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OBSERVATIONS, PLANS AND REQUIREMENTS BRANCH

Quality Evaluation Section

FORTY-FIFTH QUARTERLY REPORT

ON DRIFTING BUOYS

IN THE NORTH ATLANTIC

JANUARY TO MARCH 1998

Produced By : P.M. Ellis
Meteorological Office,
Met O (OPR),
Room 129,
London Road,
Bracknell,
Berkshire, RG12 2SZ,
United Kingdom

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5th May 1998

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.

NOTE 1

Observation - background (Ob-bg) values for pressure, air temperature, wind speed and wind direction are missing from the Observation Processing Databanks (OPD) for the periods 16/1 to 20/1 and 27/3 to 31/3 for all drifting buoys.

(a) Location Accuracy

The location accuracy was very good with 59 out of 62 of the buoys reporting having a '% of observations with acceptable positions' greater than 95% (compared to 59 out of 66 last quarter).

(b) Data timeliness

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

Timeliness	Last quarter.	This quarter
Very Good	50	45
Good	9	8
Satisfactory	4	5
Poor	2	3
Very poor	1	1
Total no. of buoys	66	62

(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	3	3	21	24
Good	2	1	10	9
Satisfactory	8	9	2	2
Poor	6	6	9	3
Very Poor	2	--	3	5

The total number of buoy days in the quarter was 4,620 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 4,359) and the number of 'buoy hours' with at least one observation was 71,214 (compared with 65,790 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 15.41 (last quarter the figure was 15.09).

3. SUMMARY OF PRESSURE PERFORMANCE

(a) Buoy deployments, etc.

NOTE 2

Although buoys 44727, 62803 and 64528 (all north of 50 degN) were reporting at the beginning of the period, pressure data failed to reach the OPD until 7/1, 13/1 and 6/1 respectively.

North of 50deg N

There were 40 buoys reporting pressure at the beginning of the period. This figure includes buoys 44776, 62553 and 62697 which drifted north of 50 degN during this quarter. The figure also includes the buoys from the note above. Buoy 44834 was mistakenly excluded from the last report, but was reporting on the first day of this period. Buoy 44925 was mistakenly quoted as ceasing pressure reports on 30/12 last year, but was in fact still reporting on the first day of this period. The figure (40) excludes buoys 62927 and 62929 which were reporting on the first day of the period but failed to report pressure data until 19/1 and 8/1 respectively. 34 buoys were operating at the end of the period. 1 new buoy was deployed (65562). 9 buoys ceased reporting pressure (44728, 44769, 44776, 44834, 44911, 62552, 62554, 62927 and 62929). (Buoy 62929 ceased reporting pressure on 10/3 but continued to report other elements until the end of the quarter.)

South of 50deg N

There were 13 buoys reporting pressure at the beginning of the period. Buoy 13906 drifted into the area during this quarter and buoy 65596 drifted south of 50 degN during the period. 11 buoys were reporting at the end of the period. 6 new buoys were deployed (51633, 62506, 62551, 62751, 62755 and 62758). 8 buoys ceased reporting (13910, 44610, 44742, 44743, 44760, 62555, 62556 and 65596).

(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:-

- 13910 - Pressure data showed a bias of -2.0 hPa from the start of the period until the end of the buoy's life on 9/2.
- 44742 - A bias of approximately -3.0 hPa was reported from the end of January until the end of the buoy's life on 12/2.
- 44763 - Data from this buoy showed a slightly larger than normal scatter throughout the period.
- 44776 - This buoy only produced 10 pressure observations, all of which were erroneous.

- 44925 - Data showed a bias of +0.7 hPa and a larger than normal scatter throughout the report period.
- 62557 - Pressure data showed a bias of +0.5 hPa throughout the period, with a large number of erroneous observations being reported between 11/2 and 1/3.
- 62558 - Pressure data showed a bias of +0.8 hPa throughout the period, with a large number of erroneous observations being reported between 11/2 and 1/3.
- 62927 - Pressure data showed a larger than normal scatter, with a number of erroneous observations being reported between 11/2 and 15/2.
- 65596 - Data from this buoy showed a bias of -1.1 hPa and a larger than normal scatter from the start of the period until the end of the buoy's life on 13/2.

Biases

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

WMO No.	Buoy bias (hPa)	Ship bias (hPa)	Period of reports
13903	+1.0	0.0	01/01 - 31/03
44743	-1.0	-0.7	01/01 - 06/01
44762	-0.7 *	-0.9	01/01 - 31/03
44834	+0.7	+0.7	01/01 - 30/03
44911	+0.7	+0.2	01/01 - 06/03
44912	+1.0	-0.9	01/01 - 31/03
62506	+1.5	-0.6	27/03 - 31/03
62551	+0.6	-0.5	02/02 - 31/03
62552	-0.7	0.0	01/01 - 11/02
62929	+0.7	-2.9	01/01 - 31/03
64563	-0.9	+0.8	01/01 - 31/03
65597	-0.6	-1.6	01/01 - 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.

- (* - The pressure bias of 44762 was averaged over the period at -0.7 hPa, but was in fact, approximately -3.0 hPa from 8/3 until the end of the period)

(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
13903	---	---	---	0.3(0.0)	0.3(2.0)	252 (108)
13906	---	---	---	0.2(-0.1)	0.4(1.8)	245 (130)
13910	---	---	---	-0.6(-0.2)	5.9(1.9)	117 (138)
44609	---	---	---	-0.1(0.3)	0.9(5.8)	2262 (118)
44610	---	---	---	-0.3(0.2)	1.6(5.4)	678 (148)
44614	---	---	---	0.2(-0.5)	0.9(2.2)	3553 (78)
44616	---	---	---	0.4(0.3)	0.8(5.8)	3154 (123)
44617	0.0(-0.2)	2.0(3.8)	2728 (116)	0.0(-0.1)	2.1(2.2)	2996 (119)
44621	0.1(0.1)	1.5(2.2)	2427 (177)	---	---	---
44624	---	---	---	0.1(0.0)	1.9(1.9)	4096 (91)
44727	0.4(0.4)	1.7(3.0)	4952 (75)	0.1(0.4)	1.1(6.8)	5884 (81)
44728	-0.3(0.2)	1.3(1.7)	2972 (54)	0.3(-0.2)	1.6(1.5)	3236 (51)
44742	0.9(0.9)	2.3(4.9)	893 (388)	0.6(0.0)	2.7(5.1)	1082 (638)
44743	---	---	---	-1.3(0.1)	3.7(6.5)	128 (840)

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
44760	0.0(0.7)	1.1(3.6)	706 (144)	-0.6(0.3)	1.0(4.9)	988 (159)
44761	---	---	---	0.2(-0.2)	0.8(5.4)	2766 (211)
44762	0.7(1.0)	2.3(5.0)	1846 (368)	-6.8(0.0)	10.7(5.3)	18 (605)
44763	---	---	---	-0.4(0.4)	2.1(5.5)	1532 (136)
44765	---	---	---	0.3(0.2)	1.0(3.5)	2701 (25)
44766	---	---	---	-0.3(-0.2)	1.3(2.4)	2833 (114)
44768	---	---	---	-0.4(0.4)	1.2(5.7)	3785 (114)
44769	0.7(0.3)	1.5(3.7)	2251 (330)	0.7(-0.2)	0.7(4.1)	2572 (479)
44771	---	---	---	-0.5(0.3)	1.1(5.7)	3209 (120)
44773	-0.2(0.5)	2.0(3.0)	3938 (72)	-2.4(0.8)	1.1(7.3)	4324 (69)
44775	0.4(0.4)	1.5(3.2)	4032 (62)	-0.3(0.8)	1.1(7.9)	3742 (58)
44776	---	---	---	7.5(0.1)	7.4(5.7)	26 (590)
44780	0.0(0.3)	1.1(2.7)	3238 (98)	-0.1(0.3)	0.9(5.9)	3567 (109)
44834	---	---	---	-0.2(0.0)	0.9(2.6)	792 (110)
44901	---	---	---	-0.1(1.1)	0.2(11.1)	493 (56)
44911	---	---	---	---	---	---
44912	---	---	---	-0.1(0.3)	0.2(5.3)	445 (144)
44925	---	---	---	1.6(0.2)	0.8(3.5)	28 (25)
51633	-2.0(0.8)	1.6(7.9)	434 (166)	-1.7(0.6)	1.1(7.7)	394 (269)
62506	-0.1(0.2)	0.9(4.5)	23 (293)	0.6(0.0)	0.1(6.0)	48 (413)

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
62551	---	---	---	0.1(0.0)	0.3(5.8)	609 (417)
62552	-0.1(0.2)	0.9(2.4)	833 (373)	0.5(0.3)	0.4(8.1)	1315 (359)
62553	-0.2(0.2)	0.9(2.4)	1555 (150)	0.1(0.2)	0.3(4.9)	2197 (169)
62554	----	---	---	0.2(0.2)	0.6(7.7)	1443 (405)
62555	---	---	---	-0.4(0.0)	1.1(5.2)	894 (744)
62556	----	---	---	-0.2(0.3)	1.5(5.3)	859 (149)
62557	---	---	---	0.3(0.0)	3.9(5.2)	2747 (551)
62558	----	----	----	----	----	----
62673	-0.2(0.4)	0.8(3.0)	1247 (74)	0.0(0.6)	0.5(7.0)	1429 (76)
62674	-0.1(0.5)	0.8(2.9)	1251 (79)	0.4(0.6)	0.4(6.8)	1442 (80)
62697	-0.2(0.2)	1.9(3.8)	2475 (317)	-0.7(-0.1)	1.5(5.1)	2675 (466)
62751	----	---	---	-0.1(0.4)	0.3(5.9)	1082 (336)
62755	---	---	---	0.0(0.2)	0.5(6.6)	934 (418)
62758	---	---	---	0.1(0.3)	0.3(5.8)	1056 (357)
62803	-0.2(-0.2)	1.2(3.0)	4952 (135)	0.2(0.8)	1.3(6.5)	6648 (190)
62927	----	----	----	-0.8(0.0)	2.0(4.6)	355 (419)
62929	---	---	---	0.1(-0.3)	0.2(1.5)	515 (65)
64528	-0.1(0.4)	1.5(2.9)	4894 (76)	0.2(0.2)	2.5(4.8)	3716 (174)
64530	---	---	---	0.9(11.3)	1.4(30.4)	3414 (17)
64552	----	---	---	0.0(-0.4)	0.4(1.6)	3271 (40)

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	---	---	---	-0.2(0.1)	1.3(4.9)	3328 (170)
64563	-0.5(0.0)	1.5(3.2)	4448 (80)	-0.5(1.0)	0.7(9.9)	2890 (69)
65562	2.4(0.0)	3.8(2.0)	3309 (98)	0.1(0.6)	0.3(6.2)	2184 (95)
65591	0.3(0.5)	2.4(3.3)	2556 (54)	-0.2(-0.4)	0.8(1.5)	2180 (50)
65592	-0.1(0.5)	2.0(3.3)	4310 (59)	0.0(-0.3)	1.5(1.5)	3695 (54)
65594	0.3(0.1)	2.1(1.8)	4927 (45)	-0.4(-0.4)	1.3(1.7)	6467 (38)
65596	0.0(0.3)	3.2(5.0)	268 (125)	0.2(0.4)	1.3(5.5)	198 (137)
65597	-0.6(-0.1)	2.5(4.0)	3901 (102)	-0.4(-0.3)	0.9(2.3)	2491 (106)

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

Air Temperature Summary

Buoy 51633 (-2.0) showed a significant air temperature bias.

Data from buoy 44742 (0.9) became slightly erratic towards the end of the buoy's life on 12/2. Data from buoy 44762 (0.7) also became slightly erratic towards the end of the report period.

Air temperature data from buoy 65562 (2.4), reported via the Sondre Stromfjord LUT were approximately 7°C too high (producing a double-trace on the time-series graph in Annex C) from the start of the buoy's life on 6/2 to mid-March.

Sea Surface Temperature Summary

Buoys 44743 (-1.3), 44773 (-2.4), 44776 (7.5), 44925 (1.6) and 51633 (-1.7) all showed a significant sea surface temperature bias. However, only 26 reports and 28 reports respectively were received from buoys 44776 and 44925.

Only 18 reports were produced by buoy 44762 (-6.8), all of which were erroneous.

Data from buoy 44742 (0.6) became erratic towards the end of the buoy's life on 12/2. Data from buoy 62927 (-0.8) also became slightly erratic towards the end of the buoy's life on 6/3.

SST data from buoy 62697, reported via the Sondre Stromfjord LUT were approximately 1.5°C higher than reports from other LUTs, producing a second 'trace' on the sea surface temperature graph in Annex D.

(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 : Buoy 62697 reported occasional wind speeds but no wind directions. Subsequently, no analysis was carried out on this buoy.)

WMO No.	Period	Wind Speed (kn)		Wind Direction (deg)		No. of Obs
		Mean	St. Dev.	Mean	St. Dev.	
44609	01/01 - 31/03	6.3(2.2)	15.5(6.7)	-1.5(0.4)	52.8(24.2)	2038 (77)
44610	01/01 - 23/02	2.7(3.6)	9.2(9.9)	-4.1(-11.1)	26.9(36.2)	643 (138)
44621	01/01 - 31/03	-2.0(1.2)	6.4(7.7)	-3.3(0.1)	23.4(24.5)	1209 (163)
44624	01/01 - 31/03	-8.7(0.3)	7.0(8.2)	5.9(-0.1)	26.1(34.2)	1834 (101)
44742	01/01 - 12/02	-2.2(4.5)	5.6(11.7)	-5.4(-4.0)	23.9(26.4)	426 (365)
44762	01/01 - 31/03	-3.3(4.4)	5.3(11.7)	-7.3(-3.9)	21.8(26.5)	775 (351)
44773	01/01 - 31/03	-2.7(2.2)	5.5(8.3)	0.5(-6.5)	28.1(33.2)	3739 (43)
62506	27/03 - 31/03	12.1(2.8)	5.8(7.0)	-4.0(-2.9)	28.3(26.9)	20 (287)
62551	02/02 - 31/03	1.0(2.6)	4.9(6.9)	1.3(-3.2)	28.4(23.8)	602 (272)
62552	01/01 - 11/02	-0.9(1.4)	4.4(7.7)	1.1(-0.1)	19.6(35.9)	1022 (368)
62553	01/01 - 31/03	-1.9(1.6)	4.3(7.9)	2.2(0.8)	17.6(22.7)	1997 (132)
62673	01/01 - 31/03	-5.4(1.7)	6.5(7.9)	5.7(-5.9)	25.7(33.7)	1174 (41)
62674	01/01 - 31/03	-7.5(2.5)	6.3(8.2)	1.7(-3.0)	22.7(34.3)	1179 (51)
62751	02/02 - 31/03	-0.3(2.6)	3.8(6.7)	-3.6(-2.4)	24.8(22.5)	994 (221)
62755	02/02 - 31/03	-0.5(3.0)	3.6(7.0)	4.8(-4.2)	19.8(23.5)	815 (257)
62758	02/02 - 31/03	-0.5(2.9)	3.2(6.6)	-6.9(-2.8)	16.7(22.1)	959 (220)
62803	01/01 - 31/03	-11.8(2.3)	8.9(8.3)	-15.6(-1.0)	35.8(41.8)	869 (144)

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

Buoys 44624 (-8.7), 44762 (-3.3), 62506 (12.1), 62673 (-5.4), 62674 (-7.5) and 62803 (-11.8) all showed a significant wind speed bias. However, only 20 reports were received from buoy 62506.

Buoy 44609 produced a large number of gross wind speed errors throughout the period.

Buoys 44624 (5.9), 44742 (-5.4), 44762 (-7.3), 62673 (5.7), 62758 (-6.9) and 62803 (-15.6) all showed a significant wind direction bias.

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

ANNEX A - TABLE OF STATISTICS

Wmo No./Country	13903/??	13906/??	13910/??
Argos Id.No.	????	????	????
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 09/02
Mean Latitude	25.7	25.2	27.6
Mean Longitude	-43.2	-54.8	-48.1
No. of obs received	987	980	439
% 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	29.6	31.3	29.6
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	29.6	31.3	29.6
Median delay(min)	79	67	62
Number of days	90	90	40
Mean no. of obs/day	11.0	10.9	11.0
No. of hours with obs	911	900	417
Mean no. of hours/day with obs	10.1	10.0	10.4
% of hour periods without an ob	57.9	58.3	56.7
Mean (Ob-Bg)	1.0	0.1	-2.0
RMS (Ob-Bg)	1.4	1.1	2.3
unflagged data			
Mean (Ob-Bg)	1.0	0.1	-2.1
RMS (Ob-Bg)	1.4	1.1	2.3
all data			
Revised RMS (Ob-Bg)	1.4	1.1	2.3
% of data flagged	12	14	14
Operating at end of period	YES	YES	NO
Performance			
Availability	Poor	Poor	Poor
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Good	Good	Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44609/F	44610/F	44614/UK
Argos Id.No.	14430	????	12665
Period within area	01/01 - 31/03	01/01 - 23/02	01/01 - 31/03
Mean Latitude	53.3	44.5	55.4
Mean Longitude	-27.2	-46.5	-37.9
No. of obs received	3482	1348	3904
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.9	99.9	99.9
% of Present			
Pressure	99.0	99.0	97.2
P. Tendency	12.3	5.3	91.0
Air Temperature	0.0	0.0	0.0
Wind Speed /Dir.	69.8/72.1	57.1/58.9	0.0/0.0
Sea-surface Temp.	72.5	59.3	96.7
Median delay(Min)	53	181	22
Number of days	90	54	90
Mean no. of obs/day	38.7	25.0	43.4
No. of hours with obs	1939	1090	1590
Mean no. of hours/day with obs	21.5	20.2	17.7
% of hour periods without an ob	10.4	15.8	26.3
Mean (Ob-Bg)	0.4	0.3	0.3
RMS (Ob-Bg)	1.6	1.8	1.7
unflagged data			
Mean (Ob-bg)	0.4	16.8	0.3
RMS (Ob-Bg)	2.8	84.2	4.9
all data			
Revised RMS (Ob-Bg)	2.8	1.8	1.9
% of data flagged	49	23	69
Operating at end of period	YES	NO	YES
Performance			
Availability	Very Good	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Poor	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44616/UK	44617/UK	44621/UK
Argos Id.No.	12661	26744	26752
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	50.9	50.7	56.1
Mean Longitude	-32.0	-33.5	-17.3
No. of obs received	3335	3187	2883
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.9	100.0
% of Present			
Pressure	97.7	98.4	97.2
P. Tendency	93.9	94.0	92.6
Air Temperature	0.0	96.8	96.1
Wind Speed/Dir.	0.0/0.0	0.0/0.0	48.1/95.0
Sea-surface Temp.	98.5	98.6	0.0
Median delay(min)	22	22	30
Number of days	90	90	90
Mean no. of obs/day	37.1	35.4	32.0
No. of hours with obs	1478	1474	1506
Mean no. of hours/day with obs	16.4	16.4	16.7
% of hour periods without an ob	31.7	31.7	30.4
Mean (Ob-Bg)	0.1	-0.3	-0.4
RMS (Ob-Bg)	1.5	1.8	1.7
unflagged data			
Mean (Ob-bg)	0.1	-0.4	-0.5
RMS (Ob-Bg)	5.1	3.5	3.4
all data			
Revised RMS (Ob-Bg)	1.8	1.8	1.7
% of data flagged	66	64	56
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44624/UK	44727/UK	44728/UK
Argos Id.No.	2958	3098	1254
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 12/03
Mean Latitude	62.4	56.2	63.4
Mean Longitude	-13.4	-29.6	-27.8
No. of obs received	4284	6220	3416
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.9	99.9	100.0
% of Present			
Pressure	97.0	99.2	89.8
P. Tendency	85.6	95.6	77.6
Air Temperature	0.0	98.0	95.9
Wind Speed /Dir.	56.9/56.8	0.0/0.0	0.0/0.0
Sea-surface Temp.	97.9	98.9	97.2
Median delay(Min)	21	22	21
Number of days	90	90	71
Mean no. of obs/day	47.6	69.1	48.1
No. of hours with obs	1669	1736	1290
Mean no. of hours/day with obs	18.5	19.3	18.2
% of hour periods without an ob	22.9	19.6	24.2
Mean (Ob-Bg)	0.1	-0.3	0.2
RMS (Ob-Bg)	1.7	1.7	1.4
unflagged data			
Mean (Ob-bg)	0.0	-0.5	11.4
RMS (Ob-Bg)	4.6	4.8	29.9
all data			
Revised RMS (Ob-Bg)	1.7	1.8	1.3
% of data flagged	69	77	75
Operating at end of period	YES	YES	NO
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44742/UK	44743/UK	44760/UK
Argos Id.No.	26753	1248	2947
Period within area	01/01 - 12/02	01/01 - 06/01	01/01 - 24/03
Mean Latitude	39.6	43.5	33.8
Mean Longitude	-10.1	-6.8	-38.4
No. of obs received	1038	121	1024
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.4	100.0	100.0
% of Present			
Pressure	99.5	99.2	96.7
P. Tendency	77.2	46.3	91.4
Air Temperature	98.6	0.0	94.4
Wind Speed/Dir.	71.4/63.4	0.0/0.0	0.0/0.0
Sea-surface Temp.	98.9	100.0	96.4
Median delay(min)	23	21	21
Number of days	43	6	83
Mean no. of obs/day	24.1	20.2	12.3
No. of hours with obs	566	70	896
Mean no. of hours/day with obs	13.2	11.7	10.8
% of hour periods without an ob	45.0	51.3	55.0
Mean (Ob-Bg)	-1.1	-1.0	-0.3
RMS (Ob-Bg)	2.1	1.8	1.1
unflagged data			
Mean (Ob-bg)	-1.7	-0.9	-0.3
RMS (Ob-Bg)	6.3	1.8	1.5
all data			
Revised RMS (Ob-Bg)	2.4	1.8	1.1
% of data flagged	61	55	13
Operating at end of period	NO	NO	NO
Performance			
Availability	Satisfactory	Satisfactory	Poor
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44761/UK	44762/UK	44763/UK
Argos Id.No.	12660	26754	12663
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	56.0	38.4	47.0
Mean Longitude	-17.2	-10.8	-44.8
No. of obs received	2991	2117	1639
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.8	96.0	96.8
% of Present			
Pressure	97.2	98.6	94.4
P. Tendency	93.2	77.8	87.9
Air Temperature	0.0	97.3	0.0
Wind Speed /Dir.	0.0/0.0	61.4/53.6	0.0/0.0
Sea-surface Temp.	98.9	0.9	97.6
Median delay(Min)	21	23	22
Number of days	90	90	90
Mean no. of obs/day	33.2	23.5	18.2
No. of hours with obs	1472	1161	983
Mean no. of hours/day with obs	16.4	12.9	10.9
% of hour periods without an ob	31.7	46.3	54.6
Mean (Ob-Bg)	0.4	-0.7	0.1
RMS (Ob-Bg)	1.8	1.6	1.7
unflagged data			
Mean (Ob-bg)	0.7	-0.9	-0.3
RMS (Ob-Bg)	2.7	3.4	7.2
all data			
Revised RMS (Ob-Bg)	2.6	1.8	2.0
% of data flagged	64	58	52
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44765/UK	44766/UK	44768/UK
Argos Id.No.	12662	12667	26746
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	58.6	51.2	59.4
Mean Longitude	-44.3	-34.6	-19.2
No. of obs received	2939	2996	4724
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.7	99.9
% of Present			
Pressure	95.2	97.2	98.0
P. Tendency	90.9	93.2	93.7
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	96.8	98.9	83.3
Median delay(min)	32	22	23
Number of days	90	90	90
Mean no. of obs/day	32.7	33.3	52.5
No. of hours with obs	1536	1421	1711
Mean no. of hours/day with obs	17.1	15.8	19.0
% of hour periods without an ob	28.8	34.2	20.8
Mean (Ob-Bg)	-0.2	0.1	0.2
RMS (Ob-Bg)	1.8	1.7	1.6
unflagged data			
Mean (Ob-bg)	-0.3	0.1	-0.1
RMS (Ob-Bg)	5.0	5.7	6.1
all data			
Revised RMS (Ob-Bg)	2.4	2.3	1.7
% of data flagged	58	64	71
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44769/UK	44771/UK	44773/UK
Argos Id. No.	26749	12659	26751
Period within area	01/01 - 27/02	01/01 - 31/03	01/01 - 31/03
Mean Latitude	53.7	53.2	59.1
Mean Longitude	-12.5	-27.0	-27.7
No. of obs received	2511	3341	4568
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.8	99.6	99.9
% of Present			
Pressure	98.8	97.5	97.6
P. Tendency	95.0	93.8	93.8
Air Temperature	98.1	0.0	96.6
Wind Speed /Dir.	0.0/0.0	0.0/0.0	96.4/96.3
Sea-surface Temp.	99.3	98.8	98.3
Median delay(Min)	22	22	22
Number of days	58	90	90
Mean no. of obs/day	43.3	37.1	50.8
No. of hours with obs	1027	1482	1680
Mean no. of hours/day with obs	17.7	16.5	18.7
% of hour periods without an ob	26.3	31.3	22.1
Mean (Ob-Bg)	0.0	0.3	-0.1
RMS (Ob-Bg)	1.4	1.7	1.7
unflagged data			
Mean (Ob-bg)	-0.2	0.2	-0.2
RMS (Ob-Bg)	4.9	4.5	4.3
all data			
Revised RMS (Ob-Bg)	1.5	1.8	1.7
% of data flagged	67	65	70
Operating at end of period	NO	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44775/UK	44776/UK	44780/UK
Argos Id.No.	26741	????	26742
Period within area	01/01 - 31/03	01/01 - 17/01	01/01 - 31/03
Mean Latitude	59.5	50.3	54.0
Mean Longitude	-32.2	-8.6	-29.2
No. of obs received	4709	14	3747
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	78.6	100.0
% of Present			
Pressure	97.4	100.0	98.1
P. Tendency	92.8	85.7	93.5
Air Temperature	96.4	0.0	97.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	84.4	100.0	98.7
Median delay(min)	22	27	22
Number of days	90	17	90
Mean no. of obs/day	52.3	0.8	41.6
No. of hours with obs	1713	13	1563
Mean no. of hours/day with obs	19.0	0.8	17.4
% of hour periods without an ob	20.8	96.7	27.5
Mean (Ob-Bg)	0.1	---	-0.1
RMS (Ob-Bg)	1.6	---	1.6
unflagged data			
Mean (Ob-bg)	0.2	-82.2	-0.4
RMS (Ob-Bg)	3.5	87.0	5.1
all data			
Revised RMS (Ob-Bg)	1.6	87.0	1.6
% of data flagged	71	100	67
Operating at end of period	YES	NO	YES
Performance			
Availability	Very Good	Very Poor	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	44834/??	44901/??	44911/US
Argos Id.No.	????	????	466
Period within area	01/01 - 30/03	01/01 - 31/03	01/01 - 06/03
Mean Latitude	51.1	54.1	58.8
Mean Longitude	-44.9	-49.3	-9.7
No. of obs received	843	498	286
% 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	20.8	81.7	85.3
P. Tendency	16.6	31.7	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.	97.2	94.4	0.0
Median delay(Min)	72	73	541
Number of days	89	90	65
Mean no. of obs/day	9.5	5.5	4.4
No. of hours with obs	693	393	253
Mean no. of hours/day with obs	7.8	4.4	3.9
% of hour periods without an ob	67.5	81.7	83.8
Mean (Ob-Bg)	0.7	---	0.7
RMS (Ob-Bg)	1.5	---	1.6
unflagged data			
Mean (Ob-bg)	0.8	1.1	0.9
RMS (Ob-Bg)	1.8	3.0	1.8
all data			
Revised RMS (Ob-Bg)	1.8	2.6	1.8
% of data flagged	20	100	11
Operating at end of period	NO	YES	NO
Performance			
Availability	Poor	Poor	Very Poor
Pressure Quality	Suspect	Acceptable	Suspect
Timeliness	Good	Good	Very Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	44912/US	44925/US	51633/??
Argos Id.No.	????	????	????
Period within area	01/01 - 31/03	01/01 - 31/03	28/02 - 31/03
Mean Latitude	52.2	60.3	35.6
Mean Longitude	-22.7	-53.8	-69.3
No. of obs received	379	251	503
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	98.2	97.2	49.1
% of Present			
Pressure	81.5	90.4	98.4
P. Tendency	26.4	13.9	0.0
Air Temperature	0.0	0.0	96.8
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	97.4	12.4	99.0
Median delay(min)	98	92	29
Number of days	90	90	32
Mean no. of obs/day	4.2	2.8	15.7
No. of hours with obs	329	213	435
Mean no. of hours/day with obs	3.7	2.4	13.6
% of hour periods without an ob	84.6	90.0	43.3
Mean (Ob-Bg)	1.0	0.7	0.1
RMS (Ob-Bg)	1.8	1.8	1.2
unflagged data			
Mean (Ob-bg)	1.5	1.0	0.1
RMS (Ob-Bg)	3.4	4.5	1.2
all data			
Revised RMS (Ob-Bg)	2.4	3.7	1.2
% of data flagged	16	29	24
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Poor	Very Poor	Satisfactory
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Good	Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62506/??	62551/??	62552/F
Argos Id.No.	????	????	3008
Period within area	27/03 - 31/03	02/02 - 31/03	01/01 - 11/02
Mean Latitude	48.6	47.3	59.1
Mean Longitude	-15.5	-16.5	-7.3
No. of obs received	69	1279	1388
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.9	100.0
% of Present			
Pressure	95.7	98.4	95.4
P. Tendency	85.5	0.0	88.5
Air Temperature	97.1	0.0	72.7
Wind Speed/Dir.	94.2/89.9	55.2/58.2	94.0/93.6
Sea-surface Temp.	95.7	58.9	96.6
Median delay(min)	28	139	33
Number of days	5	58	42
Mean no. of obs/day	13.8	22.1	33.0
No. of hours with obs	30	1110	841
Mean no. of hours/day with obs	6.0	19.1	20.0
% of hour periods without an ob	75.0	20.4	16.7
Mean (Ob-Bg)	1.5	0.6	-0.7
RMS (Ob-Bg)	1.7	1.2	1.9
unflagged data			
Mean (Ob-bg)	1.5	0.6	-1.1
RMS (Ob-Bg)	1.8	1.2	4.4
all data			
Revised RMS (Ob-Bg)	1.8	1.2	2.1
% of data flagged	25	11	52
Operating at end of period	YES	YES	NO
Performance			
Availability	Poor	Satisfactory	Good
Pressure Quality	Suspect	Suspect	Suspect
Timeliness	Very Good	Satisfactory	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62553/F	62554/F	62555/F
Argos Id.No.	3009	14430	27932
Period within area	01/01 - 31/03	01/01 - 18/02	01/01 - 02/02
Mean Latitude	53.0	57.9	43.2
Mean Longitude	-20.9	-7.3	-12.0
No. of obs received	2537	1528	1175
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	99.7
% of Present			
Pressure	95.1	95.8	99.8
P. Tendency	89.6	90.9	38.3
Air Temperature	78.6	0.0	0.0
Wind Speed/Dir.	94.8/94.4	0.0/0.0	0.0/0.0
Sea-surface Temp.	96.8	96.7	78.4
Median delay(min)	27	34	41
Number of days	90	49	33
Mean no. of obs/day	28.2	31.2	35.6
No. of hours with obs	1630	956	657
Mean no. of hours/day with obs	18.1	19.5	19.9
% of hour periods without an ob	24.6	18.8	17.1
Mean (Ob-Bg)	0.3	0.1	-0.1
RMS (Ob-Bg)	1.6	1.7	1.1
unflagged data			
Mean (Ob-bg)	0.0	0.1	0.0
RMS (Ob-Bg)	3.4	1.7	9.6
all data			
Revised RMS (Ob-Bg)	1.6	1.7	1.1
% of data flagged	47	48	57
Operating at end of period	YES	NO	NO
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62556/F	62557/F	62558/F
Argos Id.No.	27935	27930	27931
Period within area	01/01 - 28/01	01/01 - 31/03	01/01 - 31/03
Mean Latitude	48.2	47.7	54.0
Mean Longitude	-23.9	-13.1	-12.3
No. of obs received	1096	4031	4226
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.8	99.7	99.9
% of Present			
Pressure	99.8	92.7	92.8
P. Tendency	36.6	34.1	38.4
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.	82.7	73.3	0.0
Median delay(min)	46	49	50
Number of days	28	90	90
Mean no. of obs/day	39.1	44.8	47.0
No. of hours with obs	568	1898	1937
Mean no. of hours/day with obs	20.3	21.1	21.5
% of hour periods without an ob	15.4	12.1	10.4
Mean (Ob-Bg)	0.0	0.5	0.8
RMS (Ob-Bg)	1.7	1.2	1.6
unflagged data			
Mean (Ob-bg)	0.3	-0.4	0.1
RMS (Ob-Bg)	9.0	6.9	5.0
all data			
Revised RMS (Ob-Bg)	1.9	3.3	3.3
% of data flagged	61	62	59
Operating at end of period	NO	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62673/??	62674/??	62697/UK
Argos Id.No.	????	????	2959
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	58.7	58.7	51.0
Mean Longitude	-28.9	-25.7	-14.0
No. of obs received	1497	1478	2819
% 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	97.4	98.1	93.8
P. Tendency	0.0	0.0	80.4
Air Temperature	95.7	96.8	97.3
Wind Speed/Dir.	96.9/97.0	98.0/97.8	70.7/0.0
Sea-surface Temp.	98.1	98.6	94.8
Median delay(min)	128	133	22
Number of days	90	90	90
Mean no. of obs/day	16.6	16.4	31.3
No. of hours with obs	1176	1193	1361
Mean no. of hours/day with obs	13.1	13.3	15.1
% of hour periods without an ob	45.4	44.6	37.1
Mean (Ob-Bg)	-0.1	-0.2	0.1
RMS (Ob-Bg)	1.6	1.5	1.4
unflagged data			
Mean (Ob-bg)	-0.1	-0.1	-0.2
RMS (Ob-Bg)	1.6	1.6	5.4
all data			
Revised RMS (Ob-Bg)	1.6	1.6	1.5
% of data flagged	50	49	61
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Satisfactory	Satisfactory	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	62751/??	62755/??	62758/??
Argos Id.No.	????	????	????
Period within area	02/02 - 31/03	02/02 - 31/03	02/02 - 31/03
Mean Latitude	46.4	44.2	43.9
Mean Longitude	-19.3	-17.8	-18.8
No. of obs received	1325	1154	1313
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.9	95.1	99.8
% of Present			
Pressure	30.8	29.9	30.2
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	92.9/92.8	91.1/91.9	91.8/92.0
Sea-surface Temp.	91.4	89.4	90.0
Median delay(min)	178	221	191
Number of days	58	58	58
Mean no. of obs/day	22.8	19.9	22.6
No. of hours with obs	1237	1081	1225
Mean no. of hours/day with obs	21.3	18.6	21.1
% of hour periods without an ob	11.3	22.5	12.1
Mean (Ob-Bg)	0.2	0.4	0.2
RMS (Ob-Bg)	1.7	1.2	1.1
unflagged data			
Mean (Ob-bg)	0.2	0.4	0.2
RMS (Ob-Bg)	1.7	1.2	1.1
all data			
Revised RMS (Ob-Bg)	1.7	1.2	1.1
% of data flagged	5	4	4
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Satisfactory	Poor	Poor
Comments			

ANNEX A - Cont.

