor	Poor
Comments			

Wmo No./ Country ¹	62501/F	62503/F	62504/F
Argos Id.No.	10116	14427	14428
Period within area	01/01-31/03	01/01-31/03	01/01-31/03
Area	N of SCOS	SCOS	N of SCOS
Mean Latitude	52.3	44.6	45.0
Mean Longitude	-20.5	-16.8	-13.5
No. of obs received ²	2049	1752	1792
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	99.8	99.7	99.6
% of Presents			
Pressure	95.4	96.8	96.5
P. Tendency	89.9	92.0	90.6
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	47.3/46.8	0.0/0.0	0.0/0.0
Sea-surface temp.	96.0	97.8	97.2
Median delay (min) ⁶	29.0	55.0	17.0
Number of days	91.0	91.0	91.0
Mean no. of obs/day	22.5	19.3	19.7
No. of hours with obs	1479.0	1355.0	1365.0
Mean no. of hours/day with obs	16.3	14.9	15.0
% of hour periods without an ob ⁷	32.1	37.9	37.5
Mean (Ob-Bg)	0.4	0.0	0.0
RMS (Ob-Bg) unflagged datas	1.9	1.4	1.4
Mean (Ob-bg)	0.4	0.0	0.0
RMS (Ob-Bg) all datas	1.8	1.6	1.4
Revised RMS (Ob-Bg) ⁸	1.7	1.5	1.3
% of data flagged ⁹	38.0	33.0	33.0
Operating at end of period	YES	YES	YES
Performances			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

Wmo No./ Country ¹	62505/F	62506/F	62507/F
Argos Id.No.	10117	????	????
Period within area	19/02-31/03	19/02-31/03	19/02-31/03
Area	N of SCOS	N of SCOS	N of SCOS
Mean Latitude	46.9	49.4	46.1
Mean Longitude	-19.2	-20.0	-18.4
No. of obs received ²	834	656	702
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	99.9	99.5	99.6
% of Presents			
Pressure	97.0	92.4	35.0
P. Tendency	87.9	91.2	80.1
Air Temperature	0.0	91.6	0.0
Wind Speed/Dir.	62.1/64.5	42.2/42.4	0.0/0.0
Sea-surface temp.	97.7	97.7	80.1
Median delay (min) ⁶	27.0	87.0	78.0
Number of days	42.0	42.0	42.0
Mean no. of obs/day	19.9	15.6	16.7
No. of hours with obs	664.0	566.0	620.0
Mean no. of hours/day with obs	15.8	13.5	14.8
% of hour periods without an ob ⁷	34.2	43.8	38.3
Mean (Ob-Bg)	0.1	0.3	-0.1
RMS (Ob-Bg) unflagged datas	1.3	1.6	2.9
Mean (Ob-bg)	-0.1	-1.0	9.0
RMS (Ob-Bg) all datas	3.4	5.7	15.8
Revised RMS (Ob-Bg) ⁸	1.7	5.7	13.7
% of data flagged ⁸	32.0	39.0	77.0
Operating at end of period	YES	YES	YES
Performance ⁹			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Good	Good
Comments			

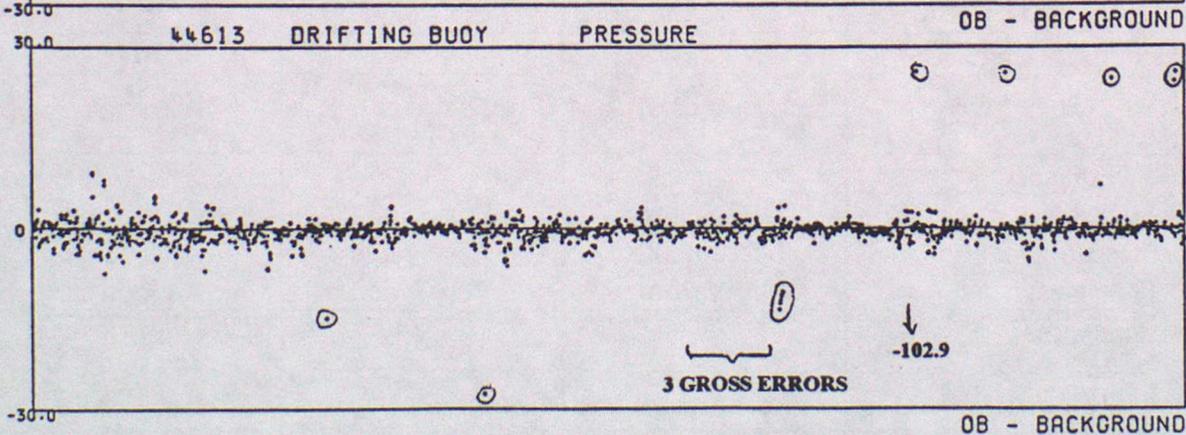
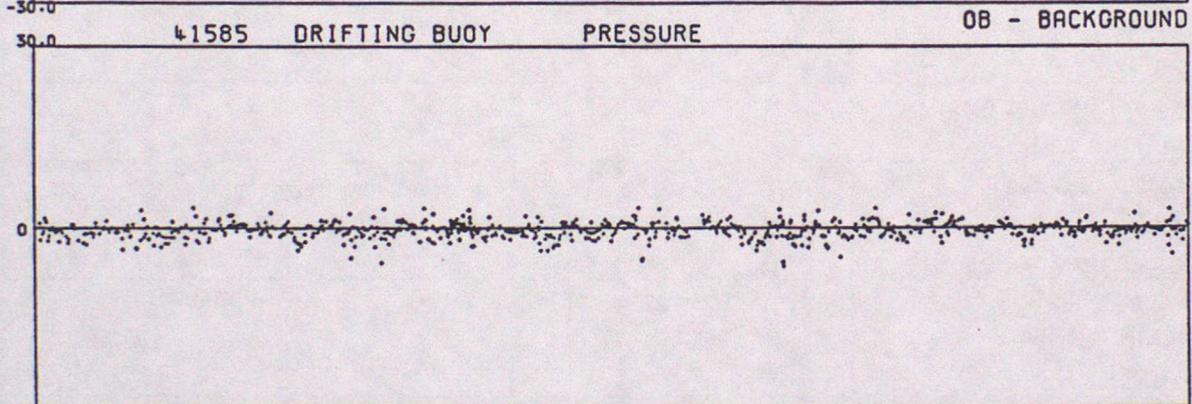
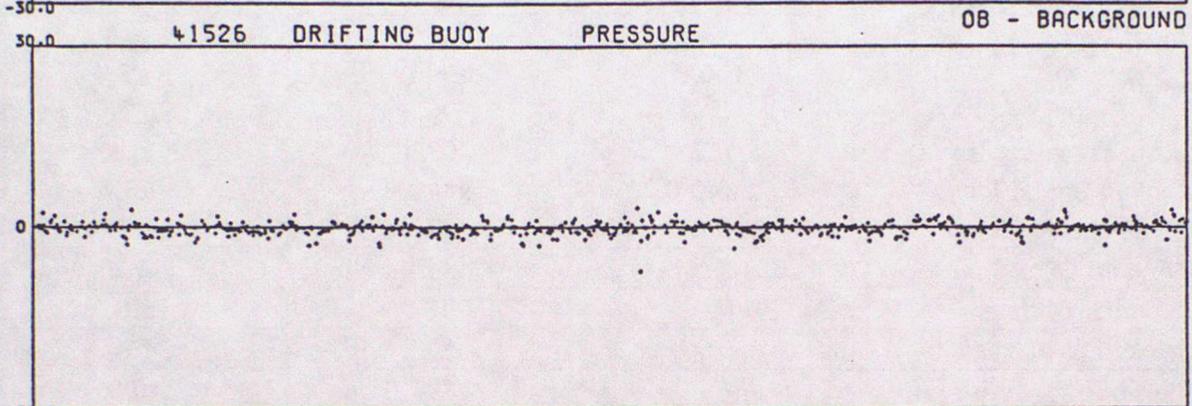
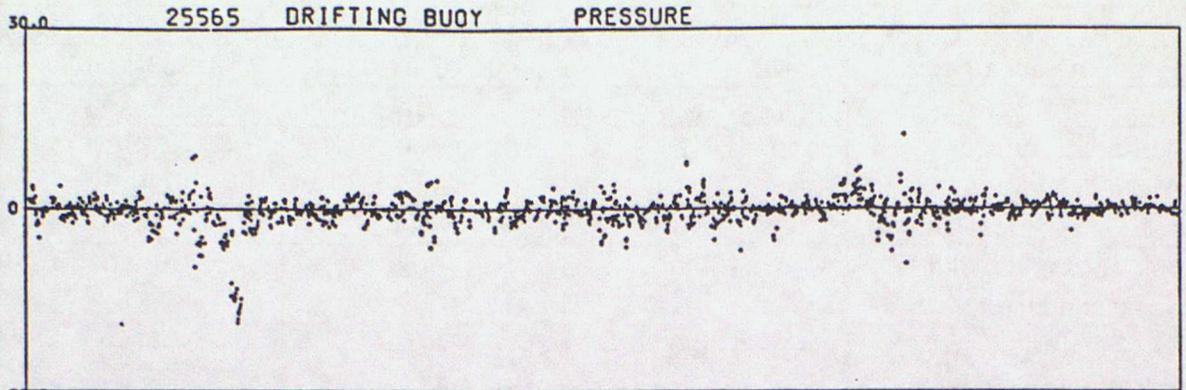
Wmo No./ Country ¹	62508/F	62510/F	62512/F
Argos Id.No.	????	14417	14424
Period within area	18/02-31/03	18/02-31/03	18/02-31/03
Area	N of SCOS	N of SCOS	SCOS
Mean Latitude	49.7	46.5	44.2
Mean Longitude	-20.0	-18.9	-19.5
No. of obs received ²	936	869	838
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	99.8	99.8	100.0
% of Presents			
Pressure	99.9	100.0	100.0
P. Tendency	64.5	61.9	60.5
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.	38.6	61.9	60.5
Median delay (min) ⁶	162.0	415.0	209.0
Number of days	43.0	43.0	43.0
Mean no. of obs/day	21.8	20.2	19.5
No. of hours with obs	724.0	678.0	650.0
Mean no. of hours/day with obs	16.8	15.8	15.1
% of hour periods without an ob ⁷	30.0	34.2	37.1
Mean (Ob-Bg)	0.6	0.4	0.6
RMS (Ob-Bg)	1.3	1.2	1.3
unflagged datas			
Mean (Ob-bg)	0.5	0.3	0.6
RMS (Ob-Bg)	1.4	1.3	1.4
all datas			
Revised RMS (Ob-Bg) ⁸	1.4	1.3	1.4
% of data flaggeds	30.0	35.0	33.0
Operating at end of period	YES	YES	YES
Performances			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Satisfactory	Very Poor	Poor
Comments			

Wmo No./ Country ¹	62518/F	62694/NL	63665/D
Argos Id.No.	14419	9306	8067
Period within area	01/01-10/02	01/01-31/03	01/01-31/03
Area	E of SCOS	SOBA	N of SOBA
Mean Latitude	41.6	61.7	68.3
Mean Longitude	-11.9	-38.3	-25.3
No. of obs received ²	764	5463	2104
% of obs with valid Time and Dates ³	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	100.0	99.3	100.0
% of Presents			
Pressure	97.4	96.6	92.1
P. Tendency	94.6	93.7	90.2
Air Temperature	0.0	96.3	72.8
Wind Speed/Dir.	98.0/97.4	0.0/0.0	0.0/0.0
Sea-surface temp.	98.2	56.3	0.0
Median delay (min) ⁵	39.0	28.0	157.0
Number of days	41.0	91.0	91.0
Mean no. of obs/day	18.6	60.0	23.1
No. of hours with obs	595.0	2018.0	1475.0
Mean no. of hours/day with obs	14.5	22.2	16.2
% of hour periods without an ob ⁷	39.6	8.0	32.5
Mean (Ob-Bg)	-0.4	-0.1	-0.4
RMS (Ob-Bg) unflagged datas	1.5	2.0	2.0
Mean (Ob-bg)	-0.4	-1.1	-0.5
RMS (Ob-Bg) all datas	1.4	5.8	2.2
Revised RMS (Ob-Bg) ⁸	1.4	4.6	2.2
% of data flagged ⁹	31.0	71.0	40.0
Operating at end of period	NO	YES	YES
Performances			
Availability	Satisfactory	Very Good	Satisfactory
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Satisfactory
Comments			

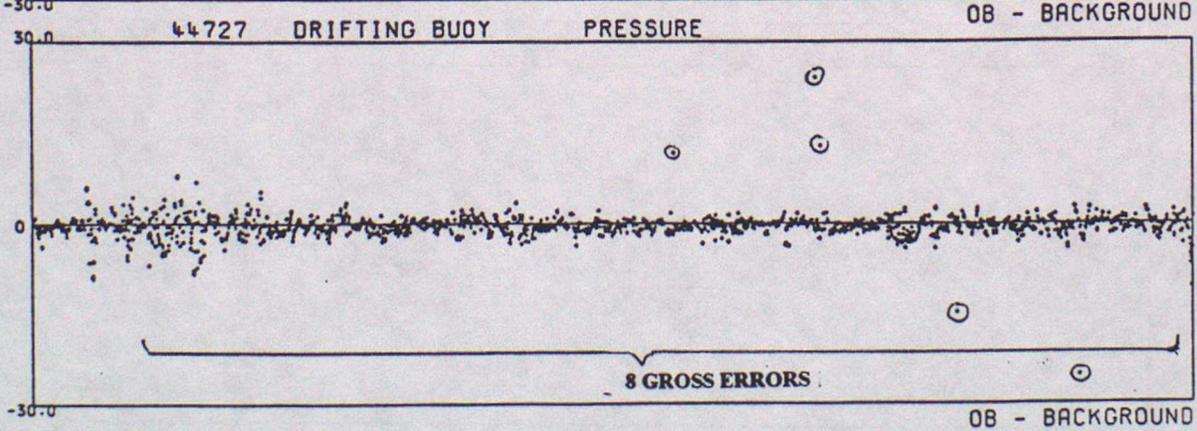
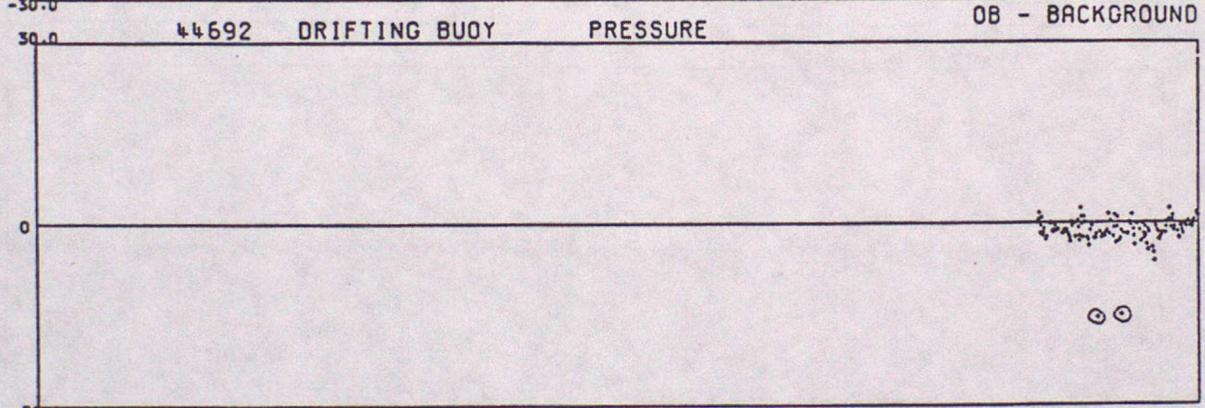
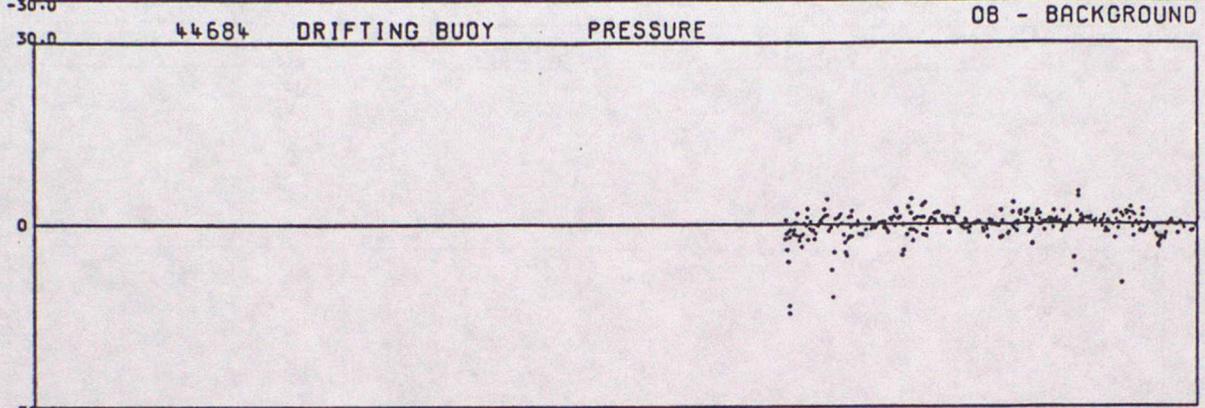
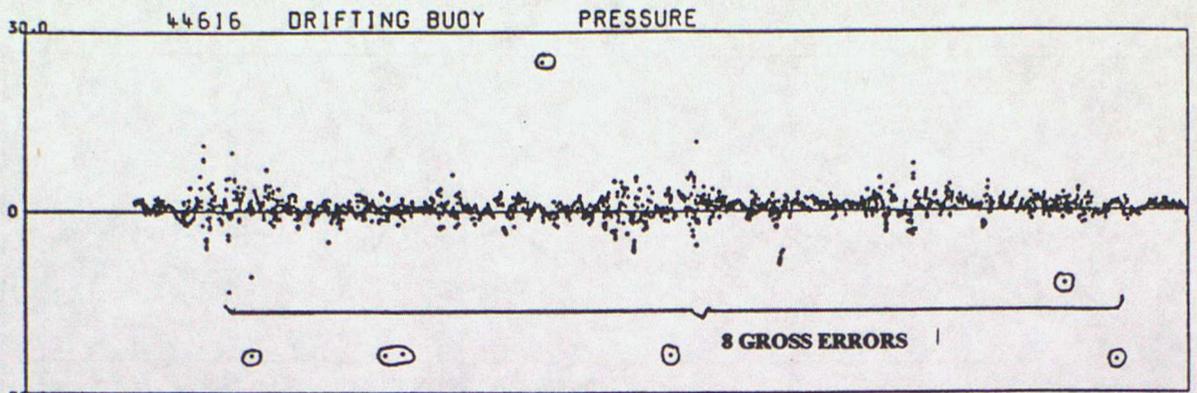
Wmo No./ Country ¹	64934/US	65594/UK	65595/??
Argos Id.No.	23567	1252	????
Period within area	22/03-31/03	01/01-31/03	19/03-31/03
Area	SOBA	SOBA	SOBA
Mean Latitude	63.1	59.3	59.1
Mean Longitude	-27.1	-36.8	-39.7
No. of obs received ²	126	5444	674
% of obs with valid Time and Dates	100.0	100.0	100.0
% of obs with acceptable Positions ⁴	100.0	99.7	97.9
% of Presents			
Pressure	100.0	99.0	97.2
P. Tendency	0.0	95.3	90.2
Air Temperature	0.0	97.7	95.1
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface temp.	0.0	97.6	61.1
Median delay (min) ⁶	1025.0	21.0	111.0
Number of days	10.0	91.0	13.0
Mean no. of obs/day	12.6	59.8	51.8
No. of hours with obs	105.0	1891.0	240.0
Mean no. of hours/day with obs	10.5	20.8	18.5
% of hour periods without an ob ⁷	56.3	13.3	22.9
Mean (Ob-Bg)	0.3	0.1	0.1
RMS (Ob-Bg) unflagged datas	0.8	1.7	1.0
Mean (Ob-bg)	0.3	0.0	0.0
RMS (Ob-Bg) all datas	0.8	2.4	1.0
Revised RMS (Ob-Bg) ⁸	0.8	1.8	1.0
% of data flagged ⁹	22.0	72.0	70.0
Operating at end of period	YES	YES	YES
Performances			
Availability	Satisfactory	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Poor	Very Good	Good
Comments			

ANNEX B - TIME SERIES PLOTS OF PRESSURE

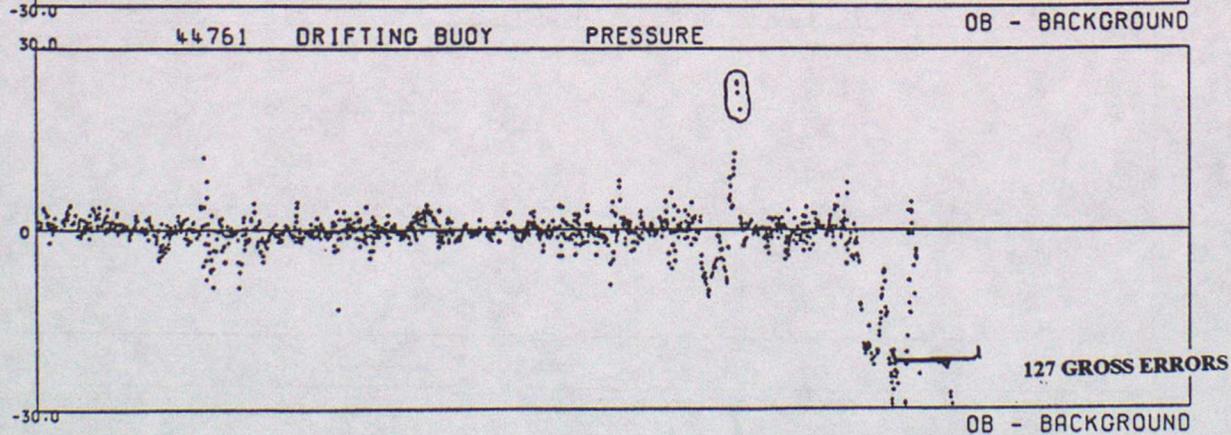
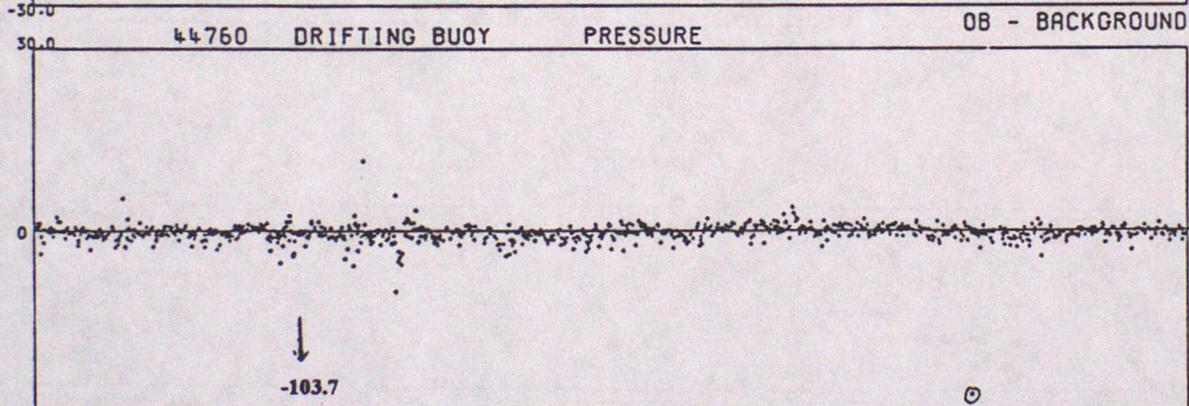
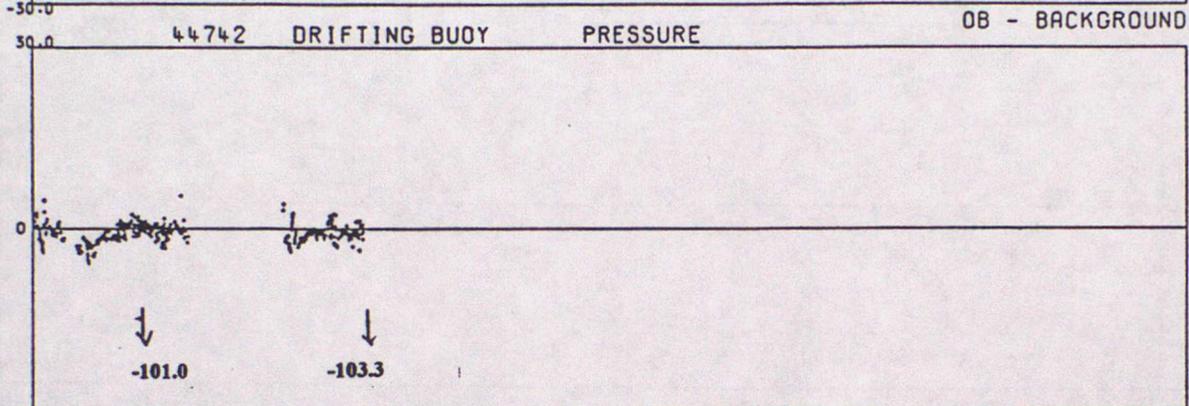
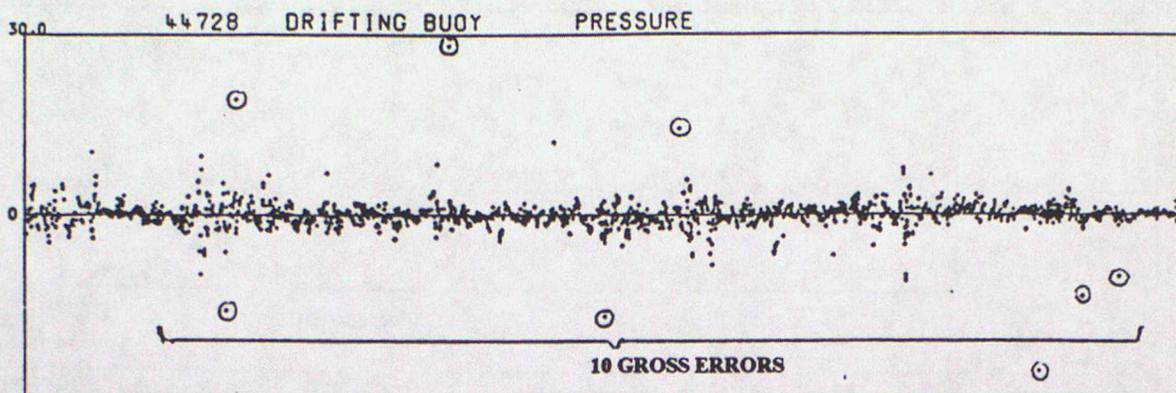
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



