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**OBSERVATIONS, PLANS AND REQUIREMENTS BRANCH**

**Quality Evaluation Section**

**FORTY-SECOND QUARTERLY REPORT**

**ON DRIFTING BUOYS**

**IN THE NORTH ATLANTIC**

**APRIL TO JUNE 1997**

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1st August 1997

This report has not been published.

Permission to quote from it should be obtained from the  
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## **1. INTRODUCTION**

Drifting buoys operated by European countries, the United States, Canada and E.G.O.S. (European Group on Ocean Stations) provide valuable meteorological data in the North Atlantic Ocean. This report is a summary of the performance of these buoys giving information on the number of buoys operating, the accuracy of reported locations and data quality, timeliness and availability. It is compiled by looking at observations received in the Met. Office Meteorological Data Bank (Met.D.B.) and by comparisons of observations with background fields from the Met. Office forecast model. Additional information on buoy operations and data quality is extracted from E.G.O.S. Technical Secretariat reports.

## **2. GENERAL PERFORMANCE**

The following few sub-sections describe the general performance of the drifting buoys throughout the quarter.

### **(a) Location Accuracy**

The location accuracy was very good with 63 out of 67 of the buoys reporting having a '% of observations with acceptable positions' greater than 95% (compared to 75 out of 81 last quarter).

### **(b) Data timeliness**

#### ***NOTE :***

An error has recently been identified with the computer programme that calculated median delays for each buoy. Thus, over the last couple of years the figures for median delay have not been accurate. The programme has now been corrected and this is reflected in the improved figures reported during this quarter.

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

<b>Timeliness</b>	<b>Last quarter.</b>	<b>This quarter</b>
Very Good	32	42
Good	14	15
Satisfactory	12	4
Poor	11	2
Very poor	12	4
<b>Total no. of buoys</b>	<b>81</b>	<b>67</b>

(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	15	17
Good	5	6	9	8
Satisfactory	21	13	6	8
Poor	10	7	13	4
Very Poor	1	1	1	2

The total number of buoy days in the quarter was 4,897 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 5,268) and the number of 'buoy hours' with at least one observation was 74,157 (compared with 75,827 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 15.14 (last quarter the figure was 14.39).

**3. SUMMARY OF PRESSURE PERFORMANCE**

(a) Buoy deployments, etc.

**NOTE**

Although buoys 44767, 62803 and 65594 (all north of 50 degN) were reporting at the beginning of the period, pressure data failed to reach the Observation Processing Databanks (OPD) until 7/4, 3/4 and 10/4 respectively.

North of 50deg N

There were 31 buoys reporting pressure at the beginning of the period. This figure includes buoys 44912 and 44925 which were not included in the last report and buoys 44513 and 62712 which drifted north of 50 degN during this quarter. The figure also includes the buoys from the note above. 28 buoys were operating at the end of the period. 8 new buoys were deployed (44621, 44727, 44769, 44773, 62552, 64528, 64563 and 65597). 11 buoys ceased reporting pressure (44614, 44764, 44767, 44776, 44780, 44917, 62508, 64562, 65593, 65595 and 65599). Buoys 44764 and 44767 (ceased reporting pressure on 8/4 and 13/6 respectively) did however, continue to report other elements until the end of the period.

### South of 50deg N

There were 24 buoys reporting pressure at the beginning of the period. Buoy 44770 drifted out of the area and 41922 drifted into the area during the period. 21 buoys were reporting at the end of the period. 4 new buoys were deployed (62553, 62554, 62555 and 62556). 7 buoys ceased reporting (44606, 61521, 61529, 61530, 61531, 62507 and 62551).

#### (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:-

- 44605 - A large number of erroneous reports were produced by this buoy between 14/5 and 30/5.
- 44767 - Pressure data were totally erratic from the start of the period until the end of the buoy's life on 13/6.
- 62518 - Pressure data showed a bias of -0.5 hPa throughout the period.
- 64562 - Data became erroneous towards the end of the buoy's life on 14/4.

##### Biases

13 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	+0.8	-0.1	01/04 - 30/06
13911	+0.7	+0.6	01/04 - 30/06
41922	+1.3	+0.3	01/04 - 30/06
44608	+0.6	0.0	01/04 - 30/06

WMO No.	Buoy bias (hPa)	Ship bias (hPa)	Period of reports
44911	+0.8	+0.2	01/04 - 30/06
44912	+0.8	+0.4	01/04 - 30/06
44917	+1.6	+1.0	01/04 - 30/04
44925	+1.0	+2.7	01/04 - 30/06
61531	-0.6	-1.4	01/04 - 20/05
62508	+0.6	+0.3	01/04 - 07/05
62551	+0.6	-0.2	01/04 - 03/04
62927	+0.7	+0.9	01/04 - 30/06
65595	-1.9	+0.5	01/04 - 09/04

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

#### (4) Air Temperatures and Sea Surface Temperatures

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

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

WMO No.	Air Temperature			Sea Surface Temperature		
	Mean	St. Dev.	No. of Obs	Mean	St. Dev.	No. of Obs
13903	---	---	---	0.4(0.2)	0.5(3.0)	275 (66)
13911	---	---	---	0.3(-0.2)	0.5(1.8)	288 (84)
41529	0.4(0.2)	1.2(1.5)	695 (82)	---	---	---
41530	0.5(0.6)	0.9(1.7)	683 (74)	0.2(-0.4)	0.4(7.4)	813 (185)
41922	---	---	---	0.5(0.0)	0.6(2.9)	289 (63)
44513	0.6(1.6)	1.0(2.3)	830 (35)	0.2(0.4)	0.6(5.5)	1001 (141)

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
44605	---	---	---	-0.6(-0.2)	3.2(2.5)	1421 (146)
44606	---	---	---	-0.2(-0.2)	0.3(2.5)	96 (145)
44607	---	---	---	-1.7(-0.2)	3.0(2.6)	1656 (112)
44608	---	---	---	0.0(1.8)	2.2(11.7)	2017 (117)
44613	0.7(2.4)	2.5(10.8)	2135 (24)	1.3(0.9)	1.6(8.3)	2331 (88)
44614	7.3(3.3)	2.5(12.3)	521 (20)	1.4(2.5)	2.5(13.7)	1040 (64)
44621	0.1(0.3)	0.9(6.9)	202 (60)	1.3(0.2)	0.7(5.2)	1001 (157)
44624	3.0(1.0)	3.3(3.5)	91 (62)	0.2(1.4)	2.3(10.0)	3558 (206)
44726	1.9(1.2)	1.2(5.4)	3144 (285)	0.2(0.6)	1.0(6.0)	3355 (464)
44727	0.6(0.2)	1.4(7.7)	4156 (46)	0.4(-0.2)	1.2(2.4)	4345 (120)
44728	-0.3(1.2)	1.3(4.8)	3433 (24)	0.8(2.7)	2.3(13.9)	3634 (81)
44742	0.5(1.5)	0.9(2.0)	1499 (8.3)	1.3(0.7)	0.5(6.5)	1636 (213)
44743	---	---	---	-0.8(0.1)	1.3(5.9)	2249 (553)
44760	0.1(0.3)	1.3(1.5)	927 (59)	-0.6(-0.3)	1.4(1.7)	1333 (140)
44762	0.3(1.2)	1.0(2.1)	1540 (75)	---	---	---
44764	-0.1(1.4)	1.5(4.0)	3483 (34)	0.5(1.9)	1.2(11.8)	3708 (147)
44767	0.3(0.9)	1.2(1.7)	4963 (121)	0.2(0.8)	1.2(7.4)	5573 (232)
44768	7.2(2.6)	1.3(12.2)	354 (21)	-0.1(1.2)	0.5(9.7)	2662 (64)
44769	0.1(-0.5)	1.0(2.0)	1651 (99)	0.5(0.5)	0.6(5.5)	1769 (224)

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	0.9(0.0)	1.0(7.3)	1130 (51)	-1.9(-0.3)	0.5(2.4)	1231 (175)
44775	0.2(8.4)	1.0(20.7)	2526 (12)	-0.6(1.3)	0.6(9.9)	2702 (62)
44776	19.5(1.1)	10.2(5.2)	10 (390)	0.7(0.7)	3.6(6.3)	1474 (591)
44777	---	---	---	1.5(0.4)	3.8(5.7)	3037 (842)
44779	---	---	---	-1.7(-0.3)	3.7(2.6)	1980 (171)
44780	0.8(1.2)	1.4(5.0)	125 (414)	-0.1(0.5)	1.5(5.5)	145 (780)
44911	—	—	—	—	—	—
44912	---	---	---	0.0(0.7)	0.6(4.2)	495 (358)
44917	---	---	---	1.1(0.0)	0.9(2.7)	176 (101)
44925	—	—	—	0.4(-1.1)	0.5(3.2)	447 (47)
61521	0.8(0.7)	3.5(1.7)	378 (100)	—	—	—
61529	2.6(4.0)	3.3(12.1)	809 (287)	0.2(-0.3)	0.5(5.9)	696 (692)
61530	2.7(4.1)	3.9(13.5)	1485 (197)	2.4(0.1)	4.6(5.0)	1766 (519)
61531	1.2(0.8)	2.6(1.9)	1379 (101)	0.3(0.1)	0.8(2.5)	1733 (232)
62503	---	---	---	0.2(-0.4)	0.4(5.9)	1745 (636)
62507	---	---	---	0.1(-0.4)	0.3(6.2)	645 (582)
62508	---	---	---	—	—	—
62515	---	---	---	-0.3(0.0)	0.3(5.2)	1207 (750)
62518	—	—	—	0.0(-0.1)	0.3(6.1)	1579 (837)

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(0.1)	0.8(5.5)	25 (1164)
62552	-0.9(2.1)	4.7(7.3)	1177 (128)	0.4(0.3)	0.9(5.2)	1866 (343)
62553	0.1(1.5)	0.8(2.0)	1033 (88)	-0.1(0.5)	1.7(6.1)	1681 (252)
62554	---	---	---	0.0(0.0)	0.3(7.6)	1593 (346)
62555	---	---	---	-0.1(0.0)	0.5(6.9)	1061 (416)
62556	---	---	---	0.4(0.4)	0.6(6.2)	1144 (237)
62697	0.3(1.3)	1.8(3.5)	3239 (39)	1.1(0.8)	2.8(8.6)	3448 (142)
62712	---	---	---	-0.8(0.7)	0.5(7.0)	1300 (181)
62713	---	---	---	-1.8(-0.2)	5.0(8.8)	2053 (182)
62803	-0.1(1.3)	1.3(3.0)	4938 (123)	0.1(1.0)	1.1(7.6)	5365 (303)
62804	0.7(1.4)	0.9(2.2)	2048 (70)	---	---	---
62927	---	---	---	-0.1(0.9)	0.5(7.5)	460 (162)
64528	-1.8(3.3)	12.8(12.6)	1685 (19)	-0.4(1.3)	0.4(9.4)	1191 (68)
64561	37.6(0.0)	5.1(3.3)	25 (24)	0.0(-1.0)	1.4(2.7)	2949 (69)
64562	0.9(1.2)	1.5(4.7)	682 (25)	0.9(1.1)	1.1(11.1)	532 (103)
64563	0.2(2.8)	1.8(13.4)	4575 (15)	0.1(1.3)	1.2(10.4)	3000 (56)
65593	0.3(1.2)	2.1(4.4)	1517 (28)	0.0(1.5)	1.2(11.9)	959 (115)
65594	0.3(1.3)	1.6(5.0)	4955 (22)	0.0(2.8)	1.4(14.2)	5793 (78)
65595	-1.0(1.0)	2.9(3.9)	389 (37)	-4.9(0.4)	2.5(7.3)	211 (129)

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
65596	0.9(2.7)	2.7(6.1)	2298 (14)	-0.2(-0.3)	1.8(3.1)	1421 (56)
65597	-0.1(4.2)	2.6(15.4)	4245 (11)	-0.1(-0.9)	0.9(2.4)	2739 (66)
65598	0.1(5.4)	2.7(16.9)	4337 (17)	-0.2(-1.1)	2.4(2.3)	2927 (60)
65599	1.3(1.3)	2.4(3.0)	613 (77)	0.2(0.7)	0.7(7.3)	396 (283)

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

Buoys 44614 (7.3), 44624 (3.0), 44726 (1.9), 44768 (7.2), 65595 (-1.0) and 65599 (1.3) all showed significant air temperature biases.

Data from buoys 61529 (2.6) and 61530 (2.7) were quite erratic with both buoys showing a significant bias. Buoy 61531 (1.2) developed an air temperature bias towards the end of its life on 20/5. A large number of erroneous observations were reported by buoy 64528 (-1.8). Only 10 and 24 reports respectively, were received from buoys 44776 and 64561, all of which were erroneous.

Buoys 44614 (1.4), 44621 (1.3), 44742(1.3), 44773 (-1.9), 44917 (1.1), 62713 (-1.8) (this buoy produced a large number of gross errors towards the end of the period) and 65595 (-4.9) all showed a significant sea surface temperature bias.

Data from buoy 44777 (1.5) became erratic midway through the period. Data from buoy 61530 (2.4) were erratic from the end of April until the end of May (when the buoy stopped reporting sea surface temperature). Data from buoy 62697 (1.1) became erratic during June.

SST data from buoy 44605, reported via the LUT at Sondre Stromfjord were approximately 8°C too low during early June. A similar problem occurred with buoy 44607, which reported SST values approximately 6°C too low from the same LUT between 14/5 and 26/6. Data from buoys 44613 and 44779 reported via the Oslo LUT, were approximately 4°C too high and 10°C too low respectively, from 21/5 until 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 : Buoy 44613 reported occasional wind speeds of 0 knots and occasional wind directions without wind speeds. Buoy 62712 had 23.2% of wind speeds present, but no wind directions. Subsequently, no analysis was carried out on either of the above mentioned buoys.)

WMO No.	Period	Wind Speed (kn)		Wind Direction (deg)		No. of Obs
		Mean	St. Dev.	Mean	St. Dev.	
41530	01/04 - 30/06	-3.7(2.3)	3.1(5.3)	7.9(-1.2)	16.2(26.2)	555 (75)
44513	01/04 - 30/06	-4.6(10.1)	4.0(29.3)	-19.2(1.1)	87.8(28.6)	672 (33)
44621	12/06 - 30/06	-5.3(1.3)	6.3(5.4)	-18.9(1.0)	16.7(41.7)	161 (49)
44624	01/04 - 30/06	-1.5(2.5)	4.3(24.2)	14.4(-3.3)	22.1(14.8)	2043 (48)
44726	01/04 - 30/06	-2.2(2.1)	4.3(12.9)	-0.4(-2.4)	21.5(30.6)	1862 (224)
44742	01/04 - 30/06	-0.2(1.9)	3.2(6.1)	-8.2(0.7)	18.7(24.8)	847 (82)
44762	01/04 - 30/06	-0.8(2.4)	3.3(5.8)	-4.6(0.6)	22.2(25.2)	859 (75)
44773	15/05 - 30/06	-1.2(1.2)	4.1(5.6)	-7.2(2.8)	28.0(46.7)	958 (35)
62518	01/04 - 30/06	-4.5(3.7)	5.0(6.3)	-9.1(-2.0)	22.2(36.0)	593 (267)
62551	01/04 - 03/04	2.0(3.0)	4.0(6.3)	-5.3(-5.4)	15.8(32.9)	21 (439)
62552	15/04 - 30/06	-2.0(4.0)	2.8(16.4)	5.6(1.9)	15.1(32.5)	1535 (111)
62553	15/04 - 30/06	-0.3(3.7)	3.4(18.9)	4.0(1.9)	17.6(27.6)	1445 (83)
62697	01/04 - 30/06	-3.0(5.9)	7.1(31.3)	-3.9(-2.9)	35.7(15.2)	1192 (29)
62803	01/04 - 30/06	-9.3(2.4)	7.6(13.7)	-3.4(-1.1)	21.3(32.9)	945 (277)

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

Buoys 41530, 44513, 44621, 44726, 62518, 62552, 62697 and 62803 all showed a significant negative wind speed bias. Buoy 62551 had a significant positive bias, but only produced 35 wind speed reports.

Buoys 41530, 44621, 44624, 44742, 44773, 62518, 62551 (only a limited number of reports) and 62552 all showed a significant wind direction bias. Data from buoy 44513 was totally erratic throughout the period.

## 6. EXPLANATORY NOTES:

1. Buoy owners are as follows,

CA	- Canada	P	- Portugal
F	- France	UK	- United Kingdom
D	- Germany	US	- United States
N	- Norway	IC	- Iceland
NL	- Netherlands	EG	- EGOS
IR	- Ireland	??	- unknown

2. Number of observations received is the number received at Bracknell in the Meteorological Data Bank (Met.DB). If identical reports are received which have originated at different Collecting Centres, the earliest one received at Bracknell is stored in the Met.DB.
3. An observation with valid Time and Date is one that contains no coding errors in the Date/Time group.
4. An acceptable position for an observation is within a distance  $d$  of the last acceptable position where  $d=vt$  and,  
 $v$  = maximum drift speed = 1/4 knot  
 $t$  = time between observations.
5. The percentage of elements present is calculated from the total number of observations received.
6. The delay is (Time of Receipt at Bracknell) - (Time of Observation).
7. The mean number of observations per day is calculated from the total number of observations received divided by the number of days in the period. It therefore includes 'quasi-identical' observations, i.e. those made within a few minutes of one another. For this reason the mean number of hours per day with at least one observation and the % of hour periods without an observation has been included, where an 'hour period' is defined as the period from HH-30 to HH+29 minutes.

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

Unflagged data are those data used in model analyses.

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

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

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

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

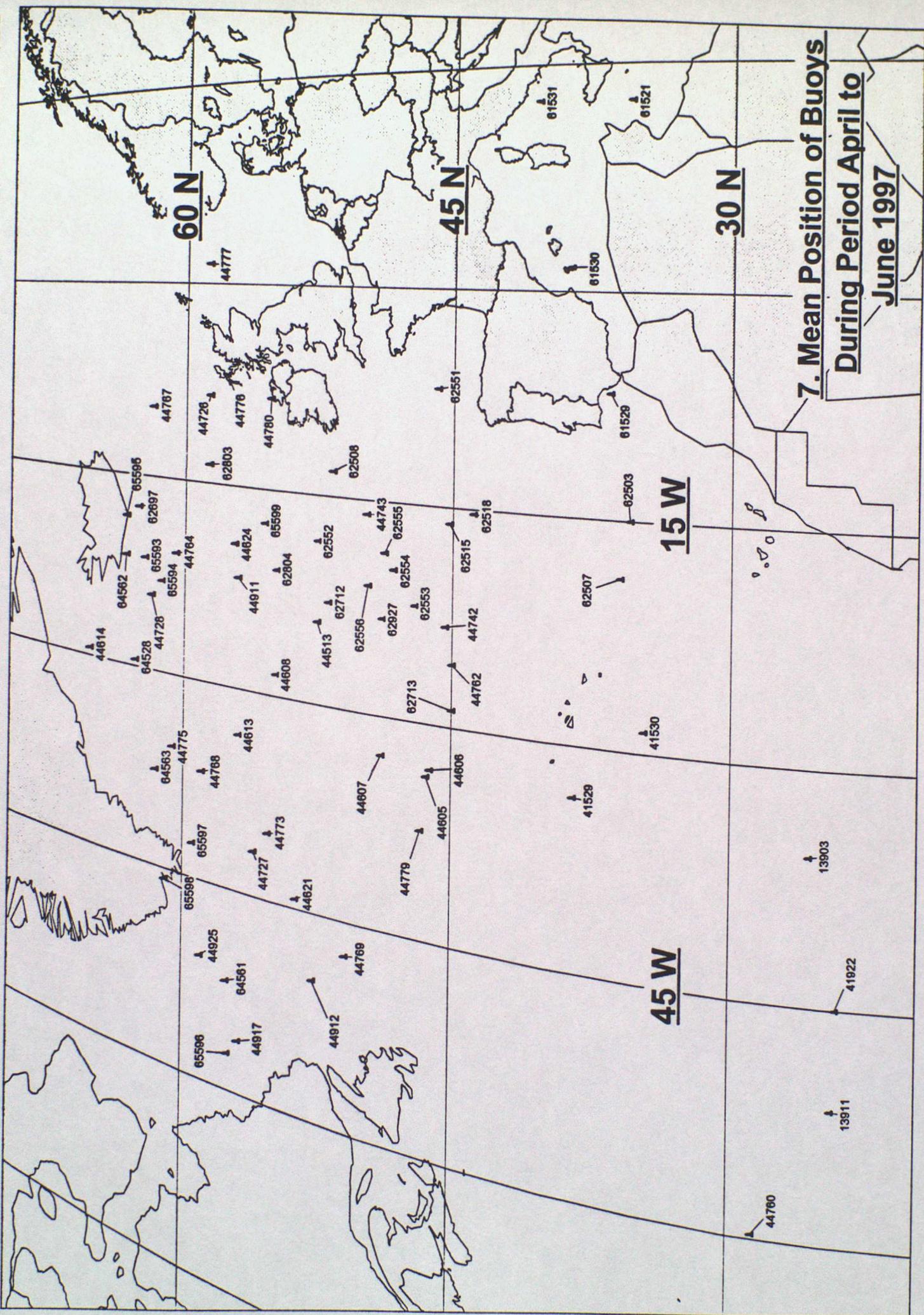
Performance	Availability (mean no. of obs/day)	Timeliness (median delay in mins)
Very Good	> 35	< 60
Good	25 - 35	60 - 119
Satisfactory	15 - 24	120 - 179
Poor	5 - 14	180 - 239
Very Poor	< 5	> 240

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

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

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

**7. Mean Position of Buoys  
During Period April to  
June 1997**



## ANNEX A - TABLE OF STATISTICS

Wmo No./Country	13903/??	13911/??	41529/US
Argos Id.No.	????	????	????
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	25.7	24.4	38.4
Mean Longitude	-35.5	-51.4	-33.4
No. of obs received	940	971	778
% 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	93.6
P. Tendency	29.4	29.4	0.0
Air Temperature	0.0	0.0	93.3
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	29.4	29.4	0.0
Median delay(min)	134	87	81
Number of days	91	91	91
Mean no. of obs/day	10.3	10.7	8.5
No. of hours with obs	860	905	732
Mean no. of hours/day with obs	9.5	9.9	8.0
% of hour periods without an ob	60.4	58.8	66.7
Mean (Ob-Bg)	0.8	0.7	0.3
RMS (Ob-Bg) unflagged data	1.1	1.2	0.9
Mean (Ob-Bg) all data	0.8	0.7	0.3
RMS (Ob-Bg) all data	1.1	1.2	0.9
Revised RMS (Ob-Bg)	1.1	1.2	0.9
% of data flagged	12	13	7
Operating at end of period	YES	YES	YES
Performance Availability	Poor	Poor	Poor
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Satisfactory	Good	Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	41530/US	41922/??	44513/US
Argos Id.No.	????	????	????
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	34.6	24.2	52.5
Mean Longitude	-28.6	-45.0	-24.1
No. of obs received	776	961	941
% 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	95.0	100.0	95.6
P. Tendency	0.0	30.7	0.0
Air Temperature	95.2	0.0	94.9
Wind Speed /Dir.	88.9/90.3	0.0/0.0	94.6/84.9
Sea-surface Temp.	95.0	30.7	96.2
Median delay(Min)	94	106	136
Number of days	91	91	91
Mean no. of obs/day	8.5	10.6	10.3
No. of hours with obs	739	906	859
Mean no. of hours/day with obs	8.1	10.0	9.4
% of hour periods without an ob	66.3	58.3	60.8
Mean (Ob-Bg)	0.3	1.3	0.0
RMS (Ob-Bg)	0.8	1.6	1.0
<b>unflagged data</b>			
Mean (Ob-bg)	0.3	1.3	0.0
RMS (Ob-Bg)	0.8	1.6	1.0
<b>all data</b>			
Revised RMS (Ob-Bg)	0.8	1.6	1.0
% of data flagged	6	14	11
Operating at end of period	YES	YES	YES
Performance Availability	Poor	Poor	Poor
Pressure Quality Acceptable	Good	Suspect	Acceptable
Timeliness	Good	Good	Satisfactory
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44605/F	44606/F	44607/F
Argos Id.No.	27933	27936	27937
Period within area	01/04 - 30/06	01/04 - 08/04	01/04 - 30/06
Mean Latitude	46.4	46.2	48.9
Mean Longitude	-33.6	-33.1	-32.7
No. of obs received	2217	153	2388
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.5	99.3	99.9
% of Present			
Pressure	100.0	72.0	100.0
P. Tendency	52.6	60.1	52.3
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.	64.5	60.1	70.1
Median delay(min)	55	76	53
Number of days	91	8	91
Mean no. of obs/day	24.4	19.1	26.2
No. of hours with obs	1610	125	1681
Mean no. of hours/day with obs	17.7	15.6	18.5
% of hour periods without an ob	26.3	35.0	22.9
Mean (Ob-Bg)	0.4	0.3	0.4
RMS (Ob-Bg)	1.1	0.9	1.2
<b>unflagged data</b>			
Mean (Ob-bg)	0.1	0.3	0.4
RMS (Ob-Bg)	23.0	0.9	1.2
<b>all data</b>			
Revised RMS (Ob-Bg)	2.5	0.9	1.2
% of data flagged	43	28	42
Operating at end of period	YES	NO	YES
Performance			
Availability	Satisfactory	Satisfactory	Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44608/F	44613/UK	44614/UK
Argos Id.No.	27938	3306	1256
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 25/04
Mean Latitude	54.8	56.9	65.6
Mean Longitude	-28.4	-33.4	-29.4
No. of obs received	2562	2457	1046
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.9	98.8	99.7
% of Present Pressure	100.0	90.6	95.6
P. Tendency	60.5	82.3	80.0
Air Temperature	0.0	90.4	51.9
Wind Speed /Dir.	0.0/0.0	4.9/40.5	0.0/0.0
Sea-surface Temp.	80.1	91.4	96.3
Median delay(Min)	53	27	31
Number of days	91	91	25
Mean no. of obs/day	28.2	27.0	41.8
No. of hours with obs	1751	1347	473
Mean no. of hours/day with obs	19.2	14.8	18.9
% of hour periods without an ob	20.0	38.3	21.3
Mean (Ob-Bg)	0.6	0.1	0.2
RMS (Ob-Bg)	1.2	1.1	1.4
unflagged data			
Mean (Ob-bg)	0.5	-0.2	0.1
RMS (Ob-Bg)	1.5	10.2	4.2
all data			
Revised RMS (Ob-Bg)	1.2	1.1	1.4
% of data flagged	43	55	63
Operating at end of period	YES	YES	NO
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Suspect	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44621/??	44624/UK	44726/UK
Argos Id.No.	????	2958	2955
Period within area	12/06 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	53.6	57.2	58.7
Mean Longitude	-44.3	-19.3	-8.4
No. of obs received	267	3507	3312
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.8	99.7
% of Present			
Pressure	95.1	98.1	98.1
P. Tendency	93.3	85.2	85.1
Air Temperature	96.3	3.3	97.7
Wind Speed/Dir.	94.0/94.8	67.5/67.2	93.7/68.8
Sea-surface Temp.	95.9	98.5	98.1
Median delay(min)	96	25	26
Number of days	19	91	91
Mean no. of obs/day	14.1	38.5	36.4
No. of hours with obs	226	1663	1630
Mean no. of hours/day with obs	11.9	18.3	17.9
% of hour periods without an ob	50.4	23.8	25.4
Mean (Ob-Bg)	0.0	0.4	0.4
RMS (Ob-Bg)	1.1	1.2	1.1
<b>unflagged data</b>			
Mean (Ob-bg)	0.0	0.2	0.1
RMS (Ob-Bg)	1.1	4.0	4.2
<b>all data</b>			
Revised RMS (Ob-Bg)	1.1	1.2	1.1
% of data flagged	22	62	60
Operating at end of period	YES	YES	YES
Performance			
Availability	Poor	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44727/UK	44728/UK	44742/UK
Argos Id.No.	3098	1254	26753
Period within area	16/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	56.0	62.0	45.4
Mean Longitude	-41.7	-24.2	-23.2
No. of obs received	4412	3634	1565
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.7	99.9	98.8
% of Present			
Pressure	97.8	97.4	98.0
P. Tendency	93.0	85.2	92.3
Air Temperature	97.9	97.6	97.8
Wind Speed /Dir.	0.0/0.0	0.0/0.0	95.7/60.6
Sea-surface Temp.	97.8	97.7	98.0
Median delay(Min)	24	26	23
Number of days	76	91	91
Mean no. of obs/day	58.1	39.9	17.2
No. of hours with obs	1570	1719	1104
Mean no. of hours/day with obs	20.7	18.9	12.1
% of hour periods without an ob	13.8	21.3	49.6
Mean (Ob-Bg)	0.2	0.2	0.0
RMS (Ob-Bg)	1.0	1.2	1.0
<b>unflagged data</b>			
Mean (Ob-bg)	0.0	-0.1	0.0
RMS (Ob-Bg)	3.8	6.0	1.0
<b>all data</b>			
Revised RMS (Ob-Bg)	1.1	1.2	1.0
% of data flagged	72	62	37
Operating at end of period	YES	YES	YES
Performance			
Availability	Very Good	Very Good	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44743/UK	44760/UK	44762/UK
Argos Id.No.	1248	2947	26754
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	49.8	28.6	45.0
Mean Longitude	-16.0	-59.7	-25.7
No. of obs received	2154	1298	1599
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.2	100.0	99.7
% of Present Pressure	98.6	99.5	97.6
P. Tendency	38.4	98.4	92.3
Air Temperature	0.0	99.4	98.3
Wind Speed/Dir.	0.0/0.0	0.0/0.0	95.9/59.7
Sea-surface Temp.	98.8	99.6	0.0
Median delay(min)	24	34	23
Number of days	91	91	91
Mean no. of obs/day	23.7	14.3	17.6
No. of hours with obs	1246	1164	1126
Mean no. of hours/day with obs	13.7	12.8	12.4
% of hour periods without an ob	42.9	46.7	48.3
Mean (Ob-Bg)	0.3	0.2	0.2
RMS (Ob-Bg)	1.0	0.9	1.0
unflagged data			
Mean (Ob-bg)	-0.3	-0.3	0.2
RMS (Ob-Bg)	8.1	6.7	1.0
all data			
Revised RMS (Ob-Bg)	1.0	1.0	1.0
% of data flagged	52	11	38
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Poor	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	44764/UK	44767/UK	44768/UK
Argos Id. No.	1259	3013	26746
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	60.6	62.0	59.0
Mean Longitude	-20.7	-9.6	-36.8
No. of obs received	3628	5494	2697
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.8	99.8	99.7
% of Present Pressure	3.9	37.5	95.8
P. Tendency	3.3	37.1	88.8
Air Temperature	98.9	99.3	13.8
Wind Speed /Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	99.3	99.5	96.8
Median delay(Min)	26	27	25
Number of days	91	91	91
Mean no. of obs/day	39.9	60.4	29.6
No. of hours with obs	1698	1886	1551
Mean no. of hours/day with obs	18.7	20.7	17.0
% of hour periods without an ob	22.1	13.8	29.2
Mean (Ob-Bg)	0.5	-0.2	0.4
RMS (Ob-Bg)	1.0	2.7	1.1
<b>unflagged data</b>			
Mean (Ob-bg)	0.4	-0.8	0.4
RMS (Ob-Bg)	1.3	10.1	1.1
<b>all data</b>			
Revised RMS (Ob-Bg)	1.0	7.8	1.1
% of data flagged	68	91	54
Operating at end of period	YES	YES	YES
Performance Availability	Very Good	Very Good	Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44769/UK	44773/UK	44775/UK
Argos Id.No.	26749	26751	26741
Period within area	17/04 - 30/06	15/05 - 30/06	01/04 - 30/06
Mean Latitude	50.8	55.2	60.7
Mean Longitude	-47.4	-40.1	-35.5
No. of obs received	1755	1262	2747
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.5	100.0	99.9
% of Present Pressure	97.6	96.4	96.0
P. Tendency	92.6	89.9	90.6
Air Temperature	97.9	96.9	96.0
Wind Speed/Dir.	0.0/0.0	92.1/95.5	0.0/0.0
Sea-surface Temp.	98.3	97.3	96.5
Median delay(min)	22	25	25
Number of days	75	47	91
Mean no. of obs/day	23.4	26.9	30.2
No. of hours with obs	1112	779	1579
Mean no. of hours/day with obs	14.8	16.6	17.4
% of hour periods without an ob	38.3	30.8	27.5
Mean (Ob-Bg)	0.0	0.1	0.4
RMS (Ob-Bg)	1.2	1.2	1.1
<b>unflagged data</b>			
Mean (Ob-bg)	0.0	0.1	0.4
RMS (Ob-Bg)	1.2	3.2	1.1
<b>all data</b>			
Revised RMS (Ob-Bg)	1.2	1.2	1.1
% of data flagged	47	51	54
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44776/UK	44777/UK	44779/UK
Argos Id.No.	2957	1249	3186
Period within area	01/04 - 10/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	57.9	58.8	46.7
Mean Longitude	-6.8	1.5	-37.4
No. of obs received	1394	2935	2370
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable positions	99.5	76.5	98.6
% of Present			
Pressure	98.6	99.2	98.0
P. Tendency	80.9	85.0	82.7
Air Temperature	0.6	0.0	0.0
Wind Speed /Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	99.2	99.2	80.9
Median delay(Min)	24	27	24
Number of days	71	91	91
Mean no. of obs/day	19.6	32.3	26.0
No. of hours with obs	815	1483	1350
Mean no. of hours/day with obs	11.5	16.3	14.8
% of hour periods without an ob	52.1	32.1	38.3
Mean (Ob-Bg)	0.1	0.2	0.3
RMS (Ob-Bg)	1.1	1.1	1.3
unflagged data			
Mean (Ob-bg)	-0.1	0.1	-0.1
RMS (Ob-Bg)	4.4	3.8	7.1
all data			
Revised RMS (Ob-Bg)	1.1	1.1	1.3
% of data flagged	49	60	55
Operating at end of period	NO	YES	YES
Performance			
Availability	Satisfactory	Good	Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44780/UK	44911/US	44912/US
Argos Id.No.	1257	466	????
Period within area	01/04 - 09/04	01/04 - 30/06	01/04 - 30/06
Mean Latitude	55.1	57.0	52.6
Mean Longitude	-8.0	-21.8	-49.8
No. of obs received	134	590	413
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	99.8	99.8
% of Present			
Pressure	97.0	85.4	89.6
P. Tendency	29.9	0.0	0.0
Air Temperature	95.5	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	97.8	0.0	100.0
Median delay(min)	23	538	80
Number of days	9	91	91
Mean no. of obs/day	14.9	6.5	4.5
No. of hours with obs	100	521	373
Mean no. of hours/day with obs	11.1	5.7	4.1
% of hour periods without an ob	53.8	76.3	82.9
Mean (Ob-Bg)	0.4	0.8	0.8
RMS (Ob-Bg)	1.0	1.2	1.5
unflagged data			
Mean (Ob-bg)	0.4	0.8	1.0
RMS (Ob-Bg)	1.0	1.2	1.9
all data			
Revised RMS (Ob-Bg)	1.0	1.2	1.9
% of data flagged	34	6	14
Operating at end of period	NO	YES	YES
Performance			
Availability	Satisfactory	Poor	Very Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Very Good	Very Poor	Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	44917/US	44925/??	61521/US
Argos Id.No.	????	????	????
Period within area	01/04 - 30/04	01/04 - 30/06	01/04 - 26/04
Mean Latitude	56.8	59.0	35.5
Mean Longitude	-56.1	-50.7	12.6
No. of obs received	320	365	553
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	98.8	95.9	100.0
% of Present Pressure	98.1	93.4	98.4
P. Tendency	0.0	0.0	0.0
Air Temperature	0.0	0.0	96.9
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	51.3	100.0	0.0
Median delay(min)	86	112	302
Number of days	30	91	26
Mean no. of obs/day	10.7	4.0	21.3
No. of hours with obs	258	338	426
Mean no. of hours/day with obs	8.6	3.7	16.4
% of hour periods without an ob	64.2	84.6	31.7
Mean (Ob-Bg)	1.6	1.0	0.2
RMS (Ob-Bg)	2.3	1.4	1.2
<b>unflagged data</b>			
Mean (Ob-bg)	1.6	1.1	-1.3
RMS (Ob-Bg)	2.5	1.8	13.8
<b>all data</b>			
Revised RMS (Ob-Bg)	2.5	1.4	1.2
% of data flagged	25	10	23
Operating at end of period	YES	YES	NO
Performance Availability	Poor	Very Poor	Satisfactory
Pressure Quality	Suspect	Suspect	Acceptable
Timeliness	Good	Good	Very Poor
Comments			

