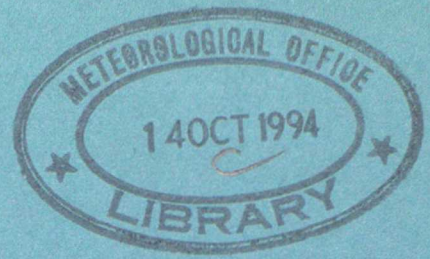


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**REPORT ON
THE QUALITY OF MARINE
SURFACE OBSERVATIONS
FOR THE PERIOD
JANUARY TO JUNE 1993.**

REPORT NO. 9

**CENTRAL FORECASTING DIVISION,
METEOROLOGICAL OFFICE,
BRACKNELL.**

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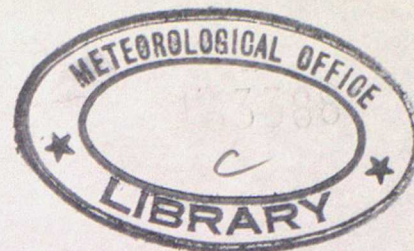
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REPORT ON THE QUALITY OF MARINE SURFACE OBSERVATIONS:

JANUARY TO JUNE 1993



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1. INTRODUCTION

In 1985, the Commission for Basic Systems agreed that there was a need for GDPS/ Global NWP centres to monitor the quality of observations available on the GTS and to exchange monthly lists of those stations providing observations which seem in error. In 1988 three lead centres were nominated which would have a co-ordinating role of producing, at six-monthly intervals, consolidated lists of suspect stations for given data types together with information on the nature of the error. RSMC Bracknell was allocated the role as lead centre for marine surface observations which encompasses observations from ships, drifting buoys, moored buoys and other fixed marine platforms. This is the ninth such report and covers the period January to June 1993. The report covering the period July to December 1993 will appear in the spring of 1994.

Following the CBS recommendations, four centres have been active in exchanging monitoring information each month; RSMC Bracknell since August 1987, ECMWF since August 1988, RSMC Tokyo since September 1988 and NMC Washington since August 1989. At first, the only monitoring information exchanged on marine surface observations was related to pressure, and the first two WMO reports were restricted to that parameter alone. All four centres now regularly monitor wind observations and results are contained in this report. In addition, the report contains monitoring results for sea-surface temperature (SST). For each marine observing platform identified as suspect, values are supplied for the number of observations received at each centre, the number of observations with gross errors, and the mean and rms differences from the background values used by the numerical data assimilation system.

2. MONITORING METHODS

Errors in observations may arise from a number of sources: the instrument may be malfunctioning, figures may be mistaken while being transferred manually, or there may be corruption of data during transmission. Errors can also arise in the pressure report if the adjustment to sea level is made incorrectly or not at all, and a poorly-sighted anemometer can result in errors in the observations of wind. For SST observations, the depth at which the observation is made can be crucial. "Surface" observations from buoys are usually made at a depth of around 0.5m, whereas ships may take a measurement between a depth of 10m and the surface, depending on the method used. At present, there is no indication given within the report of the observation's depth, so it is not possible to determine the significance of this factor. By contrast, satellites measure the temperature of the ocean's "skin" which is generally slightly cooler than the temperature immediately beneath, by several tenths of a °C, as a result of evaporative cooling and other surface processes. Some of these errors can be detected by applying checks on the code format and the internal consistency of the report (for example: are the position and pressure consistent with a report 6 hours earlier?). Checks on spatial consistency may be made if there are other nearby observations. However, such quality checks are unable to identify errors on all occasions and it is recognised that the numerical data assimilation systems in use today can provide global reference values which have a valuable application in the area of observation monitoring. The background field, or the short-term forecast from the previous numerical analysis, provides perhaps the most useful information on observation quality, as it represents an accurate and spatially consistent estimate of the observed value which is independent of the observation itself. Observation-minus-background (hereafter referred to as O-B) differences are at the centre of all monitoring work by GDPS centres. For sea-surface temperature, it is not possible to use a background field with which to

compare the observed value, as for wind and pressure observations, because no forecast of SST is performed. Instead, the analysis field is used. SST changes only slowly relative to parameters above the surface, thus this is a good enough approximation. Analyses are performed daily at RSMC Bracknell from an assimilation of both surface and satellite observations. There is one drawback in using the analysis field as an alternative: it is not independent of the observations themselves. This is a major limitation when it comes to assessing observation quality since the results are not straightforward to interpret.

Taking all marine surface observations together, the values of O-B have distinct characteristics. The vast majority of the observations show quite small departures from background and the distribution of O-B is nearly Gaussian, with little or no bias. The errors in the background field probably contribute most to the values of O-B for these observations. There is, however, often a smaller group of observations departing much more from background, for which observation error is the only reasonable explanation for the large values of O-B. Studies of the distribution of O-B and its variation at different points around the globe enable reasonably accurate estimates of background error to be made, and this provides the basis for the monitoring methods described here. Those marine observing platforms for which, in a sufficiently large sample, the observed values of pressure or wind differ from the background by an amount significantly in excess of the estimate of background error, may be labelled as suspect with a high degree of confidence. The limits used here to identify suspect observing platforms have been set sufficiently stringent to preclude much likelihood of the background, rather than the observations, being in error.

Each monitoring centre produces a monthly list of the identifiers of marine observing platforms considered suspect according to the departure from the centre's background values. All observations, both synoptic and asynoptic, are assimilated. At Bracknell, Tokyo and Washington, the corresponding background value used is that valid at the nearest main synoptic hour. At ECMWF, however, interpolation in time is performed.

Given that the number of observations made during the month is greater than or equal to 20, then the condition used by all centres for obtaining platforms for the suspect lists is that at least one of the following criteria are satisfied:

Pressure

1. the | mean of O-B | $\geq 4.0 \text{ hPa}$
2. the standard deviation of O-B $\geq 6.0 \text{ hPa}$
3. the percentage of gross errors ≥ 25

Wind *

1. the | mean of O-B | $\geq 5.0 \text{ ms}^{-1}$ (Speed)
 $\geq 30^\circ$ (Direction)
2. the standard deviation of O-B $\geq 80^\circ$ (Direction)
3. the percentage of gross errors ≥ 25

* Bracknell, ECMWF & Tokyo only; Washington use different criteria.

A gross error is defined as an observation which departs from the background by more than 15 hPa (Pressure) or 25 ms^{-1} (Vector Wind). The mean and standard deviation of the samples are evaluated excluding gross errors and in this way occasional "wild" values resulting from, for example, corruption during transmission, do not influence the sample characteristics. Direction statistics are also calculated excluding values in light winds, where either the observed or background speed is less than 5 ms^{-1} .

No information is exchanged between centres on a regular monthly basis for SST.

The monthly results for pressure from all four monitoring centres show considerable agreement, both on the observing platforms listed as suspect and the values of the mean and rms difference from each centre's background. Differences between the monthly suspect lists are usually due to the different numbers of observations available at each centre. The cut-off varies between 6 and 24 hours. There are also some unexplained variations in the data receipt between the centres, which may be due to problems in the GTS or in the local procedures for handling the data. Monitoring information for wind speed is regularly exchanged between ECMWF, RSMC Tokyo and RSMC Bracknell, with reasonable agreement on the mean and standard deviation from each centre's background; there is less agreement as to which platforms are listed, reflecting the greater uncertainty when monitoring wind speed. NMC have also played a part in the exchange of wind statistics, but as different criteria are used it is impossible to make a comparison with other centres.

This report draws together all the monthly monitoring results exchanged on marine surface data and identifies a list of observing platforms which have provided observations of poor quality over the six-month period. In drawing-up this list, there have been a number of guiding principles:

1. As with the monthly lists, accuracy is assessed relative to background values.
2. Only those observing platforms are listed for which there is a very high degree of confidence that the observations rather than the background values are in error.
3. At least 40 reports are required over the period in which the observations are considered suspect.
4. The perceived accuracy over the last part of the six-month period is of greatest importance; observing platforms will not be listed if there has been recent improvement and their reports are at present without major error.
5. Given that the number of observations made during the period is greater than or equal to 40, then the condition for listing a platform as suspect in this report is that at least one of the following criteria are satisfied:

Pressure

1. the | mean of O-B | $\geq 3.5 \text{ hPa}$
2. the standard deviation of O-B $\geq 5.0 \text{ hPa}$
3. the percentage of gross errors ≥ 25

Wind

1. the | mean of O-B | $\geq 5.0 \text{ ms}^{-1}$ (Speed)
 $\geq 30^\circ$ (Direction)
2. the standard deviation of O-B $\geq 6.0 \text{ ms}^{-1}$ (Speed)
 $\geq 60^\circ$ (Direction)
3. the percentage of gross errors ≥ 25

SST

1. the RMS of O-A $\geq 2.5^\circ\text{C}$
2. the percentage of gross errors ≥ 25

The same gross error limits apply in this report as for the monthly lists, with the limit for SST being set at 5°C . All observations having gross errors are excluded from the calculation of the mean and standard deviation of O-B and O-A.

The limits set on the bias and standard deviation of O-B are slightly less stringent than those for the monthly lists because the sample sizes are larger. They are only applied over the last part of the period if there has been a recent deterioration in quality. It is possible that there are a few observing platforms listed in this report which have not appeared on any of the monthly lists.

This can occur if they report infrequently and only produce a large enough sample over a period of several months. The six-month list is longer than most of the monthly lists because many ships cease reporting for variable periods of time, presumably in most cases while they are in port or out of service. Only over a relatively long period, probably more than six months, is a representative sample obtained from all those ships providing observations.

3. MONITORING RESULTS

The monitoring results presented in this report only relate to data exchanged over the GTS. Observations from marine platforms are transmitted in one of two formats: the SHIP code, used for most observations from ships, moored buoys and other fixed platforms, and the DRIFTR code, used mostly for observations from drifting buoys. In this report the term "ship observations" refers to those received in the SHIP code and the "drifting buoy observations" to those received in DRIFTR code. The SHIP code indicates whether the observation was made manually or by an automatic system and accordingly the sub-divisions "manual ship" and "automatic ship" will be defined.

3.1 Pressure

In the six-month period January to June 1993, 705818 observations of pressure were monitored at Bracknell from 7155 manual ships, 298 drifting buoys, and 457 automatic ships. The number of reports received from individual manual ships varies greatly as Table 1 demonstrates. Apparently, a very large number only report once. The reason for this is unclear but it may be a result of errors in the part of the message giving the ship identifier.

TABLE 1: FREQUENCY DISTRIBUTION OF THE NUMBER OF REPORTS OF PRESSURE, WIND AND SEA SURFACE TEMPERATURE FROM INDIVIDUAL IDENTIFIERS AVAILABLE FOR MONITORING AT BRACKNELL, JANUARY TO JUNE 1993.

Number of reports	Number of manual ships reporting			Number of drifting buoys reporting			Number of automatic ships reporting		
	Press	Wind	SST	Press	Wind	SST	Press	Wind	SST*
1	2683	2278	2854	5	1	2	137	127	73
2-10	1133	1090	1304	8	1	13	112	112	66
11-20	411	447	380	4	2	11	26	24	11
21-40	664	667	612	11	0	29	12	14	5
41-100	1076	1013	984	29	4	63	18	16	5
101-200	737	651	675	28	10	115	22	19	3
201-500	438	315	428	67	52	434	48	38	12
501-1000	13	10	40	65	15	98	82	41	14
1001-1500	0	0	5	56	6	52	0	0	19
1501 +	0	0	2	25	3	32	0	0	63
Total	7155	6471	7284	298	94	849	457	391	271

* numbers are for automatic (fixed) buoys only

Table 2 shows the number of observations of pressure that have been received over the GTS at Bracknell for past six-month periods. Due to changes in data storage methods at Bracknell in May 1991, report number 5 covered the period January to May 1991 only, thence figures for January-June 1991 have been scaled-up in order to make a fair comparison with other six-month periods; this may not be entirely accurate. The total number of observations rose somewhat to begin with, but was followed by a notable decline. More recently however, there has been a recovery in the total, with the first six months of 1993 showing the greatest number of all. At first the increase was mainly due to the increase in the number of drifting buoys; more

recently however, the number of buoys has stabilised, but there has been a marked increase in the number of reports from each buoy. The number of reports from ships has changed little in the past six months, with a slight shift towards manual ships. The reverse is true for the number of ships reporting: the number of manual ships continues to decline, while automatic ships increase. However, these subtle changes can almost totally be accounted for by changes in the number of ships, manual and automatic, reporting less than ten times.

TABLE 2: NUMBER OF OBSERVATIONS OF PRESSURE RECEIVED AT BRACKNELL ON THE GTS FOR EACH OF THE SIX-MONTH PERIODS COVERED BY THE WMO REPORTS ON THE QUALITY OF MARINE OBSERVATIONS

Period	WMO report number	Number of Observations			
		Manual ships	Drifting buoys	Automatic ships	Total
Jan-Jun 1989	1	424087	174971	40082	639140
Jul-Dec 1989	2	421315	151972	58016	631303
Jan-Jun 1990	3	424335	177927	63847	666109
Jul-Dec 1990	4	412430	205488	71146	689064
Jan-Jun 1991	5	364760	177069	64401	606230
Jul-Dec 1991	6	348710	148604	68456	565770
Jan-Jun 1992	7	332443	216872	73893	623208
Jul-Dec 1992	8	336958	247873	80862	665693
Jan-Jun 1993	9	340293	288208	77317	706818

A histogram of O-B differences for all ship pressure reports in the period January to June 1993 is shown in Figure 1a, together with the Gaussian distribution with the same mean and standard deviation. Although almost all values fall within the range +5 to -5 hPa, a small number of very large values, presumably resulting from erroneous observations, contribute to the large standard deviation of the population. The distribution for all those observations which fail the automatic quality-control checks is broad and bimodal (Figure 1b). The remaining 94 per cent of the observations which pass the quality checks show a distribution of O-B which is very close to Gaussian (Figure 1c) with mean -0.1 hPa and standard deviation 1.4 hPa; the principal contribution to the standard deviation is assumed to be from background errors.

A global estimate of the background error, such as is provided above, will conceal large variations which may occur from place to place. Background values will be more accurate in data-rich areas (eg: in the North Sea or Mediterranean) or where the meteorological variability is low (eg: the tropics). The geographical distributions of the mean and standard deviation of the values of O-B from all ship observations which pass the quality-control checks, have been calculated for 10-degree latitude-longitude boxes and are plotted in Figures 2 and 3. In almost all areas the magnitude of the mean is less than 1.0 hPa, the exceptions being generally only where the sample size is small. The standard deviation in the tropics is 1.0 to 1.5 hPa, in northern latitudes 1.5 to 2.0 hPa, and in the Southern Ocean 2.0 to 3.0 hPa. The number of ship pressure reports accepted by the model quality control in each 10-degree box is shown in Figure 4.

Table 3 contains a list of those ships and drifting buoys considered to have produced suspect observations of pressure in the period January to June 1993. Values over the six-month period are given for the number of observations of pressure available for the Bracknell global model runs, the number of observations differing from the background value by more than 15 hPa (gross errors), and the mean and standard deviation of O-B using the Bracknell global model.

The number of times the identifier has appeared on the monthly suspect lists from the four monitoring centres is also given. In order to give a detailed picture of the frequency of reporting and any changes in the observation accuracy, six-month time-series of O-B differences are given at the end of the report for each of the identifiers listed.

An interesting characteristic of the errors identified here, which soon becomes obvious on inspection of the time-series charts at the end of this report, is that most can be attributed to a bias in the observed pressure. In many cases the bias is constant over the whole monitoring period. There are some values which appear to depart greatly from the sample mean, presumably due to some gross error in the observation, but generally they are isolated instances. In only a few cases are there regular large random departures from background. Those observing platforms listed in Table 3 which appeared in the eighth report (July to December 1992) have been indicated with an asterisk. A comparison of the statistics given here with those in the seventh report (January to June 1992), clearly indicates that the bias in the pressure observations from some ships has scarcely changed over the past 12 months.

Statistics for those marine observing platforms which were listed in the eighth six-monthly report and which do not appear in Table 3b, are given in Table 4 along with comments on the quality of their pressure observations. Time-series charts of the pressure observations from these platforms are not given. The ships and drifting buoys on this list may be divided almost equally between those showing some improvement in the quality of observations, and those for which less than 40 reports have been received in the six-month period.

3.2 Wind

The monitoring of observations of wind, presents more problems than for pressure. On the majority of observing platforms, wind is measured using anemometers. The reported speed will be dependent on the averaging period and the height of the instrument above sea level, which will vary a great deal from platform to platform. The wind flow is distorted by a large structure and factors affecting the wind measurement will also include the siting of the anemometer and the bearing of the wind with respect to the structure. Not all winds are measured by anemometers; observations from some ships are based on visual estimates of the sea state and in these cases the factors outlined above do not apply.

In the monitoring results presented here, the background winds are valid at a height of 10 metres above mean sea-level, a little lower than the average height of a ship anemometer. Where the anemometer height is much different from the reference height a significant O-B speed bias may be introduced. This will be the case, for example, for observations from oil rigs or tankers with an anemometer height of 50m or more, or from buoys where the anemometer can be as low as 2m.

In the period January to June 1993, 378389 observations of wind were available for monitoring at Bracknell from 6471 manual ships, 94 drifting buoys, and 391 automatic ships. A more detailed breakdown is given in Table 1. Histograms of O-B differences for ship observations of wind speed are presented in Figures 1d to 1f and of wind direction in Figures 1g to 1j. As with observations of pressure, those wind observations which fail the quality-control checks differ most from background, some by as much as 30ms^{-1} , and they make a large contribution to the variance of O-B. The distributions of O-B wind speed and direction for the remaining 92 per cent of the observations are nearly Gaussian. There is a speed bias of $+1.3\text{ms}^{-1}$ relative to background, with a direction bias of just -1.5° .

Figures 5 and 6 show the geographical distributions over the six-month period of the mean and standard deviation of O-B for ship observations of wind speed which pass the quality-control checks. The numbers of wind reports used to generate these statistics are presented in Figure 7. The standard deviation of O-B wind speed is typically 3 to 4ms^{-1} in middle latitudes and less than 3ms^{-1} in the tropics. The bias is generally around $+1\text{ms}^{-1}$, but exceeds $+2\text{ms}^{-1}$ in a few places. Similar distributions of the mean and standard deviation of O-B wind direction are shown in Figures 8 and 9. Only reports where both the observed and background wind speeds are greater

than 5ms^{-1} were used to obtain these values. The magnitude of the bias is less than 10 degrees in most places. The standard deviation is generally between 20 and 30 degrees globally, but in some areas, notably tropical parts of the Indian and Pacific Oceans & in data-sparse areas of the southern hemisphere, it is as large as 40 to 50 degrees. The numbers of reports of wind direction used to generate these statistics are presented in Figure 10.

Figures 5-10 provide reference values against which the characteristics of O-B for different marine observing platforms may be compared. Table 5 contains a list of those ships and drifting buoys considered to have produced suspect observations of wind speed in the period January to June 1993, and in Table 7 a similar list is provided for wind direction. Values are given for the number of observations of wind received at Bracknell, the number of observations having a vector difference from background of more than 25ms^{-1} (gross errors), & the mean and standard deviation of O-B. Time-series of O-B for each identifier listed are given at the end of the report. In most cases of suspect speed observations, a constant bias is clearly evident. Errors in observations of direction are more random in nature. Table 6 contains statistics for platforms which are not included in Table 5 but that were listed in the previous six-month report. Time-series plots for these identifiers are not included in this report.

3.3 Sea-surface temperature

In the six-month period, January to June 1993, a total of 961827 observations of SST were monitored at RSMC Bracknell. Of these, 341398 were from ships, 240189 from fixed buoys and 369851 from drifting buoys. This is an increase of 60691 compared with the six-month period July to December 1992. The increase is entirely due to a further large increase in the number of observations by drifting buoys, but is offset by a slight fall in reports from the other two observation types. The number of ships reporting SST has decreased slightly compared with the previous six months but the number of drifting buoys reporting has again increased; the number of fixed buoys reporting has also increased slightly. Table 1 gives the number of reports received from individual identifiers in frequency categories and shows that a large number of ships and fixed buoys reported only once during the six-month period. Errors in reporting the station's identifier could make a significant contribution to these totals. Despite there being a relatively small number of buoys, they constitute a substantial percentage of the total number of observations received. This is due to the frequency at which the observations are made: ships usually report only at the main synoptic hours, or less frequently, whereas some buoys report as often as every hour.

Figures 11a, 11b and 11c show the number of observations, mean O-A and standard deviation of O-A for each of the 3 observation types, for both the northern and the southern hemispheres. Only observations passing quality control checks have been used. Figure 11b shows that the overall bias of each observation type is small ($< 0.1^{\circ}\text{C}$), with ship observations having a slightly positive bias and fixed and drifting buoys a slightly negative bias. Figure 11c shows that ship observations are substantially more erratic, with standard deviations approximately twice those of fixed and drifting buoys. This is partly due to the fact that buoys report frequently and at the same or similar location which effectively gives them increased weight in the analysed field.

Figures 12, 13 and 14 respectively show the global distribution of the bias and standard deviation of O-A and the numbers of observations, for ships. The largest biases occur at high latitudes, which is most likely a result of the small number of observations available and hence the decreased reliability of the analysis in these areas, particularly in the southern hemisphere. Figures 15 and 16 show the global distribution of fixed and drifting buoy SST reports. The coverage provided by drifting buoys is extensive with particularly good coverage in the Pacific Ocean. Only a limited number of platforms report in the Indian Ocean and tropical parts of the Atlantic Ocean. Fixed buoys are concentrated in coastal regions, with particularly high observation densities around the UK and the USA. A number of 10×10 grid boxes contain less than 5 reports; this situation may have arisen from reports containing erroneous positions.

Table 8 contains a list of the ships and drifting buoys considered to have produced suspect observations over the six-month period. The comments given in each case provide an indication of the main reason for the station to be listed as suspect. Table 9 gives details of the performance over the latest six-month period of ships which were considered suspect in the previous six-month period but which don't appear in Table 8. A significant number of the ships included in Table 9 have shown an improvement in the accuracy of SST measurements during the first six months of 1993. No time-series charts have been plotted for SST so the comments are based on a comparison of the magnitudes of the mean, root-mean-square error and standard deviation of O-A. A large number of the identifiers appearing on the list do so as a result of a persistent bias. A high percentage of those listed due to the number of gross errors, also show a large bias.

4. SUMMARY

64 marine observing platforms are listed as producing suspect observations of pressure over the period January to June 1993, 24 as producing suspect wind observations and 164 as producing suspect SST observations. The first report issued by RSMC Bracknell for the period January to June 1989, listed 150 marine platforms producing suspect observations of pressure. The selection criteria have remained unchanged, and the reduction in the number of platforms listed seems to reflect a genuine improvement in quality over the period.

The most common characteristic of the pressure errors found here is a bias in the reported pressure which may remain constant for many months. The majority of platforms listed as producing suspect wind observations show a bias in the reported wind speed, while a few show a large standard deviation in wind direction. For sea-surface temperature observations, the presence of a persistent bias is again found to be the most common cause of error.

The selection criteria have been set sufficiently stringent to ensure that only those are listed for which there is a high degree of confidence in there being large observation errors. There are a great many others, not listed here, for which there must be considerable doubt over the quality of the observations. A wider range of monitoring results are available from Bracknell on request.

TABLE 3: LIST OF MARINE OBSERVING PLATFORMS REPORTING SUSPECT PRESSURE OBSERVATIONS OVER THE PERIOD JANUARY TO JUNE 1993.

- Column 1 Call sign or identifier.
 Column 2 Number of pressure observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
 Column 3 Number of pressure observations differing by more than 15 hPa from background (gross error).
 Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
 Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
 Columns 6-9 Number of times observing platform has appeared on suspect lists. B=Bracknell, E=ECMWF, T=Tokyo, W=Washington.
 Column 10 Comments on quality of pressure observations.

NOTES: 1. Units are hPa.

2. Observing platforms marked with an asterisk were listed in the previous report (July to December 1992)

Table 3a: Stations reporting in DRIFTR code

i): Stations non-operational at the end of the reporting period

Ident.	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
48519	710	33	4.1	-2.0	1	1	1	1	Erratic from May
62515	229	0	4.1	-1.7	1	1	0	0	Erratic from Feb
63909	50	50	***	****	1	1	1	0	Gross errors
64607	91	91	***	****	2	2	0	2	Gross errors
71004 *	1398	303	2.0	-12.3	3	0	3	3	Gross errors. Biased

ii): Stations operational at the end of the reporting period

Ident.	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
71003 *	3074	3074	***	****	6	1	6	6	Gross errors
74002	1806	555	2.6	-10.7	6	1	5	5	Bias +35hPa & -12hPa !!!?

Table 3b: Stations reporting in SHIP code

Ident.	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
C6GR	247	2	2.9	4.1	3	5	4	3	Bias +4hPa; +6hPa from May
C6LK7	170	20	4.5	9.6	3	3	3	3	Bias +9hPa; +12hPa from May
DEDS	43	0	1.2	-6.6	1	2	2	1	Constant bias
D5NE	243	1	1.8	4.6	4	4	4	4	Constant bias
EKWG	40	2	2.8	-7.0	1	1	1	1	Constant bias

Continued⇒

Ident.	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
ELFN7	100	0	1.1	3.5	1	1	1	1	Slow bias drift
ELGI2	113	1	2.2	5.2	3	3	3	3	Constant bias
EMON *	108	7	3.3	3.7	2	3	3	1	Bias +5hPa from Mar
ESBI	136	0	1.8	5.7	4	4	4	4	Constant bias
ESDO	67	1	2.7	7.9	2	2	2	1	Almost constant bias
ESDR	44	0	1.6	6.3	1	1	1	1	Constant bias
EUXZ *	44	0	1.2	5.7	0	0	0	0	Constant bias
EWVJ	130	3	3.5	3.7	2	2	0	2	Bias +4 to +5hPa from Feb
EWVW	51	5	1.5	-3.9	1	0	1	0	Constant bias
KRHZ *	40	0	1.1	-10.3	0	0	0	0	Constant bias
LAJI4	272	0	3.9	2.4	2	2	2	2	Bias +8hPa from May
MPXK3 *	184	3	5.8	-2.9	1	1	1	2	Variable bias
NFMK	78	0	1.8	3.8	1	1	1	1	Constant bias
NIKL	79	20	2.4	-0.4	1	0	1	0	Gross errors
UDYG	192	5	2.0	5.8	3	3	0	3	Constant bias
UDYN	99	3	2.7	-5.3	2	2	0	0	Constant bias
UEEQ	48	1	2.8	6.7	0	0	0	0	Constant bias
UETZ *	157	2	3.0	-5.1	3	4	0	0	Constant bias; more erratic later
UFAA	181	1	3.5	3.6	2	2	0	2	Bias +5hPa from May
UFHZ	110	42	5.9	8.2	2	2	2	3	Bias +16hPa from Apr
UFJN	221	1	2.6	-5.3	3	5	0	2	Almost constant bias
UFKA	80	1	2.5	-7.4	3	3	0	0	Constant bias
UHKP	78	4	4.4	4.4	0	0	0	0	Bias +8hPa from Apr
UHLE	47	19	6.3	-4.6	1	0	0	1	Gross errors
UHLW	41	6	1.5	-11.6	1	2	0	0	Constant bias
UHUN *	77	0	1.6	4.8	2	1	0	0	Constant bias
UIVF	53	0	2.0	-4.2	0	0	0	0	Constant bias
UJDE	44	0	1.8	-5.5	0	0	0	0	Constant bias
UKTU	43	0	2.1	4.7	1	1	1	1	Almost constant bias
UKTV	96	1	2.4	4.6	0	0	0	0	Constant bias
ULDZ	54	0	1.5	7.9	1	1	0	0	Constant bias
ULYT	44	23	7.4	-4.5	1	1	0	0	Gross errors
UOOO	96	5	2.8	11.0	3	2	3	1	Almost constant bias
UORF	69	0	1.5	4.0	1	1	0	0	Constant bias
UOVE	45	32	5.8	11.1	0	0	0	0	Almost constant bias +16hPa
UQRA	52	0	1.4	8.4	0	0	0	0	Constant bias
URFB	55	1	1.6	-4.0	1	0	0	1	Constant bias
UTNG	68	14	3.7	-3.3	1	1	0	0	Bias -4hPa from Apr; Gross errors
UUJV *	206	6	2.2	-6.2	5	5	5	5	Constant bias
UUOD *	59	0	3.4	3.2	1	0	0	0	Bias +5hPa from Apr
UVLX	43	1	2.7	-4.7	0	0	0	0	Constant bias
UWVZ	177	1	2.2	4.2	3	3	2	3	Almost constant bias
UYHW	70	1	2.8	6.7	2	2	0	1	Constant bias

Continued⇒

Ident.	N Obs.	NGE	SD	Bias	B	E	T	W	Comments
VVDV	71	2	1.5	6.2	3	3	3	1	Almost constant bias
WCZB *	73	0	2.0	6.4	2	2	2	2	Constant bias
WQZ9670	99	1	2.9	3.1	1	1	1	2	Bias +5hPa from May
WWDY	42	0	2.3	-6.3	0	0	1	0	Almost constant bias
WXY6216	60	2	1.7	-5.8	1	1	1	2	Constant bias
WZE4928 *	97	94	5.7	-3.4	2	2	2	2	Gross errors; bias +23hPa
ZCAM9	203	3	2.8	4.2	2	3	2	3	Almost constant bias
ZSBK	61	1	2.8	-8.3	0	0	2	0	Constant bias
3FBK *	68	0	1.7	8.1	2	2	3	2	Constant bias

TABLE 4: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 3 ABOVE BUT LISTED AS SUSPECT IN THE PERIOD JULY TO DECEMBER 1992.

- Column 1 Call sign or identifier.
- Column 2 Number of pressure observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
- Column 3 Number of pressure observations differing by more than 15 hPa from background (gross error).
- Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
- Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
- Column 6 Comments on quality of pressure observations.

NOTES: 1. Units are hPa

Ident.	N Obs.	NGE	SD	Bias	Comments
A8MF	138	0	1.8	-2.8	Bias acceptable from May
A8PO	0				No reports
CG2241	0				No reports
CG3159	65	0	0.9	0.5	Bias acceptable
CSDE	0				No reports
C6CT2	141	4	3.3	2.5	Bias acceptable from Apr
C6KS6	4	0	1.0	6.5	Few reports. Bias persists
DMXE	0				No reports
DNCC	0				No reports
DQFW	275	0	1.4	-0.6	Bias acceptable from Jan
D9RJ	0				No reports
ELKM4	10	0	1.1	5.6	Less than 40 reports. Bias persists
ENAR	33	1	0.9	0.5	Less than 40 reports. Bias acceptable from Apr
ERNM	45	0	2.1	1.9	Bias acceptable from May
ERSO	289	2	2.3	-2.7	Bias reduced

Continued ⇨

Ident.	N Obs.	NGE	SD	Bias	Comments
EVPI	1	0	0.0	-3.3	Single report
KNFE	0				No reports
LAKZ4	94	4	4.3	1.9	Bias acceptable from Jun
LYDM	12	0	4.8	-3.0	Less than 40 reports. Still erratic
NODO	24	0	5.3	-2.7	Less than 40 reports. Bias acceptable from Jun
P3EB	75	44	3.4	-1.4	Bias acceptable from Apr
UBLX	27	0	2.5	-0.3	Less than 40 reports. Bias acceptable from Apr
UFOJ	1	0	0.0	-4.0	Single report
UJWO	0				No reports
UKMG	161	1	1.5	0.6	Bias acceptable from Jan
ULEL	62	0	2.7	±0.0	Bias acceptable from Apr
URRK	11	0	1.4	9.6	Less than 40 reports. Bias persists
URVZ	6	1	3.1	-5.7	Few reports. Bias persists
UUXG	262	2	1.8	1.3	Bias acceptable from Jan
UVQI	0				No reports
UYWE	0				No reports
VRUA4	20	0	3.9	3.8	Less than 40 reports. Bias acceptable from Jun
WAQ3521	47	3	3.9	-0.7	Bias acceptable from May
WAV4647	124	2	3.4	-2.1	Bias acceptable from May
WC5932	129	0	3.4	-4.3	Bias reduced from May
WE4805	1	0	0.0	-3.3	Single report
WTEF	276	2	1.3	-0.7	Bias acceptable from Mar
WXQ4511	213	3	1.6	-2.6	Bias acceptable from May
3ETD3	59	3	2.8	-1.9	Bias acceptable from Feb
9VOF	7	0	1.0	4.2	Few reports. Bias persists

TABLE 5: LIST OF STATIONS PRODUCING SUSPECT WIND SPEED OBSERVATIONS IN THE PERIOD JANUARY TO JUNE 1993.

Column 1	Call sign or identifier.
Column 2	Number of wind speed observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3	Number of wind observations with vector difference from background of more than 25ms^{-1} (gross error).
Column 4	Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5	Mean of observation-minus-background differences (bias) excluding cases of gross error.
Columns 6-8	Number of times observing platform has appeared on suspect lists. B=Bracknell, E=ECMWF, T=Tokyo.
Column 9	Comments on quality of wind speed observations.

- NOTES: 1. Units are ms^{-1} .
2. Observing platforms marked with an asterisk were listed in the previous report (July to December 1992)

Table 5a: Stations reporting in DRIFTR code

i): Stations non-operational at the end of the reporting period

Ident.	N Obs.	NGE	SD	Bias	B	E	T	Comments
52526	42	0	0.9	-6.4	1	1	0	Constant bias
63667	319	0	2.7	-5.6	1	1	1	Bias -7ms^{-1} developed in Mar
63668	360	0	2.7	-6.0	1	1	1	Bias drift
64043	1741	3	5.0	-2.9	2	2	1	Bias -8ms^{-1} developed in Feb

ii): Stations operational at the end of the reporting period

There are no suspect stations in this category.

Table 5b: Stations reporting in SHIP code

Ident.	N Obs.	NGE	SD	Bias	B	E	T	Comments
BROE	68	25	6.6	4.6	1	1	1	Erratic with gross errors, from Jun
DQFU *	133	3	5.3	4.7	1	0	1	Bias $+7\text{ms}^{-1}$ from May
DZXF	46	0	4.4	8.4	1	1	1	Constant bias
ELJJ7	57	0	3.0	6.9	0	0	0	Constant bias
GOSP	44	1	5.1	6.3	1	0	1	Constant bias
MNKN2	152	1	5.7	5.8	2	2	2	Bias $+9\text{ms}^{-1}$ from May
VJBE *	63	0	4.4	5.6	1	1	4	Constant bias
VPGM	111	0	3.9	5.3	3	0	4	Constant bias
XYKM *	137	0	3.2	5.3	3	2	3	Constant bias
Y5LD	43	1	6.5	7.5	0	1	1	Constant bias; large SD from Feb

TABLE 6: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 5 ABOVE BUT LISTED AS SUSPECT IN THE PERIOD JULY TO DECEMBER 1992.

- Column 1 Call sign or identifier.
- Column 2 Number of wind speed observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
- Column 3 Number of wind observations with vector difference from background of more than 25ms^{-1} (gross error).
- Column 4 Standard deviation of observation-minus-background differences excluding cases of gross error.
- Column 5 Mean of observation-minus-background differences (bias) excluding cases of gross error.
- Column 6 Comments on quality of wind speed observations.

NOTES: 1. Units are ms^{-1} .

Ident.	N Obs.	NGE	SD	Bias	Comments
C6KS4	152	11	6.7	5.0	Bias & SD acceptable from Apr
C6KV3	261	0	4.0	-0.5	Bias acceptable from Apr
ELGG8	0				No reports
ELHC2	181	1	6.3	-1.0	SD acceptable from May
ELKD7	172	1	3.5	3.5	Bias acceptable from Feb
LADE2	60	0	4.2	3.4	Bias acceptable from Jun
LAKZ4	94	1	4.1	2.7	Bias reduced
OYZC	220	3	6.0	4.2	Bias & SD acceptable from Jun
XYKH	71	1	3.6	3.2	Bias acceptable from Mar
62112	215	0	1.8	0.5	Bias acceptable from Jan

TABLE 7: LIST OF STATIONS PRODUCING SUSPECT WIND DIRECTION OBSERVATIONS IN THE PERIOD JANUARY TO JUNE 1993.

Column 1	Call sign or identifier.
Column 2	Number of wind direction observations available for monitoring over the 6-month period, excluding duplicates, but including any observations with gross errors.
Column 3	Number of wind observations with vector difference from background of more than 25ms^{-1} (gross error).
Column 4	Standard deviation of observation-minus-background differences excluding cases of gross error.
Column 5	Mean of observation-minus-background differences (bias) excluding cases of gross error.
Column 6	Comments on quality of wind direction observations.

- NOTES: 1. Units are degrees ($^{\circ}$).
2. Observing platforms marked \blacklozenge had a negative speed bias and the statistics and their plots refer to direction reports associated with background wind speeds greater than 5ms^{-1} . If no significant speed bias was present the statistics and plots refer to direction reports with an observed speed greater than 5ms^{-1} .
3. Observing platforms marked with an asterisk were listed in the previous report (July to December 1992).

Table 7a: Stations reporting in DRIFTR code

i): Stations **non-operational** at the end of the reporting period

Ident.		N Obs.	NGE	SD	Bias	Comments
42028	\blacklozenge	522	0	87.7	-17.9	Bias -120° in Apr, erratic since then
42031	\blacklozenge	238	0	123.8	-17.0	Bias $\pm 180^{\circ}$ from Apr
42033	\blacklozenge	457	1	111.6	-21.1	Bias $\pm 180^{\circ}$ from Apr
51007		400	0	61.6	-13.6	Erratic from Apr
52526	\blacklozenge	41	0	14.3	-65.3	Constant bias
55580	\blacklozenge	476	0	83.8	50.3	Erratic
64043	\blacklozenge	1640	3	57.1	26.7	Bias $\approx +130^{\circ}$ from Feb

ii): Stations **operational** at the end of the reporting period

Ident.		N Obs.	NGE	SD	Bias	Comments
42027	\blacklozenge	506	0	105.6	6.8	Bias $\pm 180^{\circ}$ in Apr; Erratic from May
55589	\blacklozenge	931	0	30.9	-25.6	Bias drift from Apr

Table 7b: Stations reporting in SHIP code

Ident.		N Obs.	NGE	SD	Bias	Comments
PSSC1		76	0	81.7	24.5	Bias $+70^{\circ}$ from Feb
ZTHP	\blacklozenge	46	0	30.7	38.1	Constant bias
22001		549	0	29.8	30.6	Slight bias drift

TABLE 8: LIST OF MARINE OBSERVING PLATFORMS REPORTING SUSPECT SEA-SURFACE TEMPERATURE OBSERVATIONS OVER THE PERIOD JANUARY TO JUNE 1993.

Column 1	Call sign or identifier
Column 2	Number of sea-surface temperature observations available for monitoring over the 6-month period, including any observations with gross errors.
Column 3	Number of sea surface temperature observations differing by more than 5°C from the analysis (gross errors).
Column 4	Standard deviation of observation-minus-analysis differences excluding cases of gross error.
Column 5	Mean of observation-minus-analysis differences excluding cases of gross error.
Column 6	Comments on quality of sea surface temperature observations.

- NOTES: 1. Units are °C.
 2. Observing platforms marked with an asterisk were listed in the previous report (July to December 1992)

Table 8a: Stations reporting in DRIFTR code

i): Stations non-operational at the end of the reporting period

Ident.	N Obs.	NGE	SD	Bias	Comments
21432	250	84	0.9	0.3	Gross errors
21522	360	109	2.8	-0.4	Gross errors. Erratic
21527	267	91	2.4	-1.2	Gross errors. Erratic
21905	56	21	1.4	-2.3	Gross errors. Biased
42520 *	198	67	1.9	0.4	Gross errors
44517 *	99	53	1.9	1.5	Gross errors
46656	1503	608	1.3	1.1	Gross errors
46699	1048	717	0.9	4.1	Gross errors. Large bias
46708	869	667	0.9	3.2	Gross errors. Large bias
51845	42	26	2.6	-2.3	Gross errors. Erratic. Biased
54919	184	67	0.4	-0.3	Gross errors
62674	975	490	1.2	0.4	Gross errors
62906	101	98	0.0	-0.7	Gross errors
64144	161	0	1.5	-2.5	Biased
64153	310	6	1.5	-3.5	Large bias
64923	510	170	0.7	0.5	Gross errors

ii): Stations operational at the end of the reporting period

Ident.	N Obs.	NGE	SD	Bias	Comments
33842	83	0	0.7	-2.4	Biased
41525	107	30	1.6	-0.4	Gross errors
44503	279	54	1.3	-2.3	Biased
44510	1202	403	2.2	0.5	Gross errors. Erratic

Table 8b: Stations reporting in SHIP code

Ident.	N Obs.	NGE.	SD	Bias	Comments
BHFR	41	0	1.7	2.3	Biased
BROE *	103	45	1.6	-2.1	Gross errors. Biased
CG2564	76	54	0.6	4.4	Gross errors. Large bias
CG2568 *	85	67	0.4	4.4	Gross errors. Large bias
CG2960	605	179	2.1	1.2	Gross errors. Erratic
C6DB8	203	74	1.6	2.0	Gross errors. Biased
C6DK	68	36	1.4	3.4	Gross errors. Large bias
C6DY8	79	1	0.6	2.7	Biased
C6HJ5	93	27	0.6	0.1	Gross errors.
C6IE7	243	1	0.6	-2.5	Biased
C6JJ8	68	7	1.3	2.2	Biased
C6JY7	348	1	0.7	-2.4	Biased
C6KB4 *	146	70	2.5	1.0	Gross errors. Erratic
DGSM	46	1	1.3	2.3	Biased
DUGZ	114	52	2.2	2.2	Gross errors. Biased. Erratic
DULV *	48	37	2.7	3.1	Gross errors. Biased. Erratic
DUMO	50	15	2.6	1.4	Gross errors. Erratic
DUNV *	105	2	1.0	3.1	Biased
DVSP	102	76	3.1	2.4	Gross errors. Erratic. Biased
DVXE	61	9	0.7	-4.0	Large bias
DZBD *	59	55	0.6	4.3	Gross errors. Large bias
DZLI	43	20	1.1	0.9	Gross errors.
DZXF	51	11	0.6	3.8	Large bias
D5NZ	350	3	0.9	2.4	Biased
EKNF *	56	14	1.2	2.5	Gross errors. Biased
ELBG9 *	127	1	0.8	-2.7	Biased
ELEI7	213	80	2.4	0.2	Gross errors. Erratic
ELEM3 *	140	35	1.8	-1.1	Gross errors.
ELHL5	60	9	2.6	0.5	Erratic
ELHY2	111	33	1.5	1.3	Gross errors.
ELJP3 *	71	5	1.9	-1.8	Slightly erratic. Slight bias
ELJS5	158	1	1.1	2.6	Biased
ELNR9	58	3	0.6	3.6	Large bias
ELNV7	104	30	2.3	-0.1	Gross errors. Erratic
ELOF7	157	47	1.6	-0.4	Gross errors
ENUN	53	4	2.5	-0.1	Erratic
EOCQ	53	0	1.5	2.2	Biased
EUPM	317	12	2.0	1.7	Erratic. Slight bias
EVRP	44	11	2.6	-1.3	Gross errors. Erratic
EWAG	90	65	2.1	2.5	Gross errors. Erratic. Biased
EWVV	86	20	2.1	-1.4	Erratic
FNDE	94	28	0.9	-0.6	Gross errors.

Continued⇒

Ident.	N Obs.	NGE.	SD	Bias	Comments
GQHC	383	1	0.9	2.4	Biased
GYYP	72	10	1.0	3.6	Large bias
JCCN	99	0	0.9	2.5	Biased
JNXT	116	56	1.3	4.3	Gross errors. Large bias
KHJB	110	8	2.9	-0.3	Erratic
KHLN	52	3	1.2	-2.5	Biased
KRBS	74	31	1.2	-3.7	Gross errors. Large bias
KRJL	66	22	2.4	-2.7	Gross errors. Erratic. Biased
LACN4	71	26	0.9	-3.6	Gross errors. Large bias
LADB2	282	29	1.3	2.8	Biased
LADR4	128	3	0.8	3.0	Large bias
LAWR2	59	13	1.2	2.9	Biased
NQST	53	5	1.4	-2.1	Biased
PCOL	346	4	0.7	-2.9	Biased
P3XZ3	53	16	2.1	1.2	Gross errors. Erratic
SVKF	50	0	0.7	2.9	Biased
SWJR	60	8	2.0	-2.3	Erratic. Biased
SWYG	107	3	1.6	2.0	Biased
SYVY	44	15	1.2	-0.2	Gross errors.
UBAW	121	99	1.1	2.1	Gross errors. Biased
UBHT	49	24	0.7	-1.1	Gross errors.
UBOW	43	5	1.6	2.4	Biased
UEBT	79	9	2.3	1.3	Erratic
UELJ	111	35	1.8	2.7	Gross errors. Biased
UEVG	47	1	0.7	2.7	Biased
UEXX	52	7	2.0	2.8	Erratic. Biased
UFJQ	42	11	1.7	1.3	Gross errors.
UFPL	41	9	2.8	±0.0	Gross errors. Erratic
UHLA	41	15	2.0	-1.8	Gross errors. Erratic
UHLE	94	33	0.9	-2.1	Gross errors. Biased
UHLW	103	101	0.0	1.9	Gross errors.
UIEC	86	13	2.6	0.1	Erratic
UJGD	157	156	0.0	-2.2	Gross errors. Biased
UJLR	52	26	1.4	-1.6	Gross errors.
ULEL	73	17	1.1	2.3	Biased
ULPH	94	72	1.9	-1.6	Gross errors.
UMVO	77	20	2.1	-0.8	Gross errors. Erratic
UNUE	44	13	2.2	-0.5	Gross errors. Erratic
UNWZ	57	7	2.9	0.4	Erratic
UOFY	317	75	2.0	2.1	Erratic. Biased
UOLC	152	58	1.7	1.0	Gross errors.
UONV	99	11	2.5	-1.2	Erratic
UOVE	48	4	0.9	2.4	Biased
UOXG	53	16	1.4	2.3	Gross errors. Biased

Continued⇒

Ident.	N Obs.	NGE.	SD	Bias	Comments
UPGQ	83	10	1.4	-2.5	Biased
UPSF	46	12	2.3	±0.0	Gross errors. Erratic
UQPS	119	8	2.5	0.4	Erratic
UQUN	121	34	1.7	1.8	Gross errors.
URBX	126	42	1.4	-2.5	Gross errors. Biased
URHJ	64	14	2.6	1.7	Erratic
USZN	187	6	1.5	2.2	Biased
UTOG	50	4	2.3	1.1	Erratic
UTTM	55	14	2.1	-1.3	Gross errors. Erratic
UUAF	66	19	1.2	-1.3	Gross errors.
UUBU	85	23	1.4	-1.2	Gross errors.
UUQR	188	84	0.9	2.4	Gross errors. Biased
UVXB *	42	1	2.1	1.5	Erratic
UVDJ	71	12	2.6	0.6	Erratic
UVHA	86	0	1.4	2.3	Biased
UVWU	71	8	1.6	2.0	Biased
UWSB	54	10	1.2	-2.4	Biased
UYDW	65	64	0.0	0.9	Gross errors.
UZCT	84	10	1.4	2.4	Biased
VA4786 *	46	18	1.5	2.7	Gross errors. Biased
VCDT	85	51	1.5	2.8	Gross errors. Biased
VCJM	48	5	2.7	1.9	Erratic
VJIK	78	15	1.2	-2.8	Biased
VOSR	64	33	1.2	1.0	Gross errors.
VRKB	72	16	1.5	-2.4	Biased
VROV	103	7	1.0	2.6	Biased
VRQY	145	18	1.3	2.9	Biased
VX5808	65	56	1.0	3.4	Gross errors. Biased
VYNG	89	12	1.7	2.2	Biased
WCHF	271	26	1.4	2.5	Biased
WCIO	56	14	1.5	-0.8	Gross errors.
WLCV *	40	9	1.7	-3.7	Large bias
WL3108 *	70	23	1.4	2.3	Gross errors. Biased
WRFJ *	51	3	1.4	2.4	Biased
WRYL	88	30	1.2	3.9	Gross errors. Large bias
WTP4965	155	45	1.4	2.9	Gross errors. Biased
WVHS *	84	8	1.5	-2.4	Biased
WWDY *	52	10	1.3	2.4	Biased
WXQ4511 *	382	49	1.5	2.2	Biased
WYQ4356	84	3	2.0	1.6	Erratic
XYER *	73	11	1.0	3.4	Large bias
XYKH	116	10	1.5	-2.5	Biased
ZFCB	345	28	0.8	2.6	Biased
ZTCD	58	3	1.6	-2.3	Biased

Continued⇒

Ident.	N Obs.	NGE.	SD	Bias	Comments	
3EBR6	66	2	1.5	-2.2	Biased	
3EDF9	43	14	1.7	0.1	Gross errors.	
3EDP3	49	18	0.7	0.9	Gross errors.	
3EIM3	132	4	1.9	-2.0	Biased	
3EJB9	240	5	1.1	2.3	Biased	
3EUU6	*	99	89	1.2	-3.9	Gross errors. Biased
3EXN9		213	63	1.2	-2.2	Gross errors. Biased
44131		270	9	1.0	2.8	Biased
44141		303	247	0.8	4.3	Gross errors. Large bias
62303		4322	1189	0.4	-0.3	Gross errors.
7LHH	*	252	34	1.2	2.6	Biased
8KVT	*	106	7	1.5	-3.1	Large bias
9MSI	*	79	17	1.6	2.6	Biased
9VYK		234	11	0.8	-2.6	Biased

TABLE 9: LIST OF PLATFORMS REPORTING IN SHIP CODE NOT APPEARING IN TABLE 8 ABOVE BUT LISTED AS SUSPECT IN THE PERIOD JULY TO DECEMBER 1992.

- Column 1 Call sign or identifier
- Column 2 Number of sea-surface temperature observations available for monitoring over the 6-month period, including any observations with gross errors.
- Column 3 Number of sea surface temperature observations differing by more than 5°C from the analysis (gross errors).
- Column 4 Standard deviation of observation-minus-analysis differences excluding cases of gross error.
- Column 5 Mean of observation-minus-analysis differences excluding cases of gross error.
- Column 6 Comments on quality of sea surface temperature observations.

NOTES: 1. Units are °C.

