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**A COMPILATION OF
OBSERVATIONS FROM MOORED
CURRENT METERS**

Volume VIII Wind, Currents and
Temperature off Northwest Africa
along 21°40'N During JOINT-I

February-April 1974

by

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

National Science Foundation
Grant GX 33502

Data Report 62

Reference 74-20

December 1974

OREGON STATE UNIVERSITY

School of Oceanography
Oregon State University
Corvallis, Oregon 97331

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ABSTRACT

Current meters, moored during JOINT-I in the coastal upwelling area off Northwest Africa along 21°40'N measured current speed and direction, temperature and, in some cases, conductivity and pressure. In addition, surface buoy meteorological stations were installed at some current meter strings to record wind speed and direction, as well as air and water temperature.

The sampling intervals of the instruments were 5 and 10 minutes. The data have been filtered and are shown here by means of pertinent statistics, real time plots, progressive vector diagrams and rotary spectra of hourly values.

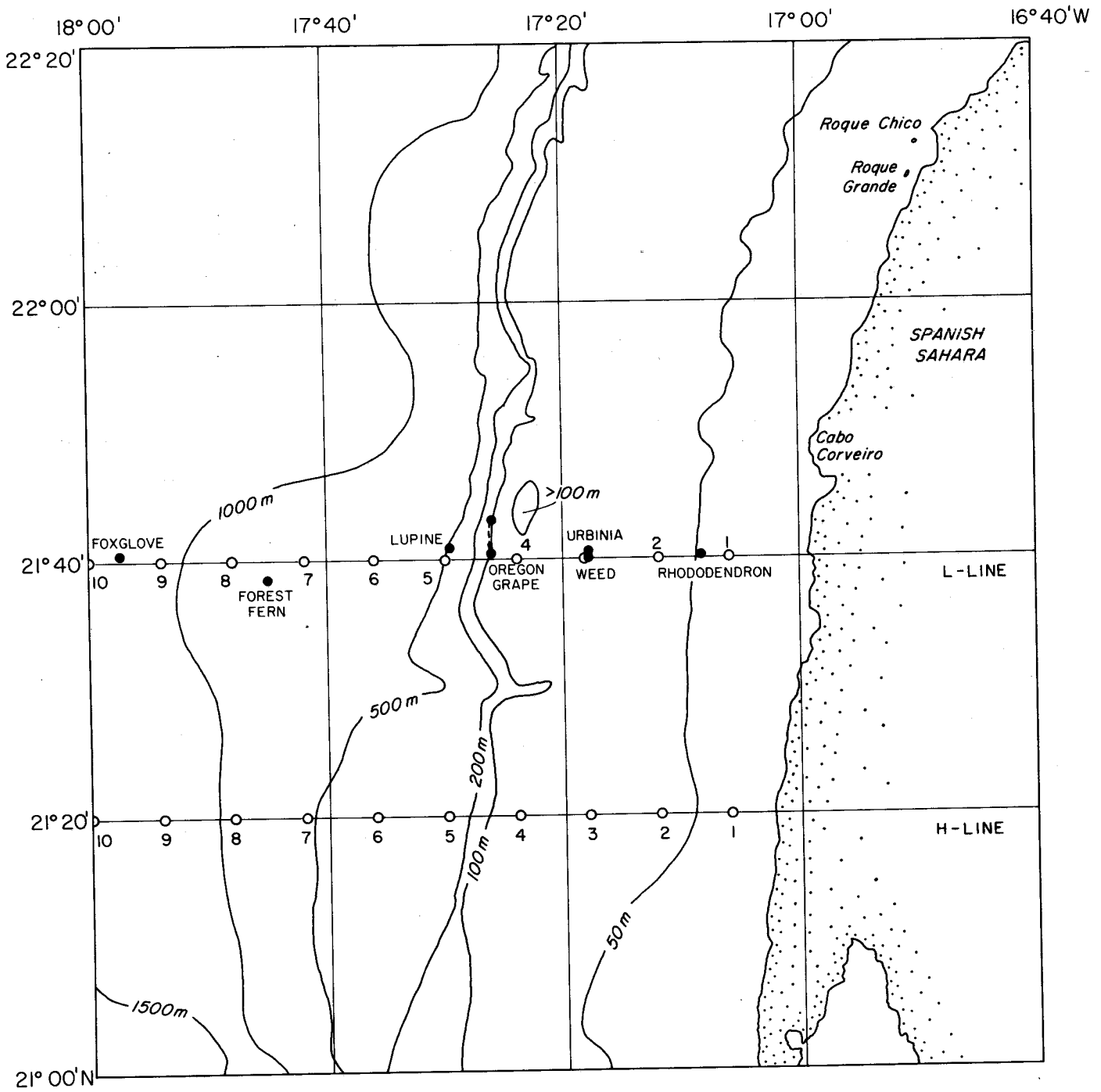


Figure 1. Locations of the current meter moorings Foxglove, Forest Fern, Lupine, Oregon Grape, Urbinia, Weed and Rhododendron during JOINT-I (February - April 1974). Solid dots indicate current meter moorings and open dots are hydrographic stations.

Introduction

During February - April 1974 an interdisciplinary experiment called JOINT-I was conducted in the coastal upwelling area off Northwest Africa. This experiment was part of the NSF International Decade of Ocean Exploration Coastal Upwelling Ecosystems Analysis Program (CUEA). The goal was to understand the physical dynamics and biological implications of upwelling phenomena.

Current meters and meteorological buoys were installed by Oregon State University (OSU, Corvallis), the Deutsches Hydrographisches Institut (DHI, Hamburg), and by the Pacific Marine Environmental Laboratory of NOAA (PMEL, Seattle). This volume presents only the data from current meters and meteorological buoys of OSU and DHI. A compilation of associated hydrographic data obtained by R/V GILLISS has been prepared by D. Barton *et al.* (1975).

The Current Meter Program

The current meter strings were aligned normal to the coast of Spanish Sahara along 21°40'N, extending from the inshore region seaward to a water depth of 1200 meters (Fig. 1).

The current meter moorings were subsurface taut wire moorings. The distribution of the instruments is shown in Fig. 2. Aanderaa current meters were used. These sampled an averaged current speed and the instantaneous current direction at 10 minute intervals.¹ At the same time, all meters recorded water temperature, and some measured conductivity

¹ The records of Rhododendron 1 and Urbinia 1 are based on 5 minute sampling intervals.

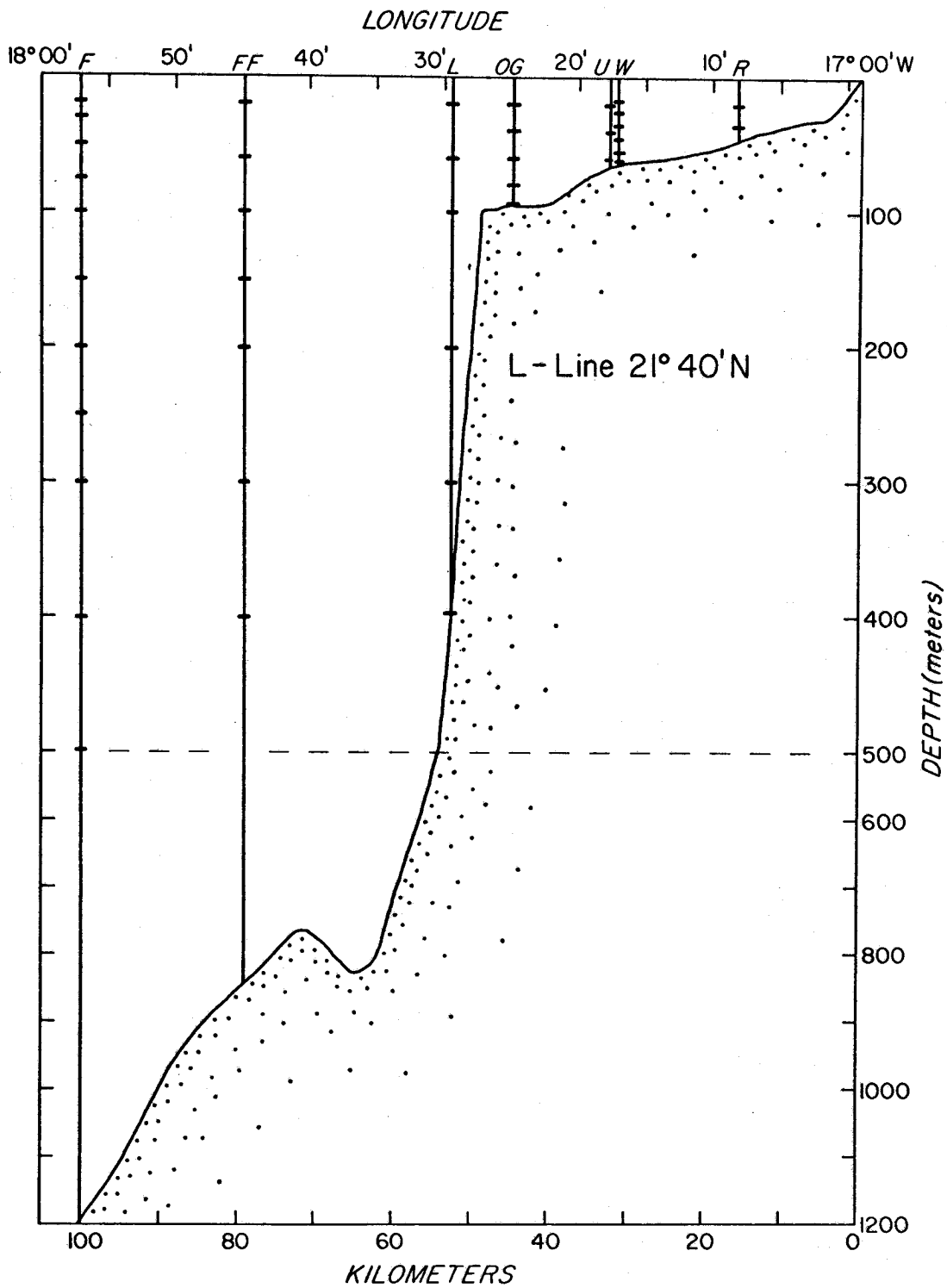


Figure 2. The vertical distribution of current meters along the mooring line during JOINT-I. Each bar represents a current meter.

and pressure. Depending on the water depth, two or five current meters at each array were equipped with pressure sensors to monitor the motion of the string and the true mean depths of the deployed instruments.

Wind data presented here were measured at Rhododendron, Urbinia and Forest Fern. Winds were recorded on Aanderaa data loggers. The sensors for wind speed, wind direction and air temperature were attached to a light metal mast at a height of about 3 meters above the sea surface. All meteorological parameters including surface water temperature were sampled every 10 minutes.² The wind speed is averaged over the sampling interval, the wind direction is instantaneous.

Two current meter strings were lost. One of these arrays was installed at shallow depths inshore from Rhododendron, and the other was the second installation of Oregon Grape. It is assumed that trawlers caused these losses.

Strong winds and high seas occasionally impeded launching and recovery activities, so the lengths of the time series and the periods of common operation were partially impaired by the weather as well as by the fishery (Fig. 3).

Description of the Processed Data

OSU current meters were calibrated before the experiment. All measuring units exhibited satisfactory reproducible data. The method of calibration and the subsequent procedure of data processing is explicitly described by R. D. Pillsbury et al. (1974).

² The records of Rhododendron 1 and Urbinia 1 are based on 5 minute sampling intervals.

JOINT-1 Current Meter Array

4

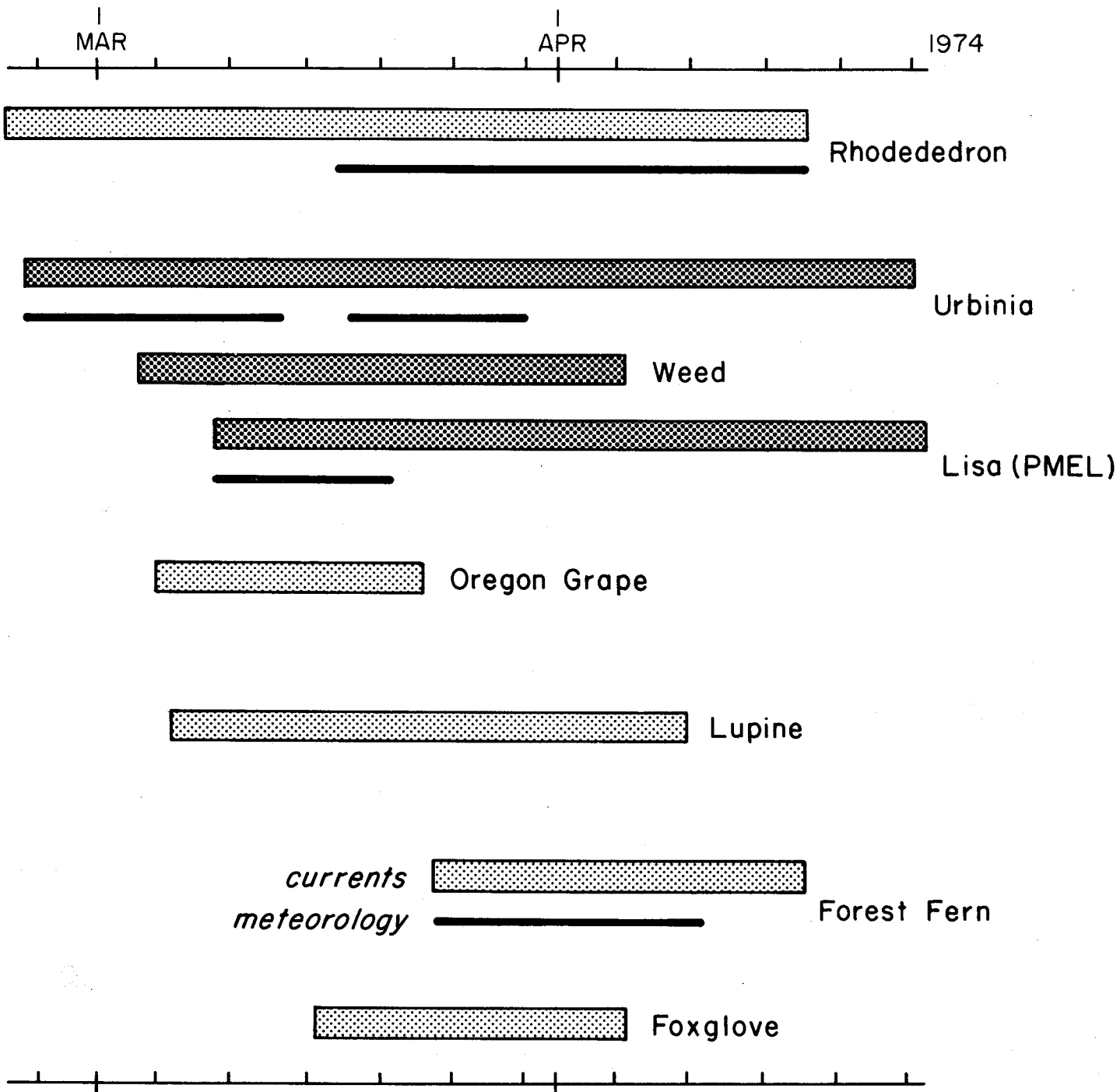


Figure 3. Operation time of the different moorings during JOINT-1. The PMEL installation Lisa was located in the proximity of Urbinia and Weed (less than 1 nm apart). Shaded beams denote the current measurements; thick black lines denote the wind measurements.

Data from each string of current meters 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 instruments is given two ways. The intended depth is based on mooring wire length and intended water depth. When the current meter had a pressure sensor, the actual depth of the instrument is given by the mean pressure. However, each meter record is identified by intended 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 presented next gives the arithmetic mean, the standard deviation, the skewness, kurtosis, the maximum value, and the minimum value.

Real time plots of the hourly values follow the table of statistics. (For a discussion of the filter used to produce these hourly values, see Appendix 2 of Pillsbury et al.[1974]). For ease in comparison, the plots of the winds and the currents have been grouped by true east-west (U) components and true north-south (V) components.

There are errors in the presented wind components from Urbinia 1 during the 13 to 16 March. Before and after this period these time series of the winds are reliable. This has been established by comparing the data from Urbinia 1 with shipboard measurements and the simultaneous wind records at Lisa. A heavy sand storm just prior to the instrumental malfunction was believed to cause the failure of the direction sensor. After

16 March Urbinia 1 was picked up (17 March). The wind sensors were replaced, the magnetic tapes changed, and the string was moored again.

The progressive vector diagrams (PVD's) are all scaled to page size, and all scale numbers are in kilometers. These plots represent a pseudo-trajectory, and each dot on the PVD is 0000 GMT of successive days. The spectra presented are rotary spectra as discussed by Mooers (1970) and Pillsbury (1972). Figure 4 shows the conversion from cycles/hour to cycles/day.

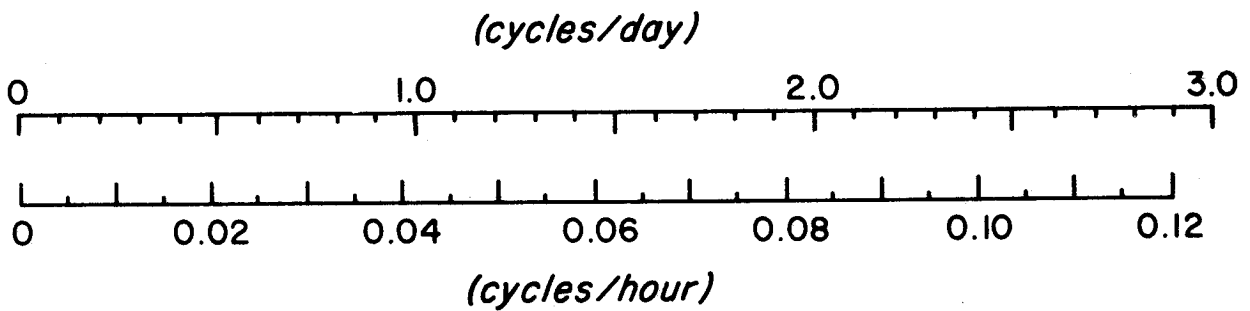


Figure 4

ACKNOWLEDGMENTS

The funds for the program came from National Science Foundation grant GX-33502, a support which is gratefully acknowledged. We are indebted to Dr. R. L. Smith, who contributed to designing and coordinating the experiment. Many thanks go to B. Moore and D. Barstow for the calibration and preparation of the instruments as well as for their effort during the fieldwork. Appreciation also is expressed to D. Root and W. E. Gilbert for their invaluable assistance in the data processing. Special thanks are due to K. Tamura who typed this report, and C. Christenson for the drawings and the final editing of the data. Finally, we gratefully acknowledge the cooperation of Captain Hagan and his crew from R/V GILLISS, which made the operation during JOINT-I successful.

REFERENCES

- Barton, D., M. R. Stevenson, and W. E. Gilbert. 1975. CTD/STD measurements off the NW African coast near Cabo Corveiro during JOINT-I. R/V GILLISS Cruise GS7401, February - April 1974. School of Oceanography, Oregon State University, Corvallis, Oregon 97331. Data Report 63. Reference 75-3.
- Mooers, C. N. K. 1970. The interaction of an internal tide with the frontal zone of a coastal upwelling region. Doctoral dissertation. Oregon State University, Corvallis. 480 pp.
- Pillsbury, R. D. 1972. A description of hydrography, winds and currents during the upwelling season near Newport, Oregon. Doctoral dissertation. Oregon State University, Corvallis. 163 pp.
- 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. School of Oceanography, Oregon State University, Corvallis. Data Report 57. Reference 74-2.

INSTALLATIONS



1974 JOINT I Installation

RHODODENDRON I

Position: 21°40.2'N, 17°08.3'W

Depth of Water: 42 m

Set at 1537 GMT 23 February 1974 by R/V GILLISS

Retrieved at 0927 GMT 17 March 1974 by R/V GILLISS

Data Interval: 2052 GMT 23 February to 0152 GMT 17 March

InstrumentationIntended DepthRCM4 Serial No./Tape No.

0 m	D72/16
20 m	746/9
35 m	684/14

Data were recorded every 5 minutes. Both subsurface instruments recorded temperature, current speed and current direction, pressure and salinity. The surface buoy measured air and water temperature and wind speed; but its direction sensor failed entirely.

RHODODENDRON I

0 m

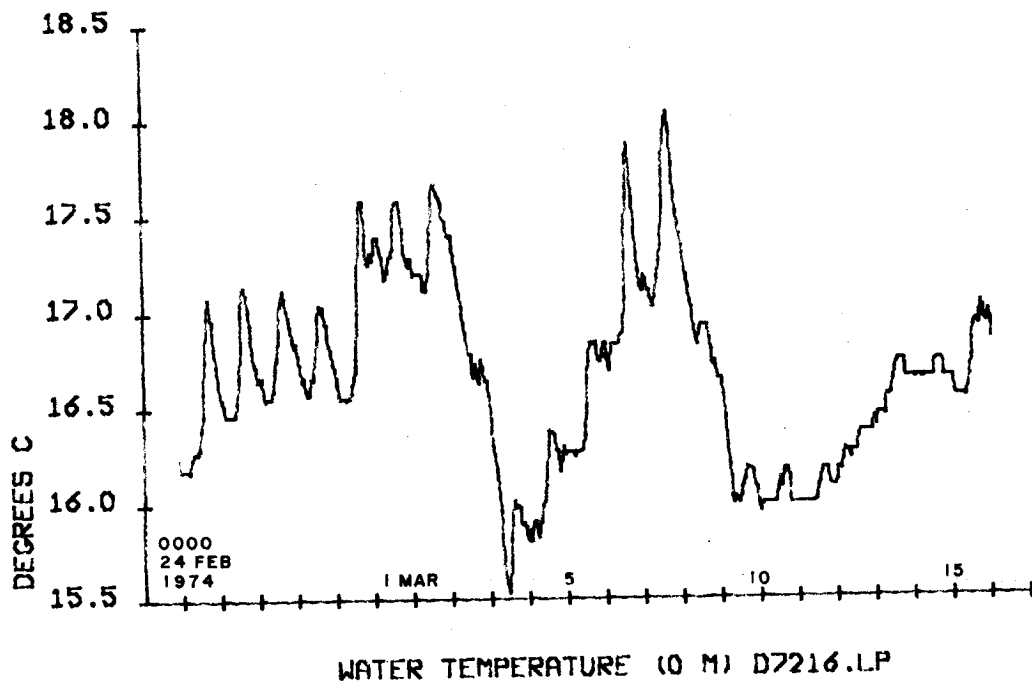
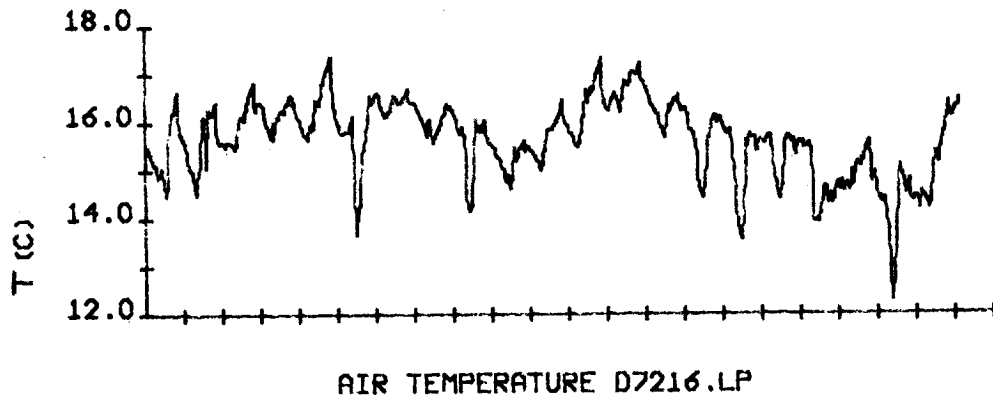
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
T Air (C)	15.6	0.8	-0.7	3.5	17.3	12.3	509
T Water (C)	16.7	0.5	0.3	2.5	18.0	15.5	509

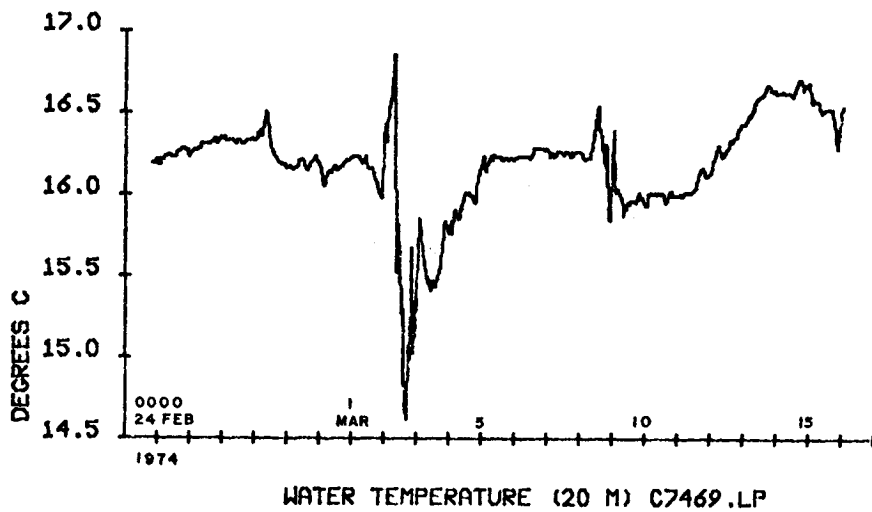
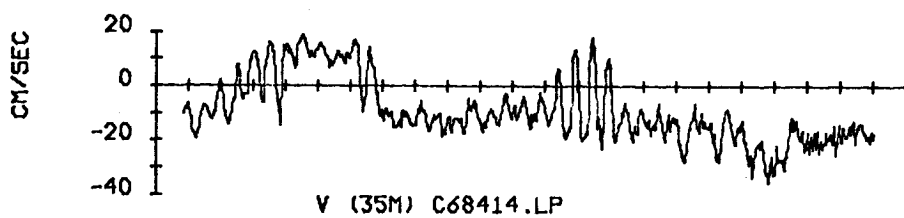
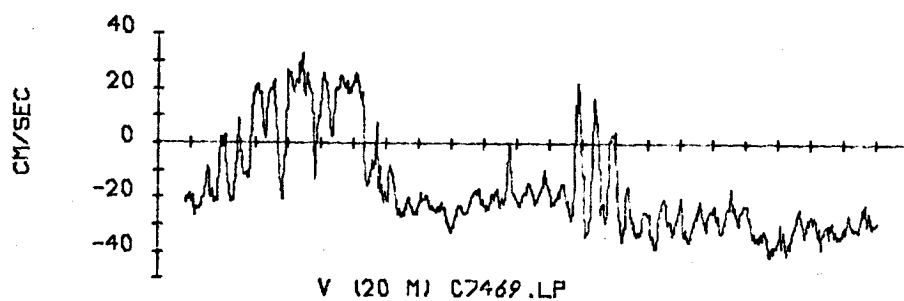
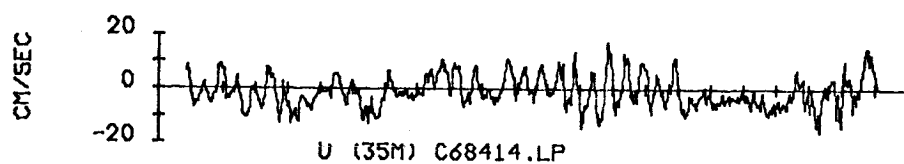
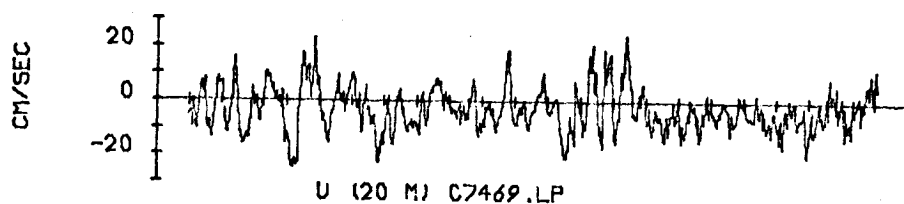
20 m

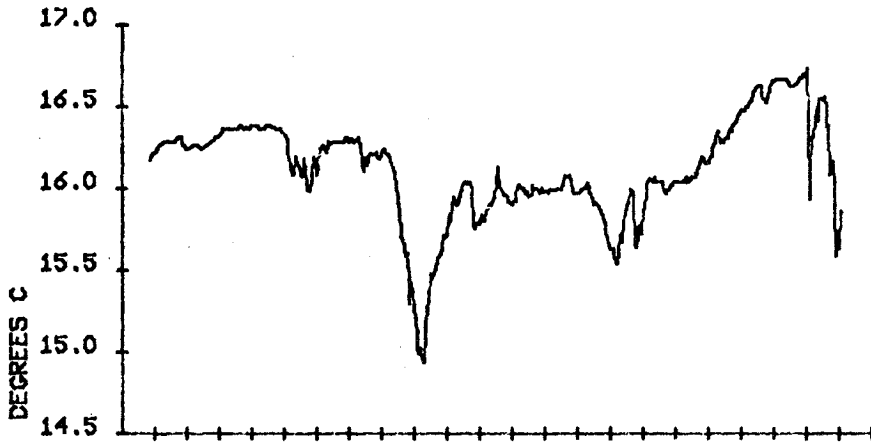
S (cm/sec)	24.4	7.6	-0.3	3.0	42.0	1.7	510
U (cm/sec)	-2.8	8.0	0.4	3.4	24.3	-23.7	510
V (cm/sec)	-16.5	17.6	1.2	3.3	33.1	-41.4	510
T Water (C)	16.2	0.3	-1.4	7.6	16.9	14.6	510
P (10^5 n/m ²)	2.9	0.0	-0.0	1.9	3.0	2.8	510
Sa1 (PPT)	35.90	0.08	-2.17	9.79	36.04	35.45	510

35 m

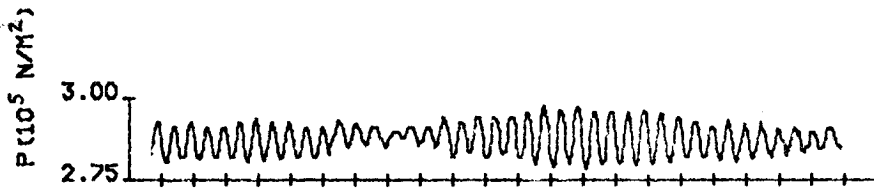
S (cm/sec)	15.0	5.4	1.0	4.3	36.2	3.7	510
U (cm/sec)	-1.0	5.9	0.4	2.8	17.4	-15.7	510
V (cm/sec)	-9.0	11.7	0.7	2.7	18.5	-35.4	510
T Water (C)	16.1	0.3	-0.8	4.4	16.7	14.9	510
P (10^5 n/m ²)	4.3	0.0	1.2	5.0	4.4	4.3	510
Sa1 (PPT)	35.87	0.10	-0.23	2.80	36.06	35.57	510



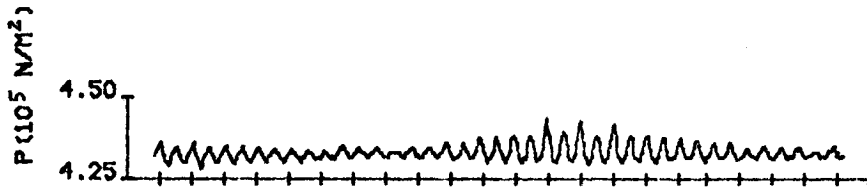




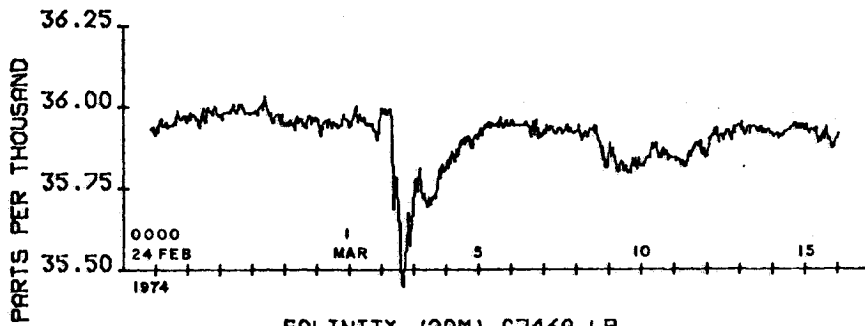
WATER TEMPERATURE (35 M) C68414.LP



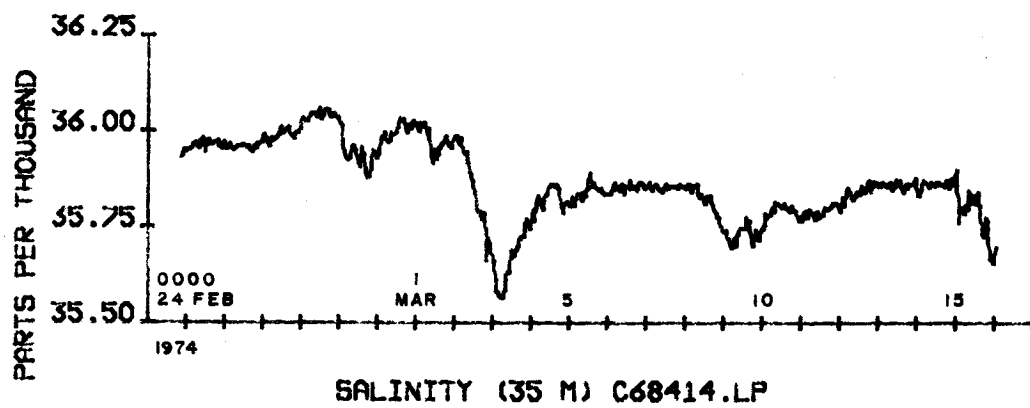
PREBBURE (20 M) C7469.LP

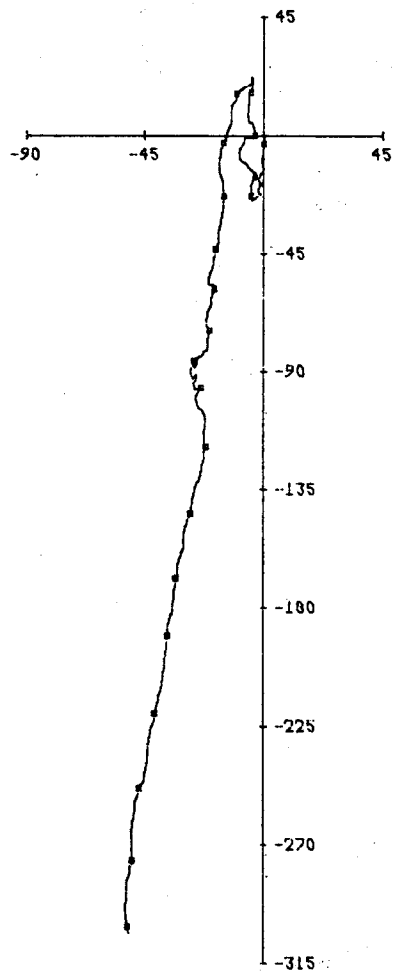


PREBBURE (35 M) C68414.LP

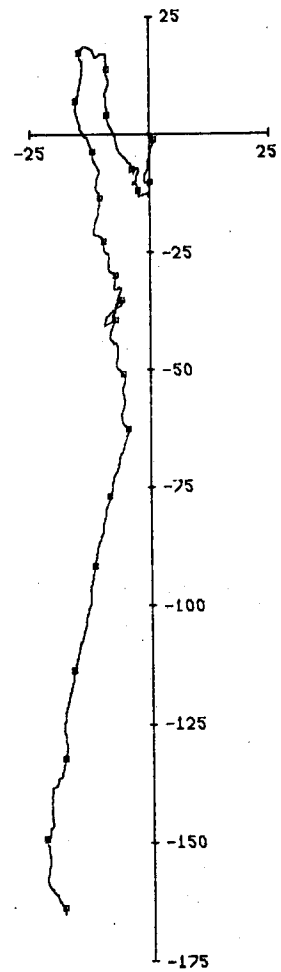


SALINITY (20M) C7469.LP





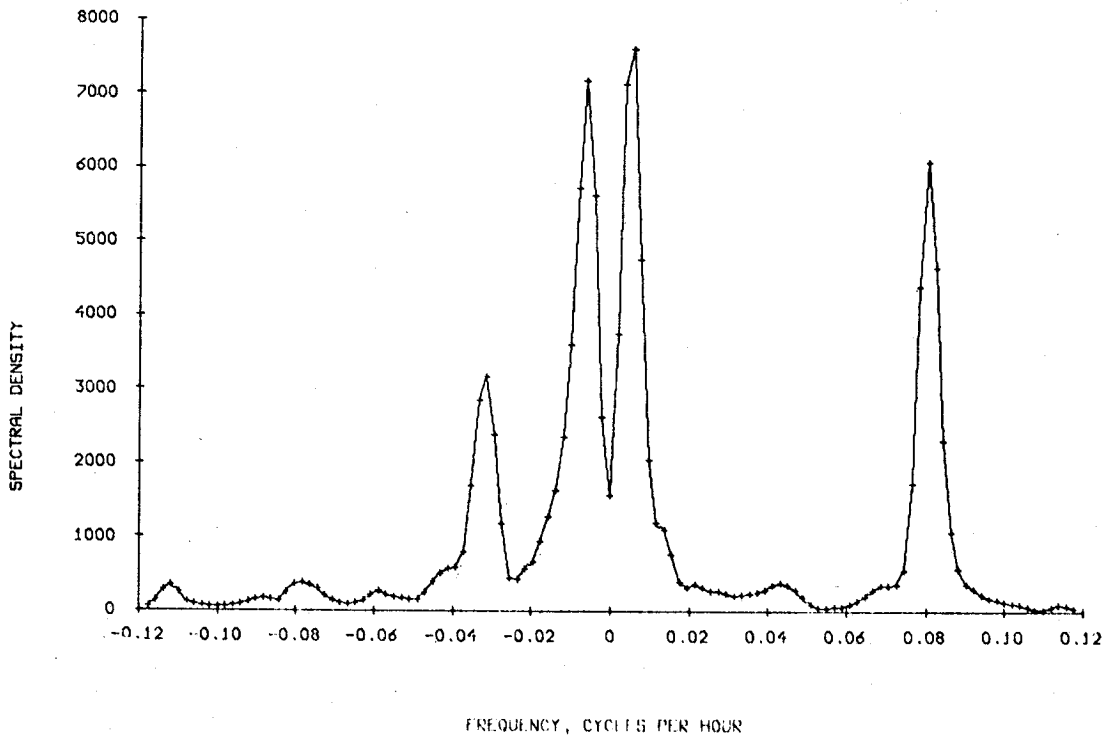
20 METERS AT RHODODENDRON. 21.2 DAYS STARTING 2052 2/23/74



35 M AT RHODODENDRON. 21.2 DAYS STARTING 2049 23 FEB 74

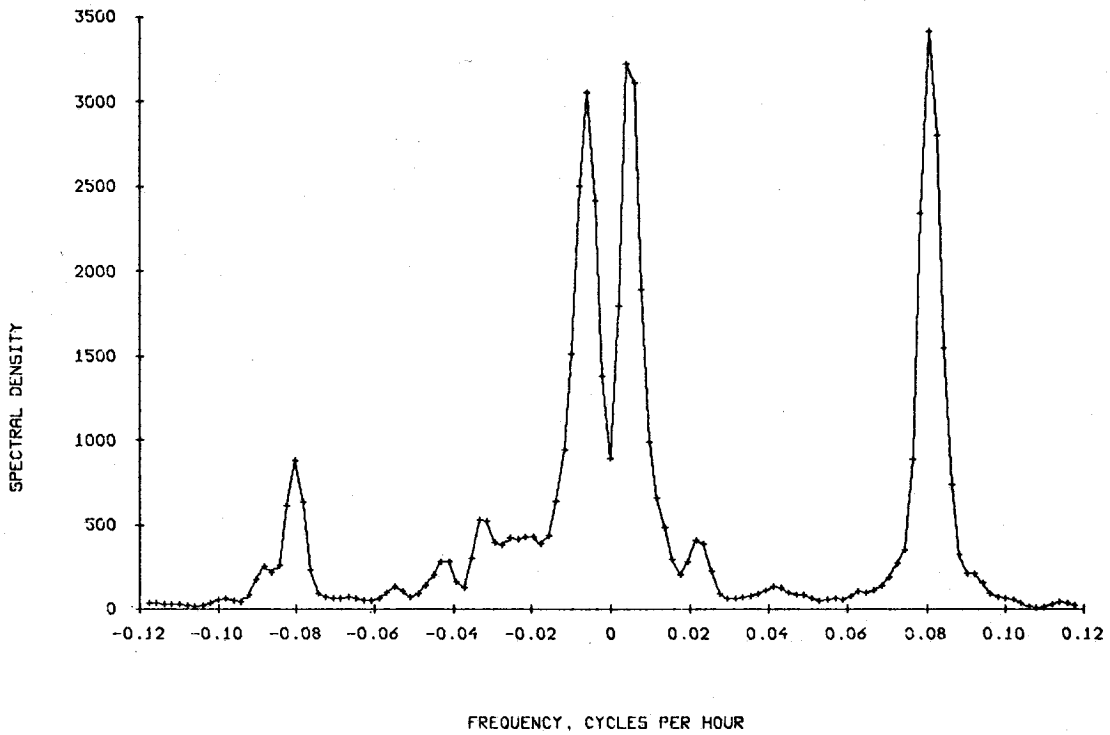
ROTARY SPECTRUM

20 M AT RHODODENDRON. 23 FEB 74 TO 17 MAR 74. TAPE 746/9



ROTARY SPECTRUM

35 M AT RHODODENDRON. 23 FEB 74 TO 17 MAR 74. TAPE 684/14





1974 JOINT I Installation

RHODODENDRON II

Position: 21°39.2'N, 17°08.8'W

Depth of Water: 45 m

Set at 1154 GMT 17 March 1974 by R/V GILLISS

Retrieved at 1642 GMT 18 April 1974 by R/V OCEANOGRAPHER

Data Interval: 1826 GMT 17 March to 0826 GMT 18 April

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
0 m	D125/3
20 m	268/24
35 m	756/8

Data were recorded every 10 minutes. The subsurface instruments measured temperature, current speed and direction and pressure. Salinity data were bad in both meters.

RHODODENDRON II

0 m

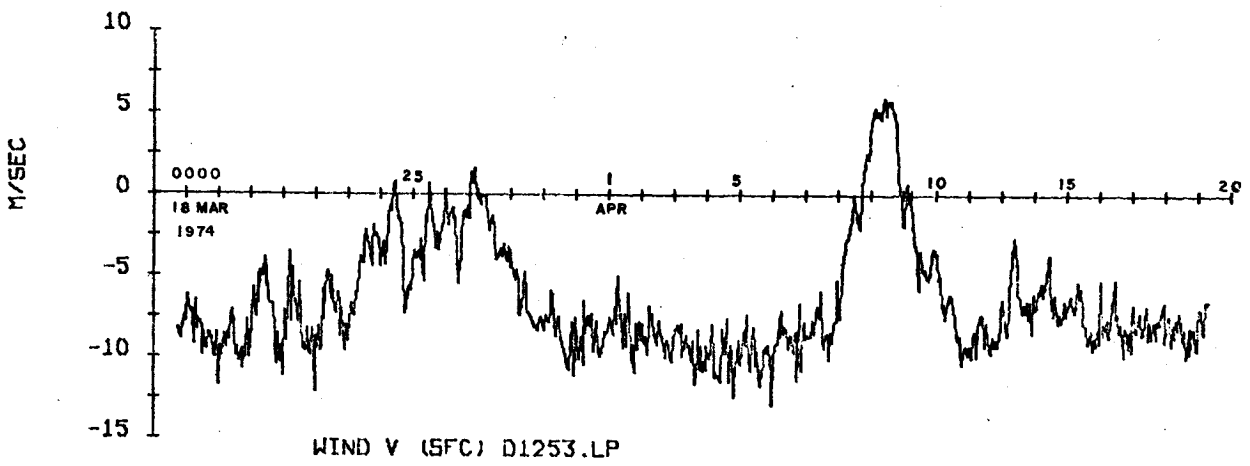
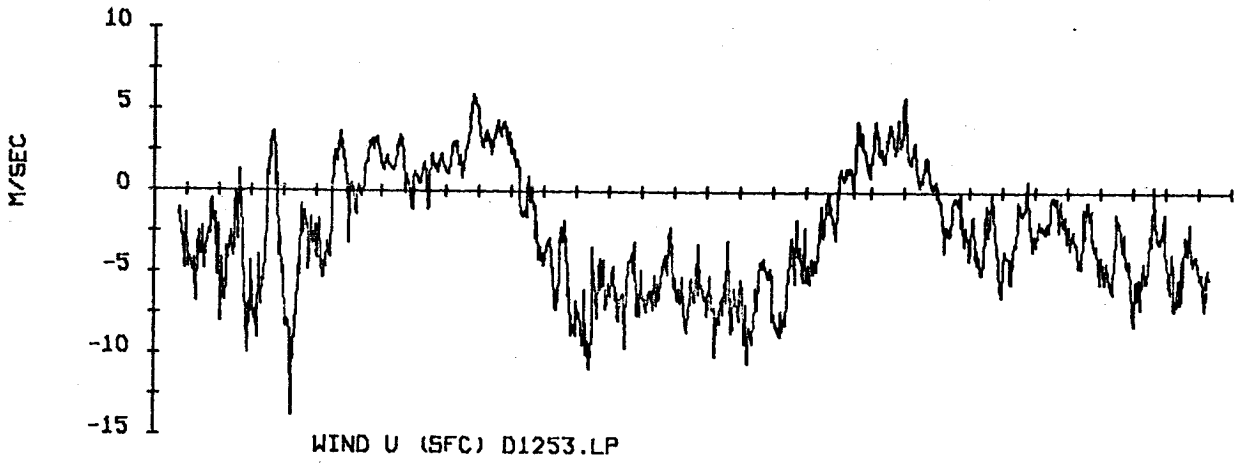
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (m/sec)	8.1	3.0	-0.4	2.3	15.1	9.4	759
U (m/sec)	-2.6	3.6	0.1	2.2	5.9	-13.8	759
V (m/sec)	-6.5	3.5	1.4	4.7	5.9	-12.9	759
T Air (C)	16.4	1.2	1.4	6.7	23.5	13.7	759
T Water (C)	16.7	0.8	0.2	2.0	18.6	15.4	759

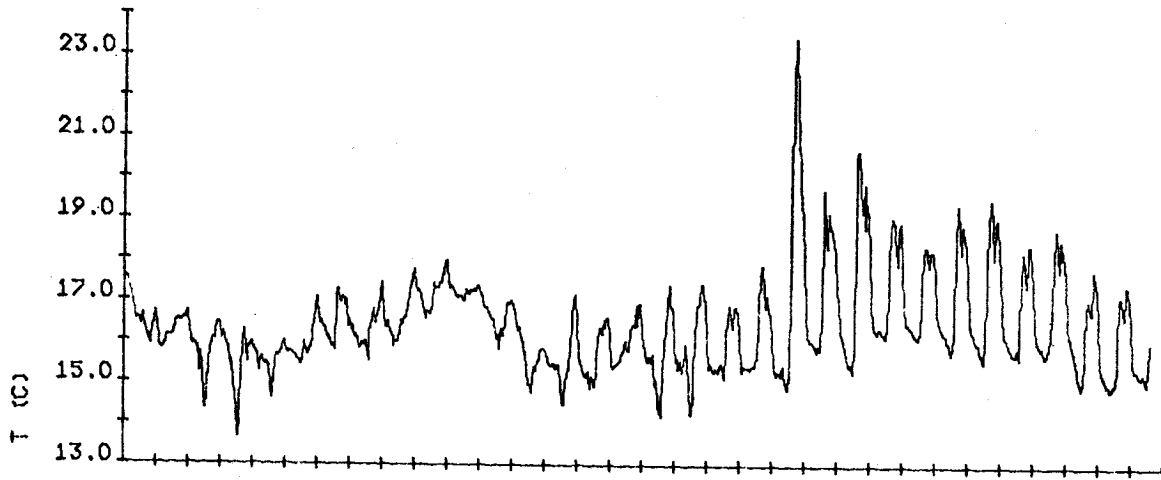
20 m

S (cm/sec)	27.3	7.3	-0.1	3.1	48.3	3.4	760
U (cm/sec)	-1.5	8.3	0.3	3.6	23.9	-27.3	760
V (cm/sec)	-24.2	11.9	1.6	6.3	24.1	-47.7	760
T Water (C)	15.9	0.4	0.5	2.6	16.9	15.0	760
P (10 n/m)	0.0	0.0	0.5	3.0	0.0	0.0	760

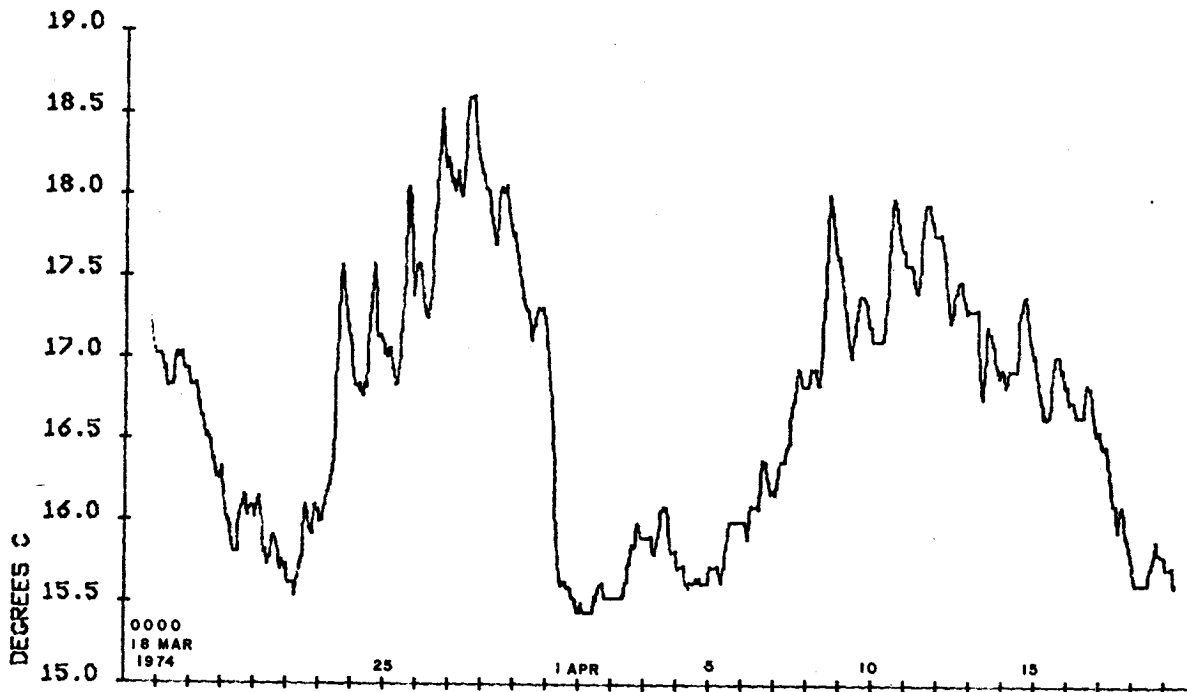
35 m

S (cm/sec)	18.4	6.4	0.2	2.3	35.6	0.4	760
U (cm/sec)	5.0	6.5	-0.3	3.3	21.6	-17.3	760
V (cm/sec)	-15.1	9.1	1.2	5.1	19.2	-32.9	760
T Water (C)	15.2	0.3	-0.1	2.4	16.0	14.6	760
P (10 n/m)	4.7	0.0	0.7	3.6	4.8	4.6	760

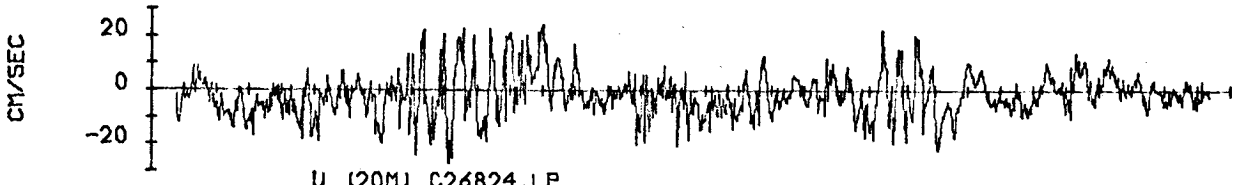




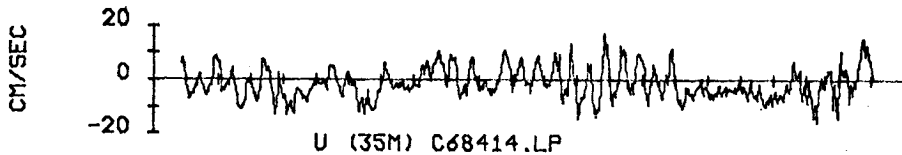
AIR TEMPERATURE D1253.LP



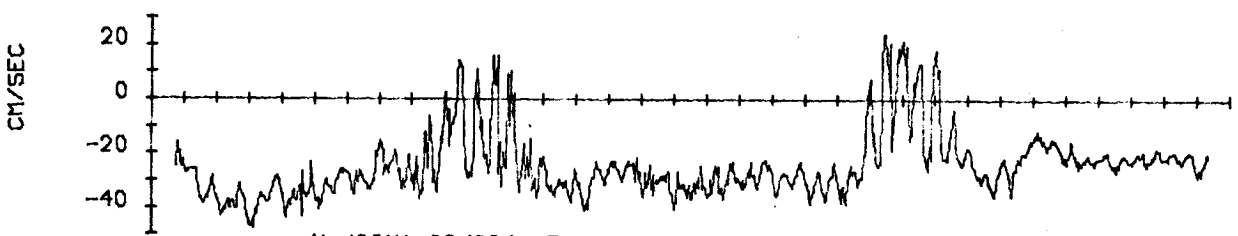
WATER TEMPERATURE (10 M) D1253.LP



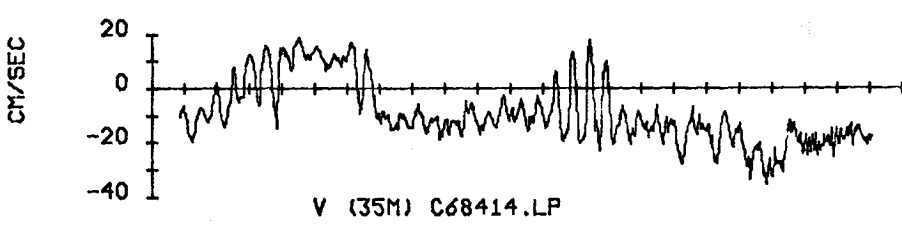
U (20M) C26824.LP



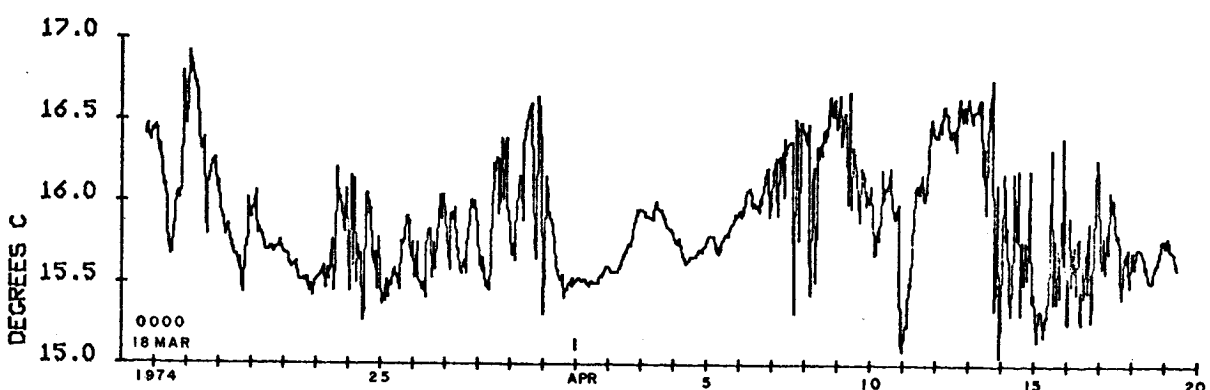
U (35M) C68414.LP



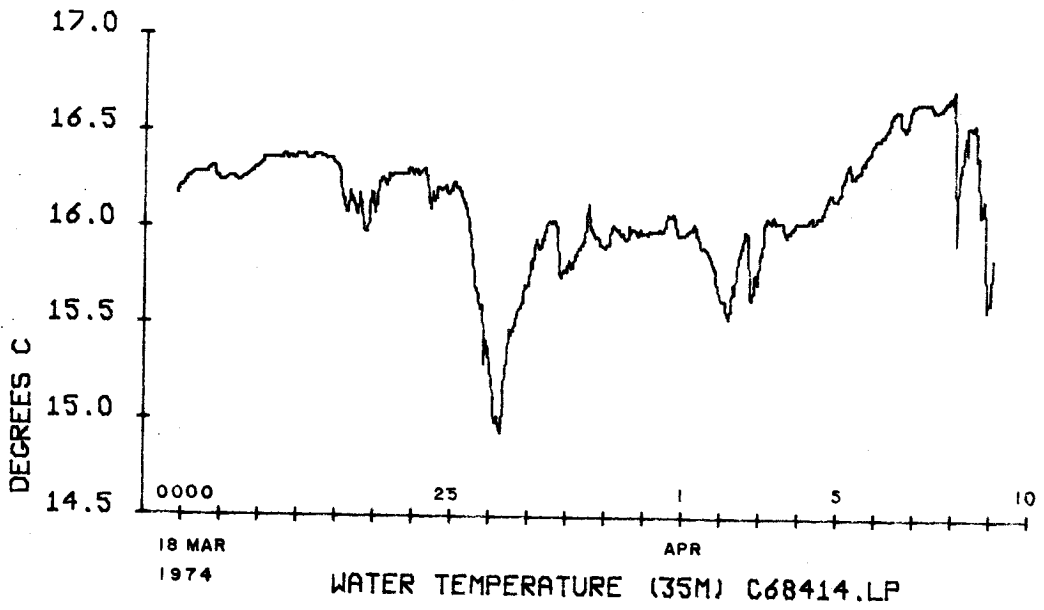
V (20M) C26824.LP

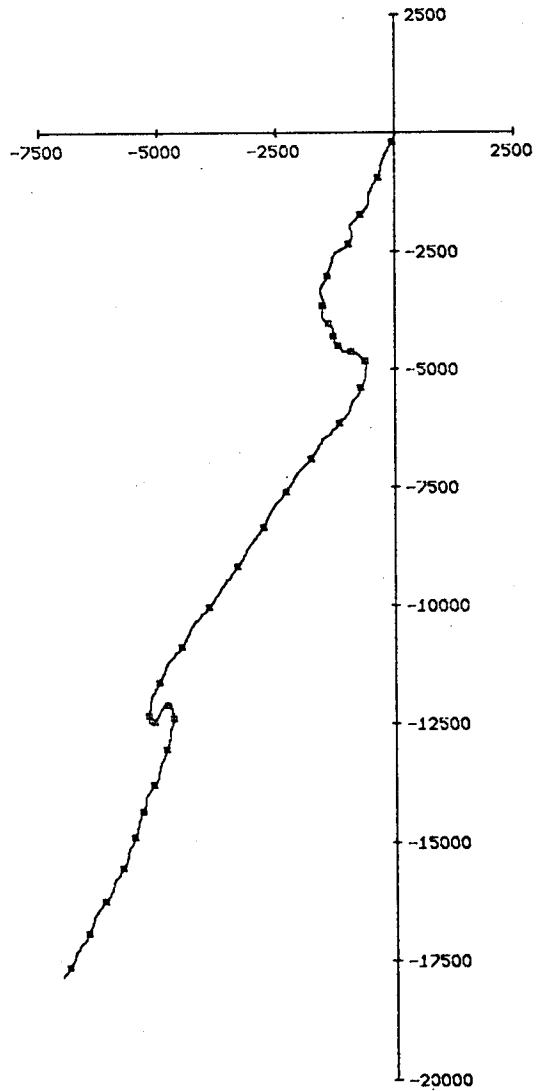


V (35M) C68414.LP

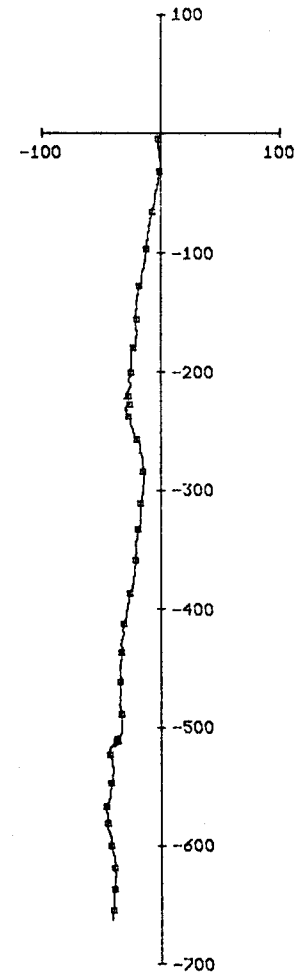


WATER TEMPERATURE (20M) C26824.LP



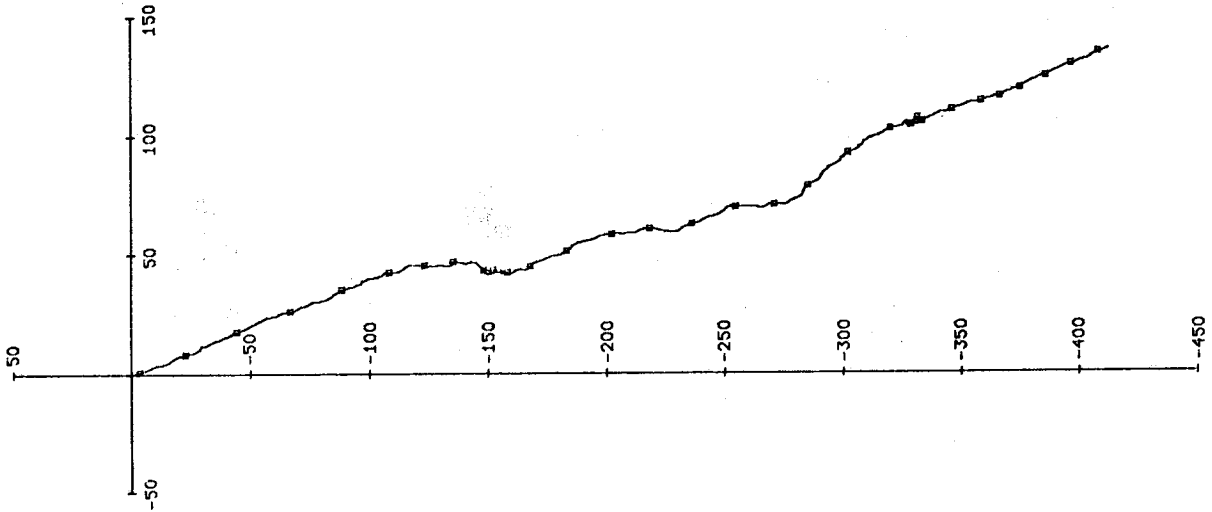
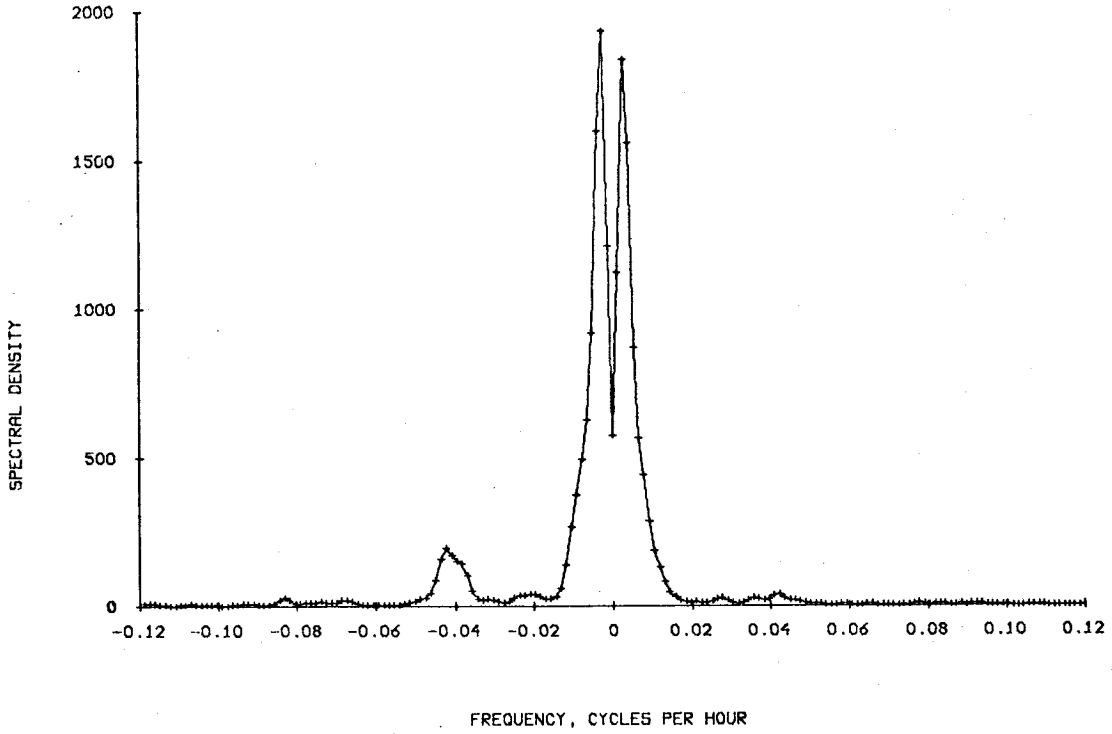


