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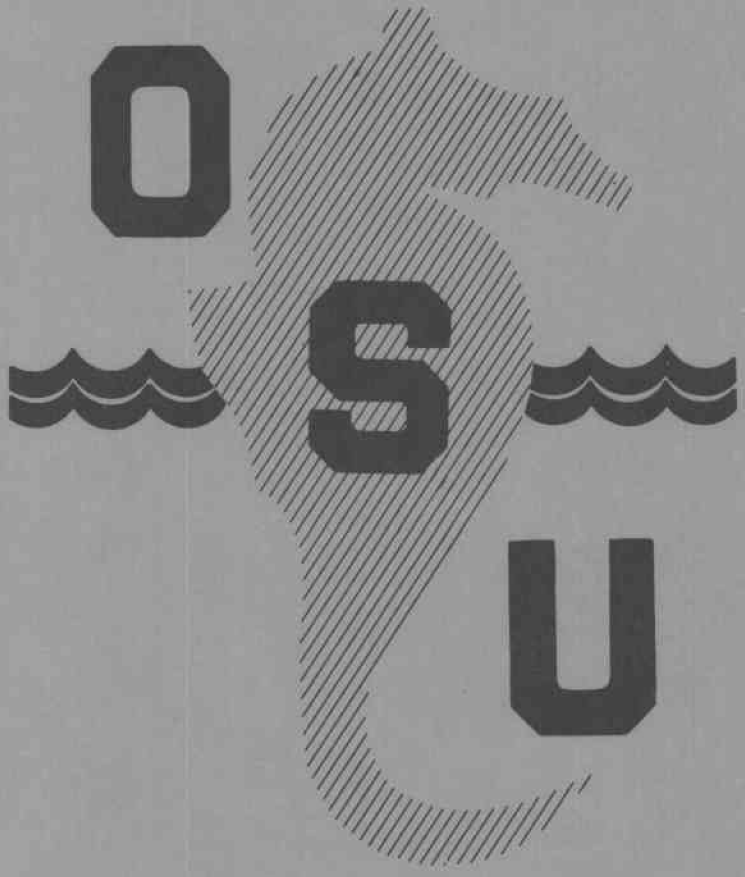

A COMPILATION OF OBSERVATIONS FROM MOORED CURRENT METERS

Volume X

Currents, Temperature and Pressure in the Drake Passage During F DRAKE 75

February 1975-February 1976

By
R. D. Pillsbury
J. S. Bottero
R. E. Still

Data Report 67
Reference 77-8
August 1977

National Science Foundation
Grant No. ID074-12558 A01

OREGON STATE UNIVERSITY

School of Oceanography
Oregon State University
Corvallis, Oregon 97331

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Abstract

Self-recording instruments were installed in the Drake Passage in February 1975. Approximately one-half were part of a short-term array. Data from these short-term instruments are described in Pillsbury, Bottero and Still (1976). This report is complementary to Report 65 and describes the data from the long-term array.

The long-term array consisted of 2 subsurface tide gauges, 11 Aanderaa current meters and 8 General Oceanics current meters. The sampling interval of the instruments was one hour. The data are shown here through pertinent statistics, real time plots, progressive vector diagrams, stick figures, and spectra.

Introduction

A field experiment designed to study circulation and transport processes in the region of the Drake Passage began in January of 1975. This experiment called F DRAKE 75 was a part of the International Southern Ocean Studies (ISOS), a component of the International Decade of Ocean Exploration. The goal of the experiment was to understand the time and space scales of the flow near the Drake Passage. The data collected will also contribute to the knowledge of the distribution of water mass properties and their dynamics in this important region of the world's oceans.

An extensive hydrographic survey of the Drake Passage region and the western Scotia Sea was conducted as a part of F DRAKE 75. The hydrographic and chemical data collected aboard the R/V MELVILLE and the R/V CONRAD are available, (Anon., 1976 and Nowlin et al., 1977). The data collected aboard the ISLAS ORCADAS are still in preparation.

The Current Meter Program

The array of current meter moorings installed in the Drake Passage is shown in Figure 1. The array, which included 19 long-term current meters and 2 long-term subsurface tide gauges, was installed in February 1975. The long-term moorings were recovered in January 1976 aboard the R/V T. G. THOMPSON. All meters were recovered with the exception of the one on mooring 5 and the tide gauge at Cape Horn.

All of the current meter moorings were subsurface taut-wire moorings. Their design followed in large part the Woods Hole Oceanographic Institution intermediate mooring scheme (Heinmiller and Walden, 1973). Most of the current meters used were Aanderaa RCM5's, but 8 General Oceanics winged current meters were deployed on mooring 9. A description of the Aanderaa meter is given in Pillsbury et al. (1974), and descriptions of the General Oceanics meter and Aanderaa tide gauge are given in Appendices of Pillsbury, Bottero and Still (1976).

The Aanderaa current meters recorded temperature, speed, and direction every hour. The narrow range of temperatures expected in the Drake Passage allowed us to restrict the range of the temperature measuring portion of the Aanderaa current meters. Not all of our meters could be so equipped but those which could were narrowed to -2°C to +6°C range. The resolution for this range is ±0.008°C. The calibrations were done with an NBS traceable quartz thermometer, and the pre- and post-calibrations agree within ±0.02°C on average.

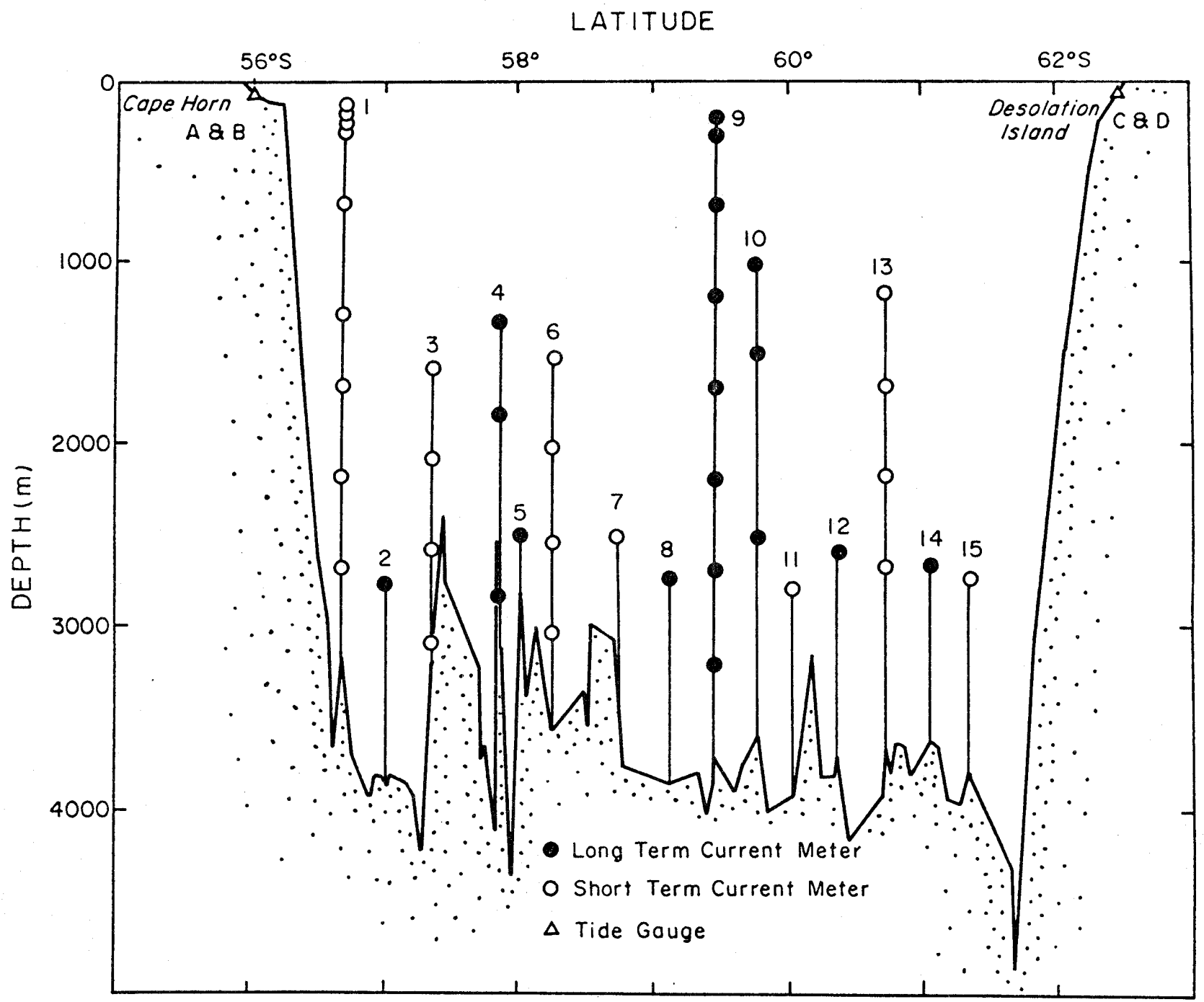

Figure 1. Distribution of Moored Instruments During F DRAKE 75.

The Aanderaa tide gauges recorded pressure averaged for 400 seconds once every hour. The pressure gauges are capable of resolving pressure changes resulting from 1/2 cm changes in water depth. The calibration of the tide gauges was done by Aanderaa Instruments Ltd., Victoria, B. C., Canada, using a Barnet dead weight tester.

OSU current meters and tide gauges were calibrated before and after the experiment. All measuring units exhibited satisfactory reproducible data. The method of calibration and subsequent procedure of data processing are generally described in Pillsbury et al. (1974). The length of the record for each meter is shown in Figure 2.

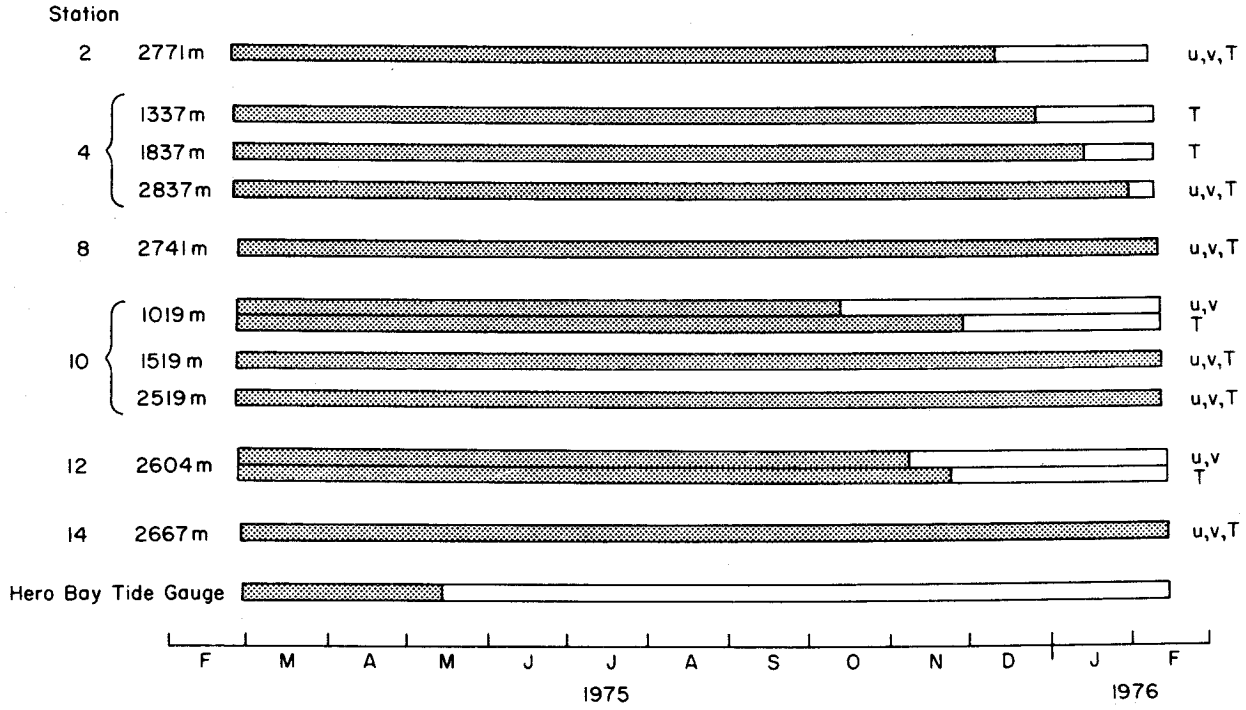

Figure 2. Operation time of the long-term moorings during F DRAKE 75.

Description of the Processed Data

Data from each installation are presented separately. The header page gives information about the location of the string, the data interval, and a general statement about the kind and quality of the data. The depth of the meters in this experiment is subject to greater errors than we would like. None of the meters were equipped with pressure sensors. The bathymetry near each mooring showed a good deal of local relief. A small scale bathymetric

survey was done for many of the moorings and where this was done, with the assumption of a 10% mooring length fallback the depths are probably within 50 m of the depth indicated. The header page indicates our best estimate of the depth and the accuracy of that depth.

Each meter has a serial number assigned to it by the manufacturer. Each successive tape recorded by that machine is numbered with the serial number and the tape number. Thus, 485/10 indicates the tenth tape from machine number 485.

The table of statistics following the header page gives the arithmetic mean, the standard deviation, the skewness, kurtosis, the maximum value, the minimum value, and the number of hourly values. V is the true north-south component and U is the true east-west component.

Real time plots of the data follow the table of statistics. Data were taken each hour and plots which show each point are too long to be easily included in this report. To reduce the plots the data were filtered with a 60+1+60 point Cosine-Lanczos filter with a half-amplitude at 34.3 hours and half power at 40 hours. The data points output by the filter program are at 6 hour intervals. This filter was designed to remove both tidal and inertial oscillations from the data.

The real time plots and stick figures are not presented in a true north-south, east-west coordinate system (Figure 3). The axes have been rotated by 62° clockwise to conform to flow parallel and perpendicular to the hydrographic sections. These directions correspond to through-Passage and cross-Passage directions. The U component is the cross-Passage one, and the V component is the through-Passage component. Positive rotated V is toward the northeast and positive rotated U is toward the southeast. In the case of the stick figures the positive axis corresponds to +V.

In the General Oceanics current meter a watch is photographed each time the tilt and direction are photographed. Because the watch was known to be more accurate than the camera timer, each sample time is taken from the time indicated by the watch. There was a nonuniform spacing of these sample times, and in order to simplify the analysis, the data were interpolated to a uniform sample interval. The description of the interpolation scheme is given in Pillsbury, Bottero and Still (1976).

ACKNOWLEDGMENTS

The funds for the program came from the National Science Foundation grant ID074-12558 A01, a support which is gratefully acknowledged. Many

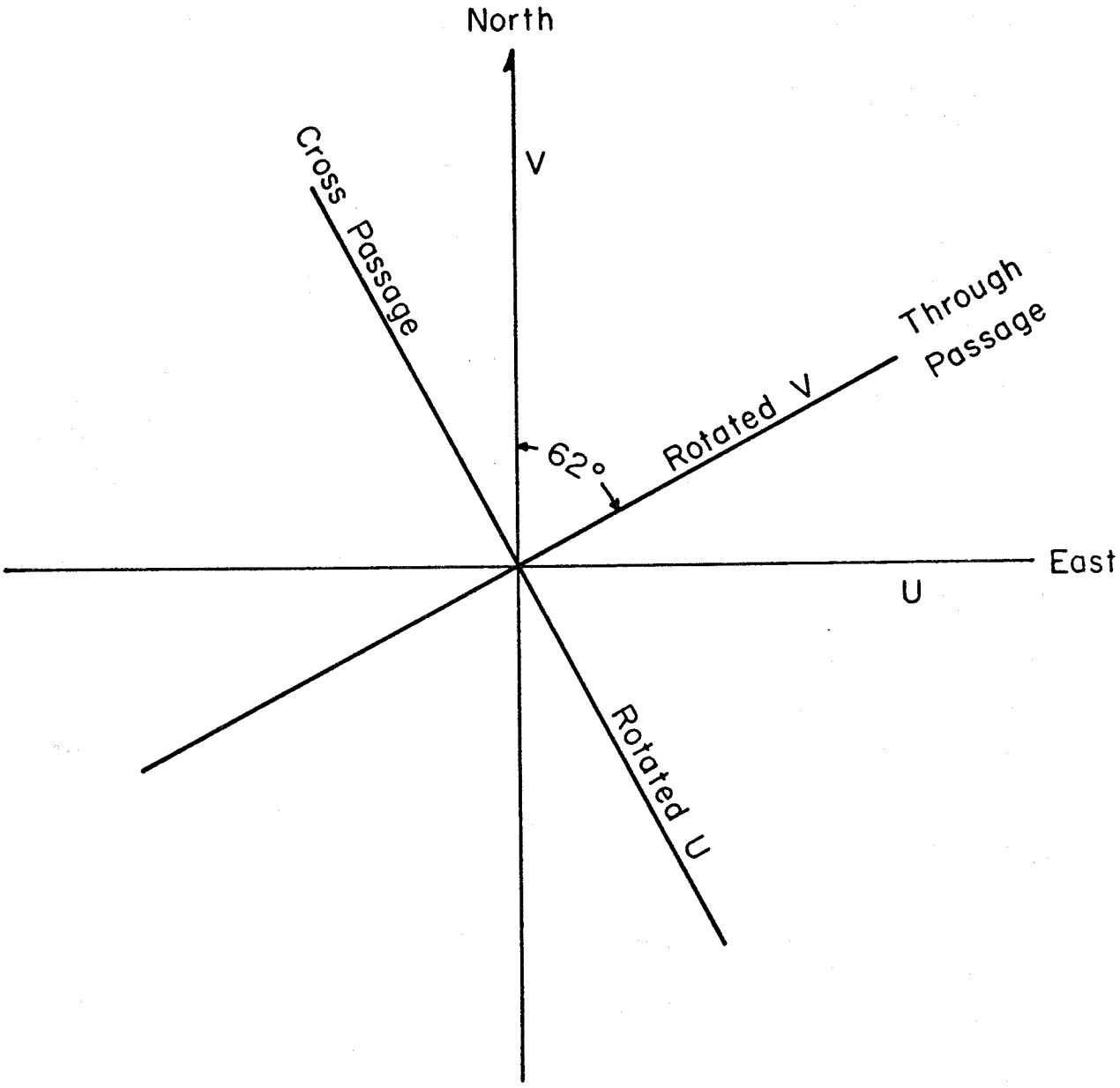

Figure 3. The coordinate system rotation used for velocity components.

thanks go to *B. Moore* and *D. Barstow* for the calibration and preparation of the instruments. Appreciation also is expressed to *D. Root* and *W. E. Gilbert* for their assistance in the data processing.

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Pillsbury, R. D., J. S. Bottero, R. E. Still and W. E. Gilbert. 1974. A Compilation of Observations from Moored Current Meters, Vol. VI, Oregon Continental Shelf, April - October 1972. Oregon State University, School of Oceanography, Corvallis. Data Report 57. Reference 74-2.

INSTALLATIONS

1975 F DRAKE Installation 2

Position: 57°03.9'S, 66°05.7'W
Depth of Water: 3871 m
Set at 2208 UCT 21 February 1975 by R/V MELVILLE
Retrieved at 1320 UCT 7 February 1976 by R/V T. G. THOMPSON
Data Interval: 0241 UCT 22 February 1975 to 0741 UCT 10 December 1975

Instrumentation

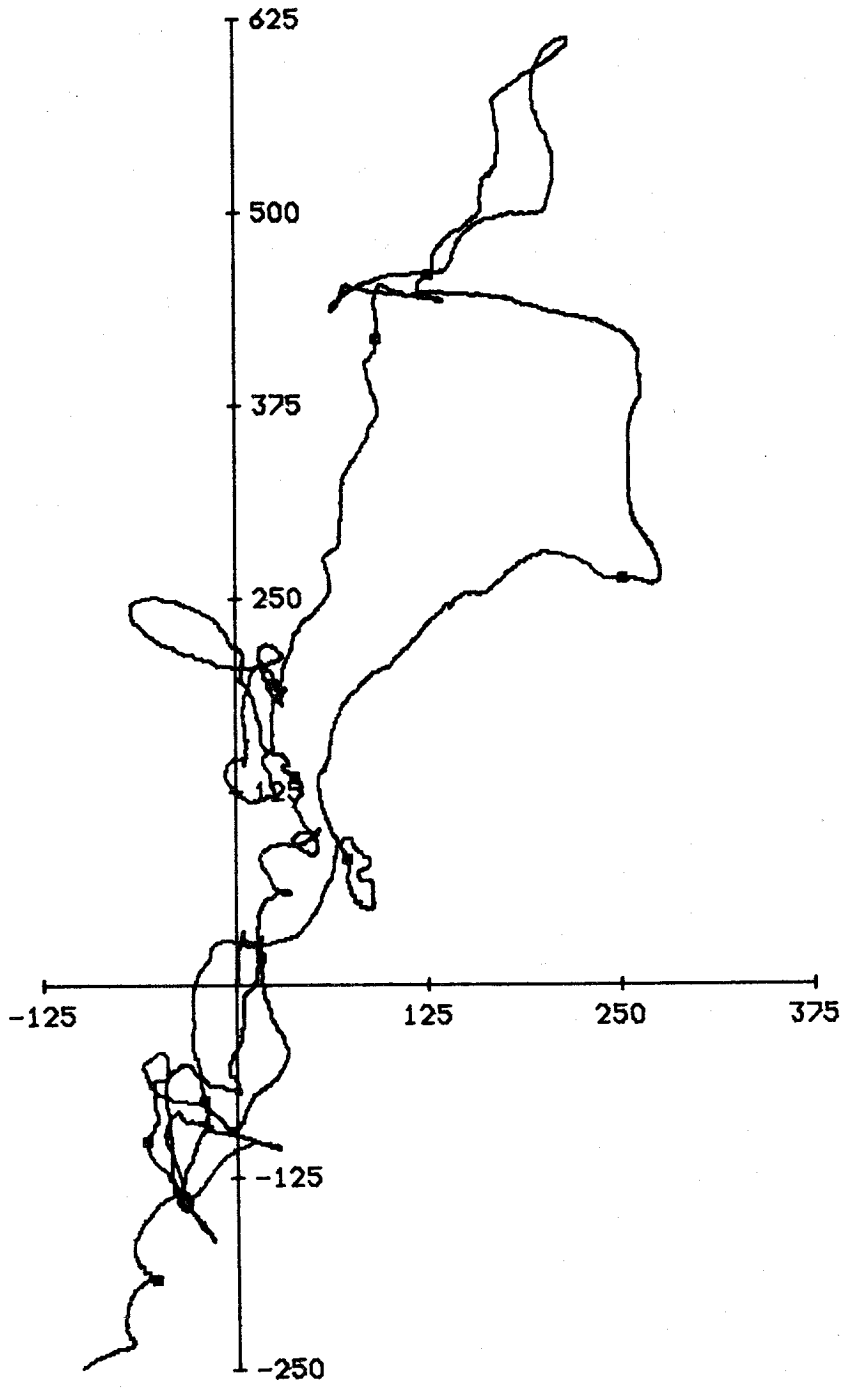
Intended Depth	RCM5 Serial No./Tape No.
2771 m	1236/5

Data were recorded at one hour intervals. Temperature, current speed and direction were measured until the instrument malfunctioned on 10 December 1975.

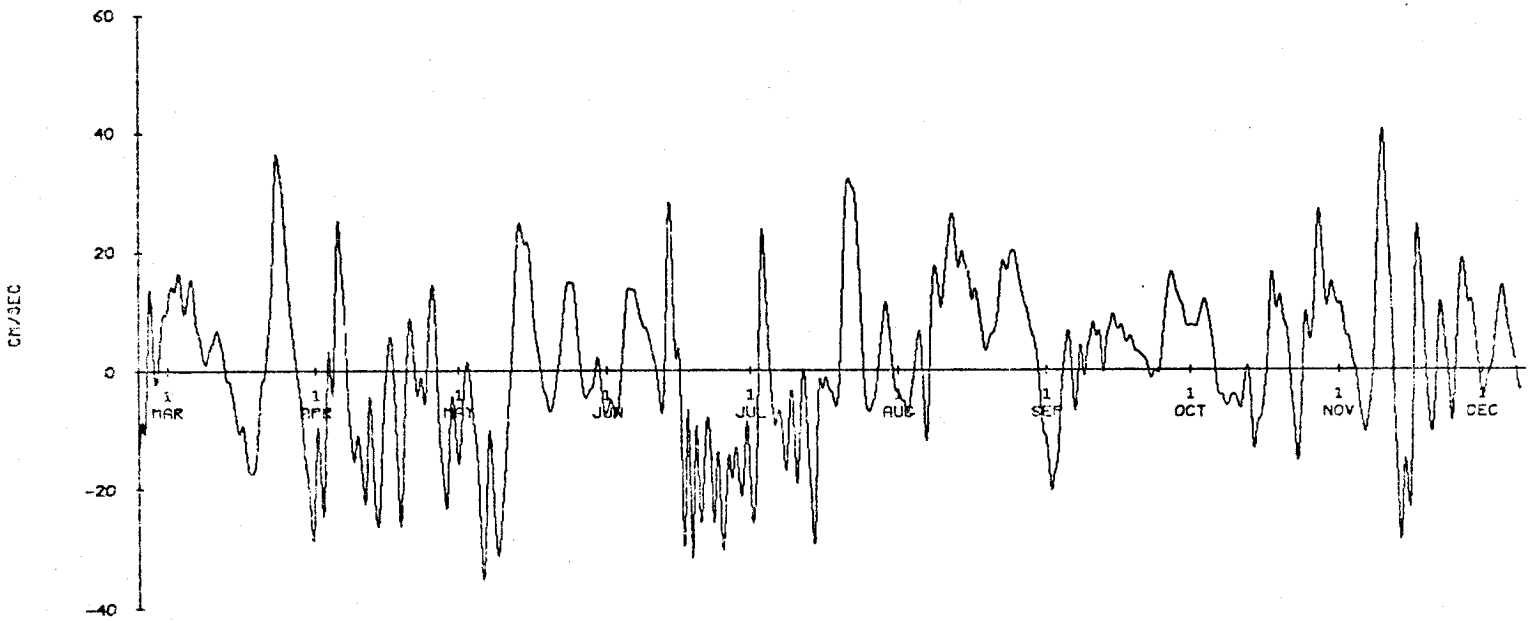
STATION TWO

2771 m

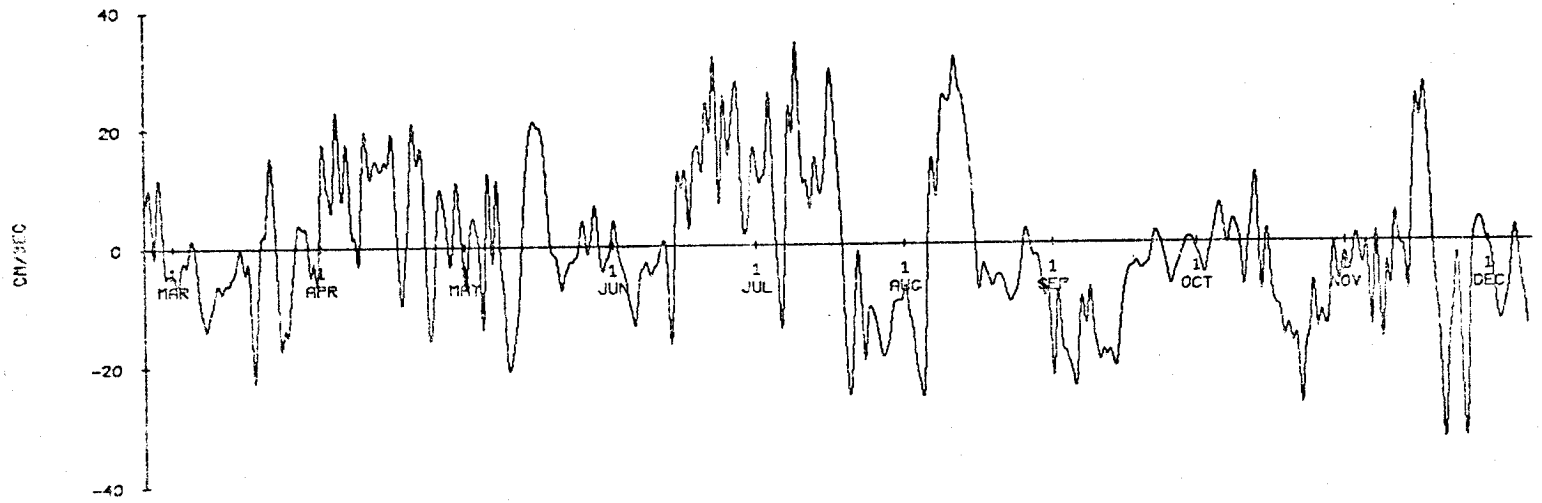
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	16.6	9.3	0.5	2.6	49.7	0.7	6990
U (cm/sec)	-0.4	12.4	0.4	3.5	42.4	-36.7	6990
V (cm/sec)	-1.0	14.4	0.2	3.0	42.2	-48.0	6990
T Water (C)	1.87	0.07	-0.83	4.56	2.06	1.51	6990



2771 M AT F DRAKE STN 2. 291.2 DAYS STARTING 0241 22 FEB 75



ROTATED U COMPONENT. 2771 METERS AT STN 2. TAPE 1236/5



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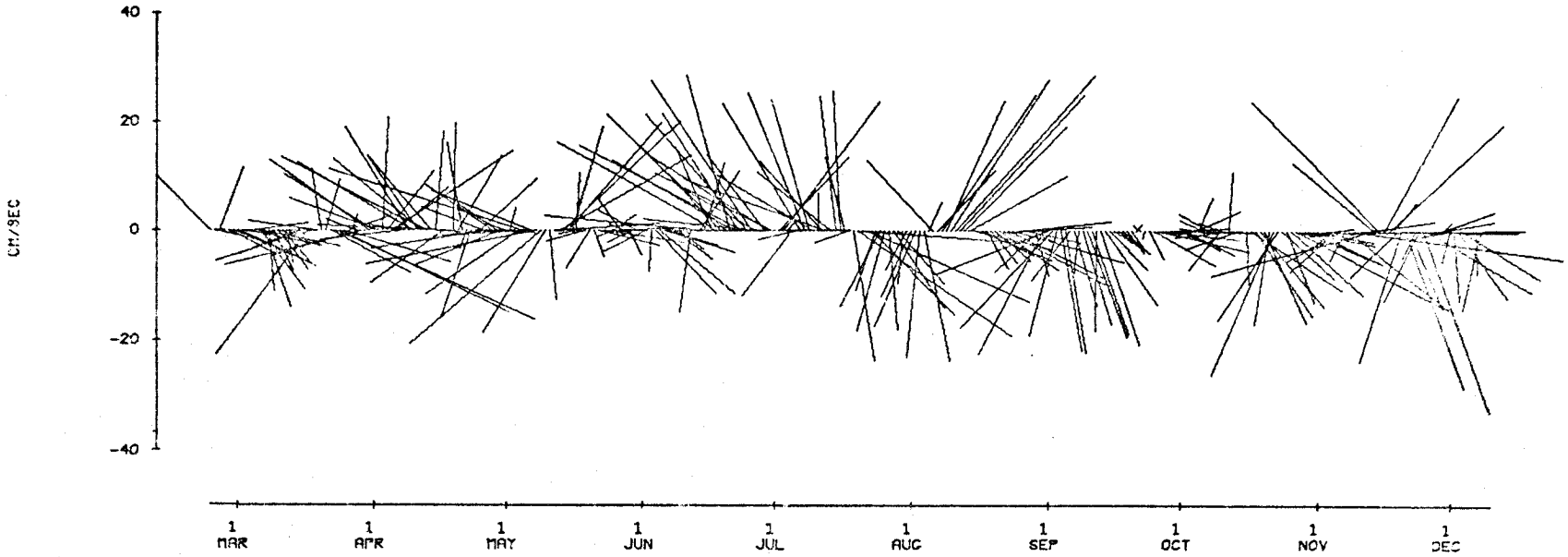
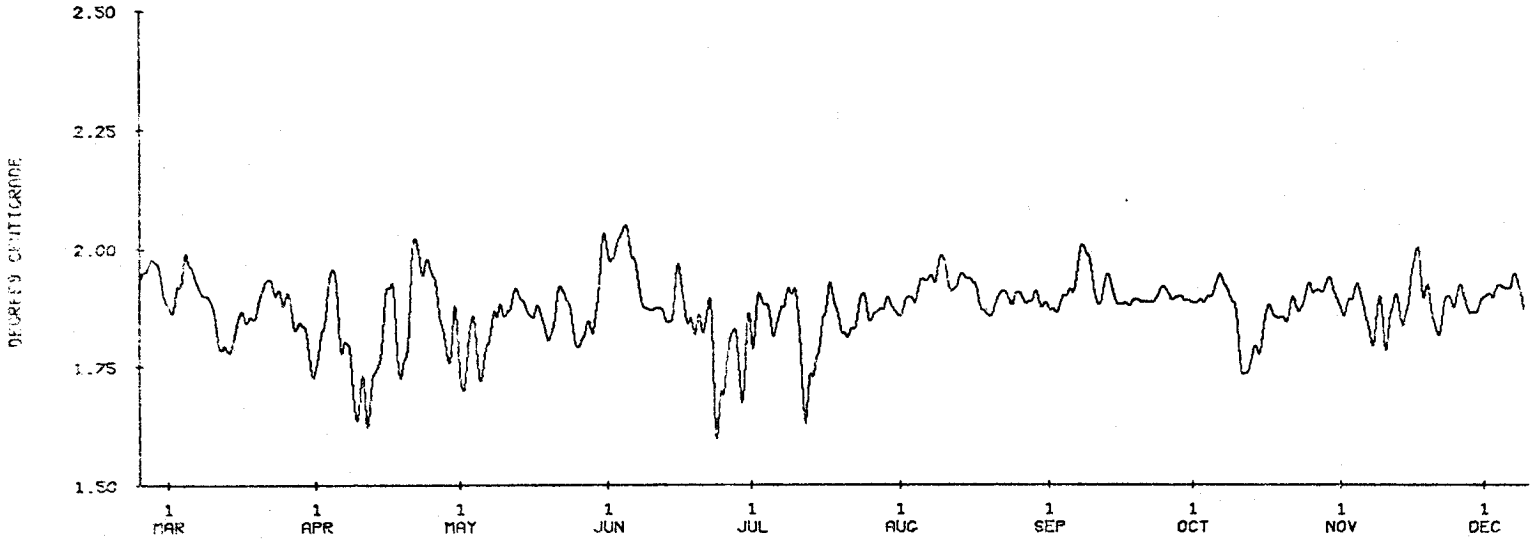
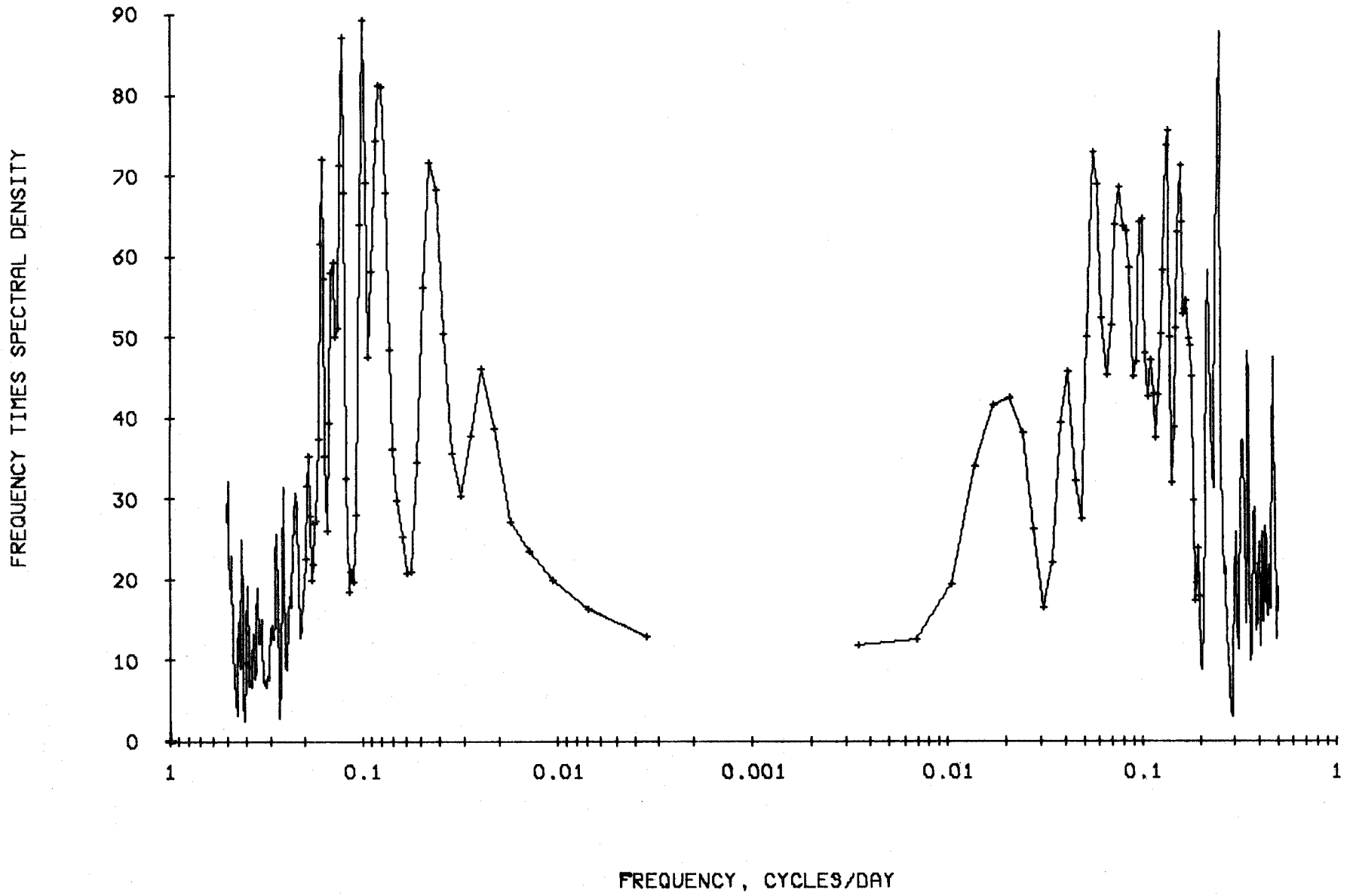


ROTATED CURRENT. 2771 METERS AT STN 2. TAPE 1236/5



TEMPERATURE. 2771 METERS AT STN 2. TAPE 1236/5

LLP CURRENT AT 2771 M, STN 2. ENDPT DETREND. DT = 24 HRS.