Ident.	N Obs.	NGE.	SD	Bias	Comments
A8LL	33	4	0.7	2.9	Less than 40 reports. Bias persists
A8UF	0				No reports
CGDT	21	0	0.7	0.9	Less than 40 reports. Bias acceptable
CSDN	0				No reports
C6IM6	28	3	1.3	-0.5	Less than 40 reports. Bias acceptable
C6JQ5	9	4	2.8	3.0	Few reports
DHES	0				No reports
DUAQ	0				No reports
DUNP	63	0	1.2	1.4	No gross errors
DVTY	68	7	1.2	-1.2	Fewer gross errors
ELEI6	64	3	0.9	2.1	Less erratic. Slightly reduced bias
ELIO8	155	26	1.8	1.5	Fewer gross errors. Less erratic
ELJW5	29	4	1.2	-3.8	Less than 40 reports. Bias persists

Continued⇒

Ident.	N Obs.	NGE.	SD	Bias	Comments
ELNC5	276	1	0.8	-0.5	Fewer gross errors
ELPF3	220	14	1.4	1.7	Fewer gross errors
EMON	126	16	1.2	-0.9	Fewer gross errors
ERCD	0				No reports
EWCS	43	2	1.4	0.5	Bias acceptable
GOYE	204	2	1.0	-0.2	Bias acceptable
JKHH	27	22	0.2	1.1	Less than 40 reports. Gross errors persist
JKIB	148	1	1.0	2.2	Bias slightly reduced
J8CY	0				No reports
KDDW	25	3	1.1	-2.8	Less than 40 reports. Bias persists
KNLO	119	0	1.2	-1.1	Bias acceptable
KRPB	229	37	1.6	0.9	Fewer gross errors. Less erratic
LISITA/L	0				No reports
SYCV	0				No reports
UBIZ	37	0	0.9	0.5	Less than 40 reports. Bias acceptable
UBNO	183	14	1.9	1.3	Fewer gross errors. Bias acceptable
UBYK	40	9	1.4	-1.5	Less erratic
UFEQ	85	9	2.0	0.6	Bias acceptable. Still erratic
UFPS	29	2	1.1	-0.4	Less than 40 reports. Bias acceptable
UGOK	92	4	2.1	-0.5	Slightly less erratic
UGWX	0				No reports
UHCK	142	3	0.9	-1.3	Bias acceptable
UIJP	52	7	1.2	-0.8	Bias acceptable
UJAK	3	0	0.3	0.6	Few reports
UJBY	32	2	2.4	0.3	Less than 40 reports. Still erratic
ULQA	26	2	0.7	1.1	Less than 40 reports. Bias acceptable
UPPZ	3	0	0.4	3.8	Few reports
UQAF	39	1	1.2	-2.1	Less than 40 reports. Fewer gross errors
USAZ	220	1	1.6	1.7	Less erratic. Bias reduced
USSZ	74	1	1.3	0.2	Less erratic. Bias acceptable
USWZ	21	1	1.8	0.3	Less than 40 reports. Bias acceptable
UVKK	37	3	1.6	0.9	Less than 40 reports. Bias acceptable
UYLC	30	9	2.3	-0.9	Less than 40 reports. Still erratic
UZUH	42	1	2.2	-0.7	Still erratic. Bias acceptable
VMAL	21	2	0.6	2.8	Less than 40 reports. Bias persists
VOXZ	19	0	1.4	2.0	Less than 40 reports. Bias persists
V7CF	67	1	1.4	0.6	Fewer gross errors
WA4659	279	2	1.6	-0.1	Less erratic
WA8463	133	4	2.0	1.0	Bias acceptable. Still erratic
WJCG	33	0	0.5	-2.6	Less than 40 reports. Bias persists
WPVF	103	0	1.5	-1.8	Bias reduced
WR3225	24	3	1.1	3.9	Less than 40 reports. Bias persists
WTP4966	50	2	1.7	-0.6	Fewer gross errors. Less erratic
WYR5386	0				No reports

Continued⇒

Ident.	N Obs.	NGE.	SD	Bias	Comments
WZ2056	39	4	1.3	1.8	Less than 40 reports. Bias reduced
Y5DL	69	0	1.1	1.3	Bias acceptable
3ECM7	285	11	1.1	1.9	Bias reduced
3EDD8	95	10	1.4	1.9	Fewer gross errors
3EKV5	42	5	1.1	-2.1	Fewer gross errors
3ELF9	209	16	1.5	-1.0	Bias acceptable
3ELP9	67	0	0.6	1.9	Bias reduced
3EPU4	54	8	1.6	1.3	Bias acceptable
46028	34	0	0.4	±0.0	Less than 40 reports. Bias acceptable
6ZFJ	0				No reports

FIG 1A:
DISTRIBUTION OF O-B SHIP PRESSURE DIFFERENCES UNITS: HPA
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: ALL OBSERVATIONS

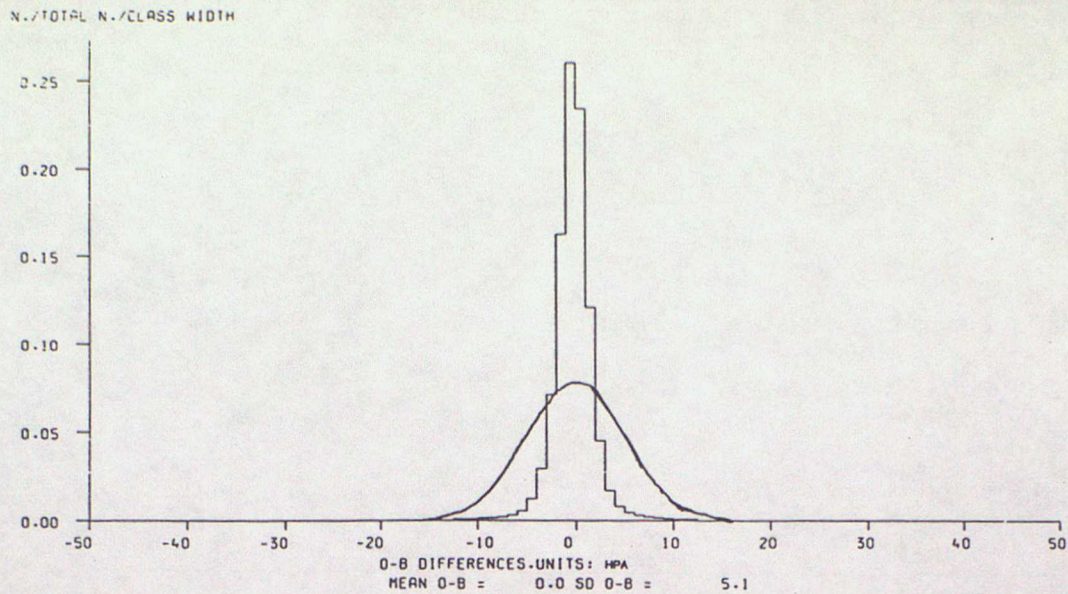


FIG 1B:
DISTRIBUTION OF O-B SHIP PRESSURE DIFFERENCES UNITS: HPA
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: FLAGGED OBSERVATIONS

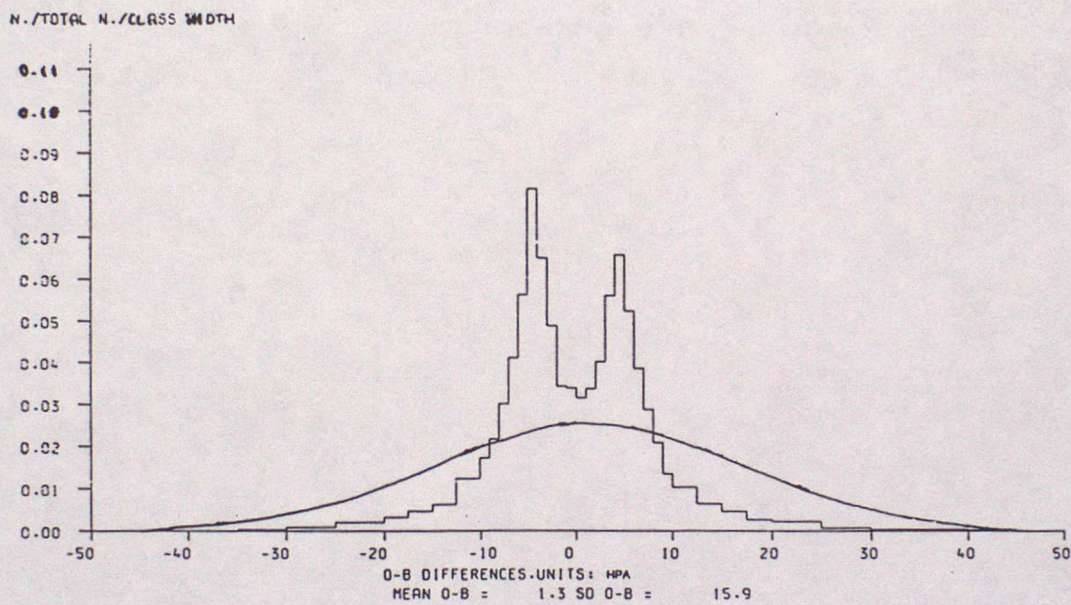


FIG 1C:
DISTRIBUTION OF O-B SHIP PRESSURE DIFFERENCES UNITS: HPA
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: UNFLAGGED OBSERVATIONS

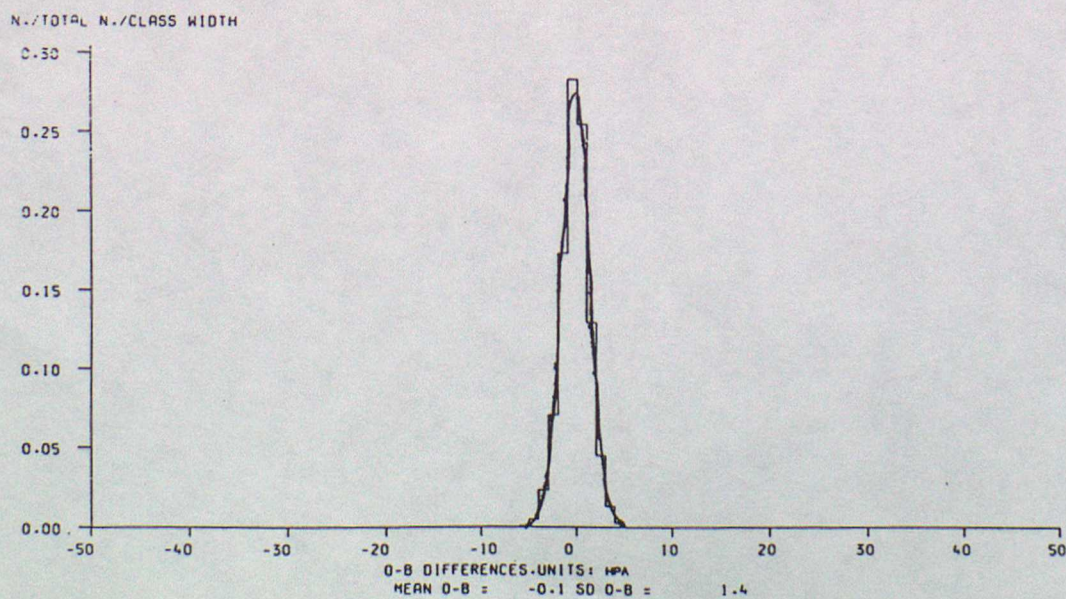


FIG 1D:
DISTRIBUTION OF O-B SHIP SPEED DIFFERENCES UNITS: MS⁻¹
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: ALL OBSERVATIONS

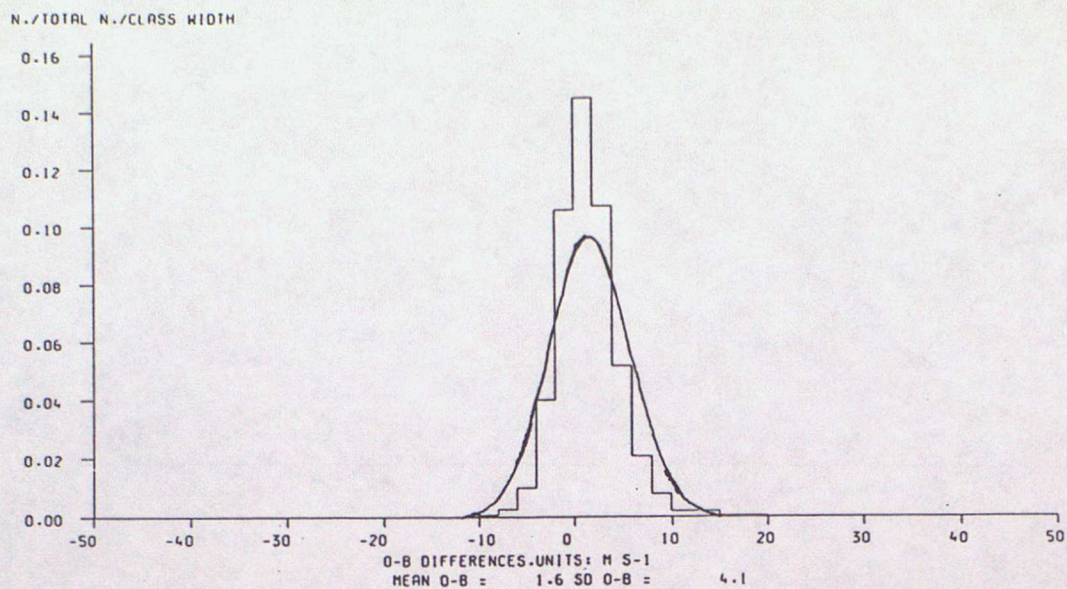


FIG 1E:
DISTRIBUTION OF O-B SHIP SPEED DIFFERENCES UNITS: MS⁻¹
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: FLAGGED OBSERVATIONS

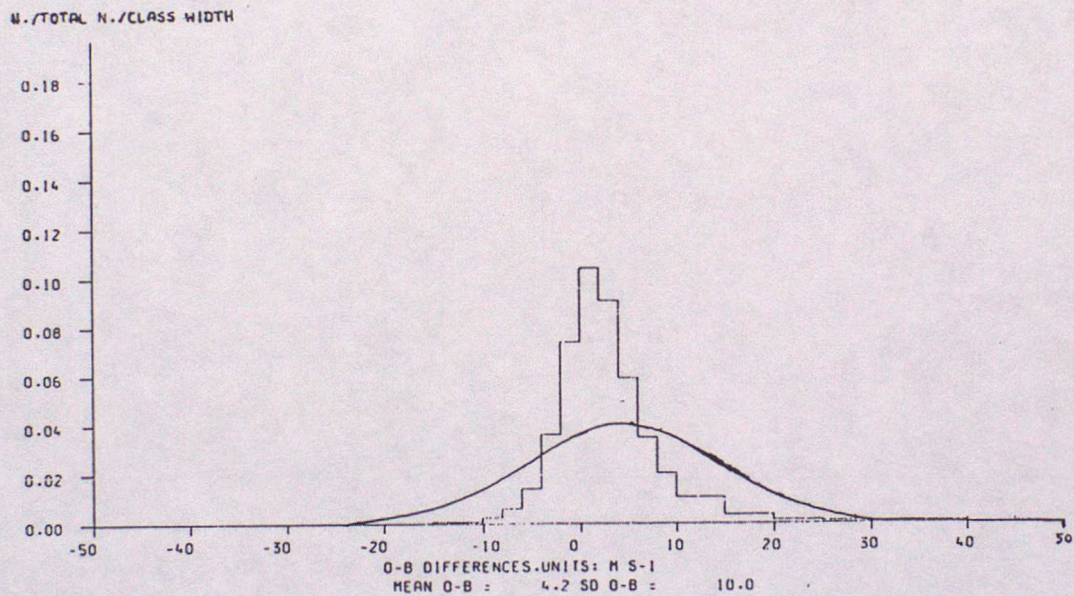


FIG 1F:
DISTRIBUTION OF O-B SHIP SPEED DIFFERENCES UNITS: MS⁻¹
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: UNFLAGGED OBSERVATIONS

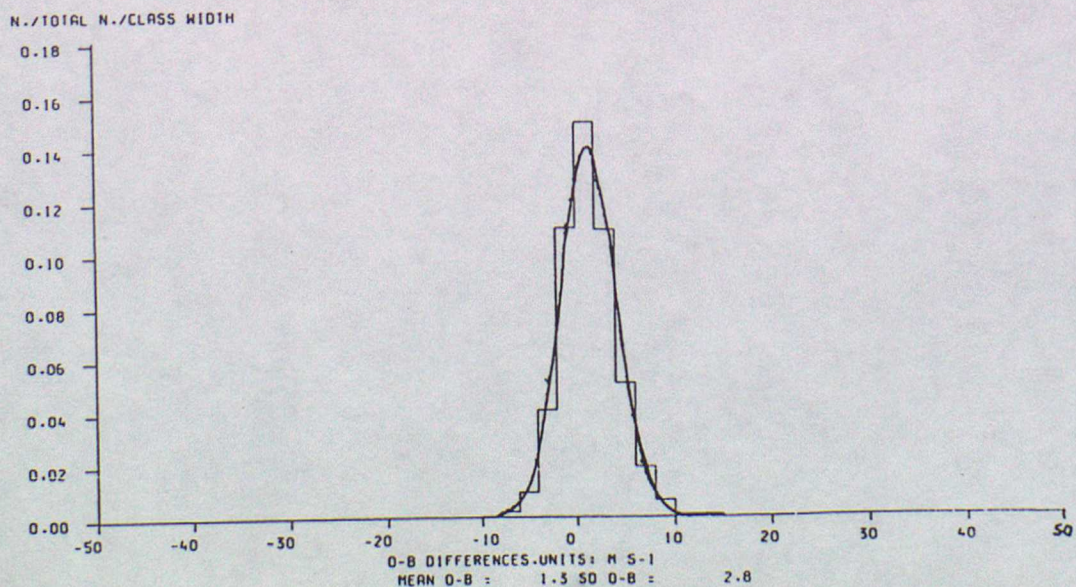


FIG 1G:
DISTRIBUTION OF O-B SHIP DIRECTION DIFFERENCES UNITS: DEGREES
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: ALL OBSERVATIONS

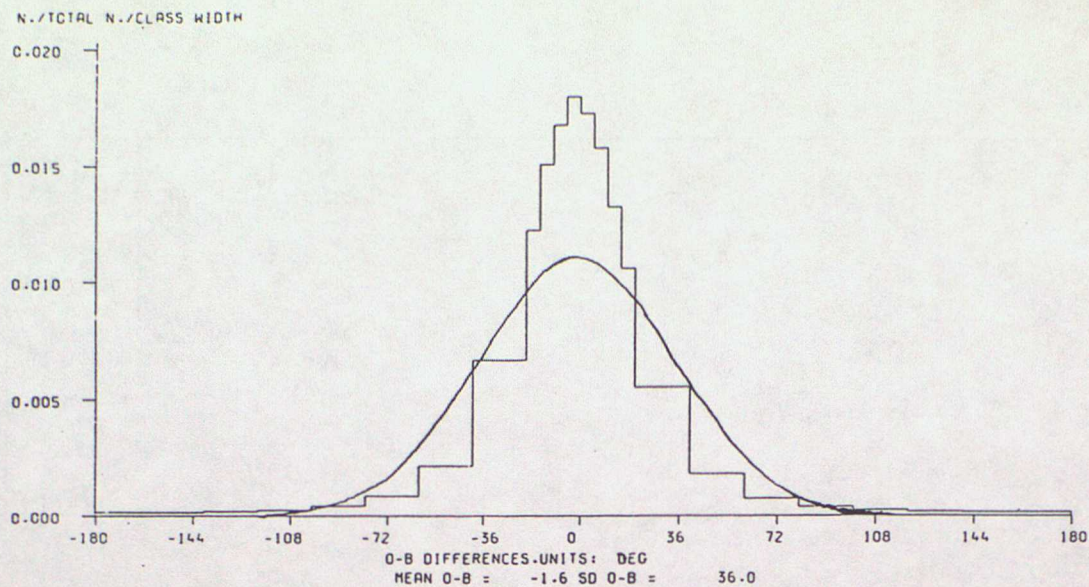


FIG 1H:
DISTRIBUTION OF O-B SHIP DIRECTION DIFFERENCES UNITS: DEGREES
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: FLAGGED OBSERVATIONS

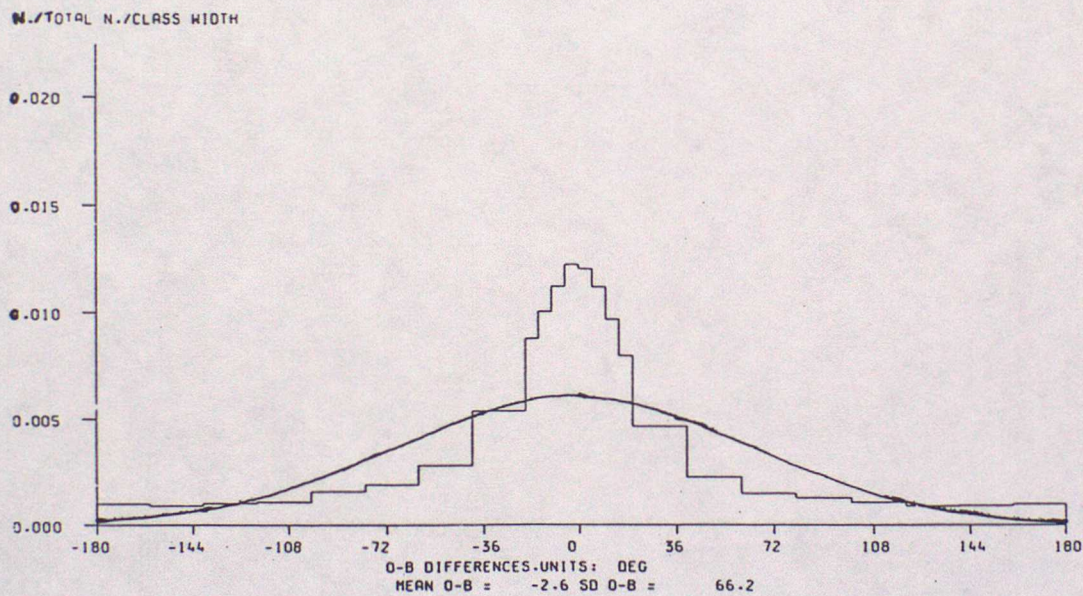


FIG 1J:
DISTRIBUTION OF O-B SHIP DIRECTION DIFFERENCES UNITS: DEGREES
PERIOD OF DATA: 1 JAN 1993 TO 30 JUN 1993 DATA USED: UNFLAGGED OBSERVATIONS

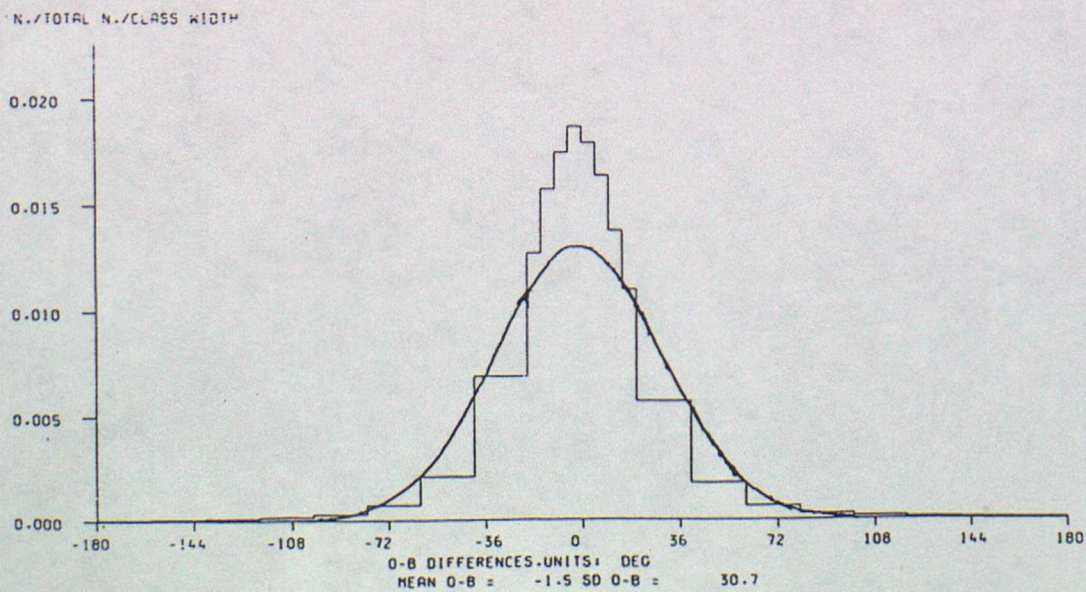


FIG 2: BIAS OF SHIP PRESSURE 0 B. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADDED HAVE BIAS OF MAGNITUDE GREATER THAN 0.5 HPA

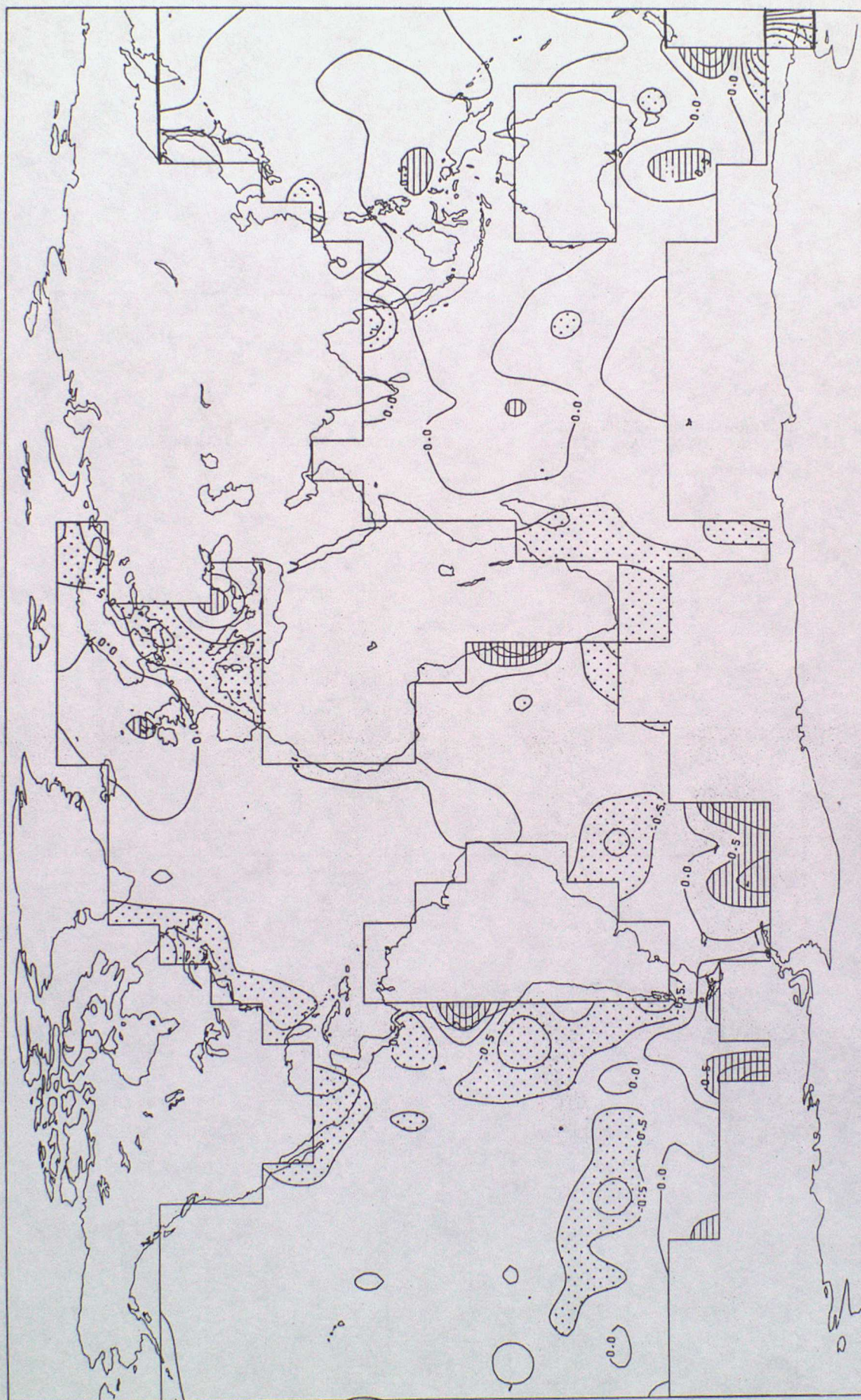


FIG 3: S.D. OF SHIP PRESSURE 0-B. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 1° DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 2.0HPA

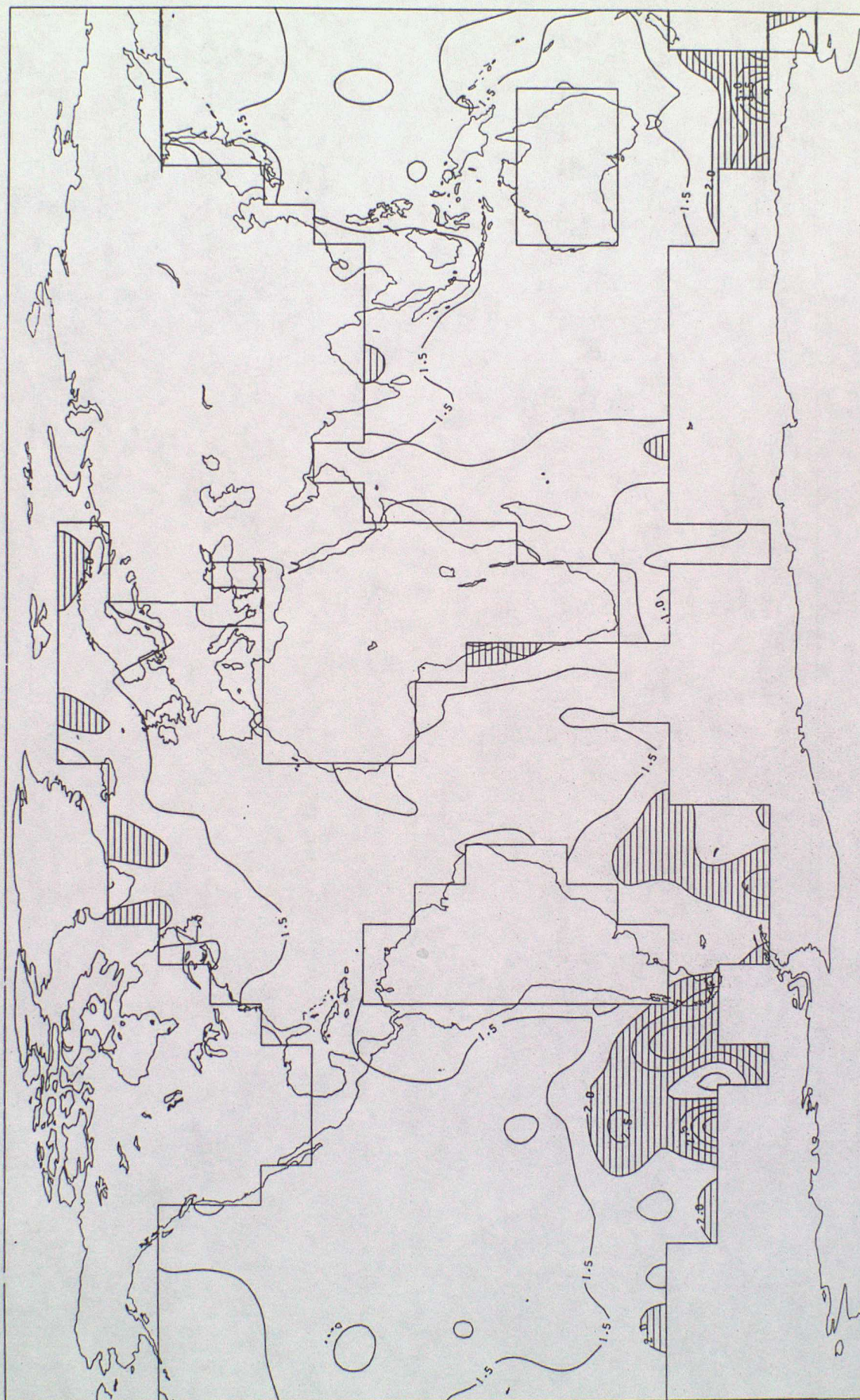


FIG 5: BIAS OF SHIP 0-8 WIND SPEED IN MS-1. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADED HAVE BIAS OF MAGNITUDE GREATER THAN 2.0MS-1

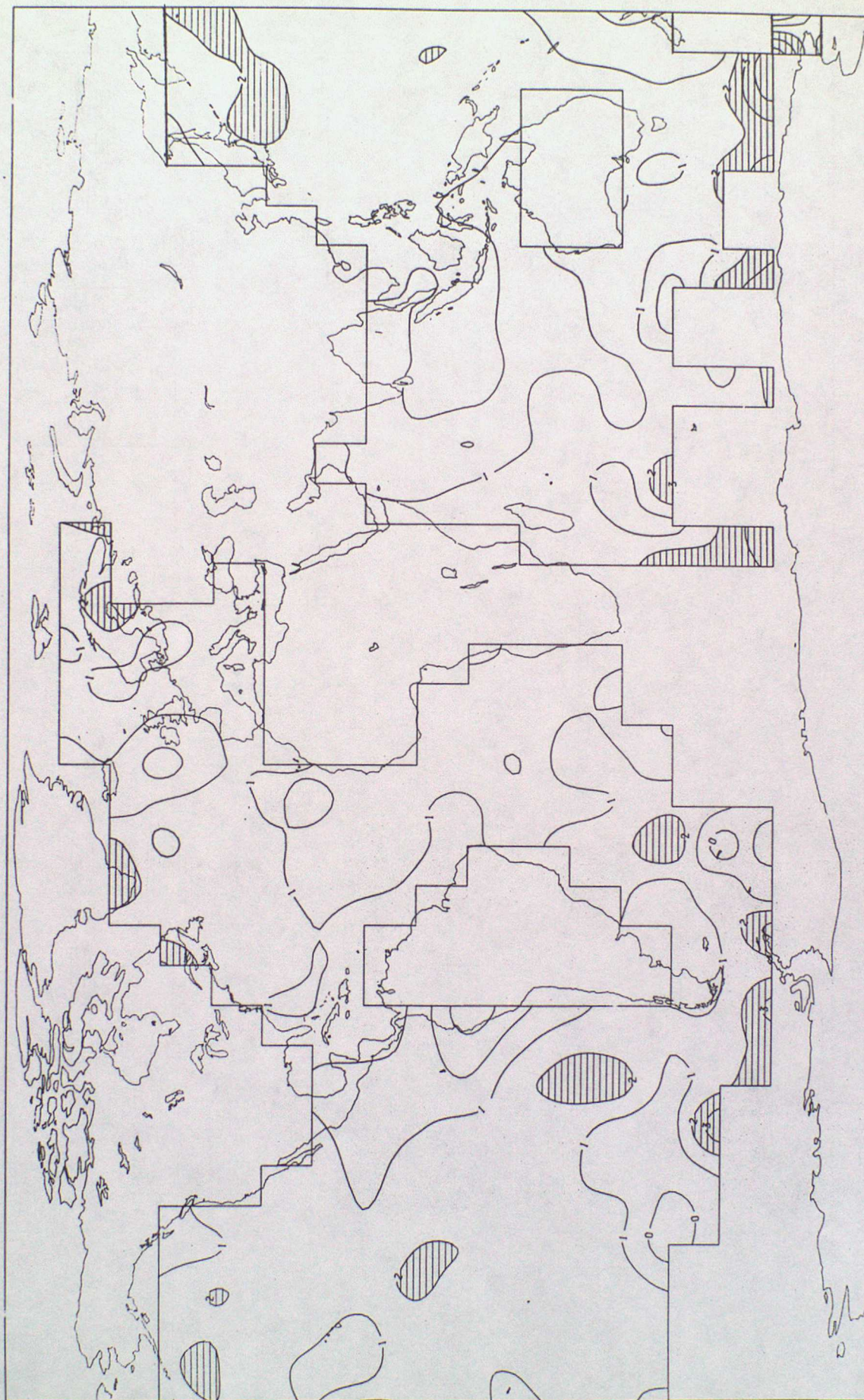


FIG 6: S.D. OF SHIP 0-B WIND SPEED IN MS-1. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 4.0 MS-1

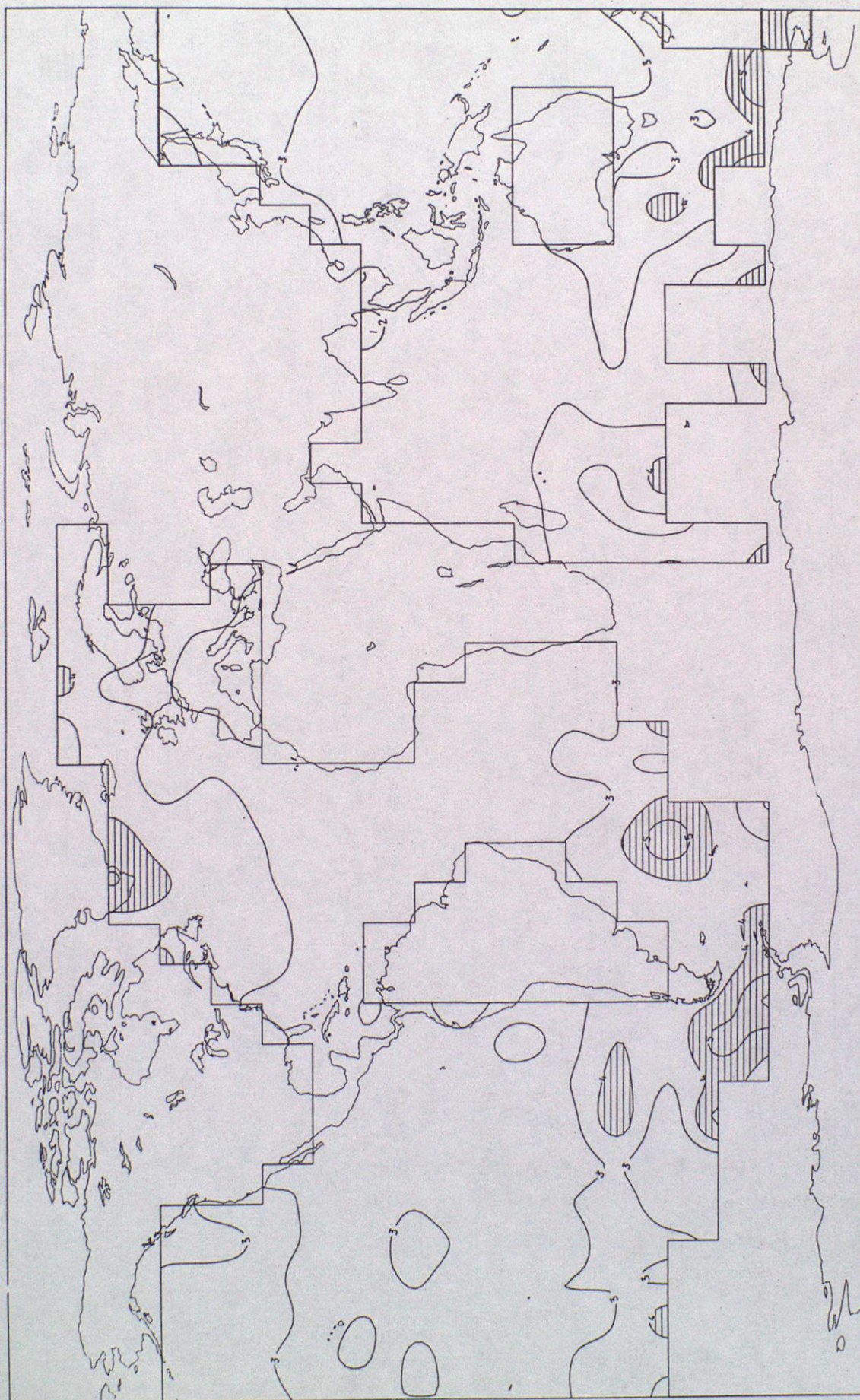


FIG 7:
PLOT OF NUMBER OF SHIP WIND SPEED OBS. PERIOD: JAN TO JUN 1993
ONLY OBSERVATIONS PASSING QUALITY CONTROL INCLUDED

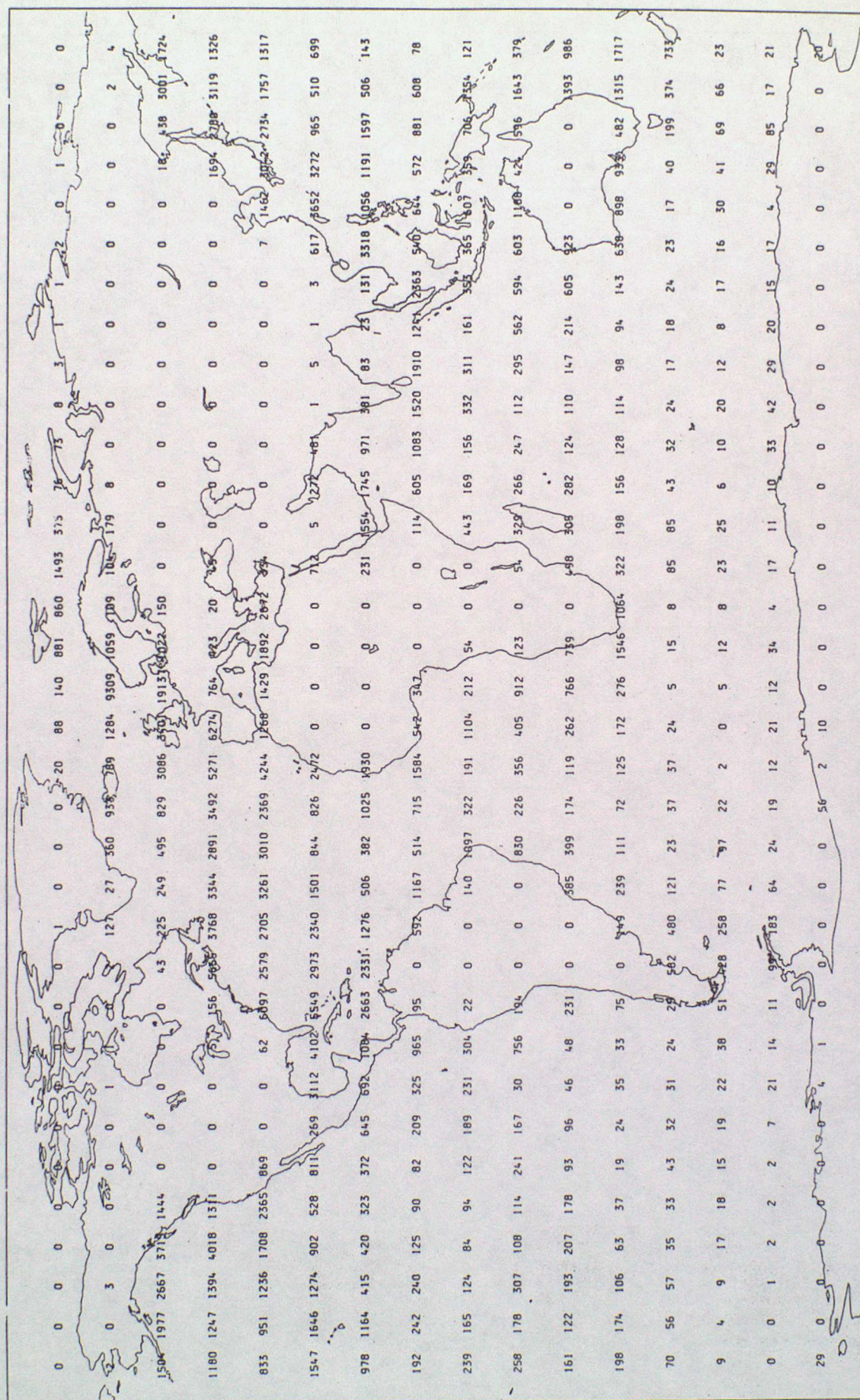


FIG 8: BIAS OF SHIP O-B WIND DIRECTION IN DEG. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADED HAVE BIAS OF MAGNITUDE GREATER THAN 10 DEG

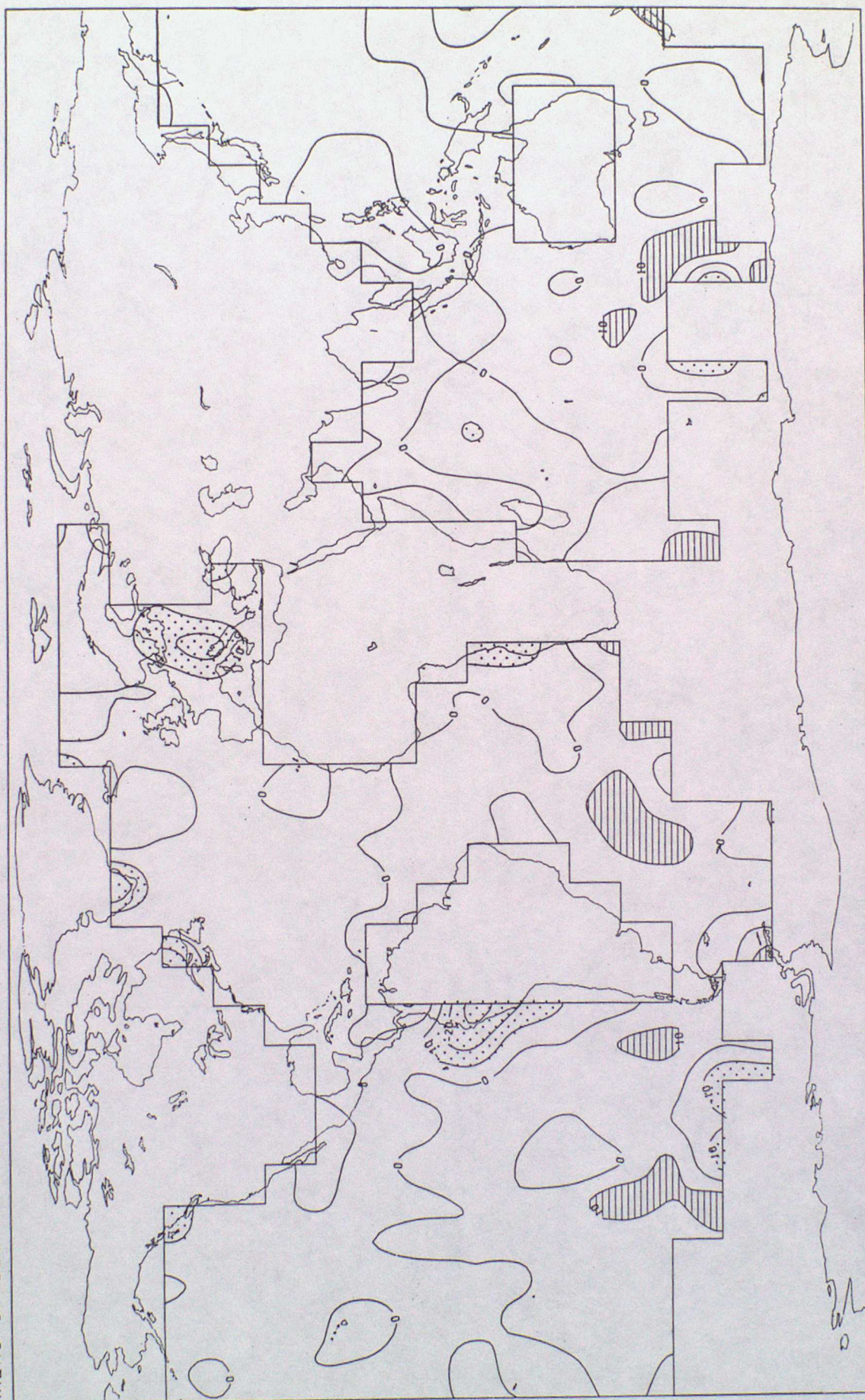


FIG 9: S.D. OF SHIP O-B WIND DIRECTION IN DEG. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
 CONTOURS DRAWN TO 10 DEGREE BOXES IF N. OF OBS > 10
 AREAS SHADED HAVE STANDARD DEVIATION GREATER THAN 40 DEG

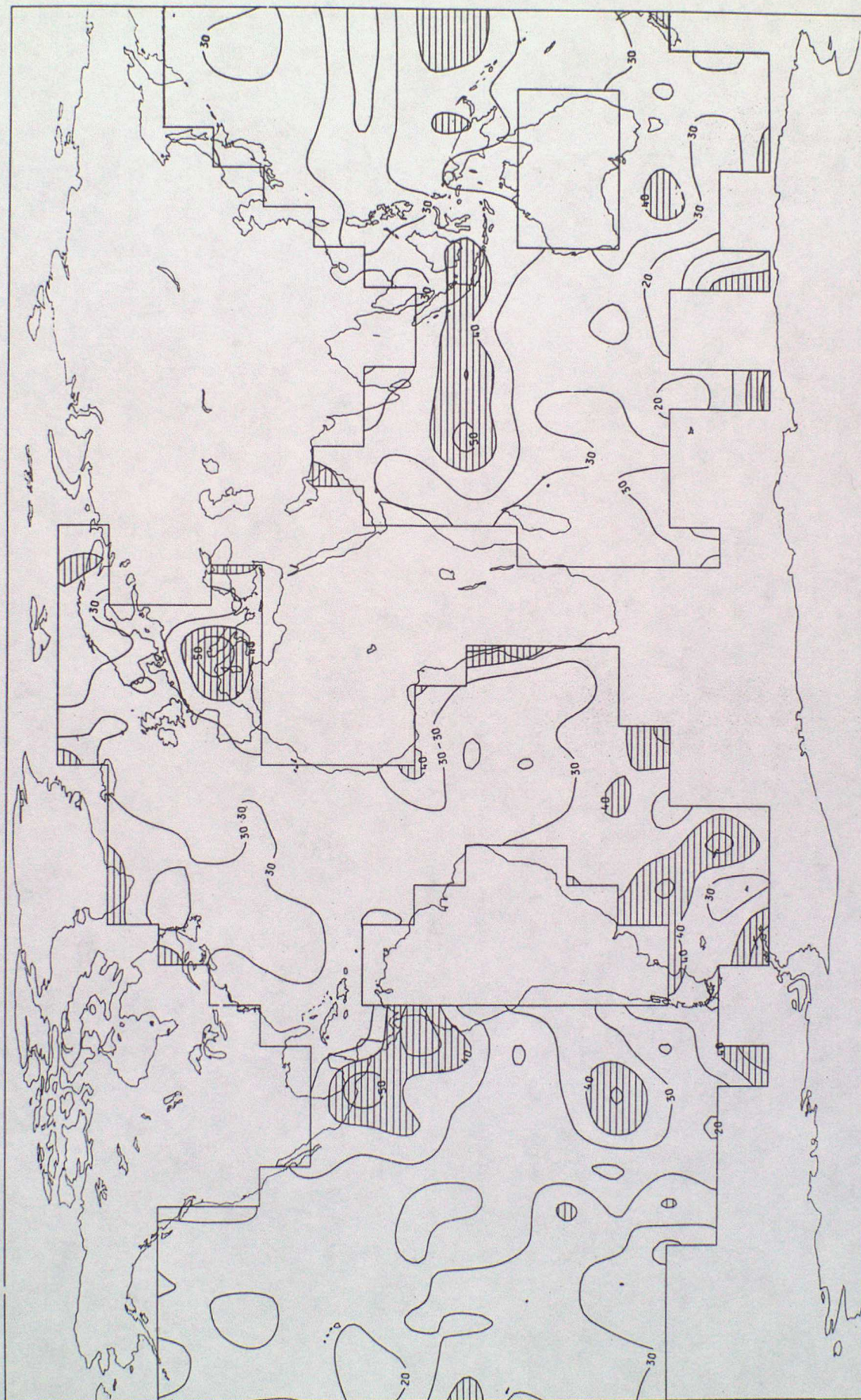
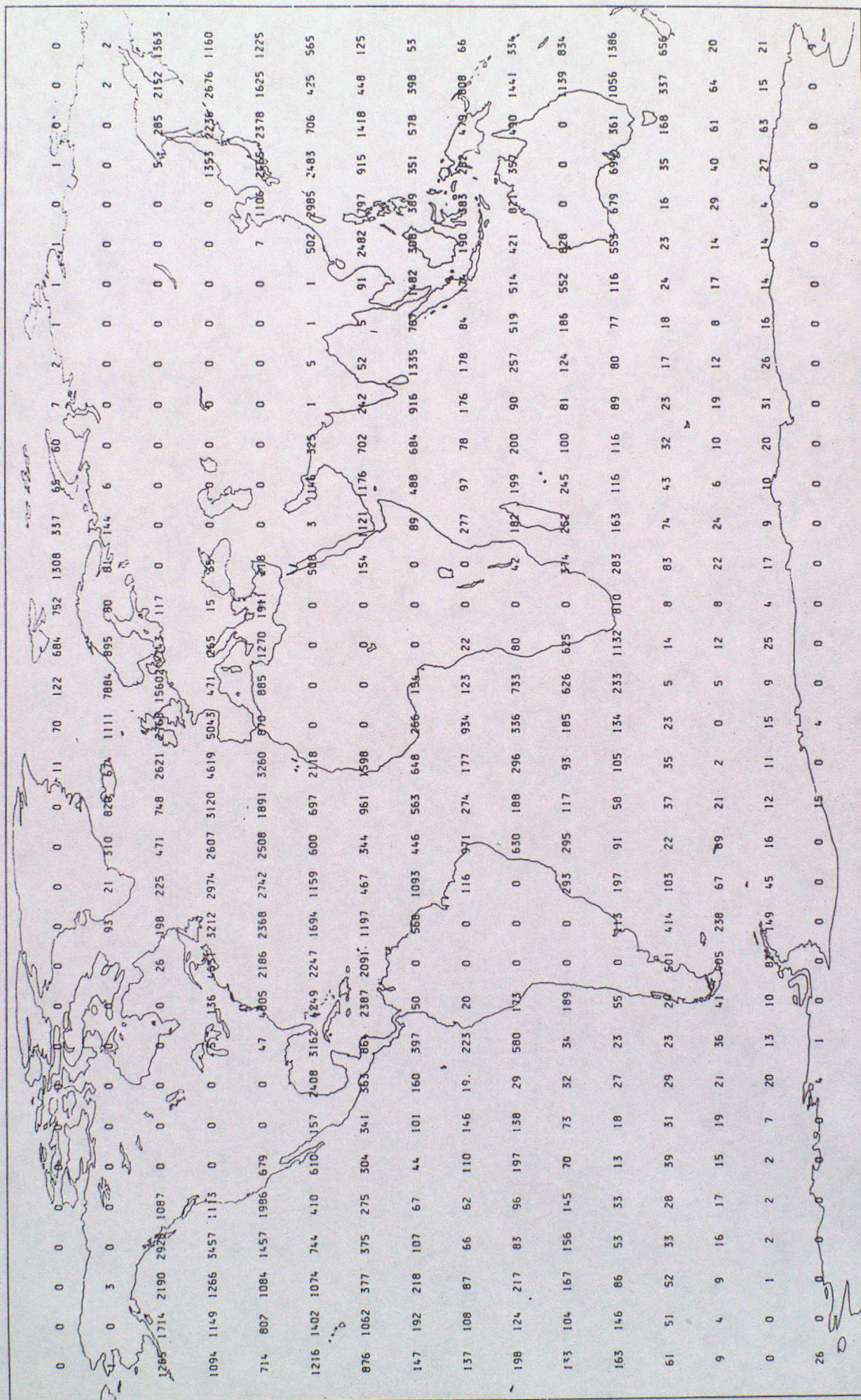


FIG 10:
 PLOT OF NUMBER OF SHIP WIND DIRECTION OBS. PERIOD: JAN TO JUN 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL INCLUDED



SEA SURFACE TEMPERATURE STATISTICS FOR EACH OBSERVATION TYPE, FOR NORTHERN AND SOUTHERN HEMISPHERES, JANUARY - JUNE 1993

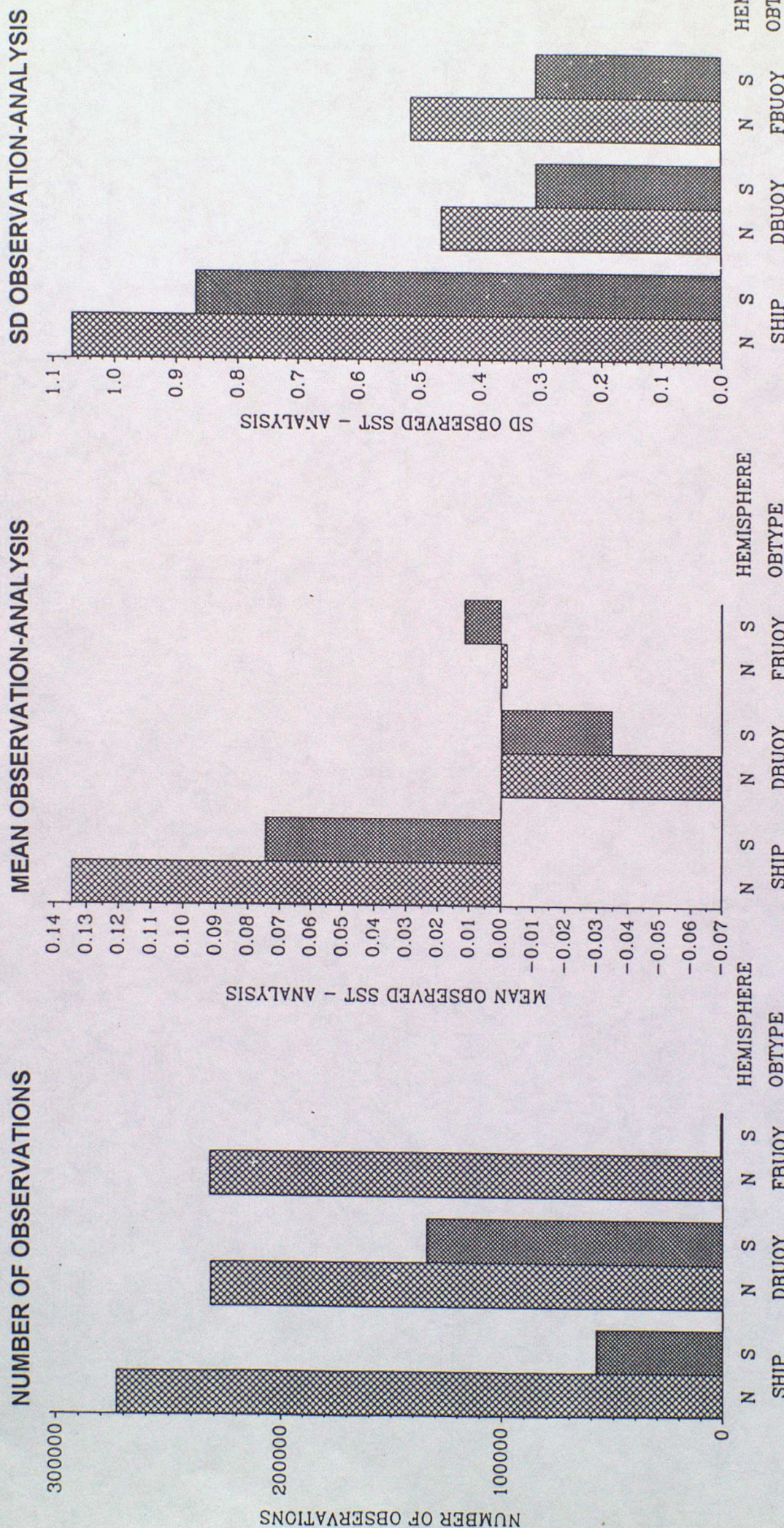


FIGURE 11(A)

FIGURE 11(B)

FIGURE 11(C)

FIG 12: BIAS OF SHIP SEA SURFACE TEMPERATURES (0-A) IN DEG C
DATES: JANUARY - JUNE 1993
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS PLOTTED AT INTERVALS OF 0.2 DEG C

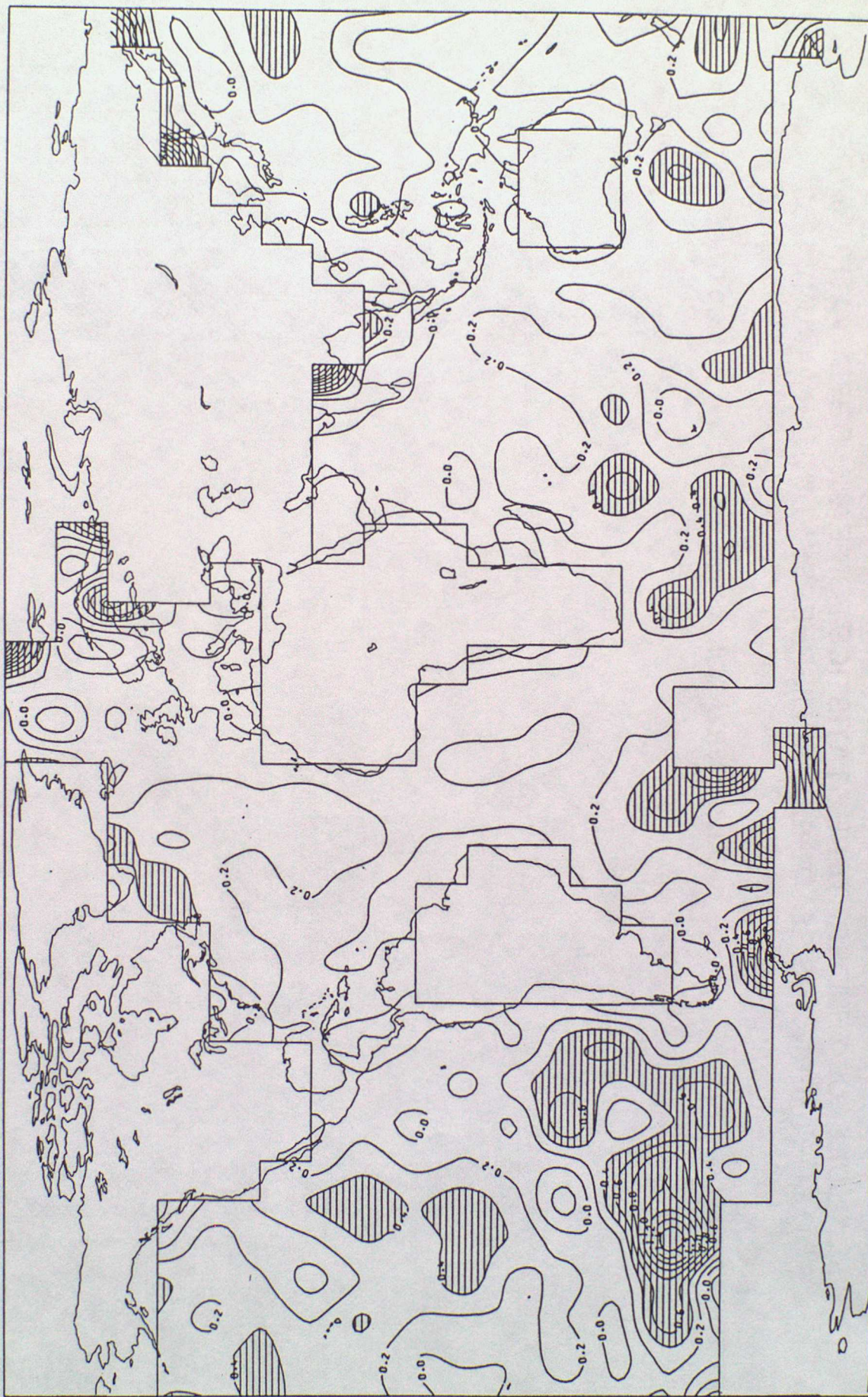


FIG 13: S.D. OF SHIP SEA SURFACE TEMPERATURES (0-A) IN DEG C
DATES: JANUARY - JUNE 1993
ONLY OBSERVATIONS PASSING QUALITY CONTROL USED IN STATISTICS
CONTOURS PLOTTED AT INTERVALS OF 0.2 DEG C