Wmo No./Country	62803/UK	62927/??	62929/??
Argos Id.No.	3209	????	????
Period within area	01/01 - 31/03	01/01 - 06/03	01/01 - 31/03
Mean Latitude	68.0	56.4	56.8
Mean Longitude	4.9	-10.2	-33.8
No. of obs received	6914	300	485
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.8	100.0	100.0
% of Present			
Pressure	99.2	52.3	20.4
P. Tendency	96.3	32.0	0.0
Air Temperature	97.5	0.0	0.0
Wind Speed/Dir.	17.7/56.9	0.0/0.0	0.0/0.0
Sea-surface Temp.	99.1	97.3	99.6
Median delay(min)	23	130	84
Number of days	90	65	90
Mean no. of obs/day	76.8	4.6	5.4
No. of hours with obs	1934	255	391
Mean no. of hours/day with obs	21.5	3.9	4.3
% of hour periods without an ob	10.4	83.8	82.1
Mean (Ob-Bg)	-0.1	0.4	0.7
RMS (Ob-Bg)	1.6	1.2	1.8
unflagged data			
Mean (Ob-bg)	-0.1	4.8	1.1
RMS (Ob-Bg)	2.6	11.5	2.9
all data			
Revised RMS (Ob-Bg)	1.7	4.7	2.4
% of data flagged	78	28	61
Operating at end of period	YES	NO	YES
Performance			
Availability	Very Good	Very Poor	Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Satisfactory	Good
Comments			

ANNEX A - Cont.

Wmo No./Country	64528/NL	64530/UK	64552/UK
Argos Id.No.	4274	12666	12658
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	58.1	60.6	63.4
Mean Longitude	-27.7	-50.9	-31.6
No. of obs received	6114	4435	3612
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.6	99.9	100.0
% of Present			
Pressure	98.2	96.0	95.7
P. Tendency	71.2	89.9	90.9
Air Temperature	97.4	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	63.8	86.0	97.3
Median delay(min)	22	22	21
Number of days	90	90	90
Mean no. of obs/day	67.9	49.3	40.1
No. of hours with obs	1680	1686	1637
Mean no. of hours/day with obs	18.7	18.7	18.2
% of hour periods without an ob	22.1	22.1	24.2
Mean (Ob-Bg)	-0.4	0.1	0.1
RMS (Ob-Bg)	1.6	1.7	1.7
unflagged data			
Mean (Ob-bg)	-0.4	0.0	0.4
RMS (Ob-Bg)	2.5	6.1	2.7
all data			
Revised RMS (Ob-Bg)	1.6	2.0	2.2
% of data flagged	78	71	67
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

Wmo No./Country	64561/UK	64563/N	65562/??
Argos Id.No.	1247	3679	????
Period within area	01/01 - 31/03	01/01 - 31/03	06/02 - 31/03
Mean Latitude	53.6	55.0	59.9
Mean Longitude	-20.5	-41.7	-21.6
No. of obs received	3444	5159	3690
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	99.8
% of Present			
Pressure	97.5	97.6	97.6
P. Tendency	93.1	69.6	71.0
Air Temperature	0.0	96.9	96.5
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	98.8	61.9	63.7
Median delay(min)	22	21	22
Number of days	90	90	54
Mean no. of obs/day	38.3	57.3	68.3
No. of hours with obs	1562	1636	1011
Mean no. of hours/day with obs	17.4	18.2	18.7
% of hour periods without an ob	27.5	24.2	22.1
Mean (Ob-Bg)	0.0	-0.9	-0.4
RMS (Ob-Bg)	1.4	2.2	1.7
unflagged data			
Mean (Ob-bg)	-0.4	-1.2	-0.5
RMS (Ob-Bg)	7.0	3.4	1.9
all data			
Revised RMS (Ob-Bg)	1.5	2.9	1.8
% of data flagged	65	76	78
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

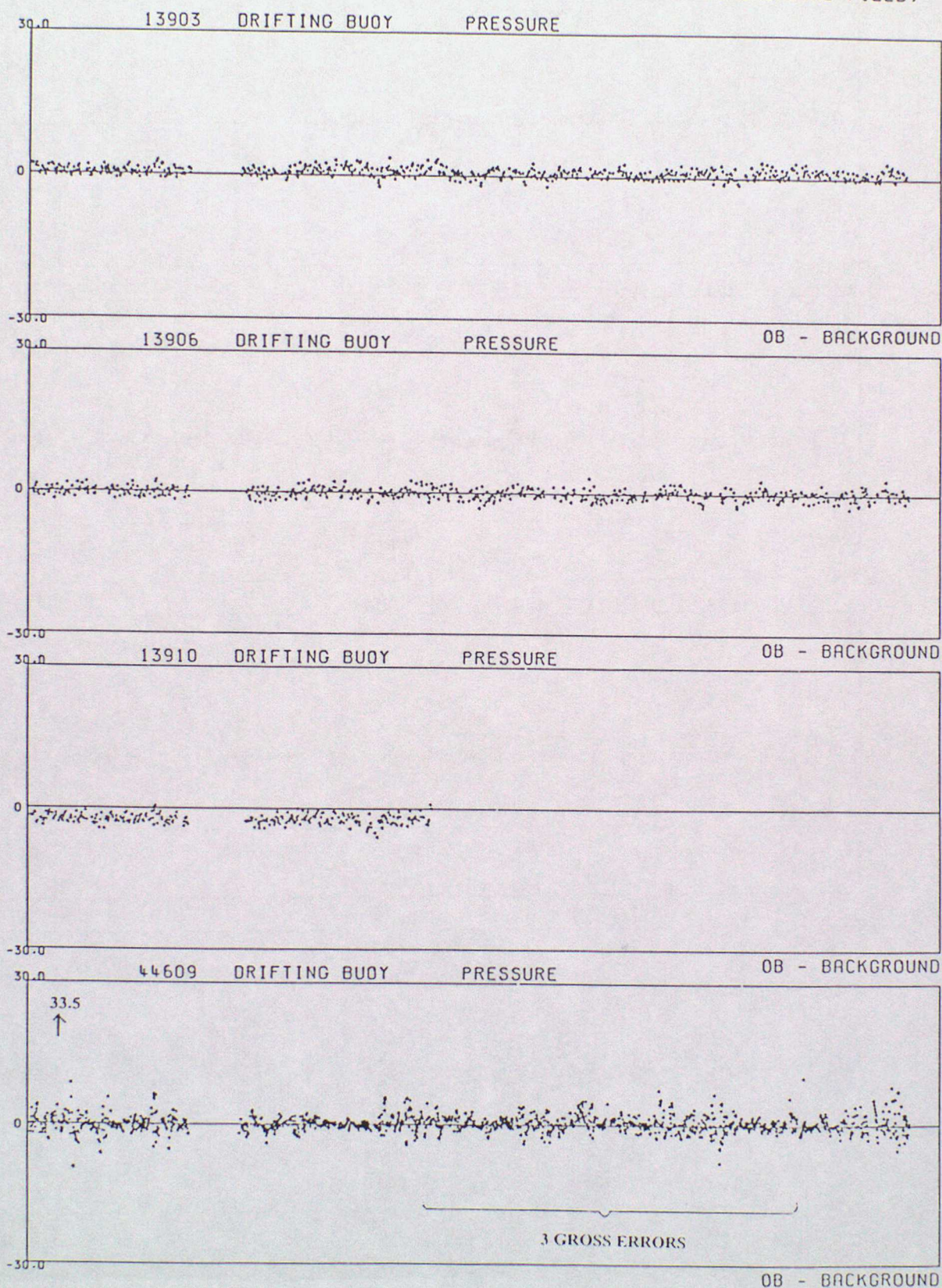
Wmo No./Country	65591/UK	65592/D	65594/UK
Argos Id.No.	26748	4270	1252
Period within area	01/01 - 31/03	01/01 - 31/03	01/01 - 31/03
Mean Latitude	59.9	60.5	63.2
Mean Longitude	-34.1	-32.7	-31.9
No. of obs received	3037	5066	6963
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.9	98.5	100.0
% of Present			
Pressure	96.4	95.9	99.2
P. Tendency	92.7	62.0	95.9
Air Temperature	95.2	95.9	97.6
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	74.9	78.4	99.1
Median delay(min)	33	21	21
Number of days	90	90	90
Mean no. of obs/day	33.7	56.3	77.4
No. of hours with obs	1552	1749	1832
Mean no. of hours/day with obs	17.2	19.4	20.4
% of hour periods without an ob	28.3	19.2	15.0
Mean (Ob-Bg)	-0.3	-0.5	-0.3
RMS (Ob-Bg)	1.6	1.7	1.7
unflagged data			
Mean (Ob-bg)	-0.5	-0.6	-0.4
RMS (Ob-Bg)	6.5	2.8	3.3
all data			
Revised RMS (Ob-Bg)	1.7	2.1	1.8
% of data flagged	58	73	79
Operating at end of period	YES	YES	YES
Performance			
Availability	Good	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

ANNEX A - Cont.

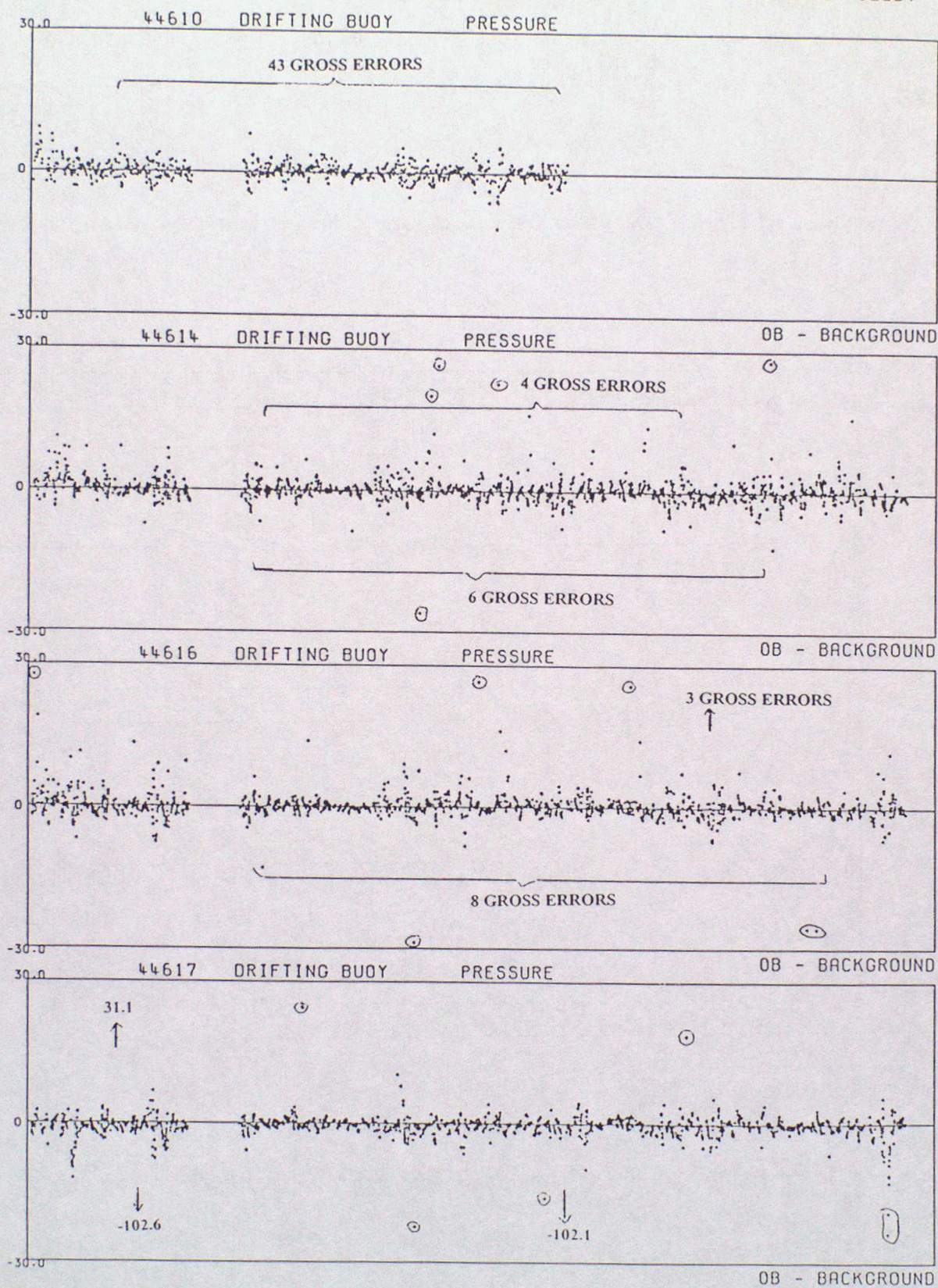
Wmo No./Country	65596/NL	65597/NL
Argos Id.No.	3036	4273
Period within area	01/01 - 13/02	01/01 - 31/03
Mean Latitude	49.1	52.7
Mean Longitude	-31.7	-33.9
No. of obs received	398	4537
% of obs with valid Time and Date	100.0	100.0
% of obs with acceptable position	91.7	98.6
% of Present		
Pressure	86.2	97.5
P. Tendency	54.0	70.4
Air Temperature	85.7	96.7
Wind Speed/Dir.	0.0/0.0	0.0/0.0
Sea-surface Temp.	52.3	58.8
Median delay(min)	22	22
Number of days	44	90
Mean no. of obs/day	9.0	50.4
No. of hours with obs	246	1533
Mean no. of hours/day with obs	5.6	17.0
% of hour periods without an ob	76.7	29.2
Mean (Ob-Bg)	-1.1	-0.6
RMS (Ob-Bg)	2.5	1.7
unflagged data		
Mean (Ob-bg)	-1.7	-0.7
RMS (Ob-Bg)	4.5	3.2
all data		
Revised RMS (Ob-Bg)	3.6	1.8
% of data flagged	52	73
Operating at end of period	NO	YES
Performance		
Availability	Poor	Very Good
Pressure Quality	Suspect	Suspect
Timeliness	Very Good	Very Good
Comments		

ANNEX B - TIME SERIES PLOTS OF PRESSURE

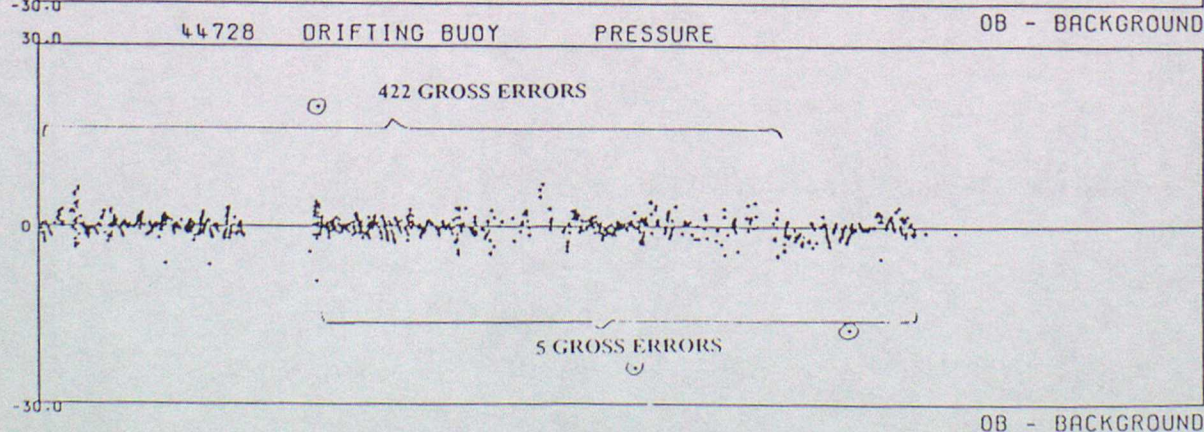
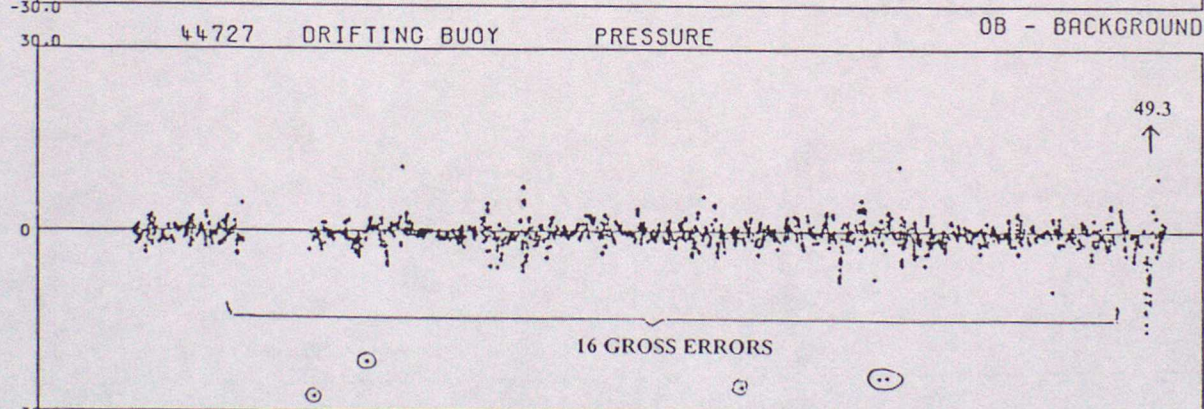
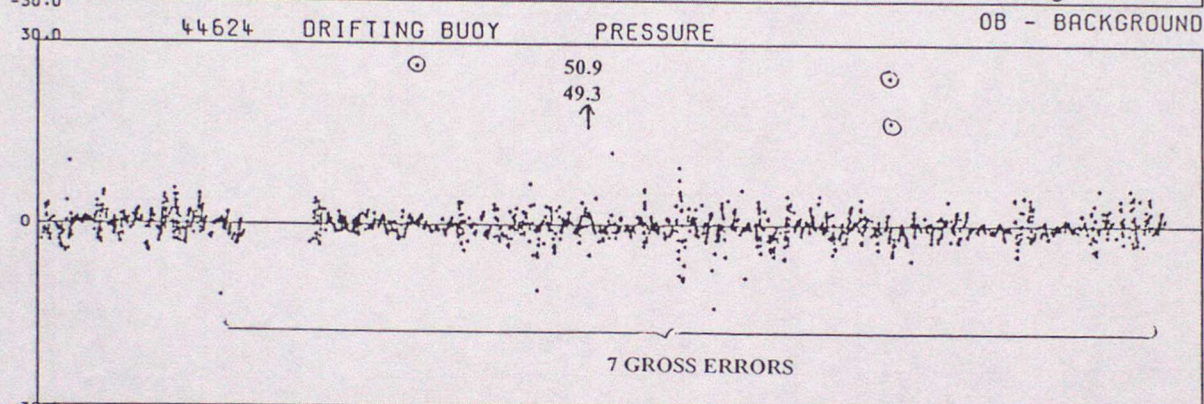
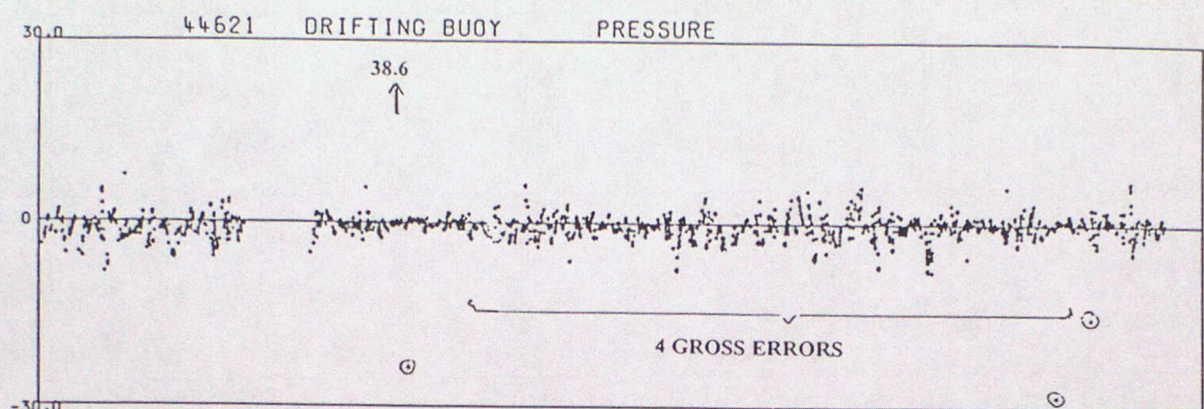
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



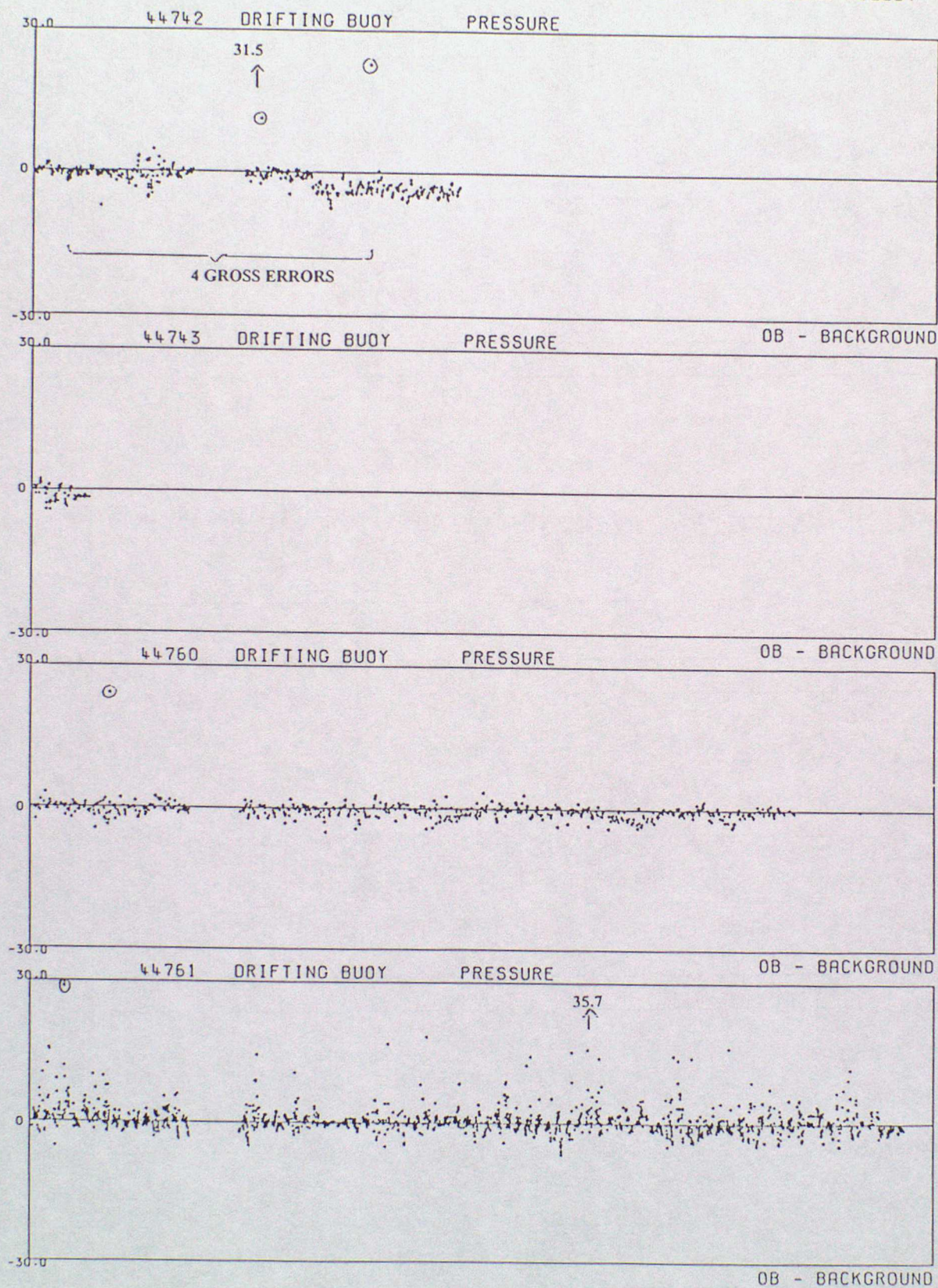
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



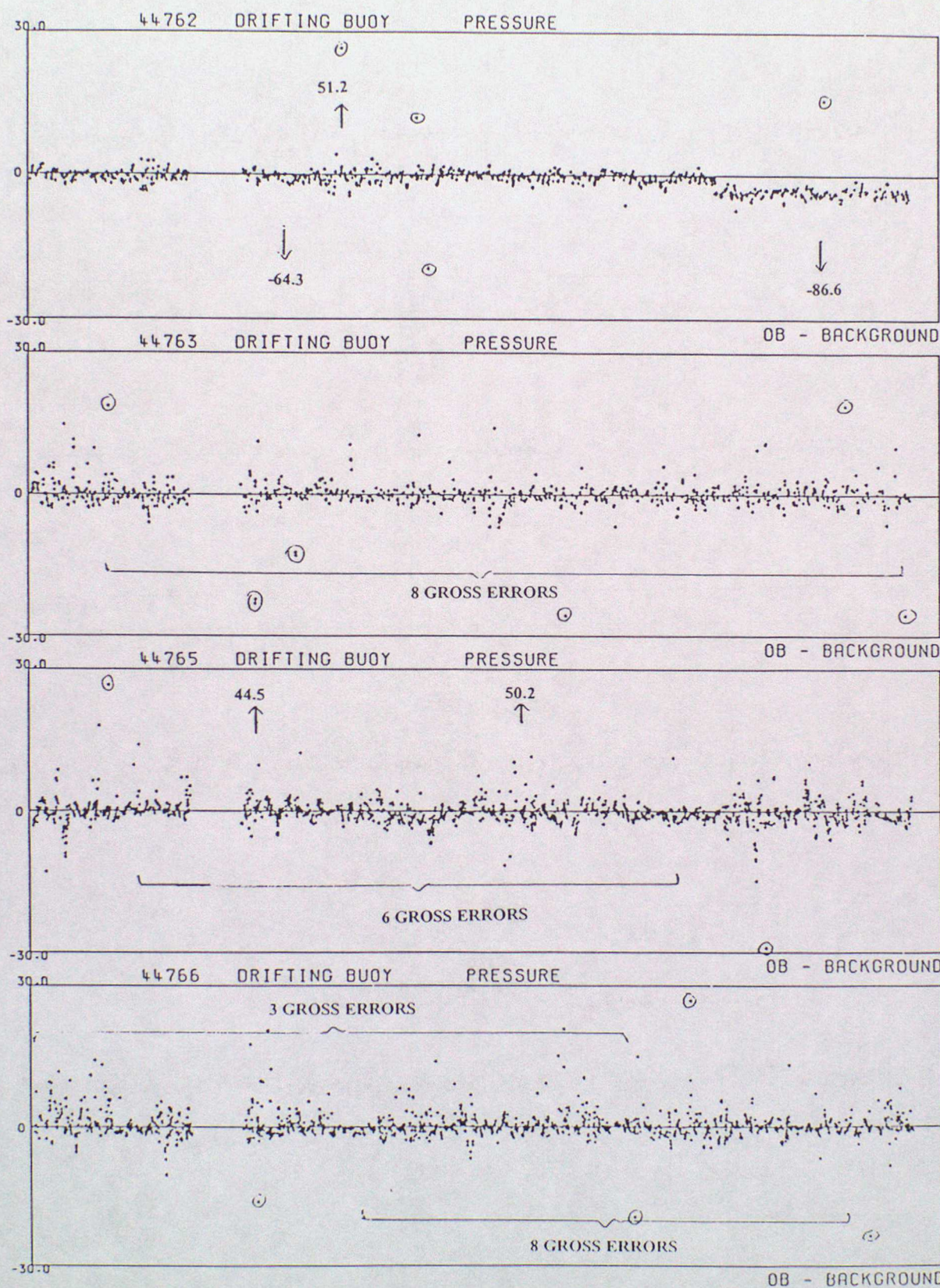
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



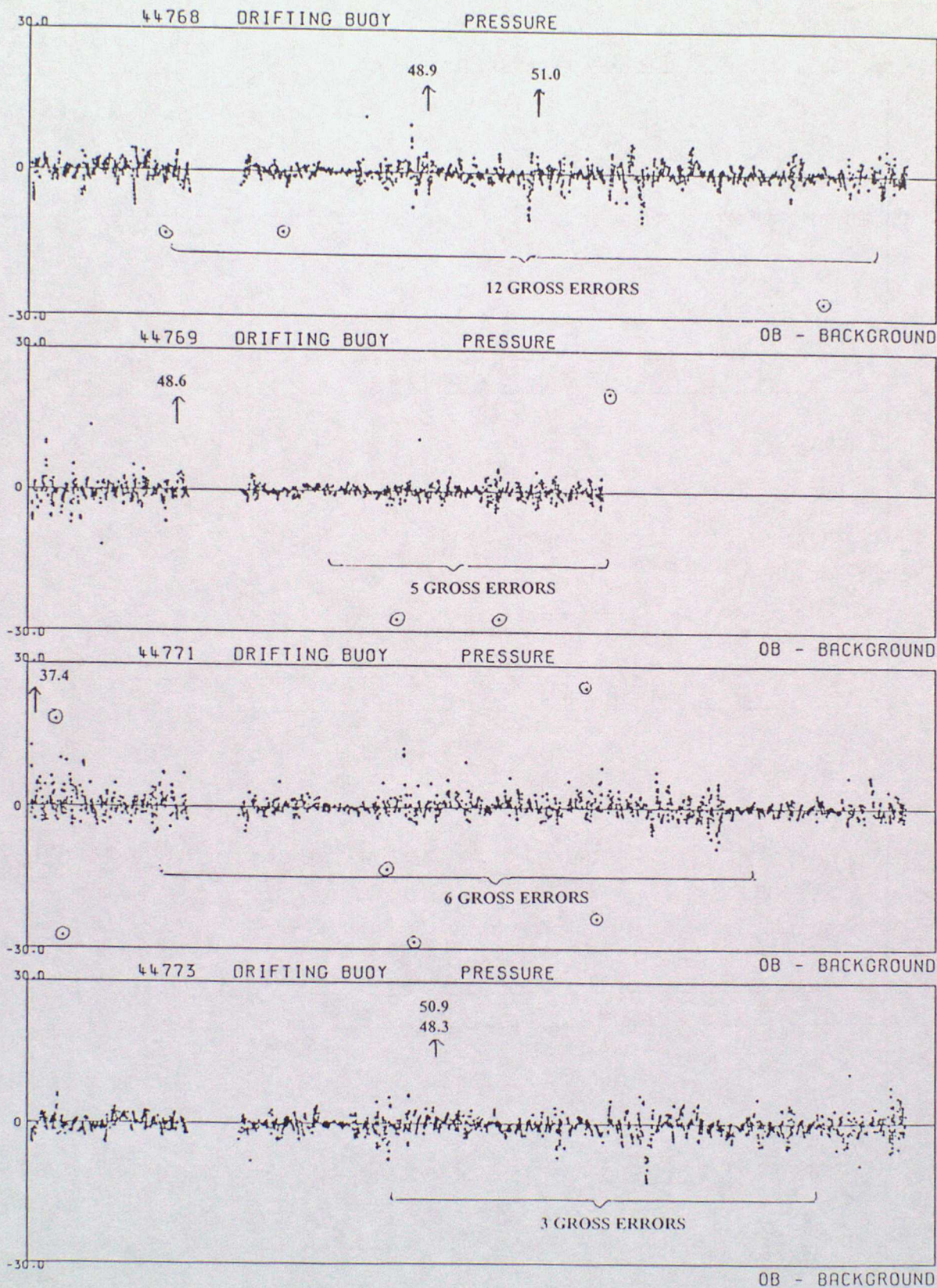
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



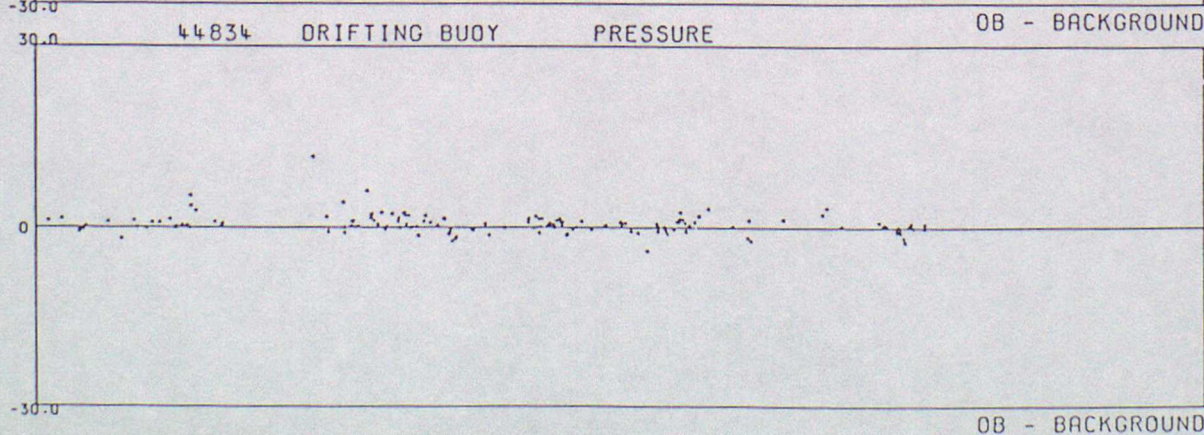
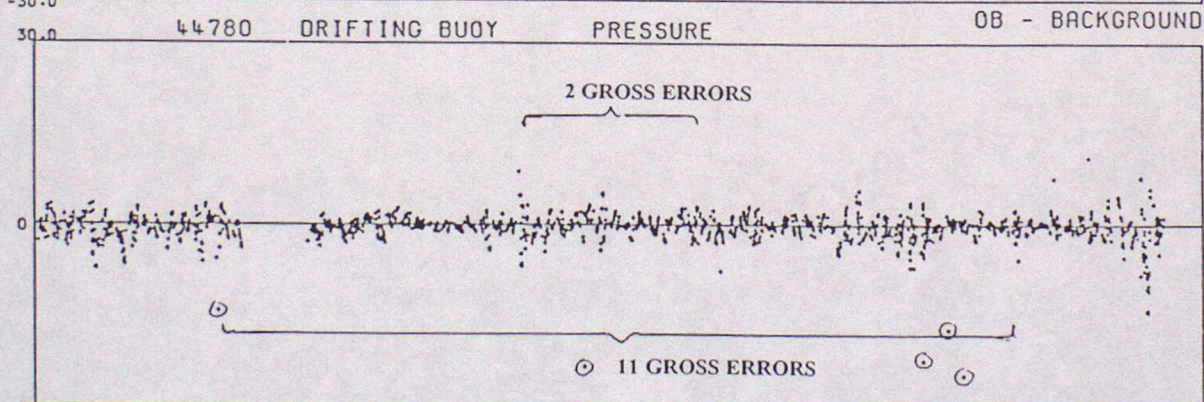
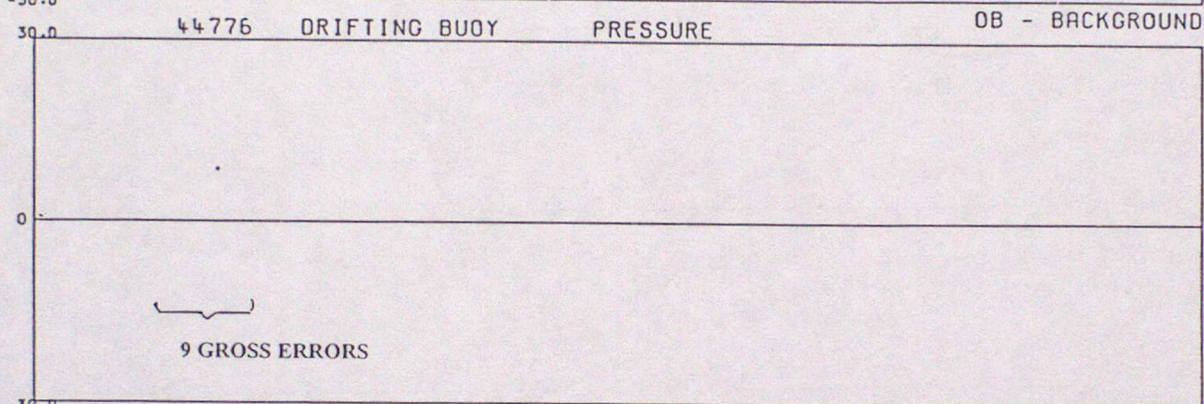
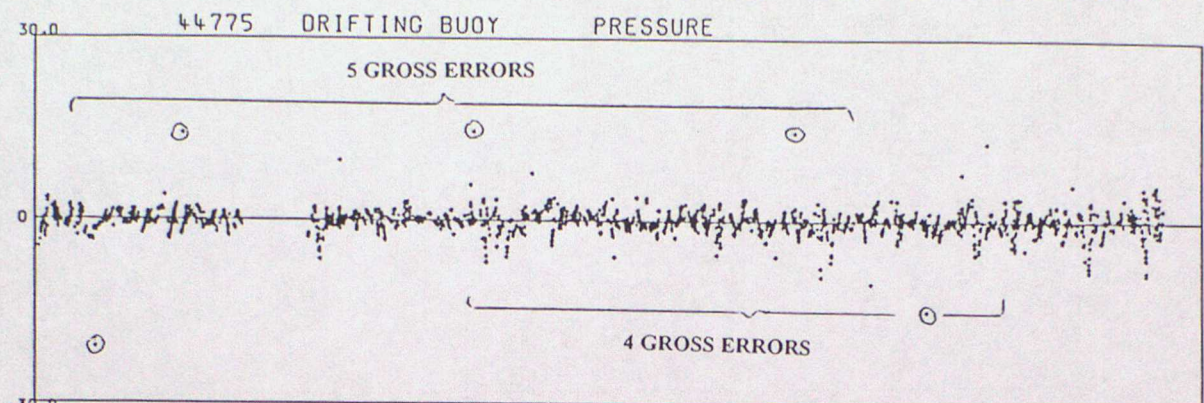
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



