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A Compilation of Observations in Atlantic North Equatorial Current

May 1977-May 1978

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A COMPILATION OF OBSERVATIONS FROM MOORED CURRENT METERS AND ASSOCIATED OCEANOGRAPHIC OBSERVATIONS

POLYMODE ARRAY III CLUSTER C

May 1977 - May 1978

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C. J. Koblinsky
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ABSTRACT

A summary of the observations taken from moored stations and hydrographic surveys in POLYMODE Array III Cluster C is presented. Currents and water temperatures were measured at various depths, including: 150, 225, 300, 500, 750, 1500, 2500, and 4000 meters.

Hydrographic surveys were made during the deployment and recovery cruises. Currents and water temperature data series cover the period from mid May, 1977 to early May, 1978. Cluster C contained 4 moorings, centered about 16°N, 54°W.

Basic statistics of the raw time series data are tabulated. Low passed (3.9 day cutoff) daily time series are used to display: water temperature data, velocity stick diagrams, progressive vector diagrams, zonal and meridional eddy heat flux, eddy kinetic energy, a pseudo eddy potential energy, empirical orthogonal modes, and auto-correlations. Hourly data (low pass cutoff at 2 hours) is used to display spectral quantities.

Hydrographic data, including 1600 stations from the NODC archives, are used to display T-S diagrams, horizontal and vertical structure of temperature, salinity, and density, Brunt-Viasala frequency versus depth, and dynamic topography.

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I. INTRODUCTION

The POLYMODE program is an international cooperative scientific investigation of the dynamics and statistics of the mesoscale motions in the sea, the energy sources of these motions, and their contribution to the general circulation of the ocean. POLYMODE includes theoretical investigations, numerical experiments, and field observations. The field program includes several moored arrays, these are shown in Figure I.1.

The objective of POLYMODE Array III was to investigate the geographical distribution, structure, and intensity of the North Atlantic eddy field. Array III moorings were set in three clusters. Clusters A and B were placed on opposite sides of the mid-Atlantic ridge to examine differences in the eddy field and mean flow. The purpose of Cluster C was to look at the North Equatorial Current eddy field and the baroclinic instability as an eddy generating mechanism there. Data from POLYMODE Array III Cluster C are described in this report.

All of the data described in this report are archived and available from the National Oceanographic Data Center (NODC).

A. Instrumentation

Cluster C consisted of 4 moorings with a total of 19 current meters, all AMF Vector Averaging Current Meters (VACM), and 13 Pressure/Temperature (P/T) recorders from the Massachusetts Institute of Technology's (M.I.T.) Draper Laboratory. Hydrographic measurements were made during mooring deployment and recovery by the GEOSECS Operations Group from the Scripps Institution of Oceanography.

1. The VACM

The VACM senses compass and vane information and computes a measure of east and north water current components each time a pair of rotor magnets passes the sensing diode, then sums these components through the entire recording interval, usually 15 minutes, thus giving a true vector average. One complete rotor revolution initiates eight compute cycles.

Temperature is derived from a voltage-to-frequency (v/f) converter, whose output frequency is then related to the thermistor resistance at its input. The v/f output pulses are summed over the entire recording interval thus averaging temperature. All variables are recorded on a cassette tape at the end of each recording interval. Temperatures are accurate to about ± .01°C (Payne et al., 1976).

2. Temperature/Pressure Recorder

An instrument to record temperature, pressure and time (T/P) was developed in the Draper Laboratory at M.I.T. for MODE-1 and used extensively on the post-MODE moorings. The instrument stores a sample every 15 seconds and records the sum of 64 successive data samples every 16 minutes on a magnetic tape cassette (64 x 15 = 960 seconds = 16 minutes).

Temperatures have a resolution of .001°C (Wunsch and Dahlen, 1974). The absolute accuracy cannot be specified because the thermistors have not been calibrated since the original calibration by the manufacturer.

The pressure sensor is a strain gauge with a manufacturer specified accuracy of .03% of the scale range used (Wunsch and Dahlen, 1974). These sensors are recalibrated for each instrument deployment.

3. Time

Time from T/Ps and VACMs was measured using a quartz crystal oscillator with a manufacturer's specified accuracy of ± 1 second per day.

B. Moorings and Hydrographic Surveys

The Cluster C mooring configuration and local topography are shown in Figure I.2. The moorings were deployed from May 4-14, 1977 from the R/V Gilliss. They were recovered from the R/V Gyre between 25 April and 5 May, 1978. Phil Bedard and his current meter group at NOVA University, Ft. Lauderdale, Florida were responsible for the preparation, deployment, recovery, and initial data processing. The MIT Draper Lab prepared and processed the P/T recorders.

The standard mooring configuration is shown in Figure I.3. All moorings were subsurface and taut-line. A complete list of the moorings including location, instrument types and depths, data recovery, and mean statistics is presented in Table II.1.

During the deployment and recovery cruises XBT and CTD casts were made in the vicinity of the array. Locations of casts taken during the R/V Gilliss cruise are shown in Figure III.1. Locations of casts taken during the R/V Gyre cruise are shown in Figure III.2.

C. Data Quality

Overall, the data return from the moored instruments was about 90%. On the VACM's recovery was 90% for current data and 89% for temperature data. Of the 13 P/T recorders, 12 produced useful long records.

The following list tabulates instrument malfunctions:

Mooring	Depth (m)	
79	2446	No current data after 18 days
80	250	No P/T data after 51 days
80	2520	No current or temperature data after 148 days
81	309	No current after 222 days, temperature after 336 days
82	1539	No P/T data
82	2538	No temperature data

The shallowest VACM on each mooring was fitted with a pressure recorder which indicated that the root-mean-square verticalexcursions of the surface instruments were only a few meters during the duration of the experiment. The maximum vertical excursion recorded was 11 meters. Upon recovery, all moorings and instruments were in excellent shape with no significant biological fouling.

D. Calculation Procedures

Sections II and III of this report tabulate or graph various computed quantities from the current meter and hydrographic data, respectively. The remainder of this section outlines the computational procedures used to compute these quantities.

1. Section II Computations

The data from the VACM and P/T recorders were separated into three groups: raw (VACM in 15 minutes intervals, P/T in 16 min. intervals), hourly, and daily. The hourly and daily data series were obtained from the raw series by using low pass Cosine filters with half-power cutoffs at .6 cph and 1.08×10^{-2} cph respectively. The basic statistics tabulated in Table II.1 were obtained using the raw data.

The quantities shown in Table II.2 and Figures II.1 through II.12 were computed using the daily data. Computational procedures from these quantities are given below; primes indicate fluctuating components (mean removed) and overbars indicate mean components (averaged over the duration of the record):

Kinetic energy: Mean $\frac{1}{2}(\bar{u}^2 + \bar{v}^2)$; eddy : $\frac{1}{2}(u'^2 + v'^2)$

Eddy Heat flux: zonal: $\rho c_p u'T'$; meridional: $\rho c_p v'T'$.

Mean Eddy Potential Energy: The mean eddy potential energy was calculated from $\frac{1}{2}N^2\zeta'^2$ where N^2 was from the Brunt Viasala profile in Figure III.6 and ζ'^2 is the mean squared isotherm displacement. The latter was calculated from $\zeta' = \frac{\partial z}{\partial T}T'$, where $\frac{\partial z}{\partial T}$ was obtained from a linear regression fit of the CTD data taken during the 1978 R/V Gyre recovery cruise.

Eddy Potential Energy: This is actually a psuedo potential energy because it does not take the compensating salinity field into account and hence over estimates PE'. It was calculated from $g\alpha^2 T'^2/2\rho\alpha\bar{\theta}_z$ where α is the coefficient of thermal expansion and $\bar{\theta}_z$ is the mean vertical potential temperature gradient at each mooring as observed during the 1978 recovery cruise.

Empirical Orthogonal mode calculations follow Kundu and Allen (1976), Auto-correlation calculations have been described by Bendat and Piersol (1971).

The spectral quantities, presented in Figure II.13, used the hourly VACM data and the quasi-hourly (64 minutes) P/T data. In computing these quantities the FFT method was used. (See Bendat and Piersol, 1971).

2. Section III computations

The computations presented in this section utilized hydrographic measurements obtained during the deployment and recovery cruises and also 1600 stations from the NODC archive files. The locations of the casts from these three data sources are shown in Figures III.1, 2, 3 respectively. Computational methods for Figures III.6 through III.13 are as follows:

a. Brunt Viasala Profile

The data based used was 28 CTD casts taken during the 1978 R/V Gyre recovery cruise. At each depth, for each cast, the Brunt Vaisala frequency was computed by fitting a line through density versus depth while compensating for the effects of pressure on the equation of state and for adiabatic heating. These Brunt Vaisala profiles were then ensemble averaged to yield the final profile.

b. Dynamic Topography

The data base was approximately 1600 stations from the NODC archived bottle data. These were edited to eliminate values of σ_T less than 20.0 and greater than 30.0. Dynamic heights were then calculated by vertically integrating the specific volume anomaly. The dynamic heights were then interpolated onto a grid of one degree squares using fitted B-splines. The values on this grid were then Laplacian smoothed and contoured.

The horizontal descriptions of salinity, temperature and density also utilize the NODC data set and smoothing techniques described for the dynamic topography calculations.

E. Acknowledgments

We gratefully acknowledge the support of this program from the National Science Foundation, grant OCE 76-22515. The moorings were designed and prepared by Phil Beard with the aid of Ted Tankard, and Juan Rodrigues from Nova University, Ft. Lauderdale, Florida. They, along with Mick Spillane, Phyllis Stabeno, Nancy Walker, Lisa Kaskan, Lazlo Nemeth and Chris Richardson worked on the installation and recovery. The hydrography on both cruises was carried out by the GEOSECS Operations Group from the Scripps Institution of Oceanography, under the direction of Arnold Bainbridge. At sea these measurements were the responsibility of Frank Sanchez and Paul Sweet.

We also wish to acknowledge the expert and willing help of the crews of the R/V Gilliss and R/V Gyre.

Many of the computer programs used to process the collected data were designed and operated by John VanBoxtel.

Our special thanks and recognition go to all these people for their indispensible assistance.

F. References

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(2.) Kundu, P.K. and J.S. Allen (1976), Some three dimensional characteristics of low-frequency current fluctuations near the Oregon coast., Journal of Physical Oceanography, 6, 2, p. 181-199.

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SECTION II.

TABLE II.1 Location, basic statistics, and instrument depths of Cluster c moorings.
A star (*) indicates a short record.

MOORING	DEPTH (m)	TYPE	START TIME GMT	LENGTH (days) VELOCITY	TEMP	PRESSURE	EASTWARD MEAN cm/sec	COMPONENT VAR cm^2/sec^2	NORTHWARD MEAN cm/sec	COMPONENT VAR cm^2/sec^2	TEMPERATURE °C	$°C^2$	PRESSURE VAR $DECIBARS^2$
79	172	VACM	2200 5/9/77	354	354	354	-5.5	56.4	-2.8	73.7	20.98	.35	1.99
16°41.3'N	247	P/T			354	354					17.79	.16	
54°20.4'W	322	VACM		354	354		-3.4	29.9	-2.9	47.9	15.64	.18	
	522	VACM		354	354		-0.6	17.5	-2.4	34.8	10.90	.26	
	728	P/T			354	354					7.01	.11	
	1446	P/T			354	354					4.38	41.3×10^{-4}	
	2446	VACM		18*	354		-1.2	5.4	4.8	7.4	3.01	8.5×10^{-4}	
	3946	VACM		354	354		-1.6	15.3	1.8	24.9	2.31	3.9×10^{-4}	
80	172	P/T	0400 5/11/77		353	353					20.12	.53	
15°23.4'N	250	P/T			51*	51*					16.24	.22	
53°55.2'W	319	VACM		355	355	355	-4.8	34.4	0.0	41.0	14.34	.61	1.02
	520	VACM		355	355		-2.3	25.5	0.4	37.4	9.42	.39	
	721	P/T			355	355					6.46	.06	
	1520	P/T			355	355					4.34	38.3×10^{-4}	
	2520	VACM		141*	148*		-1.9	9.4	2.7	8.0	3.02	13.8×10^{-4}	
	4020	VACM		355	355		0.7	7.6	0.3	8.3	2.32	2.1×10^{-4}	
81	160	VACM	1000 5/12/77	353	353	353	-7.1	79.1	0.5	83.6	20.7	.65	1.54
	233	P/T			353	353					16.83	.41	
15°11.5'N	309	VACM		222*	336*		-0.5	36.4	1.0	34.3	14.33	.42	
53°12.3'W	510	VACM		352	353		-0.3	62.4	0.7	39.1	9.43	.36	
	661	P/T			353	353					6.93	.09	
	1508	P/T			353	353					4.32	41.8×10^{-4}	
	2508	VACM		353	353		0.6	8.8	-0.1	11.0	3.02	7.1×10^{-4}	
	4008	VACM		353	353		0.7	6.9	0.7	8.9	2.33	1.3×10^{-4}	
82	194	VACM	1200 5/13/77	353	353	353	-5.6	50.1	-1.3	61.3	18.84	.54	1.16
	264	P/T			353	353					15.79	.54	
15°02.1'N	338	VACM		353	353		-3.8	35.4	-0.4	46.7	13.60	.49	
54°12.9'W	538	VACM		353	353		-2.2	31.9	-0.4	48.7	8.92	.32	
	738	P/T			353	353					6.28	.05	
	1538	P/T			0*	0*					-	-	
	2538	VACM		353	0*		-0.4	9.8	0.2	11.6	-	-	
	4038	VACM		353	353		0.4	7.6	1.8	10.8	2.34	2.2×10^{-4}	

Depth	$\overline{KE}$(cm^2/sec^2)	$\overline{KE'}$(cm^2/sec^2)	$\overline{PE'}$(cm^2/sec^2)
150	19.33	67.4	93.2
225			46.2
300	5.00	38.3	70.8
500	0.93	37.1	42.2
750			46.3
1500			12.2
2500	0.01	10.3	5.3
4000	0.61	11.3(8.4)*	3.8

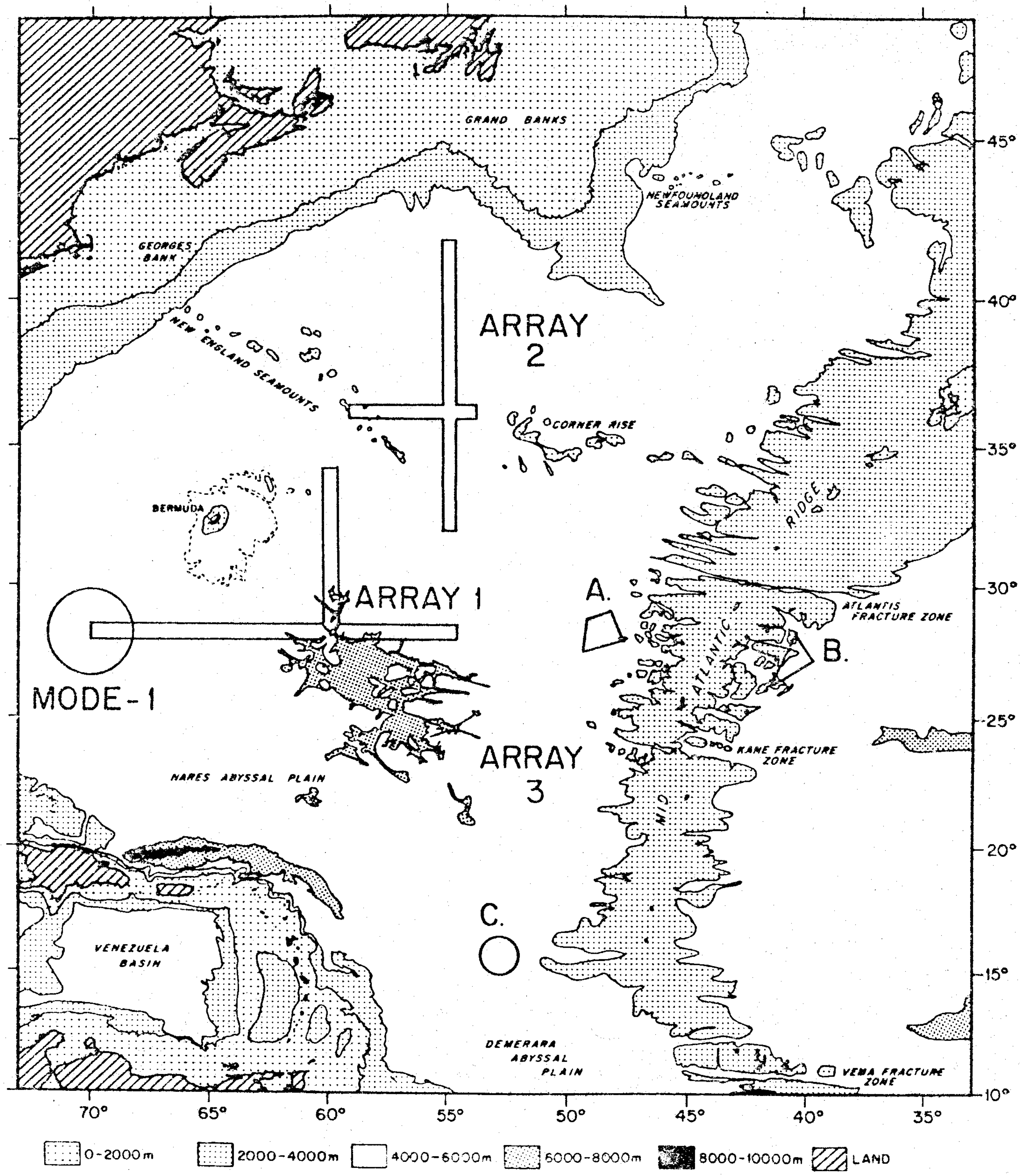
Table II.2. POLYMODE Cluster C energetics.
The starred (*) number is the 4000m $\overline{KE'}$ without the instrument at mooring 79.

		$KE'(cm^2/sec^2)$	$PE'(cm^2/sec^2)$	$T'^2(^oC^2)$
500 m	MODE C	39.5	32.0	.27
	MODE E	33.0	22.5	.19
	PM I	9.0	10.0	.036
	PM III A		20.5	.086
	PM III B	36.0	47.0	.15
	PM III C	37.1	42.2	.33
1500 m	MODE C	7.4		.0059
	MODE E	3.1		.011
	PM III A	1.8		.013
	PM III B	4.0		.016
	PM III C			4.1×10^{-3}
4000 m	MODE C	8.6	11.0	8.6×10^{-5}
	MODE E	7.4	5.2	4.1×10^{-5}
	PM I	0.48	0.8	15.0×10^{-5}
	PM III A	1.06	1.4	21.3×10^{-5}
	PM III B	0.96	0.6	5.7×10^{-5}
	PM III C	8.4	3.8	23.8×10^{-5}

MODE C	smooth
MODE E	slightly rough
PM I	rough
PM III A	very rough
PM III B	very rough
PM III C	rough

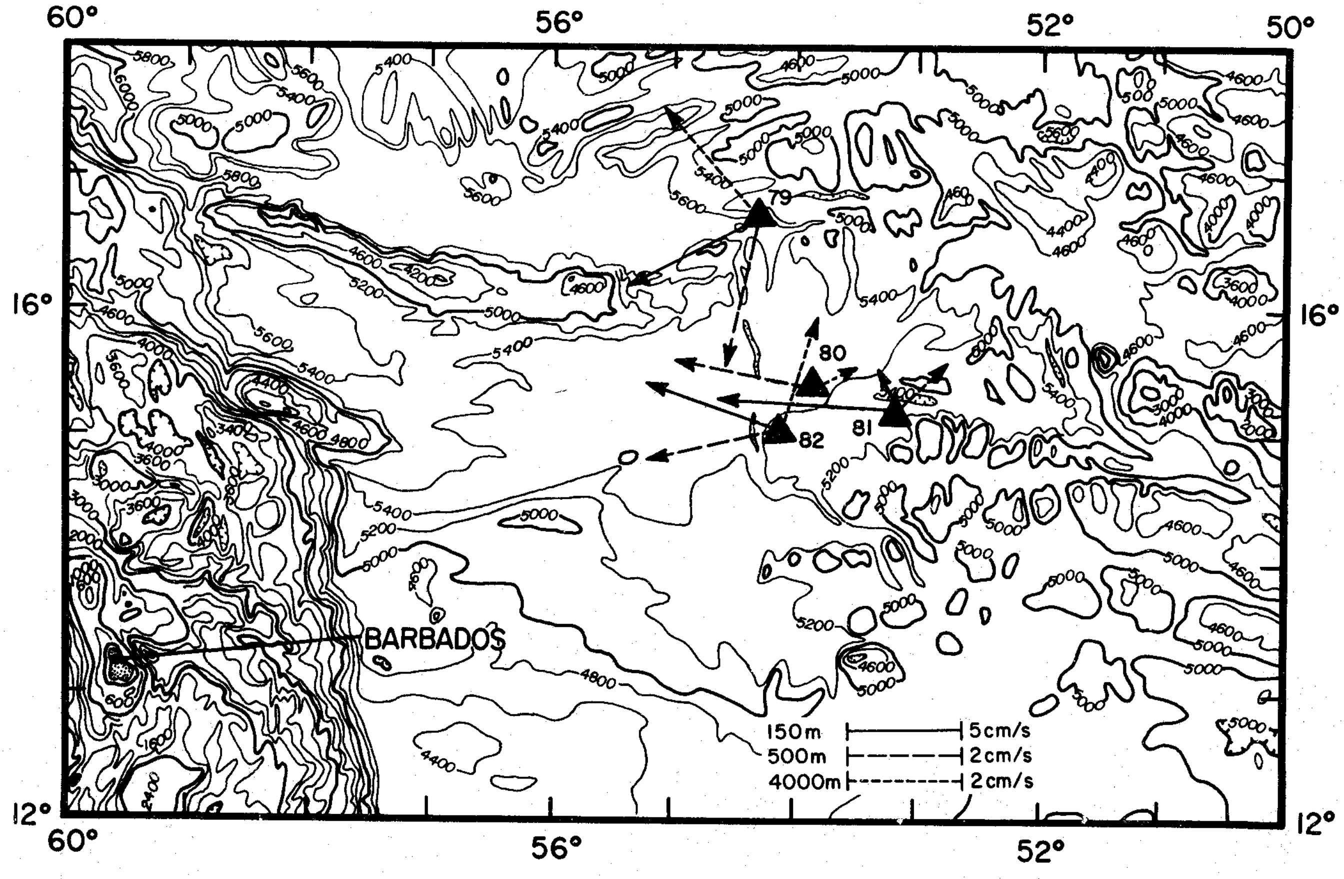
Adapted from Fu and Wunsch Polymode News #60

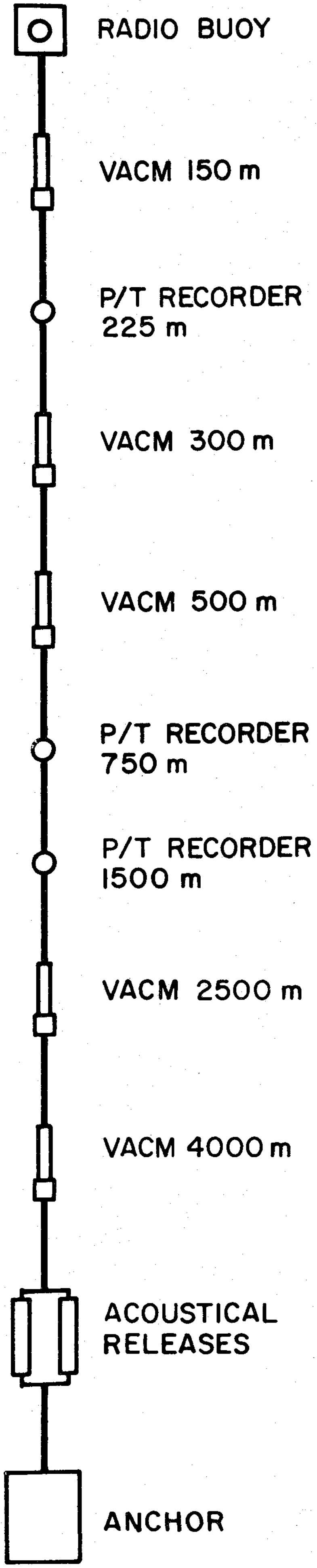
Table II.2. Summary of POLYMODE array energetics.



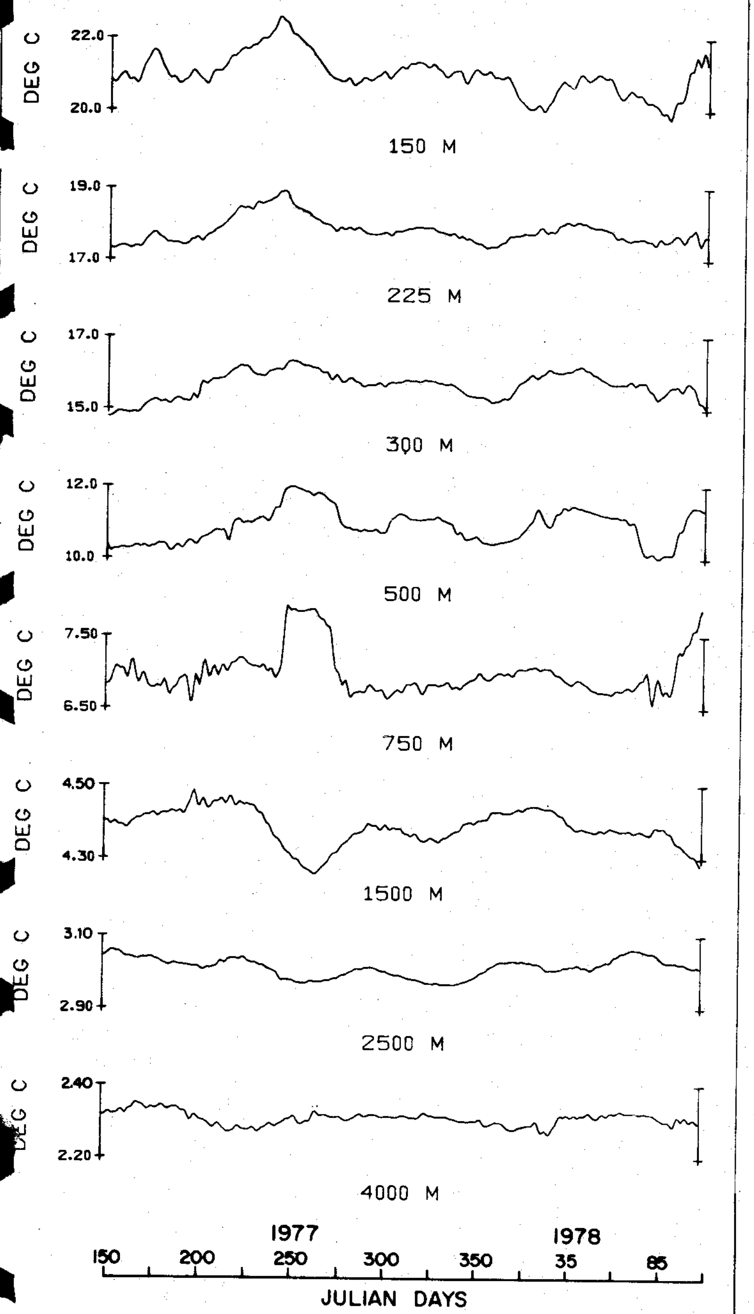
I.1 POLYMODE Moored Arrays

POLYMODE ARRAY III CLUSTER C BATHYMETRY

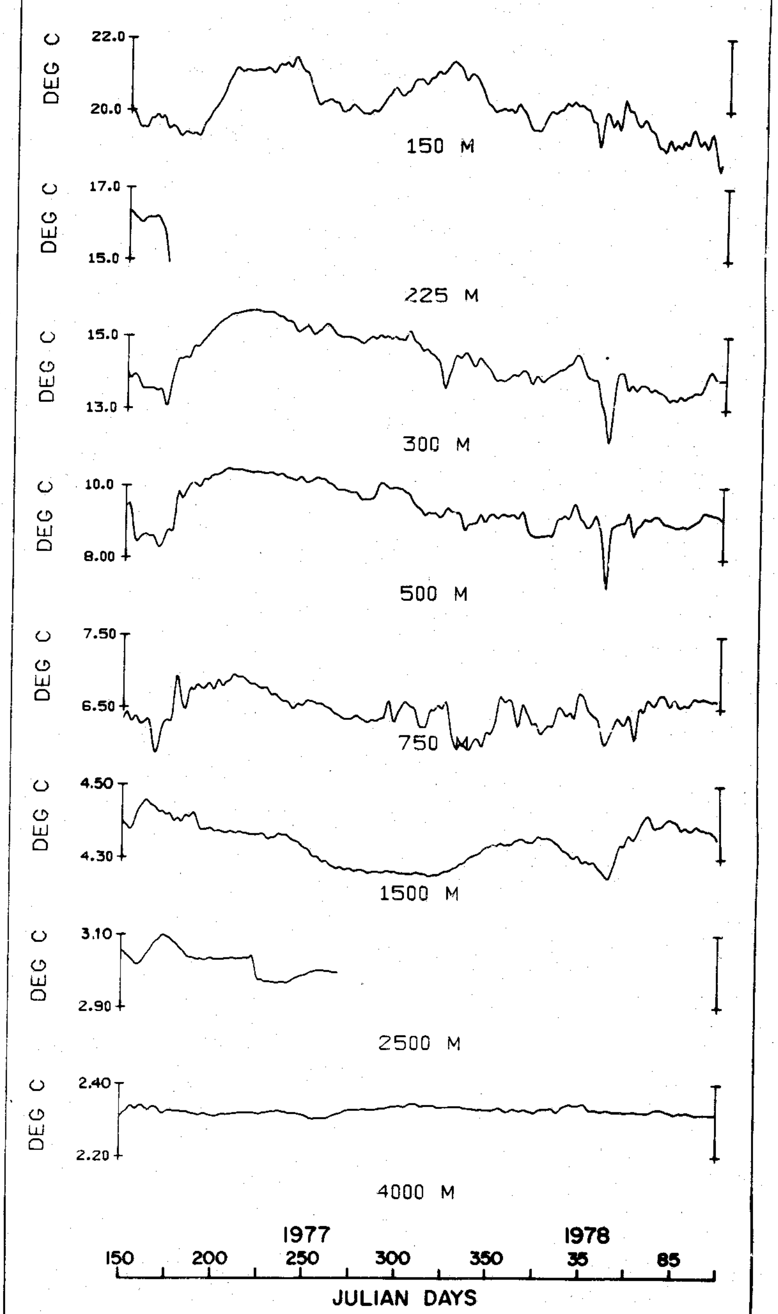




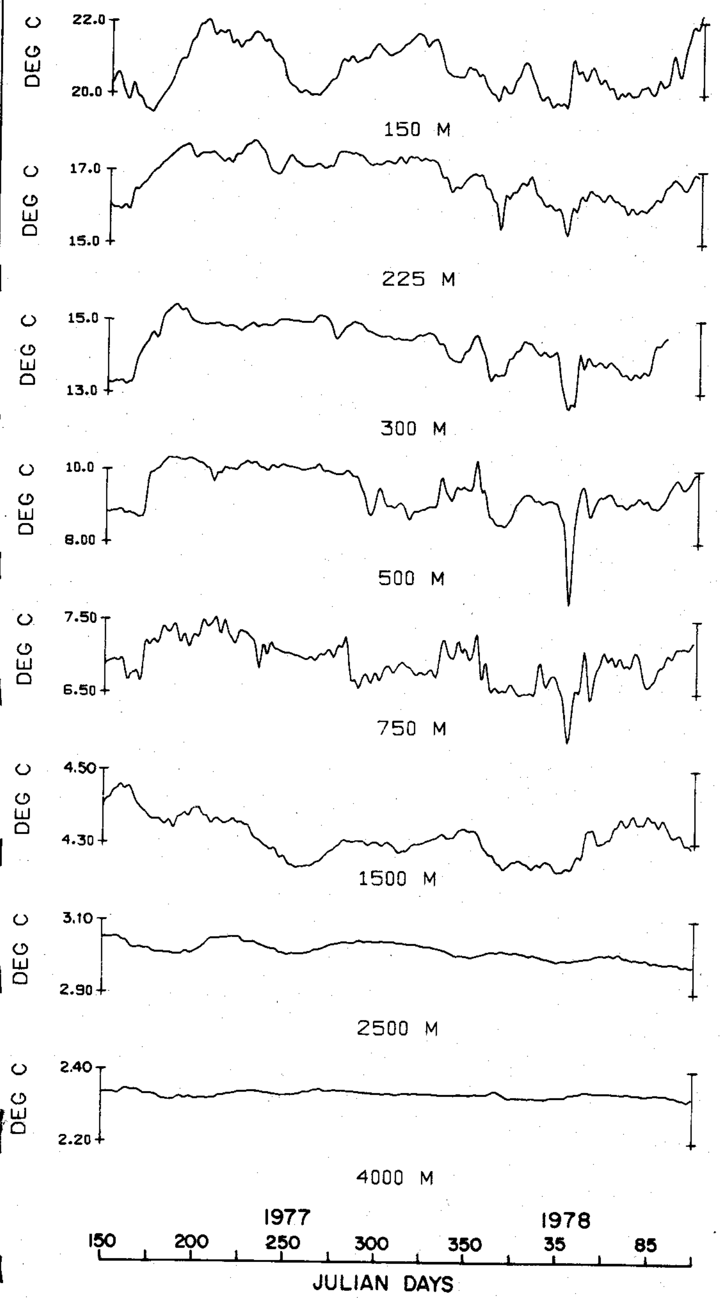
I.3 Cluster C Nominal Mooring Design



DAILY TEMPERATURE
POLYMODE CLUSTER C MOORING 79



DAILY TEMPERATURE
POLYMODE CLUSTER C MOORING 80



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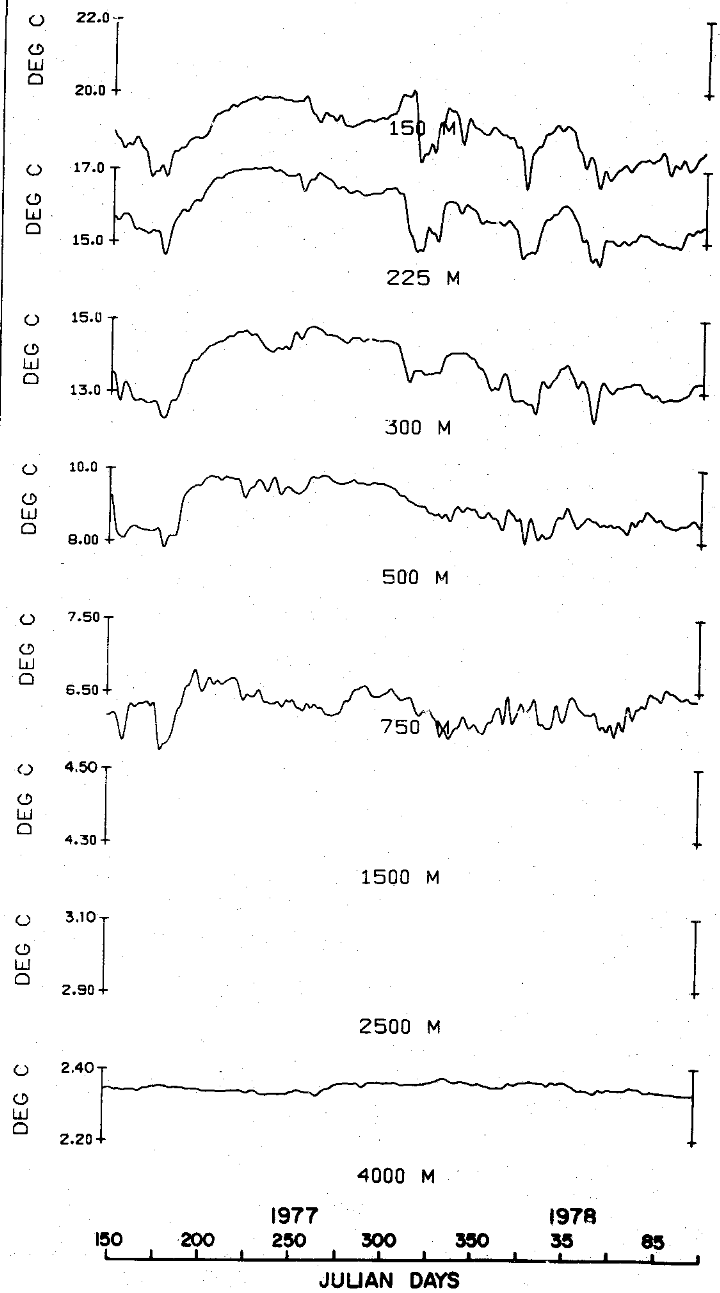
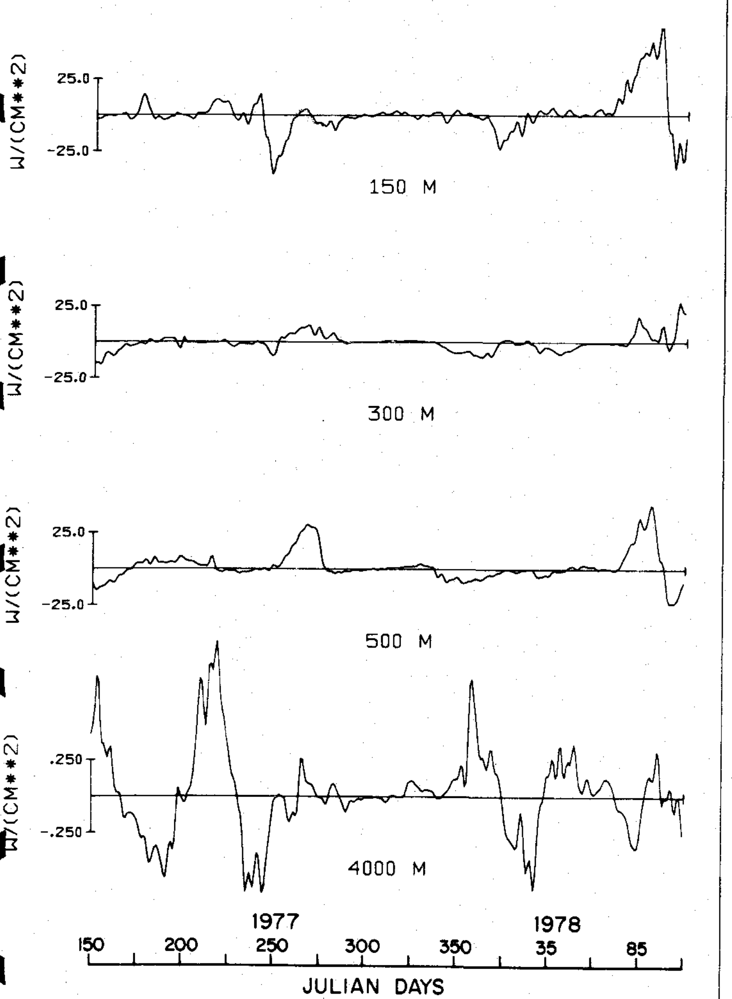
POLYMODE CLUSTER C MOORING 81



DAILY TEMPERATURE
POLYMODE CLUSTER C MOORING 82



POLEWARD HEAT FLUX
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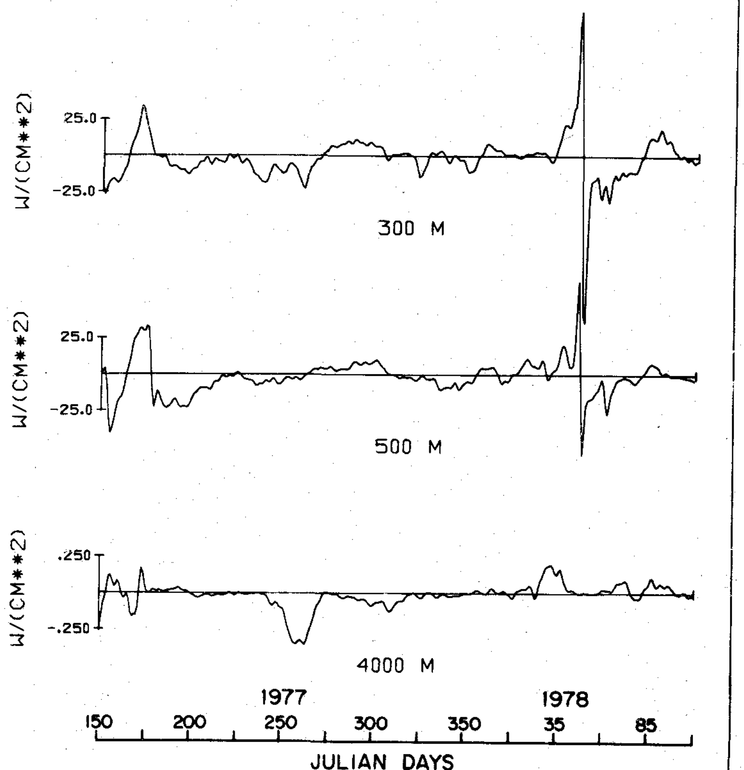

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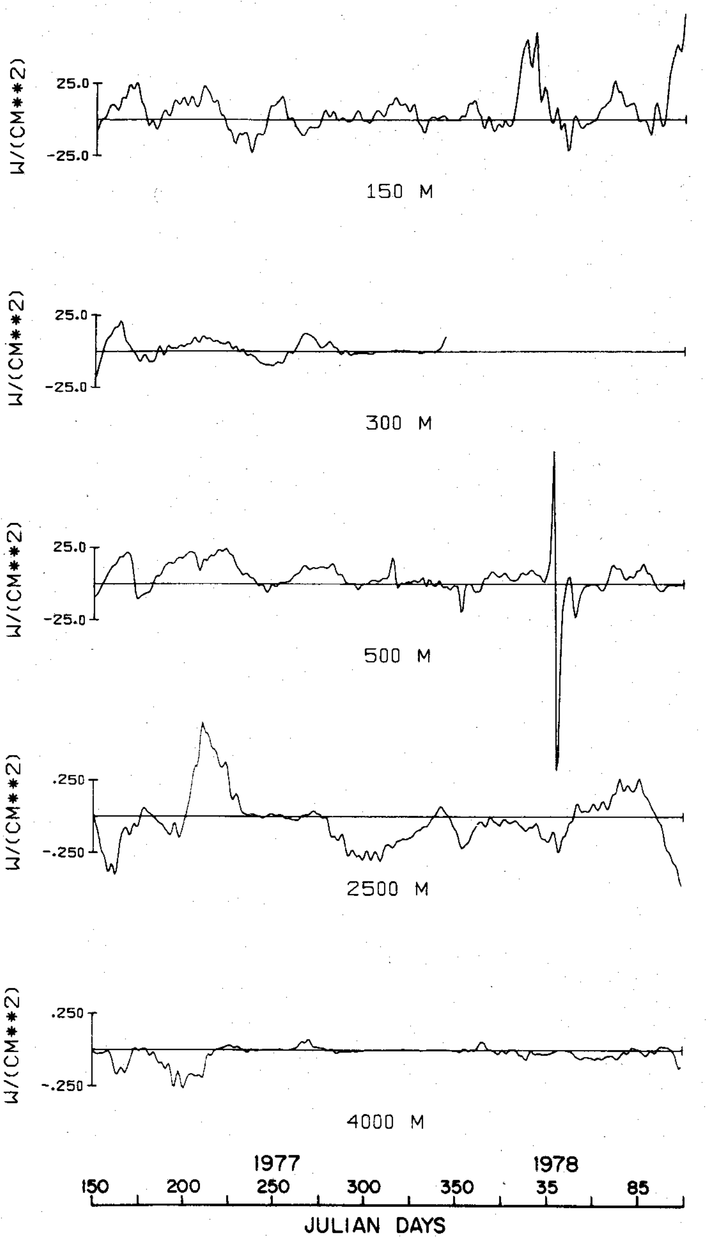

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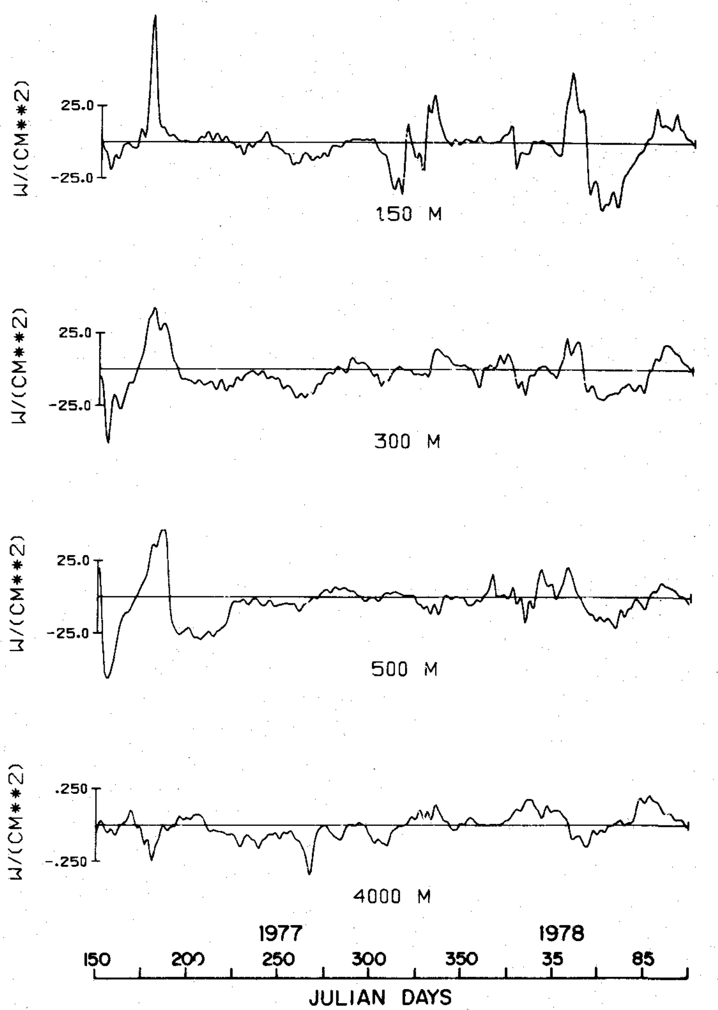

POLEWARD HEAT FLUX
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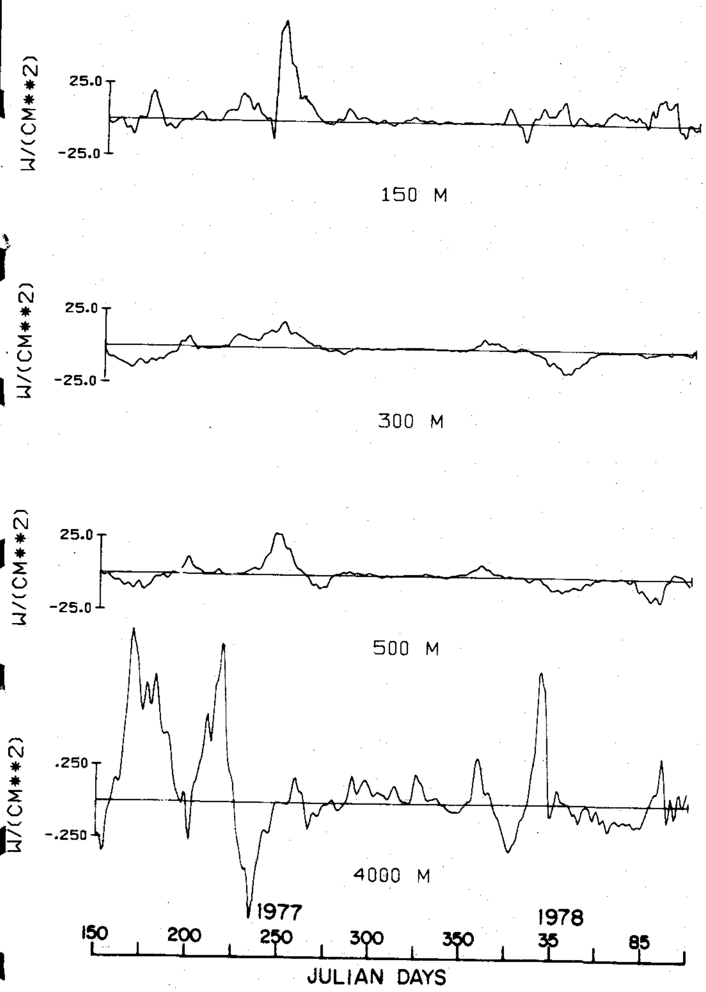

ZONAL HEAT FLUX
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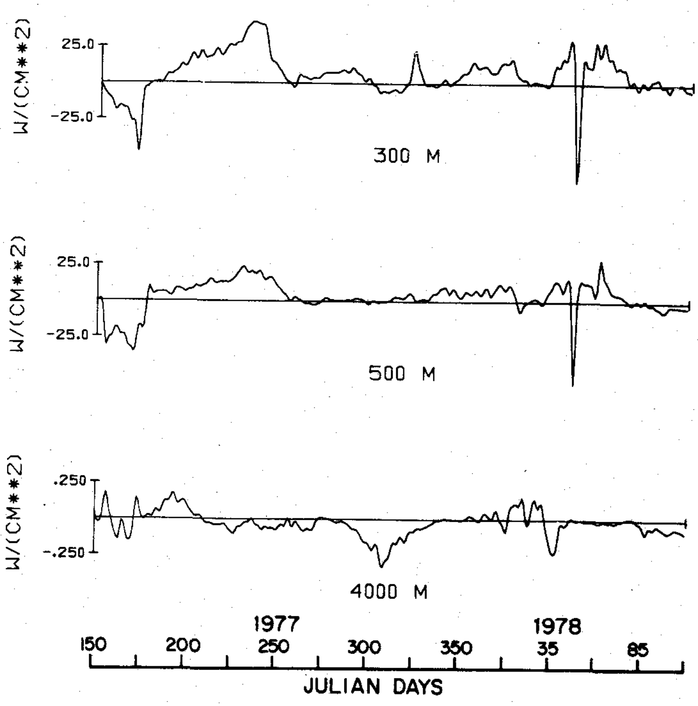

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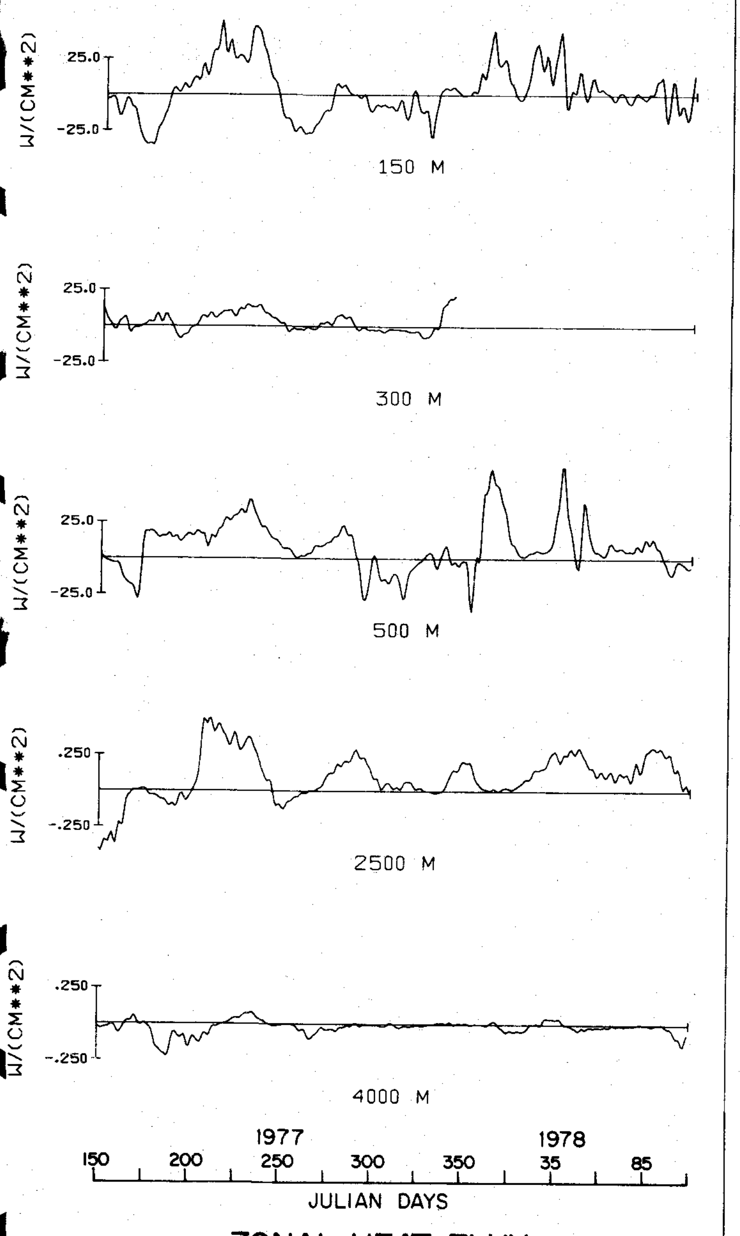
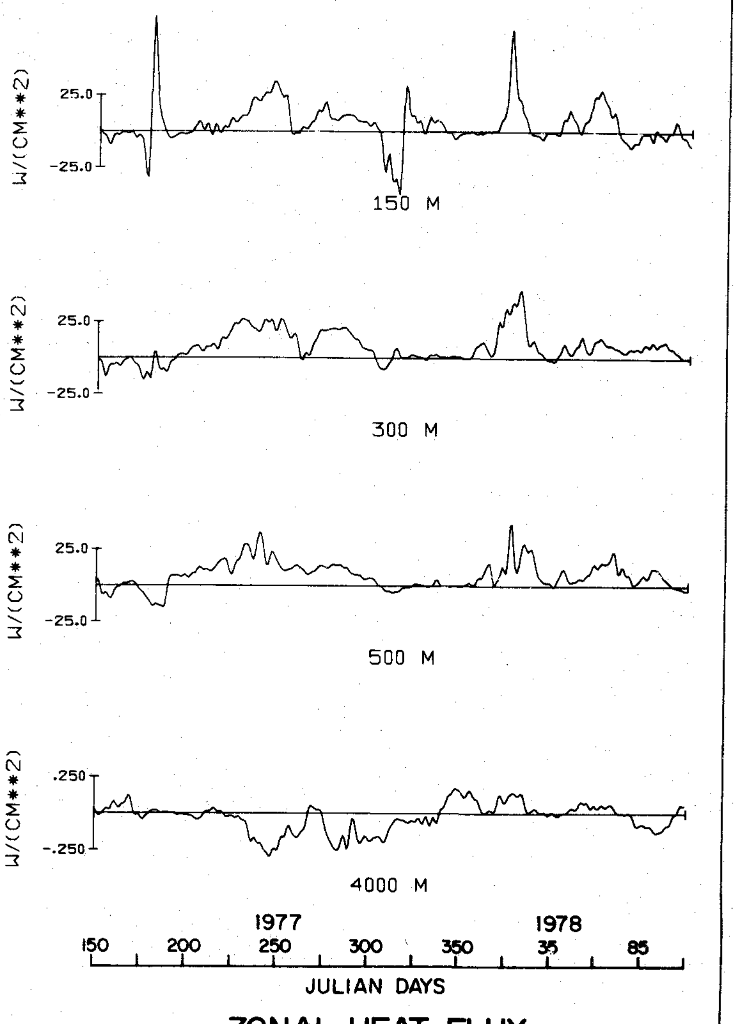
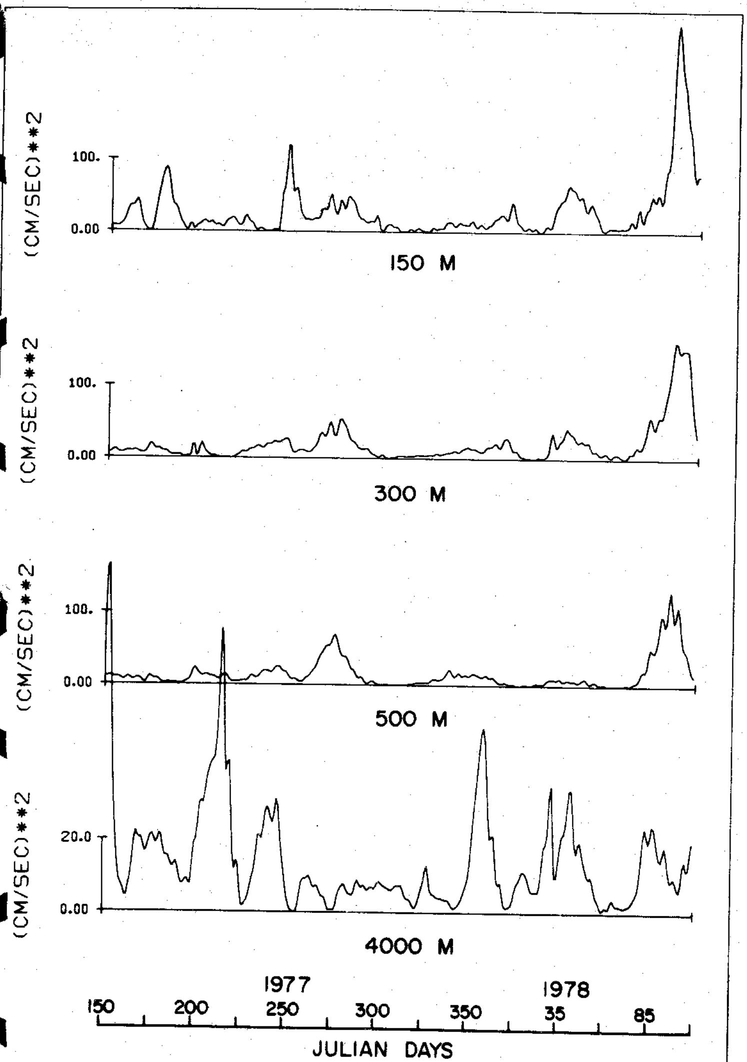
POLYMODE CLUSTER C MOORING 80



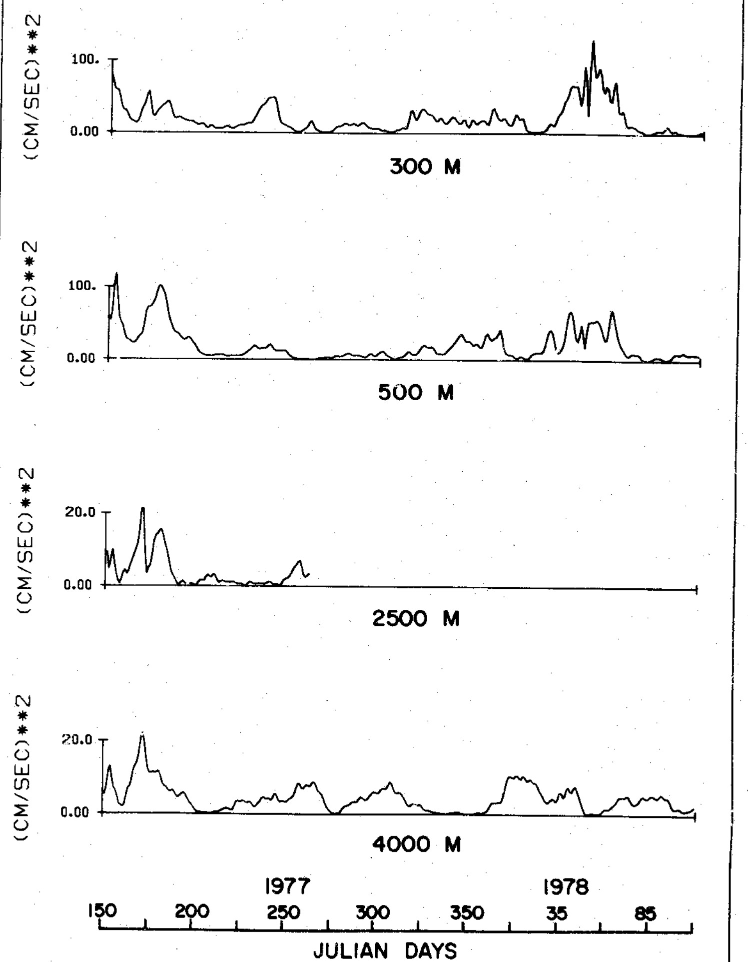
ZONAL HEAT FLUX
POLYMODE CLUSTER C MOORING 81



ZONAL HEAT FLUX
POLYMODE CLUSTER C MOORING 82



EDDY KINETIC ENERGY
POLYMODE CLUSTER C MOORING 79



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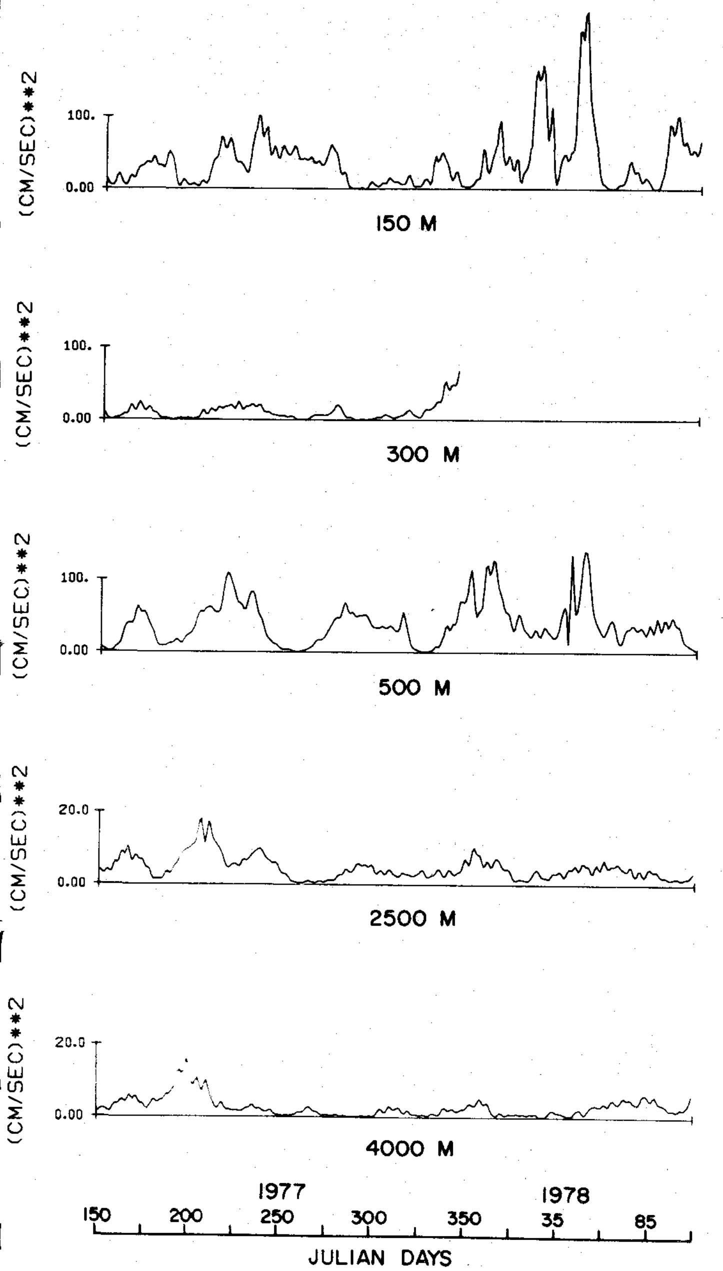
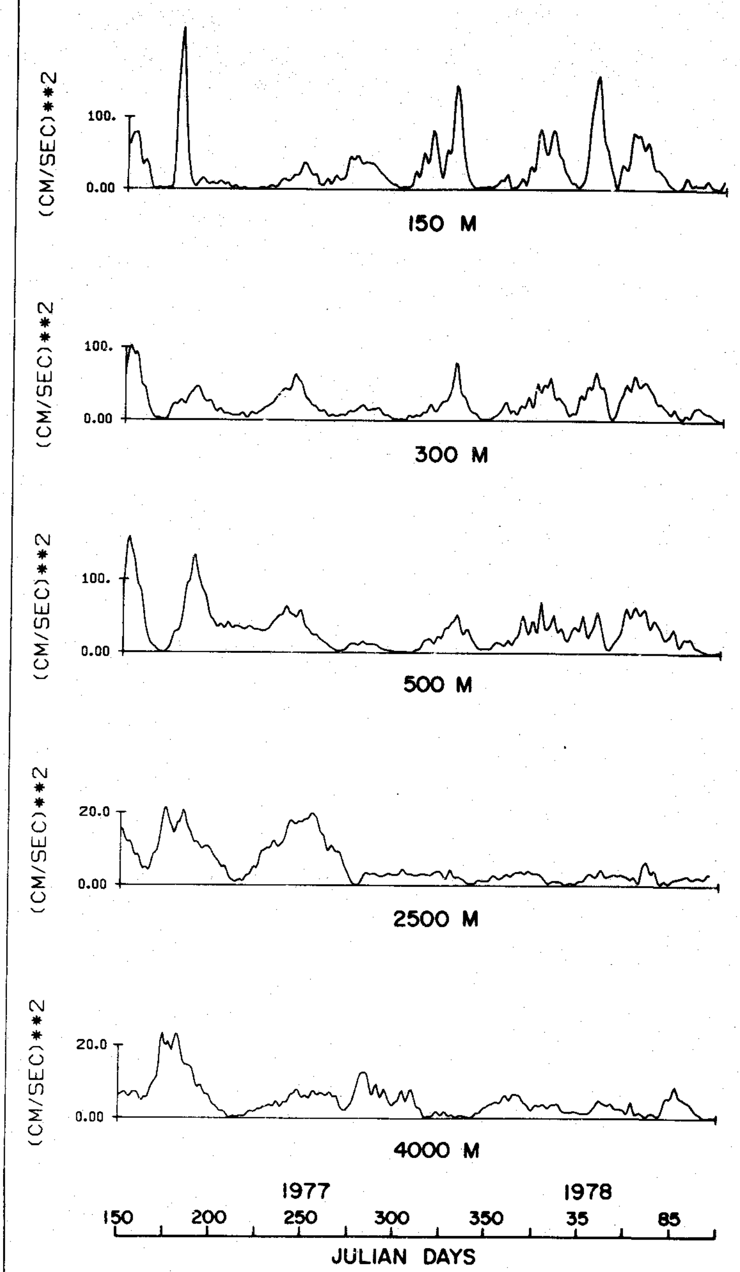
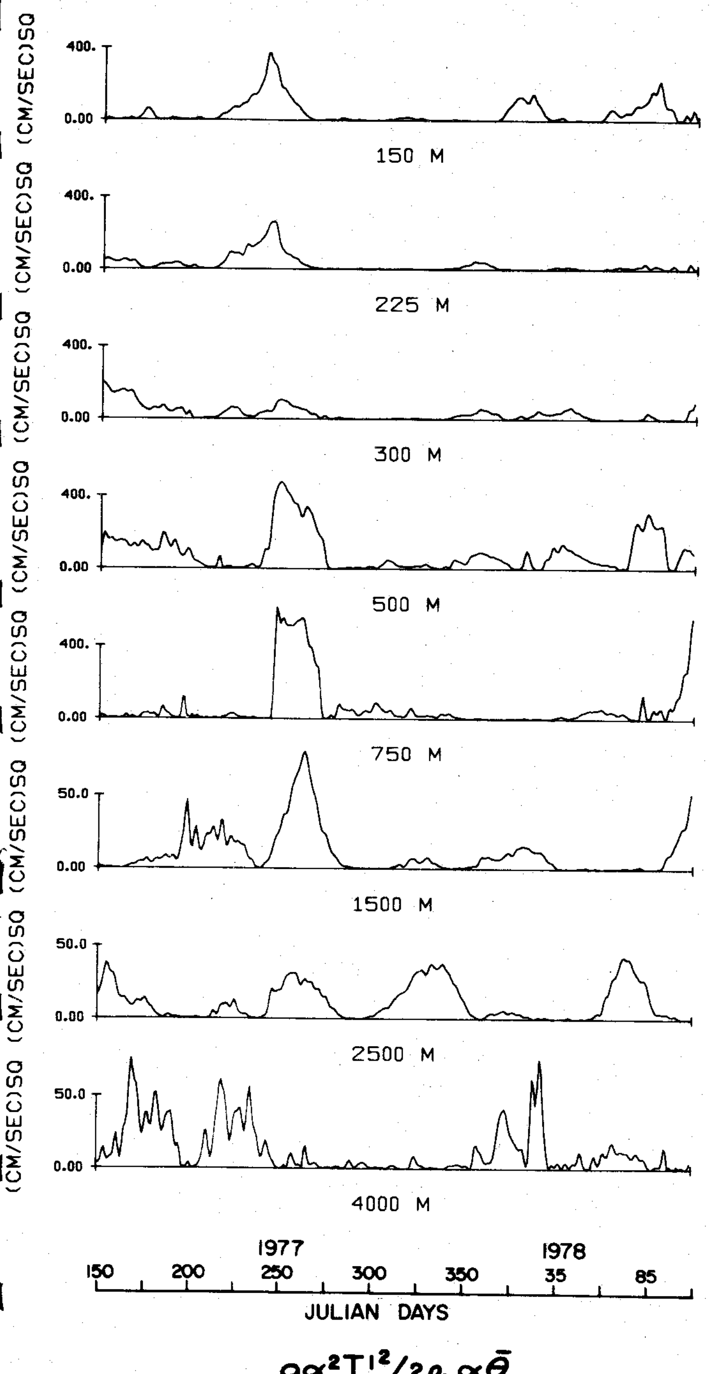
POLYMODE CLUSTER C MOORING 80



