AD-A171 432 OBSERVATIONS OF CURRENTS TEMPERATURE PRESSURE AND SEA LEVEL IN THE GULF O..(U) SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA M A MERRIFIELD ET AL. APR 86 1/2

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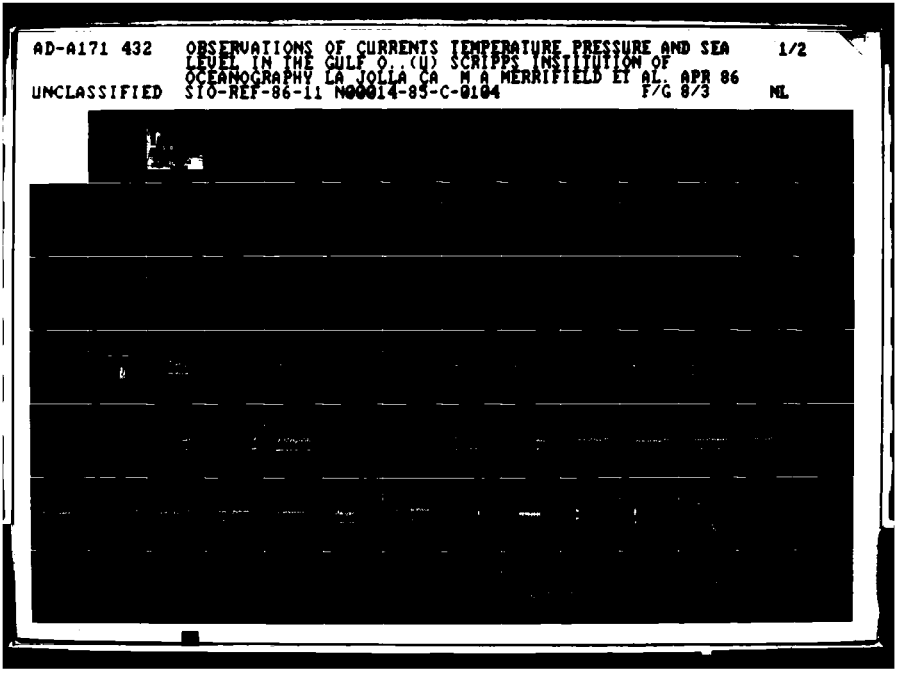

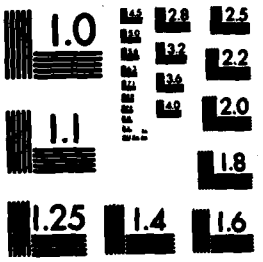

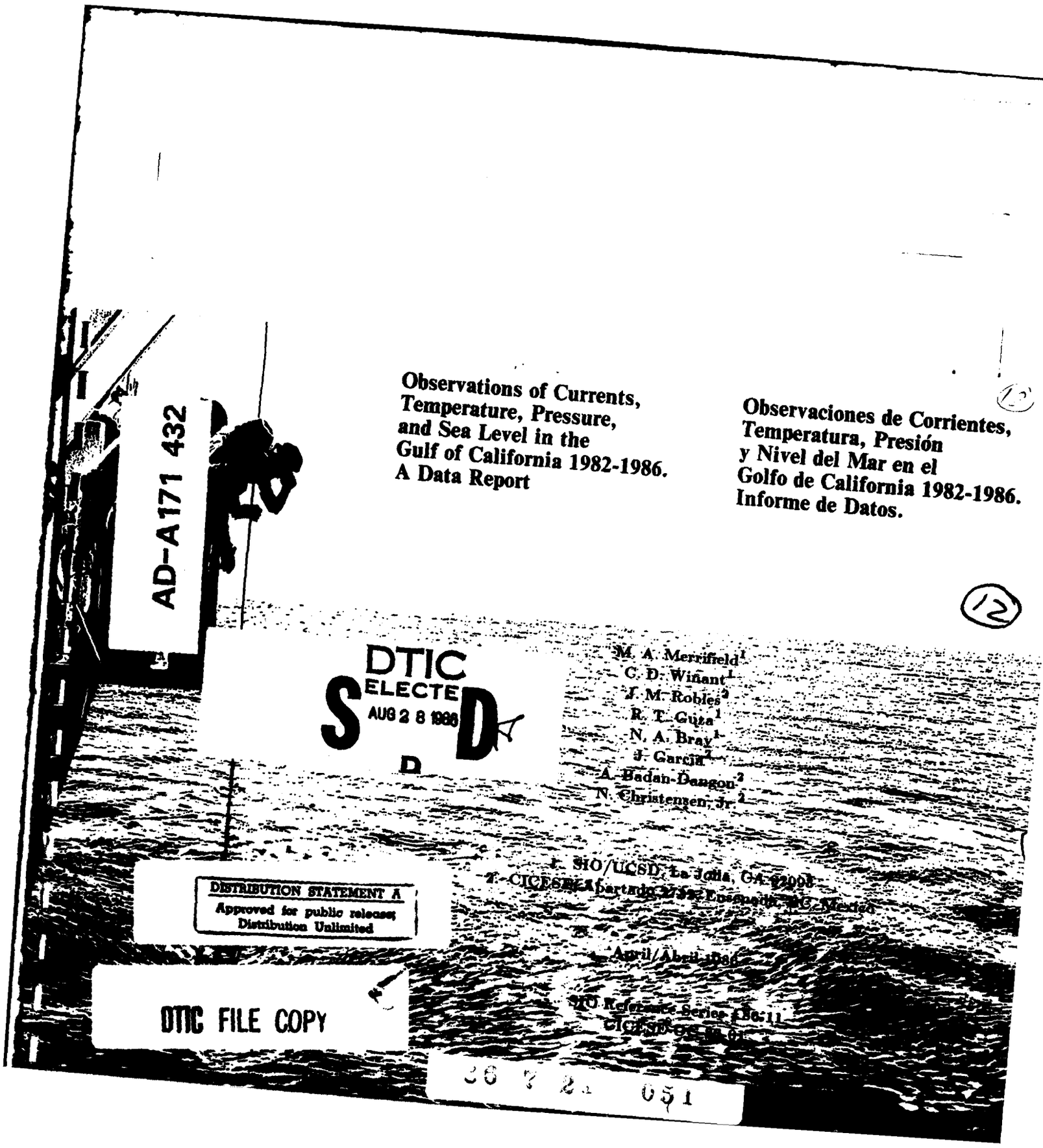

AD-A171 432

Observations of Currents, Temperature, Pressure, and Sea Level in the Gulf of California 1982-1986. A Data Report

Observaciones de Corrientes, Temperatura, Presión y Nivel del Mar en el Golfo de California 1982-1986. Informe de Datos.

(12)

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TABLE OF CONTENTS **INDICE**

Abstract

Numerous observations of horizontal currents, ocean temperature, and bottom pressure were made in the Gulf of California from November 1982 through January 1986, as part of a joint field experiment conducted by researchers at Centro de Investigación Científica y de Educación Superior de Ensenada and at Scripps Institution of Oceanography. The objective of the moored observations was to determine spatial and temporal scales of circulation, primarily along a transect in the central region of the Gulf of California, as well as the interrelationship among the various fields measured. This data report includes a brief description of the instrumentation, a discussion of the data analysis procedures, and presents the time series and simple statistics of the observations.

Resumen

Varias observaciones de corrientes horizontales, temperatura oceánica y presión en el fondo fueron realizadas en el Golfo de California, de Noviembre 1982 a Enero de 1986, como parte de un experimento conjunto, desarrollado por investigadores del Centro de Investigación Científica y de Educación Superior de Ensenada, B.C. y del Instituto Scripps de Oceanografía. El objetivo de las observaciones con anclajes consiste en determinar las escalas espaciales y temporales de la circulación, principalmente a lo largo de un transecto en la región central del Golfo de California, así como la interrelación entre los varios campos medidos. Este informe de datos incluye una descripción breve de los instrumentos, una discusión de los procedimientos de análisis y presenta las series temporales y sus estadísticas básicas.

1. Introduction

The observations presented in this report were collected during a three year joint field experiment in the Gulf of California conducted by researchers at Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE) and Scripps Institution of Oceanography (SIO). Different observations were collected during the experiment to study various physical processes in the Gulf, from finestructure to the effects of El Niño. During this experiment, moorings were used to obtain long time series of horizontal currents, ocean temperature, and bottom pressure. This portion of the experiment was designed in part to identify coherent circulation patterns in the Gulf, particularly along a cross-gulf transect from Santa Rosalia to Guaymas. Figures 1 and 2 show the mooring locations and Figure 3 the time frame of the experiment. A list of the mooring deployments and data return is given in Table 1.

In addition to the moored data collected with both SIO and CICESE instruments, the experiment documented the temporal behavior of various atmospheric parameters through measurements with fixed weather stations (PAM II), and their spatial distribution with an instrumented aircraft, all provided by the National Center for Atmospheric Research (NCAR). Furthermore, sea level records were supplied by CICESE and by the National Autonomous University of Mexico (UNAM). These data sets form the basis for a future analysis of the Gulf's circulation; this

1. Introducción

Las observaciones que se presentan en este informe fueron obtenidas durante un experimento desarrollado en conjunto en el Golfo de California por investigadores del Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE) y del Instituto Scripps de Oceanografía (SIO). Estos datos fueron obtenidos para estudiar diversos procesos físicos en el Golfo, desde la estructura fina hasta los efectos de El Niño. En la porción del experimento que tratamos aquí, se utilizaron anclajes en varias ubicaciones para obtener series temporales de larga duración en el Golfo, particularmente a lo largo de un transecto transversal al Golfo, entre Santa Rosalía, B.C. y Guaymas, Son. Las Figuras 1 y 2 muestran las posiciones de los anclajes y la Figura 3 sintetiza el marco temporal del experimento. Una lista de los anclajes instalados y de los datos recobrados de ellos se proporciona en la Tabla 1.

Además de los datos obtenidos en los anclajes con instrumentos de SIO y de CICESE, el experimento documentó el comportamiento temporal de varios parámetros atmosféricos por medio de estaciones meteorológicas fijas (PAM II), y la distribución espacial de los mismos por medio de un avión instrumentado, proporcionados por el National Center for Atmospheric Research (NCAR). Además, CICESE y la Universidad Nacional Autónoma de México (UNAM) proporcionaron los datos del nivel del mar. Este conjunto de datos forma la base para un análisis

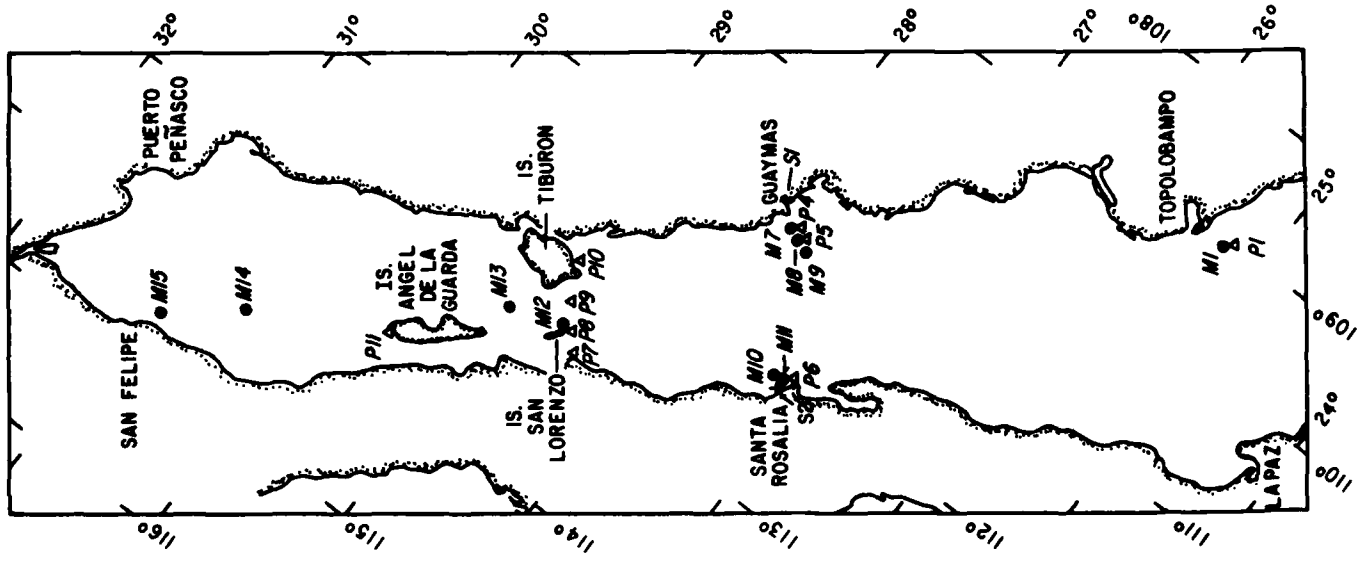

Fig. 1. Locations of current meter moorings (M), bottom pressure sensors (P), and sea level stations (S).

Fig. 1. Localización de correntómetros (M), sensores de presión (P) y de las estaciones mareográficas (S).

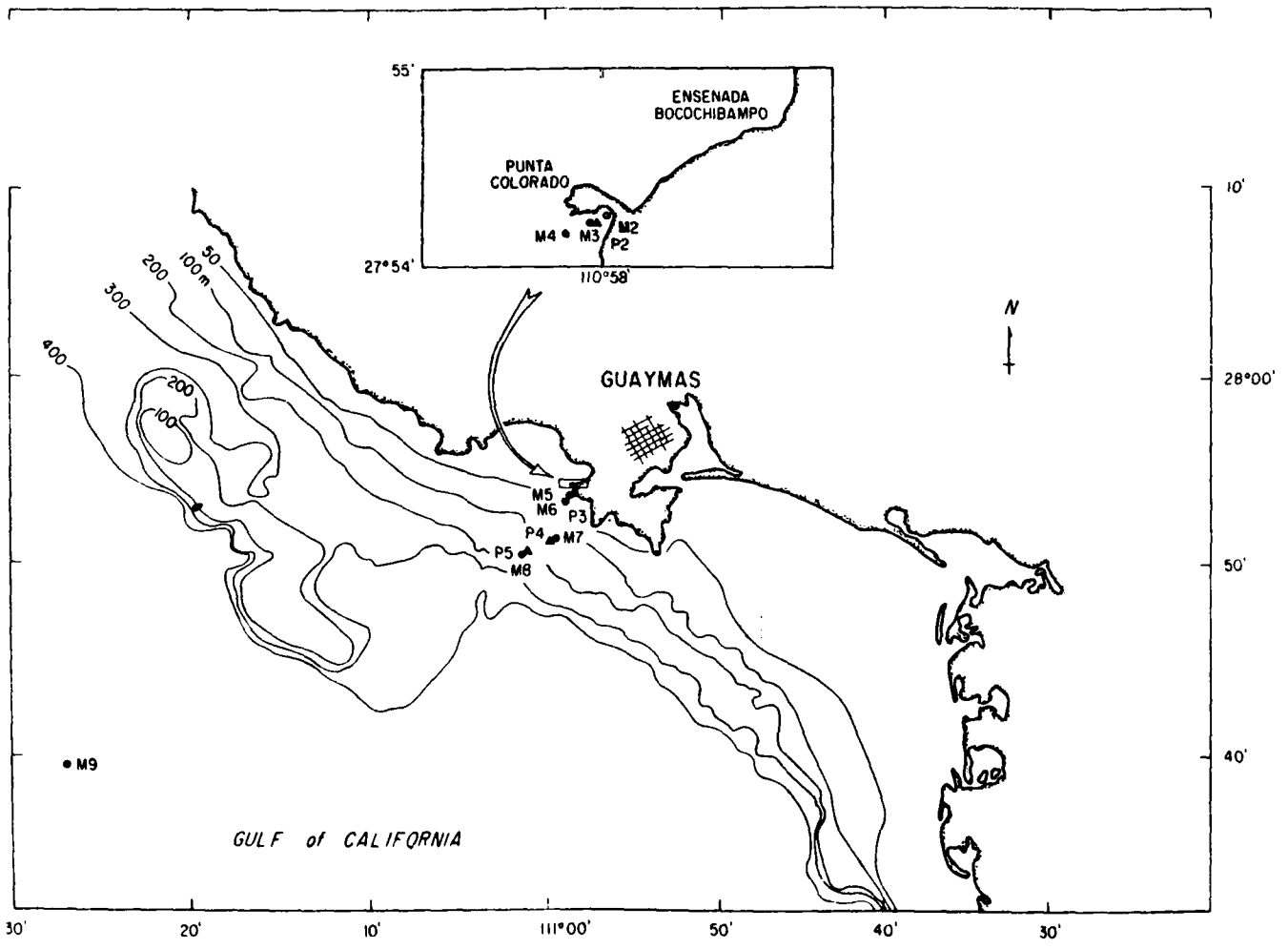

Fig. 2. Locations of sensors on the Guaymas shelf.

Fig. 2. Localización de los sensores en la plataforma de Guaymas.

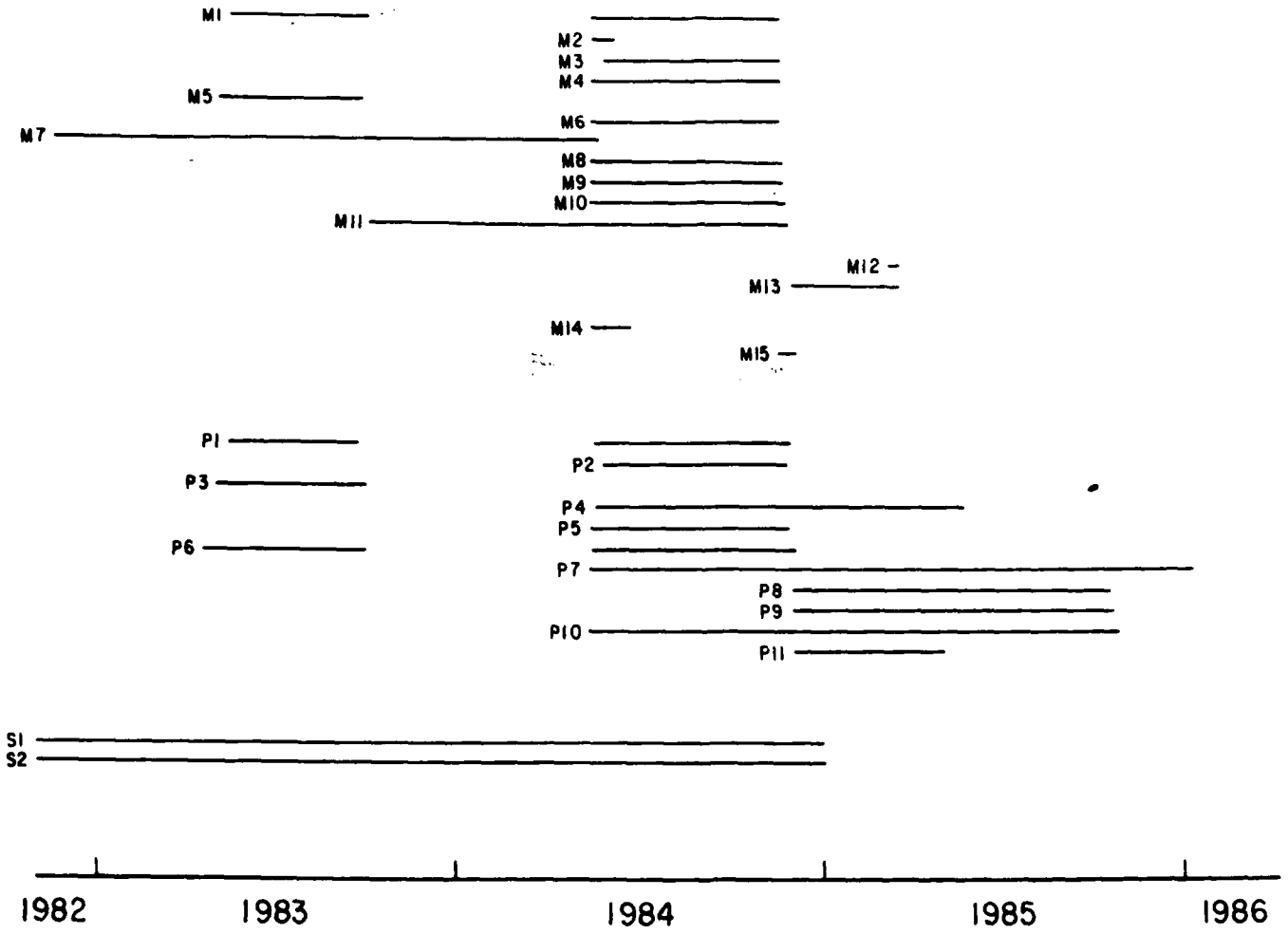

Fig. 3. Deployment periods.

Fig. 3. Períodos de despliegue.

report, however, will only present the moored observations and the sea level records. Overflight data are already available in Candela et al (1984, 1985); the PAM II data will appear shortly in a separate data report.

futuro de la circulación del Golfo. Sin embargo, el informe presente incluye únicamente las observaciones obtenidas de los anclajes y las series temporales del nivel del mar. Los datos obtenidos durante los vuelos están disponibles en Candela et al (1984, 1985); los datos de las PAM II serán publicados en breve en un informe separado.

2. Instrumentation

Most current measurements reported here were made with Vector Measuring Current Meters (VMCM's), a cartesian sampling instrument that records two orthogonal components of horizontal currents, at intervals ranging from 1 to 8 minutes with an accuracy of ± 2 cm/sec. A detailed description of this instrument is provided by Weller (1978). Other measurements were made with General Oceanics inclinometer current meters, by averaging four data points in every hourly burst (Barton et al, 1980), or with a Marsh-McBirney electromagnetic current meter, which sampled at 30 second intervals with a ± 5 cm/sec uncertainty in the mean and an accuracy of 5% in the gain.

Bottom pressure was observed with digiquartz sensors manufactured by Paroscientific with a sampling interval of either 4 or 8 minutes, and

2. Instrumentos

La mayor parte de las mediciones de corrientes que se presentan aquí fueron obtenidas con correntómetros de medición vectorial (VMCM), mismos que observan las dos componentes ortogonales de la corriente horizontal, en intervalos que varían de 1 a 8 minutos, con una precisión de ± 2 cm/sec. Este instrumento está descrito con detalle por Weller (1978). Otras observaciones se hicieron con correntómetros de inclinómetro General Oceanics, promediando cuatro mediciones en cada ráfaga horaria (Barton et al, 1980), o con un correntómetro electromagnético Marsh-McBirney, registrando los datos con intervalos de 30 segundos, una incertidumbre de ± 5 cm/sec en la media y una precisión de 5% en la ganancia.

La presión en el fondo fue registrada con sensores digitales de cuarzo de marca

an accuracy of ±1 millibar. This sensor is described by Erdman (1983).

Temperature was measured at each current meter and pressure sensor with a thermistor mounted inside the pressure housing. The response time of the thermistor is approximately 5 minutes. In addition, thermistor chains measured temperature at some locations (M2, M4, M8, M10). The thermistor chains consisted of 5 to 15 thermistors spliced in regular intervals into an underwater cable. The response time for these thermistors is approximately 16 minutes. The accuracy of all temperature measurements is ±.05°C.

Paroscientific, con intervalos entre muestras de 4 ó de 8 minutos y una exactitud de ±1 millibar. Este sensor está descrito por Erdman (1983).

La temperatura fue medida en cada correntómetro y en los sensores de presión, con un termistor montado en el interior de la cápsula de presión, cuyo tiempo de respuesta es de aproximadamente 5 minutos. Otras observaciones de temperatura se hicieron en varios puntos (M2, M4, M8, M10), con cadenas de termistores consistentes de 5 a 15 sensores intercalados a intervalos regulares en un cable submarino. El tiempo de respuesta de estos termistores es de aproximadamente 16 minutos. La exactitud de todas las mediciones de temperatura es de ±0.5°C.

3. Data Processing

Data for all instruments were recorded on cassette tape. After the data has been transferred from cassette tape to disc, the records were examined for timing discrepancies by cross-checking with known times (i.e. start and stop time of instrument, in and out of the water times). In certain cases the cassette tape was unable to hold all the information, or the instrument failed before recovery, making a timing check impossible. The data were then scanned for

3. Procesamiento de Datos

El registro de datos se efectuó en cintas de cassette para todos los instrumentos. Al transferir los datos de cassette a disco, los registros se corroboran contra tiempos conocidos (v.gr. prendido y apagado del instrumento, entrada y salida del agua) para detectar discrepancias en la grabación del tiempo. En algunos casos la cinta del cassette resultó insuficiente para almacenar toda la información o el instrumento presentó fallas antes de recobrarse, imposibilitando esa verificación.

"bad" data points, defined by a difference from adjacent points of more than three standard deviations away from the average difference for that record. The quality of these points was assessed individually. Bad data gaps less than one day in duration that may result in the record were replaced by linear interpolation from adjacent points. Gaps longer than one day were replaced by the value -9900 to identify a break in the time series and are listed in Table 1.

With regard to temperature, each individual thermistor was calibrated before it was placed in the sensor package. This gives an empirical fit between temperature (in degrees Celsius) and the resistance of the thermistor. In addition, the data logger electronics in each instrument was calibrated prior to the deployment, providing a second order fit between the resistance of the thermistor and the value which was written to tape. Combining these two steps yielded a calibration function between the values on the tape and the temperature in degrees Celsius. To test the accuracy of the calibraton, the instrument itself was immersed in a temperature bath and allowed to write to tape for one or two temperature values. The agreement between these values and the calibration method described above was generally within $\pm .05$°C. The calibration of the electronics package was repeated after recovery of the instrument to check for drift. Calibration of the thermistor chains was done in the same way as the calibration test mentioned above; the instrument was allowed to run in a temperature bath over a

Enseguida se examinan las series para detectar datos falsos, definidos por una diferencia con puntos adyacentes superior a tres desviaciones estándar de la diferencia media del registro. La calidad de estos puntos anormales se evalúa individualmente. Cuando las interrupciones así provocadas en el registro tienen una duración inferior a 1 día, se reconstruyen por una interpolación lineal entre puntos adyacentes. Las interrupciones mayores de 1 día se indican substituyendo los datos incorrectos por el valor -9900 y se enumeran en la Tabla 1.

La calibración de temperatura se efectuó para cada termistor individual antes de colocarlo con el conjunto de sensores. Esta provee un ajuste empírico entre la temperatura (en grados Celsius) y la resistividad del termistor. Por otra parte, el paquete electrónico grabador de datos de cada instrumento se calibra antes de la instalación, lo cual provee un segundo ajuste entre la resistividad del termistor y el valor que queda grabado en la cinta. La combinación de estas dos etapas resulta en una función de calibración entre los valores en la cinta y la temperatura en grados Celsius. Para verificar la precisión de esta calibración, el instrumento mismo se sumerge en un baño térmico, obteniéndose registros en la cinta para uno o dos valores de temperatura. La concordancia entre estos valores y el método de calibración descrito arriba es generalmente del orden de ± 0.5°C o mejor. La calibración del paquete electrónico se repite posteriormente a la recuperación del instrumento para corregir una

wide range of temperatures.

The pressure data were processed according to calibrations supplied by the manufacturer for each individual pressure sensor. No corrections for errors due to temperature effects on the sensor itself and on its time base were applied for this experiment. Sudden jumps that occur in the mean value of several records are most likely due to settling of the instrument. To remove these effects, the tidal portion of the records was predicted and removed from the time series. Sudden changes in the mean value of this residual time series were then noted and corrected in the original time series. For this reason, mean values for pressure time series are meaningless, and are not included in Tables 3 and 4.

Finally, hourly averaged versions of all the time series were formed using a standard running mean boxcar filter. The time series were also low-passed filtered by a convolution of the hourly values with a Groves filter of 51 weights and a half power frequency at 0.3 cycles/day (Groves, 1956).

deriva posible. La calibración de las cadenas de termistores se lleva a cabo en la misma forma que la prueba descrita arriba; el instrumento se hace funcionar en un baño térmico sobre un rango amplio de temperaturas.

Los datos de presión fueron procesados de acuerdo a las curvas de calibración provistas por el fabricante de cada sensor individual, despreciándose los errores debidos a efectos térmicos sobre el sensor mismo o sobre su base temporal. Los saltos repentinos que se observan en ocasiones se deben, en toda probabilidad, a asentamientos del instrumento. Para eliminar estos efectos, la marea de predicción se sustrae de cada registro, los cambios repentinos observados en las series residuales se anotan y se corrigen en las series originales. Por ello, el valor medio de estas series de presión carece de sentido y se omite de las Tablas 3 y 4.

Se formaron también versiones medias horarias de todas las series, utilizando un filtro *boxcar* de media corrida. Por otra parte, las series se filtraron de paso bajo, con una convolución de los valores horarios con un filtro de Groves de 51 pesos y una frecuencia de potencia media en 0.3 ciclos/día (Groves, 1956).

4. Data Presentation

The data in this report are presented in 7

4. Presentación de los Datos

Los datos se presentan en este informe en

month intervals, corresponding to each deployment period. The plots are constructed with four hour samples of the hourly averaged time series. When an instrument was deployed in the same location for adjacent 7 month intervals the entire time series is also presented in low frequency (filtered) form.

The time series of current are plotted with respect to local principal axes, which are listed in Table 2. Because the orientation of maximum along-shelf current varied with season, with location on the shelf, and with the depth of the instrument in the water column, and because the local bathymetry was often very complicated, these axes are rather arbitrary and are meant only as a convenient way to present the data.

A few exceptions to this scheme of presentation occur with the instruments at the M2 mooring, which were designed to document smaller scale features. Observations from these sensors are plotted on an expanded time scale, as well as in the time frame of the main experiment. The pressure sensor at P2 worked only sporadically, hence the data in this record cannot be filtered. Instead, the tide predicted at the S1 tide station is removed from the record and the residual series presented in place of the low frequency record.