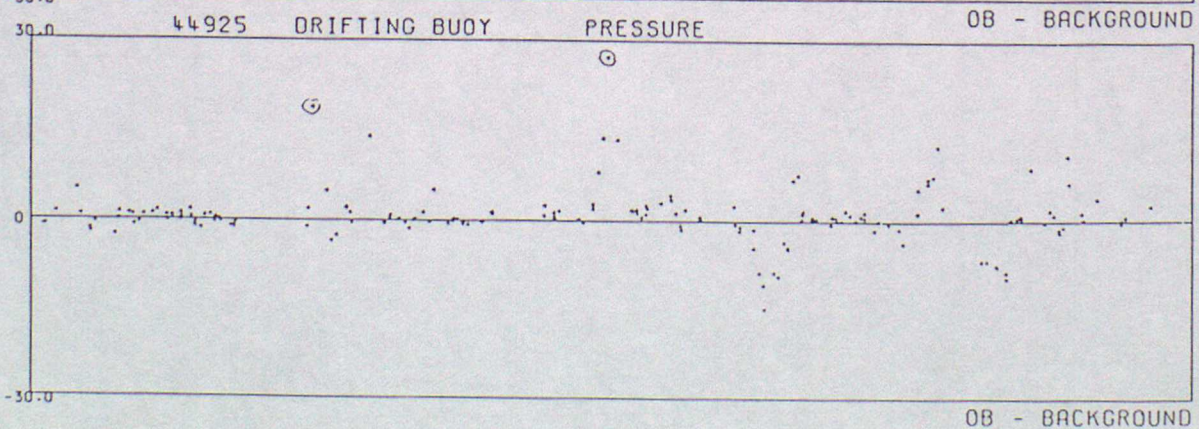
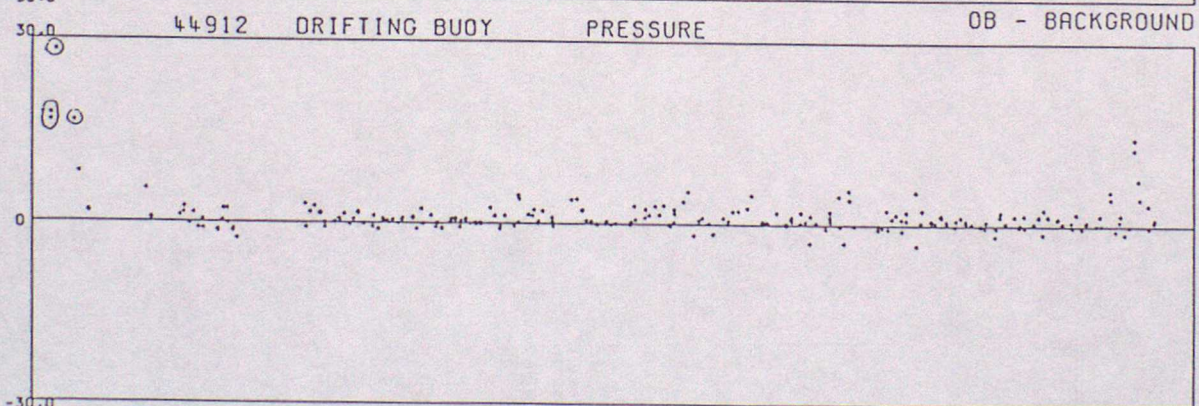
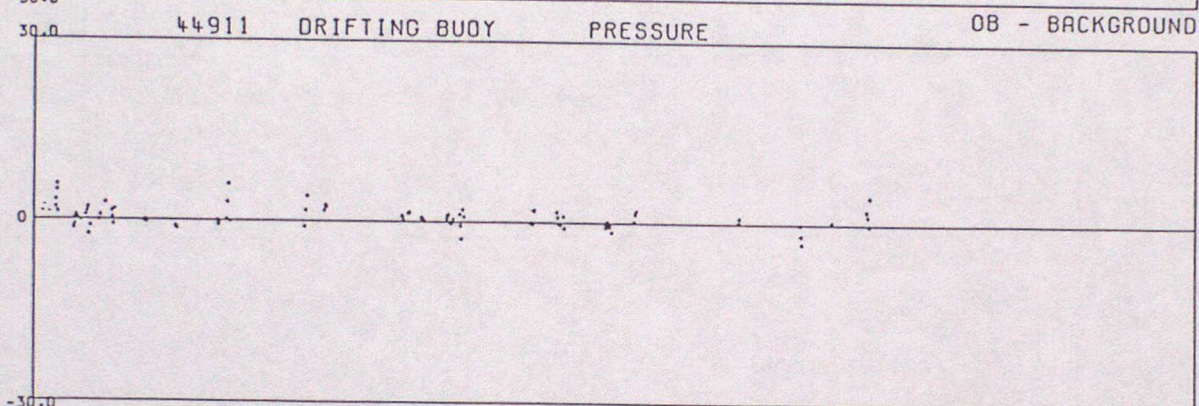
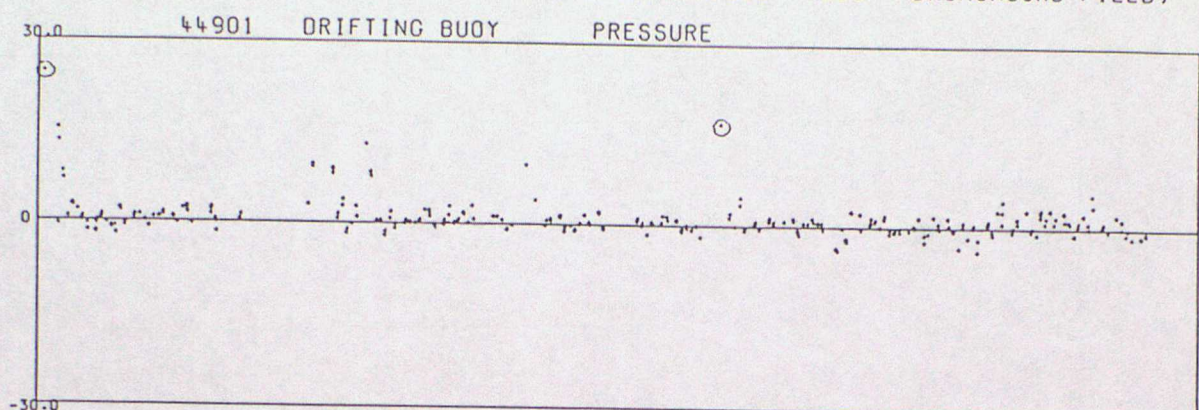
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

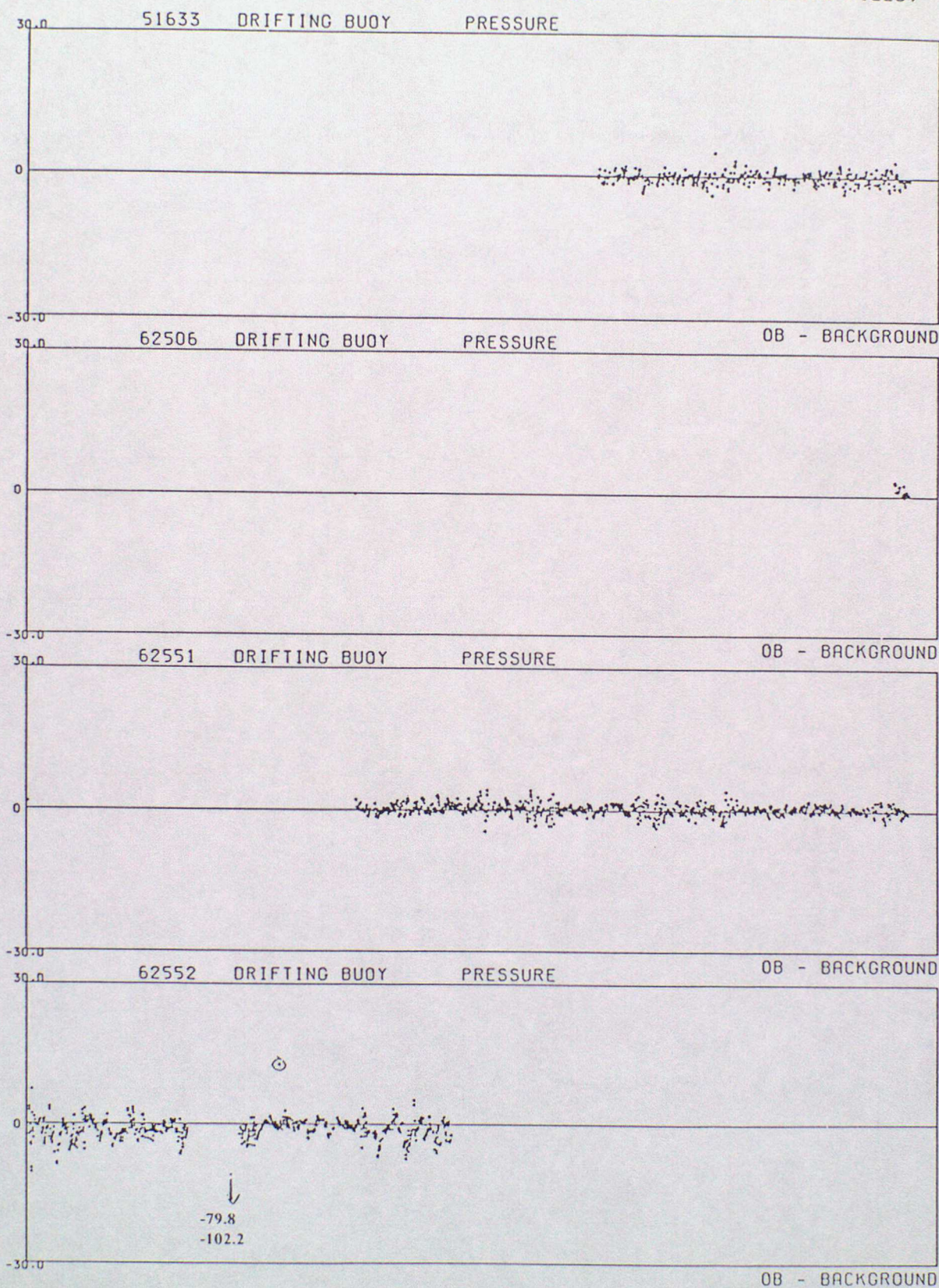


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

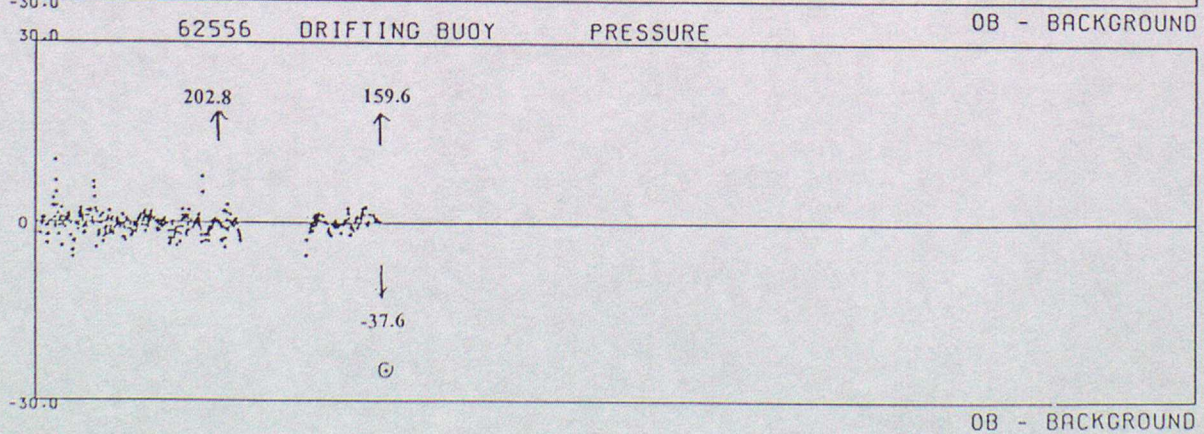
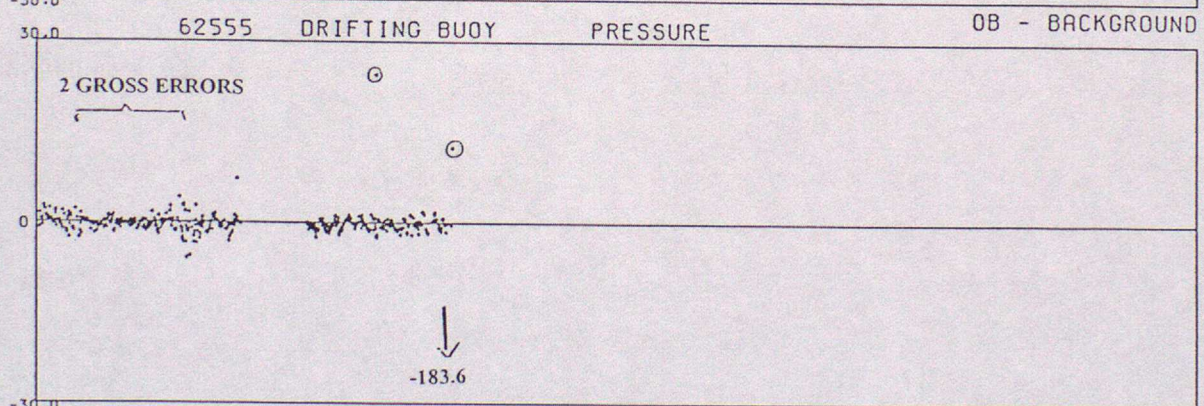
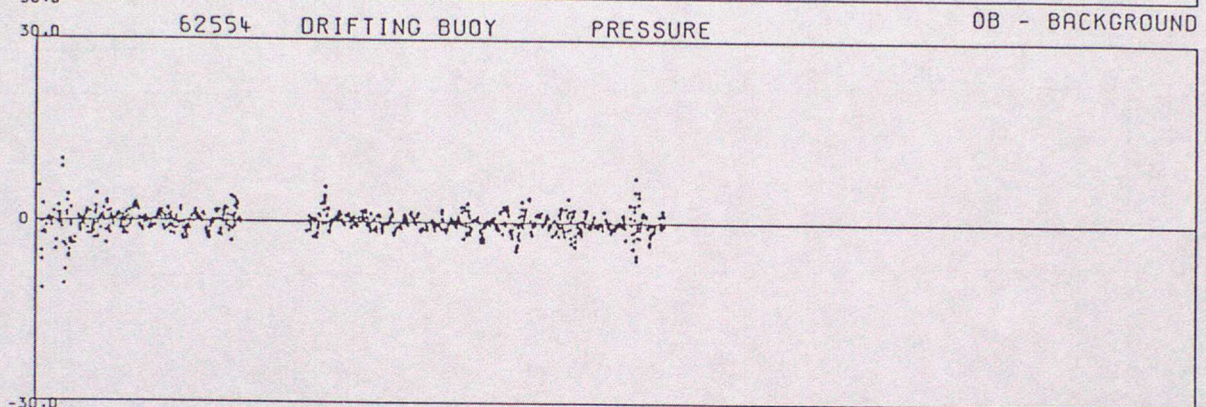
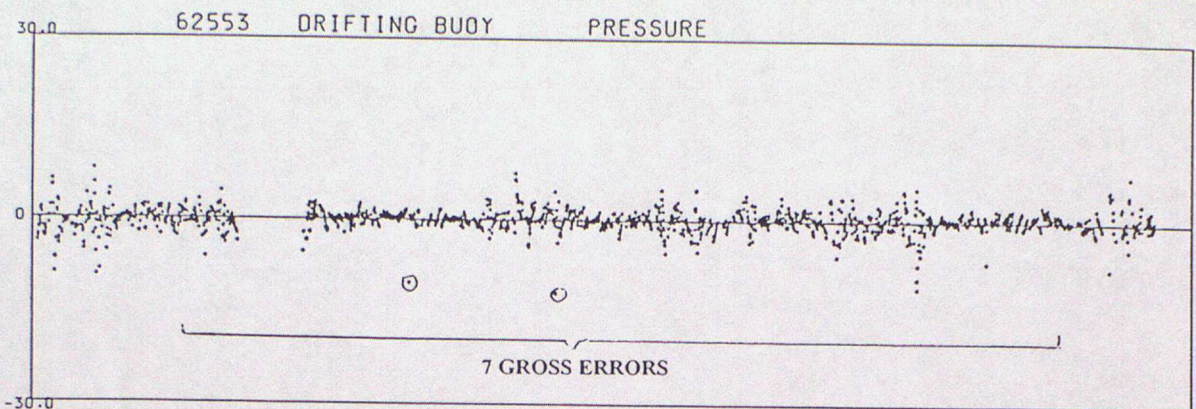


OB - BACKGROUND

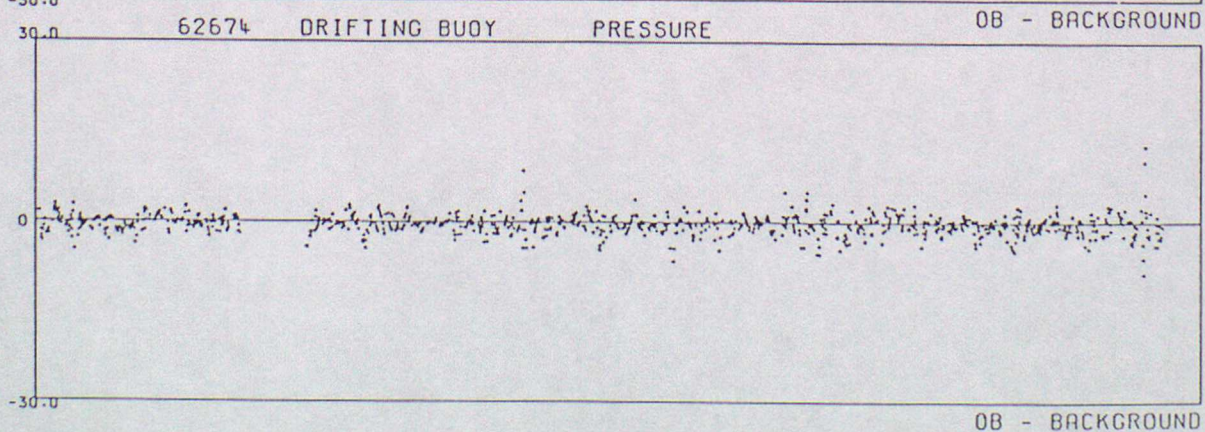
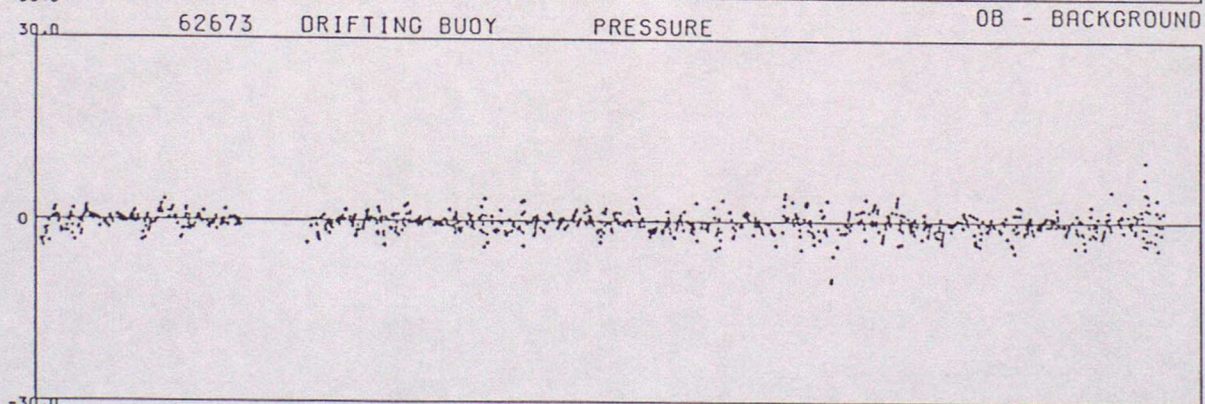
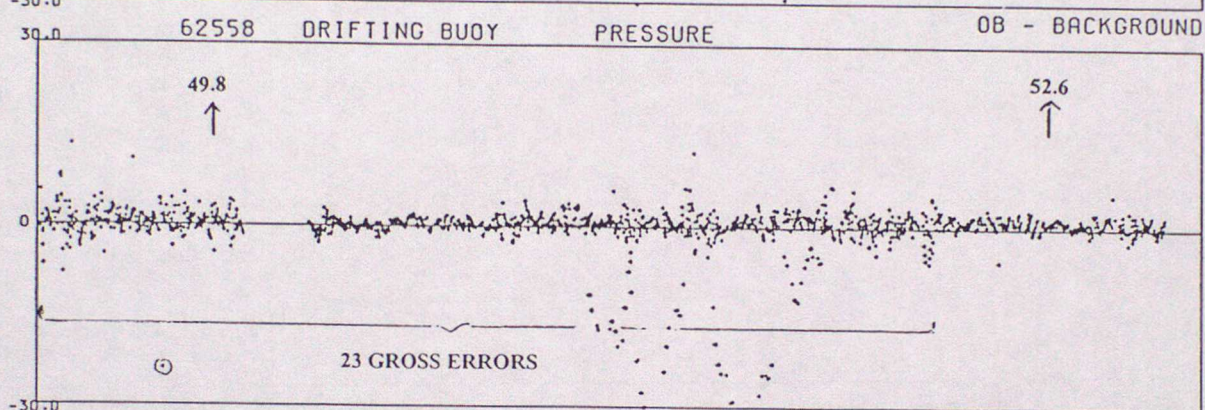
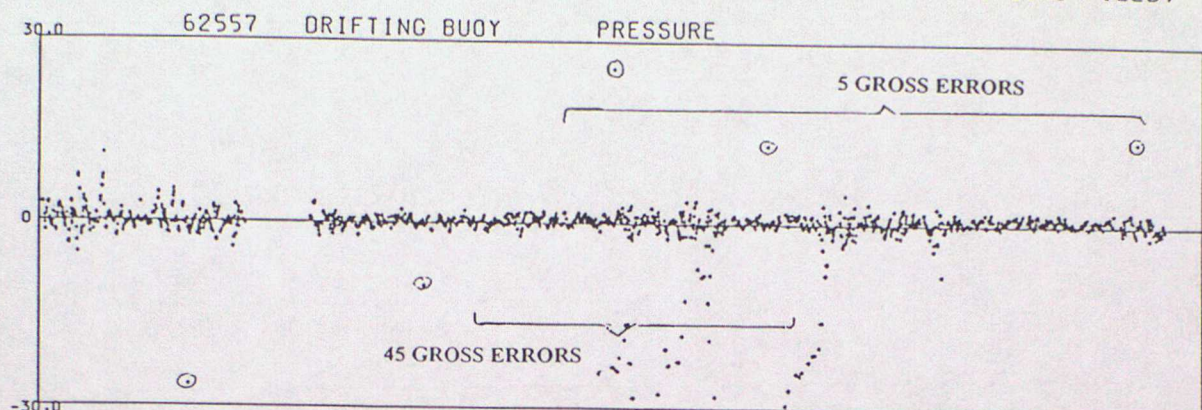
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



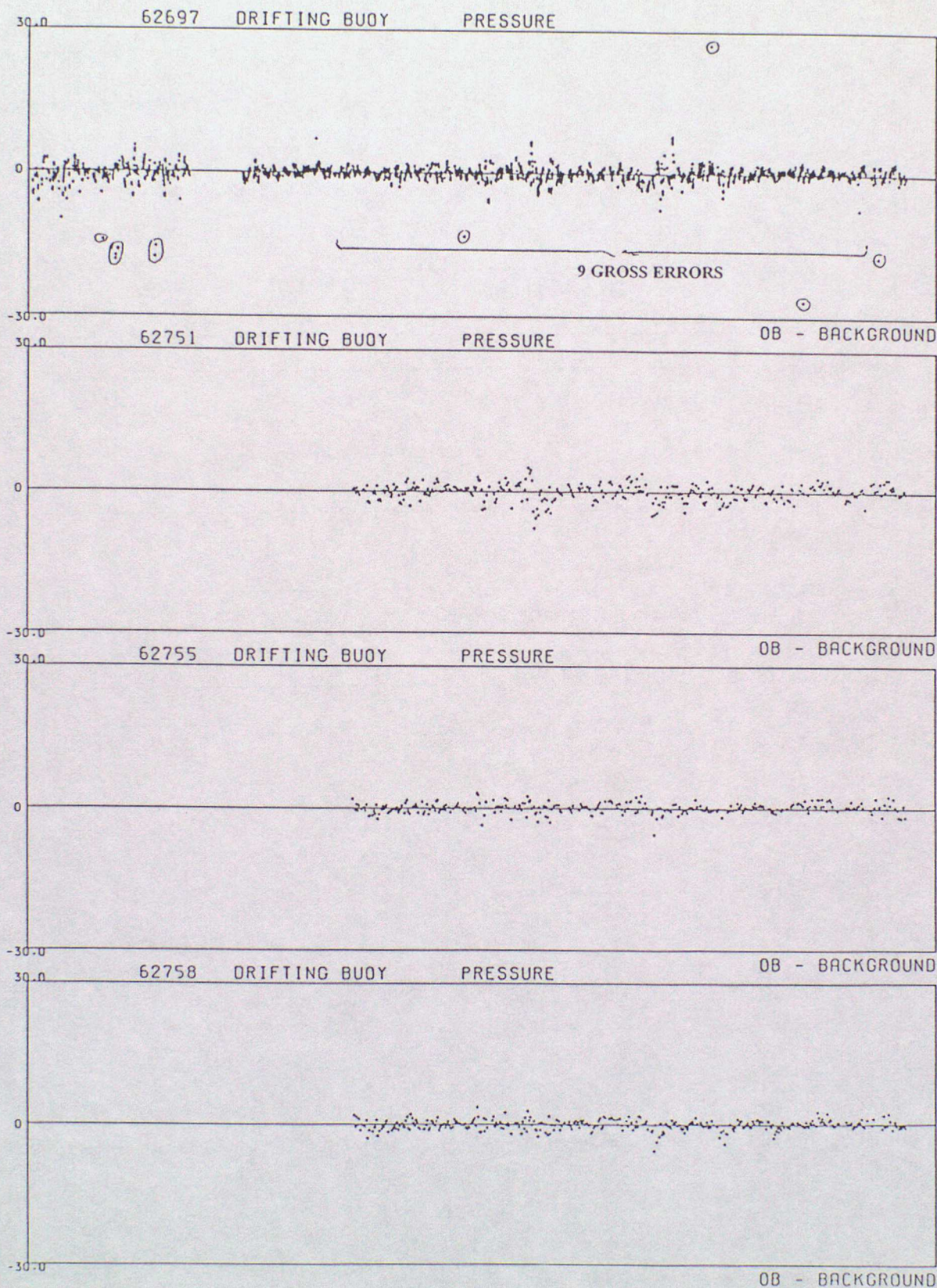
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



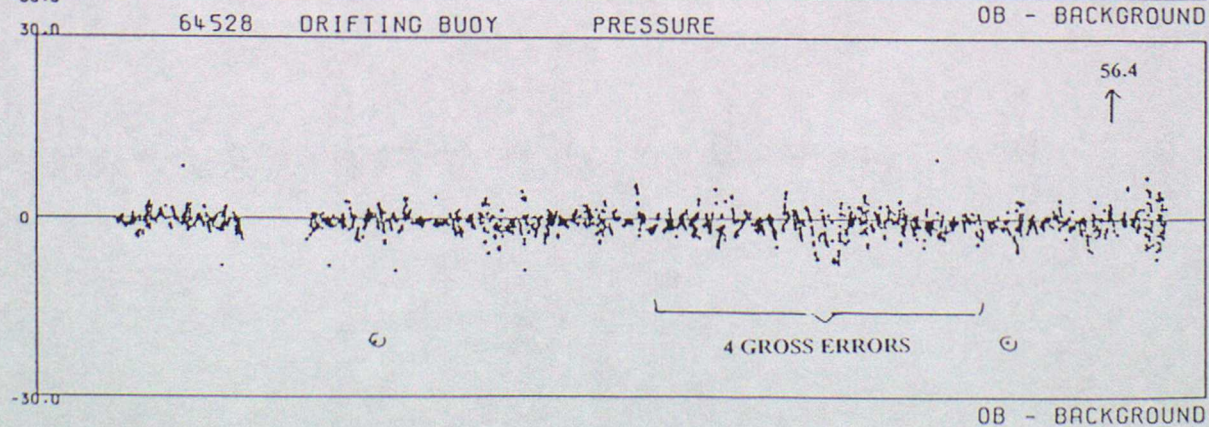
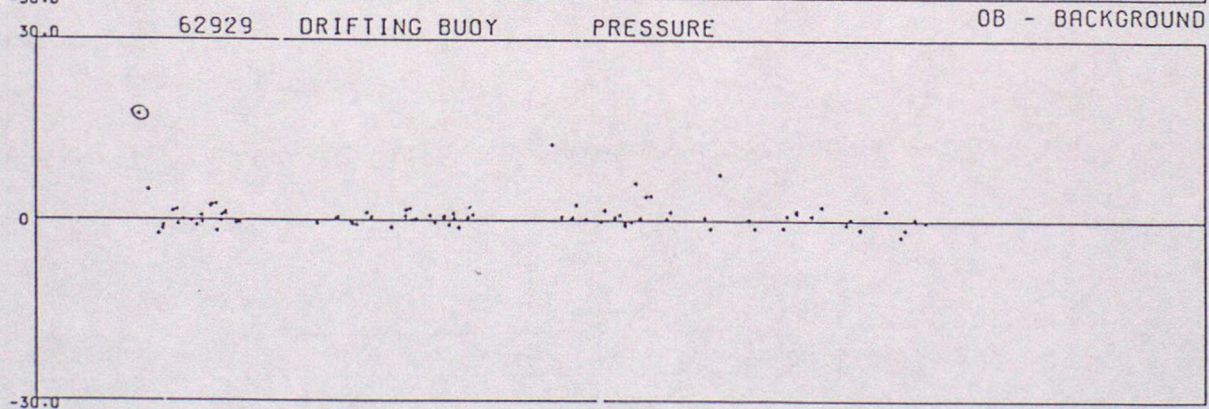
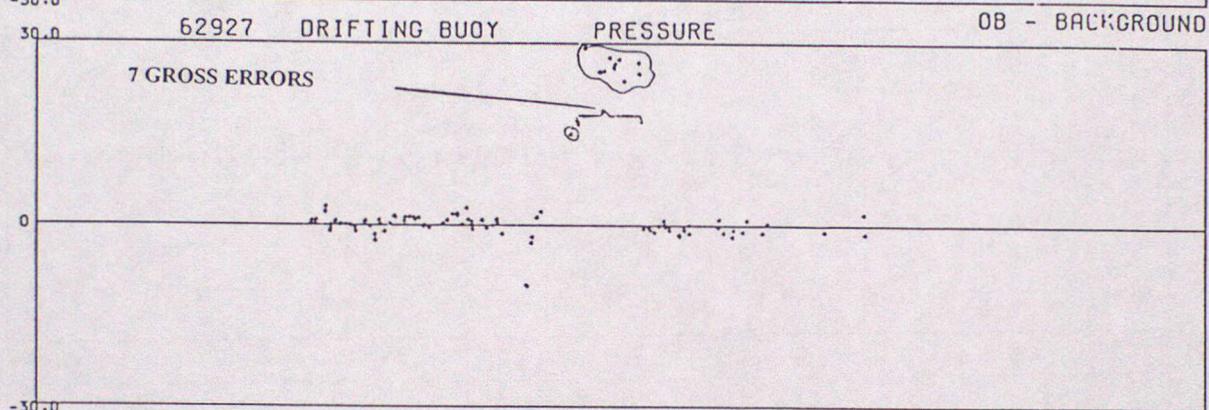
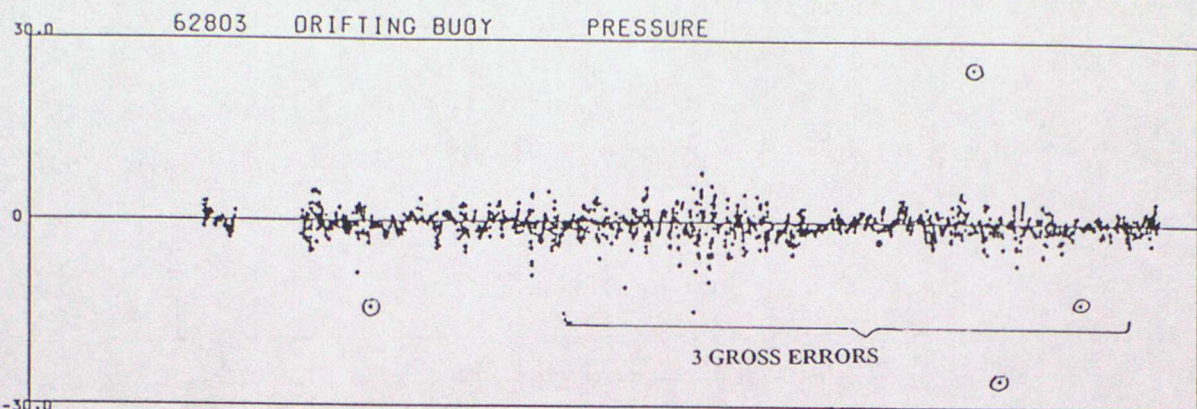
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