**ANNEX A - Cont.**

Wmo No./Country	61529/??	61530/??	61531/??
Argos Id.No.	????	????	????
Period within area	01/04 - 30/04	01/04 - 14/06	01/04 - 20/05
Mean Latitude	36.5	38.7	40.5
Mean Longitude	-6.7	1.6	12.6
No. of obs received	965	2336	1753
% 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	98.3	98.9	97.9
P. Tendency	0.0	0.0	0.0
Air Temperature	98.5	78.6	98.5
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	98.7	75.4	99.1
Median delay(min)	251	247	237
Number of days	30	75	50
Mean no. of obs/day	32.2	31.1	35.1
No. of hours with obs	720	1792	1200
Mean no. of hours/day with obs	24.0	23.9	24.0
% of hour periods without an ob	0.0	0.4	0.0
Mean (Ob-Bg)	-0.5	-0.5	-0.6
RMS (Ob-Bg) unflagged data	1.0	1.1	1.2
Mean (Ob-bg)	-0.6	-0.5	-0.6
RMS (Ob-Bg) all data	1.1	1.1	1.2
Revised RMS (Ob-Bg)	1.1	1.1	1.2
% of data flagged	24	22	29
Operating at end of period	NO	NO	NO
Performance			
Availability	Good	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Very Poor	Very Poor	Poor
Comments			

## ANNEX A - Cont.

Wmo No./Country	62503/F	62507/F	62508/F
Argos Id.No.	14427	5793	????
Period within area	01/04 - 30/06	01/04 - 22/05	01/04 - 07/05
Mean Latitude	35.2	35.9	51.7
Mean Longitude	-15.0	-18.8	-13.2
No. of obs received	1718	1033	780
% 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	97.0	99.9	100.0
P. Tendency	89.8	60.4	63.1
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	96.8	60.5	0.0
Median delay(min)	32	65	61
Number of days	91	52	37
Mean no. of obs/day	18.9	19.9	21.1
No. of hours with obs	1318	811	628
Mean no. of hours/day with obs	14.5	15.6	17.0
% of hour periods without an ob	39.6	35.0	29.2
Mean (Ob-Bg)	0.0	0.4	0.6
RMS (Ob-Bg)	0.8	1.1	1.0
unflagged data			
Mean (Ob-bg)	0.0	0.4	0.3
RMS (Ob-Bg)	0.8	1.1	7.5
all data			
Revised RMS (Ob-Bg)	0.8	1.1	1.0
% of data flagged	32	28	25
Operating at end of period	YES	NO	NO
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Very Good	Good	Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	62515/F	62518/F	62551/??
Argos Id.No.	14426	????	????
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 03/04
Mean Latitude	45.7	43.9	45.9
Mean Longitude	-16.1	-15.3	-6.9
No. of obs received	1891	2399	43
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	100.0	100.0	95.3
% of Present			
Pressure	100.0	24.7	100.0
P. Tendency	63.7	0.0	58.1
Air Temperature	0.0	0.0	0.0
Wind Speed/Dir.	0.0/0.0	59.8/73.9	58.1/48.8
Sea-surface Temp.	63.7	74.6	58.1
Median delay(min)	65	174	194
Number of days	91	91	3
Mean no. of obs/day	20.8	26.4	14.3
No. of hours with obs	1508	2017	42
Mean no. of hours/day with obs	16.6	22.2	14.0
% of hour periods without an ob	30.8	7.5	41.7
Mean (Ob-Bg)	0.3	-0.5	0.6
RMS (Ob-Bg)	0.9	1.8	0.9
unflagged data			
Mean (Ob-bg)	0.3	-0.6	0.5
RMS (Ob-Bg)	0.9	2.1	0.9
all data			
Revised RMS (Ob-Bg)	0.9	2.1	0.9
% of data flagged	26	11	14
Operating at end of period	YES	YES	NO
Performance			
Availability	Satisfactory	Good	Poor
Pressure Quality	Acceptable	Suspect	Suspect
Timeliness	Good	Satisfactory	Poor
Comments			

## ANNEX A - Cont.

Wmo No./Country	62552/??	62553/??	62554/??
Argos Id.No.	????	????	????
Period within area	15/04 - 30/06	15/04 - 30/06	15/04 - 30/06
Mean Latitude	52.5	47.1	48.3
Mean Longitude	-18.3	-22.0	-19.7
No. of obs received	1858	1652	1580
% 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	95.5	96.8	95.8
P. Tendency	87.9	90.3	86.8
Air Temperature	68.6	66.4	0.0
Wind Speed/Dir.	95.3/94.5	96.8/96.1	0.0/0.0
Sea-surface Temp.	96.7	97.6	96.4
Median delay(min)	29	24	28
Number of days	77	77	77
Mean no. of obs/day	24.1	21.5	20.5
No. of hours with obs	1272	1208	1155
Mean no. of hours/day with obs	16.5	15.7	15.0
% of hour periods without an ob	31.3	34.6	37.5
Mean (Ob-Bg)	-0.1	0.3	0.3
RMS (Ob-Bg) unflagged data	1.3	1.0	1.0
Mean (Ob-bg)	-0.2	0.0	0.3
RMS (Ob-Bg) all data	2.9	3.8	1.0
Revised RMS (Ob-Bg)	1.3	1.0	1.0
% of data flagged	43	39	38
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Satisfactory	Satisfactory
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	62555/??	62556/??	62697/UK
Argos Id.No.	????	????	2959
Period within area	14/04 - 30/06	14/04 - 30/06	01/04 - 30/06
Mean Latitude	48.8	49.7	62.8
Mean Longitude	-18.6	-21.0	-17.5
No. of obs received	1674	1763	3409
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.9	99.9	97.0
% of Present Pressure	100.0	99.9	98.2
P. Tendency	63.3	65.4	83.5
Air Temperature	0.0	0.0	98.0
Wind Speed/Dir.	0.0/0.0	0.0/0.0	68.7/45.6
Sea-surface Temp.	63.4	65.5	98.2
Median delay(min)	65	67	26
Number of days	78	78	91
Mean no. of obs/day	21.5	22.6	37.5
No. of hours with obs	1322	1372	1645
Mean no. of hours/day with obs	16.9	17.6	18.1
% of hour periods without an ob	29.6	26.7	24.6
Mean (Ob-Bg)	0.1	0.3	0.1
RMS (Ob-Bg)	0.9	0.9	1.3
<b>unflagged data</b>			
Mean (Ob-bg)	0.1	0.2	-0.6
RMS (Ob-Bg)	0.9	0.9	3.2
<b>all data</b>			
Revised RMS (Ob-Bg)	0.9	0.9	2.3
% of data flagged	33	34	67
Operating at end of period	YES	YES	YES
Performance Availability	Satisfactory	Satisfactory	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Good	Good	Very Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	62712/UK	62713/UK	62803/UK
Argos Id.No.	3188	3185	3209
Period within area	01/04 - 30/06	01/04 - 30/06	01/04 - 30/06
Mean Latitude	51.9	45.0	58.7
Mean Longitude	-22.6	-28.8	-13.6
No. of obs received	2075	2348	5329
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.5	99.4	99.7
% of Present			
Pressure	97.9	97.7	98.6
P. Tendency	0.0	81.5	94.4
Air Temperature	0.0	0.0	98.7
Wind Speed/Dir.	23.2/0.0	0.0/0.0	27.7/56.1
Sea-surface Temp.	61.7	84.3	98.8
Median delay(min)	137	25	27
Number of days	91	91	91
Mean no. of obs/day	22.8	25.8	58.6
No. of hours with obs	1401	1350	1821
Mean no. of hours/day with obs	15.4	14.8	20.0
% of hour periods without an ob	35.8	38.3	16.7
Mean (Ob-Bg)	0.3	0.2	0.3
RMS (Ob-Bg)	1.0	1.0	1.1
<b>unflagged data</b>			
Mean (Ob-bg)	0.3	0.2	0.2
RMS (Ob-Bg)	1.0	2.2	3.8
<b>all data</b>			
Revised RMS (Ob-Bg)	1.0	1.1	1.1
% of data flagged	42	54	72
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Good	Very Good
Pressure Quality	Acceptable	Acceptable	Acceptable
Timeliness	Satisfactory	Very Good	Very Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	62804/UK	62927/??	64528/NL
Argos Id.No.	26743	????	4274
Period within area	01/04 - 30/06	01/04 - 30/06	30/05 - 30/06
Mean Latitude	54.8	48.9	62.9
Mean Longitude	-20.8	-23.2	-29.5
No. of obs received	2205	362	1840
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.9	100.0	99.9
% of Present Pressure			
P. Tendency	96.8	95.6	98.5
Air Temperature	90.8	0.0	75.2
Wind Speed/Dir.	96.6	0.0	98.1
Sea-surface Temp.	0.0/0.0	0.0/0.0	0.0/0.0
Median delay(min)	0.0	100.0	65.7
Number of days	25	109	30
Mean no. of obs/day	91	91	32
No. of hours with obs	24.2	4.0	57.5
Mean no. of hours/day with obs	1377	335	693
% of hour periods without an ob	15.1	3.7	21.7
Mean (Ob-Bg)	37.1	84.6	9.6
RMS (Ob-Bg)	0.1	0.7	0.0
unflagged data	0.9	1.1	1.1
Mean (Ob-bg)			
RMS (Ob-Bg)	0.1	0.8	-0.1
all data	0.9	1.1	1.5
Revised RMS (Ob-Bg)			
% of data flagged	48	9	71
Operating at end of period	YES	YES	YES
Performance			
Availability	Satisfactory	Very Poor	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Good	Very Good
Comments			

## ANNEX A - Cont.

Wmo No./Country	64561/UK	64562/D	64563/N
Argos Id.No.	1247	9307	3679
Period within area	01/04 - 30/06	01/04 - 14/04	09/04 - 30/06
Mean Latitude	57.5	63.5	61.7
Mean Longitude	-51.9	-21.4	-37.6
No. of obs received	3000	719	4835
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	99.4	84.1	99.0
% of Present			
Pressure	96.9	97.2	96.8
P. Tendency	82.7	77.9	74.1
Air Temperature	2.6	97.2	96.4
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	97.2	72.6	62.4
Median delay(min)	25	27	26
Number of days	91	14	83
Mean no. of obs/day	33.0	51.4	58.3
No. of hours with obs	1622	265	1682
Mean no. of hours/day with obs	17.8	18.9	20.3
% of hour periods without an ob	25.8	21.3	15.4
Mean (Ob-Bg)	0.2	0.1	-0.1
RMS (Ob-Bg)	1.2	1.8	1.1
unflagged data			
Mean (Ob-bg)	0.0	-1.1	-0.2
RMS (Ob-Bg)	5.3	3.6	2.4
all data			
Revised RMS (Ob-Bg)	1.3	3.6	1.1
% of data flagged	59	75	72
Operating at end of period	YES	NO	YES
Performance			
Availability	Good	Very Good	Very Good
Pressure Quality	Acceptable	Suspect	Acceptable
Timeliness	Very Good	Very Good	Very Good
Comments			

**ANNEX A - Cont.**

Wmo No./Country	65593/IR	65594/UK	65595/IR
Argos Id.No.	3039	1252	3038
Period within area	01/04 - 29/06	01/04 - 30/06	01/04 - 09/04
Mean Latitude	62.4	61.4	63.5
Mean Longitude	-21.4	-23.0	-18.3
No. of obs received	1668	5722	408
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	89.0	99.9	100.0
% of Present Pressure	92.4	99.1	98.0
P. Tendency	75.2	95.4	96.1
Air Temperature	91.2	99.2	97.5
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	58.9	99.3	51.0
Median delay(min)	30	26	29
Number of days	90	91	9
Mean no. of obs/day	18.5	62.9	45.3
No. of hours with obs	826	1881	152
Mean no. of hours/day with obs	9.2	20.7	16.9
% of hour periods without an ob	61.7	13.8	29.6
Mean (Ob-Bg)	-0.4	0.3	-1.9
RMS (Ob-Bg)	1.4	1.2	2.5
<b>unflagged data</b>			
Mean (Ob-bg)	-1.5	-0.1	-2.2
RMS (Ob-Bg)	10.8	6.0	2.7
<b>all data</b>			
Revised RMS (Ob-Bg)	2.2	1.2	2.7
% of data flagged	60	73	69
Operating at end of period	NO	YES	NO
Performance			
Availability	Satisfactory	Very Good	Very Good
Pressure Quality	Acceptable	Acceptable	Suspect
Timeliness	Very Good	Very Good	Very Good
Comments			

## ANNEX A - Cont.

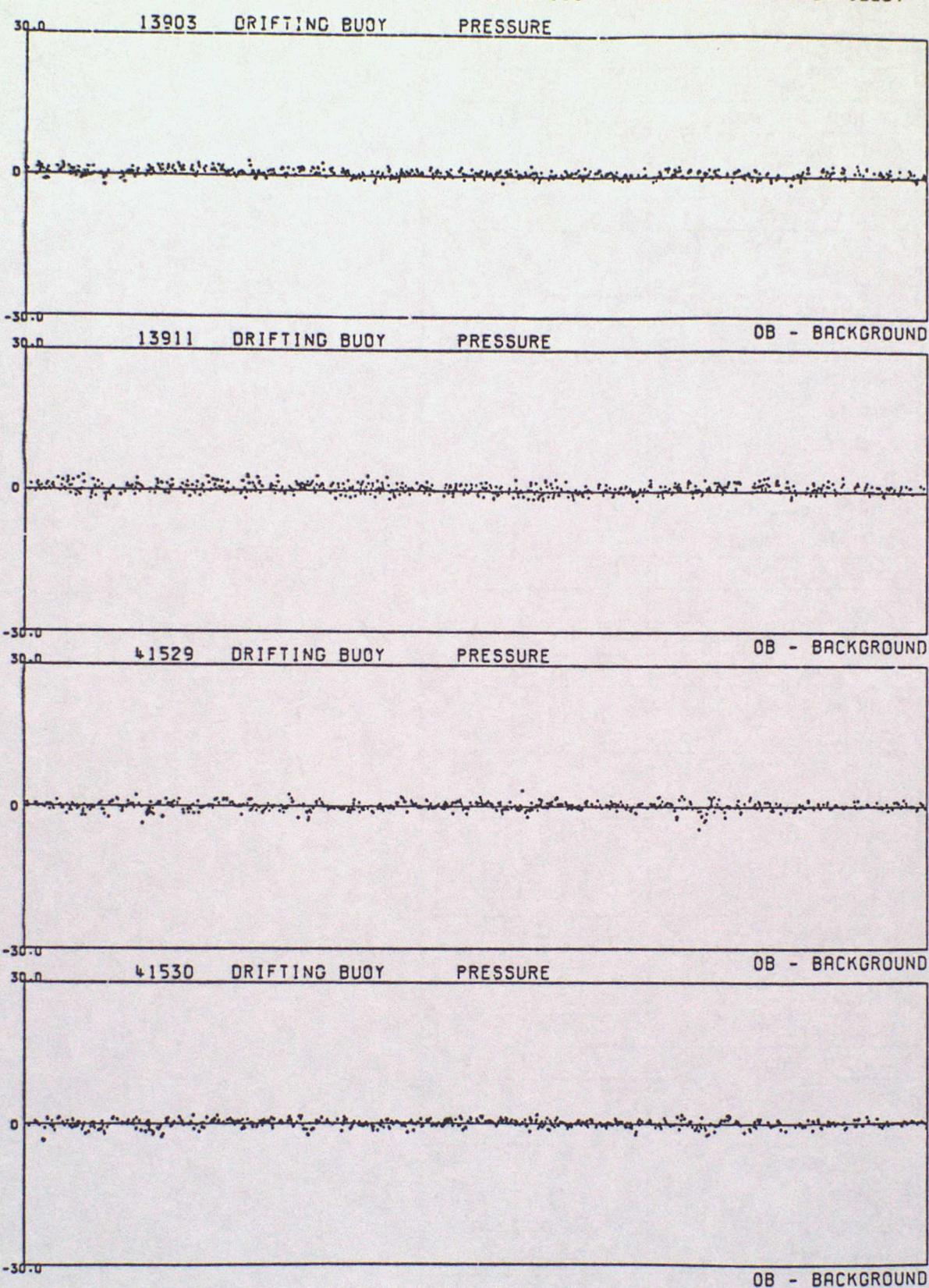
Wmo No./Country	65596/NL	65597/NL	65598/N
Argos Id.No.	3036	4273	3678
Period within area	01/04 - 30/06	09/04 - 30/06	01/04 - 30/06
Mean Latitude	57.4	59.5	61.1
Mean Longitude	-57.3	-42.4	-45.8
No. of obs received	2679	4461	4735
% of obs with valid Time and Date	100.0	100.0	100.0
% of obs with acceptable position	96.1	99.4	91.5
% of Present Pressure	91.8	96.7	94.7
P. Tendency	54.9	73.5	88.3
Air Temperature	90.5	97.0	93.6
Wind Speed/Dir.	0.0/0.0	0.0/0.0	0.0/0.0
Sea-surface Temp.	54.7	62.0	62.2
Median delay(min)	30	26	27
Number of days	91	83	91
Mean no. of obs/day	29.4	53.7	52.0
No. of hours with obs	1359	1596	1812
Mean no. of hours/day with obs	14.9	17.5	19.9
% of hour periods without an ob	37.9	27.1	17.1
Mean (Ob-Bg)	-0.2	0.0	-0.3
RMS (Ob-Bg)	1.3	1.1	1.3
<b>unflagged data</b>			
Mean (Ob-bg)	-0.2	0.0	-0.2
RMS (Ob-Bg)	2.4	2.3	3.3
<b>all data</b>			
Revised RMS (Ob-Bg)	1.4	1.1	2.0
% of data flagged	60	72	71
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.

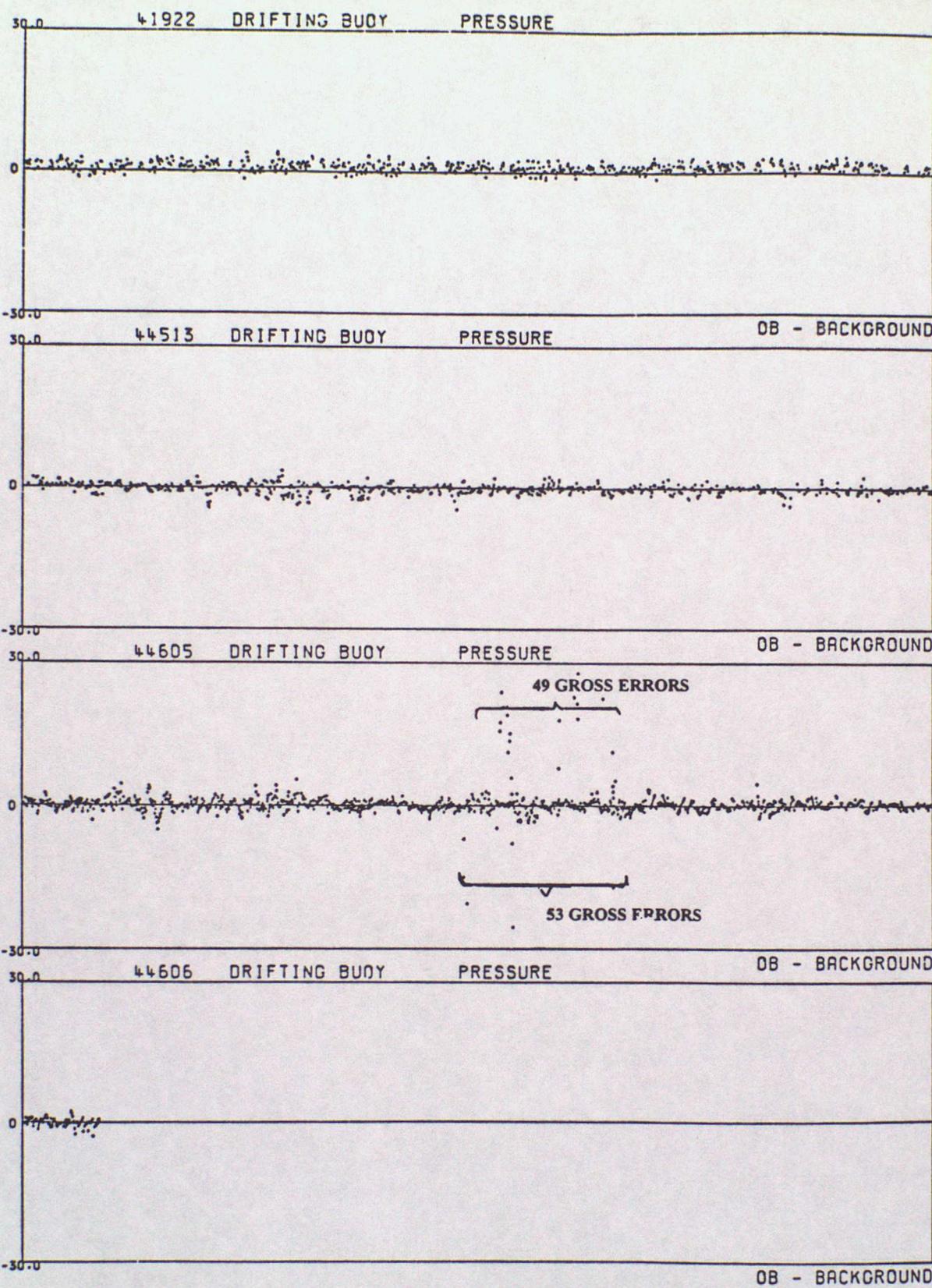
Wmo No./Country	65599/D
Argos Id.No.	9308
Period within area	01/04 - 17/04
Mean Latitude	55.5
Mean Longitude	-17.5
No. of obs received	721
% of obs with valid Time and Date	100.0
% of obs with acceptable position	100.0
% of Present	
Pressure	85.6
P. Tendency	87.1
Air Temperature	86.1
Wind Speed/Dir.	0.0/0.0
Sea-surface Temp.	54.1
Median delay(min)	27
Number of days	17
Mean no. of obs/day	42.4
No. of hours with obs	270
Mean no. of hours/day with obs	15.9
% of hour periods without an ob	33.8
Mean (Ob-Bg)	0.4
RMS (Ob-Bg)	1.0
unflagged data	
Mean (Ob-bg)	0.2
RMS (Ob-Bg)	4.0
all data	
Revised RMS (Ob-Bg)	1.0
% of data flagged	72
Operating at end of period	NO
Performance	
Availability	Very Good
Pressure Quality	Acceptable
Timeliness	Very Good
Comments	

## **ANNEX B - TIME SERIES PLOTS OF PRESSURE**

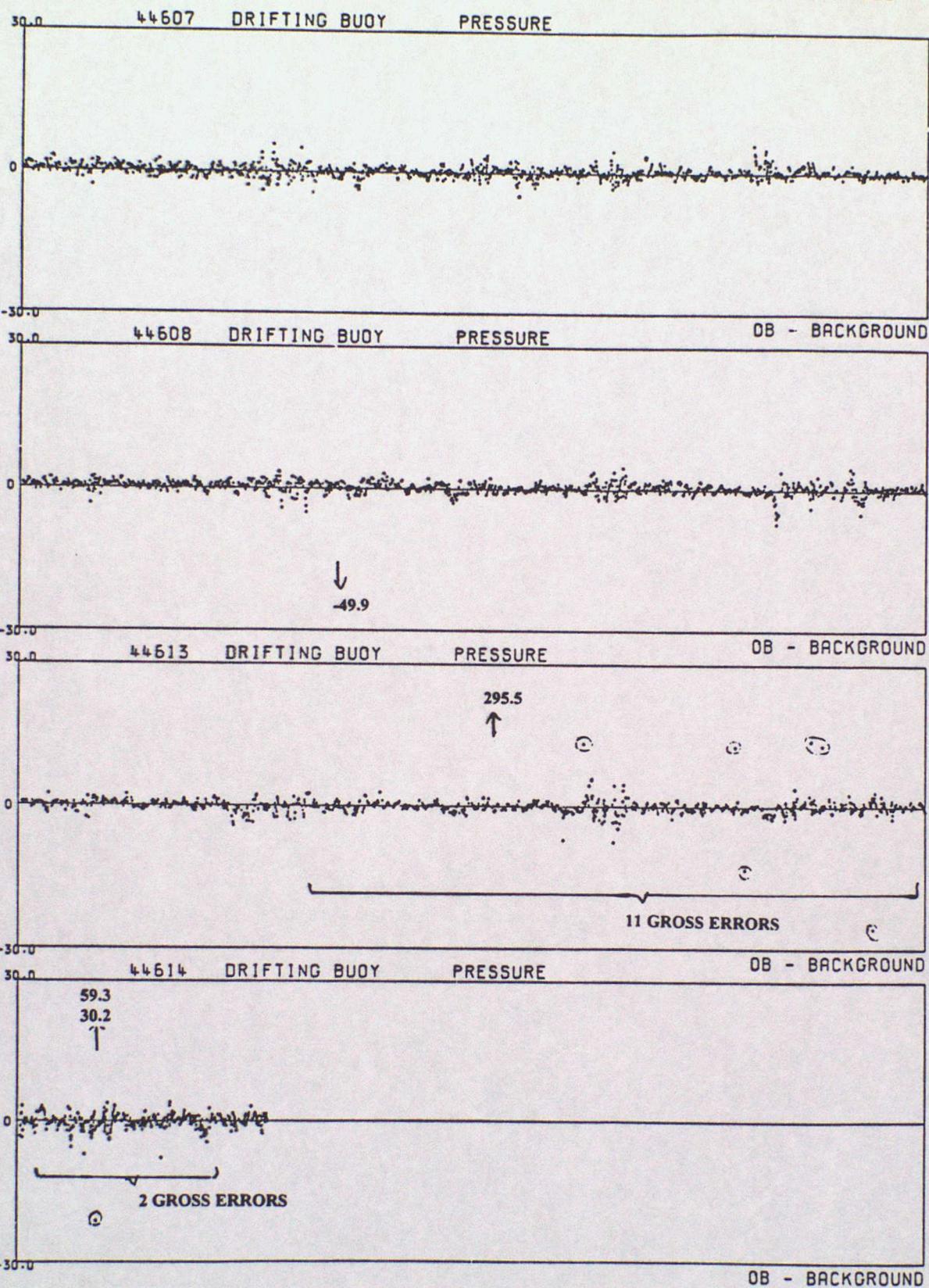
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