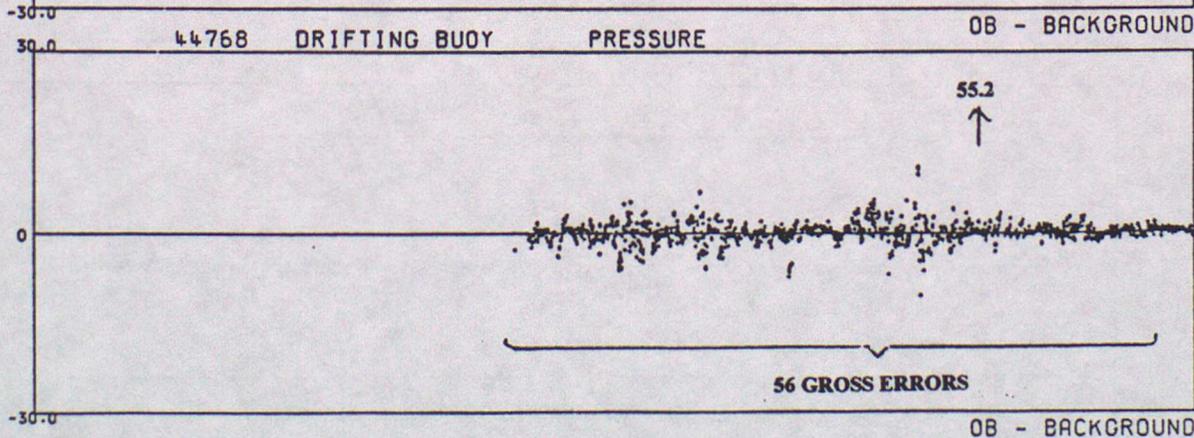
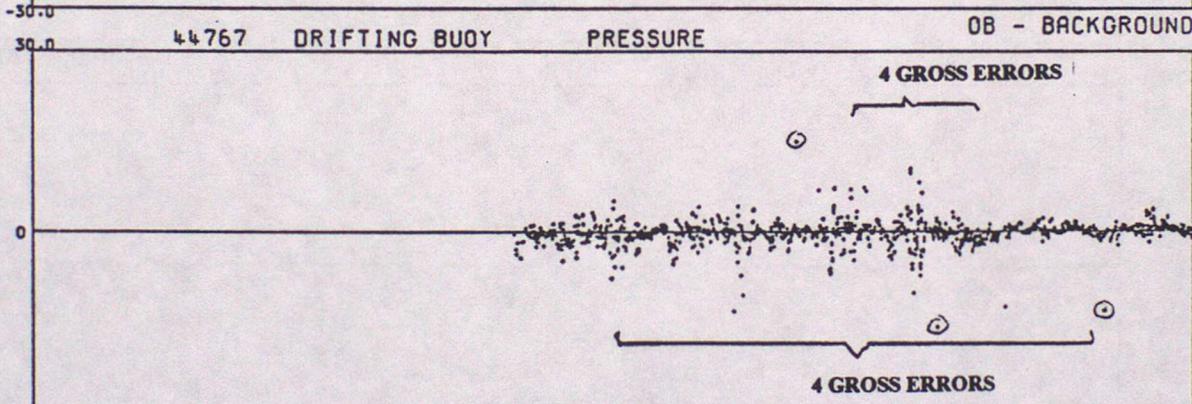
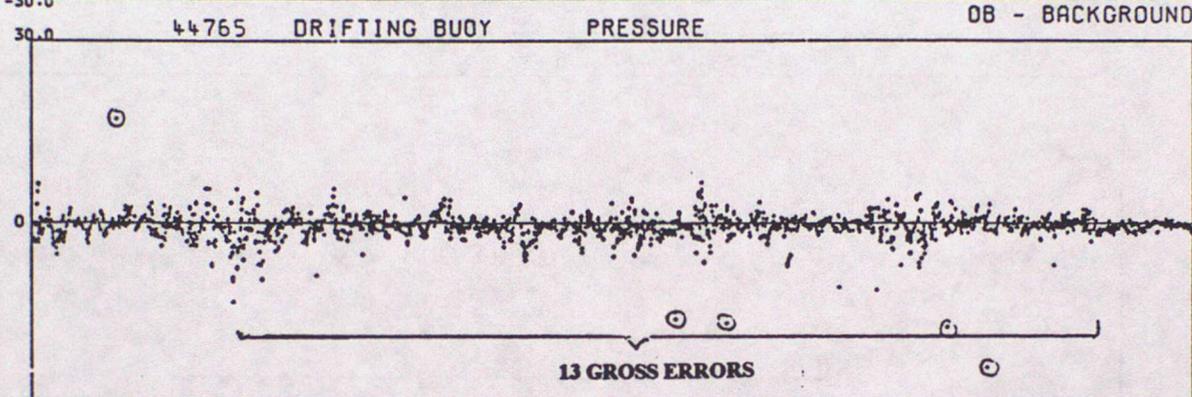
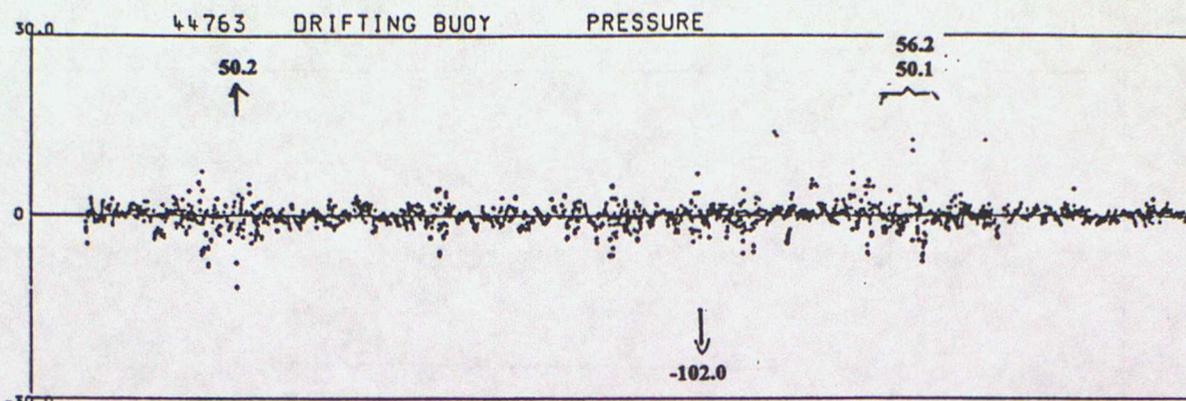
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



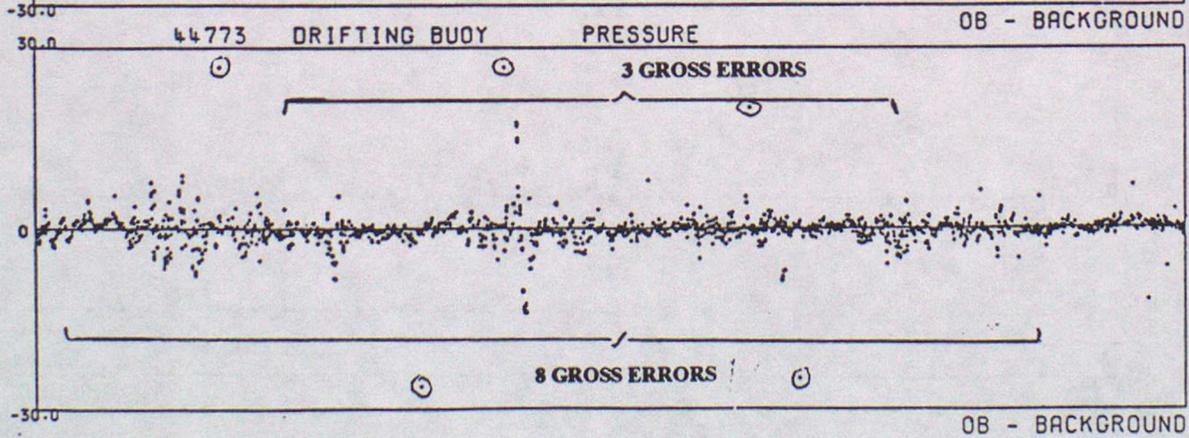
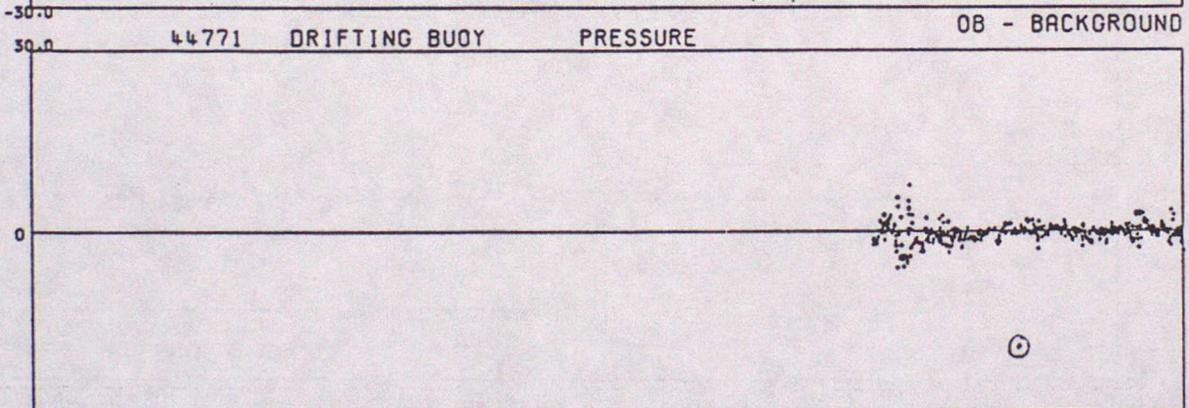
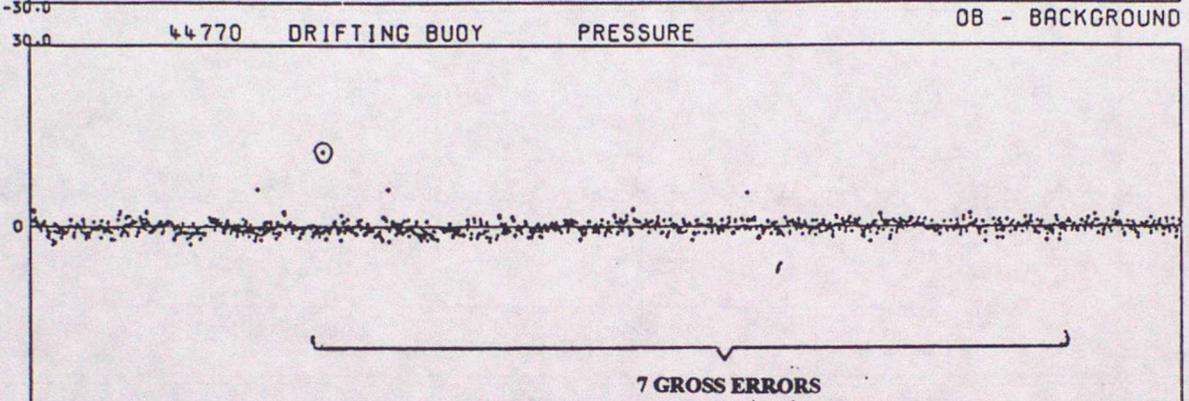
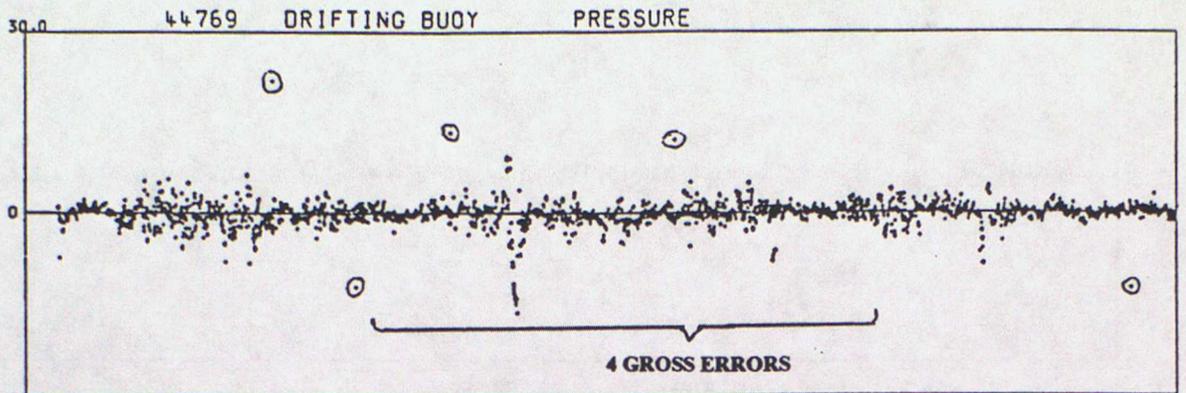
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



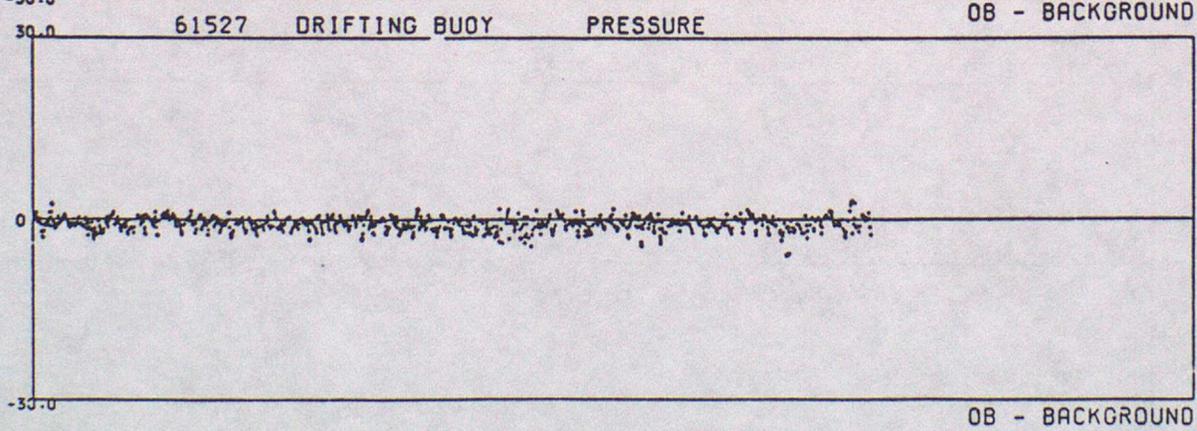
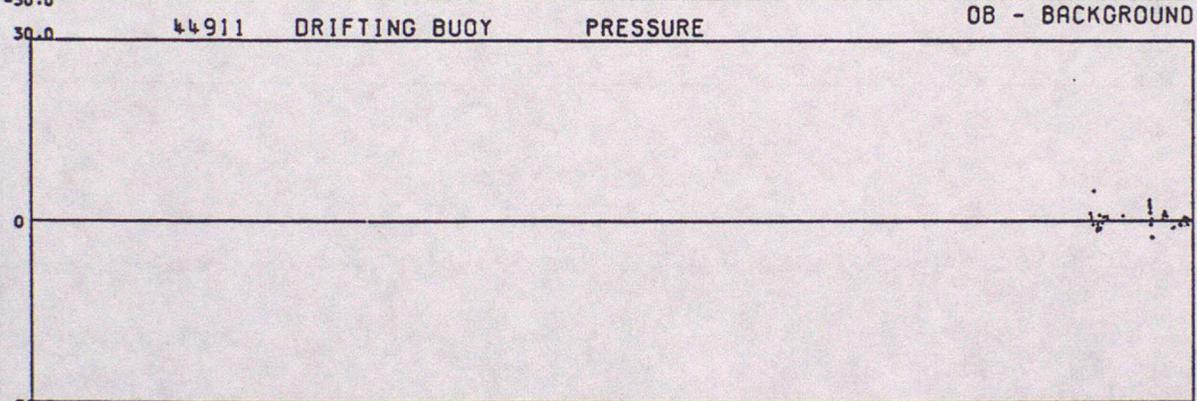
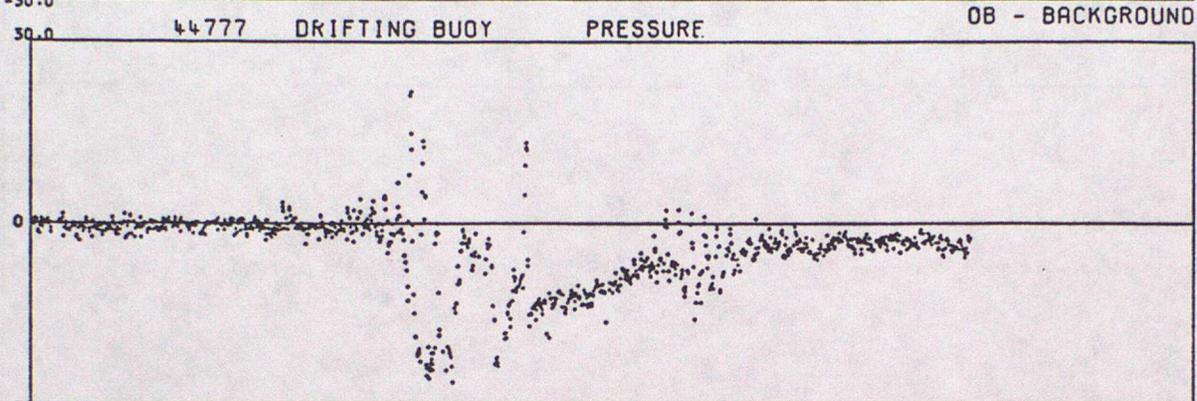
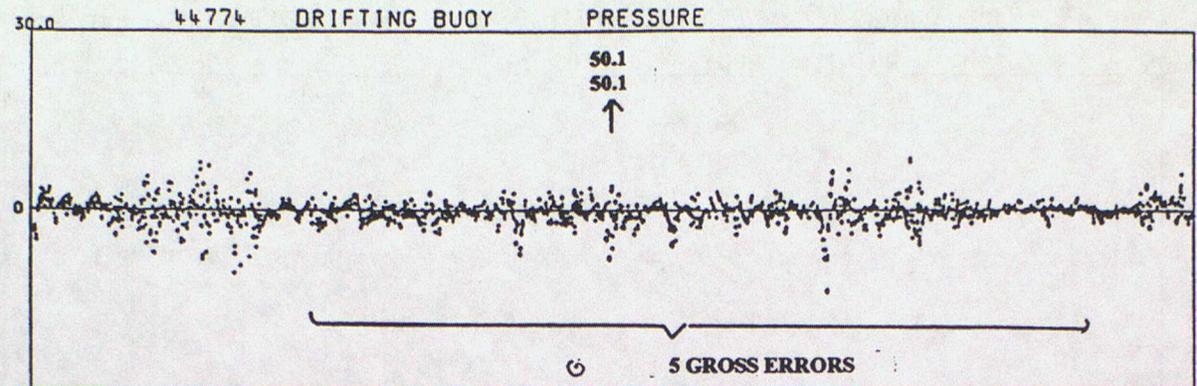
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



