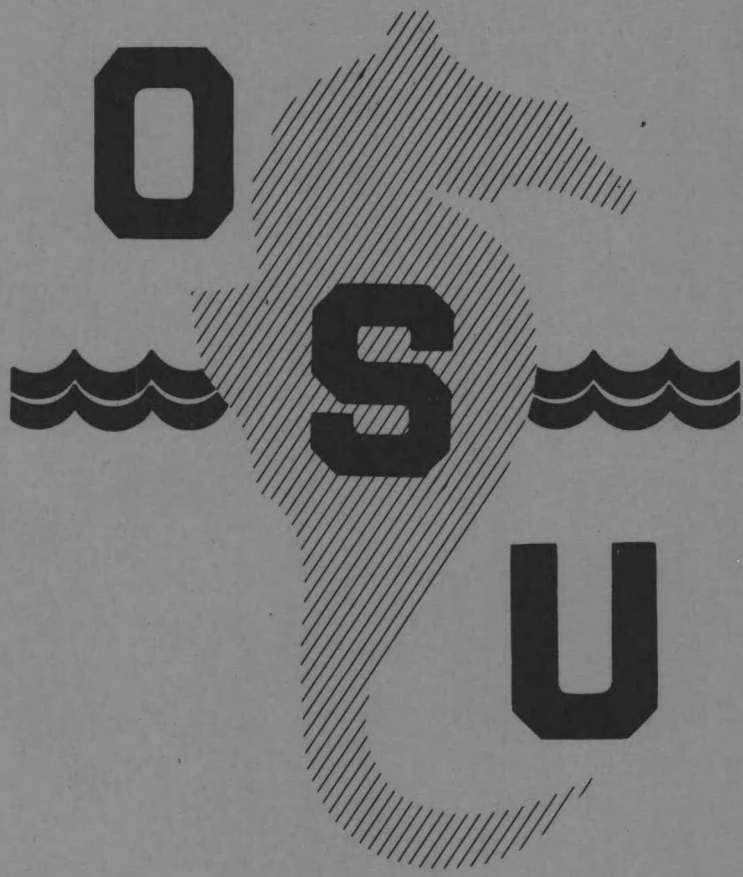


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OREGON STATE UNIVERSITY

A COMPILATION OF
OBSERVATIONS FROM MOORED
CURRENT METERS

VOLUME XII

WIND, CURRENTS AND
TEMPERATURE OVER THE
CONTINENTAL SHELF AND SLOPE
OFF PERU DURING JOINT II

March 1976 - May 1977

by
D. B. Enfield
R. L. Smith
A. Huyer

Data Report 70 April 1978 Reference 78-

National Science Foundation
OCE 76-00132

School of Oceanography
Oregon State University
Corvallis, Oregon 97331

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Abstract

Oregon State University installed and recovered moorings along the coast of Peru during the period late March 1976 through mid-May 1977. A mid-shelf mooring near 15°S (MILA) was maintained for the full duration of the experiment, through five successive installations. This site was complemented by six other moorings in the first half of 1976 and by nine in the March-April-May 1977 period. These simultaneous moorings were arranged in onshore-offshore arrays near 15°S and in alongshore arrays at midshelf from 10°S to 15°30'S.

The data described in this report consists of the hourly processed and filtered values of wind and current velocity, air and water temperature, and pressure from the 1976-1977 Peru installations. We describe the data through installation summaries, statistics tables, progressive vector diagrams, speed and direction histograms, rotary spectra and time series plots.

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Introduction

An interdisciplinary experiment called JOINT II was conducted in the coastal upwelling region off the Peru coast from late March 1976 through late May 1977. This experiment was the culmination of a series of field efforts carried out in various upwelling regions (Oregon, Baja California, Northwest Africa) as part of the NSF International Decade of Ocean Exploration Coastal Upwelling Ecosystems Analysis Program (CUEA). The Program goal is to understand the coastal upwelling ecosystem well enough to predict its response far enough in advance to be useful to mankind. The JOINT II effort contributes to this goal by extending the range of natural conditions observed in coastal upwelling systems.

This report is concerned with data from the Aanderaa current meters and meteorological data loggers installed during JOINT II by Oregon State University (OSU, Corvallis). Compilations of JOINT II hydrographic data for 1976 have been prepared by Codispoti et al. (1976), Barton (1977) and Huyer et al. (1978). Compilations for 1977 are in preparation.

The JOINT II OSU Current Meter Program

The JOINT II Aanderaa moorings were set and recovered for five contiguous periods:

- Leg I: late March to early May 1976
- Leg II: early May to late July 1976
- Leg III: late July to 30 September 1976
- Leg IV: 30 September 1976 to 4 March 1977
- Leg V: early March to mid May 1977

The time and space distribution of the Aanderaa current meter data during the first phase of JOINT II are shown graphically in Figure 1 for Legs I - IV, and in Figures 2 and 3 for Leg V. During Legs I, II and V moorings were arranged in cross-shelf arrays from nearshore to the upper slope and in alongshore arrays at midshelf from as far south as 15°30'S to as far north as 10°S. Intense coverage took place during Legs 1 and 2 from late March through most of July; monitoring of currents at midshelf was continued at 15°S (MILA) through February 1977; and the most intensive measurements were taken during March, April and May, 1977.

Table 1 summarizes the positions, water depths and accepted instrument depths by legs for the JOINT II Aanderaa moorings (only instruments from which data were obtained are included). Several navigation charts were used during JOINT II and their coastlines were found subsequently to be mutually inconsistent. Since most fixes were made by radar references to coastline points, this has created some confusion and inconsistency in geographically relating the moorings to each other, to the bathymetry and to the station positions of research vessels. The problem is discussed in greater detail in Appendix 1, and the charts used for the moorings are noted in Table 1.

All of the moorings were subsurface taut-wire installations as described (in principle) by Pillsbury, Smith and Tipper (1969). Railroad wheels were used for deadweight in conjunction with AMF acoustic releases at the base of each vertical current meter string. Over the continental shelf (250 m or less) flotation was provided by 11" diameter Viny floats (above each instrument) and a 29" steel sphere (at the top of each mooring).

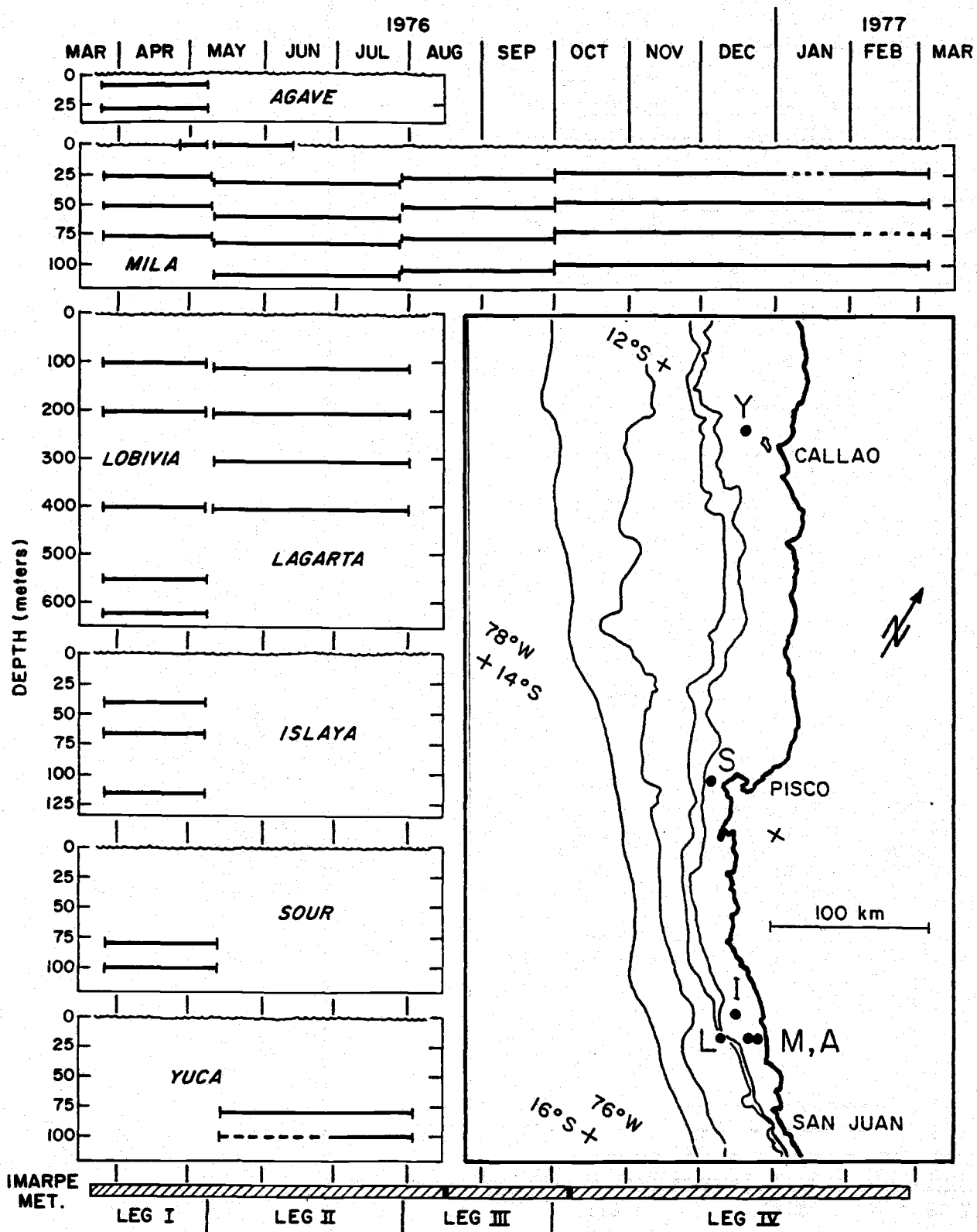


Figure 1. Time-depth distributions of Aanderaa current meter data during JOINT-II from March 1976 to March 1977, and locations of current meter moorings (inset). Lines are dashed where speed and/or direction data are missing. Mooring location symbols are: A-Agave; M-Mila; L-Lobivia and Lagarta; I-Islaya; S-Sour; Y-Yuca.

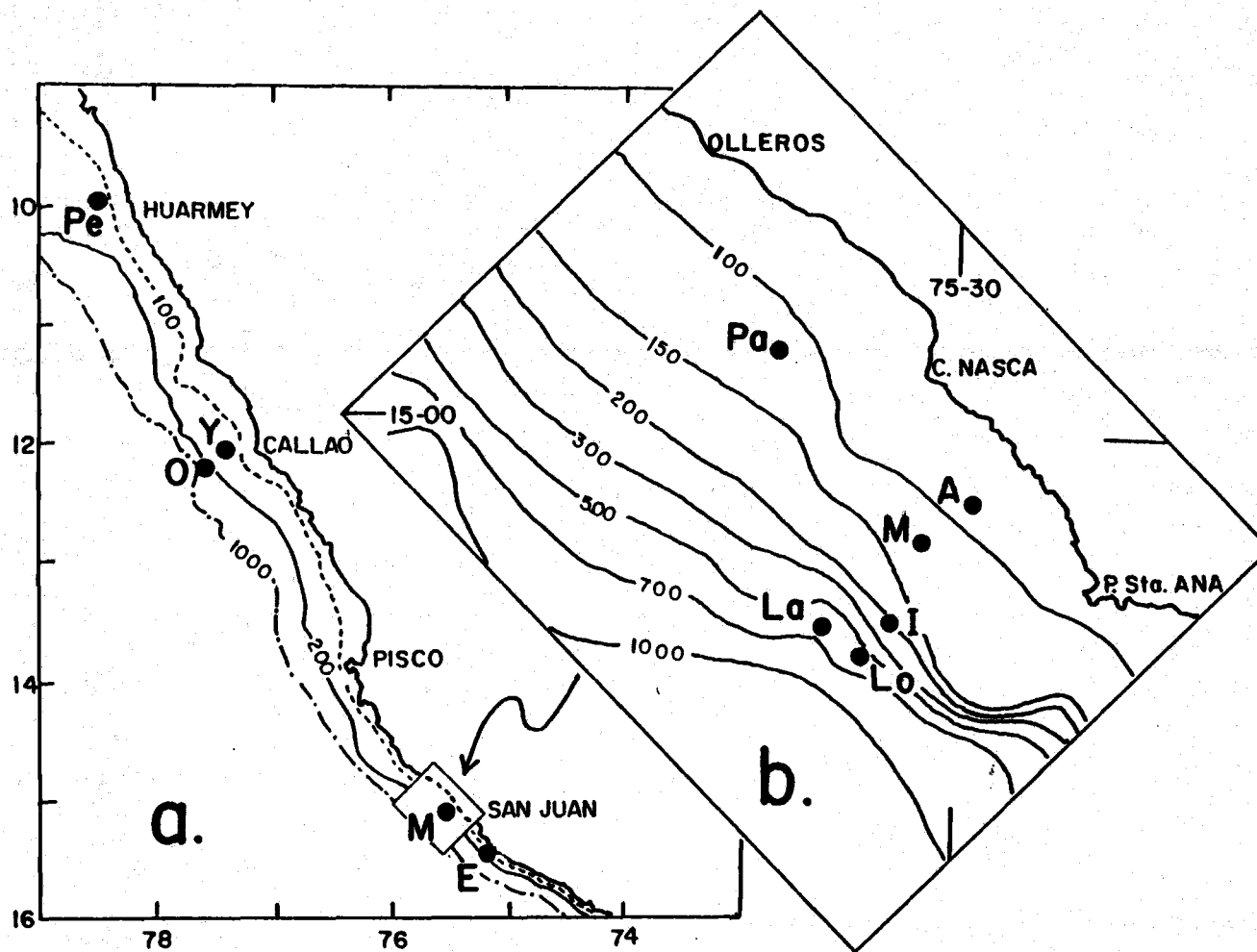


Figure 2. Locations of JOINT II Aanderaa current meter moorings (a) at midshelf in the alongshore directions and (b) near 15°S in the offshore direction, from March through May 1977. Mooring location symbols are: E-Euphorbia; M-Mila; Y-Yucca Too; O-Opuntia; Pe-Peyote; A-Agave; I-Ironwood; Lo-Lobivia; La-Lagarta; Pa-Parodia.

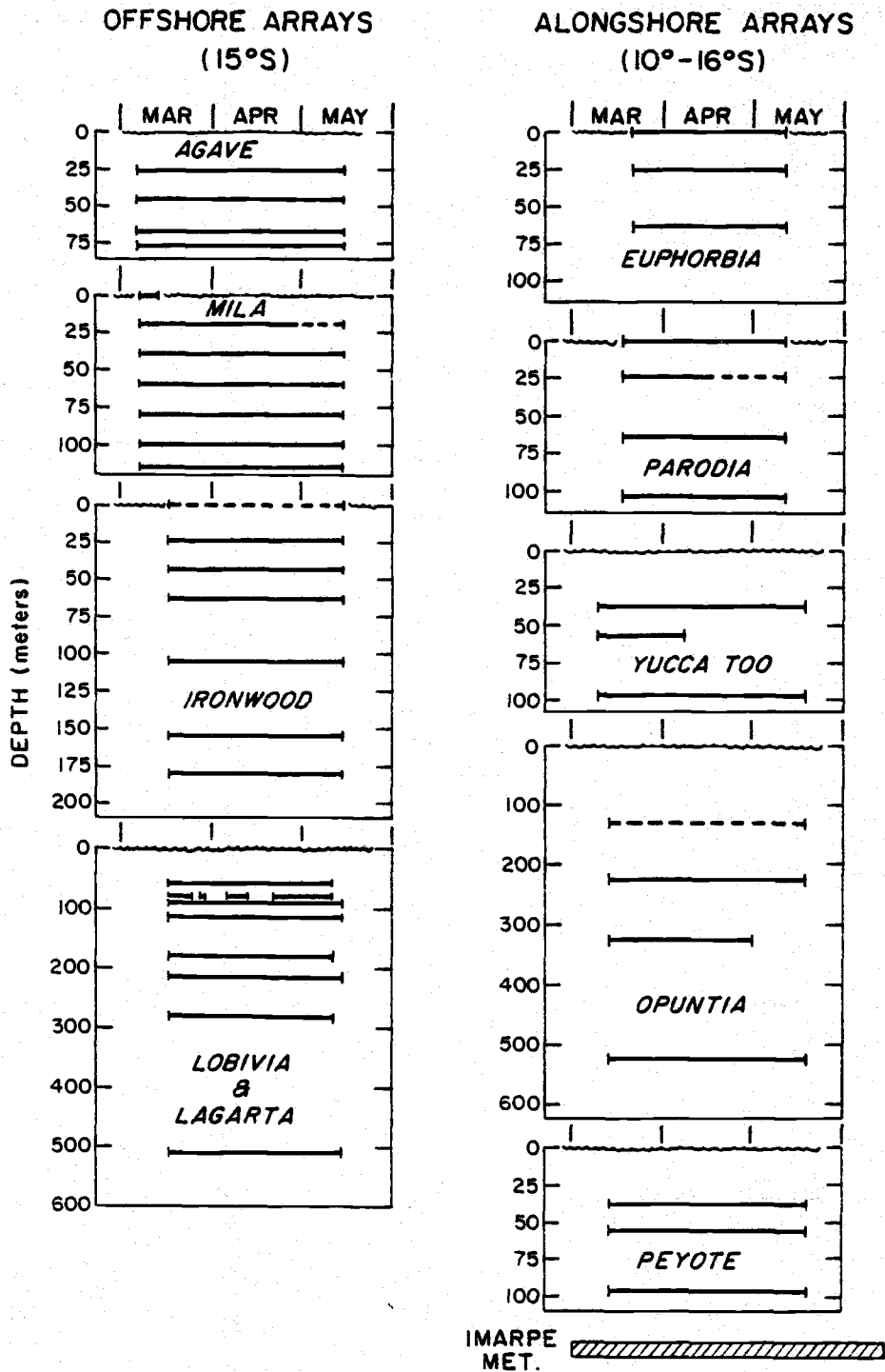


Figure 3. Time-depth distributions of JOINT II Aanderaa current meter data from March through May 1977. Lines are dashed where speed and/or direction data are missing.

Table 1. Summary of positions, water depths and instrument depths for instrument arrays deployed by OSU in JOINT II. The positions of the meteorological buoys (not listed) are given in the installation summaries. Only instruments from which data were obtained are listed.
M: Meteorological buoy; T: Tide gauge

Station	Position		Water Depth (m)	Instrument Depths (m)
<u>March - May 1976 (Leg I)¹</u>				
Agave	15°02.6'S	75°26.6'W	40	10,29
Mila-1	15°05.1'S	75°31.4'W	123	M,28,53,78
Lobivia	15°10.0'S	75°39.2'W	656	106,206,406,556,626
Islaya	15°00.0'S	75°39.0'W	136	41,66,116
Sour	13°55.2'S	76°29.4'W	120	80,100
<u>May - July 1976 (Leg II)²</u>				
Mila-2	15°07.2'S	75°30.5'W	128	M,33,62,84,109
Lagarta	15°08.7'S	75°39.5'W	465	115,212,312,412
Yuca ⁵	12°04.7'S	77°21.7'W	120	80,100
<u>July - Sept. 1976 (Leg III)³</u>				
Mila-3	15°05.8'S	75°30.2'W	123	28,53,79,104
<u>Oct. 1976 - March 1977 (Leg IV)³</u>				
Mila-4	15°06.0'S	75°30.2'W	119	23,48,73,99
<u>March - May 1977 (Leg V)³</u>				
Agave	15°04.0'S	75°27.8'W	86	26,46,67,77,T
Mila-5	15°06.0'S	75°30.8'W	121	M,19,39,59,80,100,115
Ironwood	15°09.9'S	75°32.9'W	205	M,24,44,63,105,155,180,T
Lobivia	15°11.5'S	75°34.3'W	580	58,83,183,283
Lagarta	15°10.0'S	75°36.0'W	620	M,92,115,214,512
Euphorbia	15°31.2'S	75°00.8'W	123	M,25,63
Parodia	14°55.7'S	75°39.8'W	124	M,24,64,104
Opuntia ²	12°14.2'S	77°35.9'W	620	129,224,324,524
Yuca-Too ⁵	12°04.6'S	77°19.5'W	117	37,57,97
Peyote ⁶	9°57.8'S	78°24.3'W	117	37,56,96,T
<u>March 1976 - May 1977 (Legs II - V)</u>				
IMARPE	12°03.9'S	77°09.3'W		(Height: 25 m above ground)

¹ Radar fixes and the German chart DHI 721

² Satellite Navigator fixes

³ Radar fixes and the Peruvian chart DHNM 2200

⁴ Radar fixes and the Peruvian chart DHNM 2100

⁵ Radar fixes and U.S. chart H.O. 22173

⁶ Radar fixes and U.S. chart H.O. 22008

Moorings deeper than 250 m followed the Woods Hole Oceanographic Institution mooring scheme for intermediate depths (Heinmiller and Walden, 1973) with glass Corning floats for flotation and double acoustic releases.

All of the current meters moored were Aanderaa RCM4's. They recorded temperature, speed and direction at 15, 20, 30 and 60 minute intervals in the manner described by Pillsbury et al. (1974). Some current meters also recorded pressure to monitor the mooring motion and the true mean depths of the deployed instruments; a few of the instruments were equipped with conductivity sensors as well.*

Meteorological buoys were moored at MILA during Leg I and Leg II, and again at MILA, IRONWOOD, LAGARTA, EUPHORBIA and PARODIA during Leg V. Each buoy consisted of a vertical tower with three toroids for flotation. The buoys were tethered to concrete blocks and connected by ground lines to the main anchors of the associated current meter arrays. The buoys were equipped with Aanderaa data loggers which recorded wind speed and direction, air temperature, and water temperature three meters below the surface.

A meteorological tower with an Aanderaa data logger was installed on the roof of the Instituto del Mar del Peru (IMARPE) from May 1976 through part of June, 1977. Wind speed and direction and air temperature were measured. Data segments between servicings correspond approximately to Legs II, III, IV, and V of the current meters.

Instrument Recovery and Performance

Twenty-three moorings with a total of 88 RCM's were set during all the phases of JOINT II (Legs I - V). In 1976 a shelf-break mooring near 15°S (not shown) was completely lost (four RCM's), as was the deepest

* The conductivity data have not been fully processed and are not presented in this report.

current meter at MILA (Leg I). In 1977 (Leg V) two moorings (not shown) were completely lost (8 RCM's). The 75 recovered RCM's successfully recorded 95% of the possible water temperature data and 87% of the possible velocity data. The partial data records (no velocity) are indicated by dashed time-lines in Figures 1 and 2. Table 2 summarizes the data losses due to and causes of partial or complete instrument failures.

The data logger was replaced at the MILA meteorological buoy during Leg I. The first data logger recorded no data during a four week period, and the second one recorded satisfactorily for the remaining 13 days of the Leg I current meter mooring. The Leg II buoy tore free from its tether about mid-June 1976.* Thirty-seven days of data were recorded prior to breakaway (which was determined from the changed behavior of the buoy orientation sensor).

Calibration

When Aanderaa instruments were first acquired by Oregon State University, they were subjected to tests to evaluate sensor stabilities. The initial results (Pillsbury et al., 1974) and subsequent experience indicate that speed and direction sensors, if not obviously damaged, are stable in time and adhere reasonably well to the manufacturer's specifications. Current meter thermistors exhibit (at most) a slight linear drift with time, correctable through successive calibration. Pressure and conductivity must be kept in calibration.

In-house calibration procedures have been developed by OSU (Pillsbury et al., 1974) and the direction, temperature and pressure

* A Peruvian fisherman found it beached just south of the river mouth at Rio Ica, northwest of Cabo Nazca (15°S).

Table 2. Data losses due to instrument failures or fouling, and causes.

Station	Leg	Depth (m)	Days Lost	Cause	Affected Channels
Mila	I	0	31.7	clock failure	S_w, θ_w, T, T_a
Yuca	II	100	46.3	compass malfunction	θ
Mila	IV	23	20.0	speed sensor malfunction	S
Mila	IV	73	29.4	rotor fouled	S
Mila	V	0	64.0	data logger leaked	S_w, θ_w, T, T_a
Mila	V	19	14.9	rotor fouled	S
Ironwood	V	0	58.6	orientation sensor failure	θ_w
Lagarta	V	0	68.4	compass, air temperature sensor failure	θ_w, T_a
Lagarta	V	313	59.4	tape encoder malfunction	S, θ, T
Lobivia	V	83	19.9	tape encoder malfunction	S, θ, T, P, C
Lobivia	V	383	56.4	tape encoder malfunction	S, θ, T
Euphorbia	V	103	51.8	tape transport failure	S, θ, T
Parodia	V	24	23.5	rotor fouled	S
Parodia	V	24	54.5	pressure sensor failure	P
Opuntia	V	129	66.3	compass failure	θ
Opuntia	V	324	17.7	battery failure	S, θ, T
Yucca Too	V	57	40.8	tape encoder malfunction	S, θ, T

S_w, θ_w : wind speed, direction
 S, θ : current speed, direction
 T, T_a : water and air temperature
 P, C: pressure, conductivity

sensors are usually calibrated between major experiments (i.e. at about 1-2 year intervals). Undamaged and unfouled rotors are assumed to measure speed correctly within the manufacturer's limits (calibration is considered redundant and impractical). Appendix 2 presents a discussion of the status of water temperature calibrations for the JOINT II Aanderaa current meters and buoys.

Processing and Description of the Data

The data described in this report were first read from the Aanderaa magnetic tapes and preliminary plots and statistics generated to aid in error detection. The data recorded at 15, 20 or 30 minute intervals (Legs I - III, V) were low passed so as to preserve information at tidal and smaller frequencies, while reducing point-to-point scatter. The low passed data were then decimated to hourly values. The details of the data processing are discussed by Pillsbury et al. (1974). Due to the long duration of the Leg IV mooring at MILA, the data were recorded at a one hour sampling interval and were not filtered.

The descriptive materials in this report are ordered depthwise from top to bottom in a separate section for each mooring; the mooring sections are ordered by leg, offshore distance and south-to-north distance, respectively. The header page for each mooring section summarizes information about the position, offshore distance, bottom depth, and intervals for each mooring installation. A short table lists pertinent information about the instruments with columns as follows:

Intended Depth: based on mooring wire lengths and the intended bottom depth.

Accepted Depth: based on mooring wire lengths and the mean depth(s) of one or more instruments as given by pressure sensors.

Serial/Tape Number: serial number assigned by the manufacturer and the sequence number of the magnetic tape recorded by the instrument (thus, 485/10 is the tenth tape recorded by machine #485).

Measured variables: S, θ = current speed and direction; S_w, θ_w = wind speed and direction; T, T_a = water and air temperature; P, C = pressure and conductivity

A section for comments provides specific information (if any) about malfunctions and/or the duration, kind and quality of data subsets.

Following the header page is a figure with the progressive vector diagrams (PVD's) for the current meters in the mooring. Each current meter in turn is described by a statistics table; a figure with histograms of speed and direction and the rotary spectrum; and a figure with time series of onshore (u) and alongshore (v) velocity components, temperature and pressure (if any).

The PVD's represent pseudo-trajectories referred to East-West and North-South axes, in kilometers. Each dot on a PVD refers to 0000 GMT on the corresponding day. Information given in the summary tables can be used to assign dates to the dots, if necessary.

The statistics tables give the following types of information:

Header: identification, time interval, filtering.

First/Last 5 Lines: line image listing of first and last five lines of the data file, to illustrate the format.*

Statistics for E-W (U) and N-S (V) velocity components: velocities are taken as positive toward the East (U) and North (V).

Vector mean speed and direction

Directional steadiness: the ratio of the vector mean speed to the scalar mean speed, i.e. the current stability of Neumann (1968).

Principle axis (of variation): given as a compass direction ($^{\circ}$ T).

Statistics for rotated data: the velocity components are rotated into the onshore/alongshore coordinate system as defined by the JOINT II hydrographic sections, and basic statistics are given for scalar speed, onshore velocity (U), alongshore velocity (V, positive toward NW), temperature (T), and pressure (P, if any).

The rotary spectra were computed when the length of a time series permitted, and are presented with the histograms. The rotary spectrum was generated from the hourly velocity components (E-W and N-S), typically for a 2 or 3 month period. The series were divided into detrended segments (usually two), raw spectral estimates were computed for each segment, and the results were hanned (once). The procedure was modified according to record length so as to consistently induce about 10 degrees of freedom. Rotary spectra and their interpretation are discussed by Gonella (1972), Mooers (1973) and O'Brien and Pillsbury (1974).

* These normally give GMT hour, date, month, year, east-west velocity (U), north-south velocity (V), cumulative velocities (Σu , Σv), water temperature (T), pressure (P) and conductivity (C). Units are: U, V (cm/sec for currents, m/sec for wind); T ($^{\circ}$ C); P (pascals); C (mmhos). The actual format will vary depending on the data channels recorded by the instrument.

The time series plots are grouped by instruments. These figures give the onshore and alongshore velocity components, temperature, and pressure (if any) with time. Abcissa tics are at 0000 GMT on each day (the first day of each month is indicated).

ACKNOWLEDGMENTS

We gratefully acknowledge the support for this program which came from the National Science Foundation grant OCE 76-00132. The field program was managed by *R. Still* with the aid of *B. Moore*; *D. Barstow* and *B. Moore* were principally responsible for the calibration; maintenance and preparation of the instruments; and *J. Bottero* and *D. Root* processed the data. Our special thanks and recognition go to these people for their indispensable assistance.

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INSTALLATIONS: Leg I (MAM '76)

JOINT-II 1976 Installation

AGAVE I

Position*: 15°02.6'S, 75°26.6'W
 Distance Offshore: 1.5 km
 Bottom Depth: 40 m
 Set: 1854 GMT 23 March 1976 by R/V ALPHA HELIX
 Retrieved: 1651 GMT 7 May 1976 by R/V THOMPSON
 Longest Data Interval: 0300 GMT 24 March to 0900 GMT 7 May
 Longest Record Length: 44 days, 7 hours

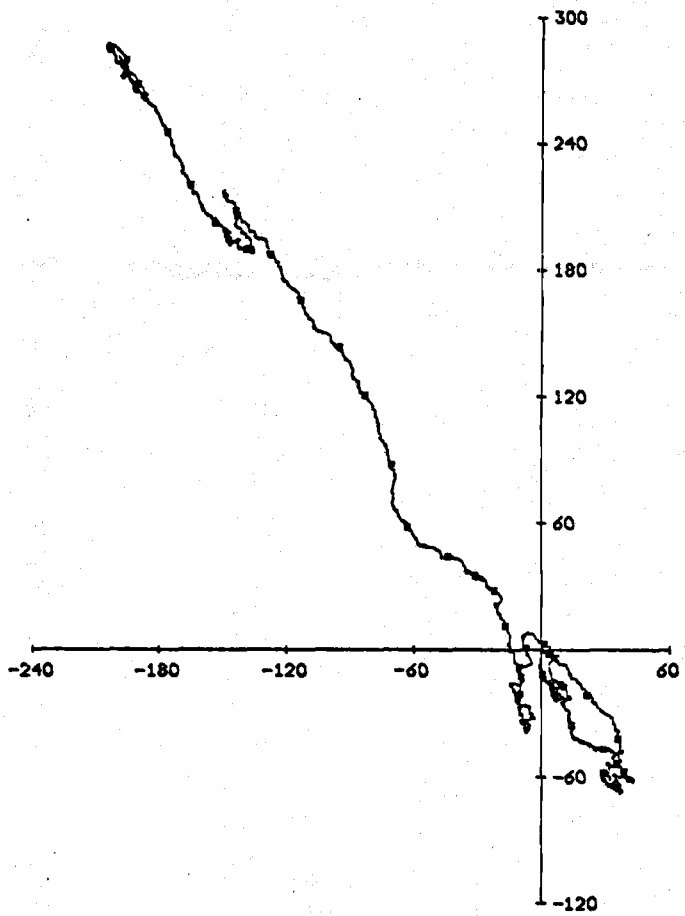
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
20 m	10 m	687/20	30 min	S,θ,T,P,C
40 m	29 m	501/35	30 min	S,θ,T,P

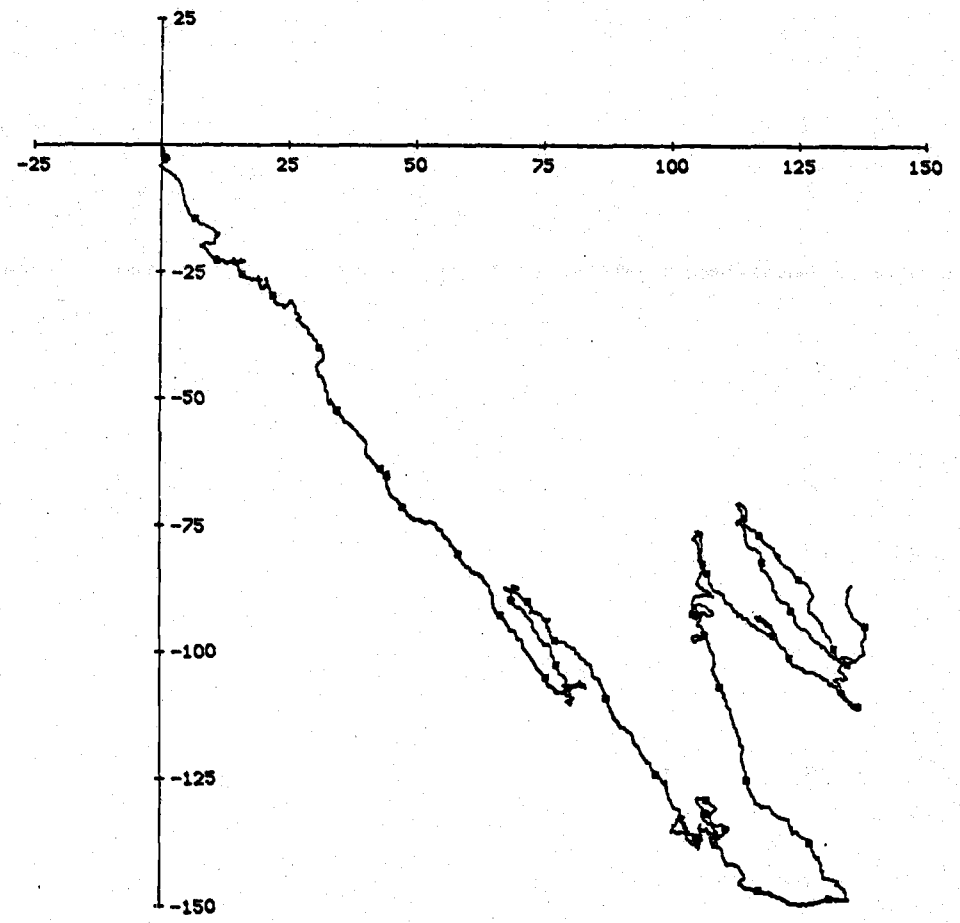
Comments:

The mooring position (above) was determined when deck work started. By the time of anchor release (set time) the R/V ALPHA HELIX had drifted considerably shoreward but a new position was not logged. Accounts of observers suggest that the ship was about one kilometer offshore when the installation was completed.

* Navigation: radar fixes and German chart DHI-721.



10 METERS AT AGAVE. 44.8 DAYS STARTING 2041 23 MAR 76.



29 METERS AT AGAVE. 44.8 DAYS STARTING 2011 23 MAR 76.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
AGAVE	1	10	687/20	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	24	3	76	23.7	-12.4	23.7	-12.4	13.97	99296	41.910
400	24	3	76	26.0	4.9	49.7	-7.5	13.97	100690	41.898
500	24	3	76	9.5	11.1	59.2	3.6	13.97	101306	41.914
600	24	3	76	-5.9	-14.1	53.4	-10.4	13.97	101276	41.921
700	24	3	76	-21.8	-9.1	31.5	-18.5	13.94	101823	41.891

LAST 5 LINES OF DATA:

500	7	5	76	-28.4	16.4	-5522.9	7656.4	16.04	101711	43.902
600	7	5	76	-16.6	25.0	-5539.5	7681.4	16.02	101144	43.861
700	7	5	76	-30.8	19.1	-5570.3	7700.5	16.14	101690	43.899
800	7	5	76	-18.3	23.2	-5588.6	7723.7	15.99	100875	43.870
900	7	5	76	7.0	31.9	-5581.5	7755.6	15.97	100567	43.844

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1063	-5.3	7.3	318.5	487.0	17.8	22.1	-150.2	-.3813

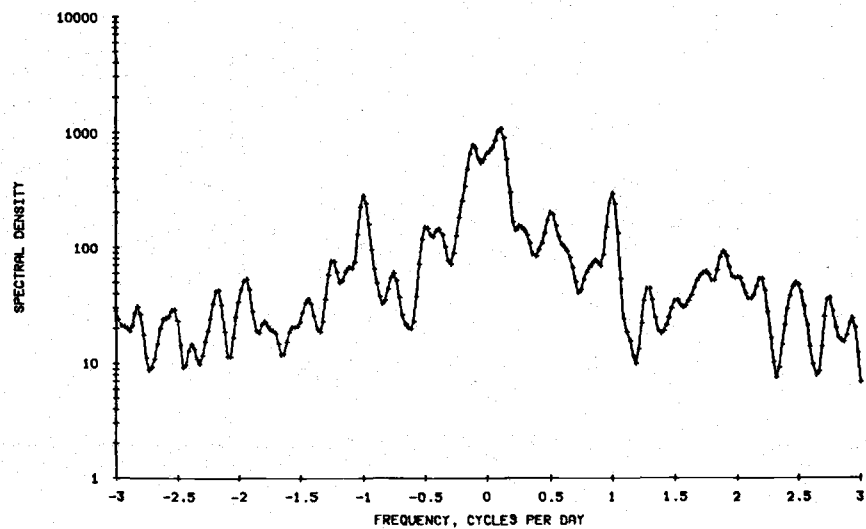
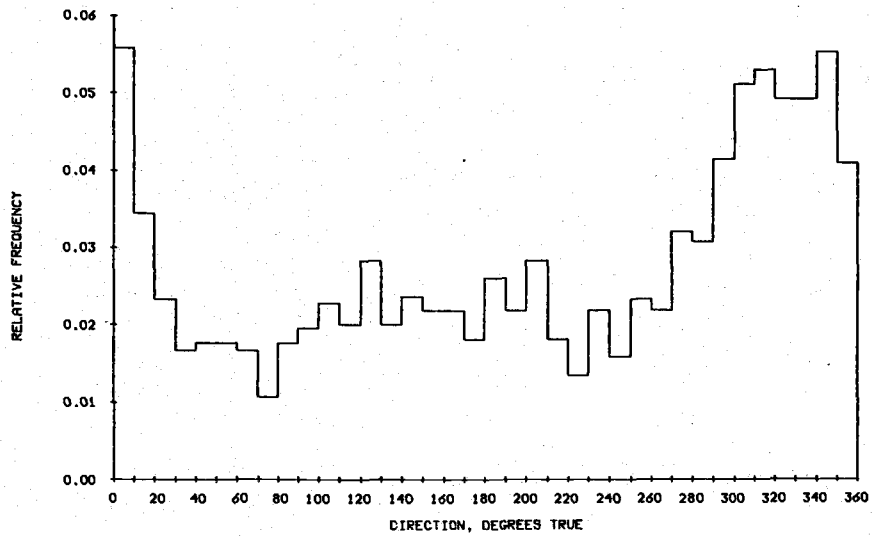
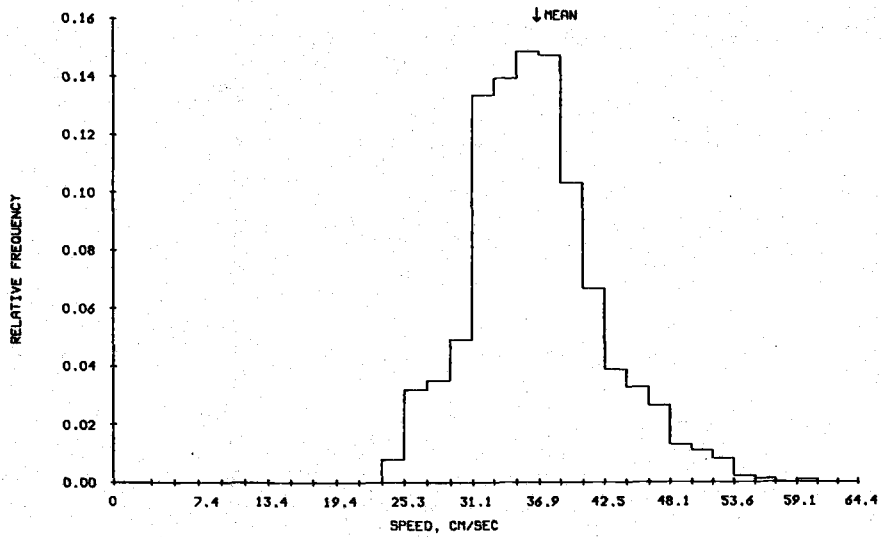
VECTOR MEAN: SPD = 9.0 CM/S, DIR = -35 DEGREES(T)
DIRECTIONAL STEADINESS: 32.0 %

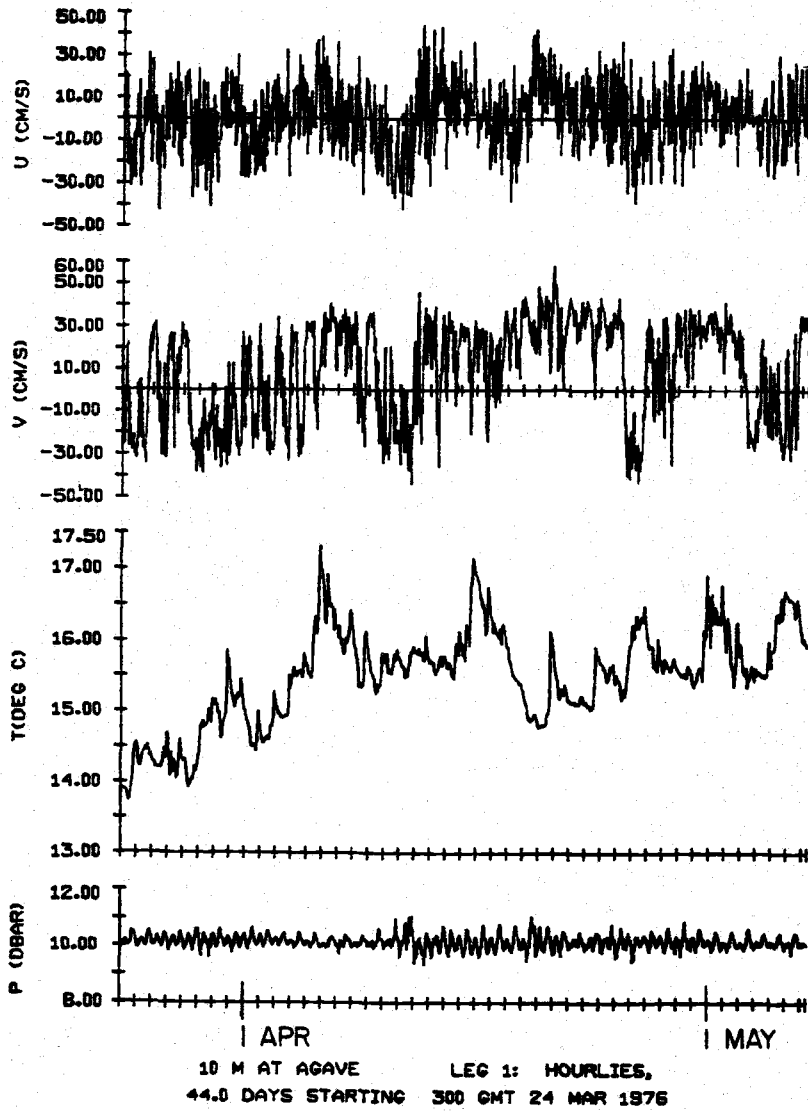
PRINCIPAL AXIS IS 149.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	AGAVE		LEG 1						
	N	10	4	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1063	23.1	9.9	-0.5	2.9	58.1	.8		
U (CM/S)	1063	1.4	15.9	-0.1	2.6	44.2	-42.1		
V (CM/S)	1063	8.9	23.5	-0.4	1.8	58.1	-43.5		
T (DEG C)	1063	15.5	.7	-0.3	2.8	17.4	13.8		
P (DEAR)	1063	10.2	.2	.3	3.6	11.1	9.3		

10 METERS AT AGAVE. 23 MAR 76 TO 7 MAY 76. TAPE 687/20.





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
AGAVE	1	29	501/35	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	24	3 76	-14.8	-13.7	-14.8	-13.7	13.82	294798	1
400	24	3 76	-10.0	-12.3	-24.8	-25.9	13.93	294785	2
500	24	3 76	2.2	0.5	-22.5	-25.5	13.67	294807	3
600	24	3 76	16.0	-8.5	-6.5	-34.0	13.51	294796	4
700	24	3 76	11.5	-12.6	4.9	-46.6	13.46	294801	5

LAST 5 LINES OF DATA:

500	7	5 76	-10.8	13.4	3746.9	-2471.0	15.59	292931	1059
600	7	5 76	-5.5	16.8	3741.4	-2454.1	15.57	292827	1060
700	7	5 76	-7.2	15.3	3734.2	-2438.9	15.57	293344	1061
800	7	5 76	-7.9	16.0	3726.3	-2422.8	15.59	293334	1062
900	7	5 76	-8.2	17.6	3718.1	-2405.3	15.60	293272	1063

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1063	3.5	-2.3	135.5	185.4	11.6	13.6	-79.0	-.4983

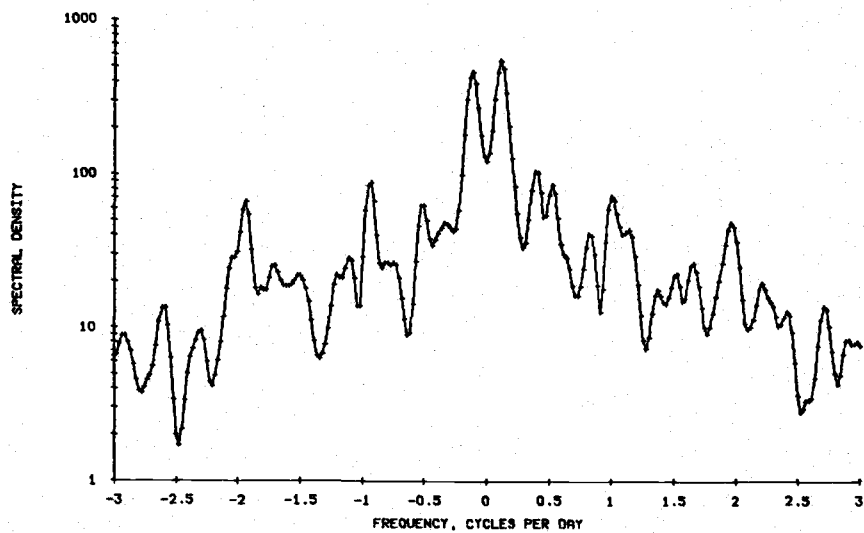
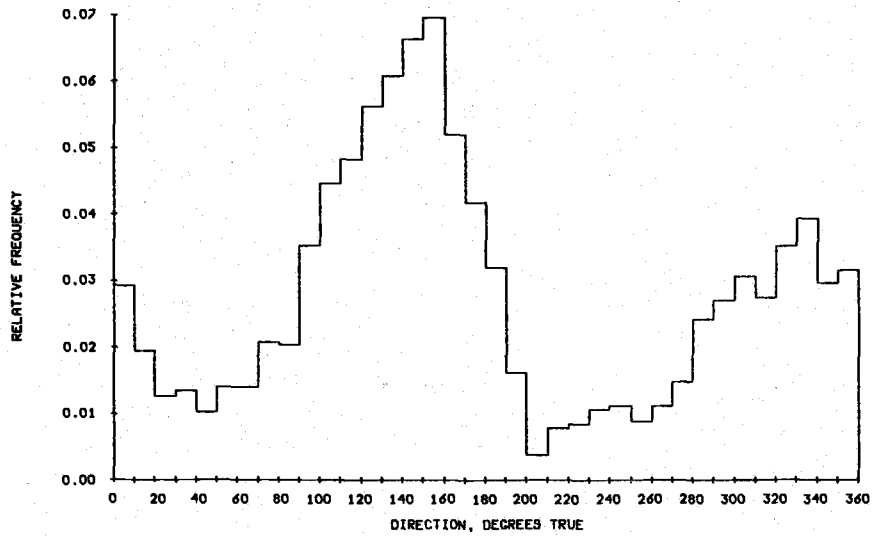
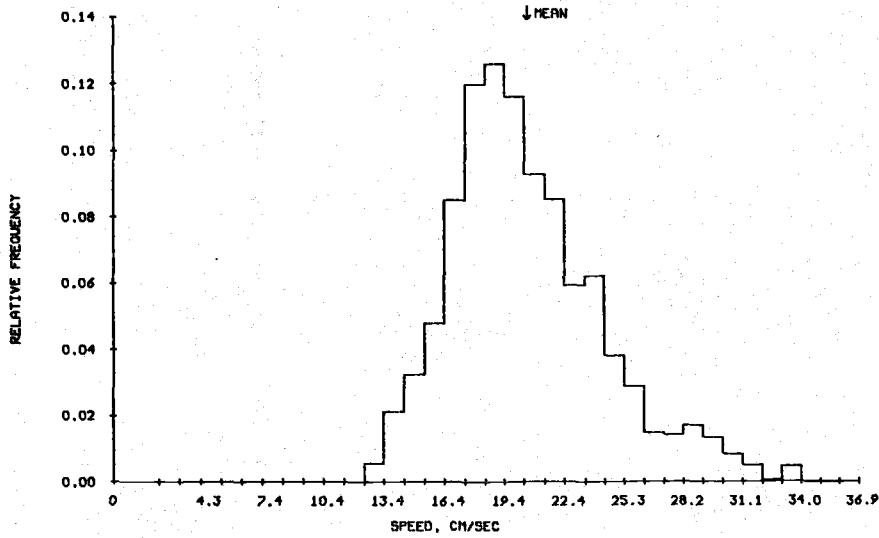
VECTOR MEAN: SPD = 4.2 CM/S, DIR = 123 DEGREES(T)
DIRECTIONAL STEADINESS: 23.5 %

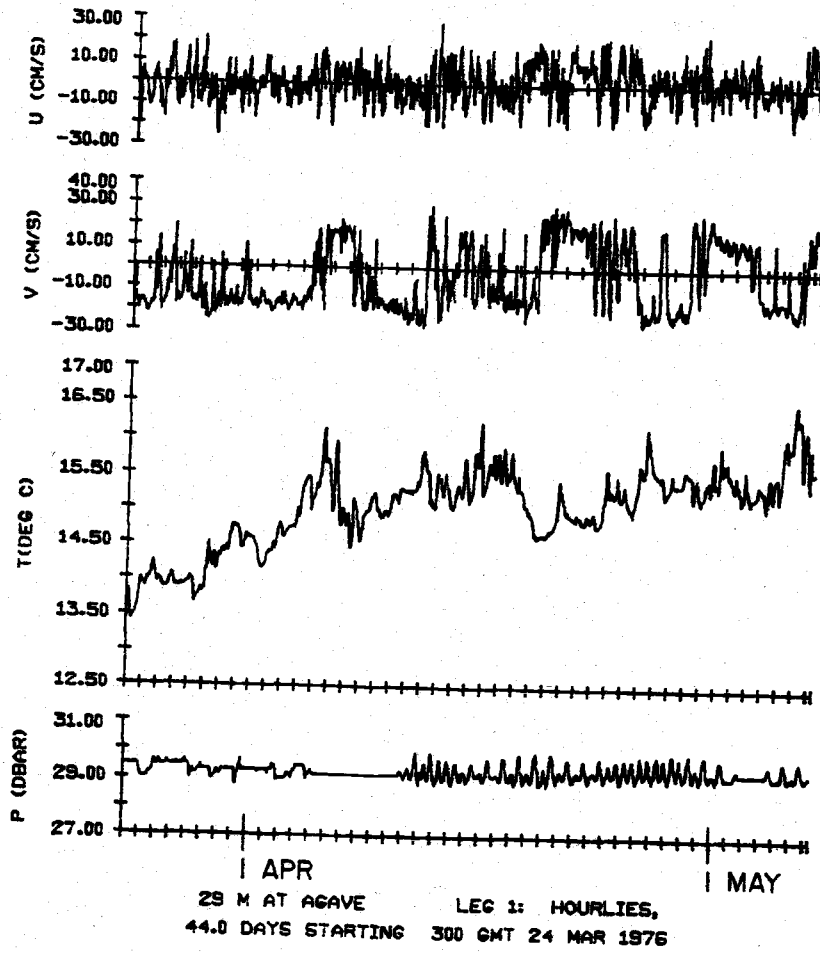
PRINCIPAL AXIS IS 143.8 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	AGAVE		LEG 1		MAX	MIN
		MEAN	STD	MEAN	STD		
S (CM/S)	1063	17.7	5.0	-0.5	3.7	31.0	1.8
U (CM/S)	1063	.9	9.0	.0	2.6	28.8	-25.0
V (CM/S)	1063	-4.1	15.5	.5	1.7	30.2	-27.5
T (DEG C)	1063	15.0	.6	-0.6	2.9	16.5	13.4
P (DEAR)	1063	29.3	.2	.3	3.5	30.0	28.8

29 METERS AT AGAVE. 23 MAR 76 TO 7 MAY 76. TAPE S01/35.





JOINT-II 1976 Installation

MILA I

Position*: 15°05.1'S, 75°31.4'W
 Distance Offshore: 12.0 km
 Bottom Depth: 123 m
 Set: 1351 GMT 25 March 1976 by R/V ALPHA HELIX
 Retrieved: 1533 GMT 9 May 1976 by R/V THOMPSON
 Longest Data Interval: 1700 GMT 25 March to 1300 GMT 9 May
 Longest Record Length: 44 days, 21 hours

Instrumentation

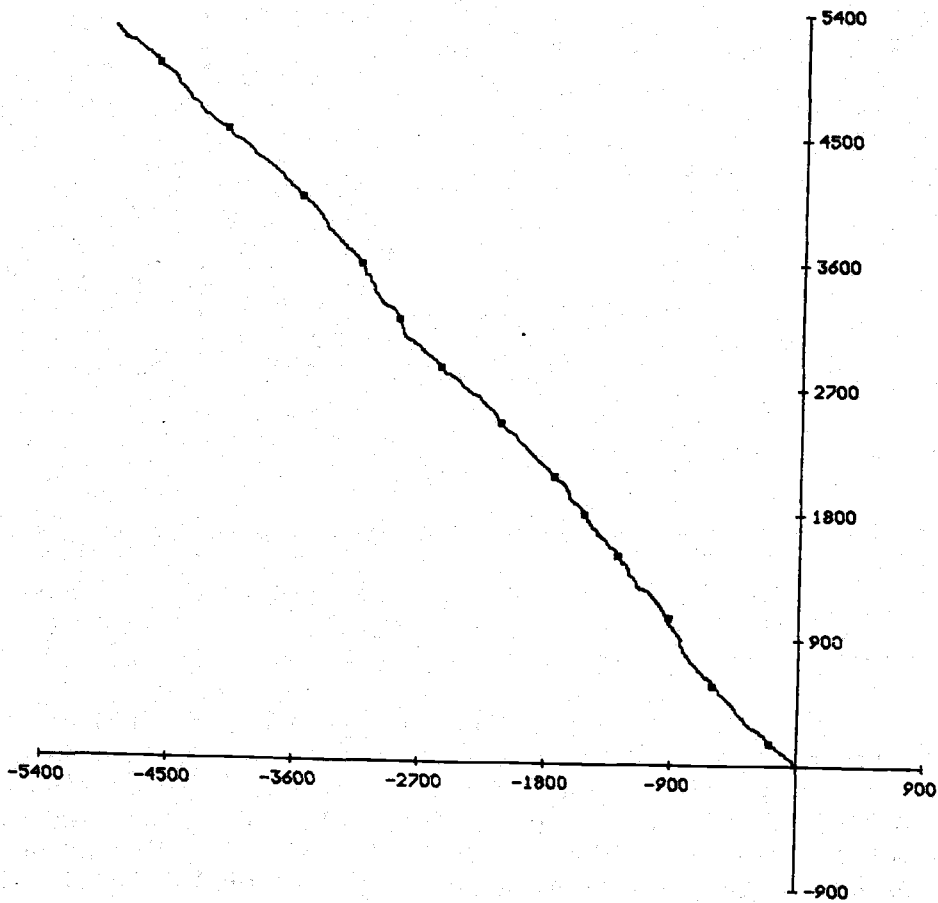
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D126/8	20 min	S _w , θ _w , T _a , T
25 m	28 m	752/21	20 min	S, θ, T, P, C
50 m	53 m	486/29	30 min	S, θ, T
75 m	78 m	490/27	30 min	S, θ, T

Comments:

The met buoy at MILA was serviced on 26 April, data logger D129 being replaced by D126. While the latter recorded satisfactorily for the remaining 12½ days of the mooring, the data from D129 was unusable due to a clock failure. The current meter near 100 meters was lost on retrieval (fouled in the screw of the R/V THOMPSON).

RCM 490 was installed with the clock cycling every 30 minutes. When it was recovered the instrument was cycling at 60 minute intervals. Processing was done assuming that the interval changed from 30 to 60 minutes at a single point and remained at 60 for the remainder of the record. This timing change point was chosen so that the in situ period agrees with the number of cycles on the data tape and occurs at 0521 2 April. The 30 minute section was decimated to every other point and combined with the 60 minute portion to create a single raw file with $\Delta t = 60$ minutes.

* Navigation: radar fixes and German chart DHI-721. The position of the MILA I meteorological buoy was estimated to be within ½ n.m. of the subsurface array.



WIND AT MILA. 13.0 DAYS STARTING 1347 26 APR 76

STATION MILA	LEG 1	DEPTH 0	TAPE NO 0126/8	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2000	26	4 76	-4.0	1.2	-4.0	1.2	18.77	17.83	1
2100	26	4 76	-3.8	2.0	-7.8	3.2	18.83	17.81	2
2200	26	4 76	-6.6	6.0	-14.3	9.2	18.71	17.59	3
2300	26	4 76	-5.3	5.8	-19.7	15.0	18.50	17.32	4
0	27	4 76	-7.0	3.8	-26.7	18.9	18.33	17.16	5

LAST 5 LINES OF DATA:

300	9	5 76	-7.4	5.2	-1274.3	1381.2	17.64	16.81	296
400	9	5 76	-7.5	4.8	-1281.8	1386.0	17.53	16.73	297
500	9	5 76	-7.8	6.3	-1289.6	1392.2	17.51	16.70	298
600	9	5 76	-7.5	6.4	-1297.1	1398.6	17.53	16.71	299
700	9	5 76	-8.4	4.5	-1305.5	1403.1	17.44	16.71	300

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CORLTN
300	-4.3	4.7	4.0	2.8	2.0	1.7	-.8	-.2419

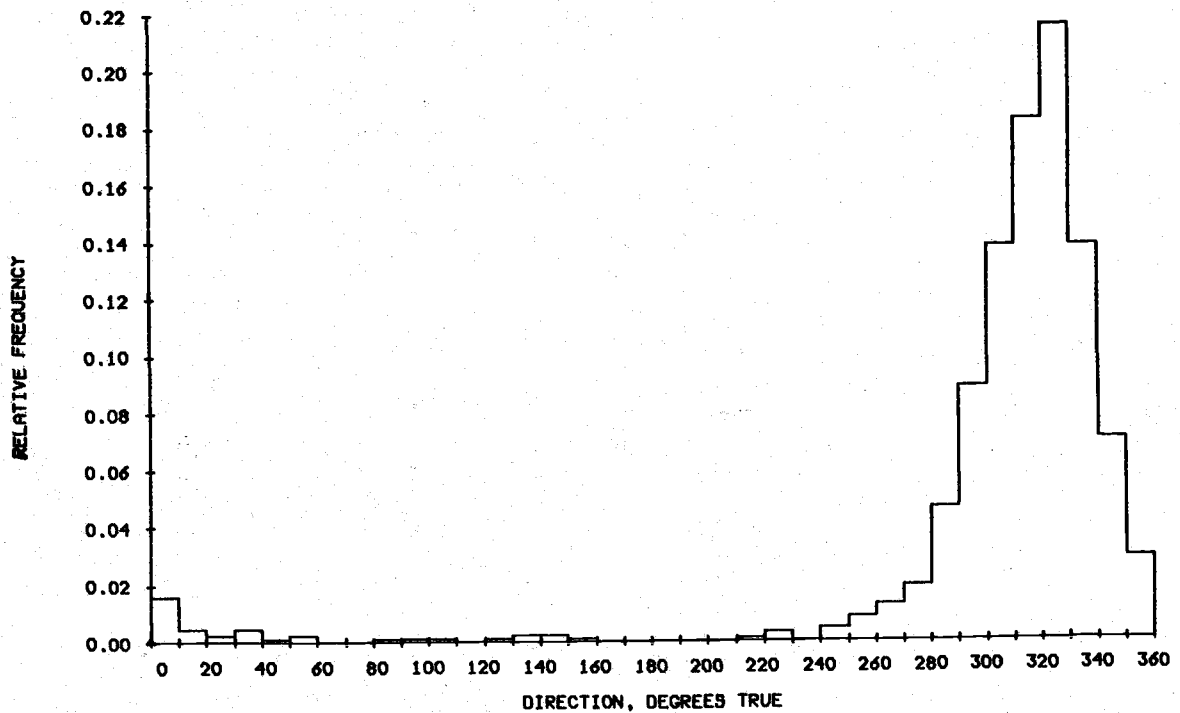
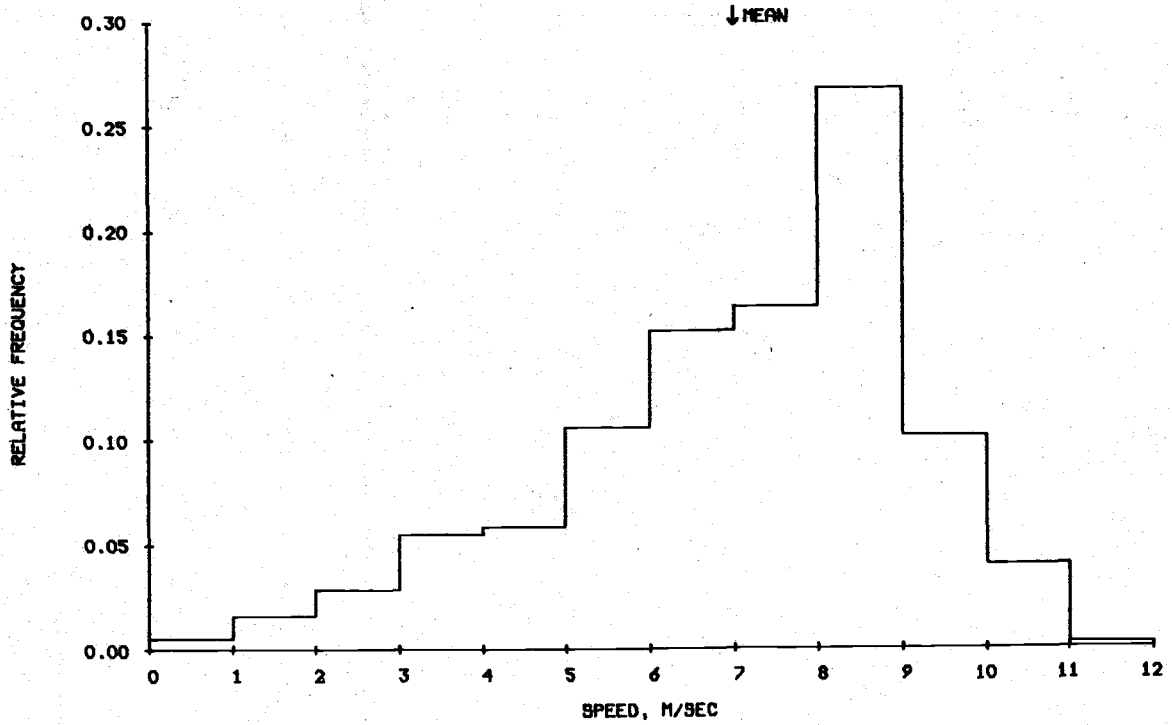
VECTOR MEAN: SPD = 6.4 M/S, DIR = -42 DEGREES(T)
DIRECTIONAL STEADINESS: 96.6 %

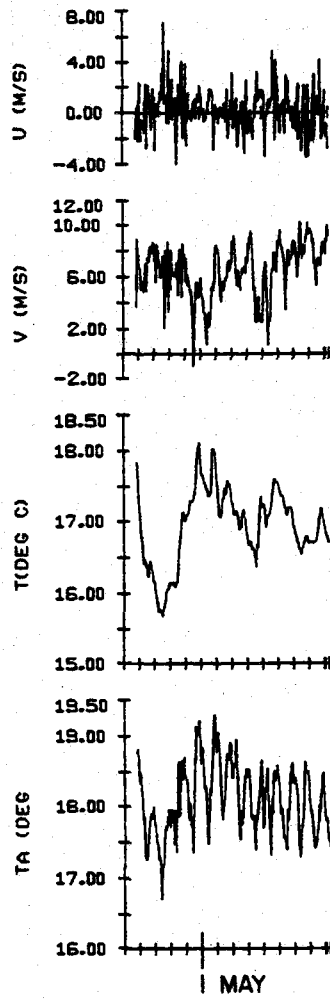
PRINCIPAL AXIS IS 116.8 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

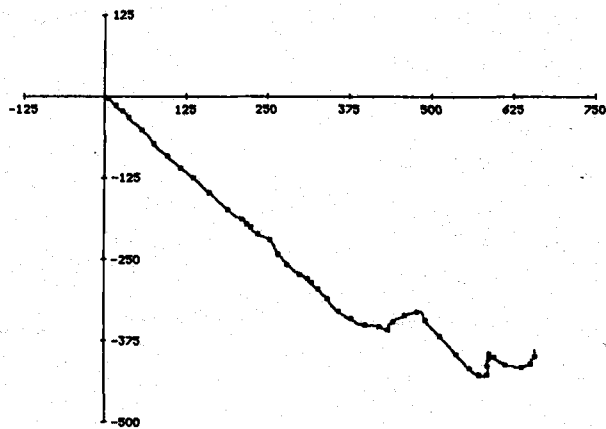
VARIABLE	N	MILA		LEG 1			
		MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	300	6.6	2.0	-.6	3.0	10.4	.8
U (M/S)	300	.2	1.6	.3	3.9	7.1	-4.0
V (M/S)	300	6.4	2.1	-.7	3.4	10.3	-1.0
TW (DEG)	300	16.9	.5	-.3	2.7	18.1	15.7
TA (DEG)	300	18.1	.5	.1	2.4	19.3	16.7

WIND AT MILA. 26 APR 76 TO 9 MAY 76. TAPE D126/8

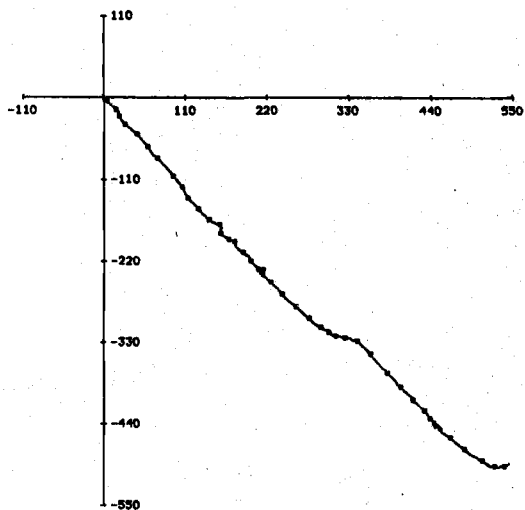




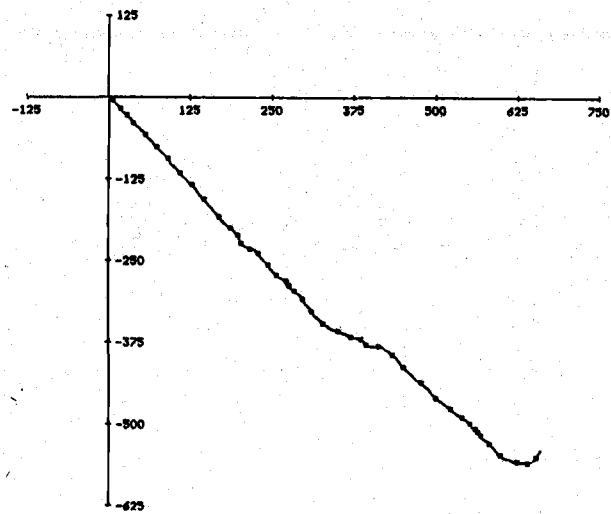
0 M AT MILA LEG 1: HOURLIES,
13 DAYS STARTING 2000 GMT 26 APR 1976



28 M AT MILA. 44.9 DAYS STARTING 1523 25 MAR 76



78 M AT MILA. 44.9 DAYS STARTING 1621 25 MAR 76



53 M AT MILA. 44.8 DAYS STARTING 1607 28 MAR 76

STATION MILA	LEG 1	DEPTH 28	TAPE NO 752/21	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2200	25	3 76	20.5	-12.6	20.5	-12.6	14.45	289350	42.576
2300	25	3 76	16.1	-14.9	36.7	-27.5	14.32	287996	42.390
0	26	3 76	15.4	-13.2	52.1	-40.8	14.23	281487	42.286
100	26	3 76	14.7	-13.2	66.8	-54.0	14.28	278340	42.325
200	26	3 76	14.6	-15.5	81.4	-69.5	14.38	278109	42.413

LAST 5 LINES OF DATA:

200	9	5 76	-2.5	22.9	18105.9	-10961.5	15.95	278670	43.959
300	9	5 76	-0.9	21.2	18105.0	-10940.3	15.90	279760	43.903
400	9	5 76	1.6	20.6	18106.6	-10919.7	15.81	279825	43.812
500	9	5 76	3.0	20.2	18109.6	-10899.5	15.85	290613	43.829
600	9	5 76	2.3	19.5	18112.0	-10880.0	15.93	282242	43.908

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

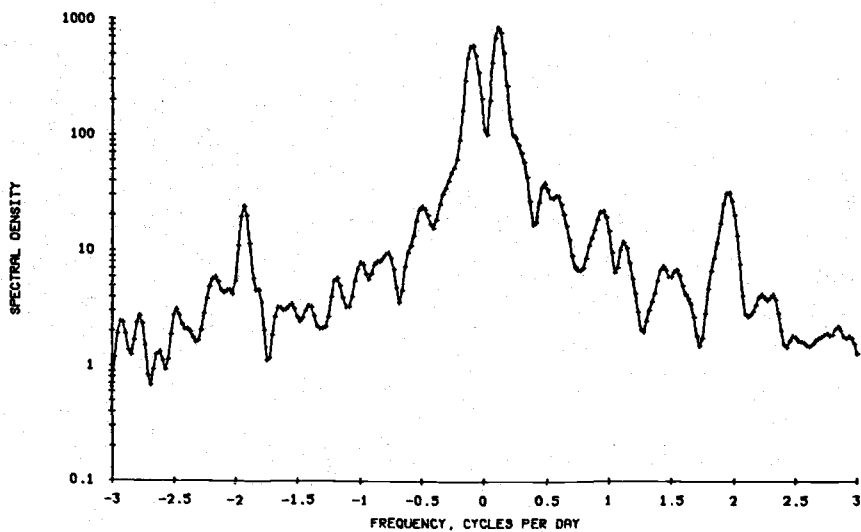
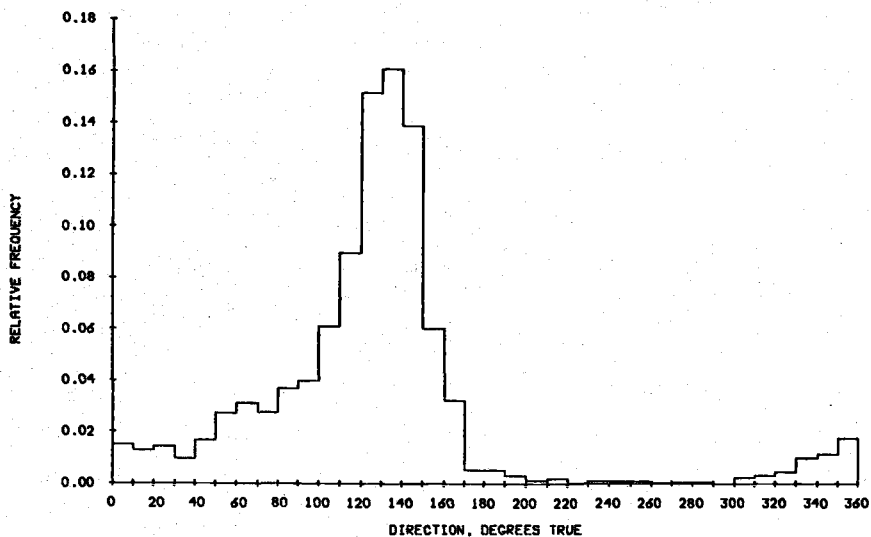
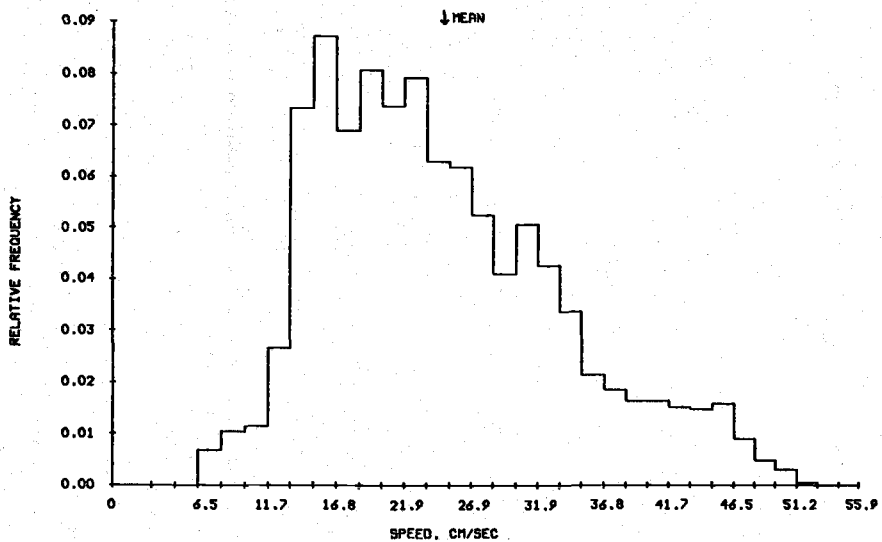
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1065	17.0	-10.2	86.1	191.3	9.3	13.8	-67.5	-.5263

VECTOR MEAN: SPD = 19.8 CM/S, DIR = 121 DEGREES(T)
DIRECTIONAL STEADINESS: 82.0 %

PRINCIPAL AXIS IS 154.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MILA		LEG 1			
		MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1065	24.2	9.3	.6	2.9	50.3	1.7
U (CM/S)	1065	4.8	8.4	.4	2.7	27.2	-19.0
V (CM/S)	1065	-19.2	14.4	.4	3.0	20.4	-50.3
T (DEG C)	1065	15.5	.7	-.3	2.6	17.2	13.5
P (DBAR)	1065	28.3	.5	1.1	4.4	30.4	27.4



STATION MILA	LEG 1	DEPTH 53	TAPE NO 436/29	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2300	25	3 76	21.8	-18.0	21.8	-18.0	13.38	1
0	26	3 76	18.6	-18.8	40.5	-36.8	13.36	2
100	26	3 76	19.6	-13.3	60.0	-50.2	13.37	3
200	26	3 76	16.0	-16.3	76.1	-66.5	13.40	4
300	26	3 76	17.8	-14.1	93.8	-80.6	13.51	5

LAST 5 LINES OF DATA:

200	9	5 76	17.8	28.6	18082.3	-15094.7	15.16	1060
300	9	5 76	15.9	29.9	18098.2	-15064.8	15.15	1061
400	9	5 76	17.3	27.7	18115.5	-15037.0	15.18	1062
500	9	5 76	17.5	25.7	18133.0	-15011.3	15.14	1063
600	9	5 76	16.4	22.2	18149.4	-14989.1	15.11	1064

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CORLTN
1064	17.1	-14.1	66.6	93.9	8.2	9.7	-28.9	-.3651

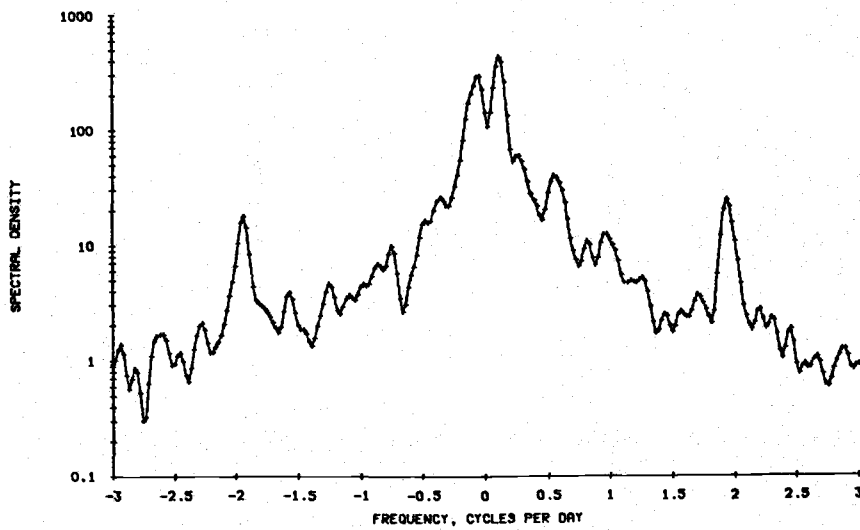
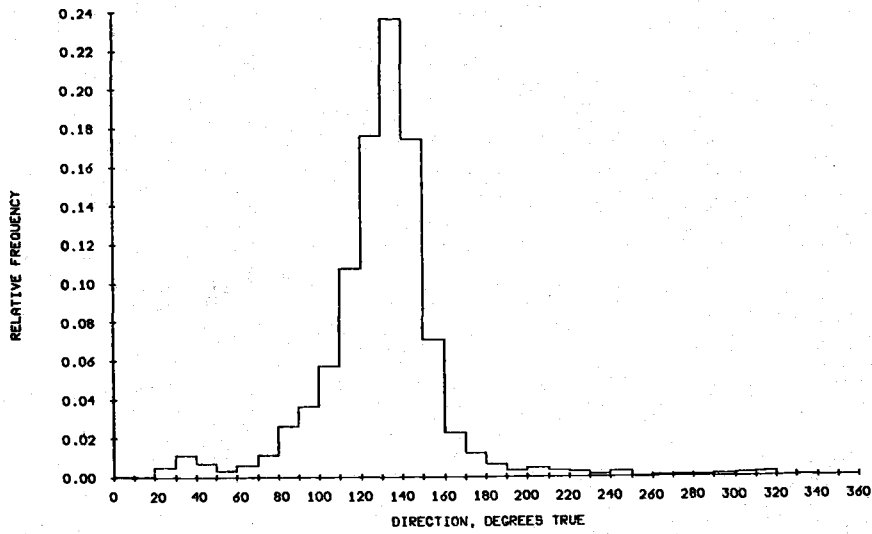
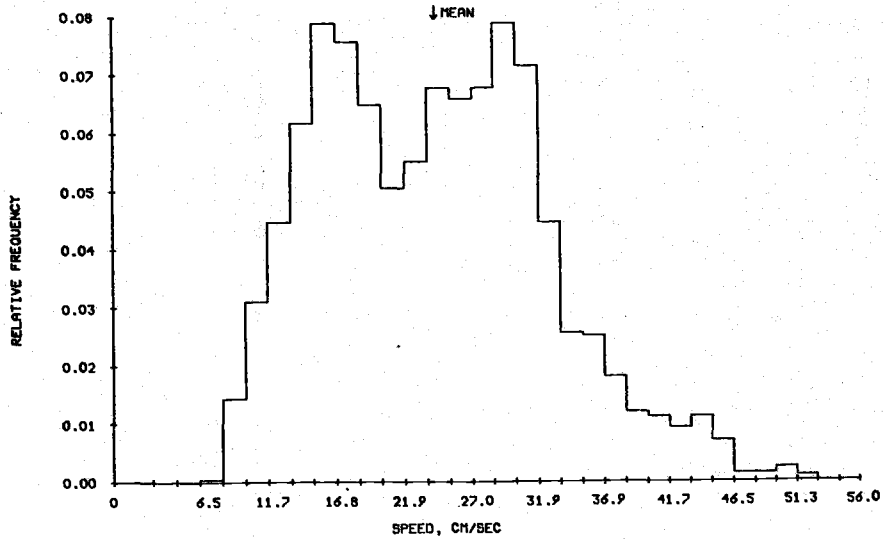
VECTOR MEAN: SPD = 22.1 CM/S, DIR = 130 DEGREES(T)
DIRECTIONAL STEADINESS: 92.3 %

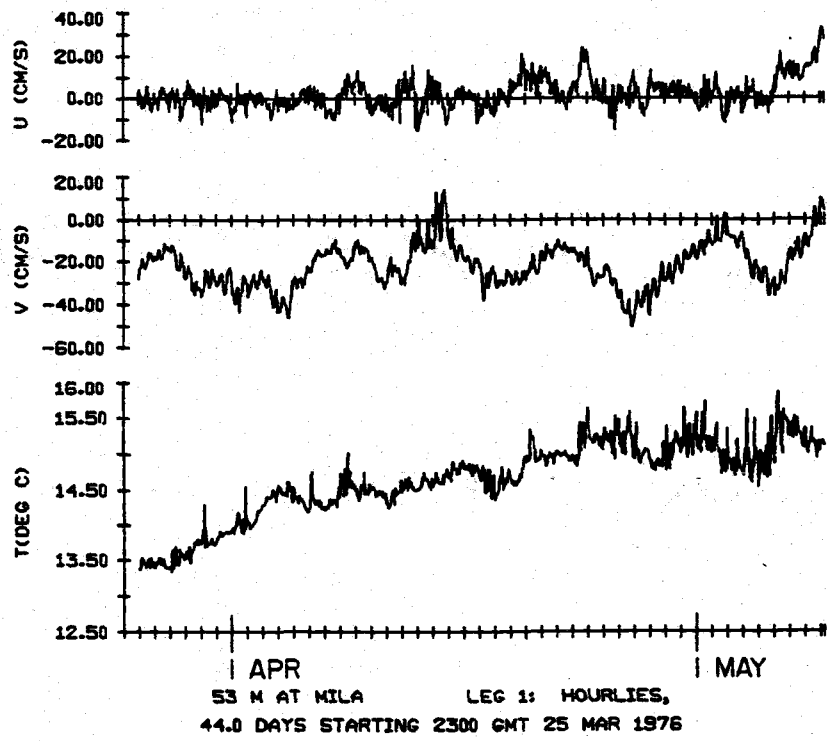
PRINCIPAL AXIS IS 147.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MILA		LEG 1		MAX	MIN
		MEAN	STD	53 M	MEAN		
S (CM/S)	1064	24.0	8.7	.3	2.7	51.1	1.2
U (CM/S)	1064	2.1	7.2	.8	4.5	32.8	-15.4
V (CM/S)	1064	-22.0	10.4	.3	3.5	14.0	-50.5
T(DEG C)	1064	14.6	.5	-.6	2.8	15.9	13.3

53 N AT NILA. 25 MAR 76 TO 9 MAY 76. TAPE 486/2P





STATION MILA	LEG 1	DEPTH 78	TAPE NO 490/27	INTERVAL HOURLY	FILTERING UNFILTERED
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FIRST 5 LINES OF DATA:

1700	25	3 76	17.0	-17.3	17.0	-17.3	13.30	1
1800	25	3 76	19.4	-14.0	36.4	-31.3	13.30	2
1900	25	3 76	17.5	-15.5	53.9	-46.8	13.30	3
2000	25	3 76	11.7	-19.9	65.6	-66.7	13.33	4
2100	25	3 76	13.3	-19.8	78.9	-86.5	13.33	5

LAST 5 LINES OF DATA:

900	9	5 76	18.0	2.2	15087.0	-13718.3	14.84	1073
1000	9	5 76	15.5	2.8	15102.4	-13715.6	14.82	1074
1100	9	5 76	12.6	5.8	15115.0	-13709.8	14.91	1075
1200	9	5 76	13.4	7.9	15128.4	-13701.9	14.97	1076
1300	9	5 76	15.3	9.6	15143.7	-13692.3	14.96	1077

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1077	14.1	-12.7	69.0	68.7	8.3	8.3	-31.9	-.4642

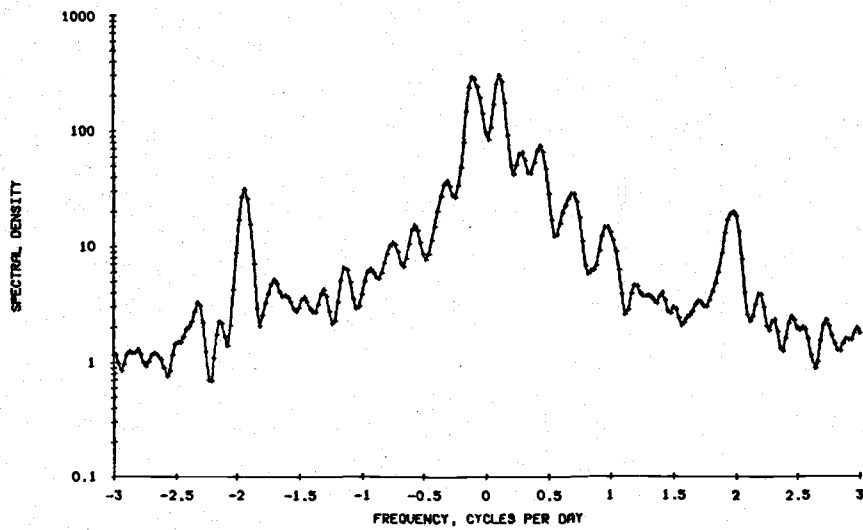
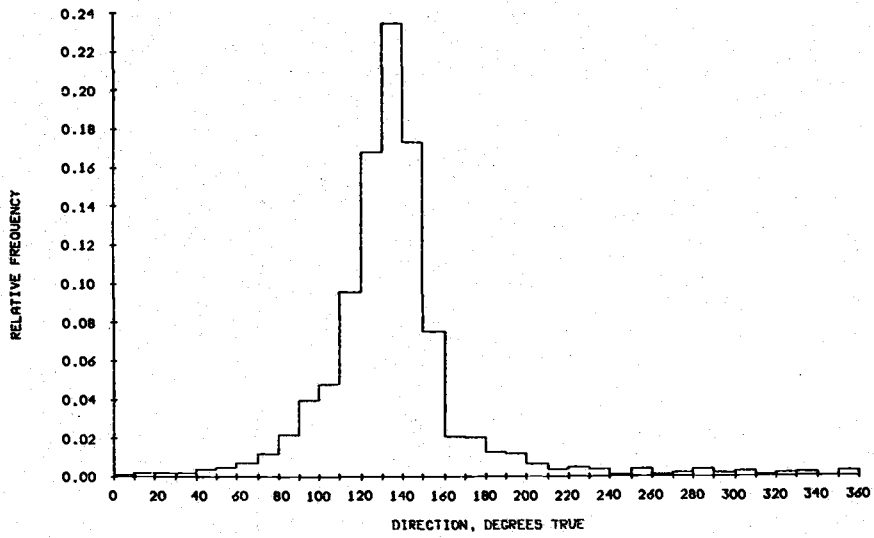
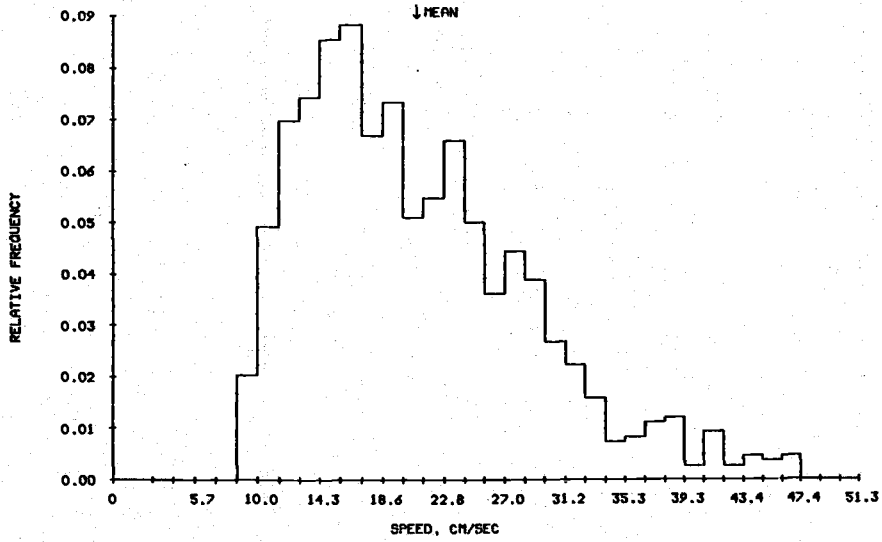
VECTOR MEAN: SPD = 19.0 CM/S, DIR = 132 DEGREES(T)
DIRECTIONAL STEADINESS: 91.0 %

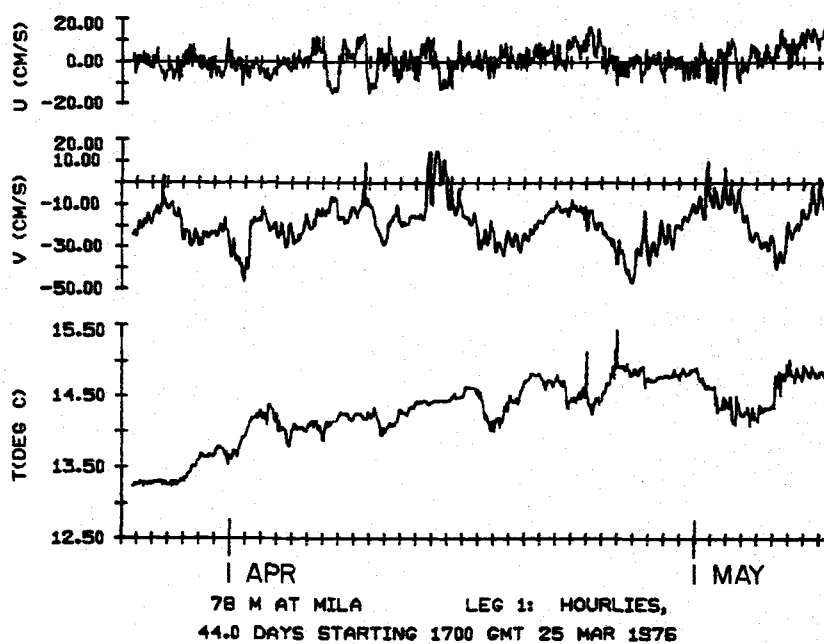
PRINCIPAL AXIS IS 134.9 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MILA		LEG 1		MAX	MIN
		MEAN	STD	SKEW	KURT		
S (CM/S)	1077	20.8	7.9	.8	3.4	46.9	2.9
U (CM/S)	1077	1.0	6.1	.0	2.9	17.6	-14.9
V (CM/S)	1077	-13.9	10.0	.2	3.9	14.7	-46.9
T (DEG C)	1077	14.4	.5	-.7	2.9	15.5	13.3

78 H AT MILA. 25 MAR 76 TO 9 MAY 76. TAPE 490/27





JOINT-II 1976 Installation

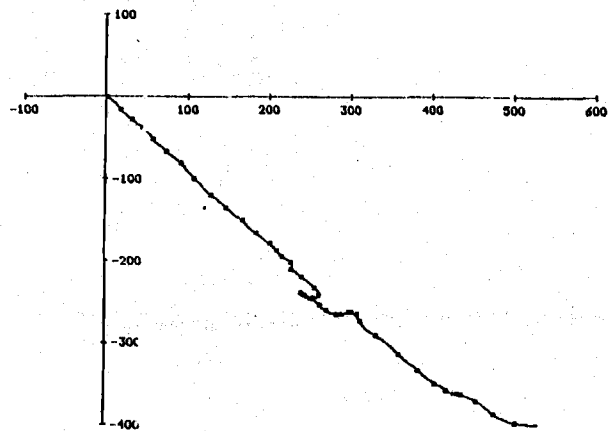
LOBIVIA I

Position*: 15°10.0'S, 75°39.2'W
 Distance Offshore: 28.5 km
 Bottom Depth: 656 m
 Set: 2140 GMT 24 March 1976 by R/V ALPHA HELIX
 Retrieved: 2122 GMT 7 May 1976 by R/V THOMPSON
 Longest Data Interval: 1000 GMT 25 March to 1400 GMT 7 May
 Longest Record Length: 43 days, 10 hours

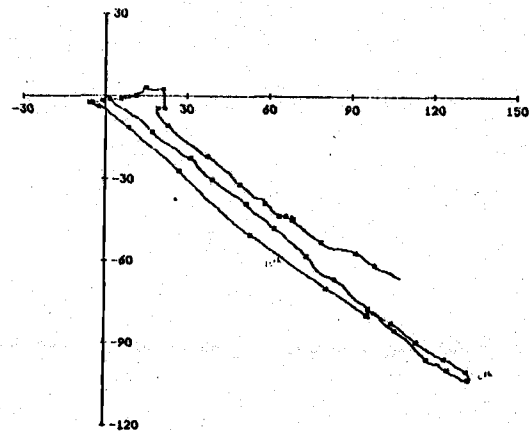
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
50 m	106 m	684/28	20 min	S,θ,T,P,C
150 m	206 m	749/23	20 min	S,θ,T,C
350 m	406 m	452/32	30 min	S,θ,T
500 m	556 m	500/37	30 min	S,θ,T
570 m	626 m	488/23	30 min	S,θ,T

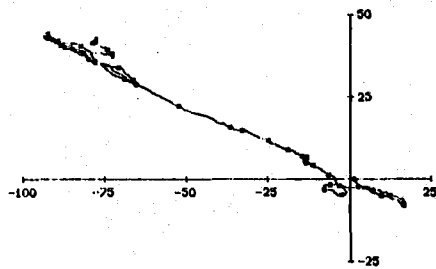
* Navigation: Radar fixes and German chart DHI-721



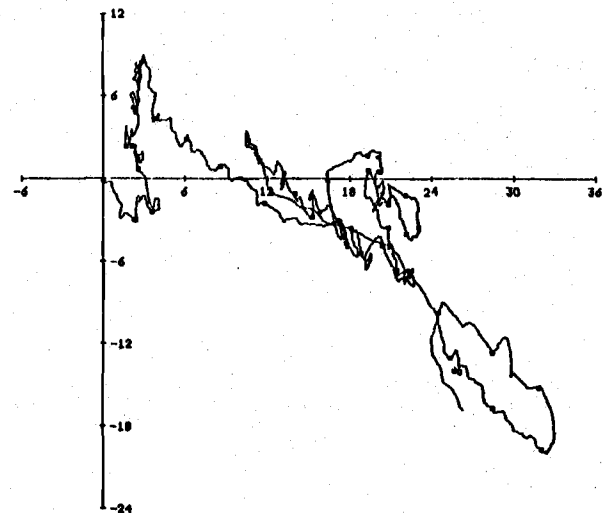
106 METERS AT LOBIVIA. 43.9 DAYS STARTING 2224 24 MAR 76.



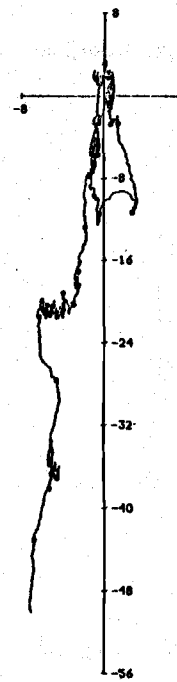
206 METERS AT LOBIVIA. 43.9 DAYS STARTING 2229 24 MAR 76.



406 M AT LOBIVIA. 43.9 DAYS STARTING 2243 24 MAR 76



556 M AT LOBIVIA. 43.9 DAYS STARTING 2341 24 MAR 76



626 M AT LOBIVIA.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	1	106	684/28	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

500	25	3	76	20.5	-13.8	20.5	-13.8	13.14	1071855	41.355
600	25	3	76	21.7	-16.2	42.2	-30.0	13.10	1077422	41.313
700	25	3	76	22.2	-17.2	64.4	-47.2	13.05	1082701	41.258
800	25	3	76	21.7	-19.4	86.2	-66.7	13.07	1085776	41.278
900	25	3	76	21.6	-20.1	107.8	-86.7	13.07	1086121	41.289

LAST 5 LINES OF DATA:

1000	7	5	76	33.6	-5.3	14239.8	-10981.0	14.72	1059381	42.763	1
1100	7	5	76	31.6	-2.6	14271.4	-10983.6	14.68	1058940	42.727	1
1200	7	5	76	33.2	-3.1	14304.5	-10986.7	14.68	1058331	42.711	1
1300	7	5	76	35.8	-1.9	14340.4	-10988.6	14.71	1059293	42.714	1
1400	7	5	76	38.8	-0.9	14379.2	-10989.5	14.74	1062775	42.732	1

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1042	13.8	-10.5	121.7	73.3	11.0	8.6	-66.5	-.7041

VECTOR MEAN: SPD = 17.4 CM/S, DIR = 127 DEGREES(T)
 DIRECTIONAL STEADINESS: 88.3 %

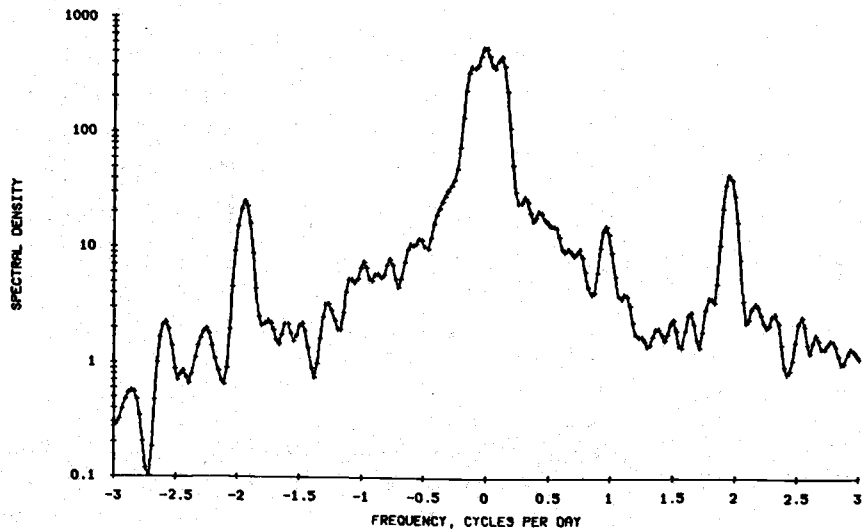
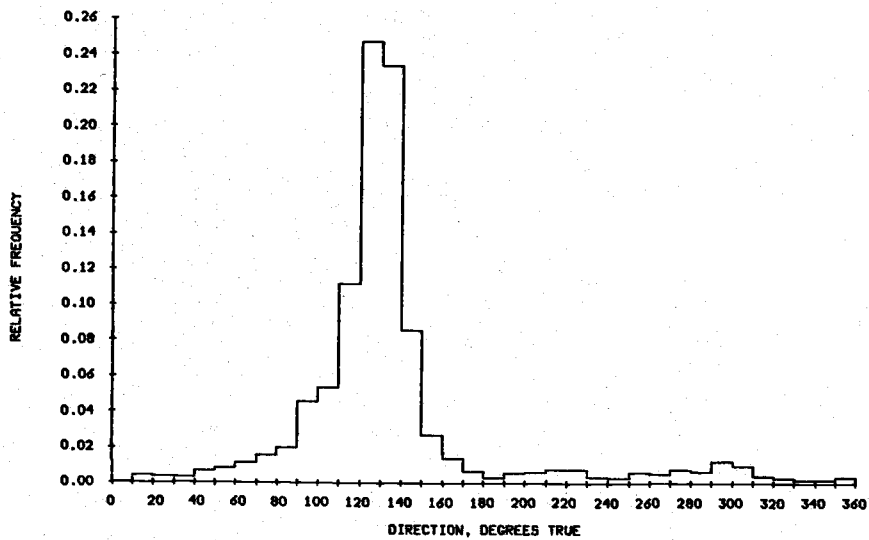
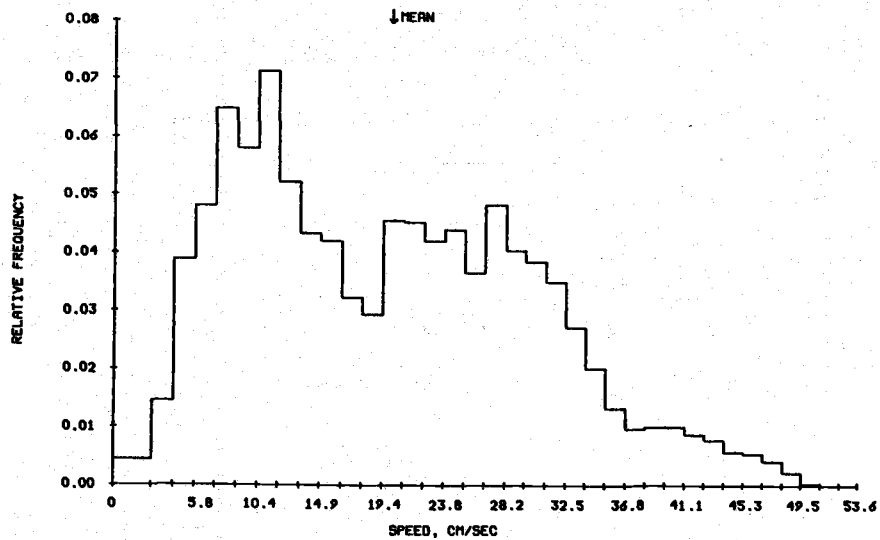
PRINCIPAL AXIS IS 125.0 DEGREES(T)

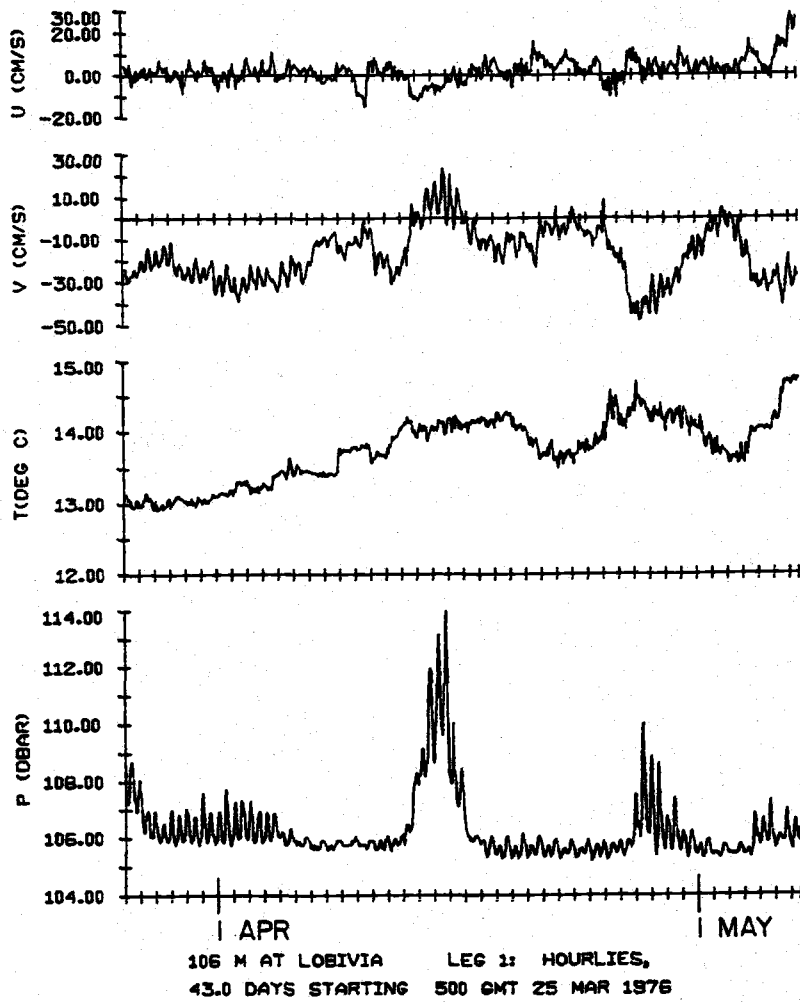
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 1
 106 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1042	19.7	10.5	.4	2.3	49.3	1.3
U (CM/S)	1042	2.3	5.6	.5	5.7	28.3	-14.9
V (CM/S)	1042	-17.2	12.8	.2	2.8	23.2	-48.2
T(DEG C)*	1042	13.8	.4	-.2	2.2	14.8	12.9
P (DBAR)	1042	106.3	1.2	3.3	14.3	114.0	105.2

* No post-calibration available. Temperature data were processed using the pre-calibration of 27 November 1973. See discussion in Appendix 2.





