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Quality Evaluation Section

FORTY-SIXTH QUARTERLY REPORT

ON DRIFTING BUOYS

IN THE NORTH ATLANTIC

APRIL TO JUNE 1998

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28th August 1998

This report has not been published.
Permission to quote from it should be obtained from the
Head of Observations, Plans and Requirements Branch.

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

Unfortunately, due to changes being made to the data storage methods and the Observation Processing Databank (OPD), there is no sea surface temperature analysis included in this report.

(a) Location Accuracy

The location accuracy was good with 60 out of 68 of the buoys reporting having a '% of observations with acceptable positions' greater than 95% (compared to 59 out of 62 last quarter).

(b) Data timeliness

(see note 9 of section 6 for definition of terms.)

| Timeliness | Last quarter. | This quarter |
|--------------------|---------------|--------------|
| Very Good | 45 | 51 |
| Good | 8 | 5 |
| Satisfactory | 5 | 4 |
| Poor | 3 | 4 |
| Very poor | 1 | 4 |
| Total no. of buoys | 62 | 68 |

(c) Data availability

(see note 9 of section 6 for definition of terms.)

| Availability | South of 50 deg N | | North of 50 deg N | |
|--------------|-------------------|-----------------|-------------------|-----------------|
| | Previous Quarter | Present Quarter | Previous Quarter | Present Quarter |
| Very Good | 3 | 1 | 24 | 24 |
| Good | 1 | 5 | 9 | 8 |
| Satisfactory | 9 | 13 | 2 | 7 |
| Poor | 6 | 6 | 3 | 3 |
| Very Poor | -- | -- | 5 | 1 |

The total number of buoy days in the quarter was 4,906 [obtained by summing the number of reporting days for each buoy] (last quarter the total was 4,620) and the number of 'buoy hours' with at least one observation was 77,401 (compared with 71,214 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 15.78 (last quarter the figure was 15.41).

3. SUMMARY OF PRESSURE PERFORMANCE

(a) Buoy deployments, etc.

NOTE 2

Although buoys 44727, 64563, 65562 and 65594 (all north of 50 degN) were reporting at the beginning of the period, pressure ob-bg (observation - background) values were not available until 19/4, 10/4, 13/4 and 15/4 respectively.

North of 50deg N

There were 35 buoys reporting pressure at the beginning of the period (including those mentioned in the note above). This figure includes buoy 44763 which drifted north of 50 degN during this quarter. 34 buoys were operating at the end of the period. 8 new buoys were deployed (44601, 44602, 44603, 44606, 44726, 44778, 64529 and 65571). 9 buoys ceased reporting pressure (44614, 44624, 44761, 44763, 44766, 62558, 62697, 64552 and 65594).

South of 50deg N

There were 16 buoys reporting pressure at the beginning of the period. This figure includes buoy 41597 which drifted into the area during the quarter. It also includes buoys 61535, 61536, 61537, 62501 and 74532 which were not included in the last report, but were reporting on the first day of this quarter. 15 buoys were reporting at the end of the period. 9 new buoys were deployed (44604, 44613, 44742, 44743, 44774, 44776, 44779, 62509 and 62510). 10 buoys ceased reporting (13903, 44762, 51633, 61535, 61536, 61537, 62501, 62751, 62755 and 74532).

(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:-

- 44743 - Pressure data showed a larger than normal scatter throughout the period.
- 44762 - A bias of -2.8 hPa was reported from the start of the period until the end of the buoy's life on 16/4.
- 44774 - This buoy showed a pressure bias of -1.3 hPa from the start of its life on 24/4 until the end of the period.
- 44775 - Data from this buoy became erroneous from 27/5 until the end of the period.
- 61535 - This buoy showed a pressure bias of -2.0 hPa from the start of the period until the end of the buoy's life on 13/4.

- 62501 - A number of erroneous reports were produced by this buoy between the start of the period and 16/4.
- 74532 - All pressure data were completely erroneous from the start of the period until the end of the buoy's life on 21/4.

Biases

5 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 | +1.3 | +1.2 | 01/04 - 02/06 |
| 44901 | +0.6 | +0.4 | 01/04 - 30/06 |
| 44912 | +0.7 | -0.3 | 01/04 - 30/06 |
| 44925 | +0.7 | -0.6 | 01/04 - 30/06 |
| 61536 | -0.8 | 0.0 | 01/04 - 03/06 |

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.

Summary of Pressure Performance

| Pressure Summary | Last Quarter | This Quarter |
|--------------------|--------------|--------------|
| Acceptable | 41 | 56 |
| Suspect - RMS | 9 | 7 |
| Suspect - Bias | 12 | 5 |
| Total no. of buoys | 62 | 68 |

(4) Air Temperatures

The following table shows the mean and standard deviation of observation minus background differences for air temperatures.

(Note : The calculations below exclude the majority of gross errors. However, gross errors within +/-20 °C of the background value are included. Therefore, in some instances, the figures may be slightly misleading.)

| Air Temperature | | | | Air Temperature | | | |
|-----------------|------|---------|------------|-----------------|------|---------|------------|
| WMO No. | Mean | St. Dev | No. of Obs | WMO No. | Mean | St. Dev | No. of Obs |
| 13903 | --- | --- | --- | 13906 | --- | --- | --- |
| 41597 | --- | --- | --- | 44601 | --- | --- | --- |
| 44602 | --- | --- | --- | 44603 | --- | --- | --- |
| 44604 | --- | --- | --- | 44606 | --- | --- | --- |
| 44609 | --- | --- | --- | 44613 | 1.1 | 1.6 | 1463 |
| 44614 | --- | --- | --- | 44616 | --- | --- | --- |
| 44617 | 0.4 | 1.6 | 3101 | 44621 | 0.5 | 1.3 | 2706 |
| 44624 | --- | --- | --- | 44726 | --- | --- | --- |
| 44727 | 0.9 | 1.5 | 4956 | 44742 | 0.5 | 2.3 | 1658 |
| 44743 | --- | --- | --- | 44761 | --- | --- | --- |
| 44762 | 2.5 | 2.0 | 216 | 44763 | --- | --- | --- |
| 44765 | --- | --- | --- | 44766 | --- | --- | --- |
| 44768 | --- | --- | --- | 44771 | --- | --- | --- |
| 44773 | 0.1 | 2.3 | 4076 | 44774 | -0.1 | 1.6 | 1917 |
| 44775 | 1.7 | 2.0 | 3677 | 44776 | --- | --- | --- |
| 44778 | -0.2 | 1.0 | 2967 | 44779 | --- | --- | --- |
| 44780 | 0.5 | 1.3 | 4119 | 44901 | --- | --- | --- |
| 44912 | --- | --- | --- | 44925 | --- | --- | --- |

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

| Air Temperature | | | | Air Temperature | | | |
|-----------------|------------------|-------------------|------------|-----------------|--------------------|------------------|------------|
| WMO No. | Mean | St. Dev | No. of Obs | WMO No. | Mean | St. Dev | No. of Obs |
| 51633 | -1.5 | 2.4 | 966 | 61535 | 0.5 | 1.4 | 80 |
| 61536 | 5.2 | 3.0 | 916 | 61537 | 2.4 | 2.5 | 440 |
| 62501 | --- | --- | --- | 62506 | 0.2 | 1.4 | 1057 |
| 62509 | --- | --- | --- | 62510 | --- | --- | --- |
| 62551 | --- | --- | --- | 62553 | 0.5 | 1.7 | 1670 |
| 62557 | --- | --- | --- | 62558 | --- | --- | --- |
| 62673 | 1.7 | 2.1 | 1328 | 62674 | 0.6 | 1.5 | 1325 |
| 62697 | 7.2 ¹ | 11.4 ¹ | 89 | 62751 | --- | --- | --- |
| 62755 | --- | --- | --- | 62758 | --- | --- | --- |
| 62803 | 1.8 ¹ | 5.2 ¹ | 1659 | 64528 | 0.6 | 1.6 | 3160 |
| 64529 | 0.8 | 1.7 | 2357 | 64530 | --- | --- | --- |
| 64552 | --- | --- | --- | 64561 | --- | --- | --- |
| 64563 | 0.4 | 1.5 | 4851 | 65562 | 0.5 | 1.3 | 4900 |
| 65571 | 1.3 | 2.0 | 2756 | 65591 | 0.3 | 2.1 | 2902 |
| 65592 | 0.6 | 1.7 | 4449 | 65594 | 1.2 | 2.0 | 4933 |
| 65597 | 0.3 | 1.3 | 4480 | 74532 | -27.4 ² | 2.3 ² | 181 |

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

Notes

¹ Buoys 62697 and 62803 both have a large number of gross errors which are excluded from the calculations in the table. Including the gross errors the buoys show an air temperature bias of 7.2°C and 8.2°C respectively.

² Buoy 65597 reported only 1 observation within 20°C of the background, thus the calculation in the table includes all observations.

Summary

Buoys 44613(1.1), 44762(2.5), 51633(-1.5), 61536(5.2), 61537(2.4) and 65571(1.3) all showed a significant air temperature bias.

Data from buoy 44775 (1.7) became slightly erratic between the end of April and the start of June. Data from buoys 62673 (1.7) and 65594 (1.2) also became slightly erratic in the second half of the report period.

Air temperature data from buoys 62697, 62803 (from 20/4 until it stopped reporting on 4/5) and 74532 were totally erroneous.

(5) Winds

The following table shows the mean and standard deviation of observation minus background differences for wind speed and direction. Unfortunately, comparison figures from voluntary observing ships are not available for this report.

(Note : Buoy 44762 produced only 20 wind reports. Buoy 62697 reported occasional wind speeds but no wind directions. Subsequently, no analysis was carried out on either of these buoys.)

| WMO No. | Period | Wind Speed (kn) | | Wind Direction (deg) | | No. of Obs |
|---------|---------------|-----------------|----------|----------------------|----------|------------|
| | | Mean | St. Dev. | Mean | St. Dev. | |
| 44601 | 15/04 - 30/06 | 2.8 | 4.8 | -3.4 | 36.0 | 825 |
| 44602 | 15/04 - 30/06 | 0.3 | 4.4 | 3.9 | 34.2 | 728 |
| 44609 | 01/04 - 30/06 | 1.2 | 6.9 | 1.0 | 26.8 | 2525 |
| 44621 | 01/04 - 30/06 | -2.0 | 5.3 | -8.2 | 20.9 | 1259 |
| 44624 | 01/04 - 27/05 | -10.4 | 11.0 | 3.7 | 25.8 | 311 |
| 44773 | 01/04 - 30/06 | -5.1 | 4.8 | -5.9 | 19.6 | 3265 |
| 62506 | 01/04 - 30/06 | -0.7 | 3.2 | -3.2 | 13.0 | 142 |
| 62551 | 01/04 - 30/06 | 0.7 | 3.6 | -4.6 | 33.5 | 848 |
| 62553 | 01/04 - 30/06 | -1.7 | 3.1 | -3.2 | 19.1 | 1920 |
| 62673 | 01/04 - 30/06 | 0.5 | 5.0 | 1.9 | 41.2 | 1046 |
| 62674 | 01/04 - 30/06 | -1.9 | 4.2 | -4.4 | 27.6 | 1120 |
| 62751 | 01/04 - 08/06 | 0.2 | 3.3 | -1.4 | 18.9 | 1090 |
| 62755 | 01/04 - 13/05 | -0.2 | 3.5 | 7.7 | 16.1 | 442 |
| 62758 | 01/04 - 30/06 | -0.3 | 3.6 | -6.2 | 19.7 | 1367 |
| 62803 | 01/04 - 30/06 | -9.4 | 8.8 | -4.5 | 54.1 | 102 |

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

Buoys 44601 (2.8), 44621 (-2.0), 44624 (-10.4) and 44773 (-5.1) all showed a significant wind speed bias.

Buoys 44621 (-8.2), 44773 (-5.9), 62755 (7.7) and 62758 (-6.2) all showed a significant wind direction bias.

Both wind speed and direction reports from buoy 62803 were erroneous from the start of the period until it stopped reporting wind data on 21/5.

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).

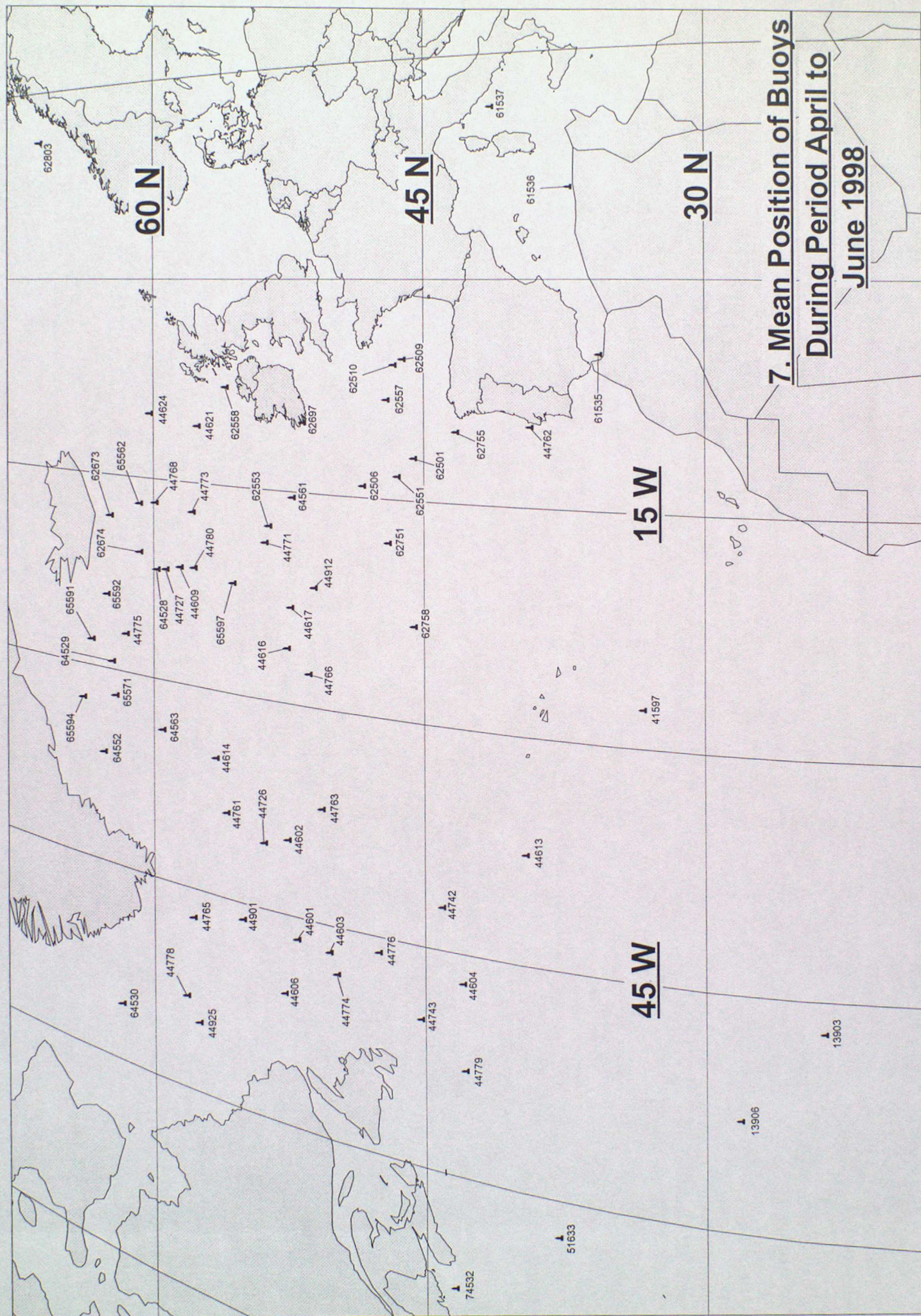
9. The performance categories are defined in the table below.