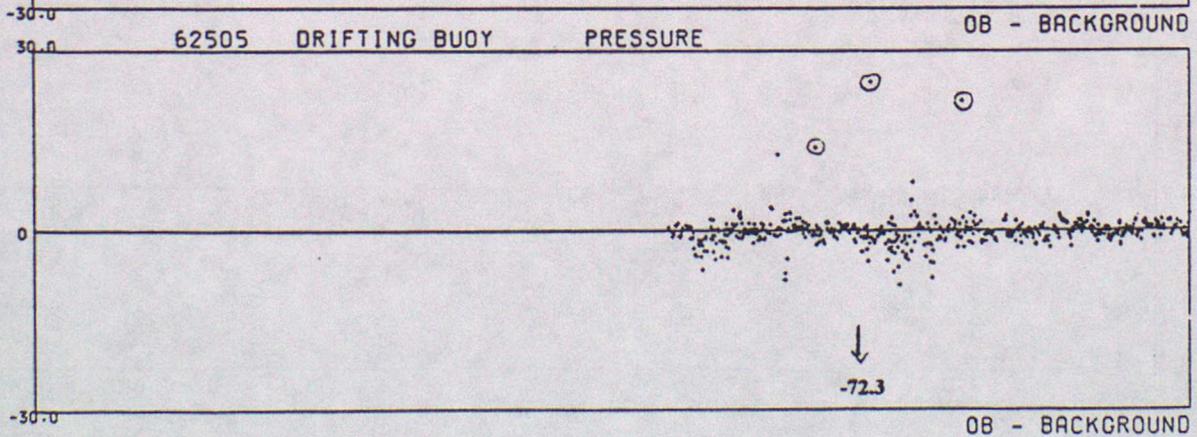
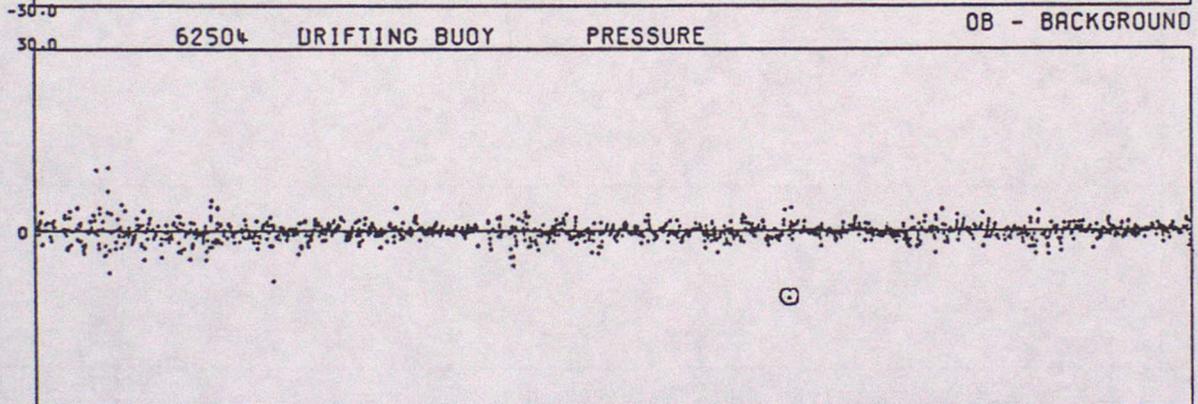
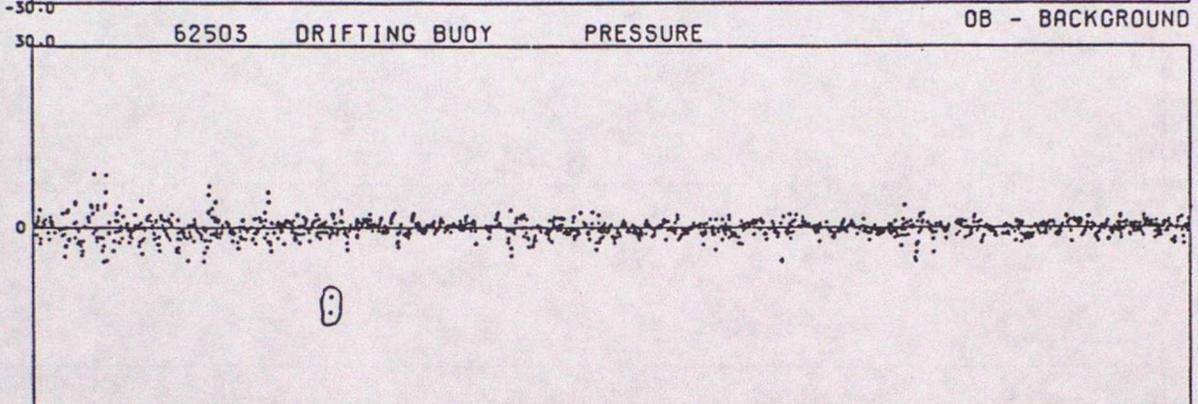
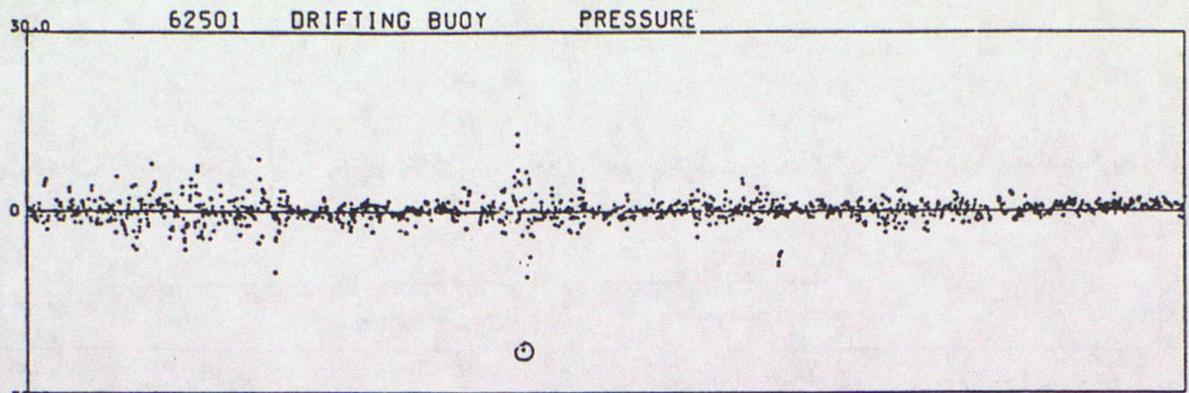
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



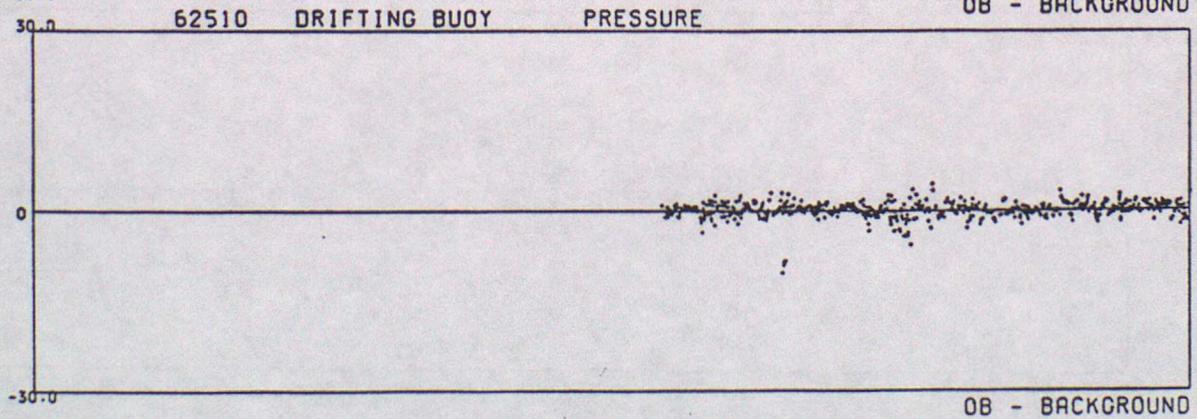
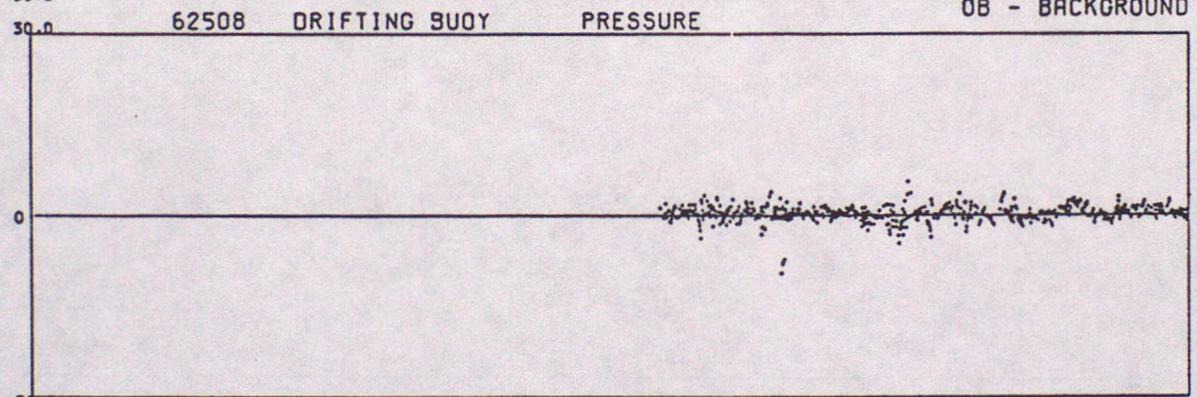
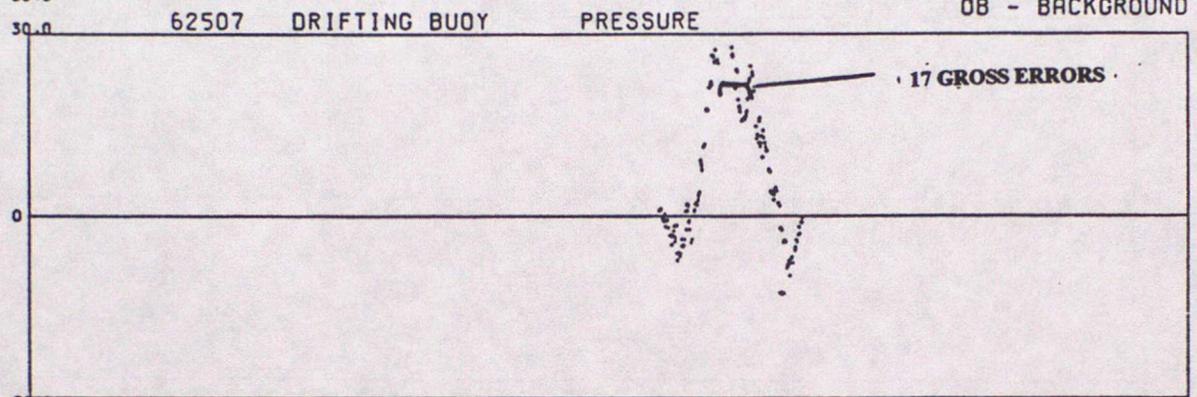
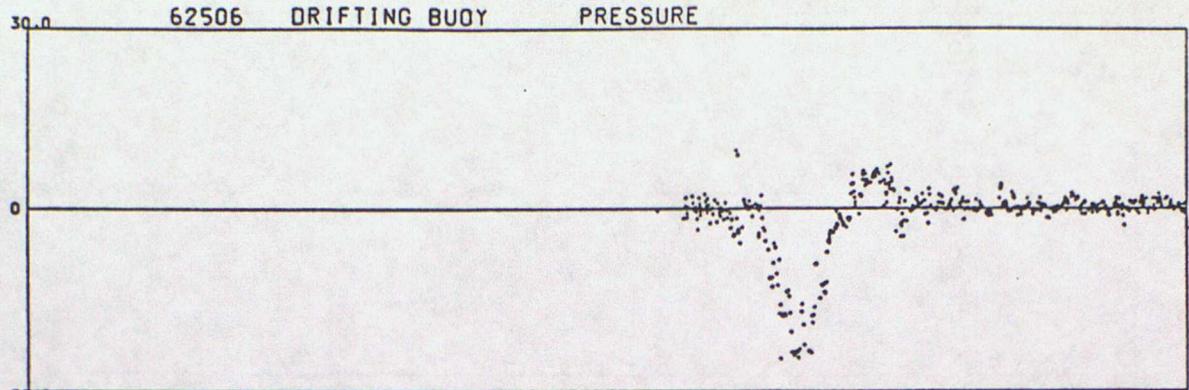
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



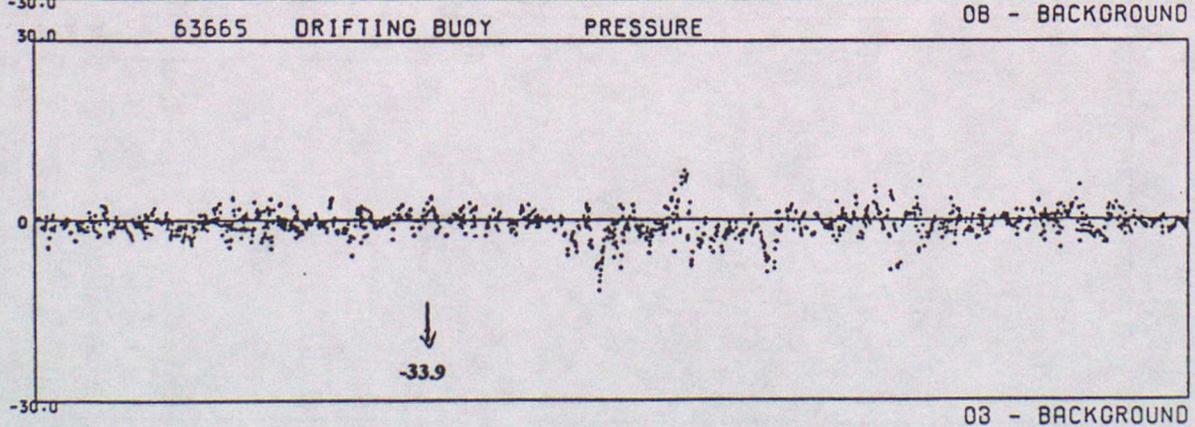
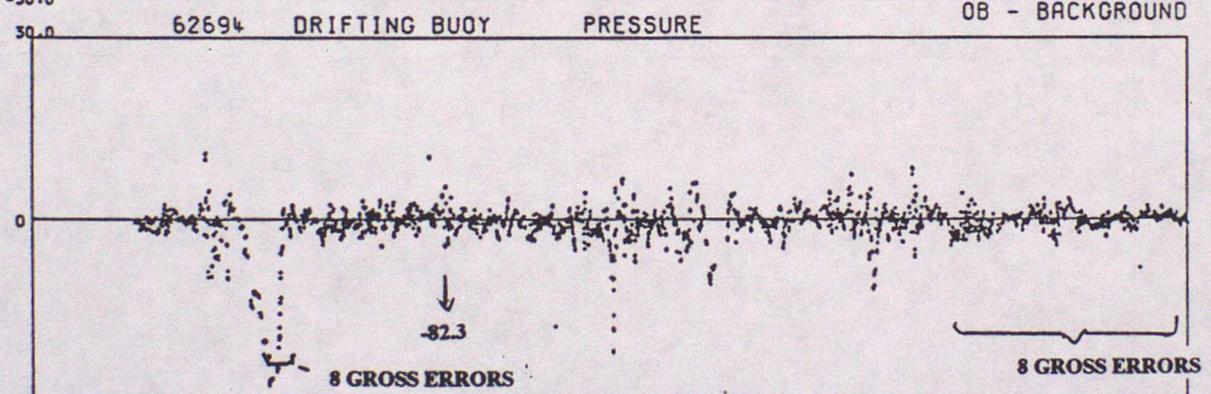
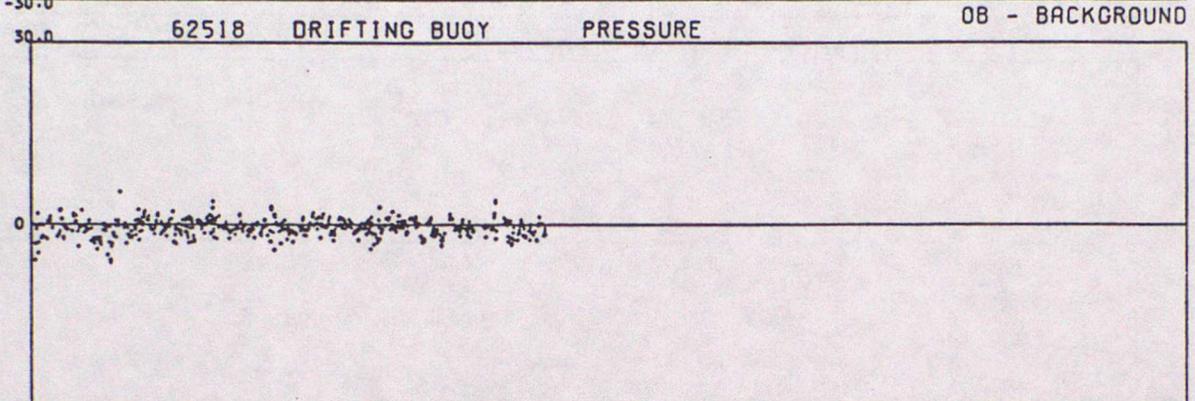
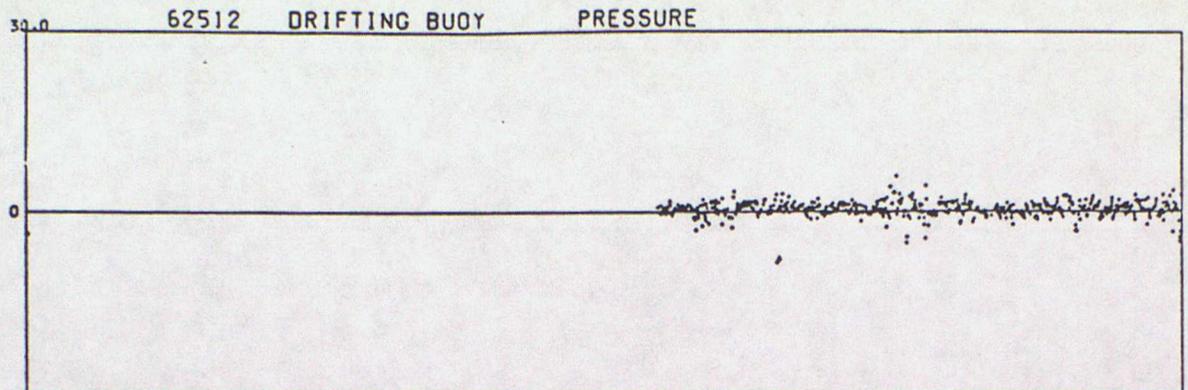
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



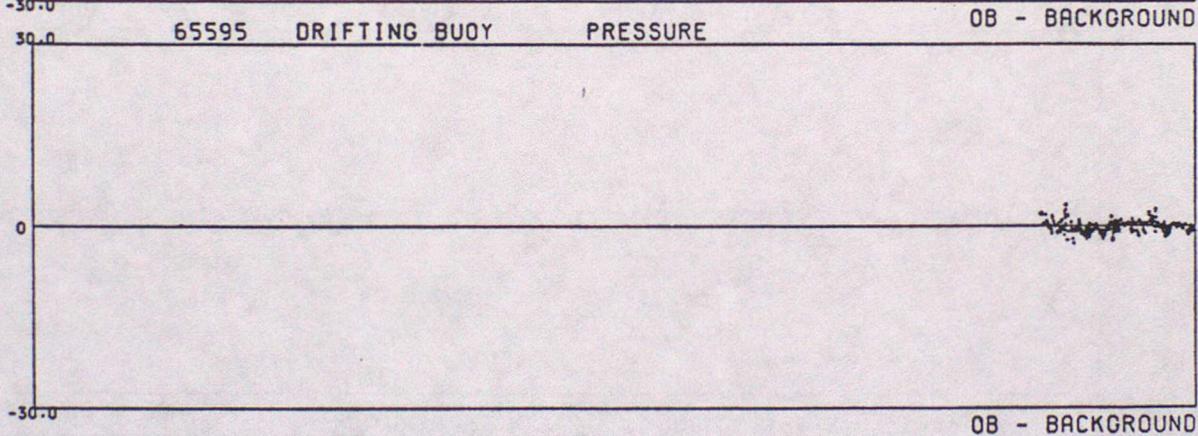
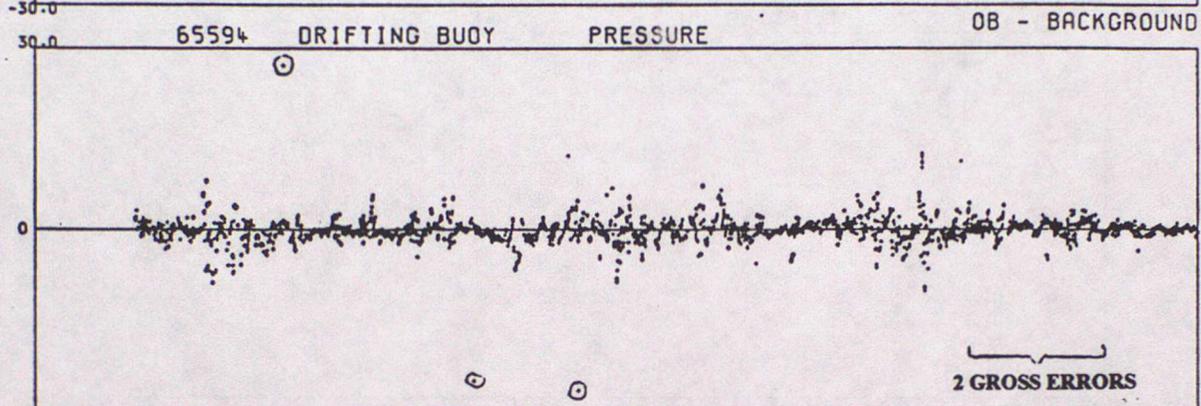
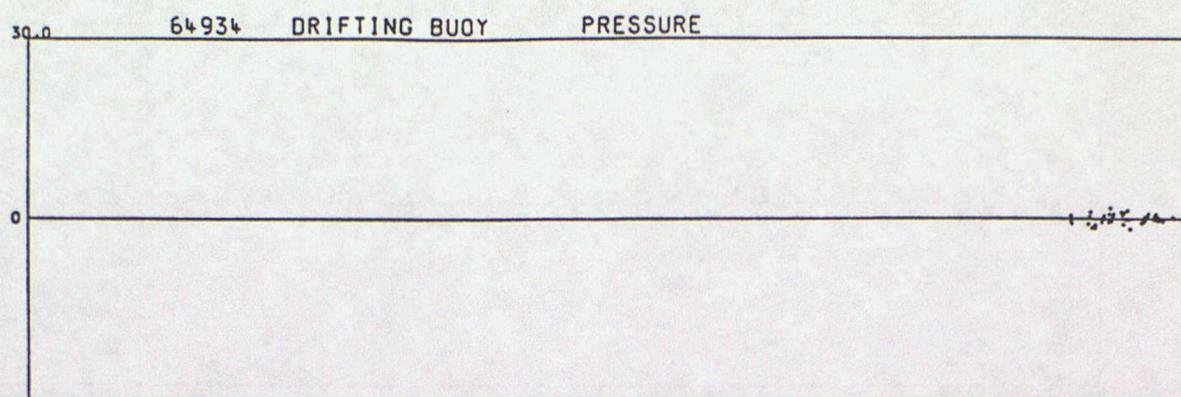
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