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	1	206	749/23	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

500	25	3	76	16.6	-9.9	16.6	-9.9	12.91	0	40.946
600	25	3	76	17.9	-11.7	34.5	-21.6	12.83	0	40.956
700	25	3	76	20.2	-13.5	54.7	-35.1	12.84	0	40.961
800	25	3	76	23.3	-12.3	78.1	-47.4	12.85	0	40.980
900	25	3	76	23.7	-12.6	101.8	-50.1	12.85	0	40.979

LAST 5 LINES OF DATA:

1000	7	5	76	14.7	-4.9	2774.7	-1682.2	13.25	0	41.353	1
1100	7	5	76	10.3	-4.5	2785.0	-1686.7	13.19	0	41.293	1
1200	7	5	76	8.4	-4.8	2793.4	-1691.5	13.16	0	41.259	1
1300	7	5	76	7.8	-5.3	2801.2	-1696.7	13.16	0	41.262	1
1400	7	5	76	7.8	-5.2	2808.9	-1701.9	13.18	0	41.282	1

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1042	2.7	-1.6	159.8	95.9	12.6	9.8	-112.5	-.9084

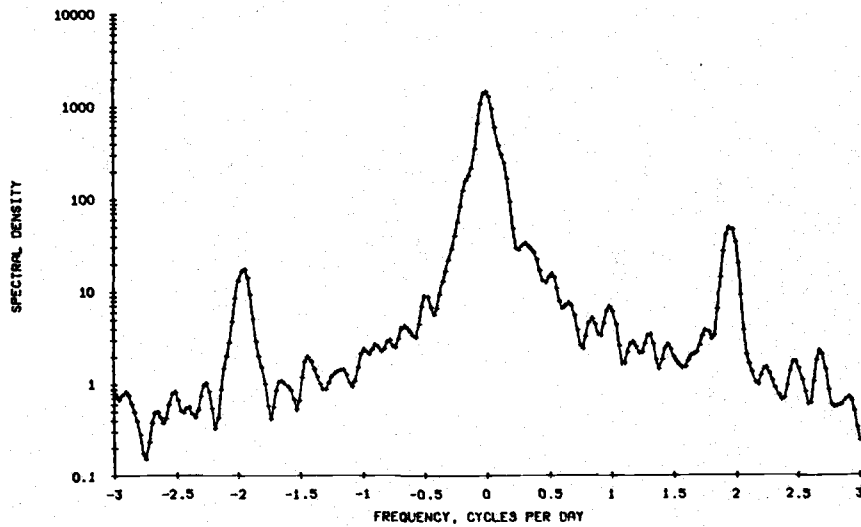
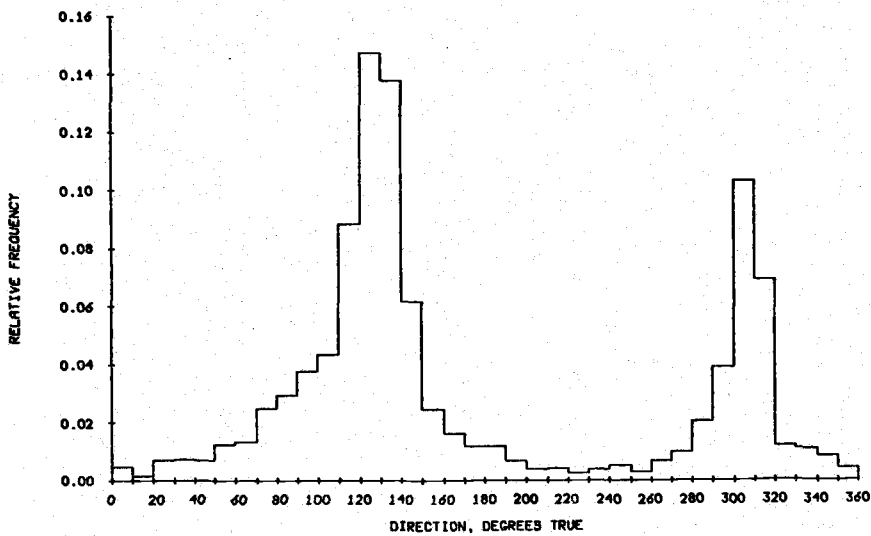
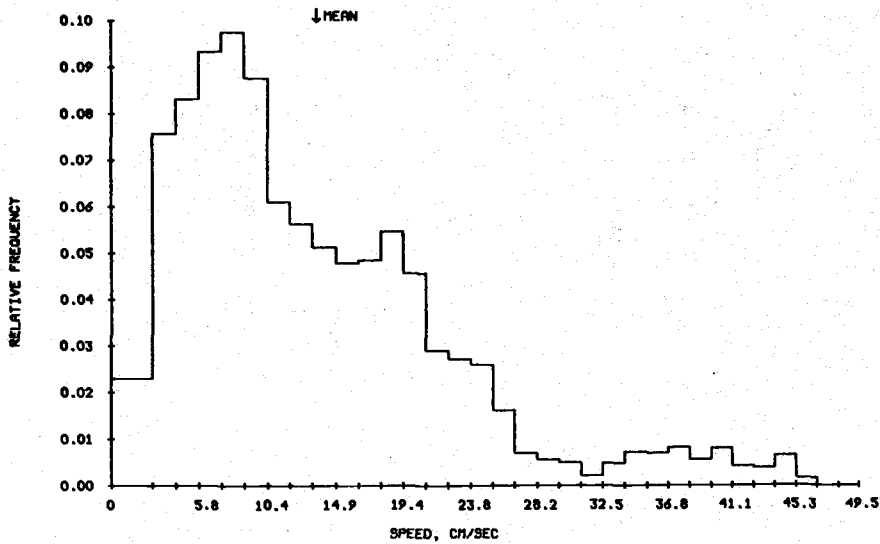
VECTOR MEAN: SPD = 3.2 CM/S, DIR = 121 DEGREES(T)
DIRECTIONAL STEADINESS: 23.3 %

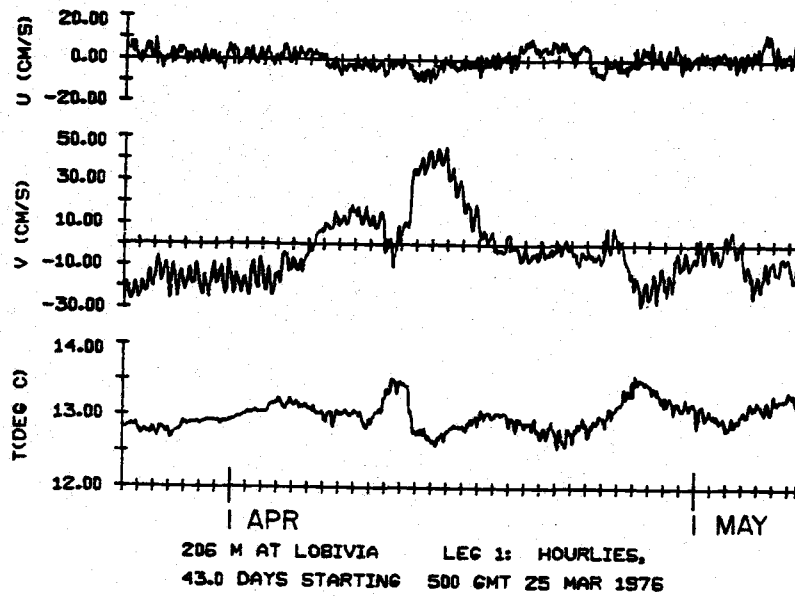
PRINCIPAL AXIS IS 127.1 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 1
206 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1042	13.5	9.1	1.3	4.5	45.6	.3
U (CM/S)	1042	.8	3.9	.0	2.7	12.8	-10.3
V (CM/S)	1042	-3.1	15.5	1.1	4.0	45.6	-28.4
T(DEG C)	1042	13.0	.2	.5	2.9	13.6	12.6





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	1	406	452/32	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

500	25	3 76	11.5	-8.6	11.5	-8.6	11.60	1
600	25	3 76	10.3	-9.6	21.7	-18.3	11.59	2
700	25	3 76	8.3	-9.4	30.0	-27.7	11.56	3
800	25	3 76	10.6	-7.1	40.6	-34.8	11.60	4
900	25	3 76	12.7	-4.2	53.3	-38.9	11.61	5

LAST 5 LINES OF DATA:

900	7	5 76	-0.3	0.6	-2216.1	1229.1	11.05	1037
1000	7	5 76	-0.2	0.7	-2216.3	1229.8	10.94	1038
1100	7	5 76	-0.6	1.5	-2216.9	1231.3	10.60	1039
1200	7	5 76	-0.1	1.4	-2217.0	1232.7	10.52	1040
1300	7	5 76	0.4	1.4	-2216.6	1234.1	10.68	1041

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1041	-2.1	1.2	63.8	20.2	8.0	4.5	-24.3	-.6762

VECTOR MEAN: SPD = 2.4 CM/S, DIR = -60 DEGREES(T)
 DIRECTIONAL STEADINESS: 32.0 %

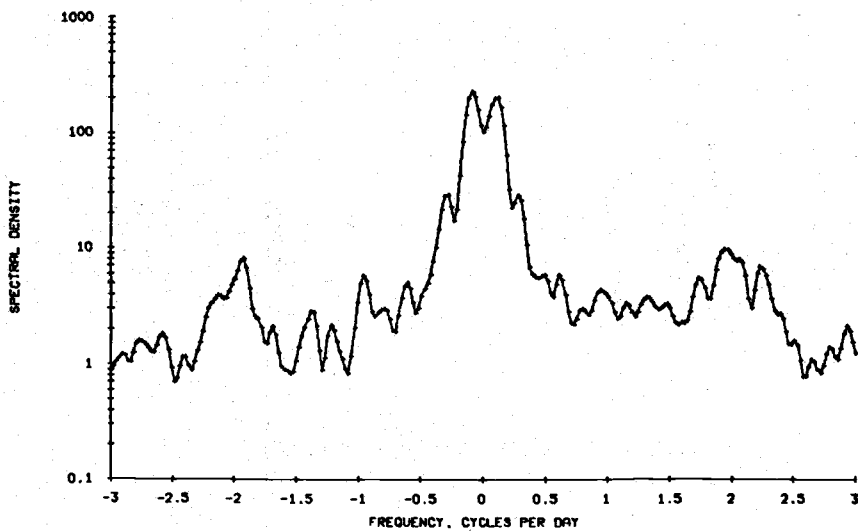
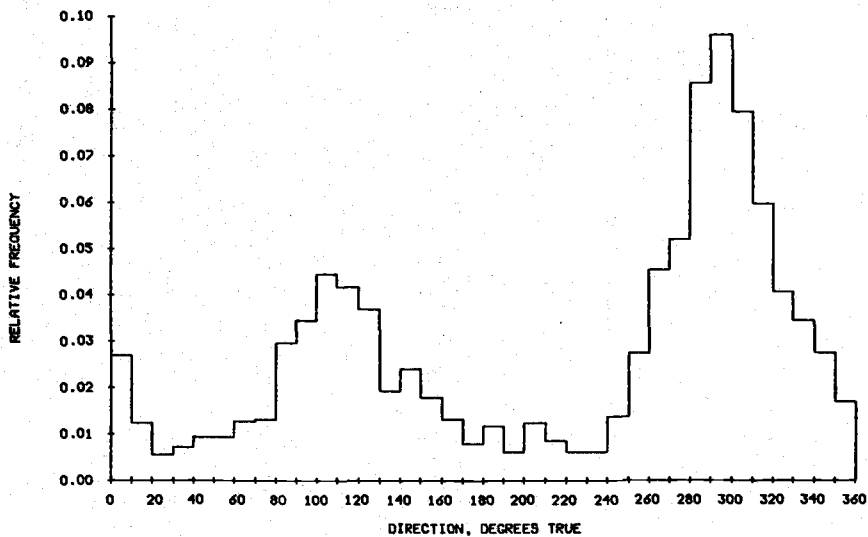
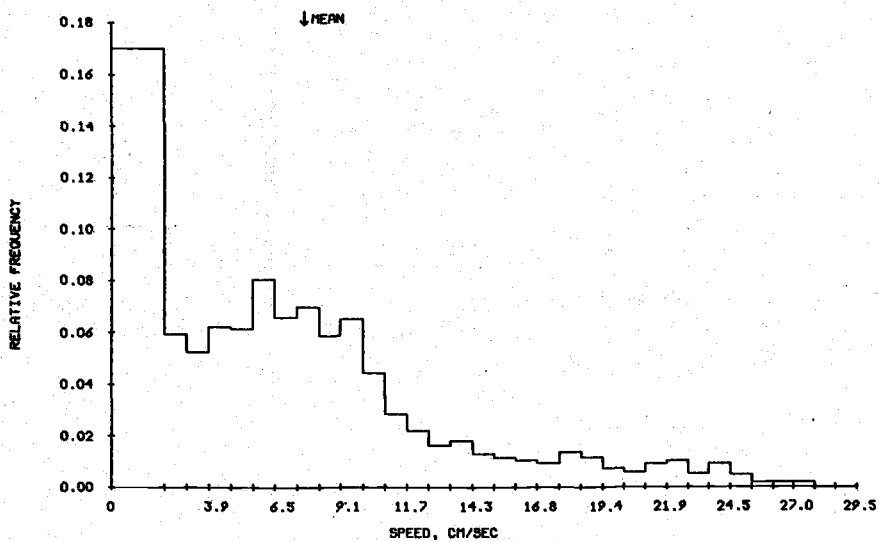
PRINCIPAL AXIS IS 114.0 DEGREES(T)

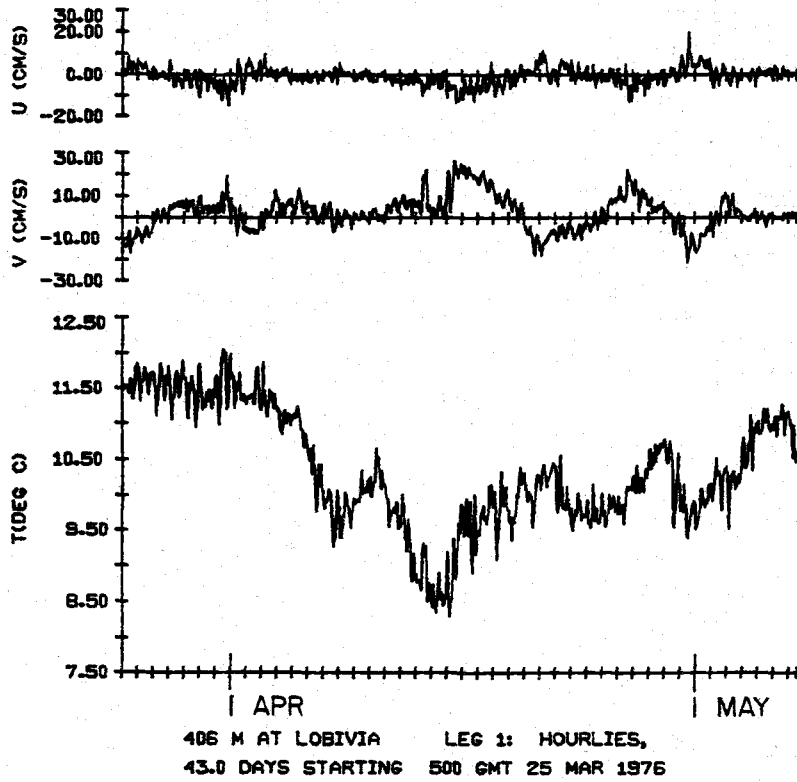
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 1
 406 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1041	7.6	5.7	1.1	4.0	27.7	.1
U (CM/S)	1041	-.7	4.2	.1	4.2	20.2	-14.6
V (CM/S)	1041	2.3	8.1	.2	3.3	26.4	-22.0
T(DEG C)	1041	10.4	.8	-.0	2.4	12.1	8.4

406 ft AT LOBIVIA. 24 MAR 76 TO 7 MAY 76. TAPE 452/32





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	1	556	500/37	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

600	25	3 76	4.9	-7.7	4.9	-7.7	7.45	1
700	25	3 76	4.3	-6.1	9.2	-13.8	7.57	2
800	25	3 76	1.9	-6.0	11.1	-19.8	7.66	3
900	25	3 76	2.5	-4.9	13.6	-24.7	7.79	4
1000	25	3 76	3.5	-5.3	17.1	-30.0	8.10	5

LAST 5 LINES OF DATA:

900	7	5 76	5.1	-15.7	653.6	-342.3	7.55	1036
1000	7	5 76	7.0	-10.1	660.6	-352.4	7.56	1037
1100	7	5 76	3.9	-7.2	664.4	-359.6	7.32	1038
1200	7	5 76	2.7	-8.2	667.1	-367.8	7.41	1039
1300	7	5 76	2.8	-15.4	669.9	-383.2	7.65	1040

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1040	.6	-.4	13.9	34.4	3.7	5.9	-7.4	-.3376

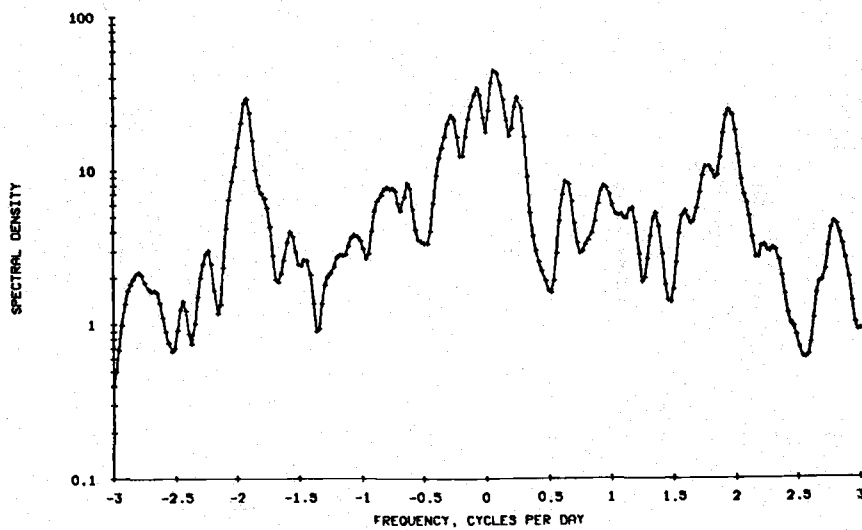
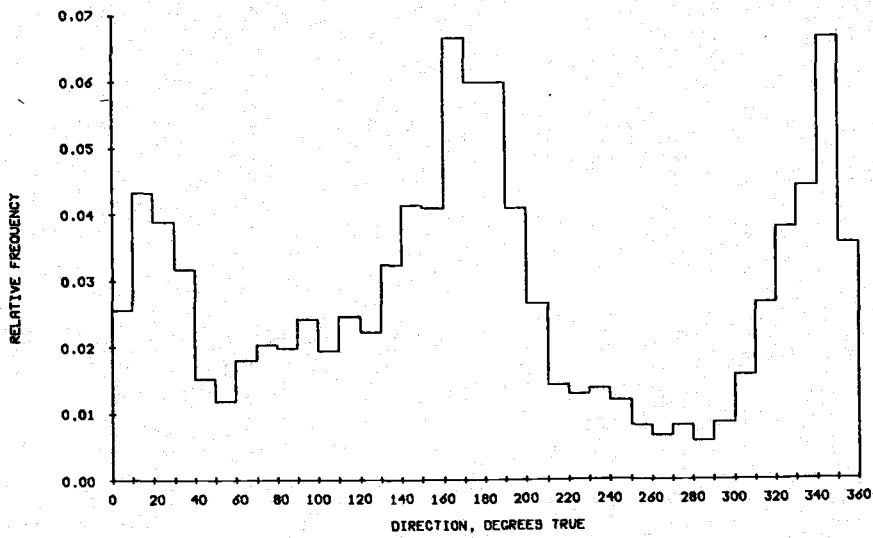
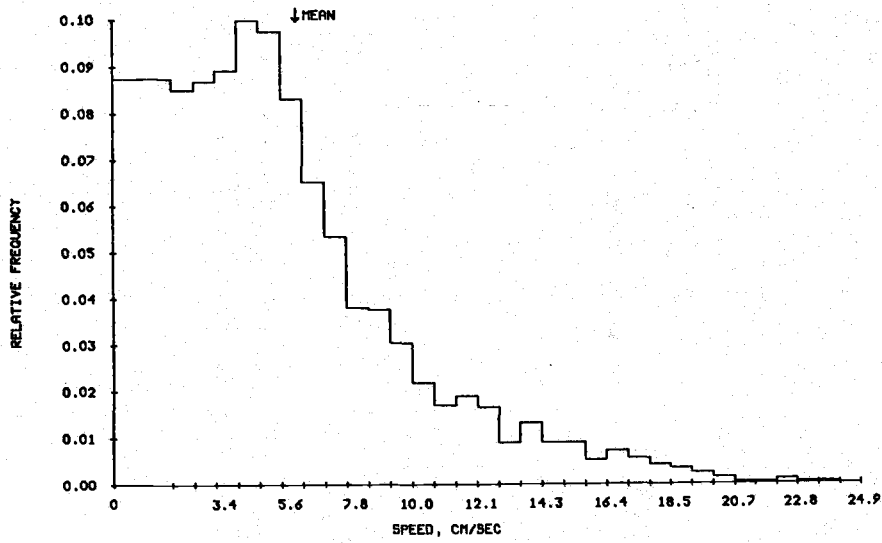
VECTOR MEAN: SPD = .7 CM/S, DIR = 120 DEGREES(T)
DIRECTIONAL STEADINESS: 12.7 %

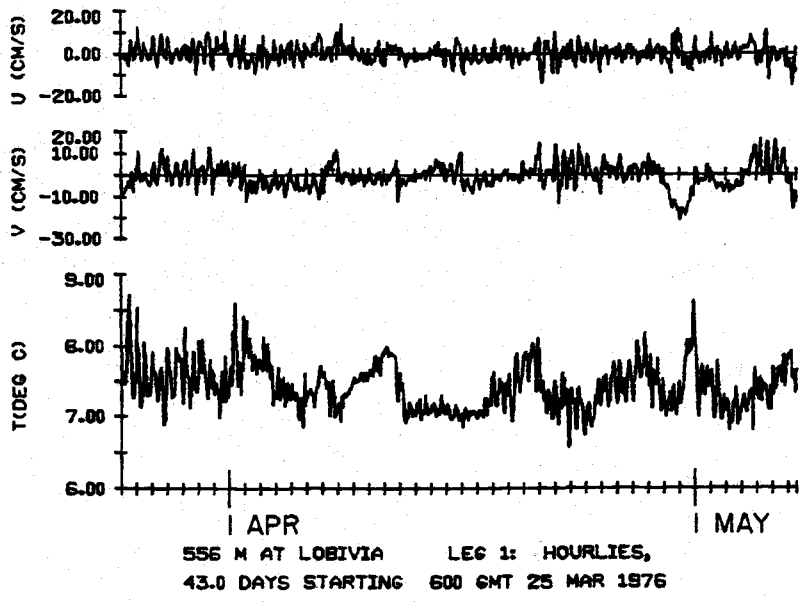
PRINCIPAL AXIS IS 162.1 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 1
556 1

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1040	5.9	3.8	1.4	4.9	22.6	.2
U (CM/S)	1040	.2	4.1	-.0	3.3	13.8	-15.3
V (CM/S)	1040	-.7	5.6	-.1	4.0	16.3	-21.5
T (DEG C)	1040	7.4	.3	.6	3.3	8.7	6.6





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	1	626	488/23	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

500	25	3	76	-1.0	-4.4	-1.0	-4.4	6.85	1
600	25	3	76	2.1	0.4	1.1	-4.0	6.63	2
700	25	3	76	2.5	2.2	3.6	-1.8	6.71	3
800	25	3	76	1.3	-0.3	4.9	-2.1	6.48	4
900	25	3	76	-1.4	-2.8	3.5	-4.9	6.69	5

LAST 5 LINES OF DATA:

900	7	5	76	-0.2	-8.9	-203.0	-1293.8	6.52	1037
1000	7	5	76	-3.1	-10.7	-206.2	-1304.6	6.68	1038
1100	7	5	76	-1.7	-8.1	-207.9	-1312.6	6.42	1039
1200	7	5	76	-0.2	-11.2	-208.1	-1323.8	6.60	1040
1300	7	5	76	-1.5	-14.1	-209.7	-1337.9	6.63	1041

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1041	-.2	-1.3	4.7	33.7	2.2	5.8	3.5	.2729

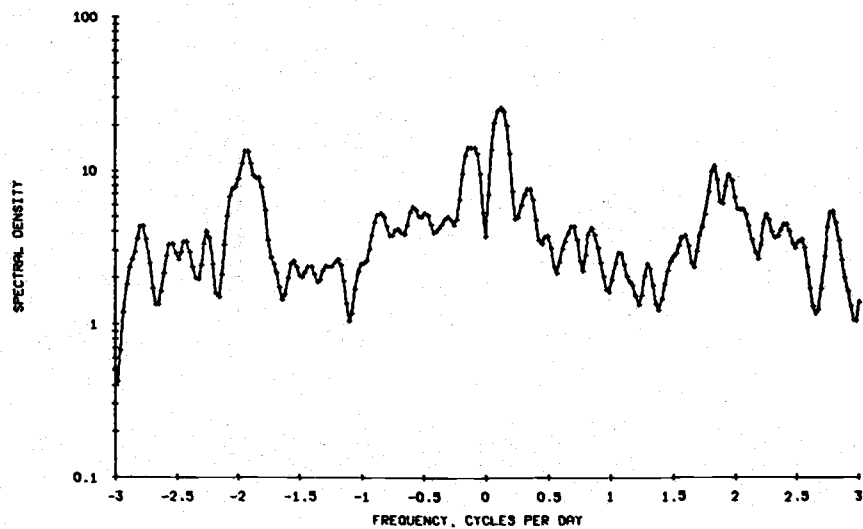
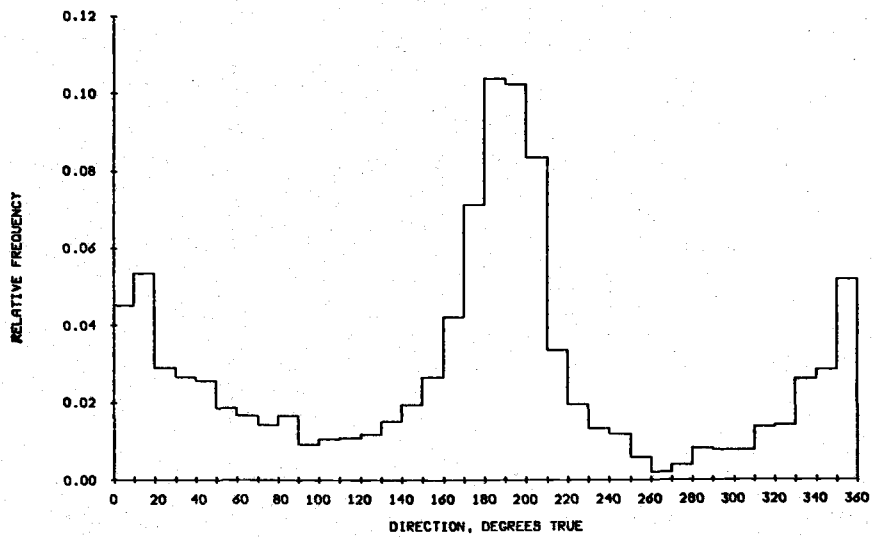
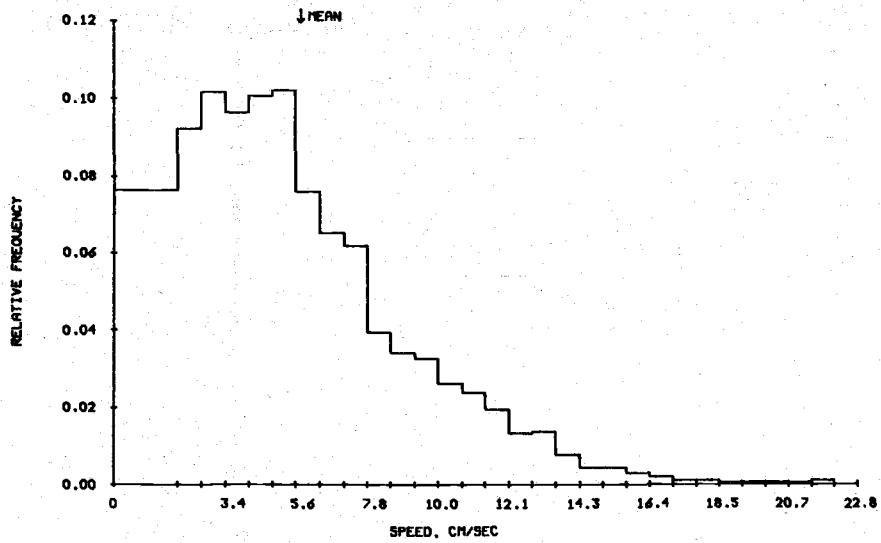
VECTOR MEAN: SPD = 1.3 CM/S, DIR = 189 DEGREES(T)
DIRECTIONAL STEADINESS: 24.2 %

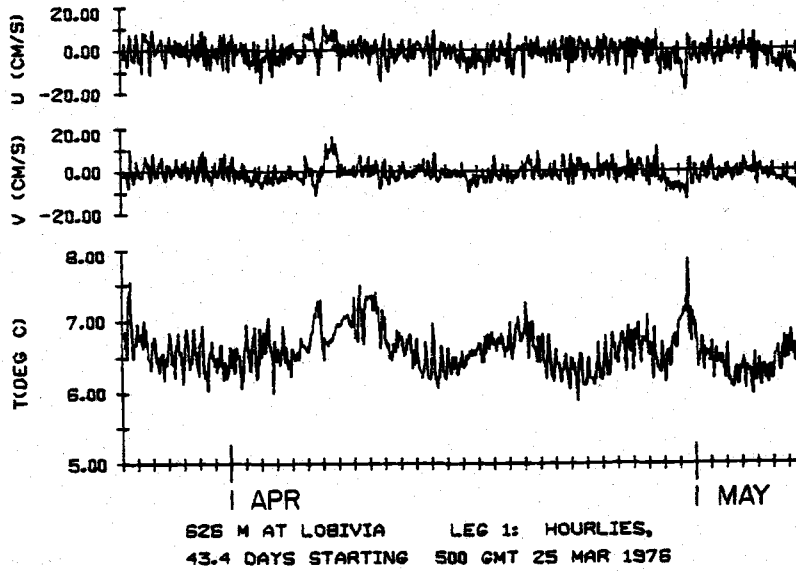
PRINCIPAL AXIS IS 6.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 1
626 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1041	5.4	3.3	1.0	4.2	21.7	.1
U (CM/S)	1041	-1.1	4.8	-.2	2.9	11.7	-18.5
V (CM/S)	1041	-.8	4.0	.5	3.5	16.3	-13.4
T(DEG C)	1041	6.6	.3	.6	3.6	7.9	5.9





JOINT-II 1976 Installation

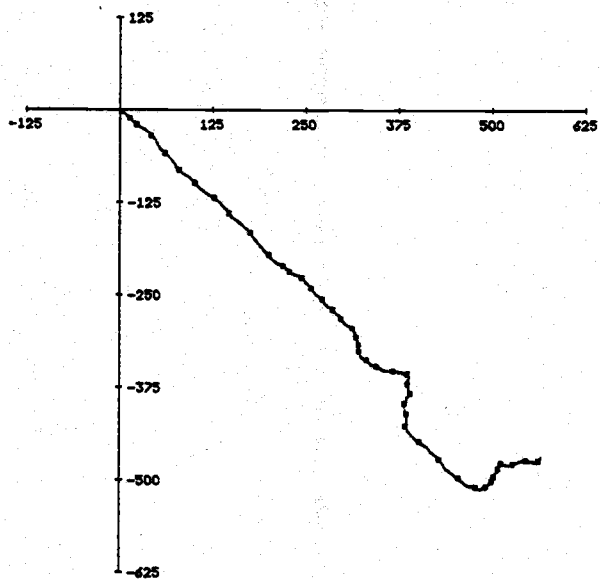
ISLAYA I

Position*: 15°00.0'S, 75°39.0'W
 Distance Offshore: 17.0 km
 Bottom Depth: 136 m
 Set: 1838 GMT 25 March 1976 by R/V ALPHA HELIX
 Retrieved: 1345 GMT 7 May 1976 by R/V THOMPSON
 Longest Data Interval: 0200 GMT 26 March to 0500 GMT 7 May
 Longest Record Length: 42 days, 4 hours

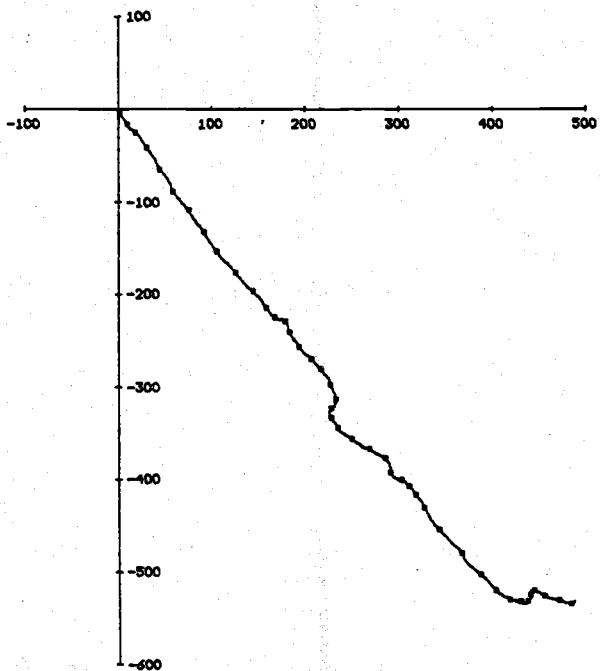
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
25 m	41 m	682/31	20 min	S,θ,T,P,C
50 m	66 m	489/30	30 min	S,θ,T
100 m	116 m	686/29	20 min	S,θ,T,P,C

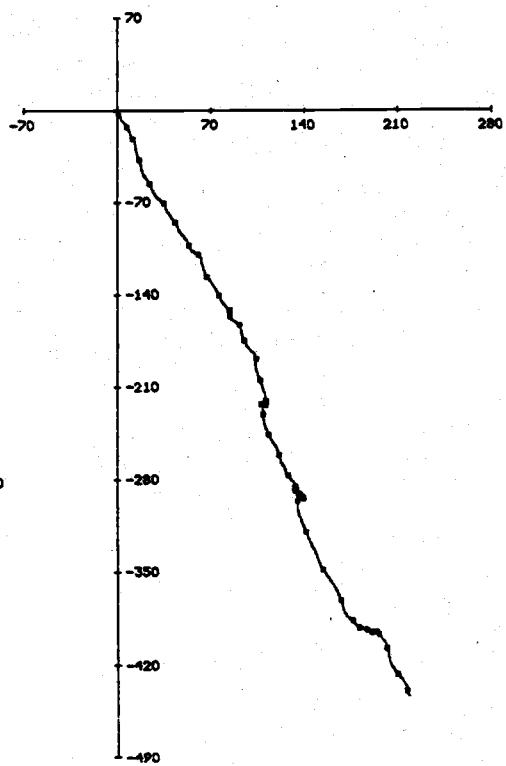
* Navigation: Radar fixes and German chart DHI-721



41 M AT ISLAYA. 42.7 DAYS STARTING 1933 25 MAR 76



66 M AT ISLAYA. 42.7 DAYS STARTING 1940 25 MAR 76



116 M AT ISLAYA. 42.7 DAYS STARTING 1957 25 MAR 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
ISLAYA	1	41	682/31	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	26	3	76	16.7	-12.6	16.7	-12.6	13.84	405712	41.838
300	26	3	76	15.1	-12.3	31.8	-24.9	13.73	405842	41.739
400	26	3	76	15.5	-7.8	47.2	-32.7	13.93	404215	41.932
500	26	3	76	16.9	-4.9	64.2	-37.6	14.15	404257	42.144
600	26	3	76	17.1	-7.6	81.3	-45.1	13.98	405208	41.998

LAST 5 LINES OF DATA:

100	7	5	76	12.9	12.8	15500.7	-13026.2	15.35	405017	43.367
200	7	5	76	11.9	10.9	15512.6	-13015.3	15.39	405452	43.392
300	7	5	76	11.8	10.5	15524.4	-13004.8	15.51	405586	43.457
400	7	5	76	12.1	9.9	15536.4	-12994.9	15.50	405948	43.462
500	7	5	76	10.4	9.6	15546.8	-12985.2	15.48	406187	43.444

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1012	15.4	-12.3	113.4	151.3	10.9	12.3	-49.9	-.3729

VECTOR MEAN: SPD = 20.0 CM/S, DIR = 130 DEGREES(T)
 DIRECTIONAL STEADINESS: 84.5 %

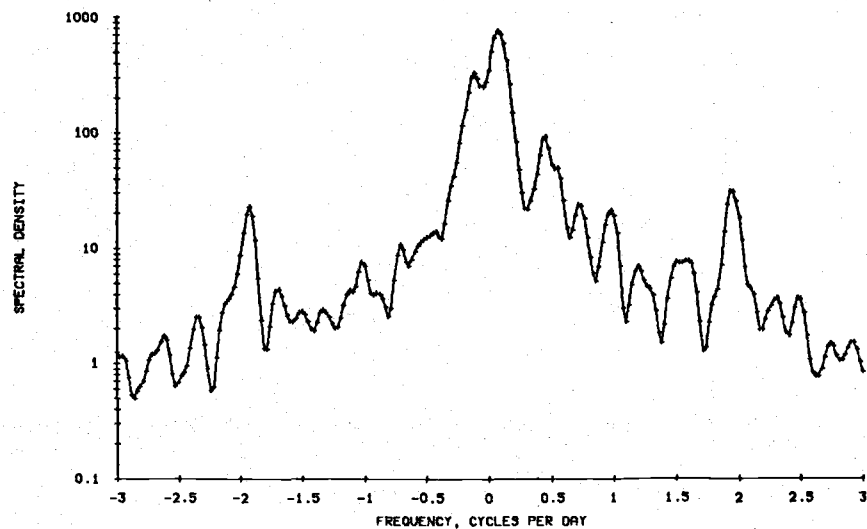
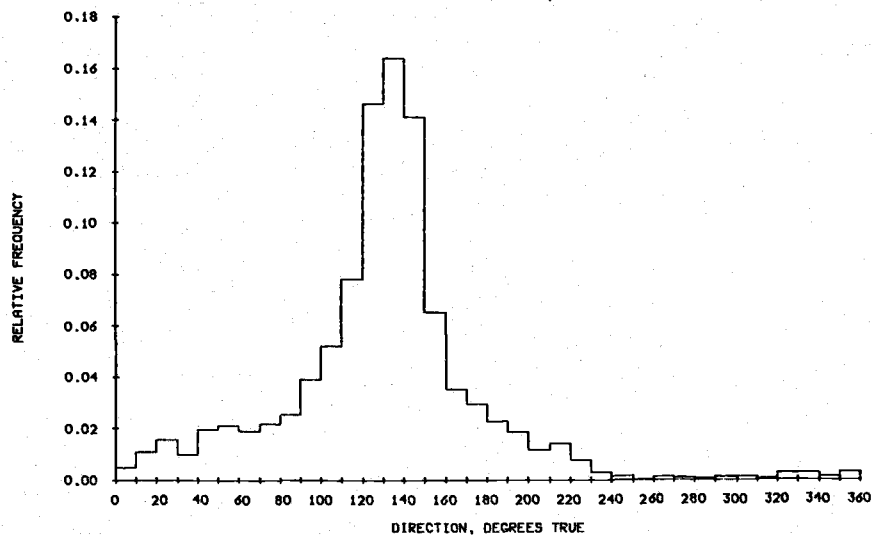
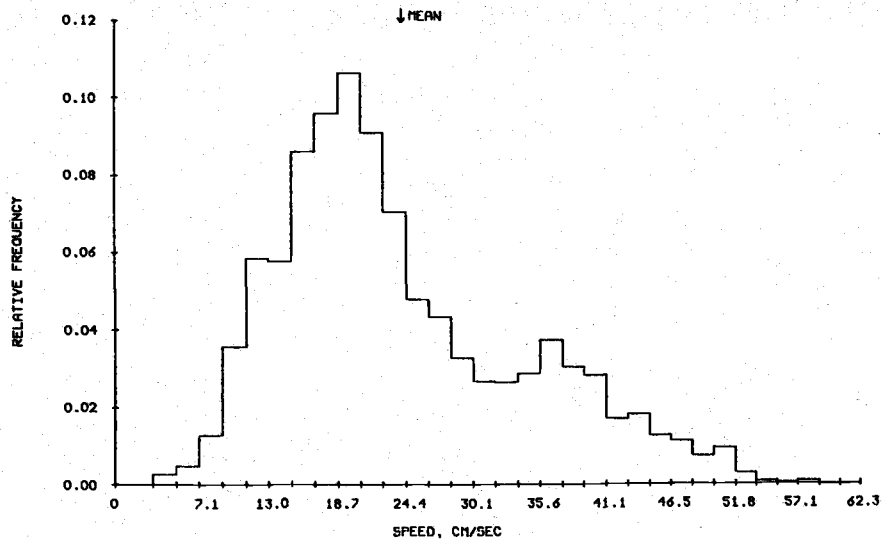
PRINCIPAL AXIS IS 144.1 DEGREES(T)

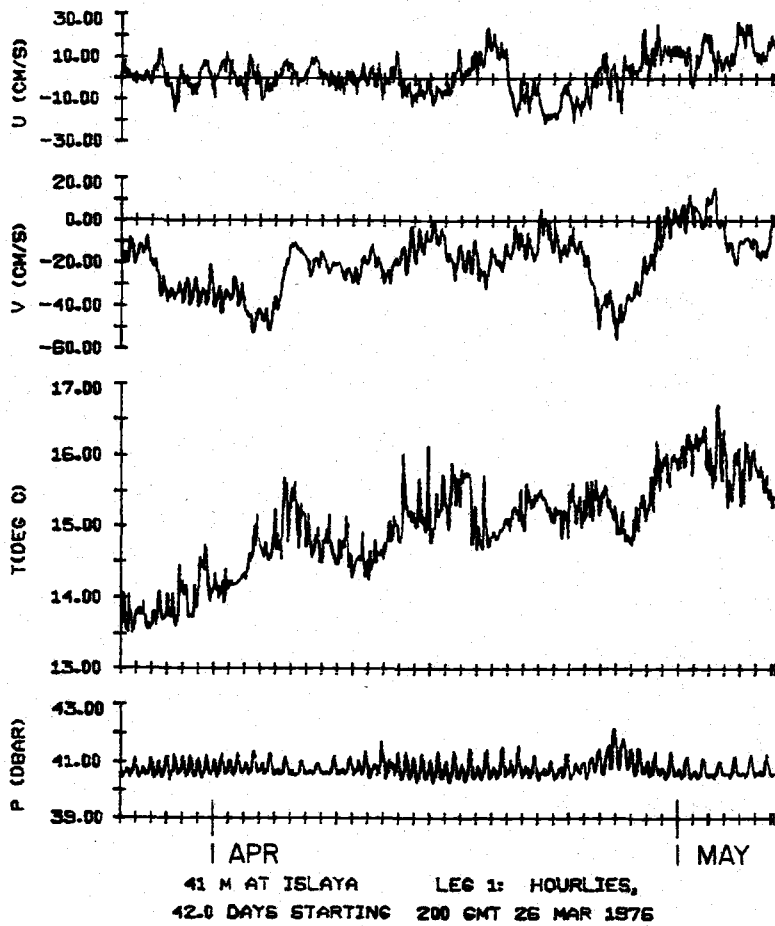
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

ISLAYA LEG 1
 41 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1012	23.7	10.4	.7	2.8	55.6	3.9
U (CM/S)	1012	1.8	9.2	.1	2.8	26.0	-21.4
V (CM/S)	1012	-19.9	13.6	-.1	2.7	15.3	-55.4
T (DEG C)	1012	15.1	.7	-.2	2.5	16.8	13.6
P (DBAR)	1012	40.8	.3	1.1	4.2	42.2	40.3

41 M AT ISLAYA. 25 MAR 76 TO 7 MAY 76. TAPE 682/31





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
ISLAYA	1	66	489/30	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	26	3	76	8.5	-16.7	8.5	-16.7	13.34	1
300	26	3	76	8.7	-16.2	17.2	-32.8	13.39	2
400	26	3	76	7.7	-17.5	24.9	-50.3	13.43	3
500	26	3	76	9.5	-15.3	34.4	-65.6	13.47	4
600	26	3	76	12.6	-14.6	47.0	-80.2	13.64	5

LAST 5 LINES OF DATA:

100	7	5	76	11.5	8.0	13403.0	-14724.2	15.19	1008
200	7	5	76	11.4	3.6	13414.4	-14720.6	15.11	1009
300	7	5	76	12.5	-1.0	13426.9	-14721.6	15.05	1010
400	7	5	76	11.3	0.5	13438.2	-14721.1	15.07	1011
500	7	5	76	11.4	2.3	13449.6	-14718.7	15.08	1012

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1012	13.3	-14.5	61.5	98.3	7.8	9.9	-33.6	-.4324

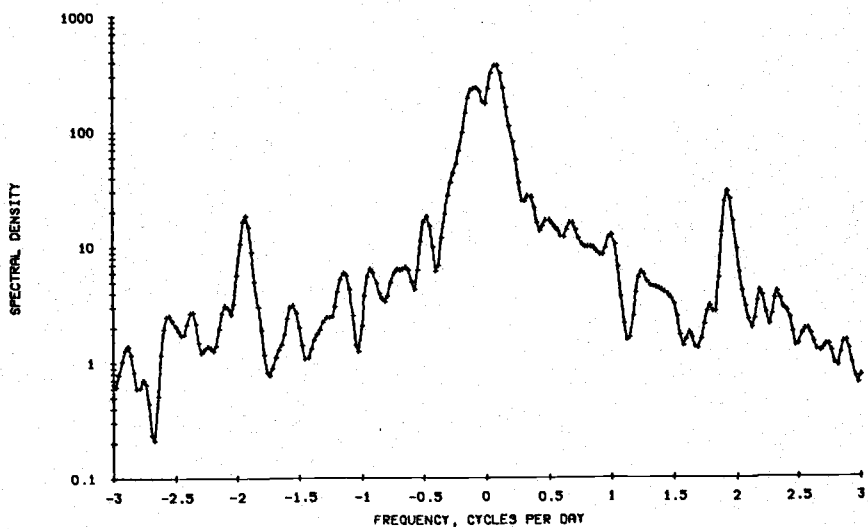
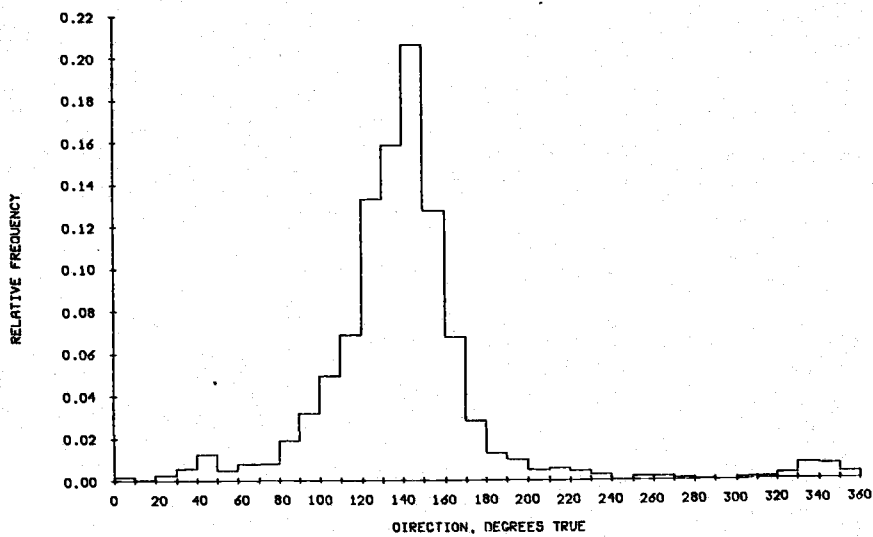
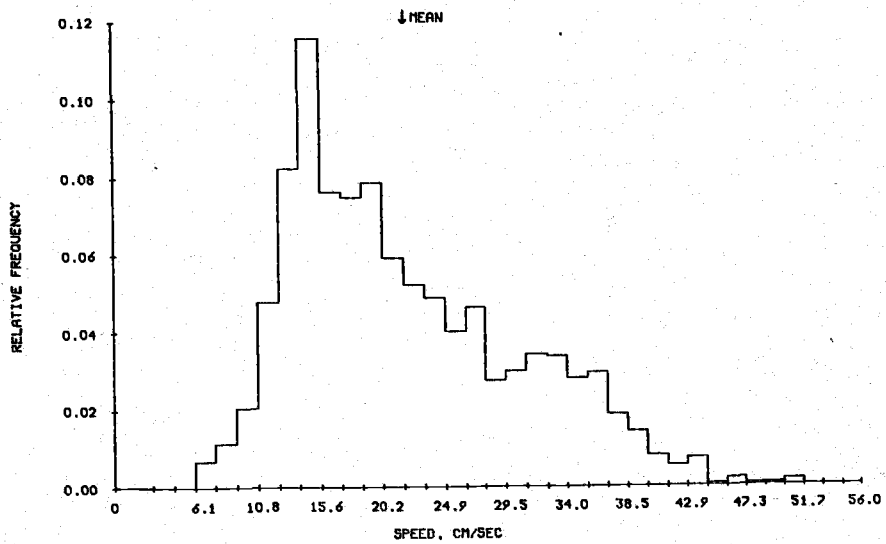
VECTOR MEAN: SPD = 19.7 CM/S, DIR = 138 DEGREES(T)
 DIRECTIONAL STEADINESS: 90.5 %

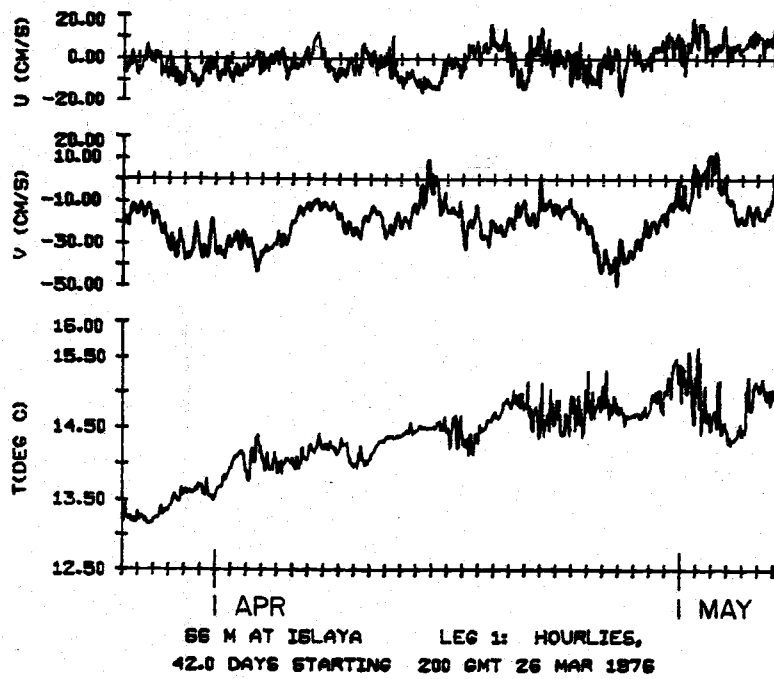
PRINCIPAL AXIS IS 149.4 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

ISLAYA		LEG 1					
66 M							
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1012	21.8	3.6	.6	2.7	50.1	3.7
U (CM/S)	1012	-.9	6.8	.2	2.5	18.5	-17.0
V (CM/S)	1012	-19.7	10.7	.1	3.2	12.6	-49.9
T (DEG C)	1012	14.5	.5	-.4	2.7	15.8	13.3

66 H AT ISLAYA. 25 MAR 76 TO 7 MAY 76. TAPE 489/30





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
ISLAYA	1	116	686/29	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	26	3	76	9.4	-13.1	9.4	-13.1	13.19	1158814	41.112
300	26	3	76	9.9	-11.8	19.3	-25.0	13.19	1158100	41.111
400	26	3	76	6.5	-11.1	25.8	-36.0	13.19	1156858	41.115
500	26	3	76	3.9	-13.6	29.7	-49.6	13.21	1157717	41.141
600	26	3	76	4.2	-15.2	33.9	-64.8	13.23	1158693	41.154

LAST 5 LINES OF DATA:

100	7	5	76	0.2	-13.0	5977.6	-12140.2	14.63	1161481	42.494
200	7	5	76	3.9	-11.6	5981.4	-12151.7	14.60	1161547	42.488
300	7	5	76	4.6	-10.9	5986.1	-12162.6	14.60	1161383	42.483
400	7	5	76	5.0	-10.1	5991.1	-12172.7	14.63	1162086	42.510
500	7	5	76	5.1	-9.9	5996.2	-12182.6	14.63	1162050	42.506

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1012	5.9	-12.0	36.3	99.3	6.0	10.0	-34.1	-.5680

VECTOR MEAN: SPD = 13.4 CM/S, DIR = 154 DEGREES(T)
 DIRECTIONAL STEADINESS: 85.5 %

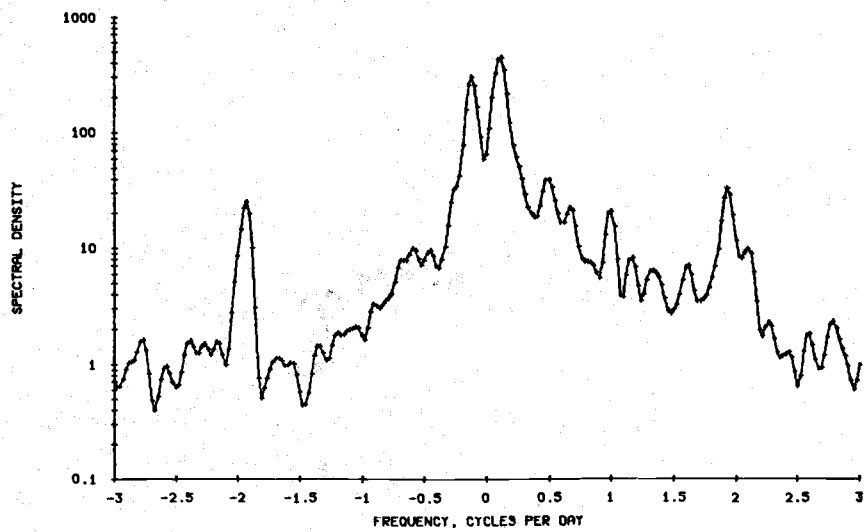
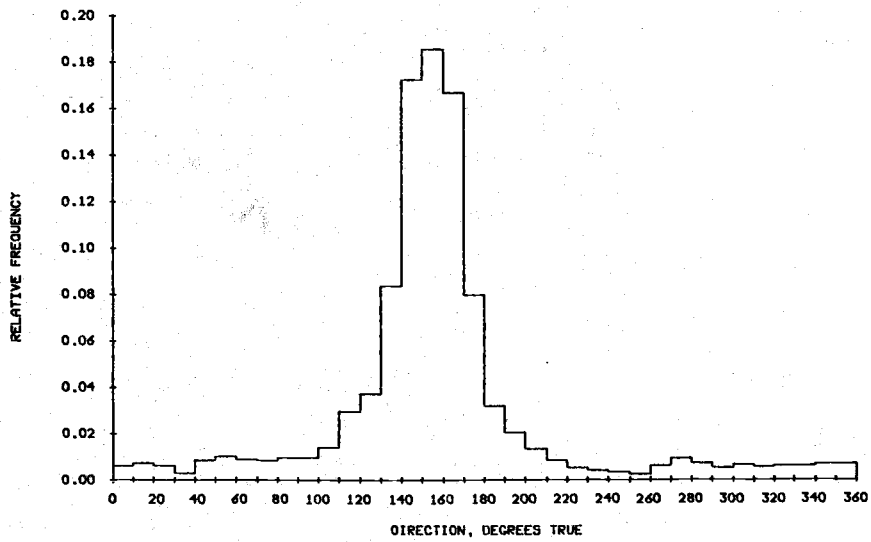
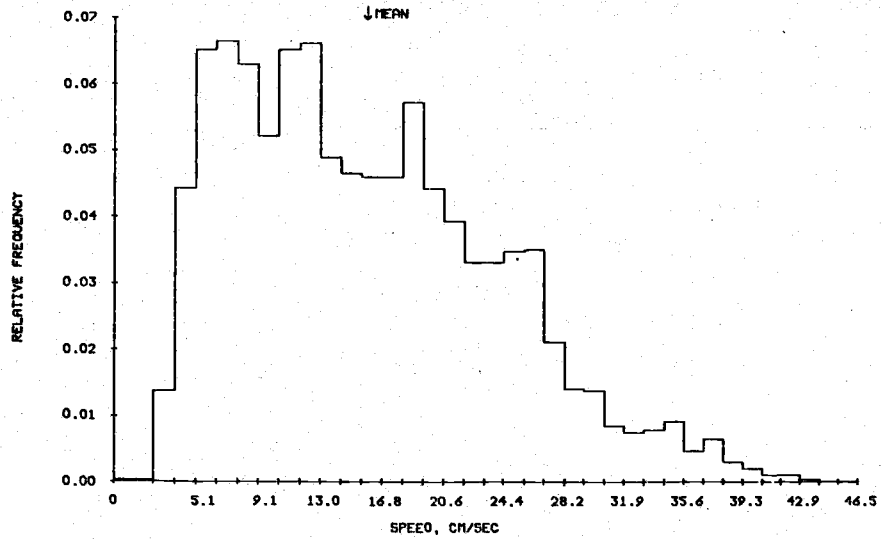
PRINCIPAL AXIS IS 156.4 DEGREES(T)

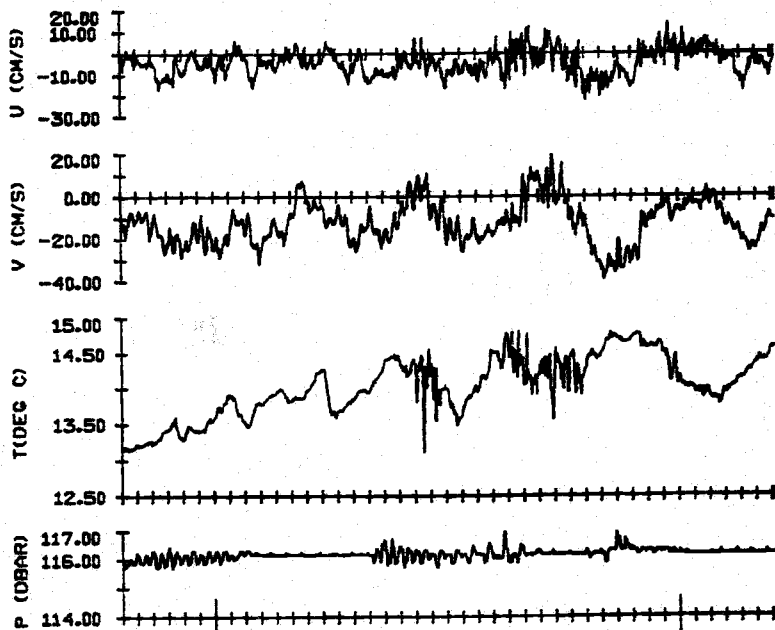
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

ISLAYA LEG 1
 116 M

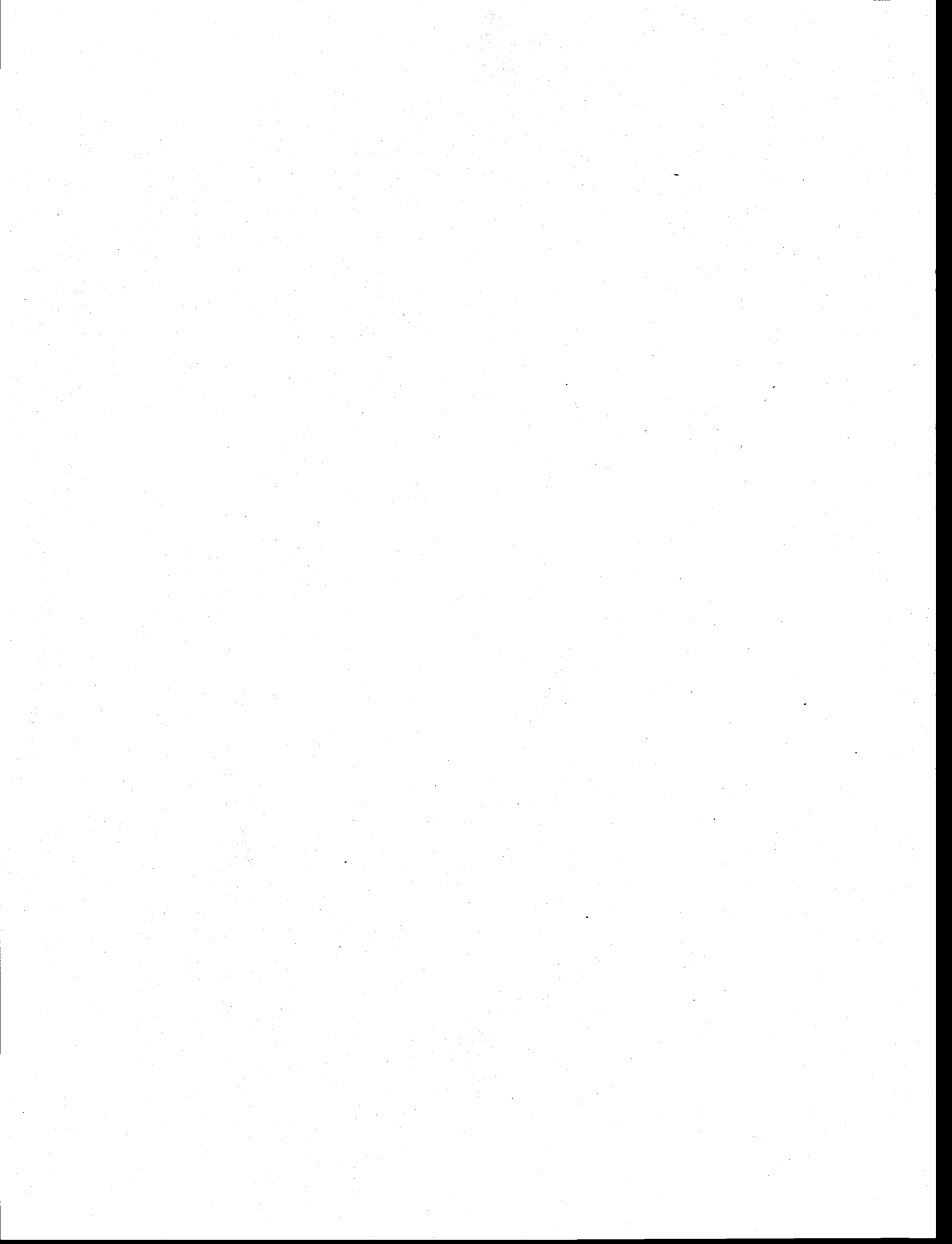
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1012	15.7	8.3	.6	2.7	42.4	1.8
U (CM/S)	1012	-4.3	5.8	.0	2.9	14.1	-22.5
V (CM/S)	1012	-12.7	10.1	.2	2.9	19.0	-39.5
T (DEG C)	1012	14.1	.4	-.2	2.3	14.9	13.2
P (DBAR)	1012	116.2	.2	.2	6.2	117.0	115.7

116 M AT ISLAYA. 25 MAR 76 TO 7 MAY 76. TAPE 686/29





116 M AT ISLAYA LEG 1: HOURLIES,
42.0 DAYS STARTING 200 GMT 26 MAR 1976



JOINT-II 1976 Installation

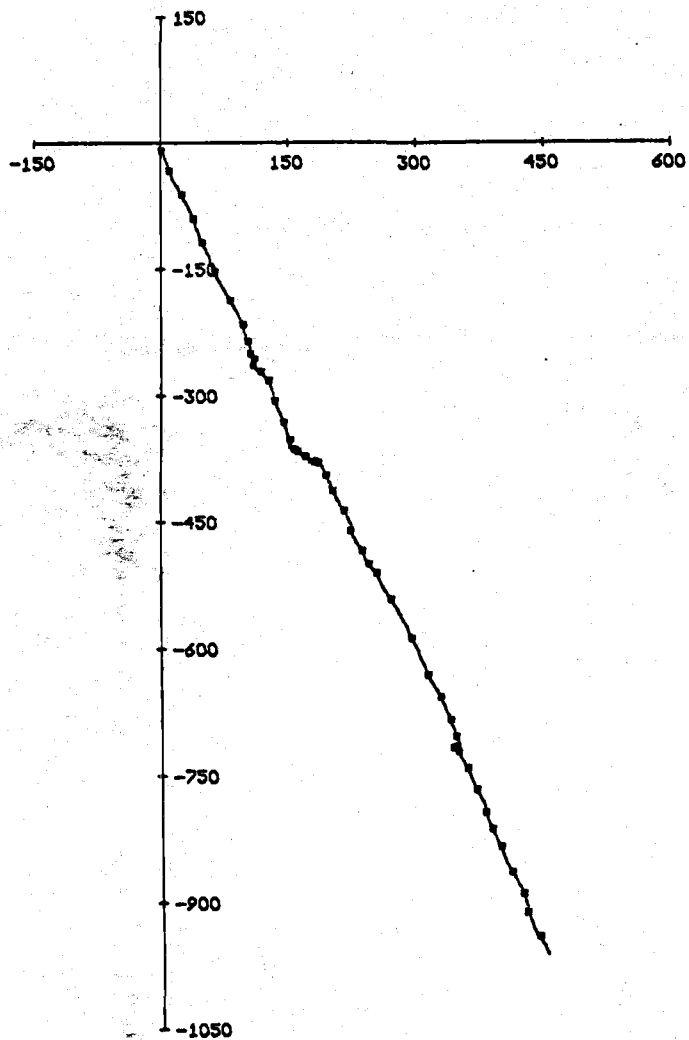
SOUR I

Position*: 13°55.2'S, 76°29.4'W
 Distance Offshore: 10.8 km
 Bottom Depth: 120 m
 Set: 1302 GMT 26 March 1976 by R/V ALPHA HELIX
 Retrieved: 1855 GMT 12 May 1976 by R/V THOMPSON
 Longest Data Interval: 2100 GMT 26 March to 1100 GMT 12 May
 Longest Record Length: 46 days, 15 hours

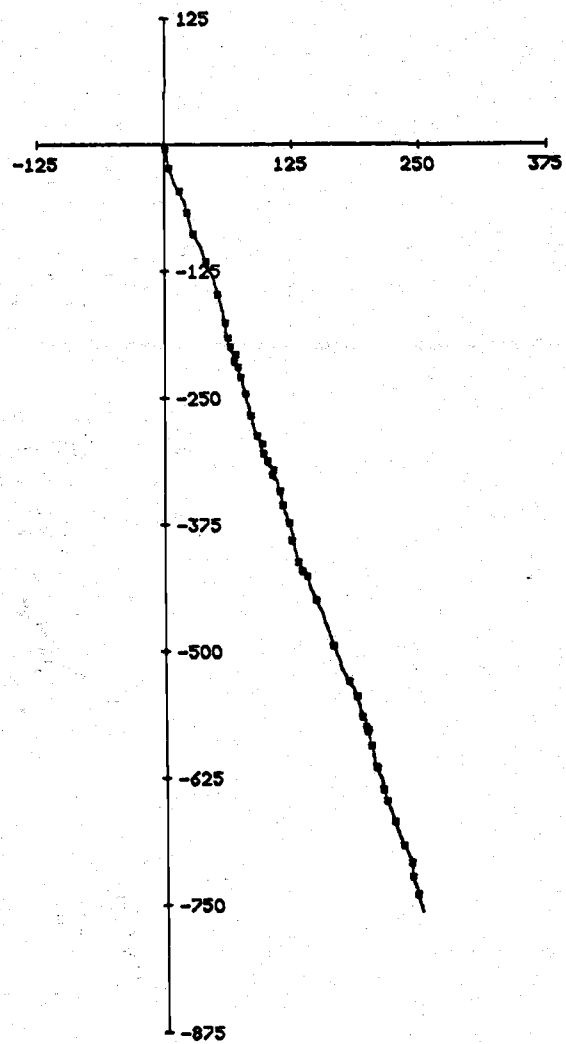
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
80 m	80 m	453/38	30 min	S,θ,T
100 m	100 m	498/31	30 min	S,θ,T

* Navigation: radar fixes and German chart DHI-721.



80 METERS AT SOUR. 47.2 DAYS STARTING 1404 26 MAR 76.



100 METERS AT SOUR. 47.1 DAYS STARTING 1608 26 MAR 76.

STATION SOUR	LEG 1	DEPTH 80	TAPE NO 453/38	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2100	26	3 76	6.7	-28.4	13.71	1
2200	26	3 76	1.2	-28.2	13.65	2
2300	26	3 76	8.9	-24.7	13.70	3
0	27	3 76	3.7	-24.0	13.67	4
100	27	3 76	4.2	-21.7	13.66	5

LAST 5 LINES OF DATA:

700	12	5 76	23.1	-36.4	12421.8	-26211.6	14.74	1115
800	12	5 76	15.9	-43.8	12437.7	-26255.5	14.76	1116
900	12	5 76	27.0	-40.0	12464.7	-26235.4	14.86	1117
1000	12	5 76	21.2	-40.6	12485.9	-26336.1	14.75	1118
1100	12	5 76	9.7	-39.3	12495.7	-26375.4	14.66	1119

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1119	11.2	-23.6	77.5	199.6	8.8	14.1	-67.9	-.5456

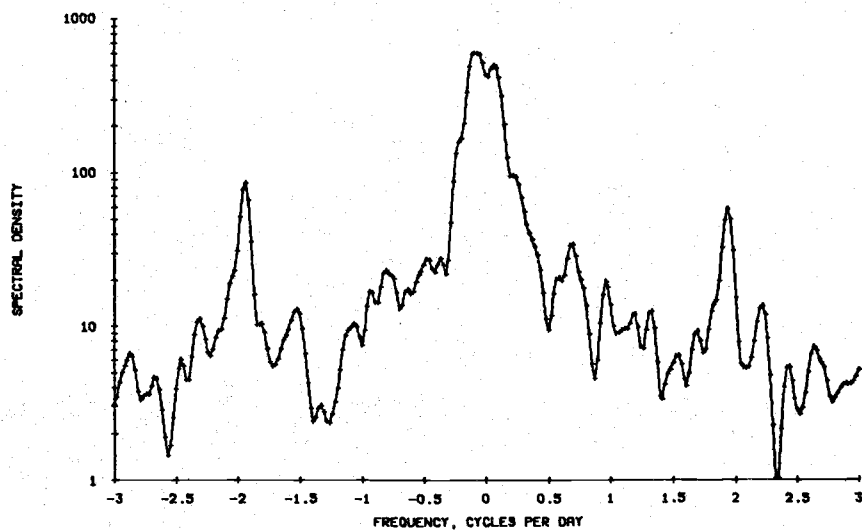
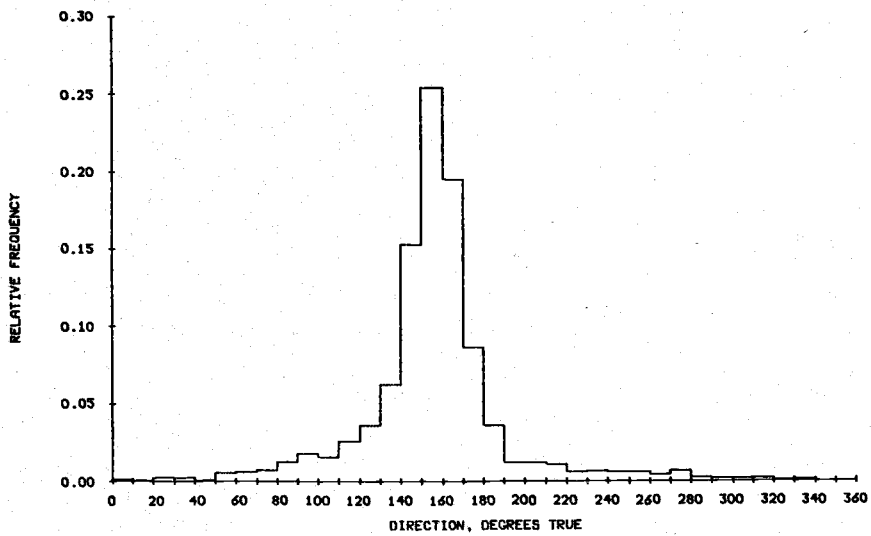
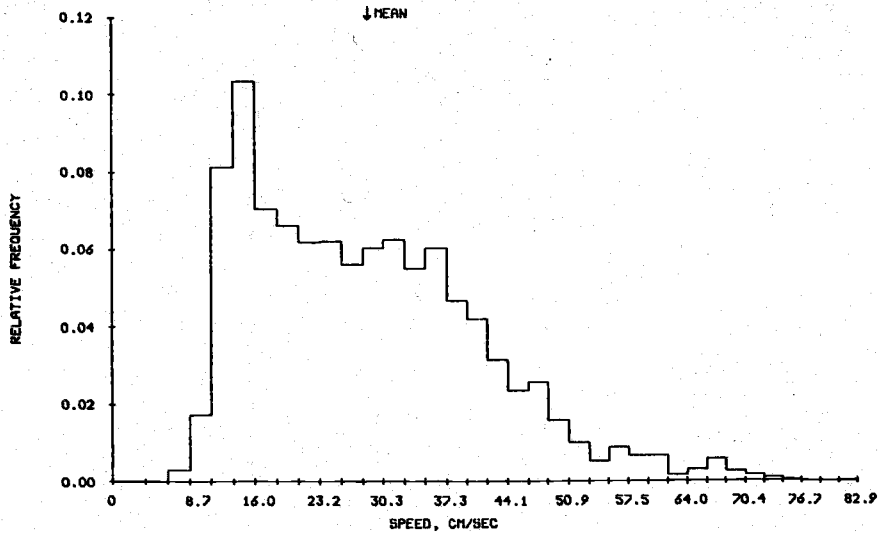
VECTOR MEAN: SPD = 26.1 CM/S, DIR = 155 DEGREES(T)
DIRECTIONAL STEADINESS: 93.5 %

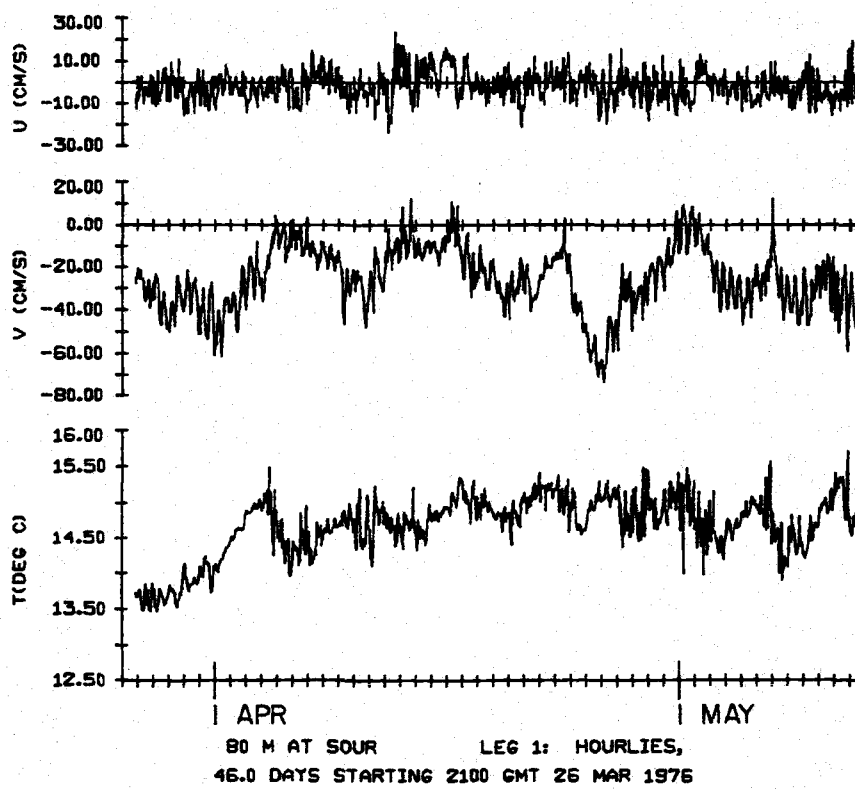
PRINCIPAL AXIS IS 156.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

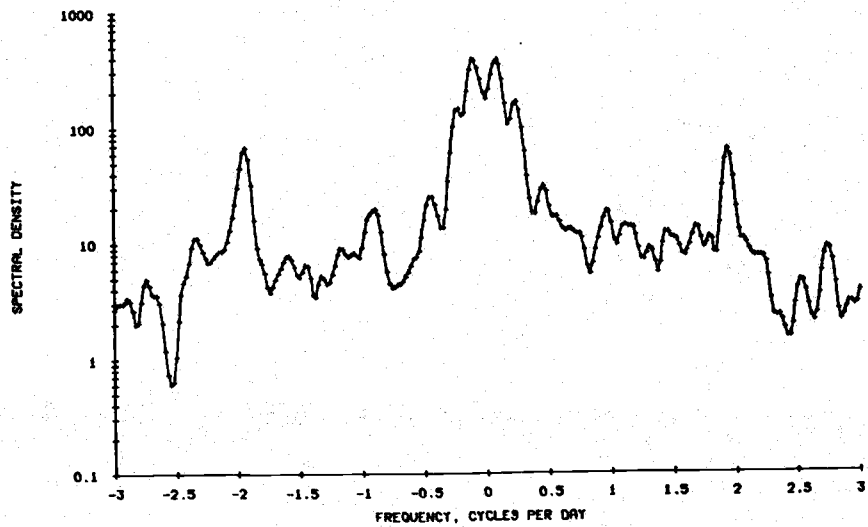
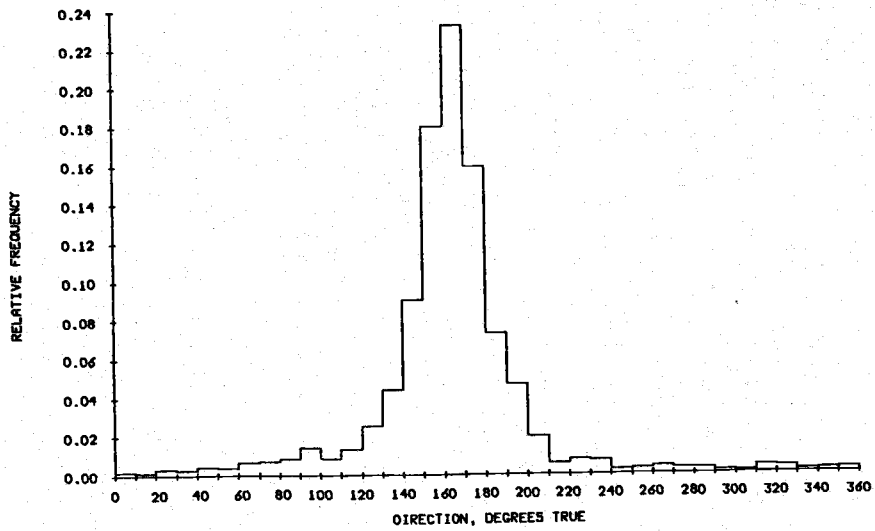
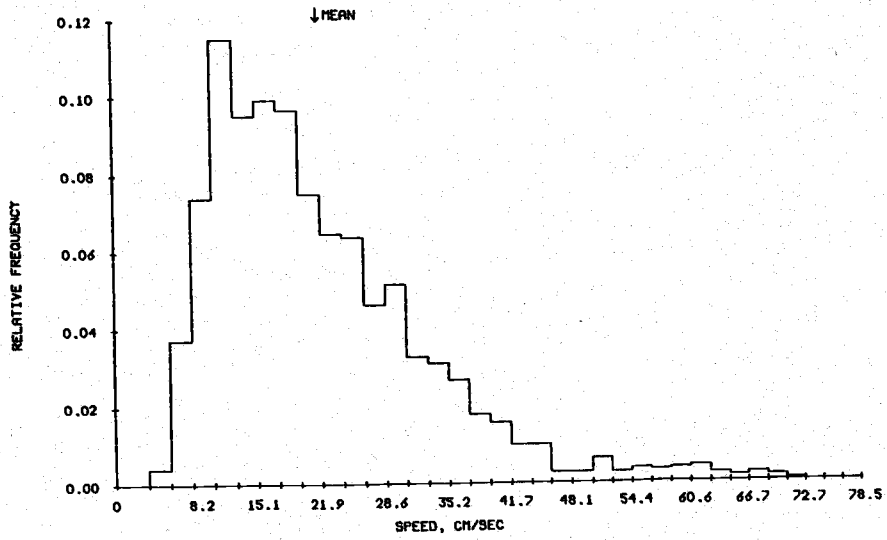
VARIABLE	SOUR		LEG 1					
	N	80 M	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1119		27.9	13.4	.6	3.1	73.9	.4
U (CM/S)	1119		-2.1	7.0	.3	3.1	23.2	-24.1
V (CM/S)	1119		-26.0	15.1	-.2	3.0	12.2	-73.8
T(DEG C)	1119		14.7	.4	-.8	3.2	15.7	13.5

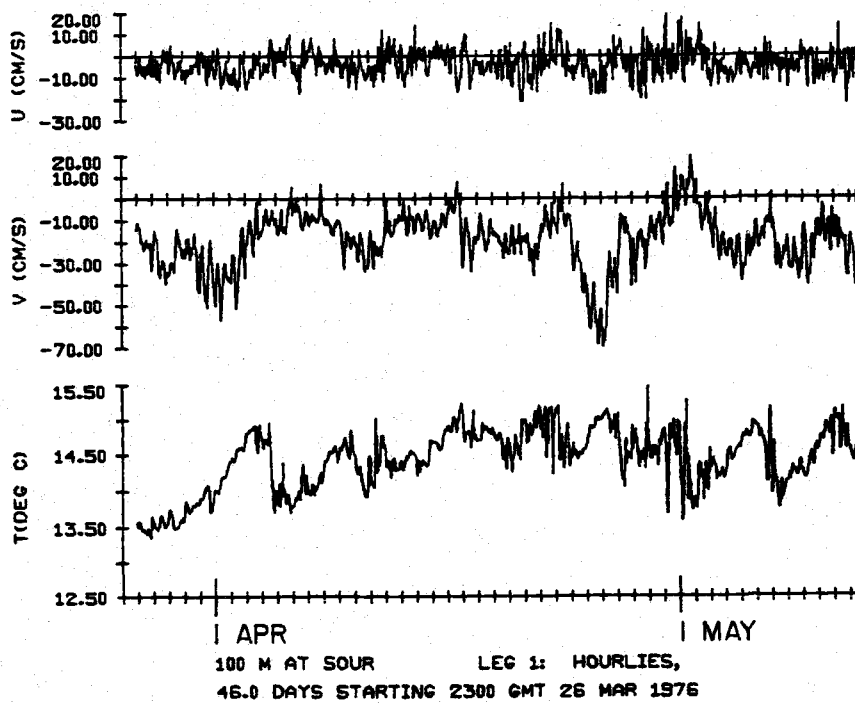
80 METERS AT SOUR. 26 MAR 76 TO 12 MAY 76. TAPE 453/38.





100 METERS AT SOUR. 26 MAR 76 TO 12 MAY 76. TAPE 498/31.





INSTALLATIONS: Leg II

JOINT-II 1976 Installation

MILA II

Position*: 15°07.2'S, 75°30.5'W
 Distance Offshore: 12.0 km
 Bottom Depth: 128 m
 Set: 1416 GMT 10 May 1976 by R/V THOMPSON
 Retrieved: 1353 GMT 27 July 1976 by R/V EASTWARD
 Longest Data Interval: 2100 GMT 10 May to 0600 GMT 27 July
 Longest Record Length: 81 days, 14 hours

Instrumentation

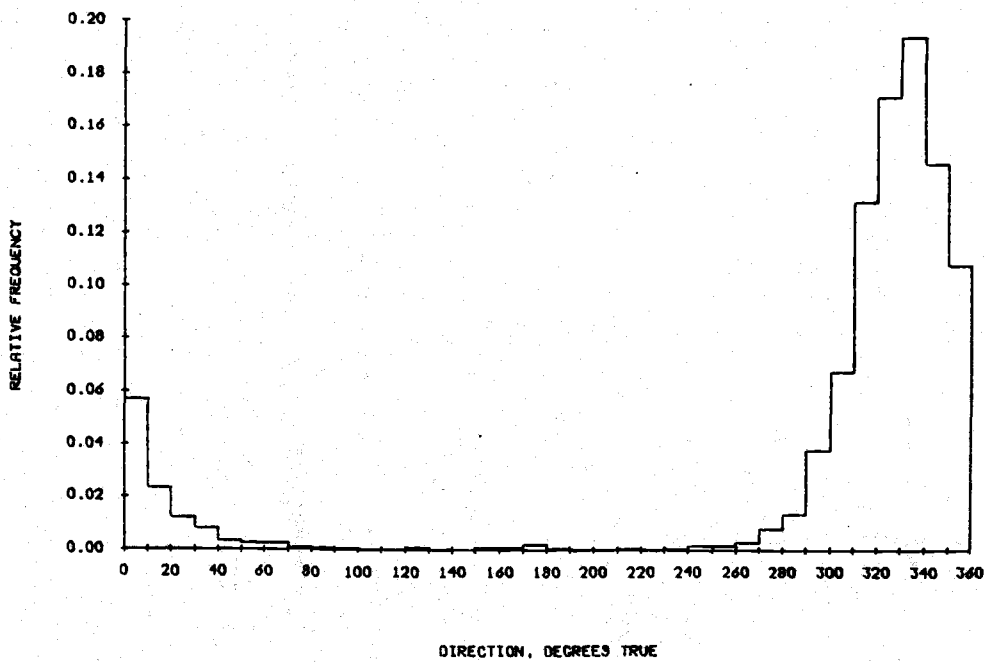
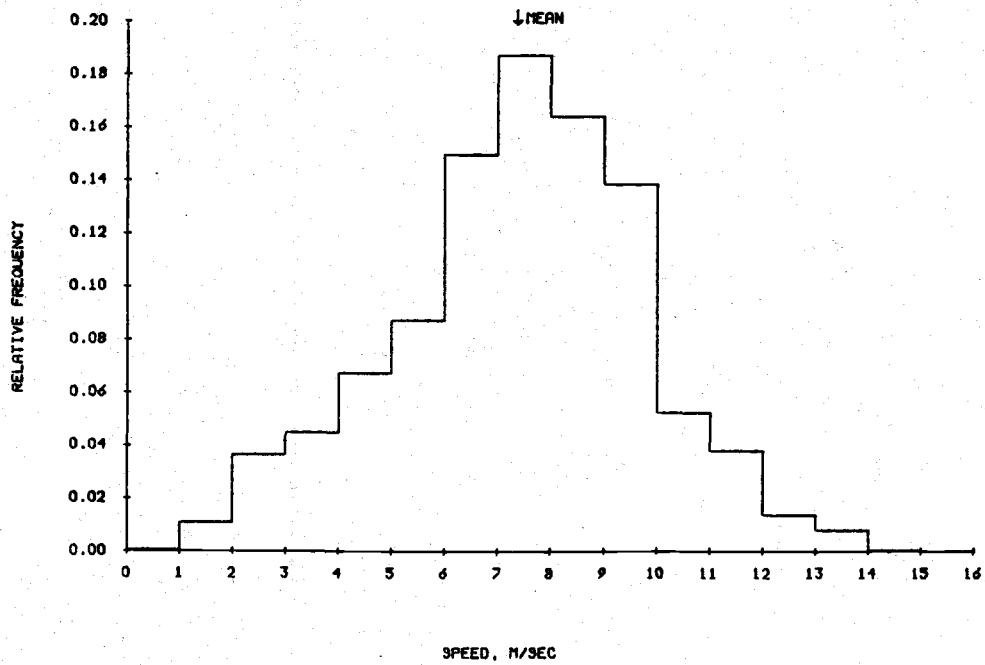
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D124/12	20 min	Sw, θ_w , Ta, T
25 m	33 m	682/32	20 min	S, θ , T, P, C
50 m	62 m	749/24	20 min	S, θ , T, P, C
75 m	84 m	489/31	30 min	S, θ , T
100 m	109 m	686/30	20 min	S, θ , T, P, C

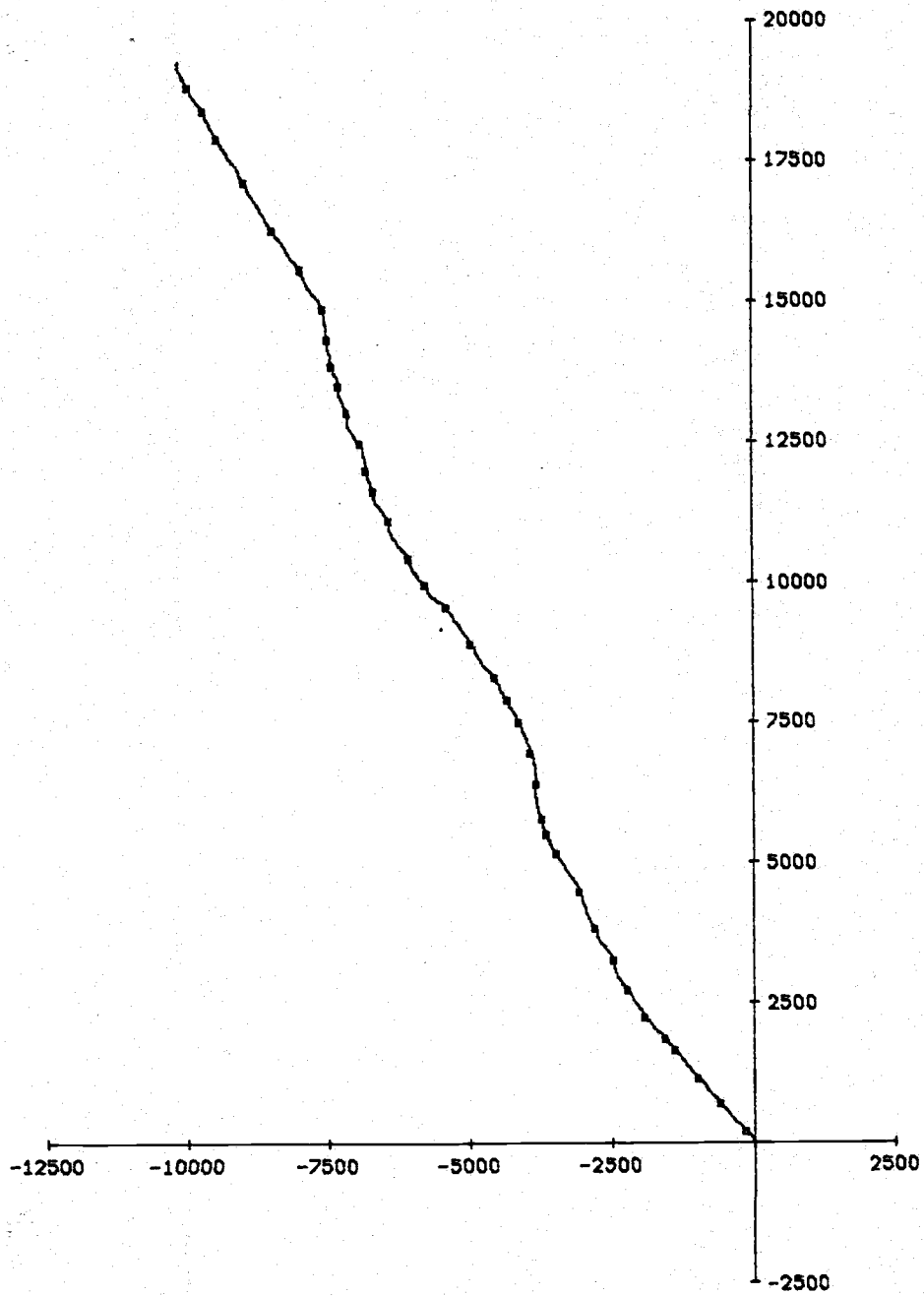
Comments:

MILA II was equipped with a meteorological buoy (D124) which apparently tore loose from its mooring during a period of strong winds. A local fisherman discovered the buoy on the beach just south of the Ica River mouth, and personnel from the Pisco fisheries (IMARPE) laboratory recovered it. The data from the buoy orientation sensor clearly indicated when the buoy began to drift, therefore 37 days of data were salvaged. The mean direction for the MILA II wind record was more onshore than for the shorter MILA I record, but the vector mean directions are similar for the several-day periods before and after the buoy was serviced (see the PVD's). The MILA II water temperature (3 m) did not agree with the pre-calibration and is about 1.1°C cooler than the hydrographic (CTD) observations at the beginning, and about 1.9°C cooler at the end of the record. The data were not corrected. The CTD values are included on the time series plot for comparison.

* Navigation: Satellite navigator. The position of the MILA II meteorological buoy was estimated to be within $\frac{1}{2}$ n.m. of the subsurface array.

WIND AT MILA 2. 10 MAY 76 - 16 JUN 76. TAPE 0124/12.





WIND AT MILA 2. 10 MAY 76 - 16 JUN 76. TAPE D124/12.

STATION MILA	LEG 2	DEPTH 0	TAPE NO 0124/12	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2200	10	5 76	-4.3	7.2	-4.3	7.2	17.56	15.54	1
2300	10	5 76	-4.1	7.1	-8.4	14.3	17.46	15.49	2
0	11	5 76	-6.4	5.1	-14.8	19.4	17.40	15.49	3
100	11	5 76	-5.1	5.3	-19.9	24.7	17.28	15.50	4
200	11	5 76	-3.9	5.7	-23.7	30.4	17.24	15.45	5

LAST 5 LINES OF DATA:

1100	16	6 76	-4.0	4.6	-2776.4	5261.1	15.83	13.80	878
1200	16	6 76	-2.5	4.1	-2778.9	5265.2	15.86	13.80	879
1300	16	6 76	-3.6	3.4	-2782.5	5268.6	15.94	13.80	880
1400	16	6 76	-2.5	4.7	-2785.0	5273.3	16.00	13.80	881
1500	16	6 76	-0.6	7.2	-2785.5	5280.6	16.12	13.85	882

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
882	-3.2	6.0	4.3	4.5	2.1	2.1	-1.2	-.2730

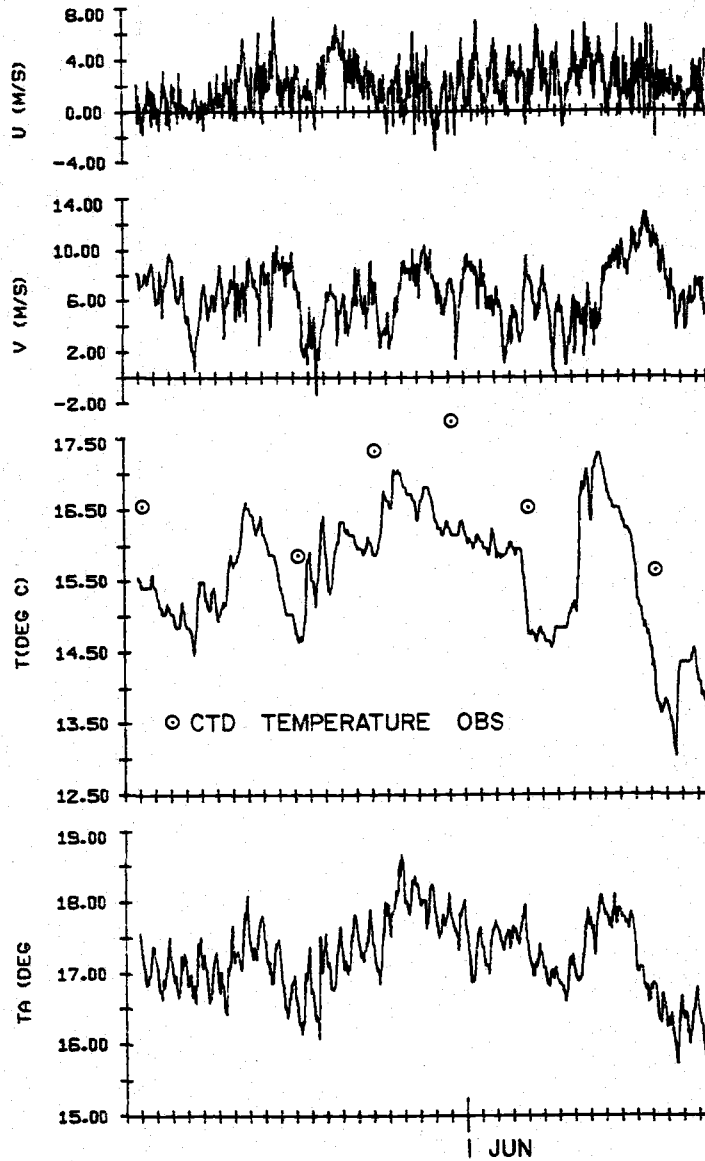
VECTOR MEAN: SPD = 6.8 M/S, DIR = -27 DEGREES(T)
DIRECTIONAL STEADINESS: 96.2 %

PRINCIPAL AXIS IS 137.0 DEGREES(T)

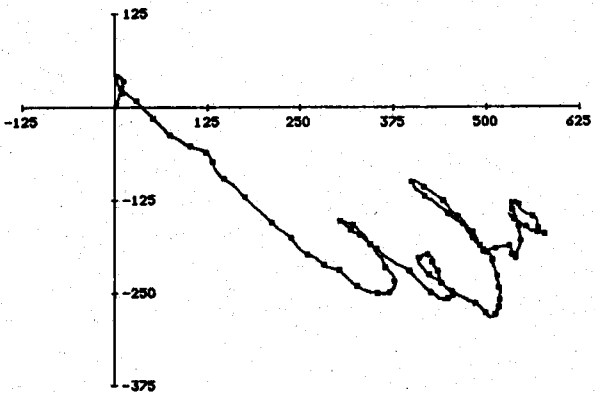
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 2					
	N	0 M	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	882		7.0	2.3	-.2	3.0	13.3	.9
U (M/S)	882		2.0	1.8	.3	2.8	7.4	-3.1
V (M/S)	882		6.5	2.4	-.1	2.8	12.9	-1.3
TA (DEG)*	882		15.6	.9	-.4	2.6	17.3	13.0
TA (DEG)	882		17.2	.5	-.2	2.7	19.7	15.7

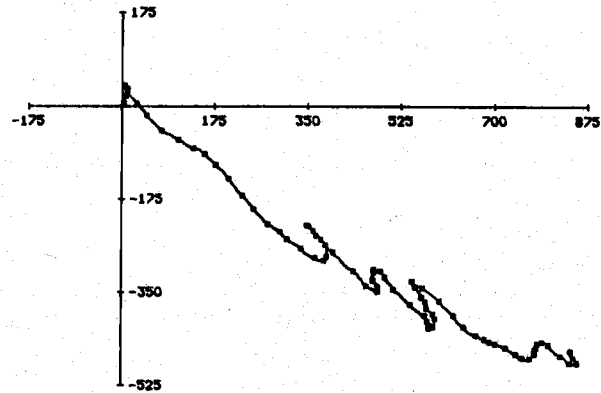
* Post- and pre-calibrations do not agree and data do not agree with CTD casts. See comments on installation summary and in Appendix 2. CTD values are plotted with the time series for comparison.



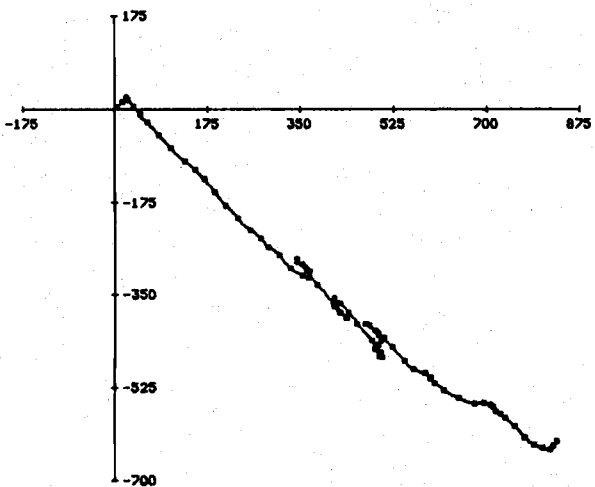
0 M AT MILA LEG 2: HOURLIES,
36.8 DAYS STARTING 2200 GMT 10 MAY 1976



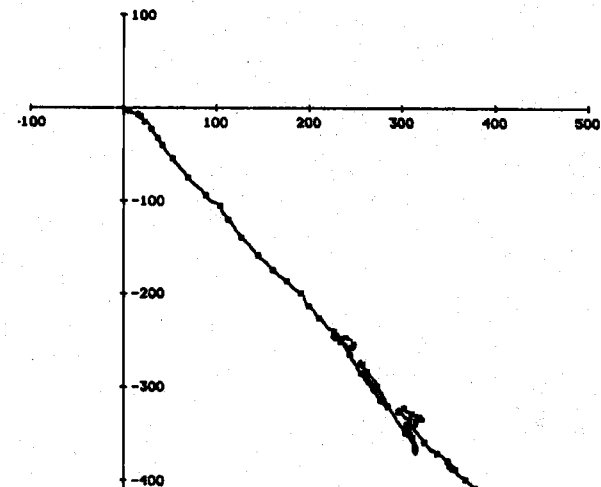
33 M AT MILA II. 77.9 DAYS STARTING 1453 10 MAY 76



62 M AT MILA II. 77.9 DAYS STARTING 1439 10 MAY 76



84 M AT MILA II. 77.9 DAYS STARTING 1510 10 MAY 76



109 M AT MILA II. 77.9 DAYS STARTING 1437 10 MAY 76

STATION MILA	LEG 2	DEPTH 33	TAPE NO 682/32	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2100	10	5 76	9.4	11.8	9.4	11.8	15.83	338193	43.774
2200	10	5 76	10.7	11.8	20.1	23.6	15.85	338057	43.857
2300	10	5 76	11.3	13.1	31.4	36.7	15.89	338178	43.850
0	11	5 76	7.6	17.0	39.0	53.7	15.87	337487	43.818
100	11	5 76	7.0	18.4	46.0	72.1	15.86	333599	43.831

LAST 5 LINES OF DATA:

200	27	7 76	-19.9	9.1	14842.9	-4276.3	16.71	332668	43.703
300	27	7 76	-19.2	12.9	14823.6	-4263.4	16.75	332026	43.719
400	27	7 76	-20.7	13.9	14803.0	-4249.5	16.76	331995	43.727
500	27	7 76	-15.3	16.3	14787.6	-4233.2	16.75	329905	43.743
600	27	7 76	-14.2	15.8	14773.4	-4217.4	16.75	329500	43.704

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1858	8.0	-2.3	391.8	385.6	19.8	19.6	-298.4	-.7677

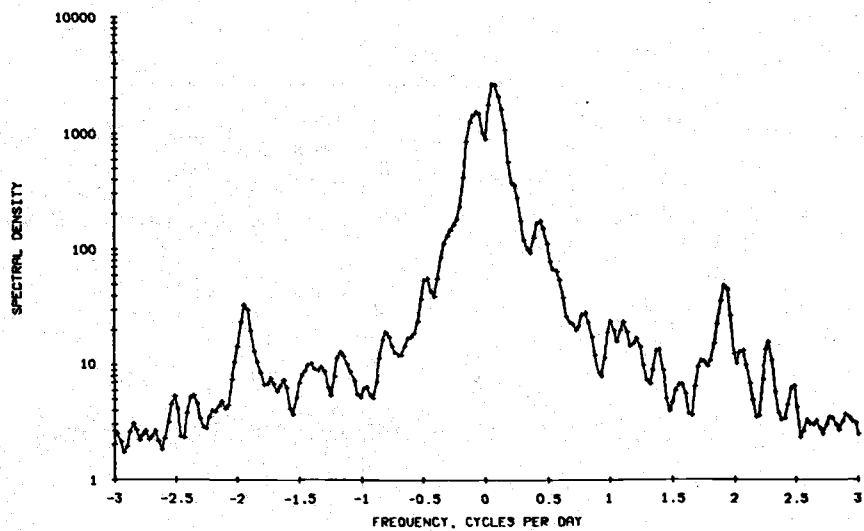
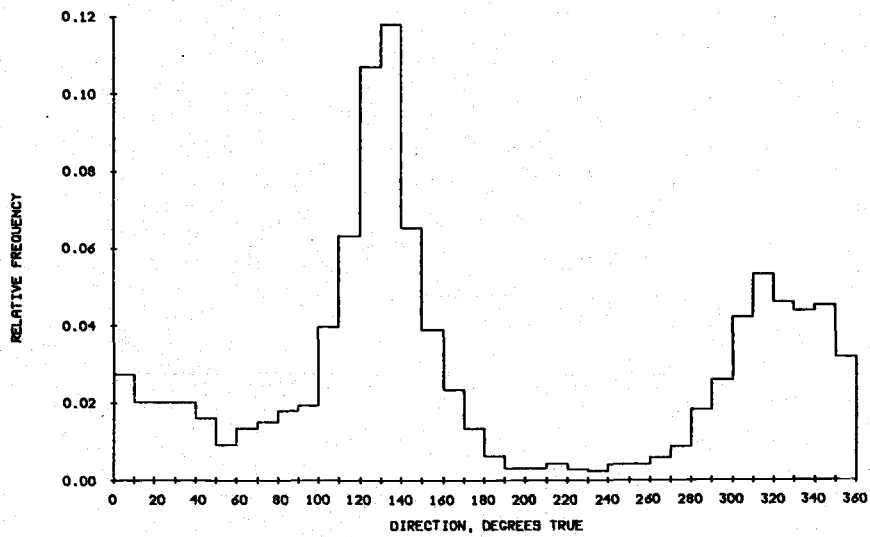
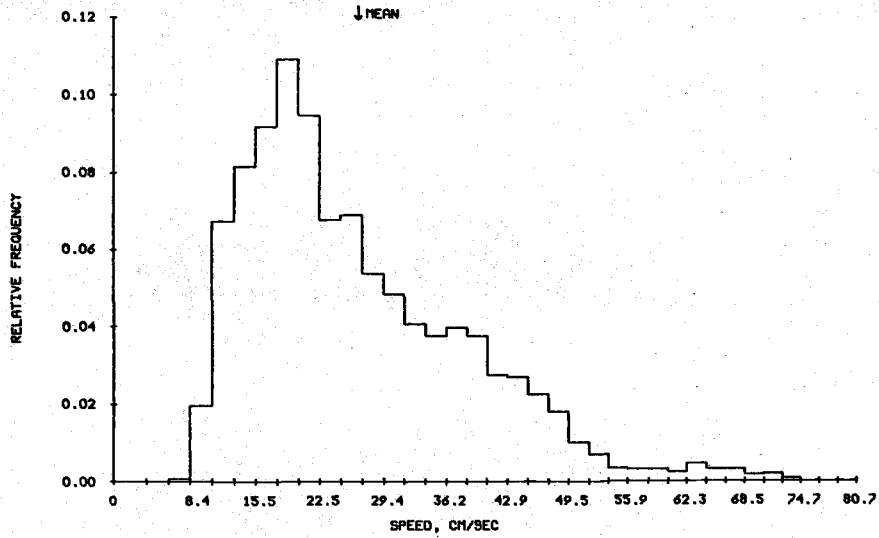
VECTOR MEAN: SPD = 8.3 CM/S, DIR = 106 DEGREES(T)
DIRECTIONAL STEADINESS: 31.3 %

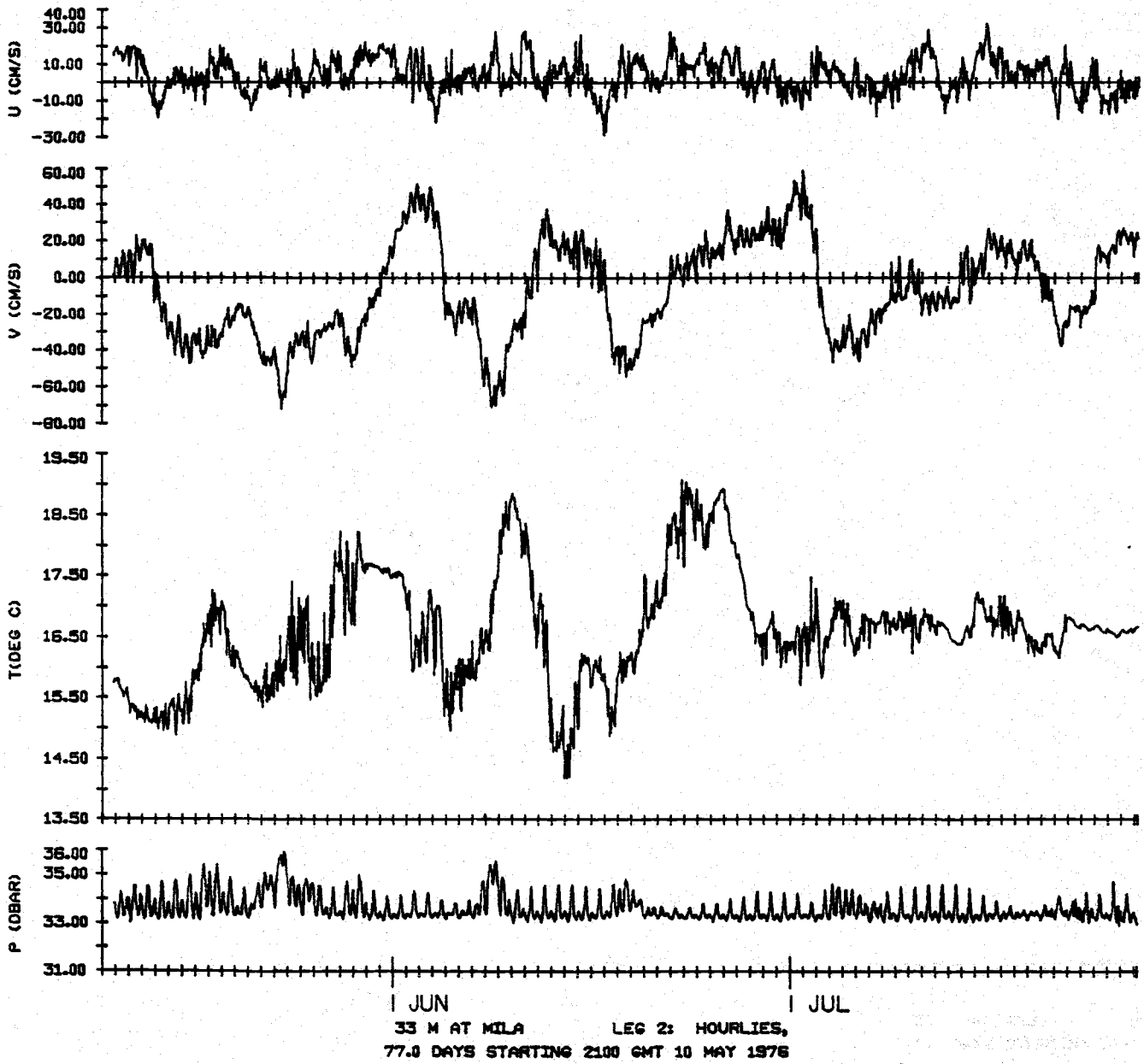
PRINCIPAL AXIS IS 134.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

MILA		LEG 2					
33 M							
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1858	26.4	12.2	.9	3.7	73.7	2.1
U (CM/S)	1858	4.0	9.5	-.9	2.7	32.7	-28.4
V (CM/S)	1858	-7.2	26.2	.9	2.1	59.0	-71.6
T(DEG C)	1858	16.7	.9	.4	3.3	19.2	14.3
P (DBAR)	1858	33.6	.5	1.5	4.9	35.9	32.9

33 M AT MILA II. 10 MAY 76 TO 27 JUL 76. TAPE 682/32





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
MILA	2	62	749/24	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2100	10	5 76	12.6	16.0	12.6	16.0	15.28	617408	43.310
2200	10	5 76	10.8	15.0	23.4	31.0	15.29	617397	43.323
2300	10	5 76	7.8	14.1	31.2	45.1	15.30	617406	43.334
0	11	5 76	6.6	17.1	37.8	62.2	15.25	617390	43.270
100	11	5 76	6.1	20.9	43.9	83.1	15.22	617457	43.235

LAST 5 LINES OF DATA:

200	27	7 76	-2.8	10.5	23367.8	-12853.3	16.62	618028	44.714
300	27	7 76	-2.7	11.4	23365.1	-12841.9	16.60	616872	44.695
400	27	7 76	-4.6	11.9	23363.5	-12830.0	16.61	615925	44.726
500	27	7 76	0.8	14.8	23361.3	-12815.2	16.40	615669	44.516
600	27	7 76	4.8	17.5	23366.1	-12797.7	16.17	614697	44.246

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

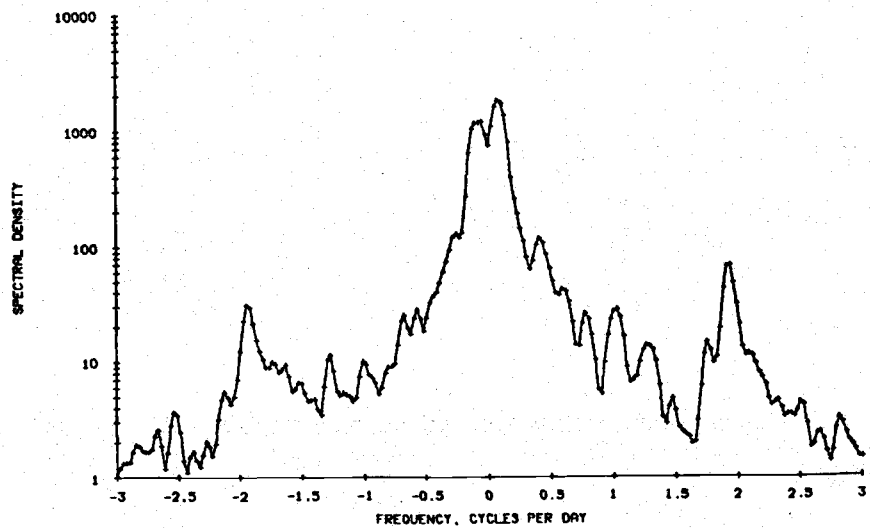
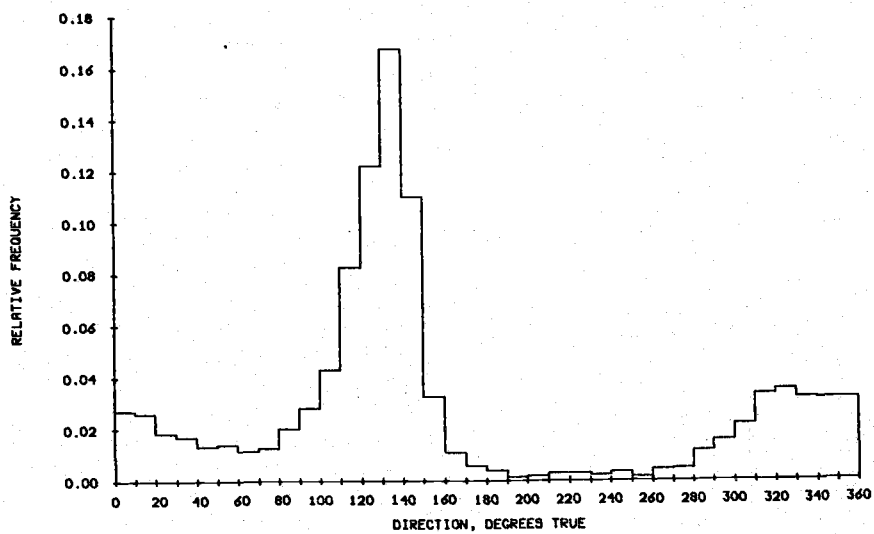
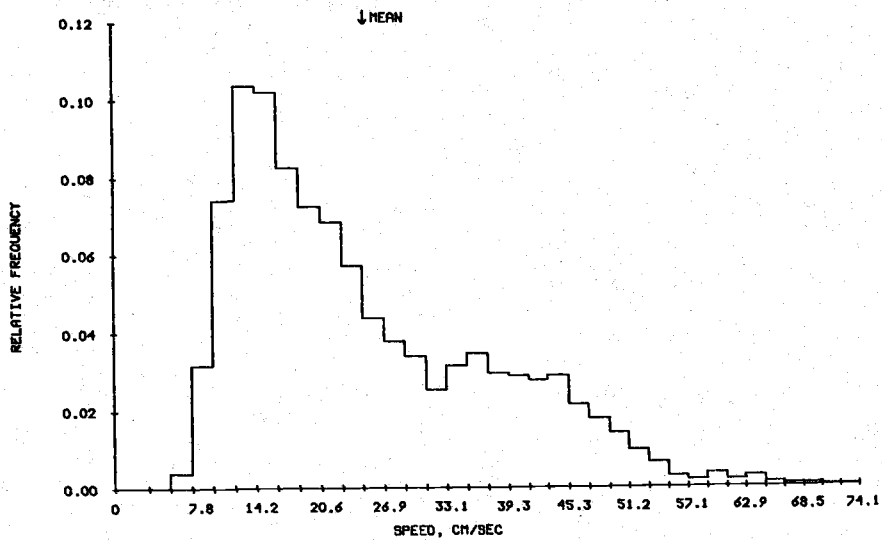
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CORLTN
1858	12.6	-6.9	251.5	316.1	15.9	17.8	-229.9	-.8156

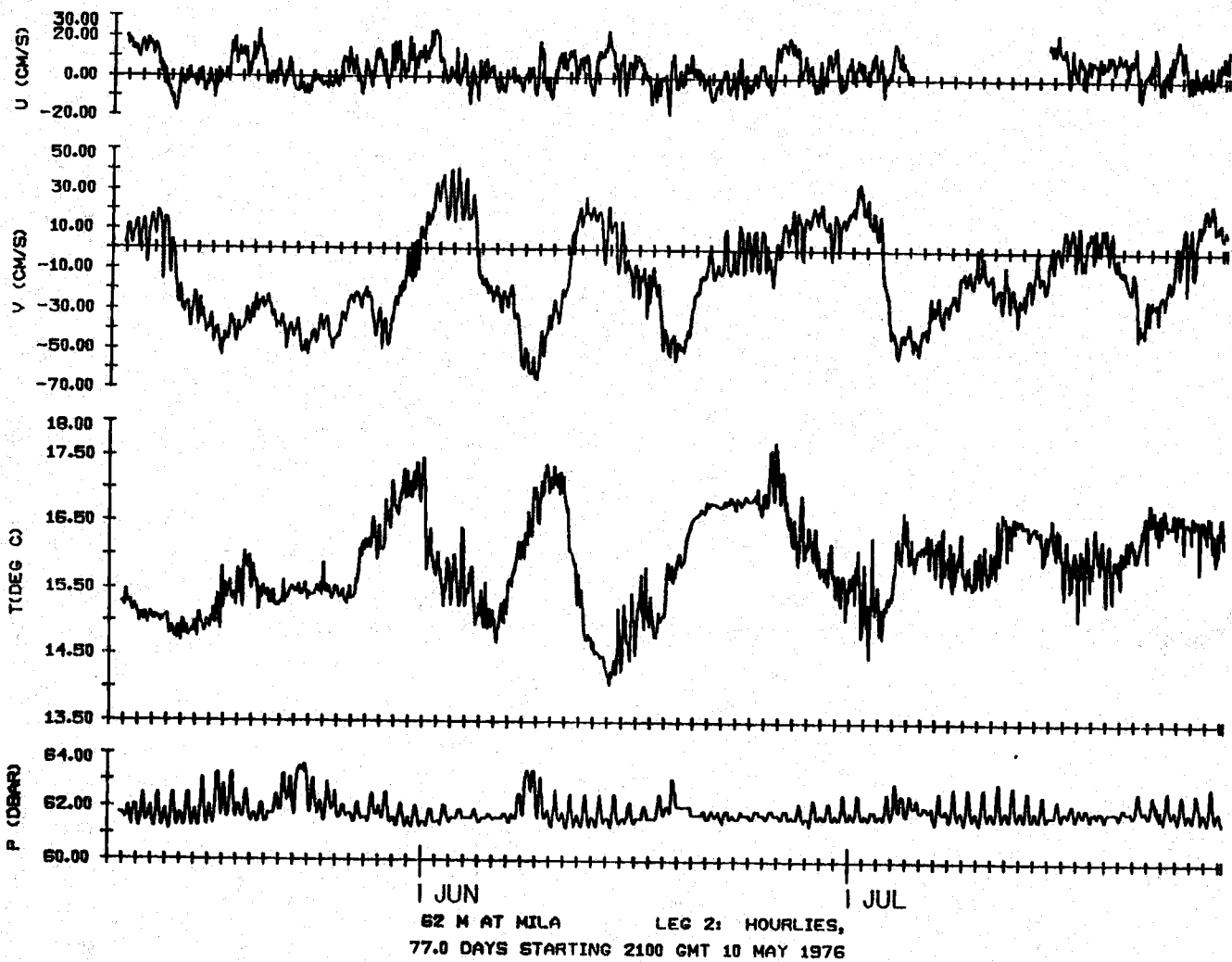
VECTOR MEAN: SPD = 14.3 CM/S, DIR = 119 DEGREES(T)
DIRECTIONAL STEADINESS: 58.0 %

PRINCIPAL AXIS IS 139.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 2					
	N	62	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1858		24.7	12.7	.9	2.8	67.1	.9
U (CM/S)	1858		4.0	7.3	.1	2.6	23.5	-18.5
V (CM/S)	1858		-13.8	22.7	.1	2.0	40.8	-65.1
T (DEG U)	1858		15.9	.7	-.0	2.4	17.7	14.1
P (DEAR)	1858		61.9	.4	1.6	5.8	63.6	61.1





STATION MILA	LEG 2	DEPTH 84	TAPE NO 489/31	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2200	10	5 76	13.9	5.3	13.9	5.3	14.85	1
2300	10	5 76	12.9	5.5	26.8	10.8	14.87	2
	3	5 76	10.9	8.2	37.6	19.0	14.93	3
	100	5 76	10.6	9.6	48.3	28.5	14.95	4
	200	5 76	12.1	11.6	60.4	40.2	14.96	5

LAST 5 LINES OF DATA:

300	27	7 76	-4.7	12.0	23000.3	-17371.8	15.85	1854
400	27	7 76	-2.3	13.4	22998.0	-17358.4	16.06	1855
500	27	7 76	-9.9	11.6	22989.1	-17346.8	15.77	1856
600	27	7 76	-7.0	11.6	22982.1	-17335.2	15.70	1857
700	27	7 76	-2.6	11.2	22979.5	-17324.0	15.63	1858