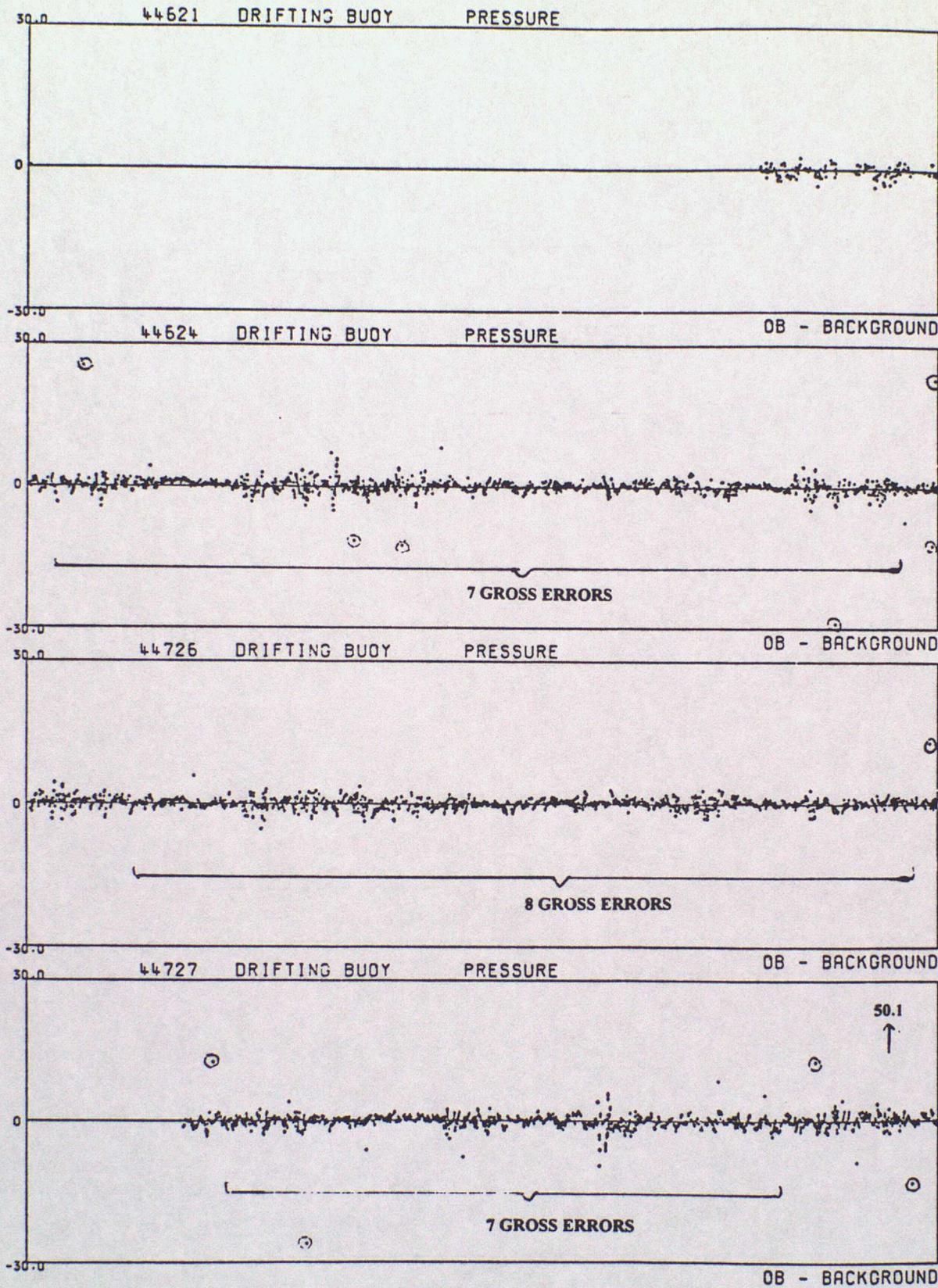
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



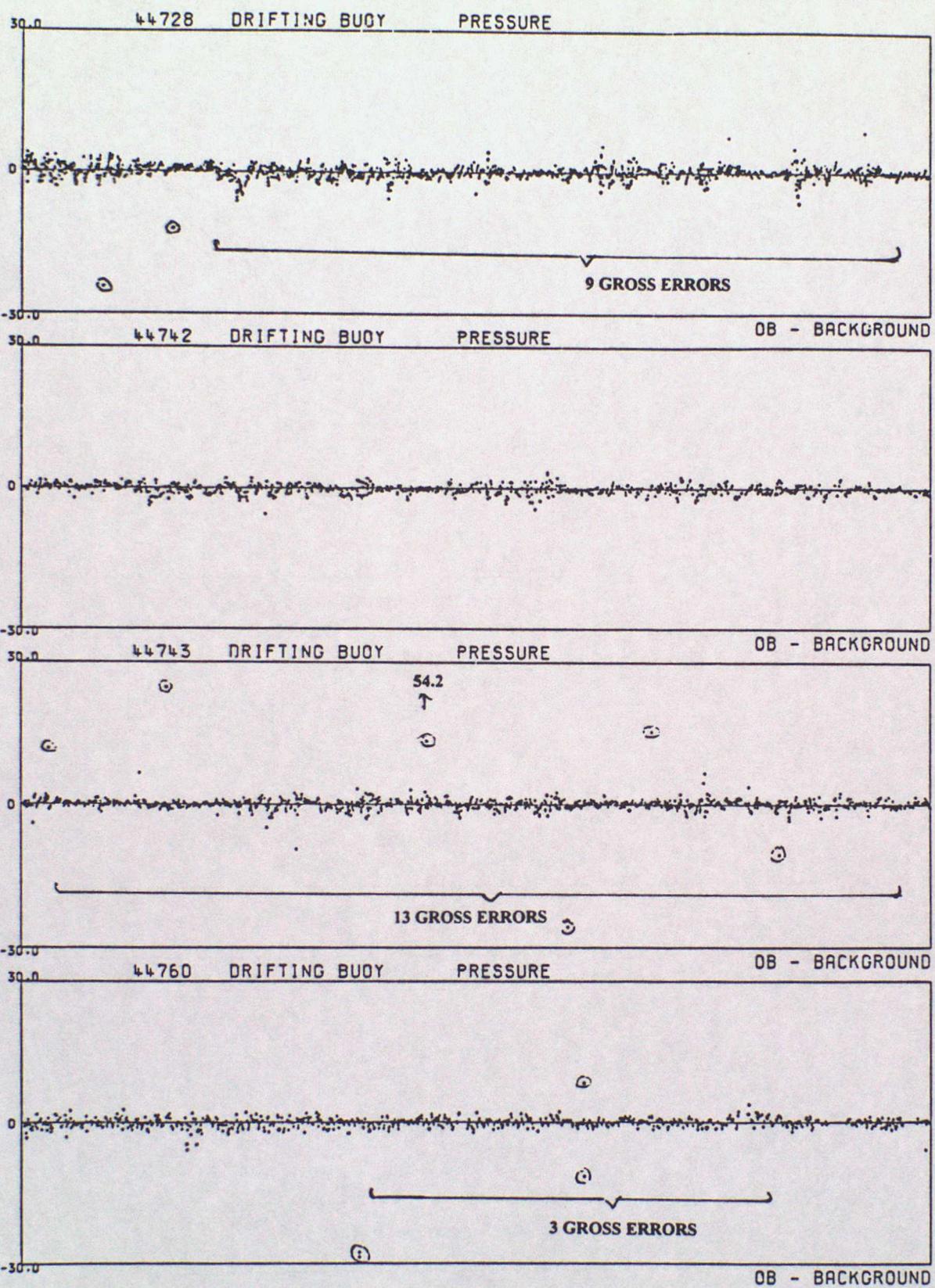
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



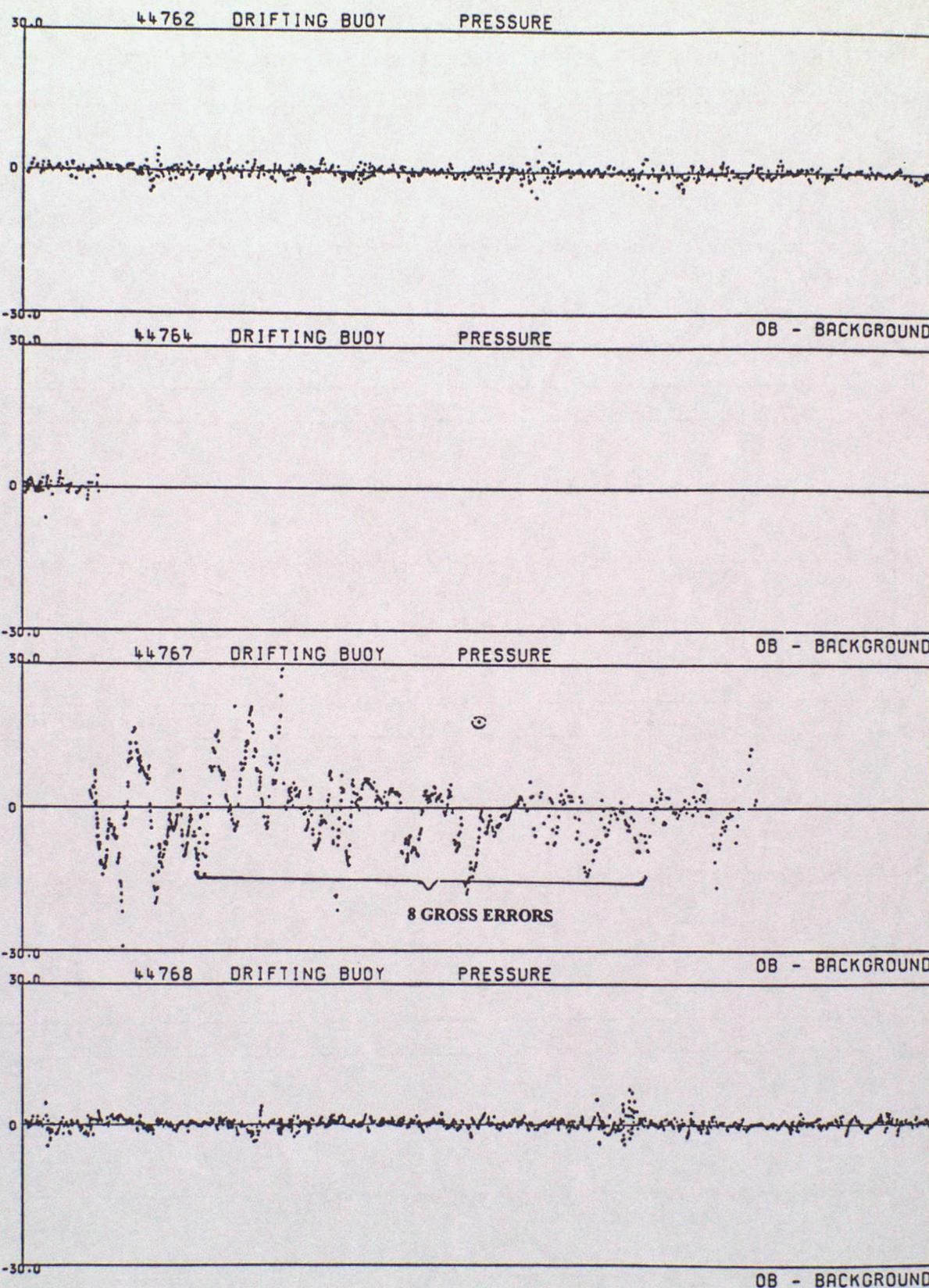
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



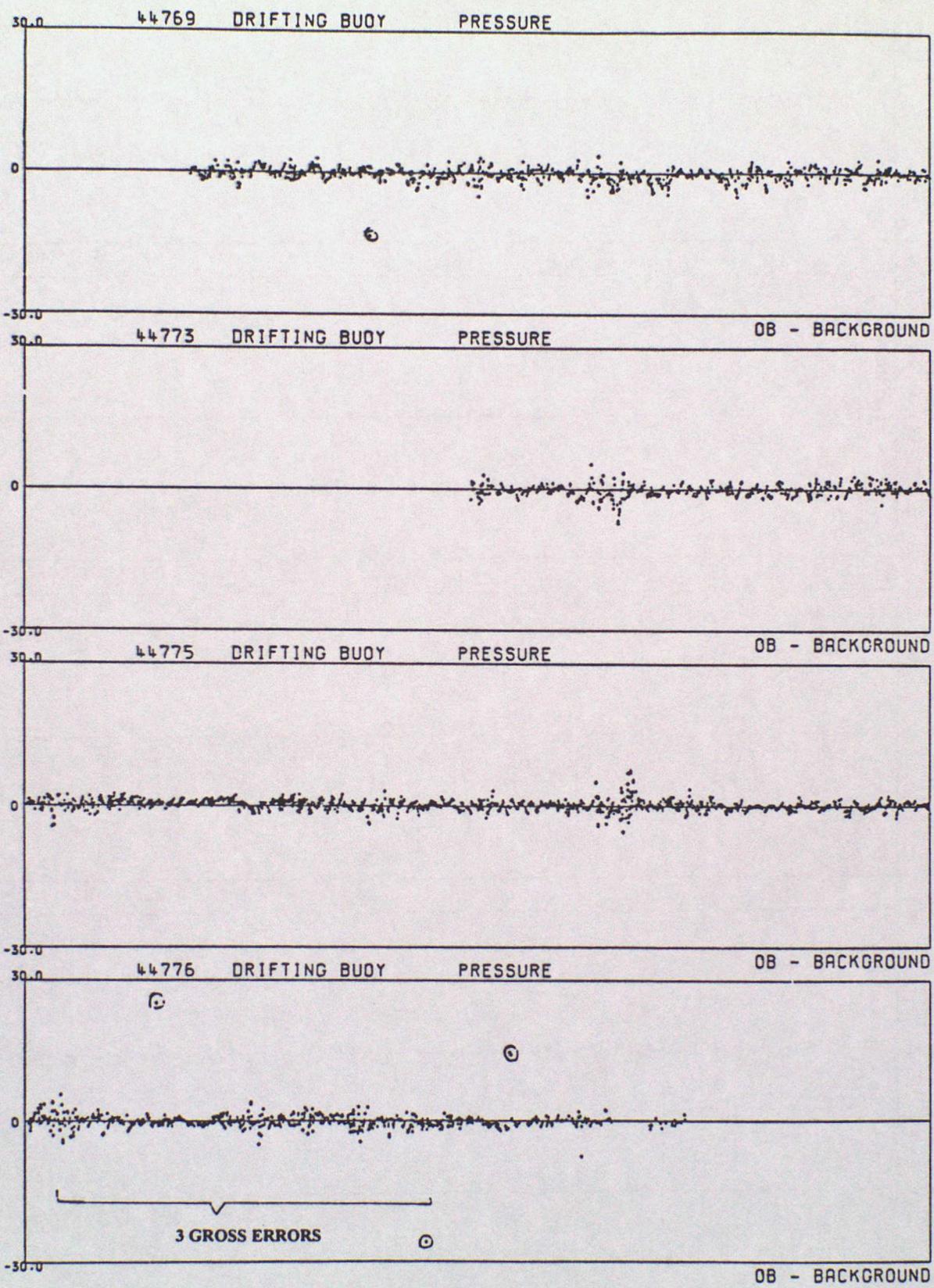
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



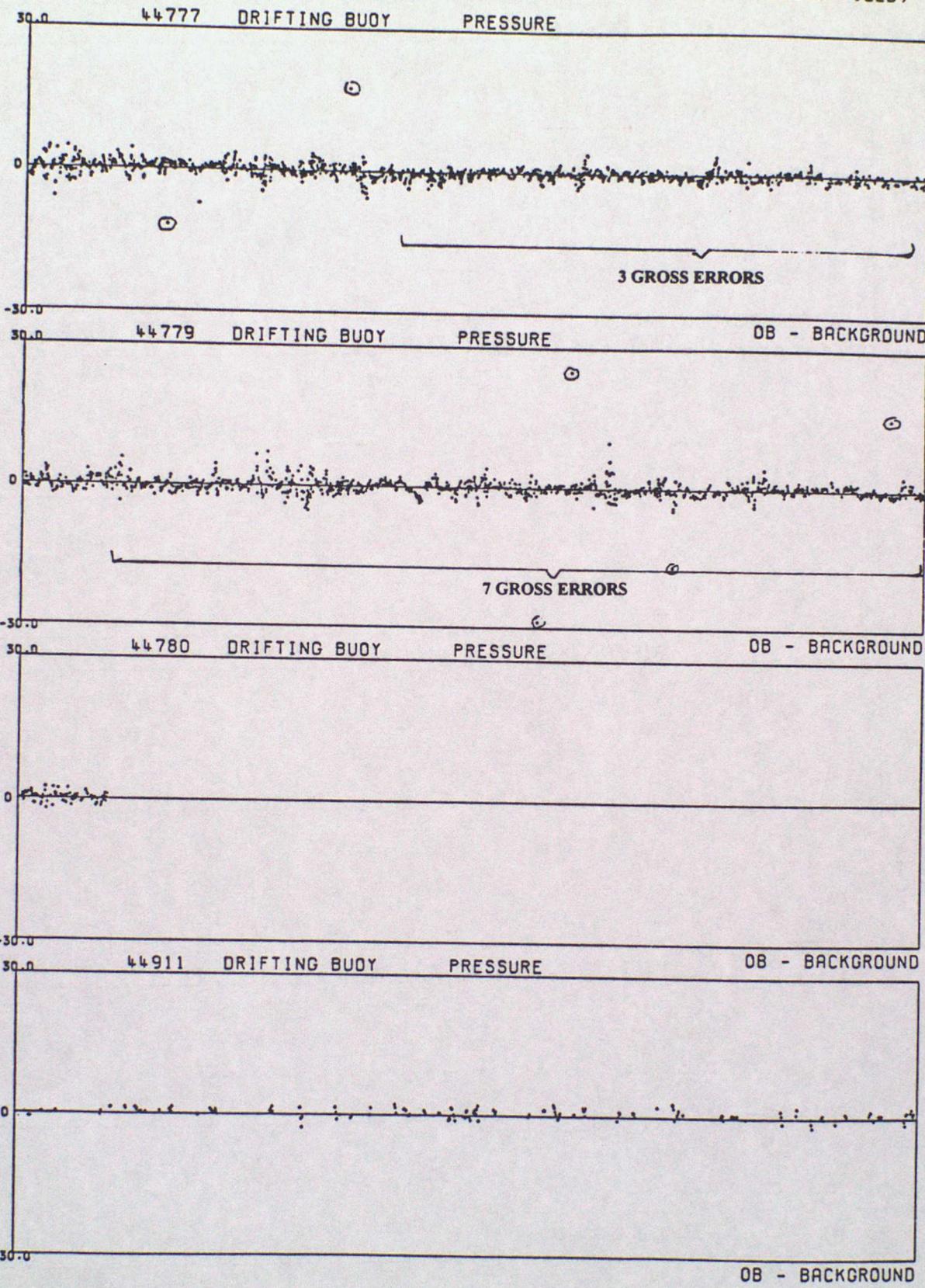
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (025 - BACKGROUND FIELD)



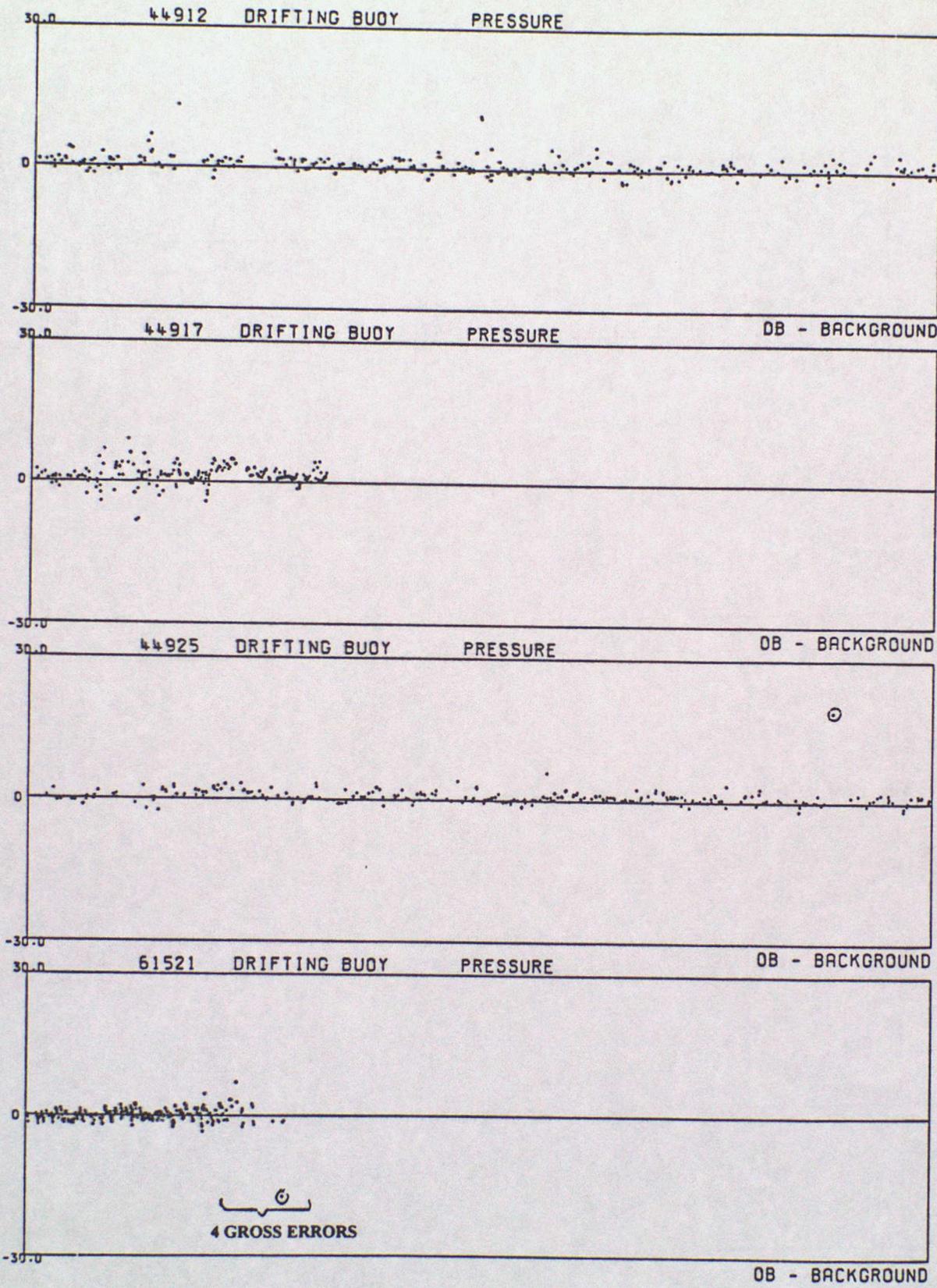
DATA FROM 00Z ON 01/06/997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



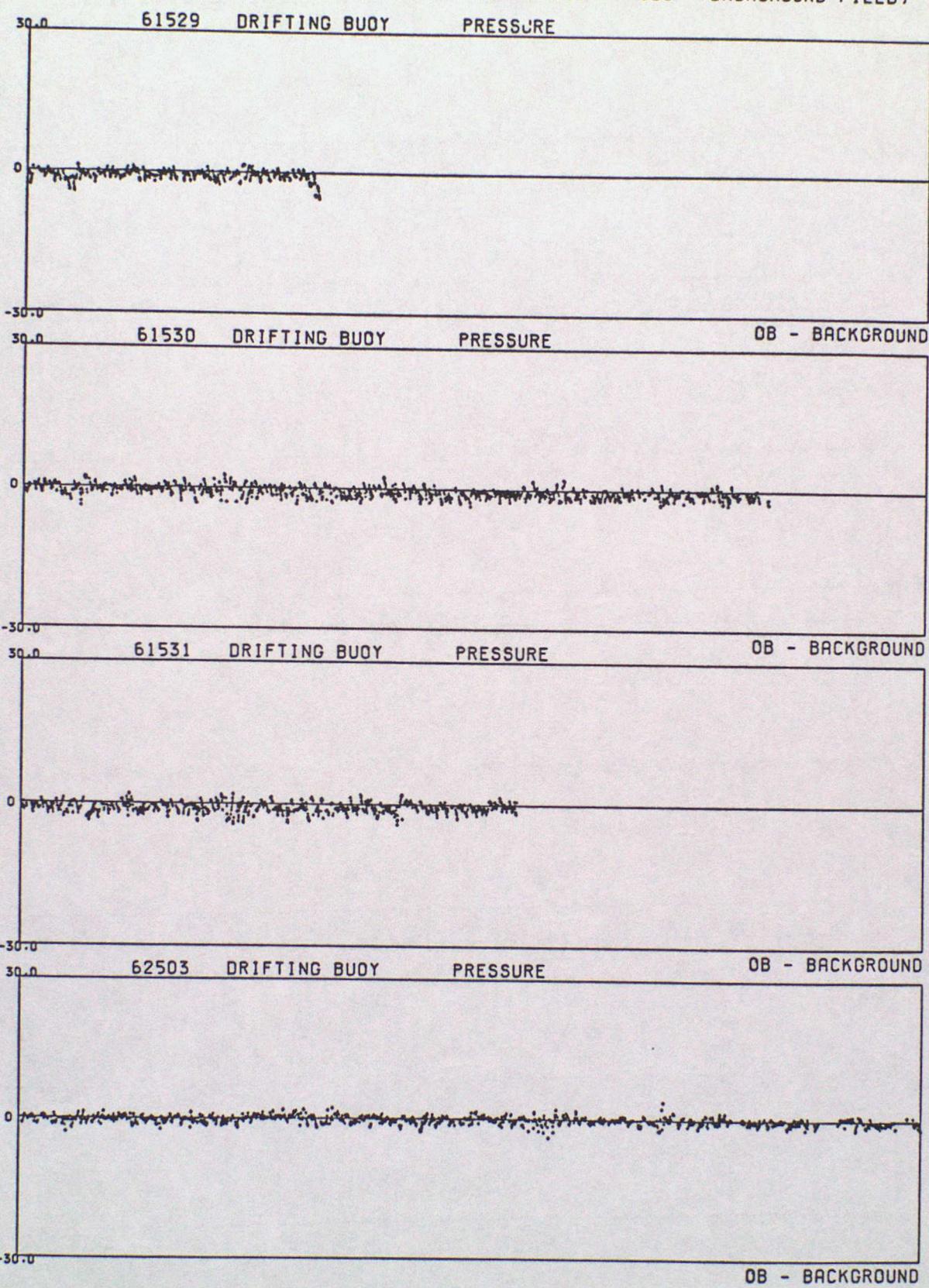
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



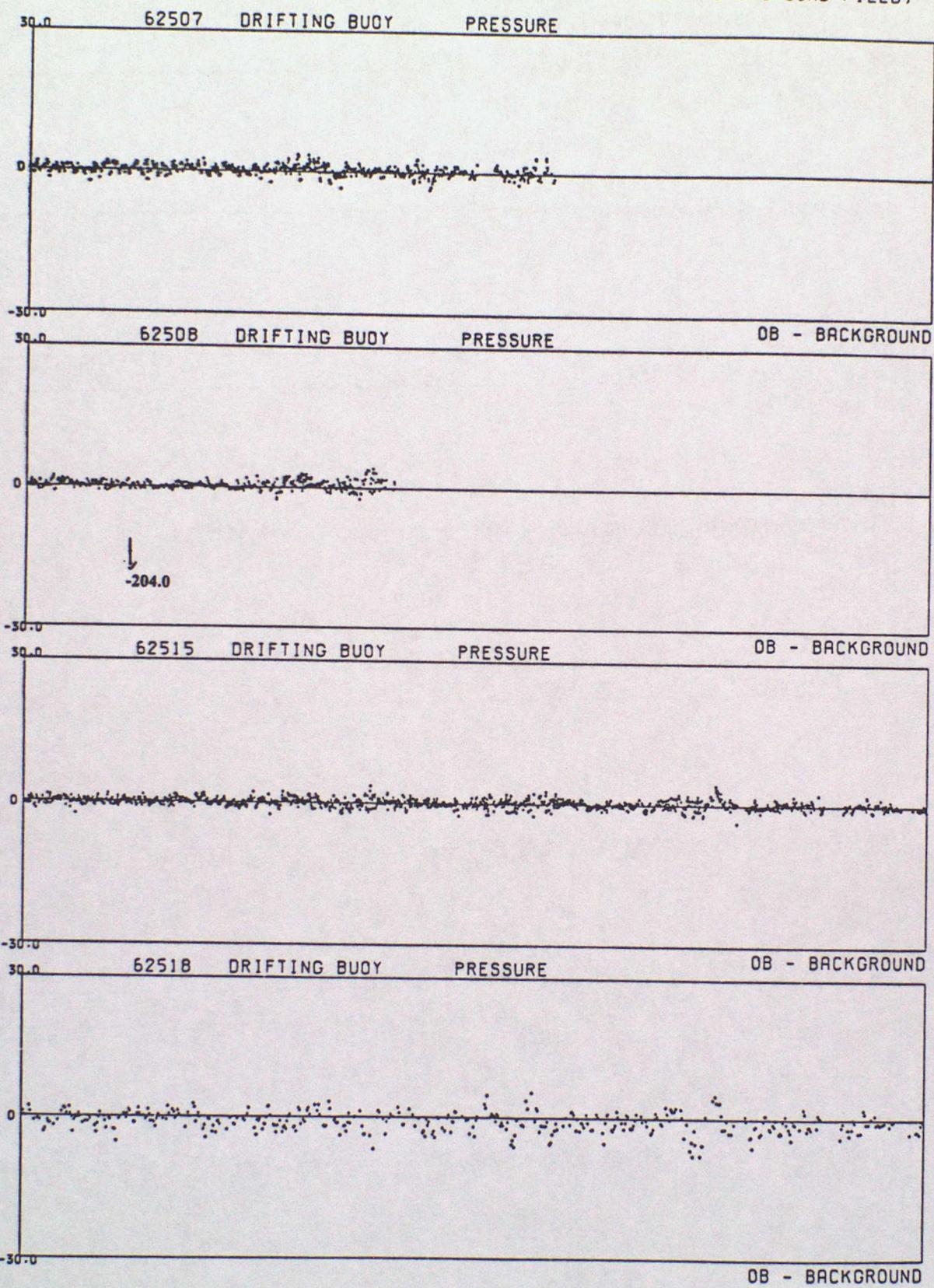
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