1975 F DRAKE Installation 4

Position: 57°46.8'S, 64°54.0'W
Depth of Water: 3137 m
Set at 1348 UCT 23 February 1975 by R/V MELVILLE
Retrieved at 1014 UCT 4 February 1976 by R/V T. G. THOMPSON
Data Interval: 1615 UCT 23 February 1975 to 2312 UCT 31 January 1976

Instrumentation

Intended Depth	RCM5 Serial No./Tape No.
1337 m	1237/5
1837 m	1238/6
2837 m	1239/5

Data were recorded at one hour intervals. Speed failed on instruments at 1337 m and at 1837 m at the time of installation. Direction failed at 1337 m at 0917 UCT 3 December 1975, but good temperature data are recorded until 1117 UCT 26 December 1975. Direction failed at 1837 m at 0915 UCT 28 December 1975, but good temperature data are recorded until 0115 UCT 14 January 1976.

STATION FOUR

1337 m

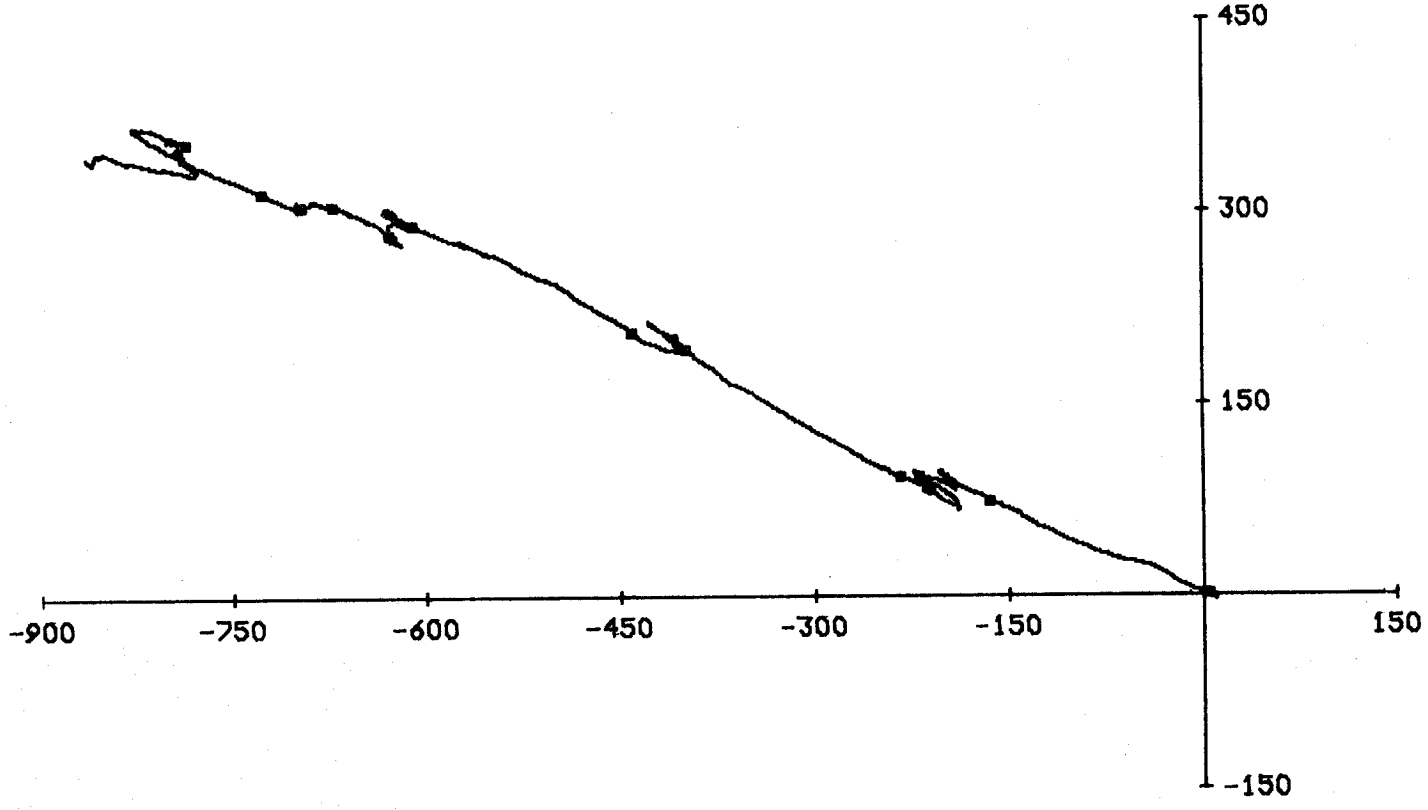
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
T Water (C)	2.13	0.12	-0.79	3.13	2.39	1.78	7340

1837 m

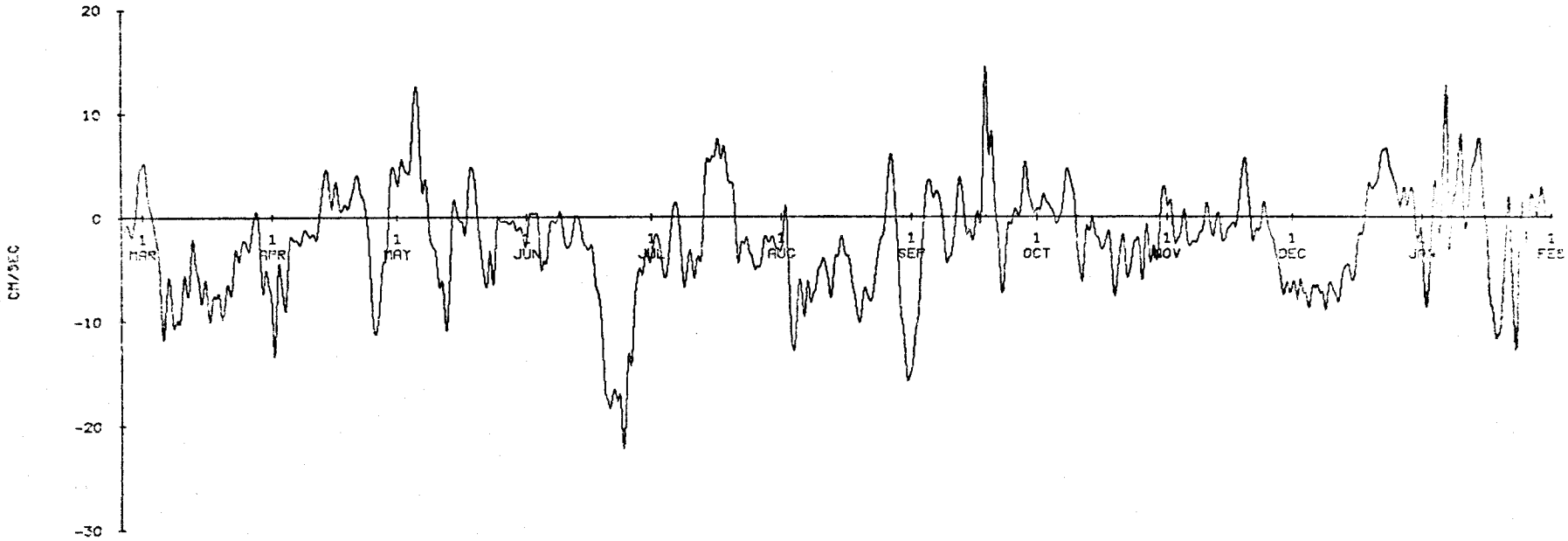
T Water (C)	1.80	0.14	-0.46	2.55	2.16	1.41	7786

2837 m

S (cm/sec)	6.8	4.8	1.4	5.7	35.6	0.7	8215
U (cm/sec)	-2.9	6.3	-0.3	4.1	25.8	-34.4	8215
V (cm/sec)	1.2	4.4	0.0	3.6	18.7	-16.7	8215
T Water (C)	1.21	0.14	1.03	4.25	1.86	0.97	8215



2837 M AT F DRAKE STN 4. 342.3 DAYS STARTING 1712 23 FEB 75



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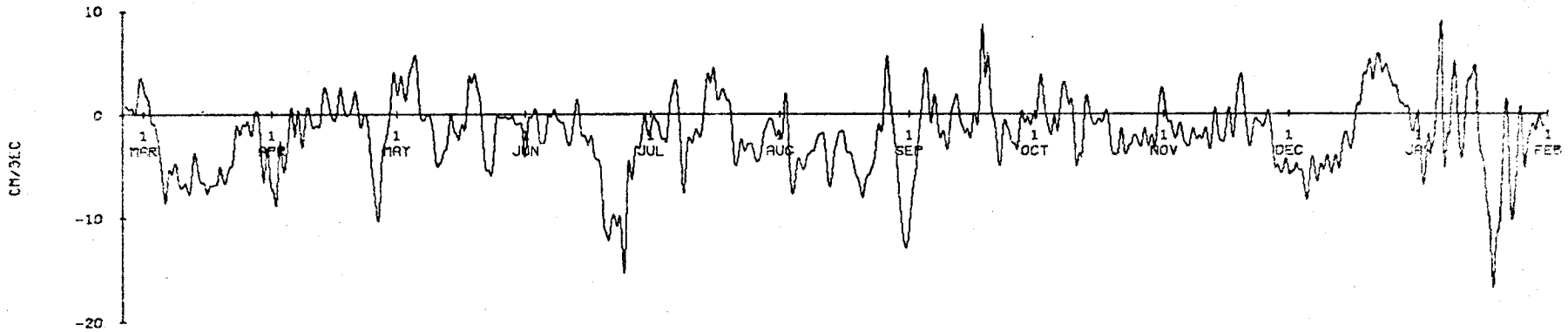

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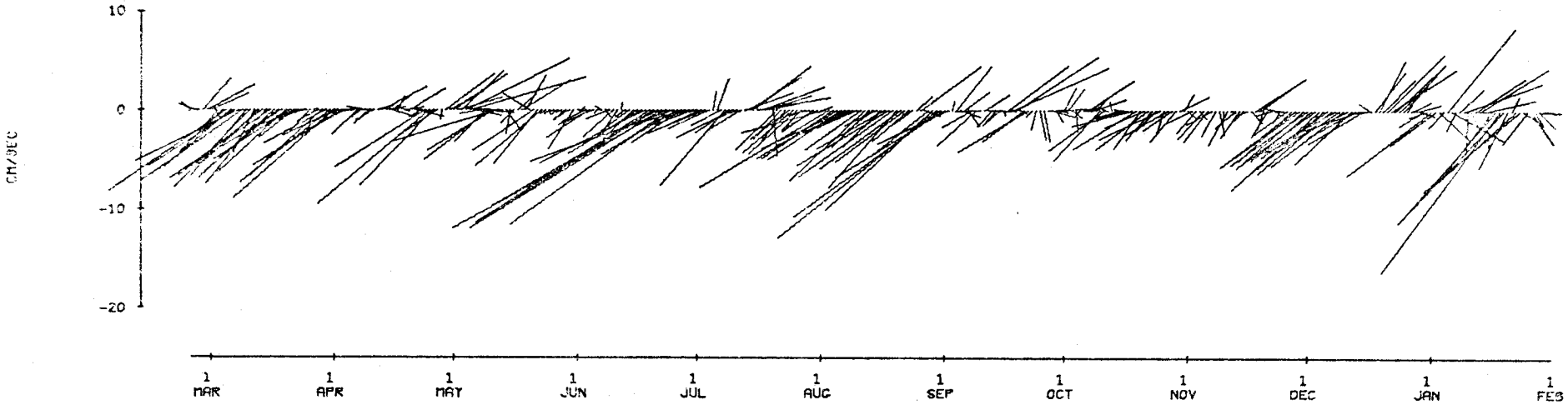
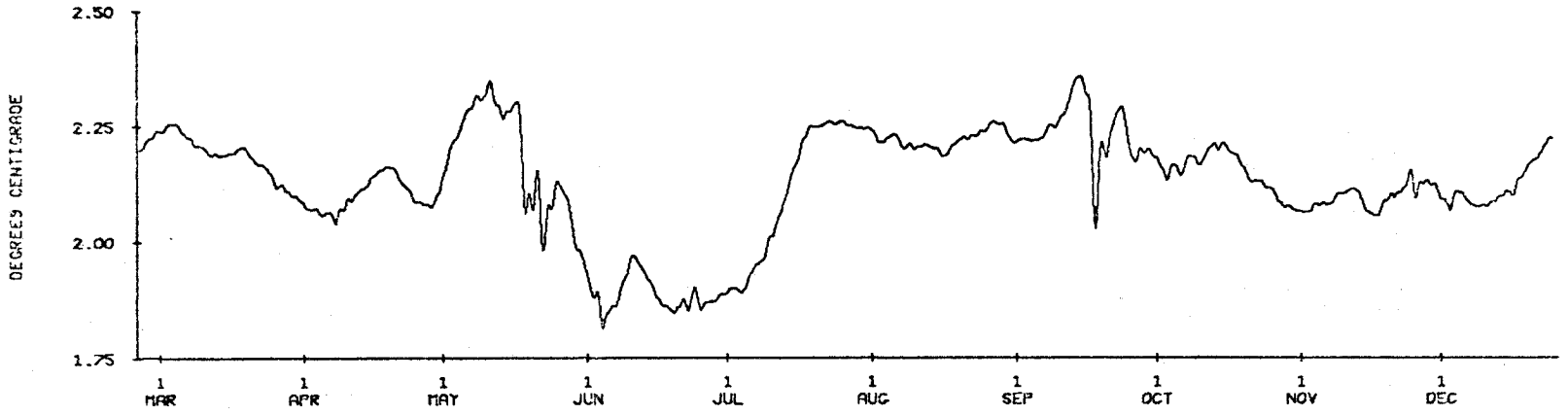
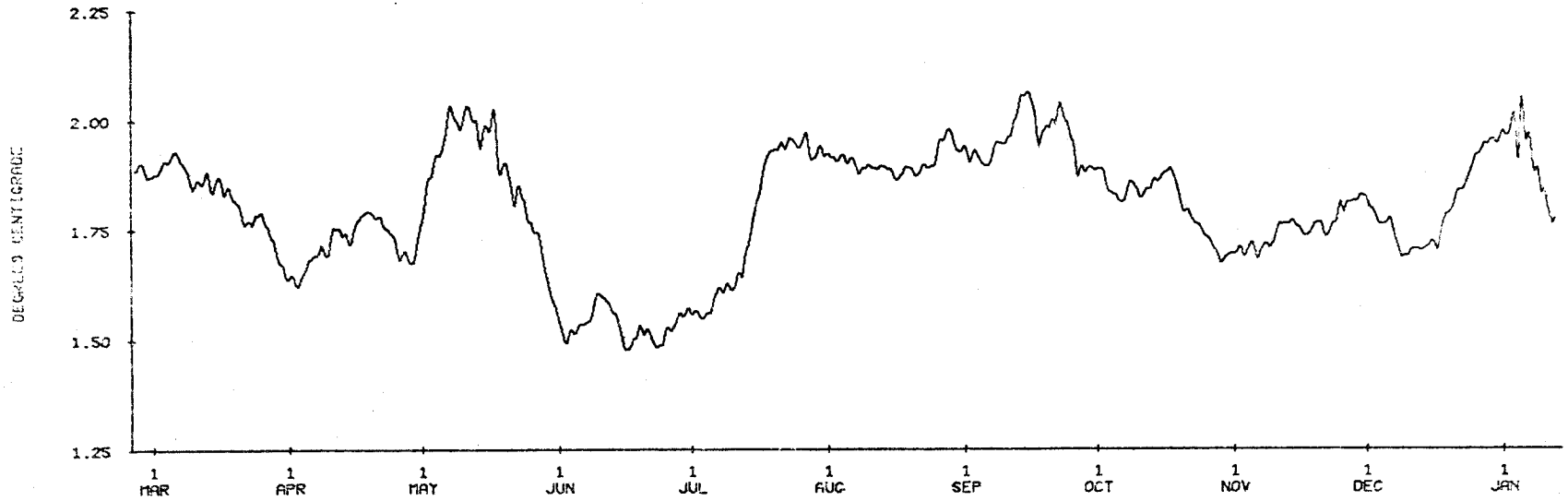


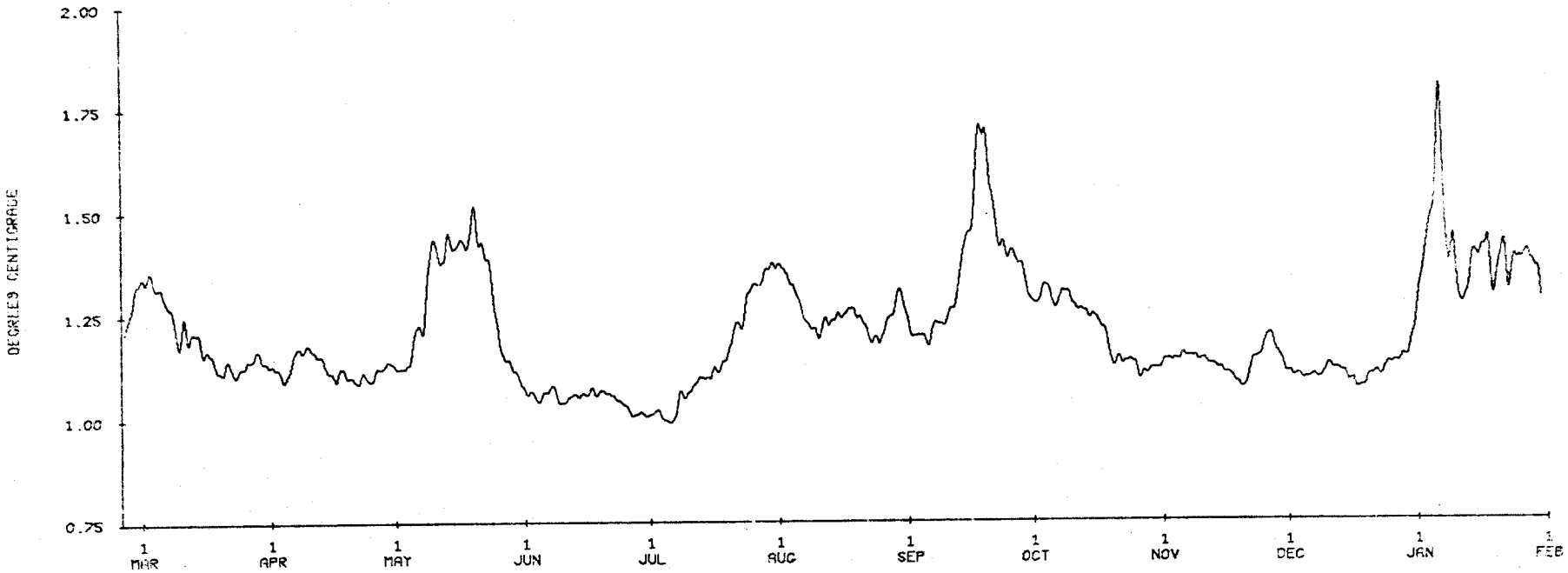
ROTATED CURRENT. 2837 METERS AT STN 4. TAPE 1239/5



TEMPERATURE. 1337 METERS AT STN 4. TAPE 1237/5



TEMPERATURE. 1837 METERS AT STN 4. TAPE 1238/6



TEMPERATURE. 2637 METERS AT STN 4. TAPE 1239/5

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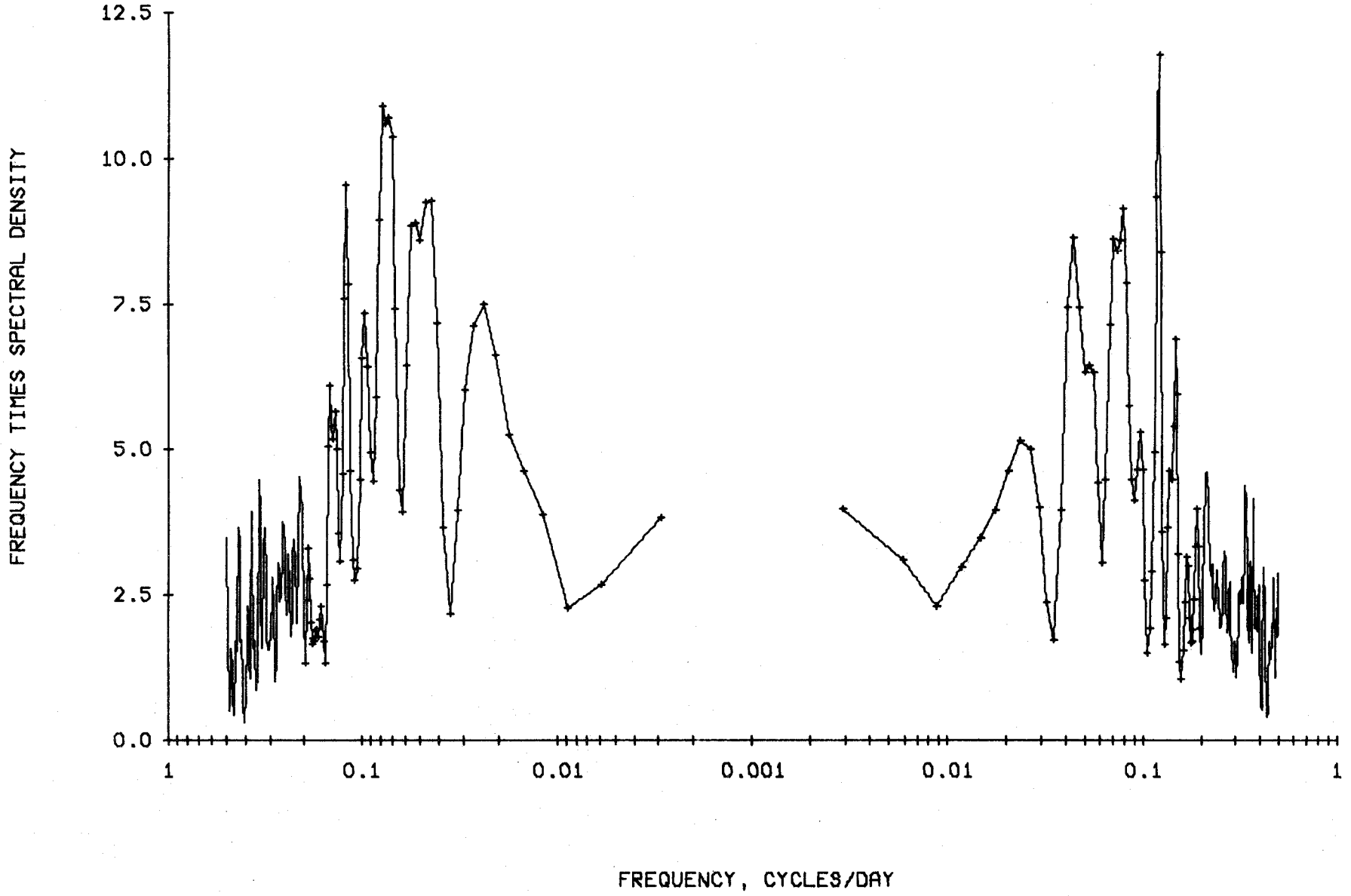


1975 F DRAKE Installation 8

Position: 59°09.3'S, 64°00.0'W
Depth of Water: 3841 m
Set at 0159 UCT 25 February 1975 by R/V MELVILLE
Retrieved at 0824 UCT 11 February 1976 by R/V T. G. THOMPSON
Data Interval: 0413 UCT 25 February 1975 to 0813 UCT 11 February 1976

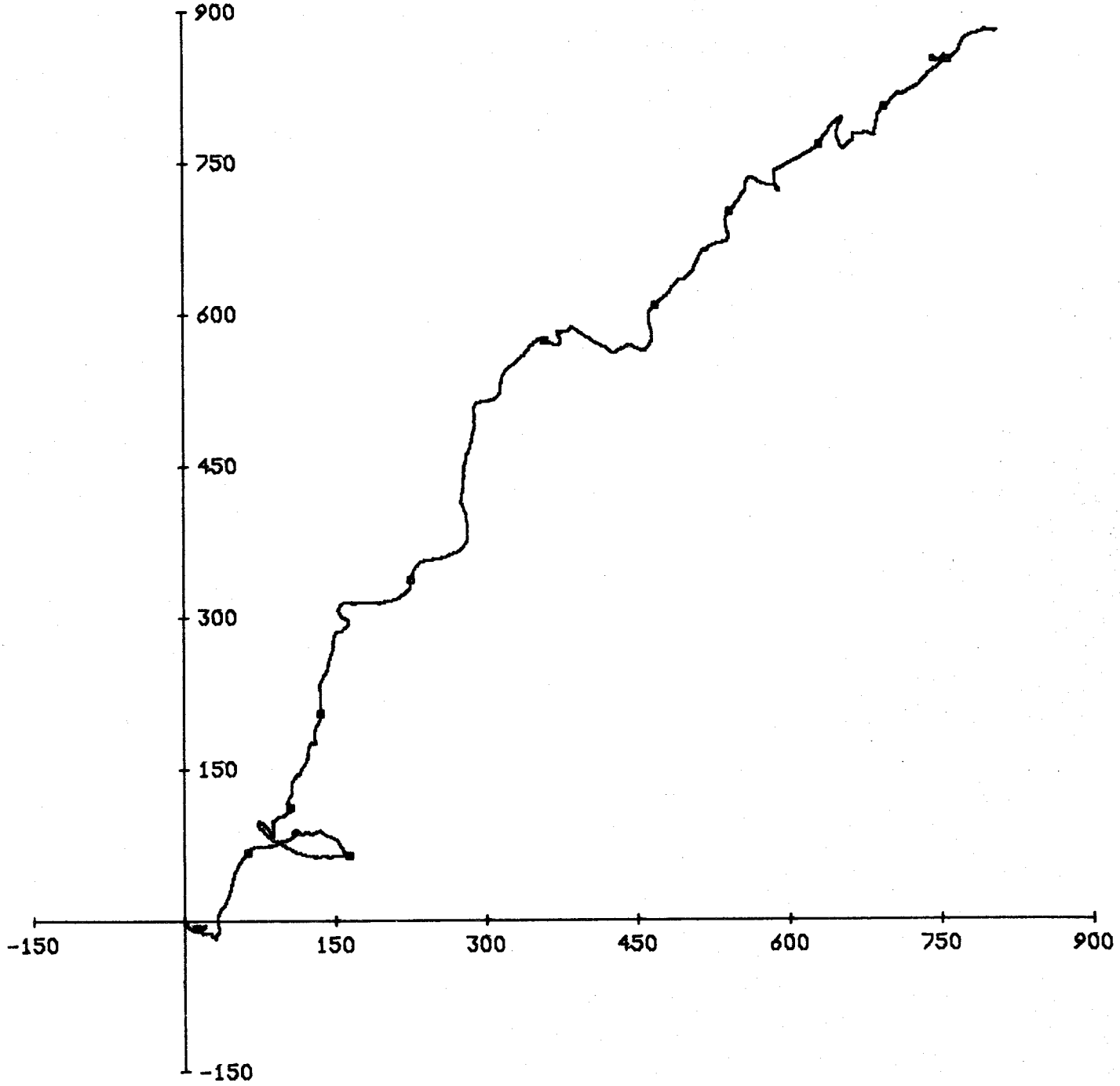
Instrumentation

Intended Depth	RCM5 Serial No./Tape No.
2741 m	1241/5

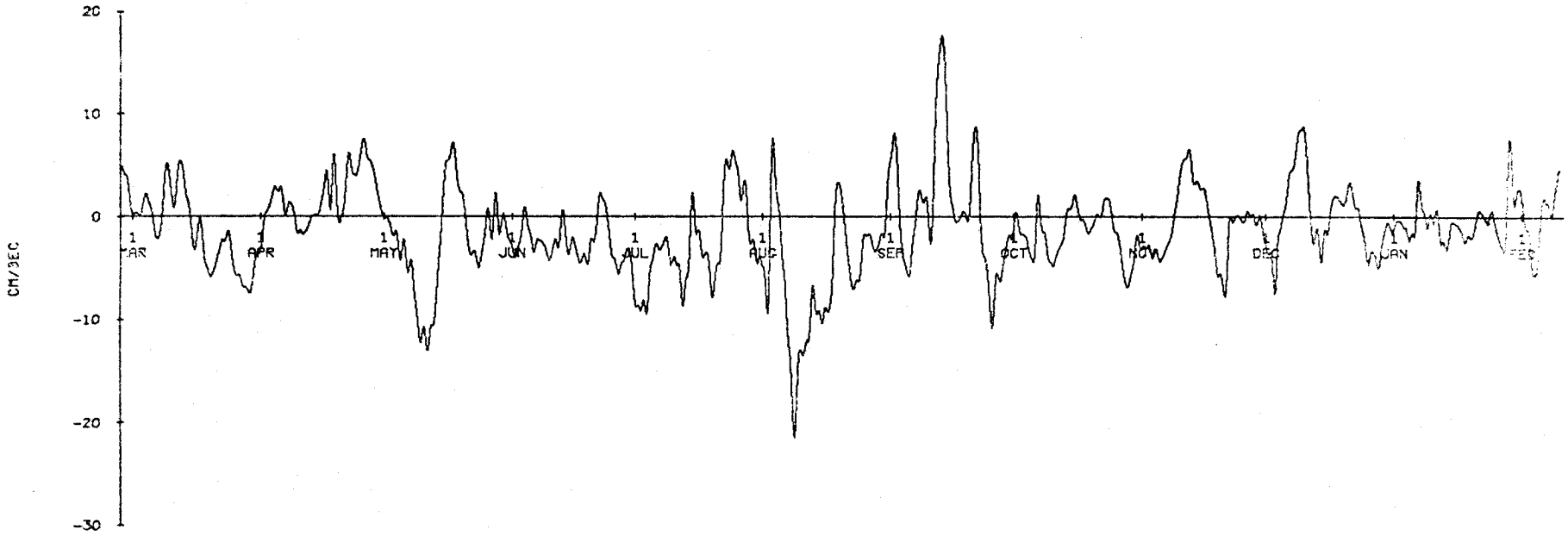
STATION EIGHT

2741 m

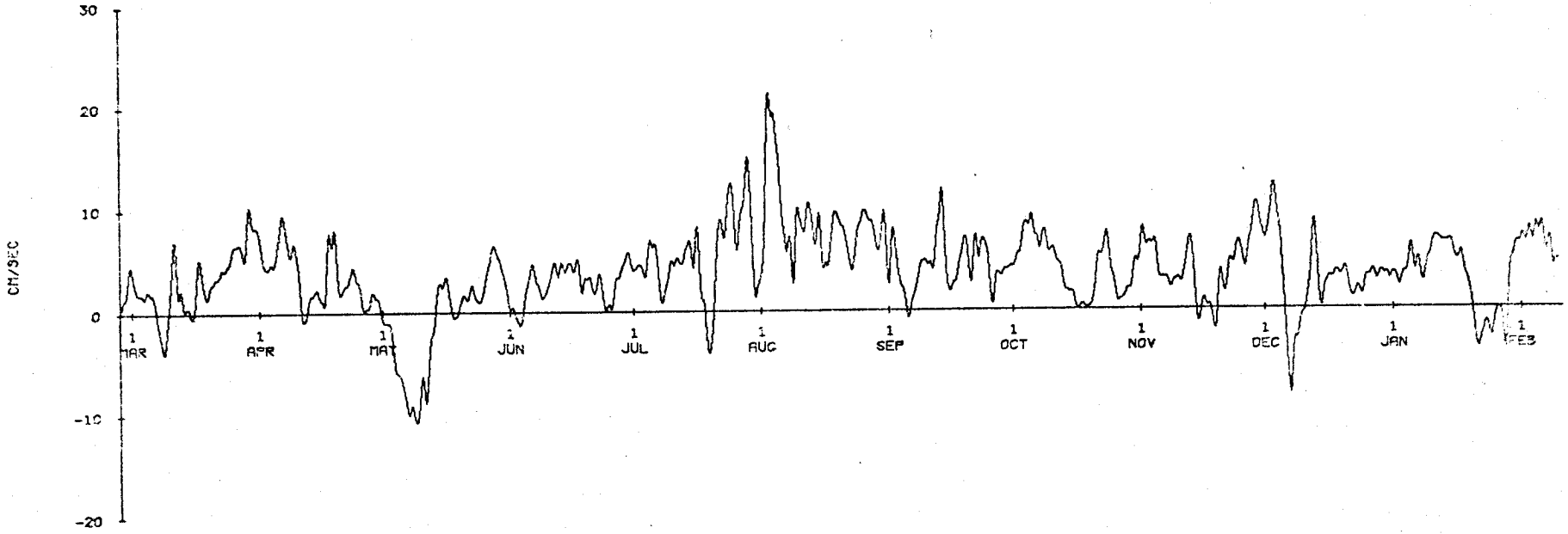
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	7.1	4.2	1.1	4.8	27.2	0.7	8429
U (cm/sec)	2.7	5.2	-0.1	4.7	24.1	-21.4	8429
V (cm/sec)	2.9	5.0	0.1	3.9	25.0	-17.3	8429
T Water (C)	0.95	0.15	-0.03	2.23	1.33	0.60	8429