Elementary statistics for each of the time series are given in Table 3. The statistics are grouped according to deployment period as well as statistics for records longer than a single deployment. It is here that the mean values of the

intervalos de 7 meses, correspondientes a cada período de instalación. Las gráficas se construyen con datos a intervalos de cuatro horas, obtenidas de las series media horarias. Cuando un instrumento fue instalado en la misma posición durante otros 7 meses adyacentes, la serie temporal total se presenta también en una versión filtrada de paso bajo.

Las series temporales de corrientes están graficadas con respecto a los ejes principales locales, recopilados en la Tabla 2. Debido a que la orientación de la máxima corriente longitudinal a la costa varía con las estaciones, con la ubicación sobre la plataforma y con la posición del instrumento en la columna de agua y porque, además, la batimetría local es con frecuencia muy complicada, estos ejes representan solamente una manera arbitraria pero conveniente para presentar los datos.

Algunas excepciones a este esquema de presentación ocurre con los instrumentos colocados en el anclaje M2, que fueron diseñados para observar estructuras de escala menor. Las observaciones de estos sensores se grafican en una escala temporal expandida, así como en el marco temporal del experimento principal. El sensor de presión en P2 funcionó solamente en forma esporádica, por lo que los datos en este registro no pueden ser filtrados. En su lugar, la marea de predicción en S1 fue sustraida del registro y la serie residual presentada en lugar de la señal de baja frecuencia.

temperature time series (plotted with arbitrary offset) are shown. Statistics for pressure and sea level are only given for low-passed filtered series. Finally, Table 4 provides the statistics for the group of data taken during a common time interval, within the main phase of the experiment, for the purpose of intercomparison. Unless otherwise noted, the statistics are calculated from the hourly-averaged time series. The statistics shown are the mean and standard deviation, and the maximum and minimum values, where the first two are defined as:

Las estadísticas básicas para cada serie temporal se presentan en la Tabla 3. Estas quedan agrupadas de acuerdo al período de instalación y también calculadas para períodos consecutivos de mayor duración. Aquí se proporcionan los valores medios de las series de temperatura (graficadas con un punto de referencia arbitrario). Las estadísticas de los registros de presión y nivel del mar se calculan únicamente para las series filtradas de paso bajo. Finalmente, la Tabla 4 proporciona estadísticas de un grupo de datos tomados durante un intervalo común, comprendido dentro de la fase principal del experimento, para fines de comparación. Excepto donde queda indicado, las estadísticas para cada serie temporal se calculan en base a registros horarios. Estas son la media y desviación estándar y los valores máximos y mínimos, definiéndose las dos primeras como:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^{N} x_i$$

$$SD = \left[\frac{1}{N} \sum_{i=1}^{N} \left(x_i - \bar{x} \right)^2 \right]^{1/2}$$

5. Acknowledgements

The principal investigators for the moored instrument portion of the experiment are C. D. Winant, R. T. Guza and N. A. Bray at SIO, and A. Badan-Dangon, N. Christensen, Jr. and J. M. Robles at CICESE.

The success of the field experiment is due in great proportion to the collaboration of numerous people. P. D'Acri and P. Harvey were responsible for moorings and instrument preparation at SIO. C. Flores assembled the moorings at CICESE. The electronics were kept in excellent state by W. Boyd, M. Kirk, R. Lowe, L. Ryssman, and D. Stadille at SIO, and by R. Hazas at CICESE. Many also collaborated in the deployment efforts, coordinated by C. D. Winant and M. Clifton at SIO, and J. Garcia at CICESE, who were helped considerably by W. Waldorf, D. Muus, J. Becker, J. Candela, J. DeGraff, G. Hargreaves, C. Paden, J. Semler, U. Send, and J. Wells. In the region of the experiment, we were helped enormously by H. Montiel and A. Robles of the Instituto Nacional de Pesca, by our colleagues of ITESM at Guaymas, particularly Dr. F. Manrique, by M. Garcia of the Cooperativa de Ostioneros de Bacochibampo, C. Soto of Radio Marina del Golfo, and by Captain M. Rebolledo, of the Port of Guaymas.

Considerable support in various logistics matters was provided by Admiral Gilberto López Lira, Dirección General de Oceanografía de la Secretaría de Marina, and by Admiral Fernando Magaña Gayou, commander of the Mexican Navy

5. Agradecimientos

Los investigadores responables del experimento con anclajes son C. D. Winant, R. T. Guza y N. A. Bray en SIO y A. Badan-Dangon, N. Christensen, Jr. y J. M. Robles en CICESE.

El éxito absoluto de este experimento en el terreno se debe en gran parte a la eficiente colaboración de varias personas. P. D'Acri y P. Harvey se responsabilizaron de la preparación de anclajes e instrumentos en SIO. C. Flores desarrolló la misma tarea en CICESE. La electrónica de los instrumentos permaneció en excelente estado gracias a W. Boyd, M. Kirk, R. Lowe, L. Ryssman y D. Stadille en SIO y a R. Hazas en CICESE. Varias de estas personas colaboraron además en la instalación misma de los anclajes, coordinada por C. D. Winant y M. Clifton en SIO y por J. García en CICESE. Muy apreciada ayuda adicional se recibió de W. Waldorf, D. Muus, J. Becker, J. Candela, J. DeGraff, G. Hargreaves, C. Paden, J. Semler, U. Send y J. Wells. En la región misma del experimento recibimos auxilio considerable de H. Montiel y A. Robles del Instituto Nacional de Pesca, de nuestros colegas del ITESM, en particular del Dr. Fernando Manrique, de M. García de la Cooperativa de Ostioneros de Bacochibampo, de C. Soto de Radio Marina del Golfo y del Capitán M. Rebolledo, del Puerto de Guaymas.

En varios aspecto de logística, el Sr. Almirante Gilberto López Lira, Director General de Oceanografía de la Secretaría de Marina, y el

post at Santa Rosalia. In particular, we also wish to express our thanks to the crews of the R/V *El Puma*, Captains Ramirez and Padilla commanding, and of the R/V *New Horizon*, Captain Desjardins commanding, for their extremely professional collaboration, which was essential for the success of our mission.

Matters of customs, shipping and finances were expertly handled by V. Cunningham and J. Davis at SIO and by A. Padilla at CICESE. M. Squibb lent valuable assistance in processing the data. Figures and layout for this report were done by M. Clark.

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Sr. Almirante Fernando Magaña Gayou, comandante del Cuartel de Marina en Santa Rosalía, prestaron un apoyo entusiasta y permanente. Muy en particular, deseamos expresar nuestro agradecimiento a los tripulantes del B/O *El Puma*, dirigidos por los Capitanes F. Ramírez y E. Padilla y del B/O *New Horizon*, Capitán T. Desjardins, por una colaboración extremada y profesional, esencial en el éxito de nuestras misiones.

Los asuntos de aduanas, envíos y finanzas fueron manejados en forma experta por V. Cunningham y J. Davis en SIO y por A. Padilla en CICESE. M. Squibb proporcionó ayuda considerable en el procesamiento de los datos. Las figuras y diseño gráfico del trabajo se deben a M. Clark.

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TABLE 1: Instrument Deployments
TABLA 1: Despliegue de Instrumentos

Station / Estación	Water Depth (m) / Profundidad (m)	Latitude N / Lat. N	Longitude W / Long. O	Date Set / Fecha de Despliegue	Date Recovered / Fecha de Recuperación	Inst.	Inst. Depth (m) / Profundidad de Inst. (m)	Data Return / Datos Recuperados
November 1982 - May 1983 Noviembre 1982 - Mayo 1983								
M7	100	27 51.6	111 01.1	11/18/82	05/01/83	V/T	10	complete
M7	100	27 51.6	111 01.1	11/18/82	11/25/82	V*/T	70	complete
M7	100	27 51.6	111 01.1	11/18/82	05/01/83	V/T	75	complete
May - November 1983 Mayo - Noviembre 1983								
M1	100	25 01.7	108 53.9	05/17/83	11/02/83	V/T	10	T only, ends 9/29/83
M1	100	25 01.7	108 53.9	05/17/83	11/02/83	V*/T	70	ends 10/16/83
P1	100	25 01.7	108 53.9	05/17/83	11/02/83	P/T	100	complete
M5	35	27 53.4	110 58.7	05/01/83	11/03/83	V/T	10	ends 9/7/83
P3	35	27 53.4	110 58.7	05/01/83	11/03/83	P/T	35	complete
M7	100	27 51.8	111 00.6	05/01/83	11/03/83	V/T	10	100 day gap: 5/31-9/9/83
M7	100	27 51.8	111 00.6	05/01/83	11/03/83	V*/T	70	complete
M7	100	27 51.8	111 00.6	05/01/83	11/03/83	V/T	75	ends 9/29/83
M11	86	27 13.1	112 02.5	04/29/83	11/03/83	V/T	10	complete
M11	86	27 13.1	112 02.5	04/29/83	11/03/83	V/T	65	ends 9/26/83
P6	86	27 13.1	112 02.5	04/29/83	11/03/83	P/T	86	complete

List of abbreviations at end of table
Lista de abreviaturas al final de la tabla

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station / Estación	Water Depth (m) / Profundidad (m)	Latitude N / Lat. N	Longitude W / Long. O	Date Set / Fecha de Despliegue	Date Recovered / Fecha de Recuperación	Inst.	Inst. Depth (m) / Profundidad de Inst. (m)	Data Return / Datos Recuperados
November 1983 - May 1984 Noviembre 1983 - Mayo 1984								
M7	100	27 52.0	110 57.1	11/03/83	05/11/84	V/T	10	no data, broken stinger
M7	100	27 52.0	110 57.1	11/03/83	05/11/84	V*/T	70	complete
M11	90	27 13.2	112 01.2	11/03/83	05/11/84	V/T	10	complete
M11	90	27 13.2	112 01.2	11/03/83	05/11/84	V*/T	65	ends 2/10/84
May - November 1984 Mayo - Noviembre 1984								
M1	100	25 10.0	108 54.1	05/09/84	11/12/84	V/T	10	complete
M1	100	25 10.0	108 54.1	05/09/84	11/12/84	V/T	70	ends 8/11/84
P1	100	25 10.0	108 54.1	05/09/84	11/12/84	P/T	100	complete
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T	1	complete
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T	2	instrument drifted
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T	3	complete
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	T	4	complete
M2	5	27 54.1	110 58.0	05/12/84	05/30/84	V**/T	5	complete
M3	8	27 54.1	110 58.0	05/20/84	11/14/84	V**	8	no data, inst. failure
P2	8	27 54.1	110 58.0	05/20/84	11/14/84	P/T	8	19 day gap: 6/11-6/29, 83 day gap: 7/17-10/7,

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station / Estación	Water Depth (m) / Profundidad (m)	Latitude N / Lat. N	Longitude W / Long. O	Date Set / Fecha de Despliegue	Date Recovered / Fecha de Recuperación	Inst.	Inst. Depth (m) / Profundidad de Inst. (m)	Data Return / Datos Recuperados
								17 day gap: 10/20-11/6
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	V/T	5	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	V/T	12	27 day gap: 5/30-6/25, 21 day gap: 9/17-10/7
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	2	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	4	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	6	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	8	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	10	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	12	complete
M4	15	27 54.1	110 58.1	05/07/84	11/14/84	T	14	complete
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	10	45 day gap: 8/21-10/5/84
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	20	complete
M6	50	27 53.0	110 58.8	05/10/84	11/13/84	V/T	30	T only, broken compass
M6	50	27 53.0	110 58.7	05/10/84	11/13/84	T	**	T-chain failed, no data
M7	100	27 51.1	110 59.3	05/10/84	********	V/T	10	no data, mooring failure
M7	100	27 51.1	110 59.3	05/10/84	********	V/T	30	no data, " "
M7	100	27 51.1	110 59.3	05/10/84	********	V/T	50	no data, " "
M7	100	27 51.1	110 59.3	05/10/84	********	V/T	70	no data, " "
P4	100	27 51.1	110 59.3	05/10/84	05/26/85	P/T	100	T ends 5/16/85
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	V/T	10	complete

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station	Water Depth (m)	Latitude N	Longitude W	Date Set	Date Recovered	Inst.	Inst. Depth (m)	Data Return
Estación	Profundidad (m)	Lat. N	Long. O	Fecha de Despliegue	Fecha de Recuperación	Inst.	Profundidad de Inst. (m)	Datos Recuperados
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	20	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	30	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	40	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	50	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	60	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	70	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	85	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	100	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	115	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	130	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	145	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	160	complete
M8	200	27 50.0	111 01.2	05/10/84	11/14/84	T	175	complete
P5	200	27 50.0	111 01.2	05/10/84	11/14/84	P/T	200	offset in T
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	10	lost
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	50	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V/T	100	T only, broken stinger
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	300	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	500	complete
M9	1000	27 39.4	111 26.8	05/19/84	11/13/84	V*/T	850	complete
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	V/T	10	V ends 9/8/84
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	20	ends 7/8/84
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	30	" "

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station / Estación	Water Depth (m) / Profundidad (m)	Latitude N / Lat. N	Longitude W / Long. O	Date Set / Fecha de Despliegue	Date Recovered / Fecha de Recuperación	Inst.	Inst. Depth (m) / Profundidad de Inst. (m)	Data Return / Datos Recuperados
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	40	ends 7/8/84
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	50	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	60	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	70	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	85	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	100	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	115	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	130	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	145	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	160	" "
M10	200	27 14.0	112 01.5	05/11/84	11/14/84	T	175	" "
M11	90	27 14.0	112 02.5	05/11/84	11/14/84	V/T	10	complete
M11	90	27 14.0	112 02.5	05/11/84	11/14/84	V/T	30	complete
M11	90	27 14.0	112 02.5	05/11/84	11/14/84	V/T	70	complete
P6	90	27 14.0	112 02.5	05/11/84	11/14/84	P/T	90	complete
M14	100	30 30.8	114 15.1	05/21/84	06/19/84	V/T	10	complete
P7	7	28 26.0	112 52.5	05/17/84	11/26/84	P/T	7	complete
P10	7	28 46.5	112 16.0	05/18/84	11/25/84	P/T	7	complete

November 1984 - March 1985
Noviembre 1984 - Marzo 1985

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station	Water Depth (m)	Latitude N	Longitude W	Date Set	Date Recovered	Inst.	Inst. Depth (m)	Data Return
Estación	Profundidad (m)	Lat. N	Long. O	Fecha de Despliegue	Fecha de Recuperación	Inst.	Profundidad de Inst. (m)	Datos Recuperados
P7	7	28 26.0	112 52.5	11/26/84	03/23/85	P/T	7	complete
P8	5	28 34.5	112 46.0	11/27/84	03/10/85	P/T	5	complete
P9	5	28 40.0	112 32.0	11/28/84	03/16/85	P/T	5	complete
P10	7	28 46.5	112 16.0	11/25/84	03/13/85	P/T	7	complete
P11	5	29 33.5	113 33.5	11/30/84	03/21/85	P/T	5	complete
M13	410	29 09.5	112 52.1	12/02/84	03/22/85	V/T	150	complete
M15	500	30 50.1	114 42.0	11/15/84	11/29/84	V/T	150	complete
March 1985 - January 1986 Marzo 1985 - Enero 1986								
M12	500	28 35.7	112 38.0	03/09/85	03/19/85	V/T	25	T only
M12	500	28 35.7	112 38.0	03/09/85	03/19/85	V/T	150	T only
M12	500	28 35.7	112 38.0	03/09/85	03/19/85	V/T	300	lost
M12	500	28 35.7	112 38.0	03/09/85	03/19/85	V/T	450	complete
P7	7	28 26.0	112 52.5	03/23/85	01/03/86	P/T	7	complete
P8	5	28 34.5	112 46.0	03/12/85	11/05/85	P/T	5	T not calibrated

TABLE 1: Instrument Deployments (cont.)
TABLA 1: Despliegue de Instrumentos (cont.)

Station	Water Depth (m)	Latitude N	Longitude W	Date Set	Date Recovered	Inst.	Inst. Depth (m)	Data Return
Estación	Profundidad (m)	Lat. N	Long. O	Fecha de Despliegue	Fecha de Recuperación	Inst.	Profundidad de Inst. (m)	Datos Recuperados
P9	5	28 40.0	112 32.0	03/16/85	11/04/85	P/T	5	complete
P10	7	28 46.5	112 16.0	03/13/85	11/03/85	P/T	7	complete
January 1982 - December 1984 Enero 1982 - Diciembre 1984								
S1	0	27 54.0	110 53.0	01/01/82	12/31/84	S	0	18 day gap: 10/13-10/31/83
S2	0	27 18.0	112 18.0	01/29/82	12/31/84	S	0	4 day gap: 8/1-8/4/82 5 day gap: 11/17-11/21/83

Abbreviations:
Abreviaciones:

P:	Pressure	Presión
S:	Sea Level	Nivel del Mar
T:	Temperature	Temperatura
V:	VMCM	VMCM
V*:	Inclinometer	Inclinómetro
V**:	Electromagnetic Current Meter	Correntómetro Electromagnético

TABLE 2: Mooring sites and principle axes
TABLA 2: Posiciones de los Anclajes y los Ejes Principales

Mooring Anclaje	Location Posición	Principal axis (from True North) Eje Principal (Norte Verdarado)
M1	Topolobampo	283
M2	Guaymas	324
M3-M8	Guaymas	297
M9	Guaymas Basin	305
M10-M11	Santa Rosalia	331
M12	Southern Sill	291
M13	Northern Sill	317
M14	Delphin Basin	334
M15	San Felipe	304

TABLE 3a: Currents (cm/s): Statistics For Each Deployment
TABLA 3a: Corrientes (cm/s): Estadísticas Para Cada Despliegue

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf Mean	Along-Shelf SD	Along-Shelf Max	Along-Shelf Min	Cross-Shelf Mean	Cross-Shelf SD	Cross-Shelf Max	Cross-Shelf Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Paralelo a la Costa Medio	Paralelo a la Costa DE	Paralelo a la Costa Max	Paralelo a la Costa Min	Normal a la Costa Medio	Normal a la Costa DE	Normal a la Costa Max	Normal a la Costa Min
November 1982 - May 1983													
Noviembre 1982 - Mayo 1983													
M7	100	13:00 11/18/82	23:00 05/31/83	194.04	10	4.03	21.10	95.60	-73.40	1.26	7.16	29.20	-35.90
M7	100	15:00 11/18/82	23:00 05/31/83	194.38	70	8.47	15.84	68.20	-30.00	1.49	7.38	25.50	-34.80
M7	100	13:00 11/18/82	07:00 11/25/82	6.75	75	16.81	15.46	54.80	-4.00	1.46	5.68	15.60	-12.70
May - November 1983													
Mayo - Noviembre 1983													
M1	100	00:00 05/01/83	13:00 11/03/83	85.75	70	14.50	35.14	113.50	-86.20	8.41	20.09	94.10	-57.10
M7	100	00:00 05/01/83	13:00 11/03/83	85.75	10	8.46	20.44	95.60	-45.60	-.17	8.11	29.00	-30.60
M7	100	00:00 05/01/83	23:00 11/30/83	214.00	70	5.54	15.14	78.60	-48.70	1.71	9.08	48.00	-67.80
M7	100	16:00 05/01/83	13:00 09/29/83	150.88	75	2.08	6.92	32.80	-27.00	5.53	15.13	71.40	-48.30
M11	86	00:00 05/01/83	23:00 11/30/83	214.00	10	3.18	16.30	53.60	-84.50	.11	5.75	32.50	-22.20
M11	86	00:00 05/01/83	23:00 09/26/83	148.96	65	-1.96	11.85	49.70	-48.30	-.39	4.42	15.40	-20.90
November 1983 - May 1984													
Noviembre 1983 - Mayo 1984													
M7	100	00:00 11/01/83	21:00 05/10/84	191.88	70	6.02	22.38	115.70	-68.70	2.36	11.70	70.50	-67.80
M11	90	00:00 11/01/83	23:00 05/31/84	213.00	10	2.21	10.30	42.80	-50.80	-.68	3.91	32.70	-23.40
M11	90	00:00 11/05/83	02:00 02/12/84	97.08	65	-3.65	26.50	68.80	-91.10	-1.53	9.60	45.40	-47.90
May - November 1984													
Mayo - Noviembre 1984													
M1	100	13:00 05/09/84	00:00 08/01/84	83.46	10	.21	15.93	50.90	-90.80	-3.48	12.31	49.90	-41.00
M1	100	13:00 05/09/84	09:00 11/12/84	186.83	70	-2.40	17.09	53.80	-70.10	-.98	9.10	29.40	-38.60
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	5	4.23	3.49	14.30	-1.30	-1.36	.95	1.20	-4.10
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	5	-1.37	5.58	25.00	-35.70	-.25	1.49	10.70	-9.20
M4	15	09:00 05/07/84	09:00 11/14/84	145.88	12	-1.54	3.40	7.10	-25.20	-.17	1.49	7.90	-8.70

TABLE 3a: Currents (cm/s): Statistics For Each Deployment (cont.)
TABLA 3a: Corrientes (cm/s): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf Mean	Along-Shelf SD	Along-Shelf Max	Along-Shelf Min	Cross-Shelf Mean	Cross-Shelf SD	Cross-Shelf Max	Cross-Shelf Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Paralelo a la Costa Medio	Paralelo a la Costa DE	Paralelo a la Costa Max	Paralelo a la Costa Min	Normal a la Costa Medio	Normal a la Costa DE	Normal a la Costa Max	Normal a la Costa Min
M6	50	13:00 05/10/84	00:00 11/13/84	141.92	10	-3.57	15.08	63.70	-56.90	1.63	5.80	35.40	-27.10
M6	50	12:00 05/10/84	17:00 11/13/84	187.21	20	-2.60	12.41	63.70	-54.50	.49	5.07	31.50	-26.40
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	10	2.18	28.95	103.60	-104.10	2.36	14.01	87.30	-67.40
M9	1000	05:00 05/19/84	11:00 11/13/84	178.25	50	3.74	21.13	60.60	-60.80	-.62	14.34	43.60	-58.00
M9	1000	08:00 05/19/84	20:00 11/12/84	177.50	300	-2.33	16.35	81.90	-79.90	.84	13.14	55.80	-63.10
M9	1000	08:00 05/19/84	20:00 11/13/84	178.50	500	-1.49	14.67	60.50	-52.50	-2.13	9.48	48.70	-56.40
M9	1000	07:00 05/19/84	14:00 11/12/84	177.29	850	.41	13.25	88.60	-63.70	.01	9.61	44.50	-48.90
M10	200	18:00 05/11/84	19:00 09/08/84	120.04	10	-8.63	19.97	38.40	-84.10	-.26	8.76	37.30	-30.40
M11	90	00:00 05/01/84	17:00 11/14/84	197.71	10	.08	18.95	46.10	-85.90	.83	6.98	35.10	-25.10
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	30	-4.35	19.71	59.60	-84.60	-1.09	6.69	32.70	-32.70
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	70	-3.93	16.07	54.70	-71.10	-1.28	5.31	20.40	-21.10
M14	100	20:00 05/21/84	08:00 06/09/84	18.50	10	-12.37	25.90	59.20	-63.60	-1.76	13.15	33.30	-36.30
November 1984 - May 1985													
Noviembre 1984 - Mayo 1985													
M12	500	10:00 03/09/85	21:00 03/19/85	10.46	450	4.19	40.52	105.50	-80.00	.62	11.96	37.80	-50.10
M13	410	07:00 12/02/84	07:00 03/22/85	110.00	150	-3.75	22.38	56.30	-64.70	-.75	6.98	21.20	-33.30
M15	500	16:00 11/15/84	22:00 11/29/84	14.25	150	5.80	47.31	126.20	-99.10	-9.29	17.40	28.20	-77.60
Long Records (filtered)													
M7	100	14:00 11/19/82	12:00 11/02/83	347.88	10	2.77	14.99	70.00	-49.10	.50	3.34	13.50	-14.00
M7	100	16:00 11/19/82	20:00 05/09/84	537.13	70	6.68	13.66	51.00	-26.60	2.17	3.66	33.20	-12.00
M11	90	21:00 04/30/83	16:00 11/13/84	562.80	10	1.85	11.29	33.00	-48.20	.15	2.65	14.50	-8.40

TABLE 3b: Temperature (°C): Statistics For Each Deployment
TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue

Station / Estación	Water Depth (m) / Profundidad (m)	Start Time (PST) / Tiempo de Comienzo (PST)	Stop Time (PST) / Tiempo de final (PST)	Duration (days) / Duración (días)	Inst. Depth (m) / Profundidad de Inst. (m)	Mean / Medio	SD / DE	Max / Max	Min / Min
November 1982 - May 1983									
Noviembre 1982 - Mayo 1983									
M7	100	13:00 11/18/82	23:00 05/31/83	194.46	10	21.60	1.48	26.20	18.58
M7	100	15:00 11/18/82	23:00 05/31/83	194.38	70	20.40	2.15	25.93	15.33
M7	100	13:00 11/18/82	07:00 11/25/82	6.75	75	21.02	1.18	22.68	17.95
May - November 1983									
Mayo - Noviembre 1983									
M1	100	11:00 05/17/83	20:00 09/29/83	135.38	10	28.33	1.35	29.86	23.72
M1	100	13:00 05/17/83	19:00 10/16/83	152.25	70	24.46	1.49	29.09	20.00
M1	100	13:00 05/17/83	11:00 11/02/83	168.92	100	19.39	1.94	24.92	14.45
M5	35	10:00 05/01/83	08:00 08/22/83	112.92	10	27.11	3.17	30.95	19.89
M5	35	11:00 05/01/83	12:00 11/03/83	186.04	35	24.48	3.03	28.43	16.76
M7	100	00:00 05/01/83	23:00 11/30/83	214.00	10	27.11	2.99	30.69	18.81
M7	100	00:00 05/01/83	23:00 11/30/83	214.00	70	25.76	4.19	31.05	15.49
M7	100	16:00 05/01/83	13:00 09/29/83	150.88	75	23.85	2.85	30.05	17.38
M11	86	00:00 05/01/83	23:00 11/30/83	214.00	10	26.00	1.89	29.63	20.08
M11	86	00:00 05/01/83	23:00 09/26/83	150.12	65	20.77	2.17	25.15	16.04
M11	86	00:00 05/01/83	13:00 11/03/83	191.79	86	19.94	1.85	24.07	15.61
November 1983 - May 1984									
Noviembre 1983 - Mayo 1984									
M7	100	00:00 11/01/83	17:00 05/10/84	191.71	10	19.04	2.65	27.31	13.67
M7	100	00:00 11/01/83	21:00 05/10/84	191.88	70	17.23	1.79	25.88	13.79
M11	86	00:00 11/01/83	23:00 05/31/84	213.00	10	20.81	2.22	26.66	16.33
M11	86	00:00 11/05/83	02:00 02/12/84	97.08	65	18.97	1.57	23.87	15.17
May - November 1984									

TABLE 3b: Temperature (°C): Statistics For Each Deployment (cont.)
TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (diás)	Profundidad de Inst. (m)	Medio	DE	Max	Min
Mayo - Noviembre 1984									
M1	100	13:00 05/09/84	00:00 08/01/84	83.46	10	27.39	2.00	29.92	21.31
M1	100	13:00 05/09/84	09:00 11/12/84	186.83	70	19.79	2.58	27.39	13.58
M1	100	14:00 05/09/84	10:00 11/12/84	186.83	100	15.88	1.59	23.65	12.46
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	1	25.49	.67	27.23	23.91
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	3	25.28	.70	27.11	23.33
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	4	25.07	.65	26.88	22.71
M2	5	09:00 05/12/84	17:00 05/23/84	11.33	5	24.87	.66	26.61	22.16
M3	8	19:00 05/20/84	10:00 11/14/84	63.42	8	27.07	2.71	30.21	18.10
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	2	28.45	2.27	31.20	20.08
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	4	28.14	2.48	31.23	19.10
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	6	28.07	2.51	31.18	18.18
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	8	27.95	2.57	31.11	17.81
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	10	27.85	2.64	30.97	16.85
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	12	27.66	2.71	30.83	16.97
M4	15	09:00 05/07/84	09:00 11/14/84	191.00	14	27.50	2.82	30.80	15.46
M6	50	12:00 05/10/84	17:00 11/13/84	187.17	10	28.00	2.44	30.77	18.96
M6	50	12:00 05/10/84	17:00 11/13/84	187.21	20	27.33	2.80	30.46	17.48
M6	50	12:00 05/10/84	17:00 11/13/84	187.25	30	26.50	3.33	30.41	16.35
M7	100	17:00 05/10/84	23:00 11/30/84	204.29	100	14.16	1.90	29.02	10.58
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	10	28.18	2.84	31.46	19.27
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	20	27.47	3.21	31.10	17.75
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	30	26.27	3.48	30.81	16.91
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	40	24.58	3.51	30.72	16.54
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	50	22.70	3.27	30.39	15.96

TABLE 3b: Temperature (°C): Statistics For Each Deployment (cont.)
TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	60	20.74	2.99	28.89	13.98
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	70	19.23	2.54	28.63	13.63
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	85	17.62	2.02	28.35	13.33
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	100	15.65	2.20	26.34	10.13
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	115	15.18	1.52	22.73	11.74
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	130	14.90	1.20	20.49	12.05
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	145	14.24	1.06	19.70	11.72
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	160	13.64	.99	18.60	11.24
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	175	13.12	.90	17.73	10.89
M8	200	19:00 05/10/84	08:00 11/14/84	187.54	200	13.13	.62	16.31	11.54
M9	1000	05:00 05/19/84	11:00 11/13/84	178.25	50	22.23	2.49	27.70	16.69
M9	1000	06:00 05/19/84	05:00 09/07/84	110.96	100	16.73	.98	19.52	14.45
M9	1000	08:00 05/19/84	20:00 11/12/84	177.50	300	11.73	.28	12.64	10.80
M9	1000	08:00 05/19/84	20:00 11/13/84	178.50	500	8.77	.60	9.93	7.51
M9	1000	07:00 05/19/84	14:00 11/12/84	177.29	850	5.38	.16	5.89	4.93
M10	200	18:00 05/11/84	18:00 11/14/84	187.08	10	25.89	2.81	29.91	17.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	10	22.04	2.36	26.79	17.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	20	20.37	2.21	25.78	16.51
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	30	19.20	2.03	24.29	16.01
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	40	18.47	1.89	22.90	15.71
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	50	17.84	1.76	22.58	15.35
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	60	17.35	1.65	21.95	15.11
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	70	16.96	1.53	20.97	14.88
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	85	16.50	1.37	19.83	14.53
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	100	16.04	1.26	19.02	14.18