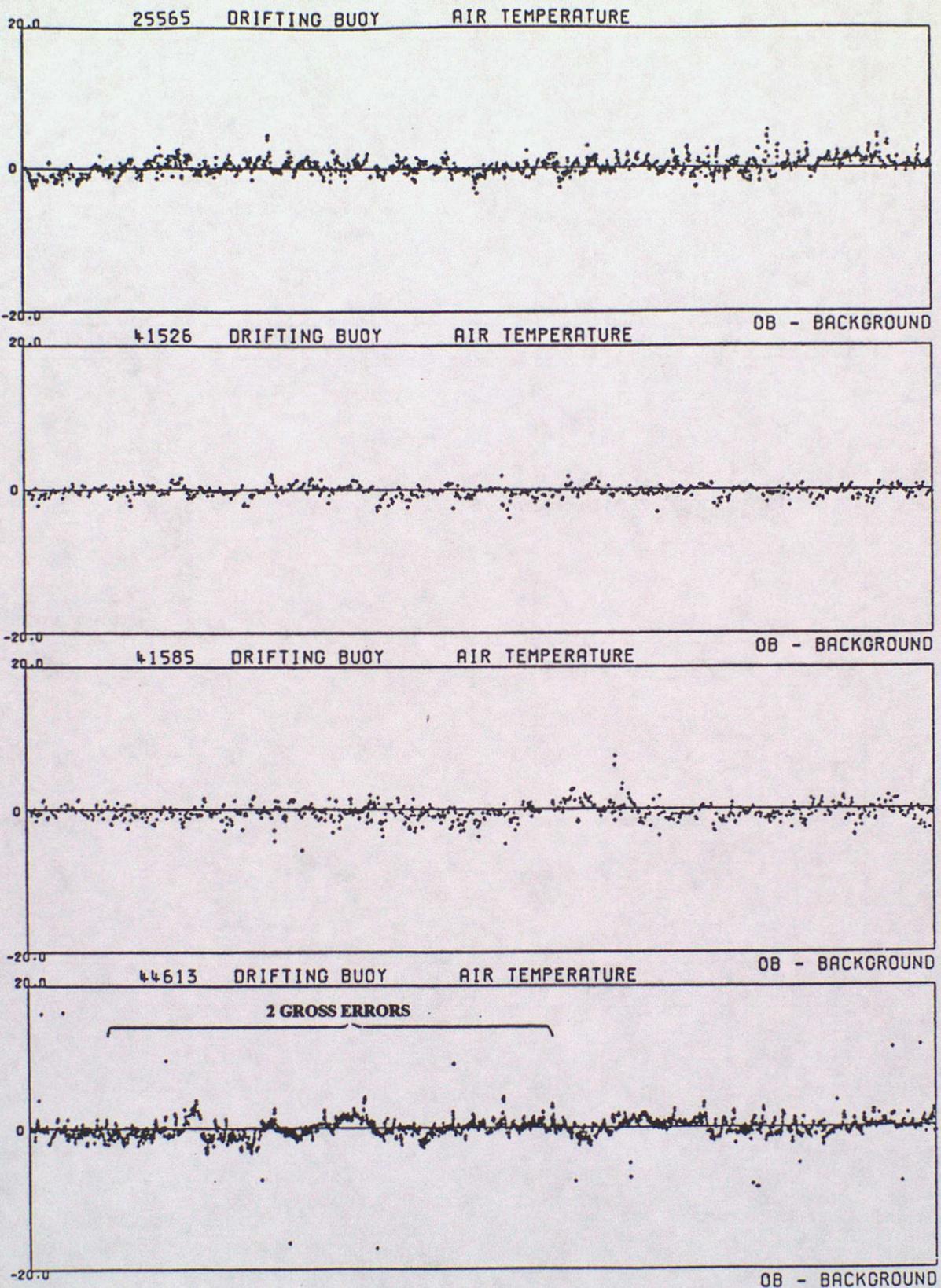


DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

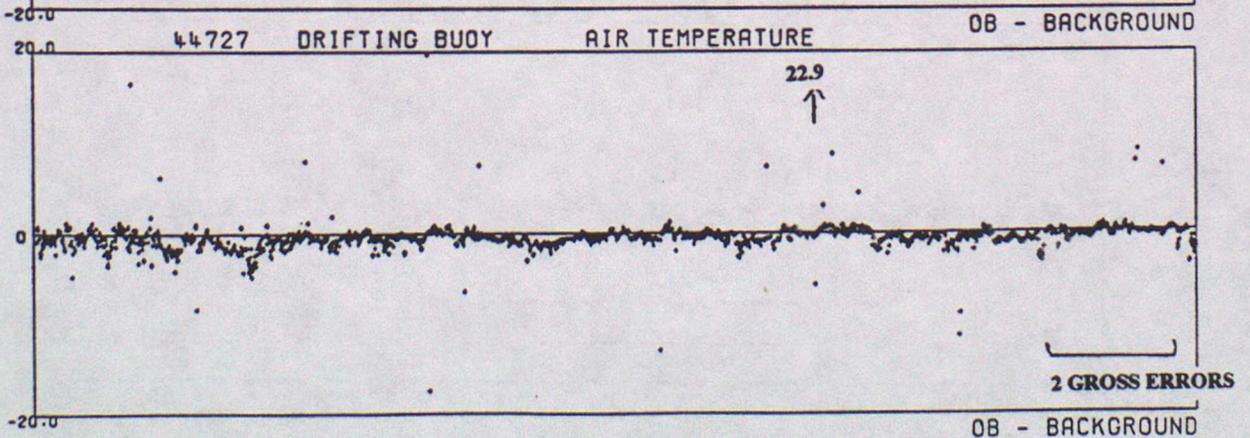
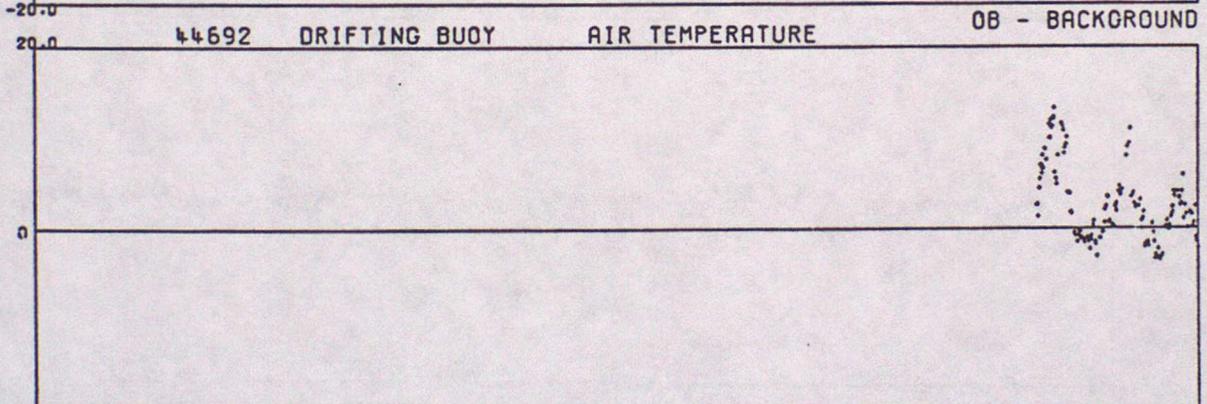
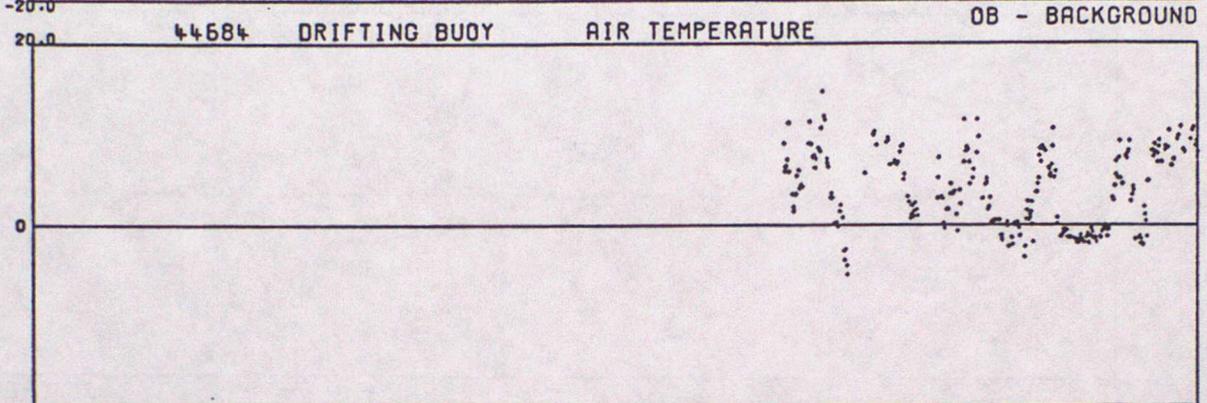
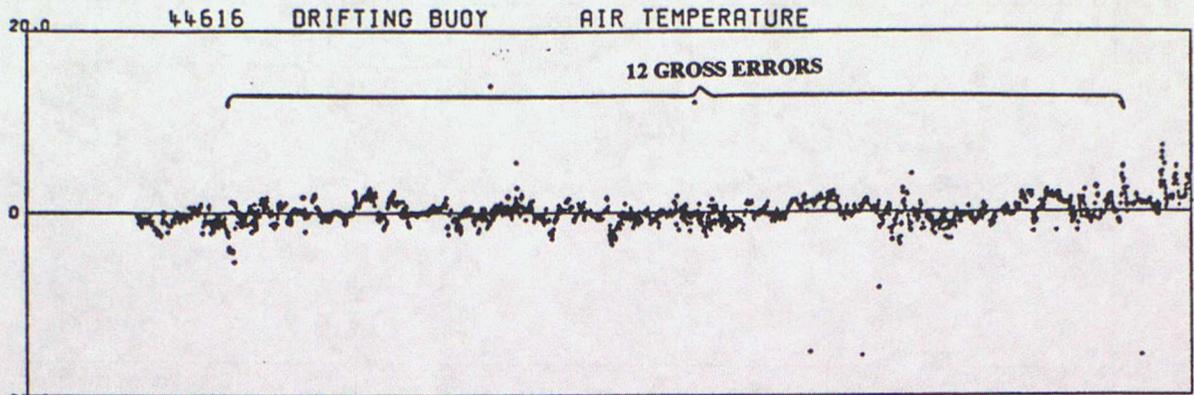


ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

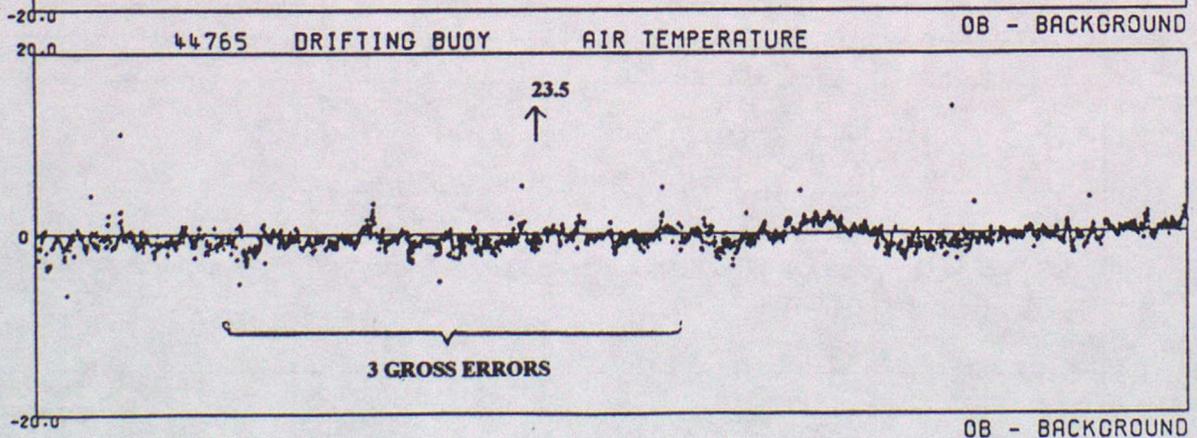
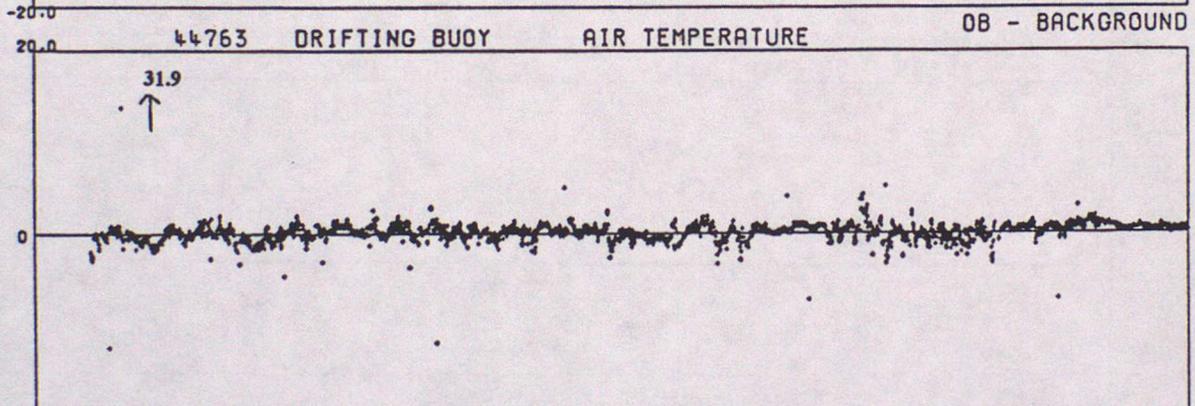
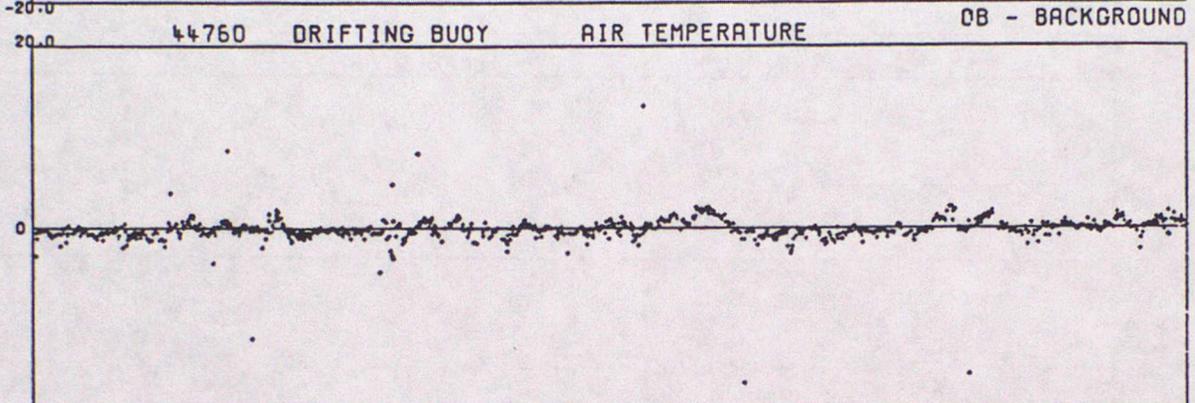
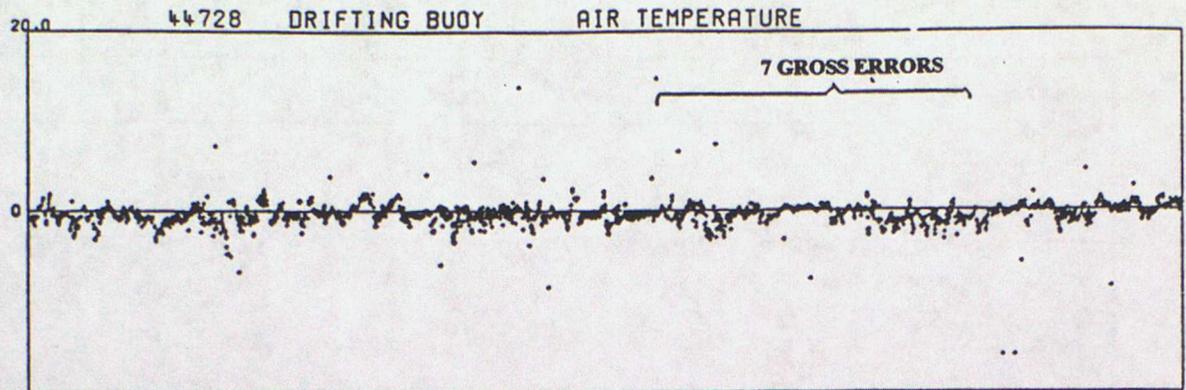
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



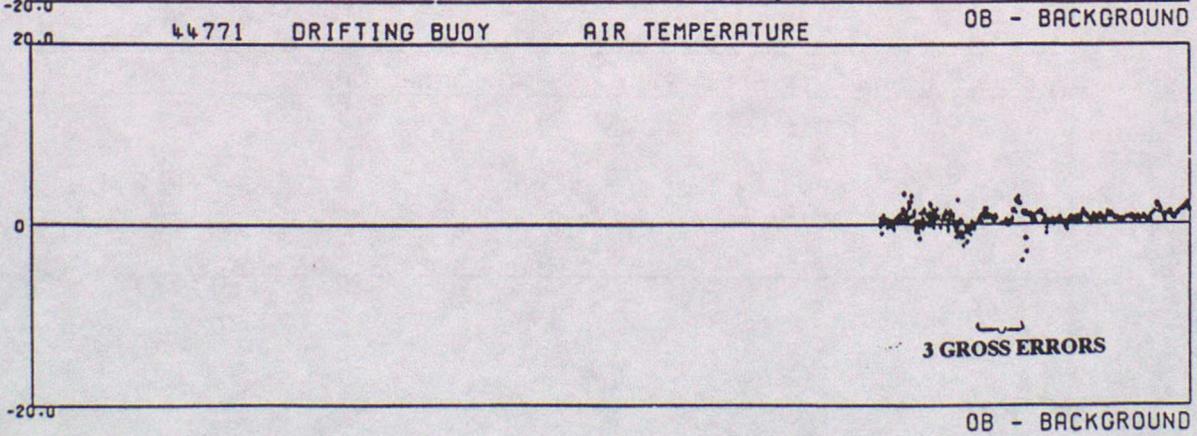
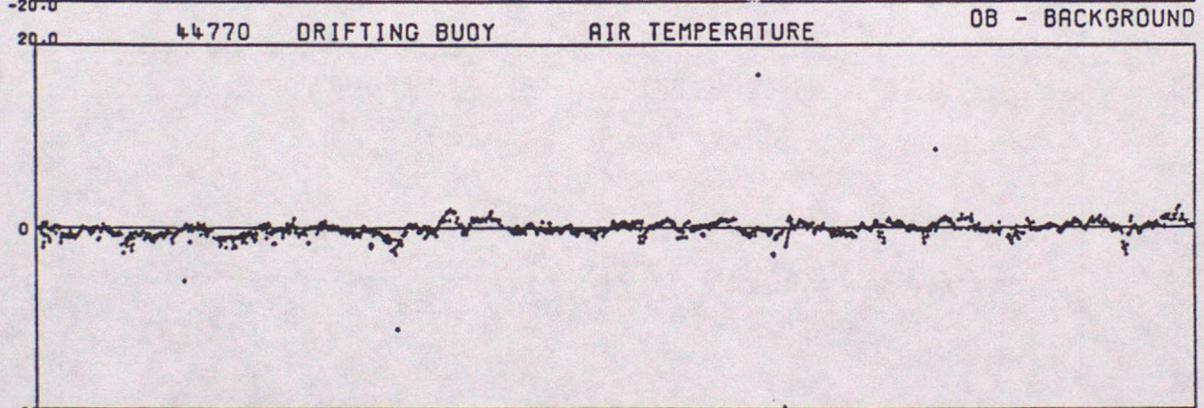
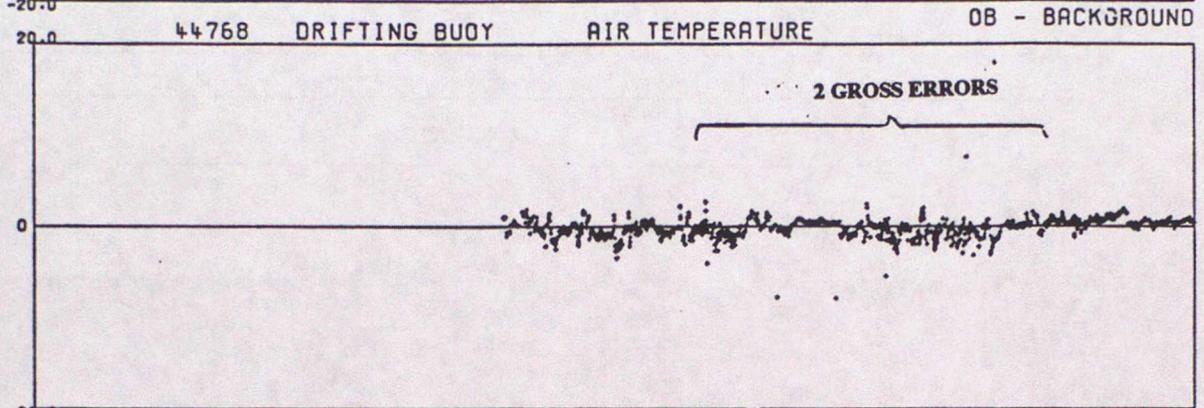
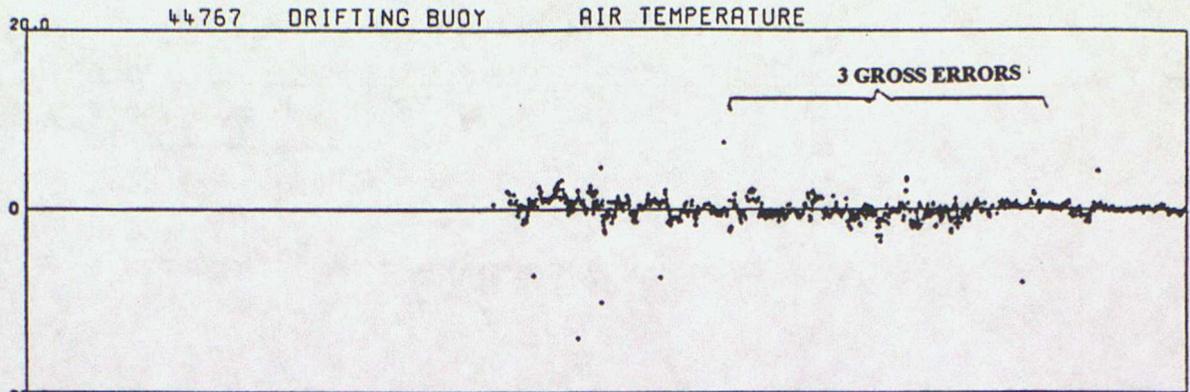
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



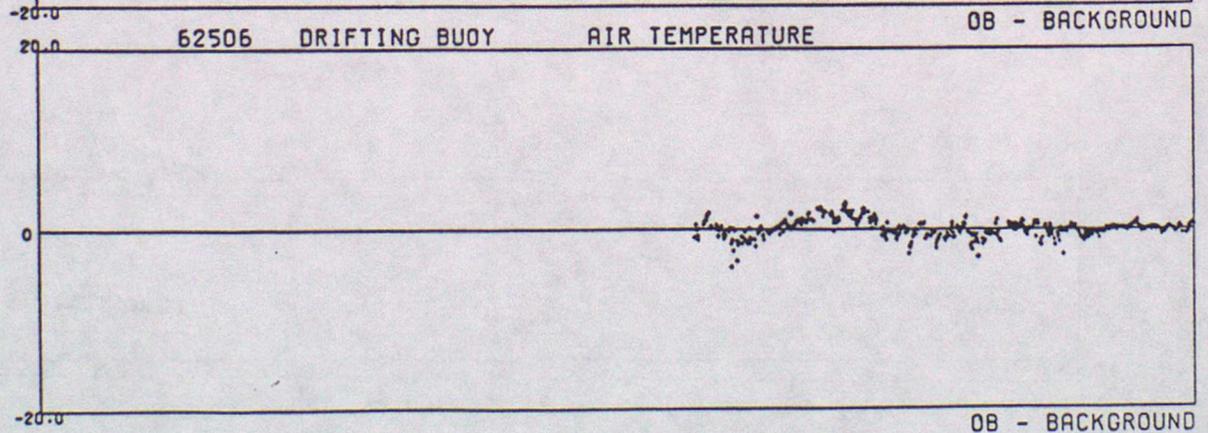
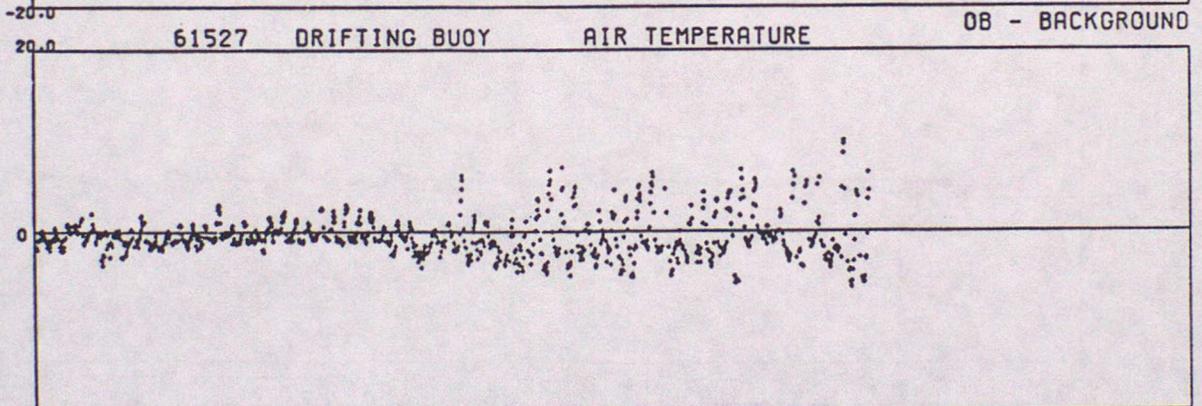
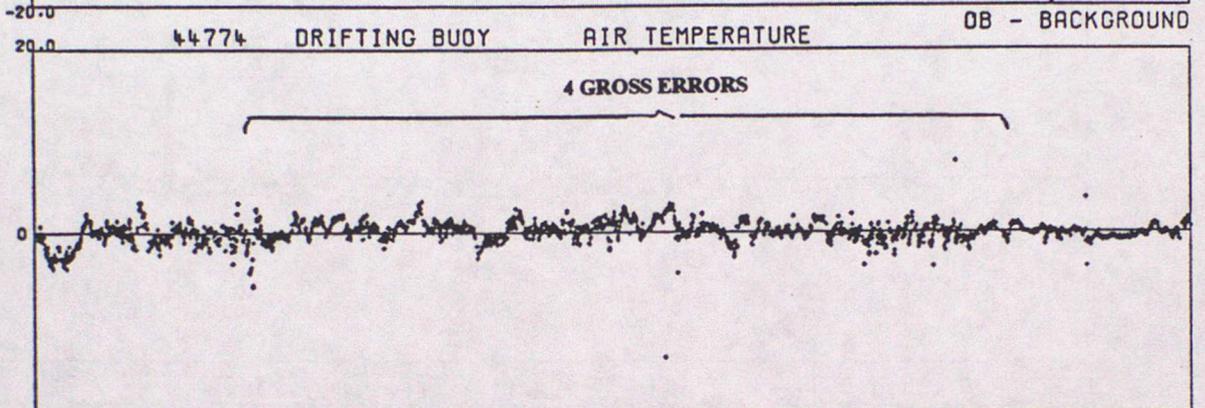
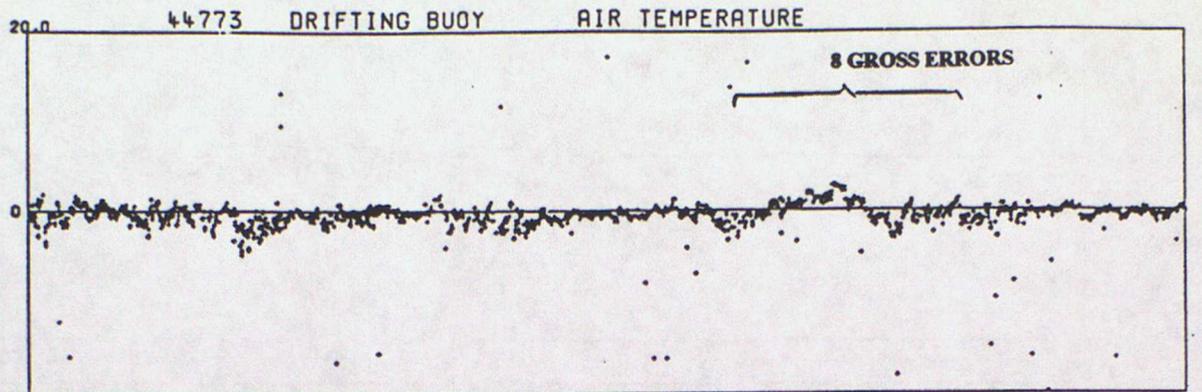
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