2741 M AT F DRAKE STN 8. 351.2 DAYS STARTING 0413 25 FEB 75



ROTATED U COMPONENT. 2741 METERS AT STN 8. TAPE 1241/5



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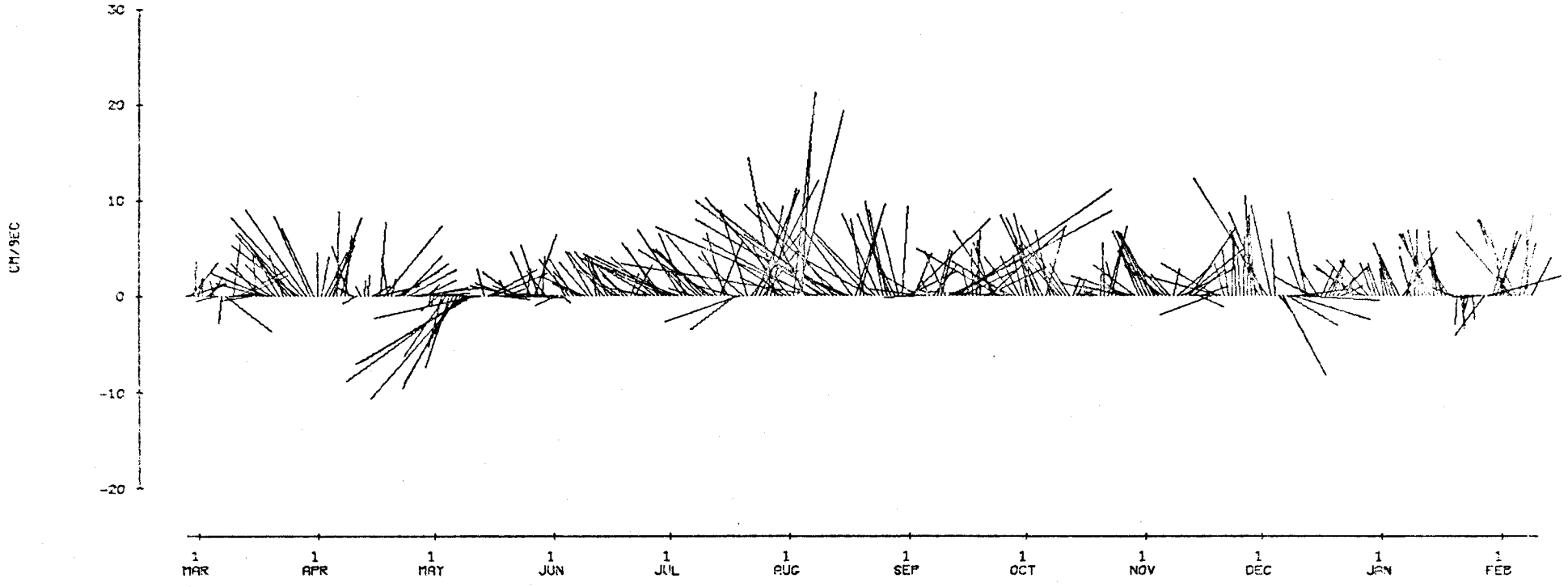

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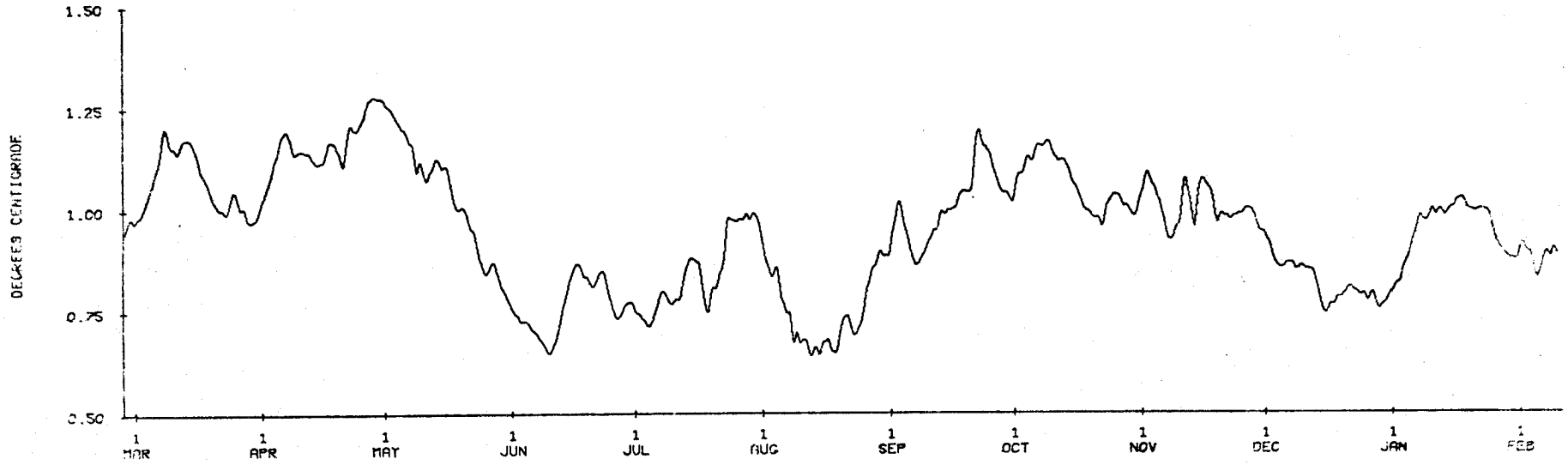

TEMPERATURE. 2741 METERS AT STN 8. TAPE 1241/5

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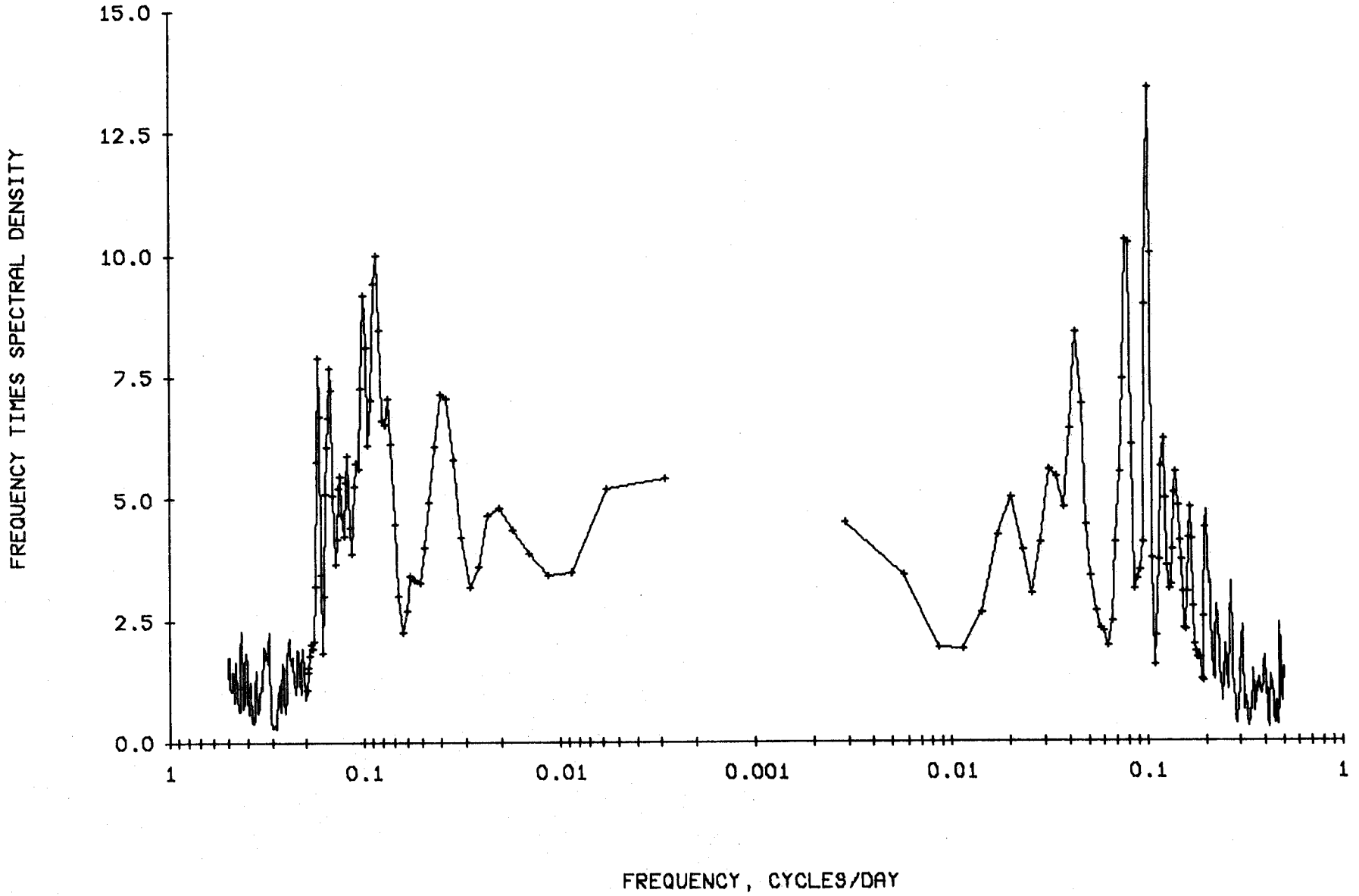


1975 F DRAKE Installation 9

Position: 59°26.8'S, 63°34.5'W
Depth of Water: 3880 m
Set at 1007 UCT 19 March 1975 by R/V MELVILLE
Recovered at 1125 UCT 11 February 1976 by R/V T. G. THOMPSON
Data Interval: 1435 UCT 19 March 1975 to 1745 UCT 15 August 1975

Instrumentation

Intended Depth	General Oceanics Meter
200 m	R
300 m	L
700 m	T
1200 m	P
1700 m	M
2200 m	N
2700 m	O
3200 m	Z

Data were recorded at one hour intervals. Current speed and direction were measured. All instruments operated but for varying time intervals. R operated for only 8 days while P operated until mid-August. Scales used in PVD's, spectra and real time plots are correspondingly different.

STATION NINE

200 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	22.3	6.8	-0.5	3.0	39.7	1.3	795
U (cm/sec)	14.8	8.1	0.2	3.6	39.7	-7.4	795
V (cm/sec)	13.8	8.2	-0.4	2.8	33.1	-10.3	795

300 m

S (cm/sec)	18.6	0.6	-1.0	3.4	19.4	17.0	380
U (cm/sec)	-11.1	8.7	1.7	5.4	17.1	-19.4	380
V (cm/sec)	-6.5	10.3	0.9	2.6	18.1	-18.8	380

700 m

S (cm/sec)	19.4	2.7	-1.5	8.0	30.0	2.6	1015
U (cm/sec)	-4.9	13.1	0.9	2.1	27.6	-19.9	1015
V (cm/sec)	-8.1	11.2	0.8	2.0	20.7	-21.0	1015

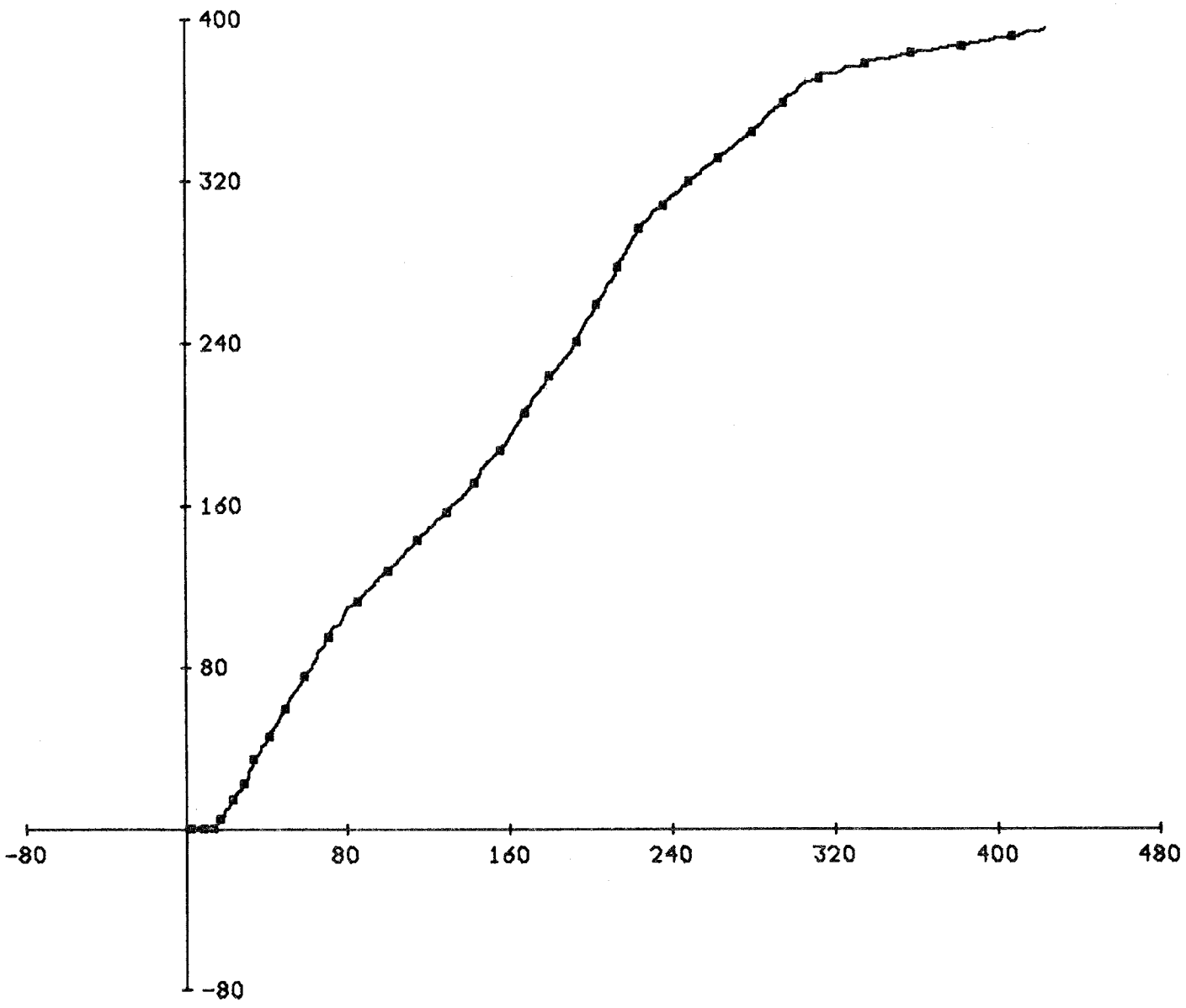
1200 m

S (cm/sec)	8.9	4.8	0.3	2.0	26.7	1.3	3579
U (cm/sec)	3.6	7.1	0.0	2.2	25.4	-17.0	3579
V (cm/sec)	1.7	6.0	0.3	2.6	24.8	-15.0	3579

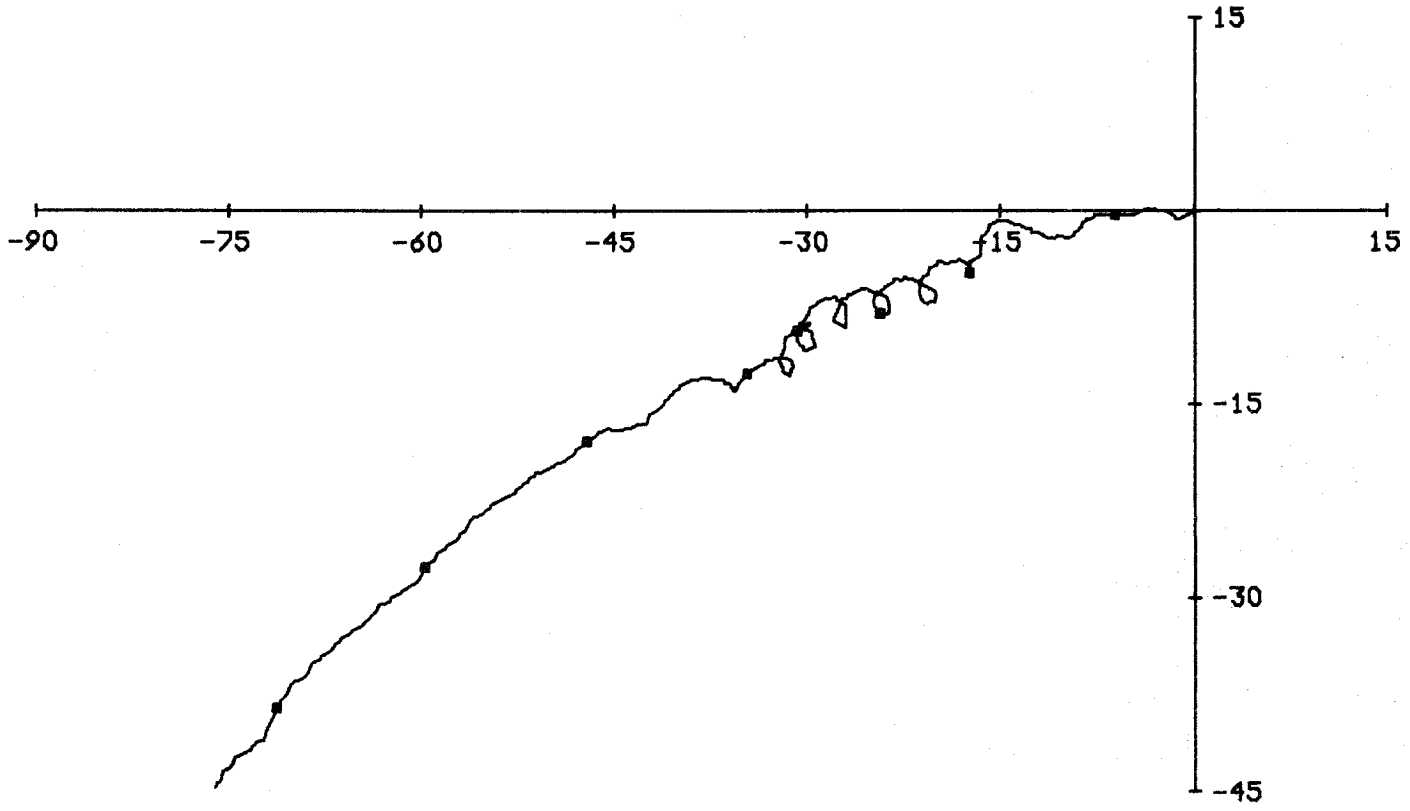
1700 m

S (cm/sec)	9.0	4.5	0.3	2.6	30.0	1.3	1626
U (cm/sec)	4.9	5.6	-0.1	2.3	24.3	-8.5	1626
V (cm/sec)	4.4	5.0	0.1	2.7	22.3	-10.0	1626

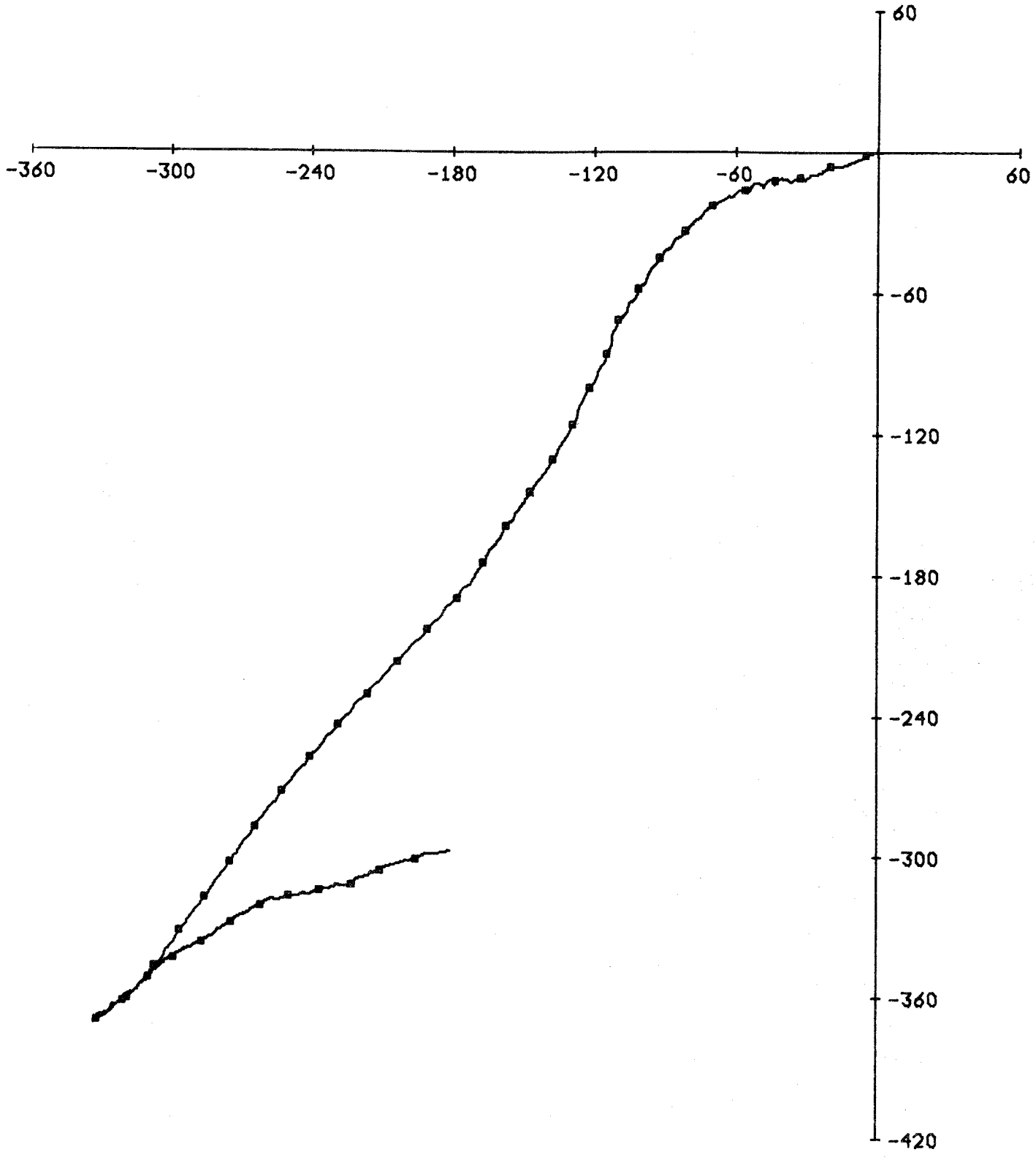
			2200 m				
S (cm/sec)	6.5	3.2	0.7	3.1	17.0	1.3	938
U (cm/sec)	0.4	5.3	0.9	2.8	14.7	-8.8	938
V (cm/sec)	-0.4	5.0	0.5	2.4	12.6	-10.2	938
			2700 m				
S (cm/sec)	5.9	2.3	-0.2	2.2	11.3	1.3	307
U (cm/sec)	-1.2	4.4	0.2	1.9	8.0	-8.5	307
V (cm/sec)	-1.2	4.2	0.6	2.9	11.0	-10.0	307
			3200 m				
S (cm/sec)	11.6	1.5	0.1	2.3	15.1	8.2	149
U (cm/sec)	-4.4	7.4	0.5	1.9	11.2	-13.7	149
V (cm/sec)	3.3	7.2	-0.8	2.3	13.4	-14.0	149



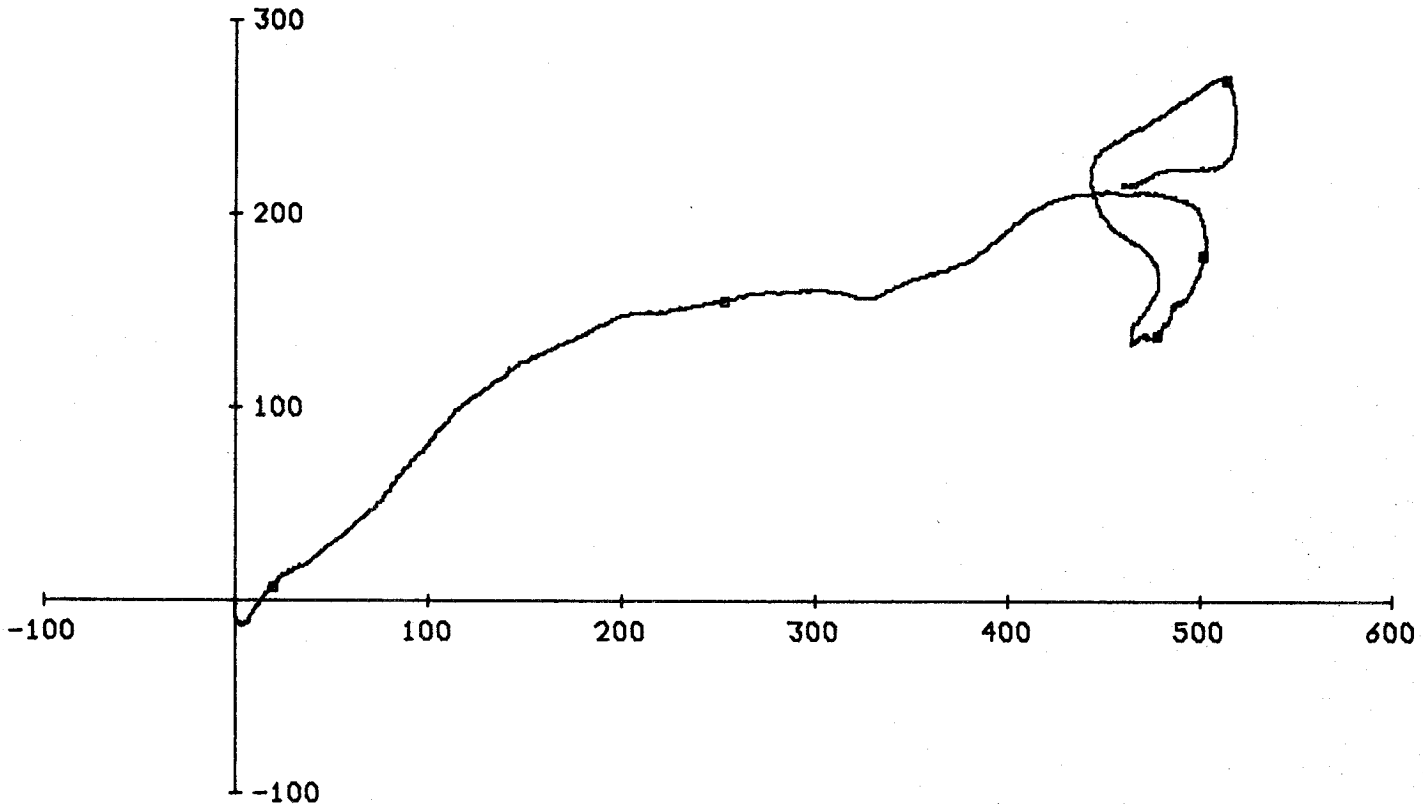
200 M AT FDRAKE STN 9. 33.1 DAYS STARTING 1545 19 MAR 75



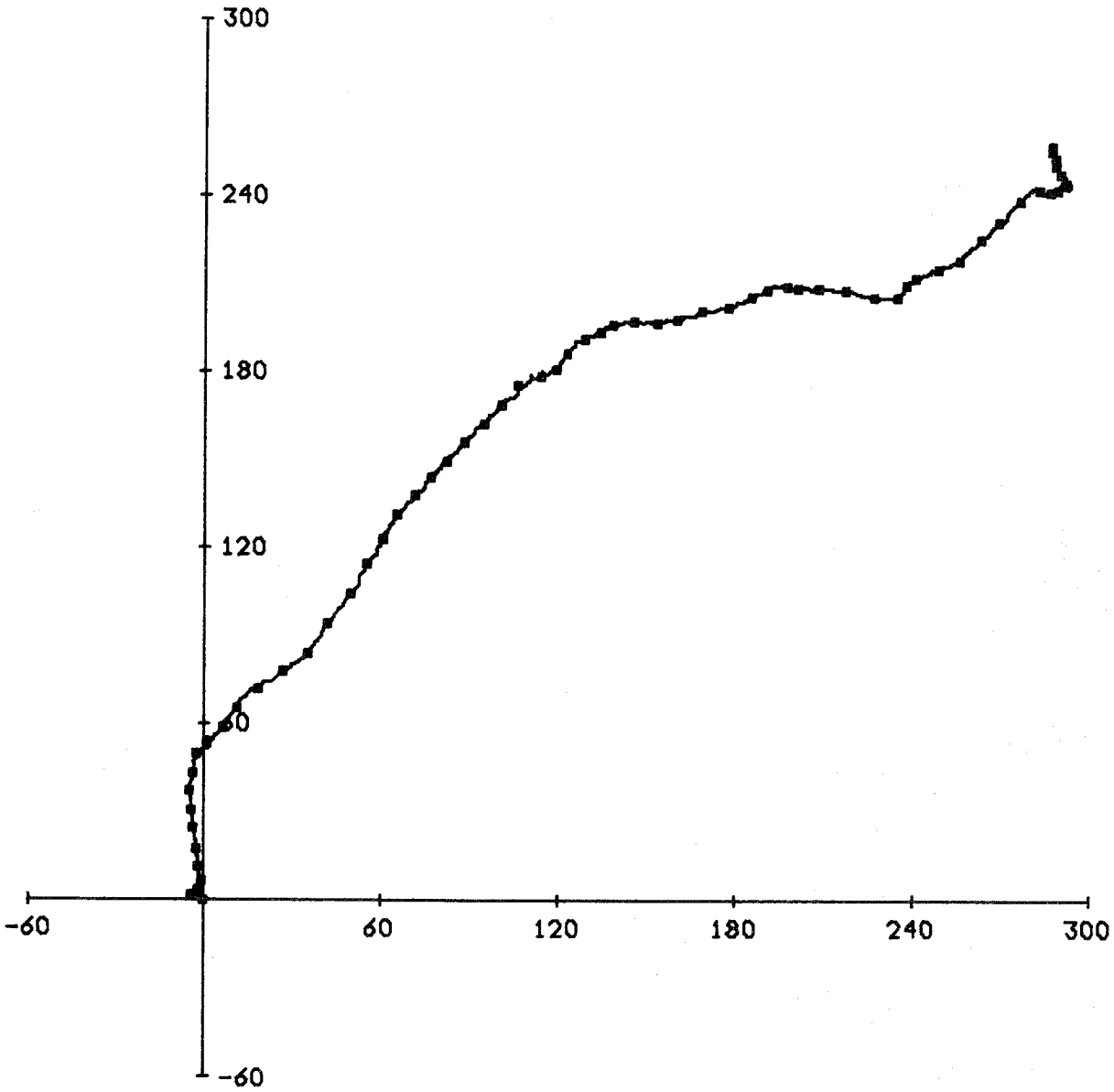
300 M AT FDRAKE STN 9. 7.9 DAYS STARTING 1435 19 MAR 75