| 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/?? | 41597/?? |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 01/04 - 02/06 | 01/04 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 23.7 | 28.2 | 33.3 |
| Mean Longitude | -47.0 | -52.9 | -27.5 |
| No. of obs received | 526 | 945 | 2030 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.6 | 99.5 | 90.9 |
| % of Present | | | |
| Pressure | 100.0 | 100.0 | 98.9 |
| P. Tendency | 29.7 | 32.1 | 12.6 |
| 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. | 29.7 | 32.1 | 69.1 |
| Median delay(min) | 74 | 68 | 47 |
| Number of days | 63 | 91 | 91 |
| Mean no. of obs/day | 8.4 | 10.4 | 22.3 |
| No. of hours with obs | 499 | 865 | 1341 |
| Mean no. of hours/day with obs | 7.9 | 9.5 | 14.7 |
| % of hour periods without an ob | 67.1 | 60.4 | 38.8 |
| Mean (Ob-Bg) | 1.3 | 0.1 | 0.2 |
| RMS (Ob-Bg) | 1.6 | 1.1 | 0.8 |
| unflagged data | | | |
| Mean (Ob-Bg) | 1.2 | 0.1 | 0.2 |
| RMS (Ob-Bg) | 1.6 | 1.1 | 0.8 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.6 | 1.1 | 0.8 |
| % of data flagged | 16 | 15 | 42 |
| Operating at end of period | NO | YES | YES |
| Performance | | | |
| Availability | Poor | Poor | Satisfactory |
| Pressure Quality | Suspect | Acceptable | Acceptable |
| Timeliness | Good | Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|------------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44601/?? | 44602/?? | 44603/?? |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 15/04 - 30/06 | 15/04 - 30/06 | 15/04 - 30/06 |
| Mean Latitude | 52.1 | 52.6 | 50.3 |
| Mean Longitude | -46.6 | -39.7 | -46.9 |
| No. of obs received | 1798 | 1702 | 1586 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable positions | 99.8 | 99.9 | 55.2 |
| % of Present | | | |
| Pressure | 98.6 | 97.6 | 99.6 |
| P. Tendency | 6.7 | 5.6 | 5.1 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed /Dir. | 54.9/57.7 | 51.3/55.8 | 0.0/0.0 |
| Sea-surface Temp. | 59.1 | 56.8 | 99.7 |
| Median delay(Min) | 176 | 202 | 46 |
| Number of days | 77 | 77 | 77 |
| Mean no. of obs/day | 23.4 | 22.1 | 20.6 |
| No. of hours with obs | 1514 | 1436 | 1150 |
| Mean no. of hours/day with obs | 19.7 | 18.7 | 14.9 |
| % of hour periods without an ob | 17.9 | 22.1 | 37.9 |
| Mean (Ob-Bg) | 0.3 | 0.2 | -0.2 |
| RMS (Ob-Bg) | 1.3 | 1.2 | 1.2 |
| unflagged data | | | |
| Mean (Ob-bg) | 33.1 | 21.7 | -0.2 |
| RMS (Ob-Bg) | 119.1 | 95.9 | 1.3 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.3 | 1.2 | 1.3 |
| % of data flagged | 23 | 19 | 42 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Satisfactory | Satisfactory | Satisfactory |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Satisfactory | Poor | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44604/?? | 44606/?? | 44609/F |
| Argos Id.No. | ???? | ???? | 14430 |
| Period within area | 18/04 - 30/06 | 19/04 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 43.0 | 52.8 | 58.6 |
| Mean Longitude | -47.0 | -50.7 | -21.4 |
| No. of obs received | 1153 | 2283 | 3976 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 60.0 | 58.8 | 99.6 |
| % of Present | | | |
| Pressure | 99.8 | 98.3 | 98.8 |
| P. Tendency | 7.4 | 17.8 | 15.8 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 74.3/76.6 |
| Sea-surface Temp. | 99.7 | 65.7 | 77.4 |
| Median delay(min) | 45 | 46 | 50 |
| Number of days | 74 | 73 | 91 |
| Mean no. of obs/day | 15.6 | 31.3 | 43.7 |
| No. of hours with obs | 917 | 1374 | 1960 |
| Mean no. of hours/day with obs | 12.4 | 18.6 | 21.5 |
| % of hour periods without an ob | 48.3 | 22.5 | 10.4 |
| Mean (Ob-Bg) | 0.2 | 0.1 | 0.5 |
| RMS (Ob-Bg) | 1.1 | 1.2 | 1.2 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.2 | 0.1 | 0.4 |
| RMS (Ob-Bg) | 1.1 | 1.2 | 2.5 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.1 | 1.1 | 1.4 |
| % of data flagged | 32 | 51 | 55 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Satisfactory | Good | Very Good |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|------------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44613/?? | 44614/UK | 44616/UK |
| Argos Id.No. | ???? | 12665 | 12661 |
| Period within area | 24/04 - 30/06 | 01/04 - 09/06 | 01/04 - 30/06 |
| Mean Latitude | 39.6 | 56.6 | 52.6 |
| Mean Longitude | -37.7 | -35.0 | -26.1 |
| No. of obs received | 1518 | 3284 | 3489 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable positions | 99.4 | 99.9 | 99.9 |
| % of Present | | | |
| Pressure | 98.4 | 98.0 | 98.1 |
| P. Tendency | 91.8 | 91.1 | 93.6 |
| Air Temperature | 97.2 | 0.0 | 0.0 |
| Wind Speed /Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 12.6 | 97.5 | 99.0 |
| Median delay(Min) | 22 | 22 | 22 |
| Number of days | 68 | 70 | 91 |
| Mean no. of obs/day | 22.3 | 46.9 | 38.3 |
| No. of hours with obs | 841 | 1281 | 1505 |
| Mean no. of hours/day with obs | 12.4 | 18.3 | 16.5 |
| % of hour periods without an ob | 48.3 | 23.8 | 31.3 |
| Mean (Ob-Bg) | -0.1 | 0.2 | 0.1 |
| RMS (Ob-Bg) | 0.8 | 1.2 | 1.2 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.3 | 0.0 | 0.0 |
| RMS (Ob-Bg) | 6.2 | 4.5 | 3.4 |
| all data | | | |
| Revised RMS (Ob-Bg) | 0.8 | 1.3 | 1.3 |
| % of data flagged | 55 | 71 | 66 |
| Operating at end of period | YES | NO | YES |
| Performance | | | |
| Availability | Satisfactory | Very Good | Very Good |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44617/UK | 44621/UK | 44624/UK |
| Argos Id.No. | 26744 | 26752 | 2958 |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 27/05 |
| Mean Latitude | 52.4 | 57.6 | 60.3 |
| Mean Longitude | -23.2 | -10.8 | -10.1 |
| No. of obs received | 3331 | 2975 | 952 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.8 | 100.0 | 99.3 |
| % of Present | | | |
| Pressure | 98.5 | 97.5 | 96.0 |
| P. Tendency | 92.0 | 94.4 | 80.7 |
| Air Temperature | 94.2 | 92.7 | 0.0 |
| Wind Speed/Dir. | 0.0/0.0 | 45.9/92.8 | 50.9/50.2 |
| Sea-surface Temp. | 98.8 | 0.0 | 95.9 |
| Median delay(min) | 22 | 36 | 22 |
| Number of days | 91 | 91 | 57 |
| Mean no. of obs/day | 36.6 | 32.7 | 16.7 |
| No. of hours with obs | 1474 | 1522 | 425 |
| Mean no. of hours/day with obs | 16.2 | 16.7 | 7.5 |
| % of hour periods without an ob | 32.5 | 30.4 | 68.8 |
| Mean (Ob-Bg) | 0.1 | -0.1 | 0.0 |
| RMS (Ob-Bg) | 1.2 | 0.9 | 0.9 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.1 | -0.2 | -1.0 |
| RMS (Ob-Bg) | 5.2 | 3.5 | 10.6 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.3 | 1.0 | 0.9 |
| % of data flagged | 65 | 57 | 66 |
| Operating at end of period | YES | YES | NO |
| Performance | | | |
| Availability | Very Good | Good | Satisfactory |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|------------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44726/?? | 44727/UK | 44742/UK |
| Argos Id.No. | ???? | 3098 | 26753 |
| Period within area | 26/05 - 30/06 | 01/04 - 30/06 | 24/04 - 30/06 |
| Mean Latitude | 53.9 | 59.4 | 44.1 |
| Mean Longitude | -40.3 | -21.7 | -42.1 |
| No. of obs received | 1006 | 6570 | 1711 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable positions | 100.0 | 99.9 | 99.4 |
| % of Present | | | |
| Pressure | 97.2 | 99.3 | 98.4 |
| P. Tendency | 92.2 | 93.1 | 92.4 |
| Air Temperature | 0.0 | 93.9 | 97.8 |
| Wind Speed /Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 98.4 | 99.3 | 98.8 |
| Median delay(Min) | 21 | 22 | 21 |
| Number of days | 36 | 91 | 68 |
| Mean no. of obs/day | 27.9 | 72.2 | 25.2 |
| No. of hours with obs | 548 | 1785 | 905 |
| Mean no. of hours/day with obs | 15.2 | 19.6 | 13.3 |
| % of hour periods without an ob | 36.7 | 18.3 | 44.6 |
| Mean (Ob-Bg) | -0.1 | 0.2 | -0.1 |
| RMS (Ob-Bg) | 1.1 | 0.9 | 1.0 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.0 | 0.0 | -0.1 |
| RMS (Ob-Bg) | 1.1 | 4.0 | 1.8 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.1 | 0.9 | 1.0 |
| % of data flagged | 58 | 79 | 73 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Good | Very Good | Good |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44743/UK | 44761/UK | 44762/UK |
| Argos Id.No. | 1248 | 12660 | 26754 |
| Period within area | 24/05 - 30/06 | 01/04 - 07/05 | 01/04 - 16/04 |
| Mean Latitude | 45.3 | 56.0 | 39.3 |
| Mean Longitude | -50.0 | -38.8 | -9.3 |
| No. of obs received | 1550 | 1204 | 227 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.9 | 99.5 | 100.0 |
| % of Present | | | |
| Pressure | 96.5 | 96.8 | 99.1 |
| P. Tendency | 88.3 | 91.4 | 64.8 |
| Air Temperature | 0.0 | 0.0 | 95.6 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 8.8/20.7 |
| Sea-surface Temp. | 94.5 | 98.2 | 0.9 |
| Median delay(min) | 22 | 21 | 26 |
| Number of days | 68 | 37 | 16 |
| Mean no. of obs/day | 22.8 | 32.5 | 14.2 |
| No. of hours with obs | 879 | 607 | 146 |
| Mean no. of hours/day with obs | 12.9 | 16.4 | 9.1 |
| % of hour periods without an ob | 46.3 | 31.7 | 62.1 |
| Mean (Ob-Bg) | 0.1 | 0.3 | -2.8 |
| RMS (Ob-Bg) | 1.3 | 1.4 | 3.0 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.1 | 0.3 | -3.0 |
| RMS (Ob-Bg) | 6.0 | 1.5 | 3.2 |
| all data | | | |
| Revised RMS (Ob-Bg) | 2.1 | 1.5 | 3.2 |
| % of data flagged | 57 | 62 | 64 |
| Operating at end of period | YES | NO | NO |
| Performance | | | |
| Availability | Satisfactory | Good | Poor |
| Pressure Quality | Suspect | Acceptable | Suspect |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|------------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44763/UK | 44765/UK | 44766/UK |
| Argos Id. No. | 12663 | 12662 | 12667 |
| Period within area | 01/04 - 12/06 | 01/04 - 30/06 | 01/04 - 31/05 |
| Mean Latitude | 50.7 | 57.9 | 51.4 |
| Mean Longitude | -37.0 | -47.2 | -27.7 |
| No. of obs received | 1216 | 2645 | 2093 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable positions | 99.1 | 100.0 | 99.9 |
| % of Present | | | |
| Pressure | 94.3 | 95.0 | 98.4 |
| P. Tendency | 85.0 | 90.4 | 92.5 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed /Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 97.5 | 97.3 | 98.9 |
| Median delay(Min) | 23 | 38 | 22 |
| Number of days | 73 | 91 | 61 |
| Mean no. of obs/day | 16.7 | 29.1 | 34.3 |
| No. of hours with obs | 721 | 1478 | 979 |
| Mean no. of hours/day with obs | 9.9 | 16.2 | 16.0 |
| % of hour periods without an ob | 58.8 | 32.5 | 33.3 |
| Mean (Ob-Bg) | 0.1 | 0.0 | 0.0 |
| RMS (Ob-Bg) | 1.3 | 1.2 | 1.2 |
| unflagged data | | | |
| Mean (Ob-bg) | -1.1 | 0.0 | -0.3 |
| RMS (Ob-Bg) | 10.6 | 4.6 | 6.9 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.3 | 1.4 | 1.2 |
| % of data flagged | 55 | 56 | 64 |
| Operating at end of period | NO | YES | NO |
| Performance | | | |
| Availability | Satisfactory | Good | Good |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44768/UK | 44771/UK | 44773/UK |
| Argos Id.No. | 26746 | 12659 | 26751 |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 60.0 | 53.8 | 57.9 |
| Mean Longitude | -16.8 | -18.8 | -17.2 |
| No. of obs received | 4655 | 3591 | 4423 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.8 | 99.7 | 99.8 |
| % of Present | | | |
| Pressure | 98.3 | 98.2 | 98.6 |
| P. Tendency | 91.7 | 93.2 | 93.2 |
| Air Temperature | 0.0 | 0.0 | 93.9 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 91.7/93.9 |
| Sea-surface Temp. | 83.9 | 98.7 | 98.7 |
| Median delay(min) | 24 | 23 | 23 |
| Number of days | 91 | 91 | 91 |
| Mean no. of obs/day | 51.2 | 39.5 | 48.6 |
| No. of hours with obs | 1729 | 1493 | 1684 |
| Mean no. of hours/day with obs | 19.0 | 16.4 | 18.5 |
| % of hour periods without an ob | 20.8 | 31.7 | 22.9 |
| Mean (Ob-Bg) | 0.4 | 0.1 | 0.1 |
| RMS (Ob-Bg) | 1.0 | 1.1 | 1.0 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.1 | -0.1 | -0.1 |
| RMS (Ob-Bg) | 5.0 | 4.3 | 4.5 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.0 | 1.1 | 1.0 |
| % of data flagged | 70 | 67 | 69 |
| 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 | 44774/?? | 44775/UK | 44776/UK |
| Argos Id.No. | ???? | 26741 | ???? |
| Period within area | 24/04 - 30/06 | 01/04 - 30/06 | 26/05 - 30/06 |
| Mean Latitude | 49.9 | 61.7 | 47.6 |
| Mean Longitude | -48.3 | -27.1 | -46.1 |
| No. of obs received | 1983 | 4021 | 759 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable positions | 99.7 | 88.0 | 100.0 |
| % of Present | | | |
| Pressure | 98.0 | 97.7 | 97.5 |
| P. Tendency | 92.5 | 91.7 | 92.4 |
| Air Temperature | 97.9 | 93.4 | 0.0 |
| Wind Speed /Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 97.9 | 85.1 | 97.9 |
| Median delay(Min) | 22 | 22 | 22 |
| Number of days | 68 | 91 | 36 |
| Mean no. of obs/day | 29.2 | 44.2 | 21.1 |
| No. of hours with obs | 1005 | 1632 | 461 |
| Mean no. of hours/day with obs | 14.8 | 17.9 | 12.8 |
| % of hour periods without an ob | 38.3 | 25.4 | 46.7 |
| Mean (Ob-Bg) | -1.3 | 0.2 | -0.2 |
| RMS (Ob-Bg) | 2.1 | 1.3 | 1.1 |
| unflagged data | | | |
| Mean (Ob-bg) | -1.4 | -0.5 | -0.2 |
| RMS (Ob-Bg) | 4.3 | 5.0 | 1.1 |
| all data | | | |
| Revised RMS (Ob-Bg) | 2.1 | 3.7 | 1.1 |
| % of data flagged | 62 | 74 | 52 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Good | Very Good | Satisfactory |
| Pressure Quality | Suspect | Suspect | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44778/?? | 44779/?? | 44780/UK |
| Argos Id.No. | ???? | ???? | 26742 |
| Period within area | 24/04 - 30/06 | 24/04 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 58.3 | 42.9 | 57.8 |
| Mean Longitude | -53.2 | -52.8 | -21.3 |
| No. of obs received | 3092 | 1609 | 4438 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.9 | 99.3 | 99.9 |
| % of Present | | | |
| Pressure | 97.3 | 97.9 | 97.9 |
| P. Tendency | 90.3 | 92.9 | 91.5 |
| Air Temperature | 97.6 | 0.0 | 94.4 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 97.8 | 98.6 | 98.5 |
| Median delay(min) | 22 | 22 | 23 |
| Number of days | 68 | 68 | 91 |
| Mean no. of obs/day | 45.5 | 23.7 | 48.8 |
| No. of hours with obs | 1212 | 883 | 1658 |
| Mean no. of hours/day with obs | 17.8 | 13.0 | 18.2 |
| % of hour periods without an ob | 25.8 | 45.8 | 24.2 |
| Mean (Ob-Bg) | -0.3 | -0.2 | 0.2 |
| RMS (Ob-Bg) | 1.1 | 1.0 | 1.0 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.4 | -0.2 | 0.0 |
| RMS (Ob-Bg) | 4.3 | 1.5 | 5.1 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.1 | 1.0 | 1.0 |
| % of data flagged | 70 | 57 | 70 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Very Good | Satisfactory | Very Good |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 44901/?? | 44912/US | 44925/US |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 55.1 | 51.1 | 57.6 |
| Mean Longitude | -46.2 | -21.6 | -54.9 |
| No. of obs received | 475 | 373 | 579 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 98.7 | 64.3 | 97.6 |
| % of Present | | | |
| Pressure | 90.5 | 86.3 | 89.3 |
| P. Tendency | 27.8 | 29.8 | 33.2 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 93.5 | 97.1 | 0.0 |
| Median delay(min) | 75 | 94 | 75 |
| Number of days | 91 | 91 | 91 |
| Mean no. of obs/day | 5.2 | 4.1 | 6.4 |
| No. of hours with obs | 379 | 324 | 406 |
| Mean no. of hours/day with obs | 4.2 | 3.6 | 4.5 |
| % of hour periods without an ob | 82.5 | 85.0 | 81.3 |
| Mean (Ob-Bg) | 0.6 | 0.7 | 0.7 |
| RMS (Ob-Bg) | 1.1 | 1.4 | 1.6 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.8 | 0.7 | 0.7 |
| RMS (Ob-Bg) | 1.5 | 1.5 | 2.0 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.5 | 1.5 | 1.7 |
| % of data flagged | 86 | 17 | 34 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Poor | Very Poor | Poor |
| Pressure Quality | Suspect | Suspect | Suspect |
| Timeliness | Good | Good | Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 51633/?? | 61535/?? | 61536/?? |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 01/04 - 14/06 | 01/04 - 13/04 | 01/04 - 03/06 |
| Mean Latitude | 37.9 | 35.6 | 36.8 |
| Mean Longitude | -62.4 | -5.2 | 6.0 |
| No. of obs received | 1096 | 87 | 1482 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 97.5 | 100.0 | 99.9 |
| % of Present | | | |
| Pressure | 98.6 | 95.4 | 96.4 |
| P. Tendency | 0.0 | 0.0 | 0.0 |
| Air Temperature | 91.6 | 93.1 | 69.8 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 97.4 | 98.9 | 0.0 |
| Median delay(min) | 35 | 359 | 343 |
| Number of days | 75 | 13 | 64 |
| Mean no. of obs/day | 14.6 | 6.7 | 23.2 |
| No. of hours with obs | 984 | 82 | 1202 |
| Mean no. of hours/day with obs | 13.1 | 6.3 | 18.8 |
| % of hour periods without an ob | 45.4 | 73.8 | 21.7 |
| Mean (Ob-Bg) | -0.2 | -2.0 | -0.8 |
| RMS (Ob-Bg) | 1.0 | 2.2 | 1.4 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.2 | -2.2 | -0.8 |
| RMS (Ob-Bg) | 1.0 | 2.4 | 1.4 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.0 | 2.3 | 1.4 |
| % of data flagged | 24 | 15 | 20 |
| Operating at end of period | NO | NO | NO |
| Performance | | | |
| Availability | Satisfactory | Poor | Satisfactory |
| Pressure Quality | Acceptable | Suspect | Suspect |
| Timeliness | Very Good | Very Poor | Very Poor |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 61537/?? | 62501/?? | 62506/?? |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 01/04 - 19/04 | 01/04 - 12/06 | 01/04 - 30/06 |
| Mean Latitude | 41.4 | 45.6 | 48.4 |
| Mean Longitude | 11.5 | -12.1 | -14.2 |
| No. of obs received | 599 | 1505 | 1313 |
| % 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 | 98.8 | 31.3 | 92.9 |
| P. Tendency | 0.0 | 0.0 | 81.3 |
| Air Temperature | 72.8 | 0.0 | 90.3 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 11.4/11.7 |
| Sea-surface Temp. | 99.3 | 93.0 | 93.1 |
| Median delay(min) | 254 | 195 | 29 |
| Number of days | 19 | 73 | 91 |
| Mean no. of obs/day | 31.5 | 20.6 | 14.4 |
| No. of hours with obs | 430 | 1452 | 1108 |
| Mean no. of hours/day with obs | 22.6 | 19.9 | 12.2 |
| % of hour periods without an ob | 5.8 | 17.1 | 49.2 |
| Mean (Ob-Bg) | 0.1 | -0.2 | -0.2 |
| RMS (Ob-Bg) | 0.9 | 1.1 | 1.3 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.0 | 0.9 | -0.2 |
| RMS (Ob-Bg) | 0.9 | 4.0 | 1.6 |
| all data | | | |
| Revised RMS (Ob-Bg) | 0.9 | 4.0 | 1.6 |
| % of data flagged | 29 | 11 | 27 |
| Operating at end of period | NO | NO | YES |
| Performance | | | |
| Availability | Good | Satisfactory | Poor |
| Pressure Quality | Acceptable | Suspect | Acceptable |
| Timeliness | Very Poor | Poor | Very Good |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 62509/?? | 62510/?? | 62551/?? |
| Argos Id.No. | ???? | ???? | ???? |
| Period within area | 15/06 - 30/06 | 15/06 - 30/06 | 01/04 - 30/06 |
| Mean Latitude | 46.2 | 46.7 | 46.5 |
| Mean Longitude | -5.4 | -5.8 | -13.4 |
| No. of obs received | 453 | 426 | 1859 |
| % 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 | 72.8 | 76.1 | 98.1 |
| P. Tendency | 0.0 | 0.0 | 0.0 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 53.3/56.7 |
| Sea-surface Temp. | 74.0 | 76.8 | 56.9 |
| Median delay(min) | 25 | 27 | 171 |
| Number of days | 16 | 16 | 91 |
| Mean no. of obs/day | 28.3 | 26.6 | 20.4 |
| No. of hours with obs | 213 | 207 | 1614 |
| Mean no. of hours/day with obs | 13.3 | 12.9 | 17.7 |
| % of hour periods without an ob | 44.6 | 46.3 | 26.3 |
| Mean (Ob-Bg) | 0.0 | 0.2 | 0.5 |
| RMS (Ob-Bg) | 0.9 | 0.9 | 1.3 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.0 | 0.3 | 0.6 |
| RMS (Ob-Bg) | 0.9 | 0.9 | 1.4 |
| all data | | | |
| Revised RMS (Ob-Bg) | 0.9 | 0.9 | 1.3 |
| % of data flagged | 58 | 57 | 13 |
| Operating at end of period | YES | YES | YES |
| Performance | | | |
| Availability | Good | Good | Satisfactory |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Very Good | Very Good | Satisfactory |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 62553/F | 62557/F | 62558/F |
| Argos Id.No. | 3009 | 27930 | 27931 |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 03/06 |
| Mean Latitude | 53.6 | 47.1 | 56.0 |
| Mean Longitude | -17.6 | -8.2 | -7.8 |
| No. of obs received | 2562 | 3317 | 2897 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 100.0 | 72.0 | 98.2 |
| % of Present | | | |
| Pressure | 93.9 | 99.9 | 100.0 |
| P. Tendency | 86.0 | 38.1 | 39.2 |
| Air Temperature | 87.1 | 0.0 | 0.0 |
| Wind Speed/Dir. | 93.5/92.2 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 95.4 | 79.1 | 0.0 |
| Median delay(min) | 35 | 56 | 58 |
| Number of days | 91 | 91 | 64 |
| Mean no. of obs/day | 28.2 | 36.5 | 45.3 |
| No. of hours with obs | 1625 | 1750 | 1355 |
| Mean no. of hours/day with obs | 17.9 | 19.2 | 21.2 |
| % of hour periods without an ob | 25.4 | 20.0 | 11.7 |
| Mean (Ob-Bg) | 0.1 | 0.4 | 0.4 |
| RMS (Ob-Bg) | 1.2 | 1.1 | 1.1 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.2 | 0.5 | 0.4 |
| RMS (Ob-Bg) | 4.2 | 6.5 | 4.1 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.2 | 1.2 | 1.2 |
| % of data flagged | 49 | 53 | 56 |
| Operating at end of period | YES | YES | NO |
| 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 | 62673/?? | 62674/?? | 62697/UK |
| Argos Id.No. | ???? | ???? | 2959 |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 28/04 |
| Mean Latitude | 62.6 | 60.9 | 51.7 |
| Mean Longitude | -18.2 | -20.7 | -9.8 |
| No. of obs received | 1529 | 1508 | 284 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 97.6 | 100.0 | 97.5 |
| % of Present | | | |
| Pressure | 98.1 | 97.4 | 99.6 |
| P. Tendency | 0.0 | 0.0 | 81.7 |
| Air Temperature | 89.7 | 90.3 | 88.7 |
| Wind Speed/Dir. | 92.2/97.1 | 96.9/96.0 | 24.6/0.0 |
| Sea-surface Temp. | 97.8 | 97.7 | 99.3 |
| Median delay(min) | 137 | 137 | 21 |
| Number of days | 91 | 91 | 28 |
| Mean no. of obs/day | 16.8 | 16.6 | 10.1 |
| No. of hours with obs | 1192 | 1175 | 194 |
| Mean no. of hours/day with obs | 13.1 | 12.9 | 6.9 |
| % of hour periods without an ob | 45.4 | 46.3 | 71.3 |
| Mean (Ob-Bg) | -0.1 | 0.0 | 0.1 |
| RMS (Ob-Bg) | 0.9 | 0.9 | 1.3 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.1 | 0.0 | -0.2 |
| RMS (Ob-Bg) | 0.9 | 0.9 | 5.3 |
| all data | | | |
| Revised RMS (Ob-Bg) | 0.9 | 0.9 | 1.4 |
| % of data flagged | 33 | 32 | 46 |
| Operating at end of period | YES | YES | NO |
| Performance | | | |
| Availability | Satisfactory | Satisfactory | Poor |
| 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 | 01/04 - 08/06 | 01/04 - 13/05 | 01/04 - 30/06 |
| Mean Latitude | 47.0 | 43.3 | 45.6 |
| Mean Longitude | -18.0 | -10.2 | -23.5 |
| No. of obs received | 1504 | 688 | 1892 |
| % 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 | 31.1 | 31.5 | 31.2 |
| P. Tendency | 0.0 | 0.0 | 0.0 |
| Air Temperature | 0.0 | 0.0 | 0.0 |
| Wind Speed/Dir. | 92.2/93.0 | 92.6/93.3 | 91.7/93.3 |
| Sea-surface Temp. | 91.2 | 90.7 | 90.6 |
| Median delay(min) | 211 | 244 | 219 |
| Number of days | 69 | 43 | 91 |
| Mean no. of obs/day | 21.8 | 16.0 | 20.8 |
| No. of hours with obs | 1431 | 657 | 1803 |
| Mean no. of hours/day with obs | 20.7 | 15.3 | 19.8 |
| % of hour periods without an ob | 13.8 | 36.3 | 17.5 |
| Mean (Ob-Bg) | 0.1 | 0.2 | 0.1 |
| RMS (Ob-Bg) | 1.4 | 1.4 | 1.2 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.1 | 0.1 | 0.1 |
| RMS (Ob-Bg) | 1.5 | 1.4 | 1.2 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.5 | 1.4 | 1.2 |
| % of data flagged | 6 | 3 | 3 |
| Operating at end of period | NO | NO | YES |
| Performance | | | |
| Availability | Satisfactory | Very Good | Satisfactory |
| Pressure Quality | Acceptable | Acceptable | Acceptable |
| Timeliness | Poor | Very Poor | Poor |
| Comments | | | |

ANNEX A - Cont.

| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 62803/UK | 64528/NL | 64529/?? |
| Argos Id.No. | 3209 | 4274 | ???? |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 07/05 - 30/06 |
| Mean Latitude | 66.8 | 59.9 | 62.5 |
| Mean Longitude | 11.0 | -21.8 | -29.4 |
| No. of obs received | 5275 | 3550 | 2629 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 75.9 | 98.6 | 98.3 |
| % of Present | | | |
| Pressure | 99.5 | 97.2 | 93.2 |
| P. Tendency | 95.6 | 90.3 | 67.3 |
| Air Temperature | 82.8 | 91.9 | 96.2 |
| Wind Speed/Dir. | 3.8/47.7 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 94.4 | 71.2 | 60.5 |
| Median delay(min) | 25 | 29 | 27 |
| Number of days | 91 | 91 | 55 |
| Mean no. of obs/day | 58.0 | 39.0 | 47.8 |
| No. of hours with obs | 1779 | 1519 | 927 |
| Mean no. of hours/day with obs | 19.5 | 16.7 | 16.9 |
| % of hour periods without an ob | 18.8 | 30.4 | 29.6 |
| Mean (Ob-Bg) | -0.2 | -0.2 | -0.1 |
| RMS (Ob-Bg) | 1.3 | 1.0 | 1.0 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.3 | -0.3 | -0.2 |
| RMS (Ob-Bg) | 3.1 | 3.2 | 1.8 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.5 | 1.1 | 1.1 |
| % of data flagged | 74 | 65 | 72 |
| 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 | 64530/UK | 64552/UK | 64561/UK |
| Argos Id.No. | 12666 | 12658 | 1247 |
| Period within area | 01/04 - 30/06 | 01/04 - 31/05 | 01/04 - 30/06 |
| Mean Latitude | 62.0 | 63.0 | 52.3 |
| Mean Longitude | -55.7 | -36.6 | -15.4 |
| No. of obs received | 4201 | 2487 | 3025 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.9 | 99.8 | 99.7 |
| % of Present | | | |
| Pressure | 96.3 | 96.5 | 98.3 |
| P. Tendency | 88.5 | 91.1 | 92.7 |
| 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. | 87.7 | 97.5 | 99.2 |
| Median delay(min) | 22 | 21 | 23 |
| Number of days | 91 | 61 | 91 |
| Mean no. of obs/day | 46.2 | 40.8 | 33.2 |
| No. of hours with obs | 1701 | 1150 | 1433 |
| Mean no. of hours/day with obs | 18.7 | 18.9 | 15.7 |
| % of hour periods without an ob | 22.1 | 21.3 | 34.6 |
| Mean (Ob-Bg) | 0.4 | 0.2 | 0.2 |
| RMS (Ob-Bg) | 1.3 | 1.2 | 1.1 |
| unflagged data | | | |
| Mean (Ob-bg) | 0.3 | 0.3 | -0.3 |
| RMS (Ob-Bg) | 4.0 | 1.5 | 7.3 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.3 | 1.5 | 1.1 |
| % of data flagged | 70 | 67 | 63 |
| Operating at end of period | YES | NO | 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 | 64563/N | 65562/?? | 65571/?? |
| Argos Id.No. | 3679 | ???? | ???? |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 06/05 - 30/06 |
| Mean Latitude | 59.6 | 60.9 | 62.3 |
| Mean Longitude | -33.8 | -17.0 | -32.0 |
| No. of obs received | 6064 | 6297 | 2970 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 99.7 | 99.5 | 99.9 |
| % of Present | | | |
| Pressure | 97.8 | 98.4 | 95.3 |
| P. Tendency | 66.9 | 70.4 | 63.7 |
| Air Temperature | 94.5 | 93.7 | 96.4 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 63.1 | 64.8 | 76.4 |
| Median delay(min) | 22 | 22 | 23 |
| Number of days | 91 | 91 | 56 |
| Mean no. of obs/day | 66.6 | 69.2 | 53.0 |
| No. of hours with obs | 1727 | 1753 | 1039 |
| Mean no. of hours/day with obs | 19.0 | 19.3 | 18.6 |
| % of hour periods without an ob | 20.8 | 19.6 | 22.5 |
| Mean (Ob-Bg) | -0.2 | -0.2 | 0.1 |
| RMS (Ob-Bg) | 1.1 | 0.9 | 0.9 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.2 | -0.3 | 0.3 |
| RMS (Ob-Bg) | 2.3 | 1.7 | 3.4 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.2 | 0.9 | 0.9 |
| % of data flagged | 78 | 78 | 73 |
| 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.

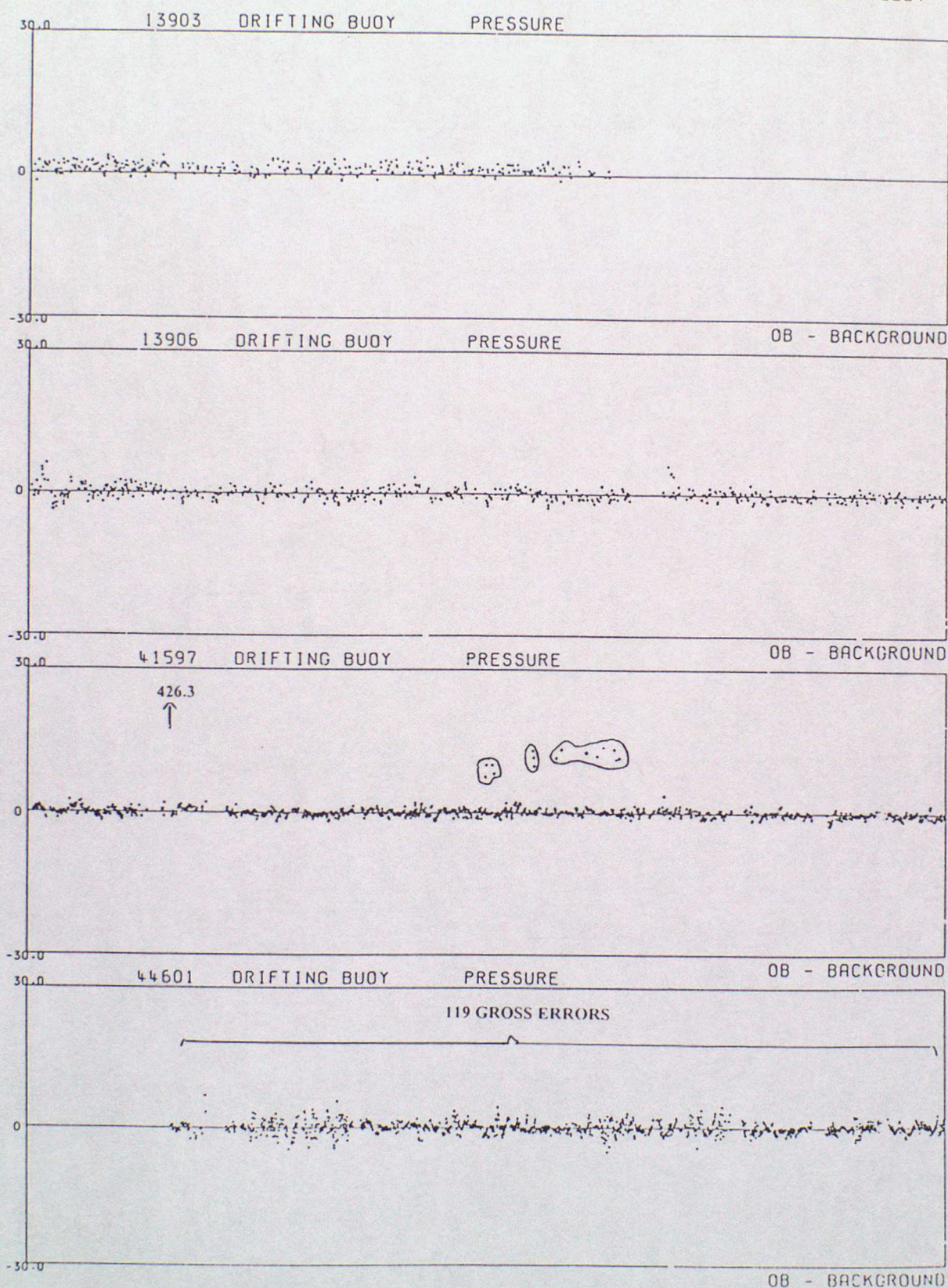
| | | | |
|-----------------------------------|---------------|---------------|---------------|
| Wmo No./Country | 65591/UK | 65592/?? | 65594/UK |
| Argos Id.No. | 26748 | ???? | 1252 |
| Period within area | 01/04 - 30/06 | 01/04 - 30/06 | 01/04 - 25/06 |
| Mean Latitude | 63.7 | 62.8 | 64.2 |
| Mean Longitude | -28.0 | -24.3 | -32.7 |
| No. of obs received | 3238 | 4989 | 6545 |
| % of obs with valid Time and Date | 100.0 | 100.0 | 100.0 |
| % of obs with acceptable position | 100.0 | 99.2 | 99.8 |
| % of Present | | | |
| Pressure | 96.6 | 95.7 | 99.1 |
| P. Tendency | 91.2 | 61.9 | 94.4 |
| Air Temperature | 92.4 | 92.8 | 93.7 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 0.5 | 79.1 | 98.4 |
| Median delay(min) | 39 | 22 | 21 |
| Number of days | 91 | 91 | 86 |
| Mean no. of obs/day | 35.6 | 54.8 | 76.1 |
| No. of hours with obs | 1625 | 1760 | 1762 |
| Mean no. of hours/day with obs | 17.9 | 19.3 | 20.5 |
| % of hour periods without an ob | 25.4 | 19.6 | 14.6 |
| Mean (Ob-Bg) | 0.2 | -0.1 | 0.2 |
| RMS (Ob-Bg) | 1.0 | 1.1 | 1.1 |
| unflagged data | | | |
| Mean (Ob-bg) | -0.2 | -0.1 | 0.1 |
| RMS (Ob-Bg) | 6.4 | 2.7 | 3.3 |
| all data | | | |
| Revised RMS (Ob-Bg) | 1.0 | 1.4 | 1.2 |
| % of data flagged | 58 | 72 | 79 |
| 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.