WIND AT RHODODENDRON. 31.6 DAYS STARTING 1826 17 MAR 74



20 M AT RHODODENDRON. 31.7 DAYS STARTING 1809 17 MAR 74

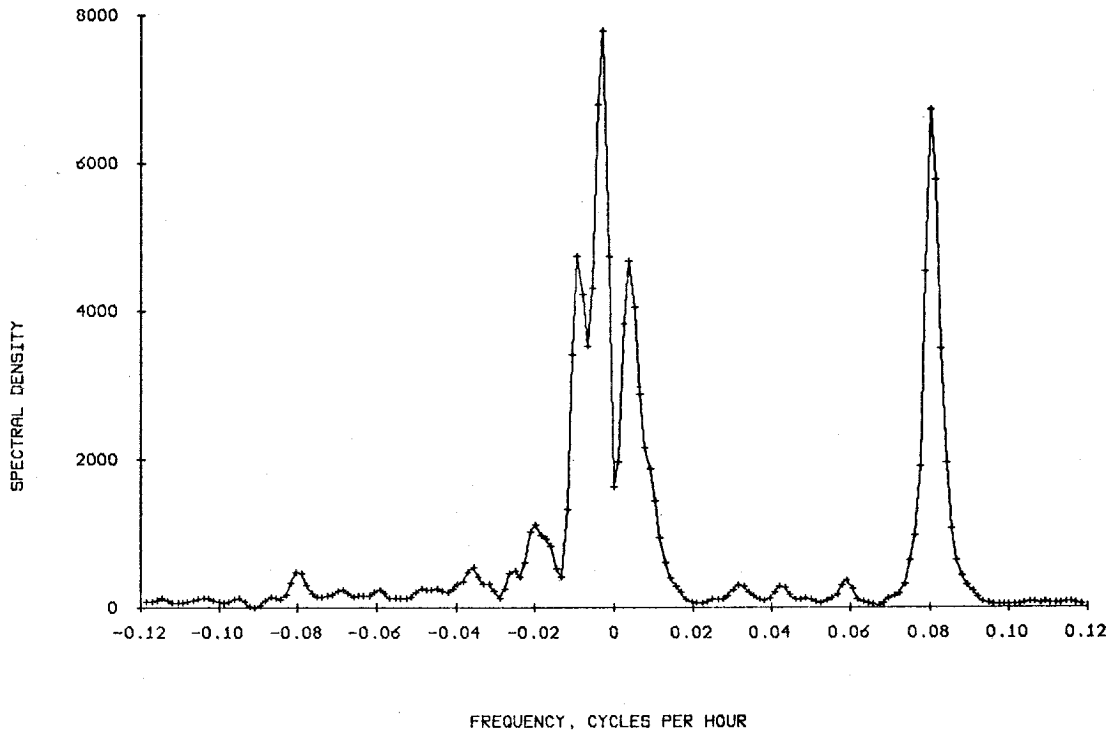
ROTARY SPECTRUM
WIND AT RHODODENDRON. 17 MAR 74 TO 18 APR 74. TAPE DJ25/3



35 M AT RHODODENDRON. 31.7 DAYS STARTING 1806 17 MAR 74

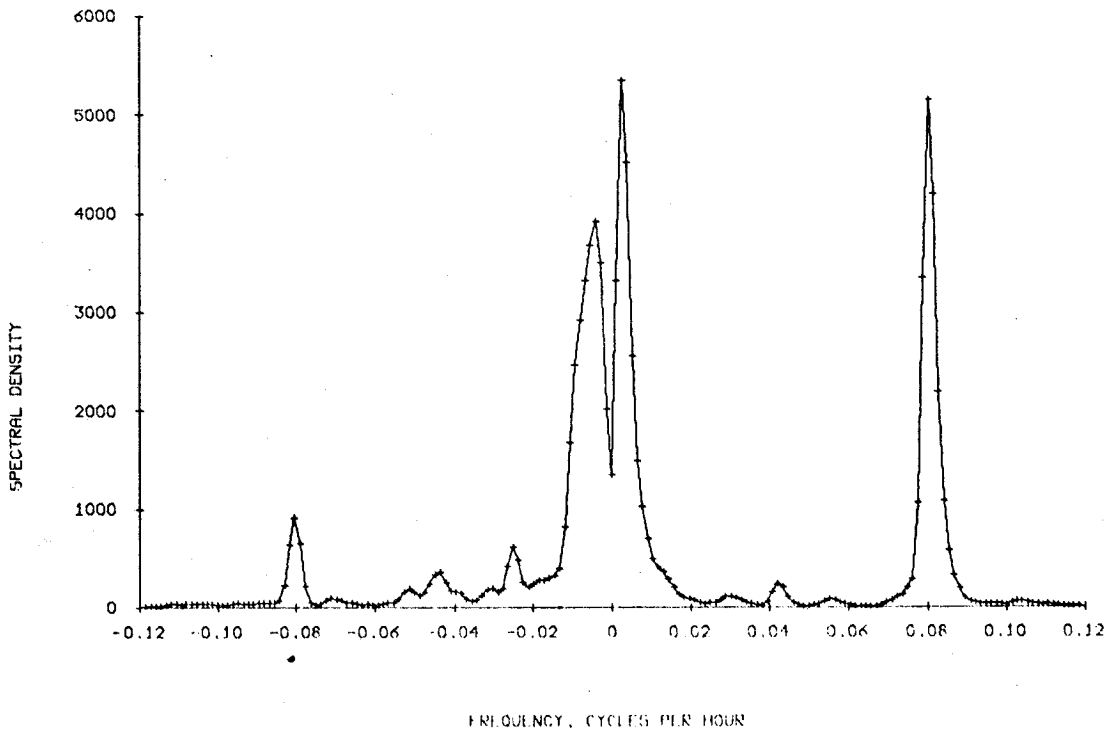
ROTARY SPECTRUM

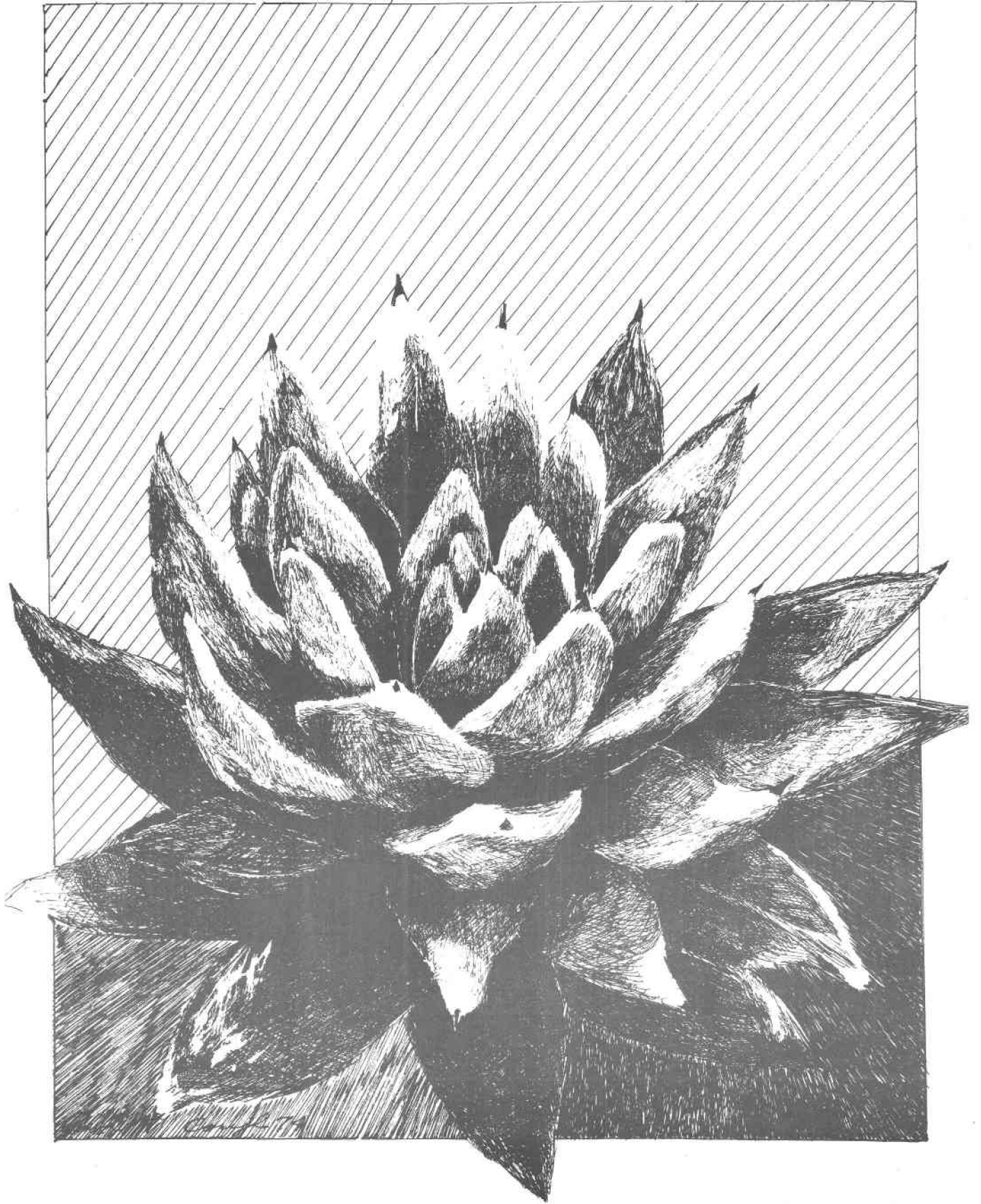
20 M AT RHODODENDRON. 17 MAR 74 TO 18 APR 74. TAPE 268/24



ROTARY SPECTRUM

35 M AT RHODODENDRON. 17 MAR 74 TO 18 APR 74. TAPE 756/8





1974 JOINT I Installation

URBINIA I

Position: 21°40.6'N, 17°17.8'W

Depth of Water: 67 m

Set at 1301 GMT 24 February 1974 by R/V GILLISS

Retrieved at 1350 GMT 17 March 1974 by R/V GILLISS

Data Interval: 1903 GMT 24 February to 0603 GMT 17 March

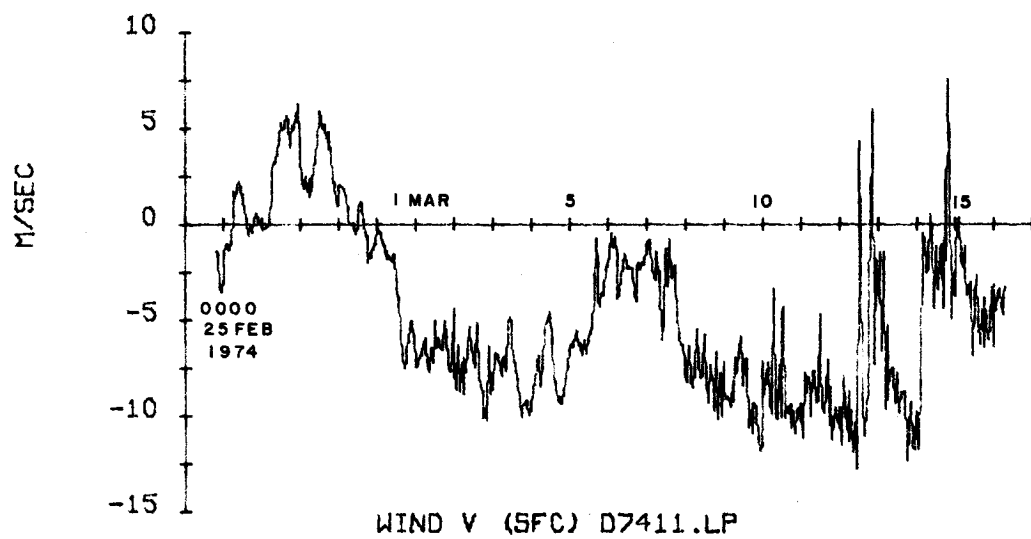
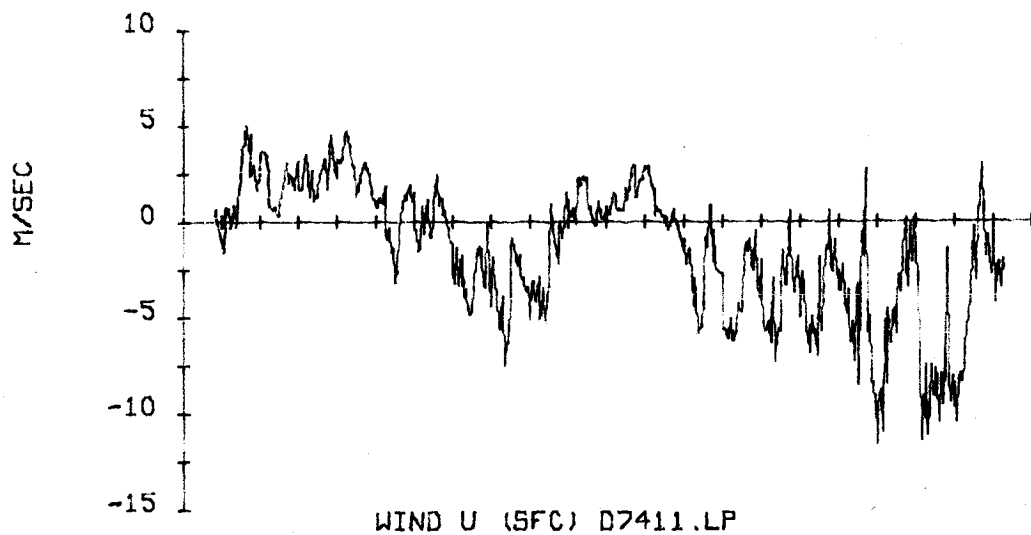
InstrumentationIntended DepthRCM4 Serial No./Tape No.

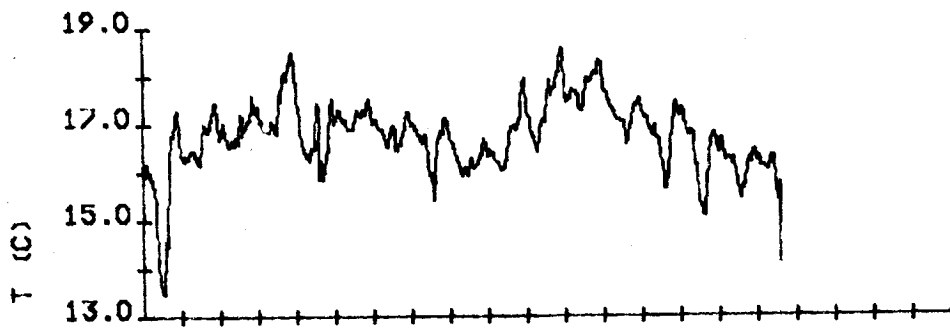
0 m	D74/11
20 m	686/15
40 m	683/17
60 m	682/15

Data were recorded every 5 minutes. All three sub-surface meters recorded temperature, current speed and direction, pressure and salinity. The surface buoy recorded air and water temperature, wind speed and direction, until the air temperature sensor failed on March 13.

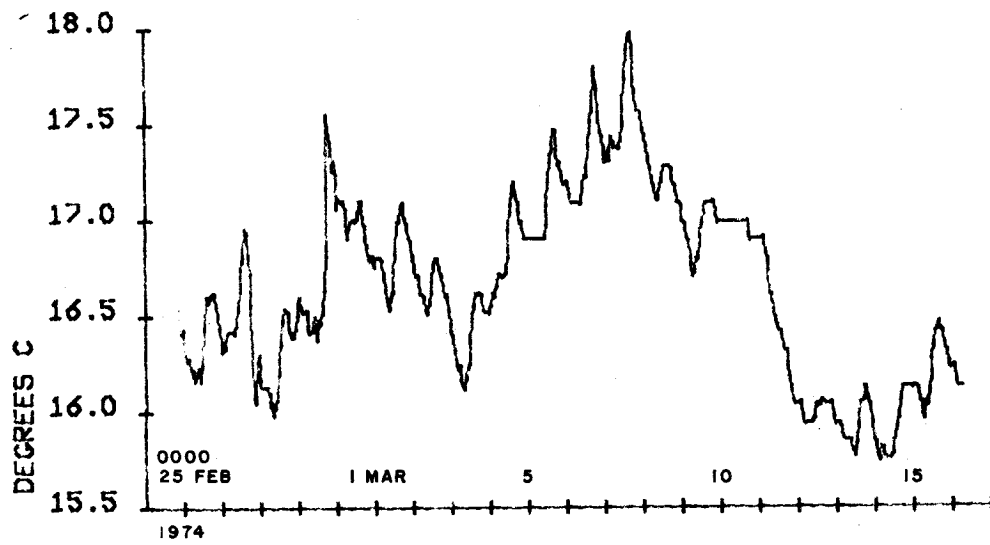
URBINIA I

	0 m						
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (m/sec)	6.7	3.1	-0.1	1.9	13.2	0.6	493
U (m/sec)	-1.5	3.5	-0.6	2.7	5.1	-11.6	493
V (m/sec)	-4.5	4.4	0.5	2.4	7.6	-12.7	493
T Air (C)	16.7	8.1	-2.0	4.2	18.5	13.5	400
T Water (C)	16.6	0.5	0.1	2.3	18.0	15.7	493
	20 m						
S (cm/sec)	22.9	8.1	0.7	3.4	49.8	0.9	493
U (cm/sec)	-9.0	9.8	0.1	2.1	20.9	-21.5	493
V (cm/sec)	-12.8	18.2	0.5	2.2	26.2	-49.8	493
T Water (C)	16.1	0.5	0.0	2.4	17.0	14.5	493
P (10^5 n/m ²)	2.6	0.0	0.2	2.5	2.7	2.5	493
Sa1 (PPT)	35.79	0.11	-0.69	2.80	35.97	35.40	493
	40 m						
S (cm/sec)	21.5	8.9	0.6	2.4	48.0	3.7	492
U (cm/sec)	4.3	7.9	-0.7	2.7	19.5	-17.1	492
V (cm/sec)	-12.3	17.6	0.3	2.0	24.6	-48.0	492
T Water (C)	15.5	0.5	0.1	2.5	17.0	14.2	492
P (10^5 n/m ²)	4.6	0.0	-0.0	2.1	4.7	4.5	492
Sa1 (PPT)	35.80	0.12	0.76	3.41	36.09	35.49	492
	60 m						
S (cm/sec)	15.3	8.3	0.7	2.5	37.7	1.8	492
U (cm/sec)	4.5	6.6	-0.2	2.2	18.2	-10.6	492
V (cm/sec)	-8.2	13.2	0.0	2.1	20.5	-36.1	492
T Water (C)	15.1	0.5	-0.8	2.8	15.8	13.9	492
P (10^5 n/m ²)	6.6	0.0	0.2	2.5	6.7	6.6	492
Sa1 (PPT)	35.56	0.09	-0.45	2.35	35.76	35.35	492

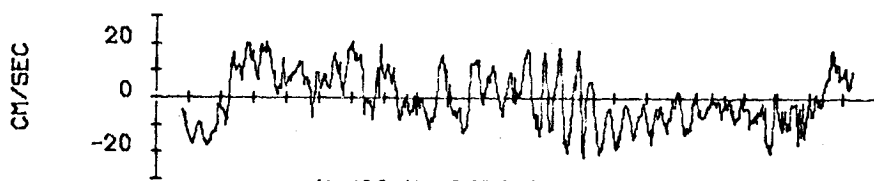




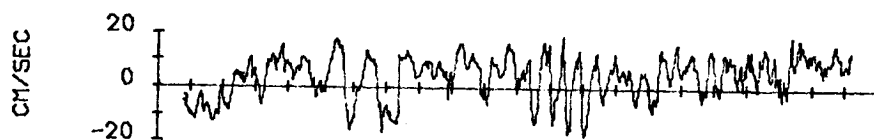
AIR TEMPERATURE D7411.LP



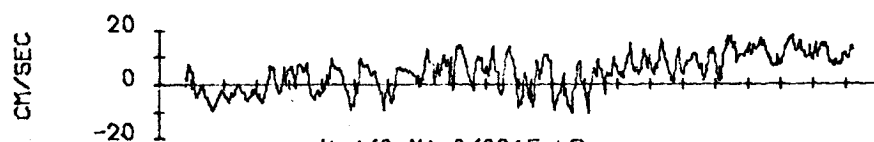
WATER TEMPERATURE (0 M) D7411.LP



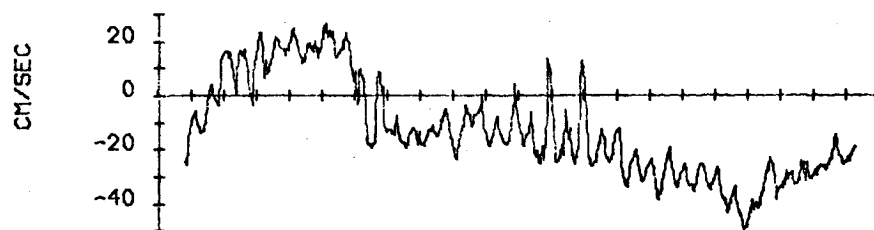
U (20 M) C68615.LP



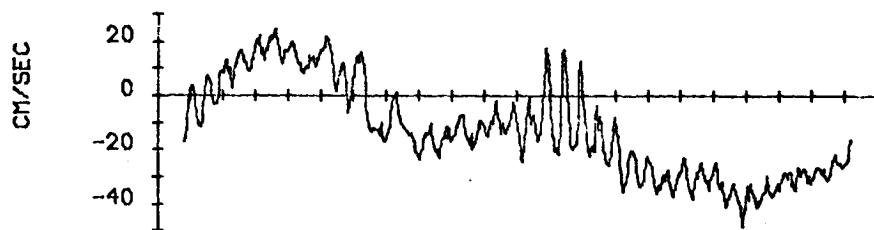
U (40 M) C68317.LP



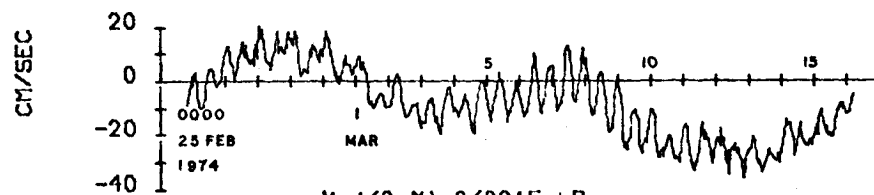
U (60 M) C68215.LP



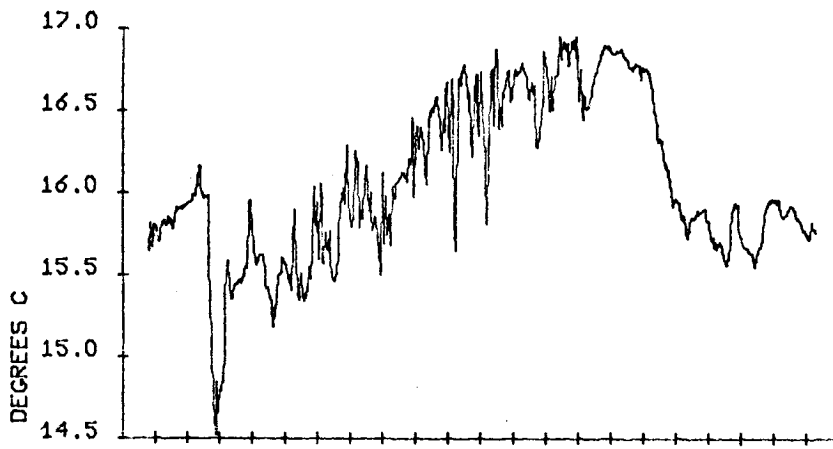
V (20 M) C68615.LP



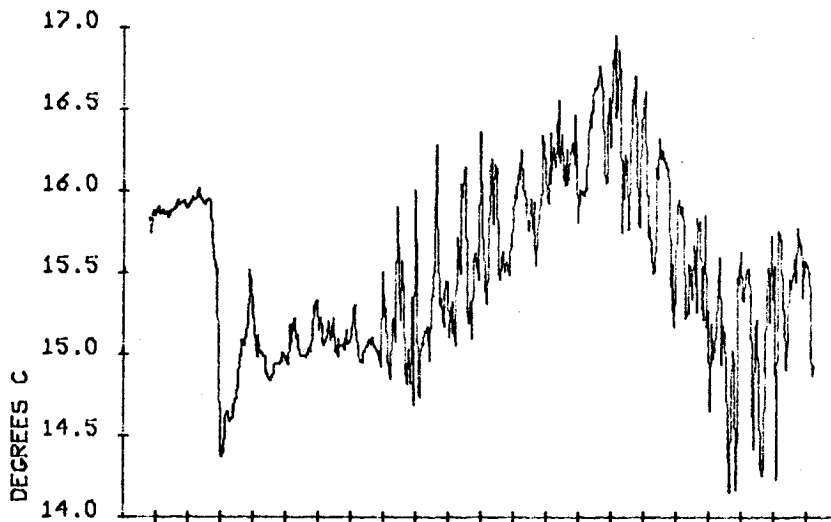
V (40 M) C68317.LP



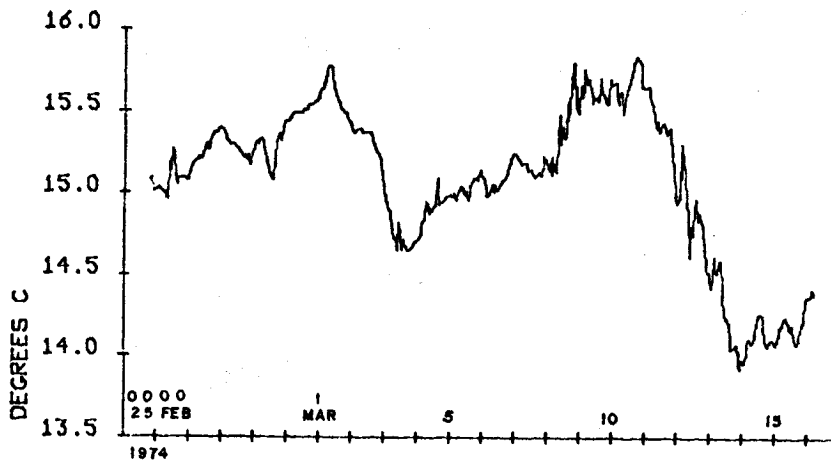
V (60 M) C68215.LP



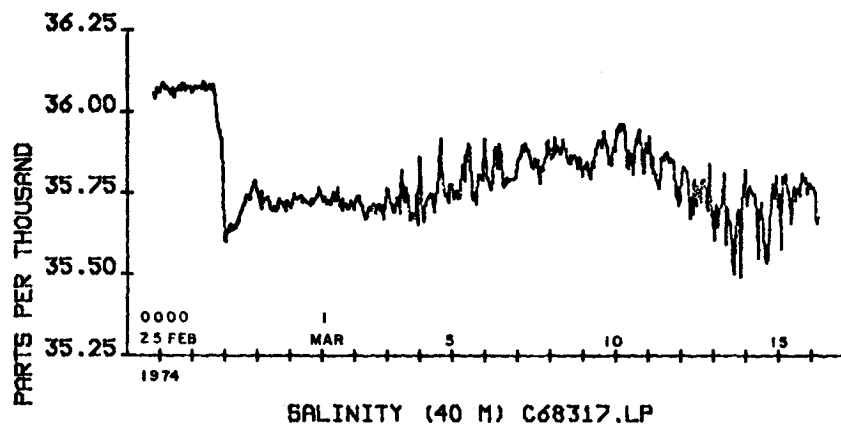
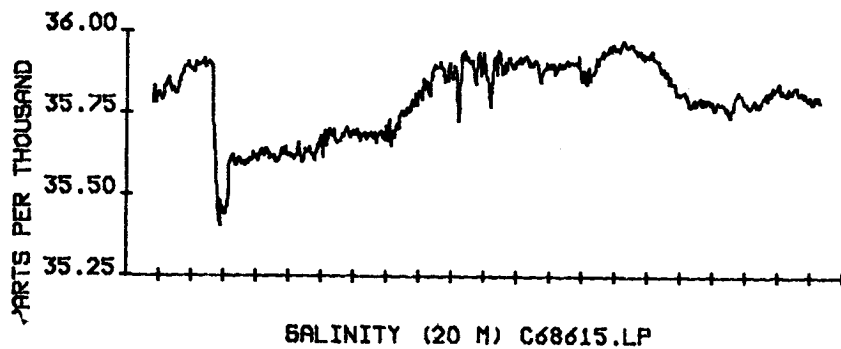
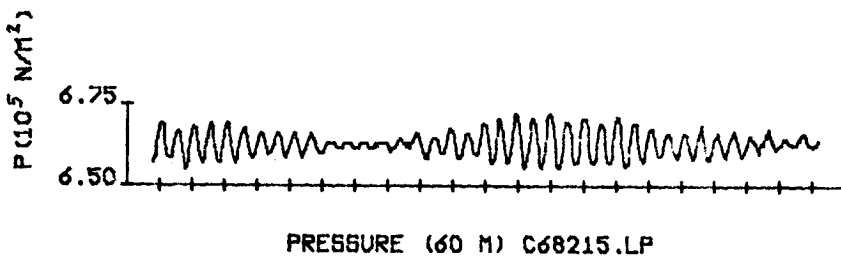
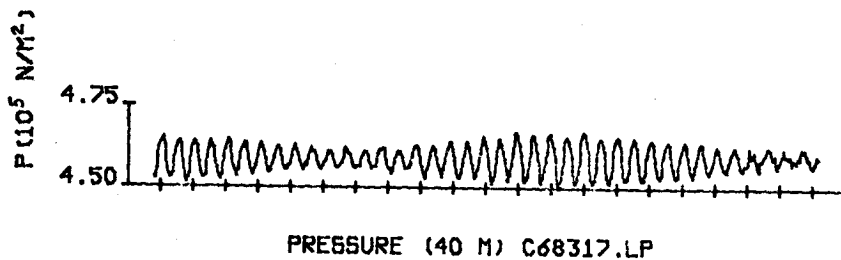
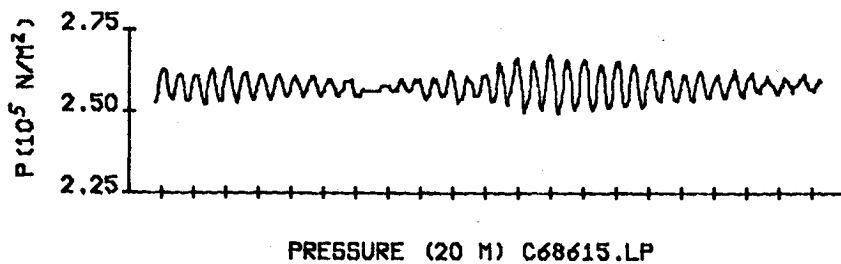
WATER TEMPERATURE (20 M) C68615.LP

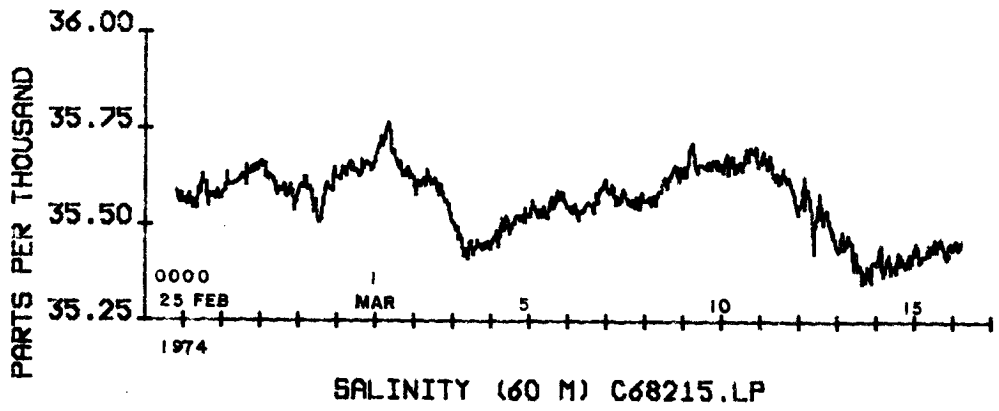


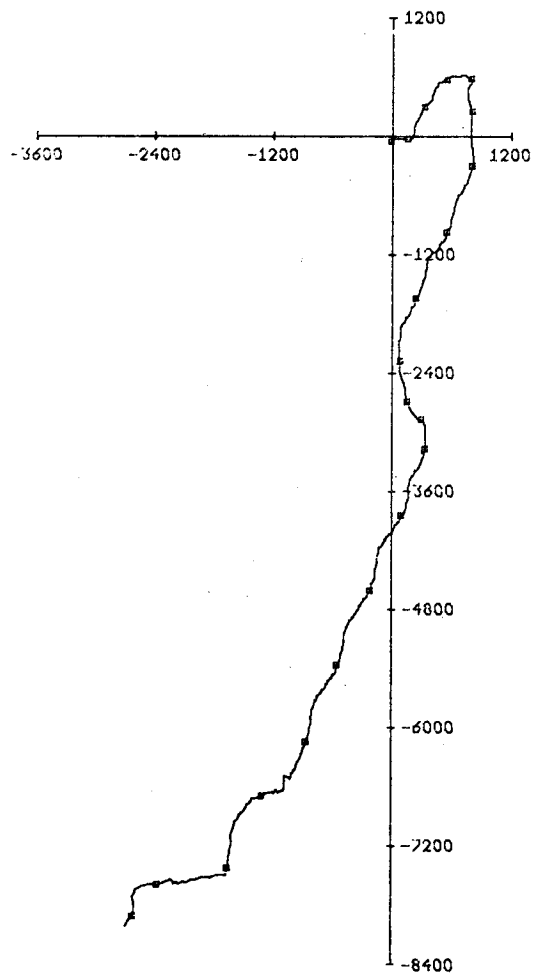
WATER TEMPERATURE (40 M) C68317.LP



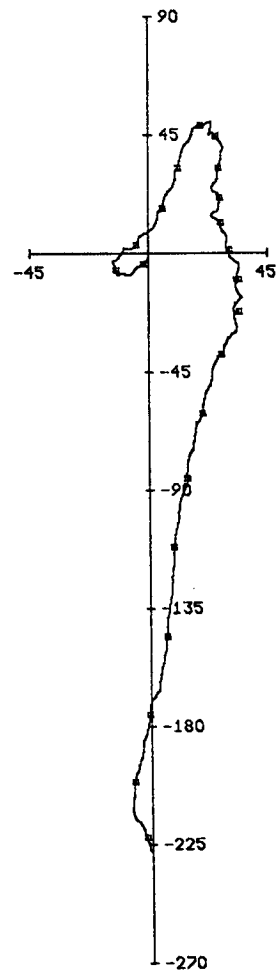
WATER TEMPERATURE (60 M) C68215.LP



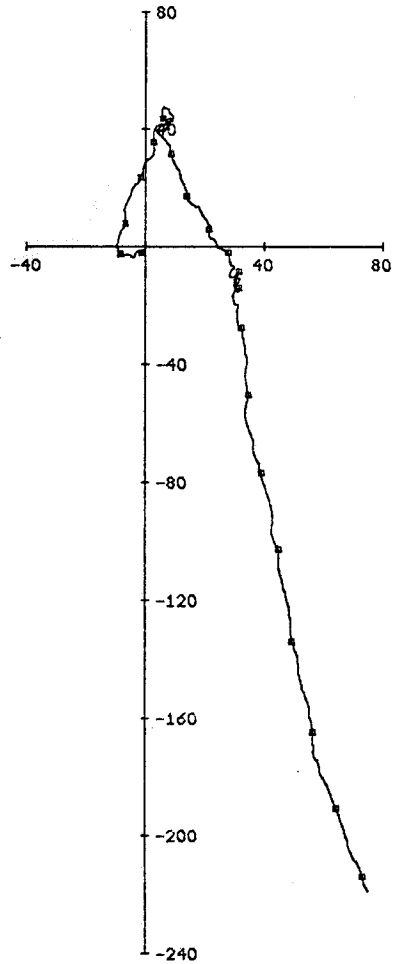




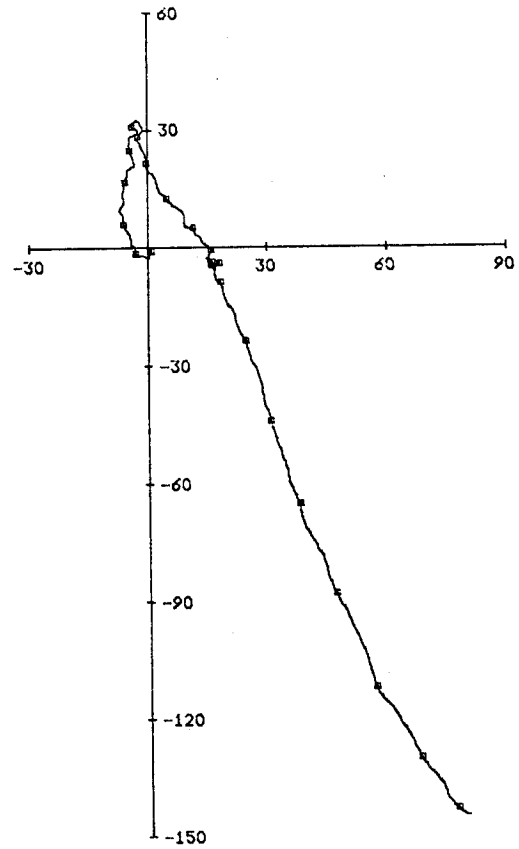
WIND AT URSINIA. 20.5 DAYS STARTING 1925 24 FEB 74 GMT



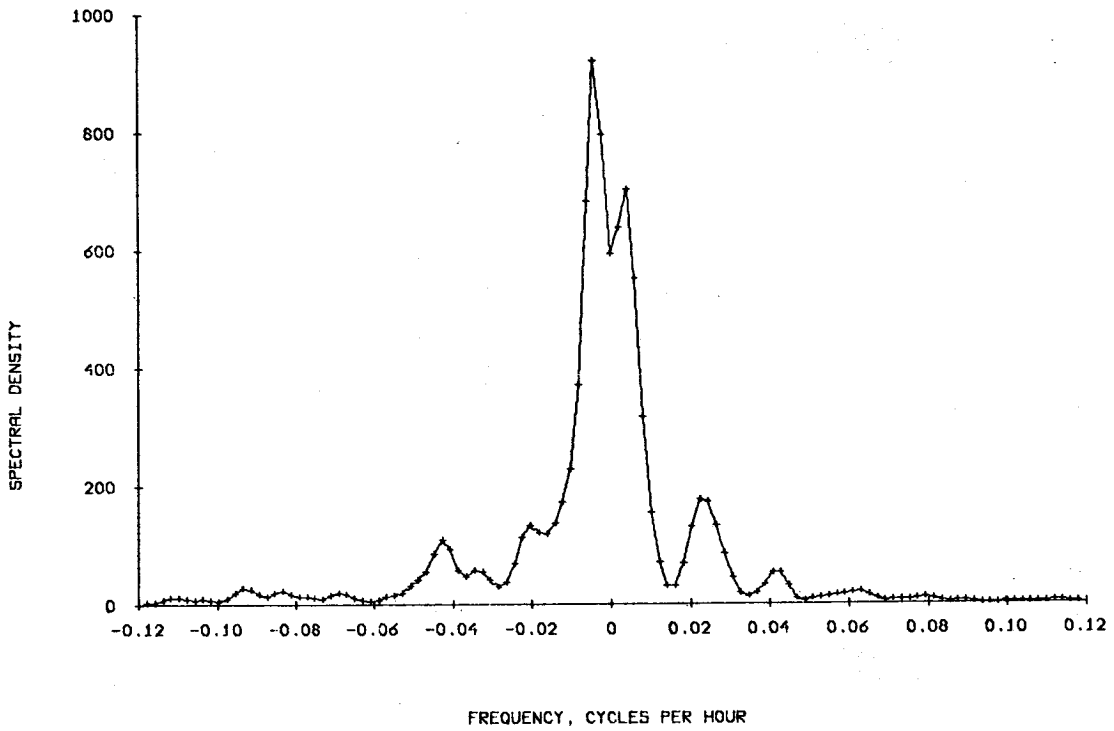
20 METERS AT URSINIA. 20.5 DAYS STARTING 1901 24 FEB 74



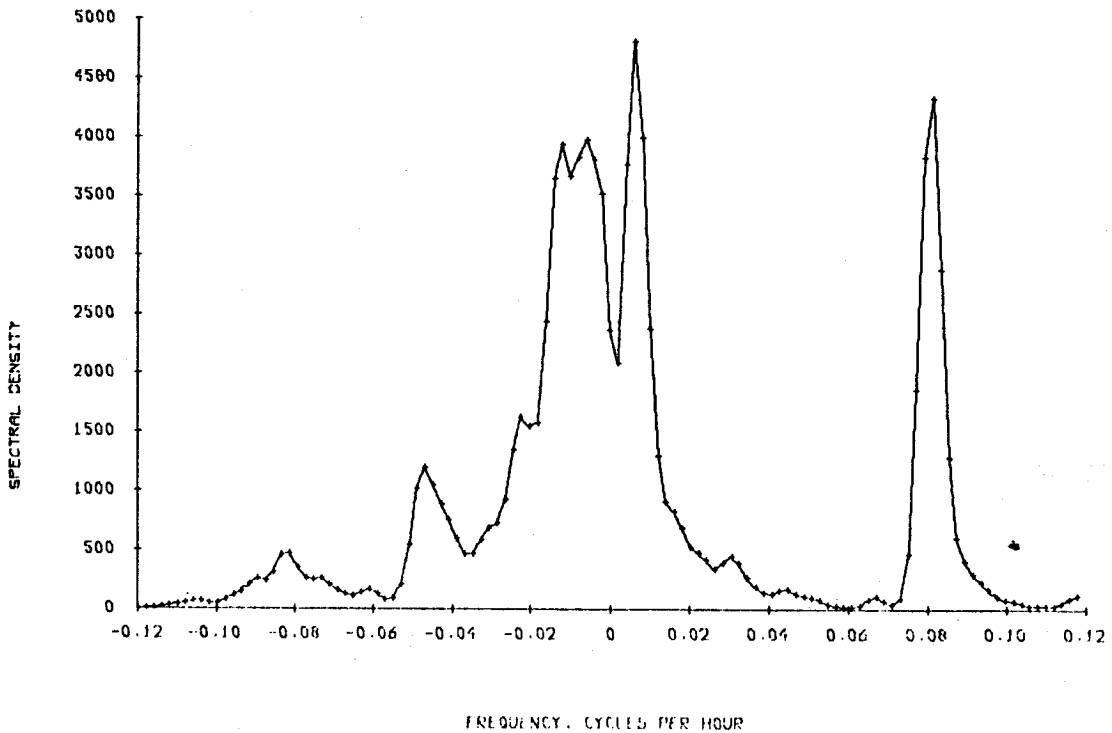
40 METERS AT URBINIA. 20.5 DAYS STARTING 1903 24 FEB 74



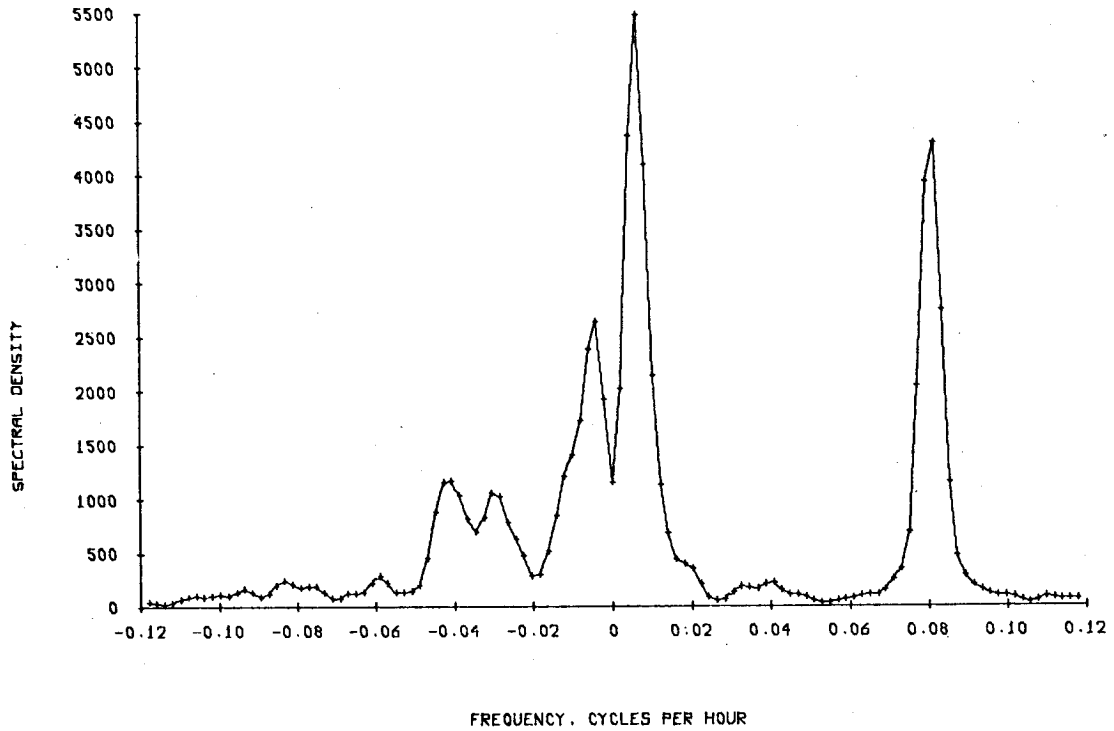
60 METERS AT URBINIA. 20.5 DAYS STARTING 1903 24 FEB 74



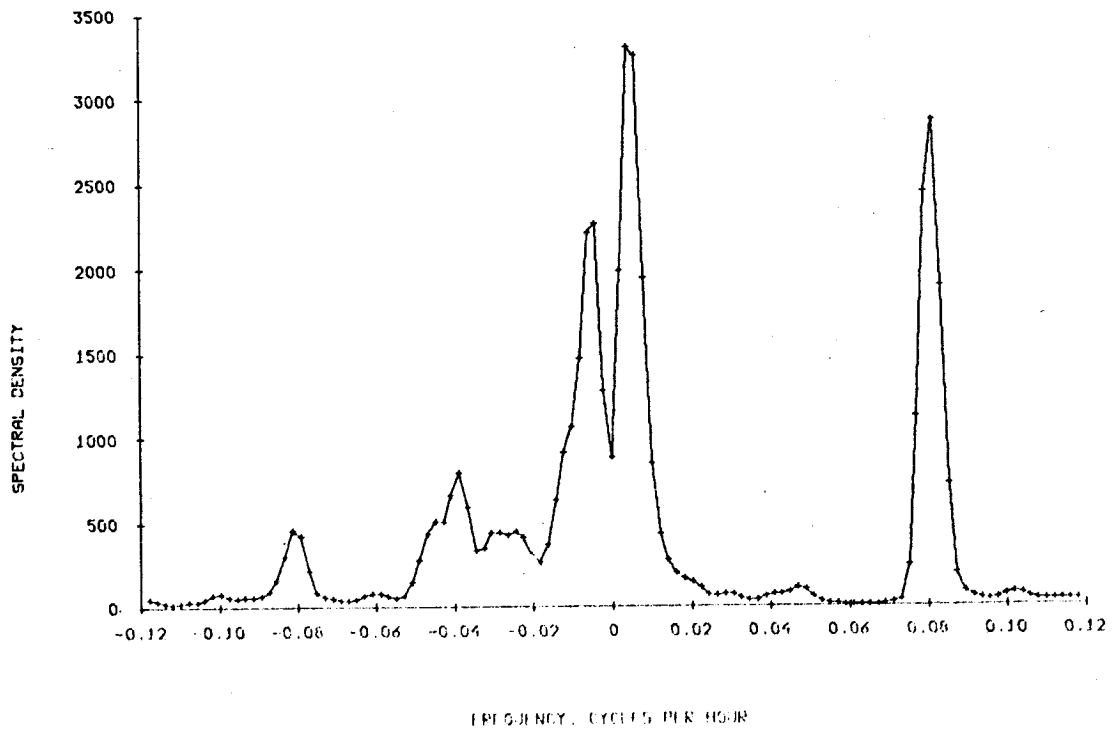
ROTARY SPECTRUM
20 METERS AT URBINIA. 2/24/74 TO 3/17/74. TAPE 686/15

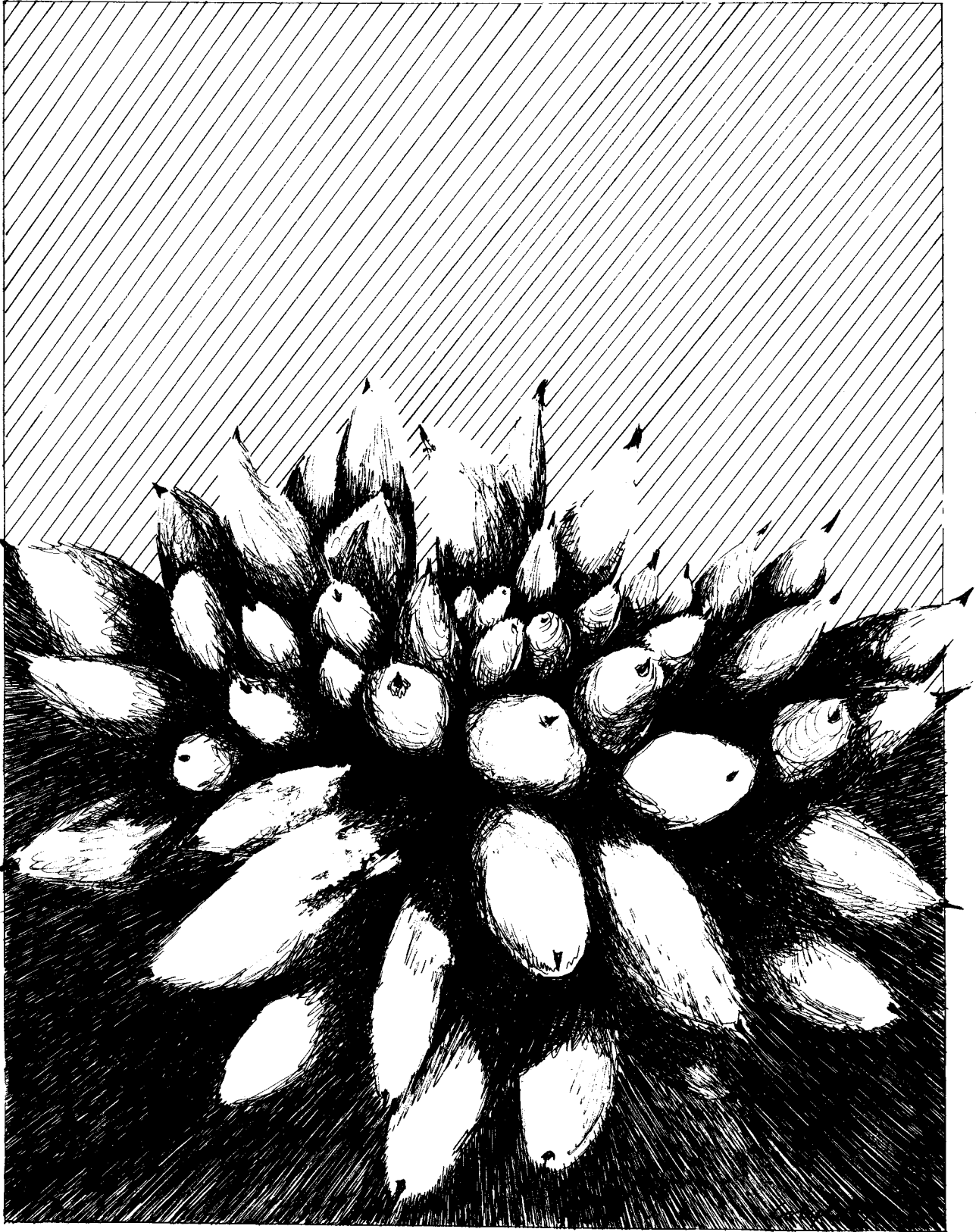


ROTARY SPECTRUM
40 METERS AT URBINIA. 2/24/74 TO 3/12/74. TAPE 683/12



ROTARY SPECTRUM
60 M AT URBINIA. 24 FEB 74 TO 17 MAR 74. TAPE 682/15





1974 JOINT I Installation

URBINIA II

Position: 21°40.0'N, 17°17.8'W

Depth of Water: 67 m

Set at 1750 GMT 17 March 1974 by R/V GILLISS

Retrieved at 1435 GMT 25 April 1974 by R/V OCEANOGRAPHER

Data Interval: 0008 GMT 18 March to 0708 GMT 25 April

InstrumentationIntended DepthRCM4 Serial No./Tape No.