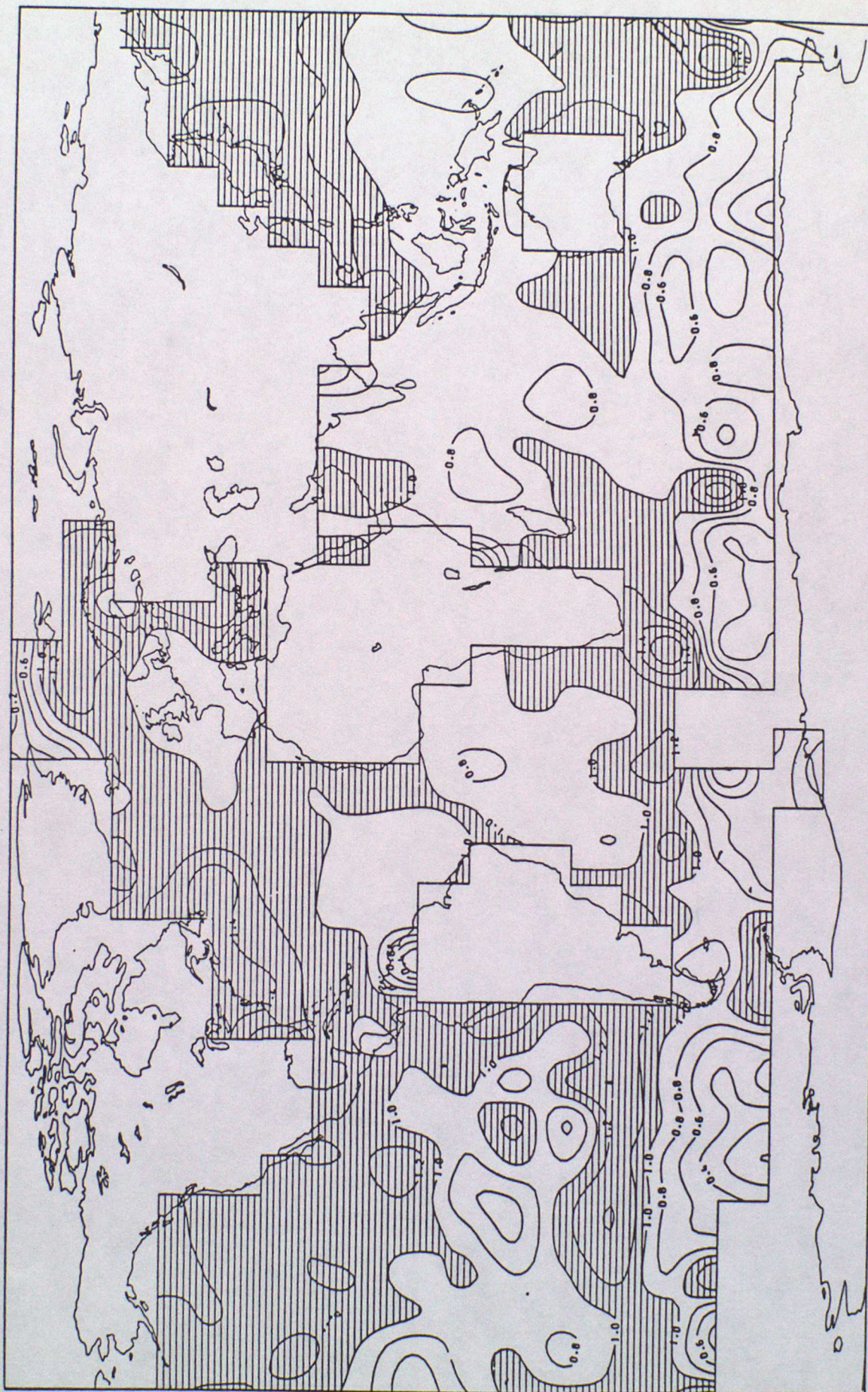


FIG 14:
 NUMBER OF SHIP SEA-SURFACE TEMPERATURE OBSERVATIONS
 DATE: JANUARY - JUNE 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL ARE INCLUDED

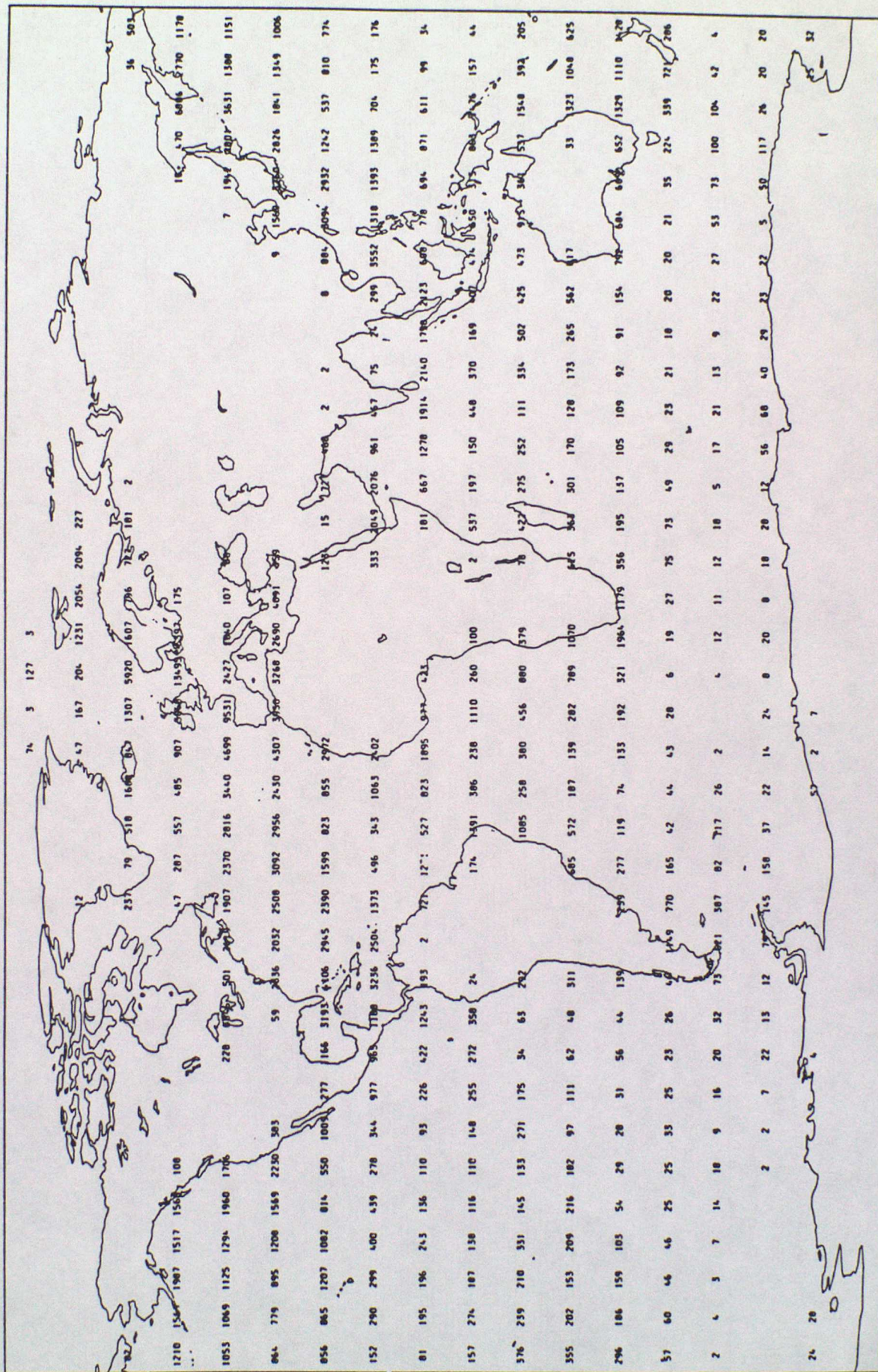


FIG 15:
 NUMBER OF FIXED BUOY SEA-SURFACE TEMPERATURE OBSERVATIONS
 DATE: JANUARY - JUNE 1993
 ONLY OBSERVATIONS PASSING QUALITY CONTROL ARE INCLUDED

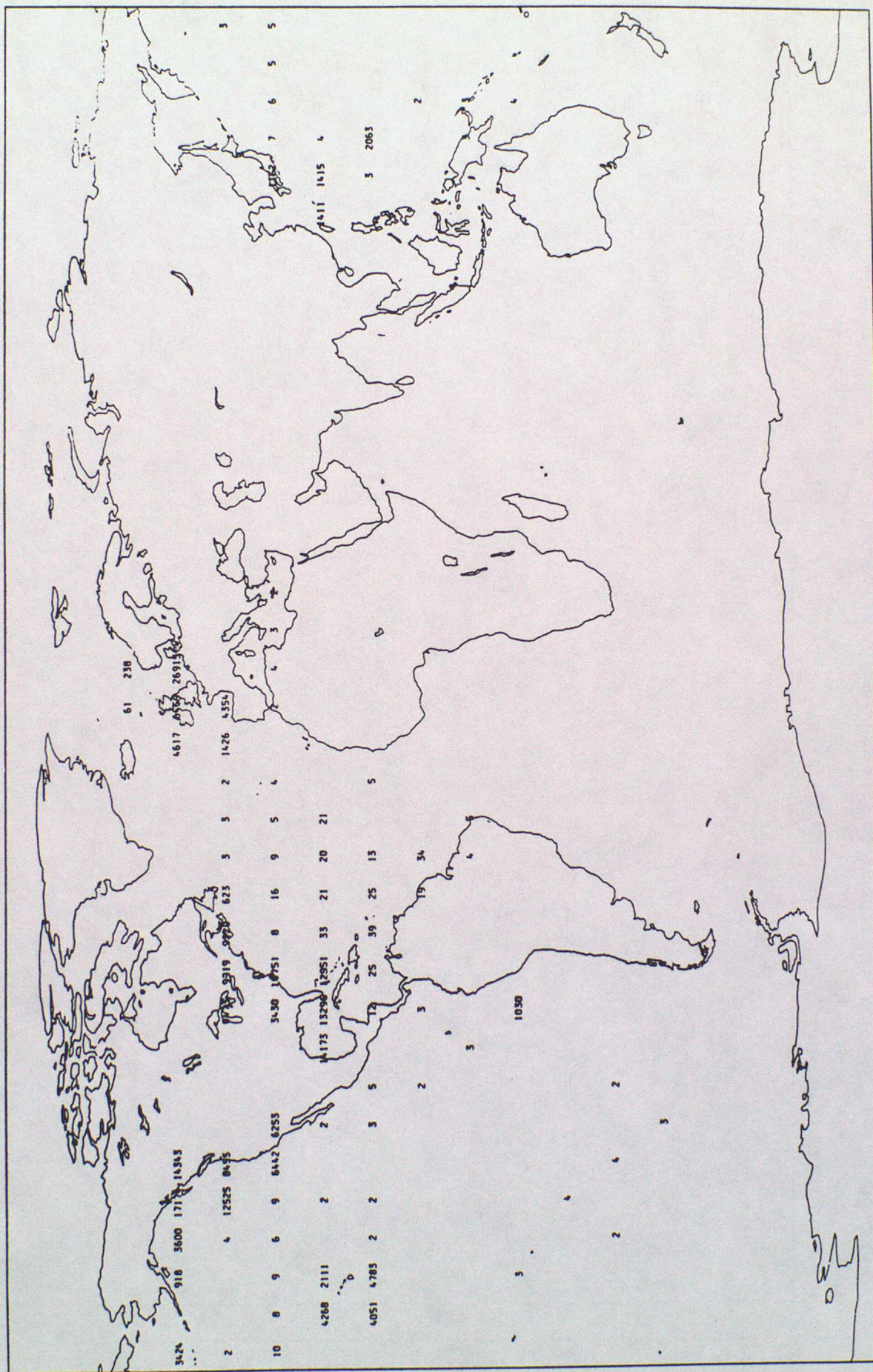
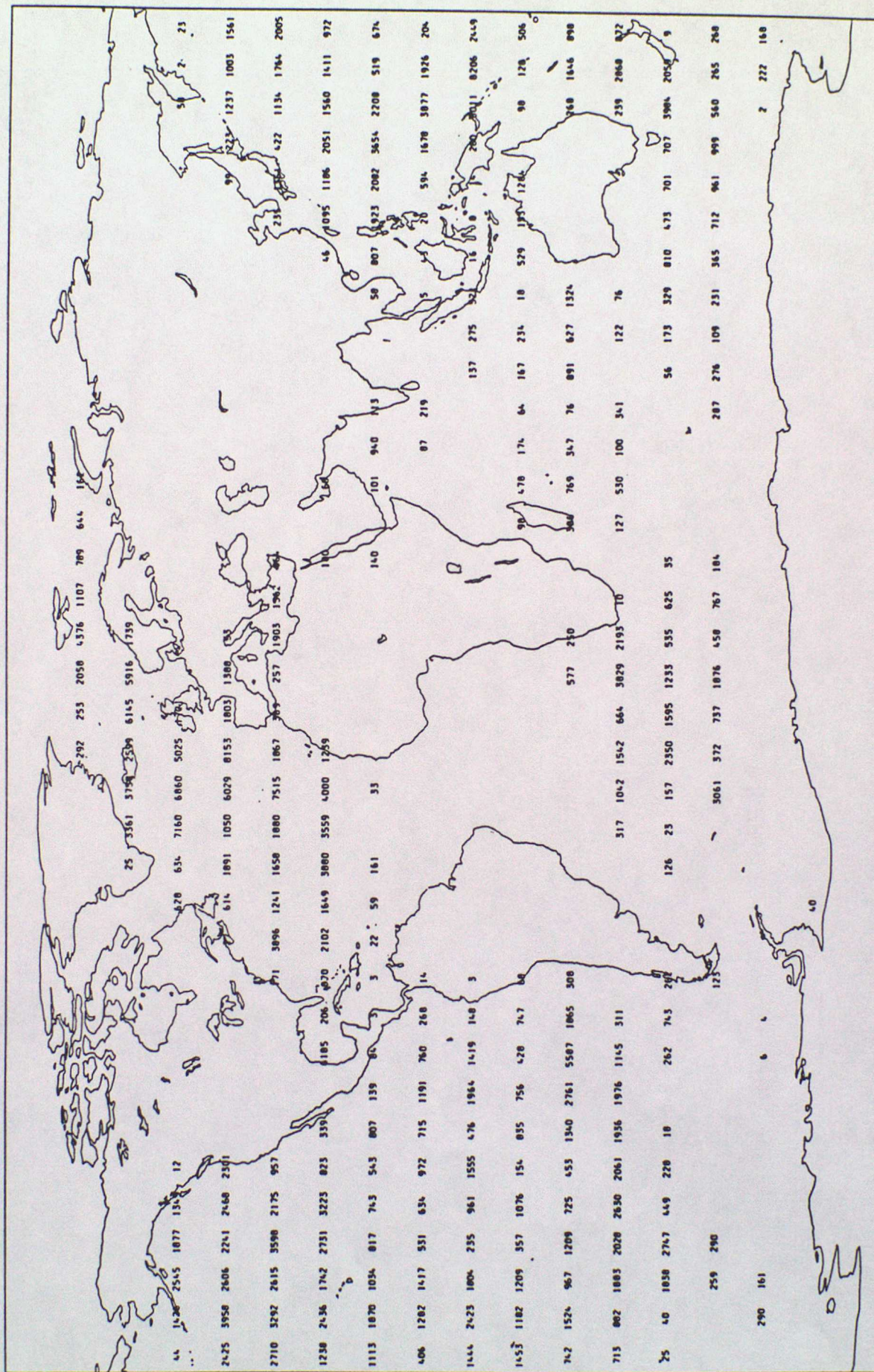
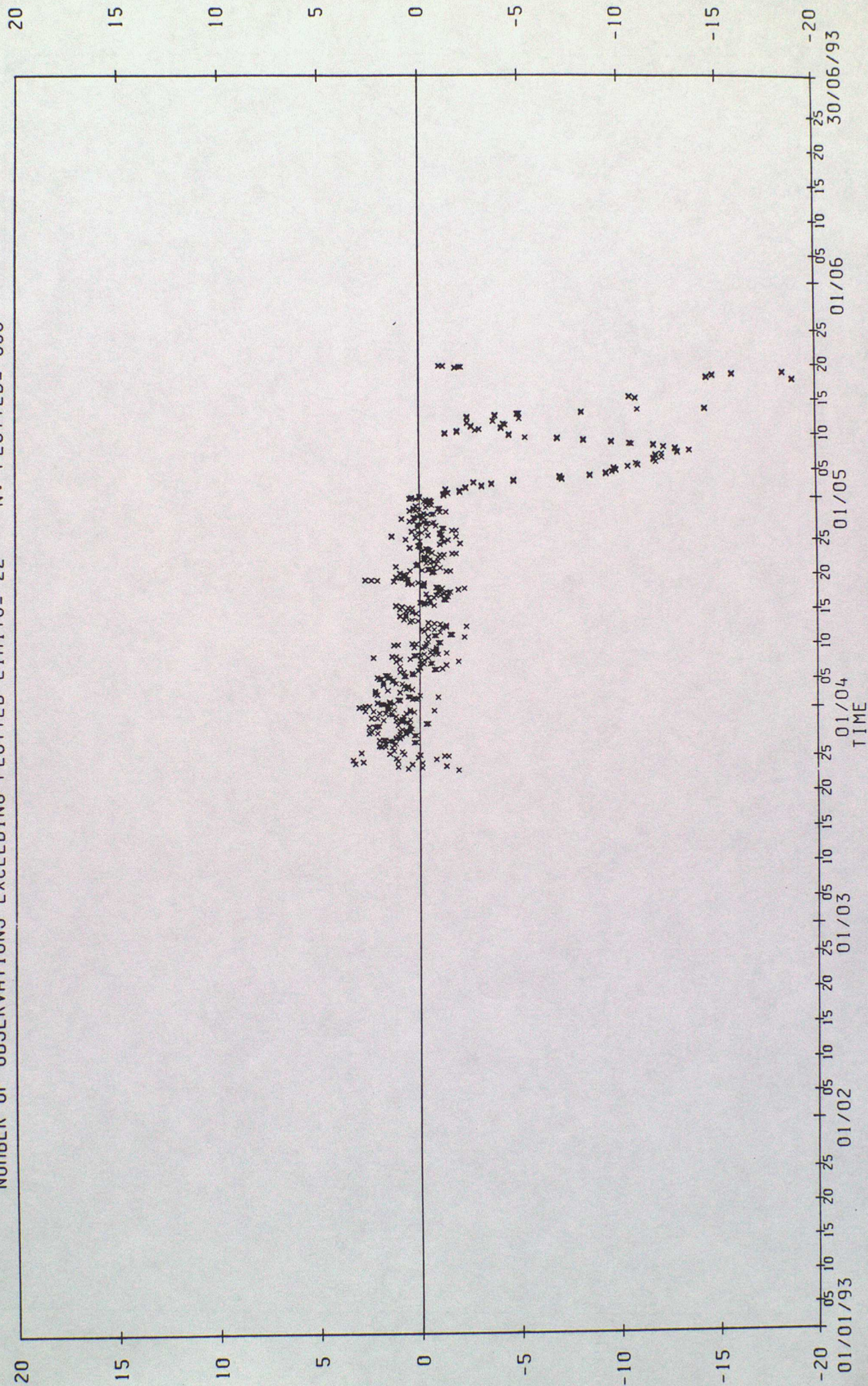


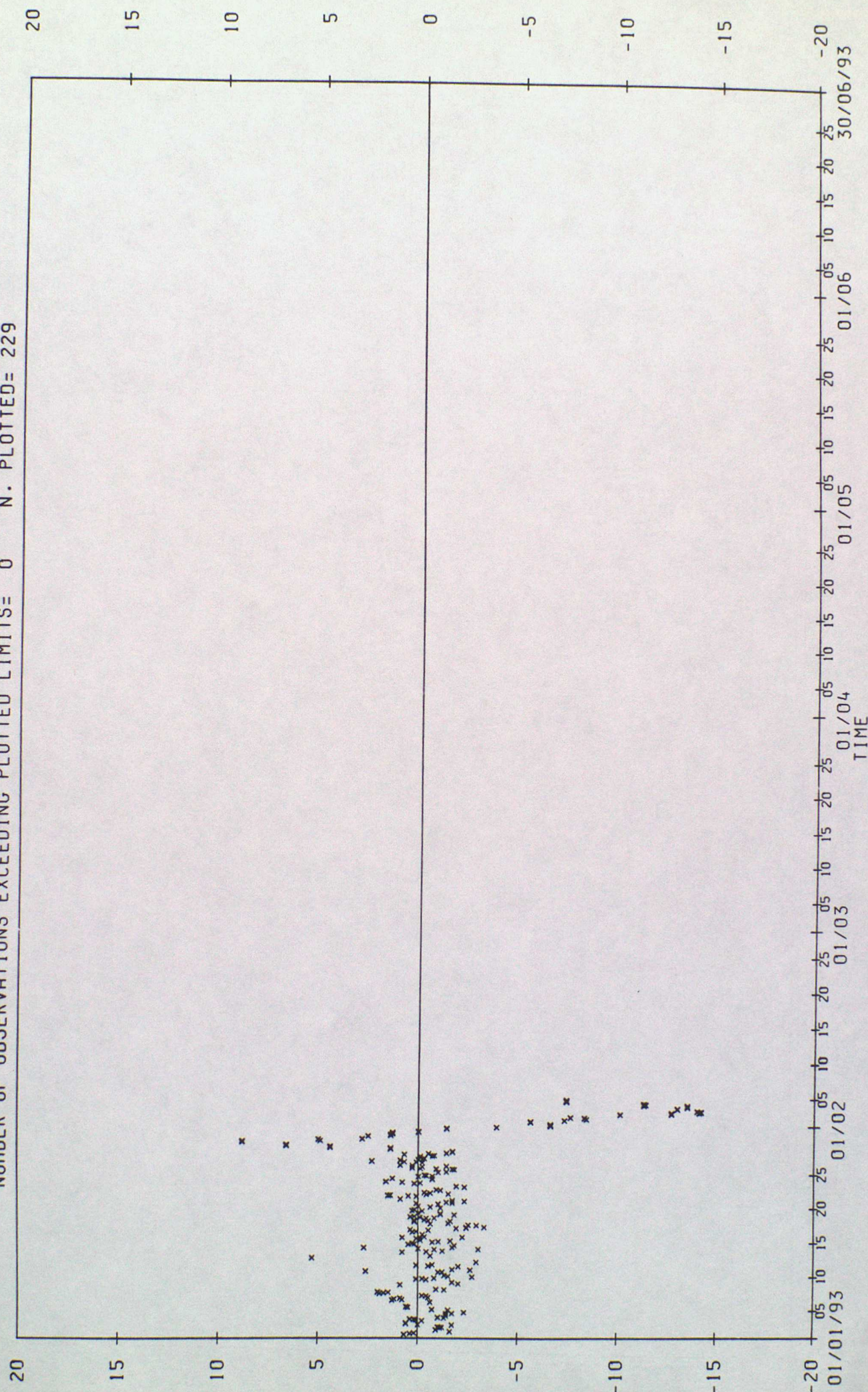
FIG 16:
NUMBER OF DRIFTING BUOY SEA-SURFACE TEMPERATURE OBSERVATIONS
DATE: JANUARY - JUNE 1993
ONLY OBSERVATIONS PASSING QUALITY CONTROL ARE INCLUDED



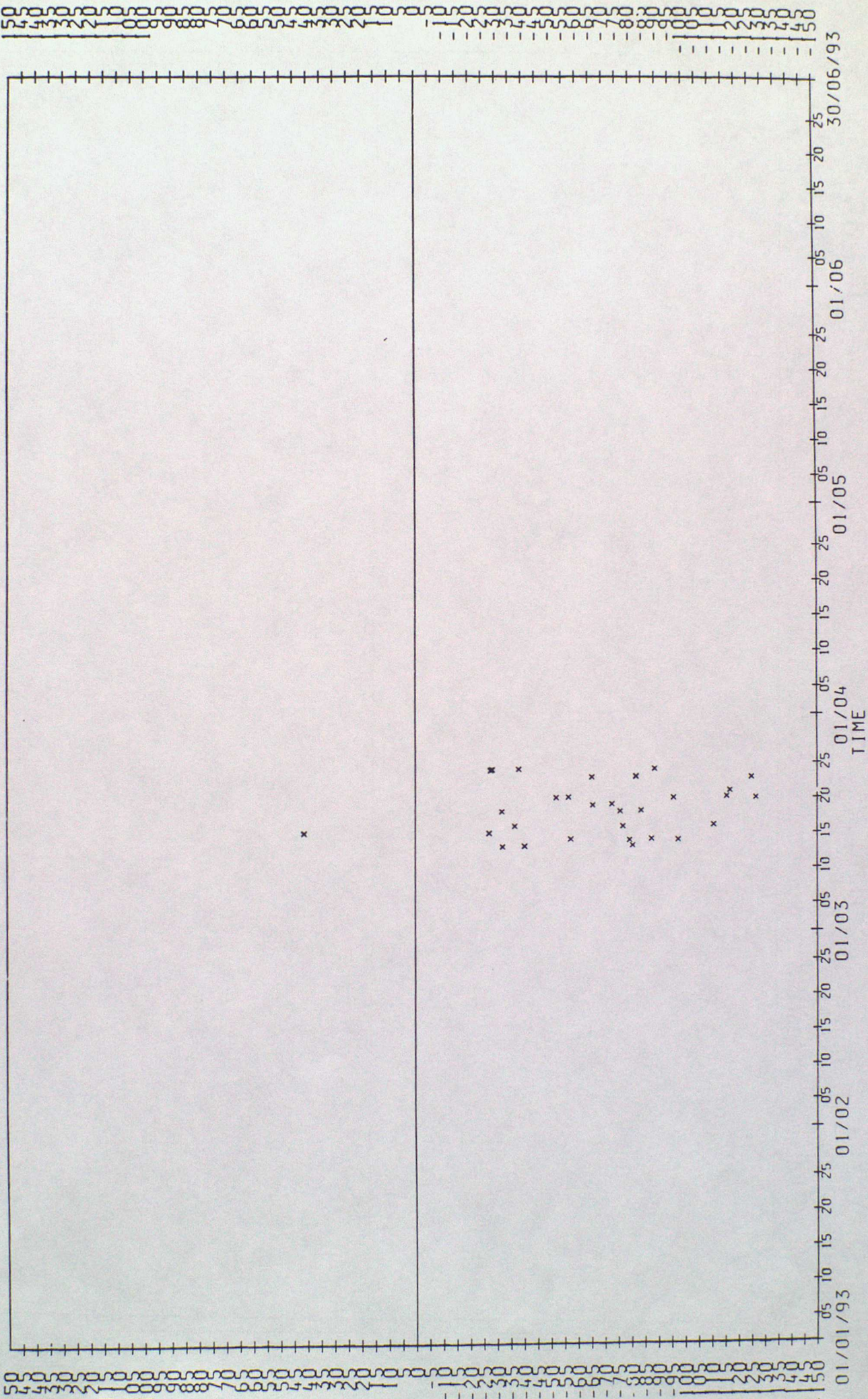
0-B
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 48519
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 22 N. PLOTTED= 688
0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 62515
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 229



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 63909
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 15 N. PLOTTED= 35



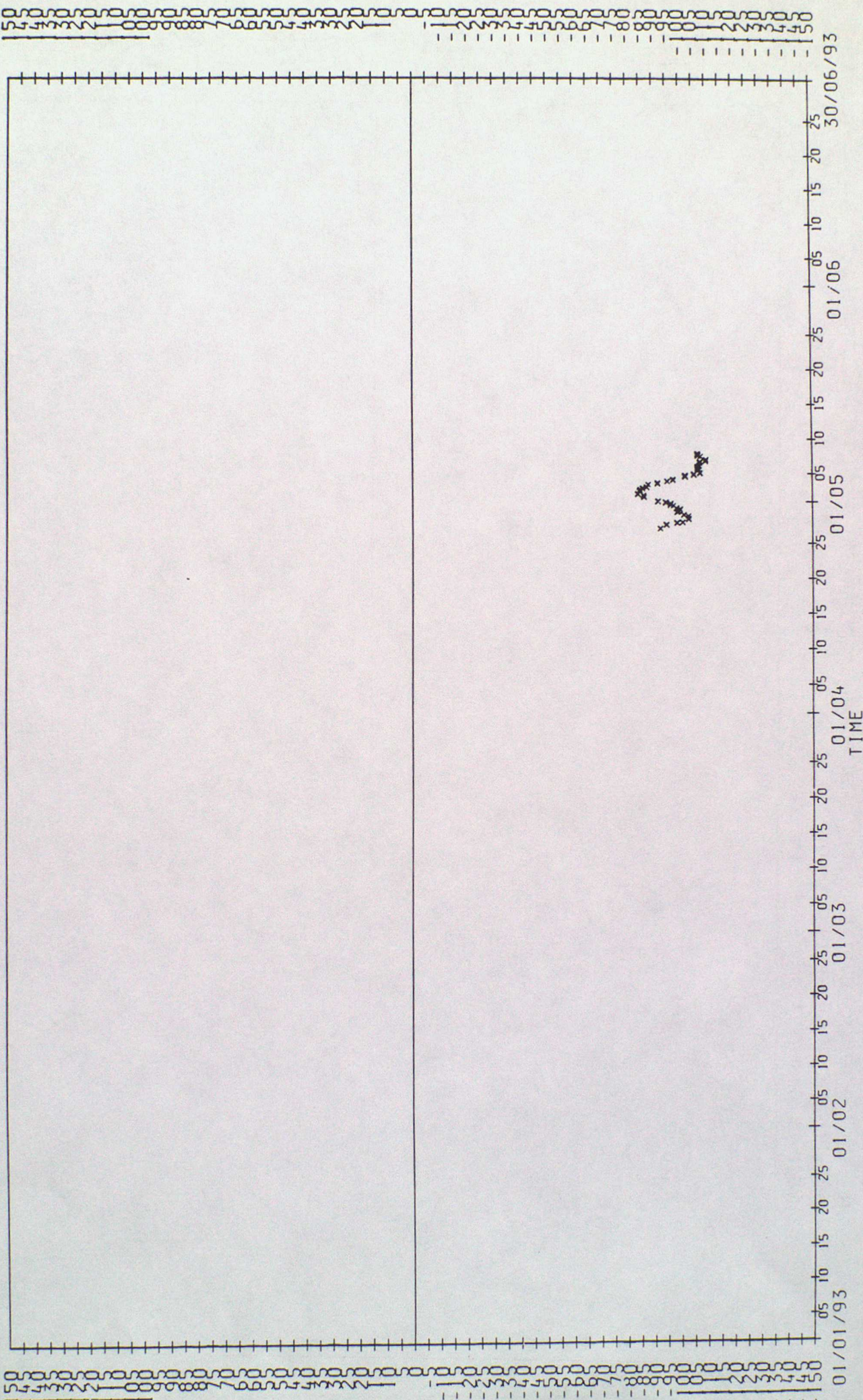
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 64607

O-B

VARIABLE : MSLP IN UNITS OF HPA

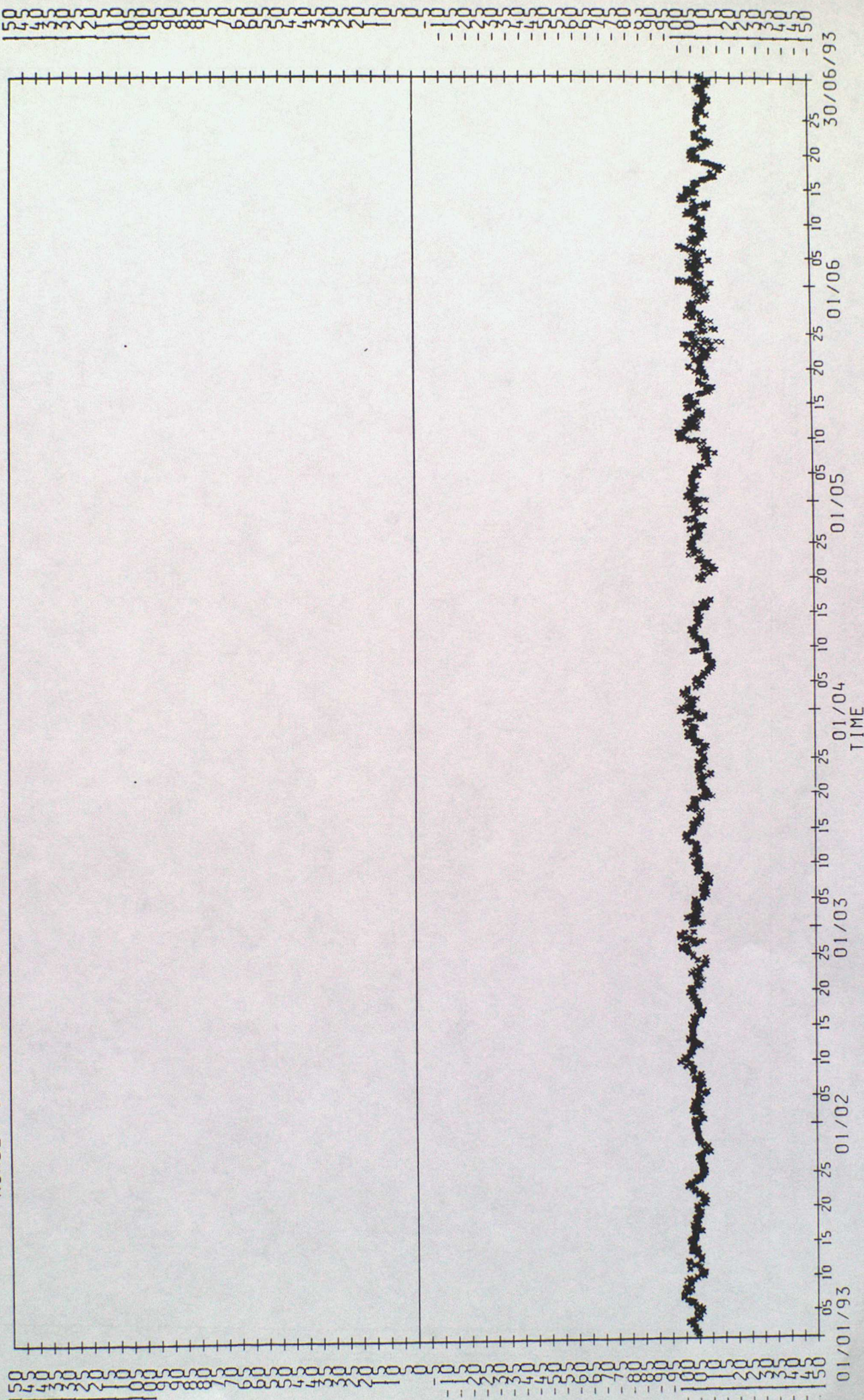
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 91



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 71003
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED=3074

0-B

0-B



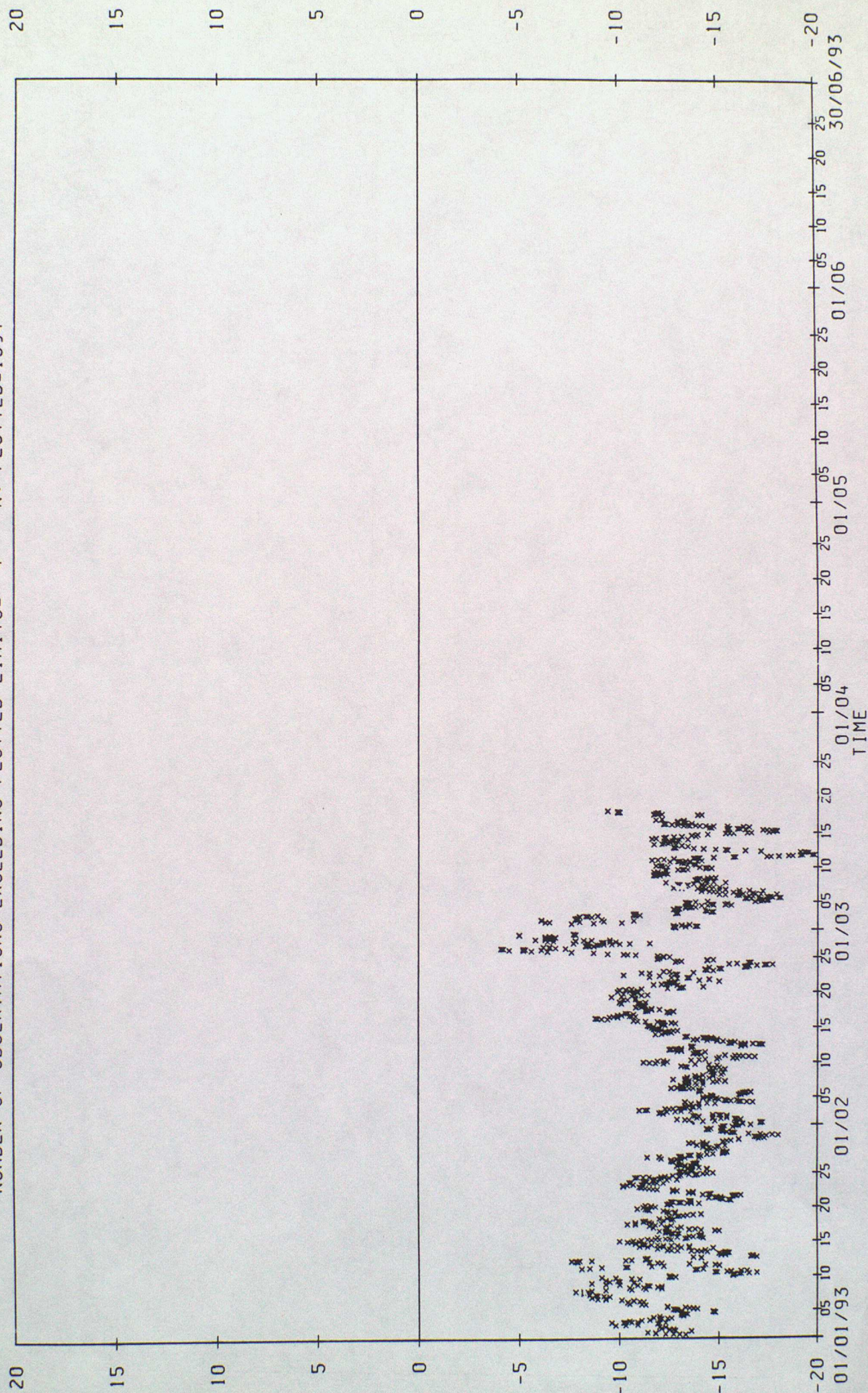
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 71004

0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 4 N. PLOTTED=1394



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

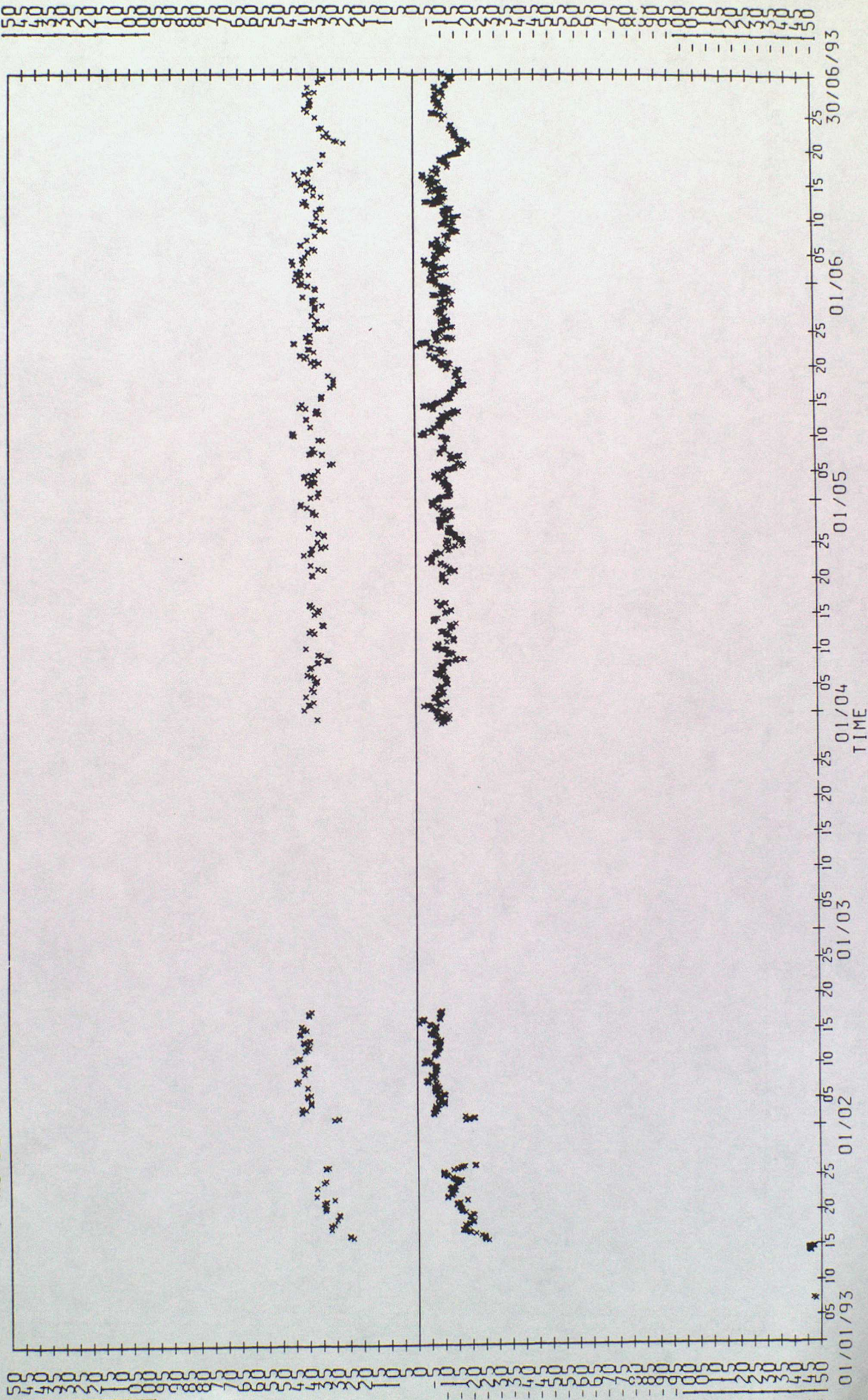
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 74002

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED=1806

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

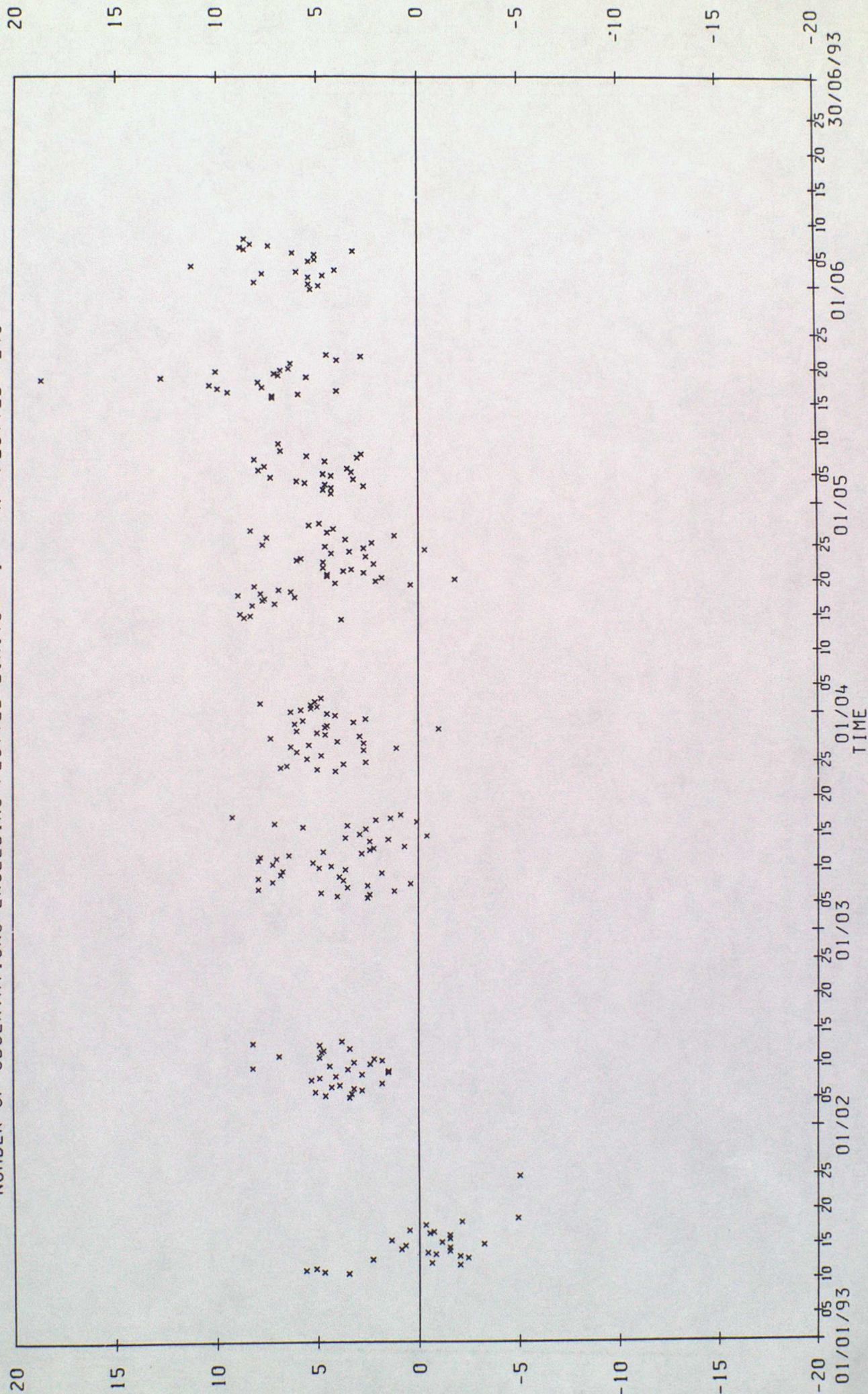
0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: C6GR

0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 246



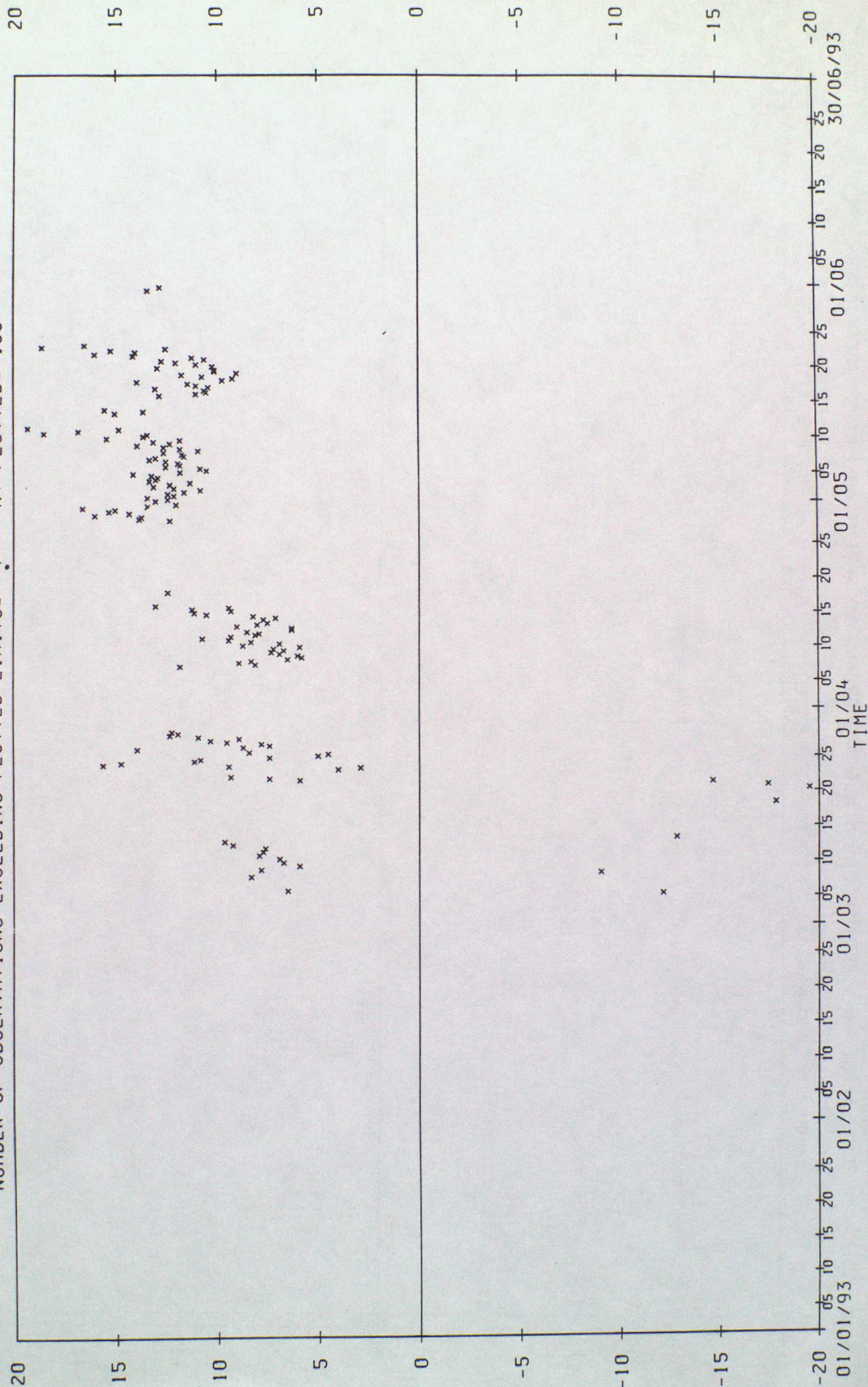
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: C6LK7

0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 4 N. PLOTTED= 166



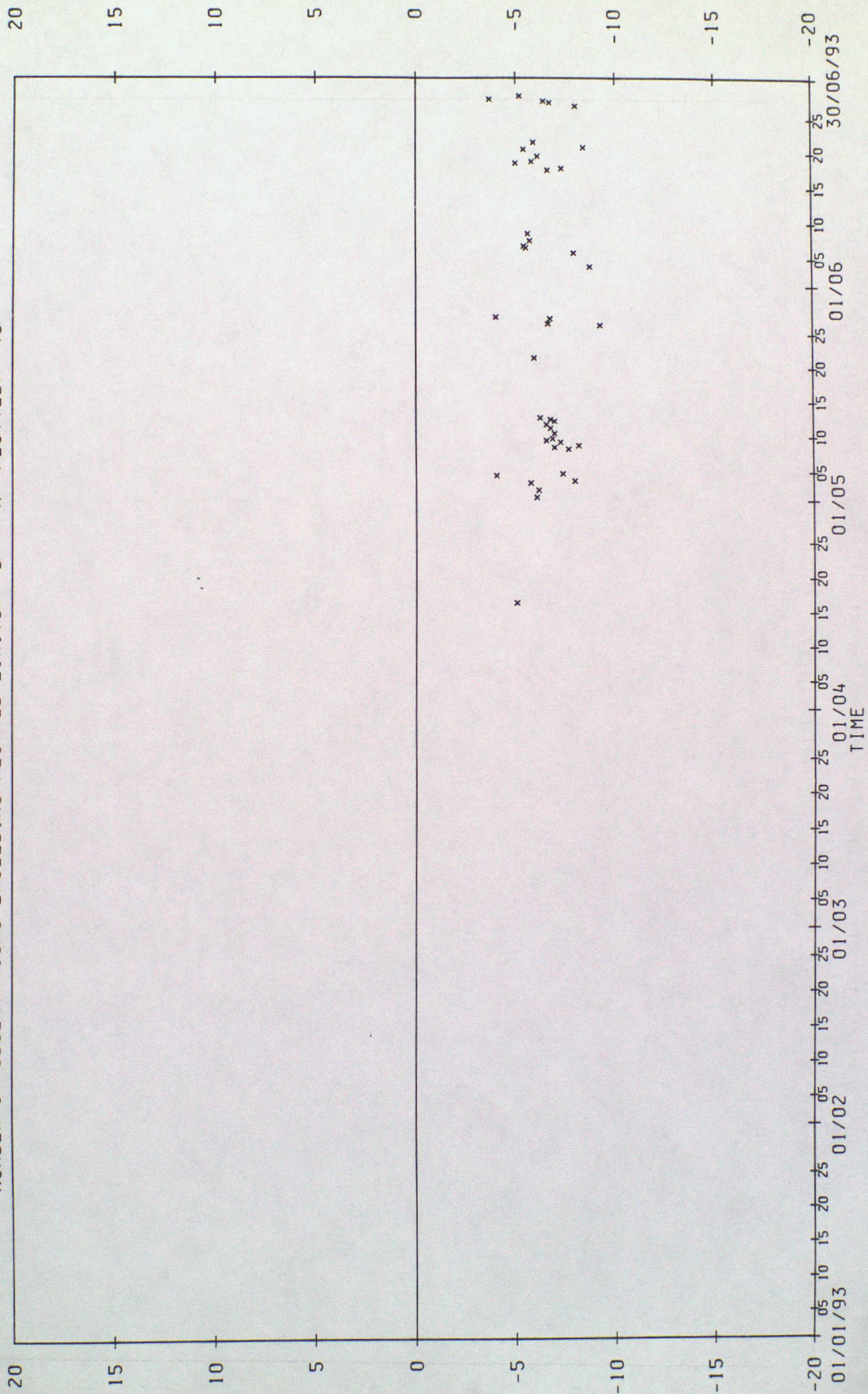
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: DEDS

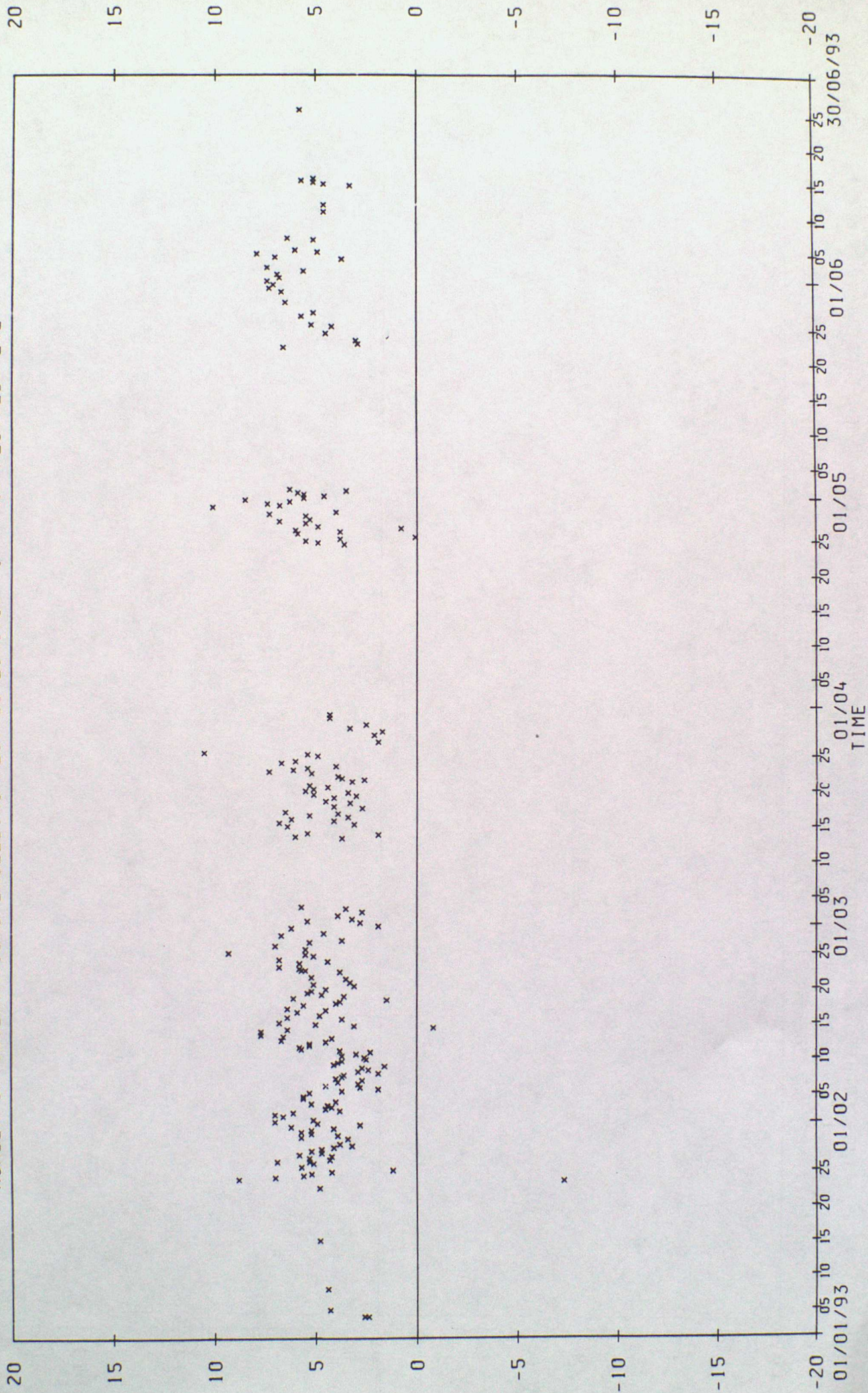
0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 43



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 05NE 0-B
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 242