EDDY KINETIC ENERGY
POLYMODE CLUSTER C MOORING 81



EDDY KINETIC ENERGY
POLYMODE CLUSTER C MOORING 82



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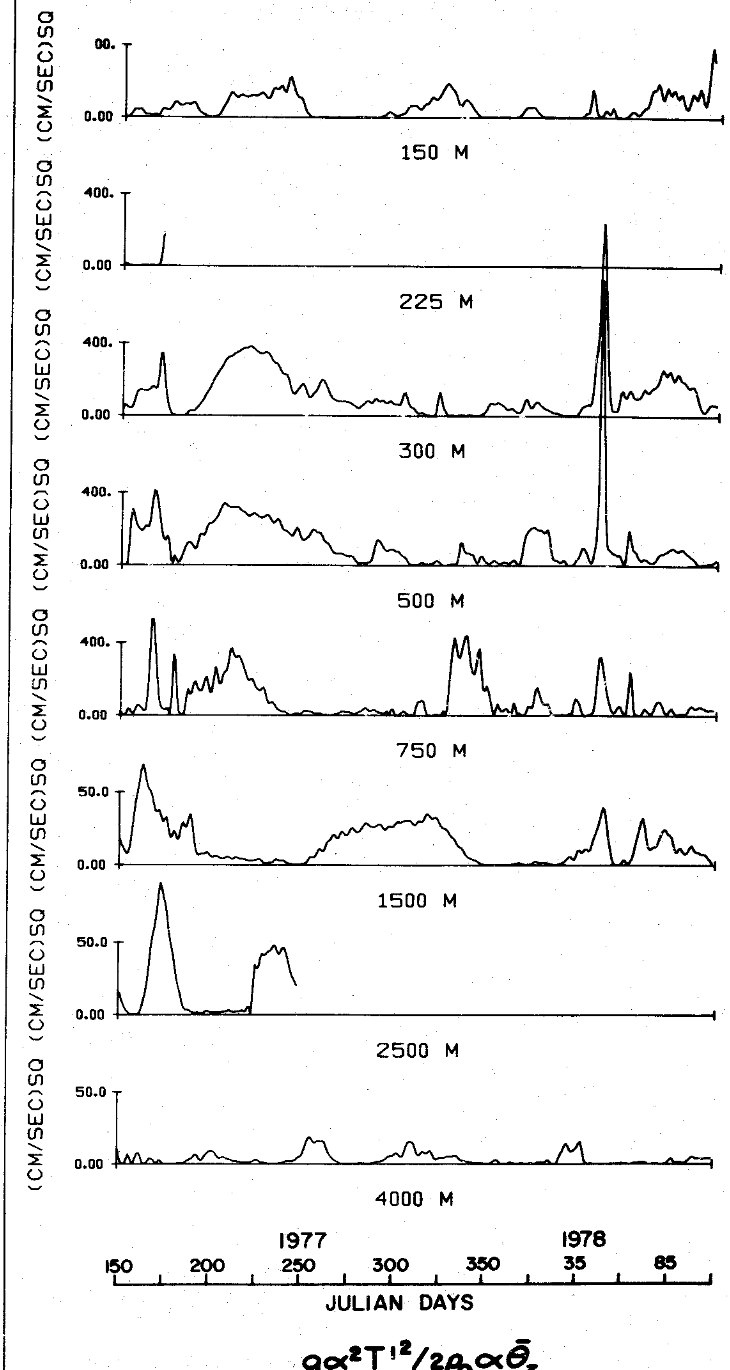

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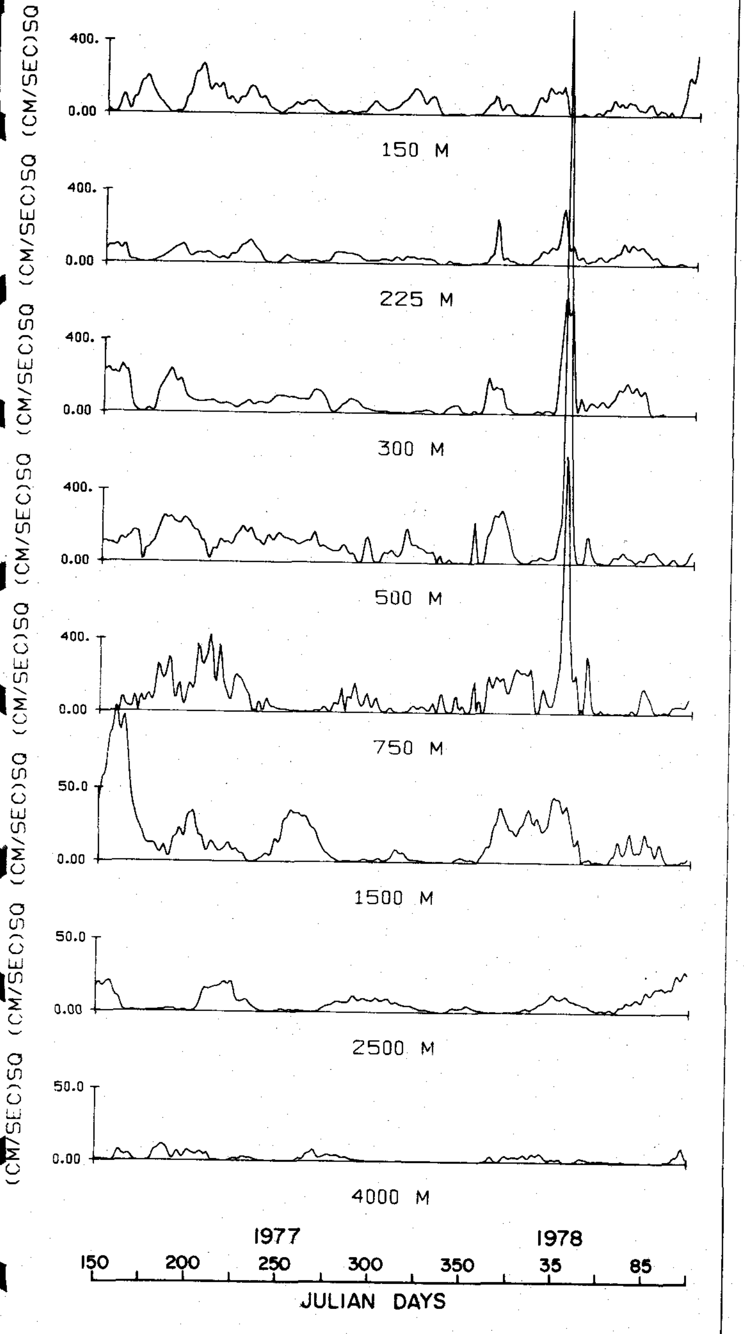
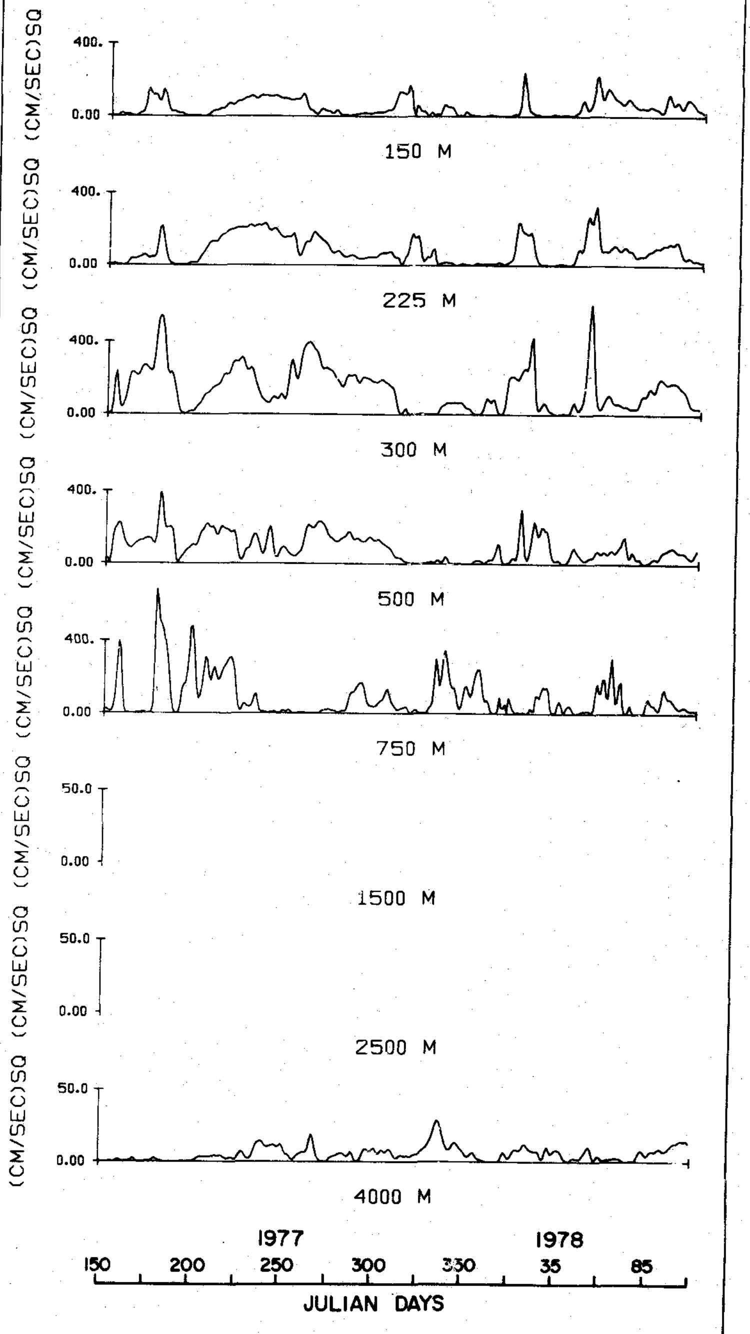


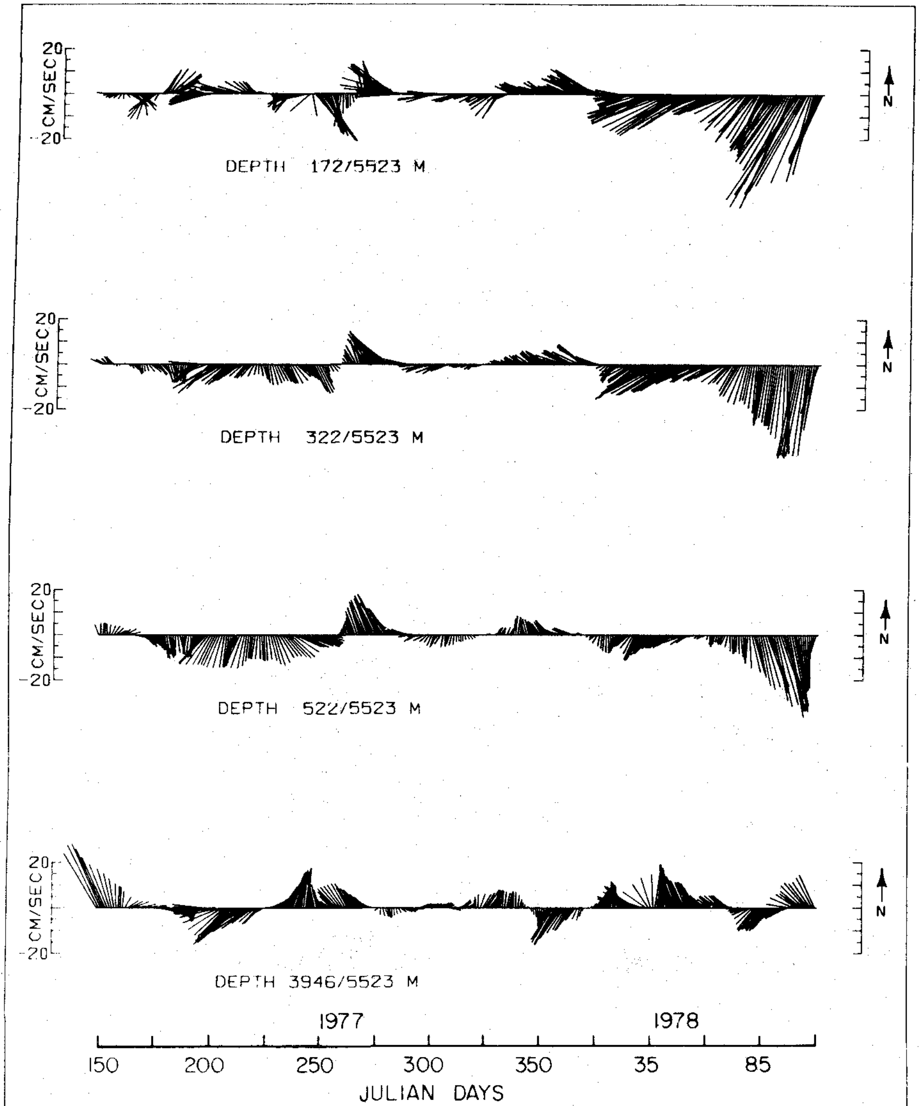
$g\alpha^2T'^2/2\rho_0\alpha\bar{\theta}_z$

POLYMODE CLUSTER C MOORING 81

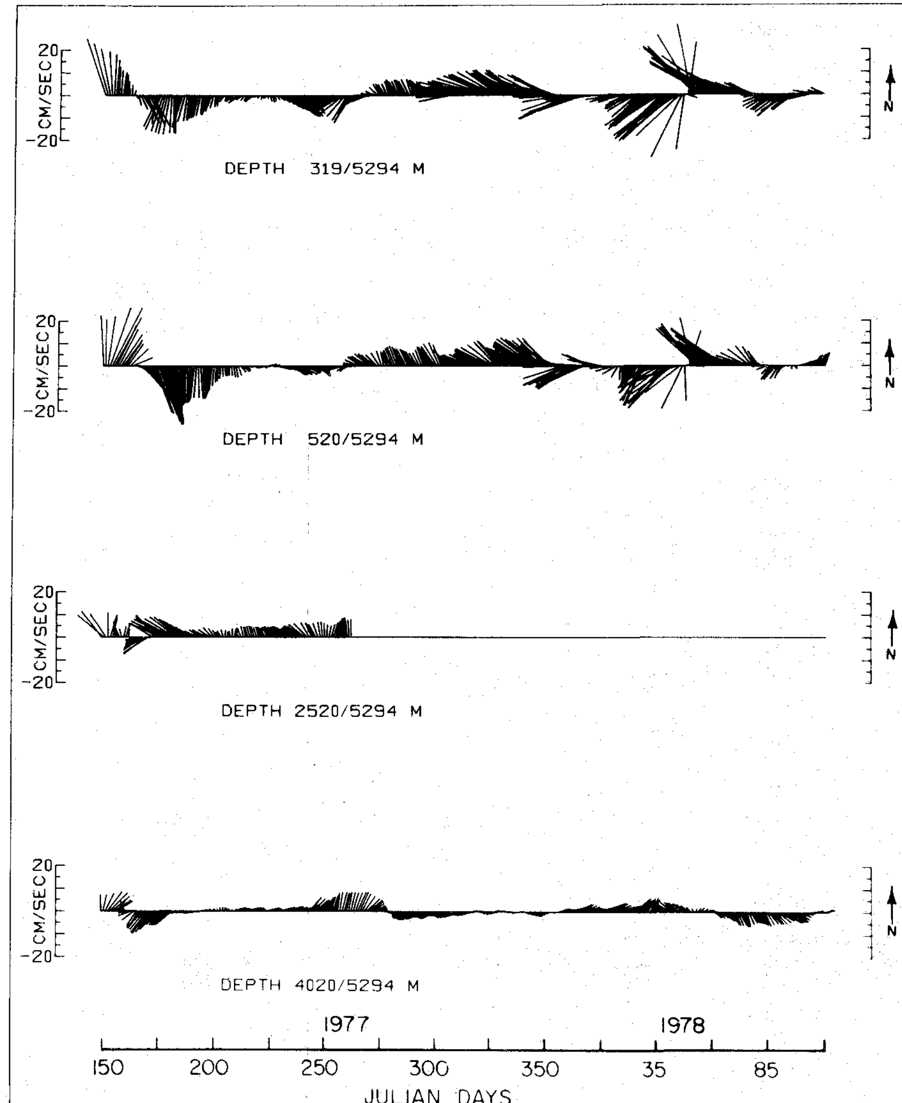


$g\alpha^2T'^2/2\rho_0\alpha\bar{\theta}_z$

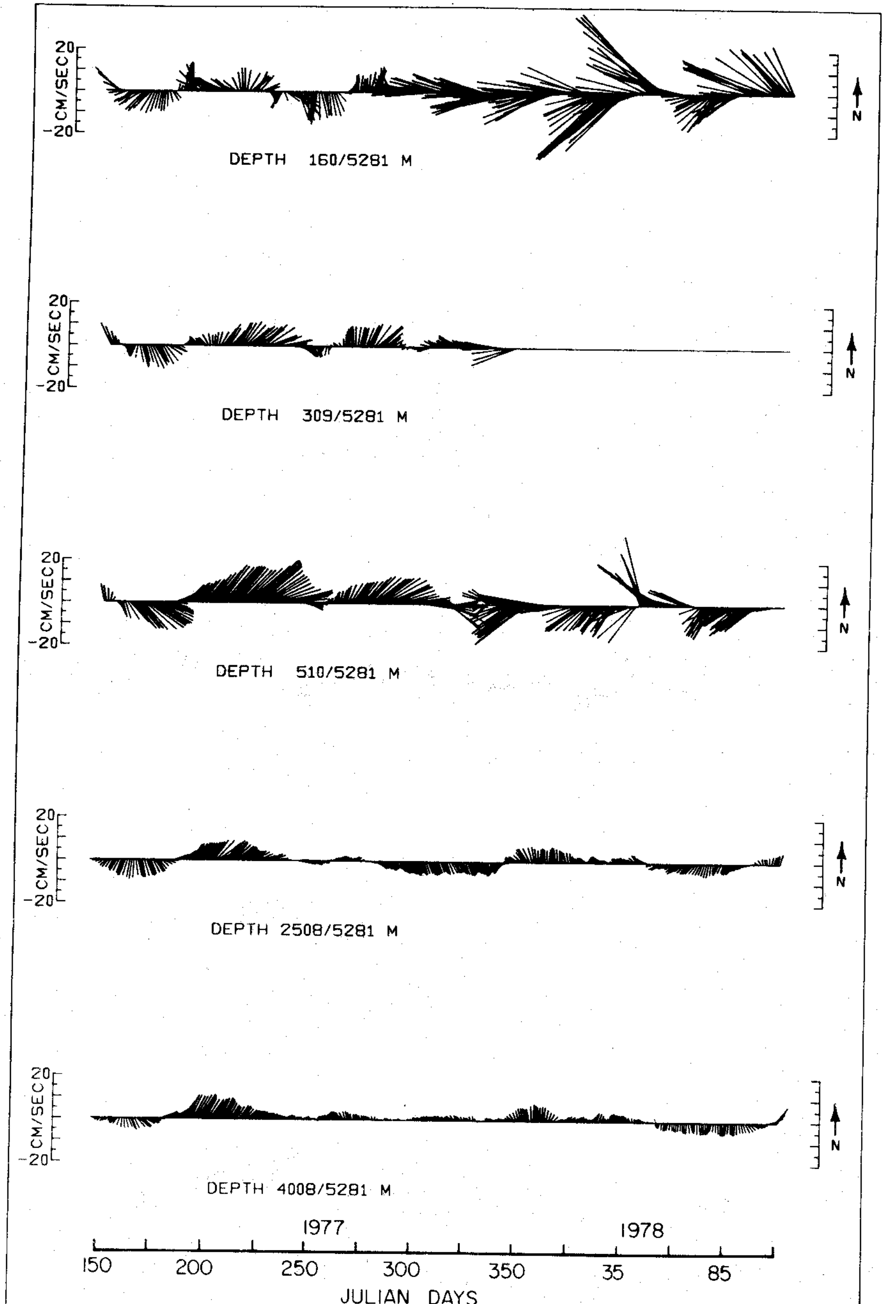
POLYMODE CLUSTER C MOORING 82



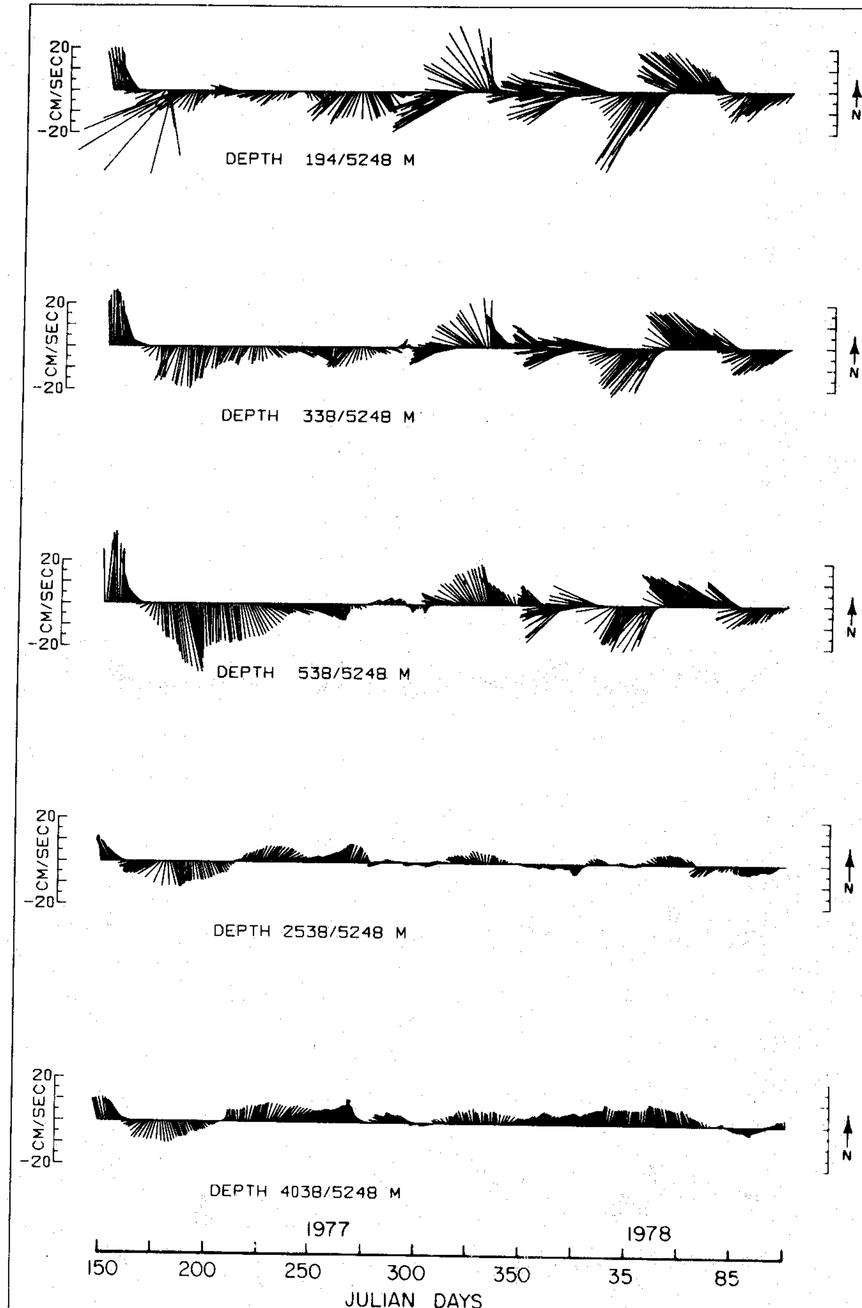
POLYMODE CLUSTER C - MOORING 79



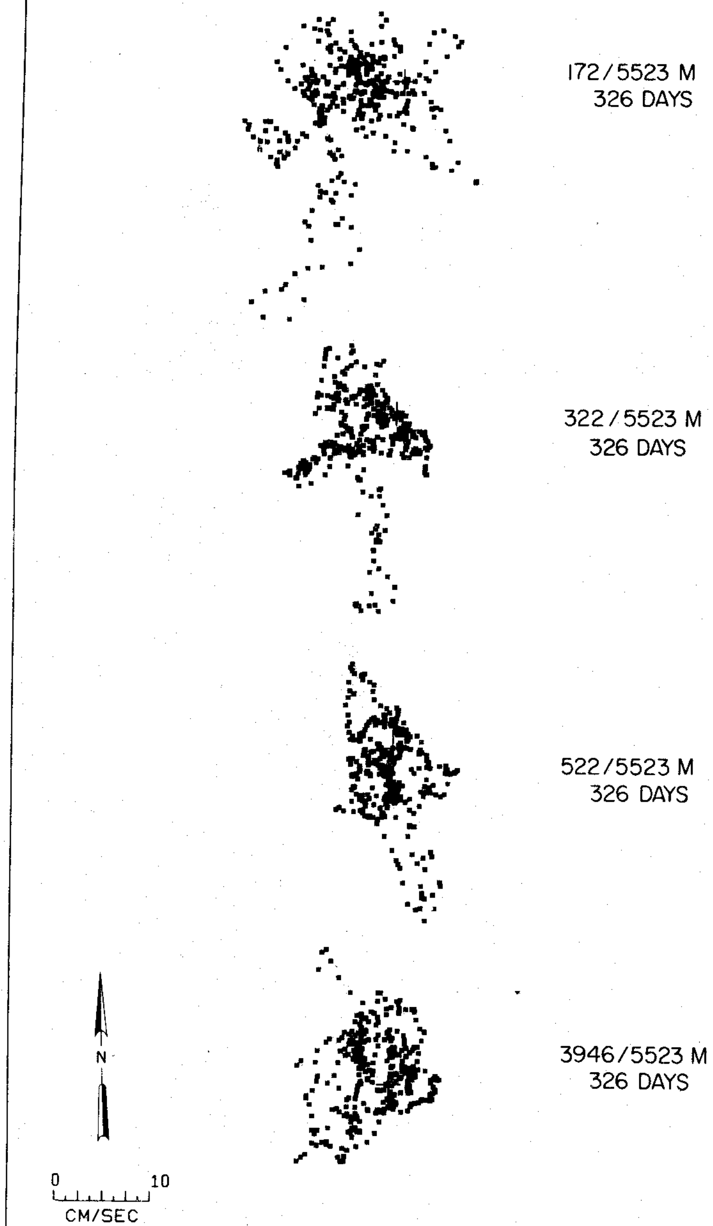
POLYMODE CLUSTER C - MOORING 80



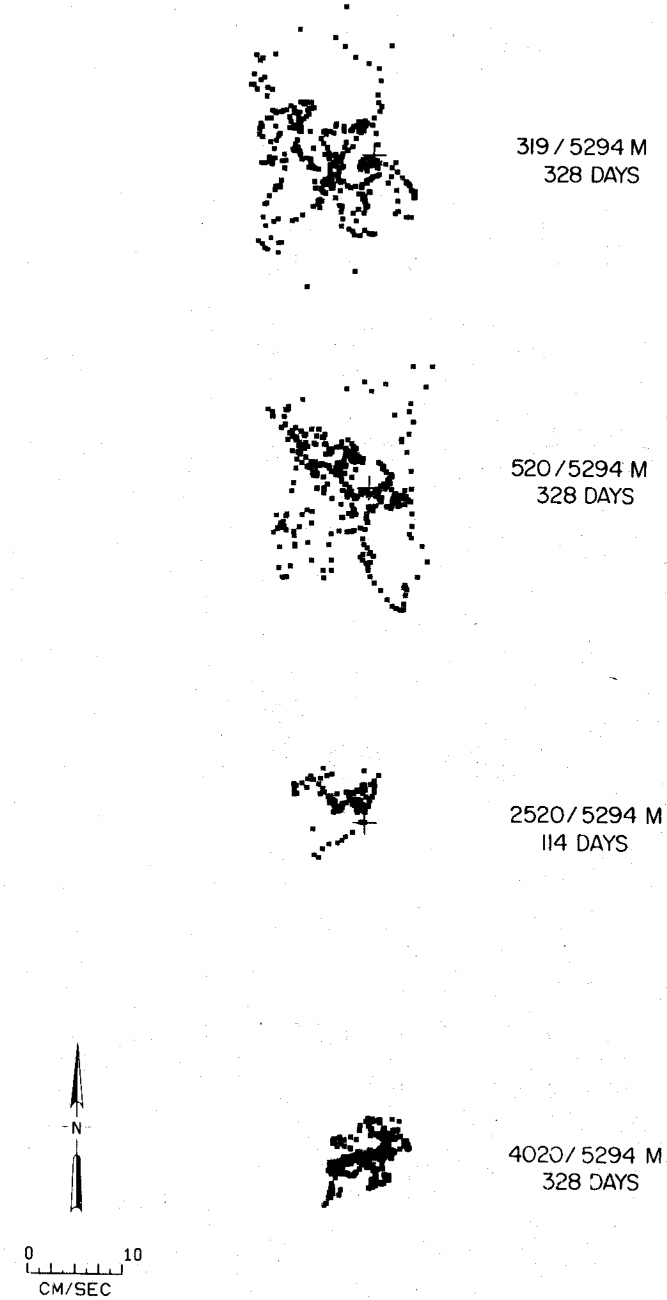
POLYMODE CLUSTER C - MOORING 81



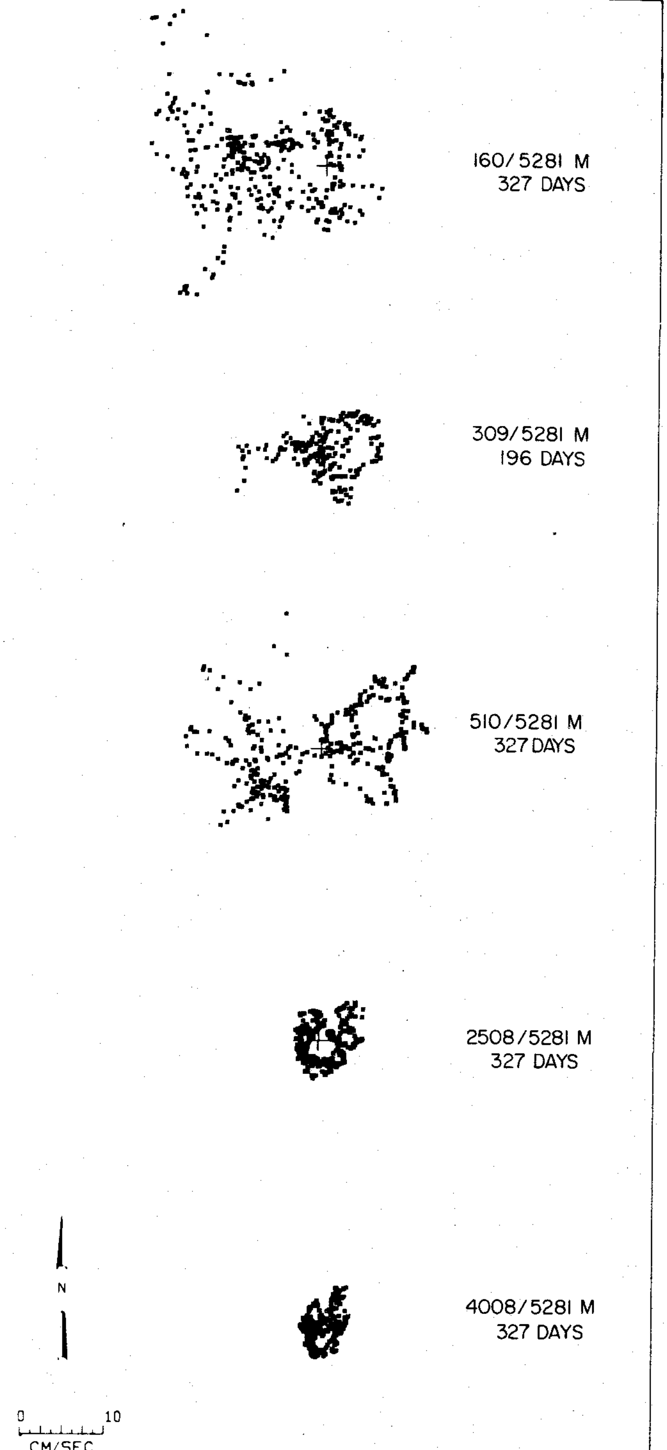
POLYMODE CLUSTER C - MOORING 82



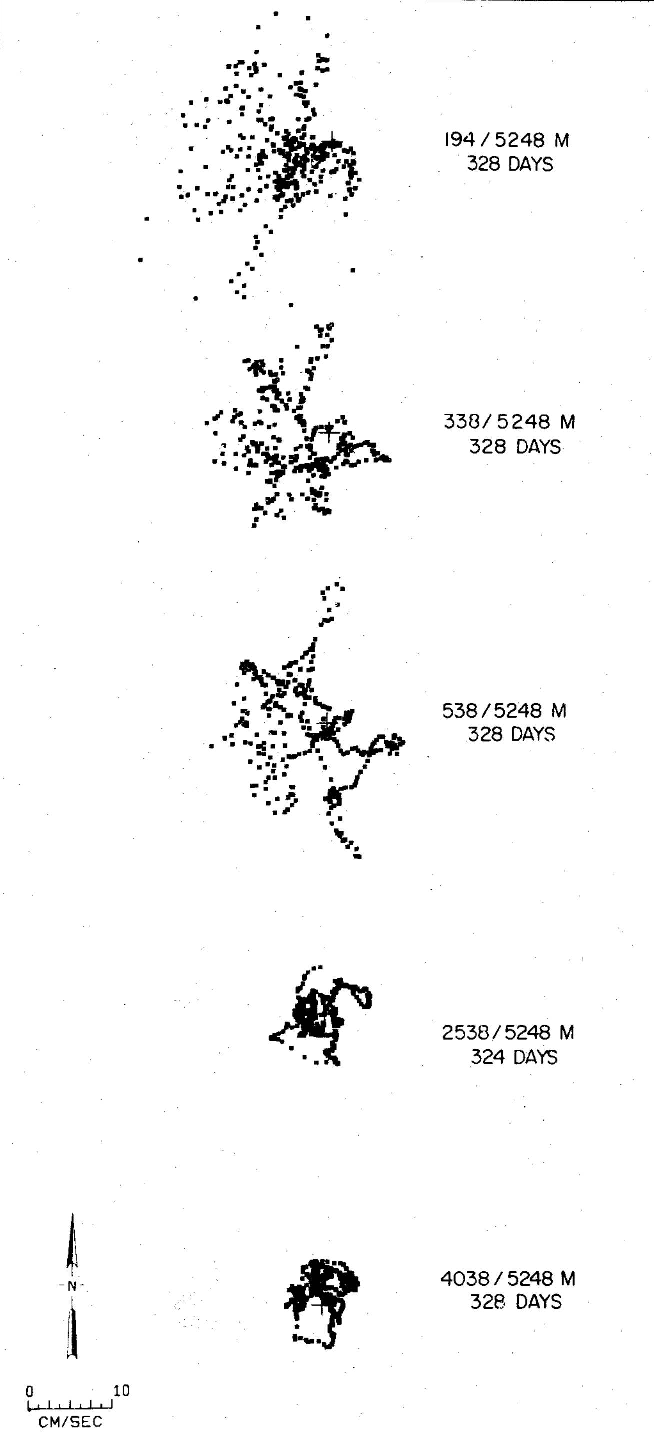
POLYMODE CLUSTER C - MOORING 79



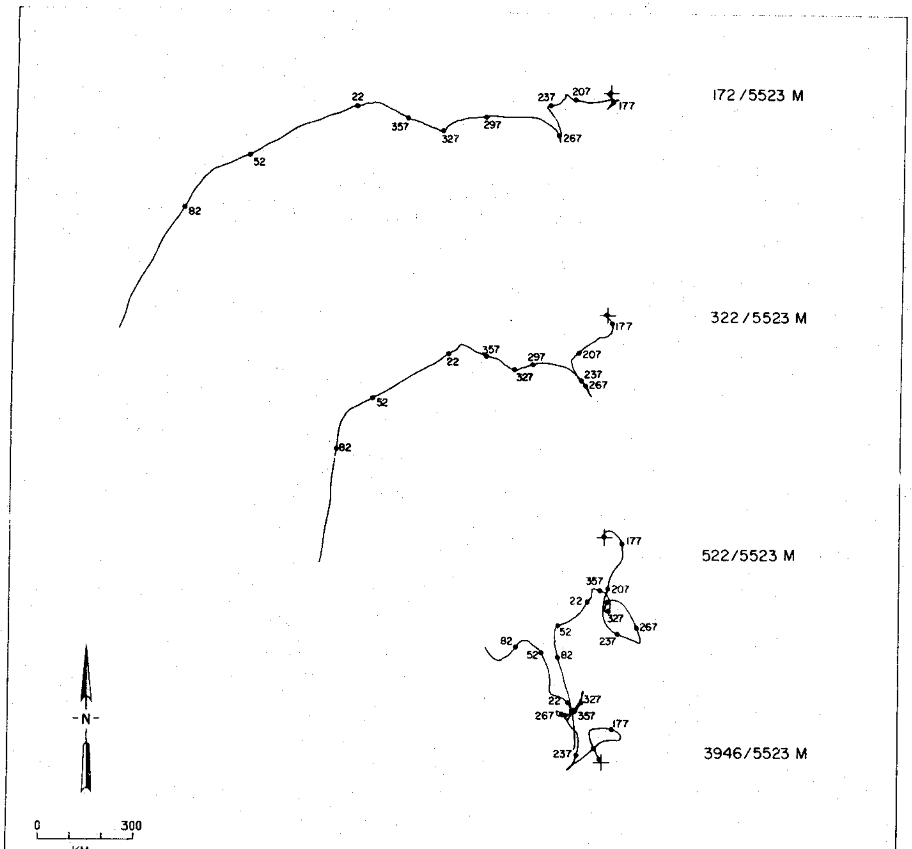
POLYMODE CLUSTER C - MOORING 80



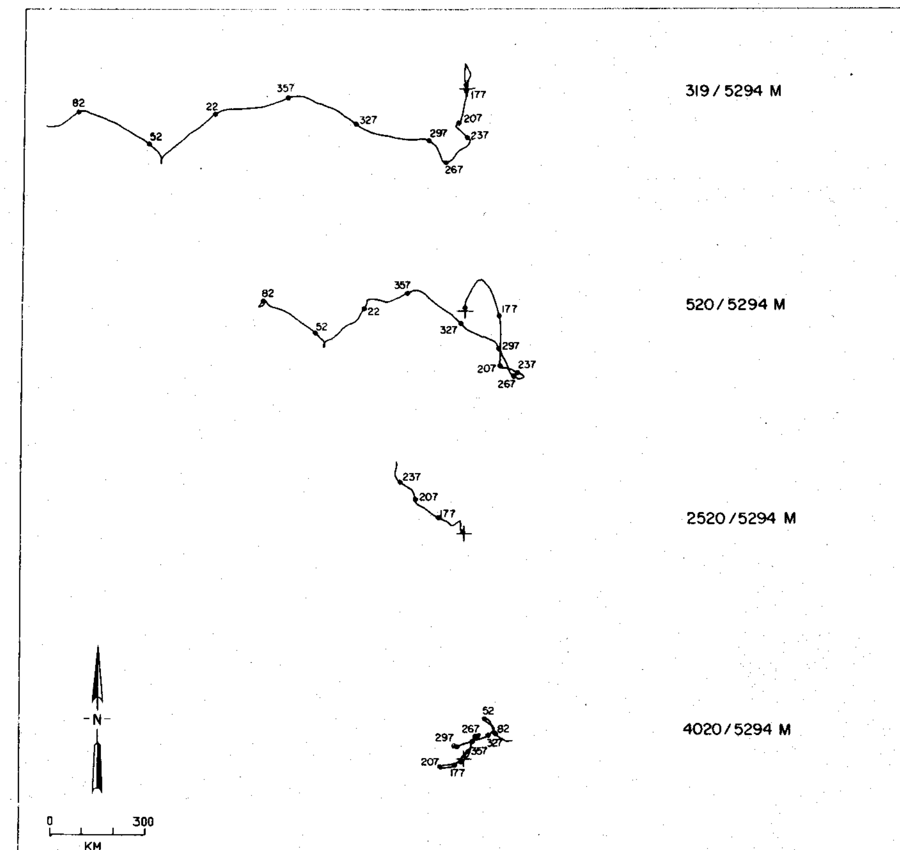
POLYMODE CLUSTER C - MOORING 81



POLYMODE CLUSTER C - MOORING 82



POLYMODE CLUSTER C- MOORING 79



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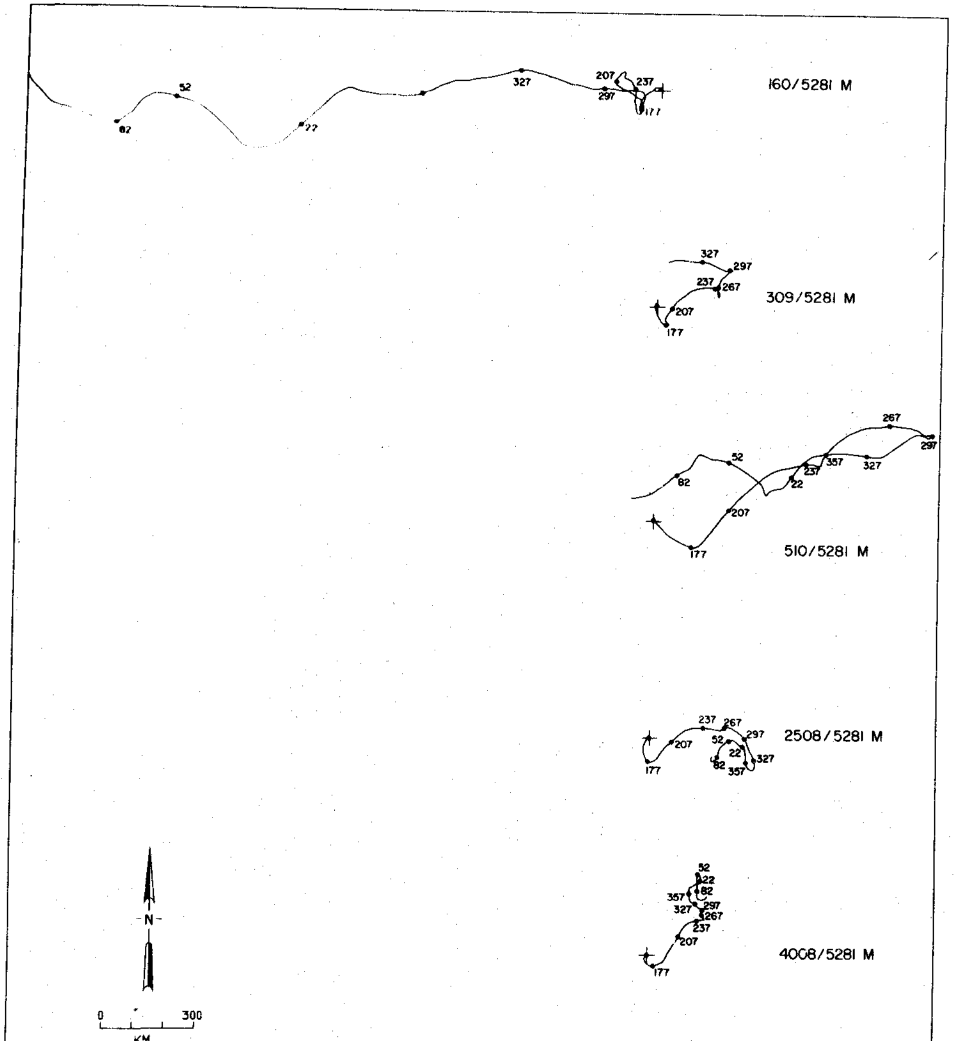
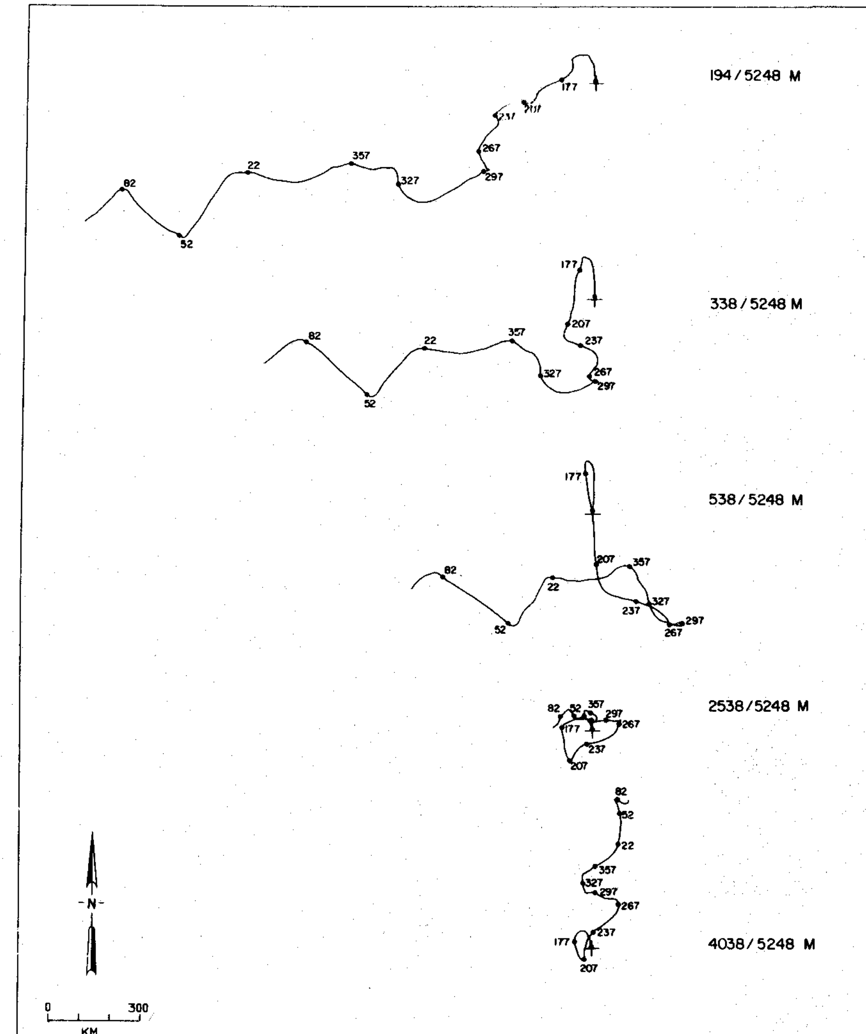
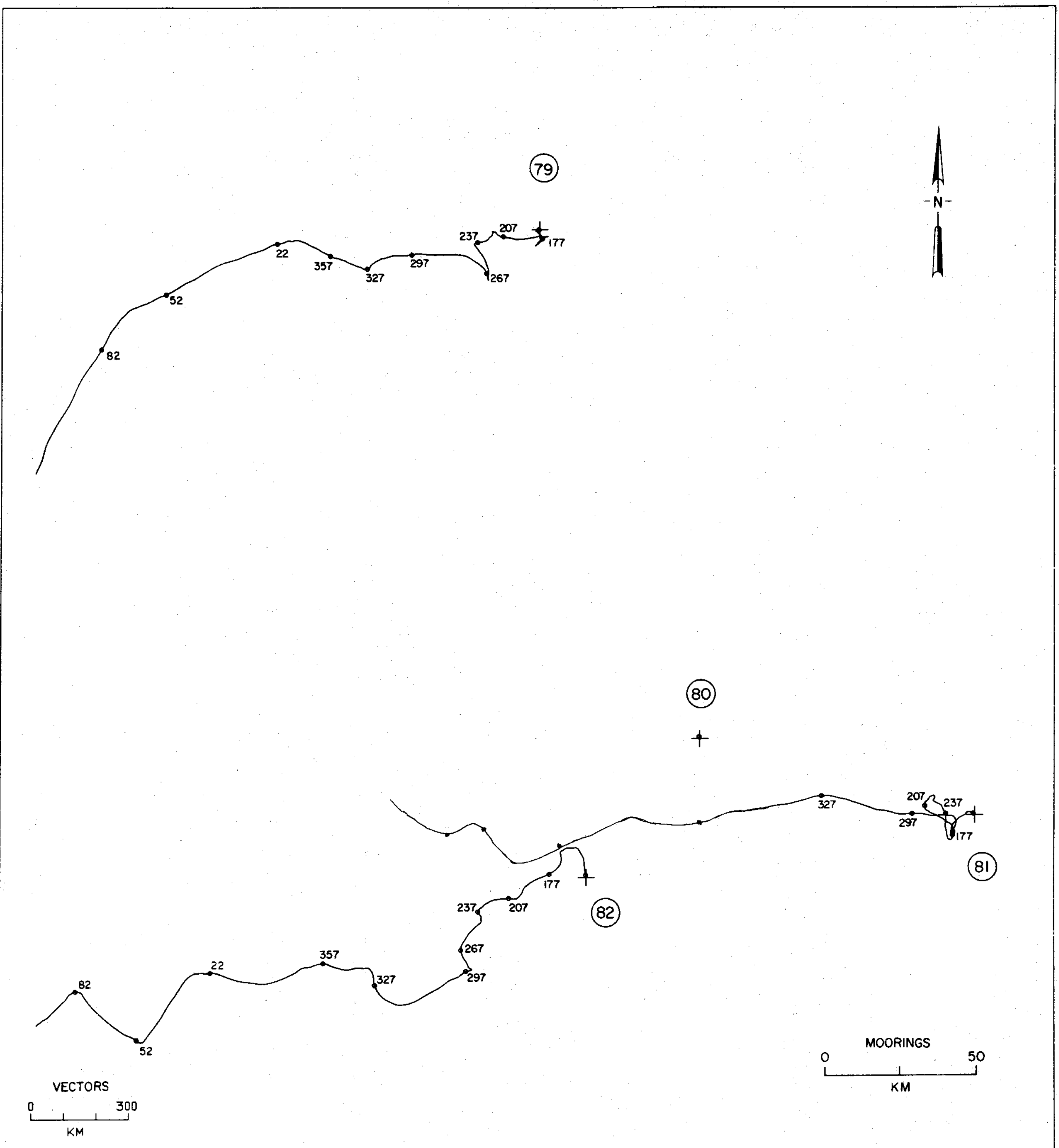