0 m	D126/5
20 m	748/7
40 m	754/8
60 m	755/8

Data were recorded at 10 minute intervals. All sub-surface meters measured temperature, current speed and direction, pressure and salinity. The surface buoy recorded water temperature, wind speed and direction. The air temperature sensor failed entirely.

URBINIA II

0 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (m/sec)	6.5	3.0	0.1	2.1	13.8	0.0	289
U (m/sec)	0.2	2.9	-0.3	2.3	5.7	-7.9	289
V (m/sec)	-5.6	3.5	0.1	1.9	1.5	-13.3	289

20 m

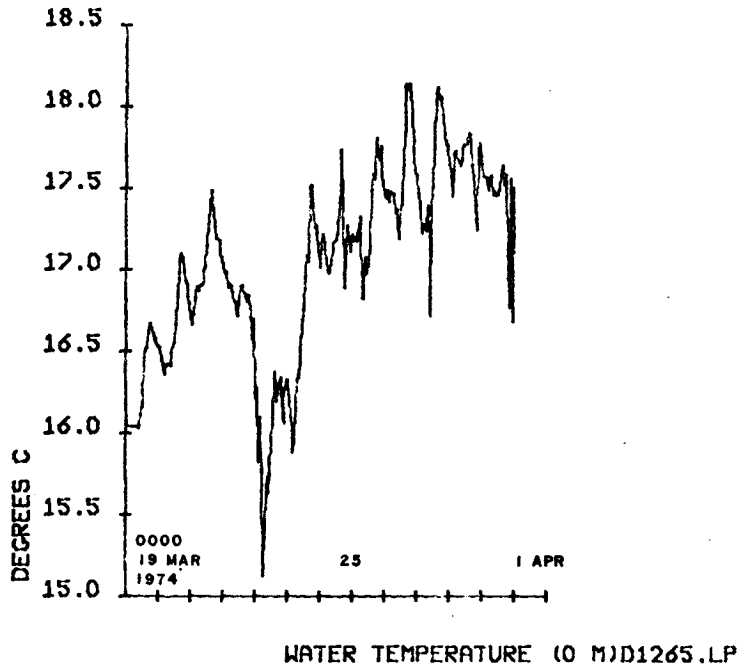
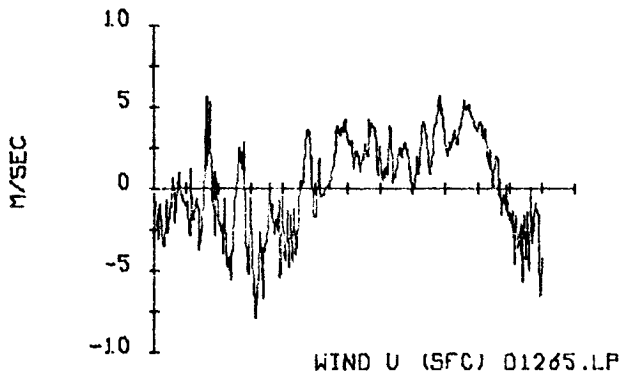
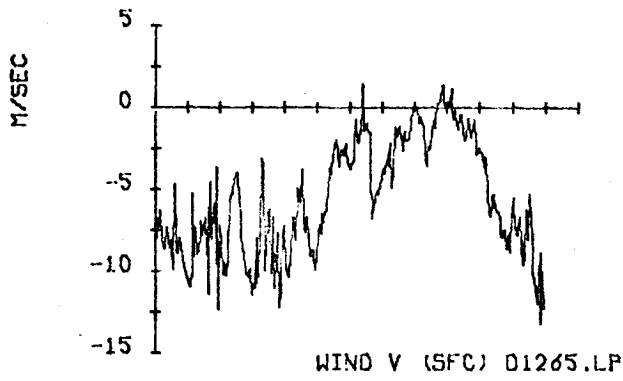
S (cm/sec)	24.6	6.7	0.2	3.0	45.7	2.9	920
U (cm/sec)	-1.4	8.2	0.2	2.7	25.4	-24.2	920
V (cm/sec)	-22.1	9.6	1.3	6.4	20.0	-45.2	920
T Water (C)	16.4	0.5	0.1	2.3	17.8	15.3	920
P (10^5 n/m ²)	2.5	0.0	0.6	2.6	2.6	2.5	920
Sal (PPT)	35.92	0.07	0.49	3.11	36.16	35.78	920

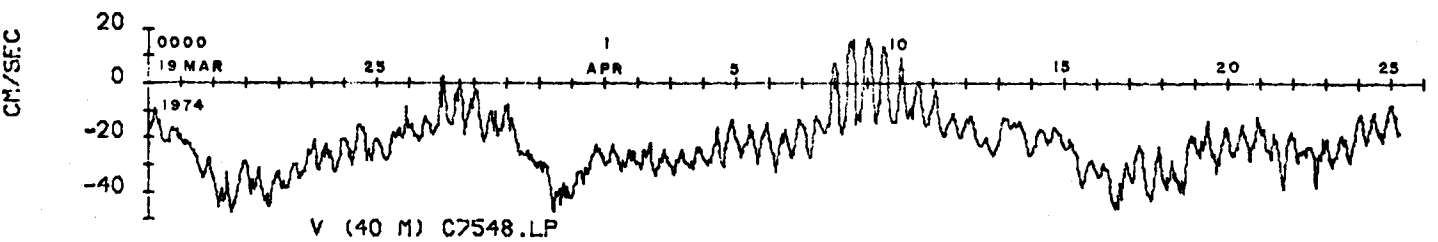
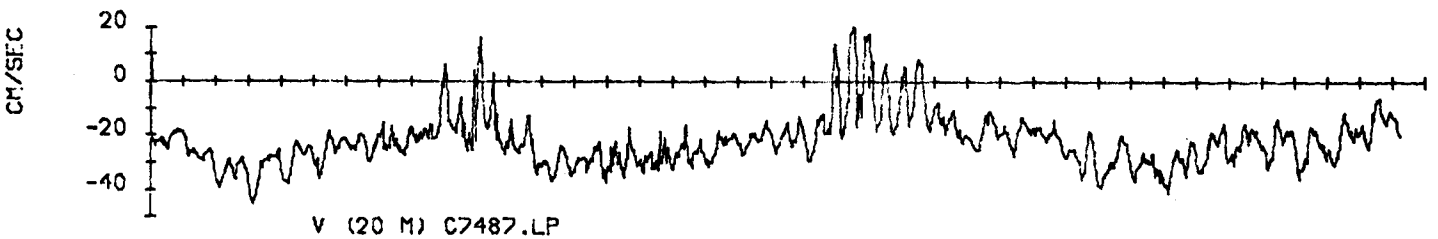
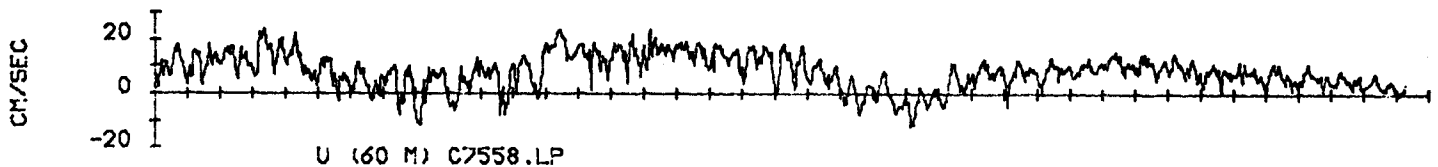
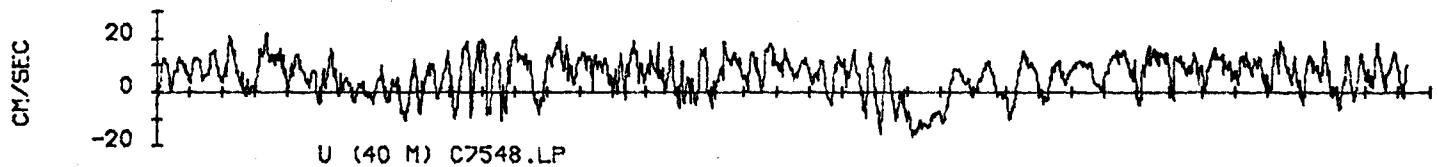
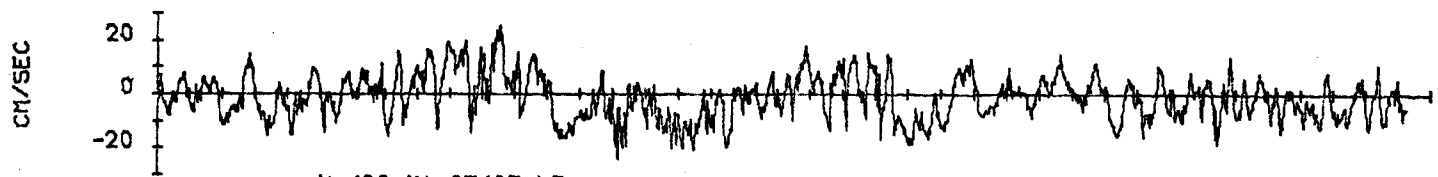
40 m

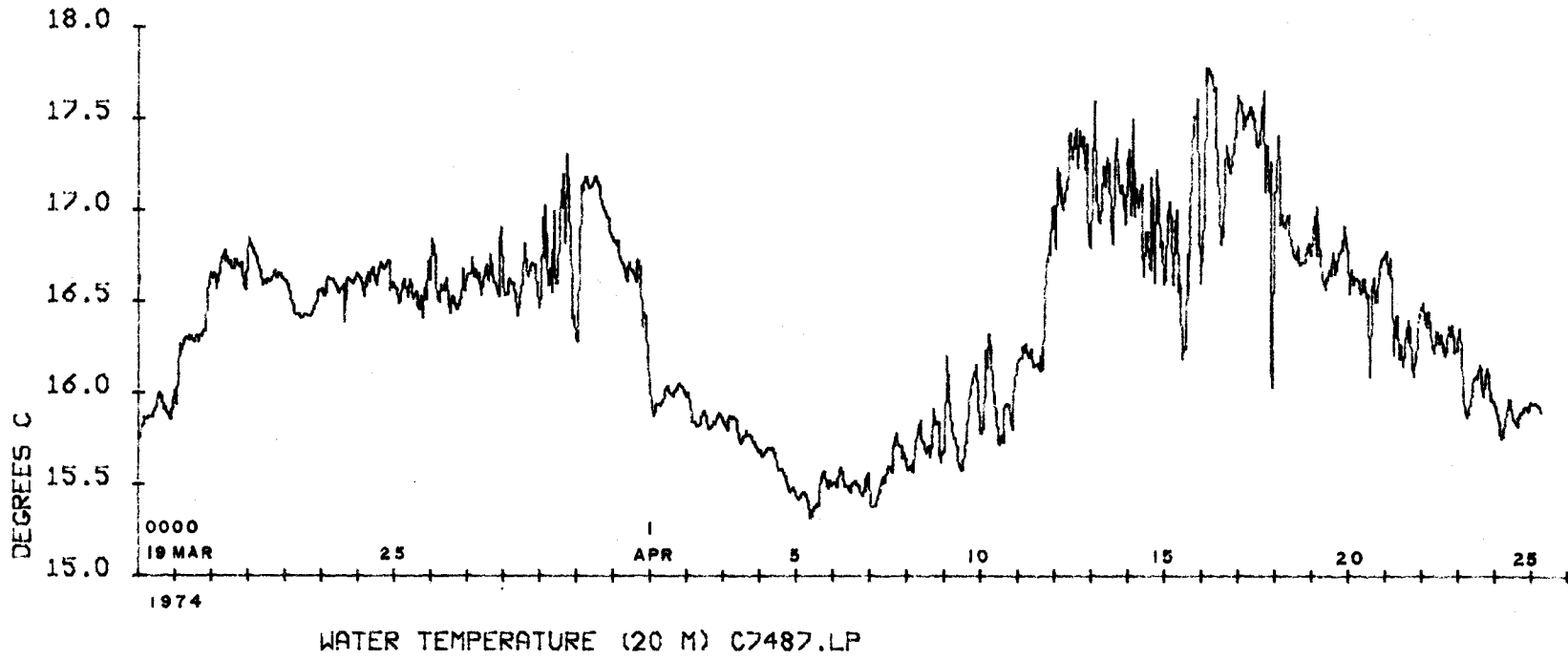
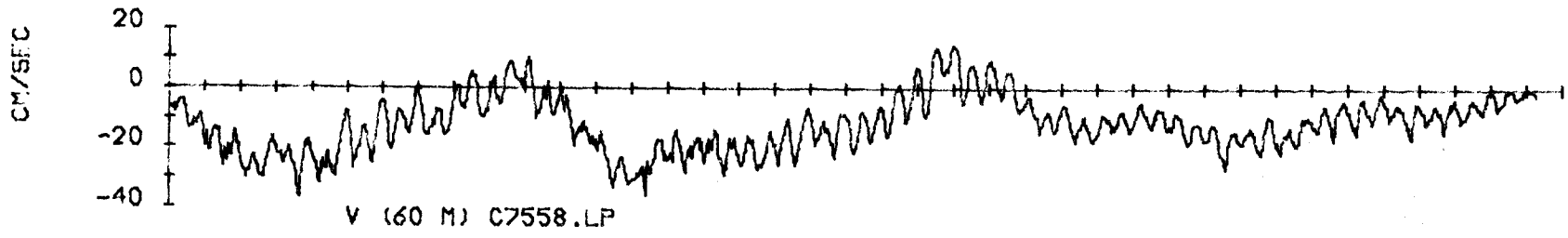
S (cm/sec)	25.3	8.4	0.5	2.8	49.1	3.2	920
U (cm/sec)	6.2	7.1	-0.6	3.1	21.7	-16.7	920
V (cm/sec)	-22.6	10.5	0.6	4.2	16.2	-47.5	920
T Water (C)	15.6	0.5	-0.6	3.5	16.7	13.9	920
P (10 n/m)	4.5	0.0	1.7	6.5	4.6	4.5	920

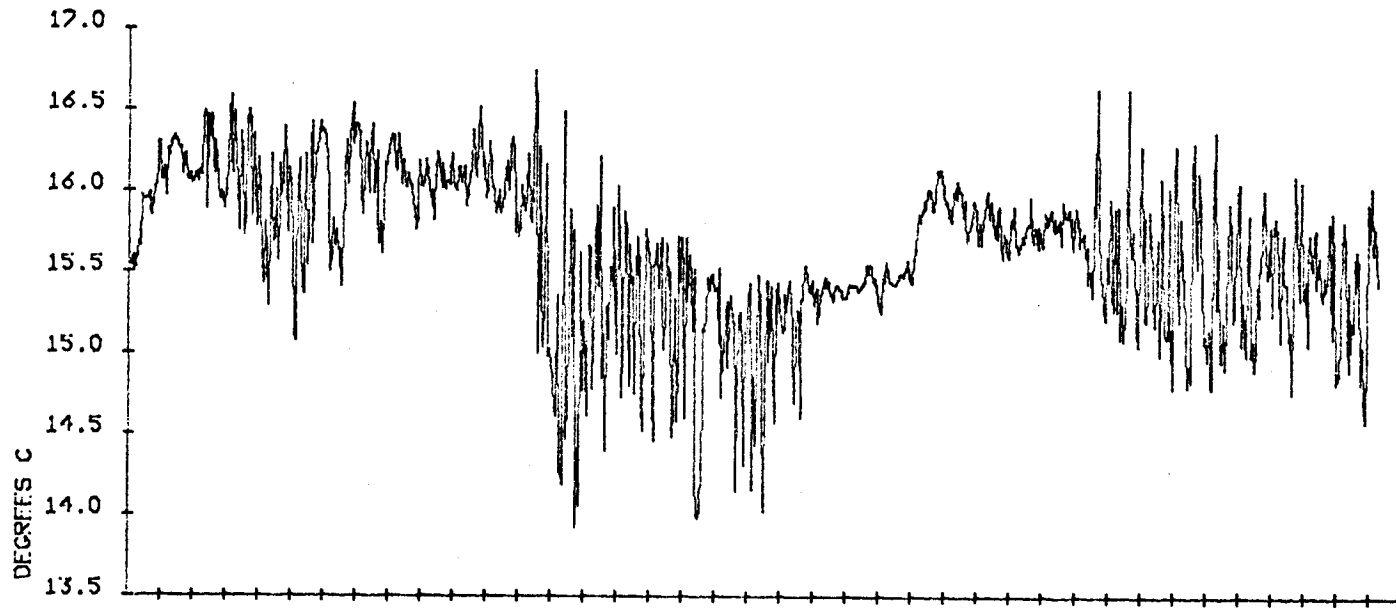
60 m

S (cm/sec)	16.2	8.4	0.5	2.4	39.9	0.5	920
U (cm/sec)	8.1	6.3	-0.3	3.2	23.6	-12.0	920
V (cm/sec)	-11.8	9.3	0.2	2.9	14.3	-36.6	920
T Water (C)	14.9	0.5	-0.2	2.2	16.3	13.8	920
P (10^5 n/m ²)	6.6	0.0	0.7	4.8	6.7	6.6	920
Sal (PPT)	35.41	0.31	-1.06	2.93	35.87	34.68	920

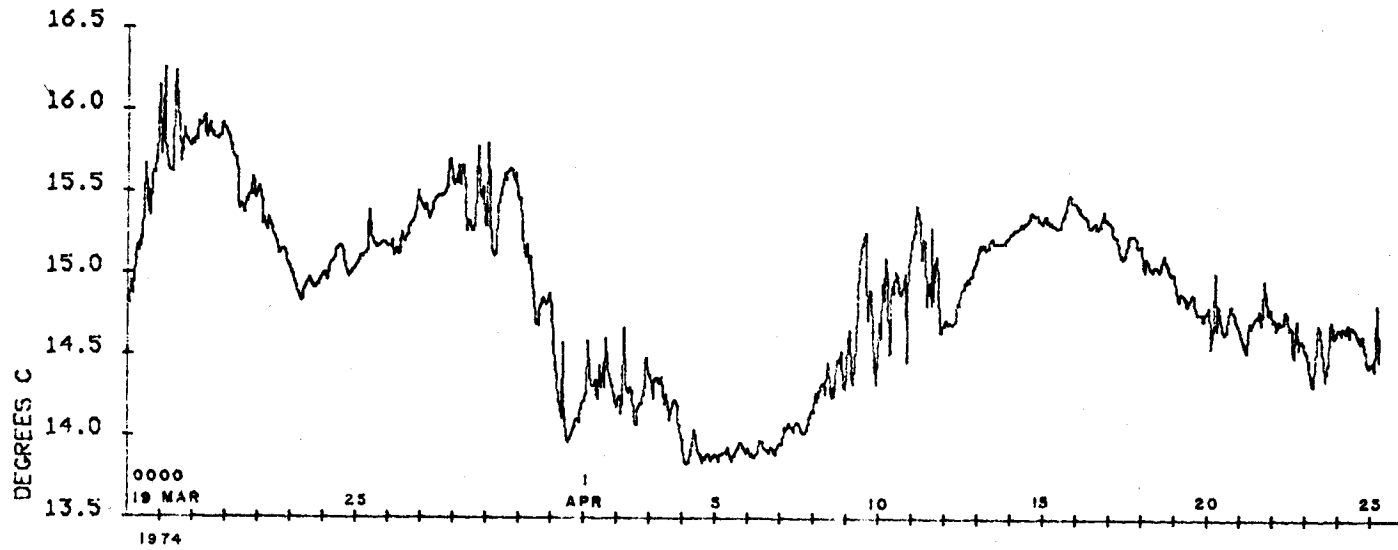




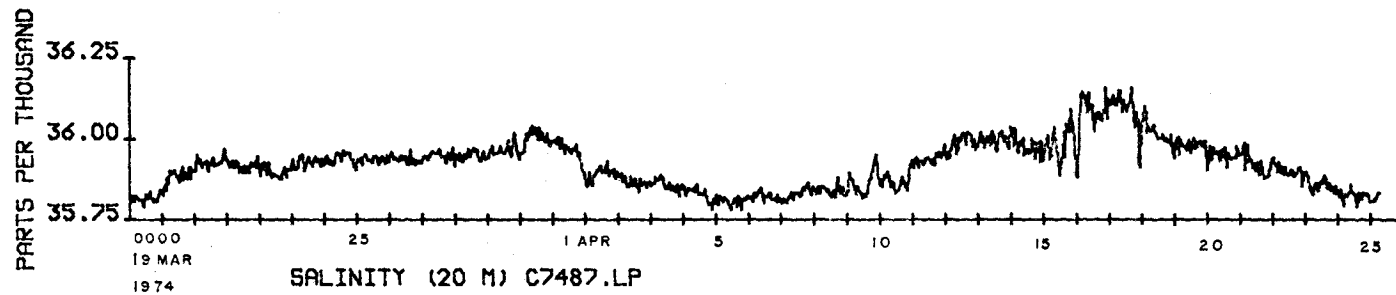
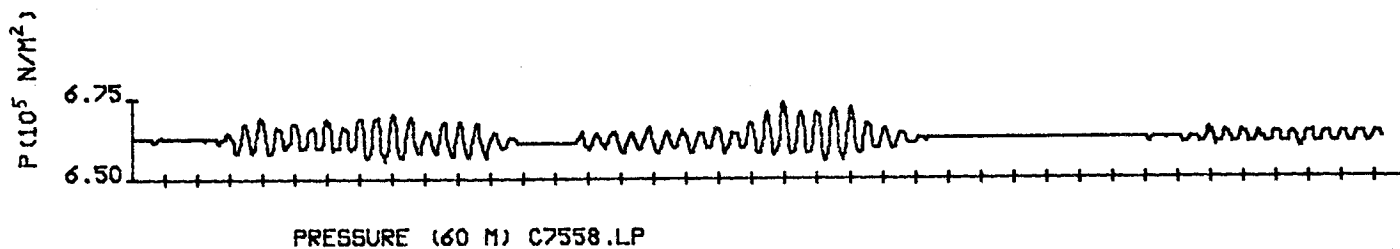
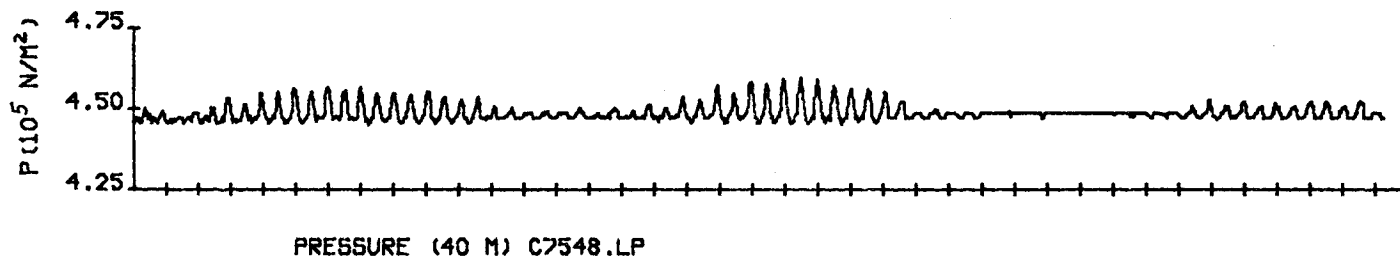
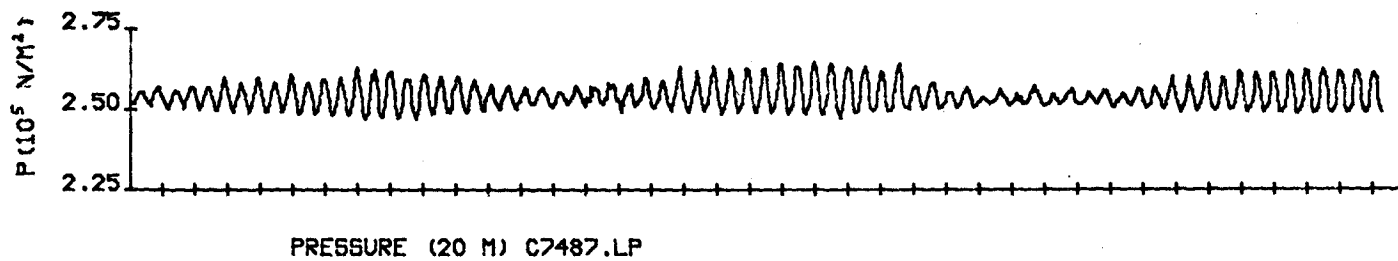


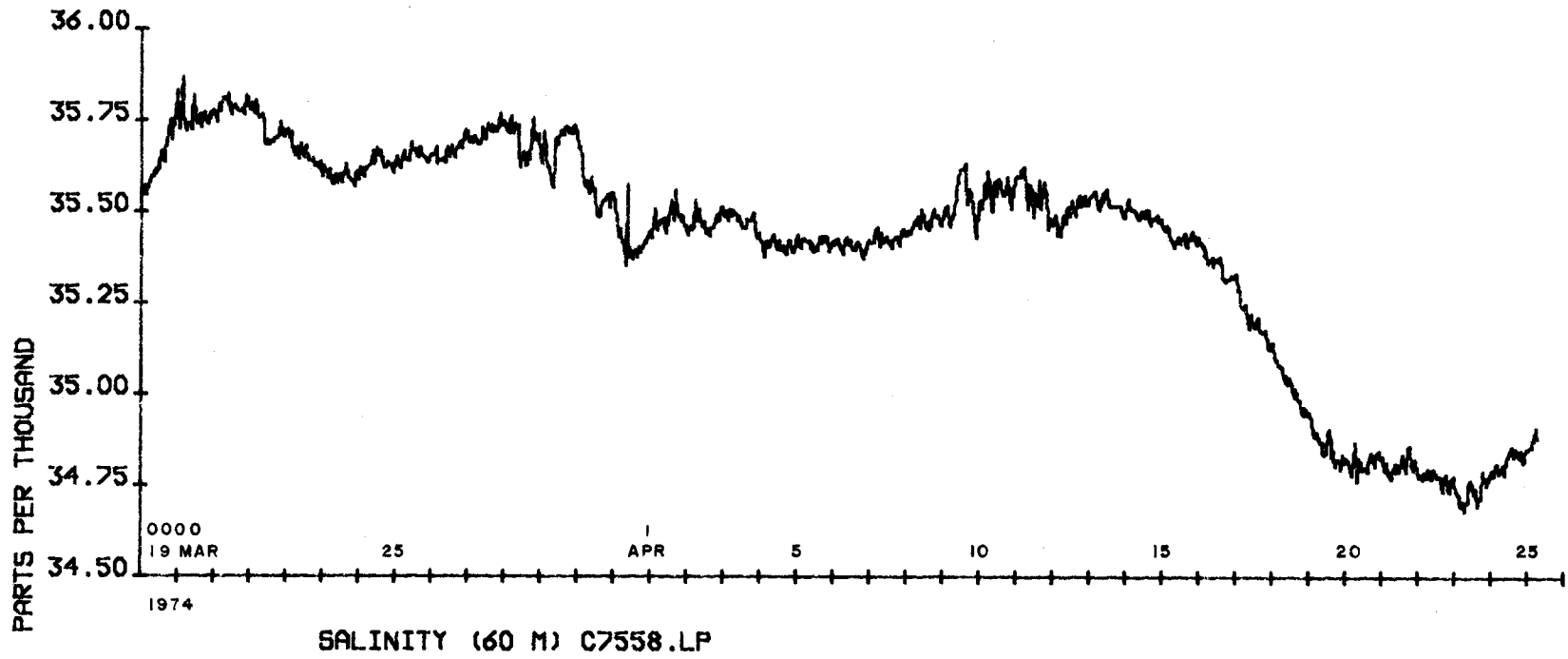


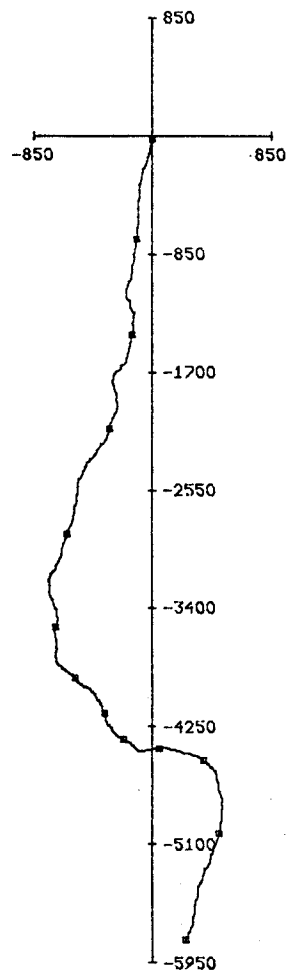
WATER TEMPERATURE (40 M) C7548.LP



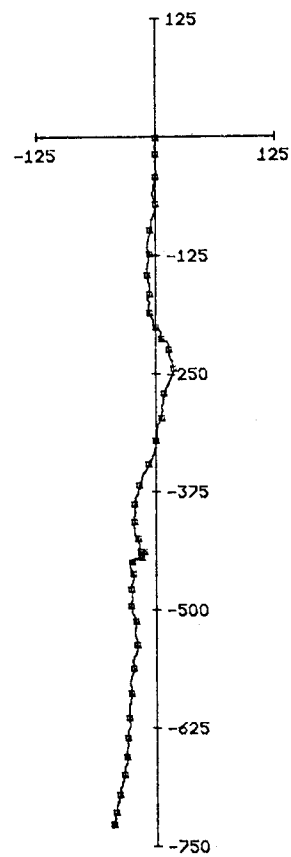
WATER TEMPERATURE (60 M) C7558.LP



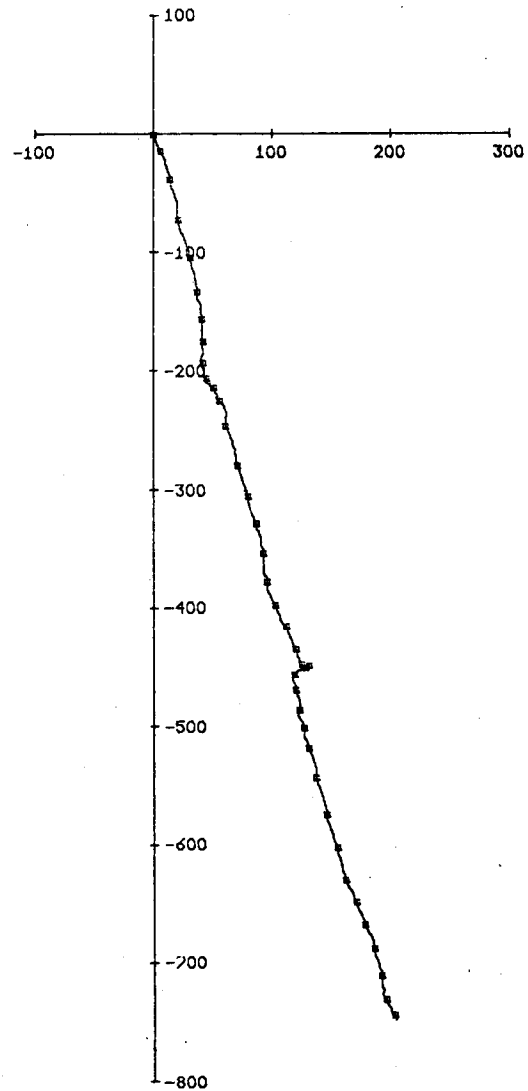




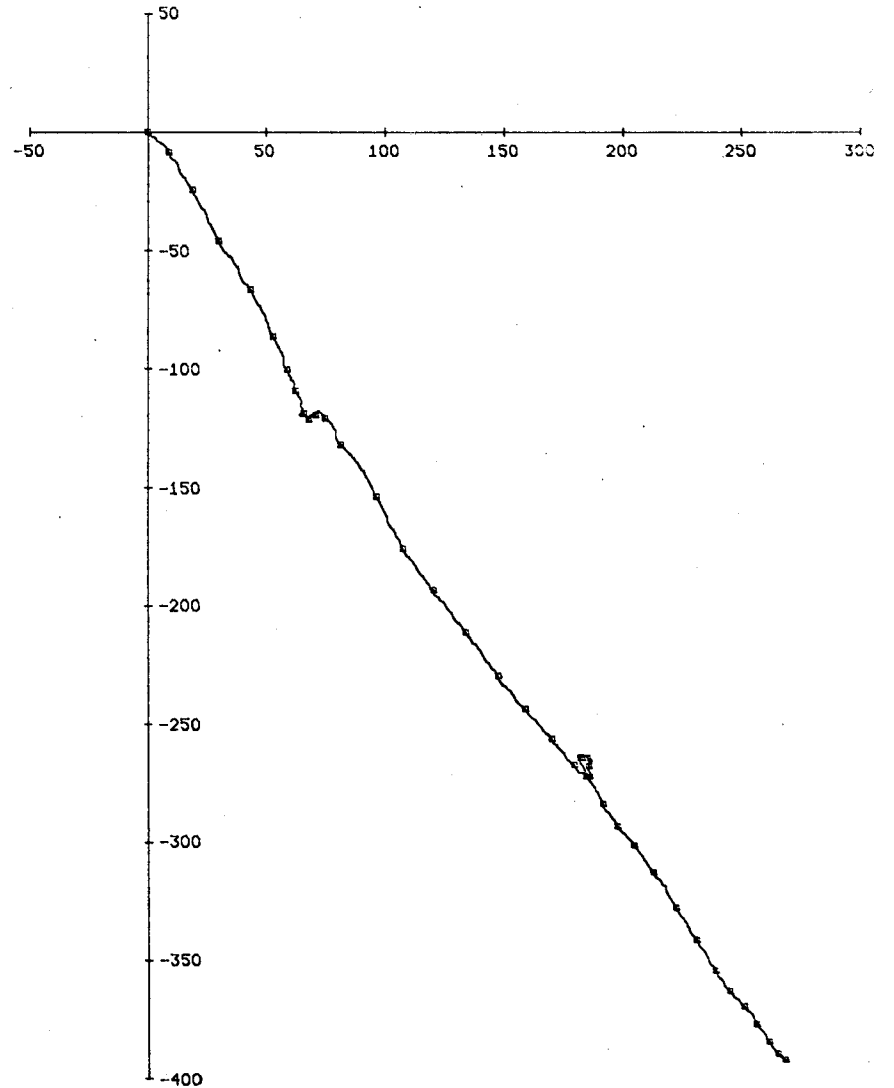
WIND AT URBINIA. 12 DAYS STARTING 0006 18 MARCH 74



20 METERS AT URBINIA. 38.3 DAYS STARTING 0008 18 MAR 74

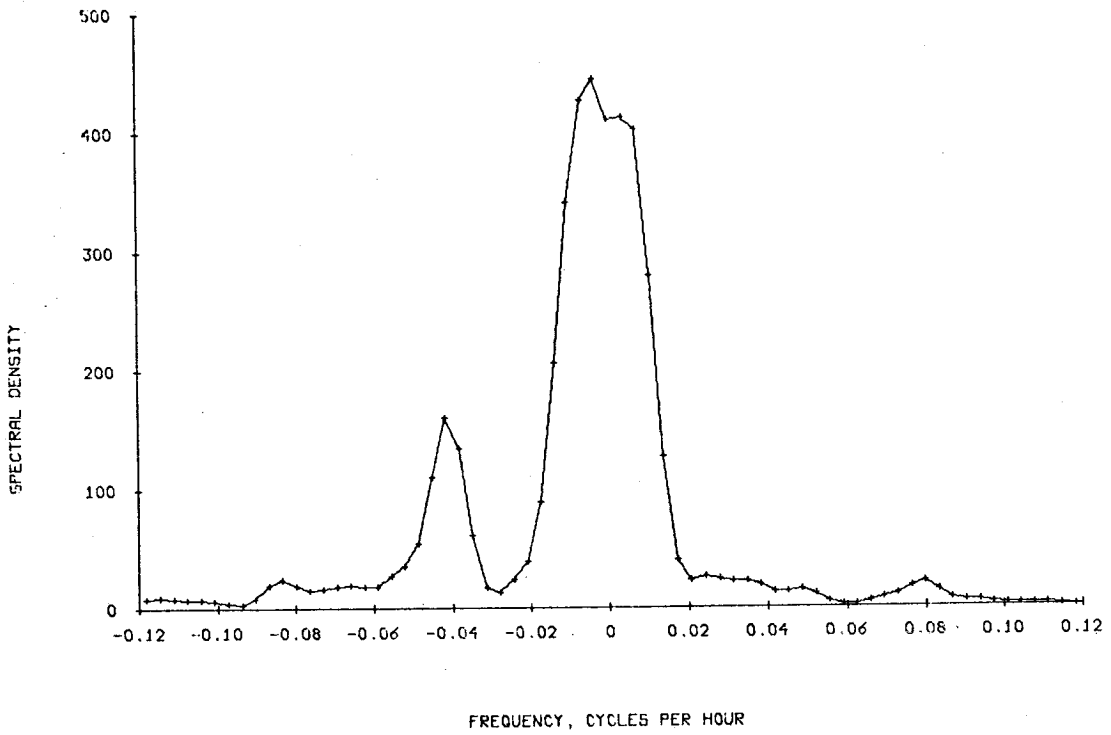


40 METERS AT URBINIA. 38.3 DAYS STARTING 0004 18 MAR 74

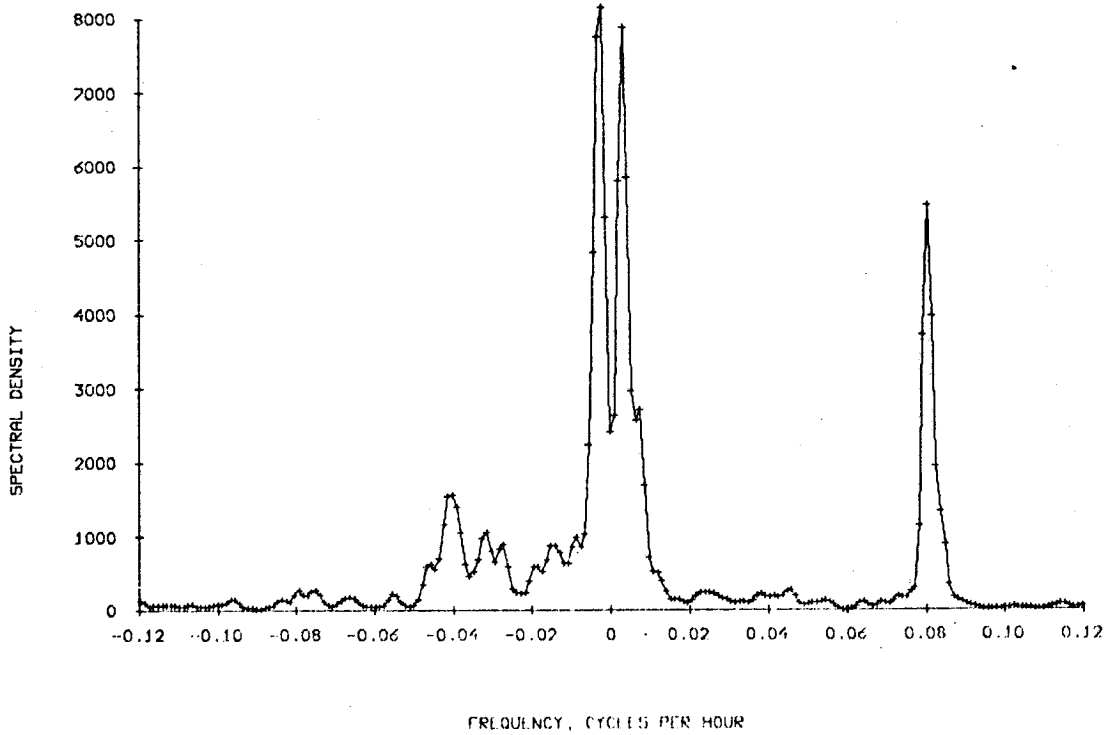


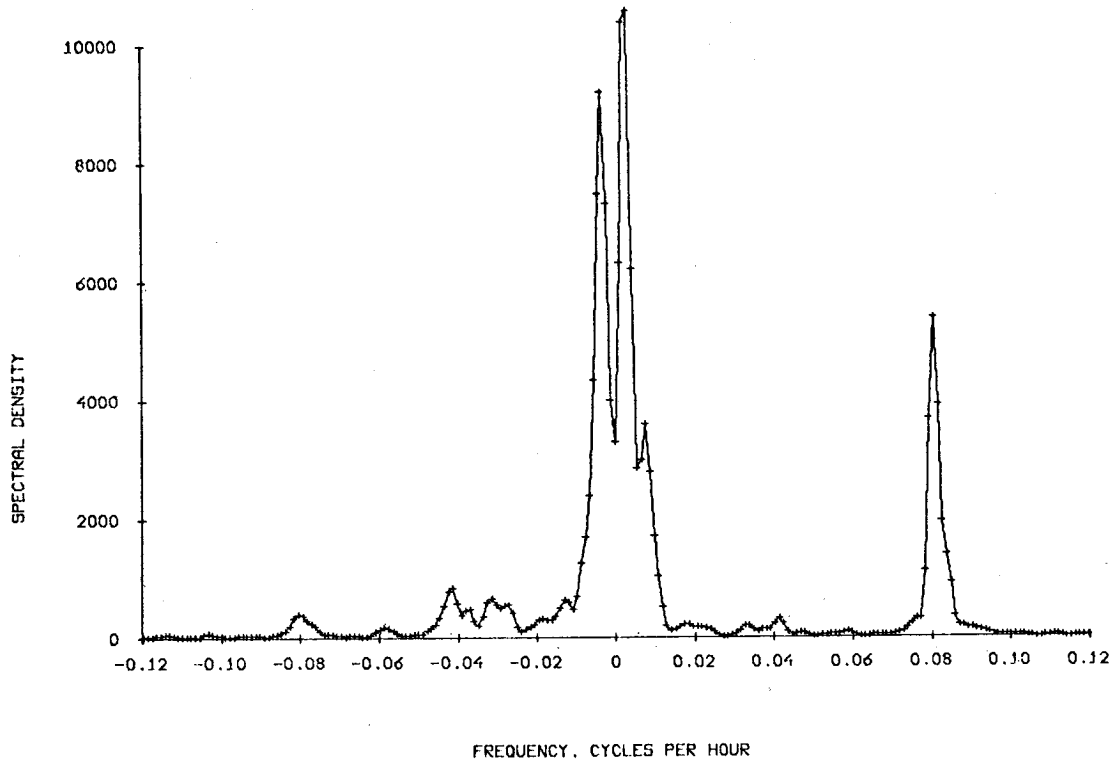
60 M AT URBINIA. 38.3 DAYS STARTING 0005 18 MAR 74

ROTARY SPECTRUM
 WIND AT URBINIA. 17 MAR 74 TO 30 MAR 74. TAPE D126/5

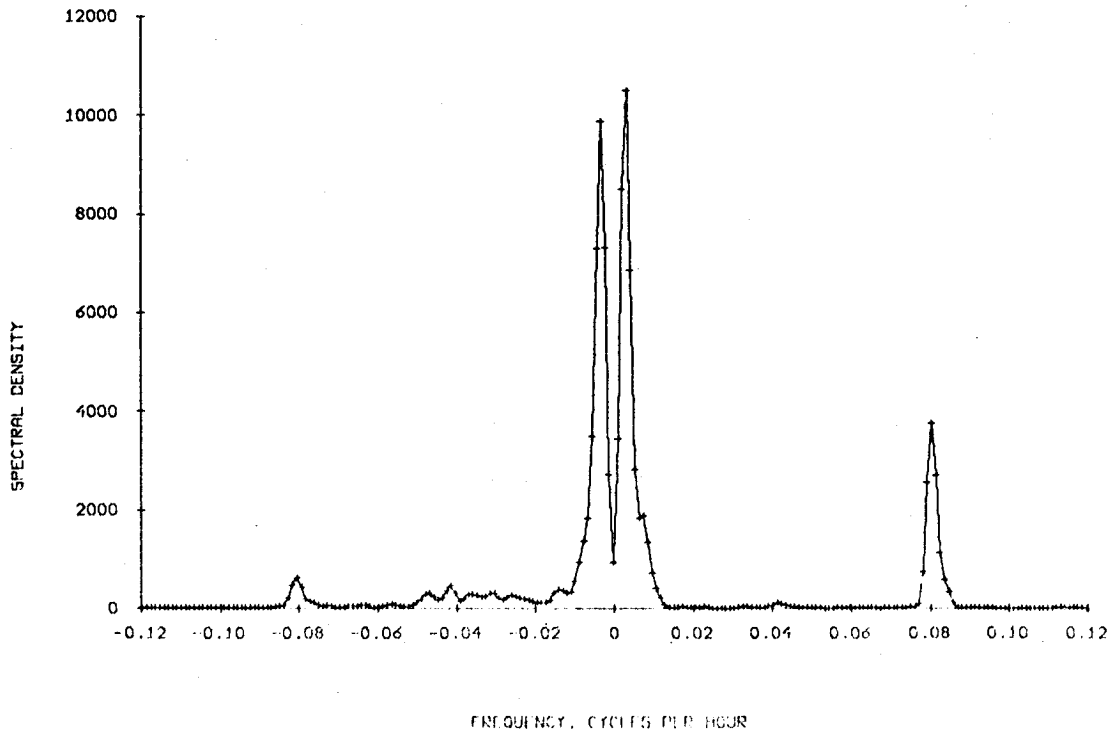


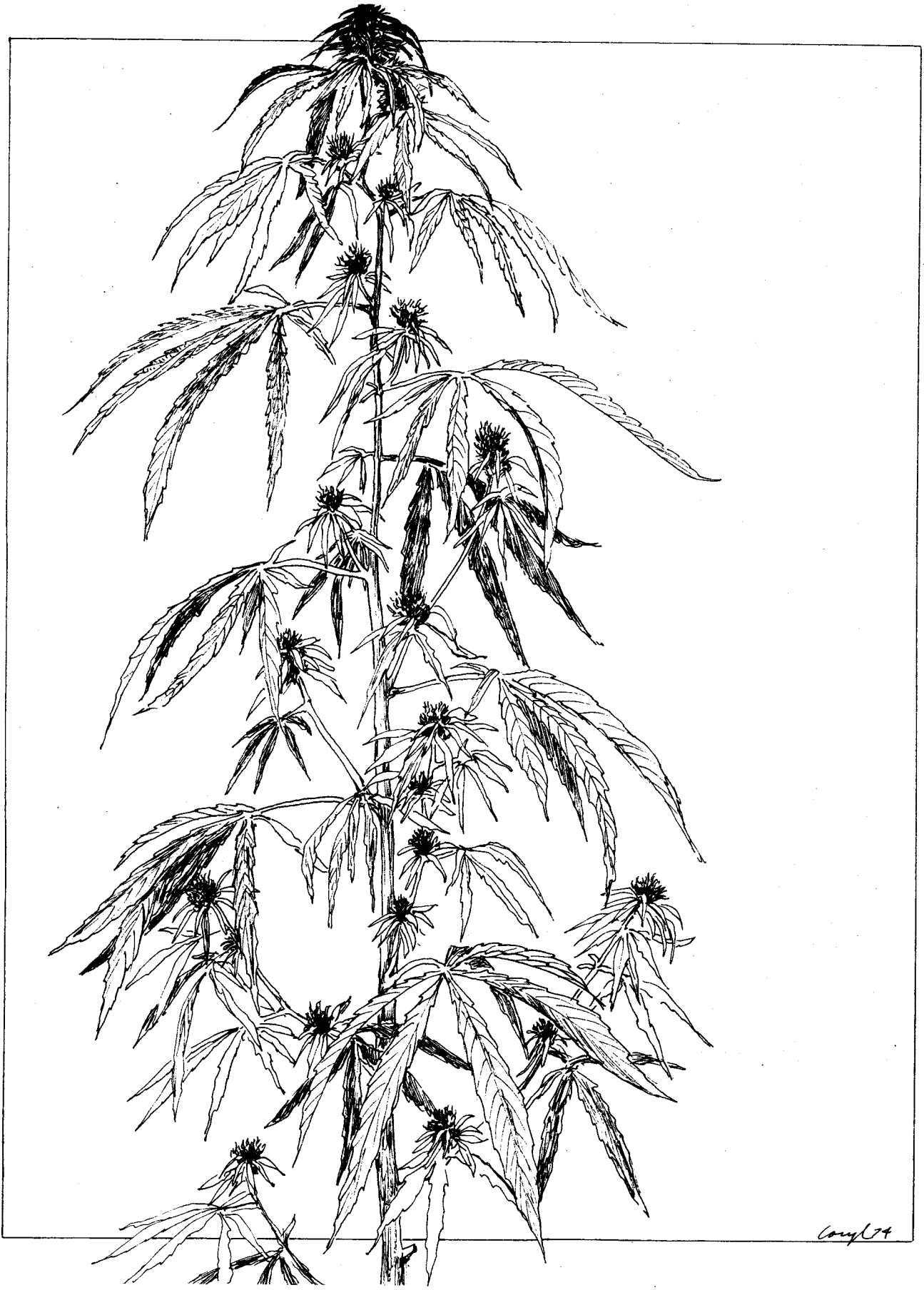
ROTARY SPECTRUM
 20 METERS AT URBINIA. 17 MAR 74 TO 25 APR 74. TAPE 748/7





ROTARY SPECTRUM
60 M AT URBINIA. 17 MAR 74 TO 25 APR 74. TAPE 755/8





Long 174

1974 JOINT I Installation

WEED

Position: 21°39.5'N, 17°17.5'W
Depth of Water: 67 m
Set at 1441 GMT 4 March 1974 by R/V GILLISS
Retrieved at 1750 GMT 6 April 1974 by R/V GILLISS
Data Interval: 2052 GMT 4 March to 1052 GMT 6 April

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
17 m	913/1
25 m	1026/1
35 m	1027/1
45 m	918/1
55 m	1024/1
61 m	1025/1

Data were recorded every 10 minutes. All instruments recorded current speed and direction, and temperature. The 45 m instrument failed to produce any useable speed data. In addition, pressures were recorded by the 17 m, 55 m, and 61 m instruments.