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

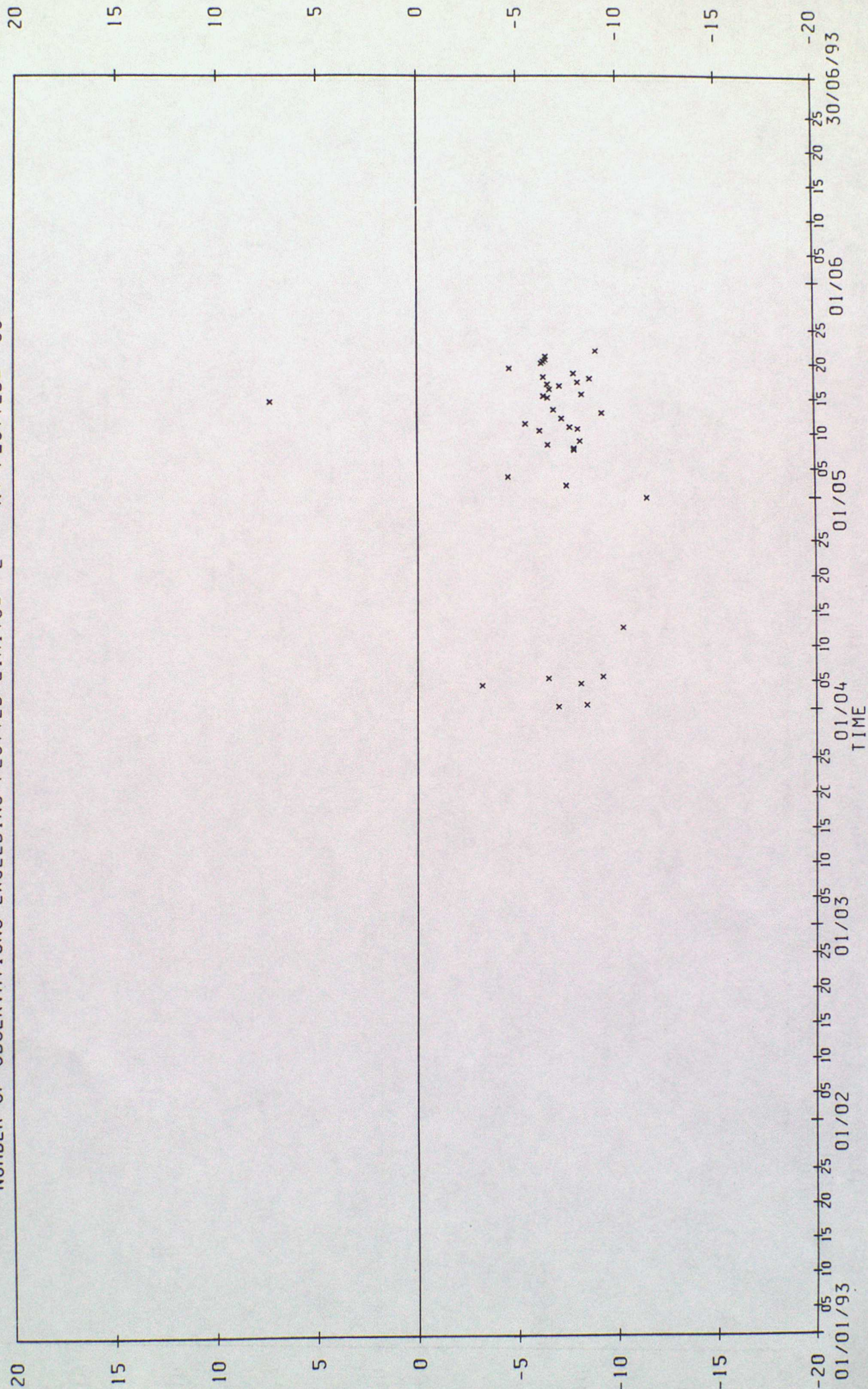
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: EKWC

VARIABLE : MSLP IN UNITS OF HPA

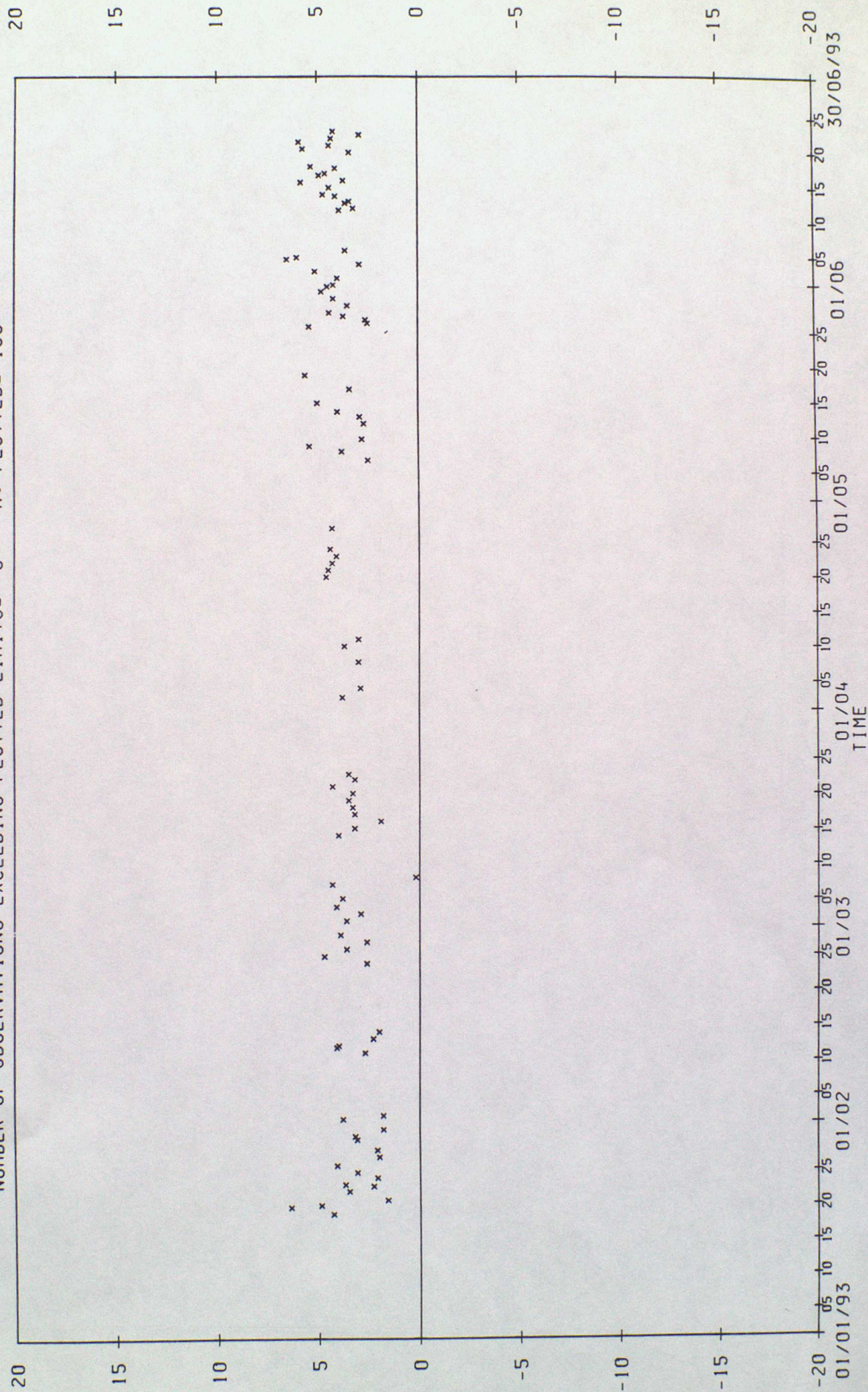
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 2 N. PLOTTED= 38

O-B

O-B



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ELFN7
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 100



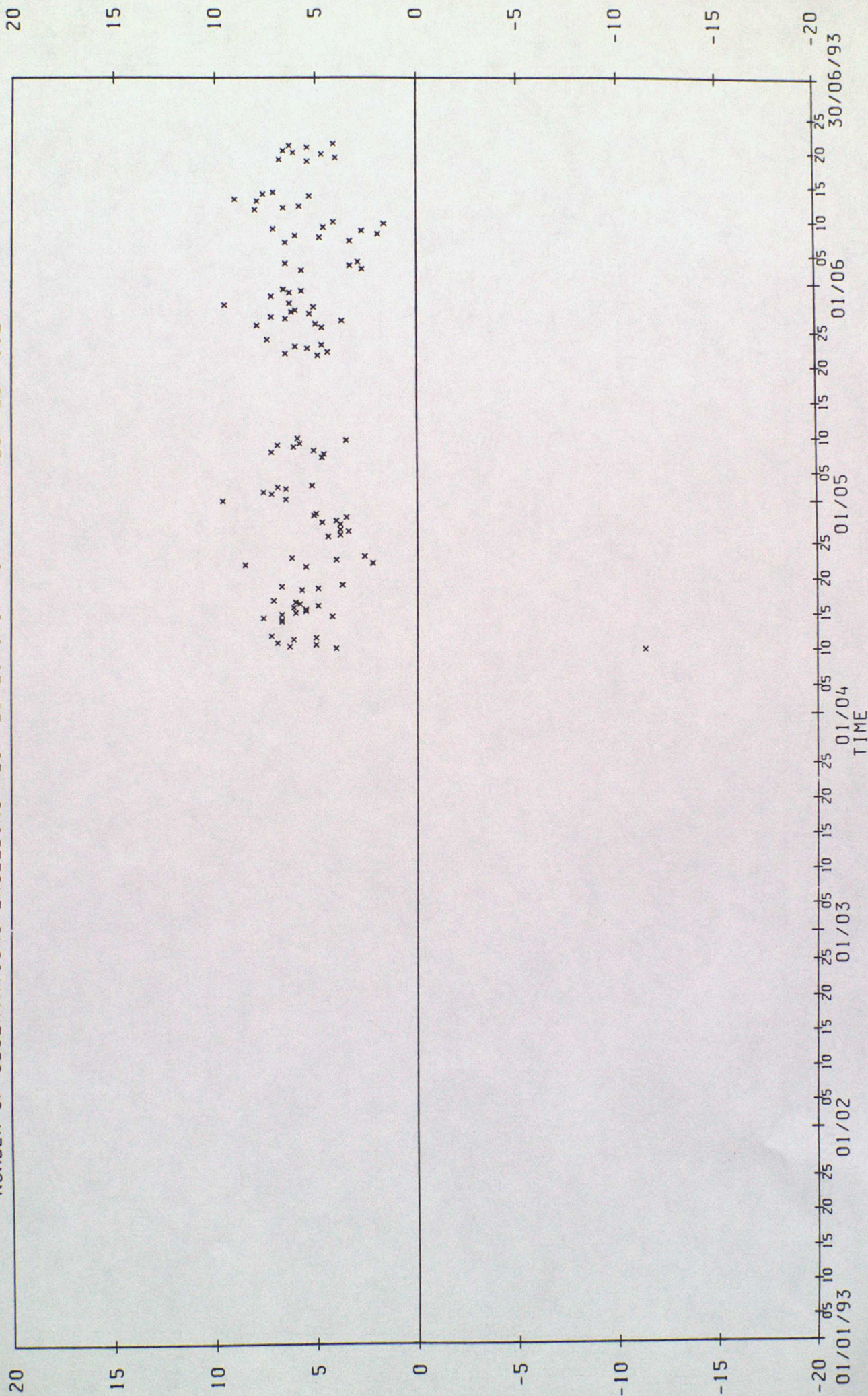
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ELG12

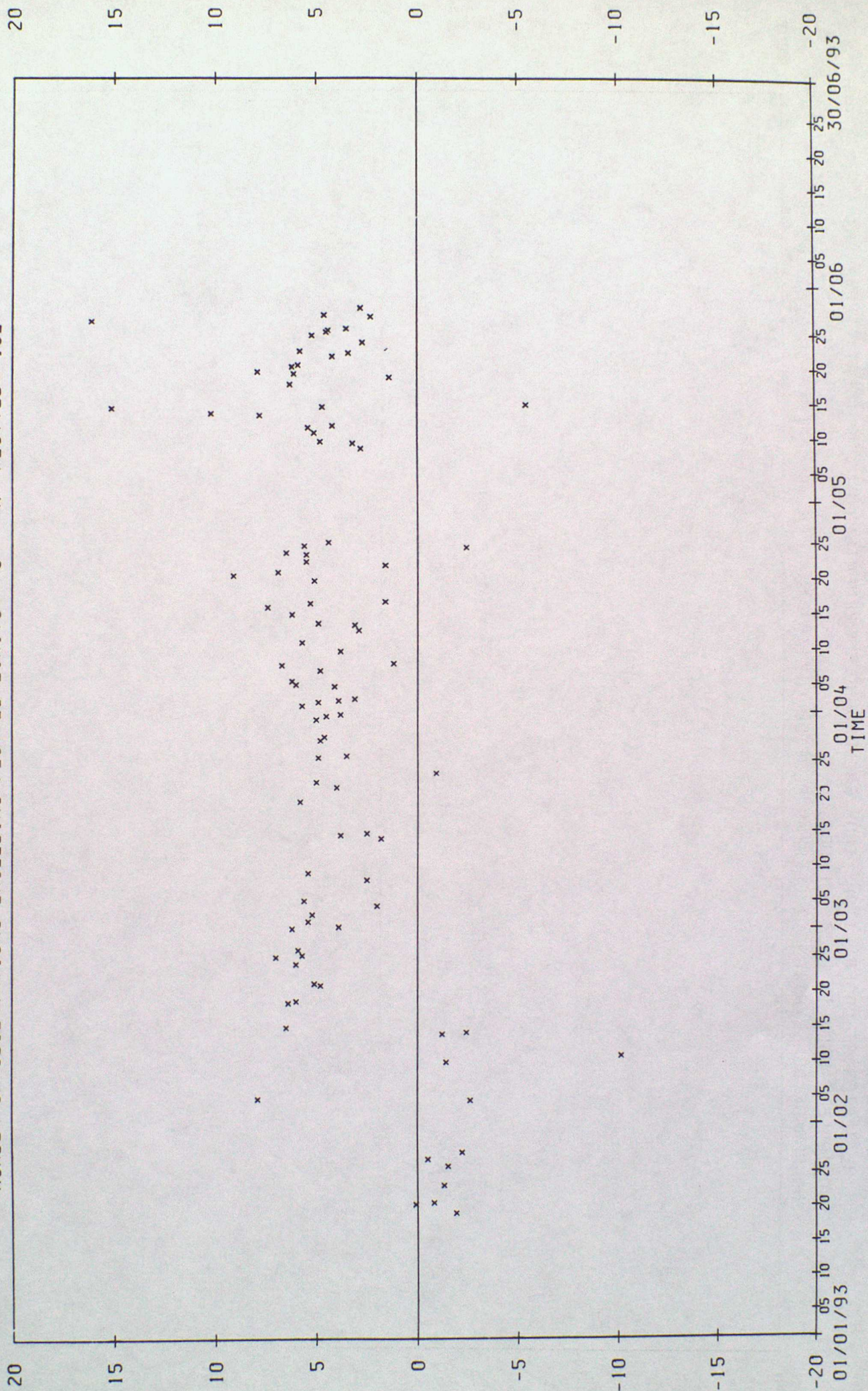
VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 112



0-B

0-B
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: EMON
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 6 N. PLOTTED= 102
0-B



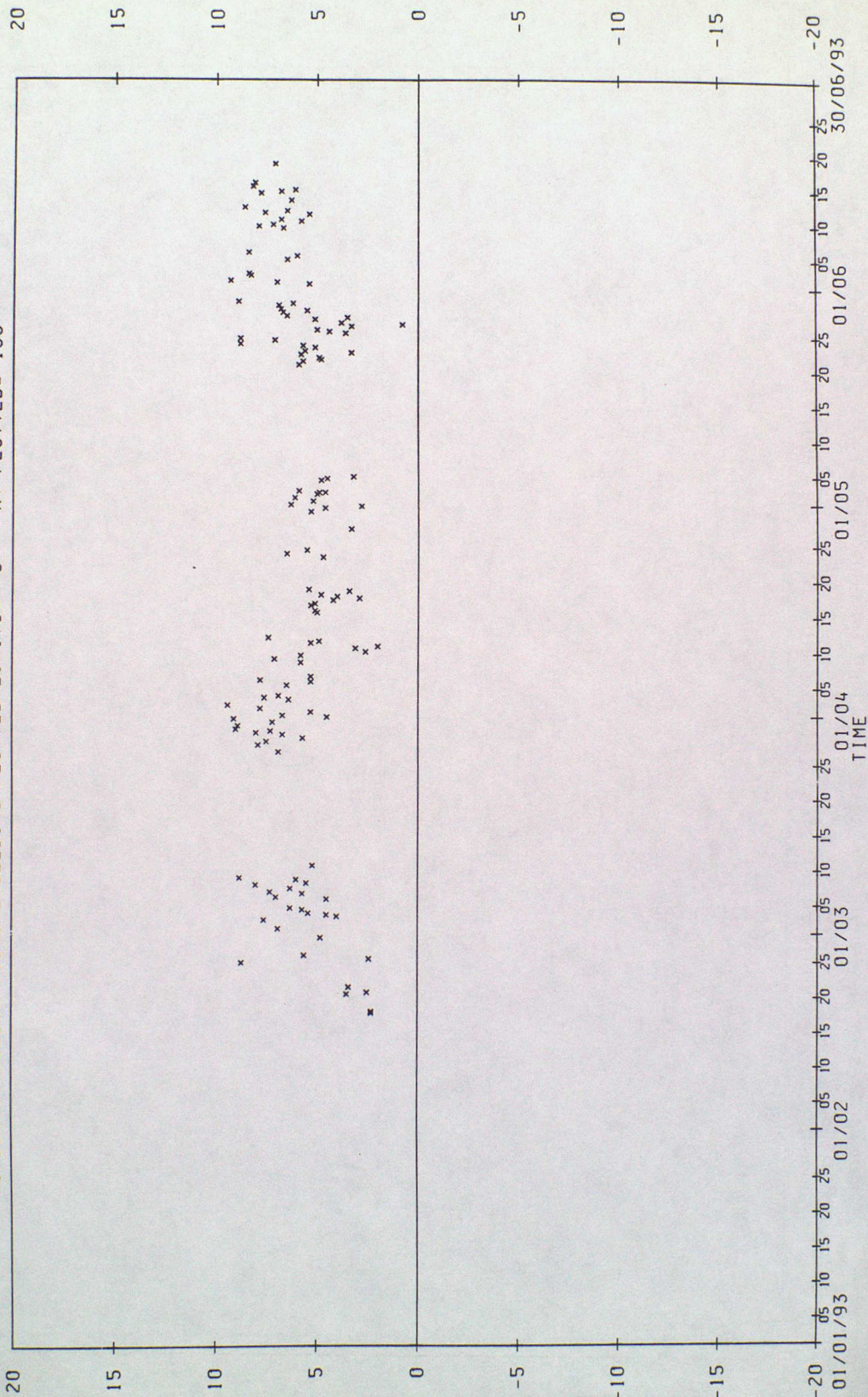
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: ESBI

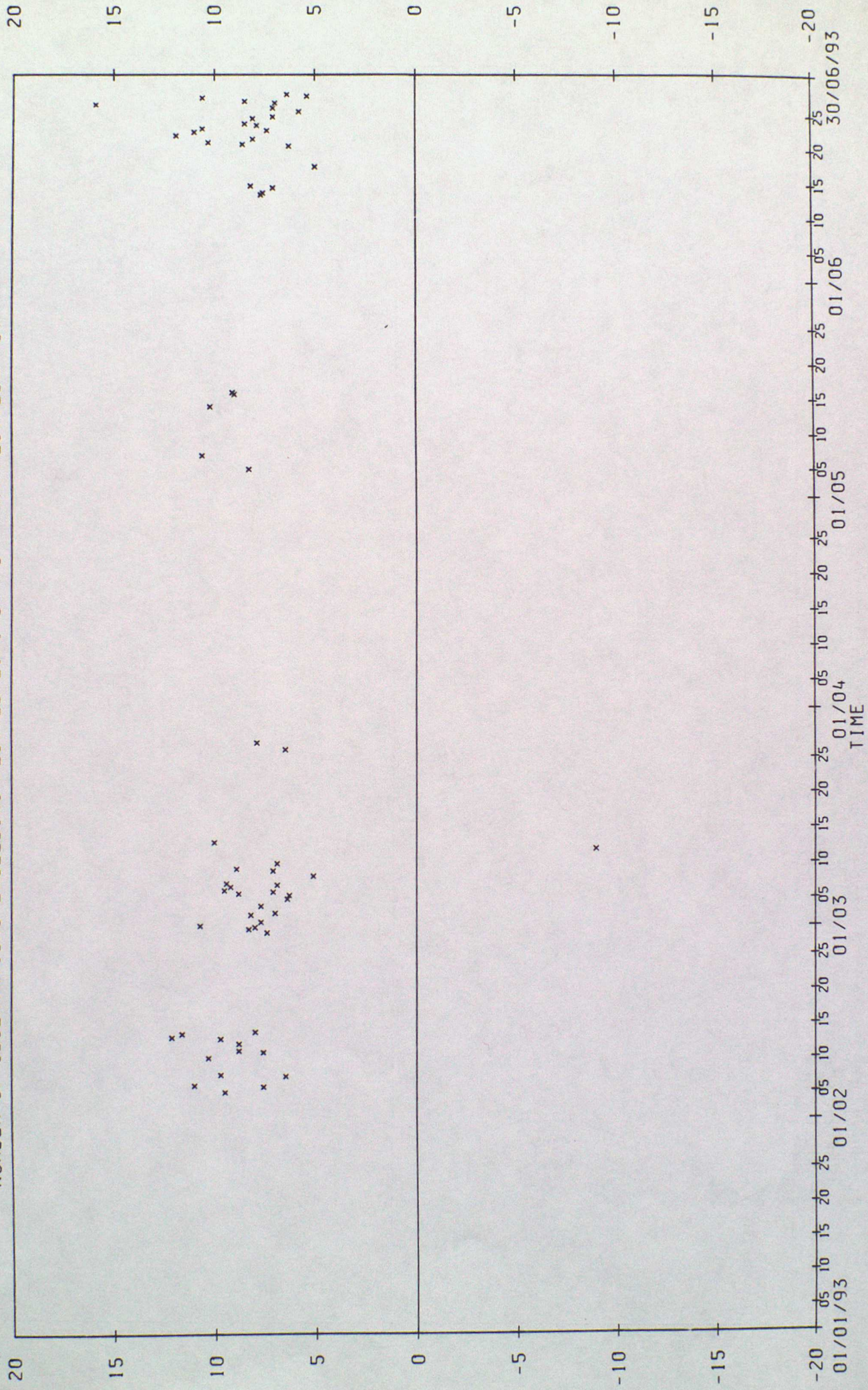
O-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 136



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ESD0
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 67



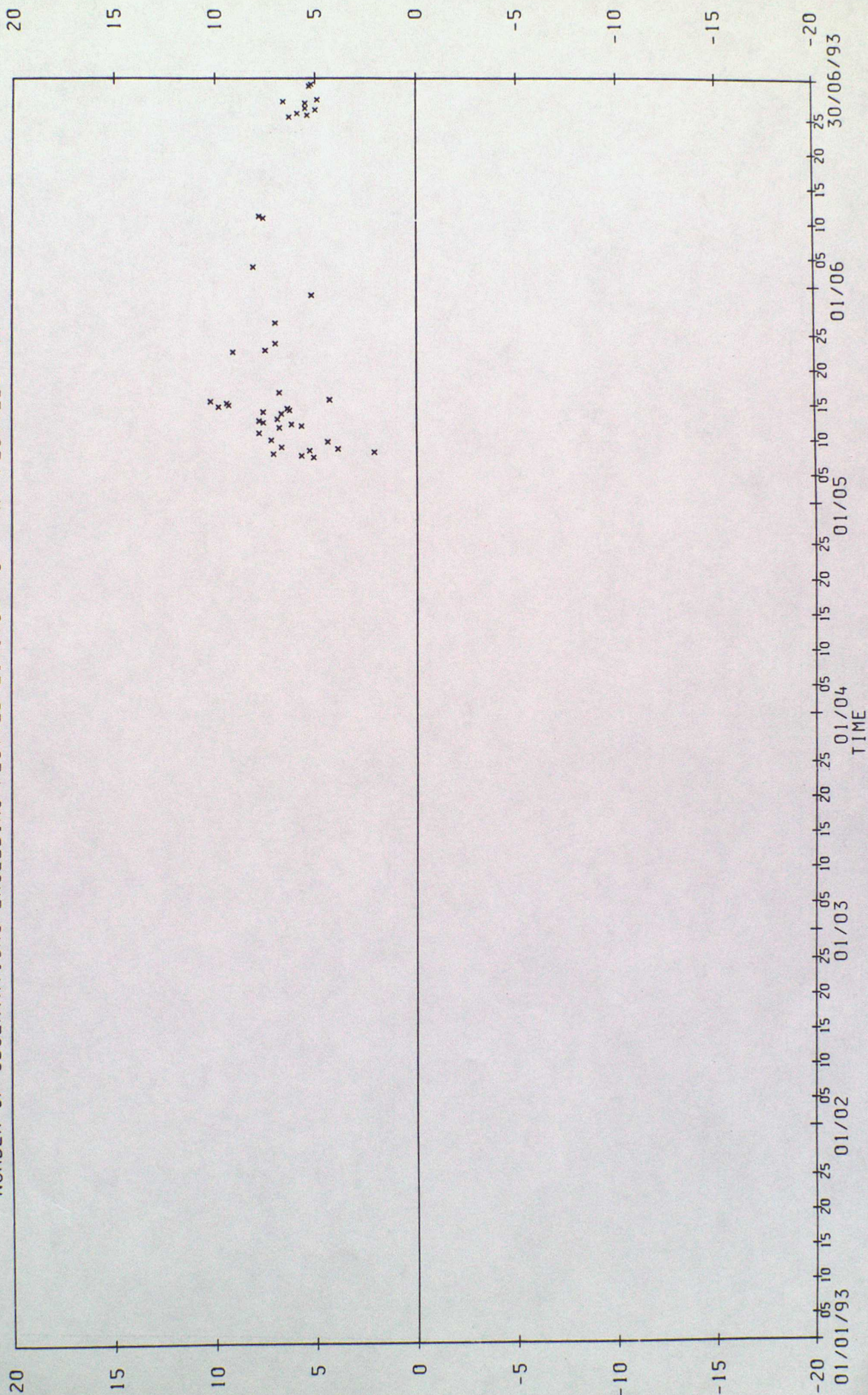
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ESDR

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 44



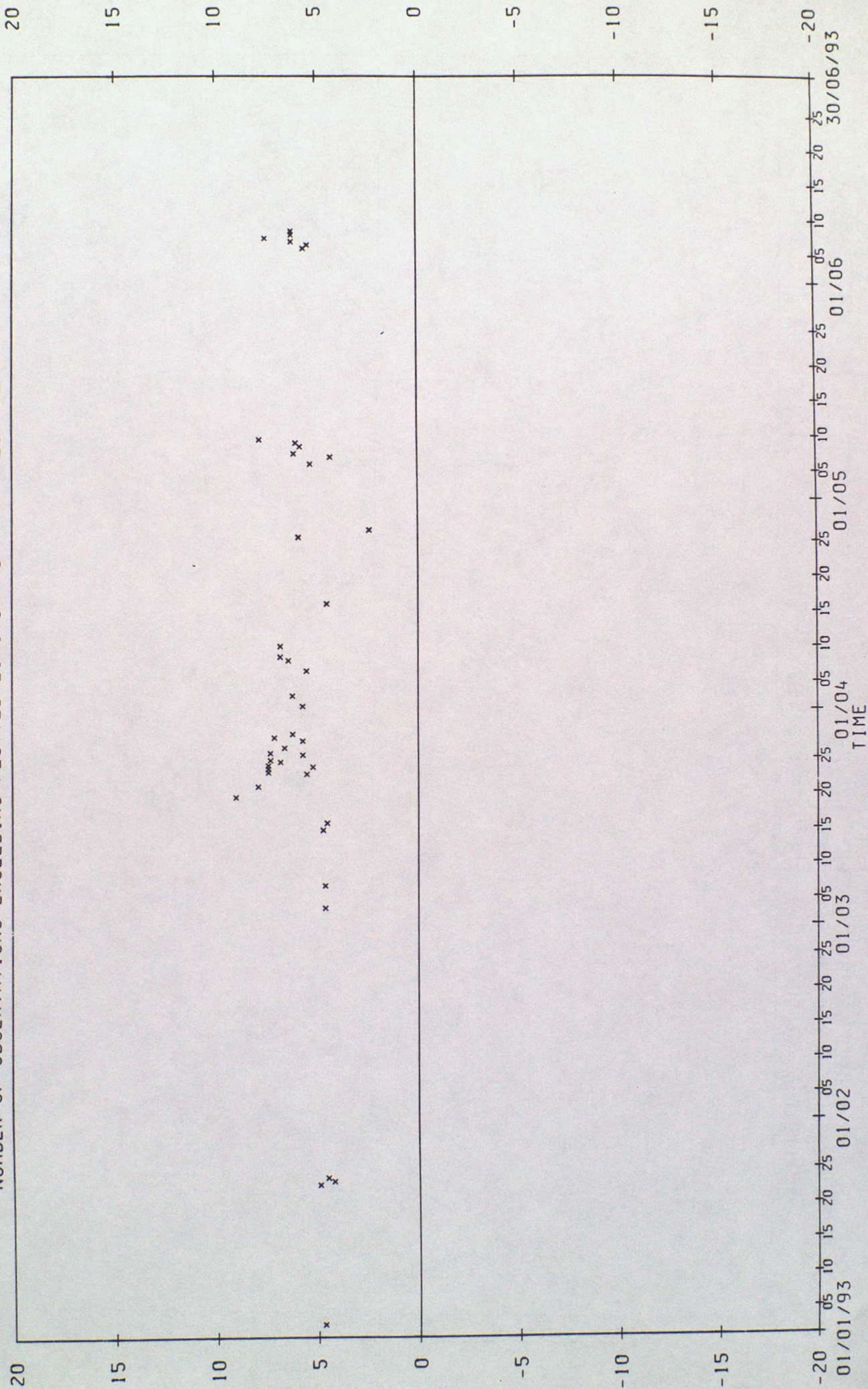
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: EUXZ

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 44



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

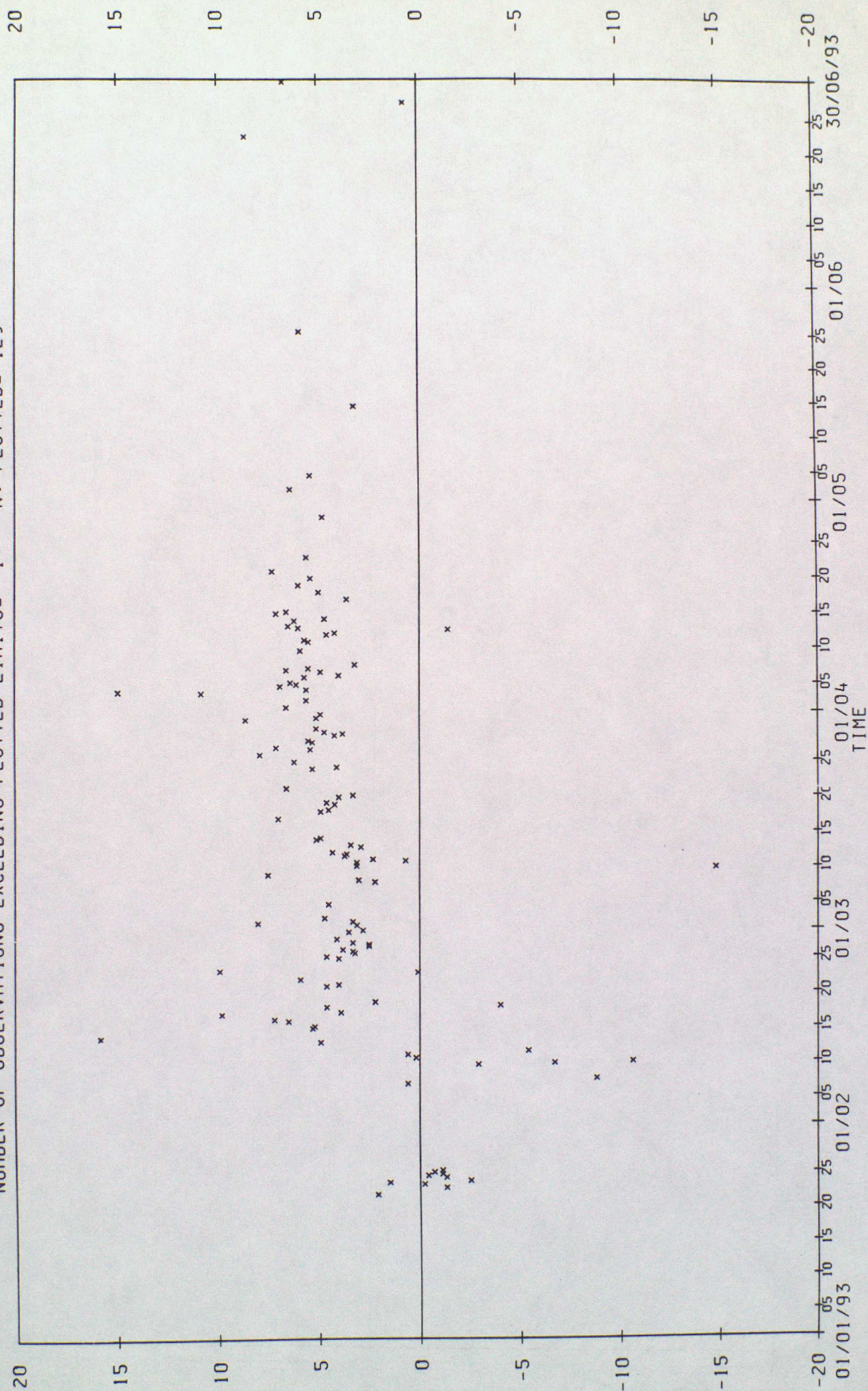
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: EWWJ

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 129

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

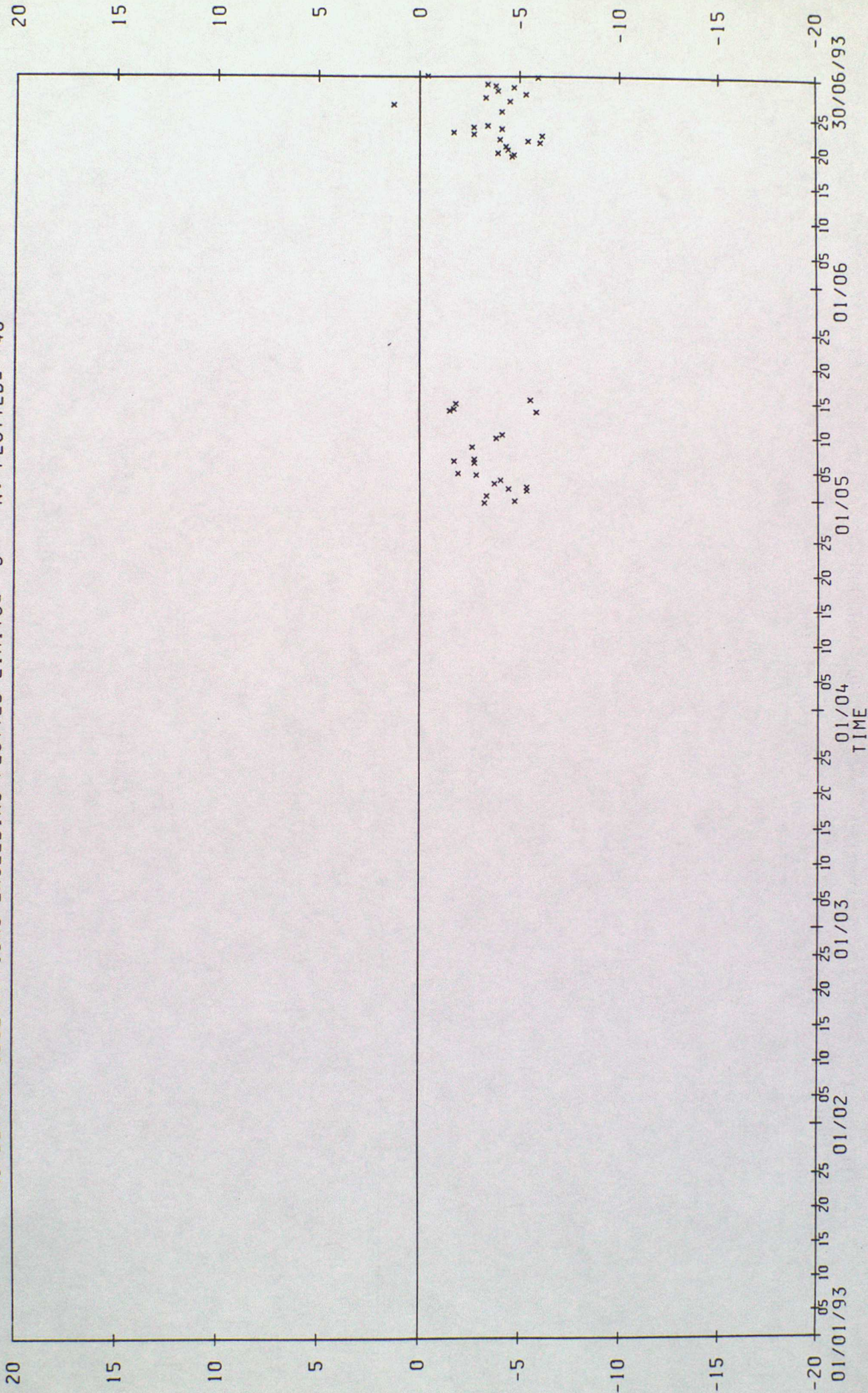
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: EWWV

0-B

0-B

VARIABLE : MSLP IN UNITS OF HPA

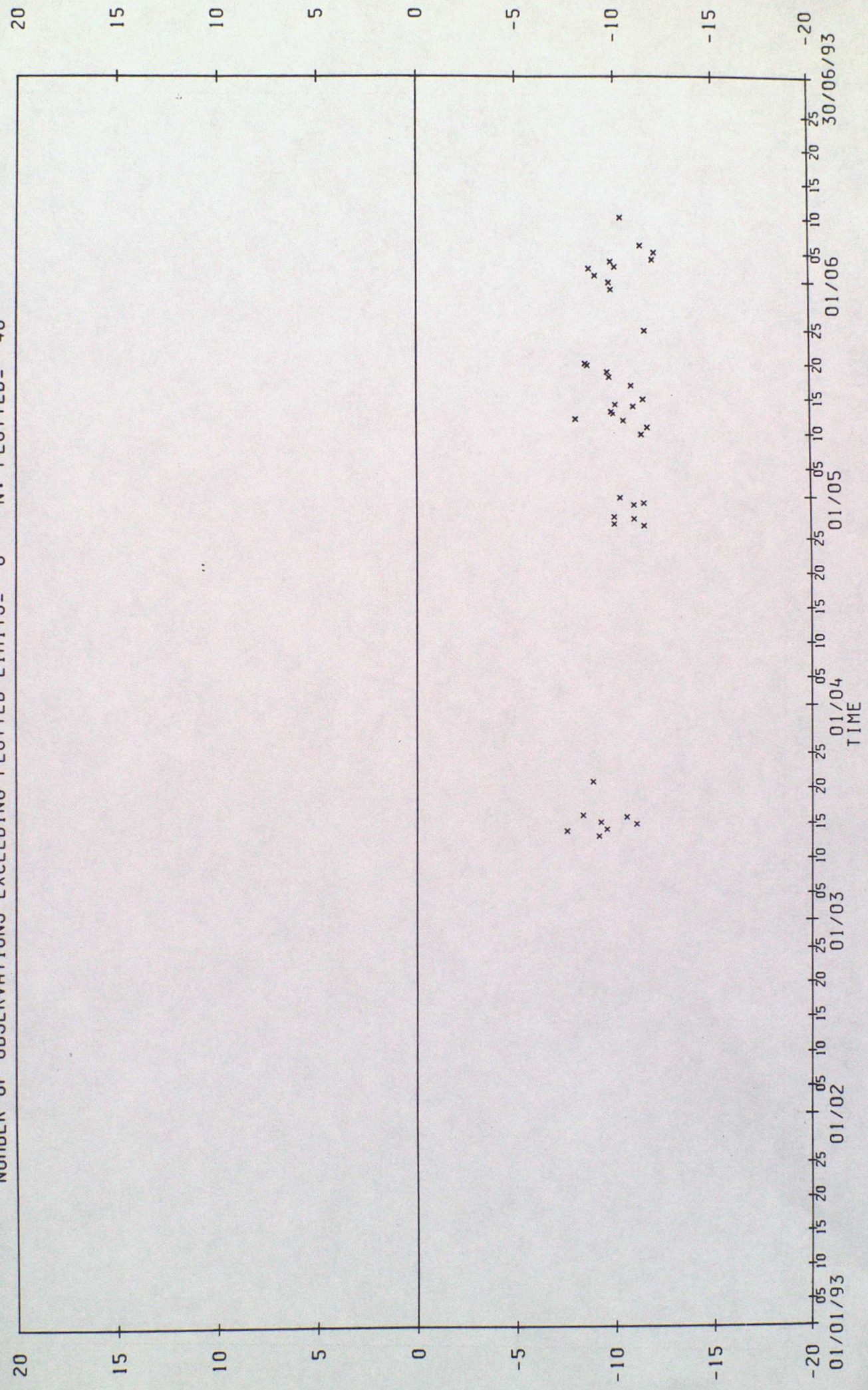
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 5 N. PLOTTED= 46



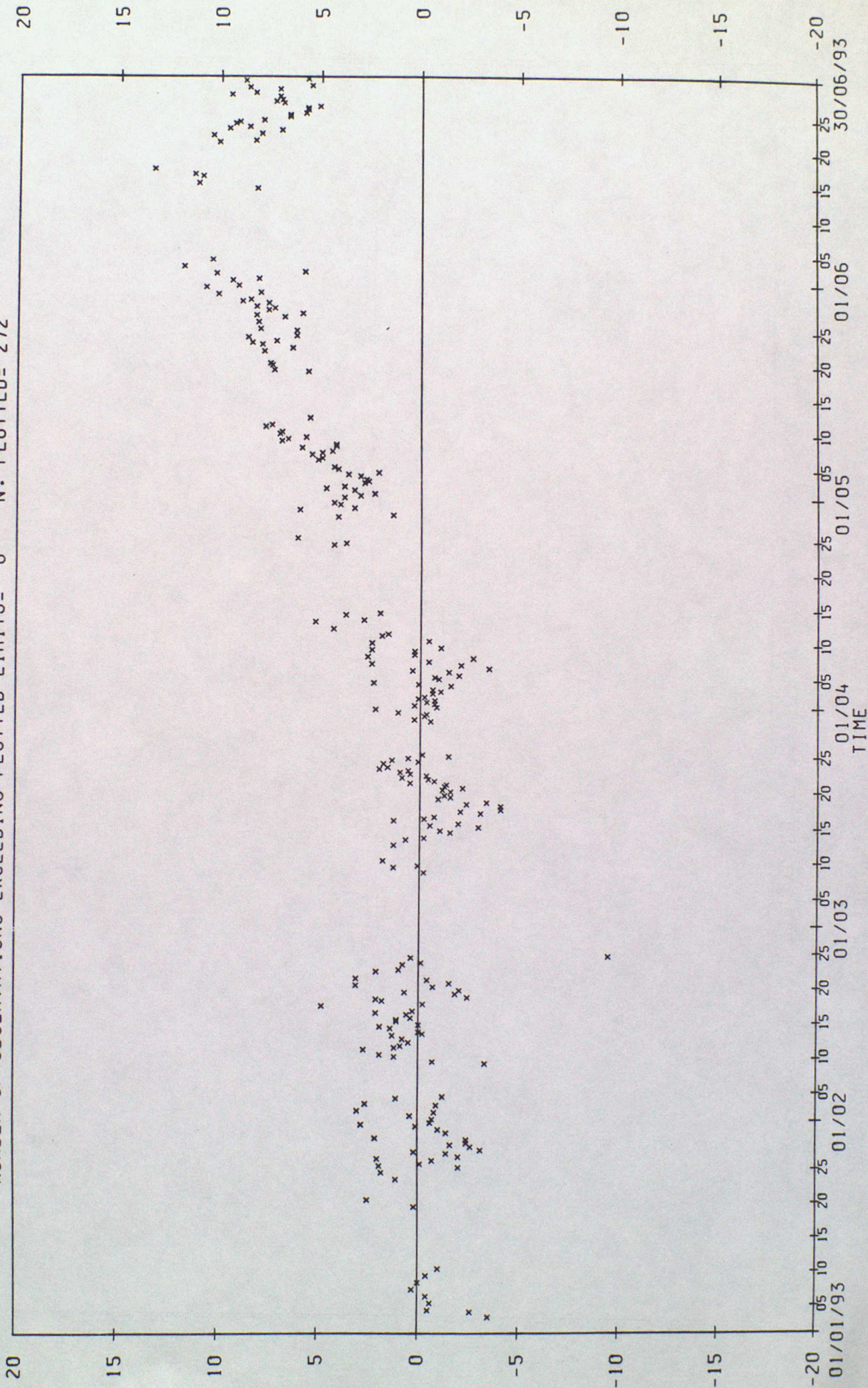
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: KRHZ
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 40

O-B

O-B



0-B
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: LAJ14
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 272
0-B



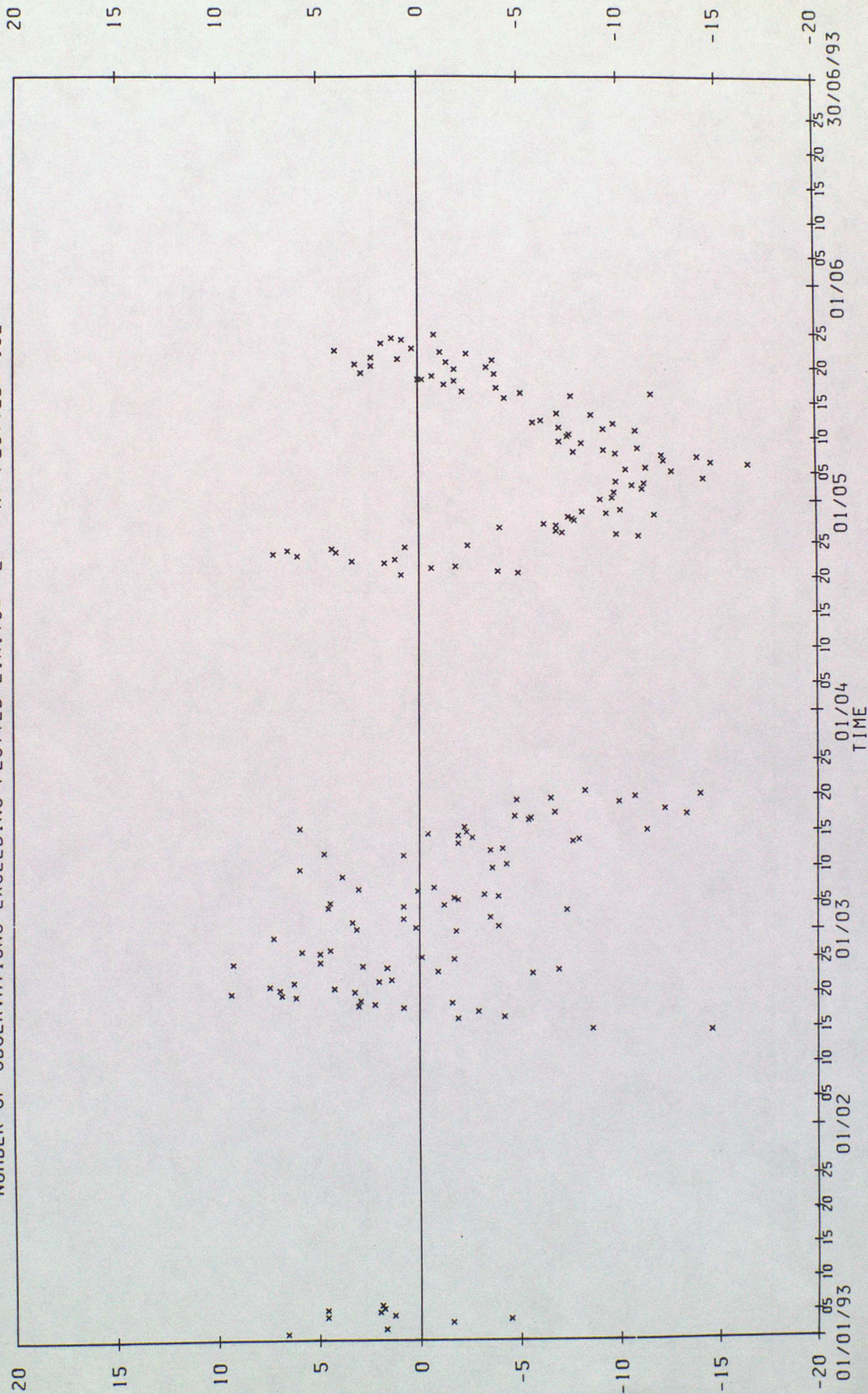
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: MPXK3

O-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 2 N. PLOTTED= 182



O-B

BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

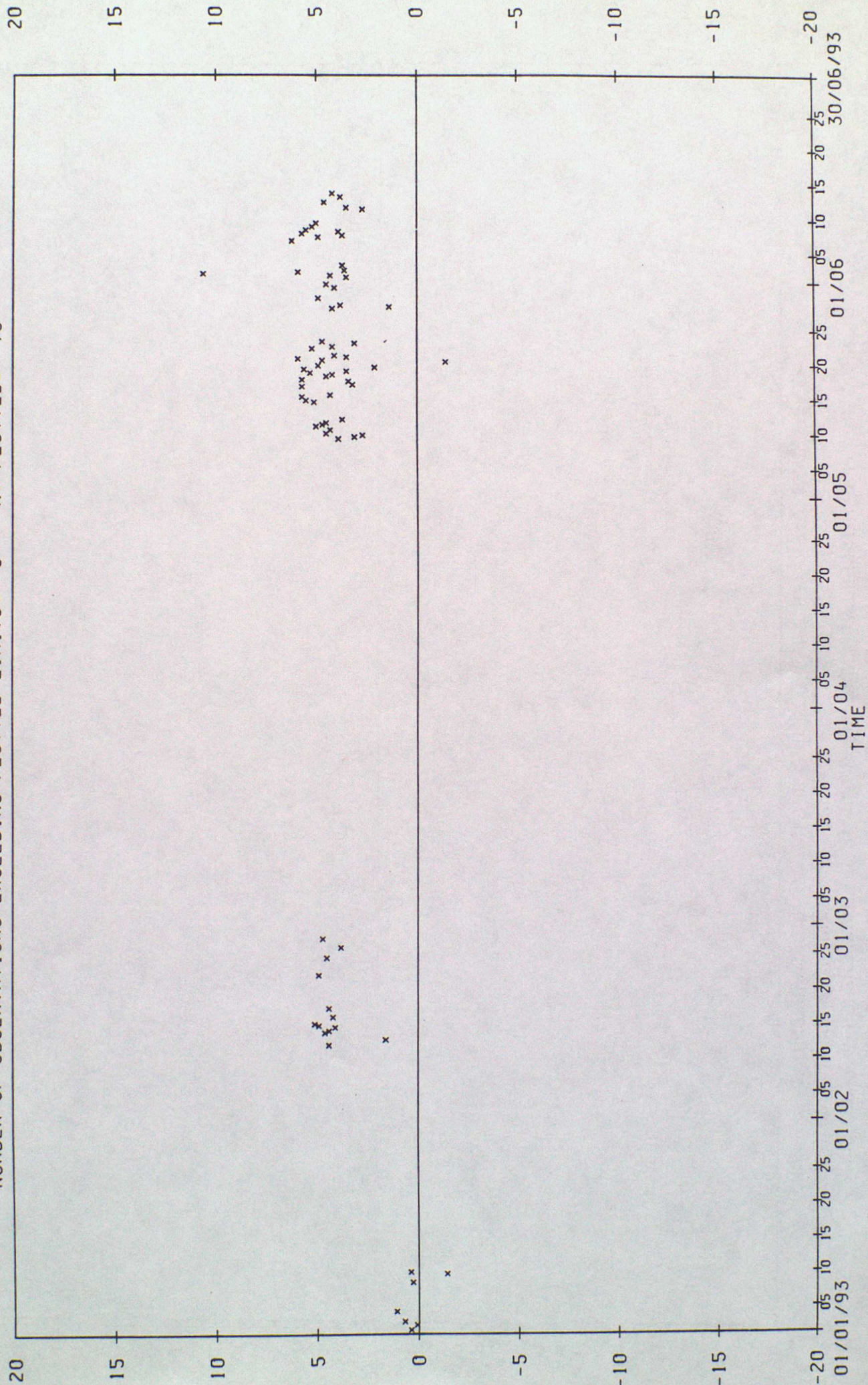
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: NFMK

VARIABLE : MSLP IN UNITS OF HPA

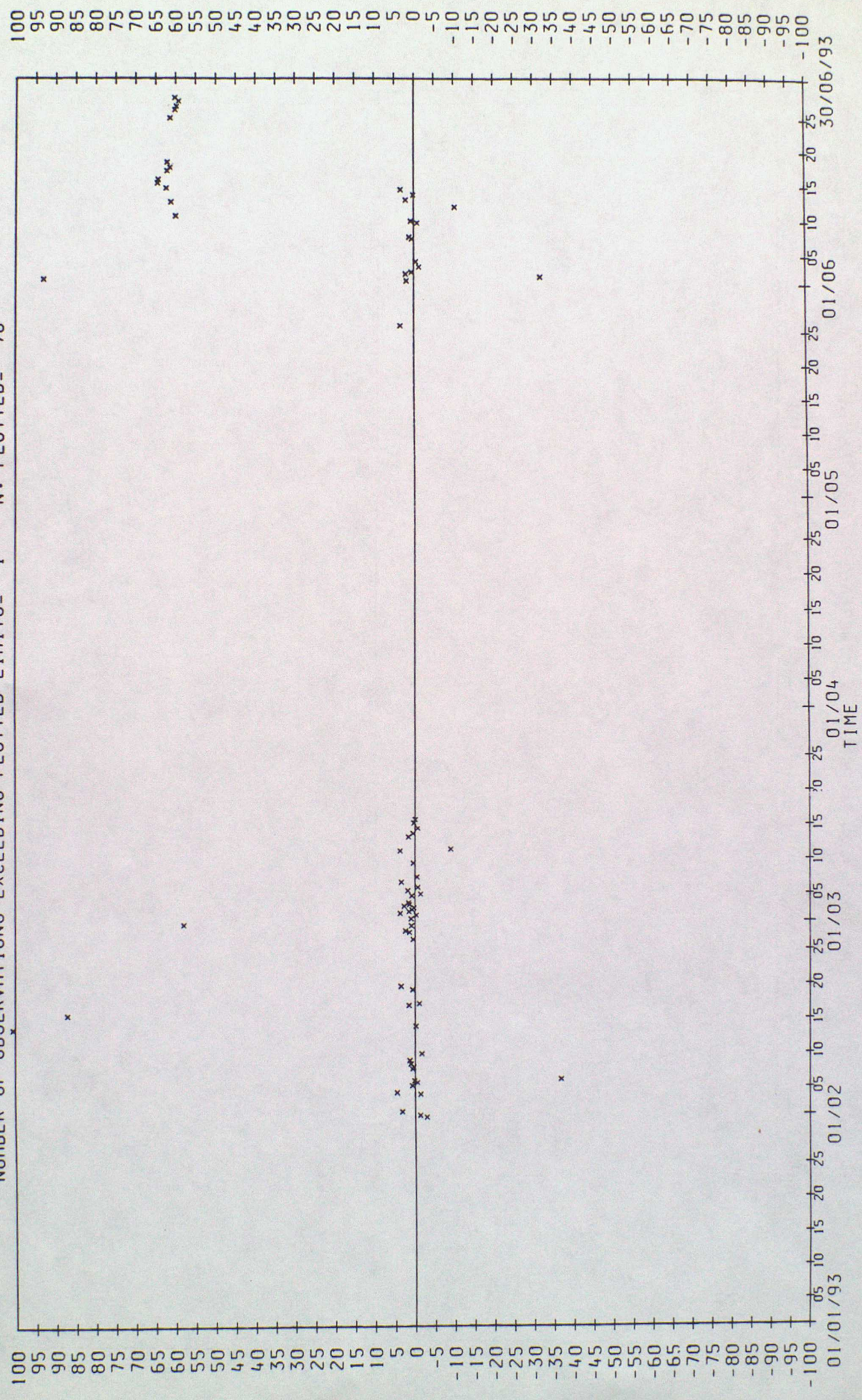
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 78