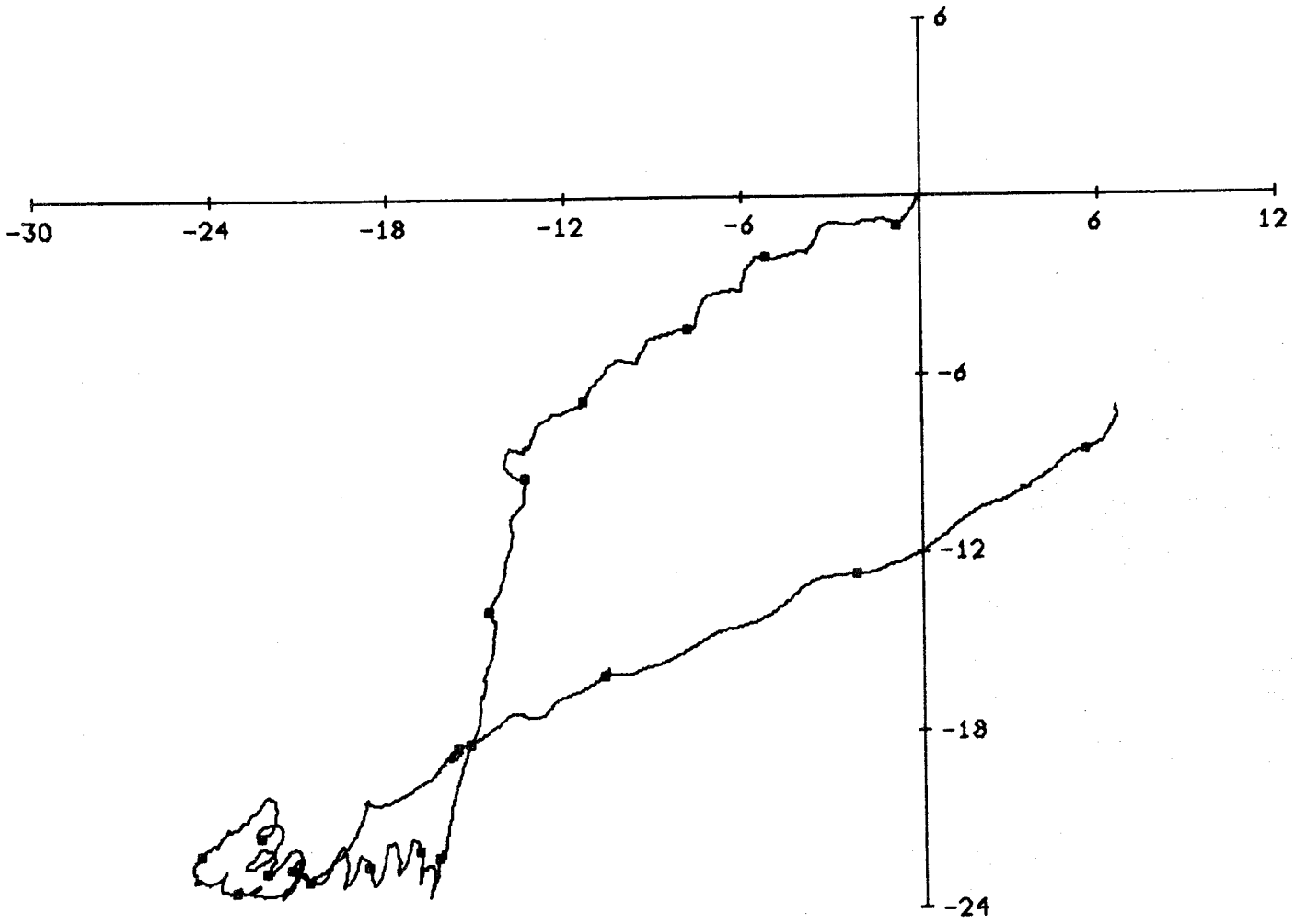
700 M AT FDRAKE STN 9. 42.3 DAYS STARTING 1545 19 MAR 75



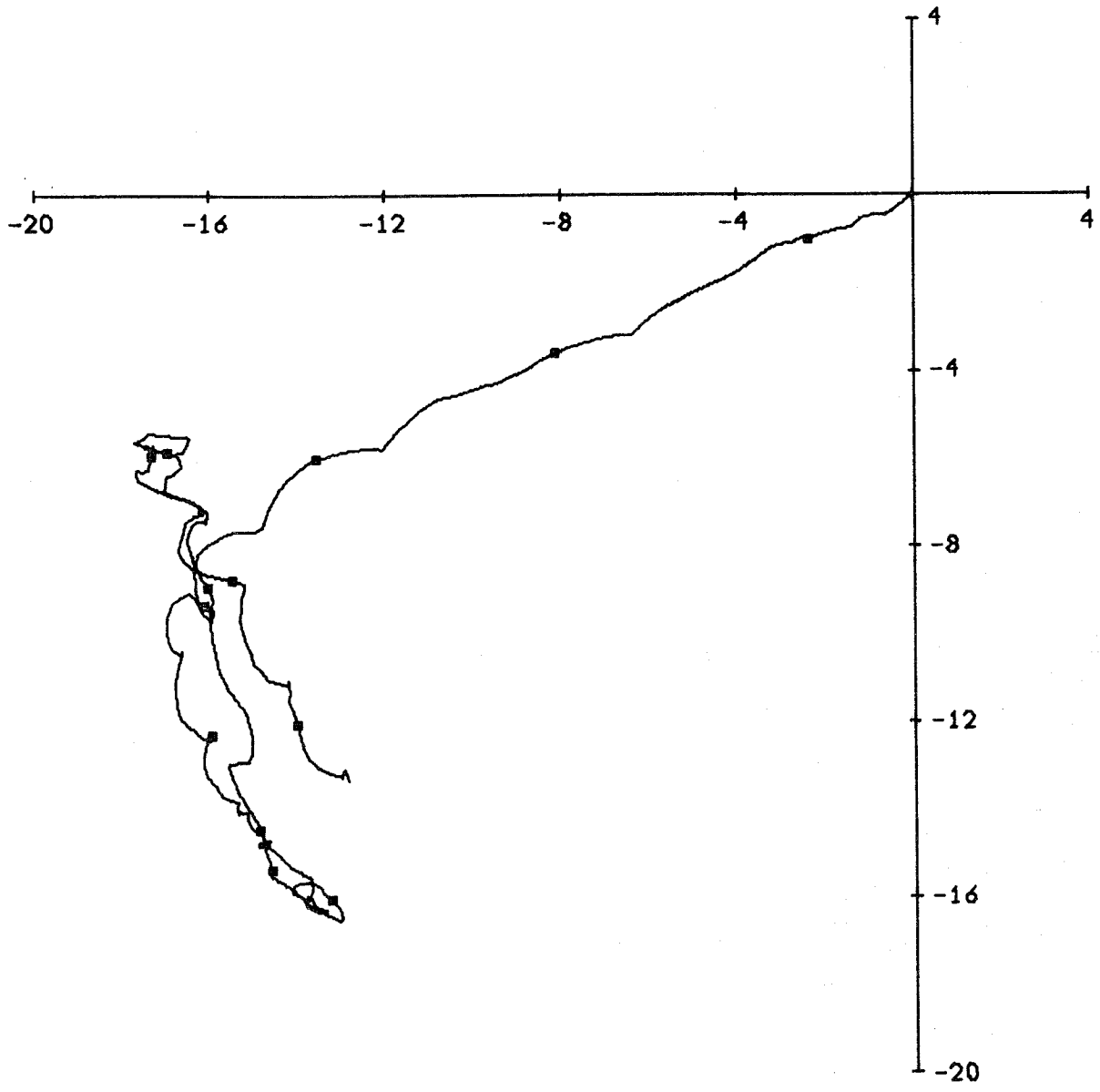
1200 M AT FDRAKE STN 9. 149.1 DAYS STARTING 1545 19 MAR 75



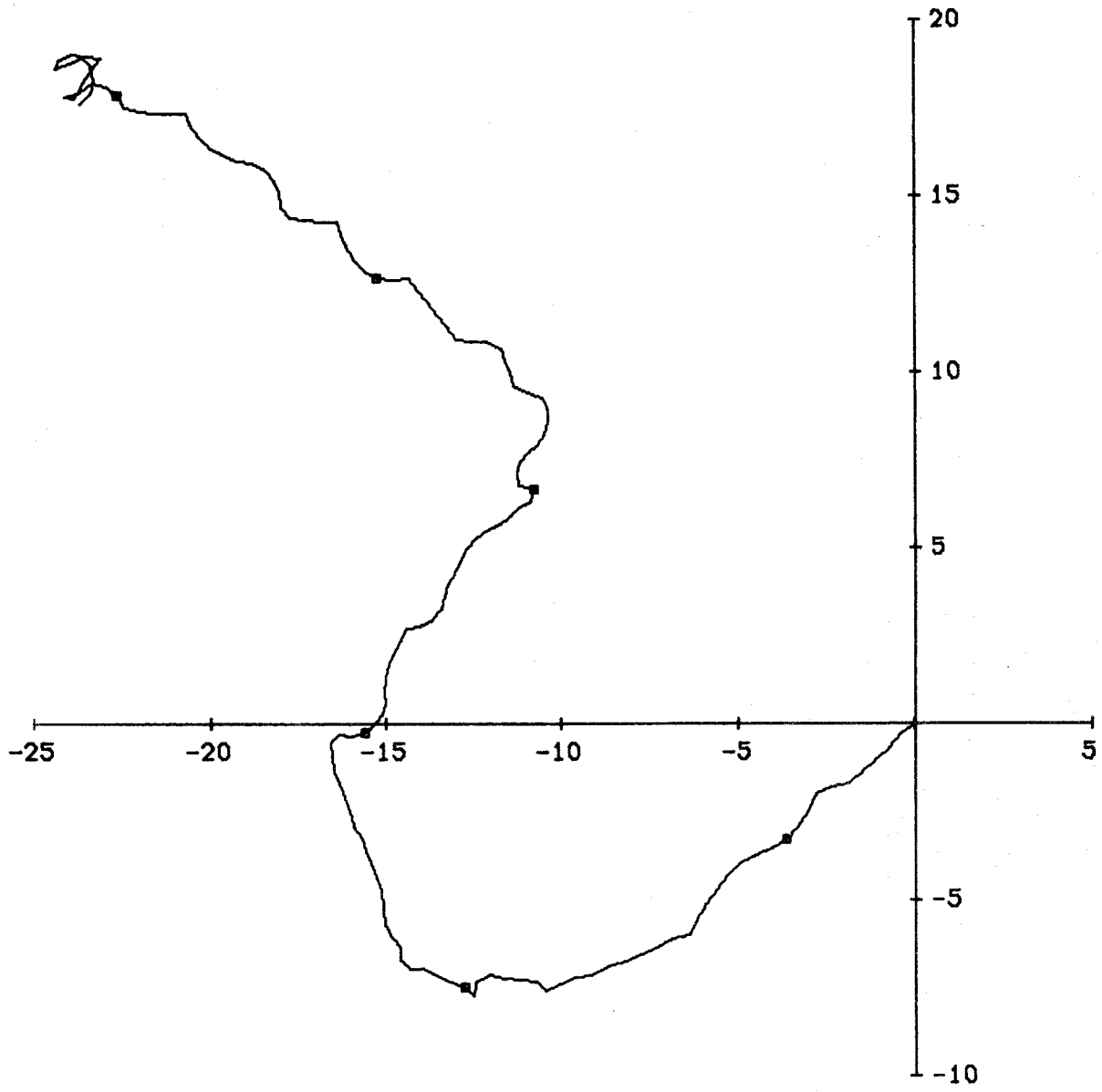
1700 M AT FDRAKE STN 9. 67.7 DAYS STARTING 1540 19 MAR 75



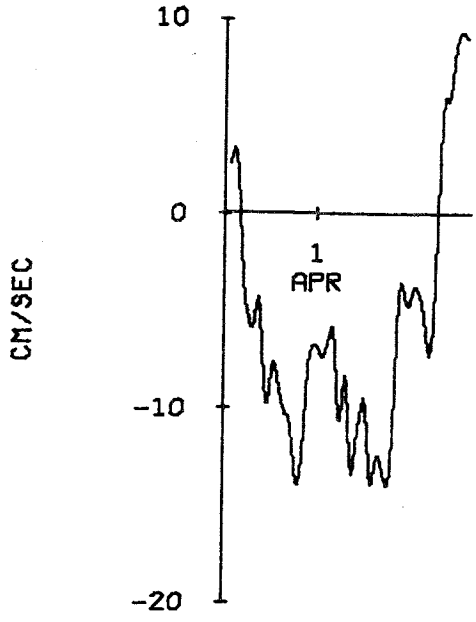
2200 M AT FDRAKE STN 9. 19.5 DAYS STARTING 1830 19 MAR 75



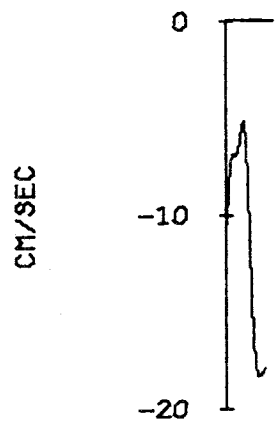
2700 M AT FDRAKE STN 9. 12.8 DAYS STARTING 1440 19 MAR 75



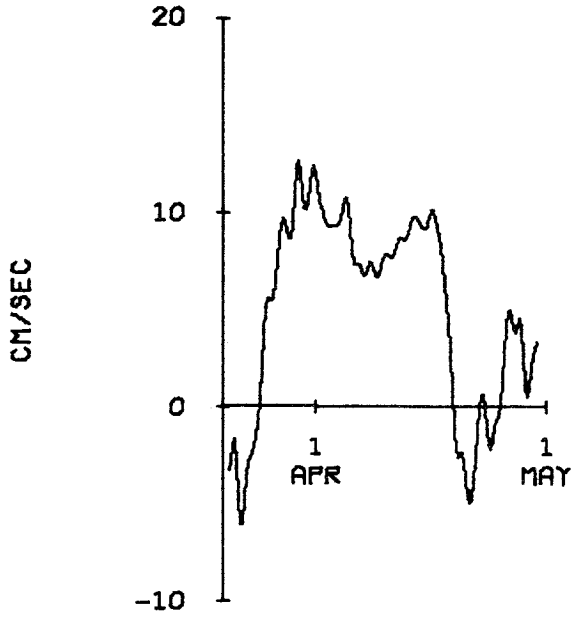
3200 M AT FDRAKE STN 9. 6.2 DAYS STARTING 1440 19 MAR 75



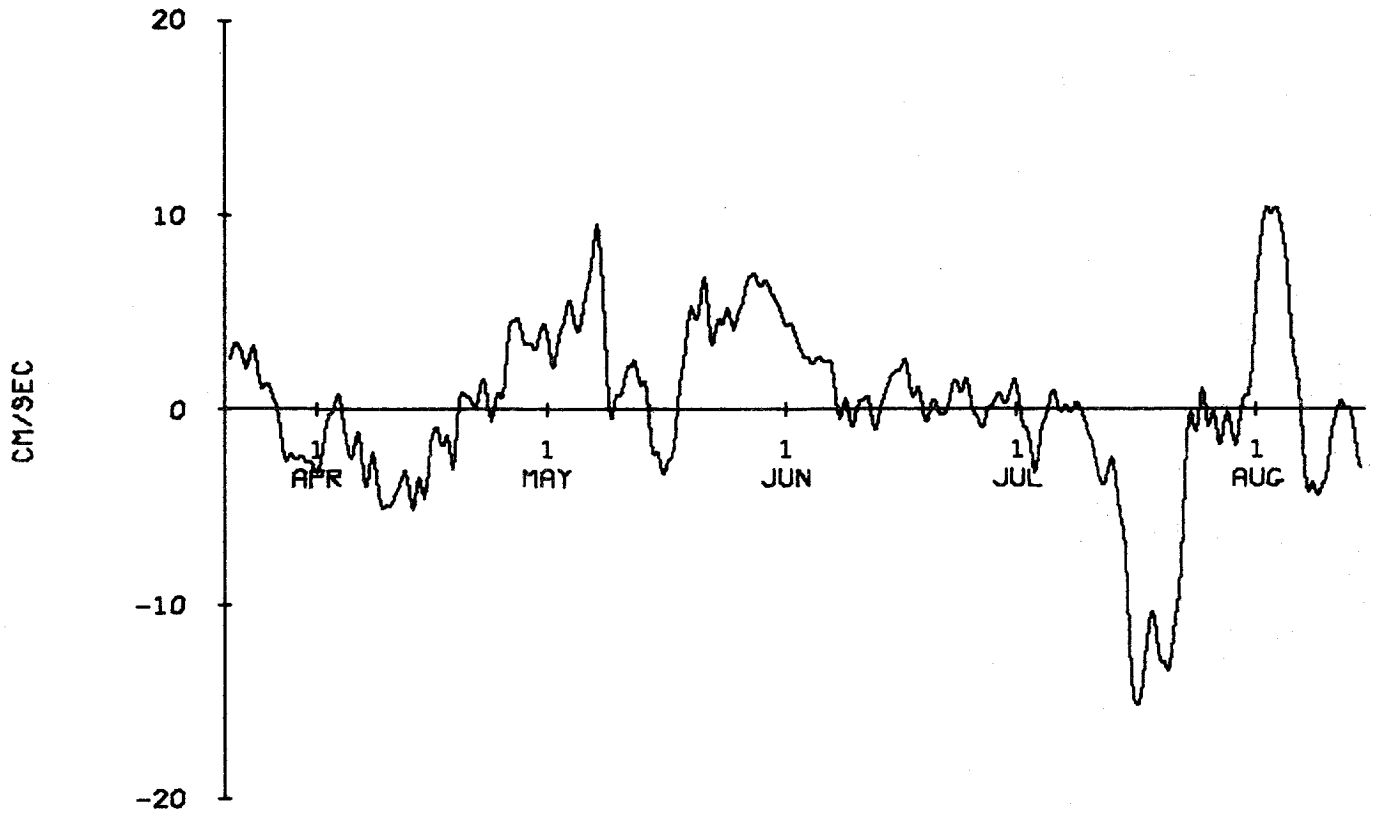
ROTATED U COMPONENT. 200 METERS AT STN 9. G.O. R



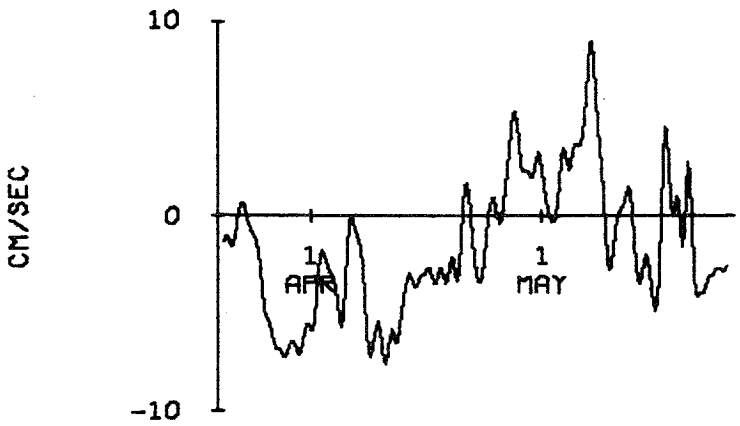
ROTATED U COMPONENT. 300 METERS AT STN 9. C.O. L



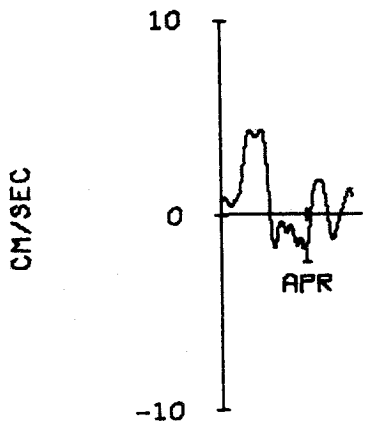
ROTATED U COMPONENT. 700 METERS AT STN 9. G.O. T



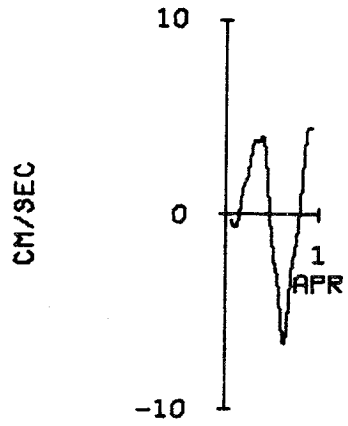
ROTATED U COMPONENT. 1200 METERS AT STN 9. G.O. P



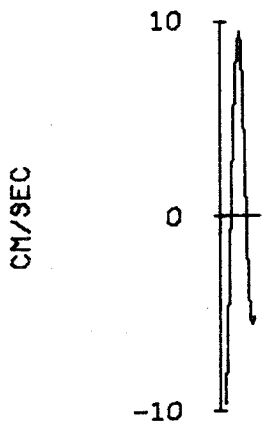
ROTATED U COMPONENT. 1700 METERS AT STN 9. G.O. M



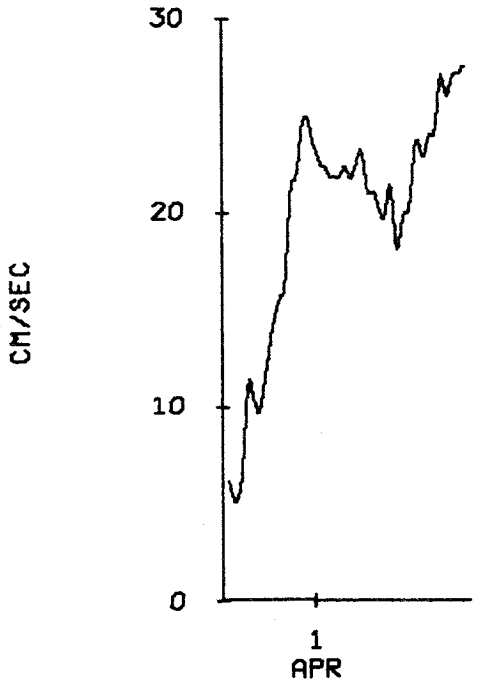
ROTATED U COMPONENT. 2200 METERS AT STN 9. G.O. N



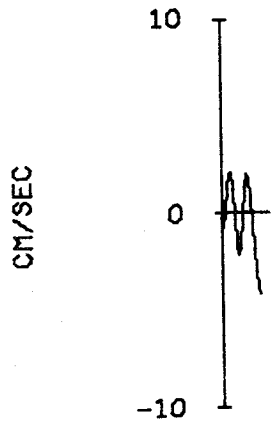
ROTATED U COMPONENT. 2700 METERS AT STN 9. C.O. 0



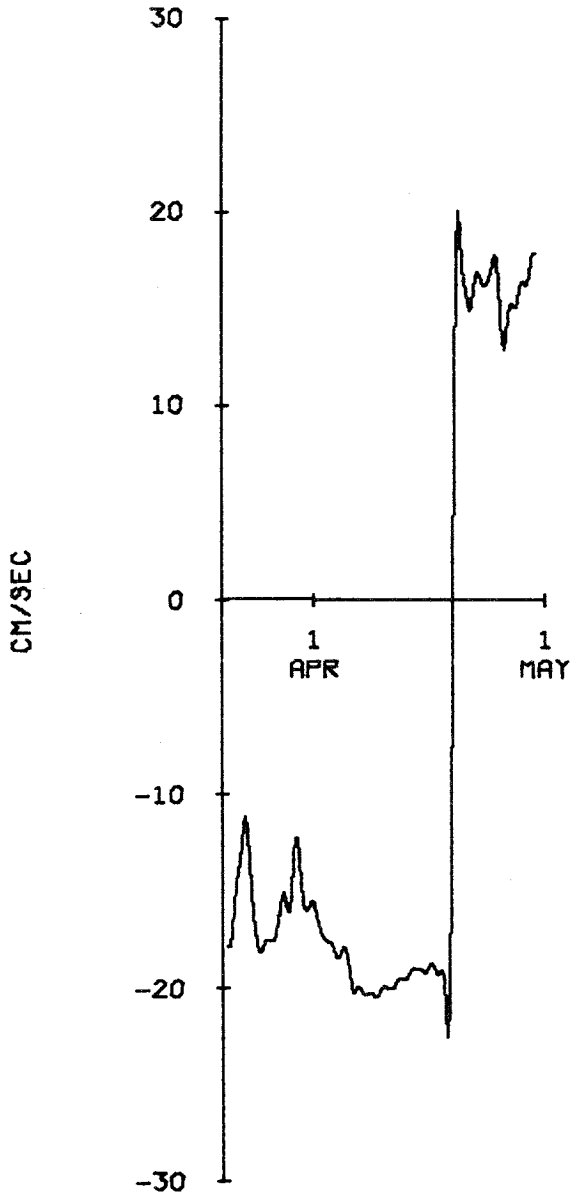
ROTATED U COMPONENT. 3200 METERS AT STN 9. C.O. Z



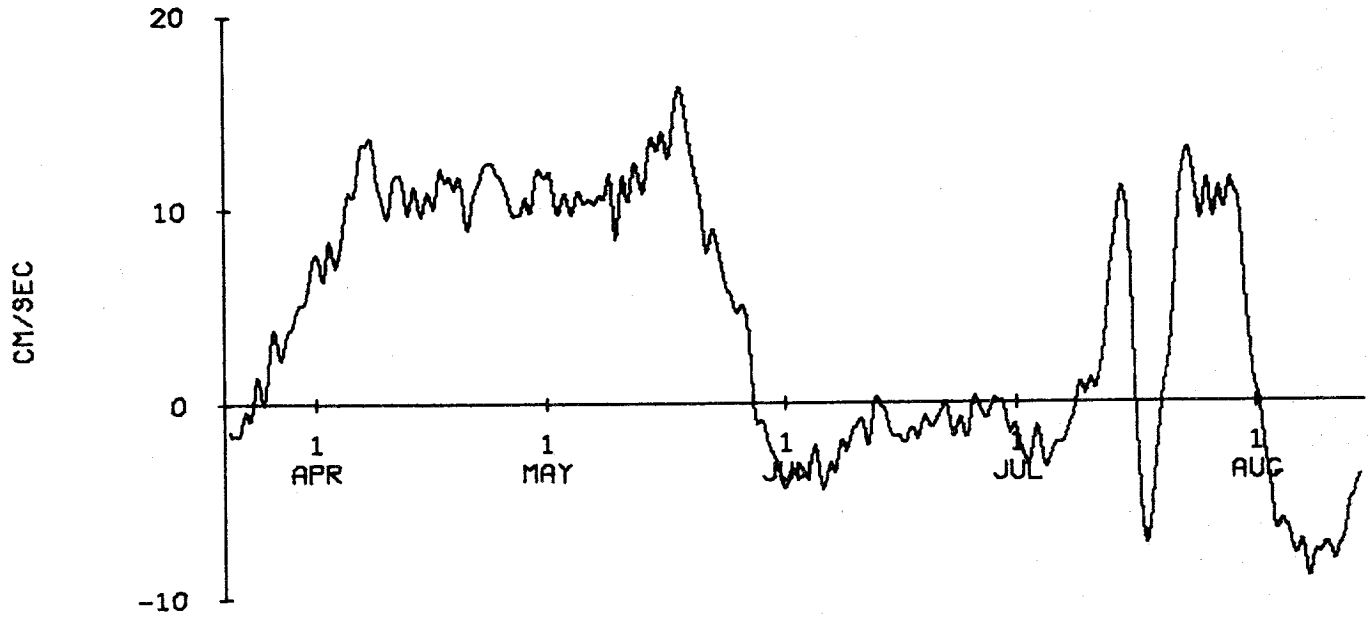
ROTATED V COMPONENT. 200 METERS AT STN 9. G.O. R



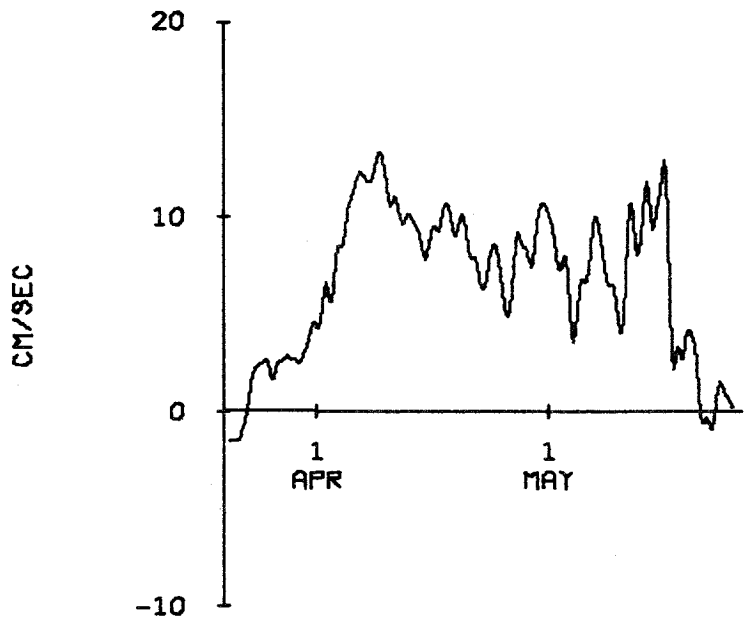
ROTATED V COMPONENT. 300 METERS AT STN 9. G.O. L



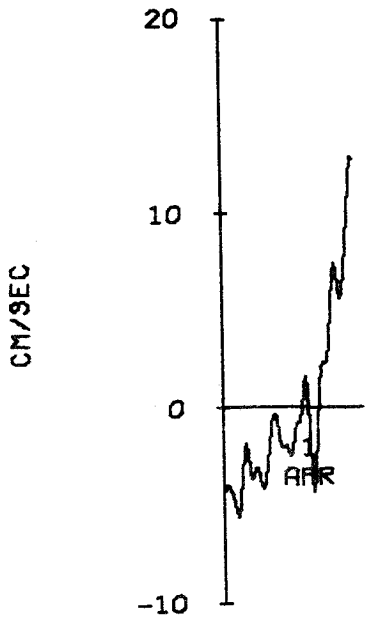
ROTATED V COMPONENT. 700 METERS AT STN 9. G.O. T



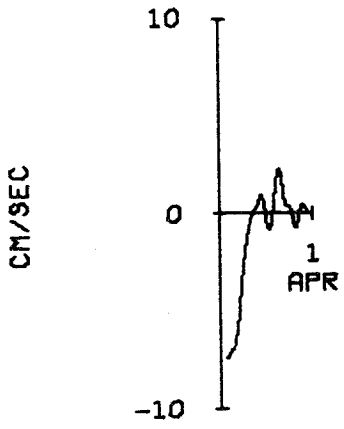
ROTATED V COMPONENT. 1200 METERS AT STN 9. C.O. P



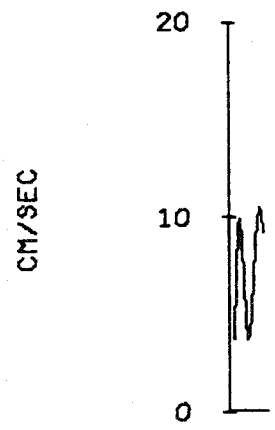
ROTATED V COMPONENT. 1700 METERS AT STN 9. C.O. M



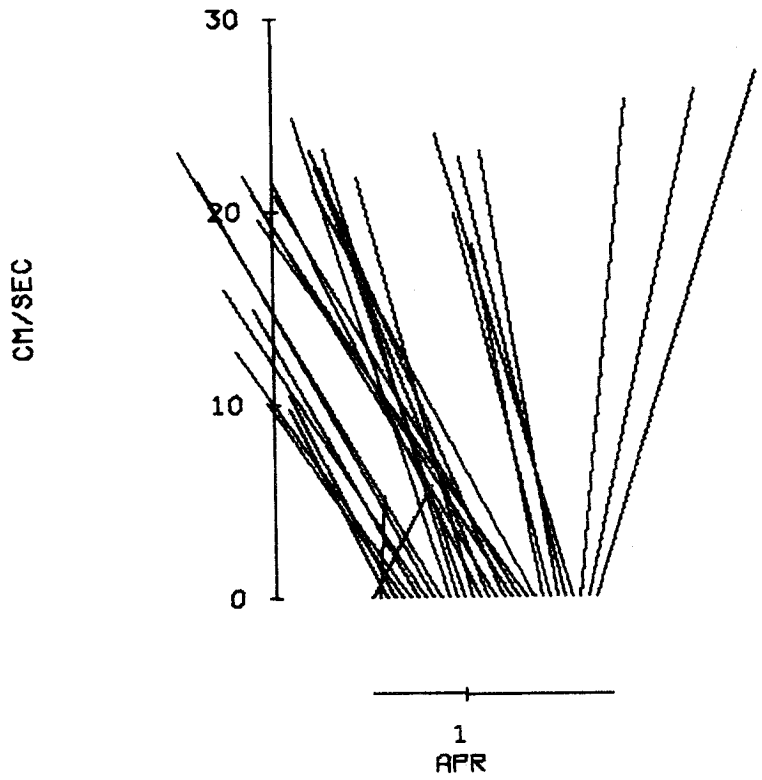
ROTATED V COMPONENT. 2200 METERS AT STN 9. G.O. N



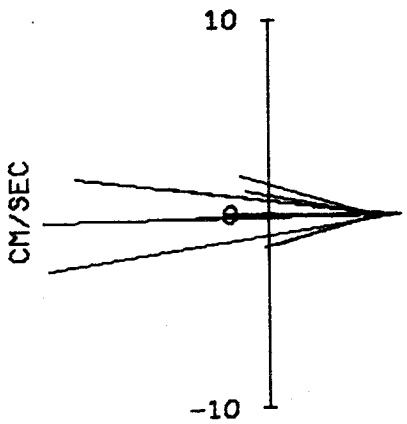
ROTATED V COMPONENT. 2700 METERS AT STN 9. C.O. 0