WEED

17 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	25.4	7.6	0.3	3.1	51.2	4.1	783
U (cm/sec)	-0.4	8.0	0.2	2.6	22.5	-20.5	783
V (cm/sec)	-23.3	9.8	0.7	4.6	17.4	-51.2	783
T Water (C)	16.5	0.5	-0.3	1.9	17.6	15.5	783
P (10 n/m)	2.3	0.0	0.4	2.6	2.5	2.3	783

25 m

S (cm/sec)	25.7	7.5	0.3	2.9	51.5	8.0	783
U (cm/sec)	-1.0	8.1	0.4	2.4	21.5	-17.3	783
V (cm/sec)	-23.6	9.5	0.6	4.4	14.7	-50.3	783
T Water (C)	16.3	0.4	-0.3	2.0	17.2	14.9	783

35 m

S (cm/sec)	26.2	8.0	0.3	2.5	47.6	8.5	783
U (cm/sec)	4.5	7.1	-0.3	2.7	21.4	-18.9	783
V (cm/sec)	-24.0	10.4	0.6	3.9	17.7	-47.6	783
T Water (C)	16.0	0.5	-0.7	3.2	17.0	14.2	783

45 m

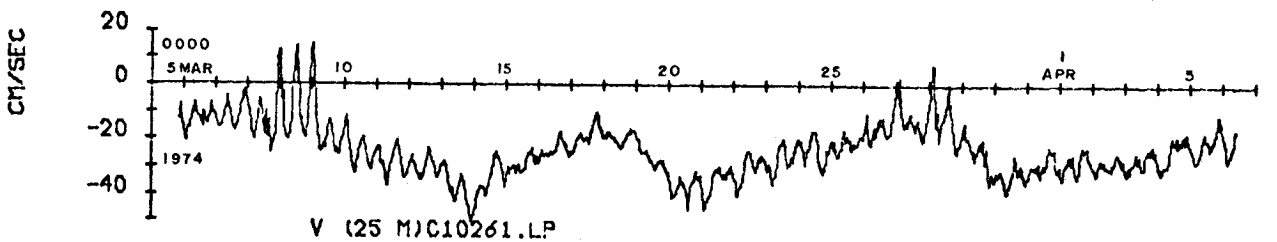
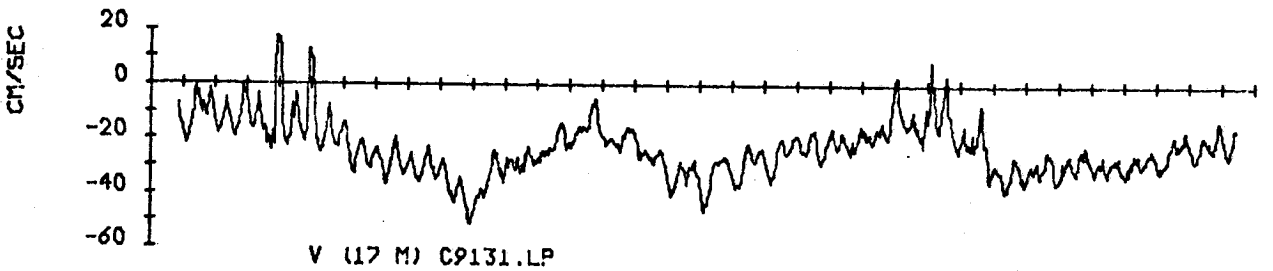
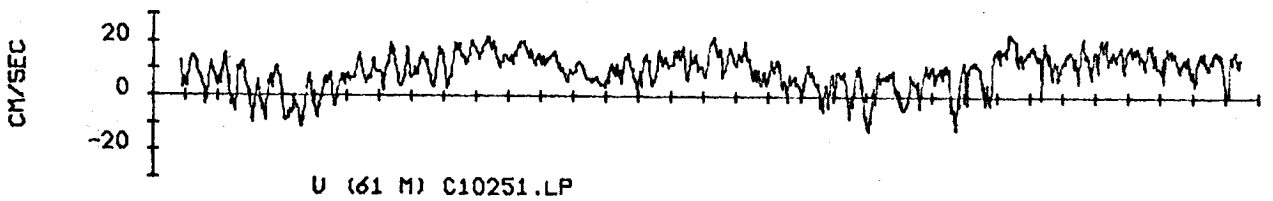
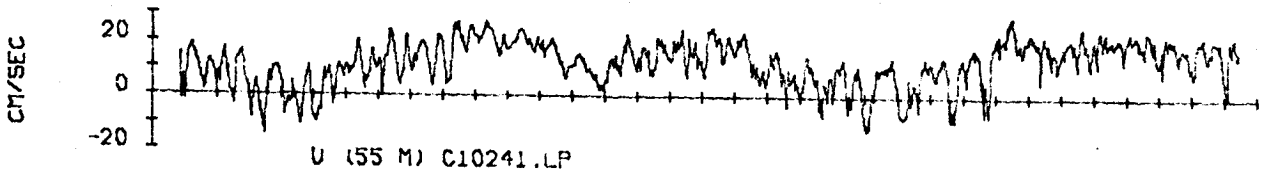
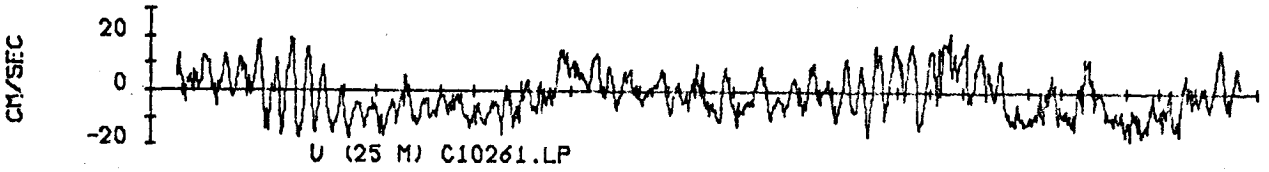
T Water (C)	15.5	0.6	-0.5	2.3	17.0	13.9	783
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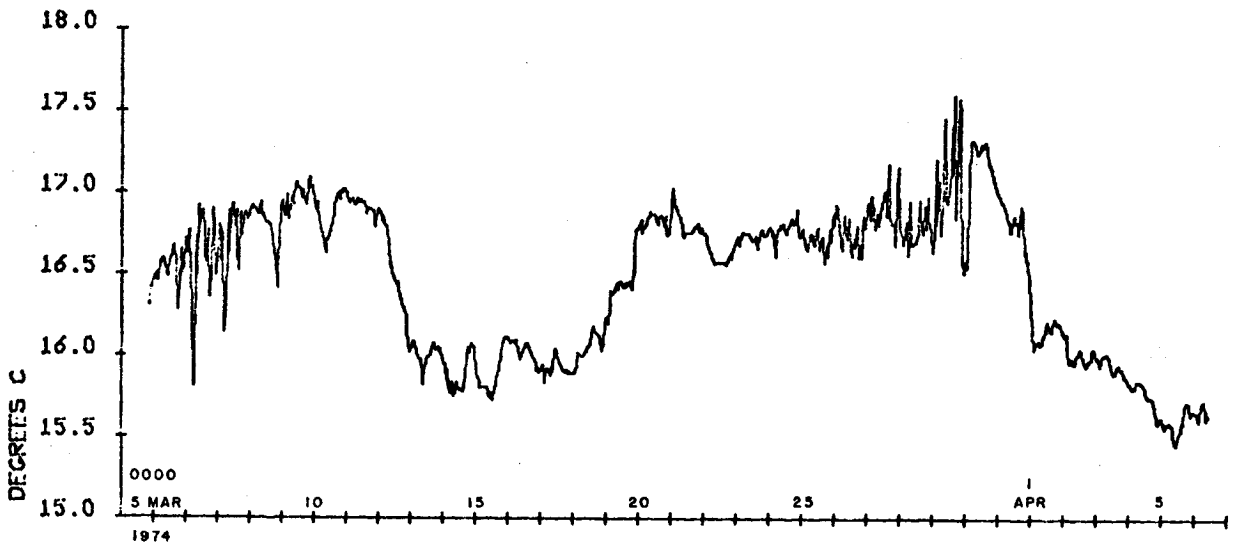
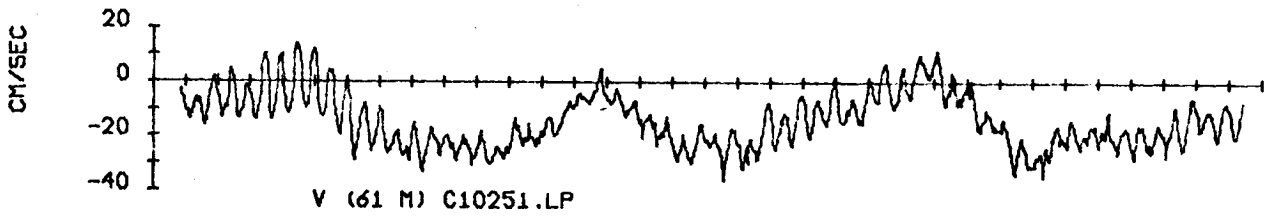
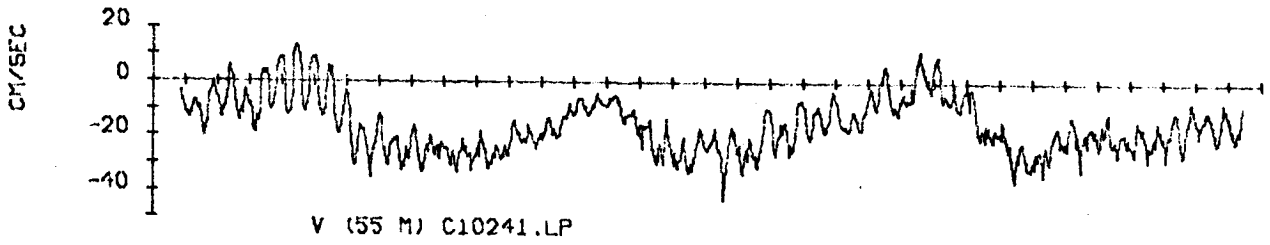
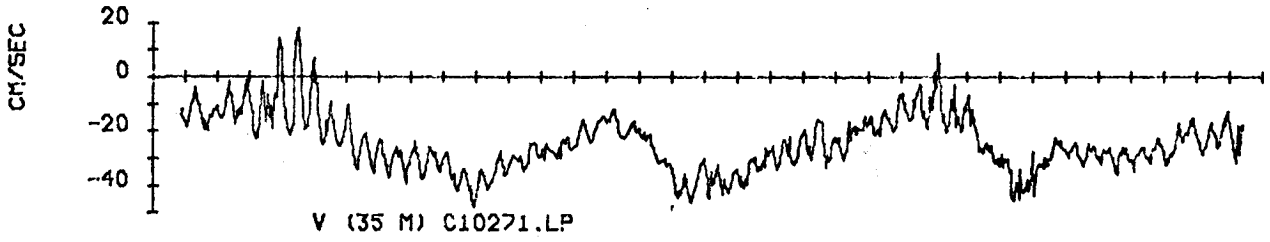
55 m

S (cm/sec)	22.1	9.1	-0.0	2.0	47.1	1.8	783
U (cm/sec)	12.2	8.4	-0.7	3.0	29.3	-14.3	783
V (cm/sec)	-16.0	9.8	0.5	2.9	13.0	-43.0	783
T Water (C)	15.1	0.6	-0.2	2.0	16.5	13.8	783
P (10 n/m)	6.1	0.0	0.1	3.4	6.2	6.0	783

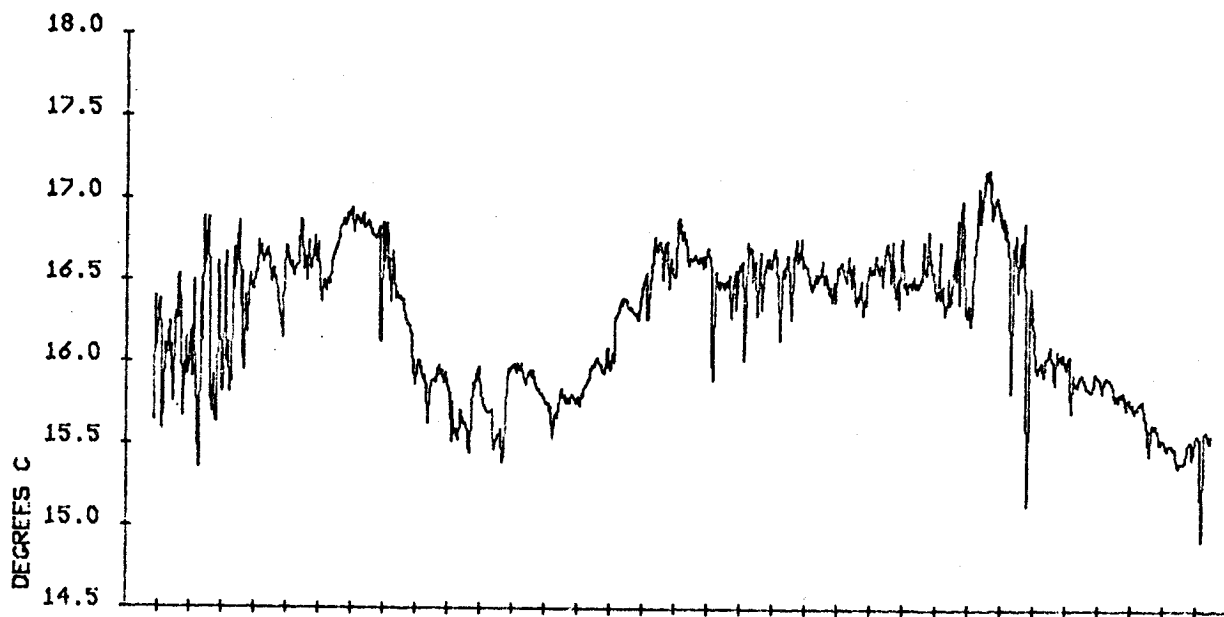
61 m

S (cm/sec)	19.0	8.4	0.1	1.9	40.3	2.5	783
U (cm/sec)	9.5	6.7	-0.7	3.3	22.7	-12.4	783
V (cm/sec)	-14.1	9.8	0.5	2.7	14.0	-35.8	783
T Water (C)	14.9	0.6	-0.3	1.9	16.2	13.8	783
P (10 n/m)	6.7	0.0	0.2	4.3	6.8	6.7	783

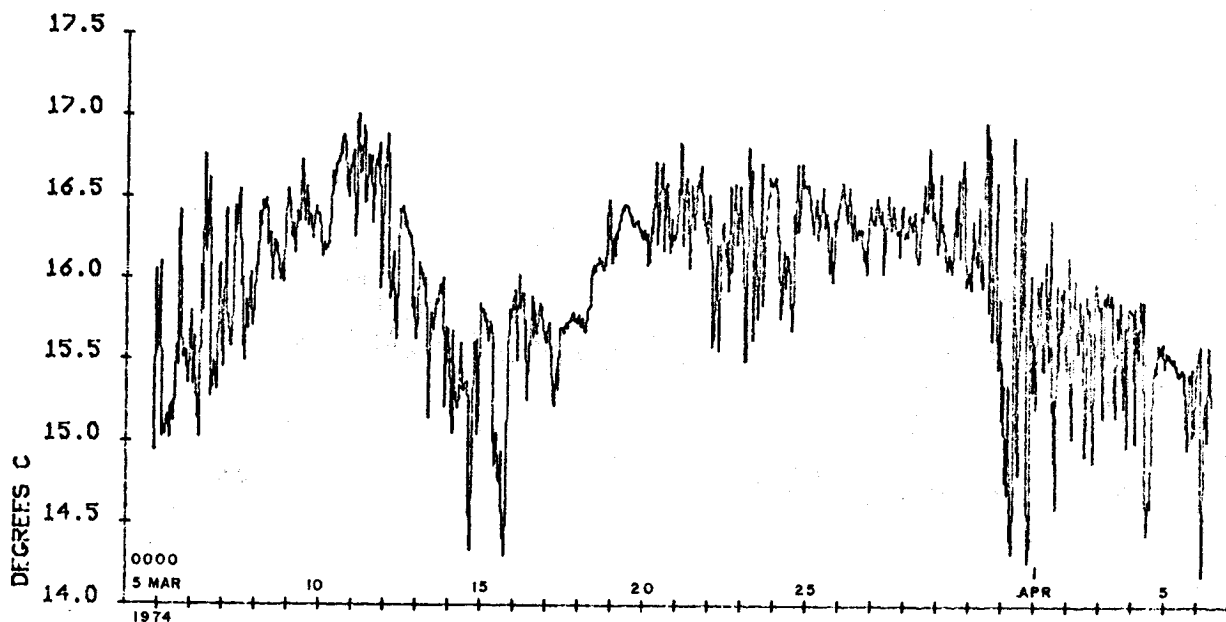




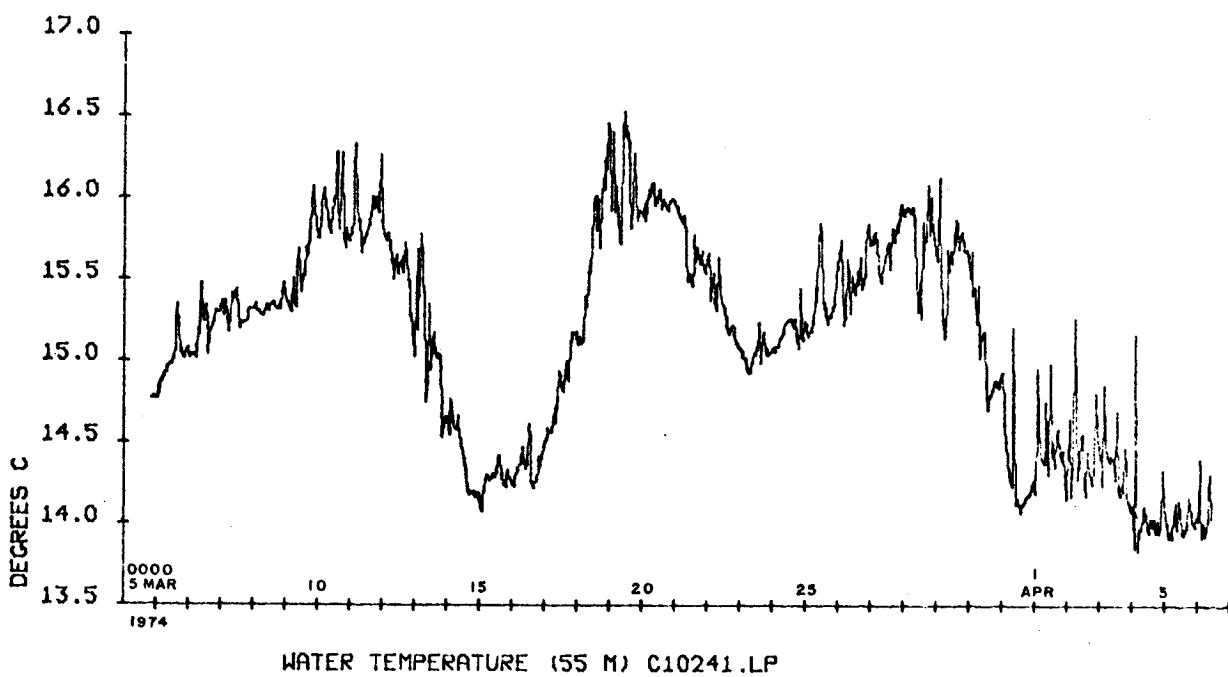
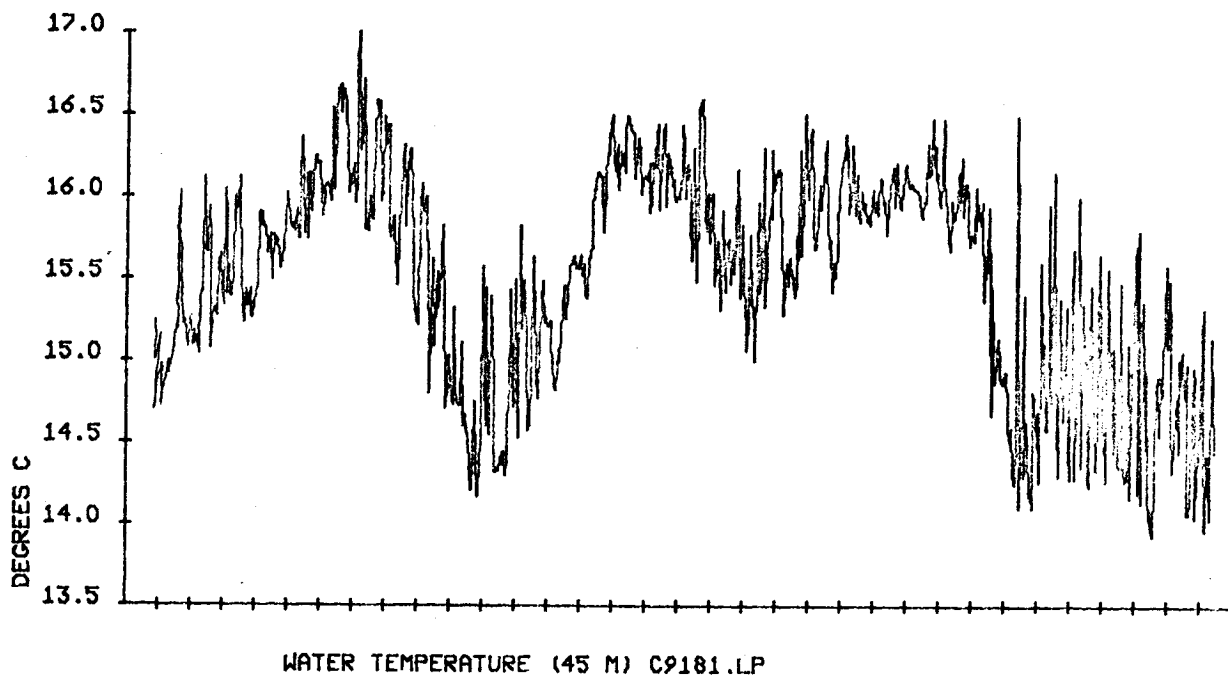
WATER TEMPERATURE (17 M) C9131.LP

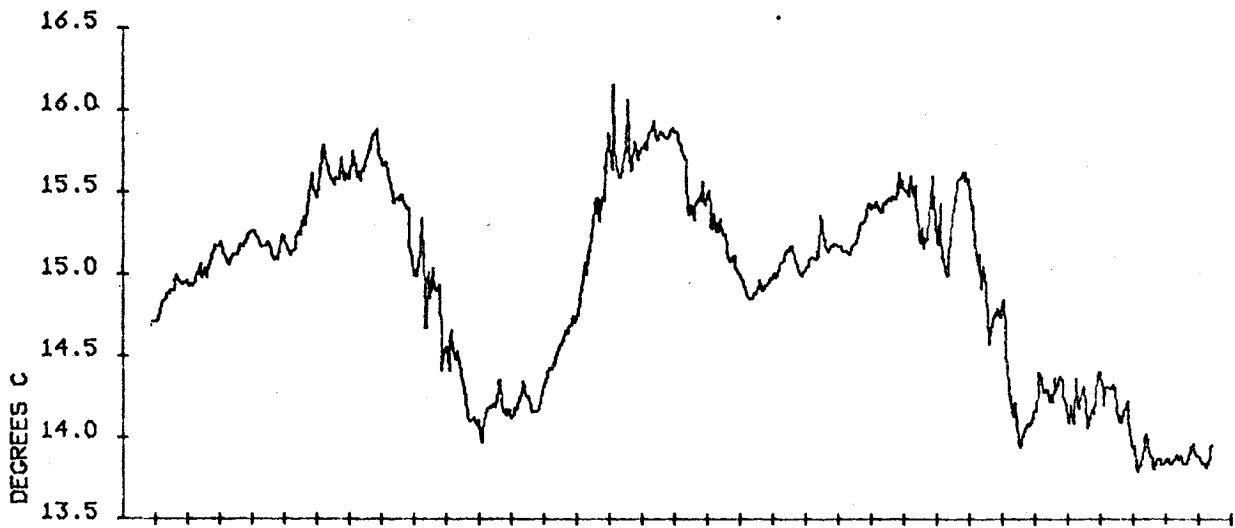


WATER TEMPERATURE (25 M) C10261.LP



WATER TEMPERATURE (35 M) C10271.LP

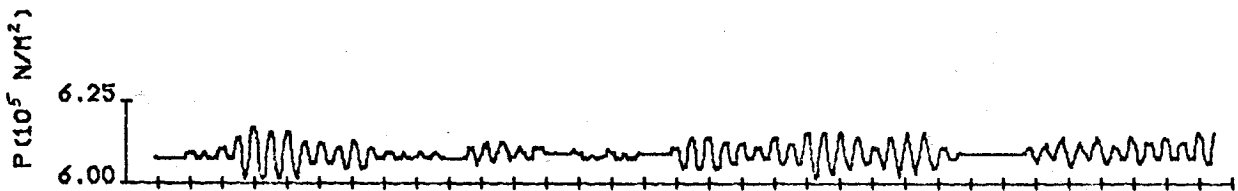




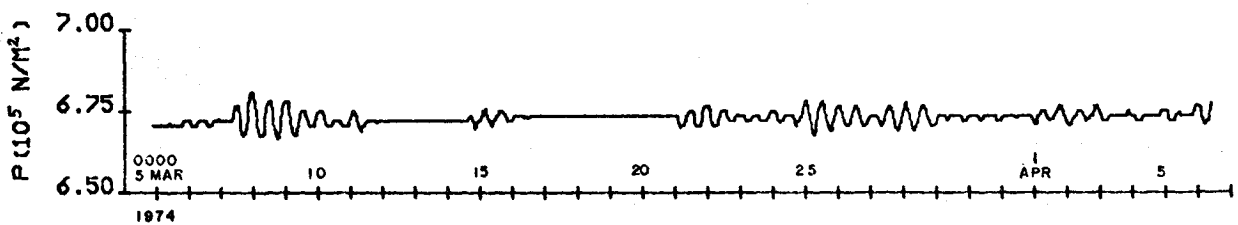
WATER TEMPERATURE (61 M) C10251.LP



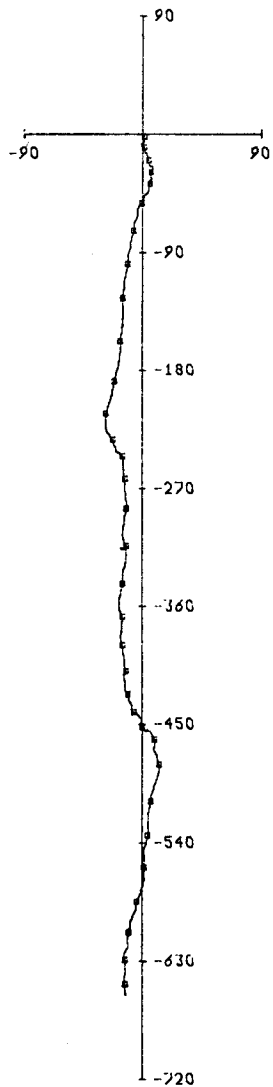
PRESSURE (17 M) C9131.LP



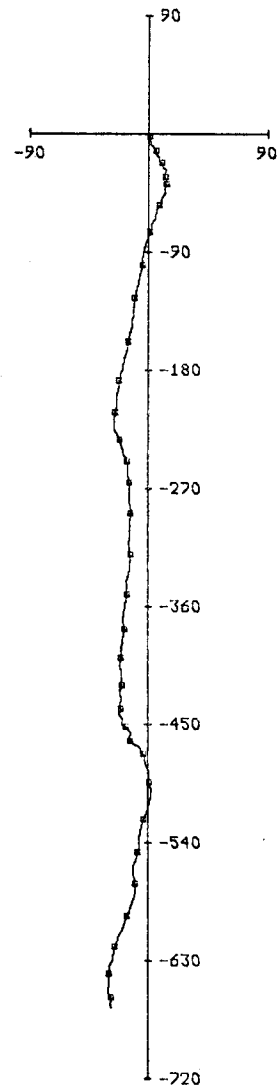
PRESSURE (55 M) C10241.LP



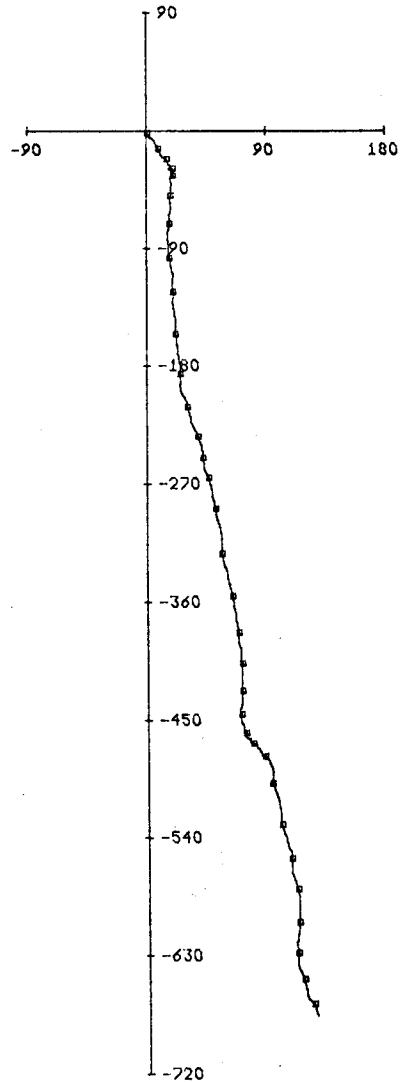
PRESSURE (61 M) C10251.LP



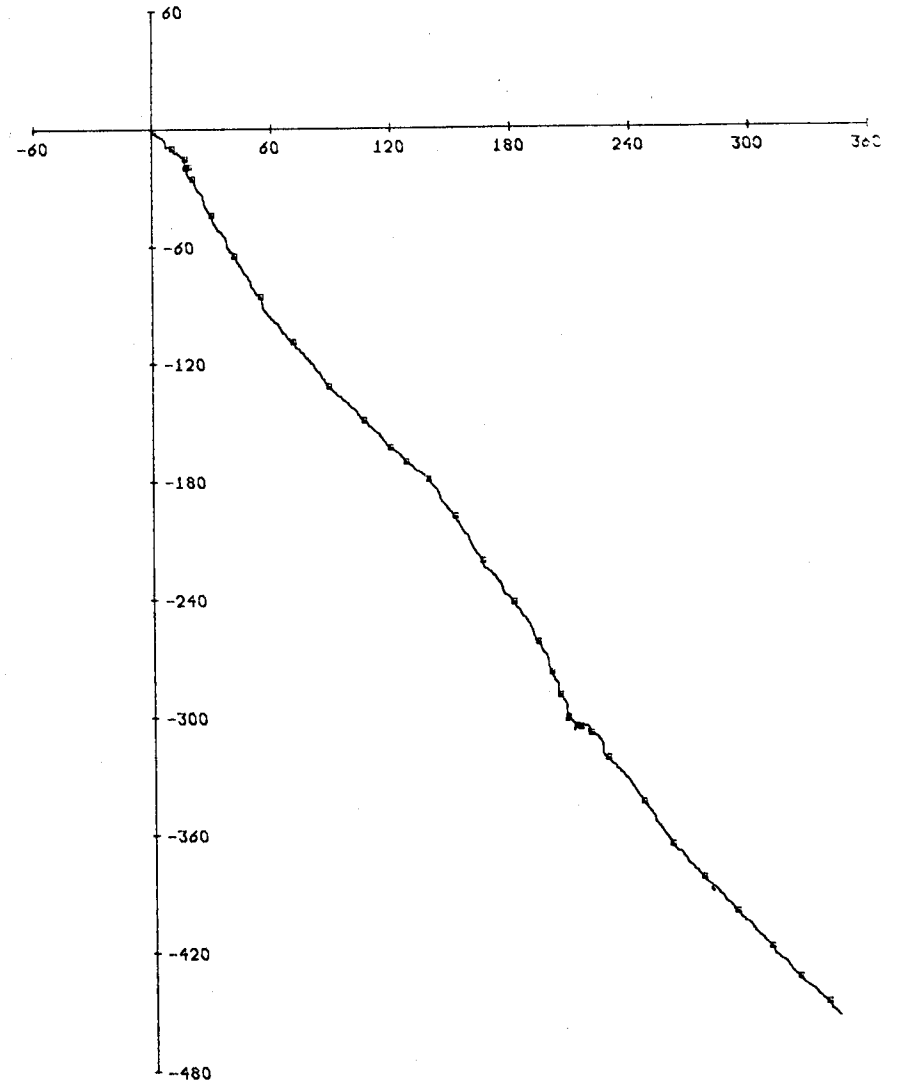
17 METERS AT WEED. 32.6 DAYS STARTING 2052 4 MAR 74 GMT



25 METERS AT WEED. 32.6 DAYS STARTING 2052 4 MAR. 74



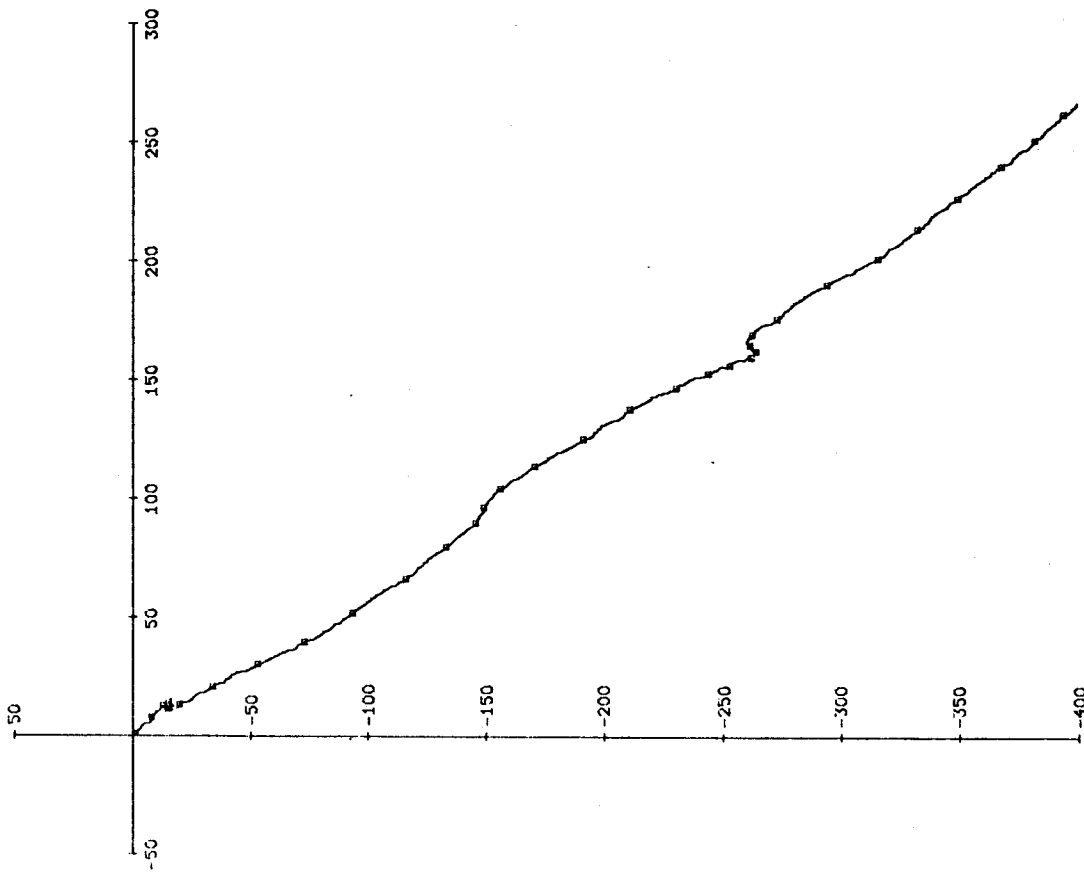
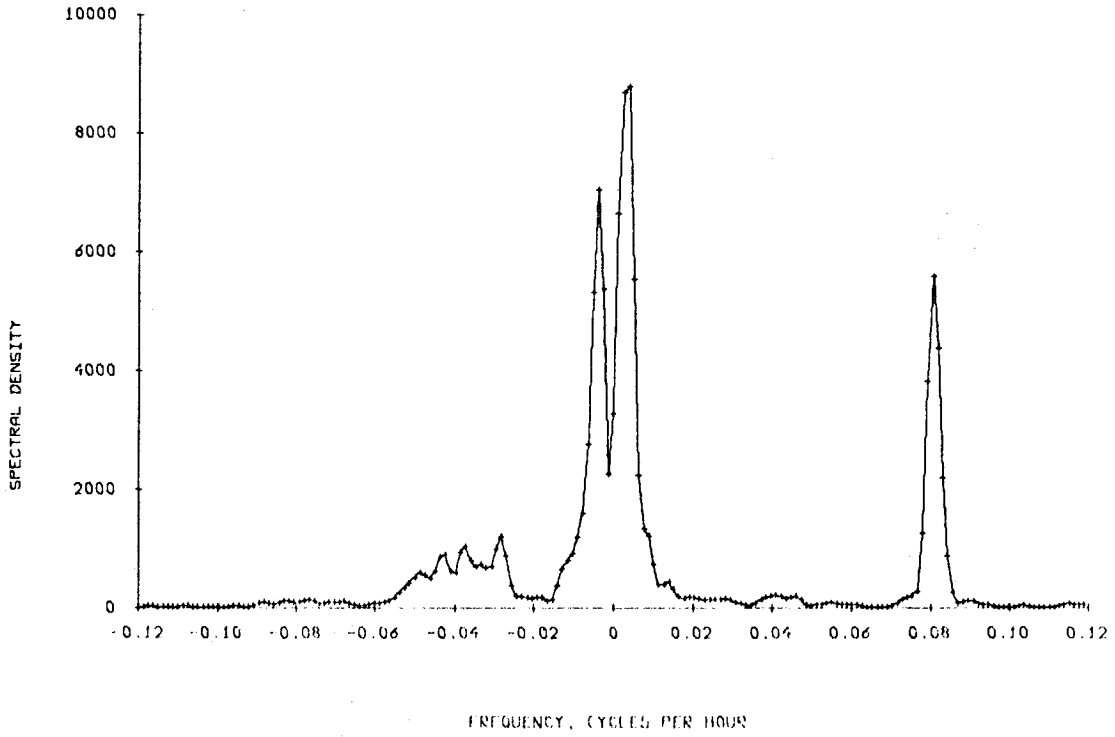
35 M AT WEED. 32.6 DAYS STARTING 2052 4 MARCH 74 GMT



55 METERS AT WEED. 32.6 DAYS STARTING 2053 4 MARCH 74 GMT

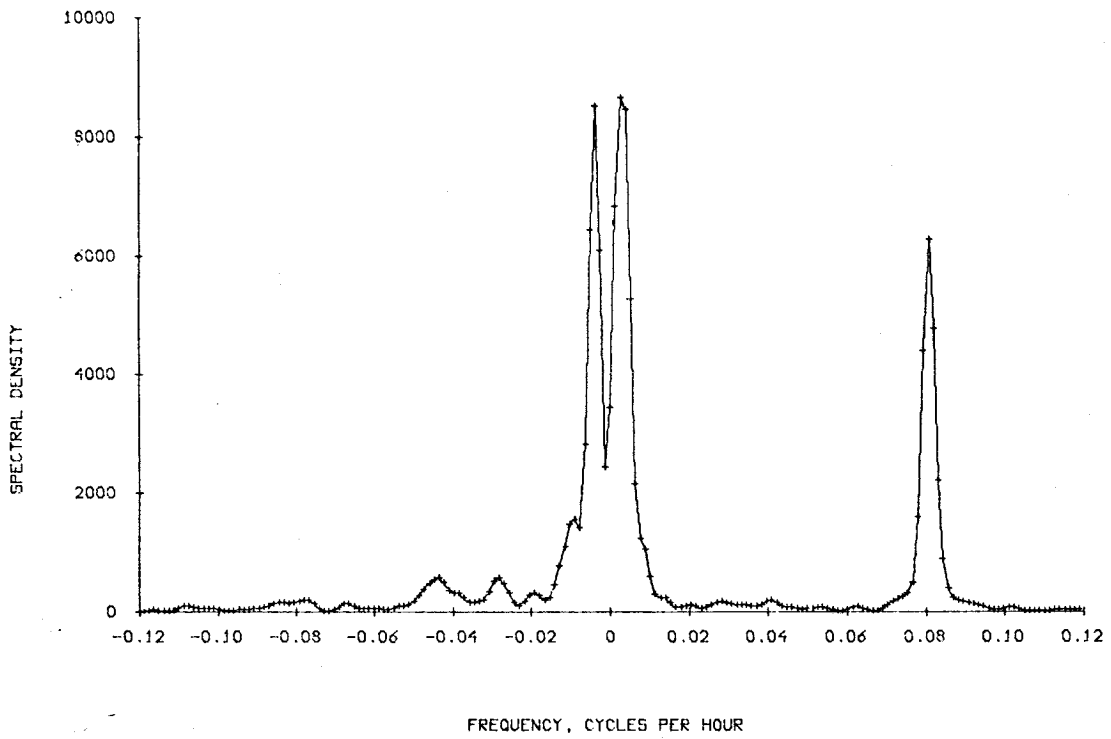
ROTARY SPECTRUM

17 M AT WEED. 4 MARCH 74 TO 6 APRIL 74. TAPE 913/1

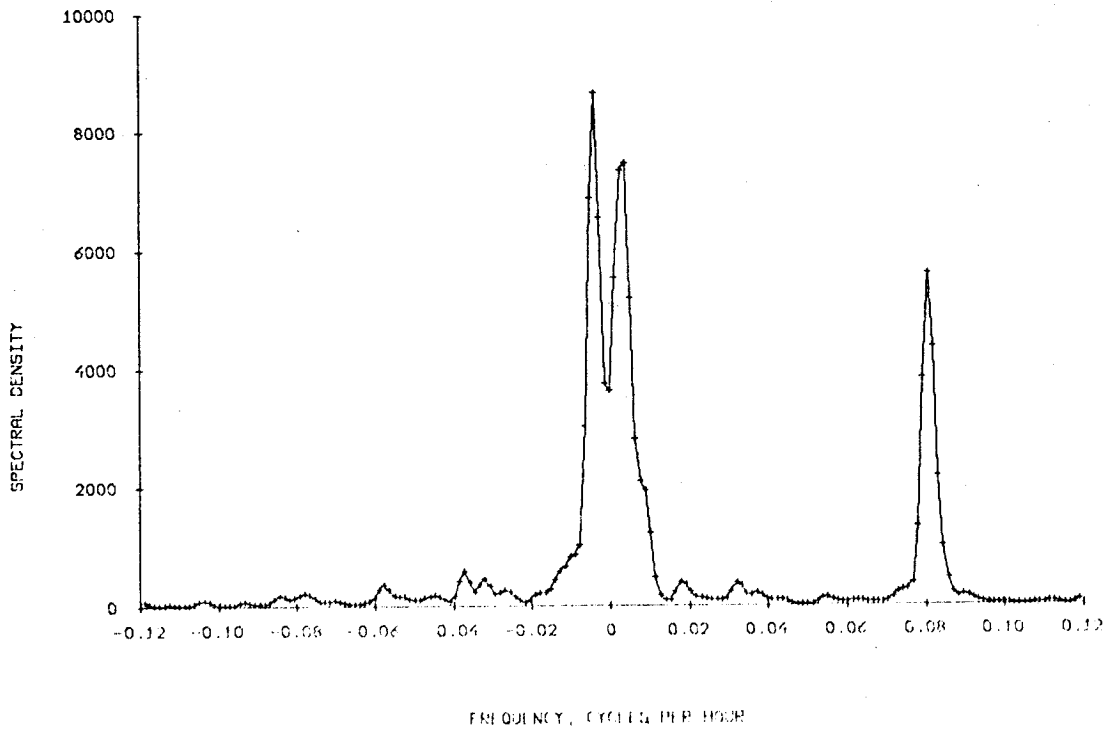


61 METERS AT WEED. 32.6 DAYS STARTING 2053 4 MAR 74 CNT

ROTARY SPECTRUM
25 METERS AT WELD. 4 MAR 74 TO 6 APR 74. TAPE 1026/1

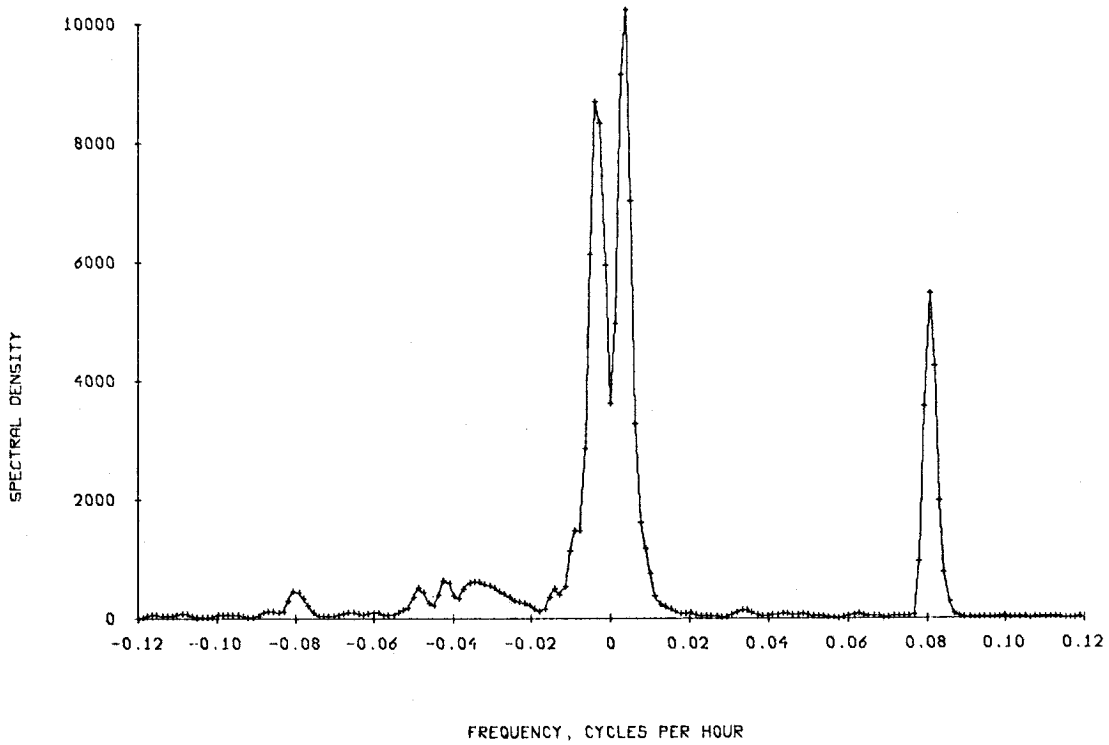


ROTARY SPECTRUM
35 METERS AT WELD. 4 MAR 74 TO 6 APR 74. TAPE 1027/1



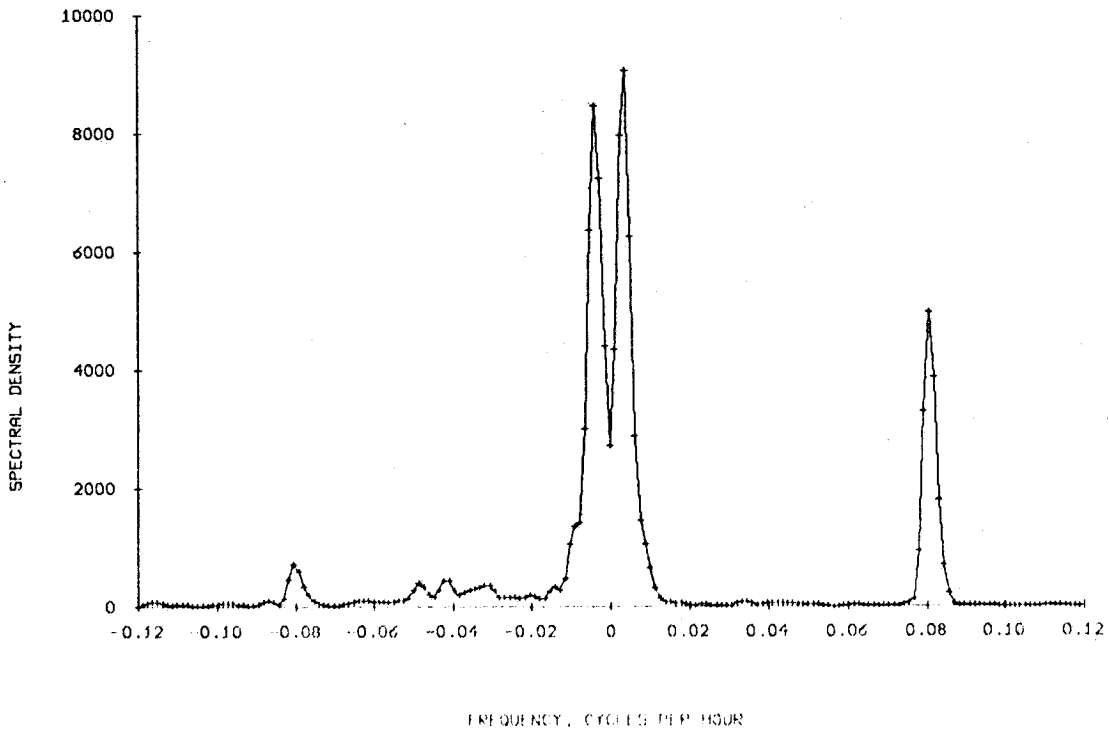
ROTARY SPECTRUM

55 METERS AT WEED. 4 MARCH 74 TO 6 APRIL 74. TAPE 1024/1



ROTARY SPECTRUM

61 METERS AT WEED. 4 MARCH 74 TO 6 APRIL 74. TAPE 1025/1





1974 JOINT I Installation

OREGON GRAPE

Position: 21°44.2'N, 17°24.8'W

Depth of Water: 104 m

Set at 1045 GMT 5 March 1974 by R/V GILLISS

Retrieved at 0904 GMT 25 March 1974 by R/V GILLISS

Data Interval: 1710 GMT 5 March to 0110 GMT 25 March

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
0 m	D75/15
20 m	747/9
40 m	749/7
60 m	750/8
80 m	751/8
97 m	752/9

Data were recorded at 10 minute intervals. All sub-surface meters measured temperature, current speed and direction, pressure and salinity. The surface buoy produced no useable data.

OREGON GRAPE

20 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	21.3	7.0	0.2	3.4	45.8	2.3	465
U (cm/sec)	2.9	12.7	-0.4	2.2	30.8	-27.5	465
V (cm/sec)	-11.2	14.4	0.6	3.0	31.9	-43.8	465
T Water (C)	16.8	0.5	-0.9	3.0	17.8	15.5	465
P (10^5 n/m ²)	2.1	0.0	0.2	2.2	2.2	2.0	465
Sal (PPT)	35.80	0.08	0.44	2.76	36.01	35.64	465

40 m

S (cm/sec)	19.5	5.9	0.1	3.5	37.1	1.1	465
U (cm/sec)	8.2	10.8	-0.7	2.6	26.6	-24.5	465
V (cm/sec)	-8.1	12.8	0.4	2.8	28.0	-36.8	465
T Water (C)	16.6	0.5	-0.7	2.6	17.5	15.6	465
P (10^5 n/m ²)	4.0	0.0	0.3	2.1	4.1	4.0	465
Sal (PPT)	35.81	0.08	0.31	2.53	36.03	35.63	465

60 m

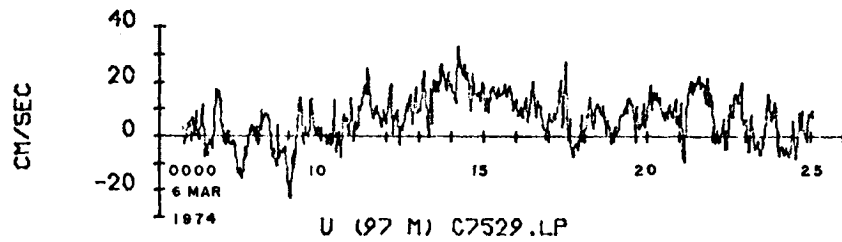
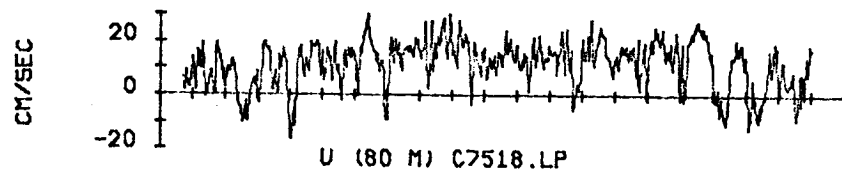
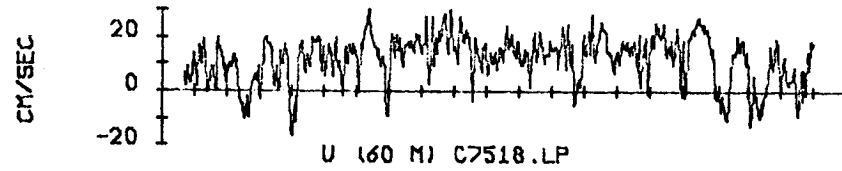
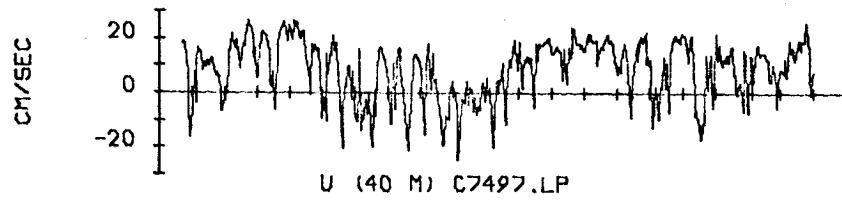
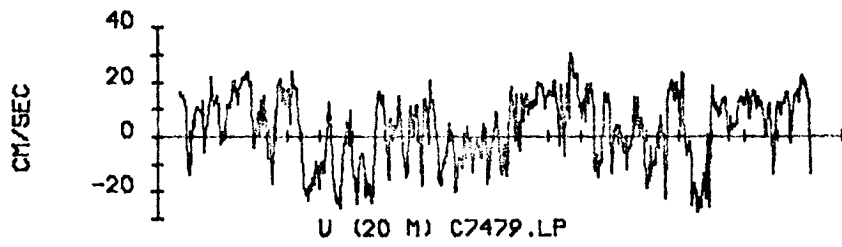
S (cm/sec)	20.4	5.2	0.1	3.6	35.8	2.5	465
U (cm/sec)	13.6	7.3	-0.8	3.5	26.7	-14.9	465
V (cm/sec)	-6.8	12.6	0.4	2.9	30.1	-35.4	465
T Water (C)	16.3	0.5	-0.5	2.5	17.5	14.9	465
P (10^5 n/m ²)	6.1	0.0	0.2	2.2	6.3	6.0	465
Sal (PPT)	35.92	0.09	-0.29	3.17	36.15	35.61	465

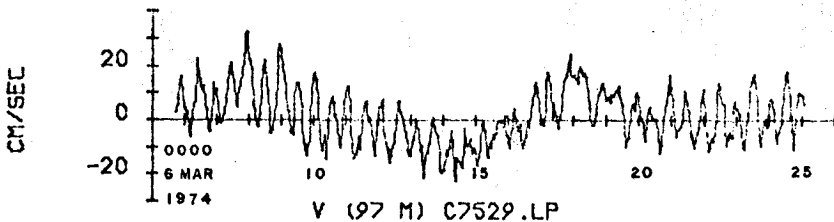
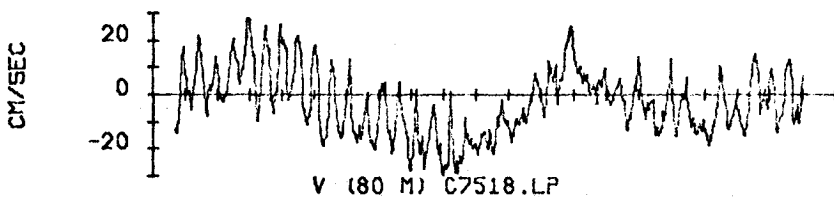
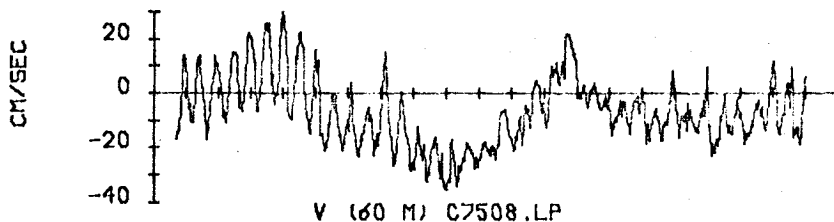
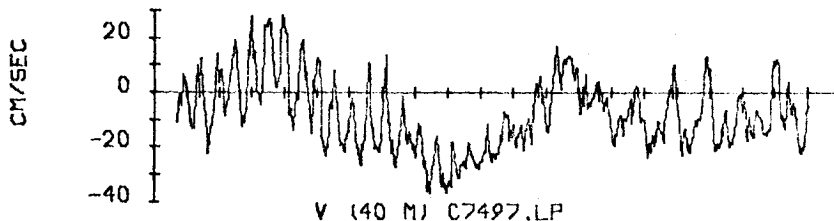
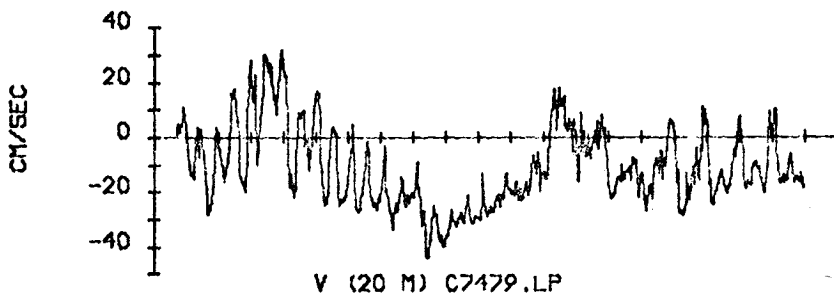
80 m

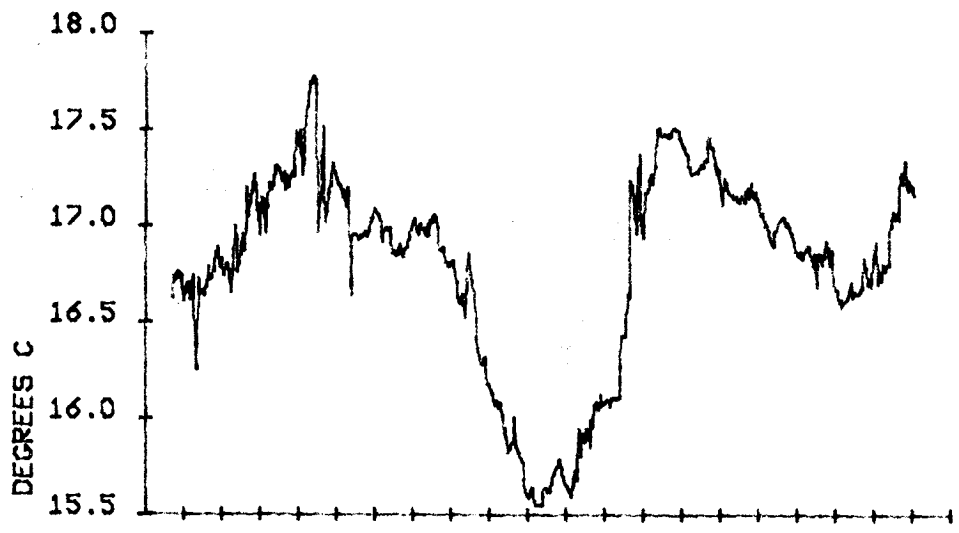
S (cm/sec)	18.3	5.9	0.3	3.2	37.6	0.9	465
U (cm/sec)	11.9	8.7	-0.7	3.2	30.1	-16.2	465
V (cm/sec)	-2.6	12.0	0.2	2.4	28.1	-29.6	465
T Water (C)	15.9	0.5	-0.4	2.6	17.0	14.4	465
P (10^5 n/m ²)	8.2	0.0	-0.1	3.7	8.3	8.1	465
Sal (PPT)	35.57	0.12	-0.25	2.89	35.84	35.27	465

97 m

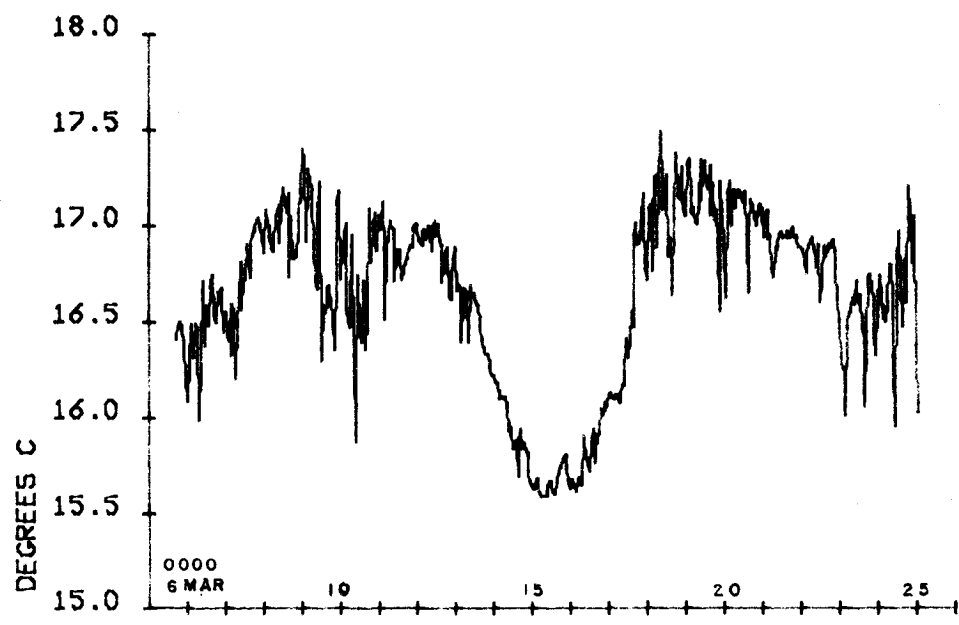
S (cm/sec)	13.8	6.2	0.6	3.1	34.5	1.3	466
U (cm/sec)	7.0	8.9	-0.1	2.8	32.9	-22.9	466
V (cm/sec)	1.9	9.9	0.2	2.6	32.5	-22.0	466
T Water (C)	15.2	0.5	-0.5	3.4	16.6	13.0	466
P (10^5 n/m ²)	10.0	0.0	0.1	2.2	10.1	9.9	466
Sal (PPT)	35.62	0.11	-0.25	2.70	35.96	35.26	466