0-B

0-B



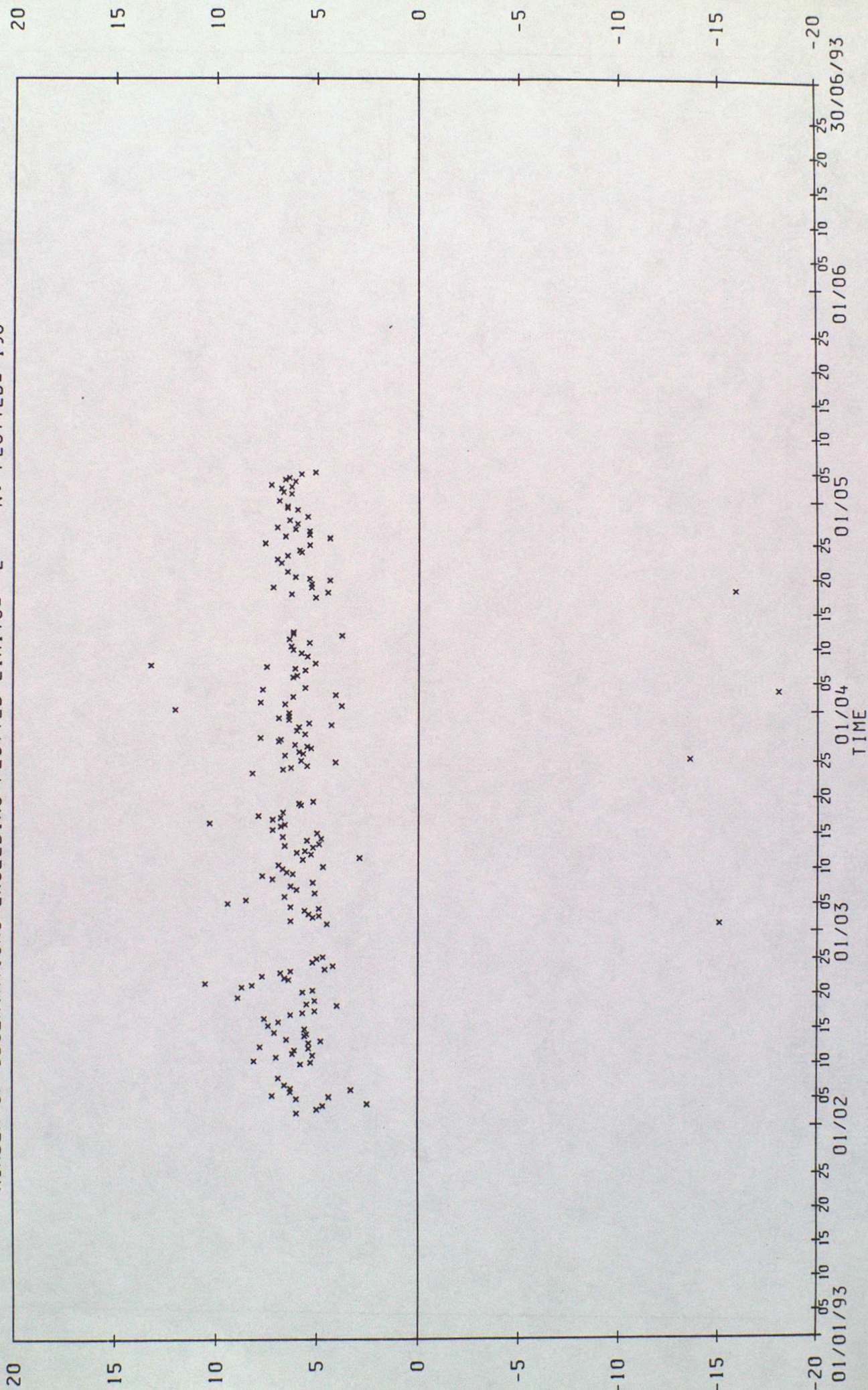
0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: NIKL
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 78
 0-B



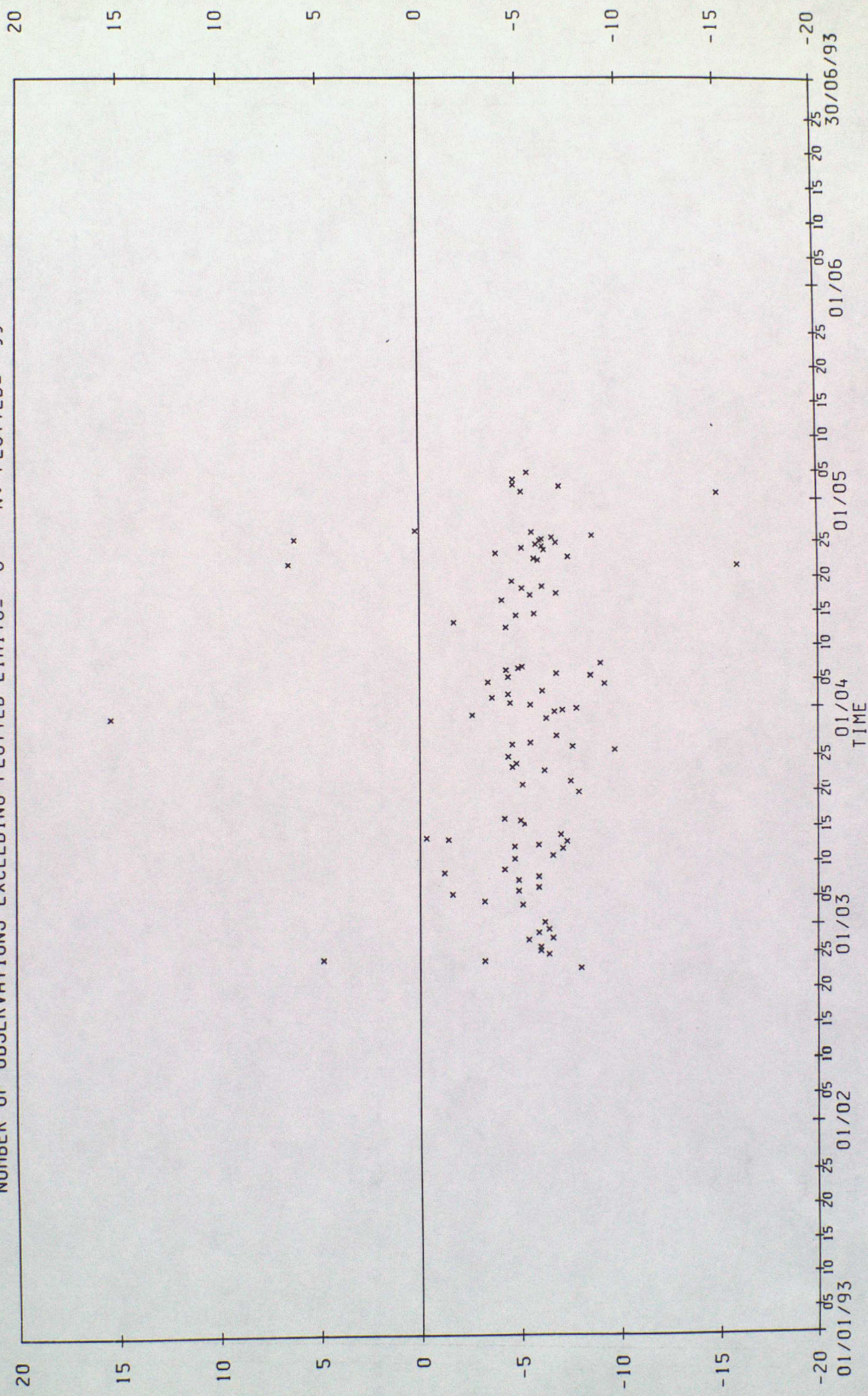
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UDYG
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 2 N. PLOTTED= 190

0-B

0-B



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UDYN
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 99
 0-B



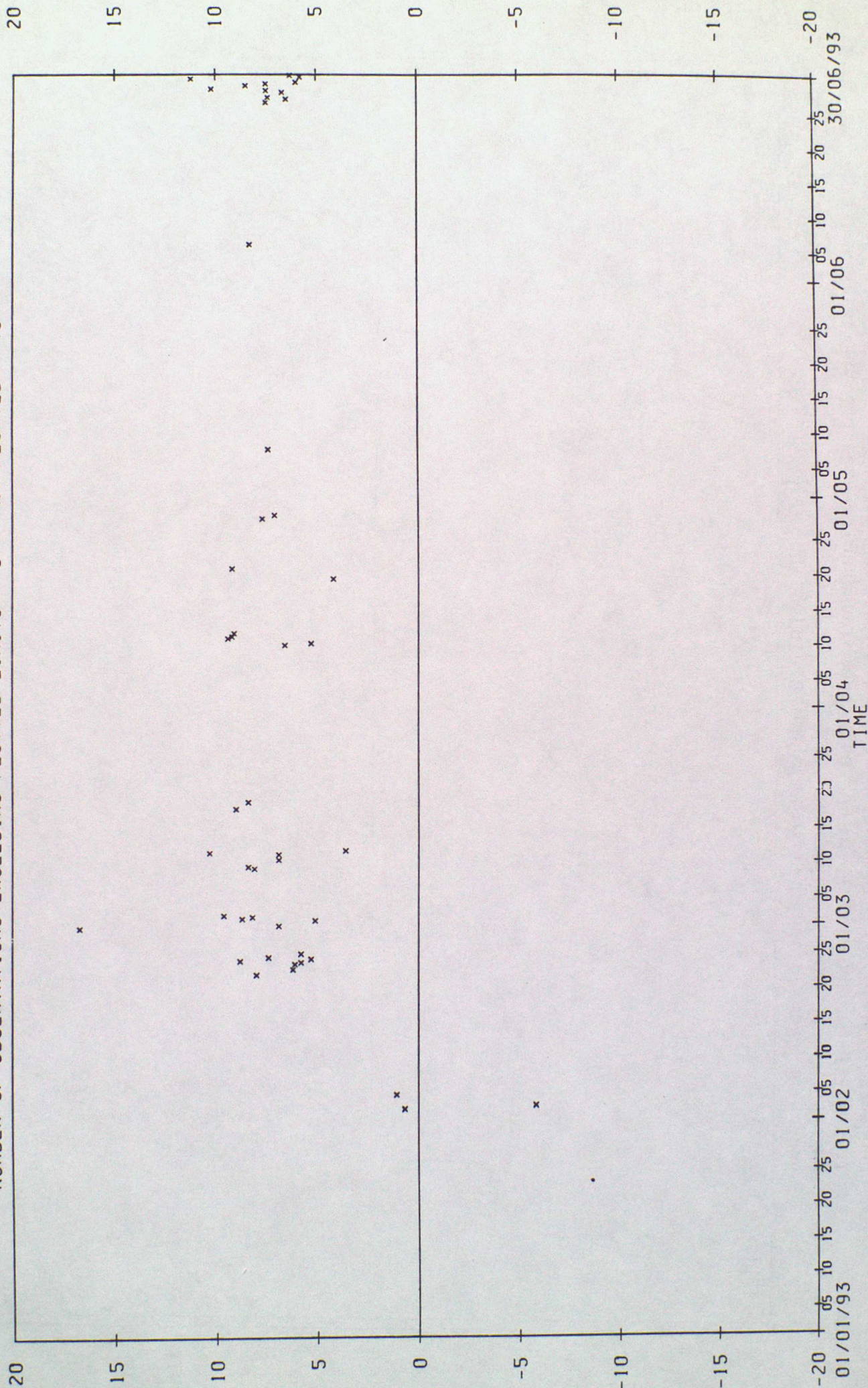
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UEE0

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 48



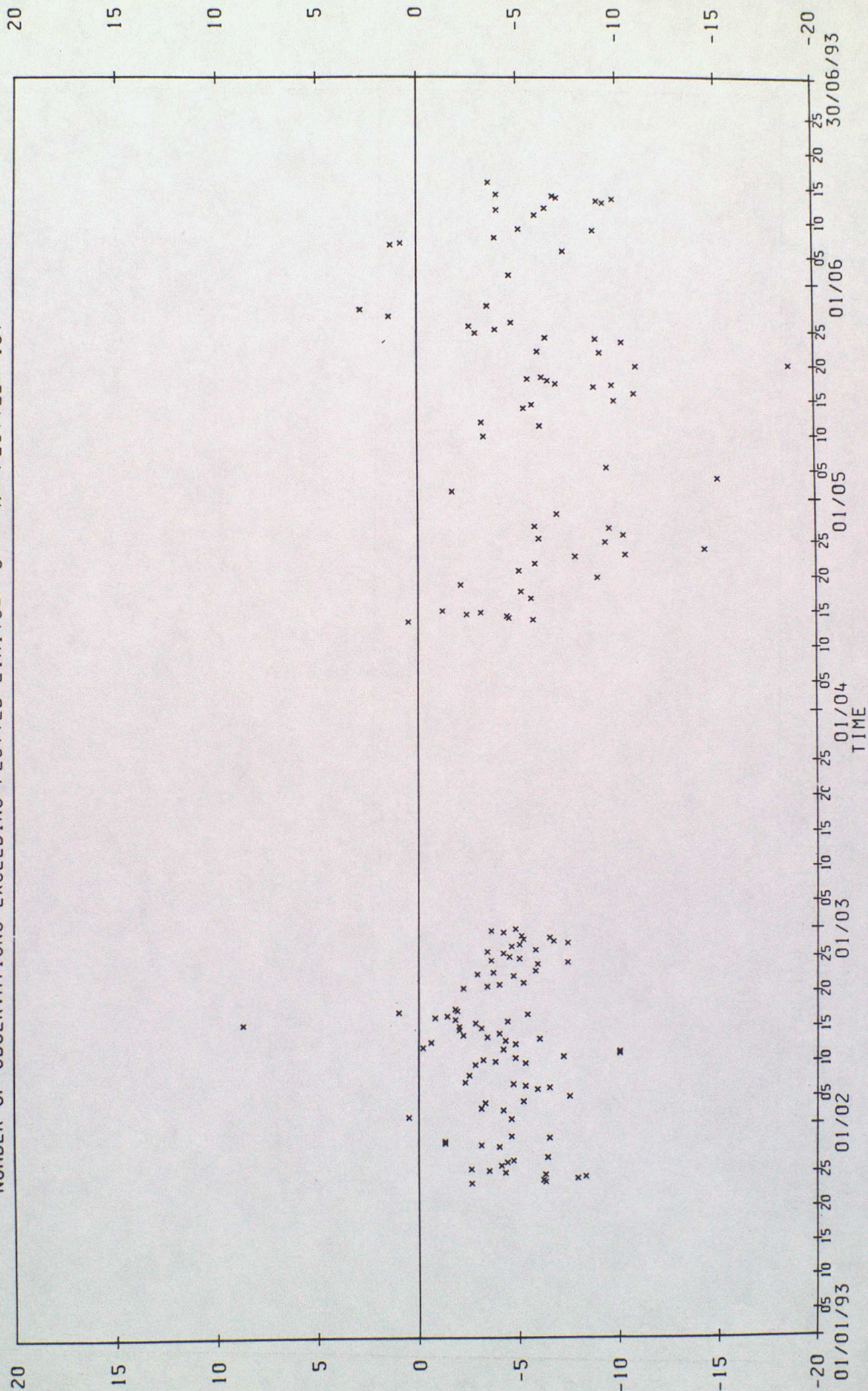
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UETZ

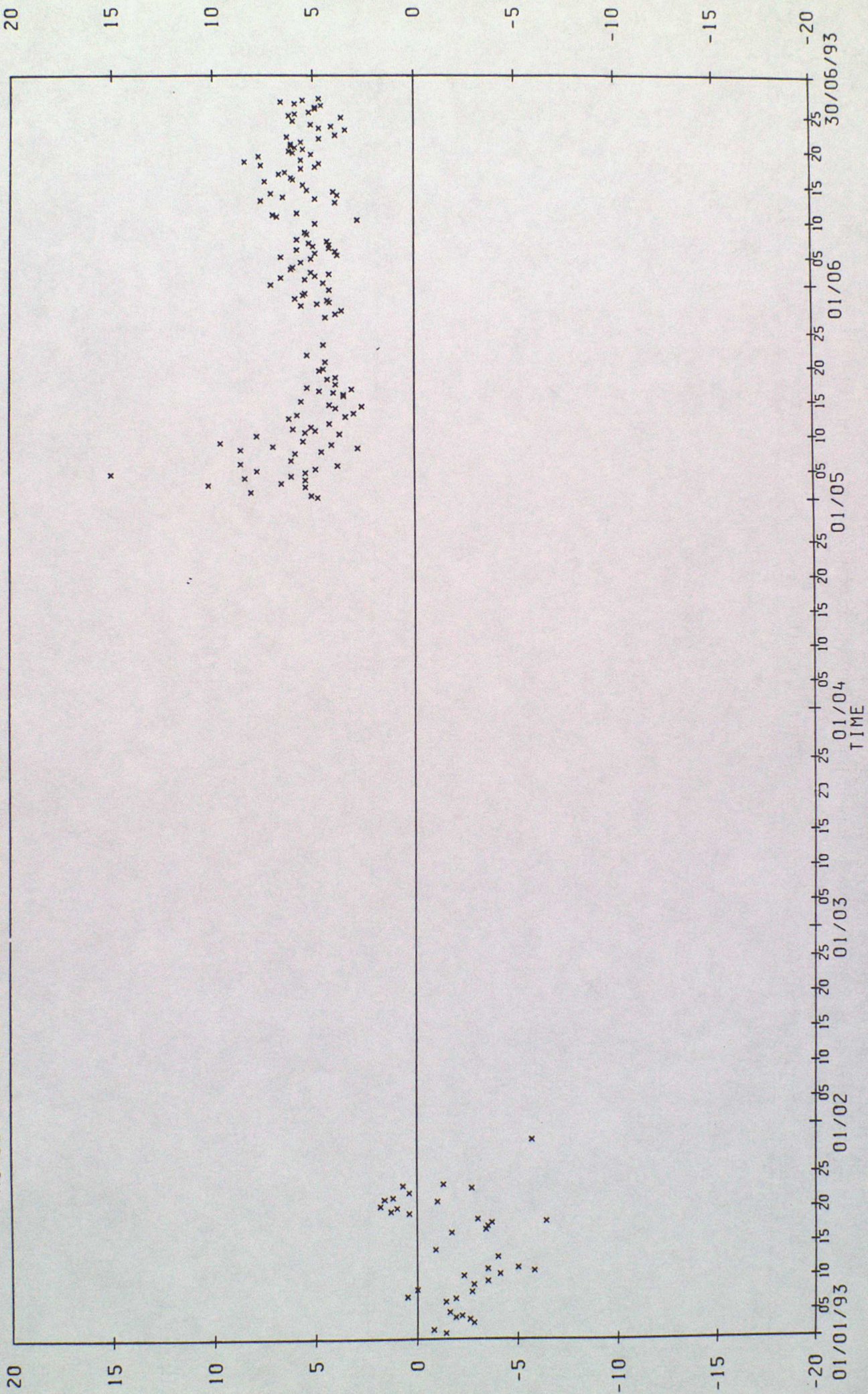
0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 157



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UFAA
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 180



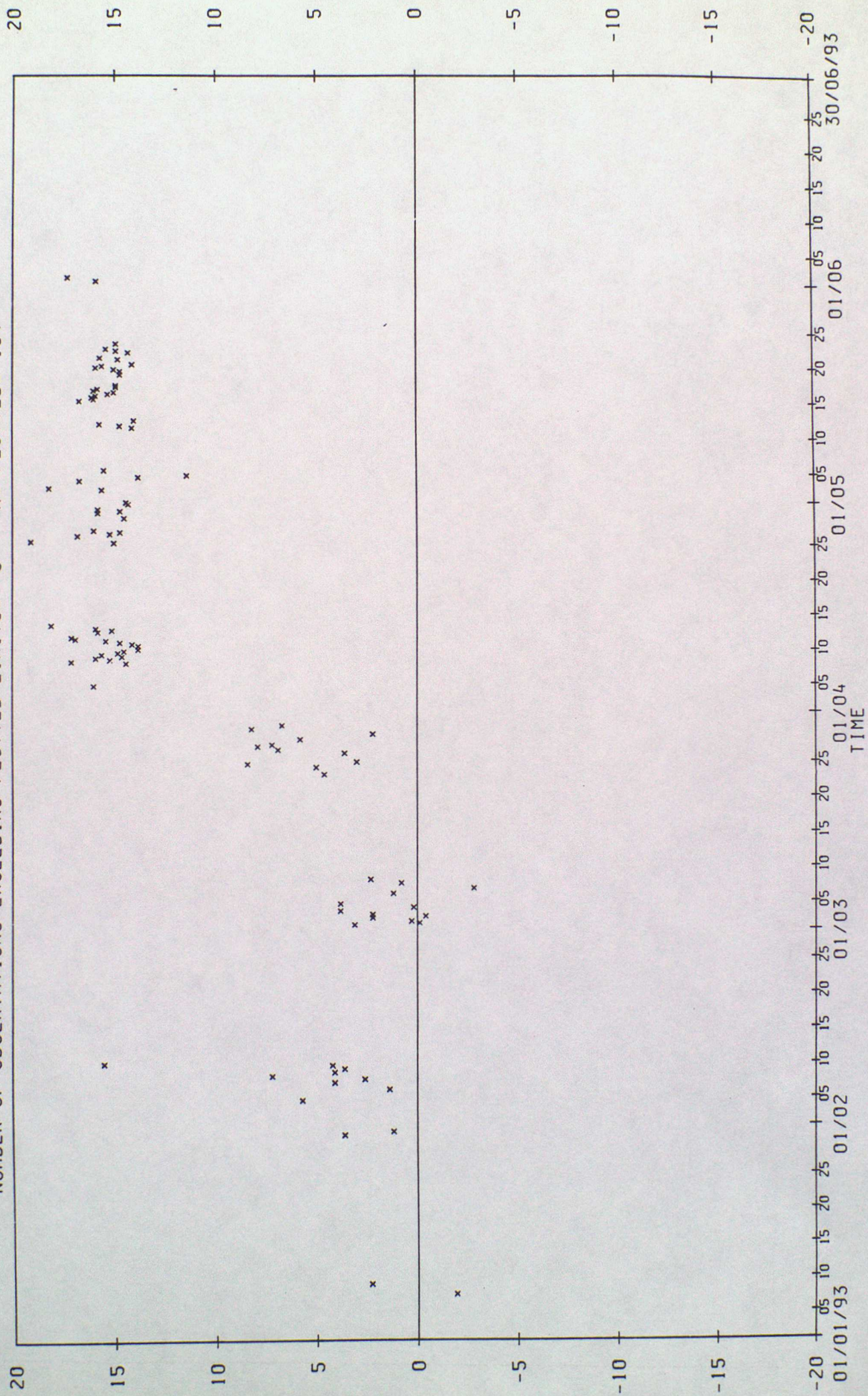
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UFHZ

O-B

VARIABLE : MSLP IN UNITS OF HPA

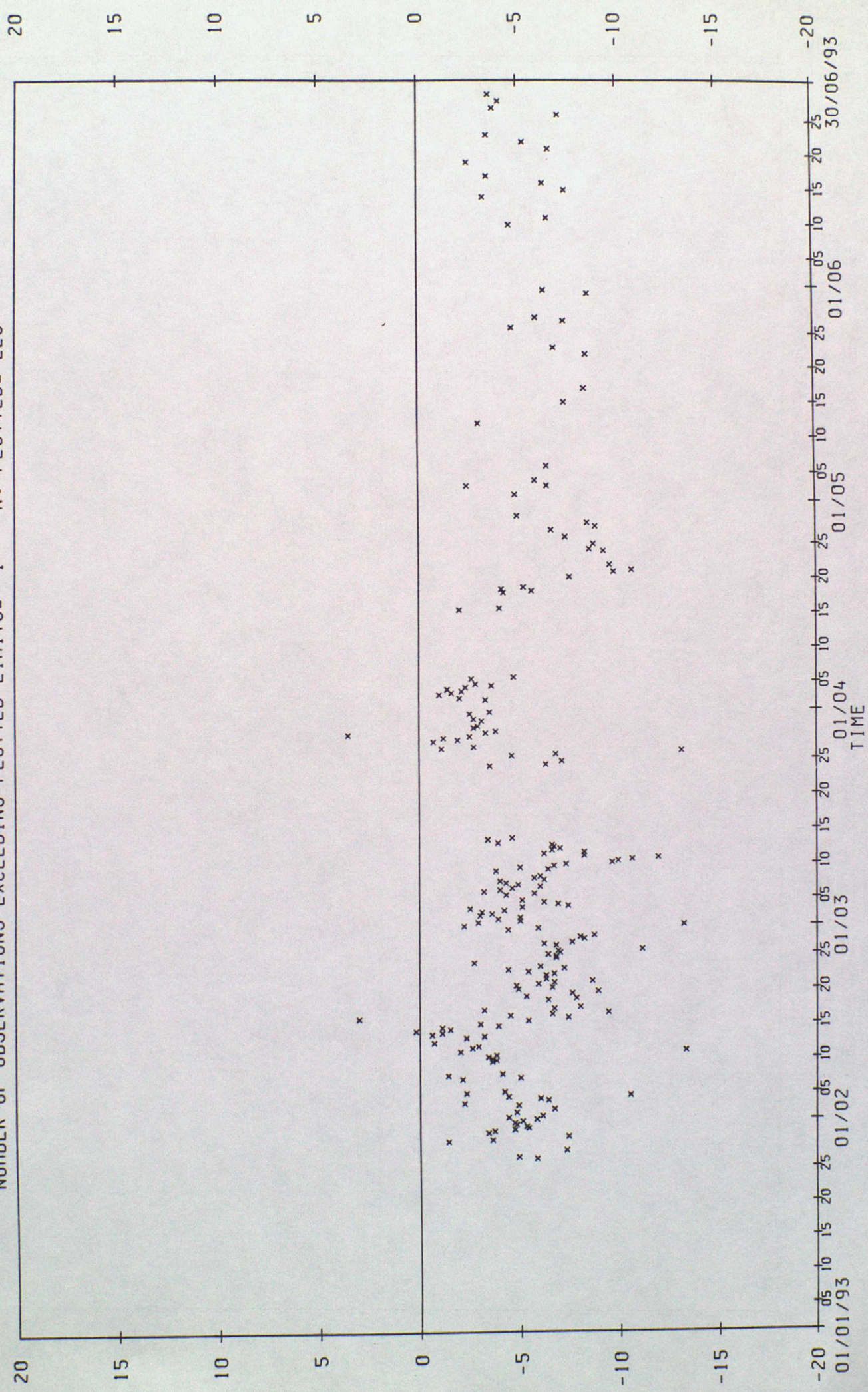
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 6 N. PLOTTED= 104



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UFJN
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 220

0-B

0-B



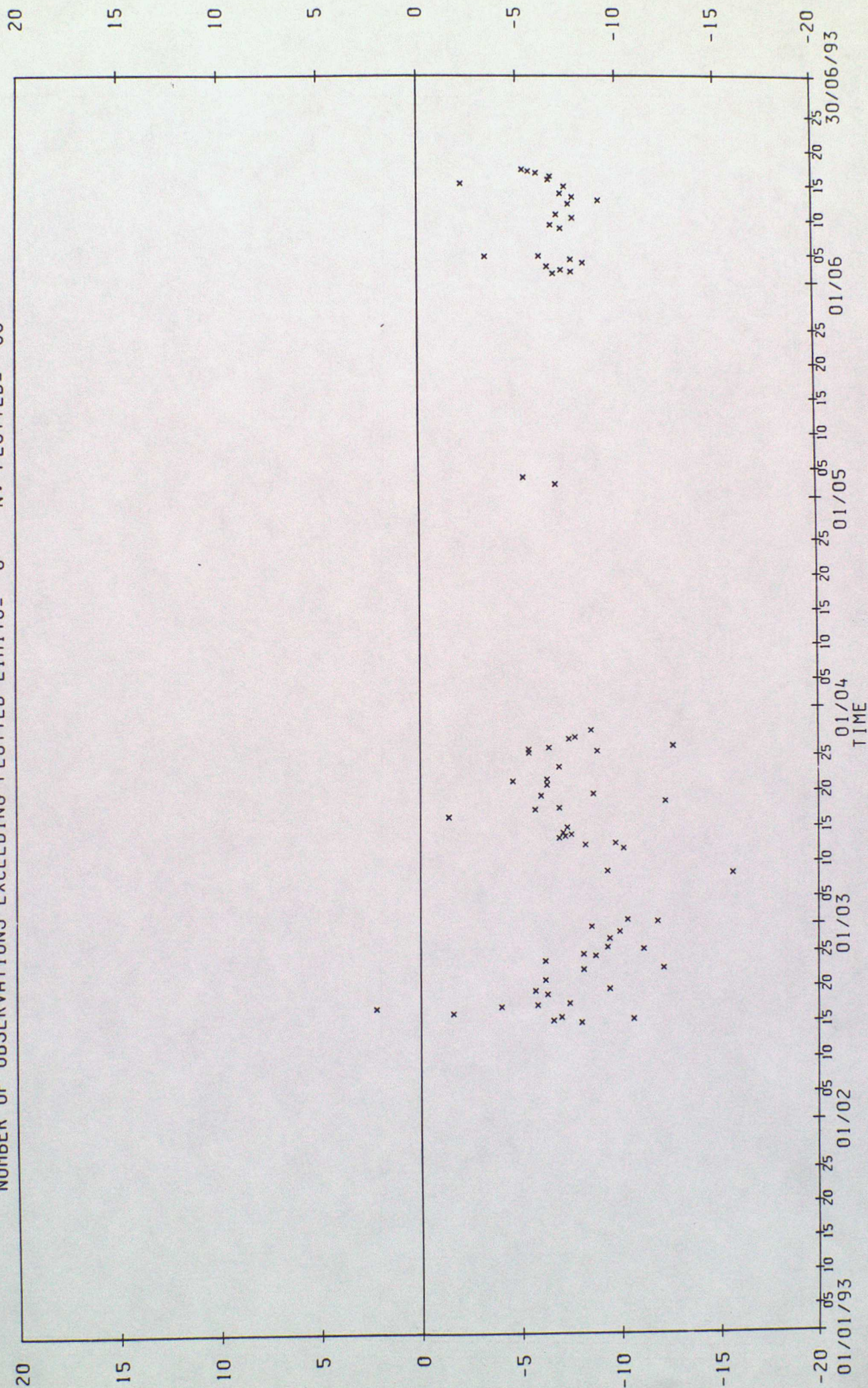
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UFKA

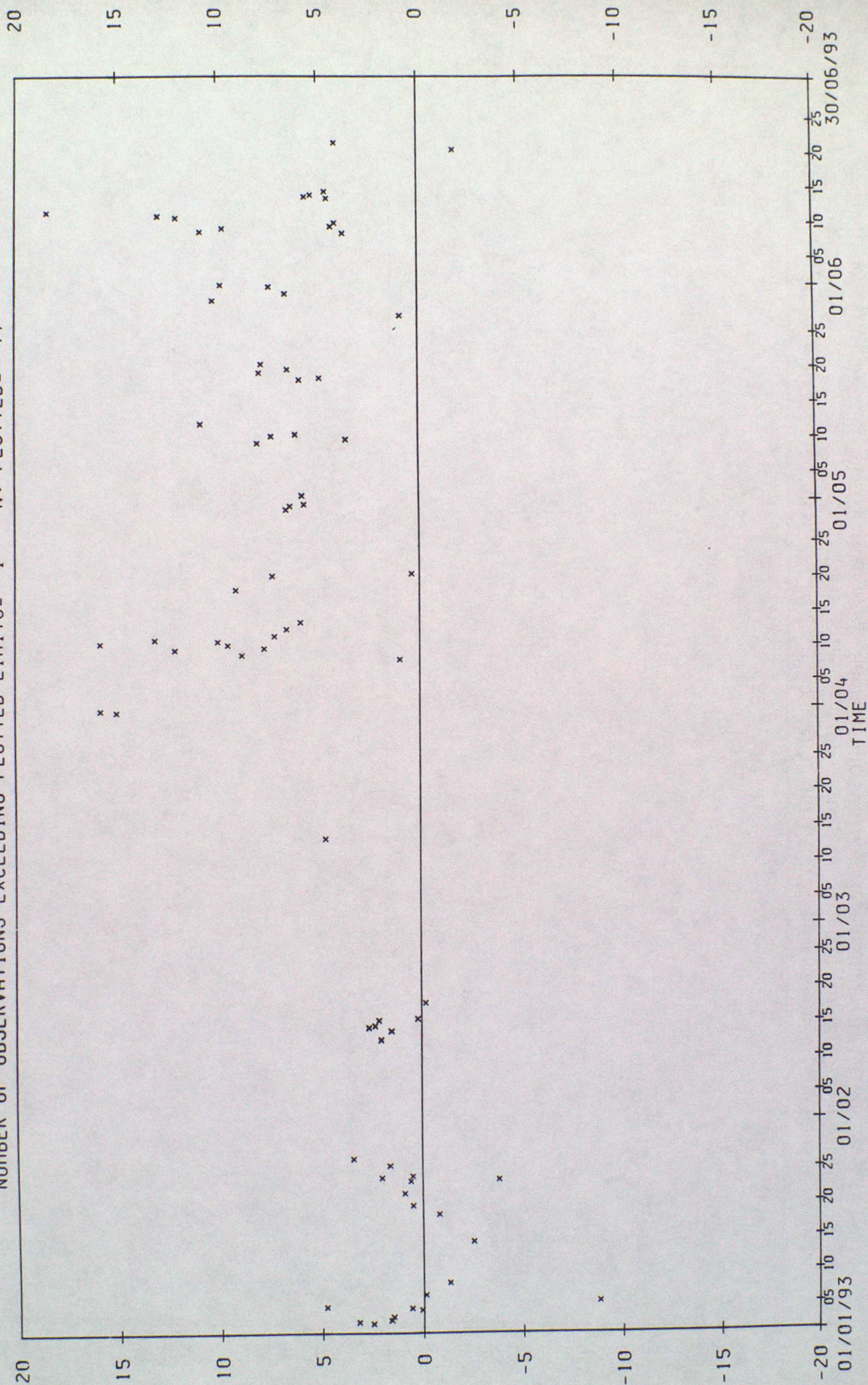
0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 80



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UHKP
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 77



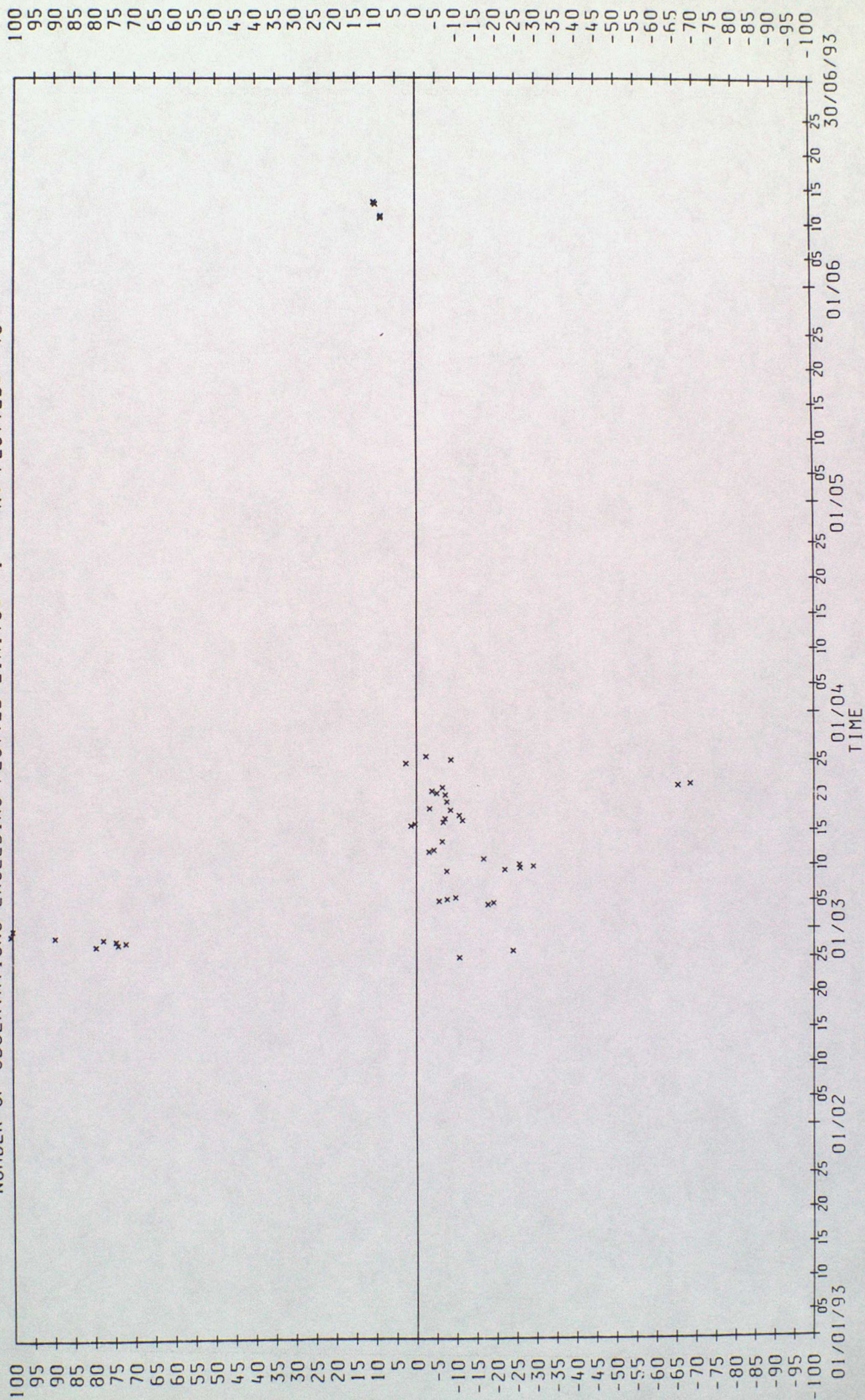
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UHLE

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 46



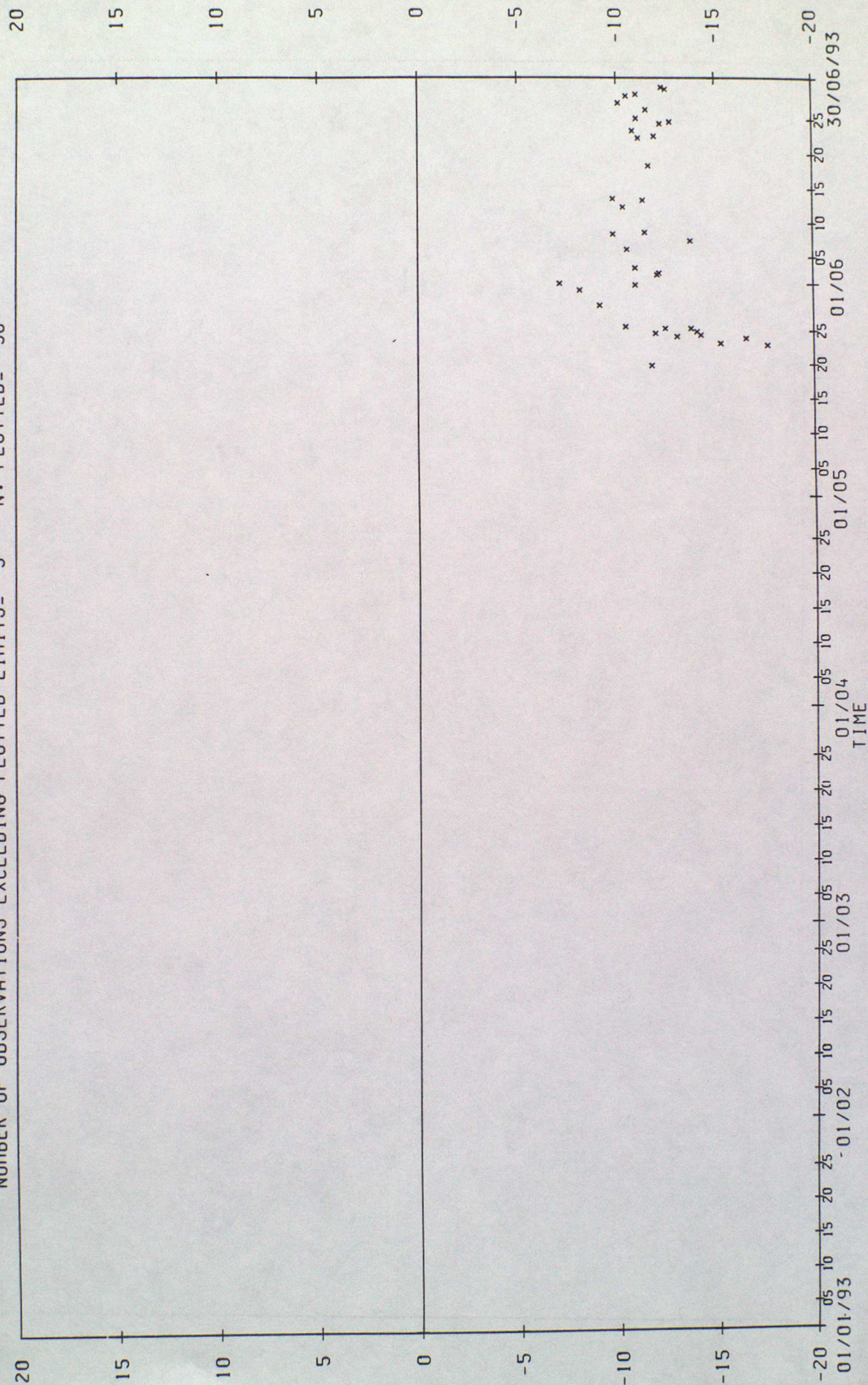
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UHLW

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 3 N. PLOTTED= 38

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

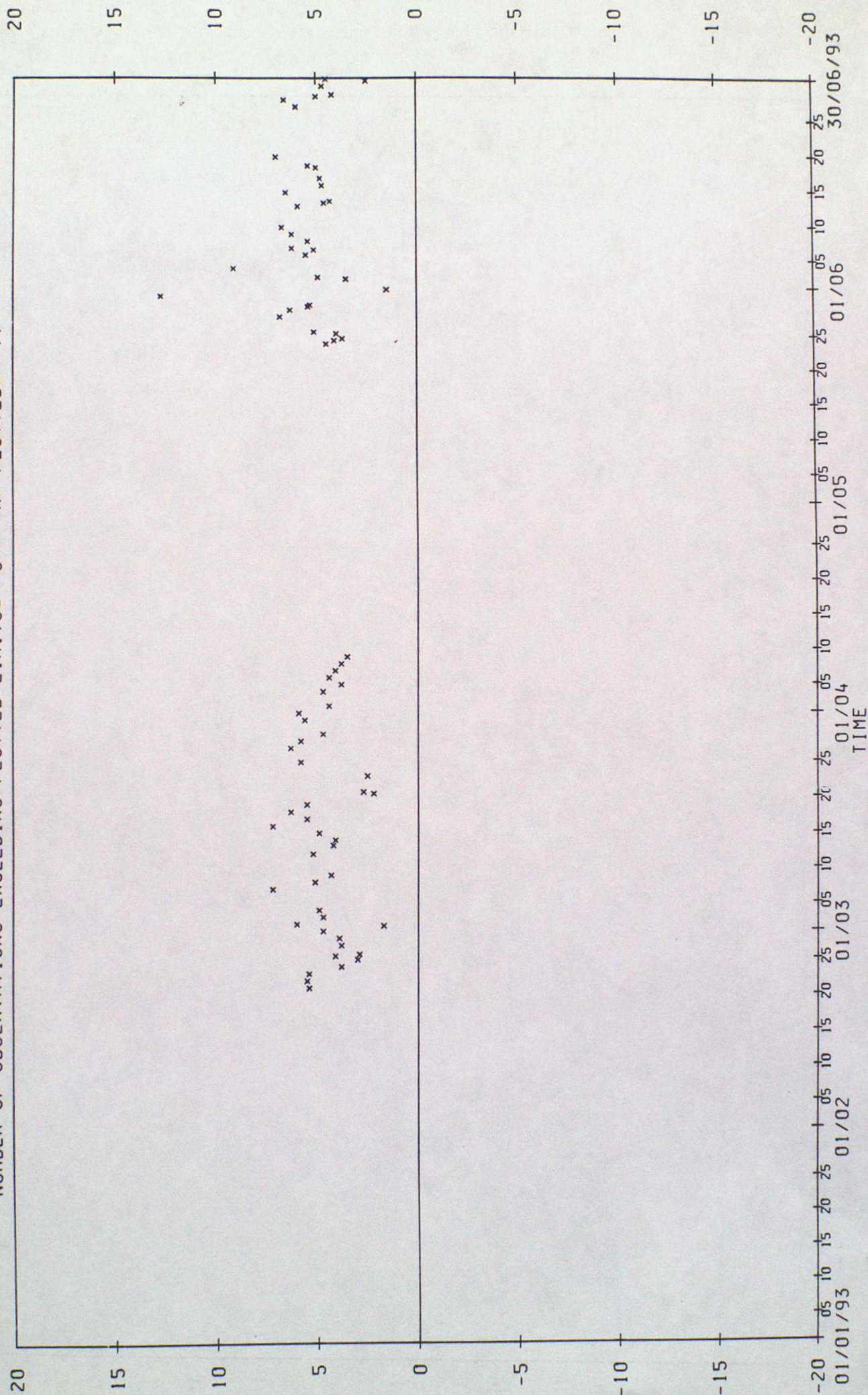
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UHUN

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 77

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

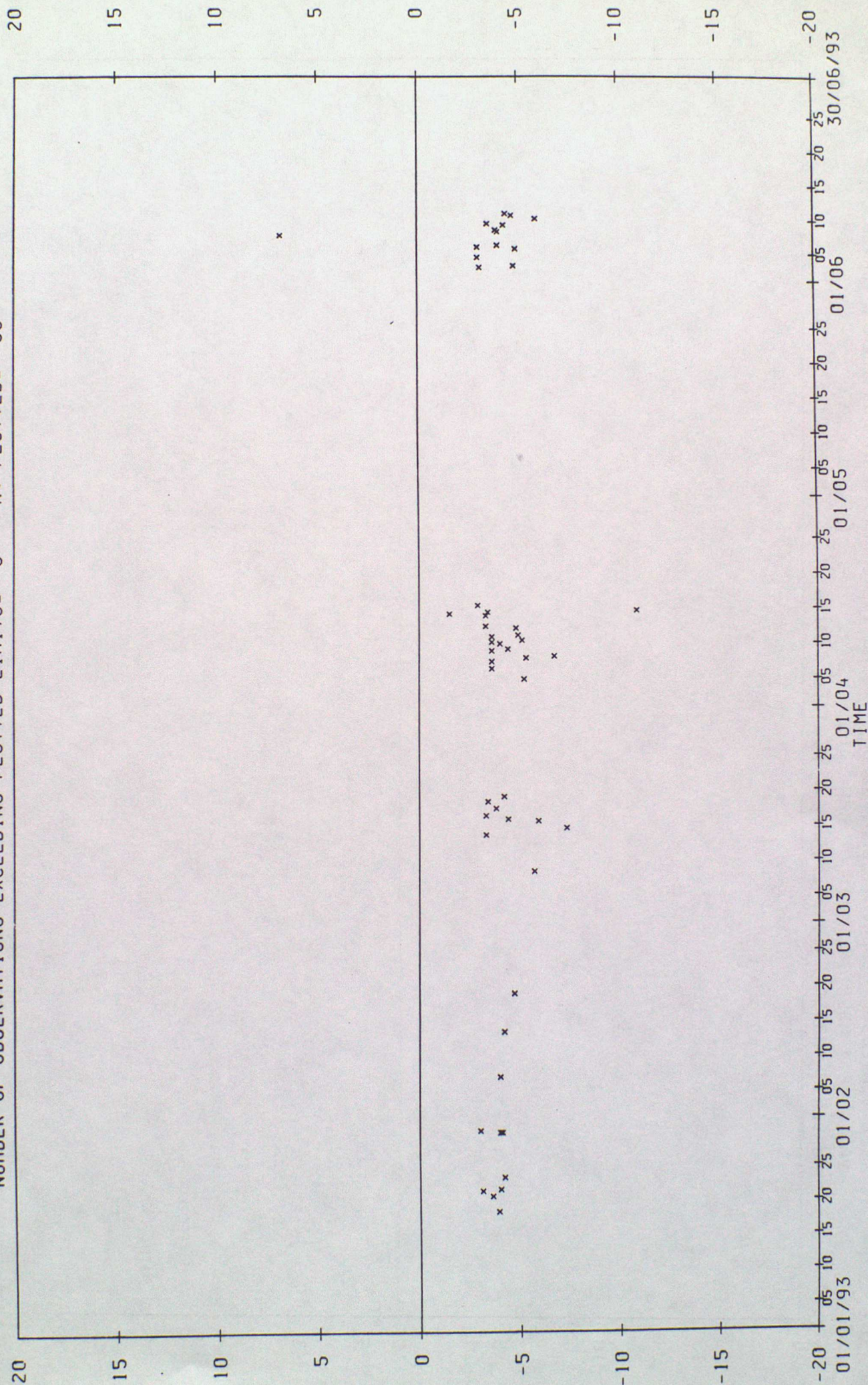
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UIVF

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 53

0-B

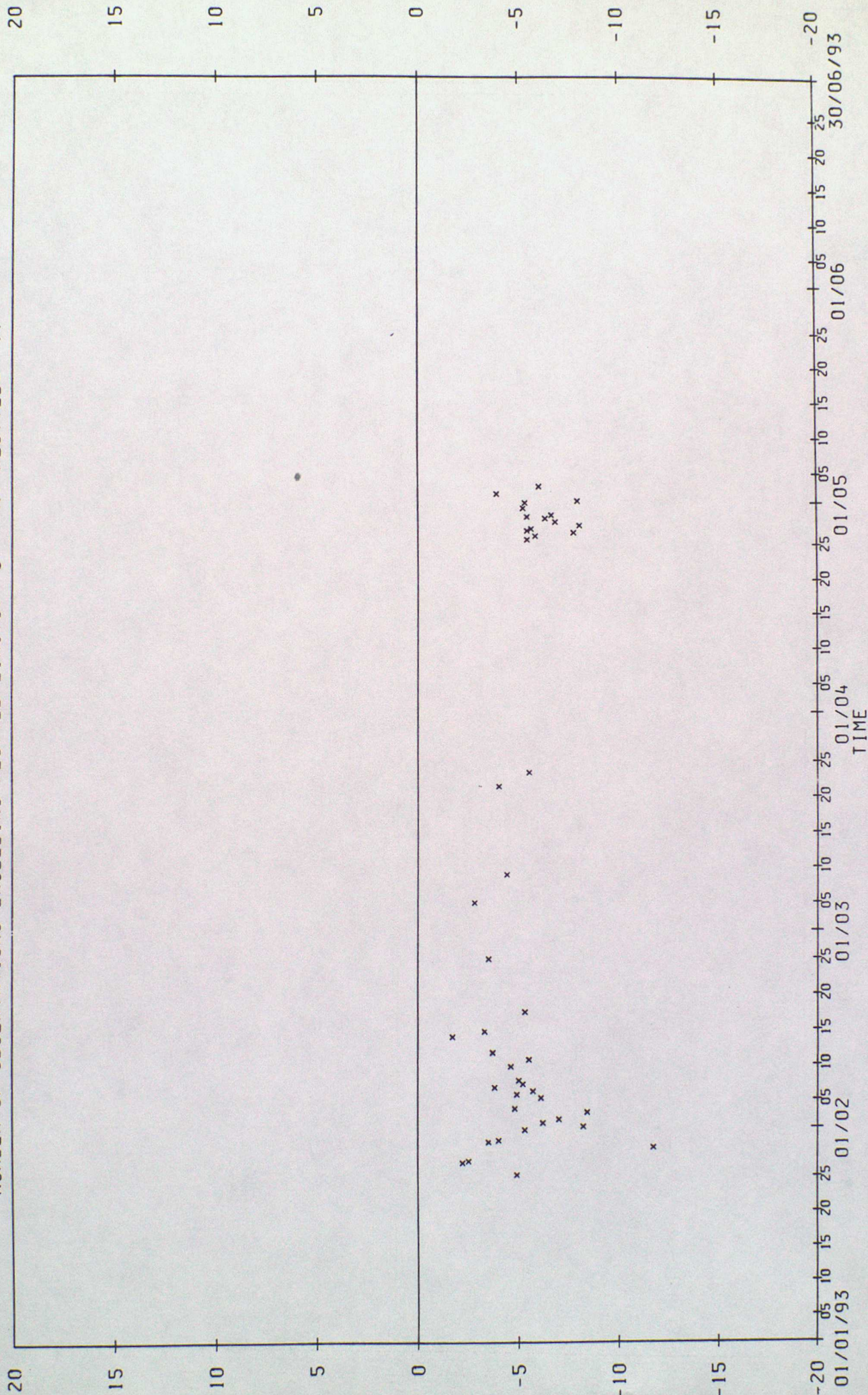
0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UJDE
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 44

0-B

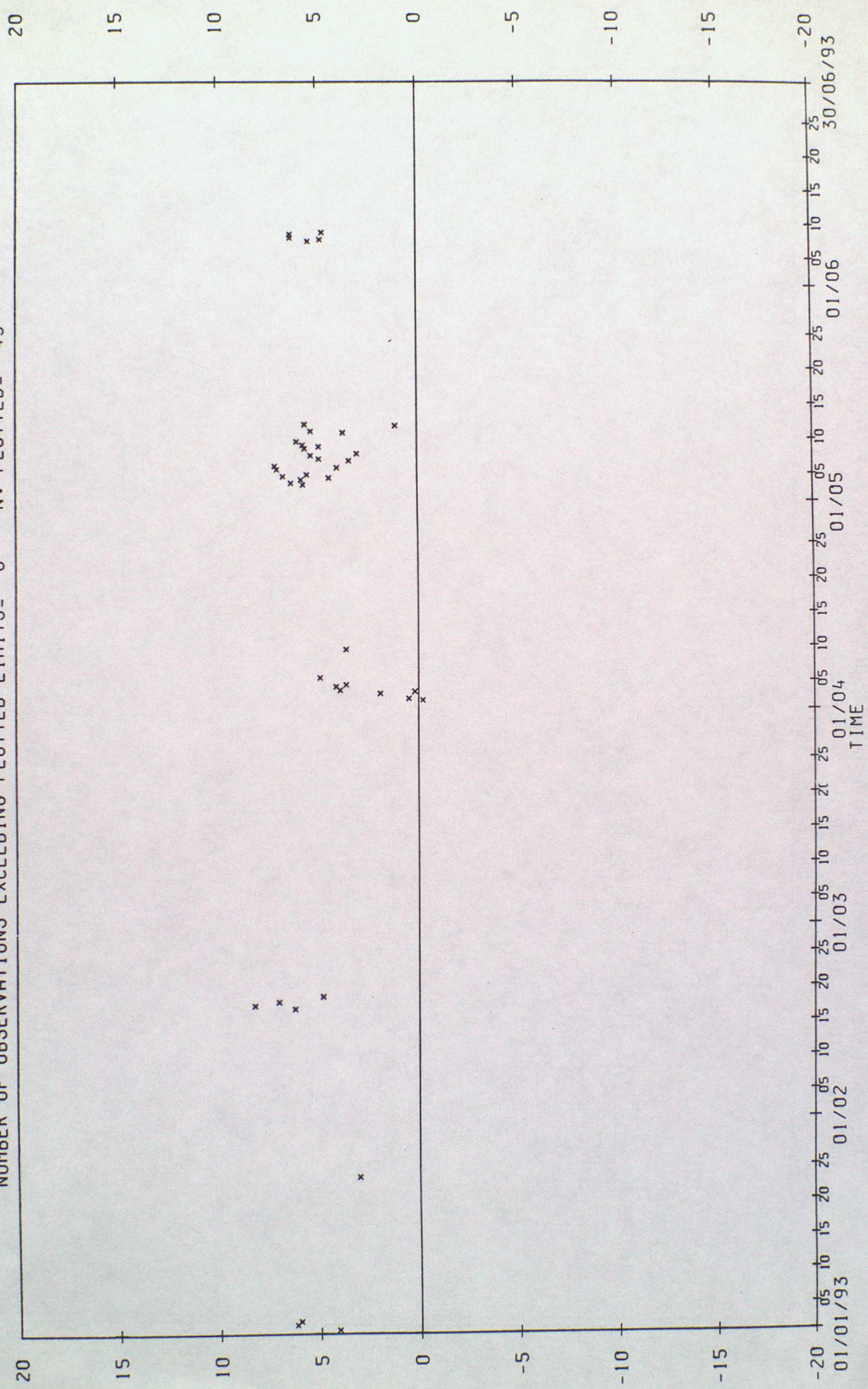
0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UKTU
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 43

0-B

0-B



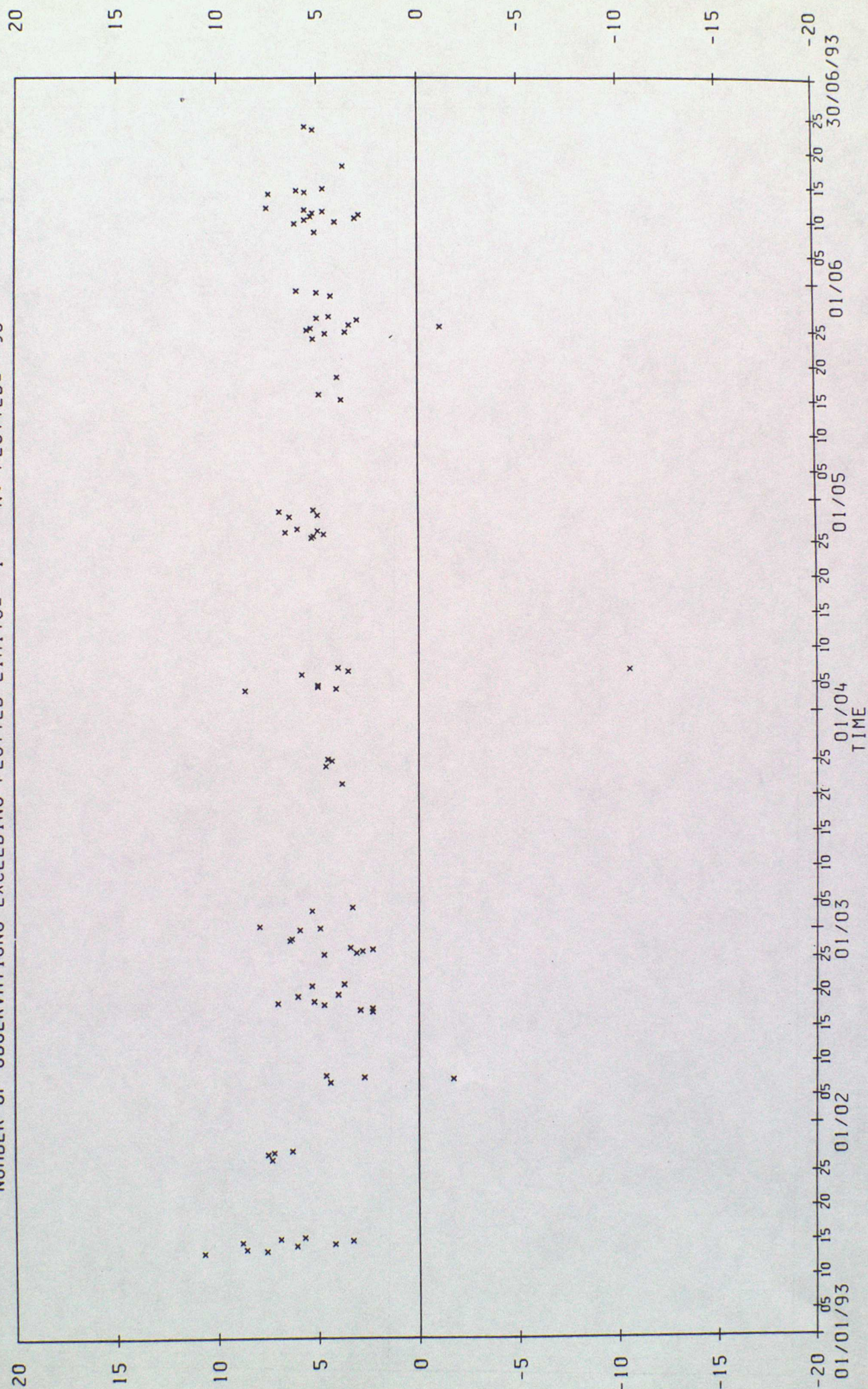
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UKTV