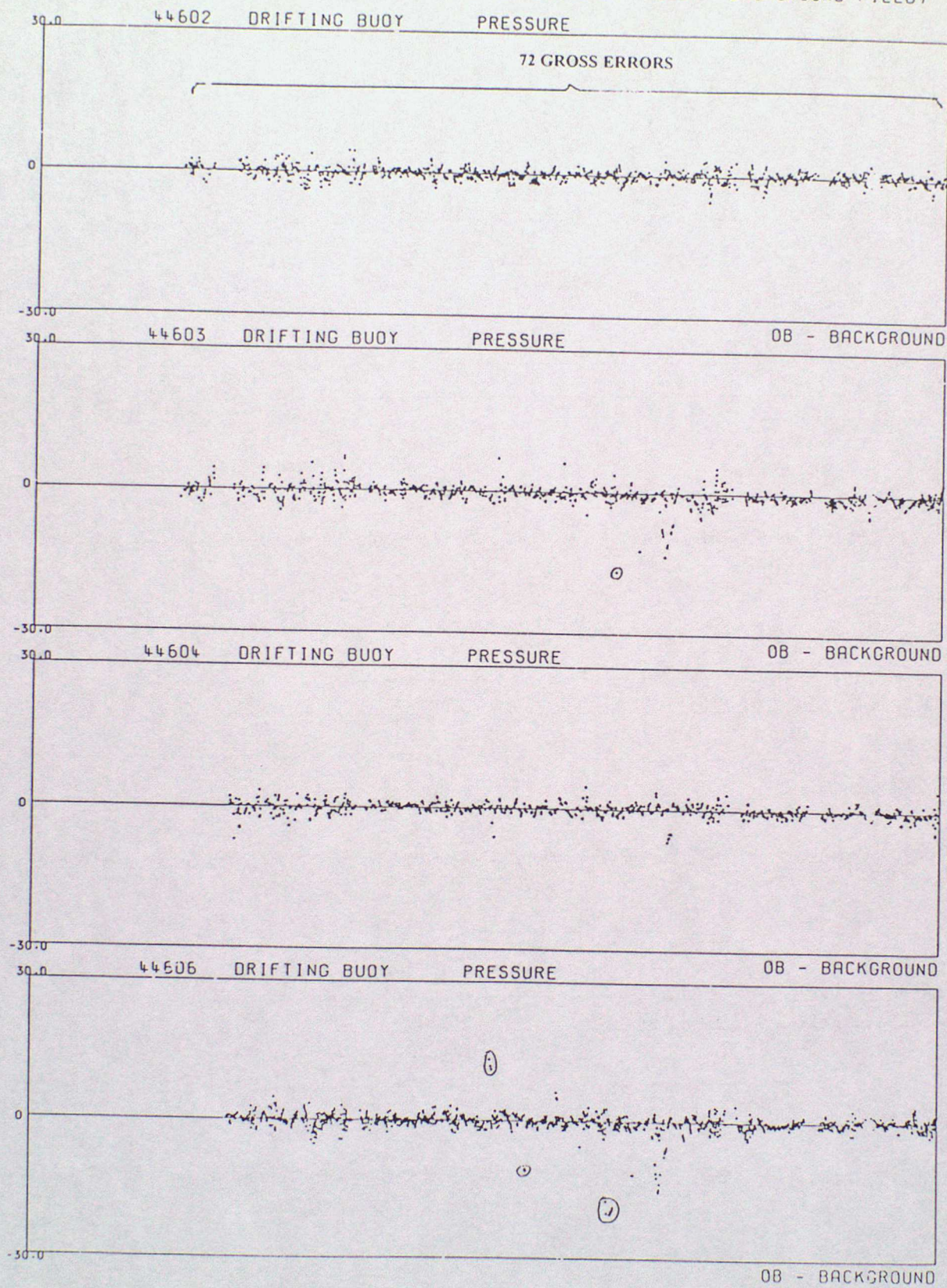
| | | |
|-----------------------------------|---------------|---------------|
| Wmo No./Country | 65597/NL | 74532/?? |
| Argos Id.No. | 4273 | ???? |
| Period within area | 01/04 - 30/06 | 01/04 - 21/04 |
| Mean Latitude | 55.6 | 43.5 |
| Mean Longitude | -22.0 | -67.6 |
| No. of obs received | 4893 | 240 |
| % of obs with valid Time and Date | 100.0 | 100.0 |
| % of obs with acceptable position | 99.1 | 100.0 |
| % of Present | | |
| Pressure | 97.7 | 93.3 |
| P. Tendency | 70.8 | 0.0 |
| Air Temperature | 93.8 | 77.1 |
| Wind Speed/Dir. | 0.0/0.0 | 0.0/0.0 |
| Sea-surface Temp. | 60.7 | 0.0 |
| Median delay(min) | 22 | 31 |
| Number of days | 91 | 21 |
| Mean no. of obs/day | 53.8 | 11.4 |
| No. of hours with obs | 1521 | 213 |
| Mean no. of hours/day with obs | 16.7 | 10.1 |
| % of hour periods without an ob | 30.4 | 57.9 |
| Mean (Ob-Bg) | -0.3 | -- |
| RMS (Ob-Bg) | 1.2 | -- |
| unflagged data | | |
| Mean (Ob-bg) | -0.3 | -25.8 |
| RMS (Ob-Bg) | 3.1 | 26.9 |
| all data | | |
| Revised RMS (Ob-Bg) | 1.2 | 22.0 |
| % of data flagged | 76 | 100 |
| Operating at end of period | YES | NO |
| Performance | | |
| Availability | Very Good | Poor |
| Pressure Quality | Acceptable | Suspect |
| Timeliness | Very Good | Very Good |
| Comments | | |

ANNEX B - TIME SERIES PLOTS OF PRESSURE

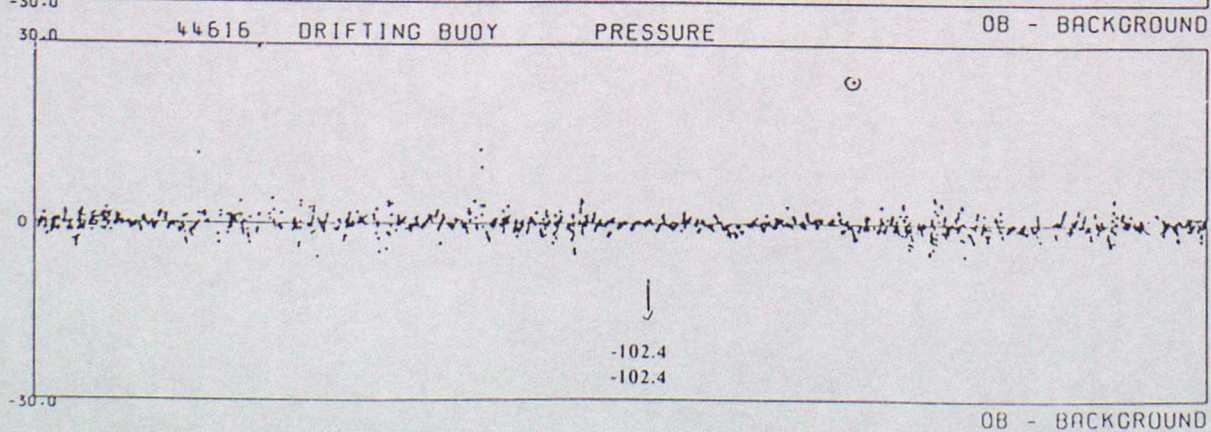
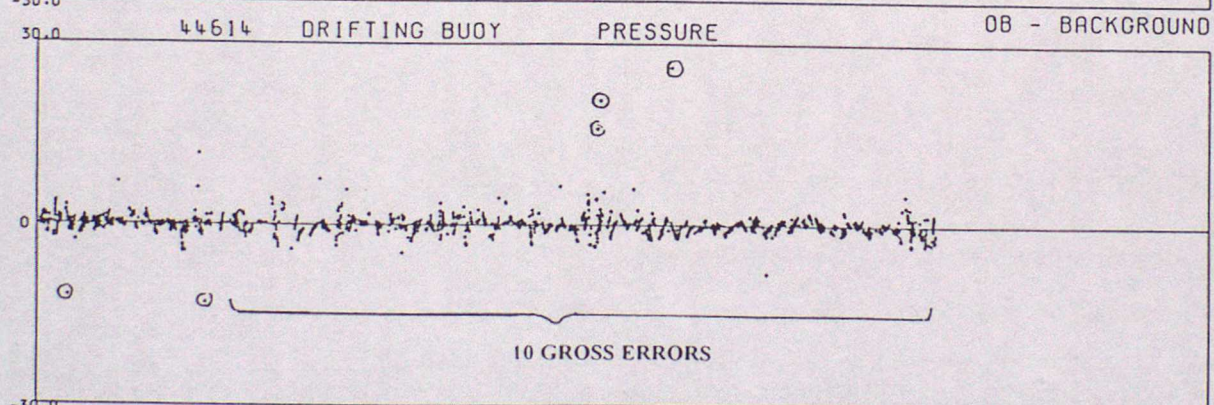
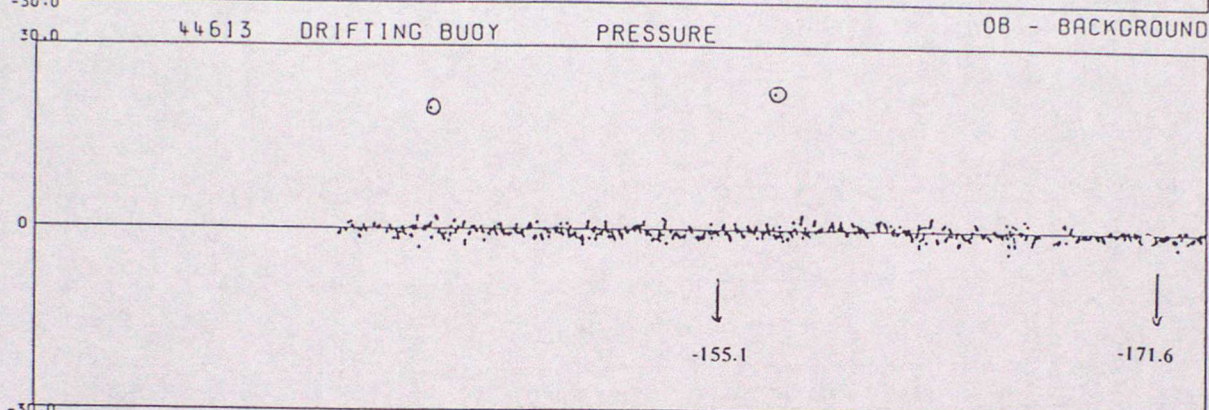
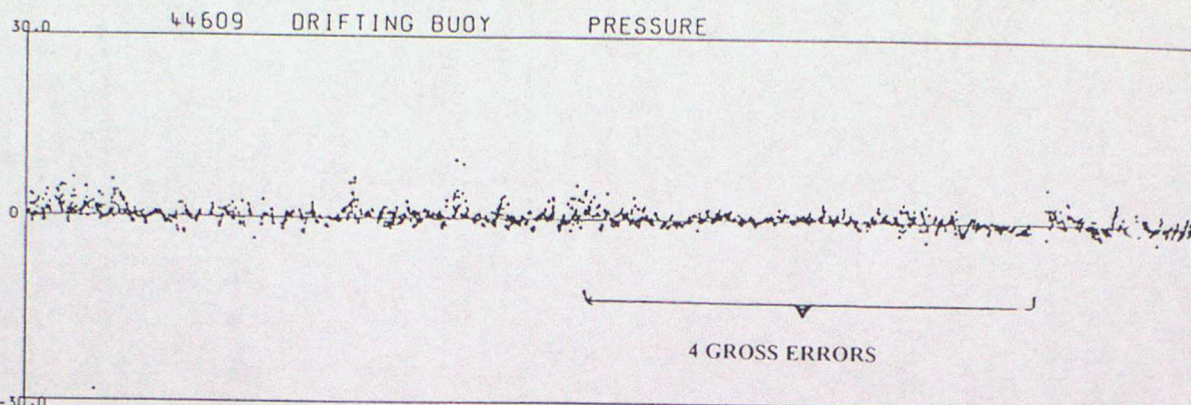
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



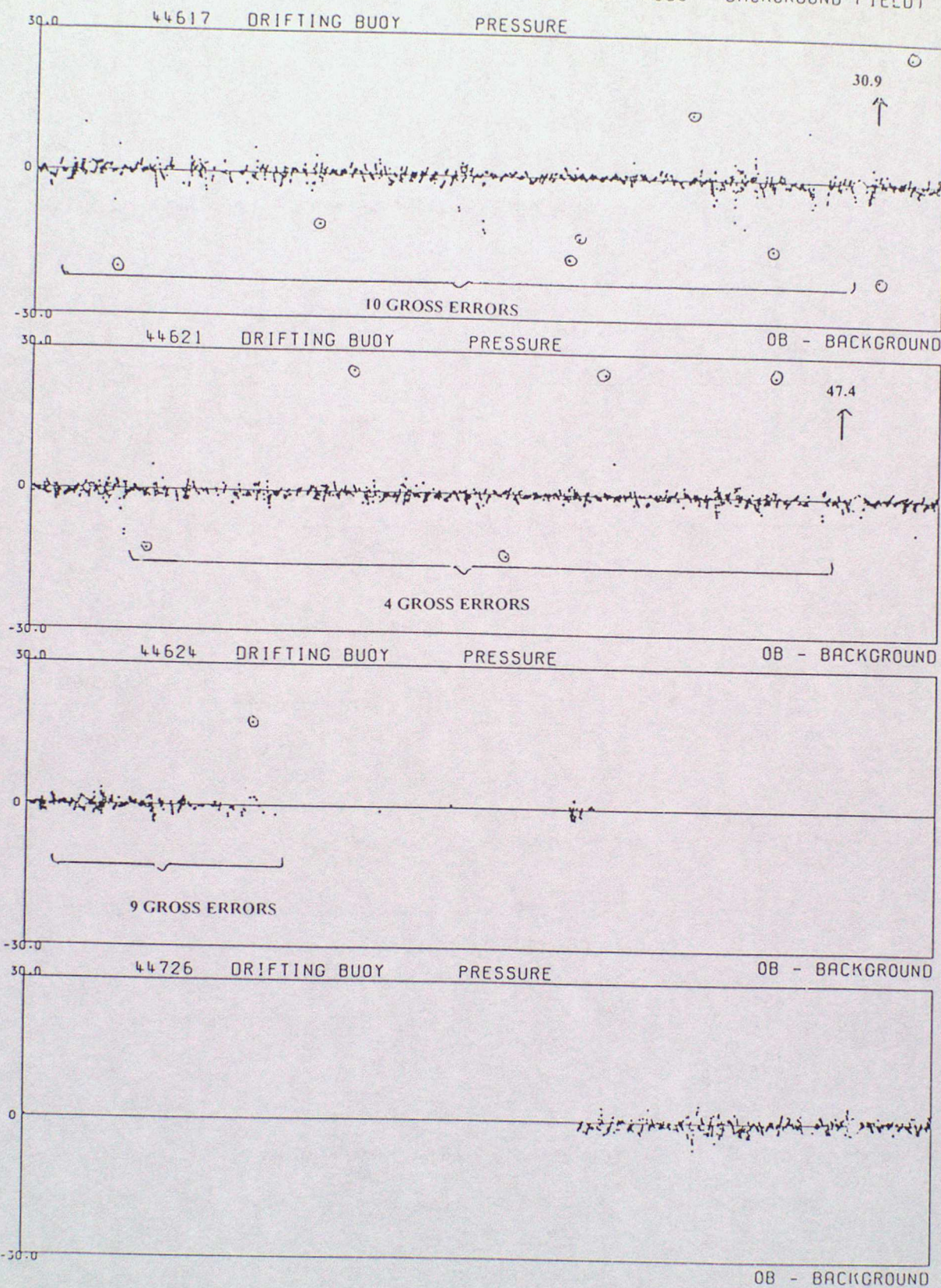
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



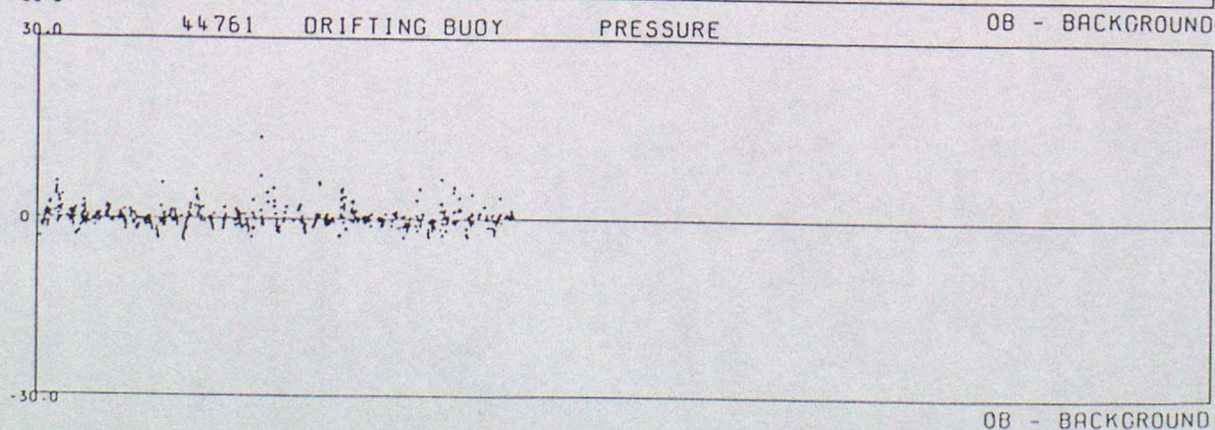
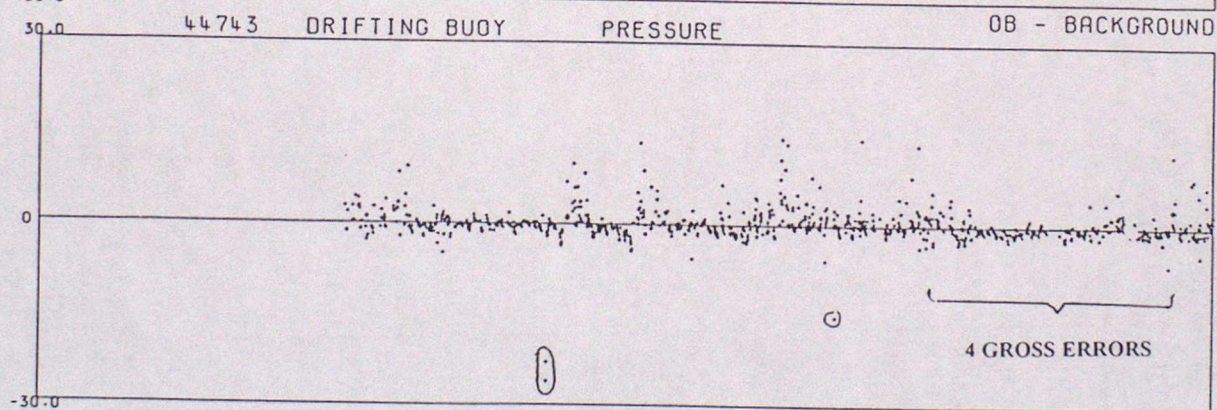
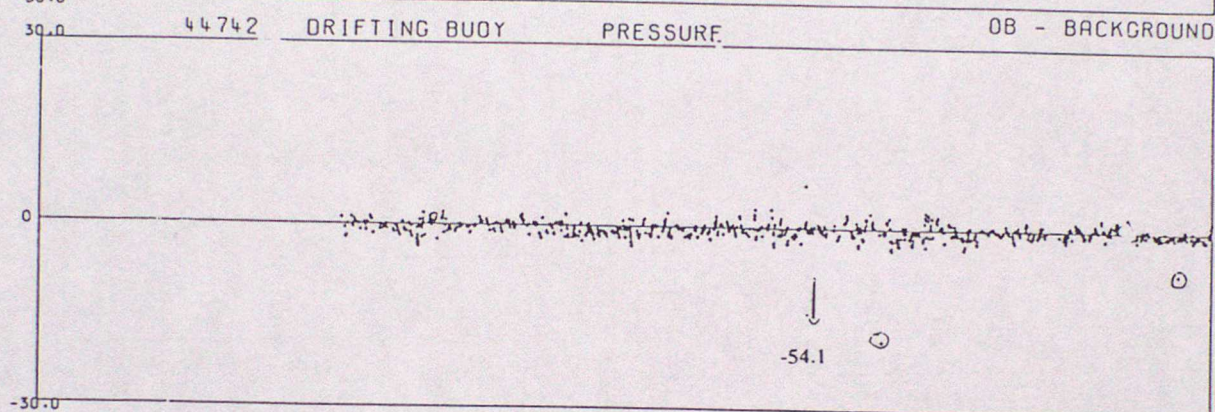
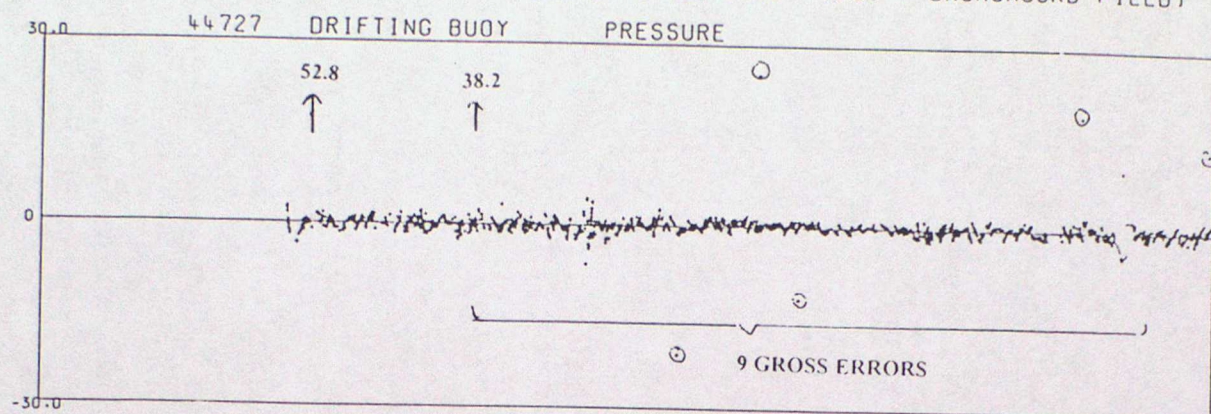
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



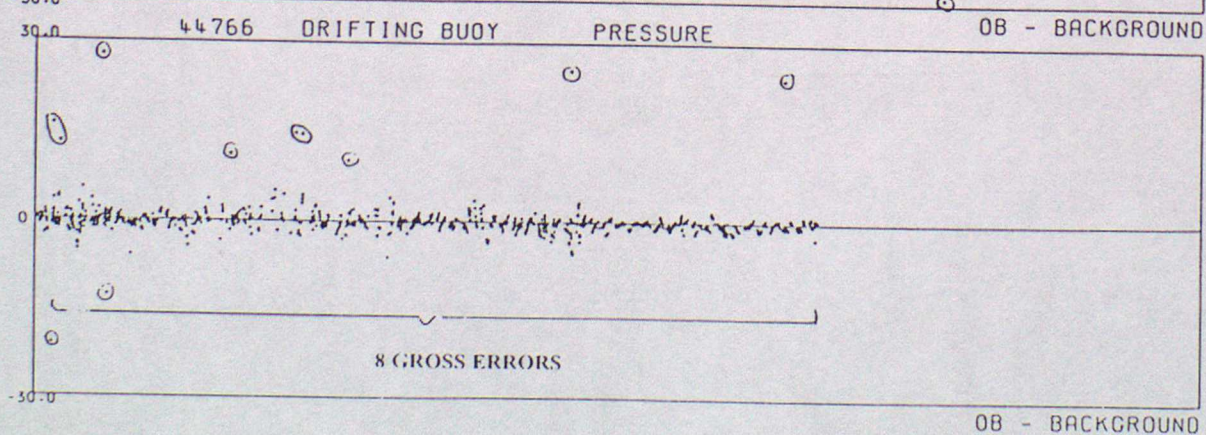
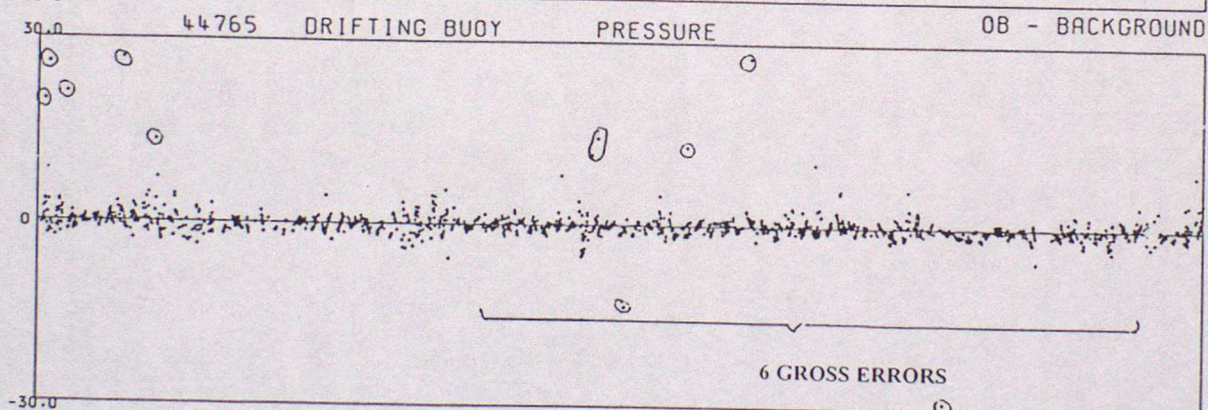
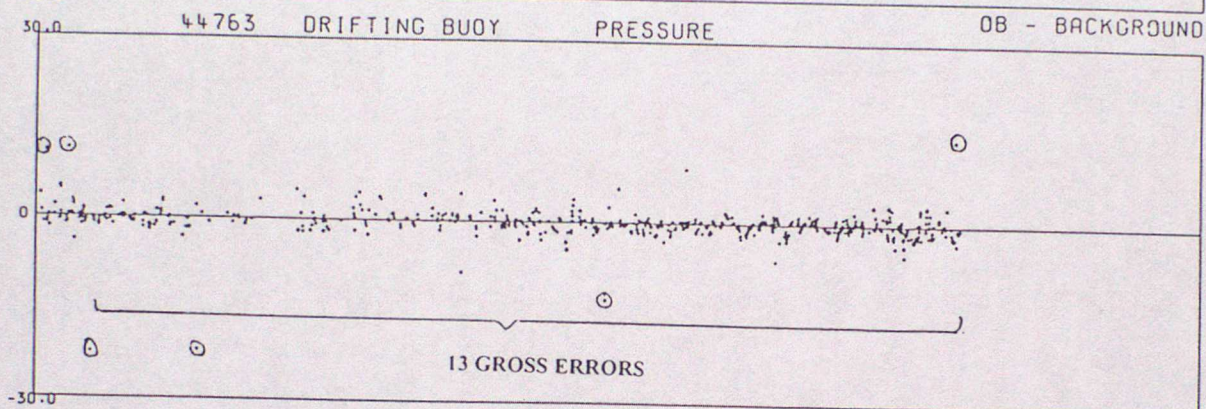
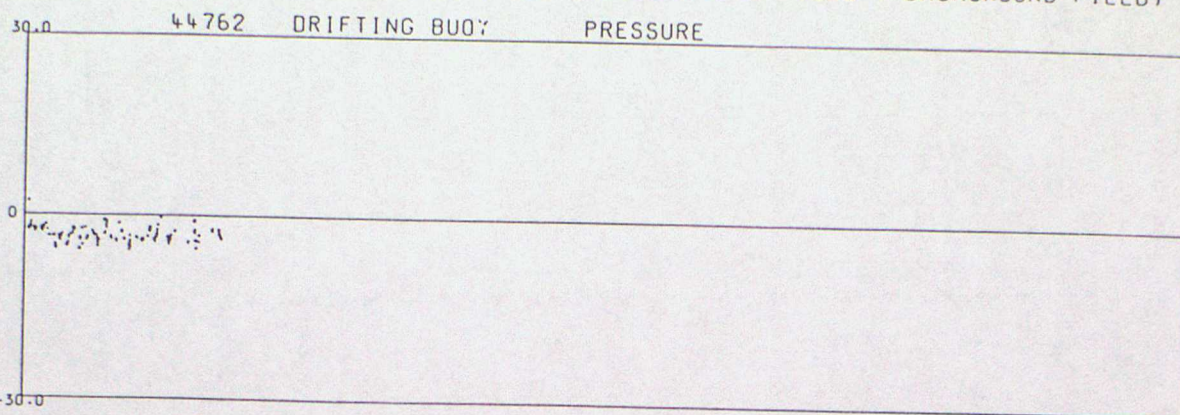
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