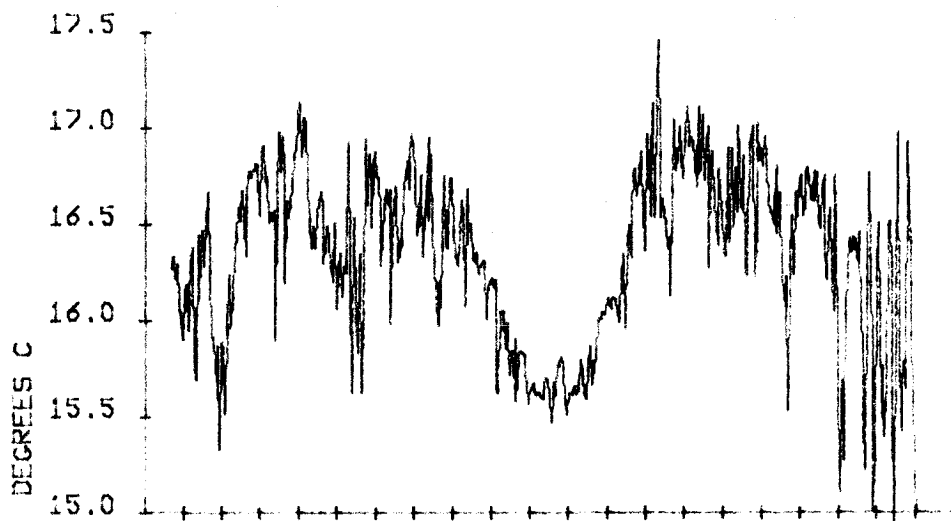




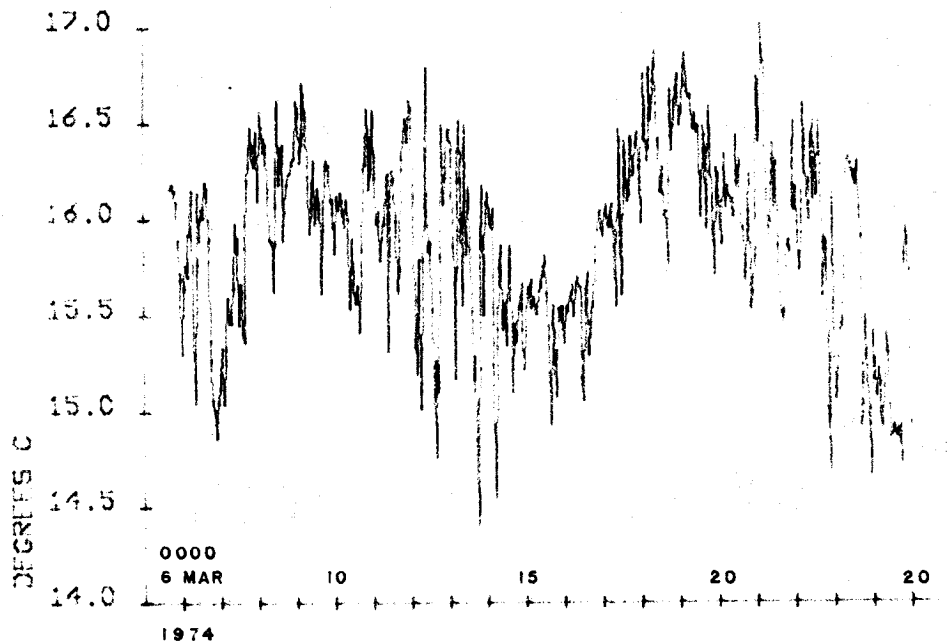
WATER TEMPERATURE (20 M) C7479.LP



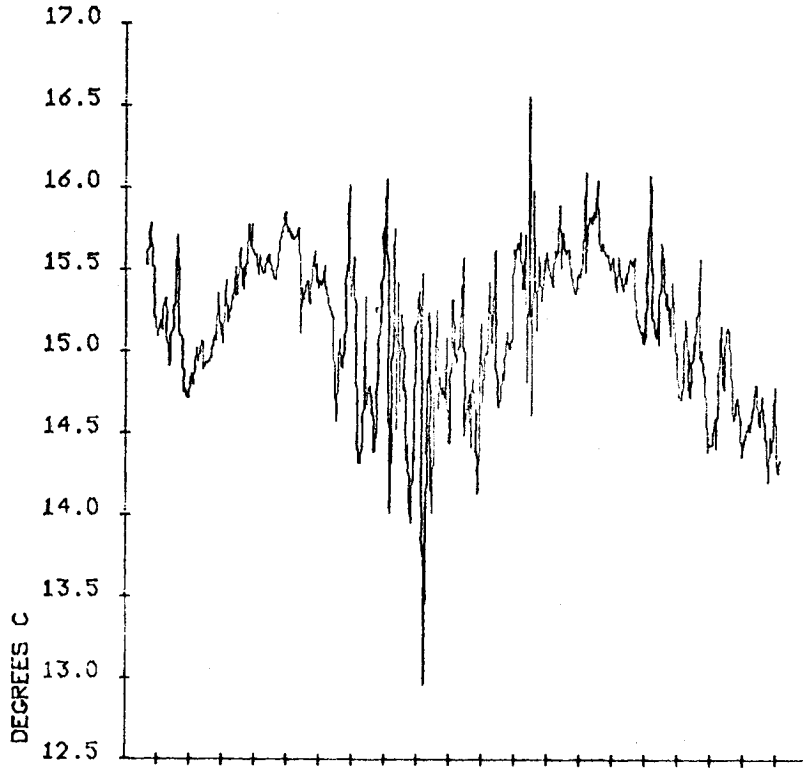
WATER TEMPERATURE (40 M) C7497.LP



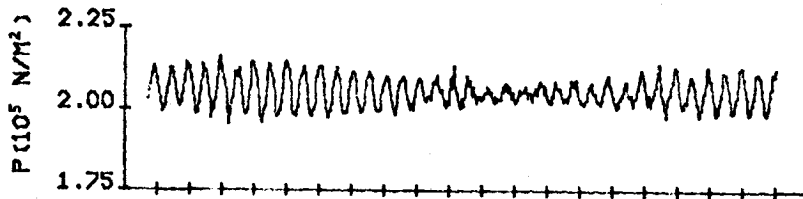
WATER TEMPERATURE (60 M) C7508.LP



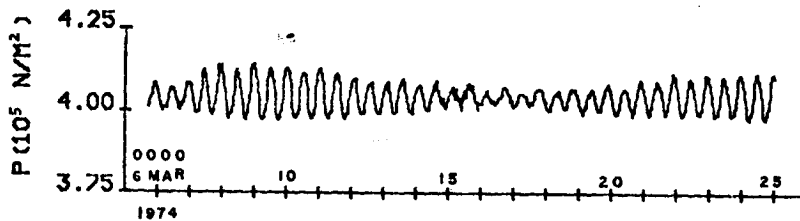
WATER TEMPERATURE (80 M) C7518.LP



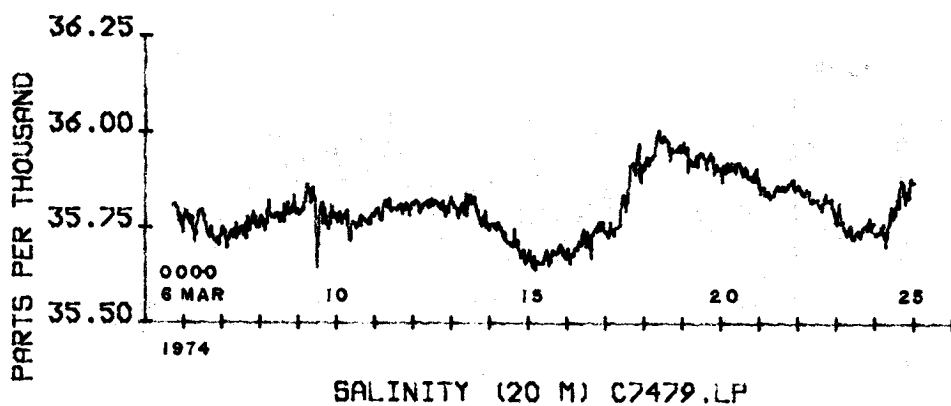
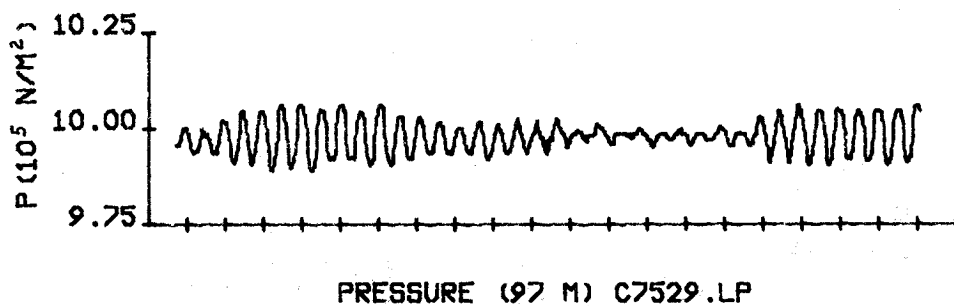
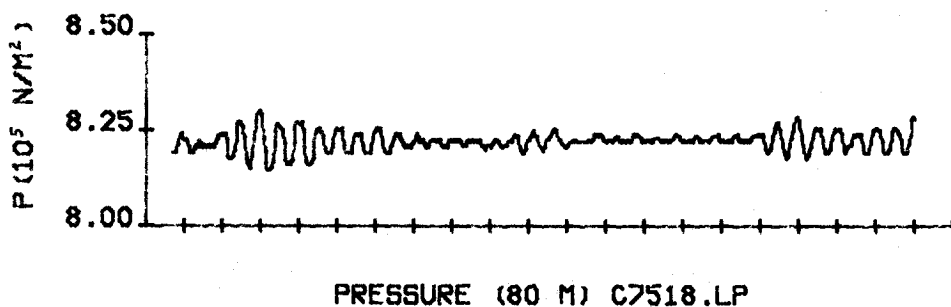
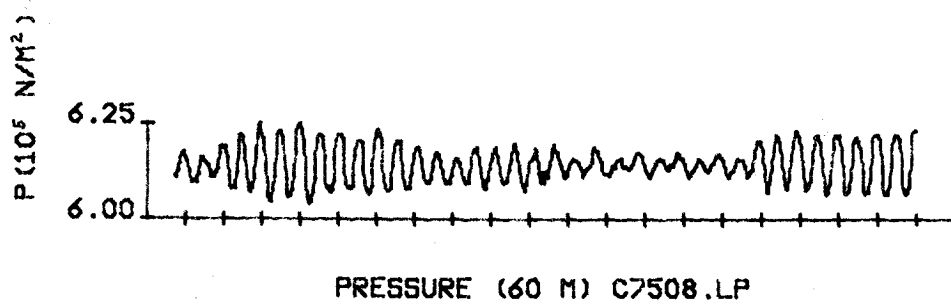
WATER TEMPERATURE (97 M) C7529.LP

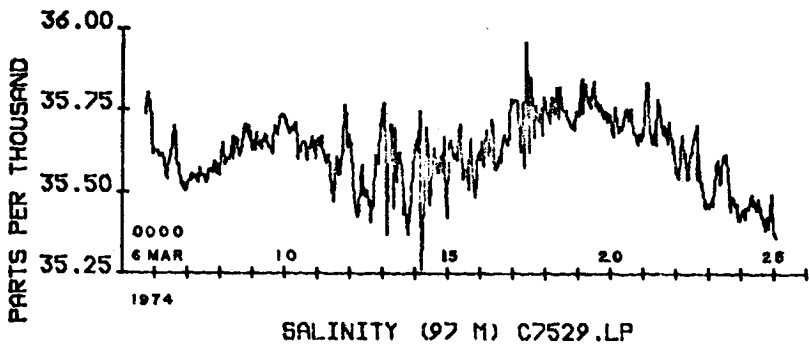
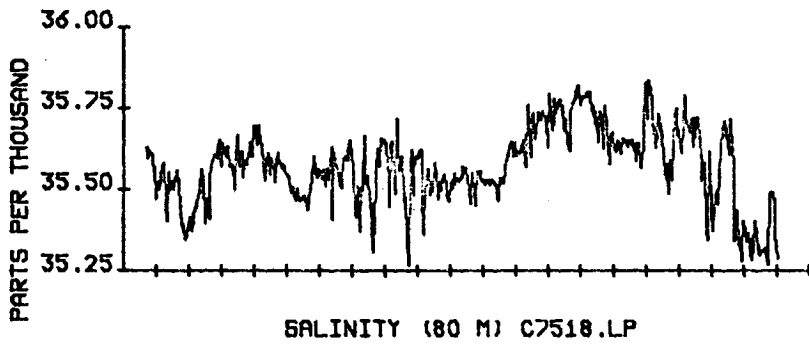
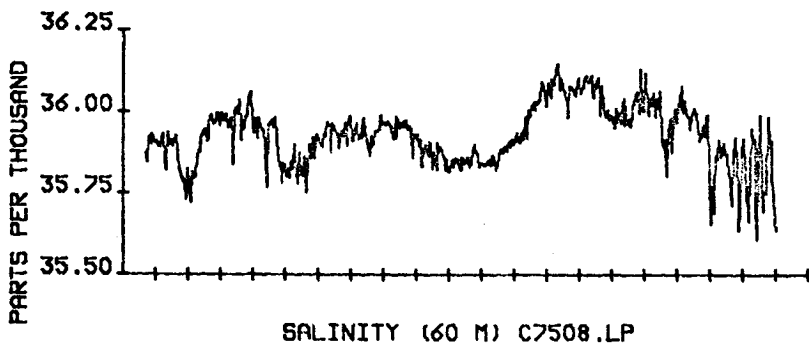
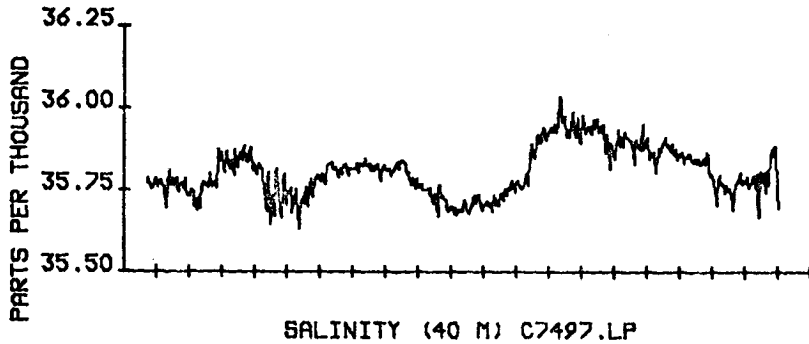


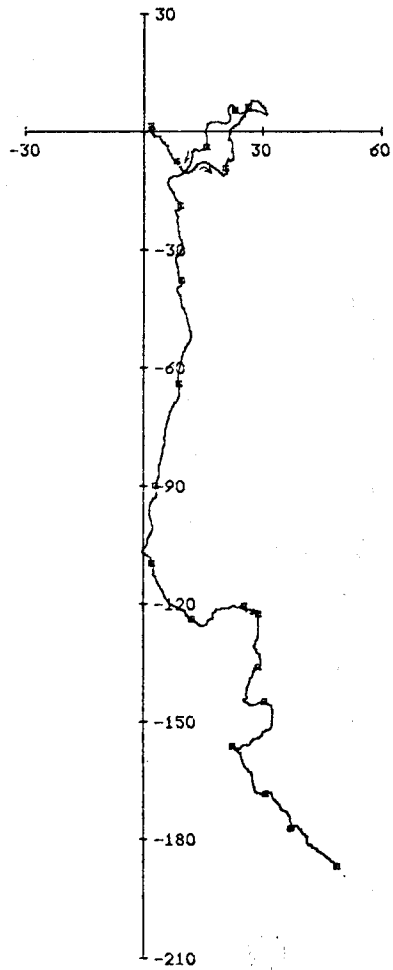
PRESSURE (20 M) C7479.LP



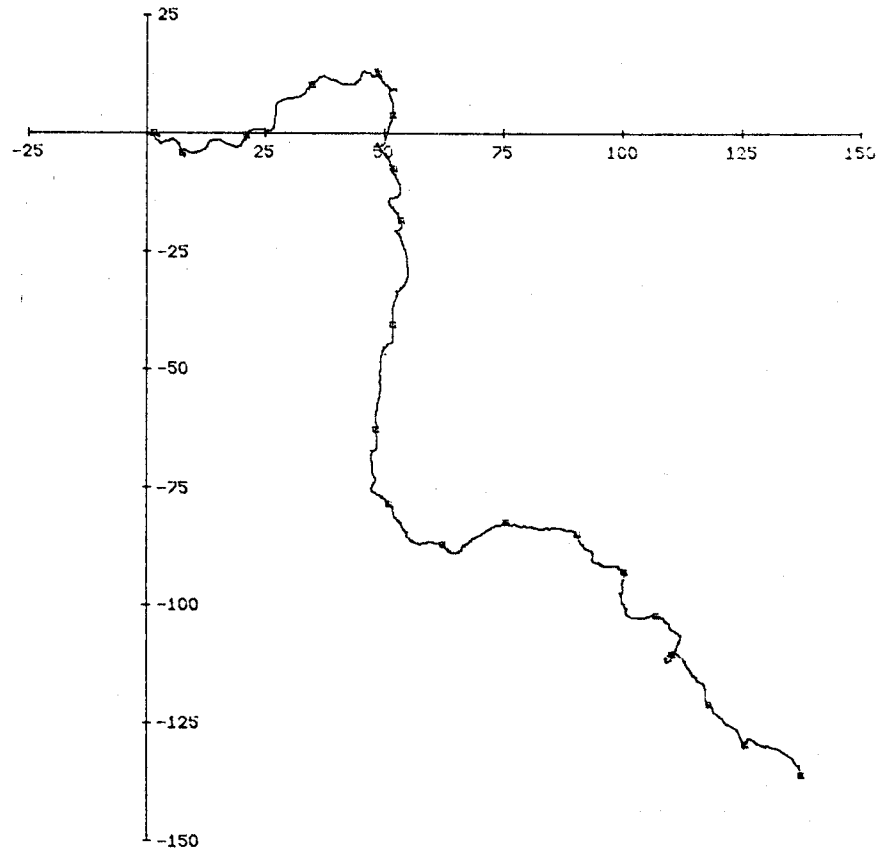
PRESSURE (40 M) C7497.LP



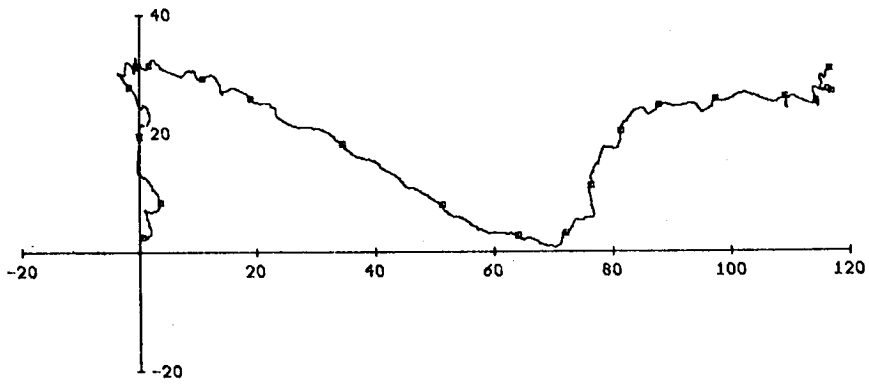




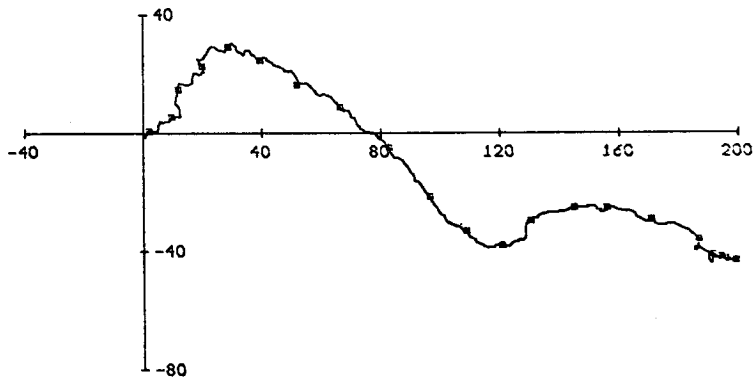
20 M AT OREGON GRAPE. 19.4 DAYS STARTING 1708 5 MAR 74



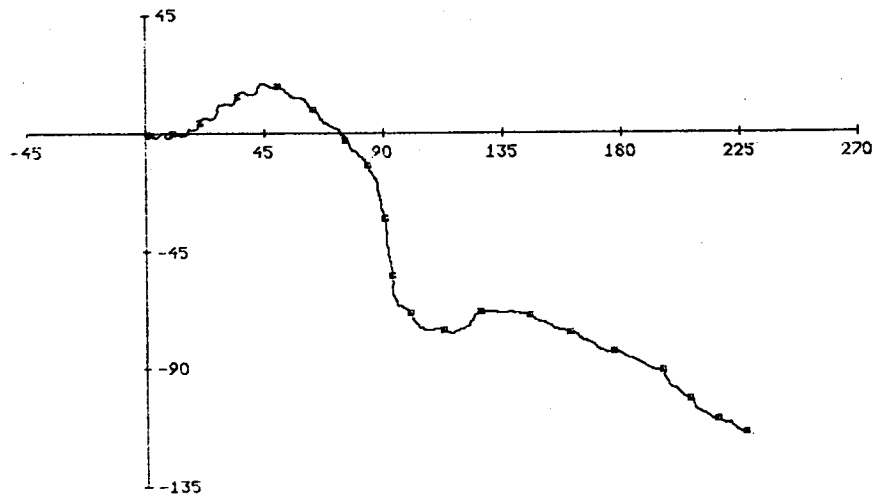
40 M AT OREGON GRAPE. 19.3 DAYS STARTING 1710 5 MAR 74



97 M AT OREGON GRAPE. 19.4 DAYS STARTING 1703 5 MARCH 74 GM



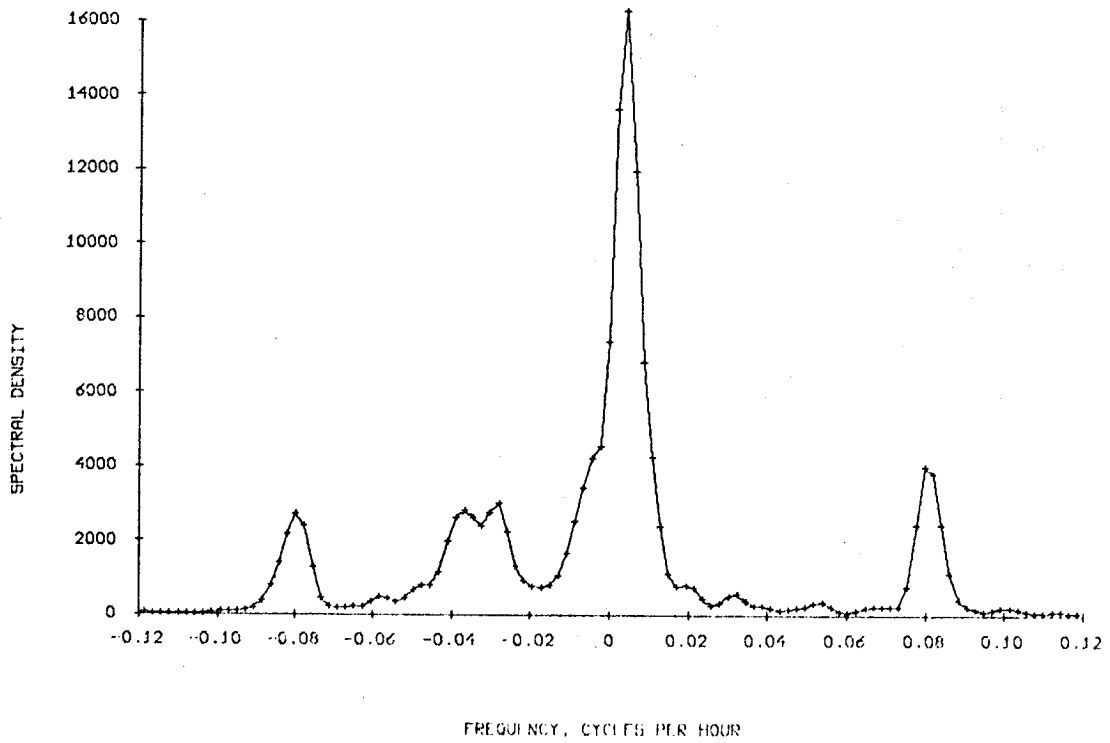
80 M AT OREGON GRAPE. 19.4 DAYS STARTING 1712 5 MAR 74



60 METERS AT OREGON GRAPE. 19.3 DAYS STARTING 1711 5 MAR 74

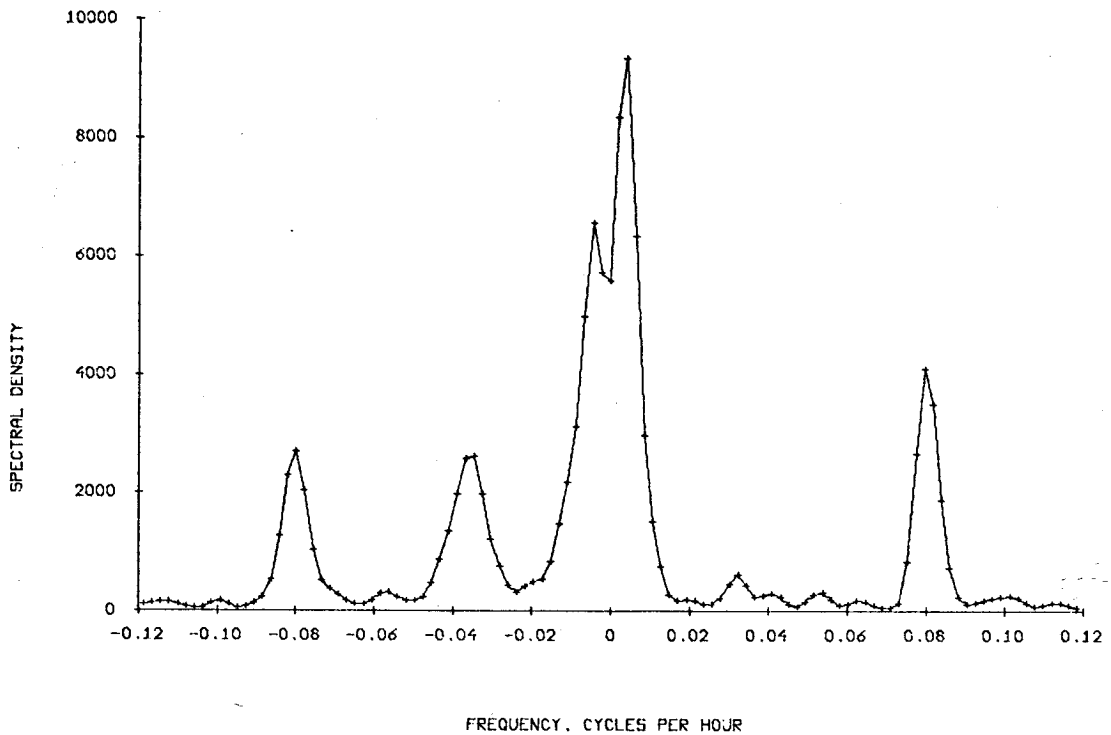
ROTARY SPECTRUM

20 M AT OREGON GRAPE. 5 MAR 74 TO 25 MAR 74. TAPE 747/9



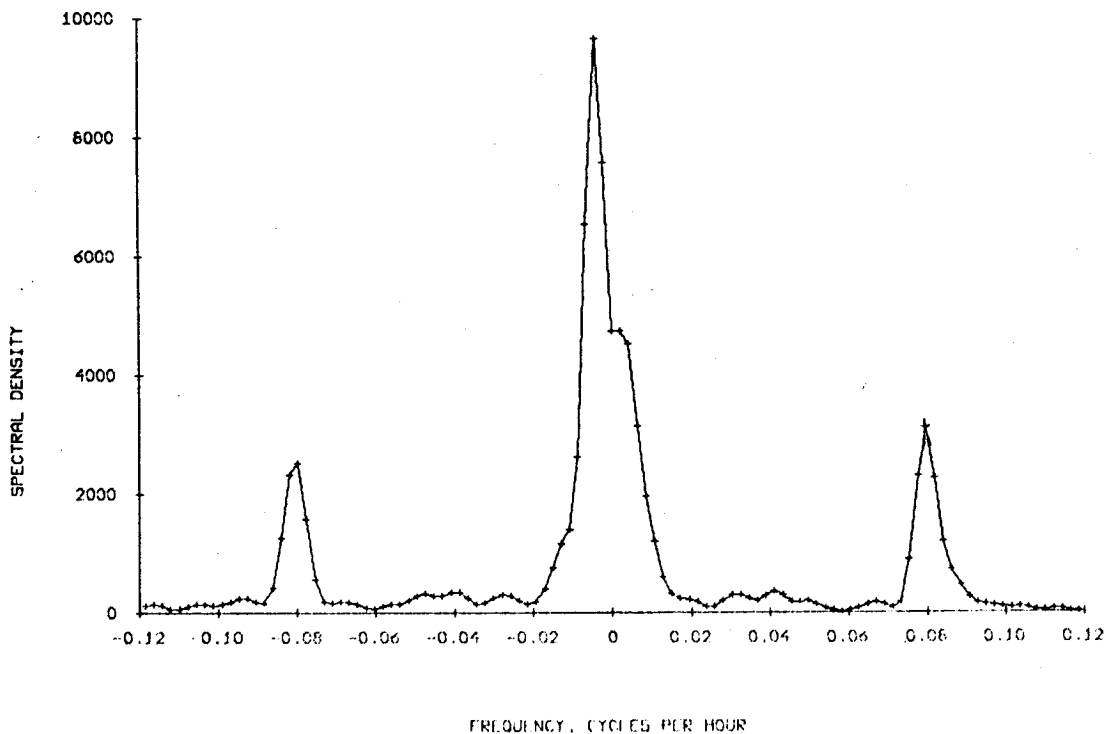
ROTARY SPECTRUM

40 M AT OREGON GRAPE. 5 MAR 74 TO 25 MAR 74. TAPE 749/7



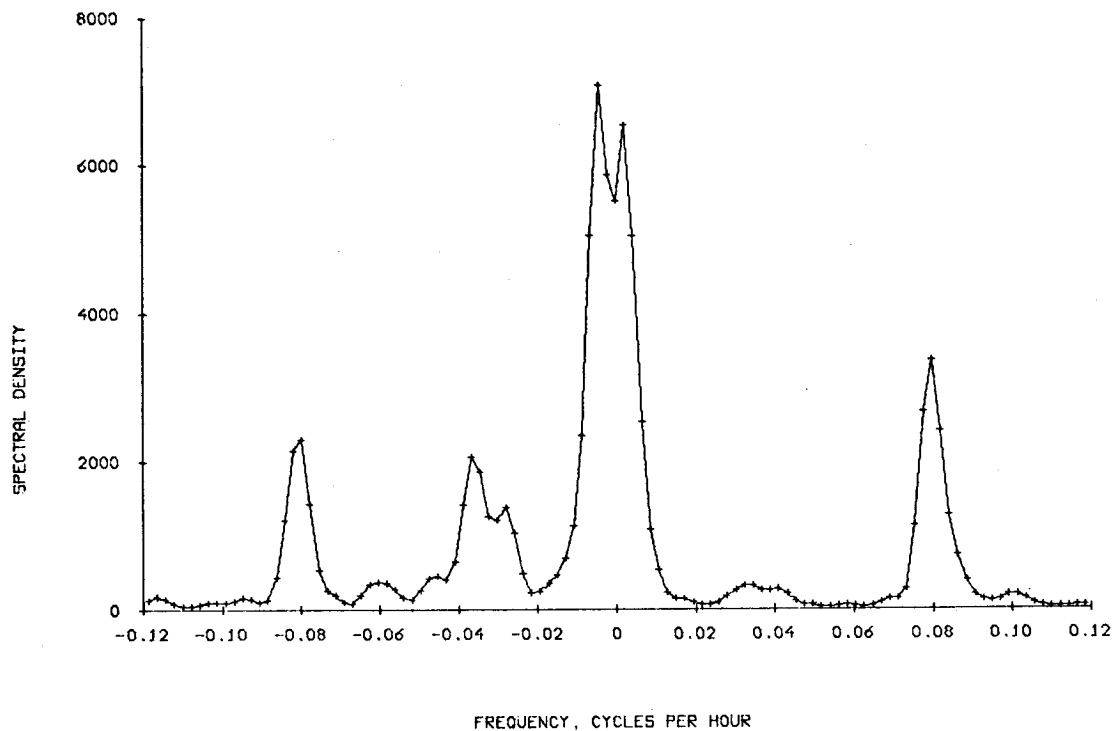
ROTARY SPECTRUM

60 M AT OREGON GRAPE. 5 MAR 74 TO 25 MAR 74. TAPE 750/8



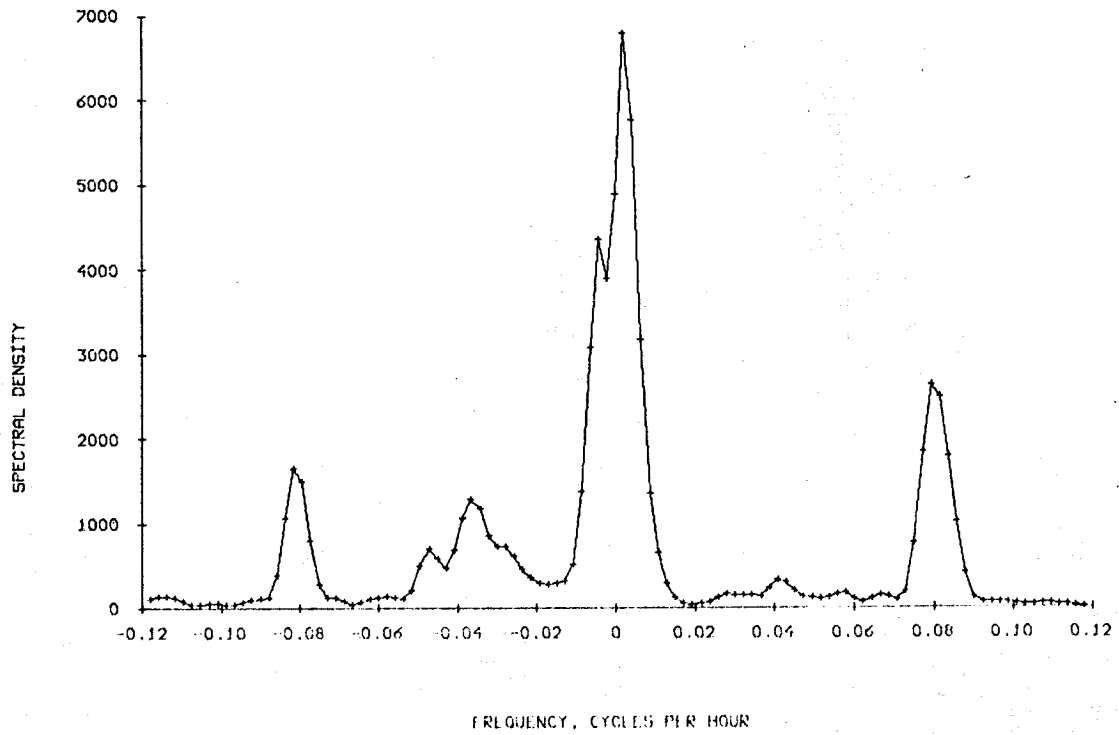
ROTARY SPECTRUM

80 M AT OREGON GRAPE. 5 MAR 74 TO 25 MAR 74. TAPE 751/8



ROTARY SPECTRUM

97 M AT OREGON GRAPE. 5 MAR 74 TO 25 MAR 74. TAPE 752/9





1974 JOINT I Installation

LUPINE

Position: 21°40.9'N, 17°29.7'W
Depth of Water: 400 m
Set at 1224 GMT 6 March 1974 by R/V GILLISS
Retrieved at 1513 GMT 6 April 1974 by R/V GILLISS
Data Interval: 1857 GMT 6 March to 0757 GMT 6 April

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
20 m	597/12
60 m	753/8
100 m	452/23
200 m	494/17
300 m	495/23
	486/16

Data were recorded every 10 minutes. All instruments recorded temperature, current speed and direction. The 400 m instrument malfunctioned and data had to be corrected by interpolation. The 60 m and 300 m instruments measured pressure. Salinity data was produced only by the 60 m instrument.

LUPINE

20 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	24.1	7.8	-0.2	2.9	45.7	2.6	734
U (cm/sec)	-1.0	16.5	-0.0	2.1	37.9	-41.6	734
V (cm/sec)	-7.3	17.8	0.4	2.0	36.3	-39.2	734
T Water (C)	17.0	0.5	-0.4	2.7	18.0	15.8	734

60 m

S (cm/sec)	19.8	6.3	0.1	3.4	39.9	2.3	734
U (cm/sec)	8.2	10.1	-0.5	2.7	31.7	-22.7	734
V (cm/sec)	-5.4	15.3	0.3	2.3	39.3	-35.6	734
T Water (C)	16.6	0.4	-0.6	3.3	17.9	15.0	734
P (10^5 n/m ²)	5.8	0.0	1.2	6.3	6.1	5.7	734
Sa1 (PPT)	35.99	0.11	-0.76	3.62	36.24	35.61	734

100 m

S (cm/sec)	16.9	6.5	0.6	3.7	40.5	1.6	734
U (cm/sec)	7.6	8.5	-0.2	2.9	31.1	-18.0	734
V (cm/sec)	-1.2	14.0	0.1	2.4	38.4	-37.0	734
T Water (C)	15.8	0.6	-0.4	2.5	17.3	14.1	734

200 m

S (cm/sec)	14.2	6.7	0.6	2.9	35.9	0.4	734
U (cm/sec)	3.5	6.8	0.3	3.0	25.3	-14.0	734
V (cm/sec)	10.3	9.1	-0.1	3.0	35.8	-15.2	734
T Water (C)	14.0	0.5	0.1	2.4	15.5	12.7	734

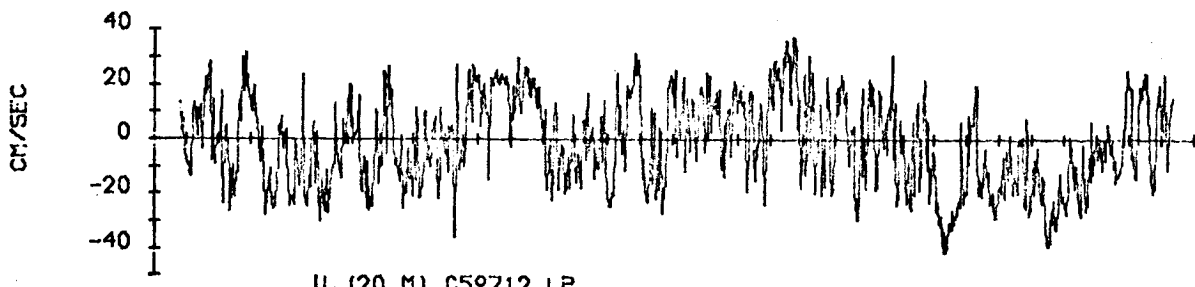
LUPINE

300 m

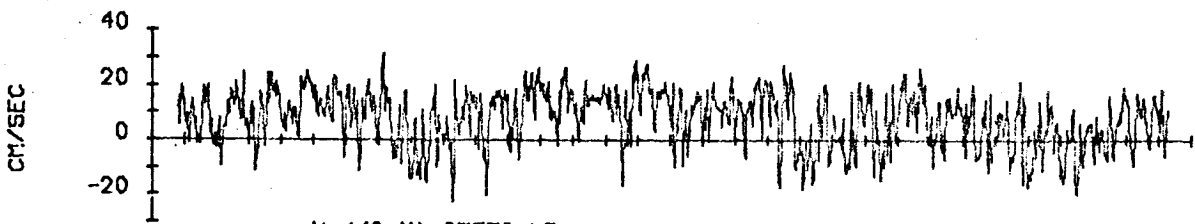
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	13.8	6.8	0.5	2.9	39.6	1.3	735
U (cm/sec)	2.3	5.0	0.4	4.2	24.2	-13.7	735
V (cm/sec)	11.7	8.4	0.0	3.0	39.3	-14.2	735
T Water (C)	12.6	0.5	0.8	3.6	14.6	11.5	735
P (10 n/m)	29.3	0.0	1.1	6.5	29.5	29.2	735

400 m

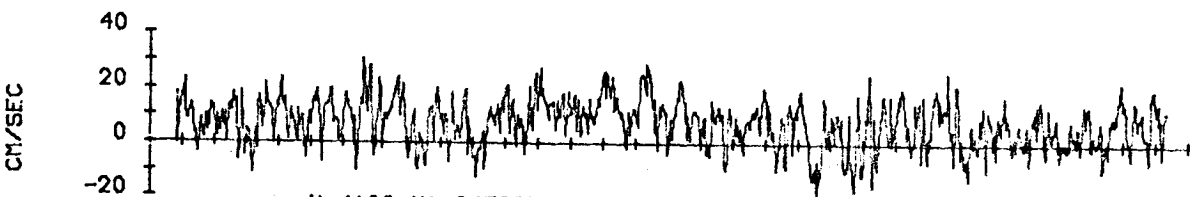
S (cm/sec)	14.5	7.6	0.7	3.4	48.5	0.2	734
U (cm/sec)	-3.6	10.5	-0.3	3.2	22.5	-46.3	734
V (cm/sec)	2.2	11.8	-0.4	3.0	31.5	-36.2	734
T Water (C)	11.3	0.6	-0.2	3.6	13.1	9.4	734



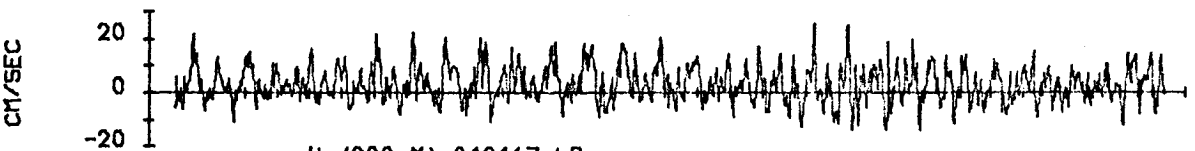
U (20 M) C59712.LP



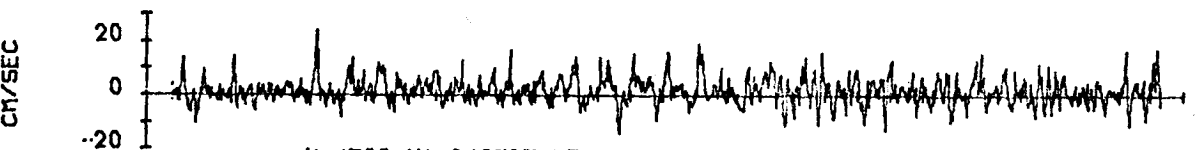
U (60 M) C7538.LP



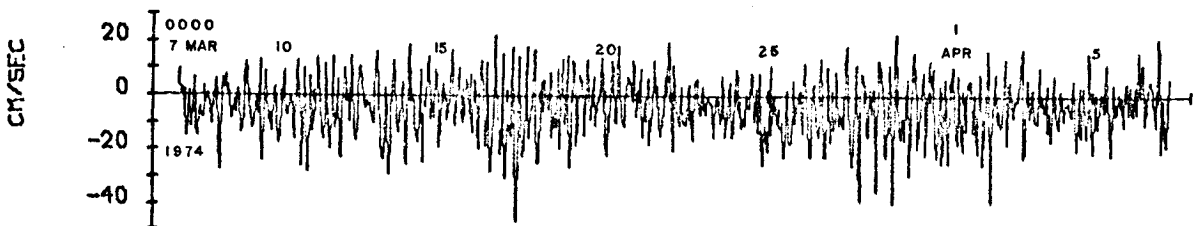
U (100 M) C45223.LP



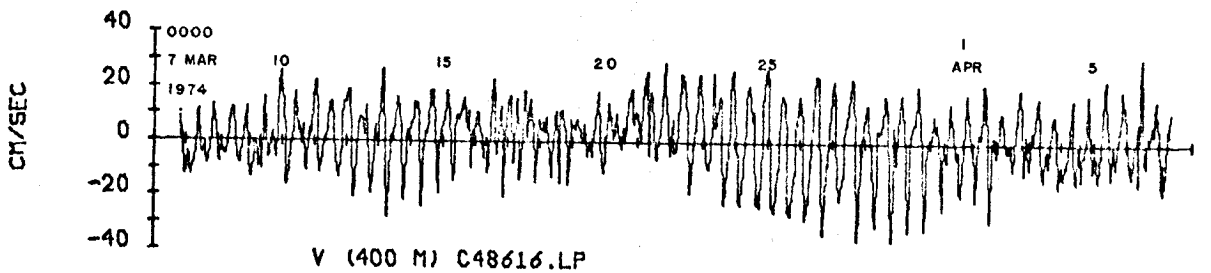
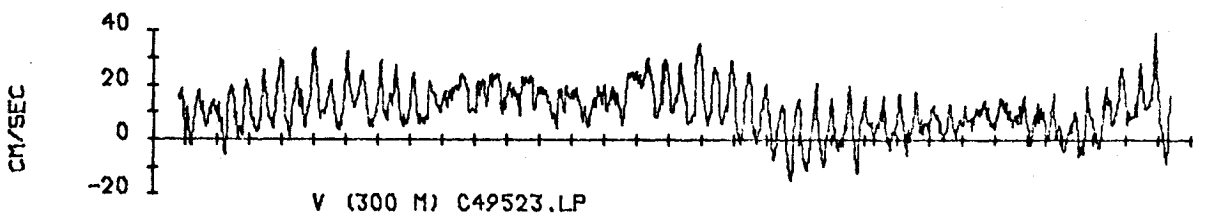
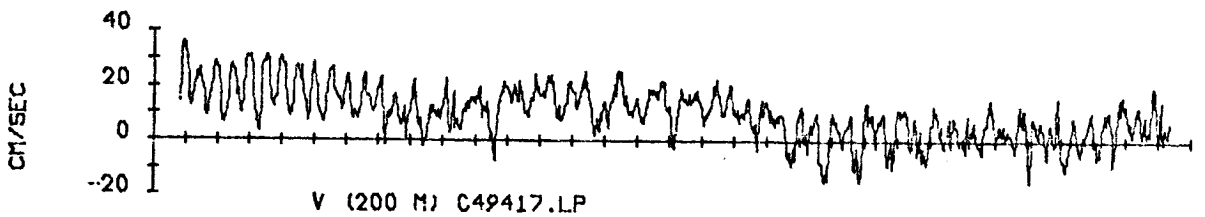
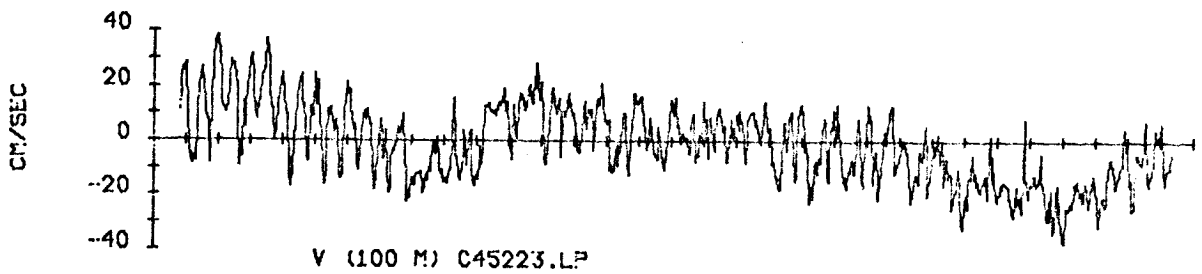
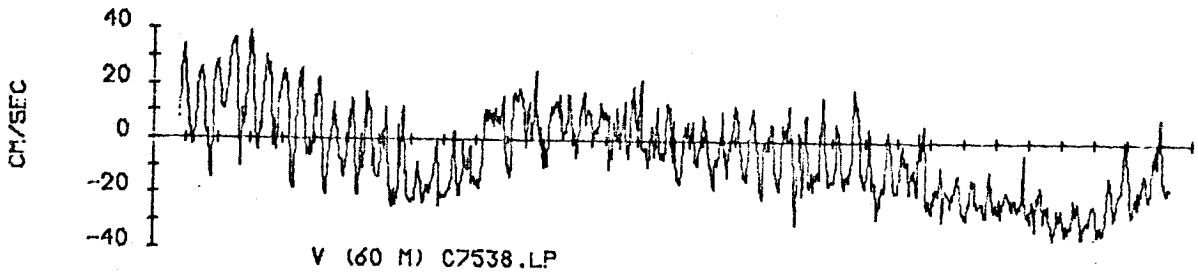
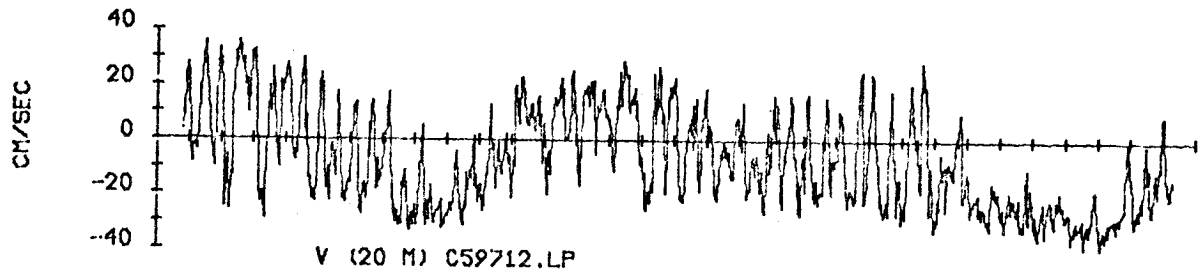
U (200 M) C49417.LP