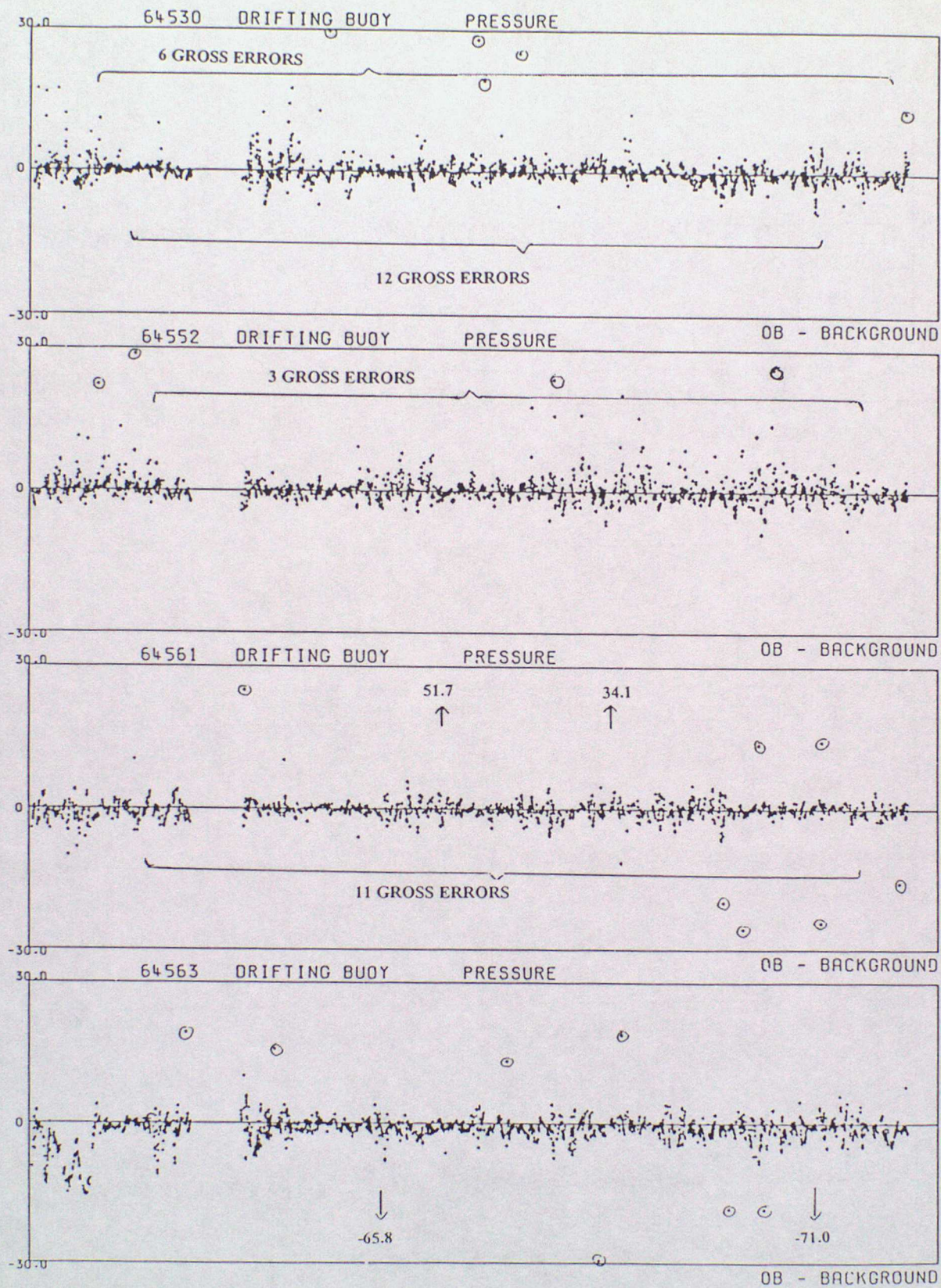
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



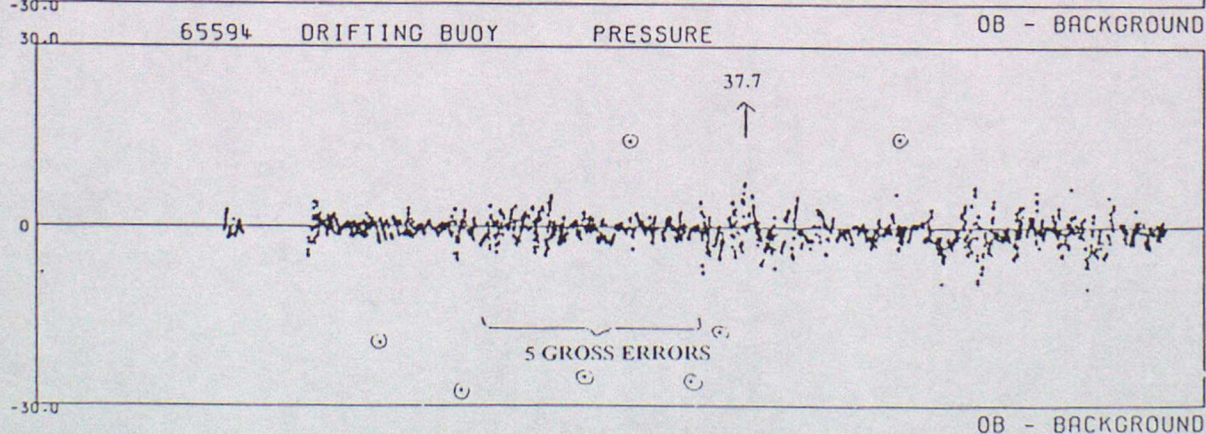
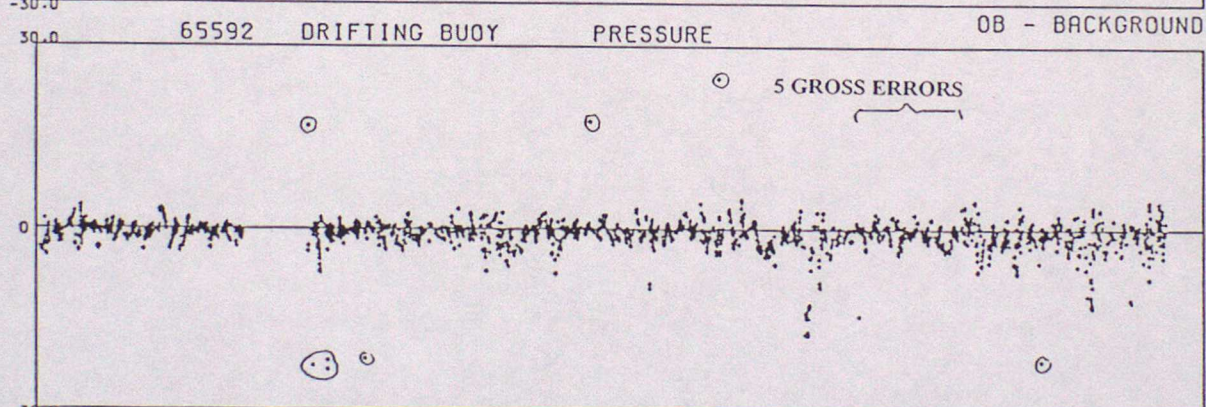
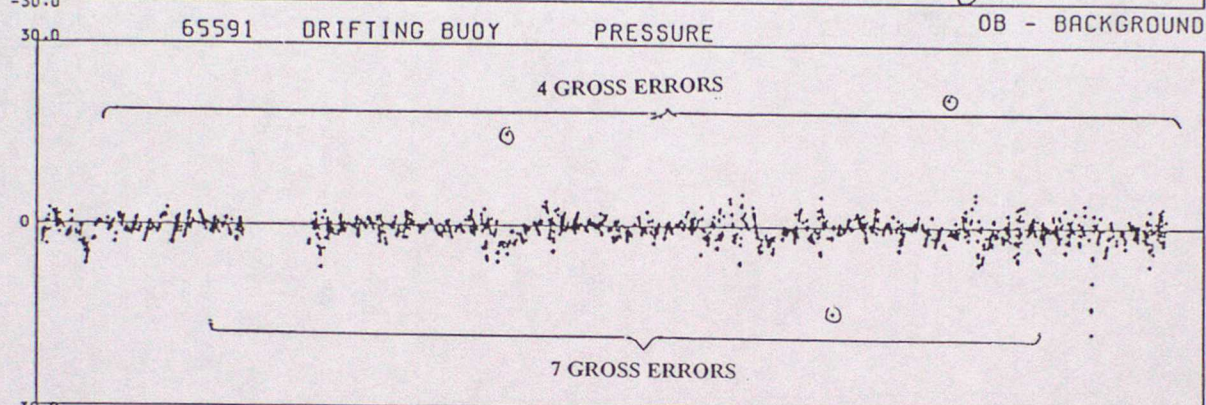
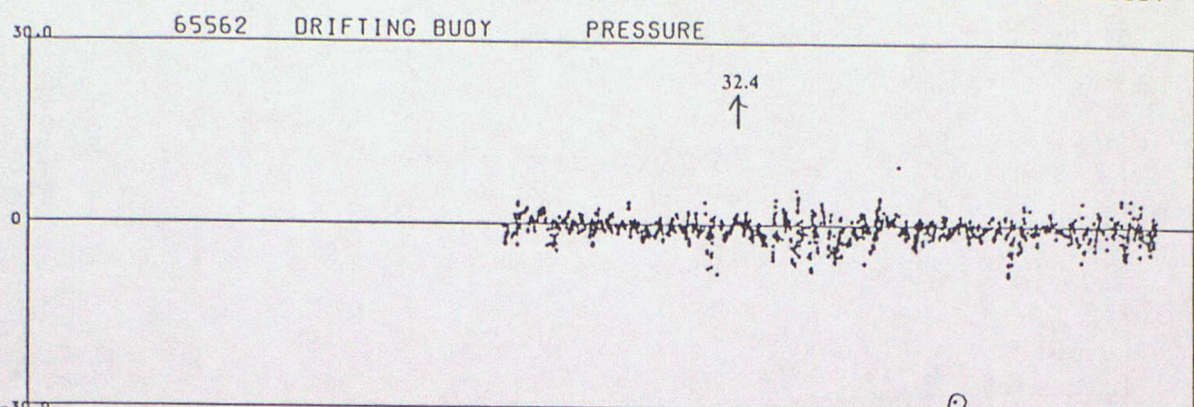
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

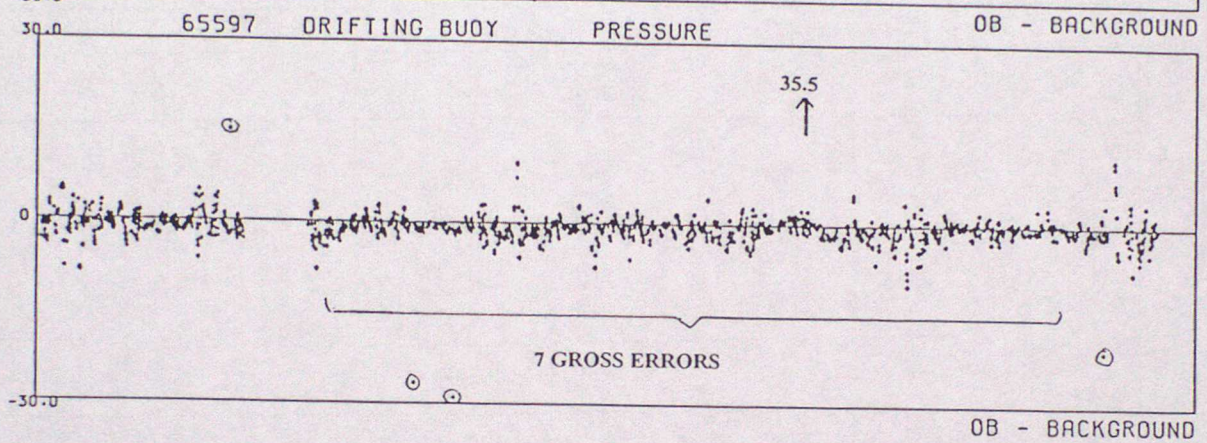
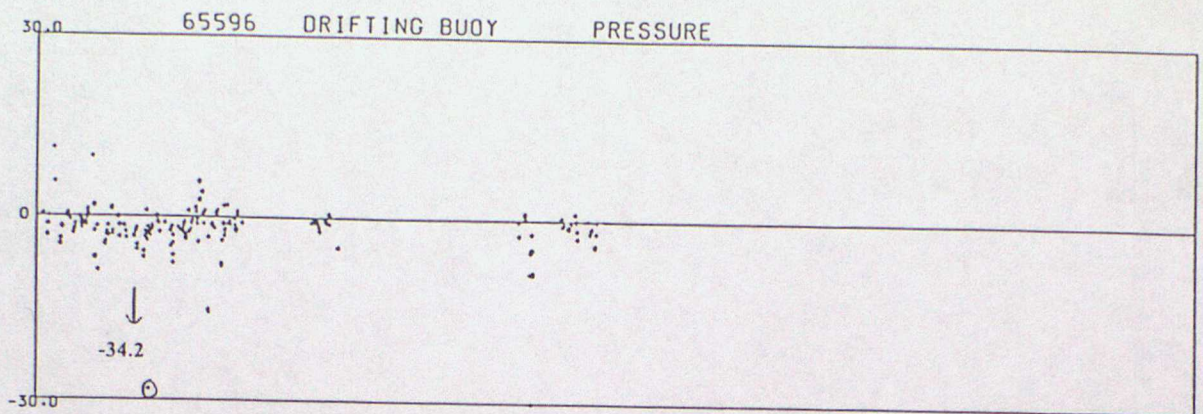


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



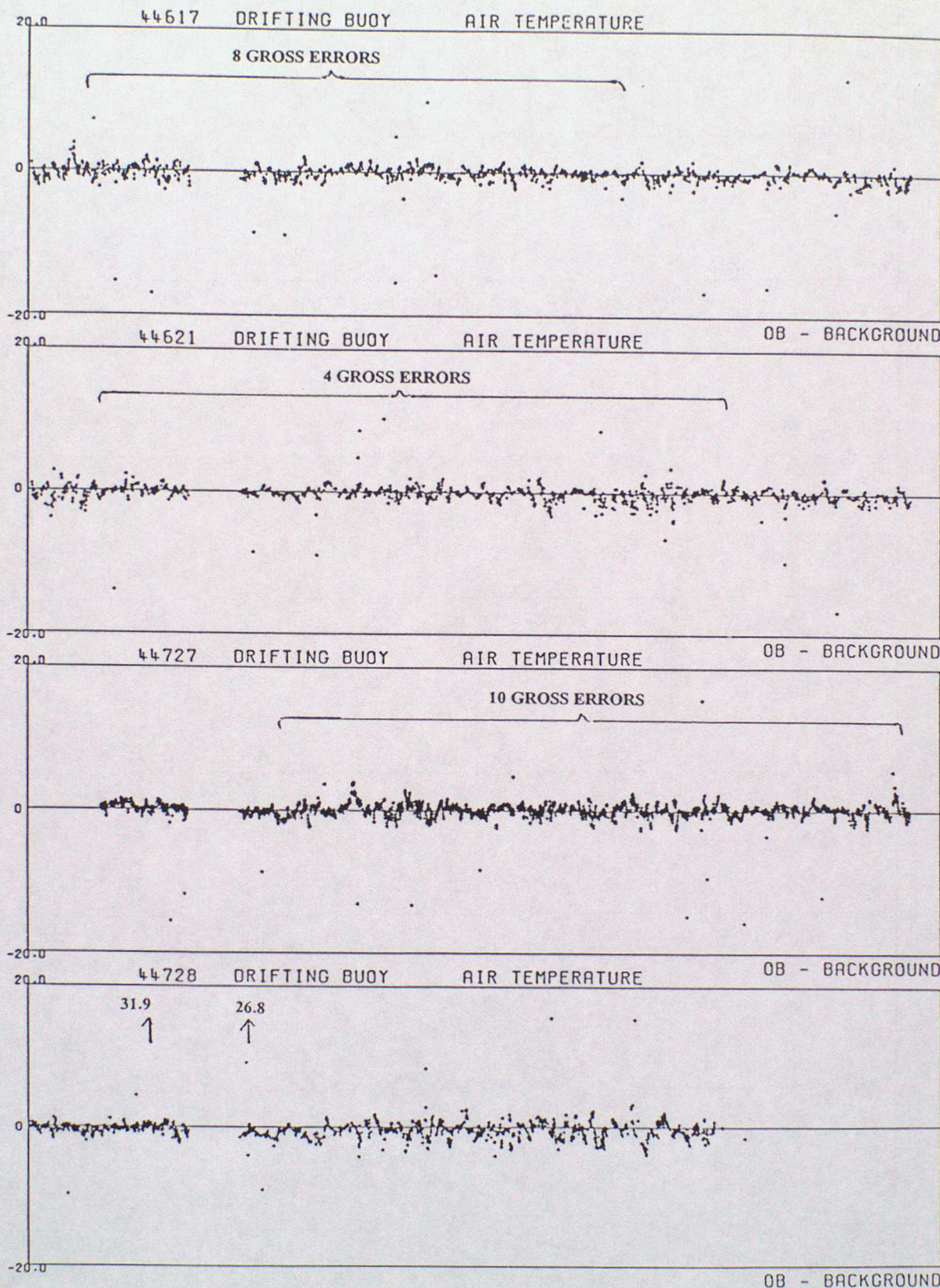
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



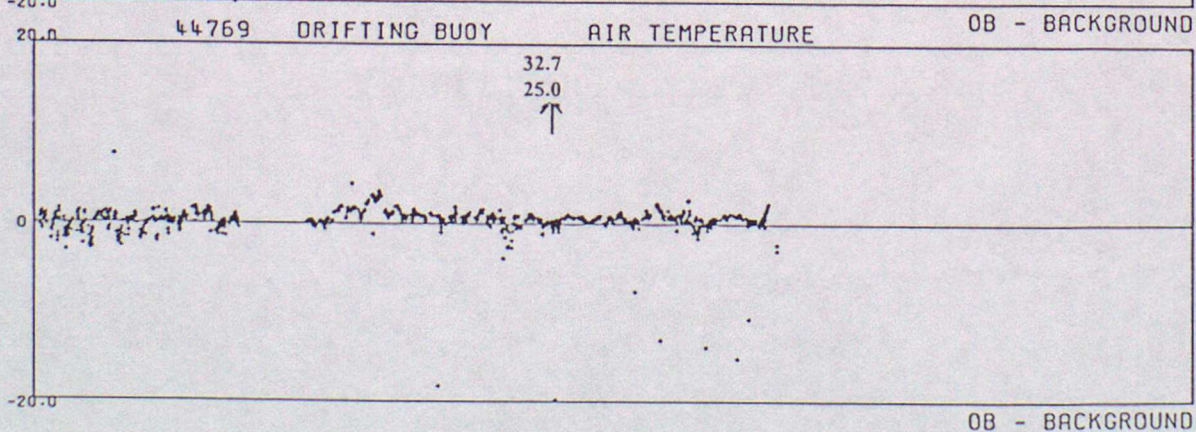
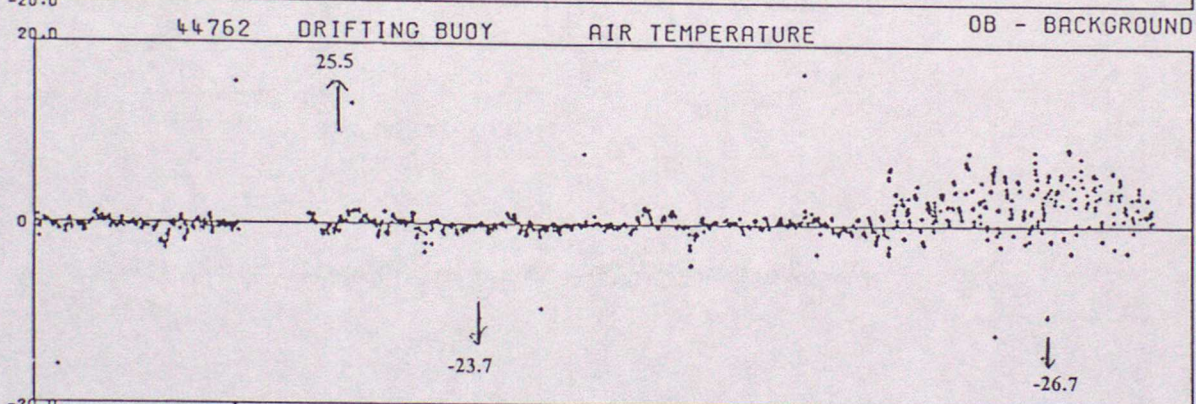
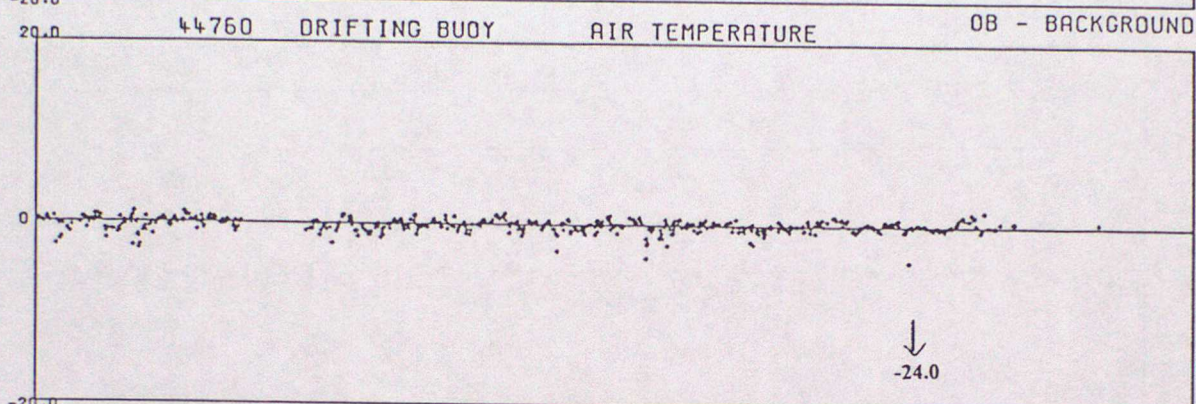
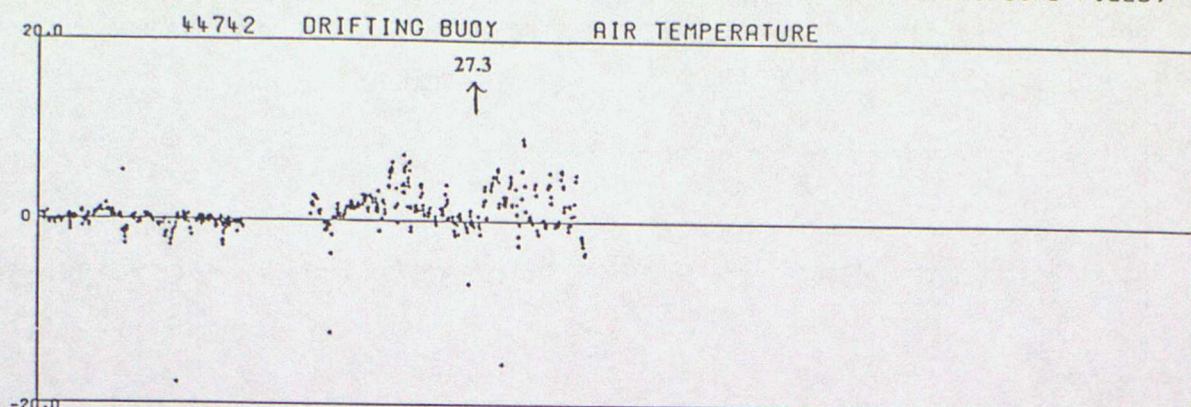


ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

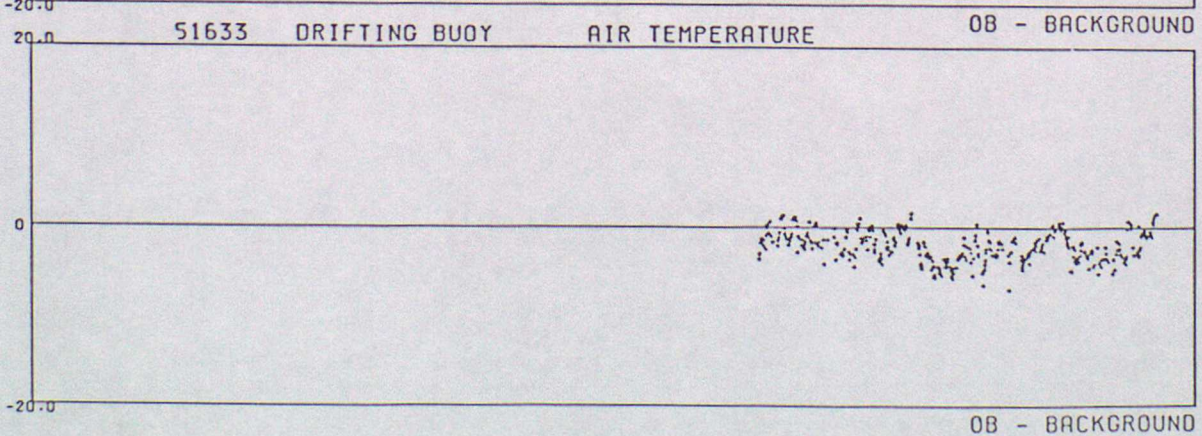
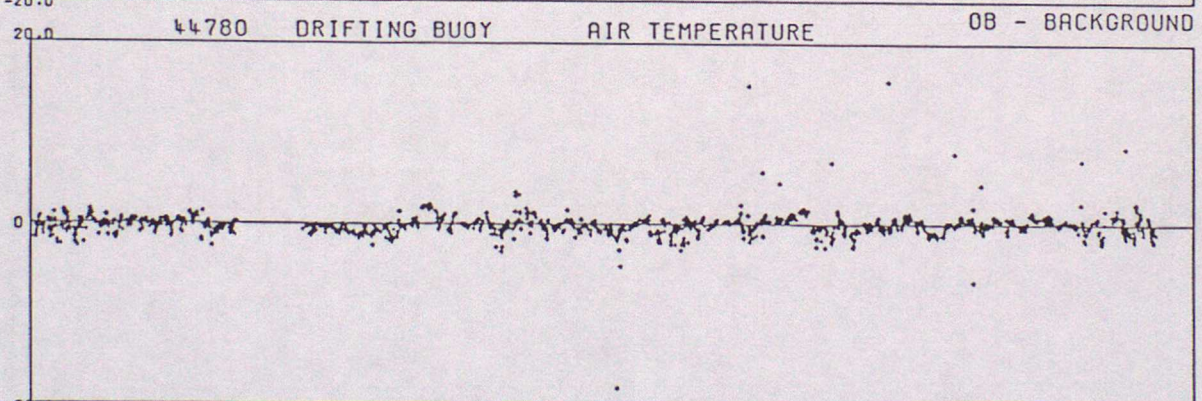
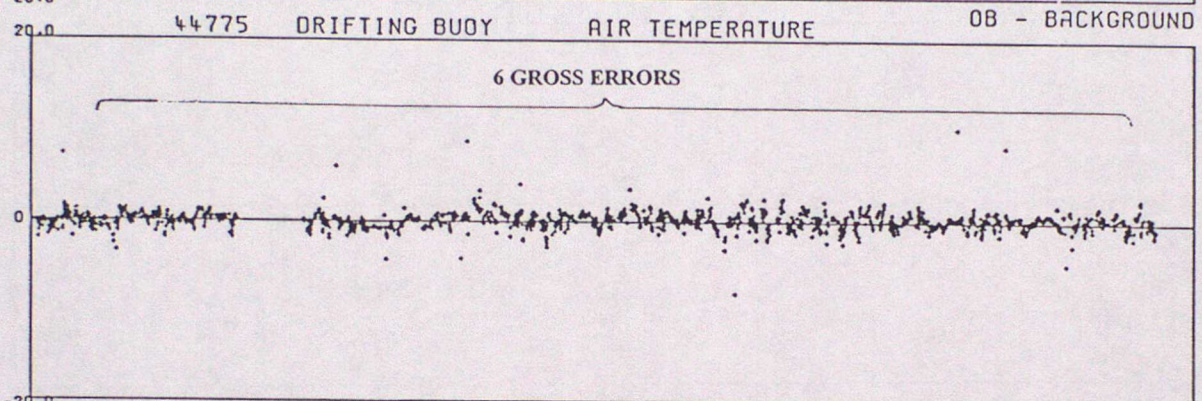
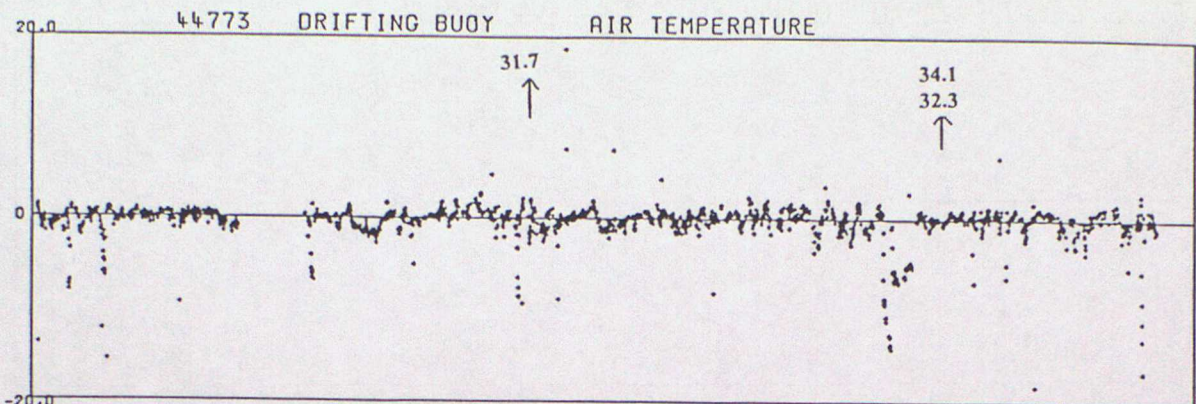
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



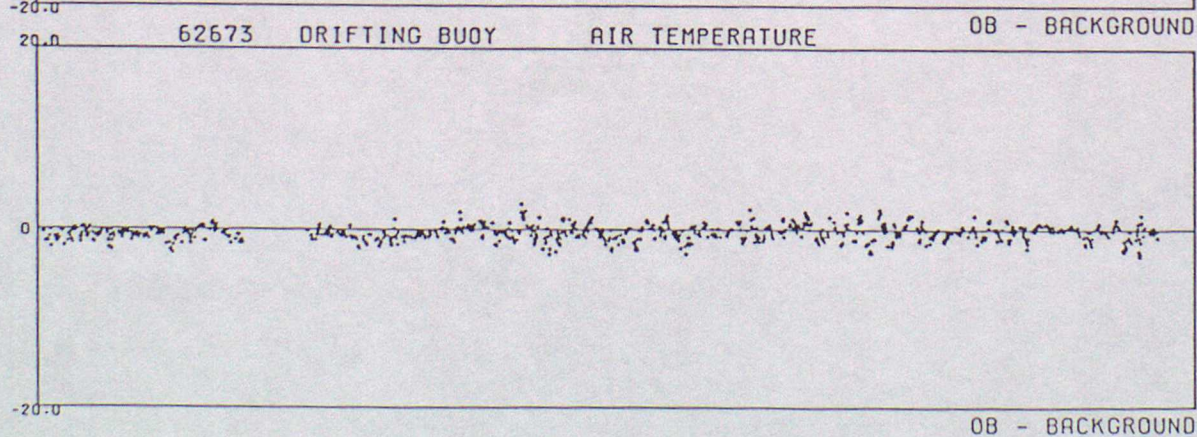
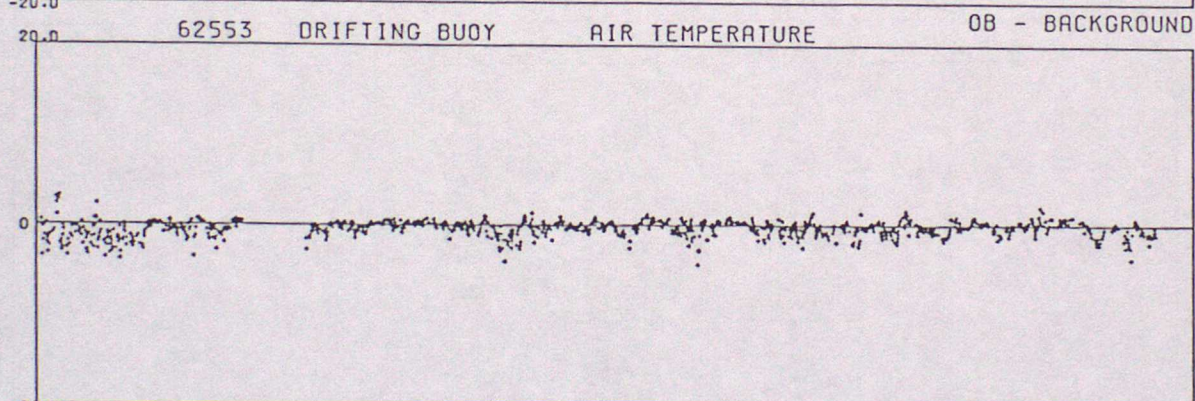
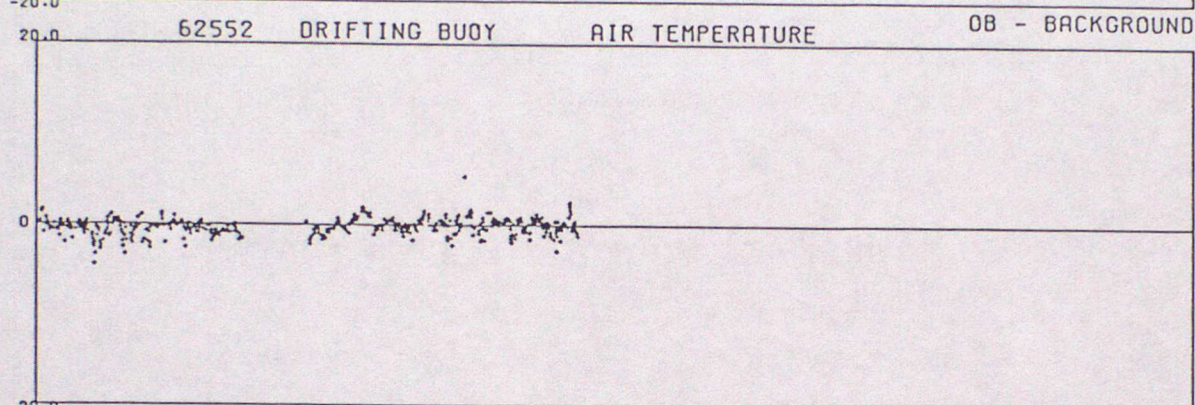
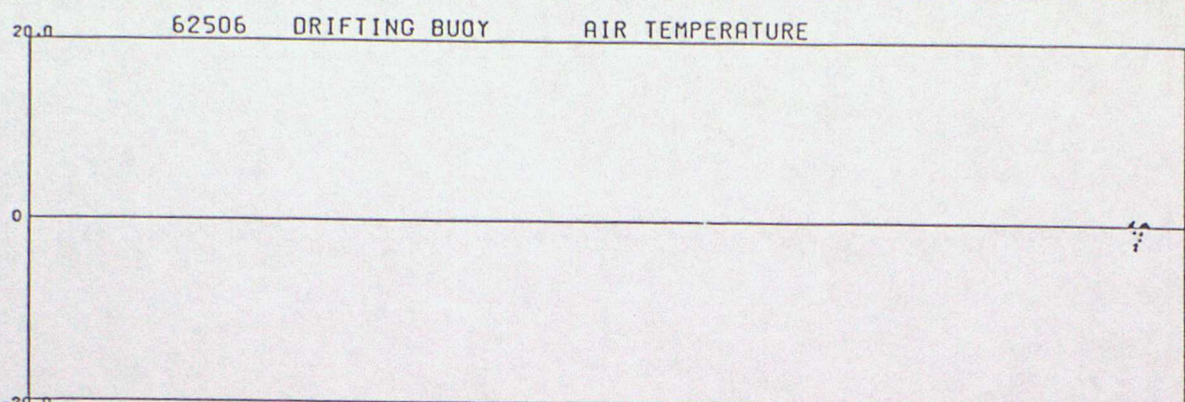
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