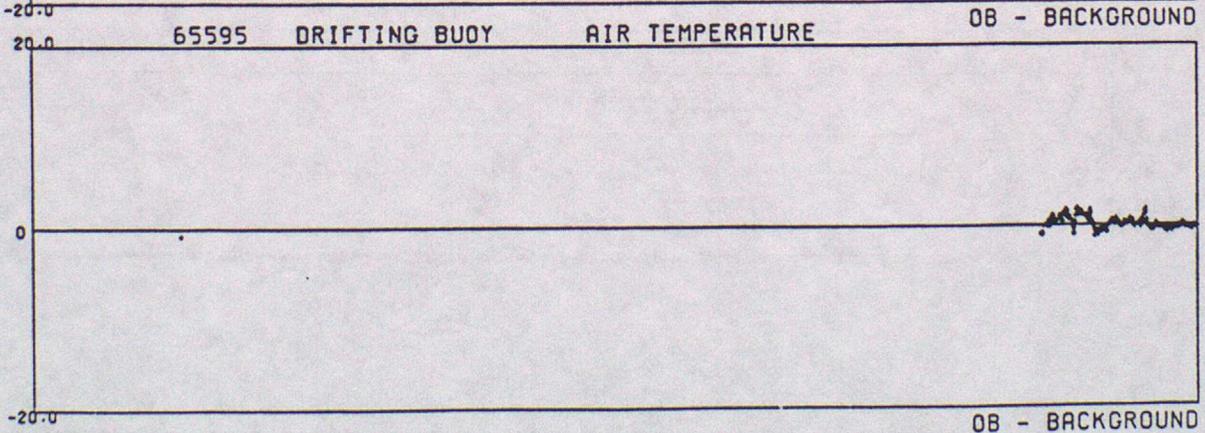
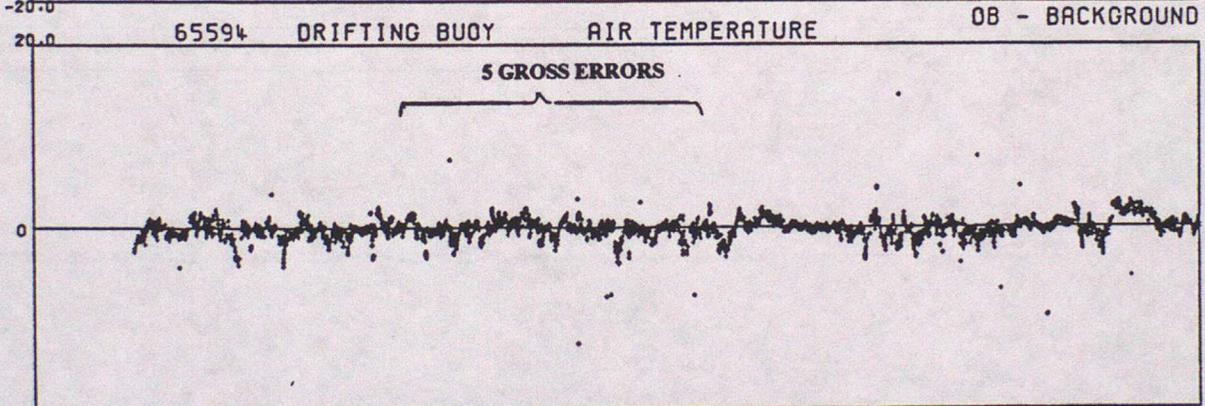
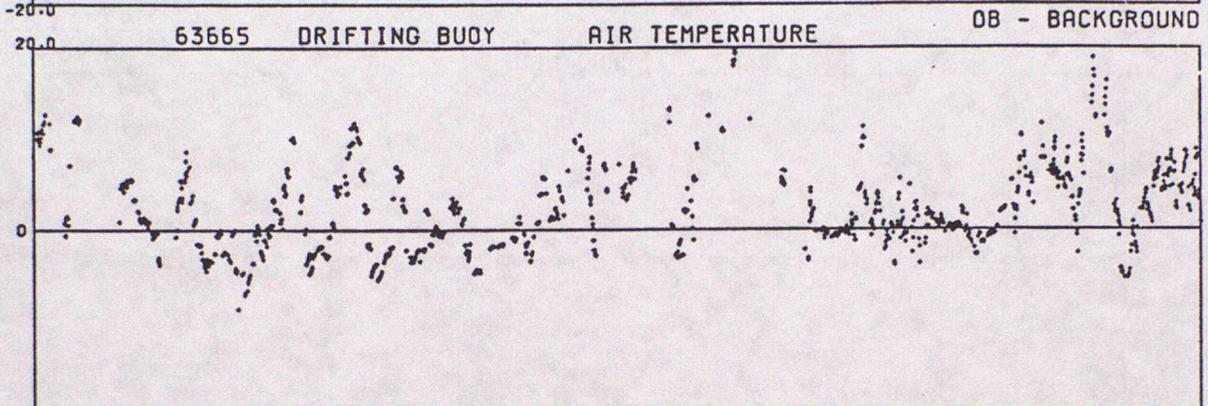
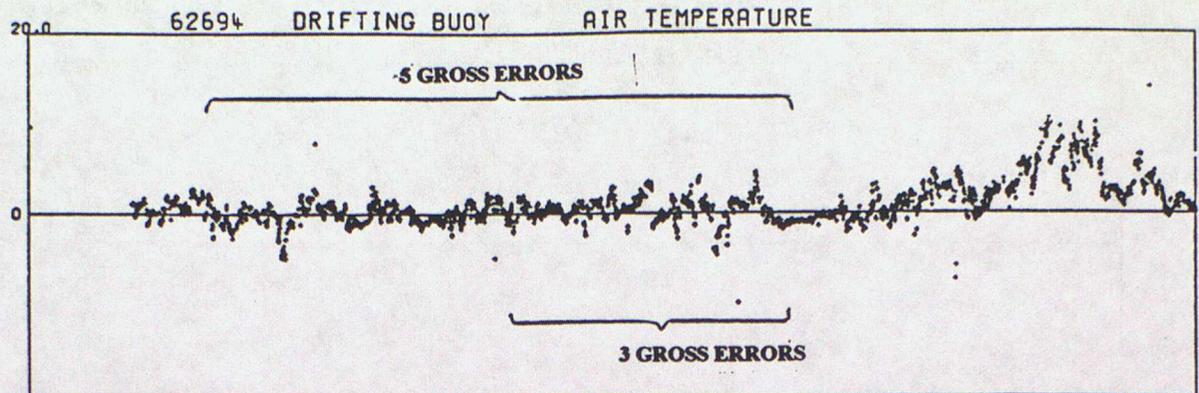
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

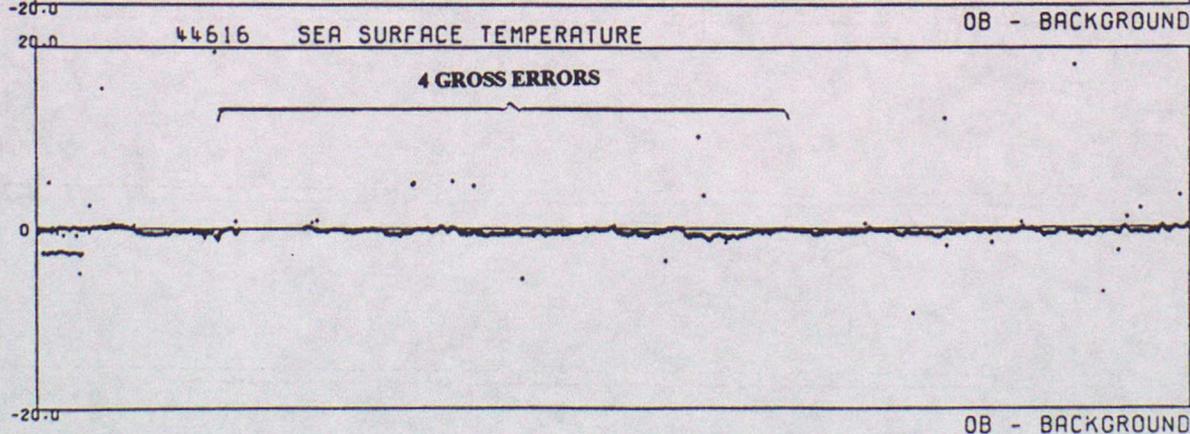
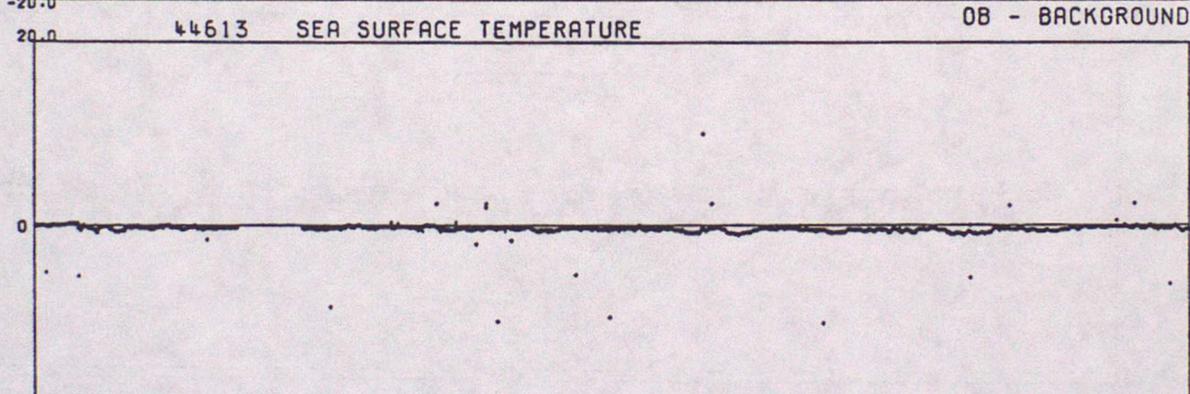
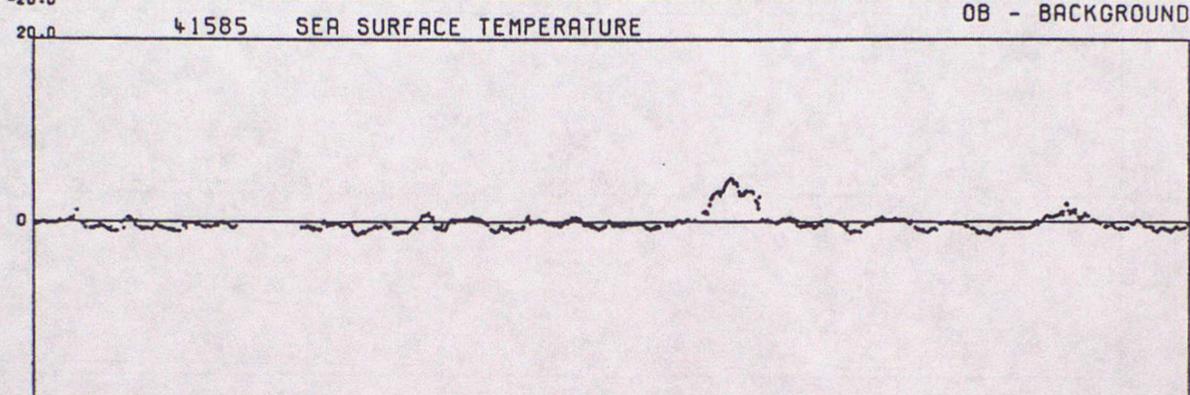
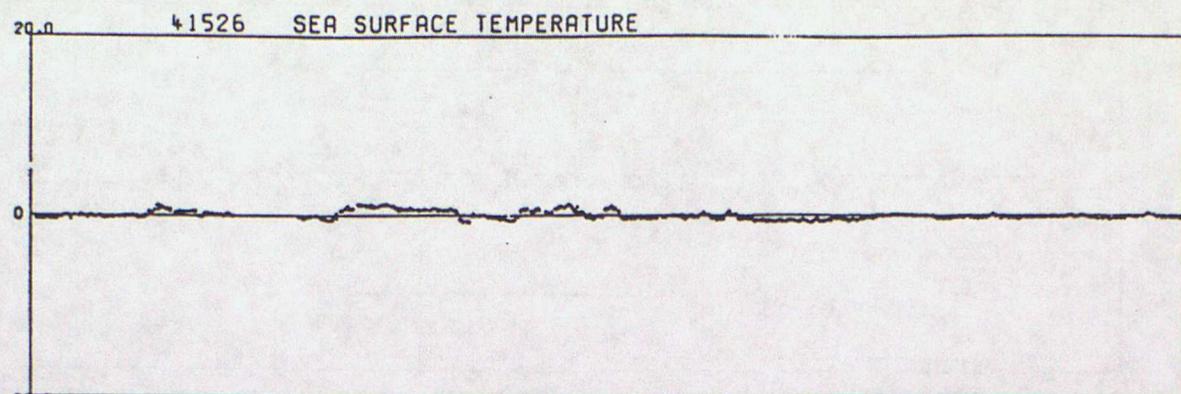


DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

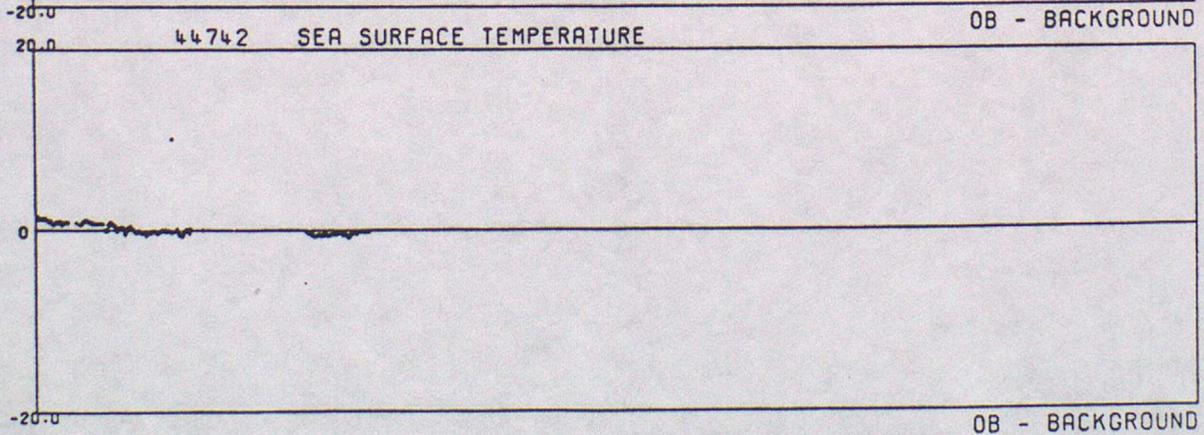
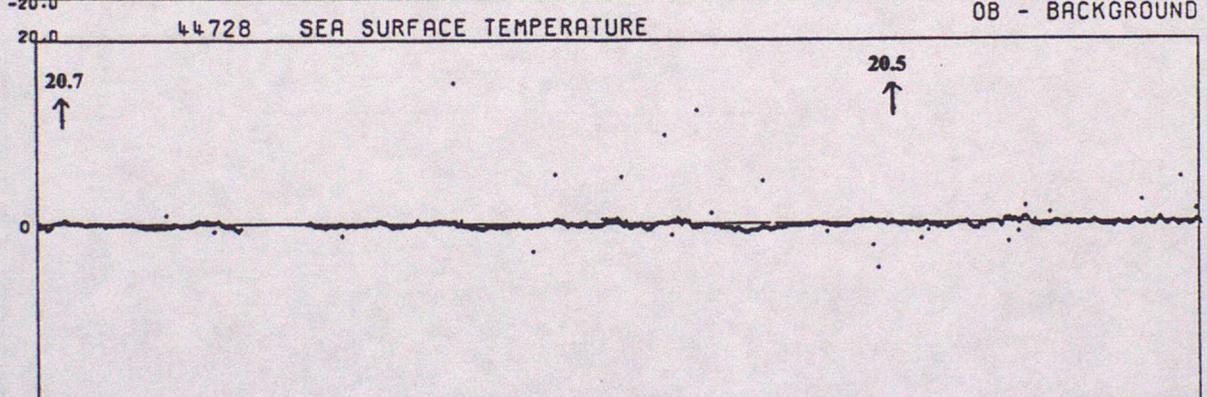
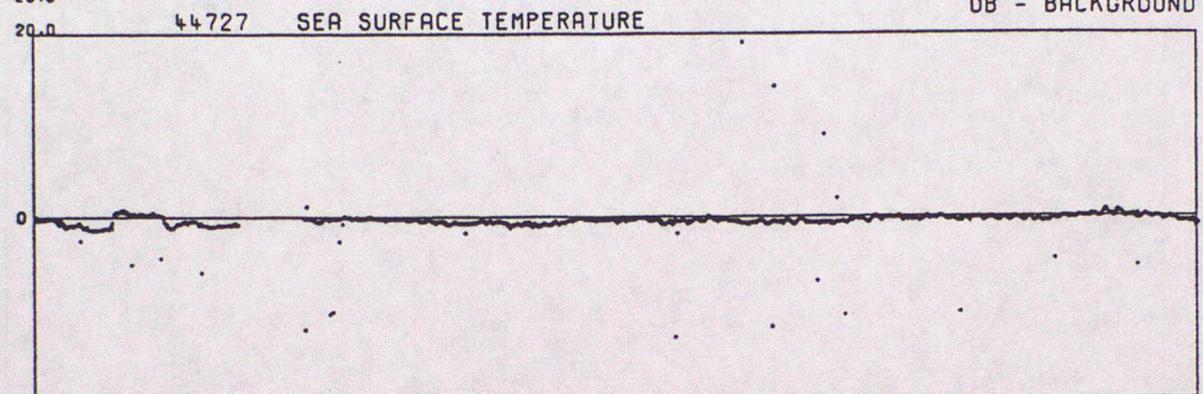
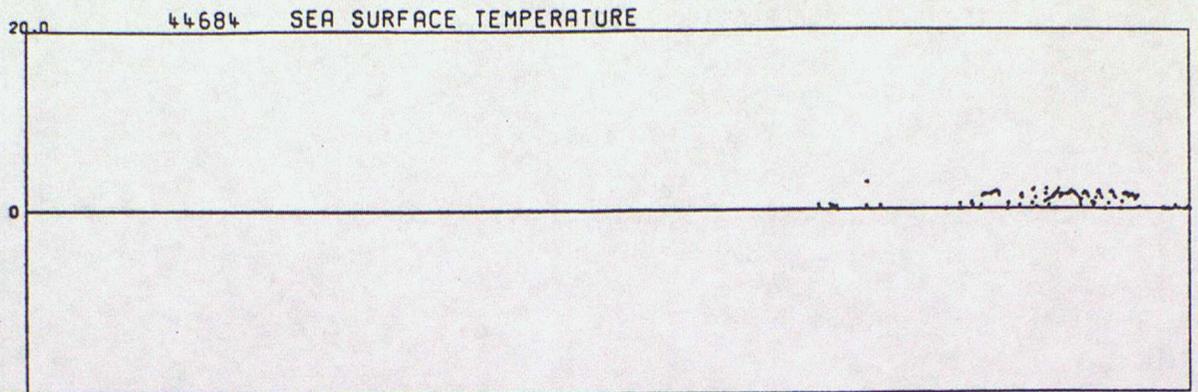


ANNEX D - TIME SERIES PLOTS OF SEA SURFACE TEMPERATURE

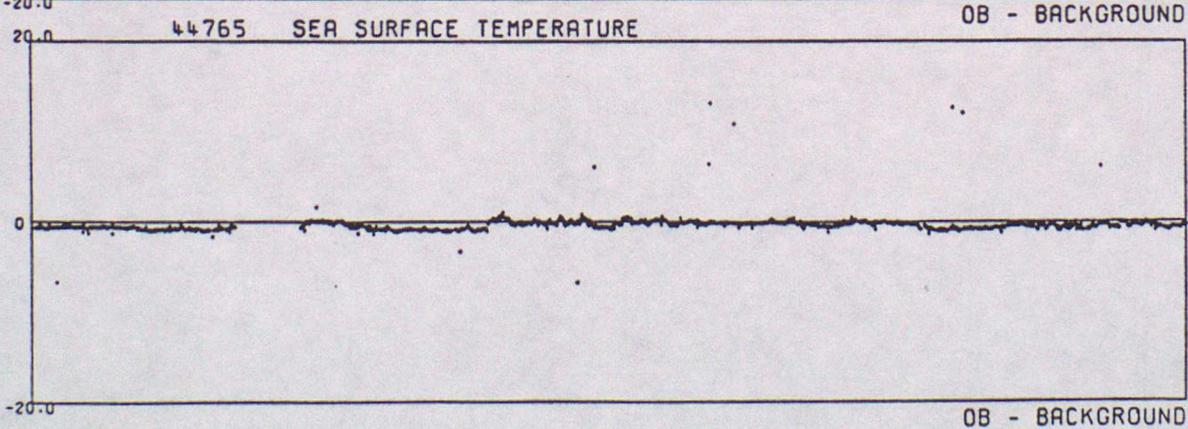
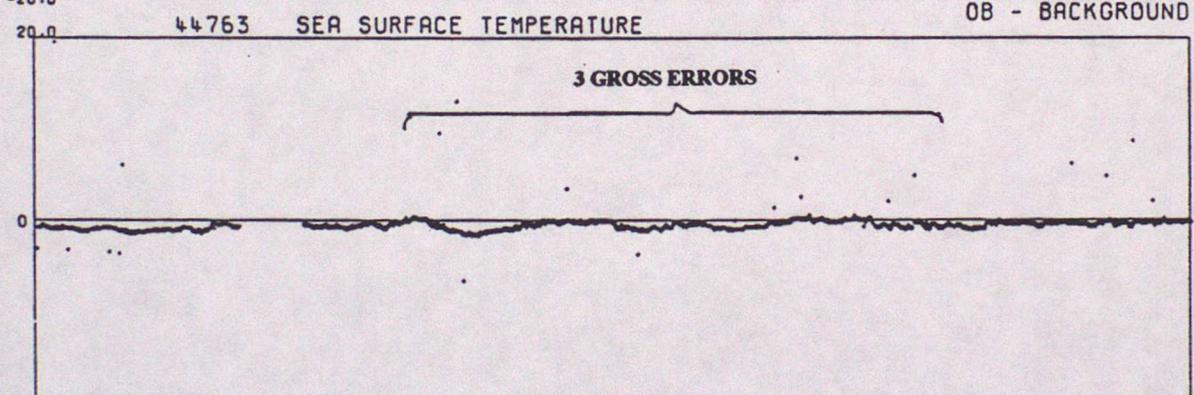
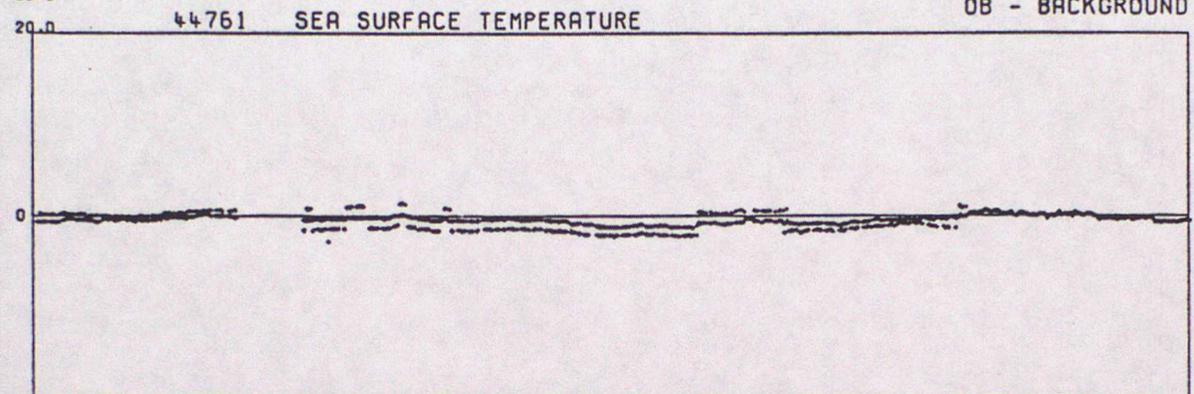
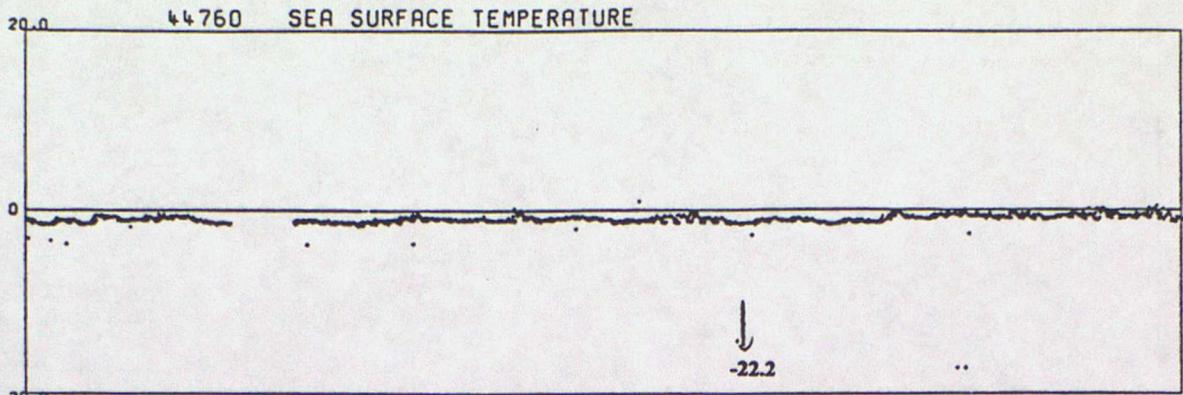
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