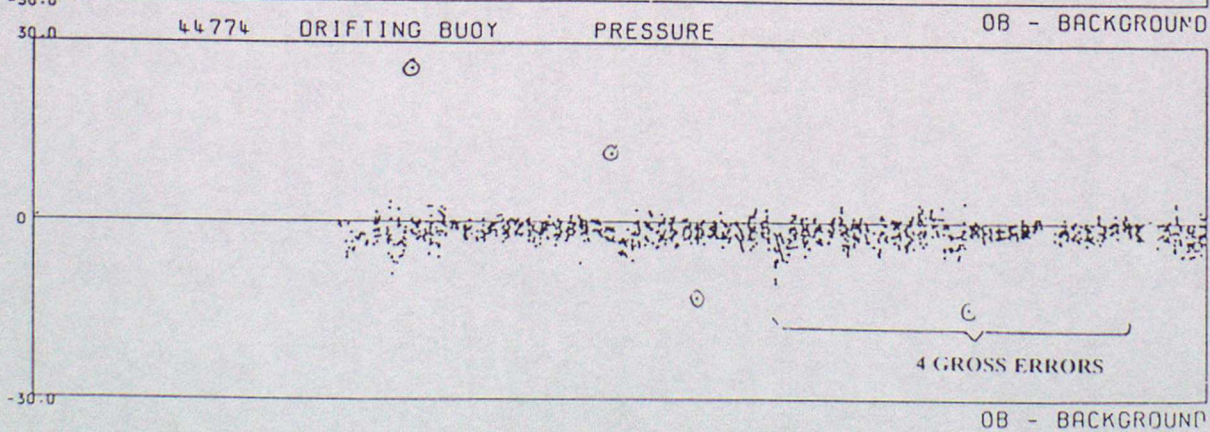
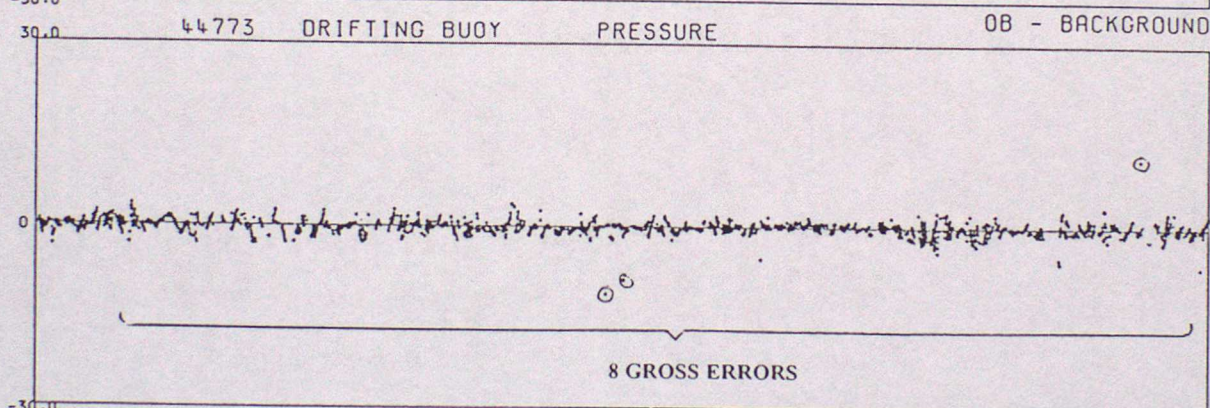
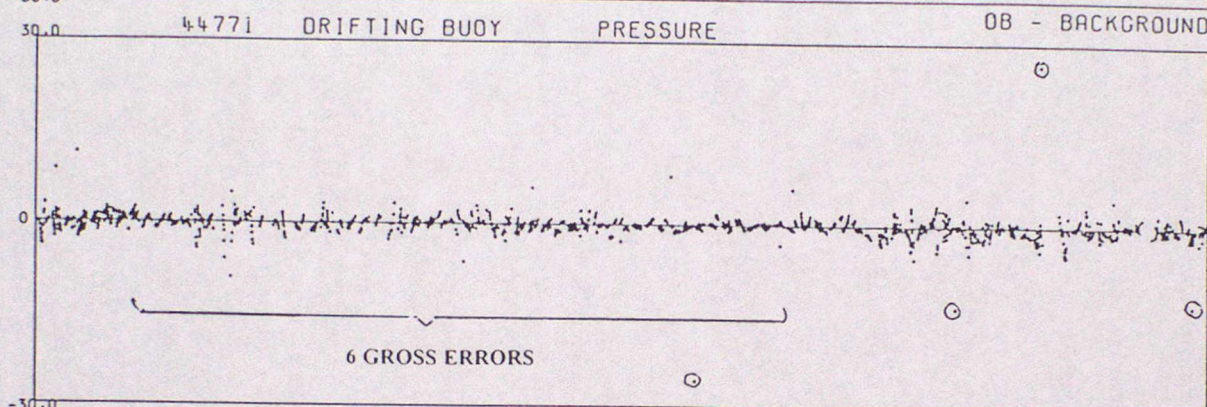
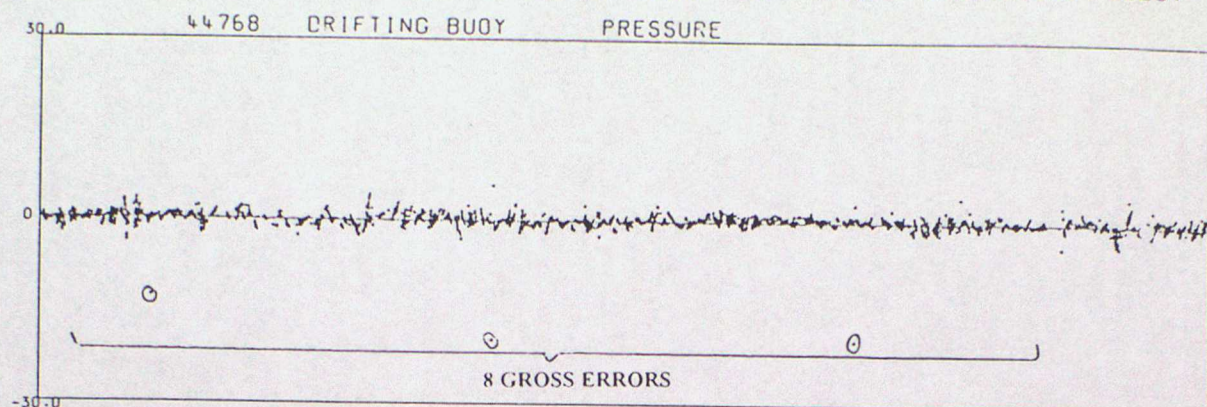
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



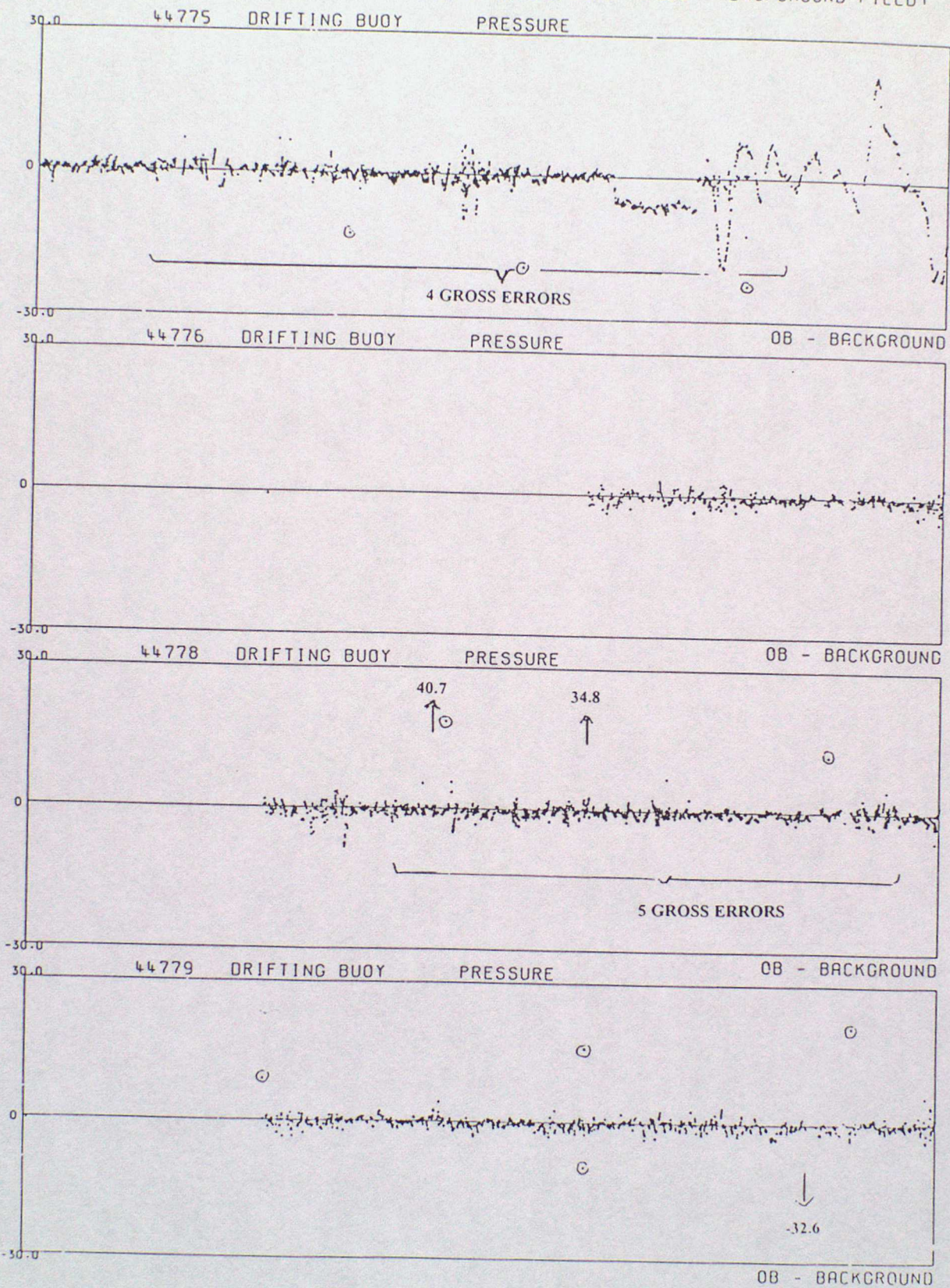
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



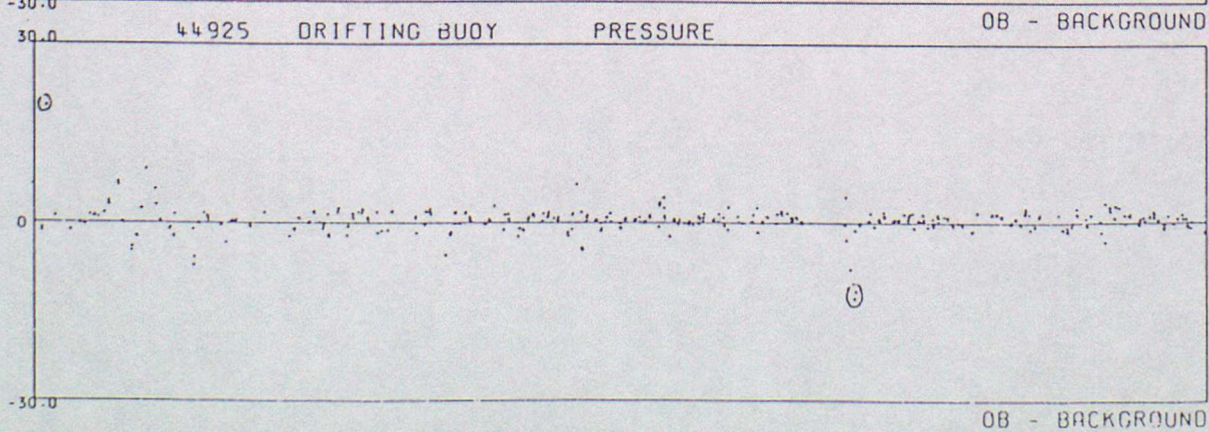
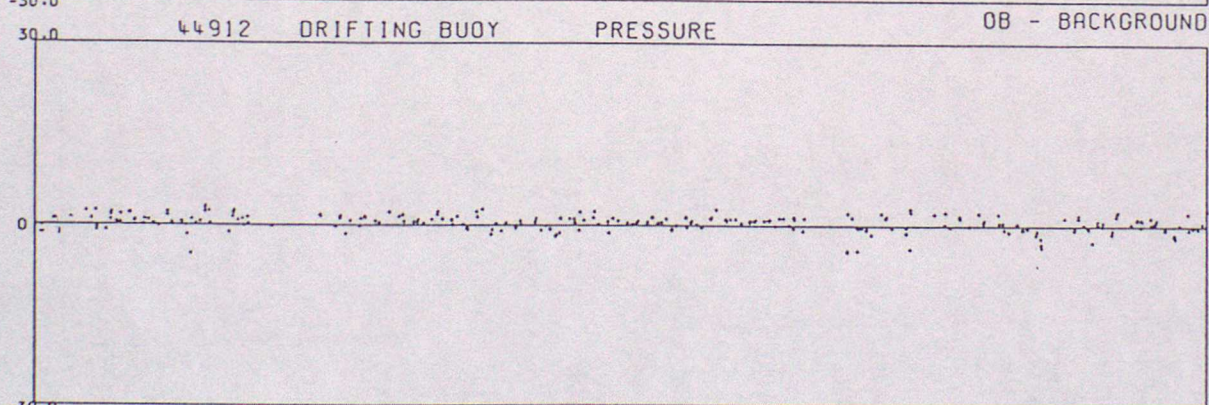
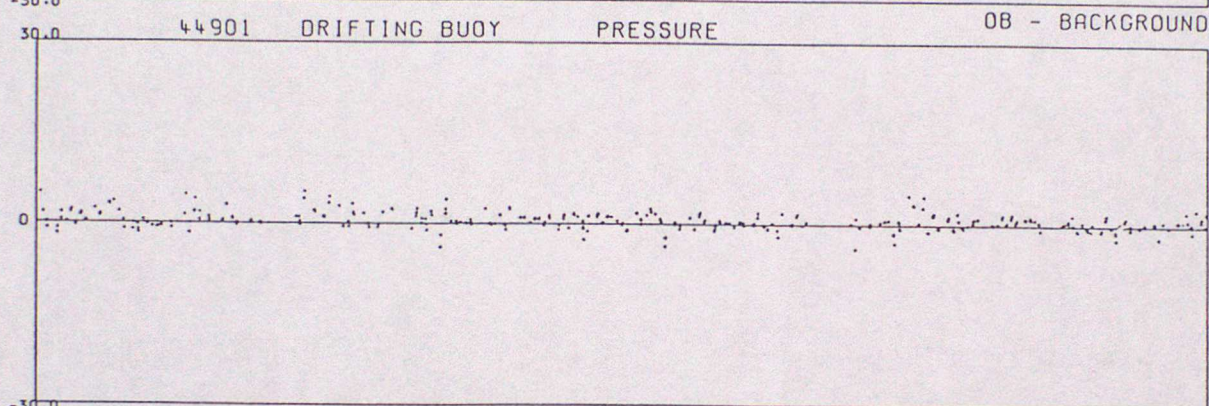
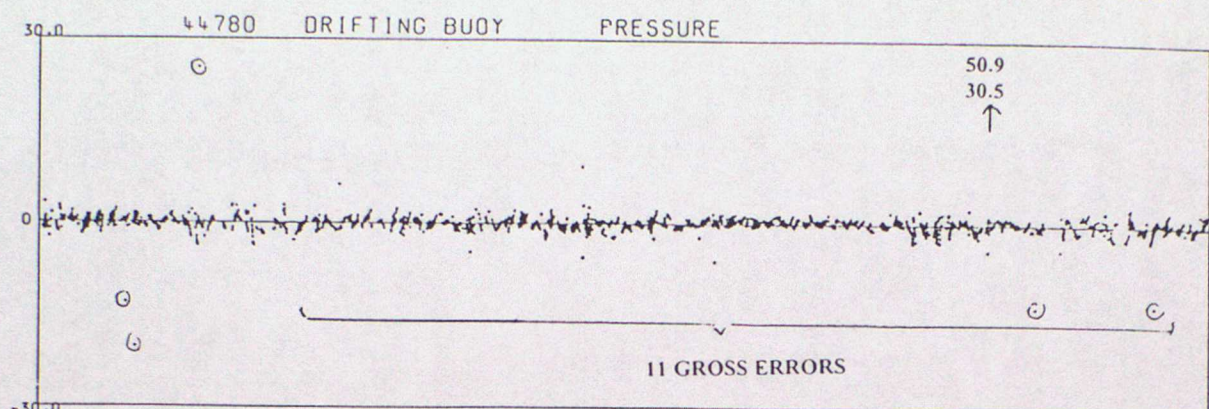
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



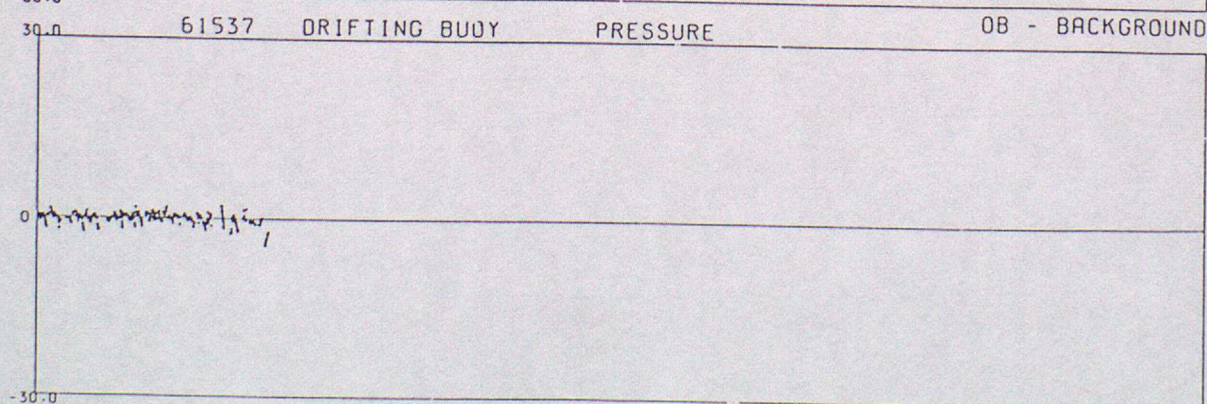
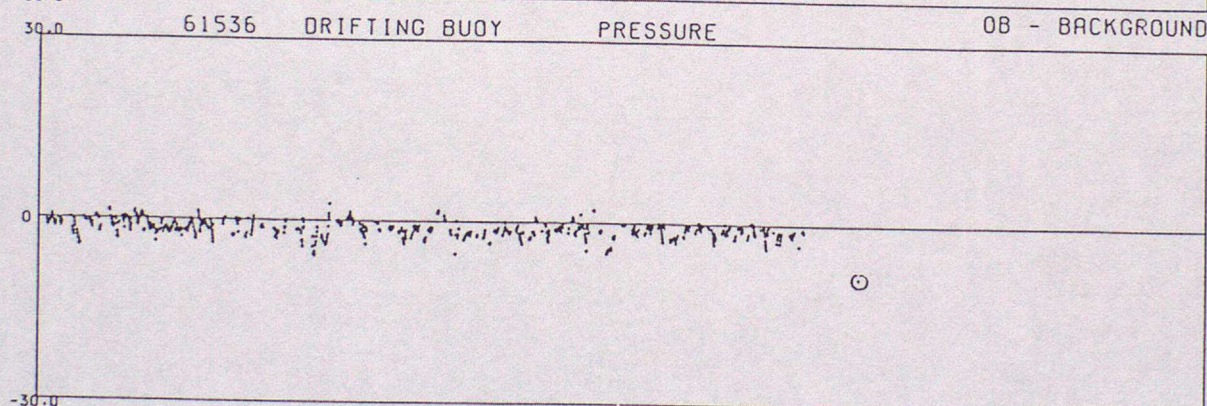
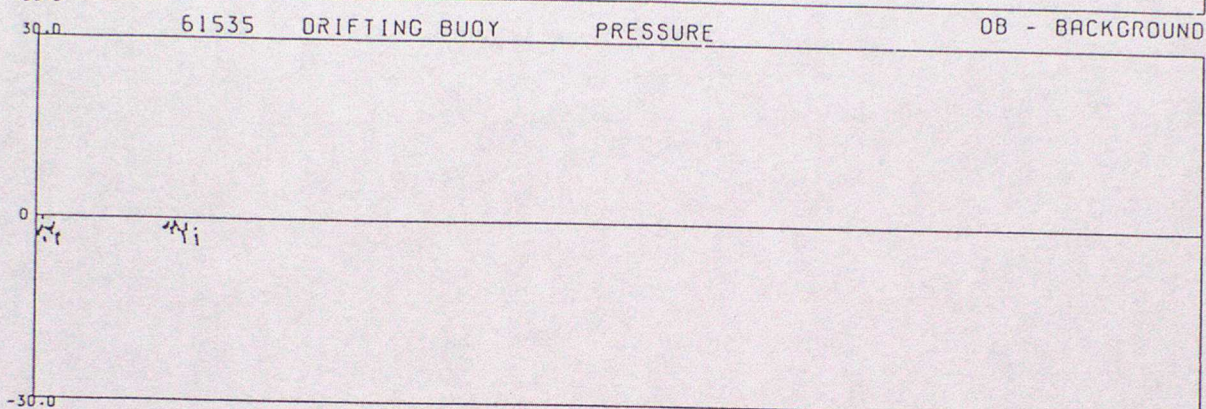
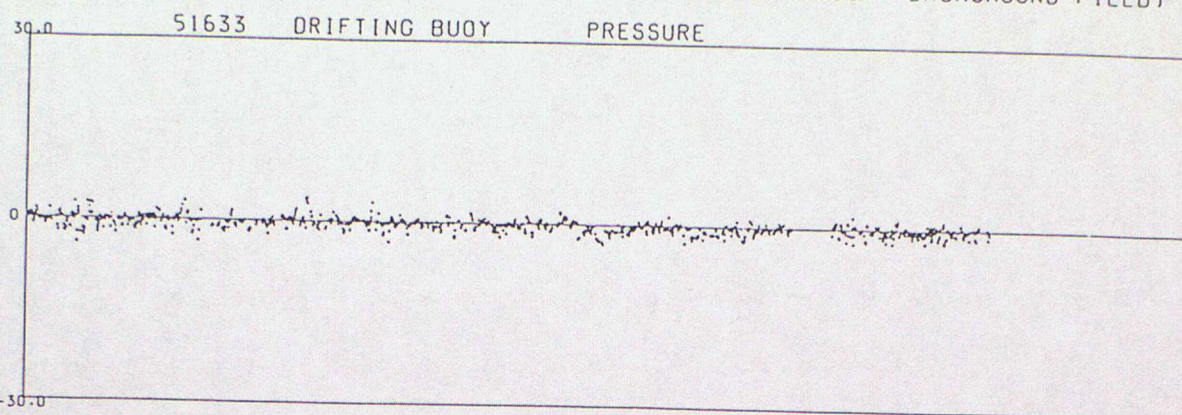
DATA FROM 00Z ON 01/04/1993 TO 23Z ON 30/06/1998 (CBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND) FIELD)