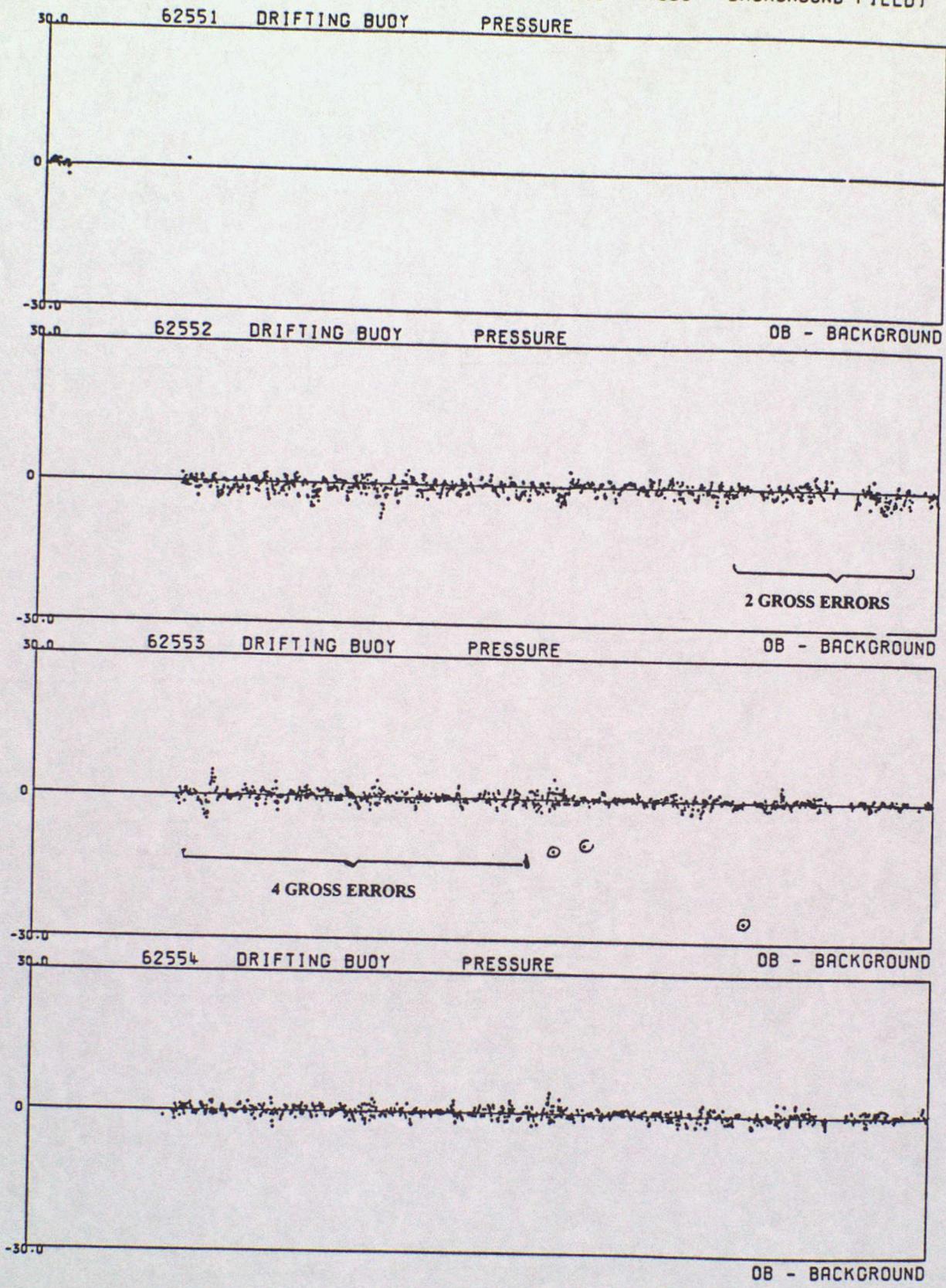
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



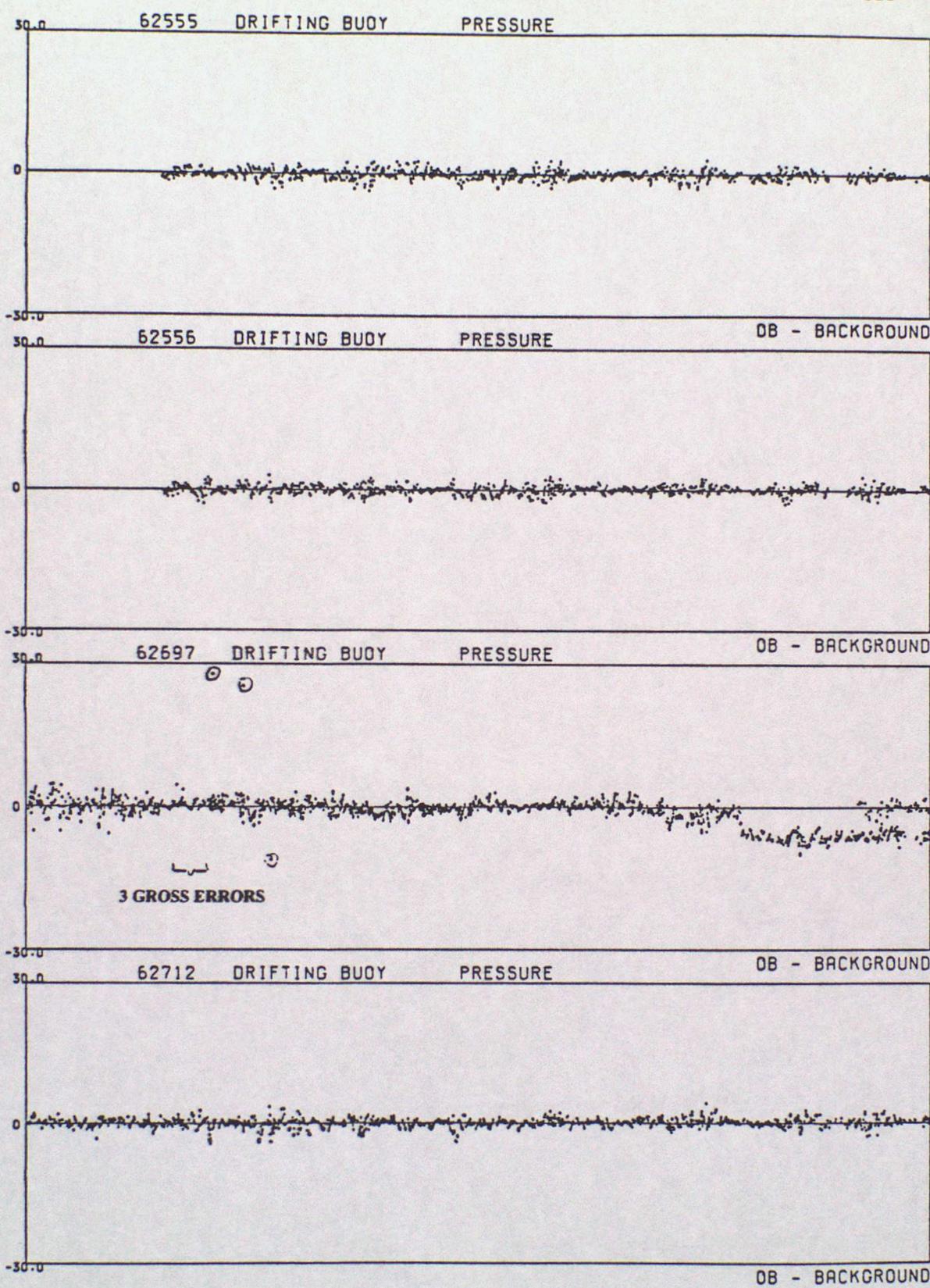
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



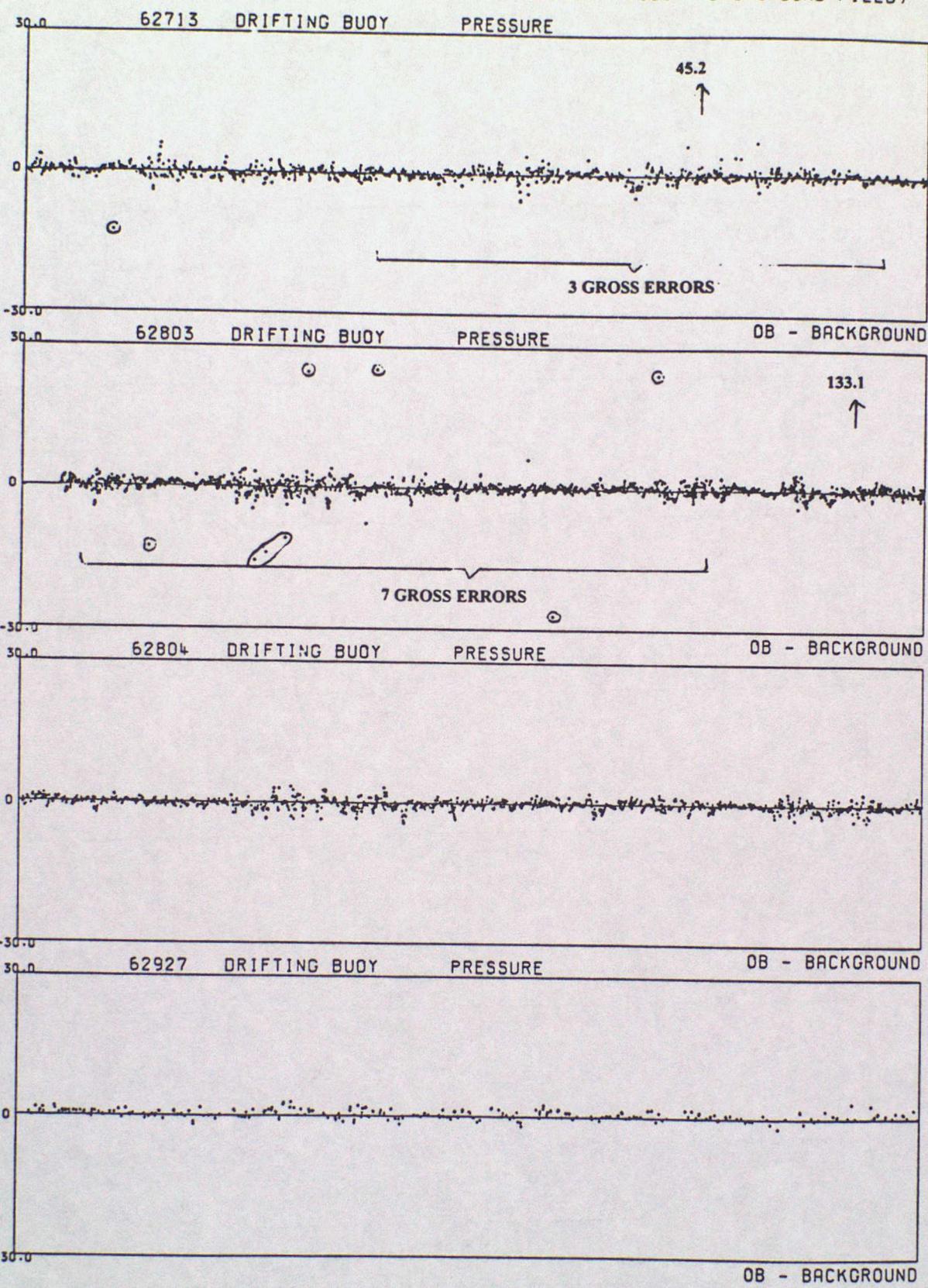
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



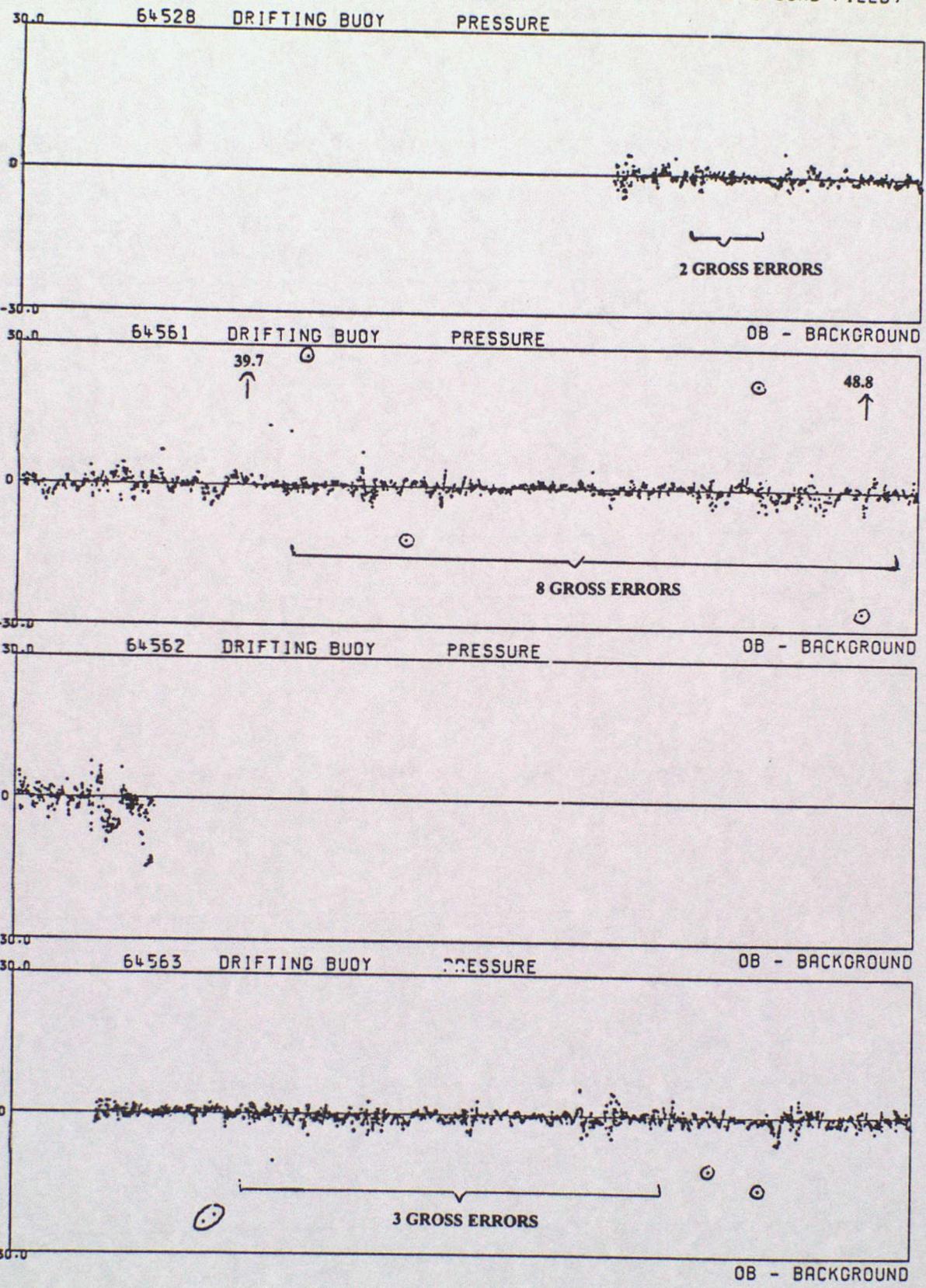
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



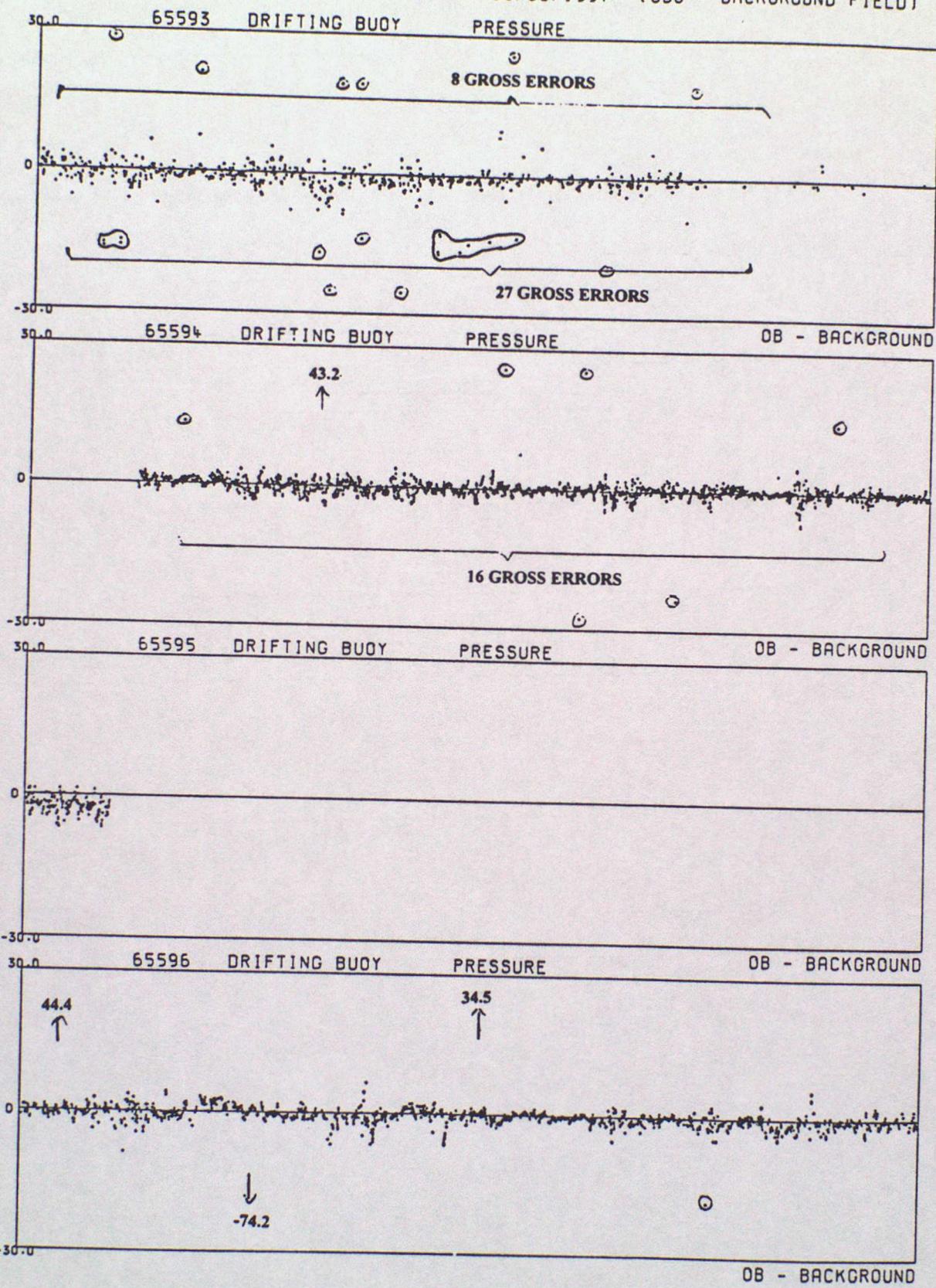
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



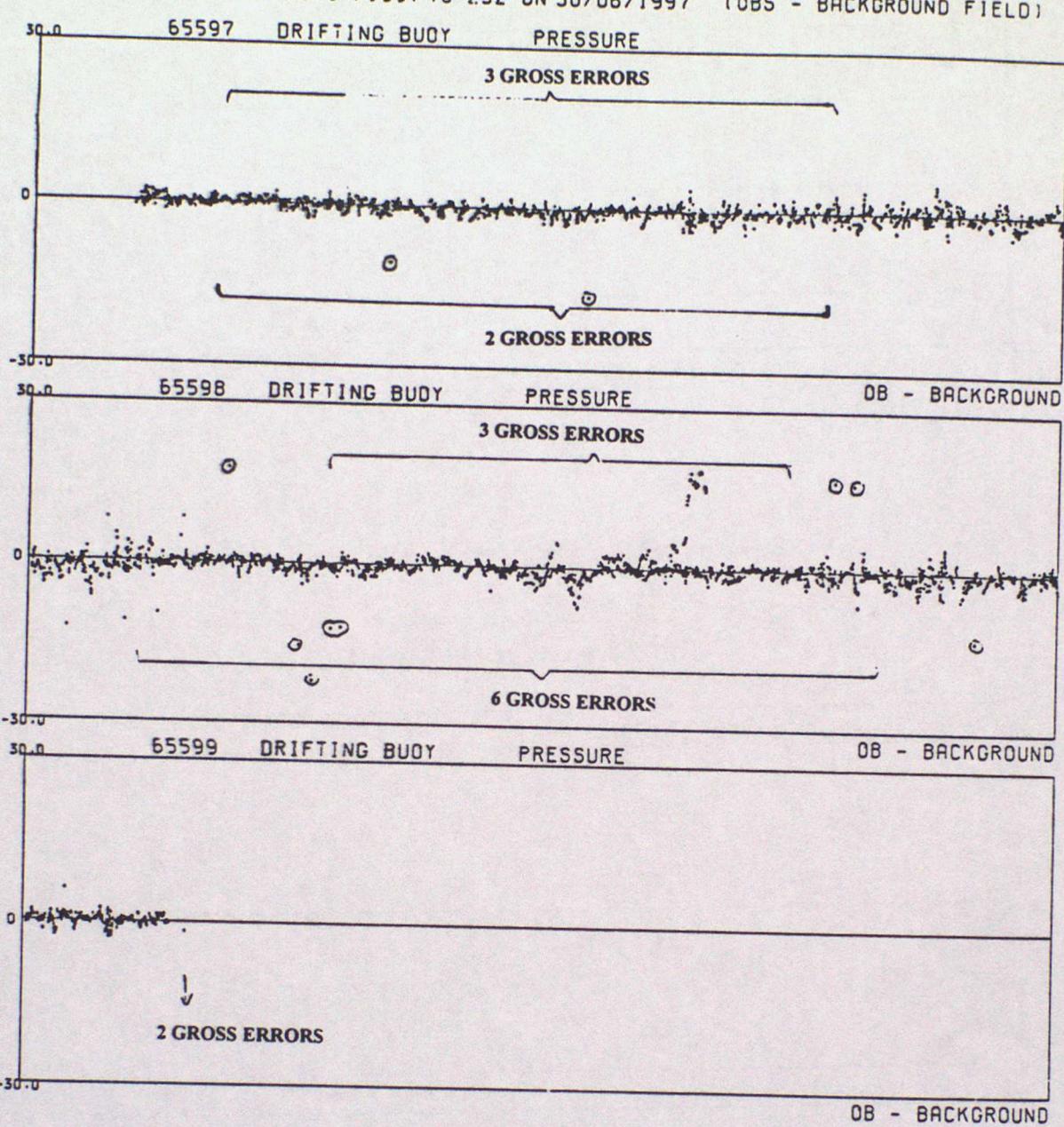
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

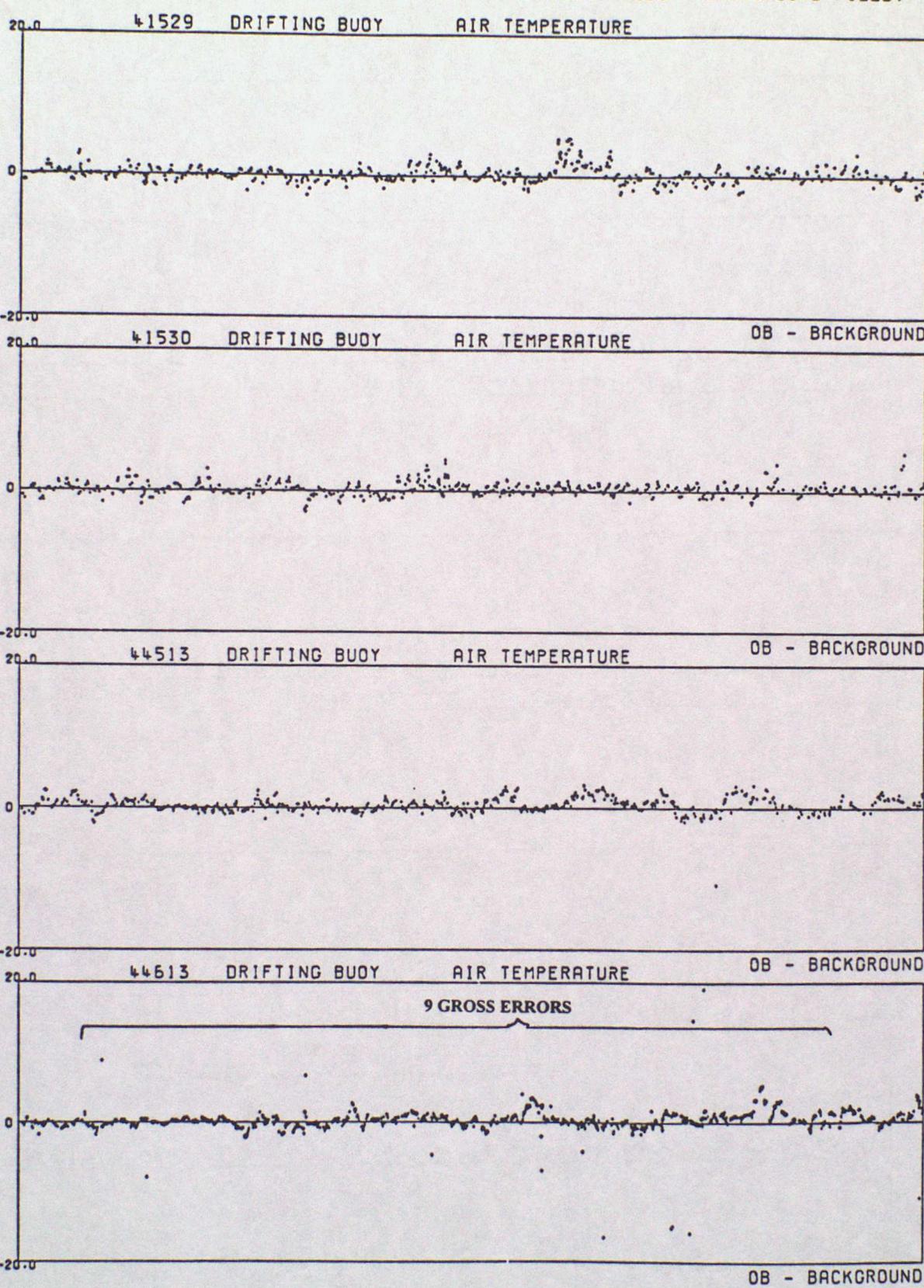


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

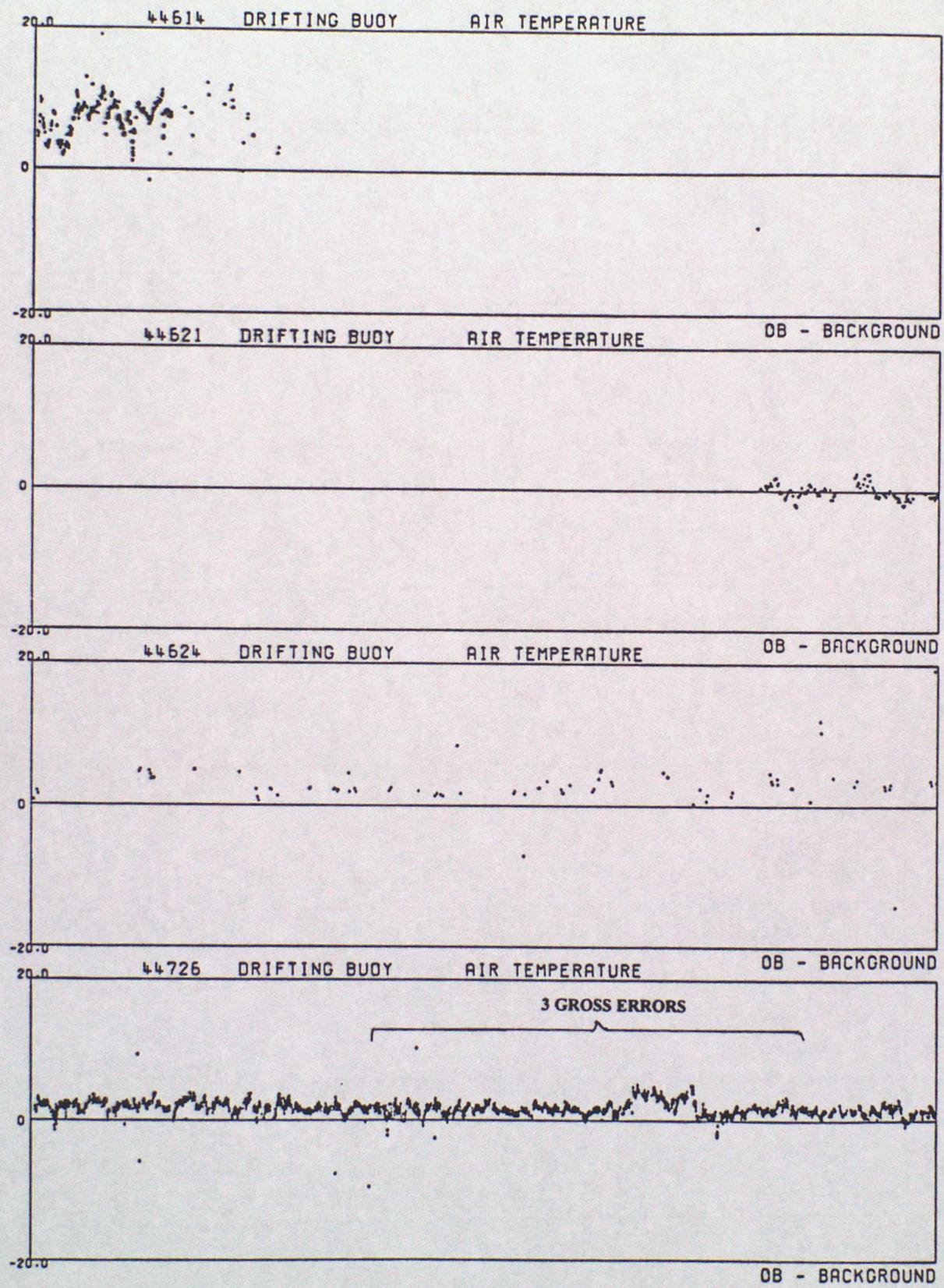


## **ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE**

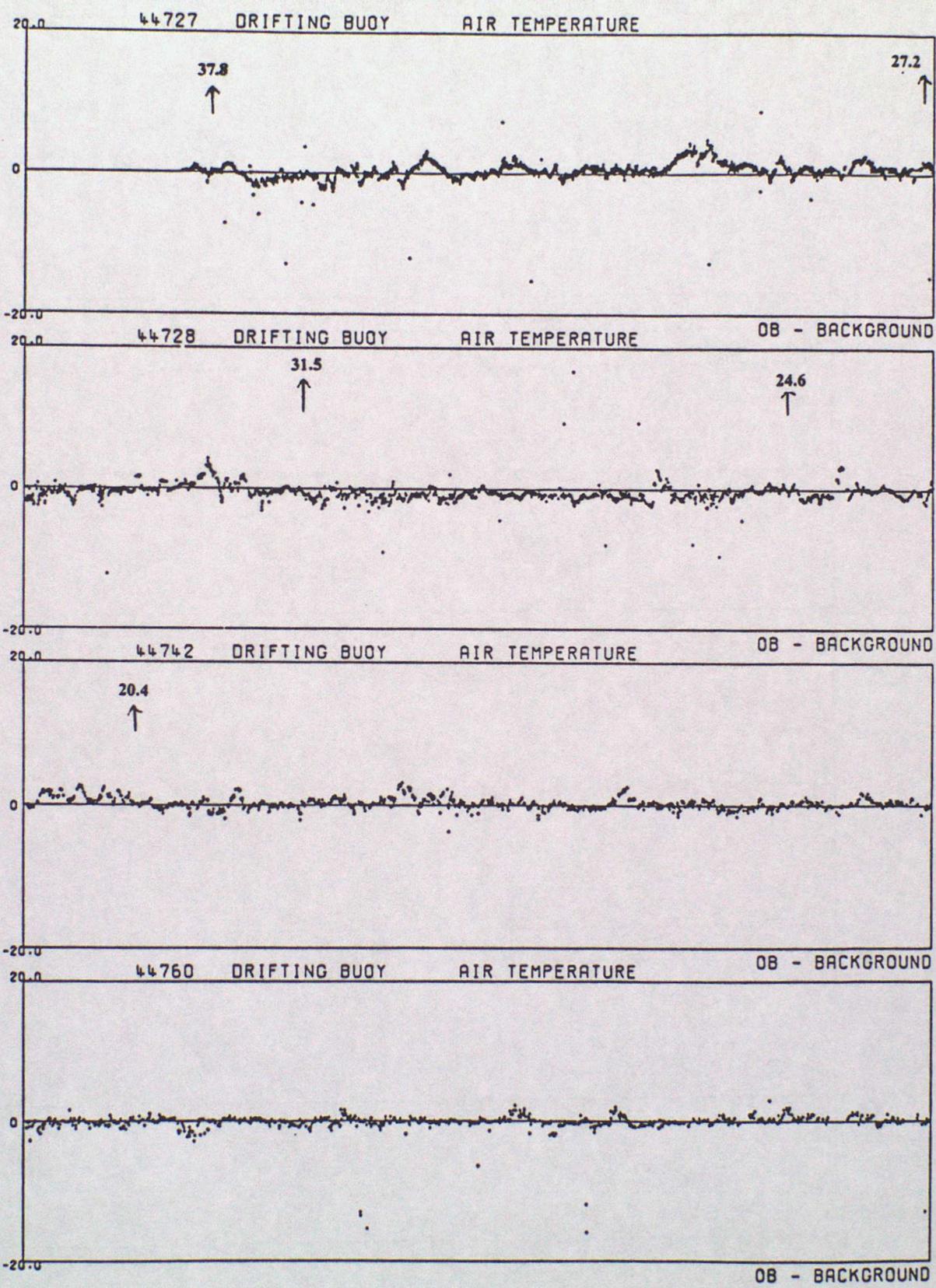
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