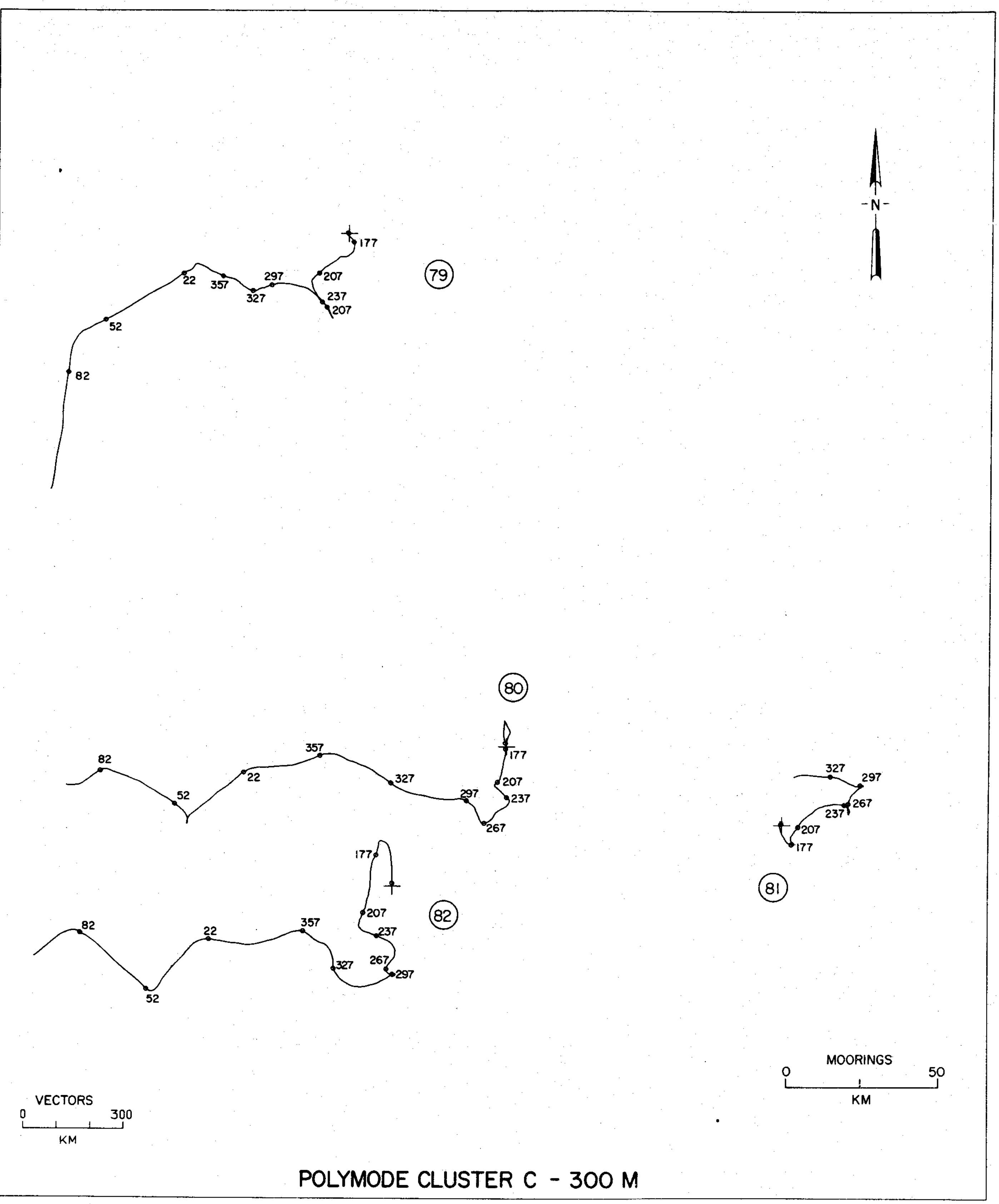
POLYMODE CLUSTER C - MOORING 81



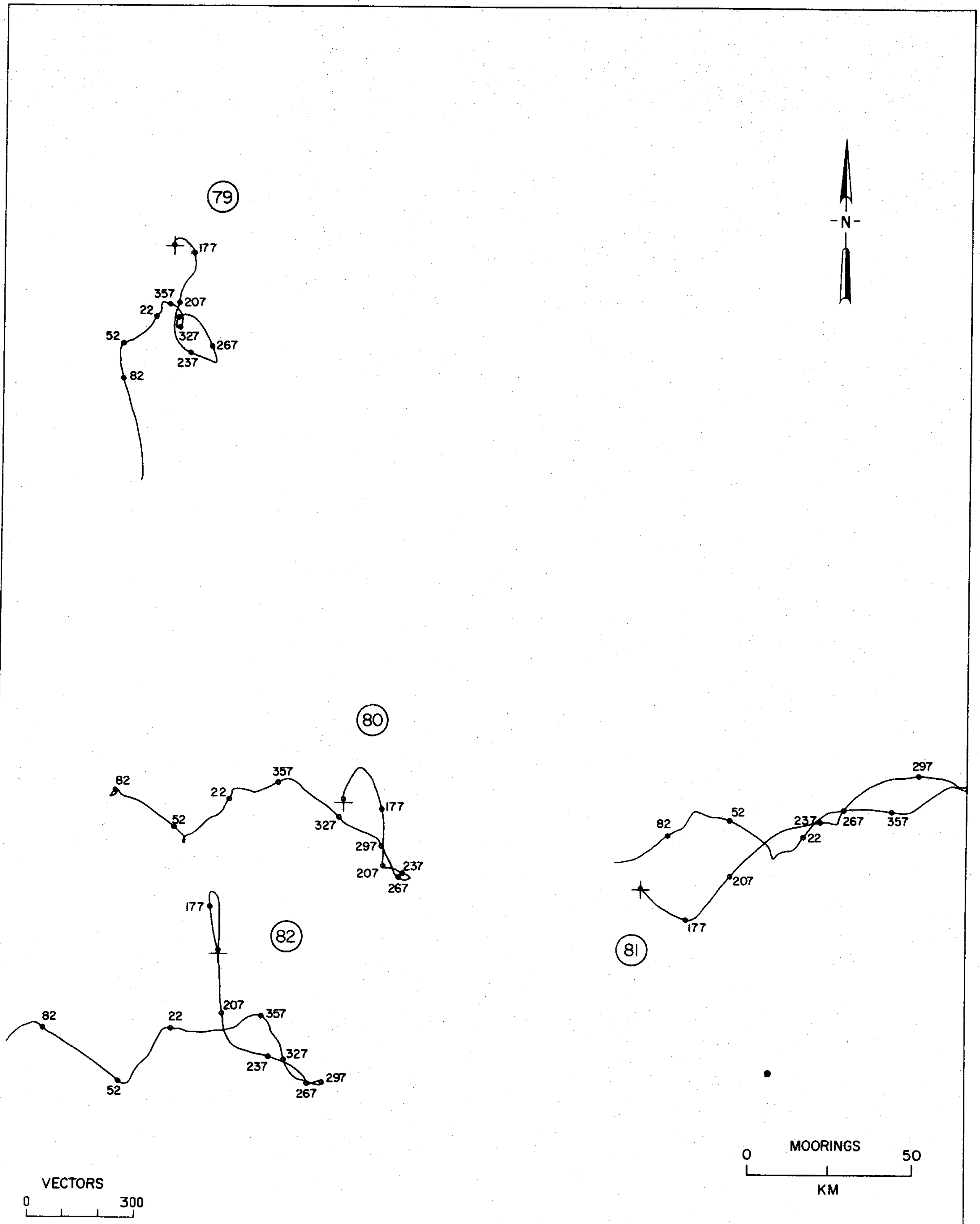
POLYMODE CLUSTER C - MOORING 82



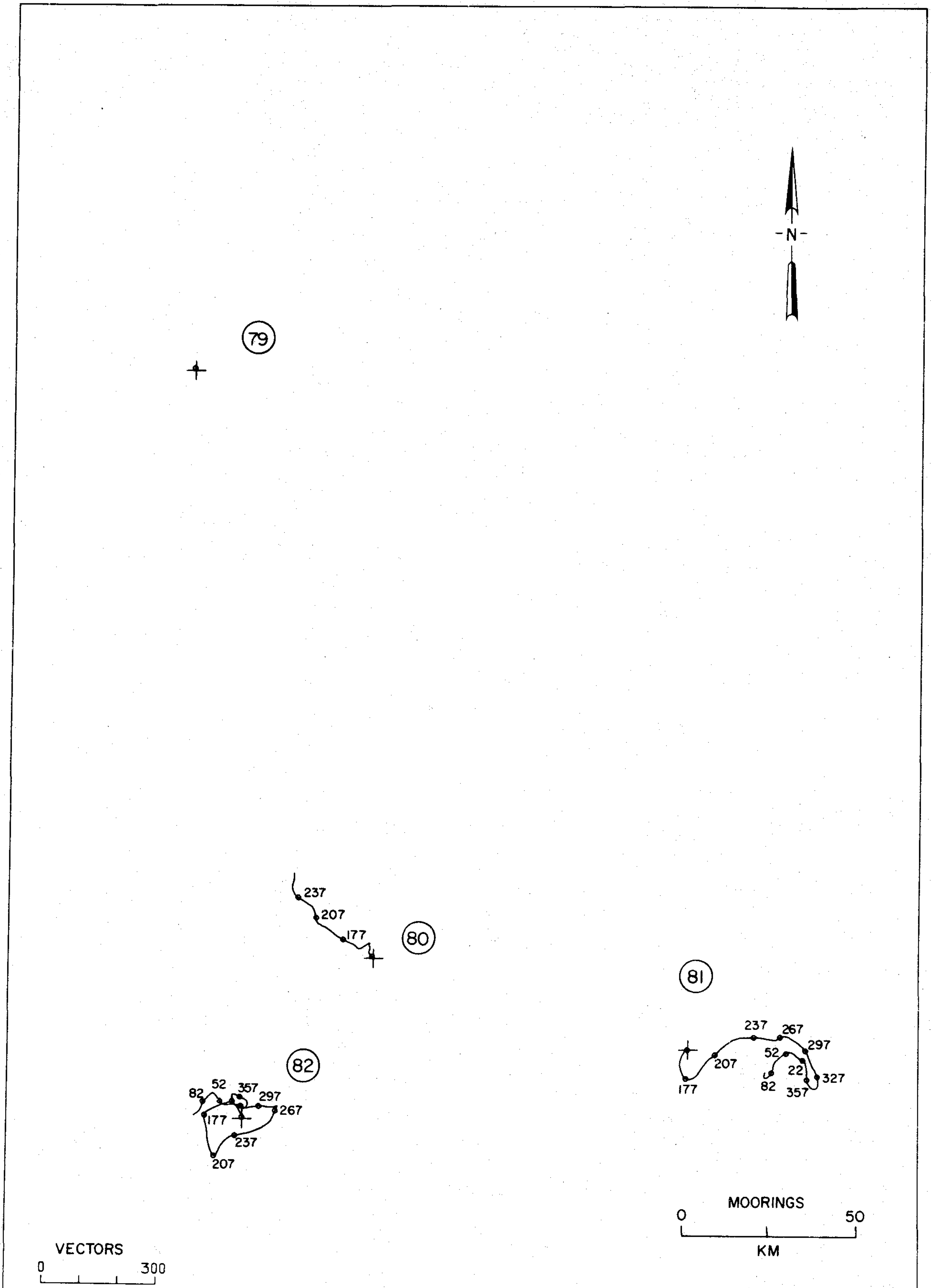
POLYMODE CLUSTER C - 150 M



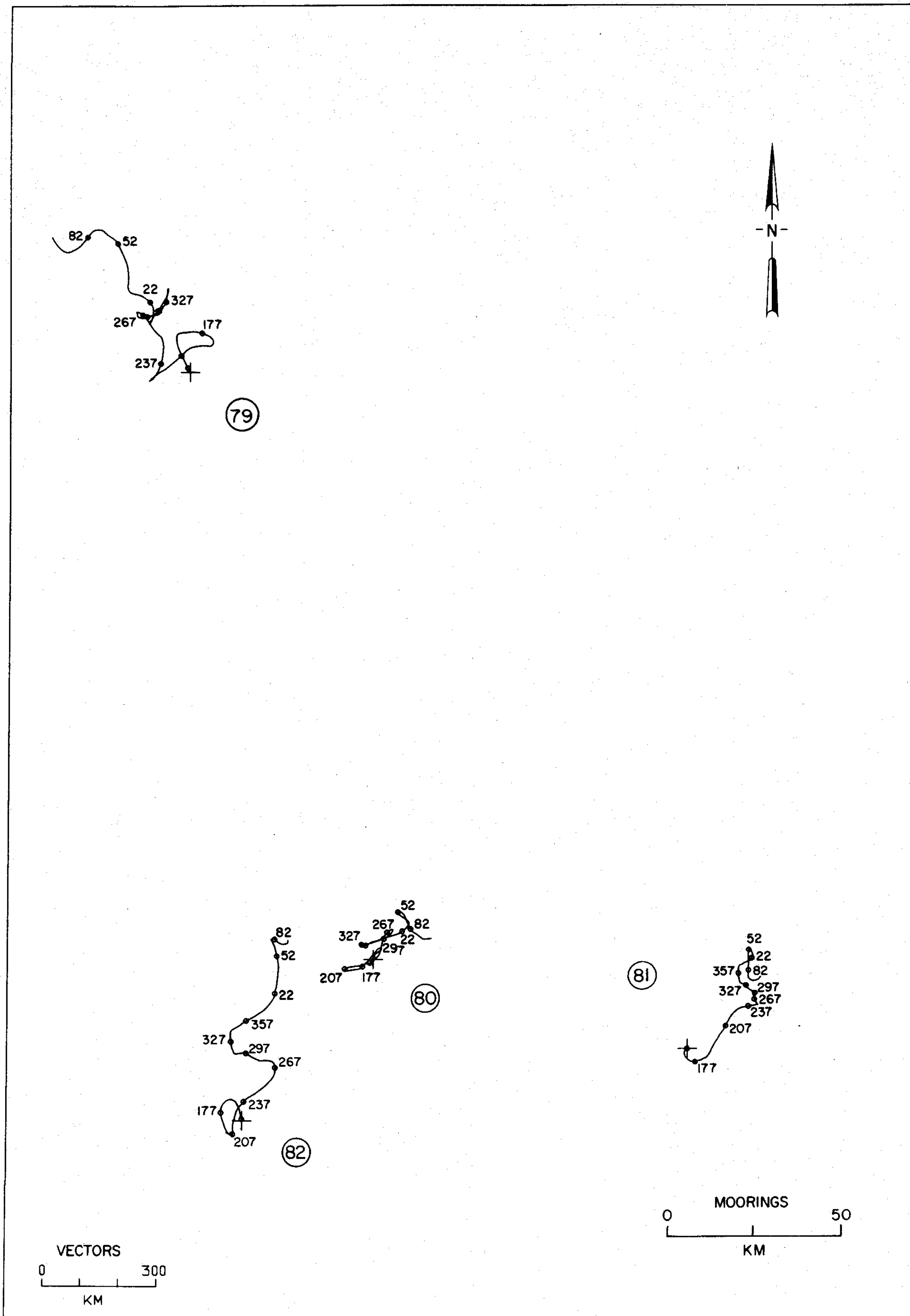
POLYMODE CLUSTER C - 300 M



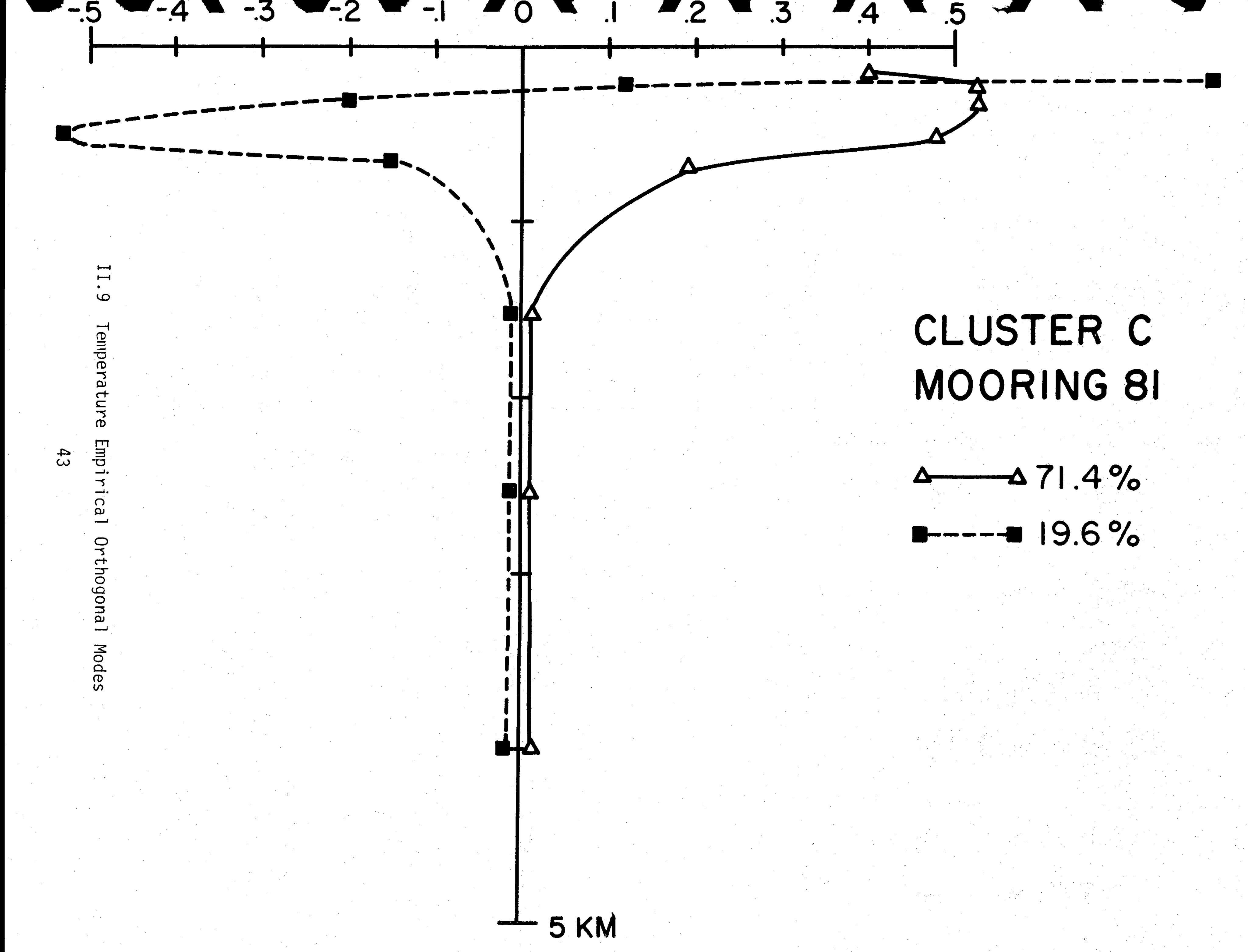
POLYMODE CLUSTER C - 500 M



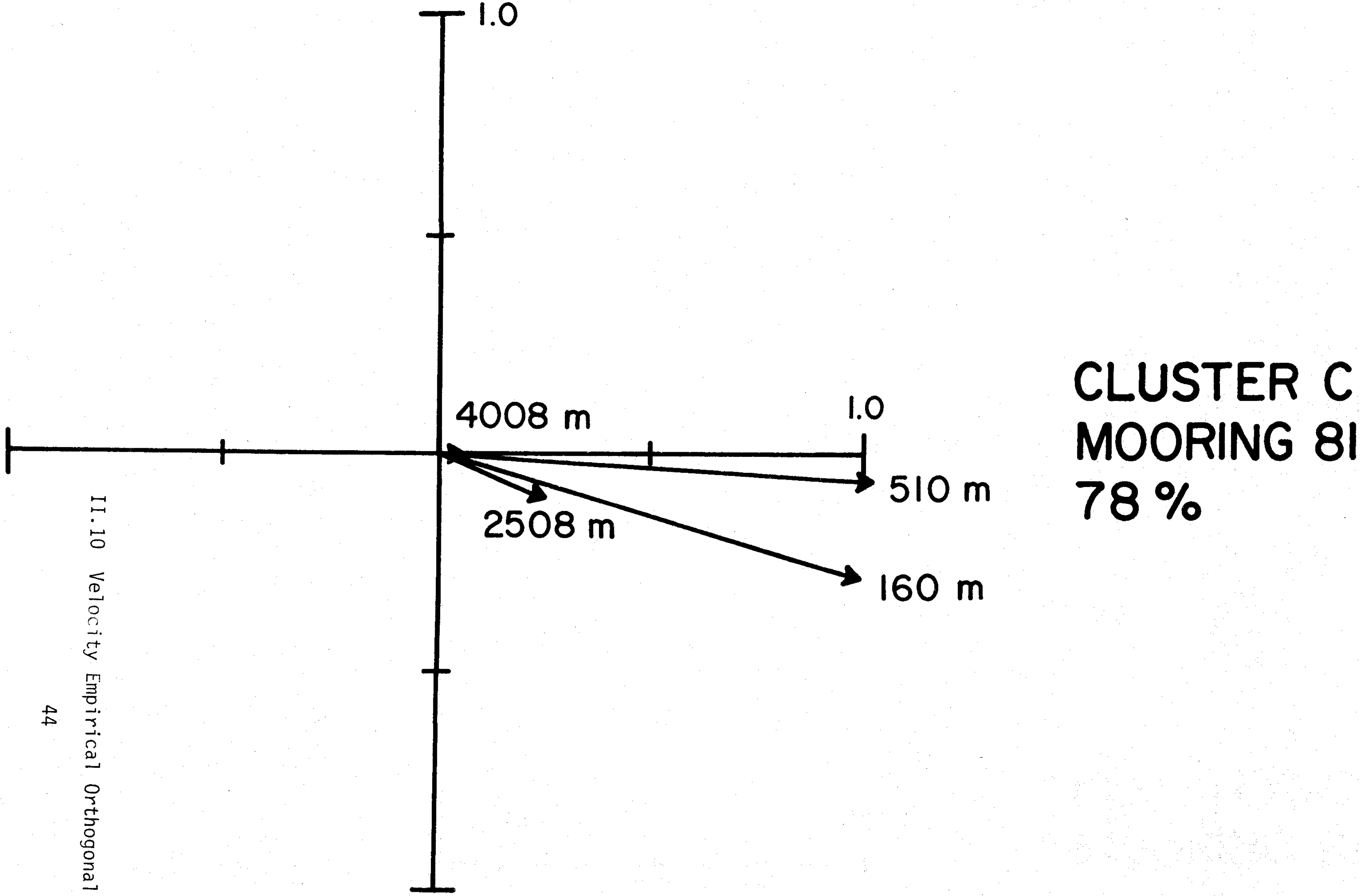
POLYMODE CLUSTER C - 2500 M



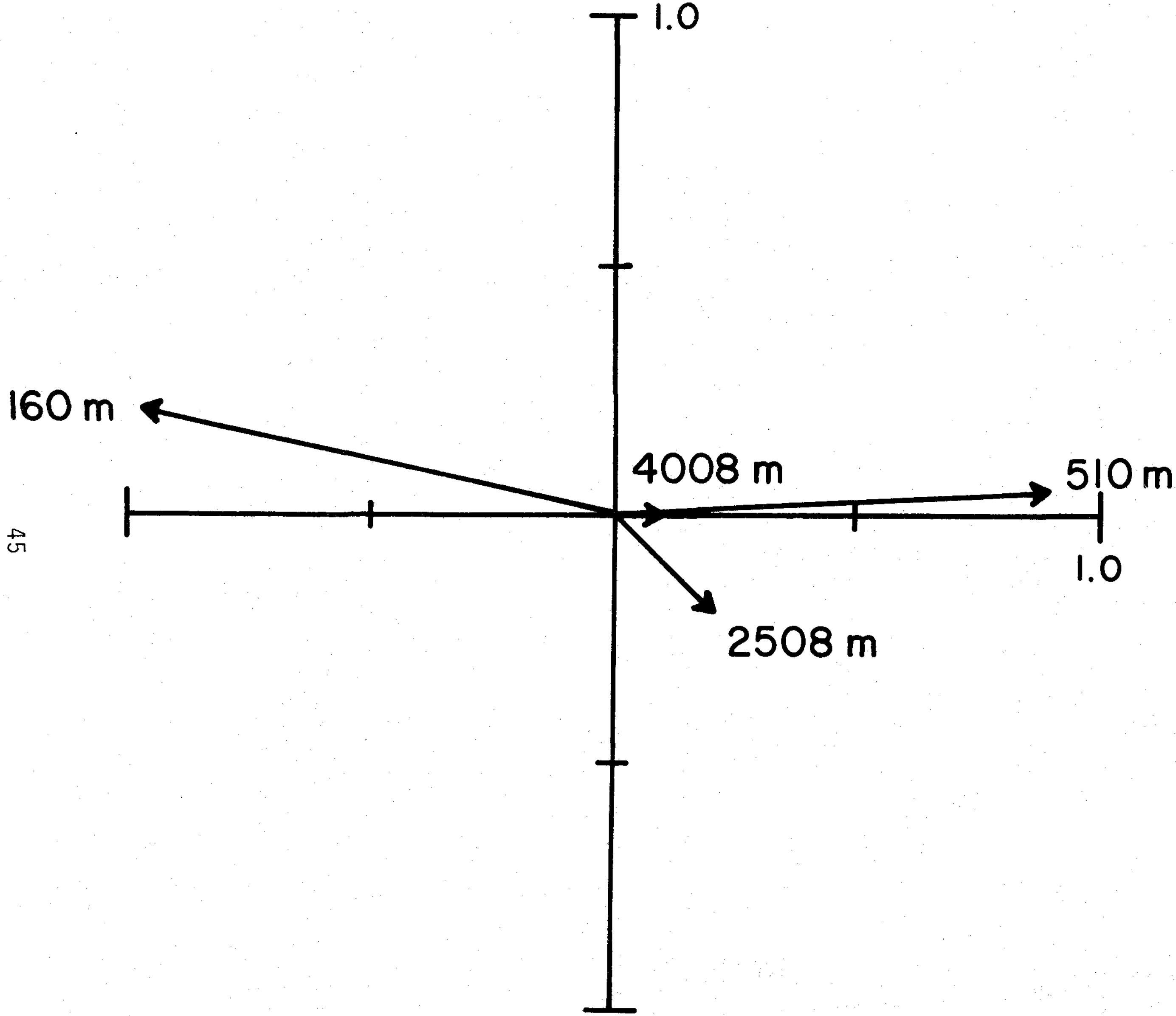
POLYMODE CLUSTER C - 4000 M



II.9 Temperature Empirical Orthogonal Modes

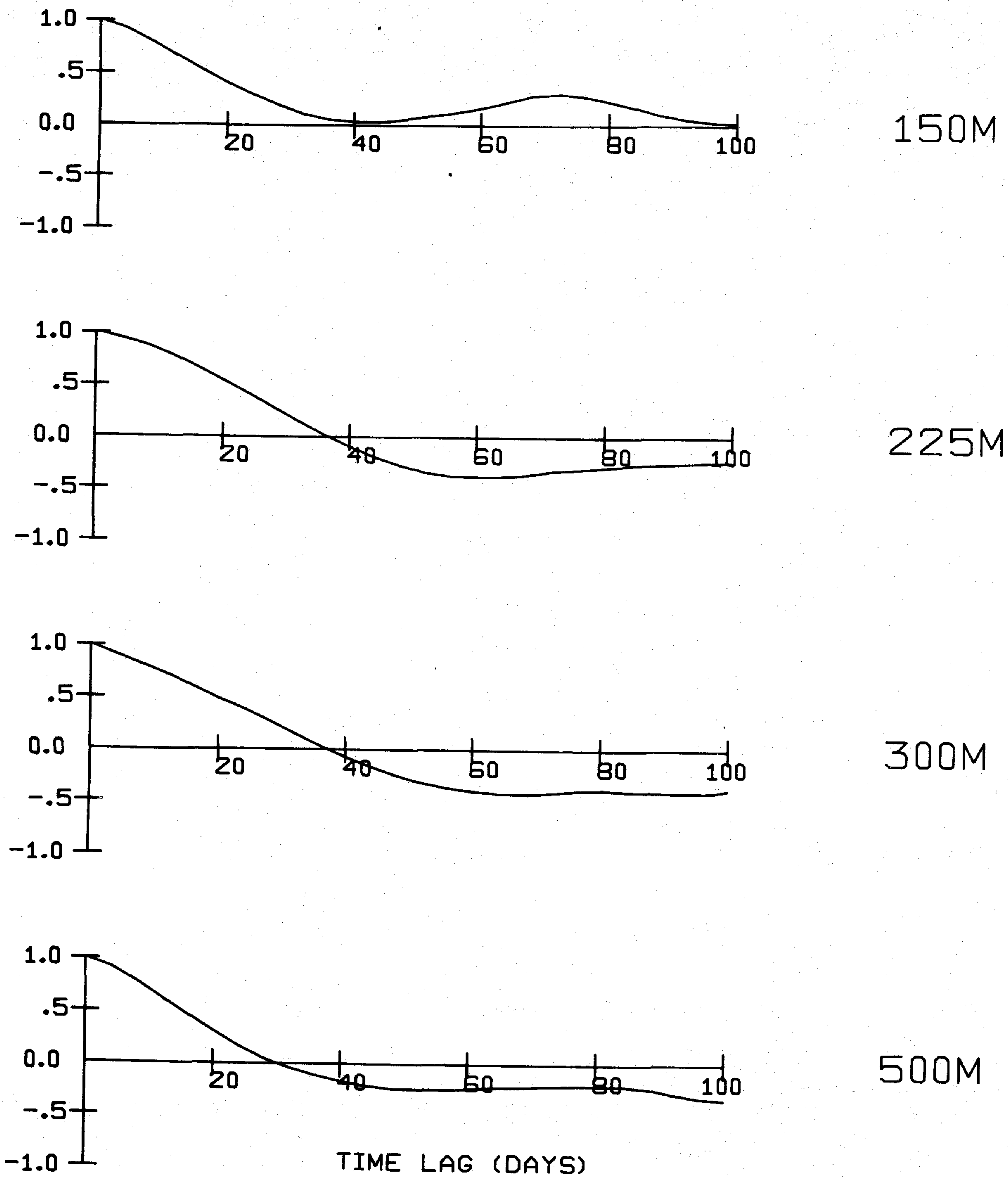


II.10 Velocity Empirical Orthogonal Modes

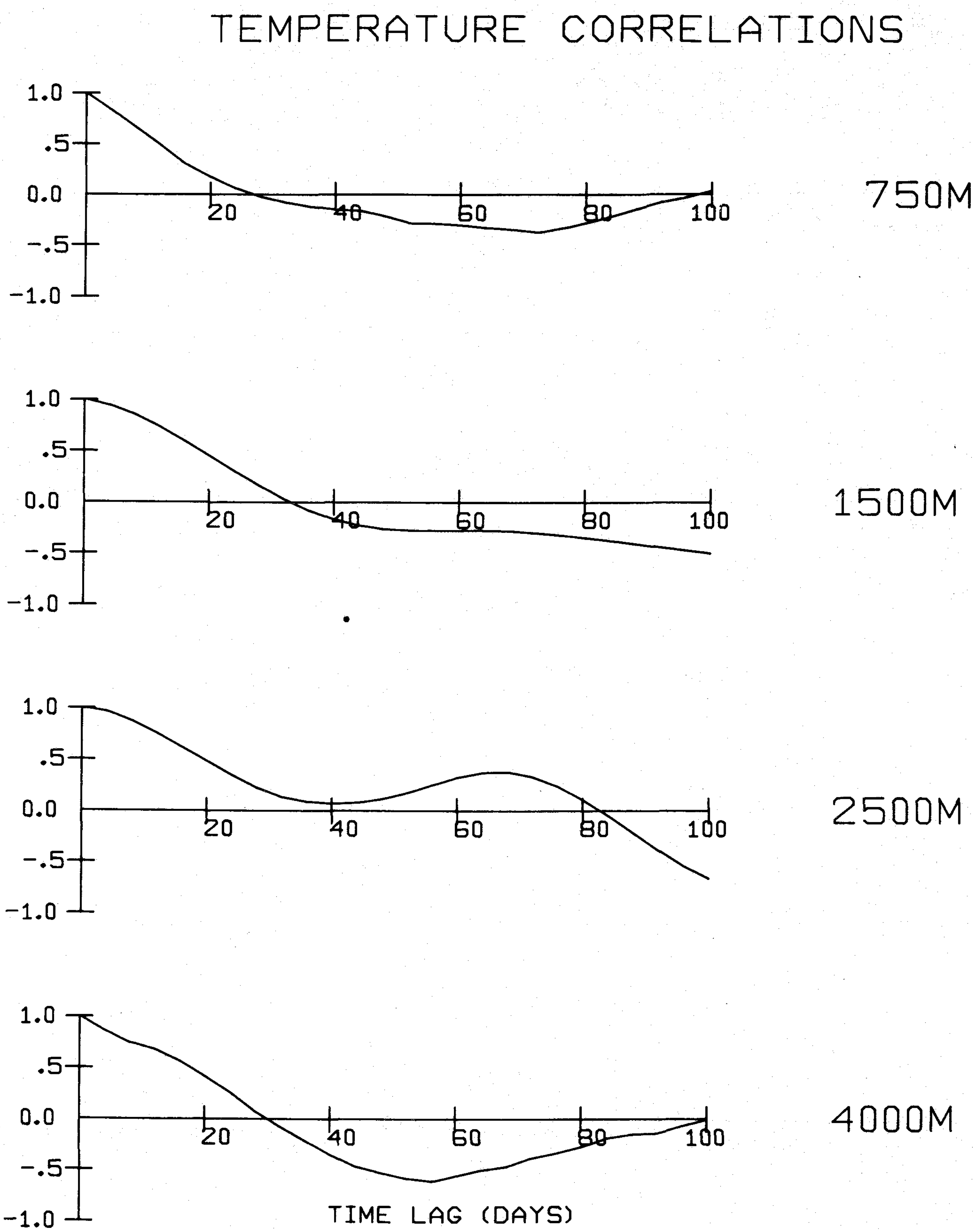


CLUSTER C
MOORING 81
17%

TEMPERATURE CORRELATIONS

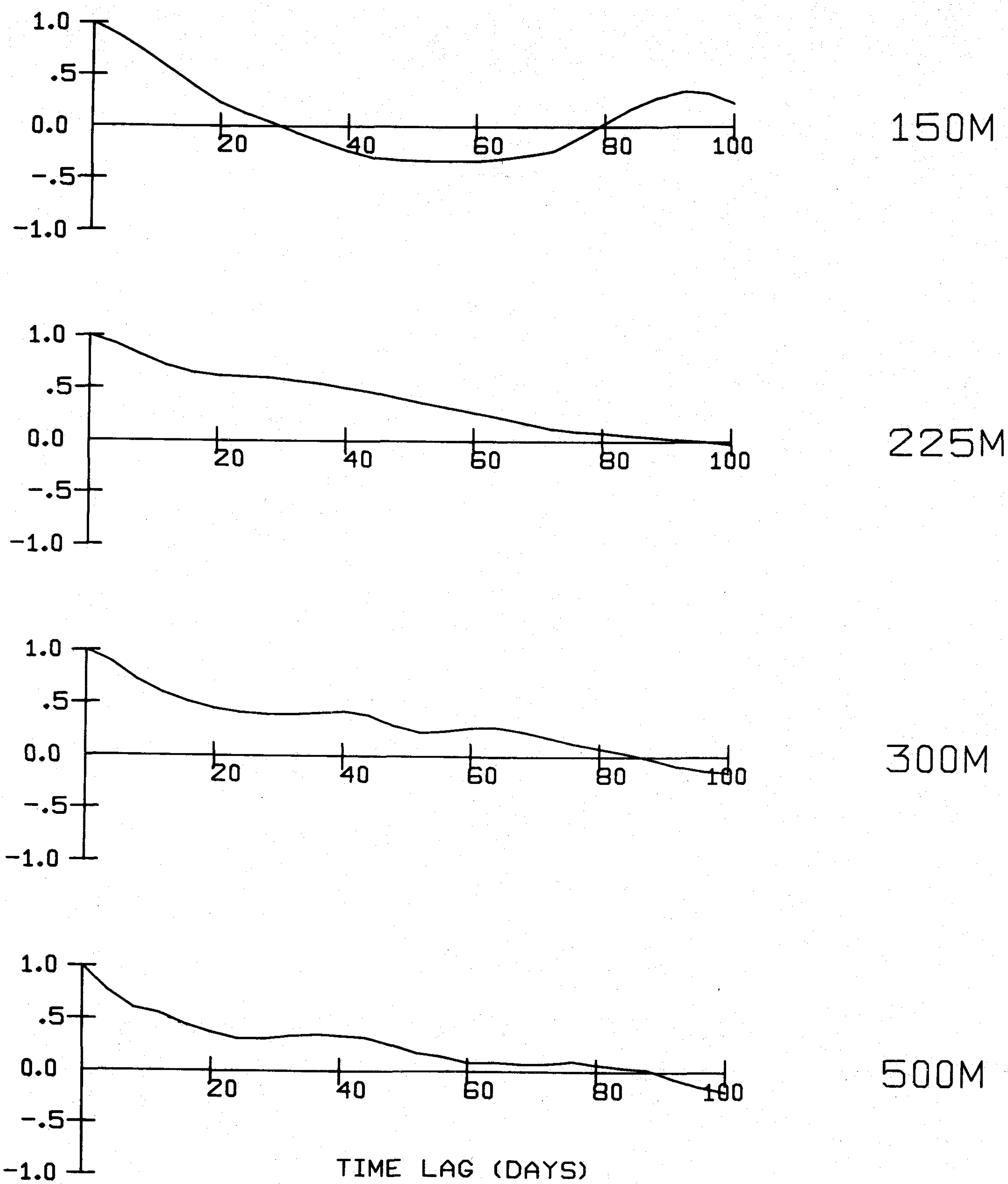


MOORING 79

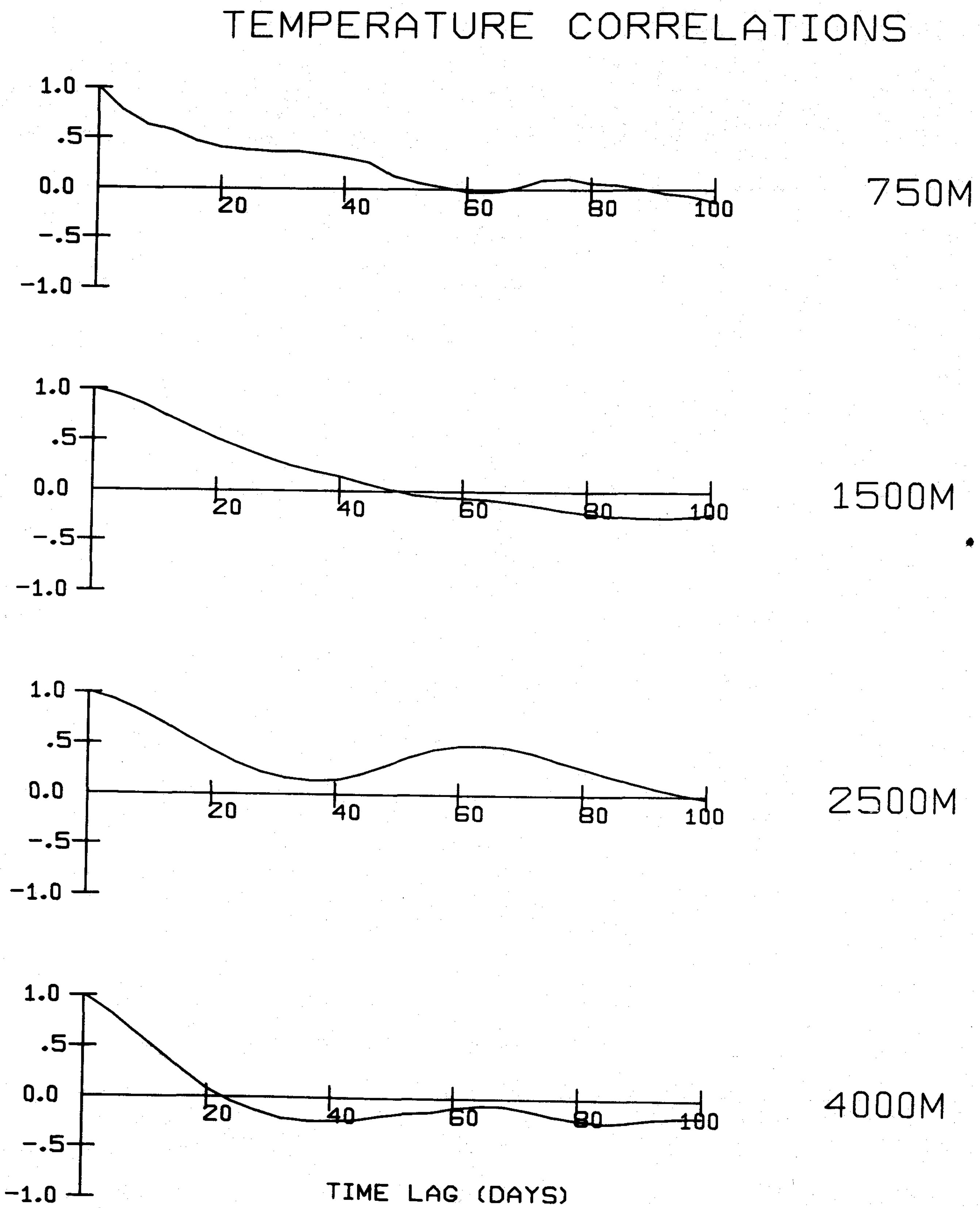

TEMPERATURE CORRELATIONS
1.0
.5
0.0
-.5
-1.0
20
40
60
80
100
750M
1500M
2500M
4000M
TIME LAG (DAYS)

MOORING 79

TEMPERATURE CORRELATIONS

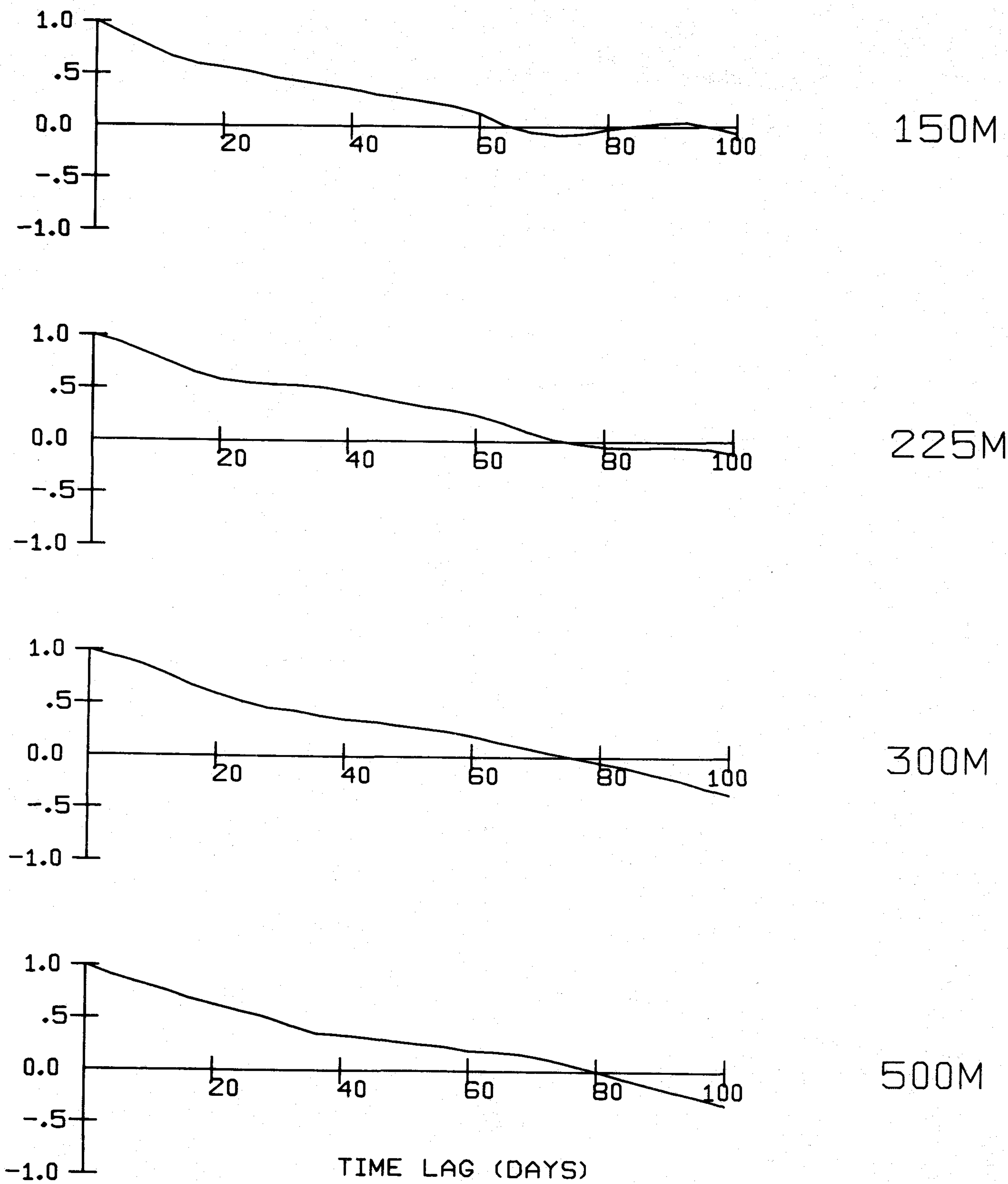


MOORING 81


TEMPERATURE CORRELATIONS
1.0
.5
0.0
-.5
-1.0
20
40
60
80
100
750M
1500M
2500M
4000M
TIME LAG (DAYS)

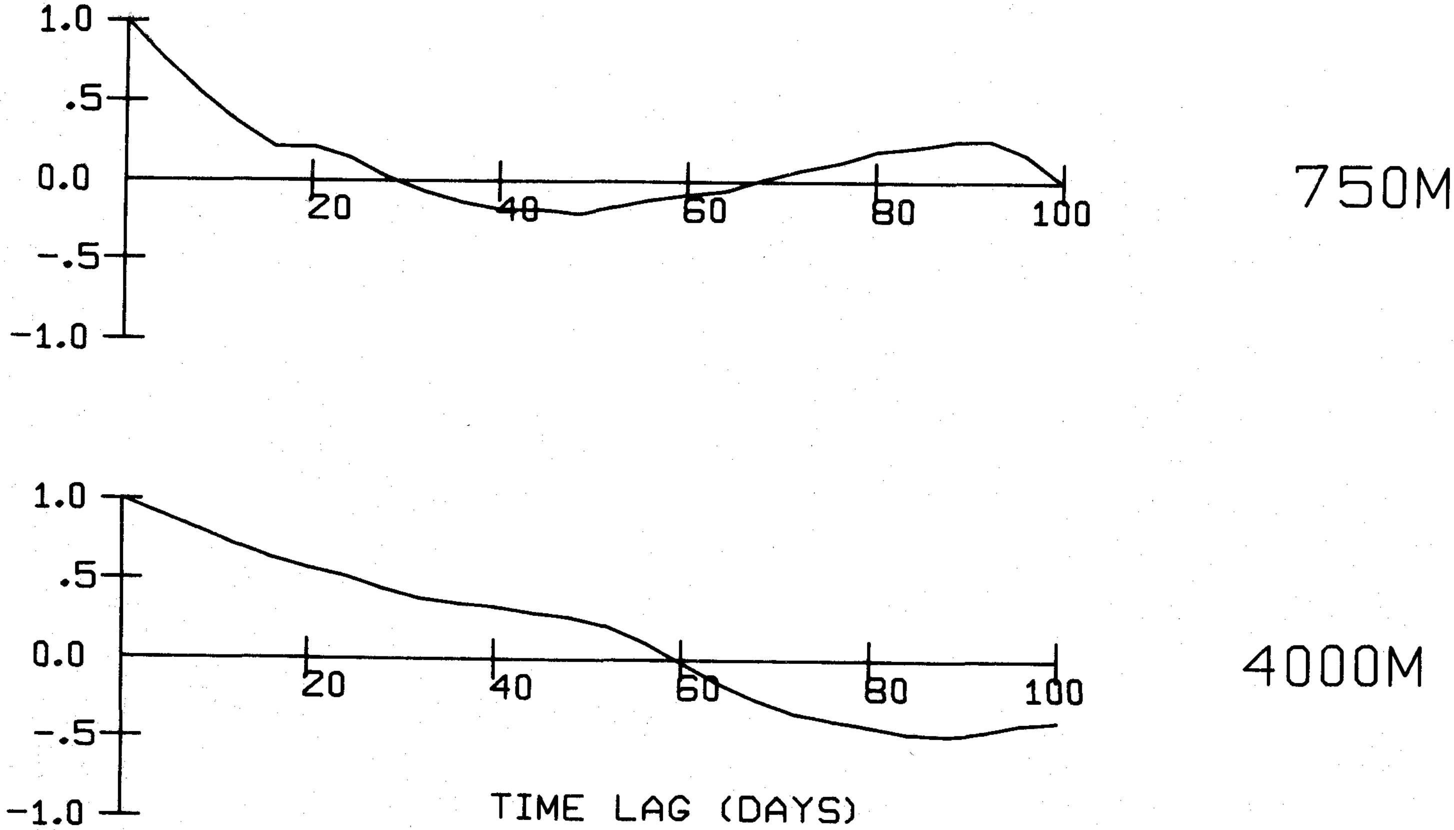
MOORING 81

TEMPERATURE CORRELATIONS



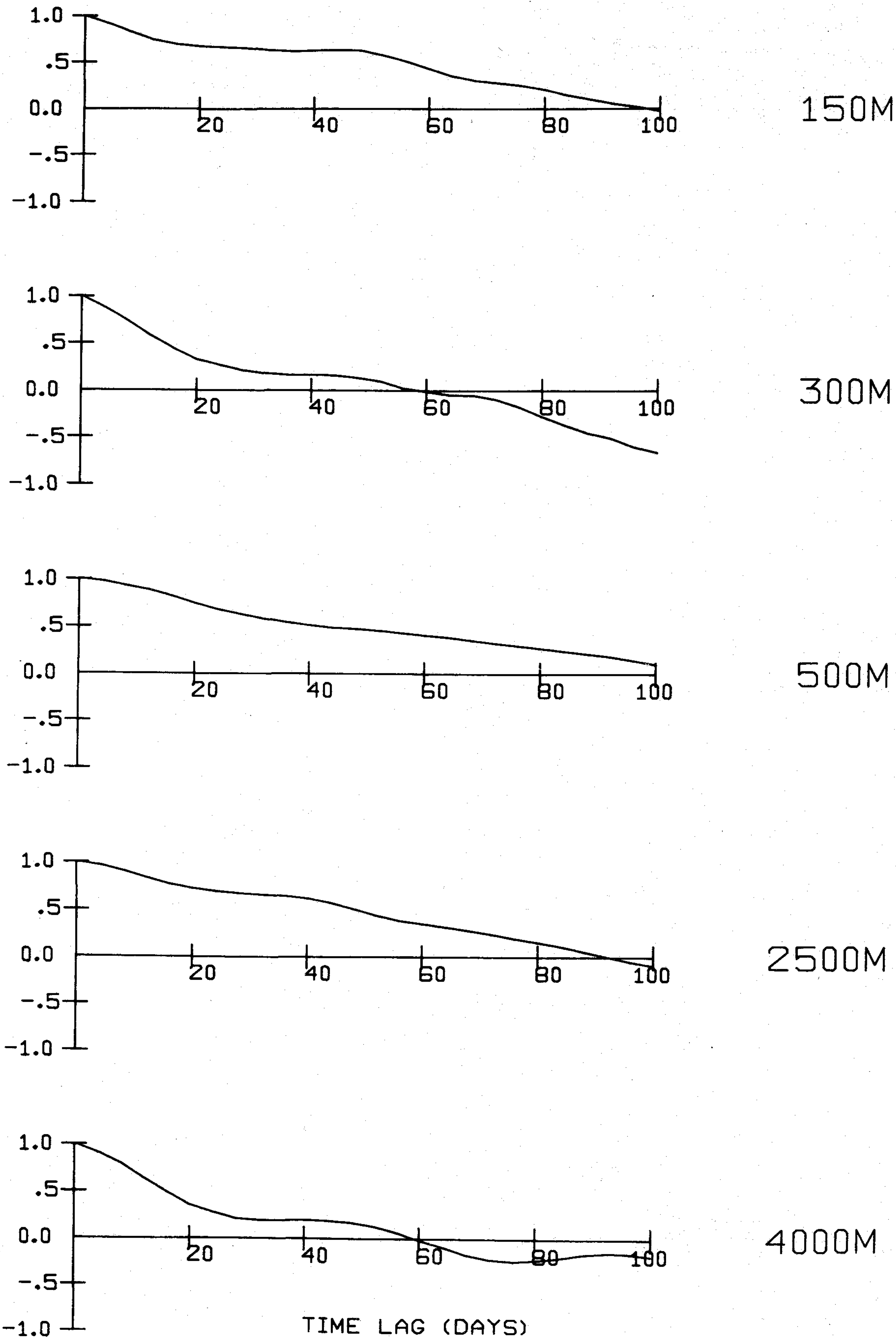
MOORING 82

TEMPERATURE CORRELATIONS

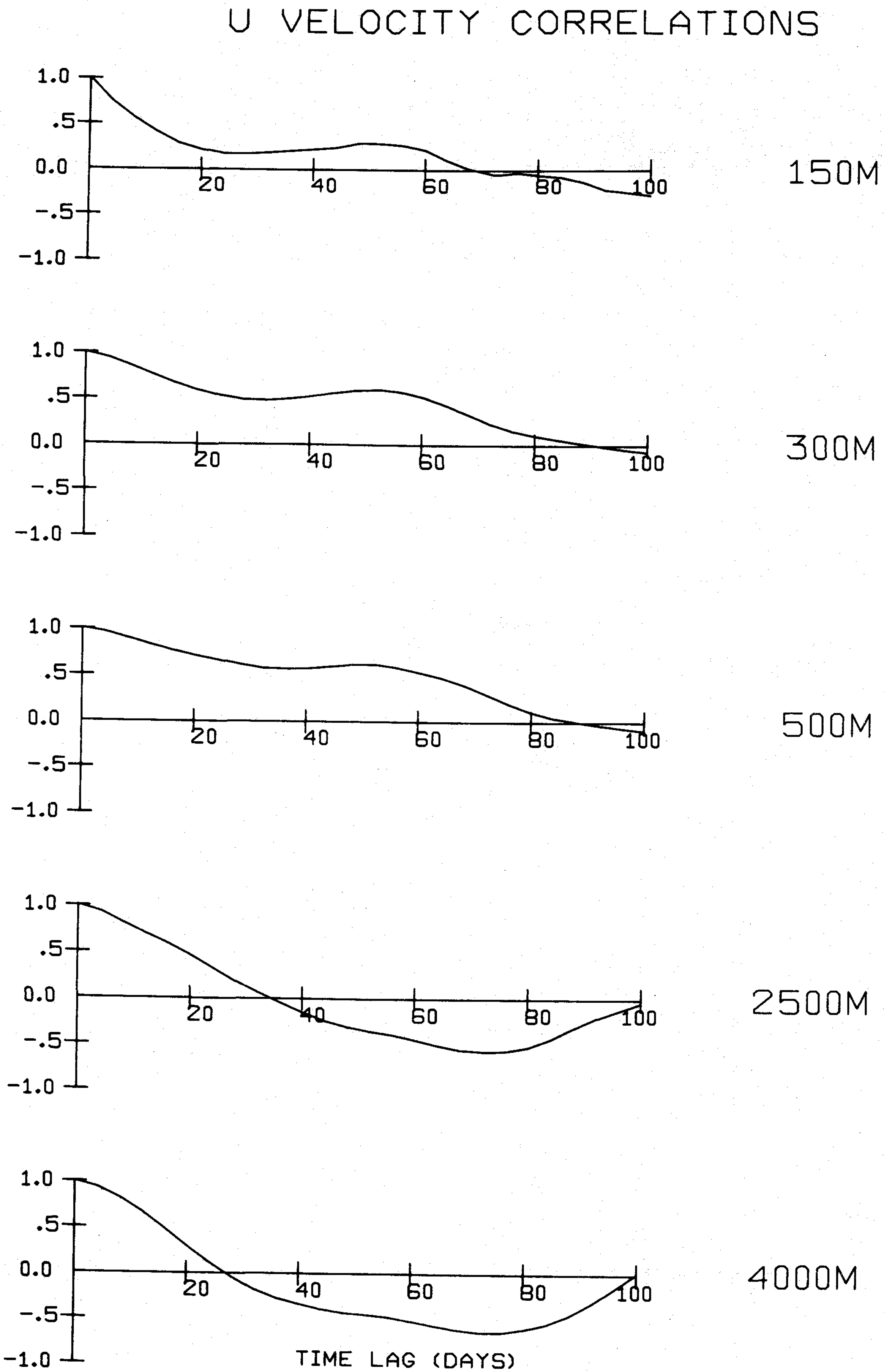


MOORING 82

U VELOCITY CORRELATIONS

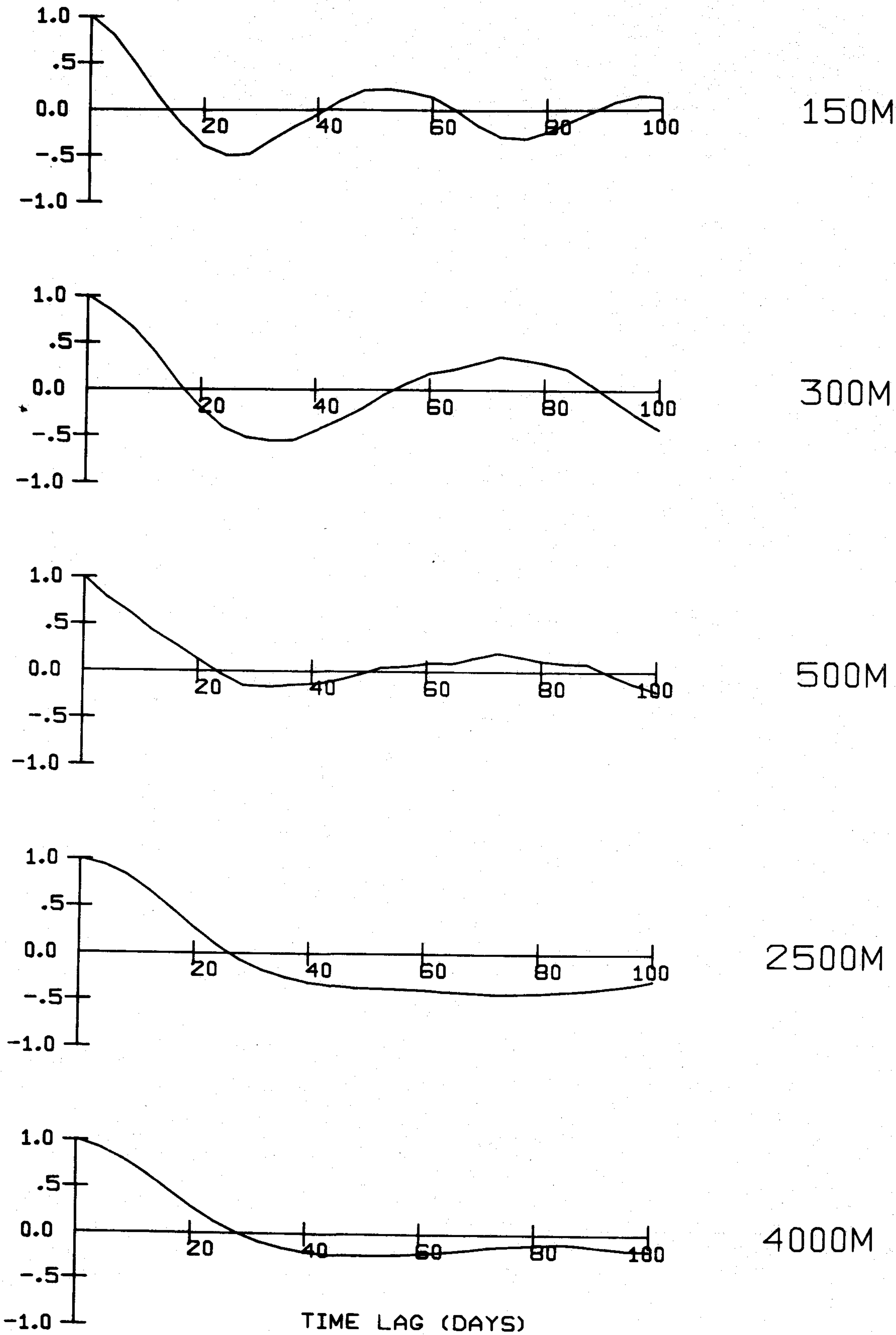


MOORING 81


U VELOCITY CORRELATIONS
1.0
.5
0.0
-.5
-1.0
20
40
60
80
100
150M
300M
500M
2500M
4000M
TIME LAG (DAYS)

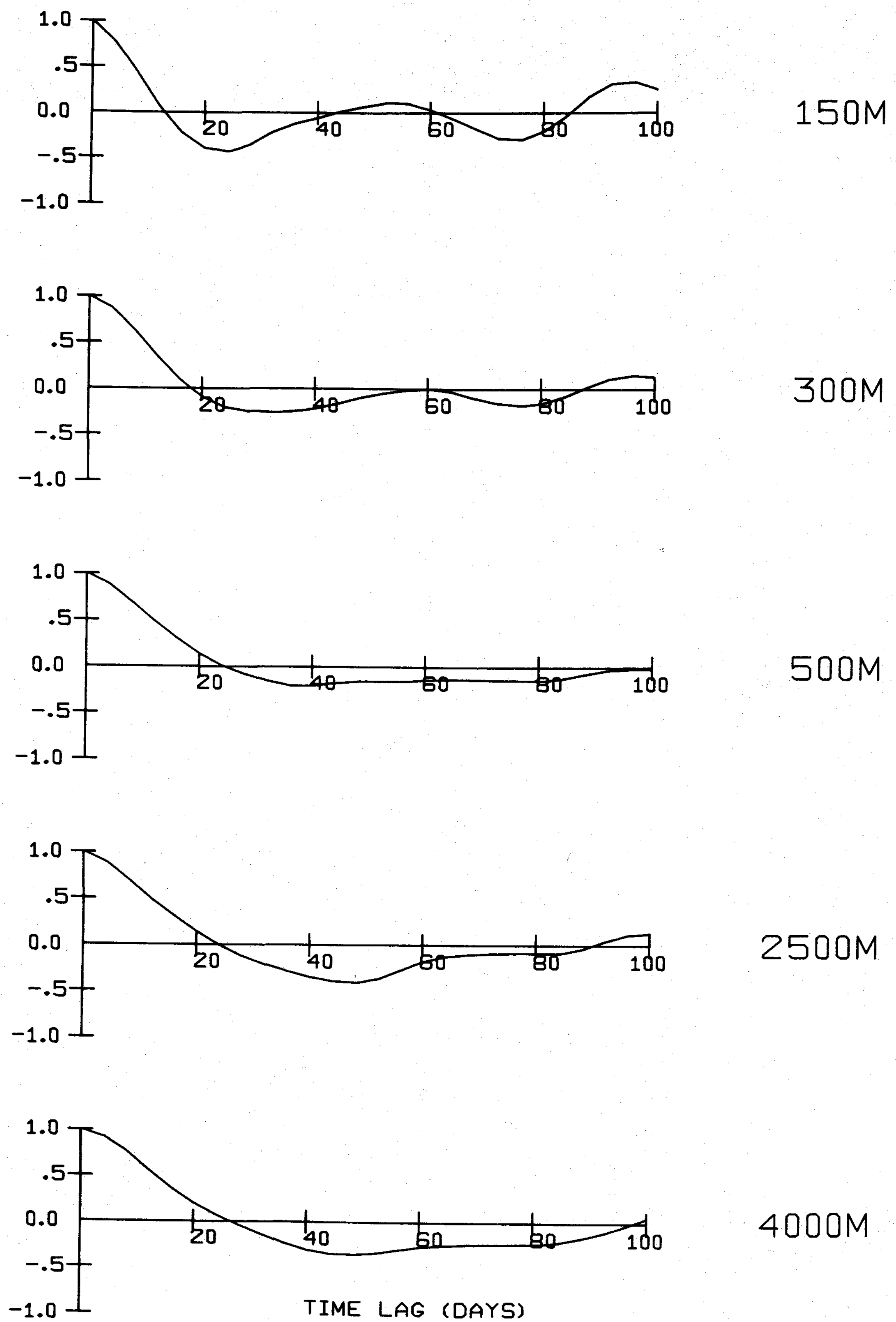
MOORING 82

V VELOCITY CORRELATIONS

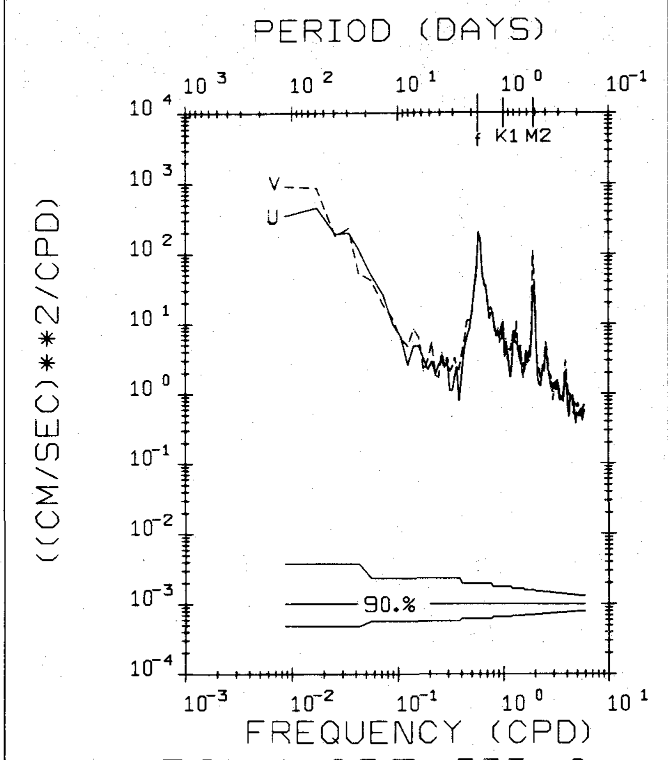


MOORING 81

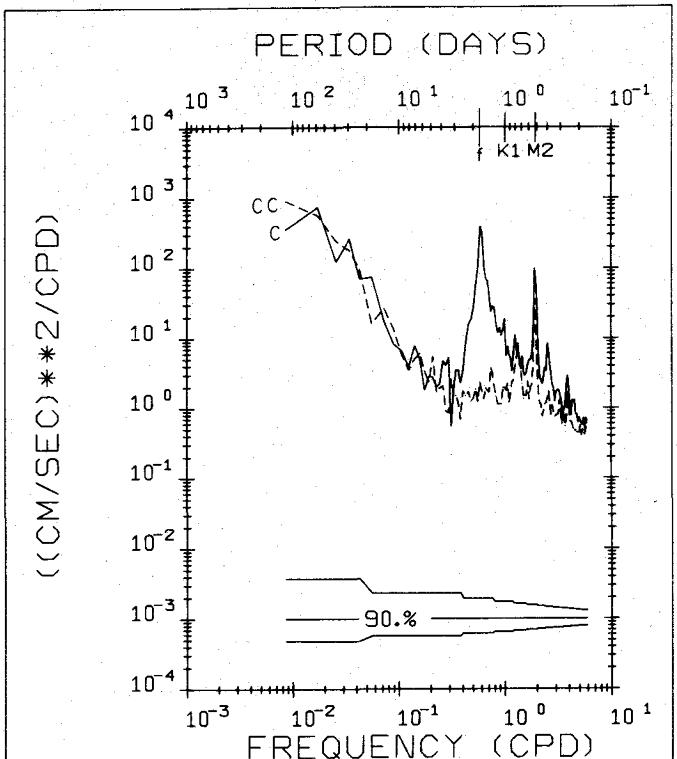
V VELOCITY CORRELATIONS



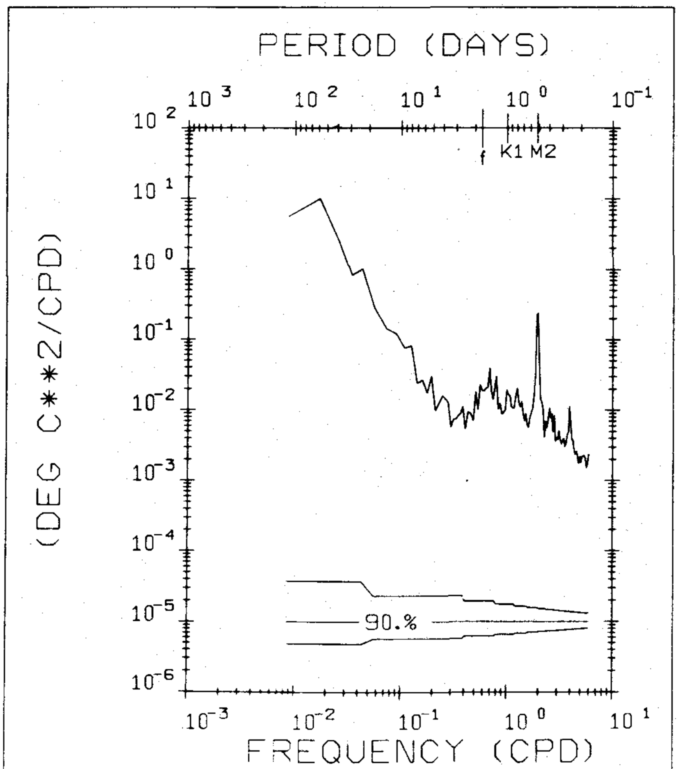
MOORING 82



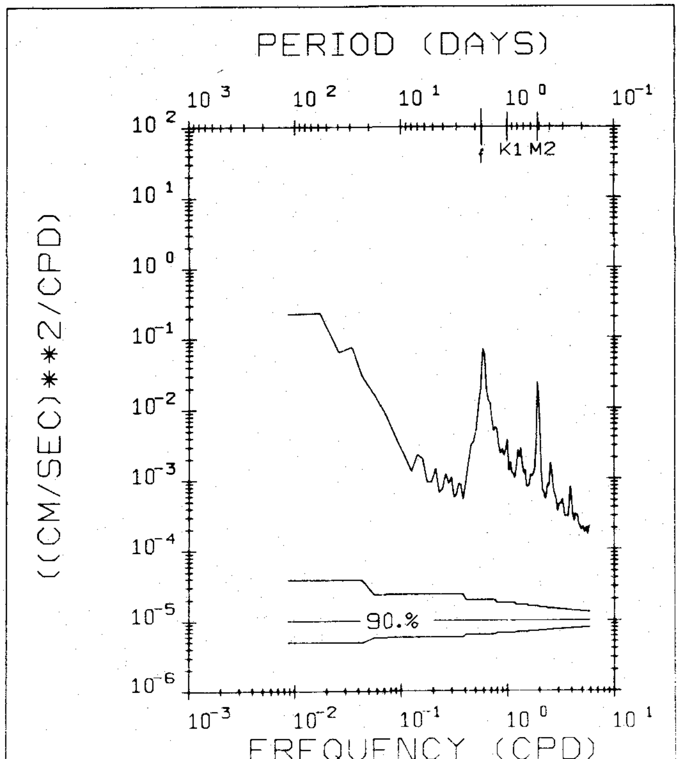
POLYMODE III-C
7901 VELOCITY



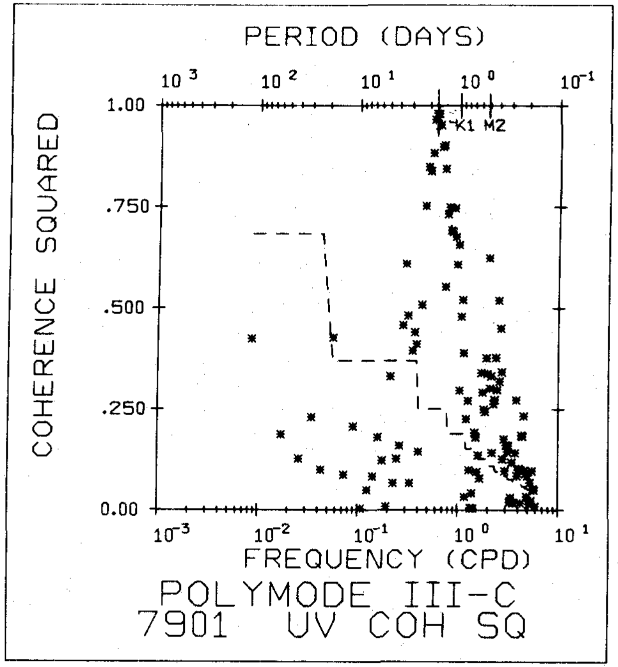
POLYMODE III-C
7901 ROTARY VEL

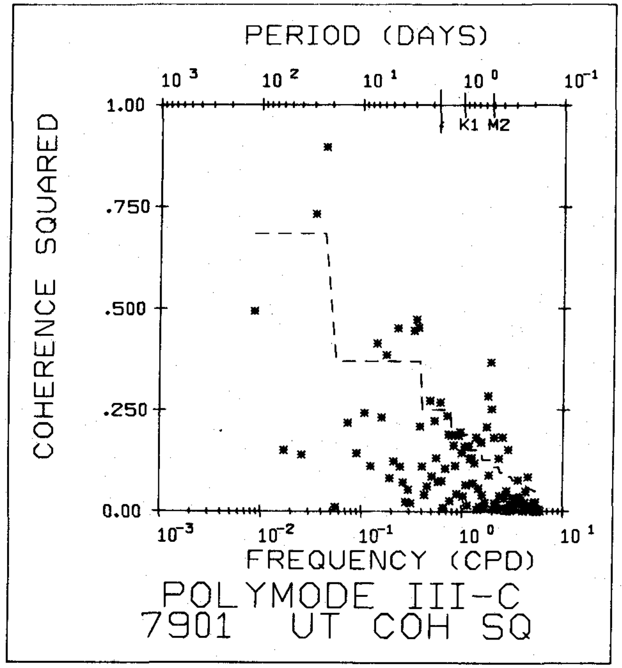


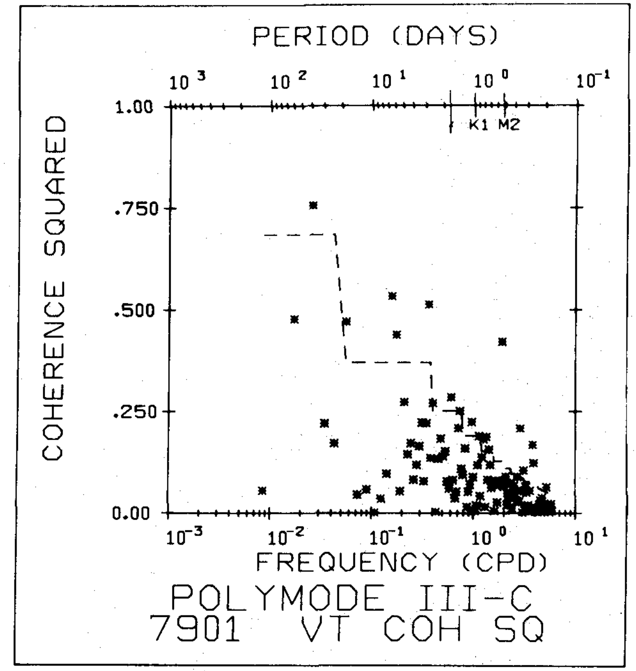
POLYMODE III-C
7901 TEMP

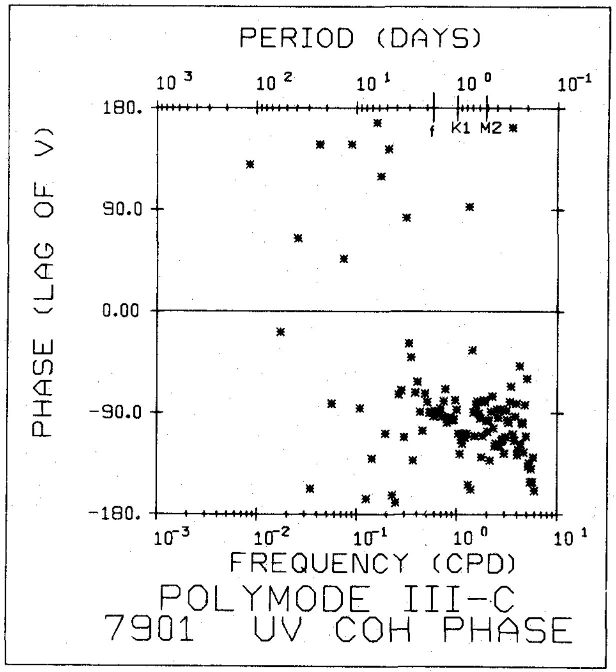


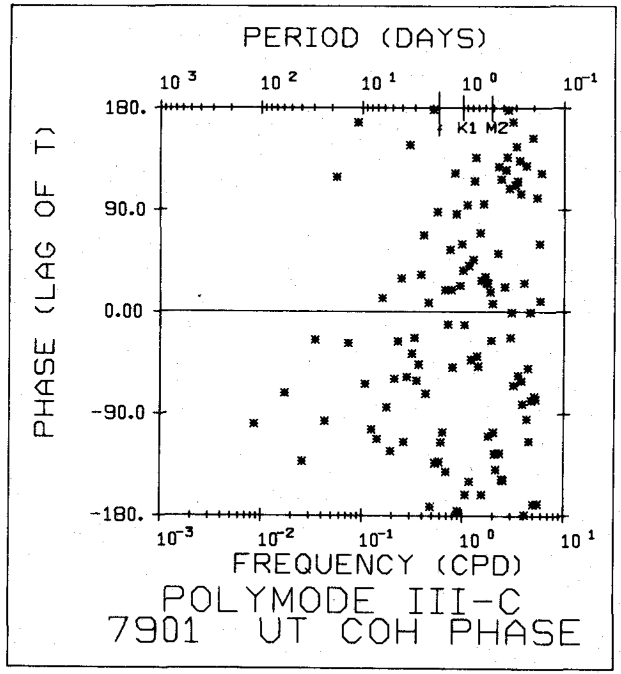
POLYMODE III-C
7901 K.E.-NORM

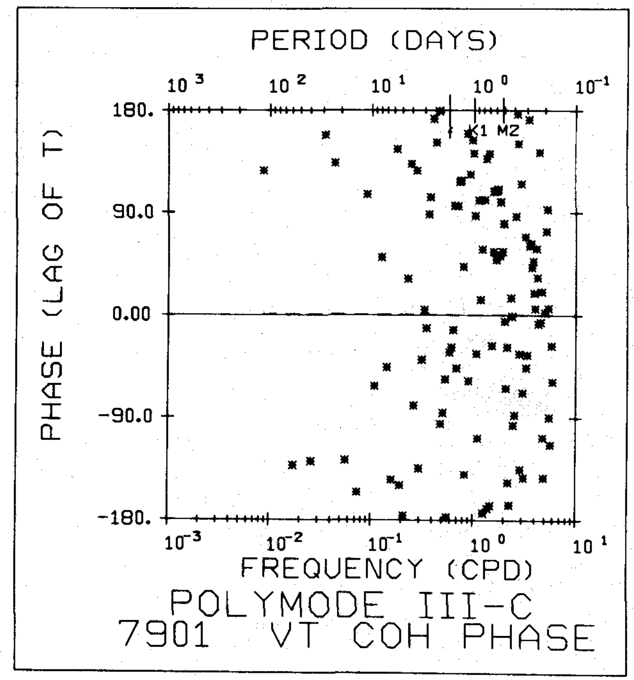

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 UV COH SQ

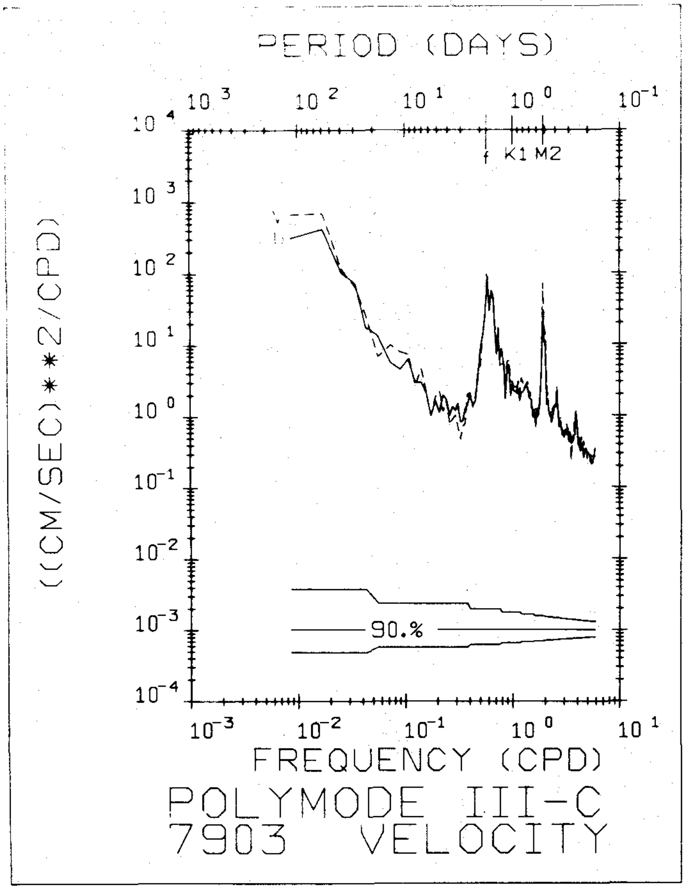

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 UT COH SQ

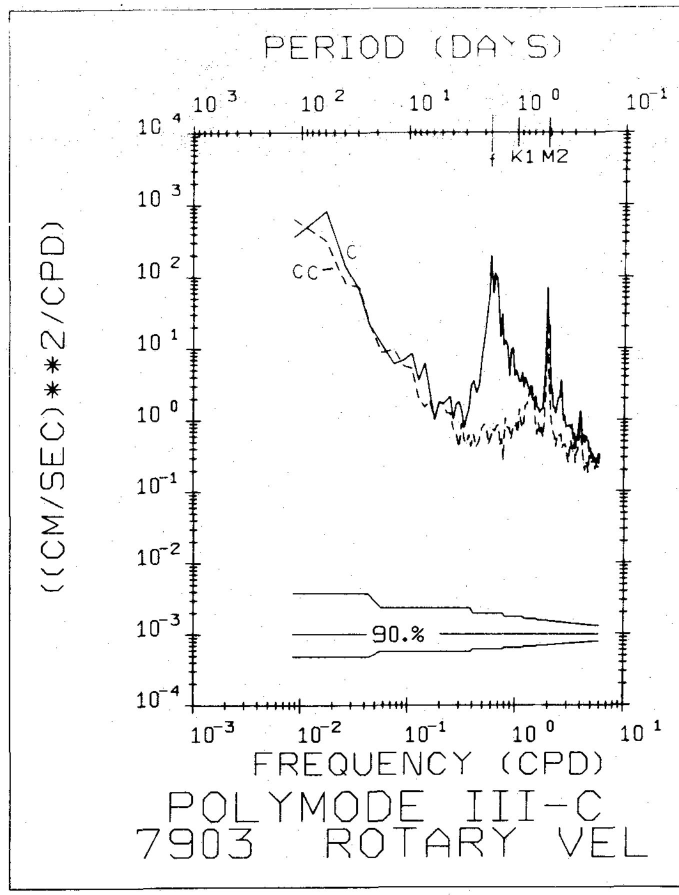

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 VT COH SQ

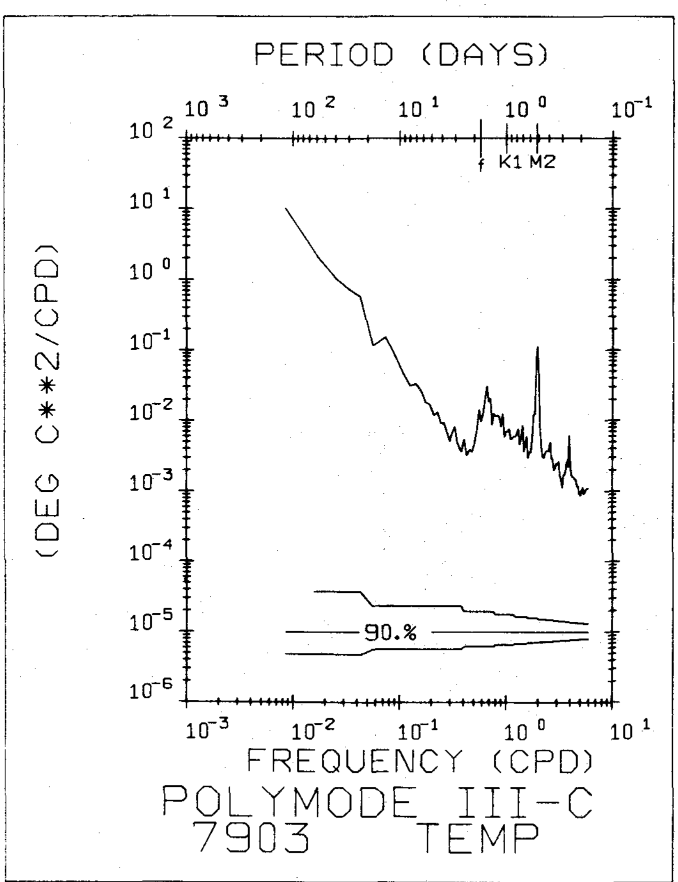

PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 UV COH PHASE

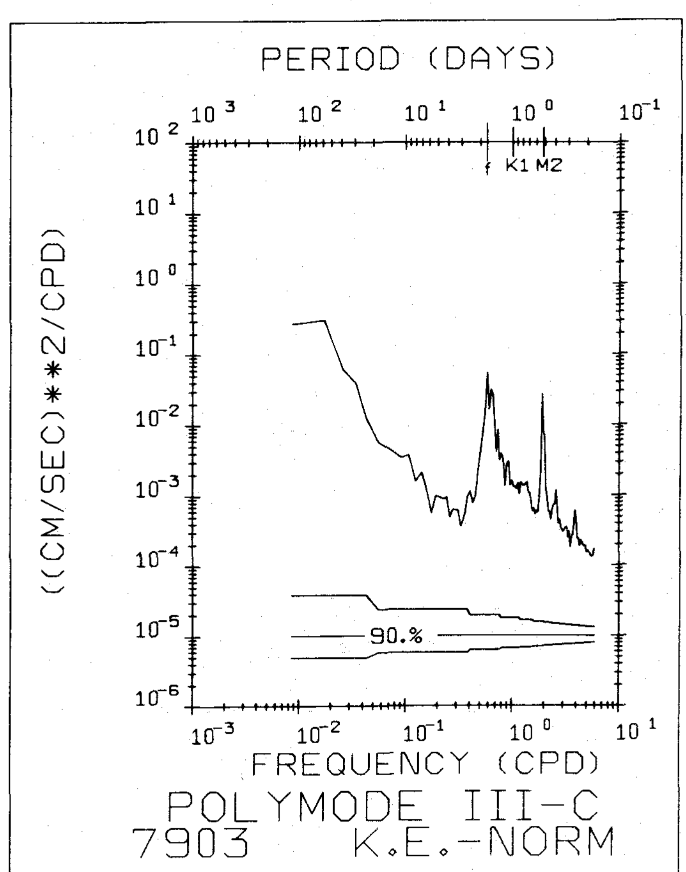

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 UT COH PHASE

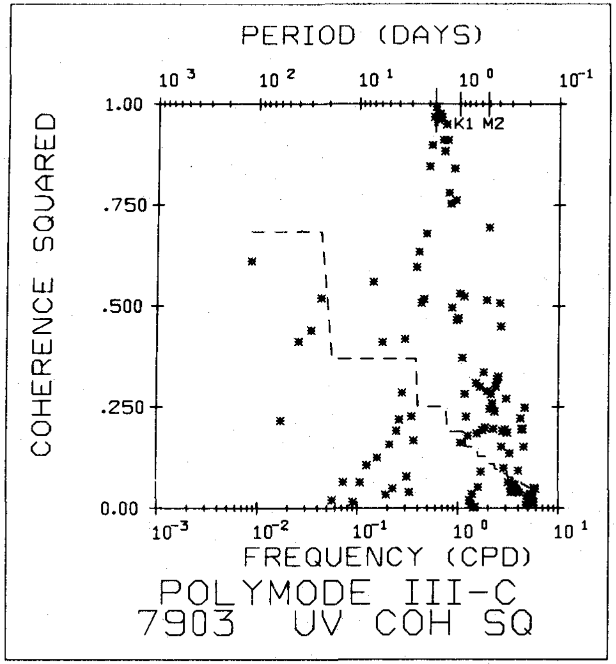

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7901 VT COH PHASE

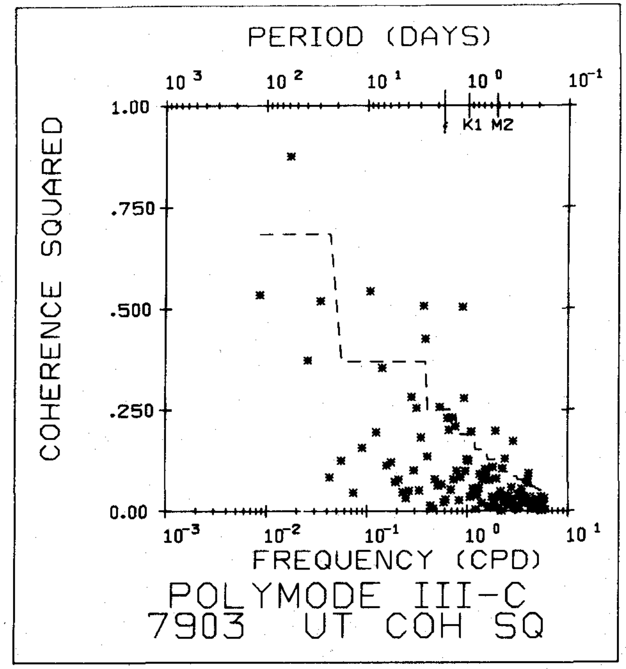

PERIOD (DAYS)
K1 M2
((CM/SEC)**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
7903 VELOCITY