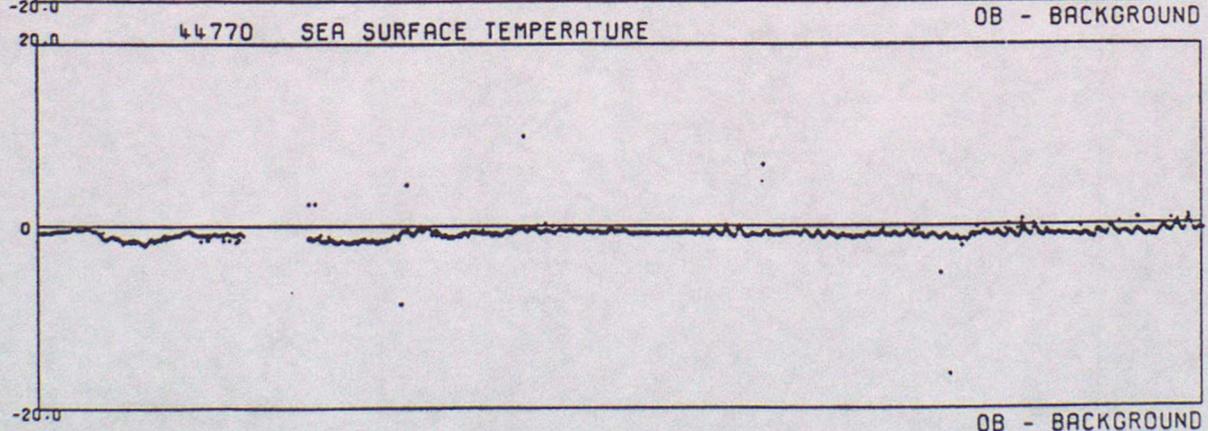
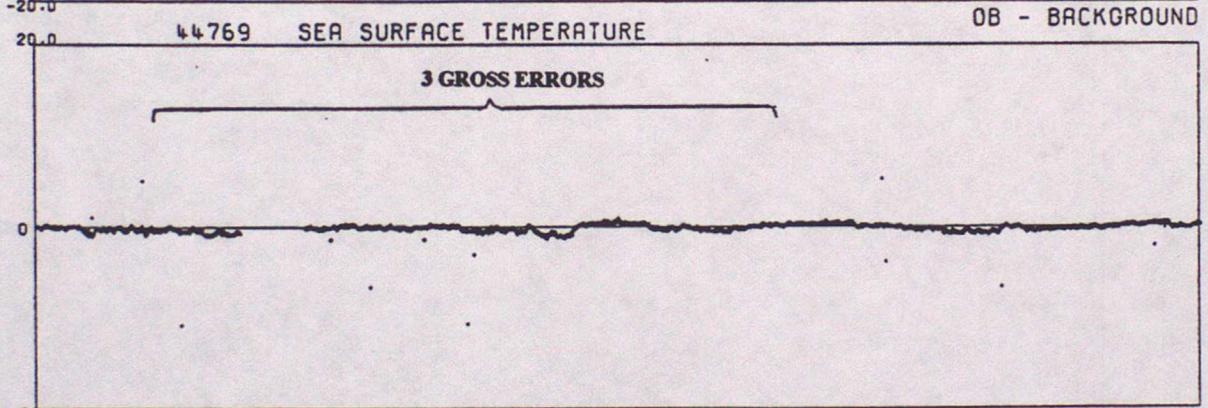
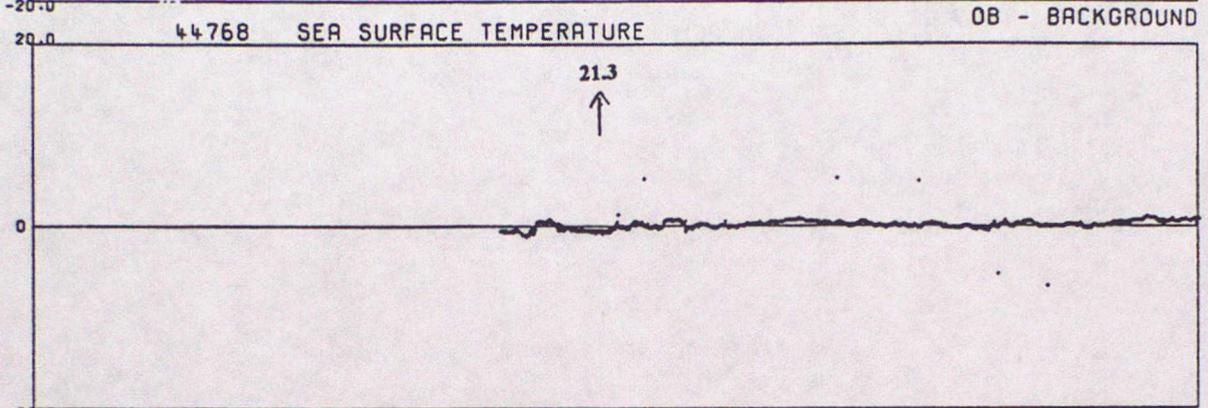
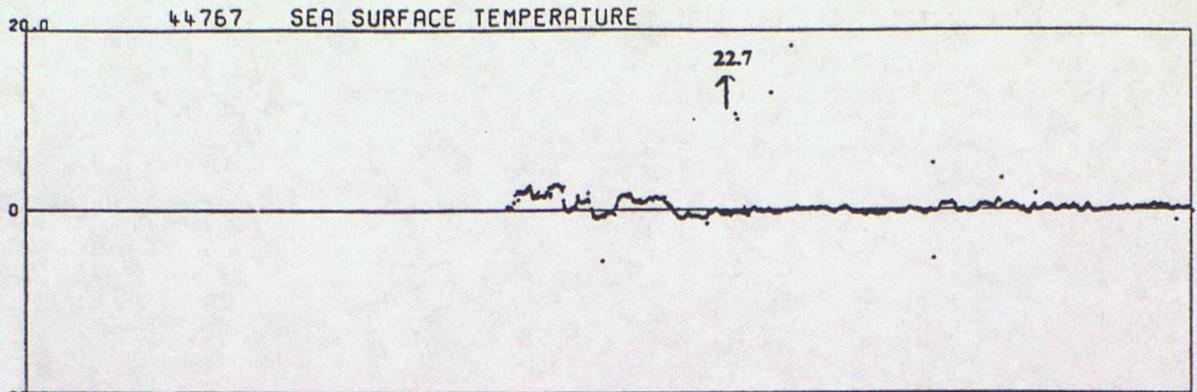
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



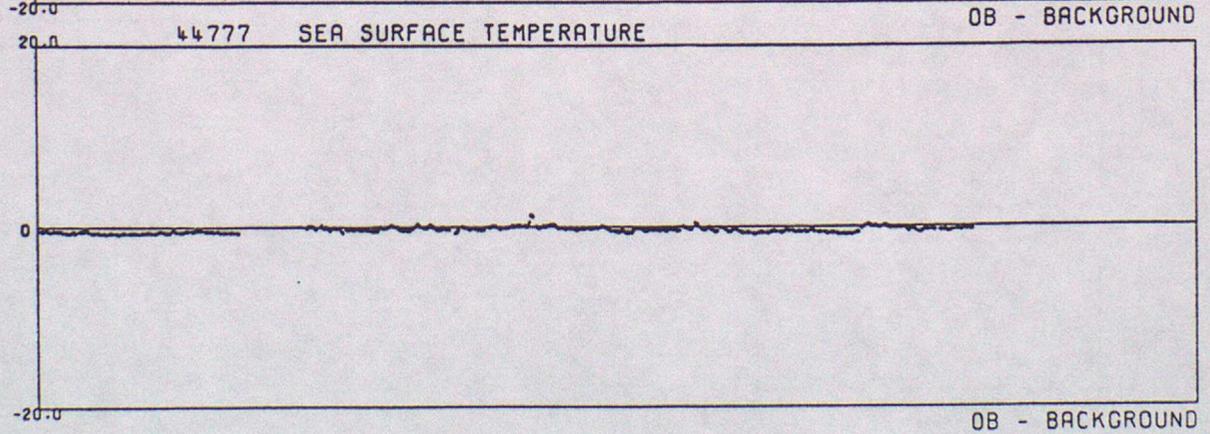
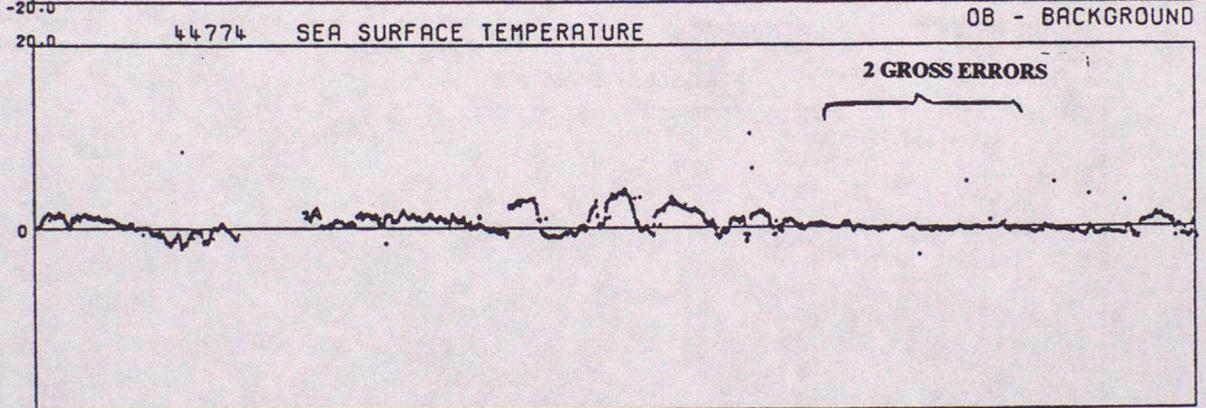
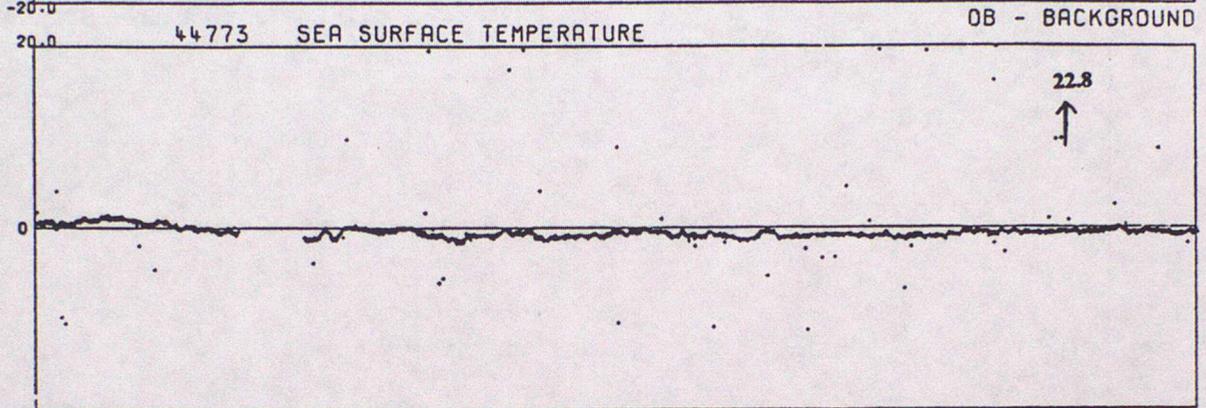
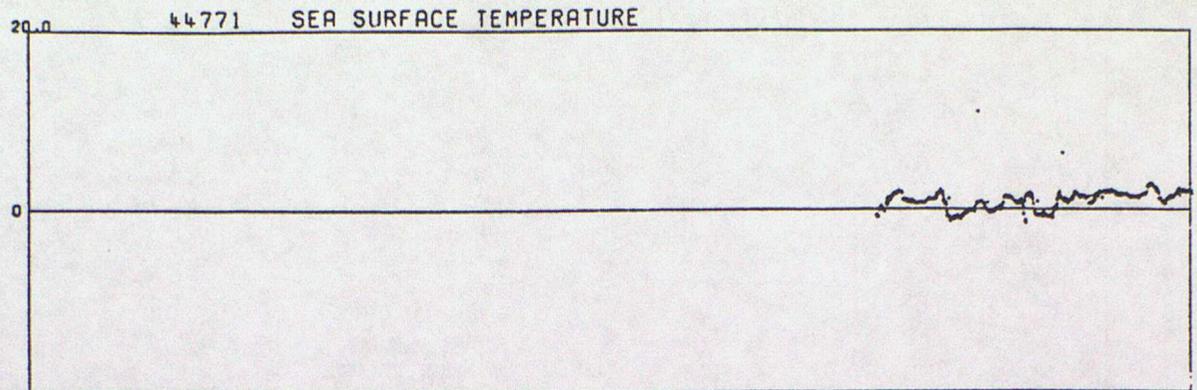
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



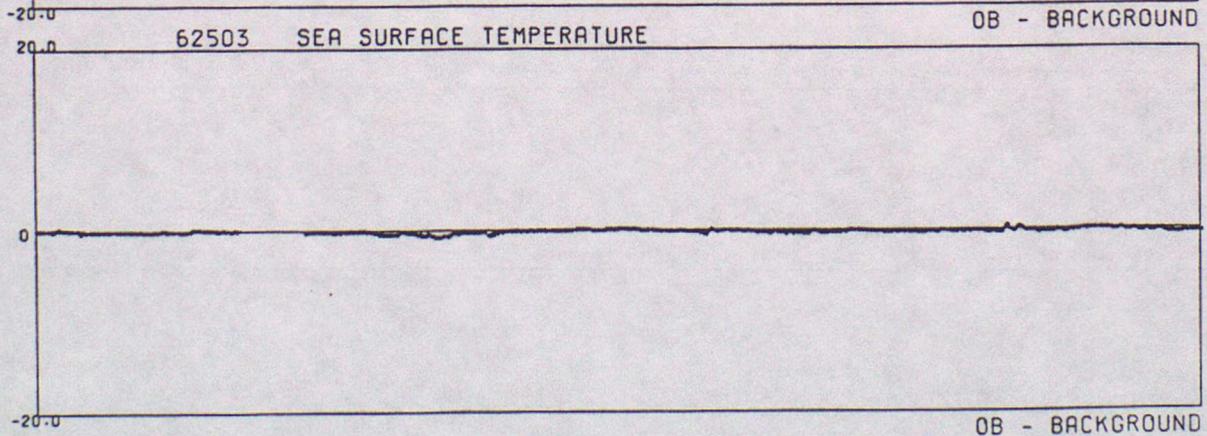
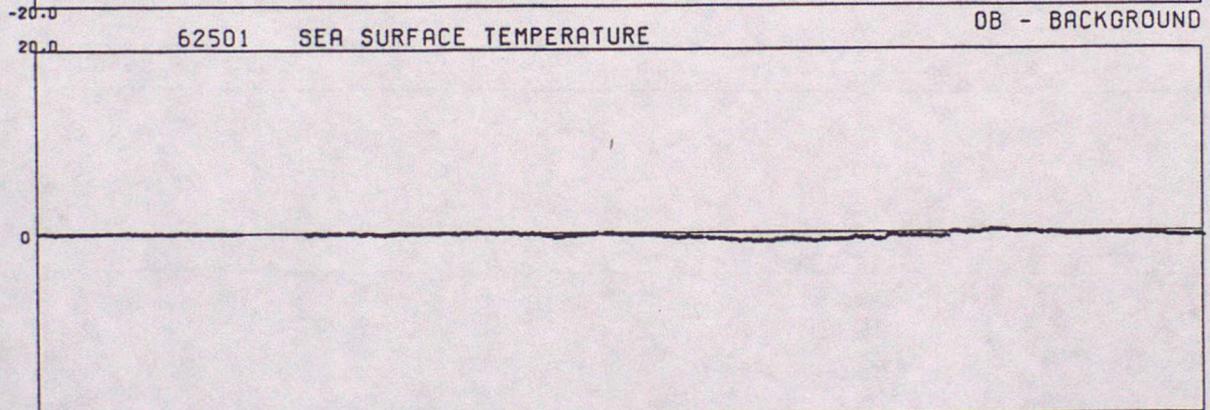
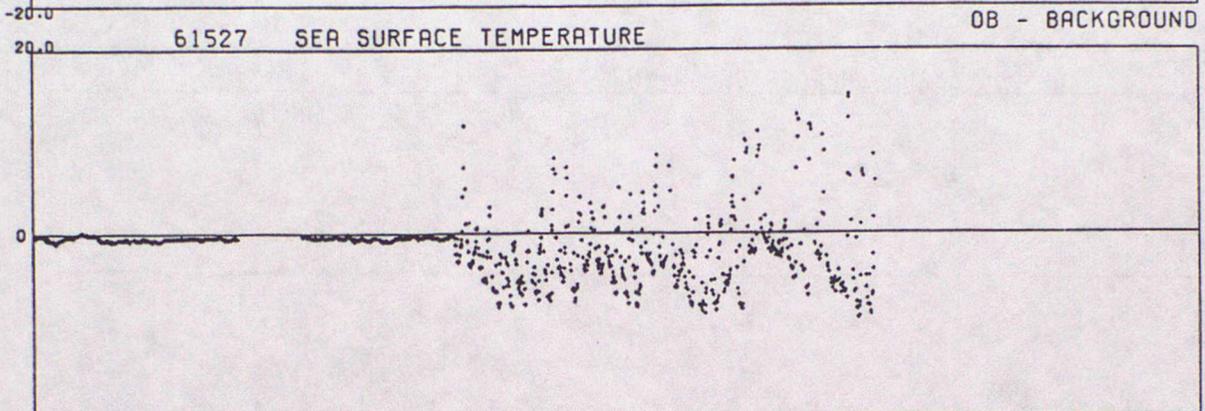
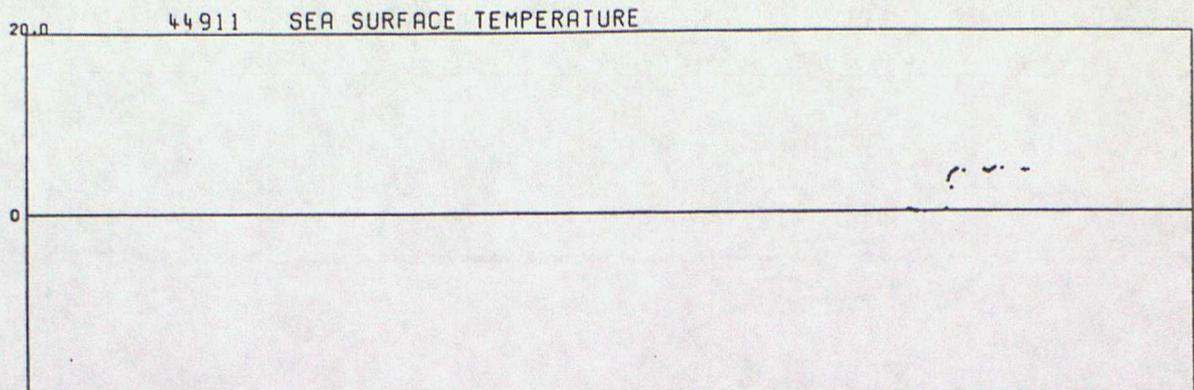
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