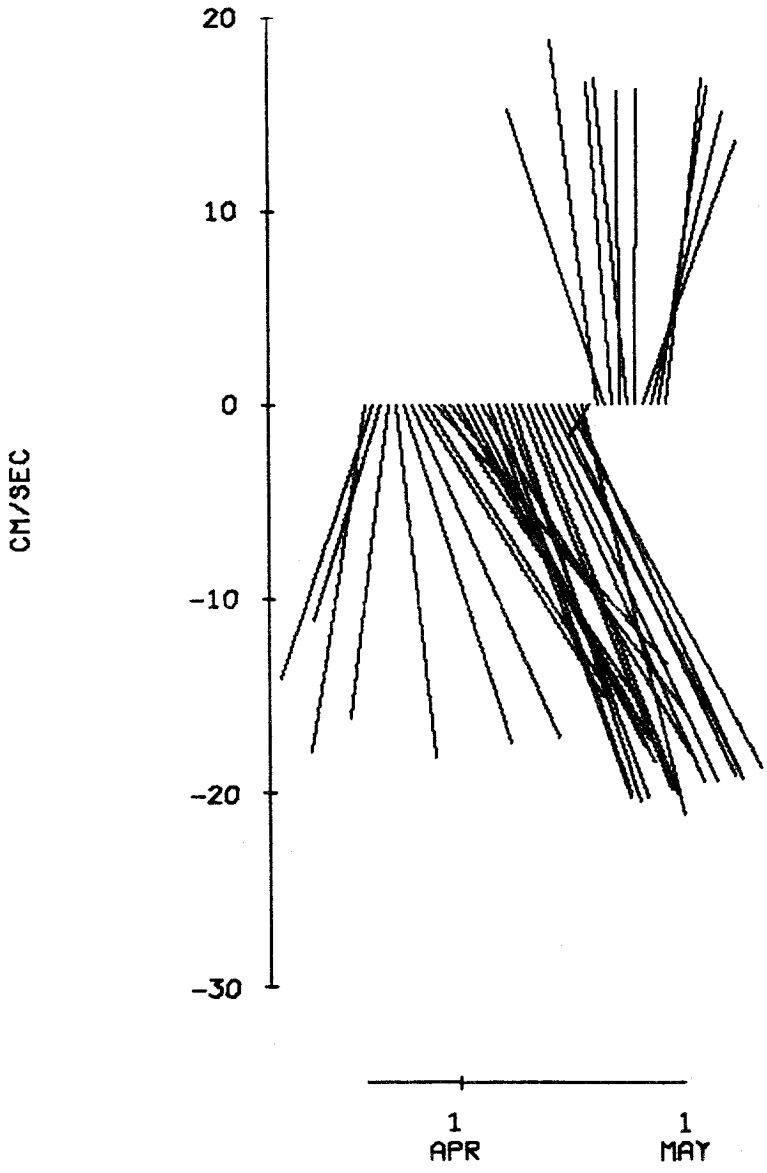
ROTATED V COMPONENT. 3200 METERS AT STN 9. C.O. Z



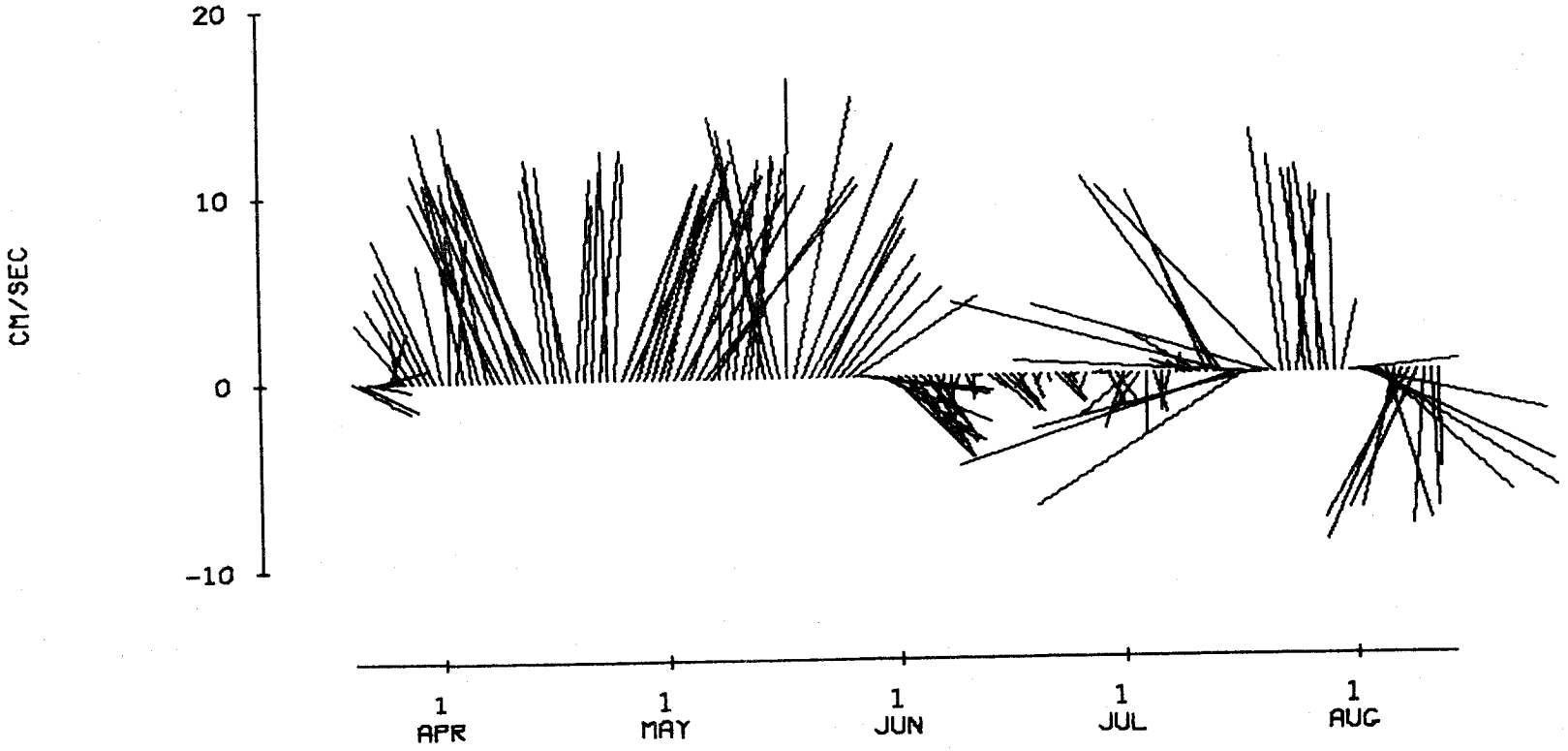
ROTATED CURRENT. 200 METERS AT STN 9. C.O. R



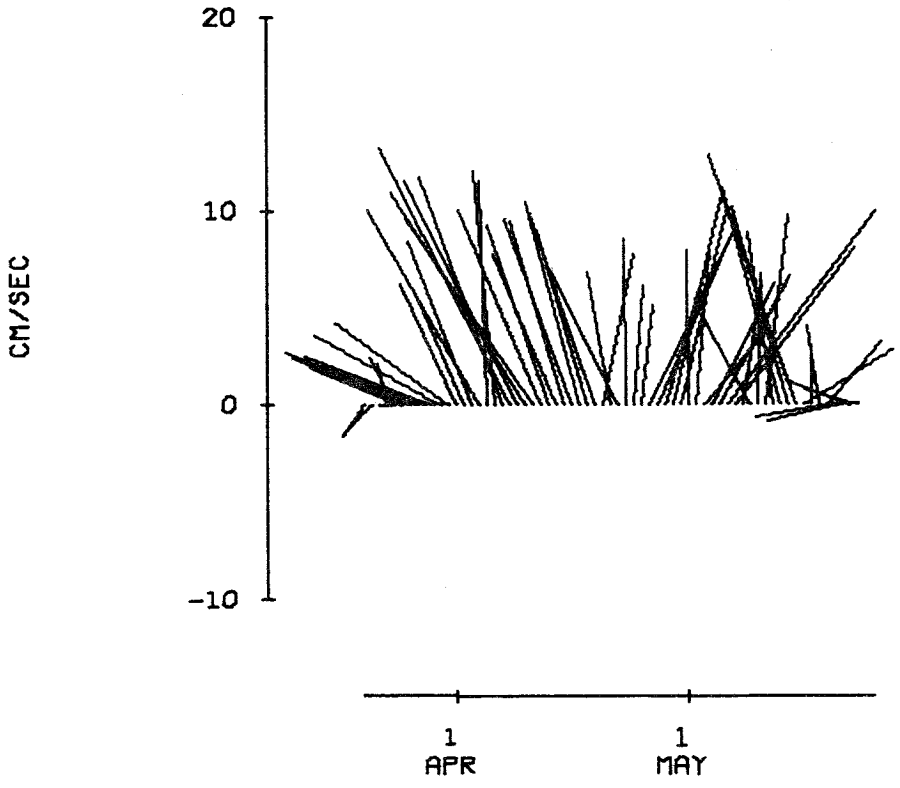
ROTATED CURRENT. 300 METERS AT STN 9. C.O. L



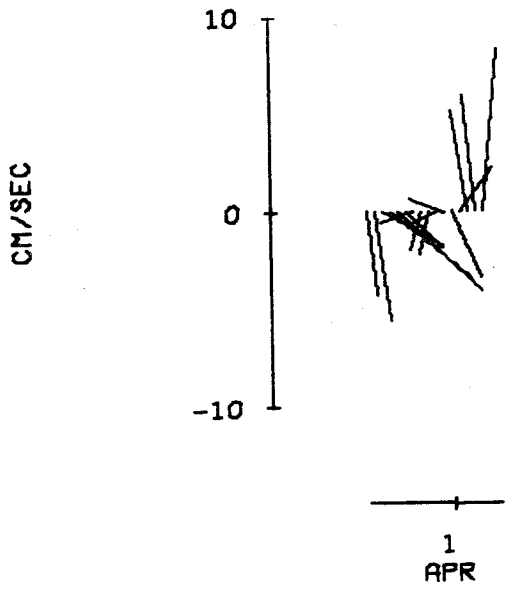
ROTATED CURRENT. 700 METERS AT STN 9. G.O. T



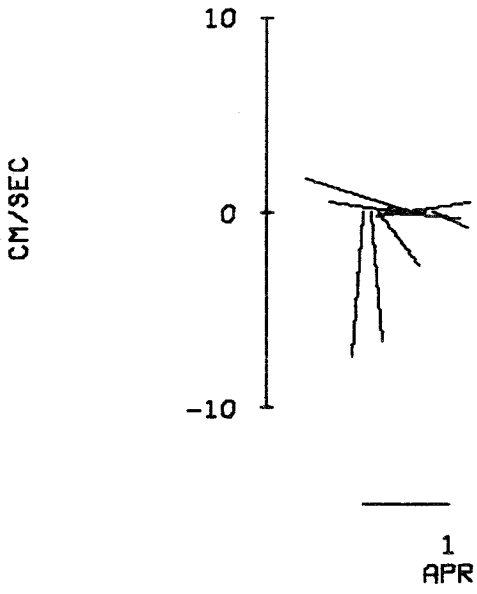
ROTATED CURRENT. 1200 METERS AT STN 9. C.O. P



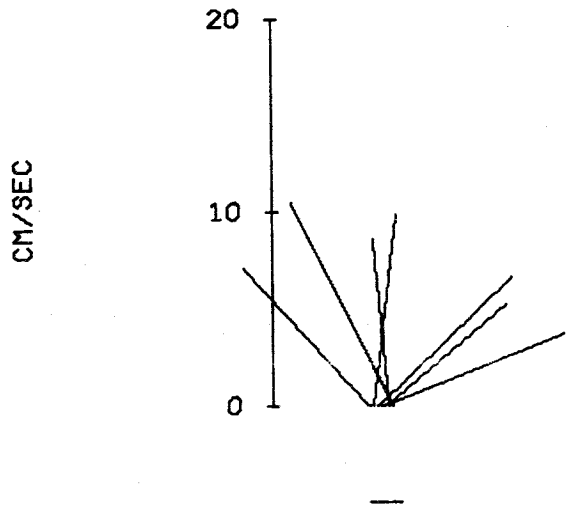
ROTATED CURRENT. 1700 METERS AT STN 9. C.O. M



ROTATED CURRENT. 2200 METERS AT STN 9. C.O. N



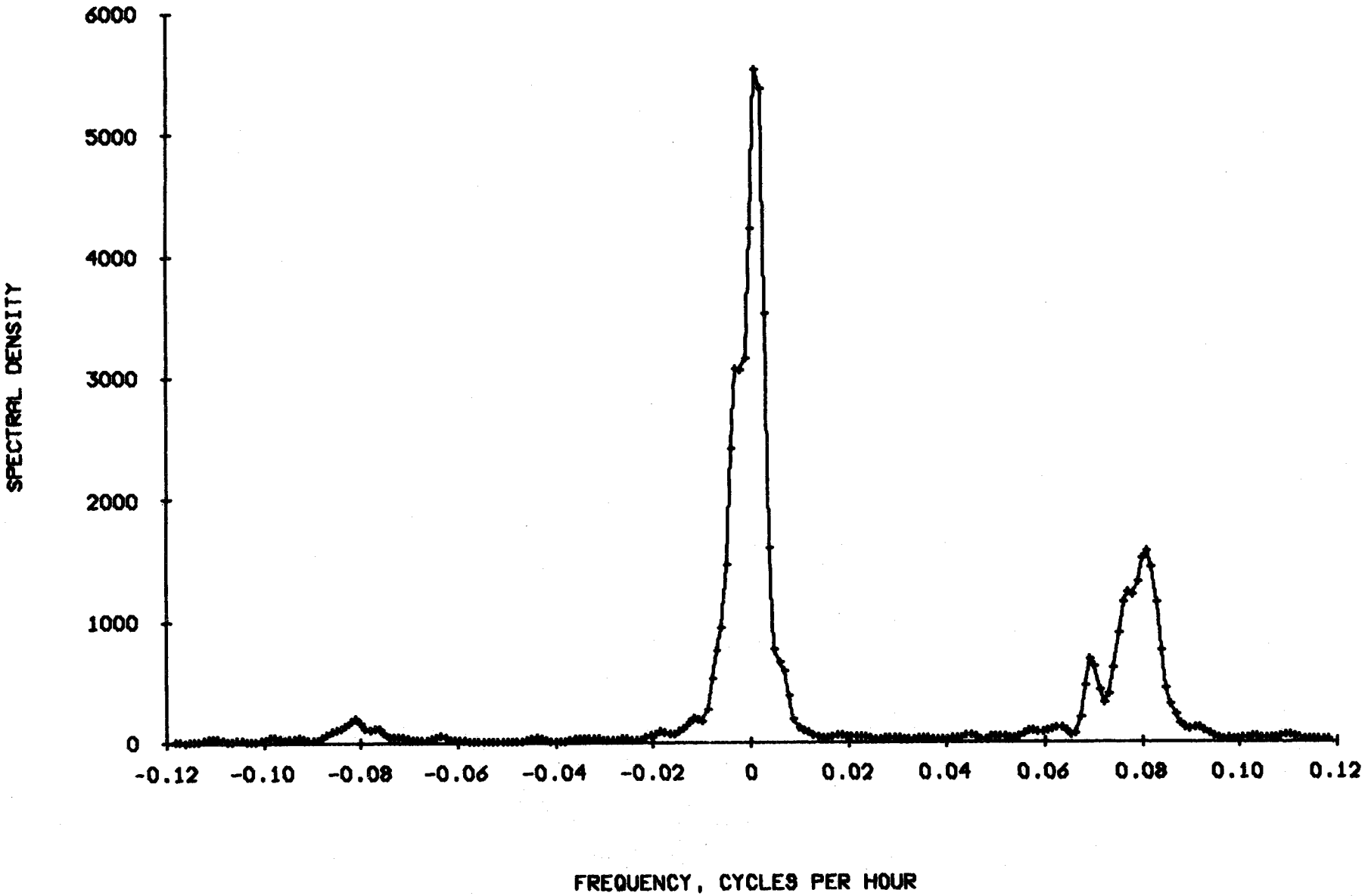
ROTATED CURRENT. 2700 METERS AT STN 9. C.O. 0



ROTATED CURRENT. 3200 METERS AT STN 9. C.O. Z

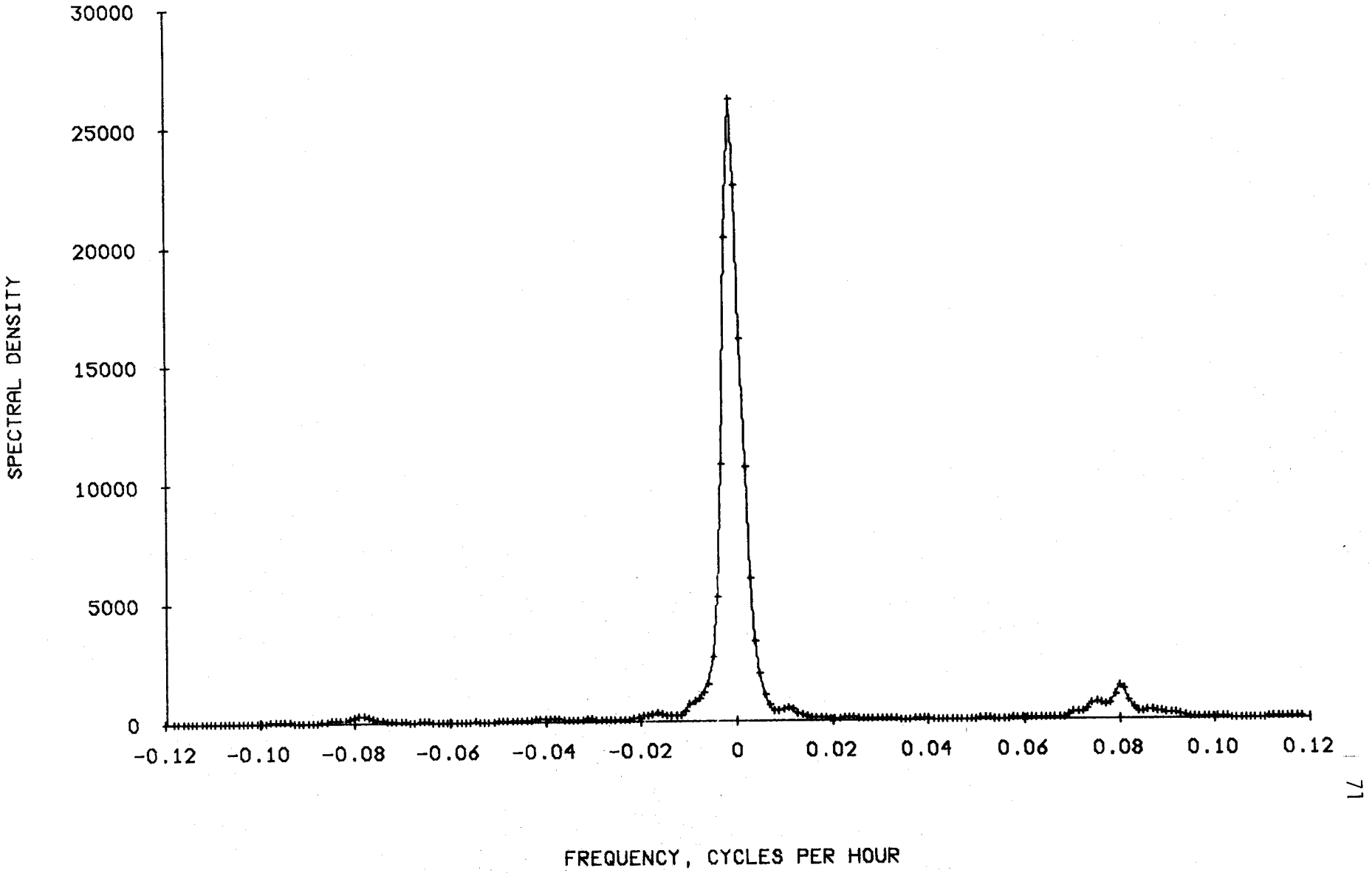
ROTARY SPECTRUM

200 M AT FDRAKE STN 9. 19 MAR 75 TO 21 APR 75. G.O. R



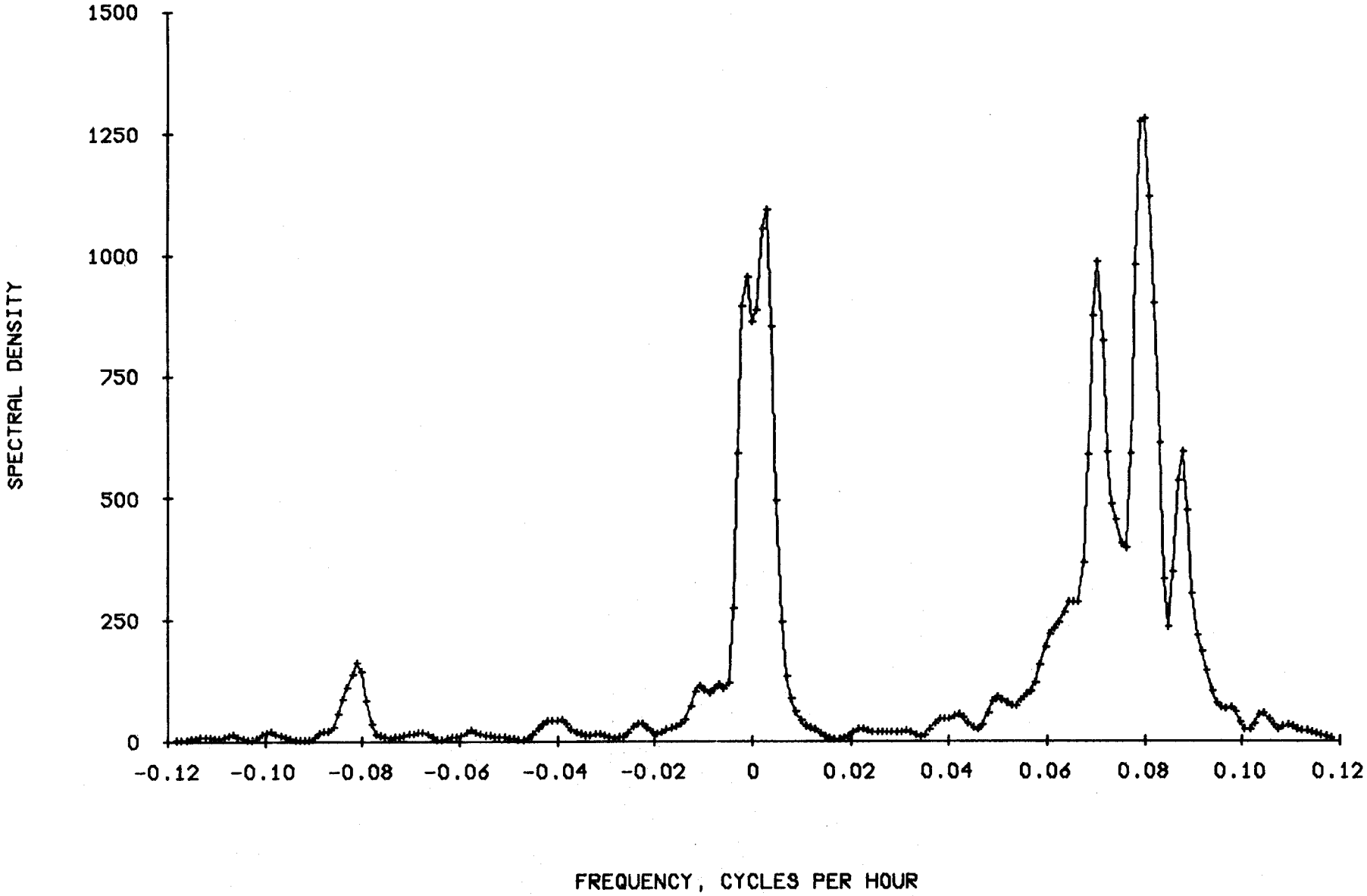
ROTARY SPECTRUM

700 M AT FDRAKE STN 9. 19 MAR 75 TO 30 APR 75. G.O. T



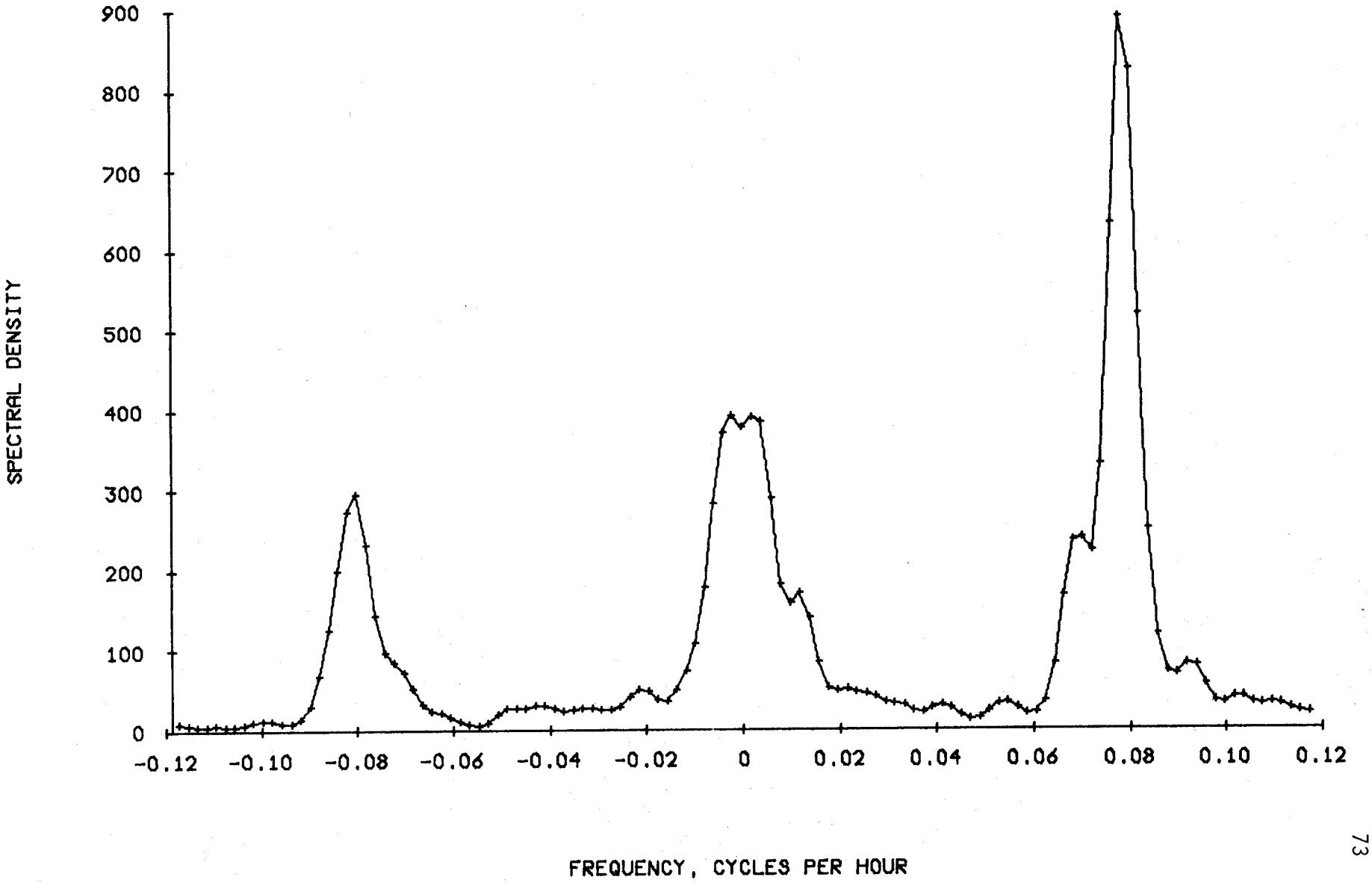
ROTARY SPECTRUM

1700 M AT FDRAKE STN 9. 19 MAR 75 TO 22 APR 75. G.O. M



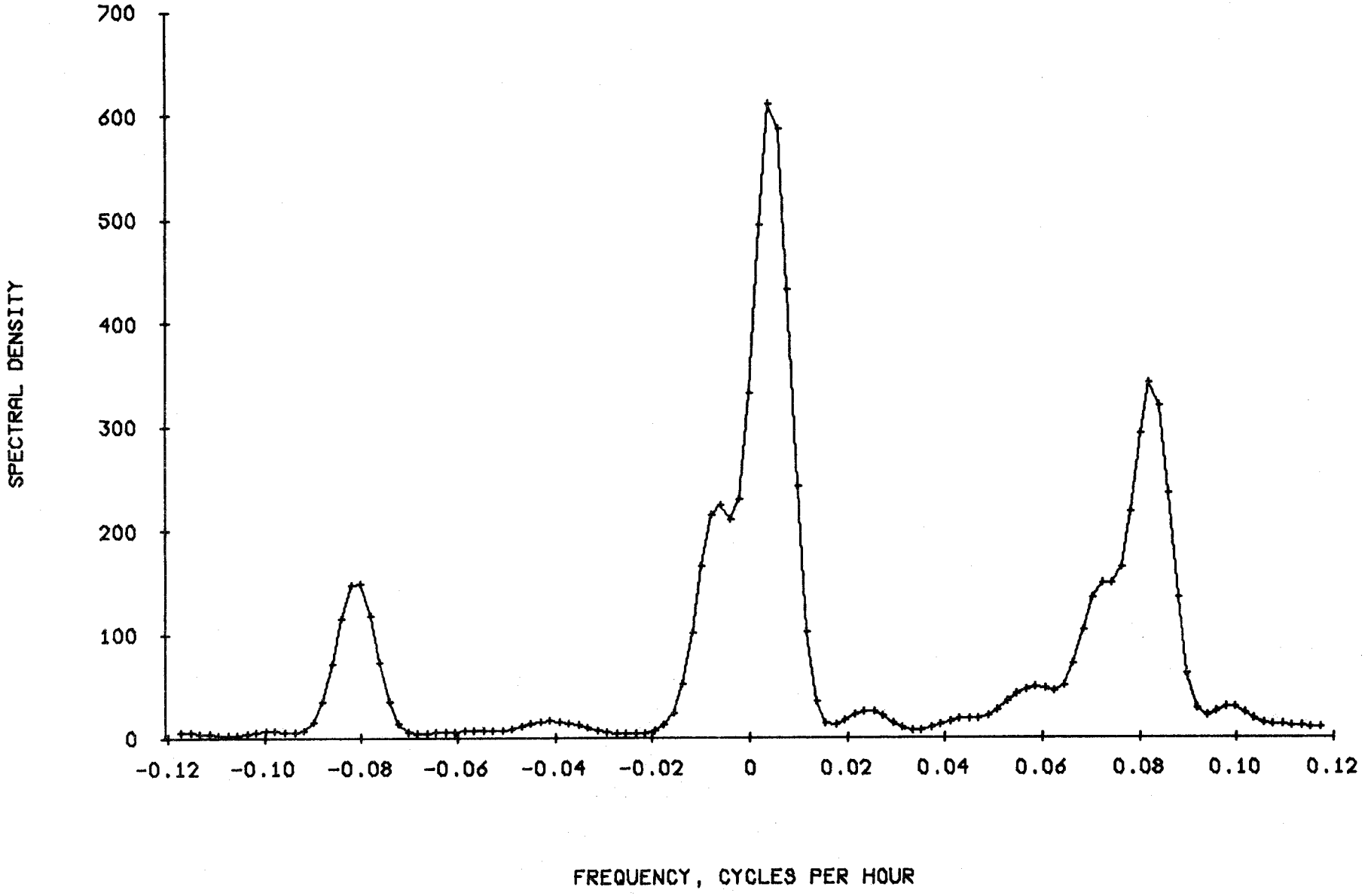
ROTARY SPECTRUM

2200 M AT FDRAKE STN 9. 20 MAR 75 TO 7 APR 75. G.O. N

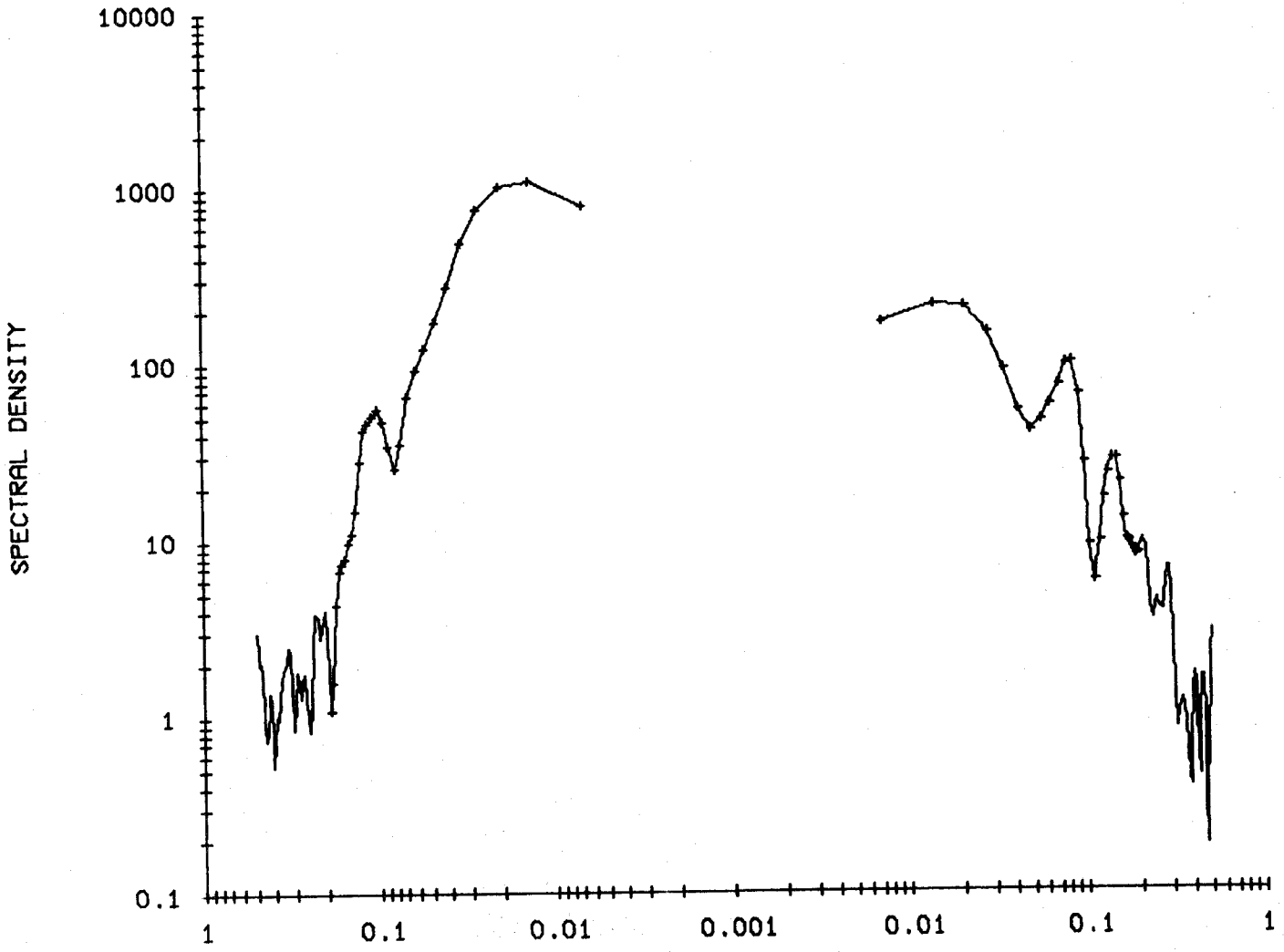


ROTARY SPECTRUM

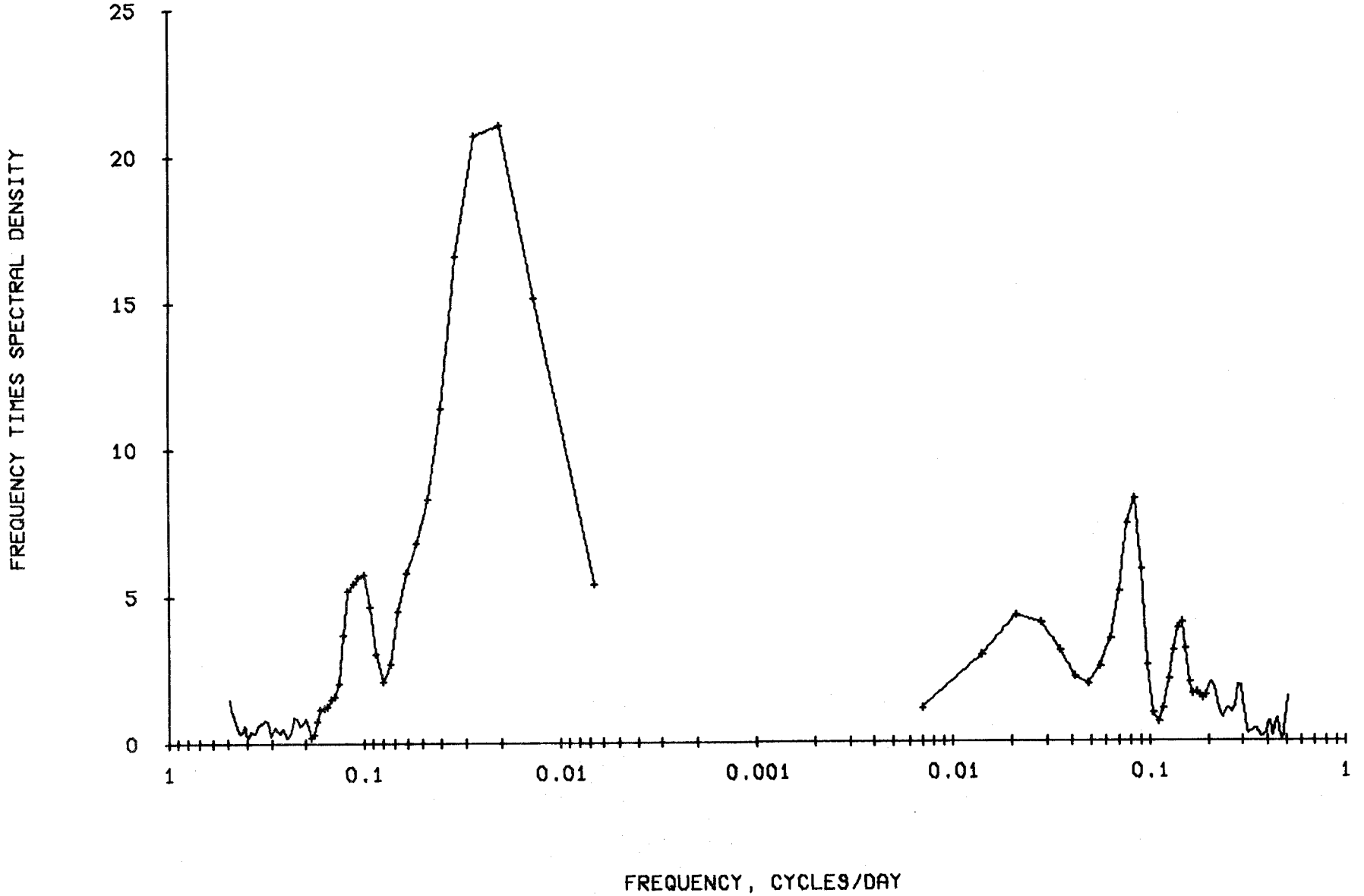
2700 M AT FDRAKE STN 9. 19 MAR 75 TO 1 APR 75. G.0. 0



LLP CURRENT AT 1200 M, STN 9. DT = 24 HRS.