O-B

VARIABLE : MSLP IN UNITS OF HPA

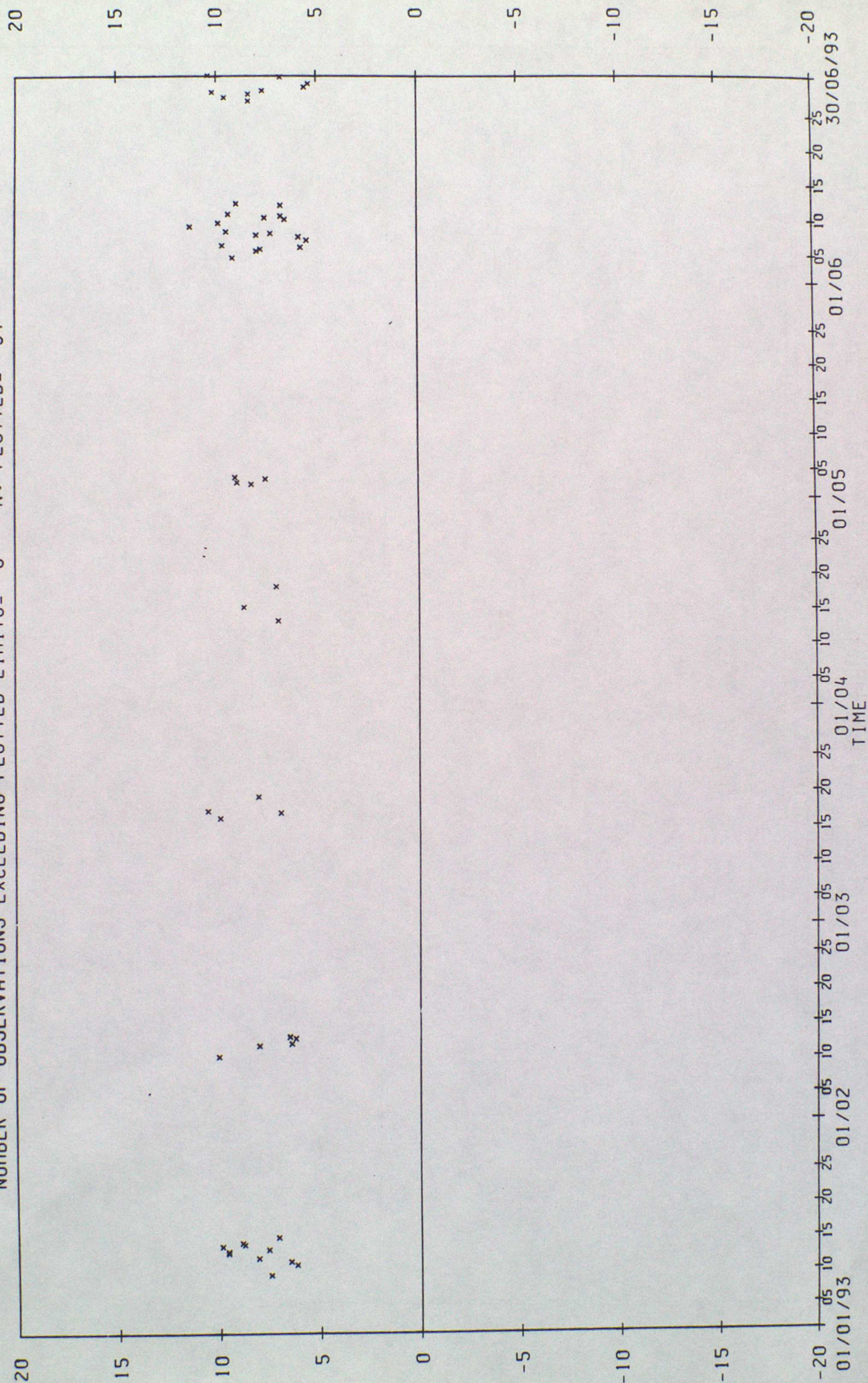
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 95



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ULDZ
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 54

0-B

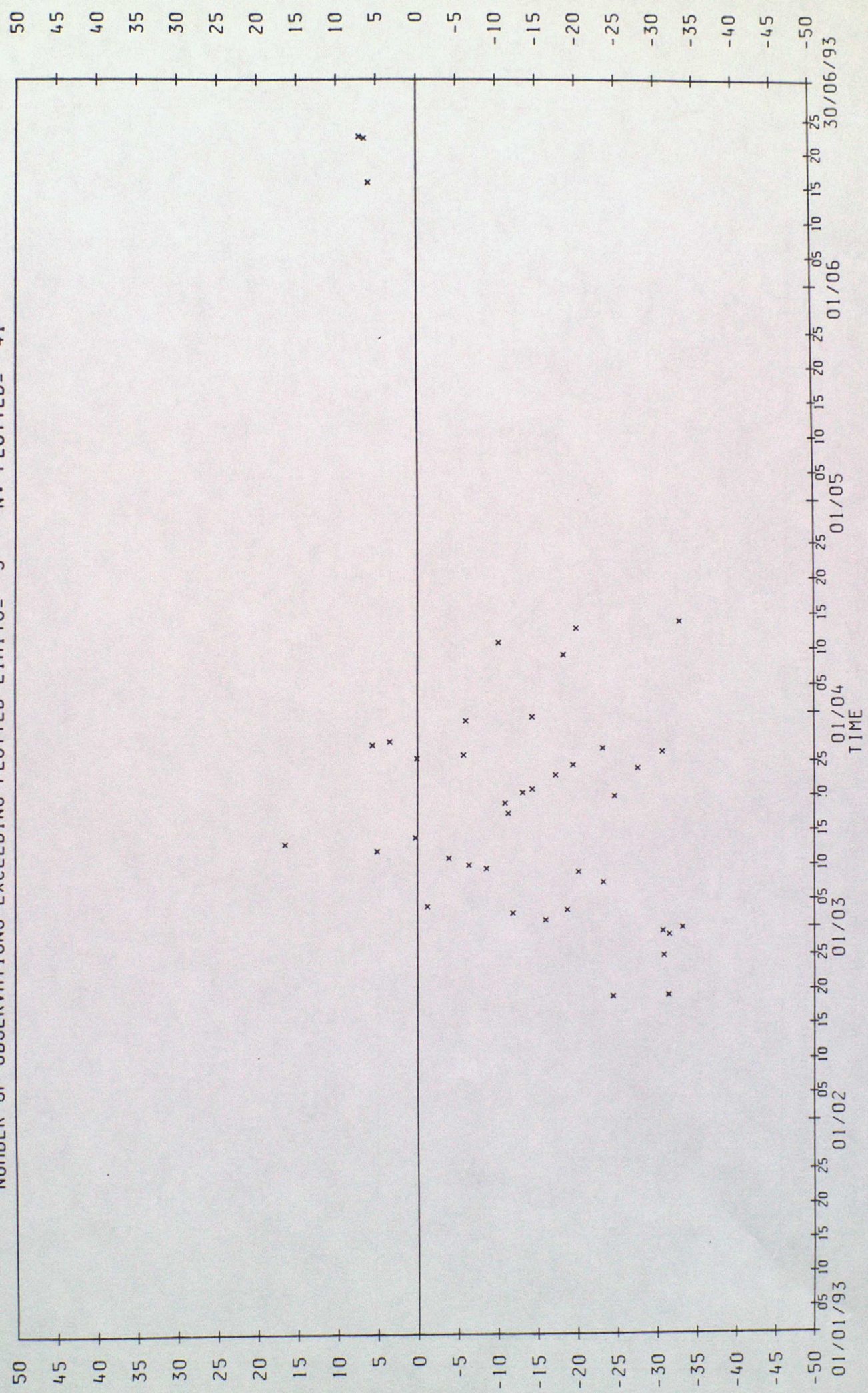
0-B



0-B

BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B.) FOR IDENTIFIER: ULYT
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 3 N. PLOTTED= 41

0-B



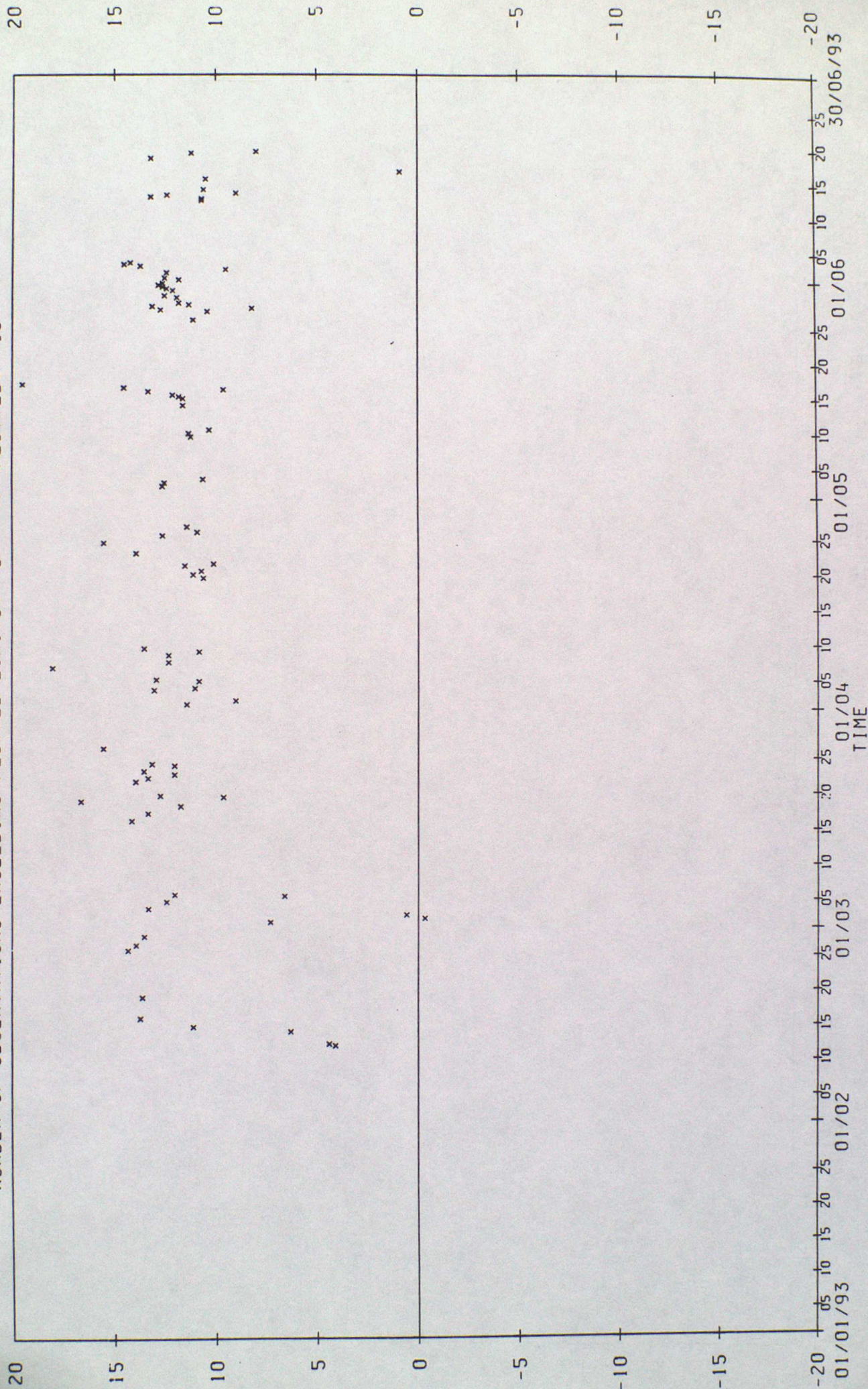
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: U000

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 96



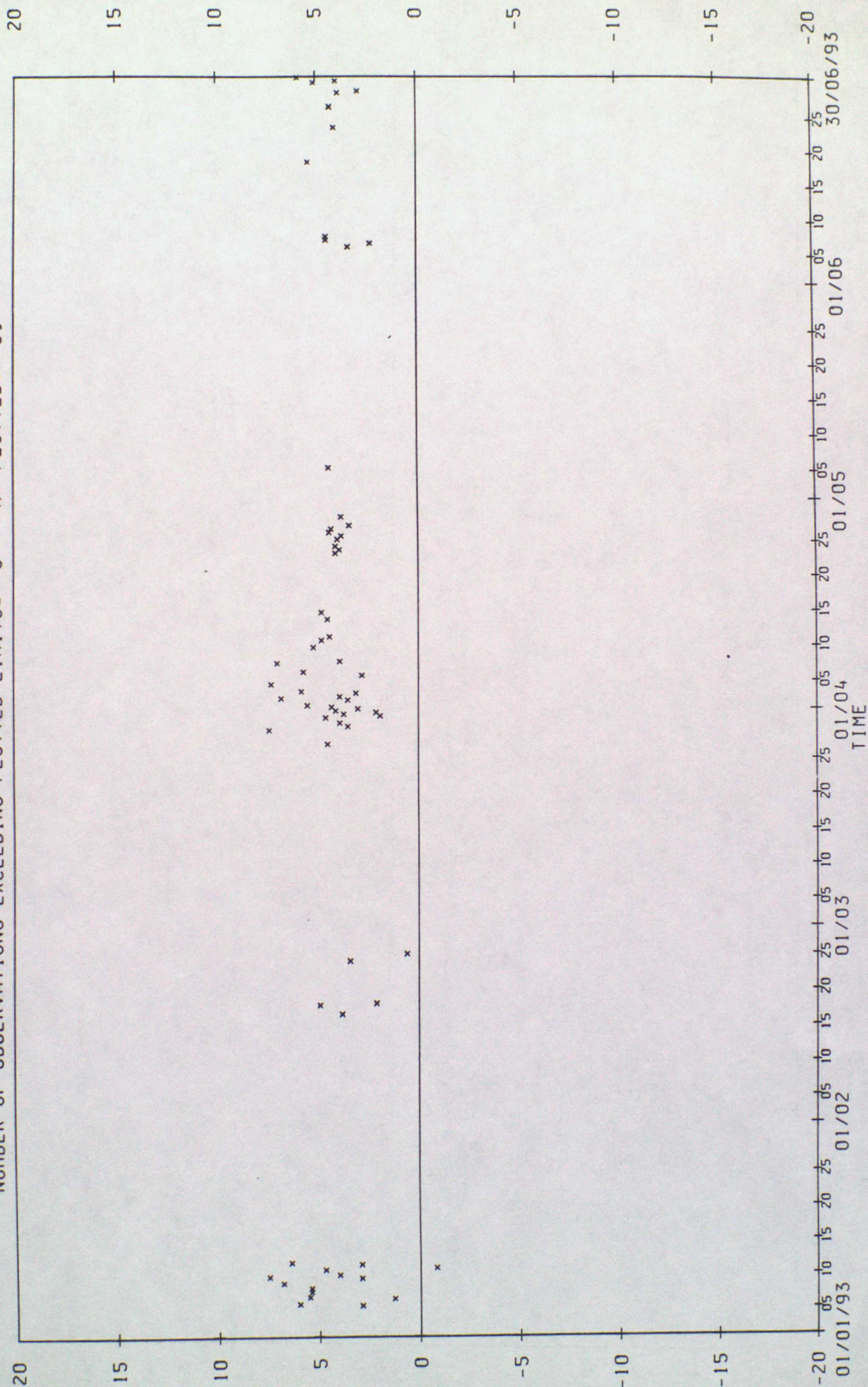
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UORF

0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 69



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

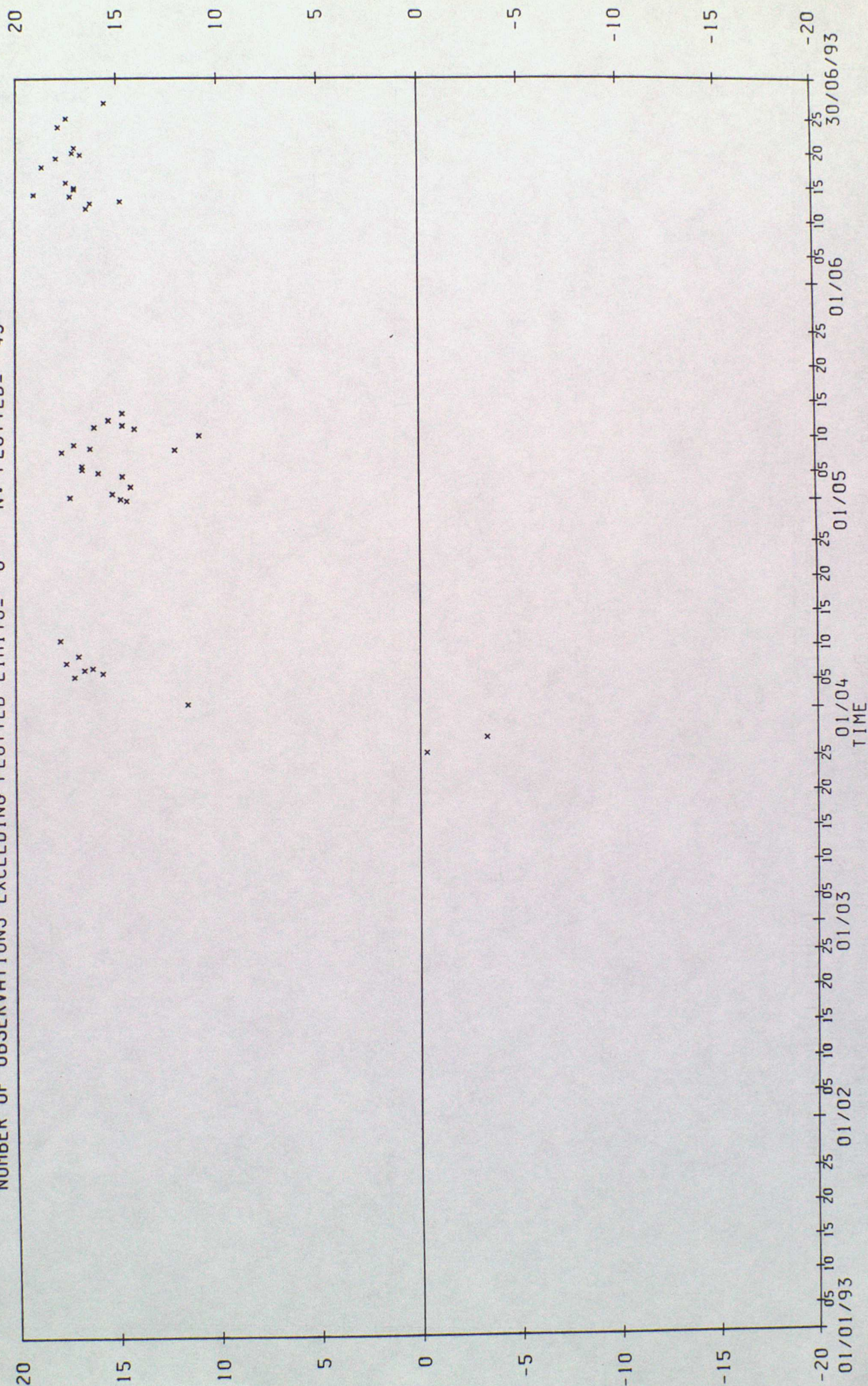
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UOVE

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 45

0-B

0-B



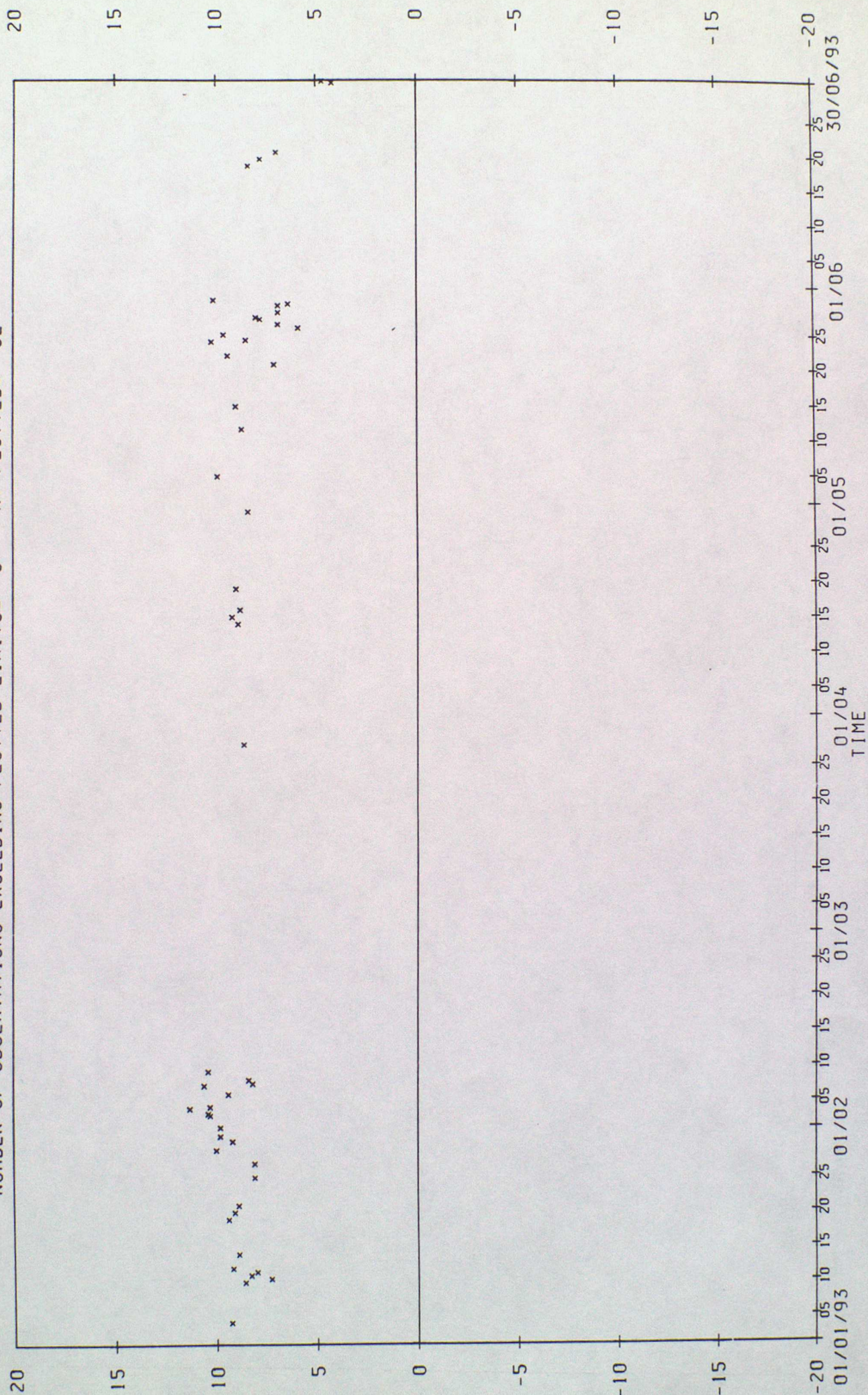
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UORA

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 52



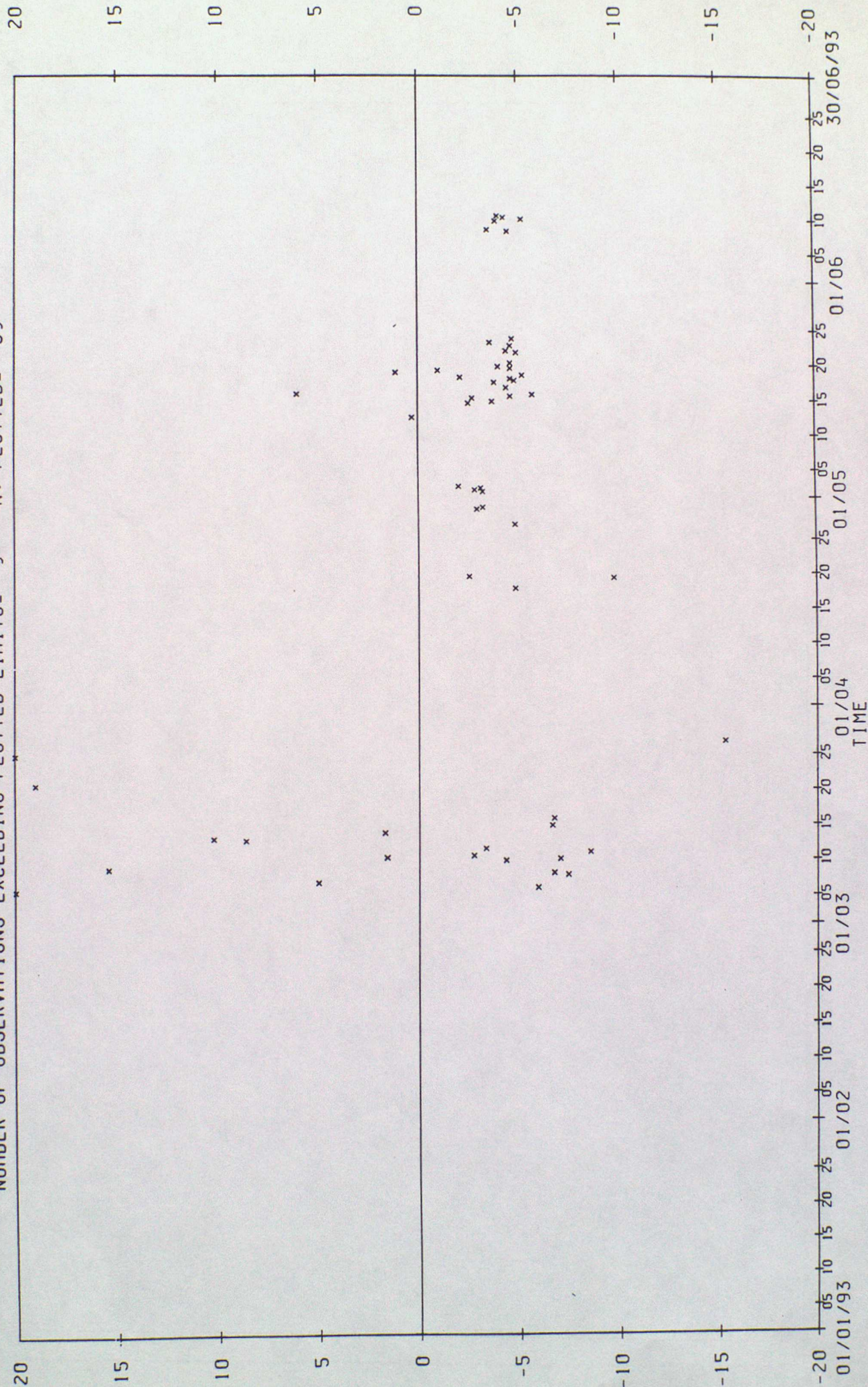
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UTNG

0-B

VARIABLE : MSLP IN UNITS OF HPA

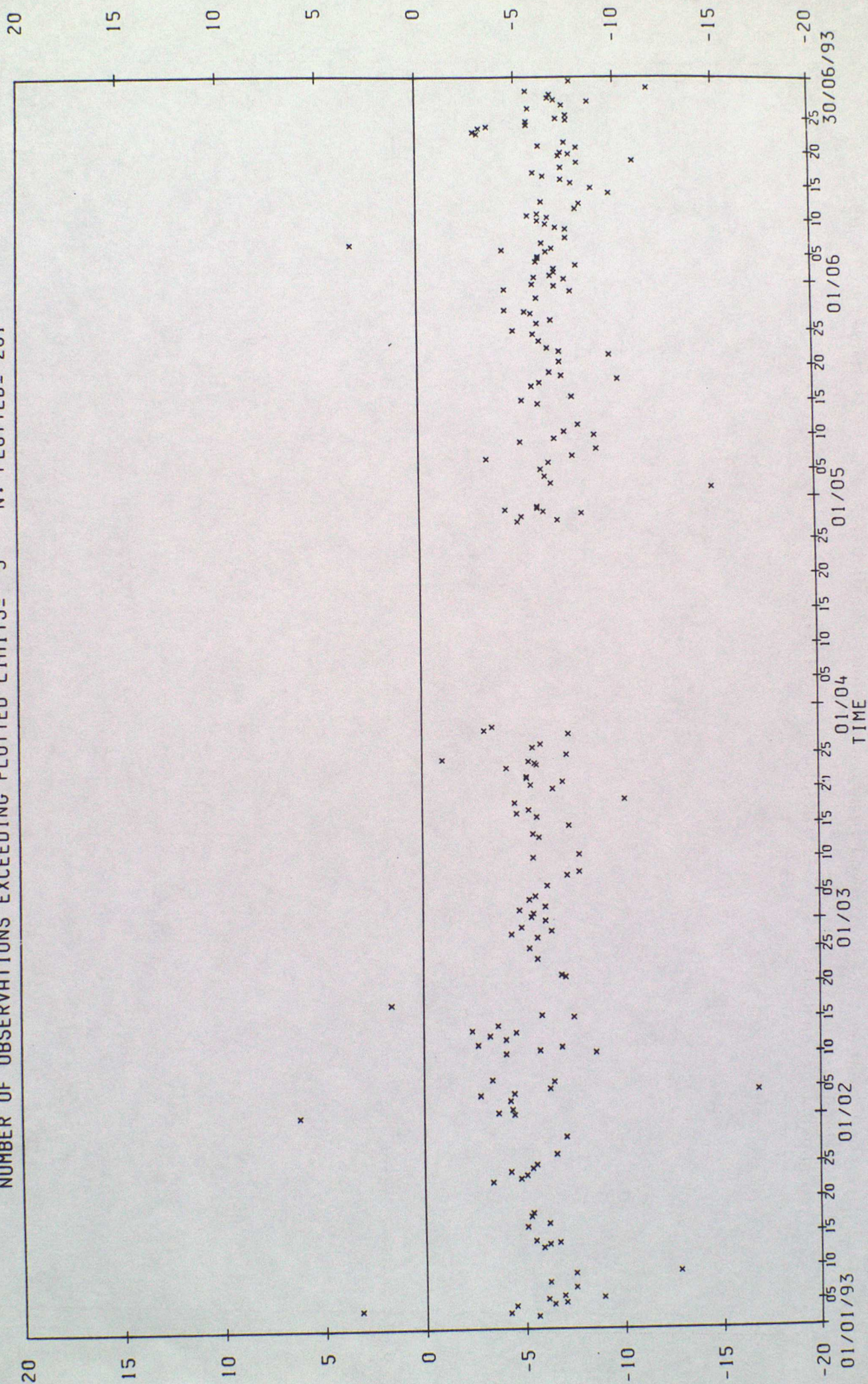
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 9 N. PLOTTED= 59



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UUJV
VARIABLE : MSLP IN UNITS OF HPA
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 5 N. PLOTTED= 201

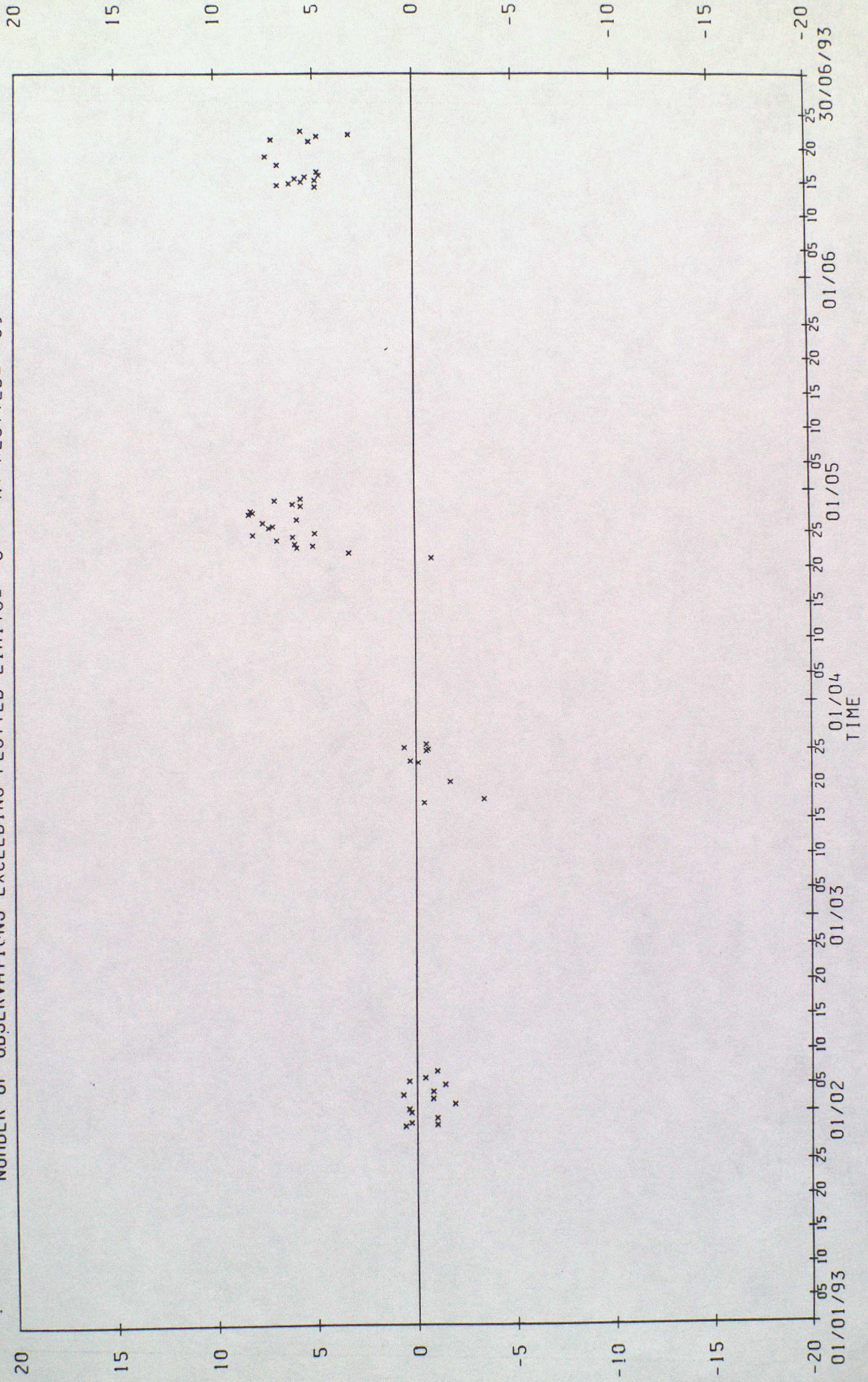
0-B

0-B

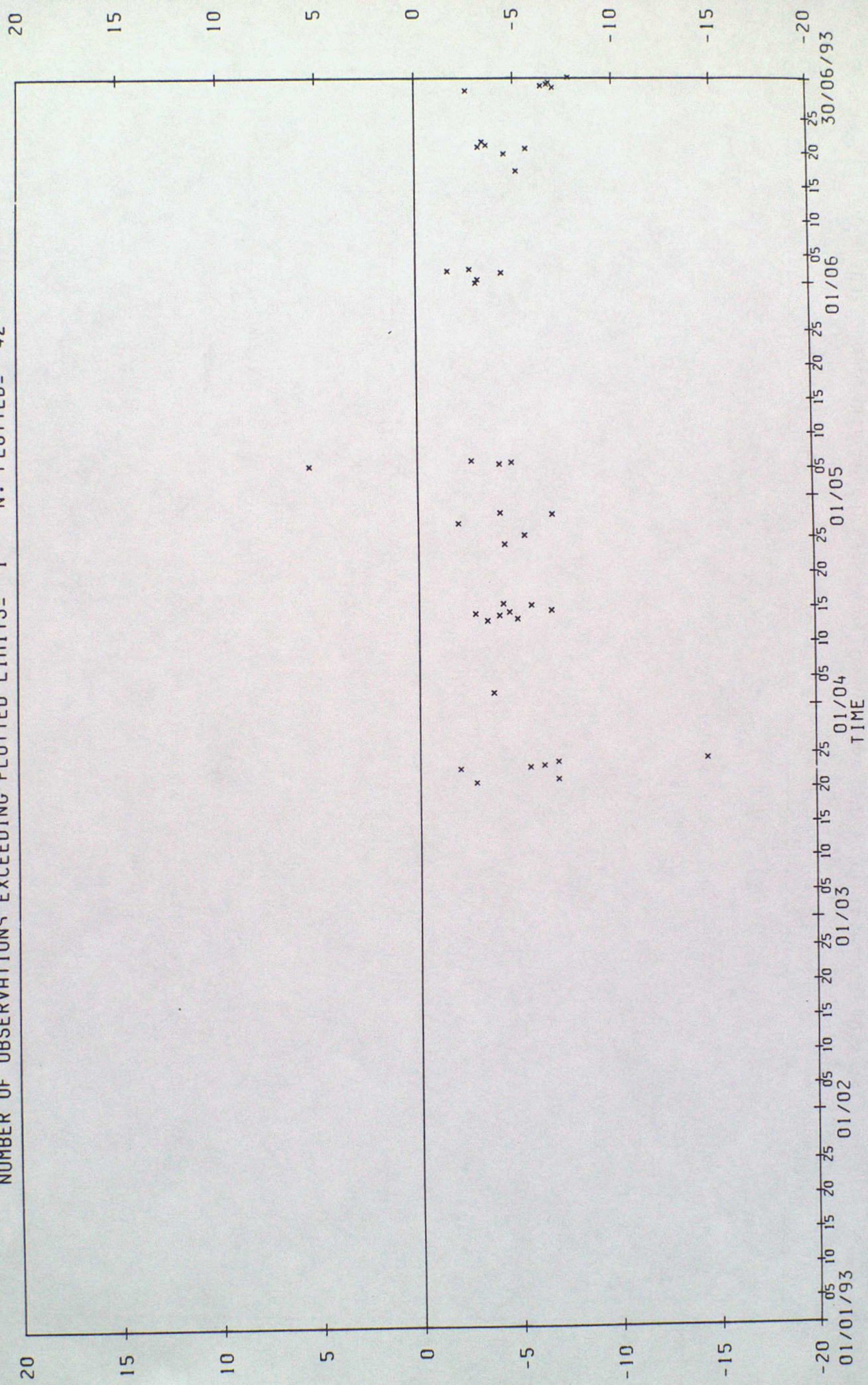


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UUOD
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 59

O-B O-B



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UVLX
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 42



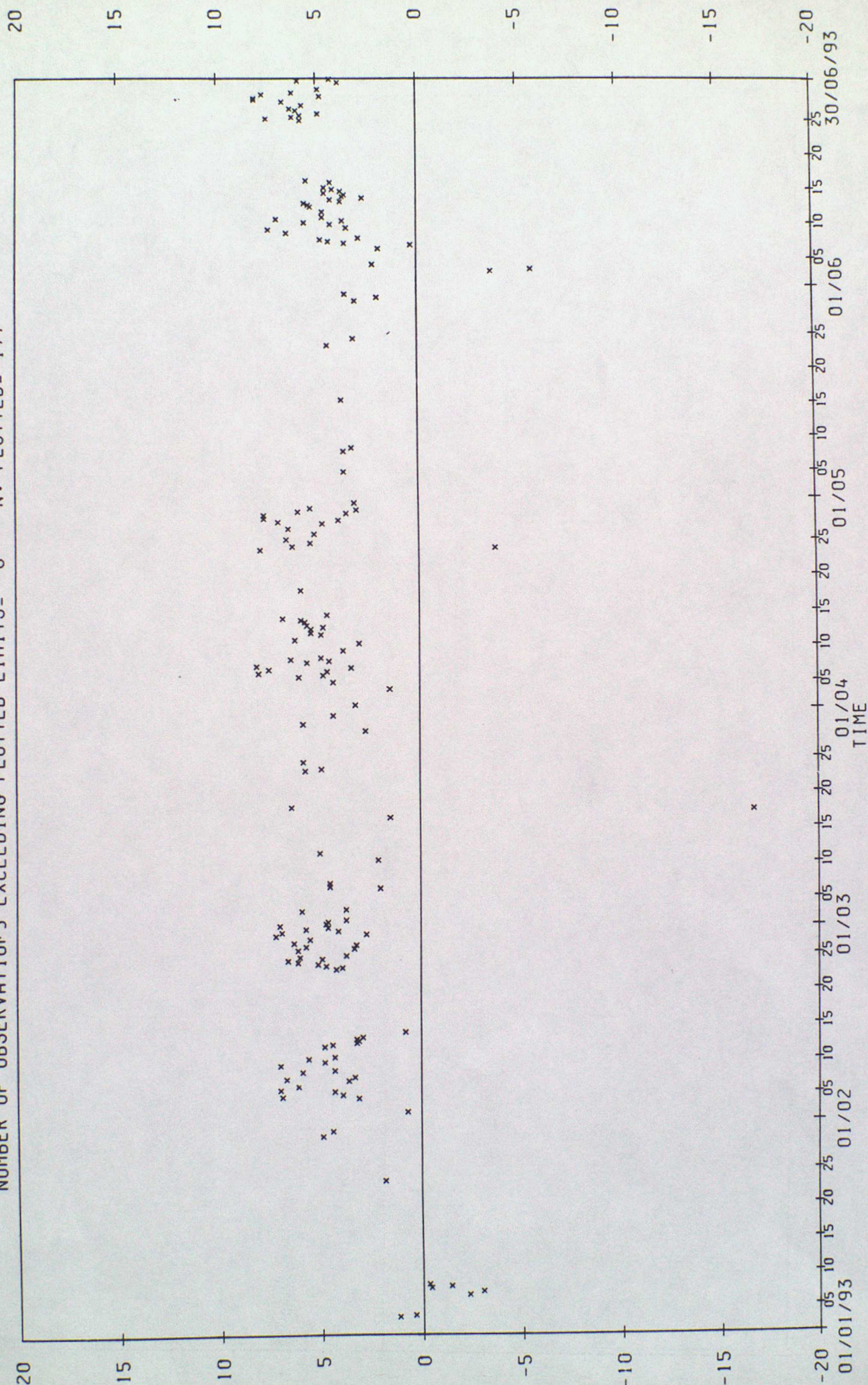
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: UWVZ

O-B

VARIABLE : MSLP IN UNITS OF HPA

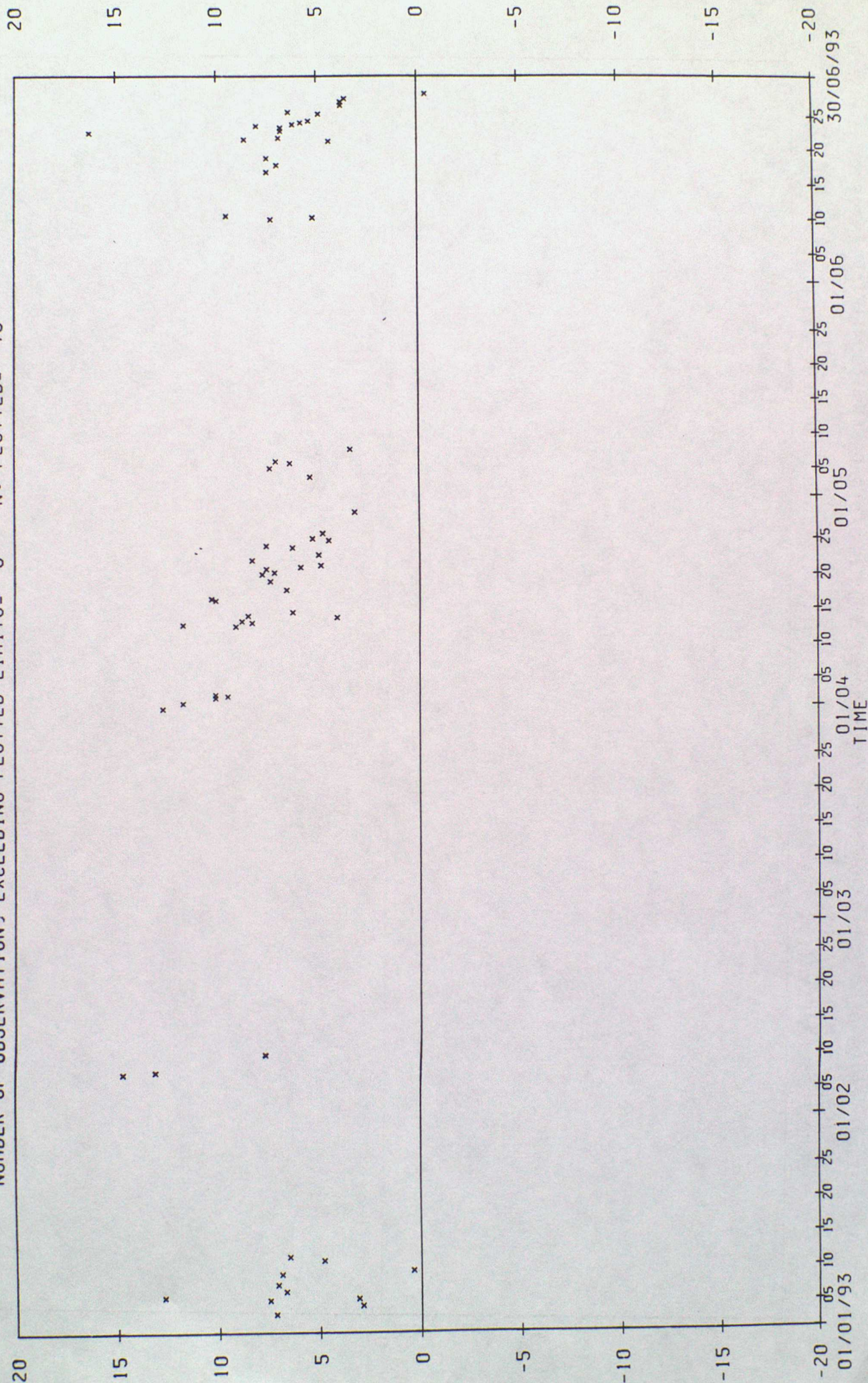
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 177



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: UYHW
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATION, EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 70

0-B

0-B



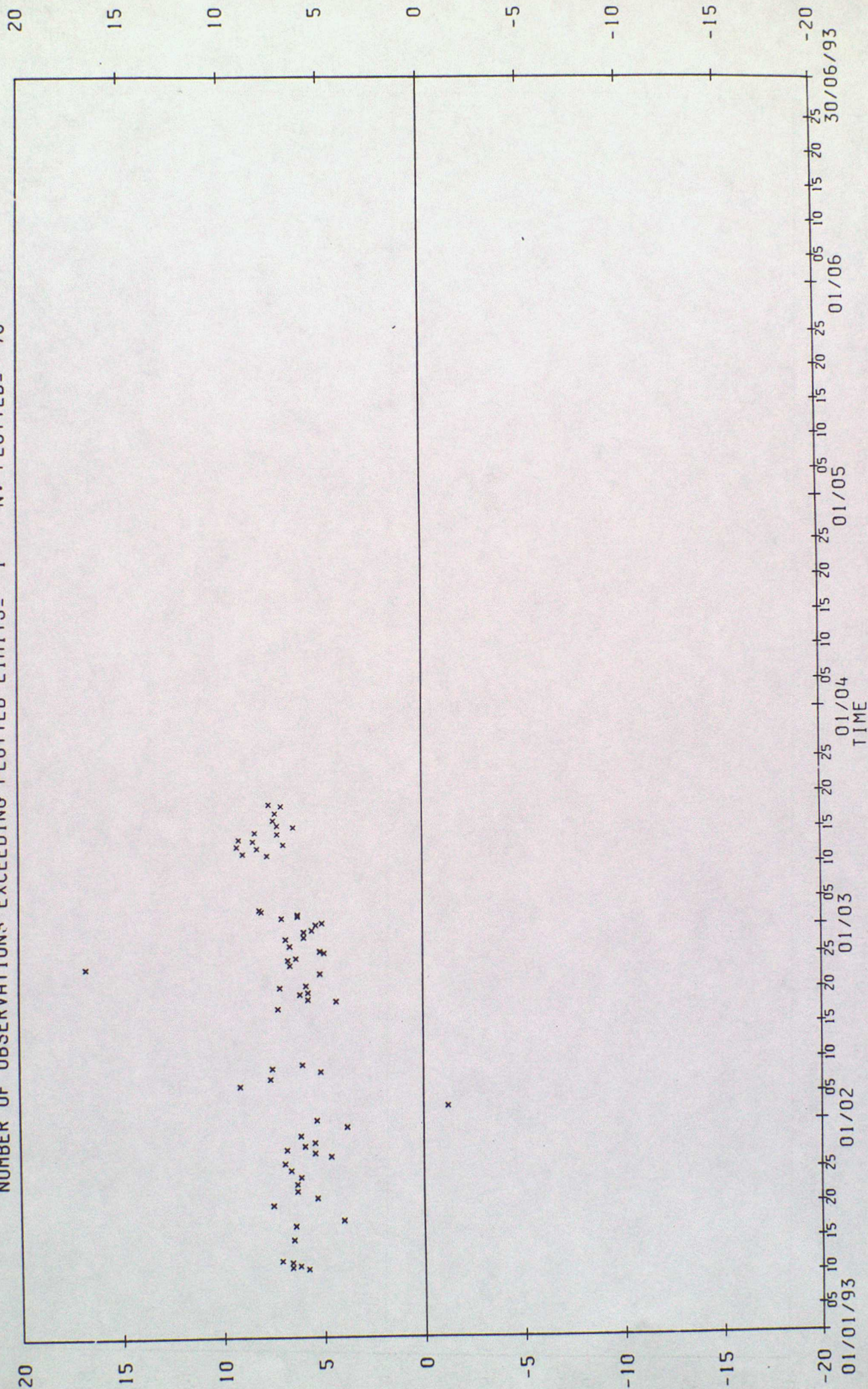
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: VVDV

O-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 70



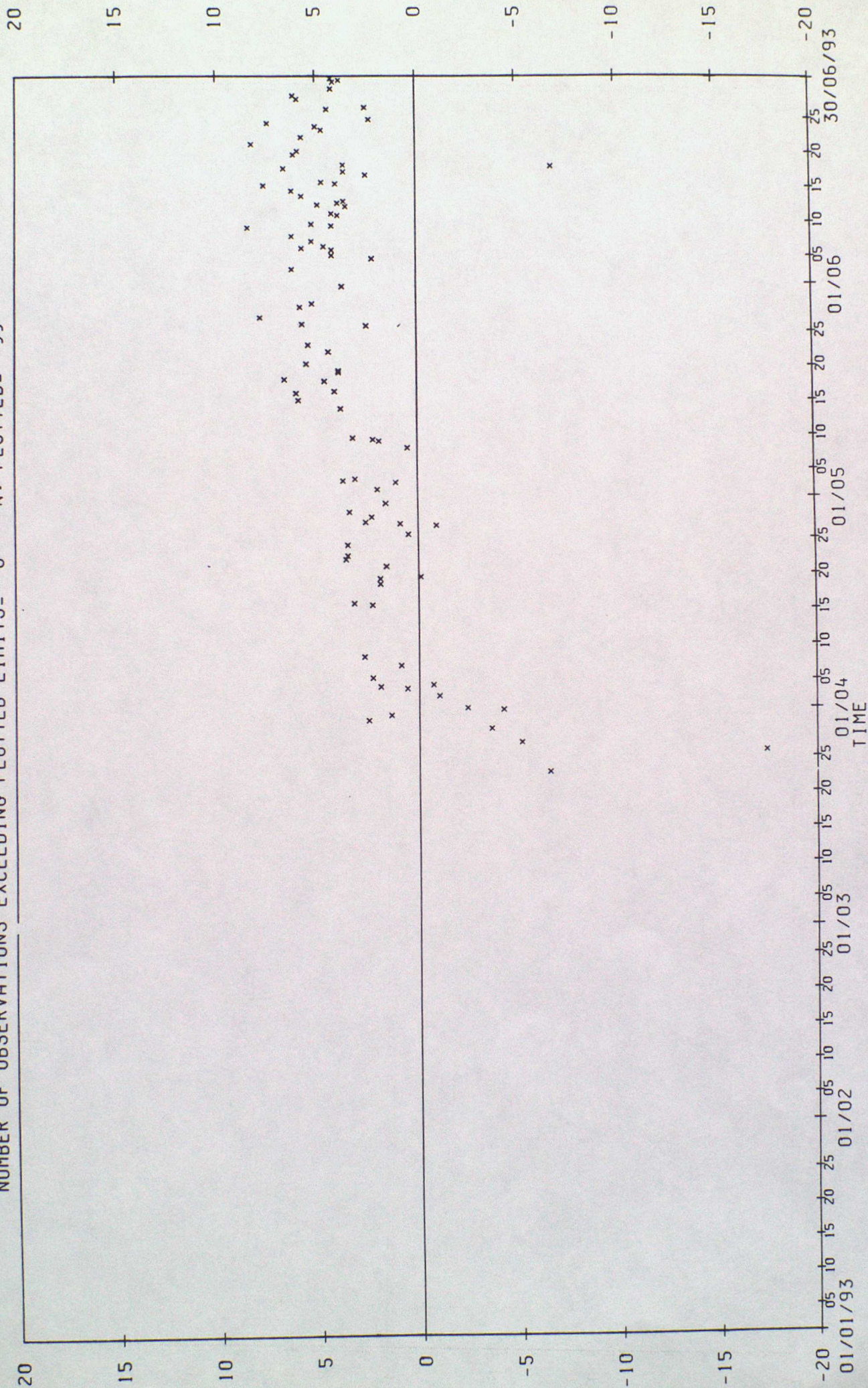
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: WQZ9670

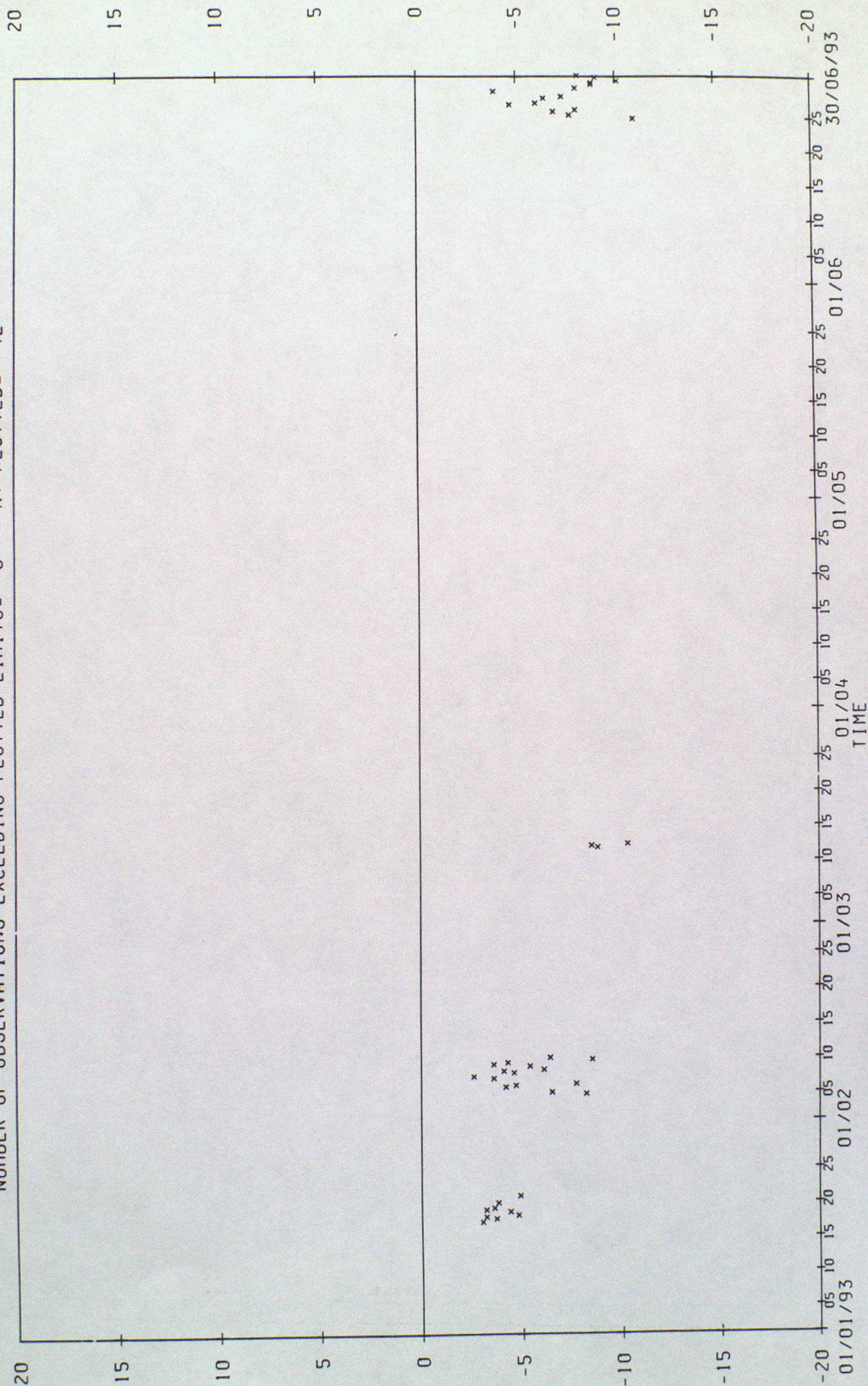
VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 99