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

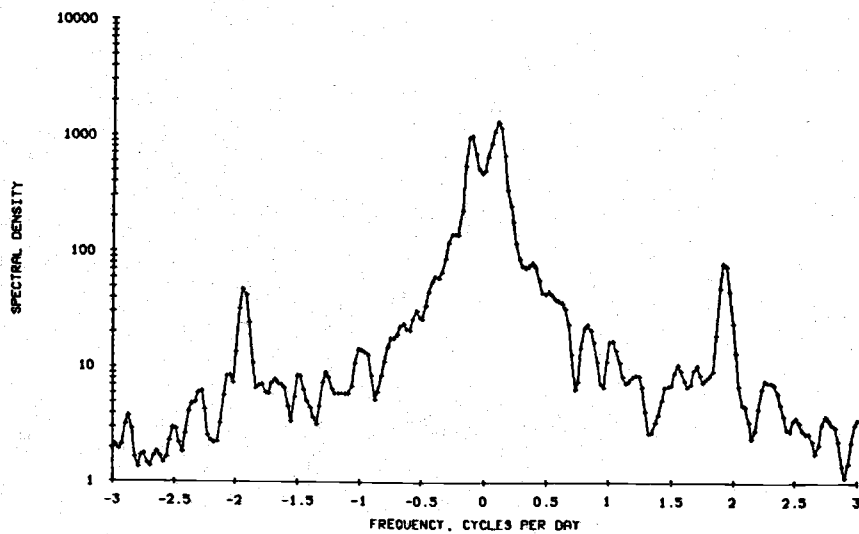
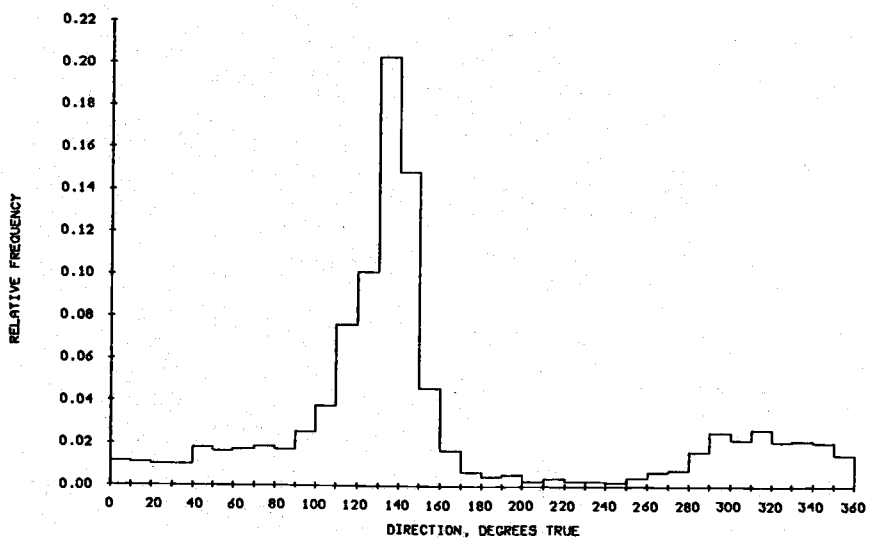
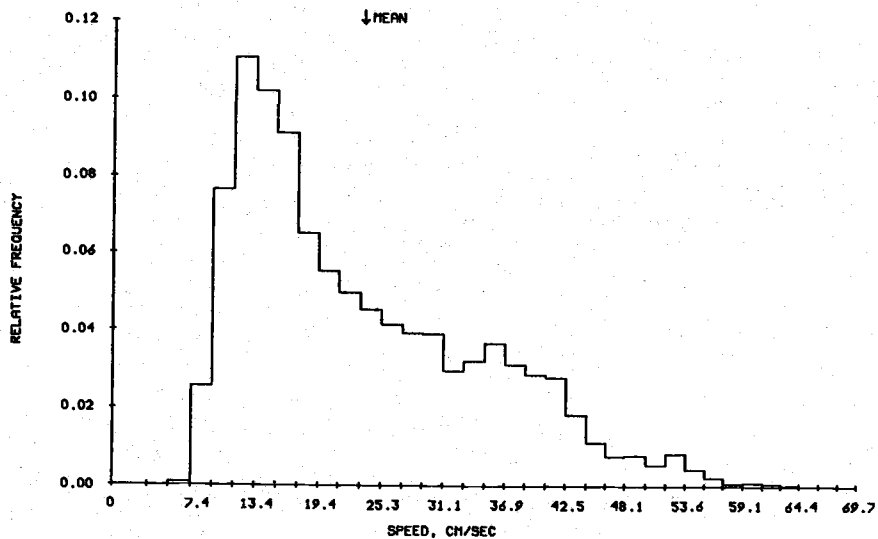
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1858	12.4	-9.3	201.1	237.5	14.2	15.4	-166.3	-.7611

VECTOR MEAN: SPD = 15.5 CM/S, DIR = 127 DEGREES(T)
DIRECTIONAL STEADINESS: 66.3 %

PRINCIPAL AXIS IS 138.1 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MILA		LEG 2		MAX	MIN
		84	M	84	M		
S (CM/S)	1858	23.4	11.5	.7	2.7	62.5	1.7
U (CM/S)	1858	2.2	7.3	.4	2.8	25.0	-21.8
V (CM/S)	1858	-15.3	19.6	.2	2.1	30.7	-62.4
T (DEG C)	1858	15.3	.6	.3	2.6	16.9	13.9



STATION MILA	LEG 2	DEPTH 109	TAPE NO 6 86/30	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2100	10	5 76	20.6	-12.9	20.6	-12.9	14.53	1095719	42.432
2200	10	5 76	20.5	-9.5	41.1	-22.4	14.53	1094930	42.430
2300	10	5 76	19.6	-6.5	60.7	-28.9	14.50	1094691	42.397
0	11	5 76	20.4	-3.3	81.1	-32.1	14.44	1095088	42.334
100	11	5 76	18.8	-2.7	100.0	-34.9	14.37	1094759	42.275

LAST 5 LINES OF DATA:

200	27	7 76	0.5	-4.5	12514.8	-13080.2	14.82	1097600	42.465
300	27	7 76	0.4	-5.1	12515.3	-13085.3	14.81	1097600	42.463
400	27	7 76	1.0	-4.4	12516.2	-13089.6	14.97	1097600	42.602
500	27	7 76	2.7	-4.1	12519.0	-13093.7	14.99	1097600	42.629
600	27	7 76	4.3	-3.2	12523.2	-13096.9	15.06	1097599	42.702

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1858	6.7	-7.0	100.9	144.8	10.0	12.0	-91.4	-.7561

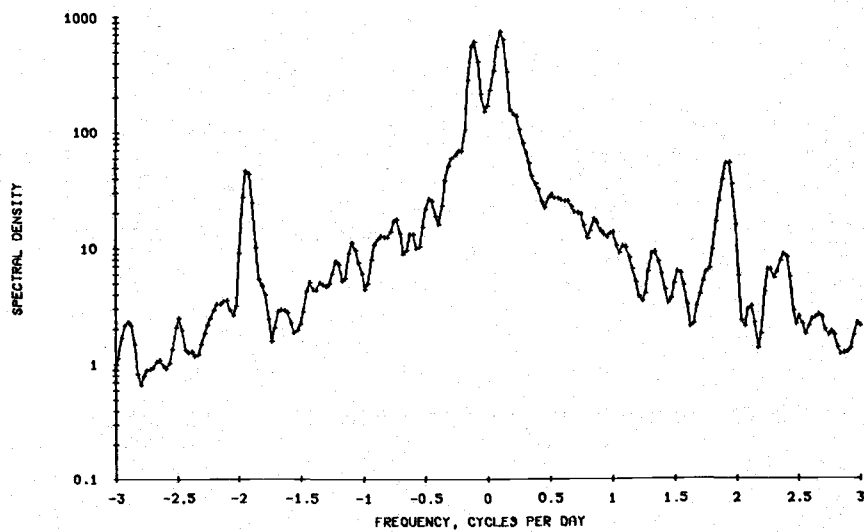
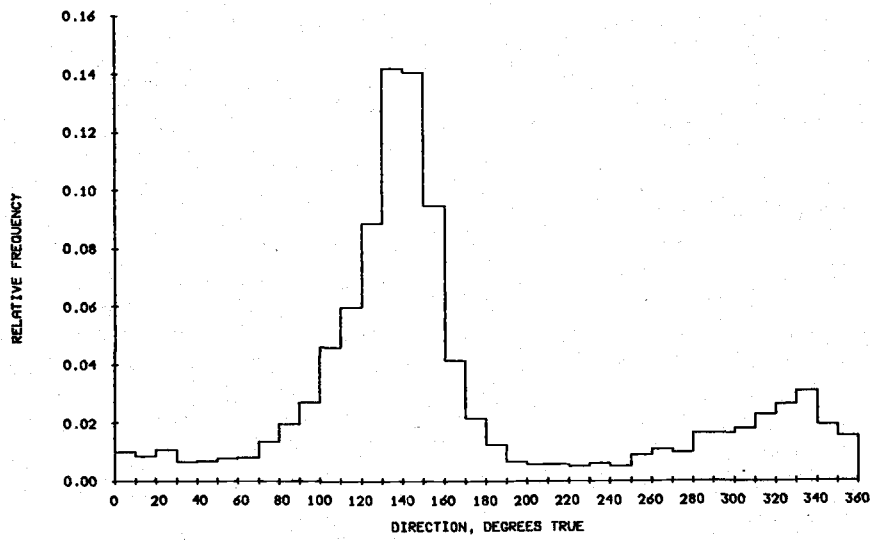
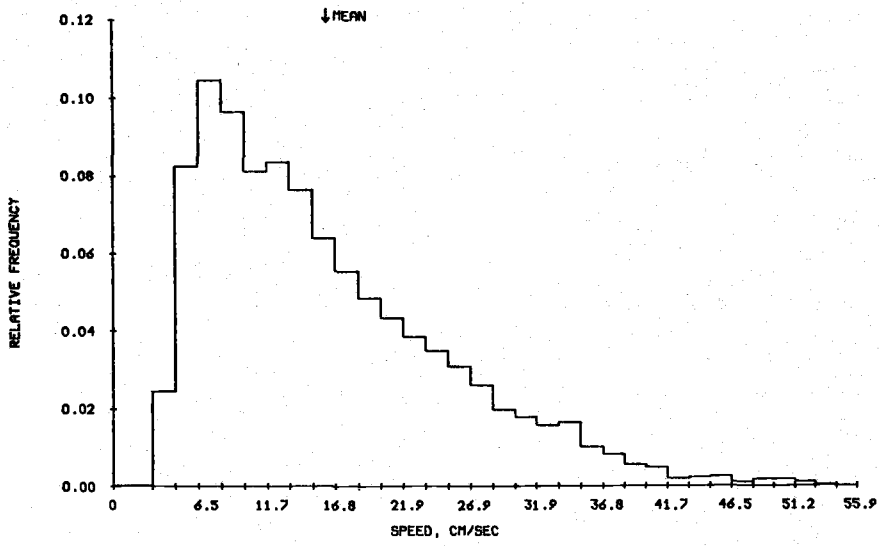
VECTOR MEAN: SPD = 9.8 CM/S, DIR = 136 DEGREES(T)
DIRECTIONAL STEADINESS: 61.0 %

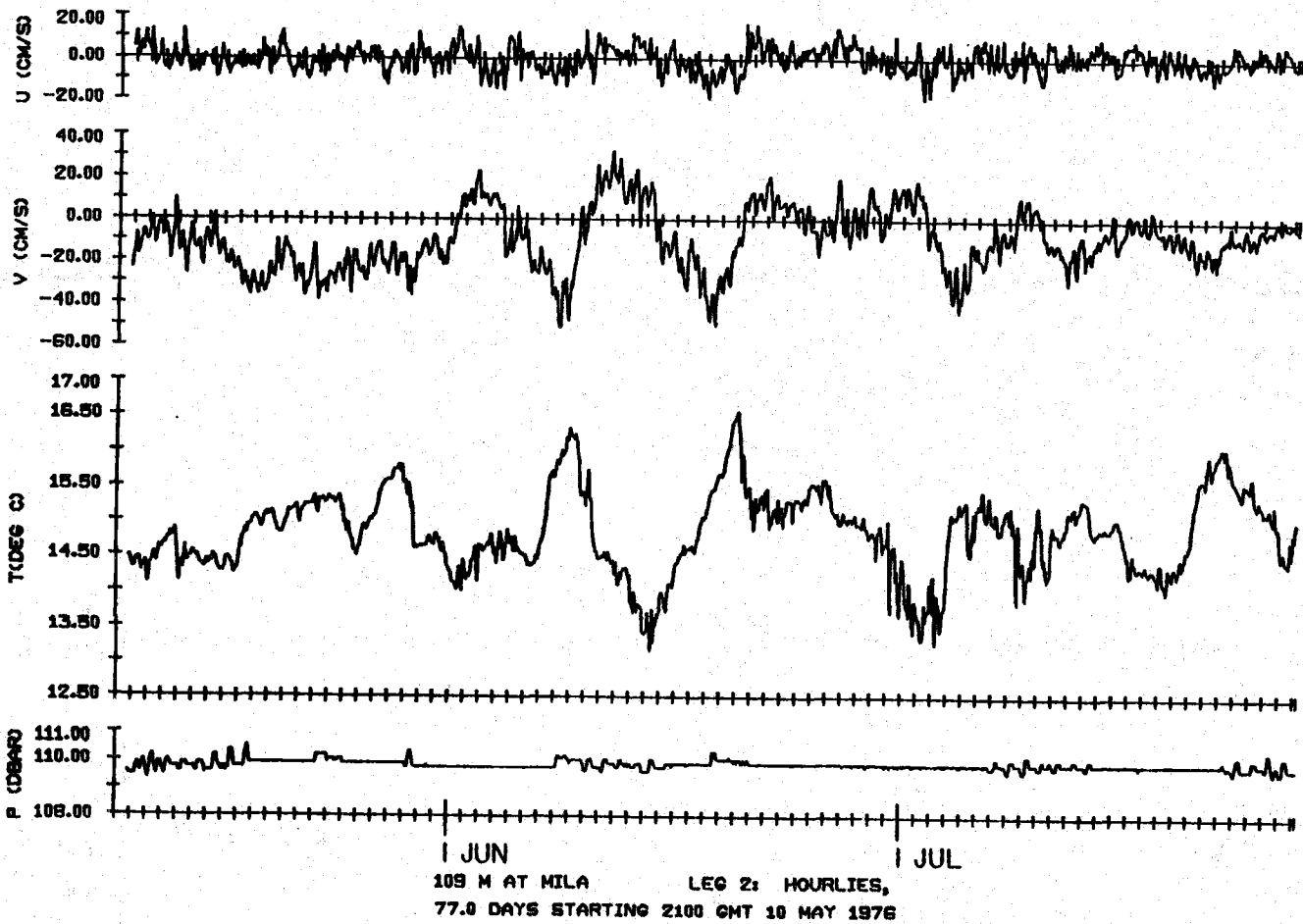
PRINCIPAL AXIS IS 141.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 2					
	N	109 M	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1858		16.0	9.3	1.0	3.6	51.7	1.0
U (CM/S)	1858		-.2	5.6	-.1	2.9	16.5	-19.3
V (CM/S)	1858		-9.7	14.6	.0	2.6	32.2	-51.3
T (DEG C)	1858		14.9	.6	.1	3.0	16.6	13.2
P (DBAR)	1858		109.9	.1	.3	5.6	110.5	109.3

109 M AT MILA II. 10 MAY 76 TO 27 JUL 76. TAPE 686/30





JOINT-II 1976 Installation

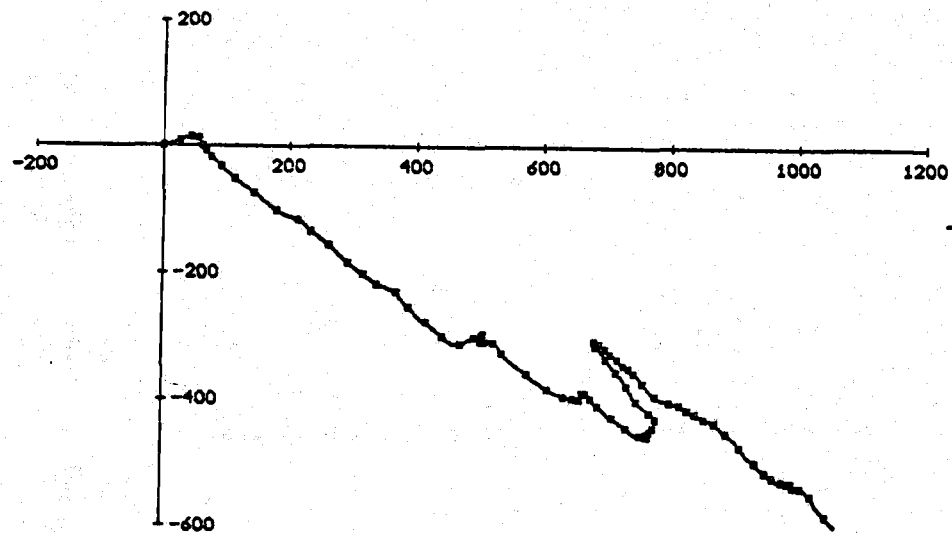
LAGARTA II

Position*: 15°08.7'S, 75°39.5'W
 Distance Offshore: 27.3 km
 Bottom Depth: 465 m
 Set: 2235 GMT 9 May 1976 by R/V THOMPSON
 Retrieved: 1334 GMT 31 July 1976 by R/V EASTWARD
 Longest Data Interval: 0600 GMT 10 May to 0500 GMT 31 July
 Longest Record Length: 82 days, 0 hours

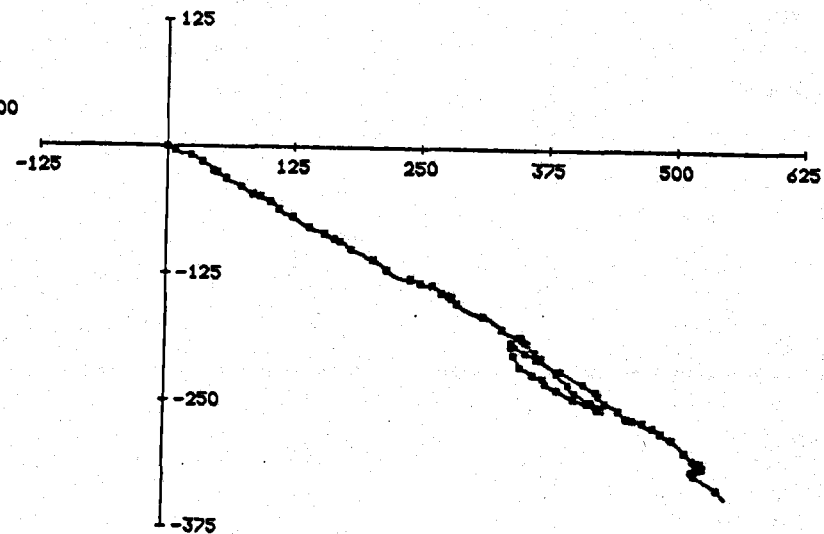
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
100 m	115 m	684/29	20 min	S,θ,T,P,C
200 m	212 m	495/34	30 min	S,θ,T,P
300 m	312 m	452/33	30 min	S,θ,T
400 m	412 m	488/24	30 min	S,θ,T

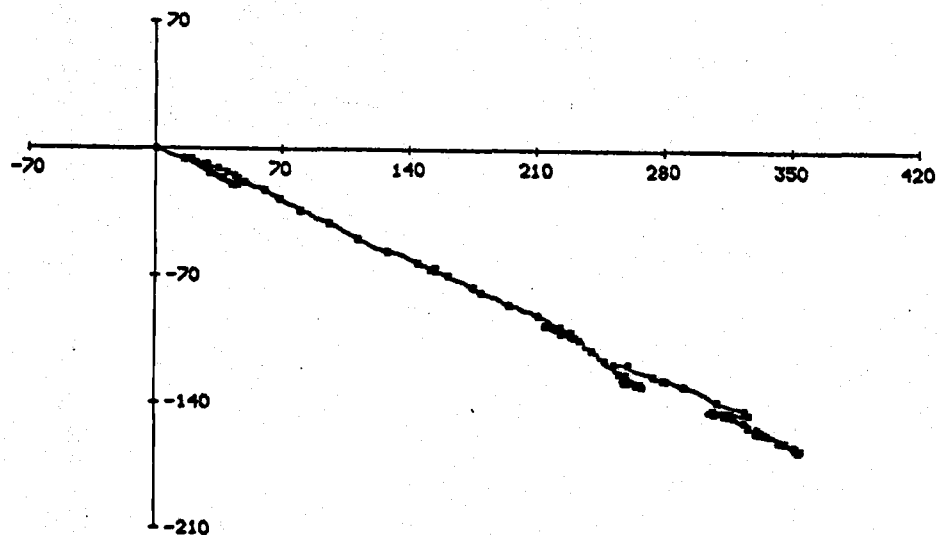
* Navigation: Satellite navigator



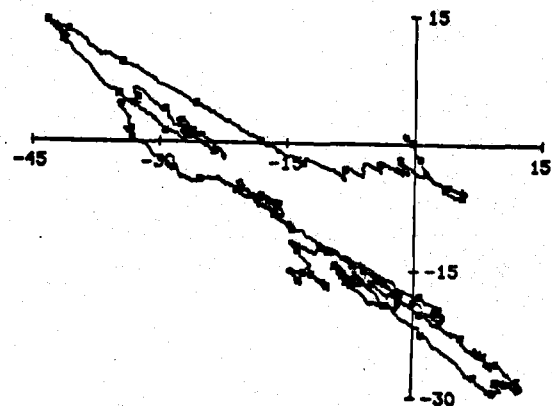
115 M AT LACARTA. 82.5 DAYS STARTING 2355 9 MAY 76



212 M AT LACARTA. 82.5 DAYS STARTING 2329 9 MAY 76



312 M AT LACARTA. 82.5 DAYS STARTING 2323 9 MAY 76



412 M AT LACARTA. 82.5 DAYS STARTING 2329 9 MAY 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	2	115	684/29	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

600	10	5	76	31.2	7.0	31.2	7.0	14.75	1154649	42.796
700	10	5	76	33.2	5.6	64.4	12.7	14.77	1154792	42.783
800	10	5	76	36.0	3.3	100.4	15.9	14.64	1158651	42.657
900	10	5	76	36.9	5.9	137.2	21.8	14.73	1164661	42.744
1000	10	5	76	35.2	8.2	172.4	30.1	14.76	1163617	42.779

LAST 5 LINES OF DATA:

100	31	7	76	32.1	-37.8	28871.6	-16242.6	15.60	1206600	43.500
200	31	7	76	39.1	-35.4	29910.7	-16278.1	14.81	1210260	42.722
300	31	7	76	35.9	-37.2	28946.7	-16315.3	14.51	1209325	42.408
400	31	7	76	38.9	-34.8	28985.6	-16350.1	15.07	1215072	42.998
500	31	7	76	41.2	-35.6	29026.7	-16385.7	15.42	1209471	43.361

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1968	14.7	-8.3	224.6	233.3	15.0	15.3	-172.3	-.7526

VECTOR MEAN: SPJ = 16.9 CM/S, DIR = 119 DEGREES(T)
DIRECTIONAL STEADINESS: 71.7 %

PRINCIPAL AXIS IS 135.7 DEGREES(T)

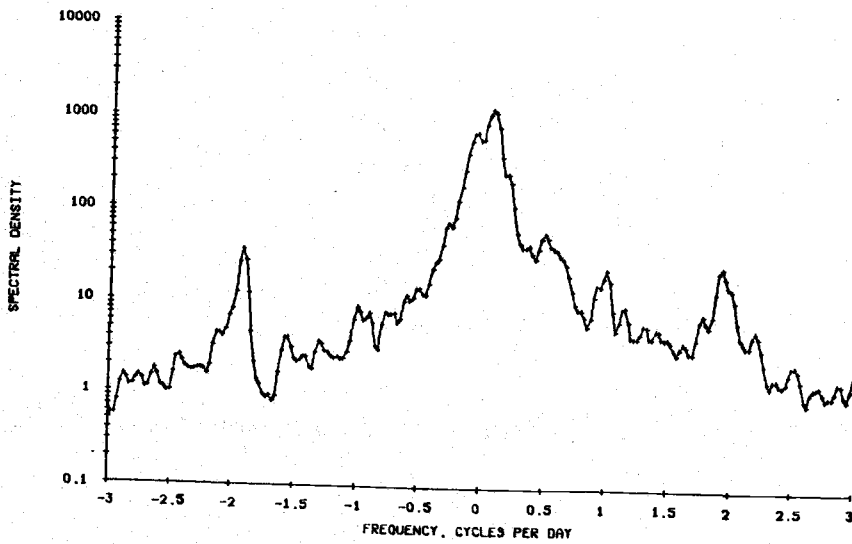
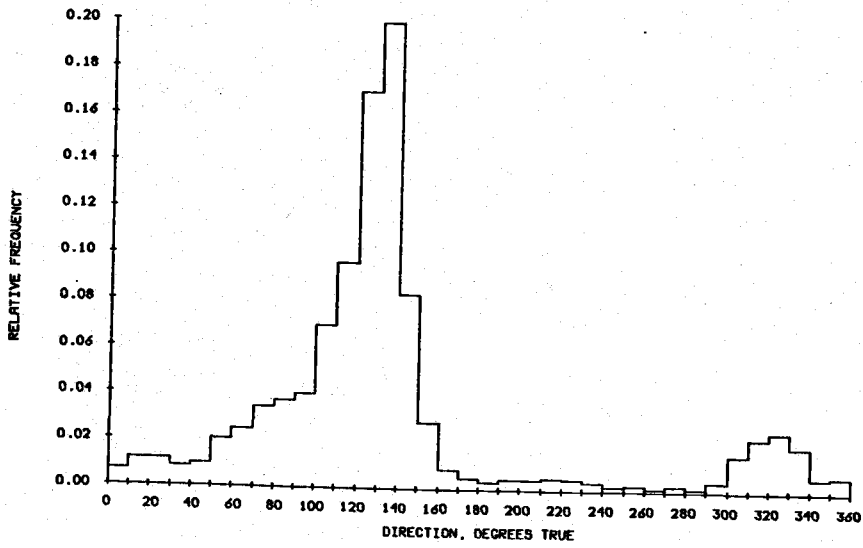
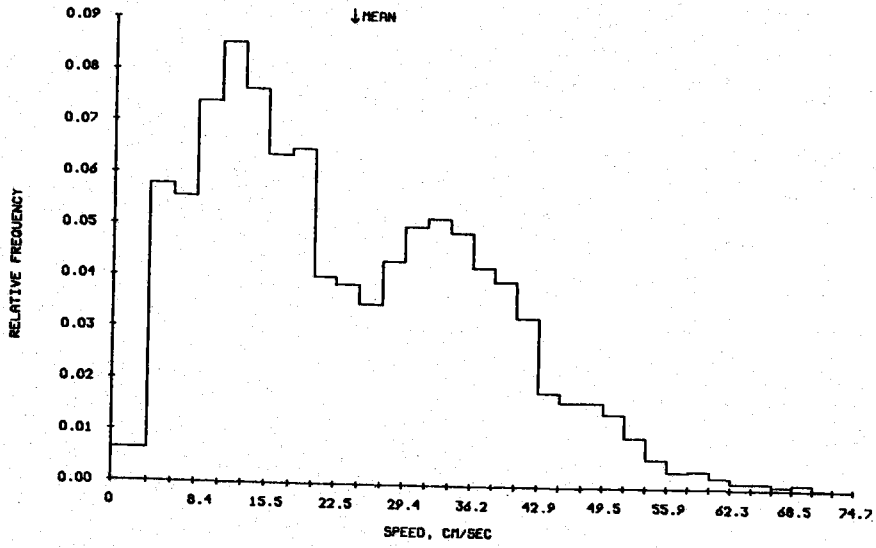
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

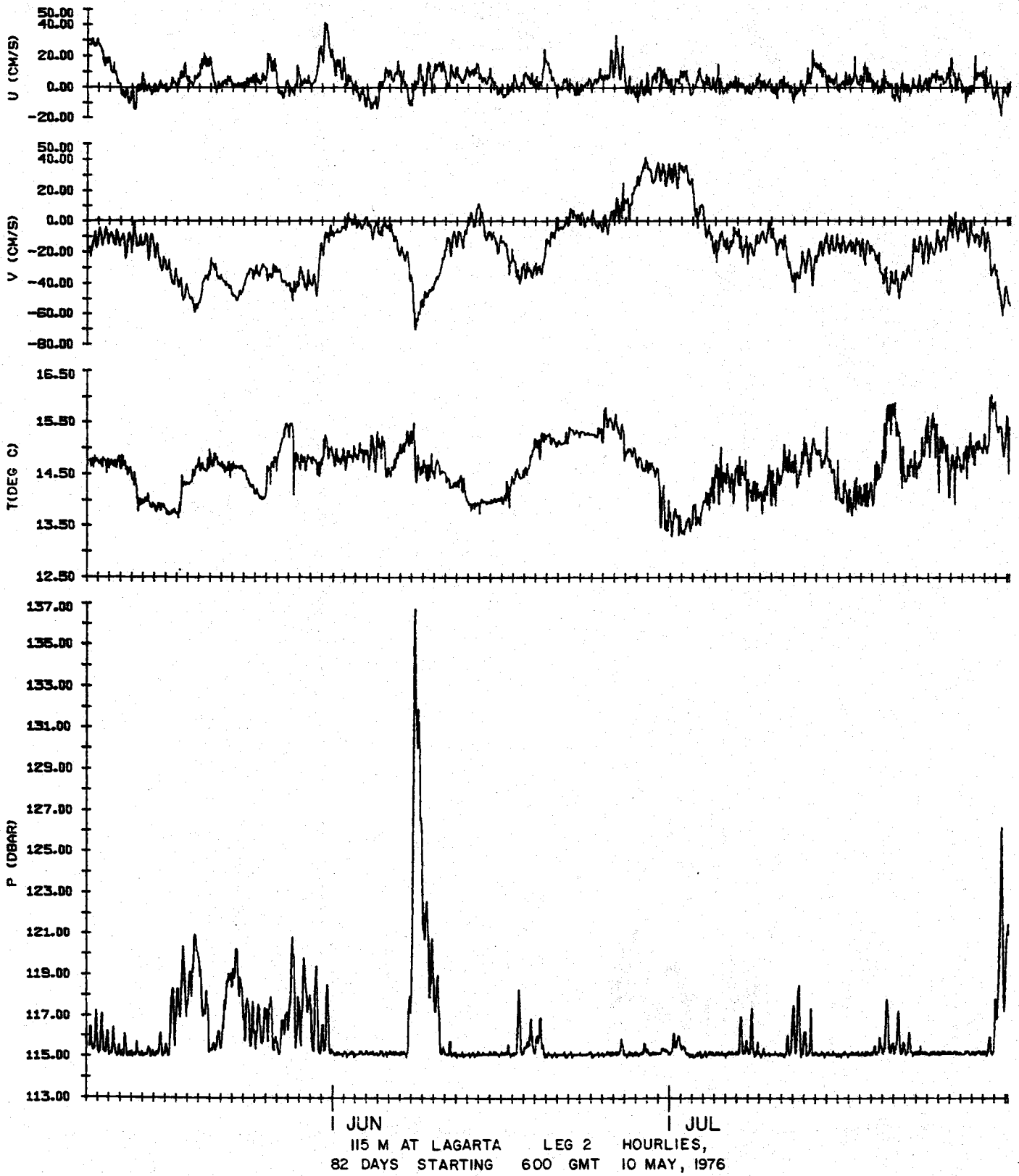
LAGARTA LEG 2

115 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1968	23.6	13.7	.5	2.5	70.1	.2
U (CM/S)	1968	4.5	7.5	.9	5.3	41.4	-18.9
V (CM/S)	1968	-16.3	20.0	.4	3.3	41.3	-70.1
T (DEG C)	1968	14.6	.5	-.1	2.7	16.1	13.3
P (DEAR)	1968	115.9	2.0	5.0	37.4	136.7	114.9

115 M AT LAGARTA. 9 MAY 76 TO 31 JUL 76. TAPE 484/29





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	2	212	495/34	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

600	10	5 76	2.2	-0.6	2.2	-0.6	12.85	2135386	1
700	10	5 76	3.1	-2.1	5.3	-2.7	12.87	2135037	2
800	10	5 76	4.4	-4.4	9.7	-7.2	12.94	2135509	3
900	10	5 76	8.2	-6.2	17.9	-13.3	12.98	2137721	4
1000	10	5 76	10.3	-3.6	28.3	-17.0	13.00	2136244	5

LAST 5 LINES OF DATA:

100	31	7 76	26.3	-21.2	15051.3	-9276.0	13.77	2172011	1964
200	31	7 76	24.9	-22.5	15076.2	-9298.5	13.71	2177465	1965
300	31	7 76	25.3	-20.7	15101.5	-9319.2	13.64	2179396	1966
400	31	7 76	24.5	-21.5	15126.0	-9340.7	13.58	2182722	1967
500	31	7 76	21.1	-24.5	15147.1	-9365.2	13.58	2183181	1968

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1968	7.7	-4.8	123.9	52.0	11.1	7.2	-58.7	-.7315

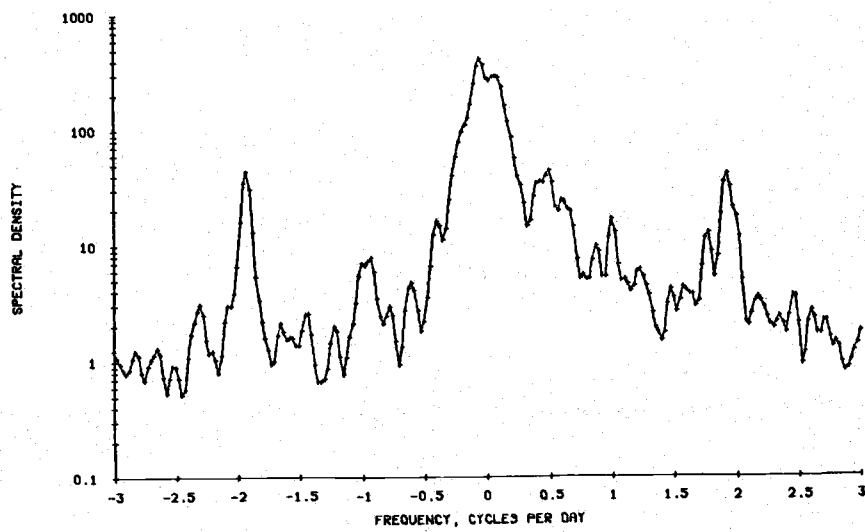
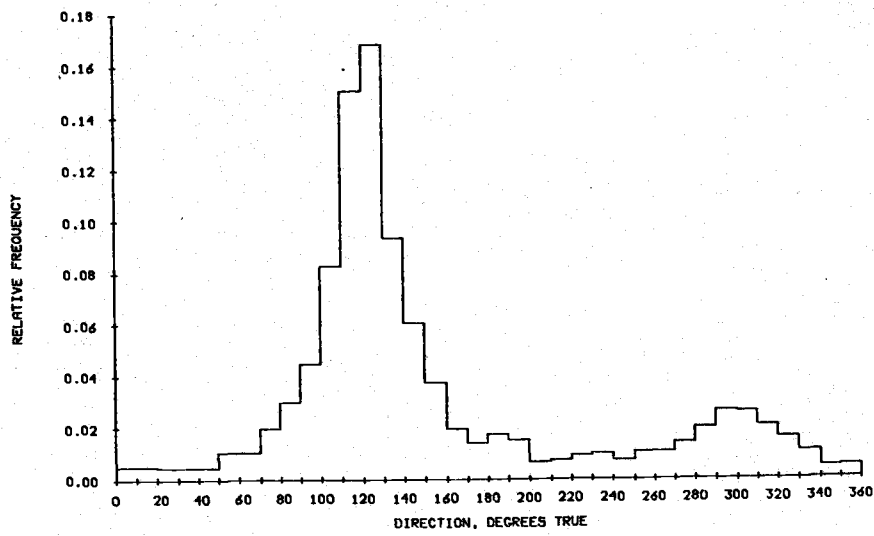
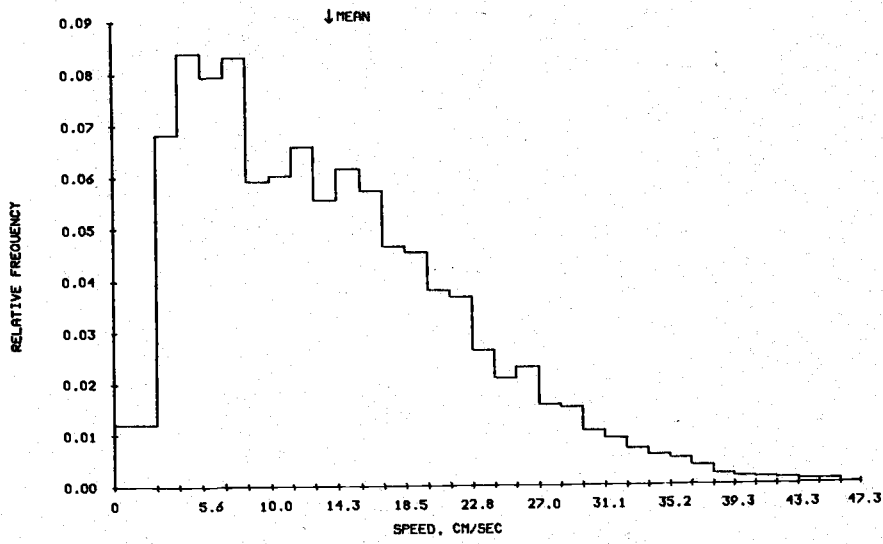
VECTOR MEAN: SPD = 9.0 CM/S, DIR = 122 DEGREES(T)
DIRECTIONAL STEADINESS: 65.7 %

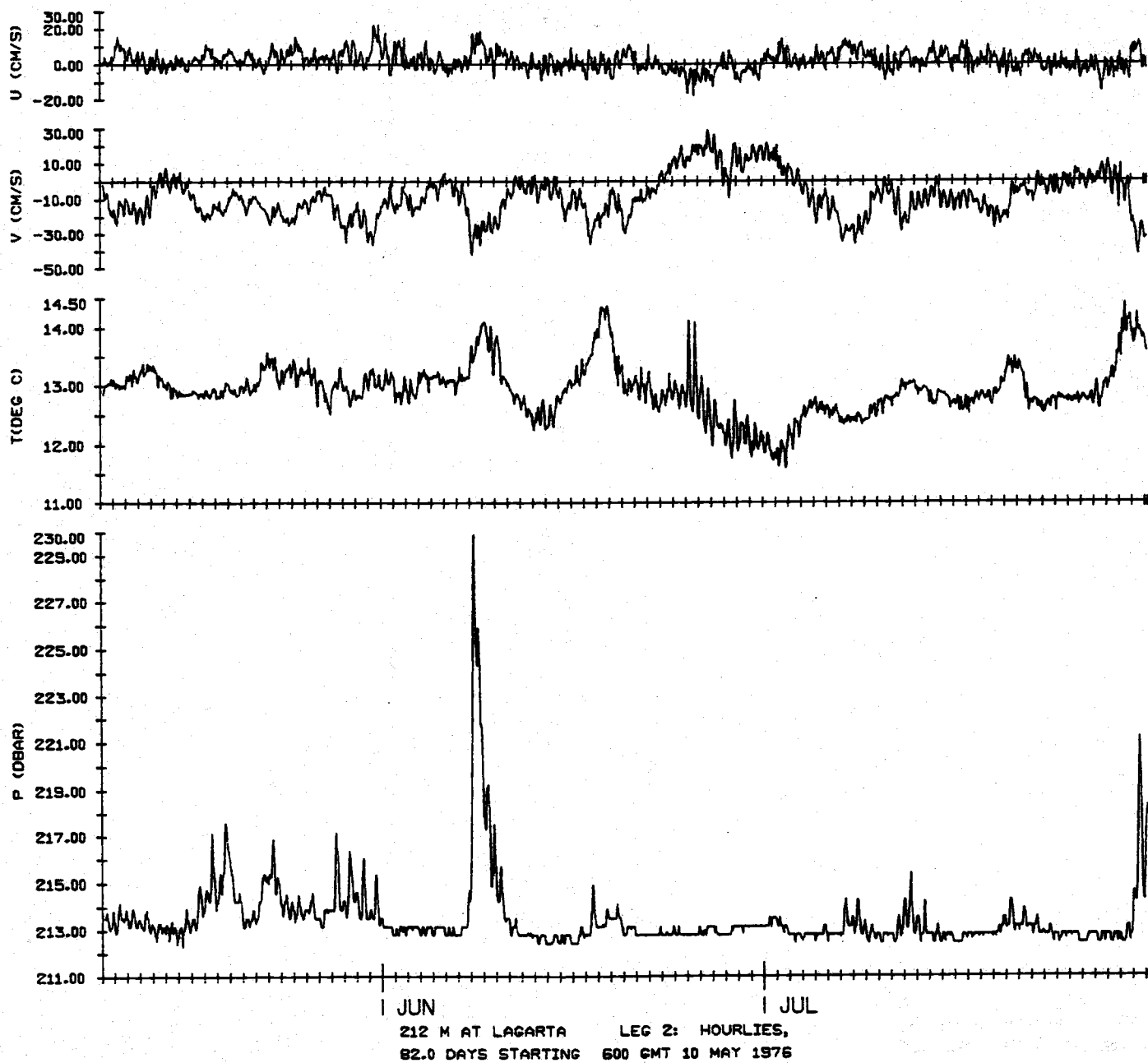
PRINCIPAL AXIS IS 119.3 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 2
212 4

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1968	13.8	8.3	.8	3.2	44.4	.3
U (CM/S)	1968	2.1	5.4	.1	3.3	22.9	-18.0
V (CM/S)	1968	-8.8	12.1	.3	3.0	28.7	-42.6
T (DEG C)	1968	12.9	.4	.4	4.3	14.4	11.6
P (DBAR)	1968	213.5	1.6	5.3	40.9	229.9	212.3





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	2	312	452/33	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

600	10	5 76	15.6	-6.5	15.6	-6.5	12.16	1
700	10	5 76	16.0	-5.1	31.6	-11.6	12.15	2
800	10	5 76	19.1	-5.6	50.7	-17.2	12.18	3
900	10	5 76	20.7	-9.6	71.4	-26.8	12.19	4
1000	10	5 76	20.3	-11.3	91.7	-38.1	12.24	5

LAST 5 LINES OF DATA:

100	31	7 76	13.3	-6.1	9106.7	-4273.0	12.22	1964
200	31	7 76	10.0	-5.2	9116.6	-4278.2	12.06	1965
300	31	7 76	10.2	-7.4	9126.9	-4285.6	11.97	1966
400	31	7 76	12.9	-3.6	9139.8	-4294.2	12.00	1967
500	31	7 76	14.3	-6.9	9154.0	-4301.1	12.05	1968

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1968	4.7	-2.2	101.8	25.4	10.1	5.0	-34.2	-.6734

VECTOR MEAN: SPD = 5.1 CM/S, DIR = 115 DEGREES(T)
 DIRECTIONAL STEADINESS: 50.4 %

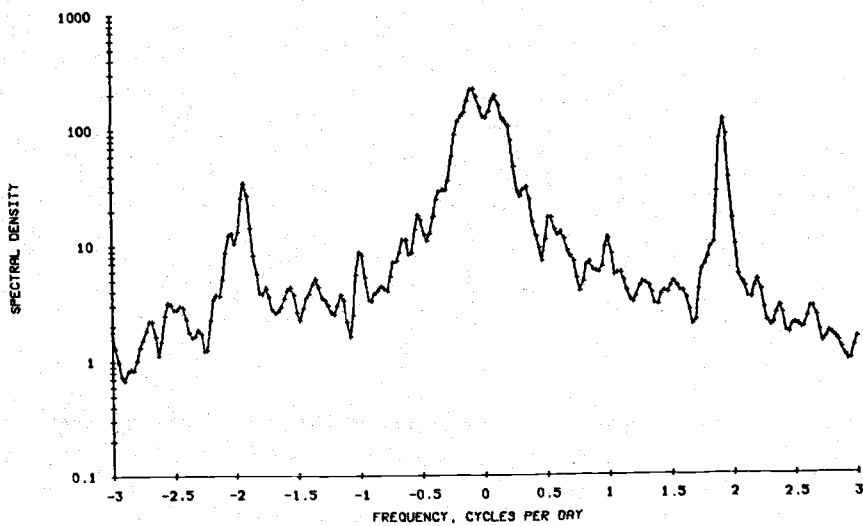
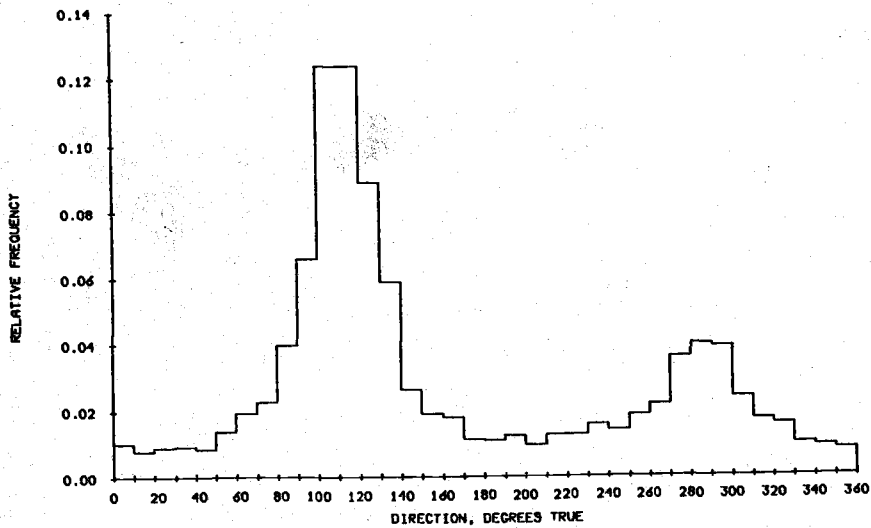
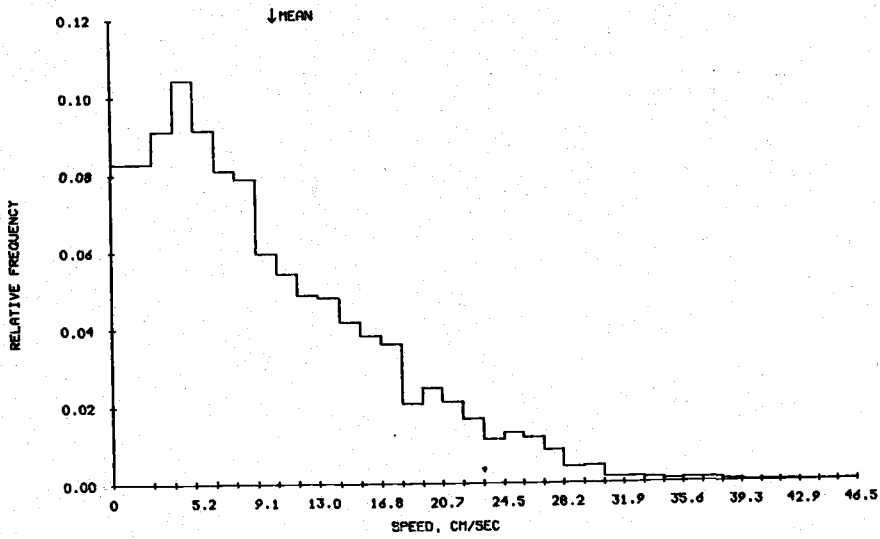
PRINCIPAL AXIS IS 110.9 DEGREES(T)

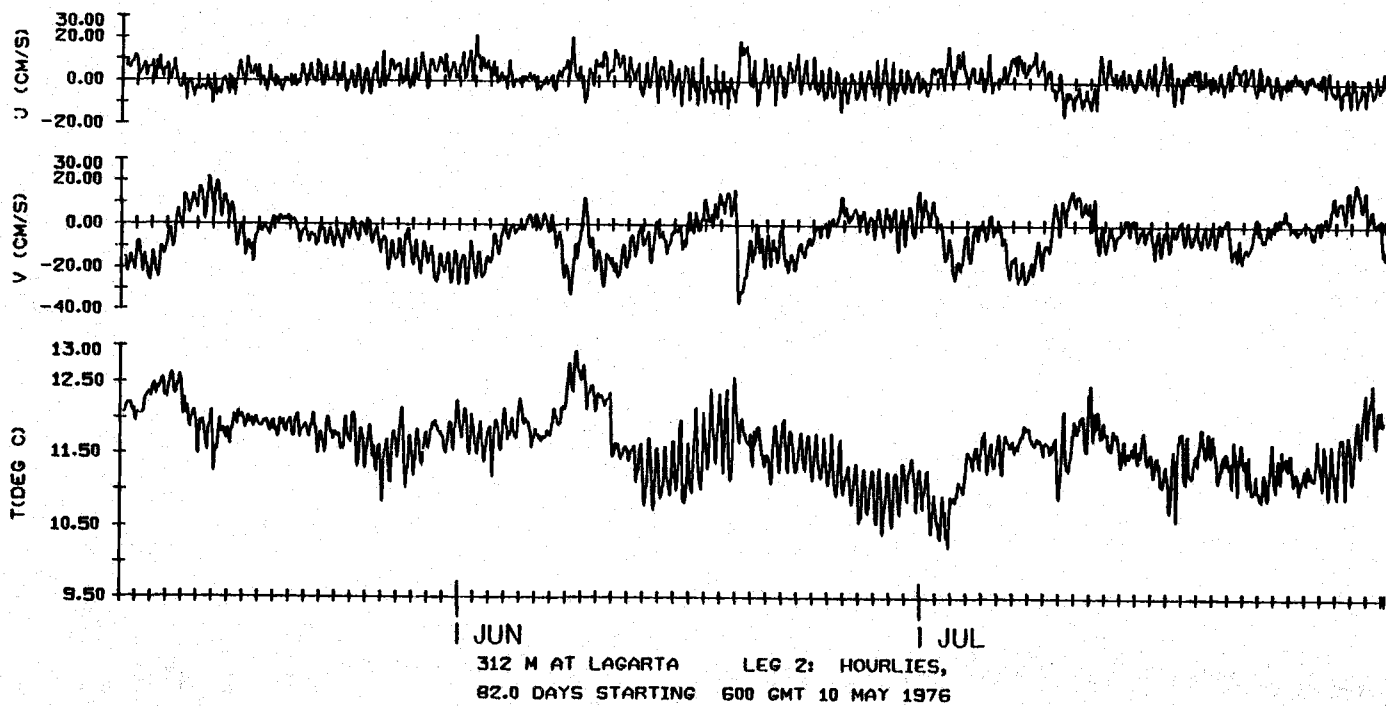
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 2
 312 4

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1968	10.2	7.0	1.0	3.7	41.3	.4
U (CM/S)	1968	1.7	5.4	.0	3.0	21.1	-15.8
V (CM/S)	1968	-4.8	9.9	-.2	2.8	21.8	-37.1
T (DEG C)	1968	11.7	.4	-.1	3.0	13.0	10.3

312 M AT LAGARTA. 9 MAY 76 TO 31 JUL 76. TAPE 452/33





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	2	412	488/24	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

600	10	5 76	-3.5	6.2	-3.5	6.2	10.64	1
700	10	5 76	-3.7	3.5	-7.2	9.7	10.54	2
800	10	5 76	-3.6	0.5	-10.8	10.2	10.61	3
900	10	5 76	-3.0	-0.3	-13.8	9.9	10.62	4
1000	10	5 76	-0.1	-3.2	-13.9	6.7	10.73	5

LAST 5 LINES OF DATA:

100	31	7 76	3.5	-6.5	-348.6	-480.8	10.66	1964
200	31	7 76	3.4	-2.7	-345.2	-483.4	10.23	1965
300	31	7 76	0.9	0.6	-344.3	-482.8	9.97	1966
400	31	7 76	-1.9	1.1	-346.2	-481.7	9.97	1967
500	31	7 76	-2.7	1.1	-349.0	-480.5	10.07	1968

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1968	-.2	-.2	31.7	21.2	5.6	4.6	-17.9	-.6907

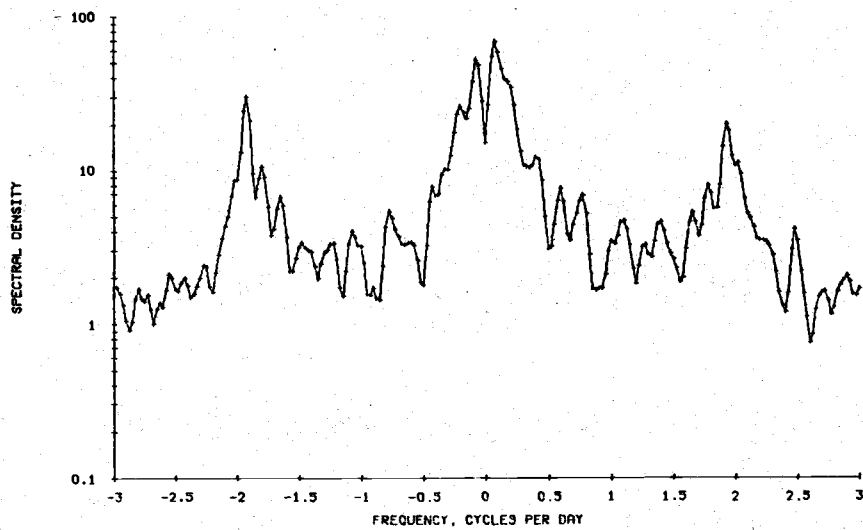
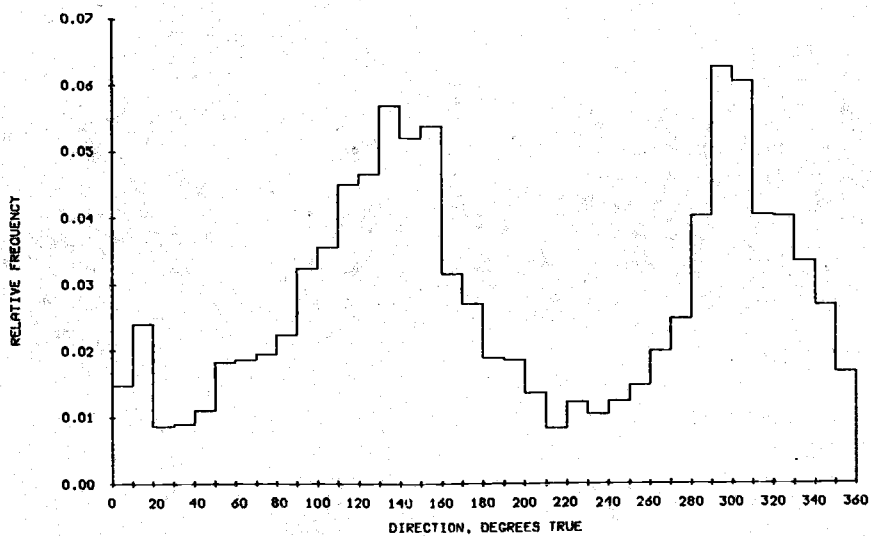
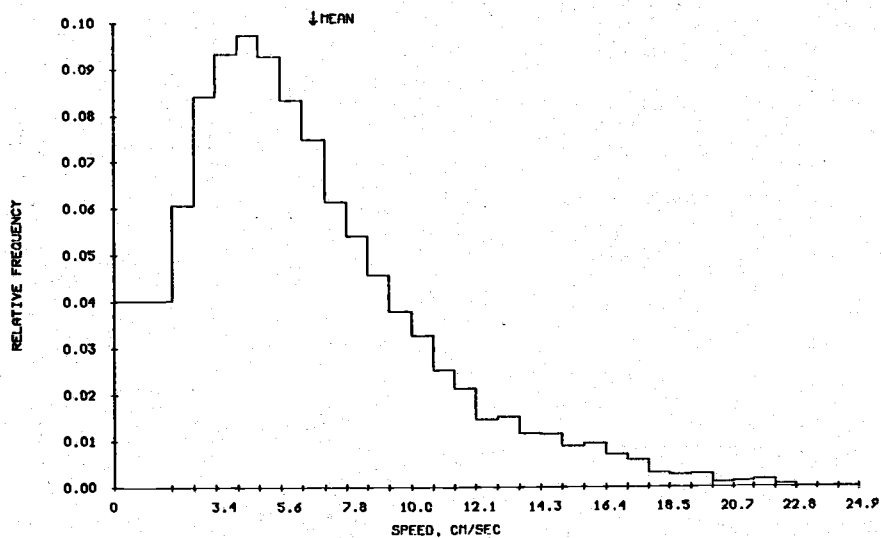
VECTOR MEAN: SPD = .3 CM/S, DIR = 216 DEGREES(T)
 DIRECTIONAL STEADINESS: 4.9 %

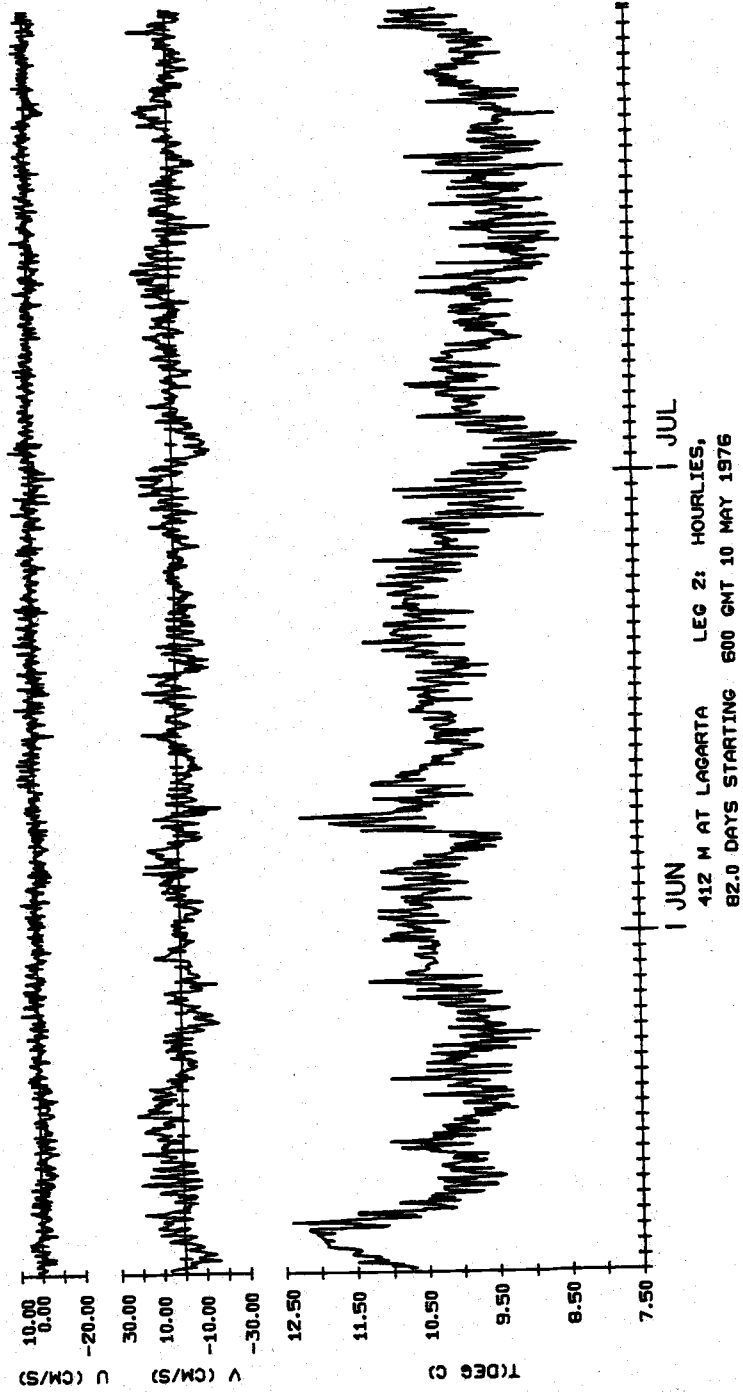
PRINCIPAL AXIS IS 126.8 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 2
 412 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1968	6.2	3.8	1.1	4.1	21.9	.1
U (CM/S)	1968	-.3	2.9	-.0	3.3	9.5	-12.1
V (CM/S)	1968	-.0	6.7	.2	3.0	21.1	-20.1
T (DEG C)	1968	9.9	.7	.4	3.5	12.3	8.1





JUN | JUL
412 M AT LAGARTA LEG 2: HOURLIES,
82.0 DAYS STARTING 600 GMT 10 MAY 1976

JOINT-II 1976 Installation

YUCA II

Position*: 12°04.7'S, 77°21.7'W
 Distance Offshore: 12.2 km (from San Lorenzo Island)
 Bottom Depth: 120 m
 Set: 1311 GMT 13 May 1976 by R/V THOMPSON
 Retrieved: 1500 GMT 2 August 1976 by R/V EASTWARD
 Longest Data Interval: 2000 GMT 13 May to 0800 GMT 2 August
 Longest Record Length: 80 days, 13 hours

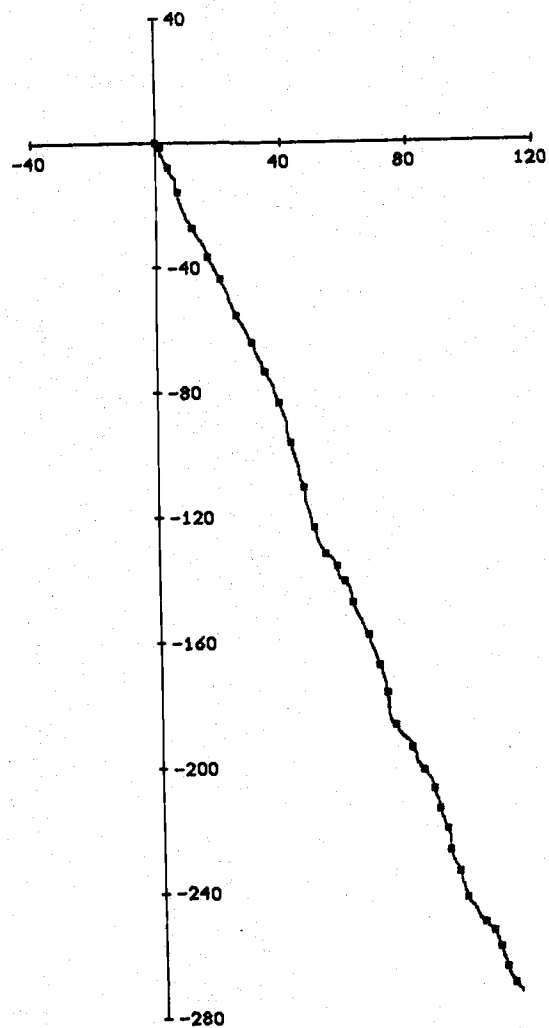
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
80 m	80 m	921/3	20 min	S,θ,T,P
100 m	100 m	442/29	30 min	S,θ,T

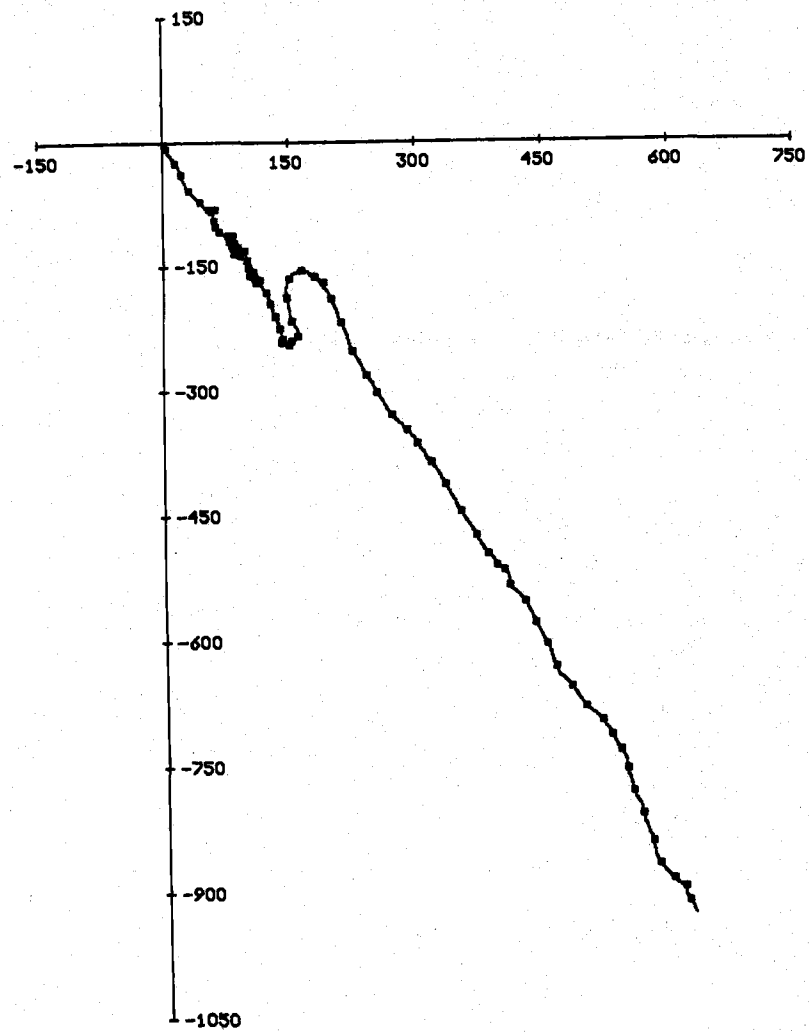
Comments:

No good direction data were recorded by current meter 442 (100 m) prior to 2233 GMT, 28 June. The filtered hourly current data covers the interval from 0433 GMT, 29 June through 0833 GMT, 2 August; temperature data is available for the entire mooring period.

* Navigation: radar fixes and U.S. chart H.O. 22173 (Callao and approaches).



100 M AT YUCA. 34.7 DAYS STARTING 2233 28 JUN 76



80 M AT YUCA. 81.0 DAYS STARTING 1342 13 MAY 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
YUCA	2	8L	921/3	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2000	13	5 76	5.9 -21.7	5.9	-21.7	16.65	799706	1
2100	13	5 76	11.8 -19.6	17.8	-41.3	16.60	800653	2
2200	13	5 76	16.8 -17.9	34.6	-59.2	16.54	801437	3
2300	13	5 76	9.0 -22.9	43.6	-82.1	16.62	801257	4
0	14	5 76	5.1 -23.9	48.7	-106.1	16.64	801323	5

LAST 5 LINES OF DATA:

400	2	8 76	21.9 -26.3	17167.1	-25375.2	16.45	802811	1929
500	2	8 76	22.8 -25.0	17189.9	-25400.2	16.31	802793	1930
600	2	8 76	20.9 -23.8	17210.8	-25424.0	16.27	802813	1931
700	2	8 76	14.2 -24.8	17224.9	-25448.8	16.26	802839	1932
800	2	8 76	5.9 -24.7	17230.9	-25473.5	16.44	802504	1933

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1933	8.9	-13.2	82.4	253.7	9.1	15.9	-82.0	-.5668

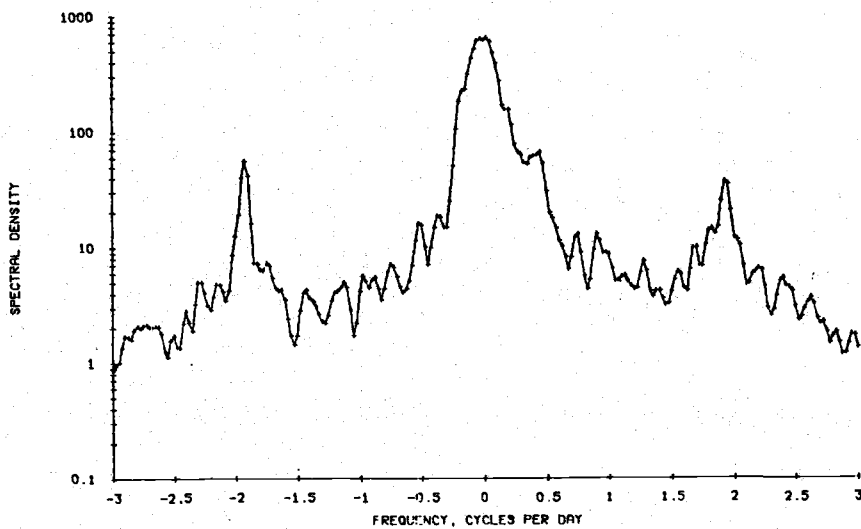
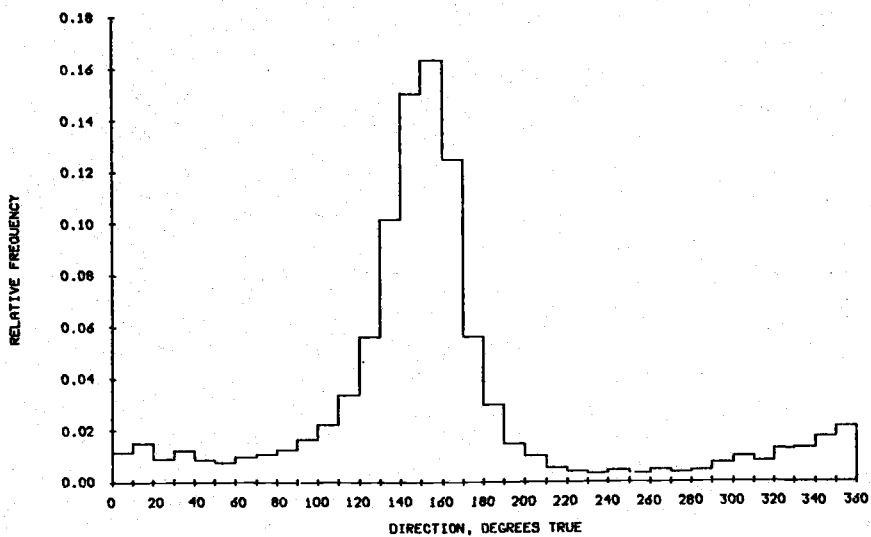
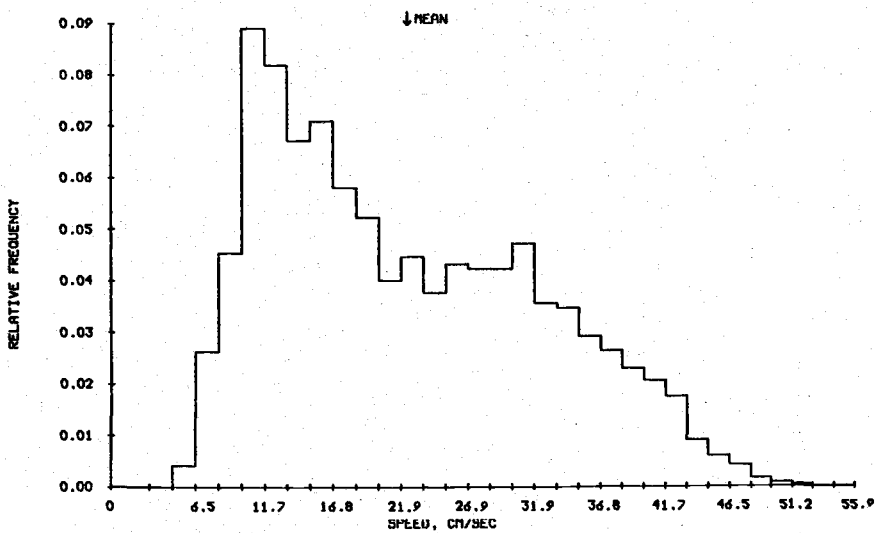
VECTOR MEAN: SPD = 15.9 CM/S, DIR = 146 DEGREES(T)
 DIRECTIONAL STEADINESS: 72.9 %

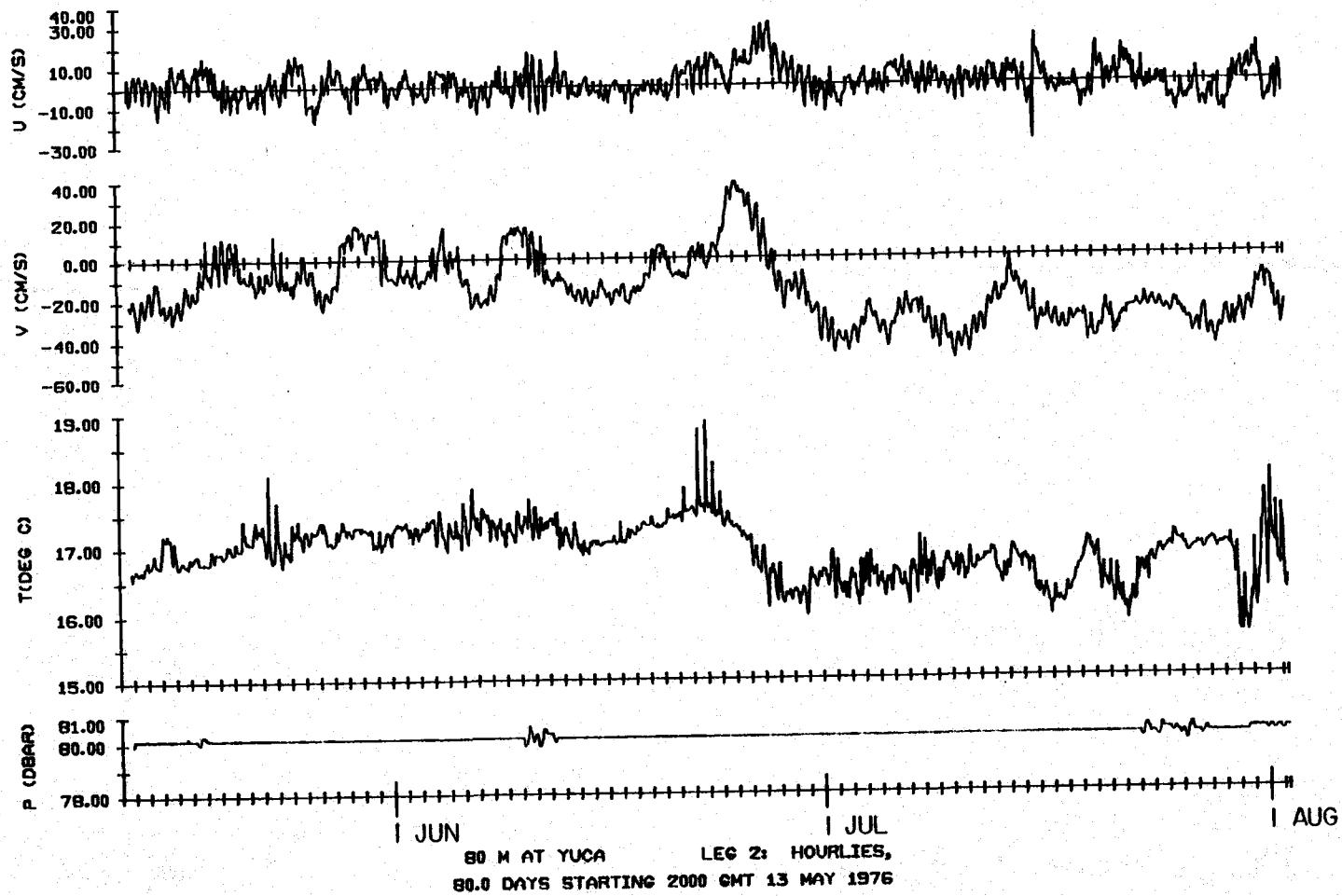
PRINCIPAL AXIS IS 158.1 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

YUCA		LEG 2					
80		1					
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1933	21.8	10.6	.4	2.2	51.1	1.2
U (CM/S)	1933	1.1	7.4	.3	3.7	30.4	-29.6
V (CM/S)	1933	-15.9	16.8	.6	3.2	38.3	-51.1
T (DEG C)	1933	16.9	.4	-.2	3.2	18.9	15.6
P (DBAR)	1933	80.1	.1	1.1	17.9	80.6	79.8

80 M AT YUCA. 13 MAY 76 TO 2 AUG 76. TAPE 921/3





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
YUCA	2	100	442/29	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2033	13	5	76	0.0	0.0	0.0	0.0	16.40	1
2133	13	5	76	0.0	0.0	0.0	0.0	16.28	2
2233	13	5	76	0.0	0.0	0.0	0.0	16.37	3
2333	13	5	76	0.0	0.0	0.0	0.0	16.41	4
33	14	5	76	0.0	0.0	0.0	0.0	16.41	5

LAST 5 LINES OF DATA:

433	2	8	76	5.8	-5.5	3107.6	-7505.7	15.99	1929
533	2	8	76	5.4	-3.3	3113.0	-7509.0	15.91	1930
633	2	8	76	5.8	-3.7	3118.8	-7512.7	15.84	1931
733	2	8	76	4.0	-2.7	3122.8	-7515.4	15.82	1932
833	2	8	76	1.8	-2.1	3124.6	-7517.5	15.77	1933

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CORLN
821	3.8	-9.2	5.1	15.5	2.3	3.9	-2.0	-.2241

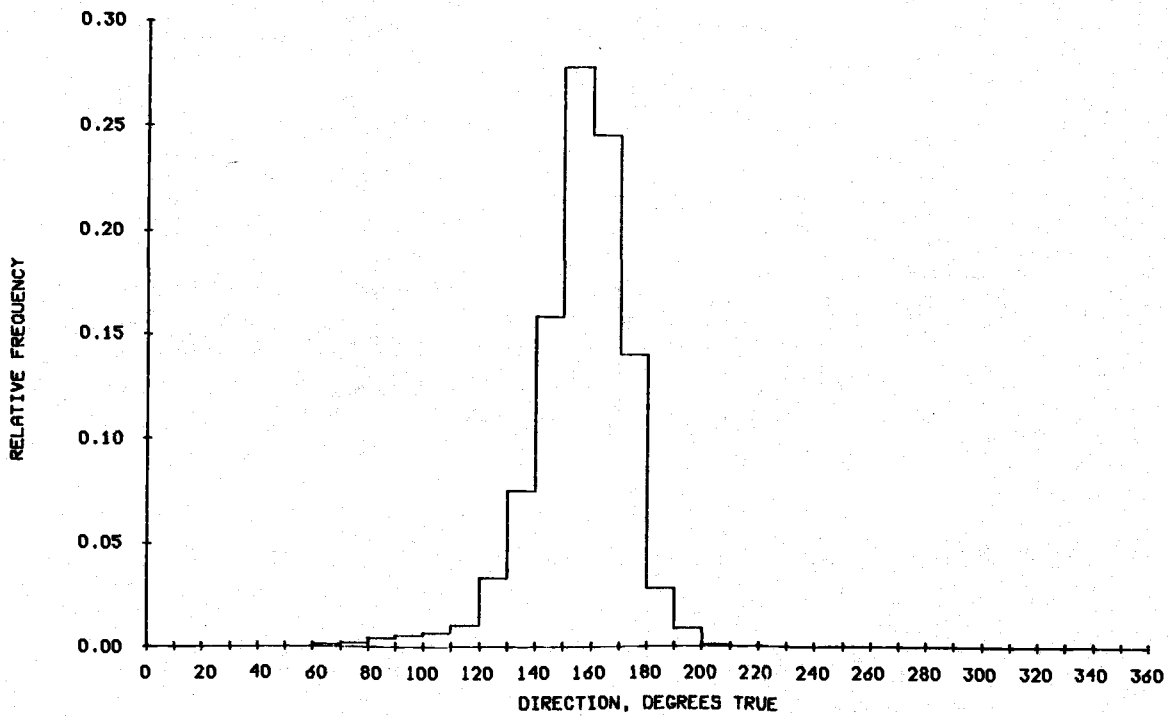
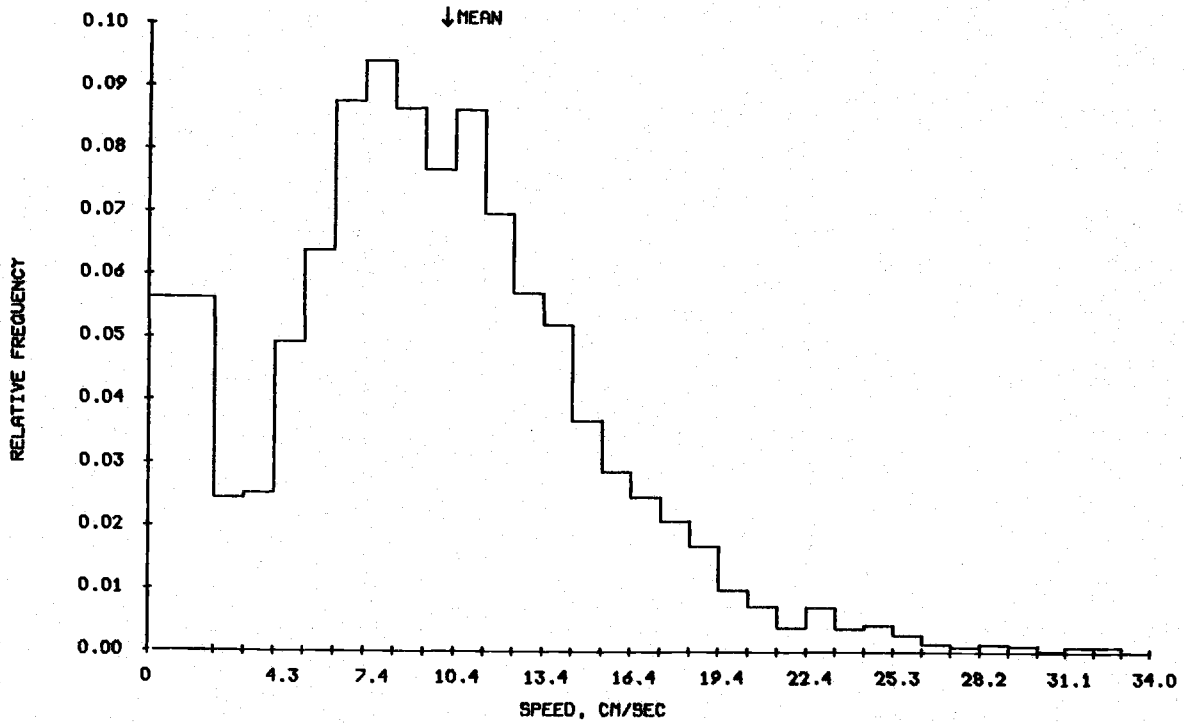
VECTOR MEAN: SPD = 9.9 CM/S, DIR = 157 DEGREES(T)
 DIRECTIONAL STEADINESS: 97.2 %

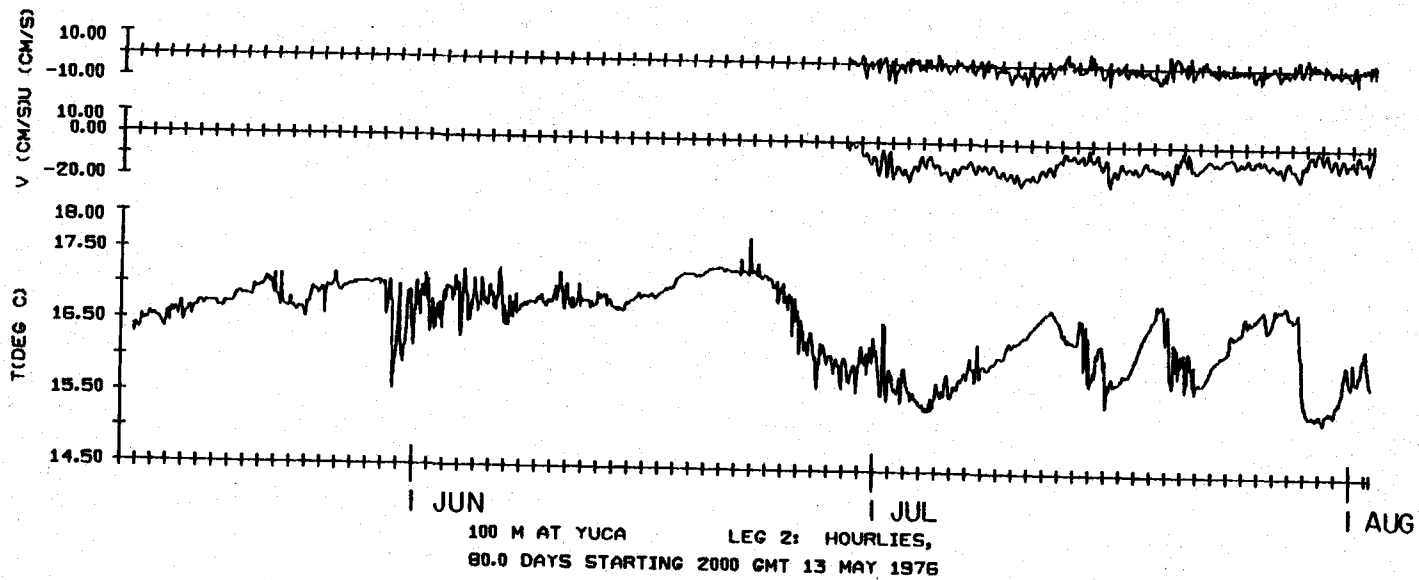
PRINCIPAL AXIS IS 159.5 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

VARIABLE	N	YUCA		LEG 2		MAX	MIN
		MEAN	STD	MEAN	STD		
S (CM/S)	821	10.2	3.9	10.2	3.9	20.4	.9
U (CM/S)	821	-1.3	2.4	-1.3	2.4	5.9	-8.8
V (CM/S)	821	-9.8	3.8	-9.8	3.8	-.6	-19.9
T (DEG C)	1933	16.5	.5	16.5	.5	17.7	15.3

100 M AT YUCA. 13 MAY 76 TO 2 AUG 76. TAPE 442/29





INSTALLATIONS: Leg III (JAS '76)

JOINT-II 1976 Installation

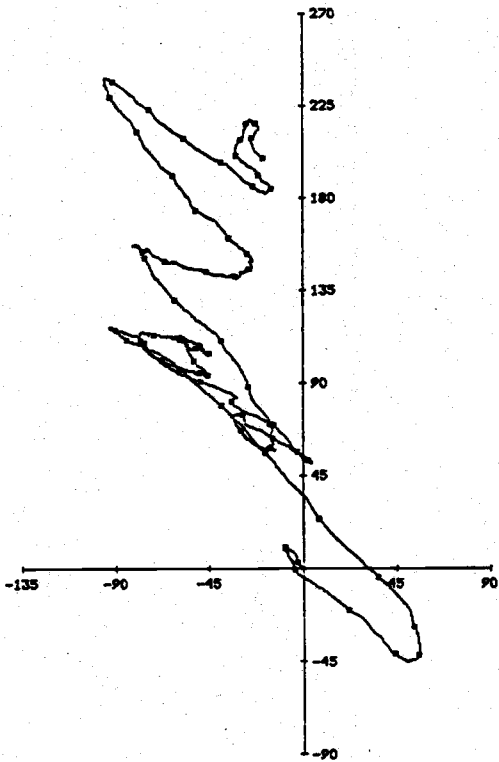
MILA III

Position*: 15°05.8'S, 75°30.2'W
 Distance Offshore: 10.0 km
 Bottom Depth: 123 m
 Set: 1726 GMT 27 July 1976 by R/V EASTWARD
 Retrieved: 1145 GMT 30 September 1976 by R/V EASTWARD
 Longest Data Interval: 0100 GMT 28 July to 0400 GMT 30 September
 Longest Record Length: 64 days, 4 hours

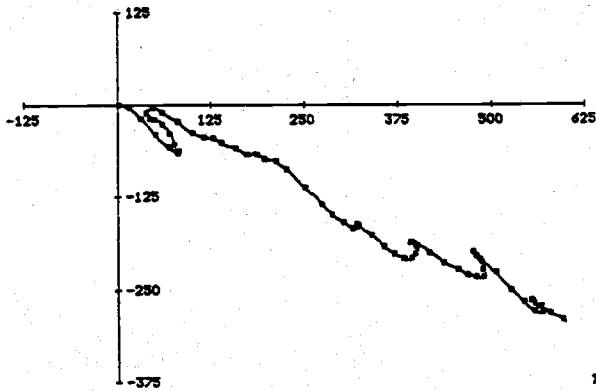
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
25 m	28 m	747/23	20 min	S,θ,T,P,C
50 m	53 m	689/23	20 min	S,θ,T,P,C
75 m	79 m	746/22	20 min	S,θ,T,P,C
100 m	104 m	748/20	20 min	S,θ,T,P,C

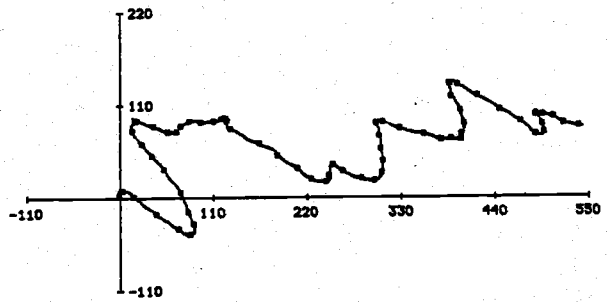
* Navigation: radar fixes and Peru chart DHNM 2200.



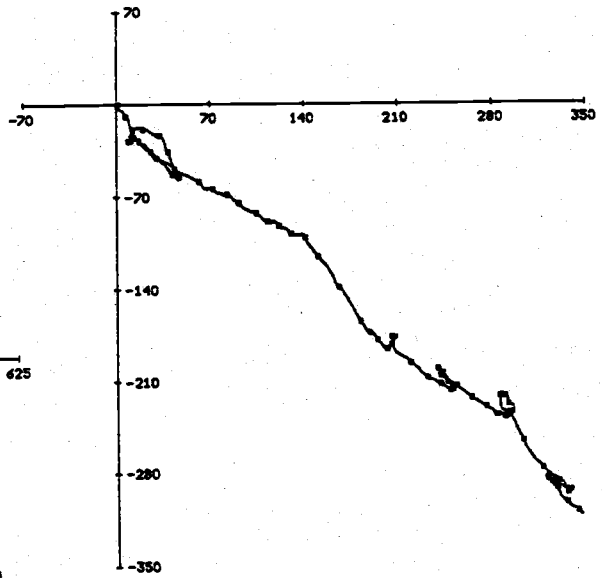
28 M AT MILA III. 64.7 DAYS STARTING 1813 27 JUL 76



79 M AT MILA III. 64.7 DAYS STARTING 1827 27 JUL 76



53 M AT MILA III. 64.7 DAYS STARTING 1820 27 JUL 76



104 M AT MILA III. 64.7 DAYS STARTING 1824 27 JUL 76

STATION MILA	LEG 3	DEPTH 28	TAPE NO 747/23	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	28	7 76	-4.8	12.0	16.89	282440	45.333
200	28	7 76	-2.9	12.9	16.92	281772	45.328
300	28	7 76	-0.3	15.4	16.96	280324	45.348
400	28	7 76	-2.2	15.6	16.97	279992	45.358
500	28	7 76	-5.8	16.5	16.98	279922	45.415

LAST 5 LINES OF DATA:

0	30	9 76	10.5	-9.0	-440.4	5437.4	13.97	279469	41.965
100	30	9 76	1.3	-3.4	-439.0	5429.0	13.96	283930	41.968
200	30	9 76	2.8	-7.5	-436.2	5421.5	13.99	284837	41.964
300	30	9 76	-1.1	0.7	-437.4	5422.1	14.01	288770	42.007
400	30	9 76	-3.9	3.4	-441.3	5425.5	14.02	293670	42.006

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1540	-.3	3.5	299.0	242.1	17.3	15.6	-221.1	-.8218

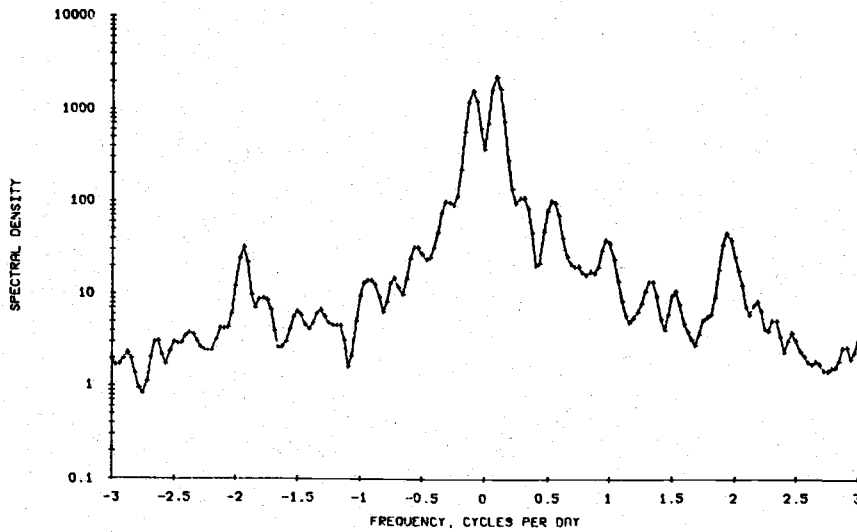
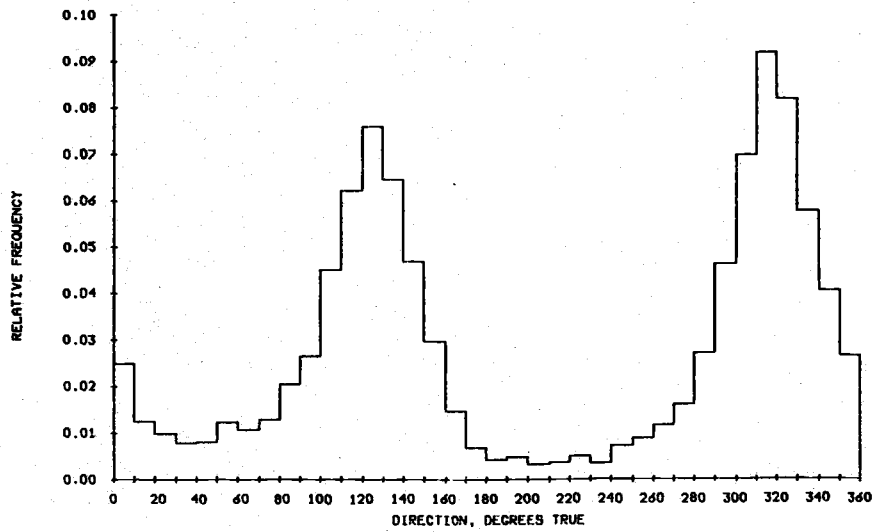
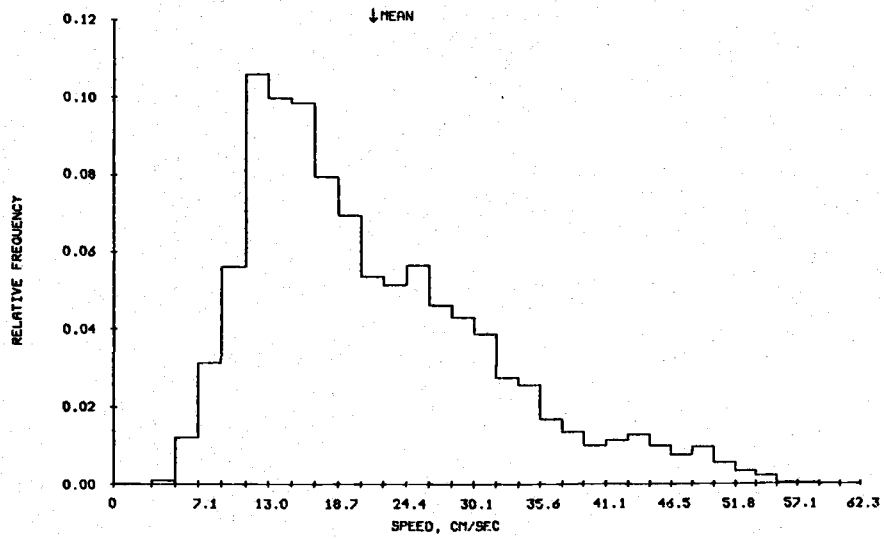
VECTOR MEAN: SPD = 3.5 CM/S, DIR = -4 DEGREES(T)
DIRECTIONAL STEADINESS: 16.8 %

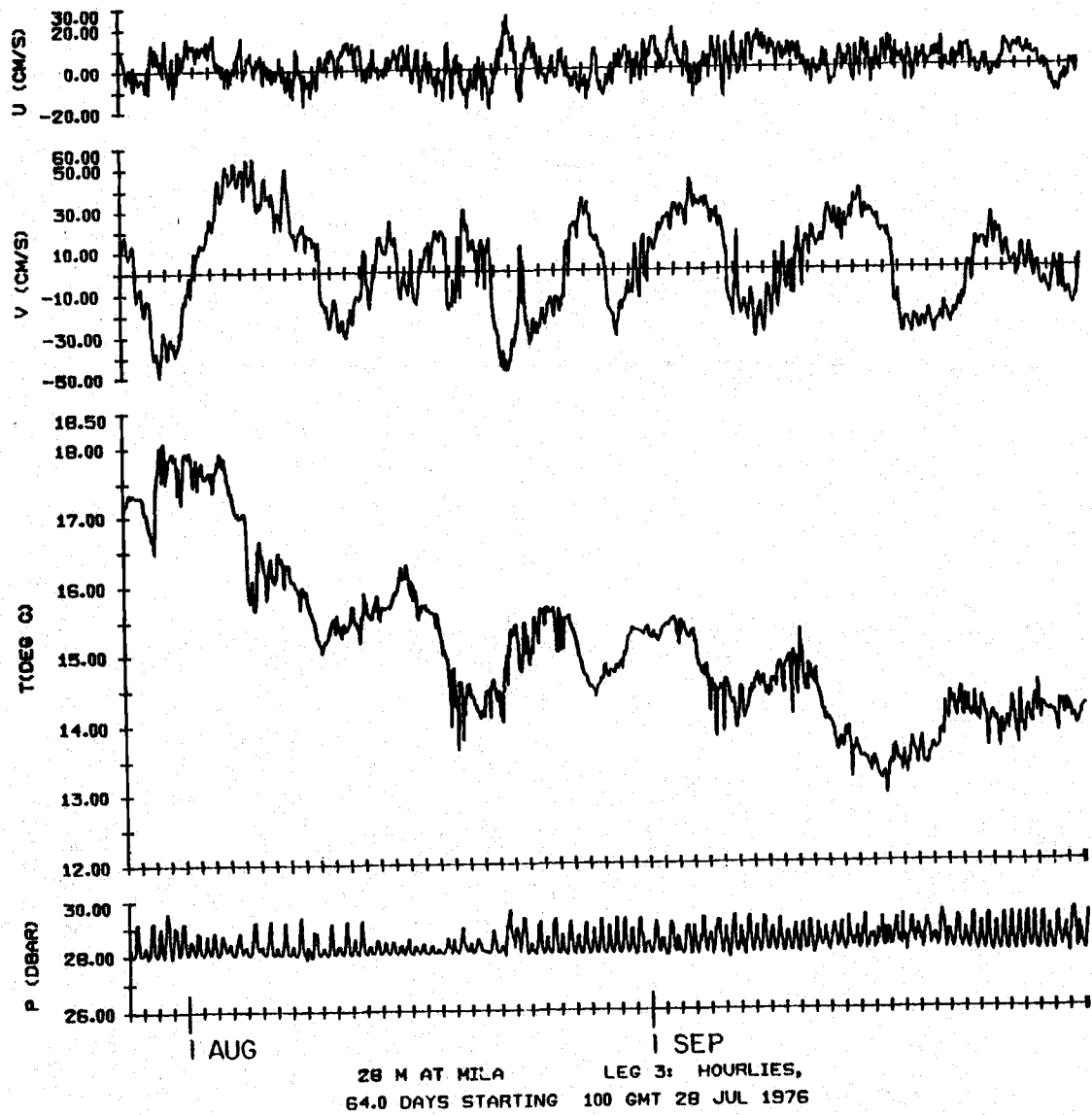
PRINCIPAL AXIS IS 131.3 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

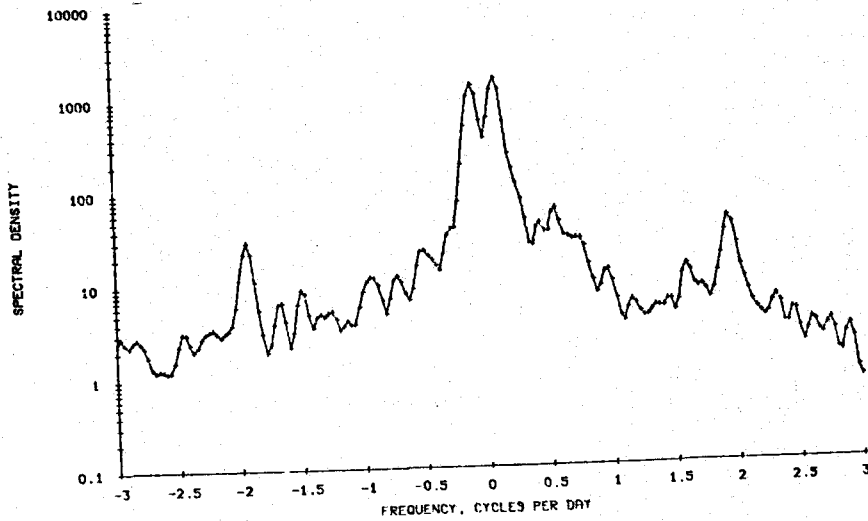
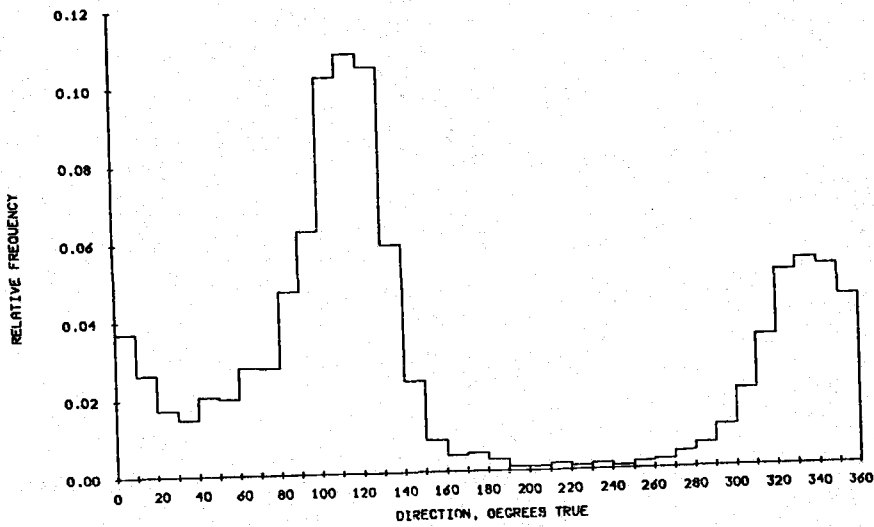
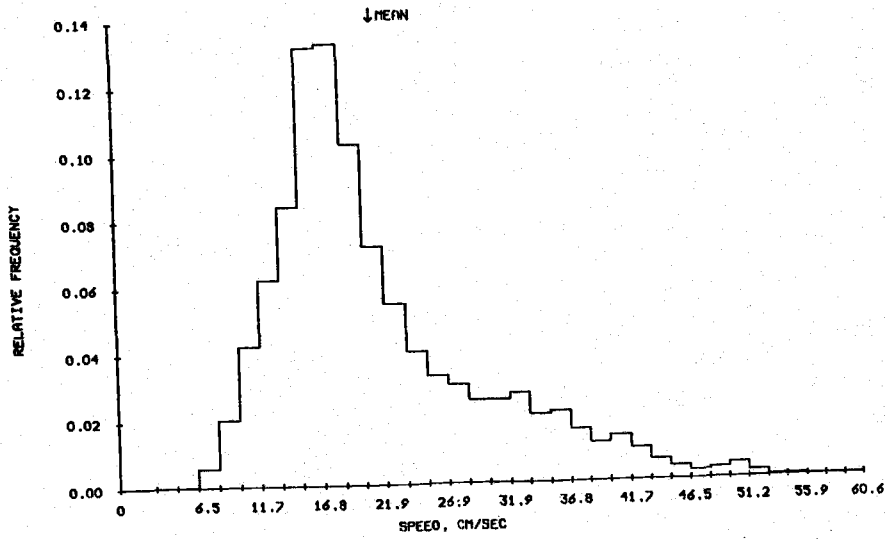
VARIABLE	N	MILA		LEG 3		MAX	MIN
		28	4	28	4		
S (CM/S)	1540	21.1	10.5	.9	3.3	54.9	.2
U (CM/S)	1540	2.3	7.0	-.2	2.7	26.1	-19.0
V (CM/S)	1540	2.7	22.2	.0	2.2	54.7	-49.4
T (DEG C)	1540	14.9	1.2	.8	2.9	17.9	12.8
P (DBAR)	1540	23.4	.4	.9	2.8	29.6	27.8

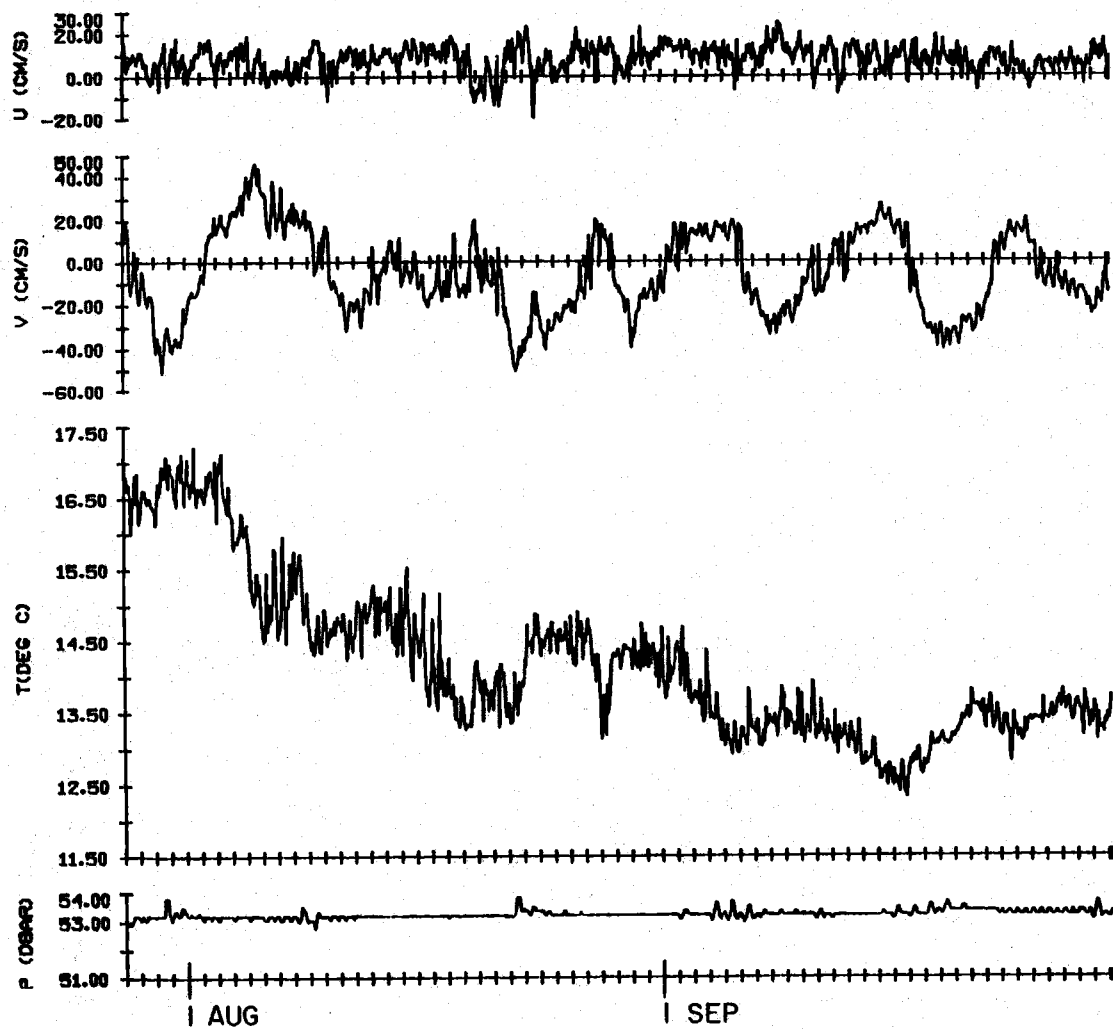
28 M AT MILA III. 27 JUL 76 10 30 SEP 76. TAPE 747/23





53 M AT NILA III. 27 JUL 76 TO 30 SEP 76. TAPE 689/23





53 M AT MILA LEG 3: HOURLIES,
 64.0 DAYS STARTING 100 GMT 28 JUL 1976

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
MILA	3	79	746/22	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	28	7 76	20.5	-6.8	20.5	-6.8	15.55	790038	43.656
200	28	7 76	15.5	-5.9	36.0	-12.7	15.79	790141	43.902
300	28	7 76	12.2	-3.3	48.2	-16.0	15.82	789902	43.937
400	28	7 76	12.2	-3.6	60.3	-19.6	15.79	789694	43.903
500	28	7 76	11.2	-0.8	71.5	-20.3	15.80	789680	43.913

LAST 5 LINES OF DATA:

0	30	9 76	11.4	-8.4	16445.5	-8049.5	13.09	795684	41.094
100	30	9 76	15.7	-5.2	16461.3	-8054.6	13.05	795729	41.046
200	30	9 76	14.9	-7.1	16476.2	-8061.7	13.00	795589	40.994
300	30	9 76	9.8	-13.2	16486.0	-8074.9	13.03	796159	41.025
400	30	9 76	5.7	-16.5	16491.7	-8091.4	13.17	797226	41.189

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1540	11.7	-5.3	148.5	150.8	12.2	12.3	-115.0	-.7685

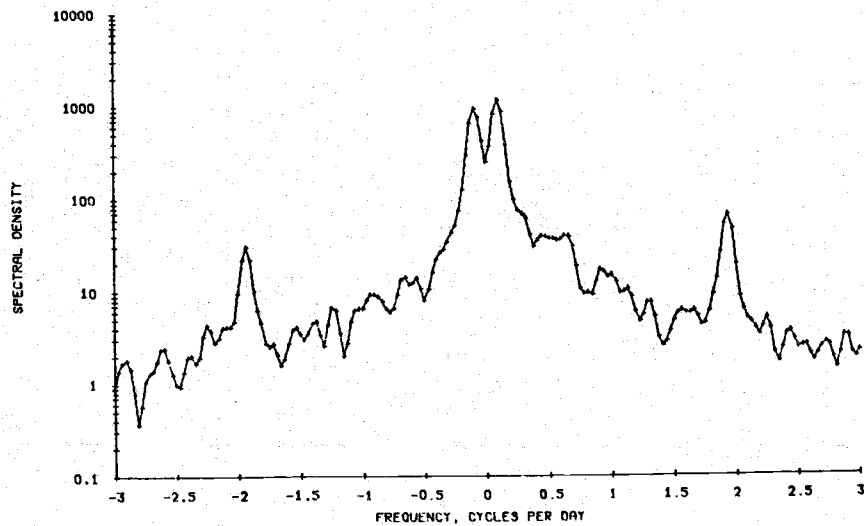
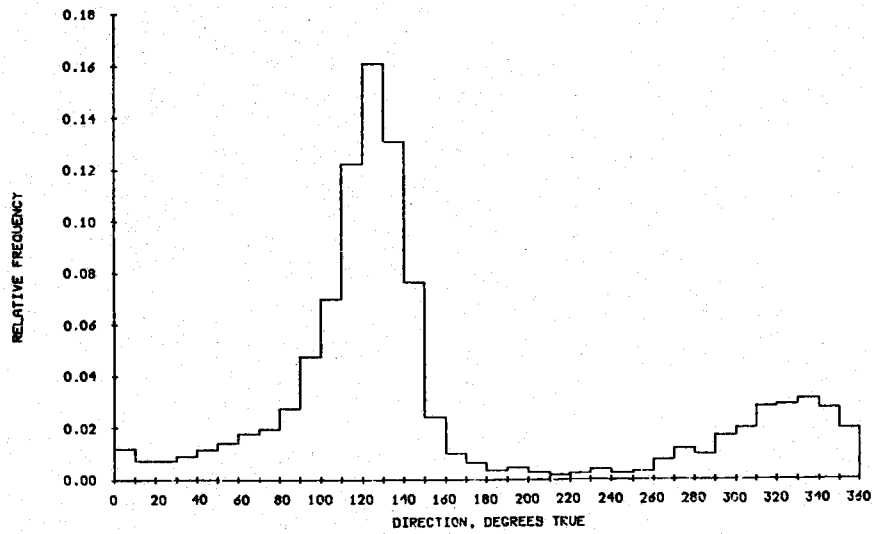
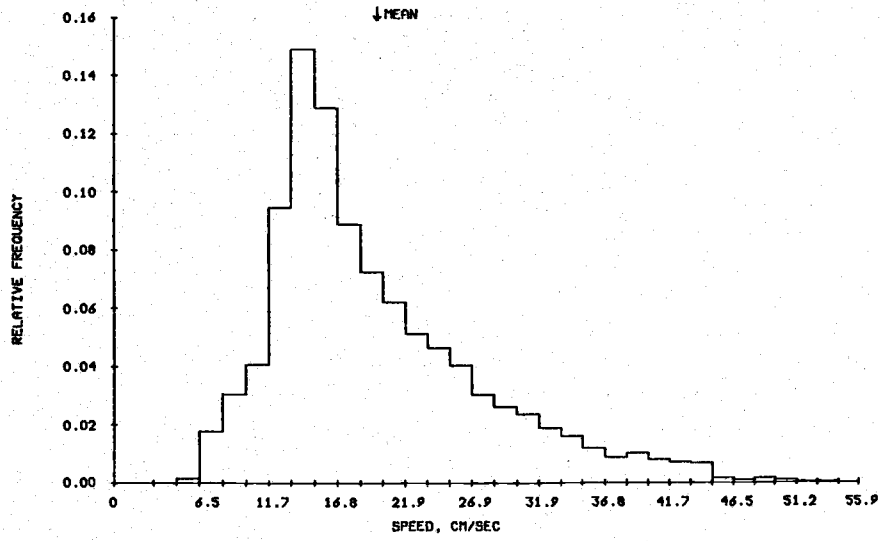
VECTOR MEAN: SPD = 11.9 CM/S, DIR = 116 DEGREES(T)
DIRECTIONAL STEADINESS: 61.7 %