LLP CURRENT AT 1200 M, STN 9. DT = 24 HRS.



1975 F DRAKE Installation 10

Position: 59°46.8'S, 63°19.0'W
Depth of Water: 3569 m
Set at 1355 UCT 25 February 1975 by R/V MELVILLE
Retrieved at 1200 UCT 12 February 1976 by R/V T. G. THOMPSON
Data Interval: 1905 UCT 25 February 1975 to 1106 UCT 12 February 1976

Instrumentation

Intended Depth	RCM5 Serial No./Tape No.
1019 m	1242/5
1519 m	1243/5
2519 m	1244/5

Data were recorded at one hour intervals. Direction failed at 0609 UCT 12 October 1975 on instrument 1242, but temperature data are good until 1509 UCT 28 November 1975. Both 1243 and 1244 operated until retrieved.

STATION TEN

1019 m

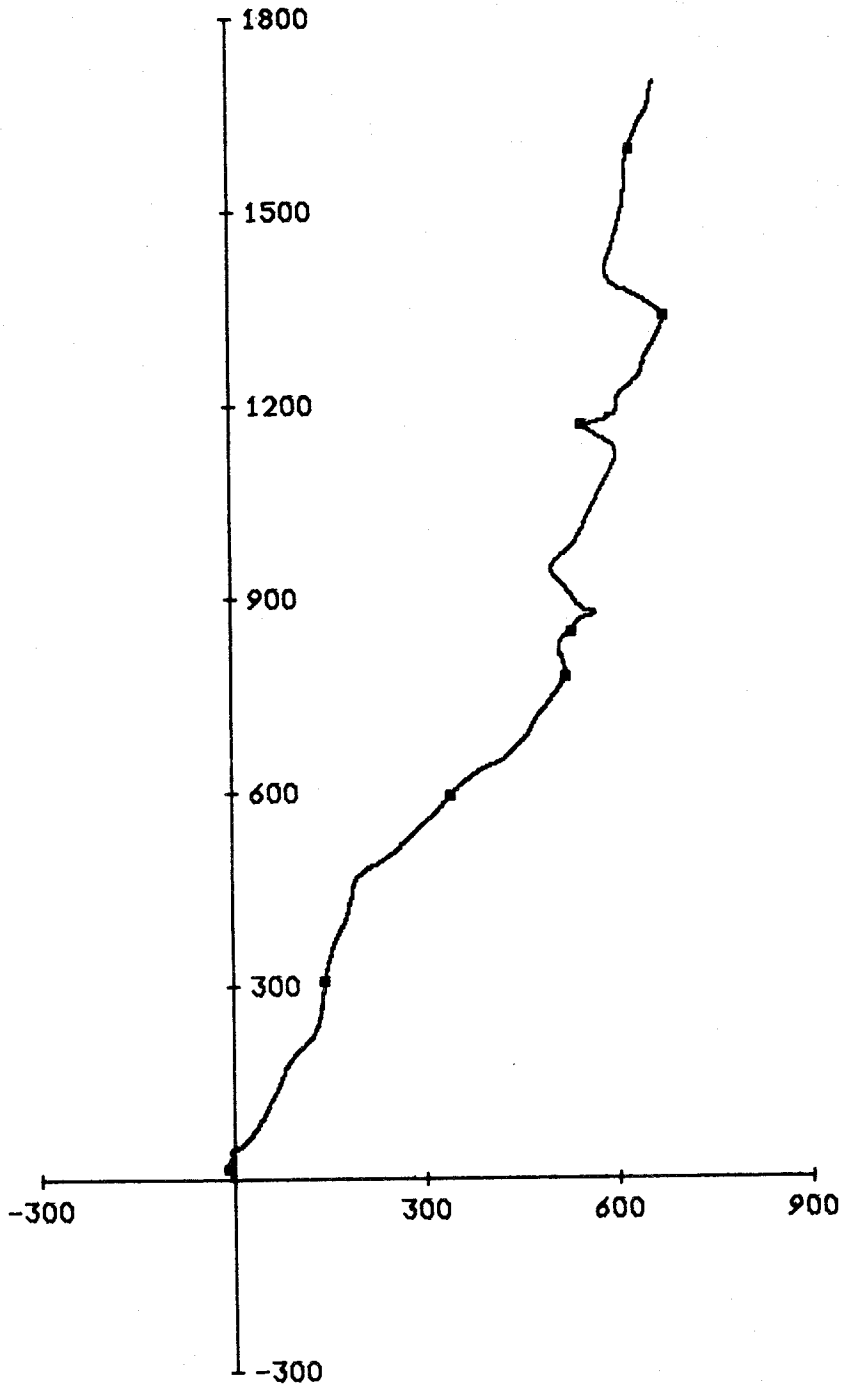
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	11.3	7.1	1.0	4.7	44.3	0.7	6604
U (cm/sec)	3.4	7.7	-0.5	4.2	31.9	-29.2	5484
V (cm/sec)	8.6	6.9	0.9	4.5	37.8	-8.2	5484
T Water (C)	1.81	0.16	-0.86	5.46	2.19	1.20	6621

1519 m

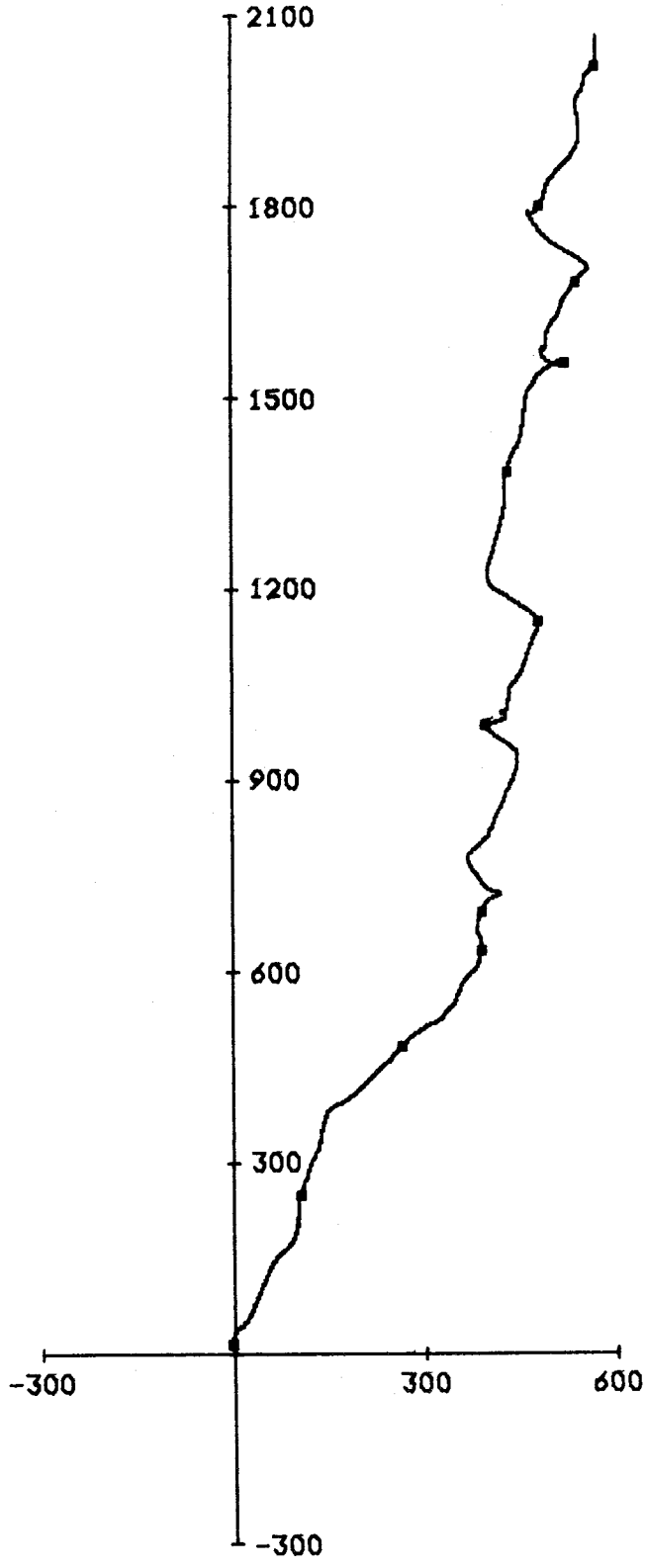
S (cm/sec)	9.7	5.7	1.2	5.6	40.4	0.7	8441
U (cm/sec)	1.9	6.6	-0.4	4.0	29.1	-24.4	8441
V (cm/sec)	6.8	5.8	0.9	5.4	35.9	-9.8	8441
T Water (C)	1.42	0.16	-0.15	4.96	1.93	0.91	8441

2519 m

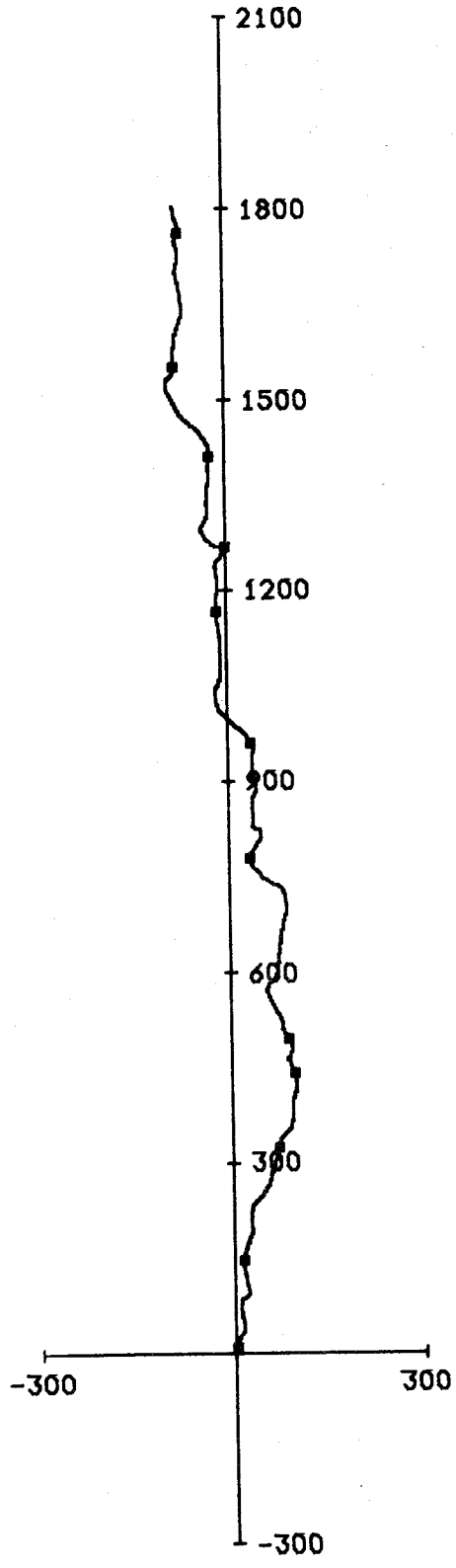
S (cm/sec)	7.4	4.7	1.8	8.5	41.5	0.7	8441
U (cm/sec)	-0.3	4.5	-0.6	6.0	20.3	-28.0	8441
V (cm/sec)	5.9	4.6	1.3	7.4	38.2	-6.5	8441
T Water (C)	0.77	0.12	0.87	5.12	1.19	0.47	8441



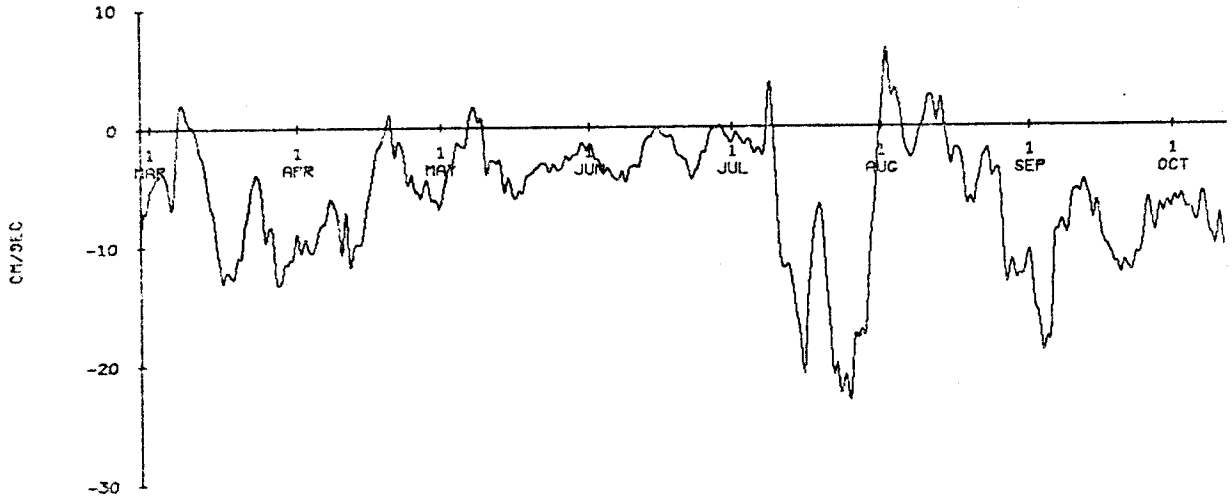
1019 M AT F DRAKE STN 10. 228.5 DAYS STARTING 1909 25 FEB 75



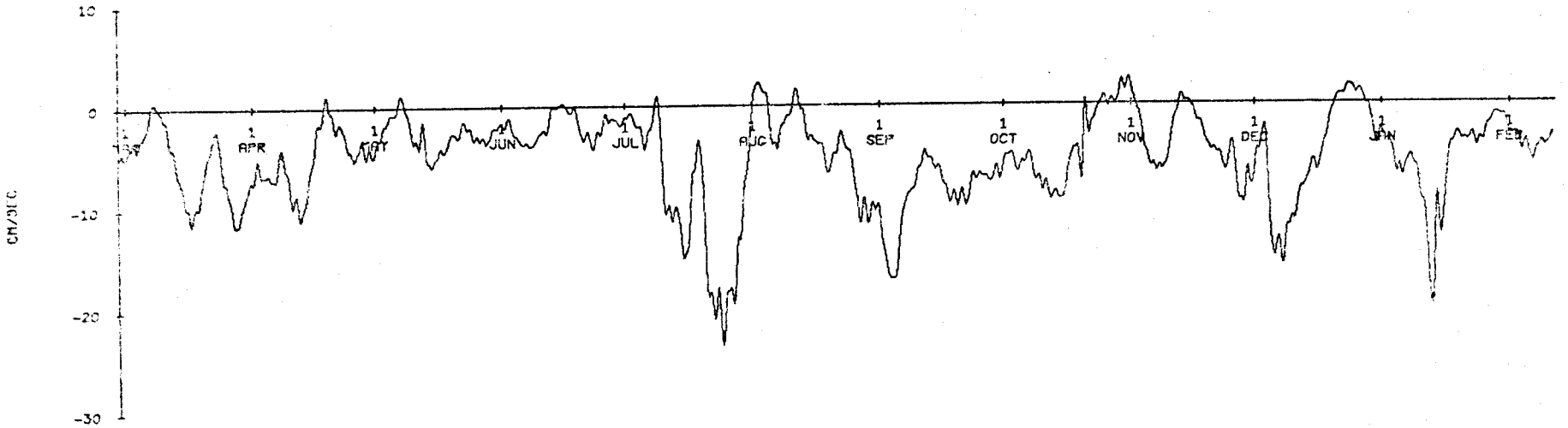
1519 M AT F DRAKE STN 10. 351.7 DAYS STARTING 1906 25 FEB 75



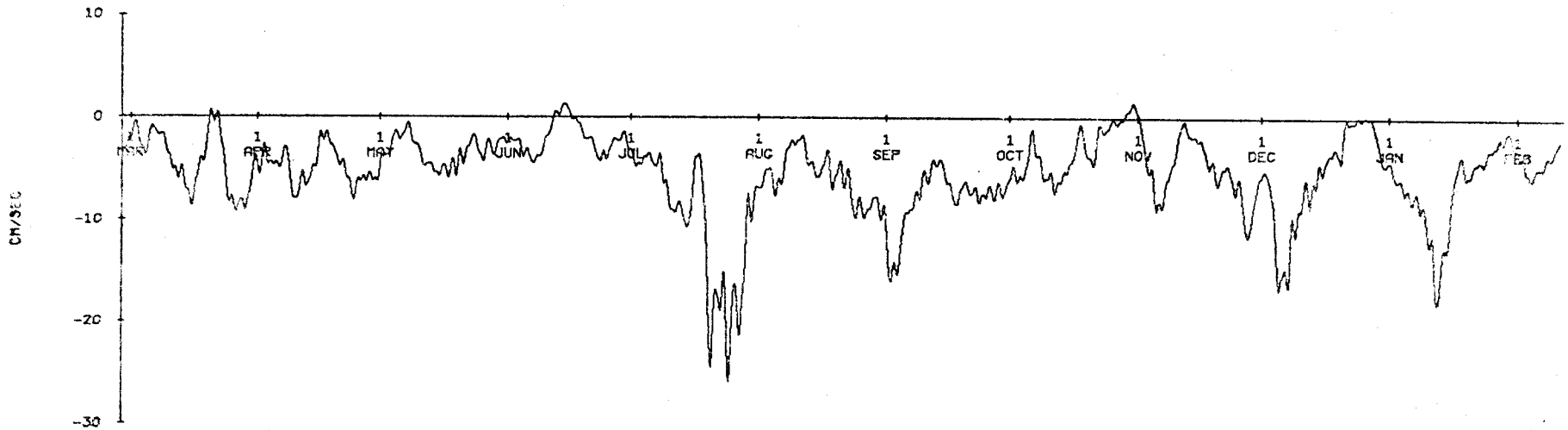
2519 M AT F DRAKE STN 10. 351.7 DAYS STARTING 1905 25 FEB 75



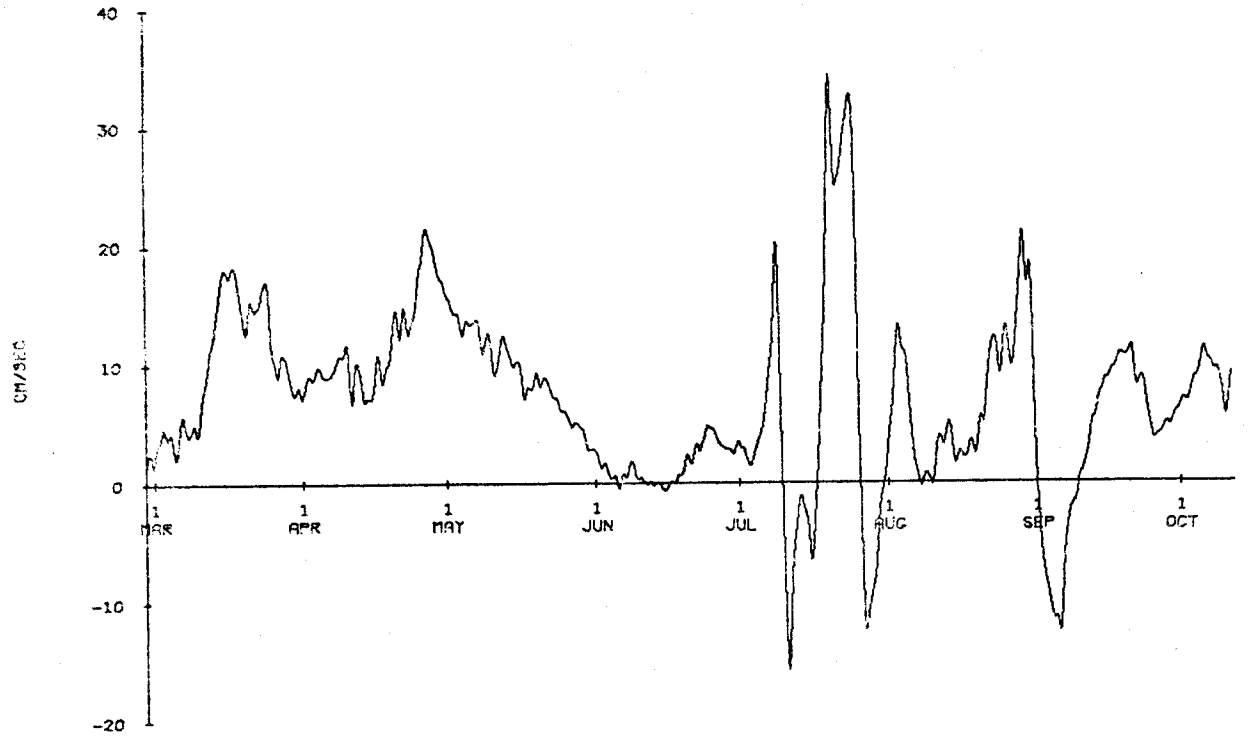
ROTATED U COMPONENT. 1019 METERS AT STN 10. TAPE 1242/5



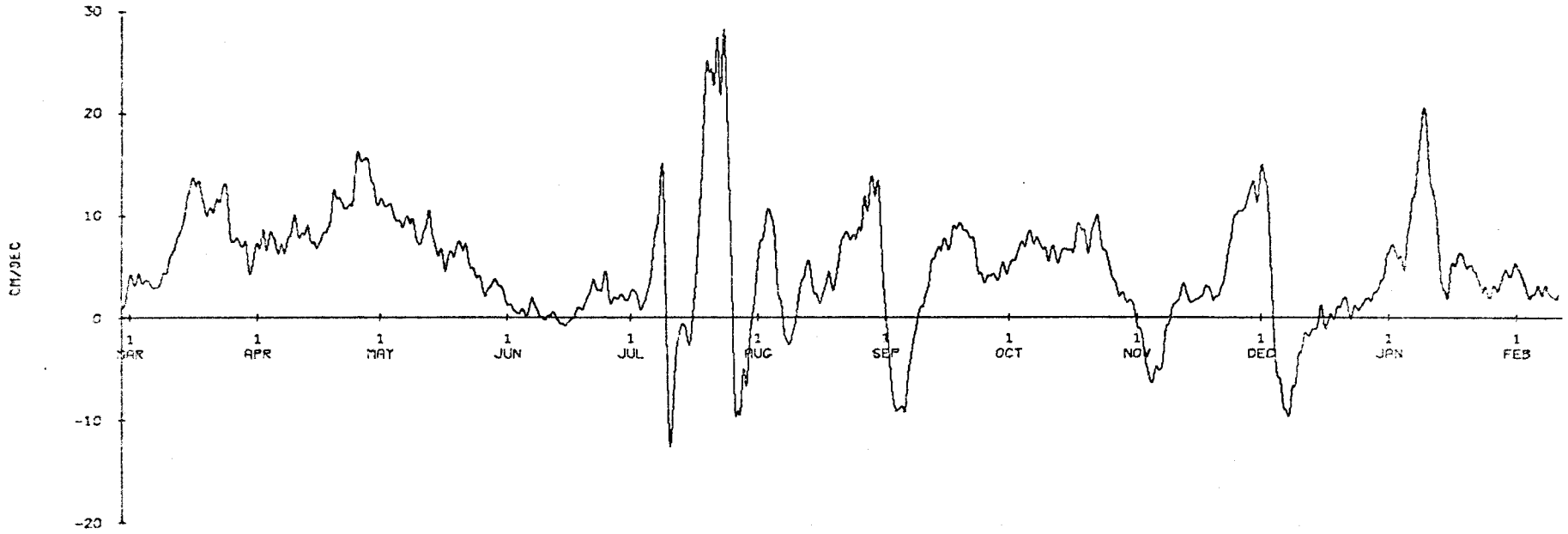
ROTATED U COMPONENT. 1519 METERS AT STN 10. TAPE 1243/5



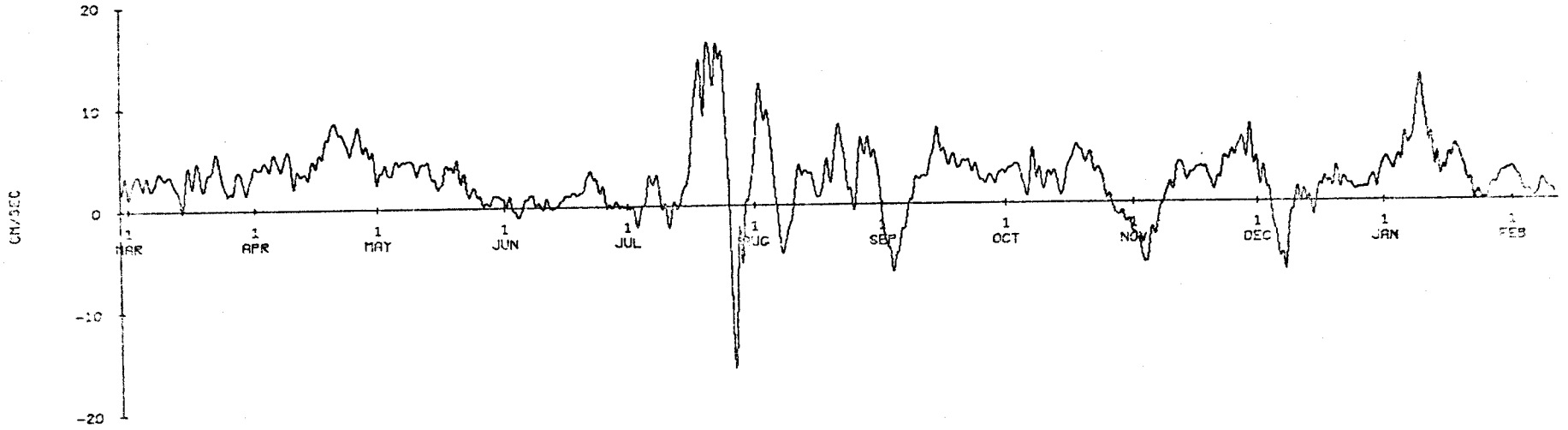
ROTATED U COMPONENT. 2519 METERS AT STN 10. TAPE 1244/5



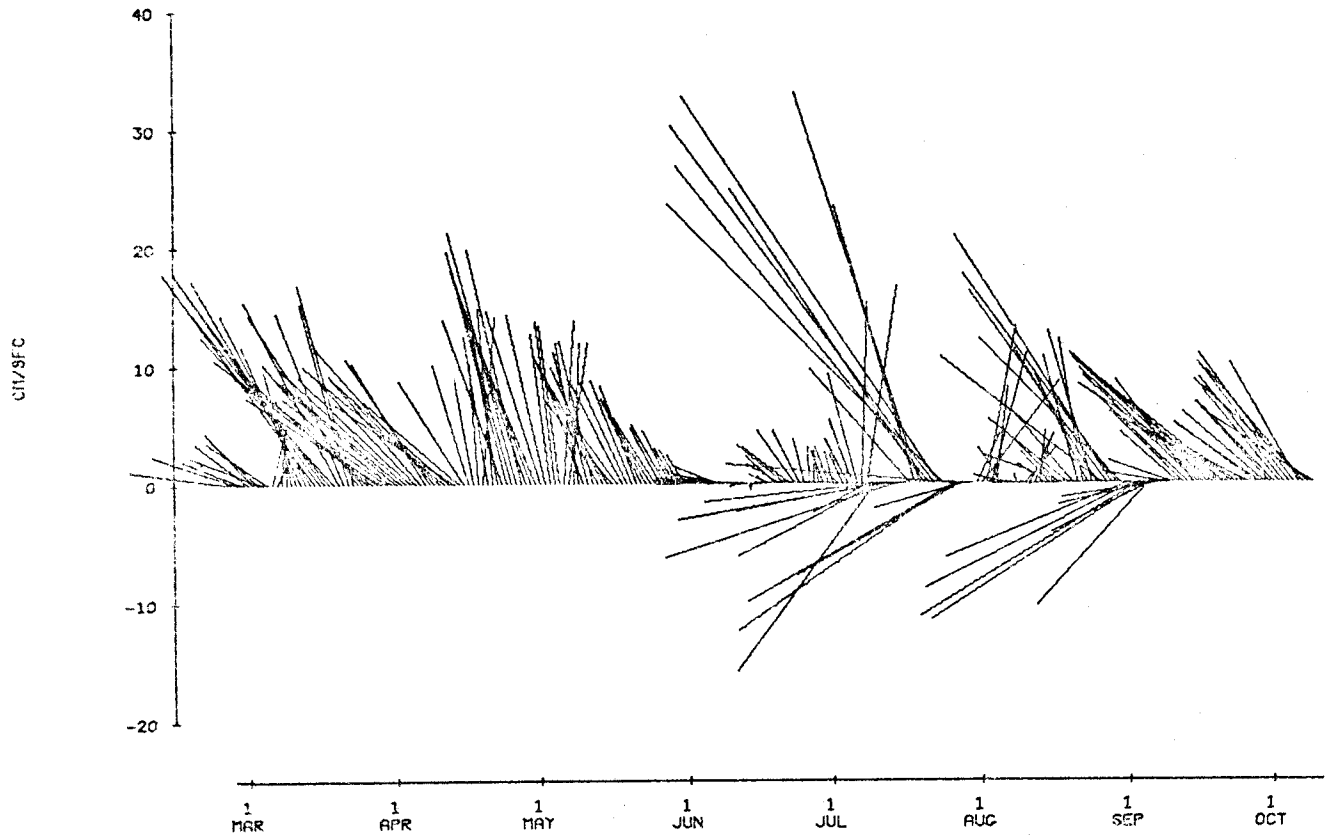
ROTATED V COMPONENT. 1019 METERS AT STN 10. TAPE 1242/5