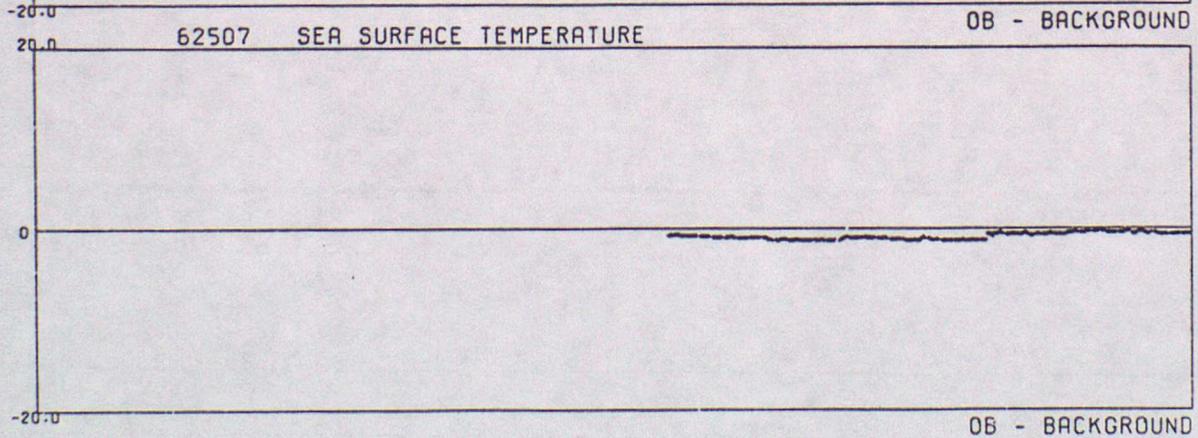
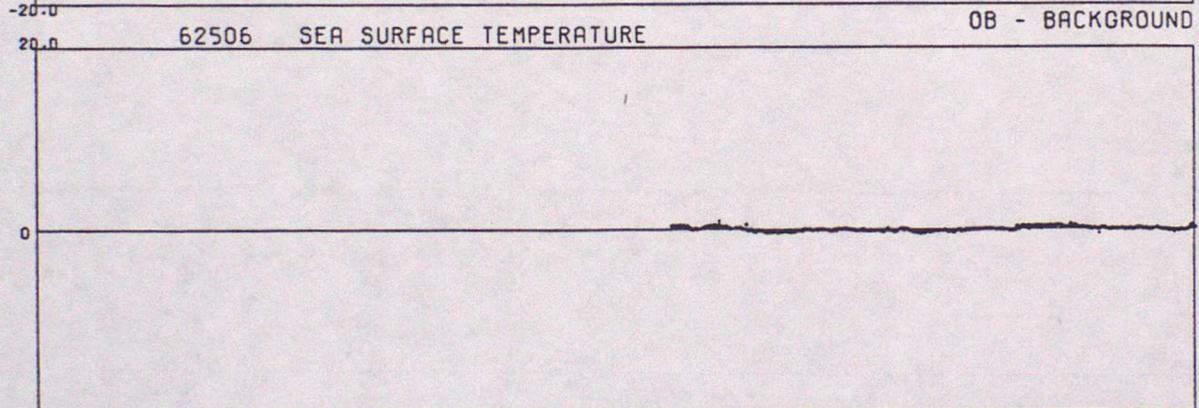
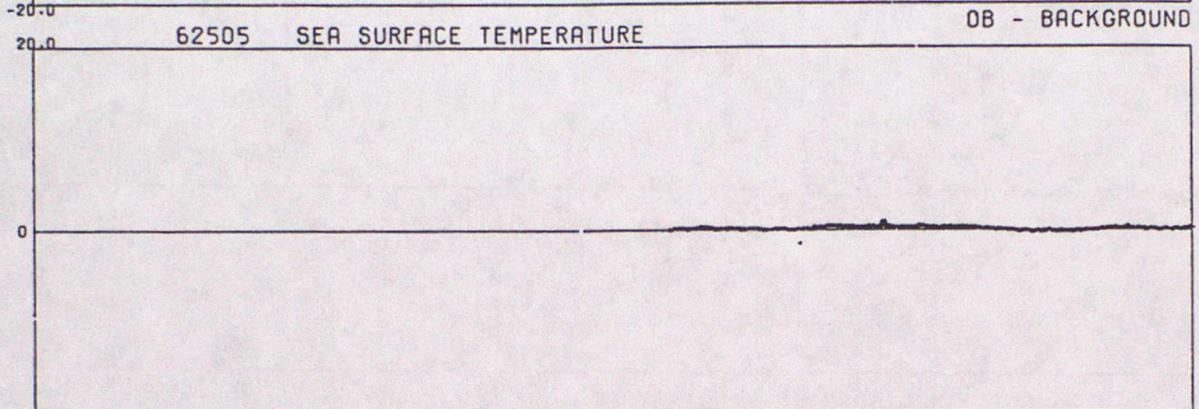
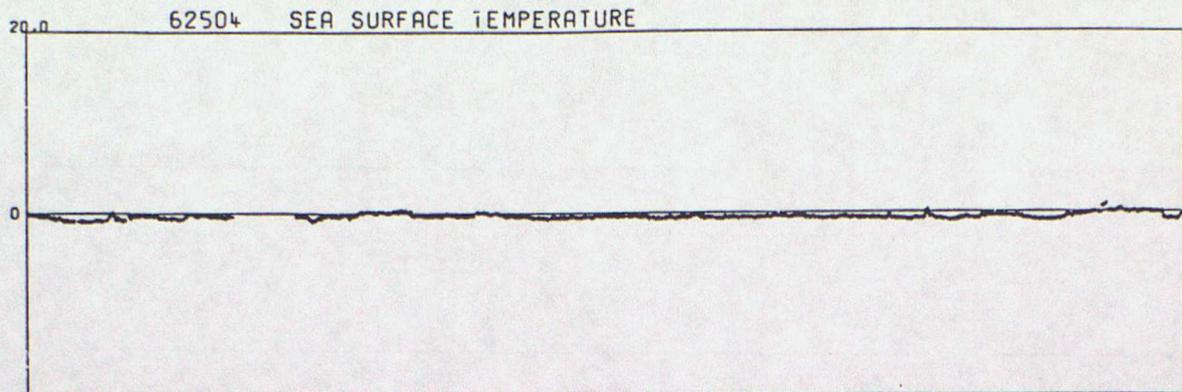
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



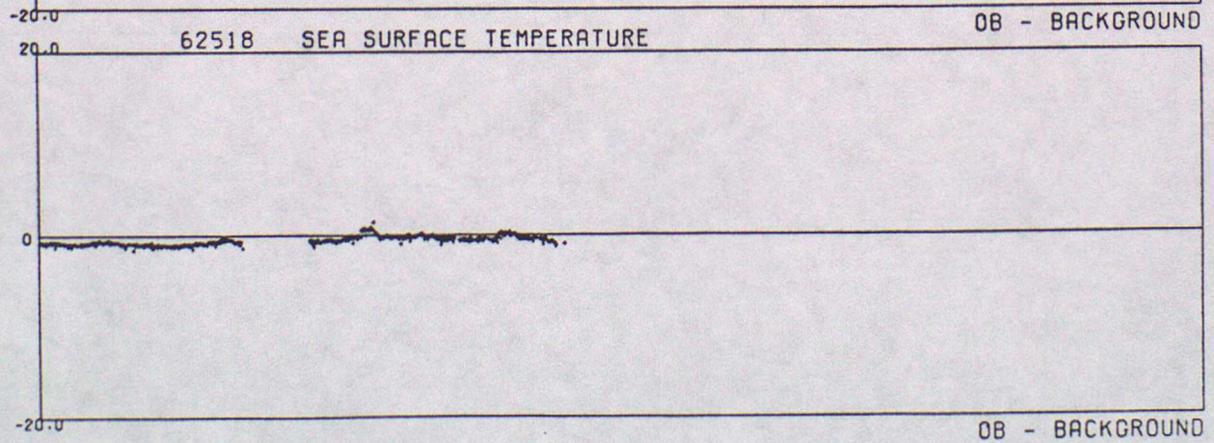
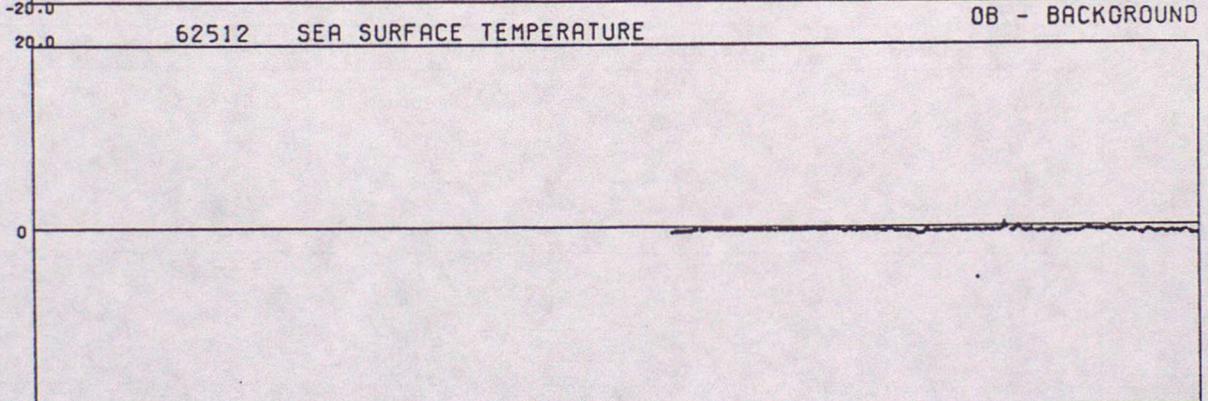
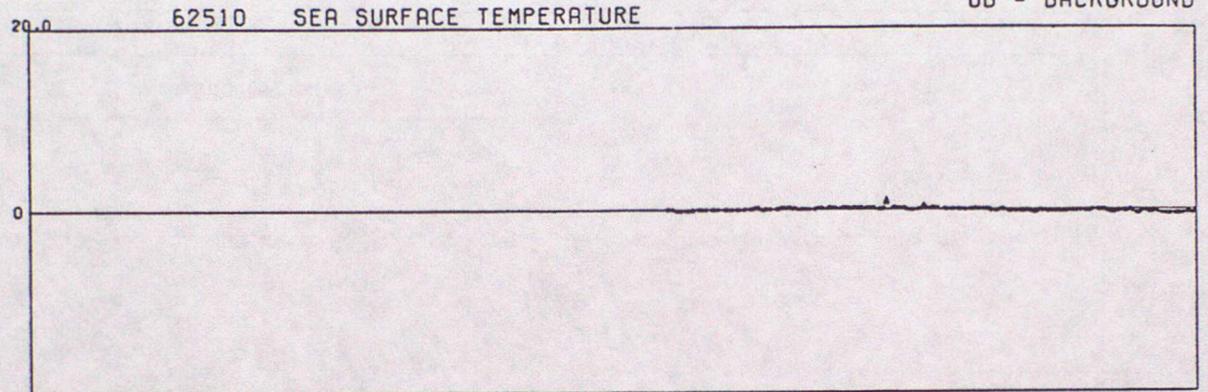
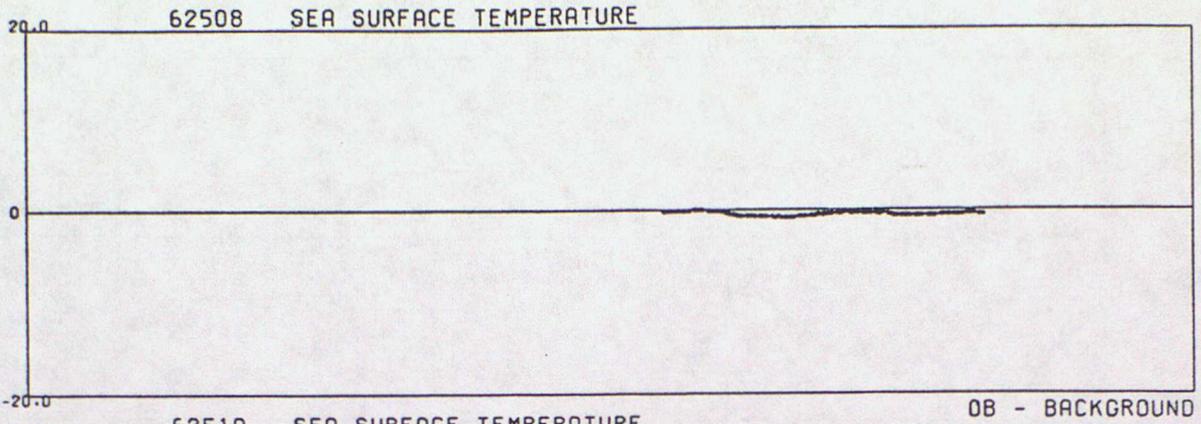
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



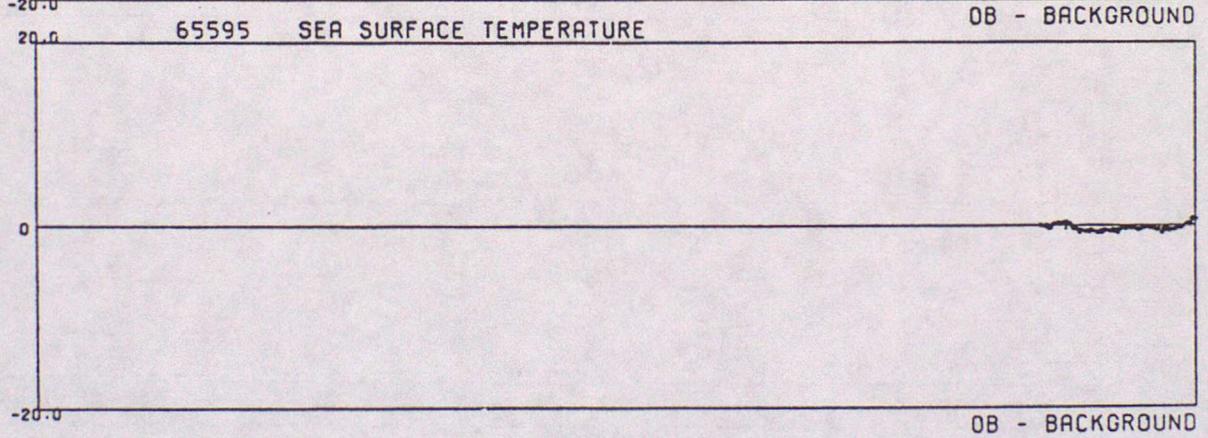
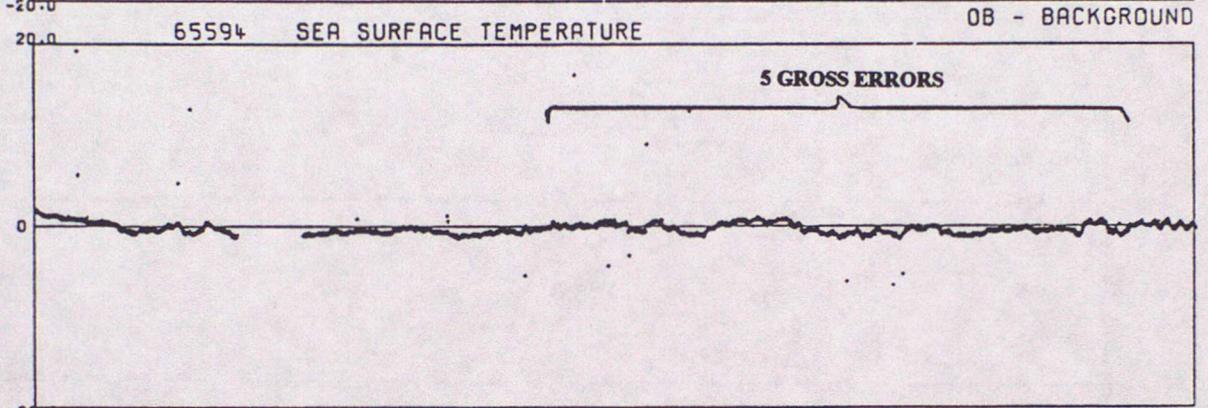
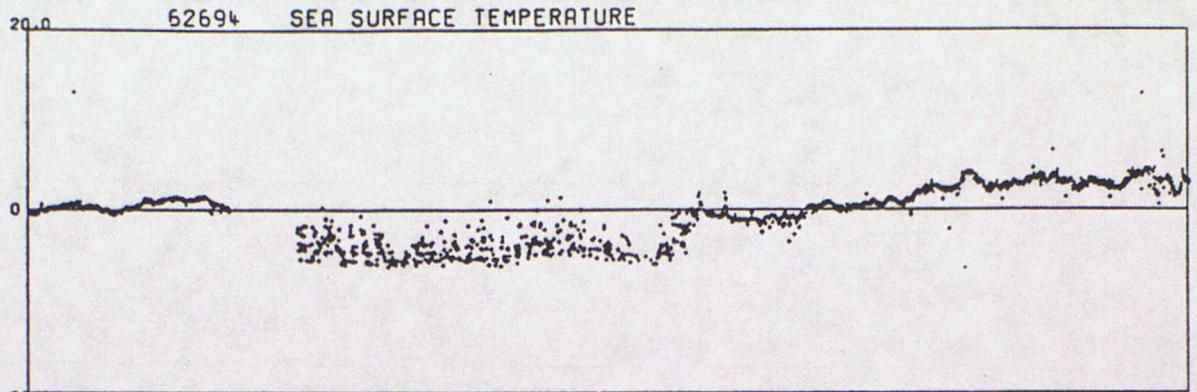
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

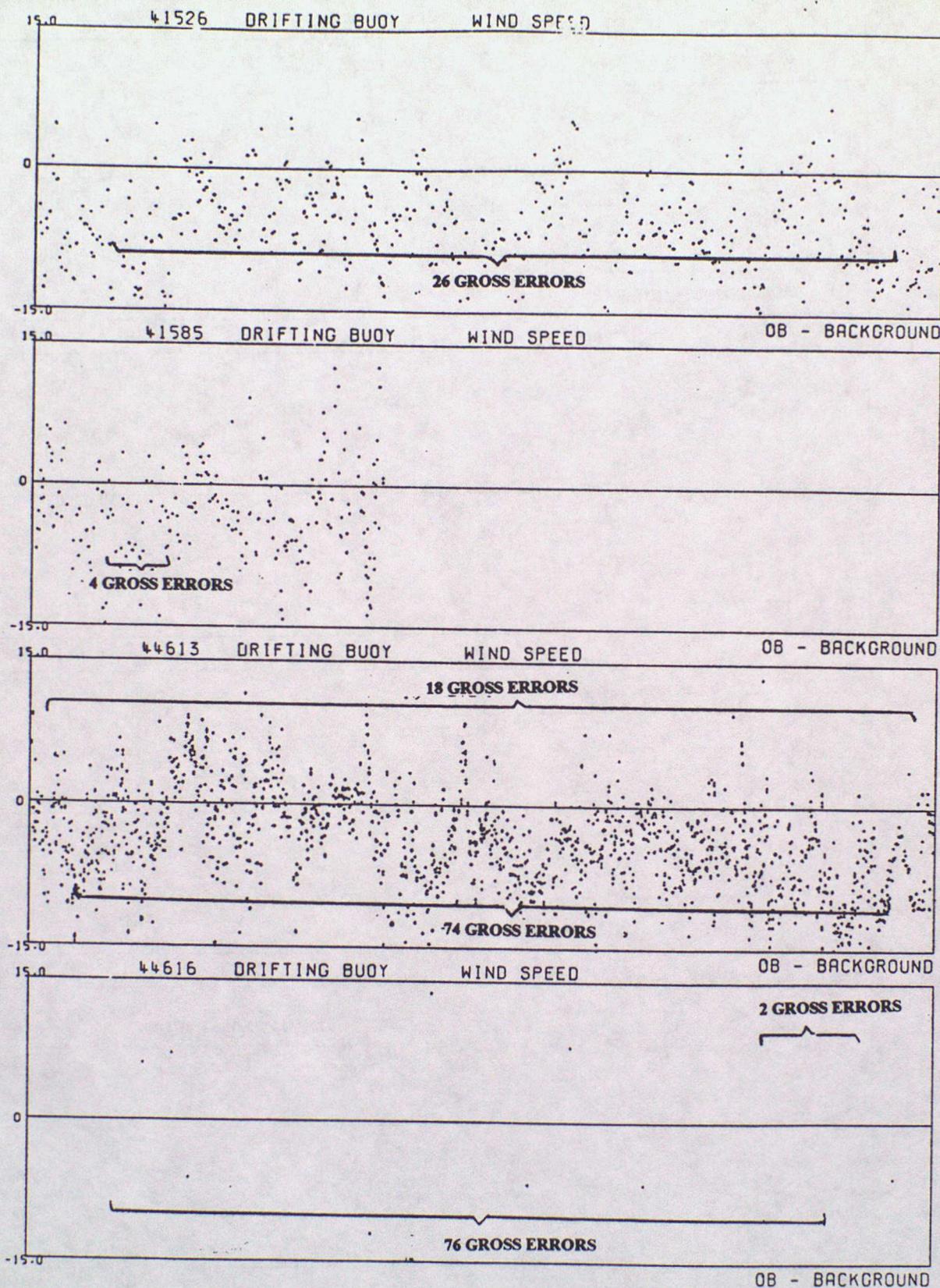


DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)

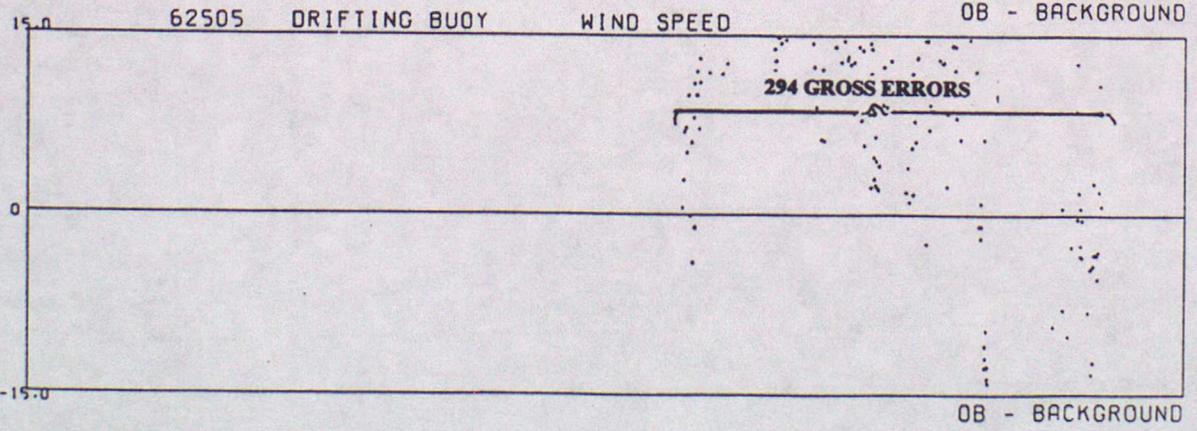
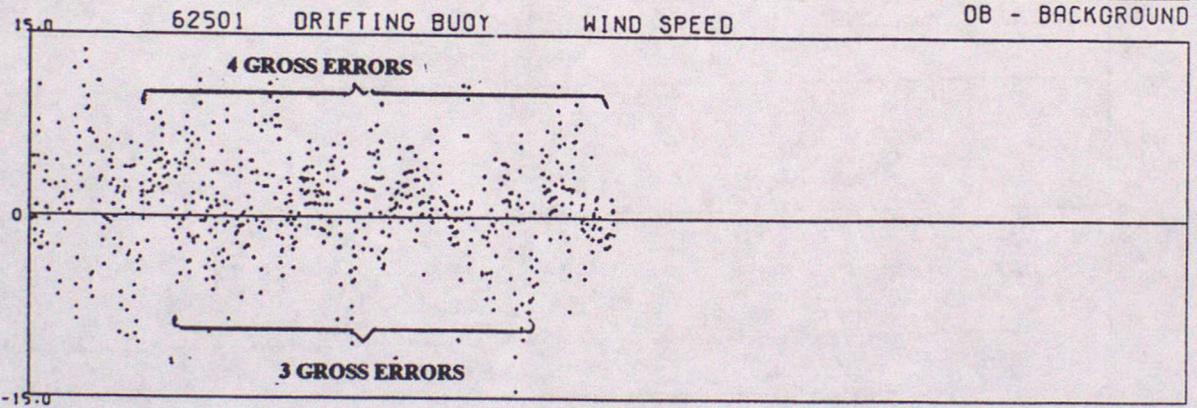
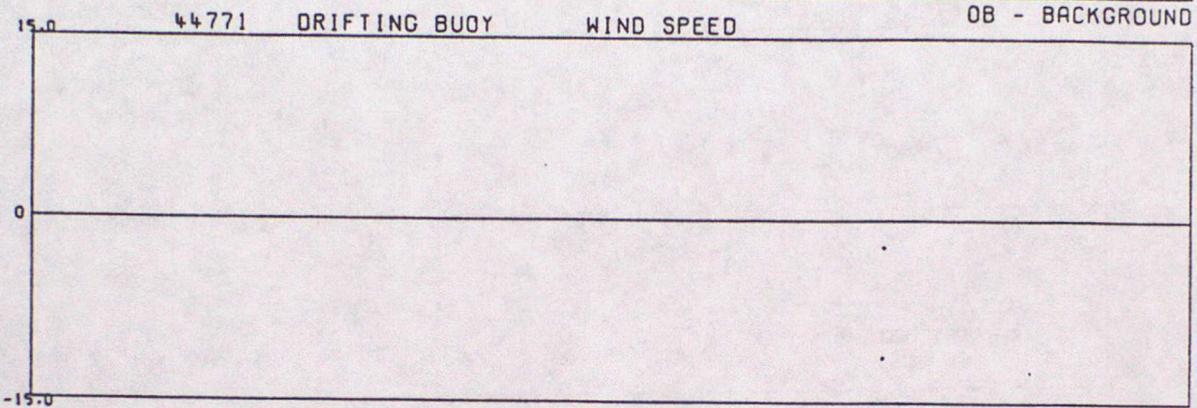
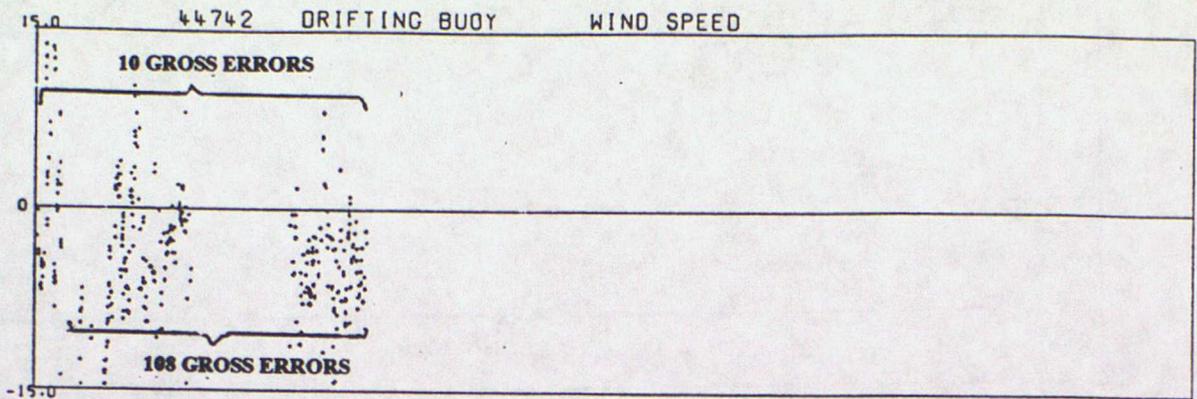