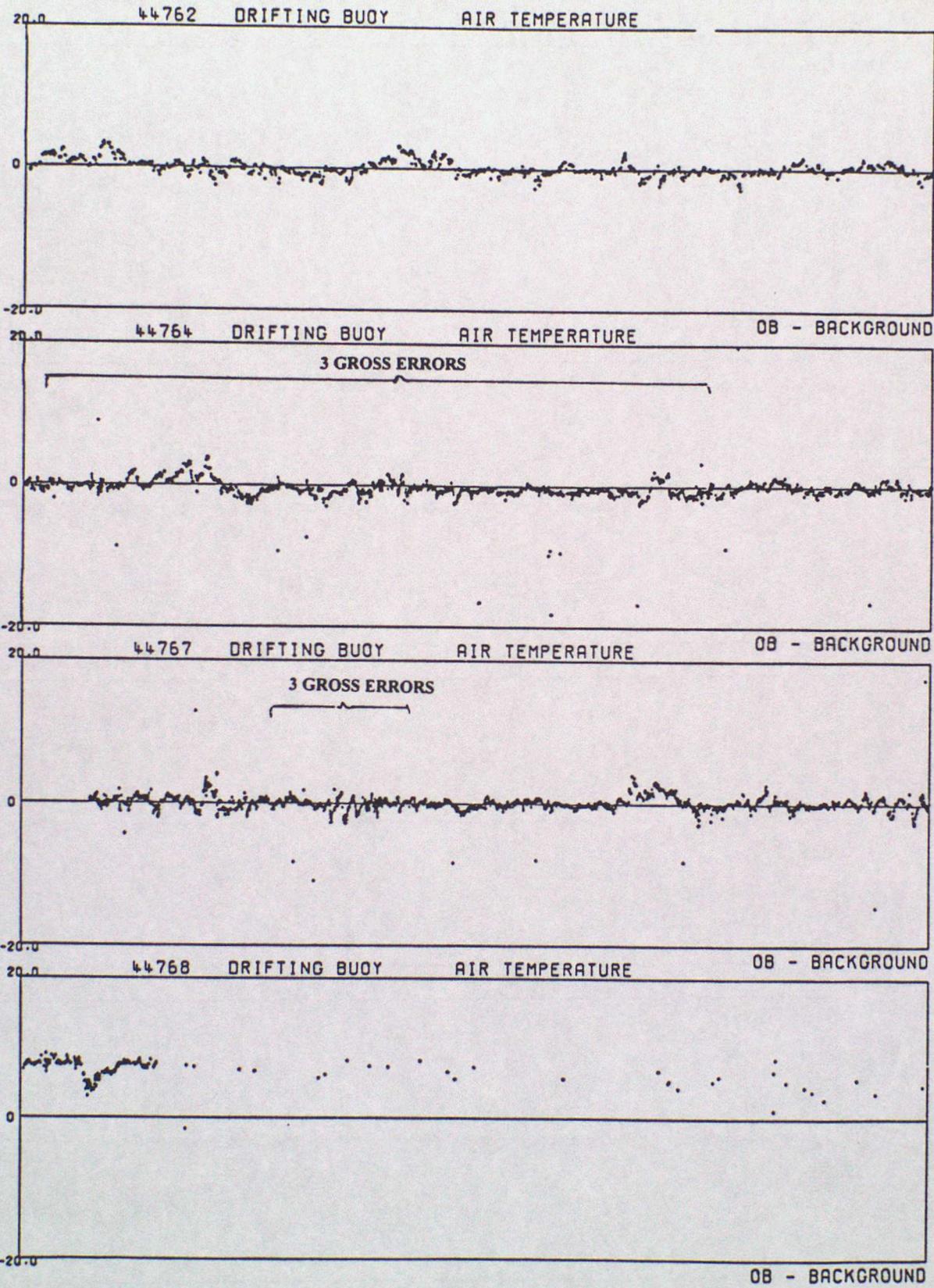
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



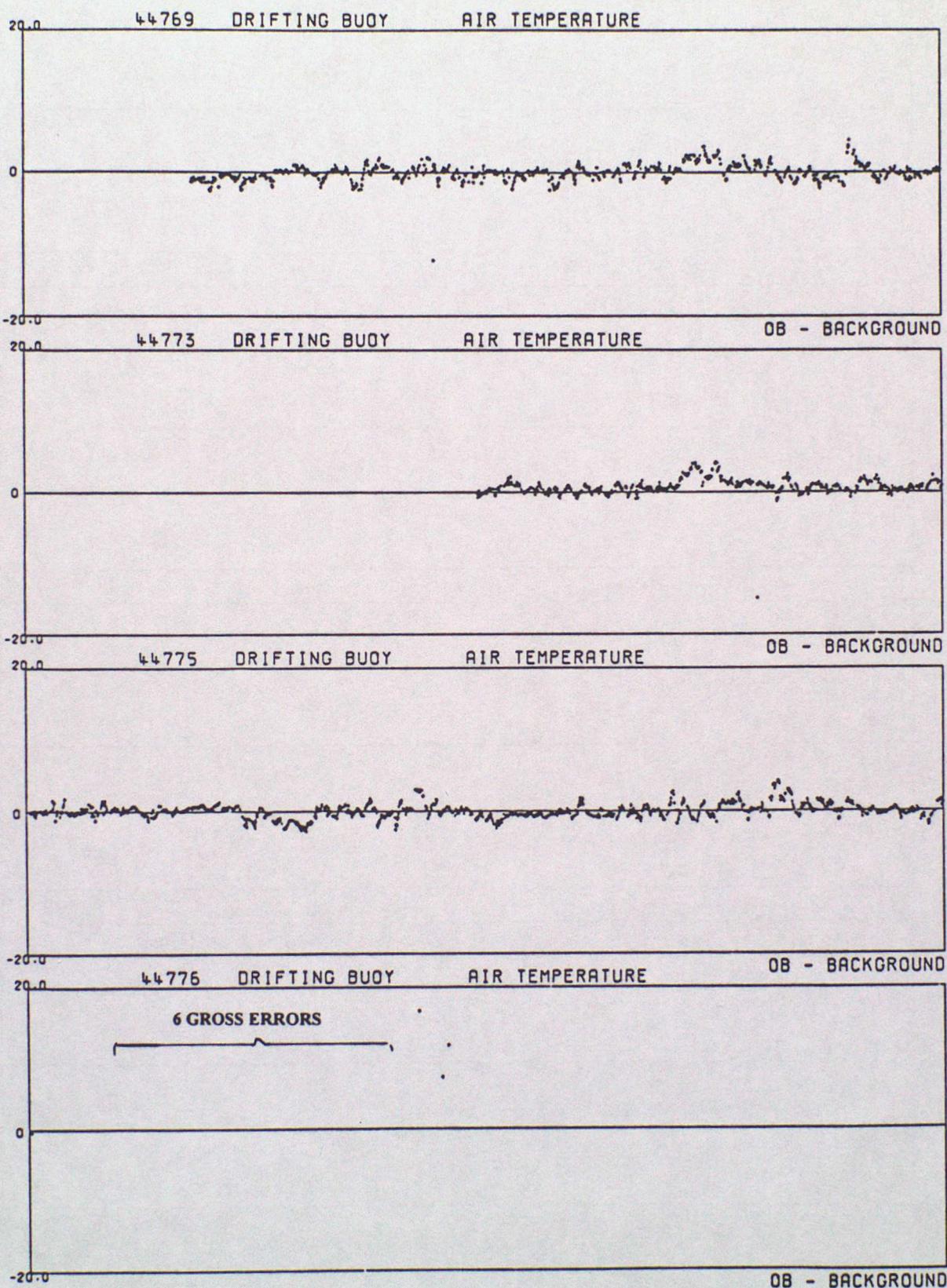
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



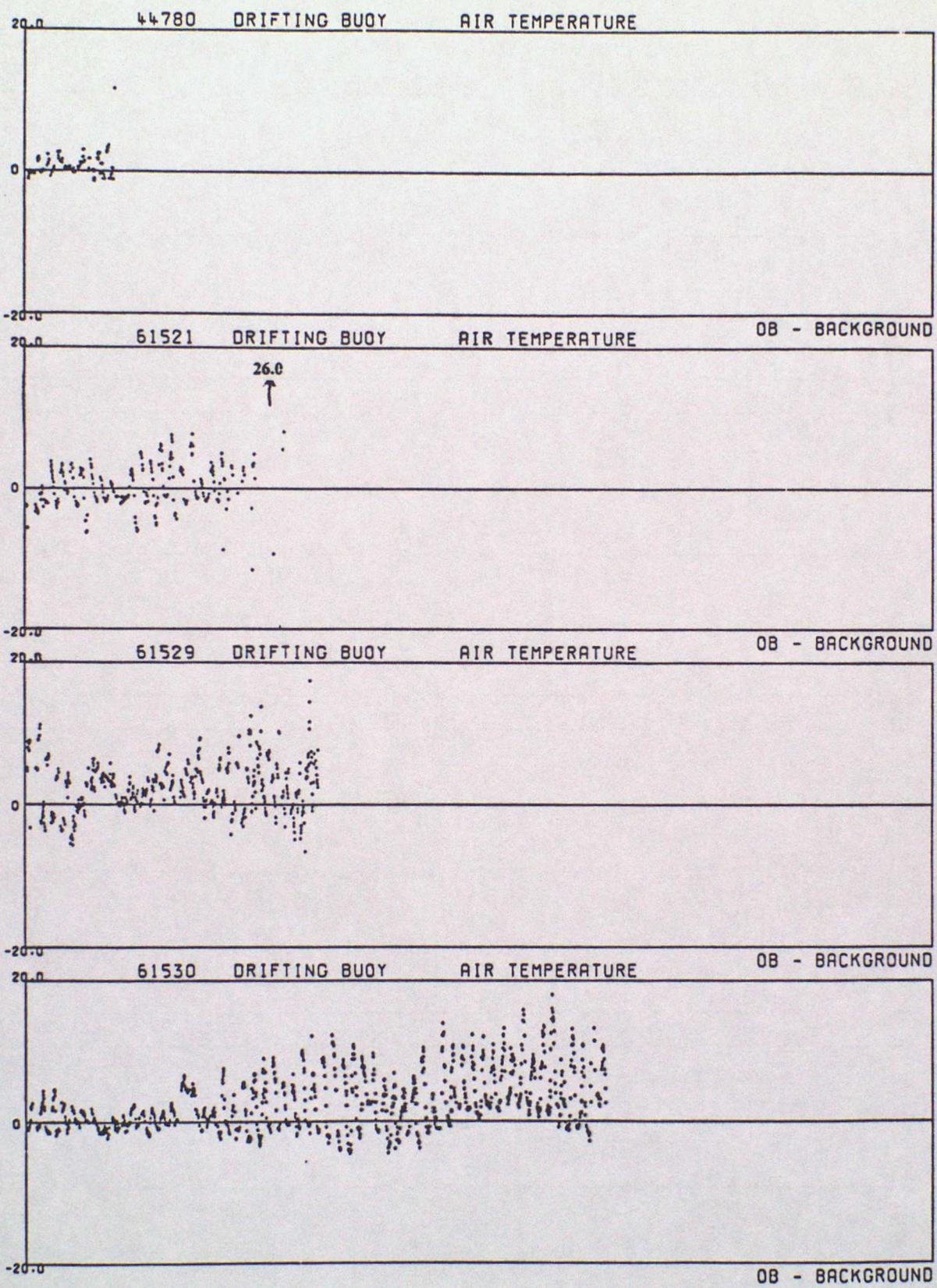
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



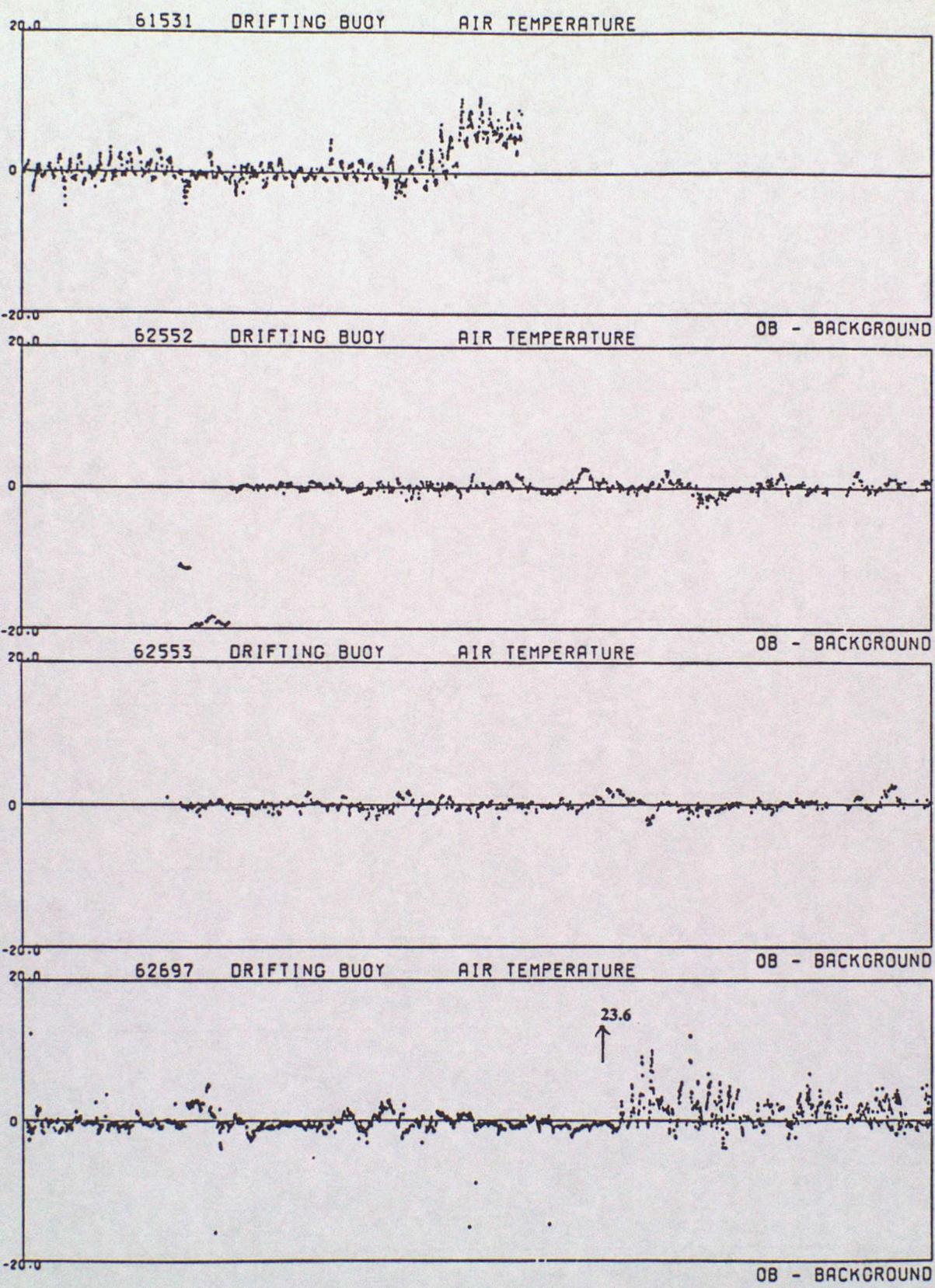
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



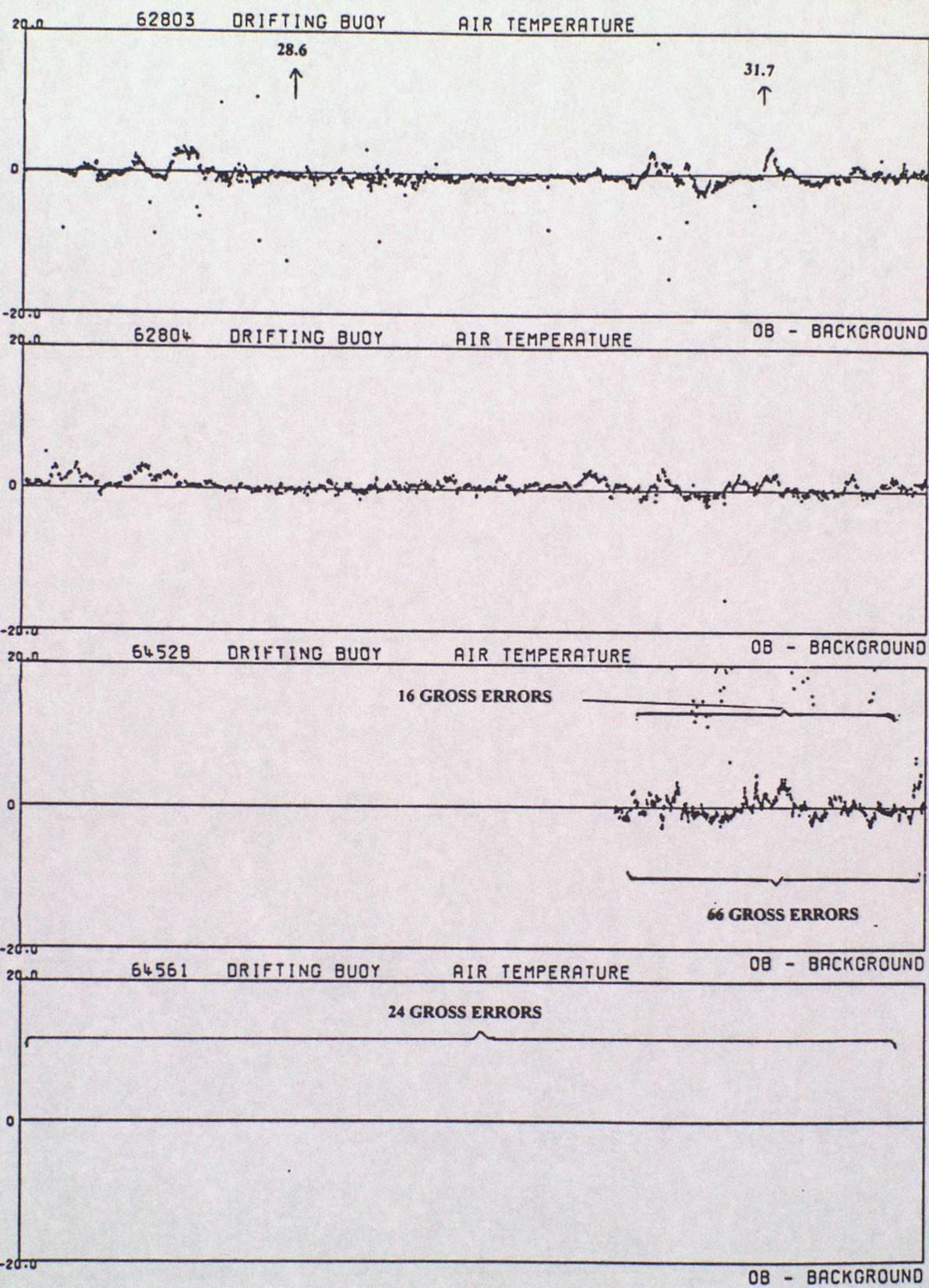
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



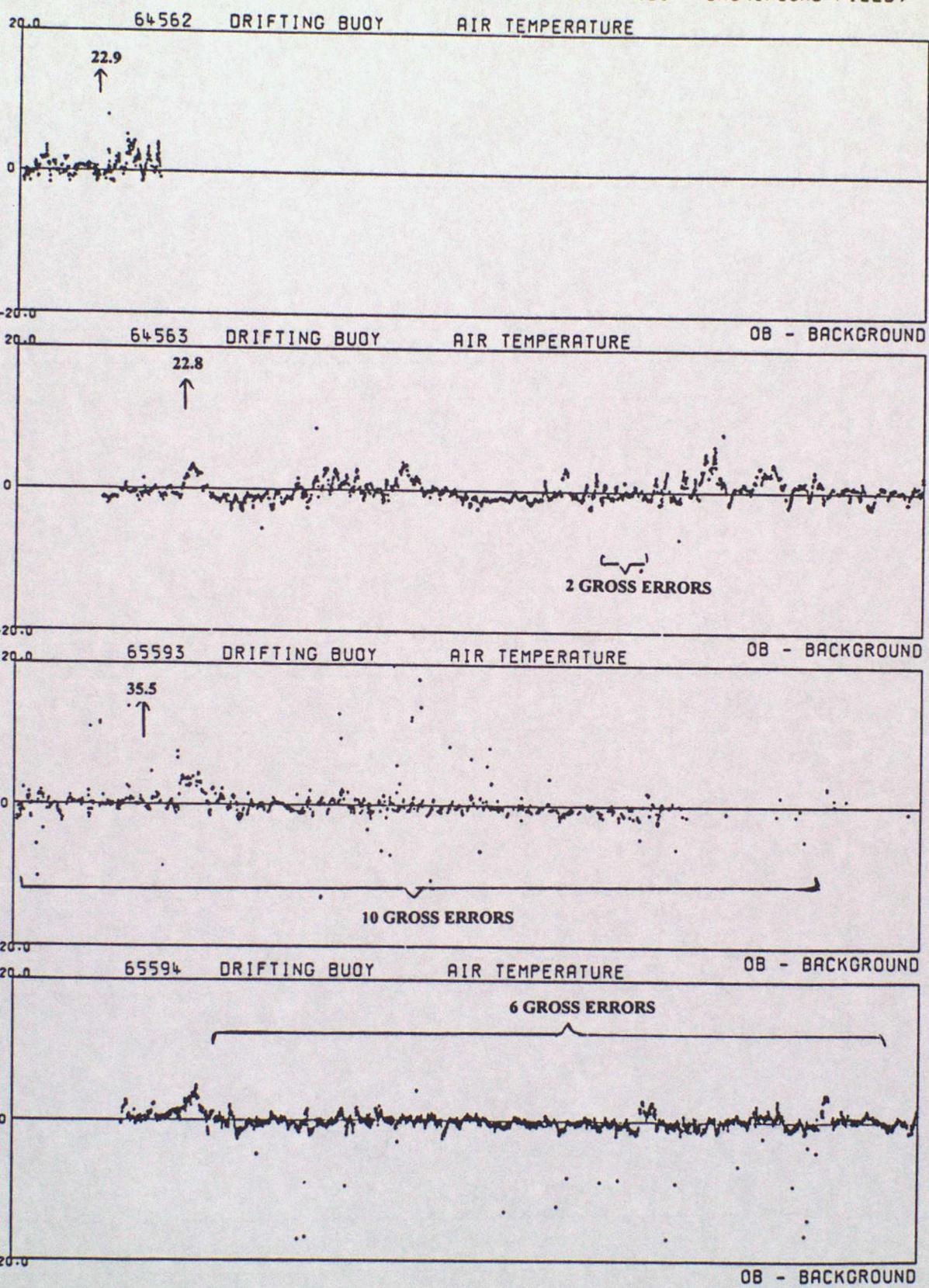
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



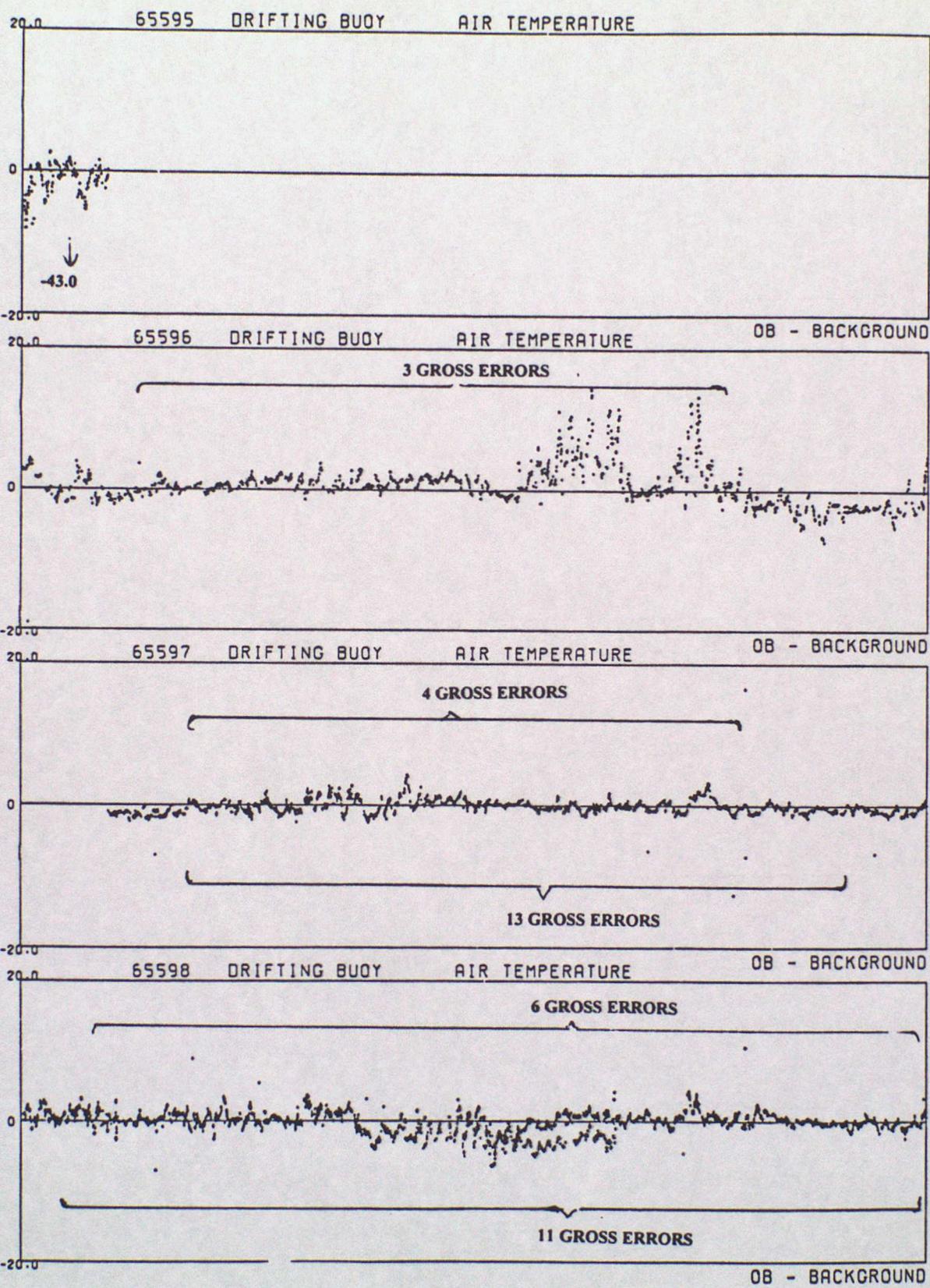
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

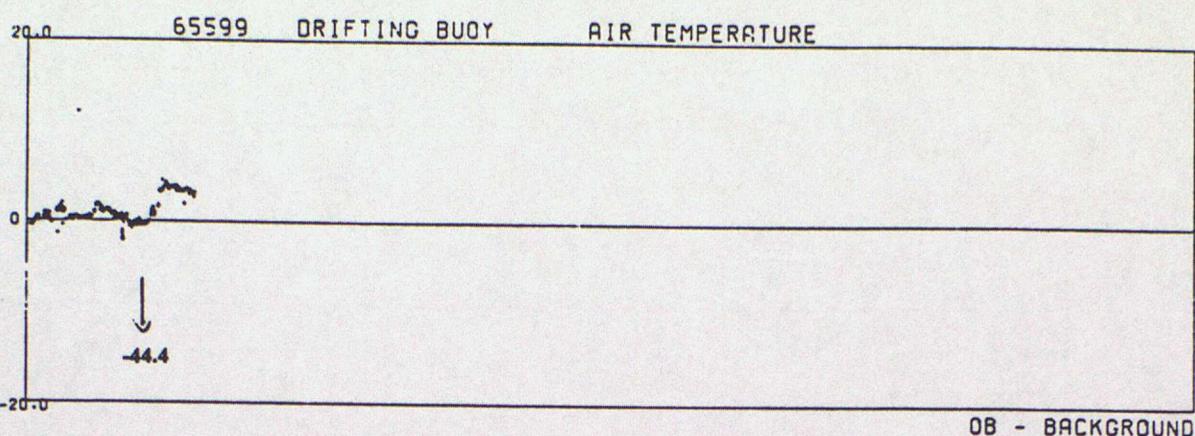


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



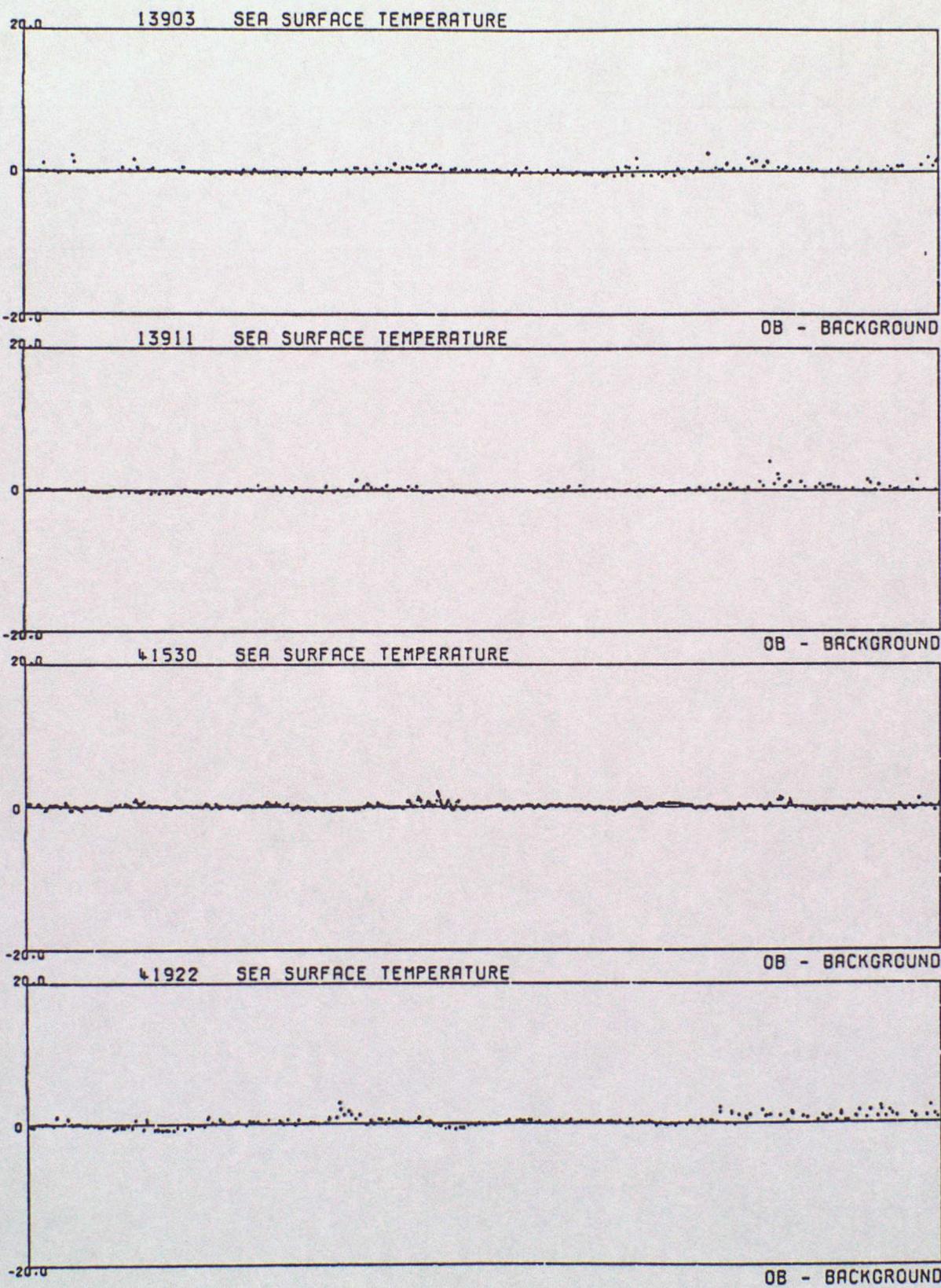
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