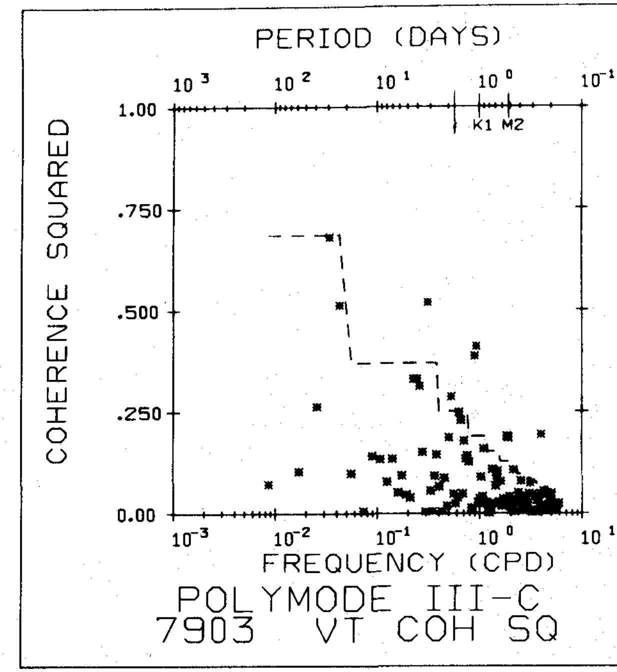

PERIOD (DAYS)
K1 M2
((CM/SEC)**2/CPD)
C
CC
90.%
FREQUENCY (CPD)
POLYMODE III-C
7903 ROTARY VEL

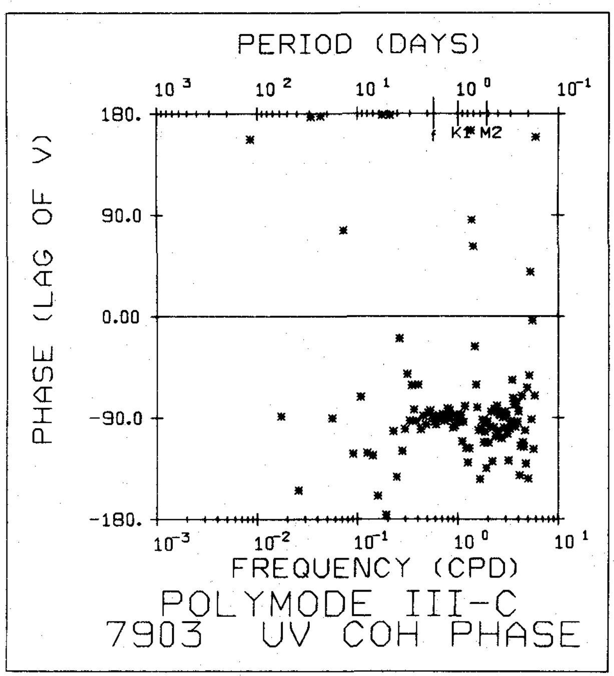

PERIOD (DAYS)
K1 M2
(DEG C**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
7903 TEMP

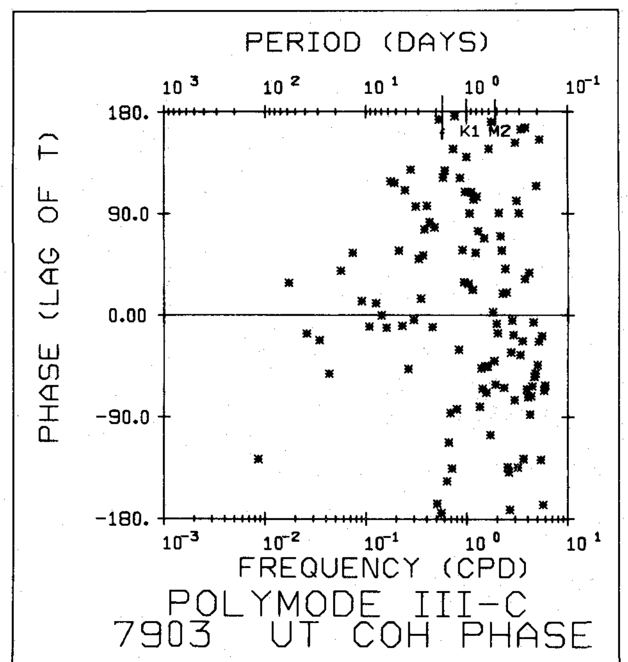

PERIOD (DAYS)
K1 M2
((CM/SEC)**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
7903 K.E.-NORM

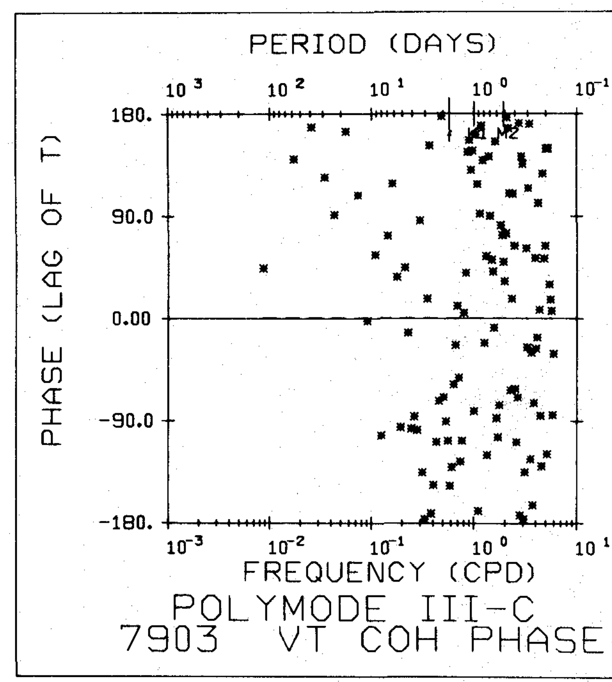

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 UV COH SQ

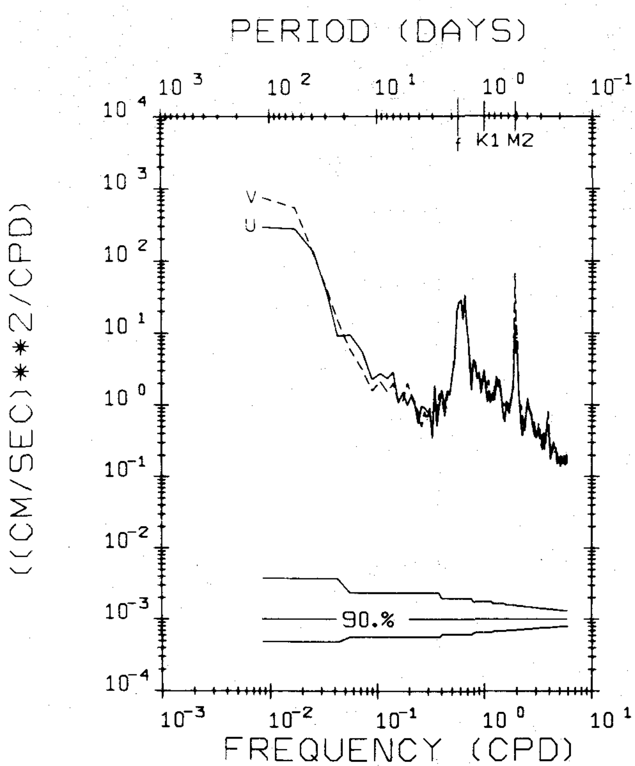

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 VT COH SQ

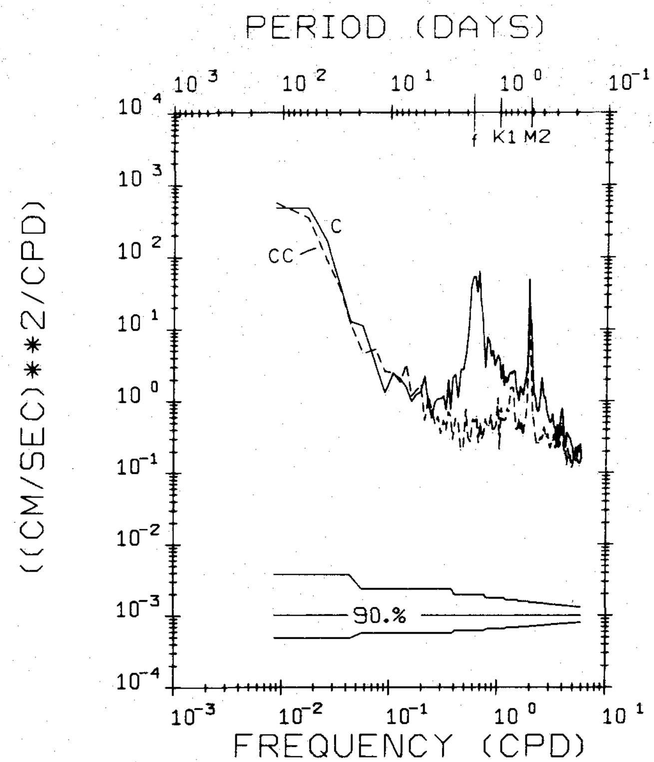

PERIOD (DAYS)
PHASE (LAG OF V)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 UV COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 UT COH PHASE

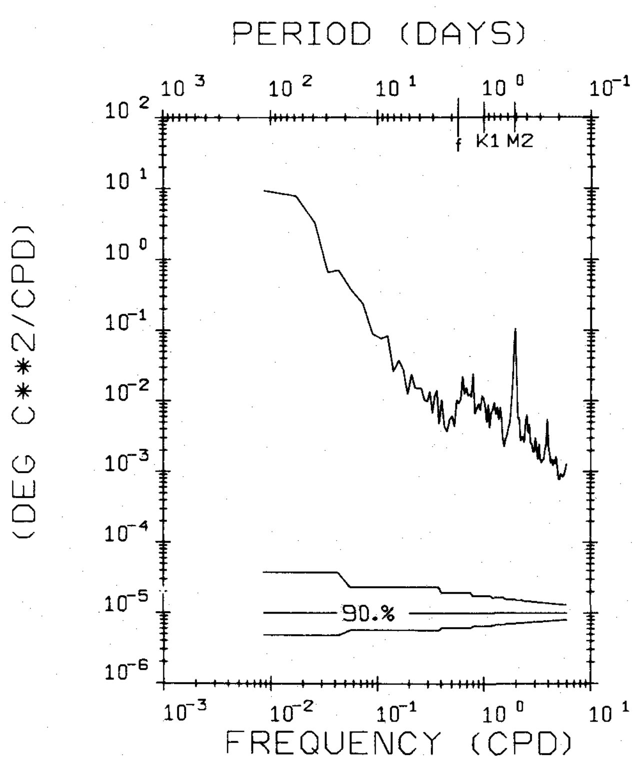

PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
7903 VT COH PHASE



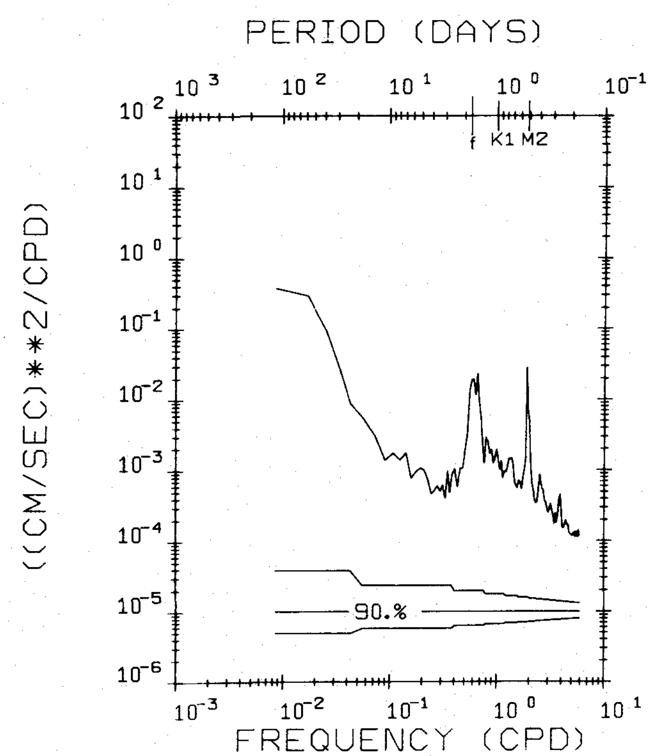
POLYMODE III-C
7904 VELOCITY



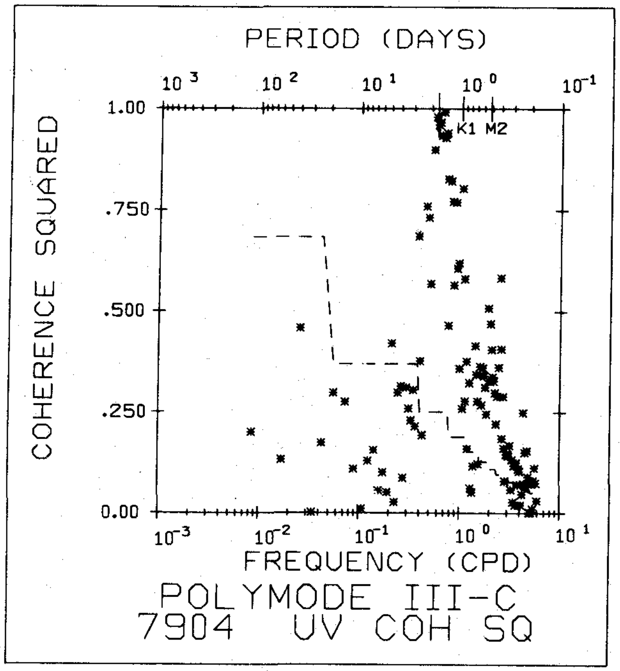
POLYMODE III-C
7904 ROTARY VEL

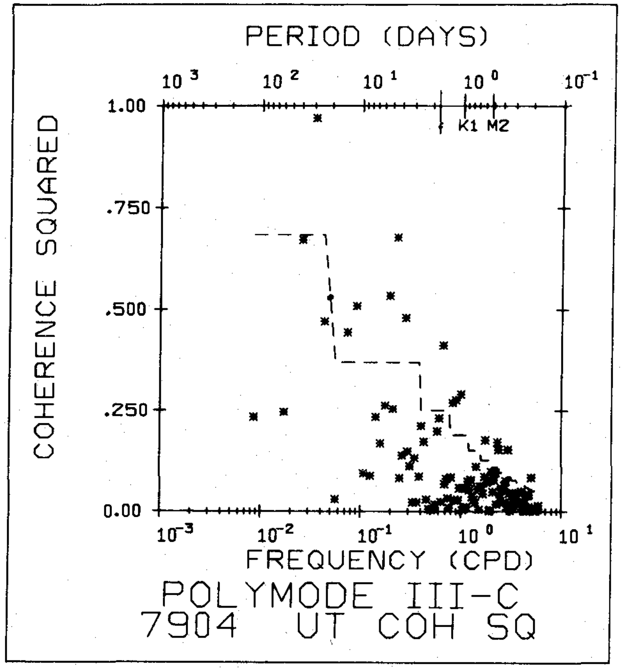


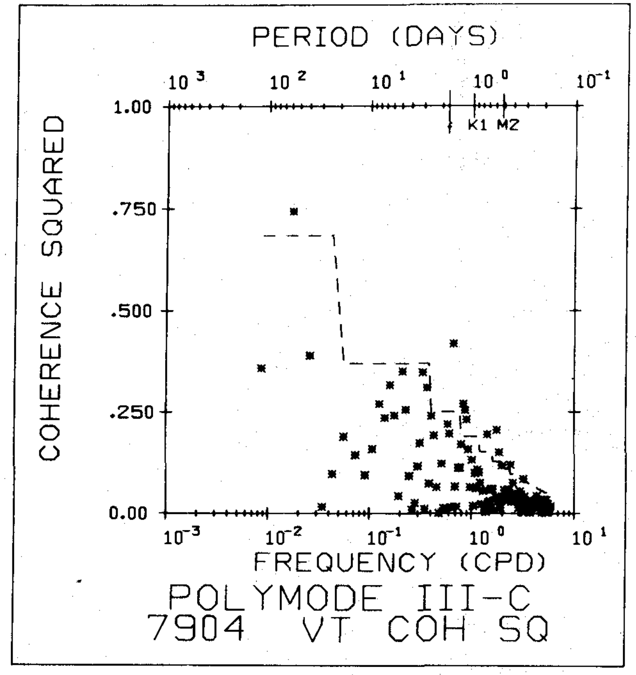
POLYMODE III-C
7904 TEMP

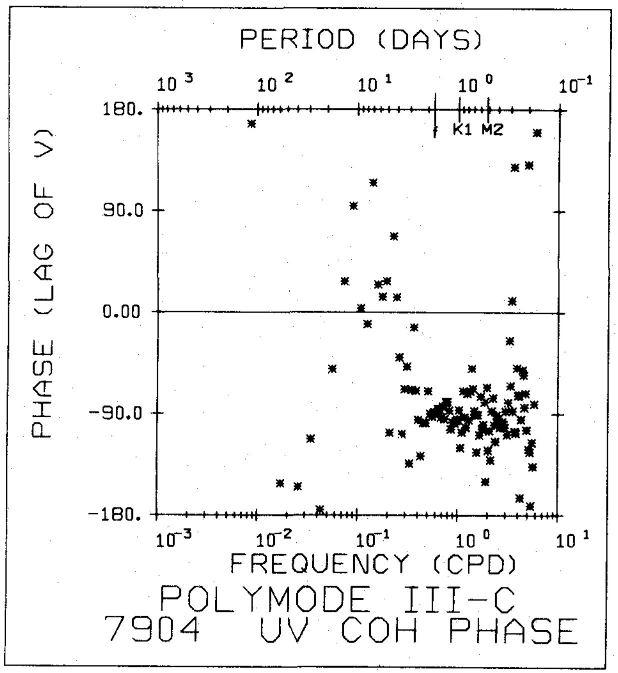


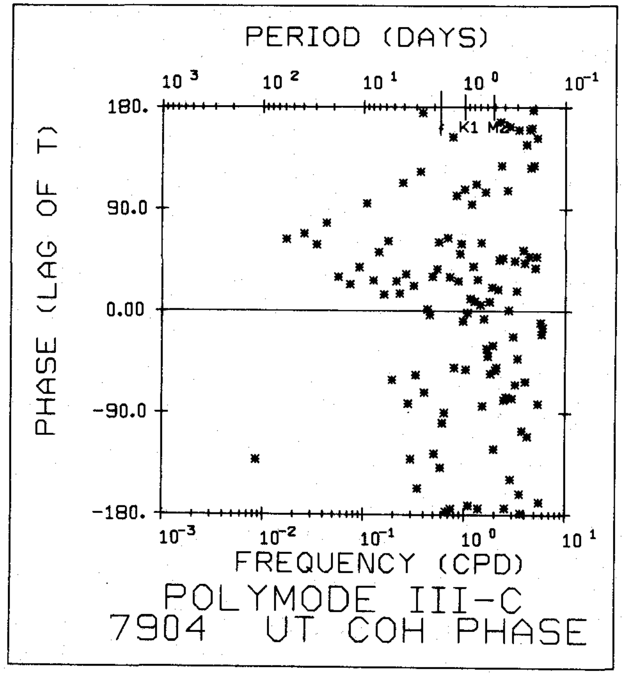
POLYMODE III-C
7904 K.E.-NORM

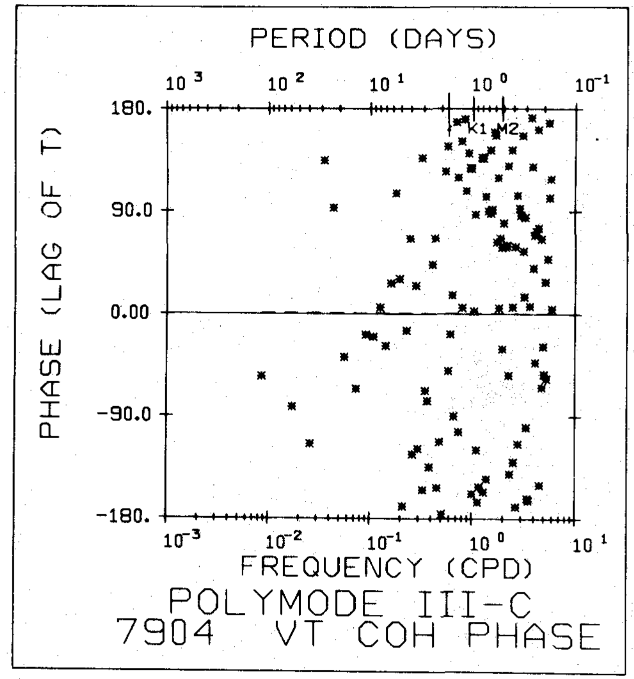

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 UV COH SQ

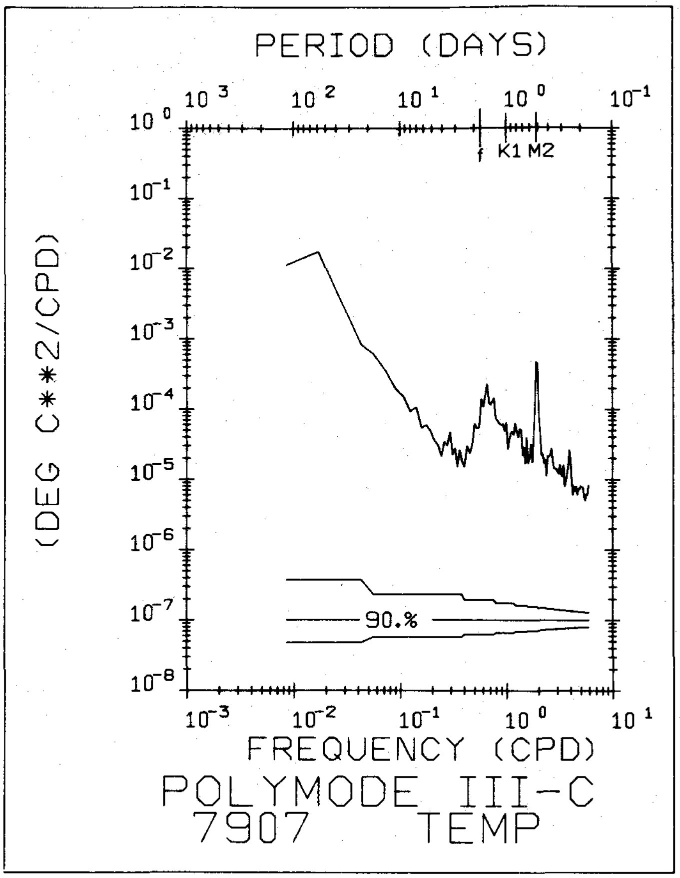

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 UT COH SQ

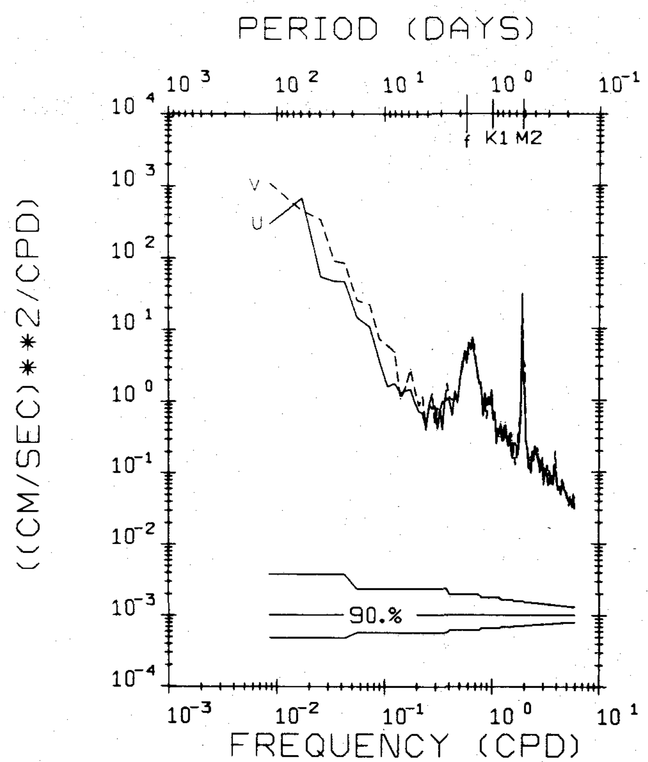

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 VT COH SQ


PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 UV COH PHASE

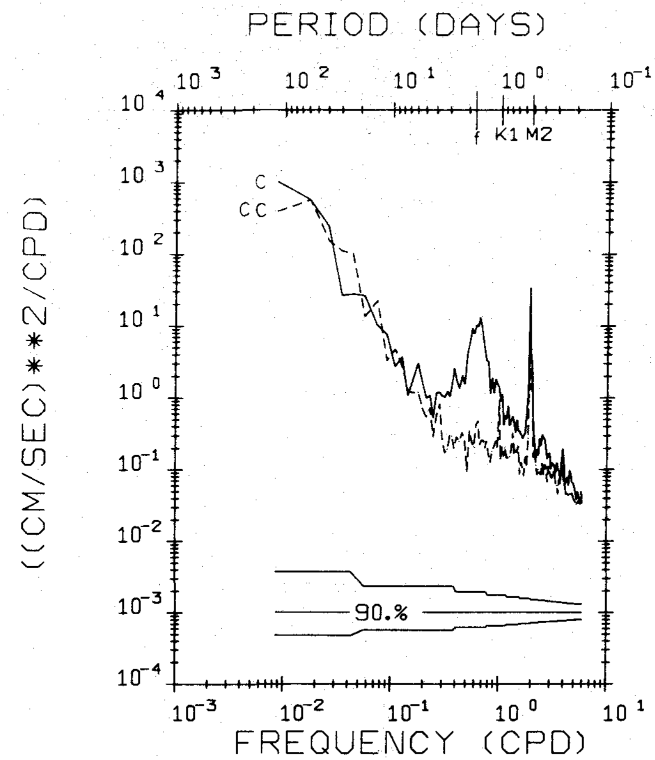

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 UT COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7904 VT COH PHASE

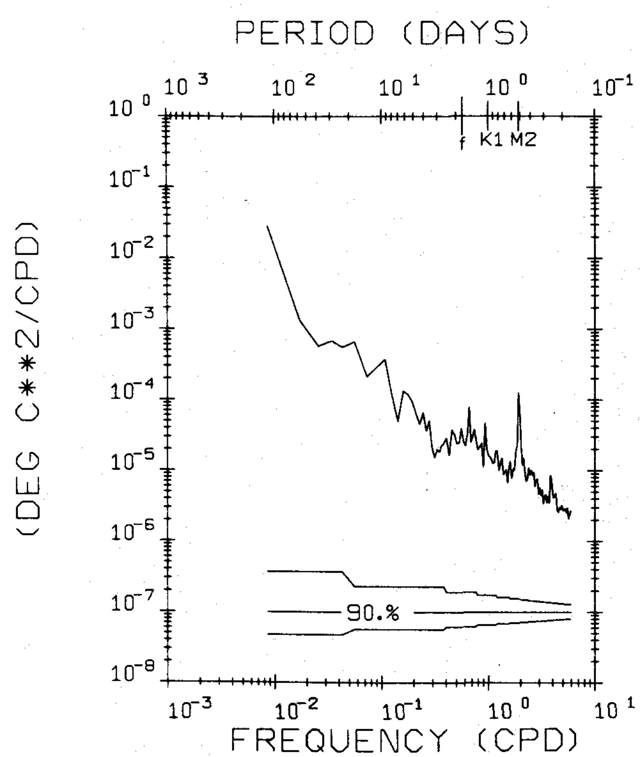

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
(DEG C**2/CPD)
10 0
10-1
10-2
10-3
10-4
10-5
10-6
10-7
10-8
90.%
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
7907 TEMP



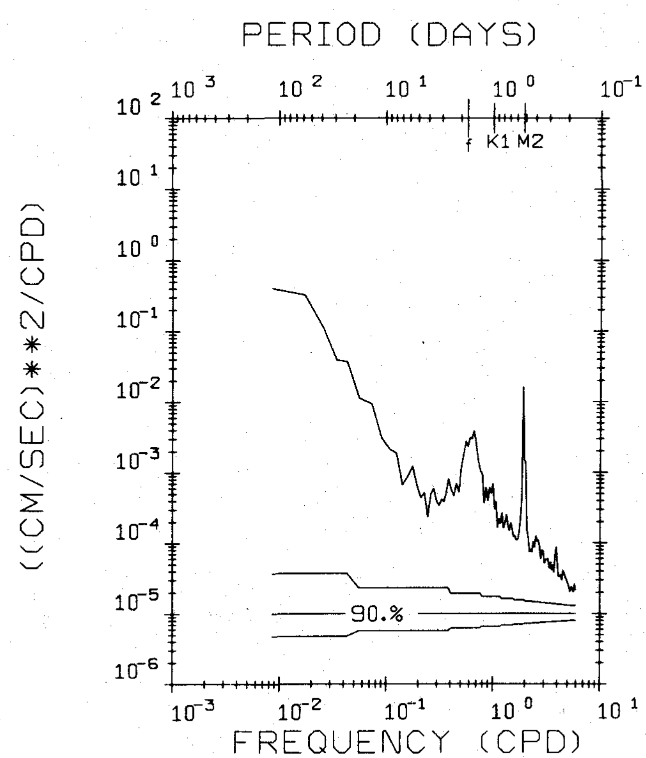
POLYMODE III-C
7908 VELOCITY



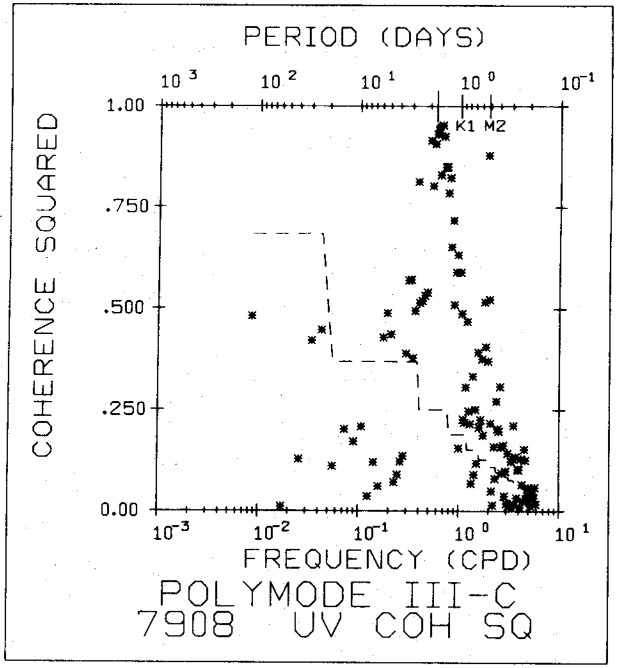
POLYMODE III-C
7908 ROTARY VEL

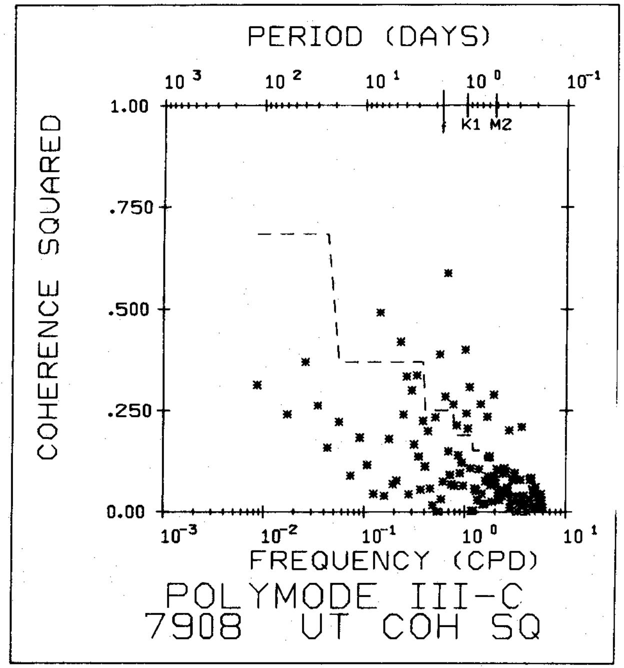


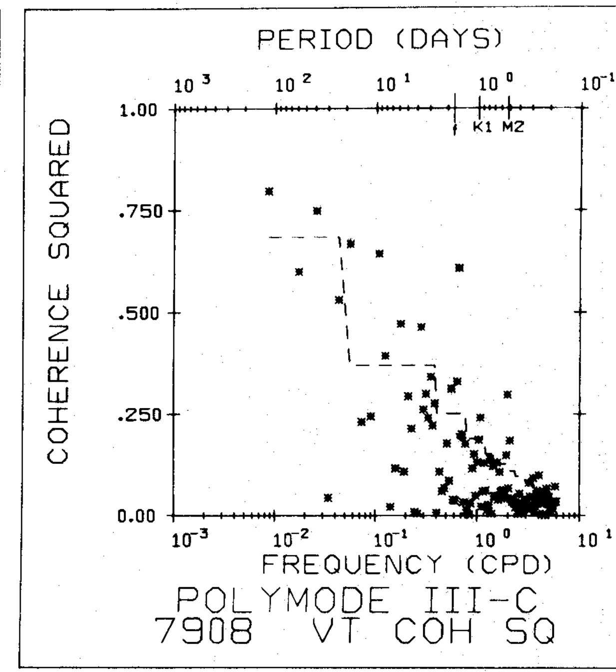
POLYMODE III-C
7908 TEMP

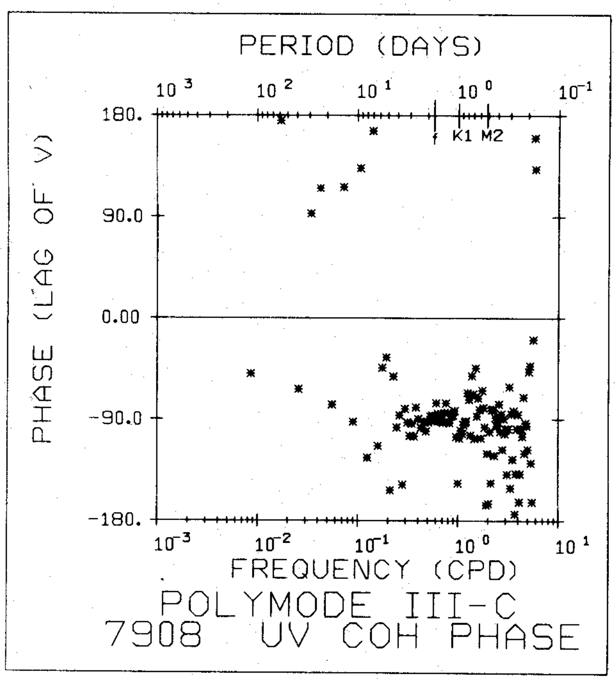


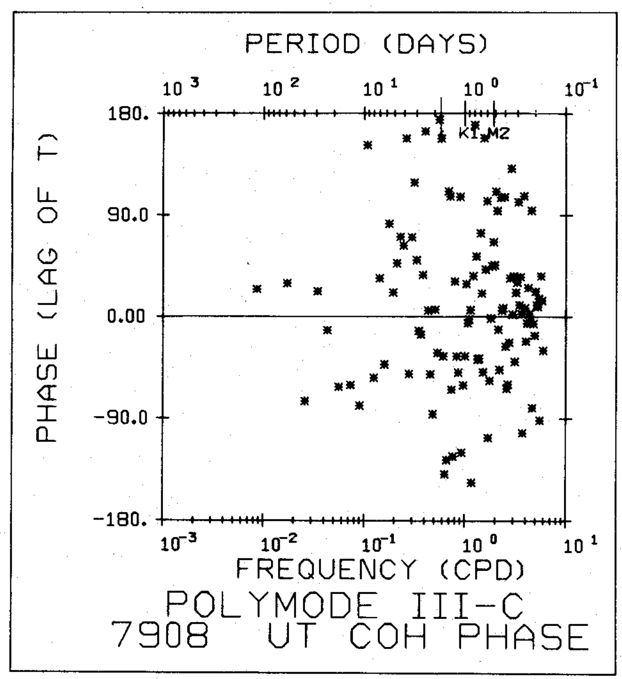
POLYMODE III-C
7908 K.E.-NORM

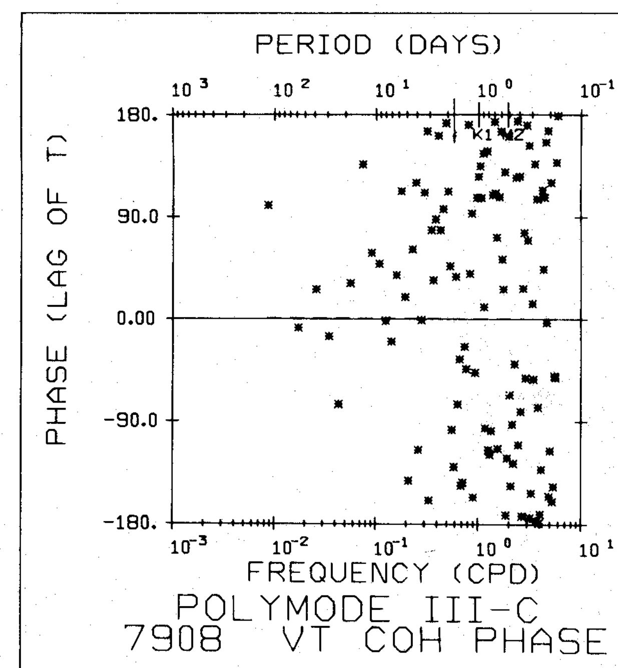

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 UV COH SQ

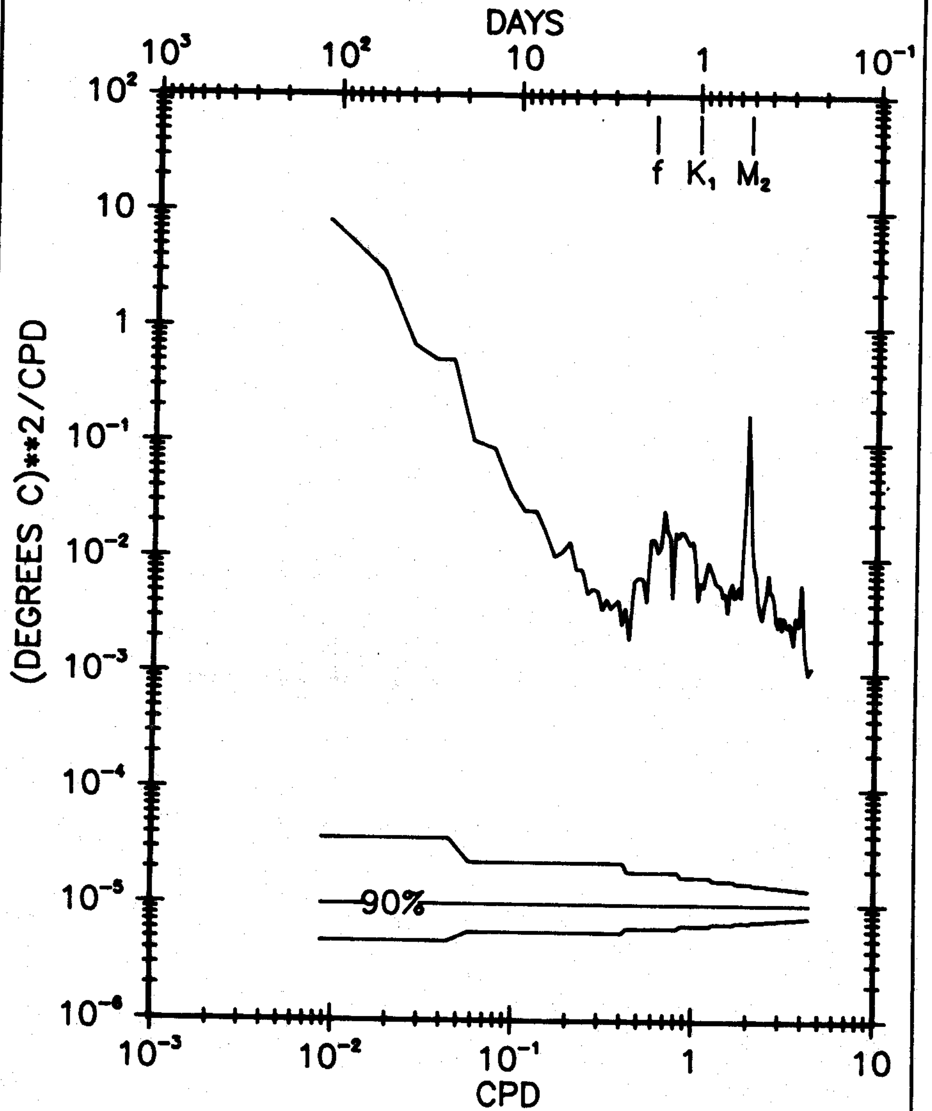

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 VT COH SQ


PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 UV COH PHASE

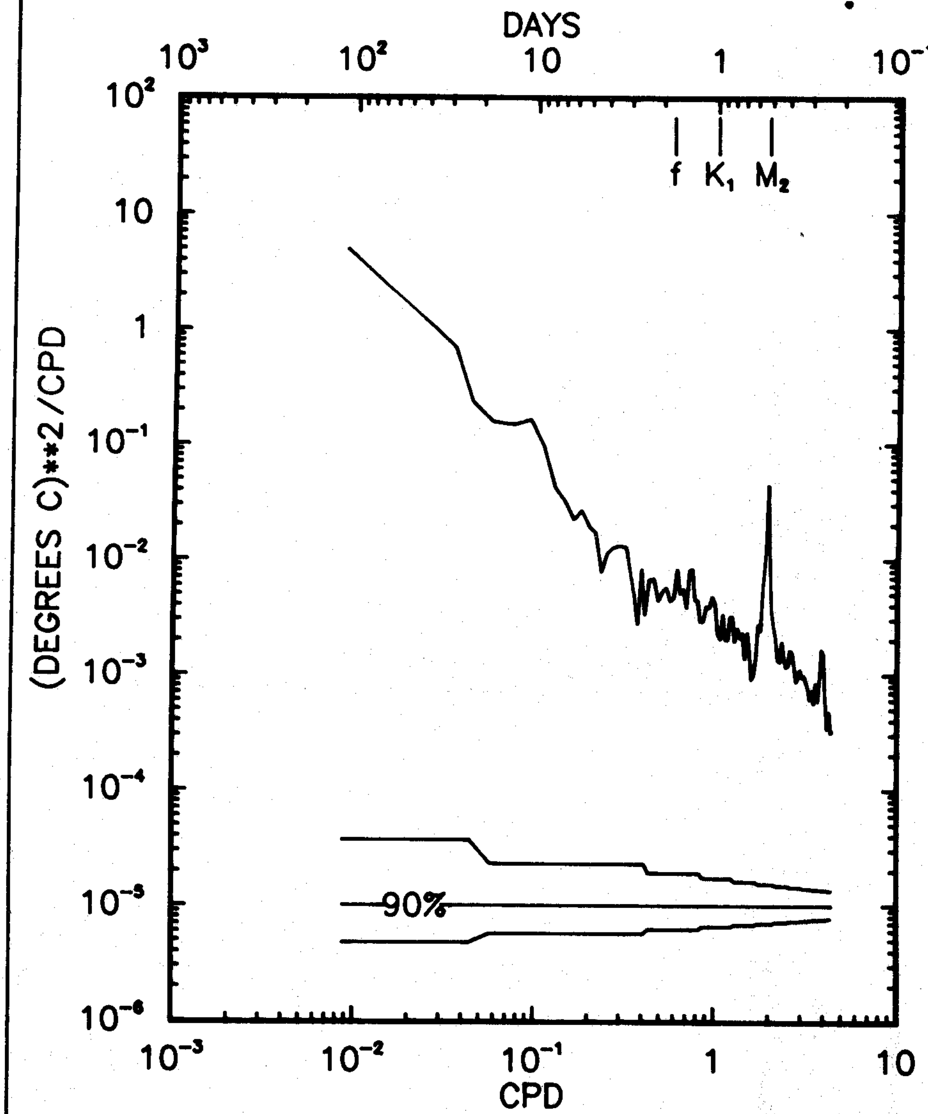

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 UT COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
7908 VT COH PHASE



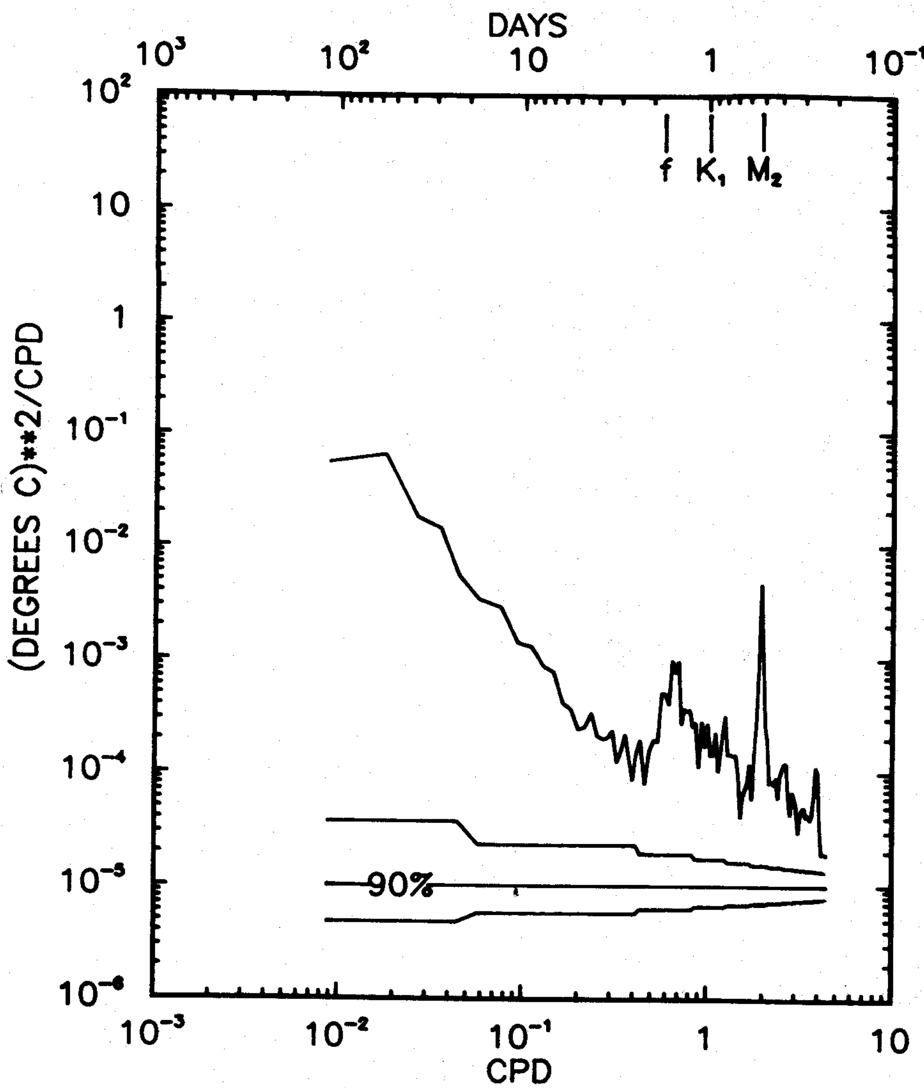
TEMPERATURE
Mooring 79
247 Meters

AUTOSPECTRUM



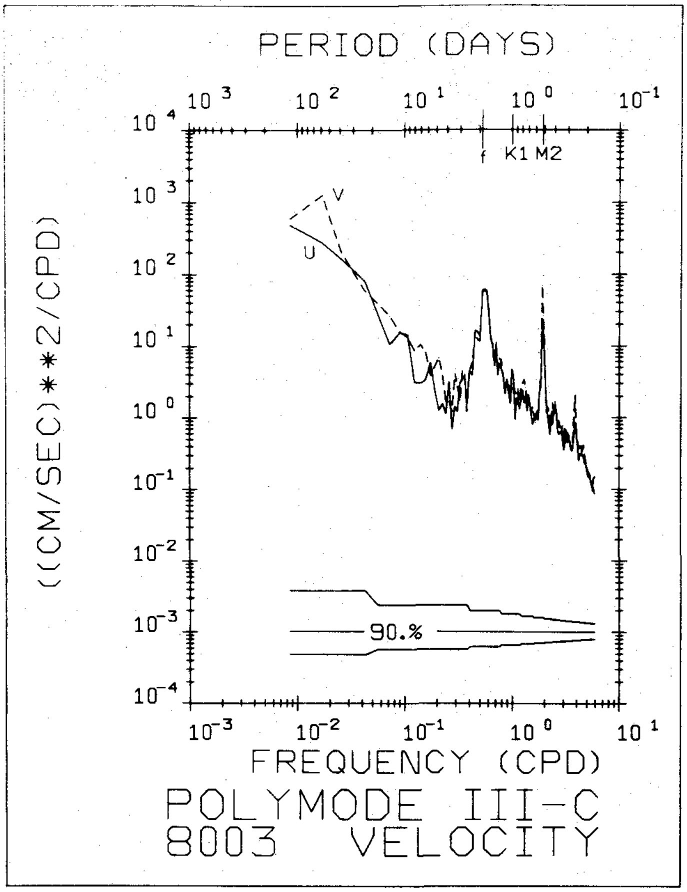
TEMPERATURE
Mooring 79
716 Meters

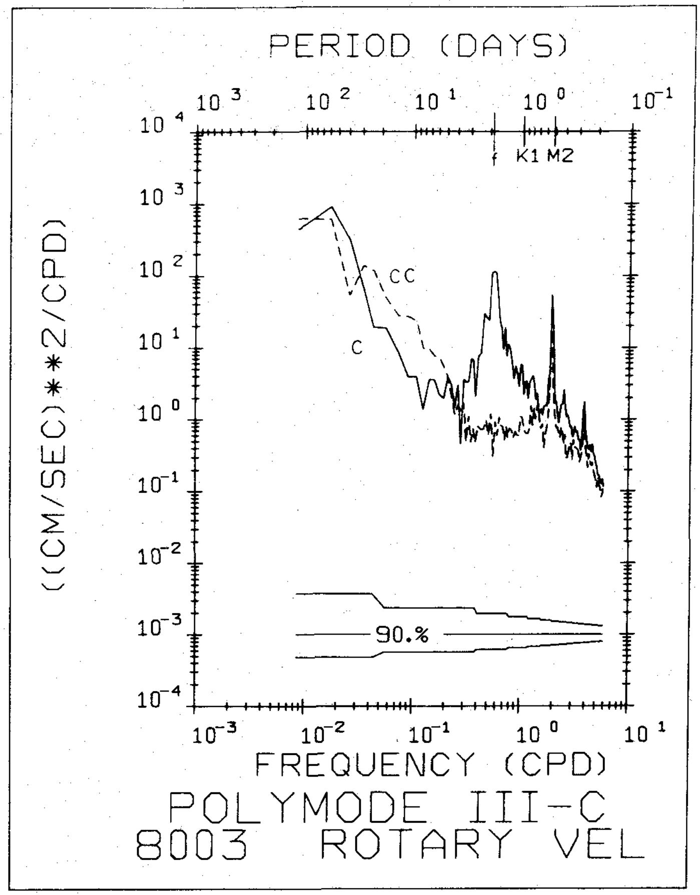
AUTOSPECTRUM

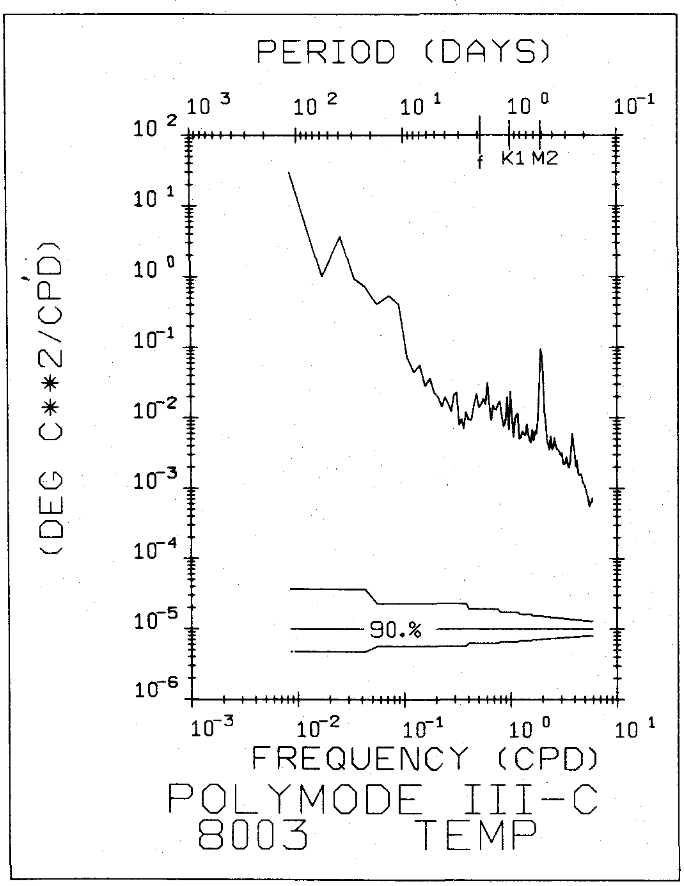


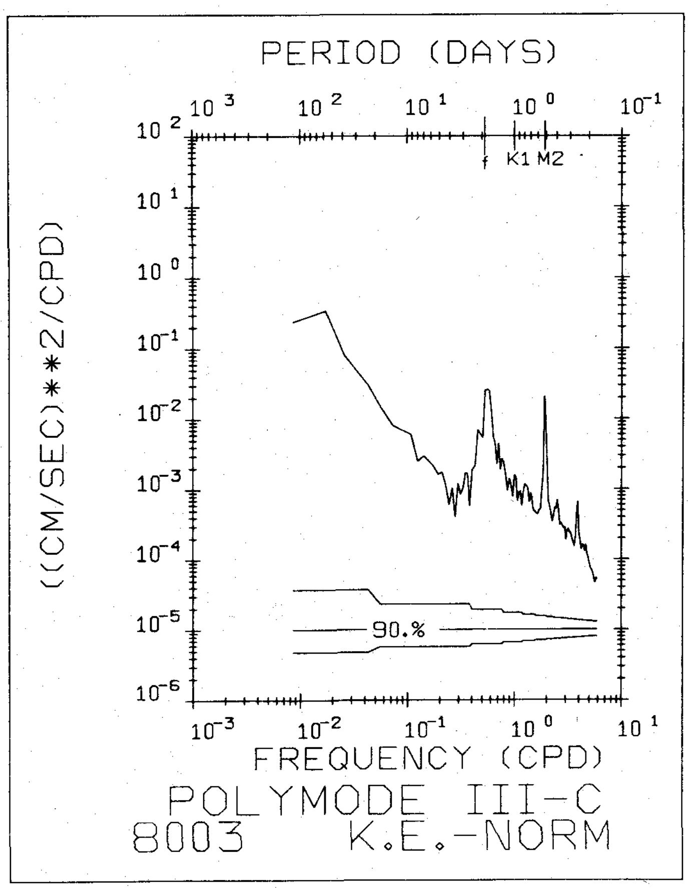
TEMPERATURE
Mooring 79
1518 Meters

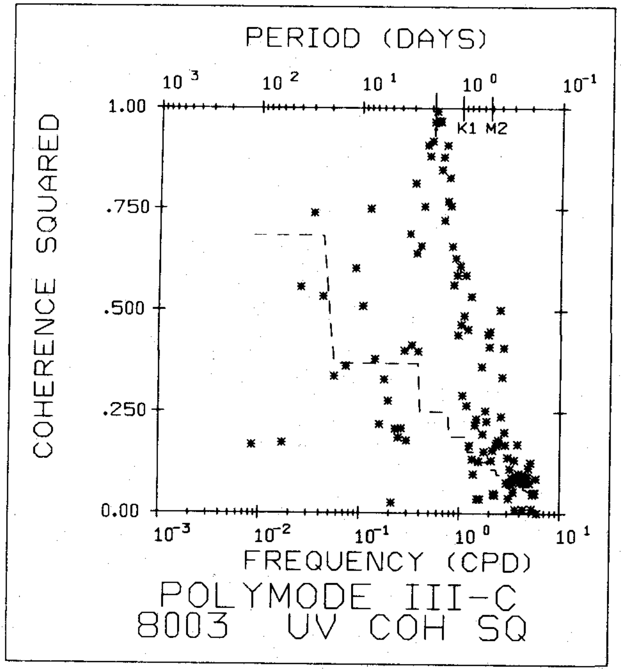
AUTOSPECTRUM

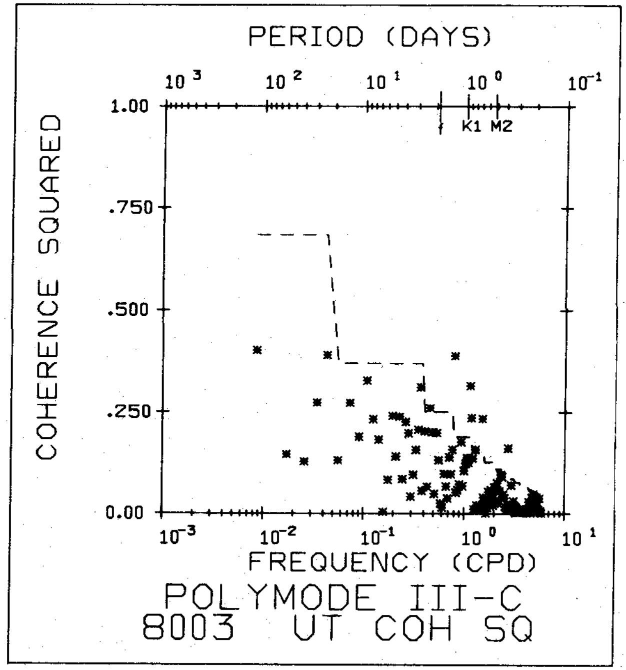

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f K1 M2
((CM/SEC)**2/CPD)
V
U
90.%
FREQUENCY (CPD)
POLYMODE III-C
8003 VELOCITY

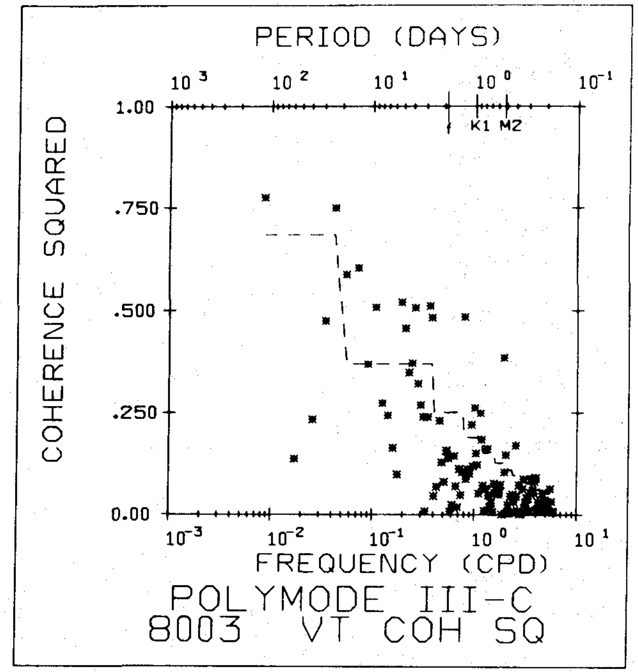

PERIOD (DAYS)
f K1 M2
((CM/SEC)**2/CPD)
CC
C
90.%
FREQUENCY (CPD)
POLYMODE III-C
8003 ROTARY VEL

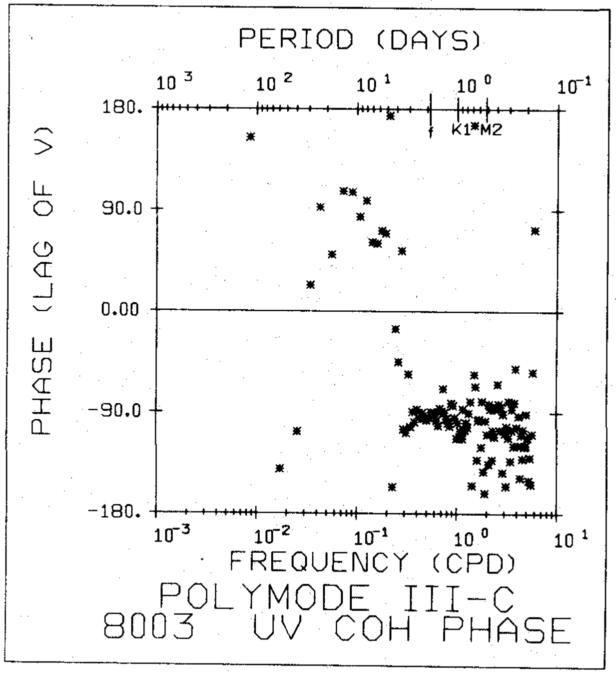

PERIOD (DAYS)
f K1 M2
(DEG C**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
8003 TEMP

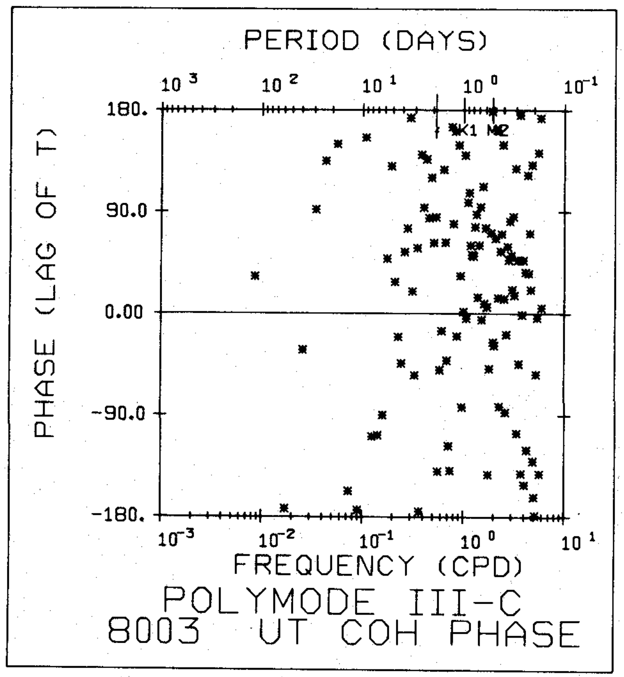

PERIOD (DAYS)
f K1 M2
((CM/SEC)**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
8003 K.E.-NORM