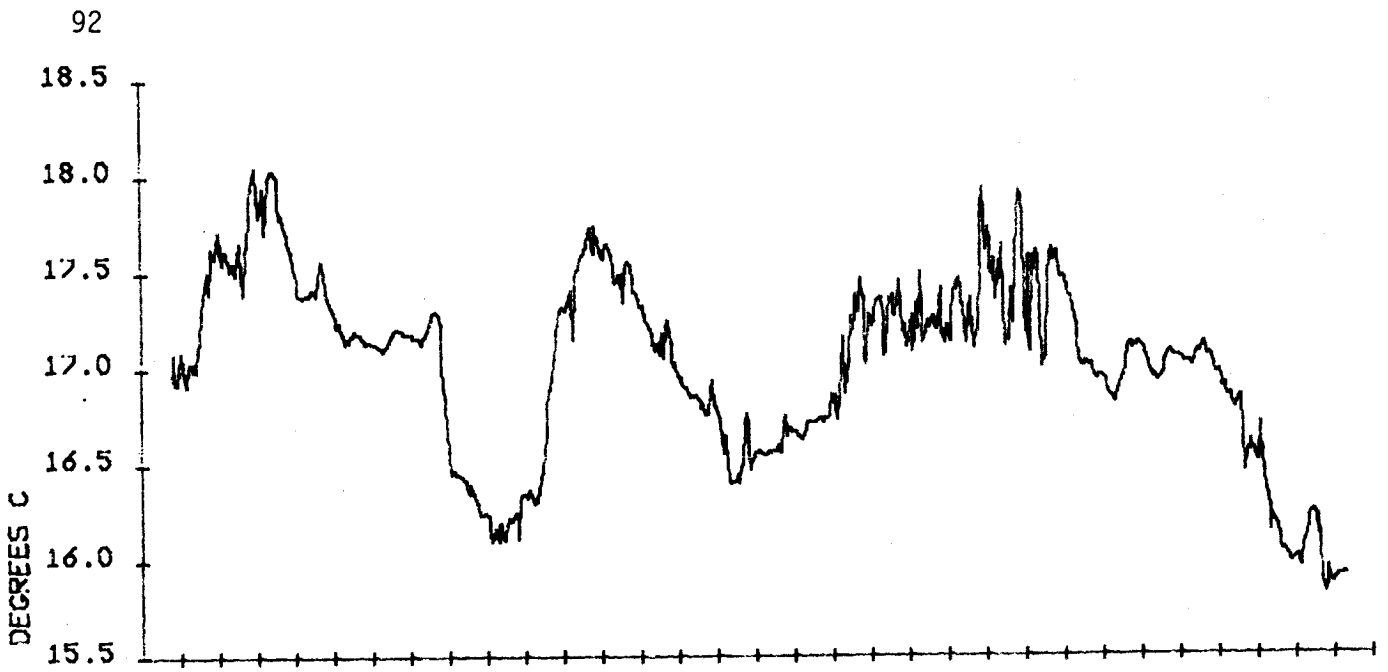


U (300 M) C49523.LP

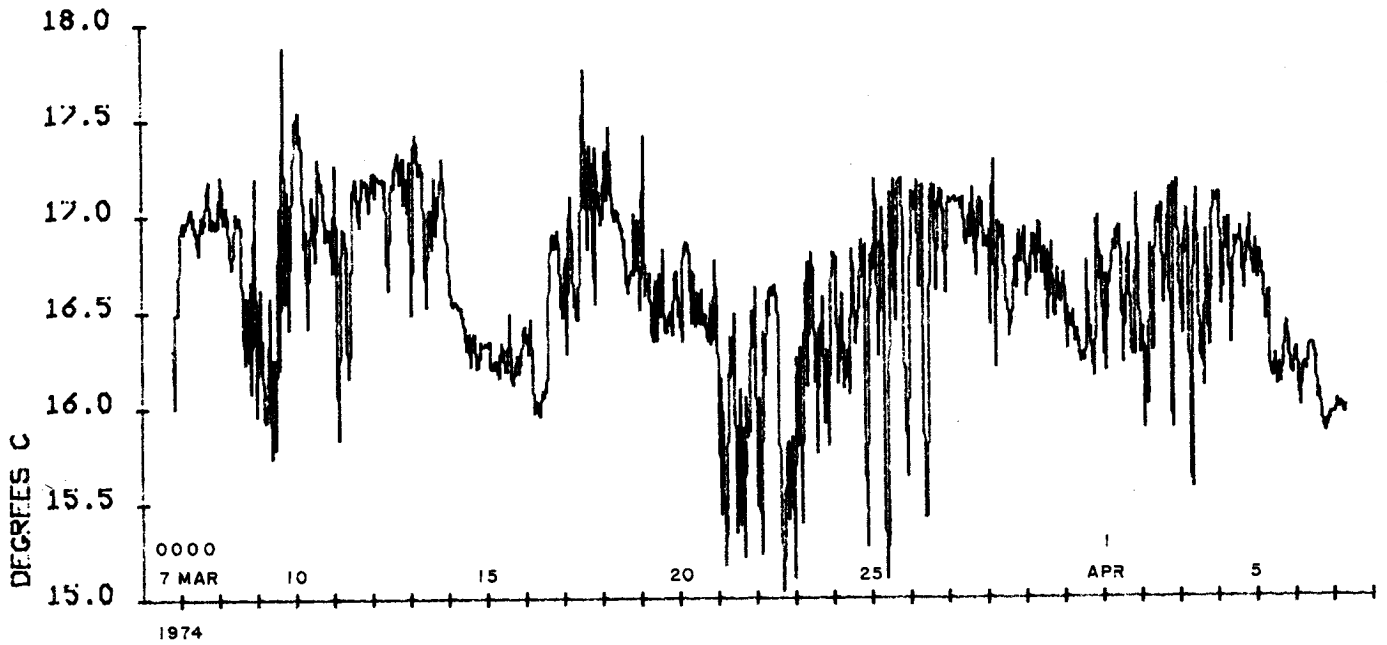


U (400 M) C48616.LP

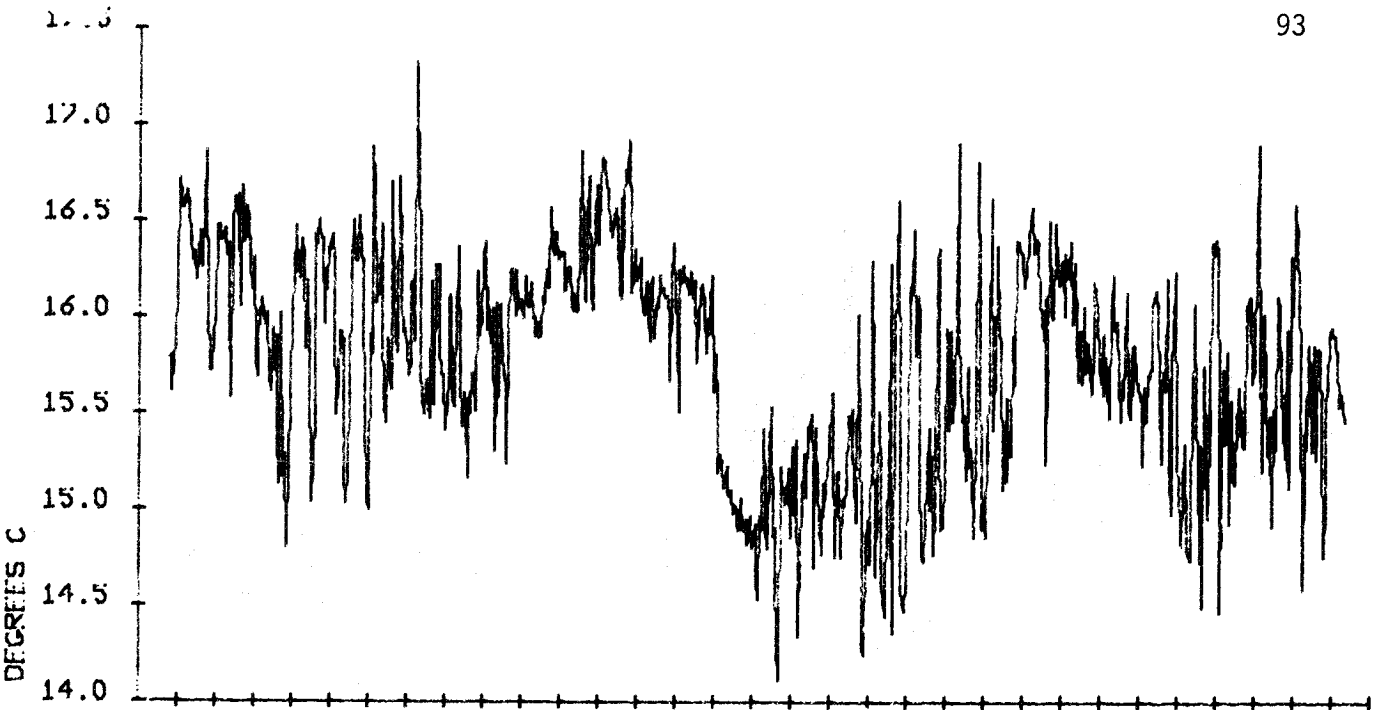




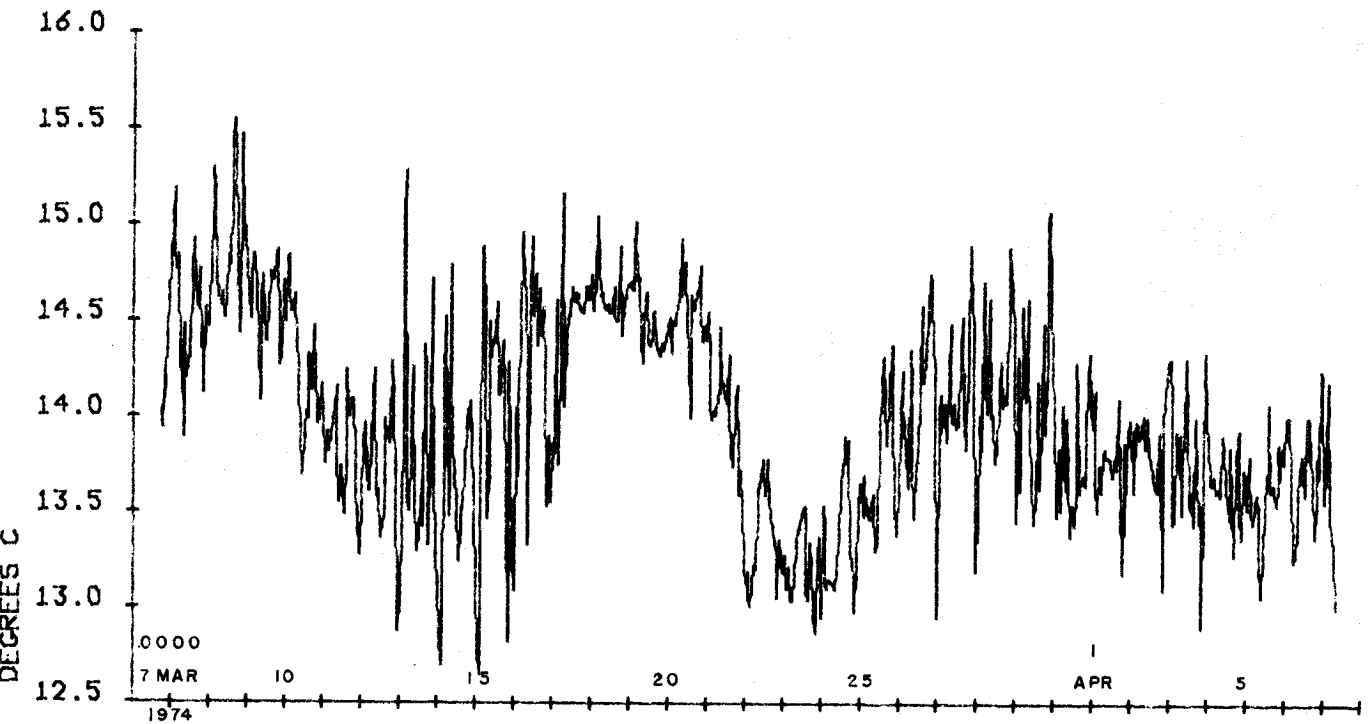
WATER TEMPERATURE (20 M) C59712.LP



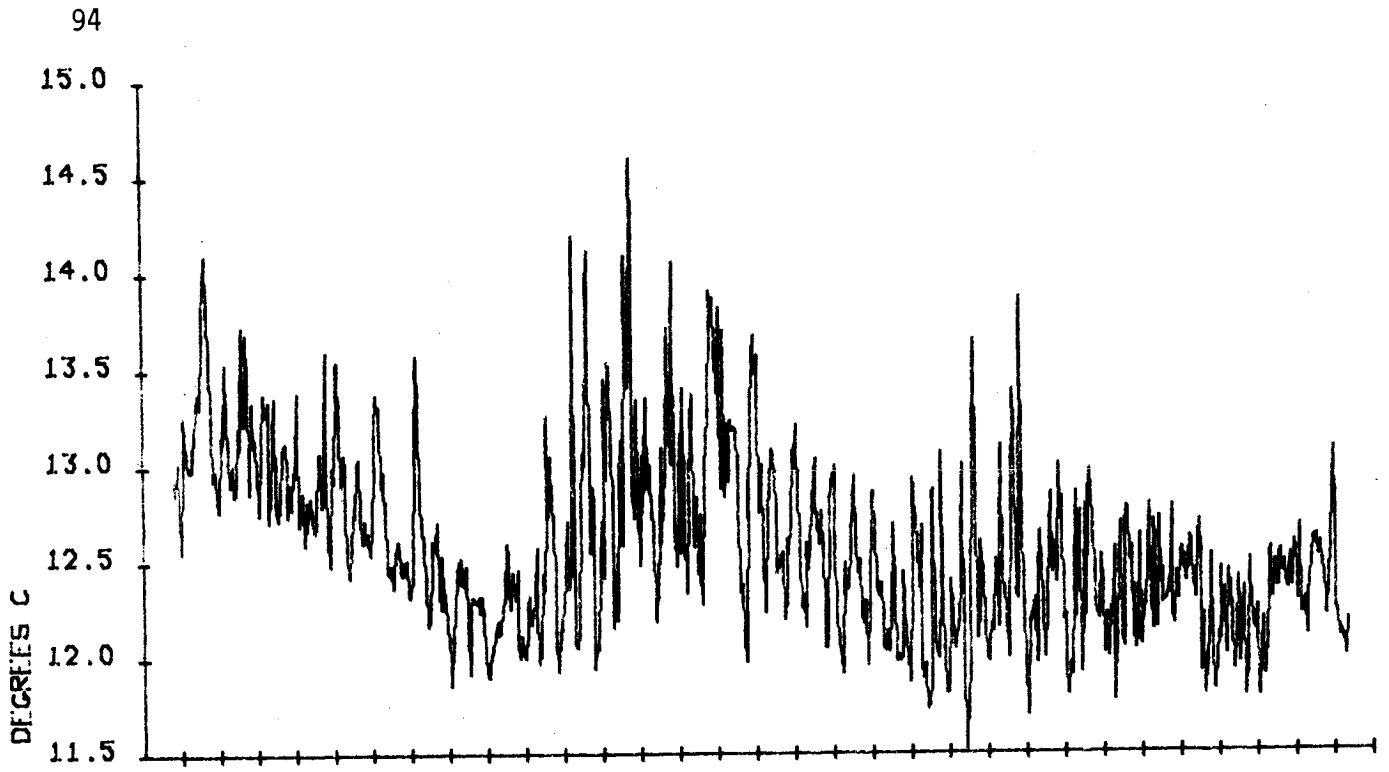
WATER TEMPERATURE (60 M) C7538.LP



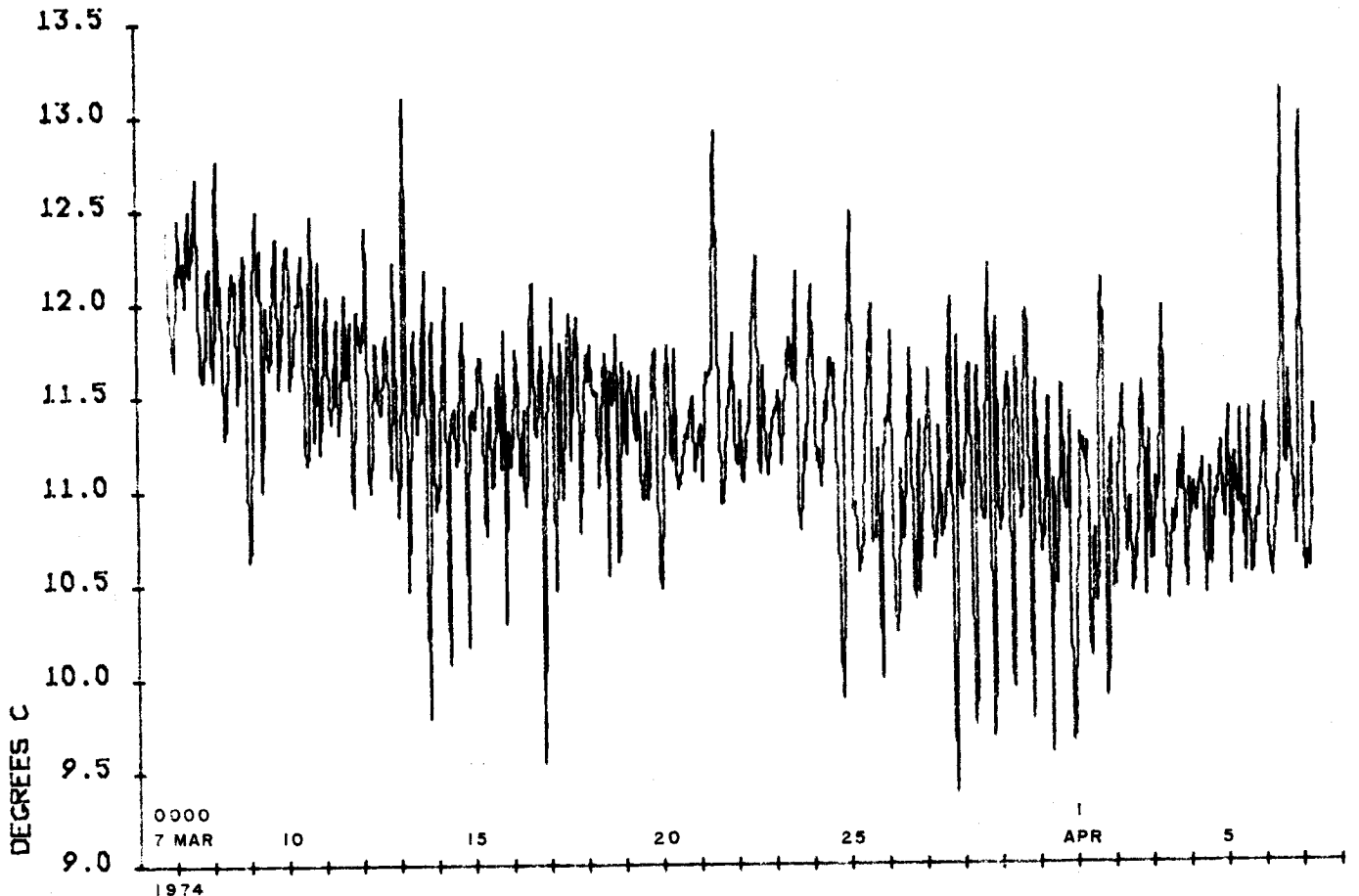
WATER TEMPERATURE (100 M) C45223.LP



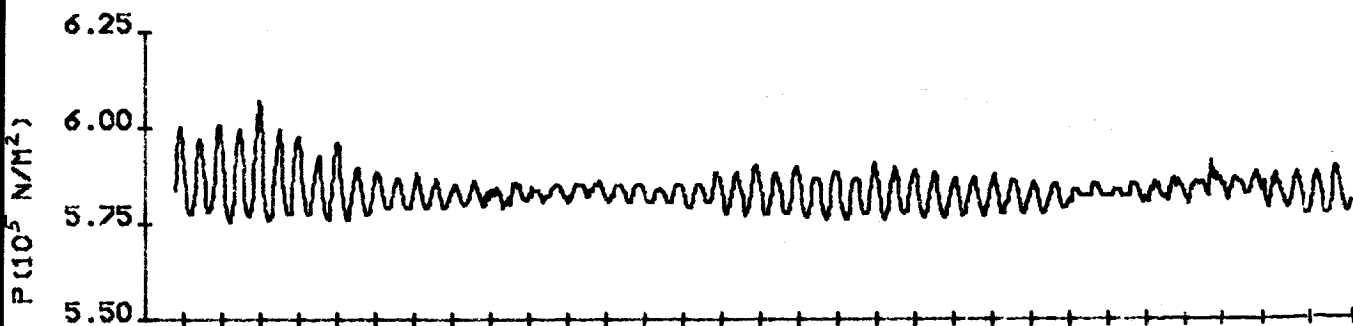
WATER TEMPERATURE (200 M) C49417.LP



WATER TEMPERATURE (300 M) C49523.LP



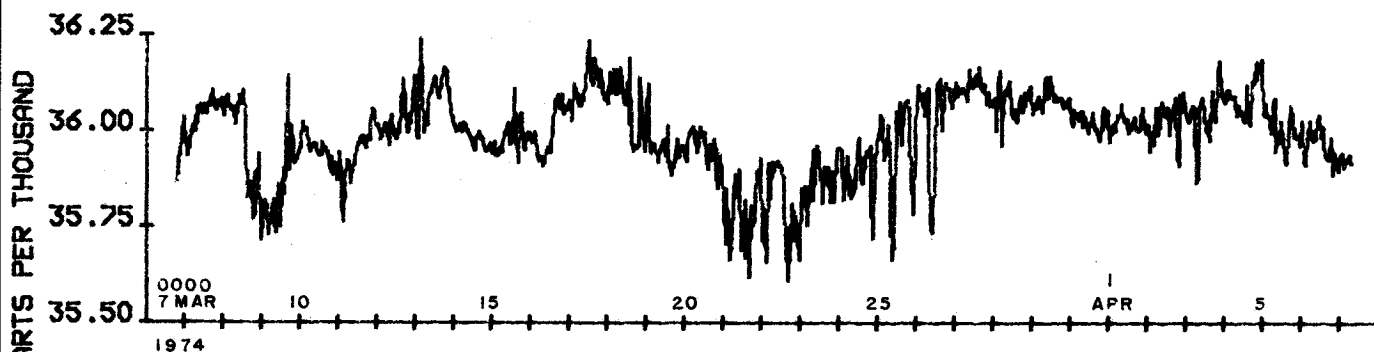
WATER TEMPERATURE (400 M) C48616.LP



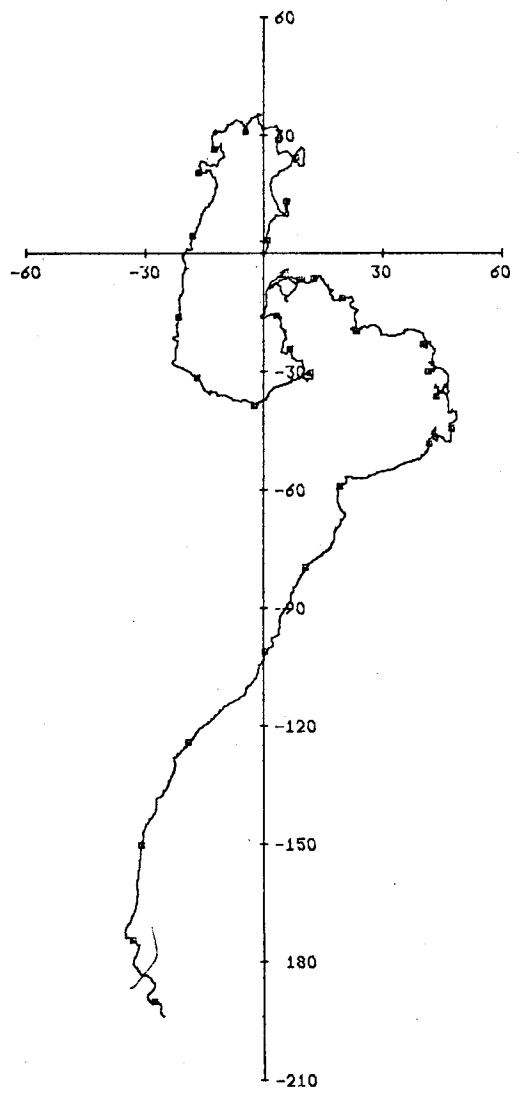
PRESSURE (60 M) C7538.LP



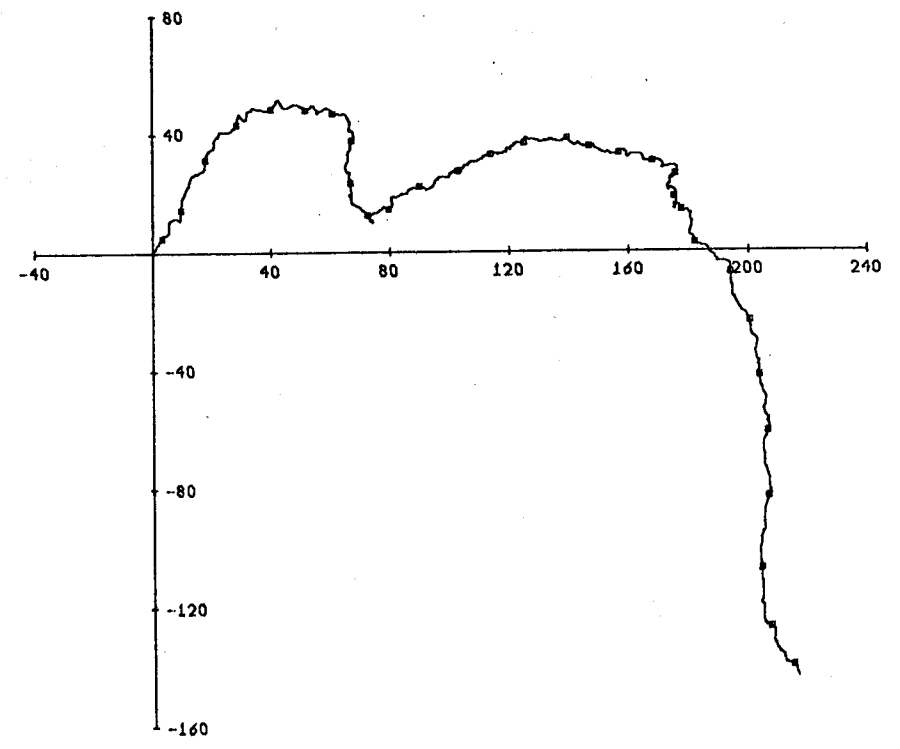
PRESSURE (300 M) C49523.LP



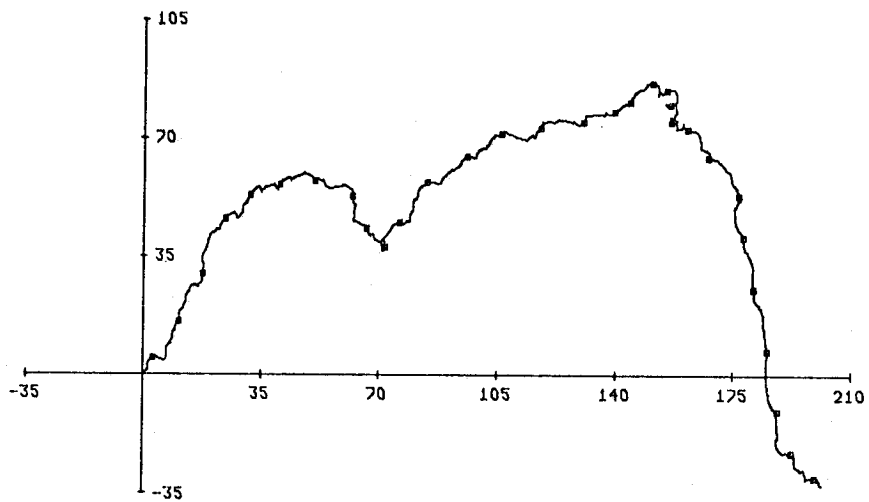
SALINITY (60 M) C7538.LP



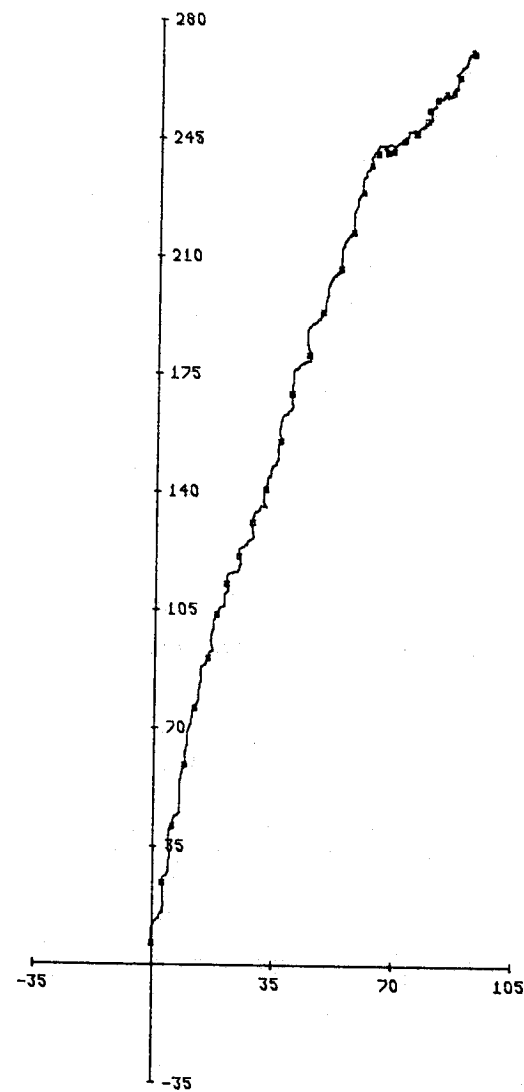
20 M AT LUPINE. 30.6 DAYS STARTING 1857 6 MAR 74 GMT



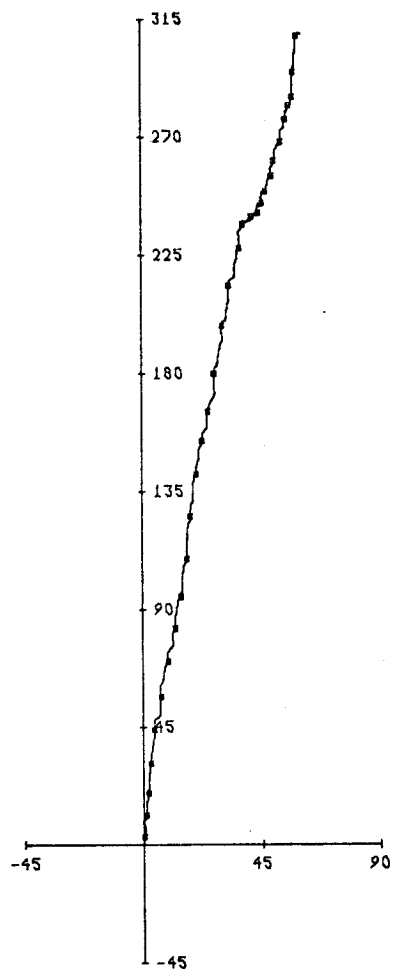
60 M AT LUPINE. 30.6 DAYS STARTING 1853 6 MARCH 74 GMT



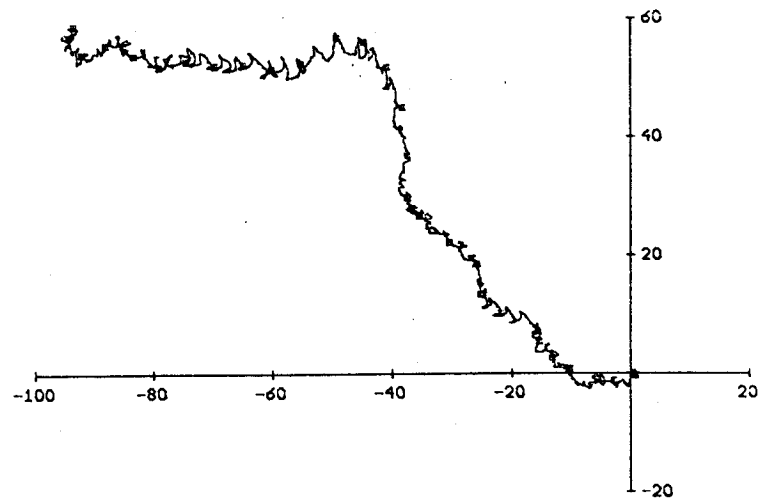
100 M AT LUPINE. 30.6 DAYS STARTING 1852 6 MAR 74 GMT



200 M AT LUPINE. 30.6 DAYS STARTING 1854 6 MAR 74 GMT

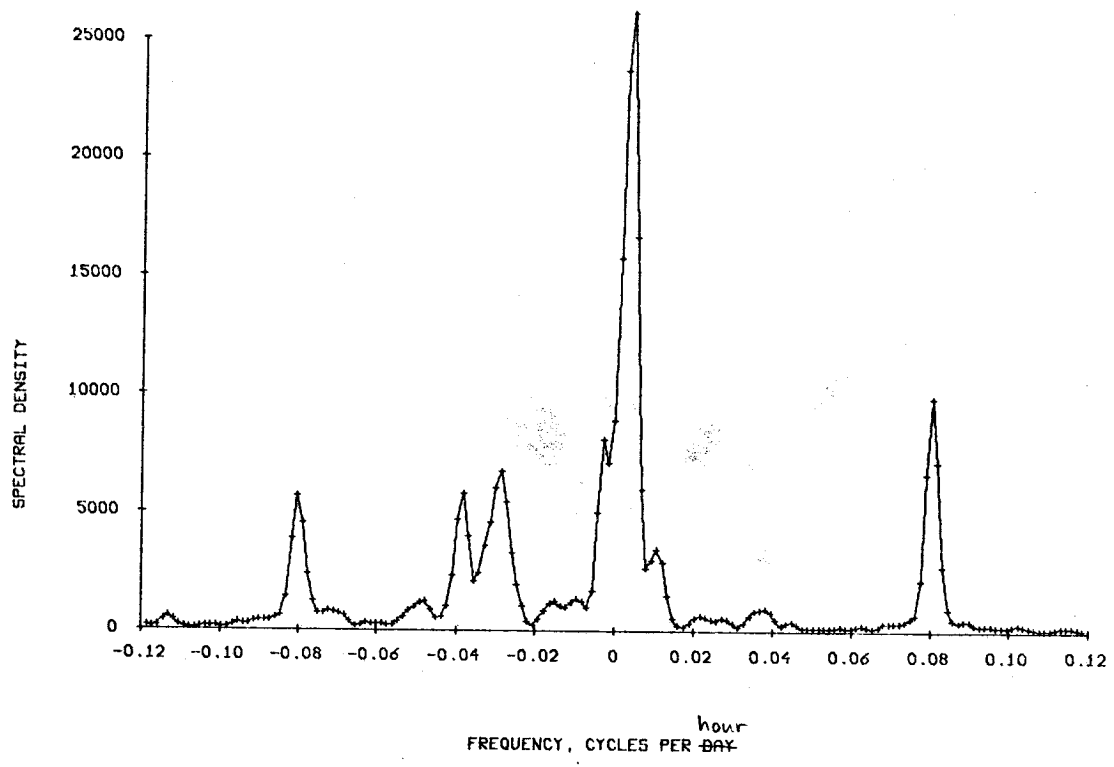


300 M AT LUPINE. 30.6 DAYS STARTING 1845 6 MAR 74 GMT

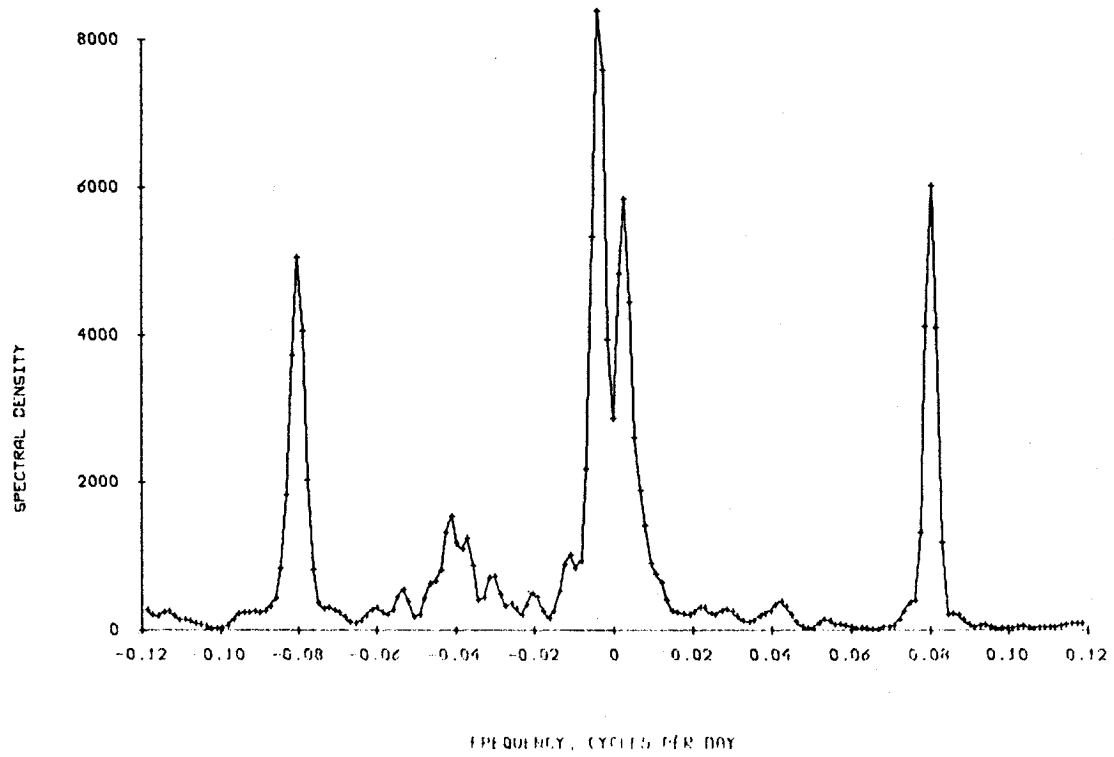


400 METERS AT LUPINE. 30.6 DAYS STARTING 1856 6 MAR 74

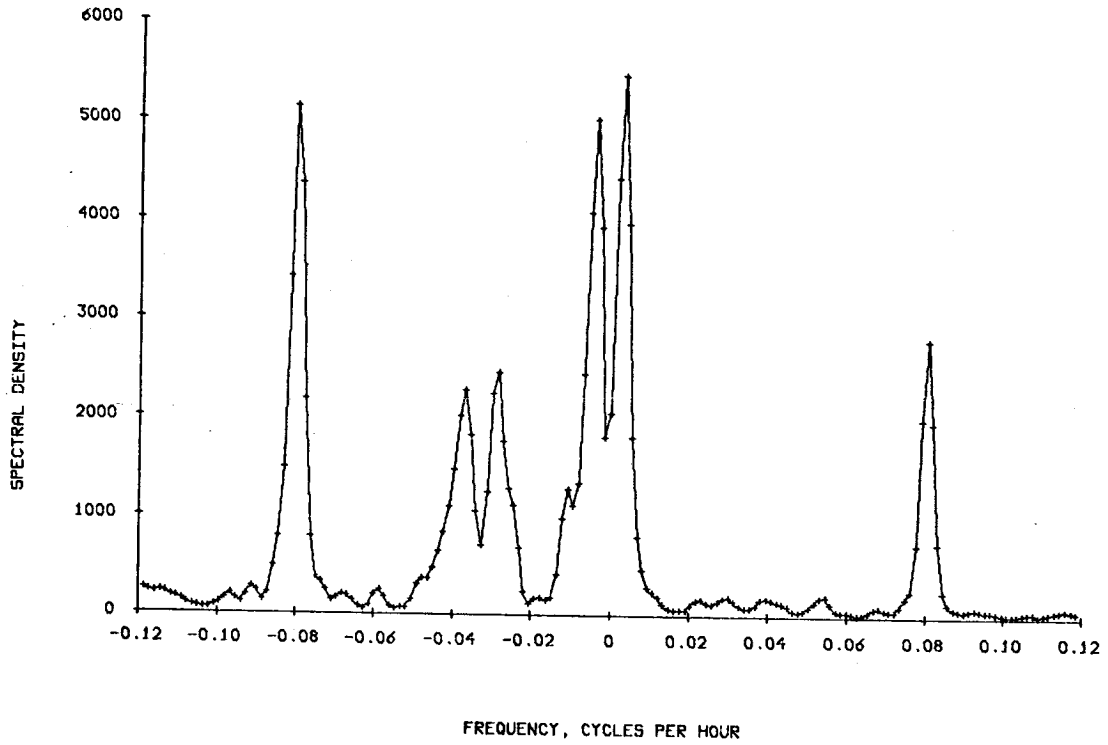
ROTARY SPECTRUM
20 M AT LUPINE. 6 MAR 74 TO 6 APR 74. TAPE 597/12



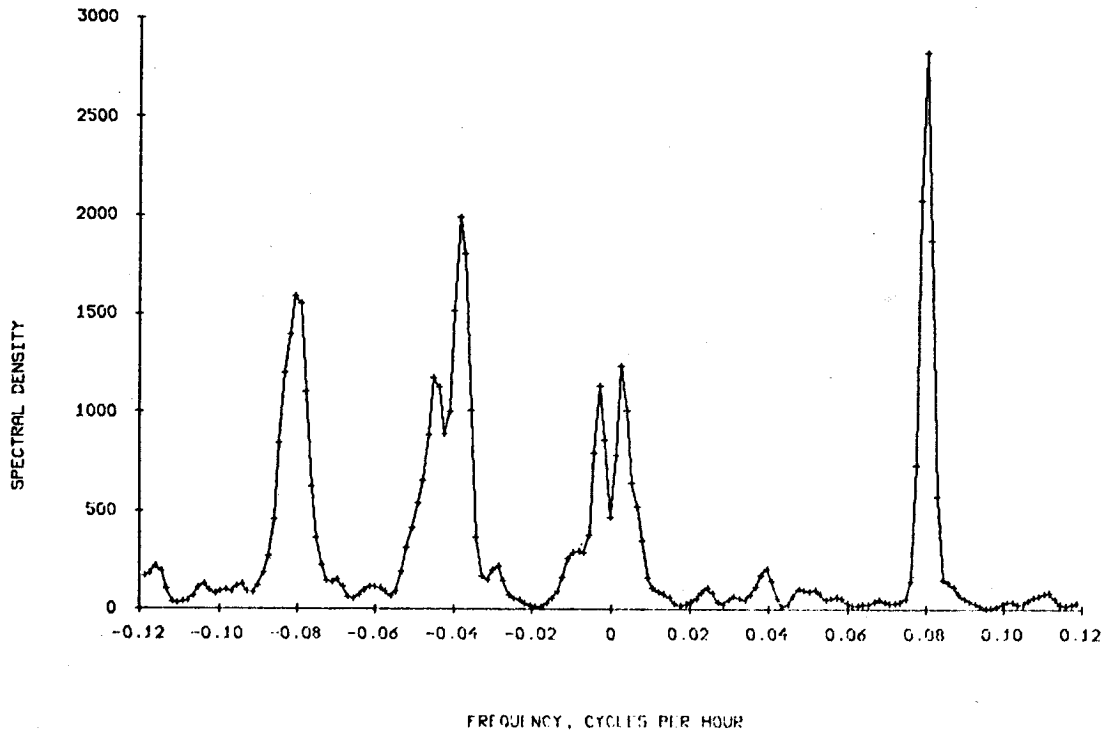
ROTARY SPECTRUM
60 M AT LUPINE. 6 MARCH 74 TO 6 APRIL 74. TAPE 753/8



ROTARY SPECTRUM
 100 METERS AT LUPINE. 6 MAR 74 TO 6 APR 74. TAPE 452/23

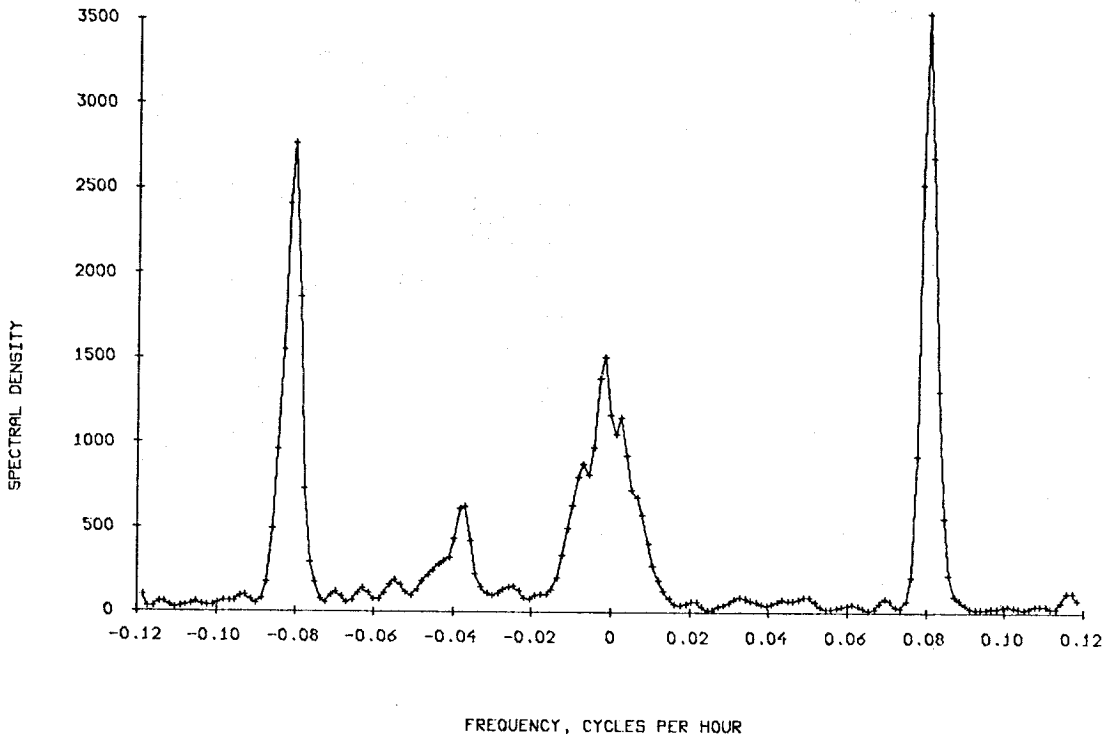


ROTARY SPECTRUM
 200 METERS AT LUPINE. 6 MAR 74 TO 6 APR 74. TAPE 494/17



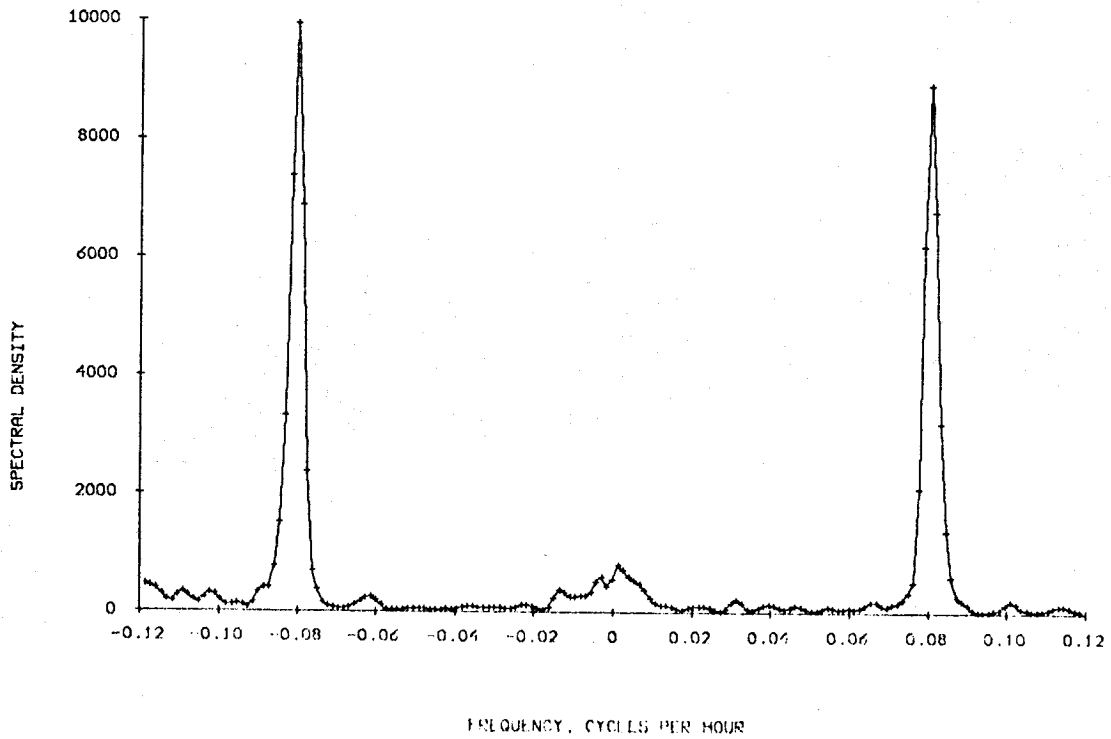
ROTARY SPECTRUM

300 METERS AT LUPINE. 6 MAR 74 TO 6 APR 74. TAPE 495/23



ROTARY SPECTRUM

400 METERS AT LUPINE. 6 MAR 74 TO 6 APR 74. TAPE 486/16





1974 JOINT I Installation

FOREST FERN

Position: 21°36.3'N, 17°46.0'W
 Depth of Water: 788 m
 Set at 1200 GMT 24 March 1974 by R/V GILLISS
 Retrieved at 1335 GMT 19 April 1974 by R/V OCEANOGRAPHER
 Data Interval: 2132 GMT 24 March to 0832 GMT 19 April

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
0 m	D72/17
20 m	686/16
60 m	689/12
100 m	498/20
150 m	454/24*
200 m	455/25
300 m	500/24
400 m	456/26*

Data were recorded every 10 minutes. With the exception of the 400 m instrument in which the direction sensor failed, all subsurface instruments recorded current speed, direction and temperature. Pressure was measured by the 20 m, 60 m and 100 m instruments. Salinity data were obtained only from the 20 m and 60 m machines.

FOREST FERN

0 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (m/sec)	6.5	2.6	-0.3	1.7	11.1	1.2	388
U (cm/sec)	-0.7	3.4	-0.1	1.7	5.3	-8.8	388
V (m/sec)	-4.8	3.8	0.7	2.5	5.6	-10.6	388
T Air (C)	17.4	0.6	0.1	2.5	19.1	15.9	388
T Water (C)	17.5	0.3	0.5	2.7	18.7	16.7	388

20 m

S (cm/sec)	24.4	7.3	-0.2	3.4	45.1	2.3	612
U (cm/sec)	-0.6	19.5	0.0	1.8	39.4	-36.9	612
V (cm/sec)	-9.1	13.6	0.5	2.6	28.7	-36.2	612
T Water (C)	17.6	0.2	-0.2	2.3	18.2	17.1	612
P (10^5 n/m ²)	1.7	0.1	1.3	4.8	1.9	1.6	612
Sa1 (PPT)	36.05	0.07	-0.63	3.64	36.24	35.85	612

60 m

S (cm/sec)	19.3	5.8	0.2	3.1	36.3	2.1	612
U (cm/sec)	5.5	13.1	-0.3	2.3	35.0	-27.0	612
V (cm/sec)	-8.6	11.5	0.7	3.0	24.7	-34.2	612
T Water (C)	17.1	0.3	-0.9	3.7	17.8	16.1	612
P (10^5 n/m ²)	5.8	0.0	0.6	2.7	5.9	5.7	612
Sa1 (PPT)	36.14	0.07	-0.74	3.54	36.32	35.88	612

100 m

S (cm/sec)	15.7	6.1	0.4	3.3	36.7	1.0	612
U (cm/sec)	5.9	9.4	-0.1	3.0	32.7	-23.8	612
V (cm/sec)	-8.1	9.7	0.6	2.9	22.7	-30.1	612
T Water (C)	16.6	0.4	-0.4	2.9	17.5	15.1	612
P (10 n/m)	9.9	0.0	1.1	4.1	10.1	9.9	612

FOREST FERN

150 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	13.7	5.3	0.5	3.0	31.6	2.1	612
U (cm/sec)	4.7	8.4	-0.2	2.7	26.9	-25.7	612
V (cm/sec)	-7.0	8.7	0.6	2.7	19.5	-25.5	612
T Water (C)	15.9	0.4	-0.6	3.7	17.1	14.4	612

200 m

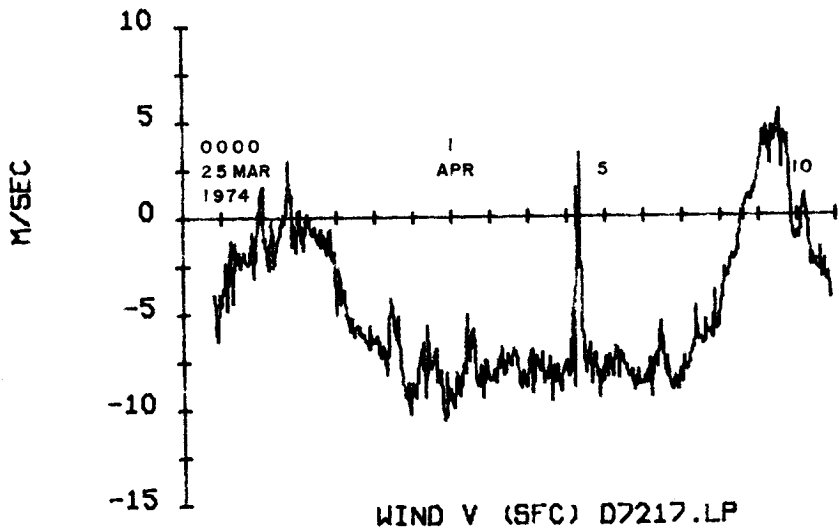
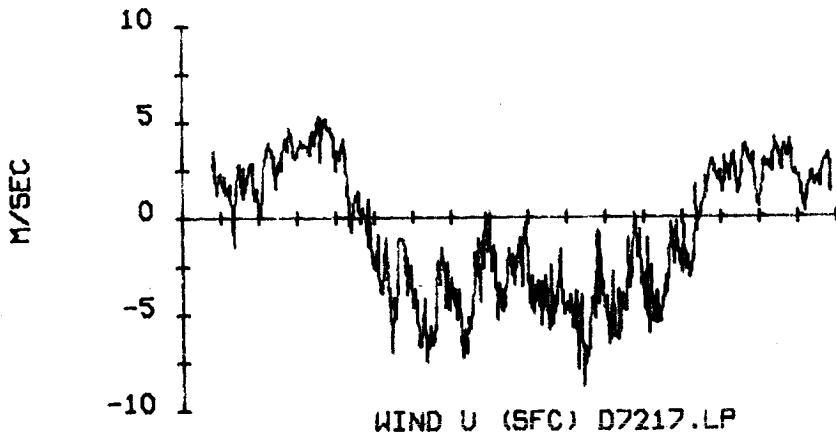
S (cm/sec)	12.3	5.0	0.6	3.4	30.2	1.3	610
U (cm/sec)	4.3	8.1	-0.1	2.8	27.6	-19.0	610
V (cm/sec)	-5.9	7.7	0.4	2.8	18.5	-26.2	610
T Water (C)	15.2	0.5	-0.2	2.4	16.5	13.8	610

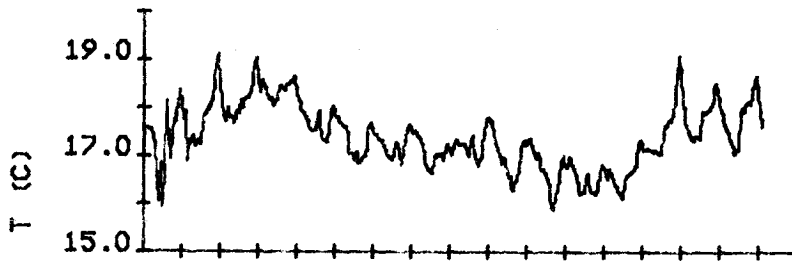
300 m

S (cm/sec)	10.2	4.8	0.6	3.2	27.7	0.3	610
U (cm/sec)	2.5	7.2	-0.0	2.6	25.7	-15.8	610
V (cm/sec)	-2.7	7.8	0.2	2.8	20.5	-24.5	610
T Water (C)	13.2	0.5	0.1	2.9	14.6	12.0	610

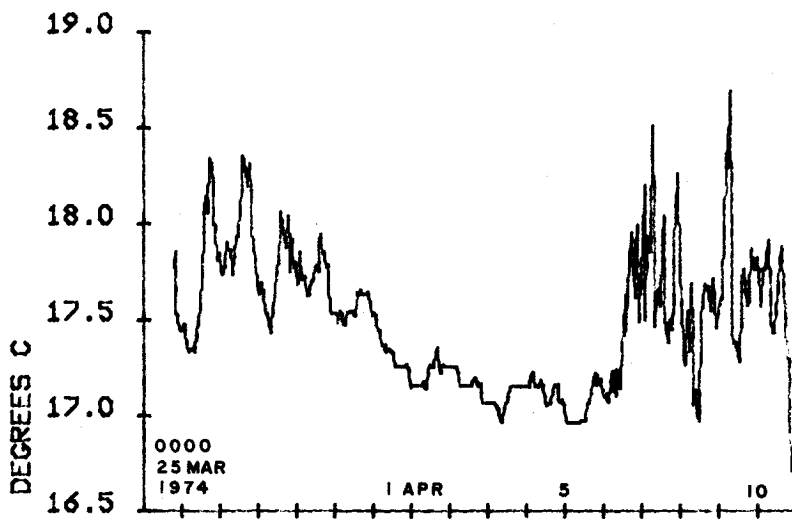
400 m

T Water (C)	11.8	0.4	-0.1	3.2	13.0	10.5	610
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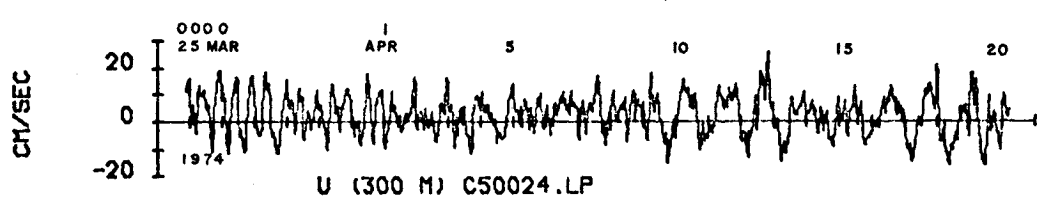
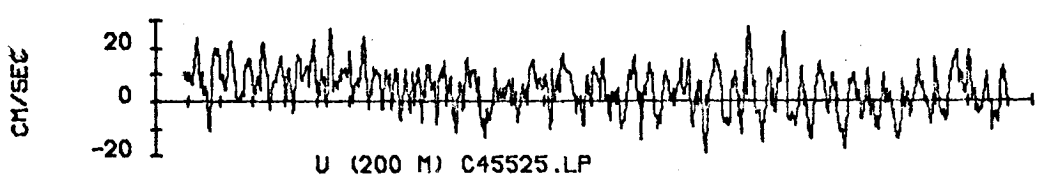
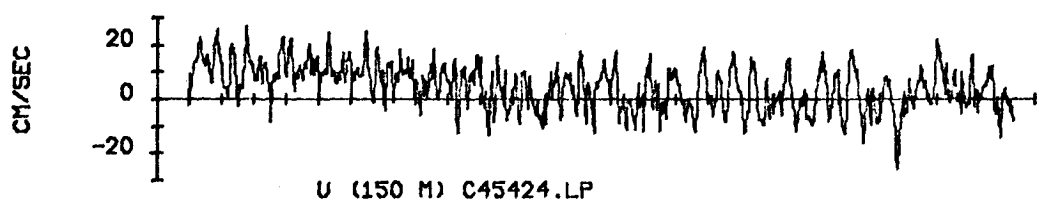
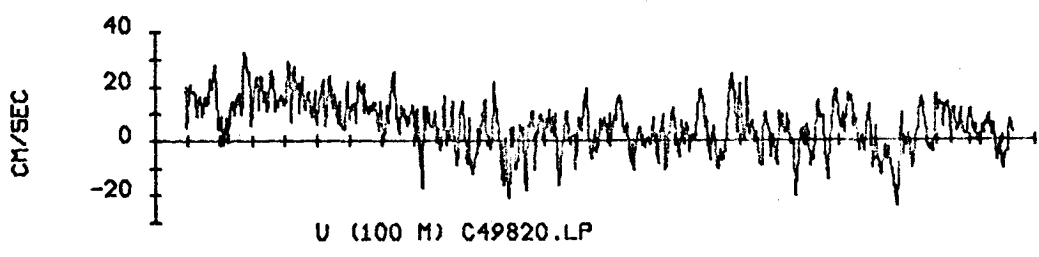
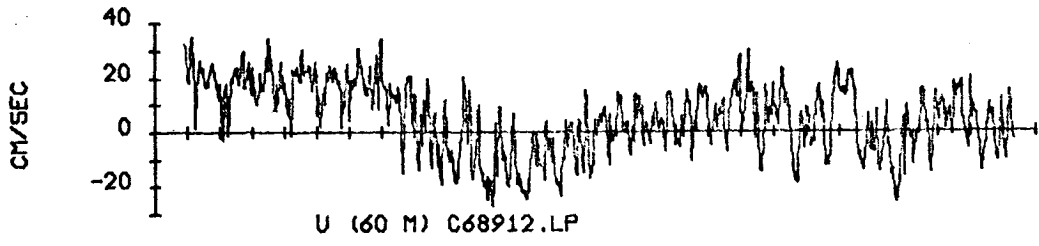
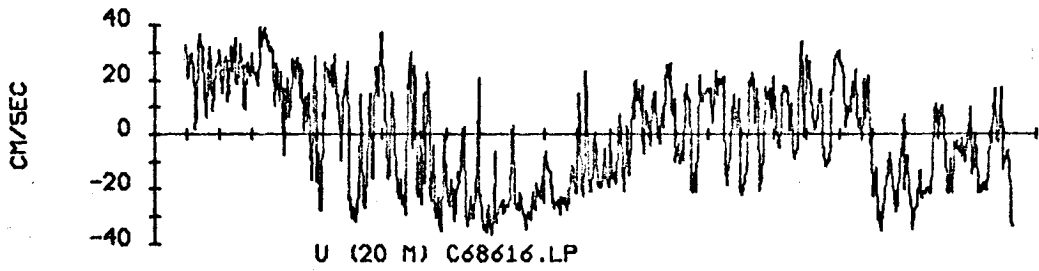


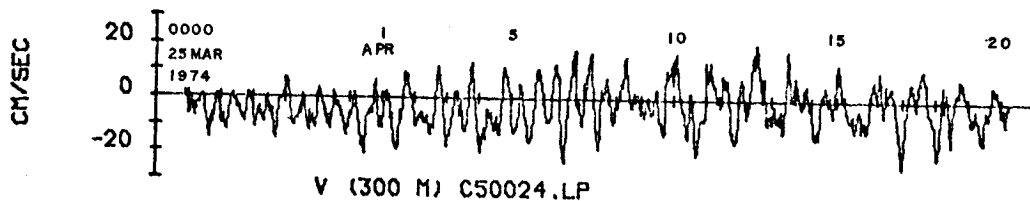
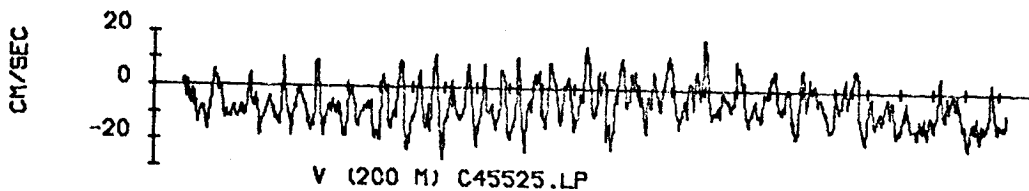
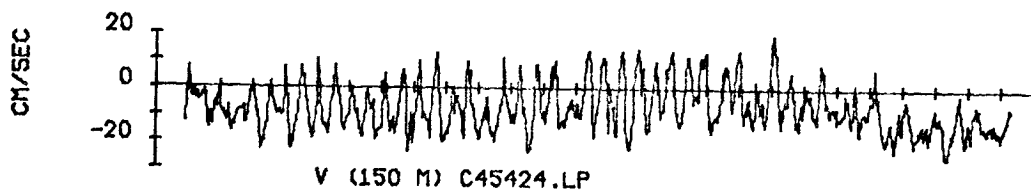
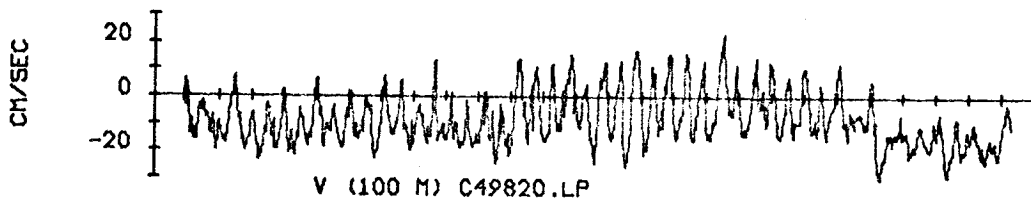
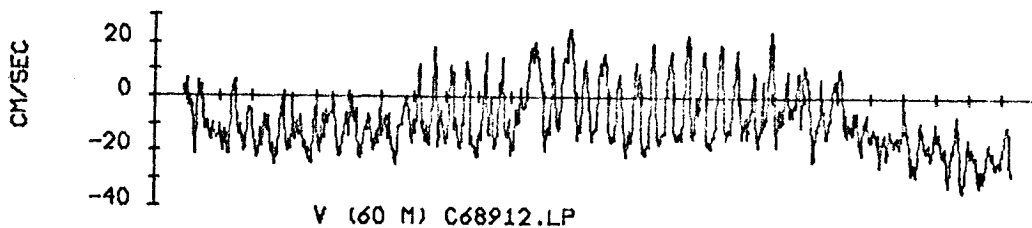
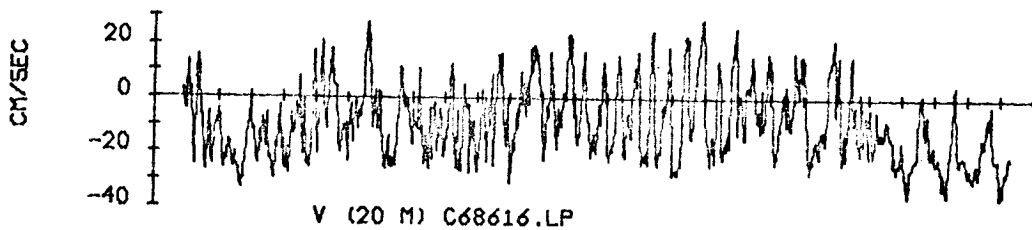