TABLE 3b: Temperature (°C): Statistics For Each Deployment (cont.)
TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	115	15.68	1.05	18.66	14.04
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	130	15.29	.88	18.16	13.68
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	145	14.98	.74	17.49	13.37
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	160	14.63	.66	16.84	13.20
M10	200	19:00 05/11/84	07:00 07/08/84	57.50	175	14.32	.59	16.30	12.93
M11	90	00:00 05/01/84	17:00 11/14/84	197.71	10	24.84	2.67	28.80	16.33
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	30	23.07	3.11	29.26	15.60
M11	90	16:00 05/11/84	17:00 11/14/84	187.04	70	19.35	2.28	24.66	14.63
M11	90	17:00 05/11/84	18:00 11/14/84	187.04	90	17.74	1.78	22.54	13.97
M14	100	20:00 05/21/84	17:00 06/19/84	28.88	10	23.07	1.02	25.28	18.74
P7	7	15:00 05/17/84	23:00 11/30/84	197.38	7	22.01	3.26	26.54	13.11
P10	7	15:00 05/18/84	23:00 11/30/84	196.38	7	27.44	3.67	31.05	16.48
November 1984 - May 1985									
Noviembre 1984 - Mayo 1985									
M7	100	00:00 11/01/84	23:00 05/31/85	196.42	100	10.90	1.05	14.39	8.70
M13	410	08:00 12/02/84	06:00 03/22/85	109.92	150	13.16	.41	14.91	11.77
M15	500	16:00 11/15/84	22:00 11/29/84	14.25	150	13.58	.88	15.99	10.28
P7	7	00:00 11/01/84	23:00 05/31/85	212.00	7	15.70	2.02	21.99	13.20
P8	5	09:00 11/27/84	12:00 03/10/85	103.12	5	15.72	1.44	19.83	13.18
P9	5	08:00 11/28/84	23:00 05/31/85	184.67	5	15.06	1.36	22.57	12.36
P10	7	00:00 11/01/84	23:00 05/31/85	212.00	7	18.16	3.17	25.33	13.75
P11	5	05:00 12/01/84	08:00 03/21/85	110.12	5	15.57	1.60	20.03	13.40
May - November 1985									
Mayo - Noviembre 1985									
M7	100	00:00 05/01/85	10:00 05/16/85	15.42	100	10.16	1.18	13.23	8.70

TABLE 3b: Temperature (°C): Statistics For Each Deployment (cont.)
TABLA 3b: Temperatura (°C): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M12	500	12:00 03/09/85	13:00 03/23/85	14.08	25	11.66	.41	12.44	10.16
M12	500	12:00 03/09/85	13:00 03/23/85	14.08	150	10.98	.42	11.93	9.62
M12	500	12:00 03/09/85	13:00 03/23/85	14.04	450	8.97	.63	10.80	7.81
P7	7	00:00 05/01/85	23:00 11/30/85	214.00	7	21.13	3.95	28.84	13.71
P9	5	00:00 05/01/85	06:00 11/04/85	187.25	5	23.30	5.00	30.01	13.42
P10	7	00:00 05/01/85	09:00 11/03/85	186.38	7	27.43	2.88	31.16	20.70
November - December 1985									
Noviembre - Diciembre 1985									
P7	7	00:00 11/01/85	05:00 12/21/85	50.21	7	18.58	2.18	23.42	14.50
Long records (filtered)									
M7	100	14:00 11/19/82	16:00 05/09/84	537.08	10	22.71	4.39	30.52	14.20
M7	100	16:00 11/19/82	20:00 05/09/84	537.17	70	21.44	4.77	30.63	14.46
M11	90	21:00 04/30/83	16:00 11/13/84	562.79	10	23.98	3.19	29.30	17.40
P7	7	16:00 05/18/84	04:00 12/20/85	580.50	7	19.72	4.21	27.54	13.61
P9	5	09:00 11/29/84	05:00 11/03/85	340.92	5	19.53	5.55	29.20	12.84
P10	7	16:00 05/19/84	08:00 11/02/85	531.67	7	24.43	5.70	30.92	14.00

TABLE 3c: Pressure (mbars): Statistics For Each Deployment
TABLA 3c: Presión (mbars): Estadísticas Para Cada Despliegue

Sta-tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Esta-ción	Profun-didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
May - November 1983								
Mayo - Noviembre 1983								
P1	100	14:00 05/17/83	10:00 11/01/83	166.83	100	6.18	12.61	-12.69
P3	35	12:00 05/02/83	11:00 11/02/83	183.96	35	8.50	19.90	-20.50
P6	86	23:00 04/30/83	11:00 11/02/83	185.50	86	4.78	7.83	-12.17
May - November 1984								
Mayo - Noviembre 1984								
P1	100	15:00 05/10/84	08:00 11/11/84	184.71	100	3.69	9.09	-8.71
P4	100	21:00 05/11/84	23:00 11/30/84	204.17	100	3.50	14.50	-7.10
P5	200	20:00 05/11/84	07:00 11/13/84	187.54	200	2.30	5.37	-6.33
P6	90	18:00 05/12/84	17:00 11/13/84	184.96	90	2.83	6.20	-7.80
P7	7	16:00 05/17/84	23:00 11/30/84	196.33	7	7.22	18.73	-18.87
P10	7	16:00 05/18/84	23:00 11/30/84	195.33	7	8.04	23.82	-16.38
November 1984 - May 1985								
Noviembre 1984 - Mayo 1985								
P4	100	00:00 11/01/84	10:00 05/25/85	206.46	100	2.63	6.71	-5.79
P7	7	00:00 11/01/84	23:00 05/31/85	212.00	7	2.77	7.67	-6.93
P8	5	10:00 11/28/84	23:00 05/31/85	184.58	5	2.65	7.10	-5.90
P9	5	09:00 11/29/84	23:00 05/31/85	183.63	5	2.78	7.17	-7.23
P10	7	00:00 11/01/84	23:00 05/31/85	212.00	7	4.50	12.33	-9.27
P11	5	14:00 12/01/84	08:00 03/20/85	110.83	5	2.18	4.63	-16.47
May - November 1985								
Mayo - Noviembre 1985								
P7	7	00:00 05/01/85	23:00 11/30/85	214.00	7	6.38	13.38	-13.82
P8	5	00:00 05/01/85	03:00 11/04/85	187.13	5	7.62	16.20	-17.80

TABLE 3c: Pressure (mbars): Statistics For Each Deployment (cont.)
TABLA 3c: Presión (mbars): Estadísticas Para Cada Despliegue (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
P9	5	00:00 05/01/85	20:00 11/02/85	185.83	5	7.03	14.34	-15.16
P10	7	00:00 05/01/85	23:00 11/02/85	184.96	7	9.75	14.18	-23.32
Long records								
P4	100	21:00 05/11/84	10:00 05/25/85	380.63	100	3.03	14.39	-7.21
P7	7	16:00 05/18/84	03:00 01/03/86	593.46	7	7.84	22.04	-15.56
P8	5	10:00 11/28/84	03:00 11/04/85	340.71	5	9.32	22.77	-13.43
P9	5	09:00 11/29/84	20:00 11/02/85	338.46	5	8.31	20.00	-13.70
P10	7	16:00 05/19/84	23:00 11/01/85	531.29	7	11.13	24.39	-18.81

TABLE 3d: Sea Level (cms): Statistics For Each Deployment
TABLA 3d: Nivel del Mar (cms): Estadísticas Para Cada Despliegue

Sta- tion	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Sta- ción	Profun- didad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
November 1982 - May 1983								
Noviembre 1982 - Mayo 1983								
1	0	00:00 11/01/82	23:00 05/31/83	211.00	0	11.48	35.60	-27.80
2	0	00:00 11/01/82	23:00 05/31/83	211.00	0	8.12	21.20	-18.20
May - November 1983								
Mayo - Noviembre 1983								
1	0	00:00 05/01/83	23:00 11/30/83	213.00	0	13.09	35.60	-19.70
2	0	00:00 05/01/83	23:00 11/30/83	213.00	0	8.41	25.30	-10.80
November 1983 - May 1984								
Noviembre 1983 - Mayo 1984								
1	0	00:00 11/01/83	23:00 05/31/84	212.00	0	6.80	8.00	-27.10
2	0	00:00 11/01/83	23:00 05/31/84	212.00	0	5.40	7.10	-20.20
May - November 1984								
Mayo - Noviembre 1984								
1	0	00:00 05/01/84	23:00 11/30/84	213.00	0	12.40	28.80	-29.40
2	0	00:00 05/01/84	23:00 11/30/84	213.00	0	10.14	19.30	-25.30

TABLE 3d: Sea Level (oms): Statistios For Eaoh Deployment
TABLA 3d: Nivel del Mar (oms): Estadistioas Para Cada Despliegue

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Estaoión	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duraoión (diás)	Profundidad de Inst. (m)	DE	Max	Min
November 1982 - May 1983								
Noviembre 1982 - Mayo 1983								
S1	0	00:00 11/01/82	23:00 05/31/83	211.00	0	11.48	35.50	-27.80
S2	0	00:00 11/01/82	23:00 05/31/83	211.00	0	8.12	21.20	-18.20
May - November 1983								
Mayo - Noviembre 1983								
S1	0	00:00 05/01/83	23:00 11/30/83	213.00	0	13.09	35.60	-19.70
S2	0	00:00 05/01/83	23:00 11/30/83	213.00	0	8.41	25.30	-10.80
November 1983 - May 1984								
Noviembre 1983 - Mayo 1984								
S1	0	00:00 11/01/83	23:00 05/31/84	212.00	0	6.80	8.00	-27.10
S2	0	00:00 11/01/83	23:00 05/31/84	212.00	0	5.40	7.10	-20.20
May - November 1984								
Mayo - Noviembre 1984								
S1	0	00:00 05/01/84	23:00 11/30/84	213.00	0	12.40	28.80	-29.40
S2	0	00:00 05/01/84	23:00 11/30/84	213.00	0	10.14	19.30	-25.30

TABLE 4a: Currents (cm/s): Statistics For Common Time Period, Main Deployment
TABLA 4a: Corrientes (cm/s): Estadísticas Para Un Intervalo Comun, Despliegue Principal

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Along-Shelf Mean	SD	Max	Min	Cross-Shelf Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Paralelo a la Costa Medio	DE	Max	Min	Normal a la Costa Medio	DE	Max	Min
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	70	-2.24	17.54	53.80	-70.10	-1.07	9.07	29.40	-38.60
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	5	-1.24	5.16	20.70	-28.80	-.23	1.41	10.70	-7.80
M8	50	19:00 05/20/84	09:00 11/12/84	175.58	20	-2.65	12.48	63.70	-54.50	.55	4.88	31.50	-26.30
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	10	.93	29.22	103.60	-104.10	2.61	14.19	87.30	-67.40
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	50	3.78	21.25	80.60	-60.80	-.65	14.43	43.60	-58.00
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	300	-2.38	16.40	61.90	-79.90	-.65	13.62	55.80	-63.10
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	500	-1.52	14.74	60.50	-52.50	-2.14	9.52	48.70	-56.40
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	850	.38	13.31	58.60	-63.70	-.65	9.63	44.50	-48.90
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	10	-.22	19.39	46.10	-85.90	.98	7.13	35.10	-25.10
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	30	-4.81	19.37	53.50	-84.60	-1.11	6.61	32.70	-32.70
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	70	-4.14	18.32	54.70	-71.10	-1.32	5.34	20.40	-21.10

TABLE 4b: Temperature (°C): Statistics For Common Time Period, Main Deployment
TABLA 4b: Temperatura (°C): Estadísticas Para Un Intervalo Comun, Despliegue Principal

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	10	20.05	2.43	27.39	13.58
M1	100	19:00 05/20/84	09:00 11/12/84	175.58	70	16.01	1.55	23.65	12.46
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	2	28.79	1.98	31.20	20.08
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	4	28.51	2.17	31.23	19.10
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	6	28.46	2.19	31.18	18.18
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	8	28.34	2.24	31.11	17.86
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	10	28.25	2.29	30.97	17.44
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	12	28.08	2.35	30.83	16.97
M4	15	19:00 05/20/84	09:00 11/12/84	175.58	14	27.93	2.44	30.80	16.71
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	10	28.27	2.24	30.77	18.96
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	20	27.64	2.56	30.46	17.48
M6	50	19:00 05/20/84	09:00 11/12/84	175.58	30	26.87	3.04	30.41	16.35
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	10	28.53	2.54	31.46	19.27
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	20	27.87	2.87	31.10	17.75
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	30	26.69	3.15	30.81	16.91
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	40	24.99	3.25	30.72	16.54
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	50	23.04	3.09	30.39	15.96
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	60	21.03	2.85	28.89	13.98
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	70	19.45	2.47	28.63	13.63
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	85	17.77	2.00	28.35	13.33
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	100	15.83	2.15	26.34	10.13
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	115	15.29	1.50	22.73	11.74
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	130	14.98	1.19	20.49	12.05
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	145	14.32	1.04	19.70	11.72
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	160	13.71	.97	18.60	11.24

TABLE 4b: Temperature (°C): Statistics For Common Time Period, Main Deployment (cont.)
TABLA 4b: Temperatura (°C): Estadísticas Para Un Intervalo Comun, Despliegue Principal (cont.)

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	Mean	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	Medio	DE	Max	Min
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	175	13.18	.88	17.73	10.89
M8	200	19:00 05/20/84	09:00 11/12/84	175.58	200	13.18	.61	16.31	11.54
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	50	22.29	2.46	27.70	16.86
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	300	11.73	.28	12.64	10.80
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	500	8.77	.60	9.93	7.51
M9	1000	19:00 05/20/84	09:00 11/12/84	175.58	850	5.38	.16	5.89	4.93
M10	200	19:00 05/20/84	09:00 11/12/84	175.58	10	26.27	2.40	29.91	17.89
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	10	25.39	2.22	28.80	17.50
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	30	23.41	2.81	29.26	16.37
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	70	19.60	2.11	24.66	14.63
M11	90	19:00 05/20/84	09:00 11/12/84	175.58	90	17.93	1.65	22.54	13.97
P7	7	19:00 05/20/84	09:00 11/12/84	175.58	7	28.38	2.49	31.05	18.37
P10	7	19:00 05/20/84	09:00 11/12/84	175.58	7	22.44	3.10	26.54	13.56

TABLE 4c: Pressure (mbars): Statistics For Common Time Period, Main Deployment
TABLA 4c: Presión (mbars): Estadísticas Para Un Intervalo Comun, Despliegue Principal

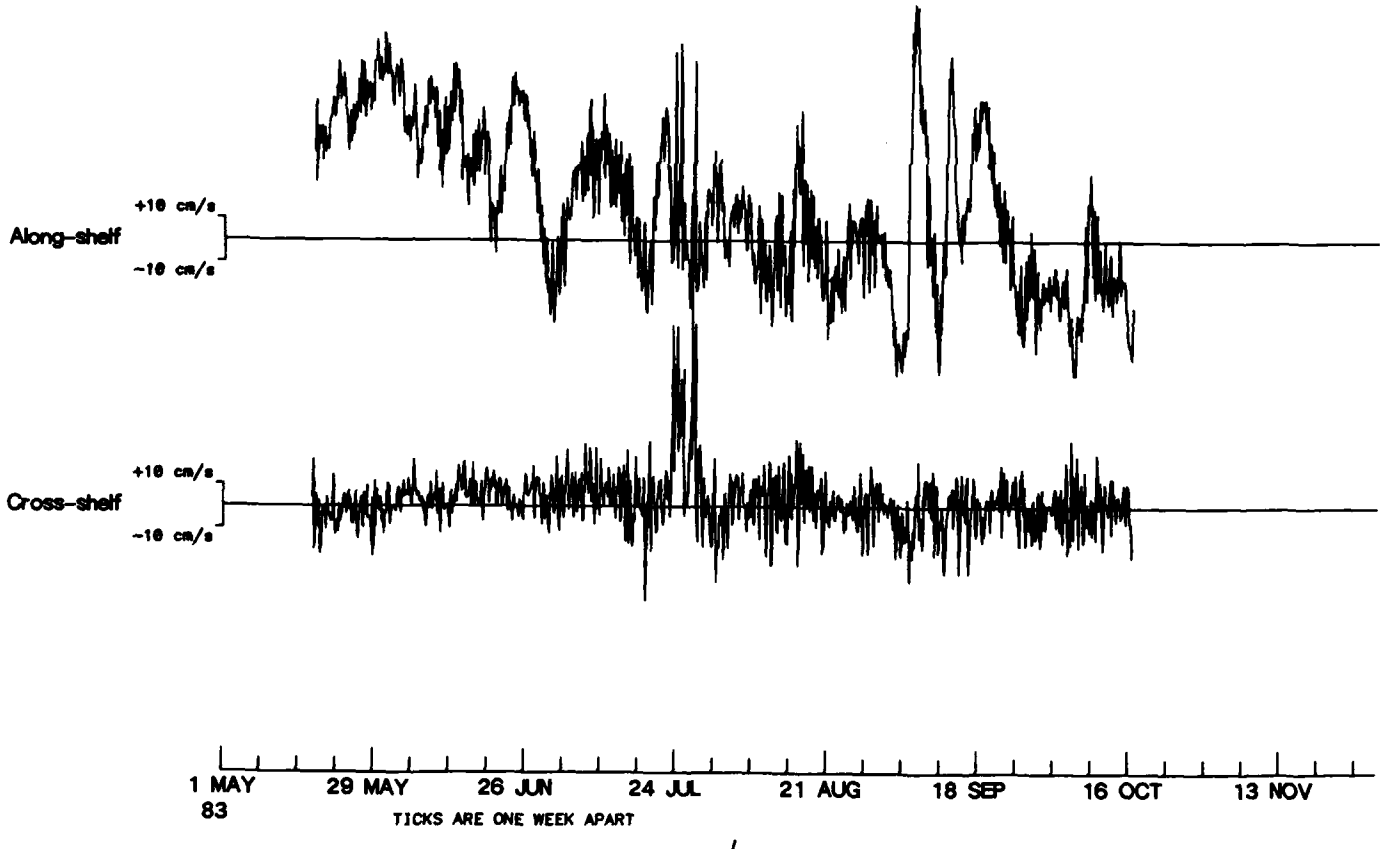
Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
P1	100	19:00 05/20/84	09:00 11/12/84	175.58	100	3.76	9.04	-8.76
P4	100	19:00 05/20/84	09:00 11/12/84	175.58	100	3.43	14.00	-7.60
P5	200	19:00 05/20/84	09:00 11/12/84	175.58	200	2.29	4.90	-6.30
P6	90	19:00 05/20/84	09:00 11/12/84	175.58	90	2.88	6.17	-7.83
P7	7	19:00 05/20/84	09:00 11/12/84	175.58	7	6.43	17.43	-20.17
P10	7	19:00 05/20/84	09:00 11/12/84	175.58	7	7.18	22.44	-17.26

TABLE 4d: Sea Level (cms): Statistics For Common Time Period, Main Deployment
TABLA 4d: Nivel Del Mar (cms): Estadísticas Para Un Intervalo Comun, Despliegue Principal

Station	Water Depth (m)	Start Time (PST)	Stop Time (PST)	Duration (days)	Inst. Depth (m)	SD	Max	Min
Estación	Profundidad (m)	Tiempo de Comienzo (PST)	Tiempo de final (PST)	Duración (días)	Profundidad de Inst. (m)	DE	Max	Min
S1	0	19:00 05/20/84	09:00 11/12/84	175.58	0	9.10	28.80	-20.20
S2	0	19:00 05/20/84	09:00 11/12/84	175.58	0	7.49	19.30	-11.10