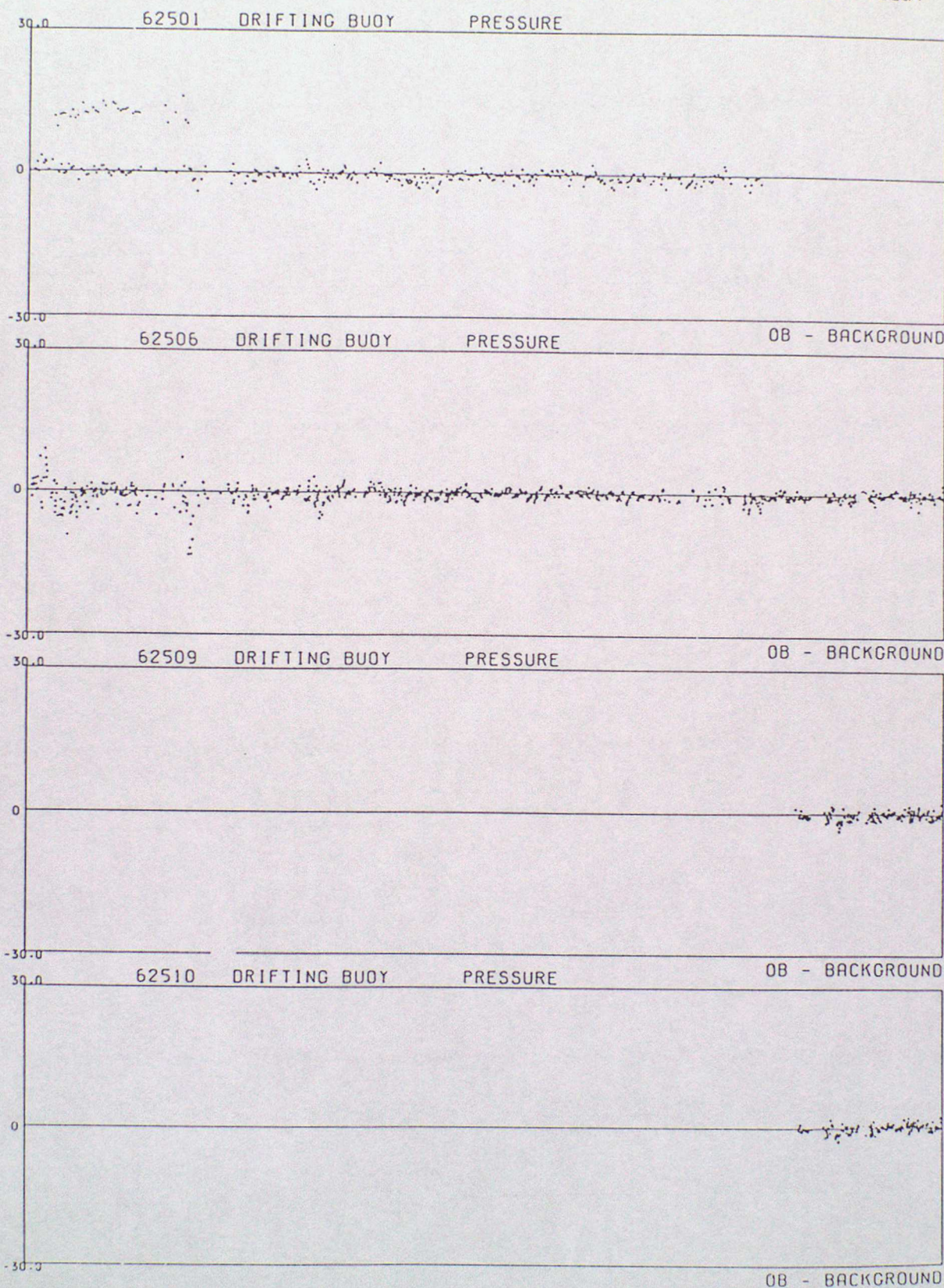


DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

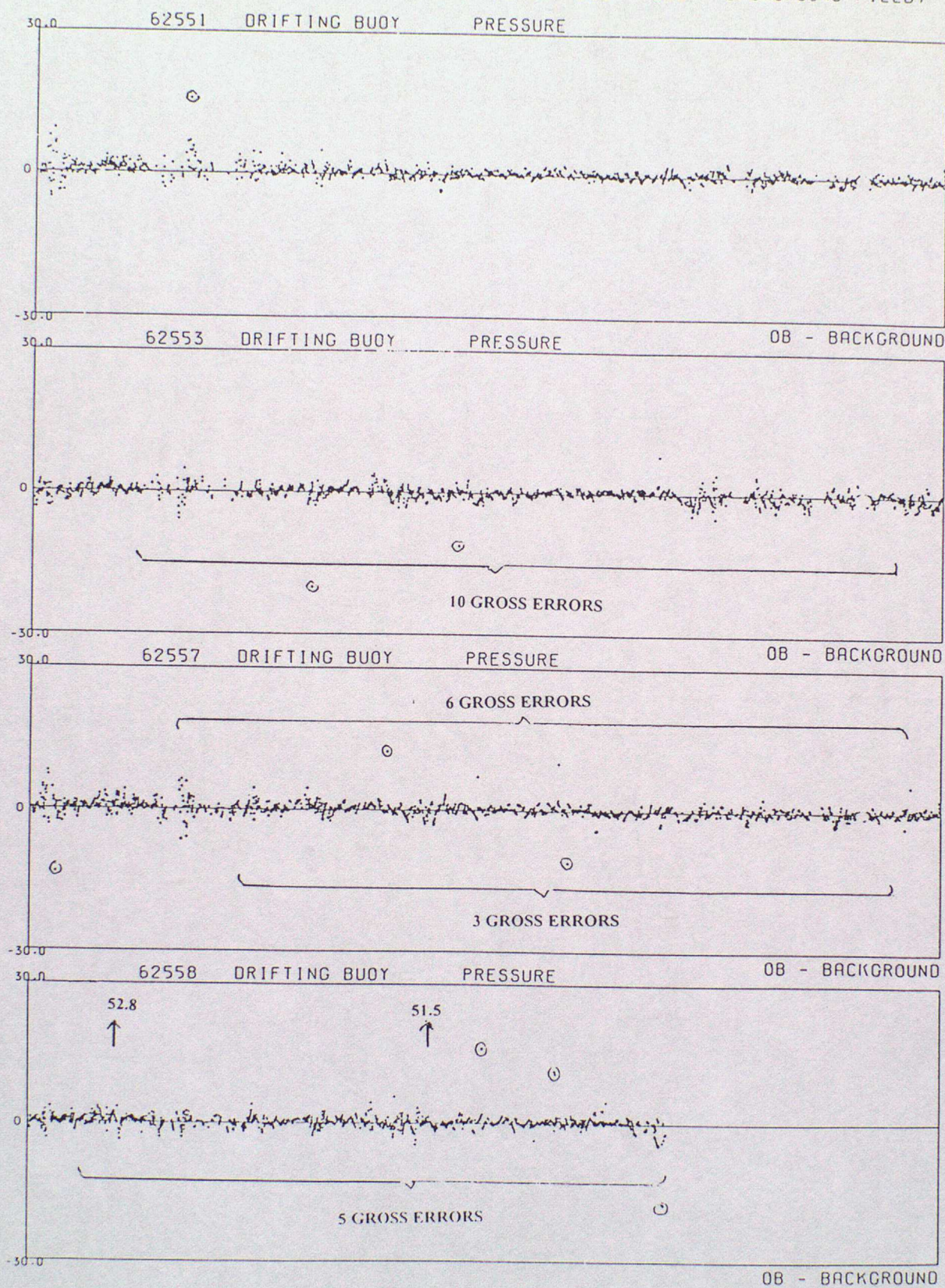


OB - BACKGROUND

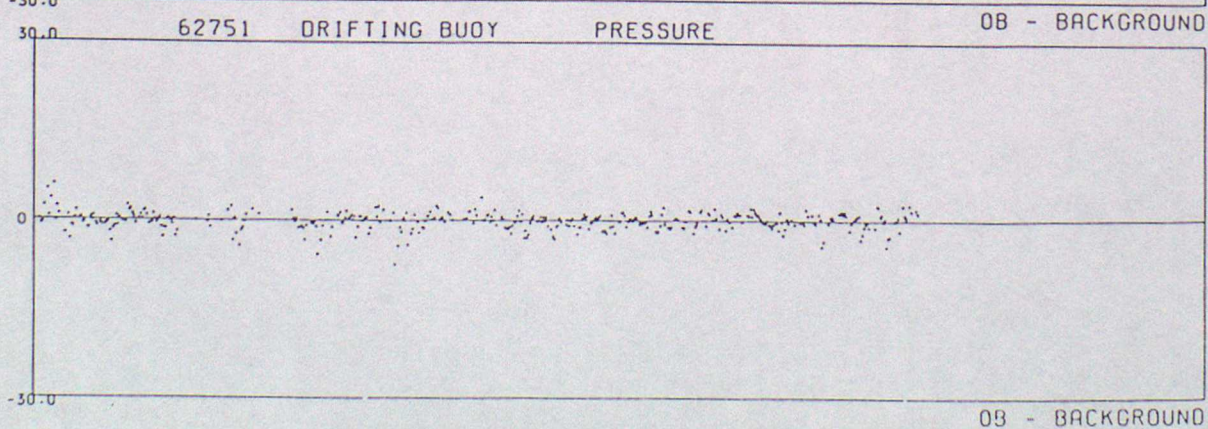
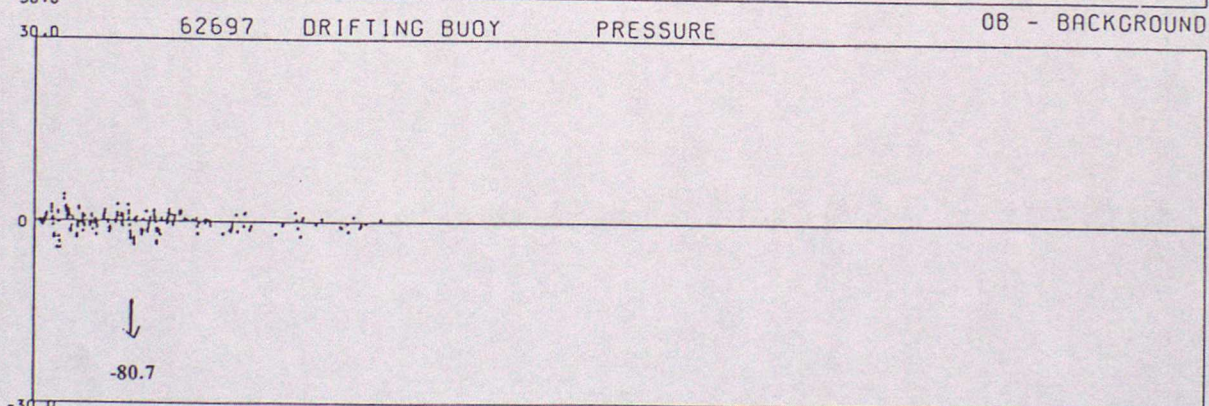
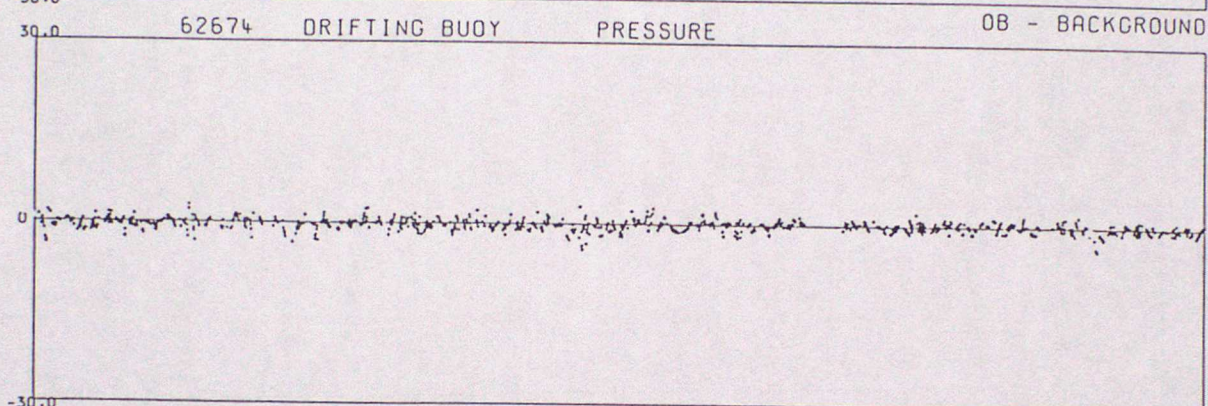
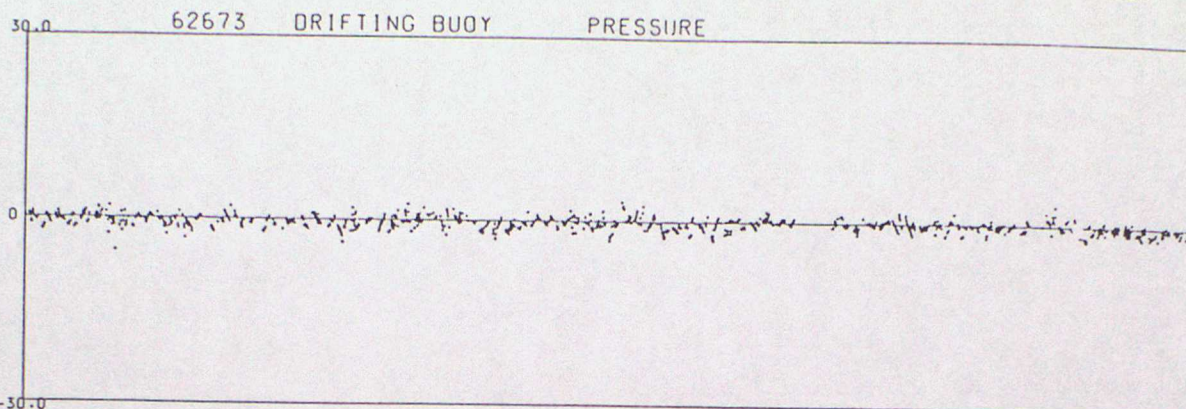
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



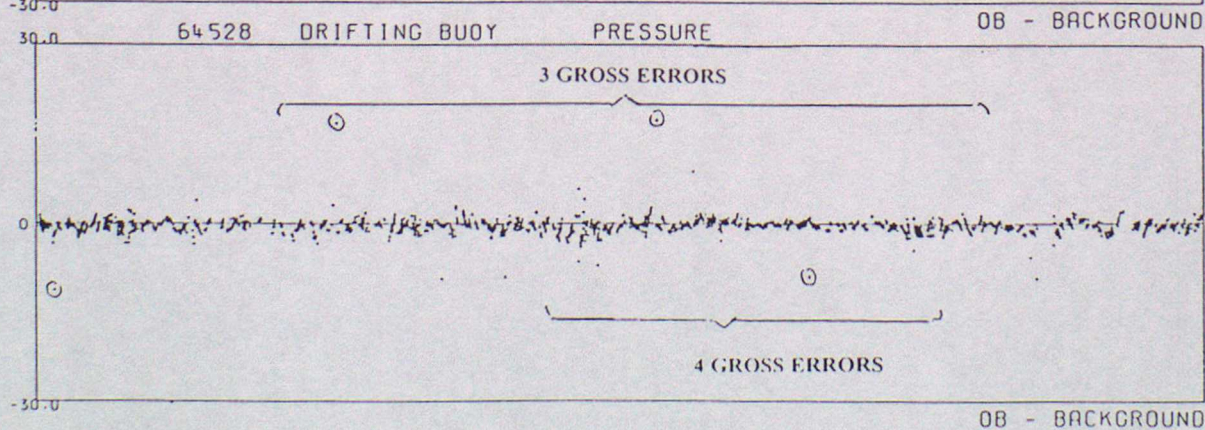
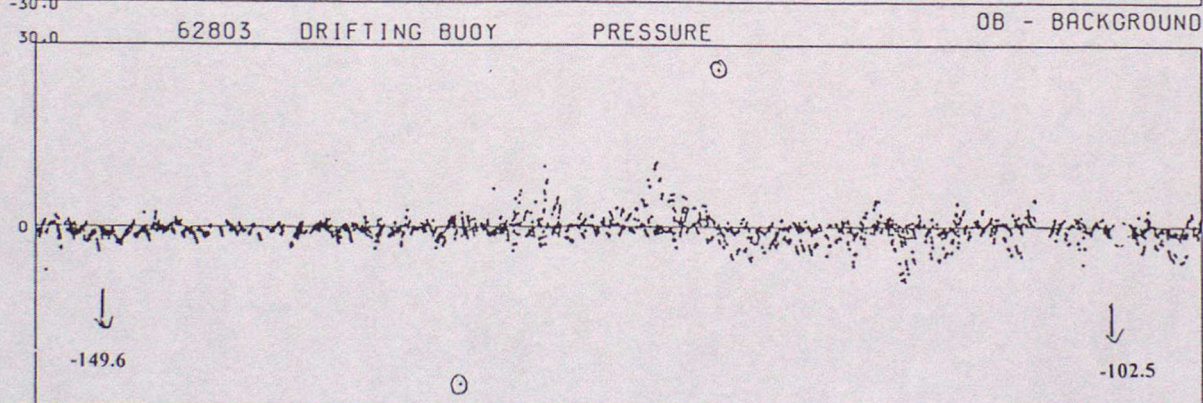
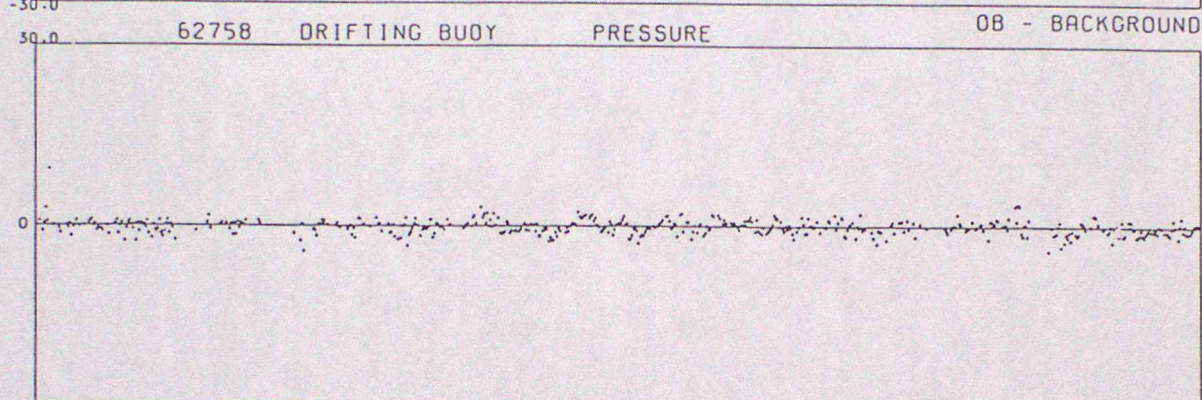
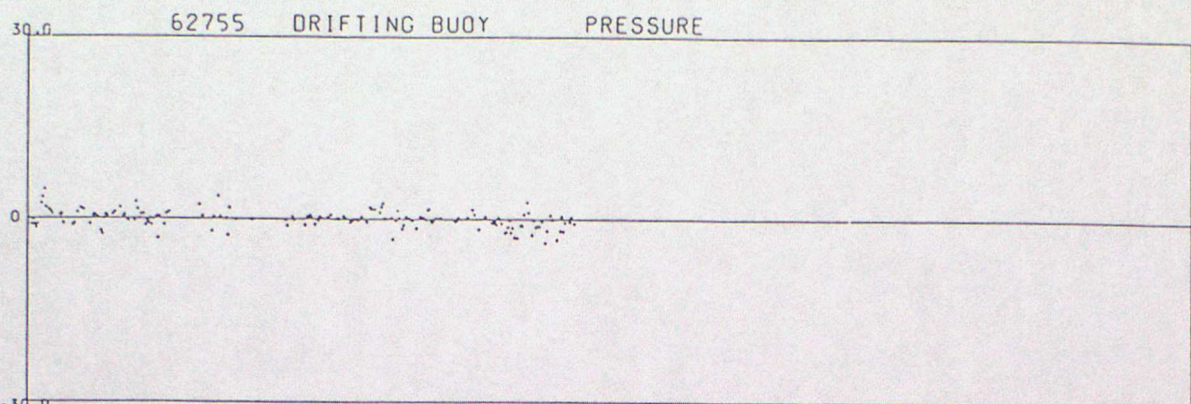
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



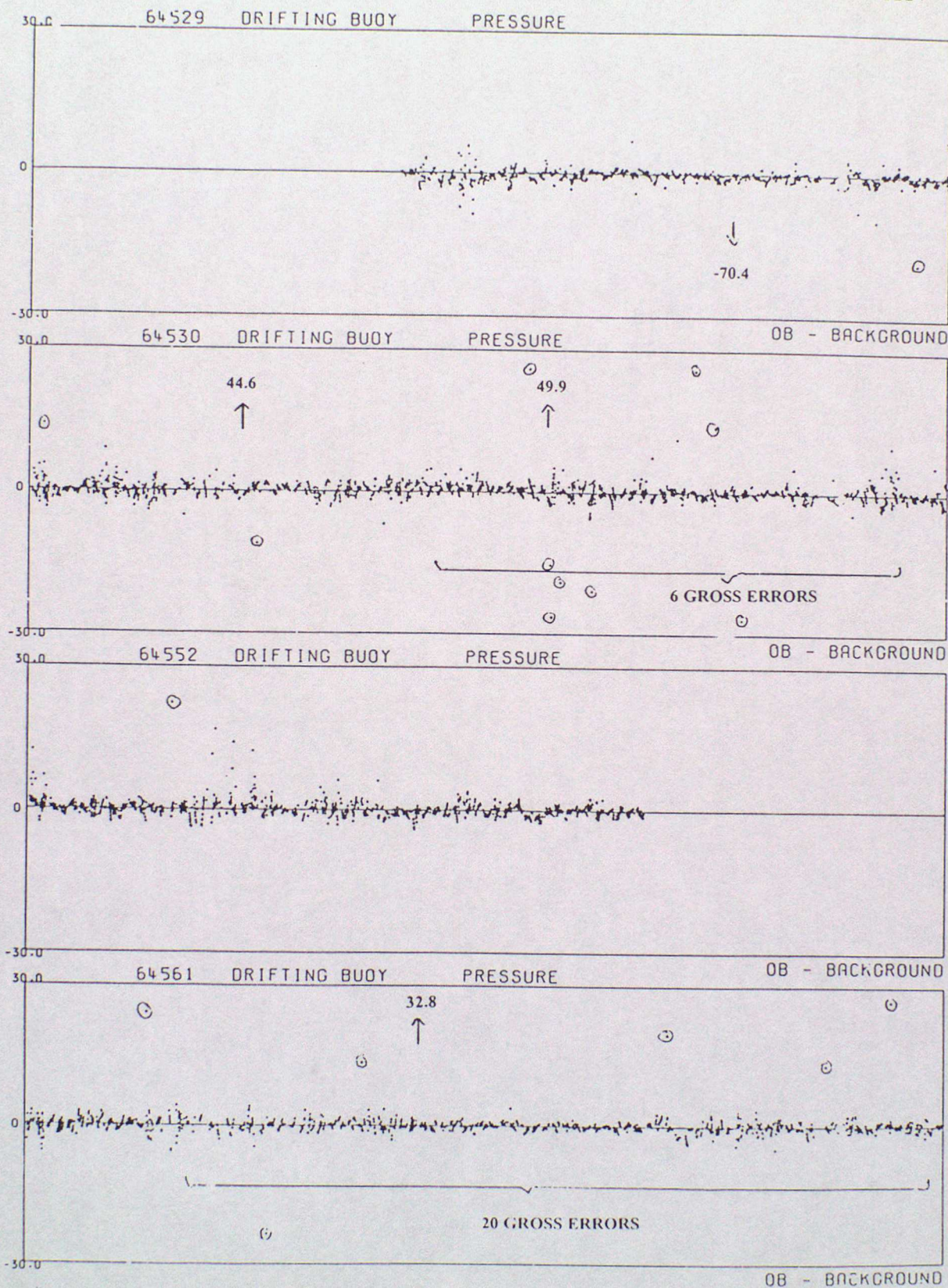
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (063 - BACKGROUND FIELD)



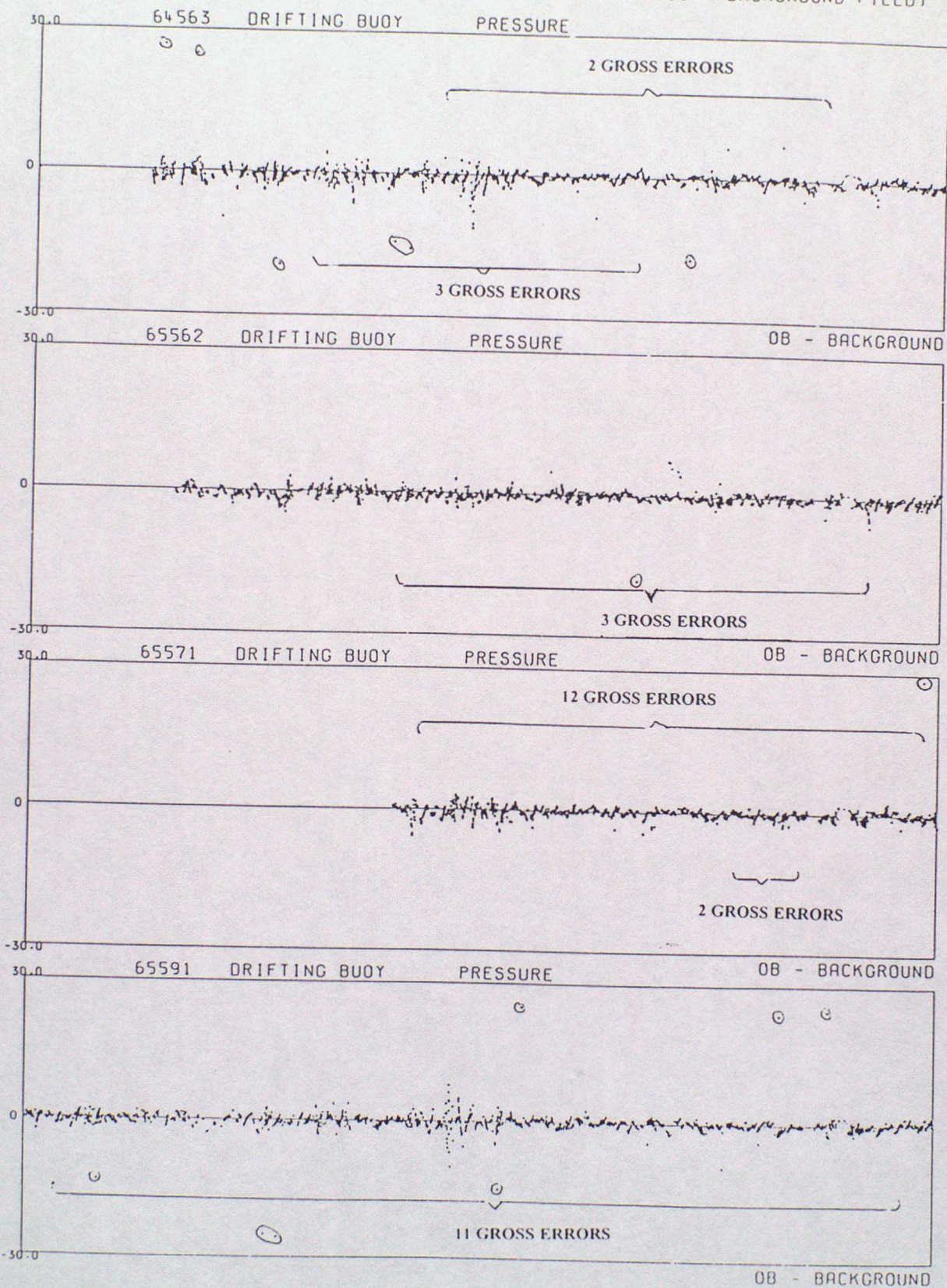
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



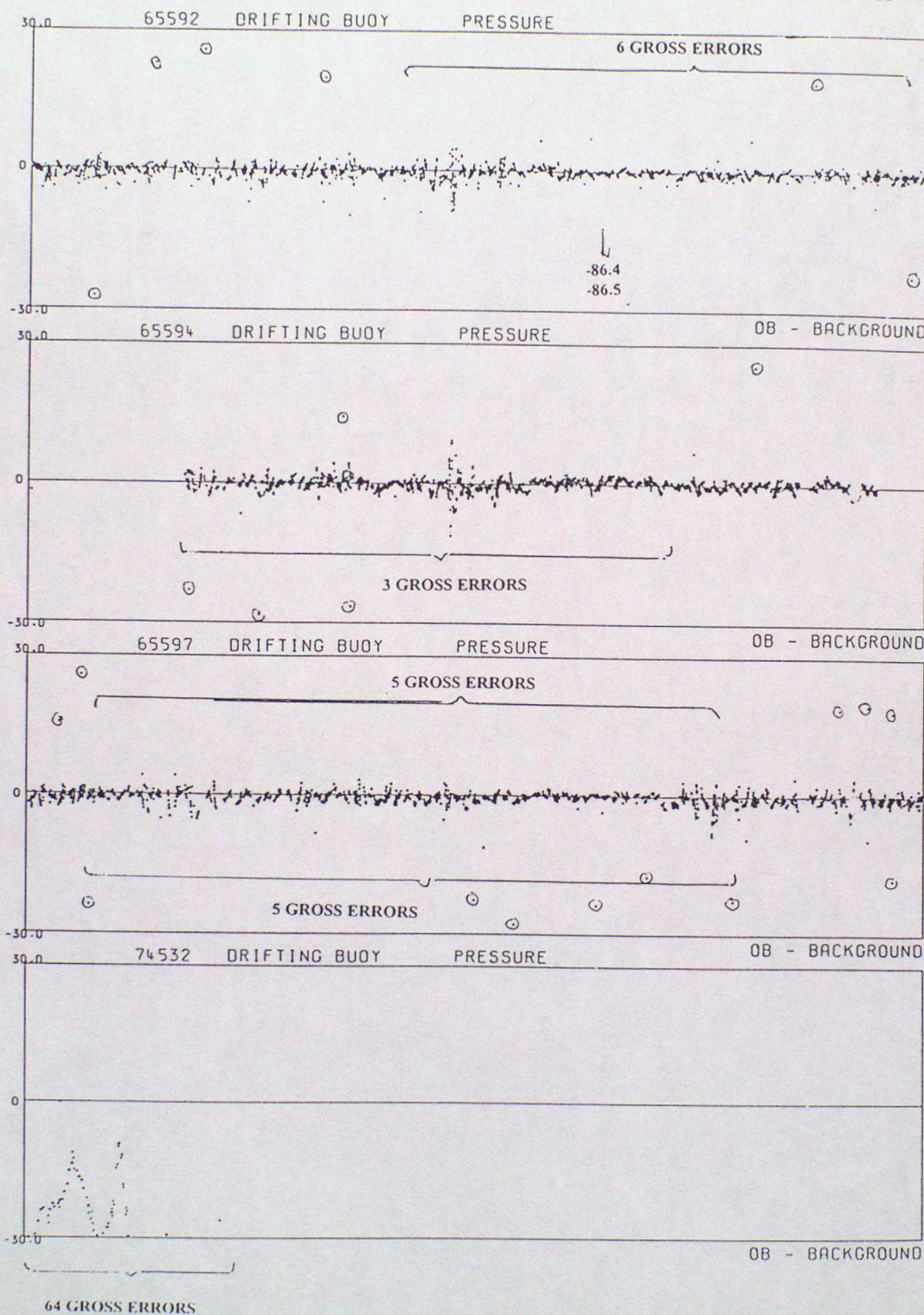
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