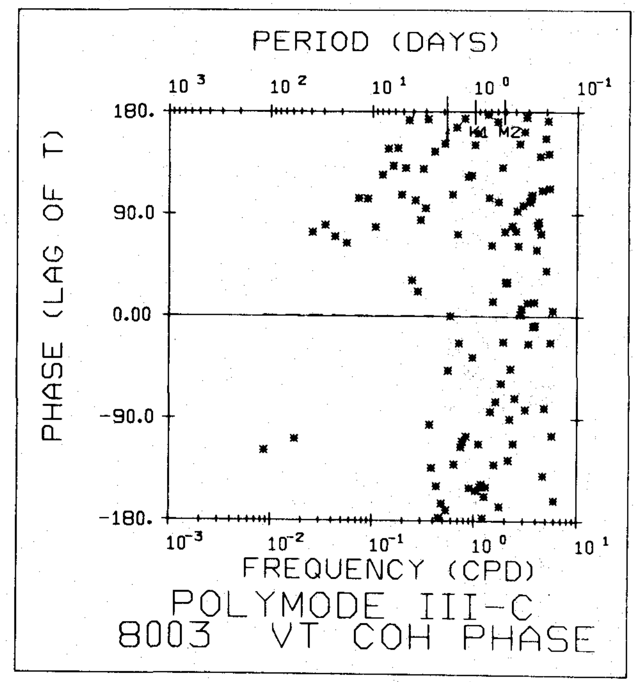

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 UV COH SQ

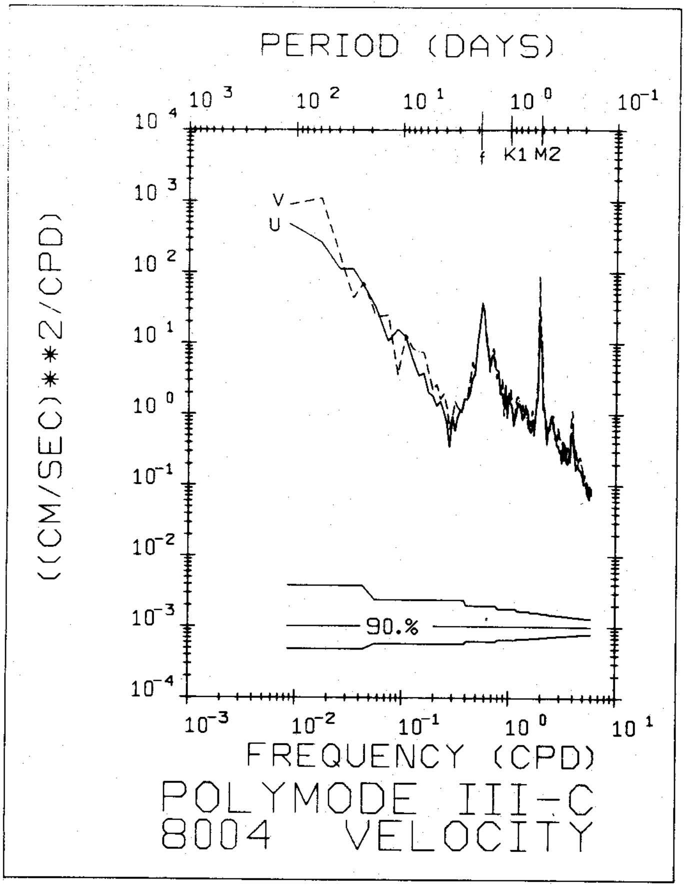

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 UT COH SQ

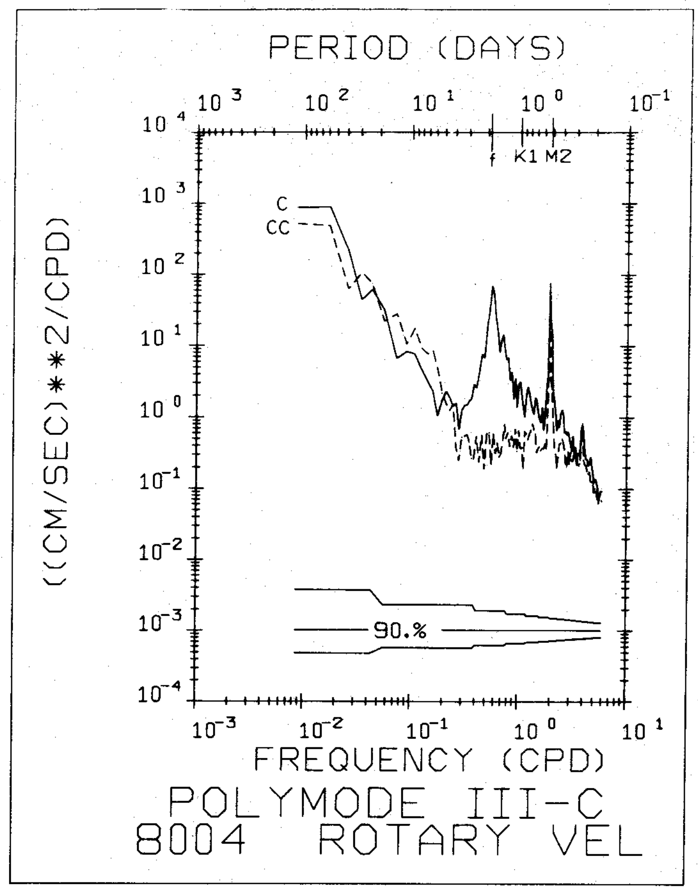

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 VT COH SQ

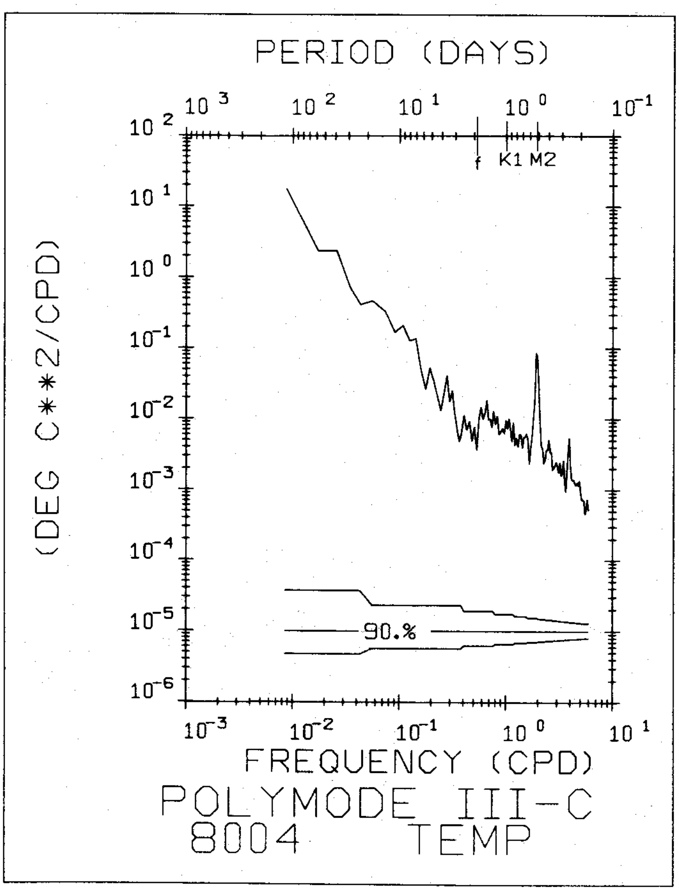

PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 UV COH PHASE

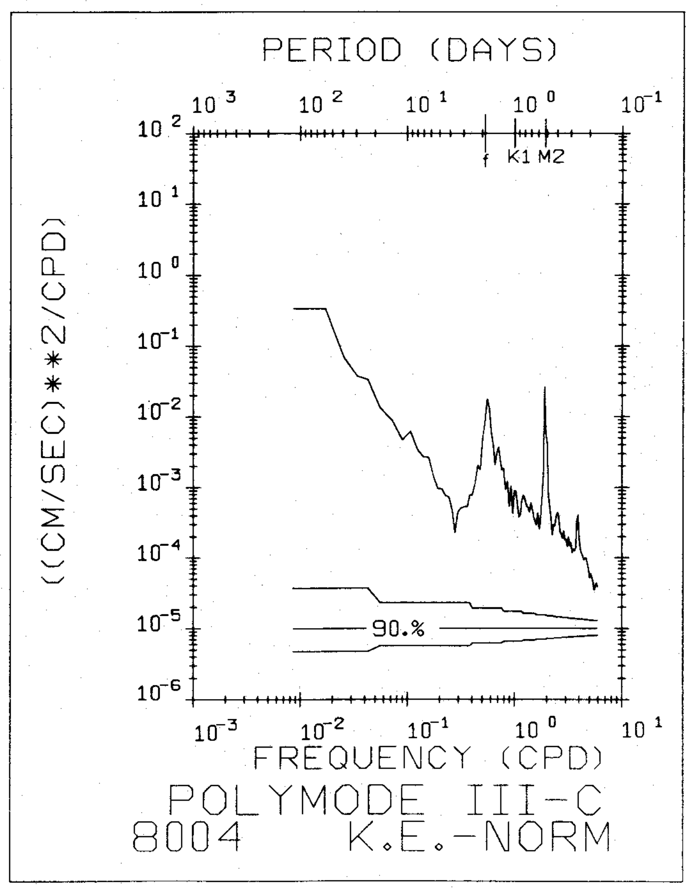

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 UT COH PHASE

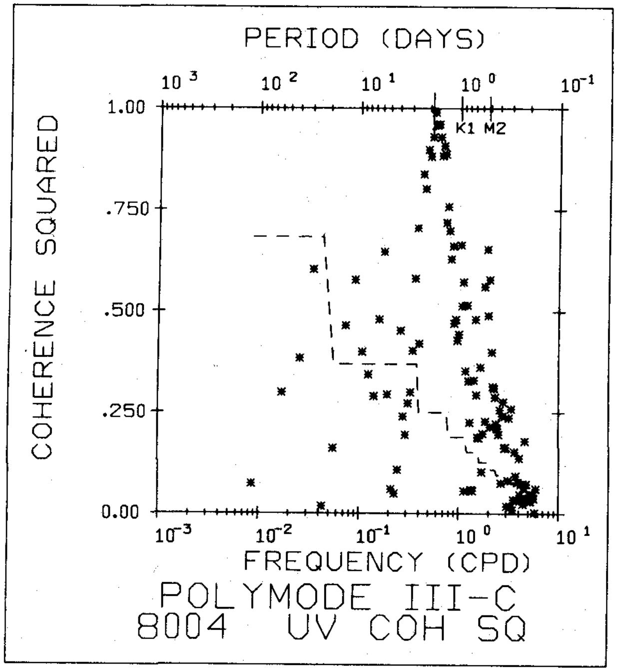

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8003 VT COH PHASE

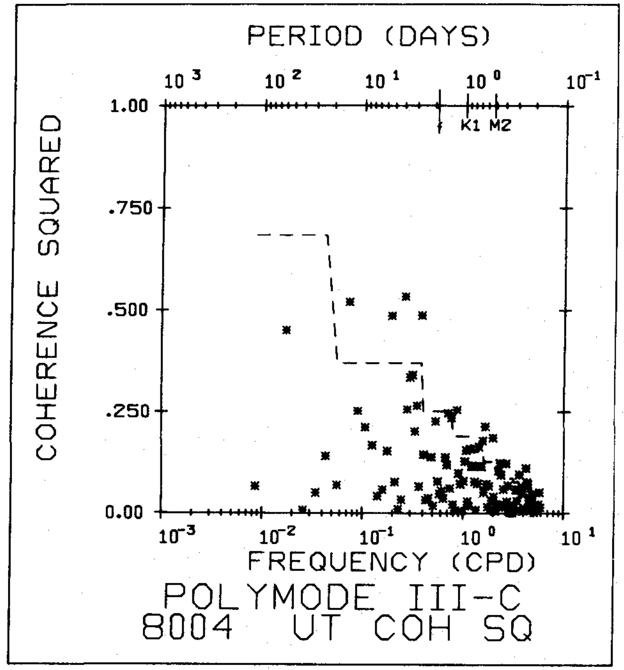

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f K1 M2
V
U
90.%
((CM/SEC)**2/CPD)
10 4
10 3
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8004 VELOCITY

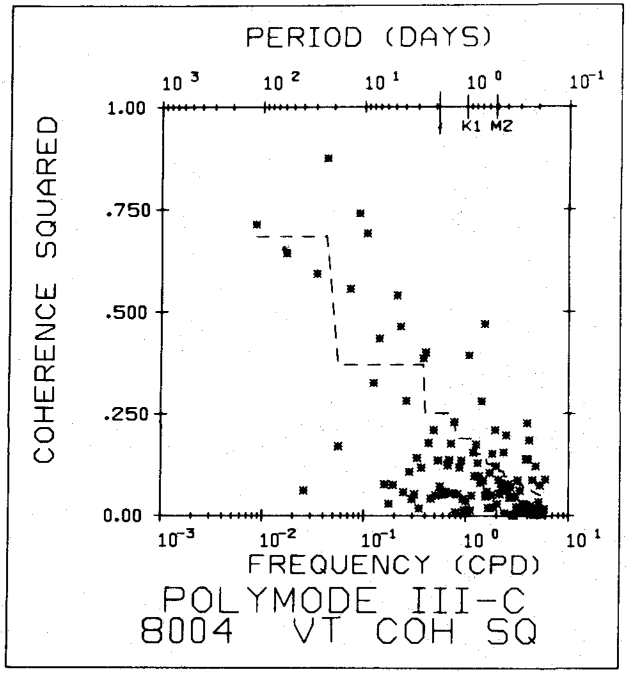

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f K1 M2
C
CC
90.%
((CM/SEC)**2/CPD)
10 4
10 3
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8004 ROTARY VEL

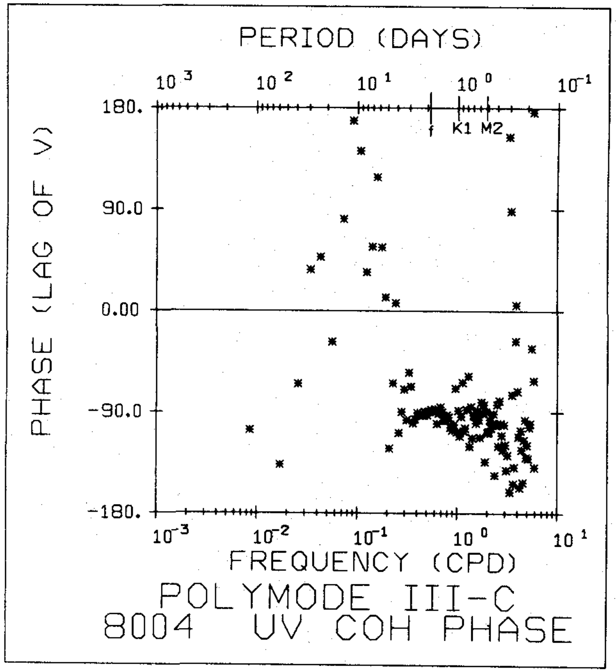

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f K1 M2
90.%
(DEG C**2/CPD)
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-5
10-6
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8004 TEMP

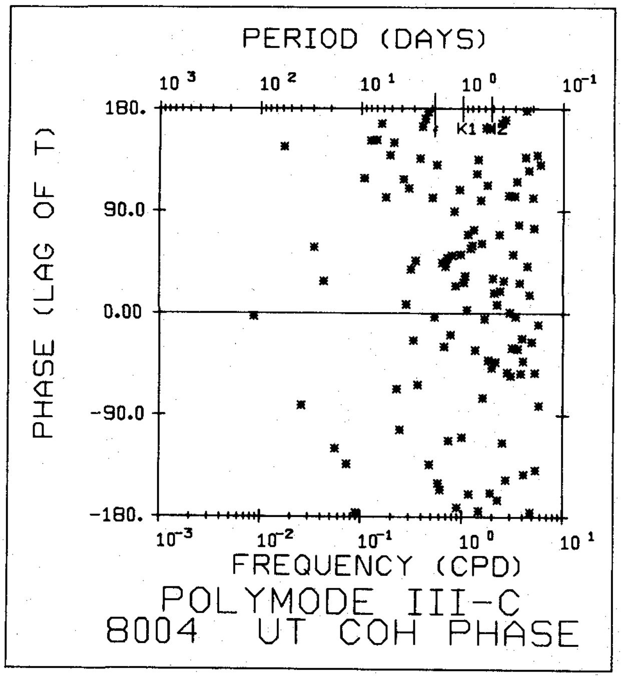

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f K1 M2
90.%
((CM/SEC)**2/CPD)
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-5
10-6
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8004 K.E.-NORM

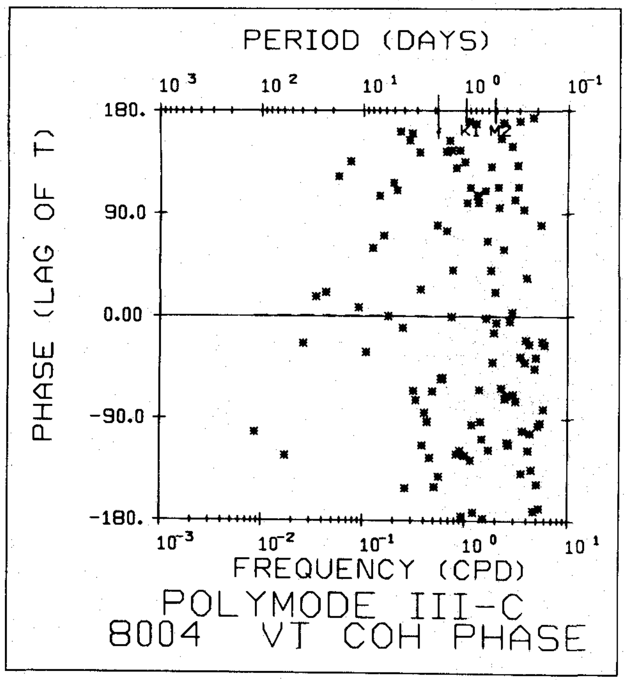

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 UV COH SQ

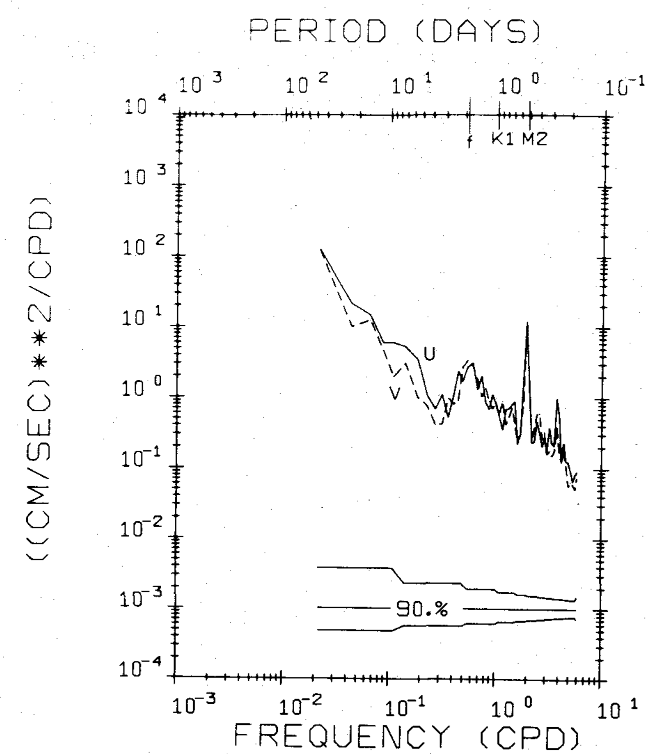

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 VT COH SQ

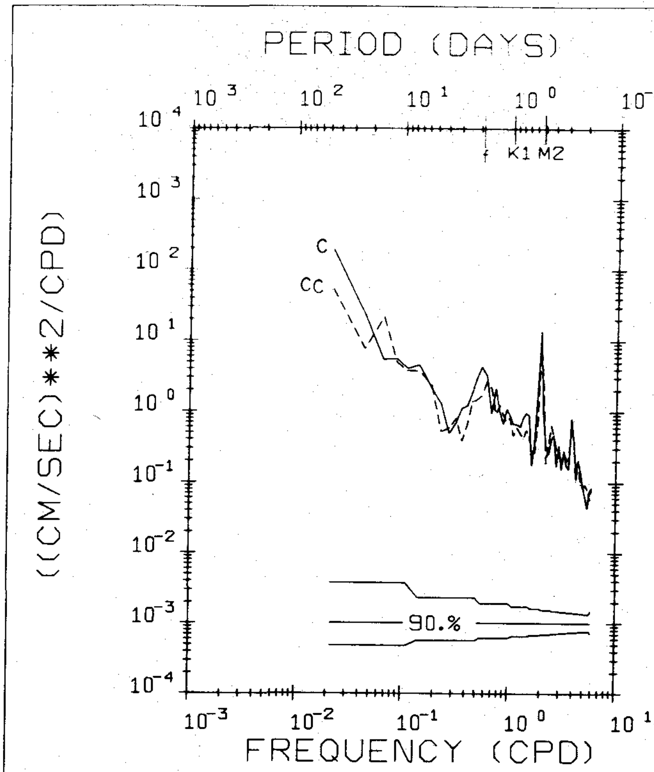

PERIOD (DAYS)
PHASE (LAG OF V)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 UV COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 UT COH PHASE

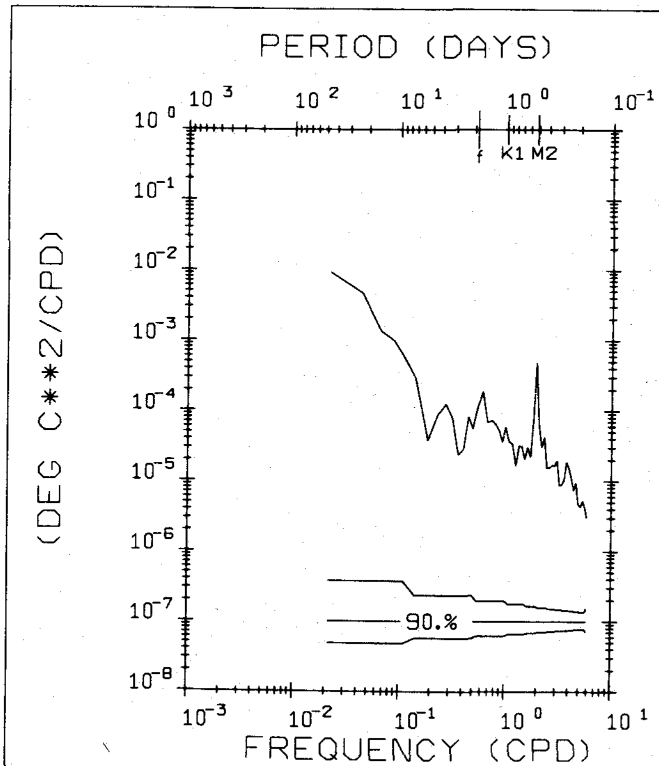

PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8004 VT COH PHASE



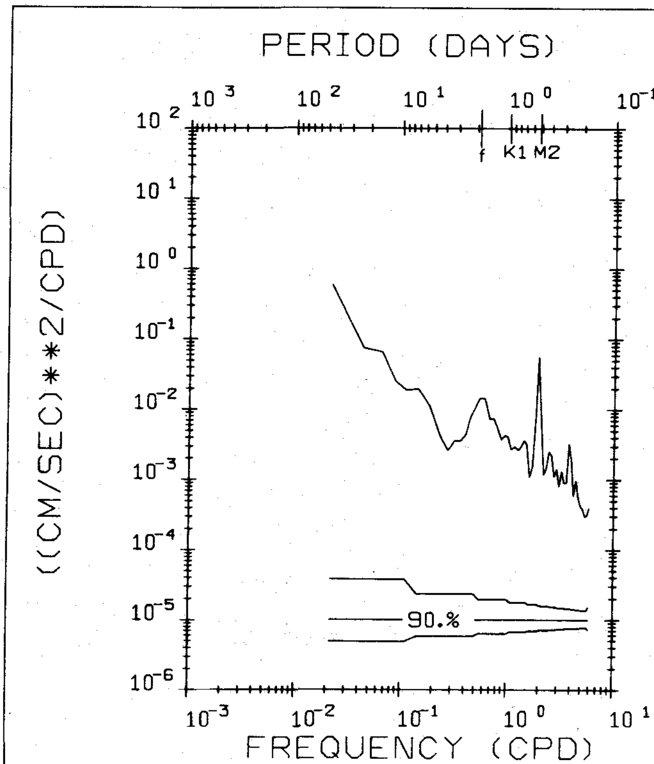
POLYMODE III-C
8007 VELOCITY



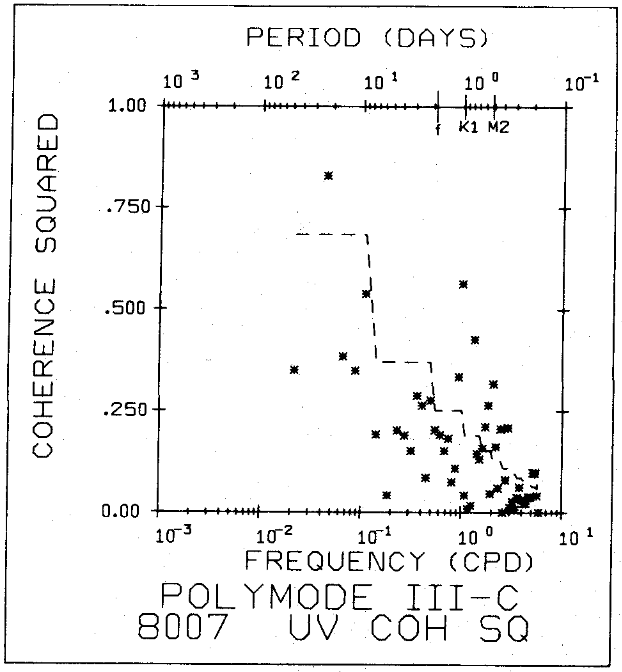
POLYMODE III-C
8007 ROTARY VEL

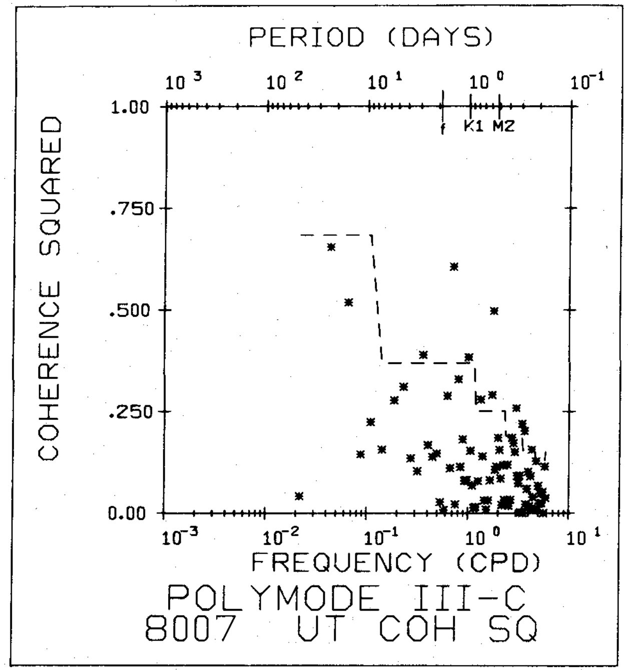


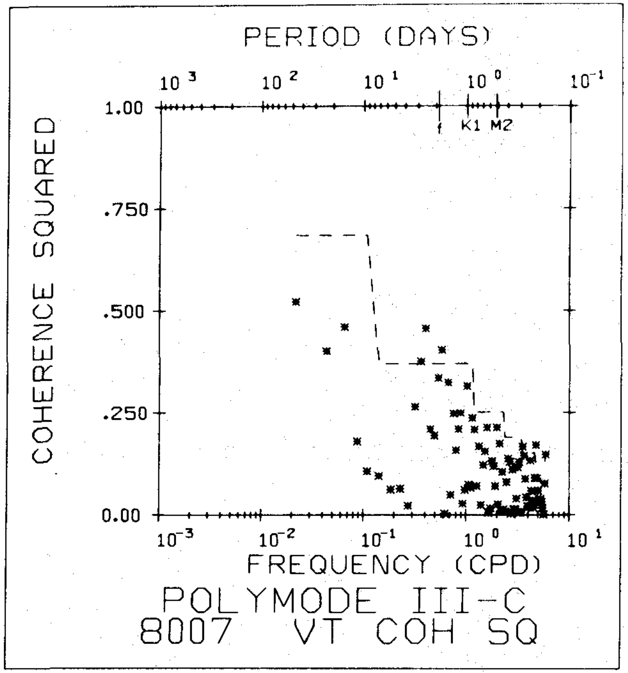
POLYMODE III-C
8007 TEMP

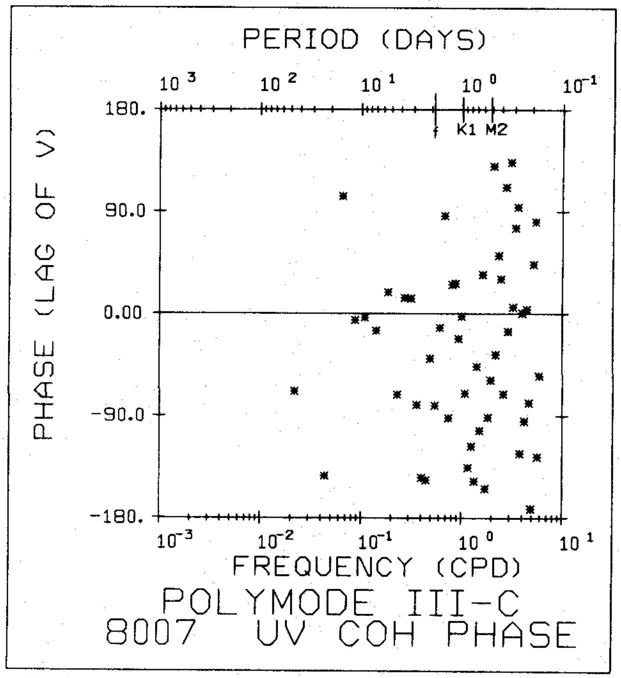


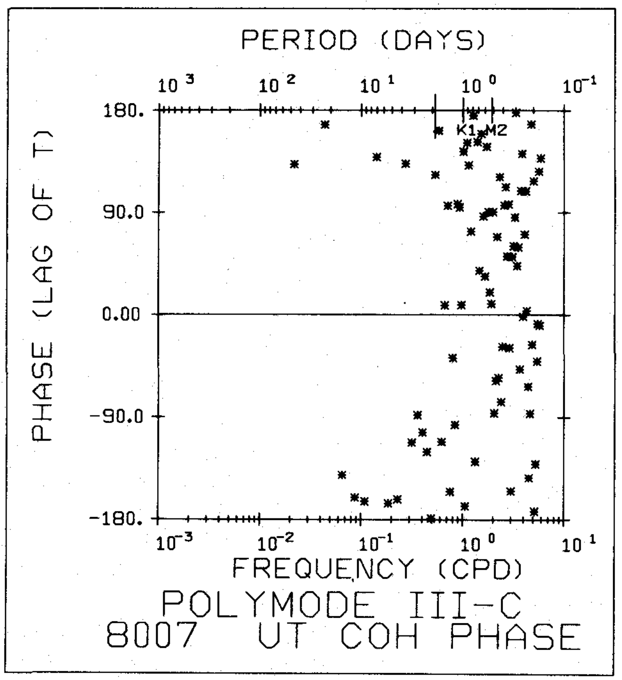
POLYMODE III-C
8007 K.E.-NORM

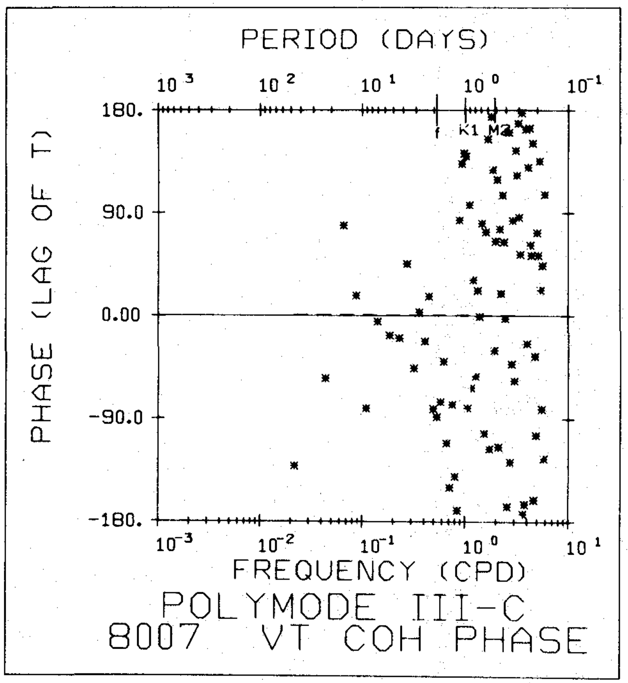

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 UV COH SQ

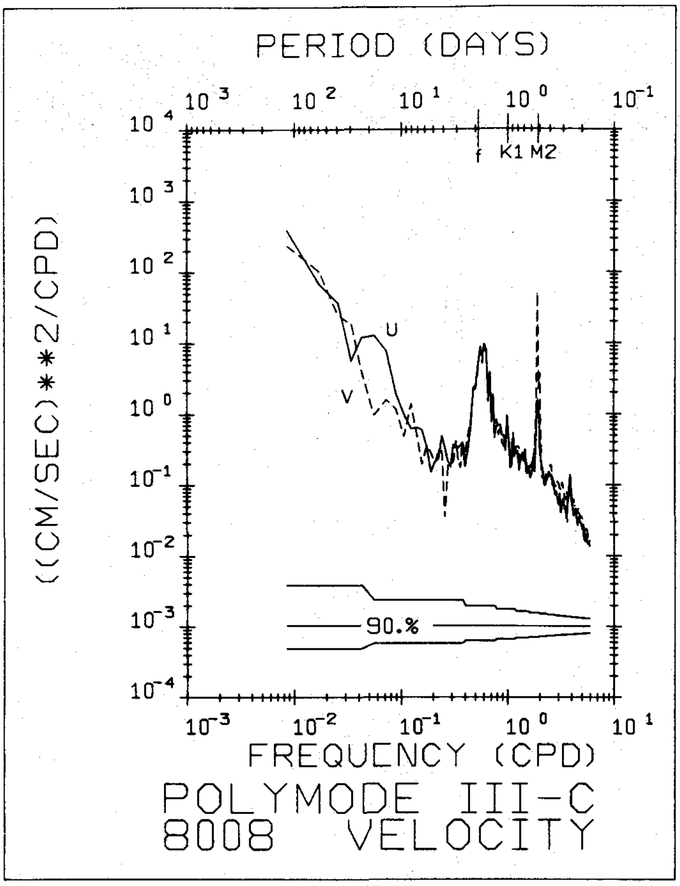

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 UT COH SQ

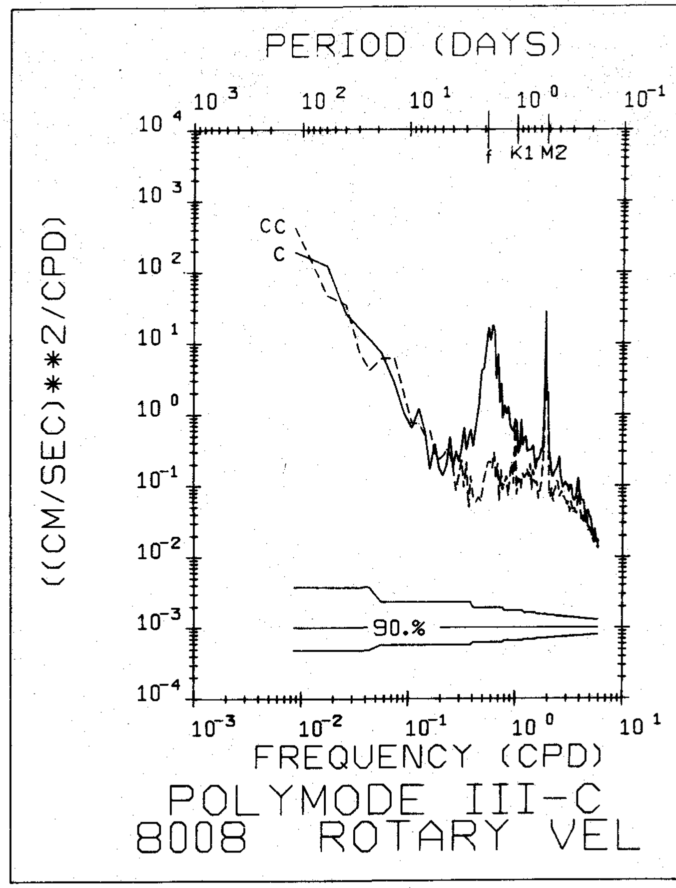

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 VT COH SQ

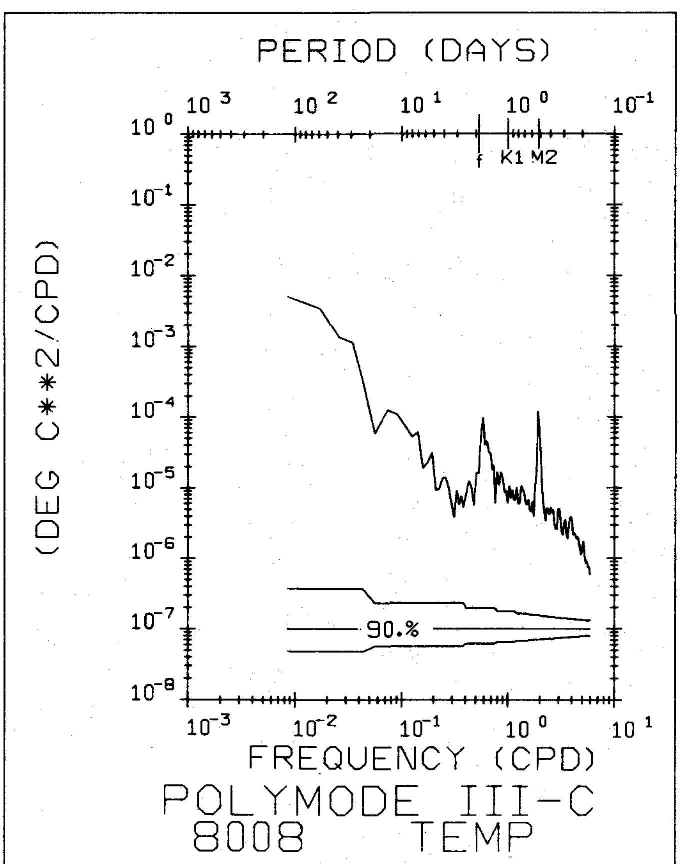

PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 UV COH PHASE

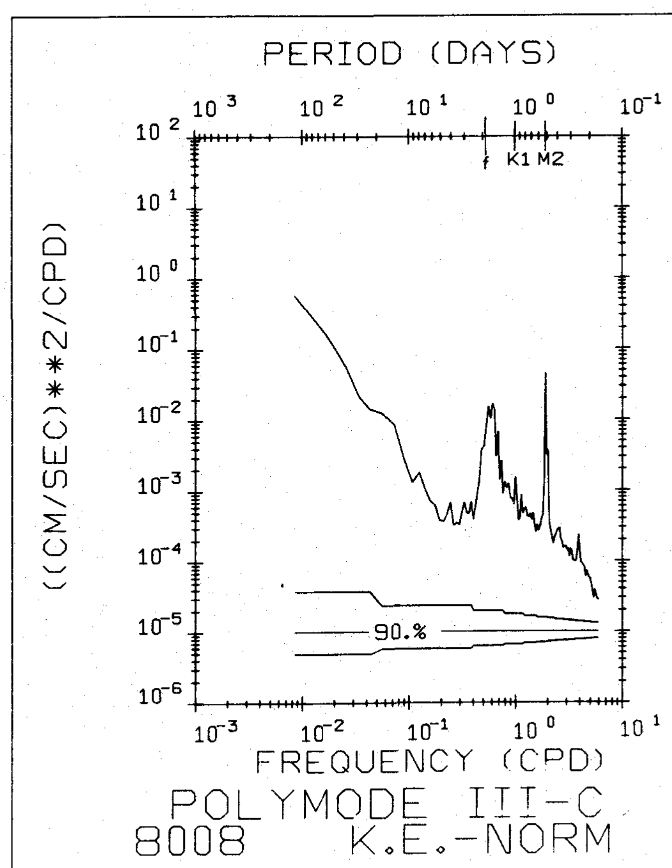

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 UT COH PHASE

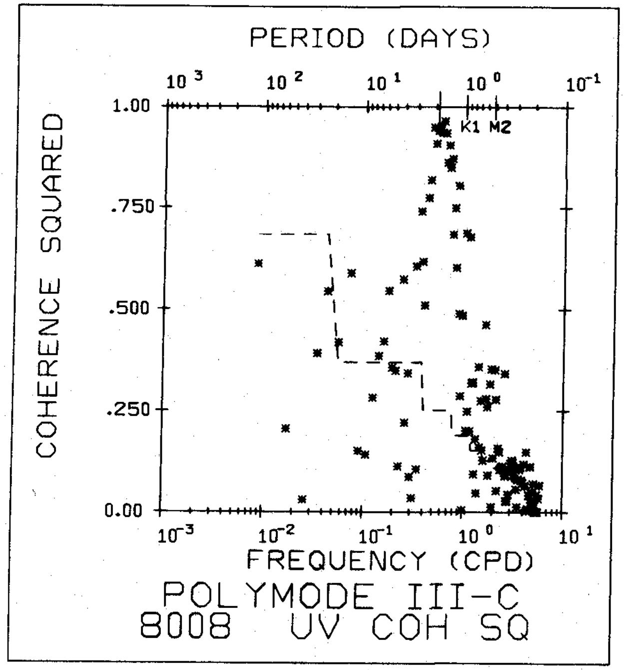

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
f K1 M2
POLYMODE III-C
8007 VT COH PHASE

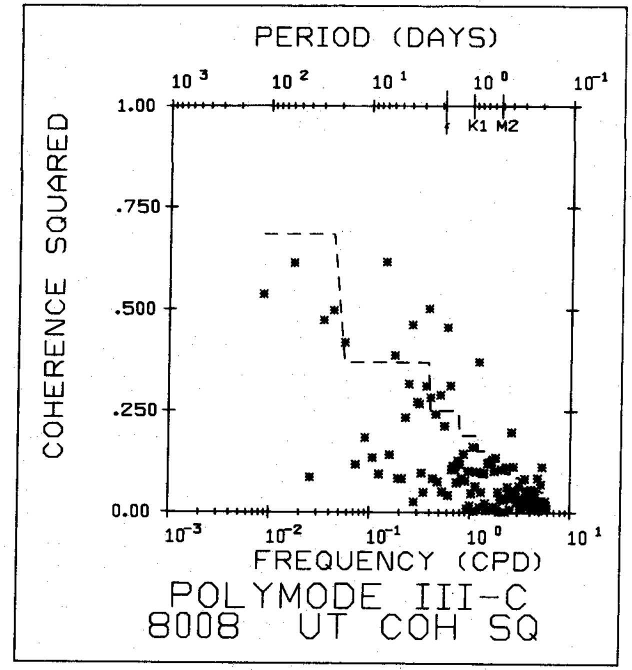

PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
U
V
90.%
POLYMODE III-C
8008 VELOCITY

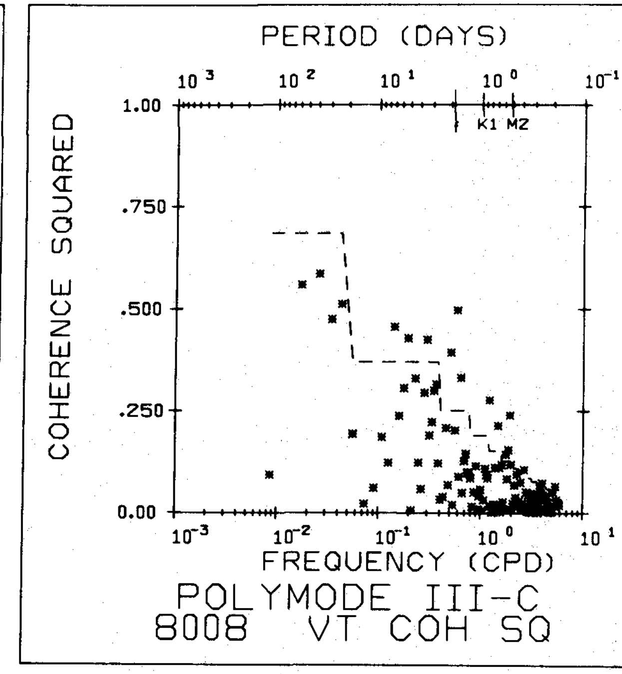

PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
CC
C
90.%
POLYMODE III-C
8008 ROTARY VEL

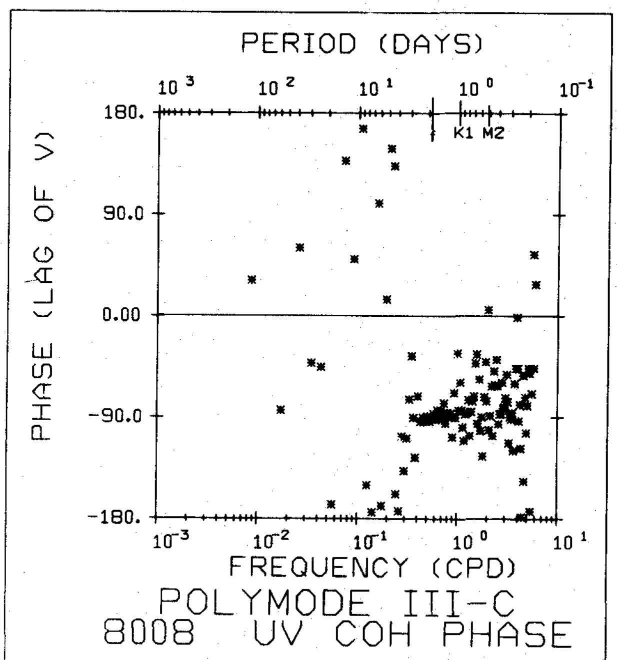

PERIOD (DAYS)
(DEG C**2/CPD)
FREQUENCY (CPD)
f K1 M2
90.%
POLYMODE III-C
8008 TEMP

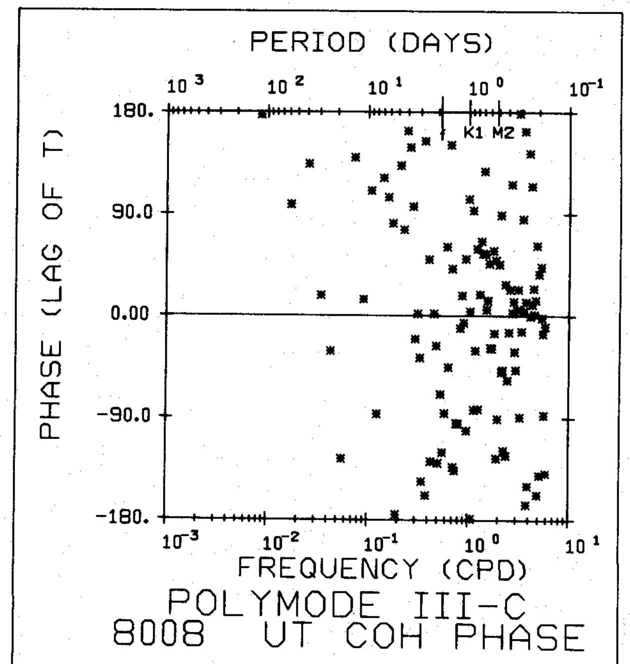

PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
90.%
POLYMODE III-C
8008 K.E.-NORM

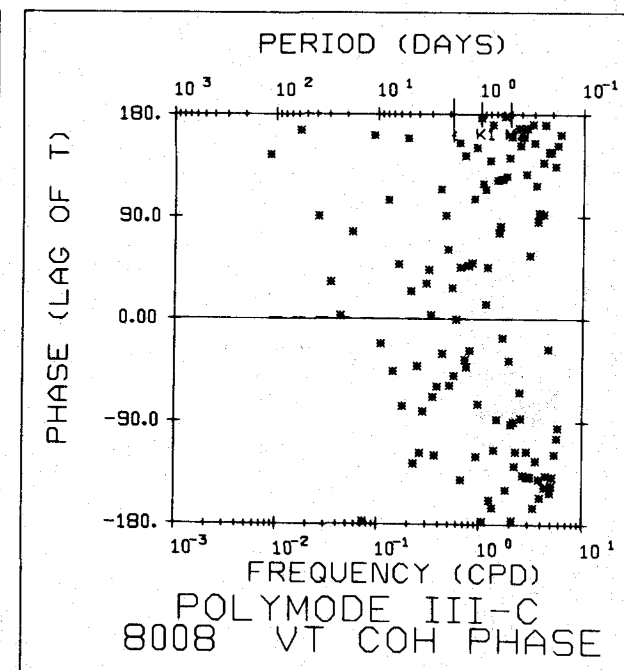

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 UV COH SQ

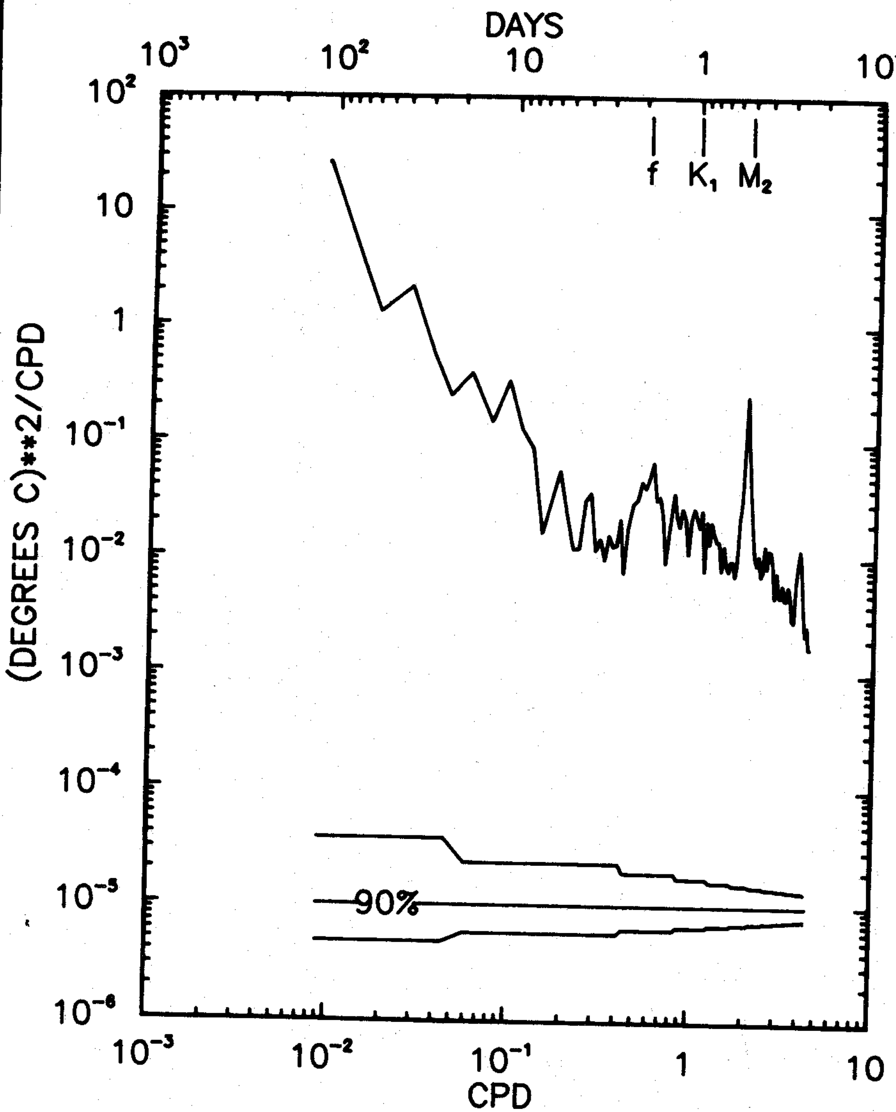

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 VT COH SQ


PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 UV COH PHASE

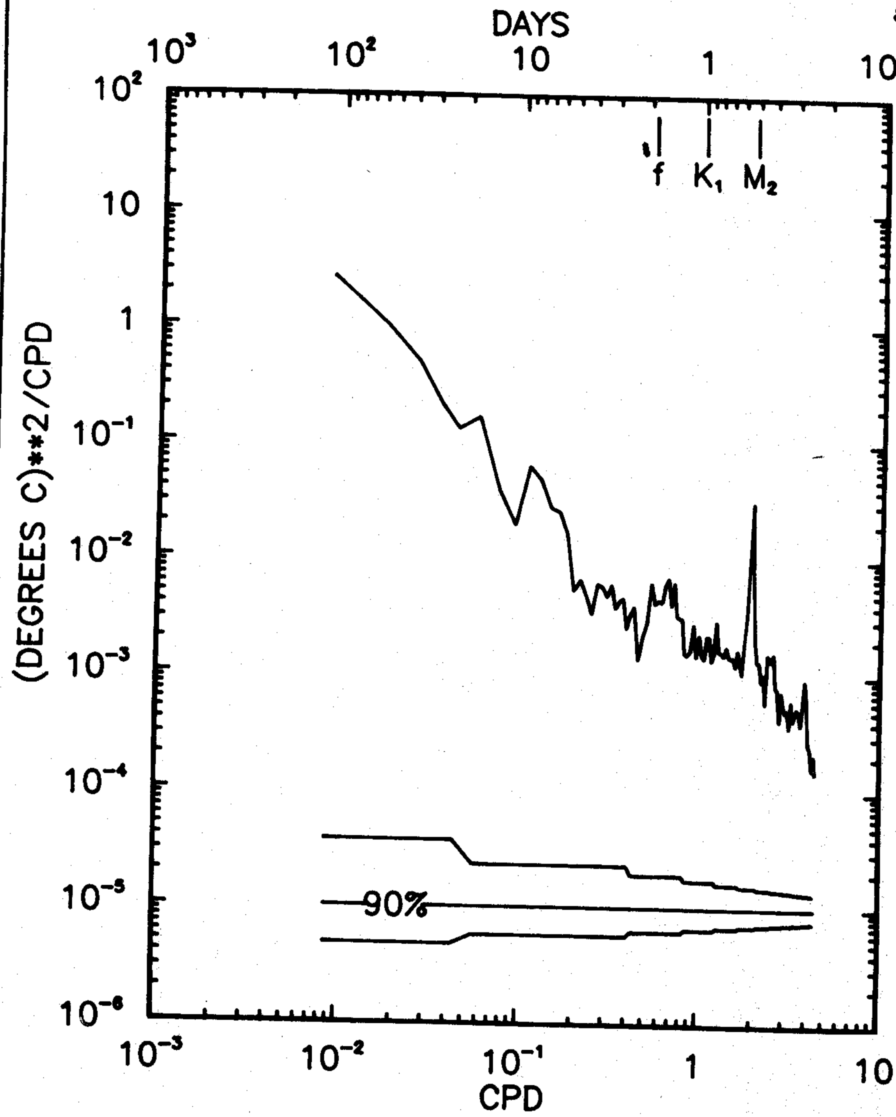

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 UT COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8008 VT COH PHASE



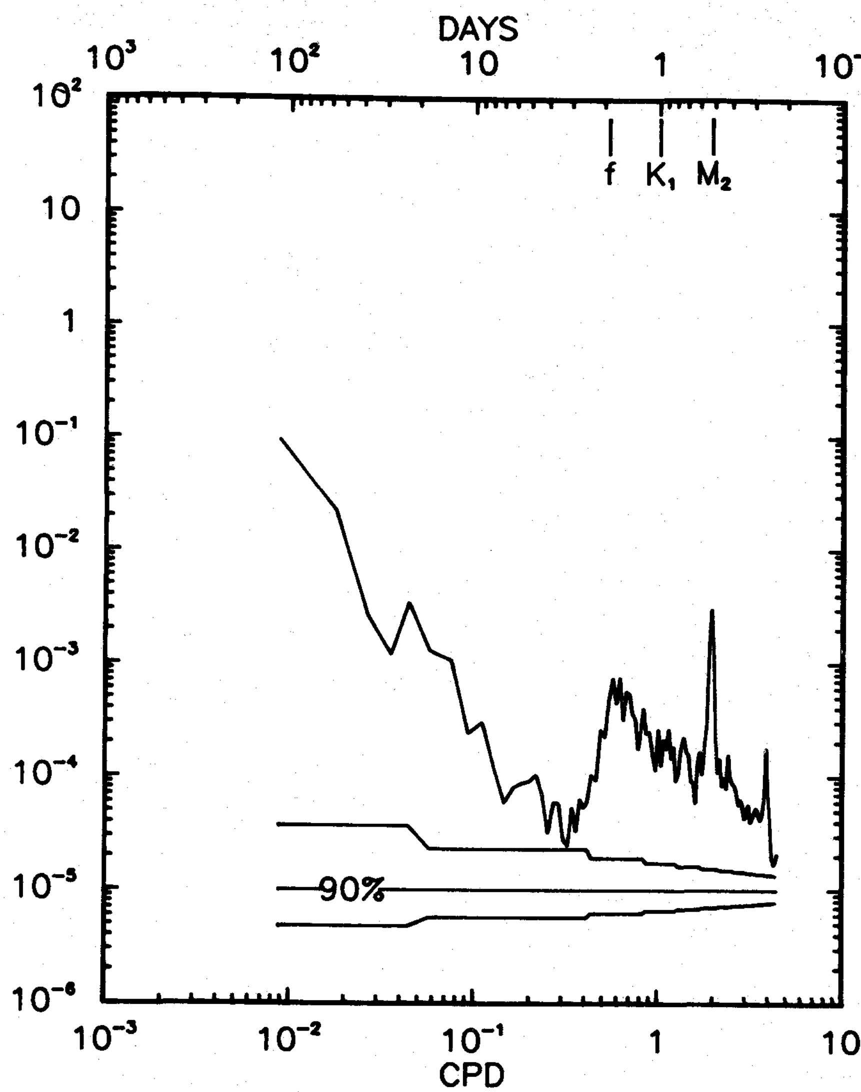
TEMPERATURE
Mooring 80
161 Meters

AUTOSPECTRUM



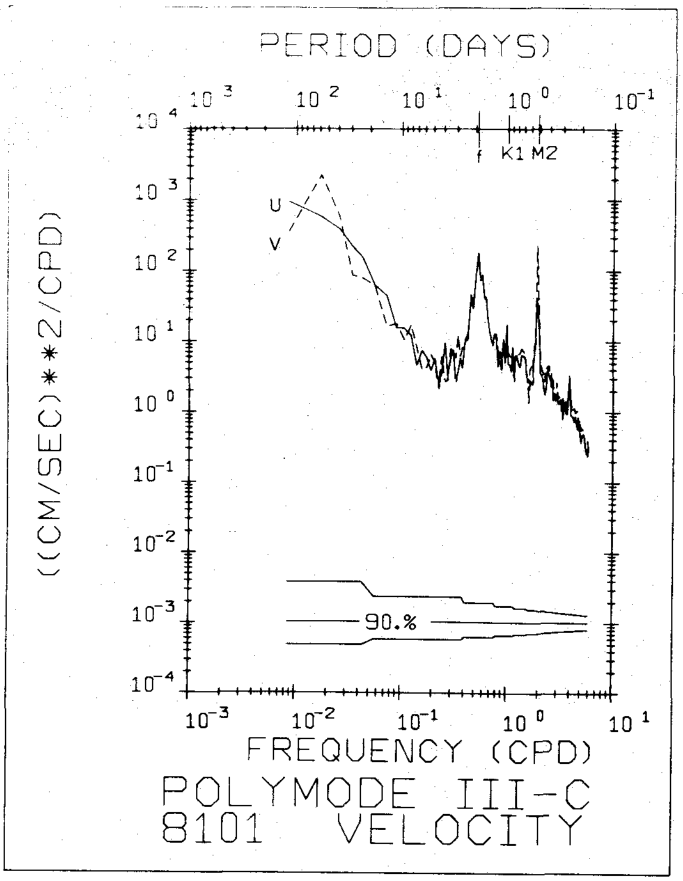
TEMPERATURE
Mooring 80
723 Meters

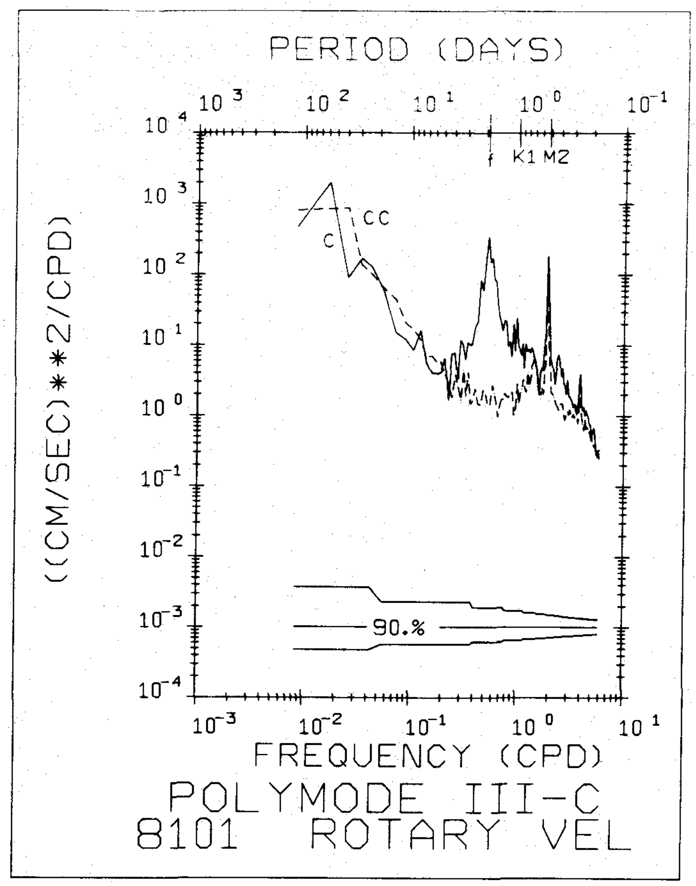
AUTOSPECTRUM

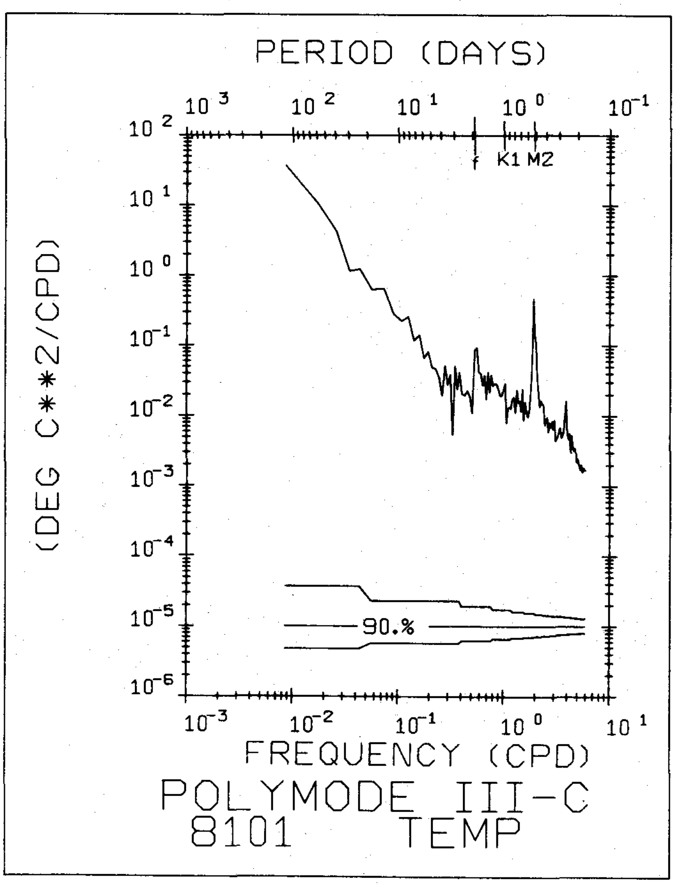


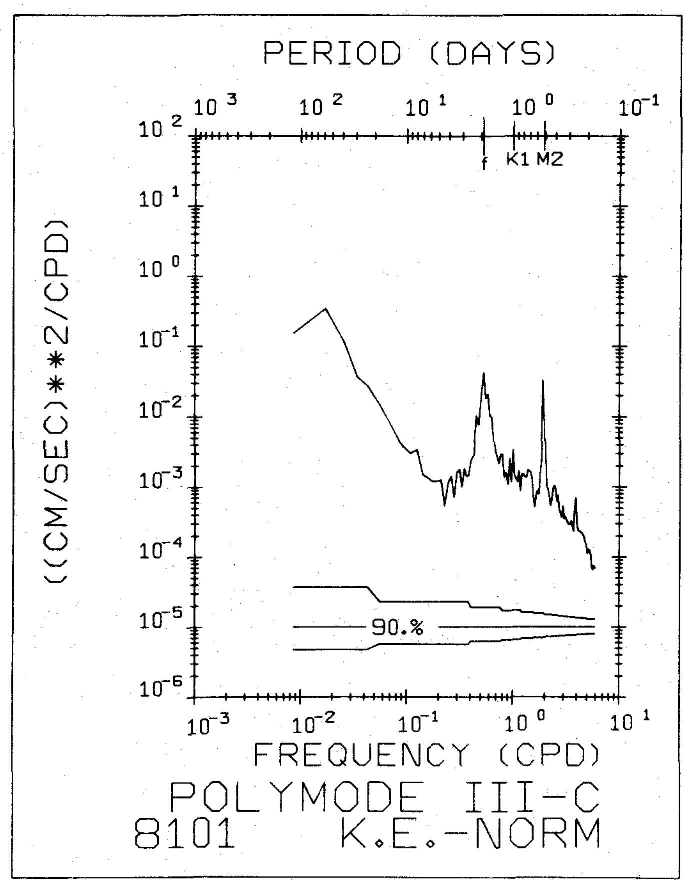
TEMPERATURE
Mooring 80
1519 Meters

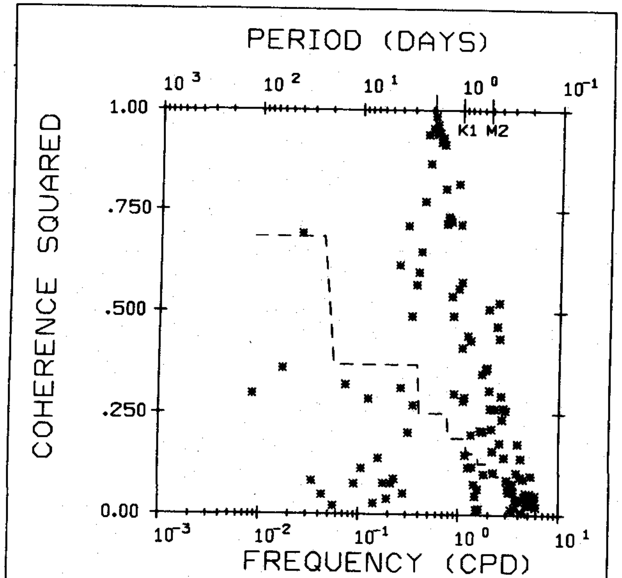
AUTOSPECTRUM


PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
U
V
90.%
POLYMODE III-C
8101 VELOCITY

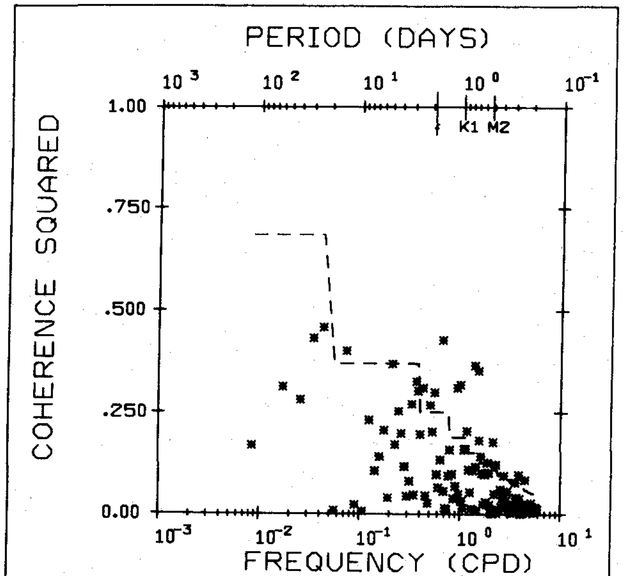

PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
CC
C
90.%
POLYMODE III-C
8101 ROTARY VEL


PERIOD (DAYS)
(DEG C**2/CPD)
FREQUENCY (CPD)
f K1 M2
90.%
POLYMODE III-C
8101 TEMP

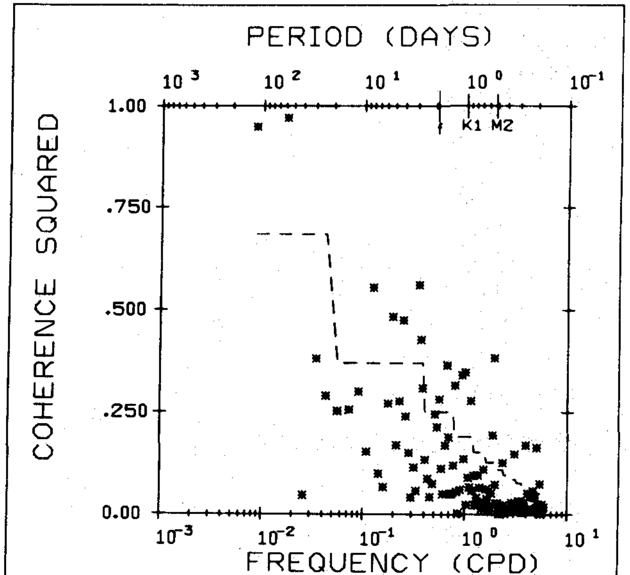

PERIOD (DAYS)
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
f K1 M2
90.%
POLYMODE III-C
8101 K.E.-NORM