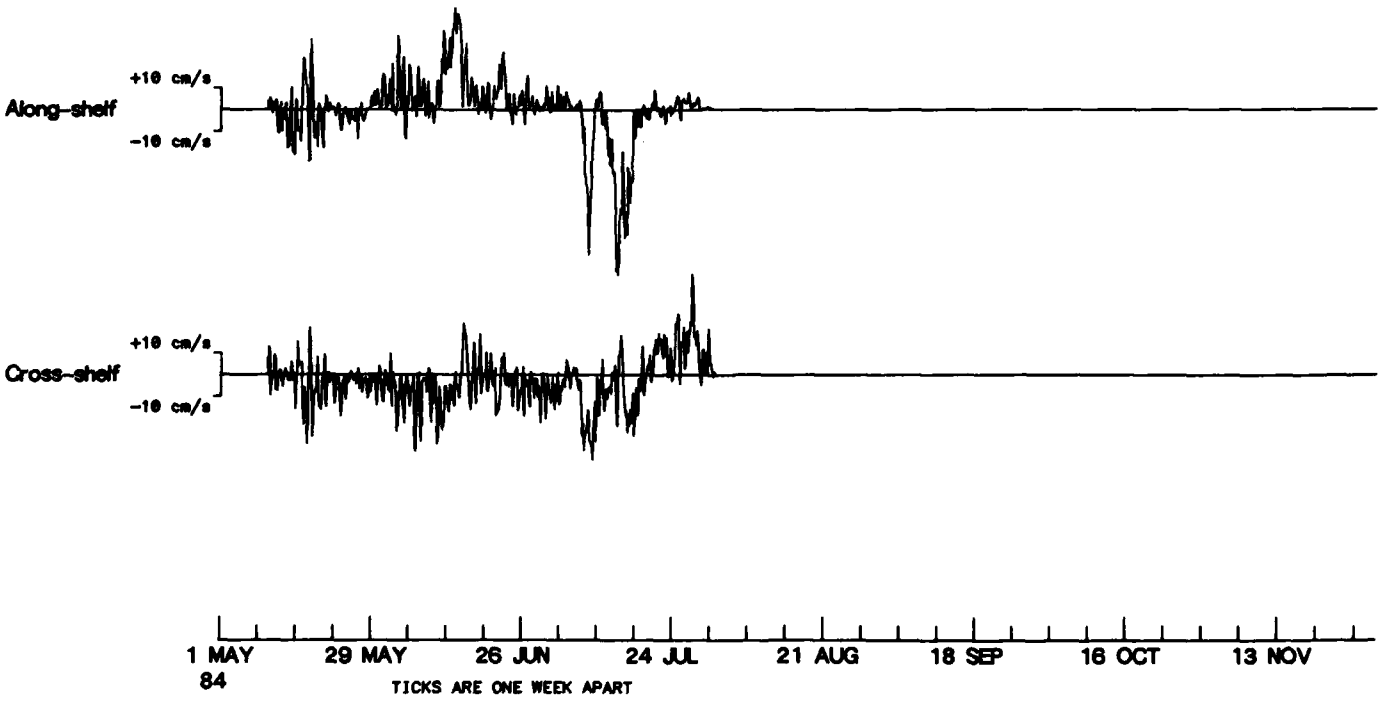
M1 : CURRENTS

depth = 70m May - Nov 83



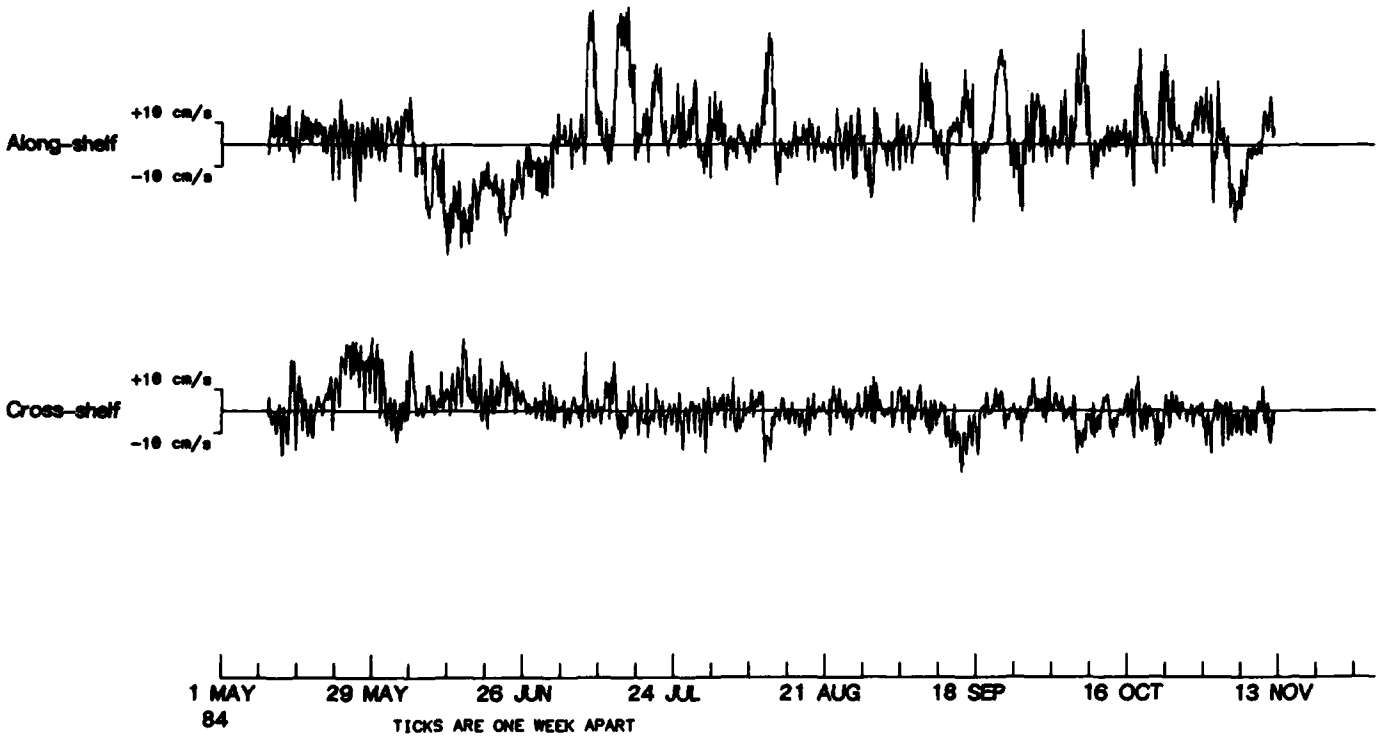
M1 : CURRENTS

depth = 10m May - Nov 84



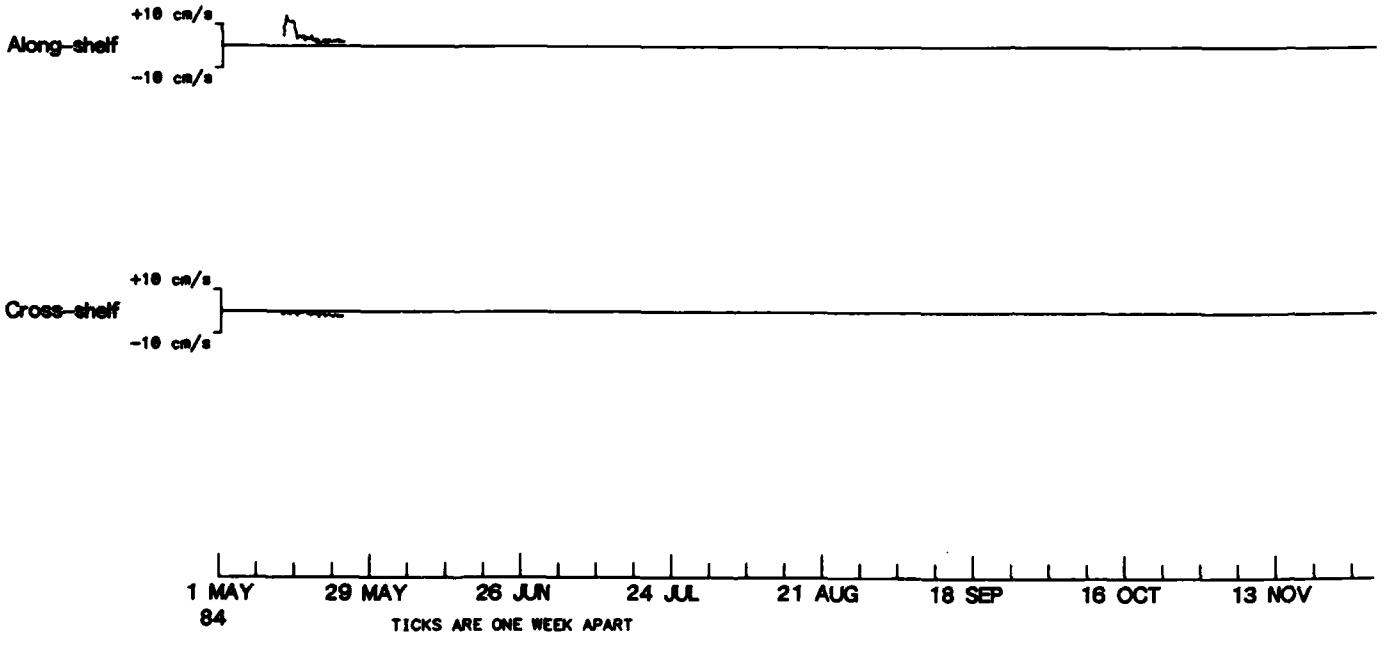
M1 : CURRENTS

depth = 70m May - Nov 84



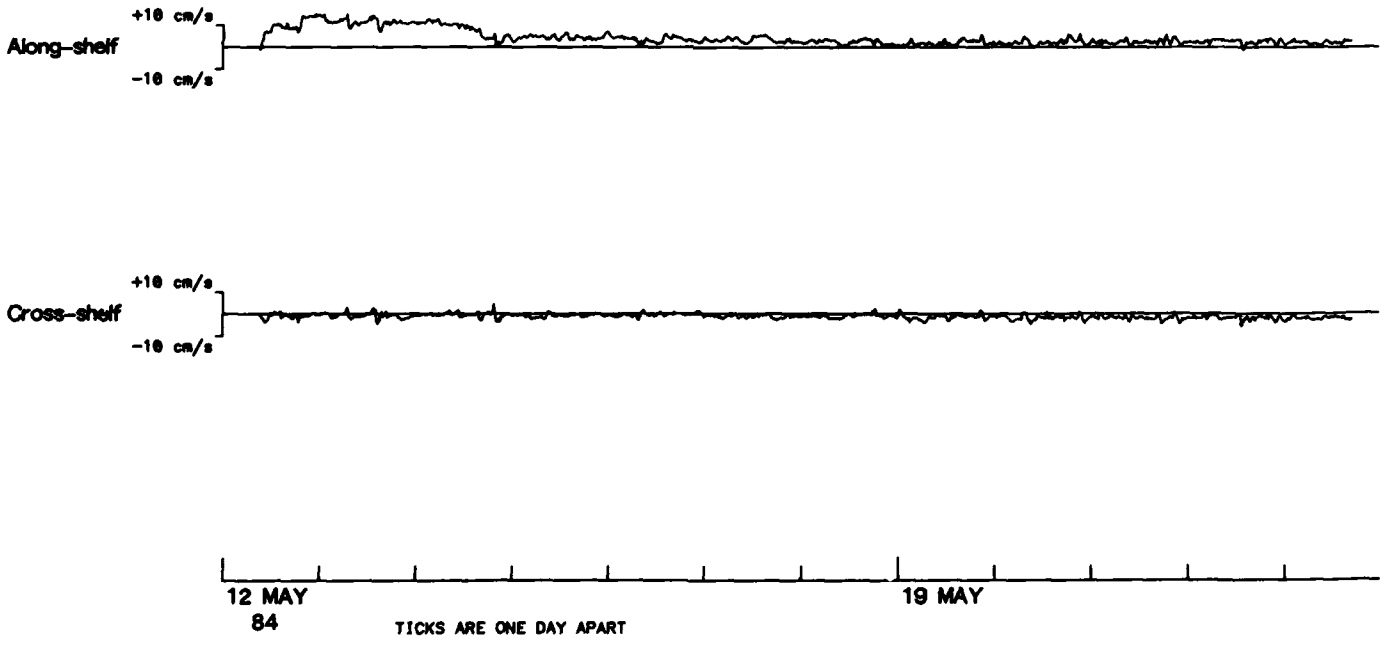
M2 : CURRENTS

depth = 5m May - Nov 84



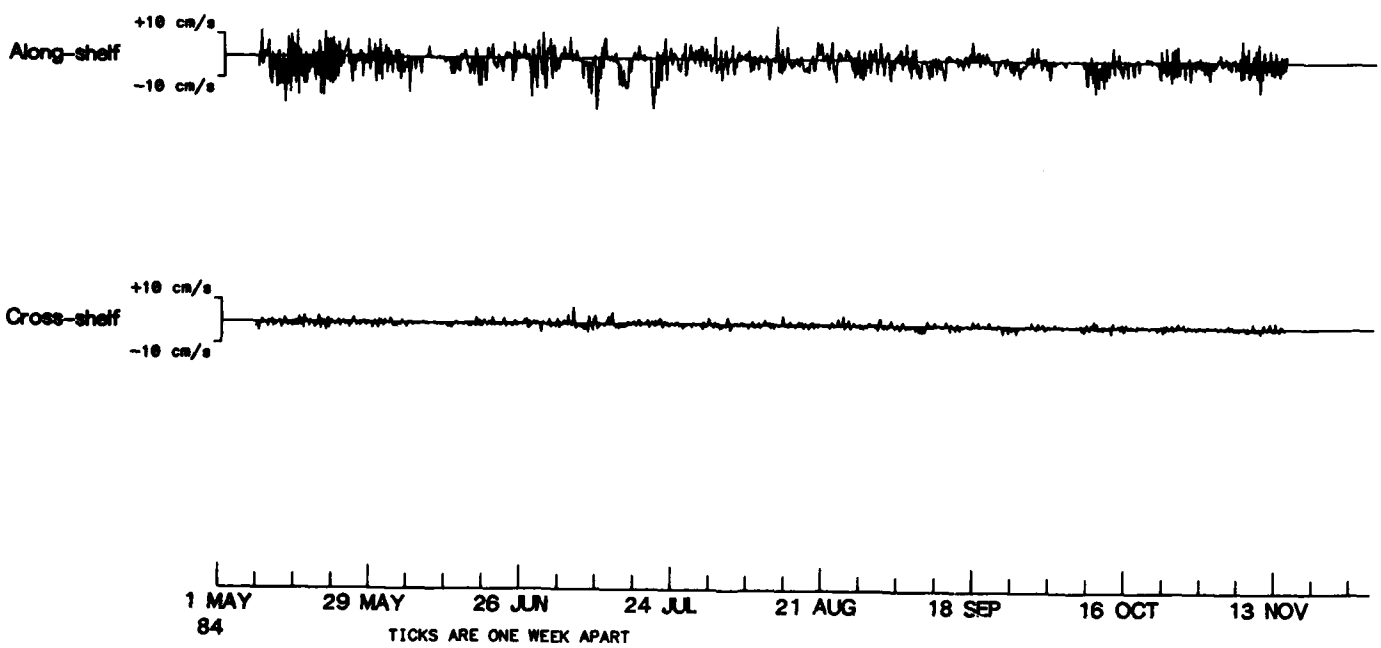
M2 : CURRENTS

depth = 5m May 84



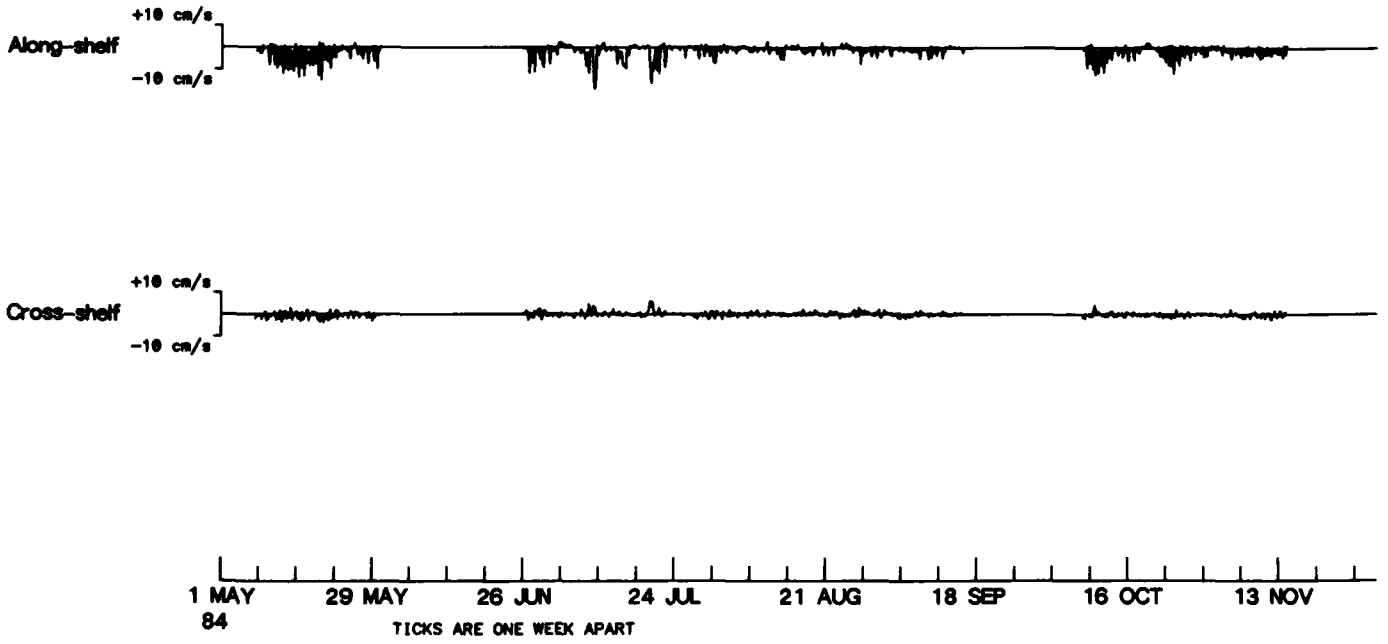
M4 : CURRENTS

depth = 5m May - Nov 84



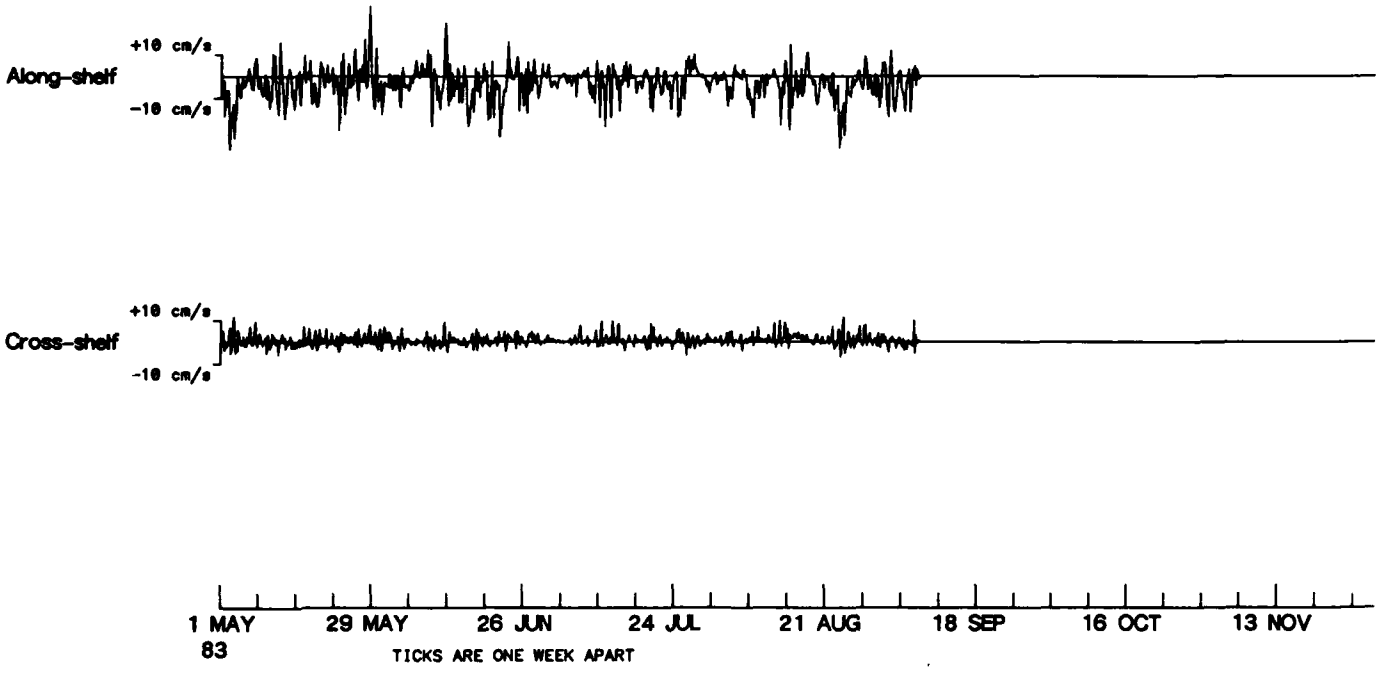
M4 : CURRENTS

depth = 12m May - Nov 84



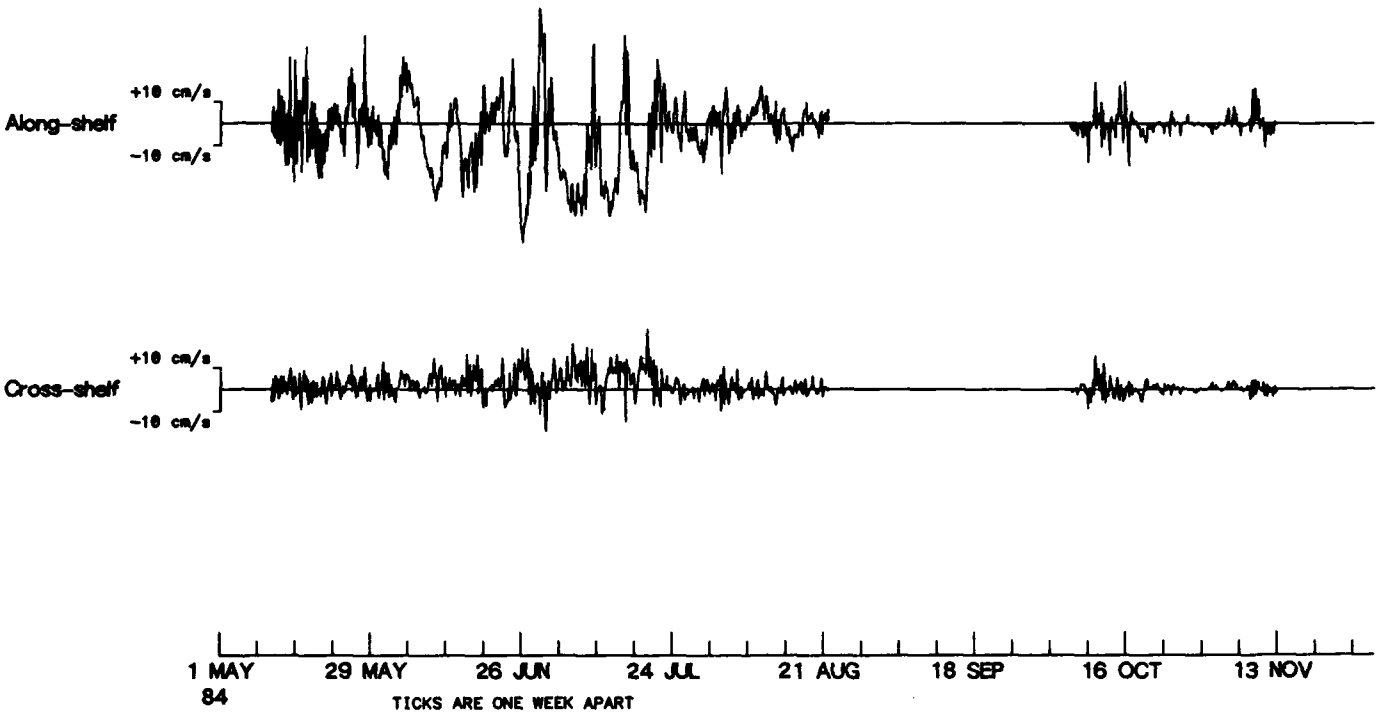
M5 : CURRENTS

depth = 10m May - Nov 83



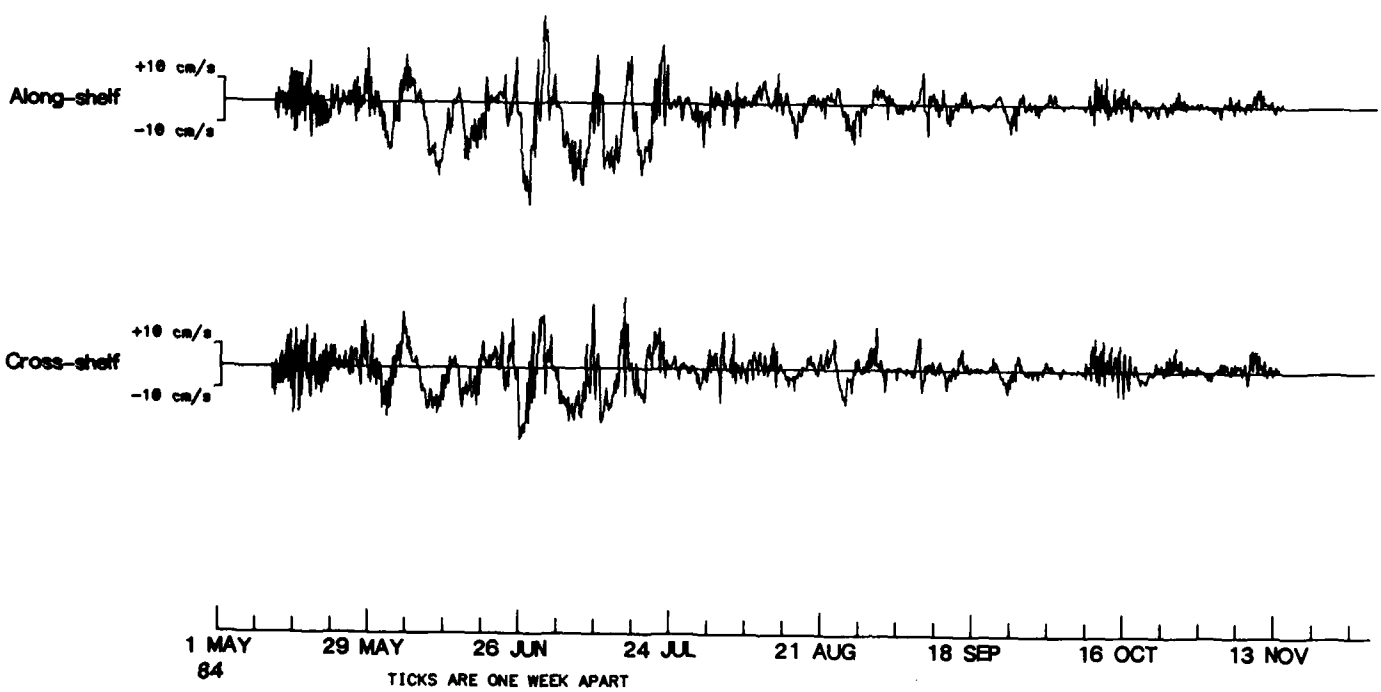
M6 : CURRENTS

depth = 10m May - Nov 84



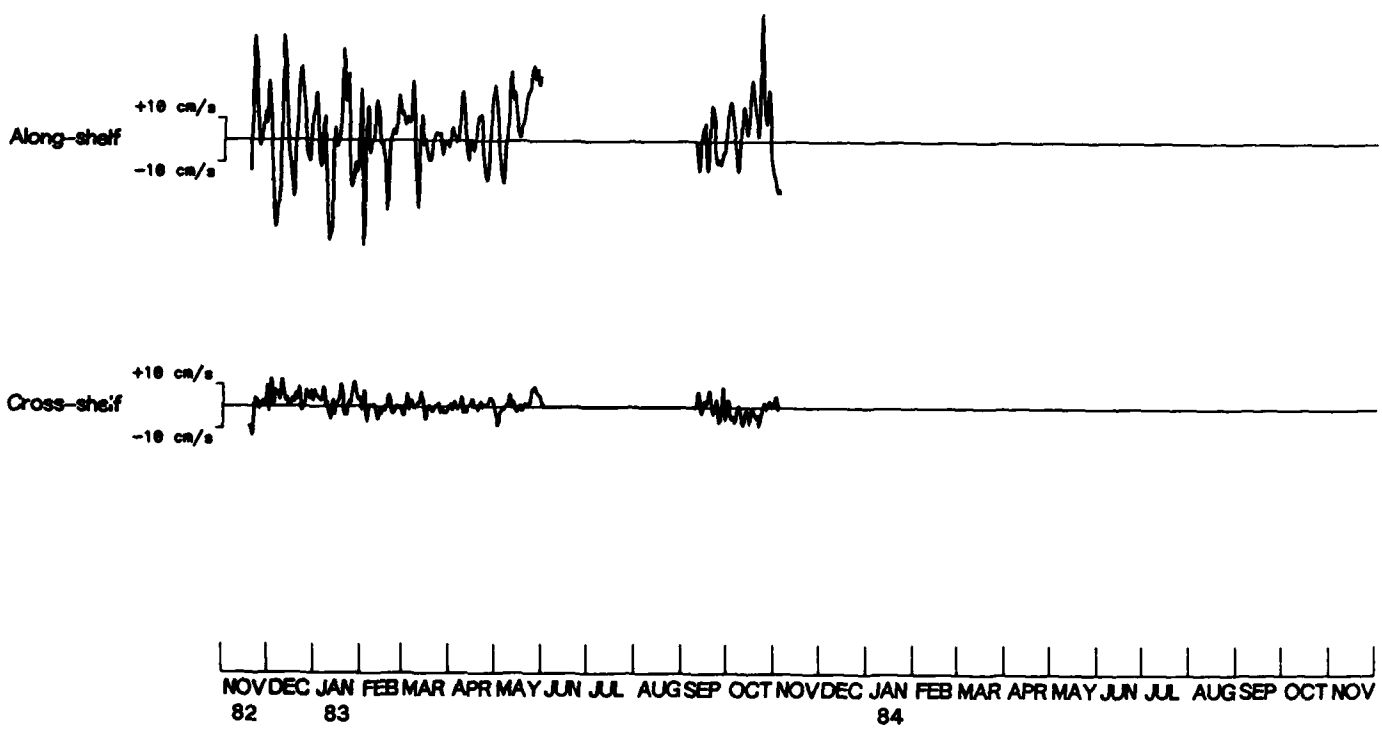
M6 : CURRENTS

depth = 20m May - Nov 84