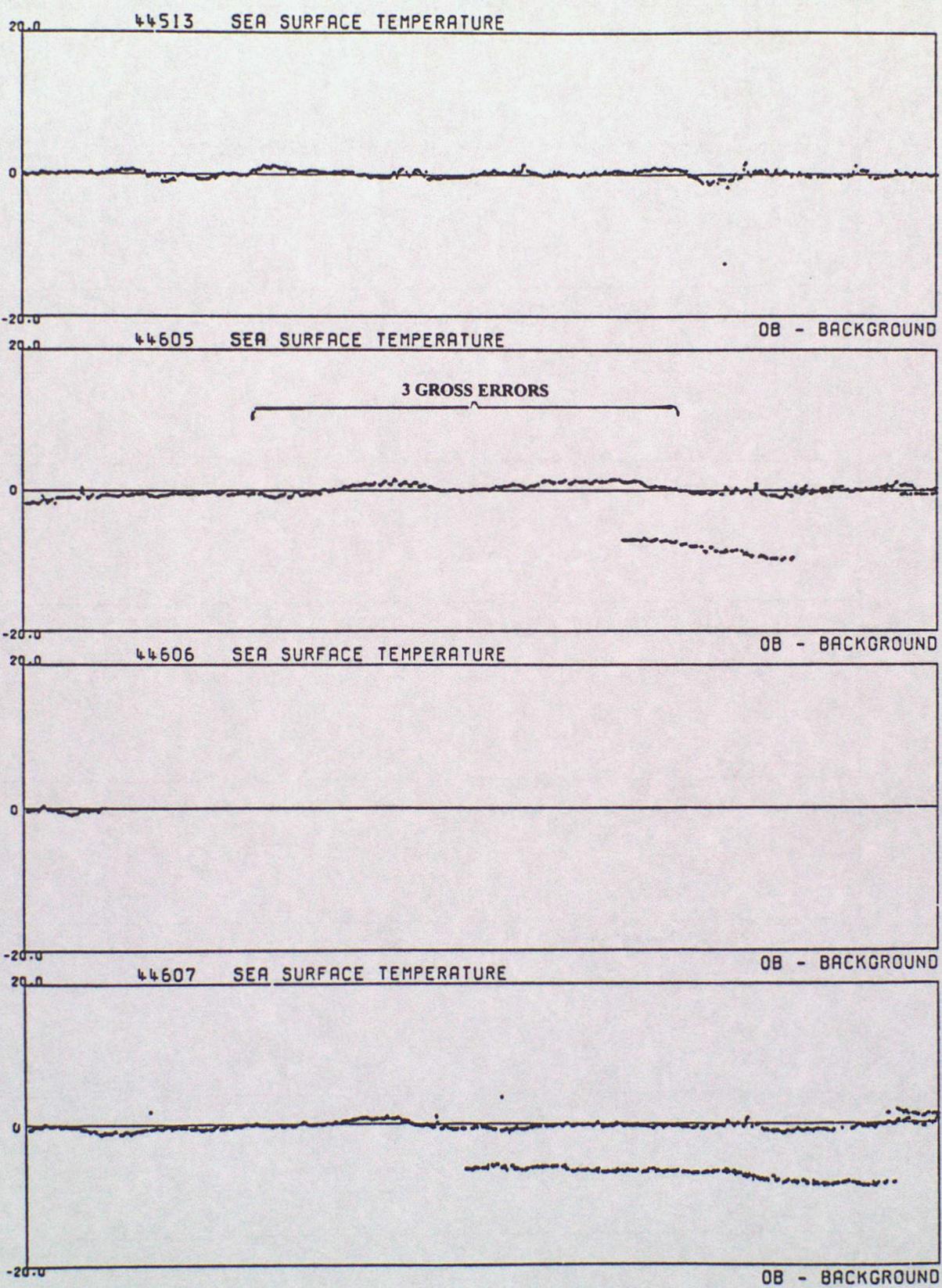


## ANNEX D - TIME SERIES PLOTS OF SEA SURFACE TEMPERATURE

DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

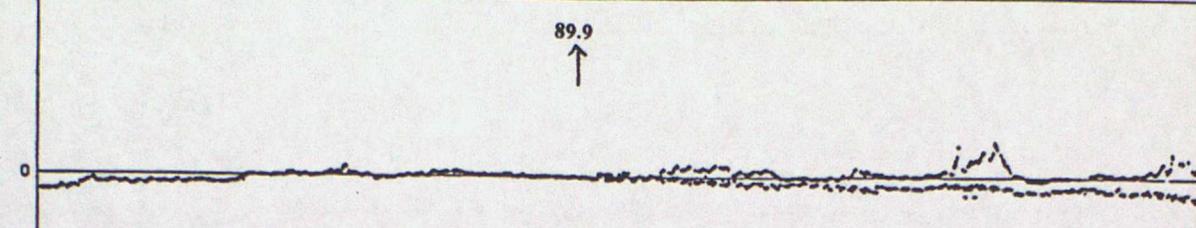


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



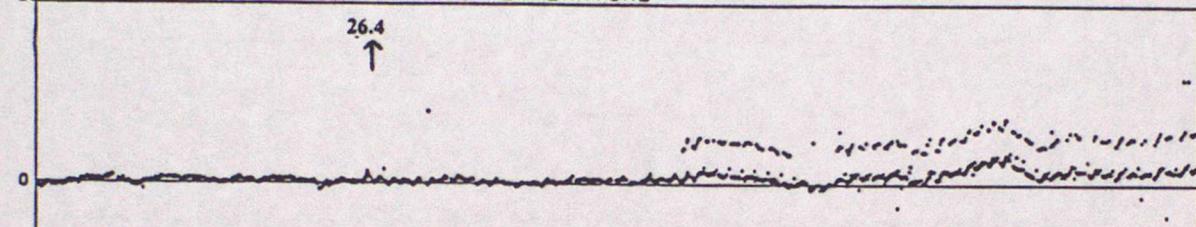
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

20.0 44608 SEA SURFACE TEMPERATURE



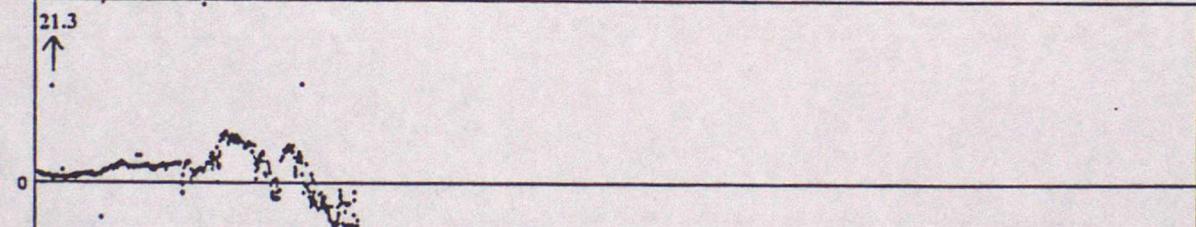
20.0 44613 SEA SURFACE TEMPERATURE

OB - BACKGROUND



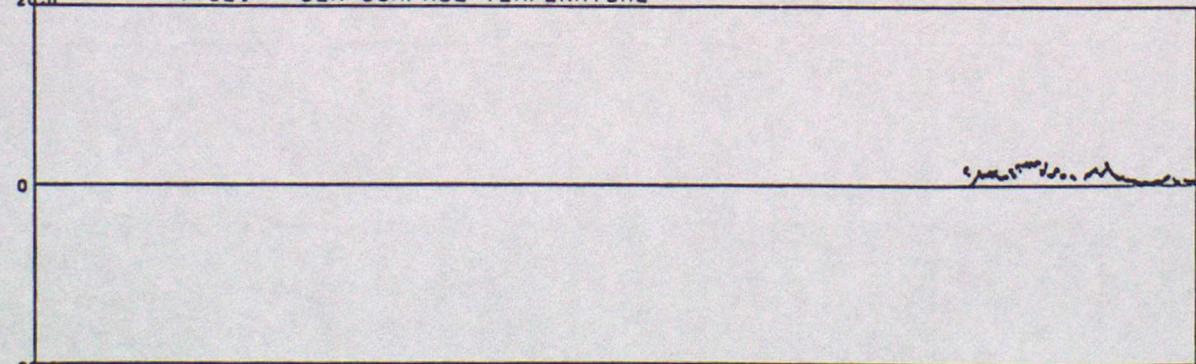
20.0 44614 SEA SURFACE TEMPERATURE

OB - BACKGROUND



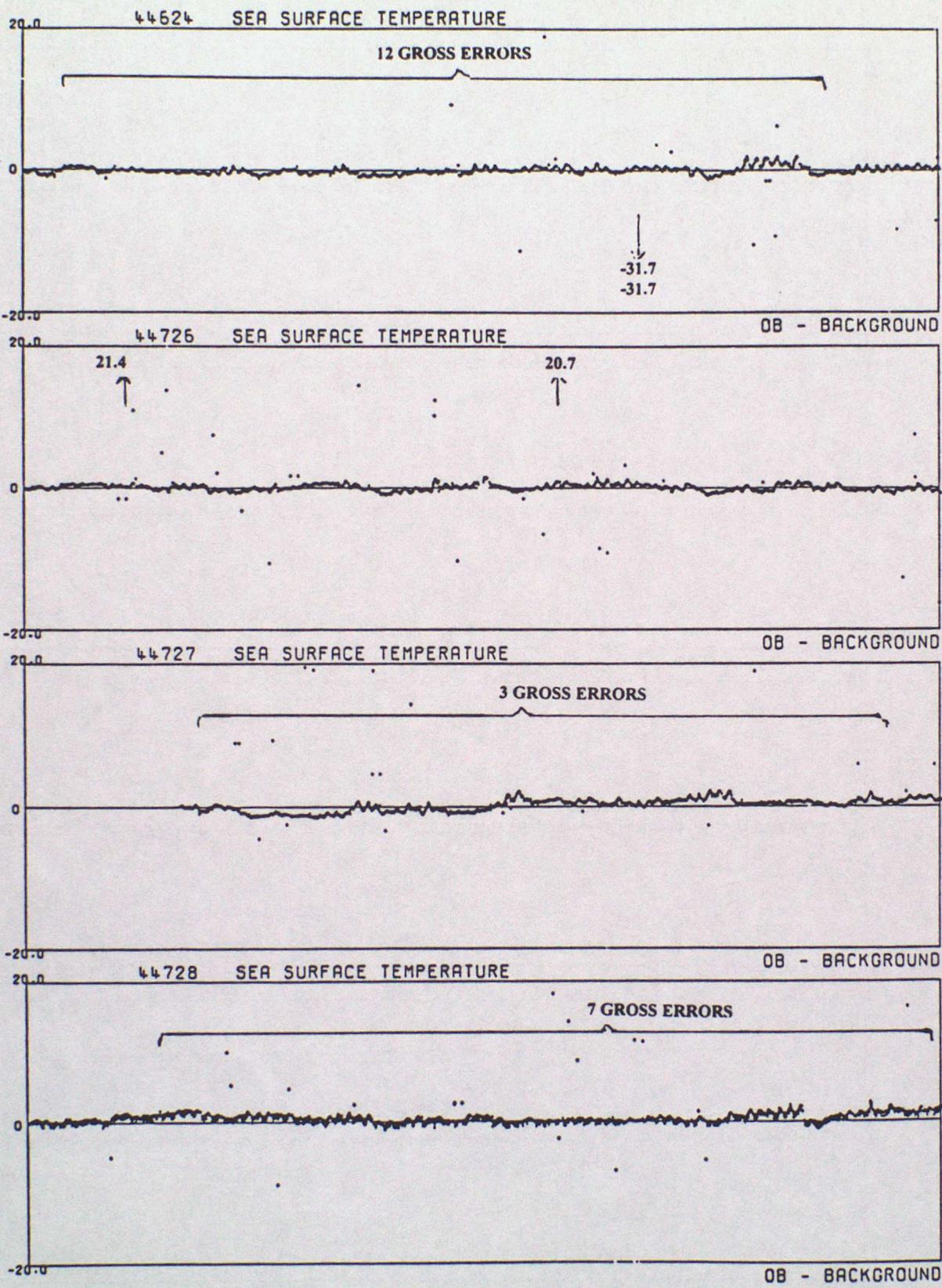
20.0 44621 SEA SURFACE TEMPERATURE

OB - BACKGROUND

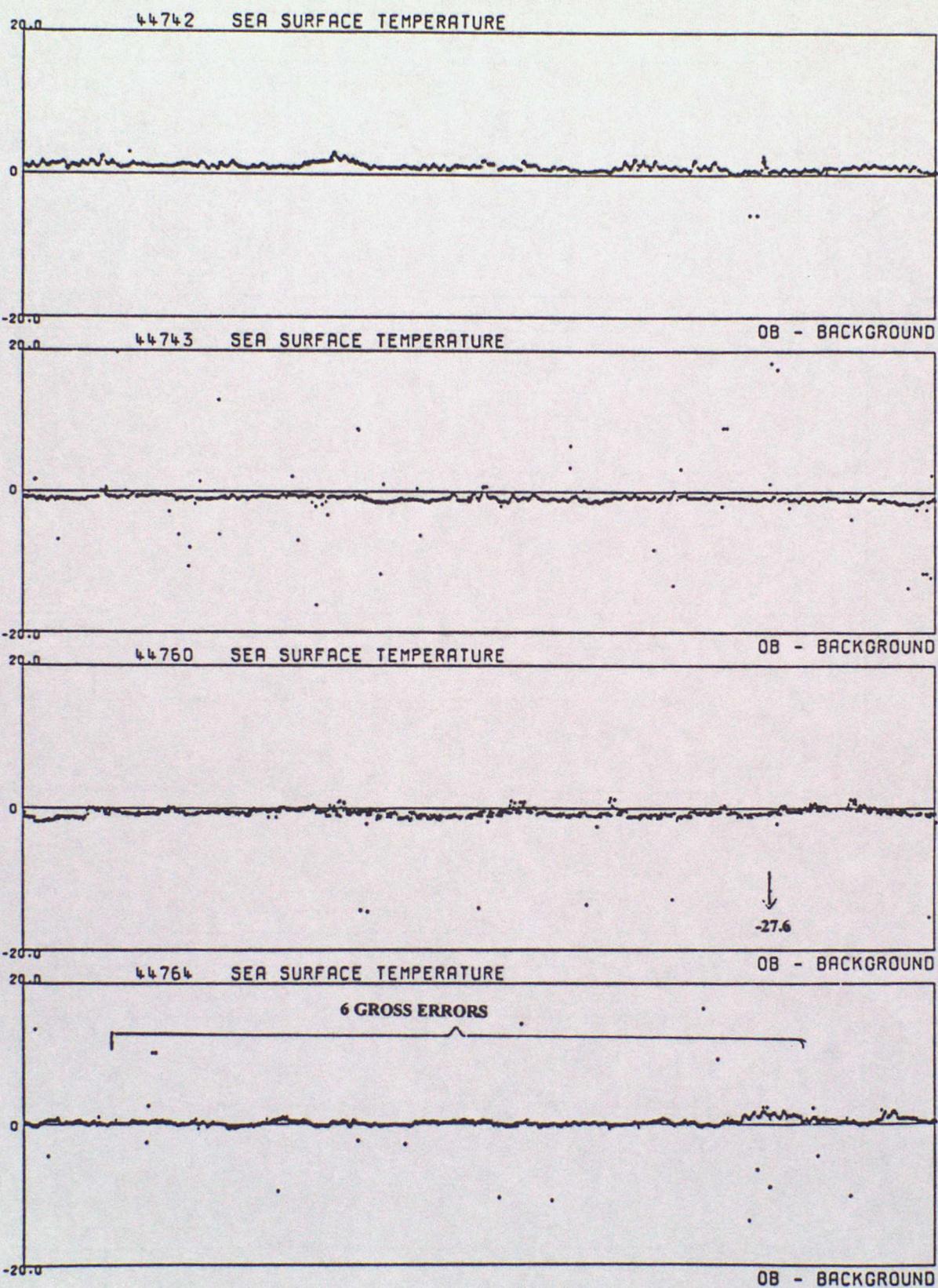


OB - BACKGROUND

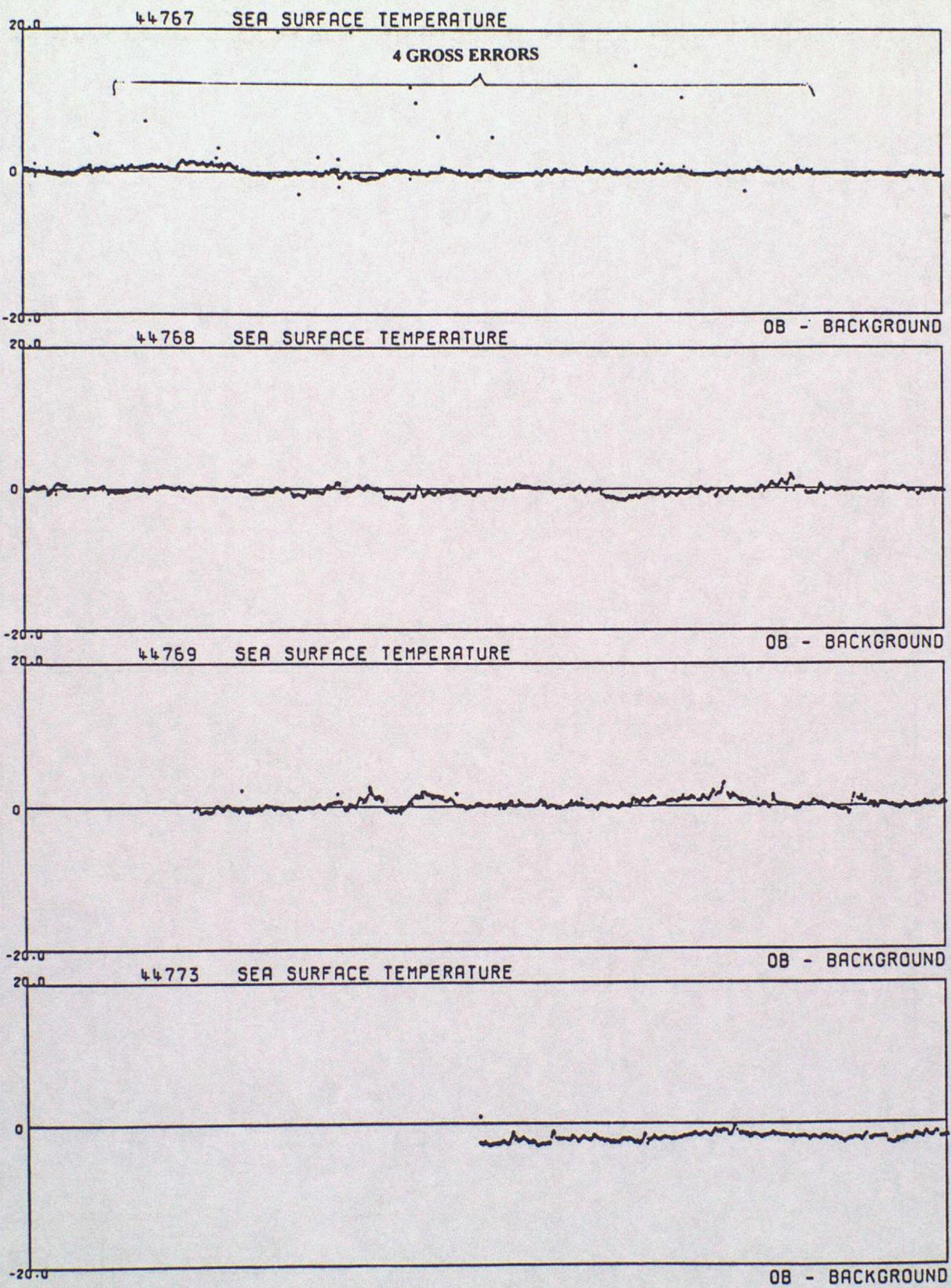
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

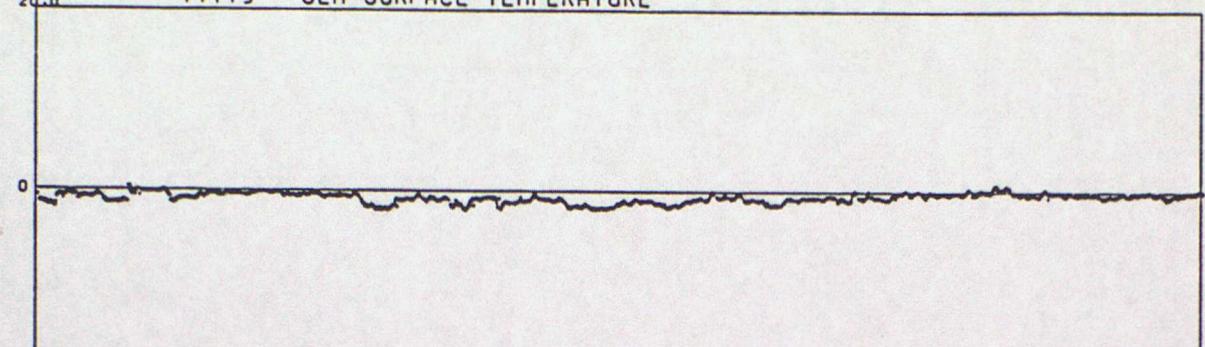


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

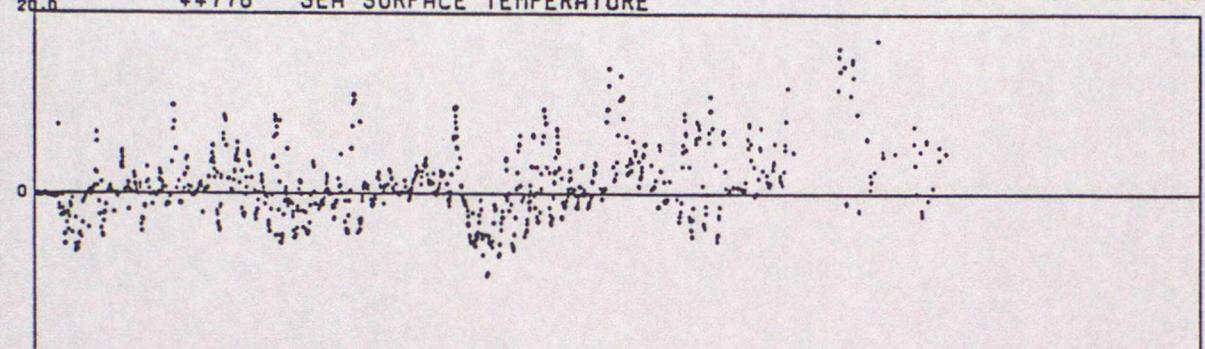


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

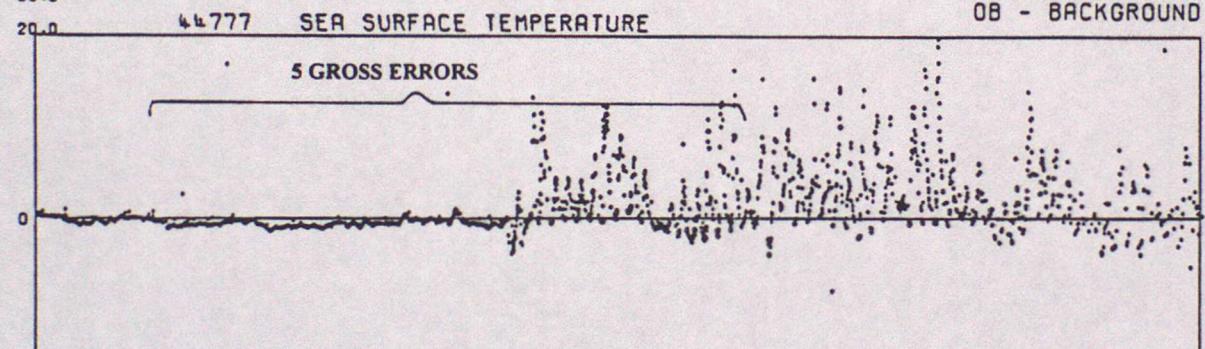
20.0 44775 SEA SURFACE TEMPERATURE



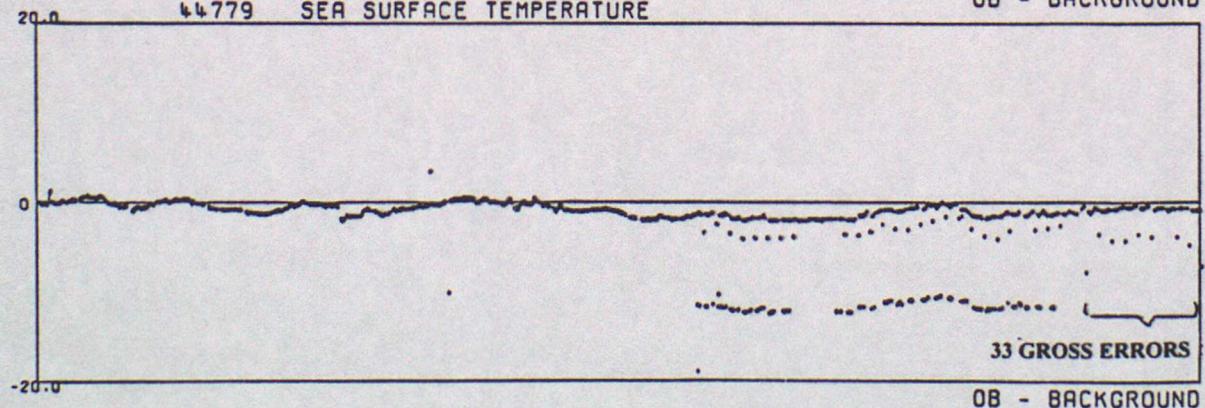
-20.0 20.0 44776 SEA SURFACE TEMPERATURE OB - BACKGROUND



-20.0 20.0 44777 SEA SURFACE TEMPERATURE OB - BACKGROUND



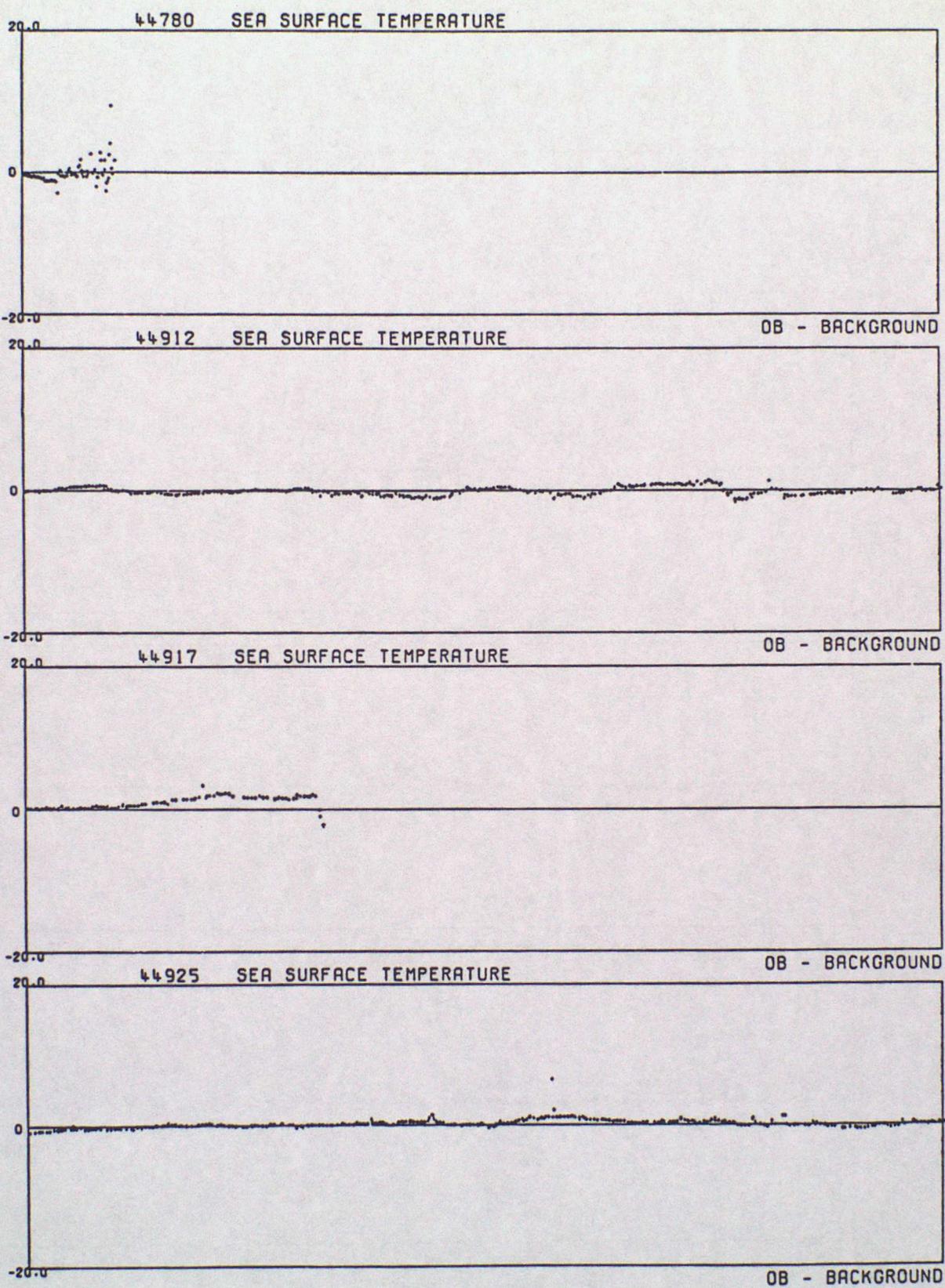
-20.0 20.0 44779 SEA SURFACE TEMPERATURE OB - BACKGROUND