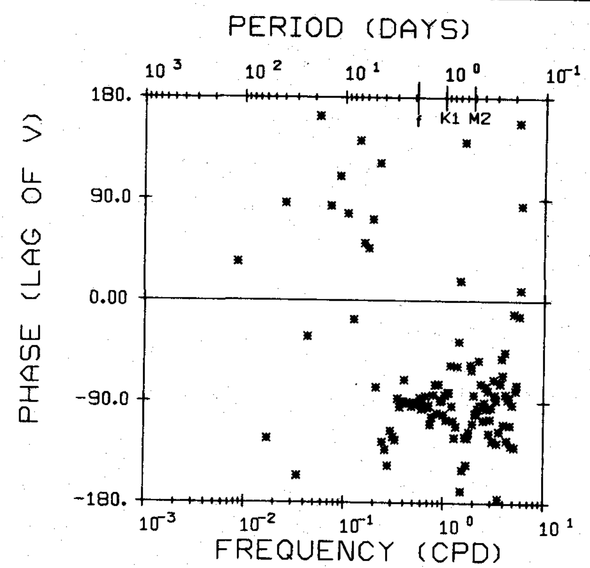
POLYMODE III-C
8101 UV COH SQ



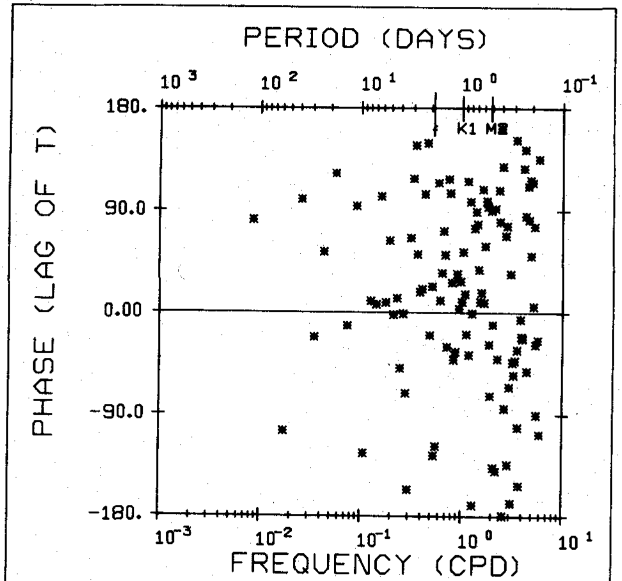
POLYMODE III-C
8101 UT COH SQ



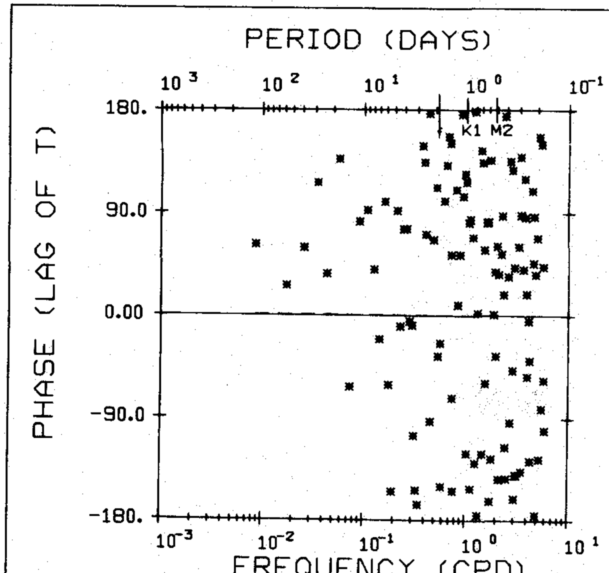
POLYMODE III-C
8101 VT COH SQ



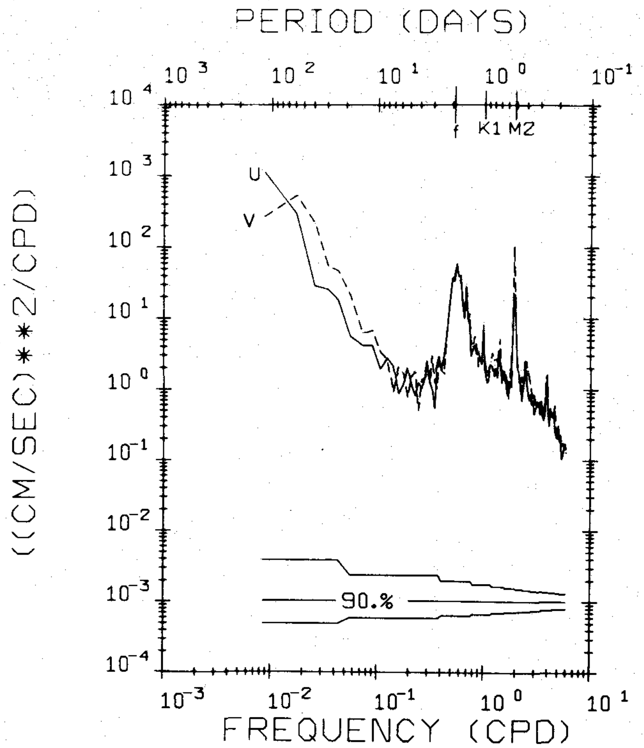
POLYMODE III-C
8101 UV COH PHASE



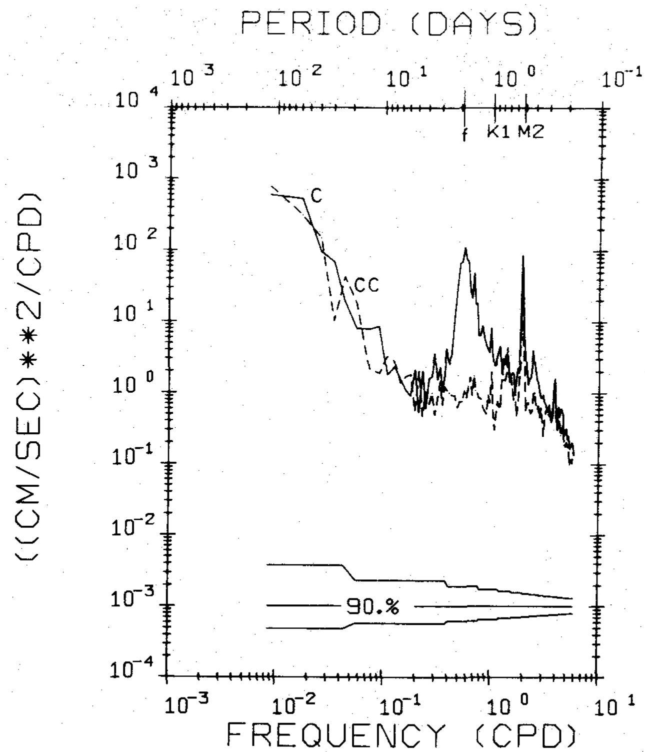
POLYMODE III-C
8101 UT COH PHASE



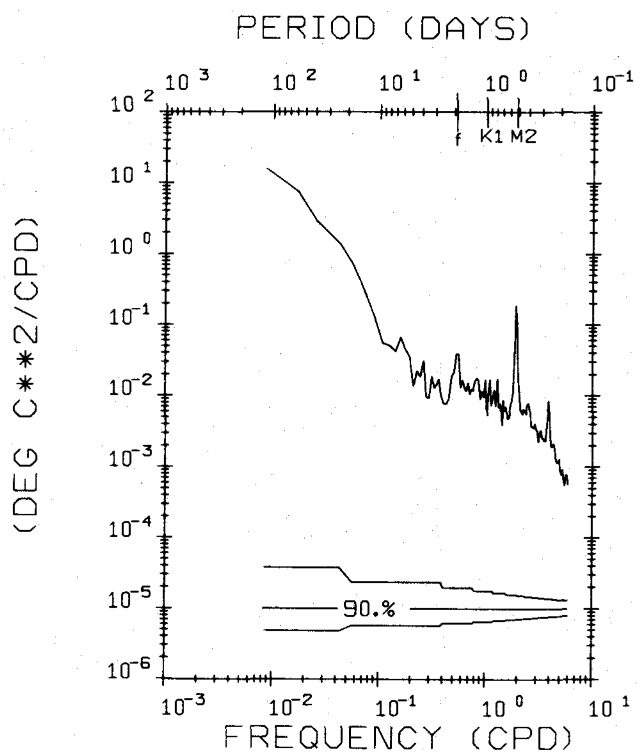
POLYMODE III-C
8101 VT COH PHASE



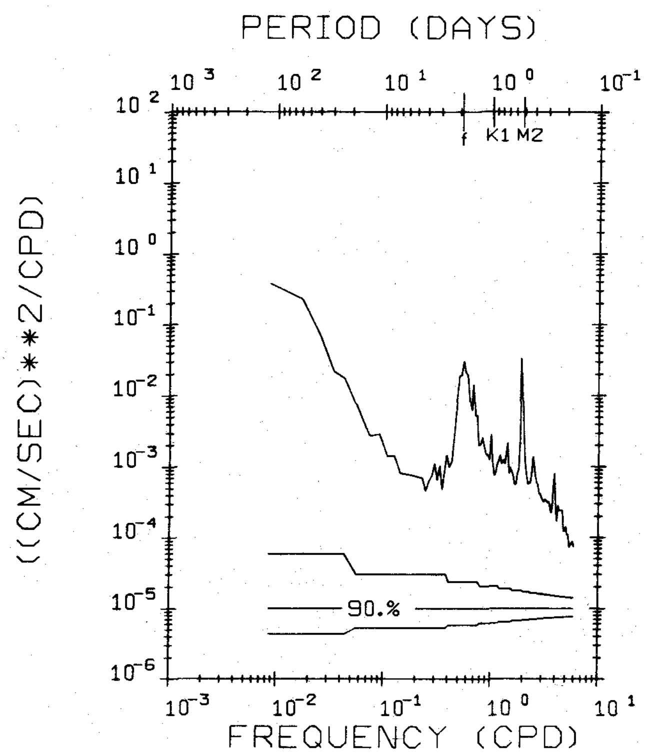
POLYMODE III-C
8103 VELOCITY



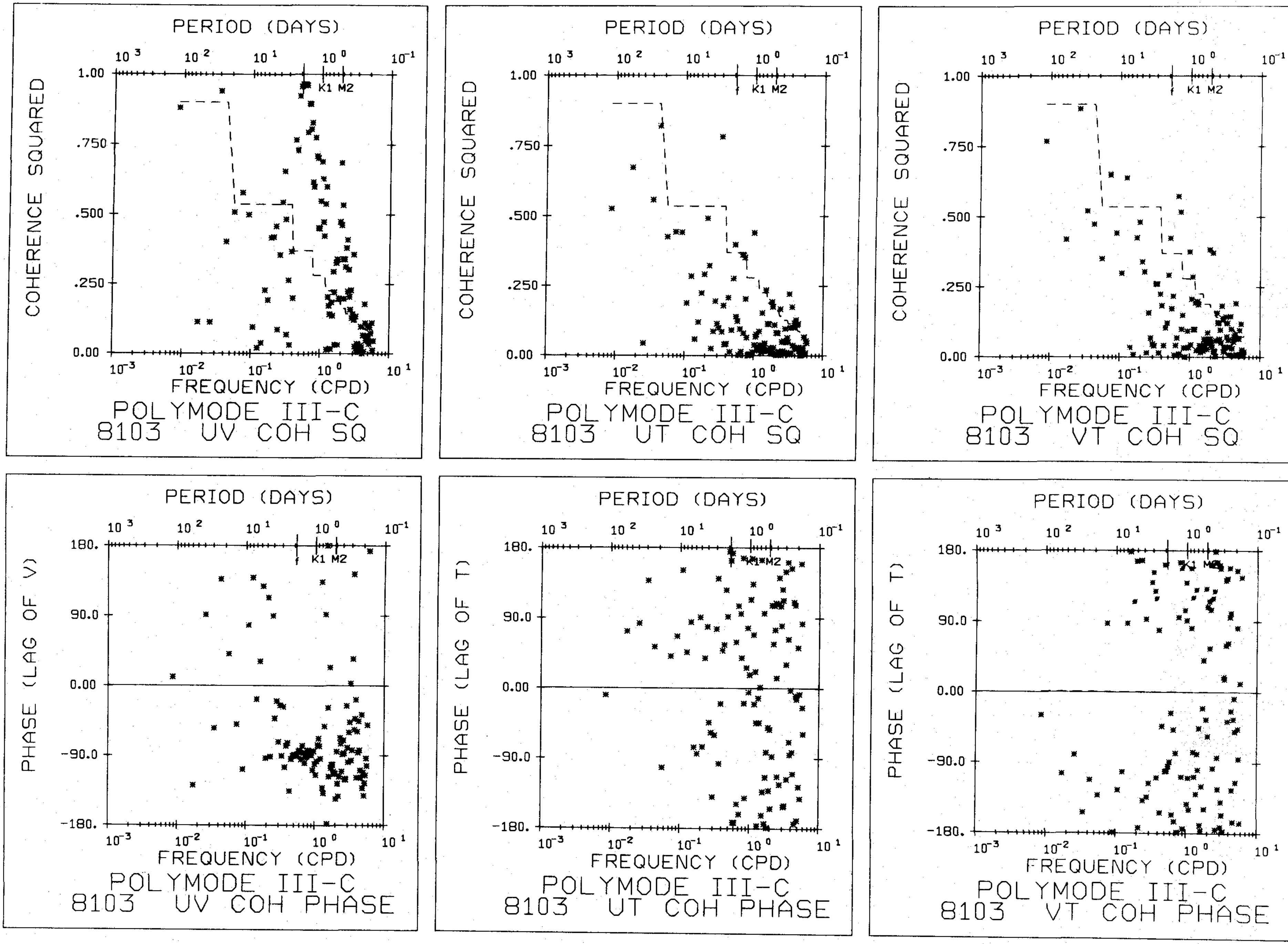
POLYMODE III-C
8103 ROTARY VEL

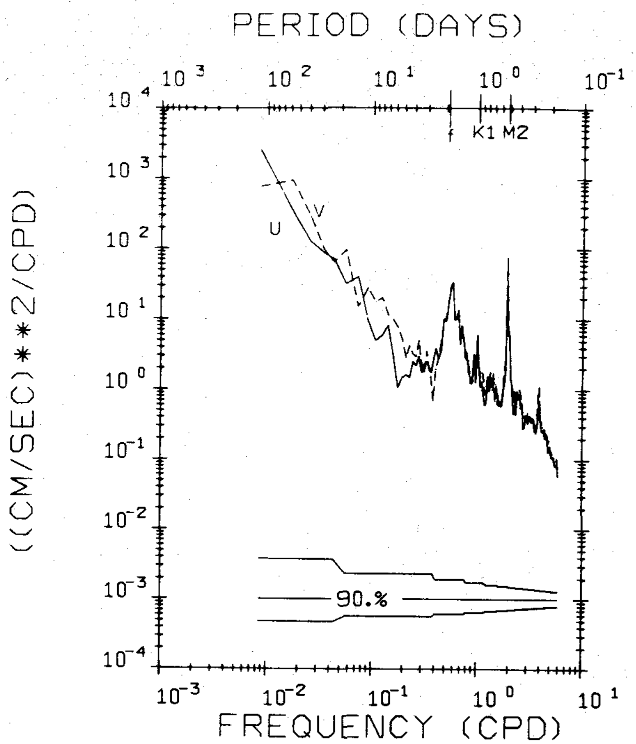


POLYMODE III-C
8103 TEMP

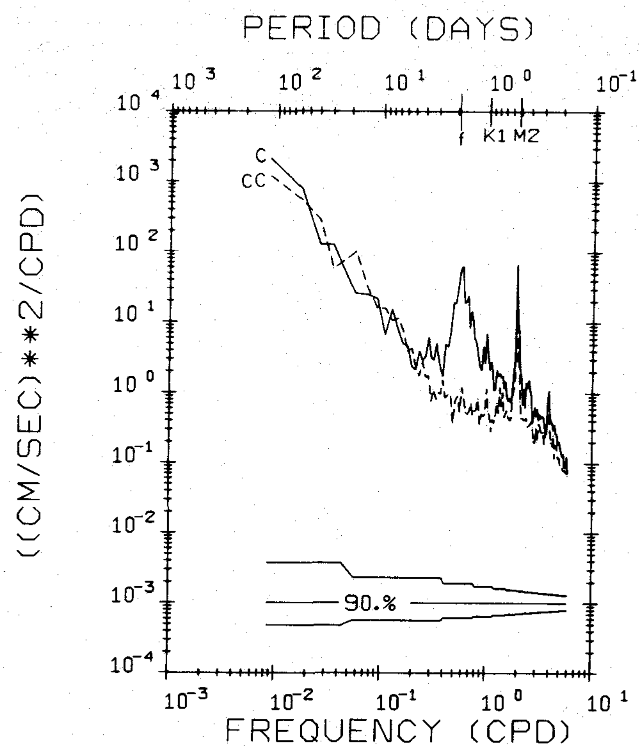


POLYMODE III-C
8103 K.E.-NORM

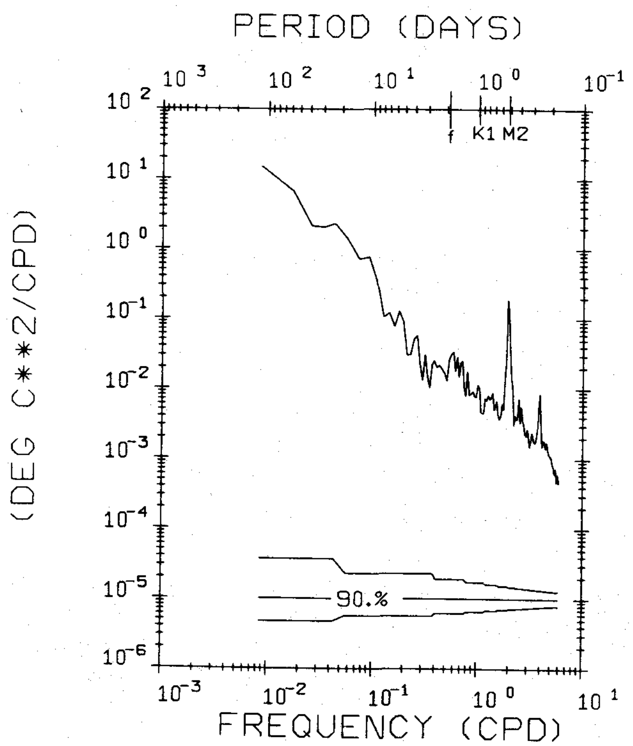

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 UV COH SQ
PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 UT COH SQ
PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 VT COH SQ
PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 UV COH PHASE
PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 UT COH PHASE
PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8103 VT COH PHASE



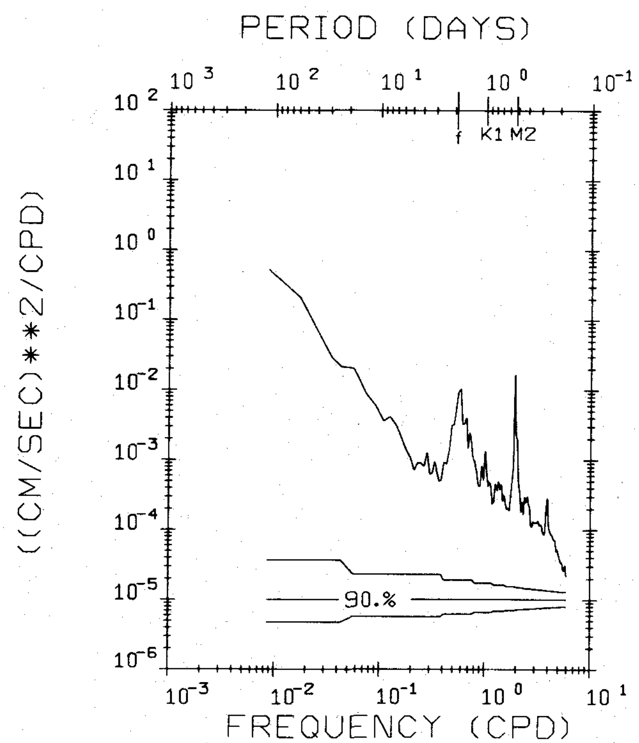
POLYMODE III-C
8104 VELOCITY



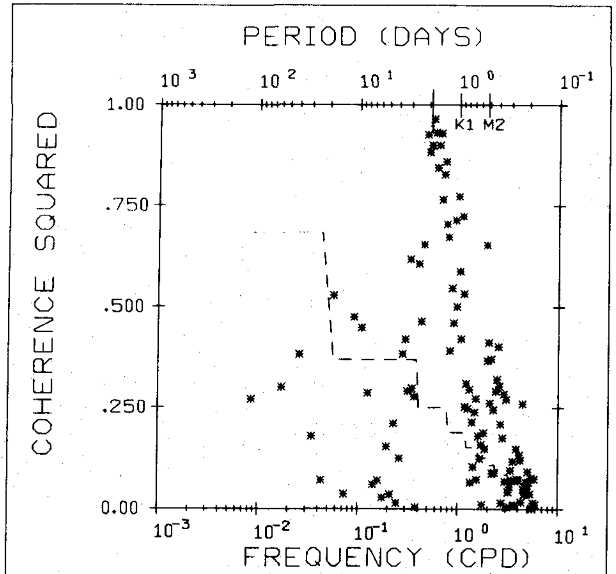
POLYMODE III-C
8104 ROTARY VEL



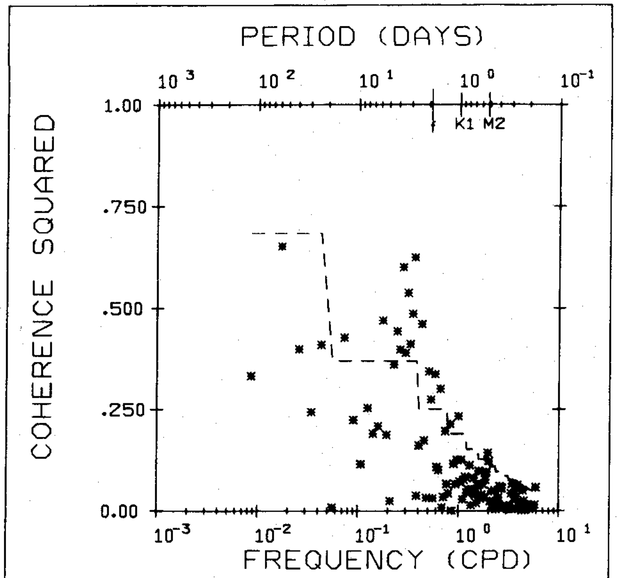
POLYMODE III-C
8104 TEMP



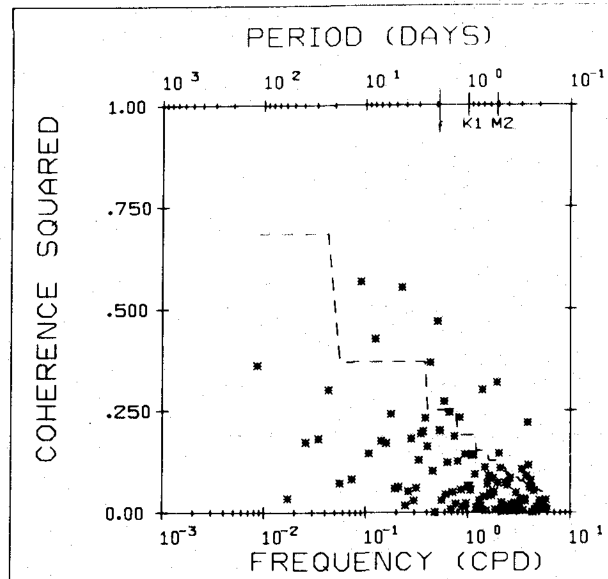
POLYMODE III-C
8104 K.E.-NORM



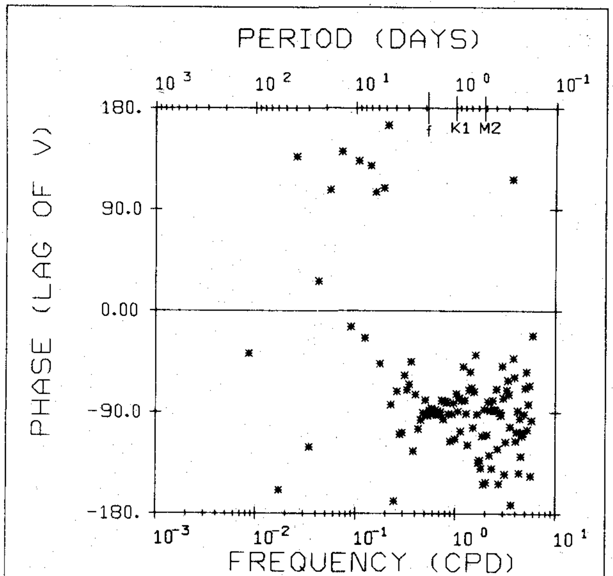
POLYMODE III-C
8104 UV COH SQ



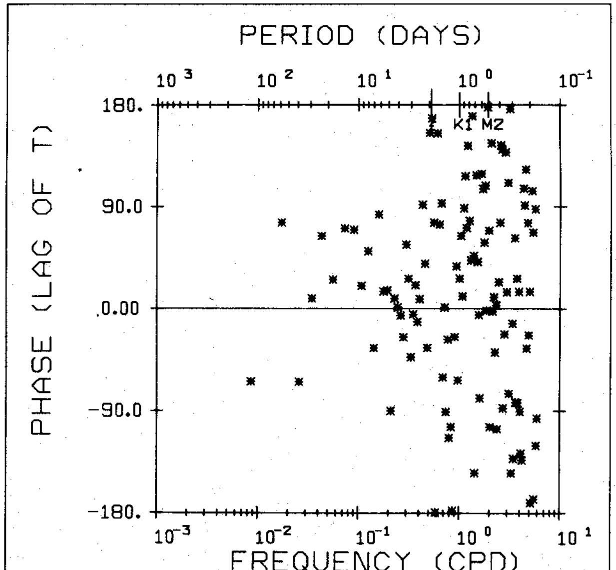
POLYMODE III-C
8104 UT COH SQ



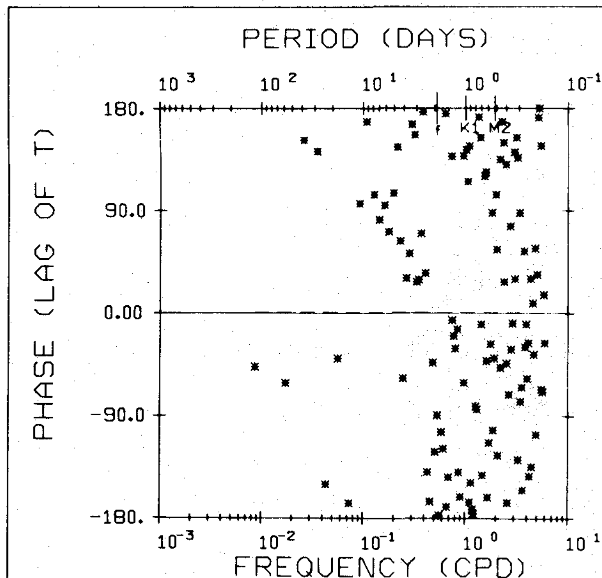
POLYMODE III-C
8104 VT COH SQ



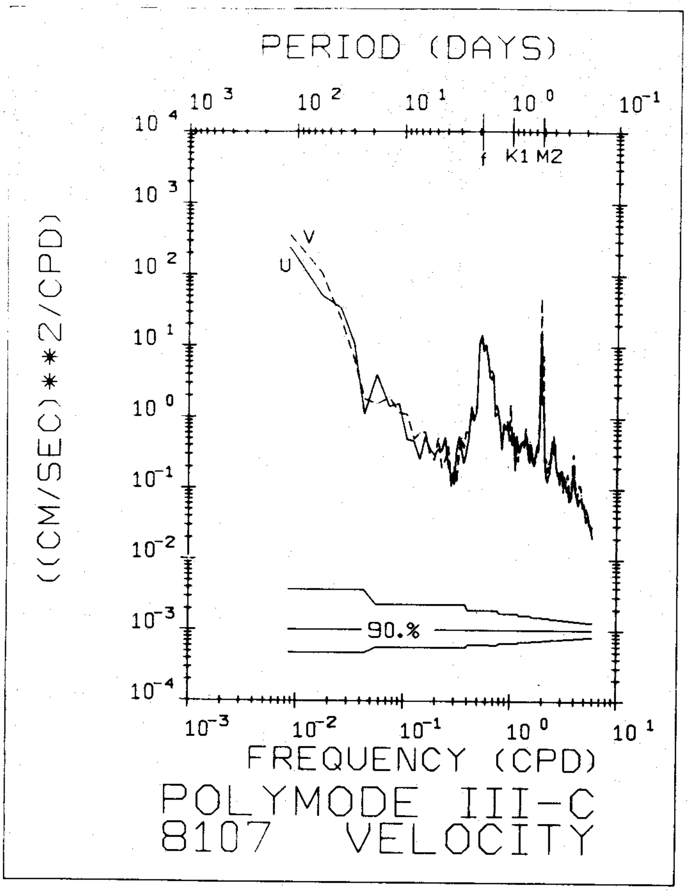
POLYMODE III-C
8104 UV COH PHASE

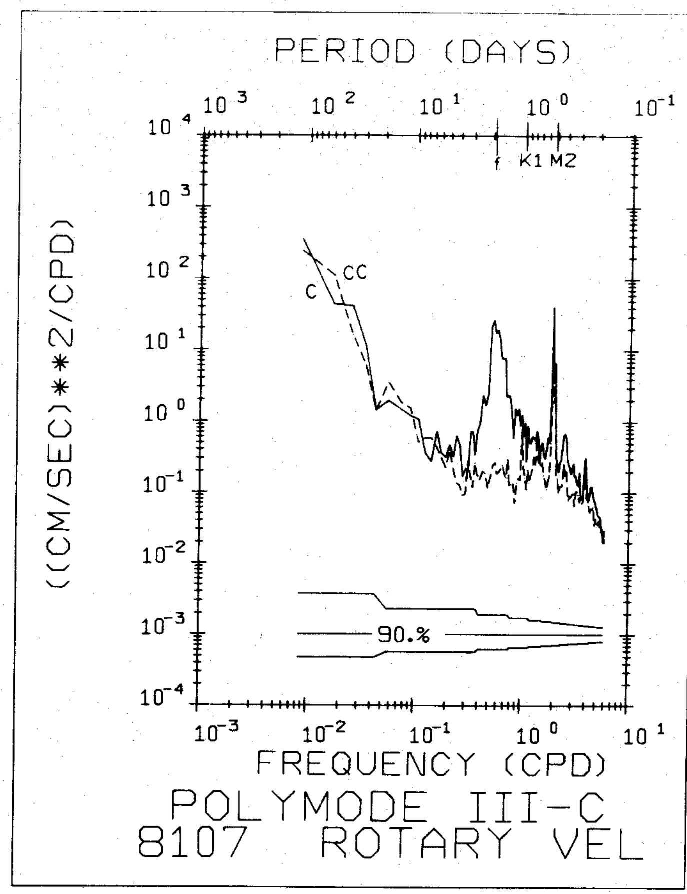


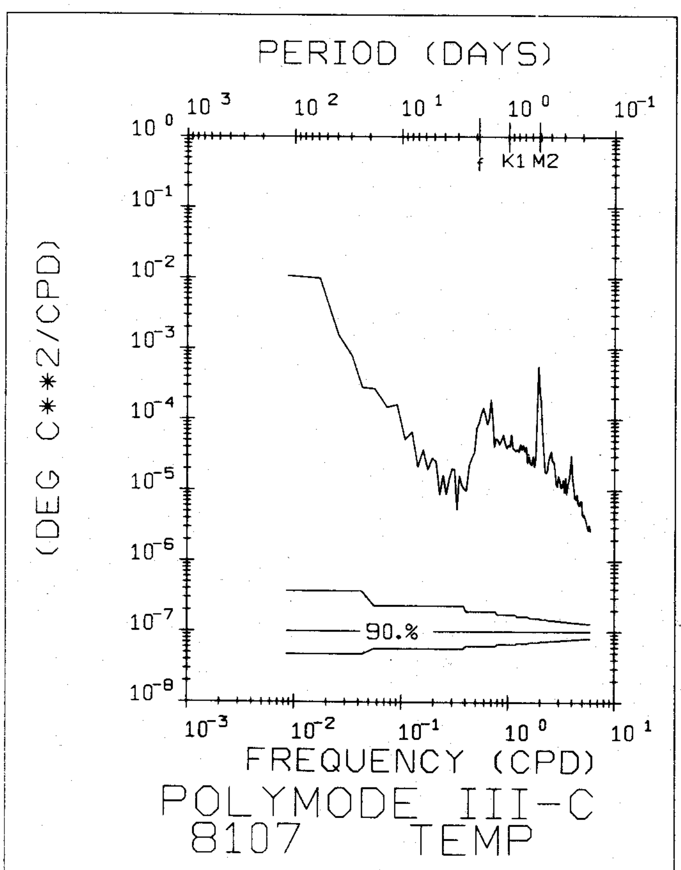
POLYMODE III-C
8104 UT COH PHASE

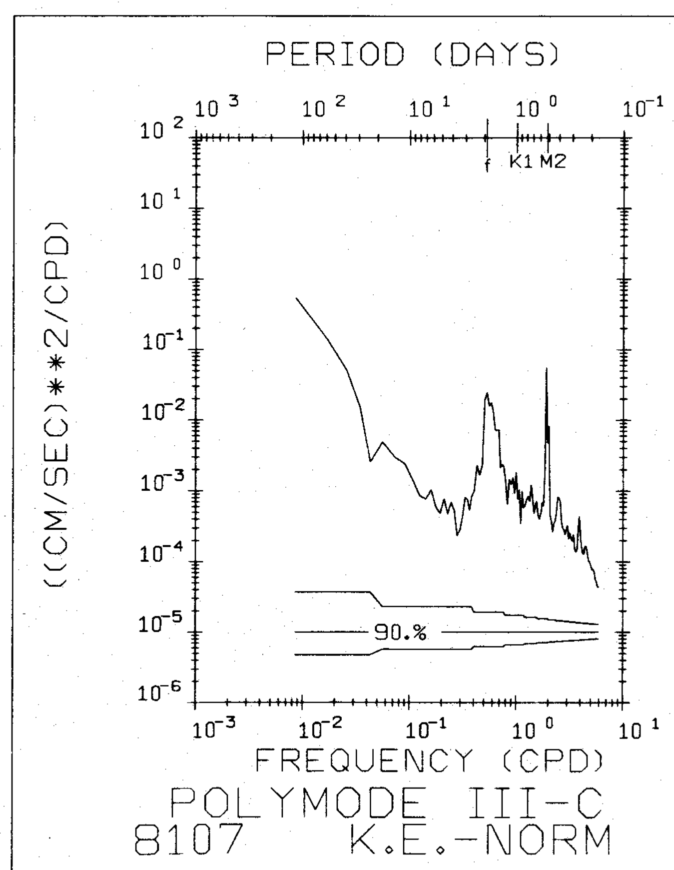


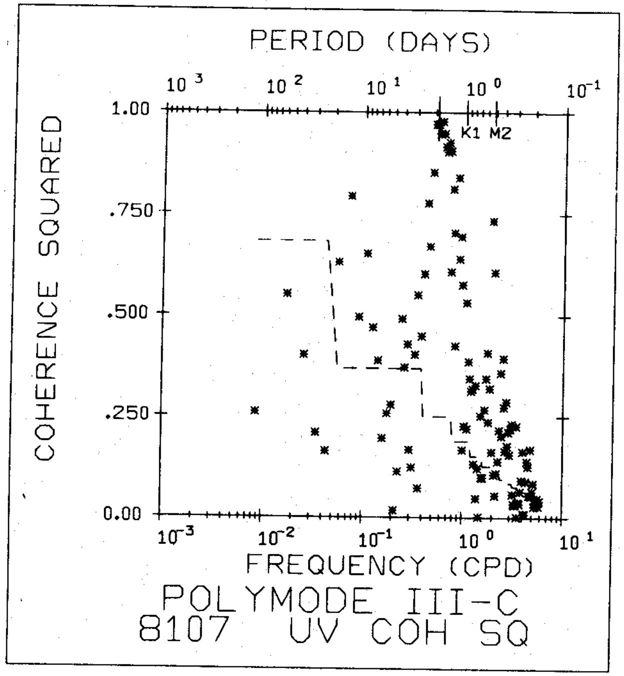
POLYMODE III-C
8104 VT COH PHASE

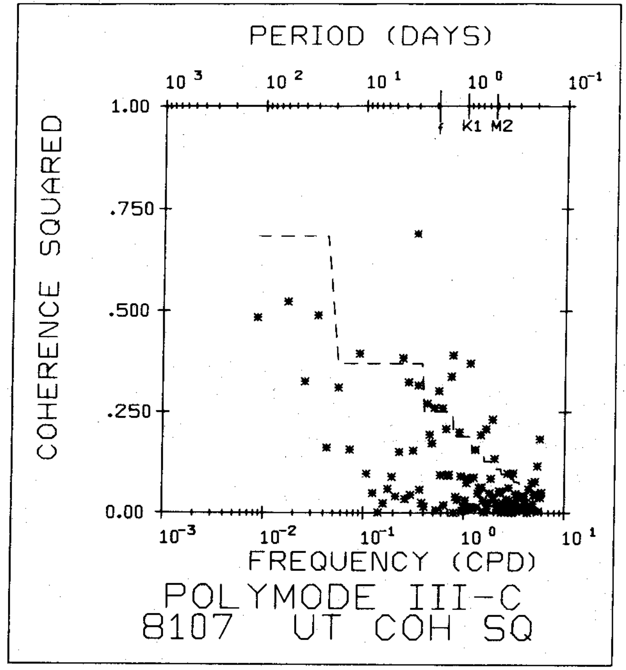

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
U
V
90.%
((CM/SEC)**2/CPD)
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8107 VELOCITY

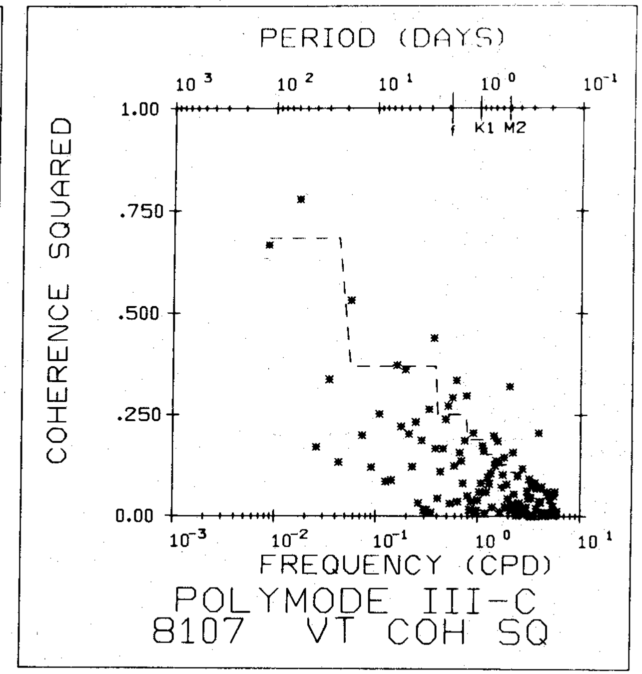

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
C
CC
90.%
((CM/SEC)**2/CPD)
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8107 ROTARY VEL

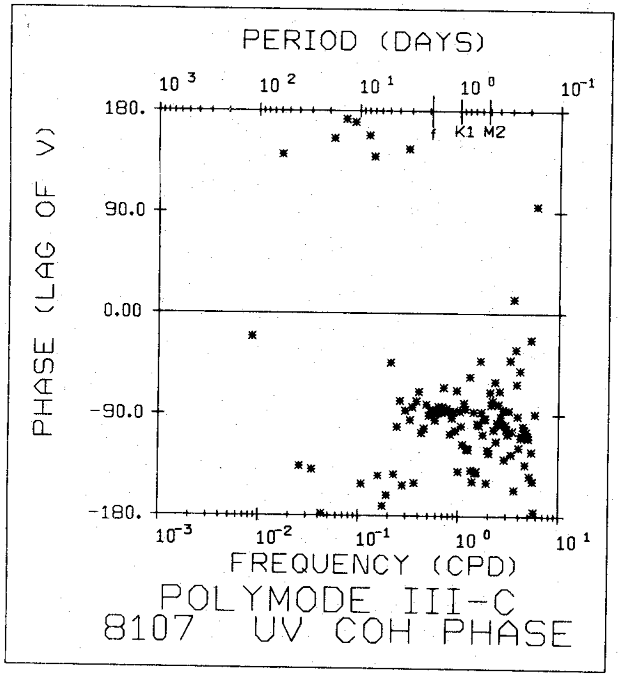

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
90.%
(DEG C**2/CPD)
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8107 TEMP

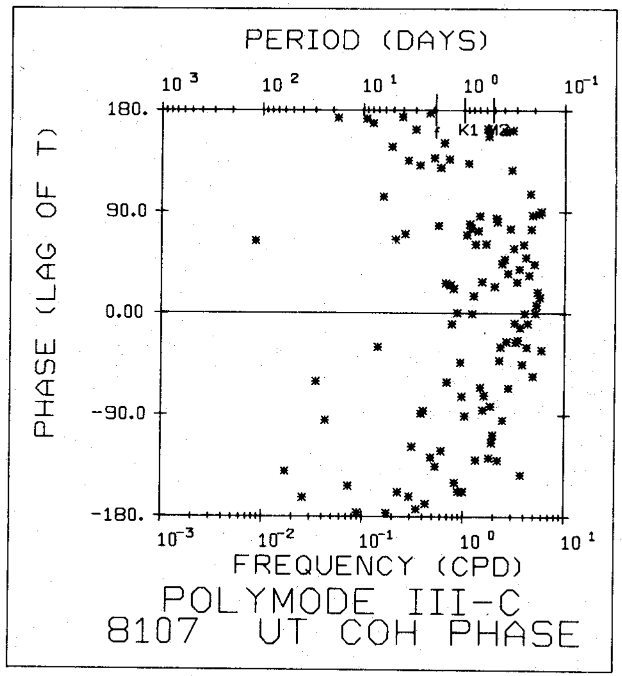

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
90.%
((CM/SEC)**2/CPD)
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8107 K.E.-NORM

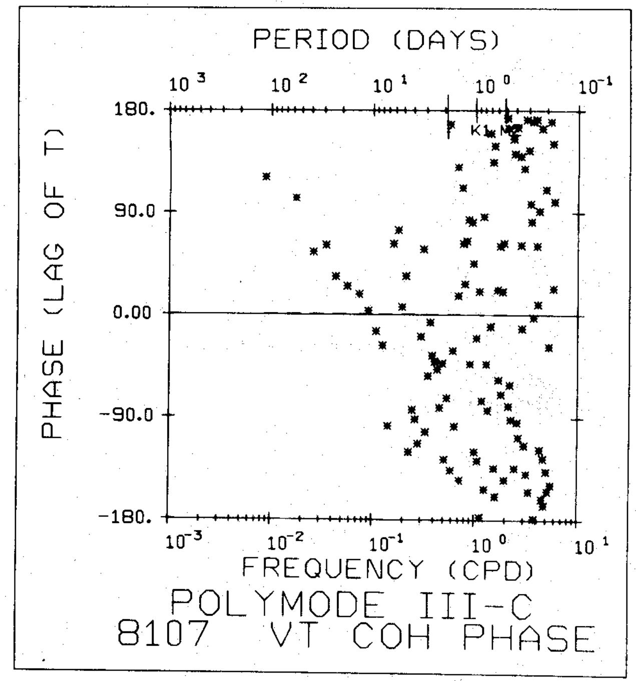

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 UV COH SQ

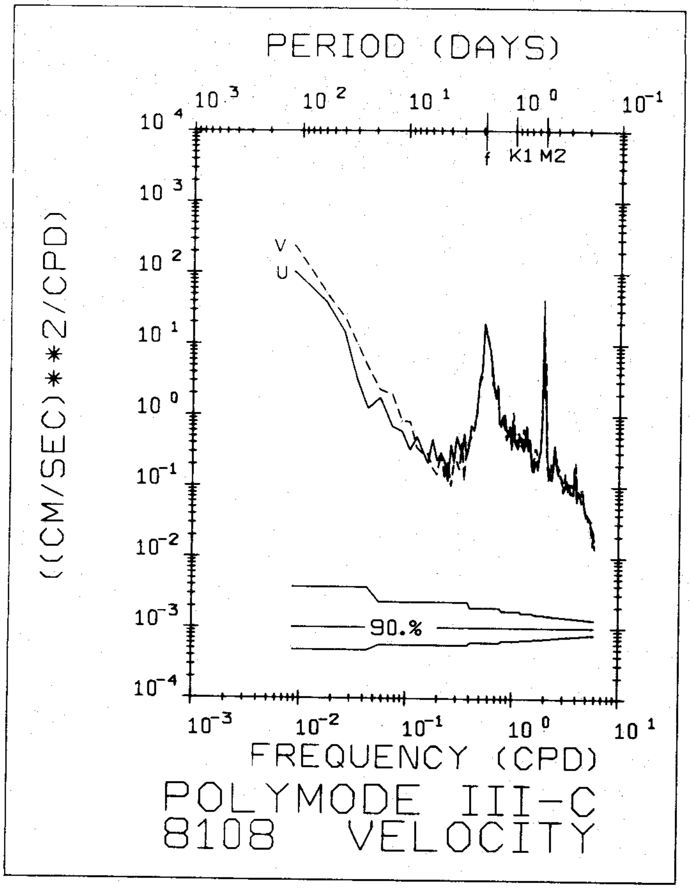

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 UT COH SQ

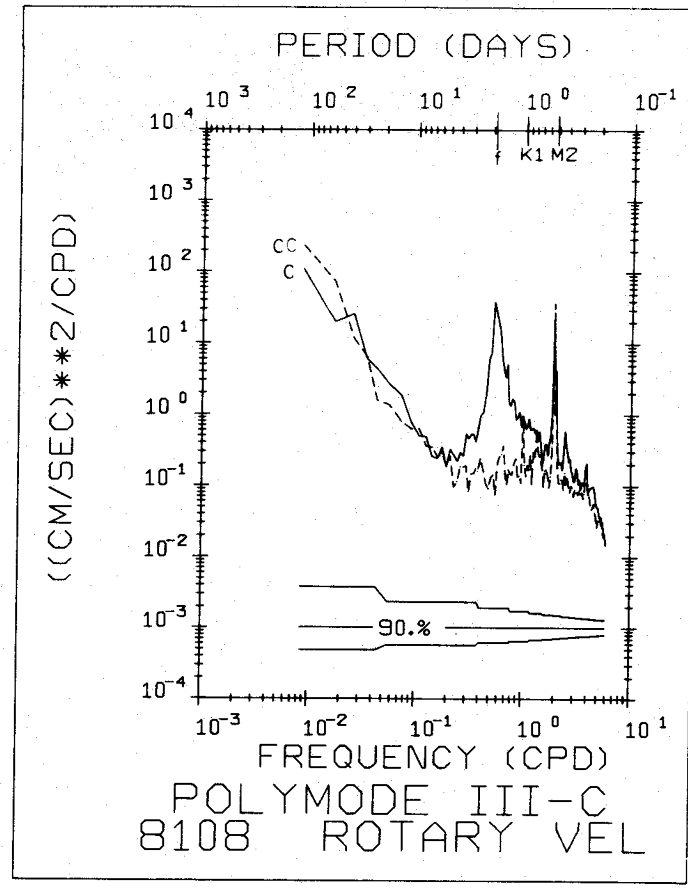

PERIOD (DAYS)
COHERENCE SQUARED
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 VT COH SQ

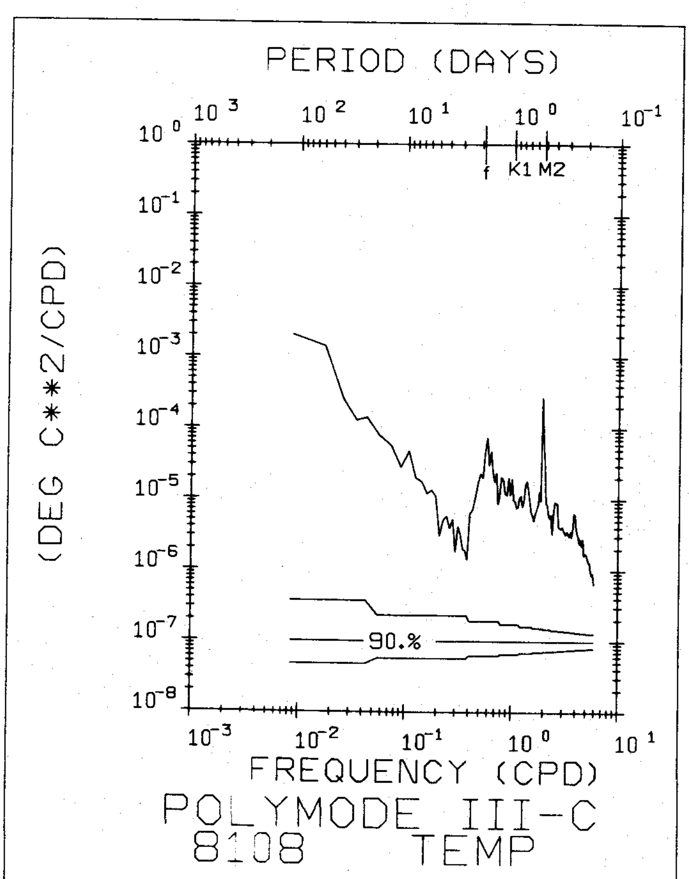

PERIOD (DAYS)
PHASE (LAG OF V)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 UV COH PHASE

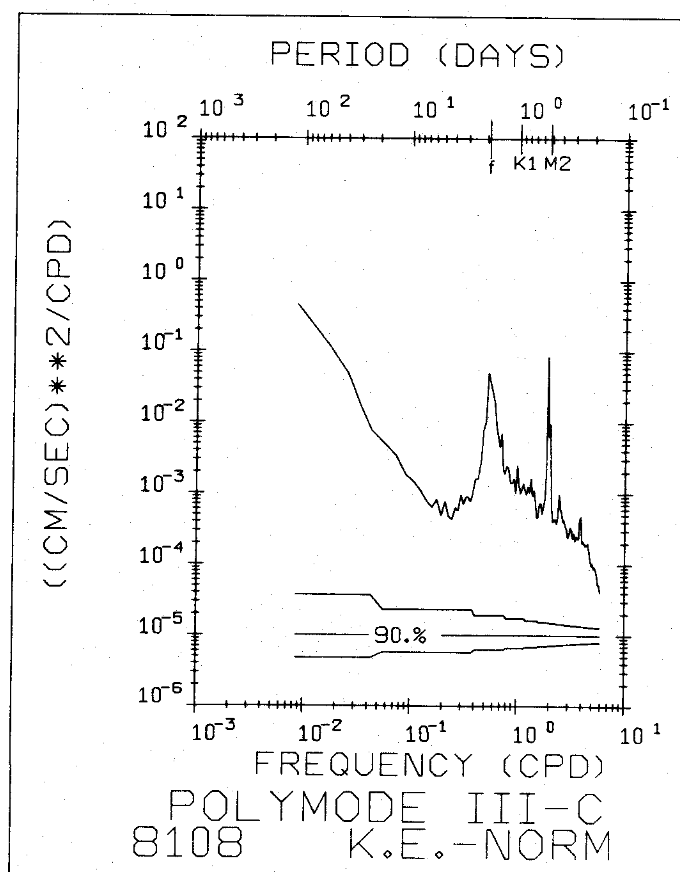

PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 UT COH PHASE

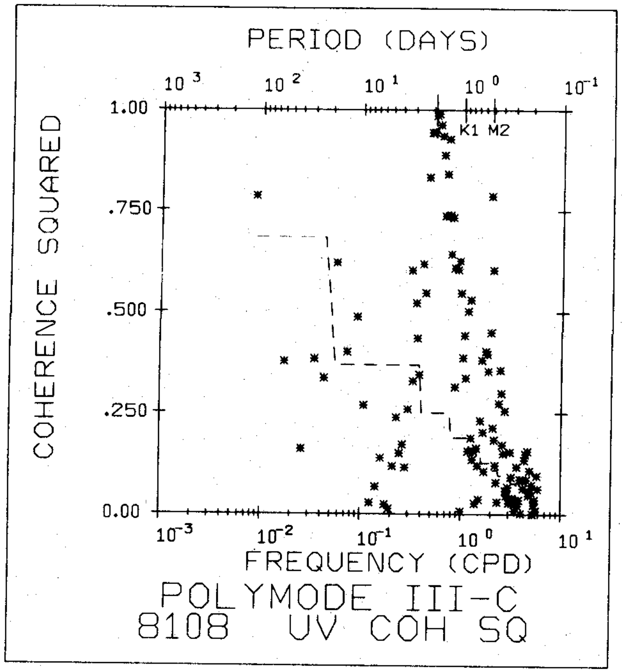

PERIOD (DAYS)
PHASE (LAG OF T)
K1 M2
FREQUENCY (CPD)
POLYMODE III-C
8107 VT COH PHASE

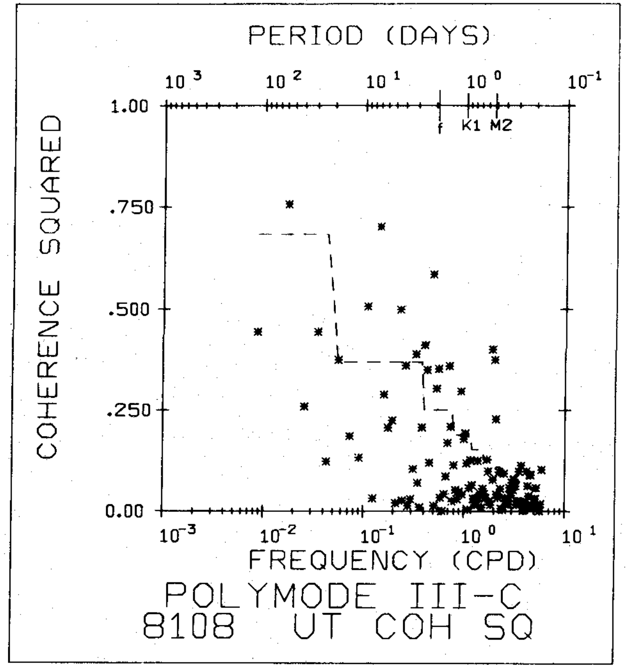

PERIOD (DAYS)
f K1 M2
((CM/SEC)**2/CPD)
V
U
90.%
FREQUENCY (CPD)
POLYMODE III-C
8108 VELOCITY

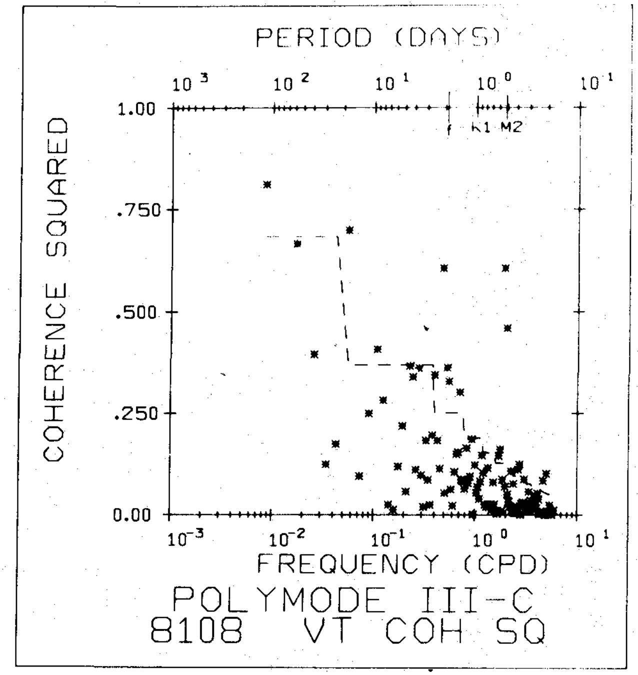

PERIOD (DAYS)
f K1 M2
((CM/SEC)**2/CPD)
CC
C
90.%
FREQUENCY (CPD)
POLYMODE III-C
8108 ROTARY VEL

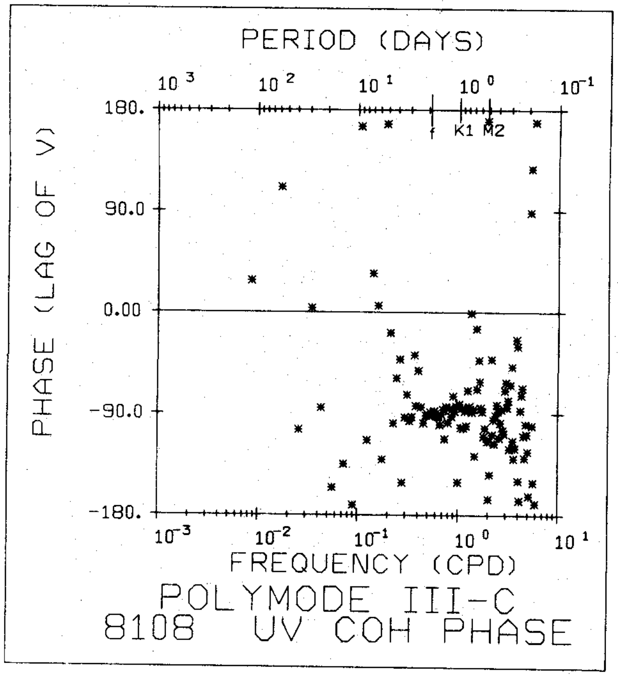

PERIOD (DAYS)
f K1 M2
(DEG C**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
8108 TEMP

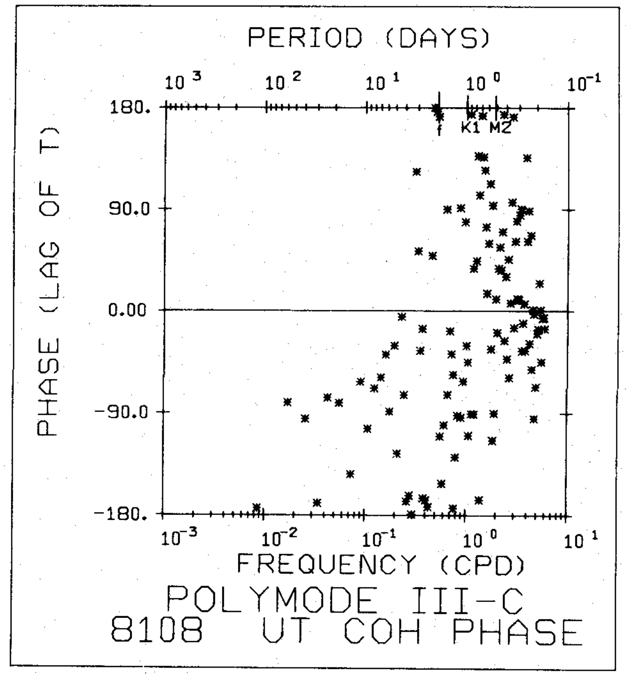

PERIOD (DAYS)
f K1 M2
((CM/SEC)**2/CPD)
90.%
FREQUENCY (CPD)
POLYMODE III-C
8108 K.E.-NORM

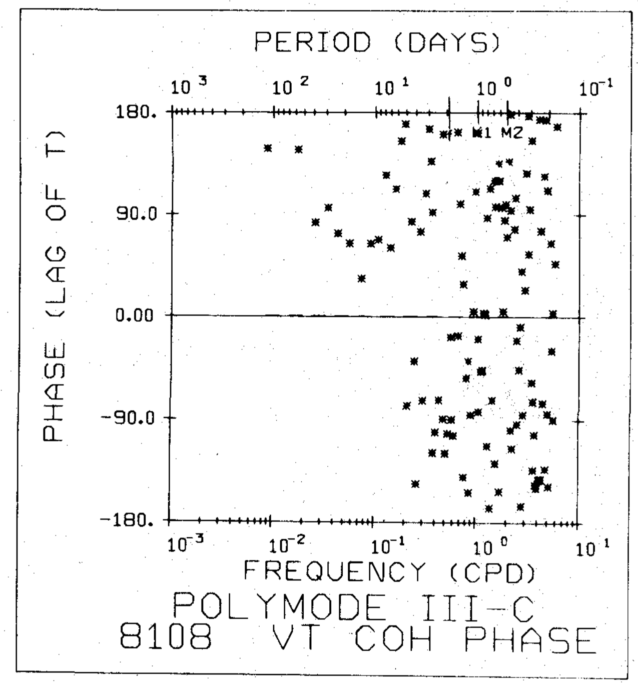

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 UV COH SQ

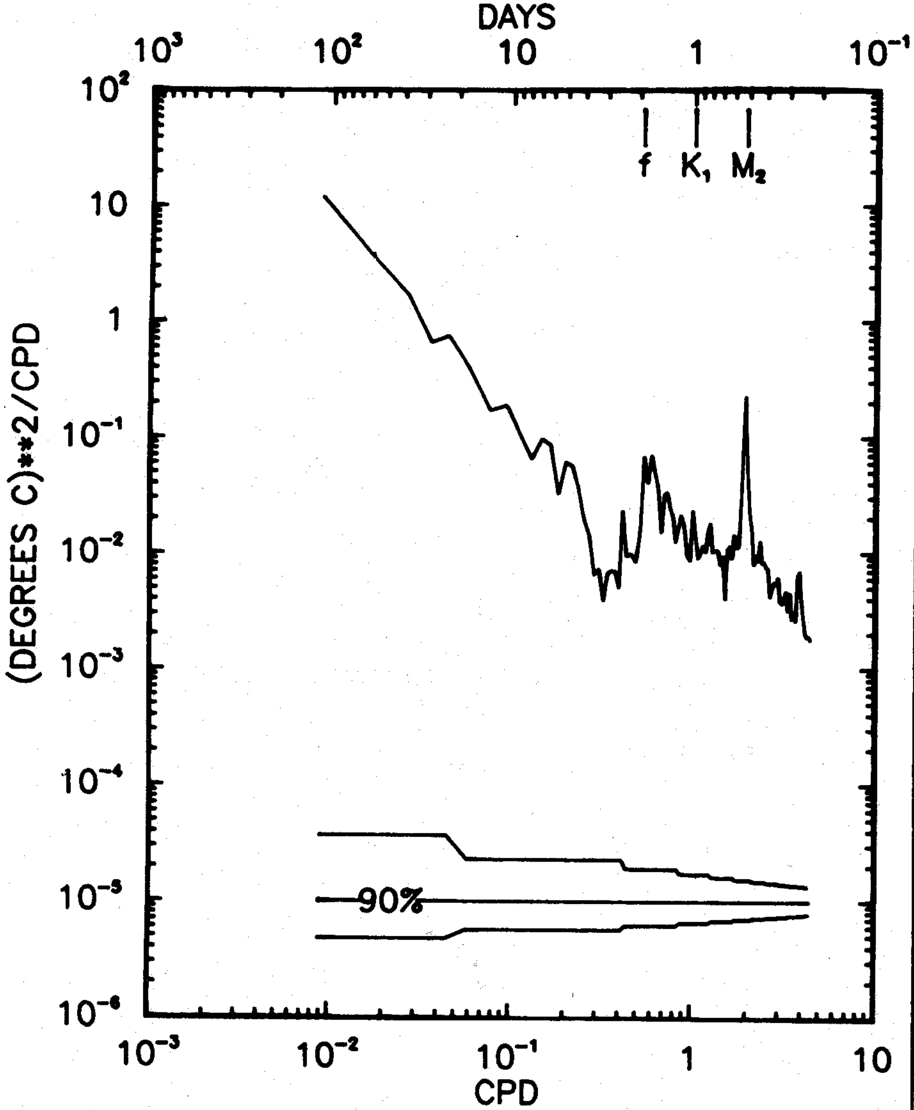

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 VT COH SQ


PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 UV COH PHASE

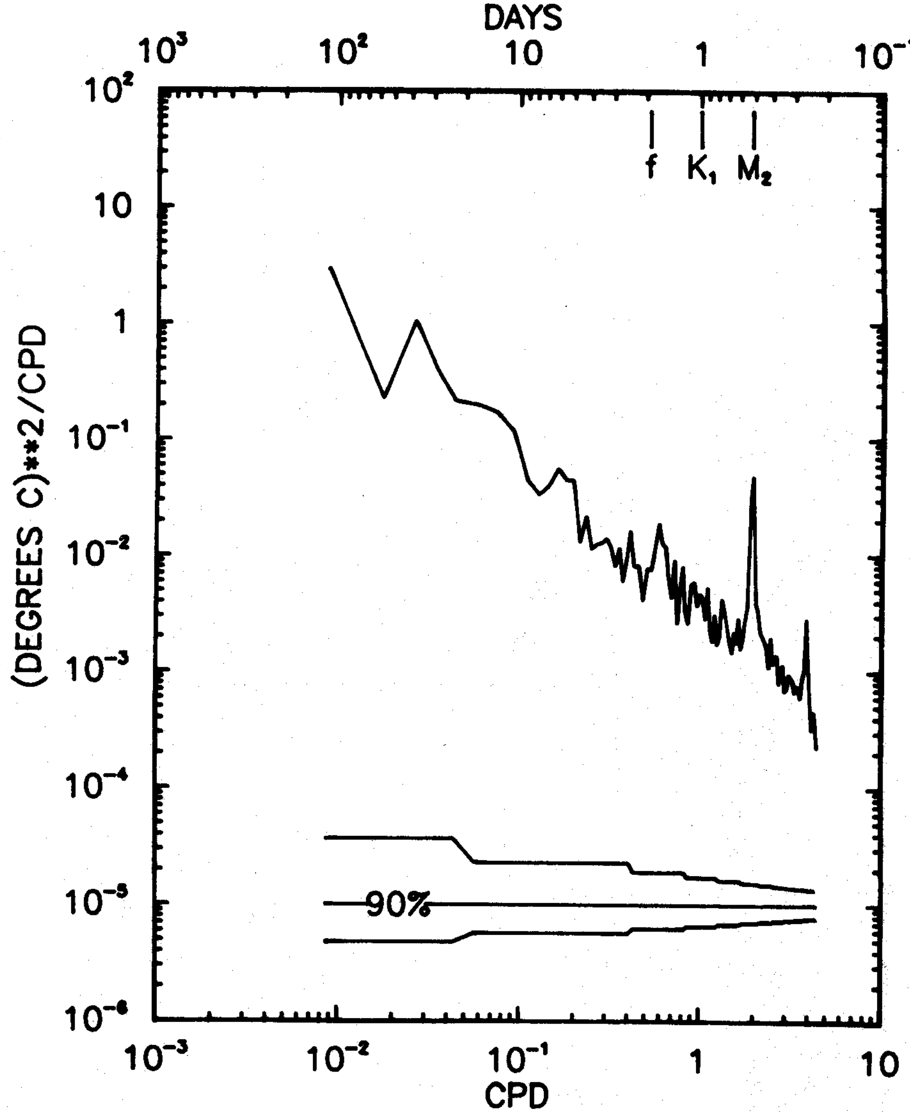

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 UT COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8108 VT COH PHASE



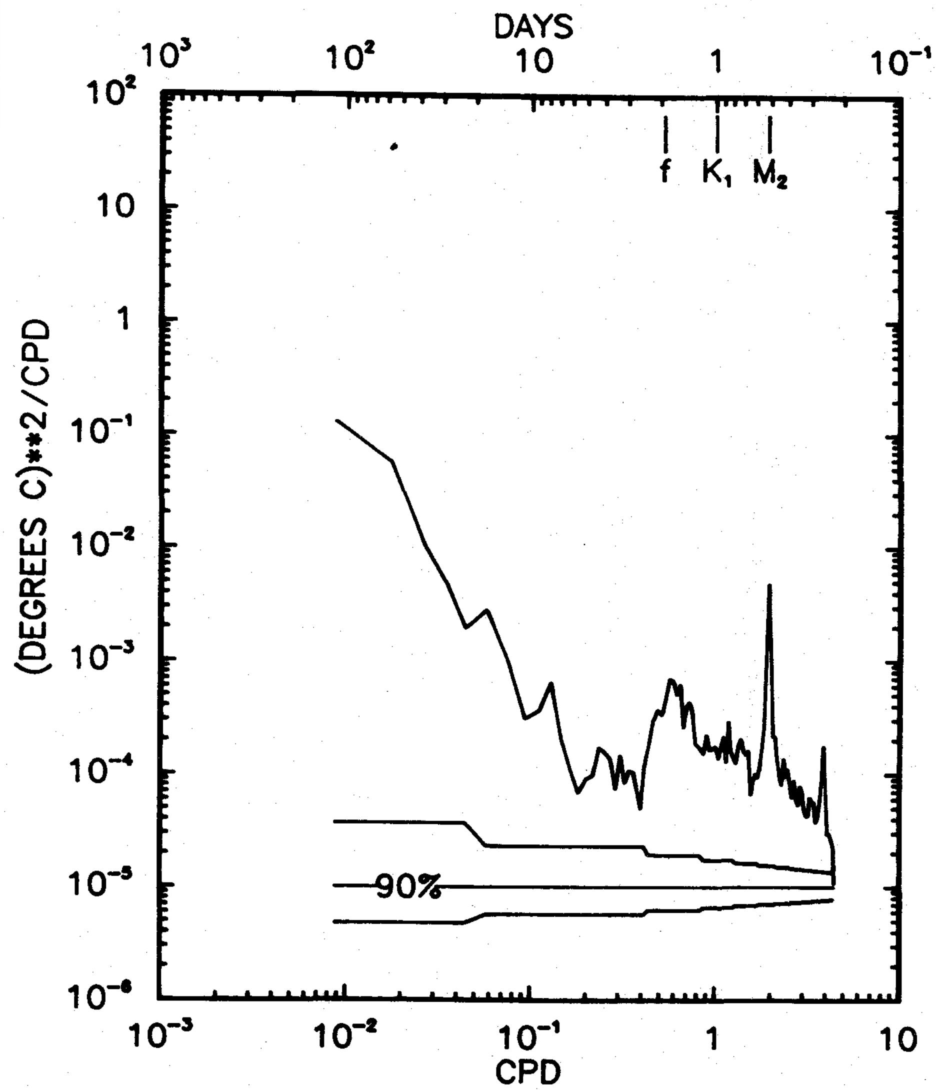
TEMPERATURE
Mooring 81
236 Meters

AUTOSPECTRUM



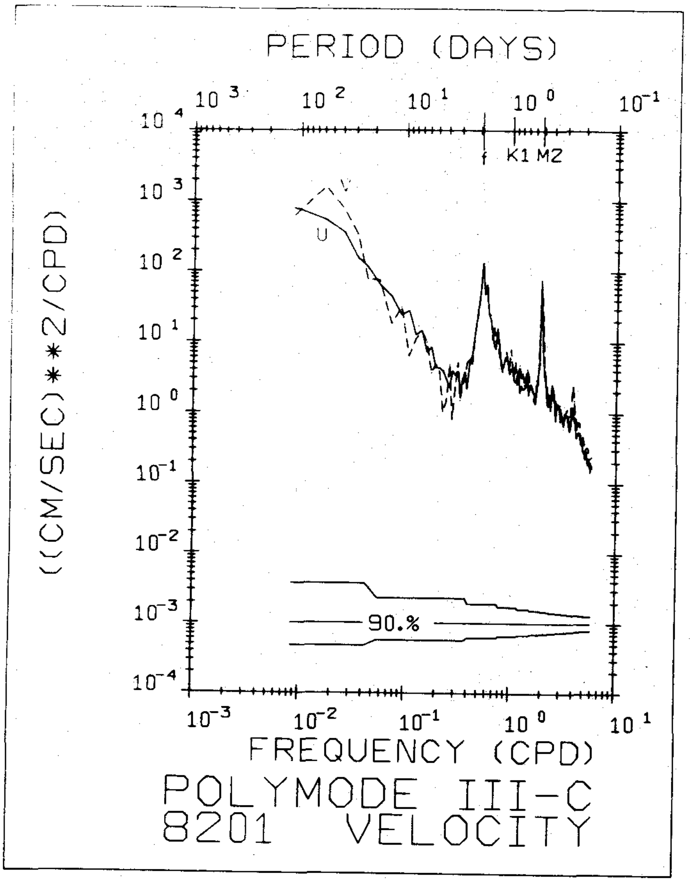
TEMPERATURE
Mooring 81
663 Meters

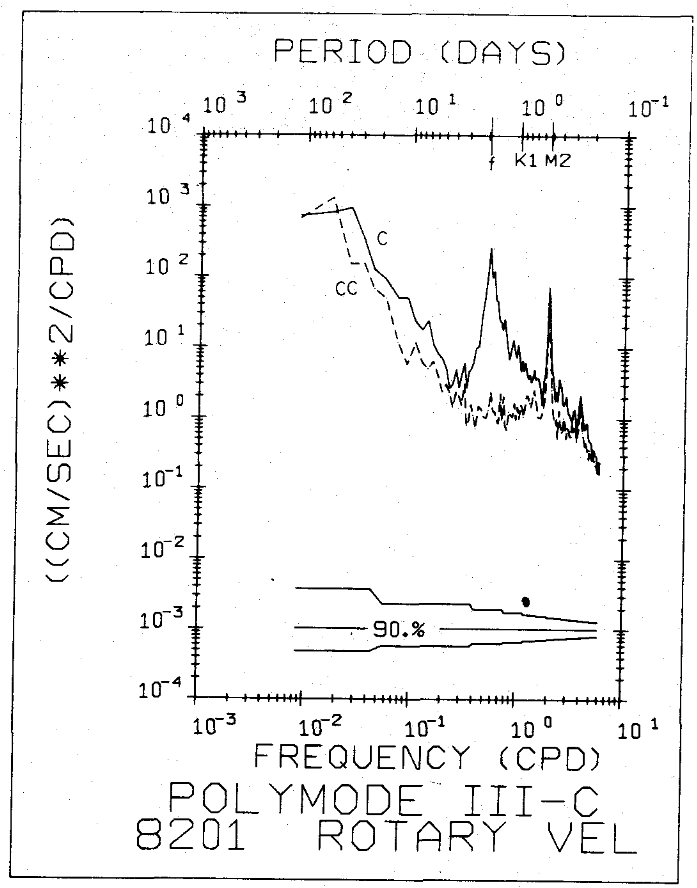
AUTOSPECTRUM

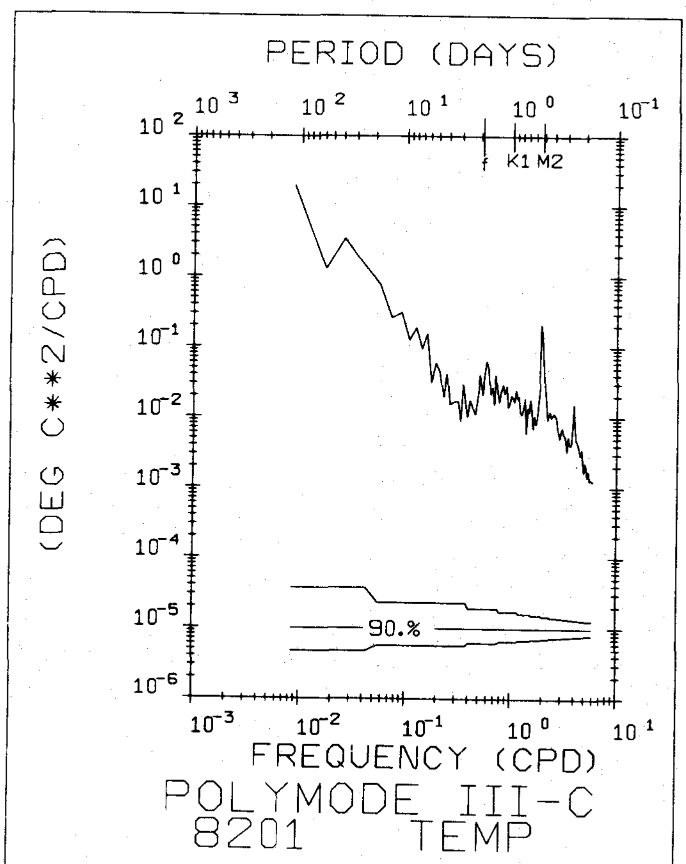


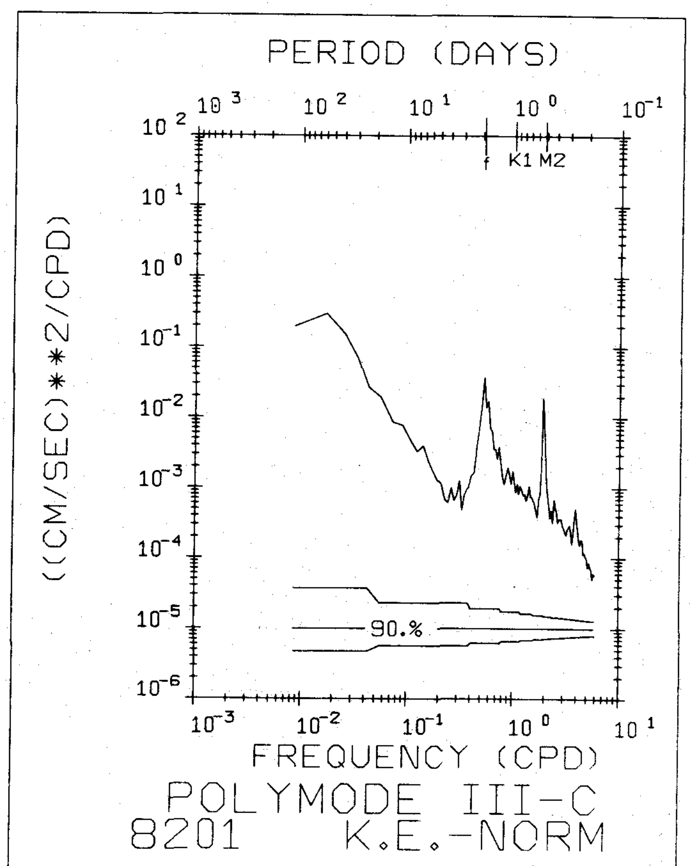
TEMPERATURE
Mooring 81
1509 Meters

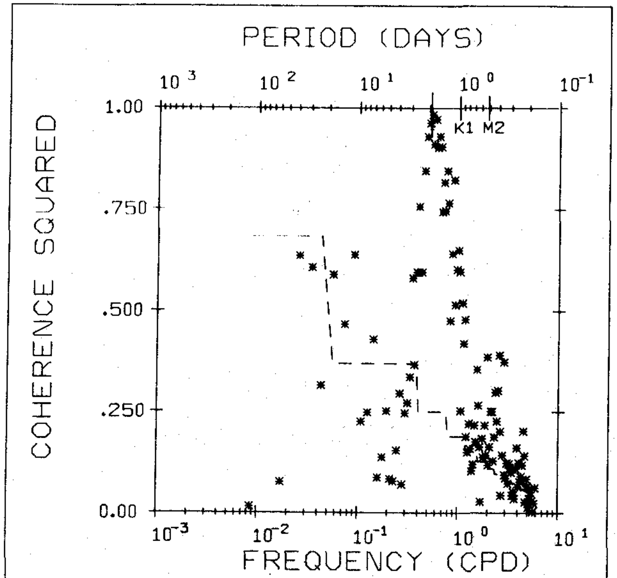
AUTOSPECTRUM


PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
U
V
((CM/SEC)**2/CPD)
10 4
10 3
10 2
10 1
10 0
10-1
10-2
10-3
10-4
90.%
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8201 VELOCITY