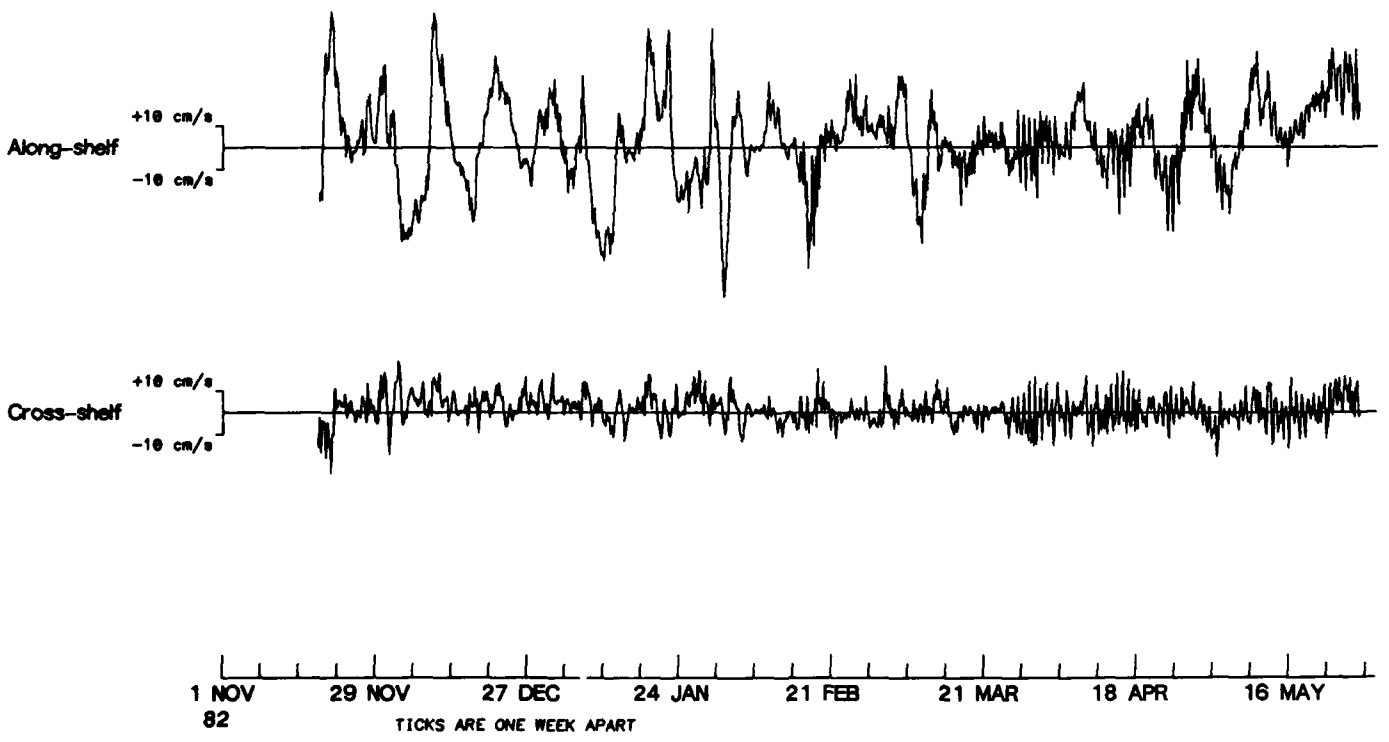
M7 : LOW FREQUENCY CURRENTS

depth = 10m Nov 82 - Nov 84



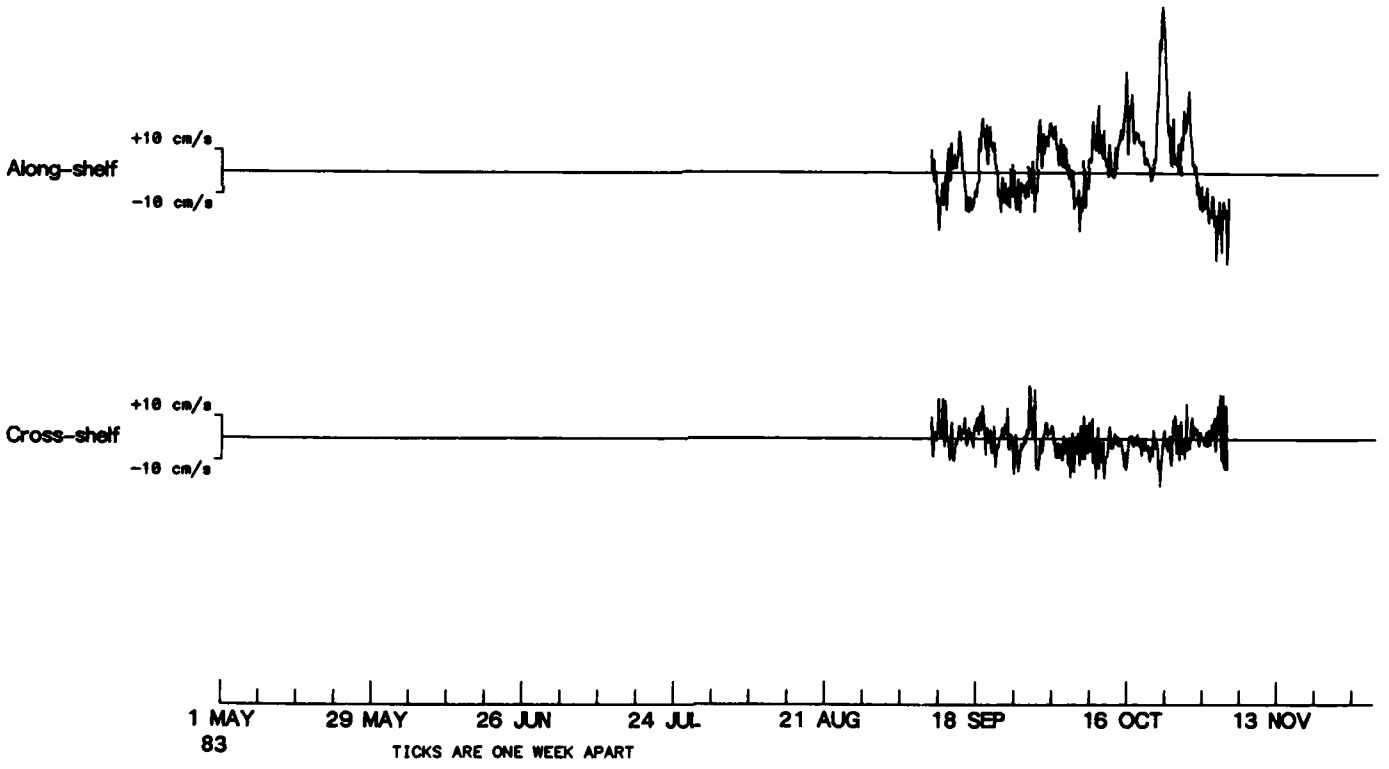
M7 : CURRENTS

depth = 10m Nov 82 - May 83



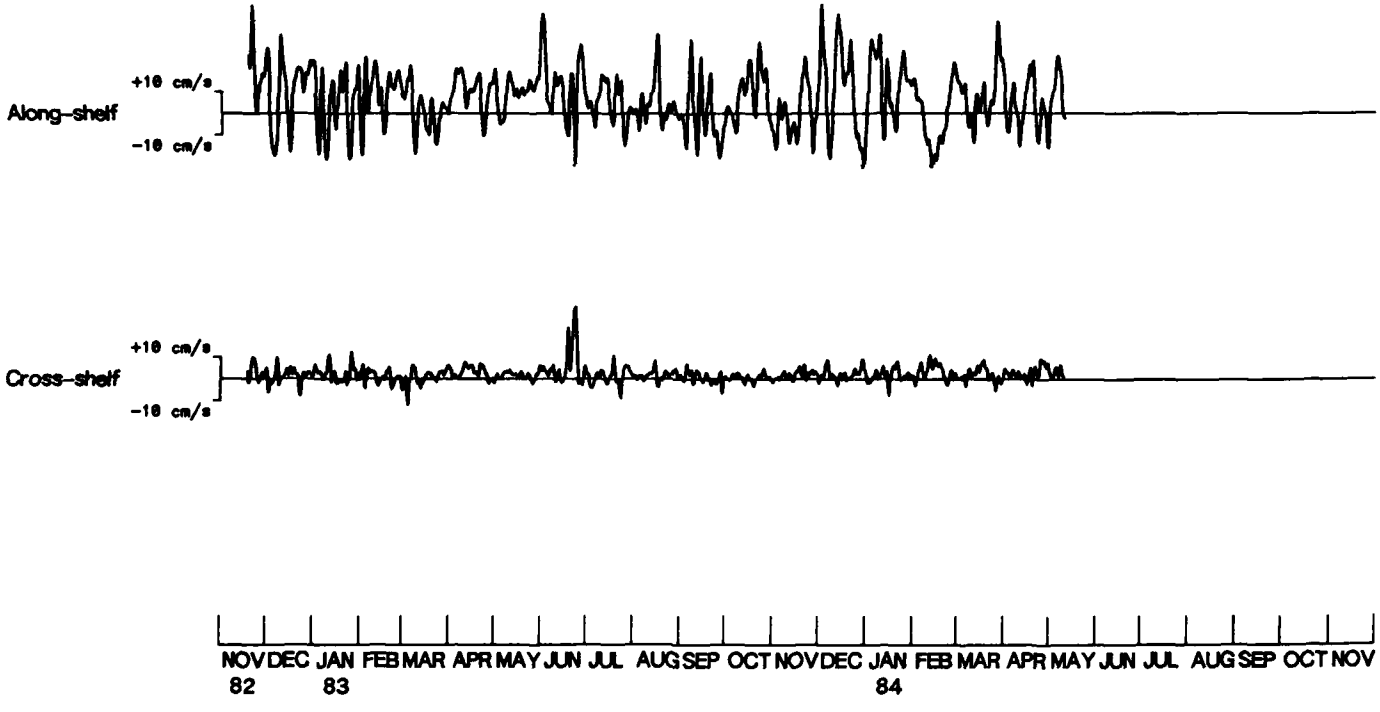
M7 : CURRENTS

depth = 10m May - Nov 83



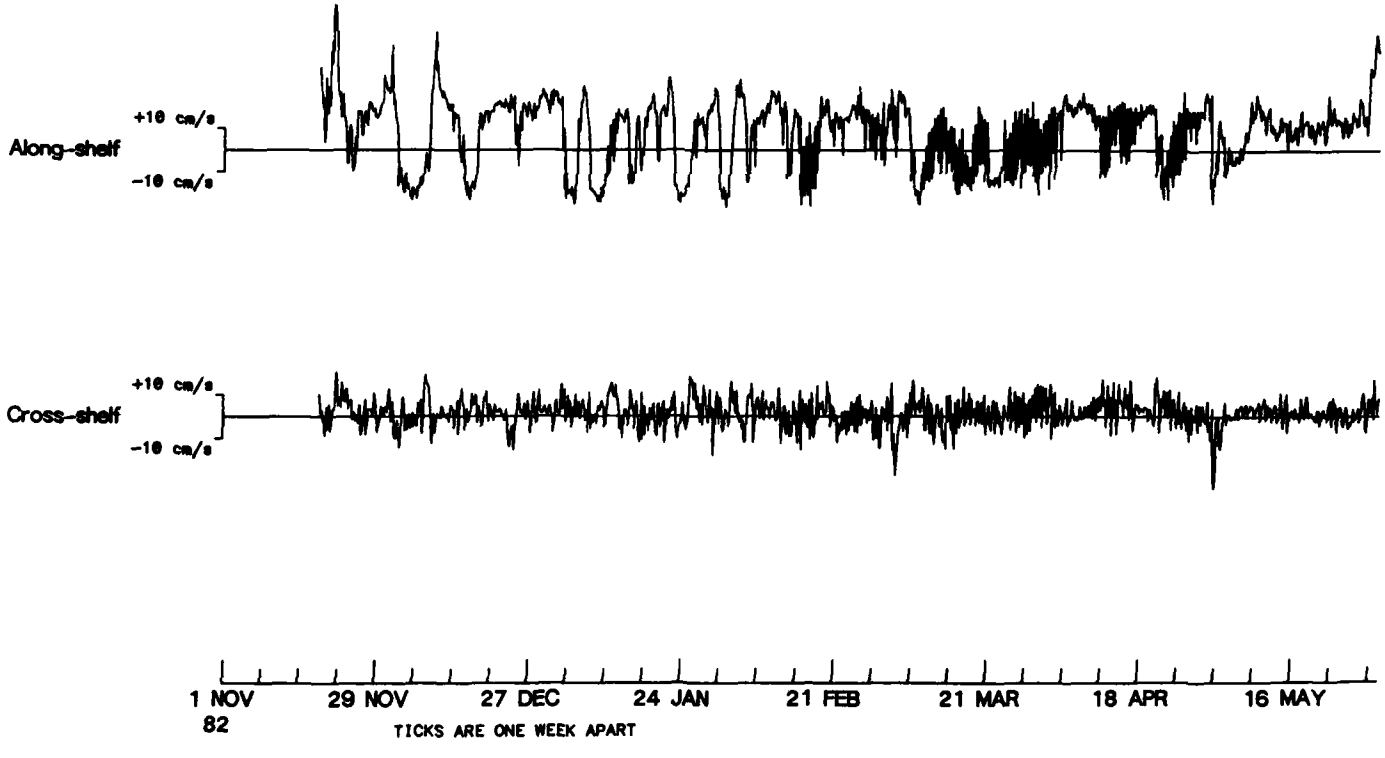
M7 : LOW FREQUENCY CURRENTS

depth = 70m Nov 82 - Nov 84



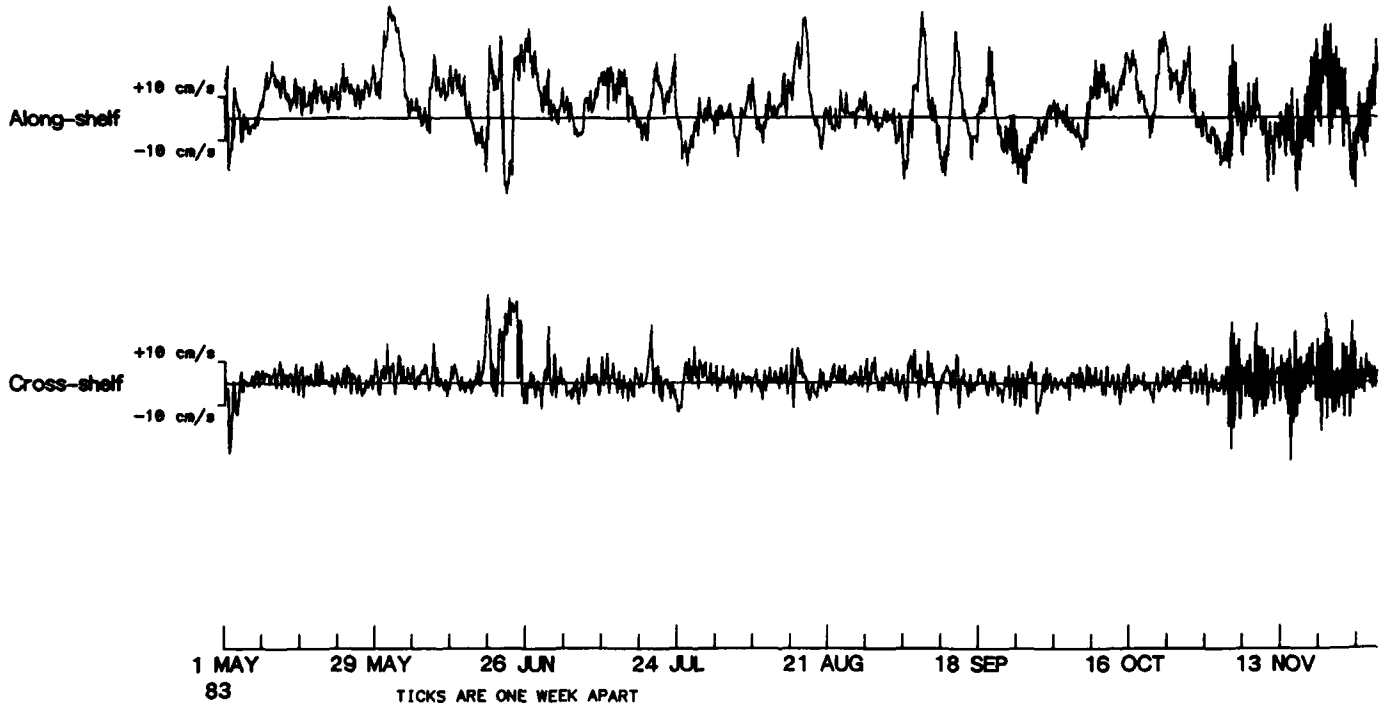
M7 : CURRENTS

depth = 70m Nov 82 - May 83



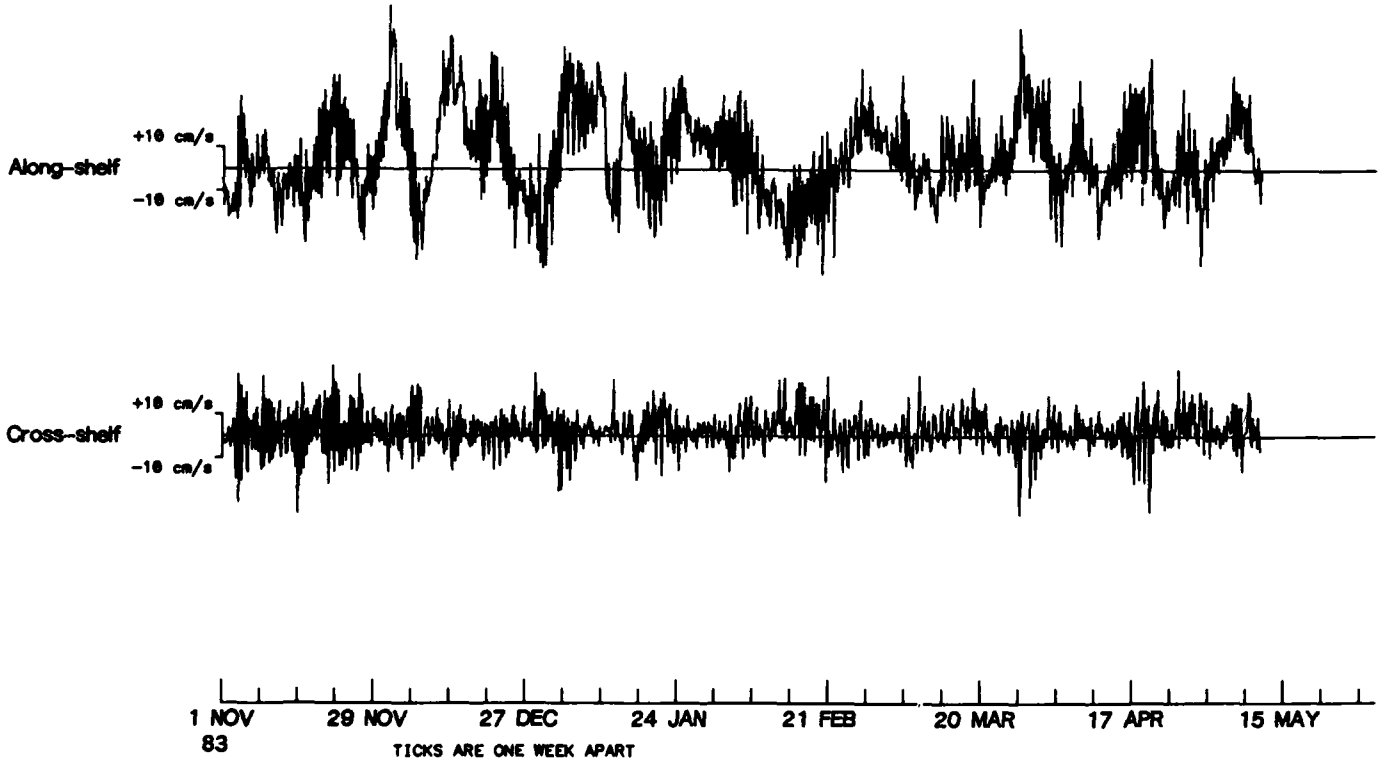
M7 : CURRENTS

depth = 70m May - Nov 83



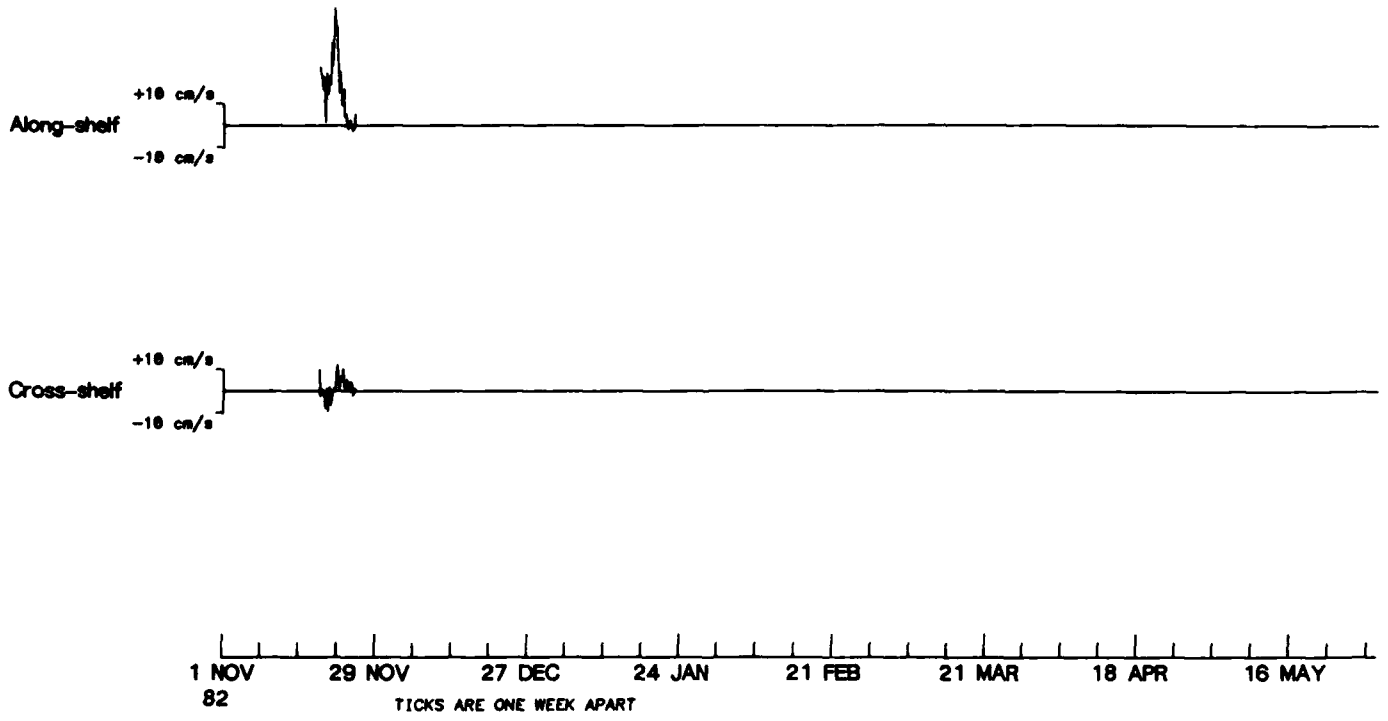
M7 : CURRENTS

depth = 70m Nov 83 - May 84



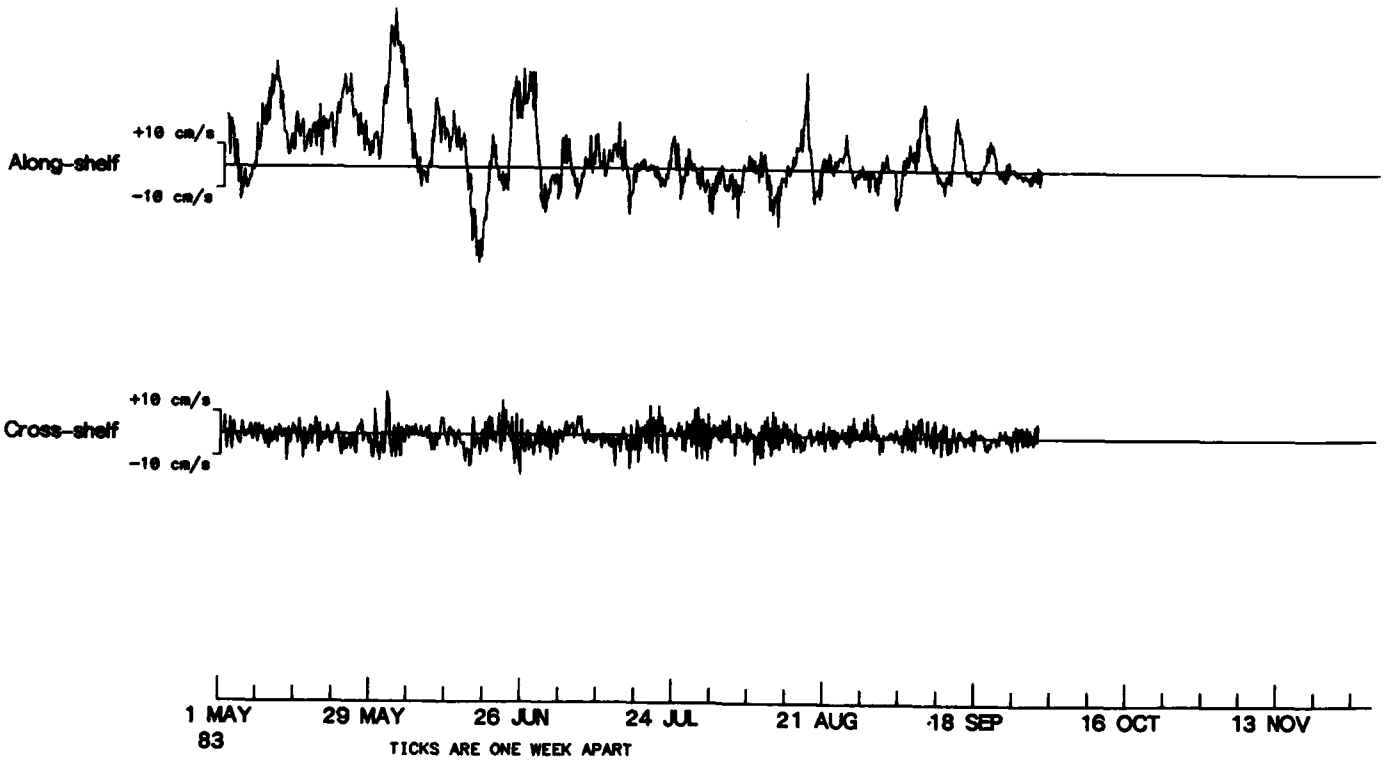
M7 : CURRENTS

depth = 75m Nov 82 - May 83



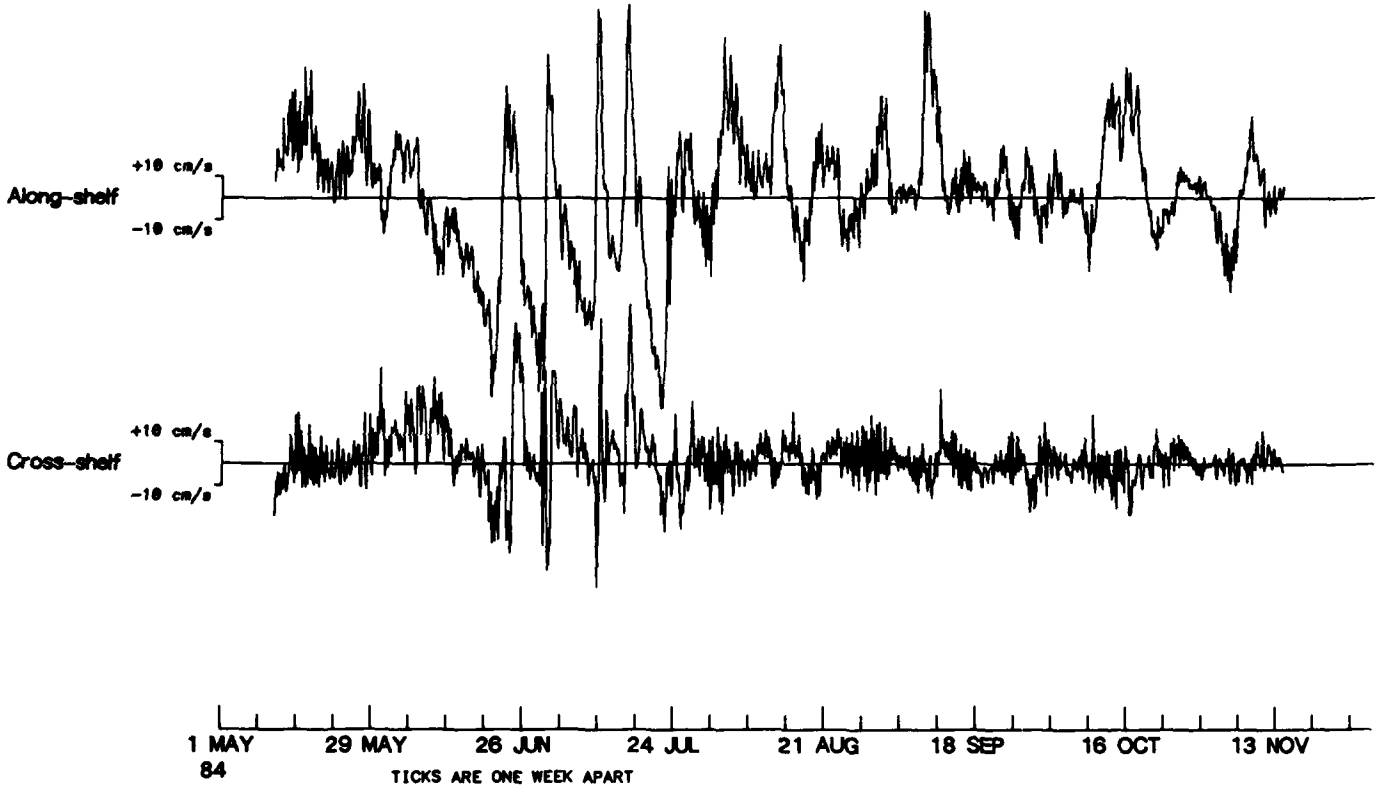
M7 : CURRENTS

depth = 75m May - Nov 83



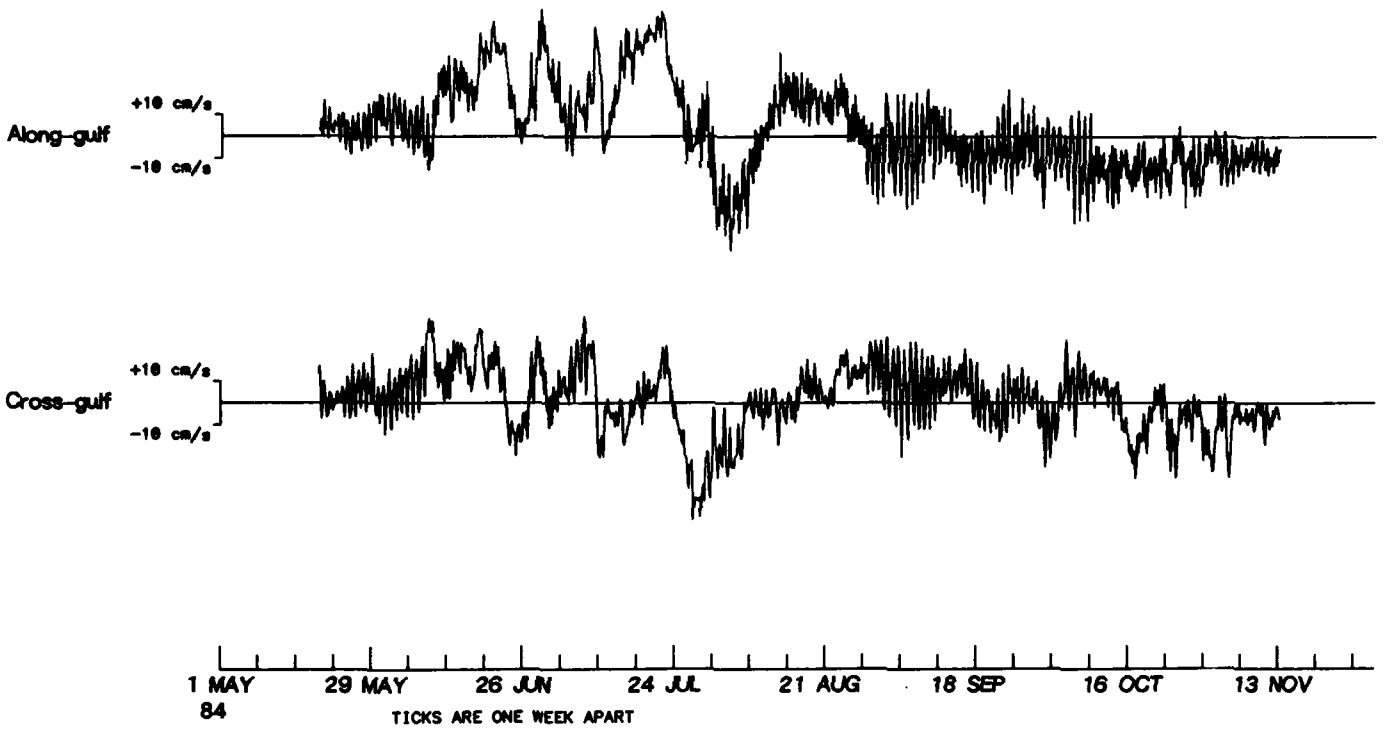