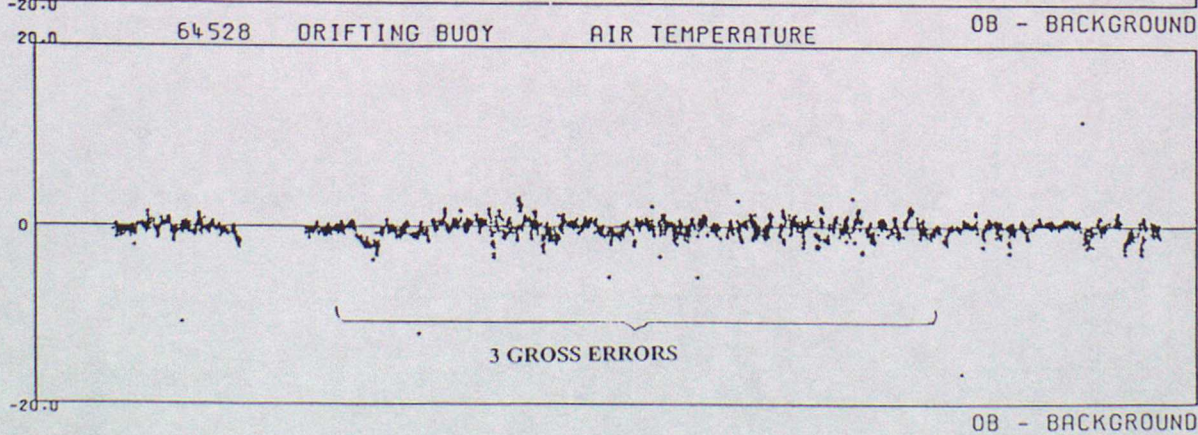
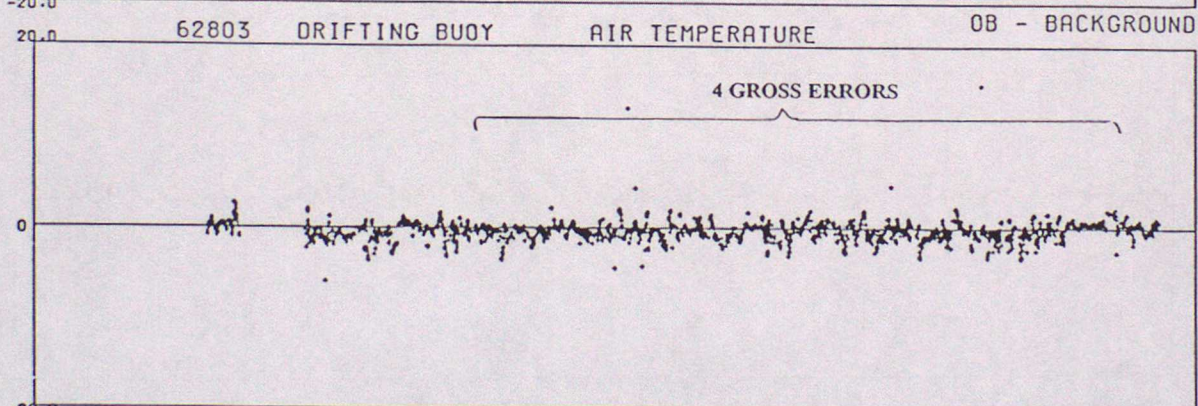
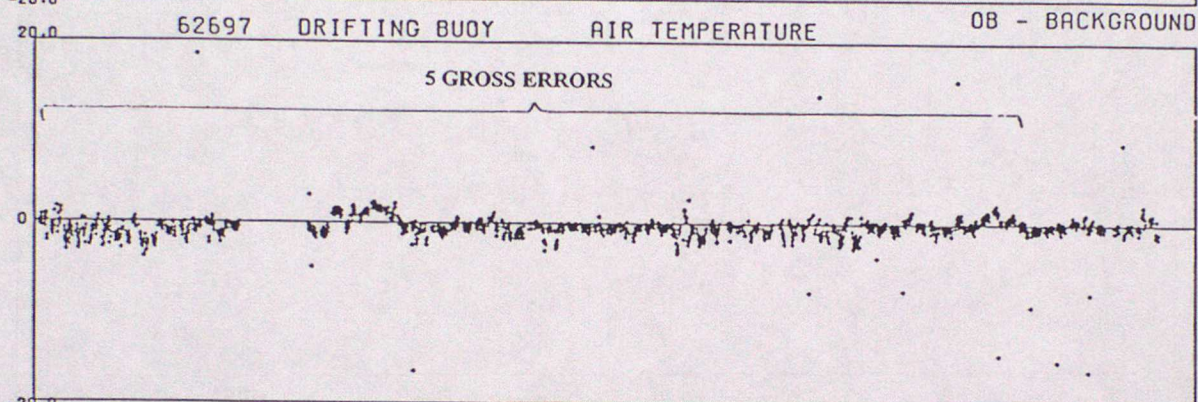
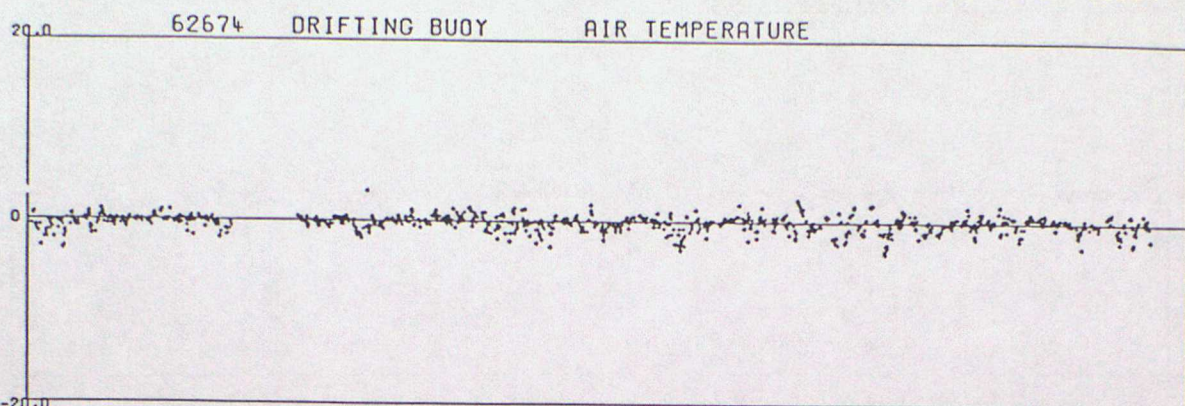
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



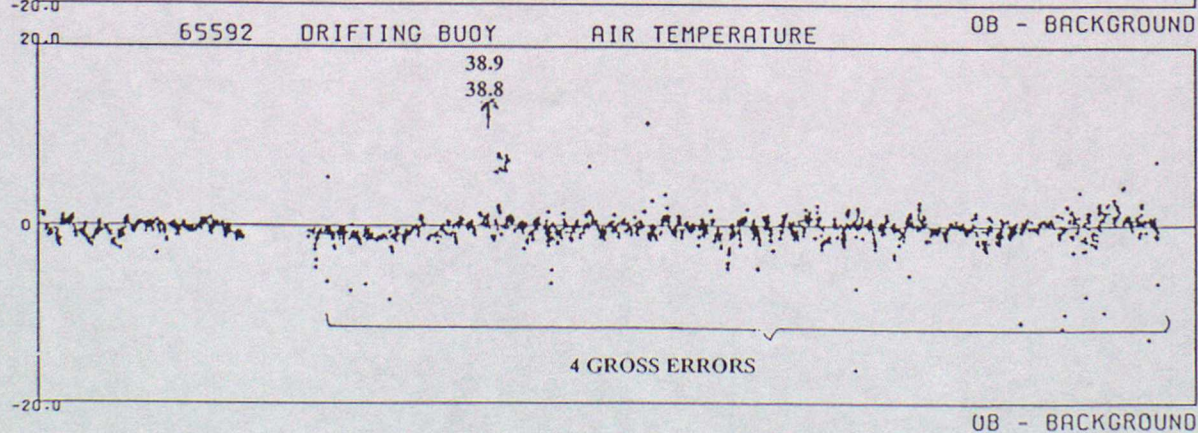
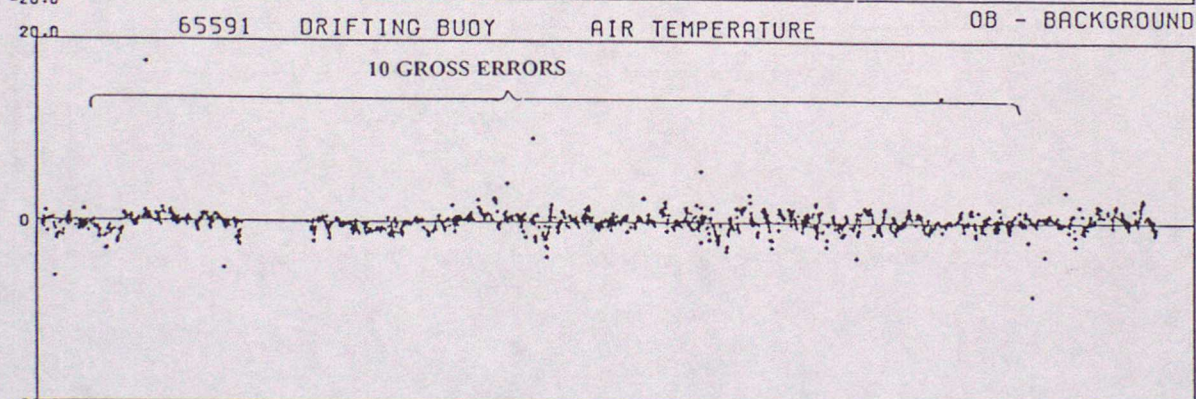
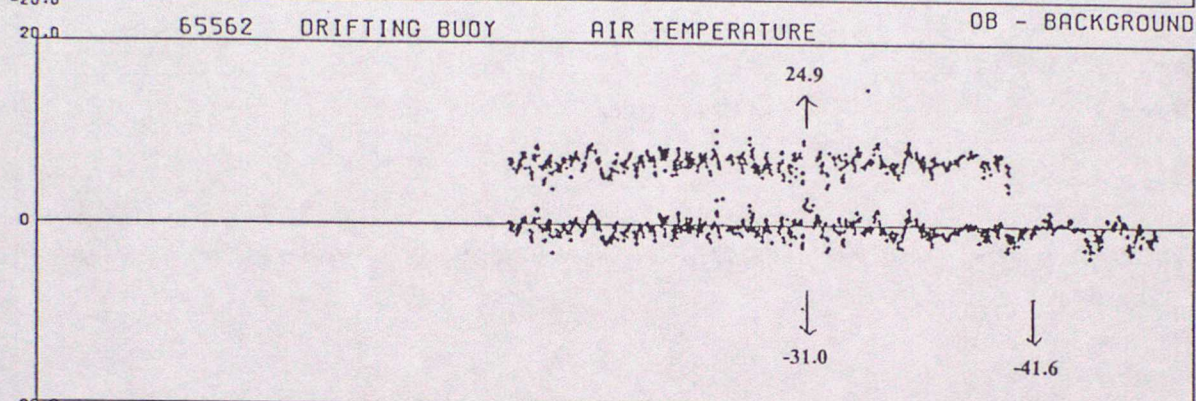
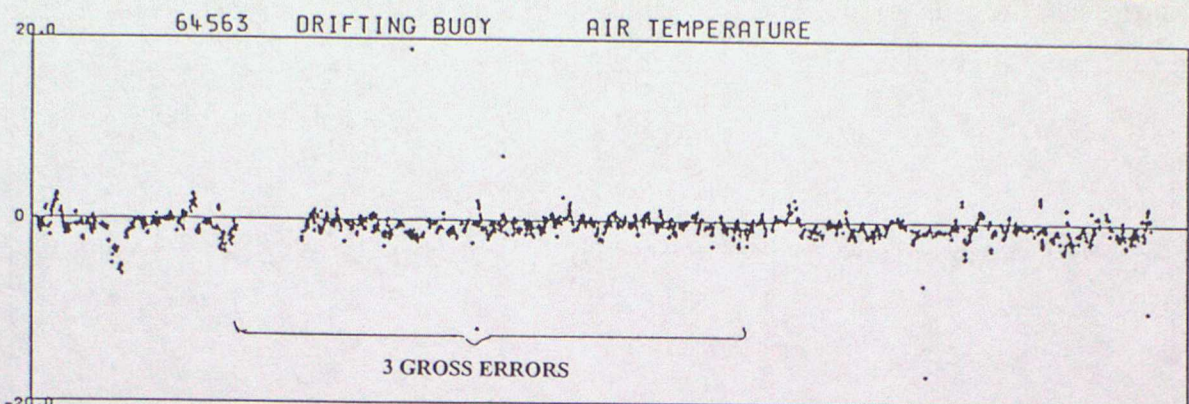
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



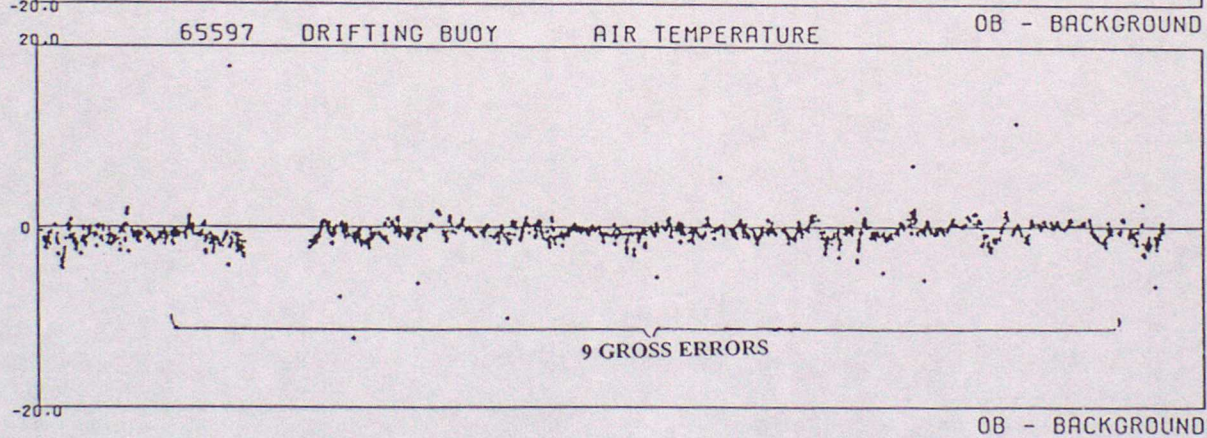
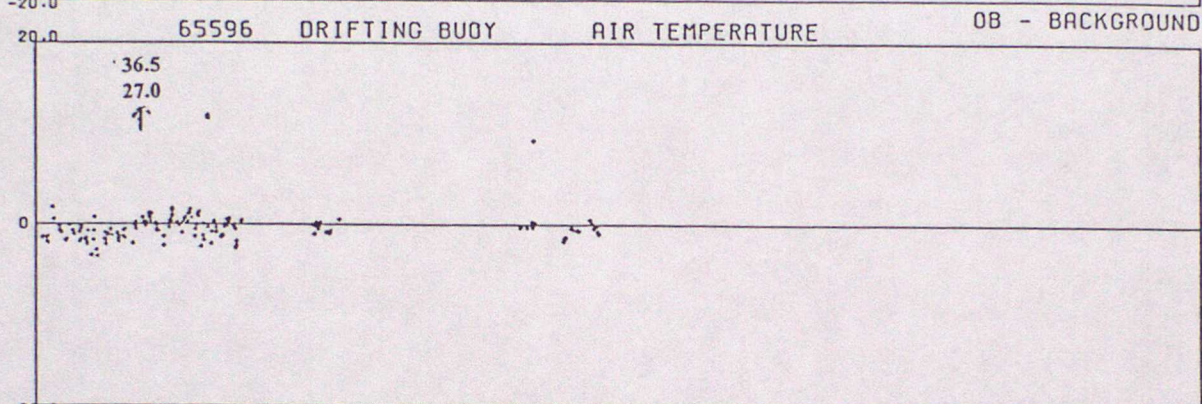
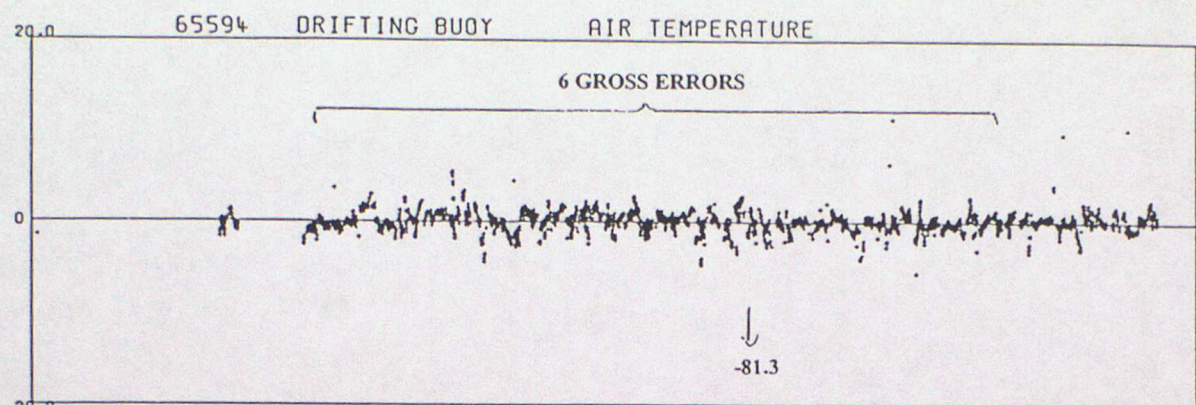
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

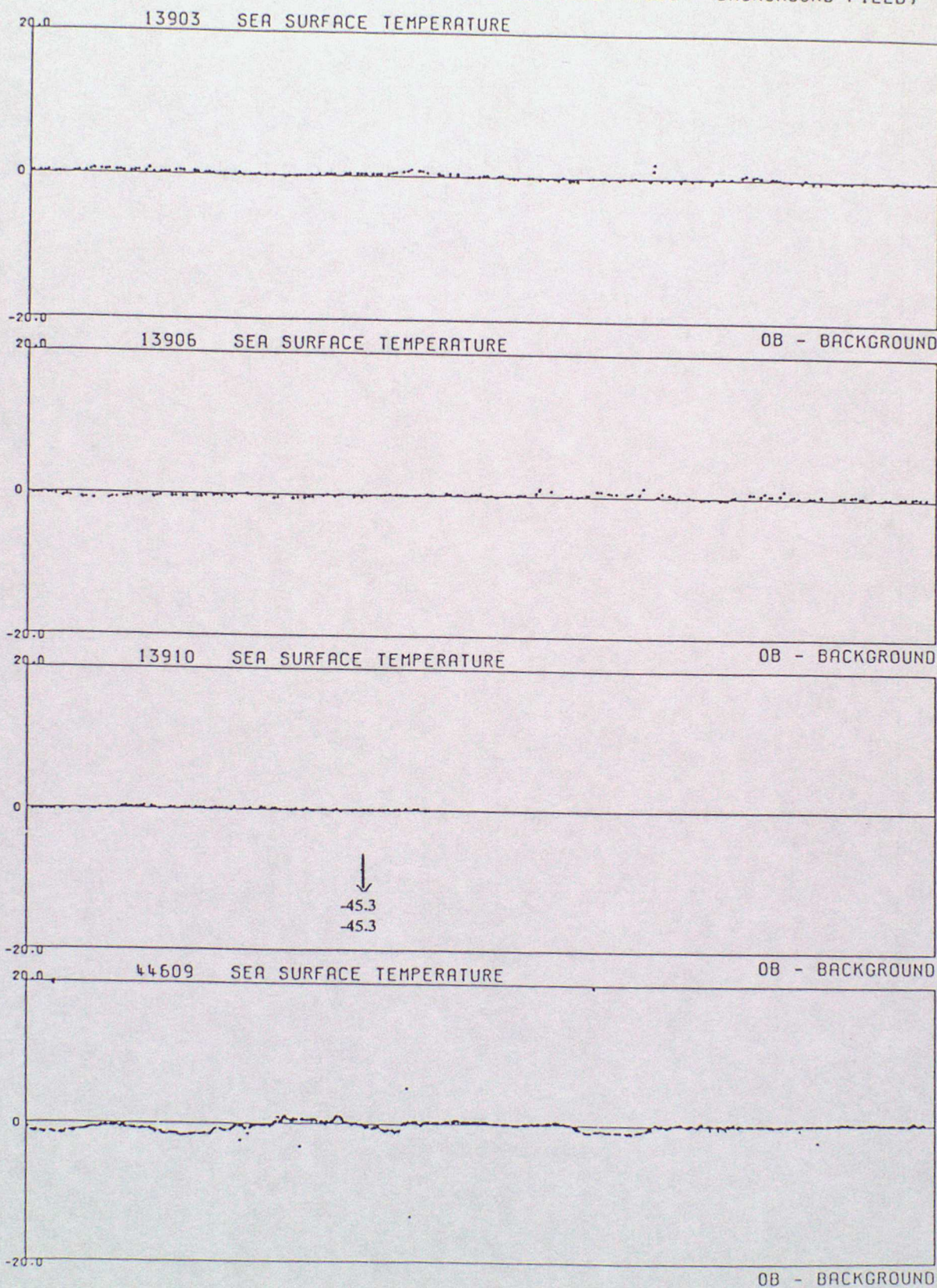


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

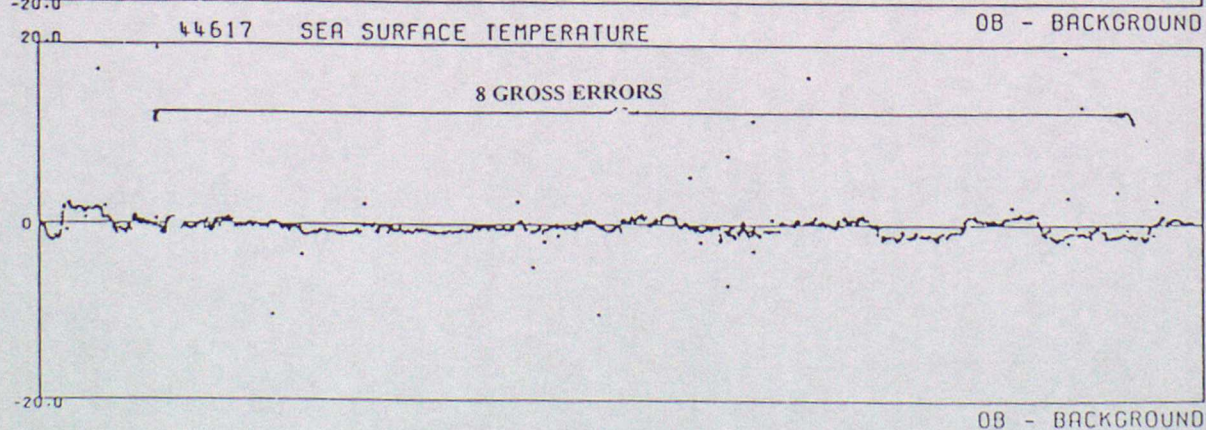
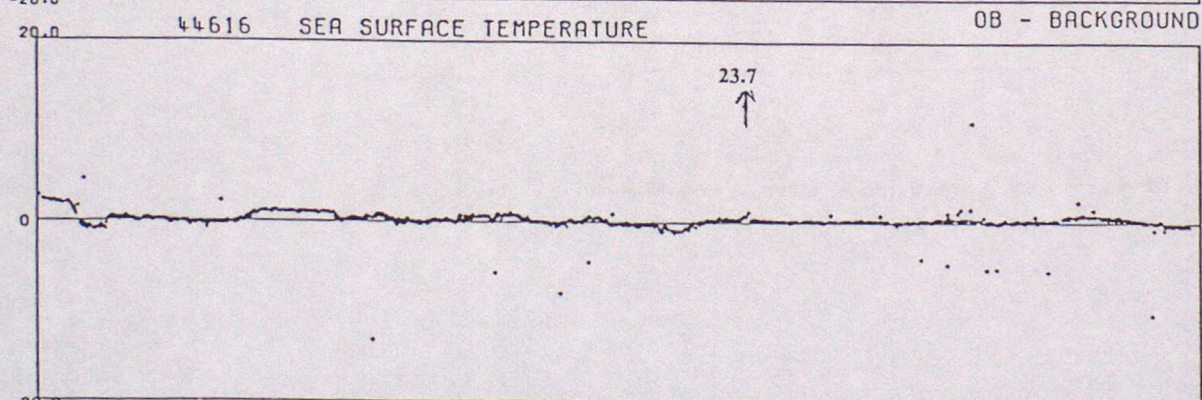
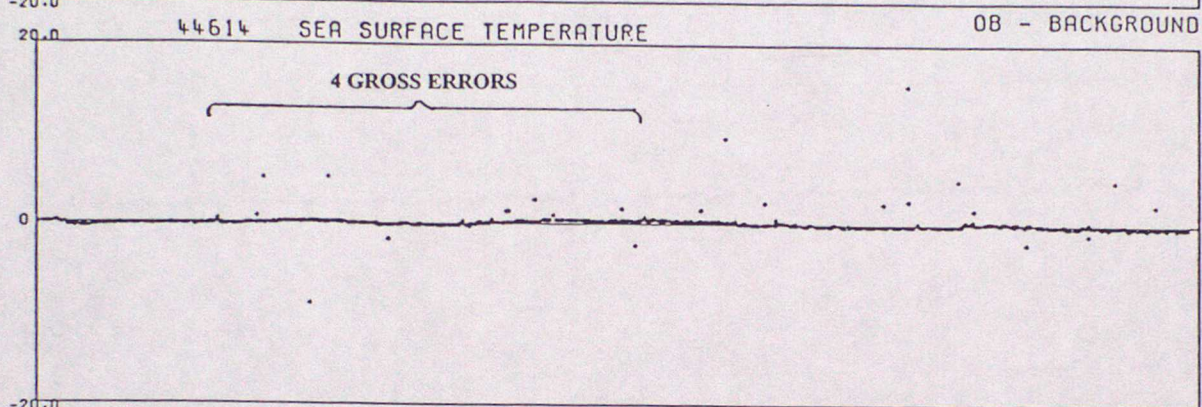
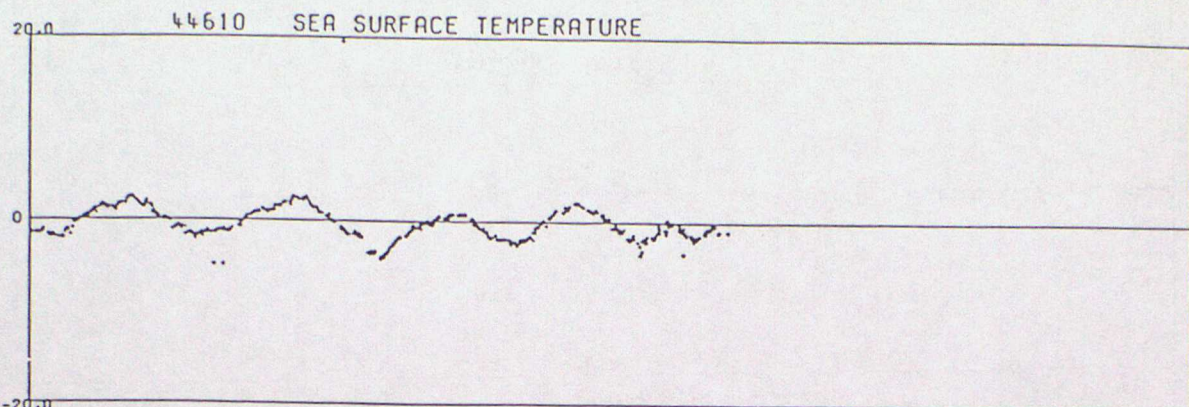


ANNEX D - TIME SERIES PLOTS OF SEA SURFACE TEMPERATURE

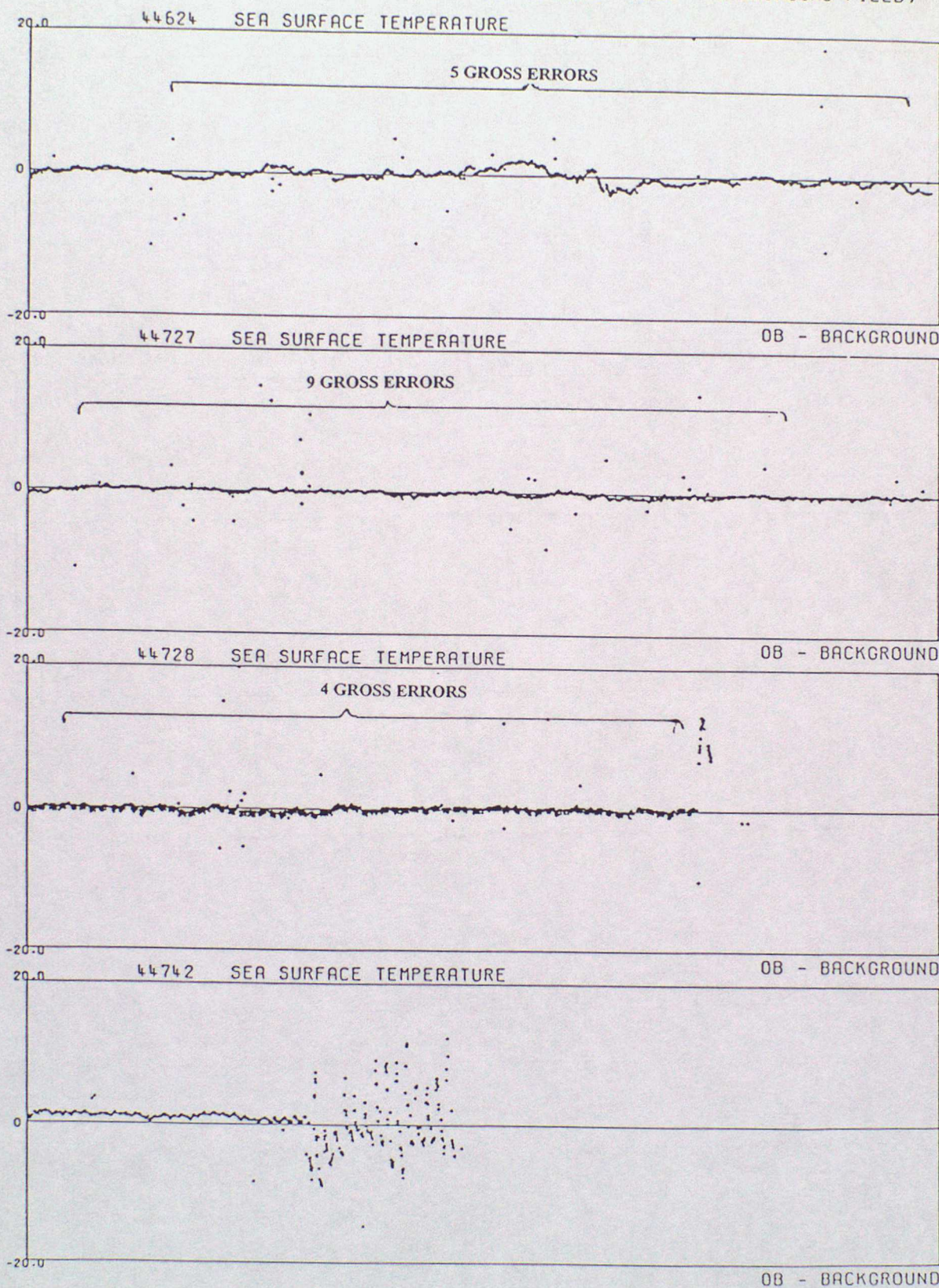
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



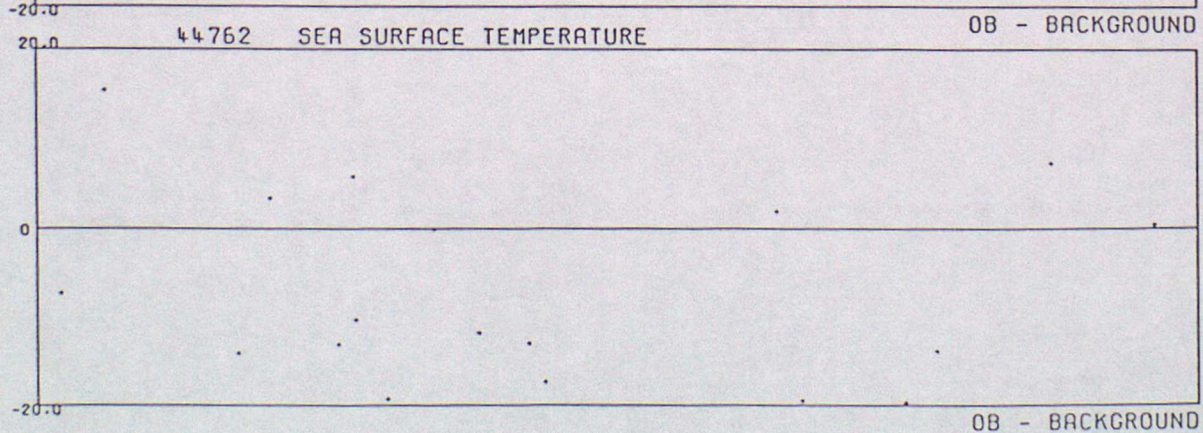
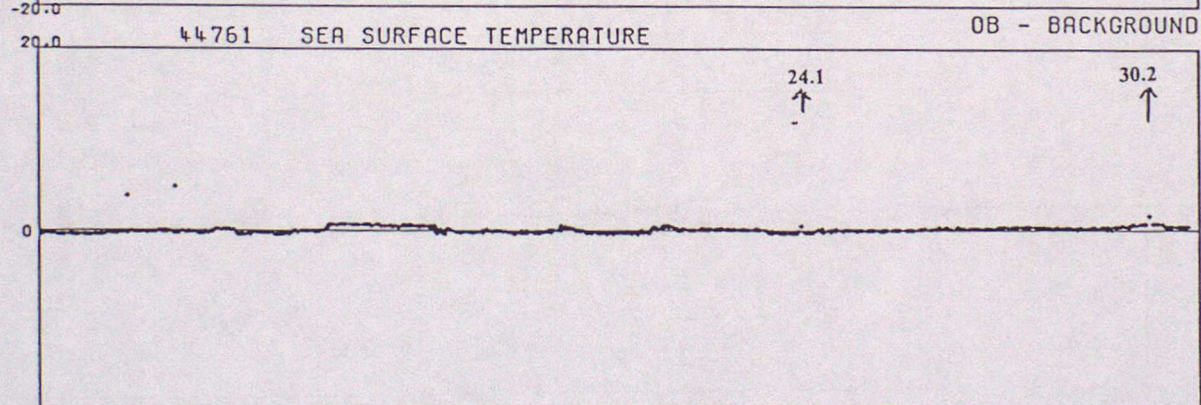
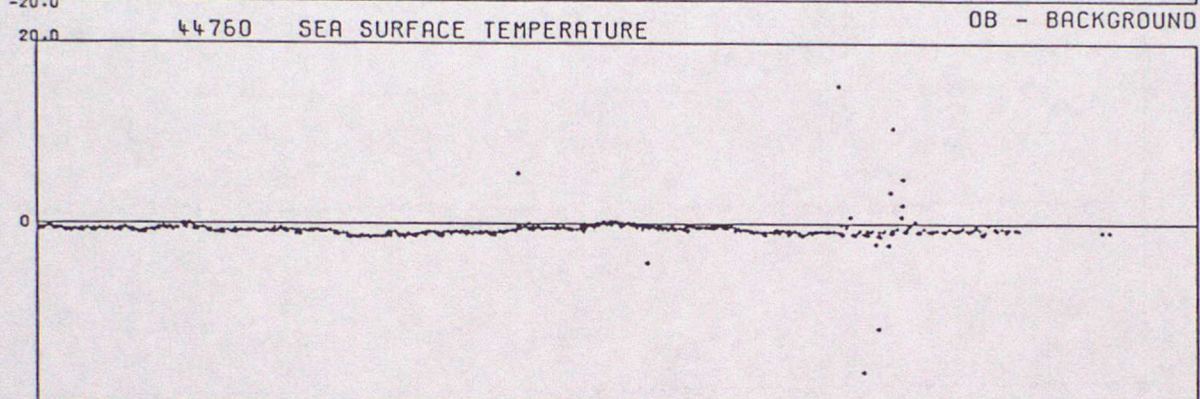
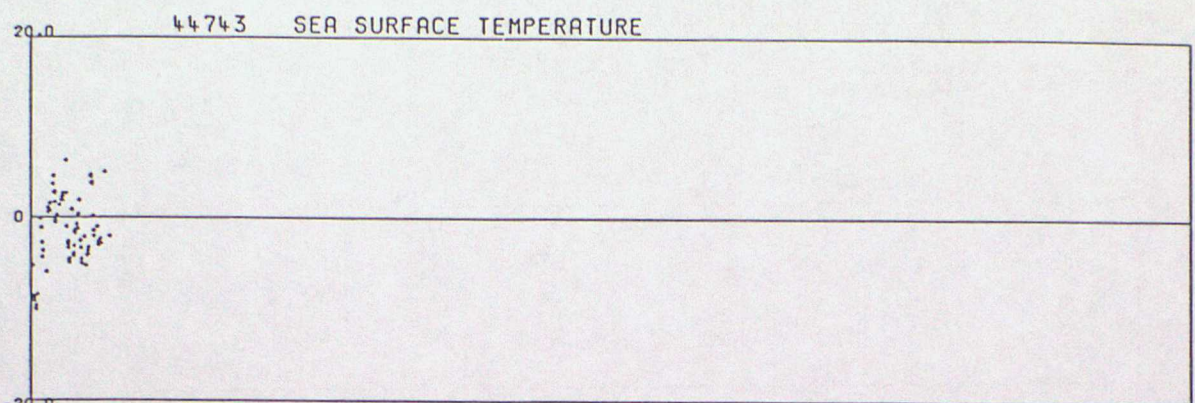
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