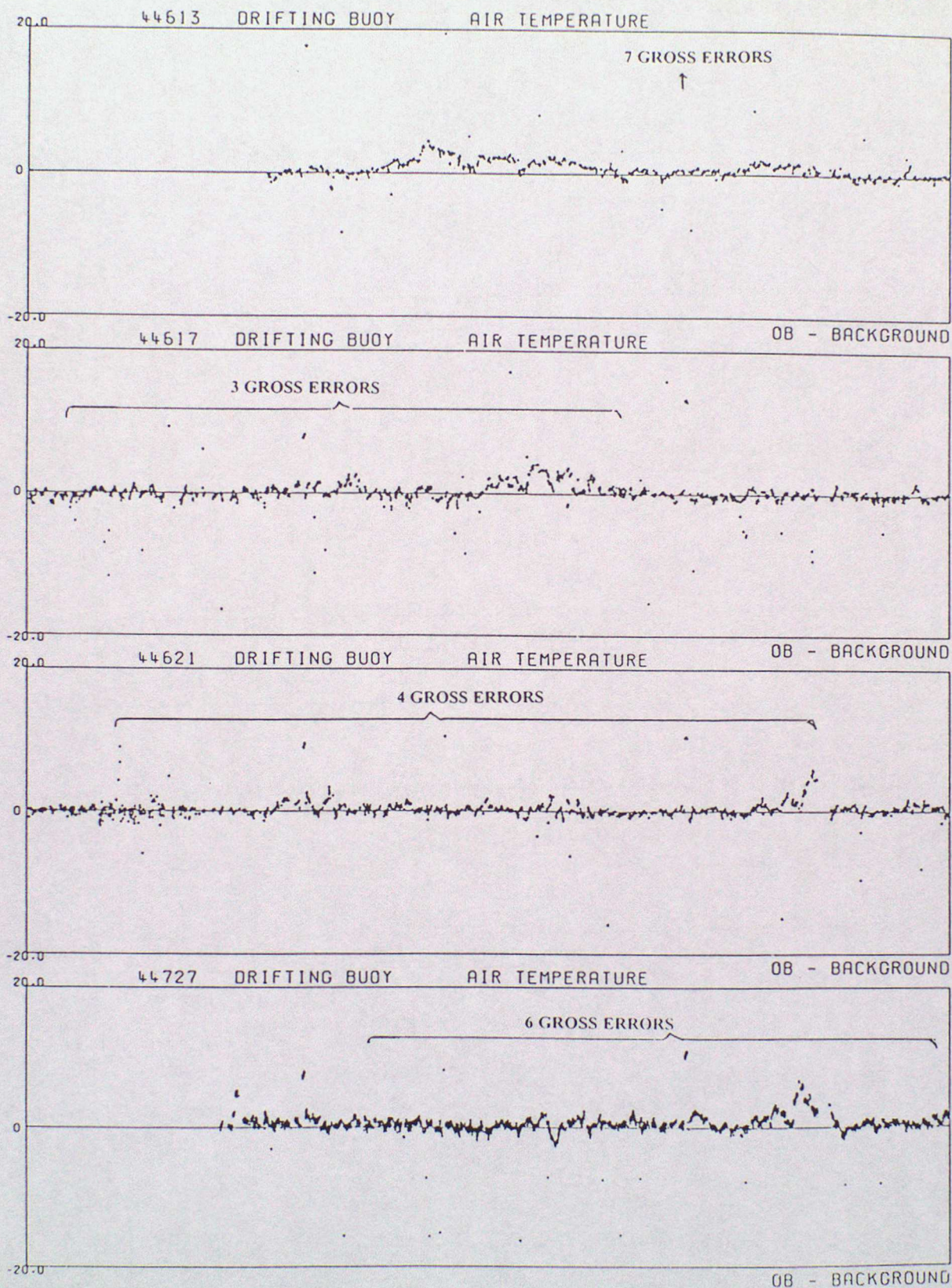


DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

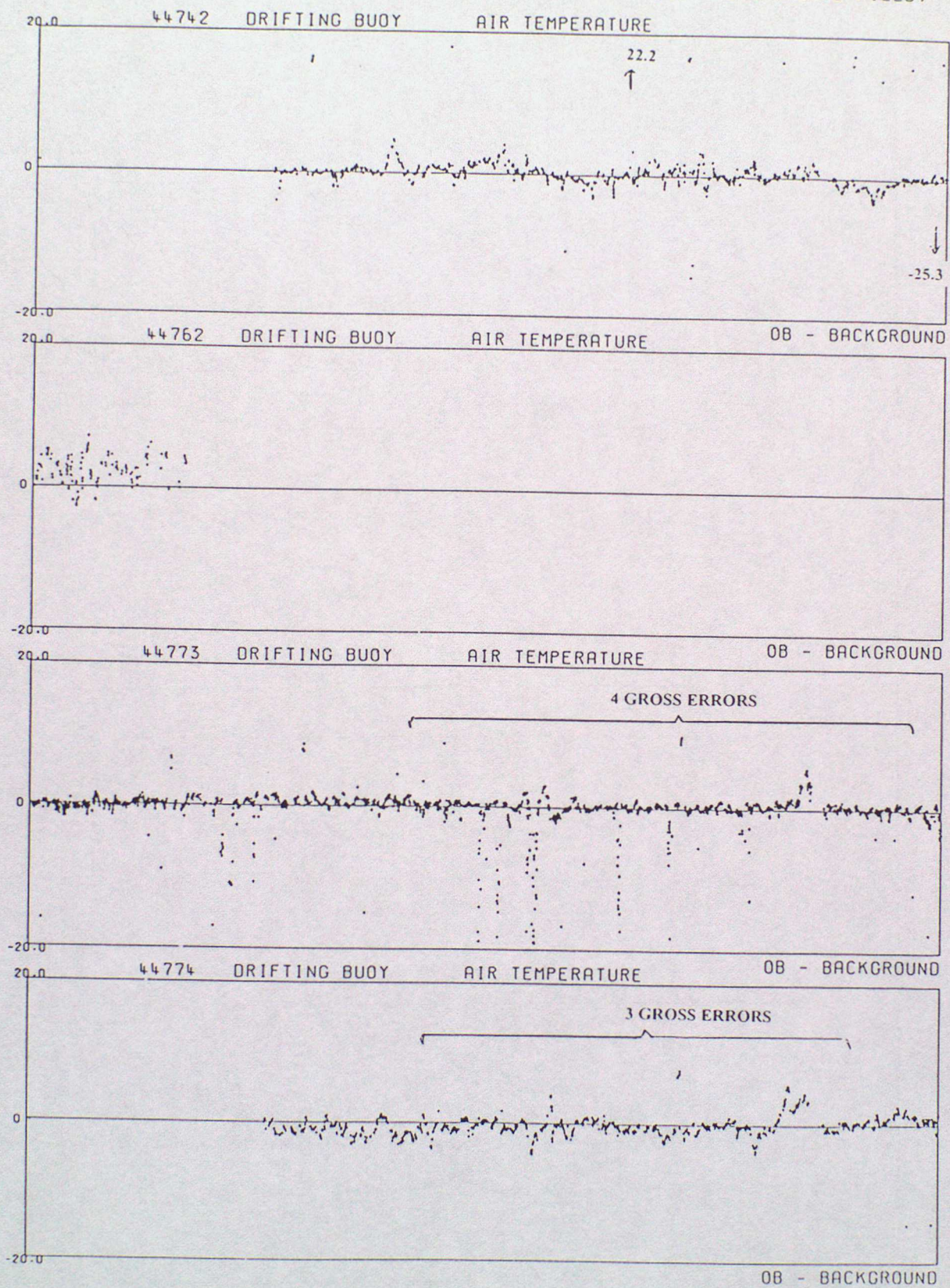


ANNEX C - TIME SERIES PLOTS OF AIR TEMPERATURE

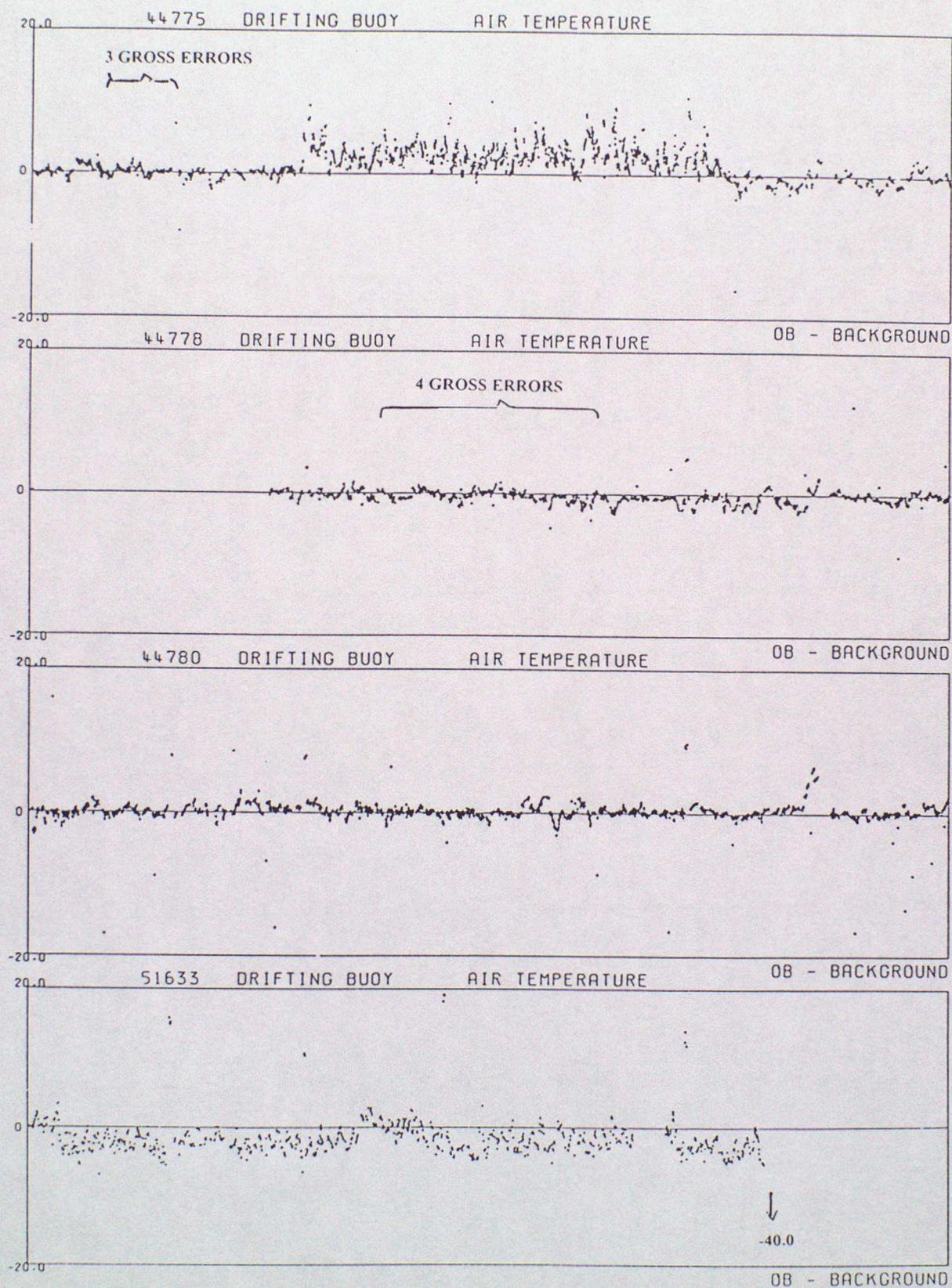
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



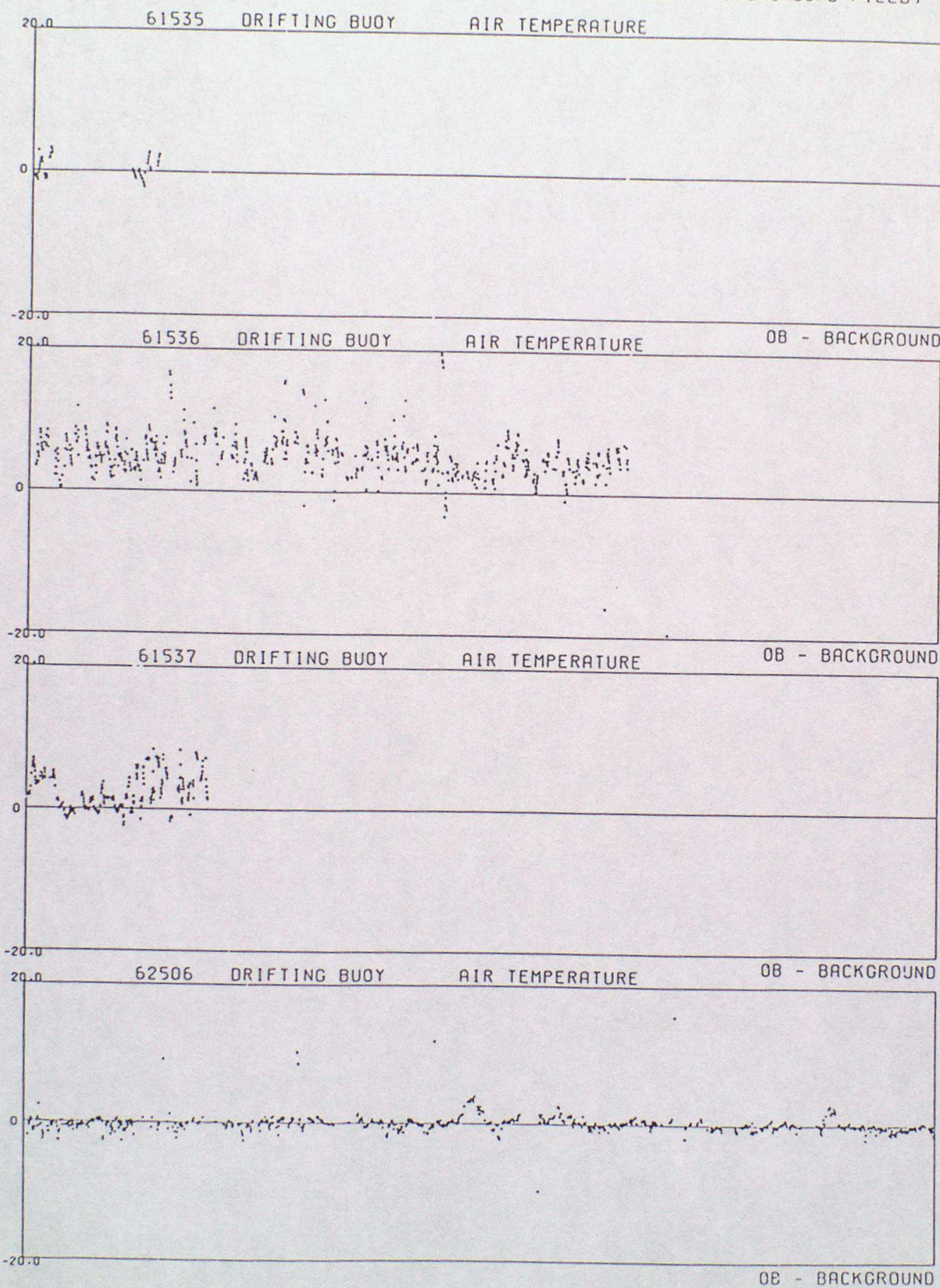
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



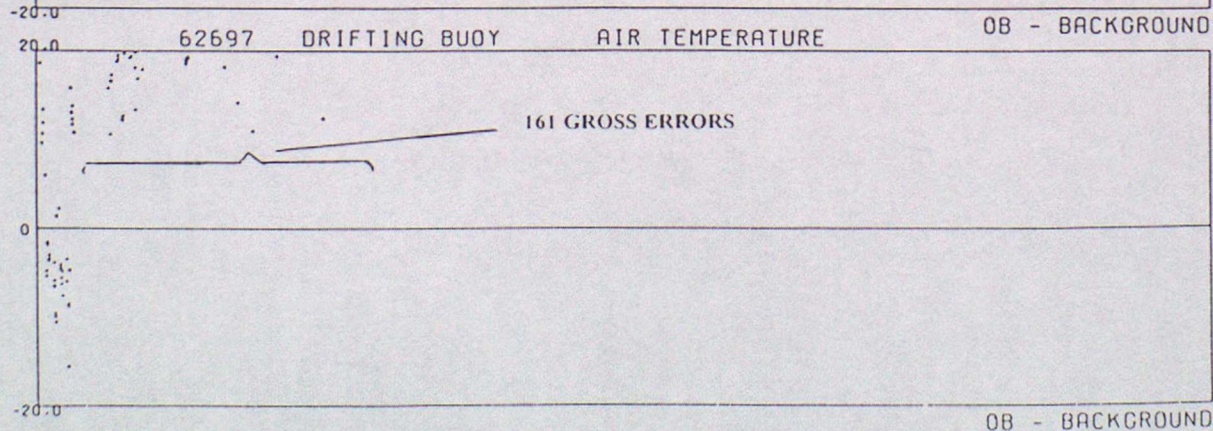
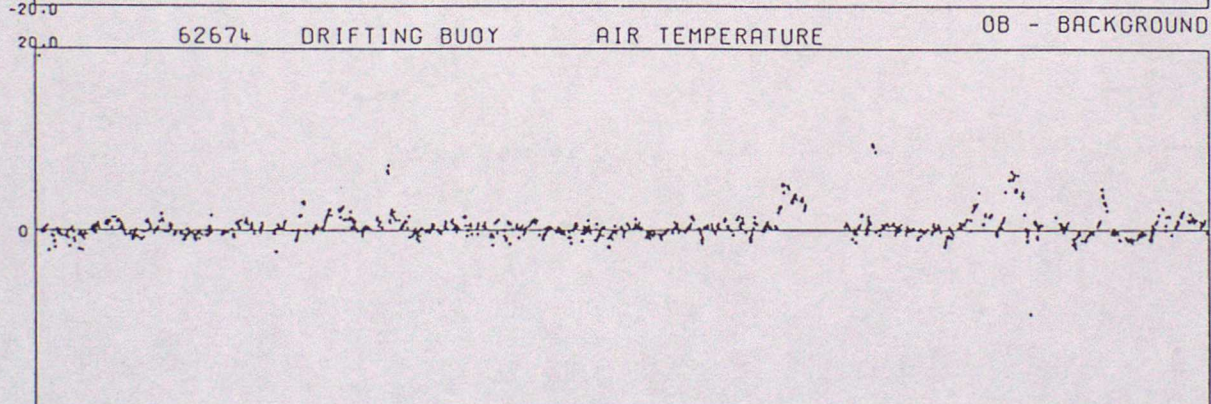
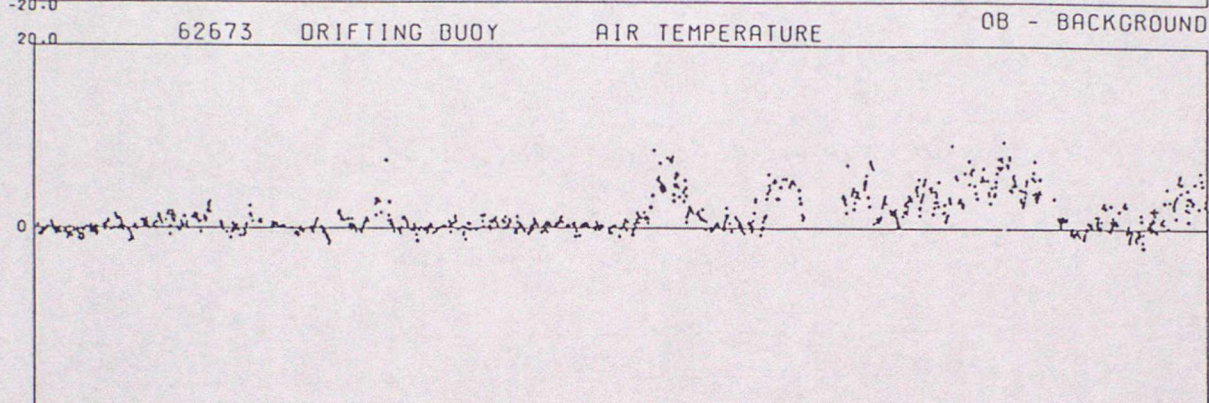
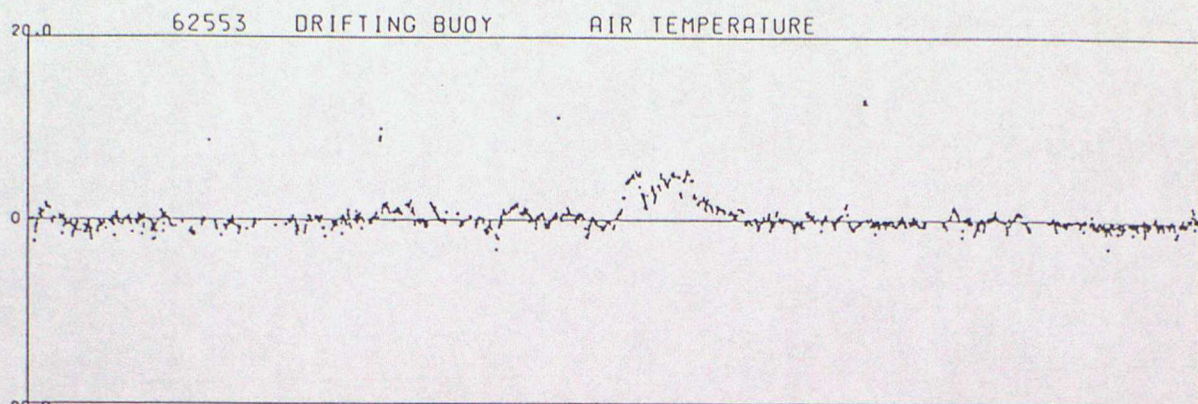
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



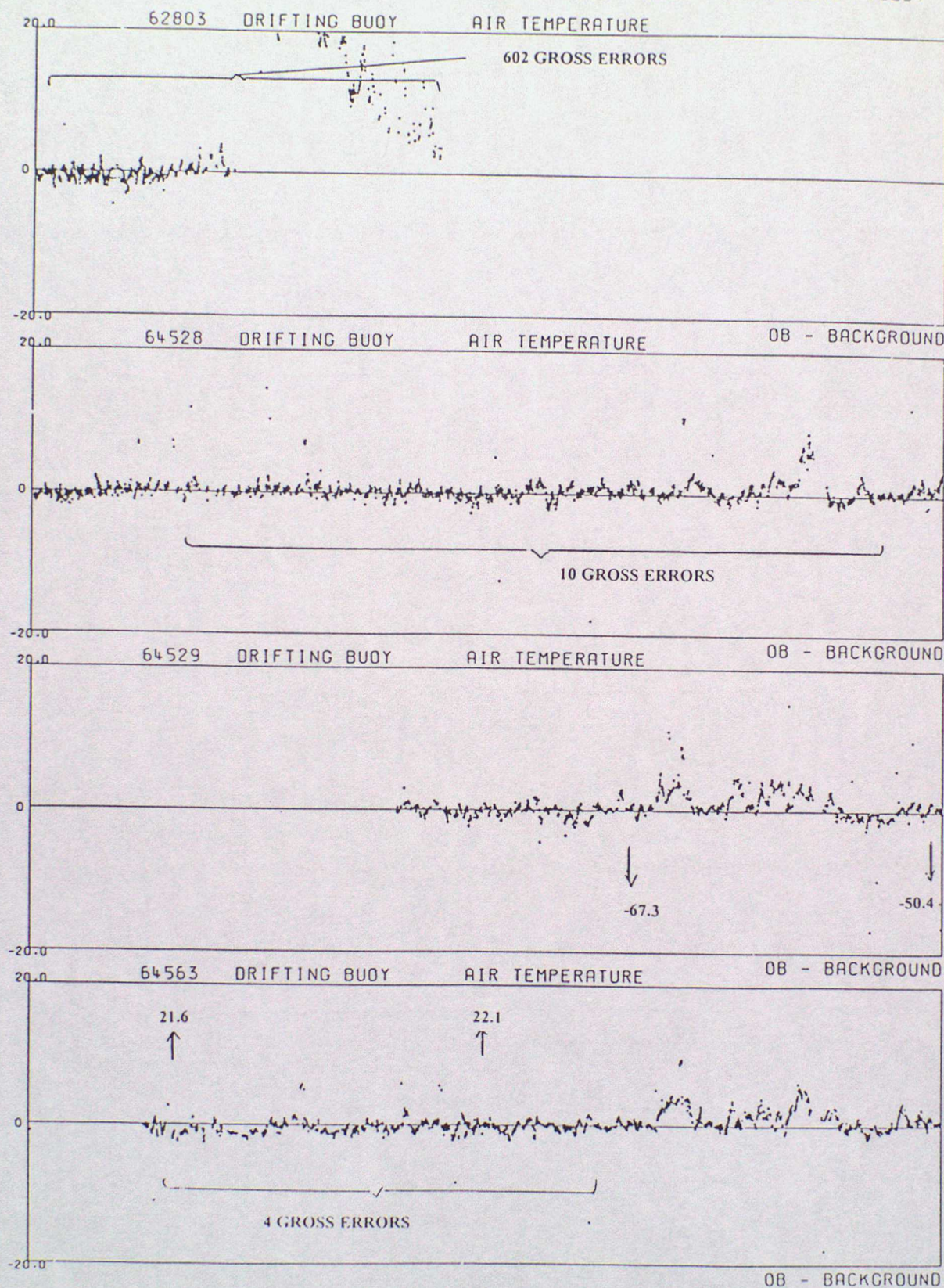
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