M8 : CURRENTS

depth = 10m May - Nov 84



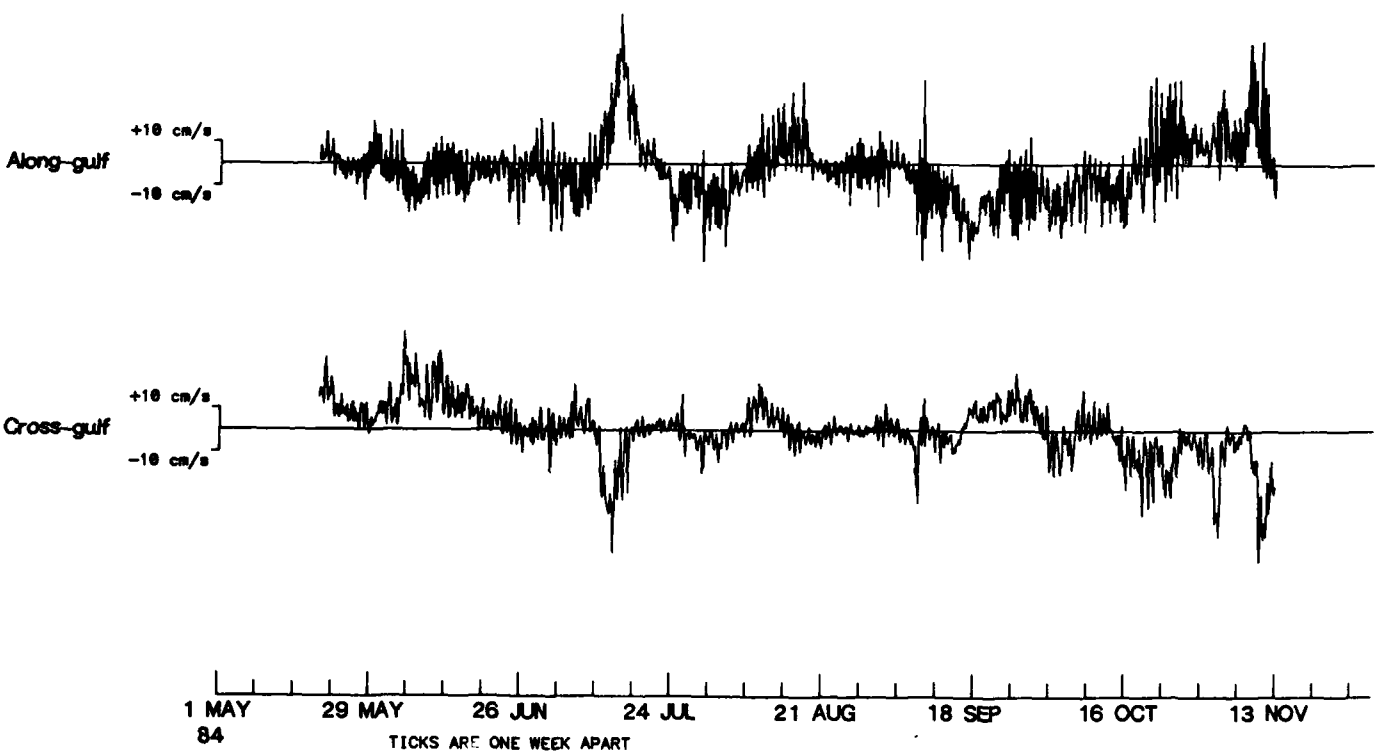
M9 : CURRENTS

depth = 50m May - Nov 84



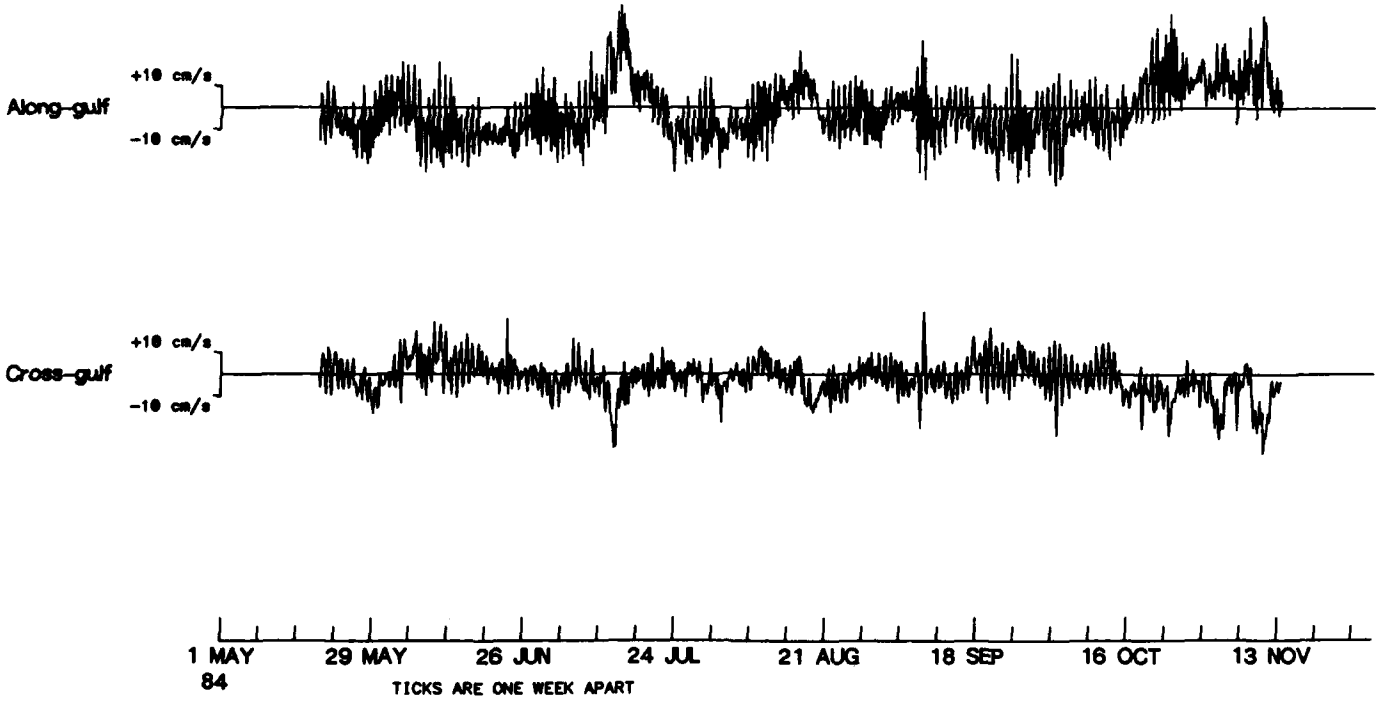
M9 : CURRENTS

depth = 300m May - Nov 84



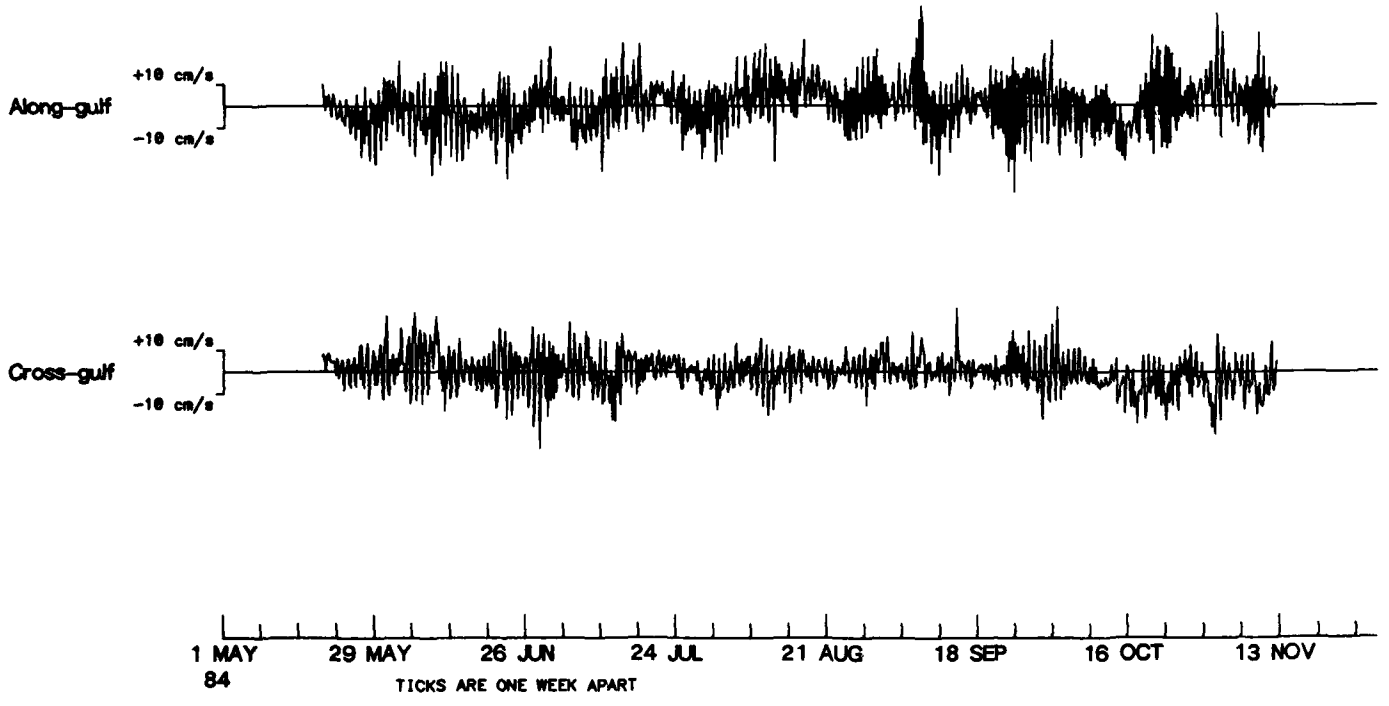
M9 : CURRENTS

depth = 500m May - Nov 84



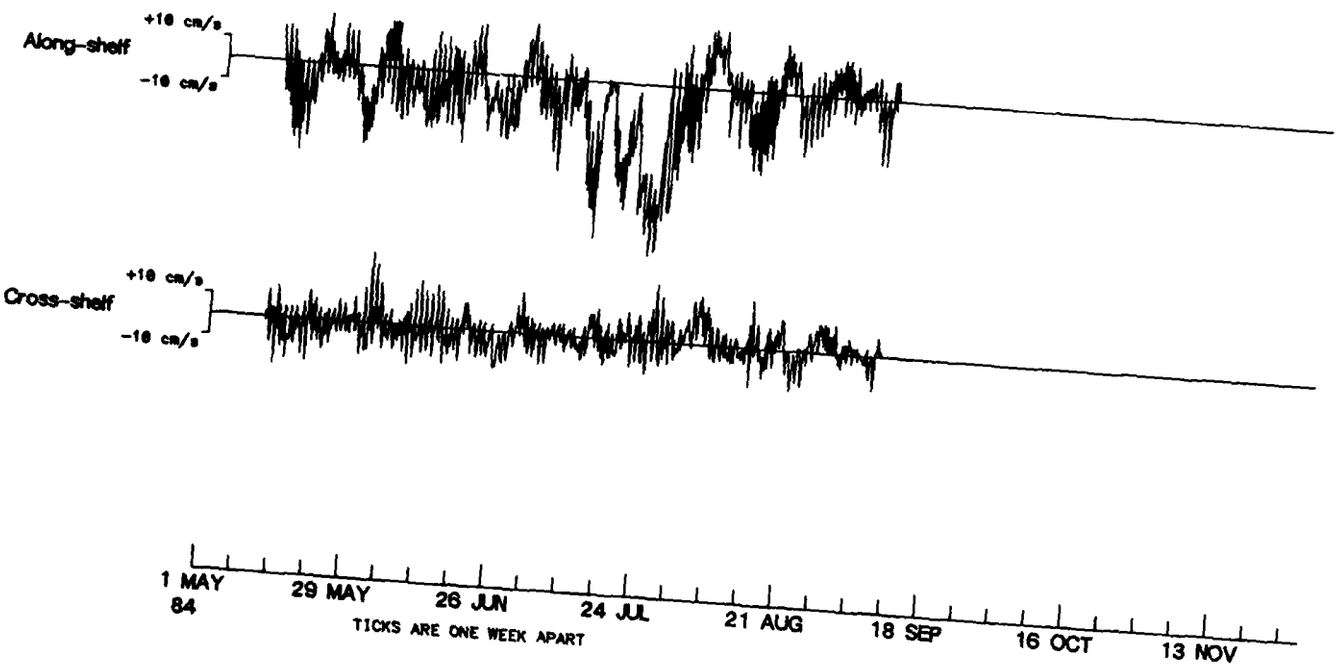
M9 : CURRENTS

depth = 850m May - Nov 84



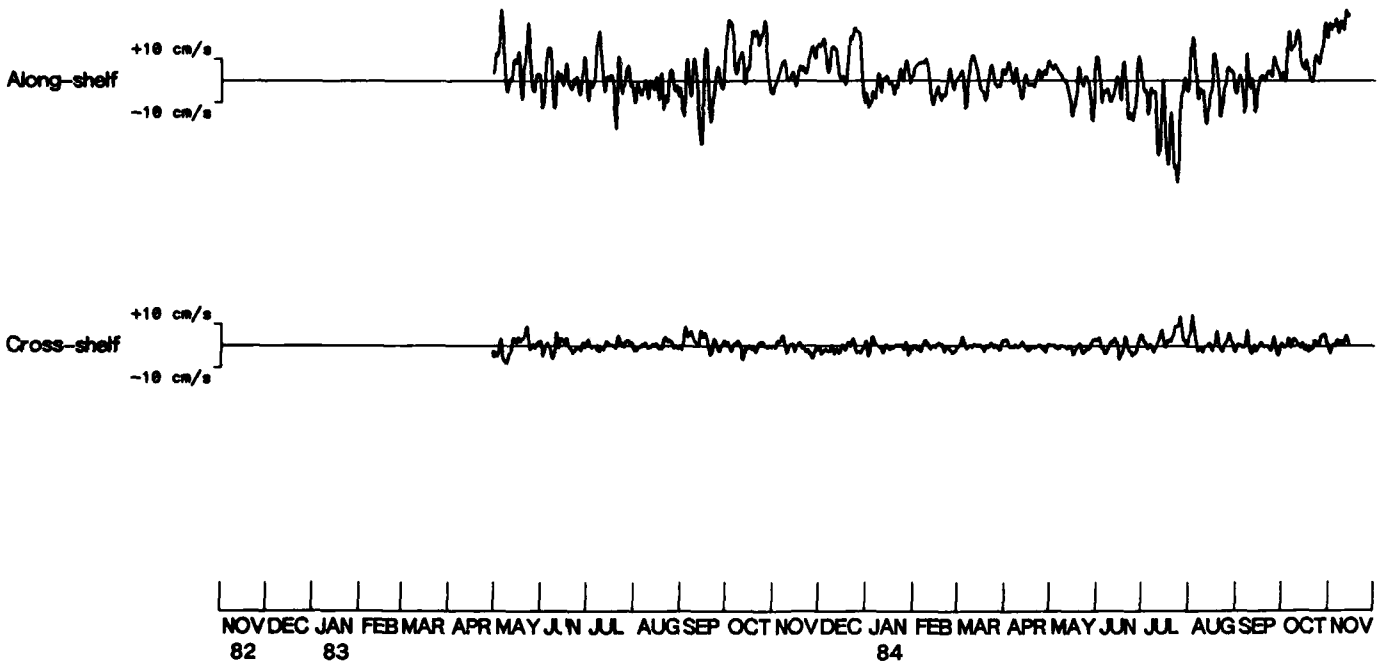
M10 : CURRENTS

depth = 10m May - Nov 84



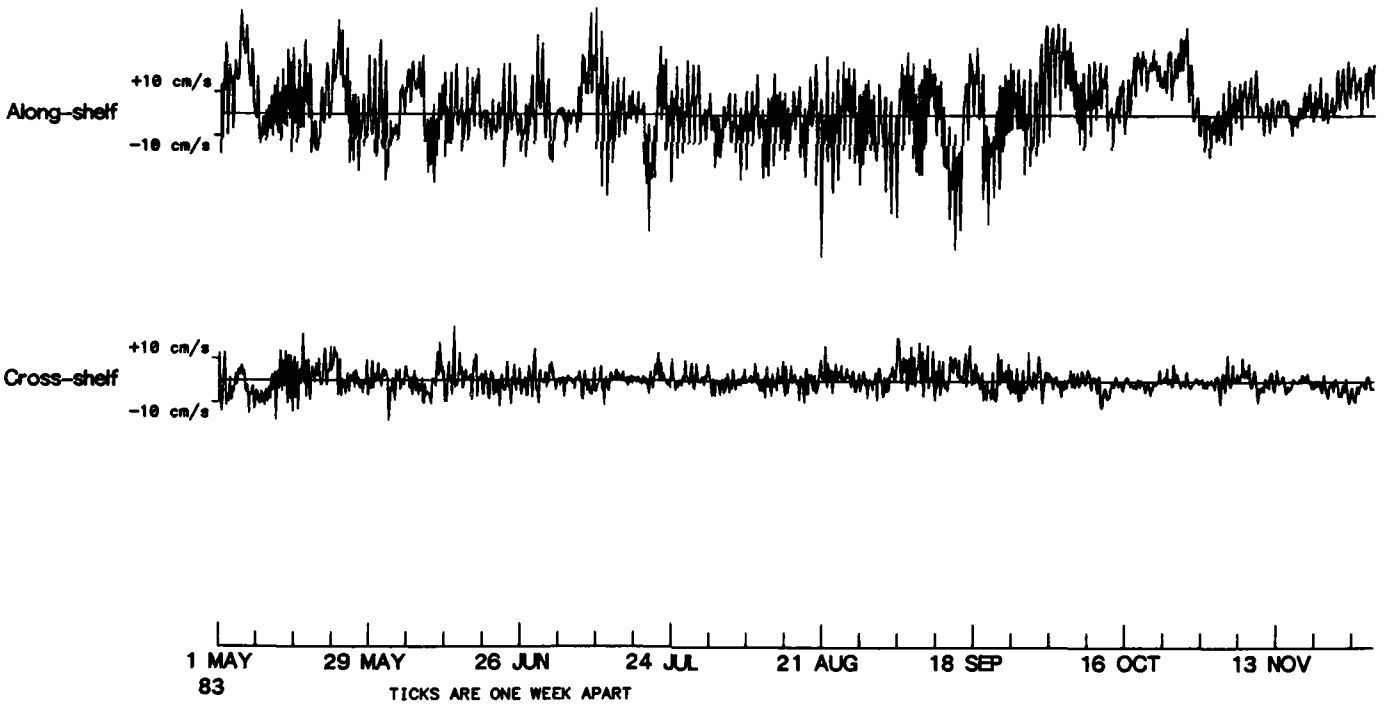
M11 : LOW FREQUENCY CURRENTS

depth = 10m Nov 82 - Nov 84



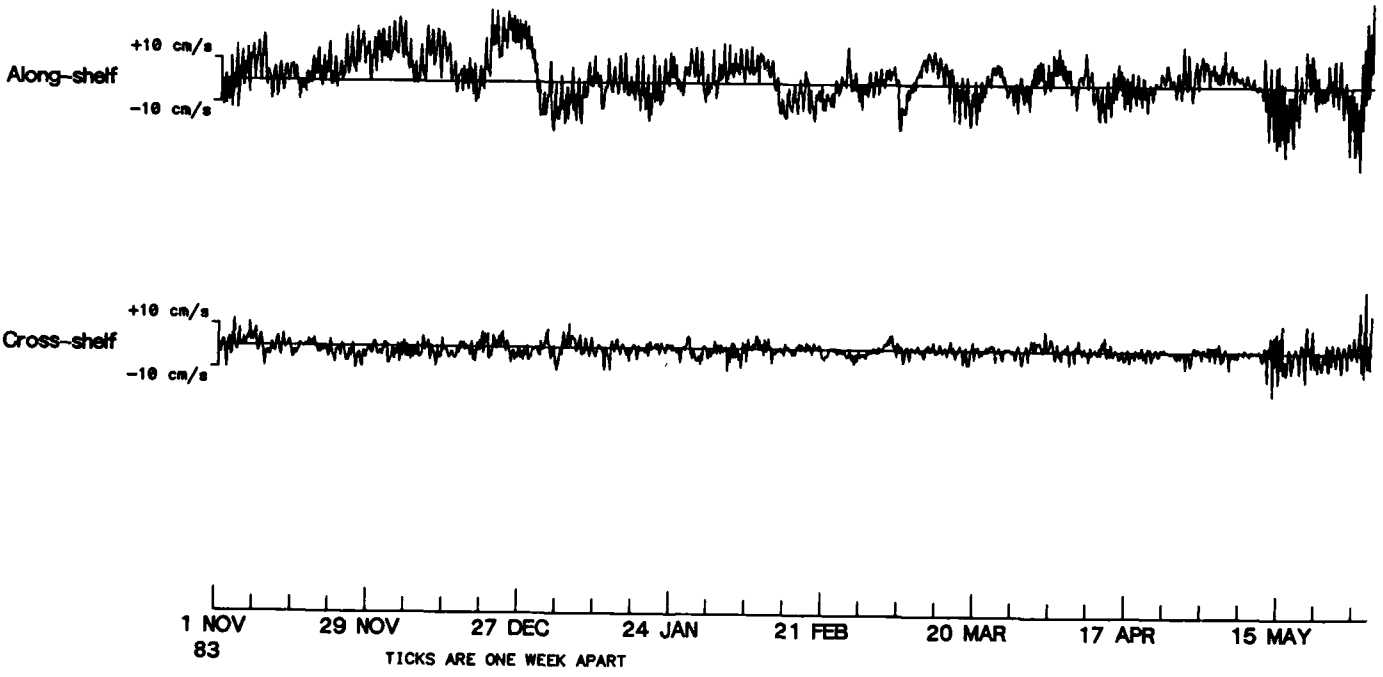
M11 : CURRENTS

depth ≈ 10m May - Nov 83



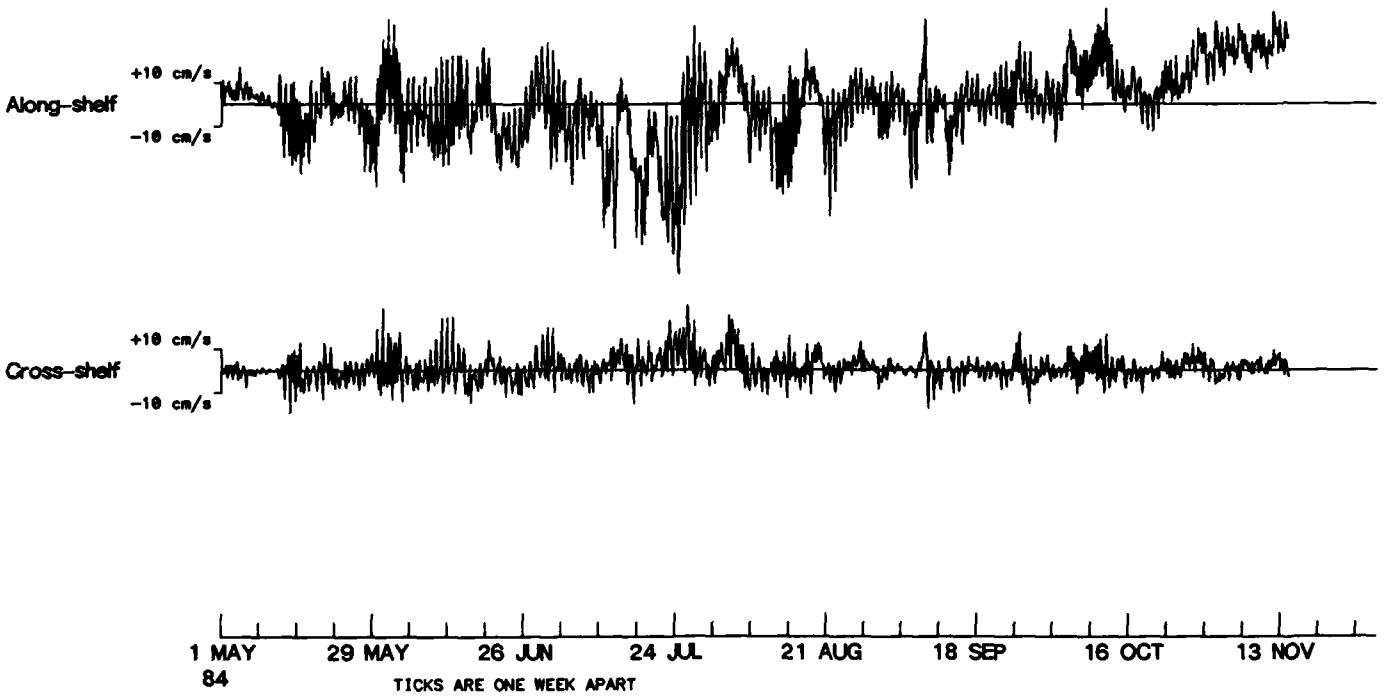
M11 : CURRENTS

depth = 10m Nov 83 - May 84



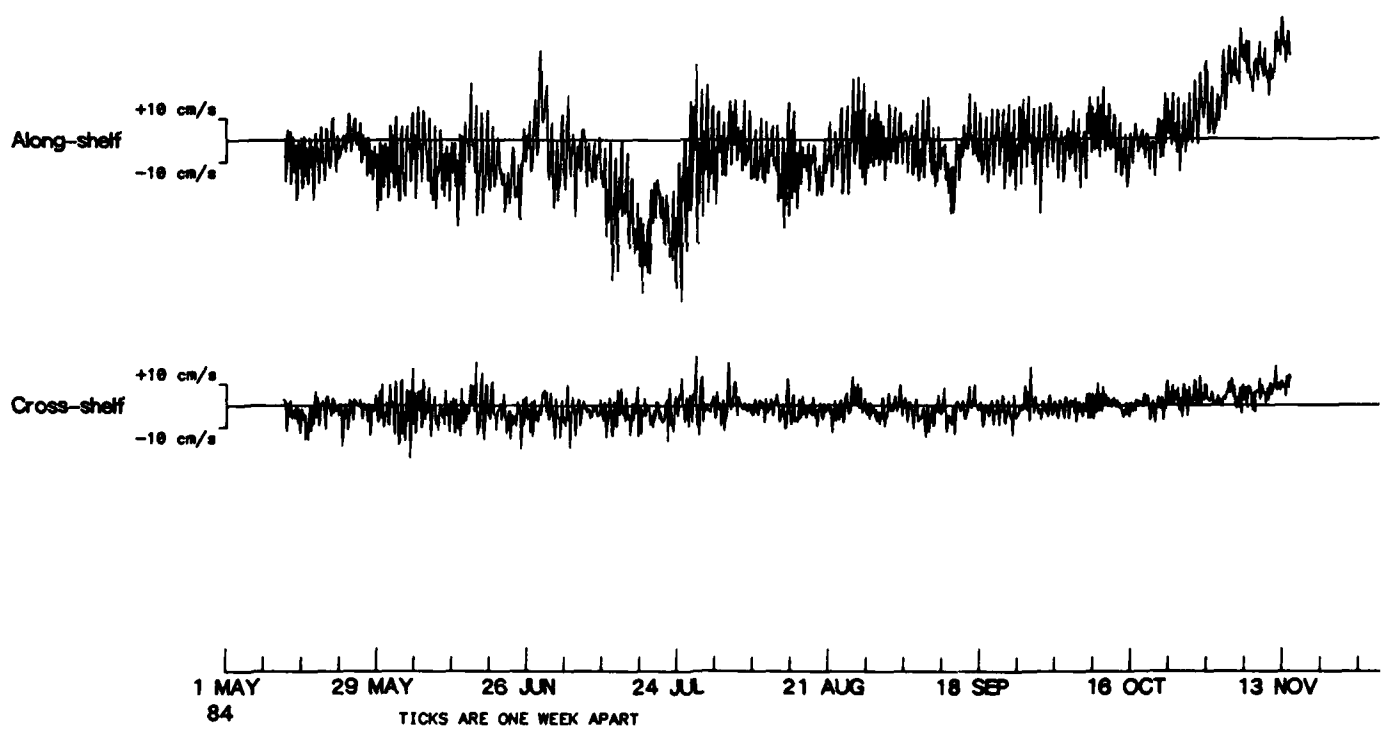
M11 : CURRENTS

depth = 10m May - Nov 84