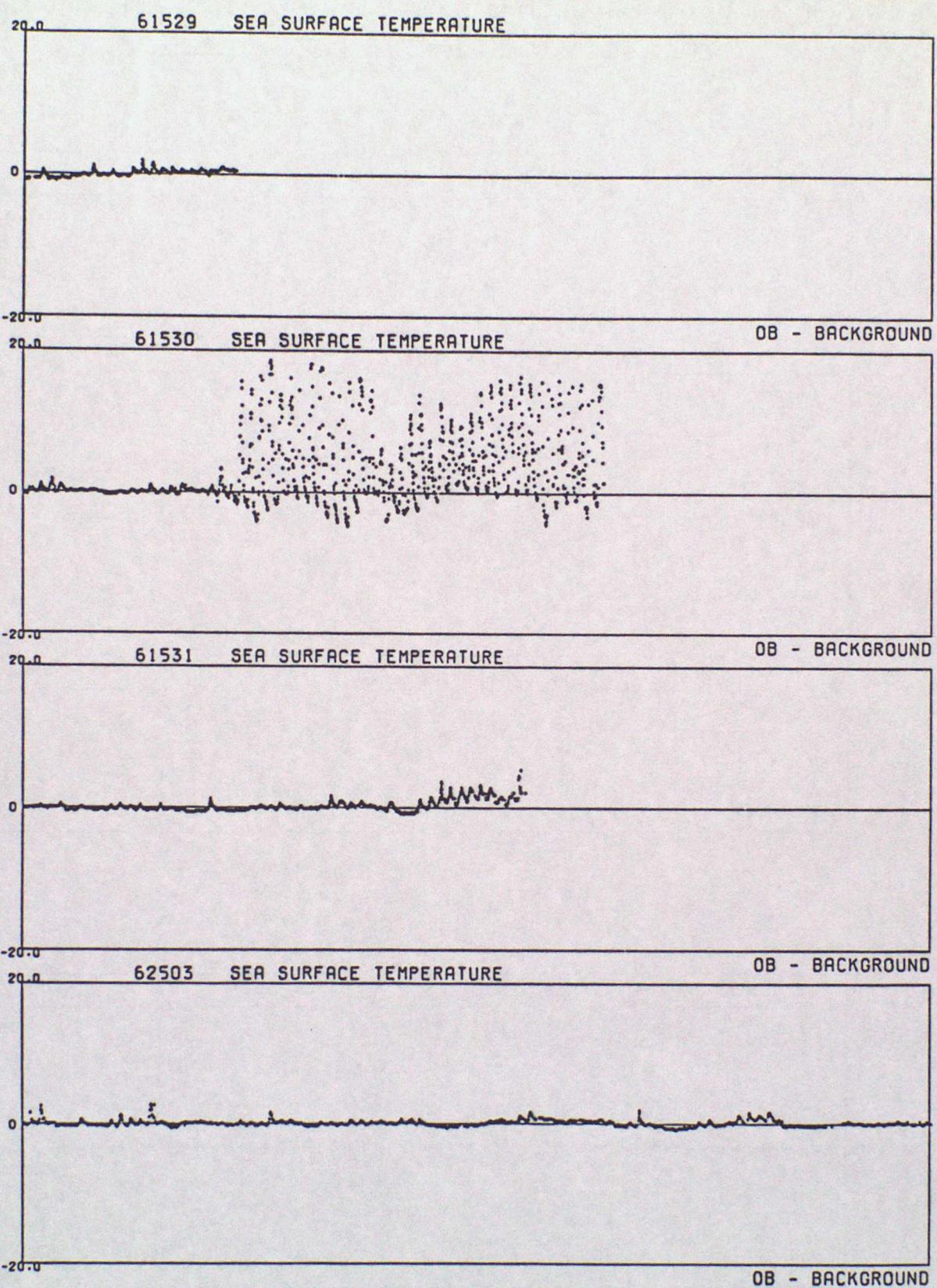
33 GROSS ERRORS

OB - BACKGROUND

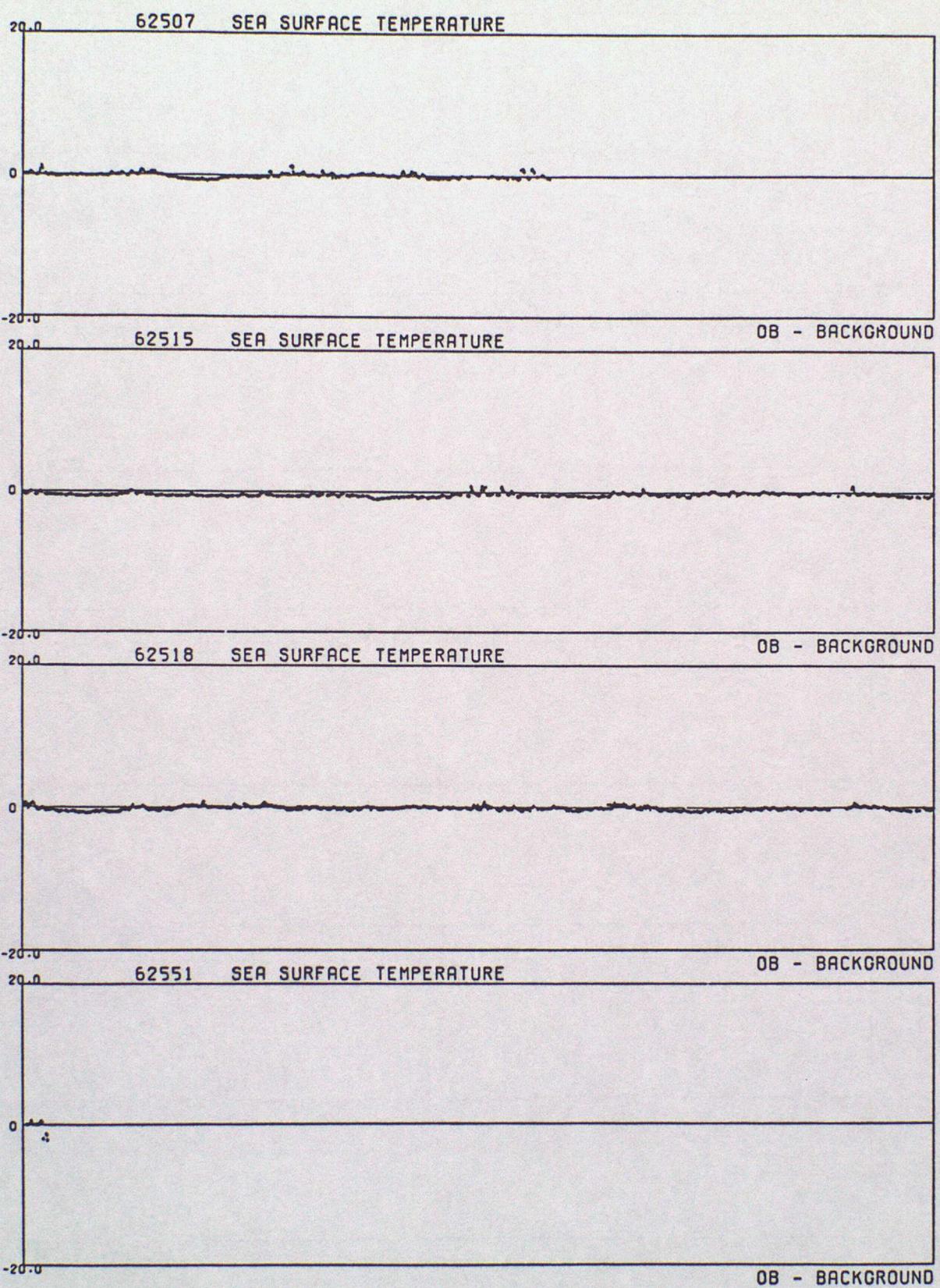
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

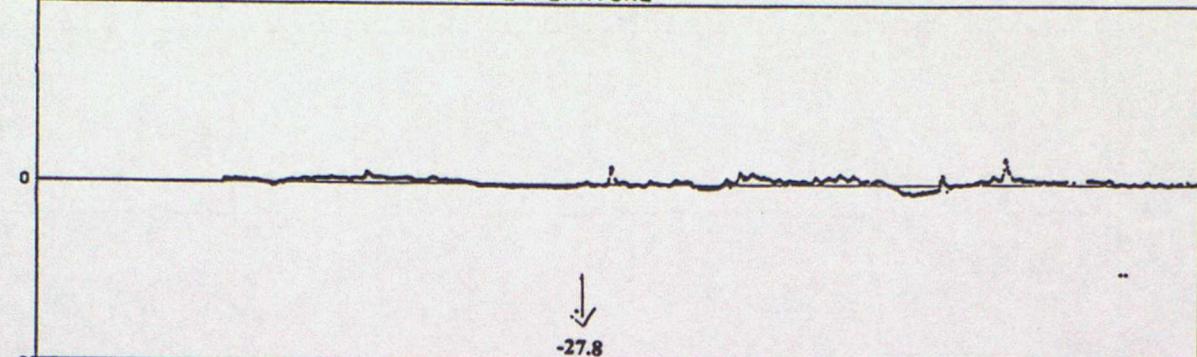


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



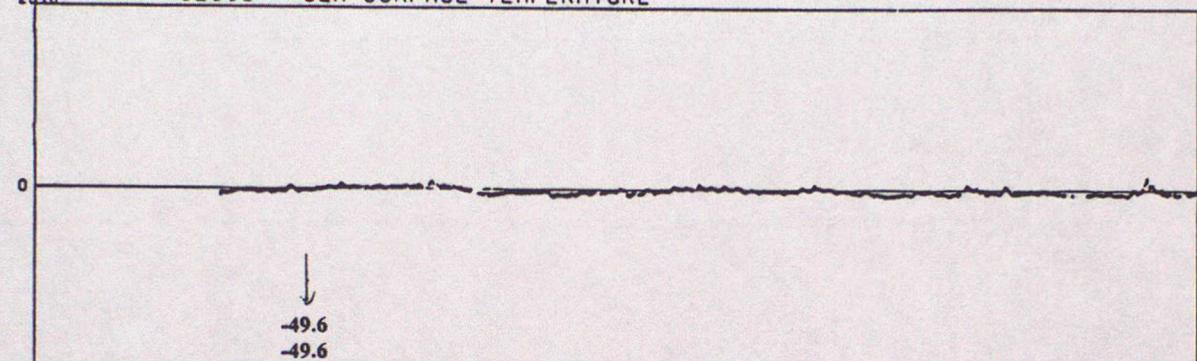
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

20.0 62552 SEA SURFACE TEMPERATURE



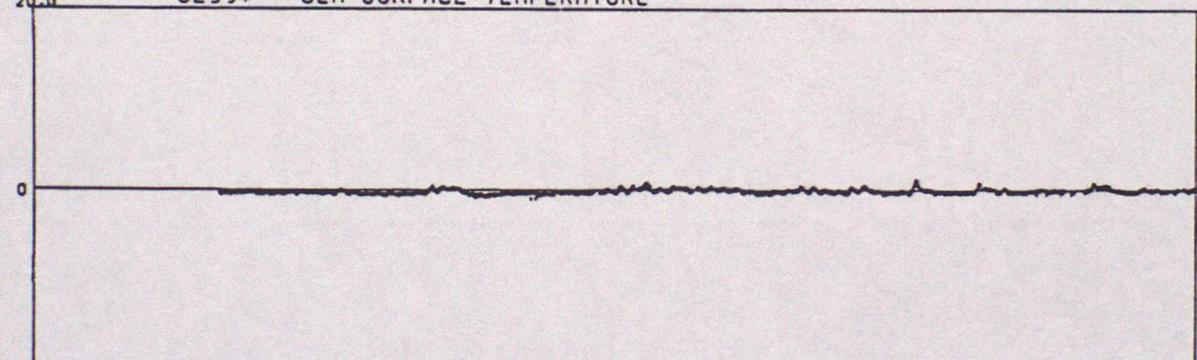
20.0 62553 SEA SURFACE TEMPERATURE

OB - BACKGROUND



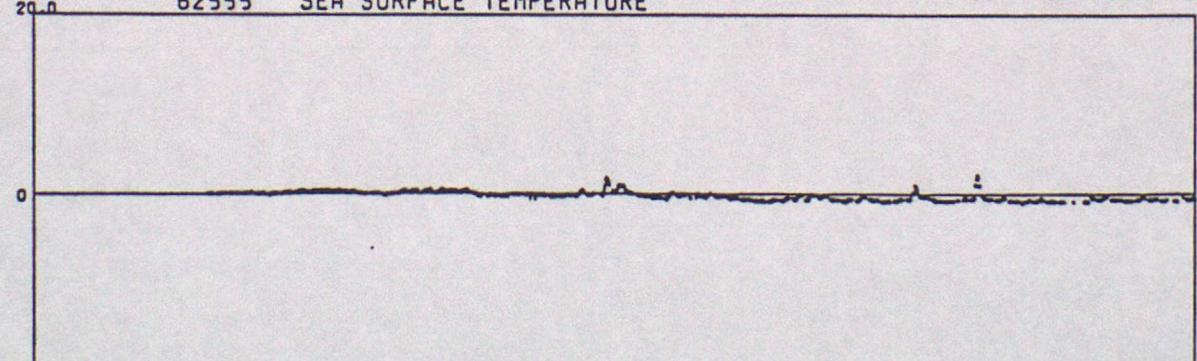
20.0 62554 SEA SURFACE TEMPERATURE

OB - BACKGROUND



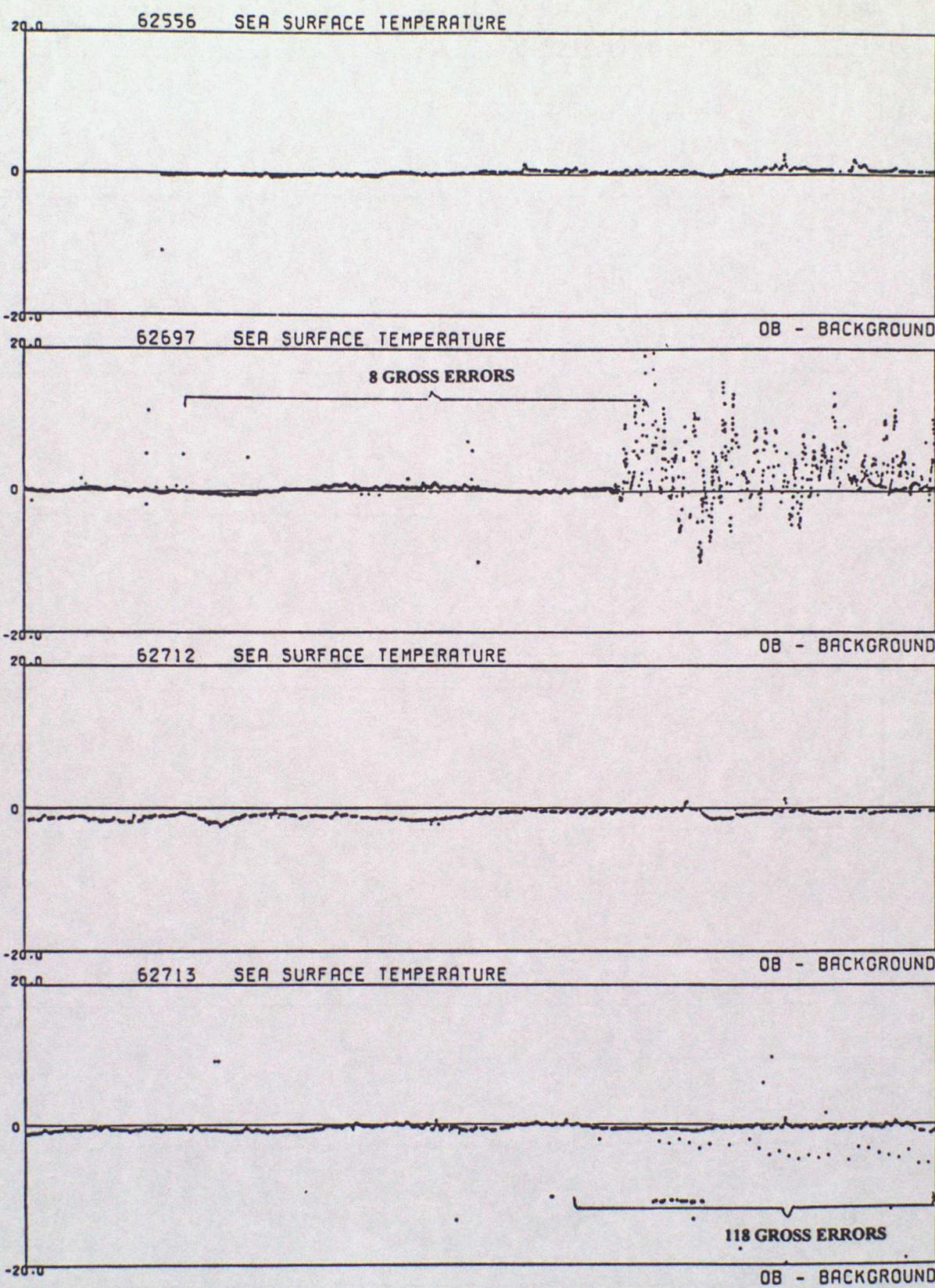
20.0 62555 SEA SURFACE TEMPERATURE

OB - BACKGROUND

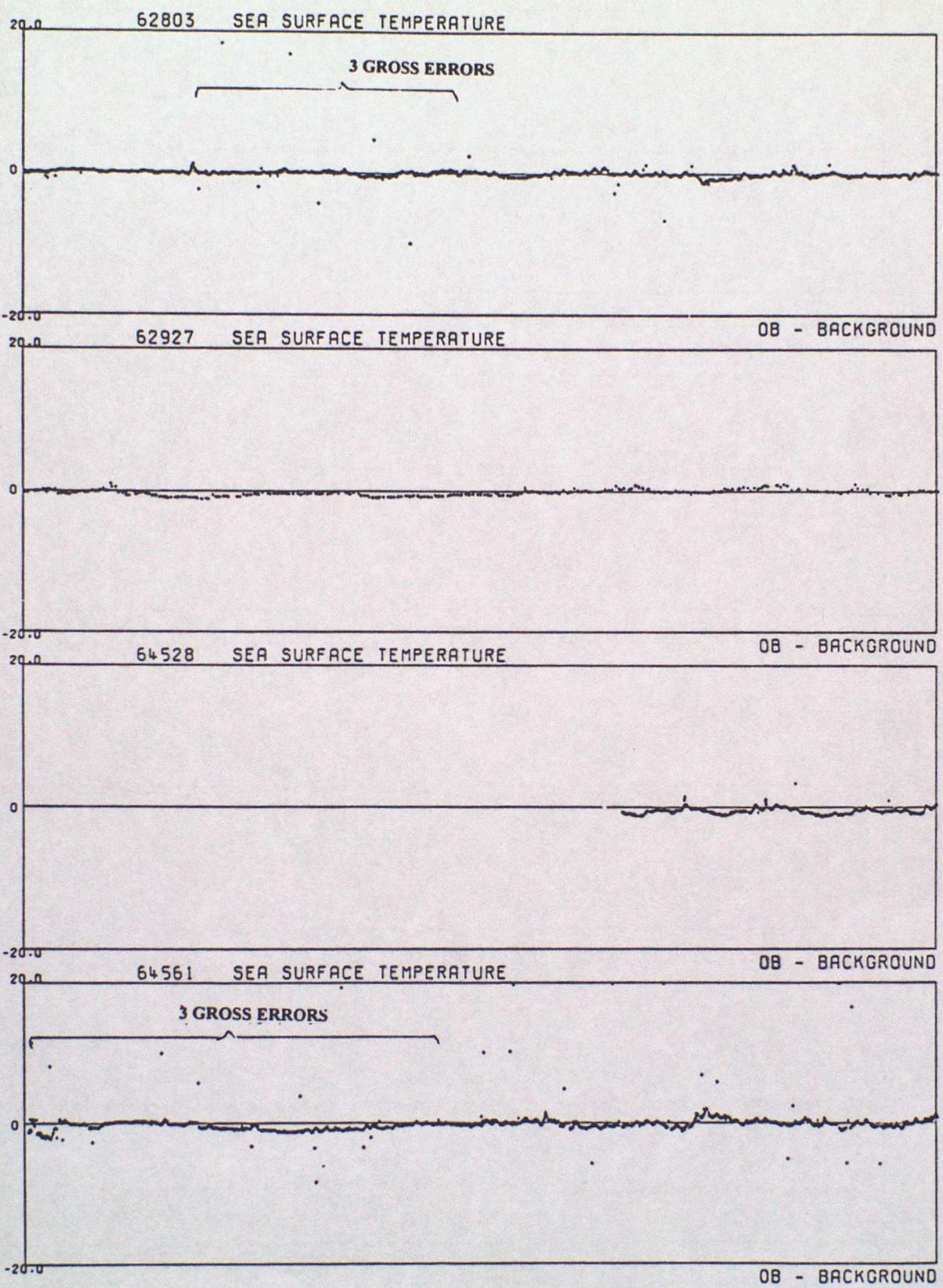


OB - BACKGROUND

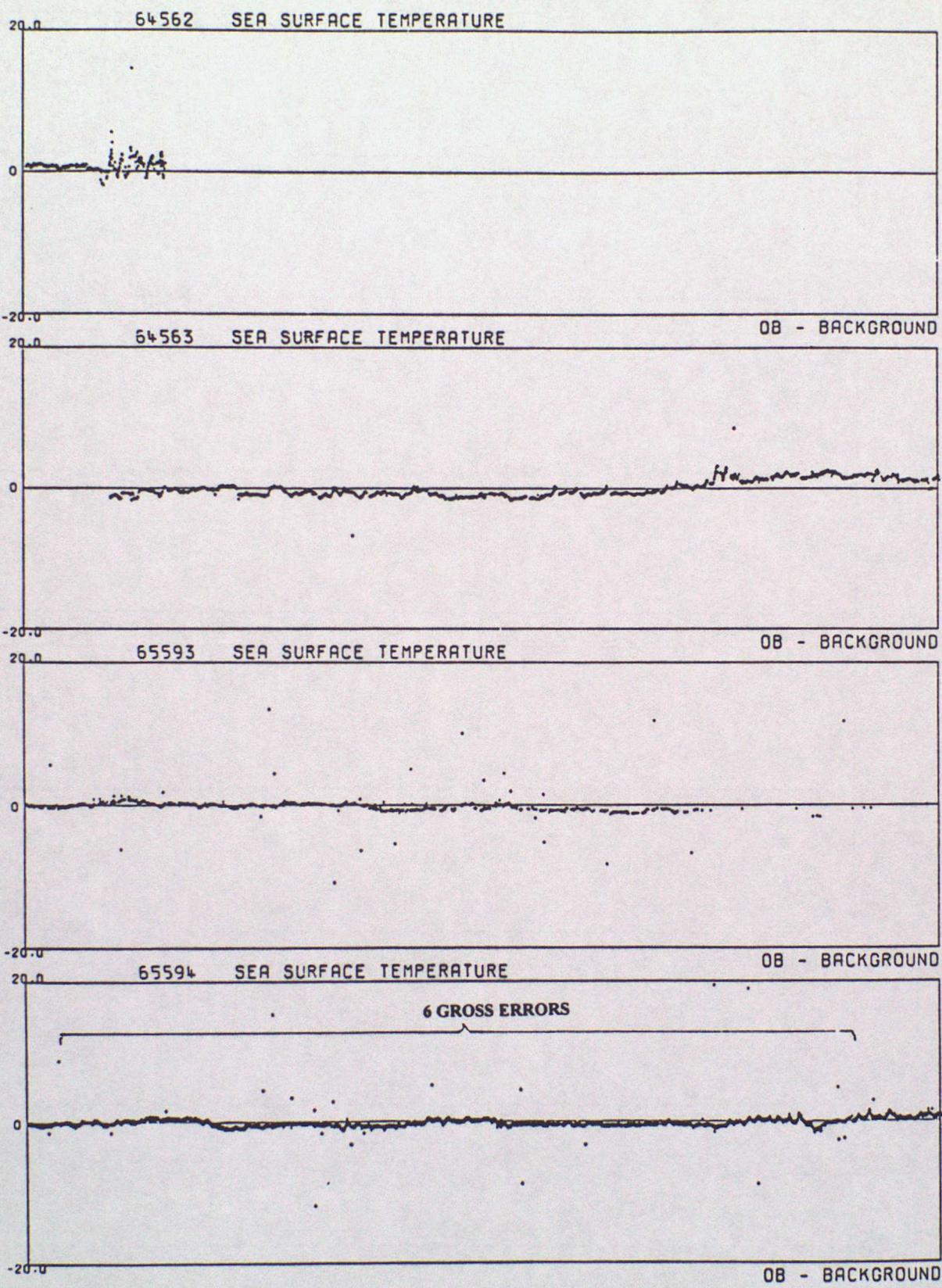
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



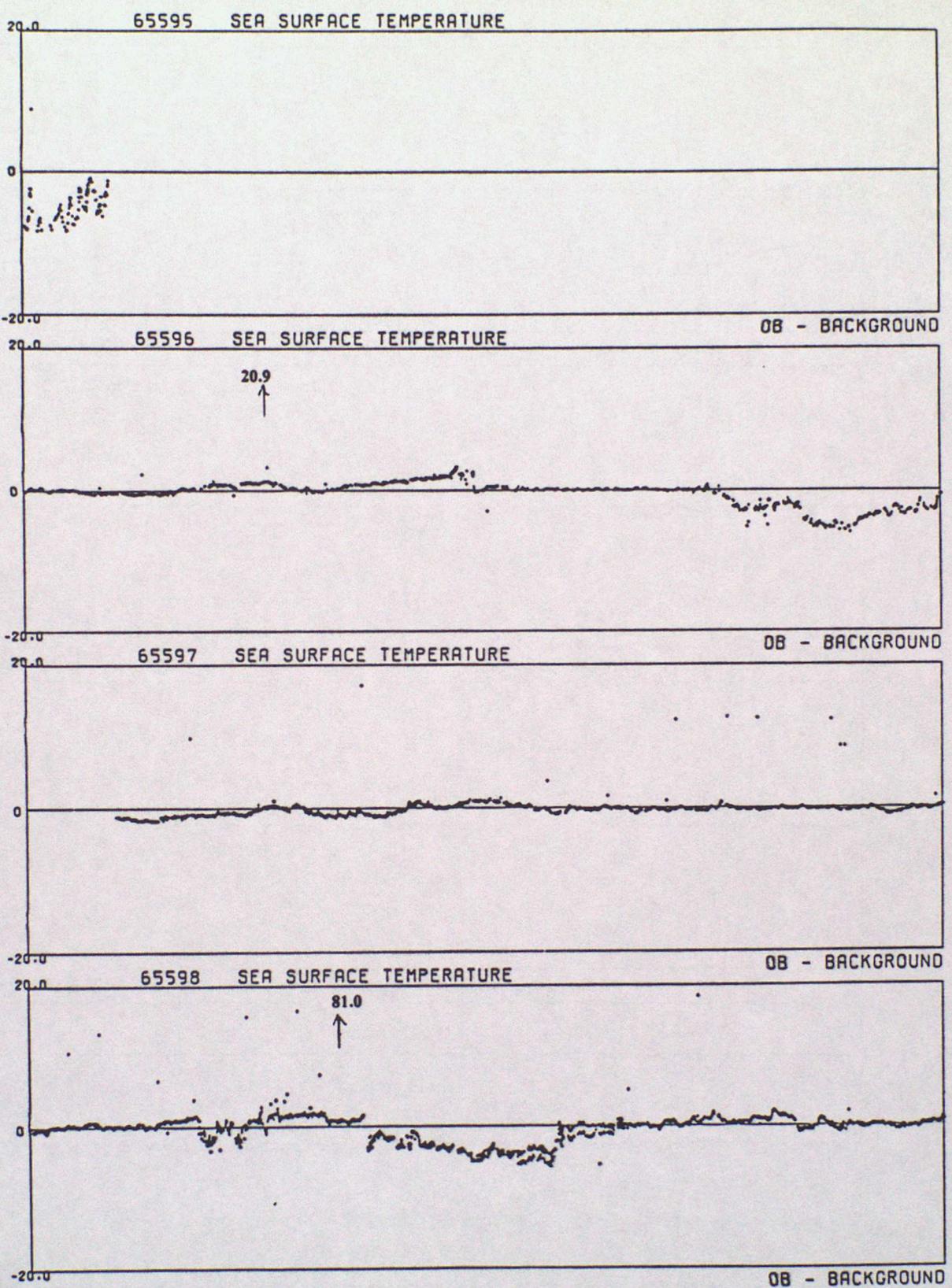
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

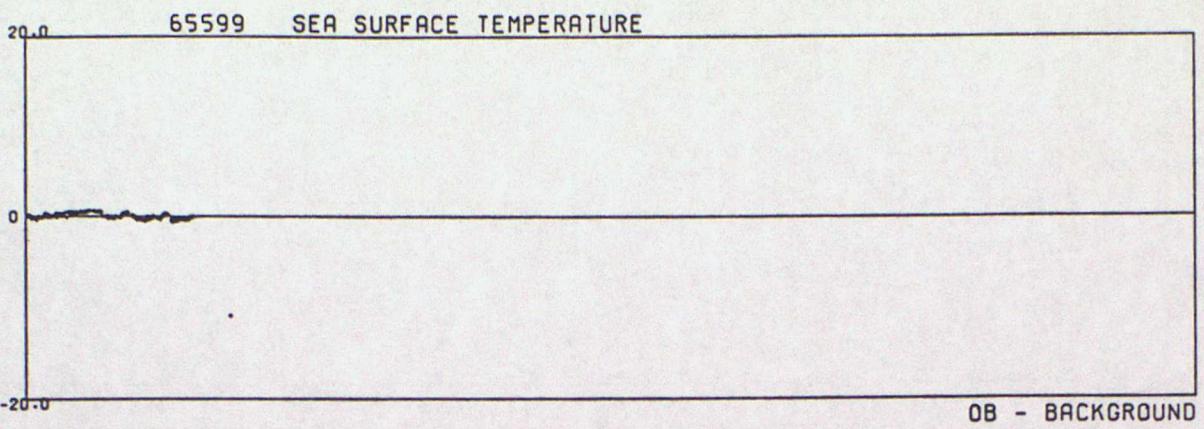


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



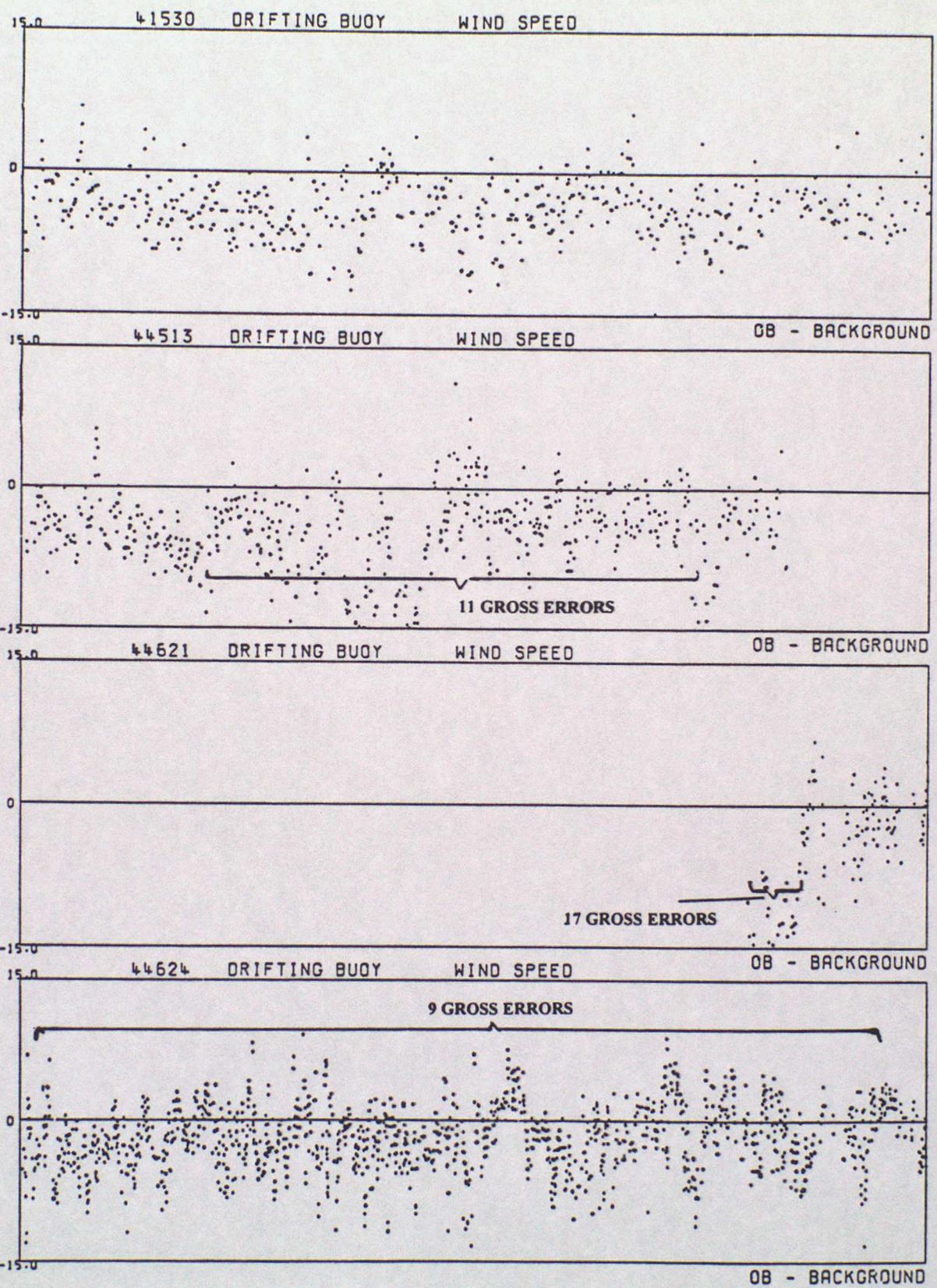
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