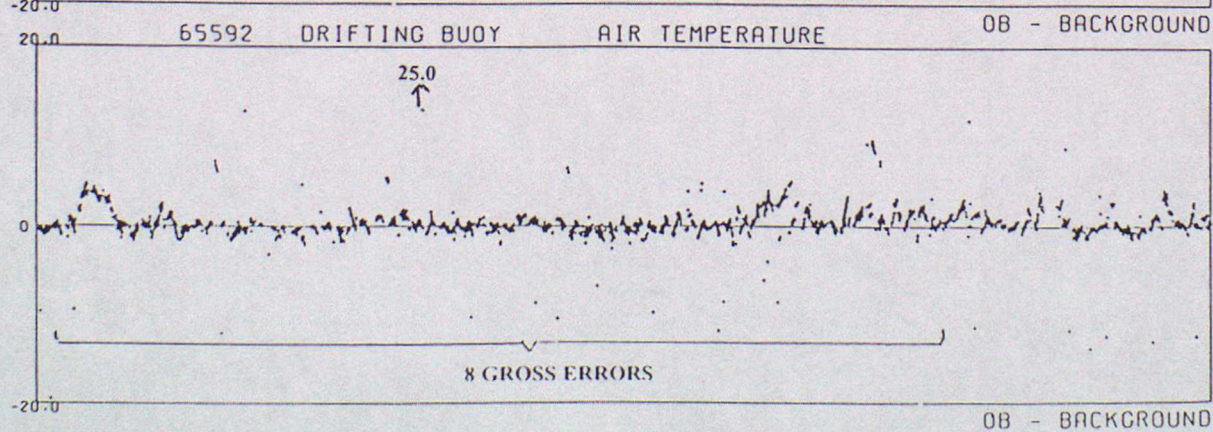
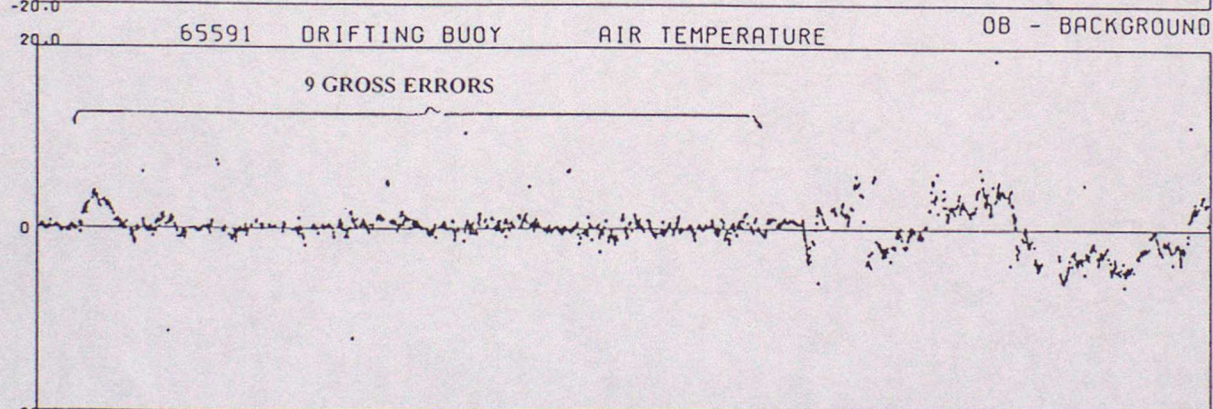
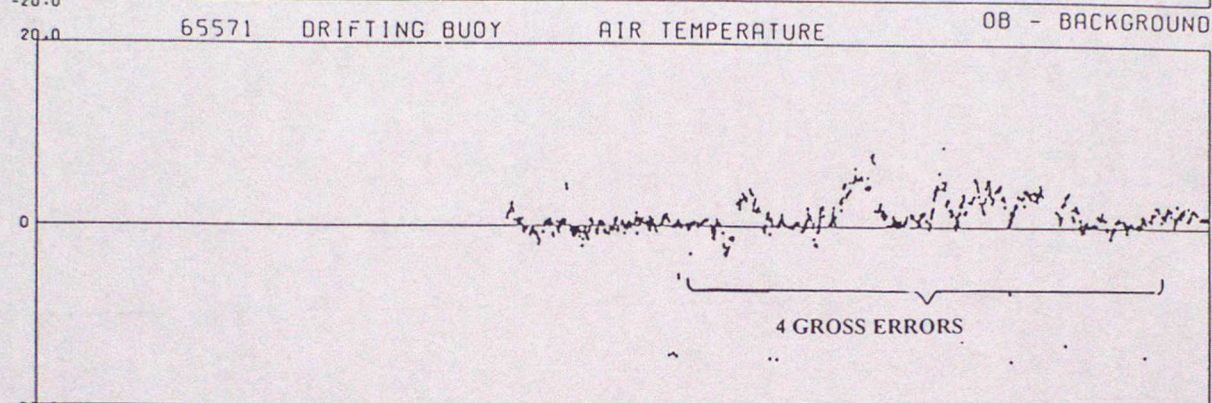
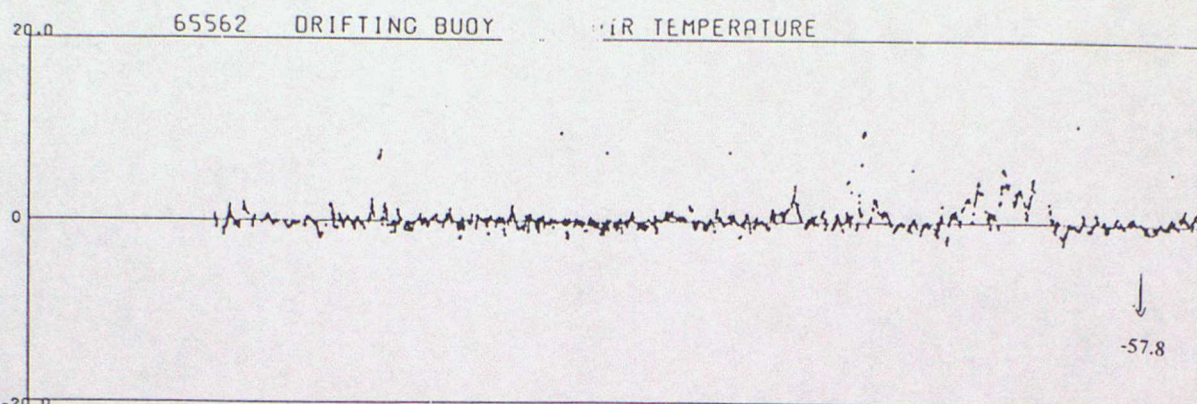
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



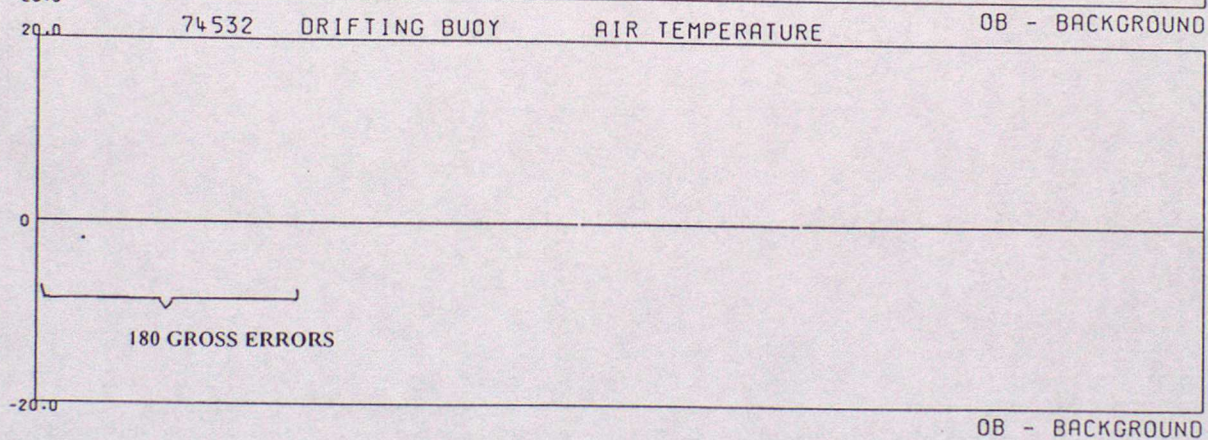
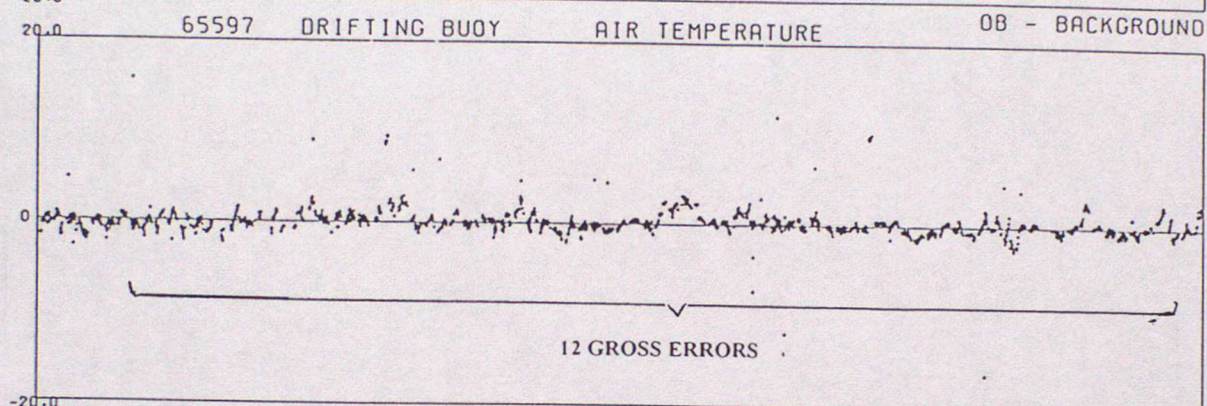
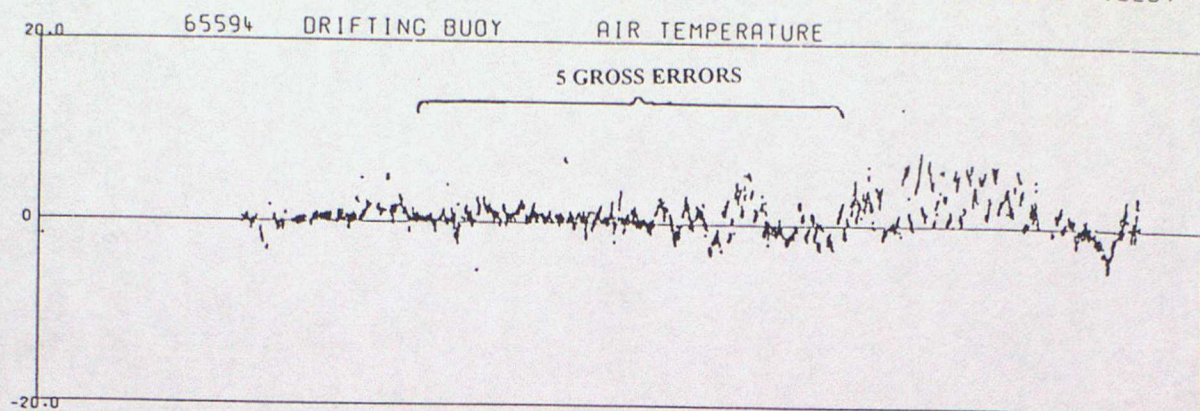
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1998 TO 23:00Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

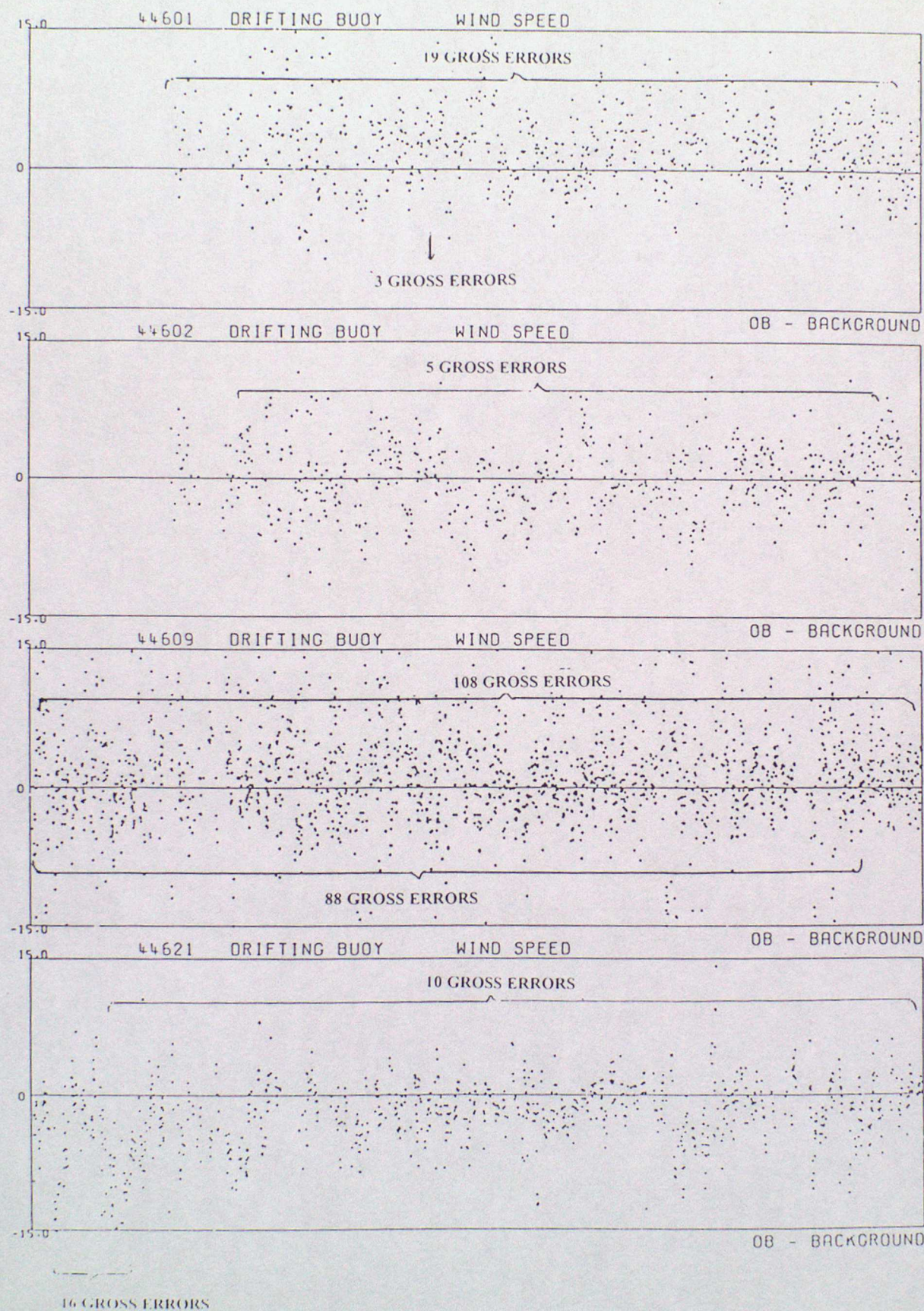


DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

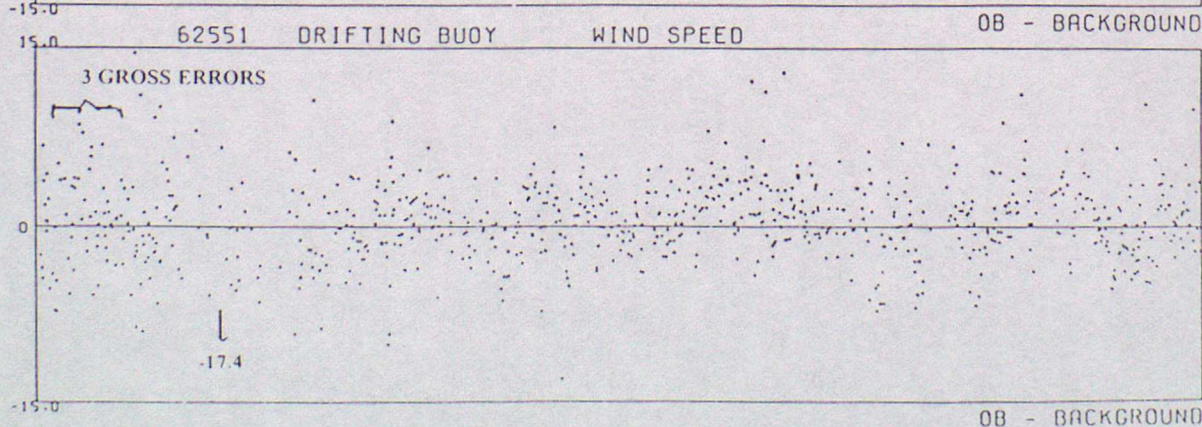
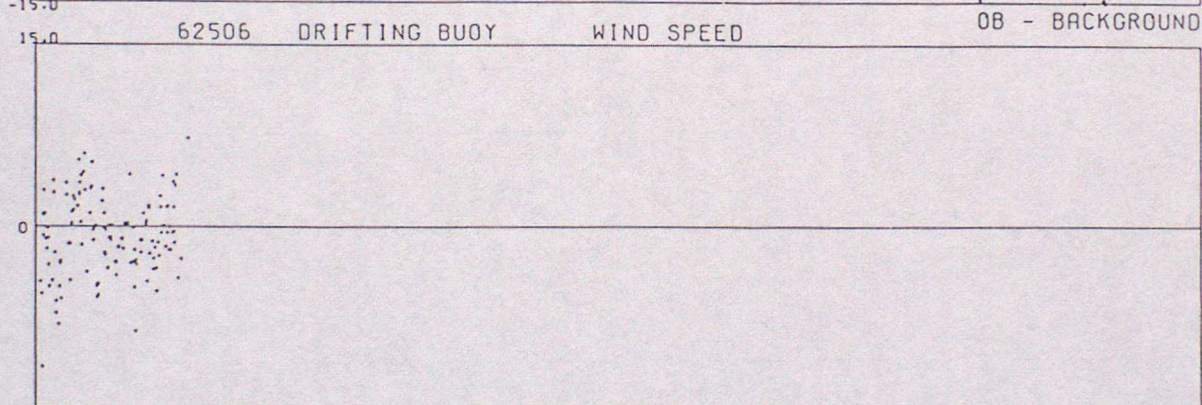
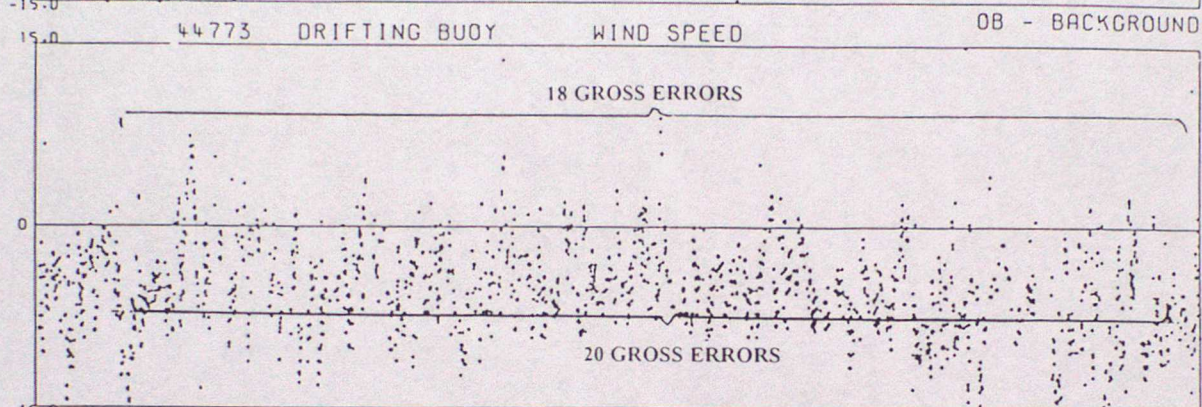
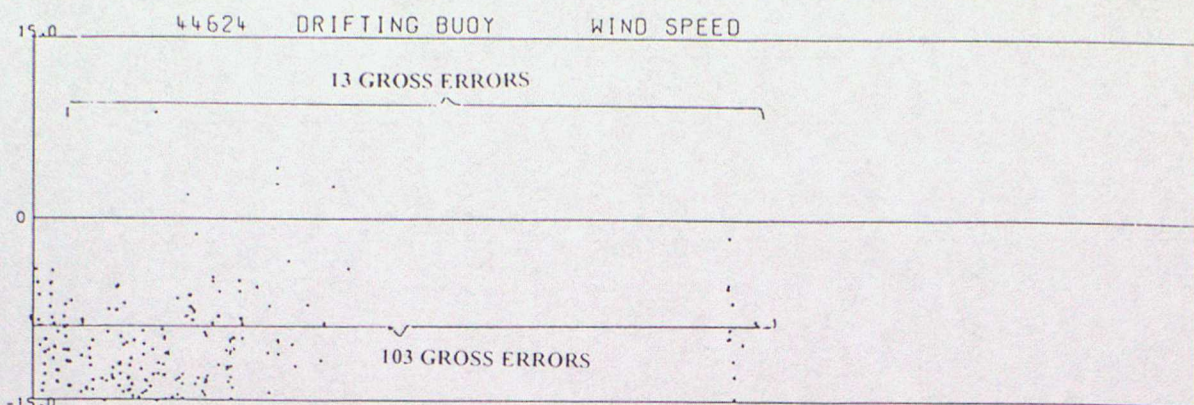


ANNEX D - TIME SERIES PLOTS OF WIND SPEED

DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

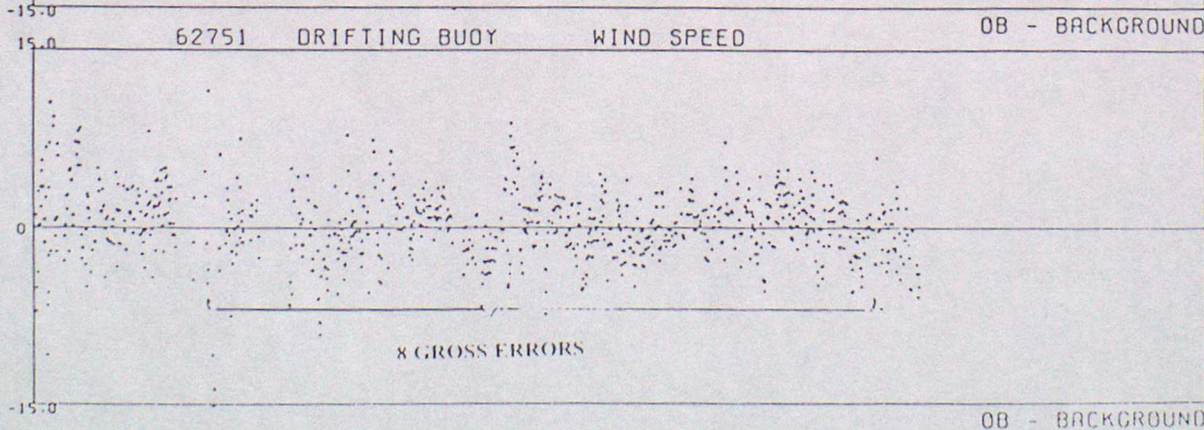
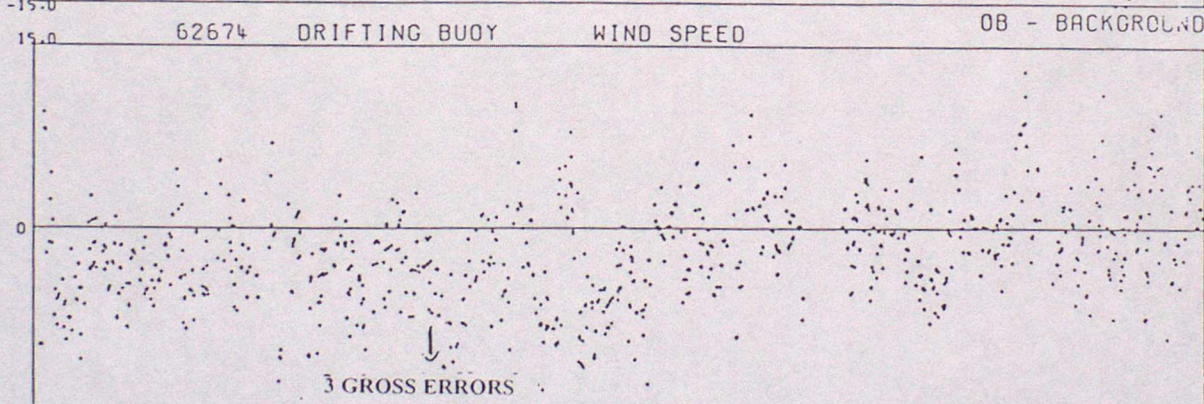
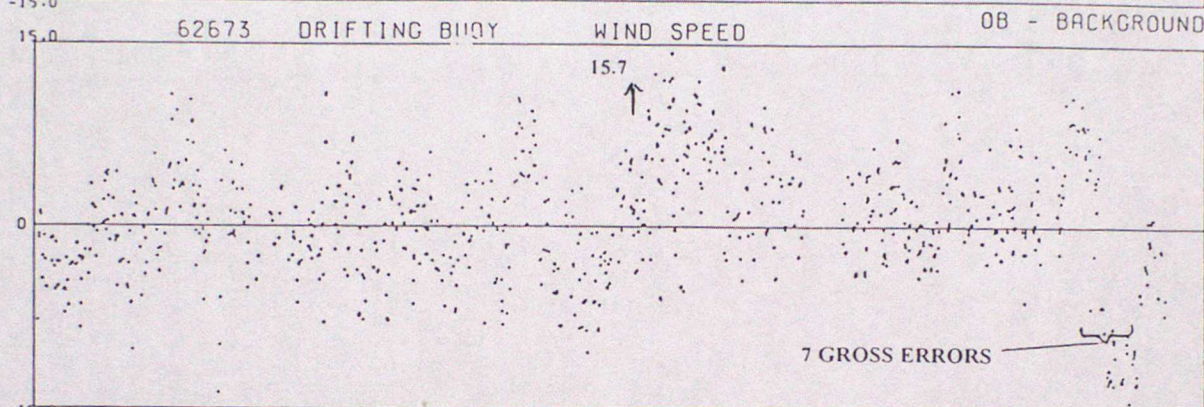
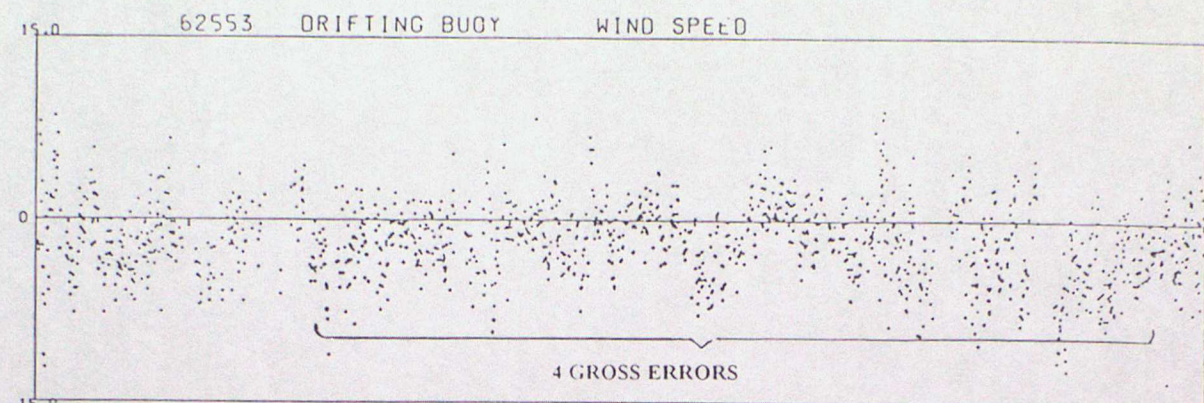


DATA FROM 00Z 01/04/1998 TO 23Z 30/06/1998 (OBS - BACKGROUND FIELD)