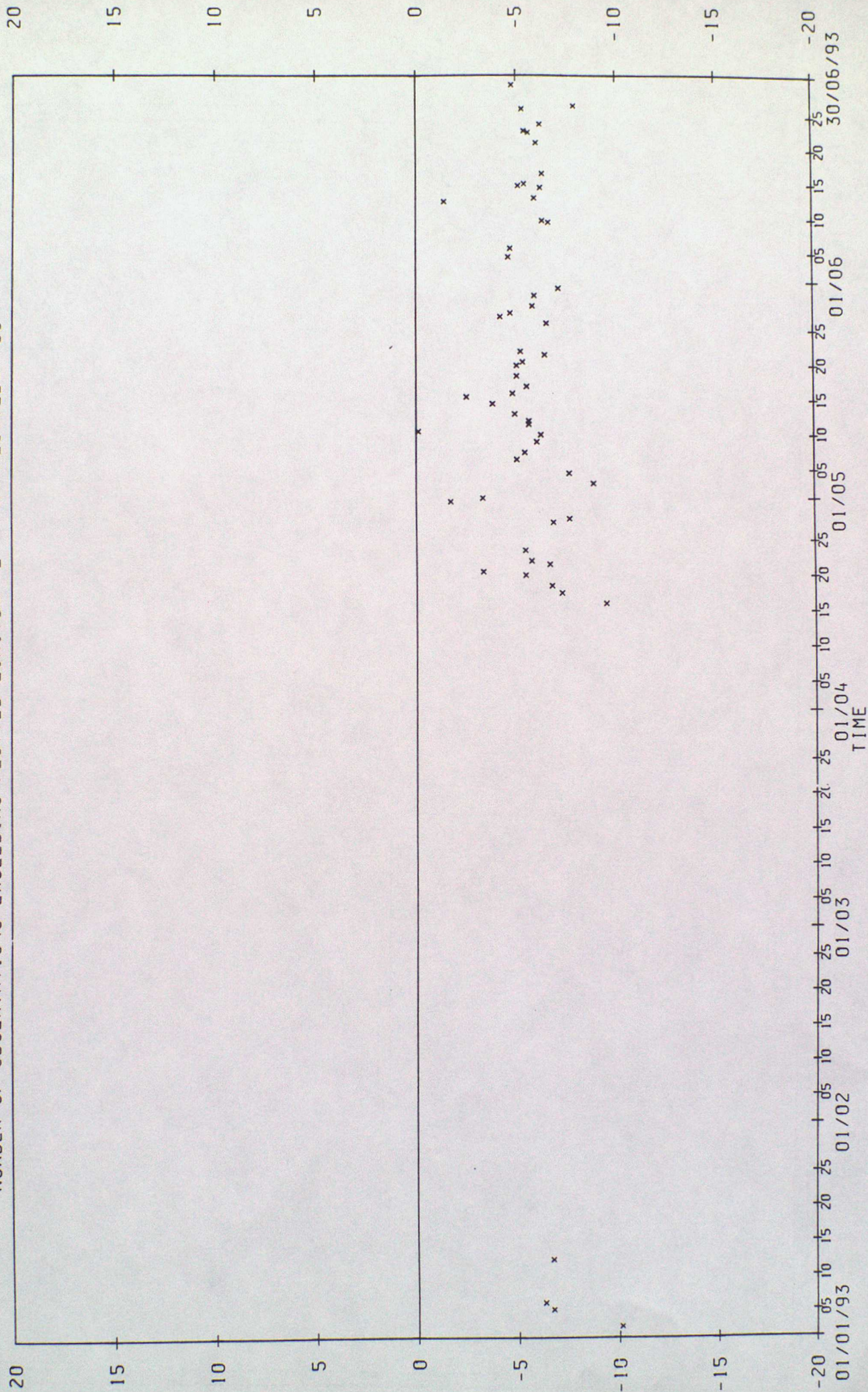


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: WWDY
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 42

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: WXY6216 0-B
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 2 N. PLOTTED= 58



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

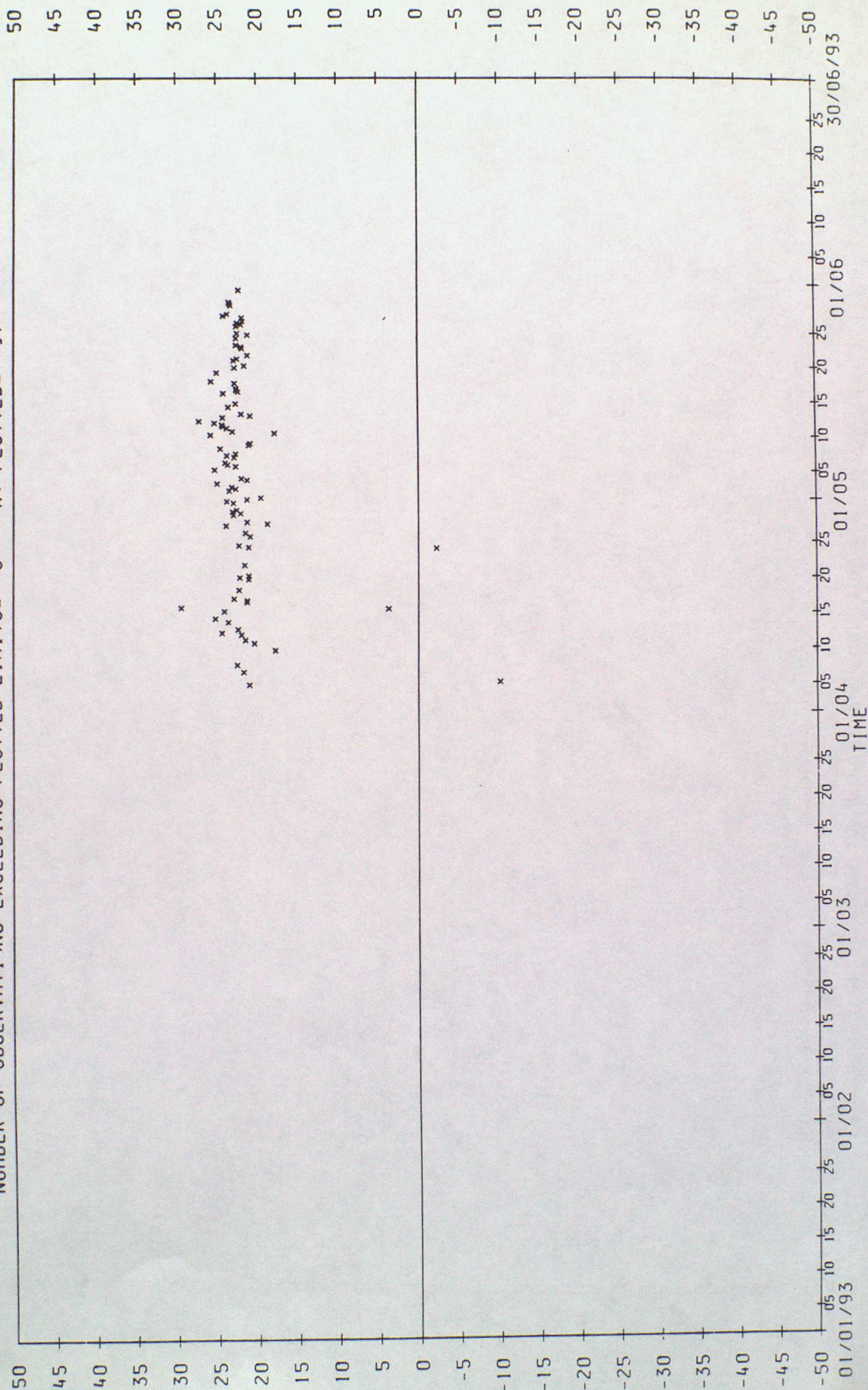
0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: WZE4928

0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 97



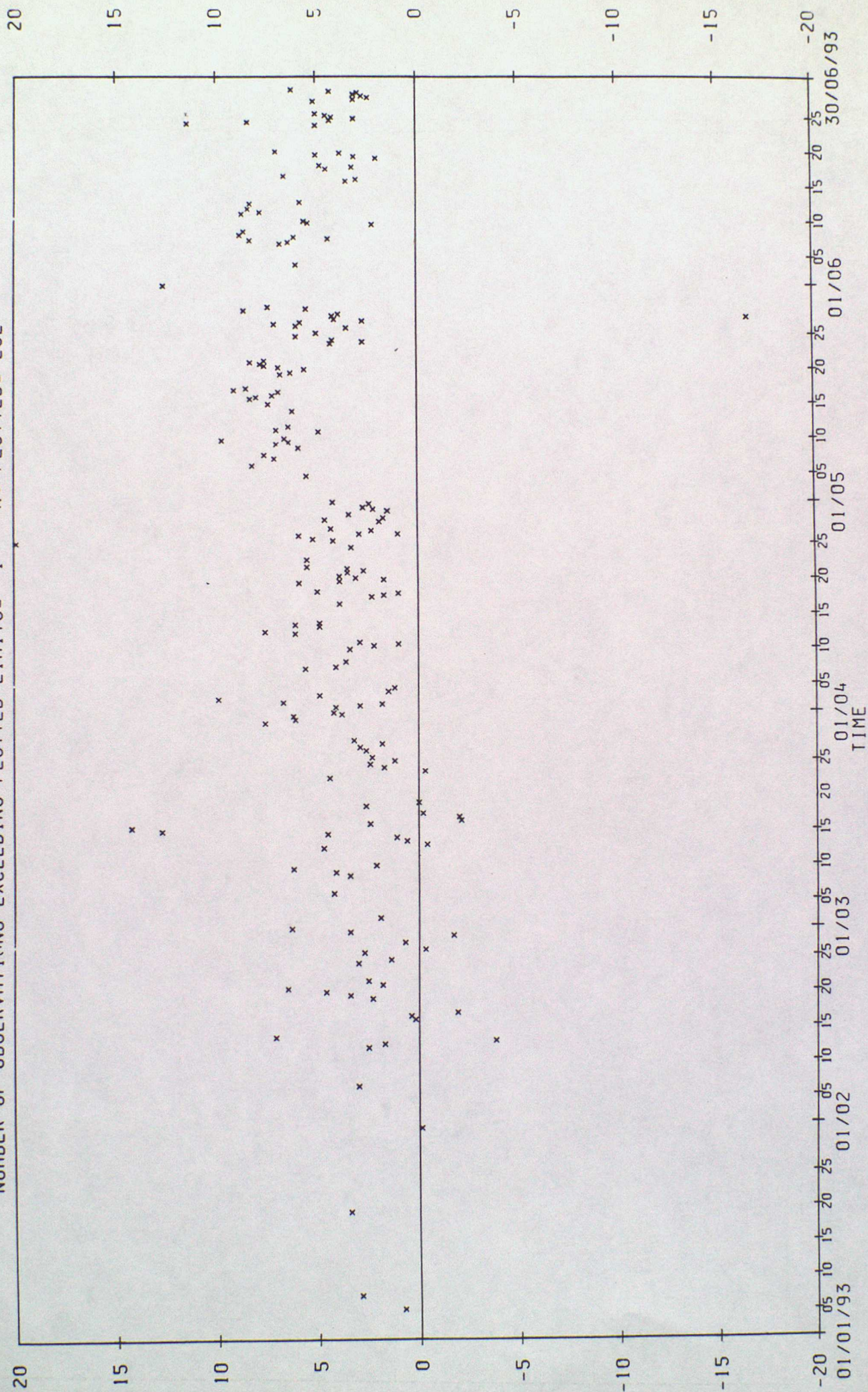
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ZCAM9

0-B

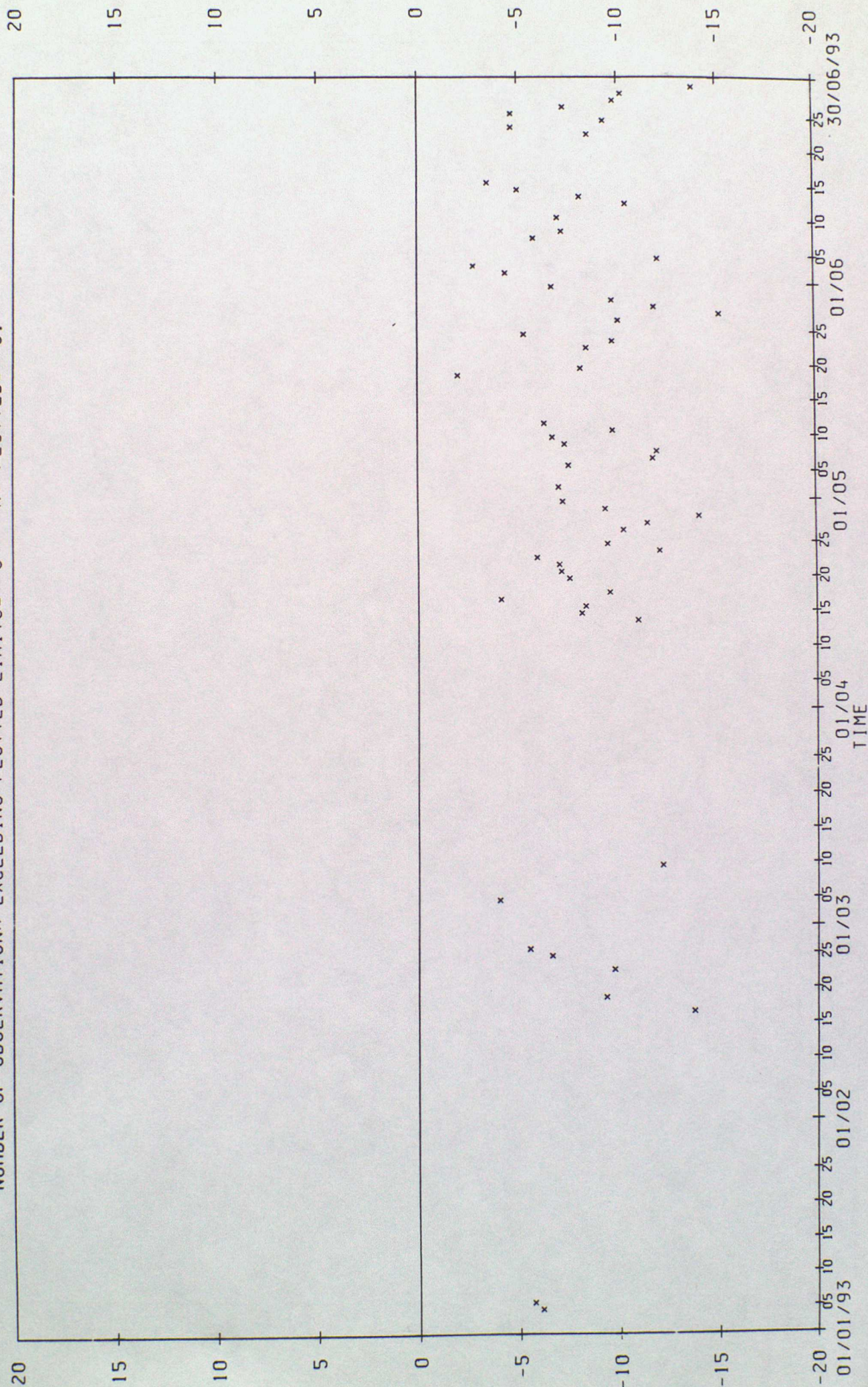
VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 202



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ZSBK
 VARIABLE : MSLP IN UNITS OF HPA
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 61

0-B

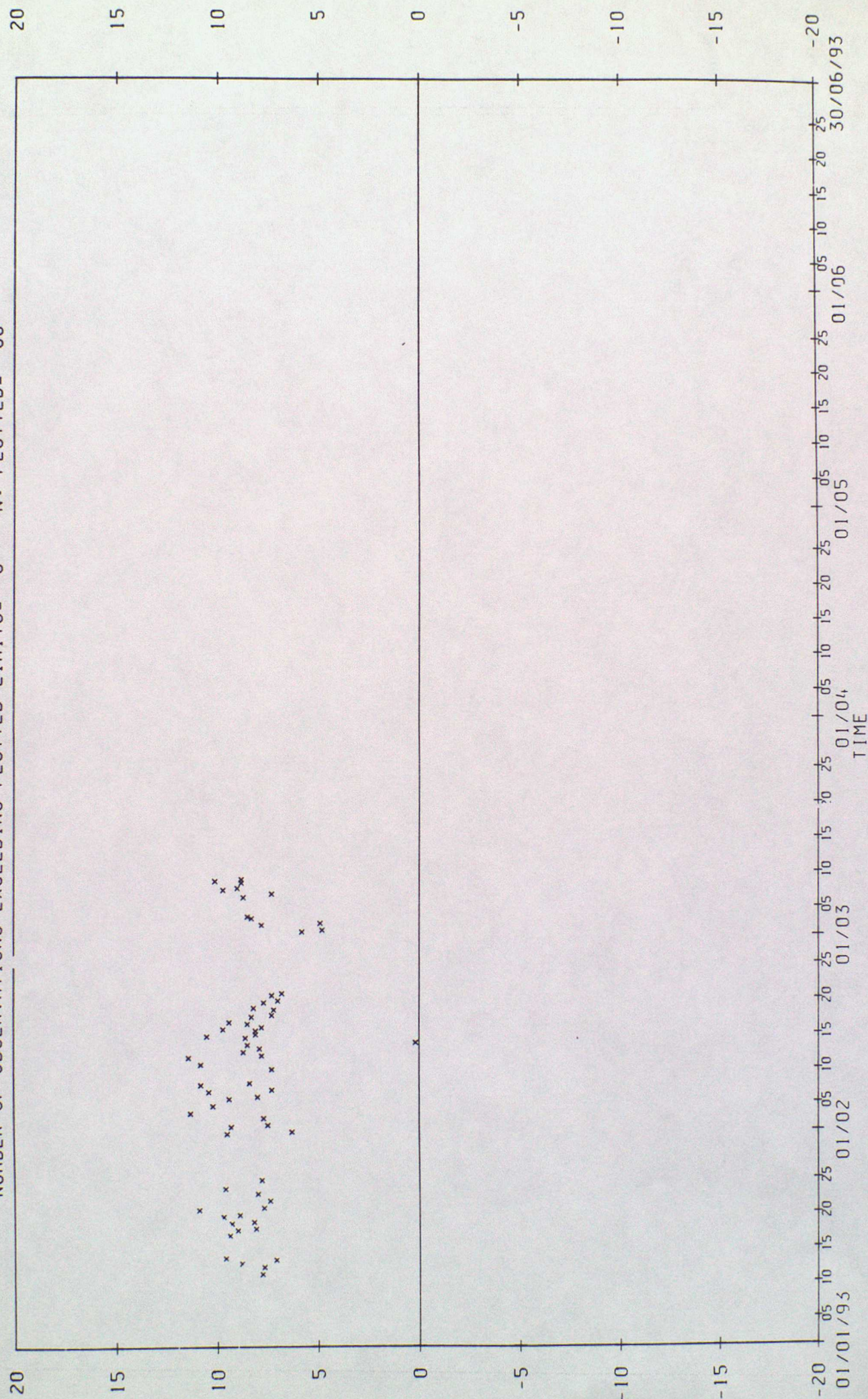


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 3FBK 0-B

VARIABLE : MSLP IN UNITS OF HPA

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 68



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

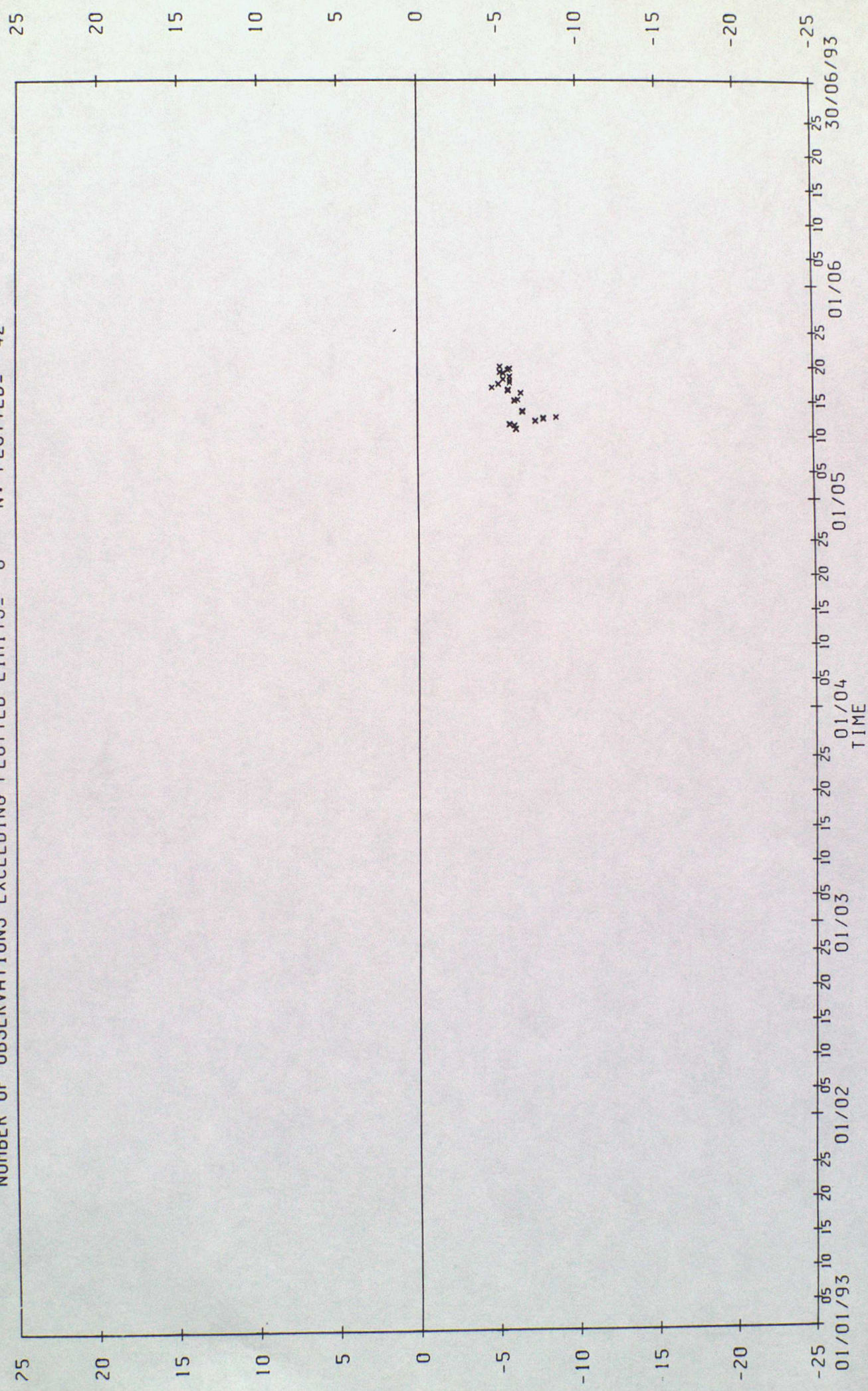
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 52526

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 42

0-B

0-B



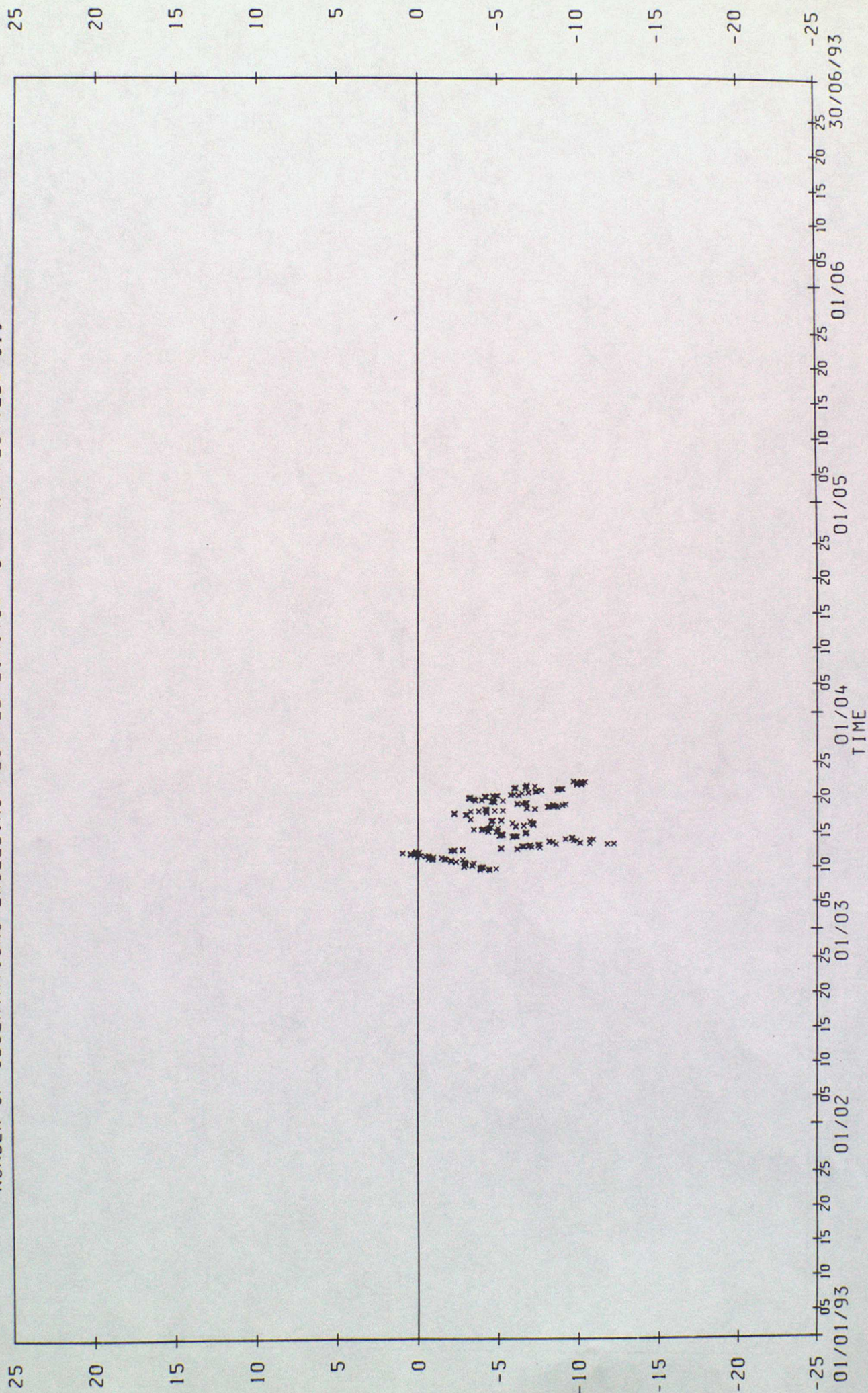
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 63667

VARIABLE : WIND SPEED IN UNITS OF MS-1

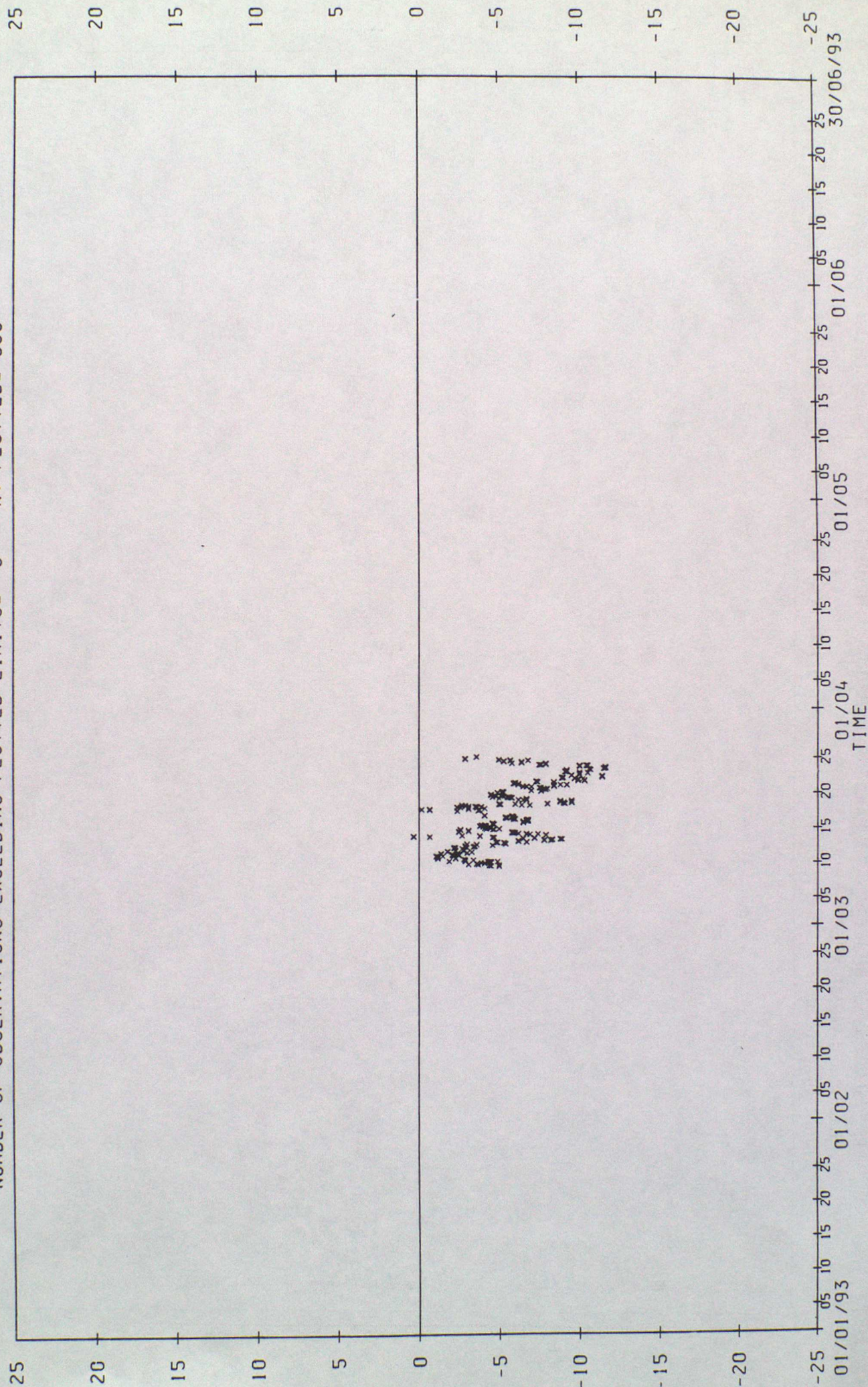
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 319



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 63668
 VARIABLE : WIND SPEED IN UNITS OF MS-1
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 360

0-B

0-B



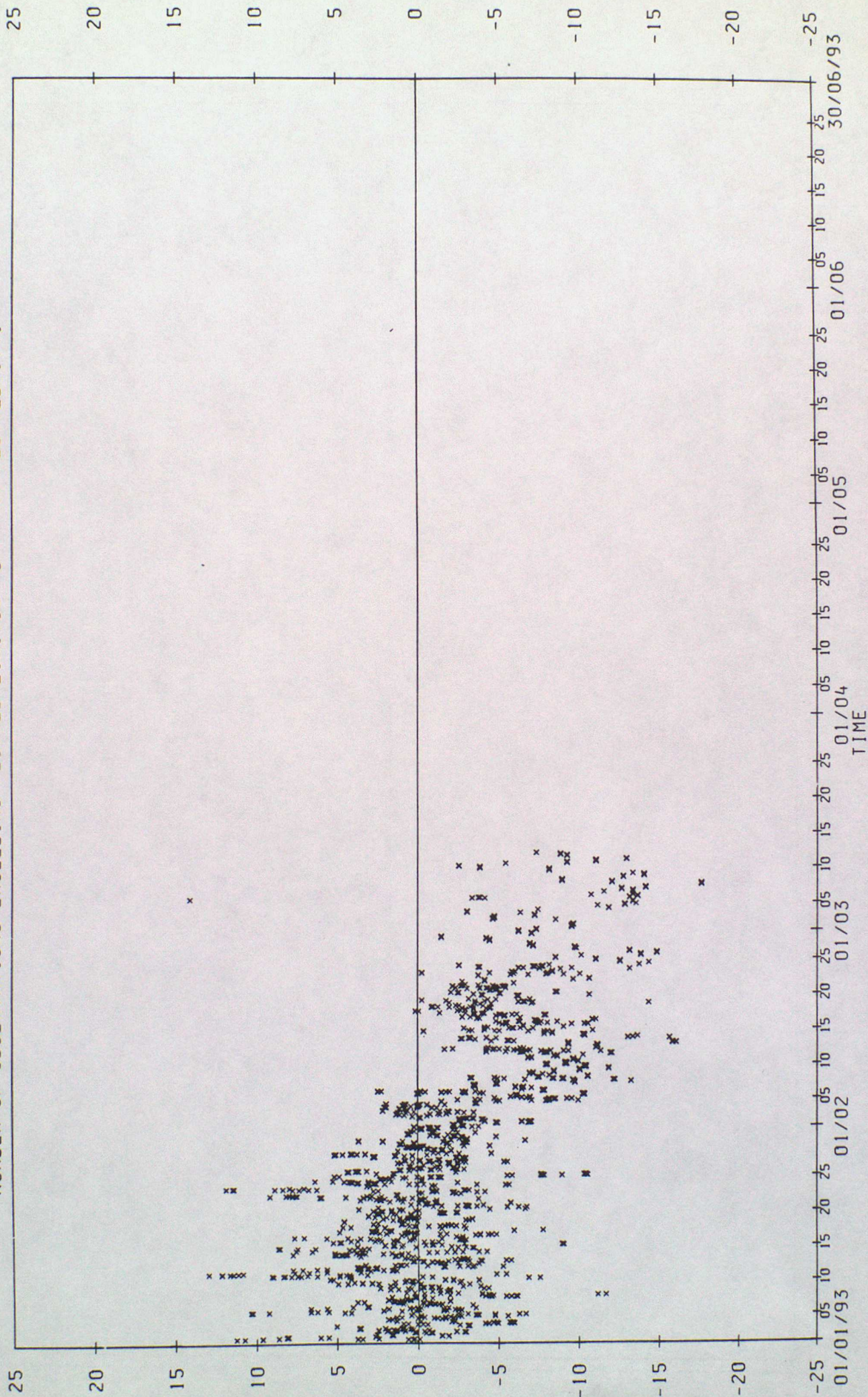
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 64043

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED=1741



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

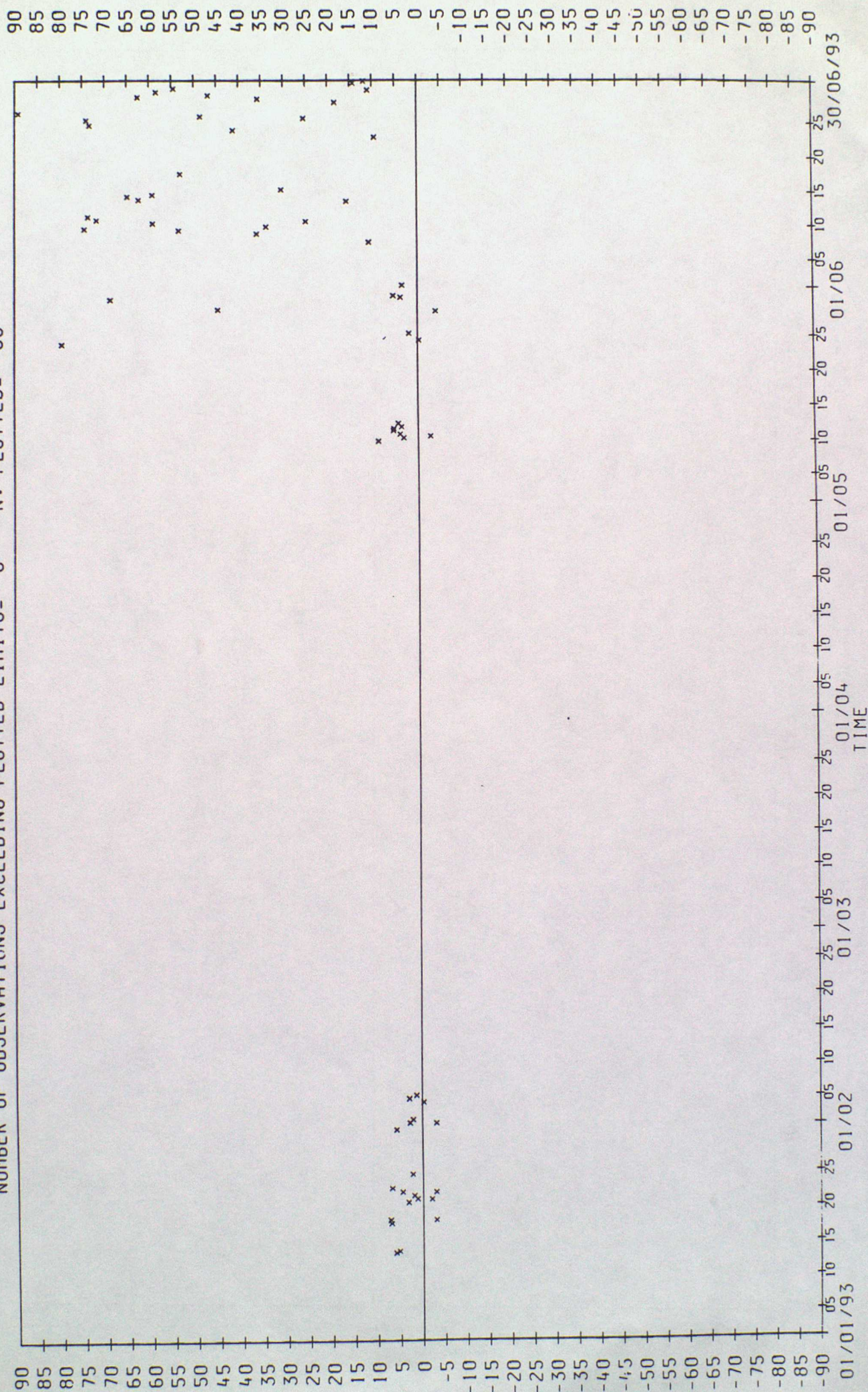
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: BROE

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 68

0-B

0-B



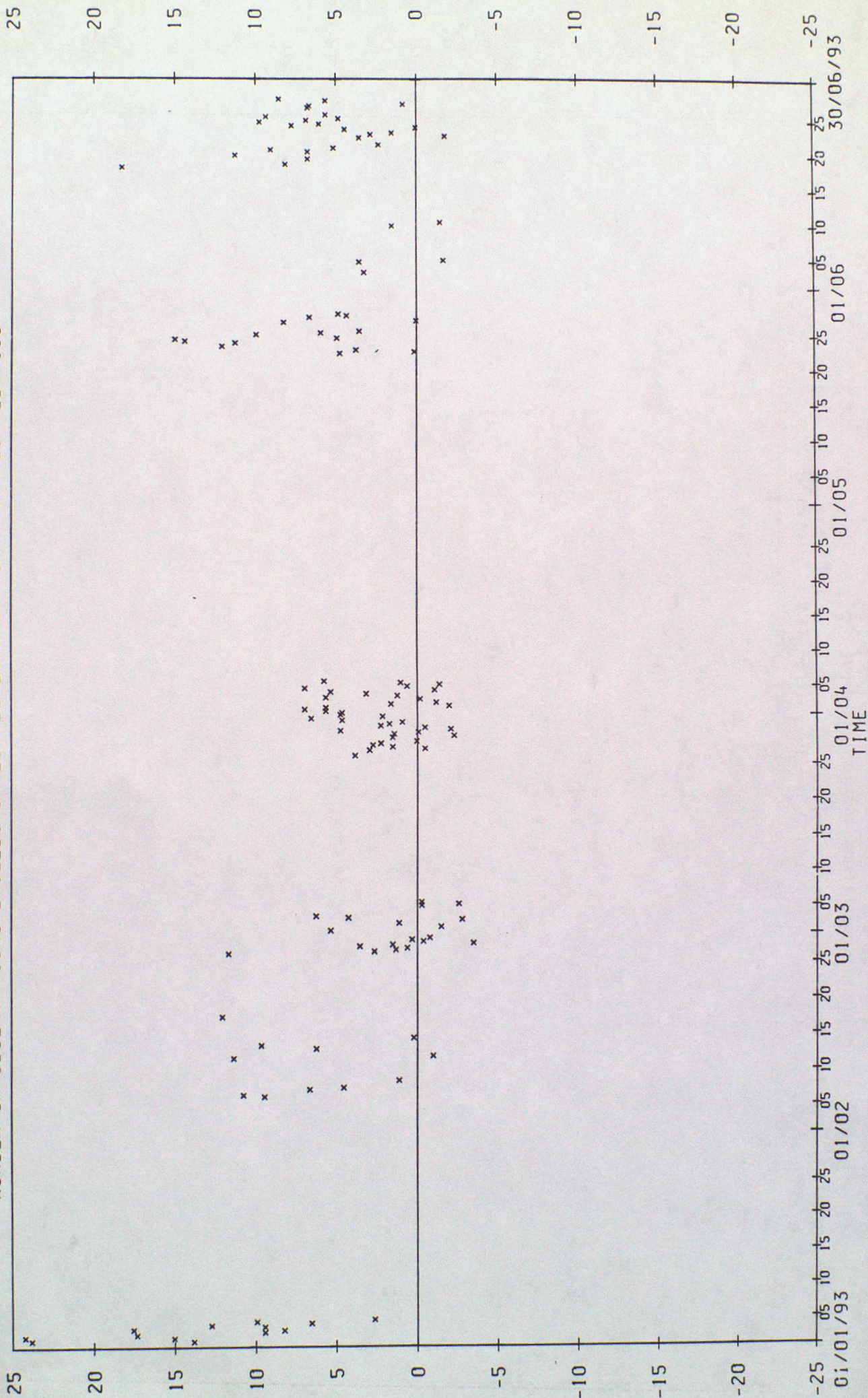
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: DOFU

O-B

VARIABLE : WIND SPEED IN UNITS OF MS-1

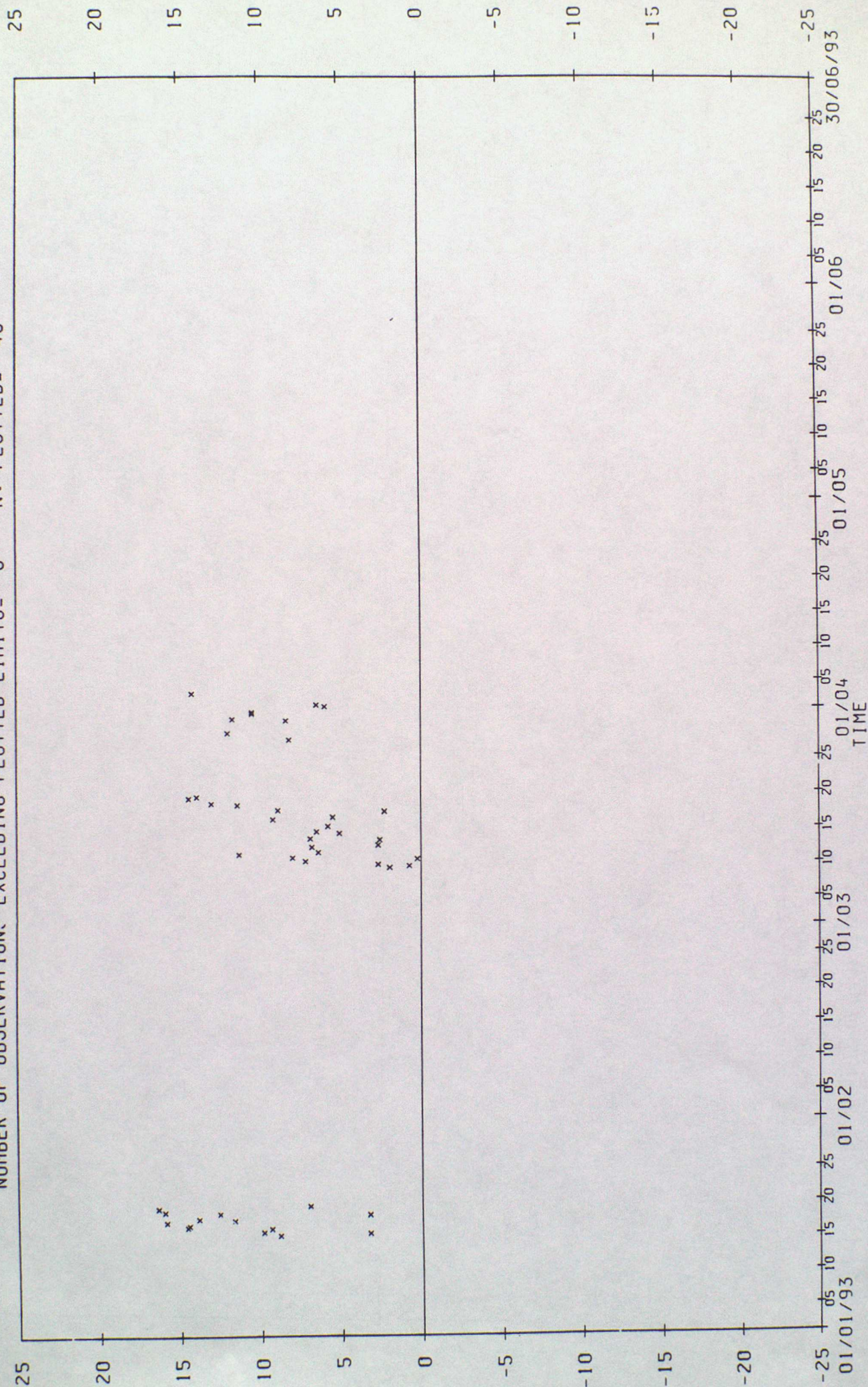
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 3 N. PLOTTED= 130



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: DZXF
 VARIABLE : WIND SPEED IN UNITS OF MS-1
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 46

0-B

0-B



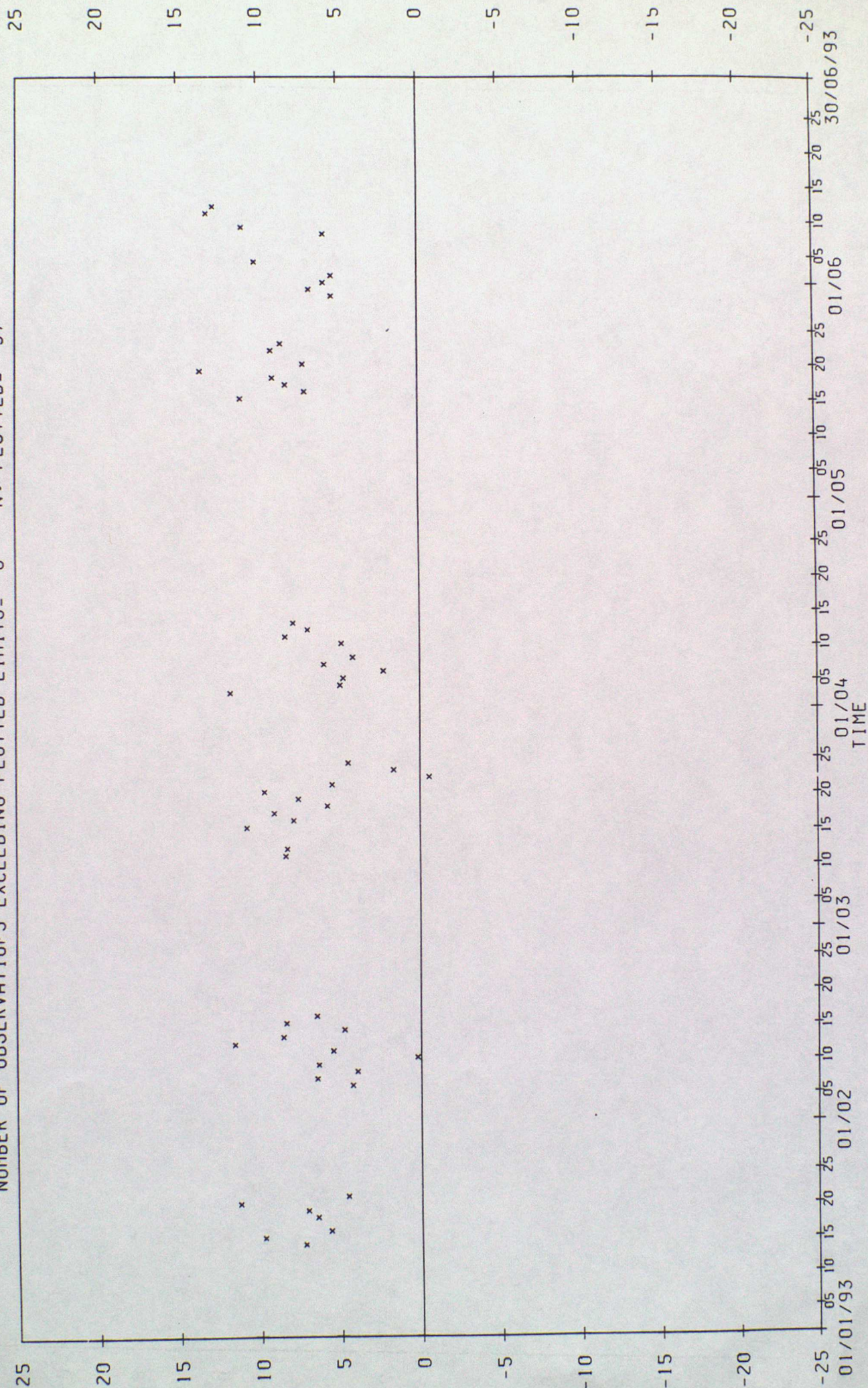
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: ELJJ7

0-B

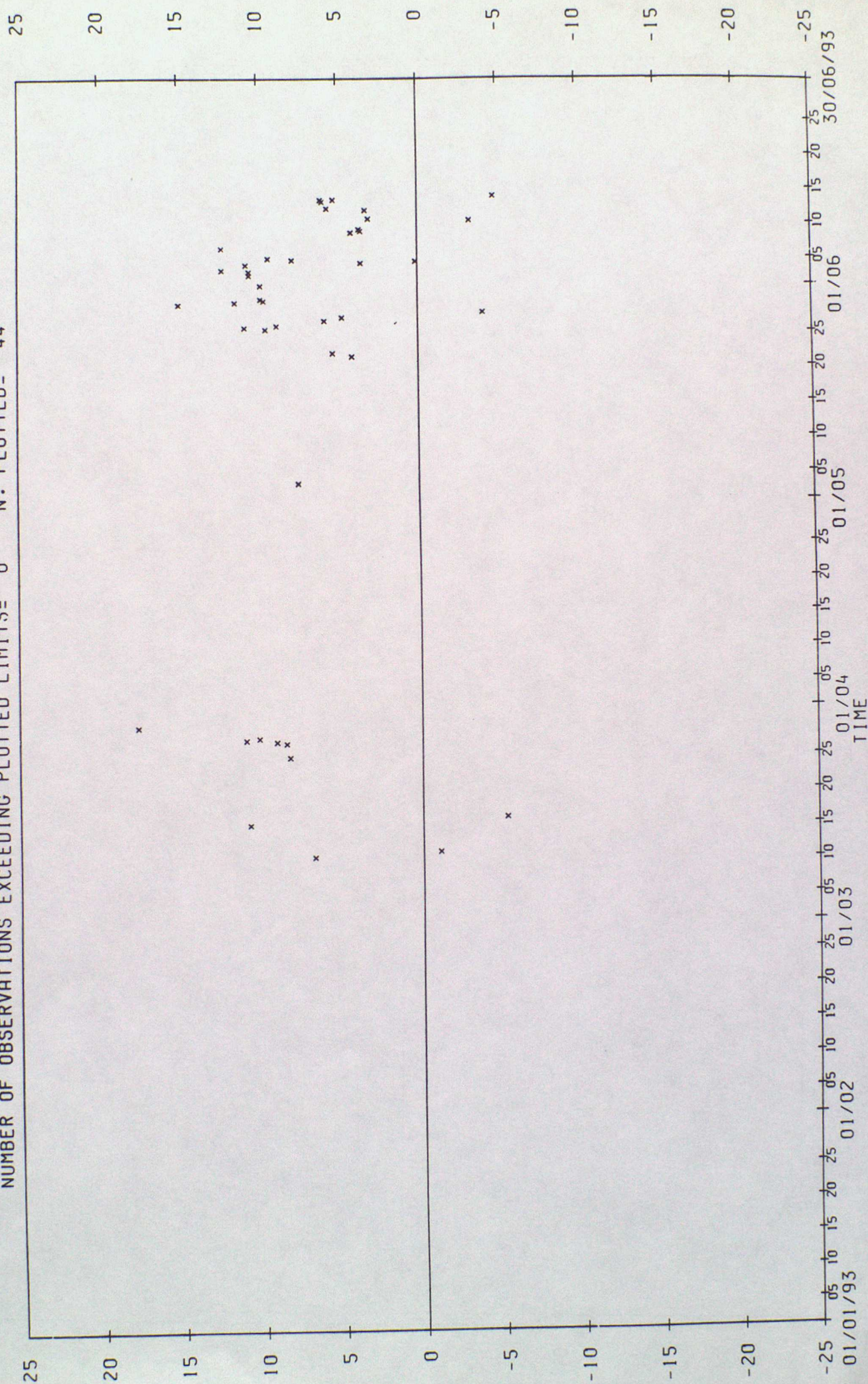
VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATION'S EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 57



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: GOSP
 VARIABLE : WIND SPEED IN UNITS OF MS-1
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 44

0-B



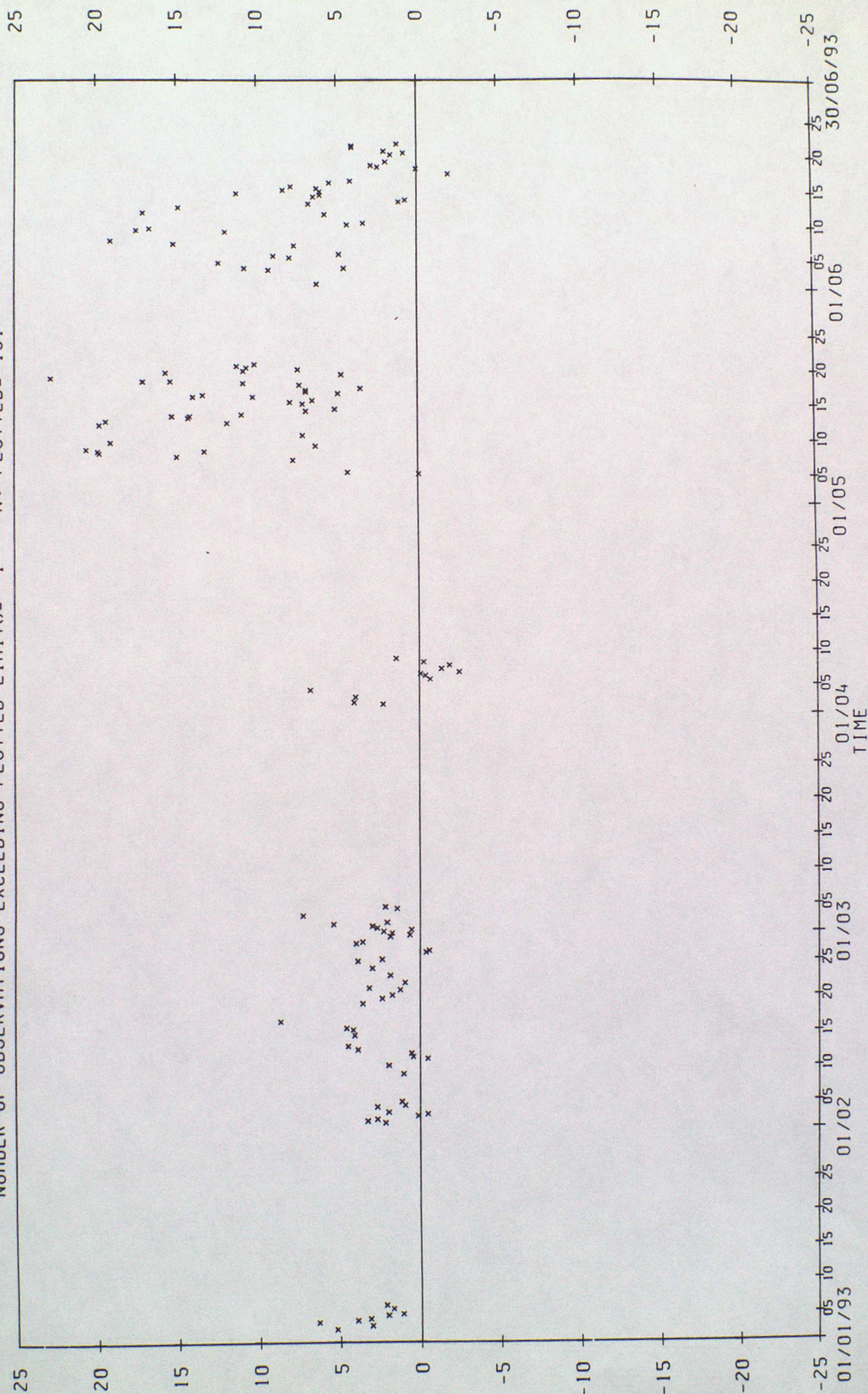
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