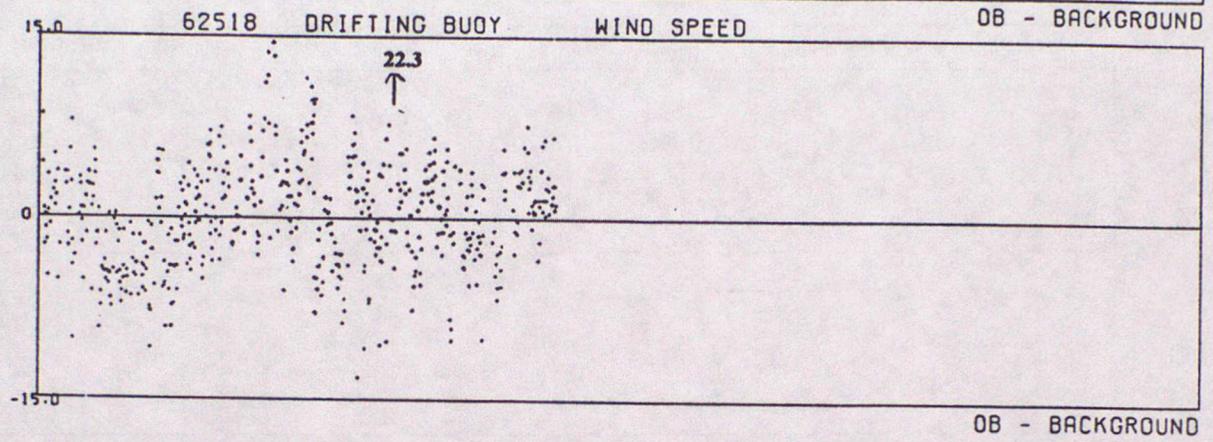
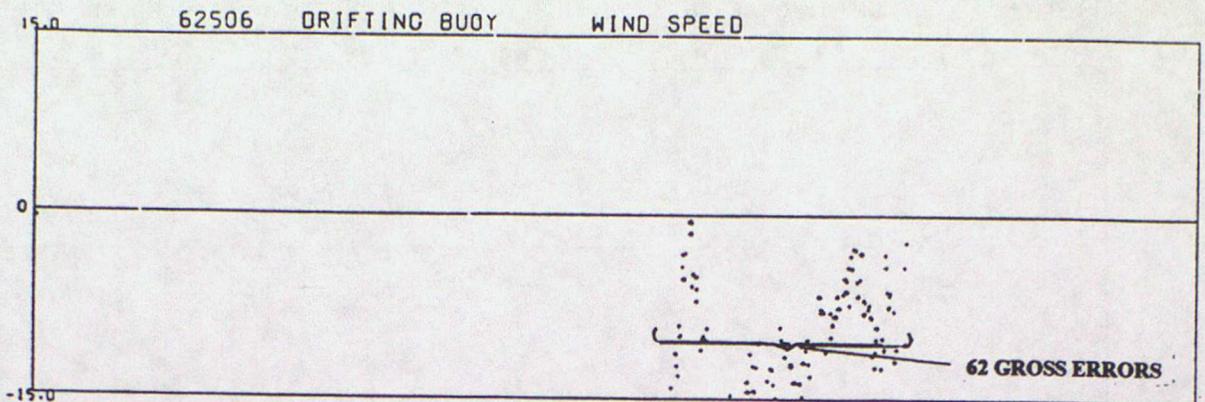
ANNEX E - TIME SERIES PLOTS OF WIND SPEED

DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



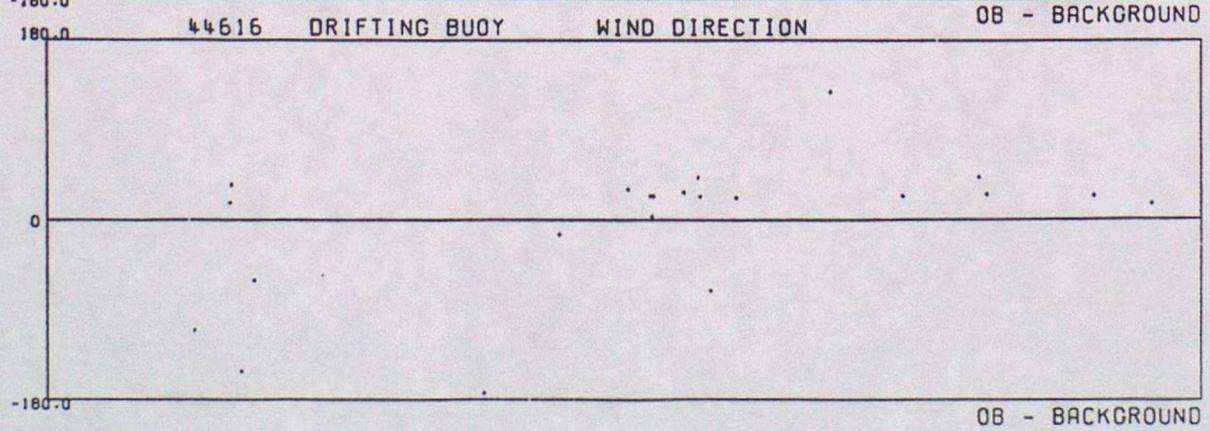
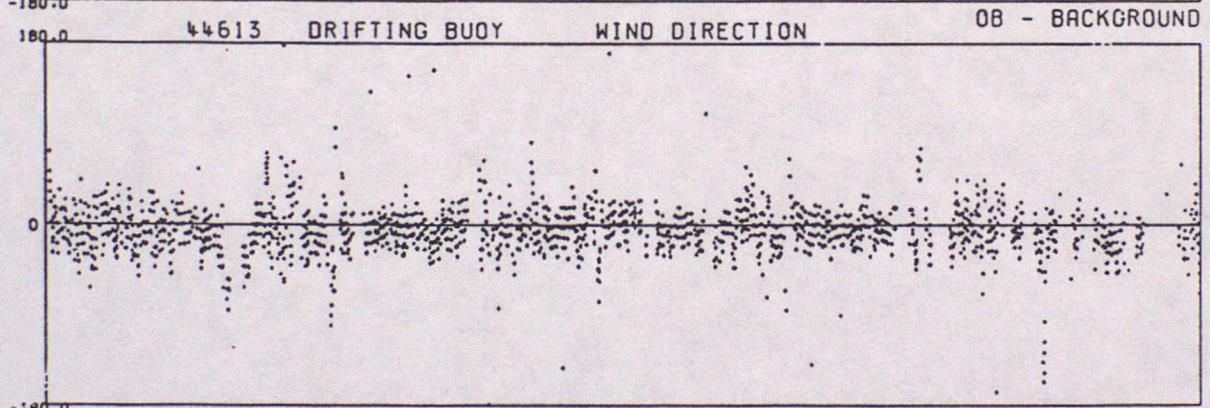
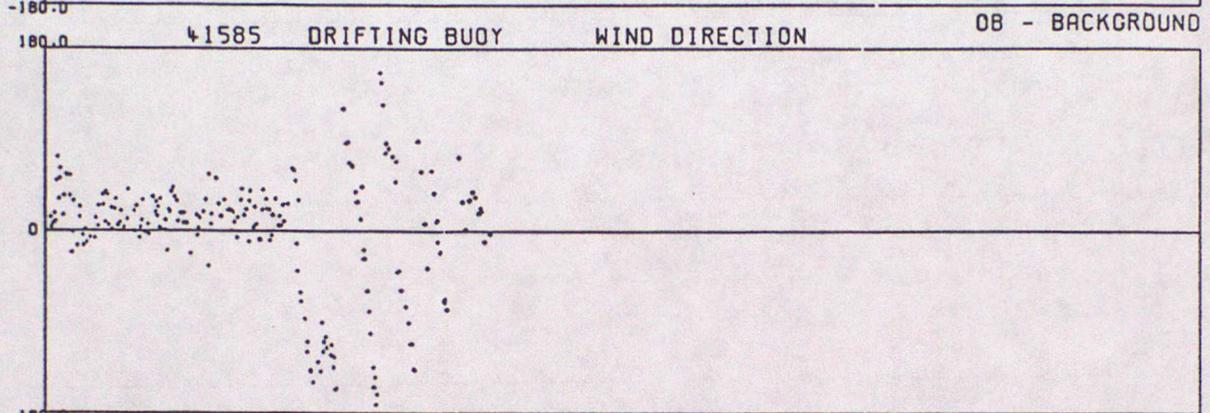
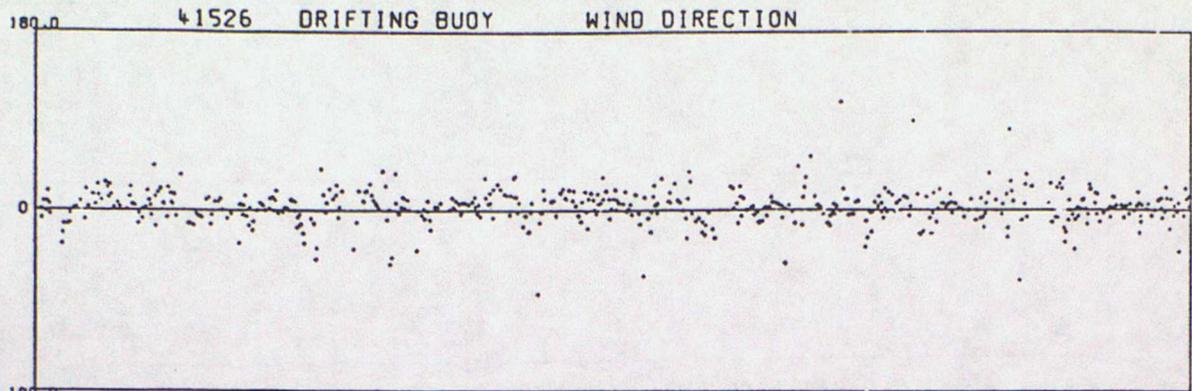
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)





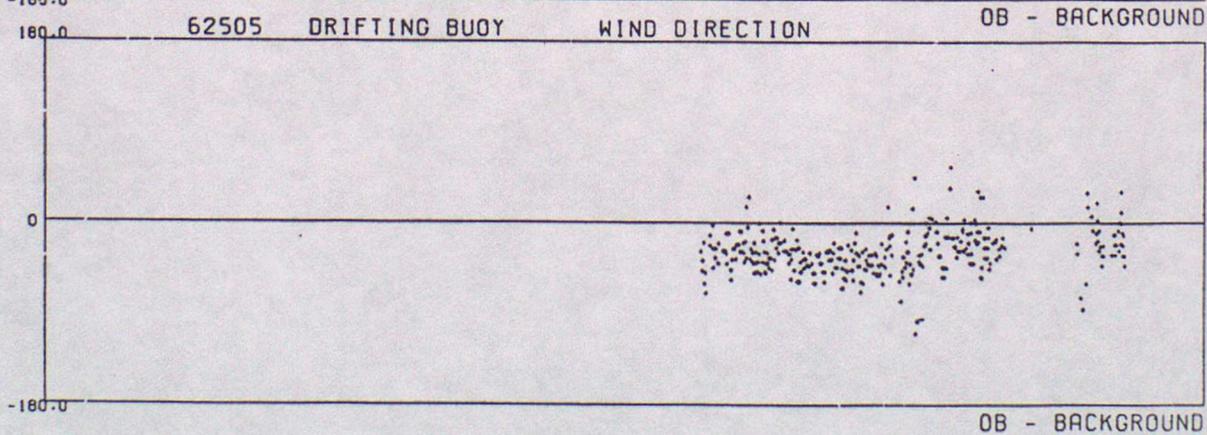
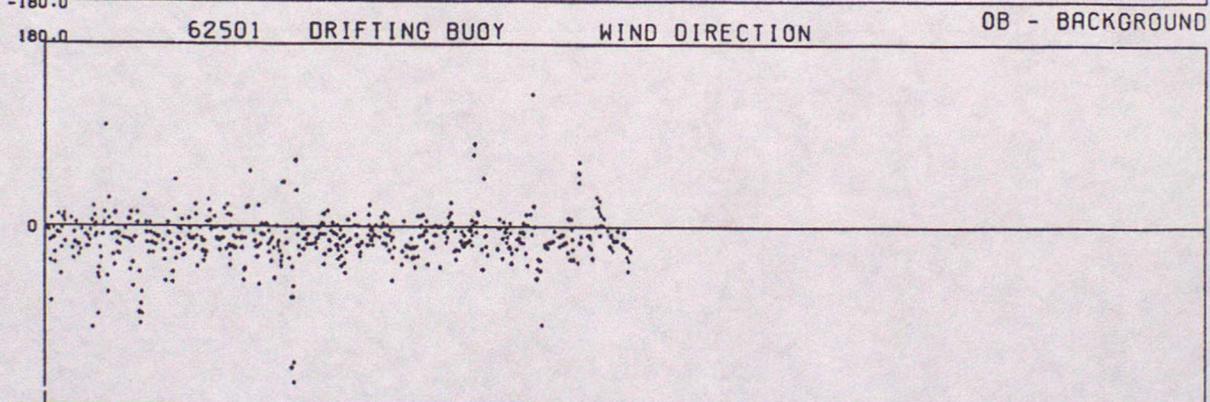
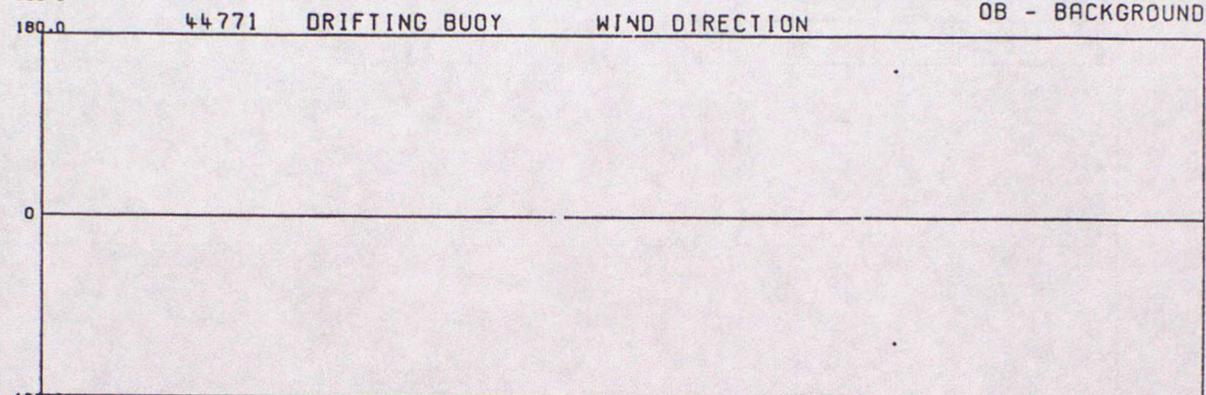
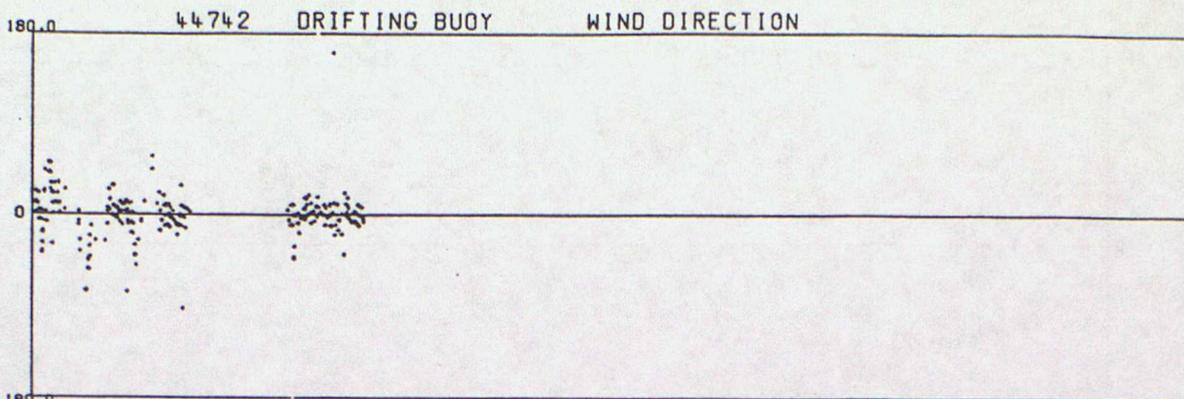
ANNEX F - TIME SERIES PLOTS OF WIND DIRECTION

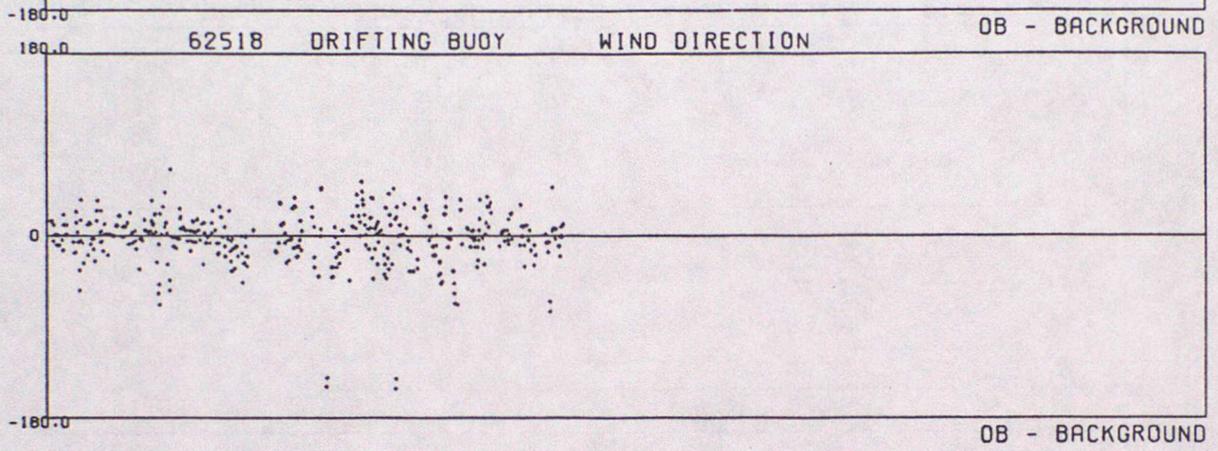
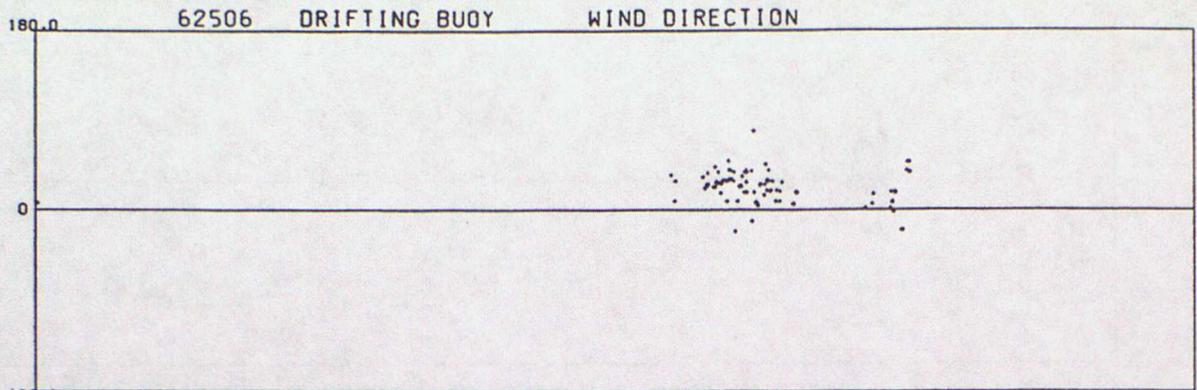
DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)



OB - BACKGROUND

DATA FROM 00Z ON 01/01/1996 TO 23Z ON 31/03/1996 (OBS - BACKGROUND FIELD)





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.	*	*	*				01/01 - 31/03
41526	5575	US.	*		*	*	*	*	01/01 - 31/03
41585	23640	US.	*		*	*	*	*	01/01 - 31/03
44613	3324	UK.	*	*	*	*	*	*	01/01 - 31/03
44616	3318	UK.	*	*	*	*	*	*	01/01 - 31/03
44684	977	CA.	*		*			*	01/02 - 31/03
44692	972	CA.	*		*				18/03 - 31/03
44727	2974	UK.	*	*	*			*	01/01 - 31/03
44728	3024	UK.	*	*	*			*	01/01 - 31/03
44742	2953	UK.	*	*		*	*	*	01/01 - 26/01
44760	2947	UK.	*	*	*			*	01/01 - 31/03
44761	14736	UK.	*	*				*	01/01 - 31/03 +
44763	3098	UK.	*	*	*			*	01/01 - 31/03
44765	4178	NL.	*	*	*			*	01/01 - 31/03
44767	3013	UK.	*	*	*			*	07/02 - 31/03
44768	1251	UK.	*	*	*			*	06/02 - 31/03
44769	1253	UK.	*	*				*	01/01 - 31/03
44770	3035	UK.	*	*	*			*	01/01 - 31/03
44771	????	??	*	*	*	*	*	*	07/03 - 31/03
44773	3132	UK.	*	*	*			*	01/01 - 31/03
44774	3162	UK.	*	*	*			*	01/01 - 31/03
44777	14733	UK.	*	*				*	01/01 - 14/03
44911	466	US.	*					*	09/03 - 31/03
61527	3749	US.	*		*			*	01/01 - 06/03
62501	10116	F.	*	*		*	*	*	01/01 - 31/03
62503	14427	F.	*	*				*	01/01 - 31/03
62504	14428	F.	*	*				*	01/01 - 31/03
62505	10117	F.	*	*		*	*	*	19/02 - 31/03
62506	????	F.	*	*	*	*	*	*	19/02 - 31/03
62507	????	F.	*	*				*	19/02 - 31/03 +

KEY

- PP - Pressure Pt - Pressure tendency TT - Air temperature
 FF - Wind speed DD - Wind direction SST - Sea surface temperature
- + - Pressure ceased reporting before the end of the period but other elements continued to be reported.

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
62508	????	F.	*	*				*	18/02 - 31/03
62510	14417	F.	*	*				*	18/02 - 31/03
62512	14424	F.	*	*				*	18/02 - 31/03
62518	14419	F.	*	*		*	*	*	01/01 - 10/02
62694	9306	NL.	*	*	*			*	01/01 - 31/03
63665	8067	D.	*	*	*				01/01 - 31/03
64934	23567	US.	*						22/03 - 31/03
65594	1252	UK	*	*	*			*	01/01 - 31/03
65595	????	??	*	*	*			*	19/03 - 31/03

KEY

PP - Pressure Pt - Pressure tendency TT - Air temperature
 FF - Wind speed DD - Wind direction SST - Sea surface temperature