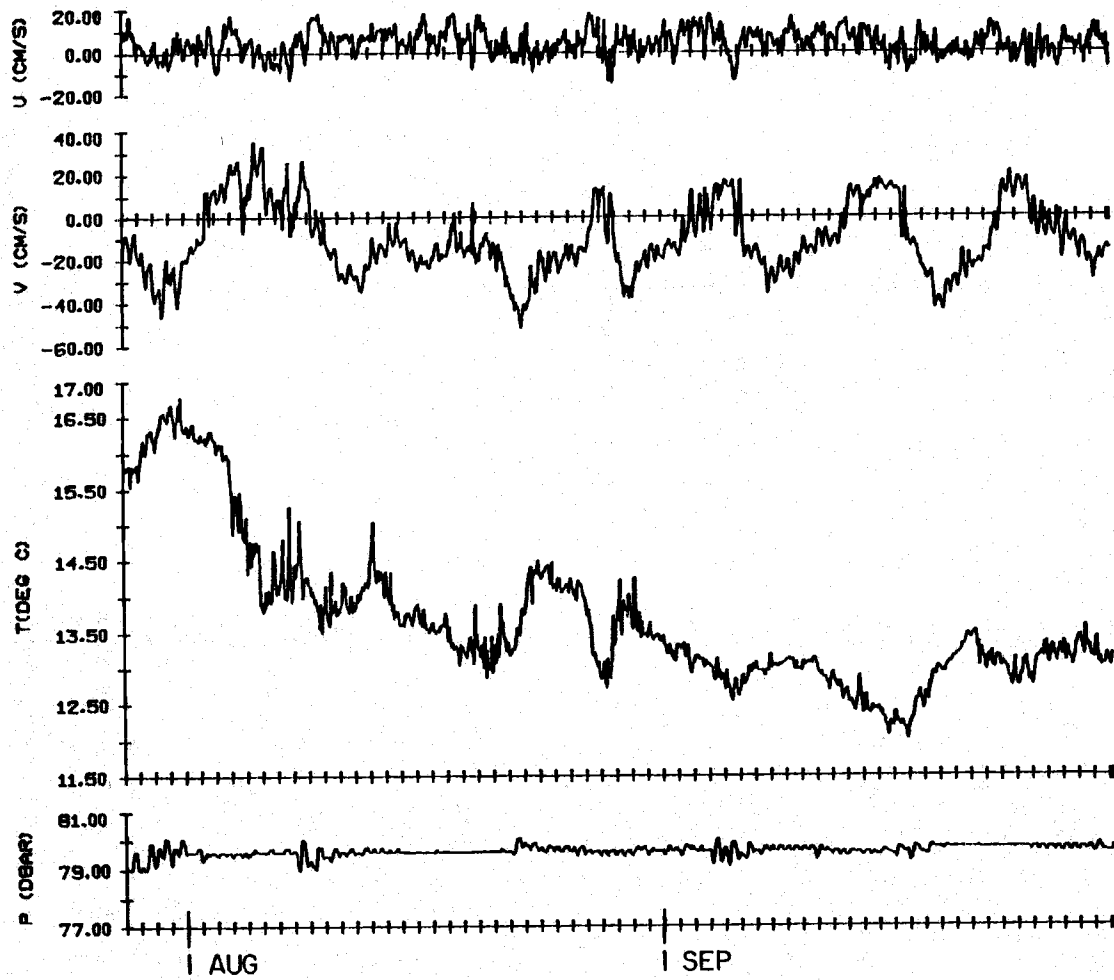
PRINCIPAL AXIS IS 135.3 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN	MILA	LEG 3
								79 M	
S (CM/S)	1540	19.3	8.3	1.0	3.8	51.7	1.7		
U (CM/S)	1540	3.9	5.9	-.2	2.8	18.0	-15.0		
V (CM/S)	1540	-11.3	16.3	.4	2.5	34.9	-51.7		
T (DEG C)	1540	13.7	1.1	1.3	4.0	16.8	12.0		
F (DBAR)	1540	79.6	.2	-1.2	7.0	80.1	79.0		

79 M AT MILA III. 27 JUL 76 TO 30 SEP 76. TAPE 746/22





79 M AT MILA LEG 3: HOURLIES,
 64.0 DAYS STARTING 100 GMT 29 JUL 1976

STATION MILA	LEG 3	DEPTH 104	TAPE NO 748/20	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100 28	7 76	-0.9	-7.7	-0.9	-7.7	14.70	1041298	42.685
200 28	7 76	-3.2	-8.8	-4.1	-16.5	14.82	1040444	42.819
300 28	7 76	-3.5	-9.9	-7.6	-26.4	14.93	1039884	42.938
400 28	7 76	-2.5	-9.5	-10.1	-35.9	15.01	1039271	43.016
500 28	7 76	-0.6	-8.7	-10.7	-44.5	15.09	1038347	43.116

LAST 5 LINES OF DATA:

0 30	9 76	4.7	-5.9	9543.3	-8594.1	12.93	1048940	40.891
100 30	9 76	6.7	-4.9	9550.0	-8599.0	12.92	1048770	40.890
200 30	9 76	7.2	-4.6	9557.3	-8603.6	12.91	1049456	40.877
300 30	9 76	7.6	-6.3	9564.9	-8609.9	12.92	1050436	40.880
400 30	9 76	7.0	-9.6	9571.9	-8619.5	12.93	1050620	40.899

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1540	0.2	-5.6	92.8	114.5	9.6	10.7	-64.8	-0.6280

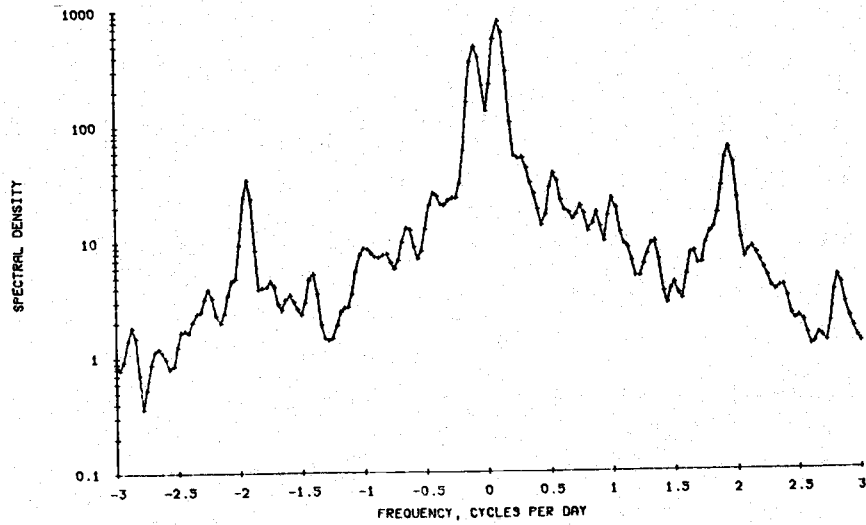
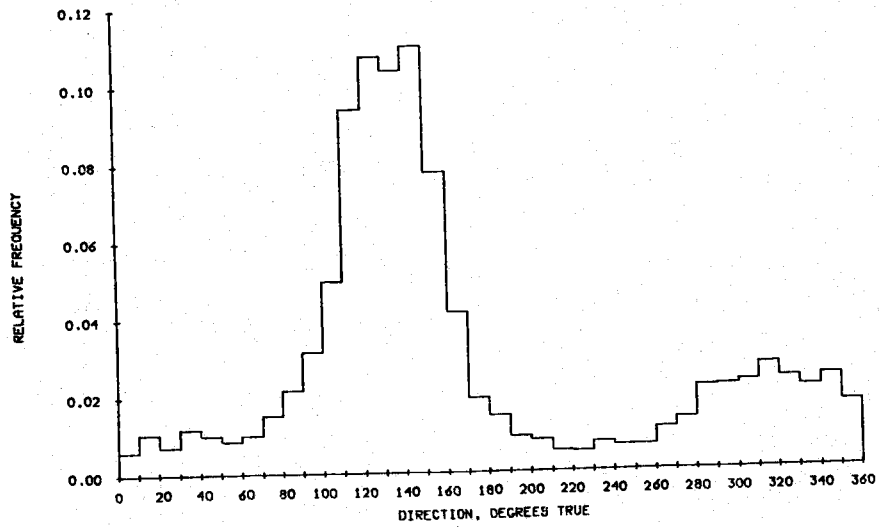
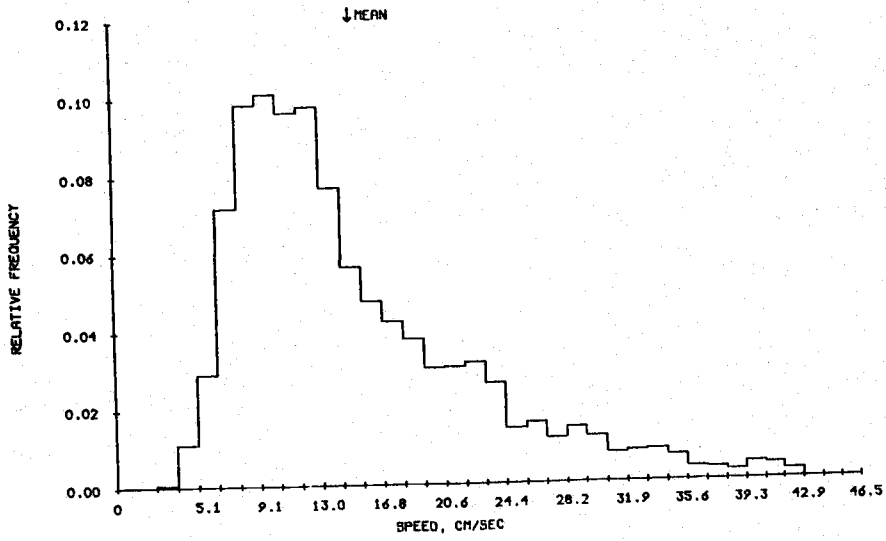
VECTOR MEAN: SPD = 8.4 CM/S, DIR = 132 DEGREES(T)
DIRECTIONAL STEADINESS: 56.4 %

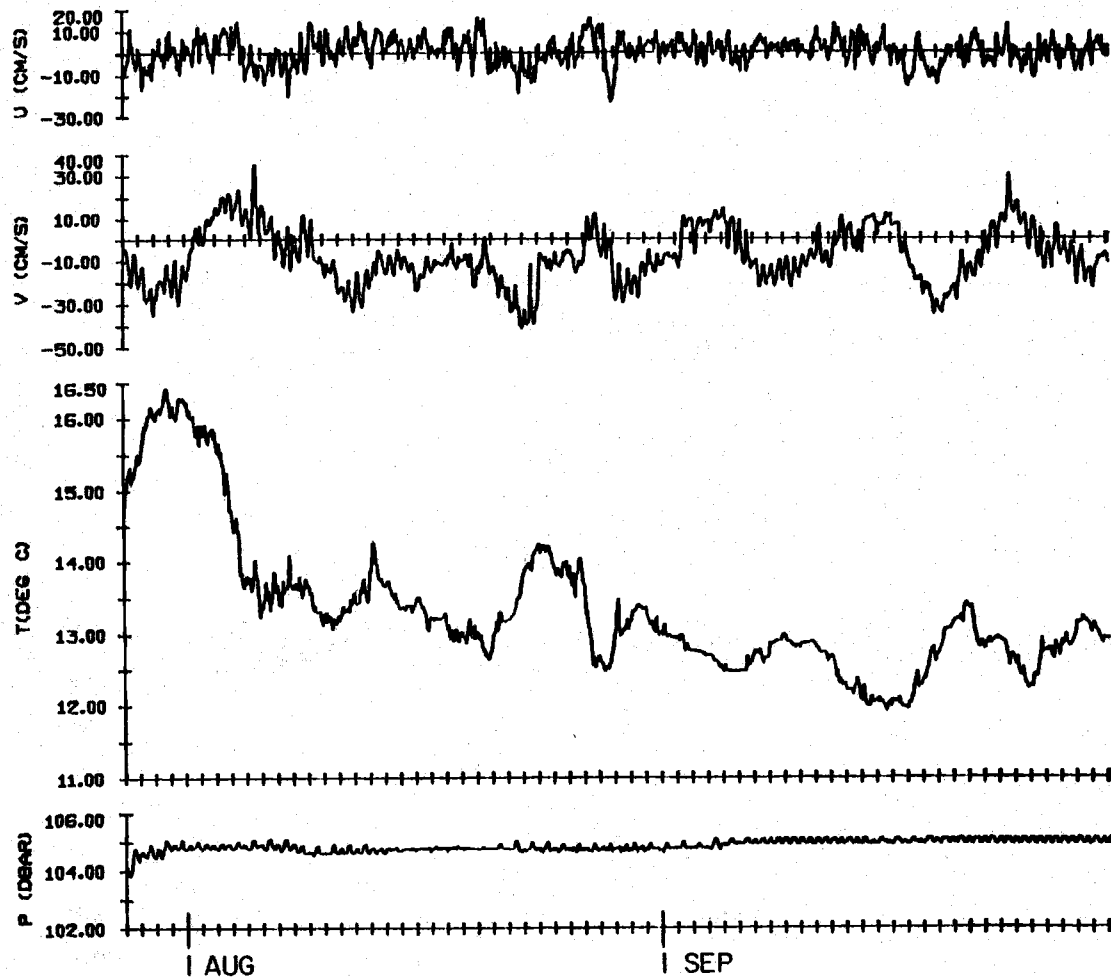
PRINCIPAL AXIS IS 139.8 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 3					
	N	104 M	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1540		14.8	7.6	1.1	4.1	42.0	1.8
U (CM/S)	1540		.4	6.2	-.3	3.2	16.2	-23.4
V (CM/S)	1540		-8.4	13.0	.2	2.8	35.1	-41.8
T (DEG C)	1540		13.3	1.0	1.5	4.8	16.4	11.9
P (DBAR)	1540		104.8	.2	-1.1	7.7	105.1	103.8

104 M AT MILA III. 27 JUL 76 TO 30 SEP 76. TAPE 748/20





104 M AT MILA LEG 3: HOURLIES,
 64.0 DAYS STARTING 100 GMT 28 JUL 1976

INSTALLATIONS: Leg IV

JOINT-II 1976 Installation

MILA IV

Position*: 15°06.0'S, 75°30.2'W
 Distance Offshore: 11.5 km
 Bottom Depth: 119 m
 Set: 1433 GMT 30 September 1976 by R/V EASTWARD
 Retrieved: 1046 GMT 4 March 1977 by R/V MELVILLE
 Longest Data Interval: 1700 GMT 30 September to 0800 GMT 4 March
 Longest Record Length: 154 days, 16 hours

Instrumentation

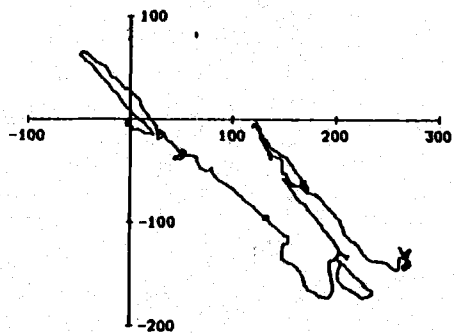
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
25 m	23 m	751/20	60 min	S,θ,T,P
50 m	48 m	1962/3	60 min	S,θ,T
75 m	73 m	1964/3	60 min	S,θ,T
100 m	99 m	503/34	60 min	S,θ,T,P

Comments:

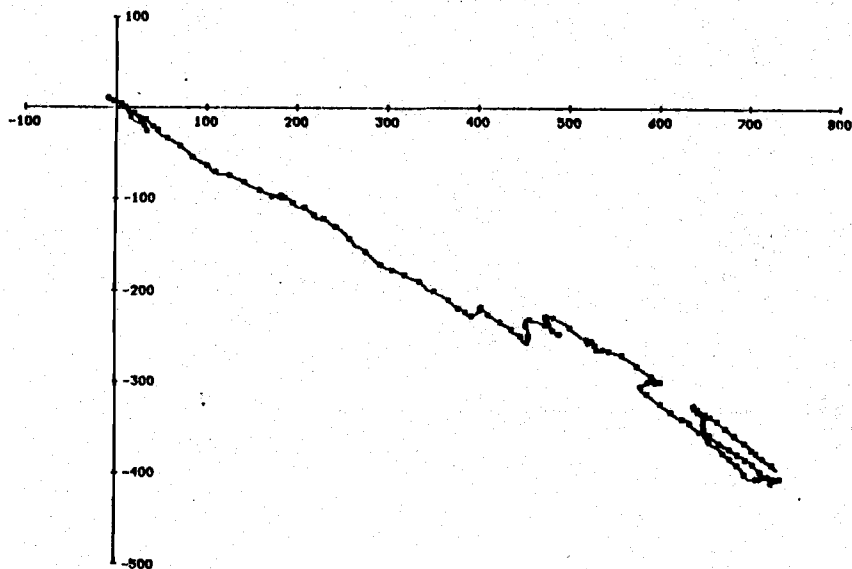
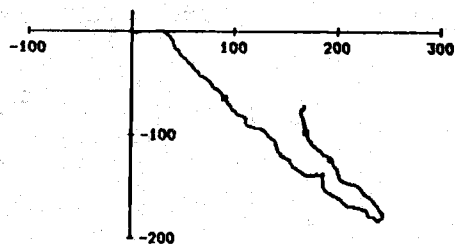
Due to a sensor malfunction on current meter 751 (23 m), speed and velocity components were zeroed out of the data record in two places. The two periods for which current data exist are from 1700 GMT 30 September 1976 through 1000 GMT 4 January 1977 (95 days, 18 hours) and from 0900 GMT 23 January through 0600 GMT 3 March 1977 (38 days, 22 hours).

Due to fouling of the savonius rotor, data for speed and velocity components don't exist for current meter 1964 (73 m) after 2300 GMT 2 February 1977.

* Navigation: radar fixes and Peru chart DHNM 2200.

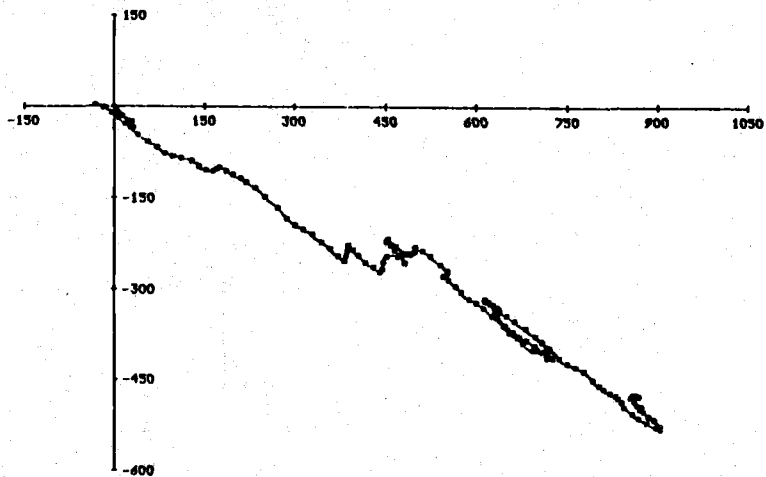


23 M AT MILA. 1702 30 SEP 76 - 1002 4 JAN 77. TAPE 751/20.

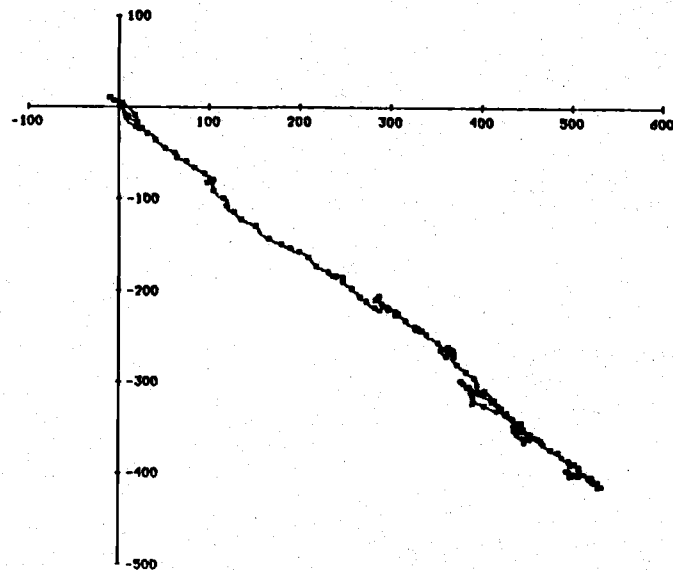


73 METERS AT MILA 4. 30 SEP 76 - 2 FEB 77. TAPE 1944/3.

23 M AT MILA. 0902 23 JAN 77 - 0402 3 MAR 77. TAPE 751/20.



48 METERS AT MILA 4. 30 SEP 76 - 4 MAR 77. TAPE 1942/3.



99 METERS AT MILA 4. 30 SEP 76 - 4 MAR 77. TAPE 903/34.

STATION MILA	LEG 4	DEPTH 23	TAPE NO 751/20	INTERVAL HOURLY	FILTERING UNFILTERED
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FIRST 5 LINES OF DATA:

1702 30	9 76	-4.4	-16.3	-4.4	-16.3	13.75	226500	1
1802 30	9 76	-6.9	-16.2	-11.3	-32.5	13.72	228100	2
1902 30	9 76	-1.7	-16.6	-13.0	-49.1	13.75	226500	3
2002 30	9 76	-8.1	-12.9	-21.1	-62.0	13.80	226500	4
2102 30	9 76	-2.0	-14.4	-23.1	-76.4	13.75	226500	5

LAST 5 LINES OF DATA:

402 4	3 77	0.0	0.0	11909.7	-5402.7	15.74	239200	3708
502 4	3 77	0.0	0.0	11909.7	-5402.7	16.25	237600	3709
602 4	3 77	0.0	0.0	11909.7	-5402.7	16.11	237600	3710
702 4	3 77	0.0	0.0	11909.7	-5402.7	16.28	236000	3711
802 4	3 77	0.0	0.0	11909.7	-5402.7	15.50	237600	3712

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

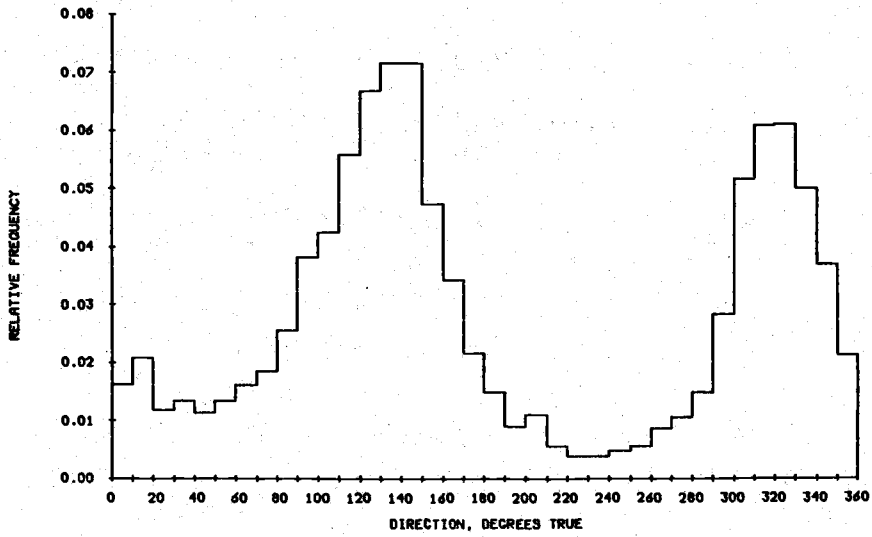
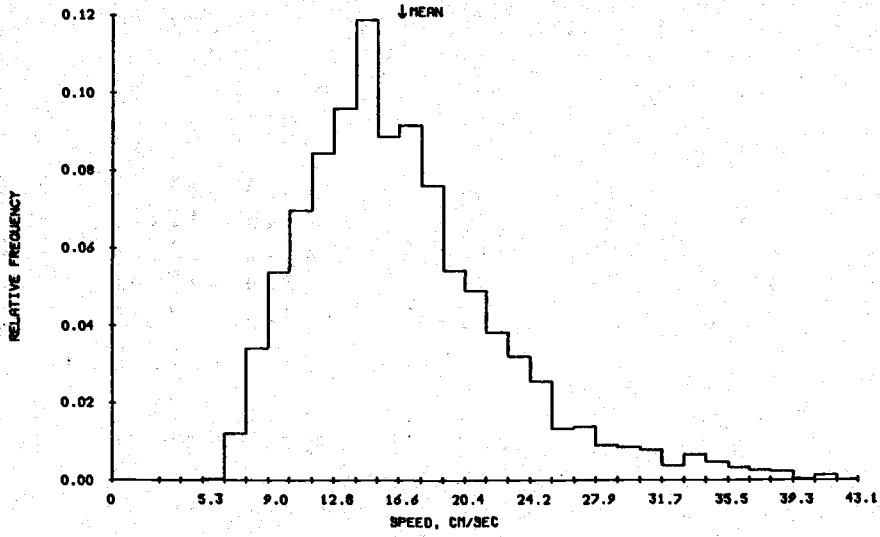
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
3232	3.7	-1.7	140.8	156.6	11.9	12.5	-88.3	-.5945

VECTOR MEAN: SPC = 4.0 CM/S, DIR = 114 DEGREES(T)
DIRECTIONAL STEADINESS: 24.2 %

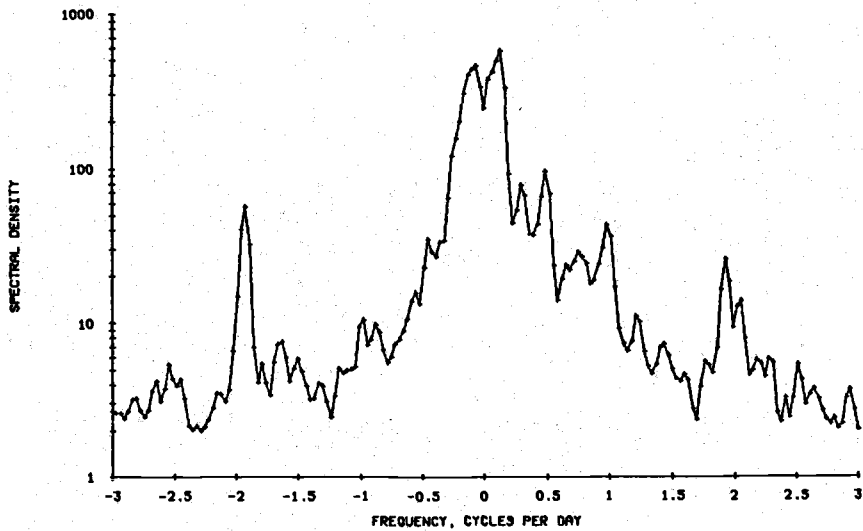
PRINCIPAL AXIS IS 137.6 DEGREES(T)

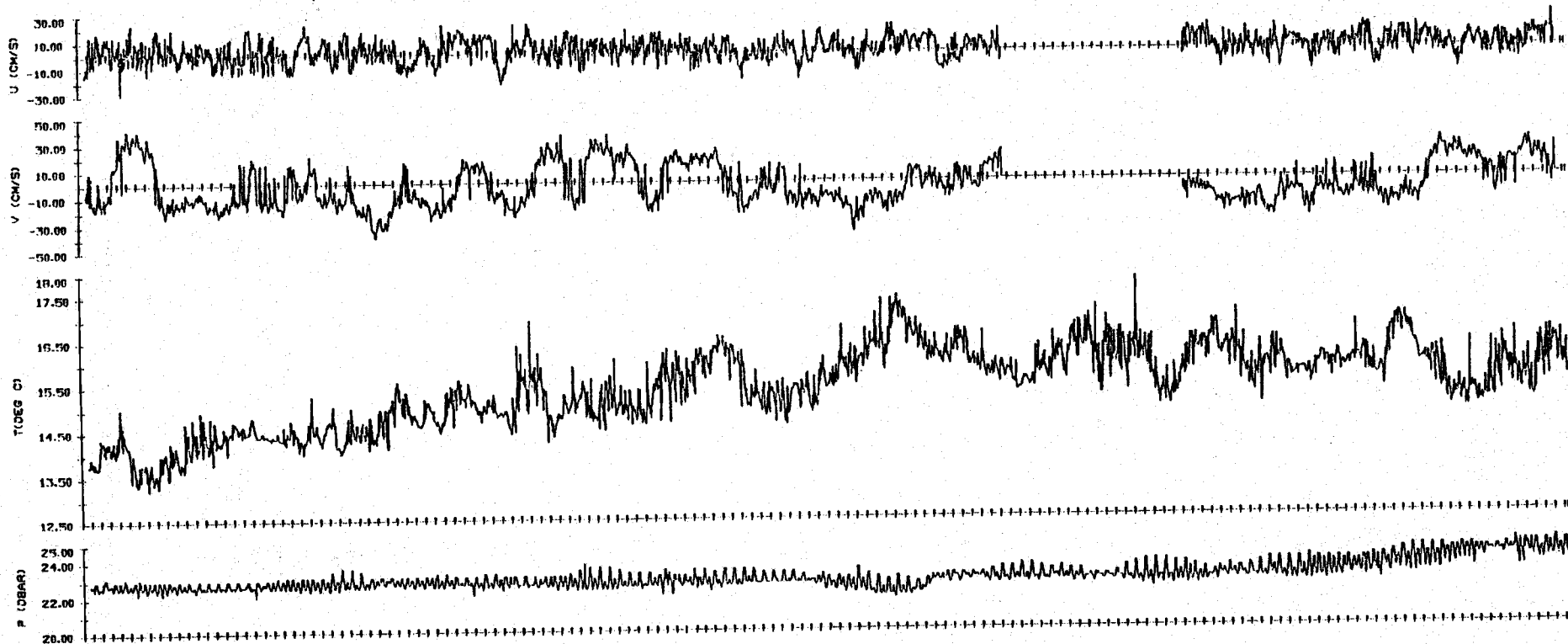
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	3232	16.8	5.8	1.1	4.5	41.1	6.2
U (CM/S)	3232	1.4	7.8	-.2	2.6	24.7	-29.6
V (CM/S)	3232	-3.8	15.4	.5	2.3	40.9	-40.5
T (DEG C)	3712	15.4	.8	-.3	2.5	17.8	13.2
P (DBAR)	3712	22.9	.5	1.1	4.2	24.7	21.7



CURRENT AT 23 M, MILA 4. 92 DAYS STARTING 1802 1 OCT 76.





143

25 M AT HILA LEG 4: HOURS,
 154.7 DAYS STARTING 1700 CHT 30 SEP 1976

STATION MILA	LEG 4	DEPTH 48	TAPE NO 1962/3	INTERVAL HOURLY	FILTERING UNFILTERED
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FIRST 5 LINES OF DATA:

1703	30	9 76	13.6	-12.6	13.25	1
1803	30	9 76	12.2	-11.8	13.22	2
1903	30	9 76	15.4	-6.9	13.30	3
2003	30	9 76	9.4	-13.5	13.41	4
2103	30	9 76	9.8	-14.0	13.39	5

LAST 5 LINES OF DATA:

403	4	3 77	2.4	5.7	24157.1	-13232.5	14.94	3708
503	4	3 77	.4	6.9	24157.5	-13225.6	15.16	3709
603	4	3 77	.7	5.8	24158.2	-13219.8	14.94	3710
703	4	3 77	2.8	6.0	24161.0	-13213.8	14.97	3711
803	4	3 77	3.6	7.3	24164.6	-13206.5	14.99	3712

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

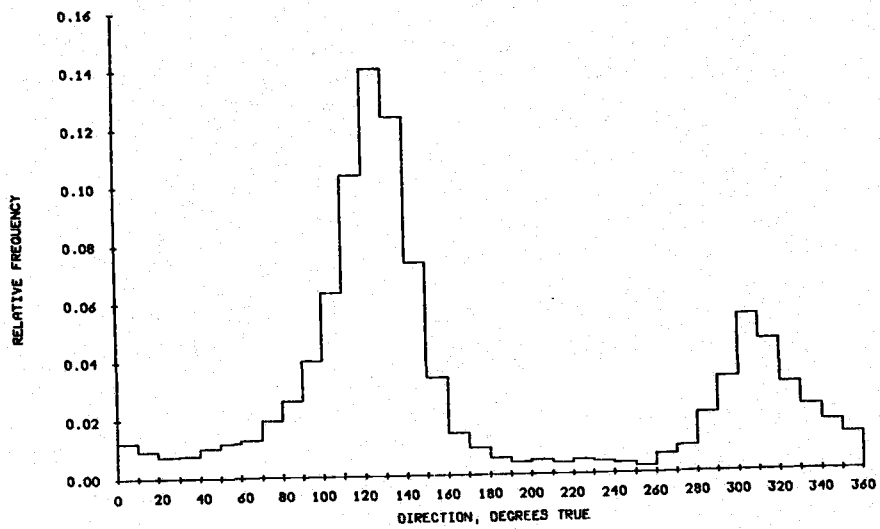
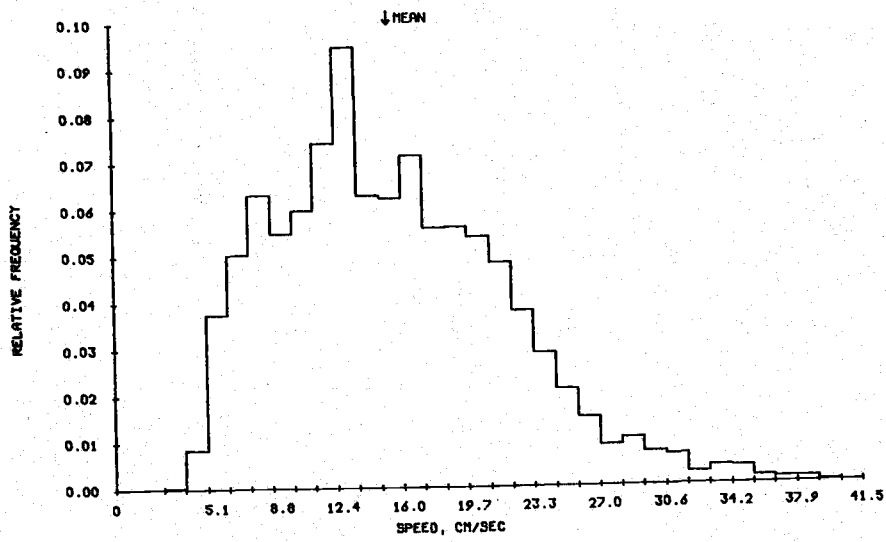
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
3712	6.5	-3.6	129.6	94.3	11.4	9.7	-78.3	-.7083

VECTOR MEAN: SPD = 7.4 CM/S, DIR = 119 DEGREES(T)
DIRECTIONAL STEADINESS: 48.0 %

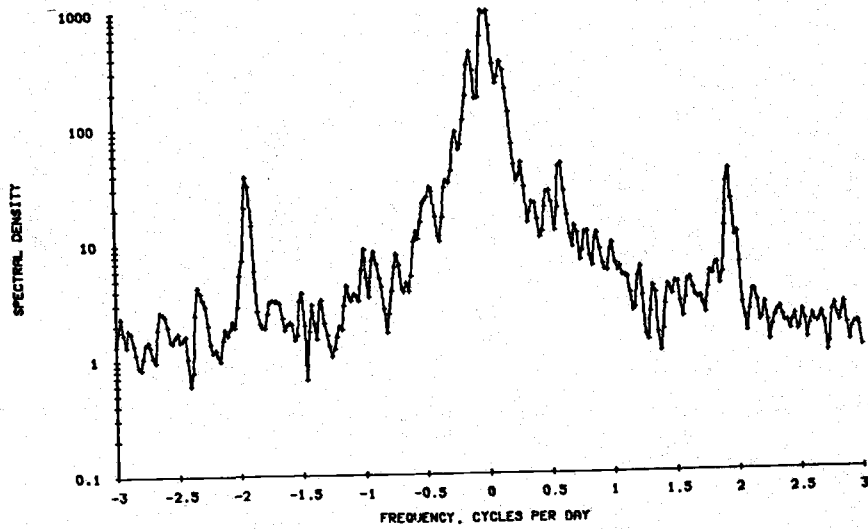
PRINCIPAL AXIS IS 128.6 DEGREES(T)

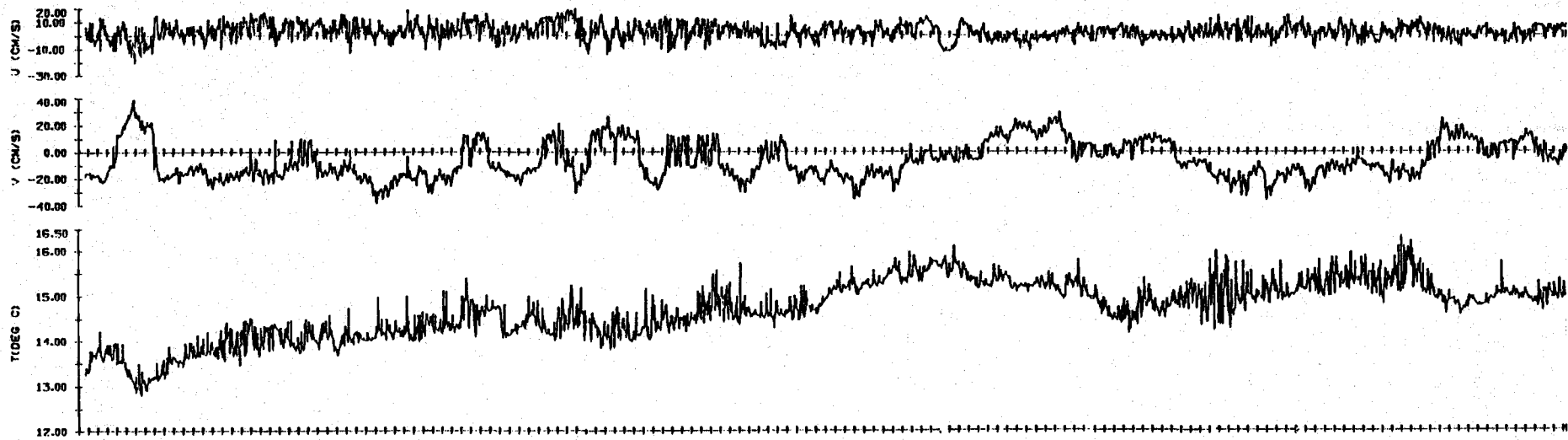
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	3712	15.5	6.3	.6	3.1	40.2	3.9
U (CM/S)	3712	2.1	5.8	-.1	2.9	19.8	-20.6
V (CM/S)	3712	-7.1	13.8	.5	2.4	38.5	-38.5
T (DEG C)	3712	14.7	.6	-.4	2.7	16.3	12.8



CURRENT AT 48 M, NILA 4. 150 DAYS STARTING 1803 1 OCT 76.





48 M AT MILA LEG 4: HOURLIES,
154.7 DAYS STARTING 1700 GMT 30 SEP 1976

STATION MILA	LEG 4	DEPTH 73	TAPE NO 1964/3	INTERVAL HOURLY	FILTERING UNFILTERED
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FIRST 5 LINES OF DATA:

1705	30	9 76	18.4	-1.3	18.4	-1.3	13.03	1
1805	30	9 76	17.7	5.7	36.1	4.4	12.98	2
1905	30	9 76	17.2	.6	53.3	5.0	13.13	3
2005	30	9 76	15.3	-4.4	68.6	.6	13.18	4
2105	30	9 76	12.3	-10.7	80.9	-10.1	13.25	5

LAST 5 LINES OF DATA:

405	4	3 77	0.0	0.0	20327.8	-11012.0	14.71	3708
505	4	3 77	0.0	0.0	20327.8	-11012.0	14.71	3709
605	4	3 77	0.0	0.0	20327.8	-11012.0	14.68	3710
705	4	3 77	0.0	0.0	20327.8	-11012.0	14.71	3711
805	4	3 77	0.0	0.0	20327.8	-11012.0	14.71	3712

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
3232	3.7	-1.7	140.8	156.6	11.9	12.5	-88.3	-.5945

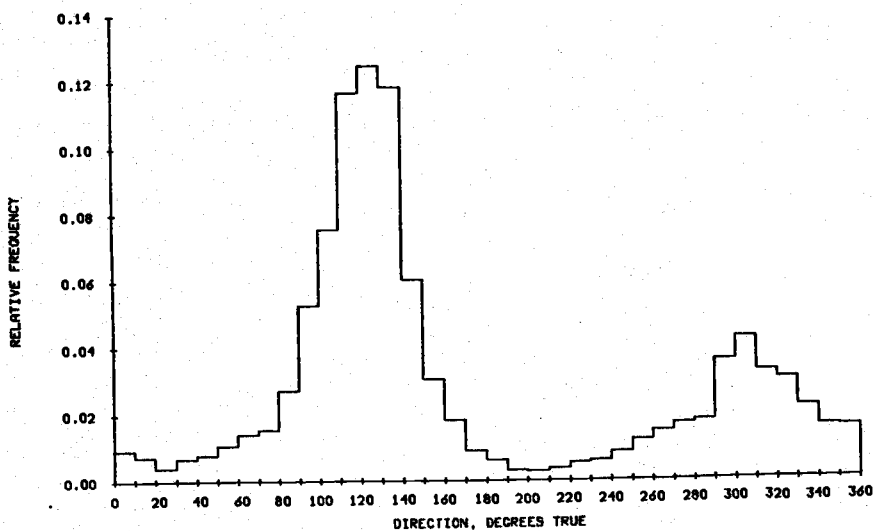
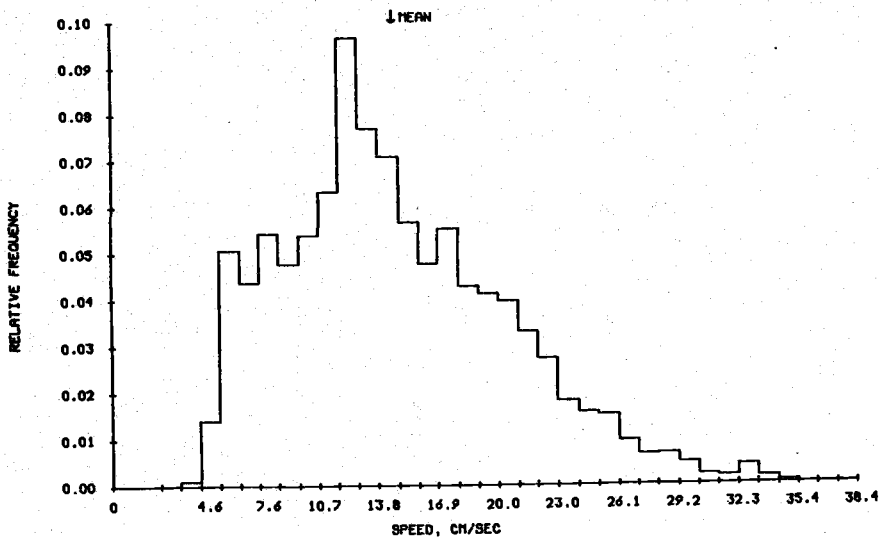
VECTOR MEAN: SPD = 4.0 CM/S, DIR = 114 DEGREES(T)
DIRECTIONAL STEADINESS: 24.2 %

PRINCIPAL AXIS IS 137.6 DEGREES(T)

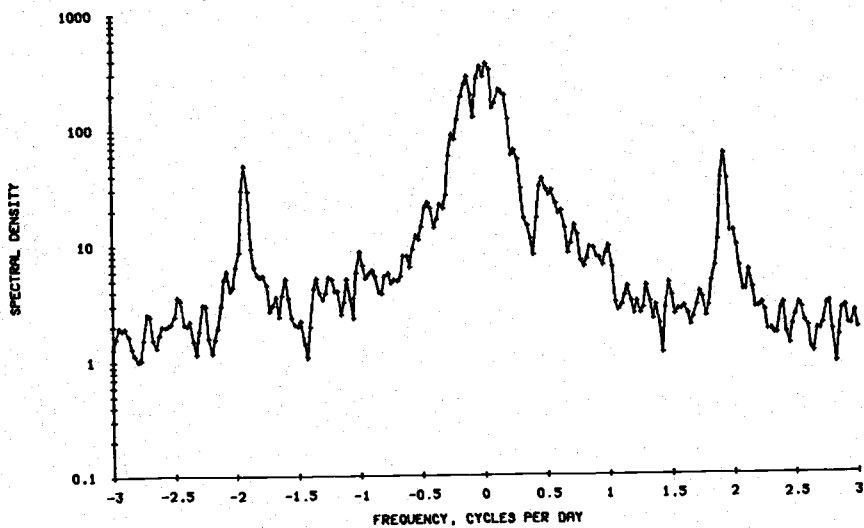
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

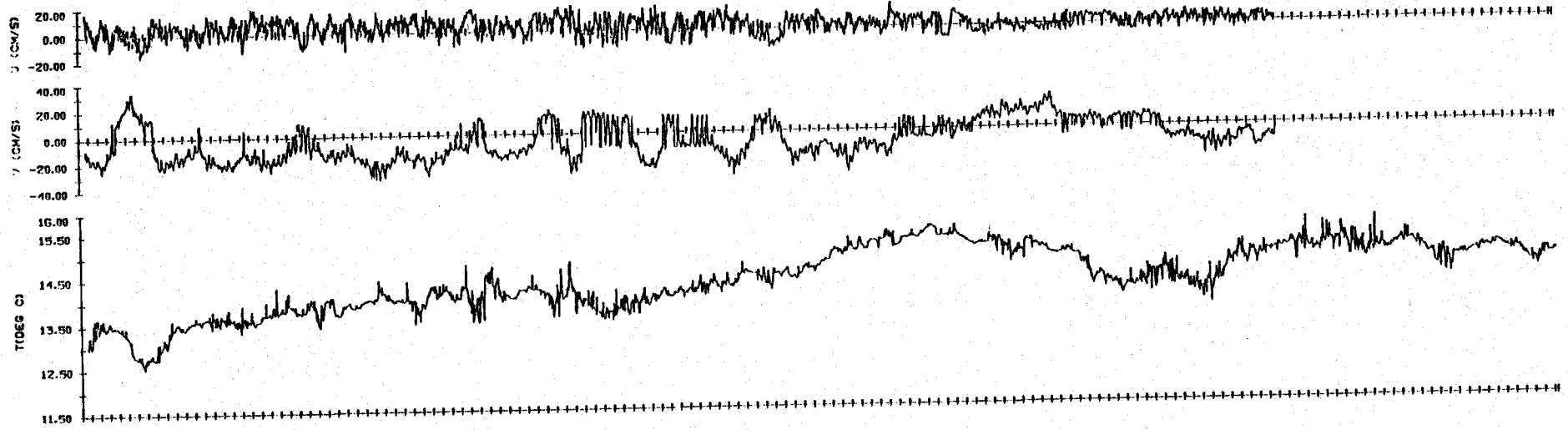
VARIABLE	N	MILA		LEG 4		MAX	MIN
		MEAN	STD	SKEW	KURT		
S (CM/S)	3232	16.8	5.8	1.1	4.5	41.1	6.2
U (CM/S)	3232	1.4	7.8	-.2	2.6	24.7	-29.6
V (CM/S)	3232	-3.8	15.4	.5	2.3	40.9	-40.5
T (DEG C)	3712	14.3	.6	-.3	2.6	15.6	12.5

73 METERS AT MILA 4. 30 SEP 76 - 2 FEB 77. TAPE 1964/3.



CURRENT AT 73 M, MILA 4. 120 DAYS STARTING 1805 1 OCT 76.





73 M AT MILA LEG 4: HOURLIES,
 154.7 DAYS STARTING 1700 GMT 30 SEP 1976

STATION MILA	LEG 4	DEPTH 99	TAPE NO 503/34	INTERVAL HOURLY	FILTERING UNFILTERED
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FIRST 5 LINES OF DATA:

1704 30	9 76	12.4	.4	12.4	.4	12.96	992500	1
1804 30	9 76	10.8	6.7	23.2	7.1	12.94	992500	2
1904 30	9 76	11.5	.8	34.7	7.9	12.91	992500	3
2004 30	9 76	9.3	-6.1	44.0	1.8	12.94	992500	4
2104 30	9 76	9.8	-4.5	53.8	-2.7	12.96	992500	5

LAST 5 LINES OF DATA:

404 4	3 77	4.2	.7	14103.8	-11187.4	14.39	992500	3708
504 4	3 77	2.9	-3.1	14106.7	-11190.5	14.42	988900	3709
604 4	3 77	1.5	-3.1	14108.2	-11193.6	14.47	988900	3710
704 4	3 77	2.6	-2.0	14110.8	-11195.6	14.44	988900	3711
804 4	3 77	2.8	-3.3	14113.6	-11198.9	14.47	988900	3712

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
3712	3.8	-3.0	76.3	51.8	8.7	7.2	-32.7	-.5202

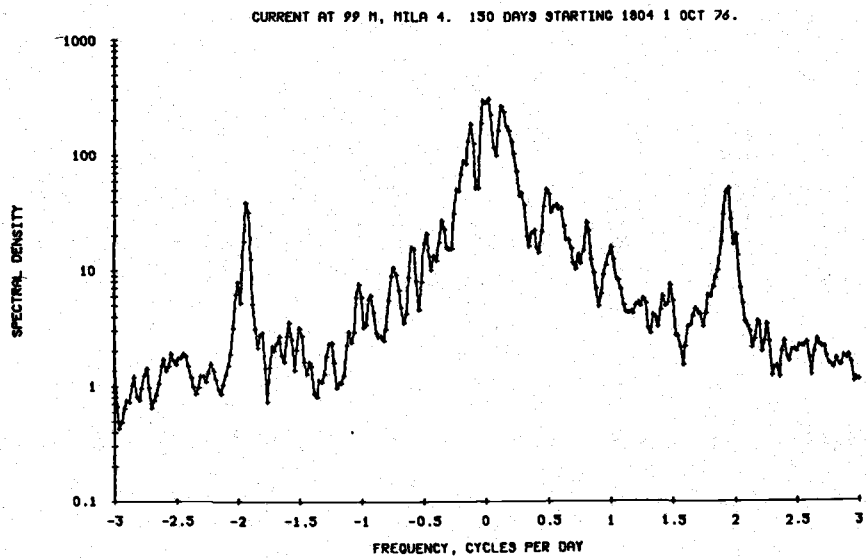
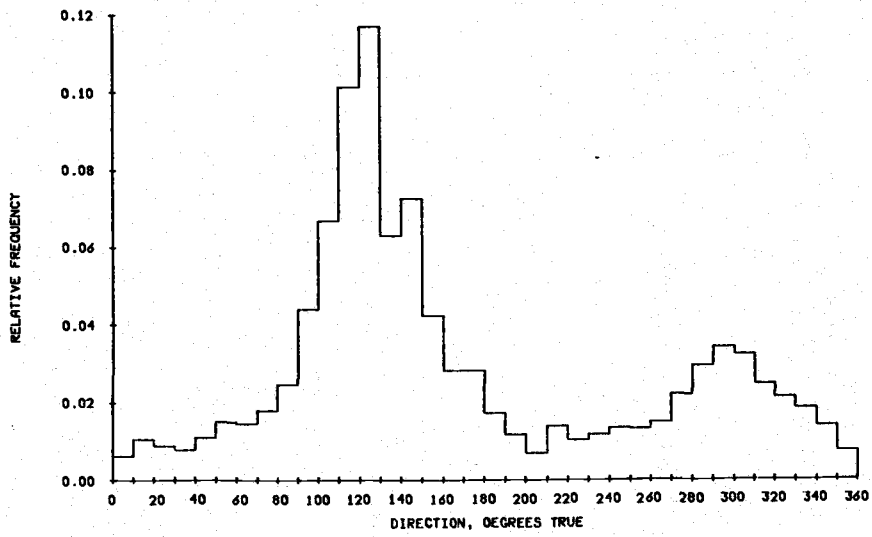
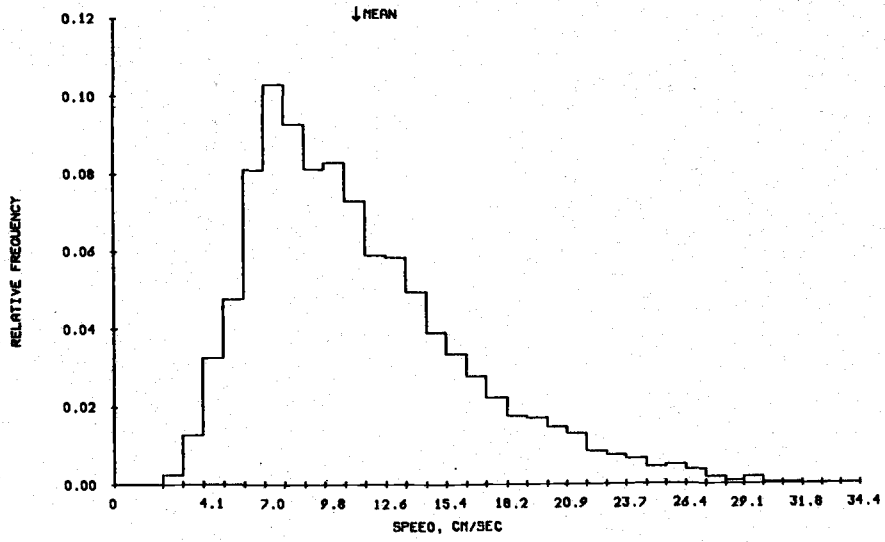
VECTOR MEAN: SPD = 4.9 CM/S, DIR = 128 DEGREES(T)
DIRECTIONAL STEADINESS: 42.9 %

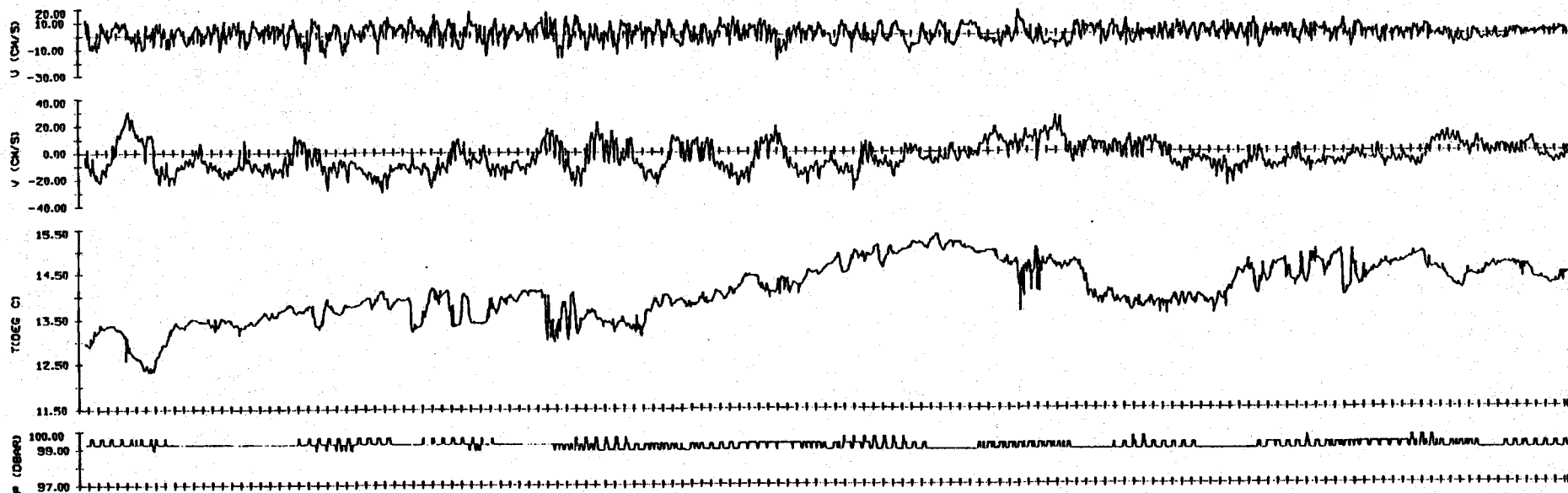
PRINCIPAL AXIS IS 124.9 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

	MILA	LEG 4					
		99 4					
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	3712	11.3	4.9	1.0	3.8	30.9	2.6
U (CM/S)	3712	.6	5.6	-.2	2.7	17.5	-20.6
V (CM/S)	3712	-4.8	9.8	.4	2.7	30.4	-30.3
T(DEG C)*	3712	14.1	.6	-.2	2.6	15.4	12.3
P (DBAR)	3712	99.1	.2	.3	2.3	99.6	98.9

* No post-calibration available. Temperature data were processed using the pre-calibration of 4 February 1976. See discussion in Appendix 2.





99 M AT MILA LEG 4: HOURLIES,
154.7 DAYS STARTING 1700 GMT 30 SEP 1976

INSTALLATIONS: Leg V (MAM '77)

JOINT-II 1977 Installation

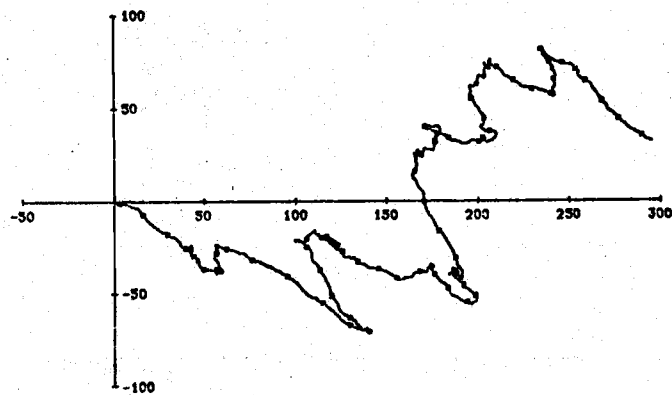
AGAVE V

Position*: 15°04.0'S, 75°27.8'W
 Distance Offshore: 4.0 km
 Bottom Depth: 86 m
 Set: 1909 GMT 4 March 1977 by R/V MELVILLE
 Retrieved: 1138 GMT 14 May 1977 by R/V ISELIN
 Longest Data Interval: 0200 GMT 5 March to 0400 GMT 14 May
 Longest Record Length: 70 days, 3 hours

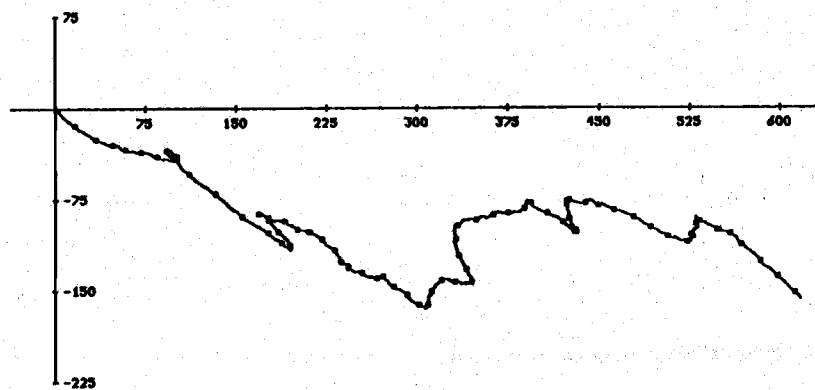
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
20 m	26 m	682/36	20 min	S,θ,T,P,C
40 m	46 m	489/35	15 min	S,θ,T
60 m	67 m	684/33	20 min	S,θ,T,P,C
70 m	77 m	497/32	15 min	S,θ,T

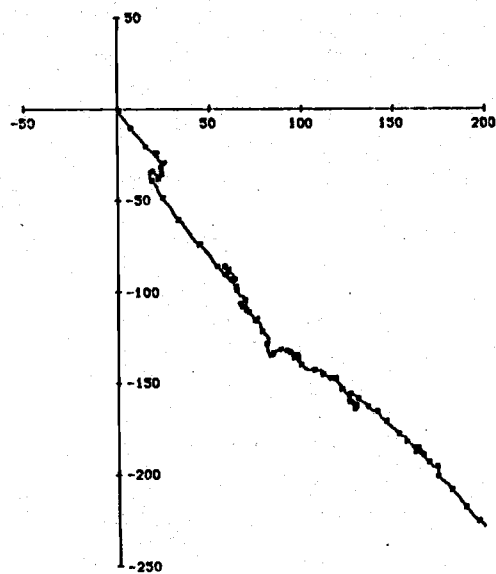
* Navigation: radar fixes and Peru chart DHNM 2200.



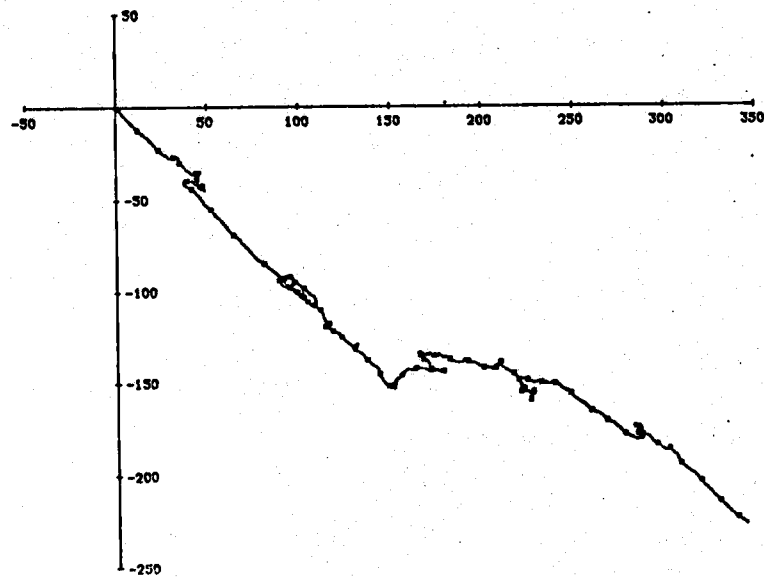
24 METERS AT AGAVE. 4 MAR 77 - 14 MAY 77. TAPE 682/36.



46 METERS AT AGAVE. 4 MAR 77 - 14 MAY 77. TAPE 489/35.



77 METERS AT AGAVE. 4 MAR 77 - 14 MAY 77. TAPE 492/32.



67 METERS AT AGAVE. 4 MAR 77 - 14 MAY 77. TAPE 684/33.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
AGAVE	5	26	682/36	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	5	3 77	10.0	-8.6	10.0	-8.6	15.56	265180	43.633
300	5	3 77	11.1	2.2	21.2	-6.5	15.69	263189	43.767
400	5	3 77	14.9	5.4	36.1	-1.1	15.61	261818	43.692
500	5	3 77	15.3	3.5	51.4	2.5	15.51	261001	43.587
600	5	3 77	15.1	0.2	66.5	2.6	15.46	260839	43.524

LAST 5 LINES OF DATA:

0	14	5 77	12.9	-10.6	7954.2	1016.1	15.90	261741	42.548
100	14	5 77	14.9	-5.9	7969.0	1010.2	15.74	257575	42.364
200	14	5 77	12.9	-6.5	7981.9	1003.8	15.70	256874	42.343
300	14	5 77	10.1	-12.7	7992.0	991.1	15.77	260044	42.500
400	14	5 77	9.7	-11.8	8001.7	979.3	15.79	258521	42.621

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1683	4.8	.6	125.5	113.6	11.2	10.7	-72.8	-.6097

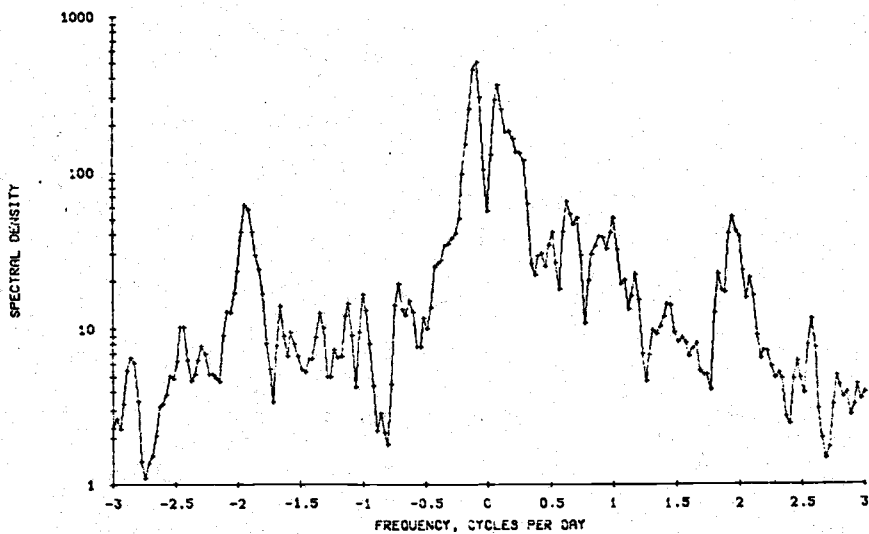
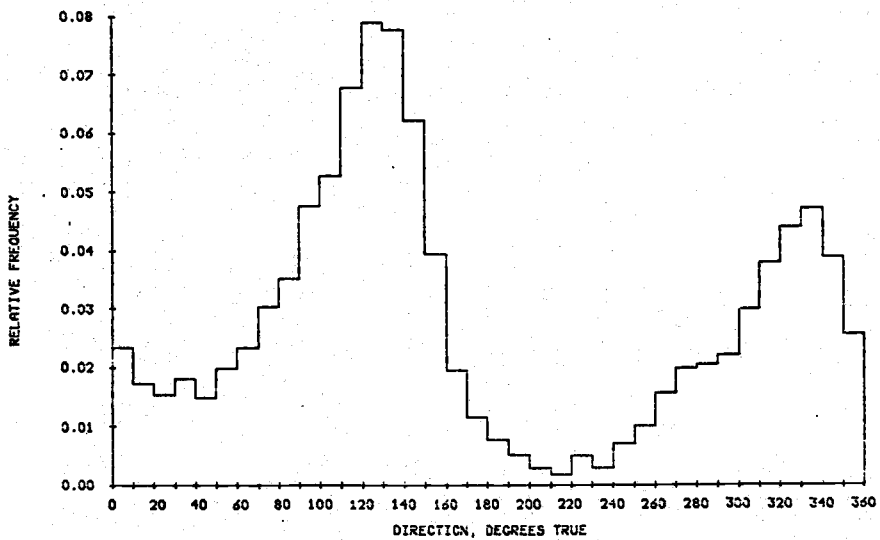
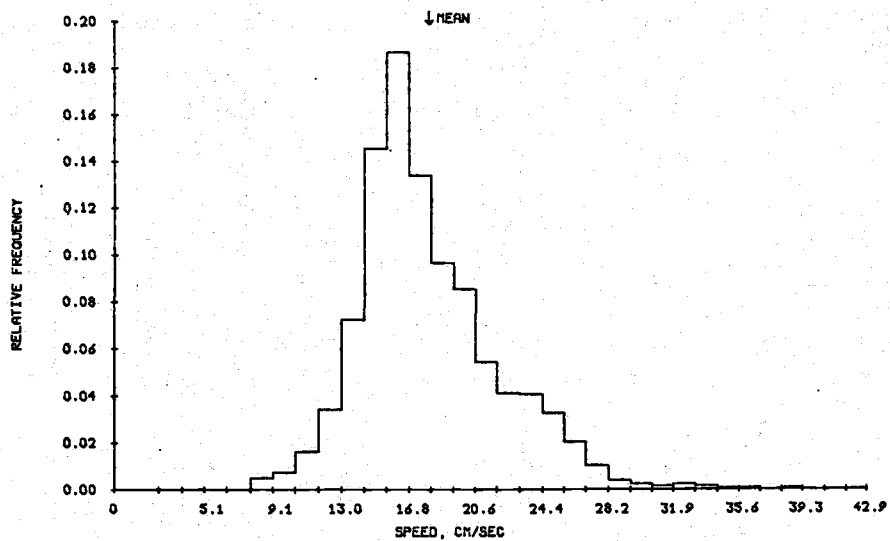
VECTOR MEAN: SPD = 4.8 CM/S, DIR = 83 DEGREES(T)
 DIRECTIONAL STEADINESS: 31.1 %

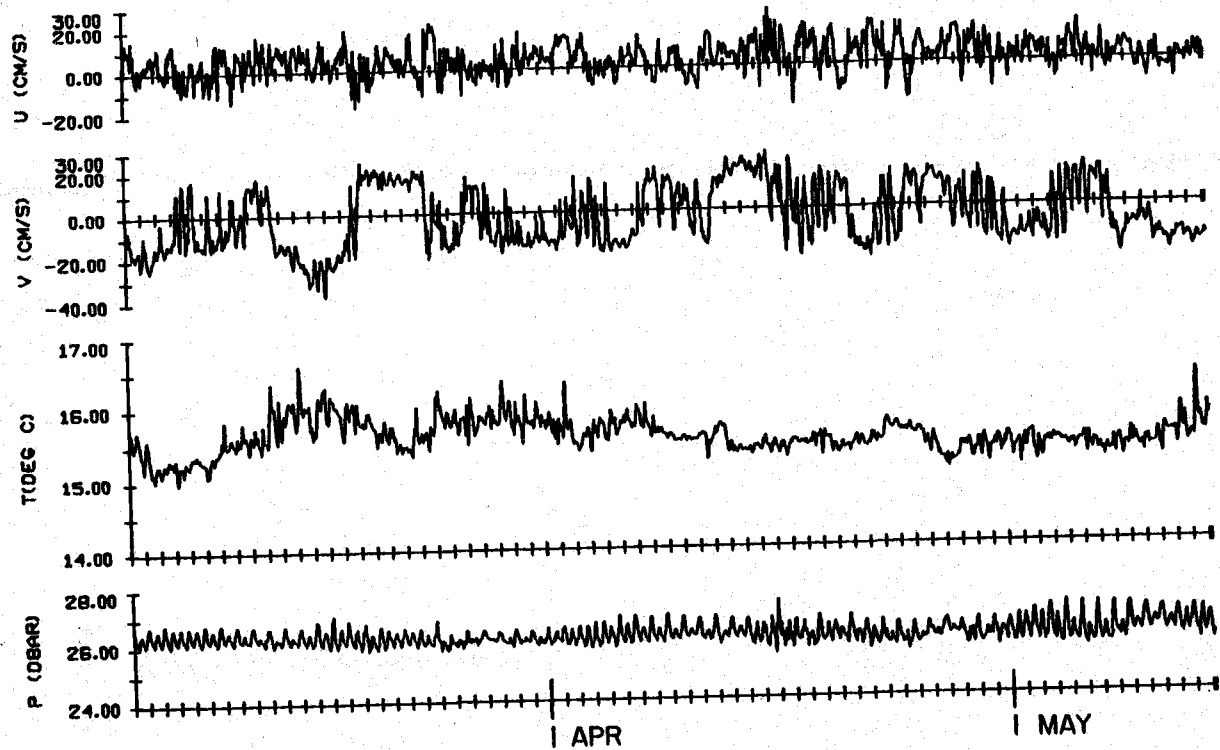
PRINCIPAL AXIS IS 132.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

AGAVE LEG 5
 26 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1683	15.4	4.9	.2	4.3	39.0	1.2
U (CM/S)	1683	3.8	6.8	-.0	2.9	26.4	-19.0
V (CM/S)	1683	-3.0	13.9	.2	1.8	26.9	-37.8
T (DEG C)	1683	15.5	.2	.6	3.3	16.6	15.0
P (DBAR)	1683	26.2	.3	.6	3.2	27.4	25.5





26 M AT AGAVE LEG S: HOURLIES,
 70.1 DAYS STARTING 200 GMT 5 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
AGAVE	5	46	489/35	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	5	3 77	14.6	-9.1	14.6	-9.1	14.94	1
300	5	3 77	9.7	-11.5	24.3	-20.7	14.97	2
400	5	3 77	8.9	-12.5	33.1	-33.1	14.93	3
500	5	3 77	8.4	-14.1	41.5	-47.3	14.93	4
600	5	3 77	6.6	-16.4	48.1	-63.6	14.95	5

LAST 5 LINES OF DATA:

0	14	5 77	15.2	-12.3	16926.4	-4128.1	15.32	1679
100	14	5 77	15.0	-11.4	16941.4	-4139.6	15.30	1680
200	14	5 77	13.5	-12.9	16954.9	-4152.5	15.31	1681
300	14	5 77	14.3	-11.3	16969.2	-4163.8	15.30	1682
400	14	5 77	15.9	-9.3	16985.1	-4173.1	15.34	1683

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1683	10.1	-2.5	98.0	107.8	9.9	10.4	-68.4	-.6658

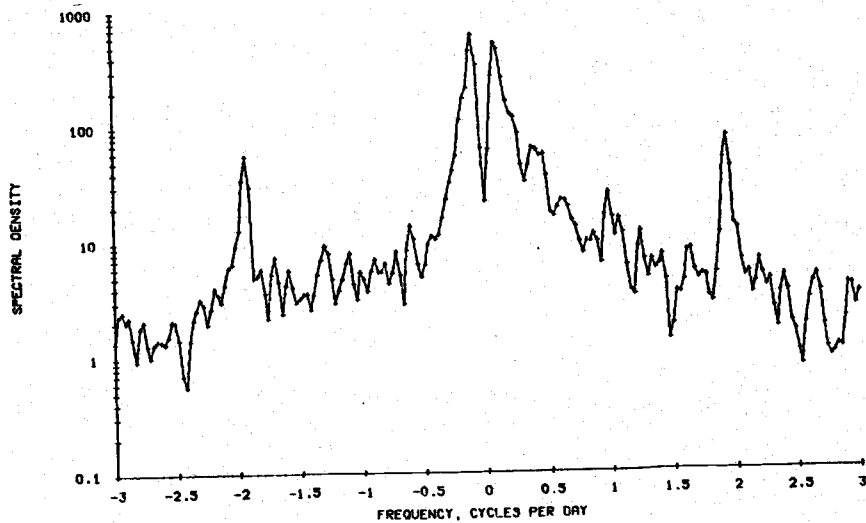
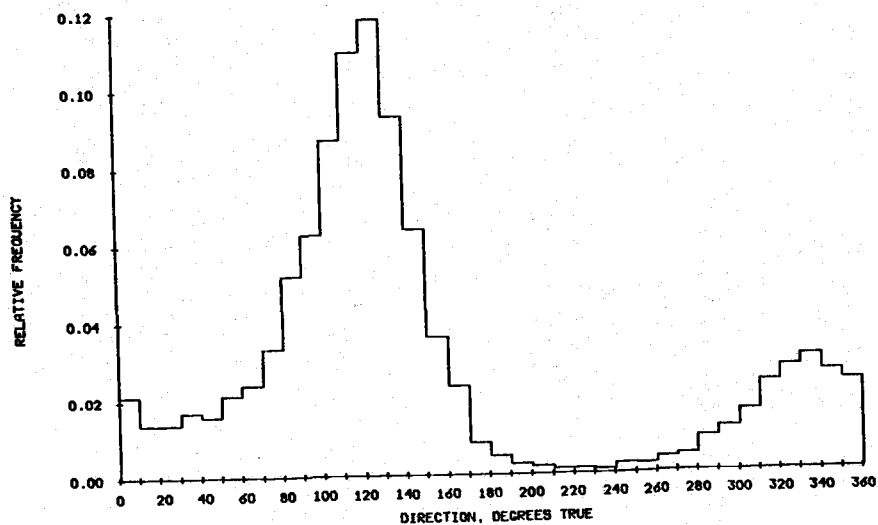
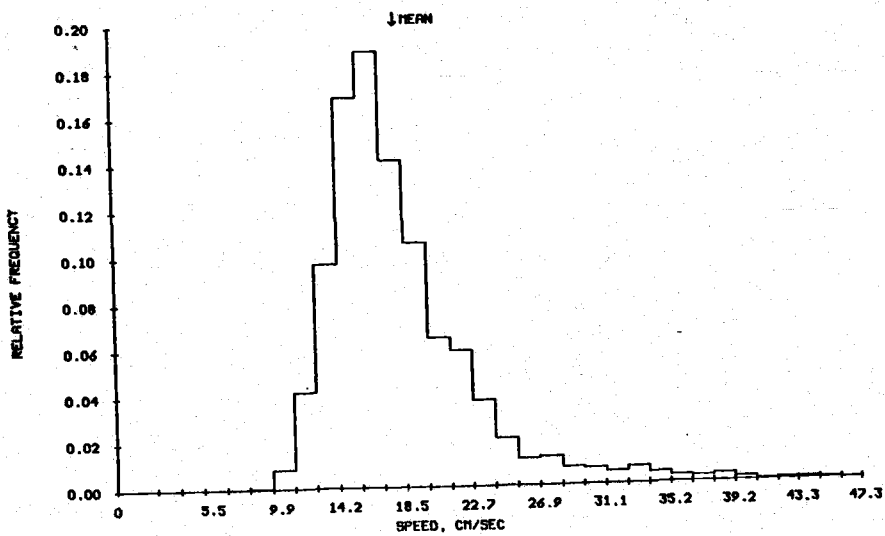
VECTOR MEAN: SPD = 10.4 CM/S, DIR = 104 DEGREES(T)
DIRECTIONAL STEADINESS: 61.3 %

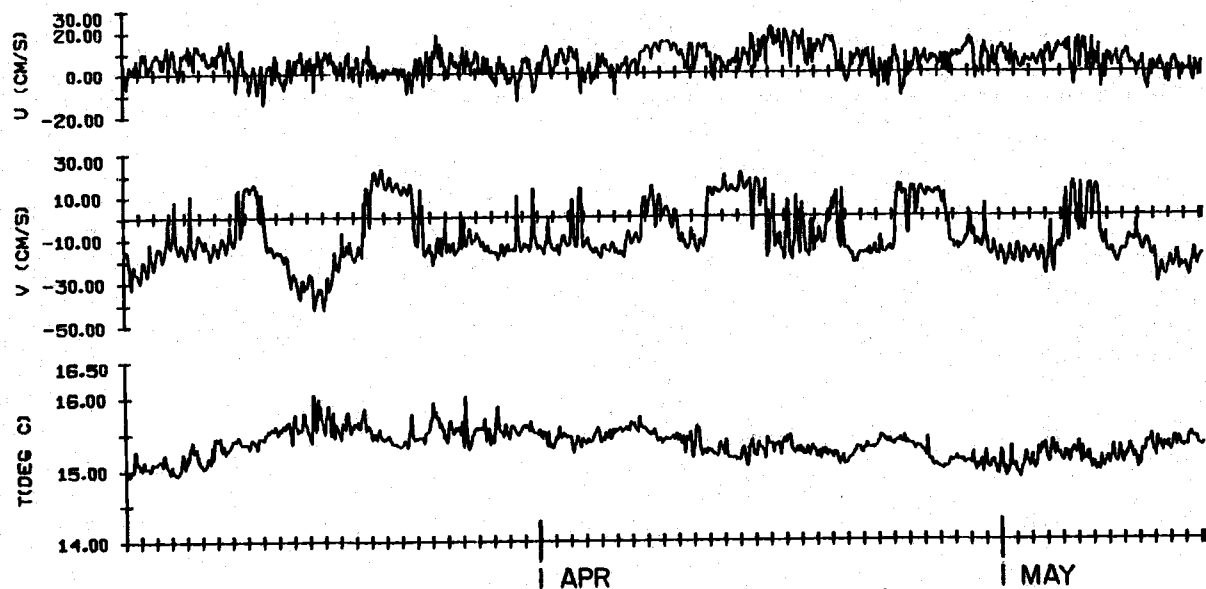
PRINCIPAL AXIS IS 137.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1683	16.9	5.2	1.4	7.0	+2.7	.6
U (CM/S)	1683	5.4	5.9	-.1	2.9	22.2	-14.5
V (CM/S)	1683	-8.9	13.1	.6	2.6	23.4	-42.5
T (DEG C)	1683	15.3	.2	.1	2.6	16.0	14.9

46 METERS AT CAVE. 4 MAR 77 - 14 MAY 77. TAPE 489/35.





46 M AT AGAVE LEG 5: HOURLIES,
 70.1 DAYS STARTING 200 GMT 5 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
AGAVE	5	67	684/33	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	5	3 77	10.6	-7.7	10.6	-7.7	14.79	670129	43.110
300	5	3 77	7.9	-9.5	18.5	-17.1	14.80	667621	43.143
400	5	3 77	5.9	-8.9	24.4	-26.0	14.81	666505	43.158
500	5	3 77	5.4	-7.7	29.8	-33.7	14.80	665987	43.131
600	5	3 77	6.3	-8.8	36.1	-42.5	14.81	664987	43.134

LAST 5 LINES OF DATA:

0	14	5 77	9.7	-9.1	9402.5	-6188.3	15.27	673228	43.354
100	14	5 77	9.8	-6.9	9412.3	-6195.2	15.28	670301	43.375
200	14	5 77	9.2	-6.4	9421.5	-6201.6	15.28	668403	43.377
300	14	5 77	9.5	-5.6	9431.0	-6207.2	15.26	667903	43.364
400	14	5 77	11.5	-4.2	9442.5	-6211.4	15.26	667844	43.371

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1683	5.6	-3.7	56.3	55.0	7.5	7.4	-33.5	-.6018

VECTOR MEAN: SPD = 6.7 CM/S, DIR = 123 DEGREES(T)
 DIRECTIONAL STEADINESS: 57.8 %

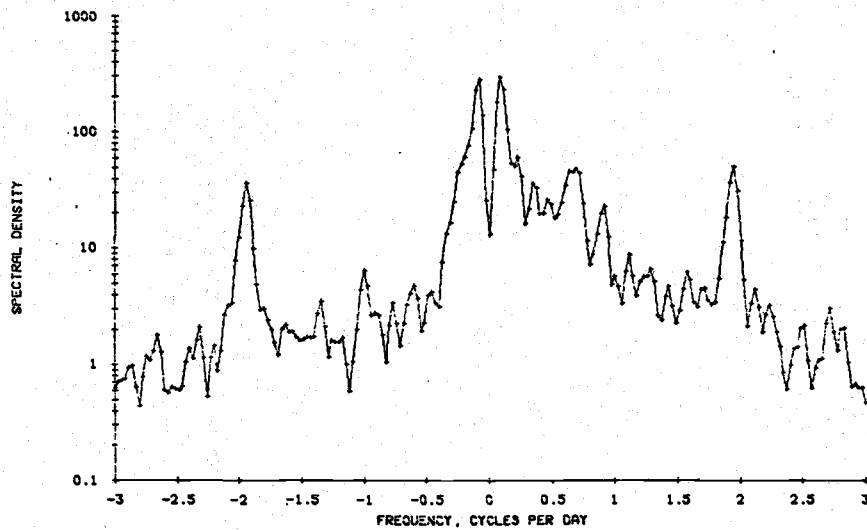
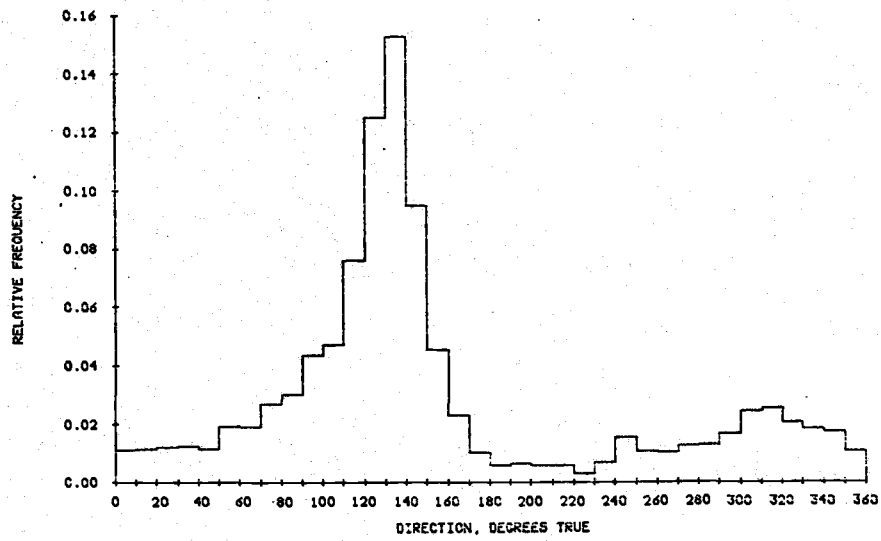
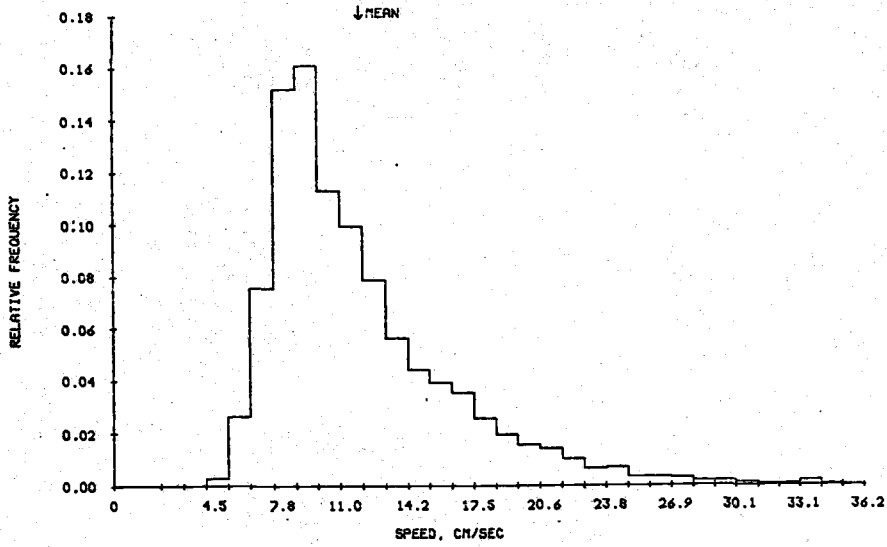
PRINCIPAL AXIS IS 134.4 DEGREES(T)

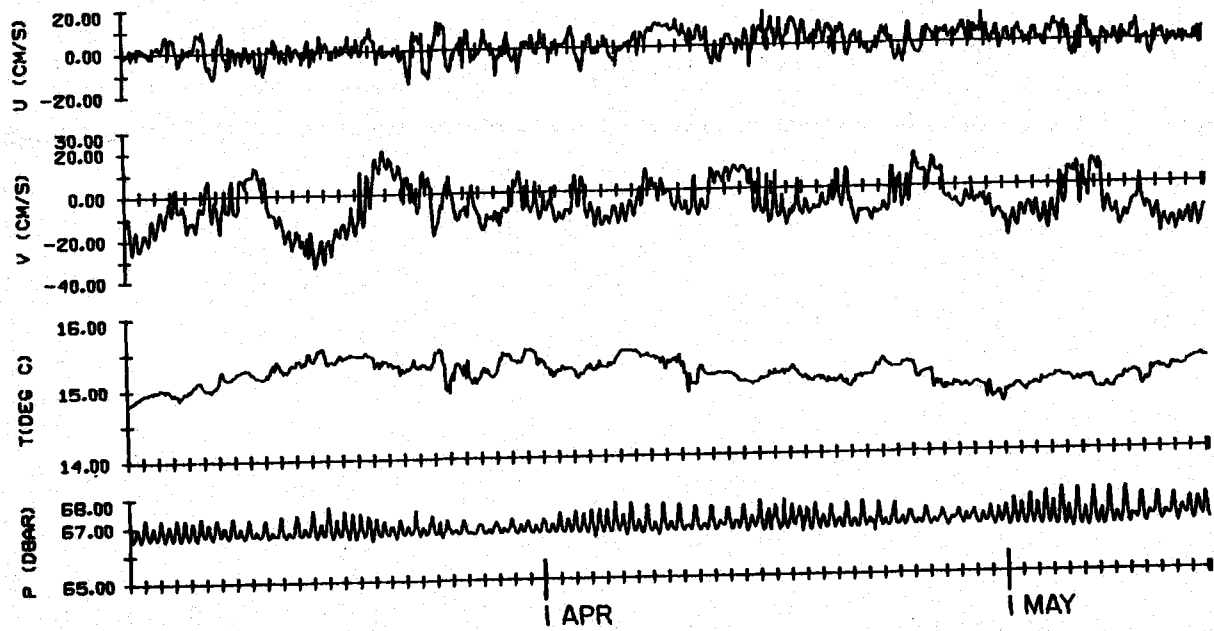
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

AGAVE LEG 5
 67 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1683	11.6	4.6	1.4	5.5	34.2	.9
U (CM/S)	1683	1.4	4.7	-.3	3.1	15.5	-15.3
V (CM/S)	1583	-6.6	9.4	.3	2.6	20.1	-34.2
T(DEG C)	1683	15.2	.2	.0	2.2	15.6	14.7
P (DBAR)	1683	66.9	.3	1.1	3.8	67.9	66.4

67 METERS AT AGAVE. 4 MAR 77 - 14 MAY 77. TAPE 684/33.





67 M AT AGAVE LEG 5: HOURLIES,
 70.1 DAYS STARTING 200 GMT 5 MAR 1977

STATION AGAVE	LEG 5	DEPTH 77	TAPE NO 497/32	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

200	5	3	77	5.2	-6.0	5.2	-6.0	14.76	1
300	5	3	77	2.8	-7.4	8.0	-13.3	14.78	2
400	5	3	77	2.1	-6.2	10.1	-19.5	14.79	3
500	5	3	77	0.8	-6.2	10.9	-25.7	14.79	4
600	5	3	77	0.6	-7.8	11.5	-33.5	14.79	5

LAST 5 LINES OF DATA:

0	14	5	77	7.8	-7.6	5409.8	-6230.2	15.26	1679
100	14	5	77	8.1	-5.0	5417.8	-6235.2	15.27	1680
200	14	5	77	8.6	-4.3	5426.5	-6239.5	15.27	1681
300	14	5	77	8.8	-3.2	5435.3	-6242.8	15.27	1682
400	14	5	77	9.7	-3.8	5445.0	-6246.6	15.26	1683

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1683	3.2	-3.7	29.4	37.7	5.4	6.1	-18.8	-.5648

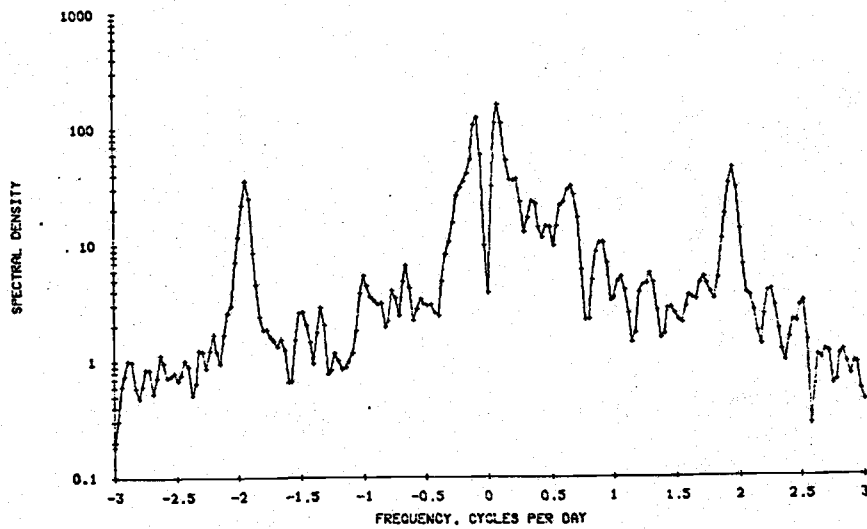
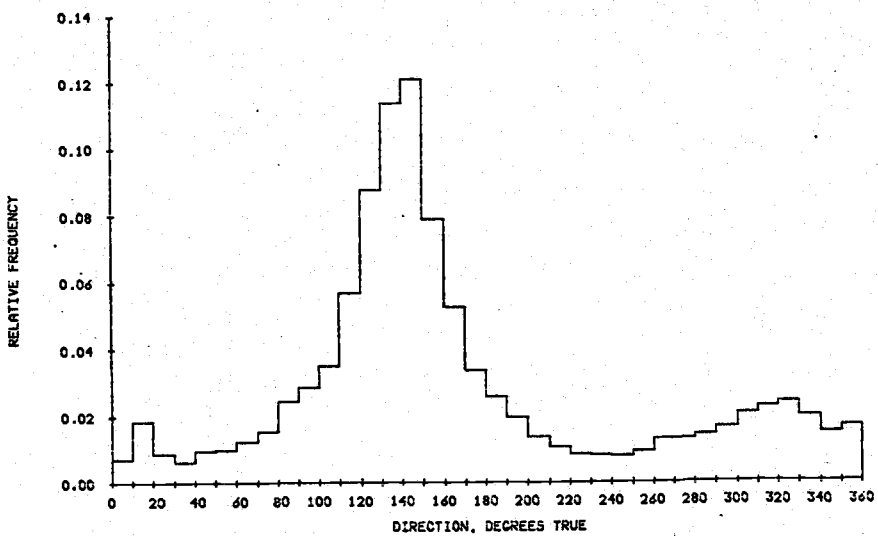
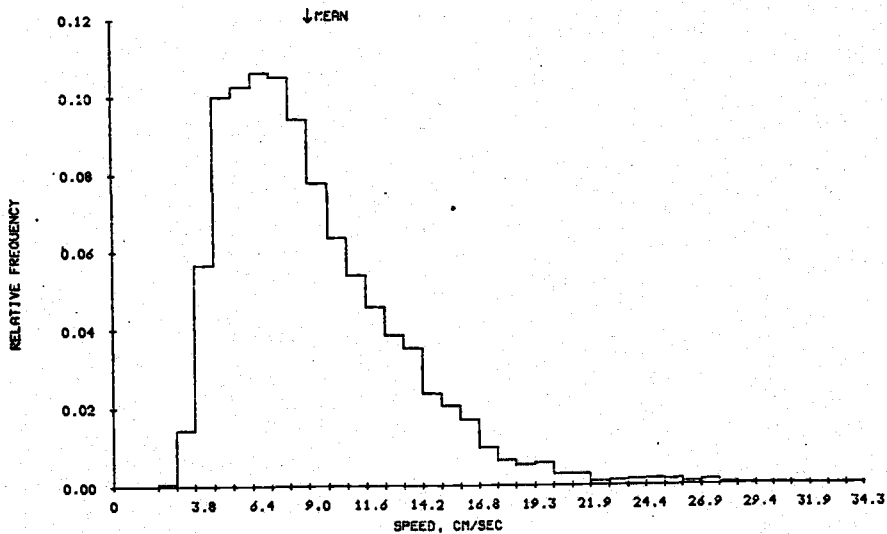
VECTOR MEAN: SPD = 4.9 CM/S, DIR = 139 DEGREES(T)
DIRECTIONAL STEADINESS: 56.6 %

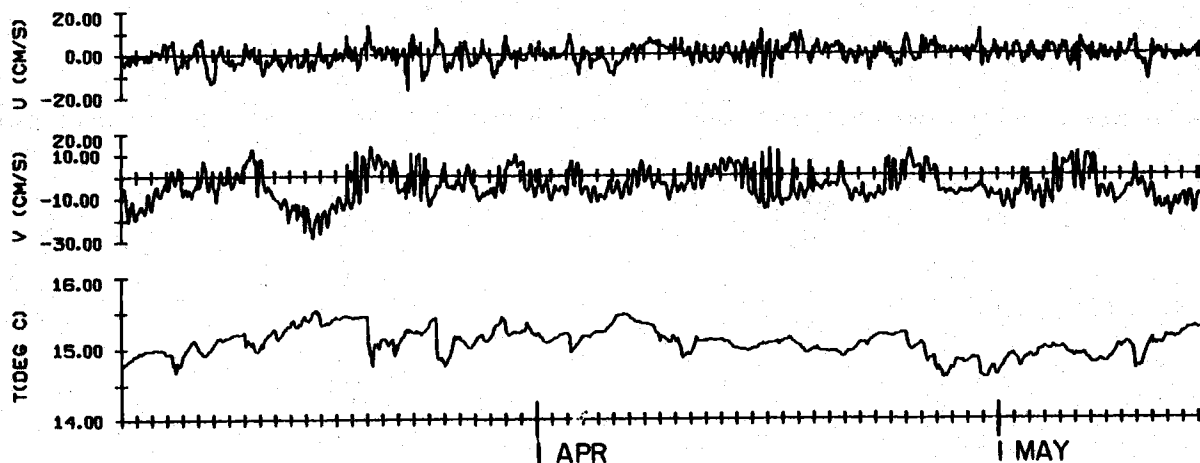
PRINCIPAL AXIS IS 141.2 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

AGAVE LEG 5
77 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1683	8.7	4.0	1.3	5.5	28.7	.8
U (CM/S)	1683	-.3	3.8	-.2	3.6	13.4	-16.5
V (CM/S)	1683	-4.9	7.2	.2	2.8	13.9	-28.6
T (DEG C)	1683	15.1	.2	.0	2.7	15.5	14.6





77 M AT AGAVE LEG 5: HOURLIES,
70.1 DAYS STARTING 200 GMT 5 MAR 1977

JOINT-II 1977 Installation

MILA V

Position*: 15°06.0'S, 75°30.8'W
 Distance Offshore: 12.0 km
 Bottom Depth: 121 m
 Set: 1825 GMT 5 March 1977 by R/V MELVILLE
 Retrieved: 2022 GMT 14 May 1977 by R/V ISELIN
 Longest Data Interval: 0100 GMT 6 March to 1300 GMT 14 May
 Longest Record Length: 69 days, 13 hours

Instrumentation

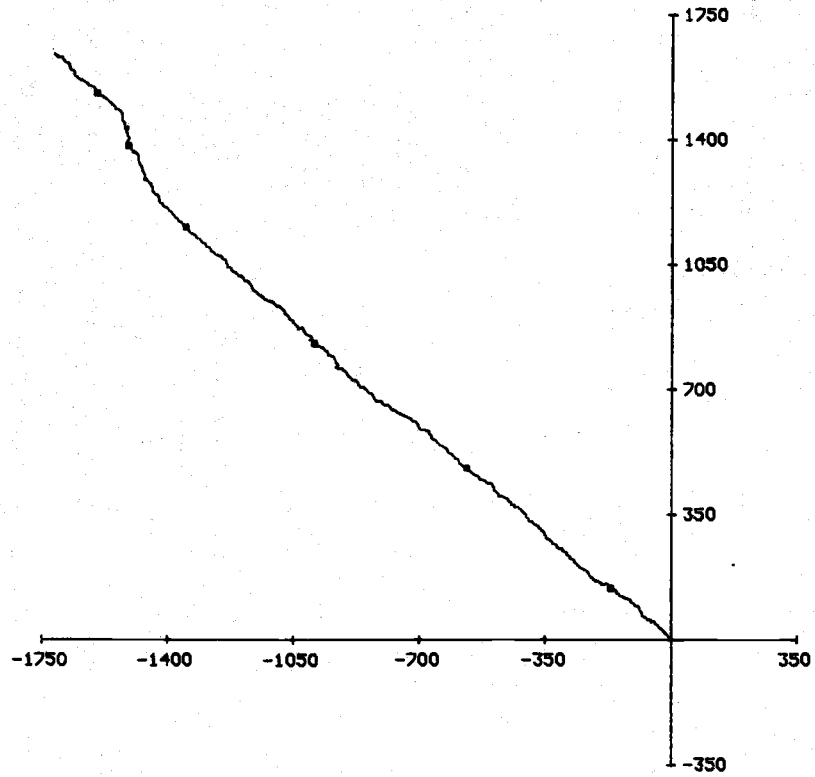
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D167/5	20 min	S _w , θ _w , T _a , T
20 m	19 m	687/24	20 min	S, θ, T, P, C
40 m	39 m	488/27	15 min	S, θ, T
60 m	59 m	752/25	20 min	S, θ, T, P, C
80 m	80 m	490/30	15 min	S, θ, T
100 m	100 m	686/34	20 min	S, θ, T, P, C
115 m	115 m	1241/8	15 min	S, θ, T

Comments:

The meteorological buoy data logger (D167) leaked after the first six days of the installation and the subsequent record was not usable.

Slowing of the rotor on RCM 687 (19 m) due to heavy fouling was apparent by 1 May 1977. Speed and component velocities were accepted through 00 GMT 30 April, and zeroed out of the record thereafter. The gearbox and speeds were such that 1/3 - 1/2 of the remaining speed observations had to be linearly interpolated.

* Navigation: radar fixes and Peru chart DNHM 2200. The position of the MILA V meteorological buoy was estimated to be 15°05.5'S 75°29.7'W.