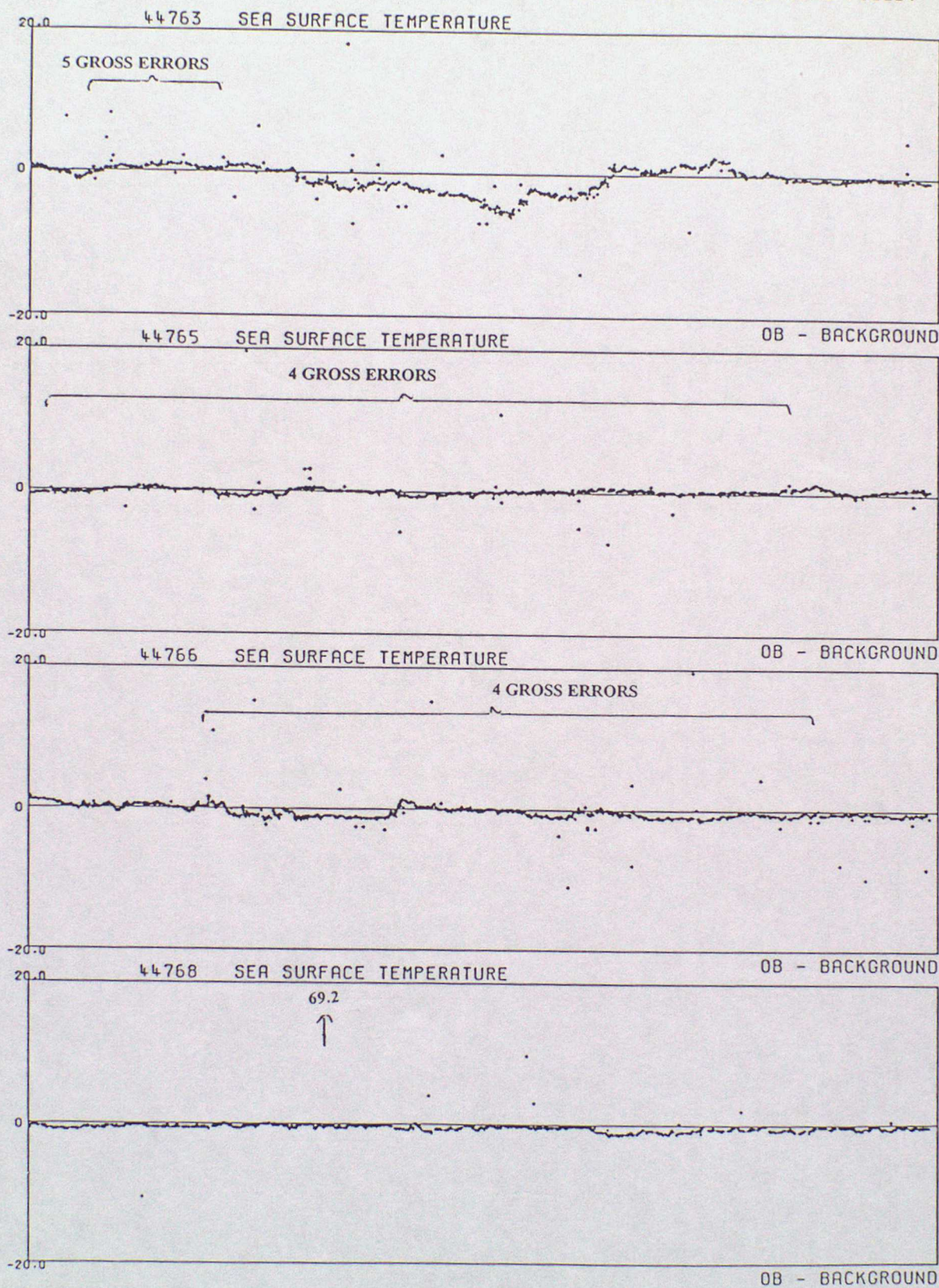
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

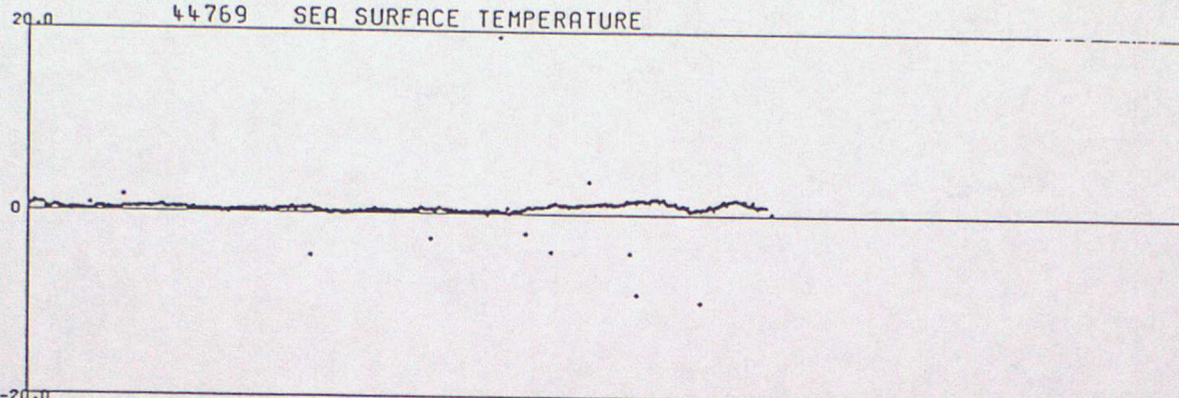


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



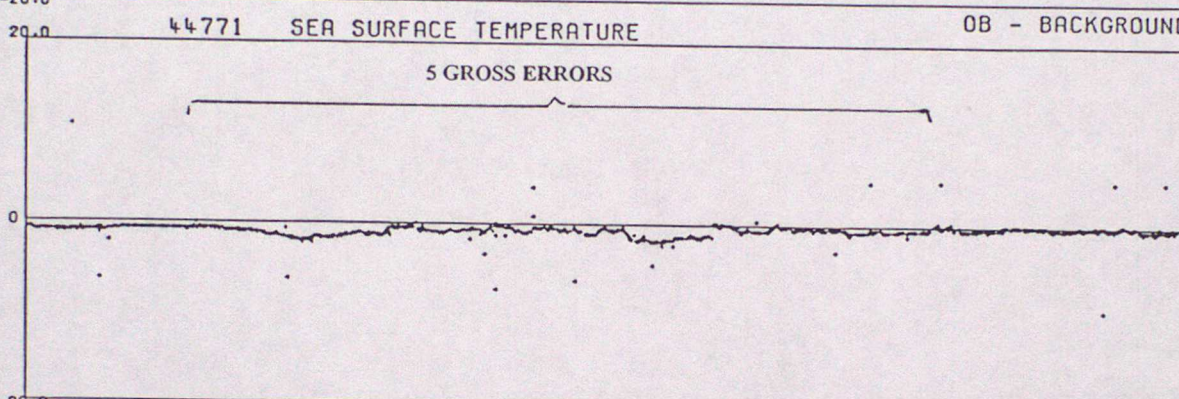
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

44769 SEA SURFACE TEMPERATURE



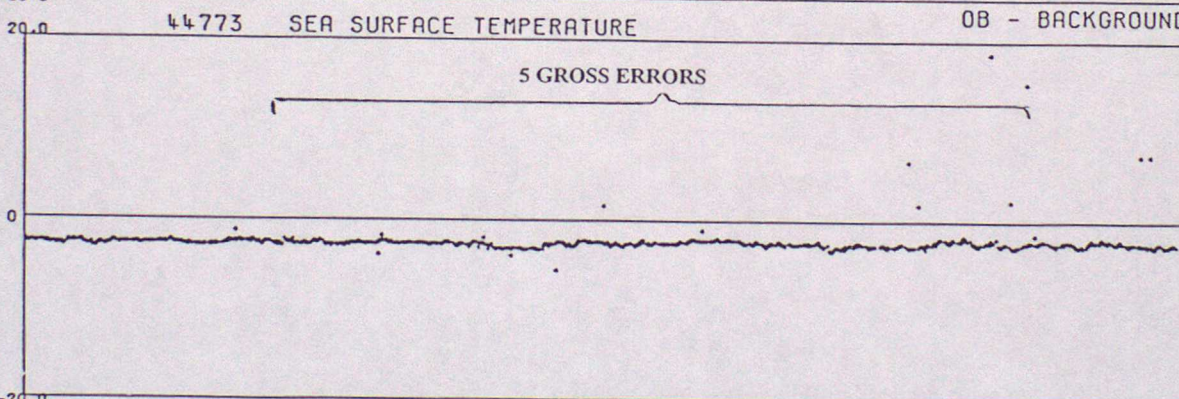
44771 SEA SURFACE TEMPERATURE

OB - BACKGROUND



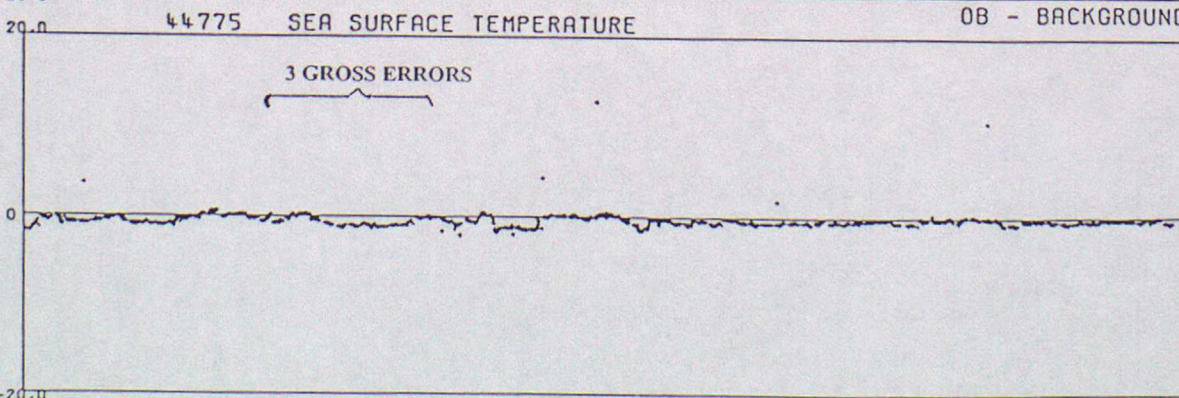
44773 SEA SURFACE TEMPERATURE

OB - BACKGROUND



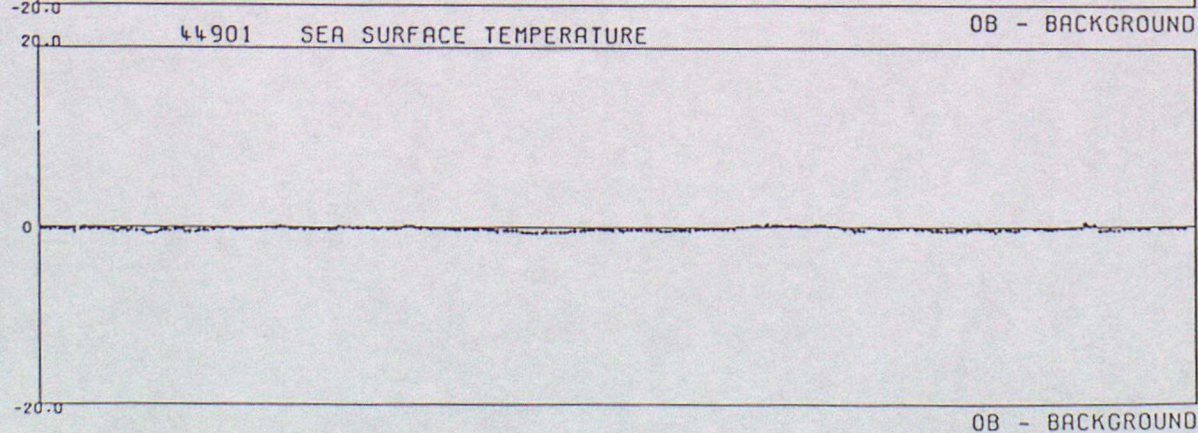
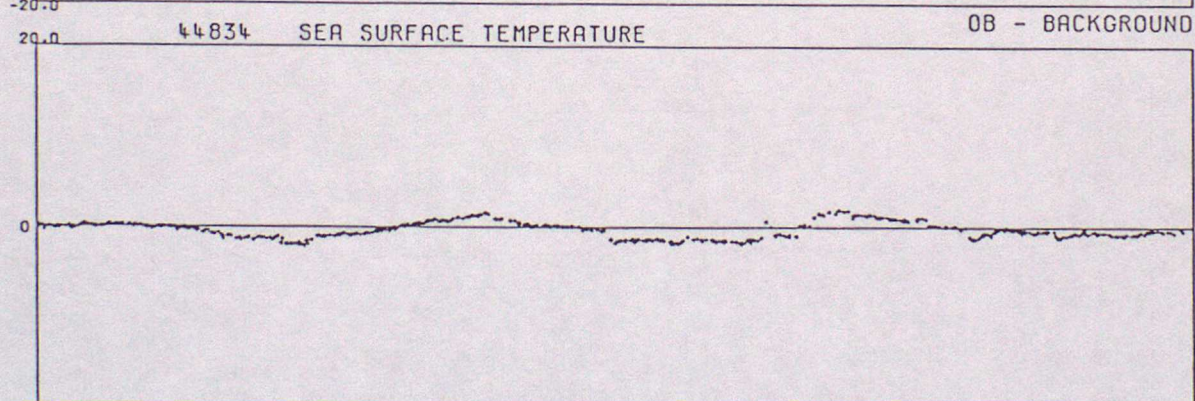
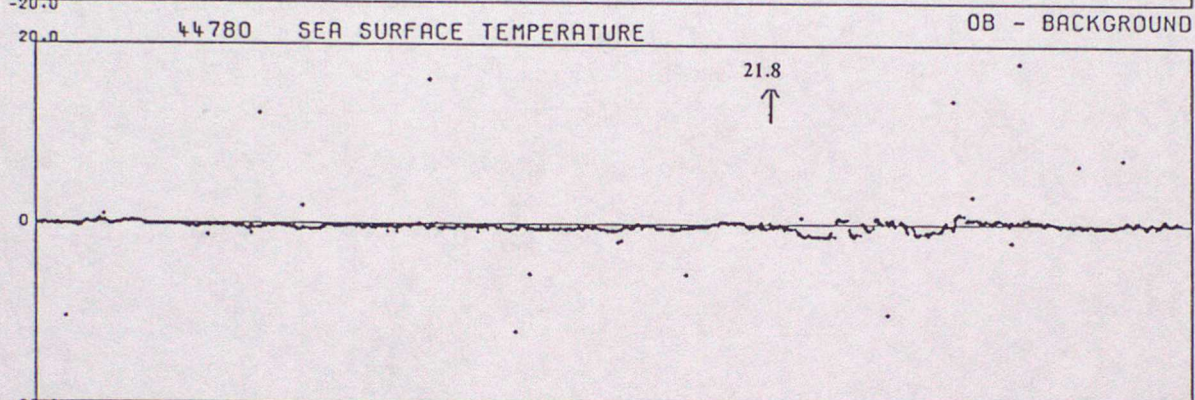
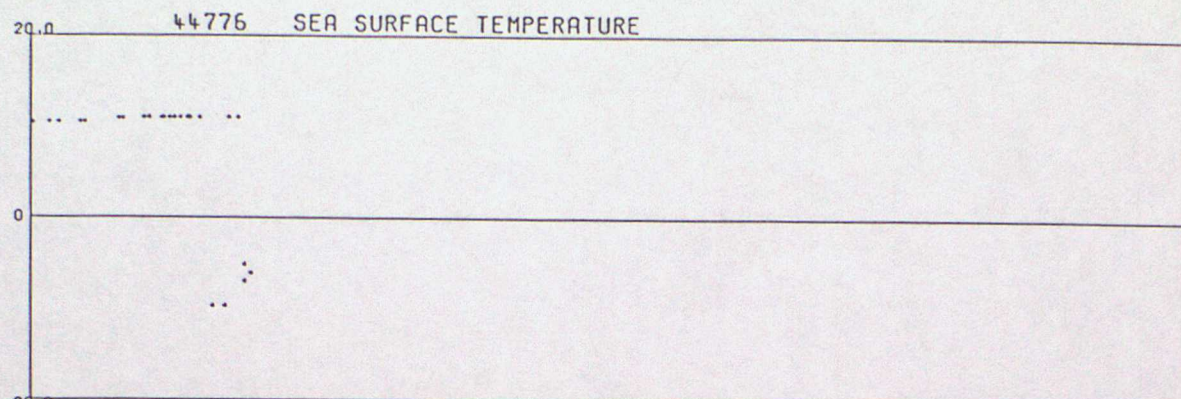
44775 SEA SURFACE TEMPERATURE

OB - BACKGROUND

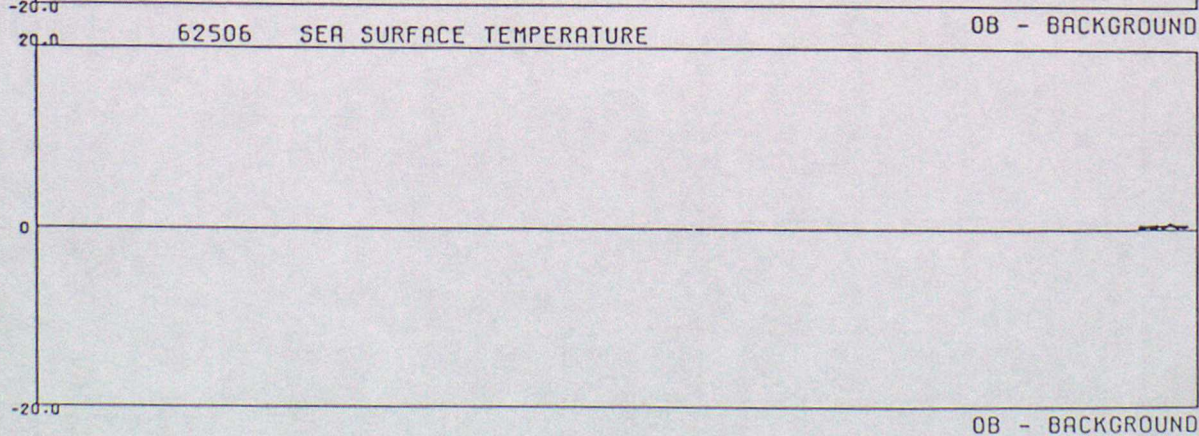
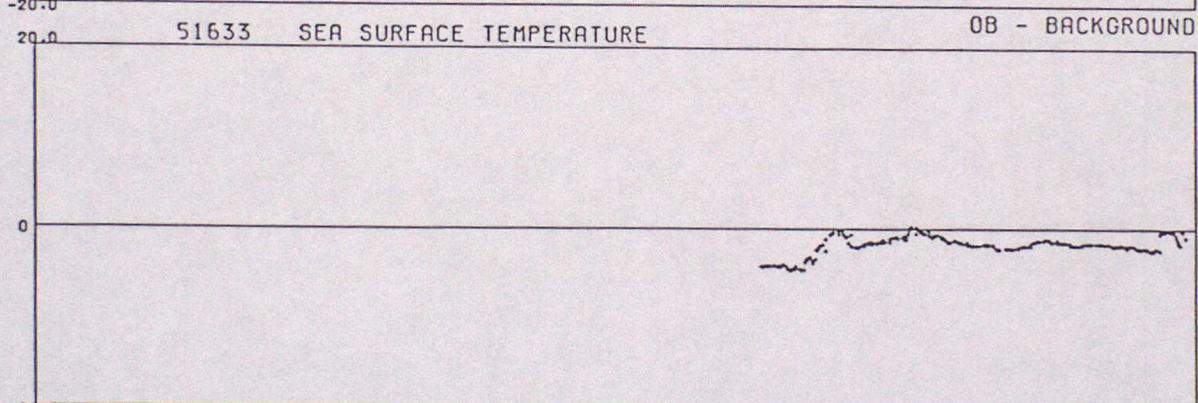
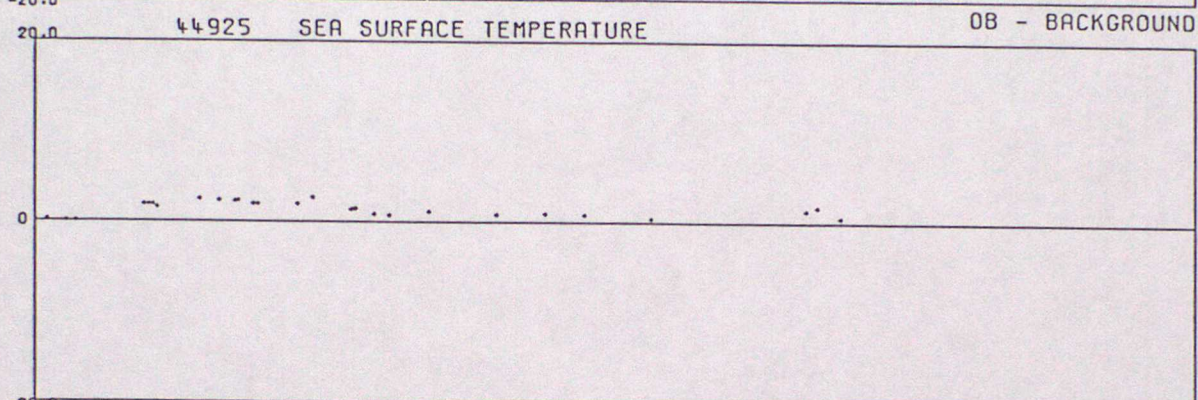
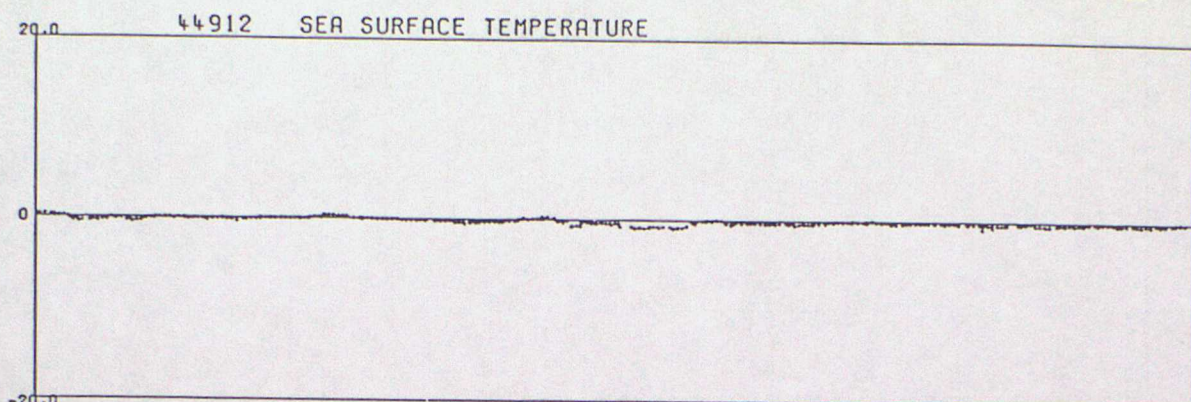


OB - BACKGROUND

DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

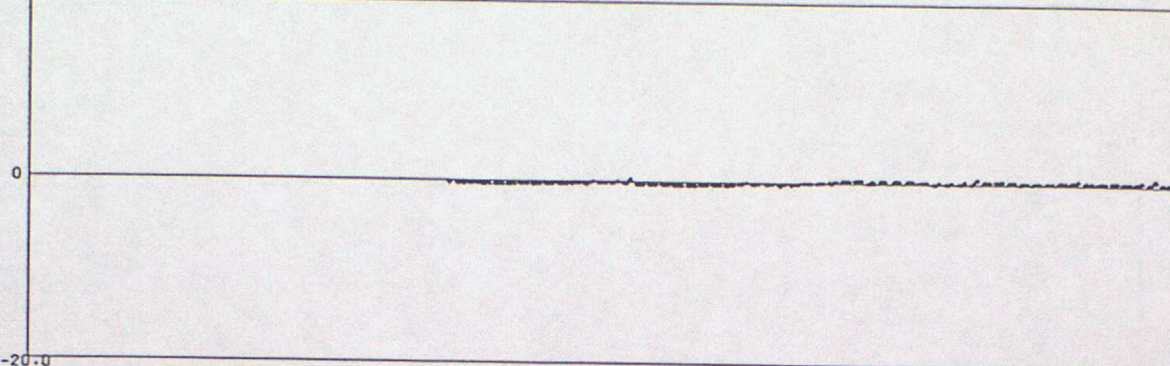


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



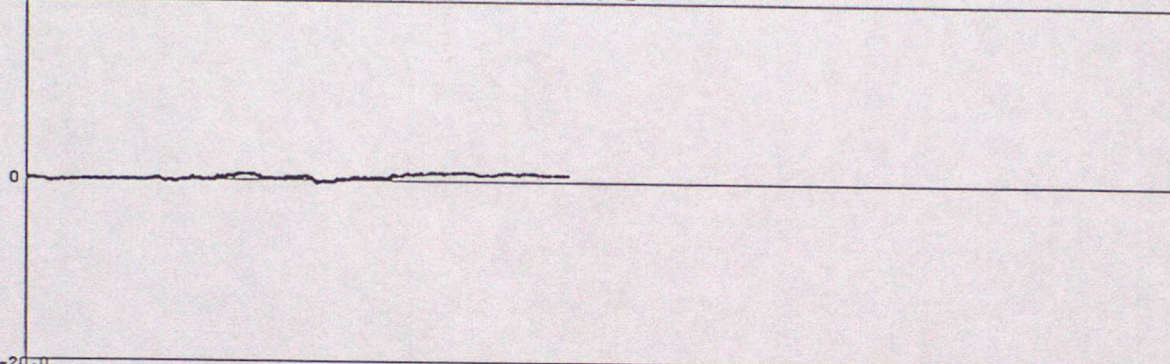
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

20.0 62551 SEA SURFACE TEMPERATURE



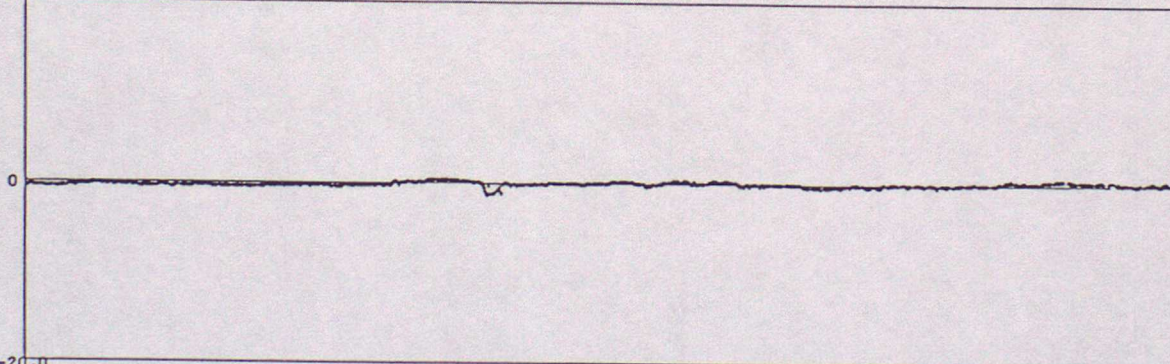
20.0 62552 SEA SURFACE TEMPERATURE

OB - BACKGROUND



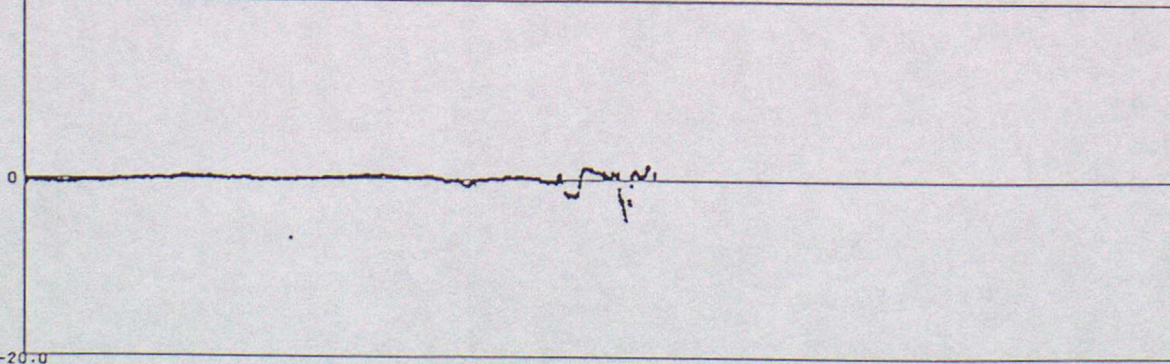
20.0 62553 SEA SURFACE TEMPERATURE

OB - BACKGROUND



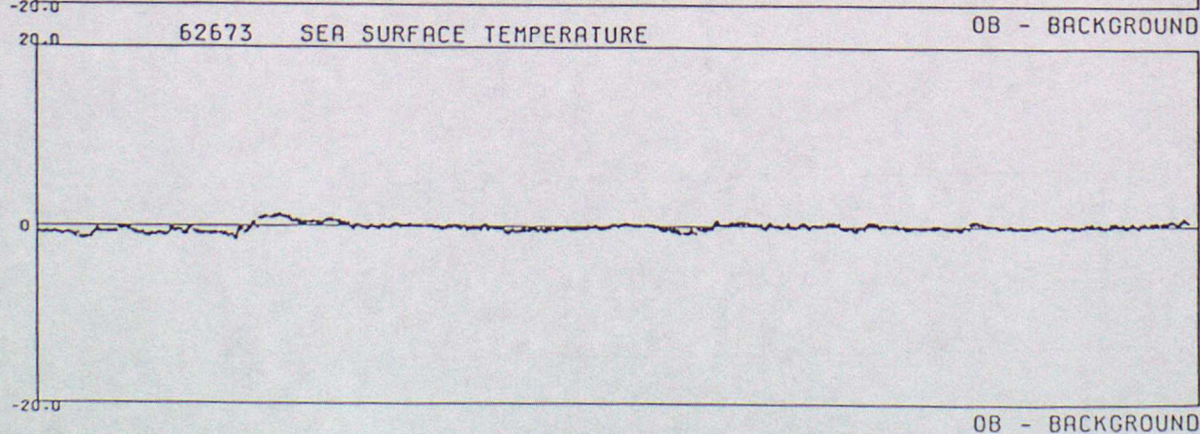
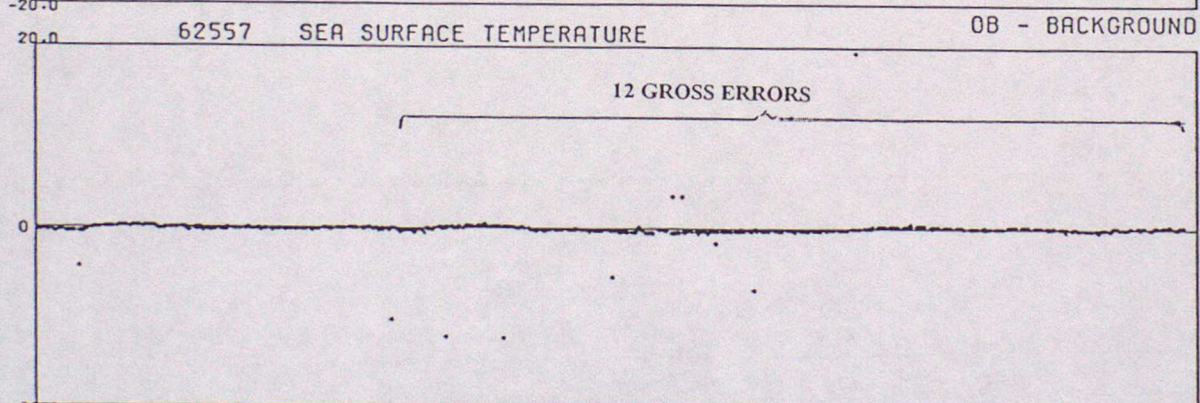
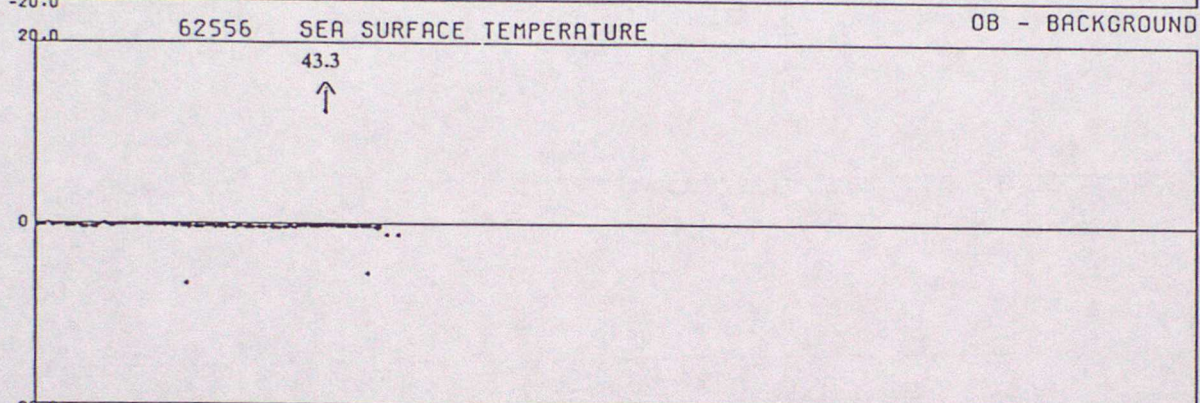
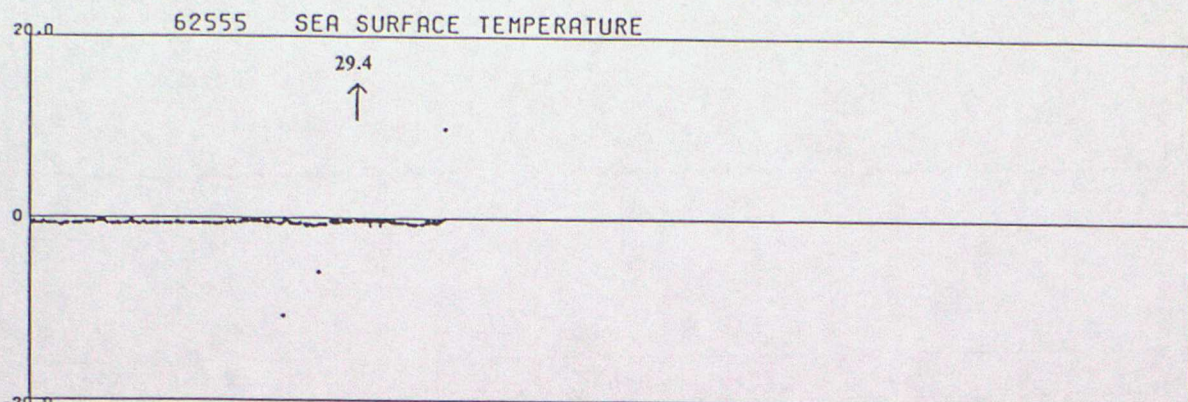
20.0 62554 SEA SURFACE TEMPERATURE