0-B

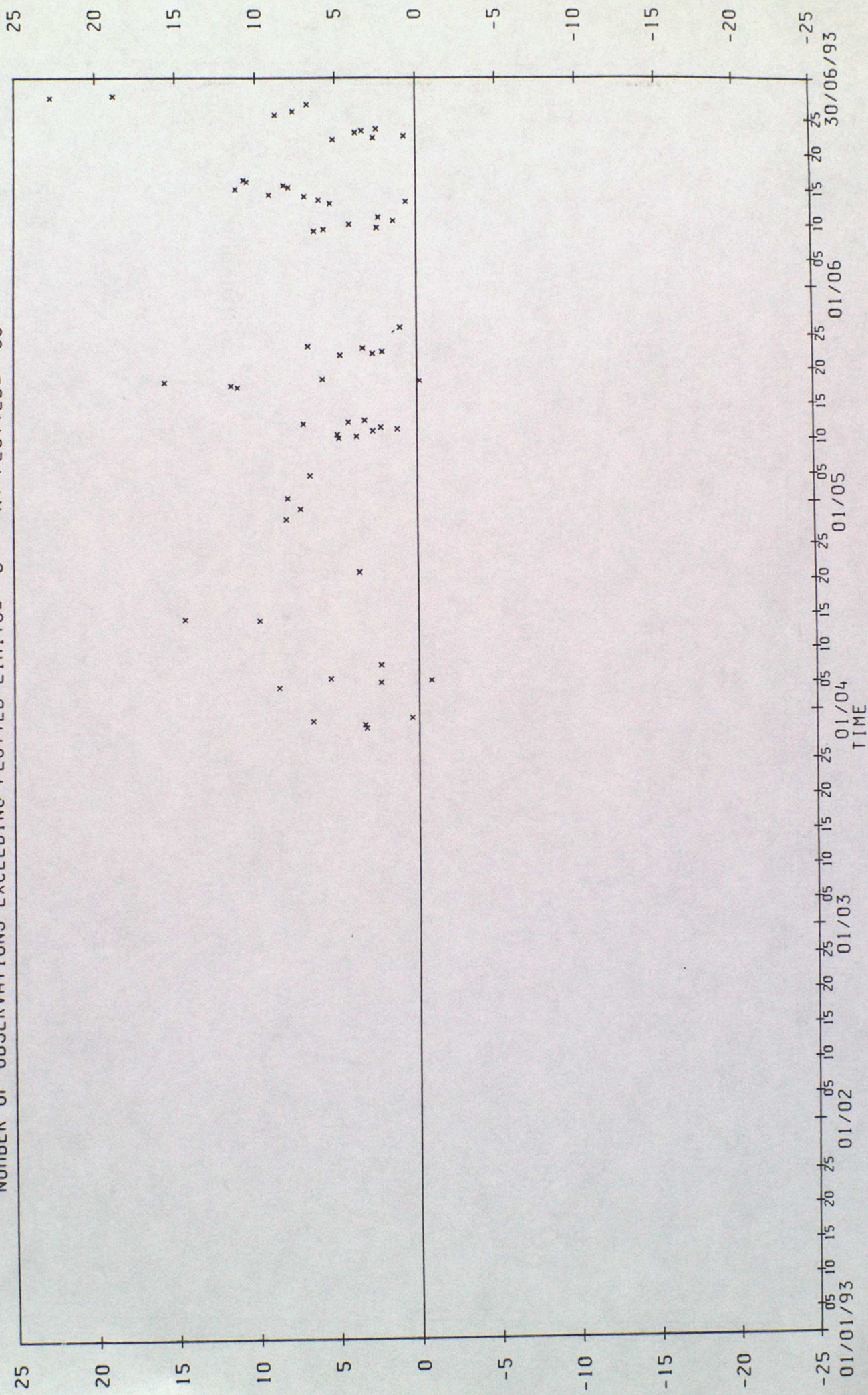
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: MNKN2

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 1 N. PLOTTED= 151



0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: VJBE
 VARIABLE : WIND SPEED IN UNITS OF MS-1
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 63
 0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

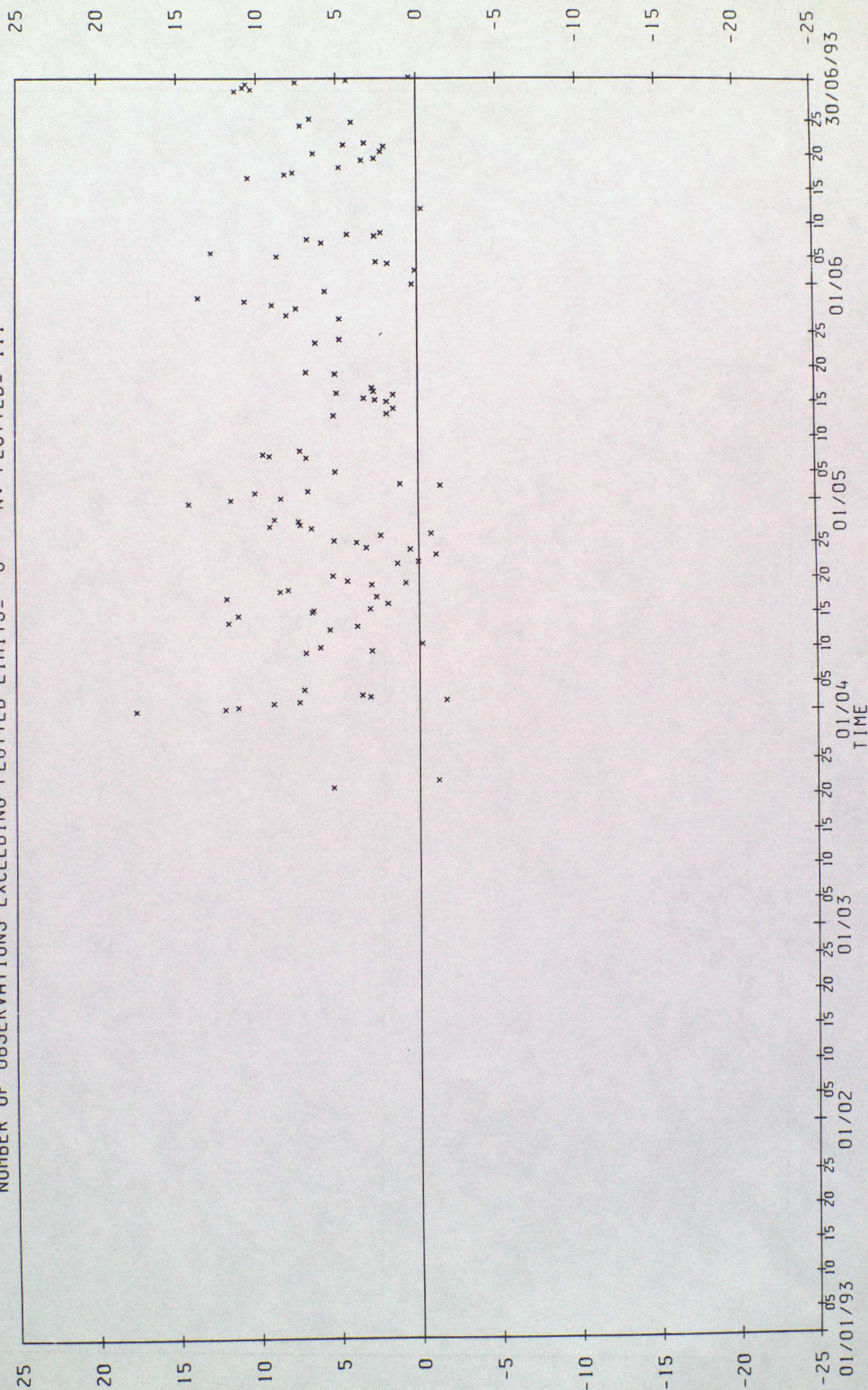
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: VPGM

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 111

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

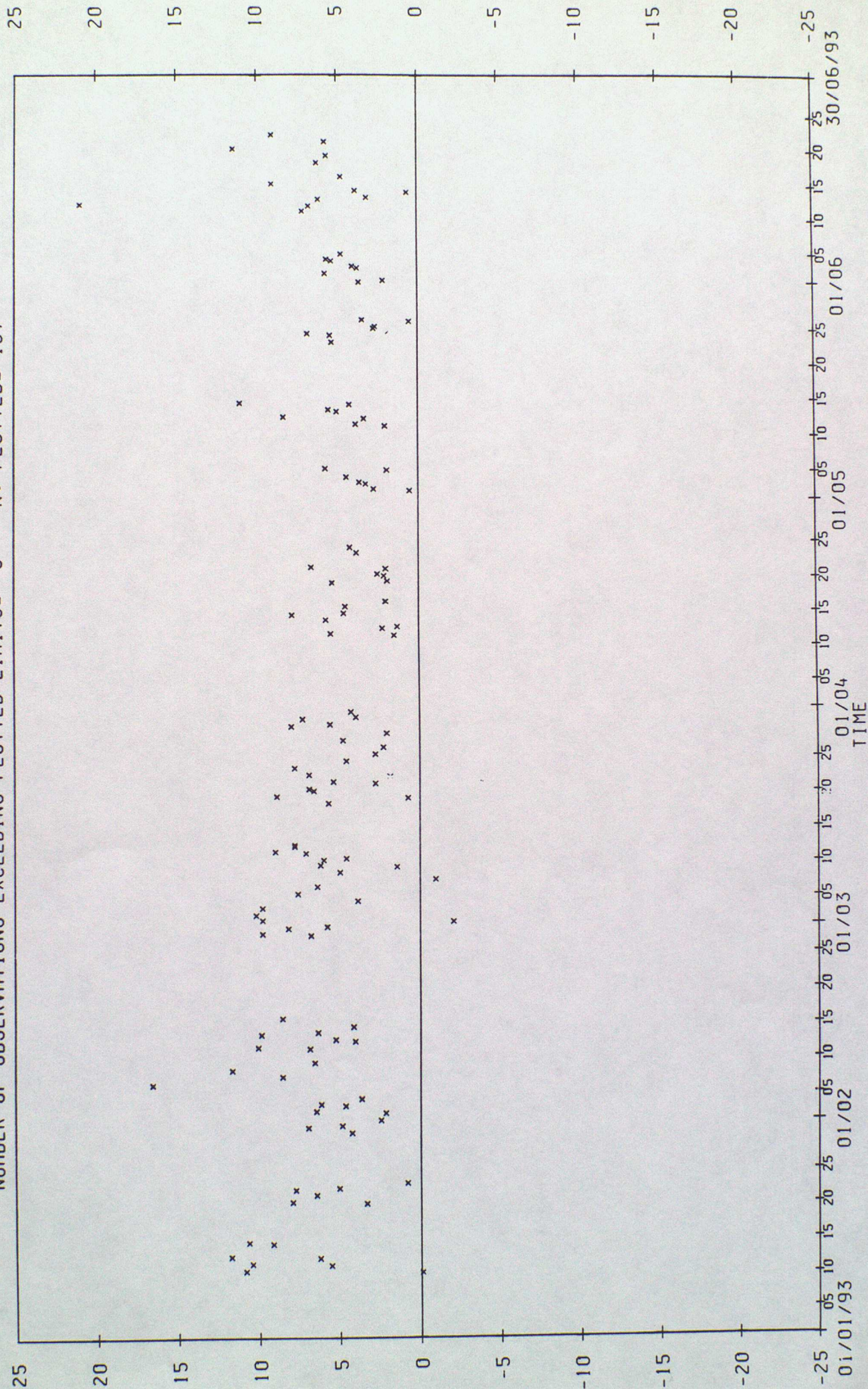
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: XYKM

VARIABLE : WIND SPEED IN UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 137

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

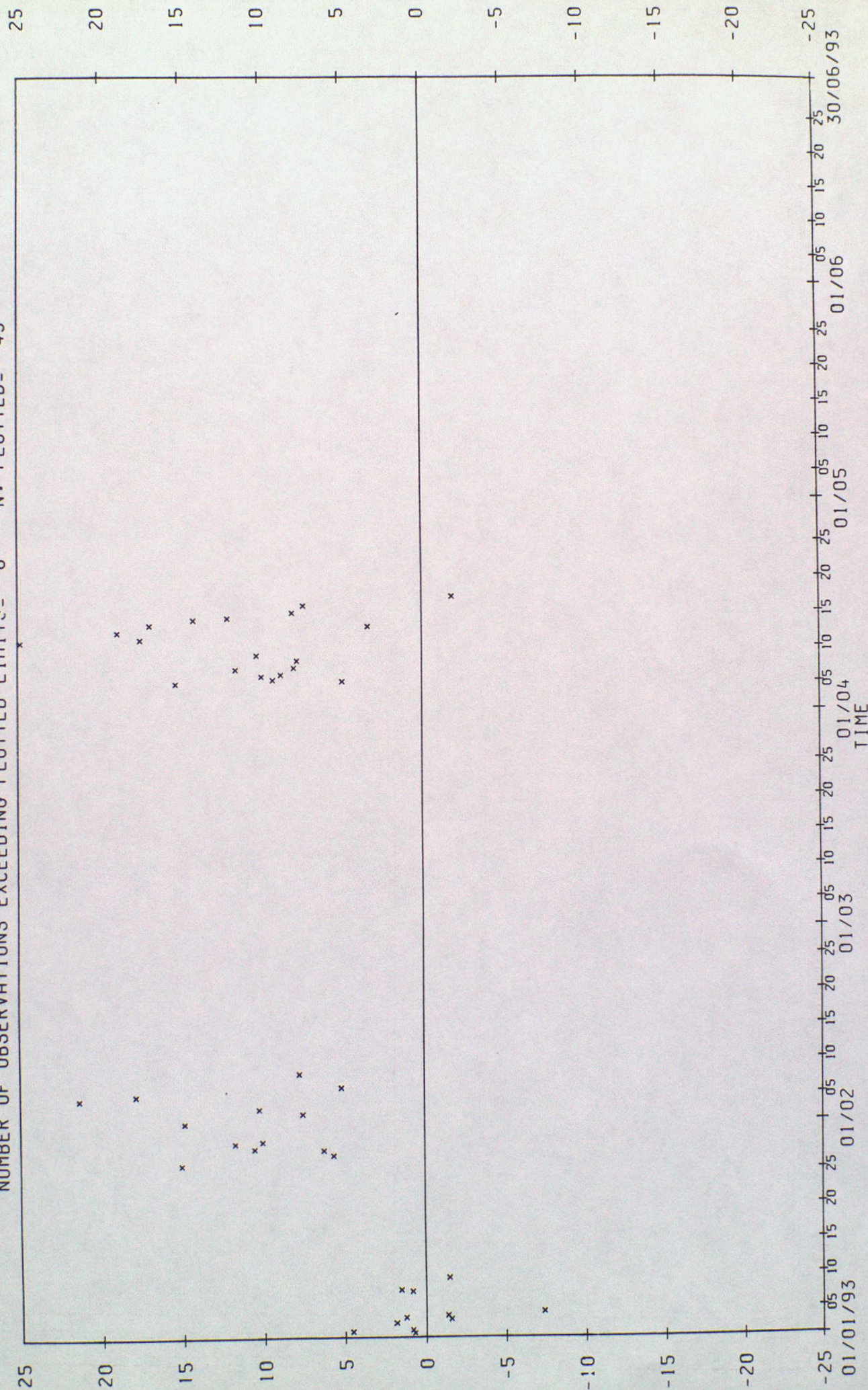
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: YSLD

VARIABLE : WIND SPEED 'N UNITS OF MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 43

O-B

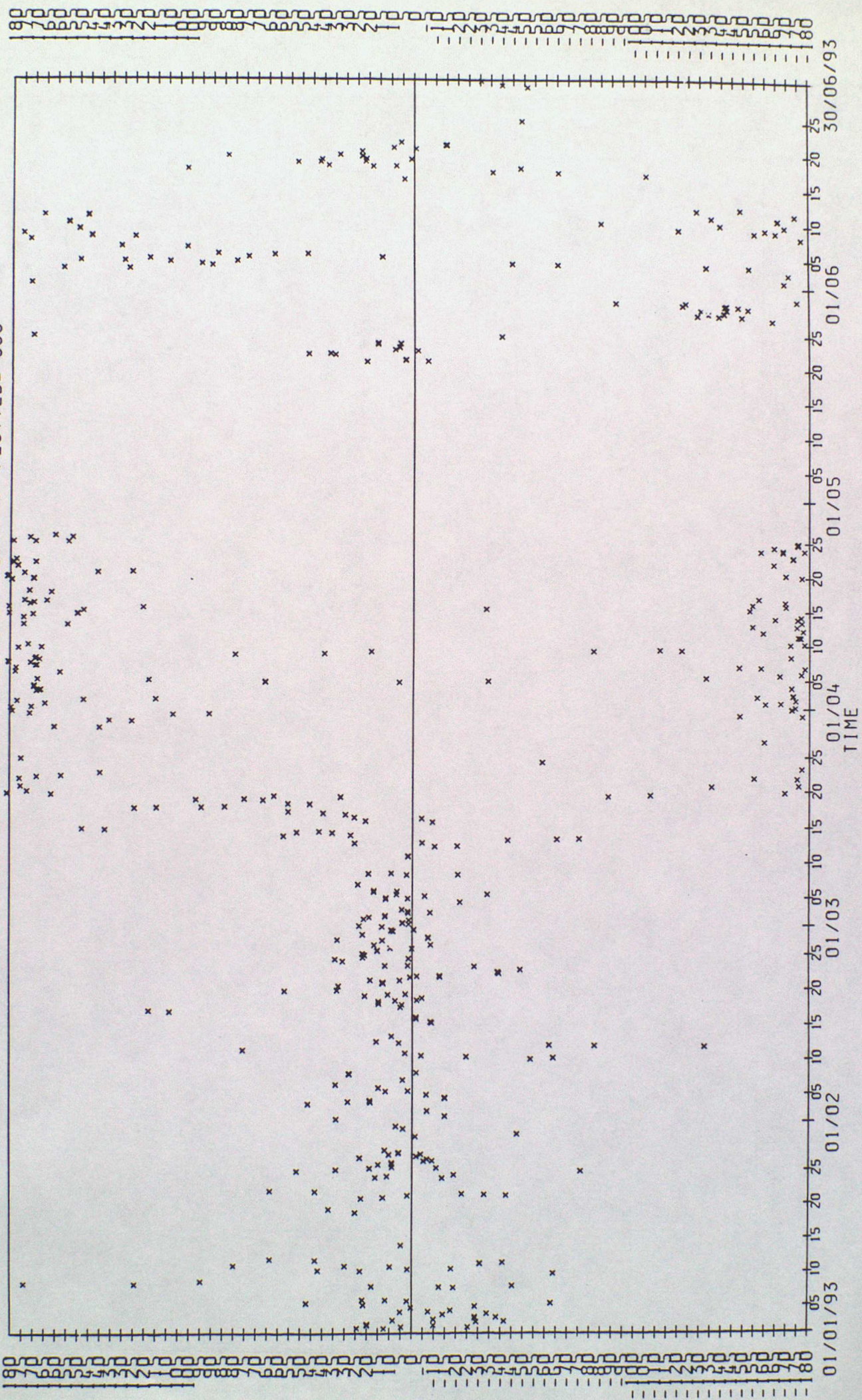
O-B



0-B

0-B

BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 42027
VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 506

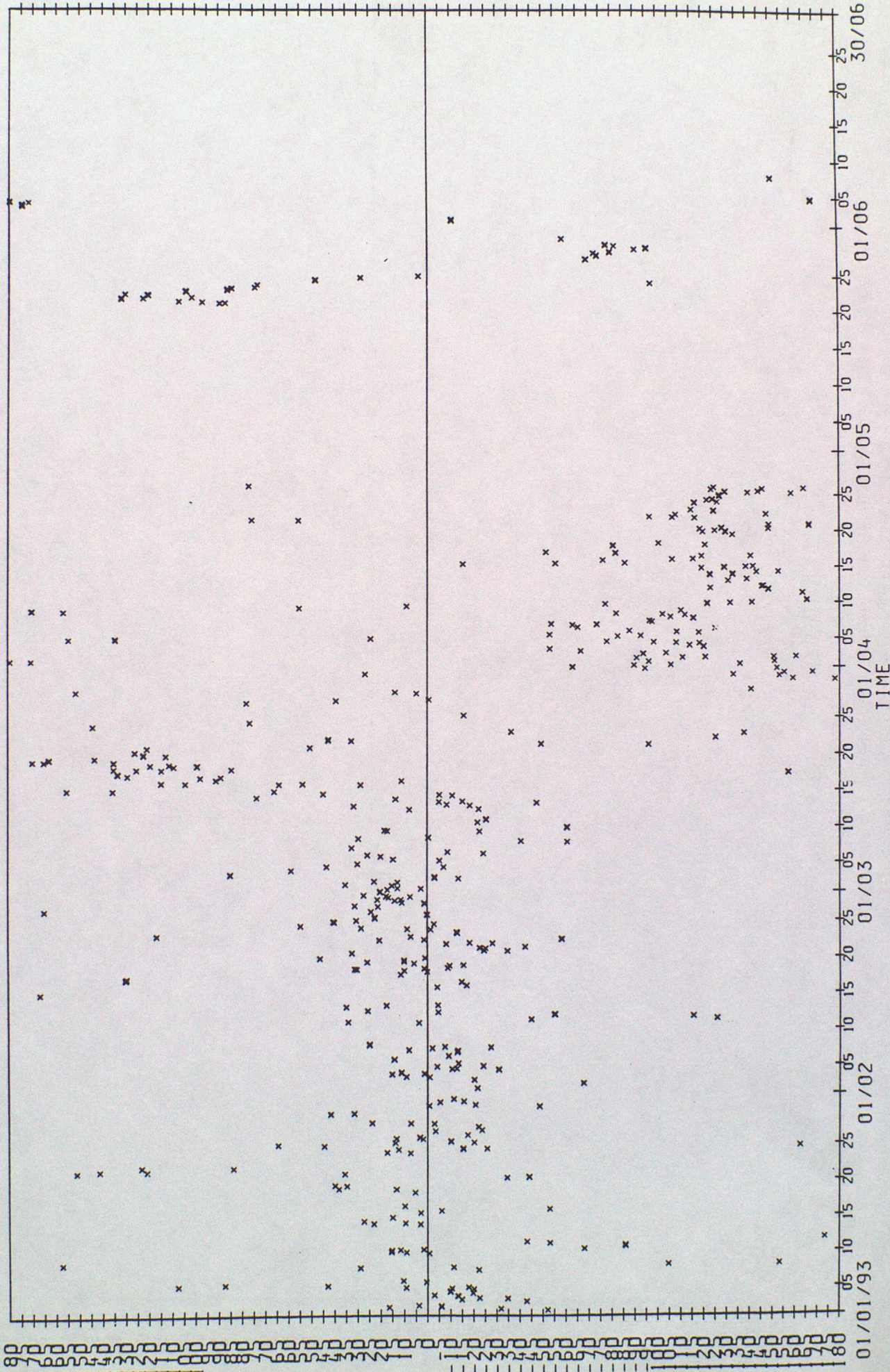


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 42028

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 522



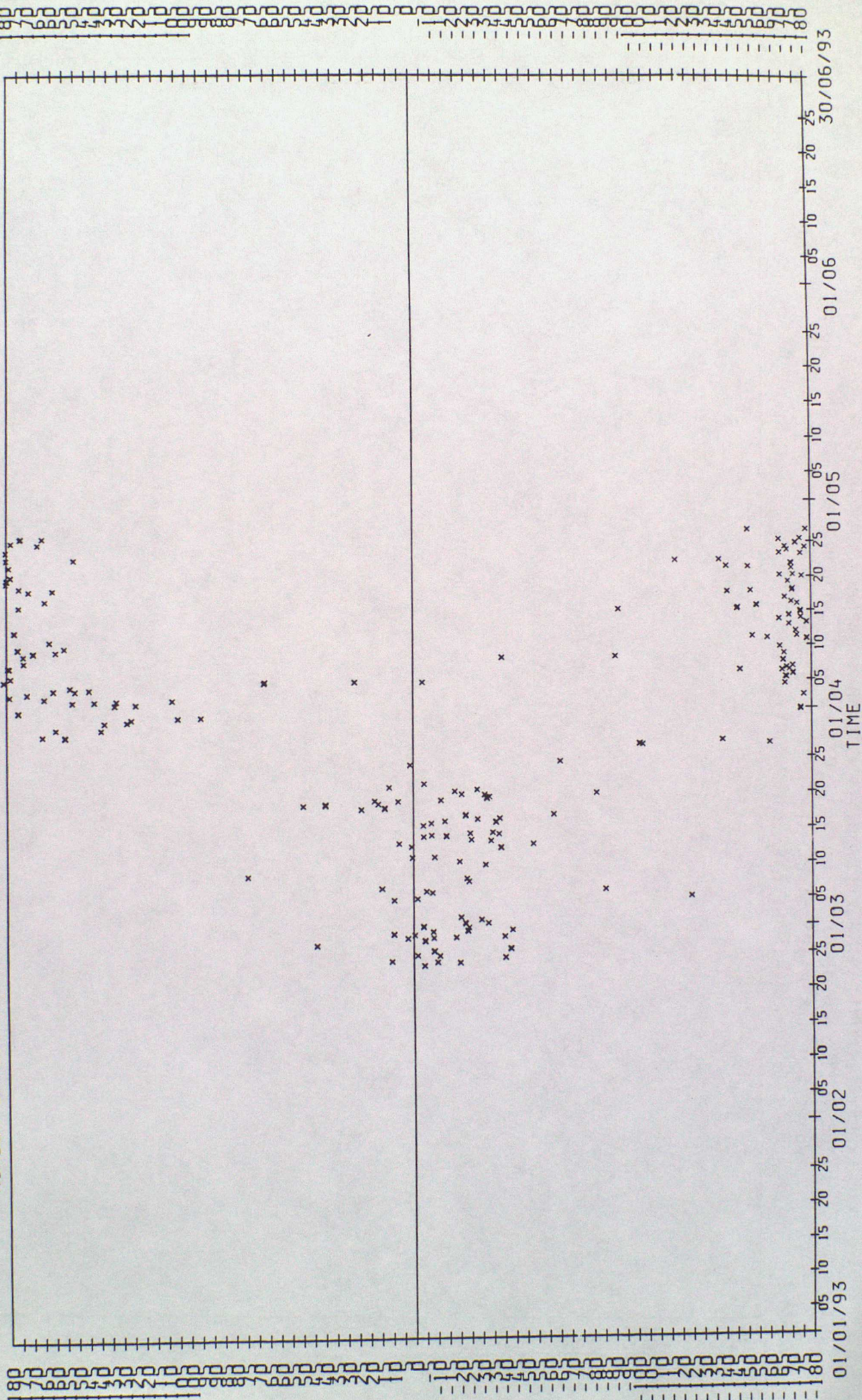
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 42031

O-B

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 238

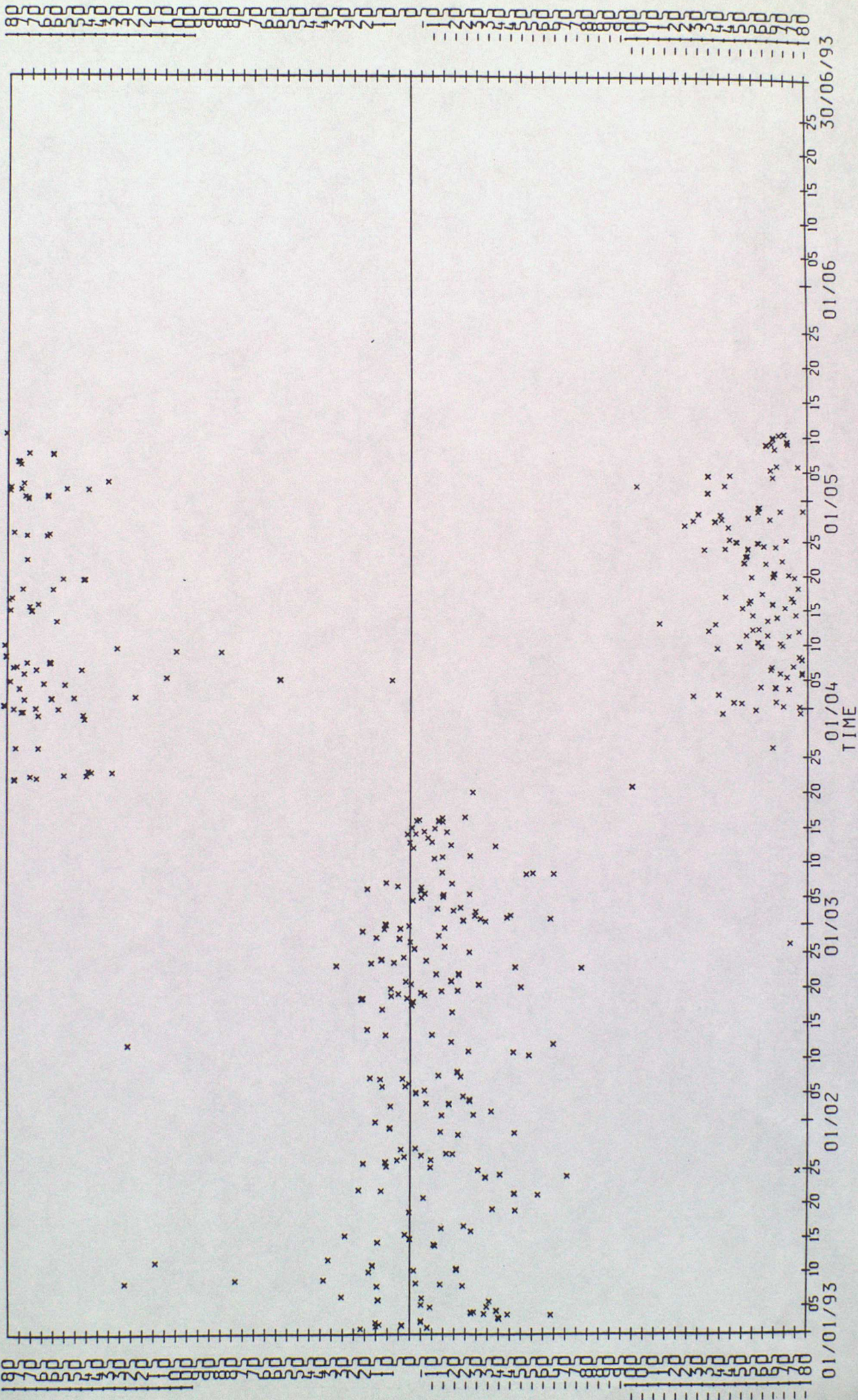


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 42033

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

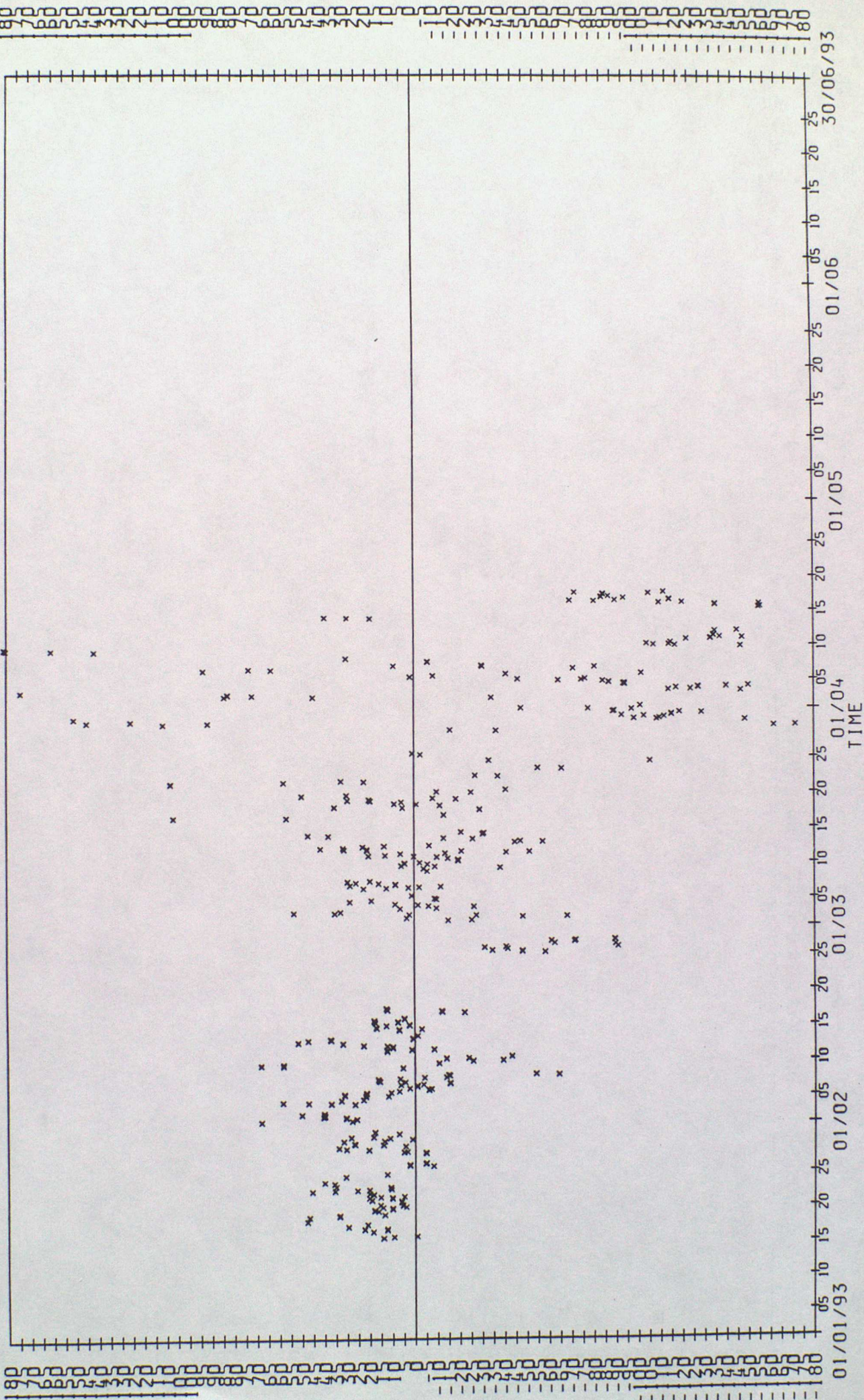
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 457



0-B

0-B

0-B
 BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
 TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 51007 0-B
 VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1
 NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 400



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

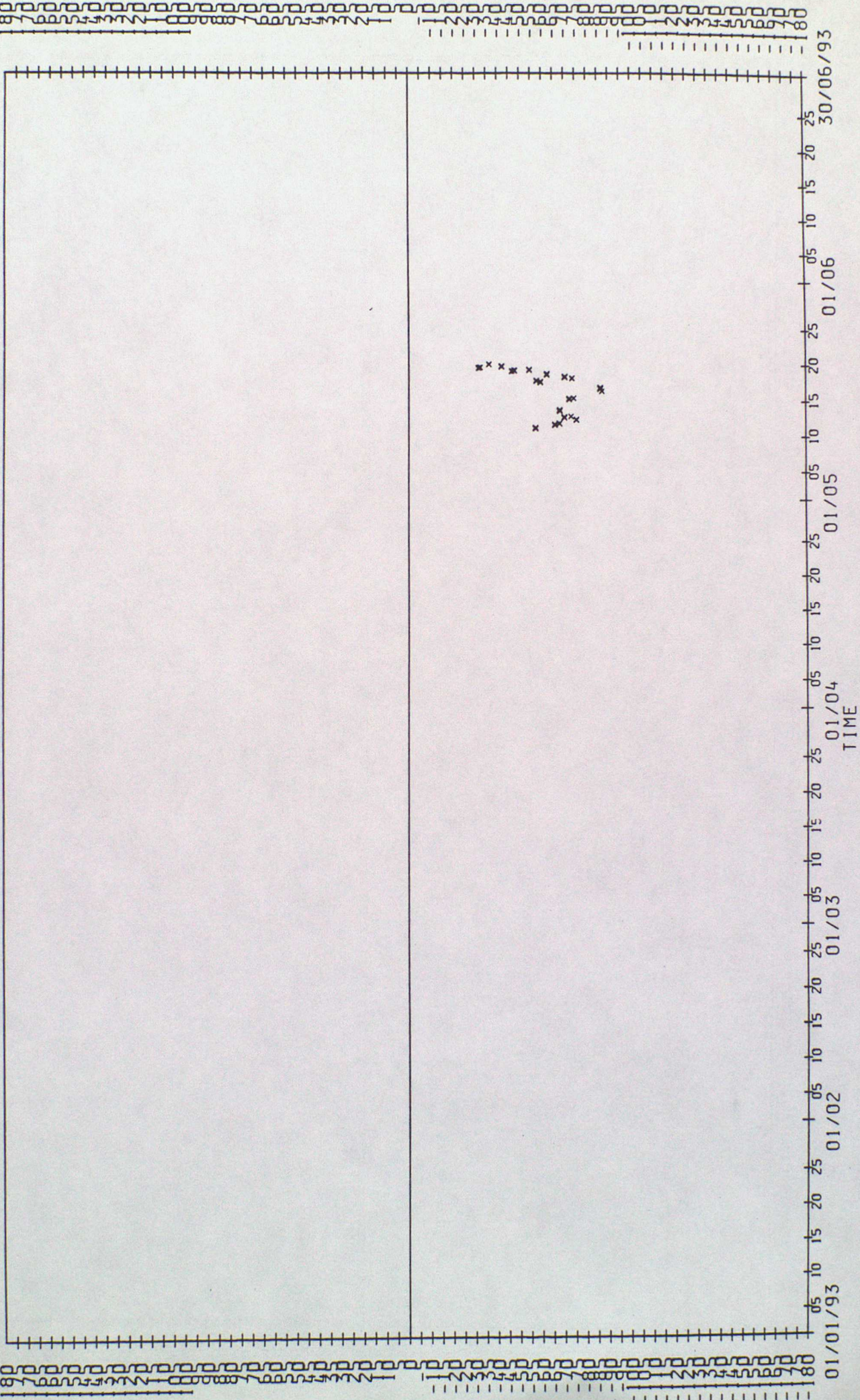
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 52526

O-B

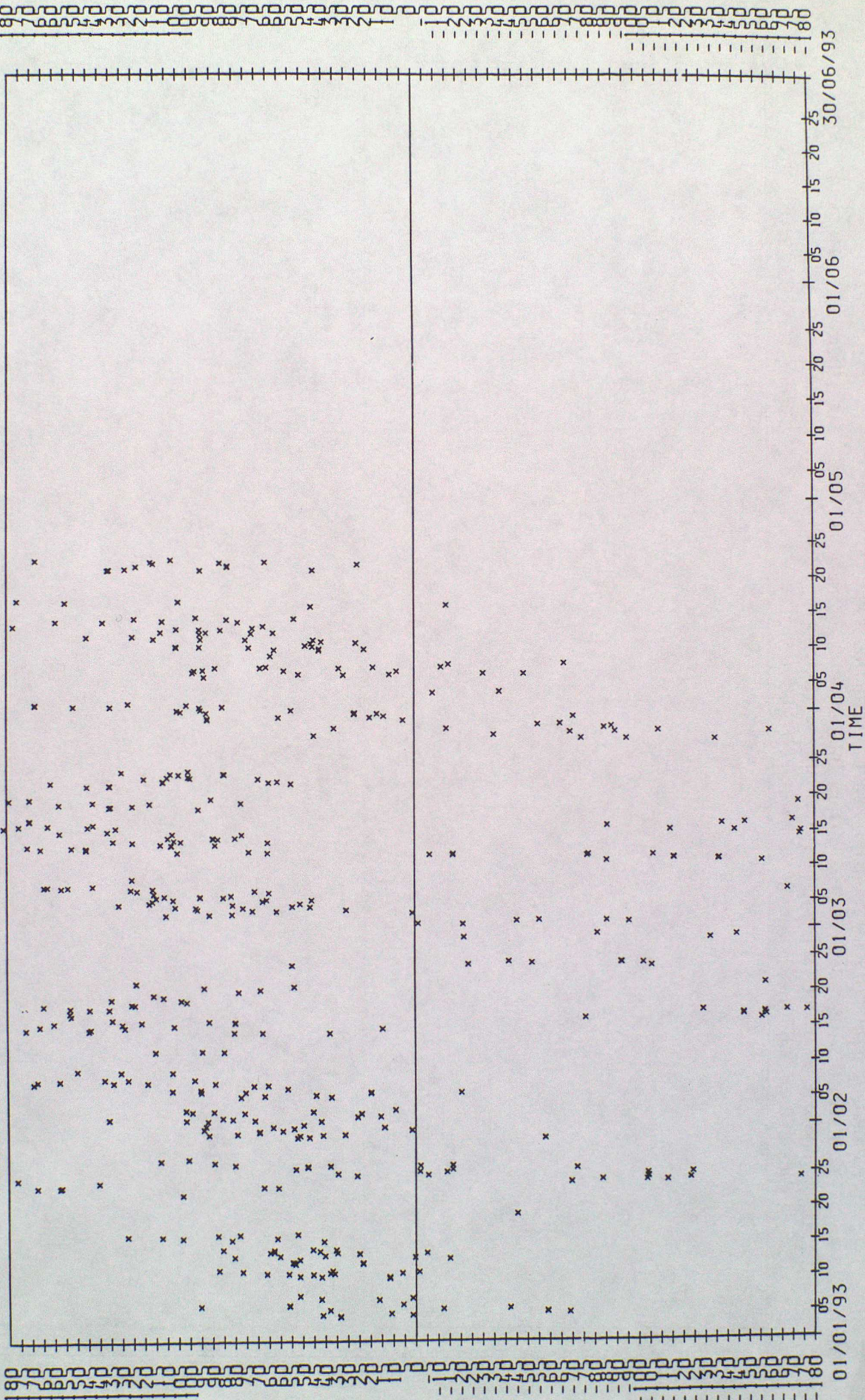
VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 41

O-B



0-B
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 55580
VARIABLE : DIRECTION IN DEG. IF SPEED > 5 MS-1
NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 476
0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

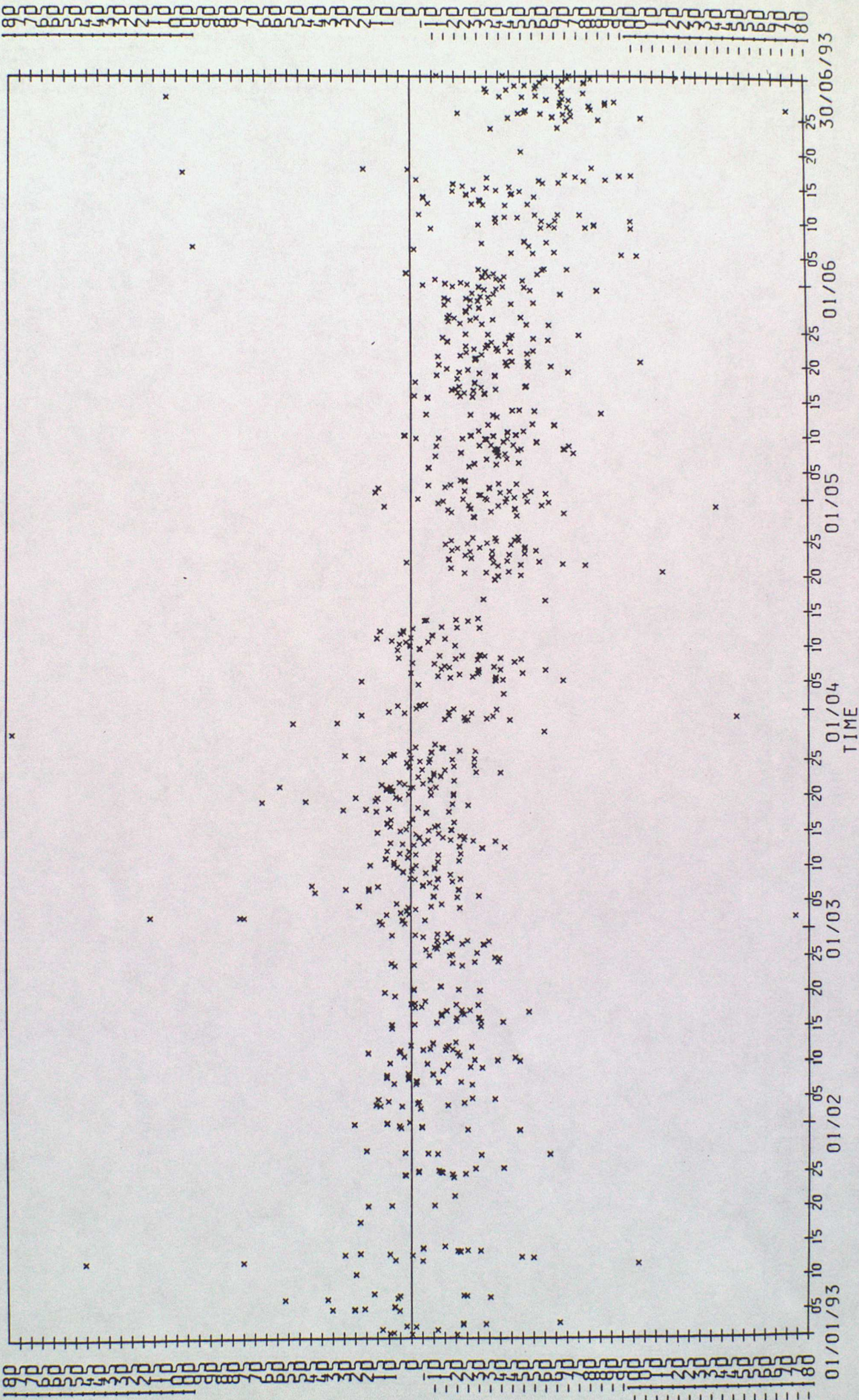
0-B

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 55589

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 931

0-B

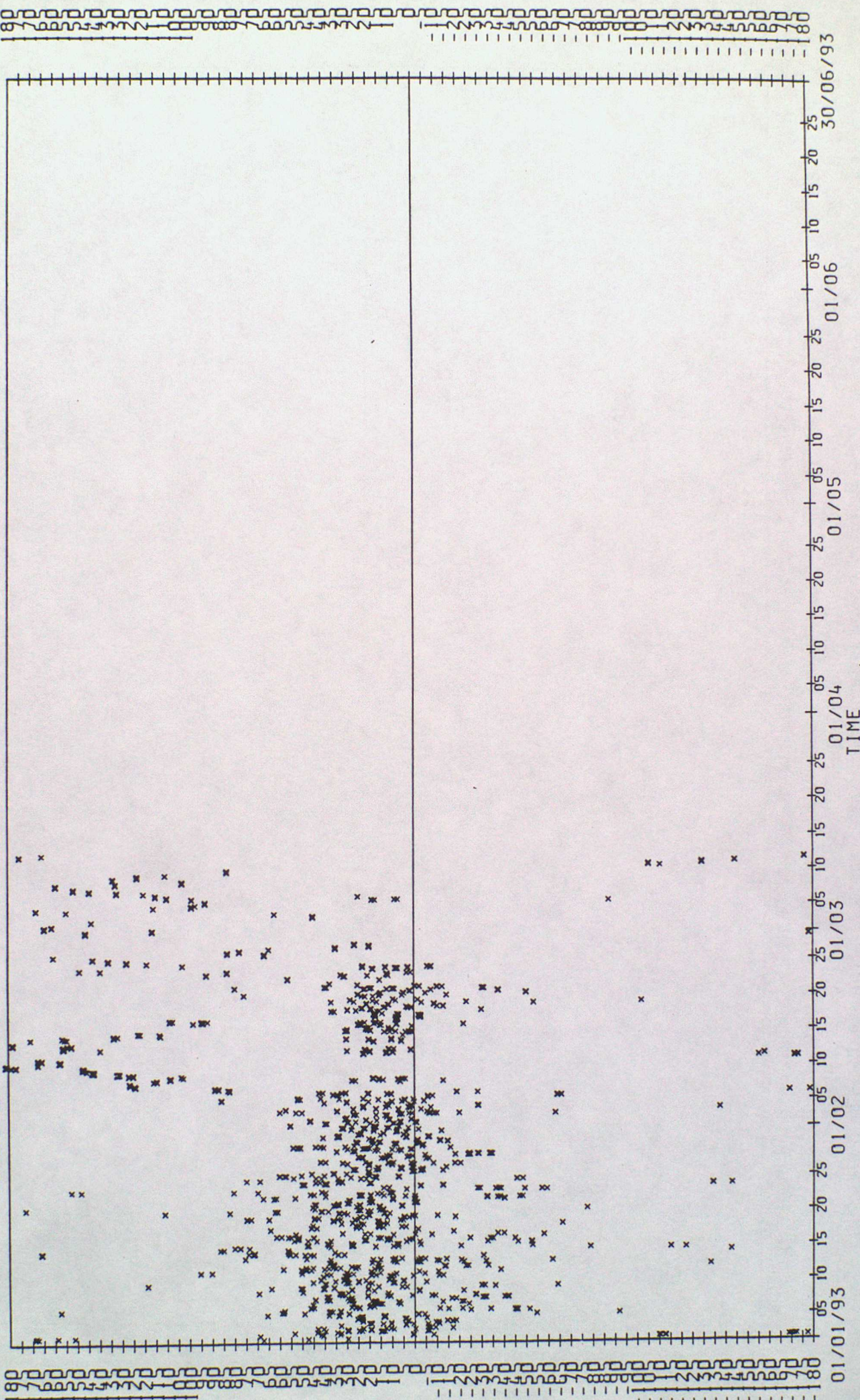


BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: 64043

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED=1640



0-B

0-B

30/06/93

01/06

01/05

01/04

01/03

01/02

01/01/93

TIME

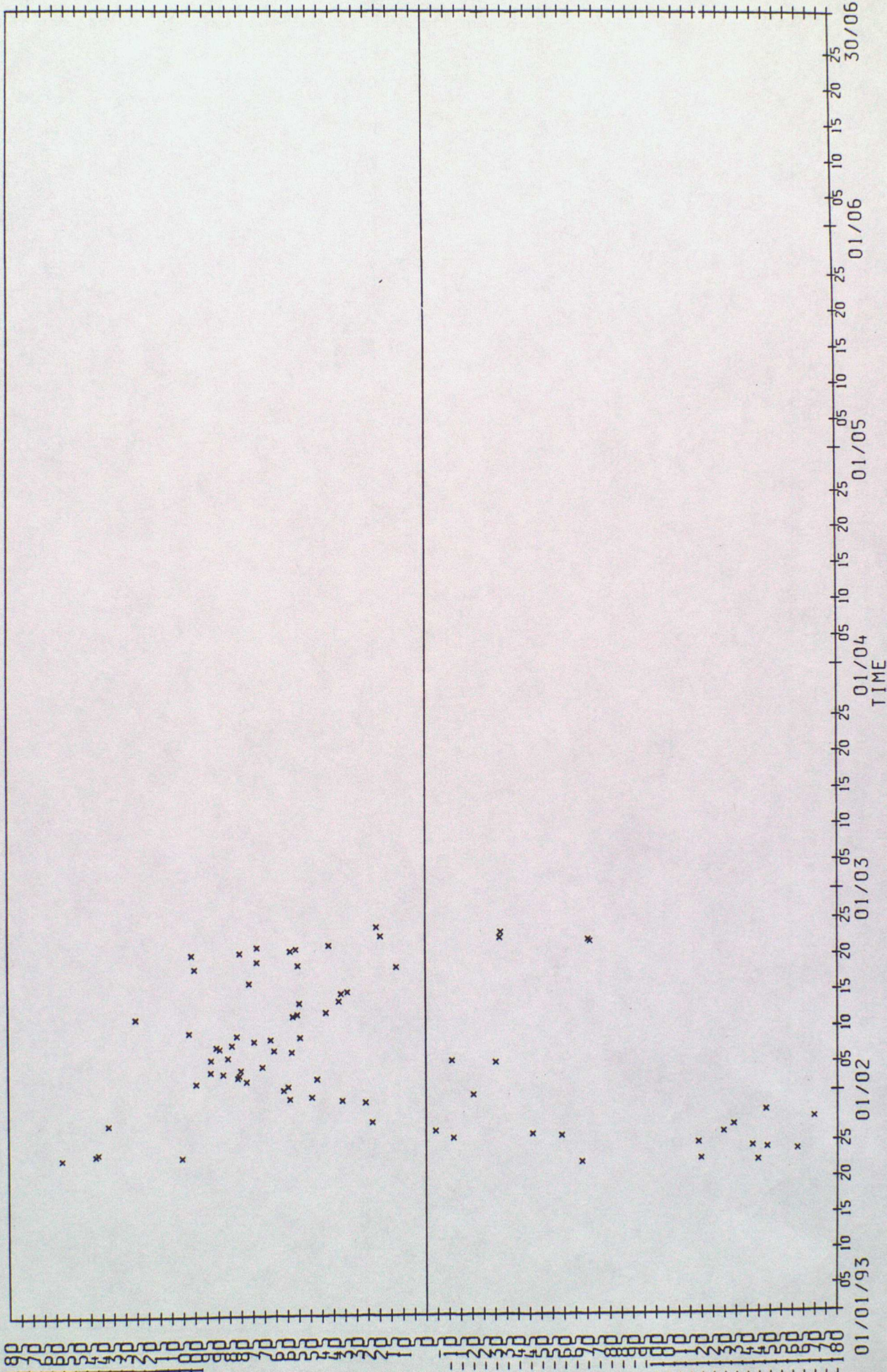
BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: PSSC1

O-B

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 76



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

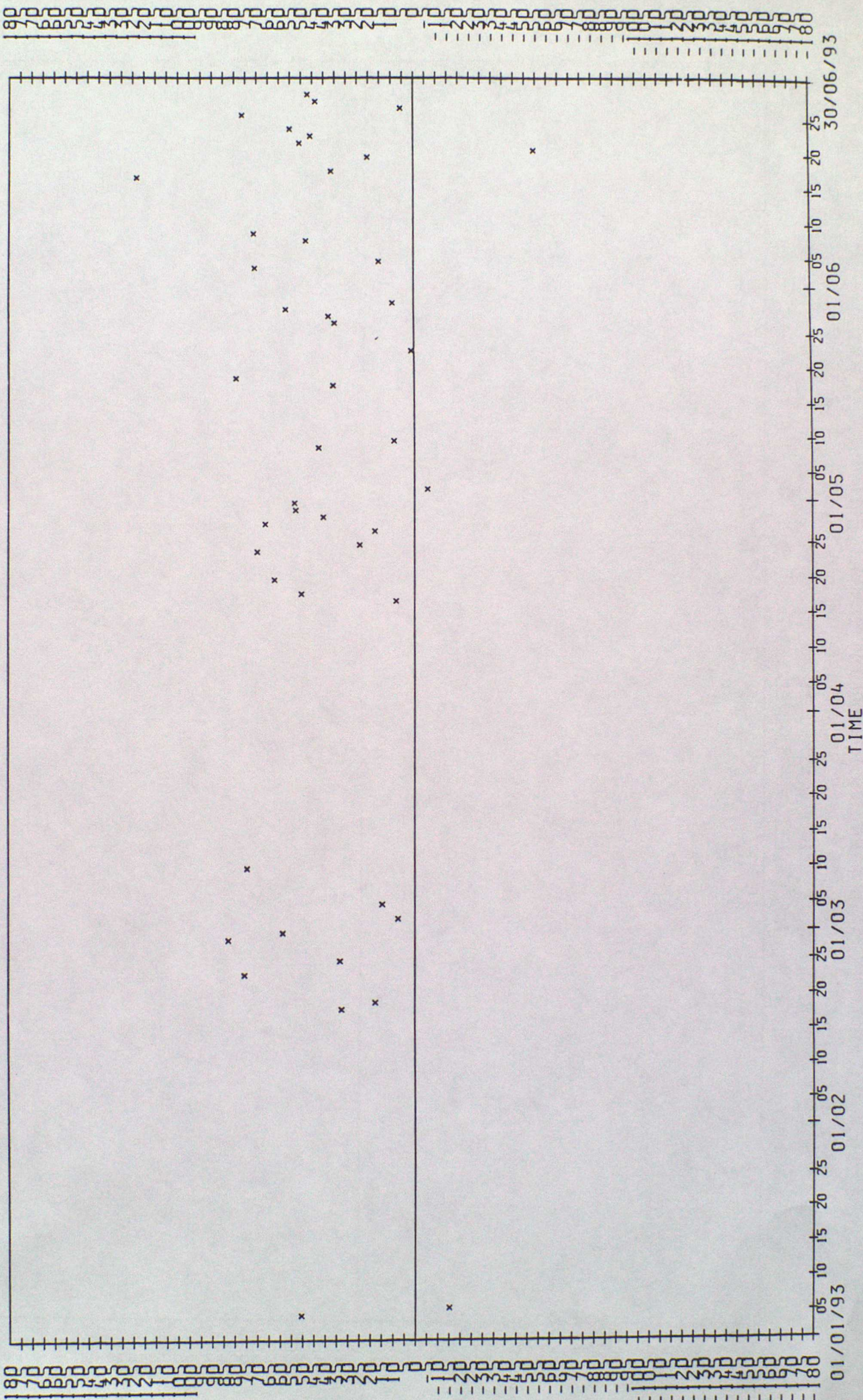
TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(O-B) FOR IDENTIFIER: ZTHP

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 46

0-B

0-B



BRACKNELL MONITORING INFORMATION FOR MARINE SURFACE DATA

TIME SERIES OF OBSERVATION MINUS BACKGROUND INCREMENTS(0-B) FOR IDENTIFIER: 22001

0-B

VARIABLE : DIRECTION IN DEG. IF SPEED >5 MS-1

NUMBER OF OBSERVATIONS EXCEEDING PLOTTED LIMITS= 0 N. PLOTTED= 549