WIND AT MILA V. 6.0 DAYS STARTING 1359 5 MAR 77

STATION MILA	LEG 5	DEPTH 0	TAPE NO D167/5	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

2000	5	3 77	-3.0	5.5	-3.0	5.5	18.68	16.77	1
2100	5	3 77	-3.8	3.6	-6.7	9.0	18.31	16.86	2
2200	5	3 77	-6.0	3.9	-12.8	12.9	18.74	16.75	3
2300	5	3 77	-6.7	4.2	-19.5	17.1	19.25	16.68	4
0	6	3 77	-6.9	5.9	-26.4	23.0	19.43	16.65	5

LAST 5 LINES OF DATA:

300	11	3 77	-4.4	2.4	-435.5	417.4	19.02	17.27	128
400	11	3 77	-3.6	4.1	-439.0	421.5	18.96	17.04	129
500	11	3 77	-2.7	4.6	-441.8	426.1	19.39	17.16	130
600	11	3 77	-1.9	3.0	-443.7	429.1	18.94	17.27	131
700	11	3 77	-3.3	1.7	-447.0	430.8	18.72	17.35	132

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
132	-3.4	3.3	3.9	2.1	2.0	1.5	-1.6	-.5613

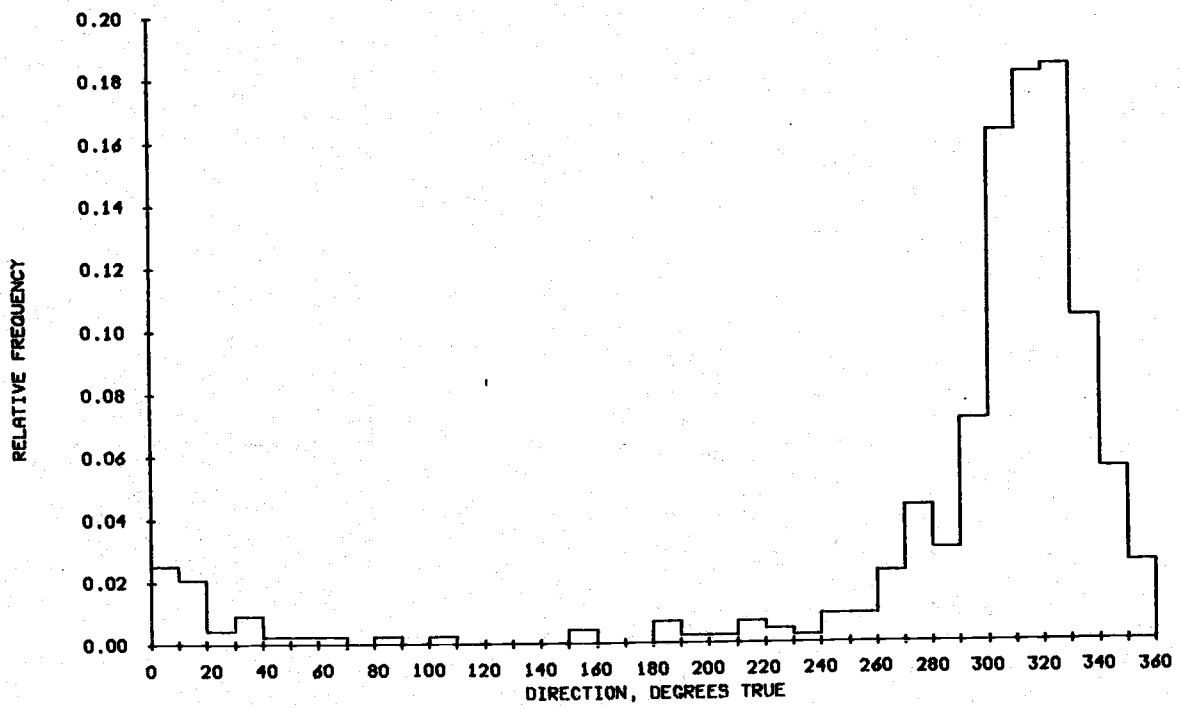
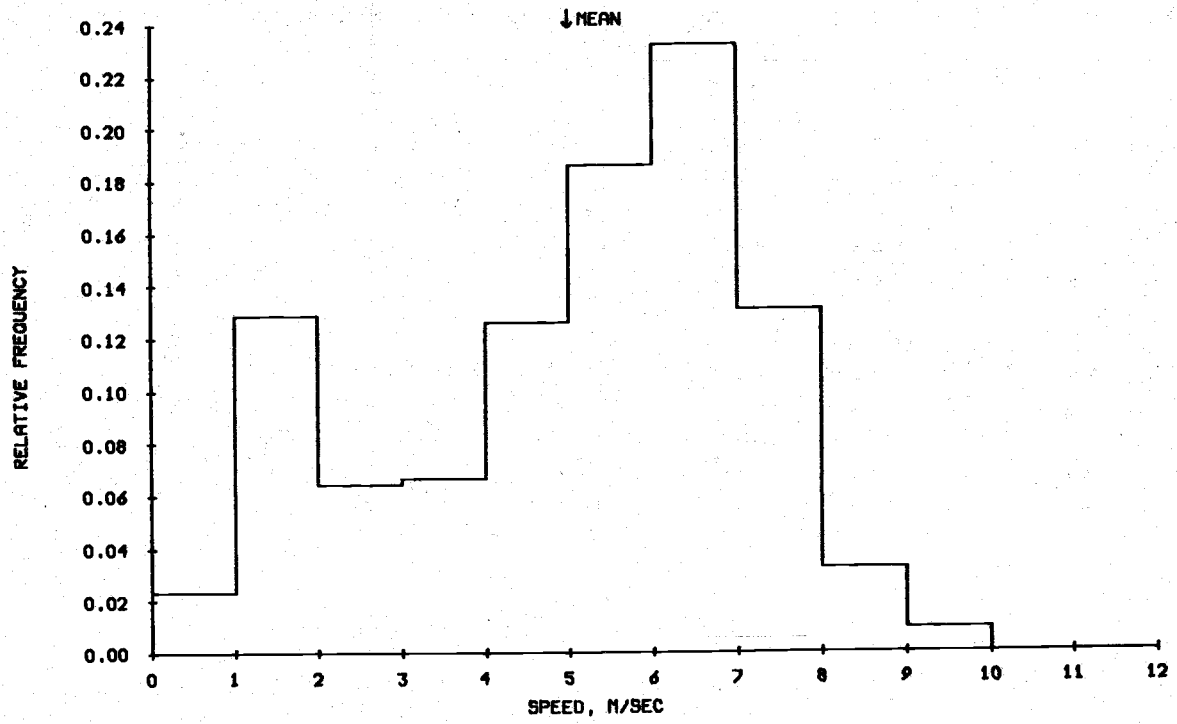
VECTOR MEAN: SPD = 4.7 M/S, DIR = -45 DEGREES(T)
DIRECTIONAL STEADINESS: 95.5 %

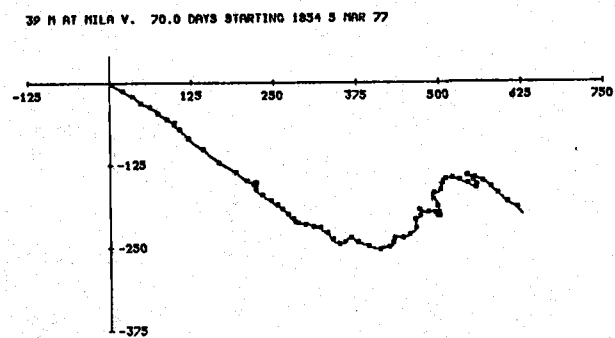
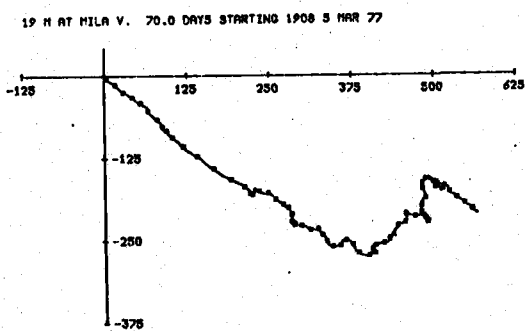
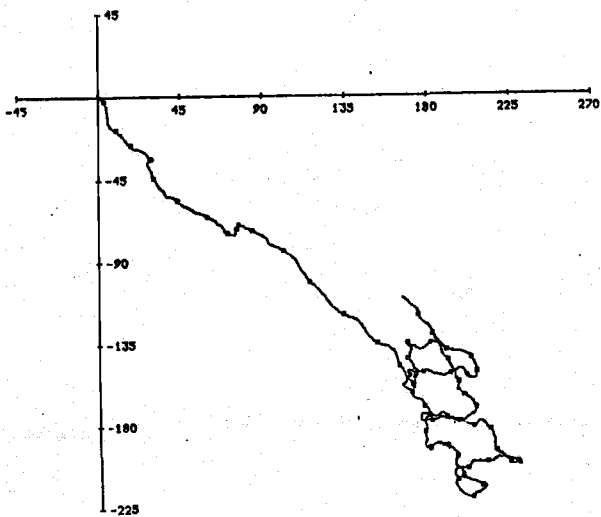
PRINCIPAL AXIS IS 120.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

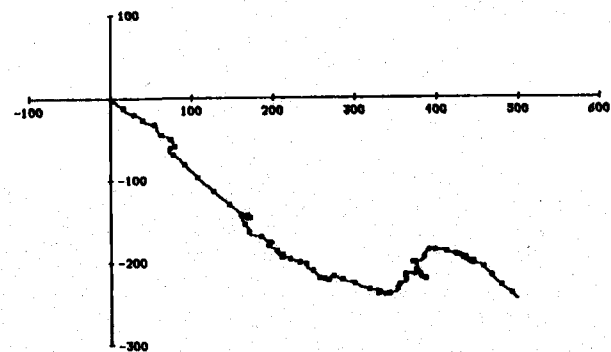
VARIABLE	MILA		LEG 5					
	N	0	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	132		4.9	2.0	-.6	2.6	9.1	.6
U (M/S)	132		-.1	1.2	-.2	2.7	2.5	-3.7
V (M/S)	132		4.7	2.2	-.7	2.9	9.1	-1.3
TW (DEG)	132		16.2	.5	.7	2.3	17.4	15.4
TA (DEG)	132		18.4	.7	.8	4.0	20.9	16.8

WIND AT MILA V. 5 MAR 77 - 11 MAR 77. TAPE D167/5

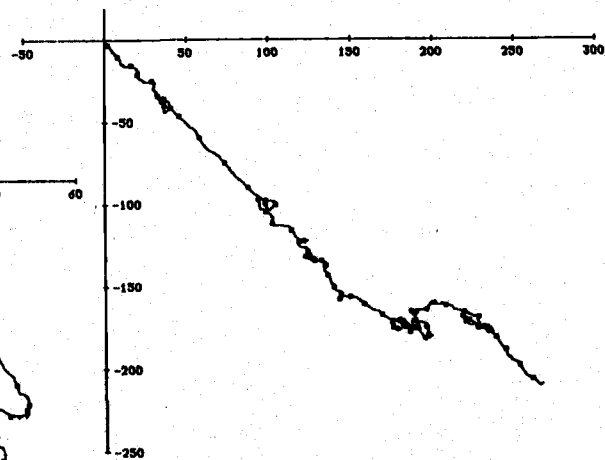




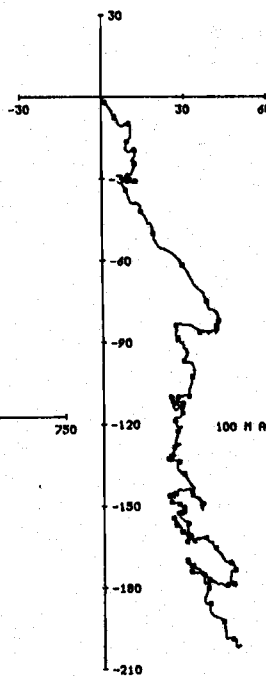
59 H AT MILA V. 70.0 DAYS STARTING 1843 5 MAR 77



80 H AT MILA V. 70.0 DAYS STARTING 1846 5 MAR 77



100 H AT MILA V. 70.0 DAYS STARTING 1847 5 MAR 77



115 H AT MILA V. 70.0 DAYS STARTING 1847 5 MAR 77

STATION MILA	LEG 5	DEPTH 19	TAPE NO 687/24	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

200	6	3 77	13.2	-20.7	13.2	-20.7	15.69	193412	43.756
300	6	3 77	7.9	-16.9	21.1	-37.6	15.71	192502	43.758
400	6	3 77	7.3	-9.0	28.4	-46.6	15.81	190297	43.854
500	6	3 77	2.6	-14.1	30.9	-60.7	16.07	187795	44.107
600	6	3 77	-4.3	-16.1	26.7	-76.8	16.03	186415	44.021

LAST 5 LINES OF DATA:

900	14	5 77	0.0	0.0	0.0	0.0	16.11	195493	42.123
1000	14	5 77	0.0	0.0	0.0	0.0	16.05	197019	42.069
1100	14	5 77	0.0	0.0	0.0	0.0	16.46	196026	42.429
1200	14	5 77	0.0	0.0	0.0	0.0	16.22	196840	42.244
1300	14	5 77	0.0	0.0	0.0	0.0	16.19	192997	42.247

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

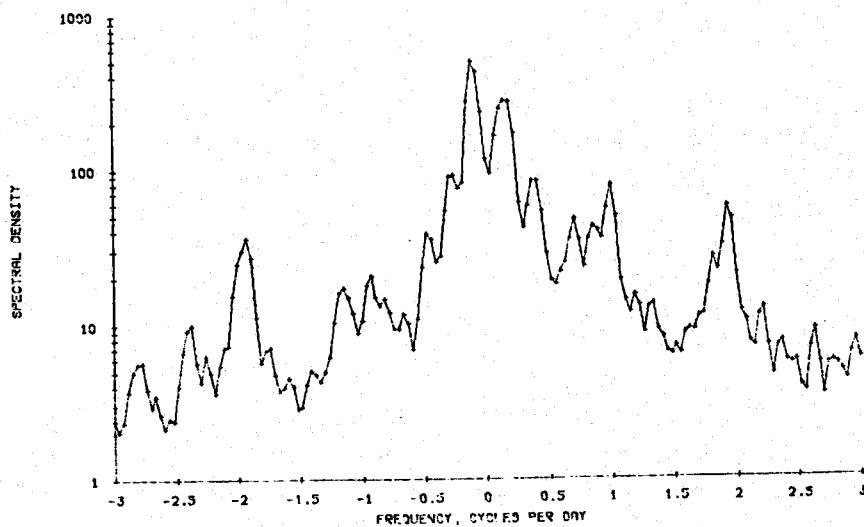
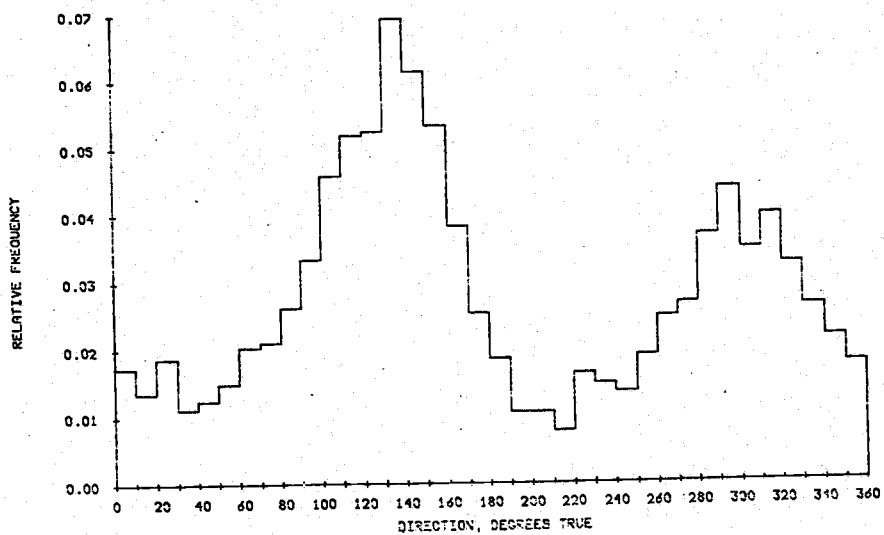
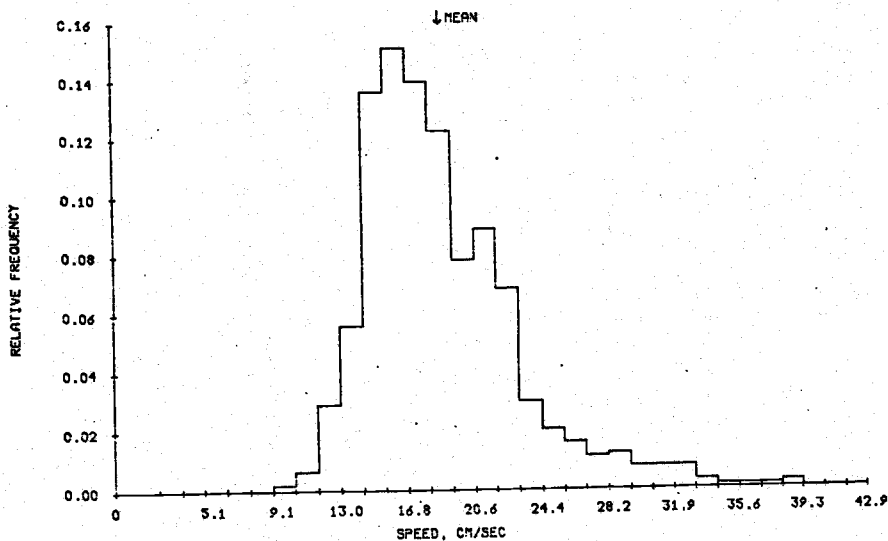
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1311	3.5	-2.3	164.7	137.7	12.8	11.7	-60.7	-.4028

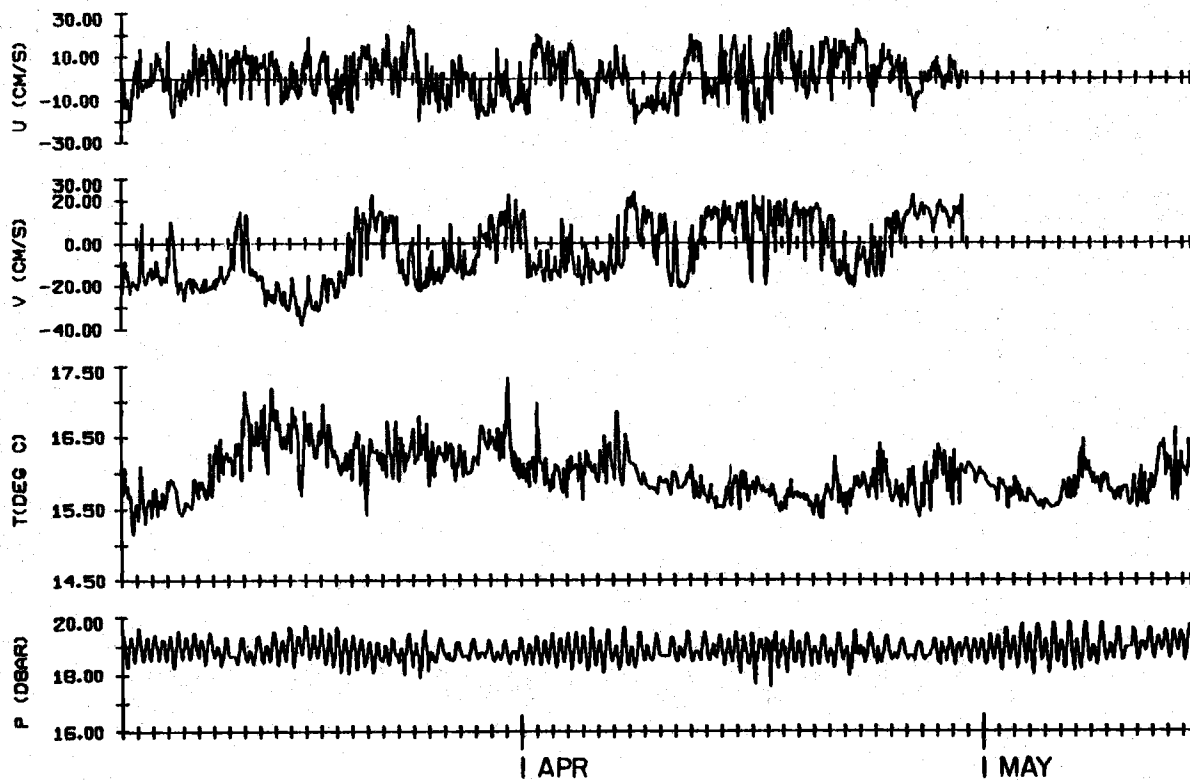
VECTOR MEAN: SPD = 4.2 CM/S, DIR = 123 DEGREES(T)
DIRECTIONAL STEADINESS: 24.5 %

PRINCIPAL AXIS IS 128.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN	MILA	LEG 5
								19 M	
S (CM/S)	1311	17.1	5.2	.5	4.4	38.1	1.2		
U (CM/S)	1311	.8	9.5	-.0	2.3	23.9	-21.8		
V (CM/S)	1311	-4.1	14.6	.1	1.7	23.6	-38.0		
T(DEG C)	1668	16.8	.3	.7	3.3	17.3	15.2		
P (DEAR)	1668	18.9	.4	.2	2.6	19.8	17.6		





19 M AT MILA LEG 5: HOURLIES,
 69.5 DAYS STARTING 200 CMT 6 MAR 1977

STATION MILA	LEG 5	DEPTH 39	TAPE NO 488/27	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	6	3	77	14.7	-16.6	14.7	-16.6	15.16	1
200	6	3	77	16.2	-14.7	30.8	-31.3	15.12	2
300	6	3	77	18.0	-14.7	48.8	-46.1	15.06	3
400	6	3	77	15.6	-11.3	64.4	-57.4	15.19	4
500	6	3	77	11.6	-12.7	76.0	-70.1	15.31	5

LAST 5 LINES OF DATA:

800	14	5	77	17.8	-9.4	15517.3	-5675.2	15.53	1664
900	14	5	77	17.1	-8.0	15534.4	-5683.3	15.58	1665
1000	14	5	77	15.0	-9.4	15549.5	-5692.7	15.43	1666
1100	14	5	77	12.5	-8.7	15562.0	-5701.4	15.47	1667
1200	14	5	77	10.1	-10.7	15572.0	-5712.2	15.52	1668

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1668	9.3	-3.4	96.9	111.8	9.8	10.6	-50.4	-.4841

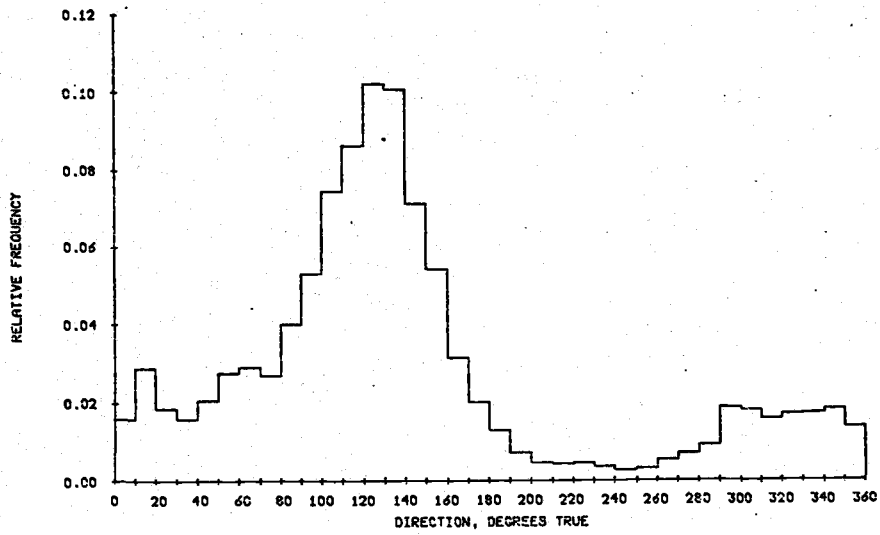
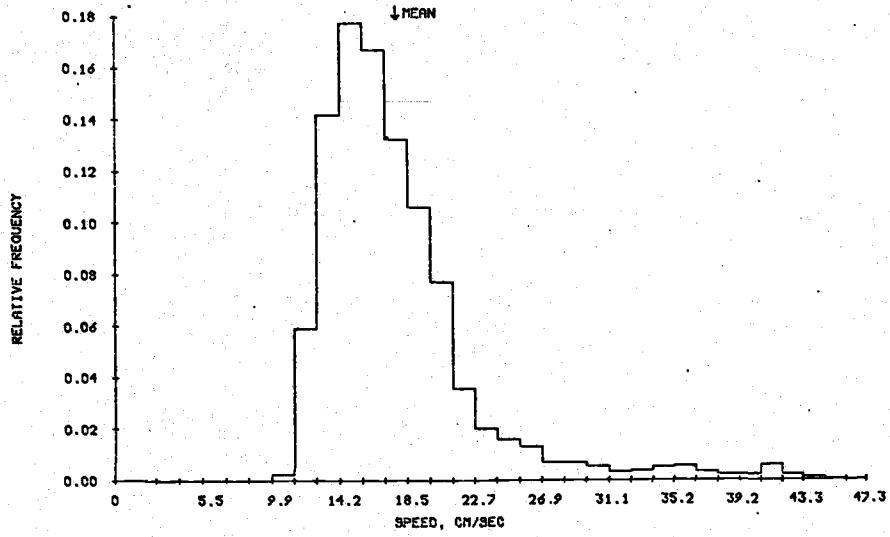
VECTOR MEAN: SPD = 9.9 CM/S, DIR = 110 DEGREES(T)
DIRECTIONAL STEADINESS: 60.0 %

PRINCIPAL AXIS IS 139.2 DEGREES(T)

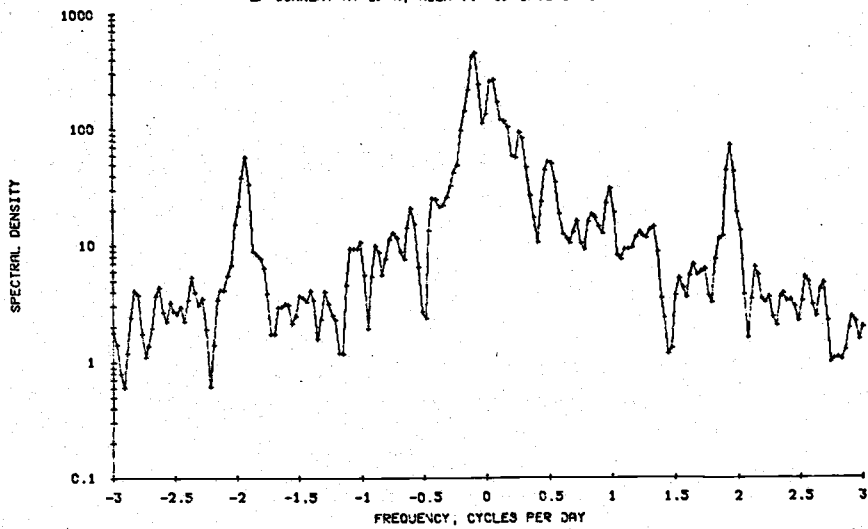
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

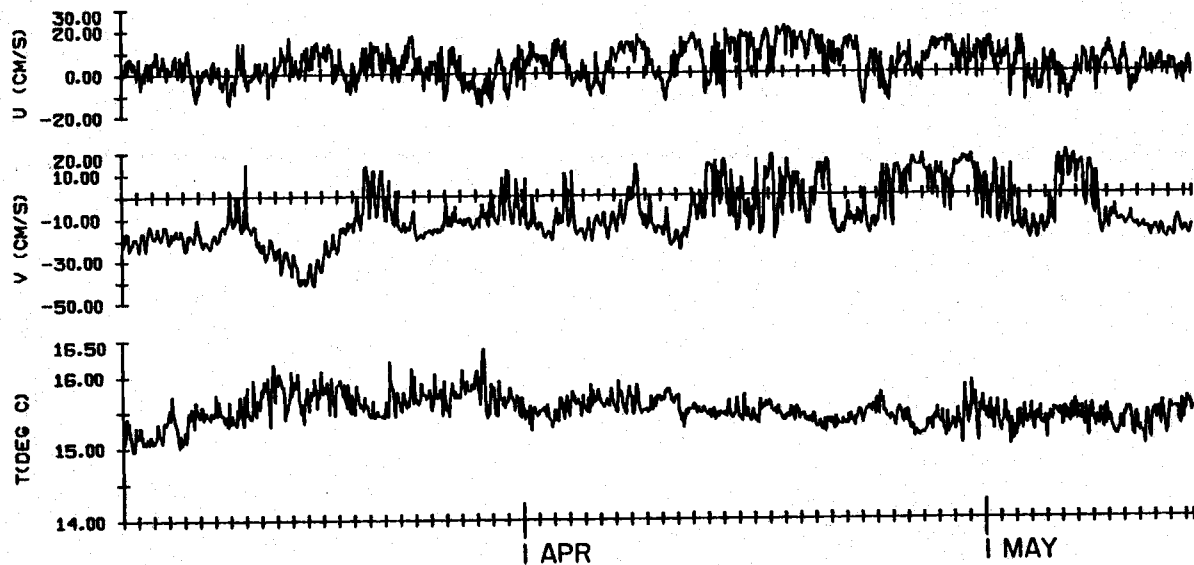
VARIABLE	N	MILA		LEG 5		MAX	MIN
		39	4	39	4		
S (CM/S)	1668	MEAN	STD	SKEW	KURT	42.8	1.0
U (CM/S)	1668	4.2	7.3	-.1	2.5	21.7	-15.4
V (CM/S)	1668	-9.0	12.4	.4	2.7	19.8	-42.2
T (DEG C)	1668	15.5	.2	.4	3.4	16.4	14.9

39 M AT MILA V. 5 MAR 77 - 14 MAY 77. TAPE 488/27



LP CURRENT AT 39 M, MILA V. 69 DAYS STNG 100 6 MAR 77





39 M AT MILA LEG 5: HOURLIES,
 69.5 DAYS STARTING 100 GMT 6 MAR 1977

STATION MILA	LEG 5	DEPTH 59	TAPE NO 752/25	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	6	3 77	18.5 -10.6	18.5	-10.6	14.76	593607	42.906
200	6	3 77	19.8 -12.7	38.4	-23.3	14.79	592643	42.942
300	6	3 77	20.7 -16.6	59.0	-39.9	14.84	591905	42.998
400	6	3 77	17.5 -14.2	76.5	-54.1	14.80	590880	42.958
500	6	3 77	12.3 -13.4	88.9	-67.6	14.83	590901	42.979

LAST 5 LINES OF DATA:

900	14	5 77	22.5 -17.0	17177.6	-5359.5	15.24	595406	43.415
1000	14	5 77	17.3 -18.5	17194.9	-5378.0	15.22	596492	43.393
1100	14	5 77	16.6 -15.3	17211.5	-5393.3	15.16	596540	43.334
1200	14	5 77	13.9 -13.3	17225.4	-5406.6	15.14	594393	43.299
1300	14	5 77	8.4 -13.7	17233.8	-5420.2	15.12	592750	43.278

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1669	10.3	-3.2	89.5	99.7	9.5	10.0	-55.6	-.5888

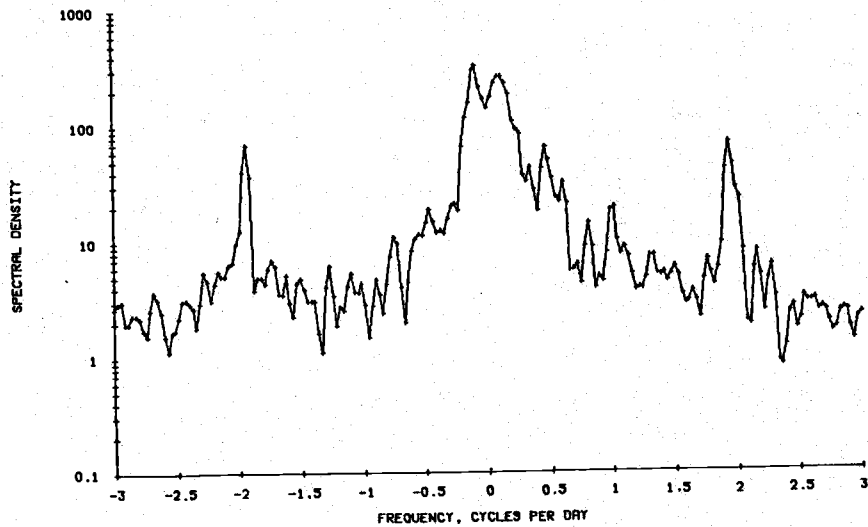
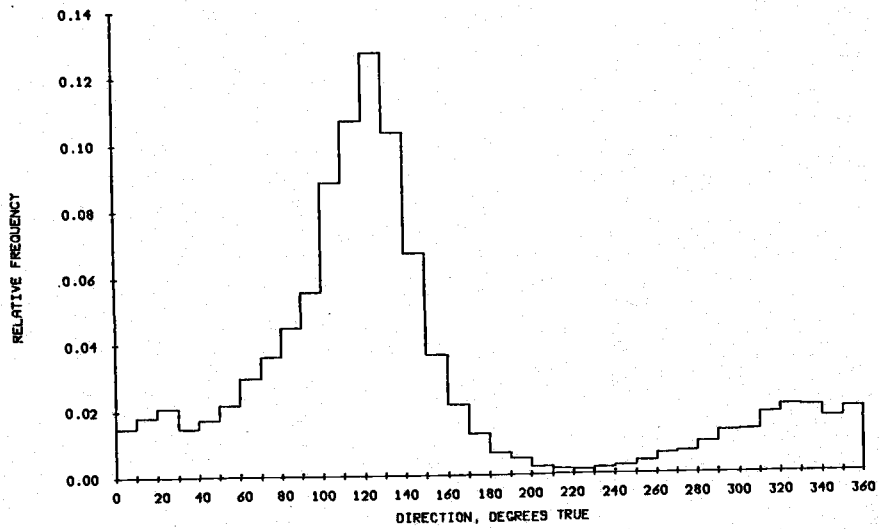
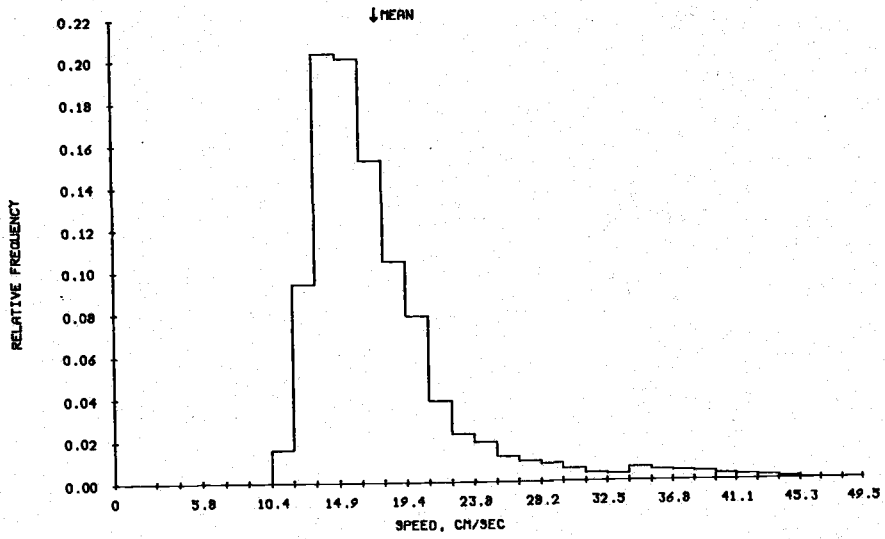
VECTOR MEAN: SPD = 10.8 CM/S, DIR = 107 DEGREES(T)
DIRECTIONAL STEADINESS: 65.4 %

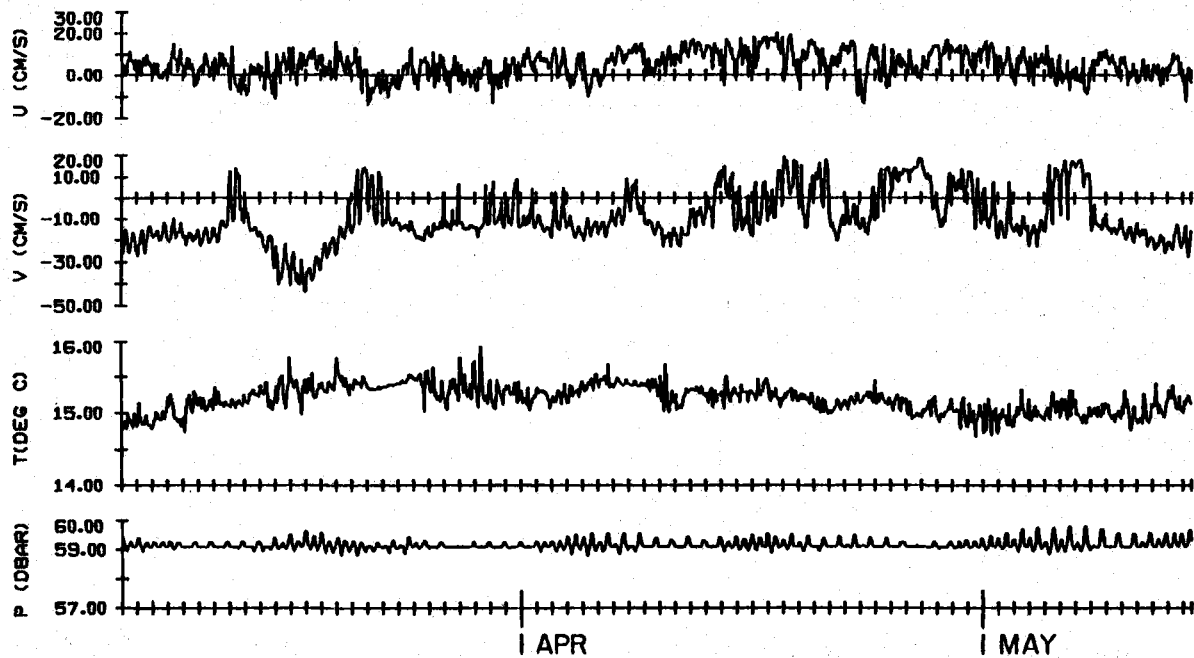
PRINCIPAL AXIS IS 137.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 5					
	N	59	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1669		16.6	5.7	1.5	7.5	44.3	.7
U (CM/S)	1669		5.0	6.2	-.2	2.6	20.7	-13.9
V (CM/S)	1669		-9.6	12.3	.4	2.8	19.3	-43.8
T (DEG C)	1669		15.2	.2	.0	2.8	15.9	14.7
P (DBAR)	1669		59.2	.1	1.5	6.0	59.8	58.8

59 METERS AT MILA. 5 MAR 77 - 14 MAY 77. TAPE 752/25.





59 M AT MILA LEG 5: HOURLIES,
 69.5 DAYS STARTING 100 GMT 6 MAR 1977

STATION MILA	LEG 5	DEPTH 80	TAPE NO 490/30	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	6	3 77	16.9	-12.6	16.9	-12.6	14.77	1
200	6	3 77	19.9	-8.5	36.8	-21.2	14.76	2
300	6	3 77	21.3	-9.0	58.2	-30.2	14.77	3
400	6	3 77	15.6	-11.7	73.8	-41.9	14.76	4
500	6	3 77	7.9	-10.6	81.7	-52.5	14.76	5

LAST 5 LINES OF DATA:

900	14	5 77	21.0	-14.9	13661.4	-6651.2	15.01	1665
1000	14	5 77	17.6	-15.8	13679.1	-6667.0	15.02	1666
1100	14	5 77	13.2	-15.0	13692.2	-6682.0	15.05	1667
1200	14	5 77	12.0	-13.9	13704.2	-6696.0	15.03	1668
1300	14	5 77	12.6	-12.4	13716.8	-6708.4	15.00	1669

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

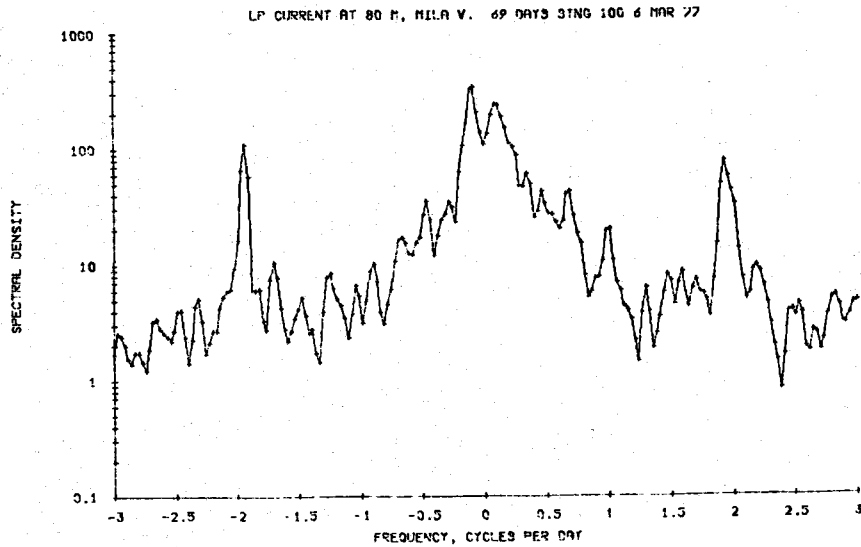
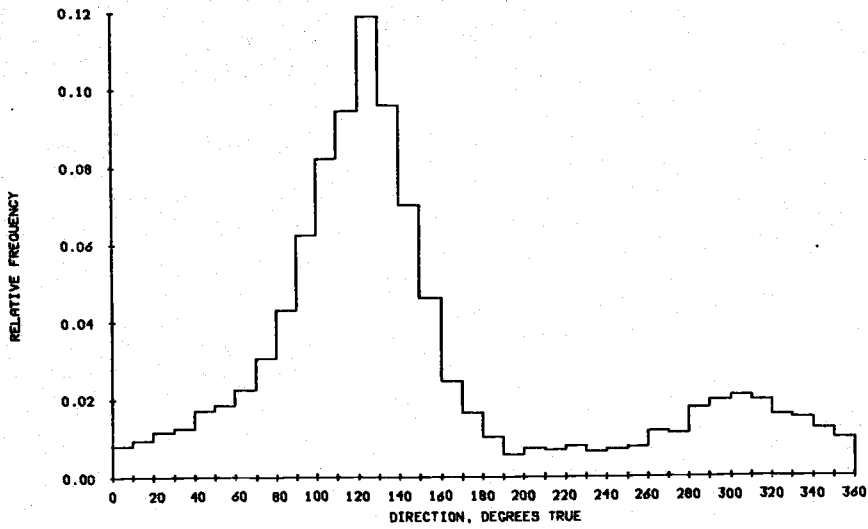
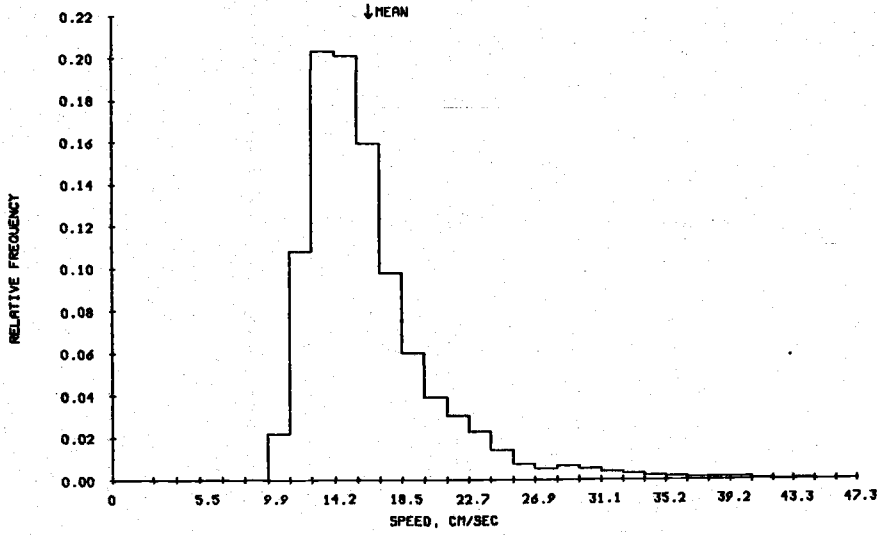
N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1669	8.2	-4.0	101.0	78.2	10.1	8.8	-43.0	-.4843

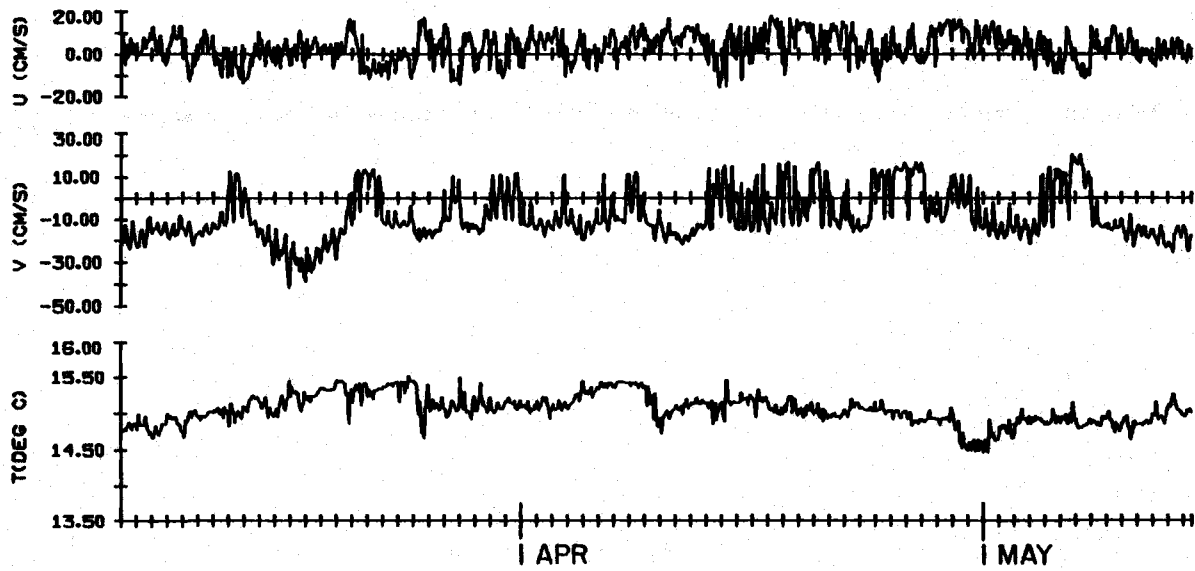
VECTOR MEAN: SPD = 9.1 CM/S, DIR = 116 DEGREES(T)
DIRECTIONAL STEADINESS: 59.1 %

PRINCIPAL AXIS IS 127.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

VARIABLE	MILA		LEG 5					
	N	80 M	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1669		15.5	4.8	1.4	7.3	42.3	1.2
U (CM/S)	1669		3.0	6.8	-.3	2.4	17.8	-15.8
V (CM/S)	1669		-8.7	11.5	.6	2.8	20.2	-41.9
T (DEG C)	1669		15.0	.2	-.1	2.9	15.5	14.5





80 M AT MILA LEC 5: HOURLIES,
 69.5 DAYS STARTING 100 GMT 6 MAR 1977

STATION MILA	LEG 5	DEPTH 100	TAPE NO 6 #6/34	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	6	3 77	9.7	-14.9	9.7	-14.9	14.74	1005008	42.707
200	6	3 77	13.5	-8.3	23.1	-23.2	14.74	1004992	42.721
300	6	3 77	11.9	-2.8	35.0	-26.0	14.75	1005004	42.720
400	6	3 77	1.2	-6.2	36.2	-32.2	14.75	1004999	42.715
500	6	3 77	4.9	-8.3	41.0	-40.5	14.74	1005000	42.714

LAST 5 LINES OF DATA:

900	14	5 77	11.2	-12.5	7281.6	-5736.8	14.87	1008006	42.859
1000	14	5 77	8.7	-12.2	7290.4	-5749.0	14.87	1008197	42.844
1100	14	5 77	9.4	-11.1	7299.8	-5760.1	14.89	1009472	42.885
1200	14	5 77	12.1	-6.0	7311.9	-5766.1	14.88	1008640	42.876
1300	14	5 77	13.2	-3.9	7325.1	-5769.9	14.86	1007628	42.854

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1669	4.4	-3.5	66.6	56.7	8.2	7.5	-26.0	-.4227

VECTOR MEAN: SPD = 5.6 CM/S, DIR = 128 DEGREES(T)
DIRECTIONAL STEADINESS: 48.2 %

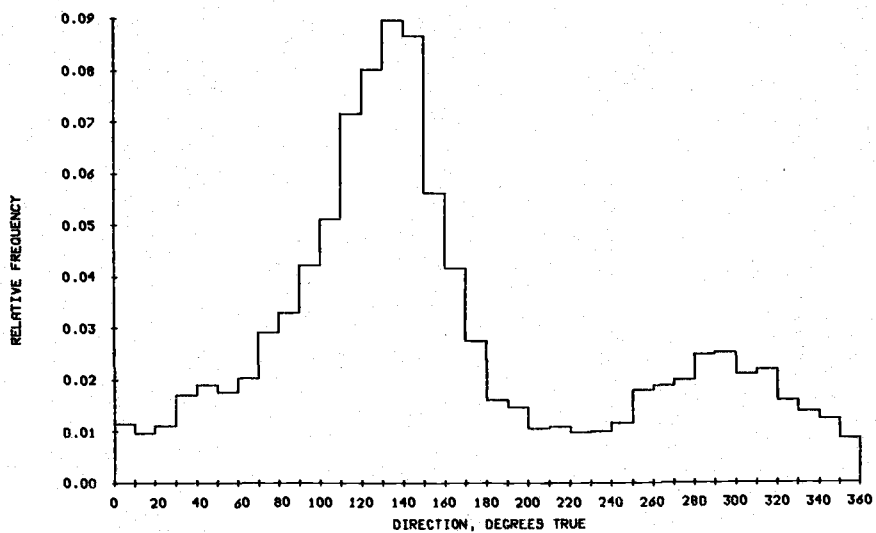
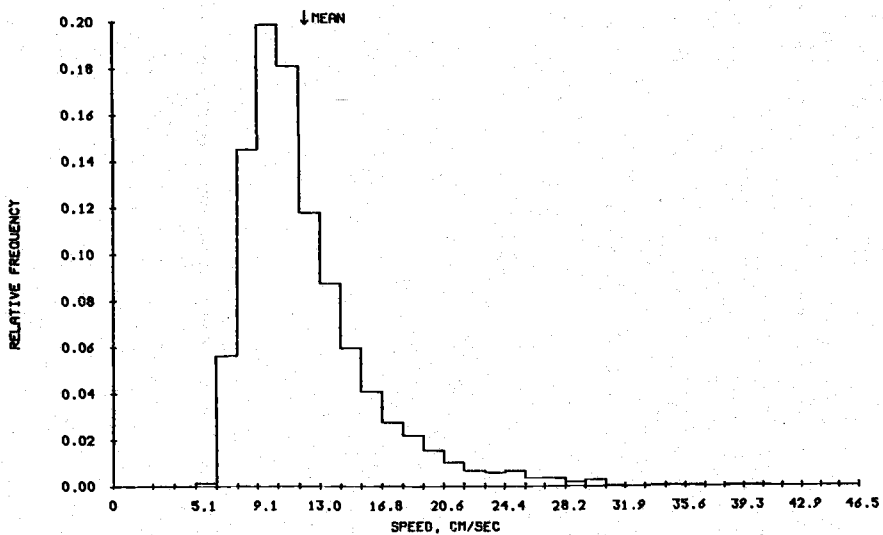
PRINCIPAL AXIS IS 129.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

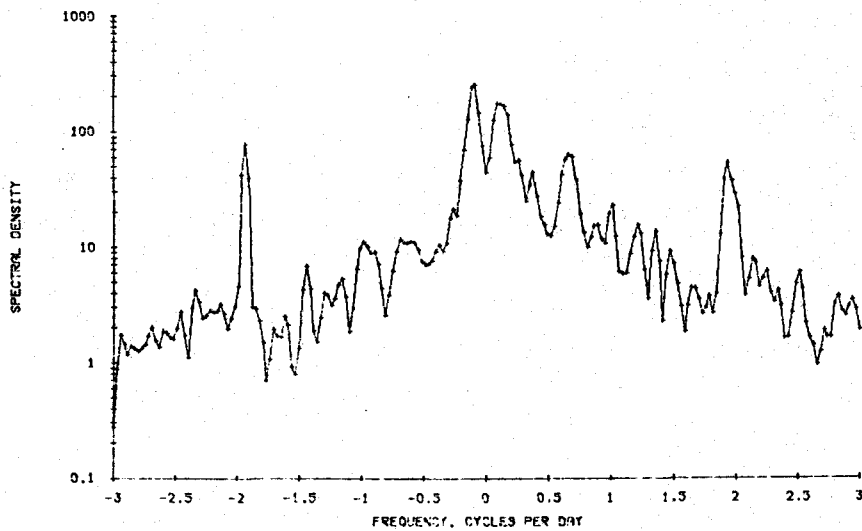
MILA LEG 5
100 M

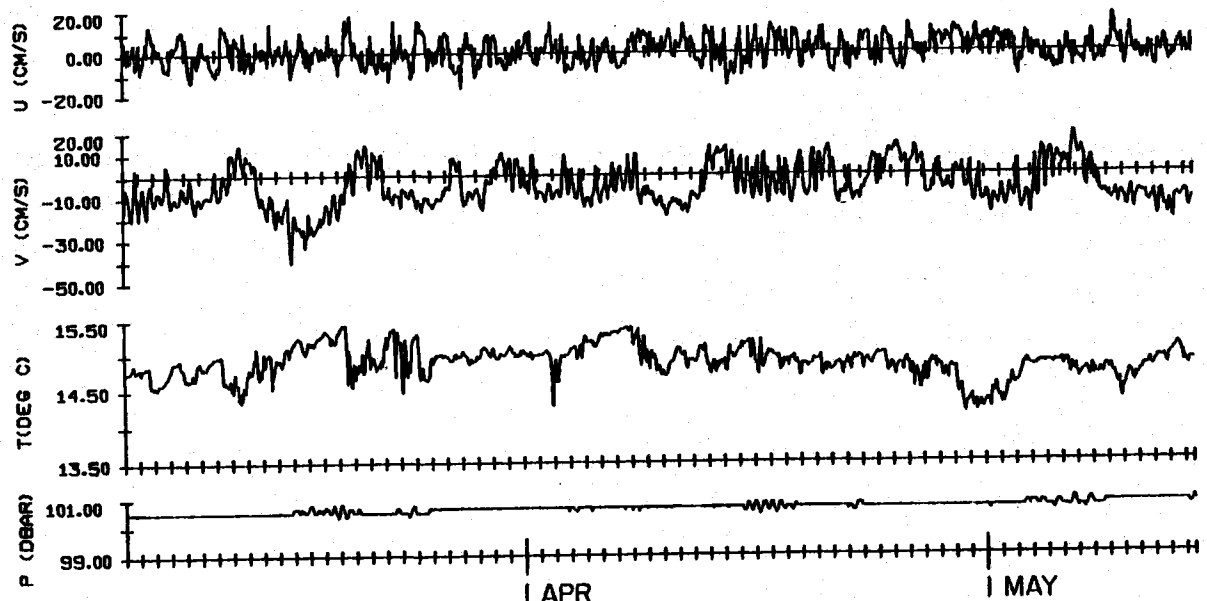
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1669	11.6	4.5	1.6	8.0	42.5	.3
U (CM/S)	1669	.7	6.0	.1	2.4	17.8	-16.9
V (CM/S)	1669	-5.5	9.4	.2	2.7	19.0	-40.8
T (DEG C)	1669	14.9	.2	-.2	3.5	15.4	14.2
P (DBAR)	1669	100.6	.1	.1	3.0	101.0	100.3

100 M AT MILA V. 5 MAR 77 - 14 MAY 77. TAPE 686/34



LP CURRENT AT 100 M, MILA V. 69 DAYS SINCE 100 6 MAR 77





100 M AT MILA LEC 5: HOURLIES,
 69.5 DAYS STARTING 100 CMT 6 MAR 1977

STATION MILA	LEG 5	DEPTH 115	TAPE NO 124/13	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	6	3 77	6.3	-10.8	6.3	-10.8	14.73	1
200	6	3 77	8.8	-7.1	15.0	-17.9	14.75	2
300	6	3 77	9.3	-3.6	24.4	-21.6	14.74	3
400	6	3 77	4.3	-5.6	28.7	-27.2	14.73	4
500	6	3 77	2.7	-5.5	31.4	-32.7	14.73	5

LAST 5 LINES OF DATA:

900	14	5 77	-1.3	-10.7	1298.8	-5505.8	14.61	1665
1000	14	5 77	-1.6	-9.1	1297.2	-5514.9	14.63	1666
1100	14	5 77	-0.3	-10.0	1296.9	-5524.9	14.79	1667
1200	14	5 77	1.9	-9.9	1298.8	-5534.8	14.79	1668
1300	14	5 77	5.6	-7.6	1304.4	-5542.5	14.81	1669

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1669	.8	-3.3	35.4	36.7	6.0	6.1	-9.2	-.2537

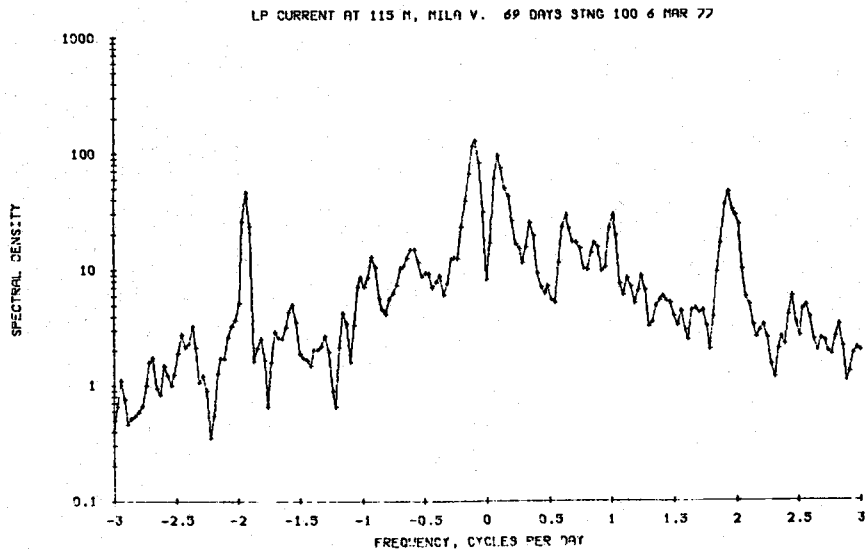
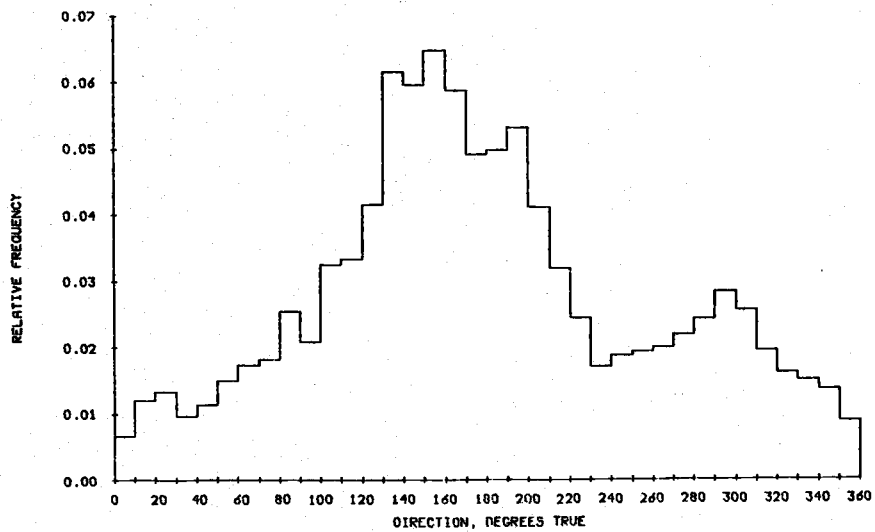
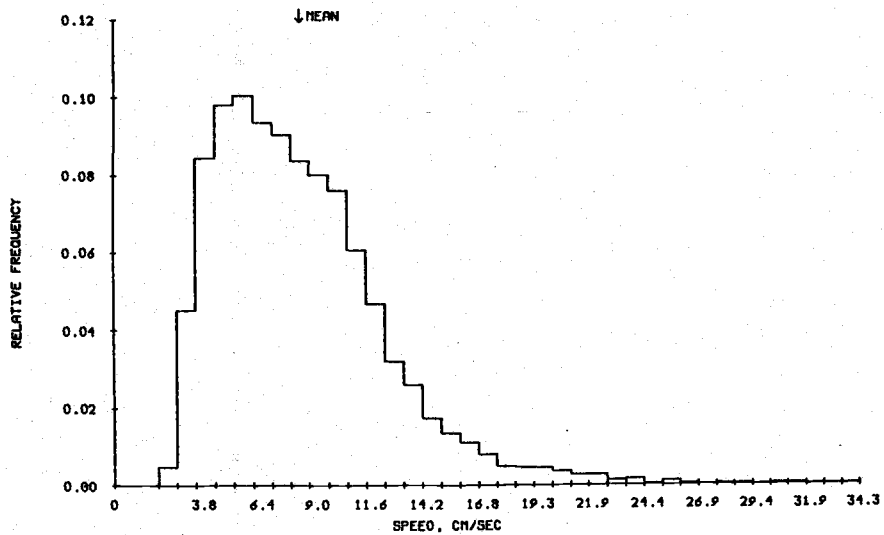
VECTOR MEAN: SPD = 3.4 CM/S, DIR = 167 DEGREES(T)
DIRECTIONAL STEADINESS: 40.9 %

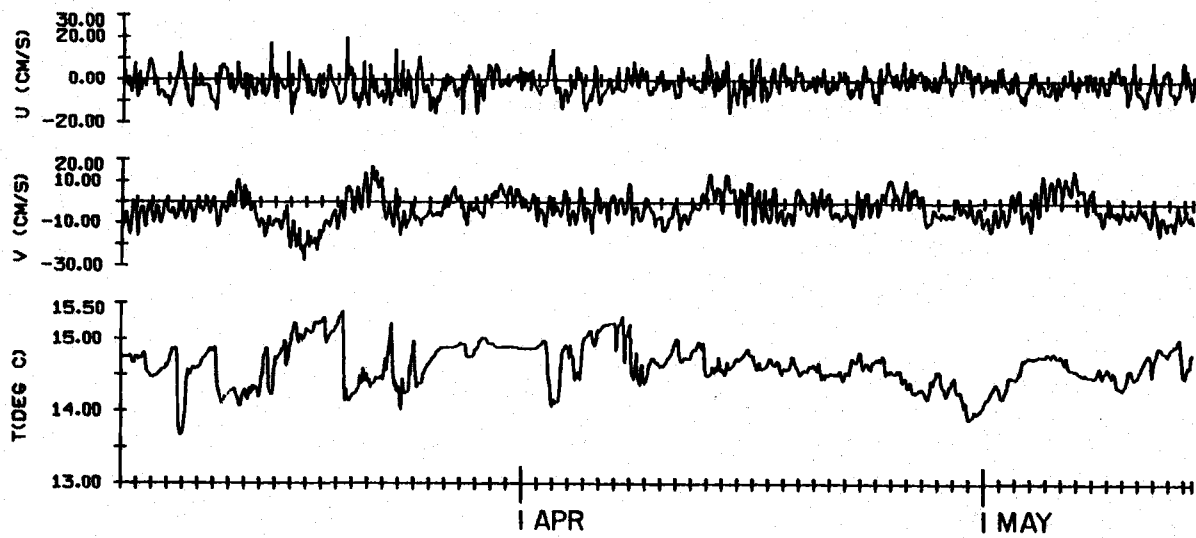
PRINCIPAL AXIS IS 137.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

MILA LEG 5
115 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1669	8.3	3.8	1.1	4.8	27.5	.8
U (CM/S)	1669	-1.8	5.2	.2	3.1	20.0	-16.0
V (CM/S)	1669	-2.9	6.7	.1	3.1	17.1	-27.4
T (DEG C)	1669	14.6	.3	-.1	3.0	15.4	13.7





115 M AT MILA LEG 5: HOURLIES,
 69.5 DAYS STARTING 100 GMT 6 MAR 1977

JOINT-II 1977 Installation

IRONWOOD V

Position*: 15°09.9'S, 75°32.9'W
 Distance Offshore: 19.5 km
 Bottom Depth: 205 m
 Set: 1546 GMT 16 March 1977 by R/V MELVILLE
 Retrieved: 1900 GMT 14 May 1977 by R/V ISELIN
 Longest Data Interval: 2200 GMT 16 March to 1200 GMT 14 May
 Longest Record Length: 58 days, 15 hours

Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D124/13	20 min	S _w , T _a , T
20 m	24 m	746/25	20 min	S, θ , T, P, C
40 m	44 m	2124/5	20 min	S, θ , T
60 m	63 m	689/26	20 min	S, θ , T, P, C
100 m	105 m	688/35	15 min	S, θ , T, P, C
150 m	155 m	1968/6	20 min	S, θ , T
175 m	180 m	2130/6	20 min	S, θ , T

Comments

No acceptable direction data exist for the Ironwood meteorological buoy (D124) due to failure of the buoy orientation sensor. The data from the buoy water temperature sensor did not agree with pre- and post-calibrations. Temperatures from CTD casts (at 3 m) are drawn on the time plots for comparison.

About 10% of the temperature data in the 1968/6 record were erroneous and were replaced by linear interpolation.

* Navigation: radar fixes and Peru chart DHNM 2200. The position of the meteorological buoy was estimated to be 15°09.0'S 75°32.9'W.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	0	0124/13	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

0	17	3	77	19.02	17.42	1
100	17	3	77	19.68	17.42	2
200	17	3	77	20.08	17.51	3
300	17	3	77	19.84	17.52	4
400	17	3	77	19.66	17.52	5

LAST 5 LINES OF DATA:

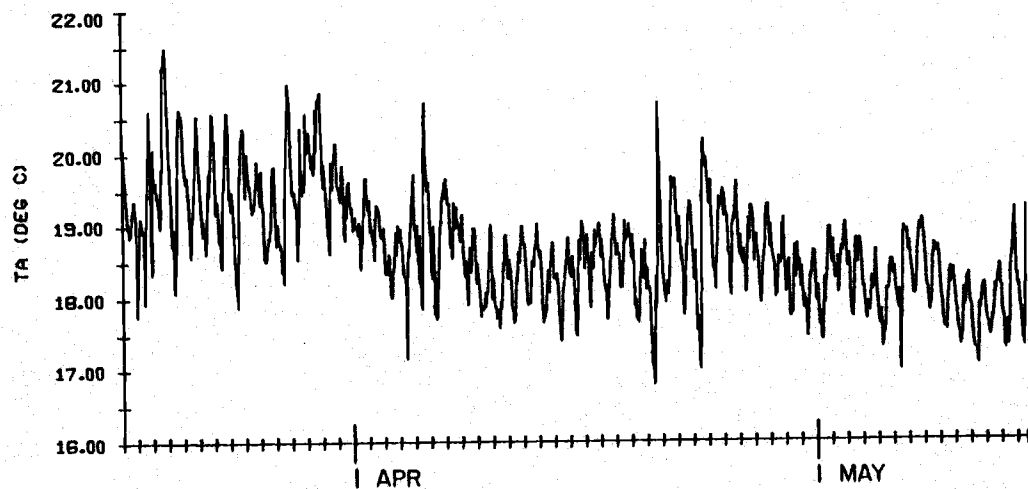
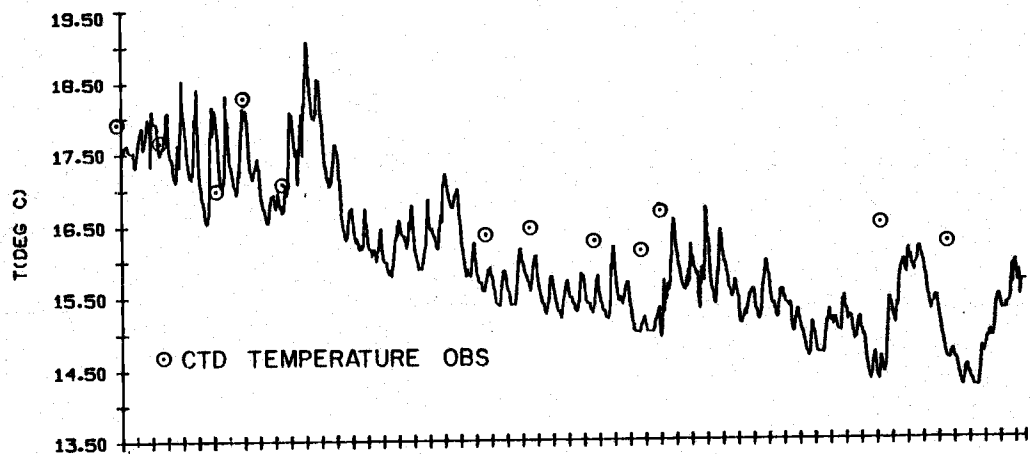
1200	14	5	77	17.81	15.68	1405
1300	14	5	77	18.43	15.68	1406
1400	14	5	77	18.86	15.68	1407
1500	14	5	77	19.23	15.69	1408

STATISTICS

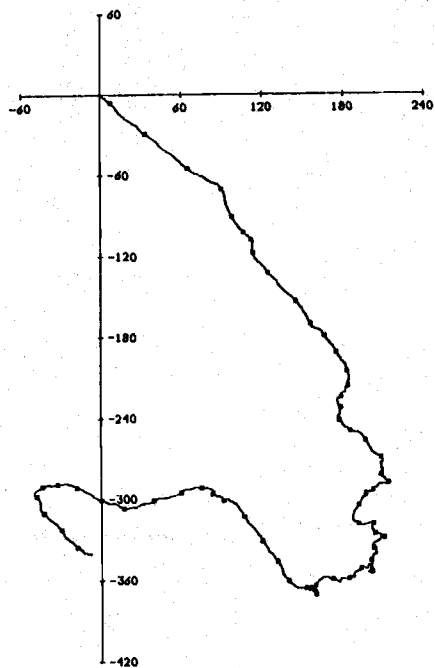
IRONWOOD LEG 5
0 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
TW (DEG)*	1408	16.0	1.0	.6	2.5	19.1	14.2
TA (DEG)	1408	18.7	.8	.5	3.2	21.5	16.8

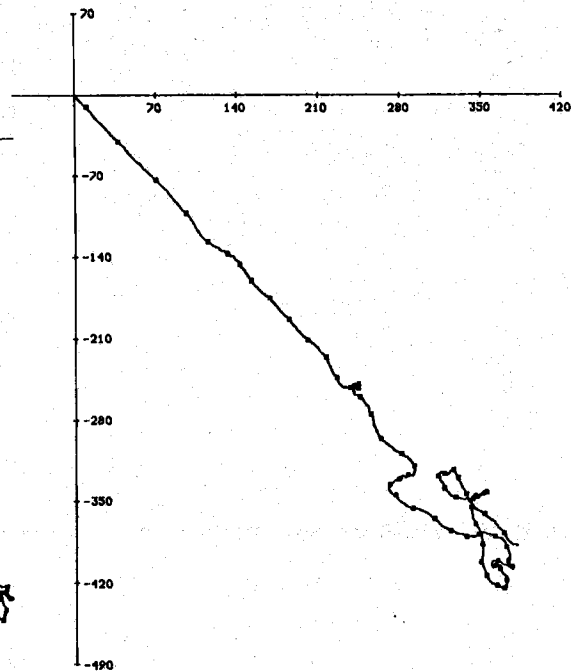
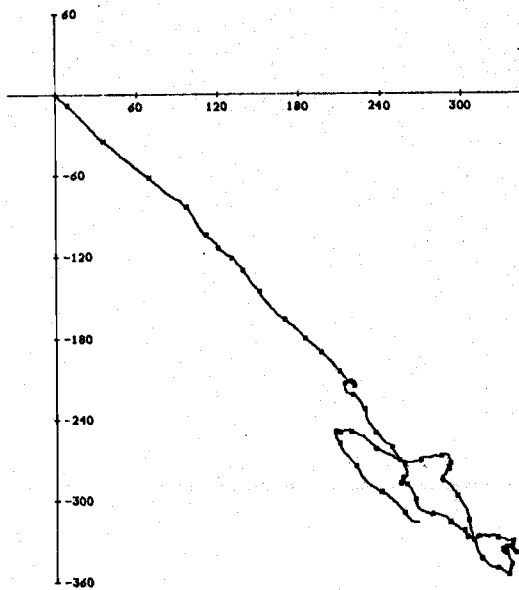
* Post- and pre-calibrations do not agree and data do not agree with CTD casts. See comments on installation summary and in Appendix 2. CTD values are plotted with the time series for comparison.



0 M AT IRONWOOD LEG 5: HOURLIES,
58.7 DAYS STARTING 000 GMT 17 MAR 1977

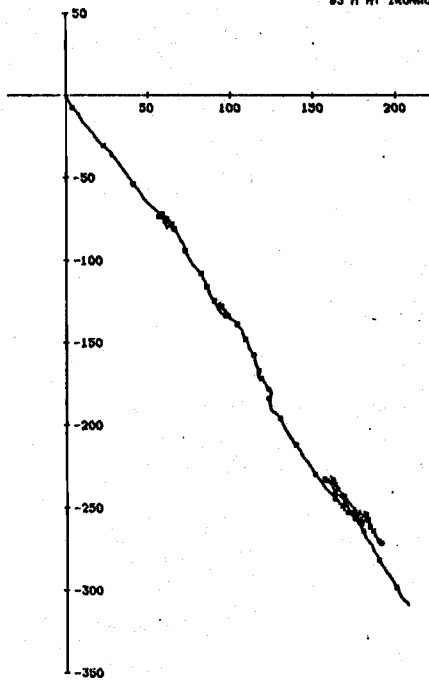
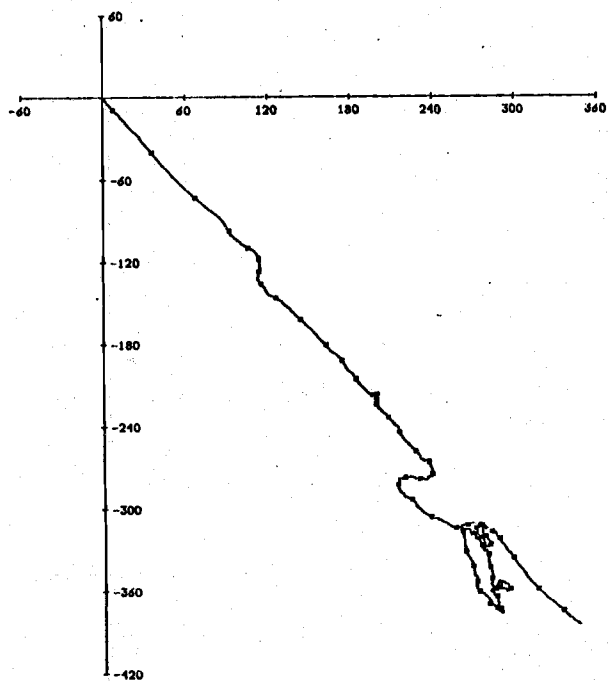


44 M AT IRONWOOD. 59.1 DAYS STARTING 1400 16 MAR 77

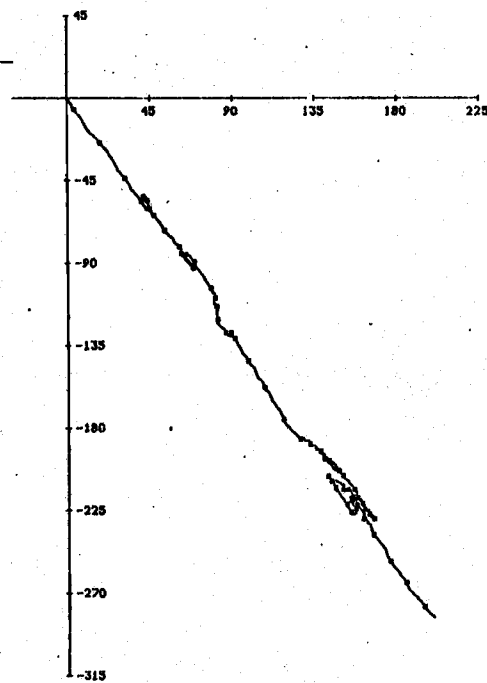


43 M AT IRONWOOD. 59.1 DAYS STARTING 1425 16 MAR 77

24 M AT IRONWOOD. 59.1 DAYS STARTING 1422 16 MAR 77



155 M AT IRONWOOD. 59.1 DAYS STARTING 1624 16 MAR 77



180 M AT IRONWOOD. 59.1 DAYS STARTING 1616 16 MAR 77

105 M AT IRONWOOD. 59.1 DAYS STARTING 1405 16 MAR 77

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	24	746/25	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	16	3 77	30.3	-22.2	30.3	-22.2	16.79	270452	45.091
0	17	3 77	30.0	-26.7	60.3	-48.9	16.93	262219	45.248
100	17	3 77	30.7	-23.4	91.0	-72.2	17.03	255130	45.346
200	17	3 77	25.5	-21.4	116.4	-93.7	16.72	248647	45.011
300	17	3 77	21.2	-24.3	137.6	-117.9	16.53	243098	44.835

LAST 5 LINES OF DATA:

800	14	5 77	13.6	-17.7	-530.9	-9291.7	16.18	243489	44.198
900	14	5 77	21.5	-10.7	-509.4	-9302.3	16.35	242326	44.359
1000	14	5 77	24.8	-1.2	-484.6	-9303.5	16.64	242085	44.650
1100	14	5 77	17.7	-9.5	-466.9	-9312.9	16.49	243618	44.528
1200	14	5 77	11.7	-13.2	-455.1	-9326.1	16.48	243672	44.500

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1406	-.3	-6.6	236.6	147.1	15.4	12.1	-110.4	-.5920

VECTOR MEAN: SPD = 6.6 CM/S, DIR = 183 DEGREES(T)
 DIRECTIONAL STEADINESS: 34.8 %

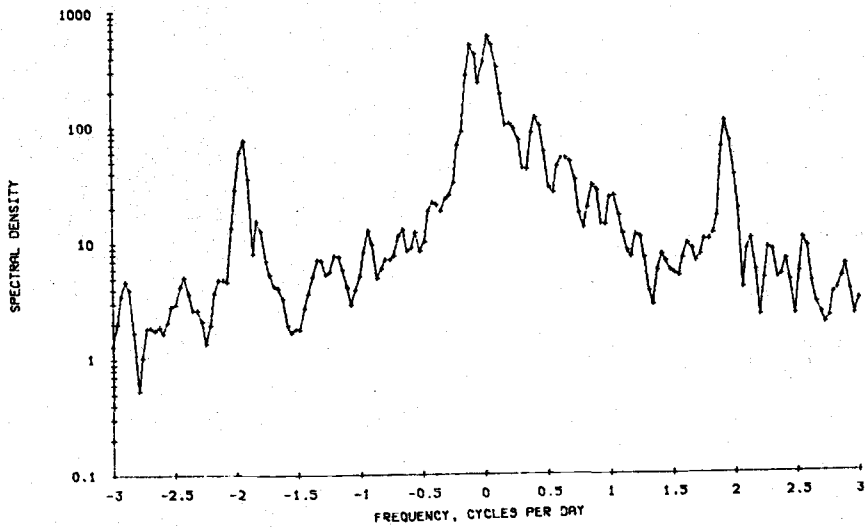
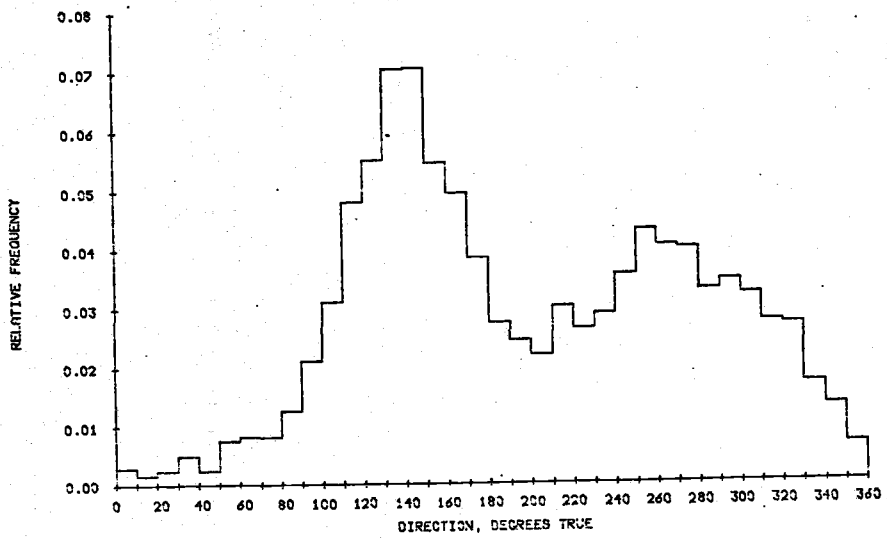
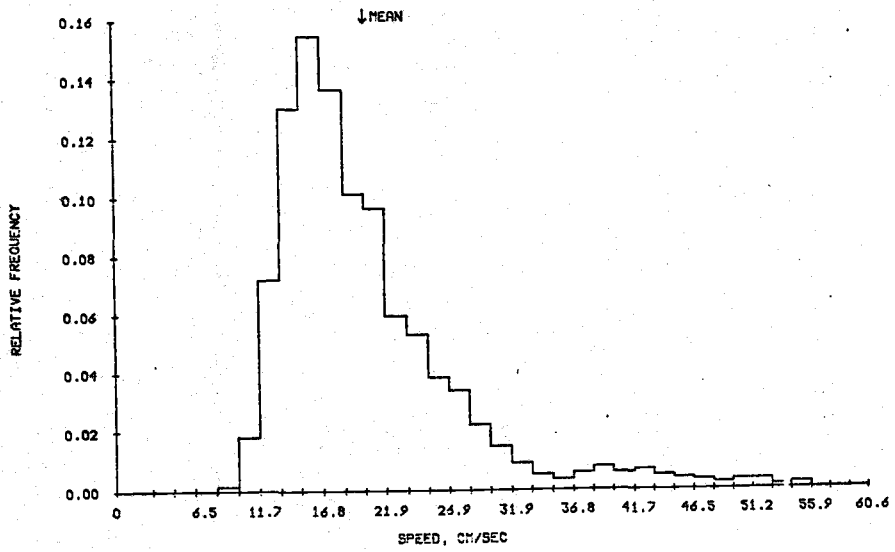
PRINCIPAL AXIS IS 124.0 DEGREES(T)

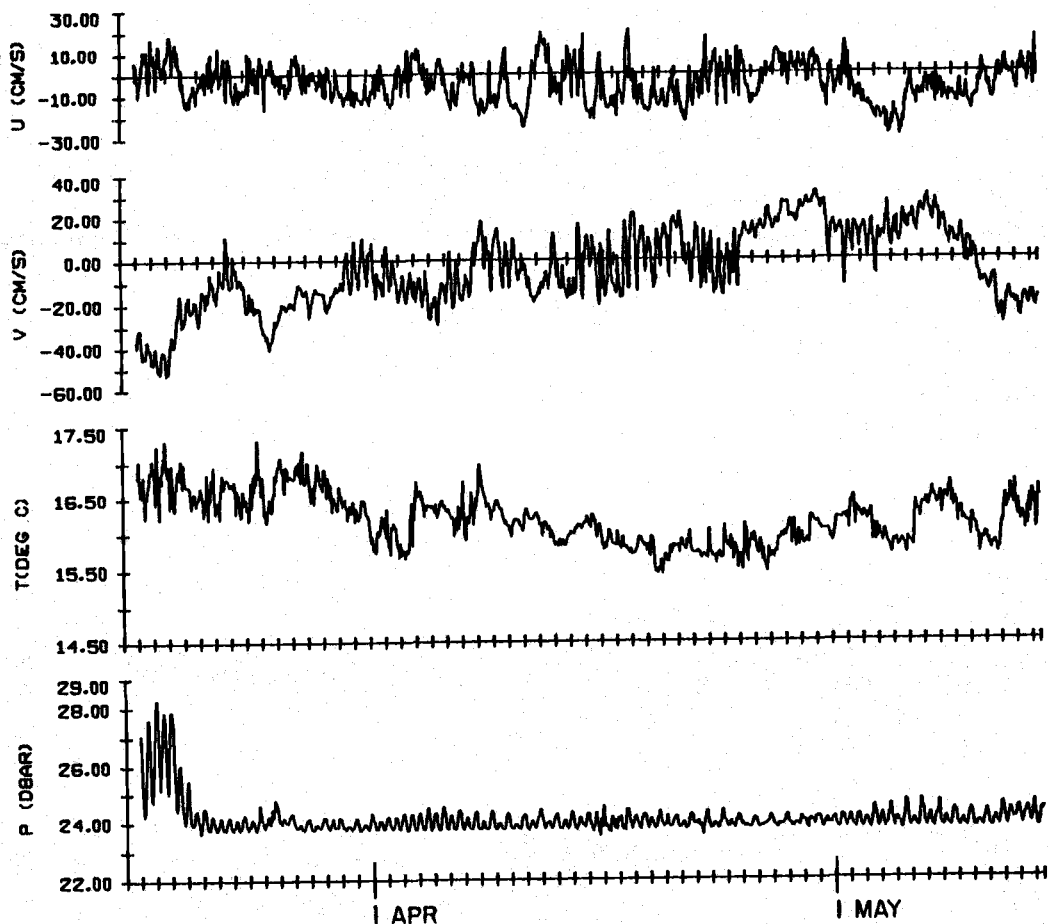
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
 24 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1406	19.1	7.9	1.5	6.6	54.5	2.8
U (CM/S)	1406	-4.9	9.0	.1	2.5	20.6	-29.9
V (CM/S)	1406	-4.5	17.4	-.2	2.5	31.7	-53.5
T (DEG C)	1406	16.2	.4	.4	2.5	17.3	15.4
P (DBAR)	1406	24.0	.6	4.6	27.0	28.3	23.5

24 H AT IRONWOOD. 16 MAR 77 - 14 MAY 77. TAPE 746/25





24 M AT IRONHOOD LEG 5: HOURLIES,
58.6 DAYS STARTING 2300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	44	212/45	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2200	16	3	77	37.6	-27.6	37.6	-27.6	15.82	1
2300	16	3	77	32.1	-34.9	69.7	-62.5	15.82	2
0	17	3	77	32.8	-32.6	102.5	-95.1	15.75	3
100	17	3	77	36.2	-25.5	138.6	-120.6	15.92	4
200	17	3	77	28.3	-24.8	166.9	-145.4	15.78	5

LAST 5 LINES OF DATA:

800	14	5	77	17.3	-21.0	7104.2	-8613.9	15.46	1403
900	14	5	77	23.4	-21.9	7127.7	-8635.8	15.53	1404
1000	14	5	77	23.3	-12.2	7151.0	-8648.0	15.63	1405
1100	14	5	77	24.9	-4.9	7175.9	-8652.9	15.80	1406
1200	14	5	77	19.1	-9.4	7195.0	-8662.3	15.45	1407

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1407	5.1	-6.2	208.1	172.0	14.4	13.1	-129.6	-.6849

VECTOR MEAN: SPD = 8.0 CM/S, DIR = 140 DEGREES(T)
DIRECTIONAL STEADINESS: 42.1 %

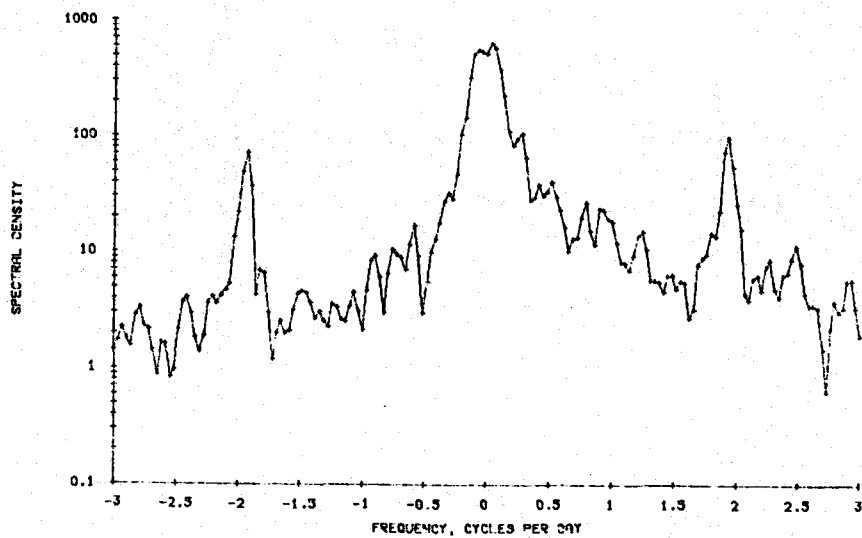
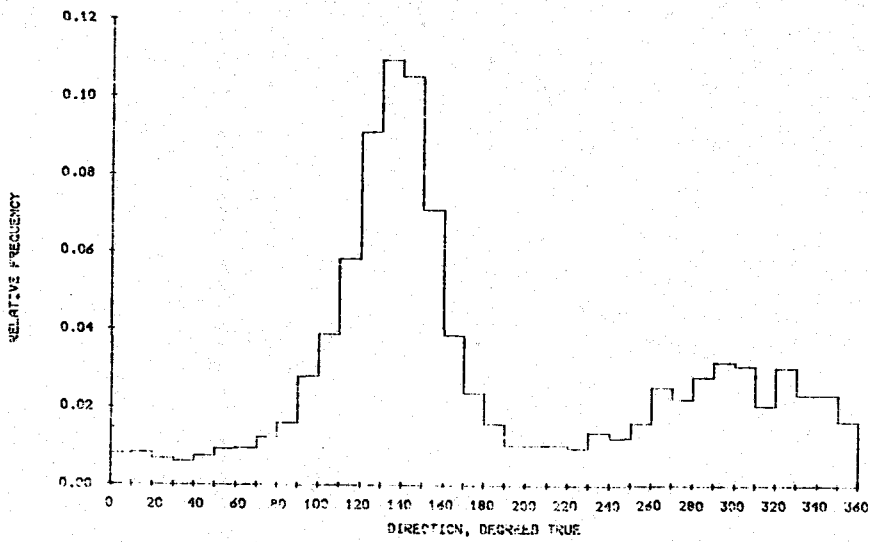
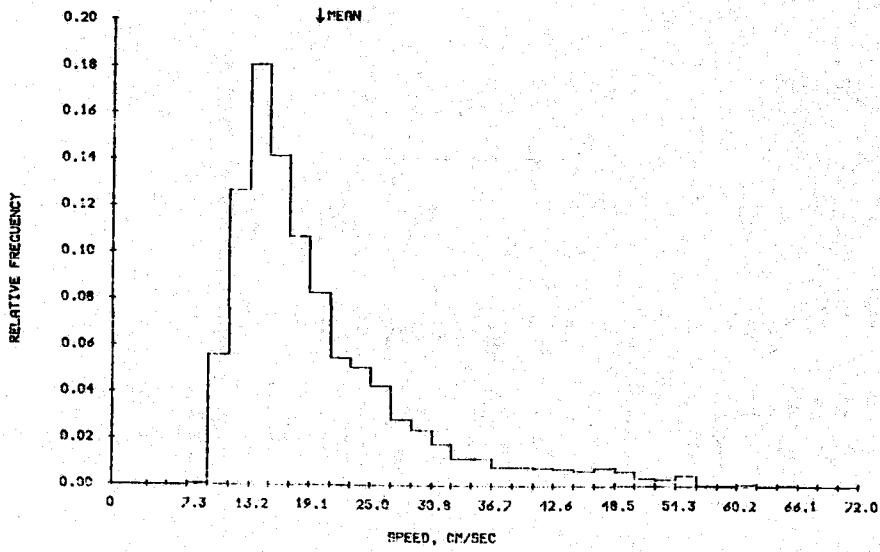
PRINCIPAL AXIS IS 131.0 DEGREES(T)

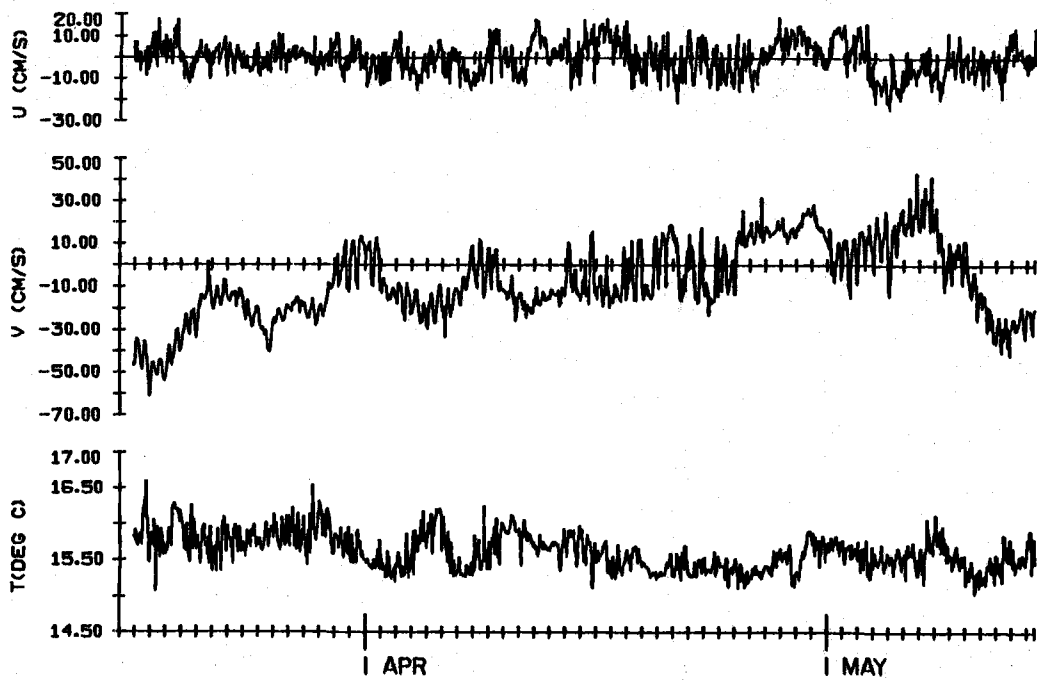
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
44 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1407	19.0	9.1	1.6	6.0	62.0	2.3
U (CM/S)	1407	-.7	7.8	-.0	2.6	19.8	-24.5
V (CM/S)	1407	-8.0	17.9	-.0	2.6	43.6	-61.8
T (DEG C)	1407	15.6	.2	.5	2.9	16.6	15.0

44 M AT IRONWOOD, 16 MAR 77 - 14 MAY 77. TAPE 2124/5





44 M AT IRONWOOD LEC 5: HOURLIES,
58.6 DAYS STARTING 2200 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	63	689/26	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	16	3	77	39.4	-34.9	39.4	-34.9	15.38	655053	44.832
0	17	3	77	35.5	-35.3	74.8	-70.2	15.39	653671	44.832
100	17	3	77	31.2	-34.3	106.0	-104.5	15.39	647450	44.827
200	17	3	77	30.7	-29.9	136.7	-134.4	15.20	641765	44.653
300	17	3	77	27.9	-28.6	164.6	-163.0	15.24	638345	44.693

LAST 5 LINES OF DATA:

800	14	5	77	21.8	-26.4	10146.0	-10489.8	14.95	635905	44.344
900	14	5	77	24.5	-22.0	10170.6	-10511.8	14.87	637226	44.257
1000	14	5	77	22.8	-20.1	10193.4	-10531.9	15.00	638010	44.371
1100	14	5	77	24.6	-14.6	10217.9	-10546.4	15.00	637906	44.387
1200	14	5	77	27.3	-6.7	10245.2	-10553.1	14.81	635614	44.190

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1406	7.3	-7.5	177.0	192.3	13.3	13.9	-119.4	-.6470

VECTOR MEAN: SPC = 10.5 CM/S, DIR = 136 DEGREES(T)
 DIRECTIONAL STEADINESS: 53.1 %

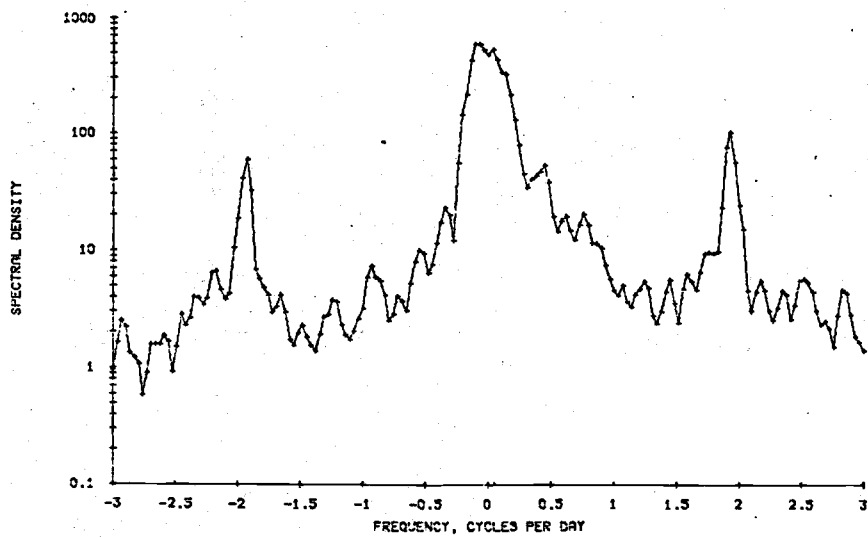
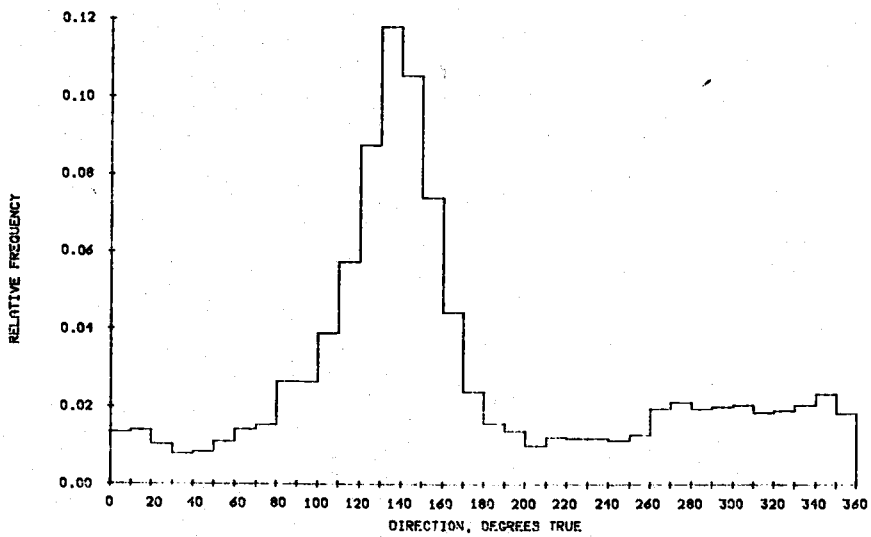
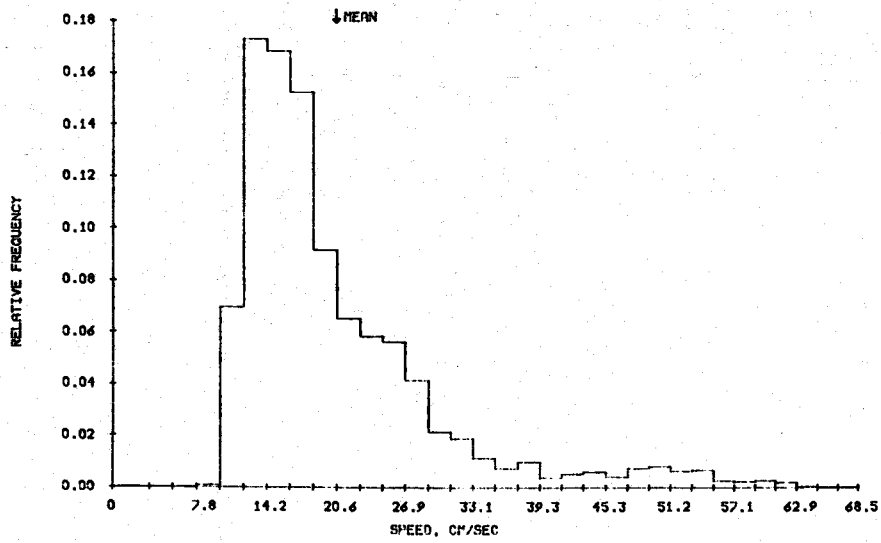
PRINCIPAL AXIS IS 136.8 DEGREES(T)

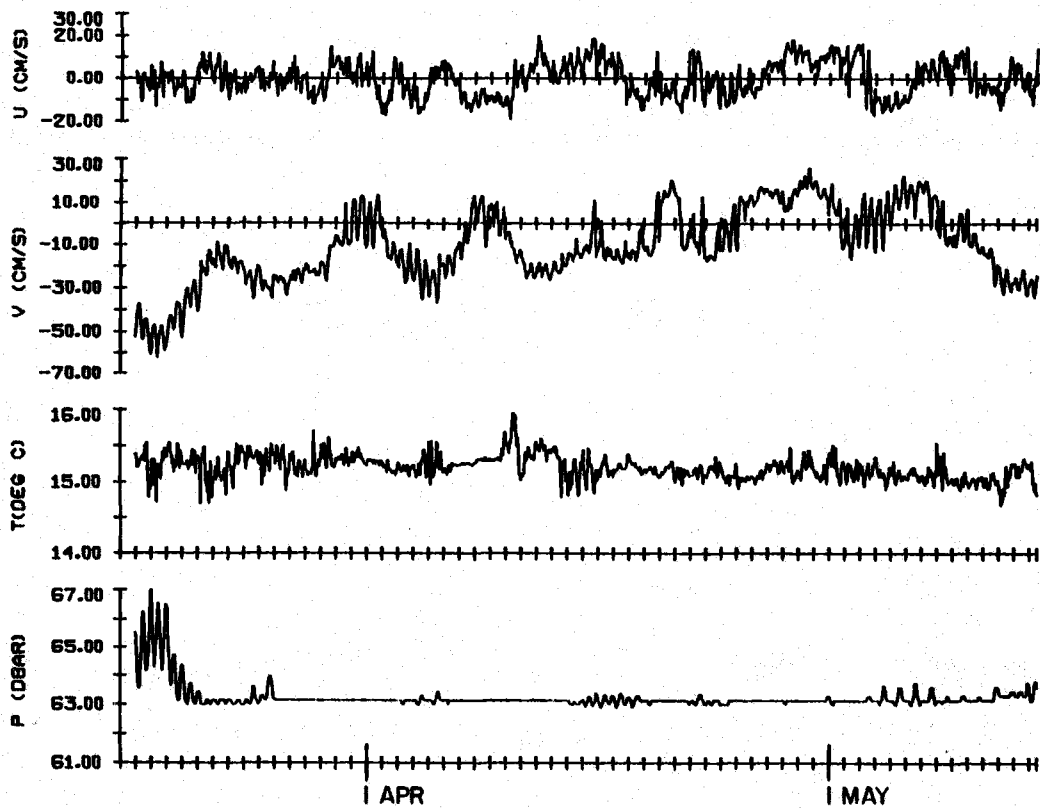
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
 63 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1406	19.7	9.5	1.8	6.9	62.6	1.5
U (CM/S)	1406	-.2	8.1	.1	2.2	20.1	-19.1
V (CM/S)	1406	-10.5	17.4	-.2	2.7	26.2	-62.4
T (DEG C)	1406	15.2	.2	.3	4.1	16.0	14.7
P (DBAR)	1406	63.3	.5	5.0	30.8	67.0	62.9

63 N AT IRONWOOD. 16 MAR 77 - 14 MAY 77. TAPE 689/26





63 M AT IRONWOOD LEG 5: HOURLIES,
58.6 DAYS STARTING 2300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	105	688/35	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	16	3	77	35.7	-35.6	35.7	-35.6	14.50	1072159	45.288
0	17	3	77	33.1	-32.8	68.8	-74.4	14.43	1072023	45.200
100	17	3	77	34.9	-30.7	103.7	-105.1	14.54	1072021	45.329
200	17	3	77	32.5	-27.3	136.2	-132.4	14.55	1067482	45.346
300	17	3	77	27.8	-32.1	164.1	-164.5	14.47	1064954	45.270

LAST 5 LINES OF DATA:

800	14	5	77	26.3	-17.5	9305.0	-10352.7	14.42	1056400	45.239
900	14	5	77	22.3	-22.0	9327.4	-10374.6	14.36	1057467	45.162
1000	14	5	77	20.0	-18.3	9347.3	-10393.0	14.42	1057123	45.223
1100	14	5	77	19.4	-15.8	9366.8	-10408.8	14.43	1057095	45.231
1200	14	5	77	17.6	-15.9	9384.4	-10424.7	14.36	1058072	45.156

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1406	6.7	-7.4	145.5	140.6	12.1	11.9	-99.2	-.6936

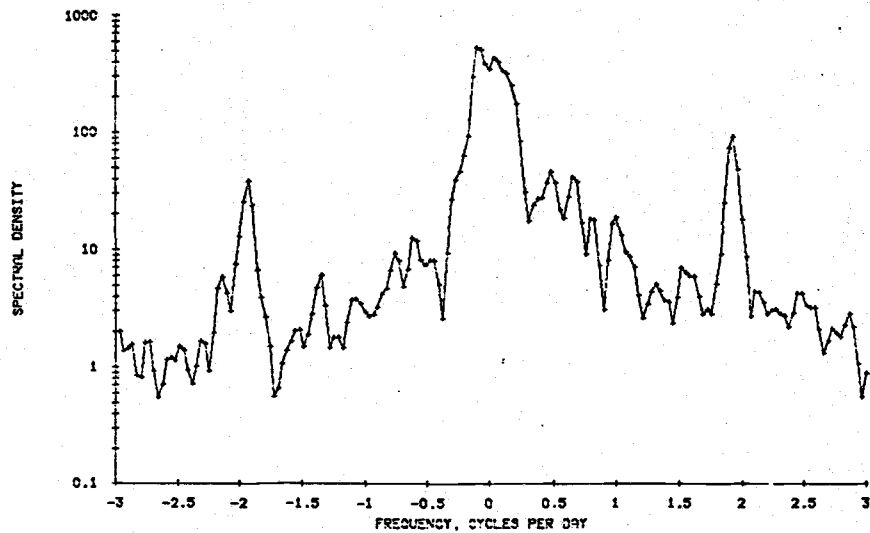
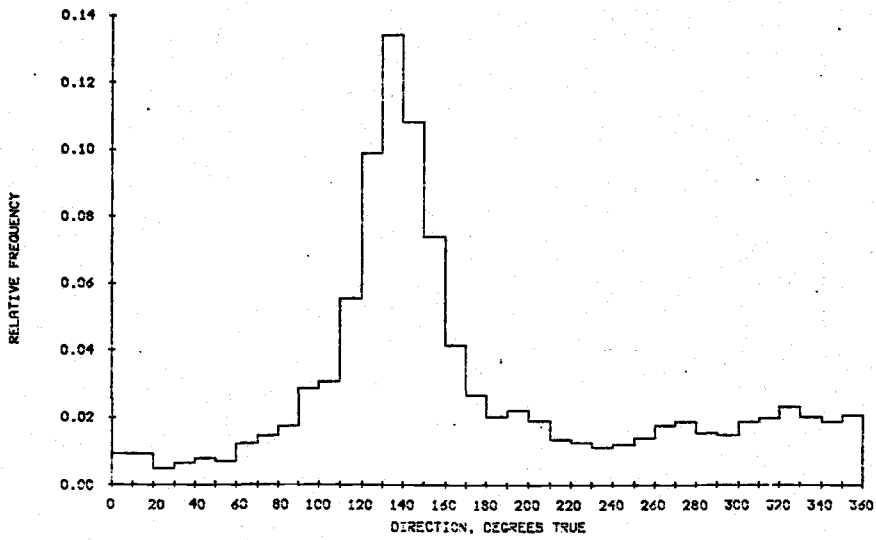
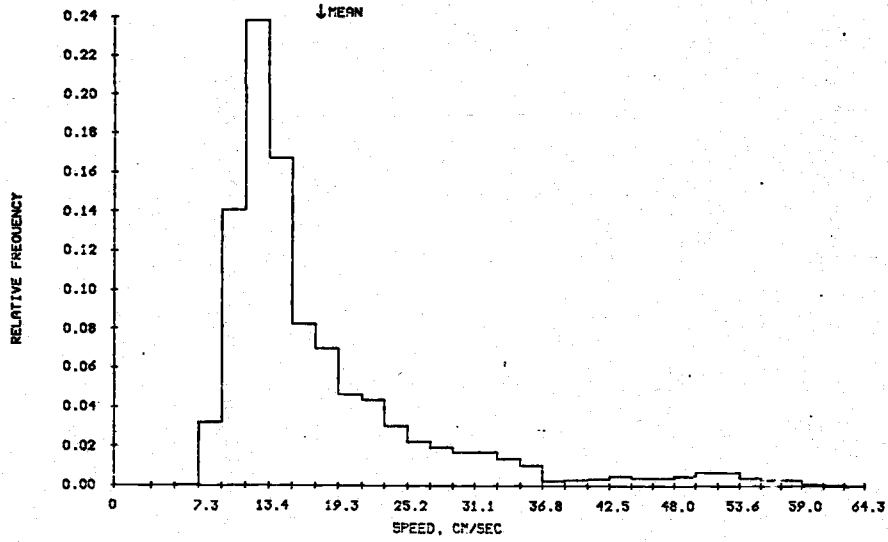
VECTOR MEAN: SPD = 10.0 CM/S, DIR = 138 DEGREES(T)
 DIRECTIONAL STEADINESS: 58.2 %

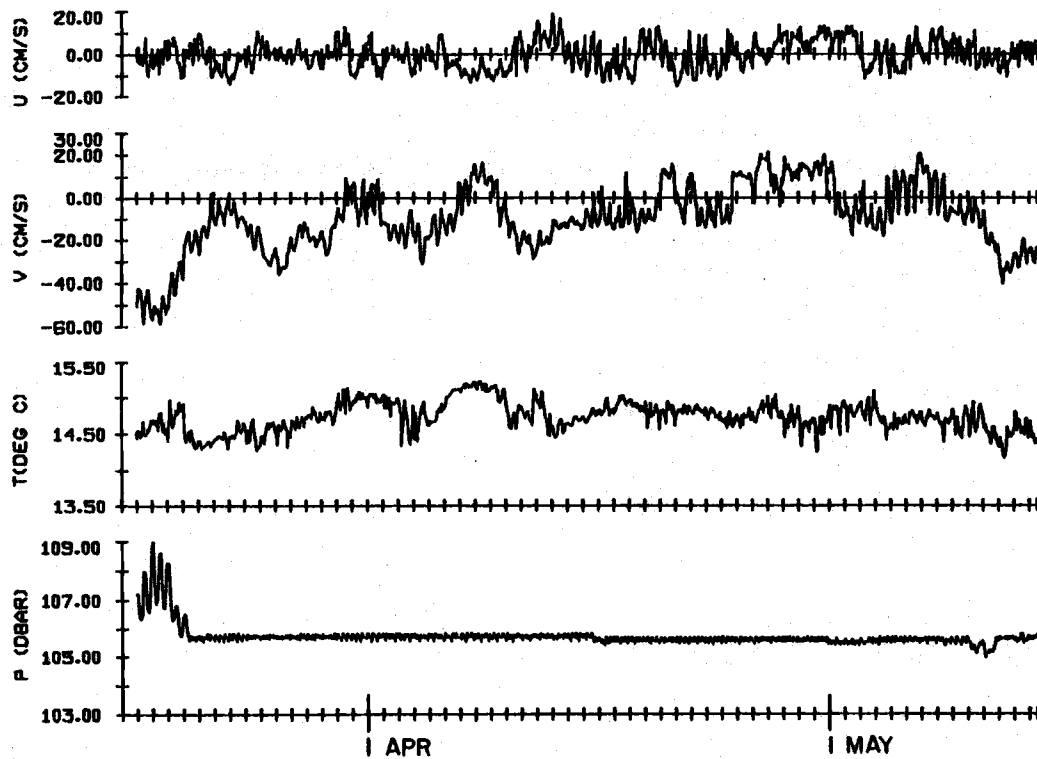
PRINCIPAL AXIS IS 134.3 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
 105 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1406	17.1	9.6	2.0	7.6	58.9	1.2
U (CM/S)	1406	-0.5	6.6	.1	2.2	19.0	-15.9
V (CM/S)	1406	-10.0	15.6	-.4	3.3	21.2	-58.9
T (DEG C)	1406	14.7	.2	.0	2.8	15.2	14.2
P (DBAR)	1406	105.7	.4	4.7	29.1	109.0	104.9





105 M AT IRONWOOD LEG 5: HOURLIES,
58.6 DAYS STARTING 2300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	155	196/86	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	16	3	77	22.1	-31.6	22.1	-31.6	13.82	1
0	17	3	77	23.3	-28.2	45.4	-59.8	13.80	2
100	17	3	77	22.2	-27.6	67.5	-87.4	13.79	3
200	17	3	77	22.0	-25.0	89.5	-112.4	13.79	4
300	17	3	77	22.4	-19.9	111.9	-132.3	13.76	5

LAST 5 LINES OF DATA:

800	14	5	77	13.5	-19.1	5552.7	-8277.0	13.88	1402
900	14	5	77	15.5	-17.2	5568.2	-8294.2	13.80	1403
1000	14	5	77	15.0	-18.0	5583.2	-8312.2	13.76	1404
1100	14	5	77	16.6	-17.4	5599.8	-8329.5	13.80	1405
1200	14	5	77	17.7	-12.9	5617.5	-8342.5	13.76	1406

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1406	4.0	-5.9	71.5	114.3	8.5	10.7	-70.5	-0.7803

VECTOR MEAN: SPD = 7.2 CM/S, DIR = 146 DEGREES(T)
DIRECTIONAL STEADINESS: 52.6 %

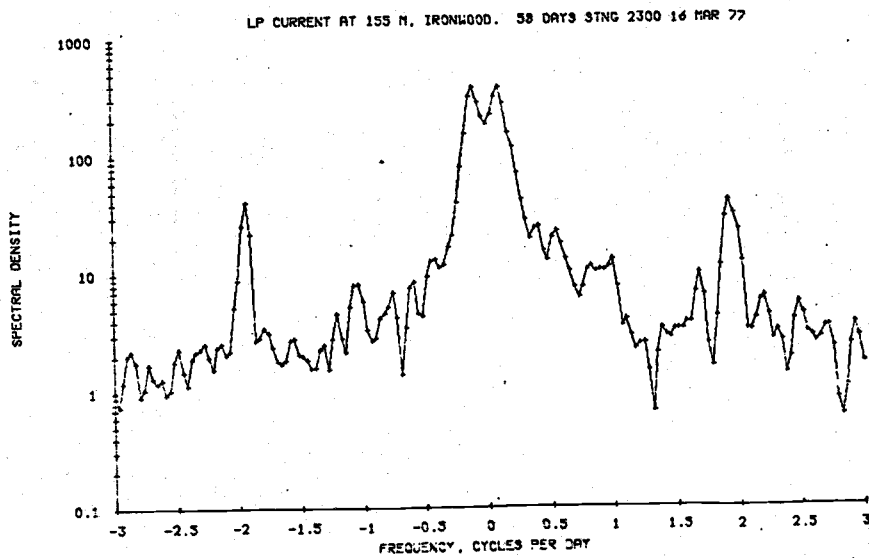
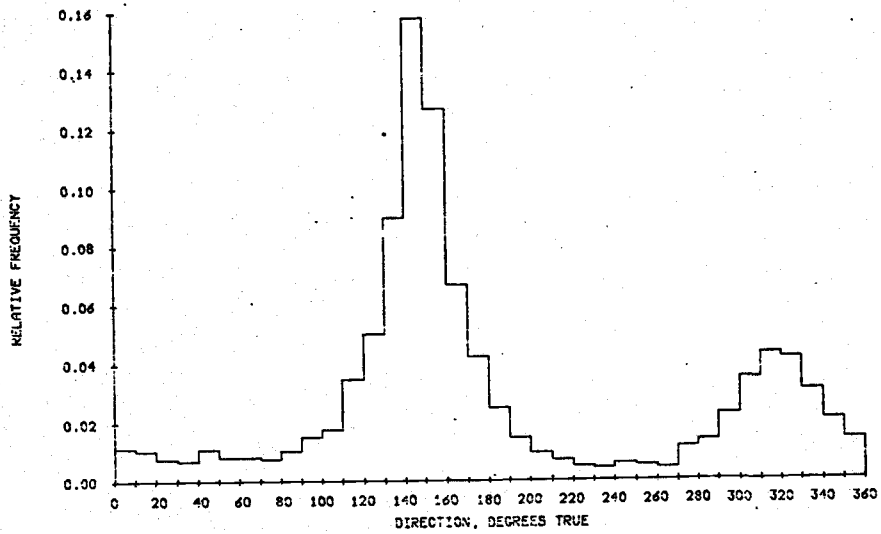
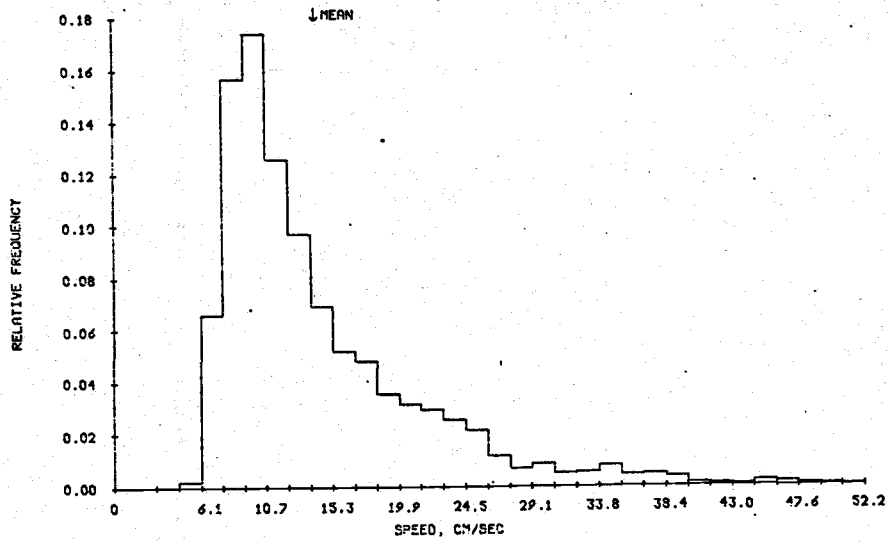
PRINCIPAL AXIS IS 143.5 DEGREES(T)

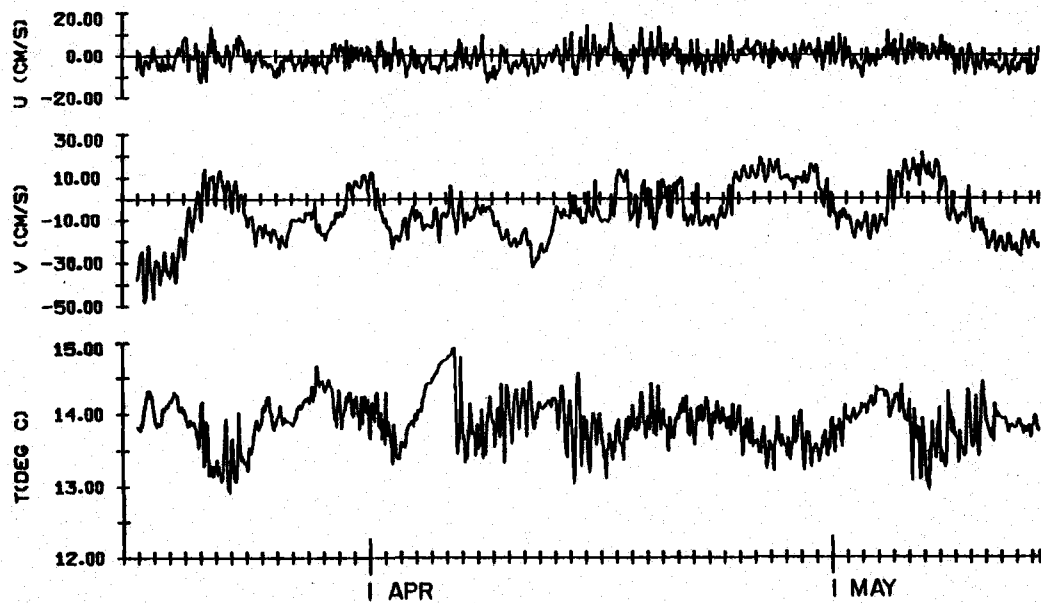
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
155 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1406	13.6	7.2	1.5	5.9	48.4	.1
U (CM/S)	1406	-1.4	4.7	.3	2.8	14.8	-13.2
V (CM/S)	1406	-7.0	12.8	-.1	2.6	21.3	-48.2
T (DEG C)	1406	13.9	.3	.0	3.3	14.9	12.9

155 M AT IRONWOOD. 16 MAR 77 - 14 MAY 77. TAPE 1968/6





155 M AT IRONWOOD LEG 5: HOURLIES,
58.6 DAYS STARTING 2300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IRONWOOD	5	180	213/06	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	16	3	77	17.1	-29.0	17.1	-29.0	13.70	1
0	17	3	77	18.9	-25.5	36.0	-54.6	13.73	2
100	17	3	77	19.7	-26.3	55.7	-80.9	13.74	3
200	17	3	77	20.4	-23.9	76.1	-104.7	13.71	4
300	17	3	77	16.3	-19.2	92.4	-124.0	13.69	5

LAST 5 LINES OF DATA:

800	14	5	77	14.4	-11.0	5410.7	-7672.2	13.60	1402
900	14	5	77	10.4	-11.6	5421.1	-7683.8	13.43	1403
1000	14	5	77	8.7	-9.0	5429.8	-7692.7	13.34	1404
1100	14	5	77	10.8	-12.5	5440.6	-7705.2	13.52	1405
1200	14	5	77	14.7	-10.7	5455.3	-7715.9	13.52	1406

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1406	3.9	-5.5	49.6	83.6	7.0	9.1	-43.8	-.6810

VECTOR MEAN: SPD = 6.7 CM/S, DIR = 145 DEGREES(T)
DIRECTIONAL STEADINESS: 57.6 %

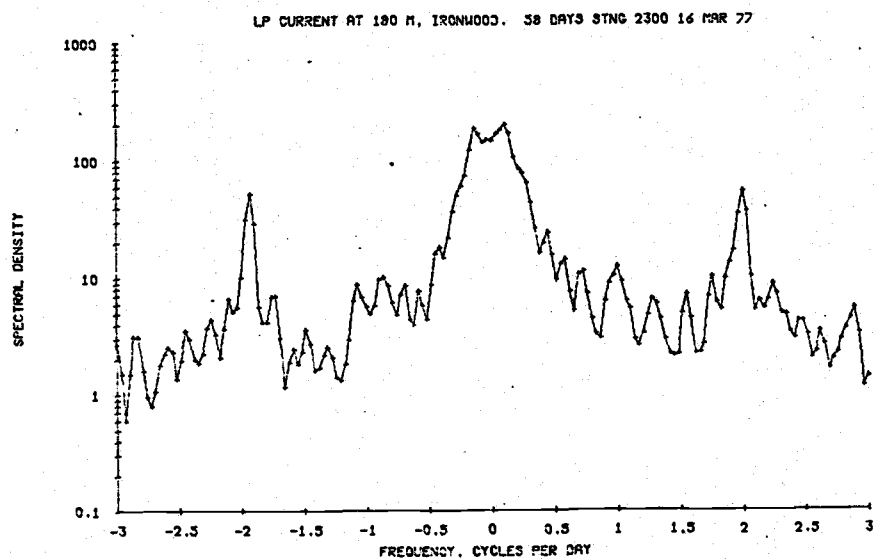
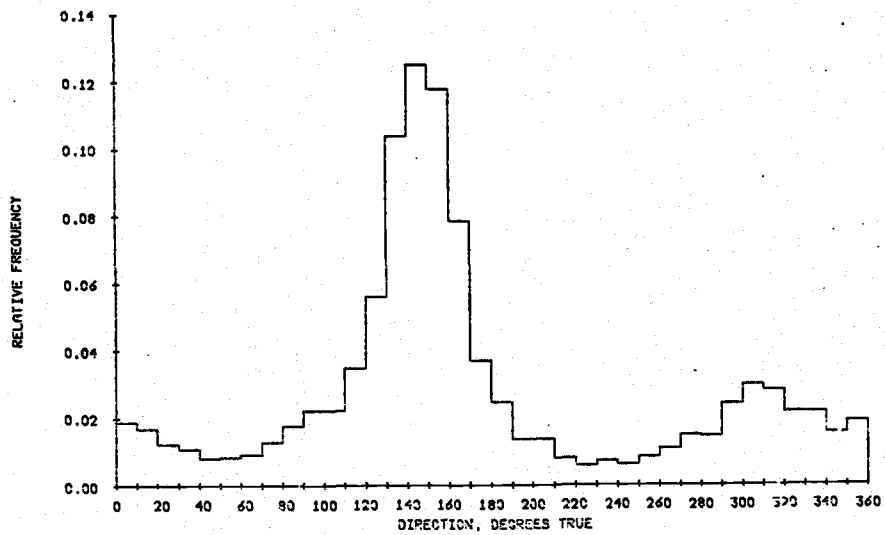
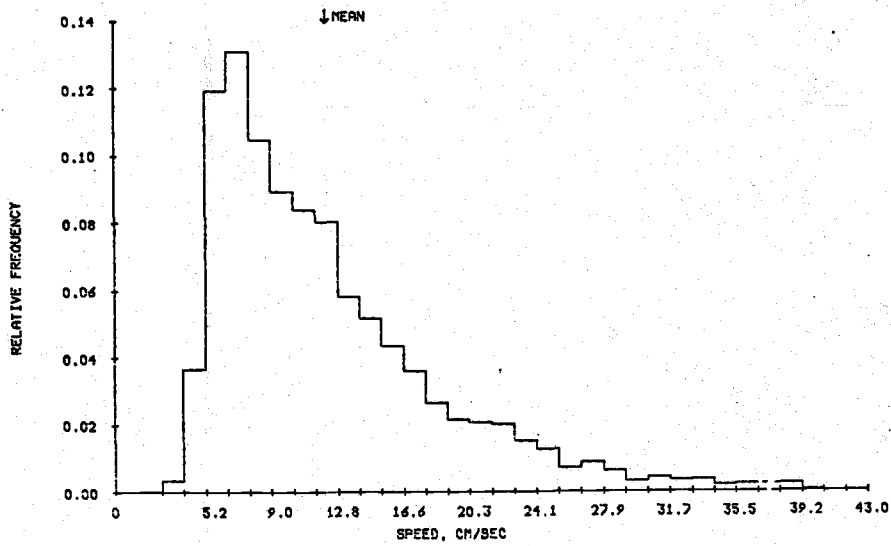
PRINCIPAL AXIS IS 145.6 DEGREES(T)

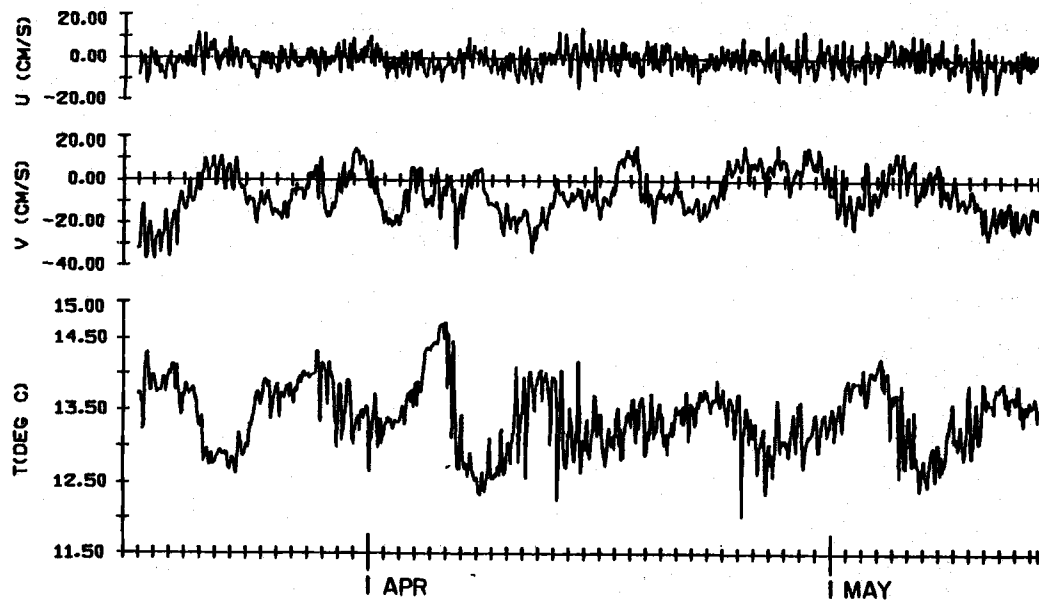
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

IRONWOOD LEG 5
180 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1406	11.7	6.5	1.3	4.9	38.8	.8
U (CM/S)	1406	-1.1	4.8	.2	3.0	14.2	-15.6
V (CM/S)	1406	-6.6	10.5	-.1	2.6	16.4	-37.4
T (DEG C)	1406	13.4	.5	-.0	2.6	14.7	12.0

180 M AT IRONWOOD. 16 MAR 77 - 14 MAY 77. TAPE 2130/6





180 M AT IRONWOOD LEC 5: HOURLIES,
58.6 DAYS STARTING 2300 CMT 16 MAR 1977

JOINT-II 1977 Installation

LAGARTA V

Position*: 15°10.0'S, 75°36.0'W
 Distance Offshore: 24.0 km
 Bottom Depth: 620 m
 Set: 1753 GMT 15 March 1977 by R/V MELVILLE
 Retrieved: 1804 GMT 14 May 1977 by R/V ISELIN
 Longest Data Interval: 0100 GMT 16 March to 1000 GMT 14 May
 Longest Record Length: 59 days, 10 hours

Instrumentation

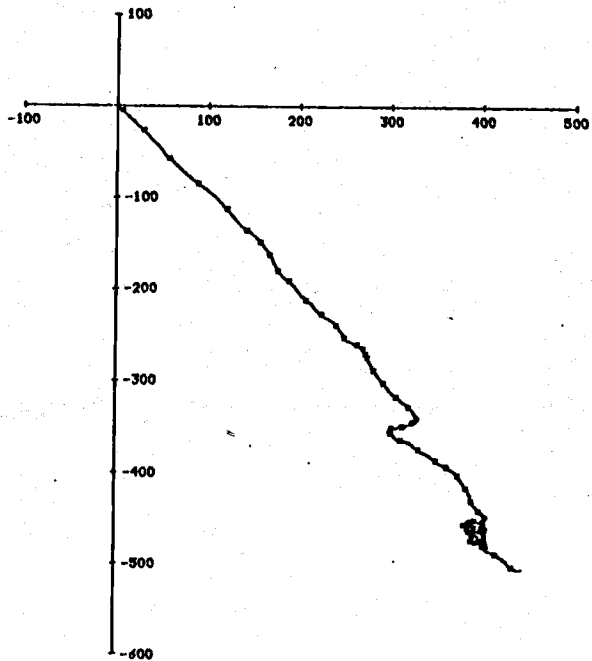
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D128/7	20 min	S _w ,T
75 m	92 m	756/21	20 min	S,θ,T,P,C
100 m	115 m	755/23	20 min	S,θ,T,P,C
200 m	214 m	500/41	15 min	S,θ,T,P
500 m	512 m	1238/9	15 min	S,θ,T,P

Comments:

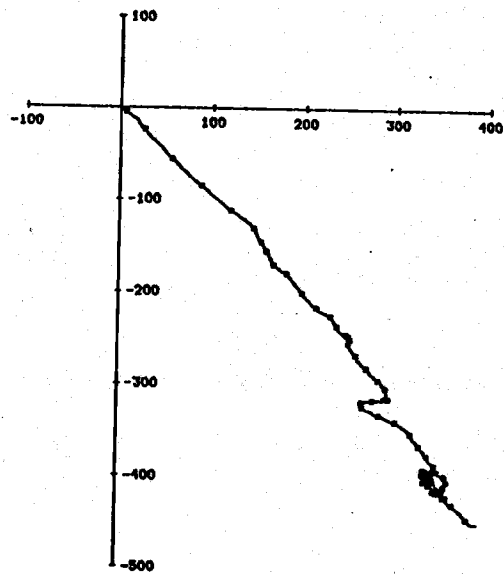
The meteorological buoy at Lagarta (D128) was set 9 days earlier than the current meters, on 6 March 1977. Speed and water temperature were satisfactorily recorded for 69 days, but no acceptable data were recorded for direction and air temperature. The data from the buoy water temperature sensor did not agree with pre- and post-calibrations. The data from D128/7 have been kept for possible future use but are not considered reliable in their present form and are not described in this report.