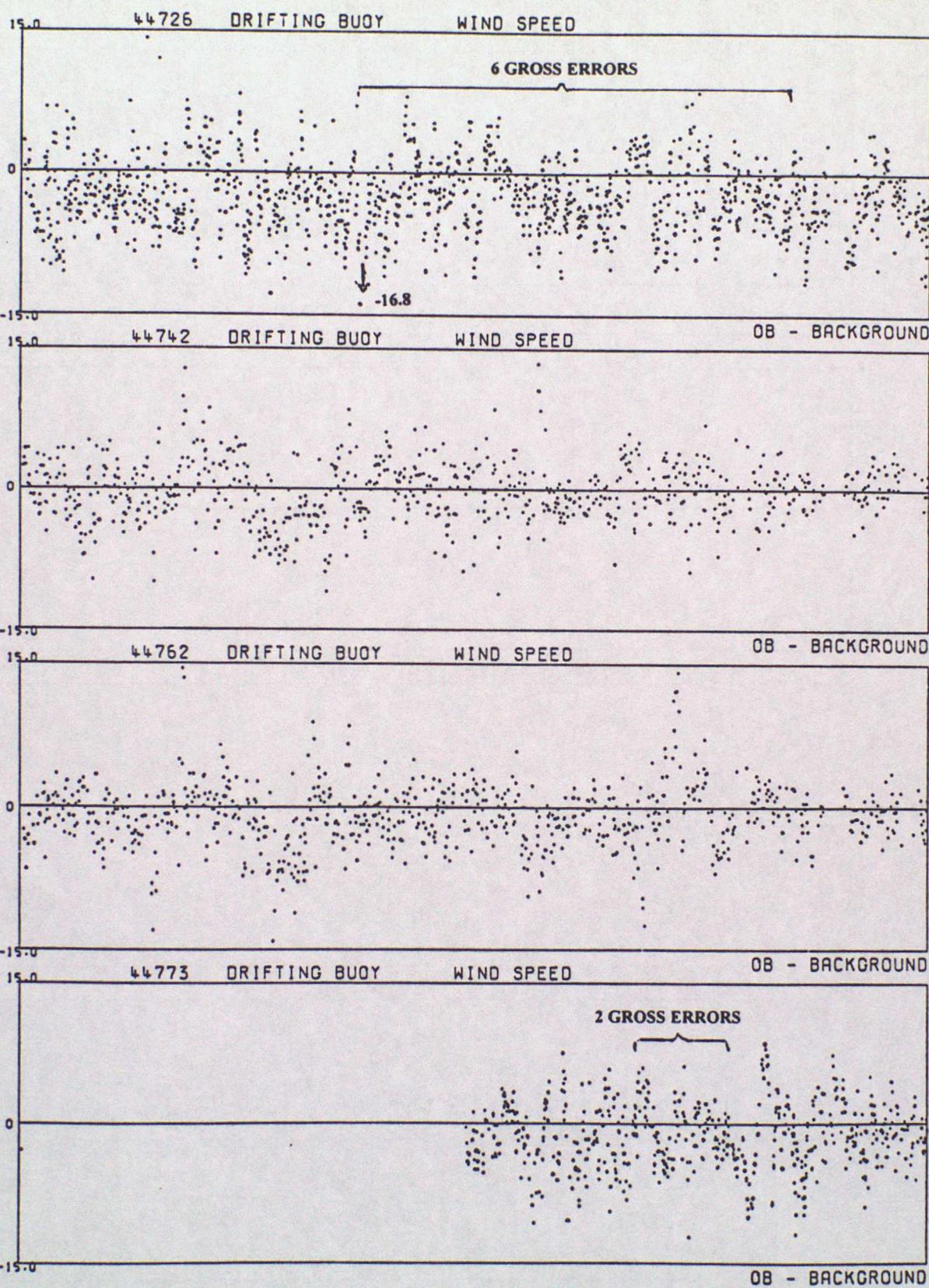


## ANNEX E - TIME SERIES PLOTS OF WIND SPEED

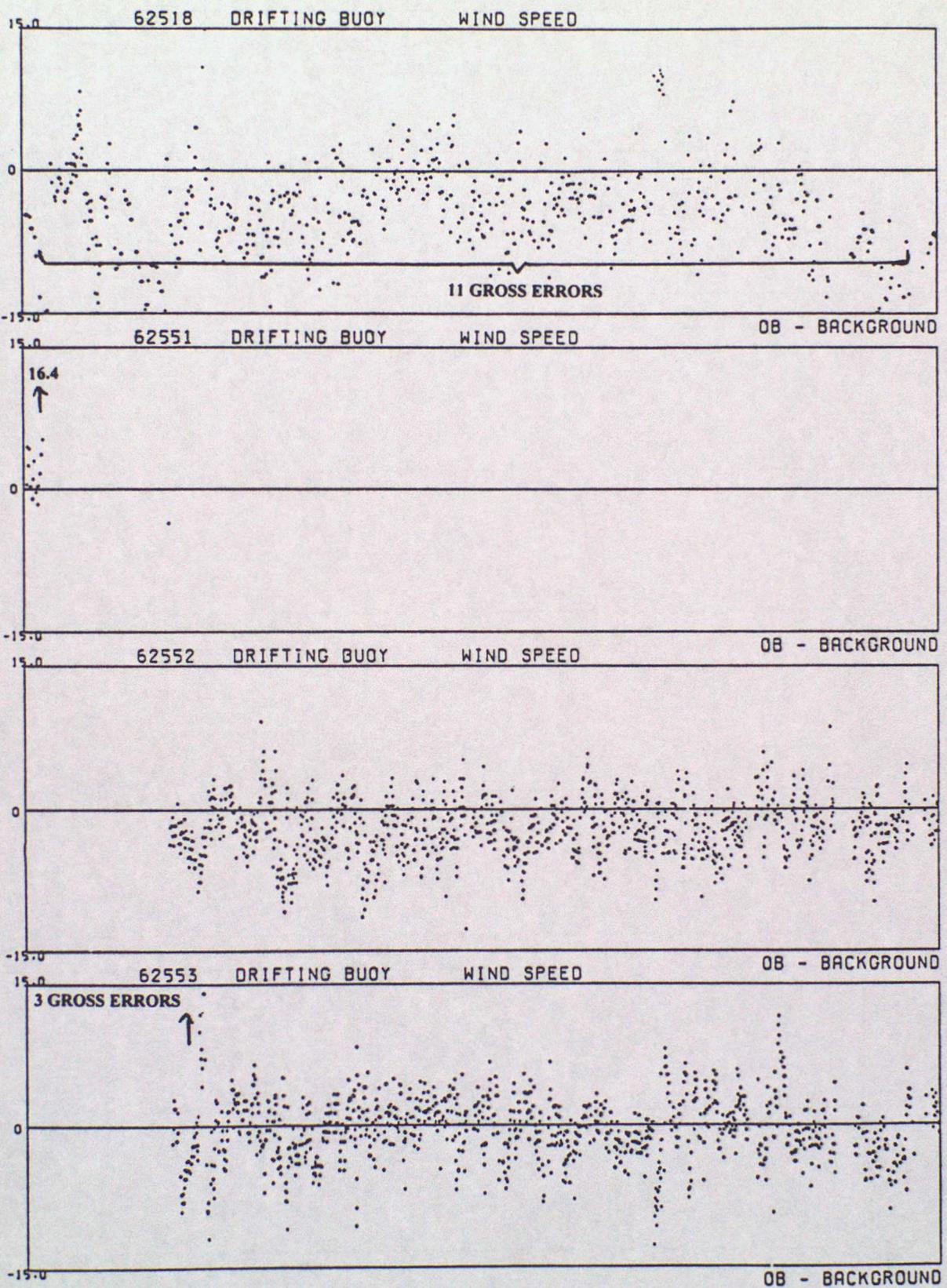
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

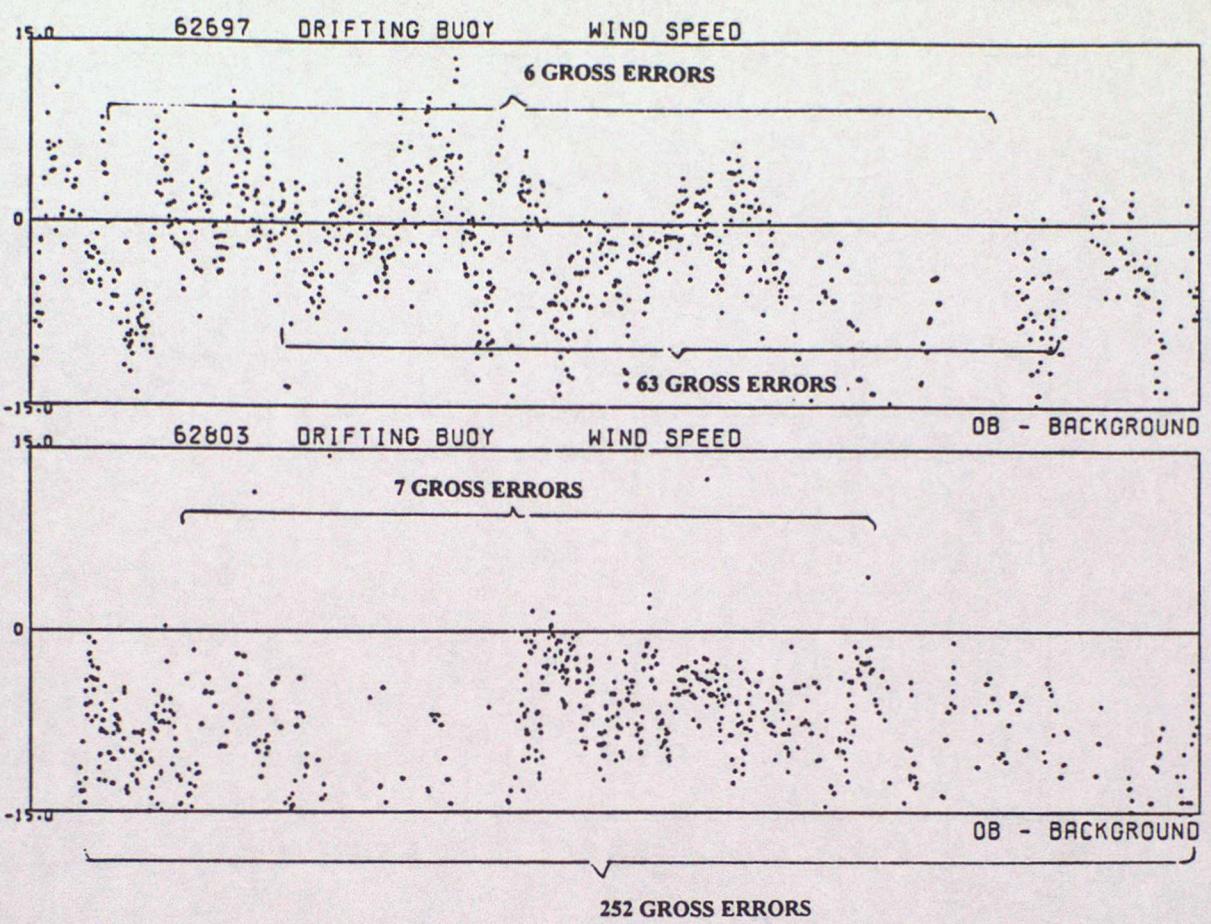


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (CBS - BACKGROUND FIELD)



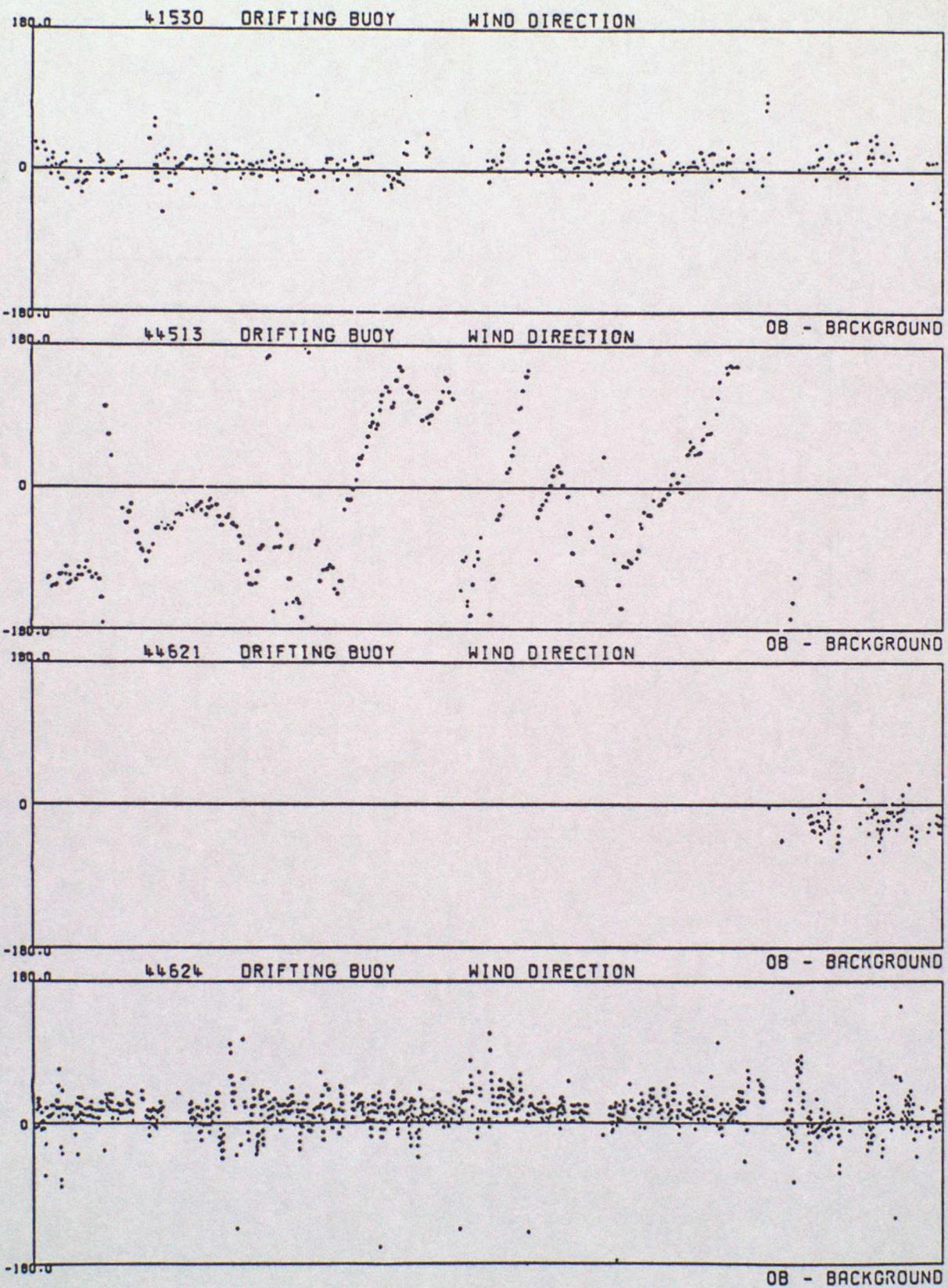
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



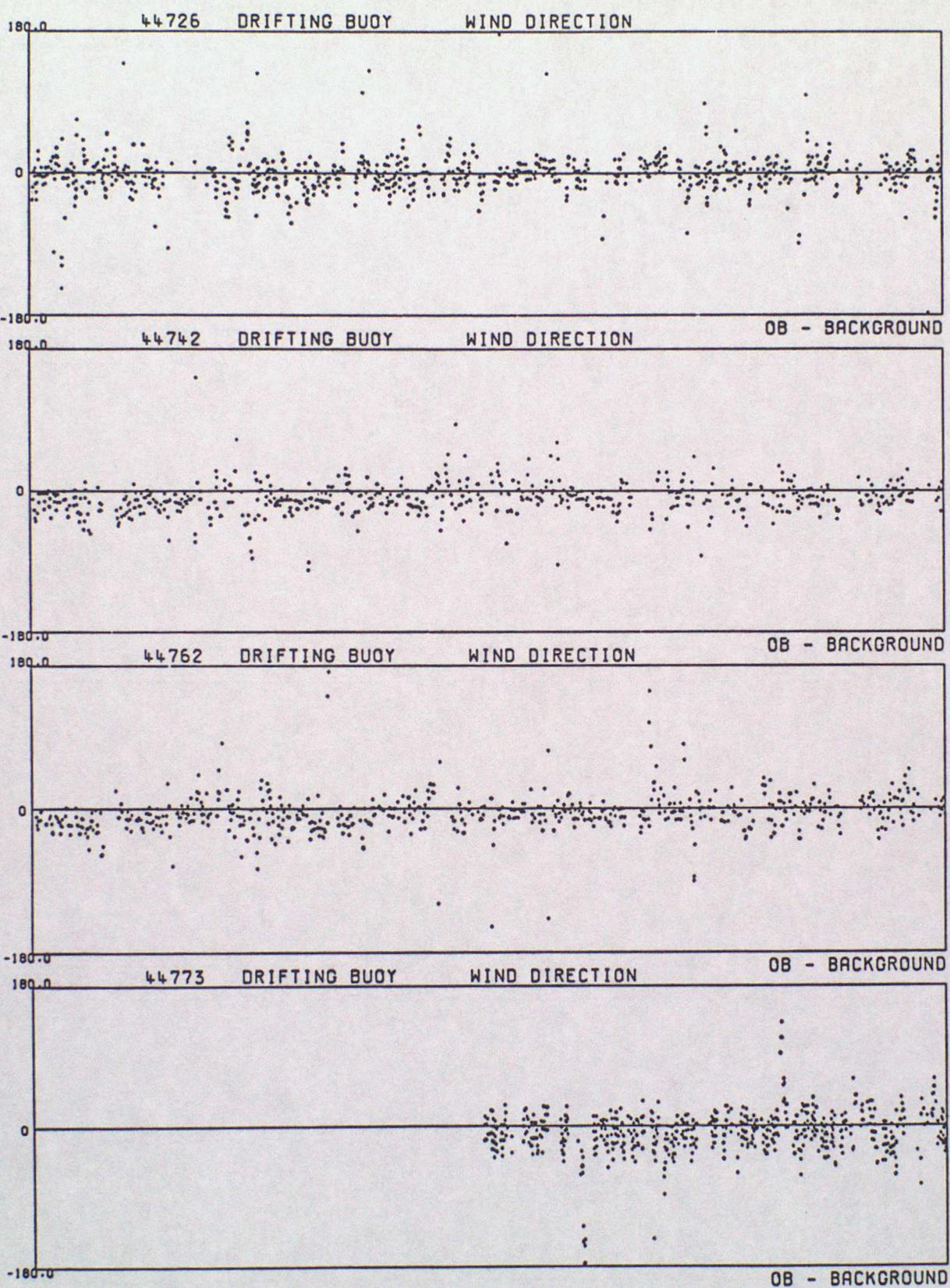


## **ANNEX F - TIME SERIES PLOTS OF WIND DIRECTION**

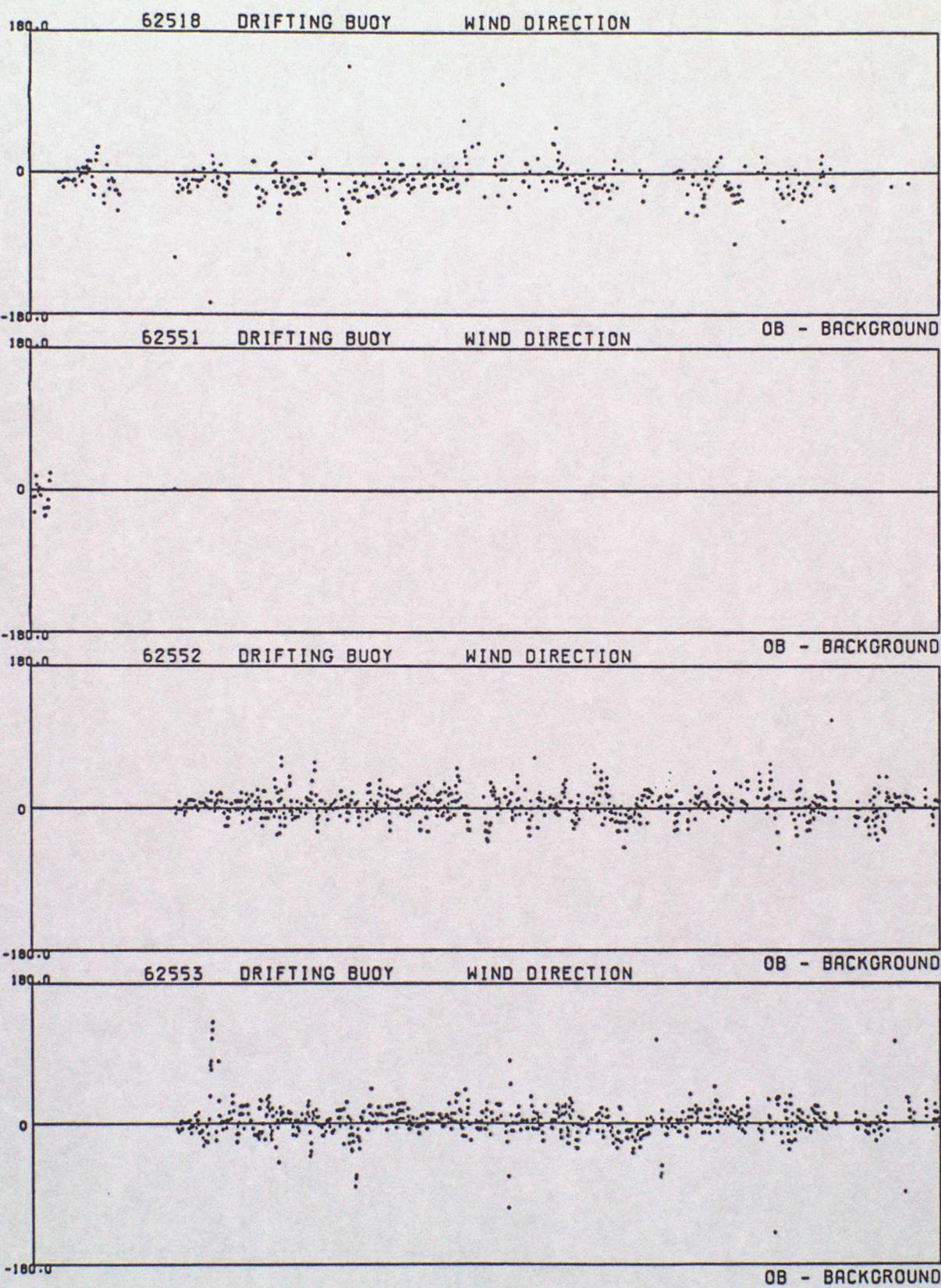
DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)

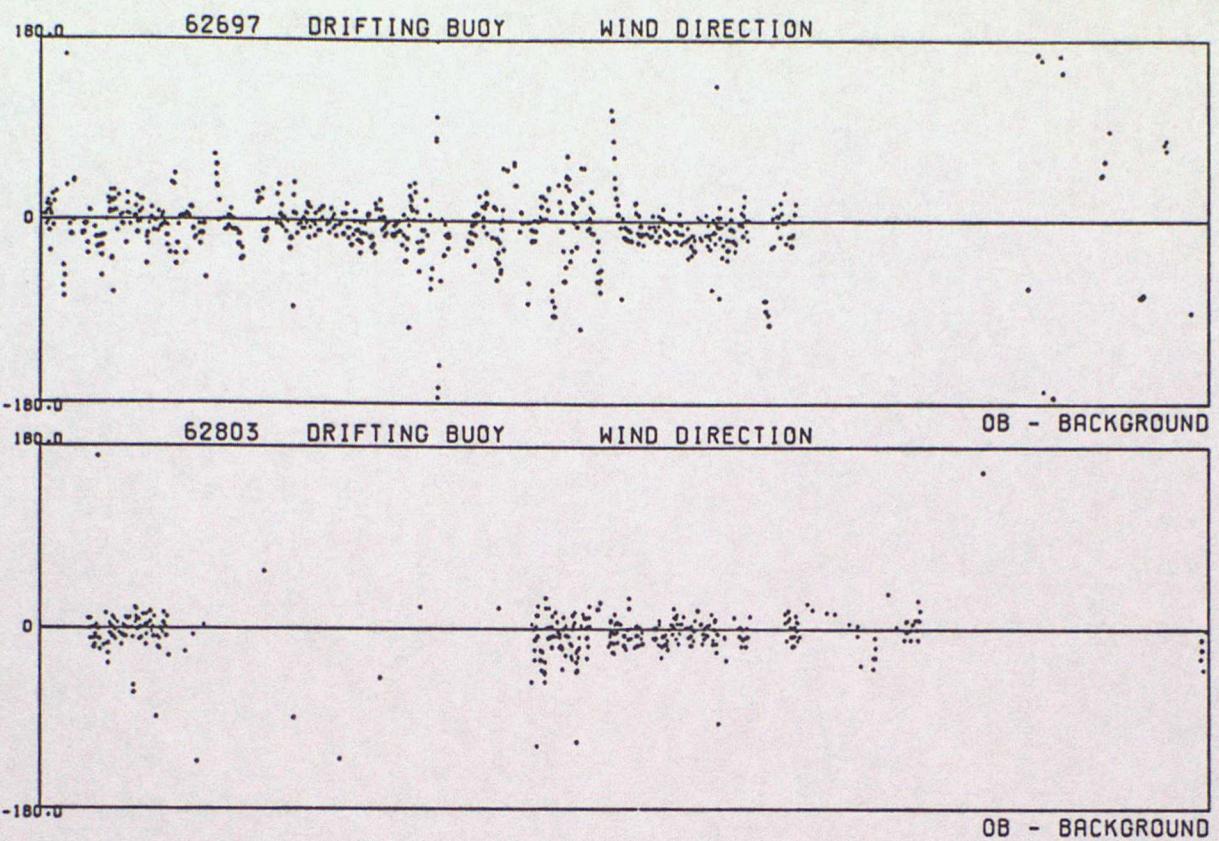


DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1997 TO 23Z ON 30/06/1997 (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	????	??	*	*				*	01/04 - 30/06
13911	????	??	*	*				*	01/04 - 30/06
41529	????	US	*		*				01/04 - 30/06
41530	????	US	*		*	*	*	*	01/04 - 30/06
41922	????	??	*	*				*	01/04 - 30/06
44513	????	US	*		*	*	*	*	01/04 - 30/06
44605	27933	F	*	*				*	01/04 - 30/06
44606	27936	F	*	*				*	01/04 - 08/04
44607	27937	F	*	*				*	01/04 - 30/06
44608	27938	F	*	*				*	01/04 - 30/06
44613	3306	UK	*	*	*	*	*	*	01/04 - 30/06
44614	1256	UK	*	*	*			*	01/04 - 25/04
44621	????	??	*	*	*	*	*	*	12/06 - 30/06
44624	2958	UK	*	*	*	*	*	*	01/04 - 30/06
44726	2955	UK	*	*	*	*	*	*	01/04 - 30/06
44727	3098	UK	*	*	*			*	16/04 - 30/06
44728	1254	UK	*	*	*			*	01/04 - 30/06
44742	26753	UK	*	*	*	*	*	*	01/04 - 30/06
44743	1248	UK	*	*				*	01/04 - 30/06
44760	2947	UK	*	*	*			*	01/04 - 30/06
44762	26754	UK	*	*	*	*	*	*	01/04 - 30/06
44764	1259	UK	*	*	*			*	01/04 - 30/06 +
44767	3013	UK	*	*	*			*	01/04 - 30/06 +
44768	26746	UK	*	*	*			*	01/04 - 30/06
44769	26749	UK	*	*	*			*	17/04 - 30/06
44773	26751	UK	*	*	*	*	*	*	15/05 - 30/06
44775	26741	UK	*	*	*			*	01/04 - 30/06
44776	2957	UK	*	*	*			*	01/04 - 10/06
44777	1249	UK	*	*				*	01/04 - 30/06
44779	3186	UK	*	*				*	01/04 - 30/06
44780	1257	UK	*	*	*			*	01/04 - 09/04
44911	466	US	*						01/04 - 30/06
44912	????	US	*					*	01/04 - 30/06
44917	????	US	*					*	01/04 - 30/04

**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 report.

ANNEX G - Cont.

WMO No.	Argos No.	Owner	Elements Reported						Reporting Period
			PP	Pt	TT	FF	DD	SST	
44925	????	US	*					*	01/04 - 30/06
61521	????	US	*		*				01/04 - 26/04
61529	????	??	*		*			*	01/04 - 30/04
61530	????	??	*		*			*	01/04 - 14/06
61531	????	??	*		*			*	01/04 - 20/05
62503	14427	F	*	*				*	01/04 - 30/06
62507	5793	F	*	*				*	01/04 - 22/05
62508	????	F	*	*					01/04 - 07/05
62515	14426	F	*	*				*	01/04 - 30/06
62518	????	F	*				*	*	01/04 - 30/06
62551	????	??	*	*		*	*	*	01/04 - 03/04
62552	????	??	*	*	*	*	*	*	15/04 - 30/06
62553	????	??	*	*	*	*	*	*	15/04 - 30/06
62554	????	??	*	*				*	15/04 - 30/06
62555	????	??	*	*				*	14/04 - 30/06
62556	????	??	*	*				*	14/04 - 30/06
62697	2959	UK	*	*	*	*	*	*	01/04 - 30/06
62712	3188	UK	*			*		*	01/04 - 30/06
62713	3185	UK	*	*				*	01/04 - 30/06
62803	3209	UK	*	*	*	*	*	*	01/04 - 30/06
62804	26743	UK	*	*	*				01/04 - 30/06
62927	????	??	*					*	01/04 - 30/06
64528	4274	NL	*	*	*			*	30/05 - 30/06
64561	1247	UK	*	*	*			*	01/04 - 30/06
64562	9307	D	*	*	*			*	01/04 - 14/04
64563	3679	N	*	*	*			*	09/04 - 30/06
65593	3039	IR	*	*	*			*	01/04 - 29/06
65594	1252	UK	*	*	*			*	01/04 - 30/06
65595	3038	IR	*	*	*			*	01/04 - 09/04
65596	3036	NL	*	*	*			*	01/04 - 30/06
65597	4273	NL	*	*	*			*	09/04 - 30/06
65598	3678	N	*	*	*			*	01/04 - 30/06
65599	9308	D	*	*	*			*	01/04 - 17/04

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 report.