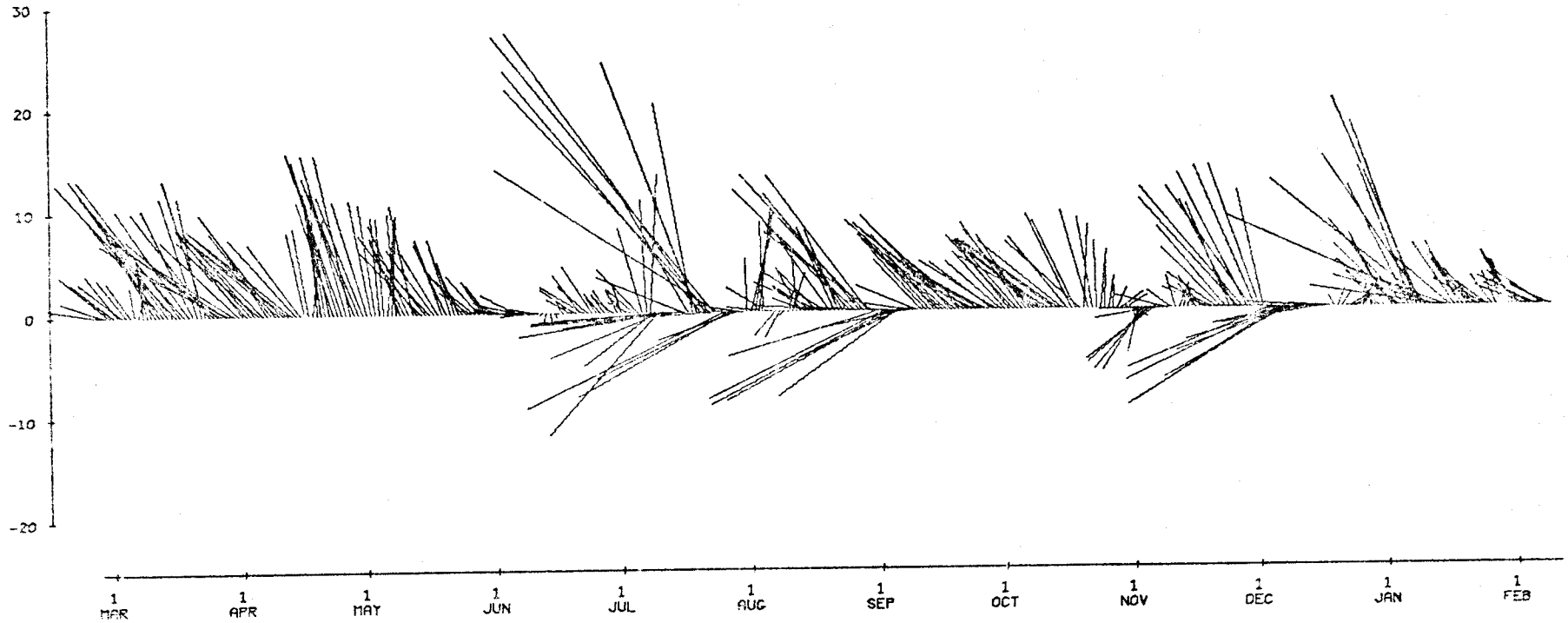
ROTATED V COMPONENT. 1519 METERS AT STN 10. TAPE 1243/5



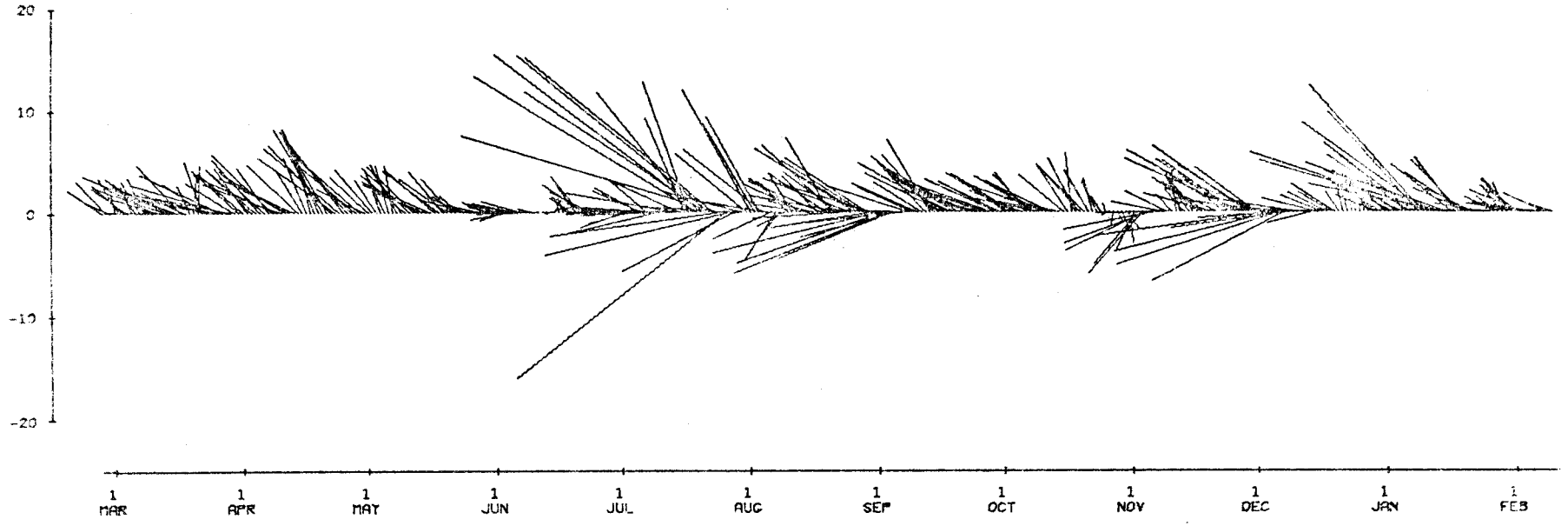
ROTATED V COMPONENT. 2519 METERS AT STN 10. TAPE 1244/5



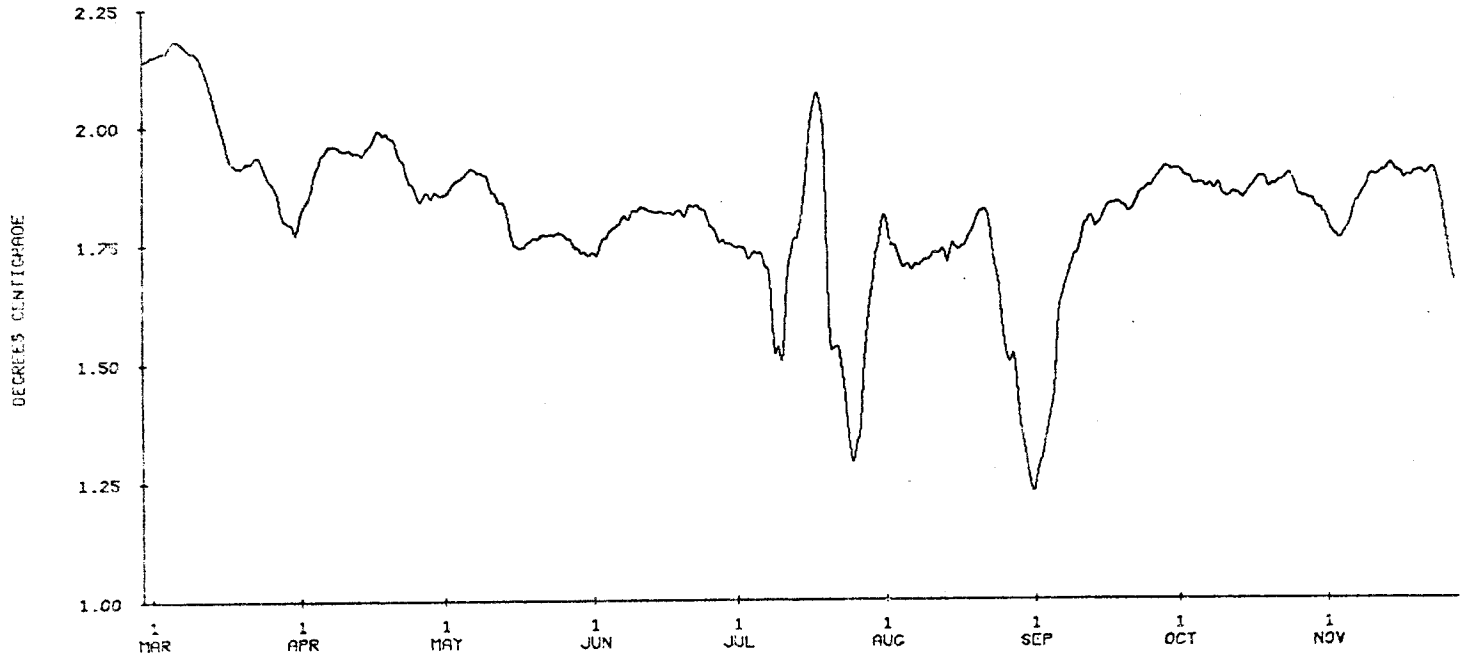
ROTATED CURRENT. 1019 METERS AT STN 10. TAPE 1242/5



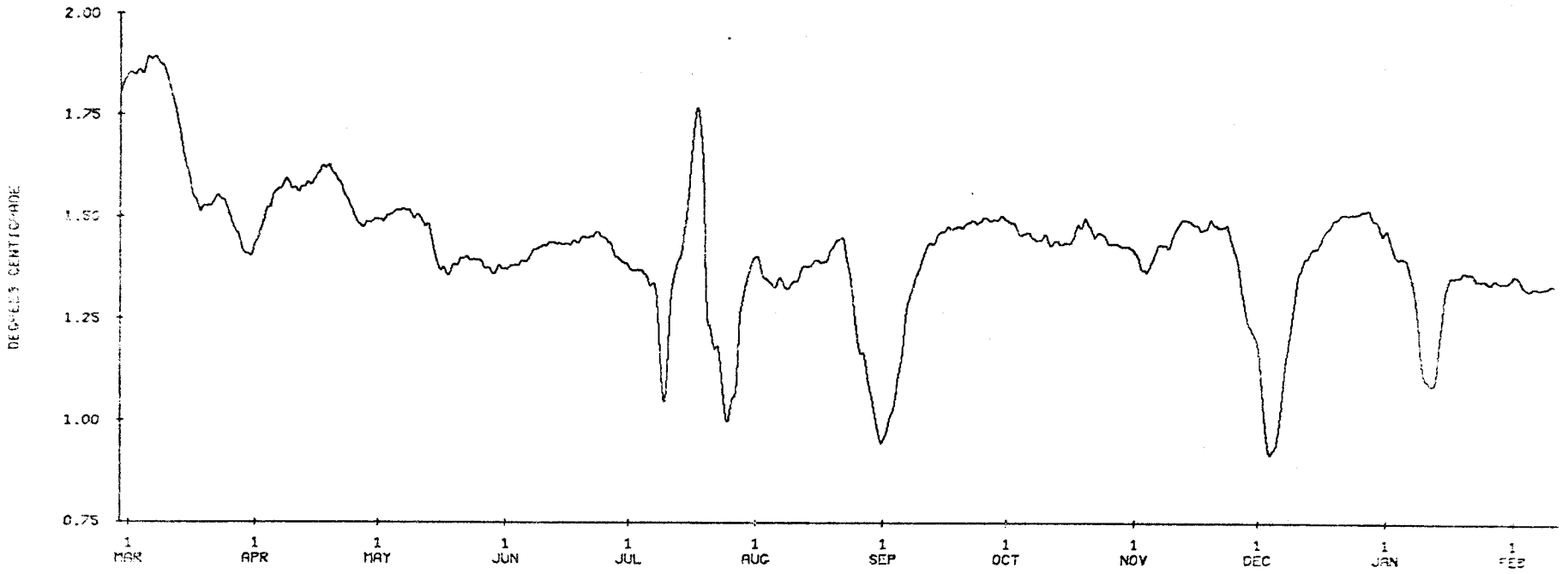
ROTATED CURRENT. 1519 METERS AT STN 10. TAPE 1243/5



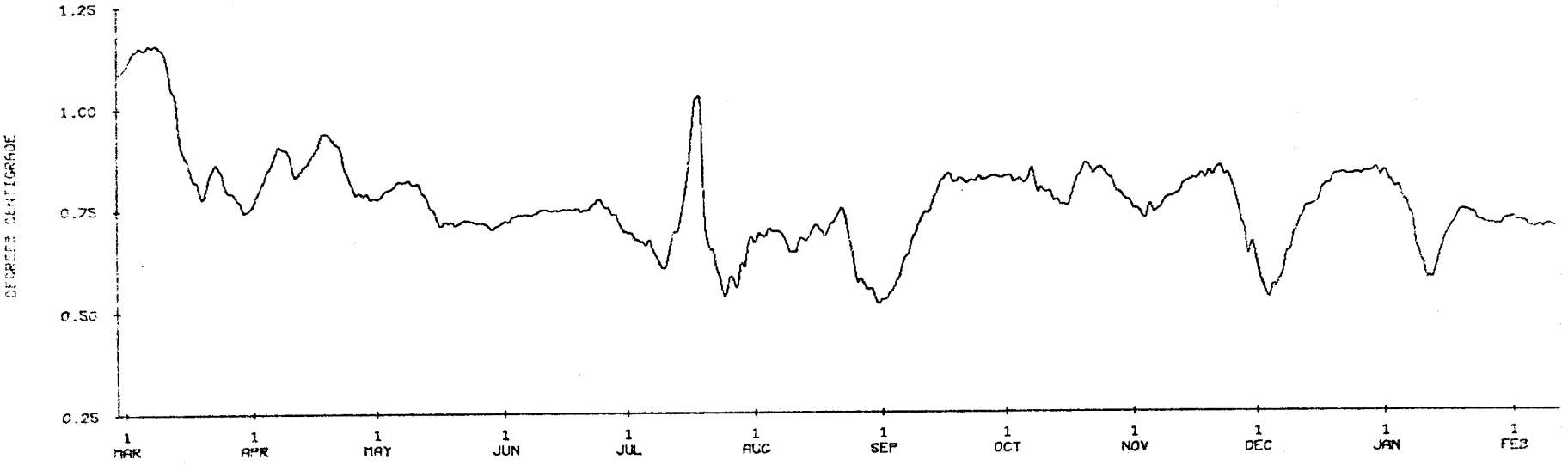
ROTATED CURRENT. 2519 METERS AT STN 10. TAPE 1244/5



TEMPERATURE. 1019 METERS AT STN 10. TAPE 1242/5

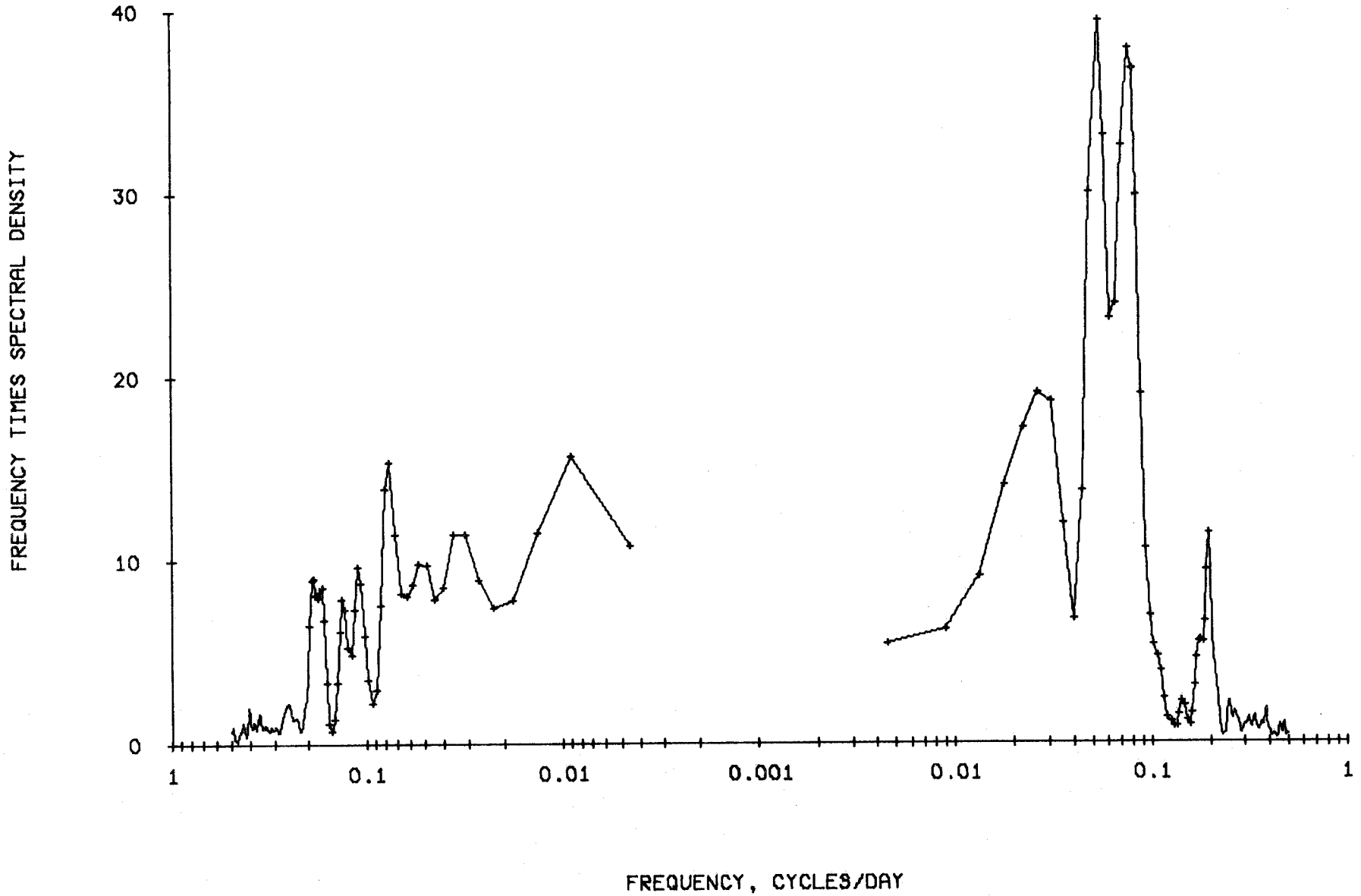


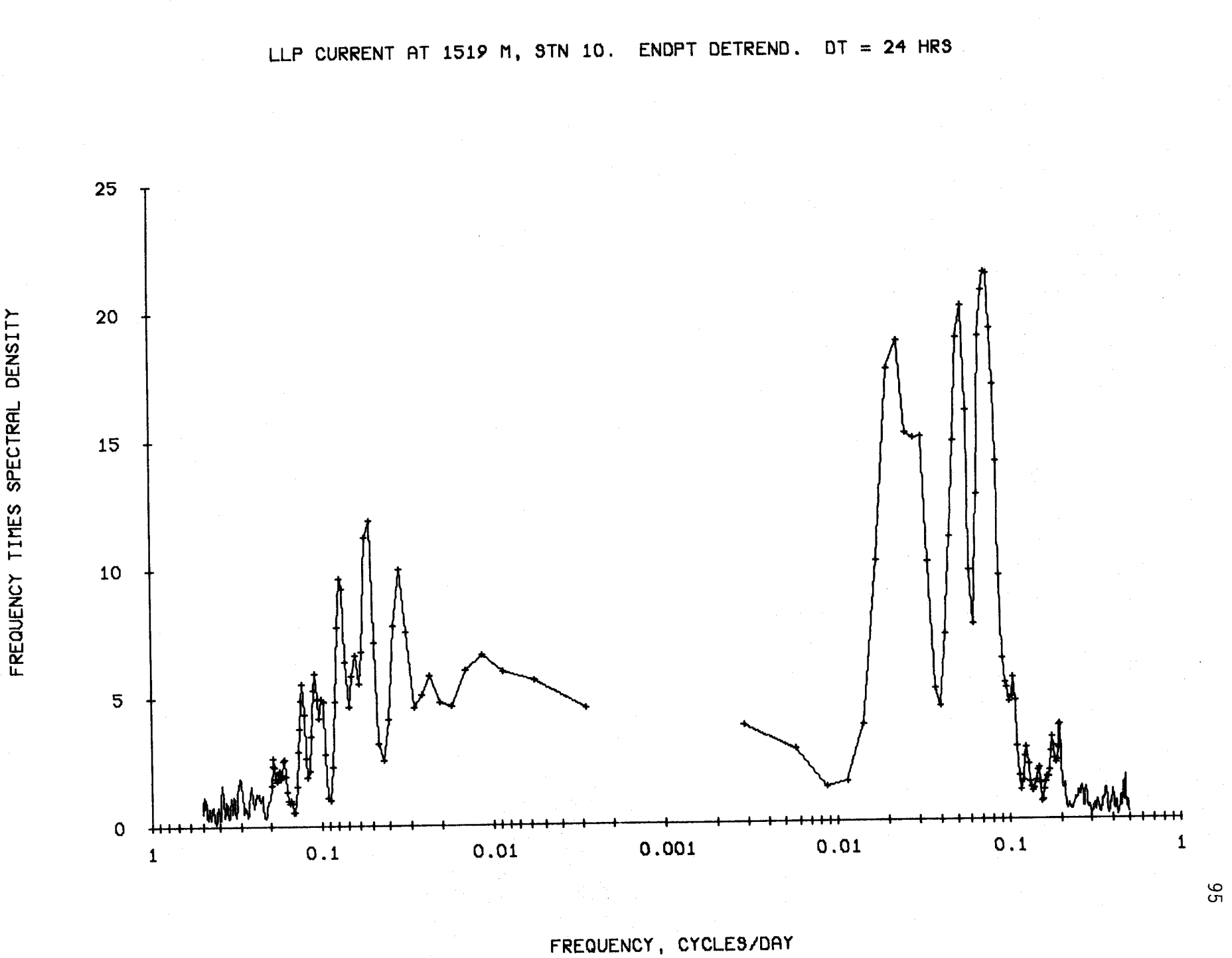
TEMPERATURE. 1519 METERS AT STN 10. TAPE 1243/5



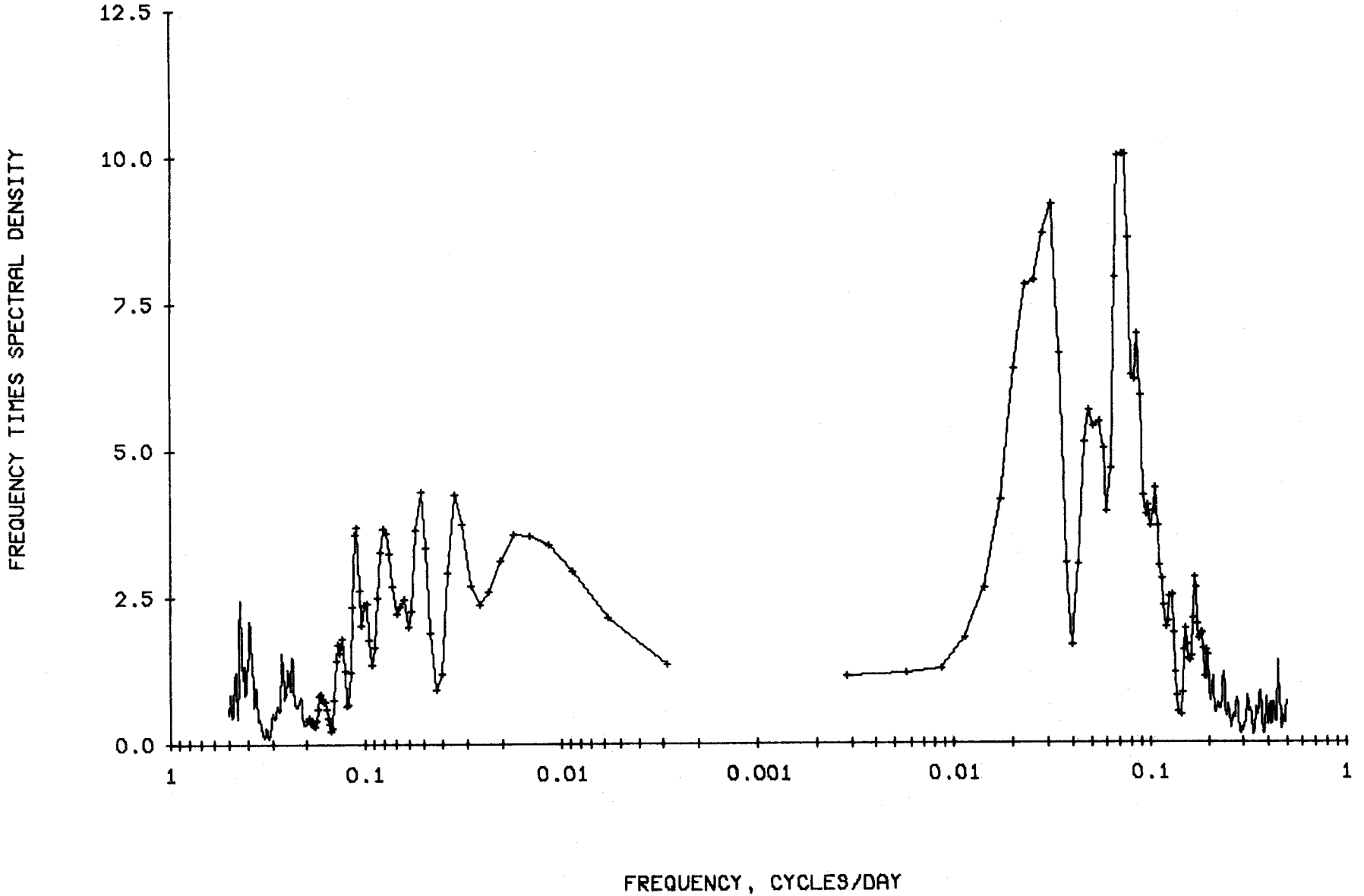
TEMPERATURE. 2519 METERS AT STN 10. TAPE 1244/5

LLP CURRENT AT 1019 M, STN 10. ENDPT DETREND. DT = 24 HRS.




LLP CURRENT AT 1519 M, STN 10. ENDPT DETREND. DT = 24 HRS
FREQUENCY TIMES SPECTRAL DENSITY
25
20
15
10
5
0
1
0.1
0.01
0.001
0.01
0.1
1
FREQUENCY, CYCLES/DAY

LLP CURRENT AT 2519 M, STN 10. ENDPT DETREND. DT = 24 HRS.



1975 F DRAKE Installation 12

Position: 60°23.5'S, 63°36.5'W
Depth of Water: 3729 m
Set at 0209 UCT 26 February 1975 by R/V MELVILLE
Retrieved at 1851 UCT 13 February 1976 by R/V T. G. THOMPSON
Data Interval: 0511 UCT 26 February 1975 to 0911 UCT 23 November 1975

Instrumentation

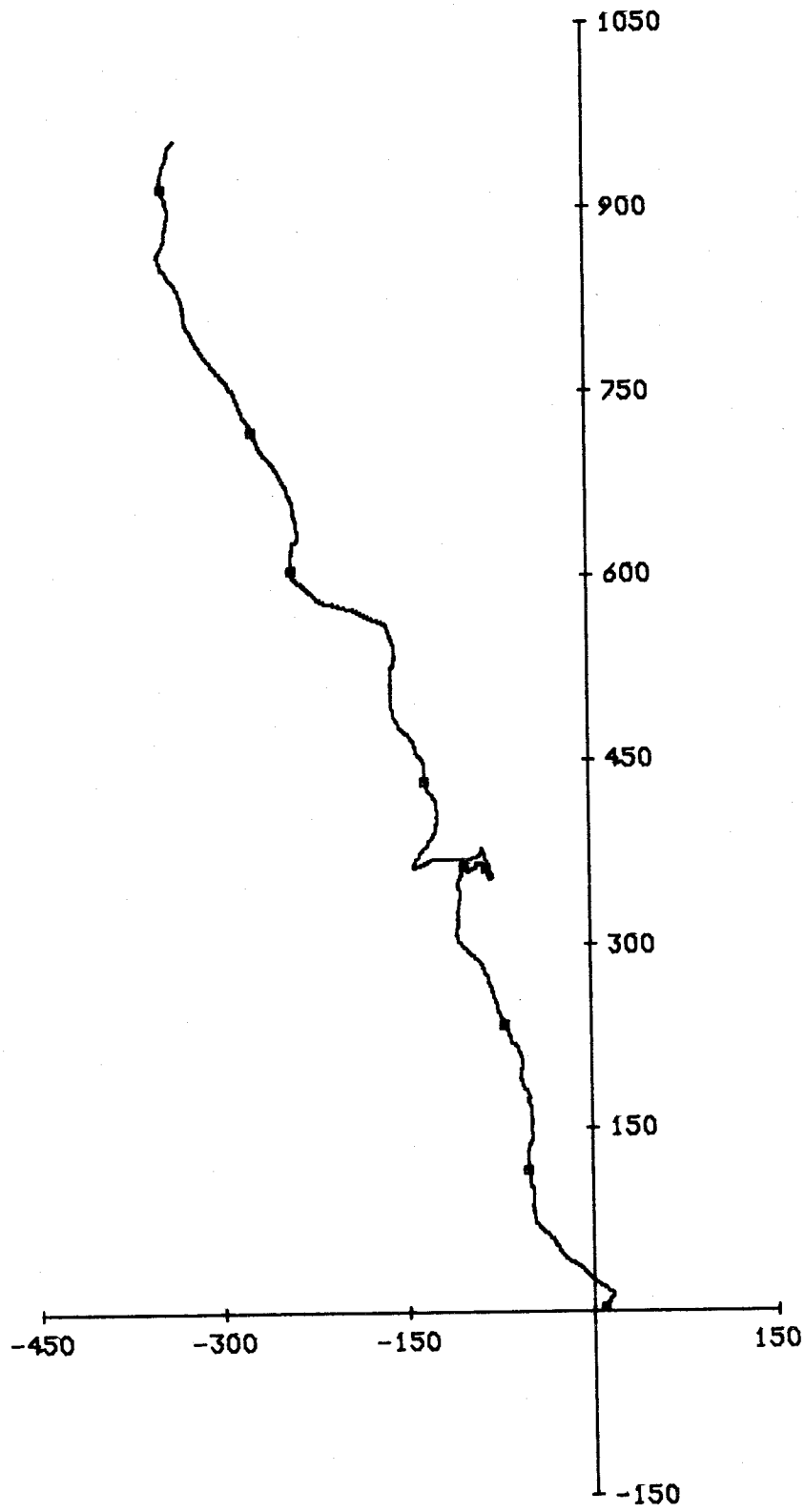
Intended Depth	RCM5 Serial No./Tape No.
2604 m	1245/5

Data were recorded at one hour intervals. Direction failed at 0011 UCT 7 November 1975, but temperature data are good until 0911 UCT 23 November 1975.