Current meter 1242 was placed at an accepted depth of 313 m (intended depth = 300 m) but no intelligible data could be read from the tape.

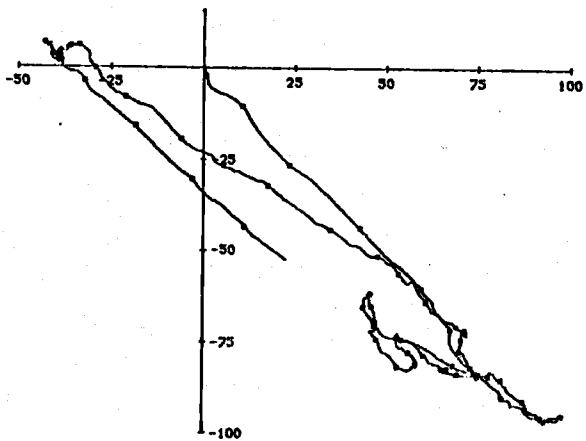
* Navigation: radar fixes and Peru chart DHNM 2200. The position of the Lagarta V meteorological buoy was estimated to be 15°10.8'S 75°35.2'W.



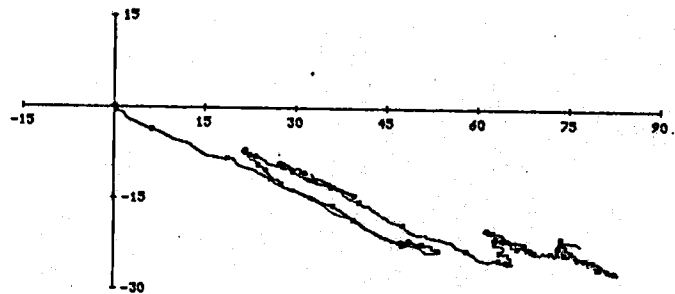
92 METERS AT LAGARTA. 15 MAR 77 - 14 MAY 77. TAPE 756/21.



115 METERS AT LAGARTA. 15 MAR 77 - 14 MAY 77. TAPE 755/23.



214 METERS AT LAGARTA. 15 MAR 77 - 14 MAY 77. TAPE 300/41.



512 METERS AT LAGARTA. 15 MAR 77 - 14 MAY 77. TAPE 1238/9.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	5	92	756/21	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	16	3	77	26.1	-24.5	26.1	-24.5	14.60	943988	37.515
200	16	3	77	25.5	-25.2	51.5	-49.6	14.63	937931	37.542
300	16	3	77	26.8	-24.6	78.3	-74.2	14.61	934189	37.521
400	16	3	77	28.3	-22.0	106.7	-96.3	14.54	933298	37.455
500	16	3	77	26.9	-23.5	133.6	-119.8	14.54	932373	37.452

LAST 5 LINES OF DATA:

600	14	5	77	18.4	-12.0	11987.9	-13851.4	14.43	929008	37.364
700	14	5	77	19.5	-9.1	12007.4	-13860.5	14.38	935054	37.311
800	14	5	77	24.6	-7.3	12032.0	-13867.8	14.57	943349	37.489
900	14	5	77	22.0	-9.0	12054.0	-13876.8	14.49	947717	37.411
1000	14	5	77	20.5	-9.1	12074.5	-13885.9	14.44	947673	37.379

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1426	8.5	-9.7	155.7	108.4	12.5	10.4	-99.9	-.7617

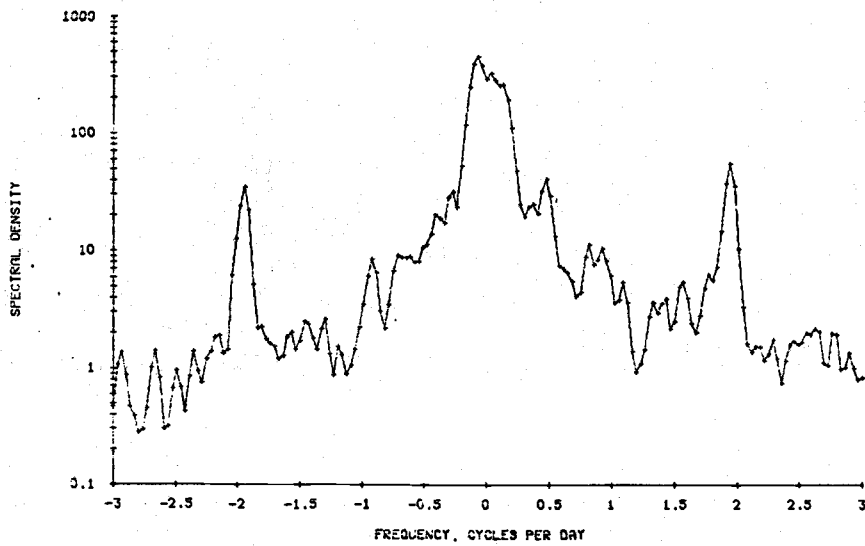
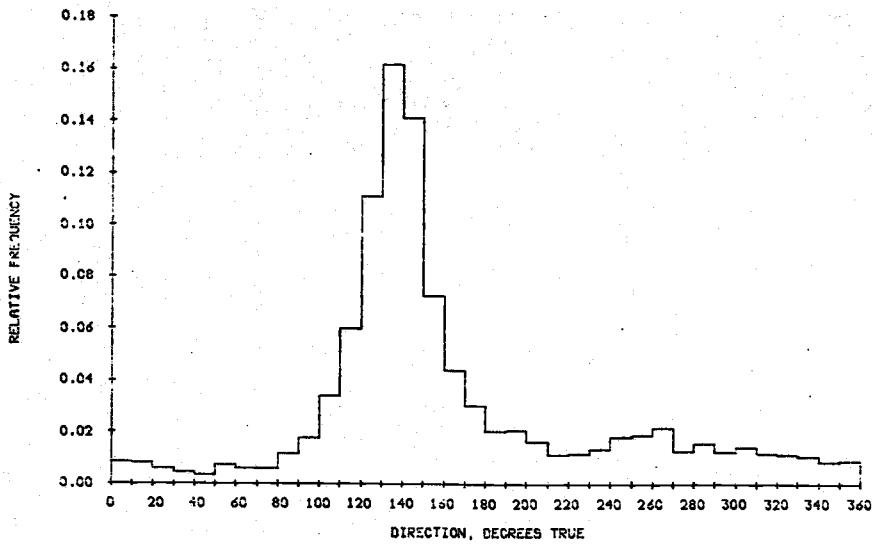
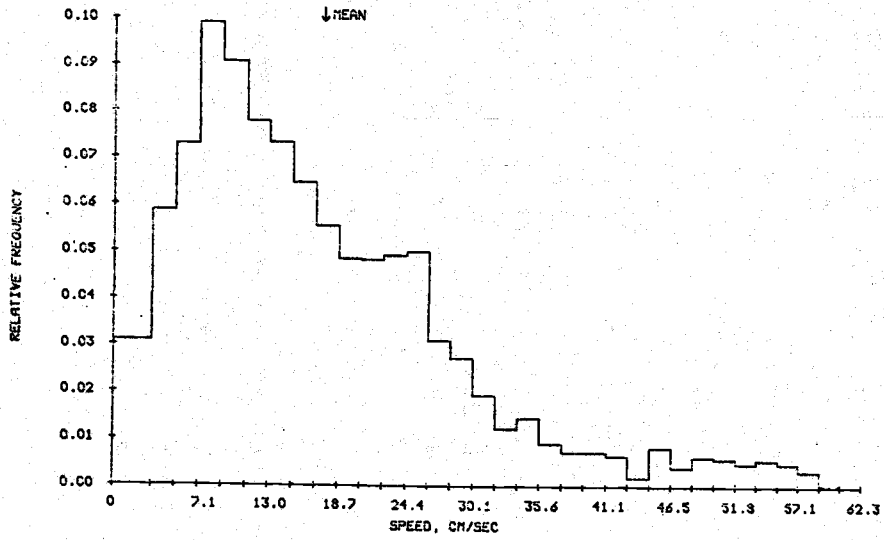
VECTOR MEAN: SPD = 12.9 CM/S, DIR = 139 DEGREES(T)
 DIRECTIONAL STEADINESS: 74.7 %

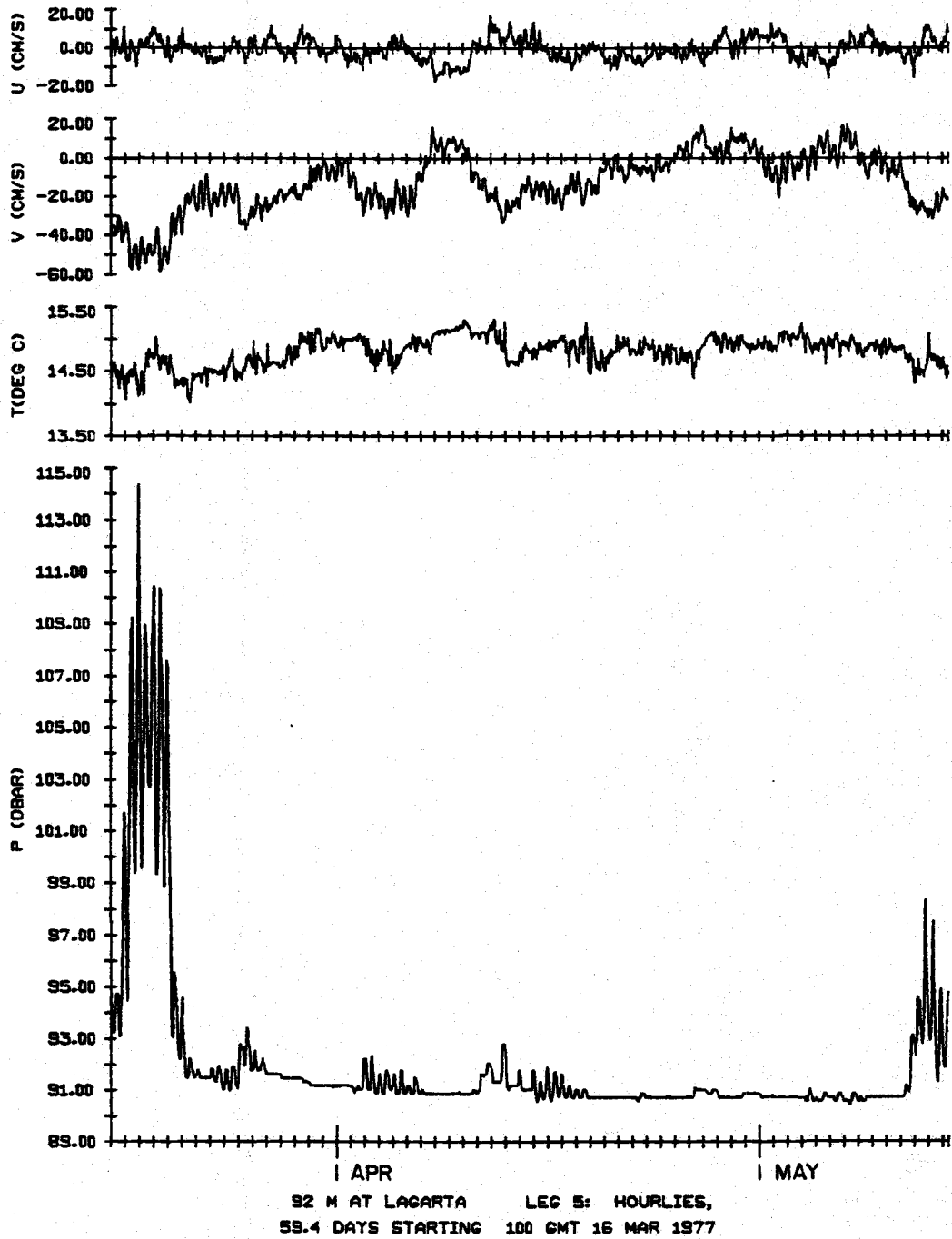
PRINCIPAL AXIS IS 128.3 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 5
 92 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1426	17.3	11.5	1.2	4.5	58.9	.9
U (CM/S)	1426	-.9	5.8	.1	2.7	16.8	-17.6
V (CM/S)	1426	-12.9	15.2	-.5	3.0	17.0	-58.3
T (DEG C)	1426	14.8	.2	-.5	2.9	15.3	14.0
P (DBAR)	1426	92.0	3.2	4.0	19.5	114.4	90.4





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	5	115	755/23	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	16	3	77	32.6	-24.3	32.6	-24.3	14.06	1181647	41.516
200	16	3	77	29.3	-19.8	61.9	-44.1	14.00	1175709	41.443
300	16	3	77	27.1	-17.5	89.1	-61.6	14.03	1173707	41.470
400	16	3	77	26.9	-17.9	116.0	-79.5	14.11	1173317	41.565
500	16	3	77	25.8	-17.0	141.8	-96.5	13.97	1172320	41.406

LAST 5 LINES OF DATA:

600	14	5	77	19.2	-15.1	10487.1	-12333.6	14.00	1169360	41.134
700	14	5	77	20.6	-15.0	10507.7	-12348.6	14.00	1174874	41.139
800	14	5	77	23.8	-10.0	10531.5	-12358.5	14.18	1180601	41.334
900	14	5	77	25.7	-7.2	10557.3	-12365.8	14.14	1184614	41.285
1000	14	5	77	24.7	-4.6	10581.9	-12370.4	14.12	1185188	41.261

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRITN
1426	7.4	-8.7	153.1	112.5	12.4	10.6	-104.3	-.7950

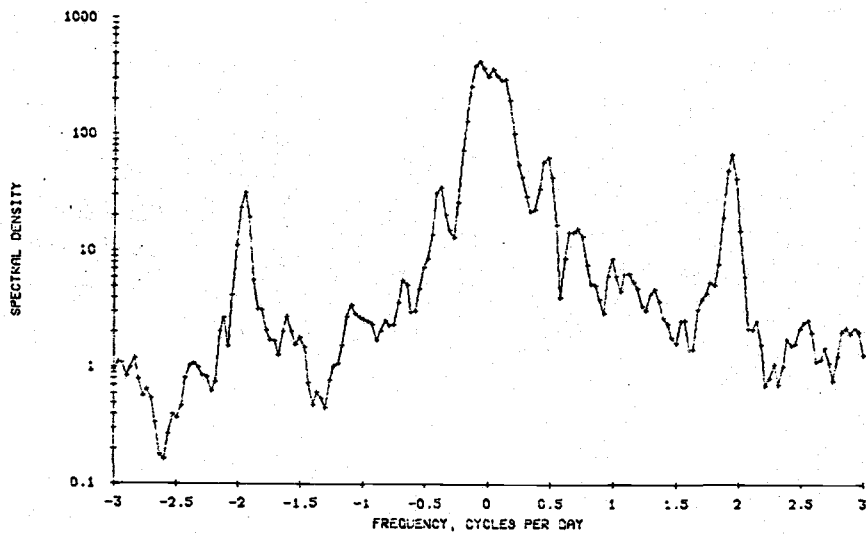
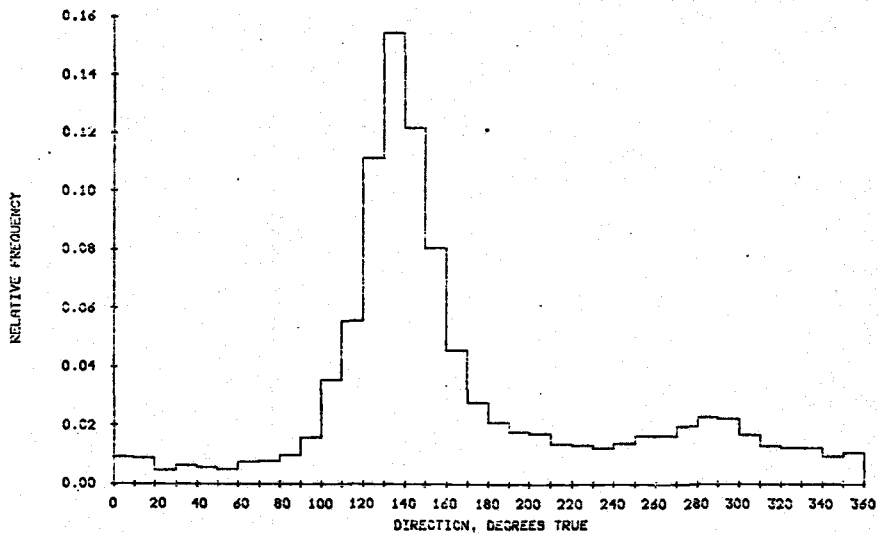
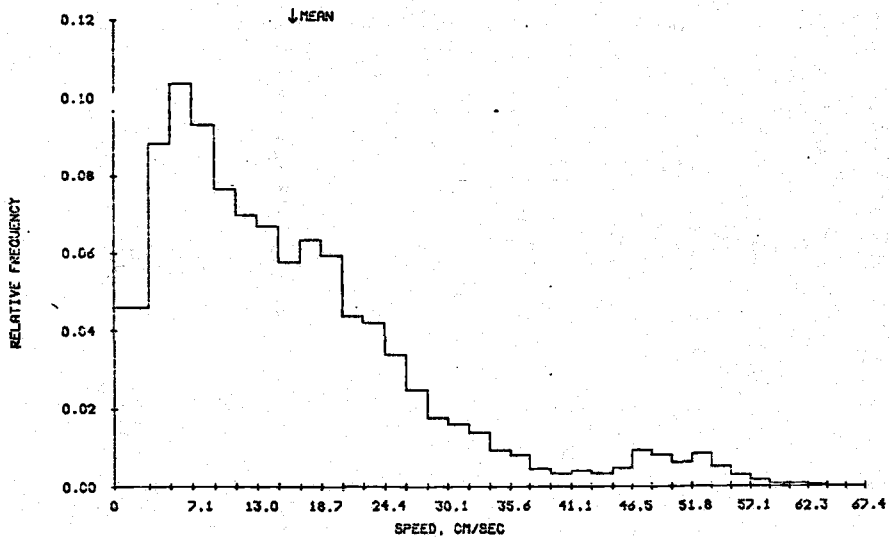
VECTOR MEAN: SPD = 11.4 CM/S, DIR = 139 DEGREES(T)
DIRECTIONAL STEADINESS: 71.2 %

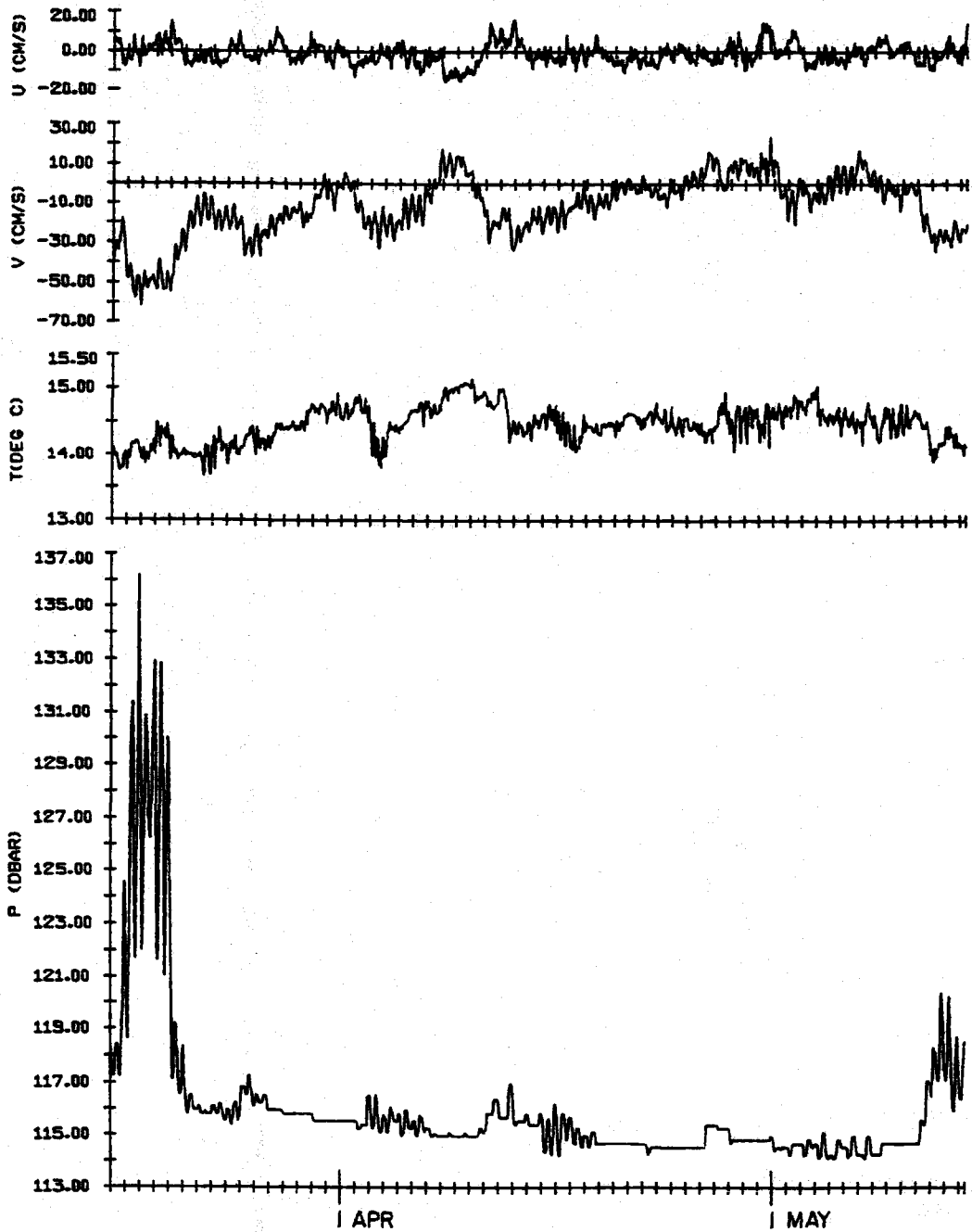
PRINCIPAL AXIS IS 129.5 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 5
115 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1426	16.0	11.8	1.4	4.9	61.8	.2
U (CM/S)	1426	-.9	5.3	.3	3.2	16.2	-15.8
V (CM/S)	1426	-11.4	15.4	-.6	3.3	23.7	-61.7
T (DEG C)	1426	14.5	.3	-.2	2.7	15.2	13.7
P (DBAR)	1426	116.0	2.9	3.9	18.8	136.2	114.1





115 M AT LAGARTA LEG 5: HOURLIES,
58.4 DAYS STARTING 100 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LAGARTA	5	214	500/41	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	16	3	77	3.5	-8.7	3.5	-8.7	12.53	2174349	1
200	16	3	77	3.7	-8.0	7.1	-16.8	12.56	2167024	2
300	16	3	77	2.6	-8.8	9.7	-25.6	12.54	2164119	3
400	16	3	77	1.5	-9.1	11.2	-34.7	12.45	2161801	4
500	16	3	77	1.4	-10.3	12.6	-44.9	12.47	2160011	5

LAST 5 LINES OF DATA:

600	14	5	77	19.1	-11.4	392.4	-1232.3	12.92	2154100	1422
700	14	5	77	20.2	-15.1	412.6	-1247.4	13.05	2160294	1423
800	14	5	77	21.1	-17.0	433.7	-1264.4	13.06	2168196	1424
900	14	5	77	22.1	-15.2	455.8	-1279.6	13.02	2174109	1425
1000	14	5	77	23.3	-15.3	479.1	-1295.0	13.02	2175324	1426

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1426	.3	-.9	105.4	79.6	10.3	8.9	-73.8	-.8062

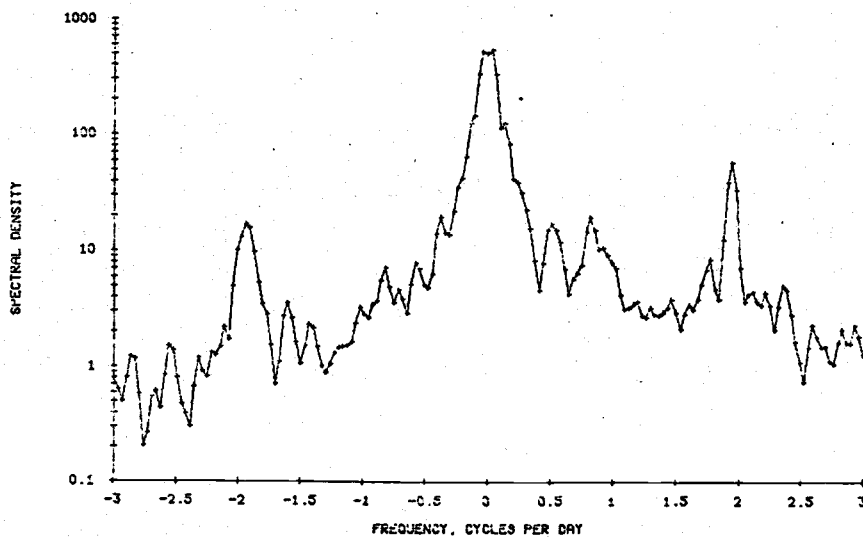
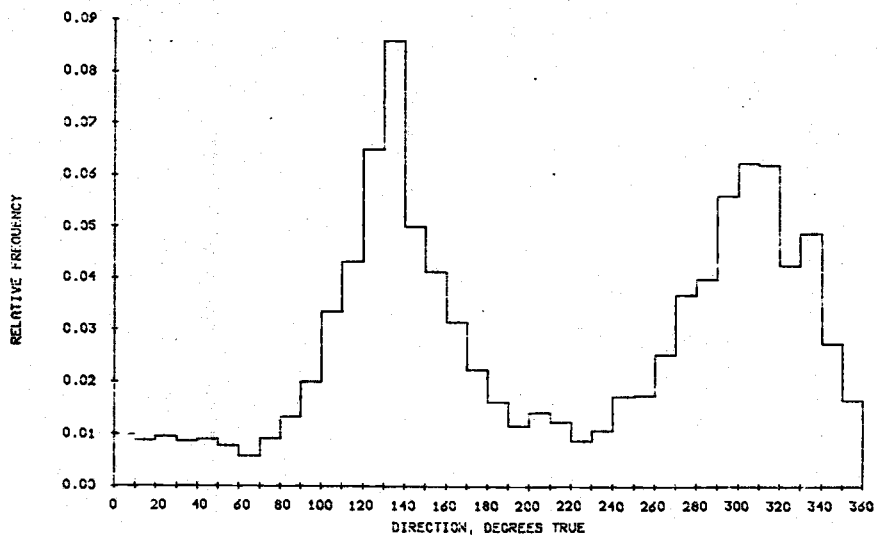
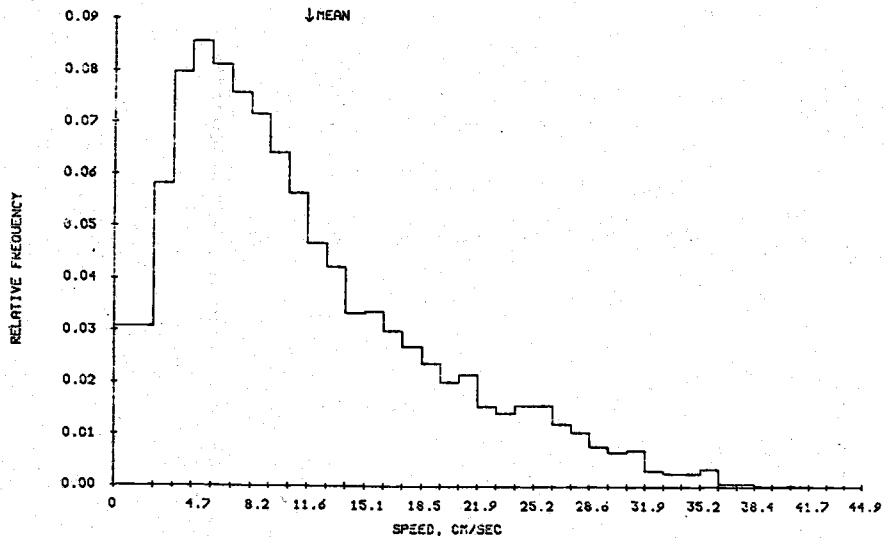
VECTOR MEAN: SPD = 1.0 CM/S, DIR = 160 DEGREES(T)
DIRECTIONAL STEADINESS: 8.5 %

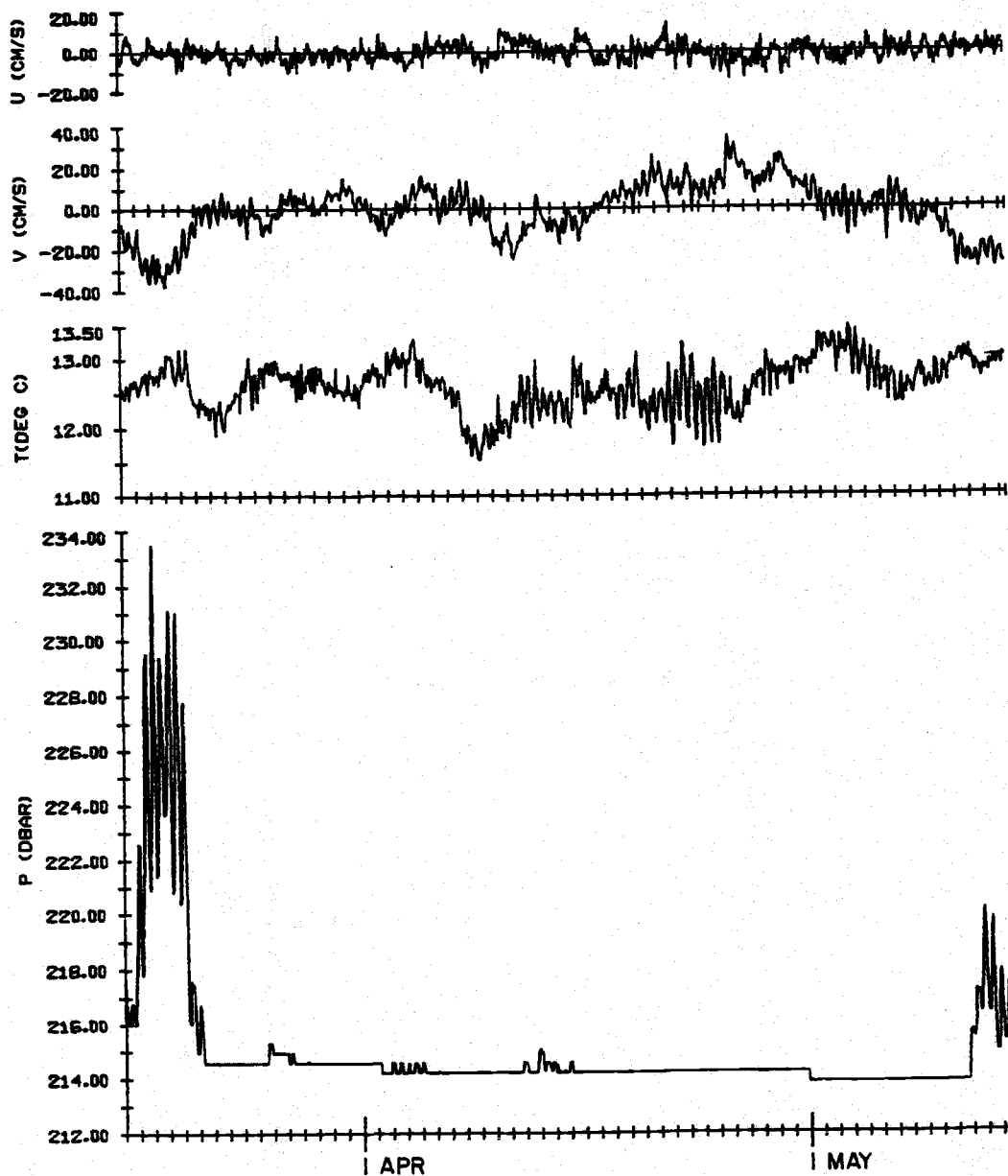
PRINCIPAL AXIS IS 130.0 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 5
214 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1426	11.4	7.5	1.0	3.4	37.8	.2
U (CM/S)	1426	-.4	4.3	.1	2.8	14.2	-14.1
V (CM/S)	1426	-.9	12.9	-.4	2.9	34.7	-37.8
T (DEG C)	1426	12.6	.3	-.4	3.1	13.5	11.5
P (DBAR)	1426	215.0	2.6	4.1	20.5	233.5	213.8





214 M AT LAGARTA LEG 5: HOURLIES,
59.4 DAYS STARTING 100 GMT 16 MAR 1977

STATION LAGARTA	LEG 5	DEPTH 512	TAPE NO 123/89	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

100	16	3	77	-5.1	0.8	-5.1	0.8	6.94	1
200	16	3	77	-2.4	0.9	-7.4	1.7	6.94	2
300	16	3	77	-0.3	1.0	-7.7	2.7	6.79	3
400	16	3	77	-0.8	0.2	-8.5	2.9	6.65	4
500	16	3	77	-1.0	-1.4	-9.5	1.5	6.71	5

LAST 5 LINES OF DATA:

600	14	5	77	4.3	-3.6	2043.5	-603.4	8.28	1422
700	14	5	77	3.3	-1.6	2046.8	-605.1	8.14	1423
800	14	5	77	6.2	-0.5	2053.0	-605.6	8.23	1424
900	14	5	77	8.9	-1.1	2061.8	-606.7	8.33	1425
1000	14	5	77	8.3	0.4	2070.1	-606.4	8.17	1426

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1426	1.5	-.4	39.7	9.9	6.3	3.1	-12.3	-.6192

VECTOR MEAN: SPD = 1.5 CM/S, DIR = 106 DEGREES(T)
DIRECTIONAL STEADINESS: 27.1 %

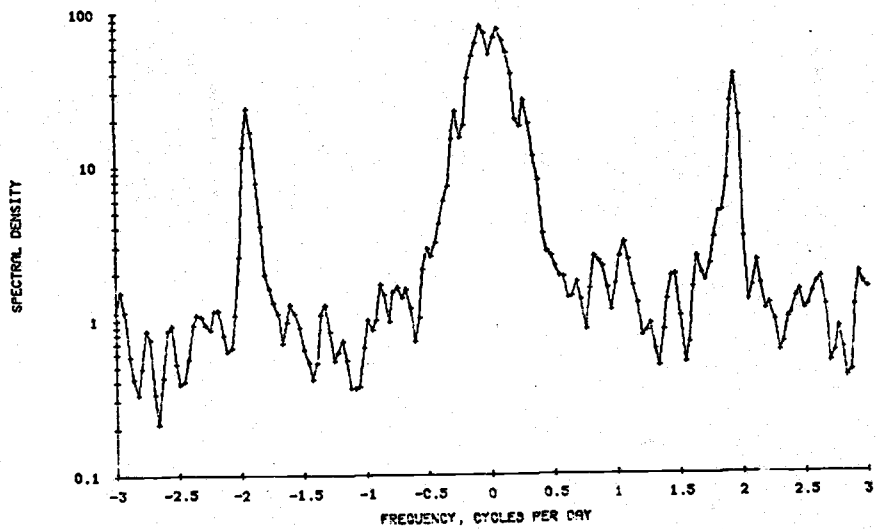
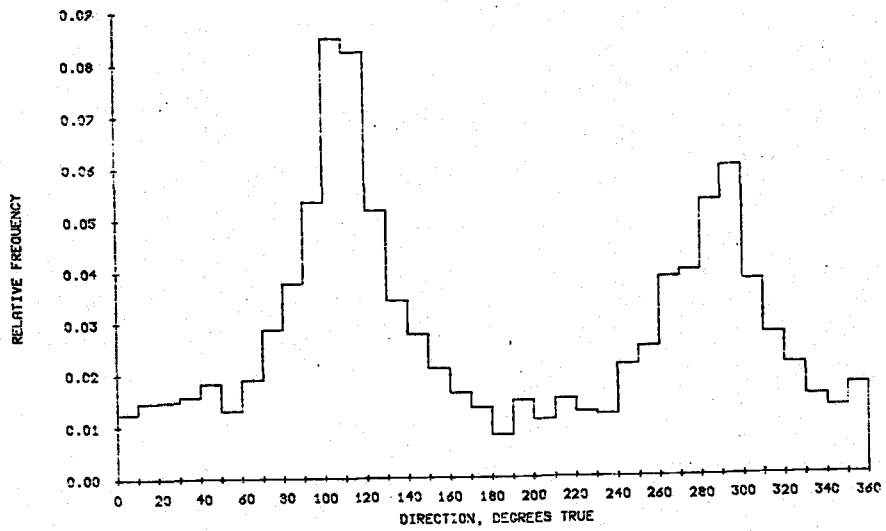
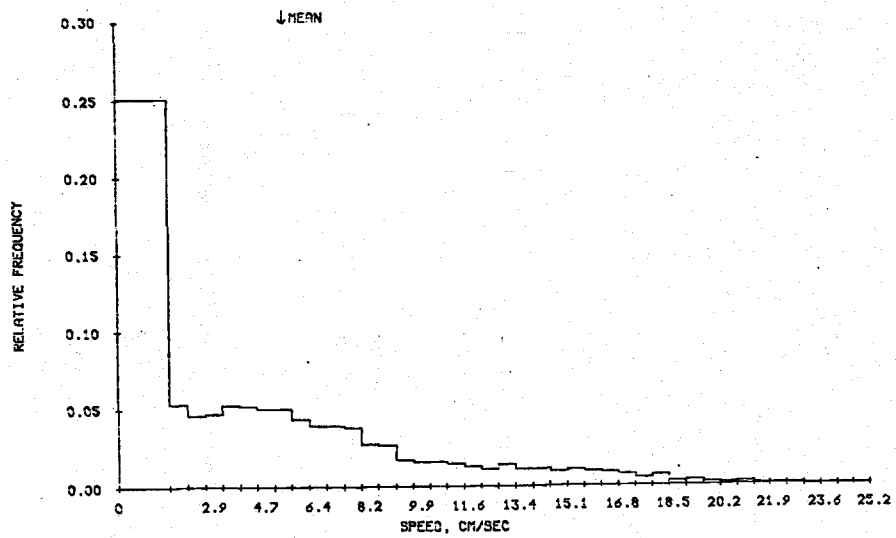
PRINCIPAL AXIS IS 109.7 DEGREES(T)

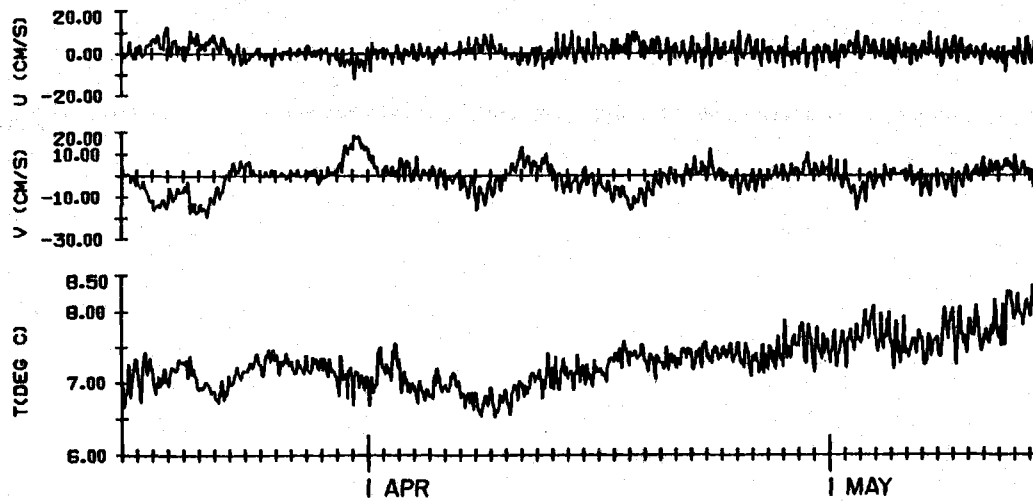
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LAGARTA LEG 5
512 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1426	5.6	4.6	1.1	3.6	22.0	.1
U (CM/S)	1426	.7	3.5	.3	3.2	12.8	-12.2
V (CM/S)	1426	-1.3	6.1	-.3	3.7	18.4	-20.0
T (DEG C)	1426	7.3	.3	.4	3.2	8.4	6.5

512 METERS AT LAGARTA. 15 MAR 77 - 14 MAY 77. TAPE 1238/9.





512 M AT LAGARTA LEG 5: HOURLIES,
 59.4 DAYS STARTING 100 GMT 16 MAR 1977

JOINT-II 1977 Installation

LOBIVIA V

Position*: 15°11.5'S, 75°34.3'W
 Distance Offshore: 24.0 km
 Bottom Depth: 580 m
 Set: 1951 GMT 15 March 1977 by R/V MELVILLE
 Retrieved: 1847 GMT 11 May 1977 by R/V ISELIN
 Longest Data Interval: 0300 GMT 16 March to 1100 GMT 11 May
 Longest Record Length: 56 days, 9 hours

Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
25 m	58 m	748/28	20 min	S,θ,T,P,C
50 m	83 m	749/28	20 min	S,θ,T,P,C
150 m	183 m	1244/8	15 min	S,θ,T
250 m	283 m	2284/4	15 min	S,θ,T

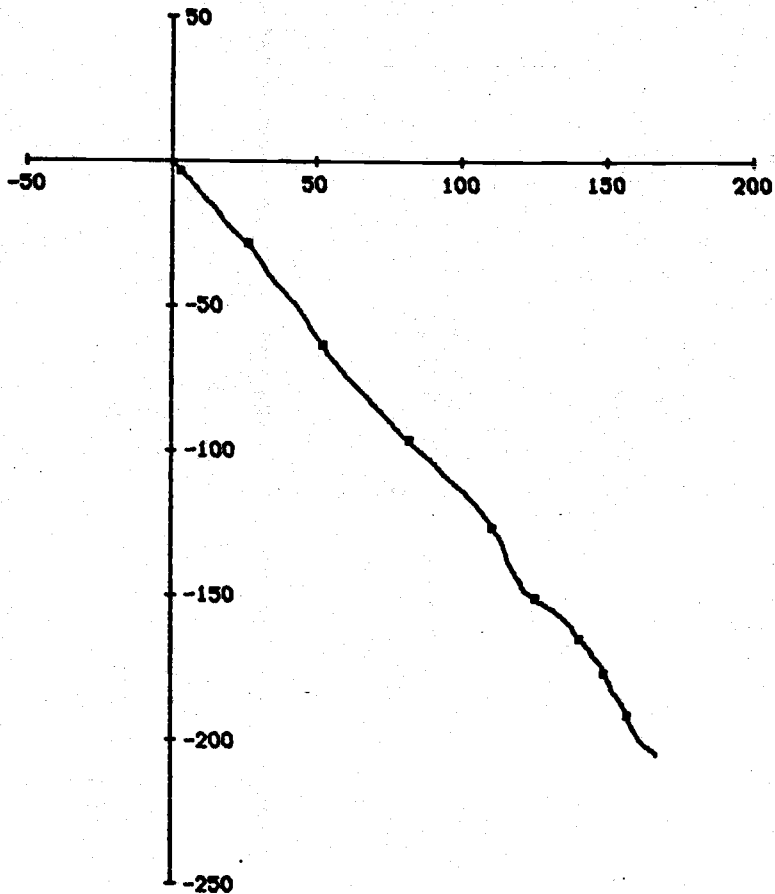
Comments:

The data from RCM 749 were of mixed quality, and three extensive sections were eliminated, leaving the following four segments of data:

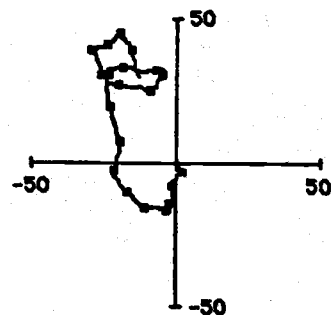
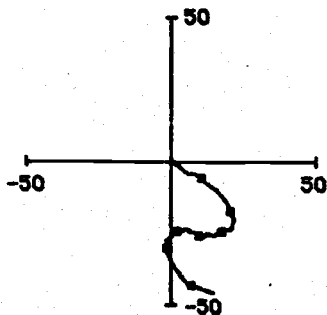
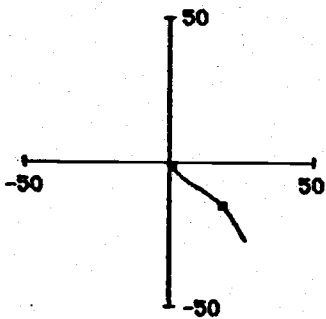
1. 0300 GMT 16 March through 1700 GMT 24 March (8 days, 15 hours)
2. 0500 GMT 27 March through 1200 GMT 28 March (1 day, 8 hours)
3. 1200 GMT 5 April through 0400 GMT 12 April (6 days, 17 hours)
4. 1600 GMT 21 April through 1100 GMT 11 May (19 days, 20 hours)

Current meter 1245 was placed at an accepted depth of 383 m (intended depth = 350 m) but no intelligible data could be read from the tape.

* Navigation: radar fixes and Peru chart DHNM 2200.



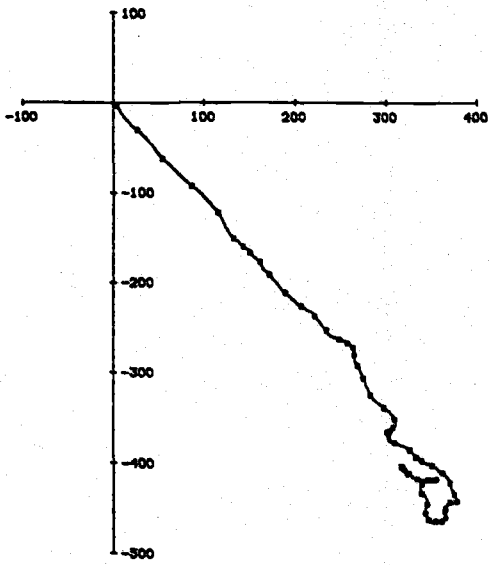
83 M AT LOBIVIA. 2050 15 MAR 77 - 2330 24 MAR 77.



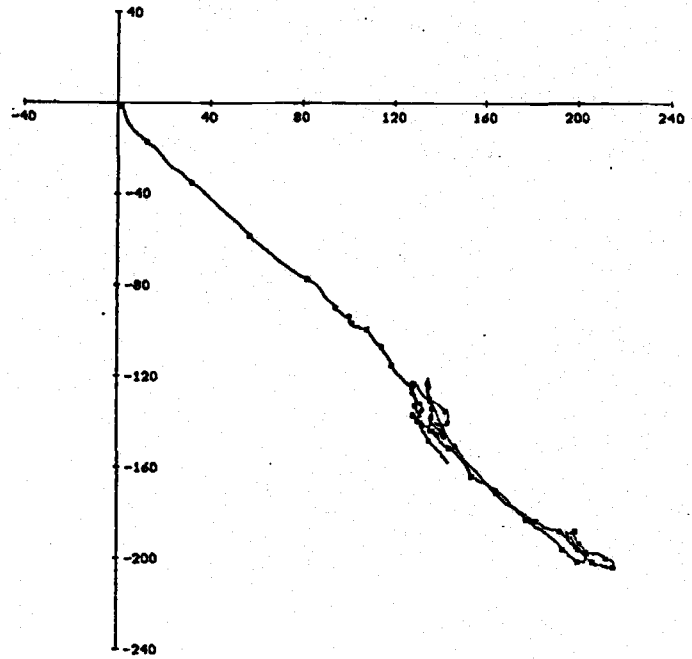
83 M AT LOBIVIA. 2210 26 MAR 77 - 1850 28 MAR 77.

83 M AT LOBIVIA. 0510 5 APR 77 - 1010 12 APR 77.

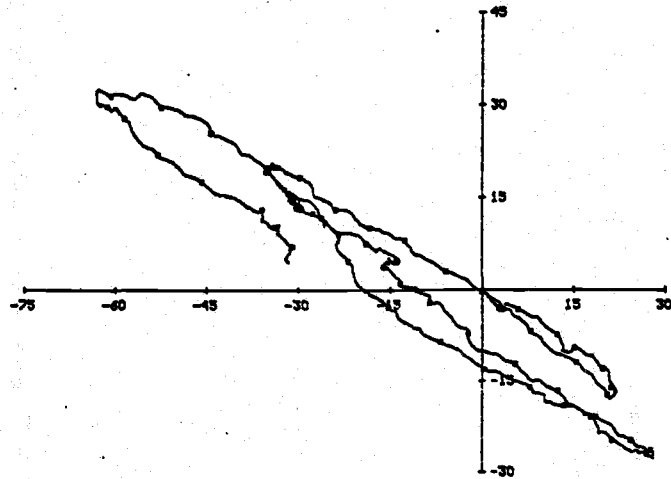
83 M AT LOBIVIA. 1010 21 APR 77 - 1750 11 MAY 77.



50 METERS AT LOBIVIA. 15 MAR 77 - 11 MAY 77. TAPE 748/28.



183 METERS AT LOBIVIA. 15 MAR 77 - 11 MAY 77. TAPE 1244/8.



283 METERS AT LOBIVIA. 15 MAR 77 - 11 MAY 77. TAPE 2284/4.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	5	58	748/28	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	16	3	77	18.4	-26.6	18.4	-26.6	15.30	616773	43.371
400	16	3	77	16.1	-27.3	34.5	-53.9	15.34	609756	43.417
500	16	3	77	17.3	-27.0	51.9	-80.9	15.40	601444	43.482
600	16	3	77	18.6	-27.9	70.4	-108.8	15.32	604363	43.392
700	16	3	77	18.2	-32.4	88.7	-141.2	15.33	614791	43.391

LAST 5 LINES OF DATA:

600	11	5	77	7.0	-18.8	8751.7	-11227.8	15.12	567081	43.166
700	11	5	77	8.9	-15.8	8760.6	-11243.7	15.06	567014	43.114
800	11	5	77	10.1	-13.1	8770.7	-11256.8	15.03	567502	43.079
900	11	5	77	5.9	-10.0	8776.6	-11266.8	15.03	566666	43.072
1000	11	5	77	2.9	-12.5	8779.5	-11279.4	15.00	566389	43.057

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1352	6.5	-8.3	151.1	147.6	12.3	12.1	-110.5	-.7401

VECTOR MEAN: SPD = 10.6 CM/S, DIR = 142 DEGREES(T)
DIRECTIONAL STEADINESS: 64.1 %

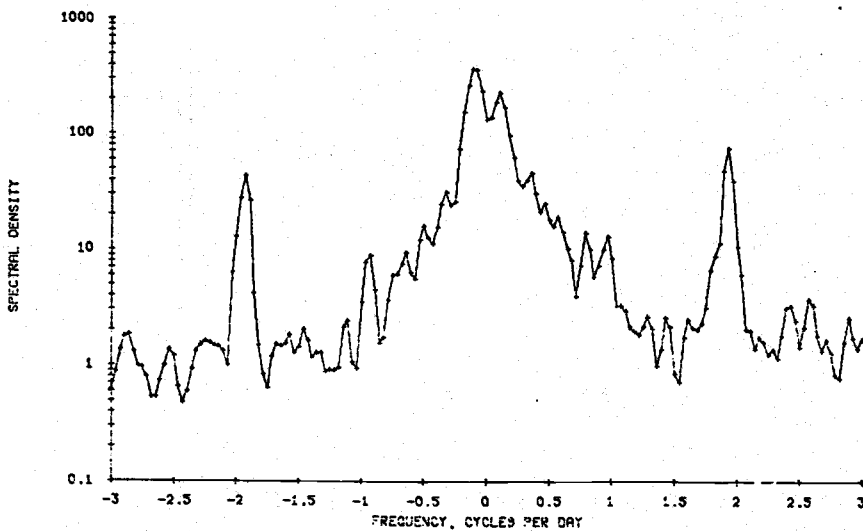
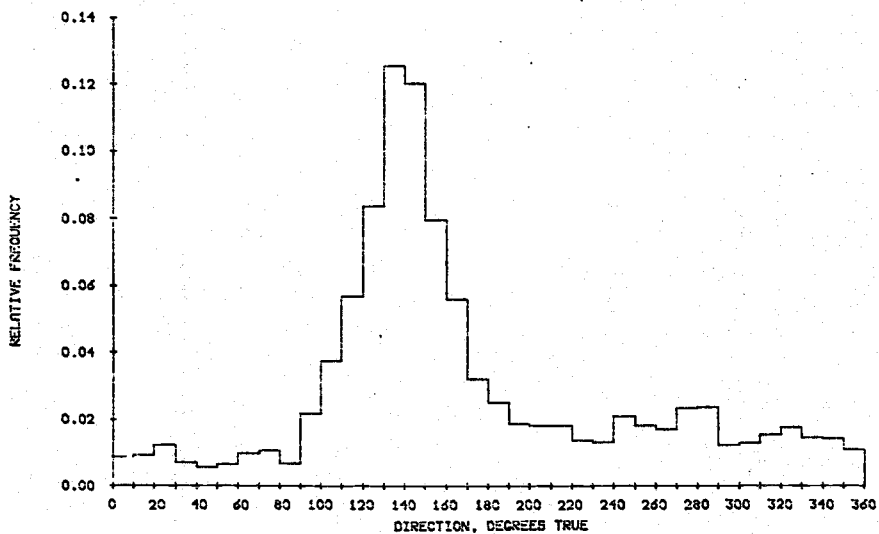
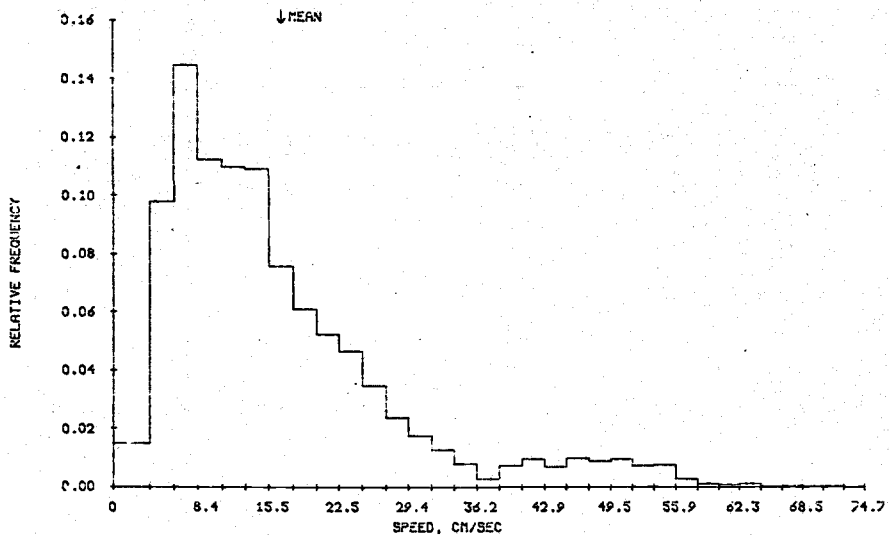
PRINCIPAL AXIS IS 134.5 DEGREES(T)

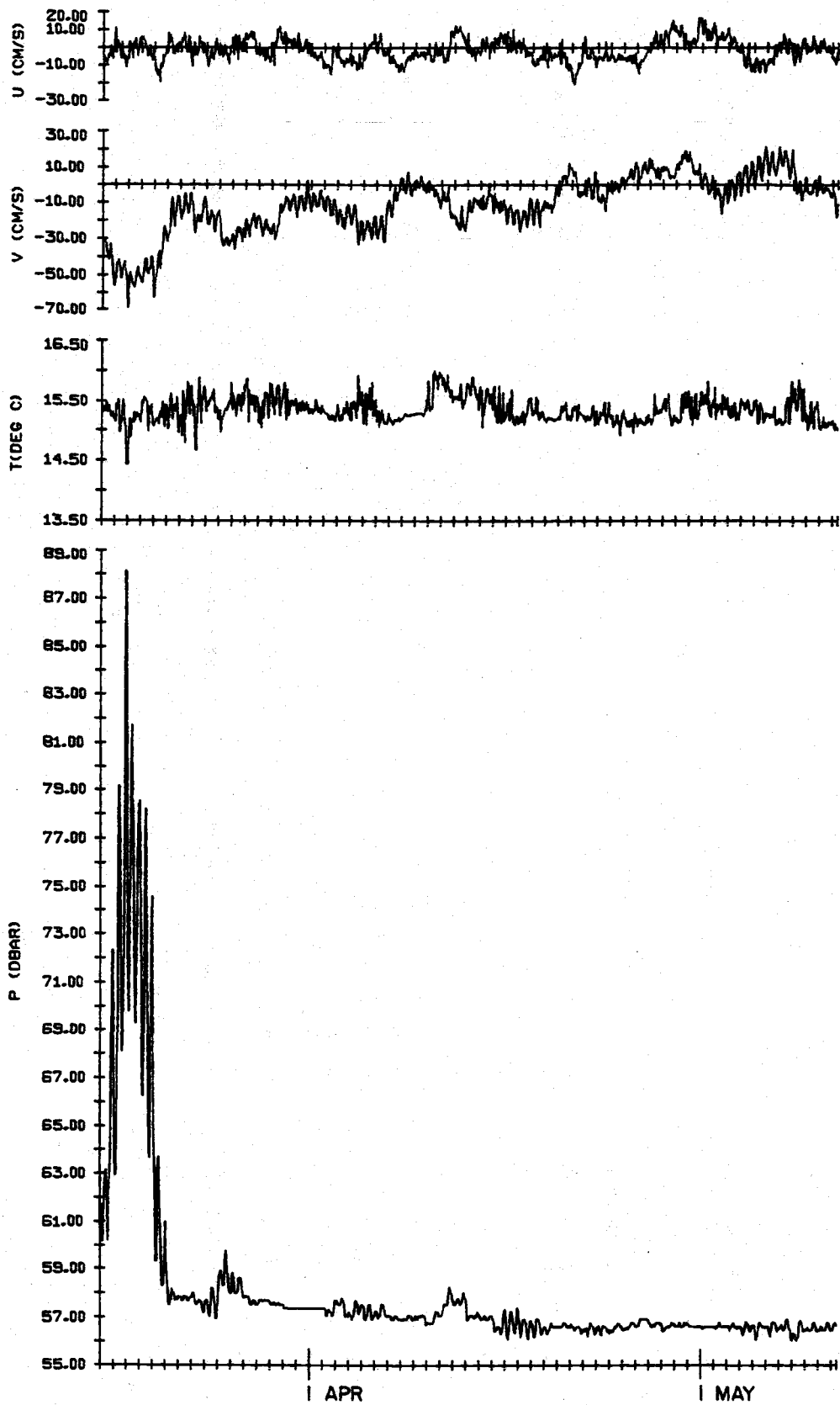
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 5
58 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1352	16.5	11.8	1.6	5.6	69.2	.2
U (CM/S)	1352	-1.3	6.2	.1	2.8	16.9	-20.8
V (CM/S)	1352	-10.5	16.1	-.7	3.5	22.1	-68.9
T (DEG C)	1352	15.3	.2	.2	3.9	16.0	14.4
P (DBAF)	1352	58.0	4.0	+.2	21.7	88.1	56.0

58 METERS AT LOSIVIA. 15 MAR 77 - 11 MAY 77. TAPE 748/28.





58 M AT LOBIVIA LEG 5: HOURLIES,
56.3 DAYS STARTING 300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	5	83	749/28	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	16	3	77	24.3	-23.0	24.3	-23.0	14.87	847799	43.021
400	16	3	77	23.0	-23.5	47.3	-46.4	14.85	845660	42.987
500	16	3	77	19.6	-24.5	66.9	-70.9	14.91	844448	43.056
600	16	3	77	21.7	-24.8	88.7	-95.7	14.87	846995	43.002
700	16	3	77	21.6	-27.9	110.3	-123.6	14.87	850946	43.009

LAST 5 LINES OF DATA:

700	11	5	77	4.1	-12.3	-451.8	1060.7	14.78	816513	42.902
800	11	5	77	5.1	-11.5	-446.6	1049.1	14.82	817456	42.952
900	11	5	77	2.9	-12.5	-443.7	1036.6	14.76	817234	42.876
1000	11	5	77	4.2	-17.7	-439.6	1018.9	14.69	817345	42.799
1100	11	5	77	0.8	-16.9	-438.7	1002.0	14.80	817236	42.921

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
876	5.4	-7.0	171.3	206.7	13.1	14.4	-147.1	-.7816

VECTOR MEAN: SPD = 8.8 CM/S, DIR = 142 DEGREES(T)
 DIRECTIONAL STEADINESS: 51.9 %

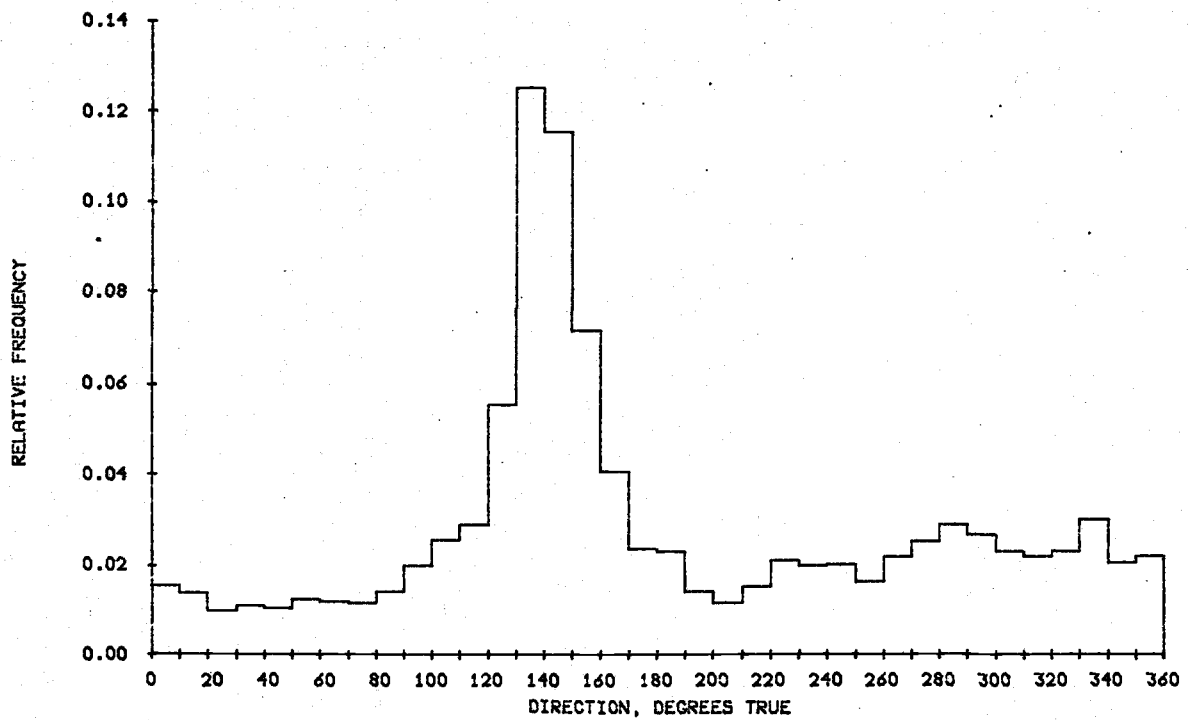
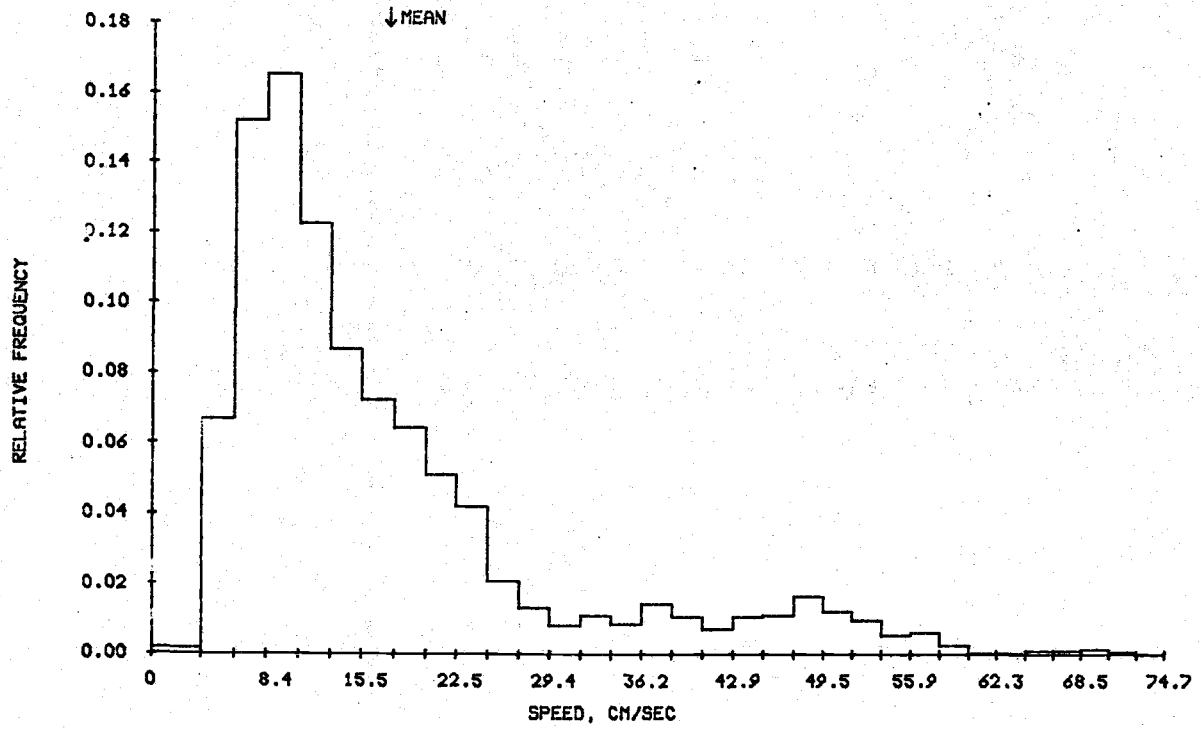
PRINCIPAL AXIS IS 138.4 DEGREES(T)

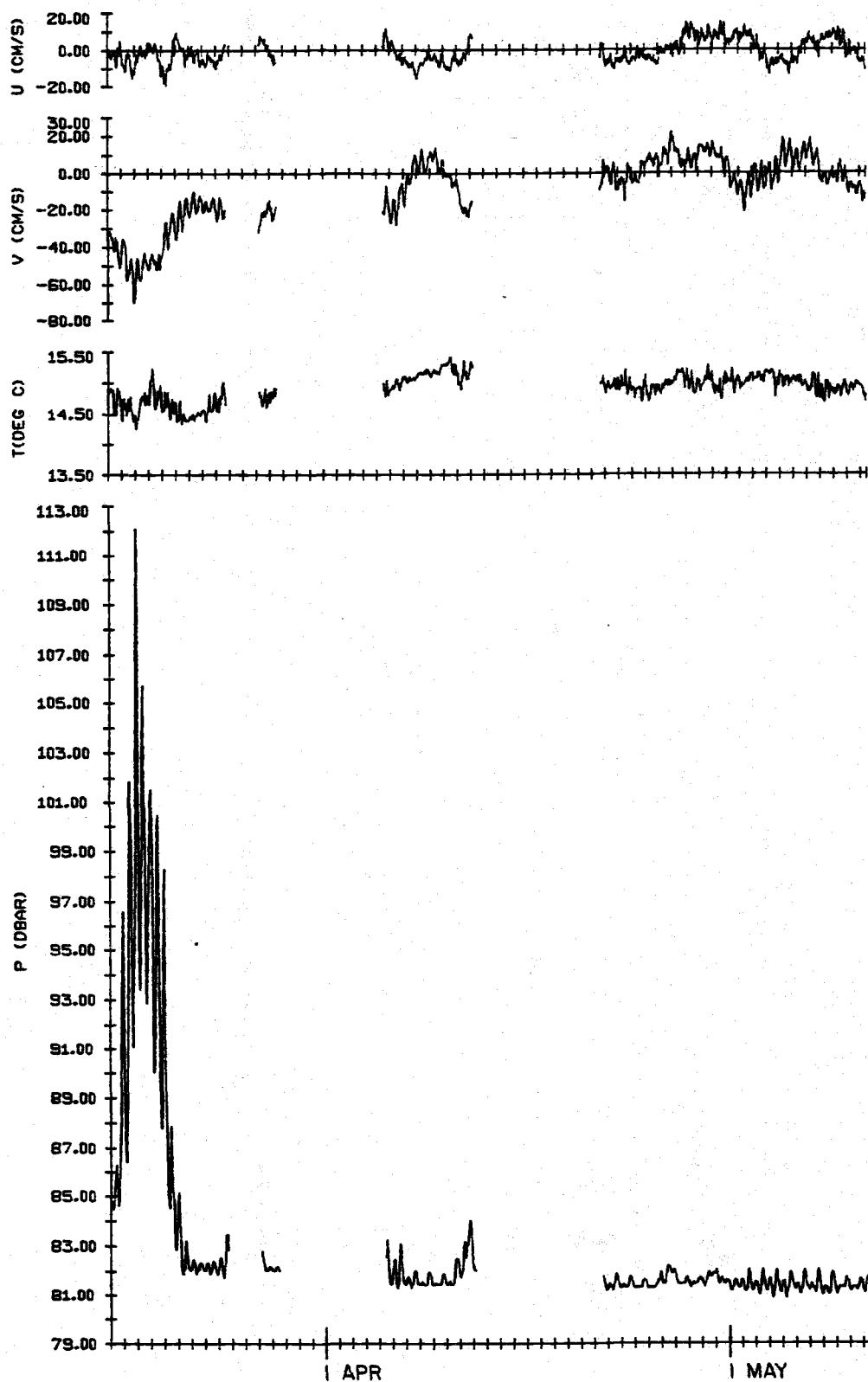
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 5
 83 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	876	17.0	12.9	1.7	5.4	71.3	.8
U (CM/S)	876	-1.2	6.5	.2	2.4	15.0	-19.5
V (CM/S)	876	-8.7	18.3	-.9	3.3	21.8	-70.1
T (DEG C)	876	14.9	.2	-.6	3.0	15.4	14.3
P (DBAR)	876	83.1	4.5	3.4	14.6	112.1	80.8

83 METERS AT LOBIVIA. 15 MAR 77 - 11 MAY 77. TAPE 749/28.





83 M AT LOBIVIA LEG 5: HOURLIES,
56.4 DAYS STARTING 300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	5	193	124/48	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	16	3	77	5.1	-14.9	5.1	-14.9	13.25	1
400	16	3	77	6.0	-15.4	11.1	-30.3	13.23	2
500	16	3	77	5.1	-16.4	16.2	-46.7	13.22	3
600	16	3	77	4.5	-16.6	20.8	-63.3	13.24	4
700	16	3	77	5.4	-19.4	26.2	-82.7	13.29	5

LAST 5 LINES OF DATA:

700	11	5	77	13.0	-14.3	3768.4	-4125.1	13.49	1349
800	11	5	77	12.9	-14.5	3781.3	-4139.6	13.53	1350
900	11	5	77	14.8	-14.9	3796.2	-4154.5	13.34	1351
1000	11	5	77	18.6	-14.2	3814.7	-4168.8	13.25	1352
1100	11	5	77	14.4	-17.1	3829.1	-4185.9	13.36	1353

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1353	2.8	-3.1	112.8	110.8	10.6	10.5	-91.0	-.8144

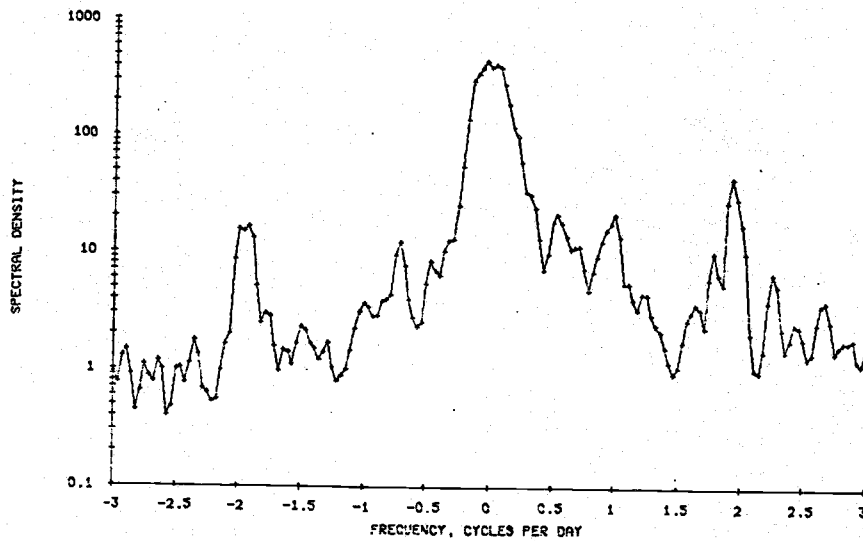
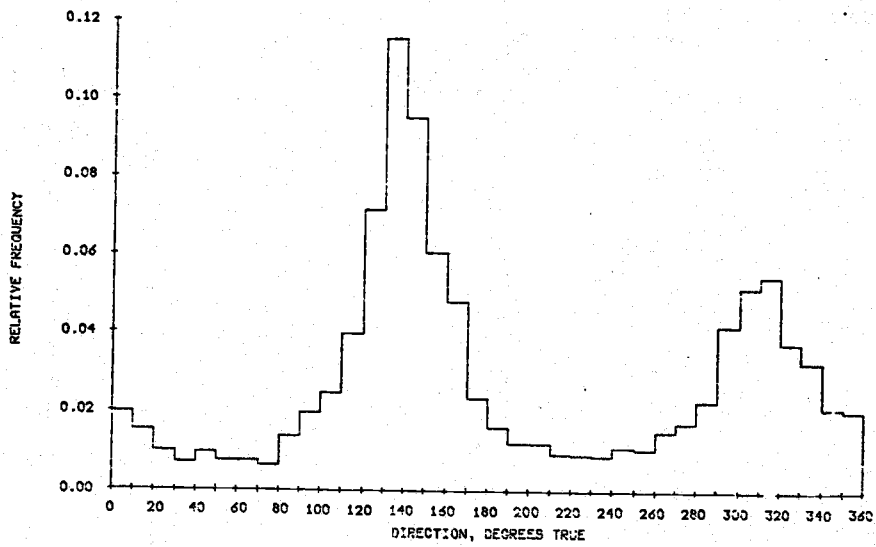
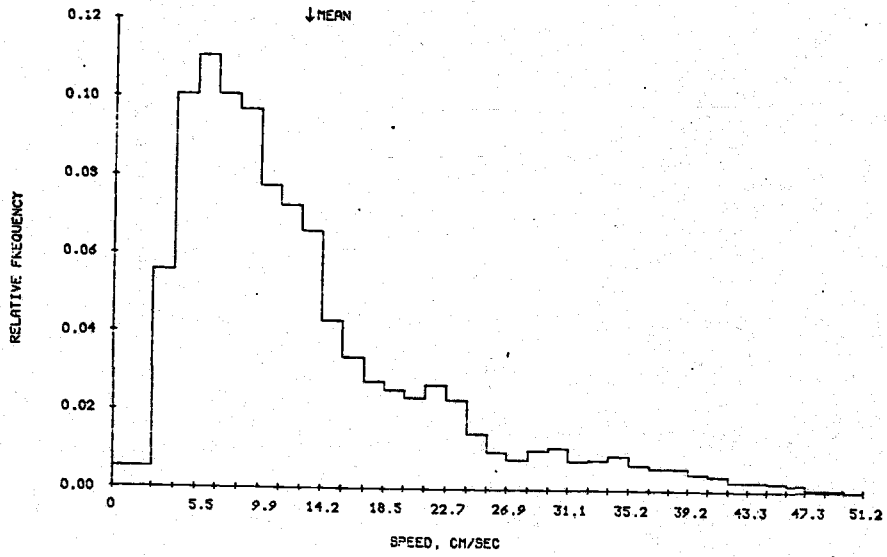
VECTOR MEAN: SPC = 4.2 CM/S, DIR = 133 DEGREES(T)
DIRECTIONAL STEADINESS: 32.9 %

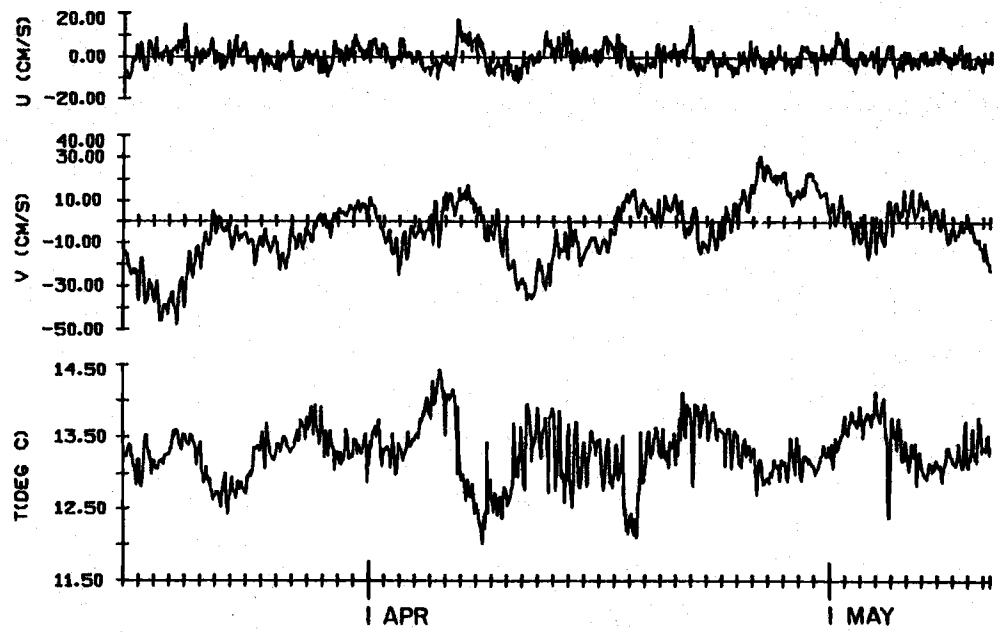
PRINCIPAL AXIS IS 134.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 5
183 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1353	12.7	8.9	1.4	4.9	48.2	.3
U (CM/S)	1353	-.2	4.6	.4	3.1	17.1	-12.2
V (CM/S)	1353	-4.2	14.2	-.5	3.2	30.8	-48.0
T (DEG C)	1353	13.3	.4	-.3	3.4	14.4	12.0





183 M AT LOBIVIA LEG 5: HOURLIES,
 56.4 DAYS STARTING 300 GMT 16 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
LOBIVIA	5	283	228/44	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

300	16	3 77	3.7	0.7	3.7	0.7	11.44	1
400	16	3 77	4.4	2.5	8.2	3.2	11.29	2
500	16	3 77	-0.7	2.1	7.5	5.3	11.09	3
600	16	3 77	-2.2	0.3	5.3	5.7	11.12	4
700	16	3 77	4.6	-2.6	9.8	3.0	11.36	5

LAST 5 LINES OF DATA:

700	11	5 77	0.0	-2.8	-864.3	186.1	11.97	1349
800	11	5 77	1.7	-1.6	-862.6	184.5	11.98	1350
900	11	5 77	-3.7	-5.0	-866.3	179.4	12.26	1351
1000	11	5 77	-4.4	-5.0	-870.7	174.4	12.33	1352
1100	11	5 77	-3.6	-5.2	-874.2	169.2	12.24	1353

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1353	-0.6	.1	53.1	32.6	7.3	5.7	-28.6	-.6872

VECTOR MEAN: SPD = .7 CM/S, DIR = -78 DEGREES(T)
 DIRECTIONAL STEADINESS: 8.0 %

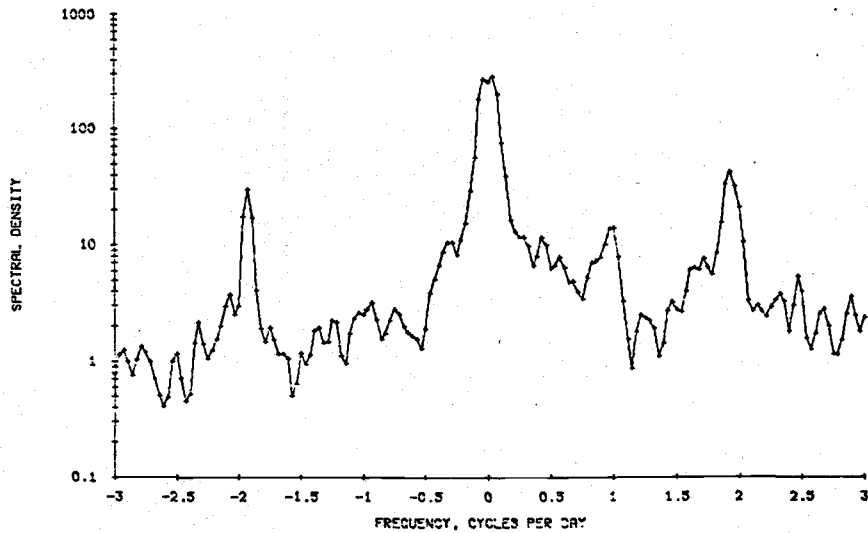
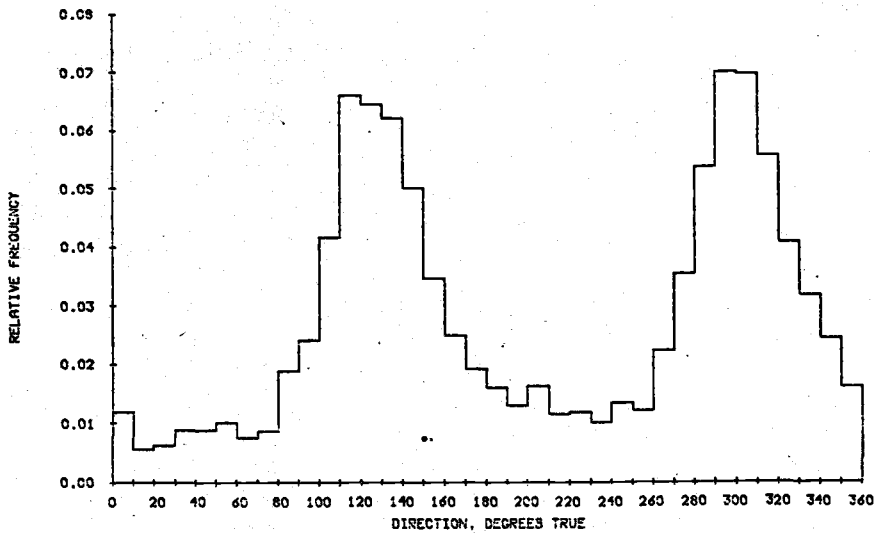
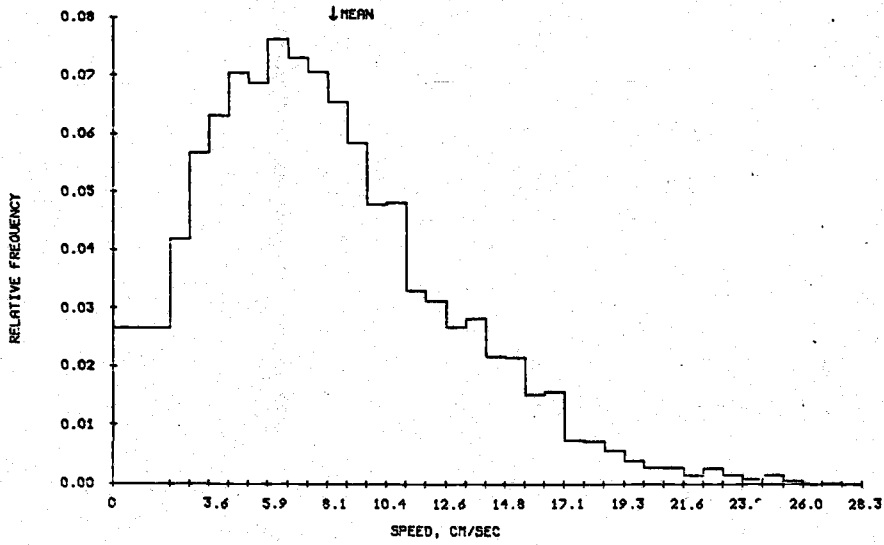
PRINCIPAL AXIS IS 125.2 DEGREES(T)

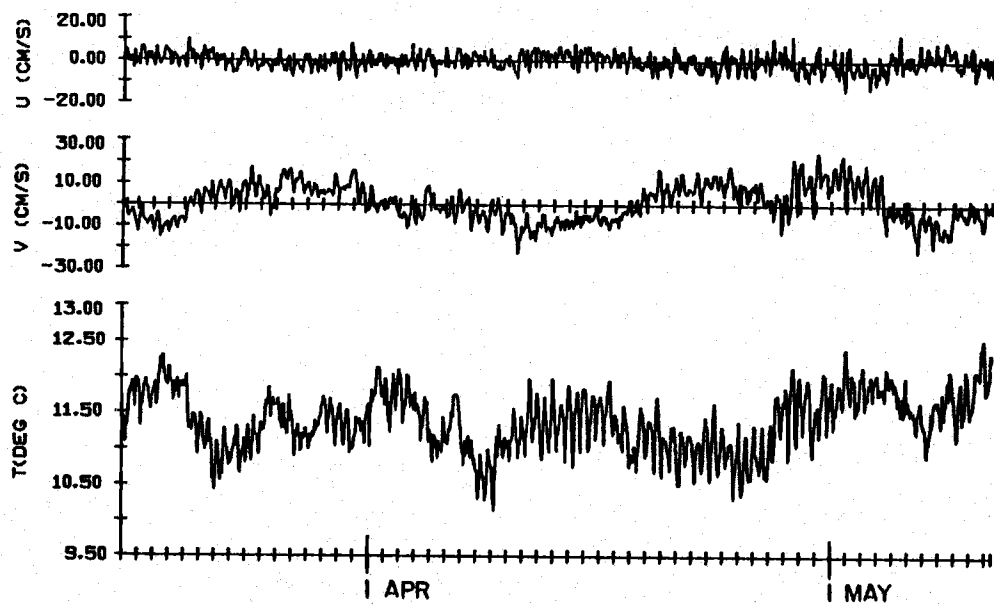
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

LOBIVIA LEG 5
 283 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1353	8.2	4.3	.8	3.5	25.5	.2
U (CM/S)	1353	-.4	3.8	-.0	2.9	12.2	-14.1
V (CM/S)	1353	.5	8.5	.1	2.4	24.3	-22.8
T (DEG C)	1353	11.4	.4	-.1	2.5	12.5	10.1

263 METERS AT LOBIVIA. 15 MAR 77 - 11 MAY 77. TAPE 2284/4.





283 M AT LOBIVIA LEG 5: HOURLIES,
56.4 DAYS STARTING 300 GMT 16 MAR 1977

JOINT-II 1977 Installation

EUPHORBIA V

Position*: 15°31.2'S, 75°00.8'W
 Distance Offshore: 7.0 km
 Bottom Depth: 123 m
 Set: 1339 GMT 20 March 1977 by R/V MELVILLE
 Retrieved: 2226 GMT 11 May 1977 by R/V ISELIN
 Longest Data Interval: 2000 GMT 20 March to 1500 GMT 11 May
 Longest Record Length: 51 days, 20 hours

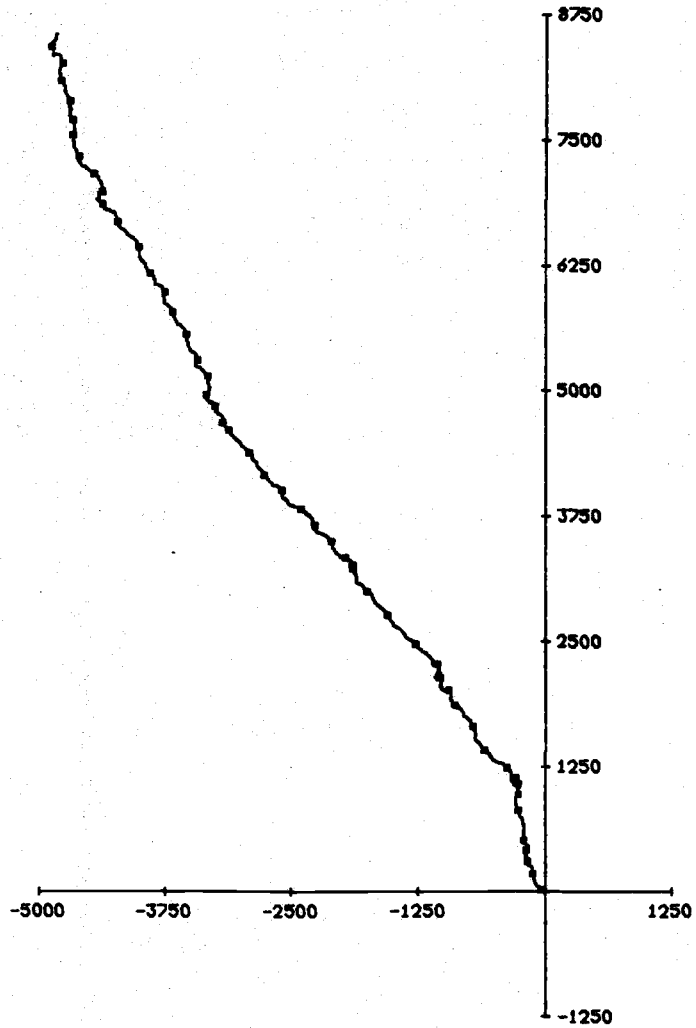
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D126/9	20 min	S, θ , T _a , T
20 m	26 m	503/35	15 min	S, θ , T, P
60 m	63 m	751/21	15 min	S, θ , T, P

Comments:

Current meter 1964 was placed at an accepted depth of 103 m (intended depth = 100 m) but the magnetic tape did not run.

* Navigation: radar fixes and Peru chart DHNM 2200. The position of the EUPHORBIA meteorological buoy was estimated to be 15°31.5'S 75°00.8'W.



WIND AT EUPHORBIA. 20 MAR 77 - 11 MAY 77. TAPE D12679.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
EUPHORBIA	5	0	D126/9	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

0	21	3	77	-1.2	1.1	-1.2	1.1	27.29	16.96	1
100	21	3	77	-0.9	1.9	-2.1	3.0	27.30	17.17	2
200	21	3	77	-1.6	2.3	-3.7	5.3	27.29	16.77	3
300	21	3	77	-1.9	1.5	-5.7	6.7	26.81	16.81	4
400	21	3	77	-1.7	1.6	-7.3	8.4	26.97	17.08	5

LAST 5 LINES OF DATA:

1100	11	5	77	1.4	1.8	-1339.4	2354.1	25.59	17.28	1236
1200	11	5	77	1.9	1.2	-1337.5	2355.3	26.01	17.67	1237
1300	11	5	77	0.6	0.3	-1336.9	2355.6	26.61	17.83	1238
1400	11	5	77	0.9	-0.7	-1336.0	2354.9	26.81	17.94	1239
1500	11	5	77	0.7	2.0	-1335.4	2357.0	27.03	18.03	1240

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1240	-1.1	1.9	2.1	1.8	1.5	1.4	-.4	-.1859

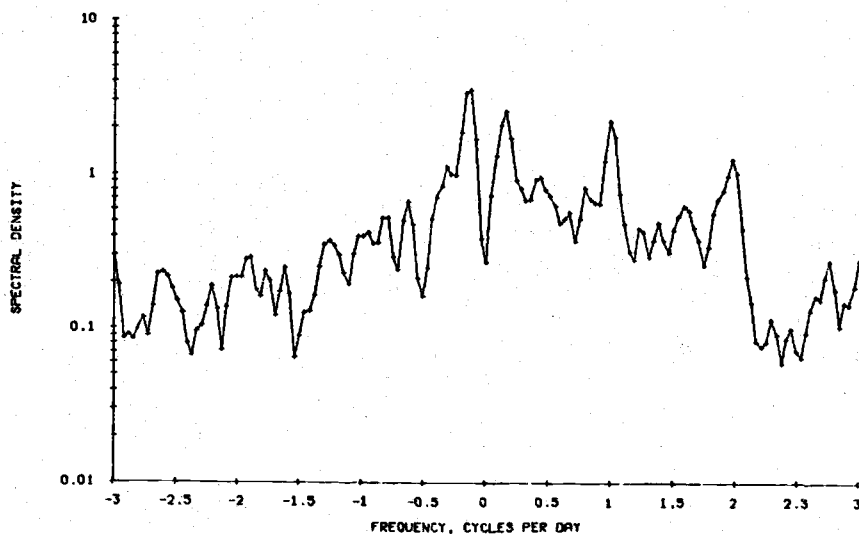
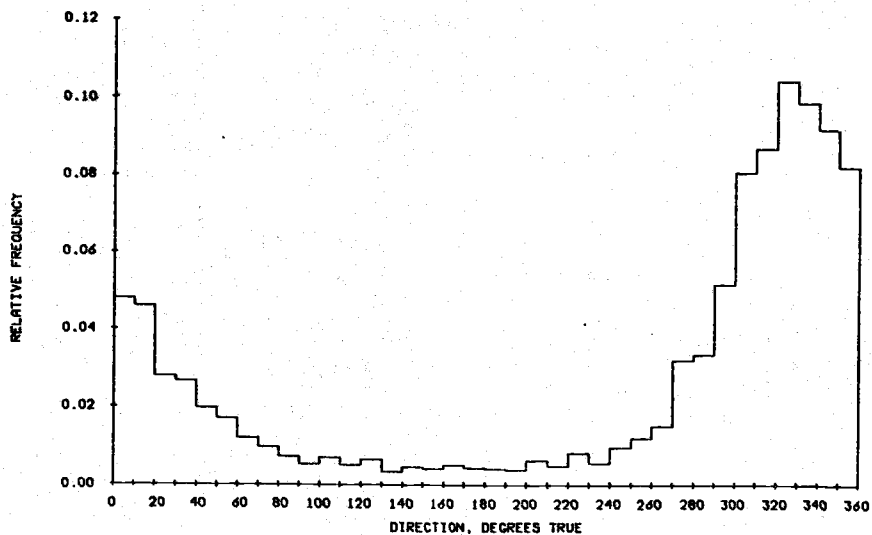
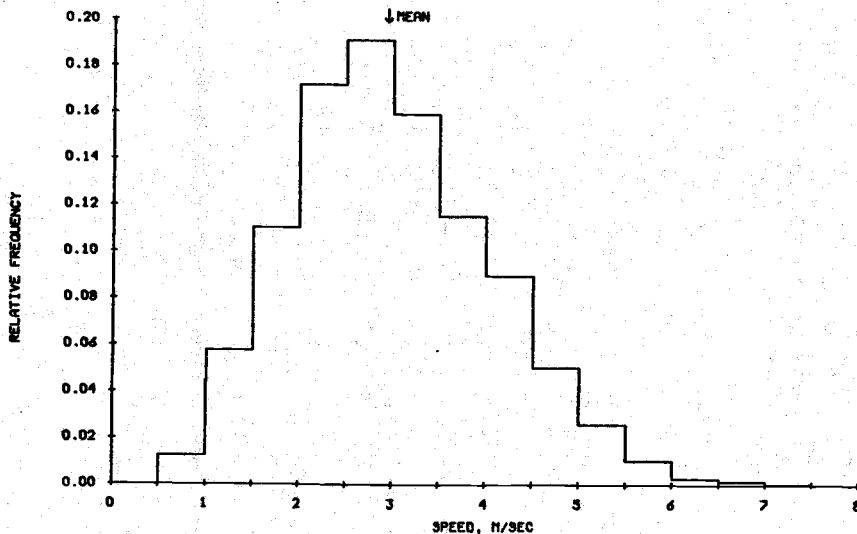
VECTOR MEAN: SPD = 2.2 M/S, DIR = -29 DEGREES(T)
DIRECTIONAL STEADINESS: 79.5 %

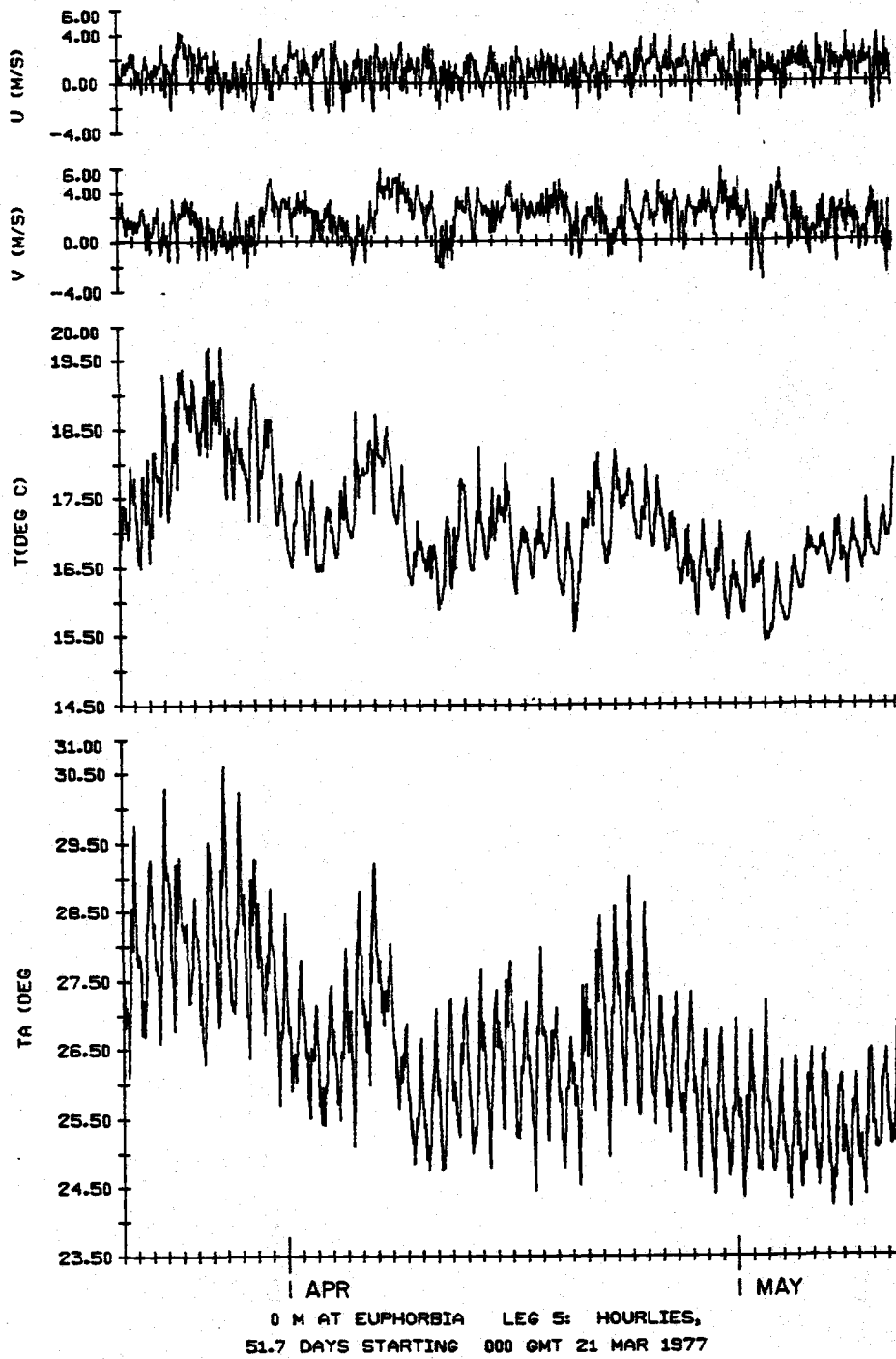
PRINCIPAL AXIS IS 123.7 DEGREES(T)

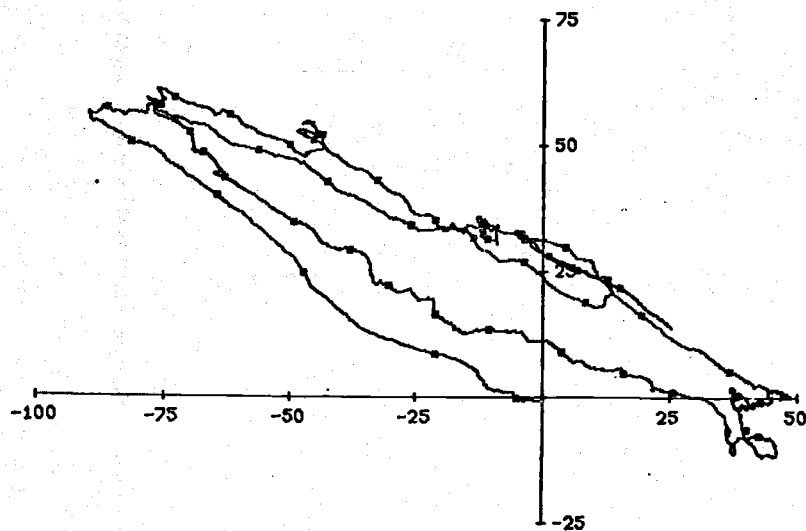
STATISTICS FOR COORDINATES ROTATED 60 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 120 DEGREES(T))

EUPHORBIA LEG 5
0 M

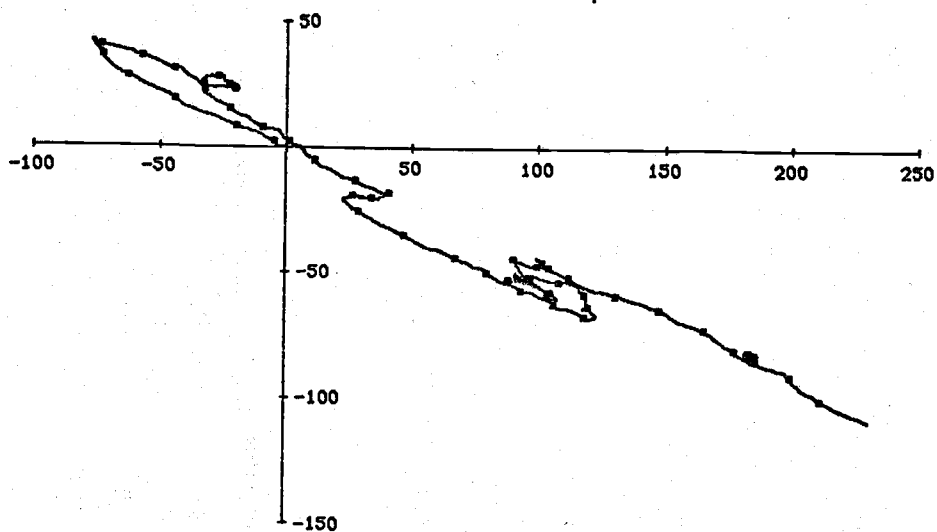
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	1240	2.7	1.1	.3	2.8	6.2	.1
U (M/S)	1240	1.1	1.3	-.4	3.0	4.3	-2.7
V (M/S)	1240	1.9	1.5	-.2	2.8	6.0	-3.2
TW (DEG)	1240	17.1	.8	.6	3.1	19.7	15.4
TA (DEG)	1240	26.5	1.2	.5	2.9	30.6	24.2







26 M AT EUPHORBIA. 20 MAR 77 - 11 MAY 77. TAPE 503/35.



63 M AT EUPHORBIA. 20 MAR 77 - 11 MAY 77. TAPE 751/21.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
EUPHORBIA	5	26	503/35	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2000	20	3	77	-18.0	0.3	-18.0	0.3	16.33	258811	1
2100	20	3	77	-15.7	-3.0	-33.7	-2.7	16.22	259970	2
2200	20	3	77	-14.5	0.1	-48.2	-2.5	16.04	260769	3
2300	20	3	77	-14.1	5.5	-62.4	3.0	15.95	260469	4
0	21	3	77	-13.1	2.2	-75.5	5.2	15.85	261379	5

LAST 5 LINES OF DATA:

1100	11	5	77	10.4	-9.1	599.5	523.4	16.40	257129	1240
1200	11	5	77	11.7	-10.0	611.1	513.4	16.41	257086	1241
1300	11	5	77	11.3	-9.7	622.4	503.6	16.20	257108	1242
1400	11	5	77	11.1	-8.5	633.6	495.2	16.27	257087	1243
1500	11	5	77	14.9	-9.1	648.5	486.0	16.18	257081	1244

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1244	.5	.4	209.6	96.0	14.5	9.8	-90.9	-.6409

VECTOR MEAN: SPC = .7 CM/S, DIR = 53 DEGREES(T)
 DIRECTIONAL STEADINESS: 4.0 %

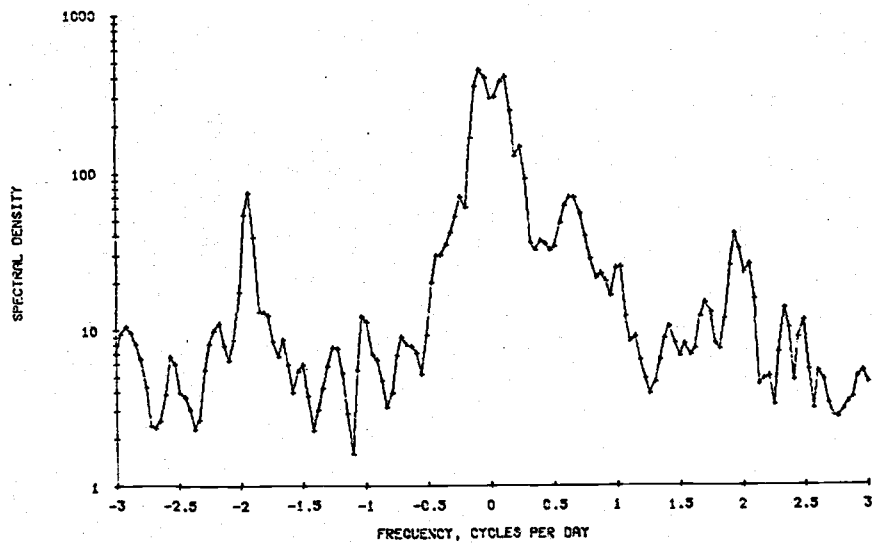
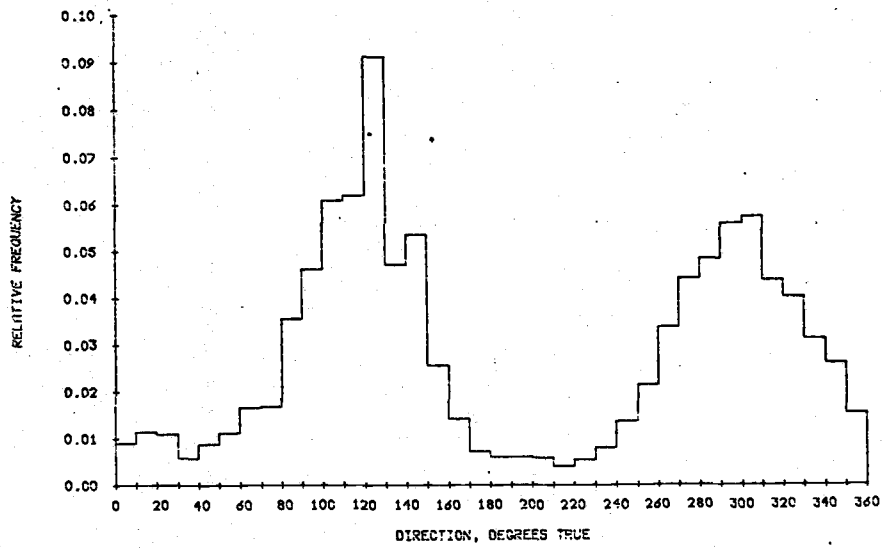
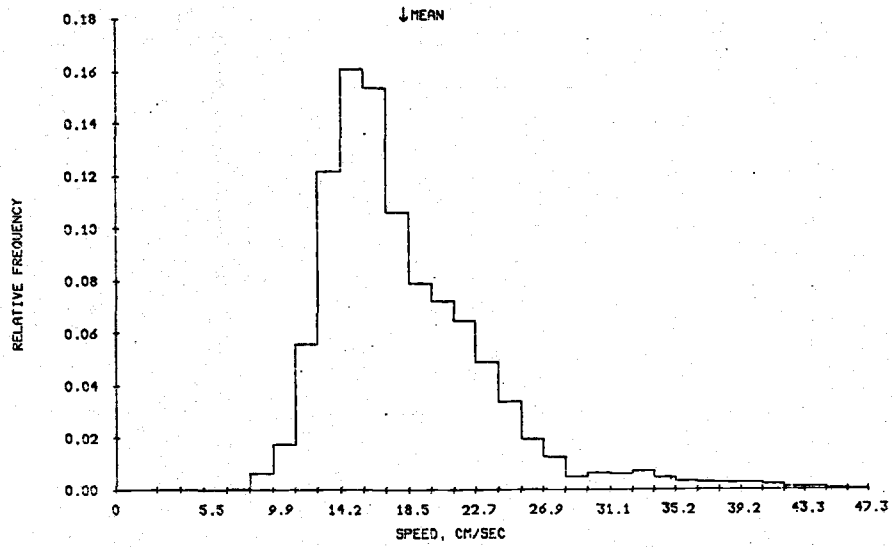
PRINCIPAL AXIS IS 119.0 DEGREES(T)

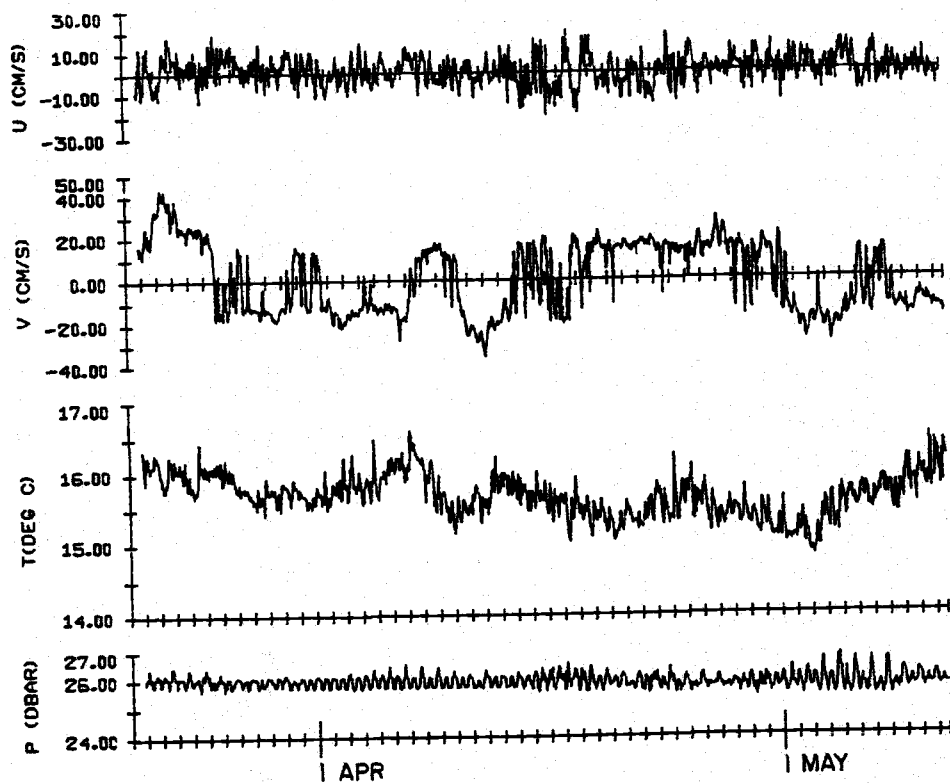
STATISTICS FOR COORDINATES ROTATED 60 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 120 DEGREES(T))

EUPHORBIA LEG 5
 26 4

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1244	16.4	6.0	1.0	5.8	43.5	.1
U (CM/S)	1244	.6	6.8	.0	2.7	20.2	-20.3
V (CM/S)	1244	-.3	16.1	.2	1.9	43.4	-36.1
T(DEG C)	1244	15.7	.3	-.0	2.6	16.6	14.8
P (DBAR)	1244	25.9	.2	.4	3.2	26.8	25.3

26 METERS AT EUPHORBIA. 20 MAR 77 - 11 MAY 77. TAPE 503/35





26 M AT EUPHORBIA LEC 5: HOURLIES,
51.8 DAYS STARTING 2000 GMT 20 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
EUPHORBIA	5	63	751/21	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2000	20	3	77	-19.9	0.5	-19.9	0.5	15.76	630384	1
2100	20	3	77	-12.4	8.1	-32.3	8.6	15.46	630460	2
2200	20	3	77	-0.7	16.1	-32.9	24.8	15.20	630751	3
2300	20	3	77	-8.5	12.6	-41.4	37.4	15.25	632537	4
0	21	3	77	-9.1	12.5	-50.5	49.9	15.24	637868	5

LAST 5 LINES OF DATA:

1100	11	5	77	22.1	-10.7	6202.7	-2906.6	14.81	639901	1240
1200	11	5	77	25.0	-9.9	6227.8	-2916.4	14.76	639901	1241
1300	11	5	77	26.9	-11.7	6254.7	-2928.2	14.82	639900	1242
1400	11	5	77	27.0	-11.5	6281.7	-2939.6	14.83	639904	1243
1500	11	5	77	28.4	-9.4	6310.1	-2949.1	14.75	639901	1244

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1244	5.1	-2.4	203.0	63.4	14.2	8.0	-77.4	-.6821

VECTOR MEAN: SPD = 5.6 CM/S, DIR = 115 DEGREES(T)
 DIRECTIONAL STEADINESS: 33.9 %

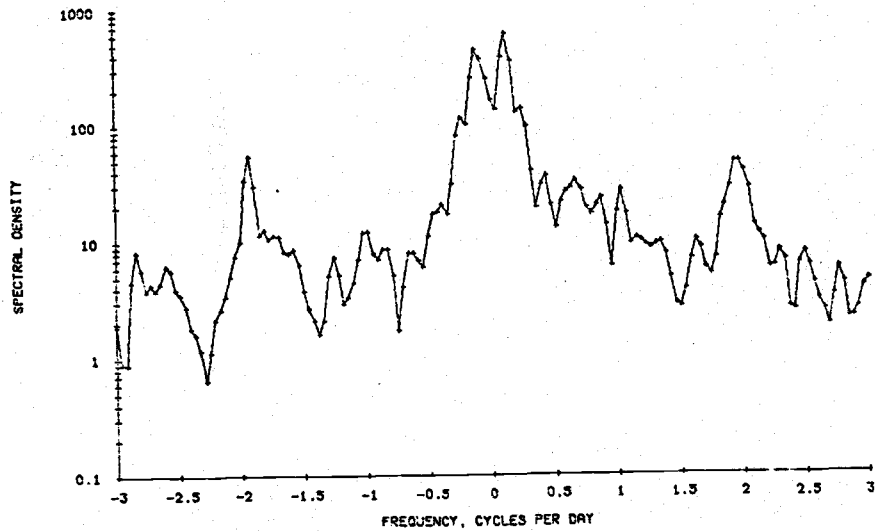
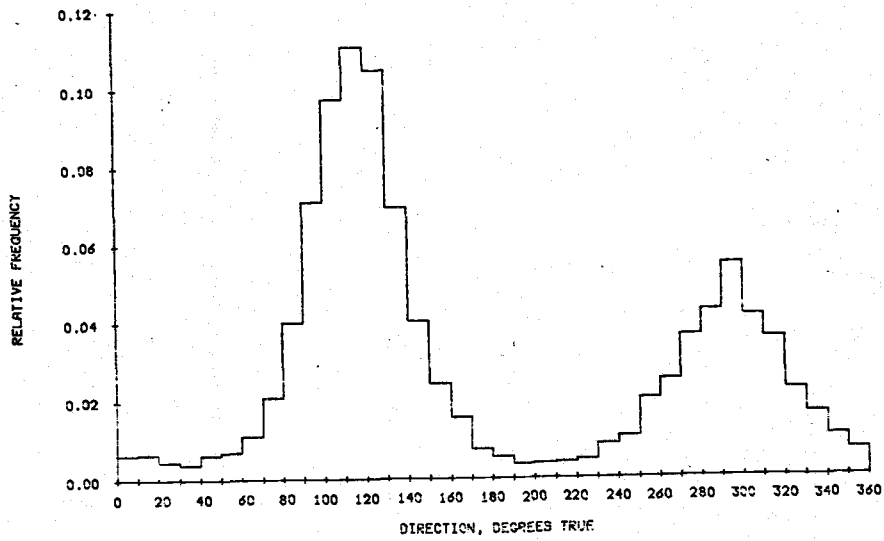
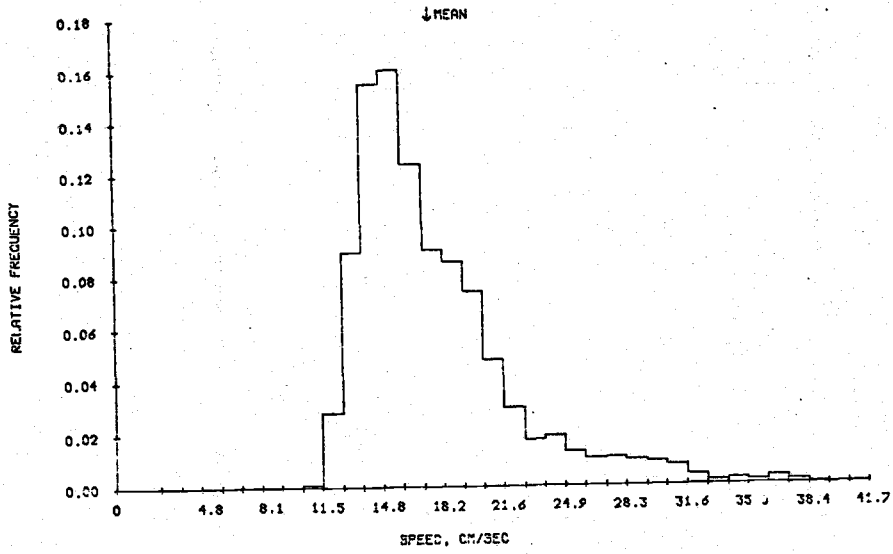
PRINCIPAL AXIS IS 114.0 DEGREES(T)

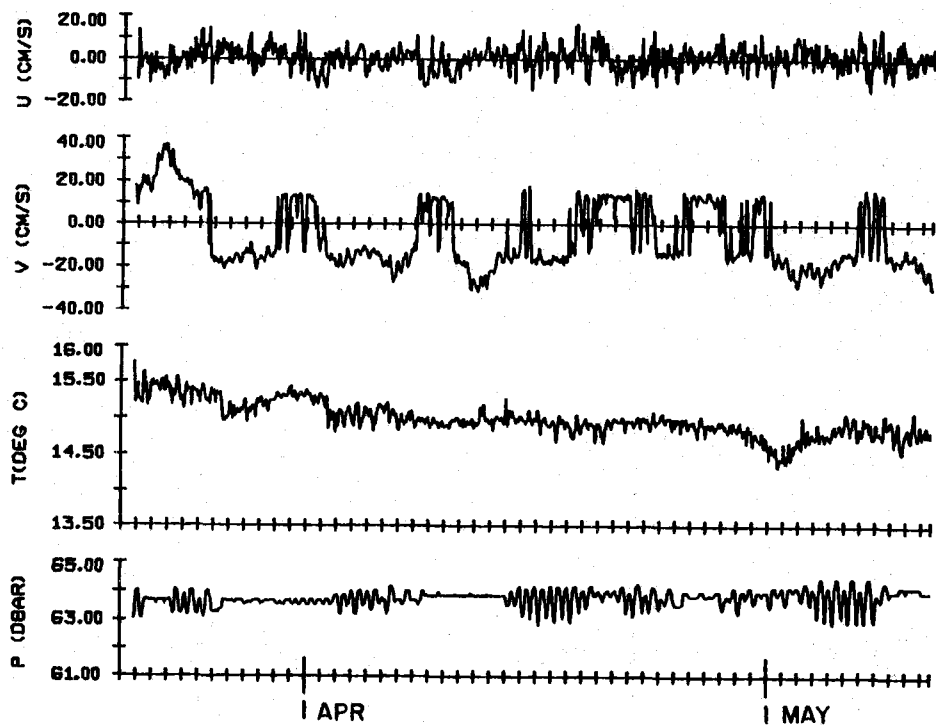
STATISTICS FOR COORDINATES ROTATED 60 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 120 DEGREES(T))

EUPHORBIA LEG 5
 63 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1244	16.5	5.0	.9	5.3	37.4	.3
U (CM/S)	1244	.5	5.6	-.0	2.8	16.9	-14.9
V (CM/S)	1244	-5.6	15.3	.6	2.1	36.7	-31.3
T (DEG C)	1244	15.0	.2	.3	3.3	15.8	14.3
P (DBAR)	1244	63.7	.3	-.5	3.3	64.5	62.8

63 H AT EUPHORBIA. 20 MAR 77 - 11 MAY 77. TAPE 751/21.





63 M AT EUPHORBIA LEC 5: HOURLIES,
51.8 DAYS STARTING 2000 GMT 20 MAR 1977

JOINT-II 1977 Installation

PARODIA V

Position*: 14°55.7'S, 75°39.8'W
 Distance Offshore: 10.5 km
 Bottom Depth: 124 m
 Set: 1438 GMT 17 March 1977 by R/V MELVILLE
 Retrieved: 1617 GMT 11 May 1977 by R/V ISELIN
 Longest Data Interval: 2200 GMT 17 March to 0900 GMT 11 May
 Longest Record Length: 54 days, 12 hours

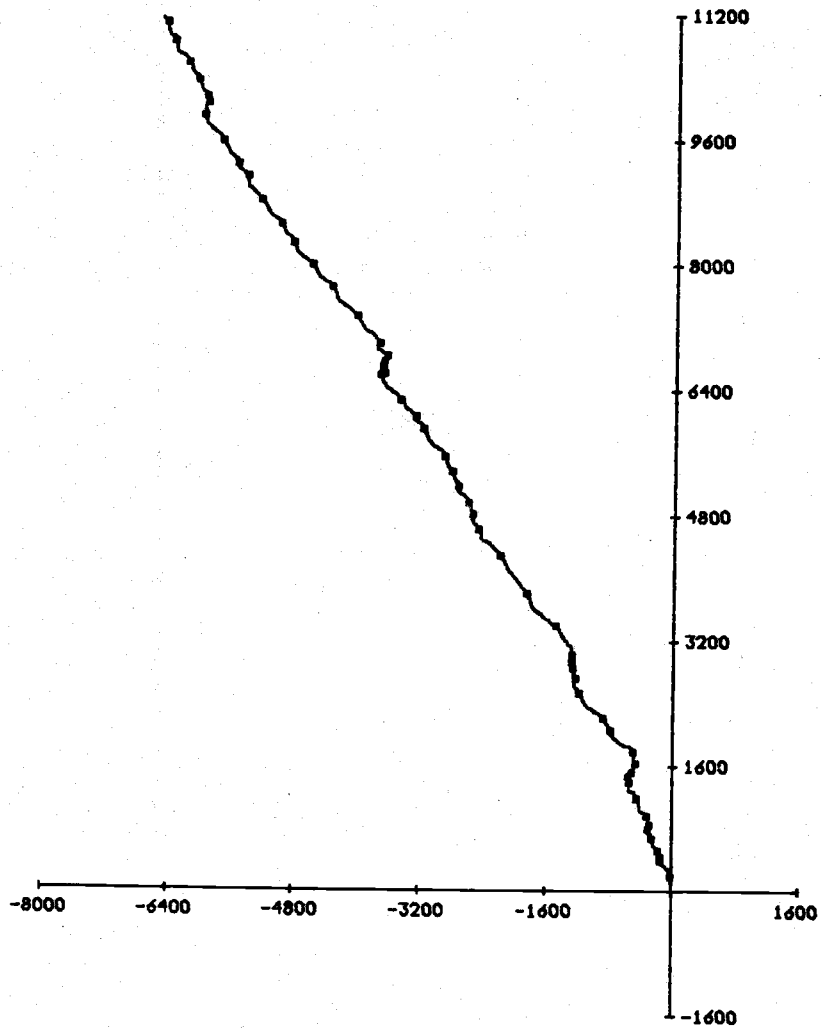
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
0 m	0 m	D72/21	20 min	S,θ,T _a ,T
20 m	24 m	438/24	15 min	S,θ,T
60 m	64 m	452/37	15 min	S,θ,T,P
100 m	104 m	485/35	15 min	S,θ,T

Comments:

The rotor on RCM 438 (24 m) became heavily fouled. Data for speed and velocity components exist only through 1900 GMT 17 April 1977. Refer to Appendix 2 for information about the Parodia water temperature calibrations.