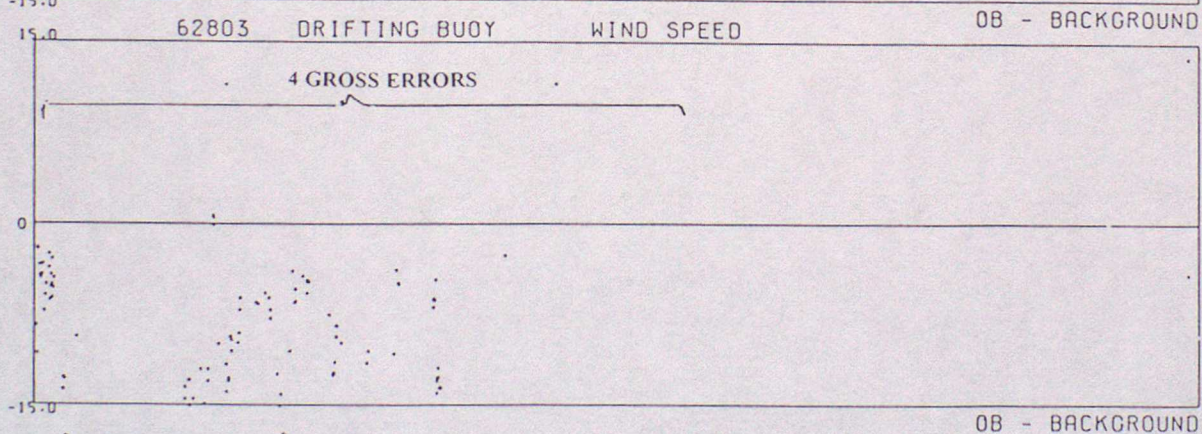
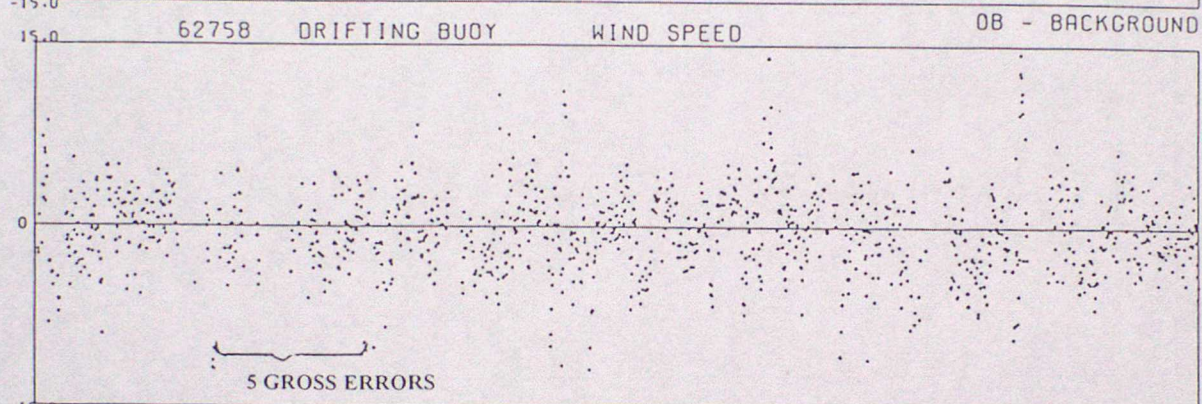
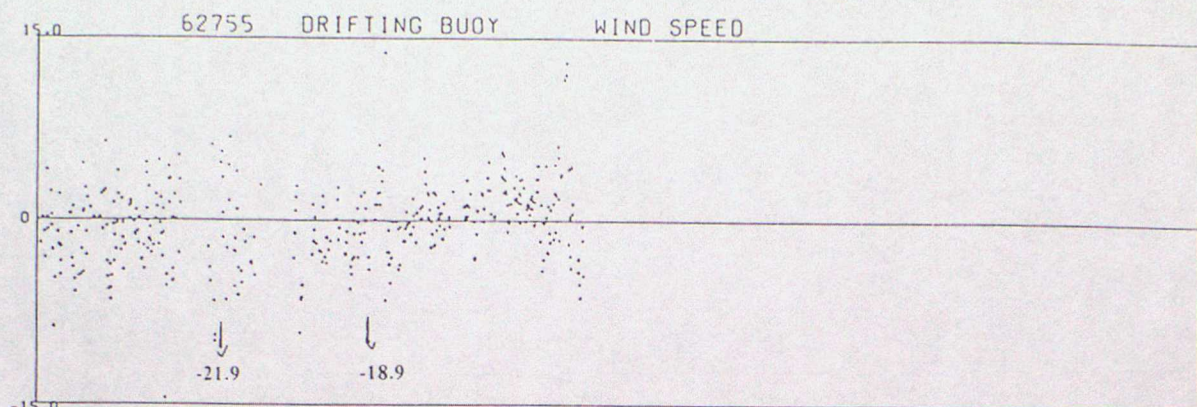


OB - BACKGROUND

DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

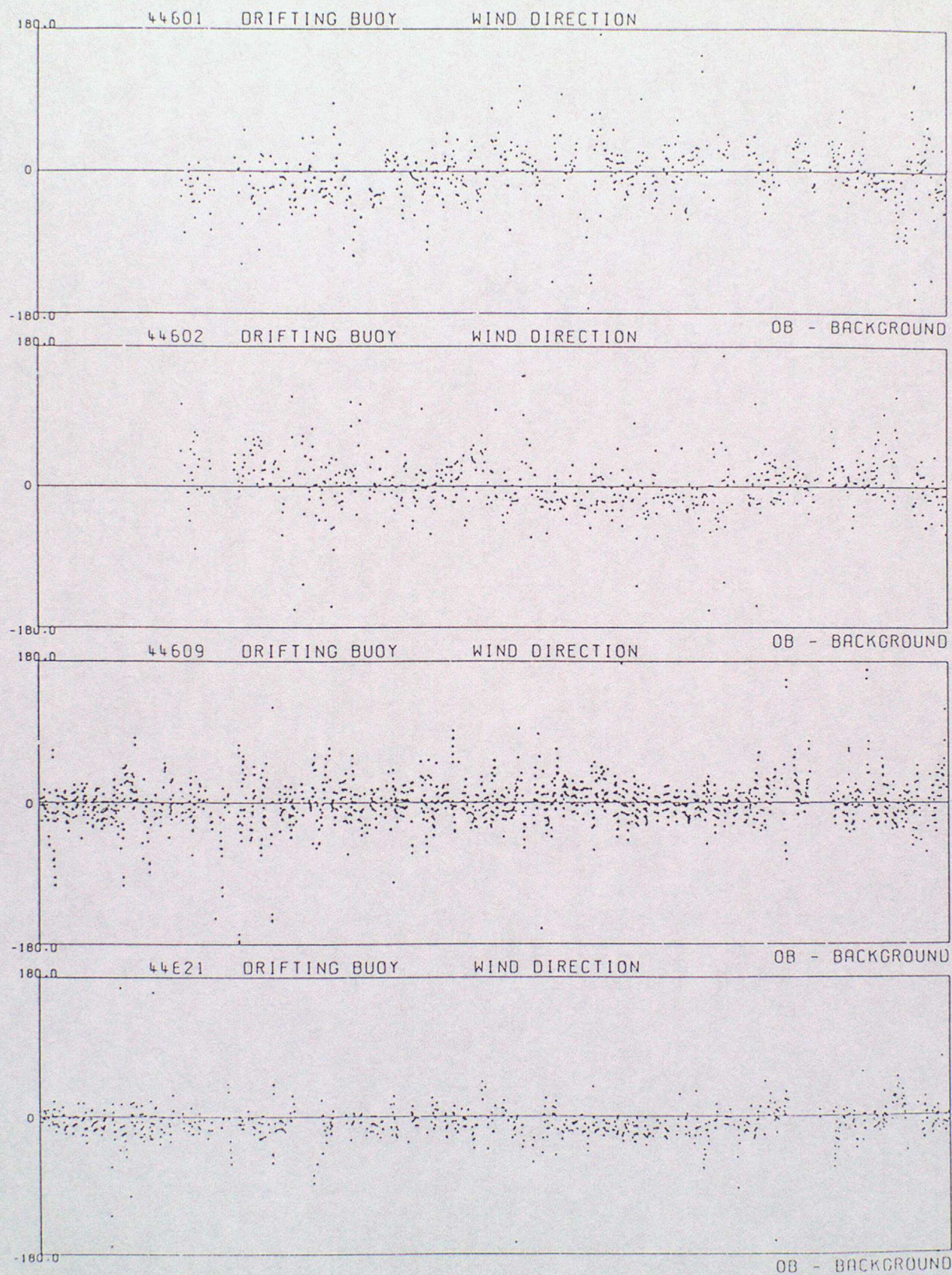


DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)

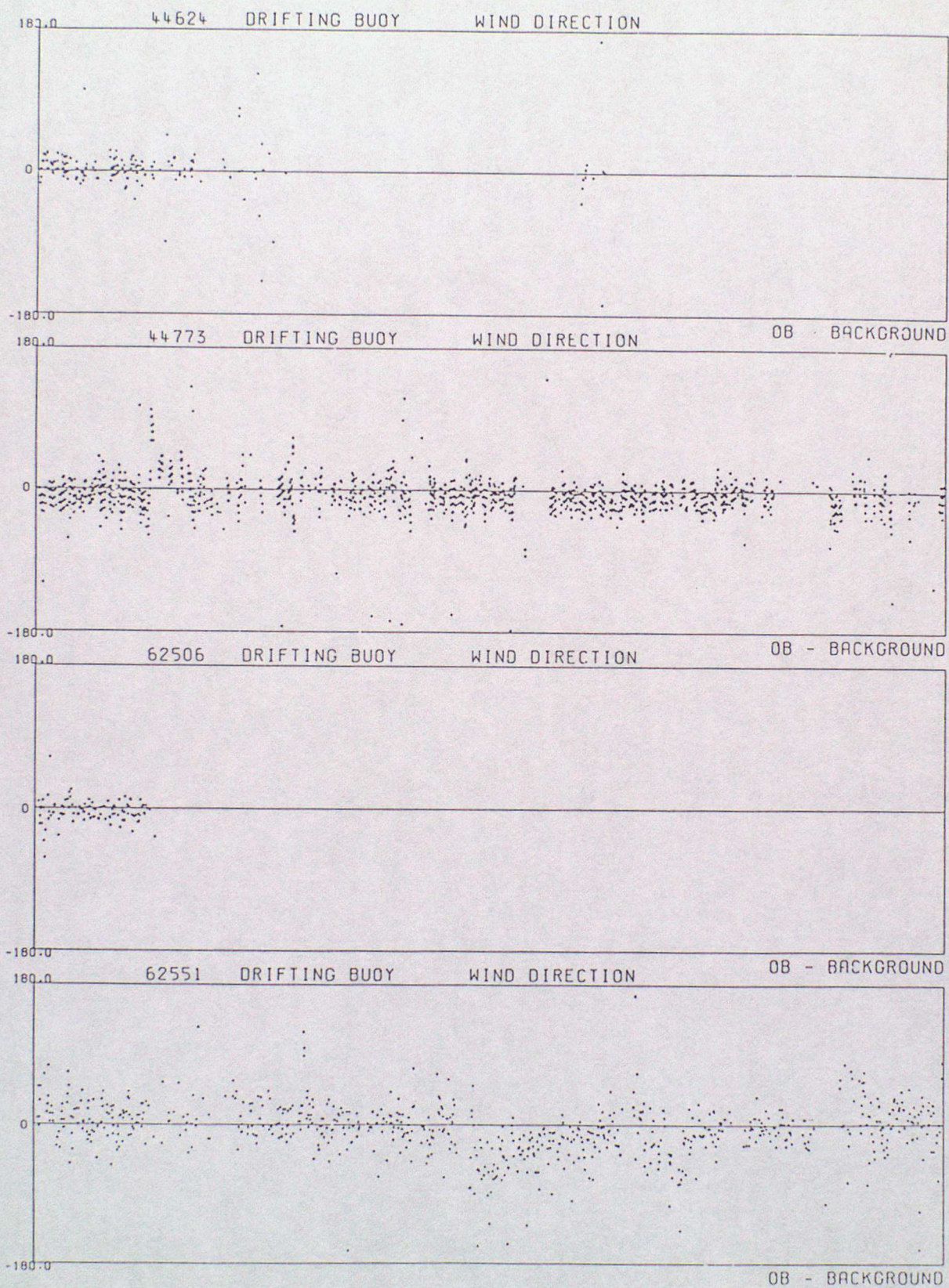


ANNEX E - TIME SERIES PLOTS OF WIND DIRECTION

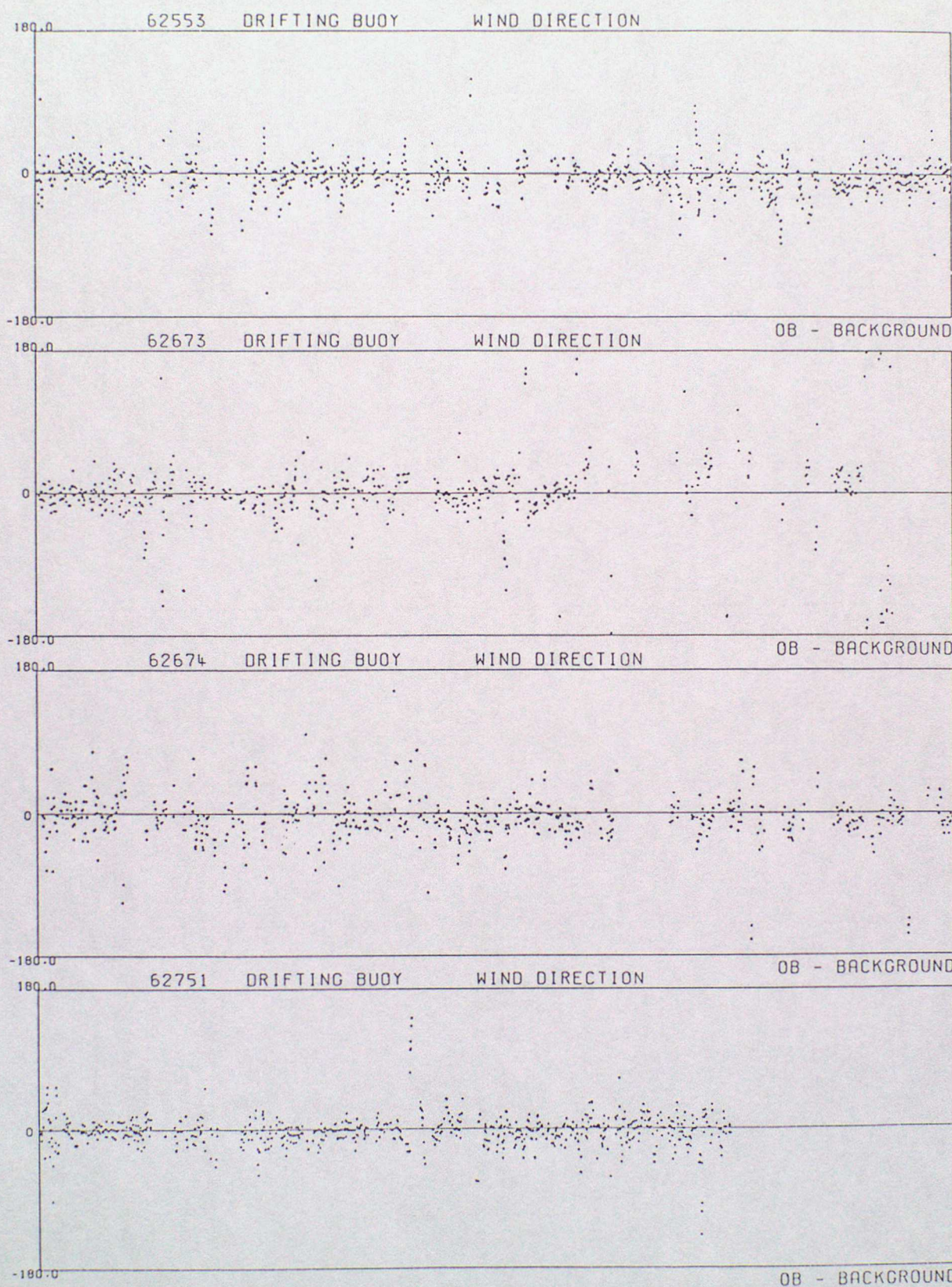
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



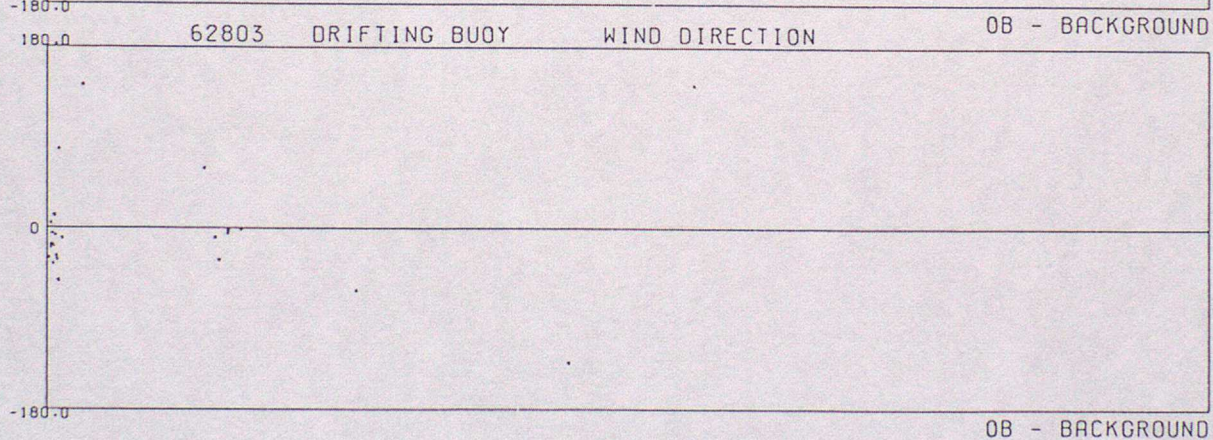
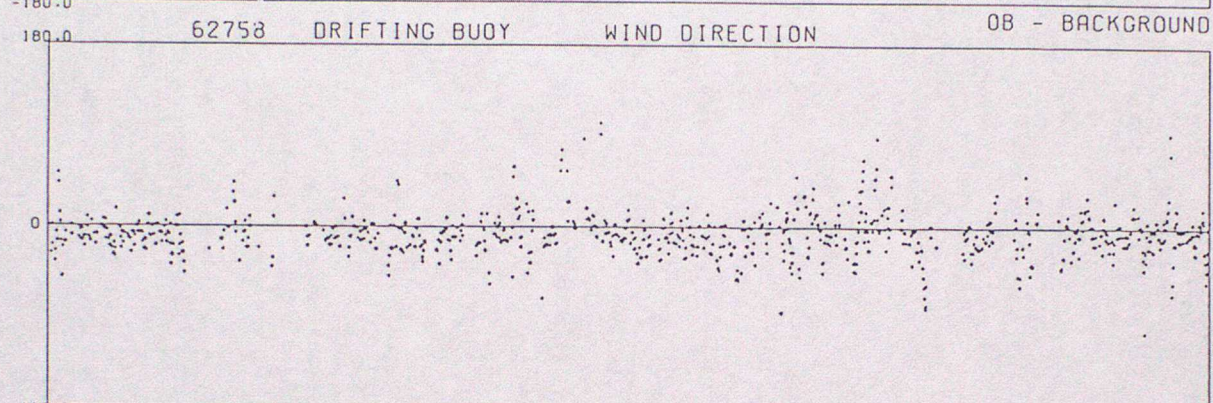
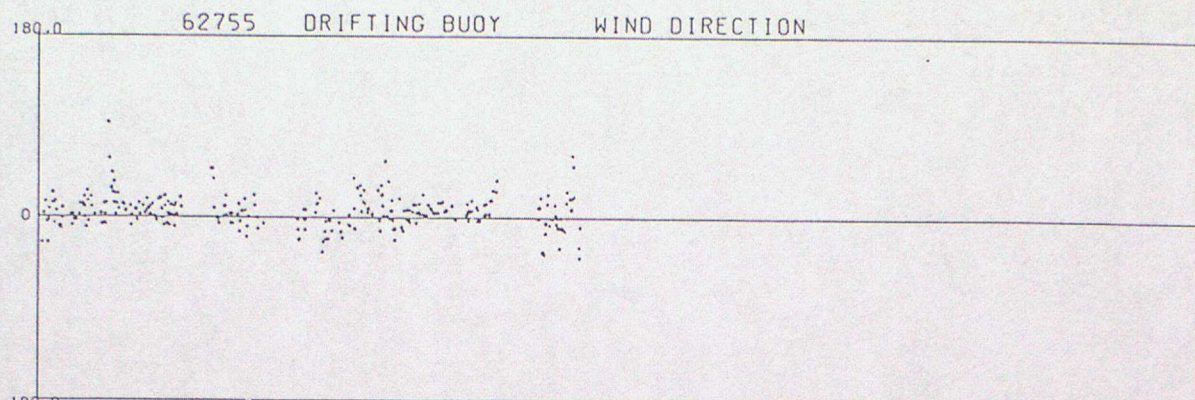
DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



DATA FROM 00Z ON 01/04/1998 TO 23Z ON 30/06/1998 (OBS - BACKGROUND FIELD)



ANNEX F - SUMMARY TABLE OF OPERATIONAL DRIFTING BUOYS

| WMO No. | Argos No. | Owner | Elements Reported | | | | | | Reporting Period |
|---------|-----------|-------|-------------------|----|----|----|----|-----|------------------|
| | | | PP | Pt | TT | FF | DD | SST | |
| 13903 | ???? | ?? | * | * | | | | * | 01/04 - 02/06 |
| 13906 | ???? | ?? | * | * | | | | * | 01/04 - 30/06 |
| 41597 | ???? | ?? | * | * | | | | * | 01/04 - 30/06 |
| 44601 | ???? | ?? | * | * | | * | * | * | 15/04 - 30/06 |
| 44602 | ???? | ?? | * | * | | * | * | * | 15/04 - 30/06 |
| 44603 | ???? | ?? | * | * | | | | * | 15/04 - 30/06 |
| 44604 | ???? | ?? | * | * | | | | * | 18/04 - 30/06 |
| 44606 | ???? | ?? | * | * | | | | * | 19/04 - 30/06 |
| 44609 | 14430 | F | * | * | | * | * | * | 01/04 - 30/06 |
| 44613 | ???? | ?? | * | * | * | | | * | 24/04 - 30/06 |
| 44614 | 12665 | UK | * | * | | | | * | 01/04 - 09/06 |
| 44616 | 12661 | UK | * | * | | | | * | 01/04 - 30/06 |
| 44617 | 27644 | UK | * | * | * | | | * | 01/04 - 30/06 |
| 44621 | 26752 | UK | * | * | * | * | * | | 01/04 - 30/06 |
| 44624 | 2958 | UK | * | * | | * | * | * | 01/04 - 27/05 |
| 44726 | ???? | ?? | * | * | | | | * | 26/05 - 30/06 |
| 44727 | 3098 | UK | * | * | * | | | * | 01/04 - 30/06 |
| 44742 | 26753 | UK | * | * | * | | | * | 24/04 - 30/06 |
| 44743 | 1248 | UK | * | * | | | | * | 24/05 - 30/06 |
| 44761 | 12660 | UK | * | * | | | | * | 01/04 - 07/05 |
| 44762 | 26754 | UK | * | * | * | * | * | * | 01/04 - 16/04 |
| 44763 | 12663 | UK | * | * | | | | * | 01/04 - 12/06 |
| 44765 | 12662 | UK | * | * | | | | * | 01/04 - 30/06 |
| 44766 | 12667 | UK | * | * | | | | * | 01/04 - 31/05 |
| 44768 | 26746 | UK | * | * | | | | * | 01/04 - 30/06 |
| 44771 | 12659 | UK | * | * | | | | * | 01/04 - 30/06 |
| 44773 | 26751 | UK | * | * | * | * | * | * | 01/04 - 30/06 |
| 44774 | ???? | ?? | * | * | * | | | * | 24/04 - 30/06 |
| 44775 | 26741 | UK | * | * | * | | | * | 01/04 - 30/06 |
| 44776 | ???? | UK | * | * | | | | * | 26/05 - 30/06 |
| 44778 | ???? | ?? | * | * | * | | | * | 24/04 - 30/06 |
| 44779 | ???? | ?? | * | * | | | | * | 24/04 - 30/06 |
| 44780 | 26742 | UK | * | * | * | | | * | 01/04 - 30/06 |
| 44901 | ???? | ?? | * | * | | | | * | 01/04 - 30/06 |

KEY

PP - Pressure

TT - Air Temperature

DD - Wind Direction

Pt - Pressure tendency

FF - Wind Speed

SST - Sea Surface Temperature

ANNEX F - Cont.

| WMO No. | Argos No. | Owner | Elements Reported | | | | | | Reporting Period |
|---------|-----------|-------|-------------------|----|----|----|----|-----|------------------|
| | | | PP | Pt | TT | FF | DD | SST | |
| 44912 | ???? | US | * | * | | | | * | 01/04 - 30/06 |
| 44925 | ???? | US | * | * | | | | | 01/04 - 30/06 |
| 51633 | ???? | ?? | * | | * | | | * | 01/04 - 14/06 |
| 61535 | ???? | ?? | * | | * | | | * | 01/04 - 13/04 |
| 61536 | ???? | ?? | * | | * | | | | 01/04 - 03/06 |
| 61537 | ???? | ?? | * | | * | | | * | 01/04 - 19/04 |
| 62501 | ???? | ?? | * | | | | | * | 01/04 - 12/06 |
| 62506 | ???? | ?? | * | * | * | * | * | * | 01/04 - 30/06 |
| 62509 | ???? | ?? | * | | | | | * | 15/06 - 30/06 |
| 62510 | ???? | ?? | * | | | | | * | 15/06 - 30/06 |
| 62551 | ???? | ?? | * | | | * | * | * | 01/04 - 30/06 |
| 62553 | 3009 | F | * | * | * | * | * | * | 01/04 - 30/06 |
| 62557 | 27930 | F | * | * | | | | * | 01/04 - 30/06 |
| 62558 | 27931 | F | * | * | | | | | 01/04 - 03/06 |
| 62673 | ???? | ?? | * | | * | * | * | * | 01/04 - 30/06 |
| 62674 | ???? | ?? | * | | * | * | * | * | 01/04 - 30/06 |
| 62697 | 2959 | UK | * | * | * | * | | * | 01/04 - 28/04 |
| 62751 | ???? | ?? | * | | | * | * | * | 01/04 - 08/06 |
| 62755 | ???? | ?? | * | | | * | * | * | 01/04 - 13/05 |
| 62758 | ???? | ?? | * | | | * | * | * | 01/04 - 30/06 |
| 62803 | 3209 | UK | * | * | * | * | * | * | 01/04 - 30/06 |
| 64528 | 4274 | NL | * | * | * | | | * | 01/04 - 30/06 |
| 64529 | ???? | ?? | * | * | * | | | * | 07/05 - 30/06 |
| 64530 | 12666 | UK | * | * | | | | * | 01/04 - 30/06 |
| 64552 | 12658 | UK | * | * | | | | * | 01/04 - 31/05 |
| 64561 | 1247 | UK | * | * | | | | * | 01/04 - 30/06 |
| 64563 | 3679 | N | * | * | * | | | * | 01/04 - 30/06 |
| 65562 | ???? | ?? | * | * | * | | | * | 01/04 - 30/06 |
| 65571 | ???? | ?? | * | * | * | | | * | 06/05 - 30/06 |
| 65591 | 26748 | UK | * | * | * | | | * | 01/04 - 30/06 |
| 65592 | ???? | ?? | * | * | * | | | * | 01/04 - 30/06 |
| 65594 | 1252 | UK | * | * | * | | | * | 01/04 - 25/06 |
| 65597 | 4273 | NL | * | * | * | | | * | 01/04 - 30/06 |
| 74532 | ???? | ?? | * | | * | | | | 01/04 - 21/04 |

KEY

PP - Pressure

TT - Air Temperature

DD - Wind Direction

Pt - Pressure tendency

FF - Wind Speed

SST - Sea Surface Temperature