OB - BACKGROUND

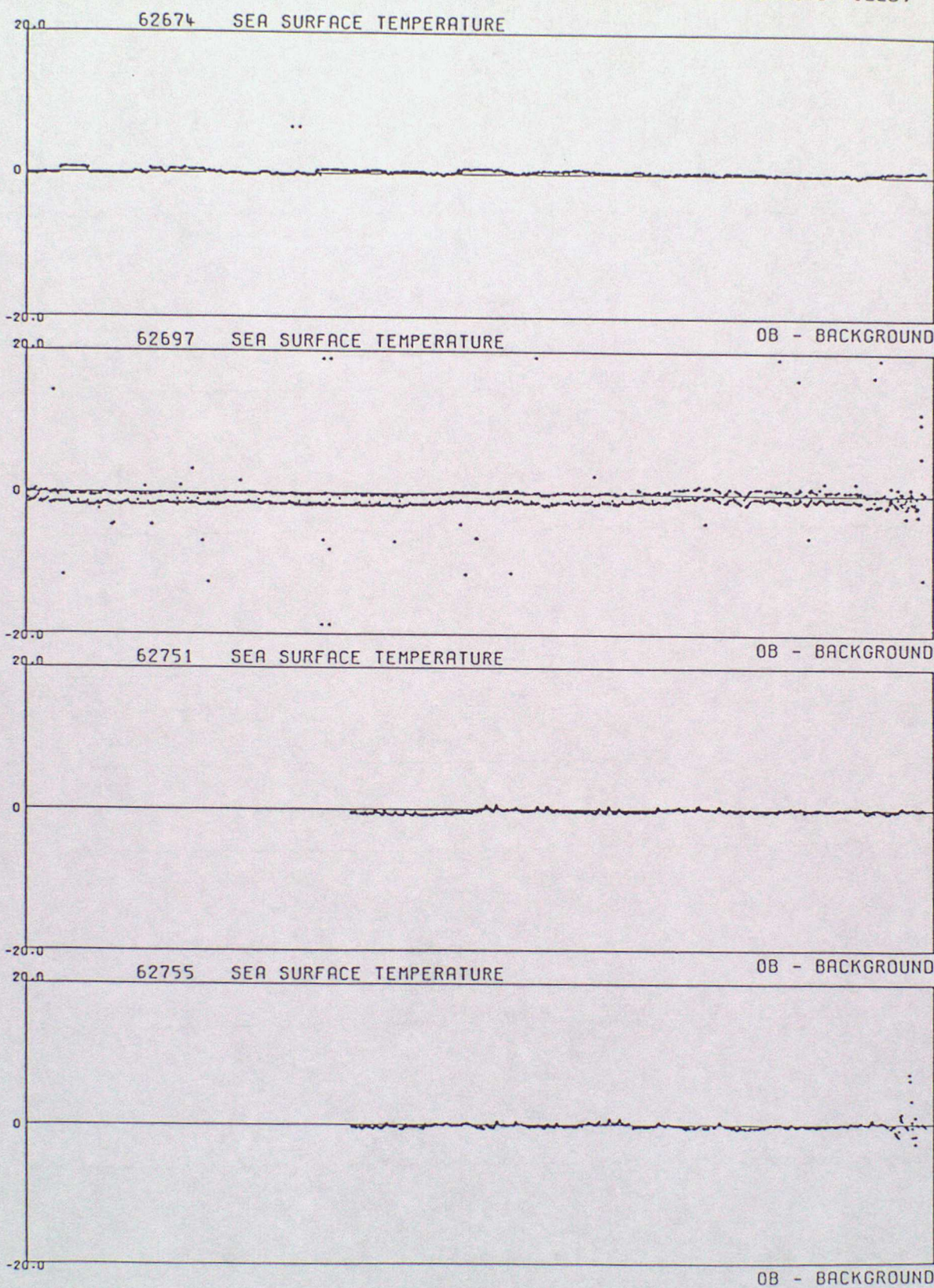


OB - BACKGROUND

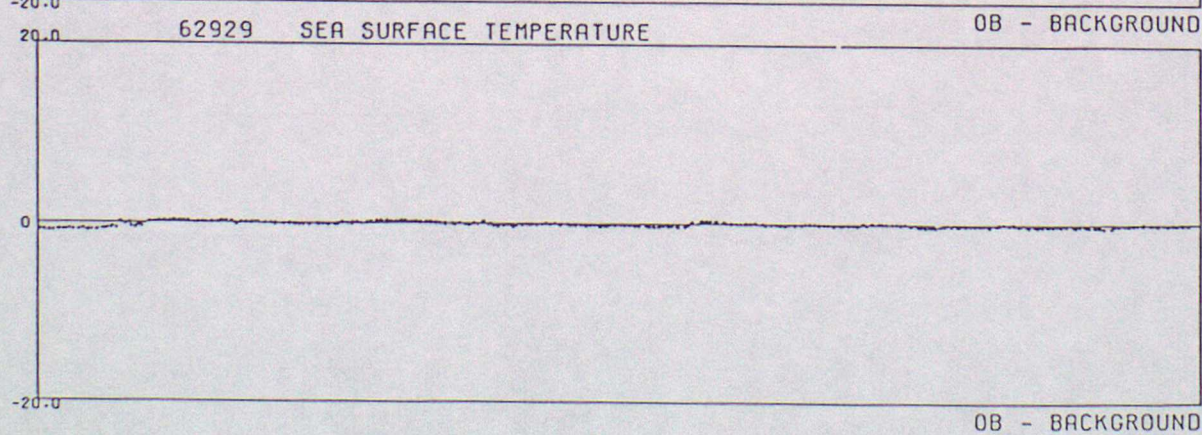
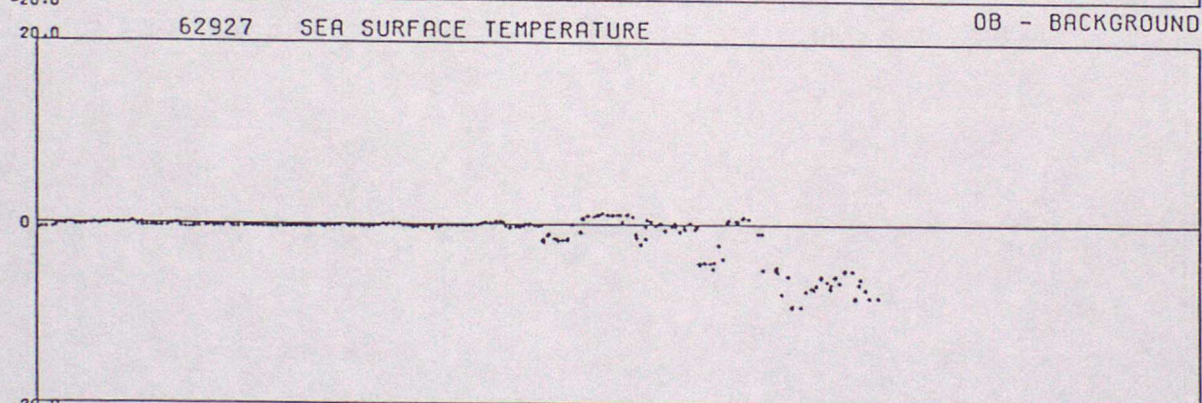
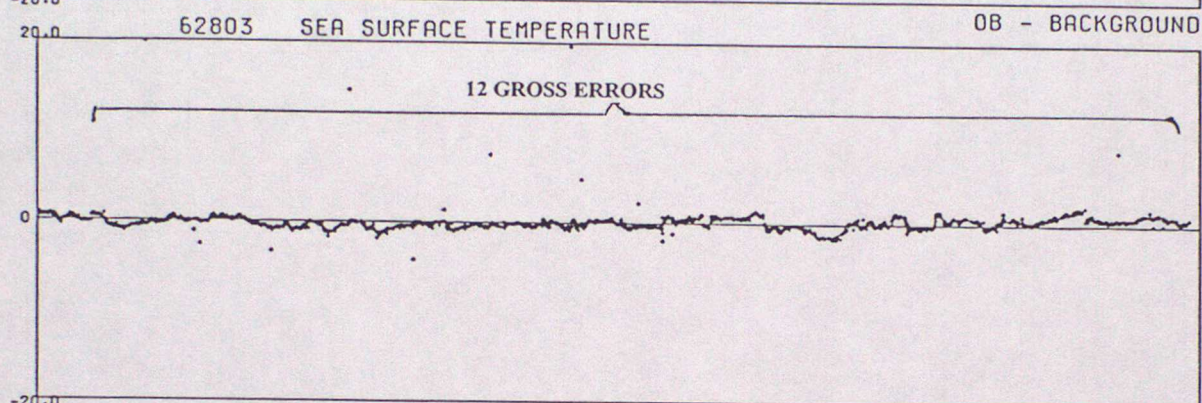
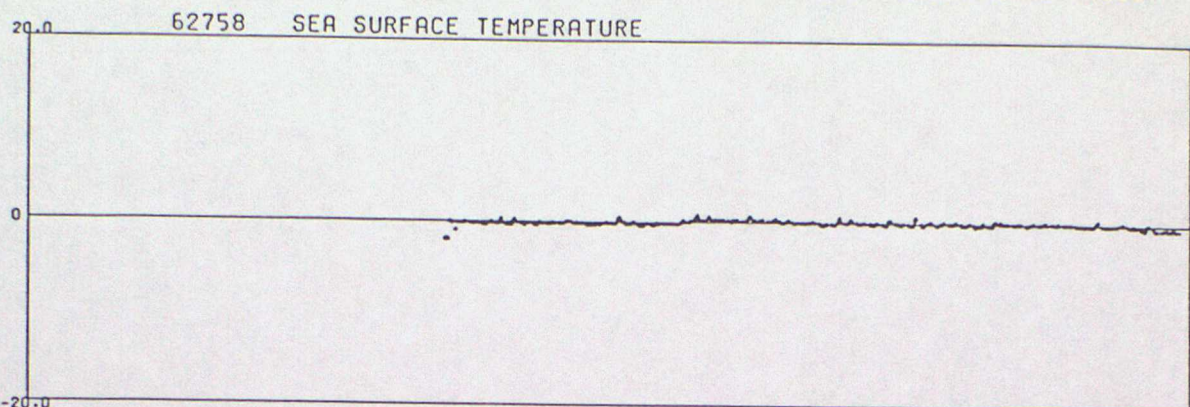
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



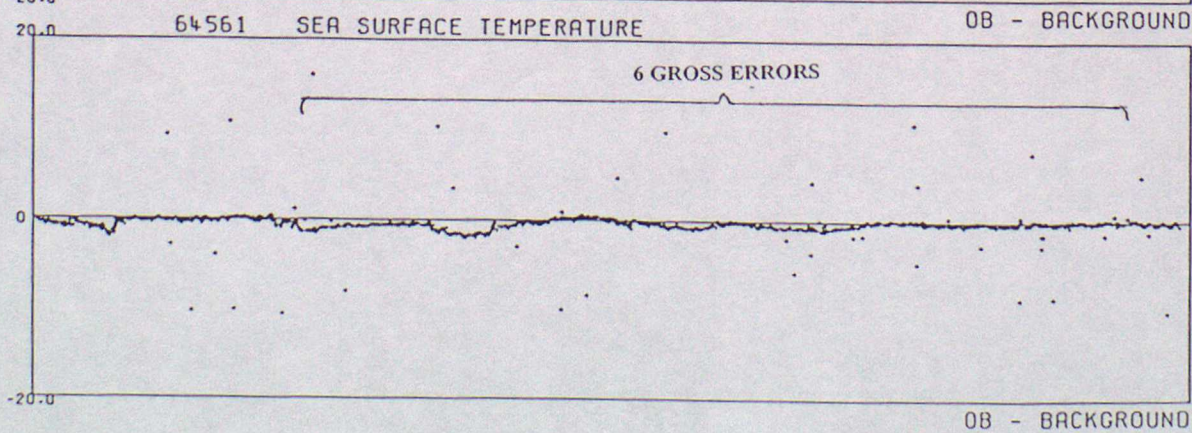
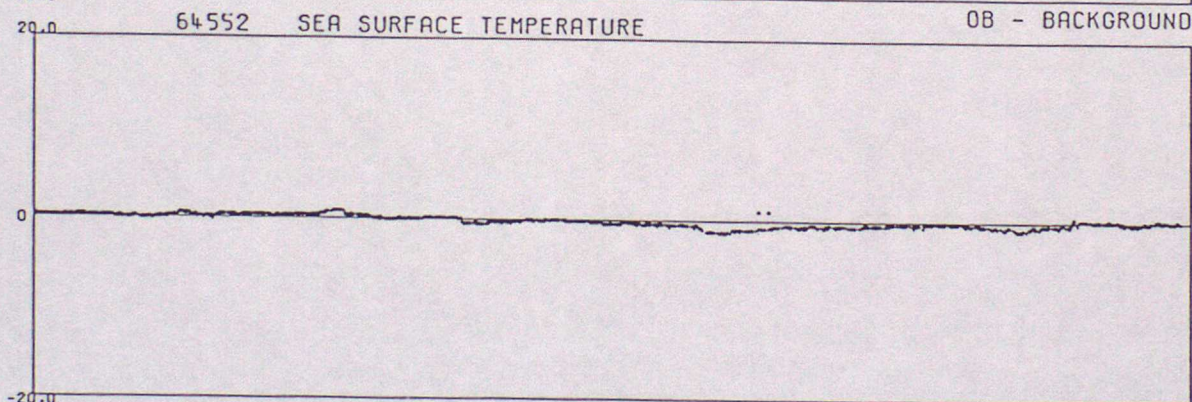
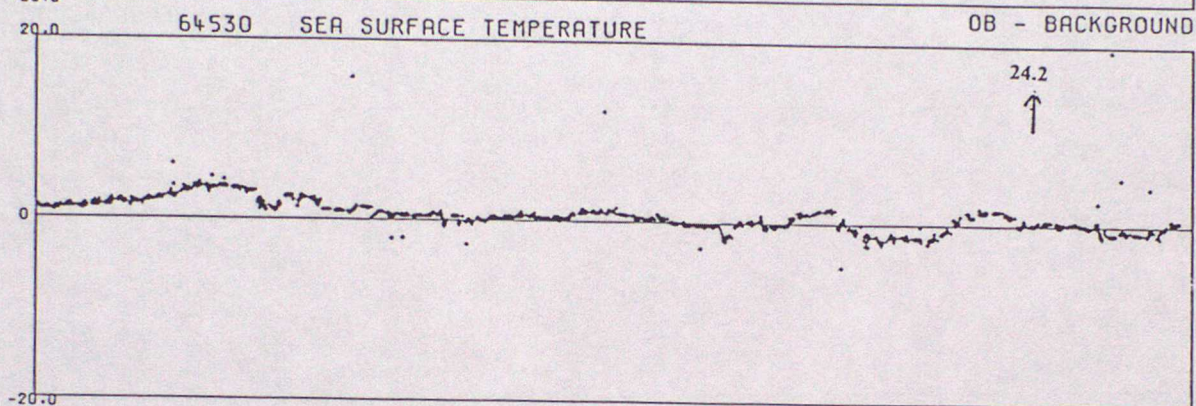
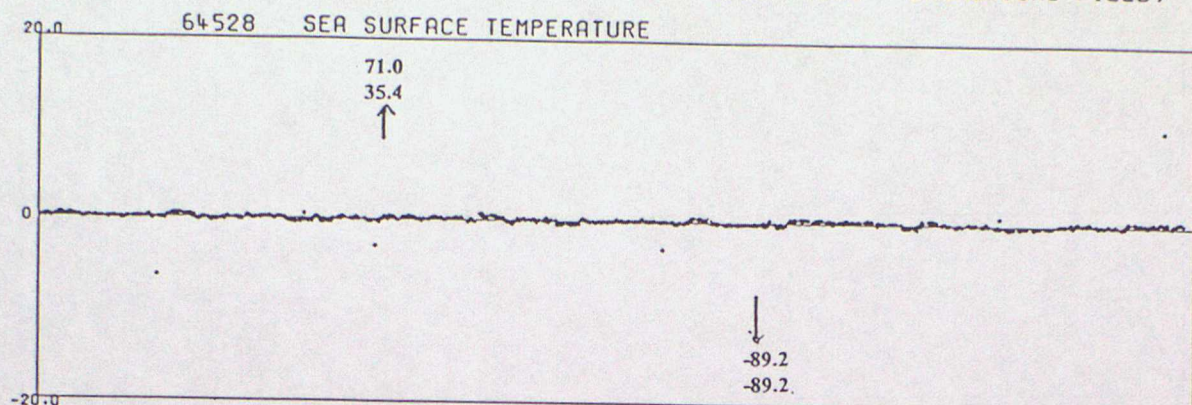
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



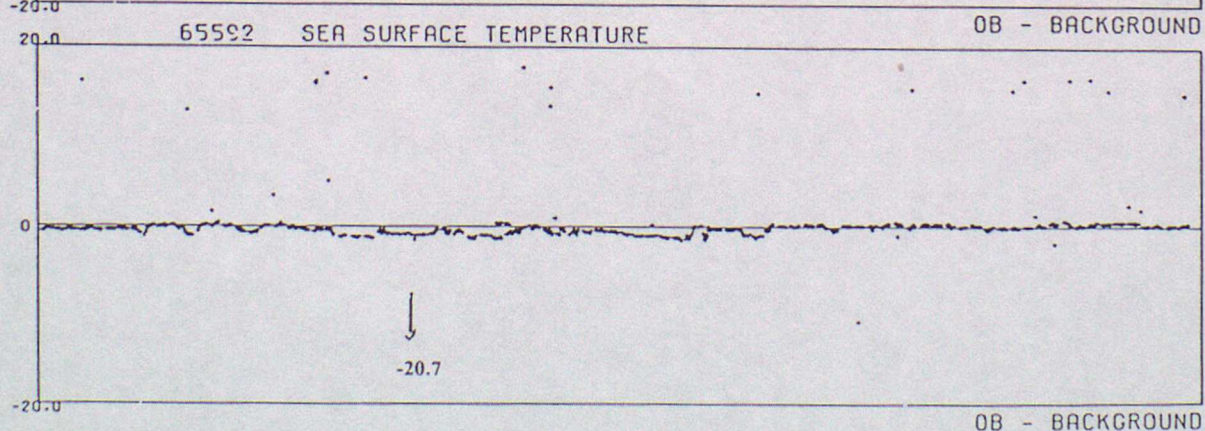
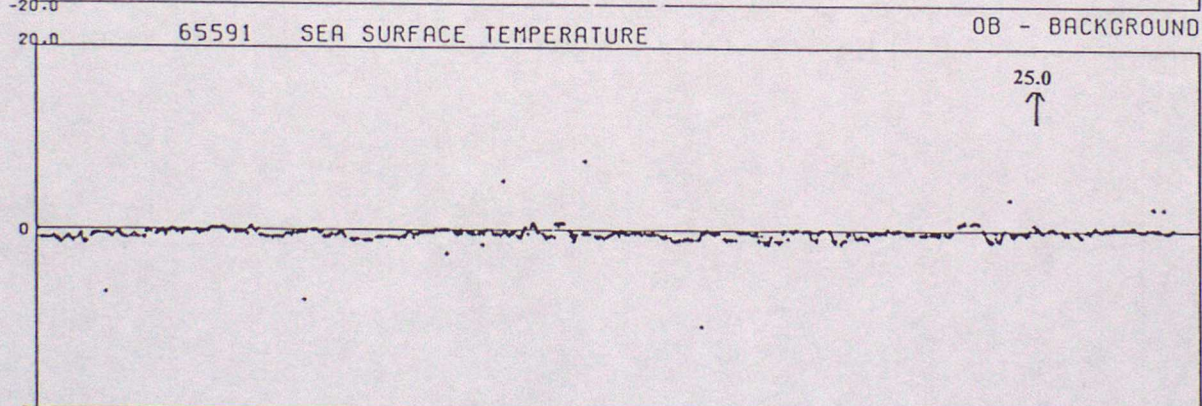
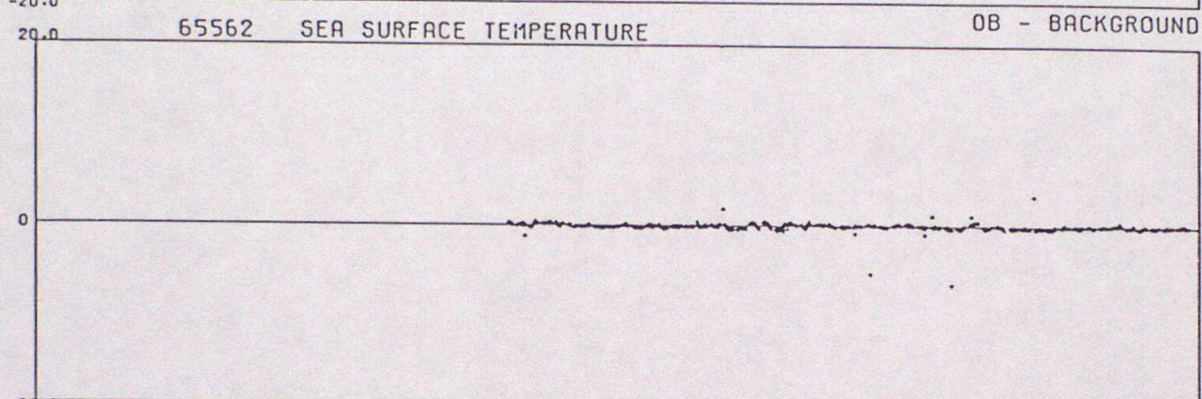
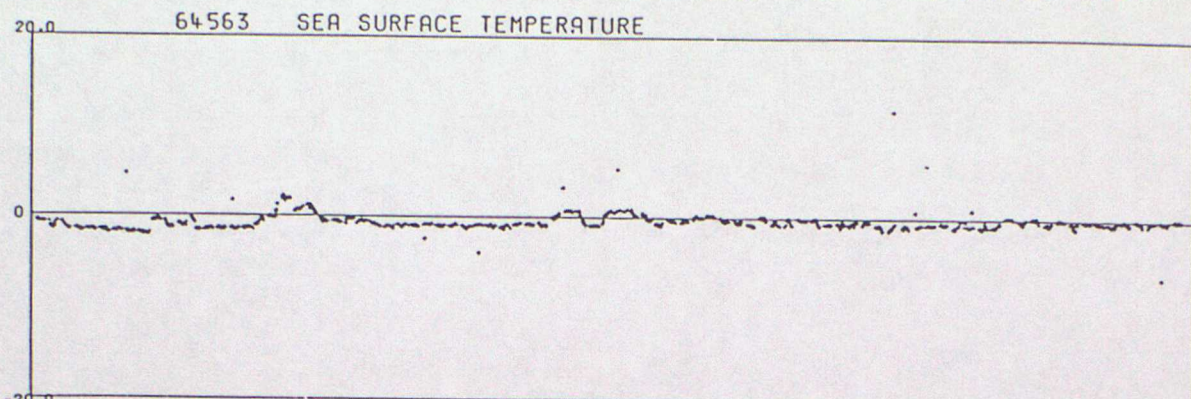
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



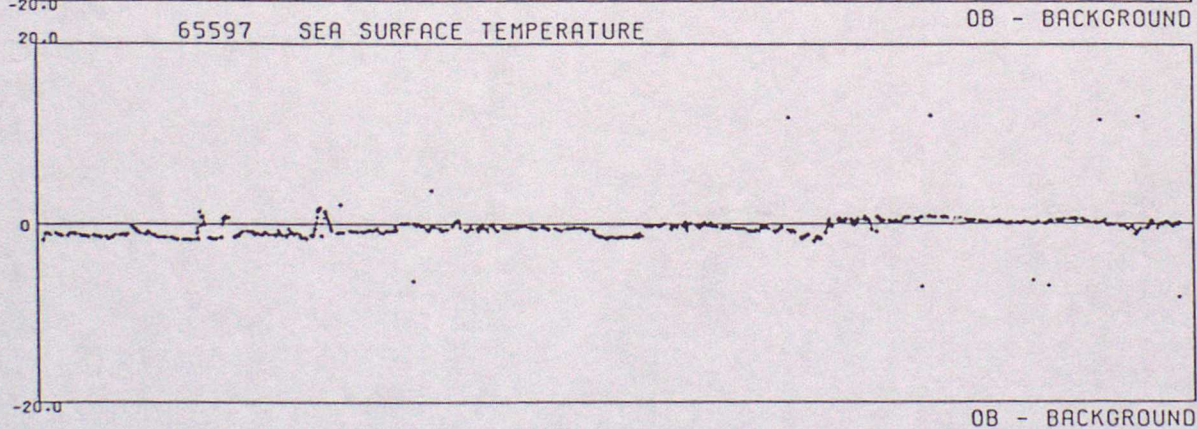
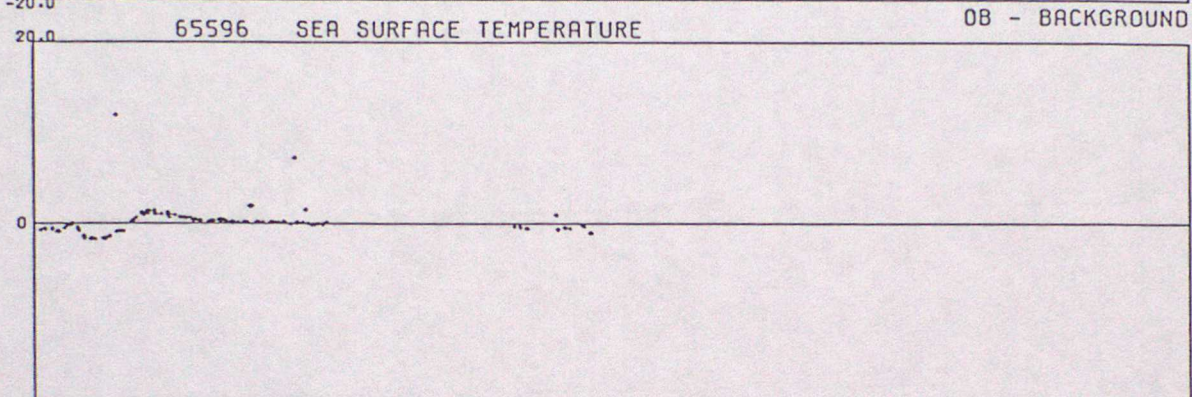
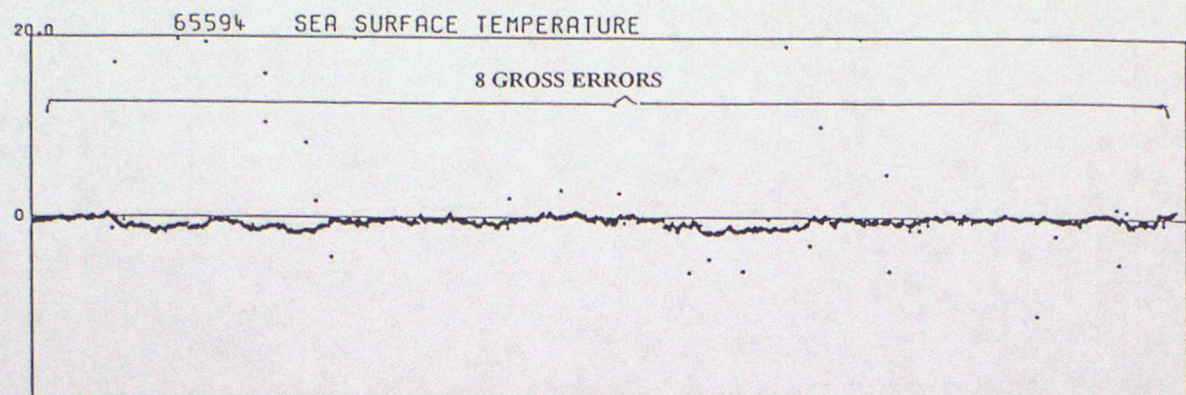
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

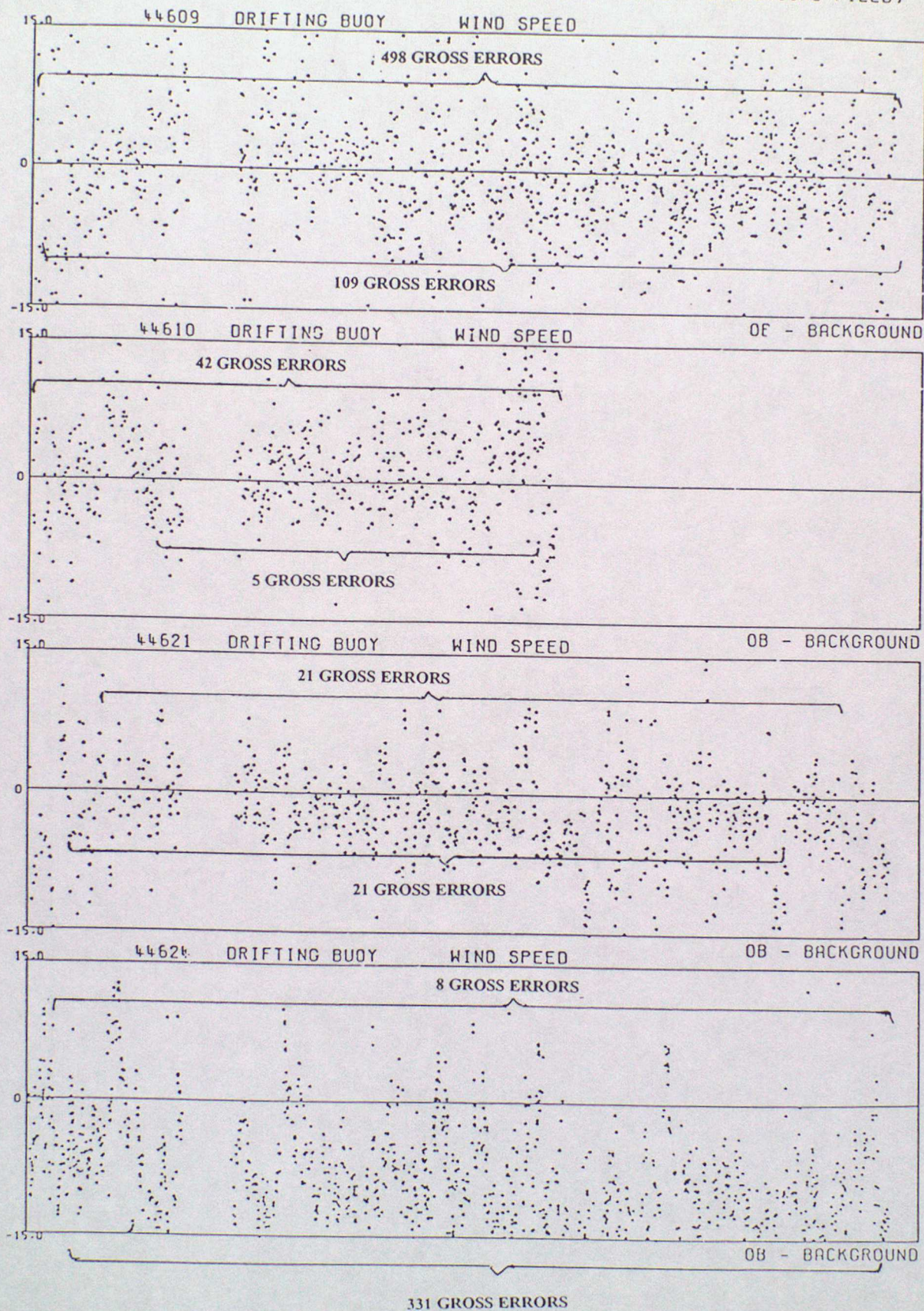


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

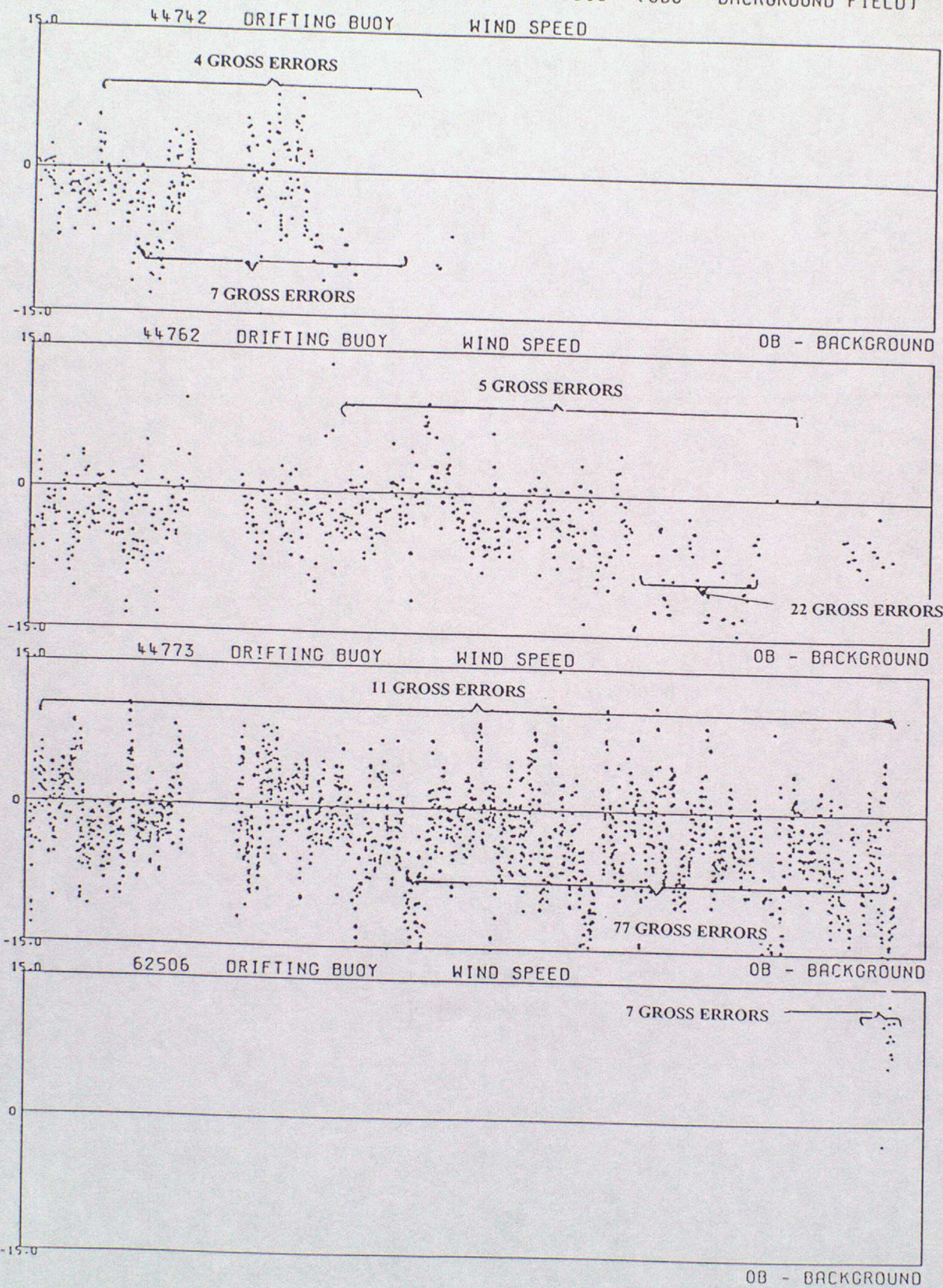


ANNEX E - TIME SERIES PLOTS OF WIND SPEED

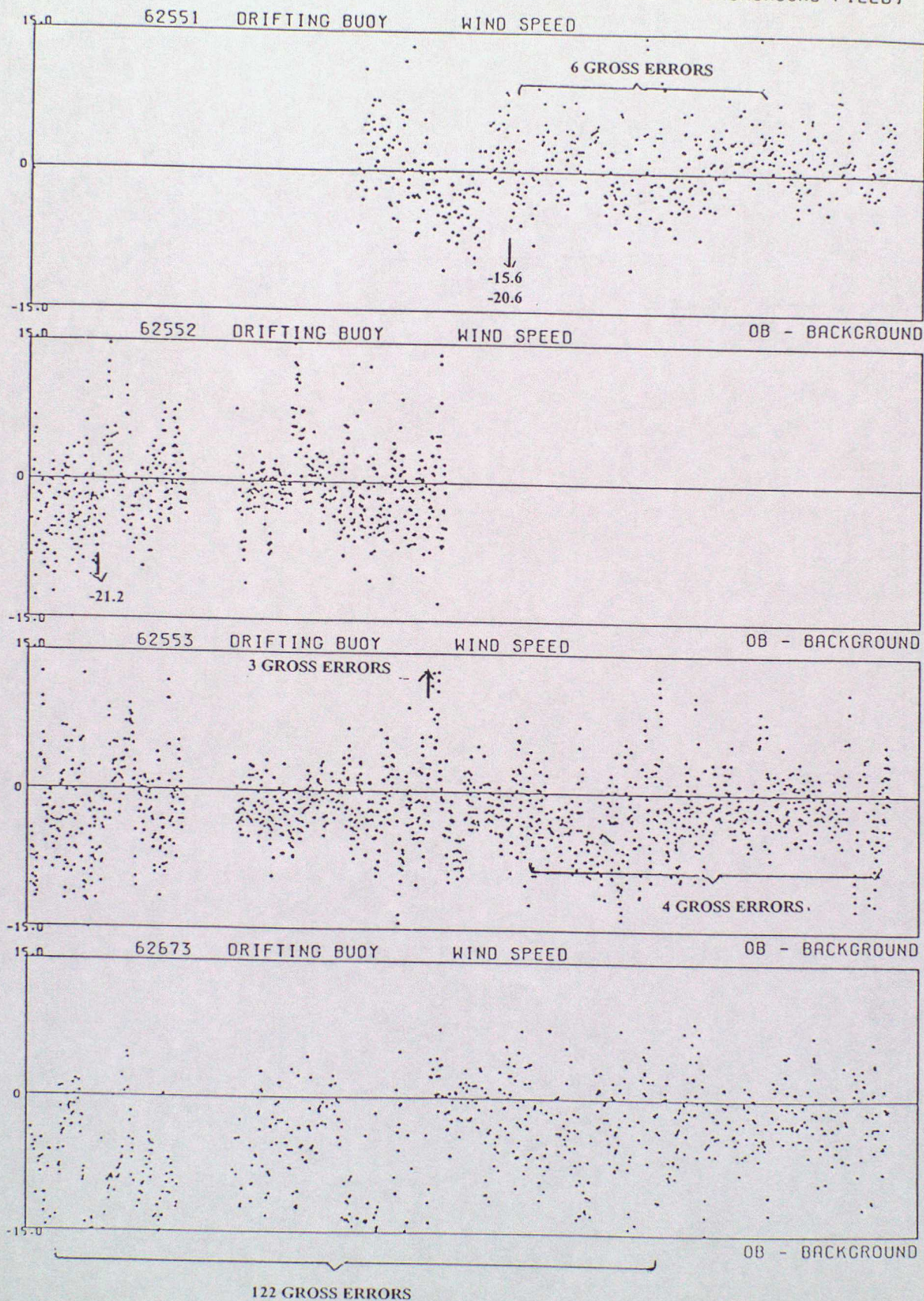
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