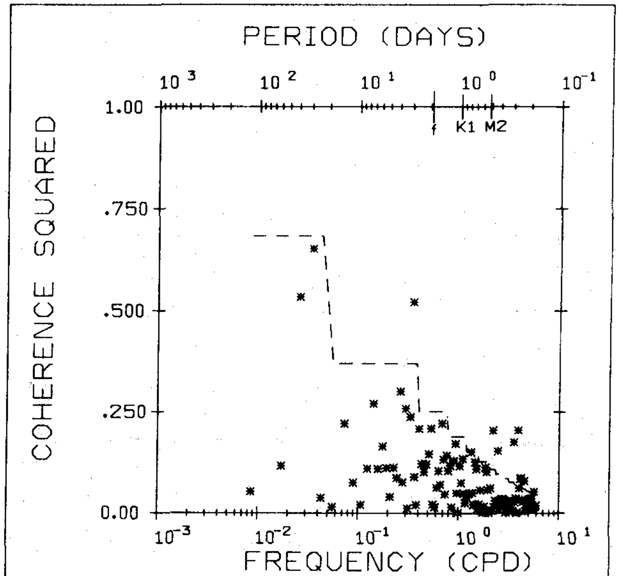

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
C
CC
((CM/SEC)**2/CPD)
10 4
10 3
10 2
10 1
10 0
10-1
10-2
10-3
10-4
90.%
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8201 ROTARY VEL


PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
(DEG C**2/CPD)
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-5
10-6
90.%
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8201 TEMP

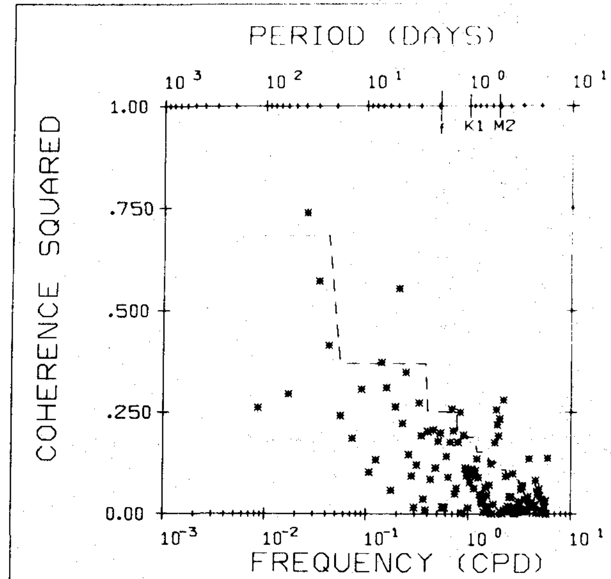

PERIOD (DAYS)
10 3
10 2
10 1
10 0
10-1
f
K1
M2
((CM/SEC)**2/CPD)
10 2
10 1
10 0
10-1
10-2
10-3
10-4
10-5
10-6
90.%
10-3
10-2
10-1
10 0
10 1
FREQUENCY (CPD)
POLYMODE III-C
8201 K.E.-NORM



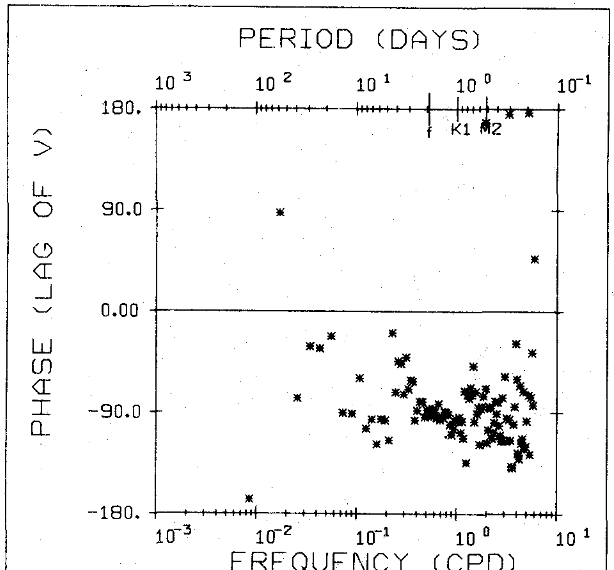
POLYMODE III-C
8201 UV COH SQ



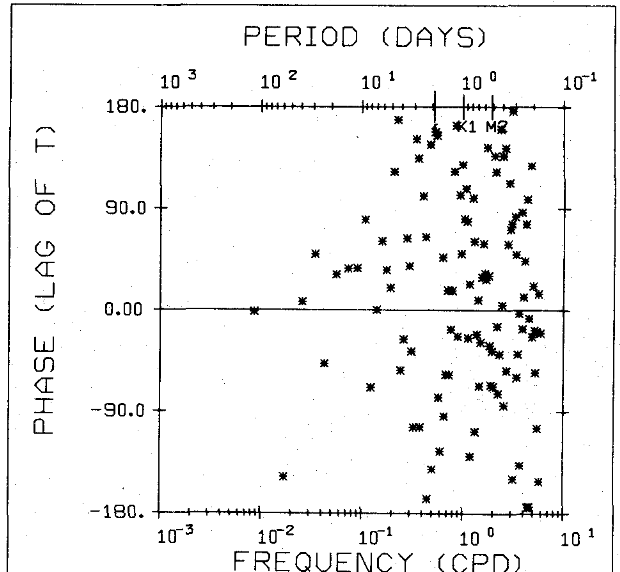
POLYMODE III-C
8201 UT COH SQ



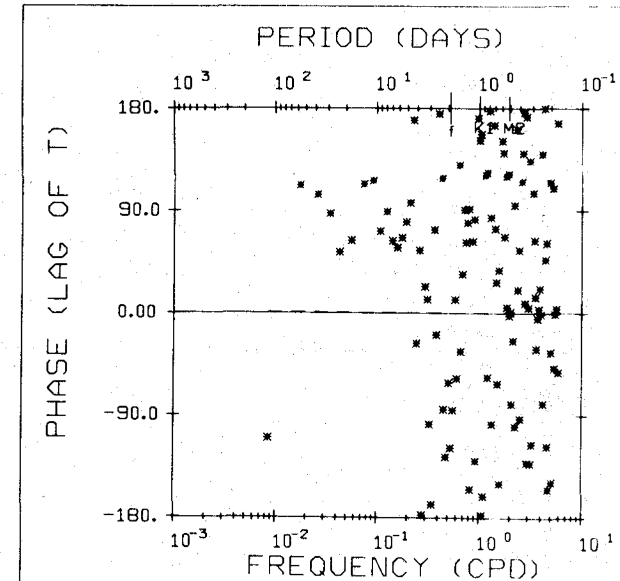
POLYMODE III-C
8201 VT COH SQ



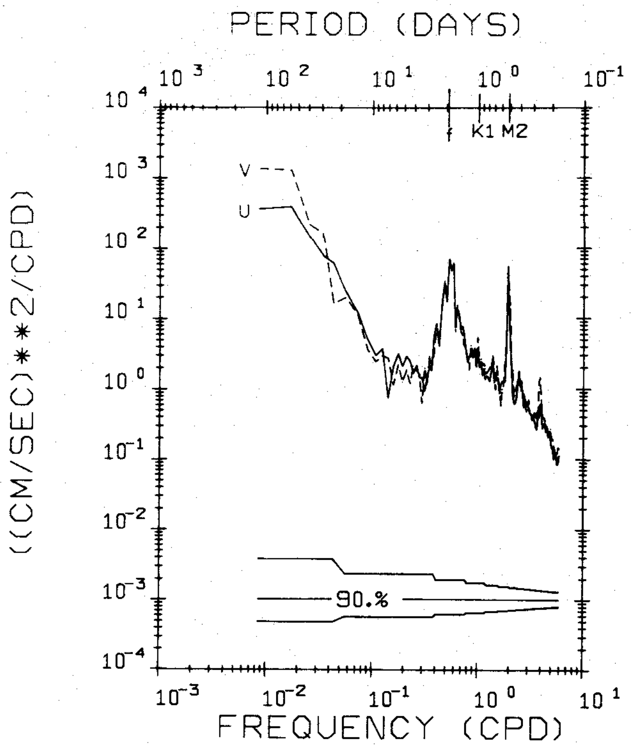
POLYMODE III-C
8201 UV COH PHASE



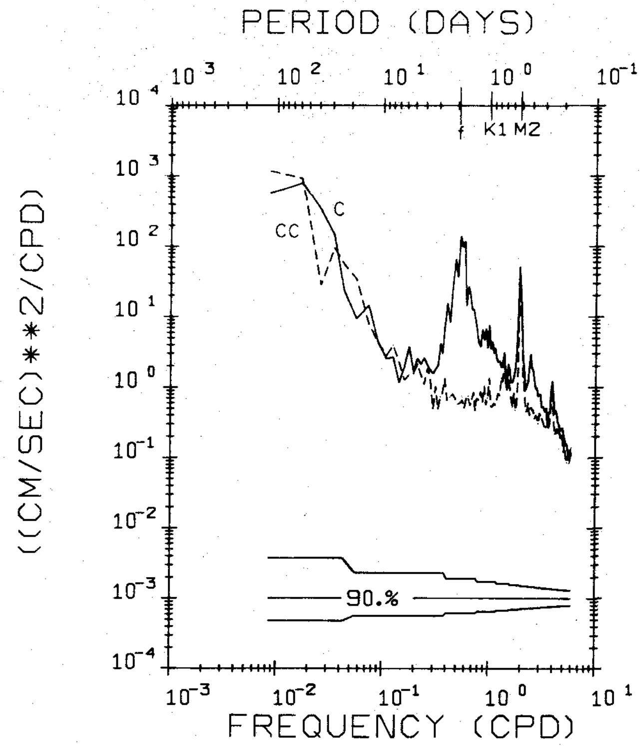
POLYMODE III-C
8201 UT COH PHASE



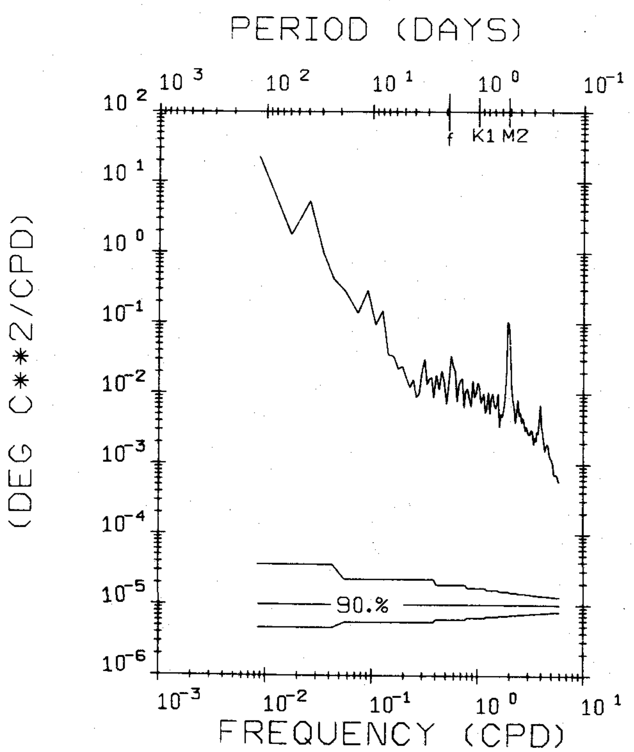
POLYMODE III-C
8201 VT COH PHASE



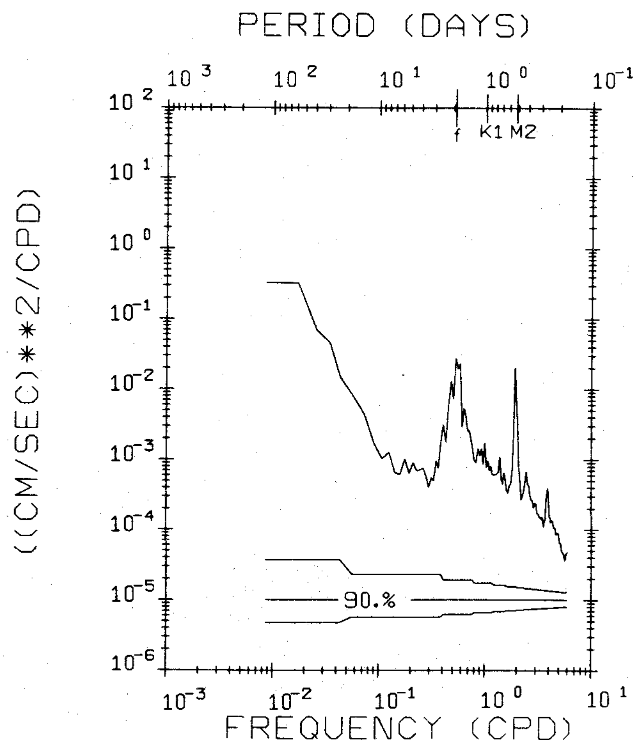
POLYMODE III-C
8203 VELOCITY



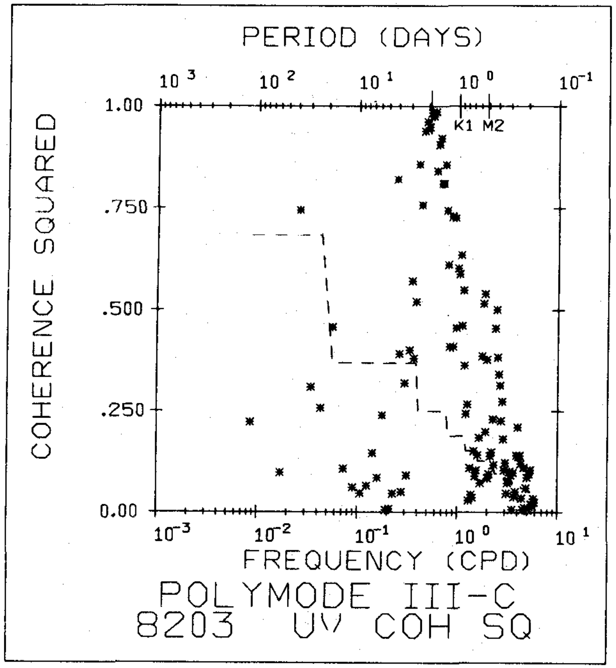
POLYMODE III-C
8203 ROTARY VEL

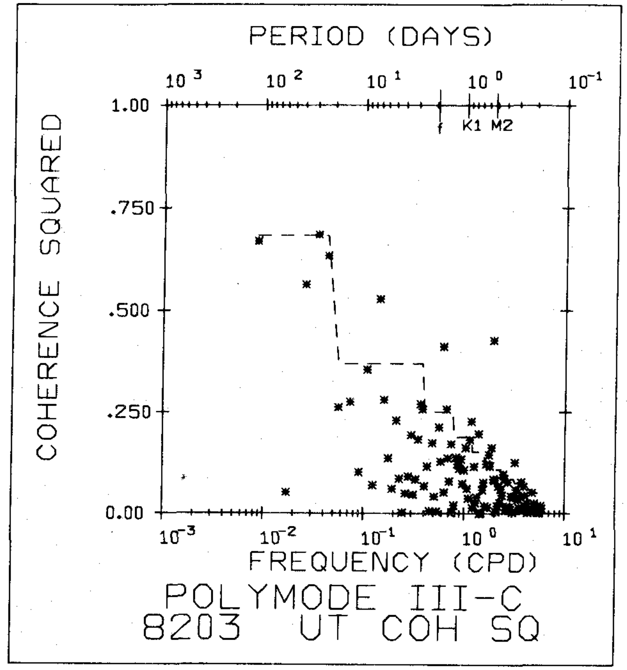


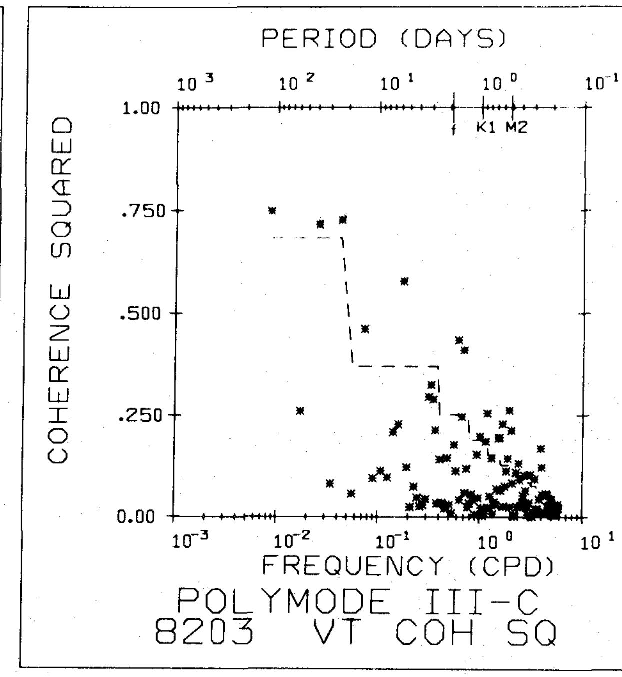
POLYMODE III-C
8203 TEMP

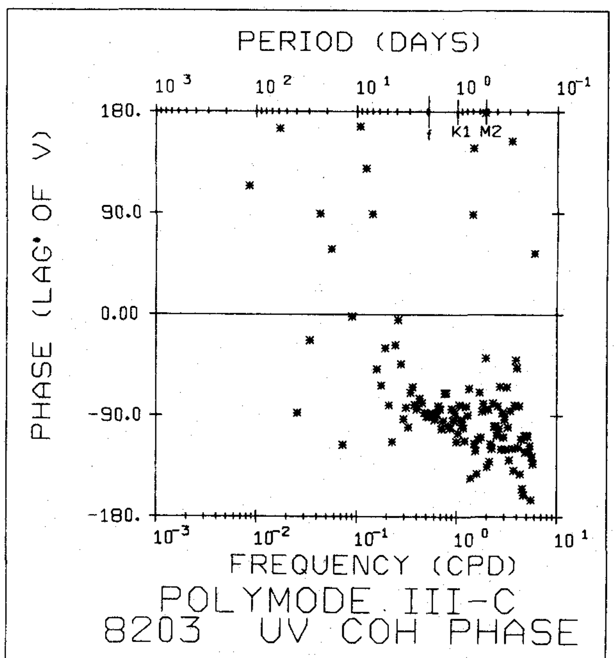


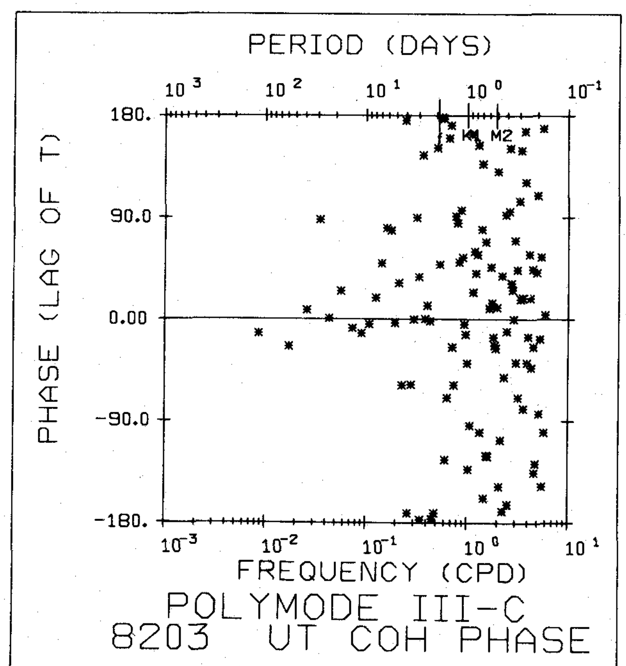
POLYMODE III-C
8203 K.E.-NORM

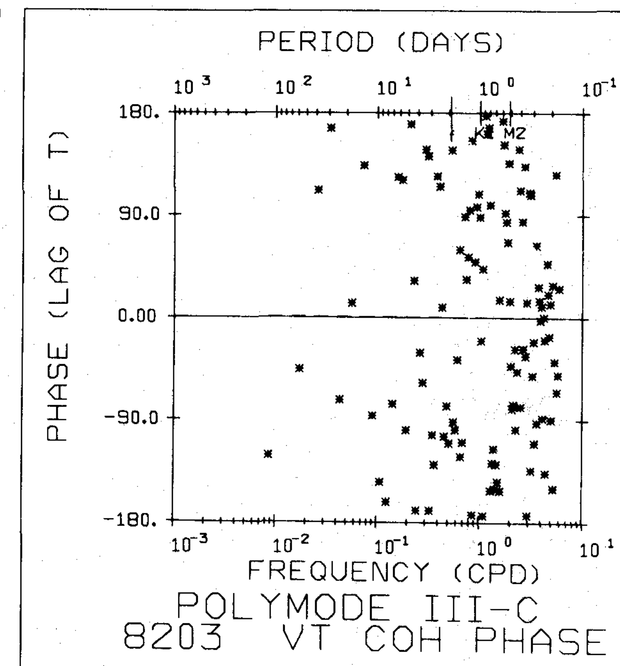

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 UV COH SQ

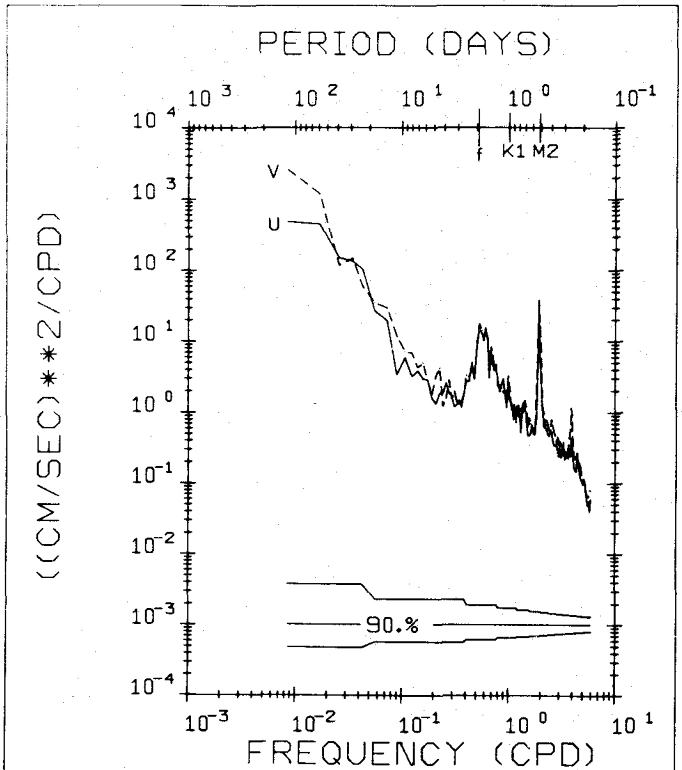

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 VT COH SQ

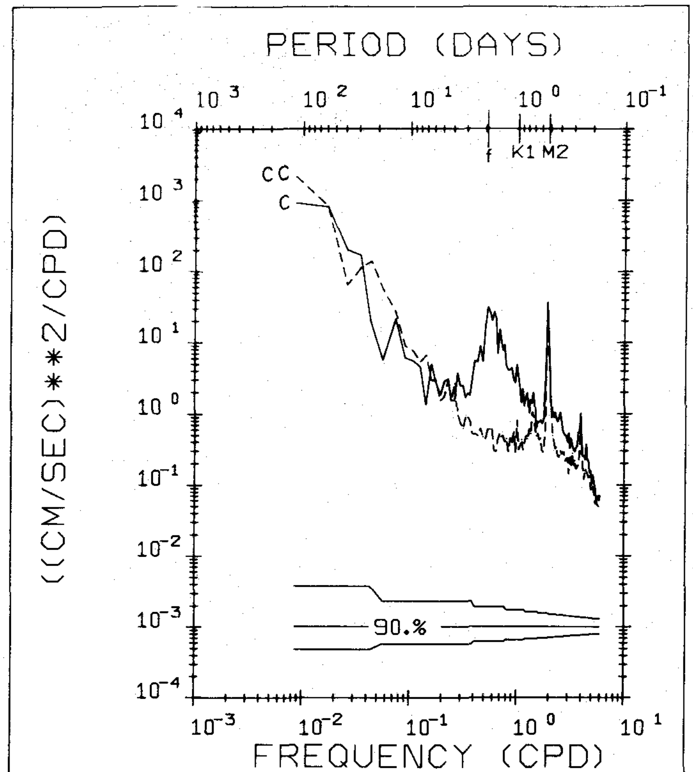

PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 UV COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 UT COH PHASE

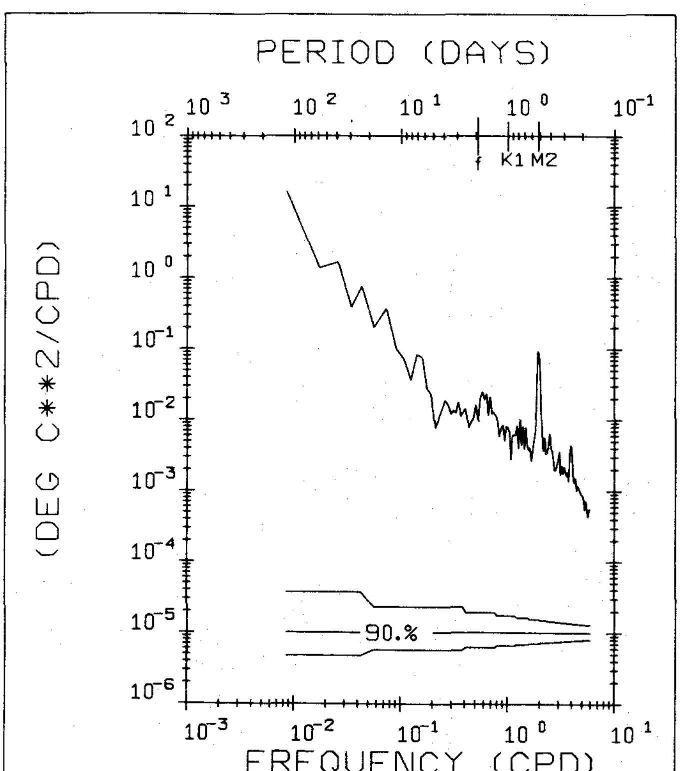

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8203 VT COH PHASE



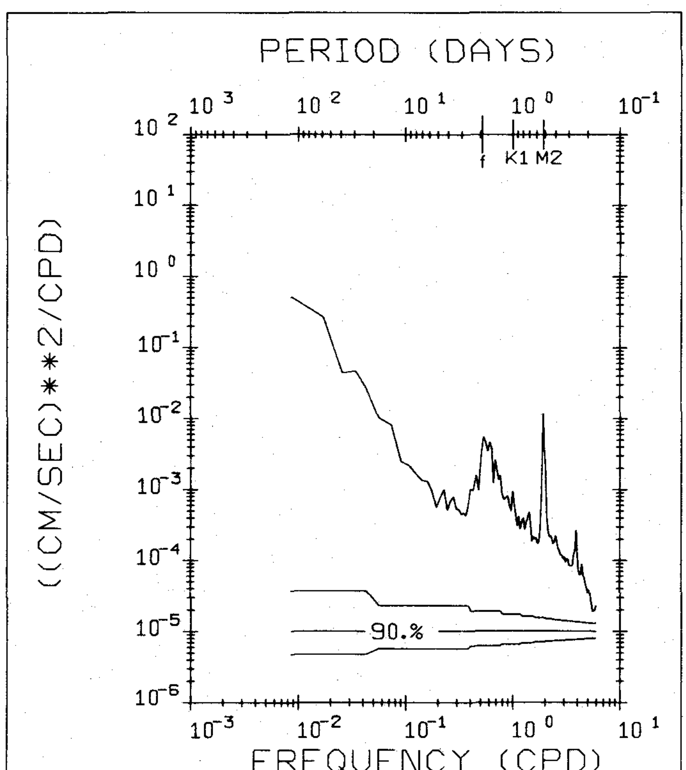
POLYMODE III-C
8204 VELOCITY



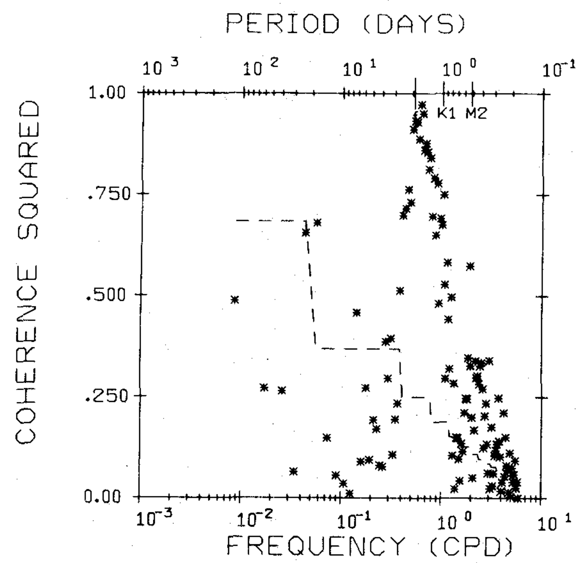
POLYMODE III-C
8204 ROTARY VEL



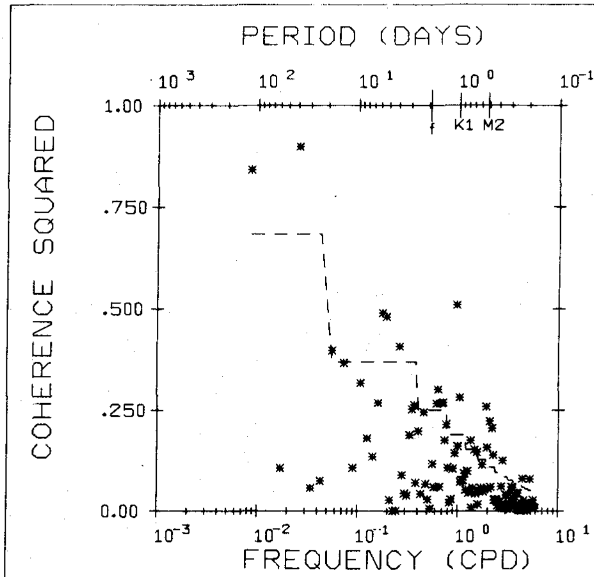
POLYMODE III-C
8204 TEMP



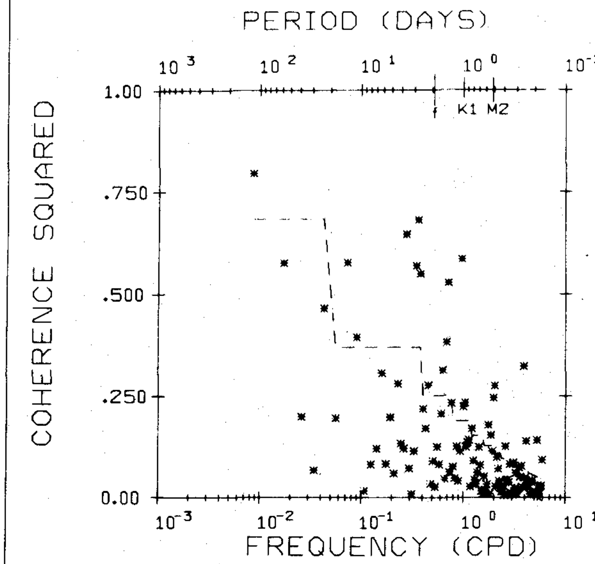
POLYMODE III-C
8204 K.E.-NORM



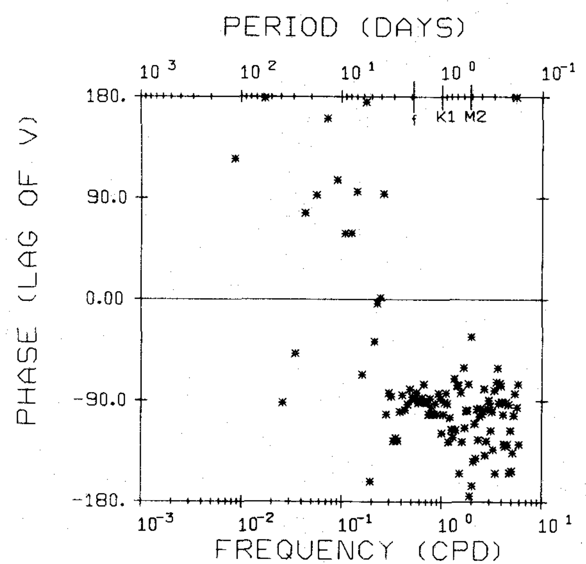
POLYMODE III-C
8204 UV COH SQ



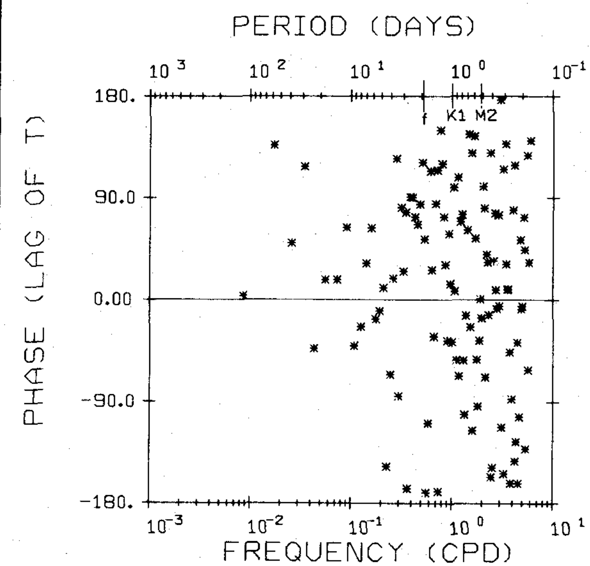
POLYMODE III-C
8204 UT COH SQ



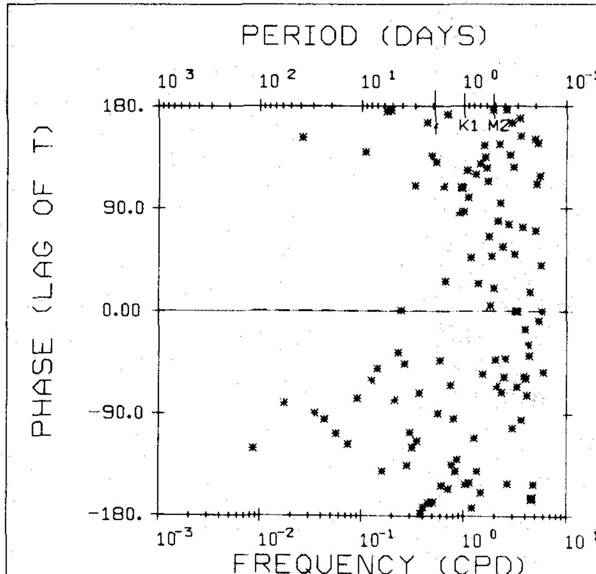
POLYMODE III-C
8204 VT COH SQ



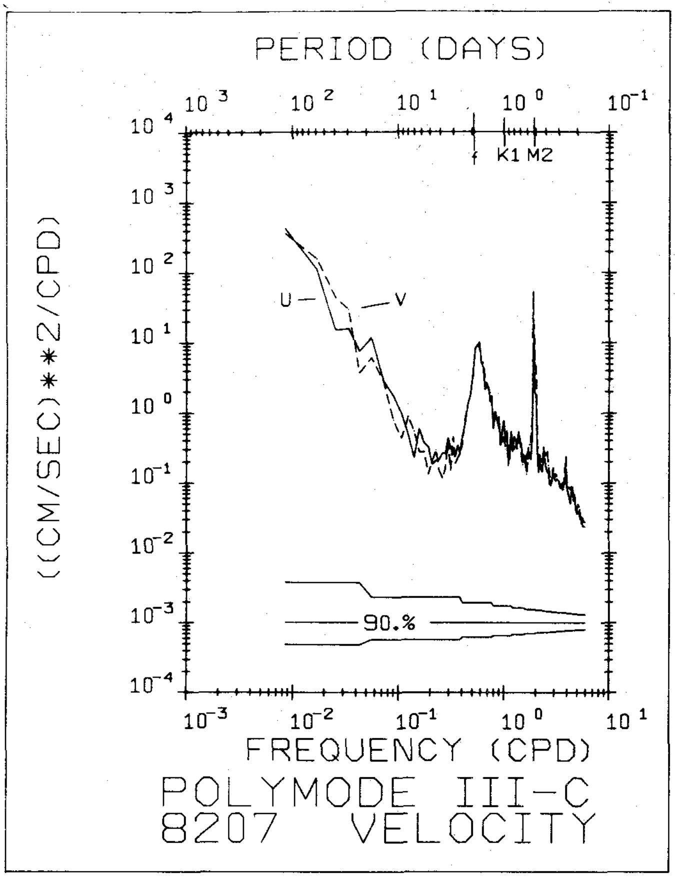
POLYMODE III-C
8204 UV COH PHASE

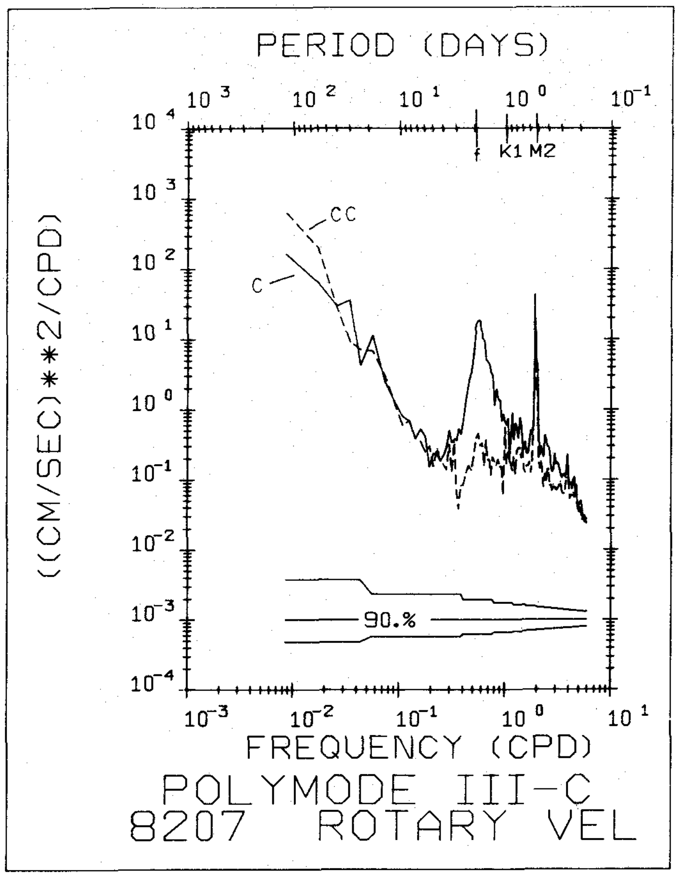


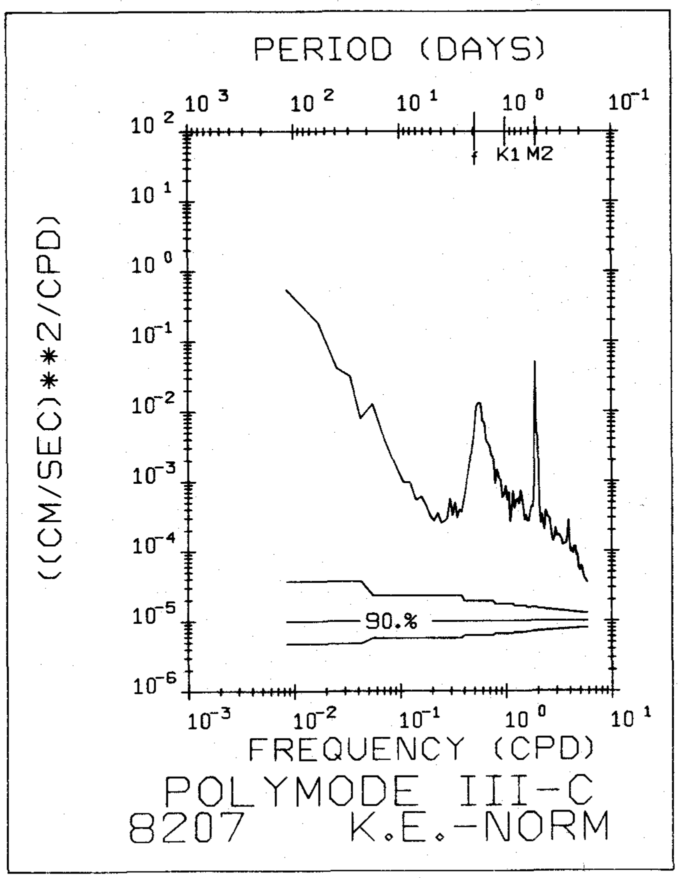
POLYMODE III-C
8204 UT COH PHASE

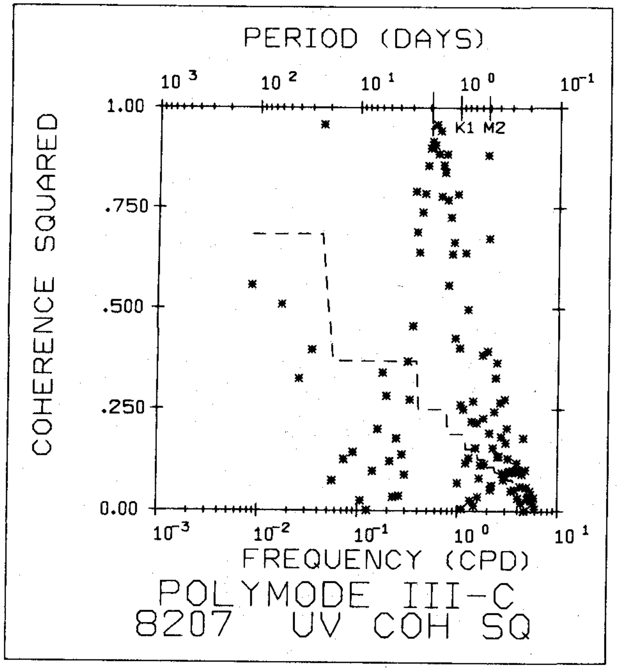


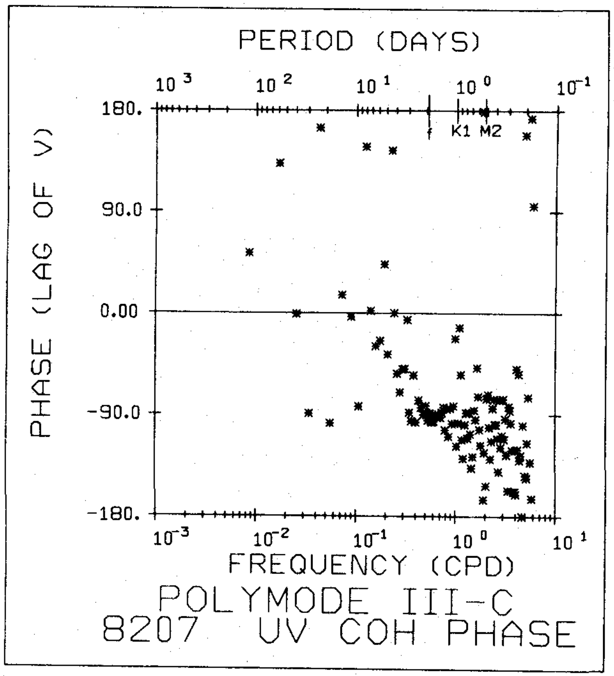
POLYMODE III-C
8204 VT COH PHASE

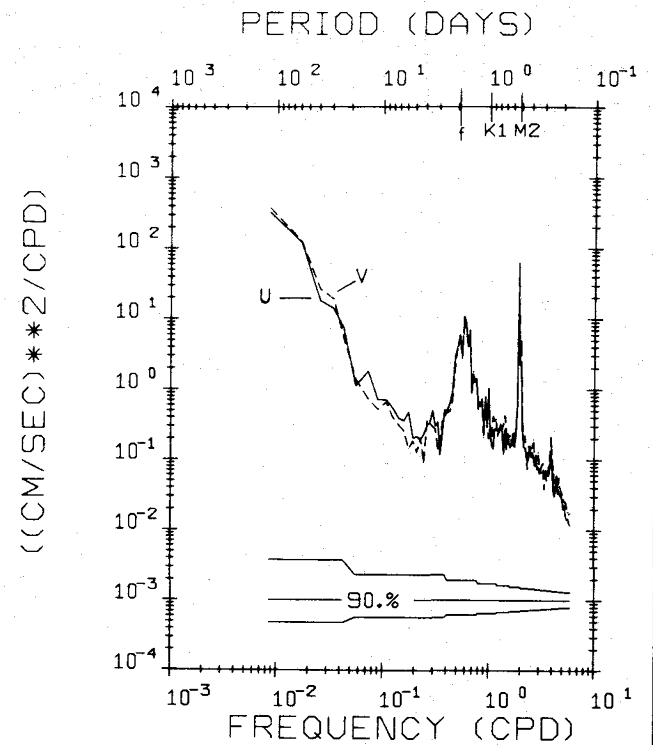

PERIOD (DAYS)
K1 M2
U
V
90.%
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
POLYMODE III-C
8207 VELOCITY


PERIOD (DAYS)
K1 M2
CC
C
90.%
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
POLYMODE III-C
8207 ROTARY VEL

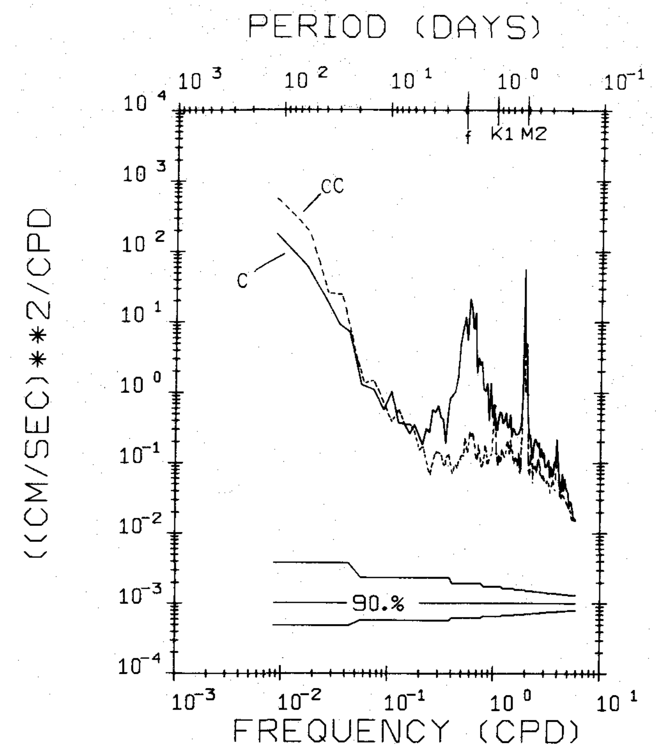

PERIOD (DAYS)
K1 M2
90.%
((CM/SEC)**2/CPD)
FREQUENCY (CPD)
POLYMODE III-C
8207 K.E.-NORM


PERIOD (DAYS)
10 3 10 2 10 1 10 0 10-1
K1 M2
COHERENCE SQUARED
1.00 .750 .500 .250 0.00
10-3 10-2 10-1 10 0 10 1
FREQUENCY (CPD)
POLYMODE III-C
8207 UV COH SQ

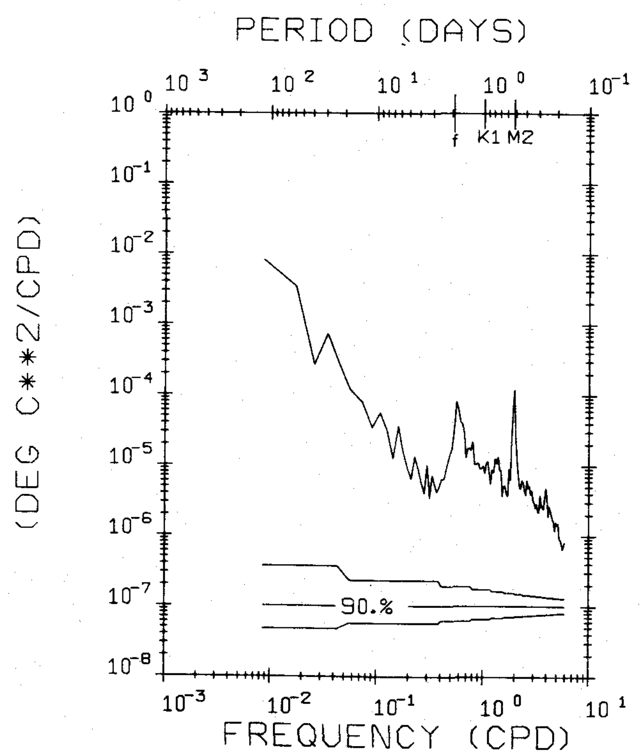

PERIOD (DAYS)
10 3 10 2 10 1 10 0 10-1
K1 M2
PHASE (LAG OF V)
180. 90.0 0.00 -90.0 -180.
10-3 10-2 10-1 10 0 10 1
FREQUENCY (CPD)
POLYMODE III-C
8207 UV COH PHASE



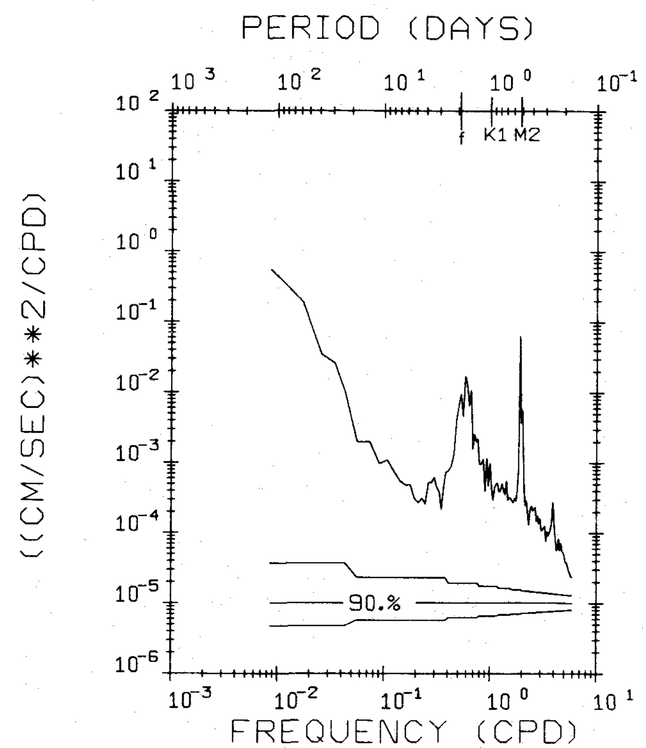
POLYMODE III-C
8208 VELOCITY



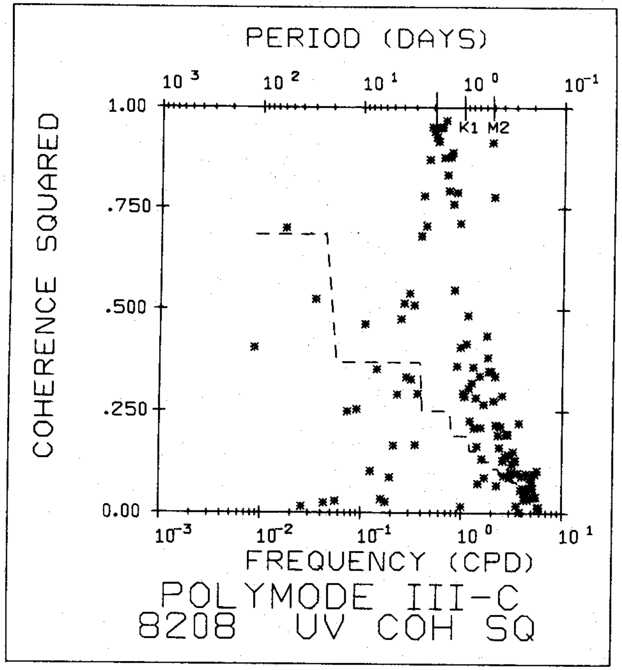
POLYMODE III-C
8208 ROTARY VEL

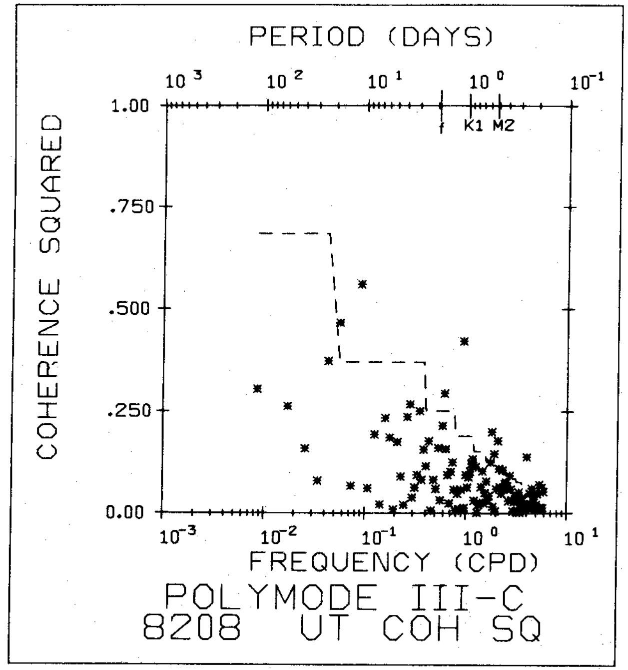


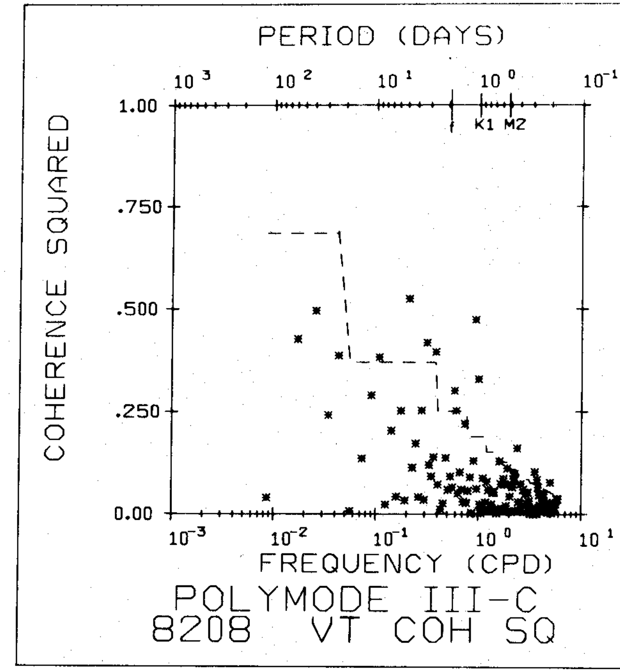
POLYMODE III-C
8208 TEMP

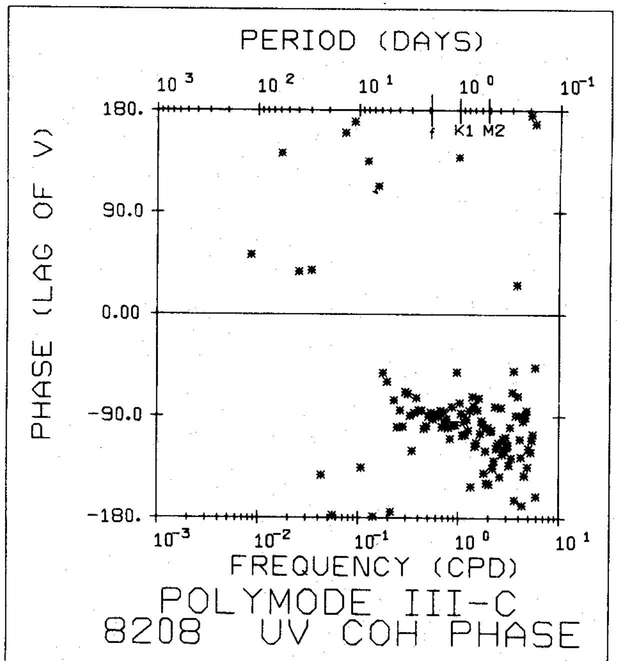


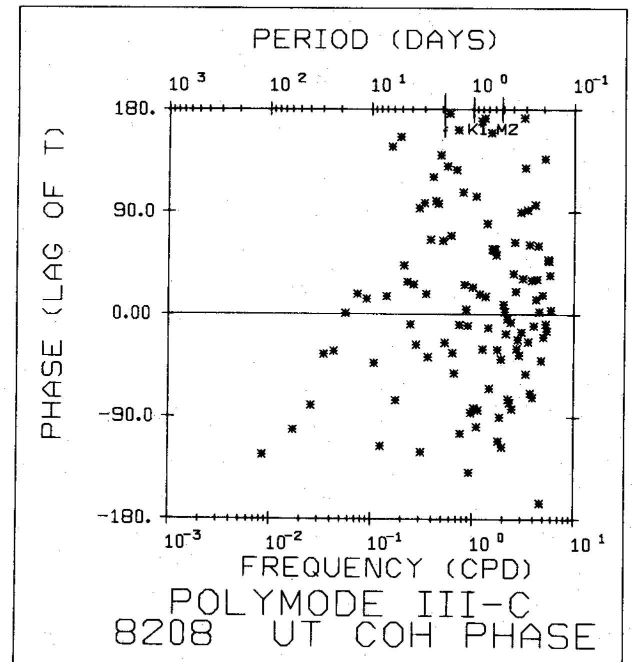
POLYMODE III-C
8208 K.E.-NORM

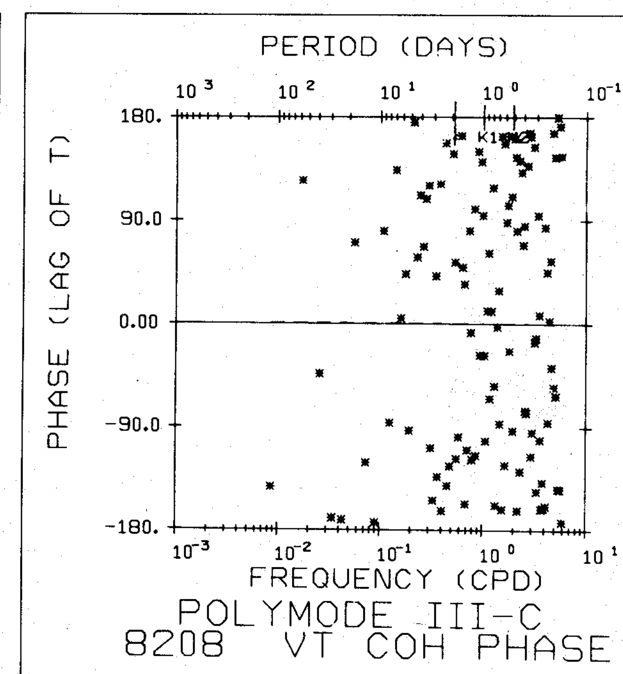

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 UV COH SQ

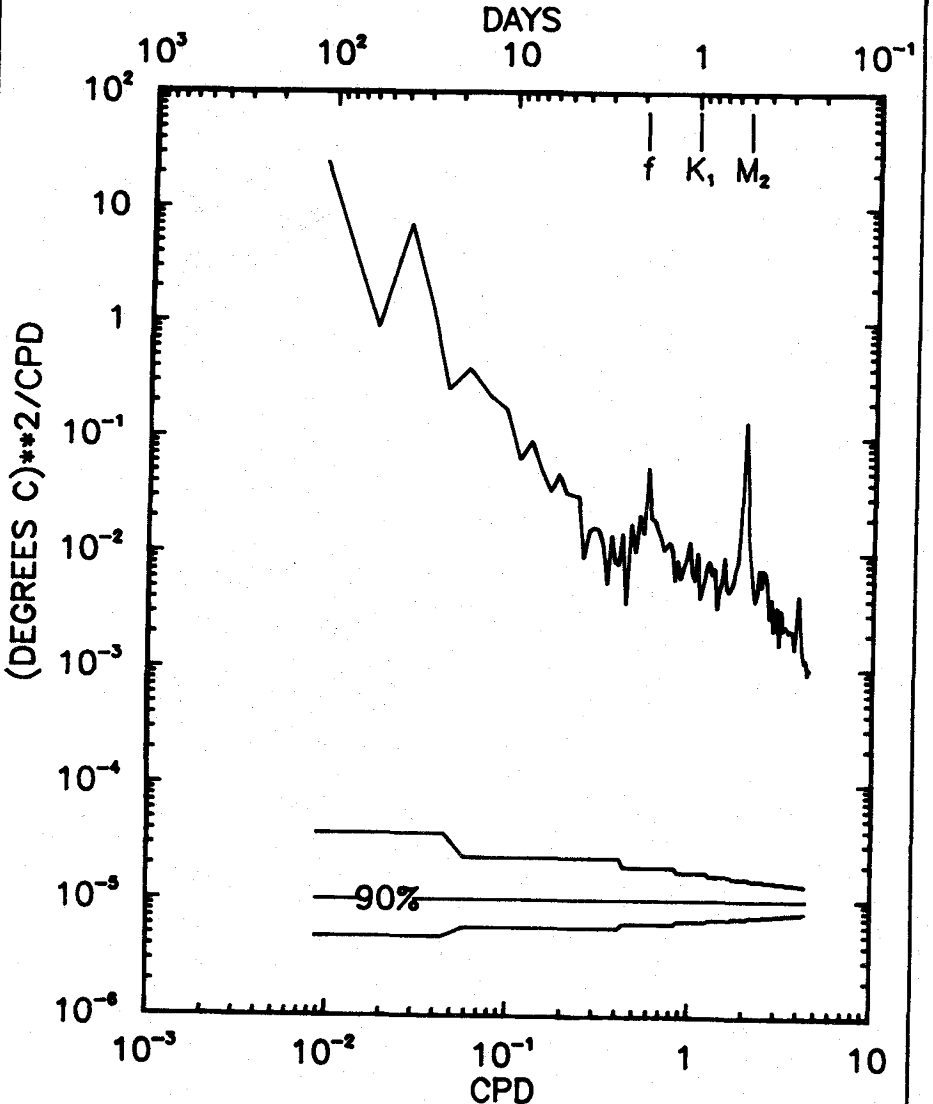

PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 UT COH SQ


PERIOD (DAYS)
COHERENCE SQUARED
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 VT COH SQ


PERIOD (DAYS)
PHASE (LAG OF V)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 UV COH PHASE

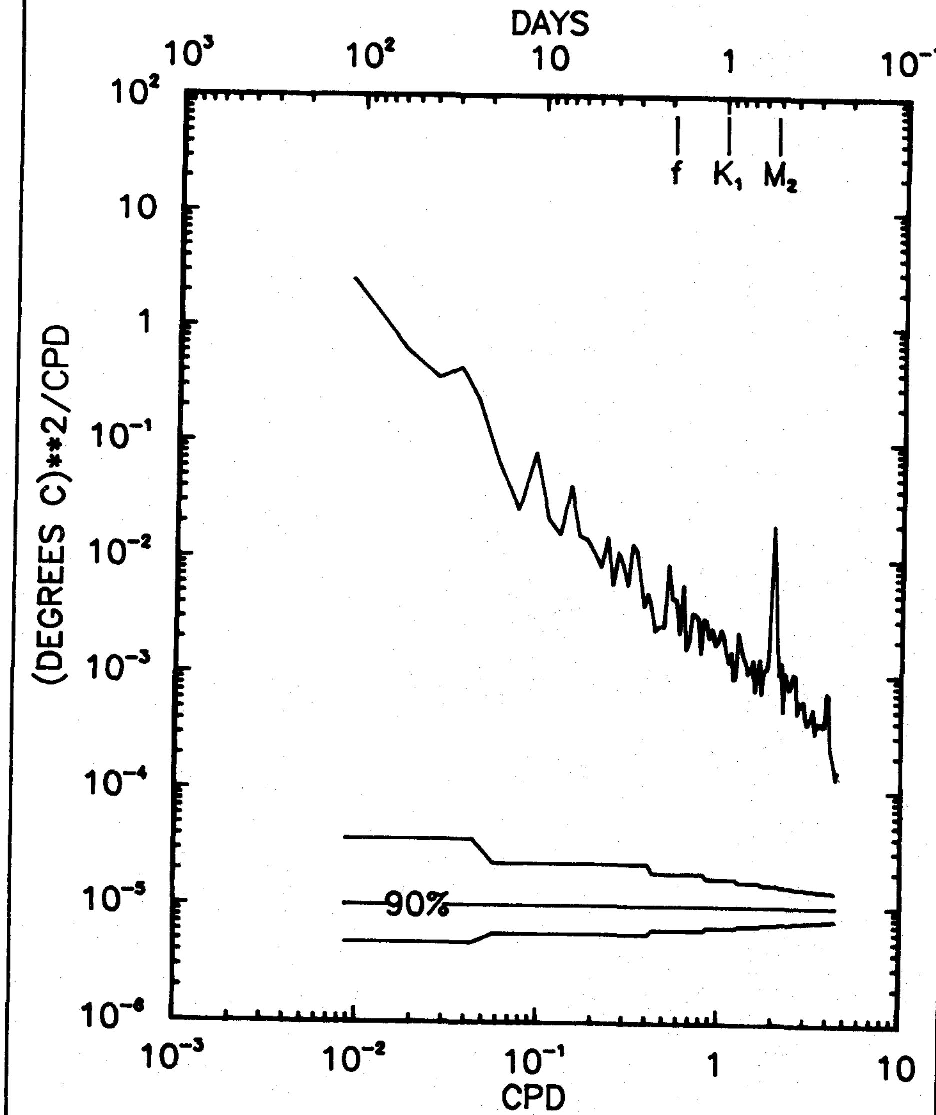

PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 UT COH PHASE


PERIOD (DAYS)
PHASE (LAG OF T)
FREQUENCY (CPD)
K1 M2
POLYMODE III-C
8208 VT COH PHASE



TEMPERATURE
Mooring 82
266 Meters

AUTOSPECTRUM

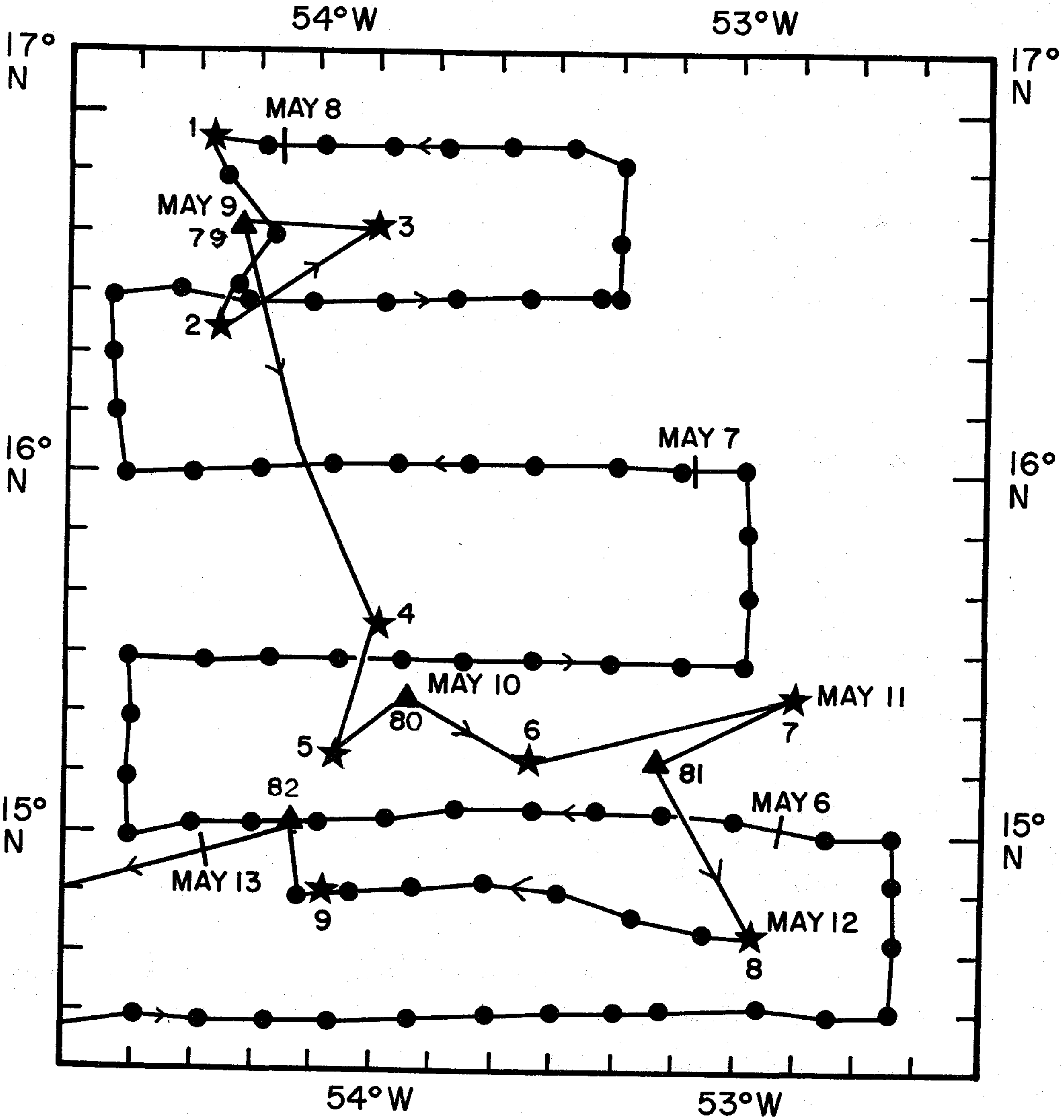


TEMPERATURE
Mooring 82
739 Meters

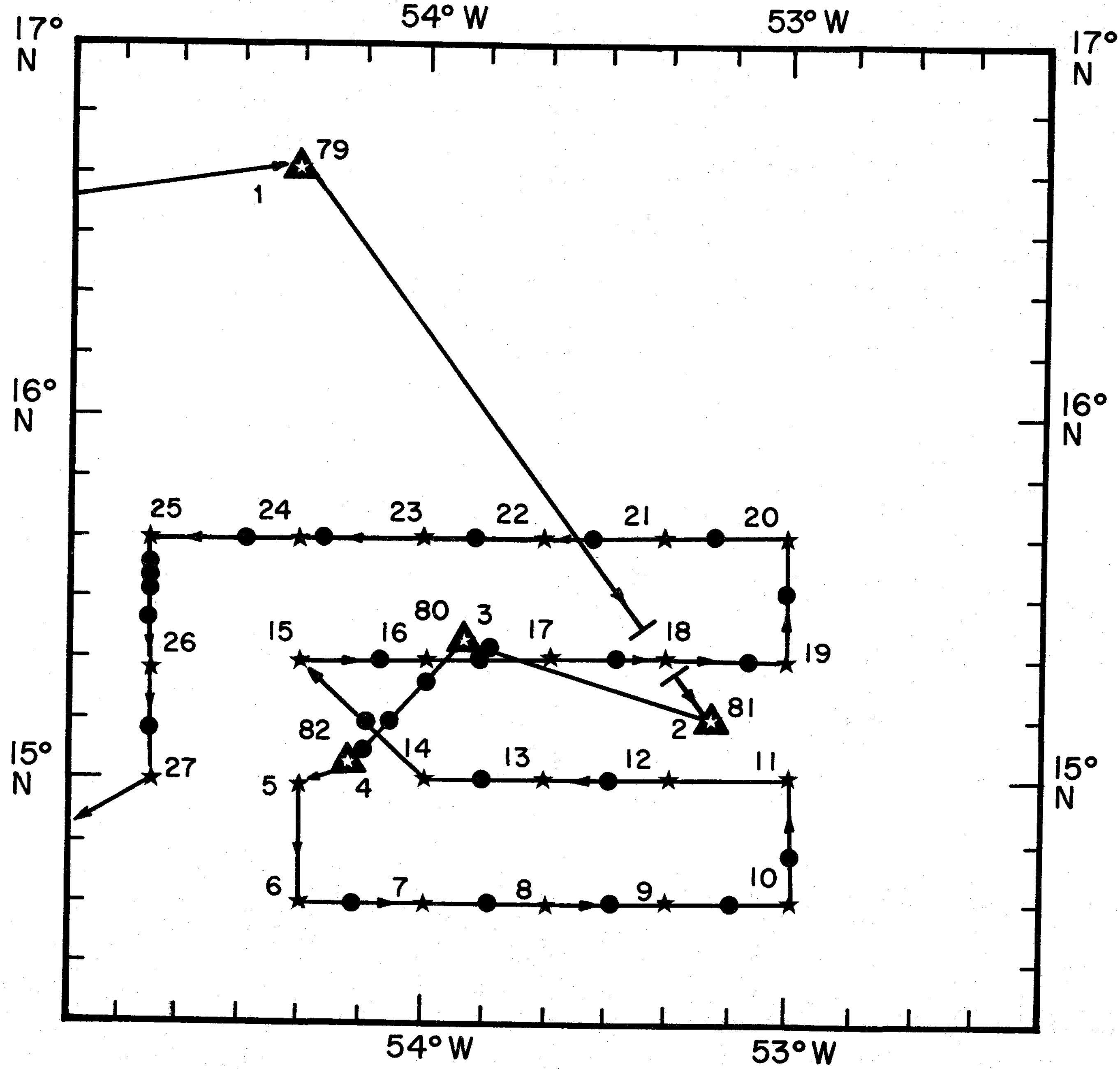
AUTOSPECTRUM

SECTION III.