* Navigation: radar fixes and Peru chart DHNM 2200. The position of the PARODIA V meteorological buoy was estimated to be within ½ n.m. of the subsurface array.



WIND AT PARODIA. 55.0 DAYS STARTING 1533 17 MAR 77.

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PARODIA	5	0	D72/21	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2200	17	3 77	1.4	5.4	1.4	5.4	19.98	18.21	1
2300	17	3 77	0.2	5.4	1.5	10.7	19.86	18.09	2
0	18	3 77	-1.7	7.2	-0.2	17.9	19.78	17.89	3
100	18	3 77	-1.8	7.7	-1.9	25.7	19.63	17.75	4
200	18	3 77	-2.7	6.4	-4.7	32.1	19.48	17.68	5

LAST 5 LINES OF DATA:

400	11	5 77	-0.3	1.4	-1793.1	3044.4	17.16	16.14	1303
500	11	5 77	-1.4	2.3	-1794.6	3046.7	17.14	16.32	1304
600	11	5 77	-2.1	2.7	-1796.7	3049.4	17.24	16.25	1305
700	11	5 77	-2.0	2.1	-1798.8	3051.5	17.20	16.33	1306
800	11	5 77	-1.9	1.8	-1800.7	3053.3	17.05	16.35	1307

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1307	-1.4	2.3	3.3	3.8	1.8	2.0	-1.9	-.5251

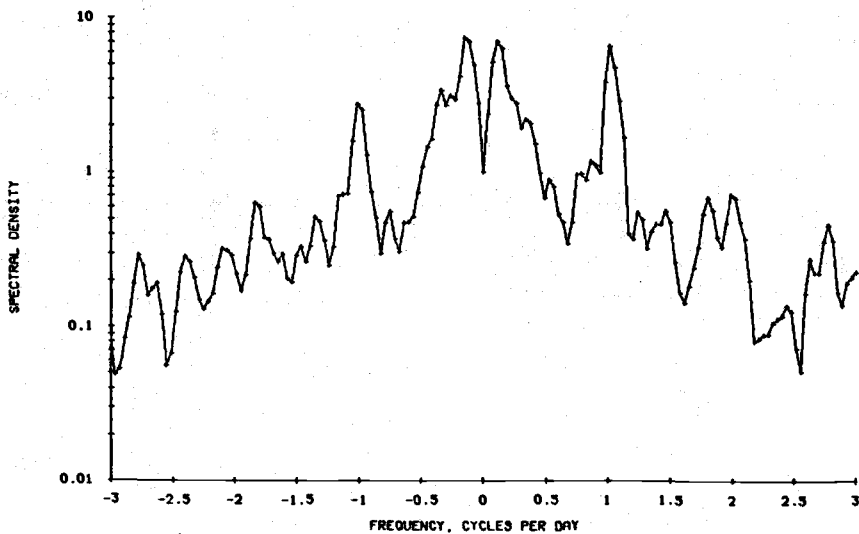
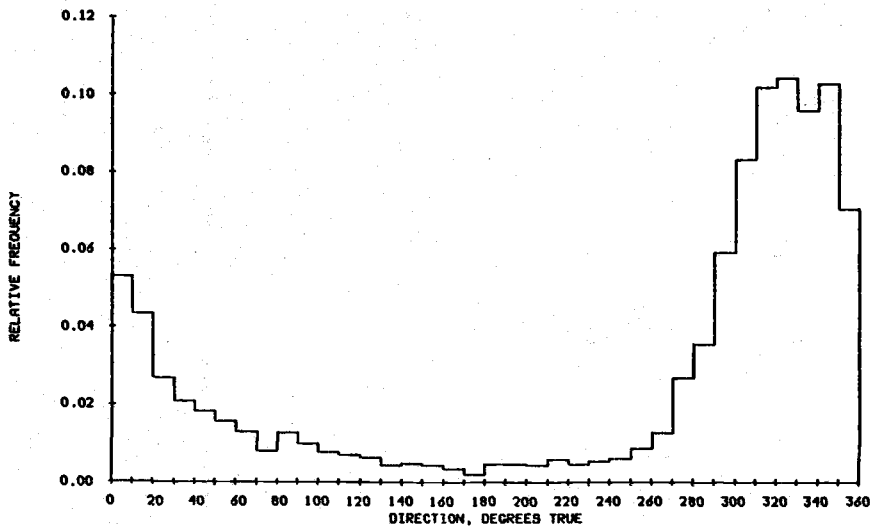
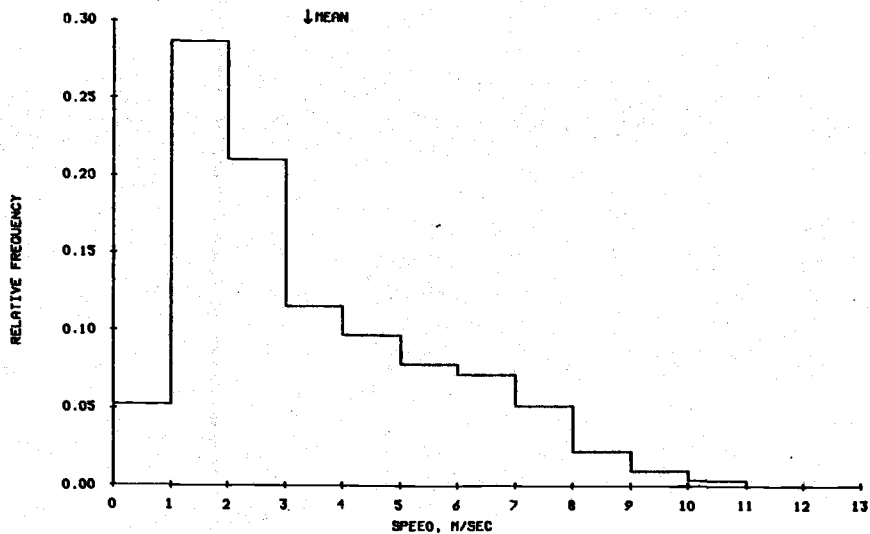
VECTOR MEAN: SPD = 2.7 M/S, DIR = -30 DEGREES(T)
 DIRECTIONAL STEADINESS: 85.3 %

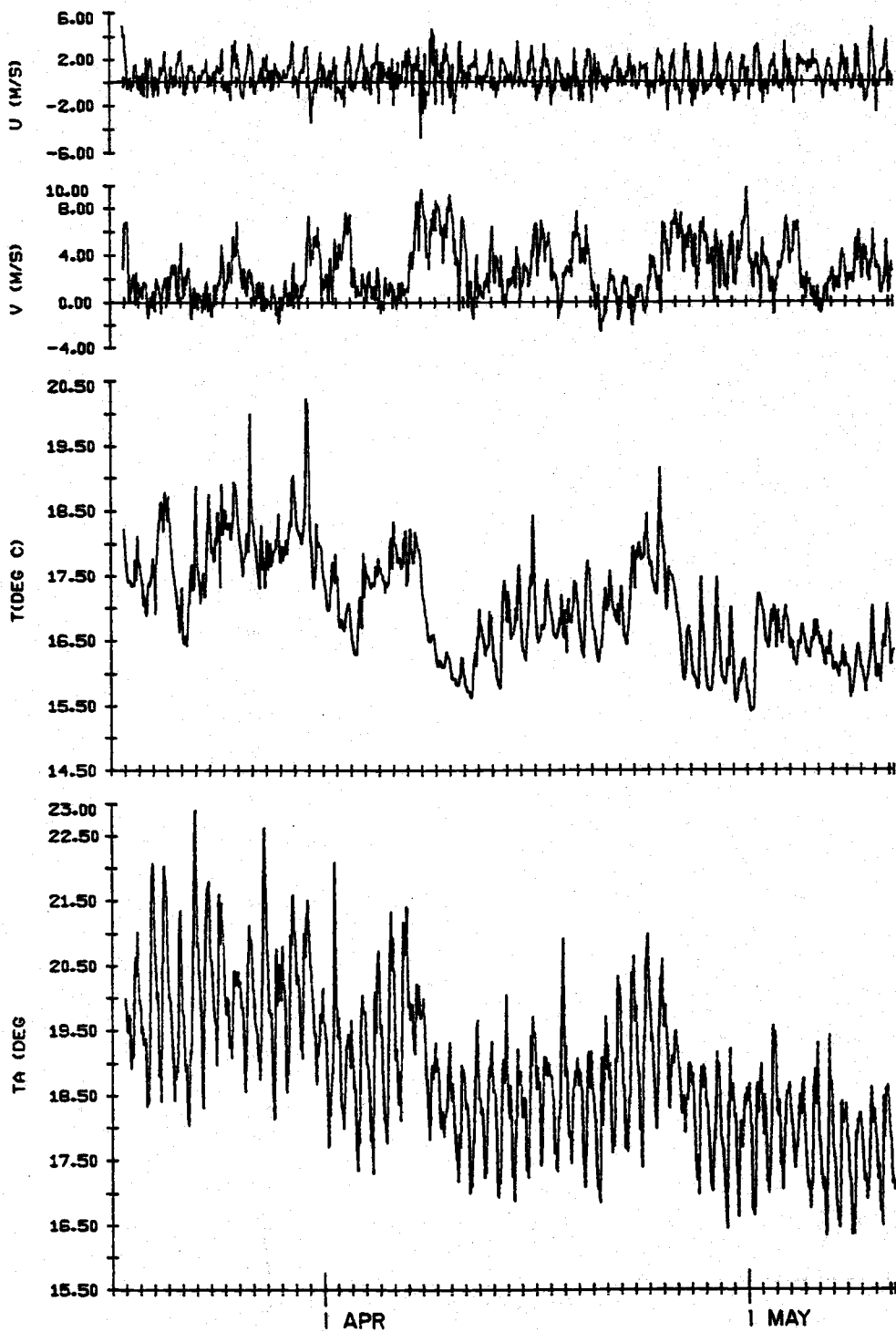
PRINCIPAL AXIS IS 139.1 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

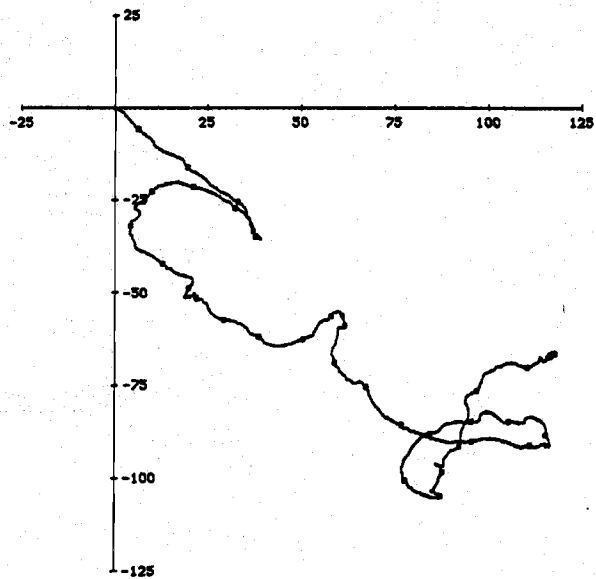
PARODIA LEG 5
 0 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	1307	3.2	2.1	.8	2.8	10.4	.1
U (M/S)	1307	.7	1.3	.2	3.0	4.8	-4.7
V (M/S)	1307	2.6	2.3	.6	2.7	9.8	-2.6
TW (DEG)	1307	17.0	.8	.4	2.8	20.2	15.4
TA (DEG)	1307	18.9	1.2	.4	2.9	22.9	16.3

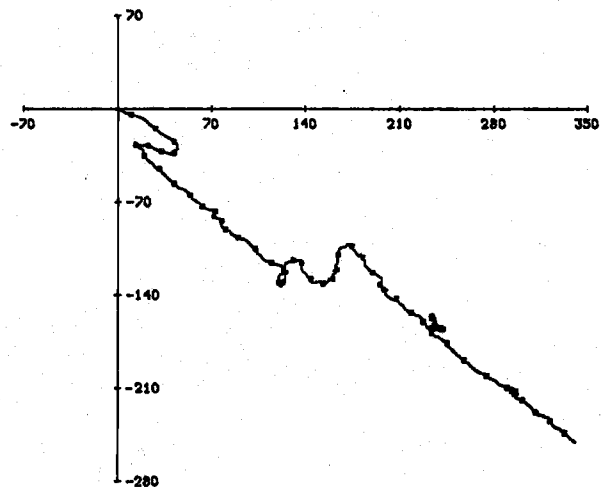




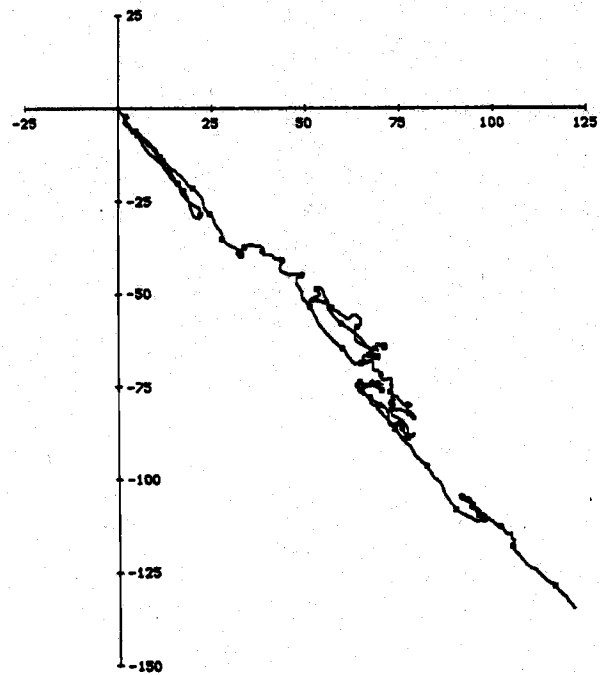
0 M AT PARODIA LEG 5: HOURLIES,
54.5 DAYS STARTING 2200 GMT 17 MAR 1977



24 M AT PARODIA. 31.6 DAYS STARTING 1454 17 MAR 77



64 M AT PARODIA. 55.0 DAYS STARTING 1303 17 MAR 77



104 M AT PARODIA. 55.0 DAYS STARTING 1306 17 MAR 77

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PARODIA	5	24	438/24	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2100	17	3	77	18.8	-21.8	18.8	-21.8	16.07	1
2200	17	3	77	20.3	-23.3	39.0	-45.1	15.79	2
2300	17	3	77	20.7	-22.5	59.7	-67.6	15.90	3
0	18	3	77	21.1	-19.5	80.8	-87.2	15.91	4
100	18	3	77	19.6	-17.3	100.4	-104.5	15.96	5

LAST 5 LINES OF DATA:

400	11	5	77	0.0	0.0	0.0	0.0	15.91	1304
500	11	5	77	0.0	0.0	0.0	0.0	15.81	1305
600	11	5	77	0.0	0.0	0.0	0.0	15.77	1306
700	11	5	77	0.0	0.0	0.0	0.0	15.84	1307
800	11	5	77	0.0	0.0	0.0	0.0	15.77	1308

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
743	4.2	-2.4	141.7	99.6	11.9	10.0	-14.0	-.1180

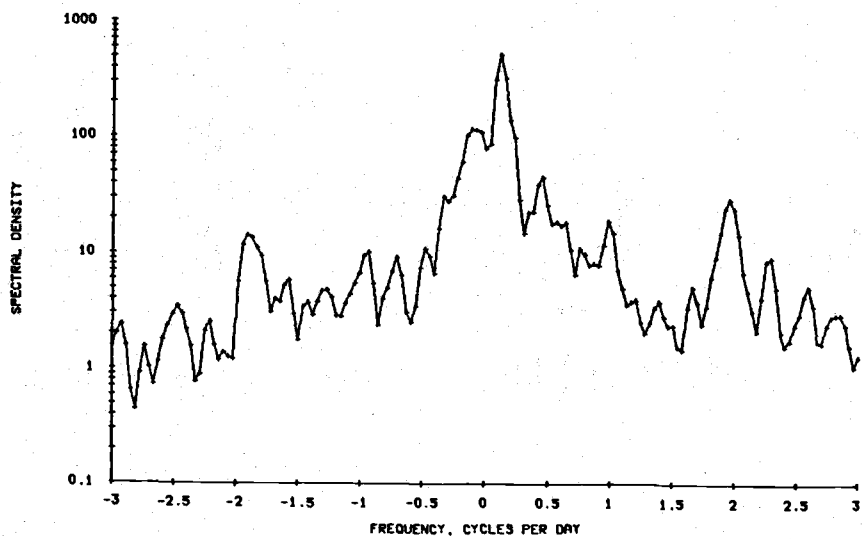
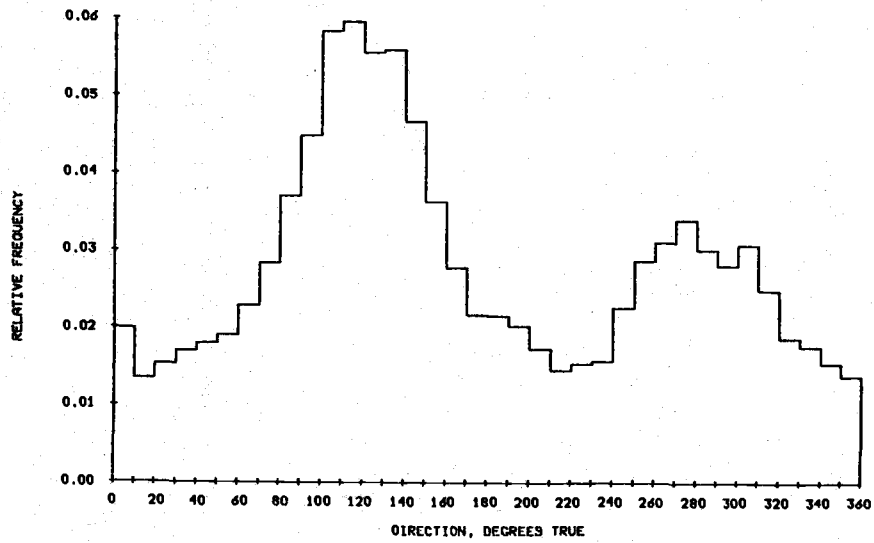
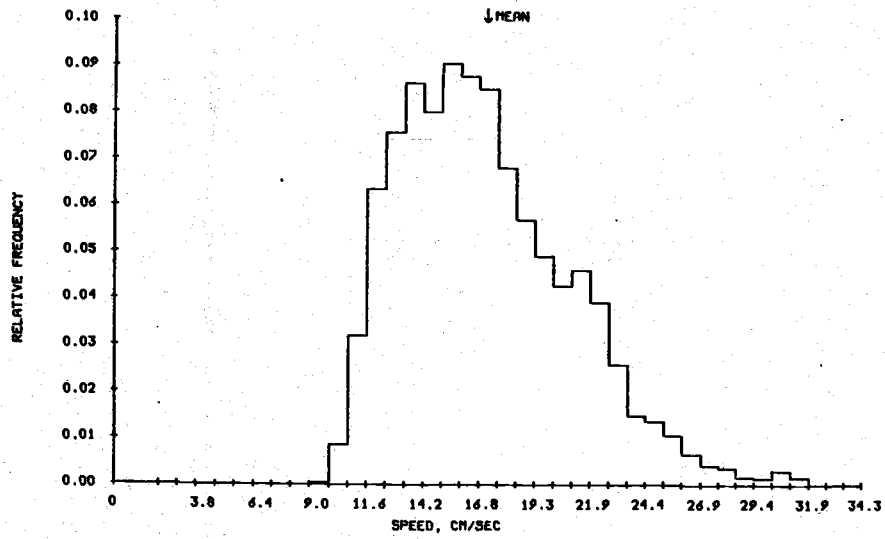
VECTOR MEAN: SPD = 4.8 CM/S, DIR = 120 DEGREES(T)
 DIRECTIONAL STEADINESS: 30.9 %

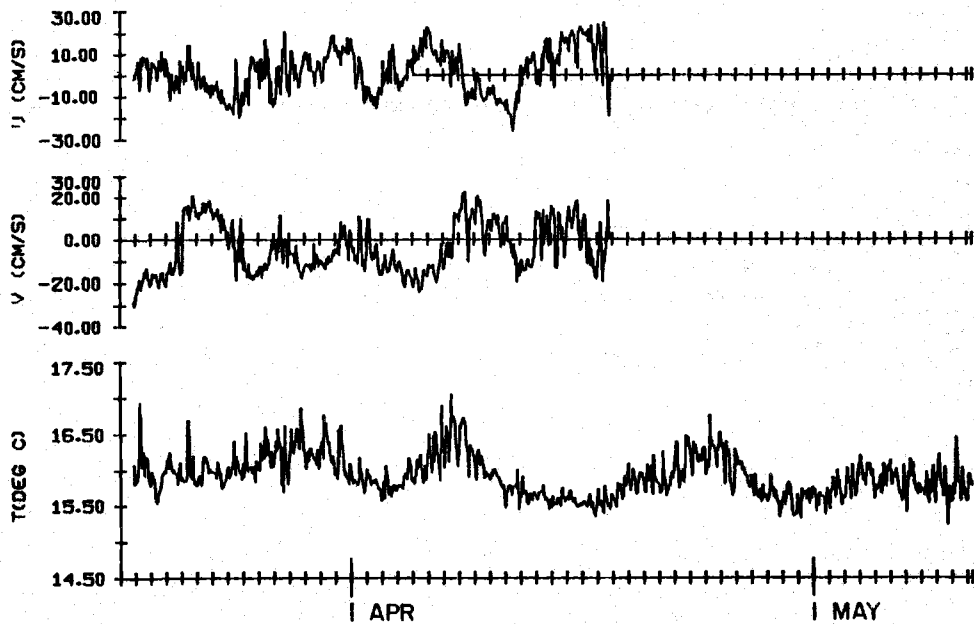
PRINCIPAL AXIS IS 106.9 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

PARODIA		LEG 5					
		24 M					
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	743	15.7	4.4	.2	3.6	30.9	2.9
U (CM/S)	743	1.3	10.3	.0	2.3	24.7	-26.3
V (CM/S)	743	-4.7	11.6	.4	2.0	22.3	-30.8
T(DEG C)*	1308	15.9	.3	.6	3.2	17.0	15.2

* No recent calibration available. See discussion of temperature calibrations in Appendix 2.





24 M AT PARODIA LEG 5: HOURLIES,
 54.5 DAYS STARTING 2100 GMT 17 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PARODIA	5	64	452/37	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2200	17	3	77	33.9	-11.2	33.9	-11.2	15.33	650444	1
2300	17	3	77	31.8	-9.3	65.7	-20.5	15.35	651094	2
0	18	3	77	30.6	-9.4	96.3	-29.9	15.35	650954	3
100	18	3	77	28.9	-12.1	125.2	-42.0	15.33	651050	4
200	18	3	77	27.2	-7.5	152.4	-49.5	15.37	649719	5

LAST 5 LINES OF DATA:

500	11	5	77	14.3	-12.4	9151.0	-6734.9	14.93	646472	1304
600	11	5	77	12.7	-14.9	9163.7	-6749.8	15.05	647355	1305
700	11	5	77	16.7	-13.6	9180.4	-6763.4	15.16	648034	1306
800	11	5	77	17.2	-14.3	9197.6	-6777.7	15.04	647988	1307
900	11	5	77	16.4	-11.8	9214.1	-6789.5	15.16	647989	1308

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1308	7.0	-5.2	100.0	76.4	10.0	8.7	-34.5	-.3953

VECTOR MEAN: SPD = 8.7 CM/S, DIR = 126 DEGREES(T)
DIRECTIONAL STEADINESS: 57.1 %

PRINCIPAL AXIS IS 125.6 DEGREES(T)

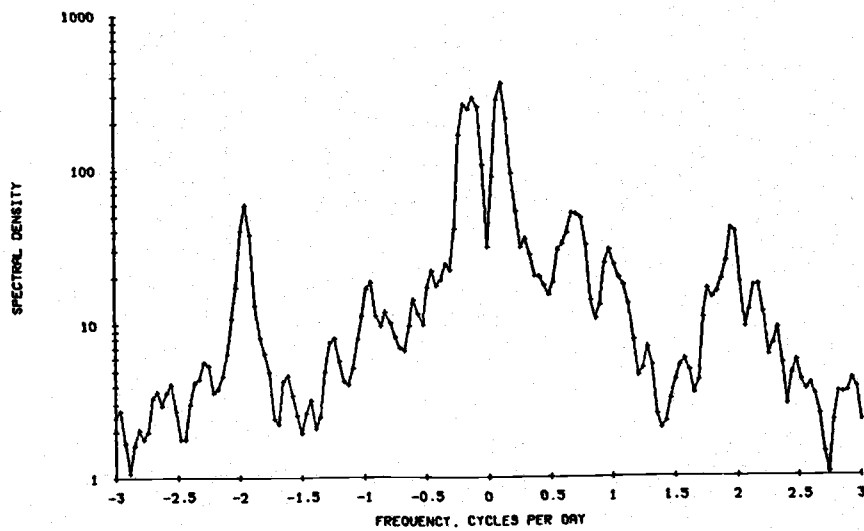
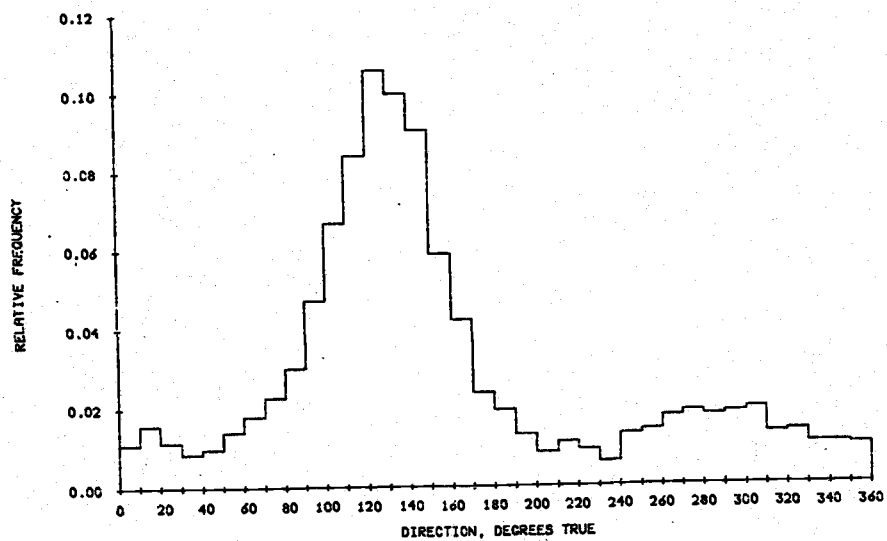
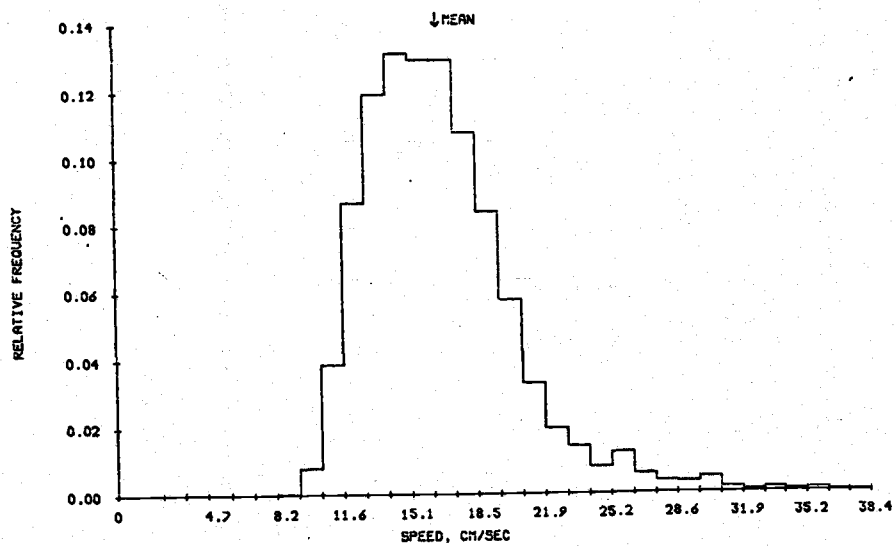
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

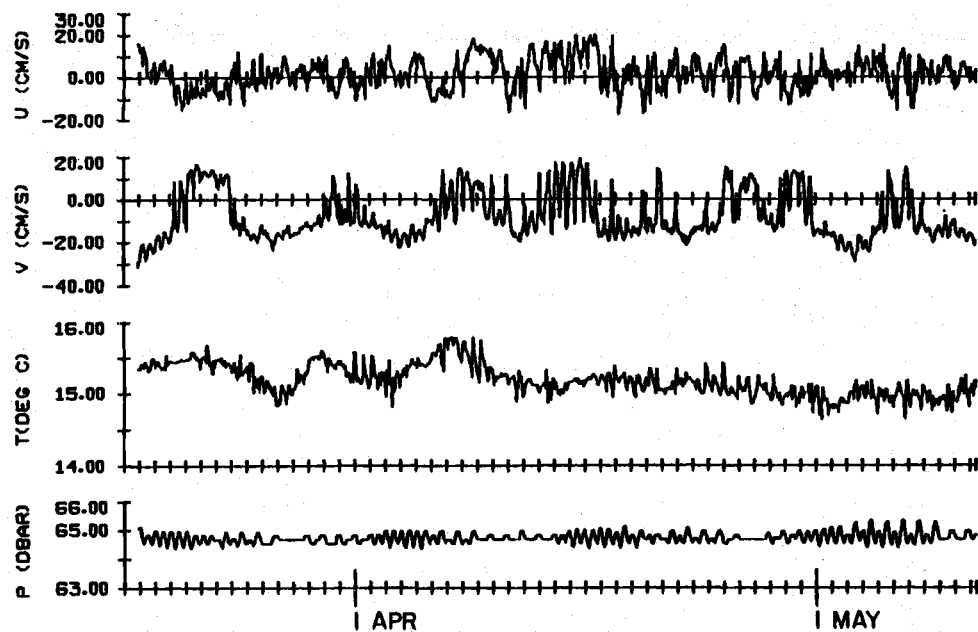
PARODIA LEG 5
64 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1308	15.3	4.2	.3	4.6	35.7	.6
U (CM/S)	1308	1.3	7.3	.1	2.5	20.0	-17.6
V (CM/S)	1308	-8.7	11.1	.8	2.5	19.2	-31.9
T (DEG C)*	1308	15.2	.2	.4	2.6	15.8	14.6
P (DBAR)	1308	64.7	.2	.6	3.5	65.3	64.3

* No post-calibration available. Temperature data were processed using the pre-calibration of 14 September 1973. See discussion in Appendix 2.

64 N AT PARODIA. 17 MAR 77 - 11 MAY 77. TAPE 452/37





64 M AT PARODIA LEC 5: HOURLIES,
54.5 DAYS STARTING 2200 GMT 17 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PARODIA	5	104	485/35	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2200	17	3	77	18.8	-23.2	18.8	-23.2	15.23	1
2300	17	3	77	18.3	-21.7	37.1	-44.9	15.24	2
0	18	3	77	15.3	-21.8	52.4	-66.7	15.25	3
100	18	3	77	12.6	-21.4	65.0	-88.1	15.25	4
200	18	3	77	10.4	-20.5	75.4	-108.6	15.27	5

LAST 5 LINES OF DATA:

500	11	5	77	12.3	-9.1	3170.7	-3488.0	14.51	1304
600	11	5	77	10.9	-9.5	3181.6	-3497.5	14.50	1305
700	11	5	77	12.3	-13.9	3193.9	-3511.4	14.53	1306
800	11	5	77	13.6	-10.5	3207.6	-3521.9	14.51	1307
900	11	5	77	10.5	-12.6	3218.0	-3534.5	14.52	1308

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1308	2.5	-2.7	55.8	57.2	7.5	7.6	-32.1	-.5673

VECTOR MEAN: SPD = 3.7 CM/S, DIR = 138 DEGREES(T)
 DIRECTIONAL STEADINESS: 34.9 %

PRINCIPAL AXIS IS 135.6 DEGREES(T)

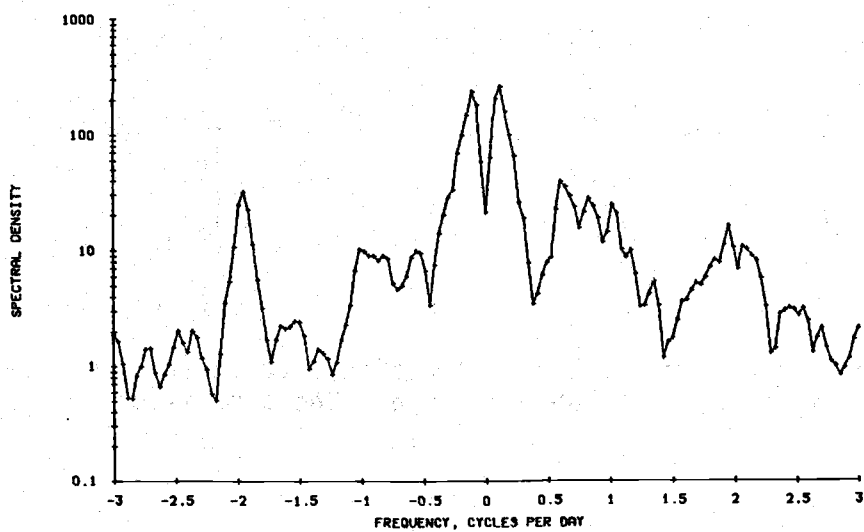
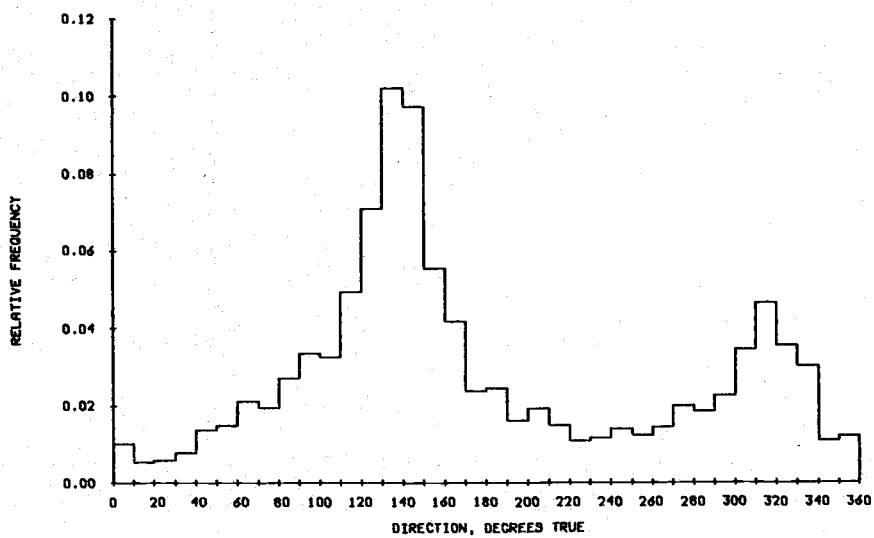
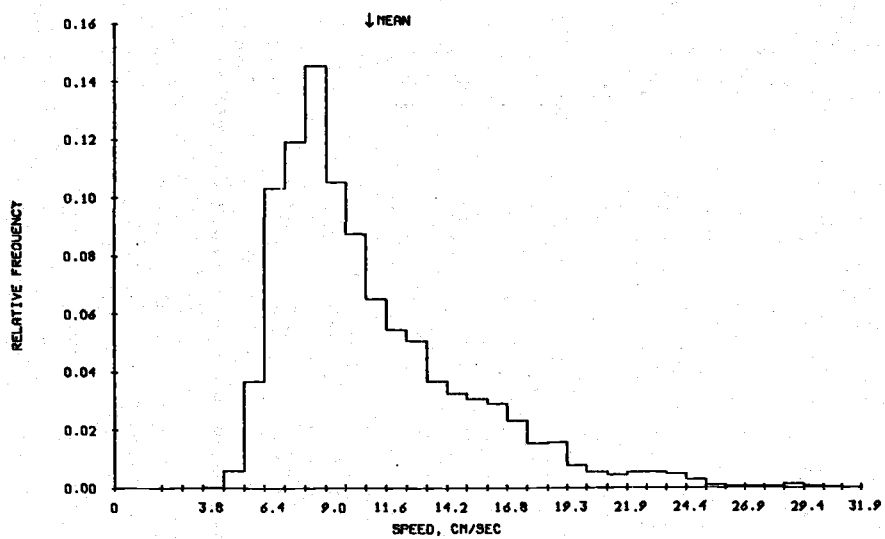
STATISTICS FOR COORDINATES ROTATED 45 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 135 DEGREES(T))

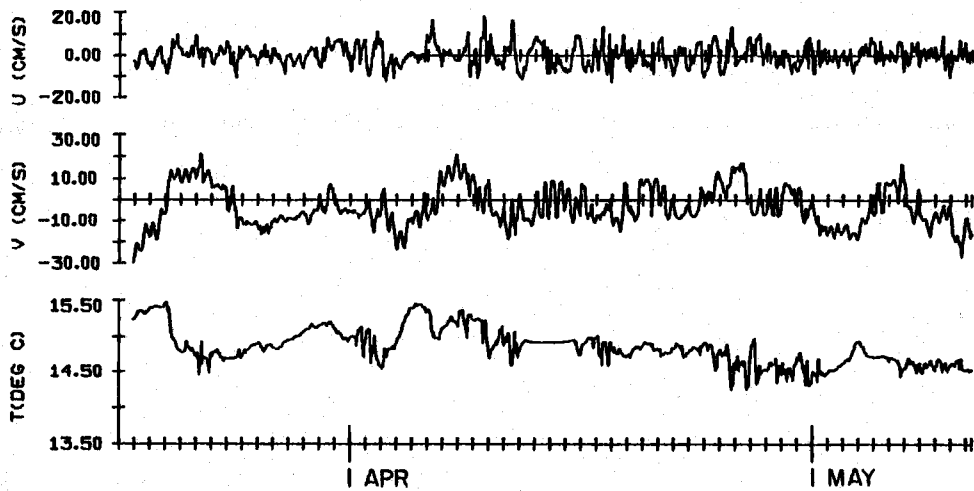
PARODIA LEG 5
 104 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1308	10.5	4.1	1.1	4.5	29.9	1.2
U (CM/S)	1308	-.2	4.9	.2	3.0	18.4	-13.1
V (CM/S)	1308	-3.7	9.4	.3	2.4	21.0	-29.7
T (DEG C)*	1308	14.8	.3	.4	2.8	15.5	14.2

* No post-calibration available. Temperature data were processed using the pre-calibration of 4 February 1976. See discussion in Appendix 2.

104 M AT PARODIA, 17 MAR 77 - 11 MAY 77. TAPE 485/35





104 M AT PARODIA LEG 5: HOURLIES,
54.5 DAYS STARTING 2200 GMT 17 MAR 1977

JOINT-II 1977 Installation

YUCCA TOO V

Position*: 12°04.6'W, 77°19.5'W
 Distance Offshore: 8.2 km (from San Lorenzo Island)
 Bottom Depth: 117 m
 Set: 1141 GMT 9 March 1977 by R/V MELVILLE
 Retrieved: 1152 GMT 18 May 1977 by R/V ISELIN
 Longest Data Interval: 1900 GMT 9 March to 0500 GMT 18 May
 Longest Record Length: 69 days, 11 hours

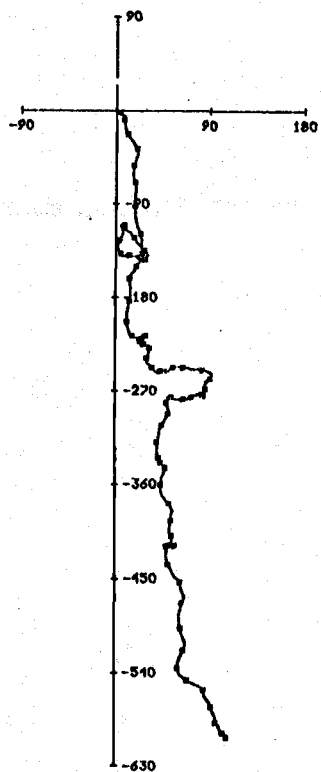
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
40 m	37 m	921/7	20 min	S,θ,T,P
60 m	57 m	493/29	15 min	S,θ,T
100 m	97 m	1239/8	15 min	S,θ,T

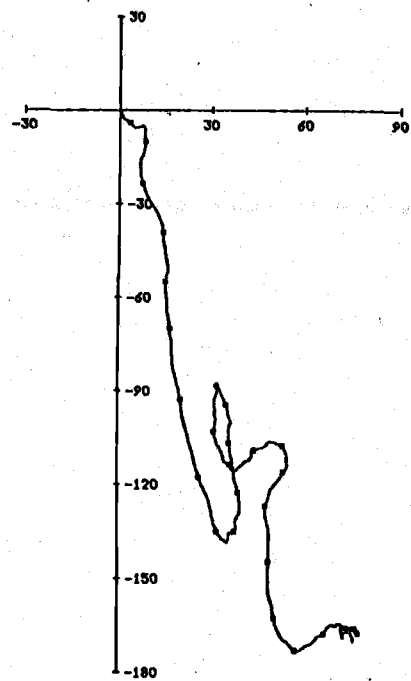
Comments:

All sensor channels from RCM 493 (57 m) were unintelligible for the latter part of the installation. Data exists through 1100 GMT 7 April.

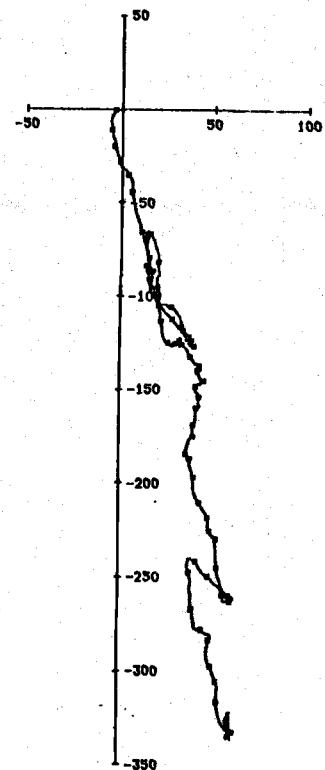
* Navigation: radar fixes and U.S. chart H.O. 22173 (Callao and approaches).



37 H AT YUCCA 100. 70.0 DAYS STARTING 1202 9 MAR 77



57 H AT YUCCA 100. 29.2 DAYS STARTING 1204 9 MAR 77



97 H AT YUCCA 100. 70.0 DAYS STARTING 1205 9 MAR 77

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
YUCCA TOO	5	37	921/7	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

1900	9	3	77	8.9	1.7	8.9	1.7	16.10	370014	1
2000	9	3	77	6.7	6.5	15.6	8.2	16.35	369599	2
2100	9	3	77	5.1	9.1	20.7	17.3	15.95	367493	3
2200	9	3	77	9.9	-0.6	30.6	16.7	16.12	368864	4
2300	9	3	77	10.9	-0.2	41.5	16.6	16.04	368556	5

LAST 5 LINES OF DATA:

100	18	5	77	3.3	16.4	2923.3	-16638.7	17.94	375303	1663
200	18	5	77	0.6	12.9	2923.9	-16625.8	17.58	373526	1664
300	18	5	77	3.3	10.9	2927.2	-16614.9	17.25	371314	1665
400	18	5	77	0.9	8.0	2928.1	-16606.9	16.29	370069	1666
500	18	5	77	0.5	8.1	2928.6	-16598.8	16.34	369547	1667

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1667	1.8	-10.0	77.7	118.1	8.8	10.9	-5.3	-.0550

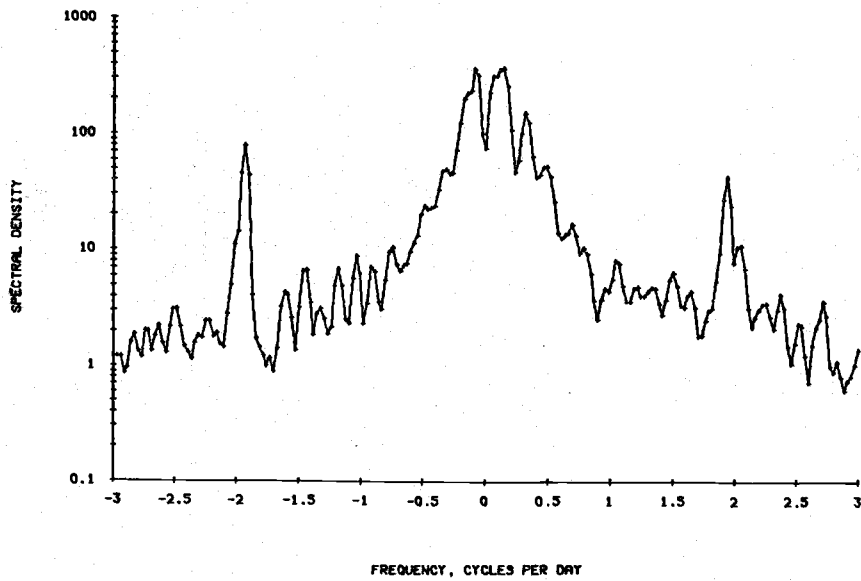
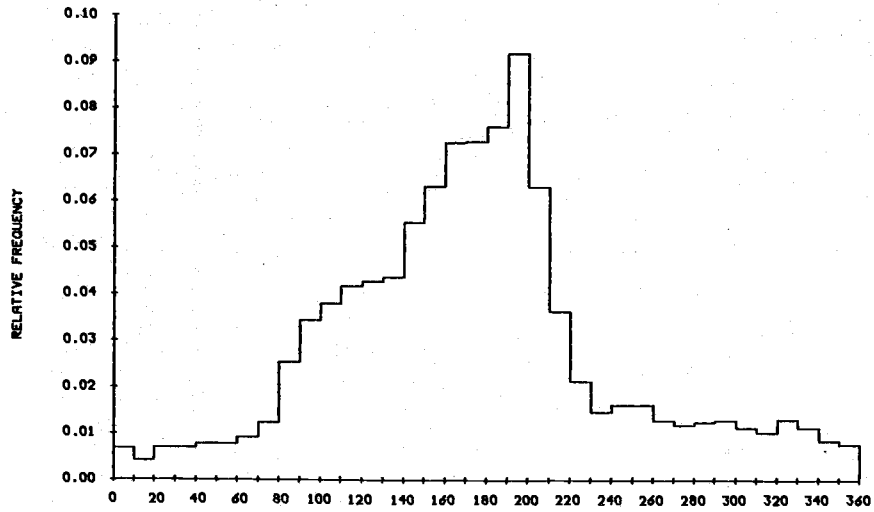
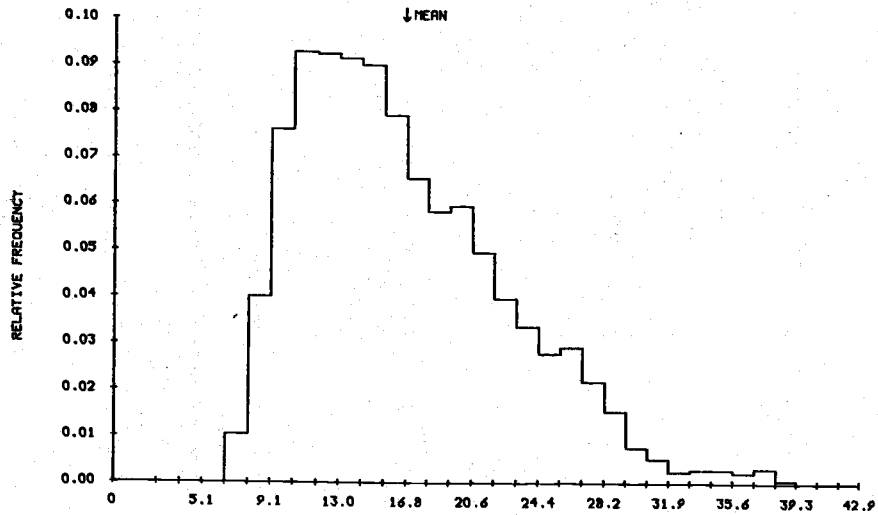
VECTOR MEAN: SPD = 10.1 CM/S, DIR = 170 DEGREES(T)
 DIRECTIONAL STEADINESS: 62.9 %

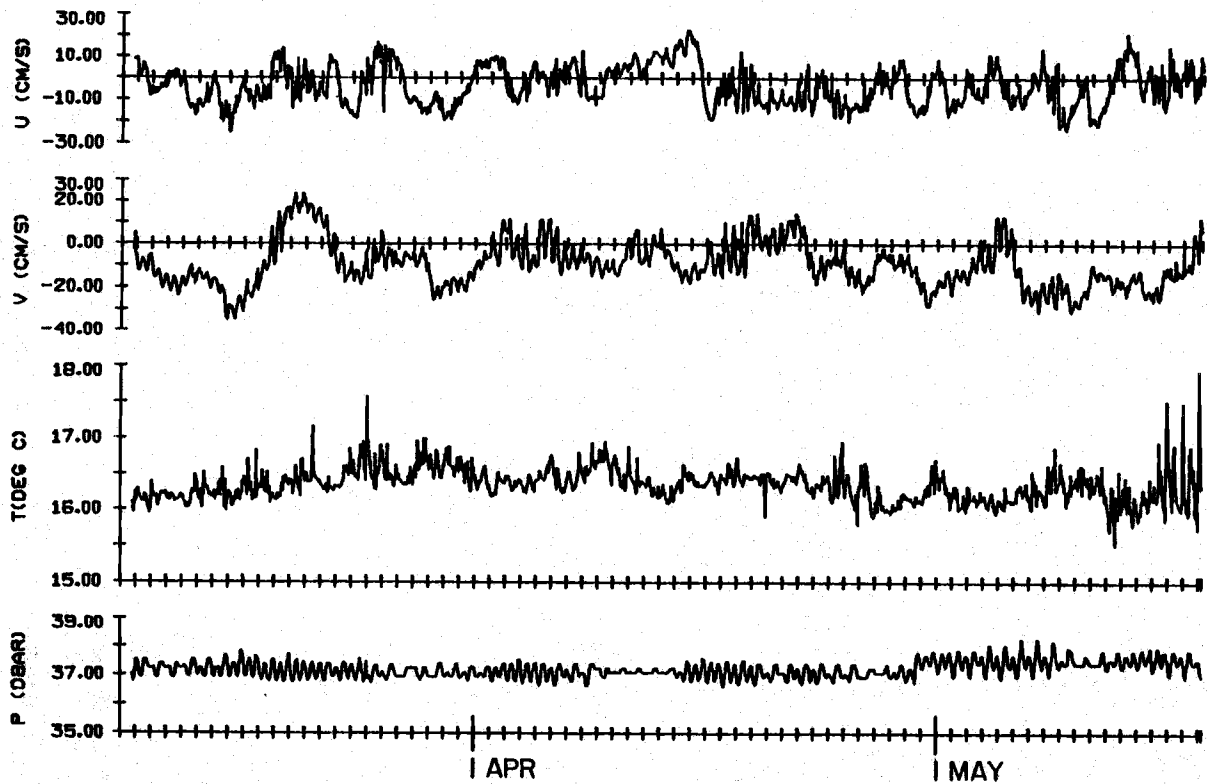
PRINCIPAL AXIS IS 172.7 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

YUCCA TOO LEG 5
 37 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1667	16.1	6.3	.6	3.1	37.9	.4
U (CM/S)	1667	-3.5	9.1	.2	2.3	22.9	-25.1
V (CM/S)	1667	-9.5	10.6	.6	3.1	23.7	-35.4
T (DEG C)	1667	16.3	.2	.8	6.2	17.9	15.5
P (DBAR)	1667	37.2	.3	.5	3.0	38.3	36.6





37 M AT YUCCA TOO LEG 5: HOURLIES,
69.5 DAYS STARTING 1900 GMT 9 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
YUCCA TOO	5	57	493/29	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

1900	9	3	77	10.0	-5.2	10.0	-5.2	15.66	1
2000	9	3	77	10.7	-5.5	20.7	-10.7	15.62	2
2100	9	3	77	8.5	-6.2	29.1	-16.9	15.54	3
2200	9	3	77	7.2	-9.3	36.4	-26.3	15.57	4
2300	9	3	77	9.5	-7.0	45.9	-33.2	15.56	5

LAST 5 LINES OF DATA:

700	7	4	77	7.0	3.6	2035.7	-4560.0	16.15	685
800	7	4	77	8.1	0.2	2043.7	-4559.8	16.15	686
900	7	4	77	5.9	-4.3	2049.7	-4564.1	16.15	687
1000	7	4	77	3.6	-6.6	2053.3	-4570.7	16.14	688
1100	7	4	77	3.1	-8.2	2056.4	-4578.9	16.14	689

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
689	3.0	-6.6	34.2	181.9	5.8	13.5	-9.2	-.1173

VECTOR MEAN: SPD = 7.3 CM/S, DIR = 156 DEGREES(T)
DIRECTIONAL STEADINESS: 47.4 %

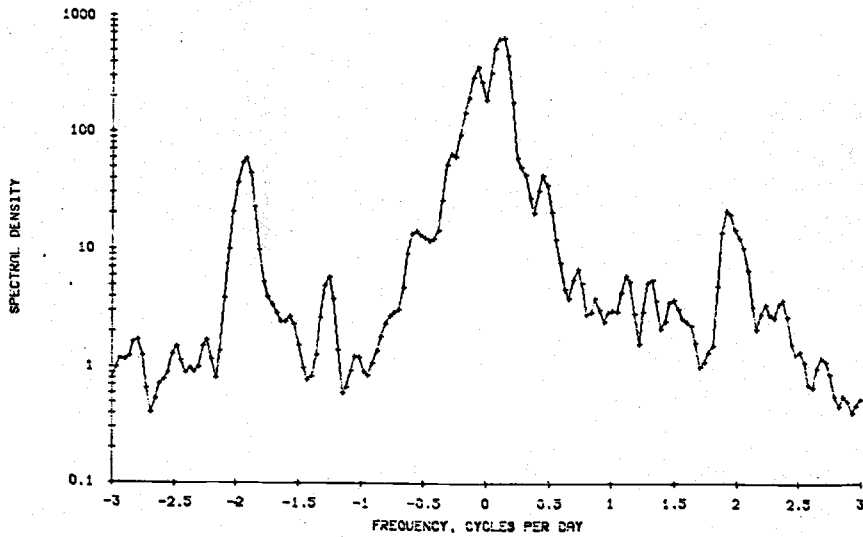
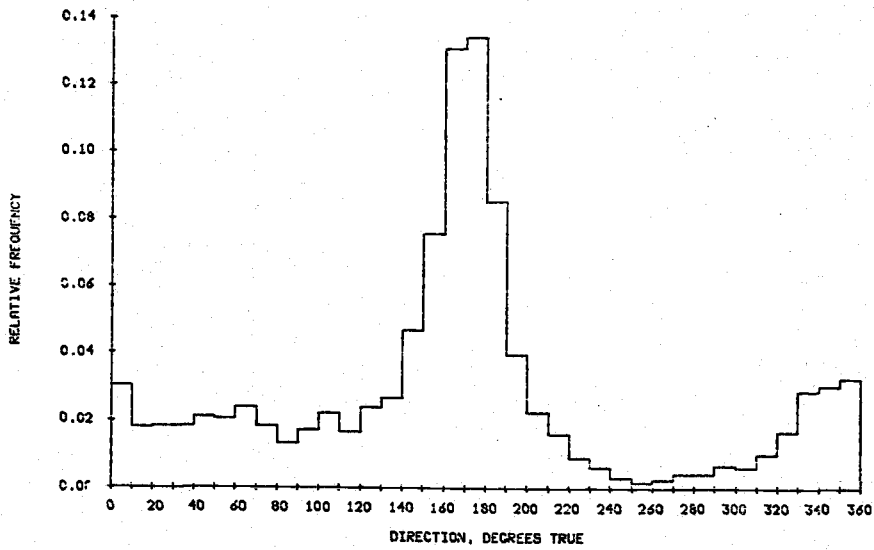
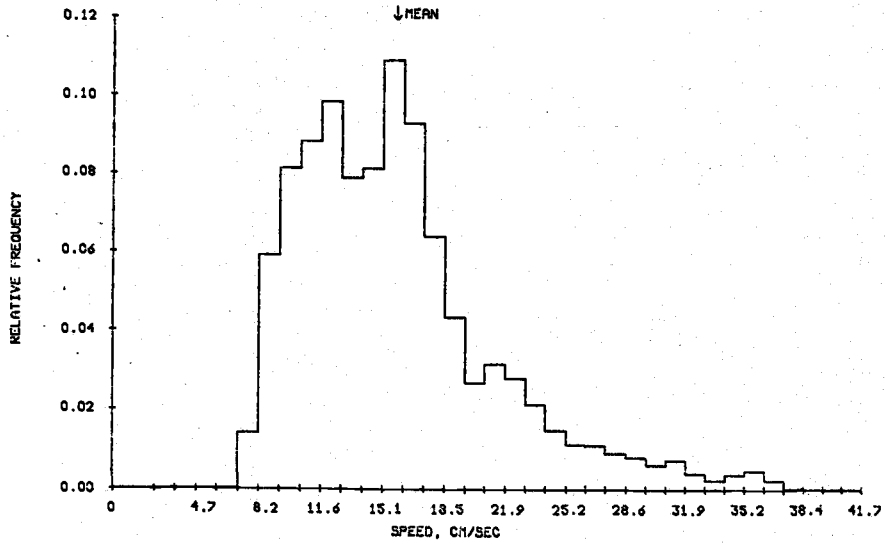
PRINCIPAL AXIS IS 176.4 DEGREES(T)

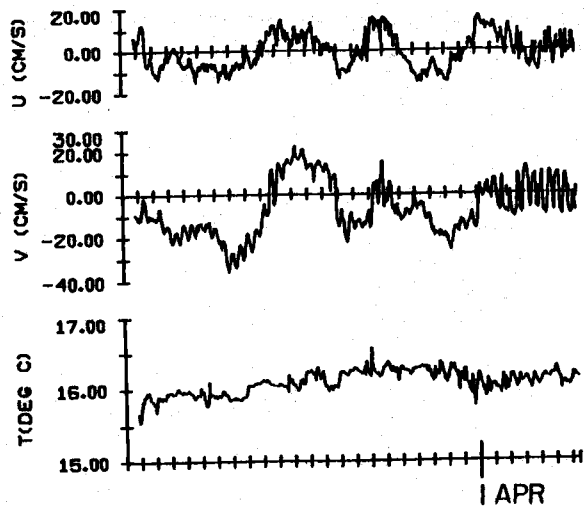
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

YUCCA TOO LEG 5
57 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	689	15.4	5.8	1.0	4.3	37.0	3.2
U (CM/S)	689	-.7	7.9	.3	2.0	16.3	-15.5
V (CM/S)	689	-7.2	12.4	.3	2.4	22.6	-36.0
T (DEG C)	689	16.1	.1	-.3	2.8	16.6	15.5

57 M AT YUCCA T00. 9 MAR 77 - 7 APR 77. TAPE 493/29





57 M AT YUCCA TOO LEG 5: HOURLIES,
28.7 DAYS STARTING 1900 GMT 9 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
YUCCA TOO	5	97	123/98	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

1900	9	3	77	-10.4	1.7	-10.4	1.7	15.22	1
2000	9	3	77	-10.6	2.8	-21.0	4.5	15.22	2
2100	9	3	77	-10.1	3.5	-31.2	8.0	15.22	3
2200	9	3	77	-10.0	3.2	-41.2	11.2	15.22	4
2300	9	3	77	-5.7	0.6	-46.9	11.8	15.22	5

LAST 5 LINES OF DATA:

100	18	5	77	-11.3	-10.2	1683.9	-9017.6	15.53	1663
200	18	5	77	-3.7	0.3	1680.2	-9017.3	15.19	1664
300	18	5	77	3.7	10.8	1683.9	-9006.5	15.13	1665
400	18	5	77	3.5	13.3	1687.4	-8993.2	15.12	1666
500	18	5	77	4.2	14.3	1691.6	-8978.9	15.13	1667

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1667	1.0	-5.4	29.7	94.0	5.5	9.7	-20.7	-.3917

VECTOR MEAN: SPD = 5.5 CM/S, DIR = 169 DEGREES(T)
 DIRECTIONAL STEADINESS: 49.2 %

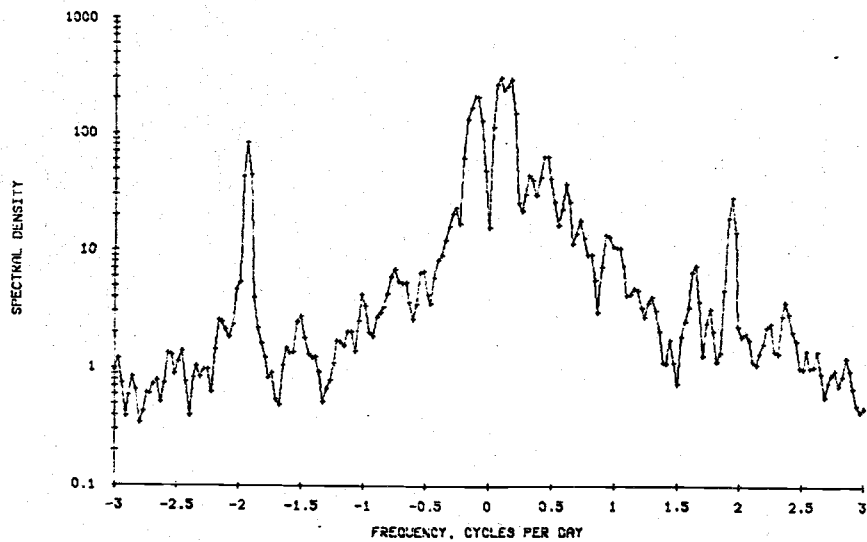
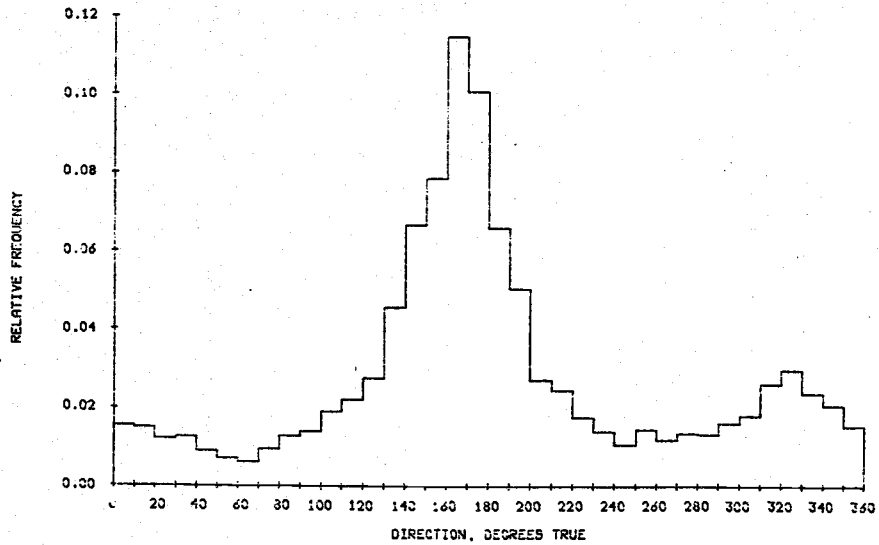
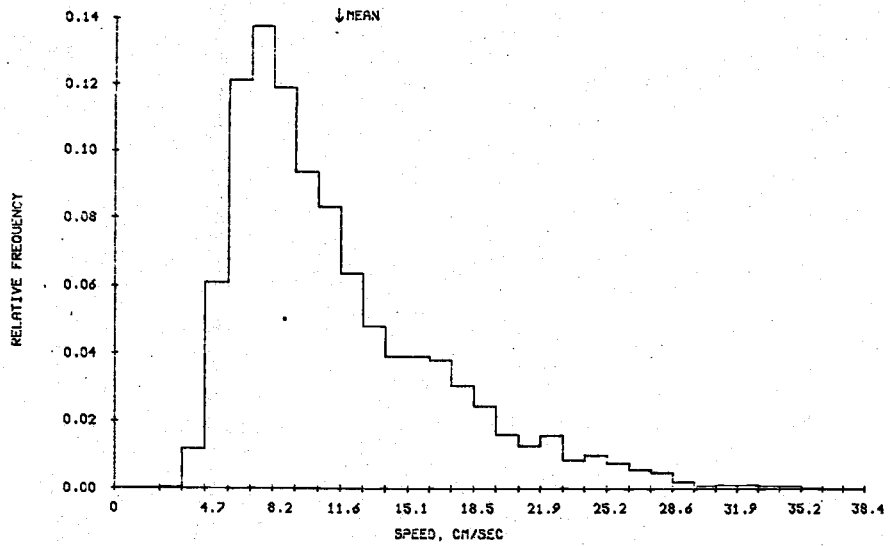
PRINCIPAL AXIS IS 163.6 DEGREES(T)

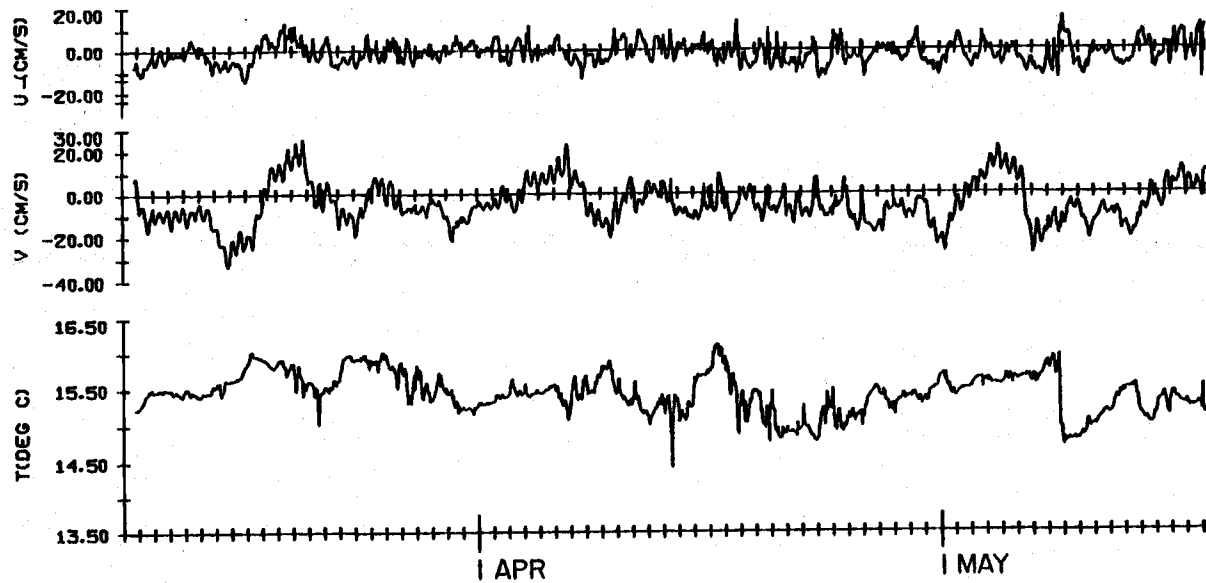
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

YUCCA TOO LEG 5
 97 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1667	11.1	5.5	1.2	4.2	34.6	.1
U (CM/S)	1667	-1.8	5.3	.3	2.7	15.4	-14.9
V (CM/S)	1667	-5.2	9.8	.3	3.0	25.7	-33.5
T (DEG C)	1667	15.4	.3	-.2	2.8	16.1	14.4

97 M AT YUCCA T00. 9 MAR 77 - 18 MAY 77. TAPE 1239/8





97 M AT YUCCA TOO LEG 5: HOURLIES,
69.5 DAYS STARTING 1900 GMT 9 MAR 1977

JOINT-II 1977 Installation

OPUNTIA V

Position*: 12°14.2'S, 77°35.9'W
 Distance Offshore: 41.9 km (from San Lorenzo Island)
 Bottom Depth: 620 m
 Set: 1823 GMT 12 March 1977 by R/V MELVILLE
 Retrieved: 1446 GMT 18 May 1977 by R/V ISELIN
 Longest Data Interval: 0200 GMT 13 March to 0800 GMT 18 May
 Longest Record Length: 66 days, 7 hours

Instrumentation

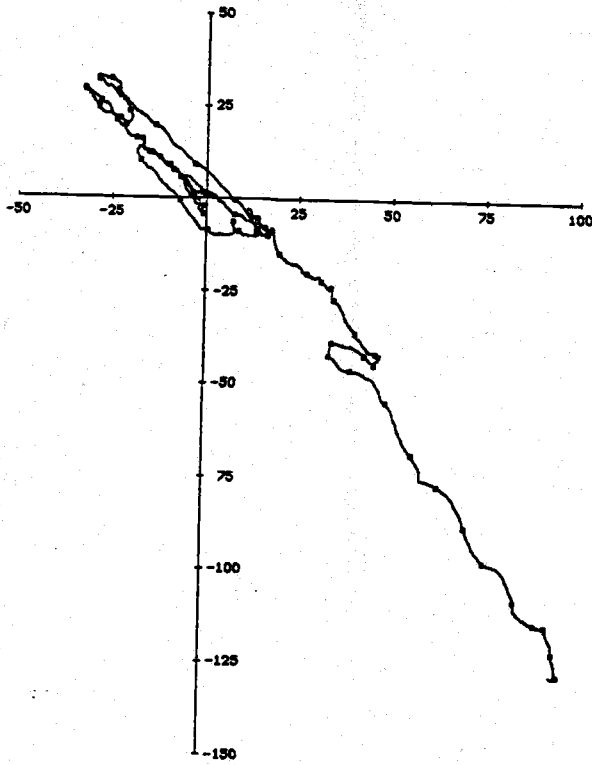
<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
100 m	129 m	501/39	15 min	S,T,P
200 m	224 m	495/38	15 min	S,θ,T,P
300 m	324 m	1962/4	15 min	S,θ,T
500 m	524 m	1243/8	15 min	S,θ,T

Comments:

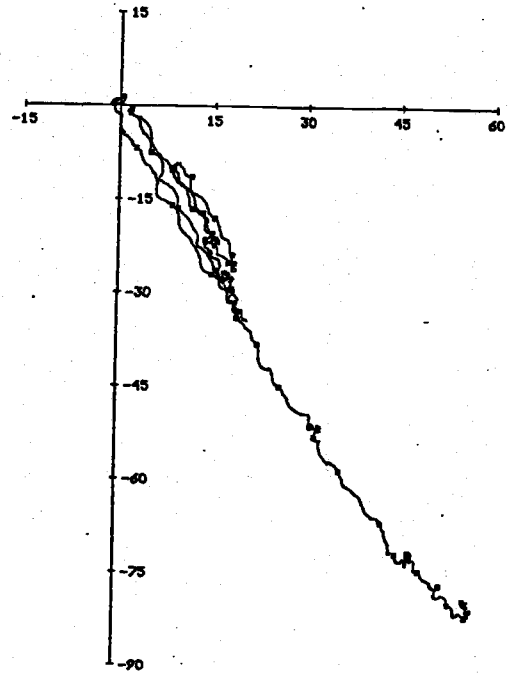
Due to compass failure, no direction data exist for RCM 501 (129 m).

Due to battery failure, data for RCM 1962 (324 m) exists only through 1400 GMT 30 April.

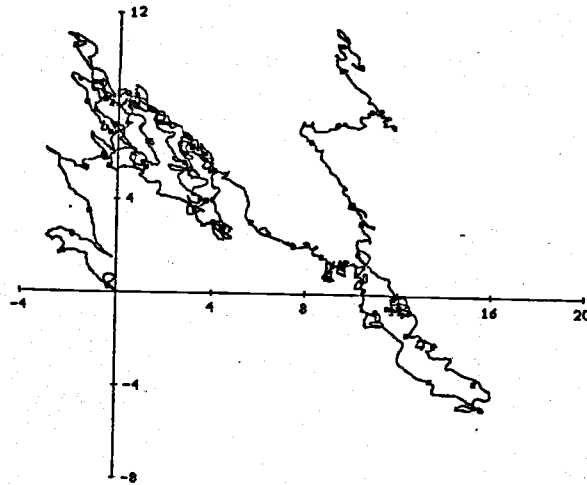
* Navigation: radar fixes and Peru chart DHNM 2100.



224 N AT OPUNTIA. 66.8 DAYS STARTING 1906 12 MAR 77.



324 N AT OPUNTIA. 49.1 DAYS STARTING 1848 12 MAR 77



524 N AT OPUNTIA. 66.8 DAYS STARTING 1919 12 MAR 77

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
OPUNTIA	5	129	501/39	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	13	3	77	14.90	1293079	1
300	13	3	77	14.90	1291459	2
400	13	3	77	14.91	1291233	3
500	13	3	77	14.90	1291656	4
600	13	3	77	14.90	1290217	5

LAST 5 LINES OF DATA:

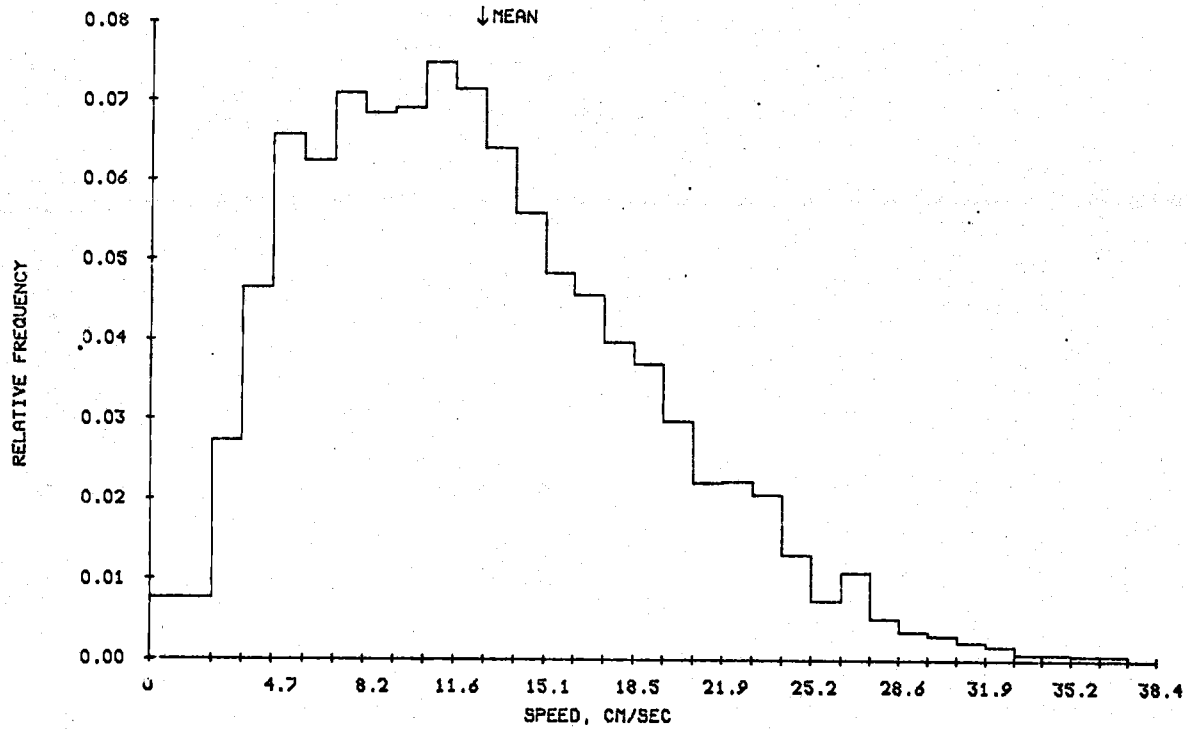
400	18	5	77	13.88	1288547	1587
500	18	5	77	13.89	1288393	1588
600	18	5	77	13.91	1288436	1589
700	18	5	77	13.91	1288281	1590
800	18	5	77	13.92	1289278	1591

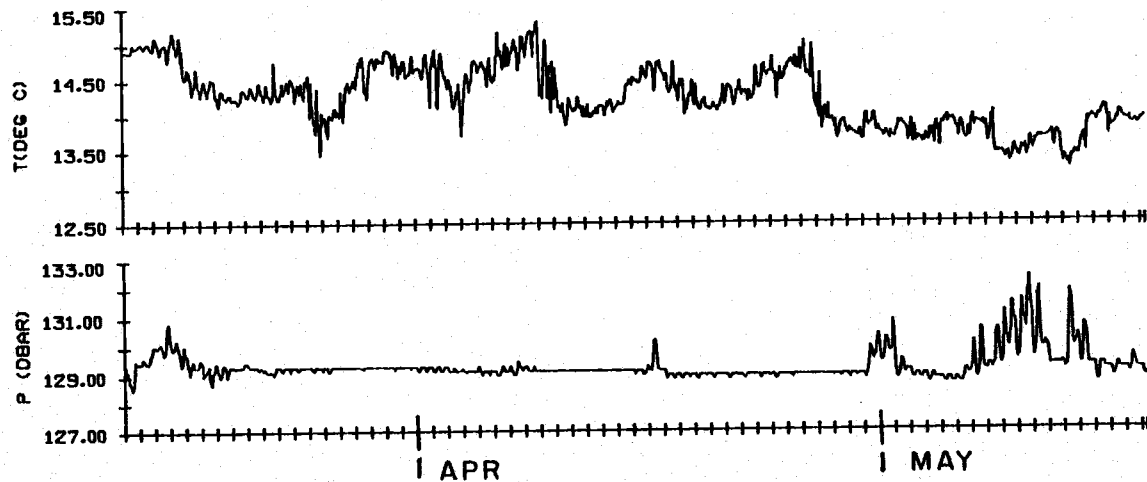
STATISTICS

OPUNTIA LEG 5
129 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
T (DEG C)	1591	14.2	.4	.0	2.1	15.3	13.2
P (DBAR)	1591	129.3	.5	2.7	12.7	132.3	128.5

129 M AT OPUNTIA. 12 MAR 77 - 18 MAY 77. TAPE 501/39





129 M AT OPUNTIA LEG 5: HOURLIES,
66.3 DAYS STARTING 200 GMT 13 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
OPUNTIA	5	224	495/38	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	13	3	77	-10.9	13.9	-10.9	13.9	12.77	2249003	1
300	13	3	77	-15.4	8.7	-26.4	22.6	12.86	2249009	2
400	13	3	77	-13.5	9.3	-39.9	31.9	12.90	2248992	3
500	13	3	77	-8.6	13.0	-48.5	44.9	12.83	2249029	4
600	13	3	77	-9.8	11.1	-58.3	56.0	12.59	2248952	5

LAST 5 LINES OF DATA:

400	18	5	77	-5.0	-3.7	2664.6	-3634.5	13.25	2245135	1587
500	18	5	77	-6.2	0.2	2658.4	-3634.2	13.18	2243361	1588
600	18	5	77	-7.0	4.3	2651.4	-3629.9	13.08	2244849	1589
700	18	5	77	-7.2	4.1	2644.1	-3625.9	13.08	2245446	1590
800	18	5	77	-6.1	3.3	2638.0	-3622.6	13.09	2245394	1591

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1591	1.7	-2.3	45.1	51.8	6.7	7.2	-33.6	-.6942

VECTOR MEAN: SPD = 2.8 CM/S, DIR = 144 DEGREES(T)
DIRECTIONAL STEADINESS: 31.8 %

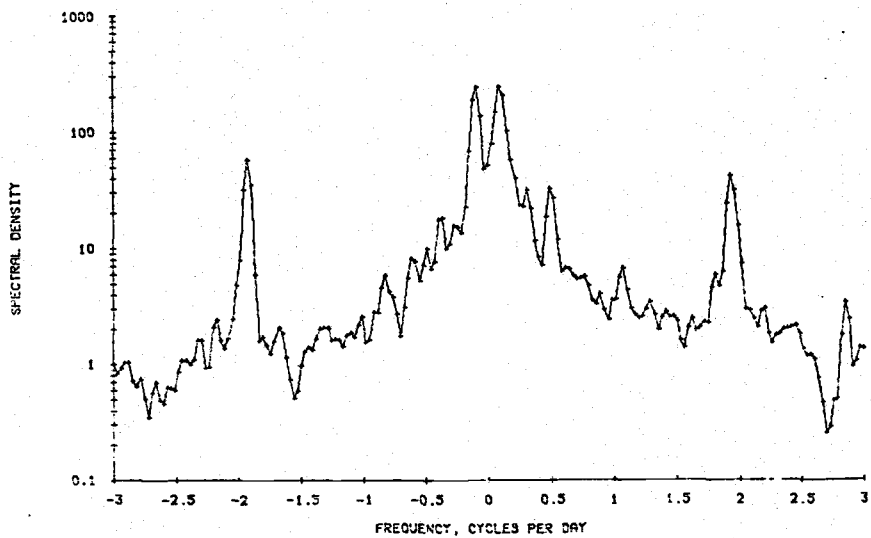
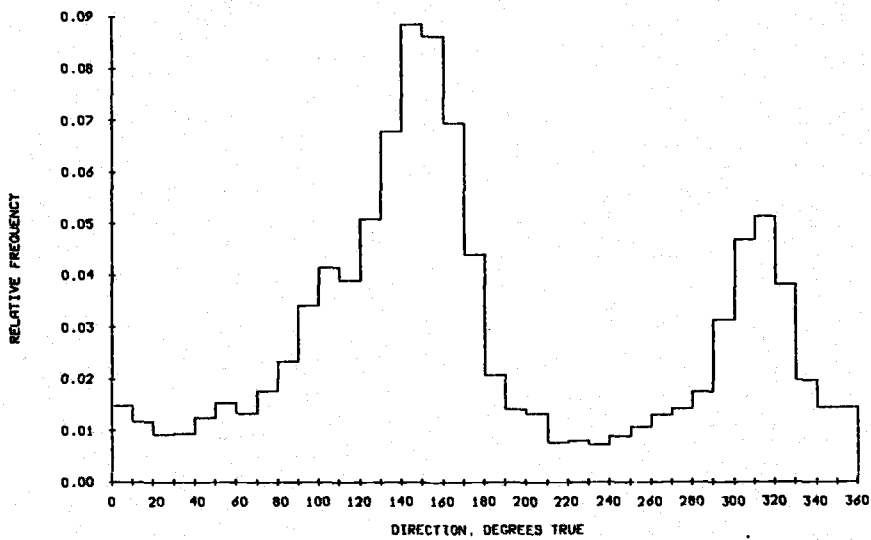
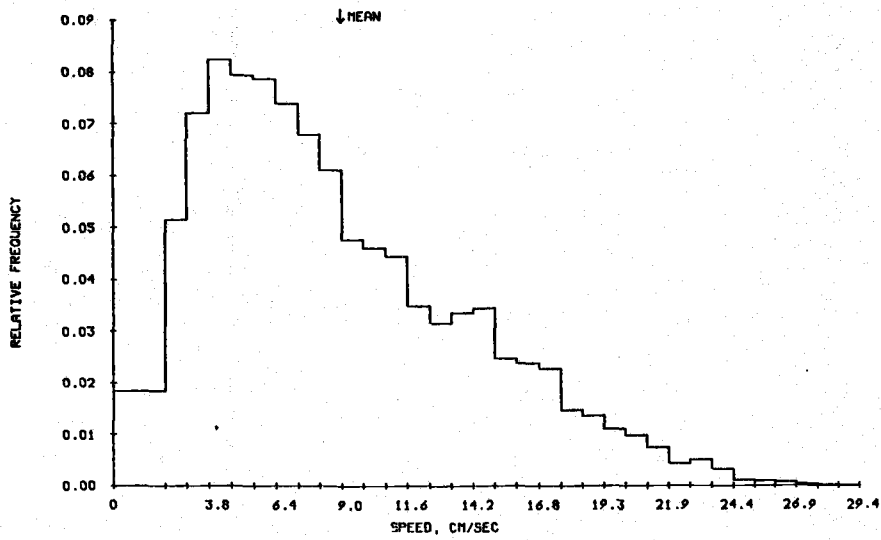
PRINCIPAL AXIS IS 137.8 DEGREES(T)

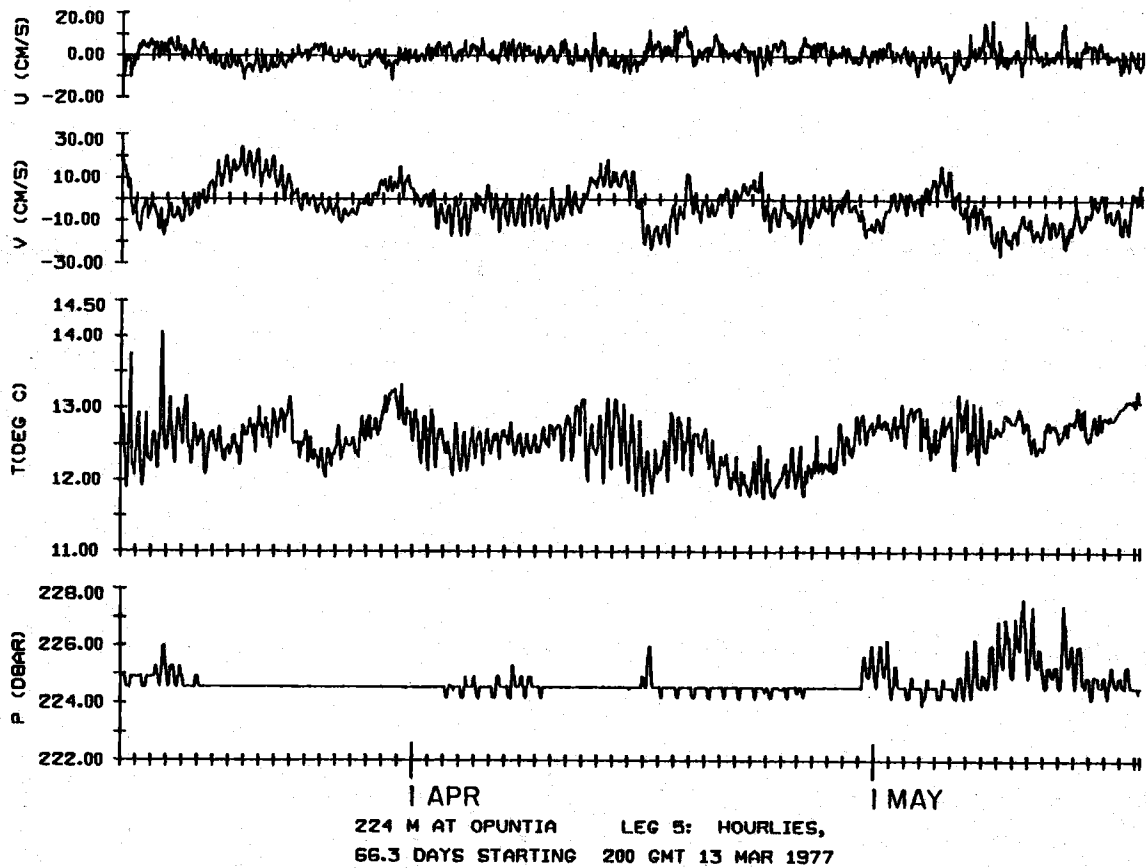
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

OPUNTIA LEG 5
224 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1591	8.9	5.1	.8	3.0	26.7	.2
U (CM/S)	1591	.3	4.2	.3	3.6	17.3	-12.3
V (CM/S)	1591	-2.8	8.9	.3	2.9	24.4	-26.2
T (DEG C)	1591	12.6	.3	-.1	3.4	14.1	11.7
P (DBAR)	1591	224.7	.5	2.9	12.3	227.7	223.9

224 N AT OPUNTIA, 12 MAR 77 - 18 MAY 77, TAPE 495/38





STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
OPUNTIA	5	324	196/24	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	13	3	77	-4.3	-2.0	-4.3	-2.0	10.03	1
200	13	3	77	-7.1	-4.5	-11.4	-6.4	10.07	2
300	13	3	77	-10.3	-6.5	-21.7	-12.9	10.14	3
400	13	3	77	-10.2	-8.7	-31.8	-21.6	10.33	4
500	13	3	77	-4.0	-8.9	-35.8	-30.5	10.65	5

LAST 5 LINES OF DATA:

1000	30	4	77	6.3	-8.4	1562.7	-2285.9	11.29	1162
1100	30	4	77	5.0	-2.7	1567.7	-2288.6	10.99	1163
1200	30	4	77	1.8	1.6	1569.5	-2287.0	10.70	1164
1300	30	4	77	-3.3	2.4	1566.2	-2284.6	10.59	1165
1400	30	4	77	-5.7	3.6	1560.5	-2281.0	10.55	1166

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1166	1.3	-2.0	29.5	45.8	5.3	6.8	-18.0	-.4991

VECTOR MEAN: SPD = 2.4 CM/S, DIR = 146 DEGREES(T)
 DIRECTIONAL STEADINESS: 31.6 %

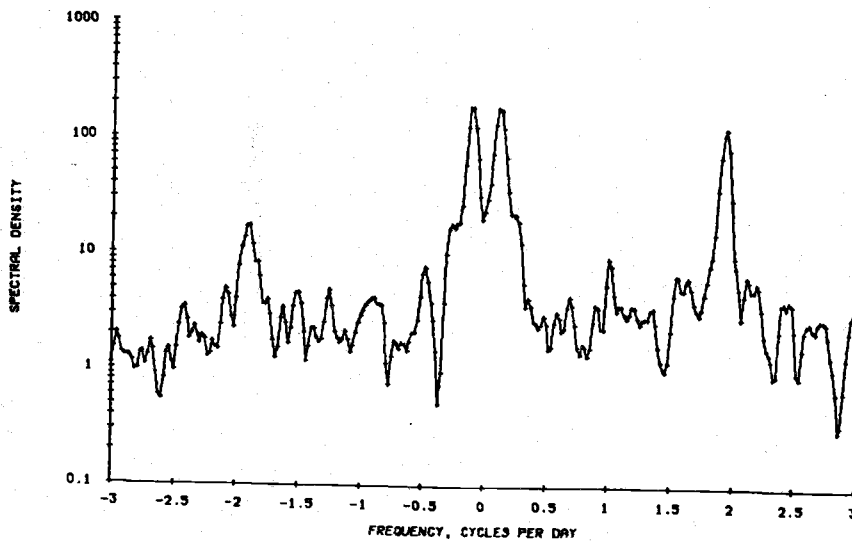
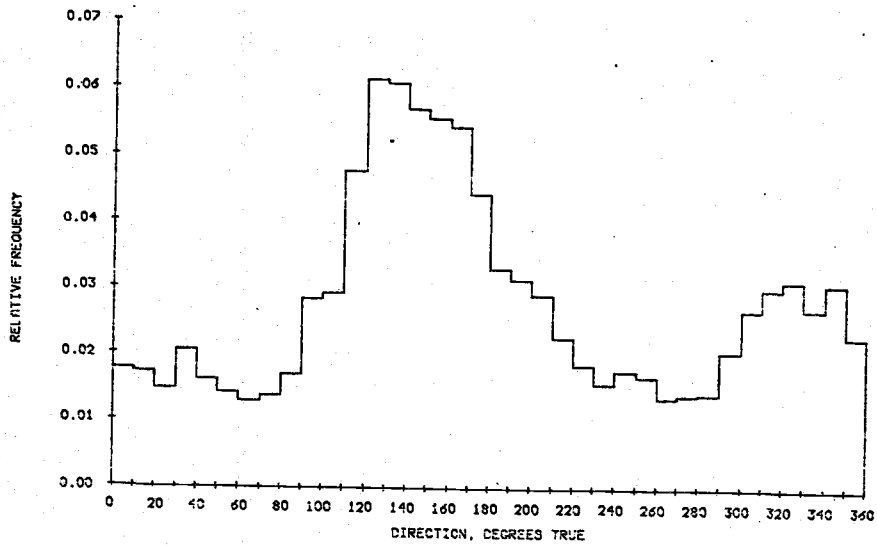
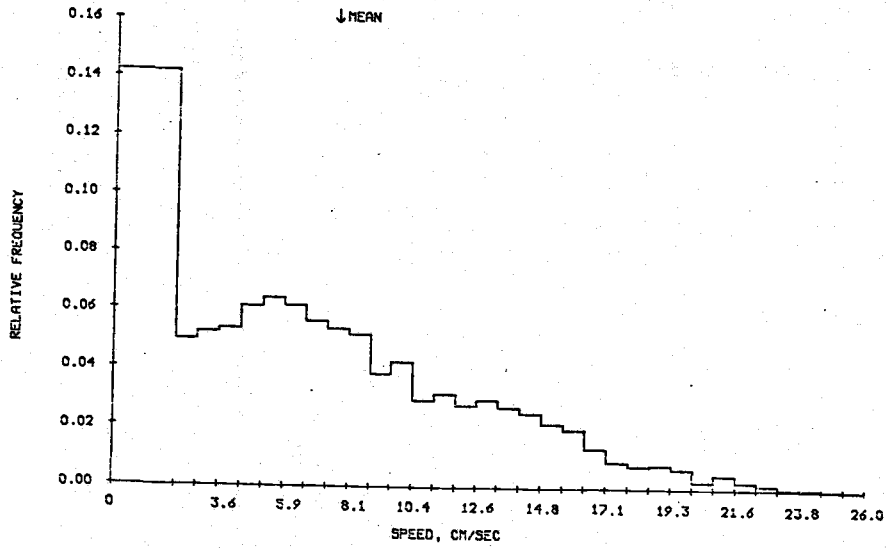
PRINCIPAL AXIS IS 147.8 DEGREES(T)

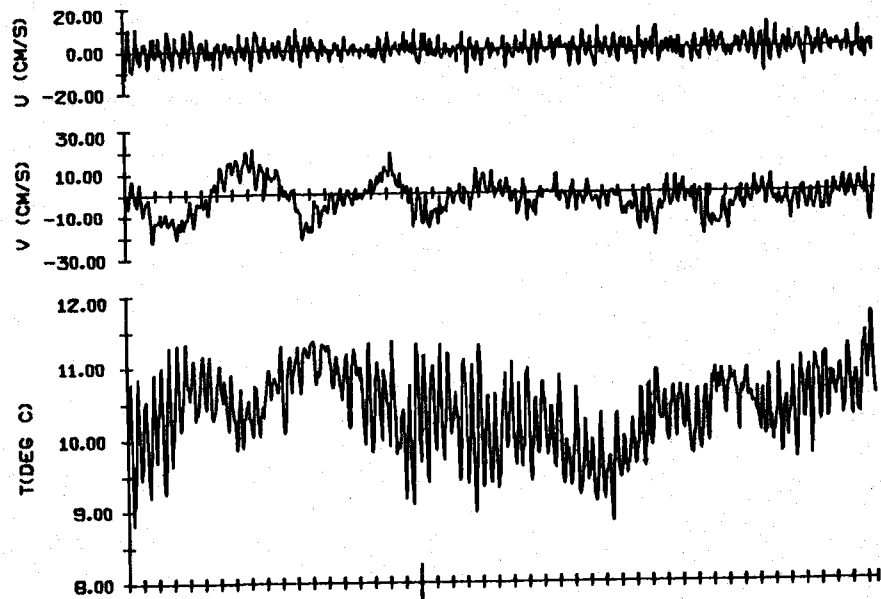
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

OPUNTIA LEG 5
 324 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1166	7.5	4.8	.7	2.8	23.3	.2
U (CM/S)	1166	.2	4.1	.0	2.9	12.0	-13.2
V (CM/S)	1166	-2.4	7.6	.1	3.1	21.1	-22.4
T (DEG C)	1166	18.4	.5	-.4	2.6	11.7	8.8

324 M AT OPUNTIA. 12 MAR 77 - 30 APR 77. TAPE 1962/4





1 APR
324 M AT OPUNTIA LEG 5: HOURLIES,
48.6 DAYS STARTING 100 GMT 13 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
OPUNTIA	5	524	124/38	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

200	13	3	77	-1.1	5.4	-1.1	5.4	6.56	1
300	13	3	77	1.6	2.2	0.6	7.7	6.49	2
400	13	3	77	2.1	1.3	2.7	9.0	6.48	3
500	13	3	77	0.4	0.6	3.1	9.6	6.48	4
600	13	3	77	1.2	0.2	4.3	9.7	6.51	5

LAST 5 LINES OF DATA:

300	18	5	77	-2.0	-1.3	297.4	256.7	8.18	1586
400	18	5	77	1.2	0.1	298.6	256.8	8.18	1587
500	18	5	77	-0.3	0.7	298.3	257.5	8.09	1588
600	18	5	77	-1.8	0.5	296.5	258.0	8.10	1589
700	18	5	77	-1.3	0.3	295.2	258.3	8.12	1590

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1590	.2	.2	10.9	8.4	3.3	2.9	-3.6	-.3730

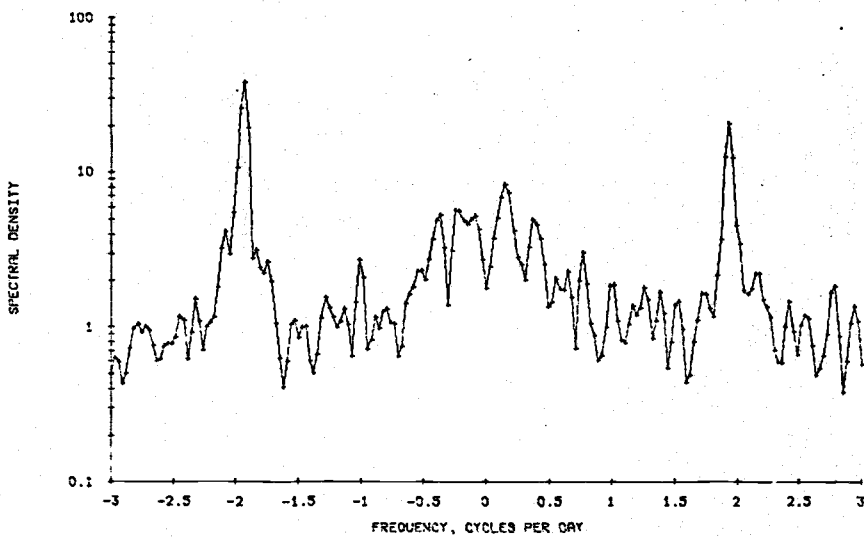
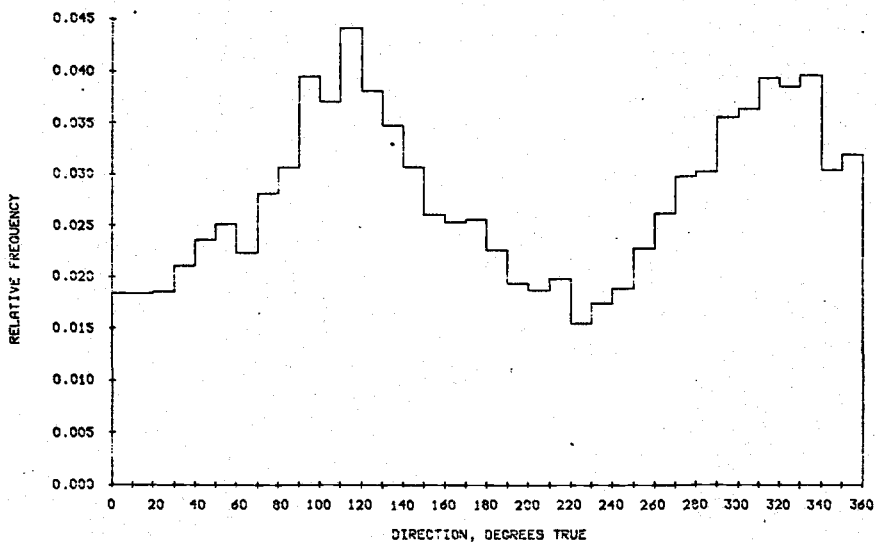
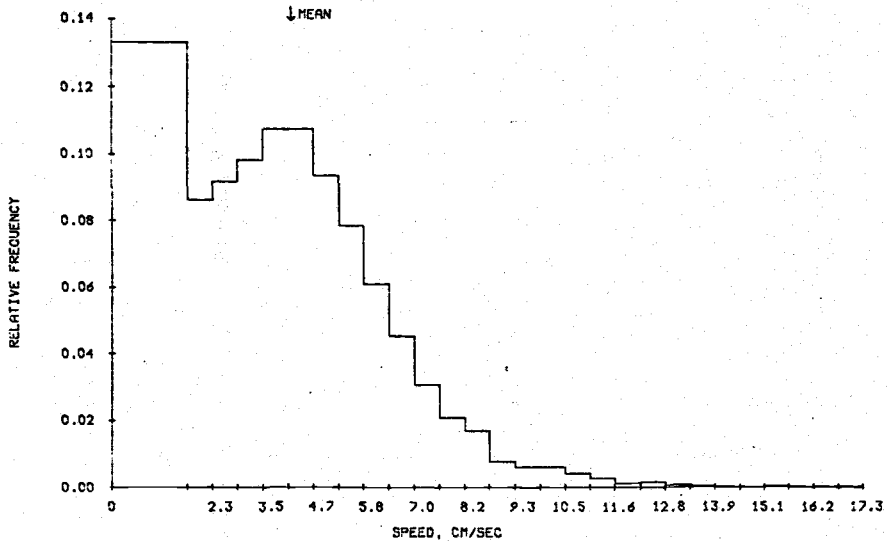
VECTOR MEAN: SPD = .2 CM/S, DIR = 49 DEGREES(T)
DIRECTIONAL STEADINESS: 6.3 %

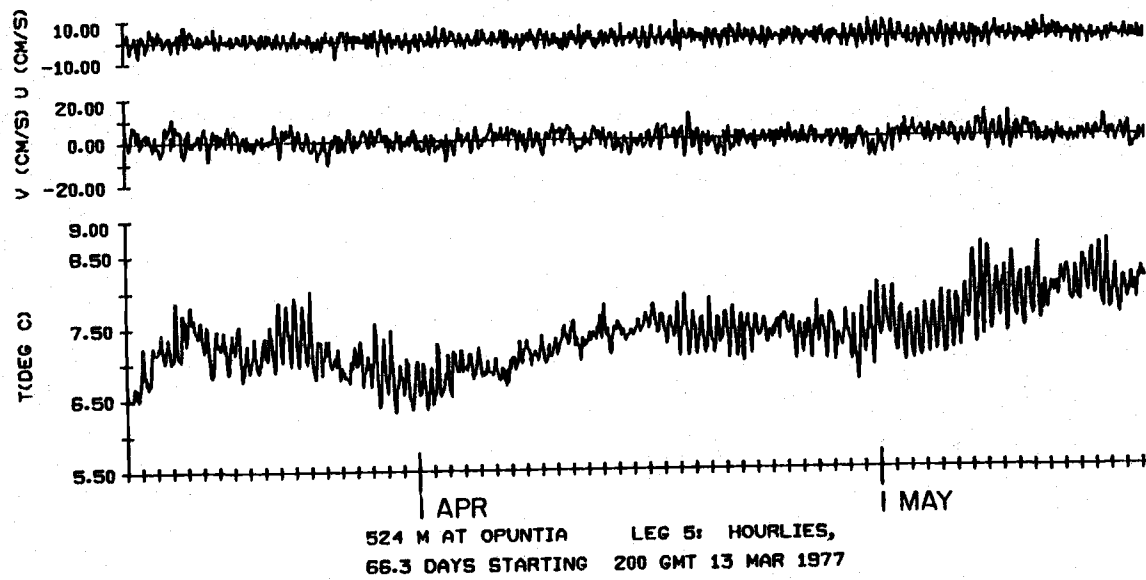
PRINCIPAL AXIS IS 125.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

OPUNTIA LEG 5
524 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1590	3.9	2.0	.7	3.6	12.3	.1
U (CM/S)	1590	.2	2.7	-.1	2.8	8.1	-8.6
V (CM/S)	1590	.0	3.5	.1	2.9	11.7	-10.7
T(DEG C)	1590	7.4	.4	.3	2.9	8.6	6.3





JOINT-II 1977 Installation

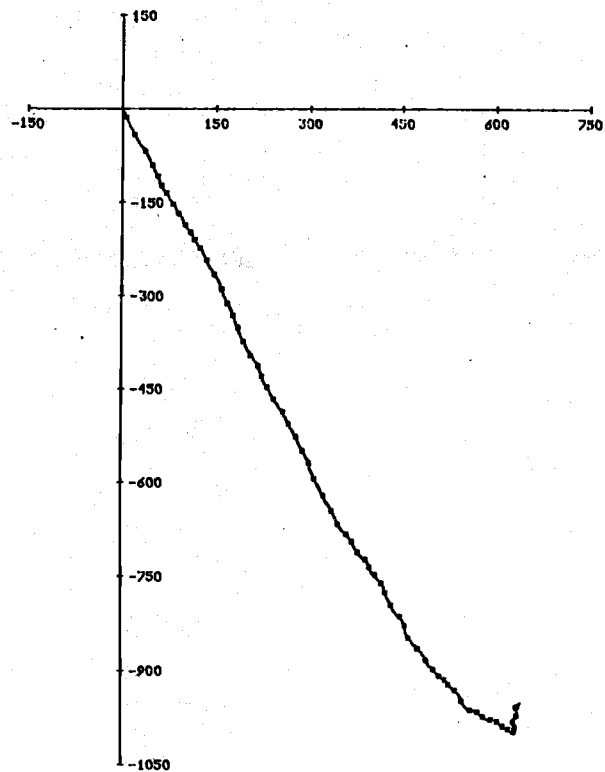
PEYOTE V

Position*: 9°57.8'S, 78°24.3'W
 Distance Offshore: 19.7 km
 Bottom Depth: 117 m
 Set: 1150 GMT 13 March 1977 by R/V MELVILLE
 Retrieved: 1322 GMT 19 May 1977 by R/V ISELIN
 Longest Data Interval: 1900 GMT 13 March to 0600 GMT 19 May
 Longest Record Length: 66 days, 12 hours

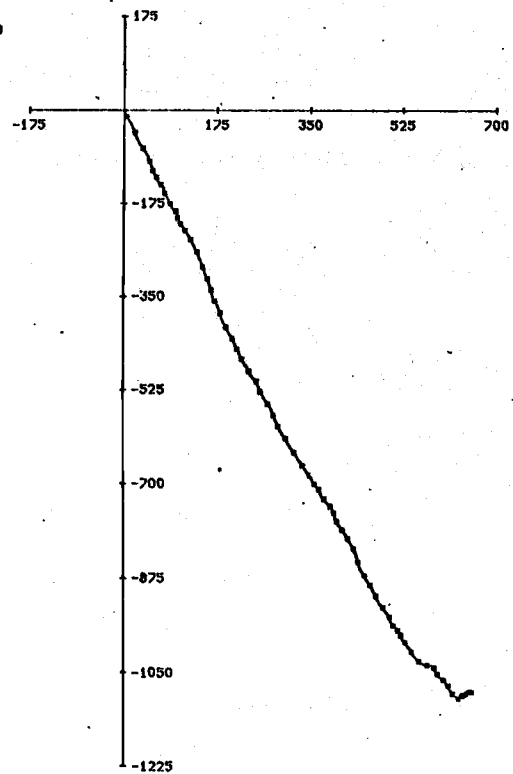
Instrumentation

<u>Intended Depth</u>	<u>Accepted Depth</u>	<u>Serial Tape #</u>	<u>Sampling Interval</u>	<u>Measured Variables</u>
40 m	37 m	496/33	15 min	S,θ,T,P
60 m	56 m	499/36	15 min	S,θ,T,P
100 m	96 m	2278/5	15 min	S,θ,T

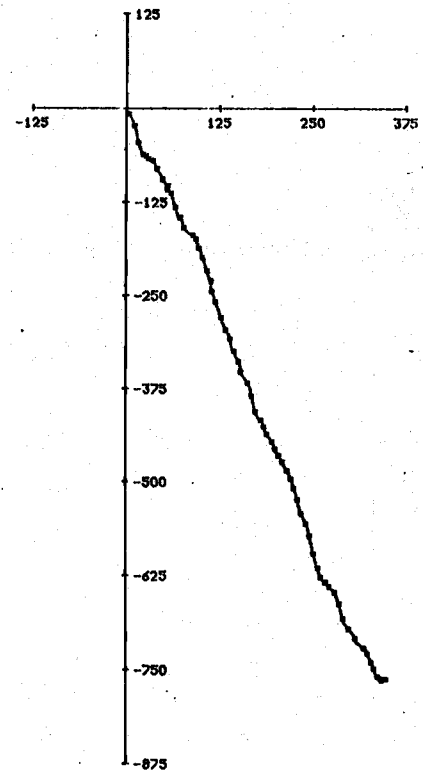
* Navigation: radar fixes and U.S. chart H.O. 22008.