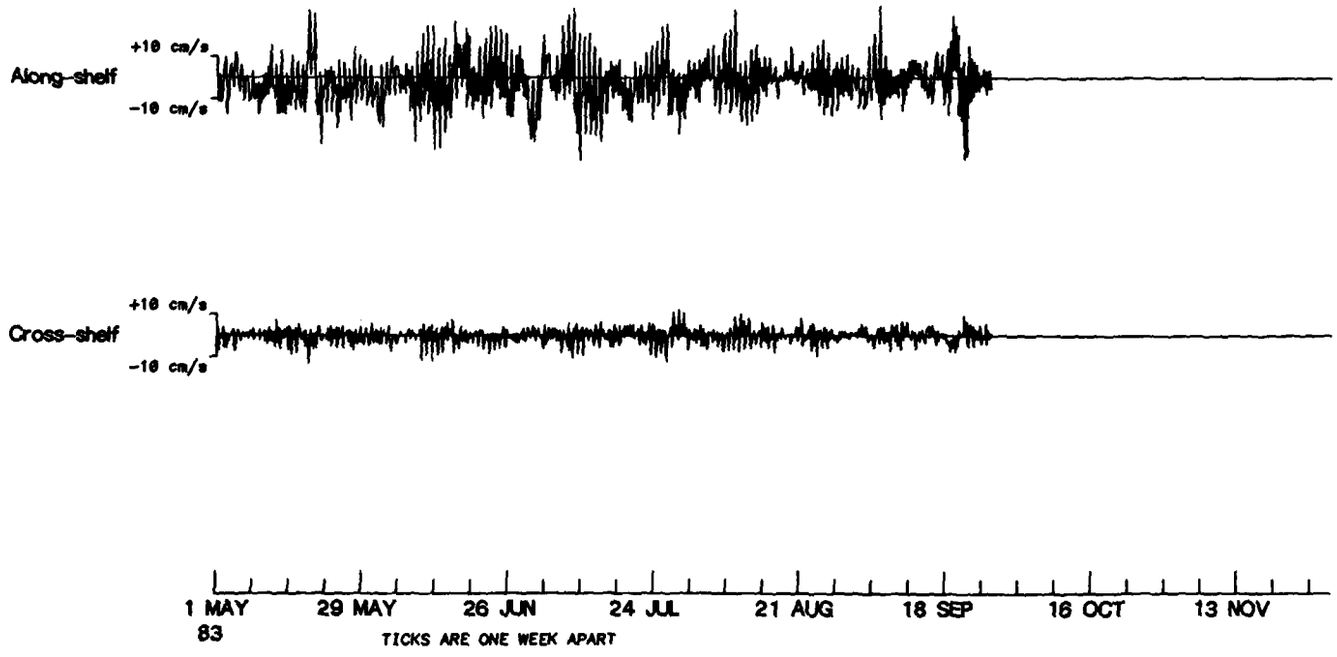
M11 : CURRENTS

depth = 30m May - Nov 84



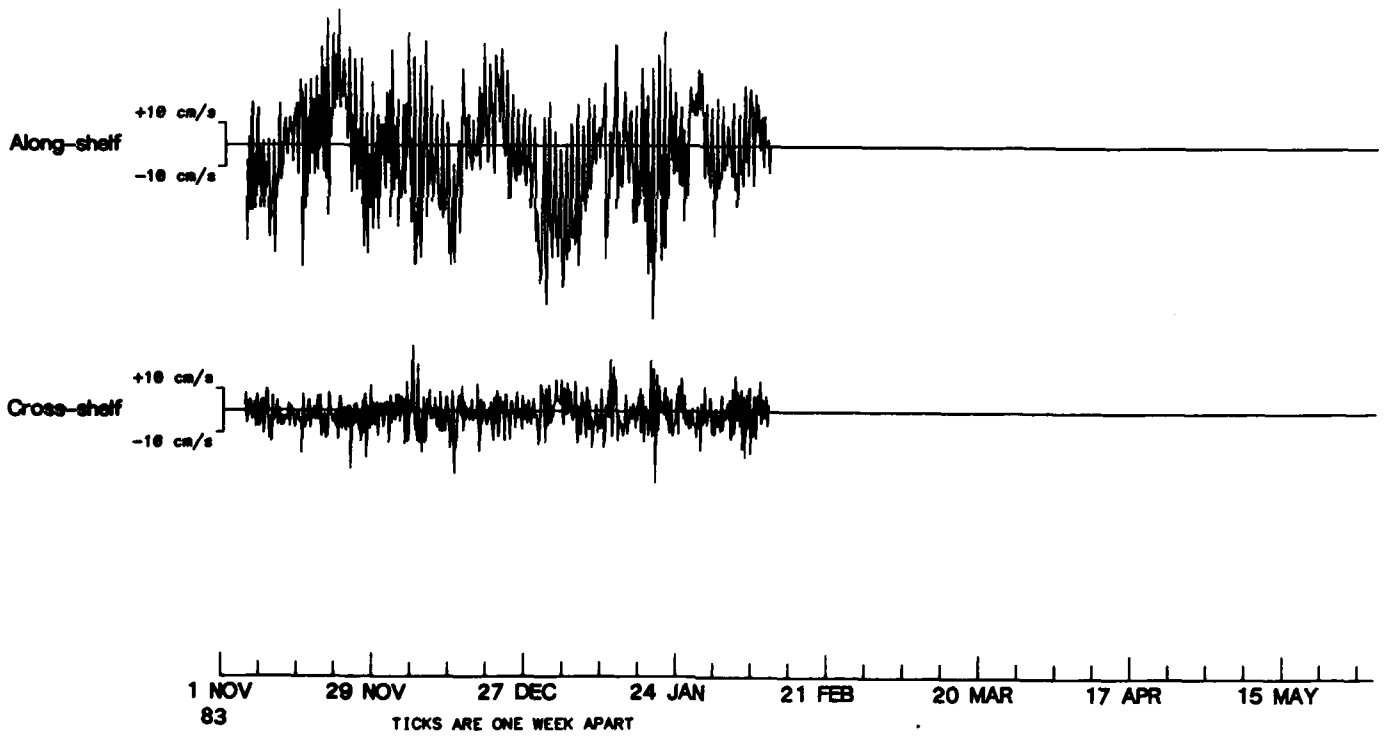
M11 : CURRENTS

depth = 65m May - Nov 83



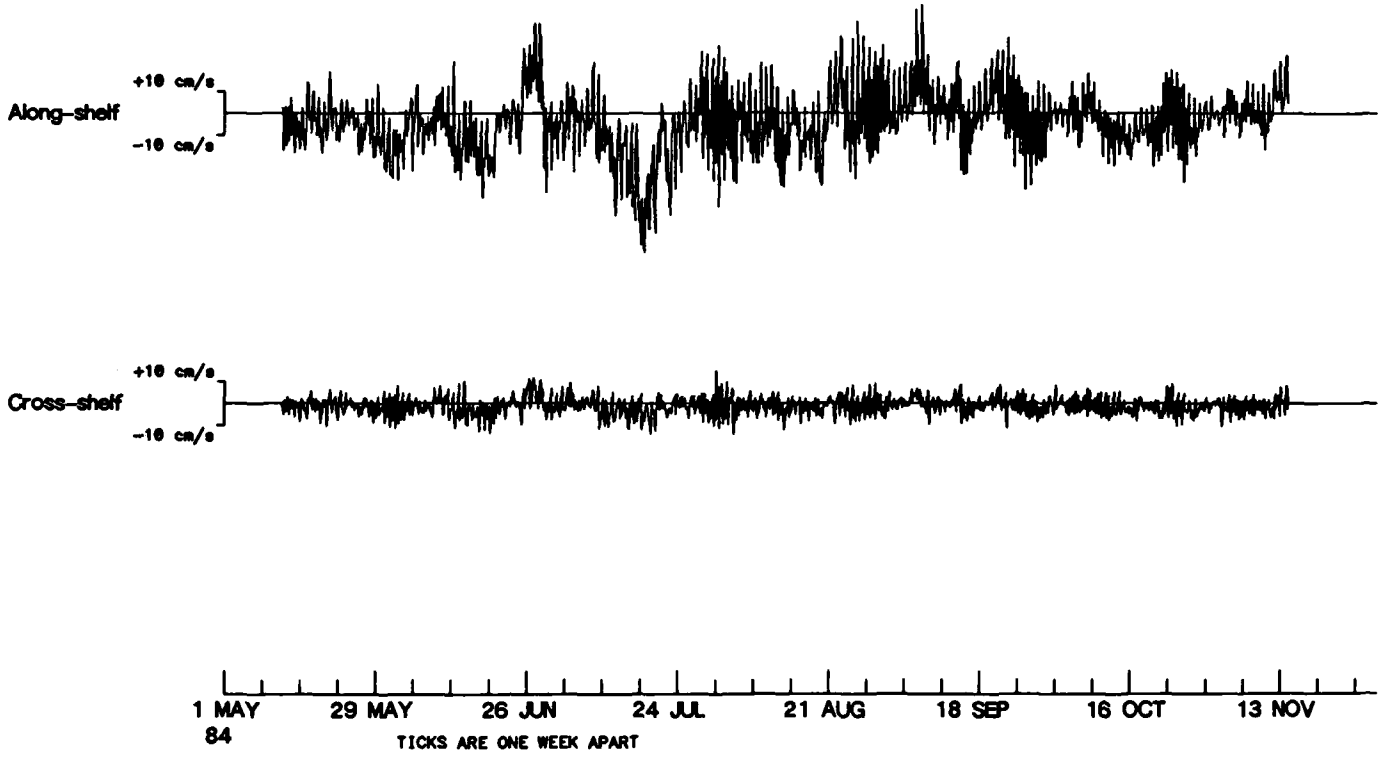
M11 : CURRENTS

depth = 65m Nov 83 - May 84



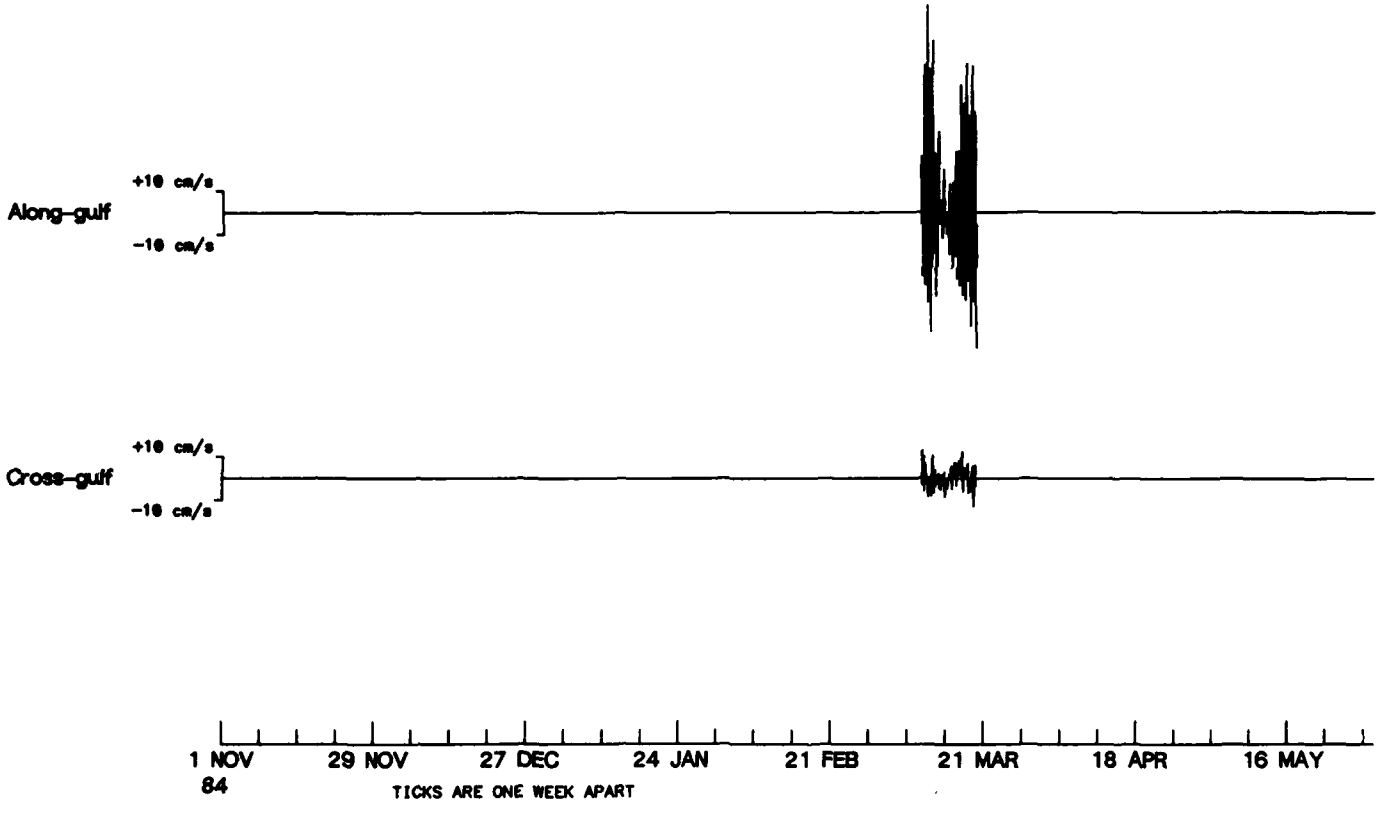
M11 : CURRENTS

depth = 70m May - Nov 84



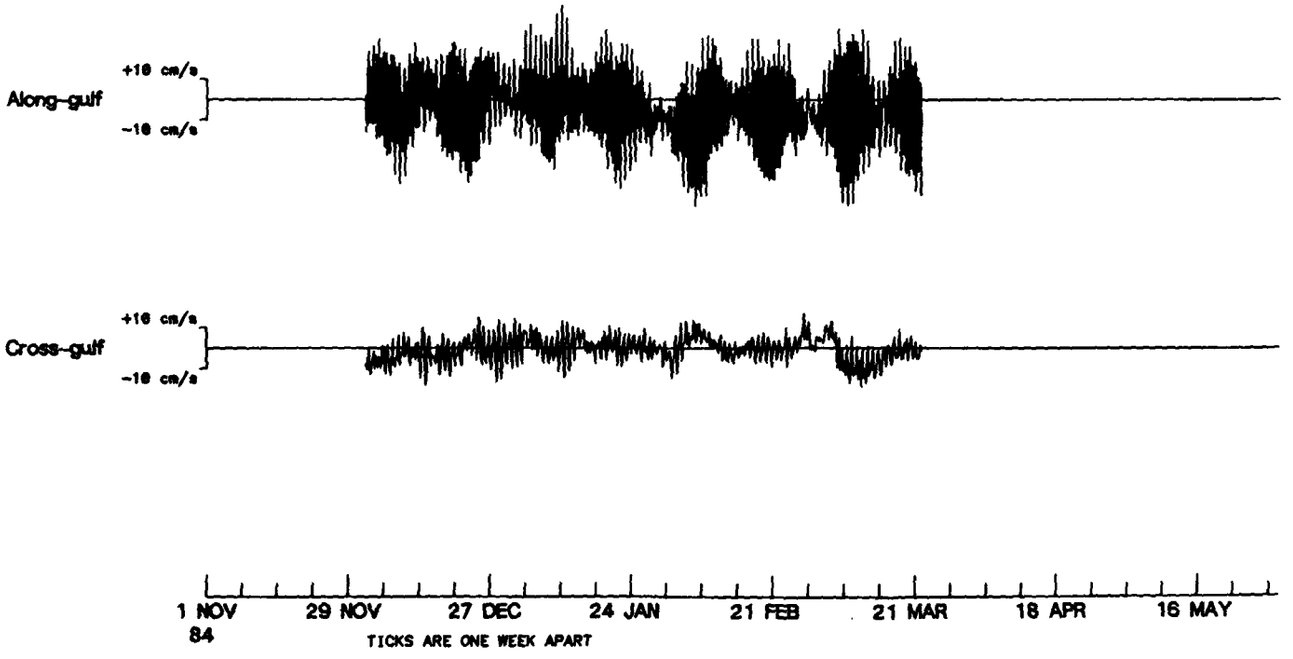
M12 : CURRENTS

depth = 450m Nov 84 - May 85



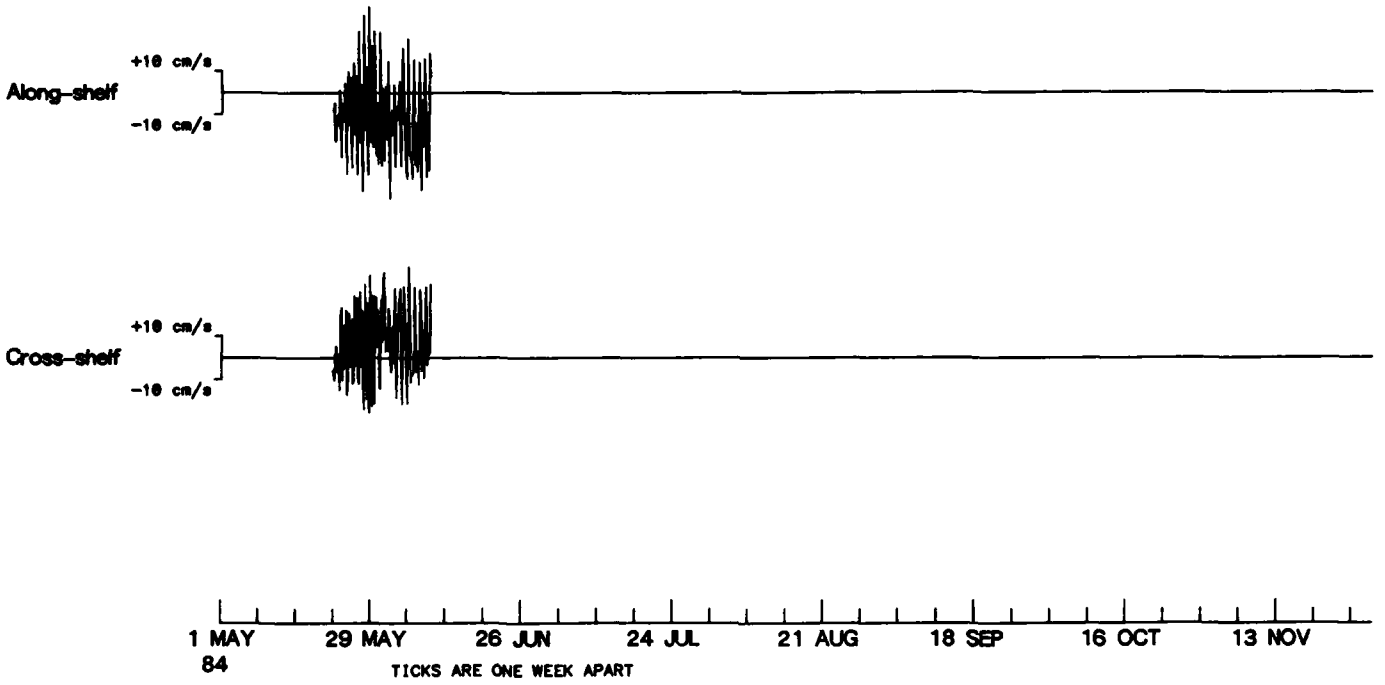
M13 : CURRENTS

depth = 150m Nov 84 - May 85



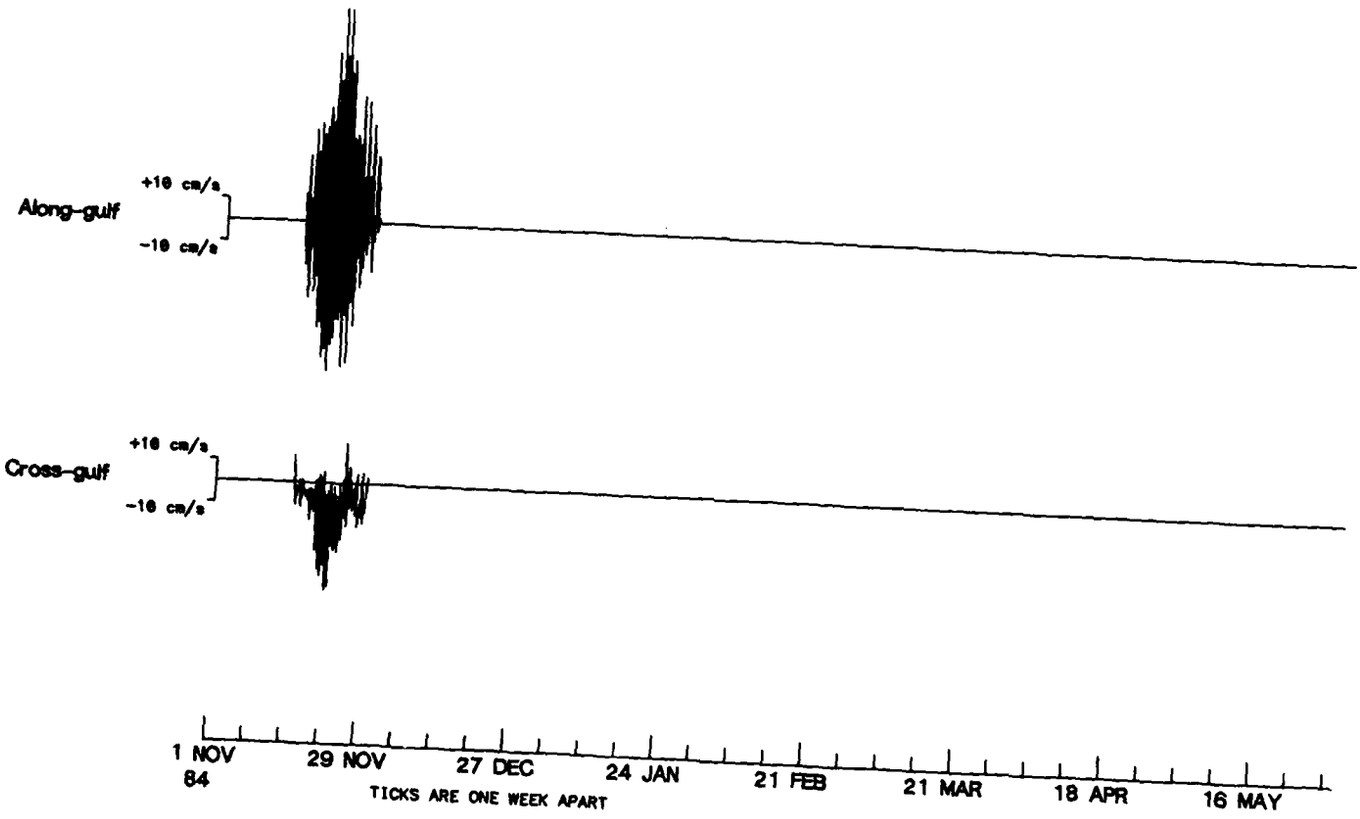
M14 : CURRENTS

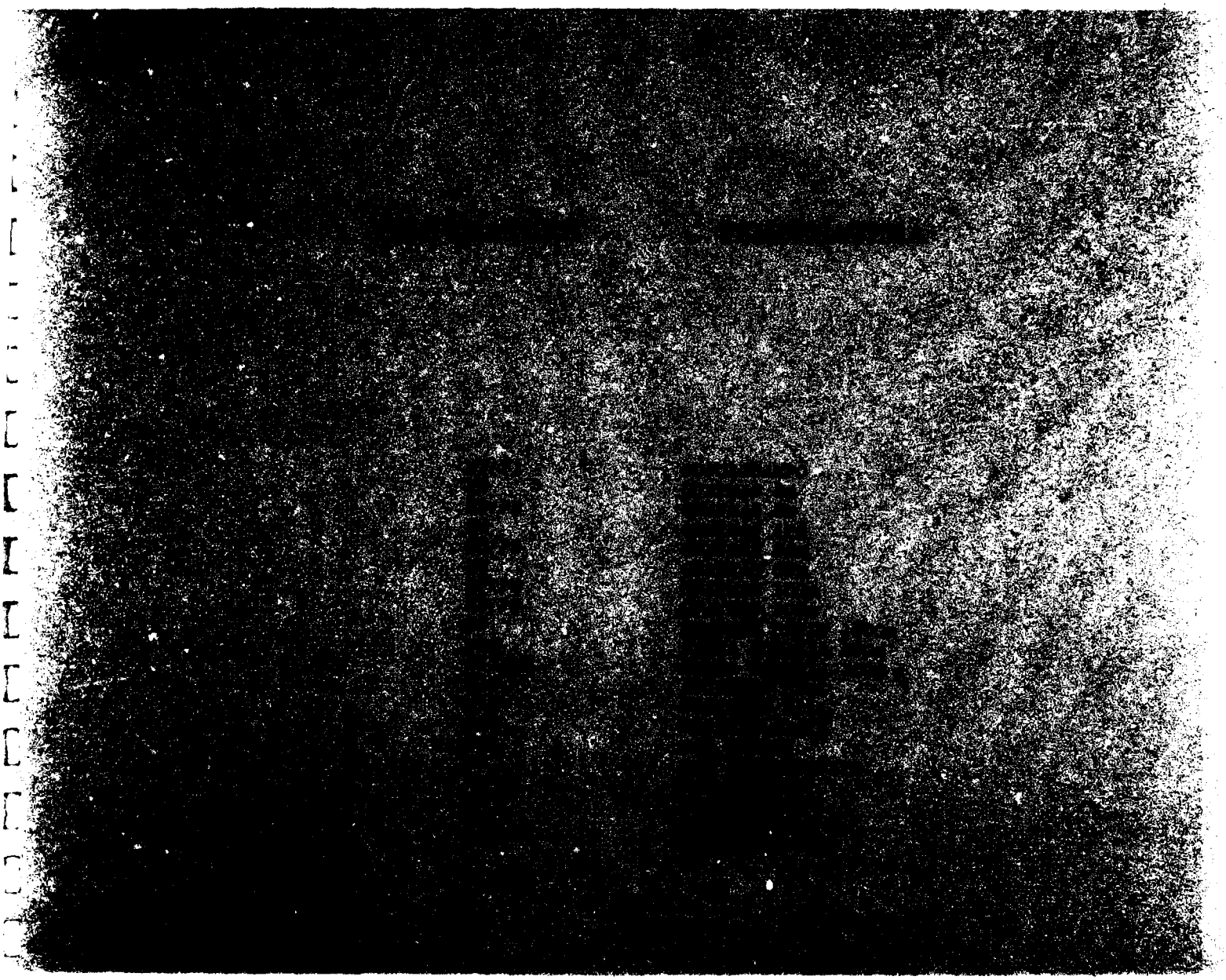
depth = 10m May - Nov 84



M15 : CURRENTS

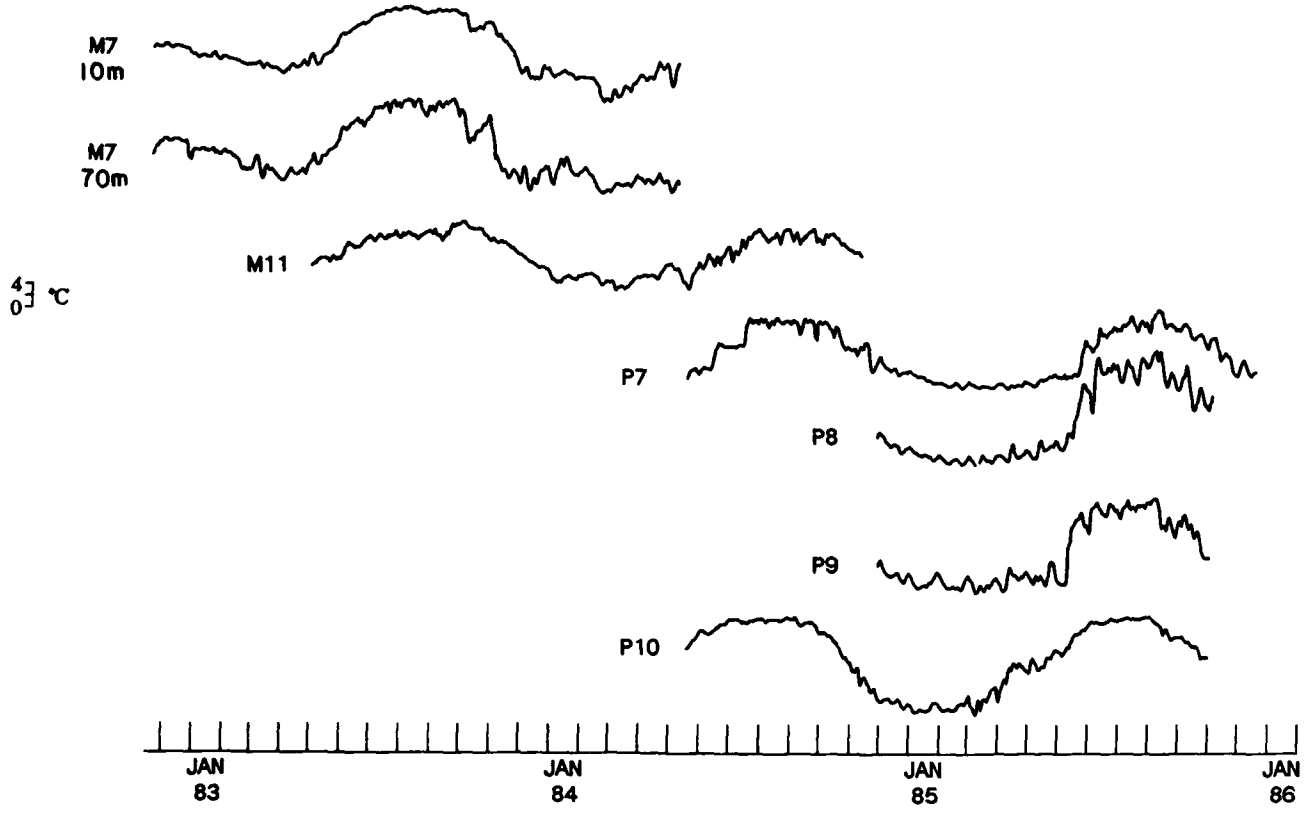
depth = 150m Nov 84 - May 85





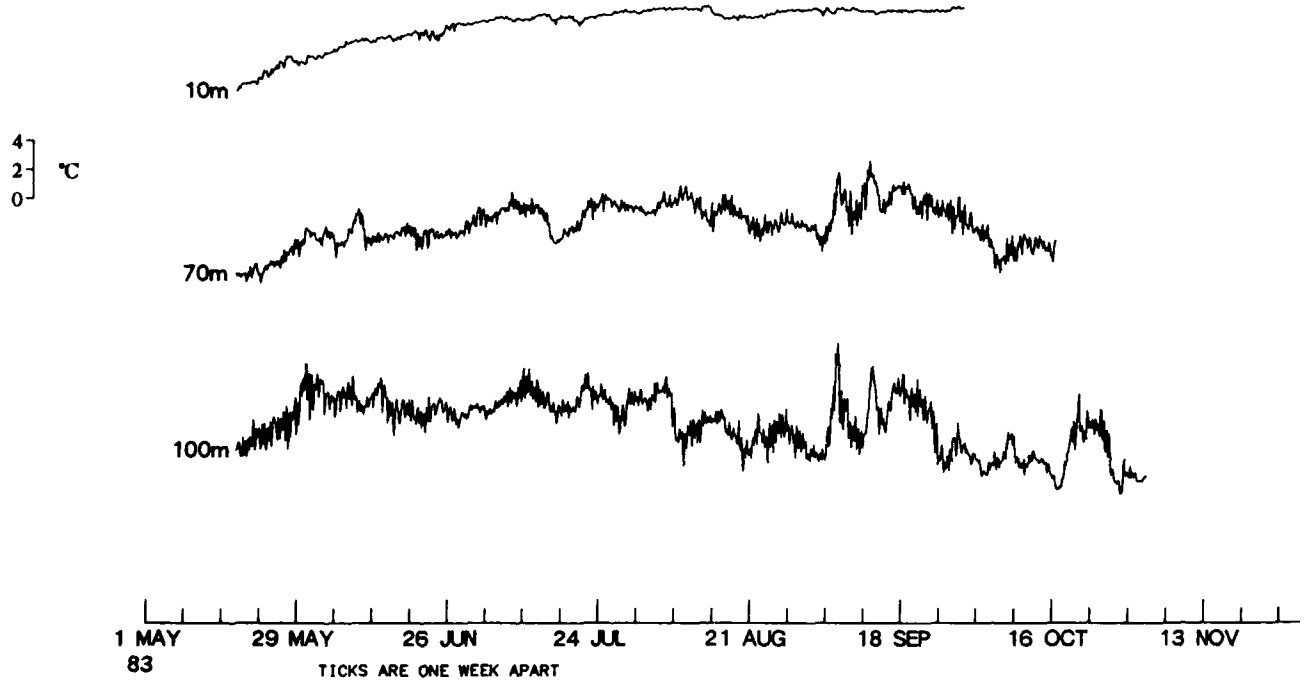
LOW FREQUENCY TEMPERATURE

Nov 82 - Jan 86