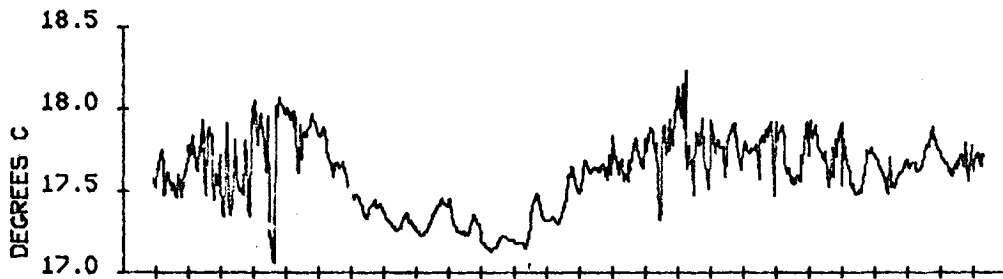
AIR TEMPERATURE D7217.LP



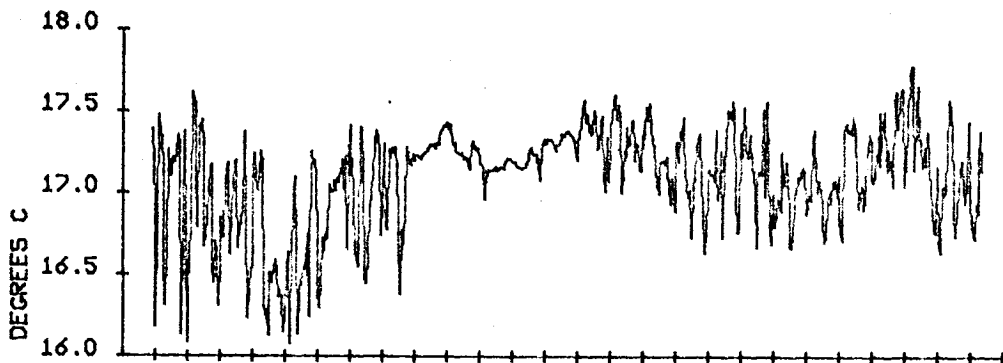
WATER TEMPERATURE (OM) D7217.LP



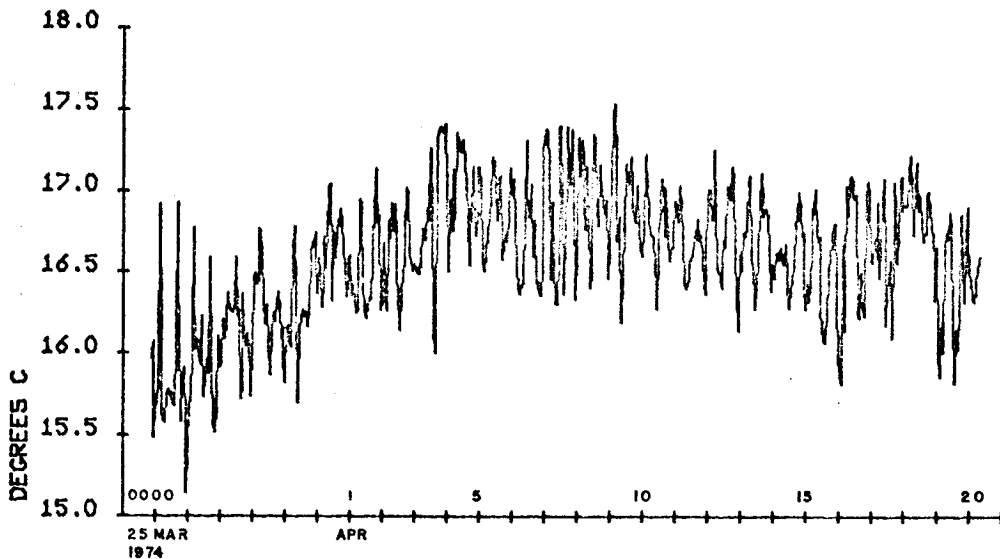




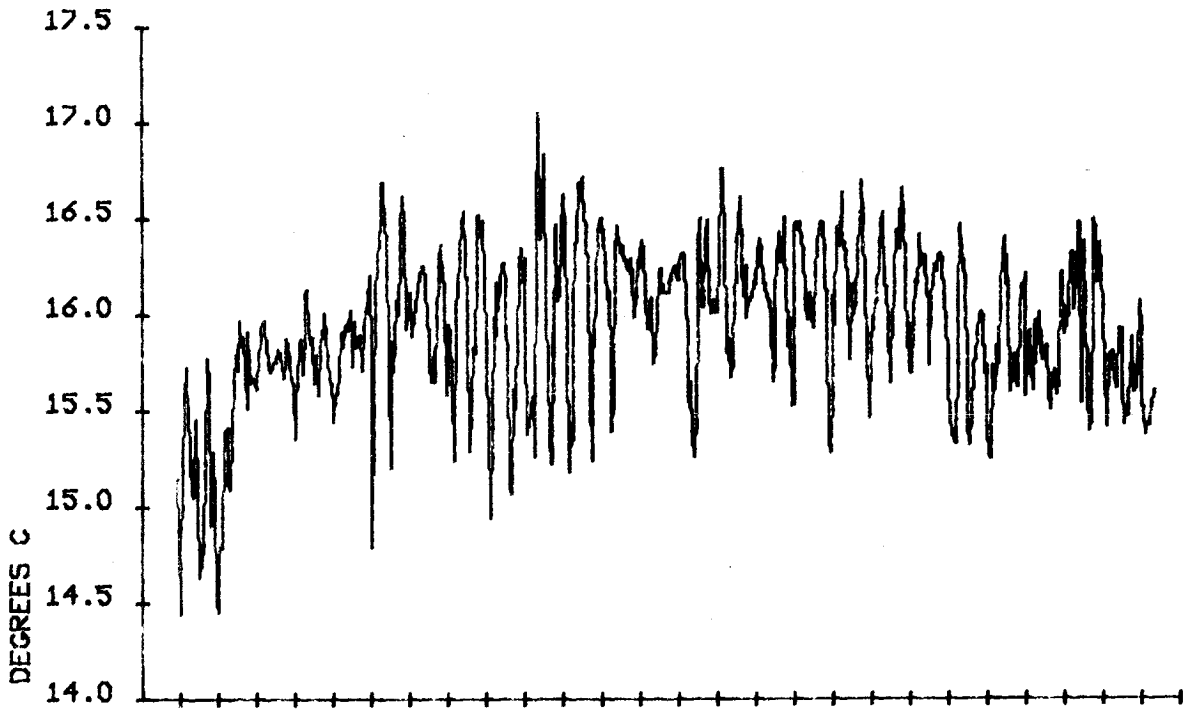
WATER TEMPERATURE (20 M) C68616.LP



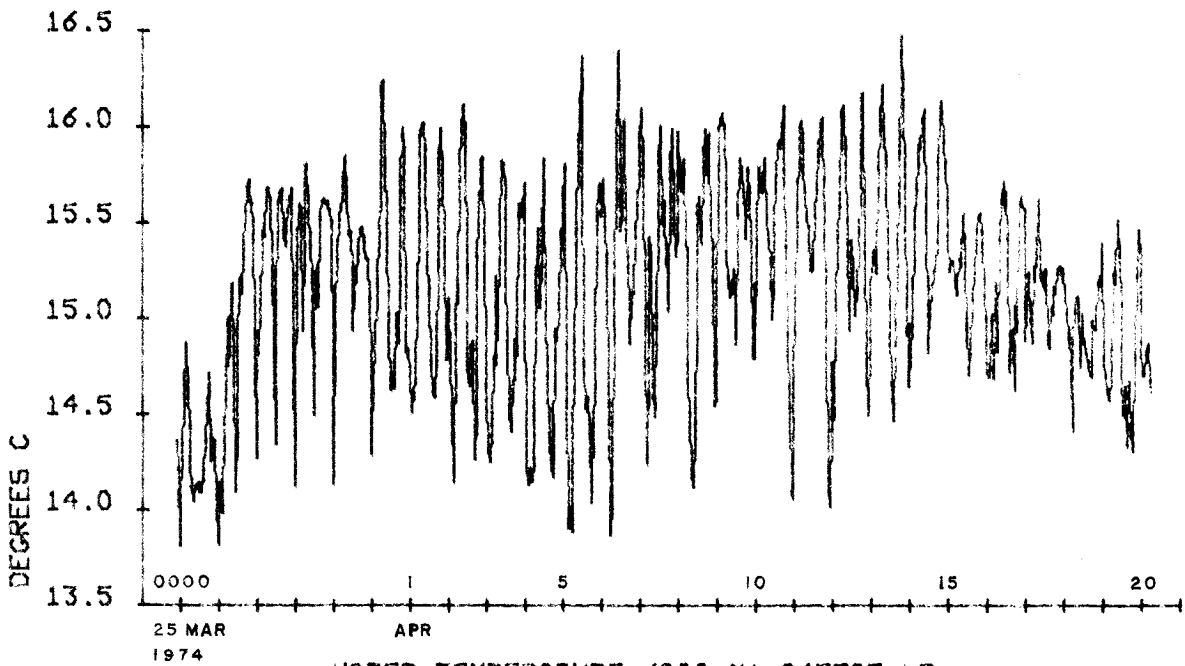
WATER TEMPERATURE (60 M) C68912.LP



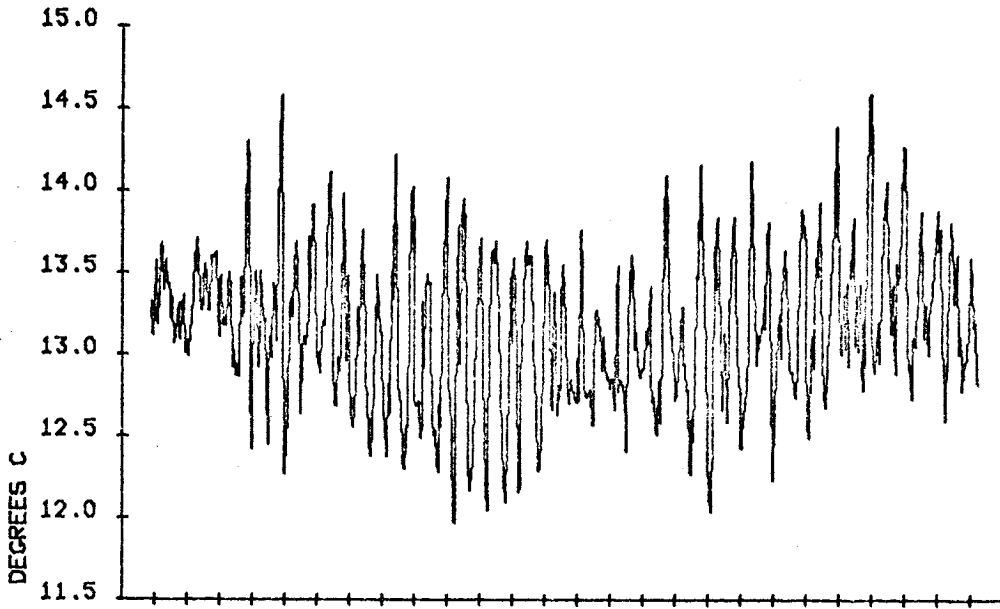
WATER TEMPERATURE (100 M) C49820.LP



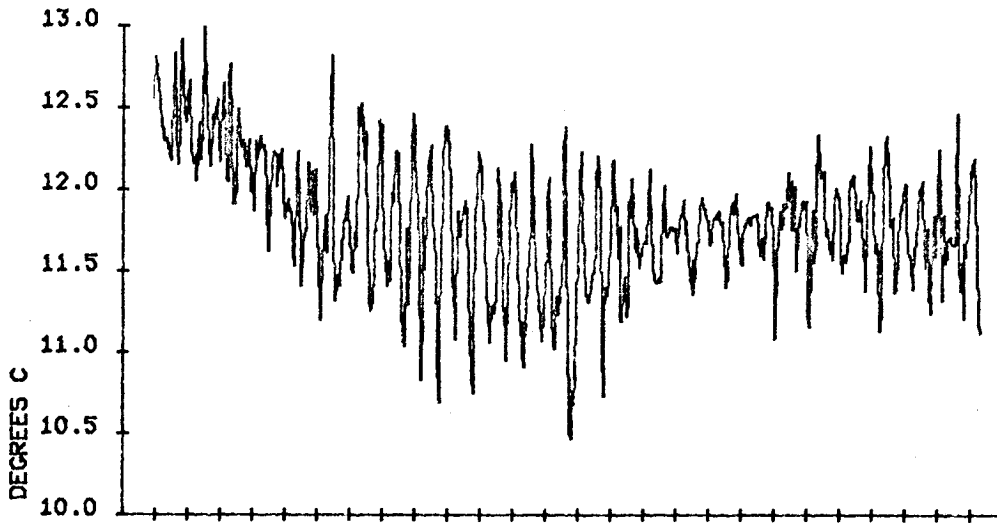
WATER TEMPERATURE (150 M) C45424.LP



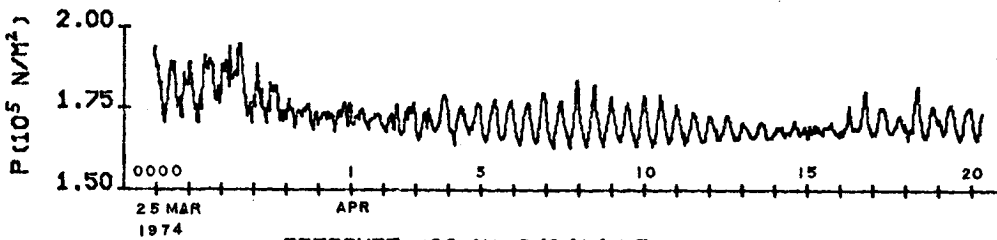
WATER TEMPERATURE (200 M) C45525.LP



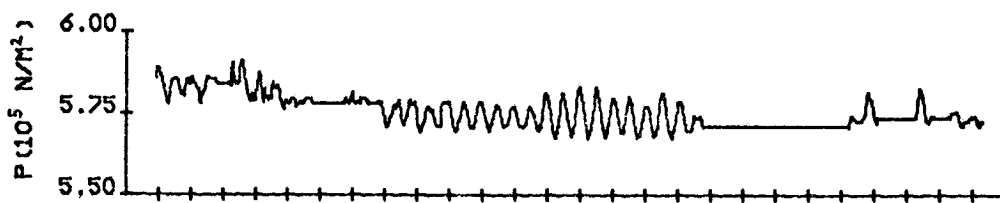
WATER TEMPERATURE (300 M) C50024.LP



WATER TEMPERATURE (400 M) C45626.LP



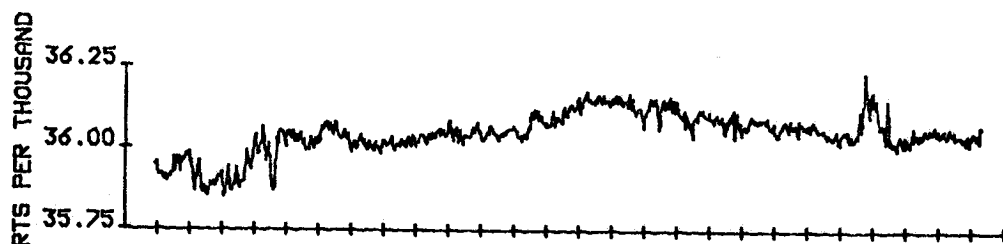
PRESSURE (20 M) C68616.LP



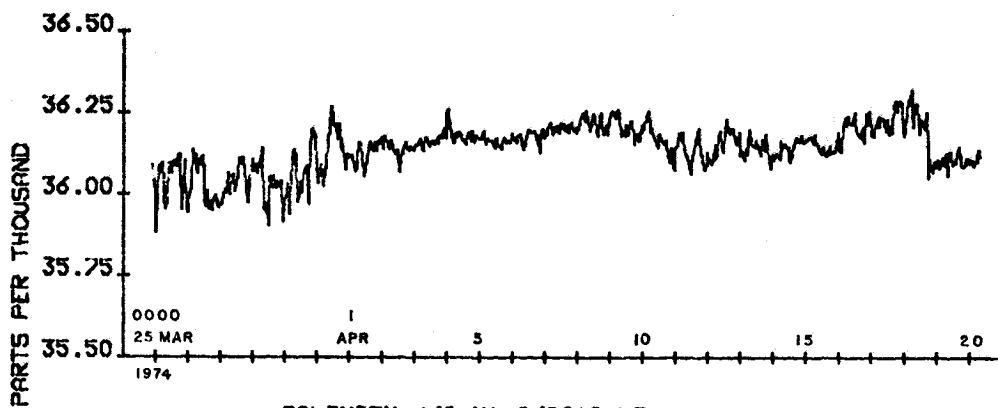
PRESSURE (60 M) C68912.LP



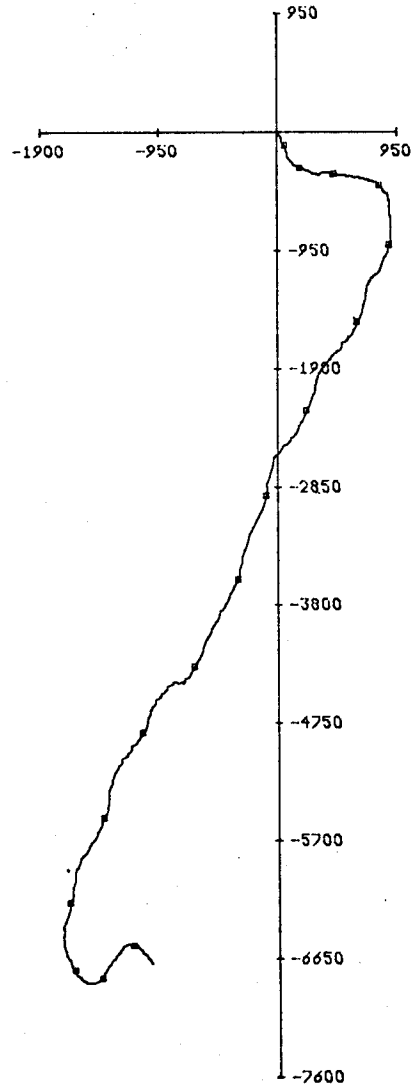
PRESSURE (100 M) C49820.LP



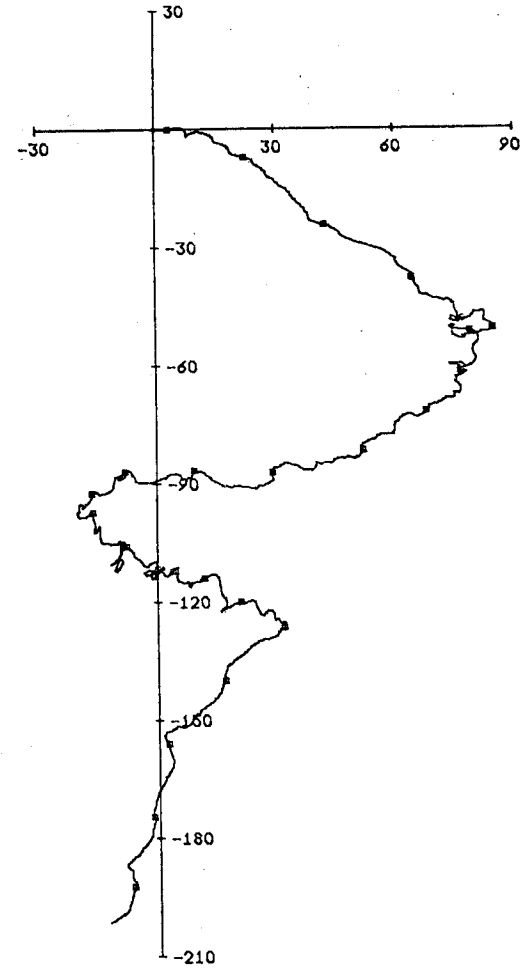
SALINITY (20 M) C68616.LP



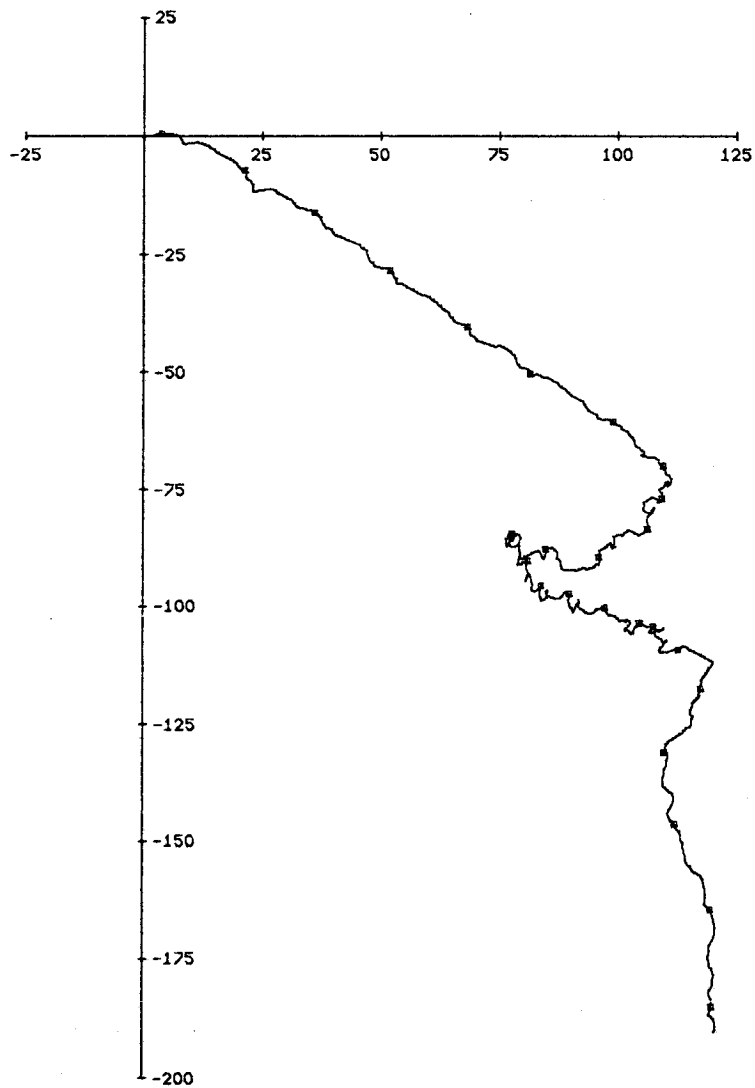
SALINITY (60 M) C68912.LP



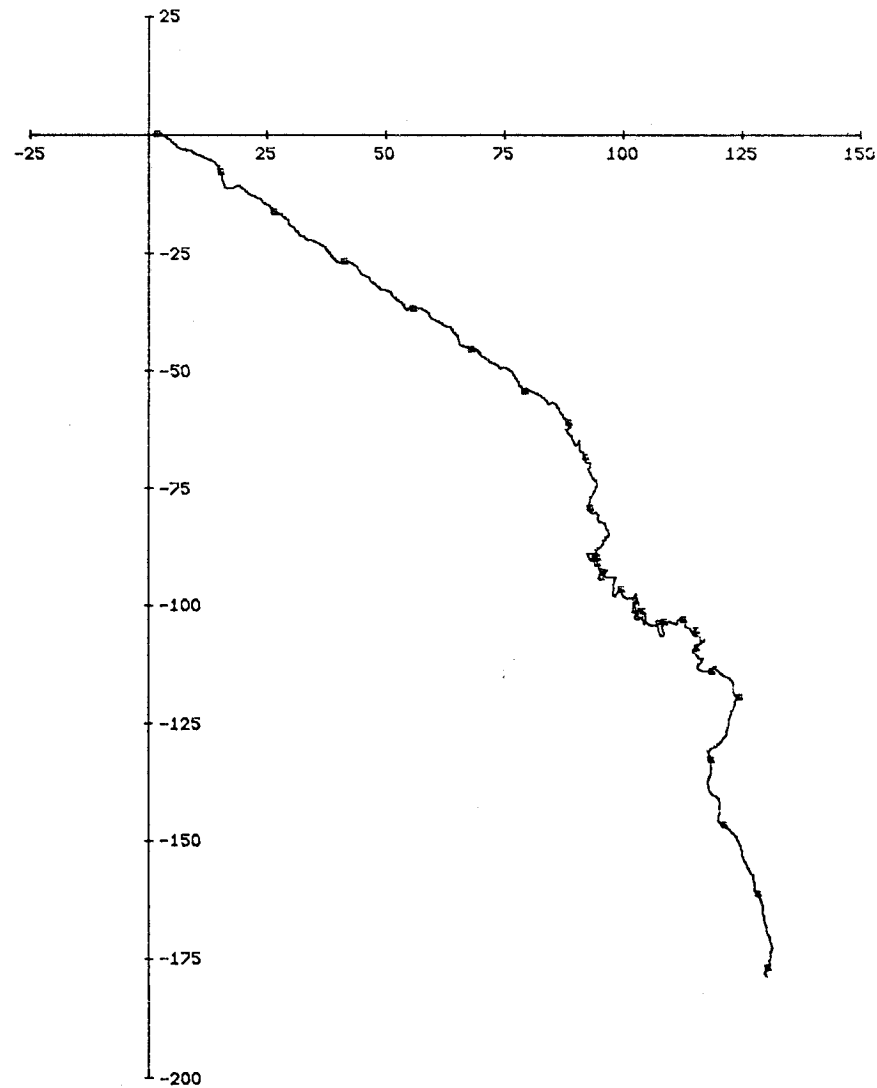
WIND AT FOREST FERN. 16.2 DAYS STARTING 1853 24 MARCH 74



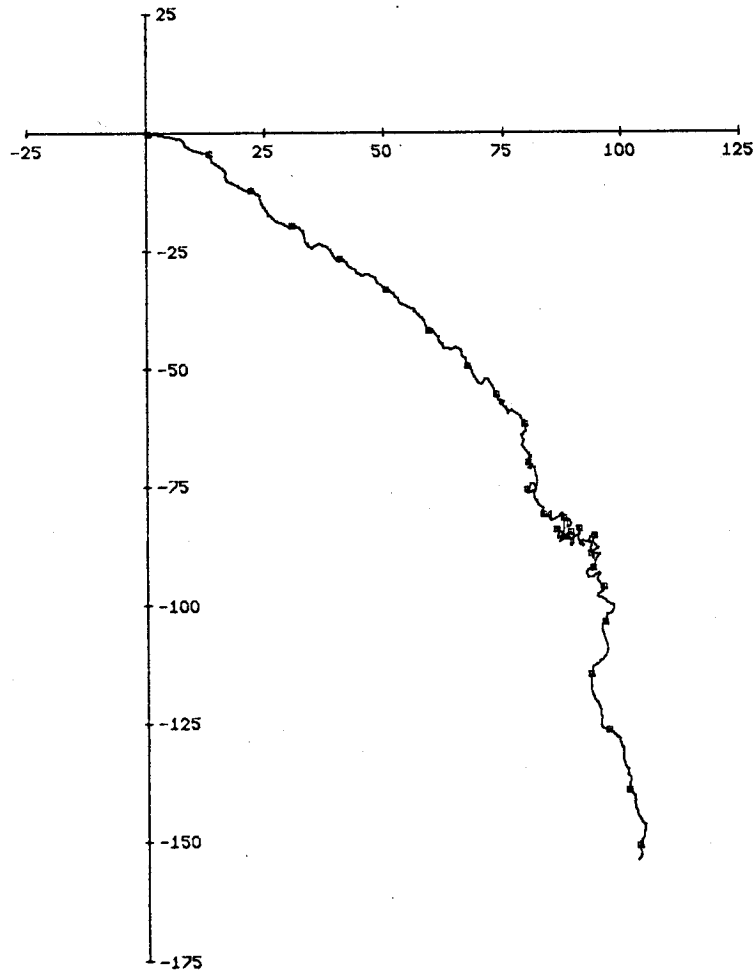
20 M AT FOREST FERN. 25.5 DAYS STARTING 2132 24 MARCH 74



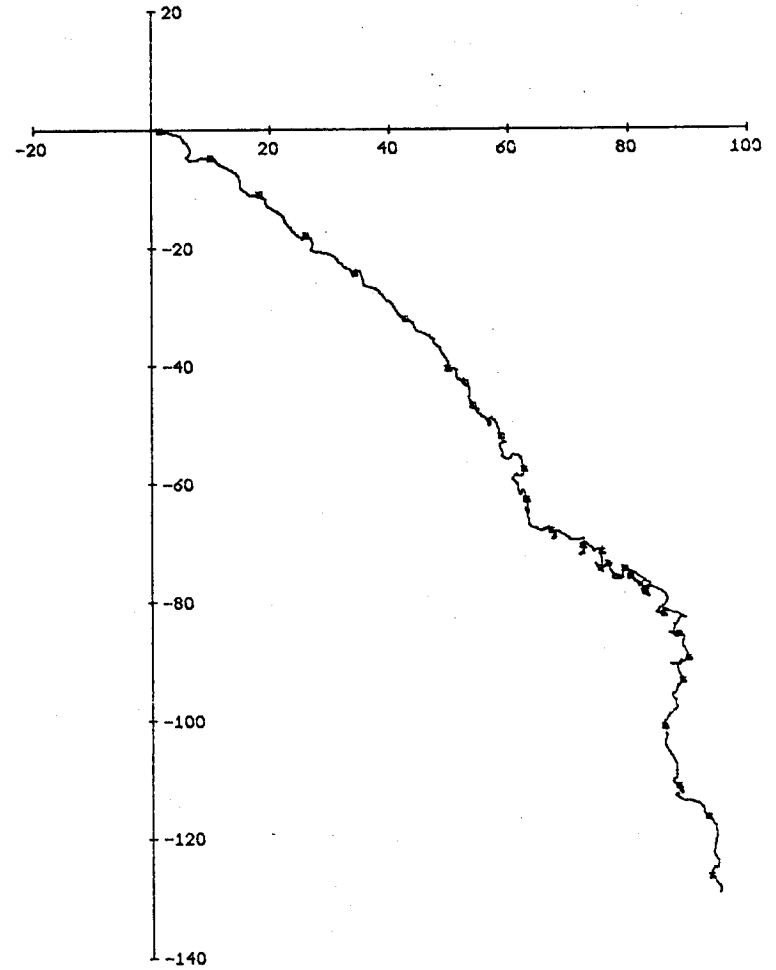
60 METERS AT FOREST FERN. 25.5 DAYS STARTING 2129 24 MAR 74



100 METERS AT FOREST FERN. 25.5 DAYS STARTING 2119 24 MAR 74

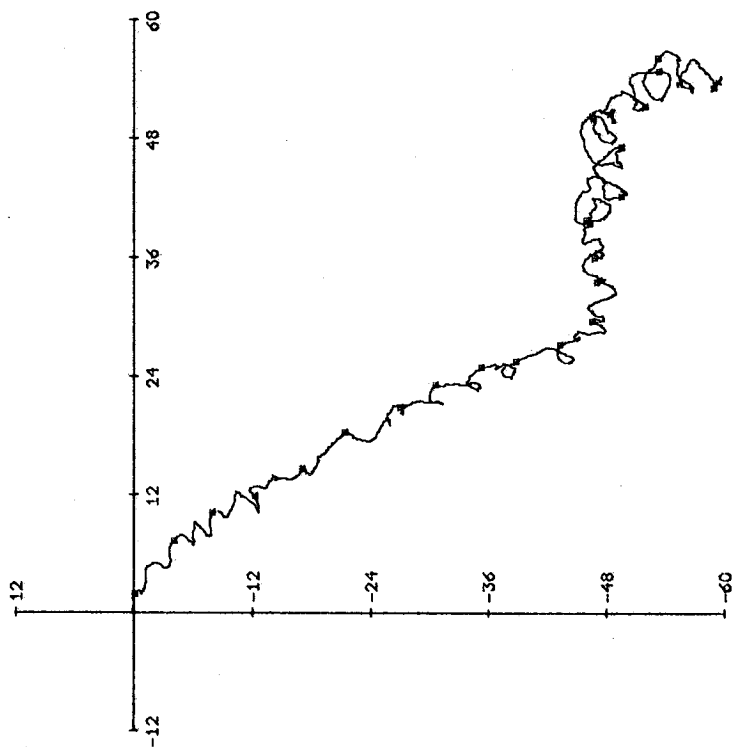


150 METERS AT FOREST FERN. 25.5 DAYS STARTING 2125 24 MAR 74



200 M AT FOREST FERN. 25.4 DAYS STARTING 2125 24 MARCH 74

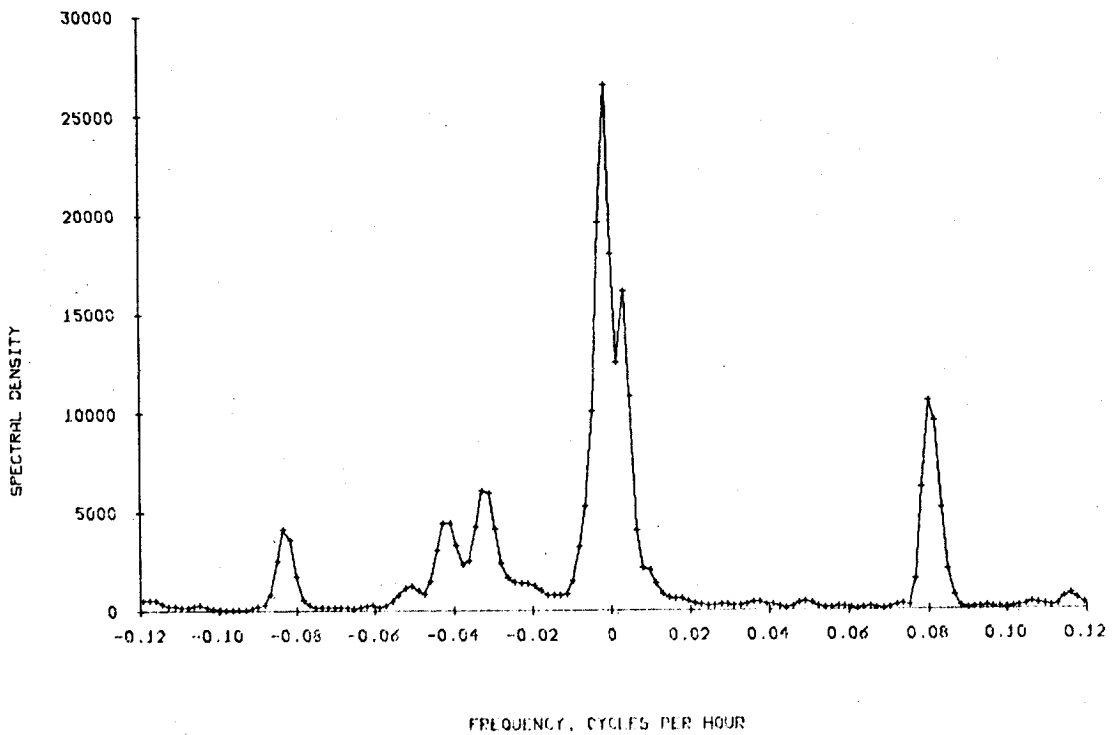
The windspeed sensor malfunctioned intermittently and it was necessary to replace hundreds of speeds during the first 9 1/2 days of the installation by interpolated values. Because of the probable effect of this on the spectrum, no current spectrum were computed.



300 M AT FOREST FERN. 25.4 DAYS STARTING 2130 24 MAR 74

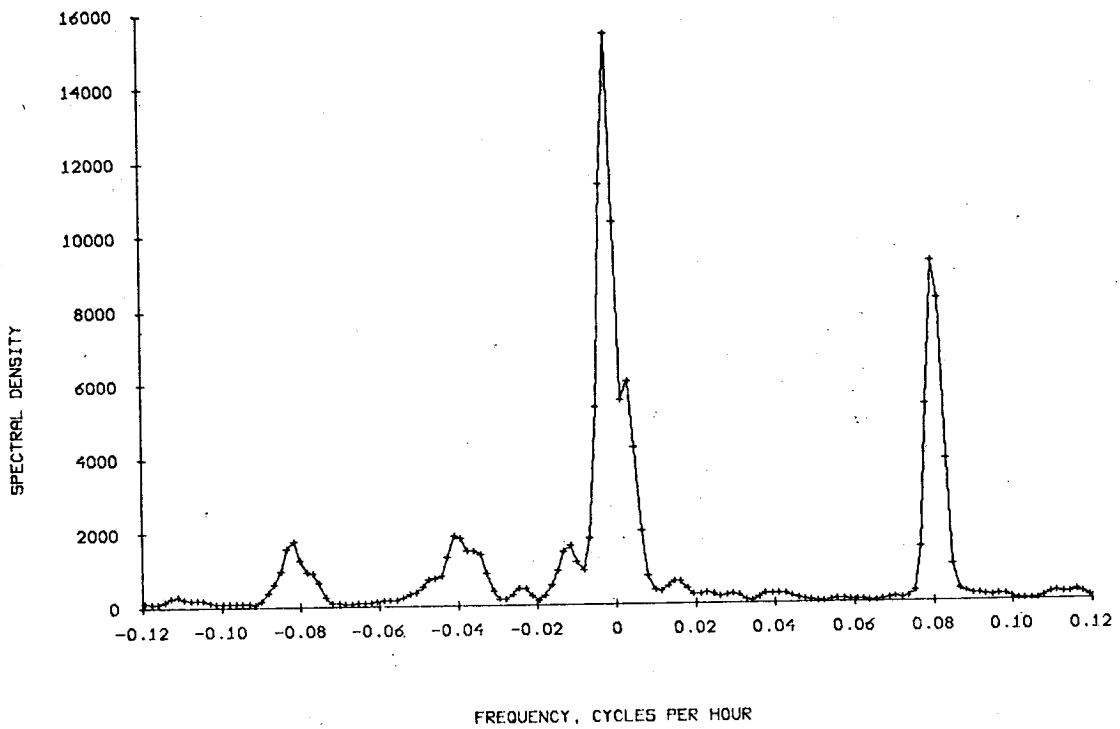
ROTARY SPECTRUM

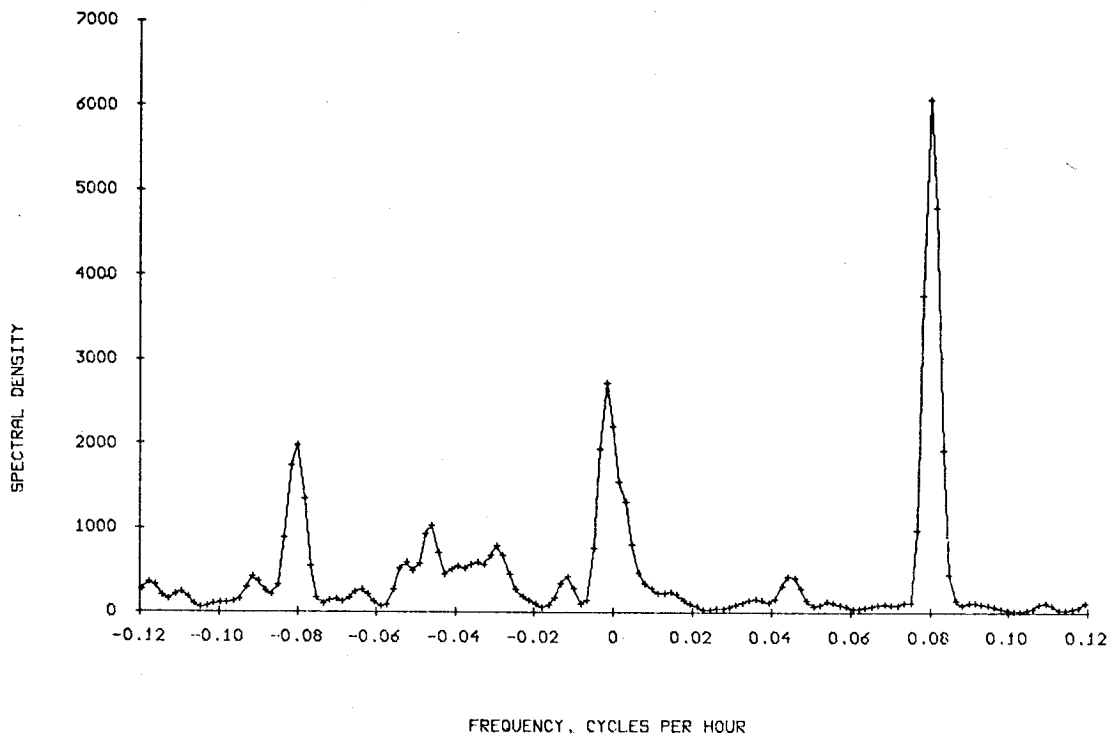
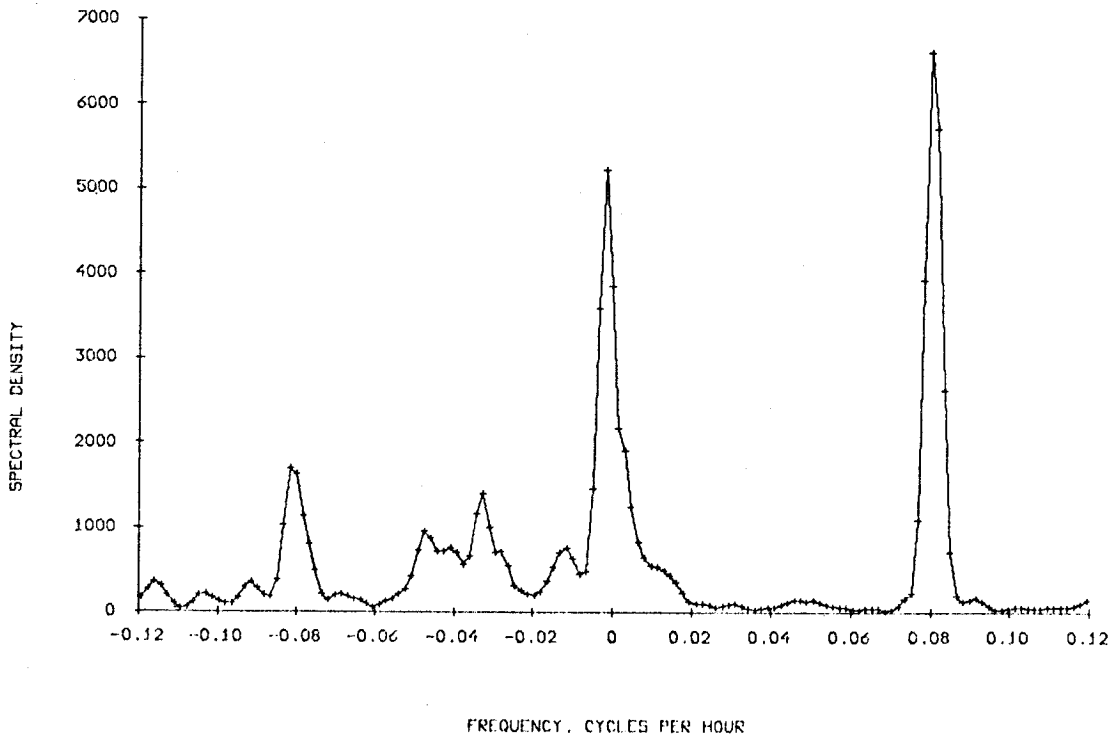
20 METERS AT FOREST FERN. 24 MARCH 74 TO 19 APRIL 74. TAPE 686/16



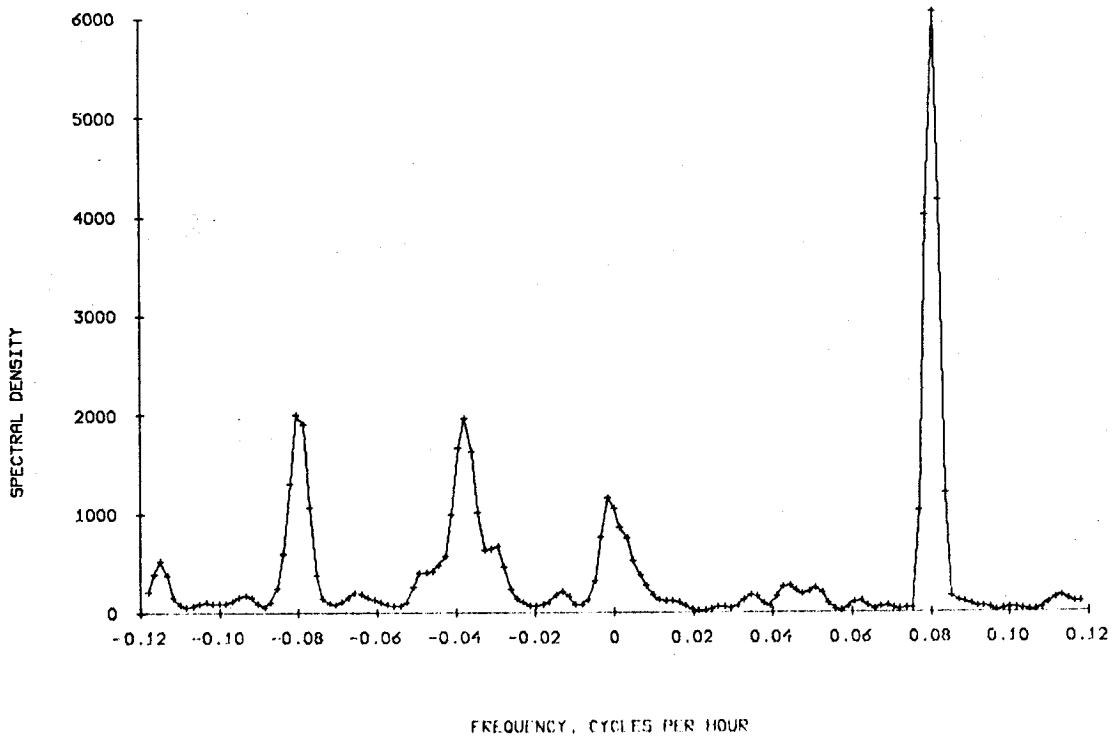
ROTARY SPECTRUM

60 METERS AT FOREST FERN. 24 MAR 74 TO 19 APR 74. TAPE 689/12

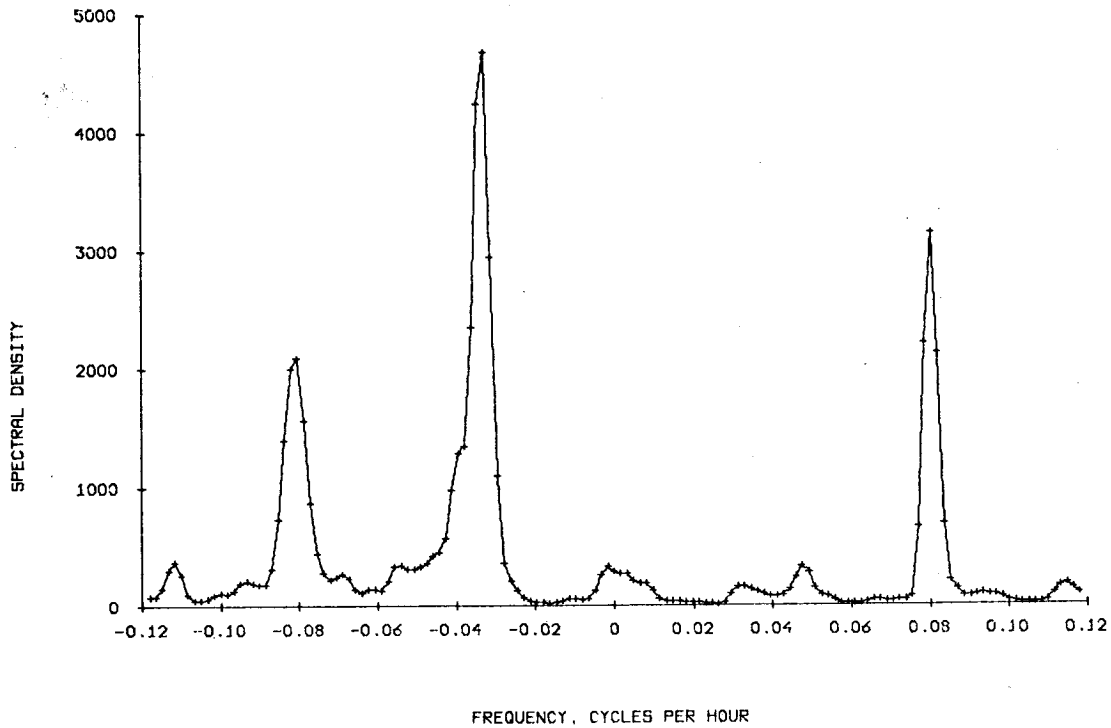




ROTARY SPECTRUM
200 M AT FOREST FERN. 24 MAR 74 TO 19 APR 74. TAPE 455/25



ROTARY SPECTRUM
300 M AT FOREST FERN. 24 MAR 74 TO 19 APR 74. TAPE 500/25





Coyne 7A

1974 JOINT I Installation

FOXGLOVE

Position: 21°40.5'N, 17°57.2'W

Depth of Water: 1200 m

Surface buoy set at 1400 GMT 7 March 1974 by R/V GILLISS

Subsurface moorings set at 0721 GMT 17 March 1974 by R/V GILLISS

Retrieved at 1036 GMT 6 April 1974 by R/V GILLISS

Data Interval: 0721 GMT 17 March to 0121 GMT 6 April

Instrumentation

<u>Intended Depth</u>	<u>RCM4 Serial No./Tape No.</u>
0 m	D124/9
18 m	911/1
30 m	912/1
50 m	914/1
75 m	915/1
100 m	790/1
150 m	791/1
200 m	453/26
	917/1 (flooded)
300 m	990/1
400 m	910/1
	792/1

Data were recorded every 10 minutes. The surface buoy was set on 7 March, but the subsurface instruments were not installed until 17 March due to inclement weather. All subsurface meters recorded temperature, current speed and direction except the 250 m instrument which was flooded. Pressure sensors failed on the 50 m, 75 m and 200 m instruments. On the 500 m instrument, the speed rotor apparently stalled for about a day and a half, starting near 1200 hours 2 April. But it produced good speeds both before and after this malfunction. The surface buoy measured air and water temperature.

FOXGLOVE

0 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
T Air (C)	17.5	0.6	0.2	2.6	19.0	15.9	705
T Water (C)	17.5	0.3	0.8	3.1	18.5	17.0	705

18 m

S (cm/sec)	26.0	6.8	-0.4	3.4	42.3	4.2	481
U (cm/sec)	4.3	21.0	-0.5	1.8	35.5	-41.7	481
V (cm/sec)	5.4	15.3	-0.3	2.1	37.3	-29.6	481
T Water (C)	17.8	0.2	0.5	2.4	18.2	17.5	481
P (10 n/m)	1.2	0.1	0.5	2.8	1.5	1.0	481

30 m

S (cm/sec)	25.2	5.5	-1.1	5.5	36.0	1.9	475
U (cm/sec)	8.3	19.8	-0.8	2.2	34.9	-35.9	475
V (cm/sec)	3.6	13.8	-0.2	2.2	31.2	-27.1	475
T Water (C)	17.5	0.2	-1.6	6.8	18.0	16.6	475
P (10 n/m)	2.5	0.1	0.4	3.2	2.7	2.4	475

50 m

S (cm/sec)	22.0	5.0	-0.6	4.5	34.4	3.4	481
U (cm/sec)	9.7	17.0	-0.9	2.5	34.0	-31.1	481
V (cm/sec)	0.9	11.1	-0.1	2.2	24.0	-24.3	481
T Water (C)	17.3	0.3	-1.0	2.6	17.8	16.5	481

75 m

S (cm/sec)	18.6	5.2	0.0	4.0	36.1	2.1	481
U (cm/sec)	11.2	13.0	-1.0	3.2	36.1	-23.7	481
V (cm/sec)	-0.1	8.9	-0.0	2.2	20.5	-19.4	481
T Water (C)	16.9	0.4	-0.2	1.9	17.6	15.7	481

FOXGLOVE

100 m

	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	16.6	5.4	0.7	3.8	35.3	2.5	481
U (cm/sec)	11.9	10.5	-0.9	3.8	35.2	-19.9	481
V (cm/sec)	-1.6	7.1	0.1	2.5	20.7	-18.6	481
T Water (C)	16.5	0.4	-0.6	3.3	17.6	15.2	481
P (10 n/m)	9.6	0.1	0.8	3.2	9.8	9.4	481

150 m

S (cm/sec)	13.3	3.9	0.4	3.4	27.2	2.8	481
U (cm/sec)	9.7	7.5	-0.9	3.6	26.4	-12.9	481
V (cm/sec)	-2.1	6.2	0.3	2.3	14.3	-16.8	481
T Water (C)	15.5	0.7	-0.3	1.7	16.7	13.9	481
P (10 n/m)	15.2	0.1	0.6	3.5	15.5	15.1	481

200 m

S (cm/sec)	10.8	3.4	0.0	3.2	23.4	1.0	481
U (cm/sec)	7.0	6.2	-0.7	3.0	23.2	-11.8	481
V (cm/sec)	-2.4	5.8	0.2	2.2	14.3	-16.2	481
T Water (C)	14.8	0.5	0.3	1.9	16.2	13.9	481

300 m

S (cm/sec)	10.4	3.6	0.2	2.5	19.9	1.0	481
U (cm/sec)	4.6	6.7	-0.6	2.9	17.9	-16.1	481
V (cm/sec)	-1.3	7.3	0.3	2.5	19.9	-18.5	481
T Water (C)	13.1	0.4	0.3	2.7	14.2	12.3	481
P (10 n/m)	30.0	0.0	1.5	3.4	30.1	30.0	481

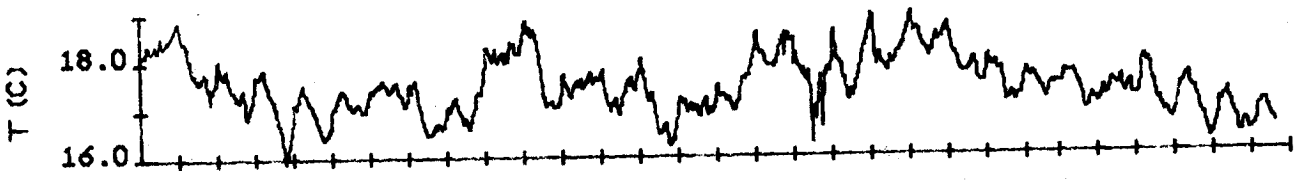
FOXGLOVE

400 m

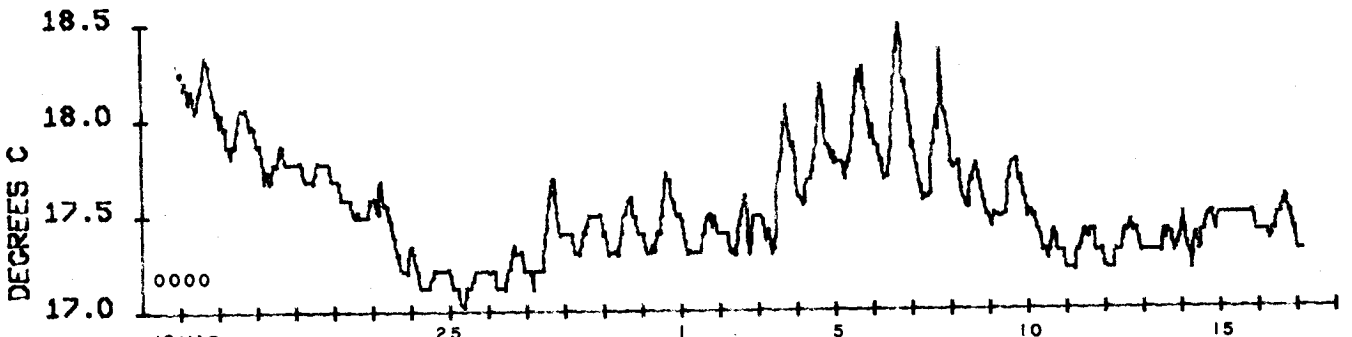
	MEAN	S.D.	SKEW	KURT	MAX	MIN	N
S (cm/sec)	9.8	4.1	0.6	3.1	23.5	1.0	481
U (cm/sec)	2.7	6.3	-0.2	2.6	18.0	-15.5	481
V (cm/sec)	-1.0	8.0	-0.2	2.4	23.5	-22.0	481
T Water (C)	12.1	0.4	0.1	2.7	13.0	11.1	481
P (10 n/m)	40.2	0.1	0.8	3.3	40.4	40.1	481

500 m

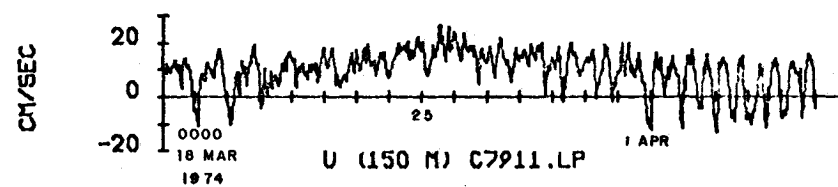
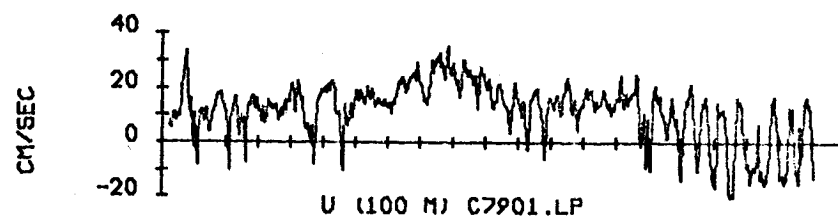
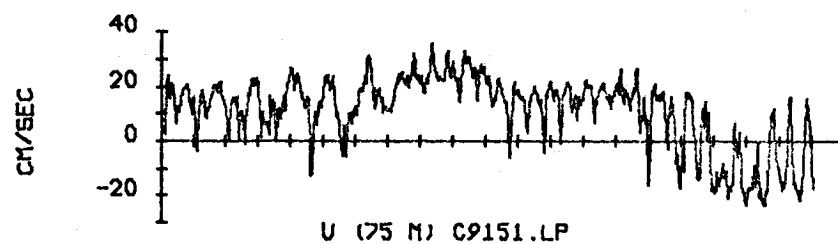
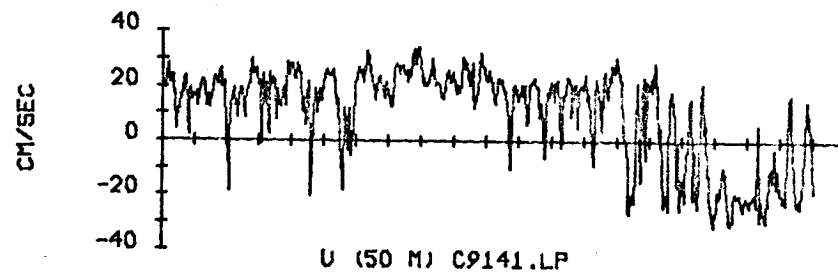
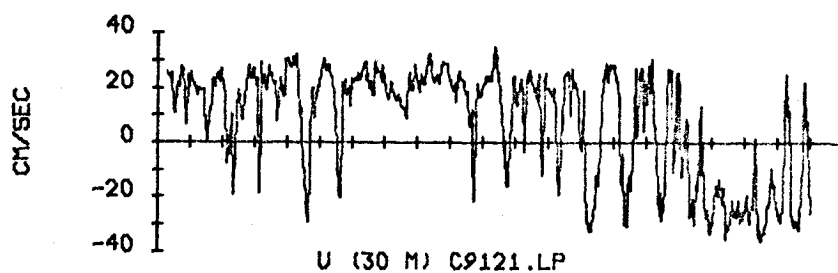
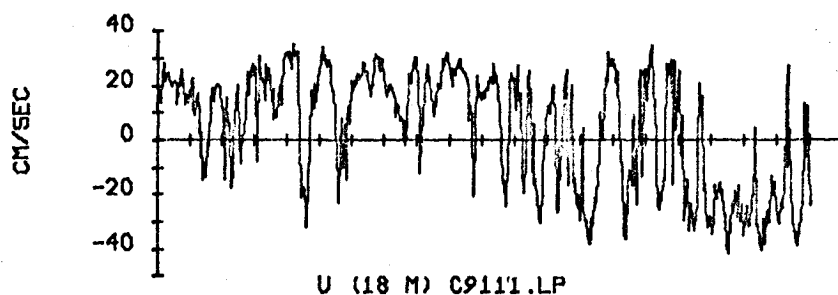
S (cm/sec)	10.5	7.0	-0.7	1.8	26.5	0.4	388
U (cm/sec)	1.1	6.8	-0.1	2.3	16.8	-14.8	388
V (cm/sec)	-1.0	9.2	-0.2	2.4	20.4	-24.7	388
T Water (C)	10.5	0.4	0.6	2.9	11.6	9.7	481
P (10 n/m)	49.8	0.0	0.3	2.8	49.9	49.7	481

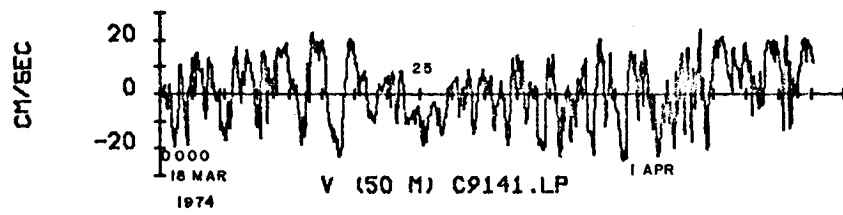
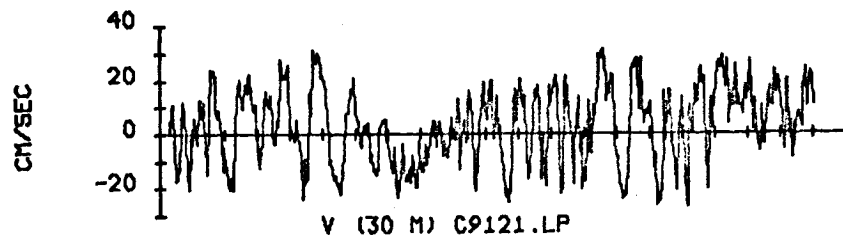
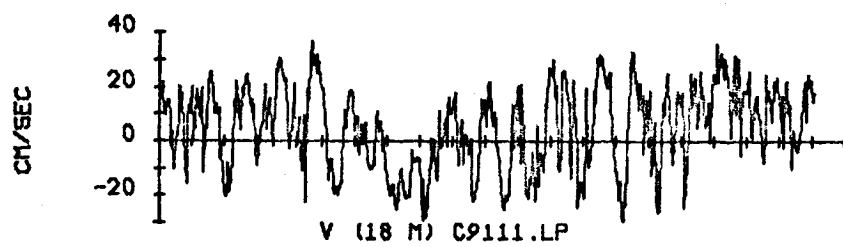
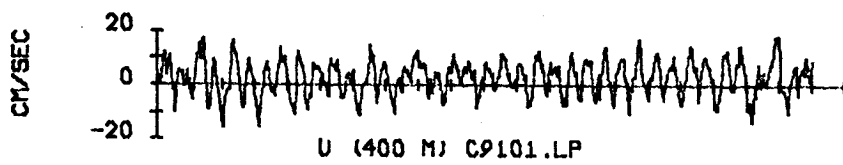
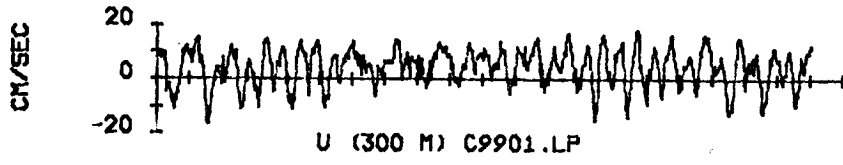
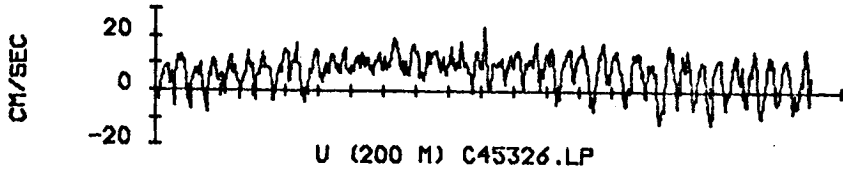