37 M AT PEYOTE. 67.0 DAYS STARTING 1202 13 MAR 77



56 M AT PEYOTE. 67.0 DAYS STARTING 1204 13 MAR 77



96 M AT PEYOTE. 67.0 DAYS STARTING 1219 13 MAR 77

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PEYOTE	5	37	496/33	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

1900	13	3	77	15.1	-35.2	15.1	-35.2	16.48	371761	1
2000	13	3	77	14.5	-34.0	29.6	-69.2	16.50	371629	2
2100	13	3	77	16.9	-31.8	46.5	-101.0	16.48	371806	3
2200	13	3	77	9.4	-34.0	55.9	-135.0	16.46	369005	4
2300	13	3	77	10.6	-31.3	66.4	-166.2	16.42	368436	5

LAST 5 LINES OF DATA:

200	19	5	77	8.7	2.0	17626.1	-26340.9	17.30	370091	1592
300	19	5	77	9.2	3.0	17635.3	-26337.9	16.43	370096	1593
400	19	5	77	11.2	6.9	17646.5	-26331.0	16.70	369775	1594
500	19	5	77	19.4	6.8	17665.9	-26324.2	16.25	369783	1595
600	19	5	77	5.3	29.6	17671.2	-26294.6	18.07	369477	1596

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1596	11.1	-16.5	31.0	123.5	5.6	11.1	-24.8	-.4013

VECTOR MEAN: SPD = 19.9 CM/S, DIR = 146 DEGREES(T)
DIRECTIONAL STEADINESS: 89.1 %

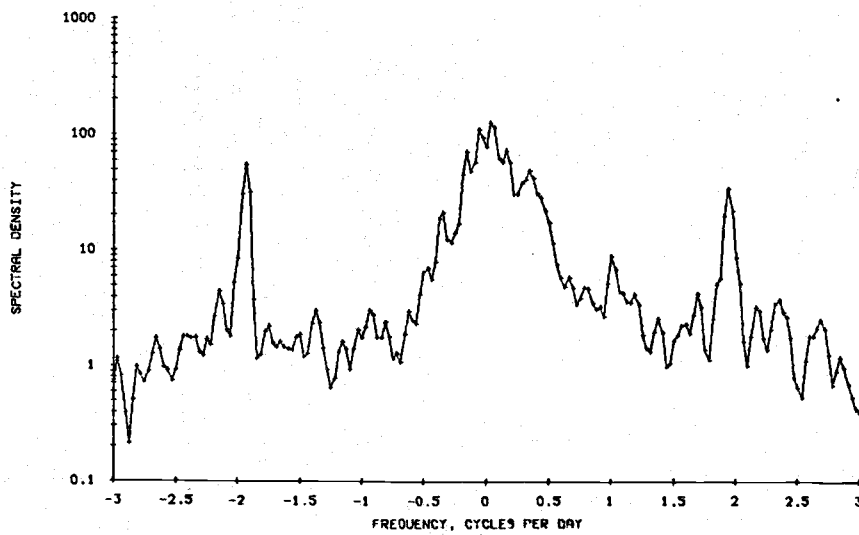
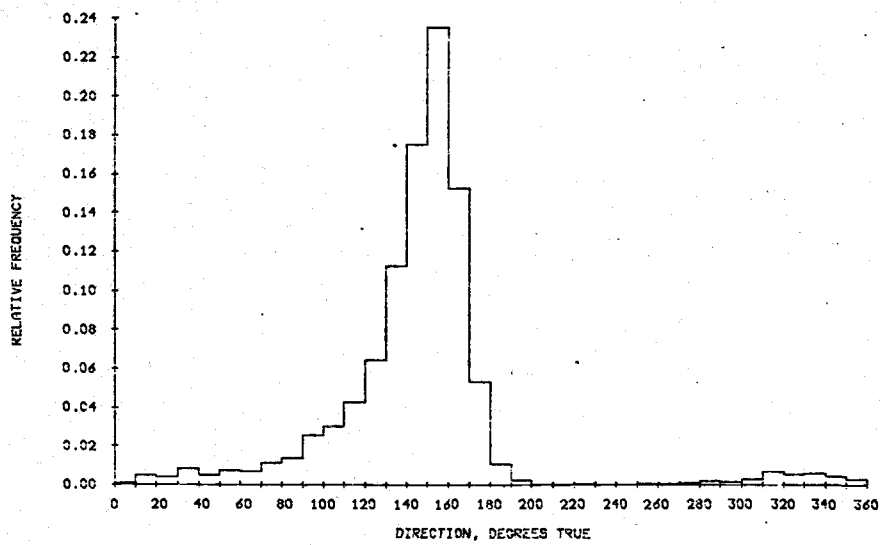
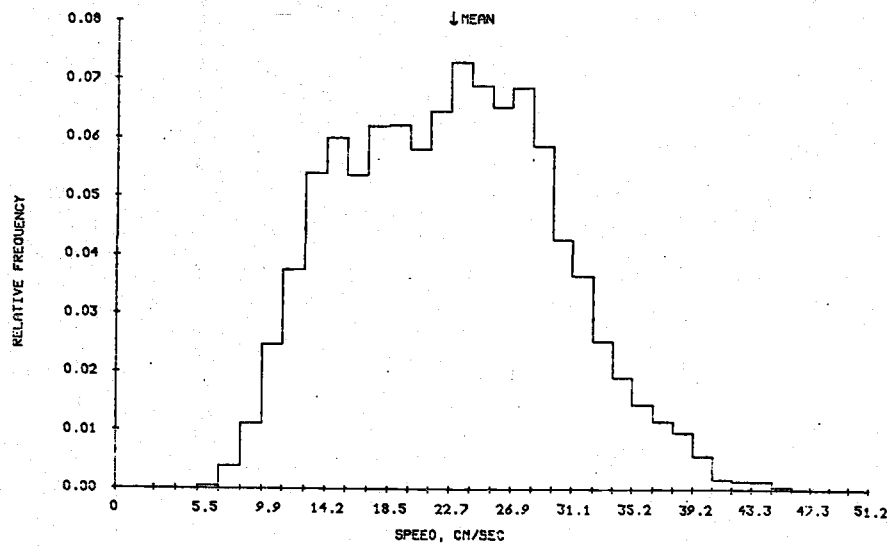
PRINCIPAL AXIS IS 165.9 DEGREES(T)

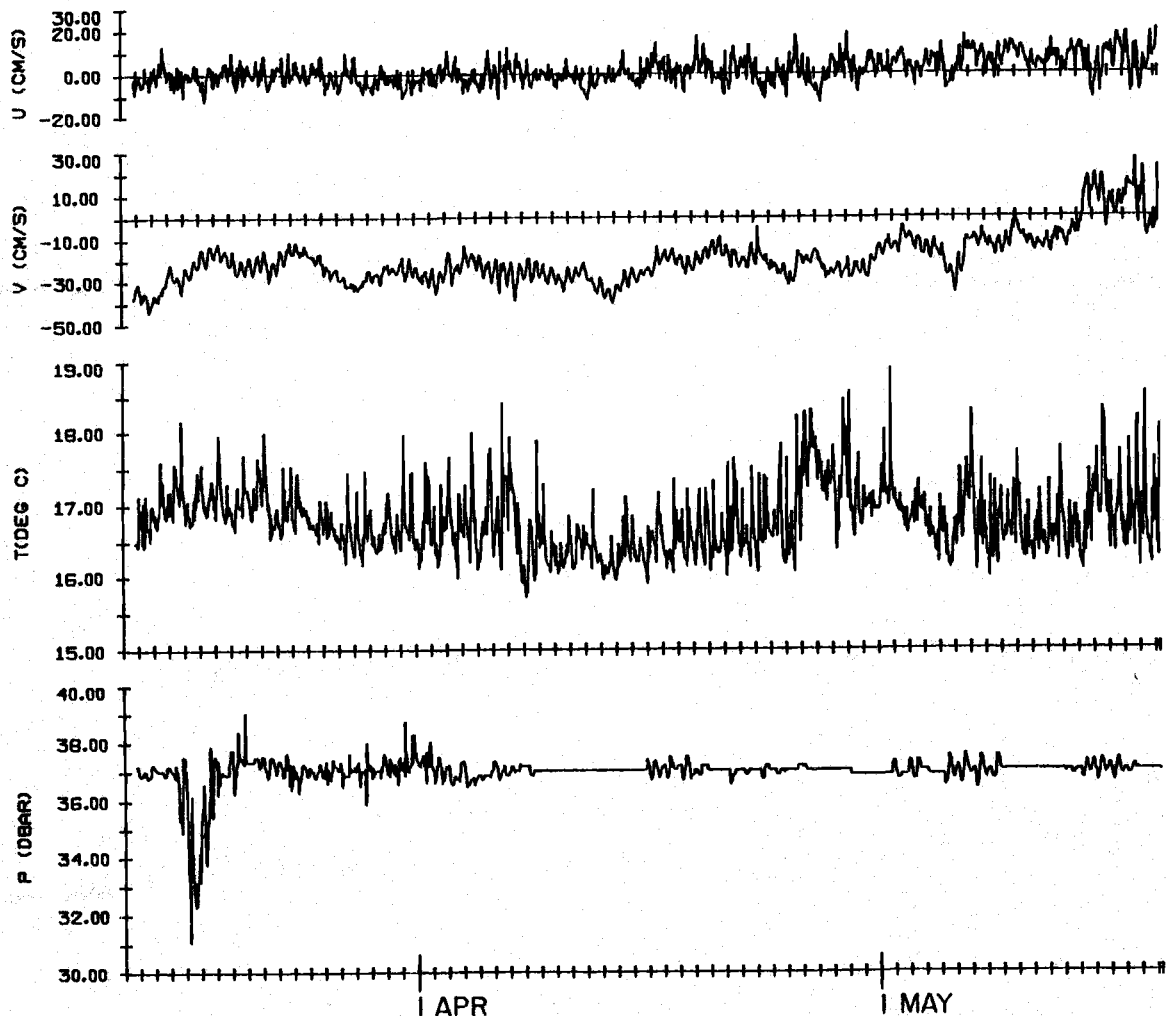
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

PEYOTE LEG 5
37 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1596	22.3	7.2	.2	2.5	44.4	1.7
U (CM/S)	1596	1.4	5.7	.4	2.9	20.2	-13.3
V (CM/S)	1596	-19.8	11.0	1.2	5.2	26.8	-44.4
T (DEG C)	1596	16.8	.5	.8	3.9	18.9	15.7
P (DBAR)	1596	36.9	.5	-5.5	45.1	39.0	31.1

37 M AT PEYOTE. 13 MAR 77 - 19 MAY 77. TAPE 496/33





37 M AT PEYOTE LEG 5: HOURLIES,
66.5 DAYS STARTING 1900 GMT 13 MAR 1977

STATION PEYOTE	LEG 5	DEPTH 56	TAPE NO 499/36	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

1900	13	3 77	14.0	-28.0	14.0	-28.0	16.07	563217	1
2000	13	3 77	17.6	-26.9	31.6	-54.9	16.02	563202	2
2100	13	3 77	15.8	-27.7	47.4	-82.6	15.96	563201	3
2200	13	3 77	17.0	-27.8	64.4	-110.5	15.88	563201	4
2300	13	3 77	11.6	-29.4	76.0	-139.9	15.87	563201	5

LAST 5 LINES OF DATA:

200	19	5 77	3.9	4.6	18119.8	-30028.6	15.57	564701	1592
300	19	5 77	2.2	7.4	18122.0	-30021.2	15.40	564701	1593
400	19	5 77	1.7	7.5	18123.8	-30013.7	15.63	564701	1594
500	19	5 77	3.3	7.1	18127.1	-30006.6	15.34	564699	1595
600	19	5 77	2.4	10.1	18129.4	-29996.5	16.80	564706	1596

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1596	11.4	-18.9	25.9	91.6	5.1	9.6	-19.0	-.3908

VECTOR MEAN: SPD = 22.0 CM/S, DIR = 149 DEGREES(T)
DIRECTIONAL STEADINESS: 94.5 %

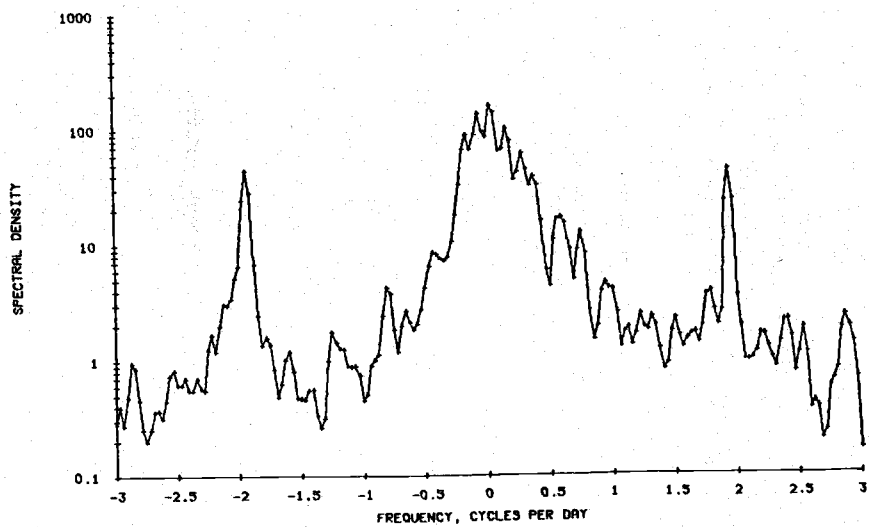
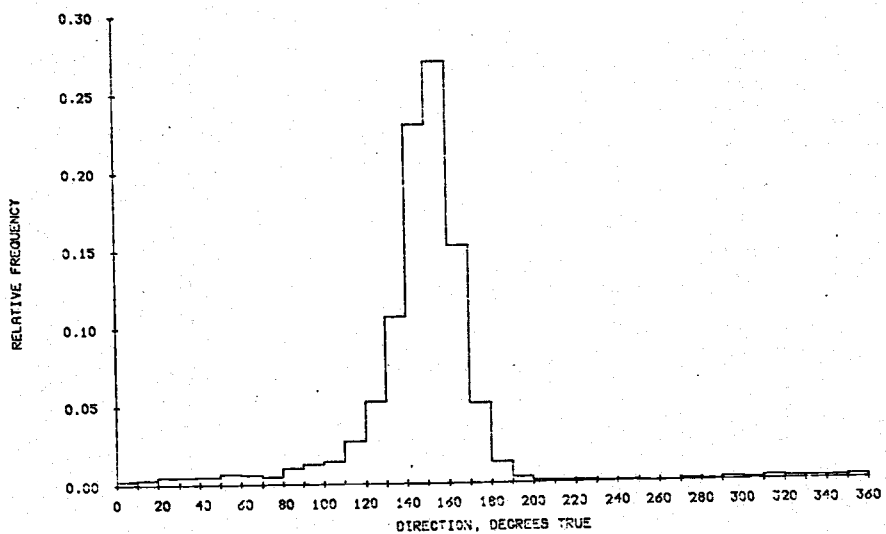
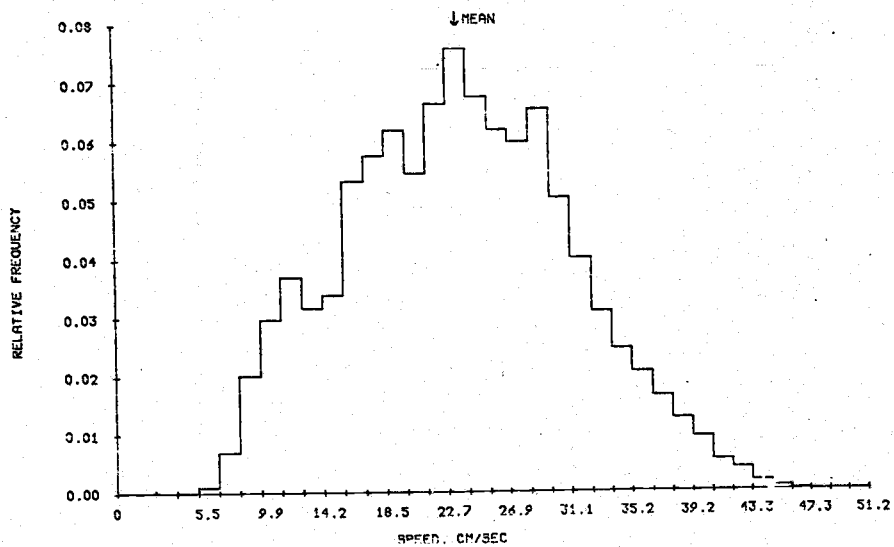
PRINCIPAL AXIS IS 165.0 DEGREES(T)

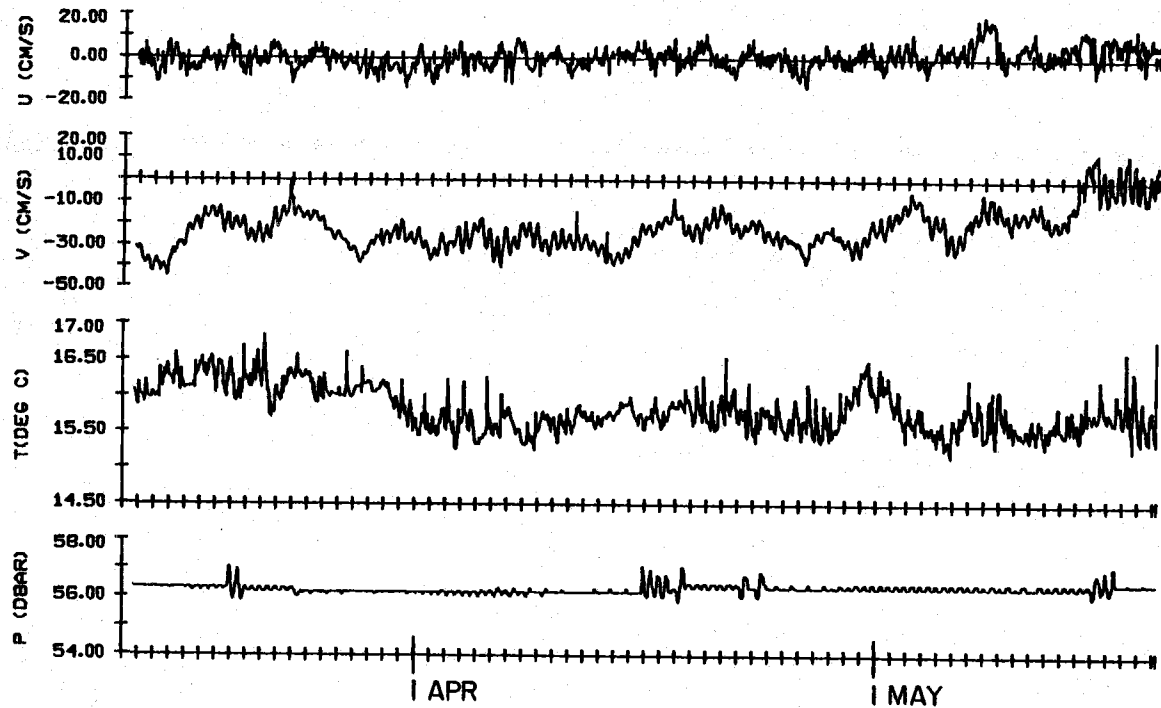
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

PEYOTE LEG 5
56 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1596	23.2	7.8	.0	2.6	45.3	2.5
U (CM/S)	1596	.4	5.1	.4	3.4	19.9	-14.4
V (CM/S)	1596	-22.0	9.6	.8	4.2	13.0	-45.0
T (DEG C)	1596	15.8	.3	.5	2.5	16.9	15.2
P (DEAR)	1596	56.3	.2	1.1	6.3	57.1	55.8

56 M AT PEYOTE. 13 MAR 77 - 19 MAY 77. TAPE 499/36





56 M AT PEYOTE LEG 5: HOURLIES,
66.5 DAYS STARTING 1900 GMT 13 MAR 1977

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
PEYOTE	5	96	227/85	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

1900	13	3	77	10.5	-19.2	10.5	-19.2	15.75	1
2000	13	3	77	10.5	-17.7	20.9	-36.9	15.75	2
2100	13	3	77	10.1	-15.9	31.0	-52.8	15.74	3
2200	13	3	77	8.6	-13.9	39.6	-66.8	15.73	4
2300	13	3	77	10.0	-11.5	49.7	-78.3	15.69	5

LAST 5 LINES OF DATA:

200	19	5	77	4.0	-2.9	9637.9	-21073.1	14.73	1592
300	19	5	77	4.5	2.6	9642.4	-21070.5	14.73	1593
400	19	5	77	0.1	3.7	9642.5	-21066.9	14.73	1594
500	19	5	77	4.0	4.8	9646.5	-21062.0	14.73	1595
600	19	5	77	0.4	-1.7	9646.9	-21063.7	14.86	1596

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1596	6.0	-13.2	13.8	58.2	3.7	7.6	-6.4	-.2262

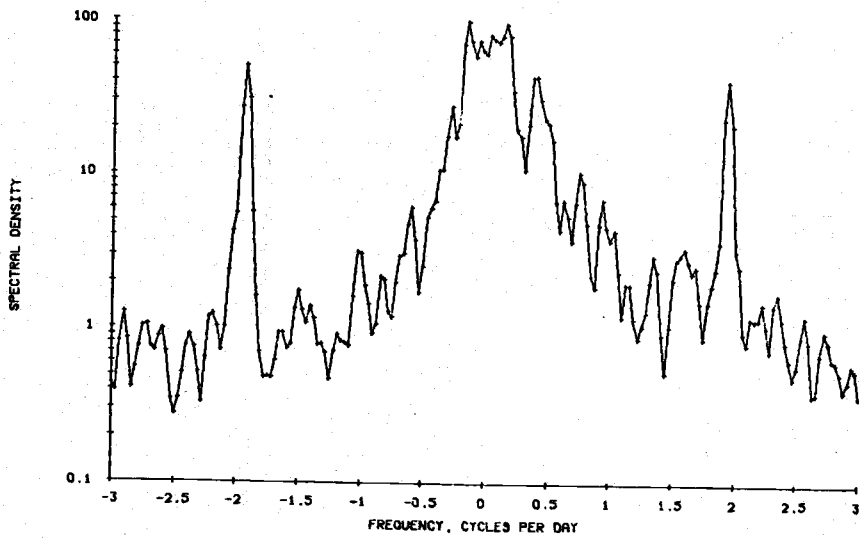
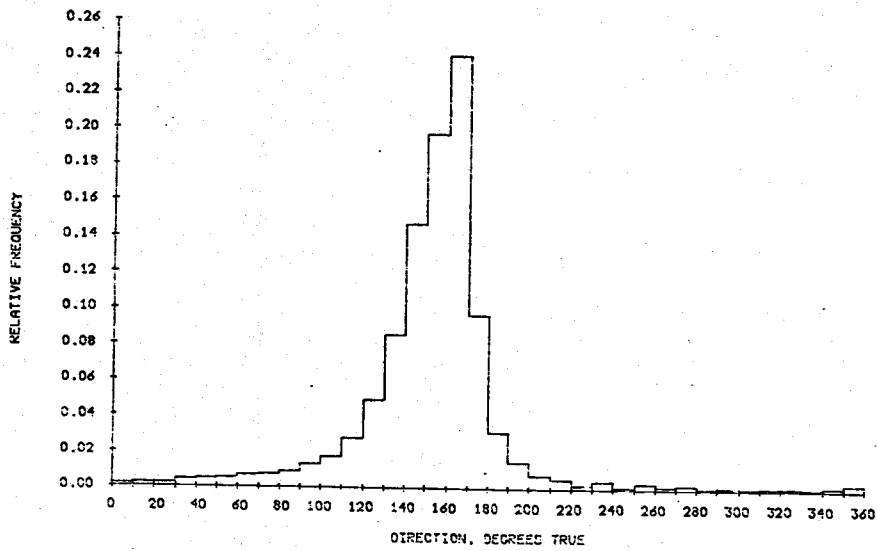
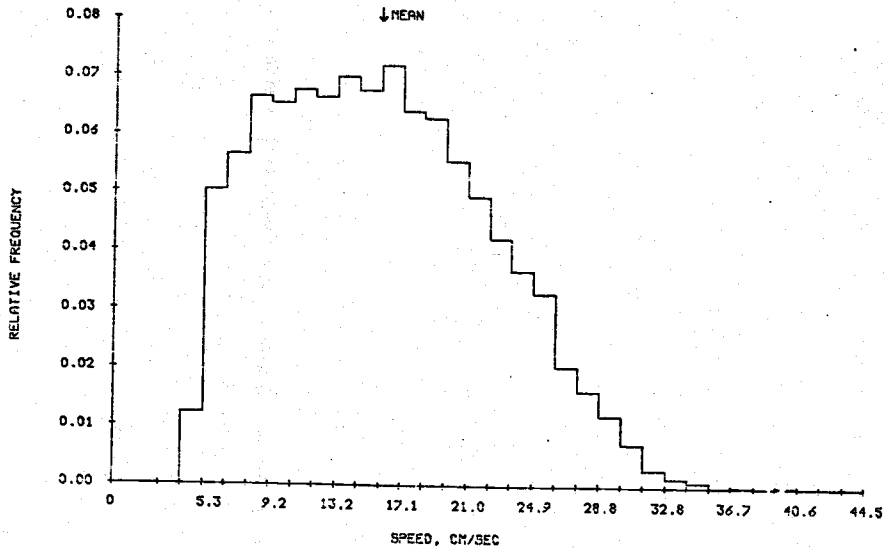
VECTOR MEAN: SPD = 14.5 CM/S, DIR = 155 DEGREES(T)
 DIRECTIONAL STEADINESS: 93.5 %

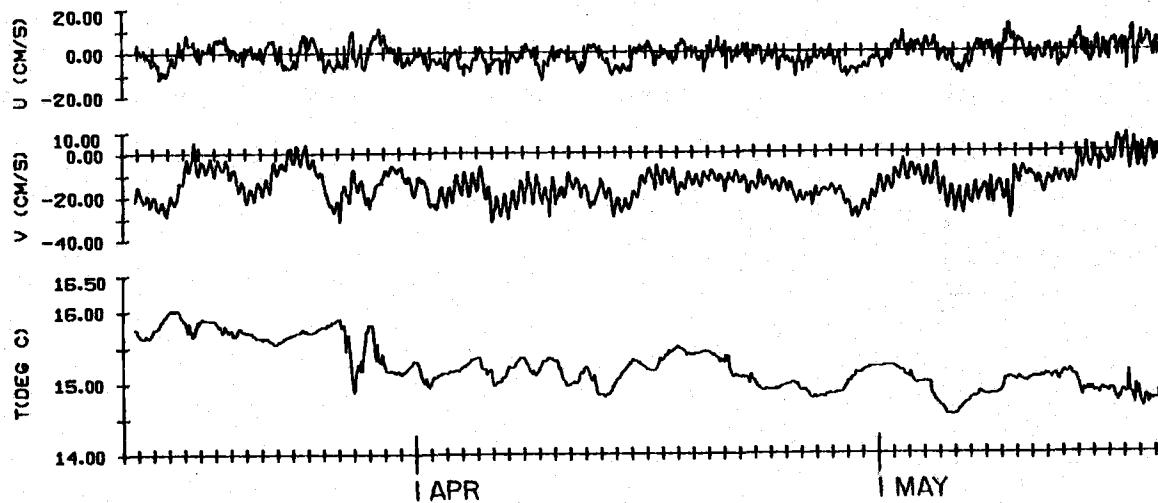
PRINCIPAL AXIS IS 171.9 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

PEYOTE LEG 5
 96 M

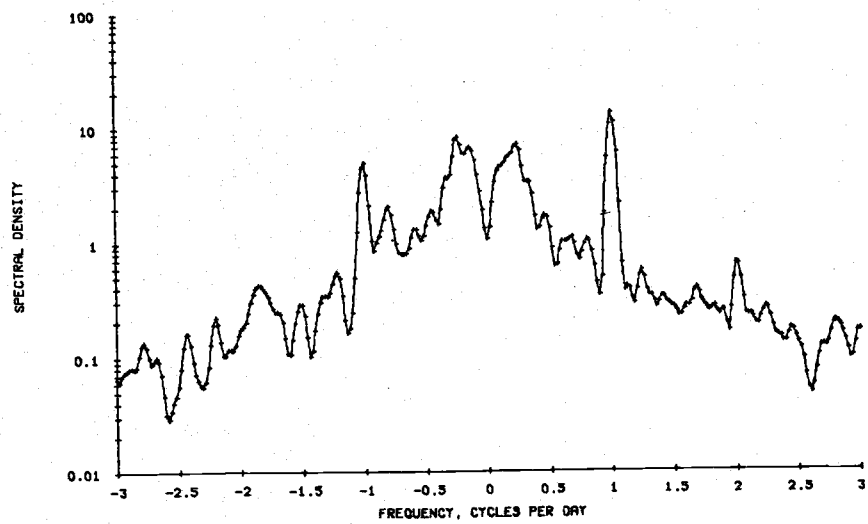
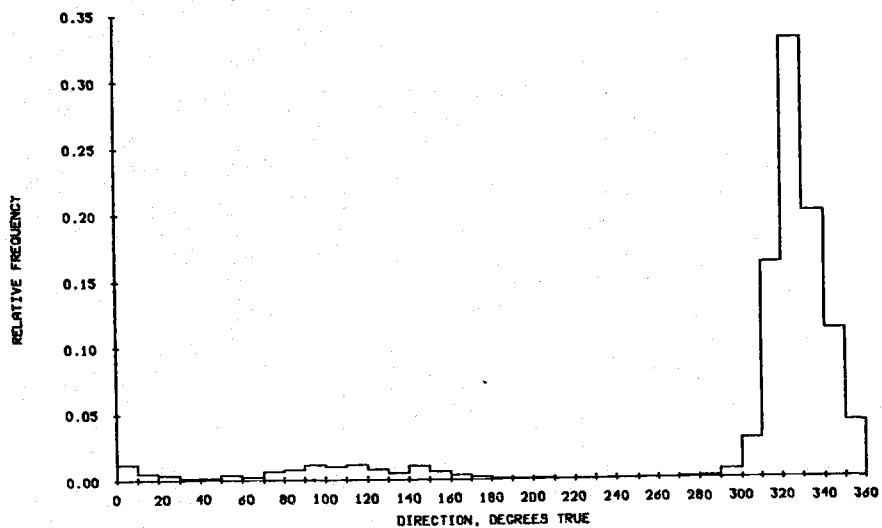
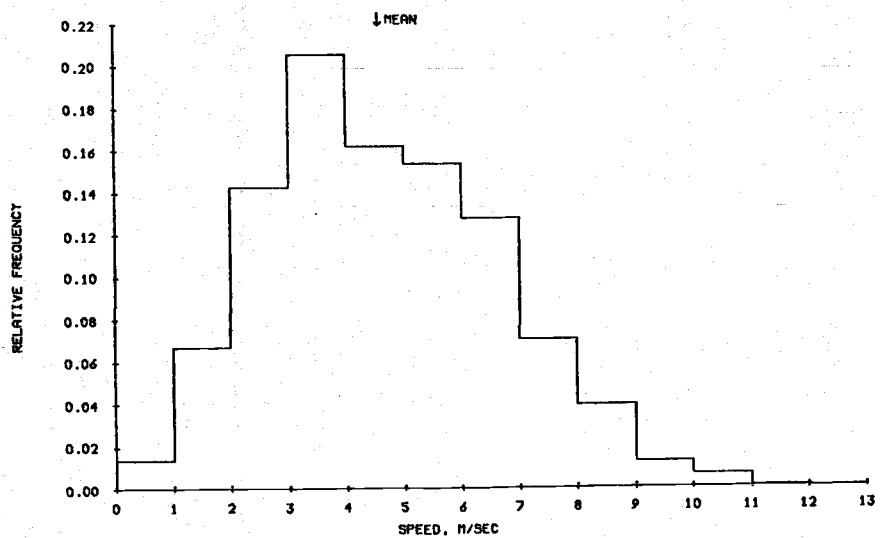
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (CM/S)	1596	15.5	6.5	.2	2.3	32.9	1.0
U (CM/S)	1596	-1.4	4.4	.2	2.6	12.4	-12.9
V (CM/S)	1596	-14.5	7.3	.3	2.9	8.2	-31.9
T(DEG C)	1596	15.2	.3	.5	2.4	16.0	14.5

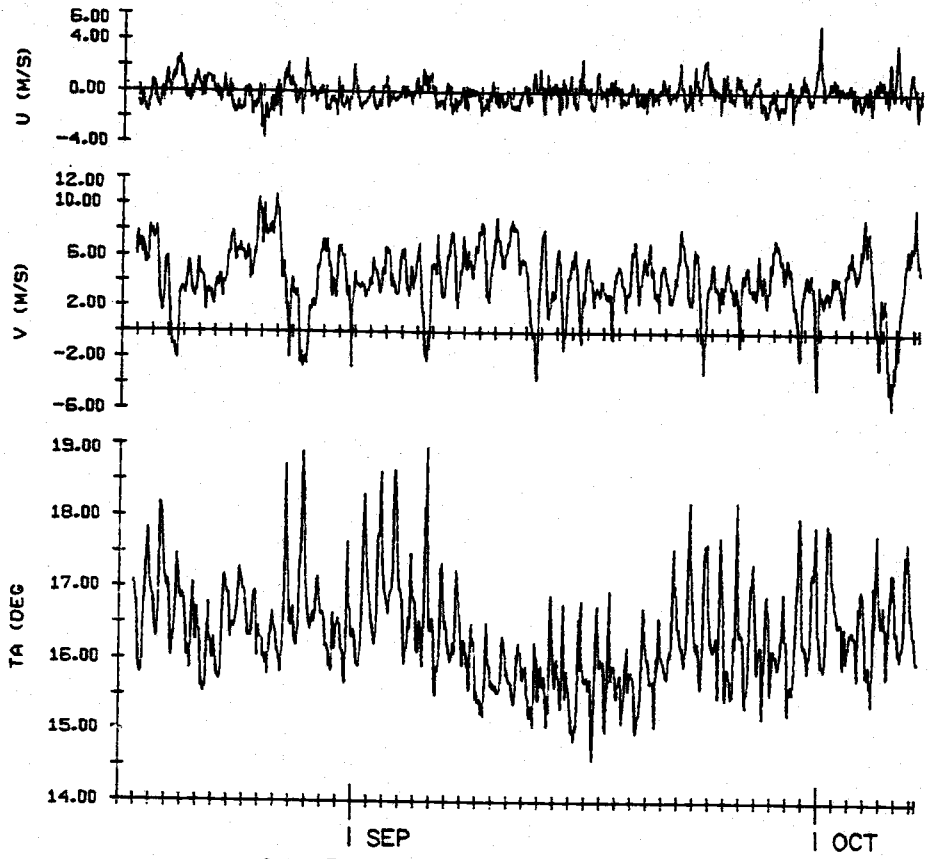




96 M AT PEYOTE LEG 5: HOURLIES,
66.5 DAYS STARTING 1900 GMT 13 MAR 1977

WIND AT INARPE. 17 AUG 76 TO 7 OCT 76. TAPE D127/8





0 M AT IMARPE LEG 3: HOURLIES,
50.5 DAYS STARTING 2200 GMT 17 AUG 1976

IMARPE Meteorological Installation

JOINT-II 1976/1977 Installations

Meteorological Tower
IMARPE

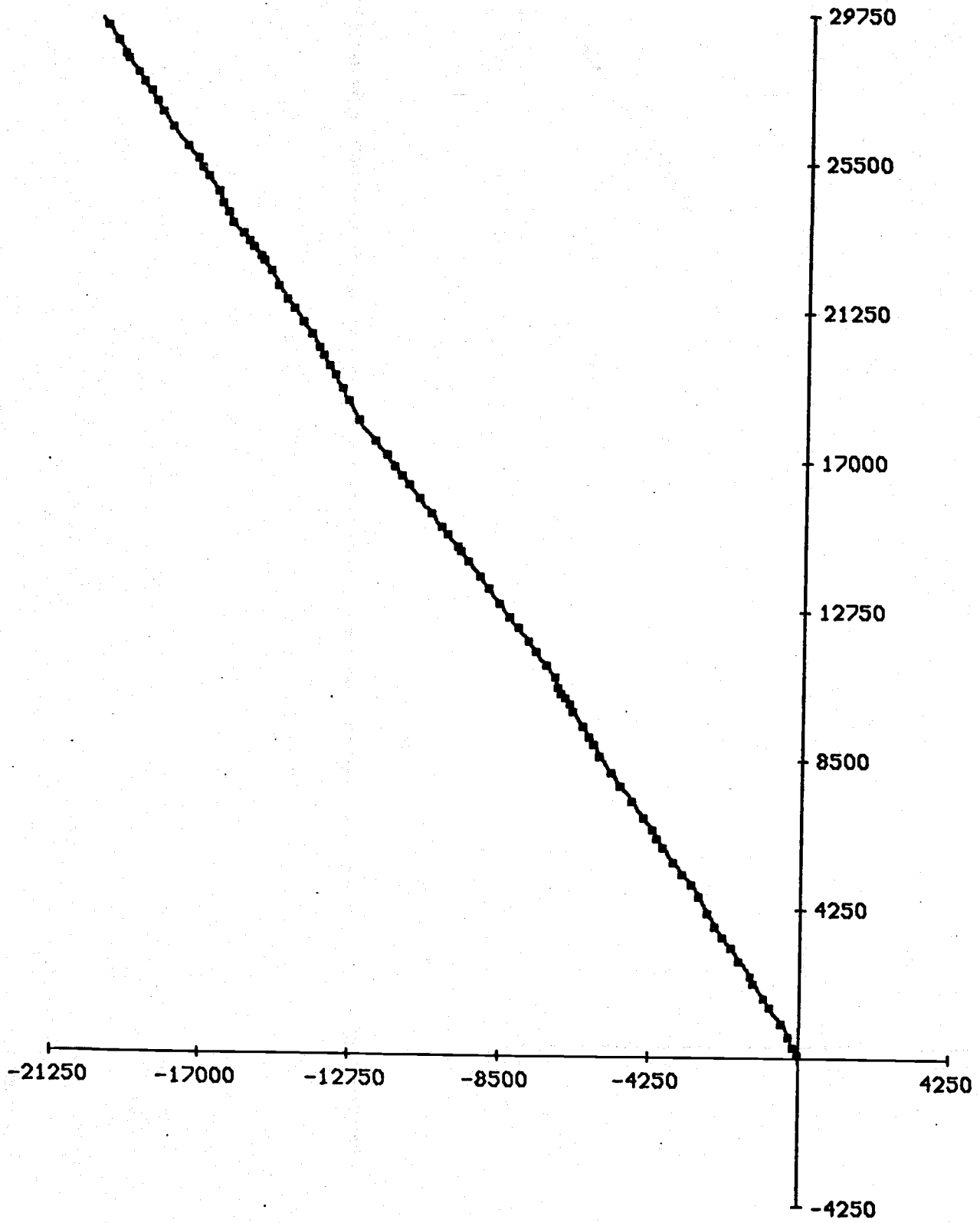
Position: 12°03.9'S, 77°09.3'W
 Location: On a guyed tower 3 m above the roof of a building
 in Callao, Peru.
 Sampling Interval: 20 minutes.
 Measured Variables: Speed, direction, air temperature.

Installation Periods:

<u>Leg</u>	<u>Serial Tape #</u>	<u>Installation Time (GMT)</u>		<u>Recovery Time (GMT)</u>		<u>Record Length</u>
II	D127/7	March 19 1976	1830	August 17 1976	1415	89 d, 7 h
III	D127/8	August 17 1976	1445	October 7 1976	1515	50 d, 11 h
IV	D127/9	October 7 1976	1545	Feb. 27 1977	1400	142 d, 16 h
V	D127/10	March 10 1977	1815	May 19 1977	1900	69 d, 10 h

Comments:

The building used for the installation was that of the Instituto del Mar del Peru (IMARPE), located in La Punta, a borough of Callao. The building is about 80 m long, oriented east-west, and seven stories high, the highest for at least a kilometer in any direction. It is situated on a narrow peninsula or spit about 200-300 meters across that extends to the west, with a beach and open ocean to the south (windward) and Callao harbor to the north (leeward). Only flat, open space lies to windward between IMARPE and the south beach. Slightly to the east of windward and across the street, lies a series of two-story buildings. Any distortions of the wind field are probably limited to those produced by the IMARPE building itself.



SURFACE AT IMARPE. 89.9 DAYS STARTING 1900 19 MAY 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IMARPE	2	0	012777	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

100	20	5	76	-2.2	3.4	-2.2	3.4	19.87	1
200	20	5	76	-2.8	3.1	-5.0	6.4	19.85	2
300	20	5	76	-1.1	2.1	-6.1	8.6	19.75	3
400	20	5	76	-1.1	0.9	-7.2	9.4	19.72	4
500	20	5	76	-1.4	1.8	-8.6	11.2	19.58	5

LAST 5 LINES OF DATA:

300	17	8	76	-4.8	5.1	-5555.0	8121.1	15.99	2139
400	17	8	76	-5.1	4.2	-5560.1	8125.3	16.00	2140
500	17	8	76	-4.7	4.2	-5564.8	8129.5	16.10	2141
600	17	8	76	-4.4	5.4	-5569.2	8134.9	15.96	2142
700	17	8	76	-4.1	3.4	-5573.3	8138.3	16.04	2143

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
2143	-2.6	3.8	2.1	3.1	1.5	1.8	-1.7	-0.6716

VECTOR MEAN: SPD = 4.6 CM/S, DIR = -33 DEGREES(T)
 DIRECTIONAL STEADINESS: 96.6 %

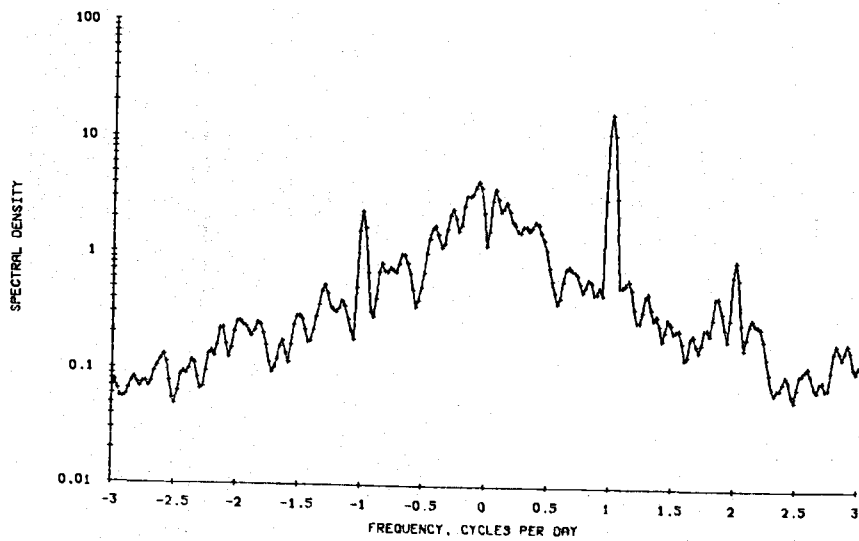
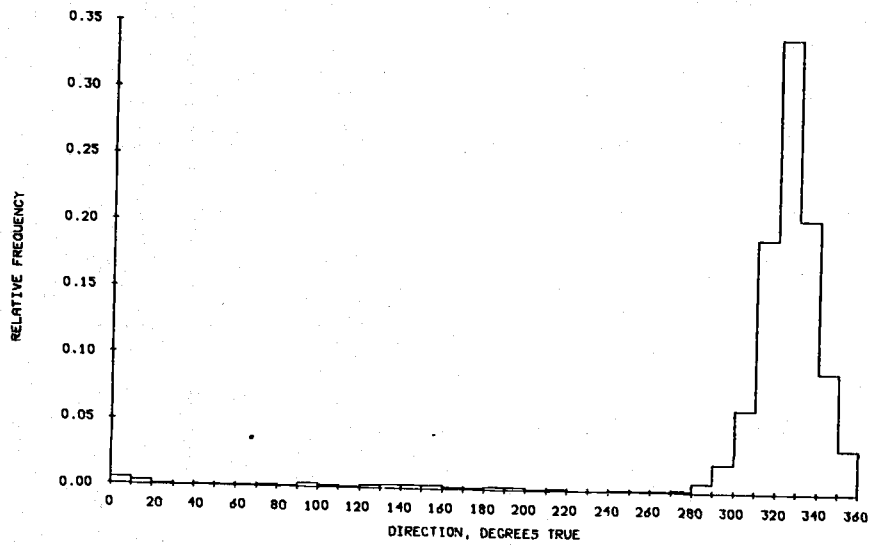
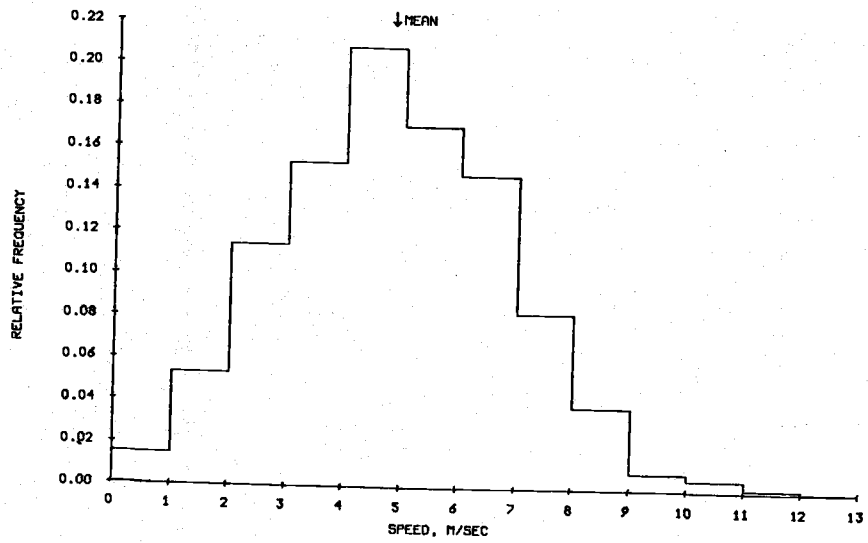
PRINCIPAL AXIS IS 143.2 DEGREES(T)

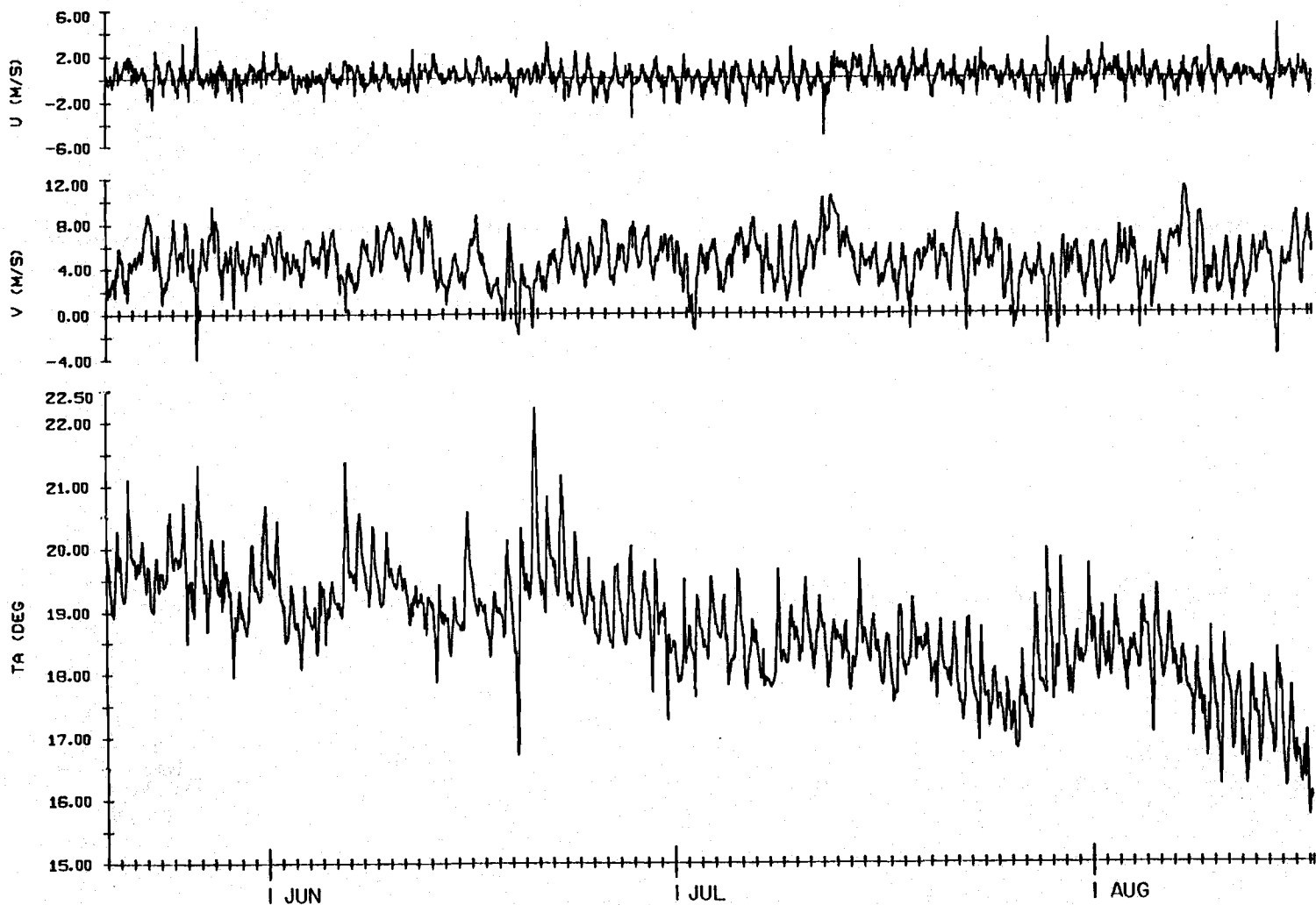
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

IMARPE LEG 2
 0 M

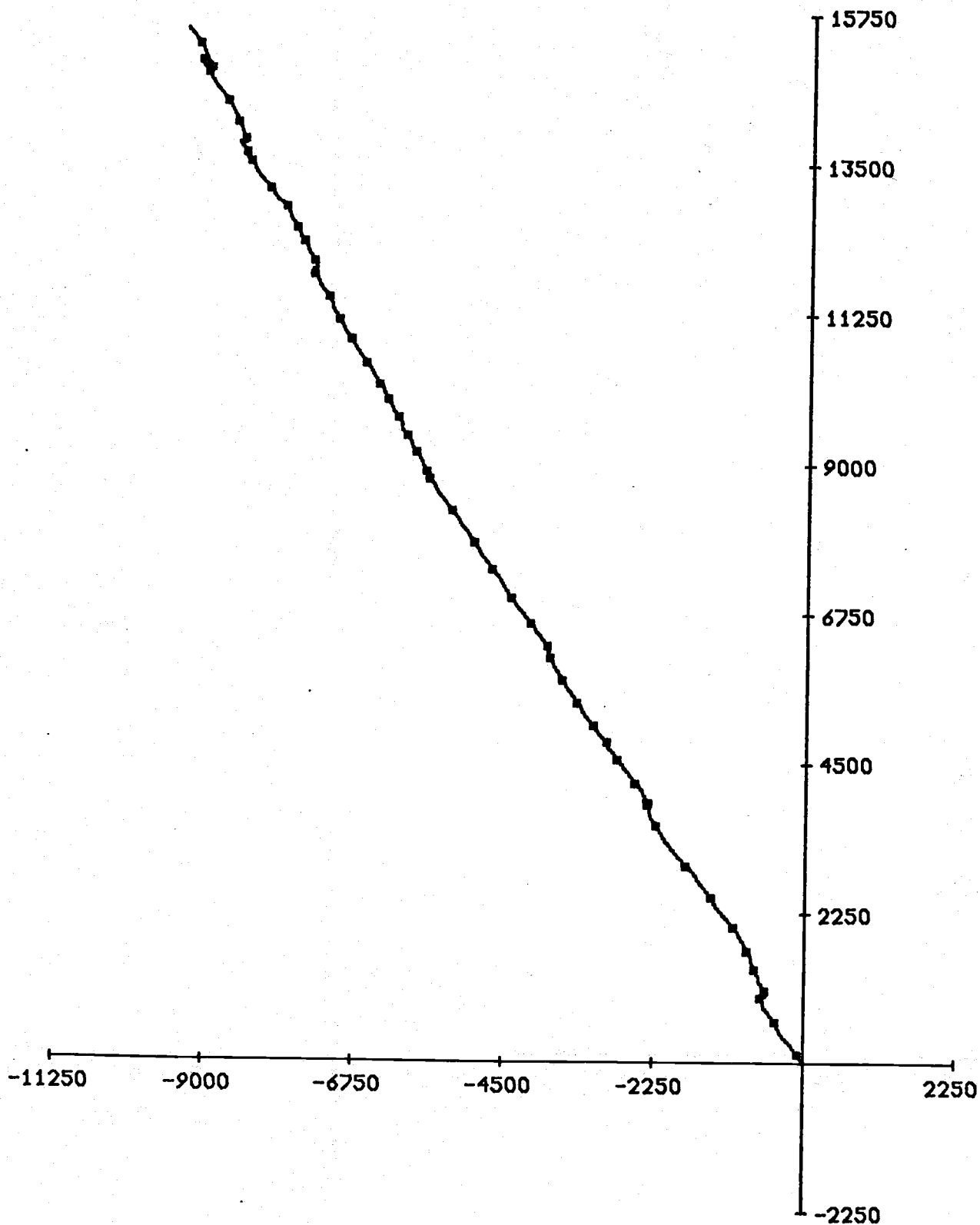
VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	2143	4.8	1.9	.1	2.8	11.3	0.0
U (M/S)	2143	-0.4	.9	.1	4.9	5.0	-5.6
V (M/S)	2143	4.6	2.1	-0.3	3.7	11.3	-3.7
TA (DEG)	2143	14.7	.9	-0.2	3.3	22.2	15.7

WIND AT IMPARPE. 19 MAY 76 TO 17 AUG 76. TAPE D127/7





0 M AT 1 MARPE LEG 2 HOURLIES,
89.3 DAYS STARTING 100 GMT 20 MAY 1976



SURFACE AT IMARPE. 51.0 DAYS STARTING 1520 17 AUG 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IMARPE	3	U	D12778	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2200	17	8 76	-3.7	4.8	-3.7	4.8	17.04	1
2300	17	8 76	-4.3	6.0	-8.1	10.8	17.09	2
0	18	8 76	-4.8	6.3	-12.8	17.1	17.01	3
100	18	8 76	-4.7	5.6	-17.6	22.7	16.88	4
200	18	8 76	-4.3	5.2	-21.9	27.9	16.81	5

LAST 5 LINES OF DATA:

400	7 10 76	-3.7	5.4	-2549.7	4251.9	16.34	1207
500	7 10 76	-3.5	4.2	-2553.2	4256.1	16.22	1208
600	7 10 76	-3.1	4.7	-2556.3	4260.7	16.12	1209
700	7 10 76	-2.9	4.9	-2559.3	4265.6	16.04	1210
800	7 10 76	-3.0	3.8	-2562.3	4269.4	15.97	1211

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CORLN
1211	-2.1	3.5	3.5	4.2	1.9	2.1	-3.2	-0.8428

VECTOR MEAN: SPD = 4.1 CM/S, DIR = -30 DEGREES(T)
 DIRECTIONAL STEADINESS: 90.6 %

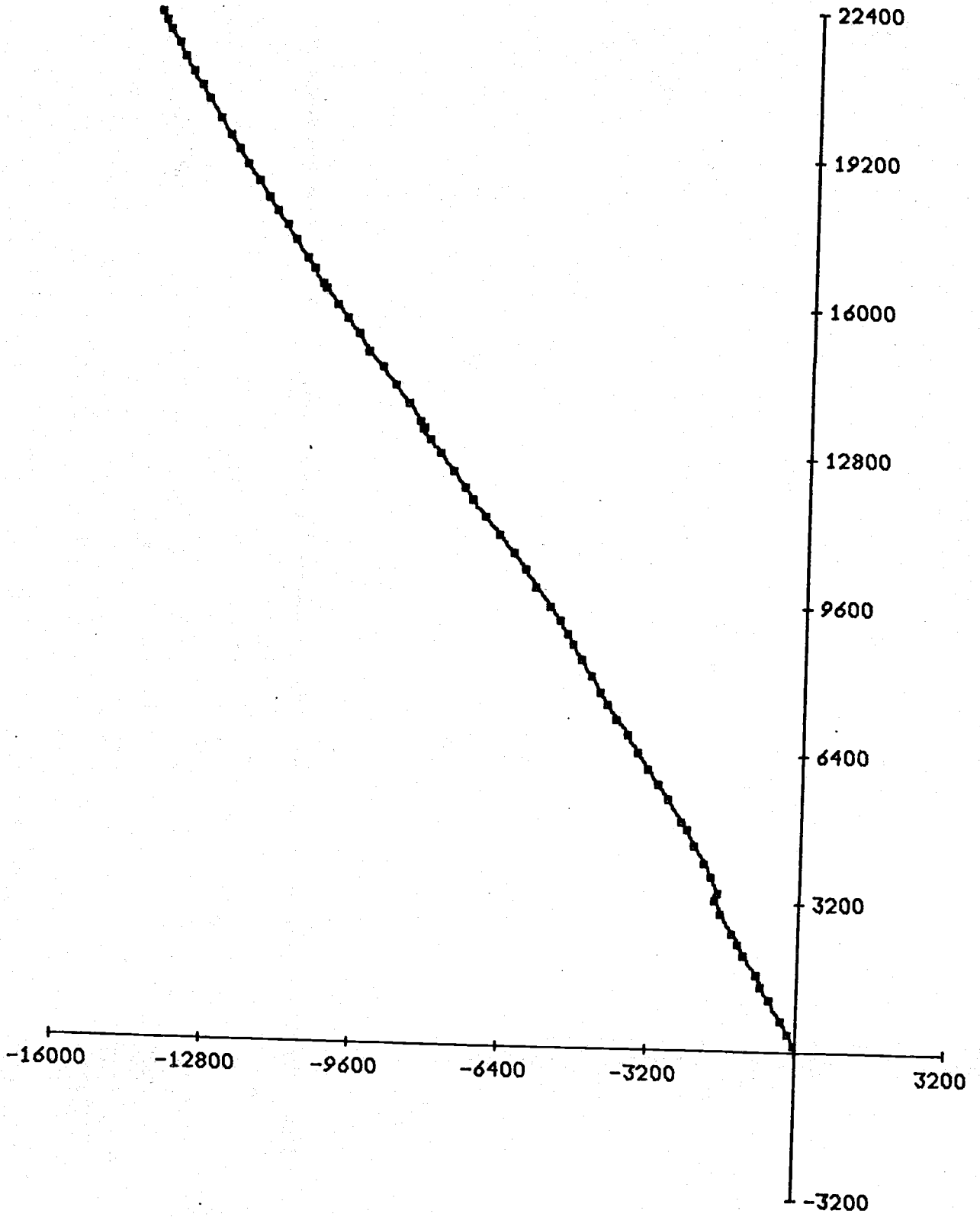
PRINCIPAL AXIS IS 138.5 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
 (EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

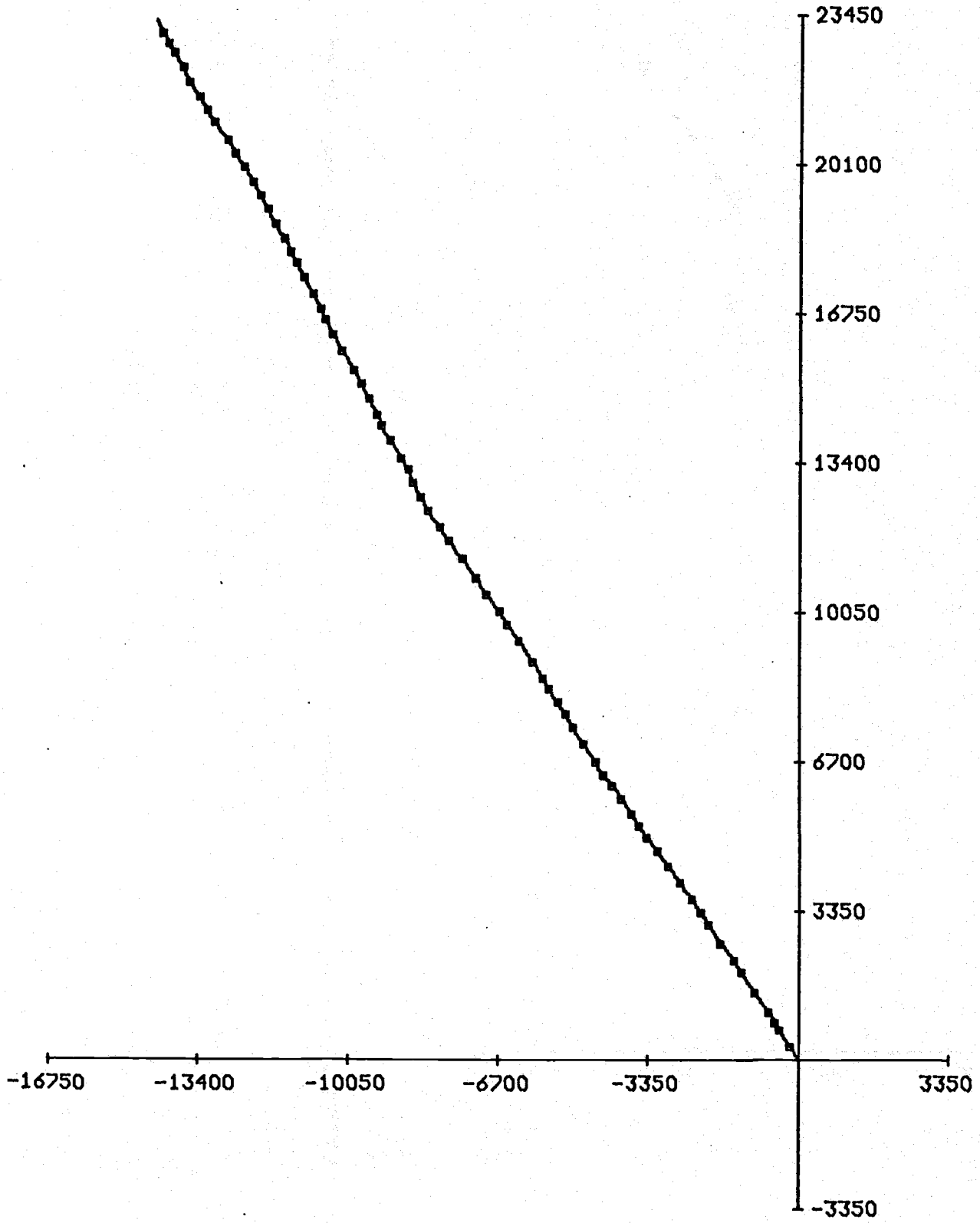
IMARPE LEG 3

0 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	1211	4.5	2.0	.3	2.6	10.7	.1
U (M/S)	1211	-0.1	.9	.7	4.9	5.3	-3.6
V (M/S)	1211	4.1	2.6	-0.7	3.8	10.7	-5.8
TA (DEG)	1211	16.3	.7	.7	3.7	19.0	14.6



SURFACE AT IMARPE. 71.6 DAYS STARTING 1630 7 OCT 76



SURFACE AT IMARPE. 71.6 DAYS STARTING 650 18 DEC 76

STATION	LEG	DEPTH	TAPE NO	INTERVAL	FILTERING
IMARPE	4	0	012779	HOURLY	LOW PASS

FIRST 5 LINES OF DATA:

2300	7	10	76	-2.6	5.6	-2.6	5.6	16.77	1
0	8	10	76	-2.8	4.9	-5.5	10.5	16.77	2
100	8	10	76	-2.4	3.7	-7.9	14.2	16.71	3
200	8	10	76	-1.9	3.0	-9.7	17.2	16.78	4
300	8	10	76	-1.8	3.2	-11.5	20.4	16.70	5

LAST 5 LINES OF DATA:

1000	27	2	77	-2.0	3.1	-7911.5	12589.2	20.60	3420
1100	27	2	77	-0.8	2.8	-7912.3	12592.1	20.59	3421
1200	27	2	77	0.3	2.8	-7912.0	12594.9	20.68	3422
1300	27	2	77	-1.1	3.1	-7913.2	12597.9	21.17	3423
1400	27	2	77	-1.6	3.2	-7914.8	12601.1	21.56	3424

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
3424	-2.3	3.7	1.8	2.5	1.3	1.6	-1.5	-.7248

VECTOR MEAN: SPD = 4.3 CM/S, DIR = -31 DEGREES(T)
 DIRECTIONAL STEADINESS: 95.9 %

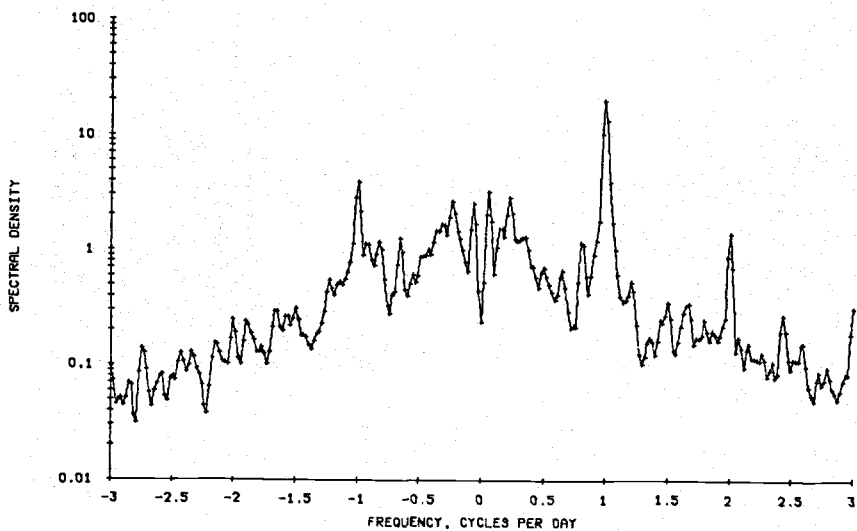
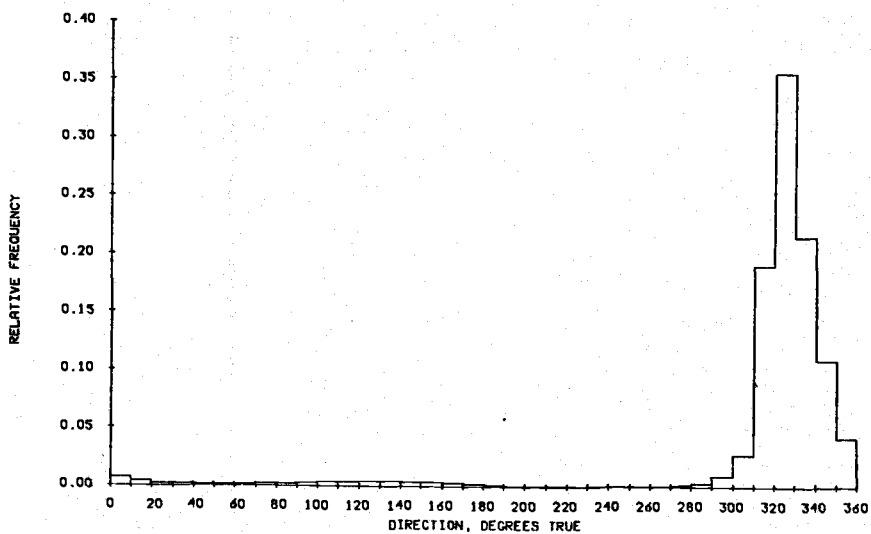
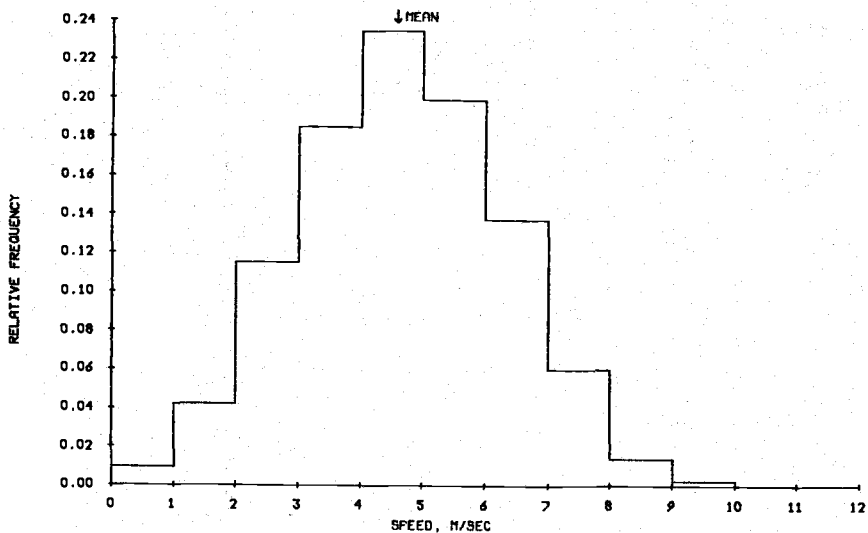
PRINCIPAL AXIS IS 142.1 DEGREES(T)

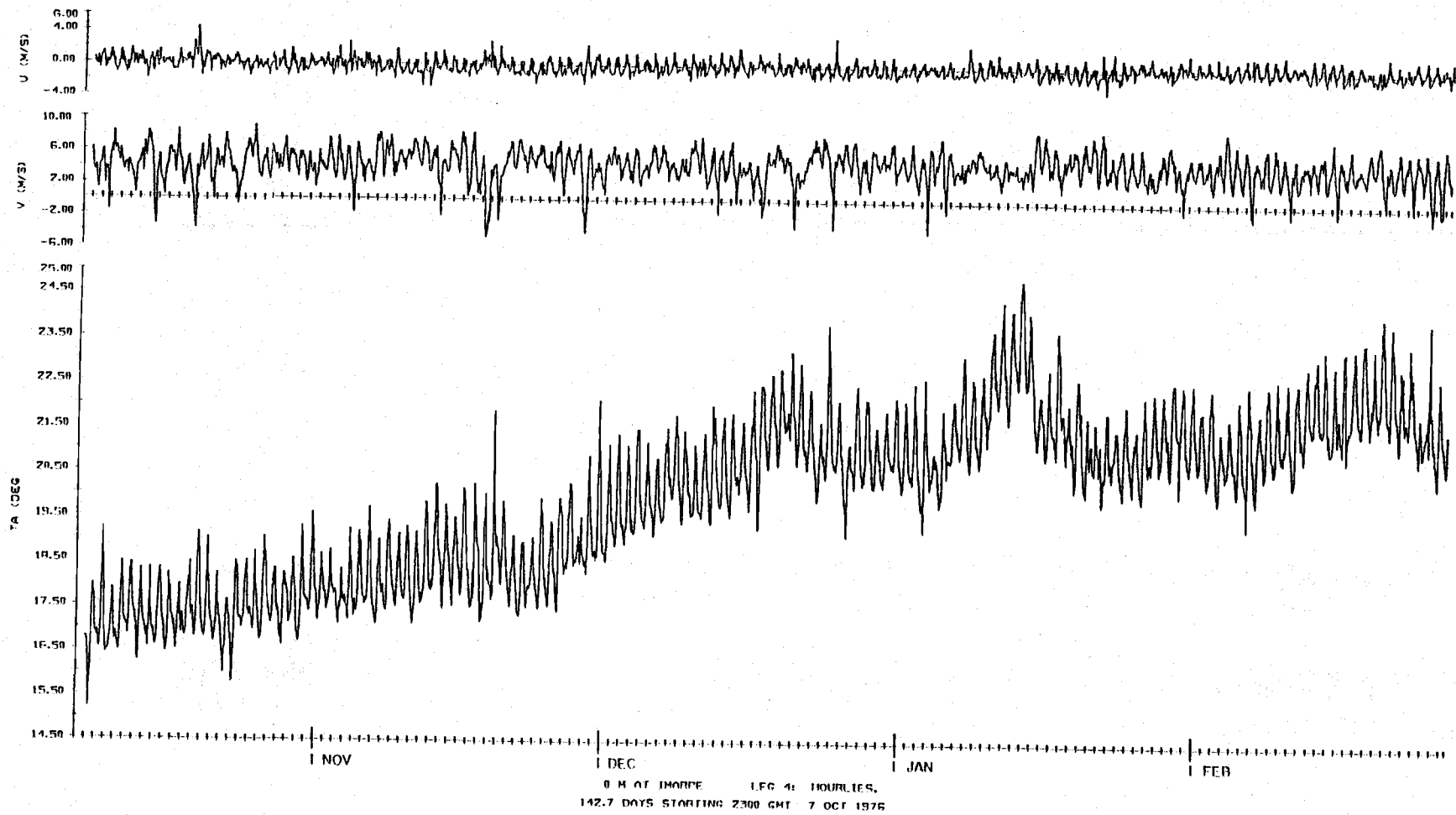
STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

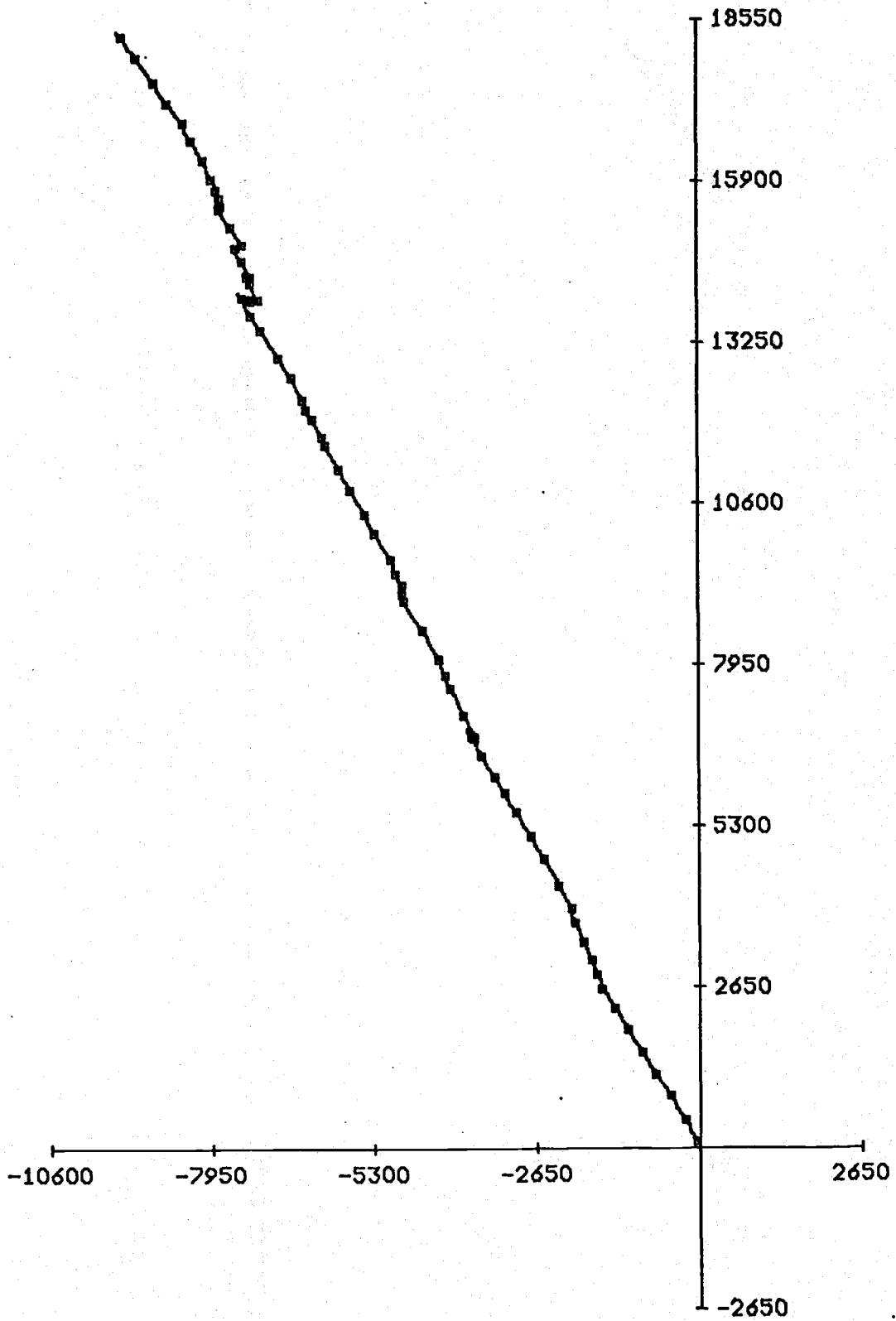
IMARPE LEG 4
0 M

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	3424	4.5	1.6	-.0	2.7	9.2	.2
U (M/S)	3424	-.2	.8	.6	3.9	4.5	-2.9
V (M/S)	3424	4.3	1.9	-.9	5.1	9.1	-4.7
TA (DEG)	3424	20.0	1.9	-.2	2.0	24.9	15.2

WIND AT INARPE. 7 OCT 76 TO 27 FEB 77. TAPE 0127/9







STATION IMARPE	LEG 5	DEPTH 0	TAPE NO 0127/10	INTERVAL HOURLY	FILTERING LOW PASS
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FIRST 5 LINES OF DATA:

230	11	3	77	-3.7	4.5	-3.7	4.5	21.44	1
300	11	3	77	-2.8	5.2	-6.5	9.7	21.44	2
430	11	3	77	-3.4	4.9	-9.9	14.6	21.27	3
500	11	3	77	-3.3	3.9	-13.3	18.5	21.20	4
600	11	3	77	-2.5	3.5	-15.8	22.0	21.09	5

LAST 5 LINES OF DATA:

700	19	5	77	-2.7	1.3	-2602.3	5065.7	18.38	1662
800	19	5	77	-2.4	1.4	-2604.7	5067.0	18.28	1663
900	19	5	77	-1.9	0.6	-2606.7	5067.6	18.11	1664
1000	19	5	77	-0.3	-0.0	-2607.0	5067.6	18.05	1665
1100	19	5	77	0.8	0.1	-2606.2	5067.7	17.90	1666

STATISTICS FOR E-W(U) AND N-S(V) COMPONENTS

N	AVG(U)	AVG(V)	VAR(U)	VAR(V)	STD(U)	STD(V)	COV(UV)	CRLTN
1666	-1.6	3.3	3.2	5.1	1.8	2.2	-3.4	-.8593

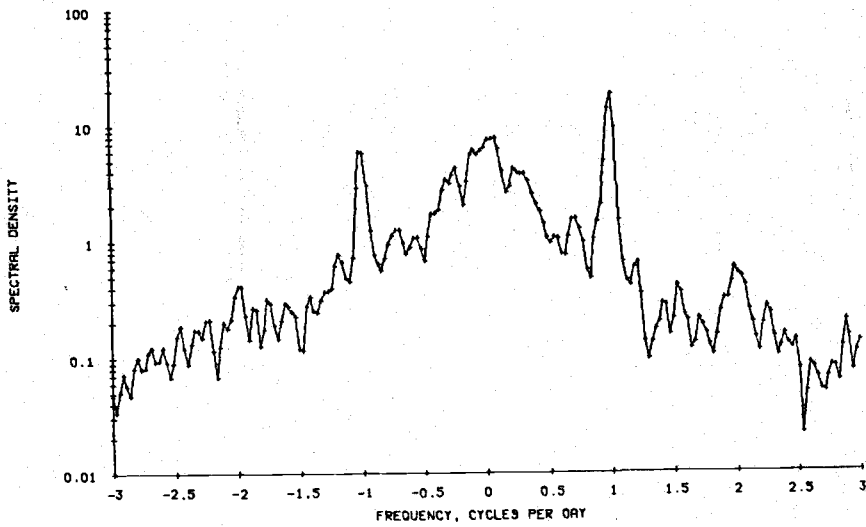
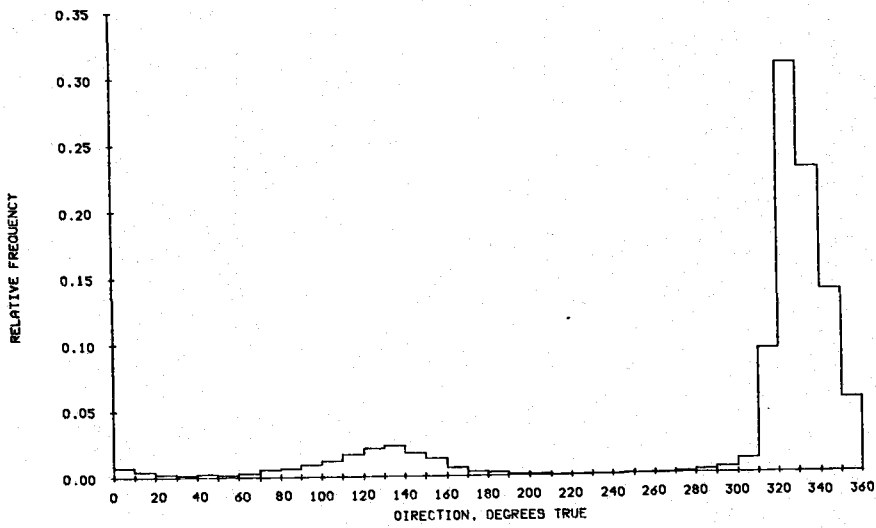
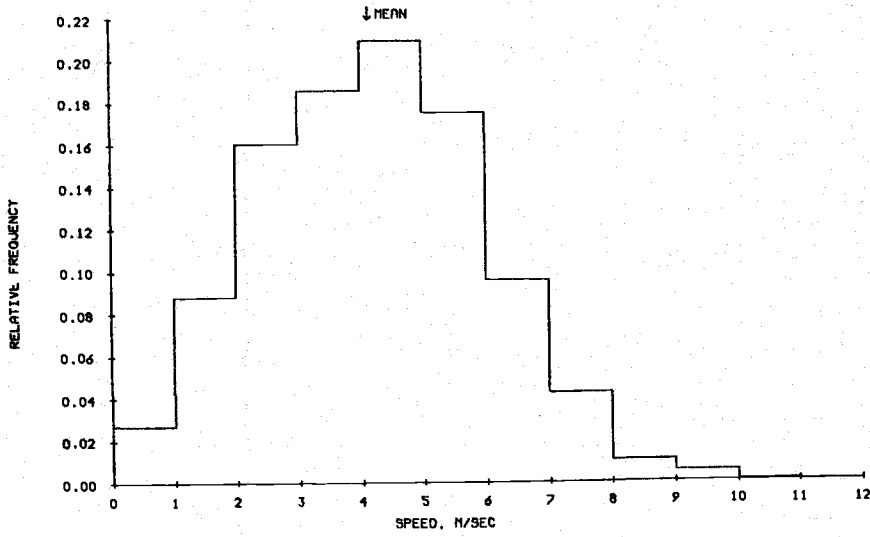
VECTOR MEAN: SPD = 3.4 CM/S, DIR = -26 DEGREES(T)
DIRECTIONAL STEADINESS: 83.5 %

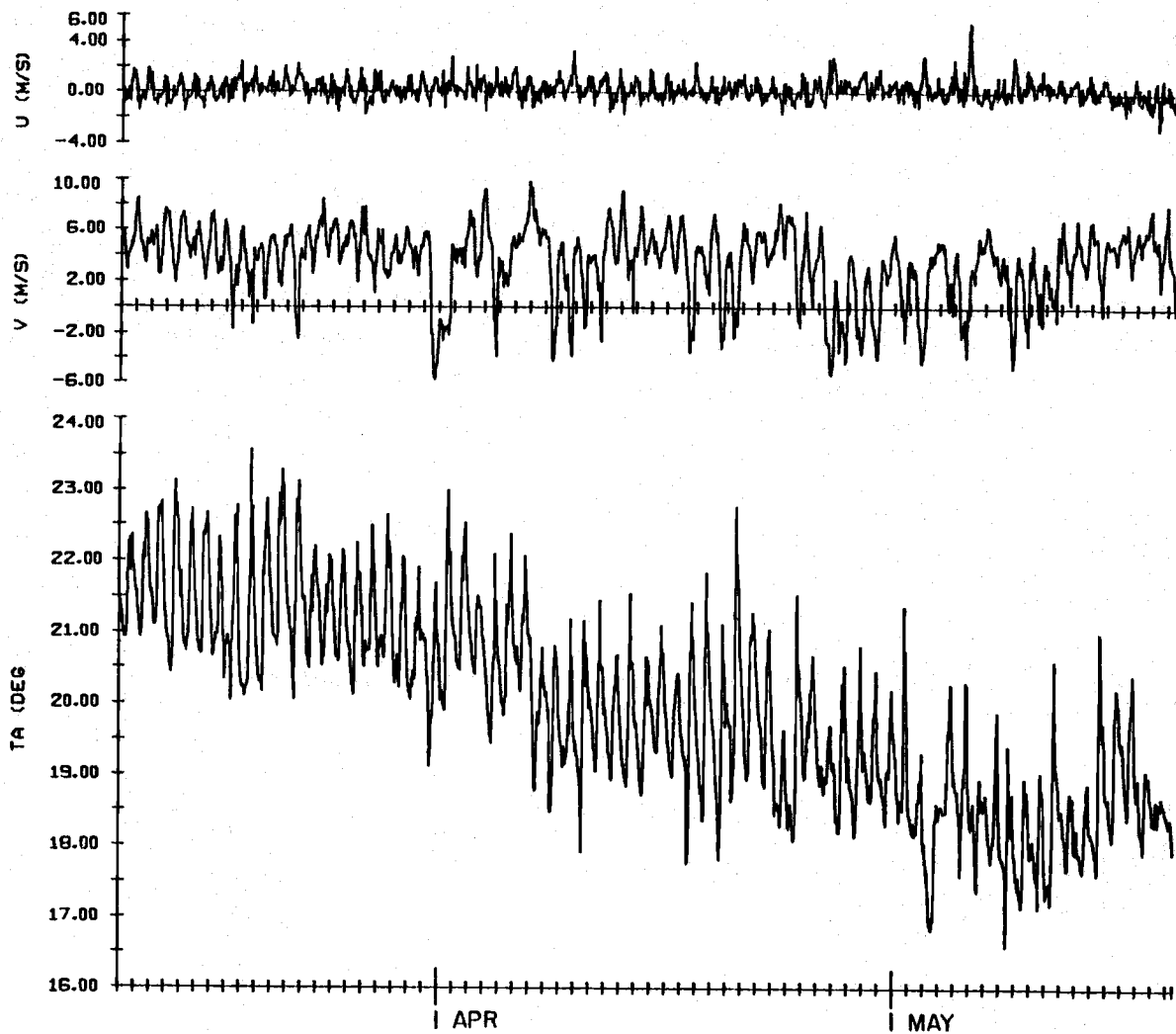
PRINCIPAL AXIS IS 142.6 DEGREES(T)

STATISTICS FOR COORDINATES ROTATED 30 DEGREES
(EQUIVALENT ALONGSHORE DIRECTION = 150 DEGREES(T))

IMARPE LEG 5
0 4

VARIABLE	N	MEAN	STD	SKEW	KURT	MAX	MIN
S (M/S)	1666	4.1	1.8	.1	2.7	9.8	0.0
U (M/S)	1666	.2	.8	.8	5.7	5.5	-2.9
V (M/S)	1666	3.4	2.8	-.9	3.6	9.8	-5.8
TA (DEG)	1666	11.9	1.4	.1	2.2	23.6	16.6





0 M AT IMARPE LEG 5: HOURLIES,
 69.4 DAYS STARTING 200 GMT 11 MAR 1977

APPENDIX I

JOINT II Navigation Charts
and Positions

JOINT II Navigation Charts and Positions

The lack of a single chart with a coastline and bathymetry in which we could be confident plagued us throughout the JOINT II experiment. Although we operated from Chimbote (9°S) to south of San Juan (16°S), most of the work was concentrated between Cabo Nazca and Punta Ana, near 15°S; unfortunately, this is a strong candidate for being the worst charted part of the coast.

The charts of the Pisco-San Juan area that we found and used all had soundings based on an 1836 British survey, with some later additions. A German chart (DHI-721) was used to obtain positions for Leg 1 moorings from radar fixes aboard the R/V ALPHA HELIX, in March 1976. The coastline on DHI-721 seems to correspond fairly closely to that on the U.S. chart (H.O. 1218), which cautions: "The coastline for about 10 miles to the south-eastward of Pta. del Infiernillo is reported to lie about 1¼ miles southwestward of its charted position". For the rest of the experiment our navigators mainly referenced their radar fixes to the Peruvian chart (DHNM 2200), though occasionally satellite fixes were accepted. While the soundings on DHNM 2200 and H.O. 1218 are apparently based on the same source (i.e. the 1836 survey), the coastline was based on a topographic chart of the Military Geographical Institute of Peru (IGM).^{*} This coastline does not agree well with that of the German and US charts.

Positions of prominent coastal navigation points from Infiernillo (14°40'S) to Pta. Lomas (15°33'S) are shown in Table A1.1, as they were determined from each of the three charts. The same features on the German and U.S. charts lie within ½ n.m. or less of each other; this suggests that their coastlines are based on the same source (as were the soundings). Features on the Peruvian chart lie 1-1½ n.m. from those of DHI-721 and H.O. 1218, in some instances to landward (Cabo Nazca, Pta. Santa Ana) and in others to seaward (Pta. San Juan, Pta. Lomas). Near Infiernillo the coastline on the Peruvian chart lies north and west of the one on the U.S. and German charts, as opposed to the reports that the true coastline lies to the southwest (seaward). This seems to confirm that the DHNM 2200 coastline was based on a different survey. The lack of agreement between surveys is not surprising, considering the rugged, uninhabited nature of the area.

Before we were aware of the discrepancy between charts, we assumed that mooring positions were known to within no less than a nautical mile in order to avoid inconsistencies. Now we feel it sensible to state positions to the nearest 1/10 mile relative to the charts used to determine them. Correcting for chart discrepancies usually makes the positions mutually consistent with each other within the limits of typical coastal navigation uncertainties (± 0.2 n. miles).

* The IGM Topographic charts we used for land work were based on aerial photographs and geodetic control done by IGM in collaboration with the Inter-American Geodetic Survey in 1966.

Table A1.1 Positions of coastal features as determined from three navigation charts used in the JOINT II Experiment.

Coastal Feature	D.H.I. 721	H.O. 1218	DHNM 2200
Infiernillo	14°40.4'S/75°55.0'W	14°39.8'S/75°55.0'W	14°38.2'S/75°55.8'W
Cerro Doña Maria	14°41.2'S/75°50.2'W	14°40.8'S/75°49.8'W	14°39.5'S/75°50.8'W
Pta. Olleros	14°46.7'S/75°43.1'W	14°46.0'S/75°43.1'W	14°46.7'S/75°44.0'W
C. Nazca	14°57.0'S/75°31.5'W	14°56.8'S/75°31.1'W	14°57.3'S/75°29.8'W
Pta. Sta. Ana	15°08.0'S/75°23.0'W	15°07.9'S/75°22.6'W	15°08.7'S/75°21.9'W
Pta. San Juan	15°21.0'S/75°11.0'W	15°21.2'S/75°10.8'W	15°21.7'S/75°11.3'W
Pta. Lomas	15°32.8'S/74°51.7'W	15°33.4'S/74°50.5'W	15°34.0'S/74°51.0'W

A related problem concerns the bathymetric chart of the JOINT II area produced by O'Brien and Preller, based on the R/V MELVILLE survey of May 1977 (Preller, CUEA Newsletter: 6[4]). Some investigators may have noted (as we have) that stations plotted on this chart are shown to be shallower in depth than was indicated by the ship's PDR when the station was taken (or by pressure sensors, in the case of Aanderaa current meter moorings).

Figure A1.1 (redrawn from O'Brien and Preller) shows how this inconsistency may be related to the coastline discrepancy. The positions of Cabo Nazca and Pta. Santa Ana as determined from DHI-721 and H.O. 1218 (not shown) plotted very close to the corresponding points on the O'Brien-Preller chart. The DNHM 2200 points plot considerably east of, and somewhat south of the points on the other three charts (see triangles, Figure A1.1). The Leg V (1977) current meter mooring positions, based on DNHM 2200, appear too shallow relative to the isobaths (squares). If they are re-plotted using the same range-crossings, but relative to the O'Brien-Preller navigation points, the depths become more reasonable (small circles). Leg I mooring positions (crosses) do not appear to be in serious conflict with the O'Brien-Preller chart, consistent with the fact that those positions are based on radar fixes on the DHI-721 chart. In particular, the AGAVE depth and offshore distance appear much more reasonable than on DNHM 2200, where it shows up as being in 60-70 m of water, and 2.3 n.m. from shore; AGAVE was in fact set about 3/4 n.m. from shore at a bottom depth of 40 m.

Which chart is more correct in an absolute sense is not certain. The processed satellite positions from Scripps appear to lie consistently seaward of the corresponding radar positions on DNHM 2200 (O'Brien, personal communication). The positions given in Table A1.1 and in the installation summaries are the original coordinates determined from the noted navigation charts, and uncorrected for discrepancies between charts. Users are hereby advised of these discrepancies, and if they wish to make corrections, we recommend the above procedure.

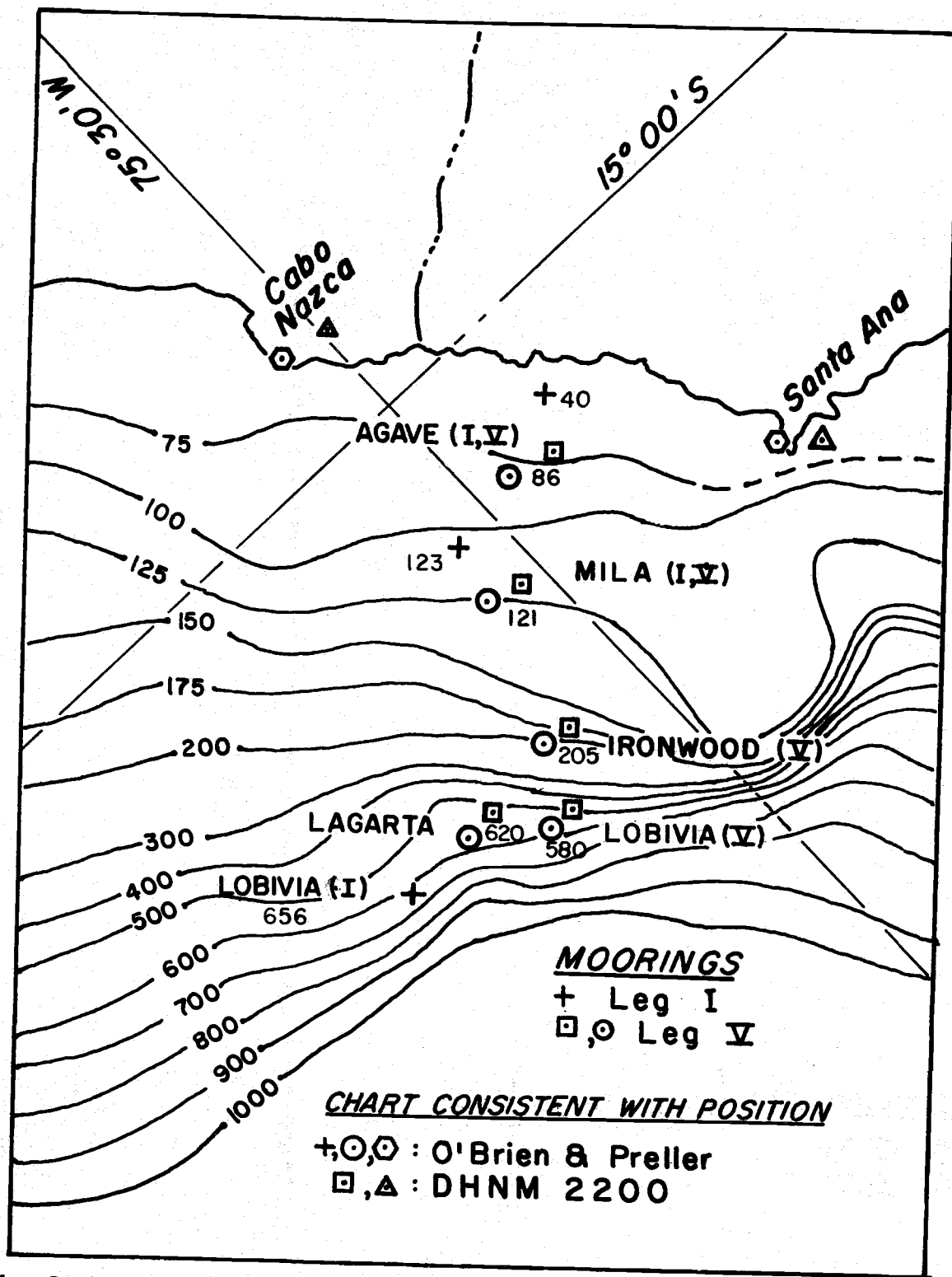


Figure A1.1

Bathymetry and coastline from the O'Brien-Preller chart. Leg I navigation points (⊙) and moorings (+) were referenced to the DHI 721 chart; Leg V navigation points (Δ) and moorings (□) were referenced to the DNM 2200 charts. Leg V moorings were then "moved" (⊙) to account for the discrepancy between navigation points (i.e., coastline) on the two charts.

APPENDIX 2

Calibration of the Aanderaa Temperature
Sensors Used in JOINT II

Calibration of the Aanderaa Temperature Sensors used in JOINT II

The temperature sensors of the Aanderaa current meters are calibrated at OSU by immersing several current meters in a bath whose temperature is measured by a quartz probe. The quartz probe is itself calibrated at least once per year. Details of the calibration procedure have been described by Barstow (1978).

All but one of the current meter and buoy temperature sensors used in JOINT II were calibrated in this manner at least once. Most of the current meters were calibrated both before and after their use in JOINT II. Some of the current meters were new when the experiment began, and there was no time to calibrate them before the experiment. Others were lost at sea, either during the experiment, or very soon afterwards, and no post-JOINT II calibration could be made.

Temperature Data from Current Meters

The resolution of the temperature sensors of the Aanderaa current meters is about 0.02°C . For each current meter, we compared the post-JOINT II calibration with the pre-JOINT II calibration, over the actual temperature range observed by that current meter during JOINT II. Current meters for which the pre- and post-calibrations were essentially identical (within ± 2 bits, or $\pm 0.04^{\circ}\text{C}$) are listed in Table A2.1 (first column). For some current meters, the post-calibration did not agree with the pre-calibration; this generally occurred only when there was a long time (two or three years) between the two calibrations. For these current meters (second column) we used the post-JOINT II calibration curves to process the data. All but one of the current meters which had not been calibrated prior to JOINT II were calibrated afterwards. The post-calibration information was used to process the temperature data from these instruments (third column).

For all but one of the current meters lost before post-calibration was possible (Table A2.2), we used the pre-calibration to process the data. Our long-term calibration records indicate that the calibration of each instrument generally changes by less than 0.1°C , but one change of 0.2°C has been observed. We estimate the accuracy of this group to be well within 0.2°C .

The one remaining current meter (Parodia, 24 m) had no recent calibration, and was lost with Peyote II, a mooring that had been left on the Peru shelf off Huarmey in May 1977, for recovery in November 1977. No trace of this mooring was found during the recovery attempt. The data from 24 m, Parodia was processed using an average calibration curve for OSU current meters.

Table A2.1 Locations and depths of current meters for which (a) pre-JOINT II and post-JOINT II temperature calibrations changed by 0.04°C or less; (b) pre-JOINT II and post-JOINT II temperature calibrations did not agree (post-calibration curves were used to process the data); (c) no pre-JOINT II calibrations exist. The precision of the Aanderaa water temperature channels is believed to be $\pm 0.04^\circ\text{C}$.

Installation Phase	Station Name	(a)	(b)	(c)
		Pre- and post-calibrations agreed	Pre- and post-calibrations disagreed; Post-calibrations used	Not pre-calibrated; Post-calibrations used
Leg I:	Agave	29 m	10 m	
	Sour	80 m	100 m	
	Mila	28,53 m	78 m	
	Islaya		41,66,116 m	
	Lobivia	206,556 m	406,626 m	
Leg II:	Mila	62 m	33,84,109 m	
	Lagarta	115,212 m	312,412 m	
	Yuca	80,100 m		
Leg III:	Mila	79,104 m	28,53 m	
Leg IV:	Mila	23,48,73 m		
Leg V:	Agave	26,67,77 m	46 m	
	Mila	39,59,80,100 m	19 m	115 m
	Ironwood	24,44,63,105,155,180 m		
	Lagarta	92,115,214 m		512 m
	Lobivia	58,83 m		183,283 m
	Euphorbia	63 m	26 m	
	Opuntia	129,324 m		224,524 m
	Yucca-Too	37 m	57 m	97 m
Peyote	56 m		37,96 m	

Table A2.2 Locations and depths of current meters for which there is no post-JOINT II calibration data, with the serial/tape number and the date of last calibration. For the current meters calibrated in 1976, the accuracy of the temperature data is believed to be ± 0.04 . For the remainder, the accuracy is believed to be within $\pm 0.2^\circ\text{C}$.

Leg I	Lobivia	106 m	(684/28)	27 Nov. 73
Leg IV	Mila	99 m	(503/34)	4 Feb. 76
Leg V	Parodia	24 m	(438/24)	no recent calibration
	Parodia	64 m	(452/37)	14 Sept. 73
	Parodia	104 m	(485/35)	4 Feb. 76

Water Temperature Data from Meteorological Buoys

A similar study was made of the water temperature sensors on the meteorological buoys. The sensors are made by Aanderaa, and the data is recorded by Aanderaa data loggers. The resolution of the data is $\pm 0.08^{\circ}\text{C}$. The temperature data from the buoy temperature sensors is, therefore, of lesser quality than the data from current meters. If the pre- and post-calibrations agreed to within ± 2 bits ($\pm 0.16^{\circ}\text{C}$), we deemed them to be identical.

Some of these temperature sensors exhibited a drift, which was apparently caused by a very small leak. All of the data was therefore compared with 3 m temperature data from CTD casts whenever possible. The results are summarized in Table A2.3.

Table A2.3 Summary of 3 m water temperature data from meteorological buoys.

Mooring	Post- and Pre-Calib. Agree	Agrees with CTD Data	Data Accepted as Good
Mila IB	no post-calib.	yes	yes
Mila II	no	no	no
Mila V	yes	yes*	yes
Ironwood	no	no	no
Lagarta	no	no	no
Euphorbia	yes	yes*	yes
Parodia	yes	yes*	yes

* Very little CTD data available for comparison.