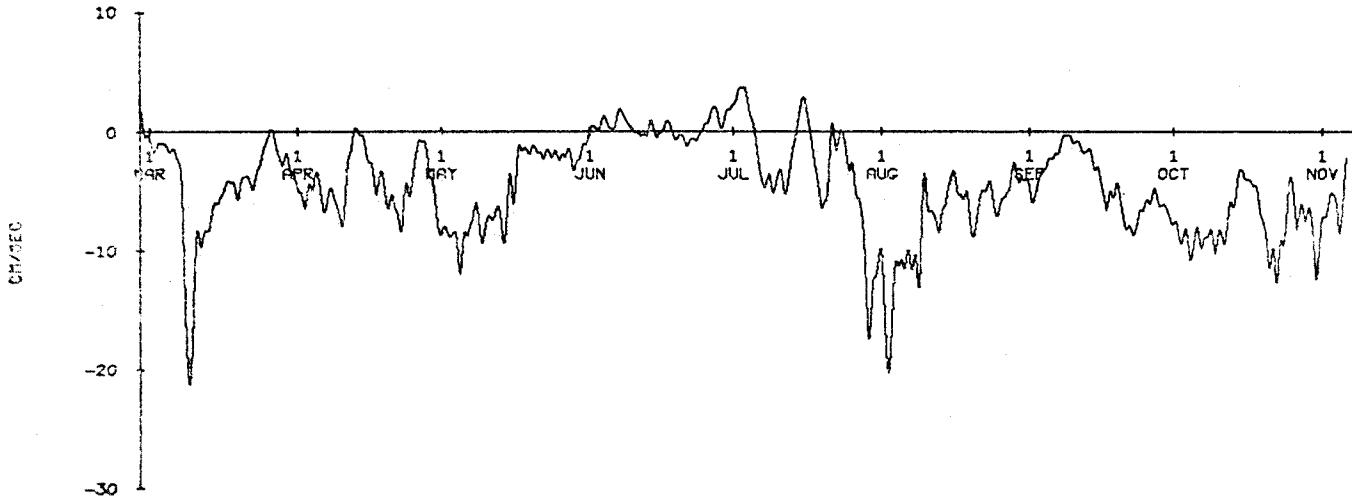
STATION TWELVE

2604 m

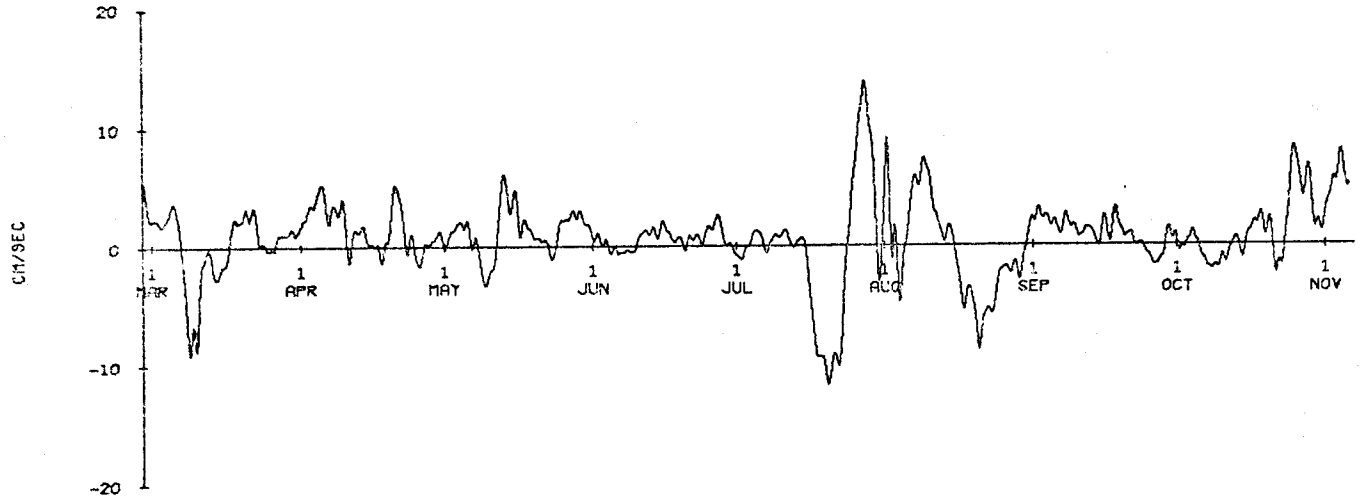
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	6.6	4.4	1.0	4.2	29.0	0.7	6485
U (cm/sec)	-1.5	4.6	-0.6	4.3	16.1	-21.3	6091
V (cm/sec)	4.4	4.6	0.7	4.0	26.2	-11.4	6091
T Water (C)	0.65	0.06	-0.51	3.32	0.79	0.47	6485



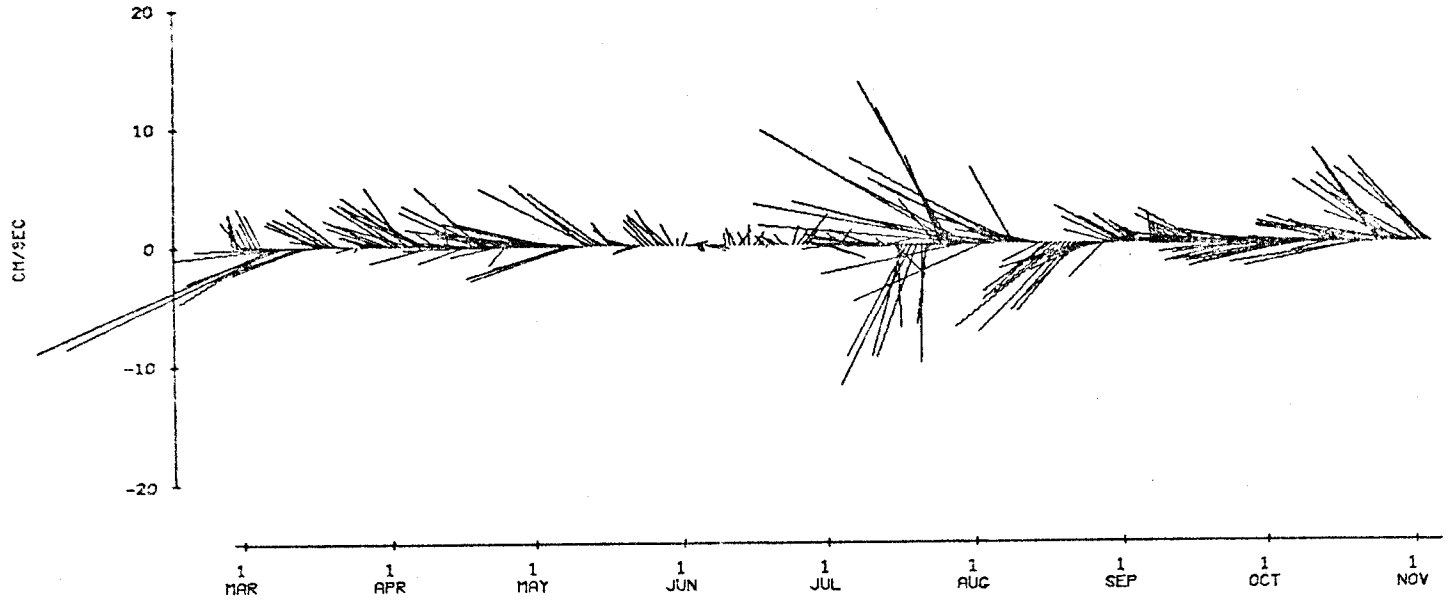
2604 M AT F DRAKE STN 12. 253.8 DAYS STARTING 0511 26 FEB 75



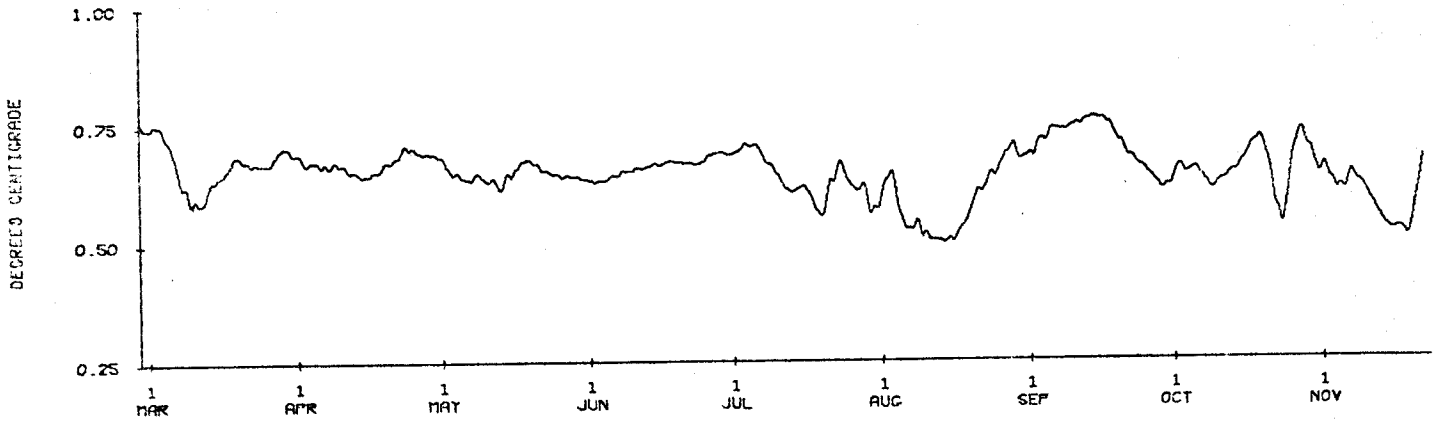
ROTATED U COMPONENT. 2604 METERS AT STN 12. TAPE 1245/5



ROTATED V COMPONENT. 2604 METERS AT STN 12. TAPE 1245/5

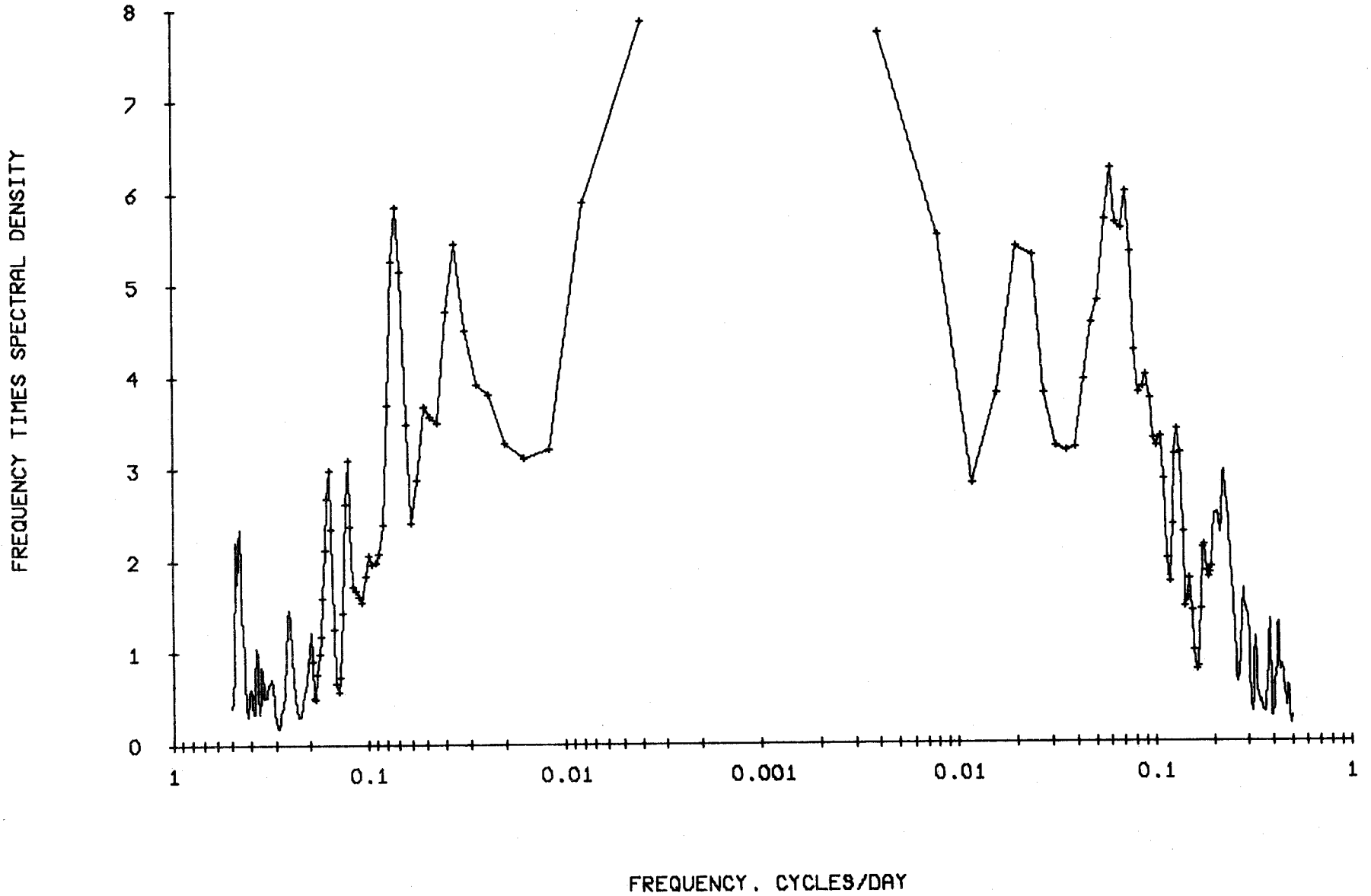


ROTATED CURRENT. 2604 METERS AT STN 12. TAPE 1245/5



TEMPERATURE. 2604 METERS AT STN 12. TAPE 1245/5

LLP CURRENT AT 2604 M, STN 12. ENDPT DETREND. DT = 24 HRS.



1975 F DRAKE Installation 14

Position: 61°03.1'S, 61°52.5'W
Depth of Water: 3617 m
Set at 2148 UCT 26 February 1975 by R/V MELVILLE
Retrieved at 1241 UCT 14 February 1976 by R/V T. G. THOMPSON
Data Interval: 0020 UCT 27 February 1975 to 0520 UCT 14 February 1976

Instrumentation

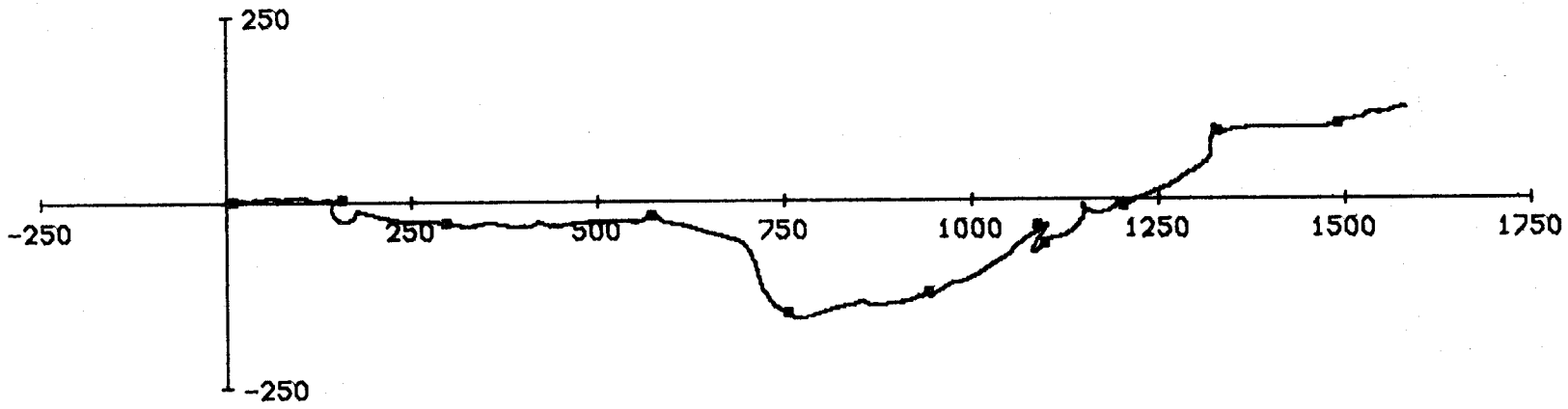
Intended Depth	RCM5 Serial No./Tape No.
2667 m	497/29

Data were recorded at one hour intervals. Direction failed at 1420 UCT 24 January 1976, but temperature data are good until 0520 UCT 14 February 1976.

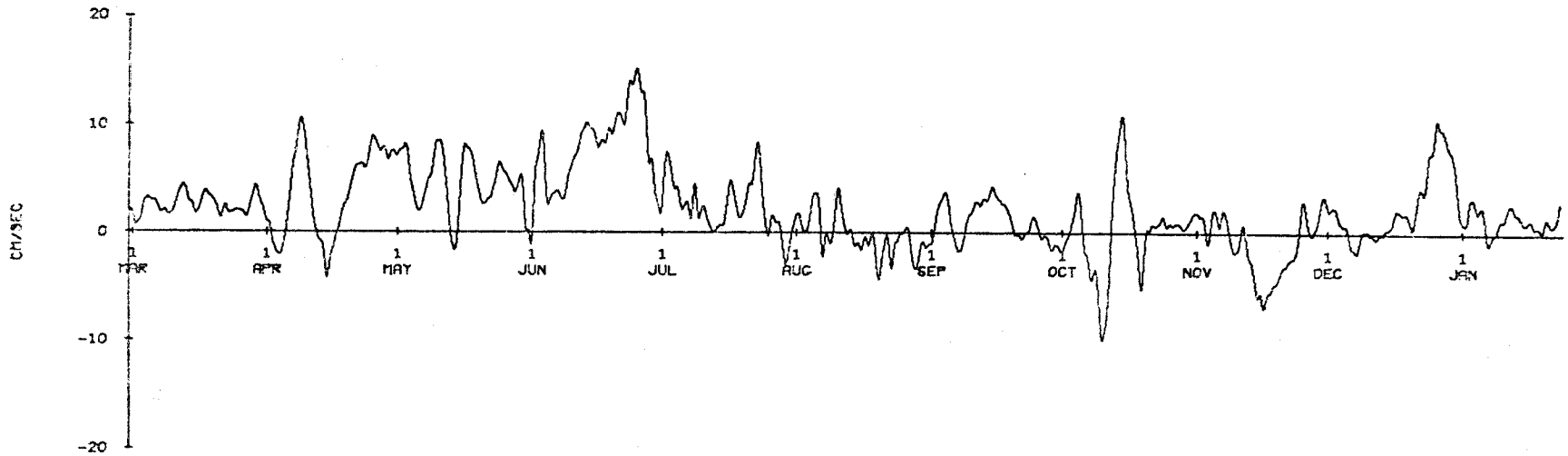
STATION FOURTEEN

2667 m

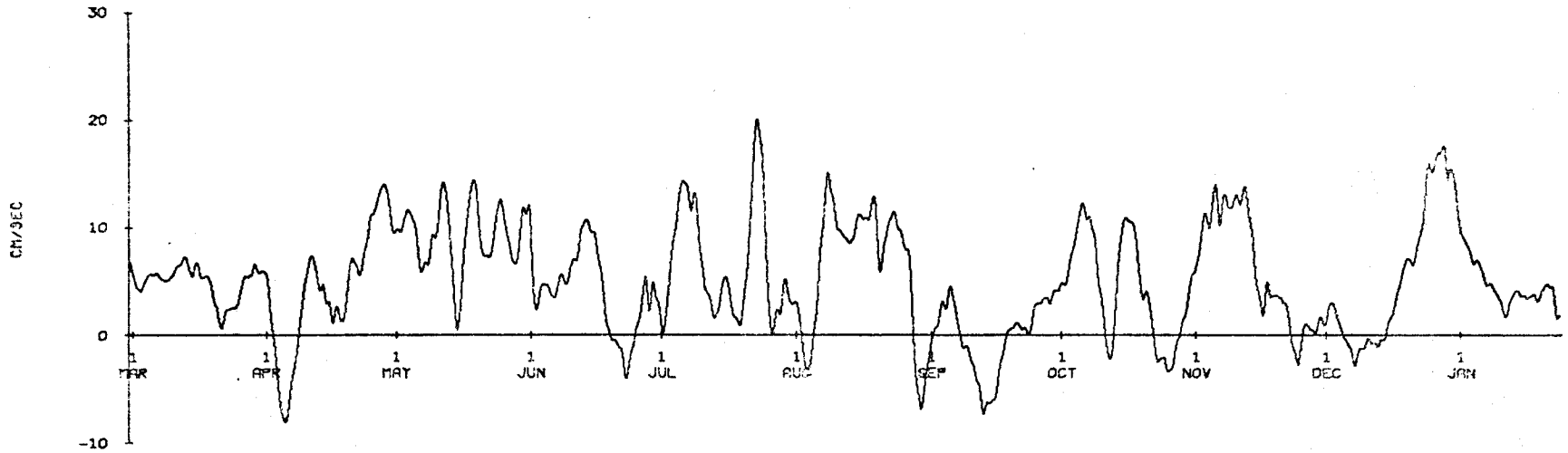
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	7.8	4.8	0.7	3.1	27.5	0.7	8454
U (cm/sec)	5.5	6.0	0.2	2.9	26.8	-11.5	7959
V (cm/sec)	0.4	4.2	-0.2	4.1	16.1	-17.7	7959
T Water (C)	0.59	0.05	0.29	3.19	0.75	0.46	8454



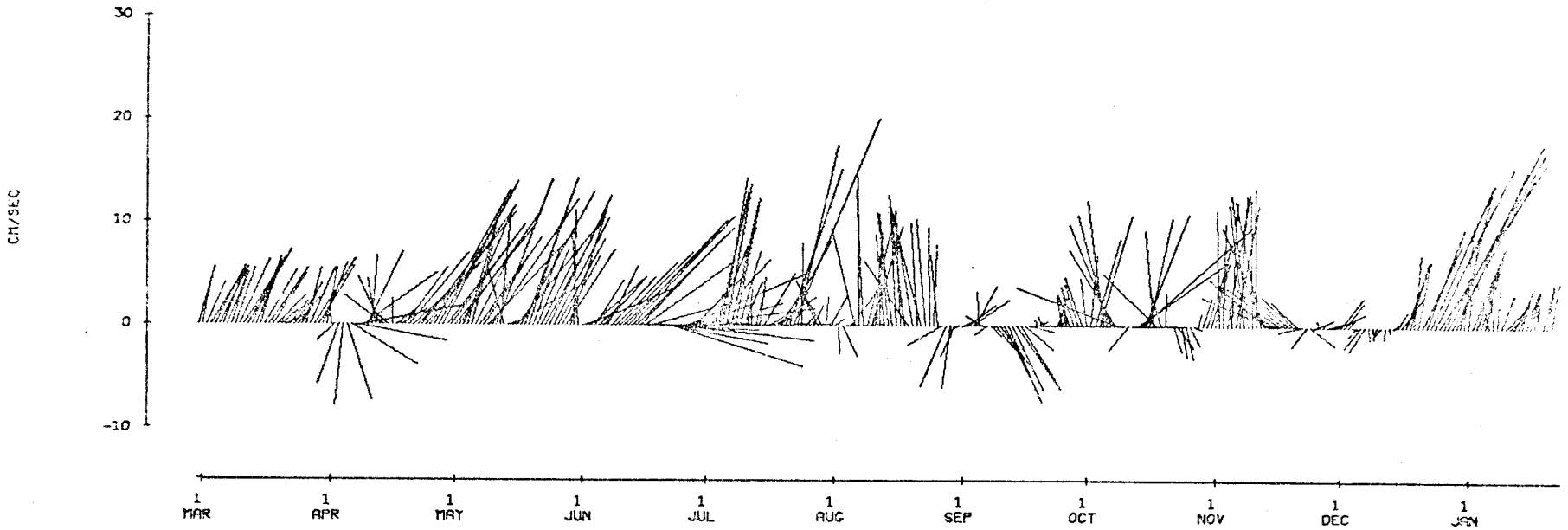
2667 M AT F DRAKE STN 14. 331.6 DAYS STARTING 0020 27 FEB 75



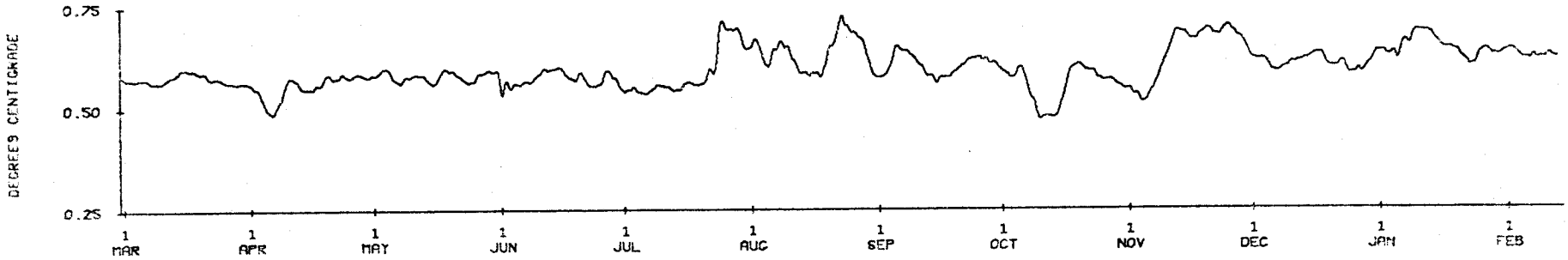
ROTATED U COMPONENT. 2667 METERS AT STN 14. TAPE 497/29



ROTATED V COMPONENT. 2667 METERS AT STN 14. TAPE 497/29

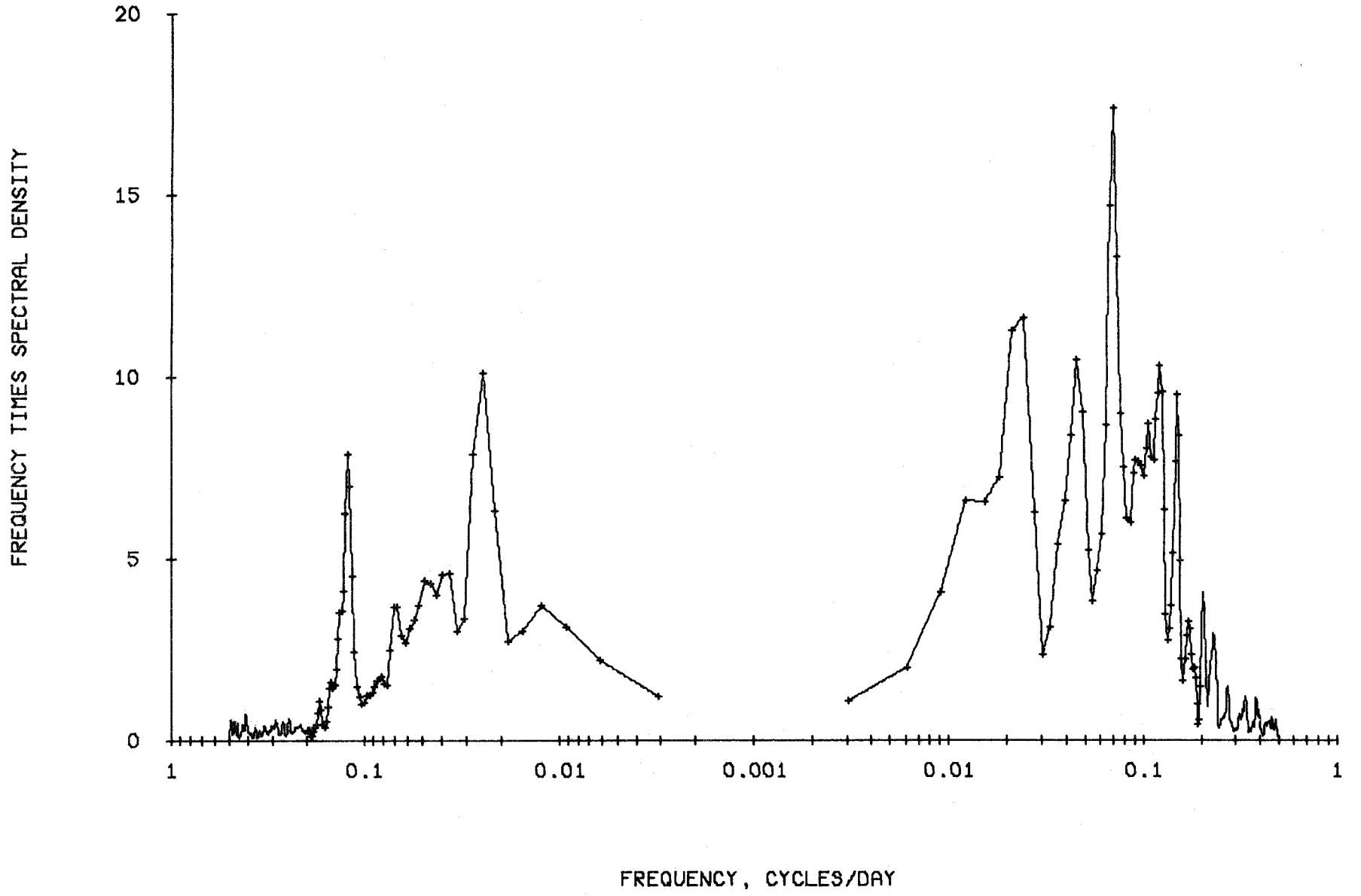


ROTATED CURRENT. 2667 METERS AT STN 14. TAPE 497/29



TEMPERATURE. 2667 METERS AT STN 14. TAPE 497/29

LLP CURRENT AT 2667 M, STN 14. ENDPT DETREND. DT = 24 HRS.



1975 F DRAKE Hero Bay Tide Gauge

Position: 62°27.8'S, 60°26.5'W
Depth of water: 91 m
Set at 1754 UCT 27 February 1975 by R/V MELVILLE
Retrieved at 1600 UCT 16 February 1976 by R/V T. G. THOMPSON
Data Interval: 1813 UCT 27 February 1975 to 0013 UCT 14 May 1975

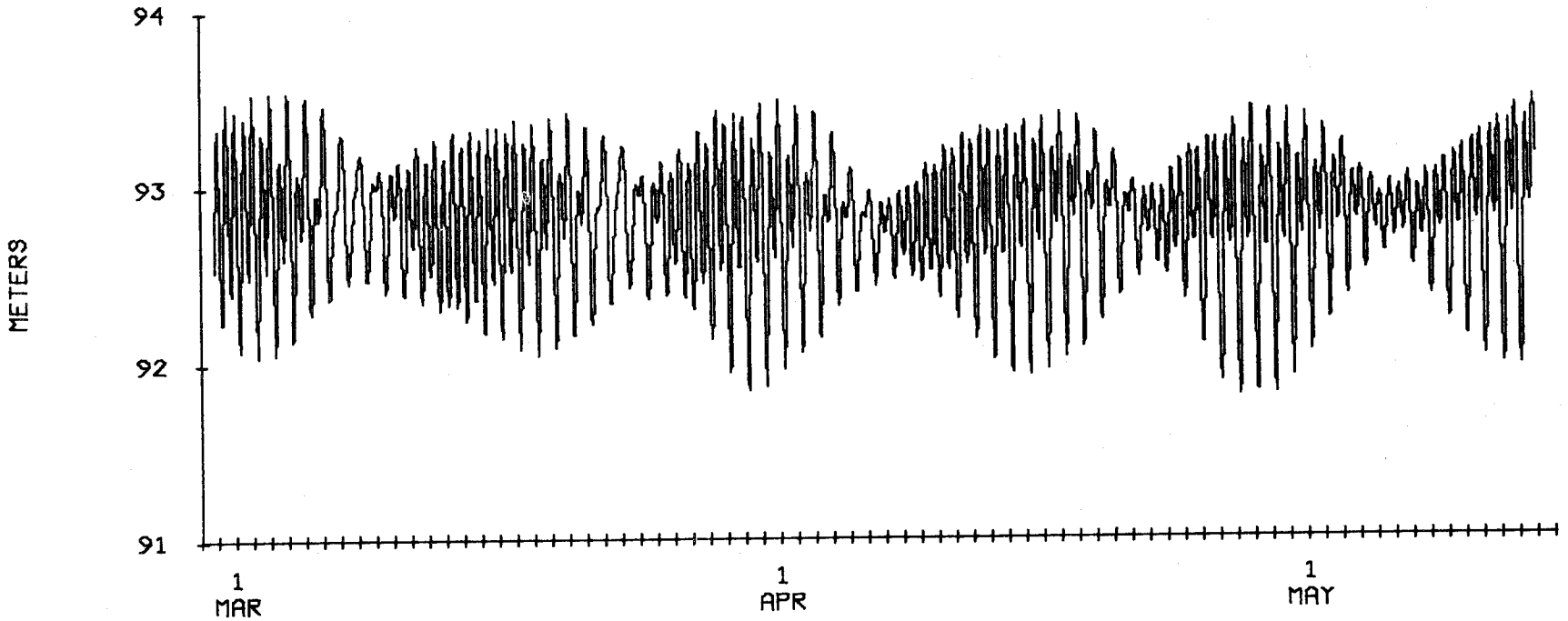
Instrumentation

Intended Depth	TG Serial No./Tape No.
91 m	51/2

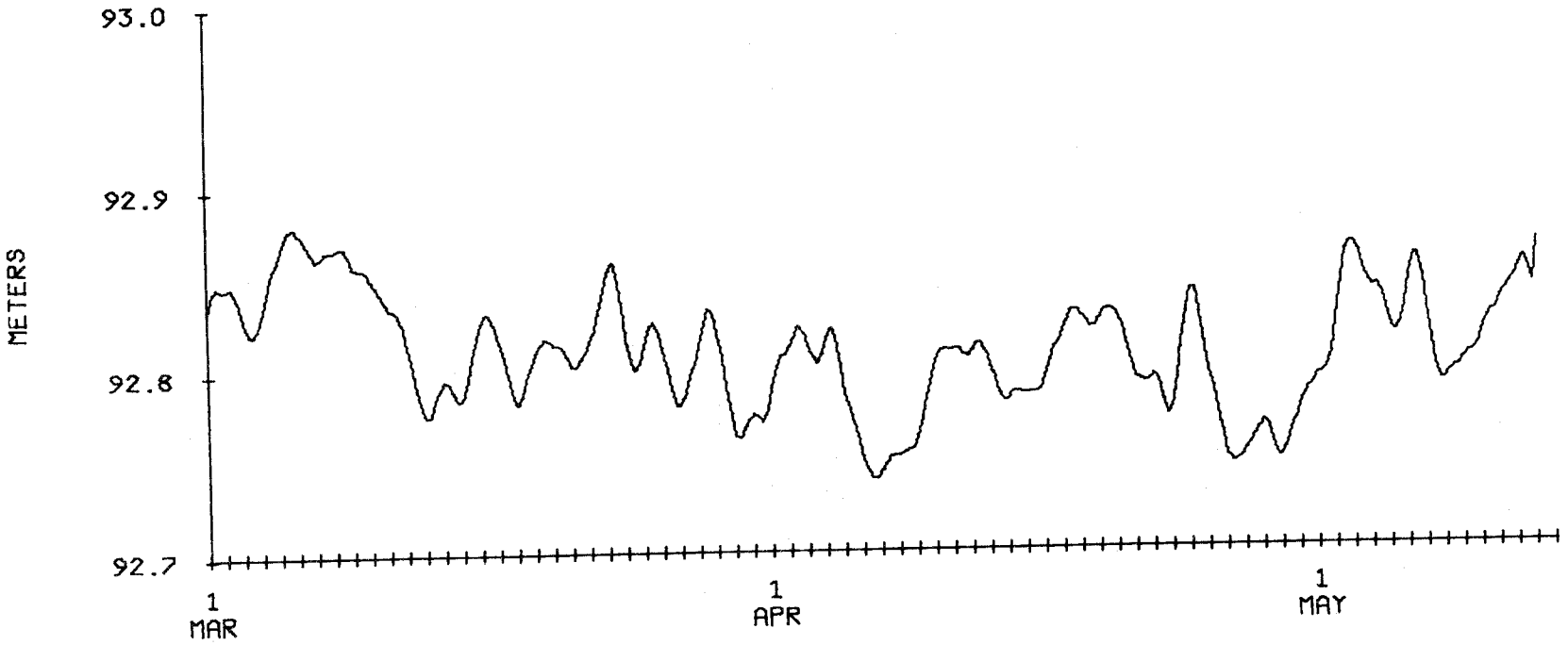
The instrument recorded pressure every hour. The pressure recorded was integrated for 400 seconds by the tide gauge electronics so that each hourly value is an average for 400 seconds just prior to the hour recorded. Included in the plots are a real time plot and a low-low passed plot where a filter with a half-power point of 40 hours has been used. For ease of comparison a filtered plot to the same scale of the Cape Horn data from Pillsbury, Bottero and Still (1976) has been included.

Tide Gauge at Hero Bay

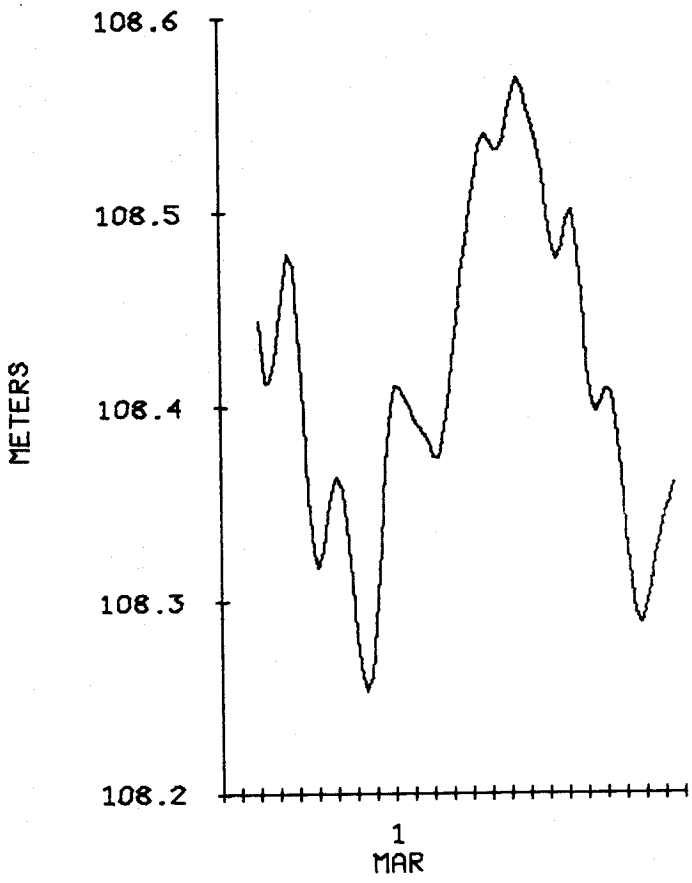
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
P (m)	92.8	0.3	-0.5	2.8	93.5	91.8	1807



F DRAKE 75. DEPTH OF TIDE GAUGE 51 AT HERO BAY.



F DRAKE 75. LLP DEPTH OF TIDE GAUGE 51 AT HERO BAY.



LLP TG52 AT CAPE HORN