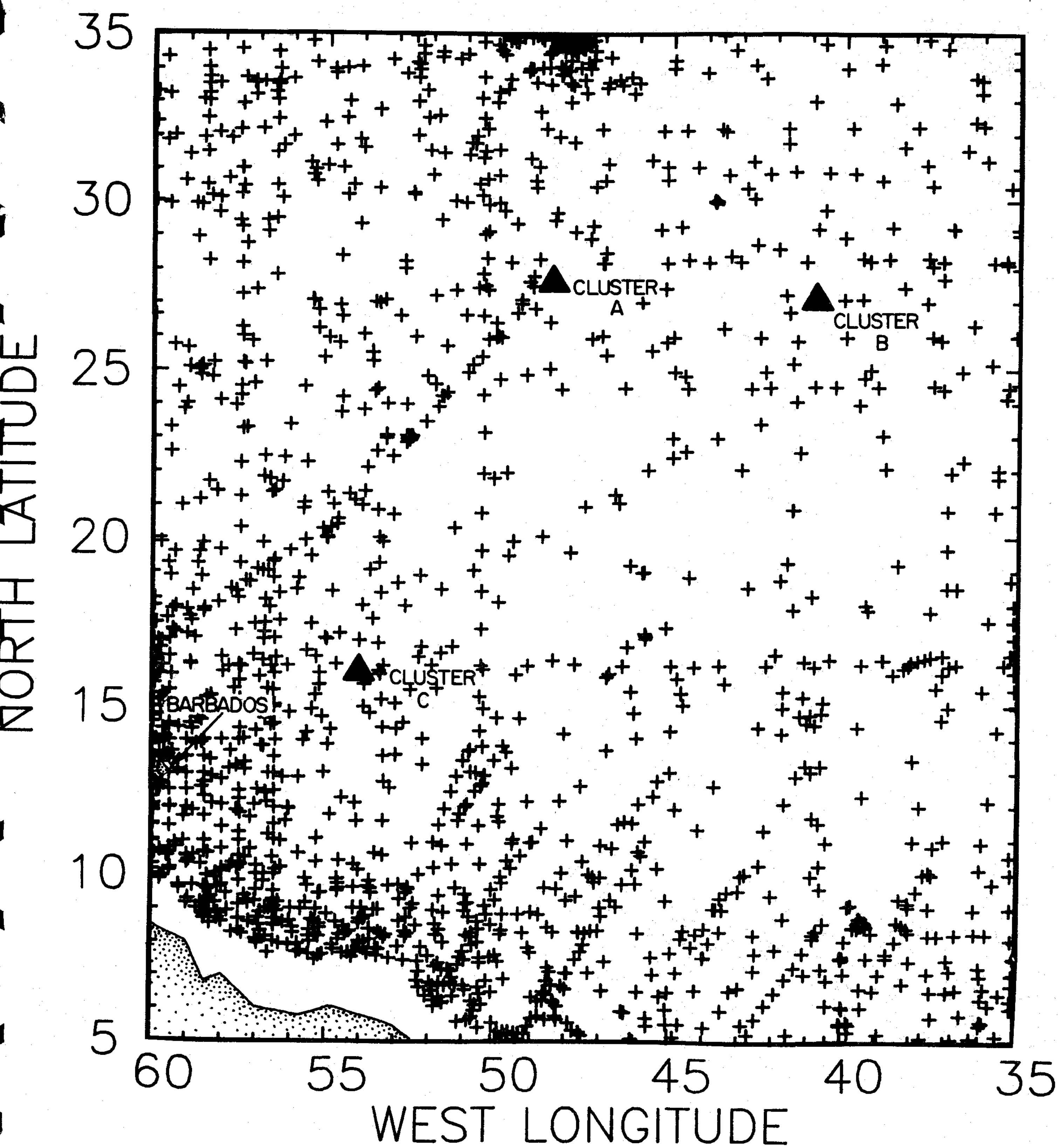
CLUSTER C
1977 HYDROGRAPHIC SURVEY



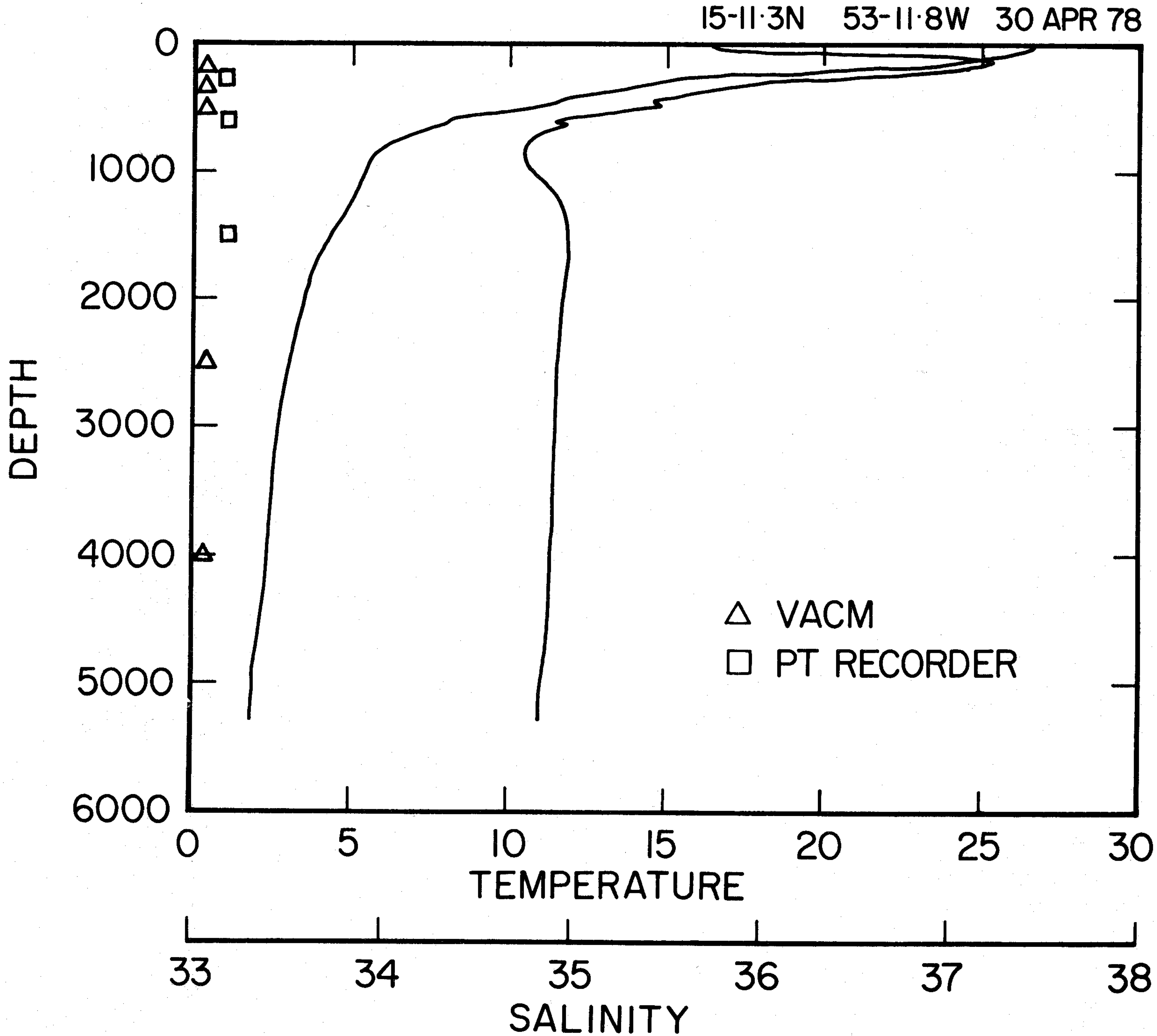
CLUSTER C
1978 HYDROGRAPHIC SURVEY



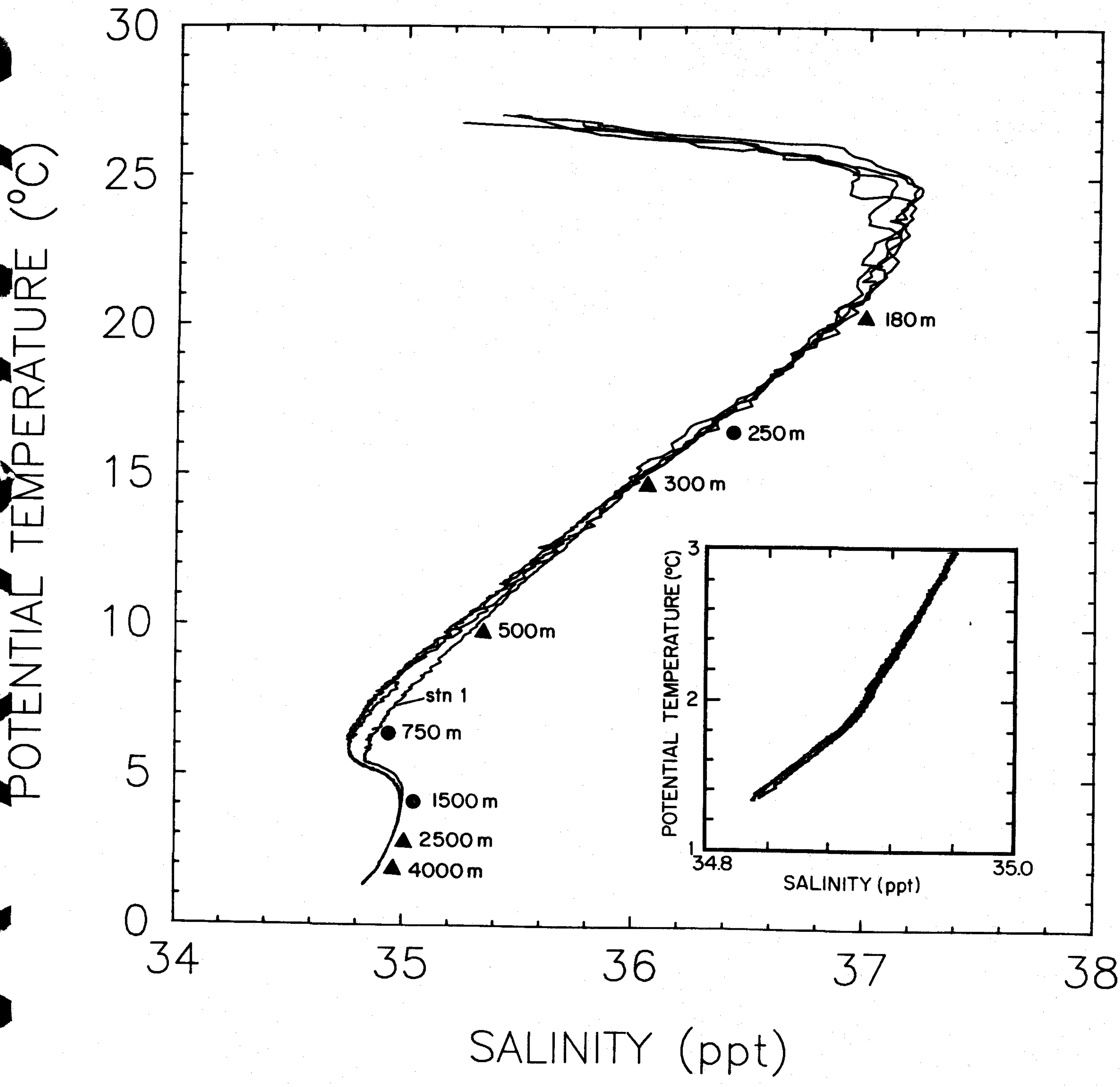
NODC STATION LOCATIONS



MOORING 81



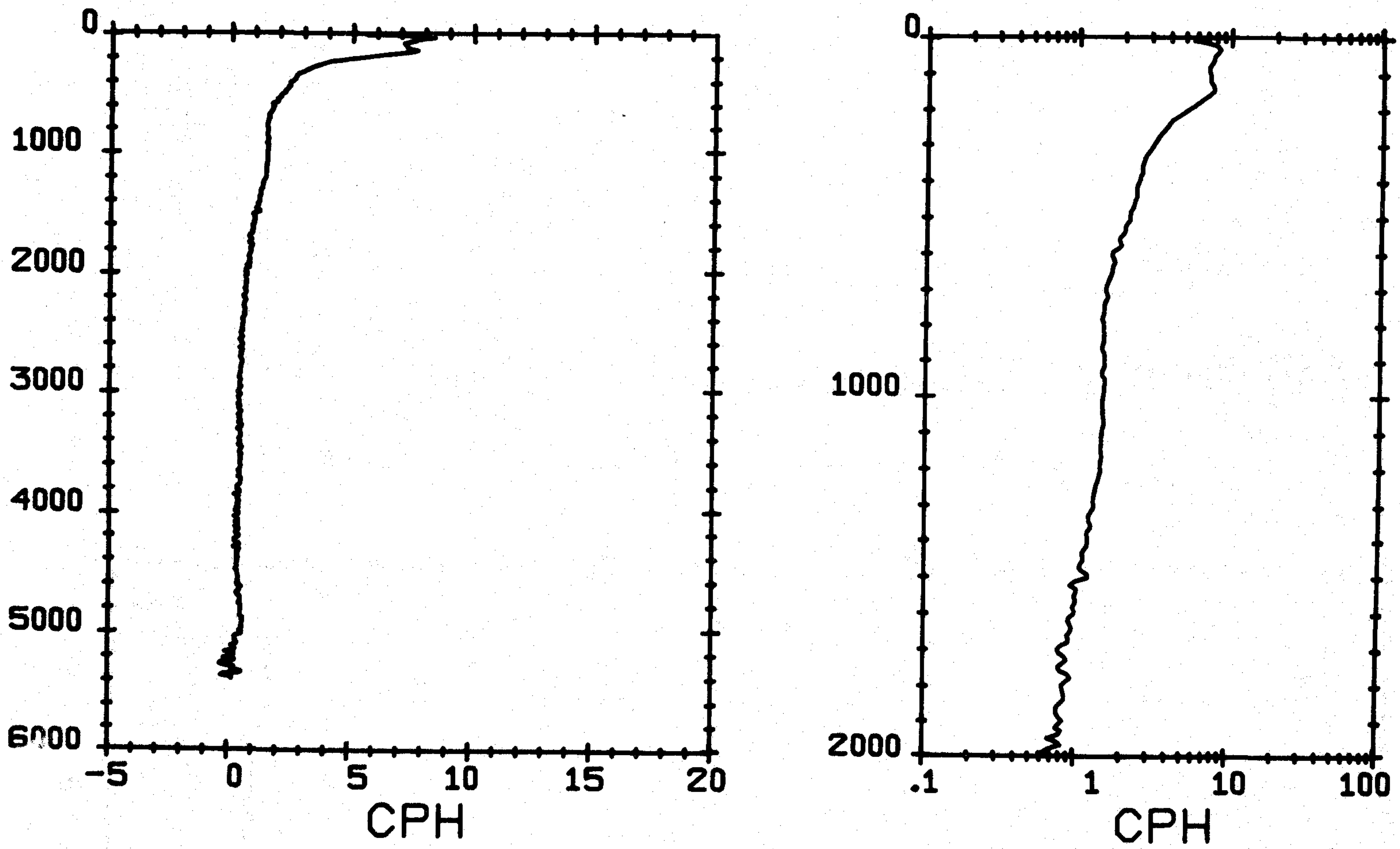
15-11·3N 53-11·8W 30 APR 78
DEPTH
0
1000
2000
3000
4000
5000
6000
0 5 10 15 20 25 30
TEMPERATURE
33 34 35 36 37 38
SALINITY
△ VACM
□ PT RECORDER



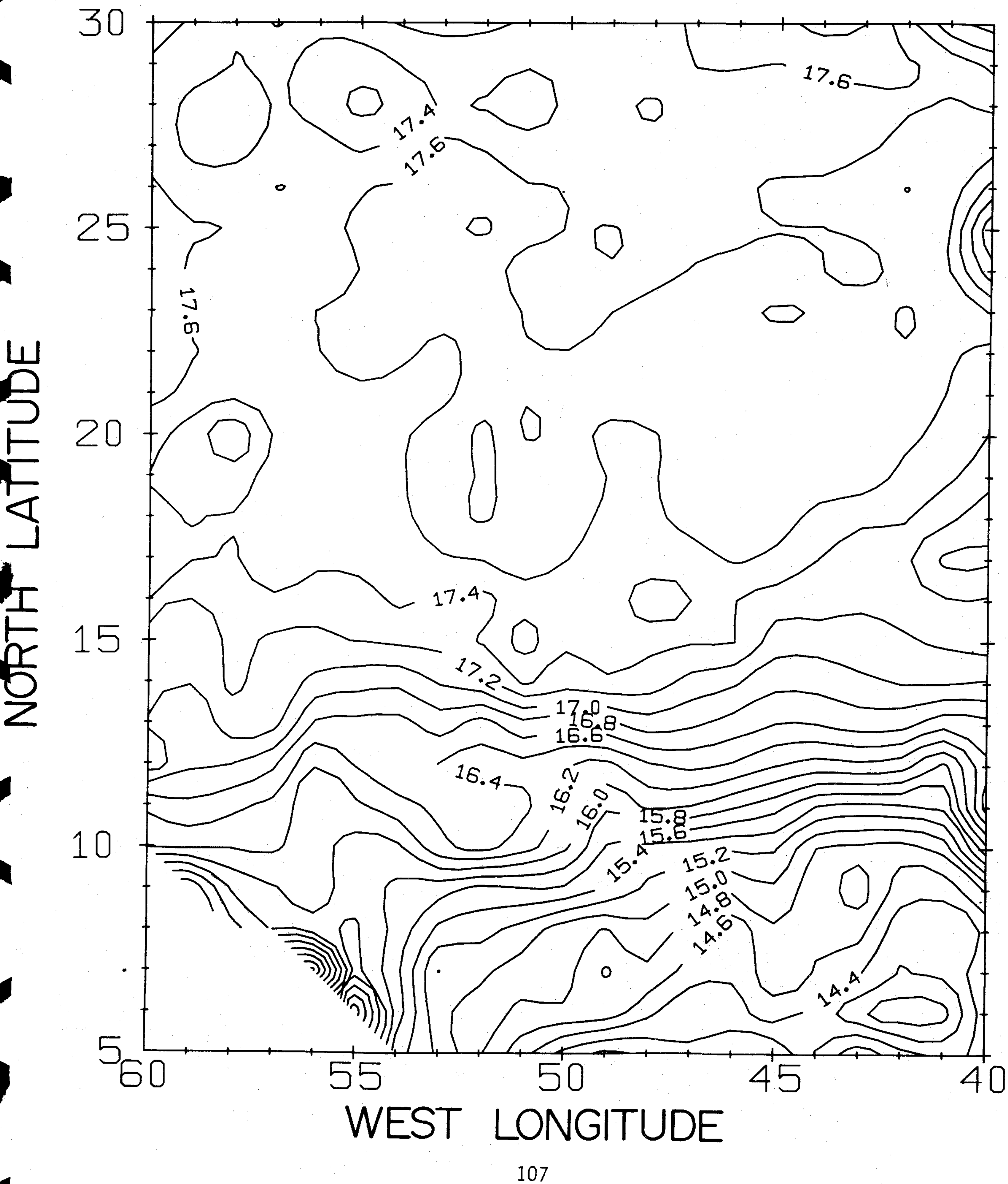
POTENTIAL TEMPERATURE (°C)
30
25
20
15
10
5
0
34
35
36
37
38
SALINITY (ppt)
180m
250m
300m
500m
stn 1
750 m
1500m
2500m
4000m
POTENTIAL TEMPERATURE (°C)
3
2
1
34.8
35.0
SALINITY (ppt)

CLUSTER C

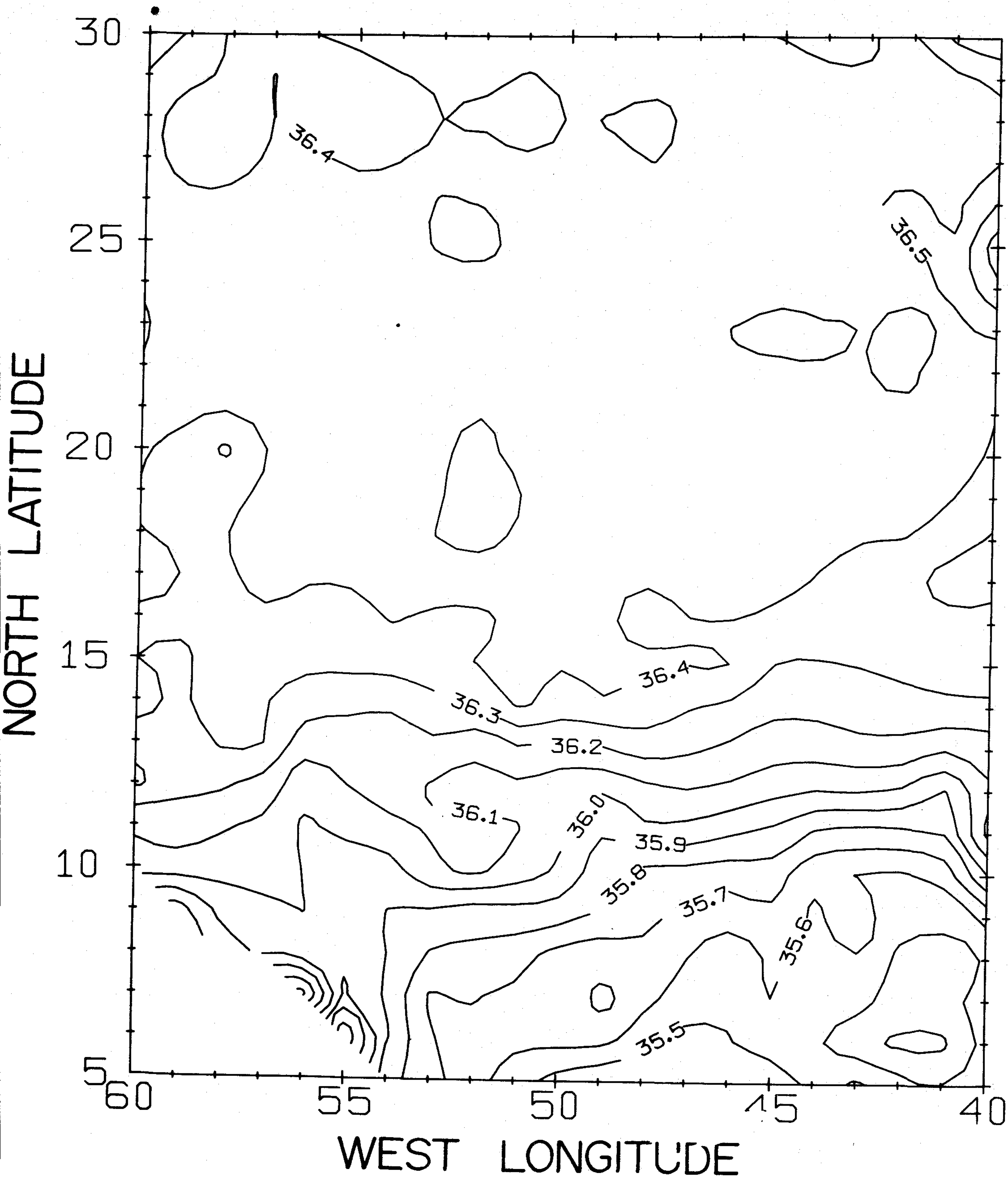
BRUNT VAISALA FREQUENCY VERSUS DEPTH



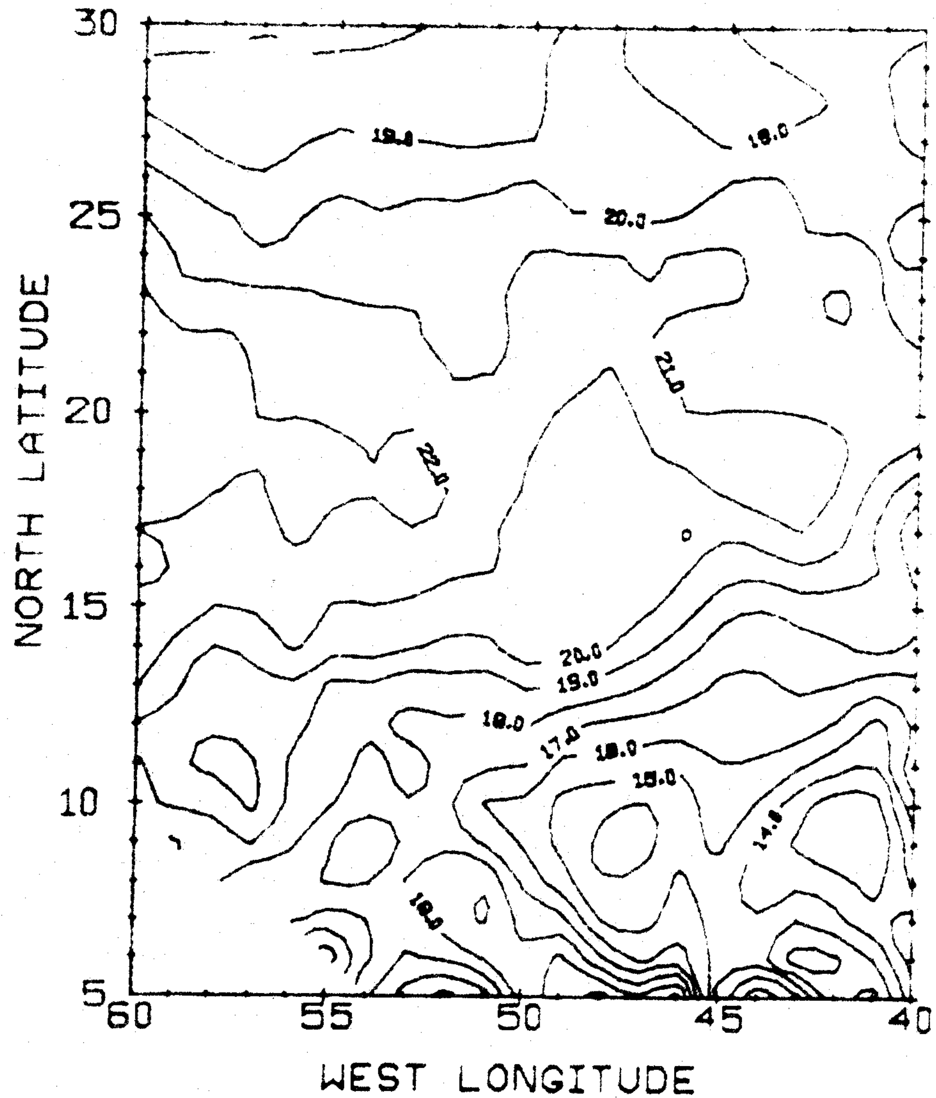
TEMPERATURE ON 26.5 SIGMA T SURFACE



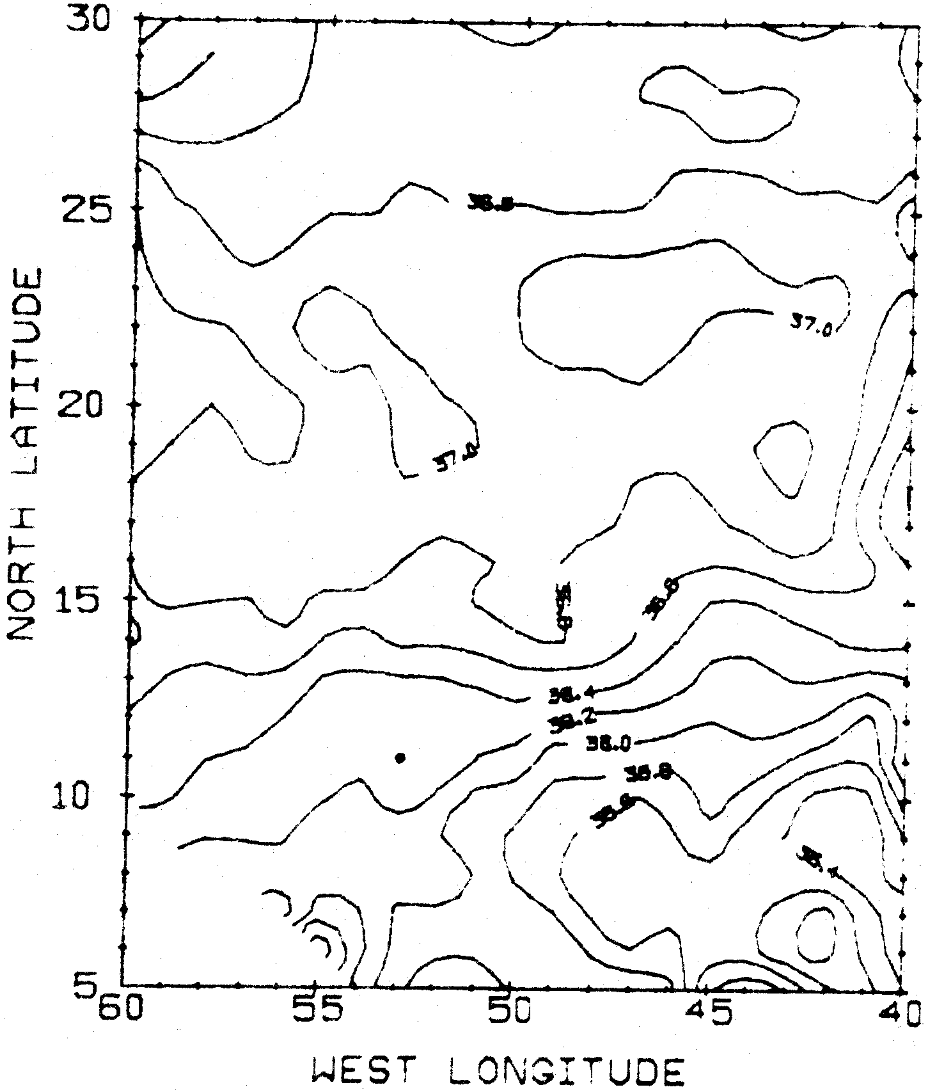
SALINITY ON 26.5 SIGMA T SURFACE

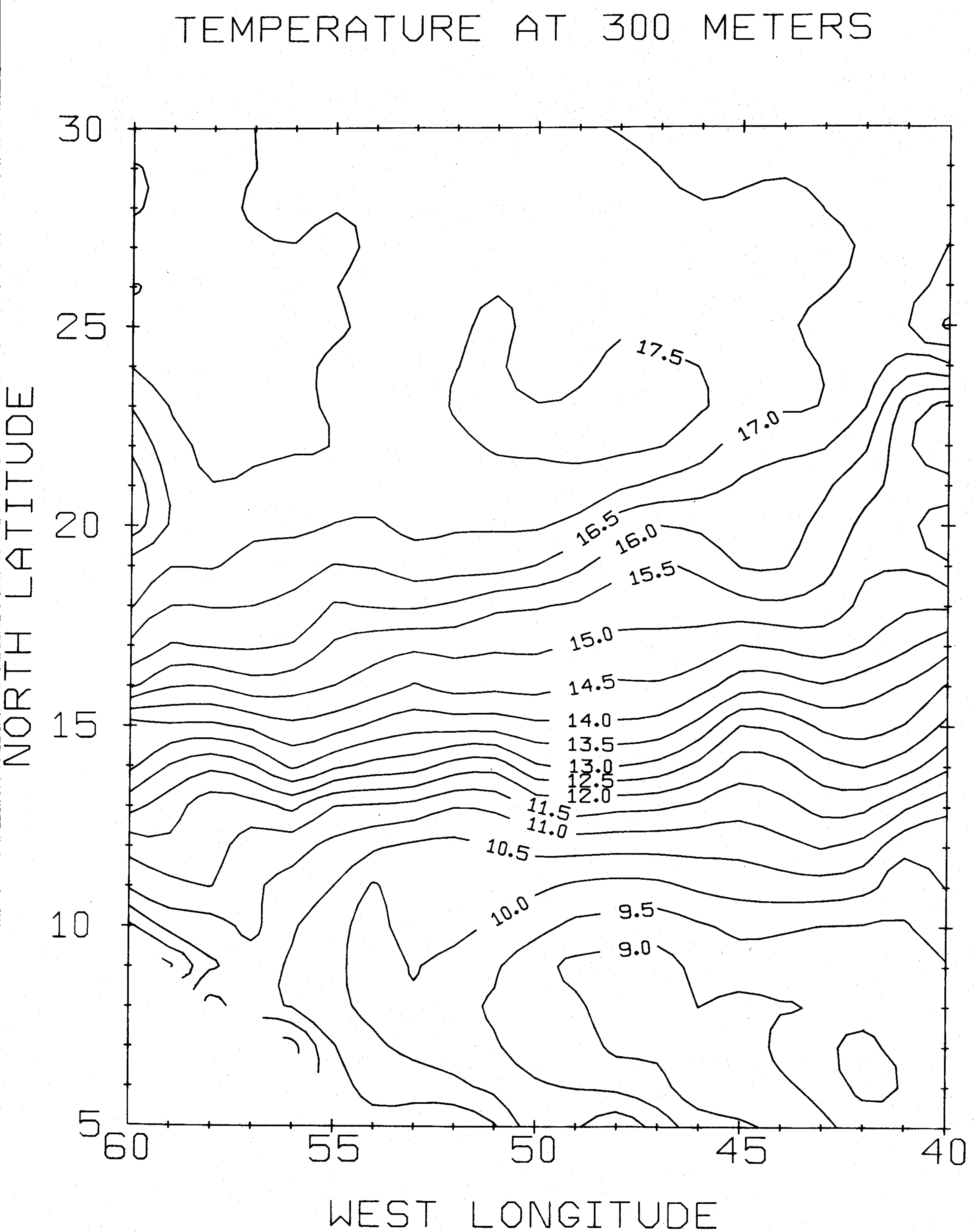


TEMPERATURE AT 150 METERS

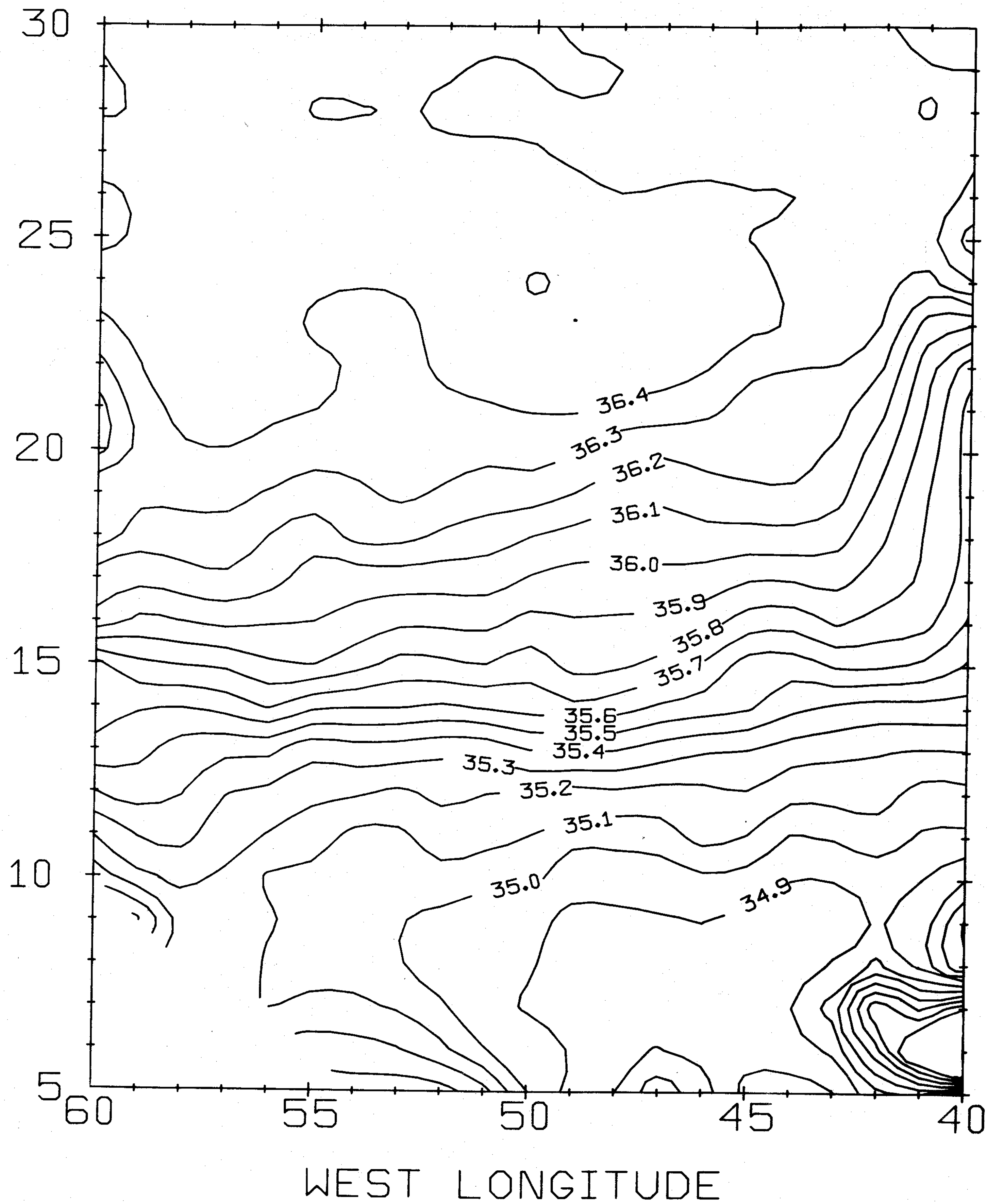


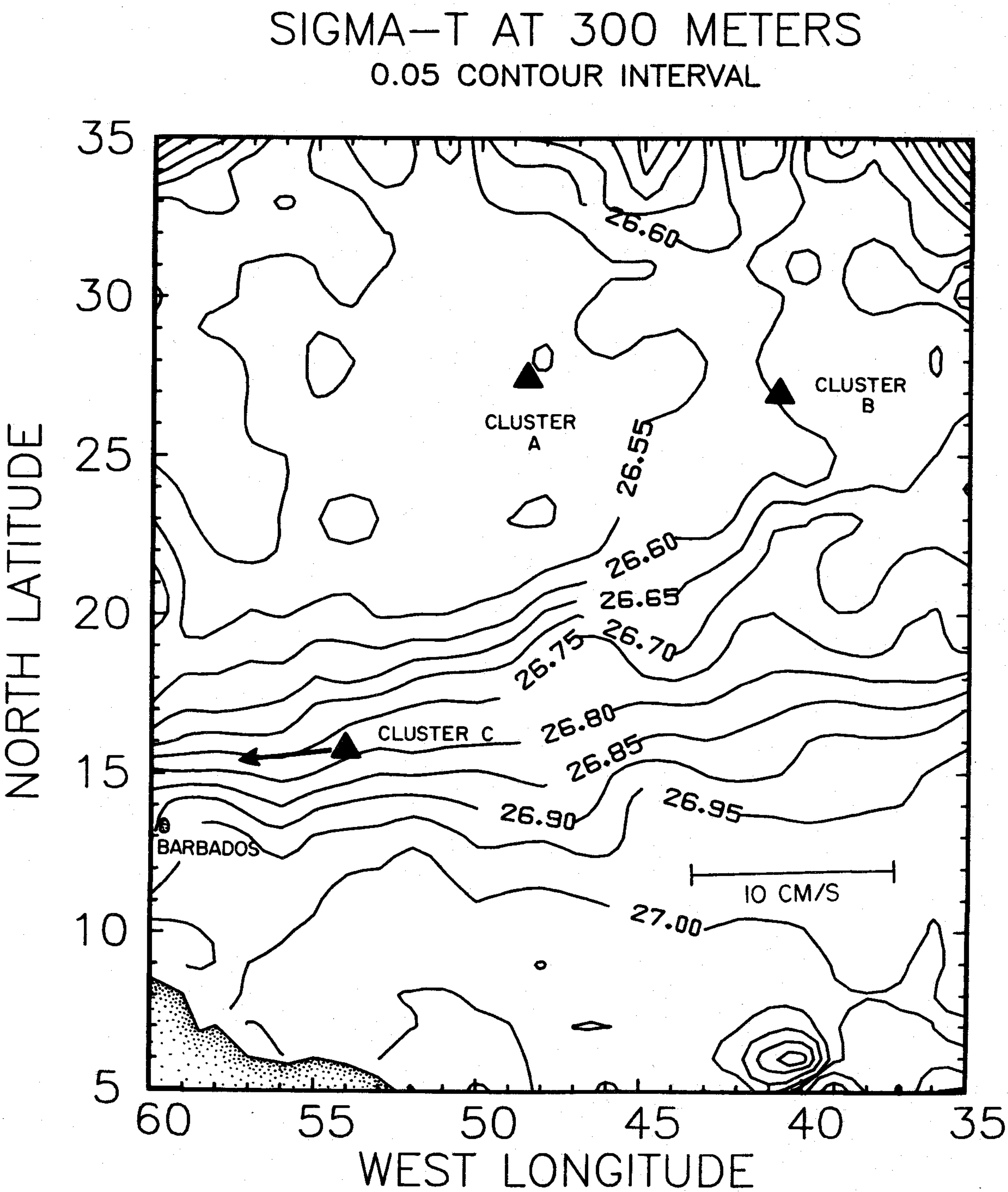
SALINITY AT 150 METERS



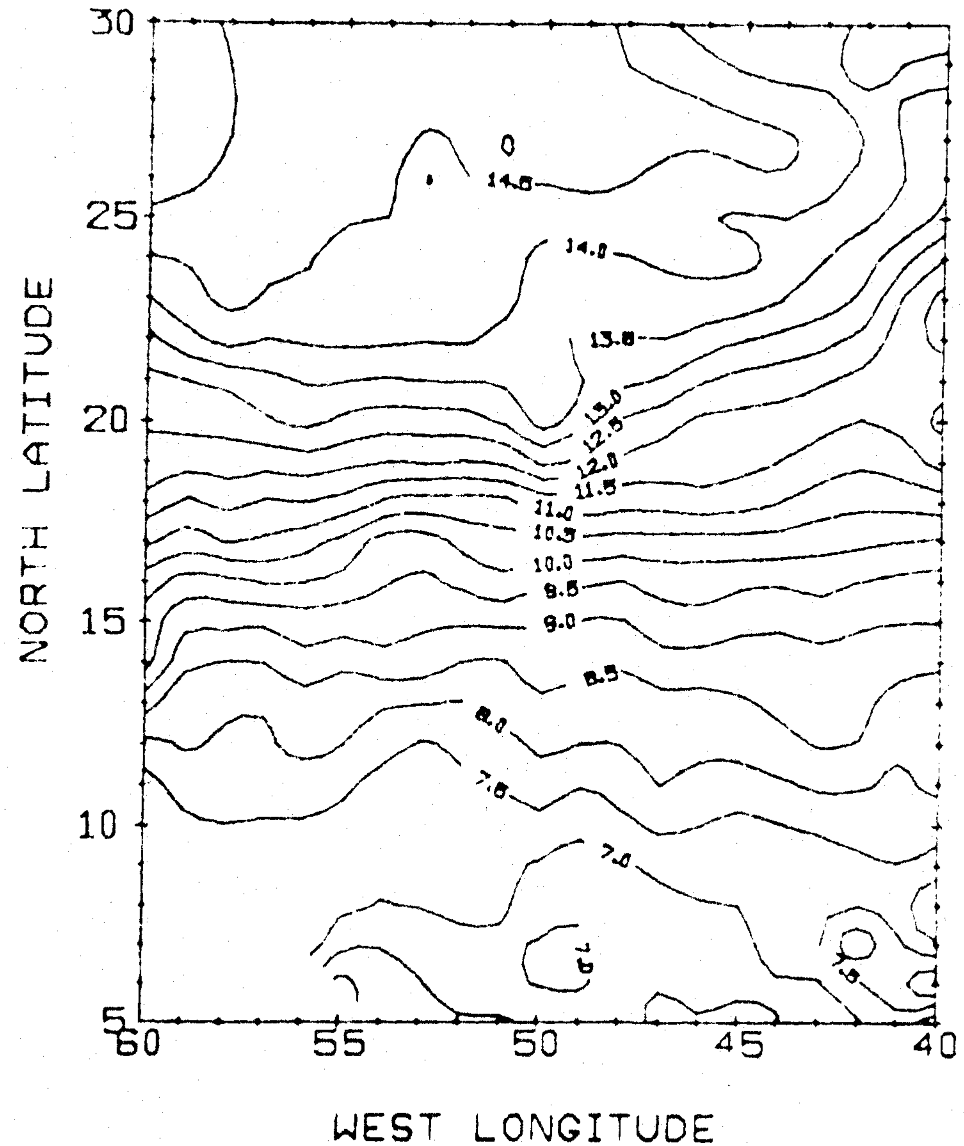

TEMPERATURE AT 300 METERS
NORTH LATITUDE
WEST LONGITUDE
30
25
20
15
10
5
60
55
50
45
40
17.5
17.0
16.5
16.0
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0

SALINITY AT 300 METERS

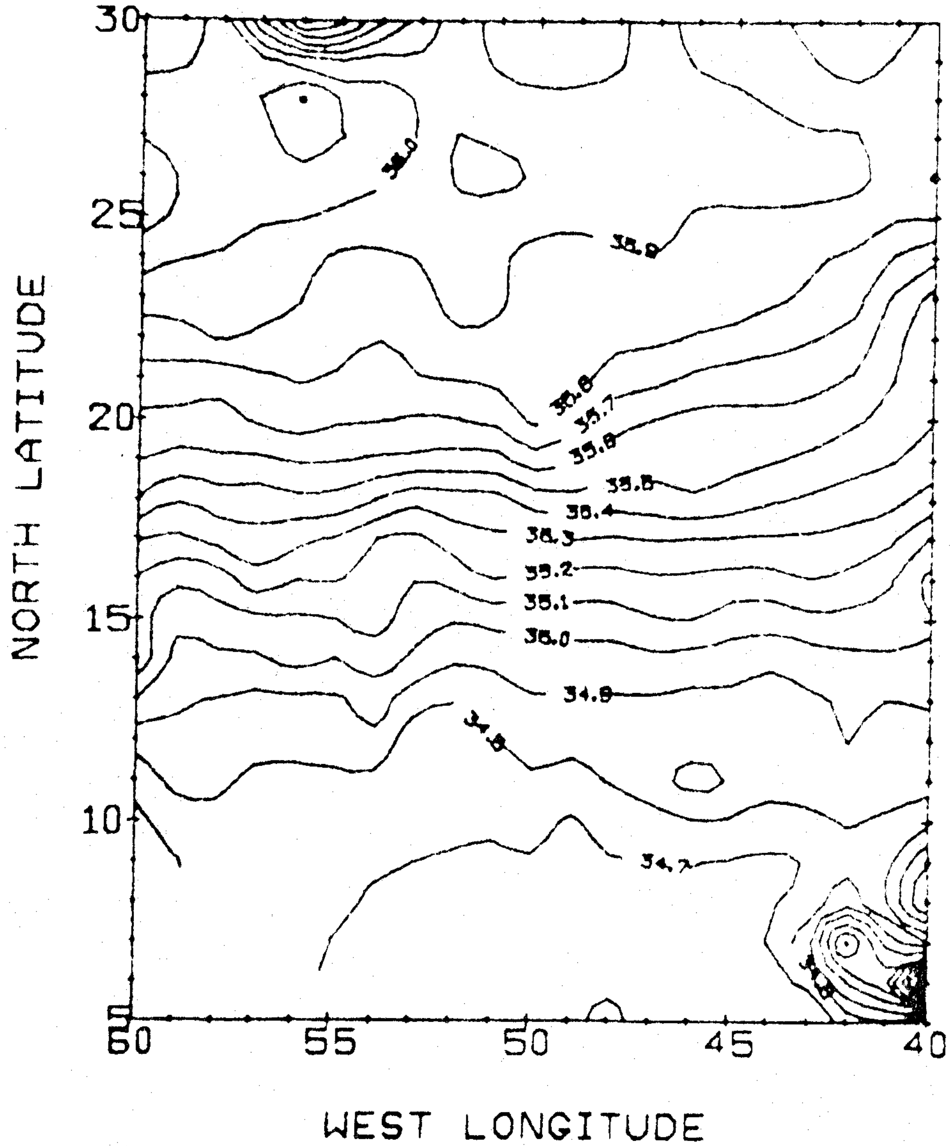



SIGMA—T AT 300 METERS
0.05 CONTOUR INTERVAL
NORTH LATITUDE
WEST LONGITUDE
35
30
25
20
15
10
5
60
55
50
45
40
35
26.60
26.55
26.60
26.65
26.70
26.75
26.80
26.85
26.90
26.95
27.00
CLUSTER A
CLUSTER B
CLUSTER C
BARBADOS
10 CM/S

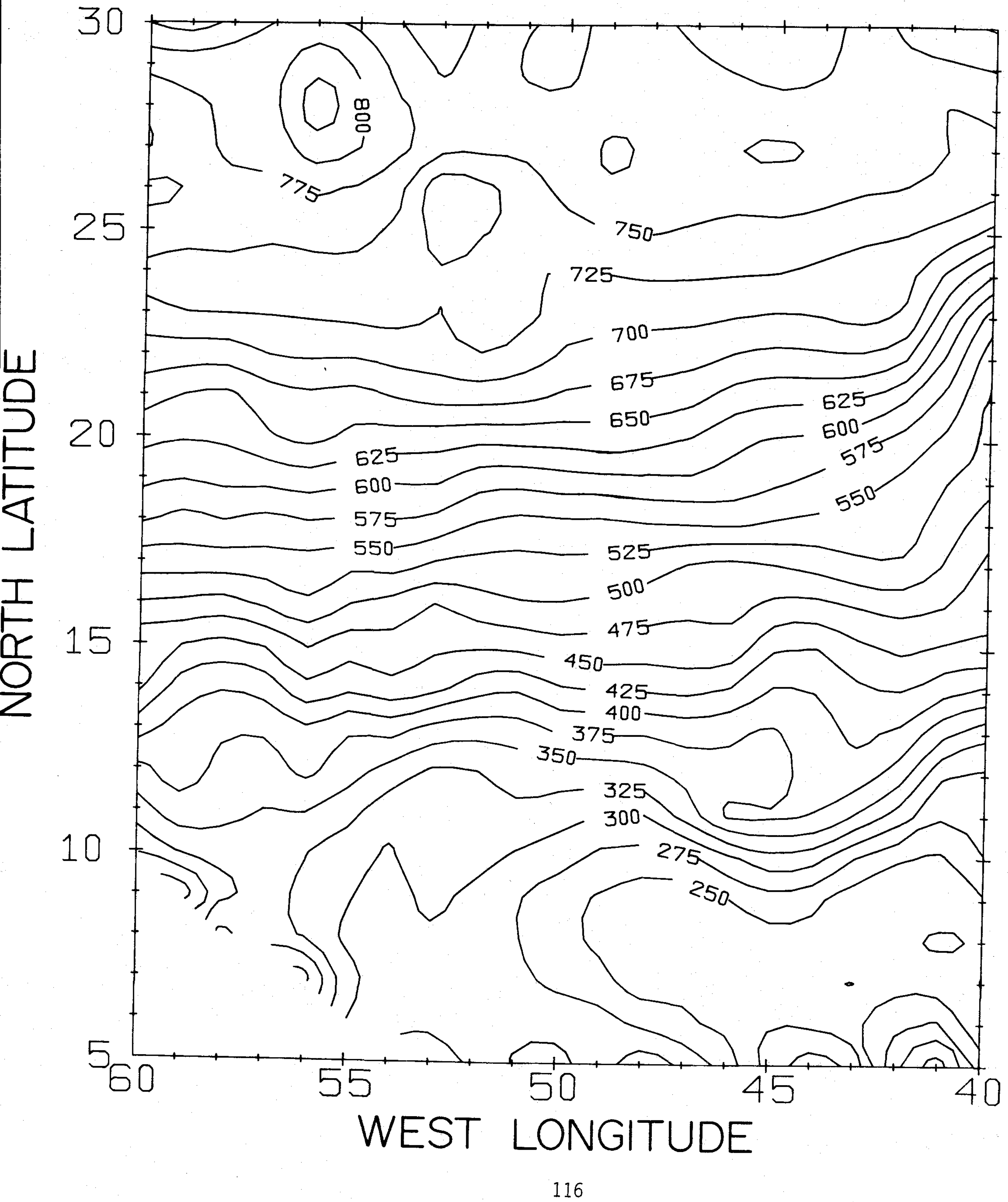
TEMPERATURE AT 500 METERS



SALINITY AT 500 METERS

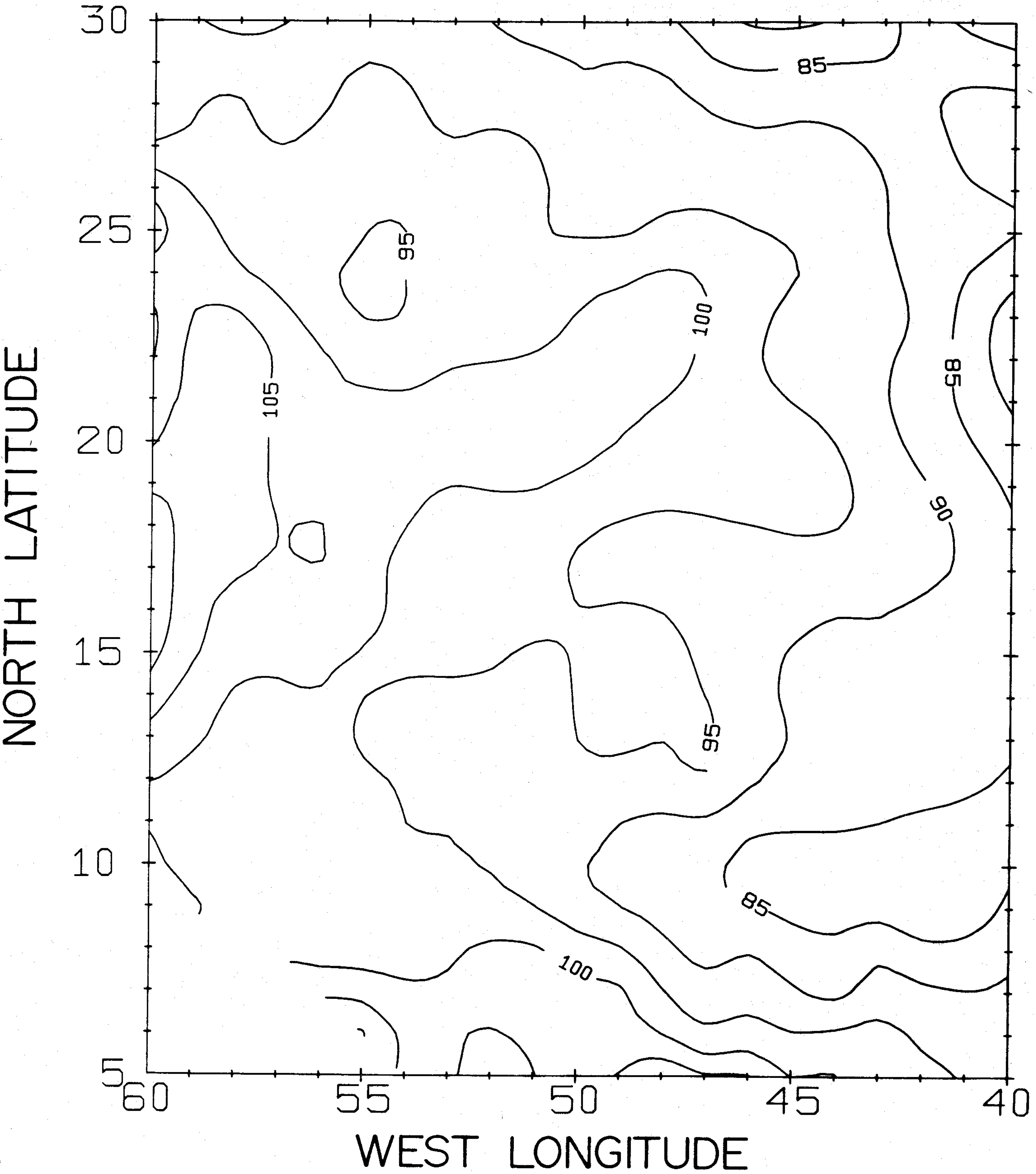


DEPTH OF 10 DEGREE ISOTHERM



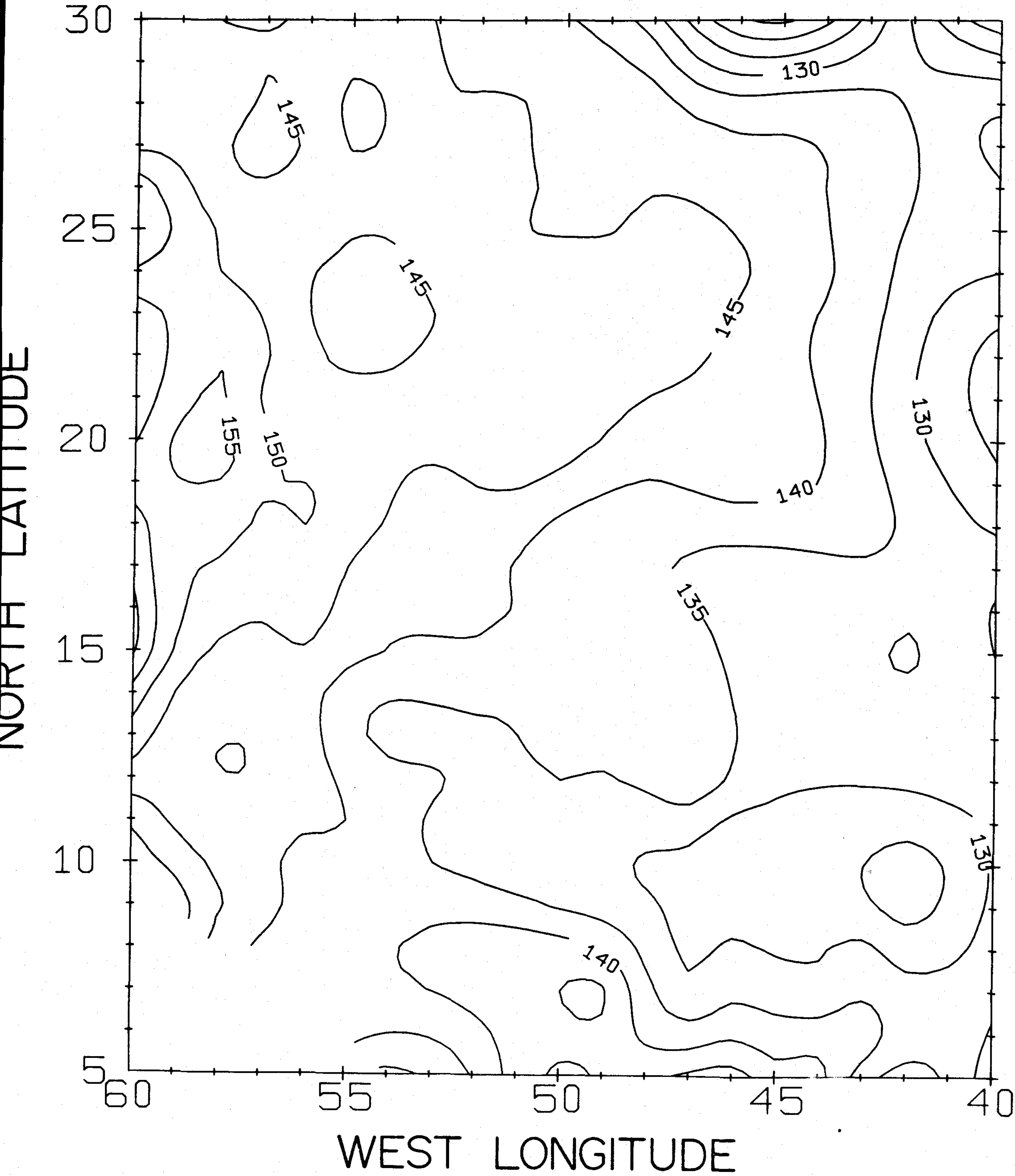
SURFACE DYNAMIC TOPOGRAPHY

REL 500 METERS



SURFACE DYNAMIC TOPOGRAPHY

REL 1000 METER



300M DYNAMIC TOPOGRAPHY

REL 1000 METERS