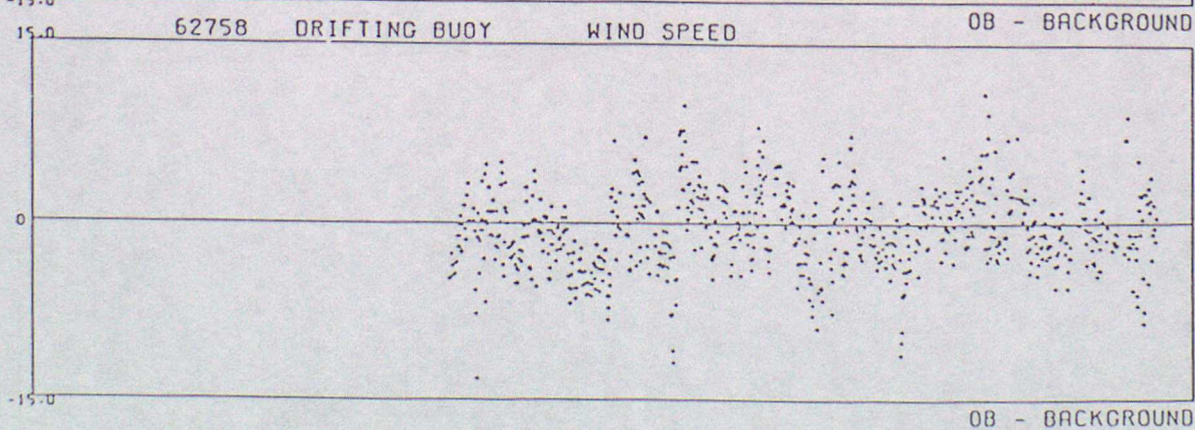
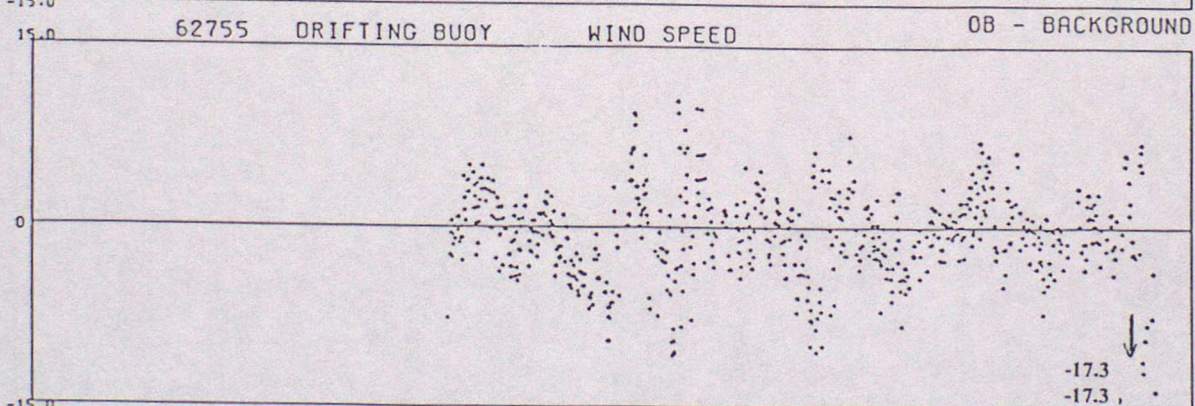
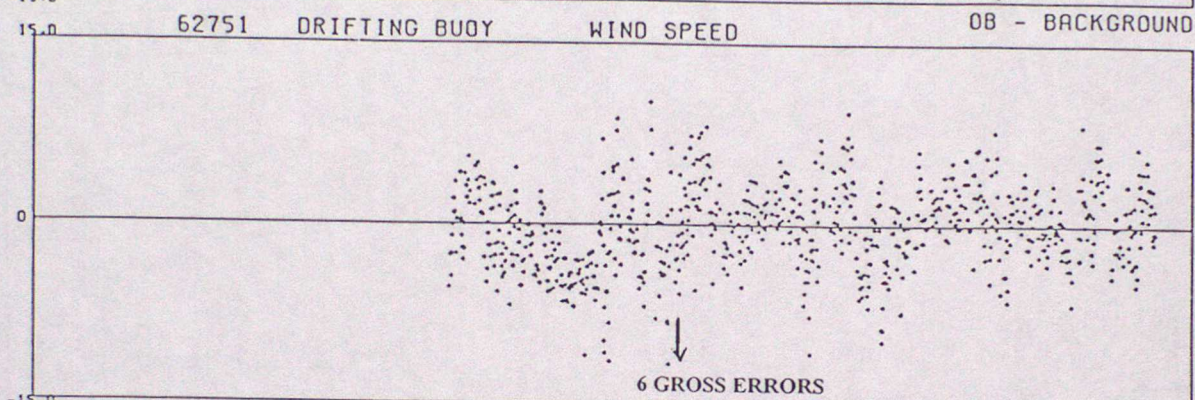
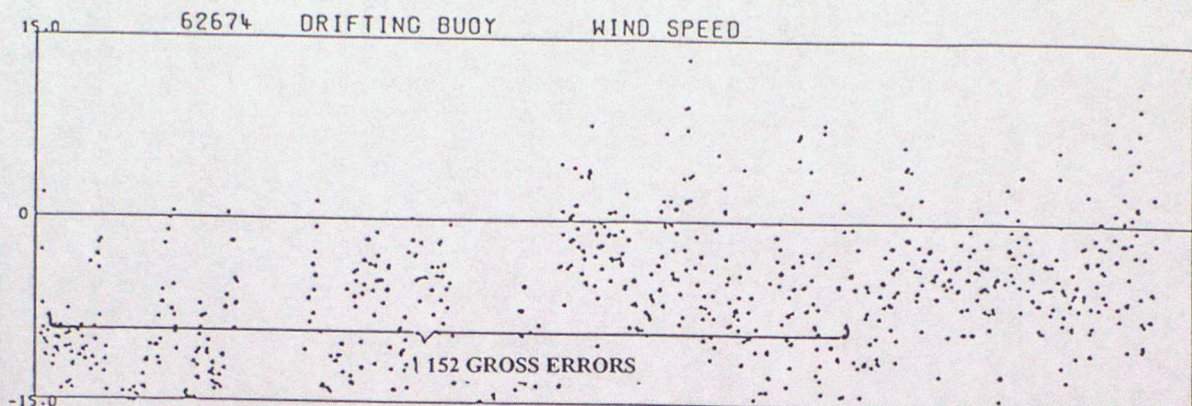
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

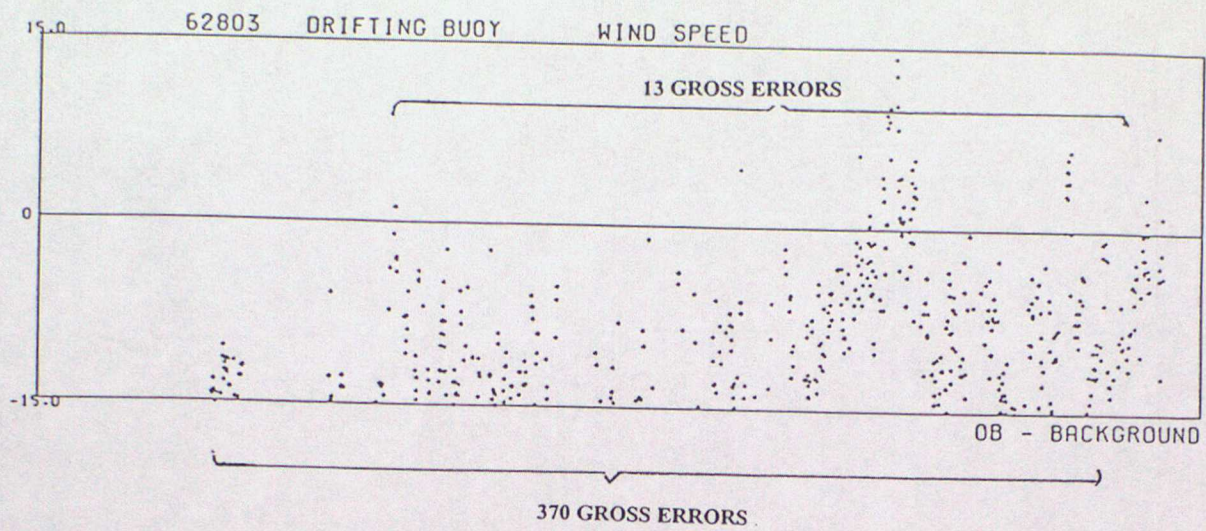


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



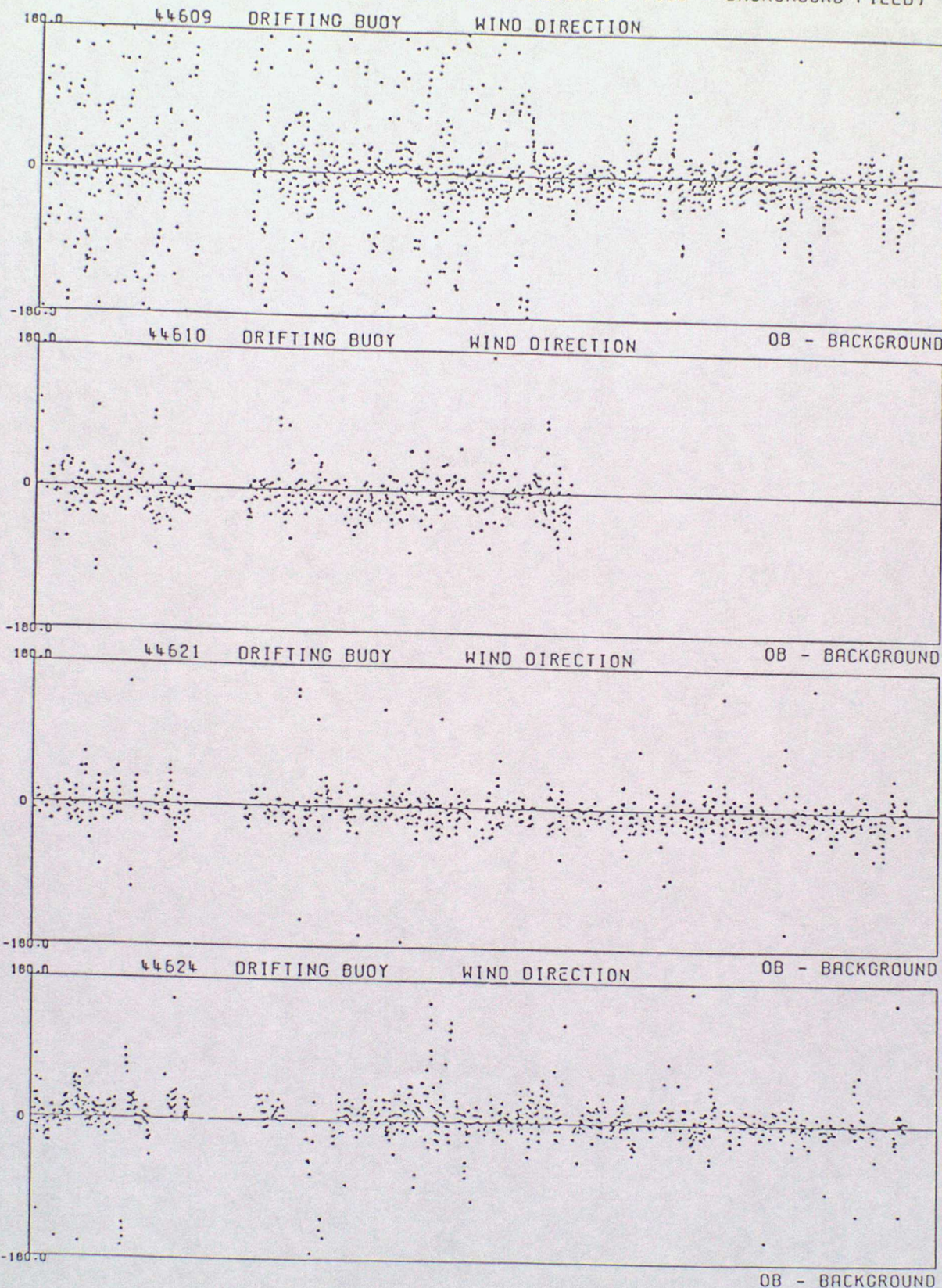
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



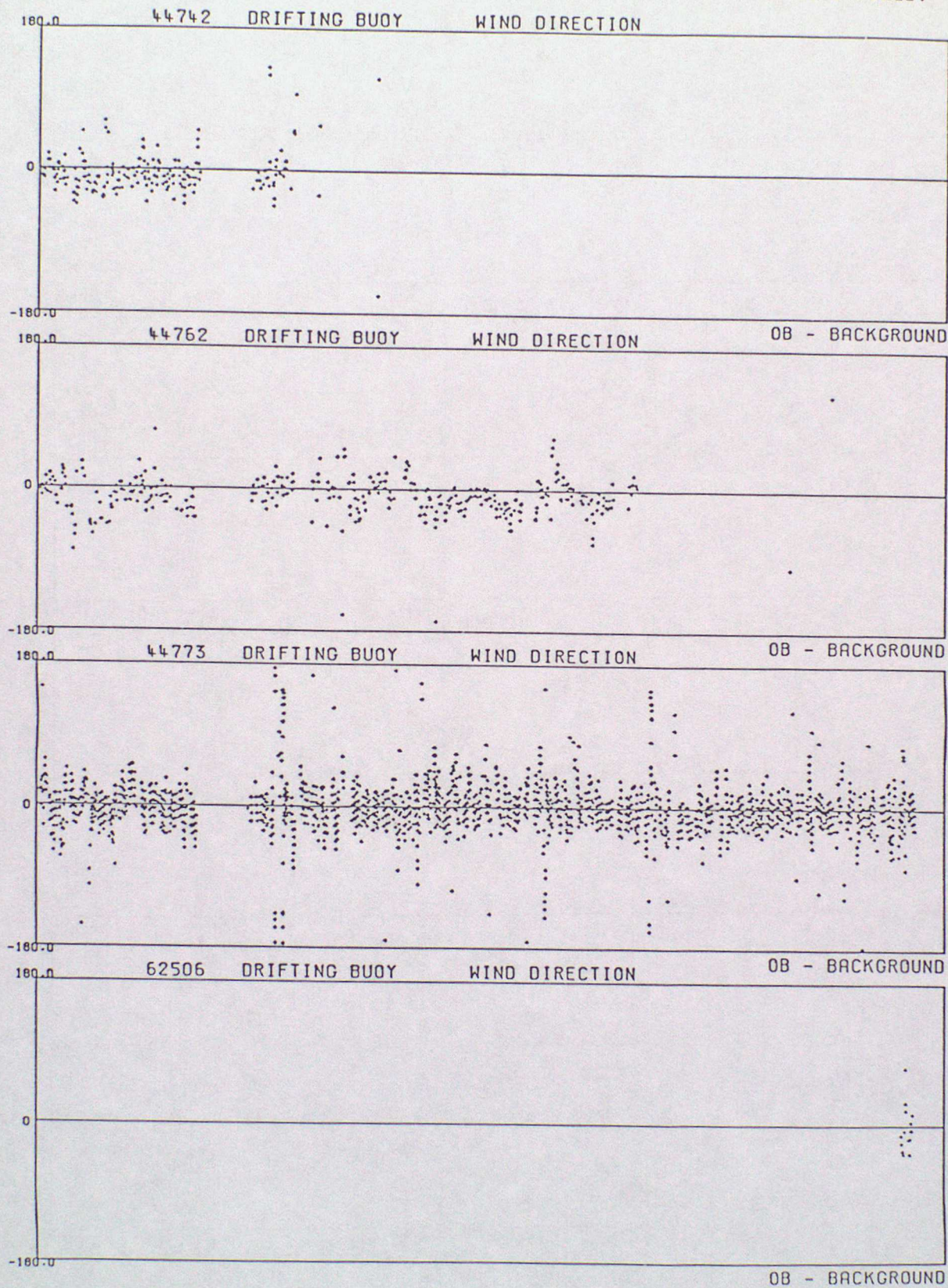


ANNEX F - TIME SERIES PLOTS OF WIND DIRECTION

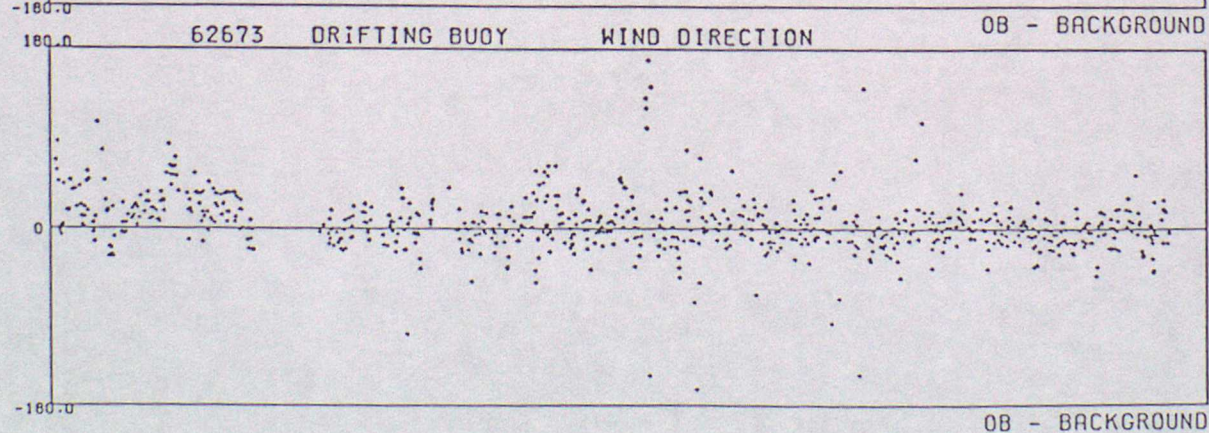
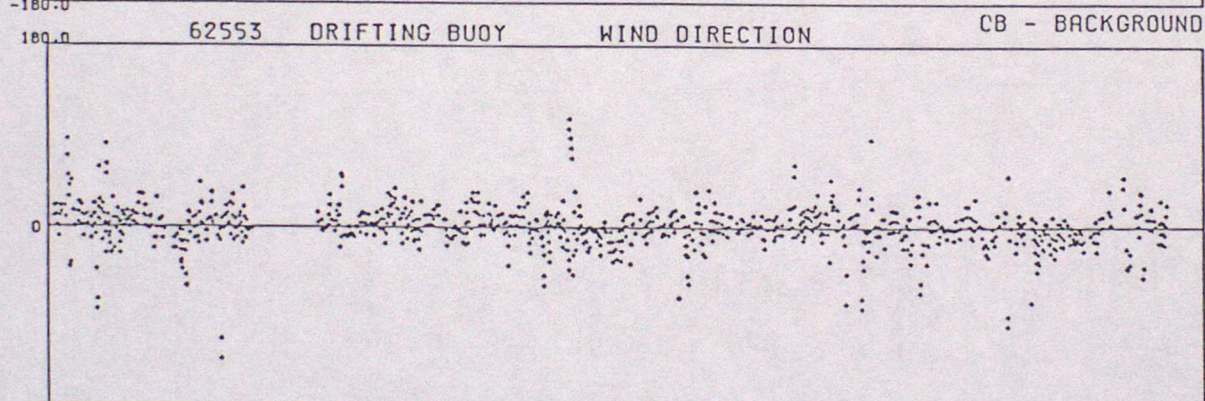
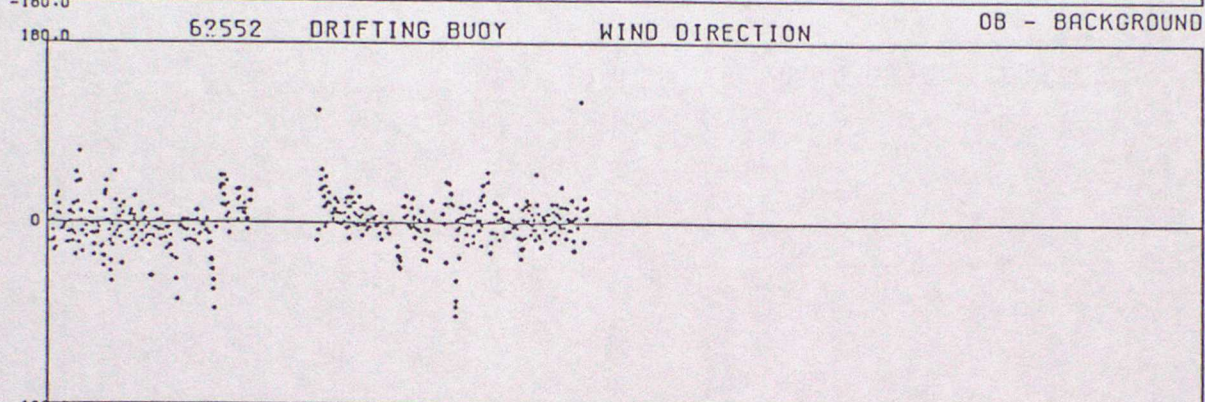
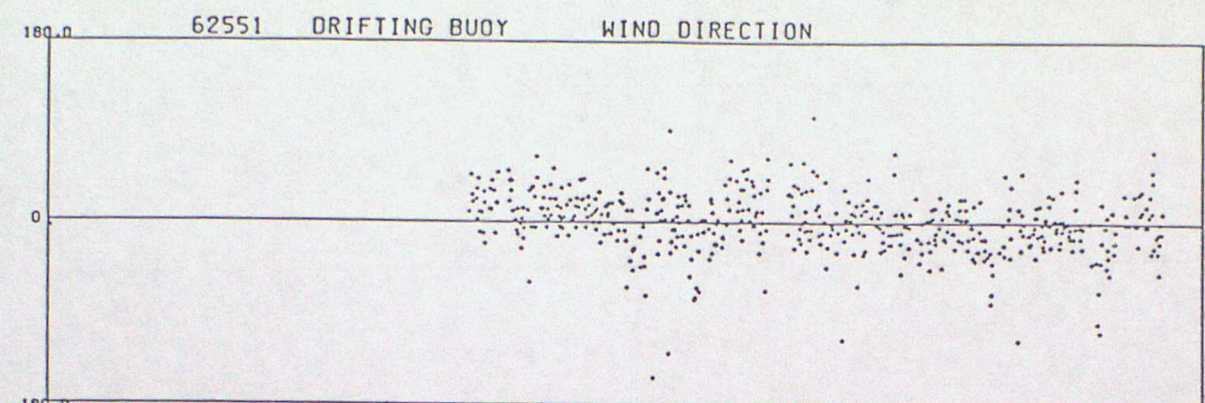
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



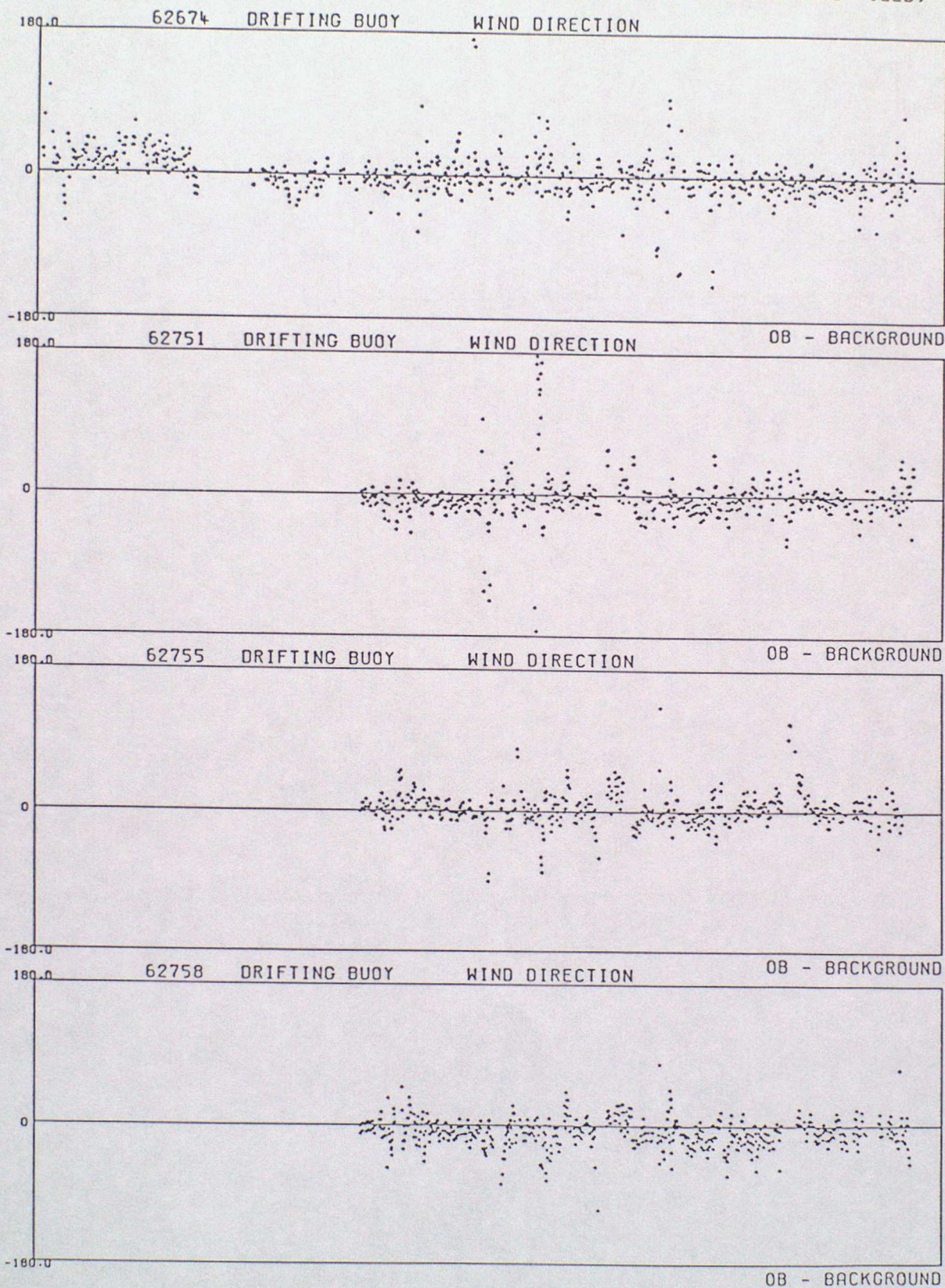
DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)

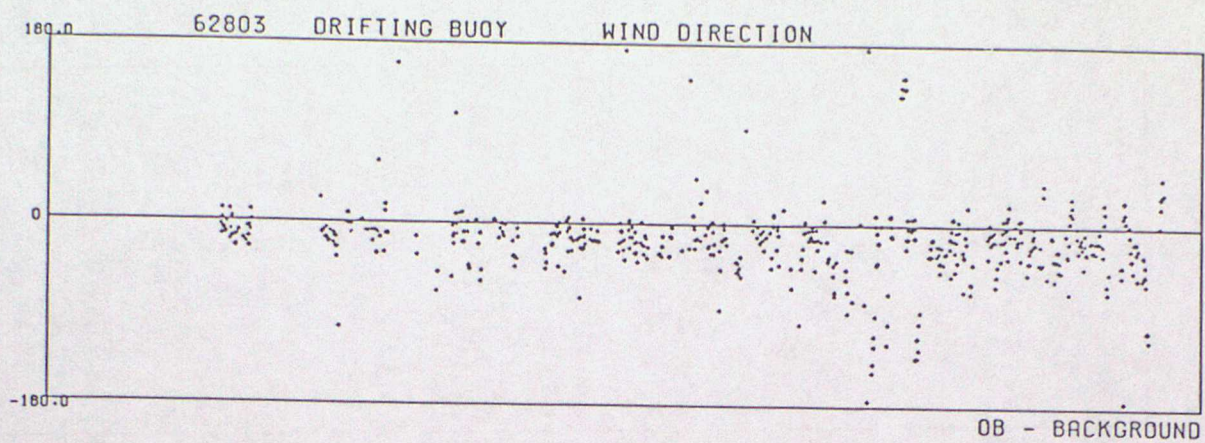


DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/01/1998 TO 23Z ON 31/03/1998 (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	
13903	????	??	*	*				*	01/01 - 31/03
13906	????	??	*	*				*	01/01 - 31/03
13910	????	??	*	*				*	01/01 - 09/02
44609	14430	F	*	*		*	*	*	01/01 - 31/03
44610	????	F	*	*		*	*	*	01/01 - 23/02
44614	12665	UK	*	*				*	01/01 - 31/03
44616	12661	UK	*	*				*	01/01 - 31/03
44617	26744	UK	*	*	*			*	01/01 - 31/03
44621	26752	UK	*	*	*	*	*		01/01 - 31/03
44624	2958	UK	*	*		*	*	*	01/01 - 31/03
44727	3098	UK	*	*	*			*	01/01 - 31/03
44728	1254	UK	*	*	*			*	01/01 - 12/03
44742	26753	UK	*	*	*	*	*	*	01/01 - 12/02
44743	1248	UK	*	*				*	01/01 - 06/01
44760	2947	UK	*	*	*			*	01/01 - 24/03
44761	12660	UK	*	*				*	01/01 - 31/03
44762	26754	UK	*	*	*	*	*	*	01/01 - 31/03
44763	12663	UK	*	*				*	01/01 - 31/03
44765	12662	UK	*	*				*	01/01 - 31/03
44766	12667	UK	*	*				*	01/01 - 31/03
44768	26746	UK	*	*				*	01/01 - 31/03
44769	26749	UK	*	*	*			*	01/01 - 27/02
44771	12659	UK	*	*				*	01/01 - 31/03
44773	26751	UK	*	*	*	*	*	*	01/01 - 31/03
44775	26741	UK	*	*	*			*	01/01 - 31/03
44776	????	UK	*	*				*	01/01 - 17/01
44780	26742	UK	*	*	*			*	01/01 - 31/03
44834	????	??	*	*				*	01/01 - 30/03
44901	????	??	*	*				*	01/01 - 31/03
44911	466	US	*						01/01 - 06/03
44912	????	US	*	*				*	01/01 - 31/03
44925	????	US	*	*				*	01/01 - 31/03
51633	????	??	*		*			*	28/02 - 31/03
62506	????	??	*	*	*	*	*	*	27/03 - 31/03

KEY

PP - Pressure

TT - Air Temperature

DD - Wind Direction

Pt - Pressure tendency

FF - Wind Speed

SST - Sea Surface Temperature

ANNEX G - Cont.

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
62551	????	??	*			*	*	*	02/02 - 31/03
62552	3008	F	*	*	*	*	*	*	01/01 - 11/02
62553	3009	F	*	*	*	*	*	*	01/01 - 31/03
62554	14430	F	*	*				*	01/01 - 18/02
62555	27932	F	*	*				*	01/01 - 02/02
62556	27935	F	*	*				*	01/01 - 28/01
62557	27930	F	*	*				*	01/01 - 31/03
62558	27931	F	*	*					01/01 - 31/03
62673	????	??	*		*	*	*	*	01/01 - 31/03
62674	????	??	*		*	*	*	*	01/01 - 31/03
62697	2959	UK	*	*	*	*		*	01/01 - 31/03
62751	????	??	*			*	*	*	02/02 - 31/03
62755	????	??	*			*	*	*	02/02 - 31/03
62758	????	??	*			*	*	*	02/02 - 31/03
62803	3209	UK	*	*	*	*	*	*	01/01 - 31/03
62927	????	??	*	*				*	01/01 - 06/03
62929	????	??	*					*	01/01 - 31/03 +
64528	4274	NL	*	*	*			*	01/01 - 31/03
64530	12666	UK	*	*				*	01/01 - 31/03
64552	12658	UK	*	*				*	01/01 - 31/03
64561	1247	UK	*	*				*	01/01 - 31/03
64563	3679	N	*	*	*			*	01/01 - 31/03
65562	????	??	*	*	*			*	06/02 - 31/03
65591	26748	UK	*	*	*			*	01/01 - 31/03
65592	4270	D	*	*	*			*	01/01 - 31/03
65594	1252	UK	*	*	*			*	01/01 - 31/03
65596	3036	NL	*	*	*			*	01/01 - 13/02
65597	4273	NL	*	*	*			*	01/01 - 31/03

KEY

PP - Pressure

TT - Air Temperature

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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