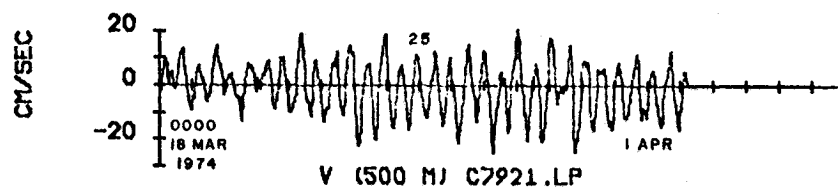
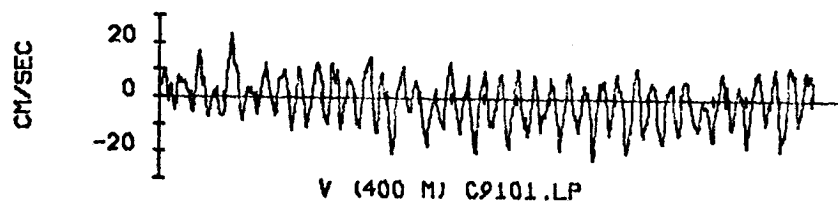
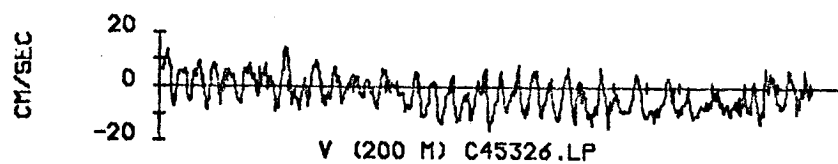
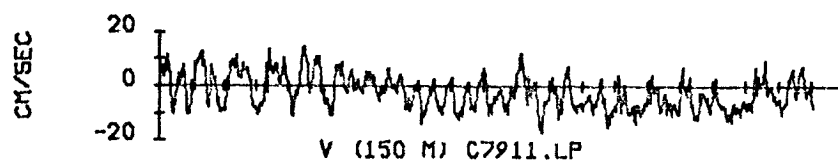
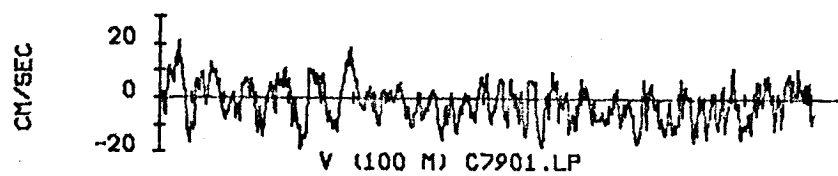
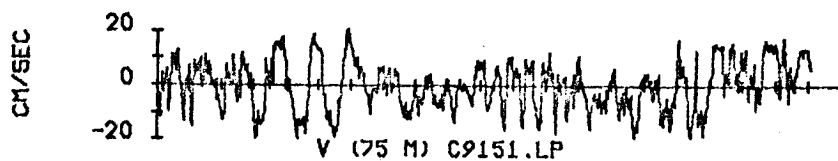
AIR TEMPERATURE D1249.LP

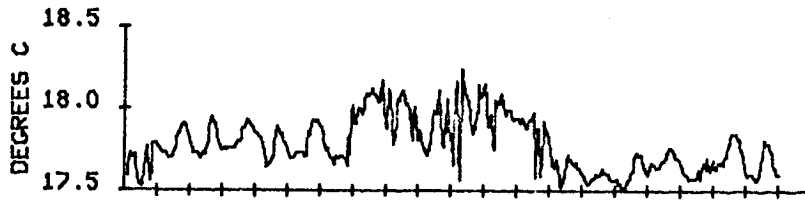


WATER TEMPERATURE (0 M) D1249.LP

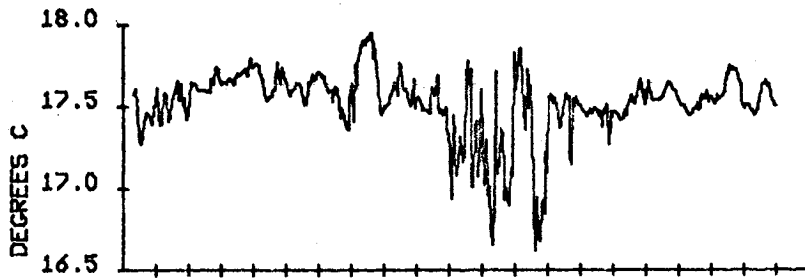




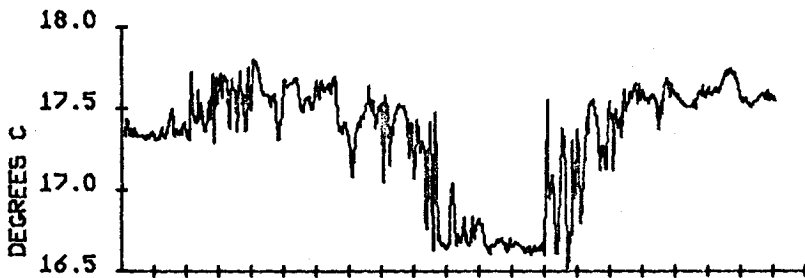




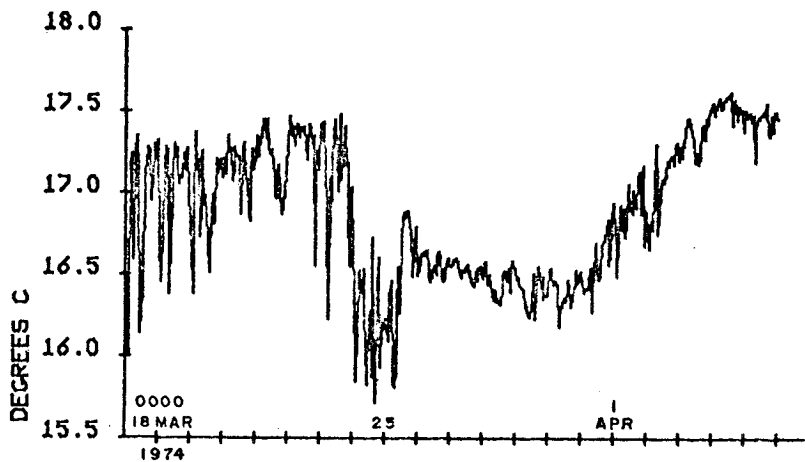
WATER TEMPERATURE (18 M) C9111.LP



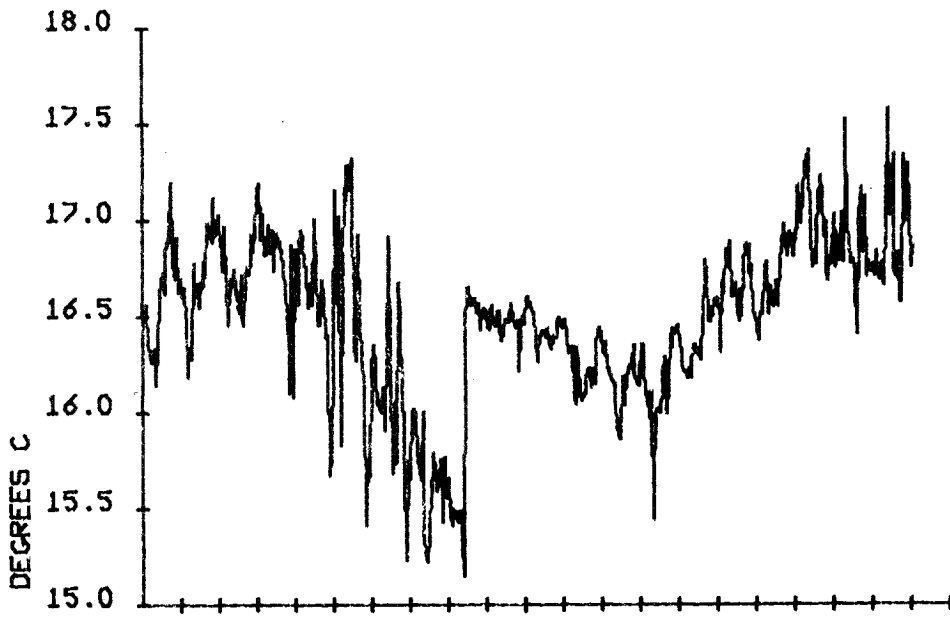
WATER TEMPERATURE (30 M) C9121.LP



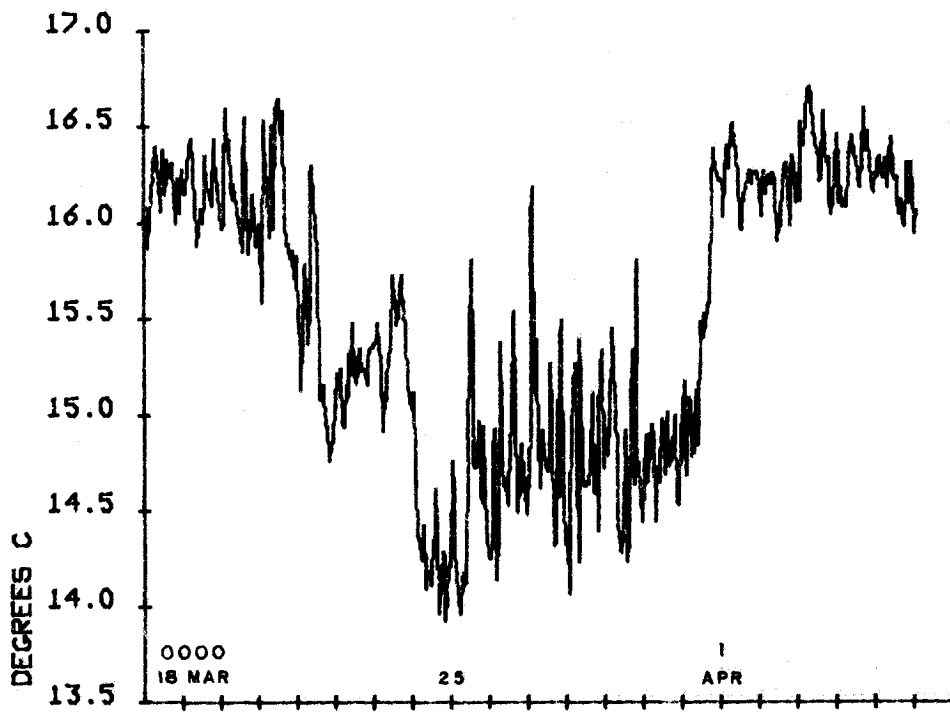
WATER TEMPERATURE (50 M) C9141.LP



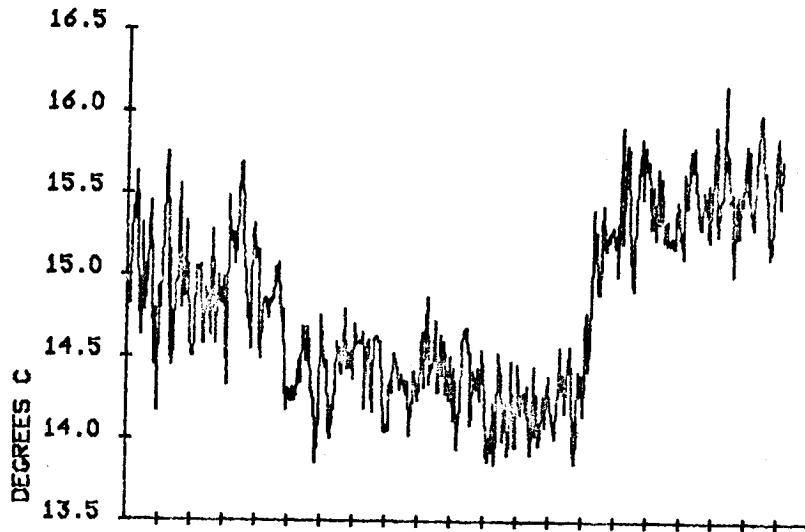
WATER TEMPERATURE (75 M) C9151.LP



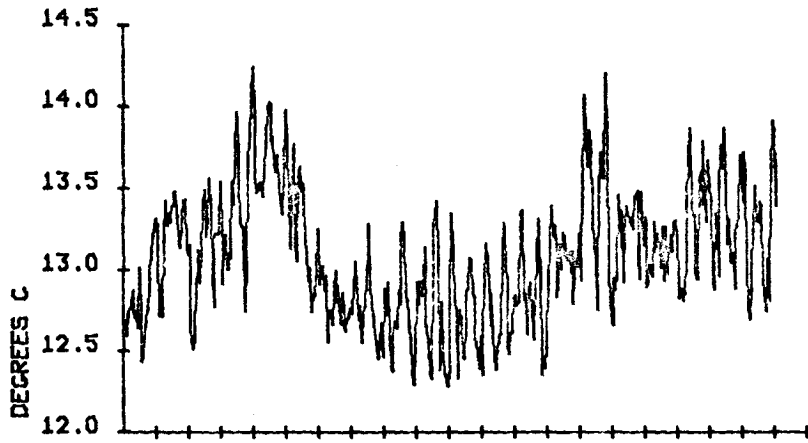
WATER TEMPERATURE (100 M) C7901.LP



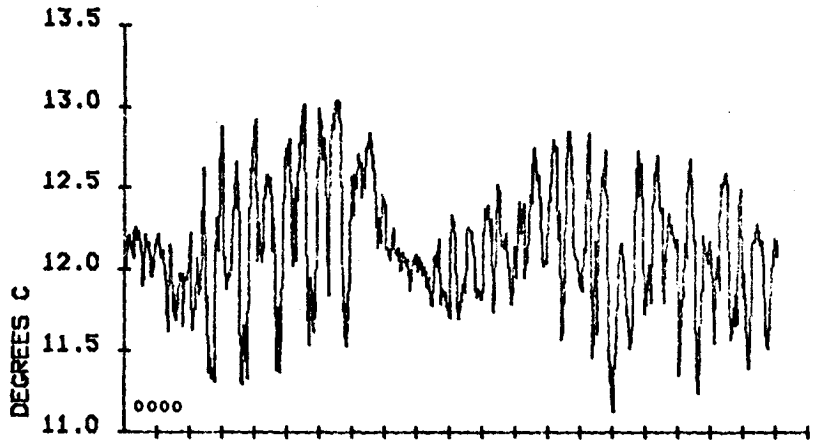
WATER TEMPERATURE (150 M) C7911.LP



WATER TEMPERATURE (200 M) C45326.LP

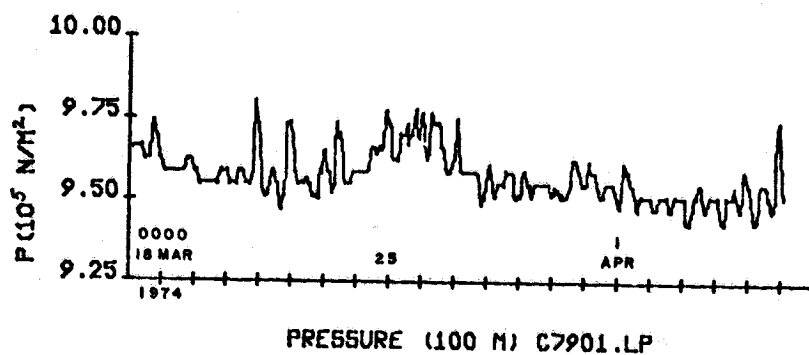
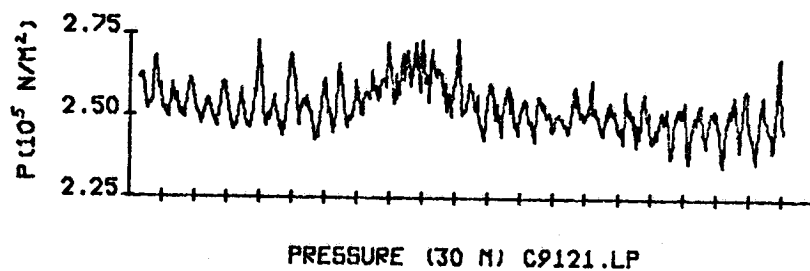
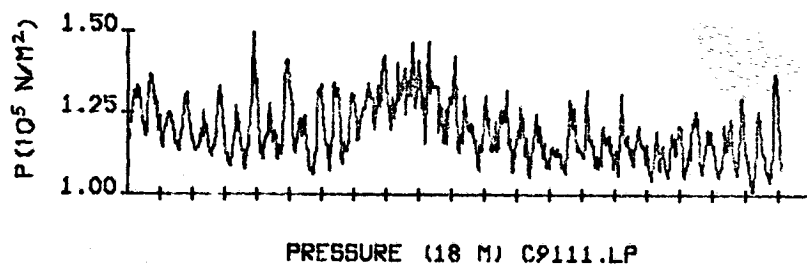
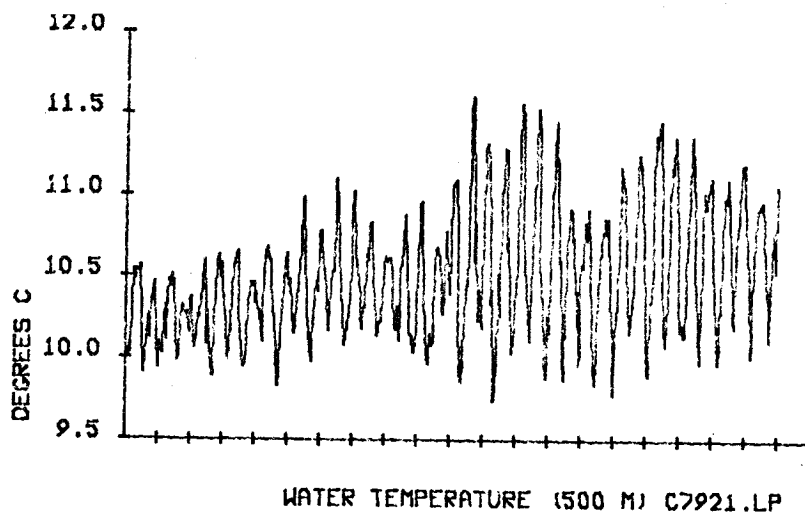


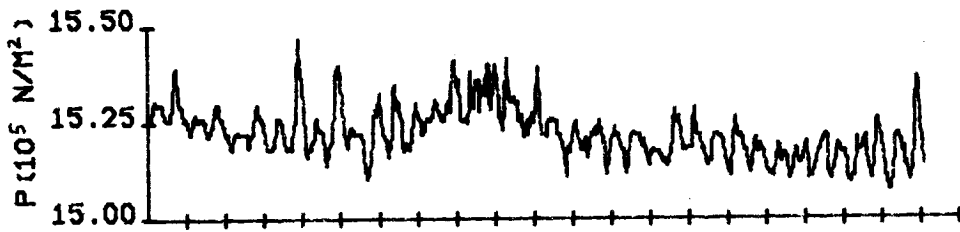
WATER TEMPERATURE (300 M) C9901.LP



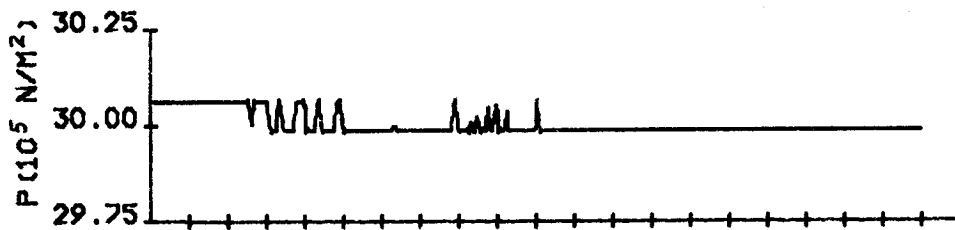
18 MAR
1974

25 1 APR
WATER TEMPERATURE (400 M) C9101.LP

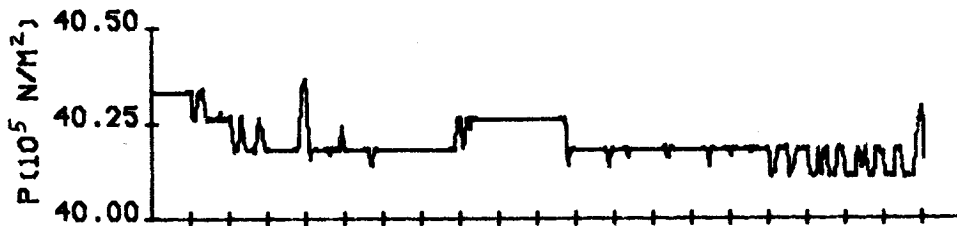




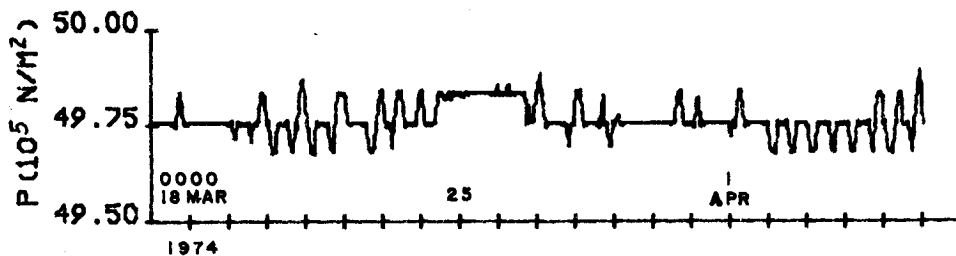
PRESSURE (150 M) C7911.LP



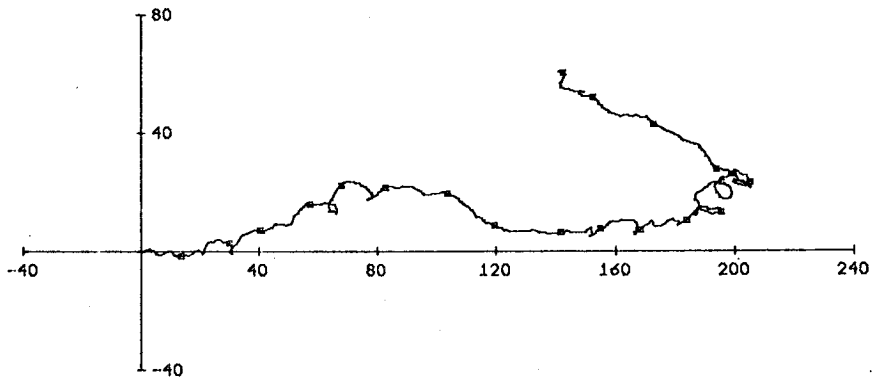
PRESSURE (300 M) C9901.LP



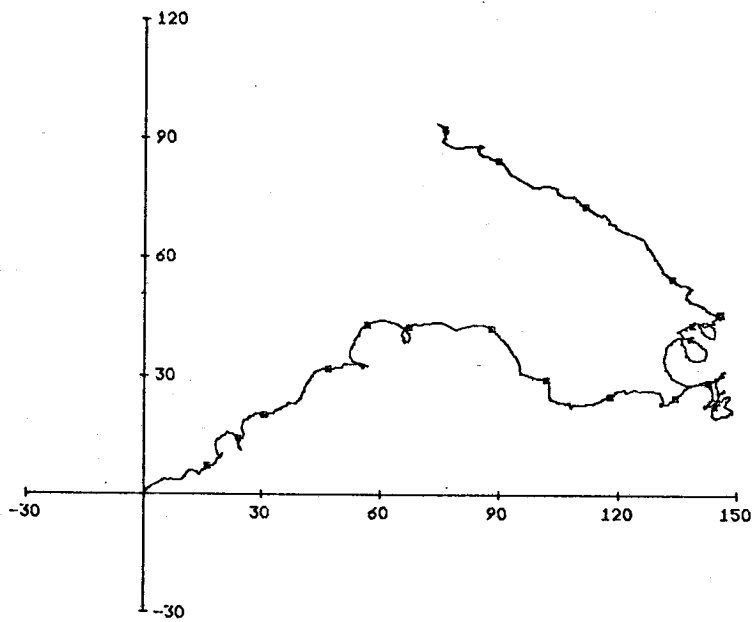
PRESSURE (400 M) C9101.LP



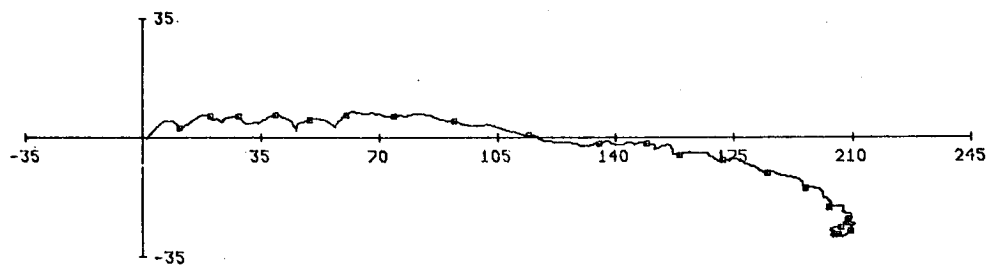
PRESSURE (500 M) C7921.LP



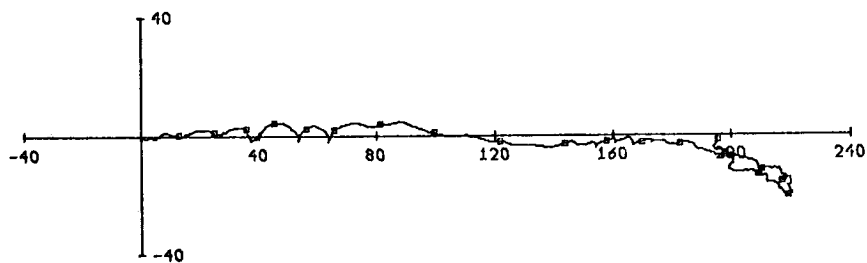
30 M AT FOXGLOVE. 19.7 DAYS STARTING 0721 17 MARCH 74



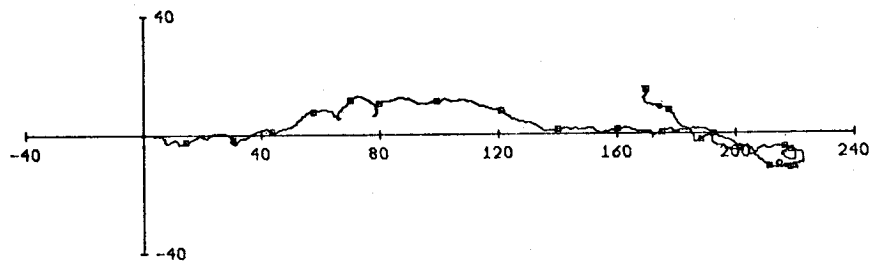
18 M AT FOXGLOVE. 20 DAYS STARTING 0151 17 MARCH 74



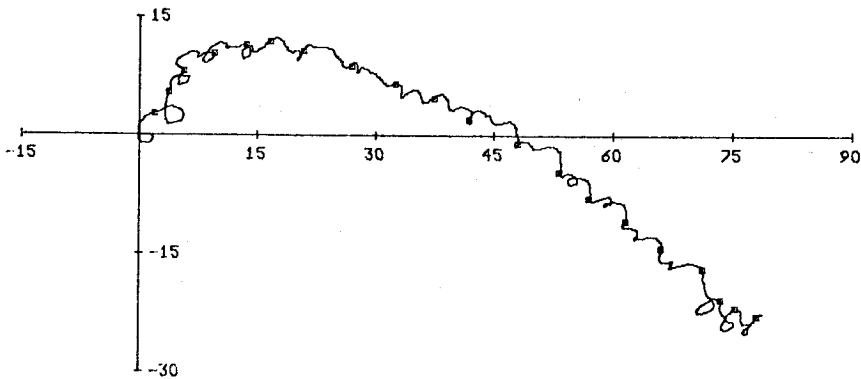
100 M AT FOXGLOVE. 20 DAYS STARTING 0151 17 MARCH 74 GMT



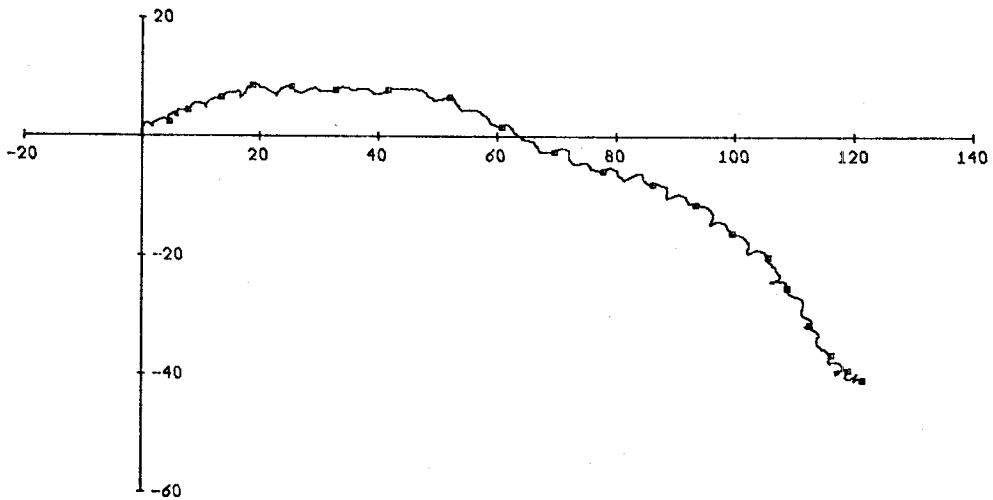
75 M AT FOXGLOVE. 20 DAYS STARTING 0152 17 MARCH 74 GMT



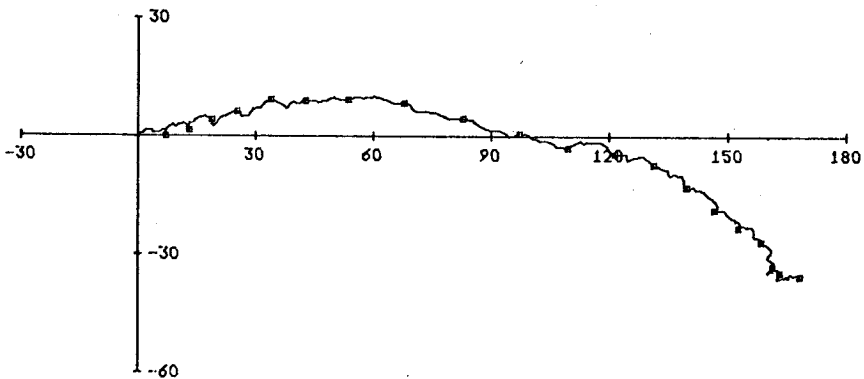
50 M AT FOXGLOVE. 20 DAYS STARTING 0151 17 MARCH 74 GMT



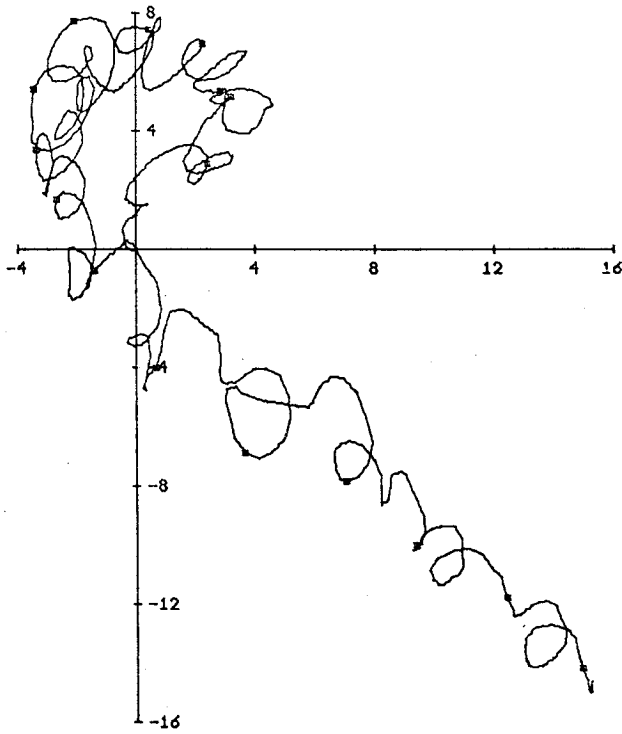
300 M AT FOXGLOVE. 20 DAYS STARTING 0146 17 MARCH 74 GMT



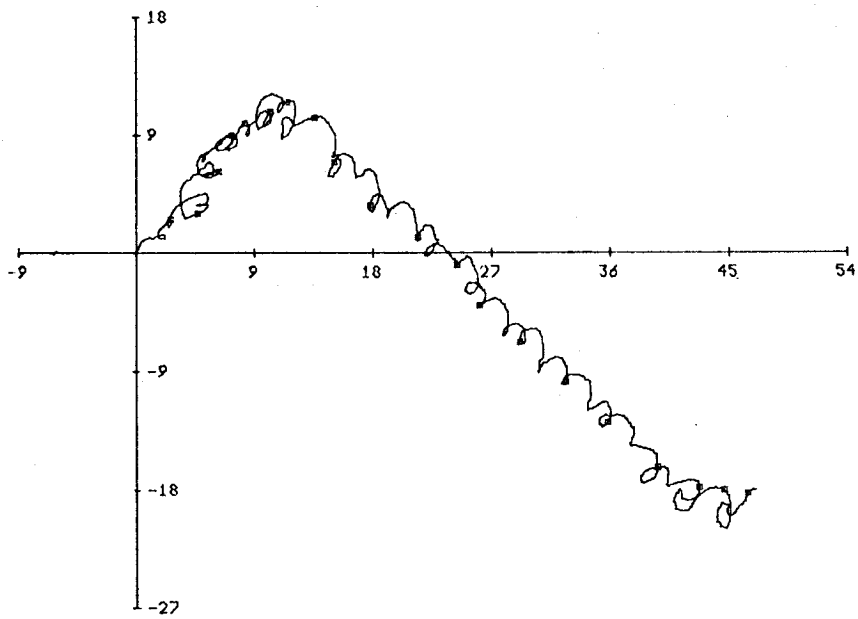
200 M AT FOXGLOVE. 20 DAYS STARTING 0153 17 MARCH 74 GMT



150 M AT FOXGLOVE. 20 DAYS STARTING 0153 17 MARCH 74 GMT



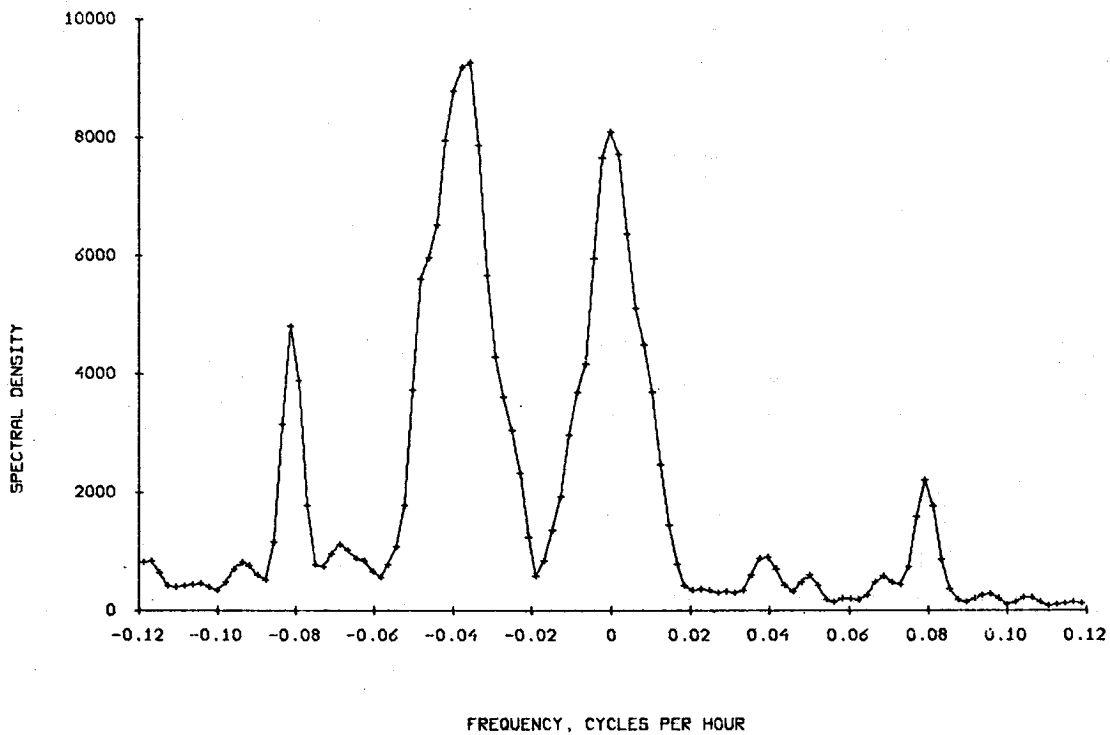
500 METERS AT FOXGLOVE. 16.2 DAYS STARTING 0131 17 MAR 74



400 M AT FOXGLOVE. 20 DAYS STARTING 0147 17 MARCH 74 GMT

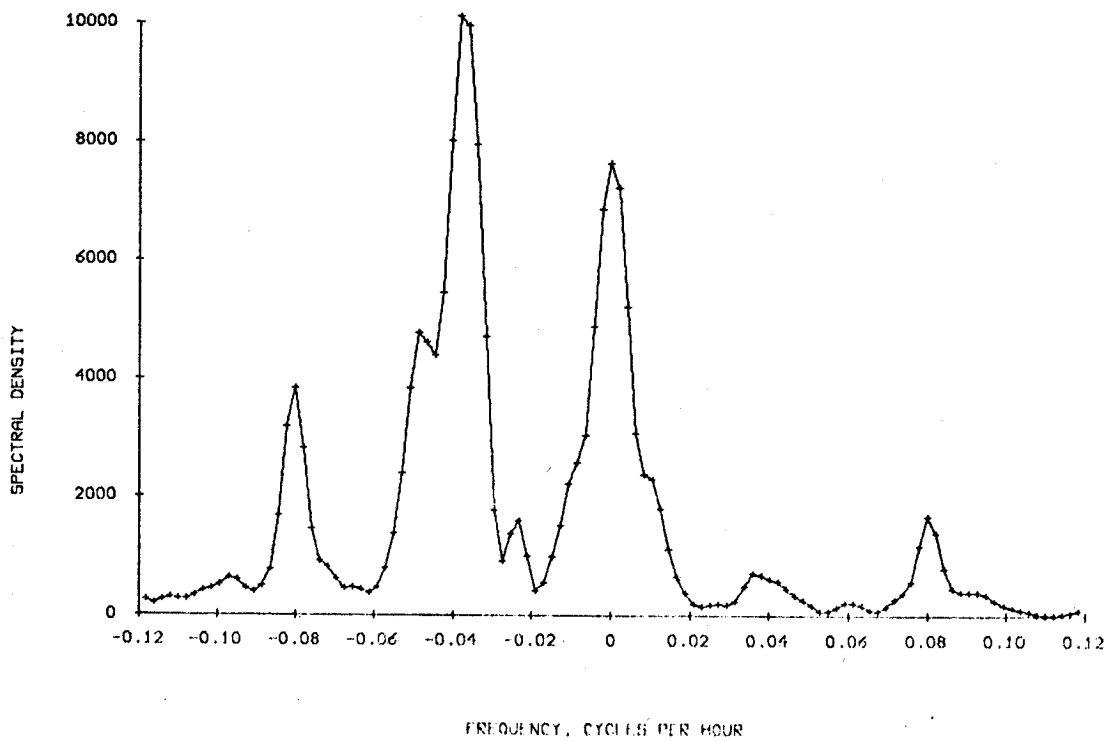
ROTARY SPECTRUM

18 METERS AT FOXGLOVE. 16 MAR 74 TO 6 APR 74. TAPE 911/1

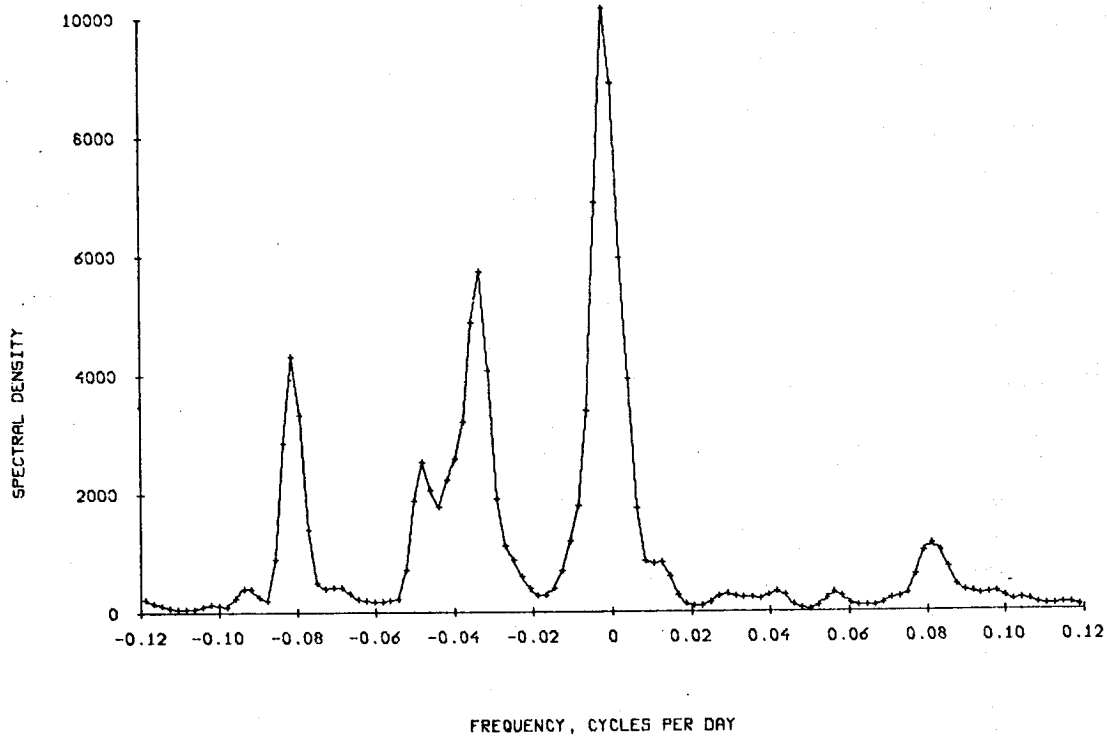


ROTARY SPECTRUM

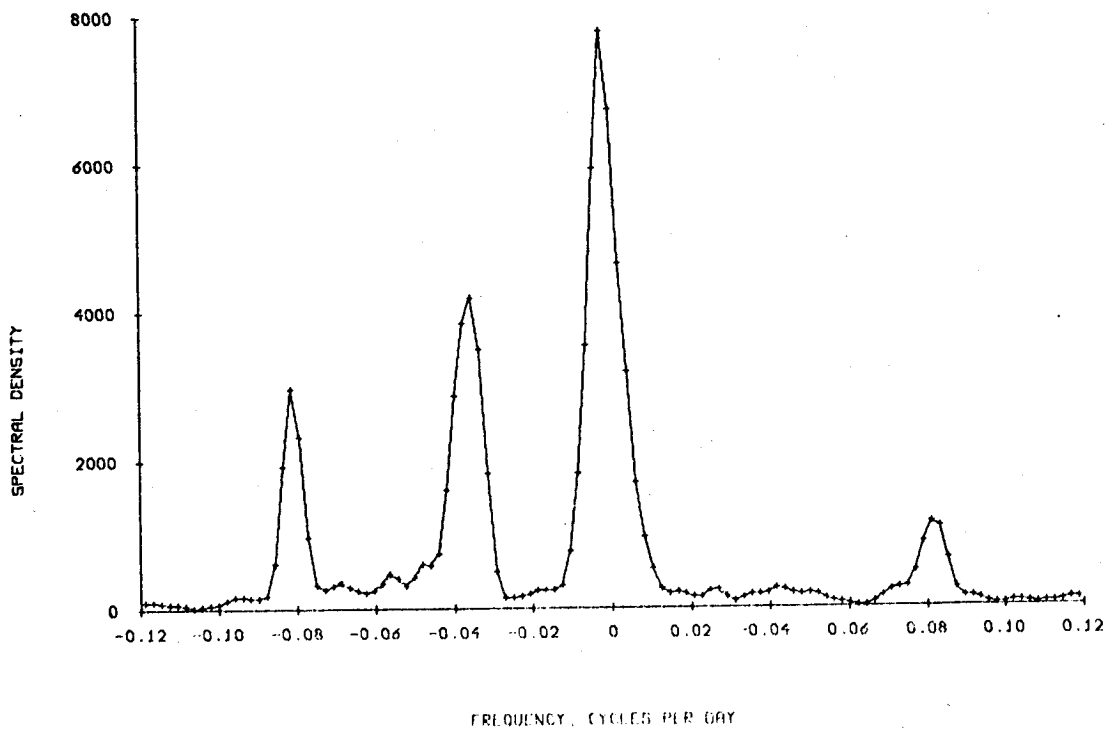
30 M AT FOXGLOVE. 17 MAR 74 TO 6 APR 74. TAPE 912/1



ROTARY SPECTRUM
50 M AT FOXGLOVE. 16 MARCH 74 TO 6 APRIL 74. TAPE 914/1

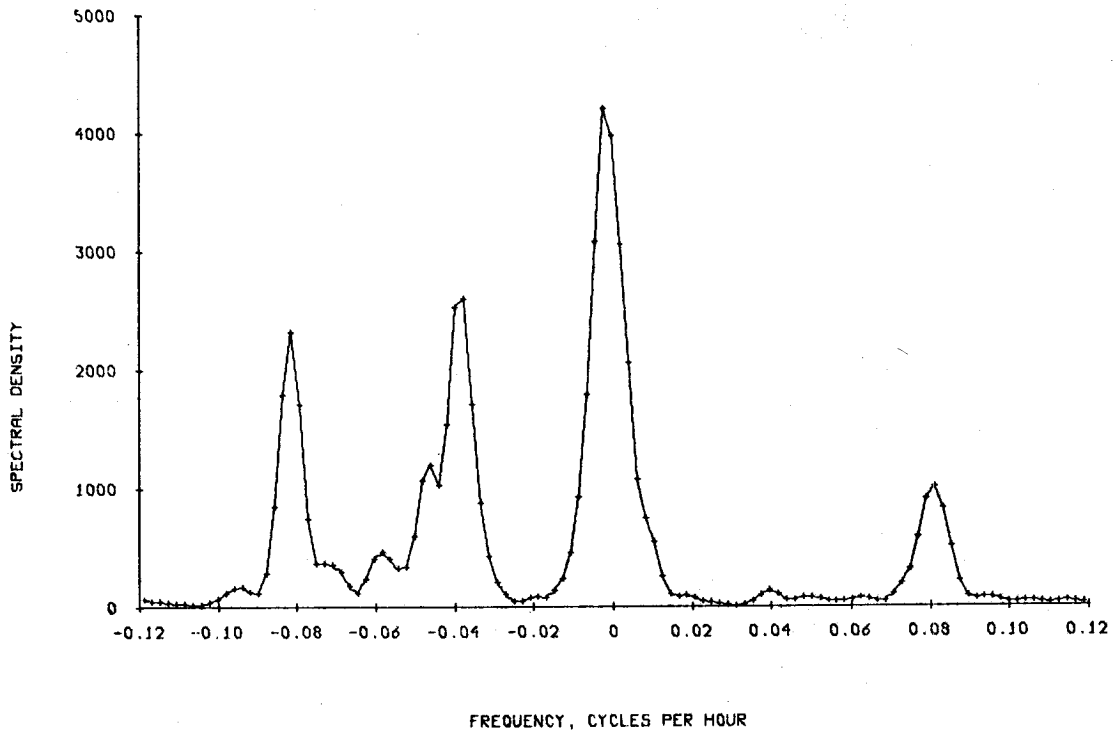


ROTARY SPECTRUM
75 M AT FOXGLOVE. 16 MARCH 74 TO 6 APRIL 74. TAPE 915/1



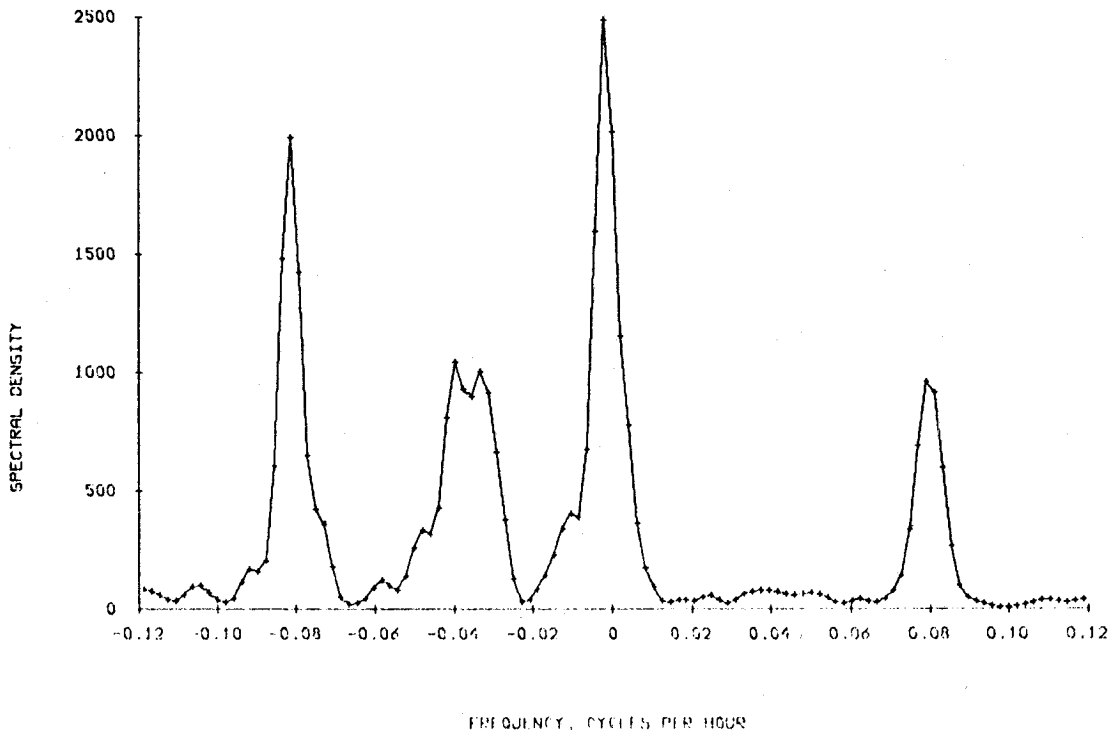
ROTARY SPECTRUM

100 M AT FOXGLOVE. 16 MAR 74 TO 6 APR 74. TAPE 720/1

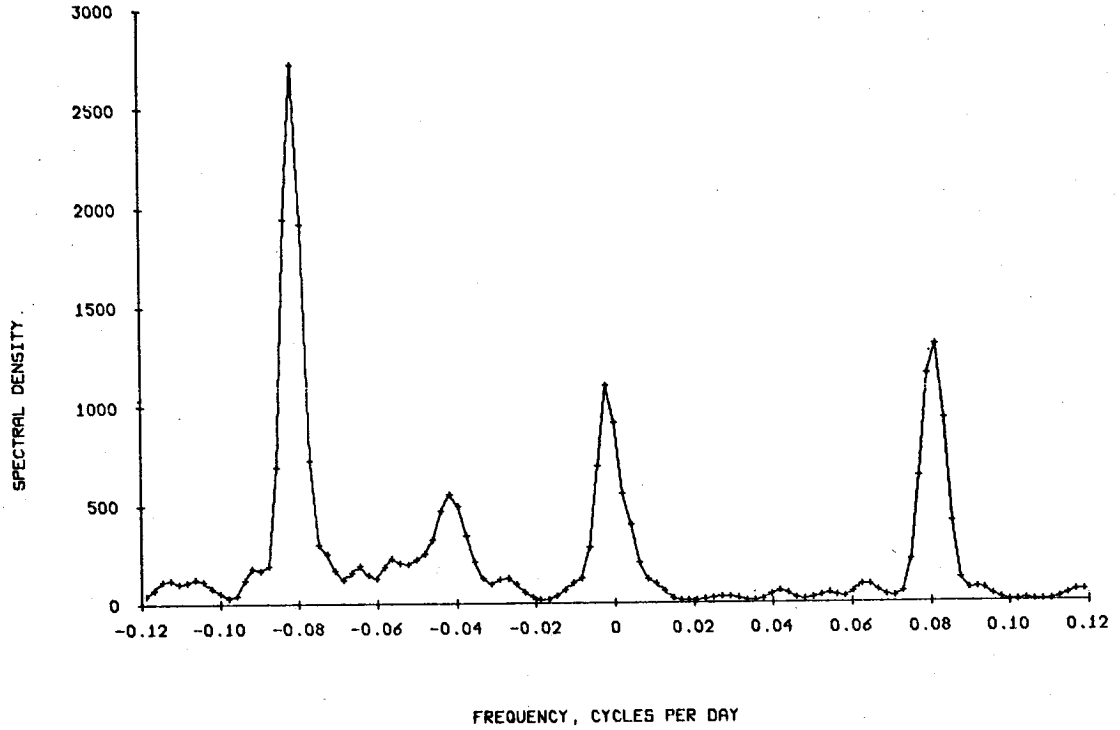


ROTARY SPECTRUM

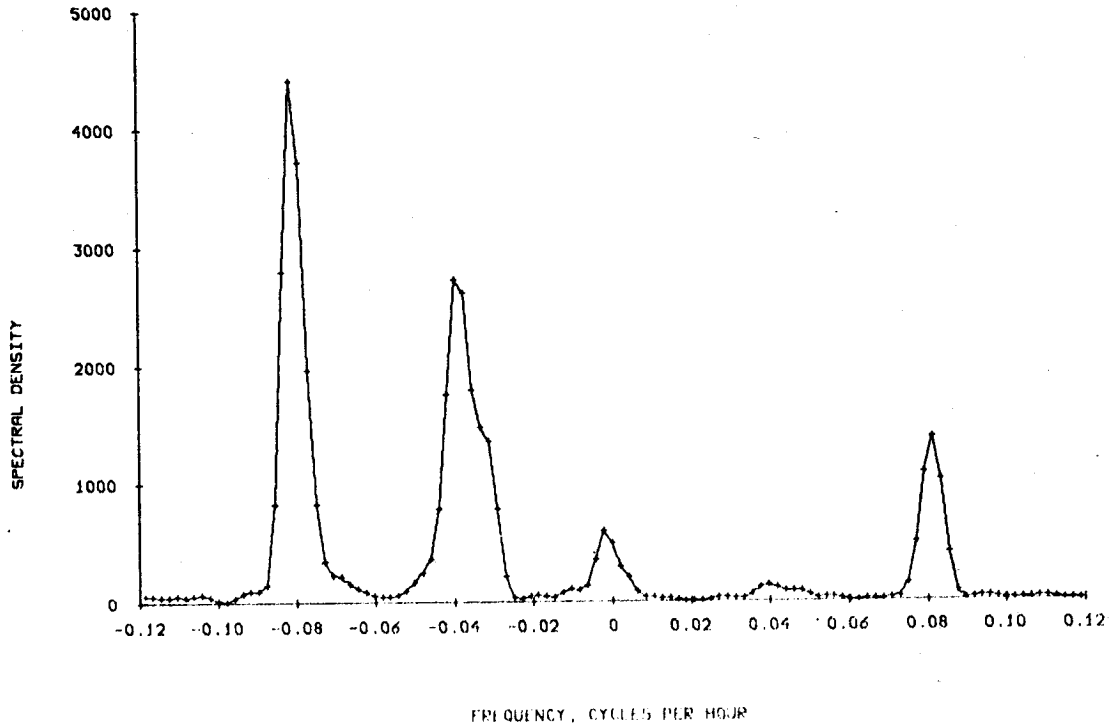
150 M AT FOXGLOVE. 16 MAR 74 TO 6 APR 74. TAPE 721/1



ROTARY SPECTRUM
200 M AT FOXGLOVE. 16 MARCH 74 TO 6 APRIL 74. TAPE 453/26

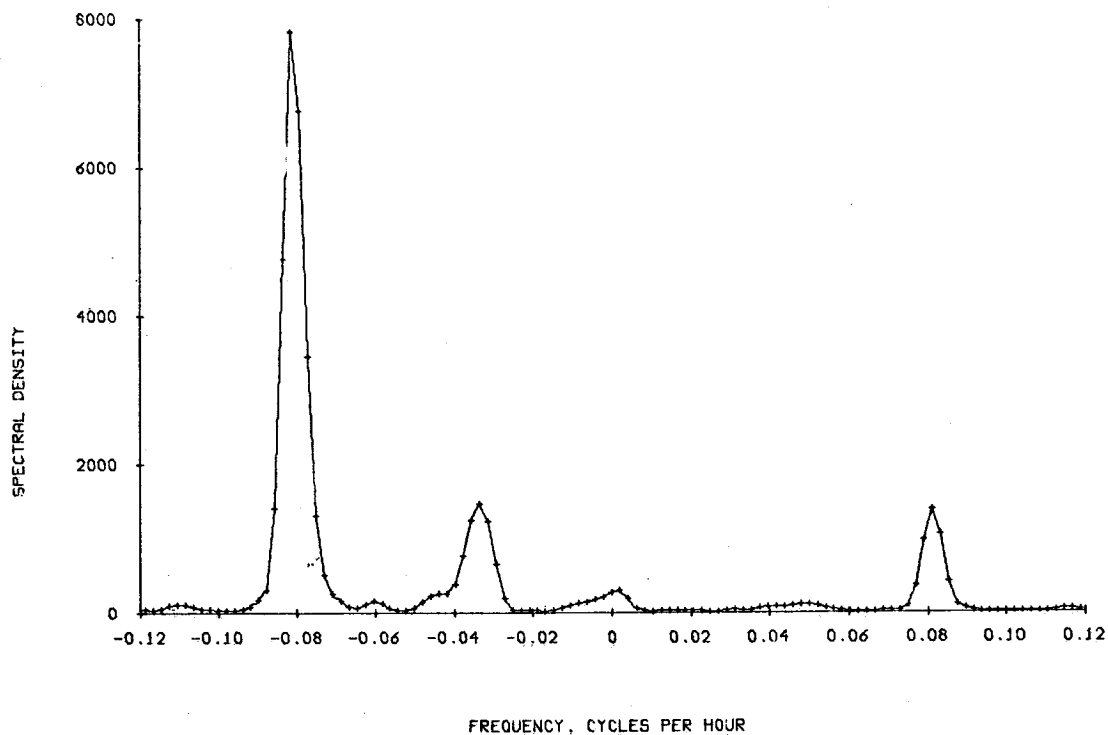


ROTARY SPECTRUM
300 M AT FOXGLOVE. 16 MAR 74 TO 6 APR 74. TAPE 990/1



ROTARY SPECTRUM

400 M AT FOXGLOVE. 16 MAR 74 TO 6 APR 74. TAPE 910/1



ROTARY SPECTRUM

500 METERS AT FOXGLOVE. 16 MAR 74 TO 2 APR 74. TAPE 792/1