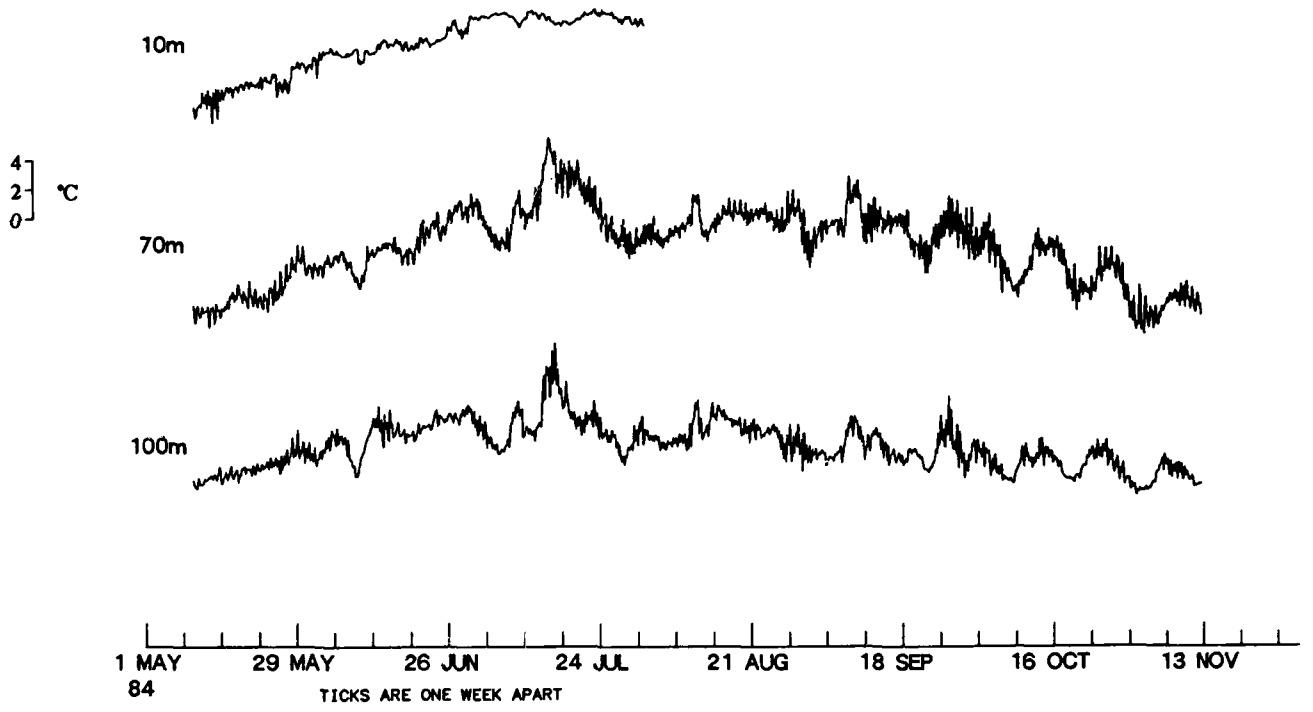
M1 : TEMPERATURE

May - Nov 83



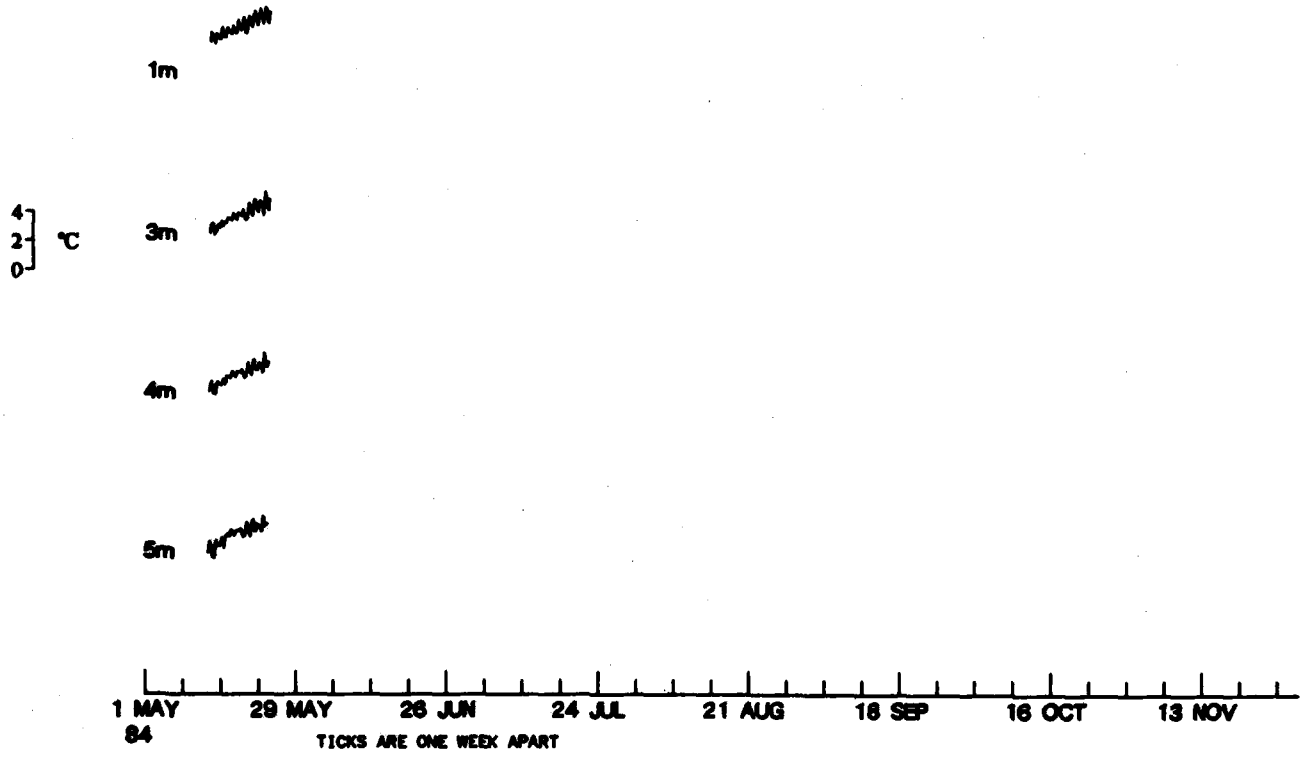
M1 : TEMPERATURE

May - Nov 84



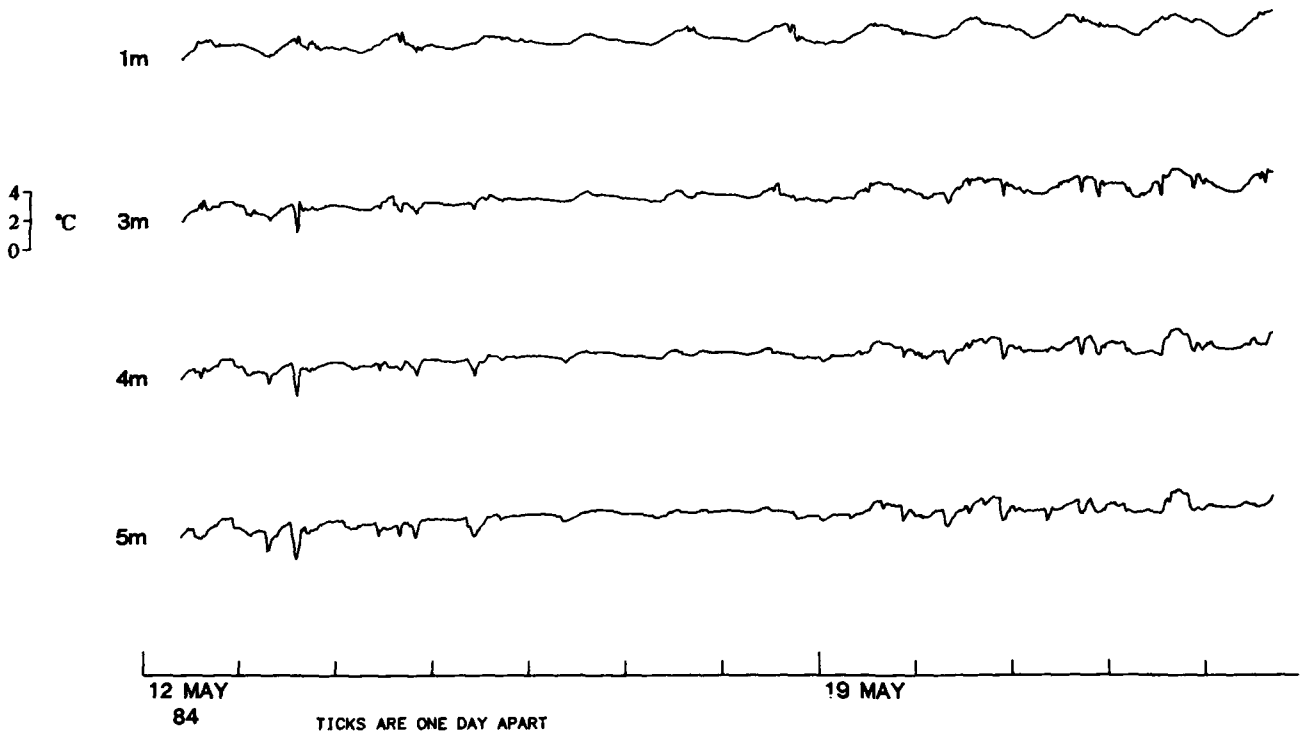
M2 : TEMPERATURE

May - Nov 84



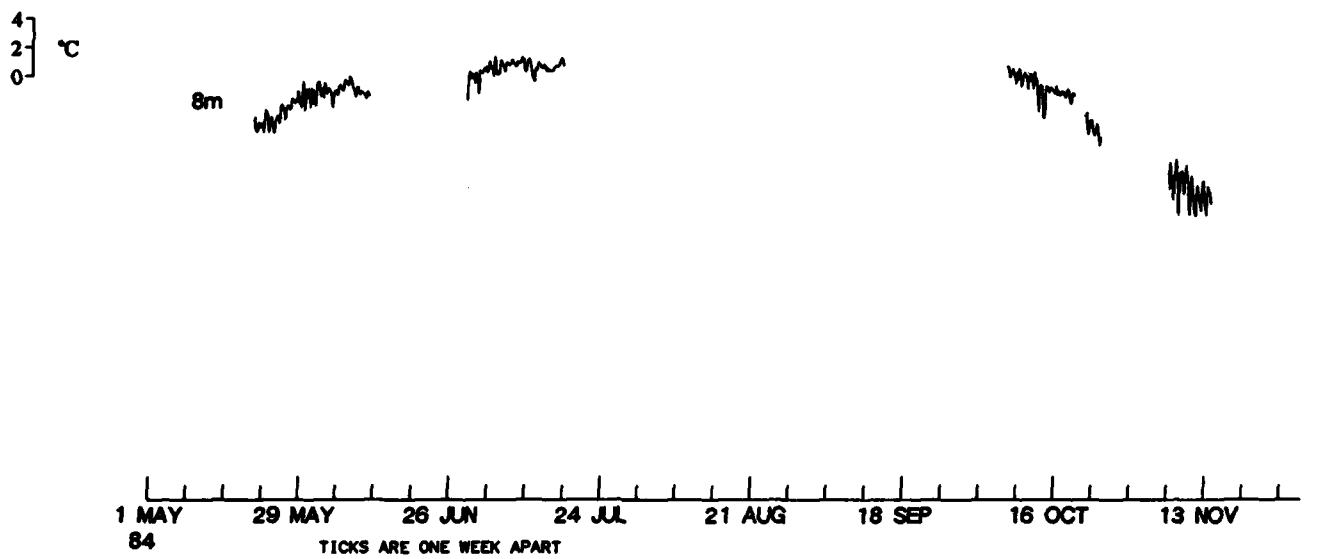
M2 : TEMPERATURE

May 84



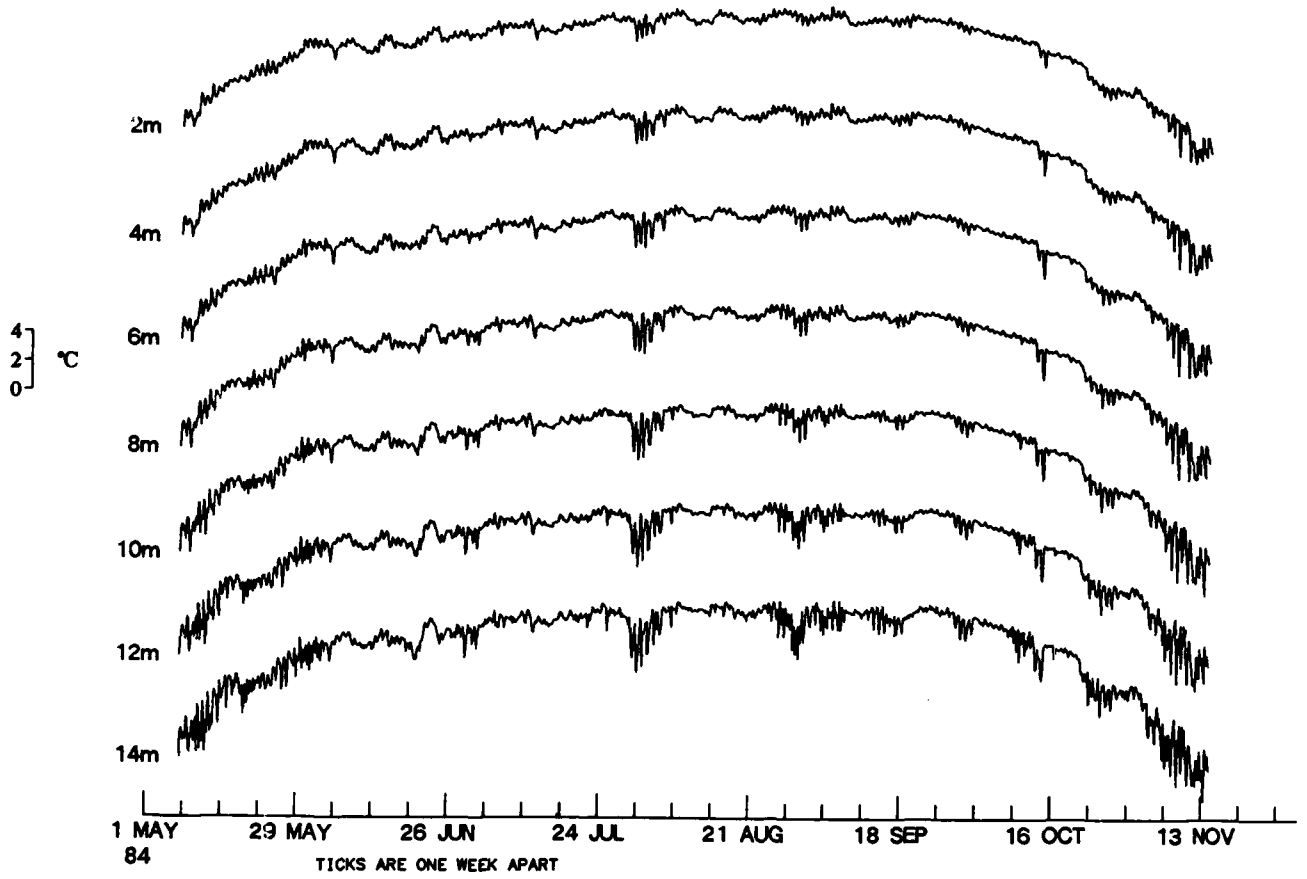
M3 : TEMPERATURE

May - Nov 84



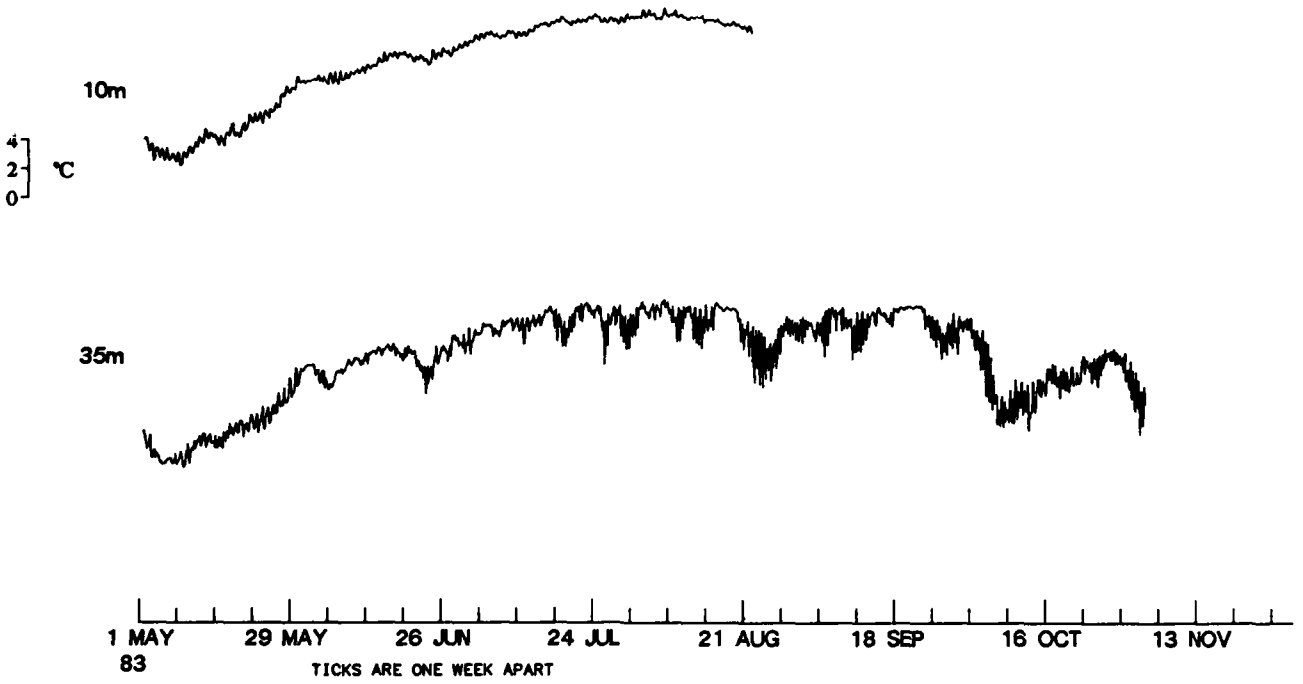
M4 : TEMPERATURE

May - Nov 84



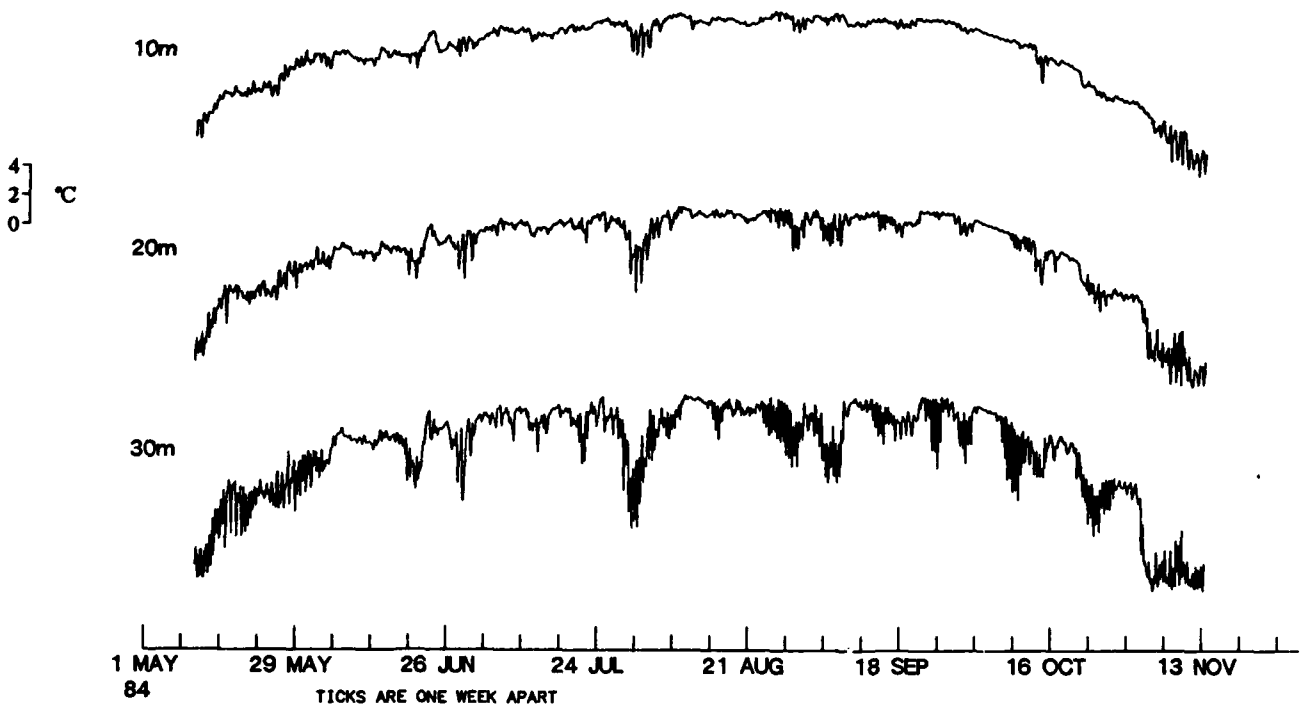
M5 : TEMPERATURE

May - Nov 83



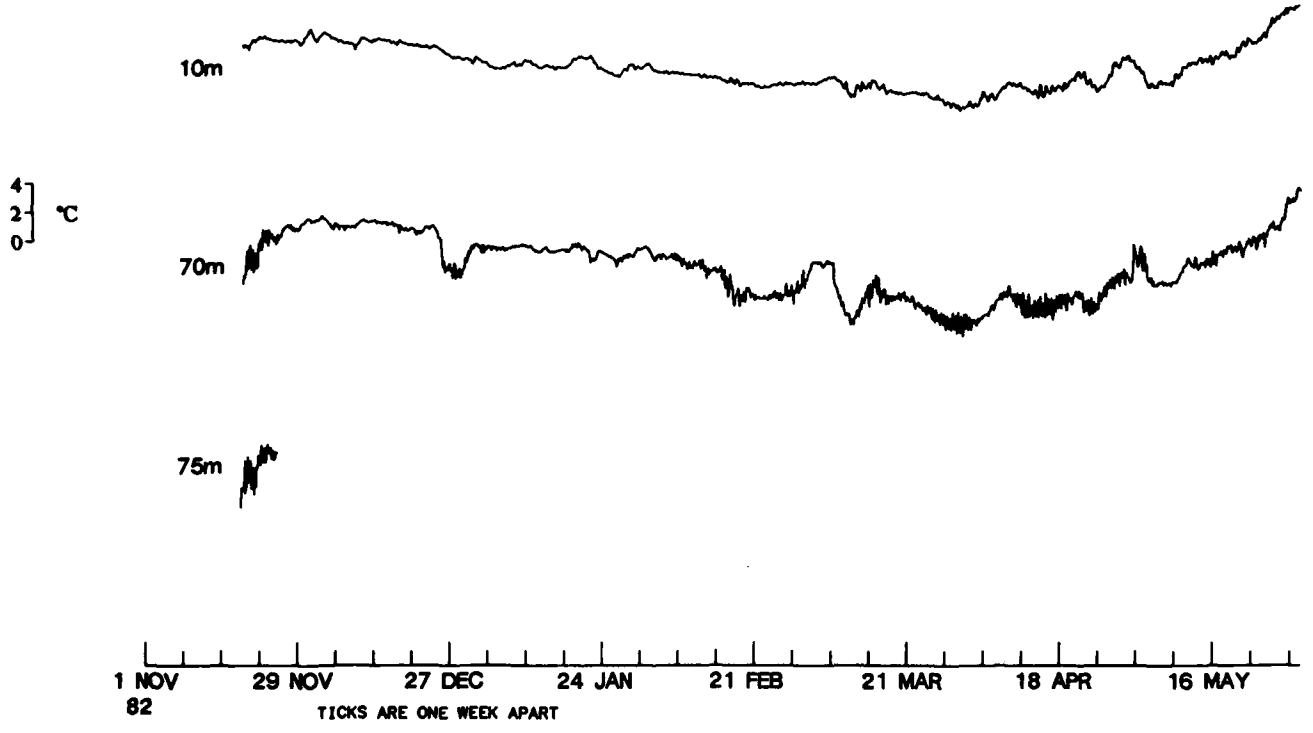
M6 : TEMPERATURE

May - Nov 84



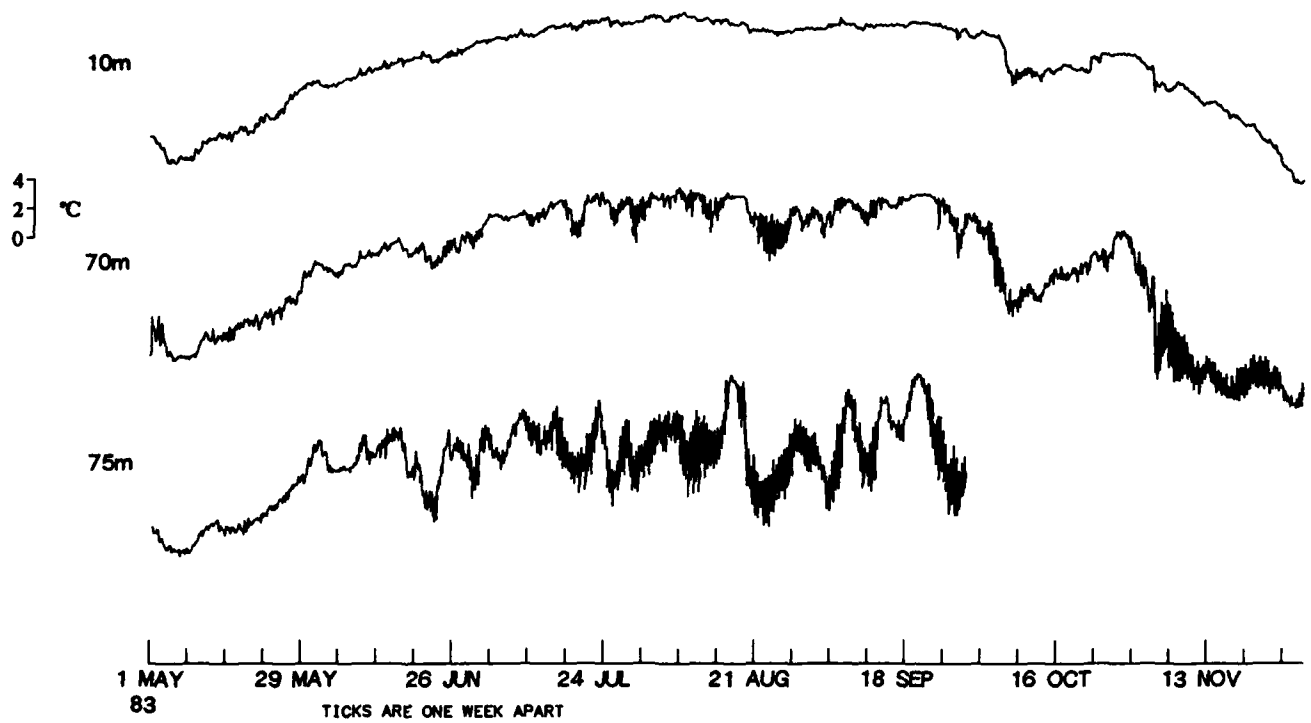
M7 : TEMPERATURE

Nov 82 - May 83



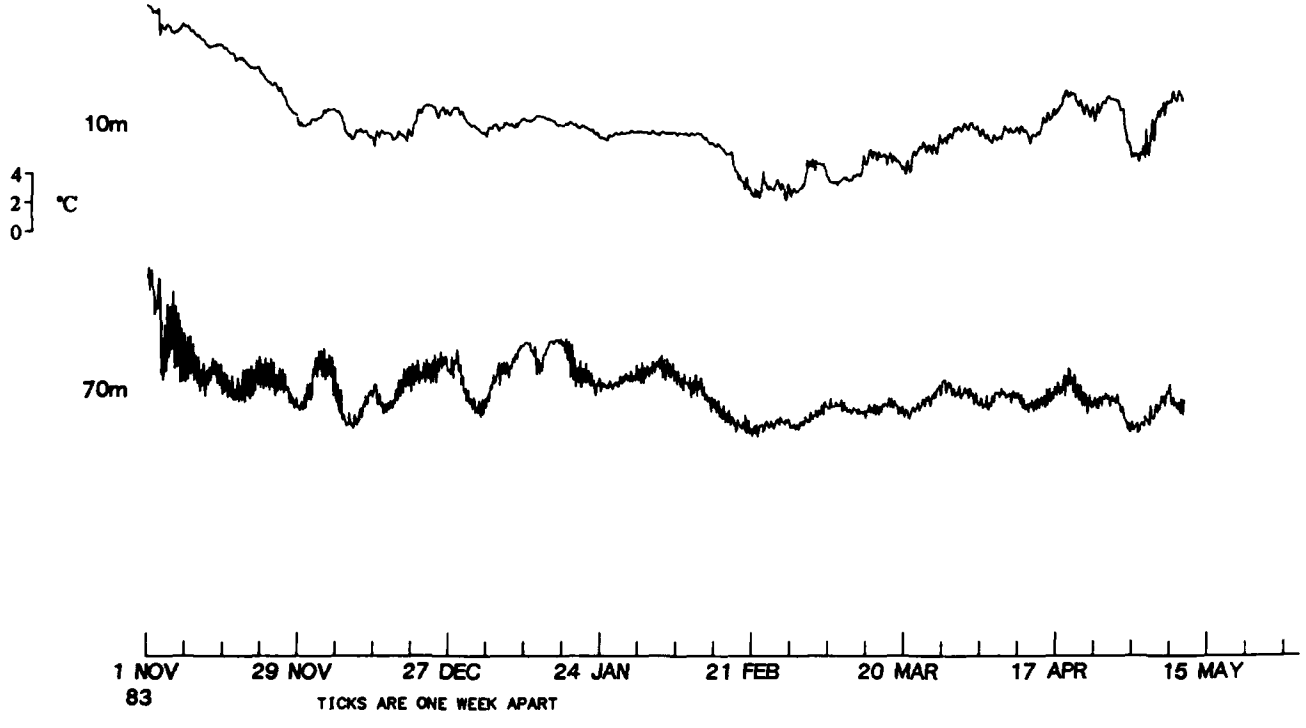
M7 : TEMPERATURE

May - Nov 83



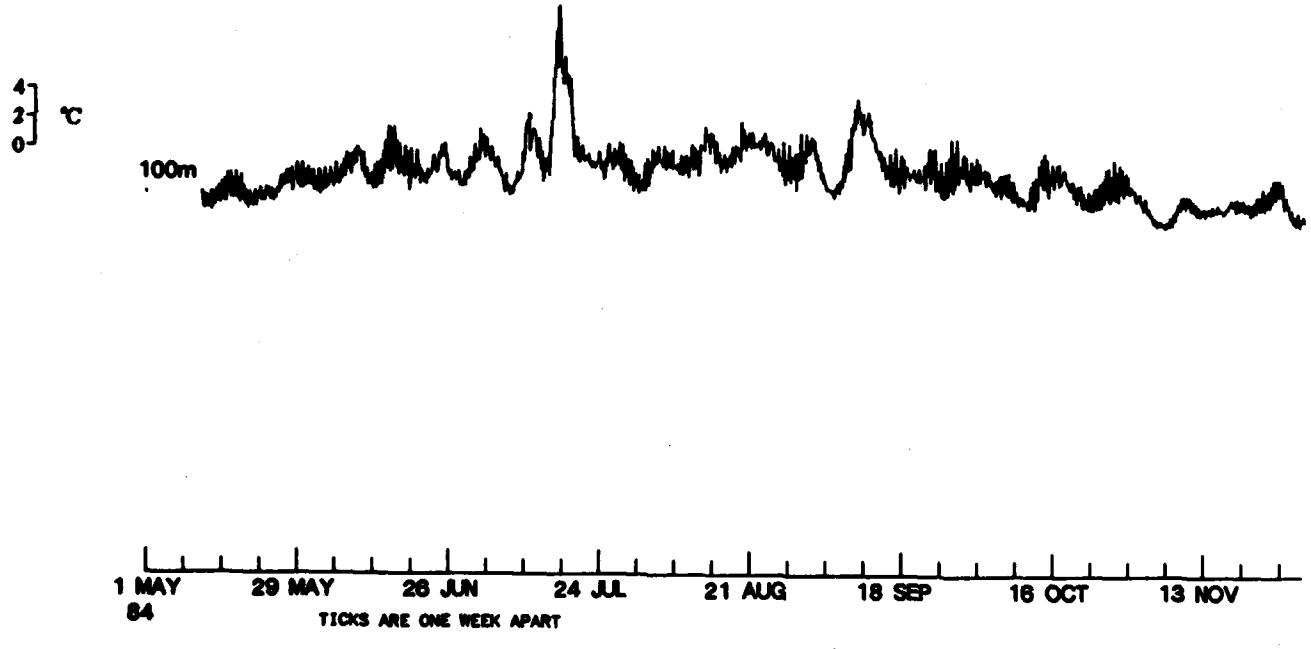
M7 : TEMPERATURE

Nov 83 - May 84



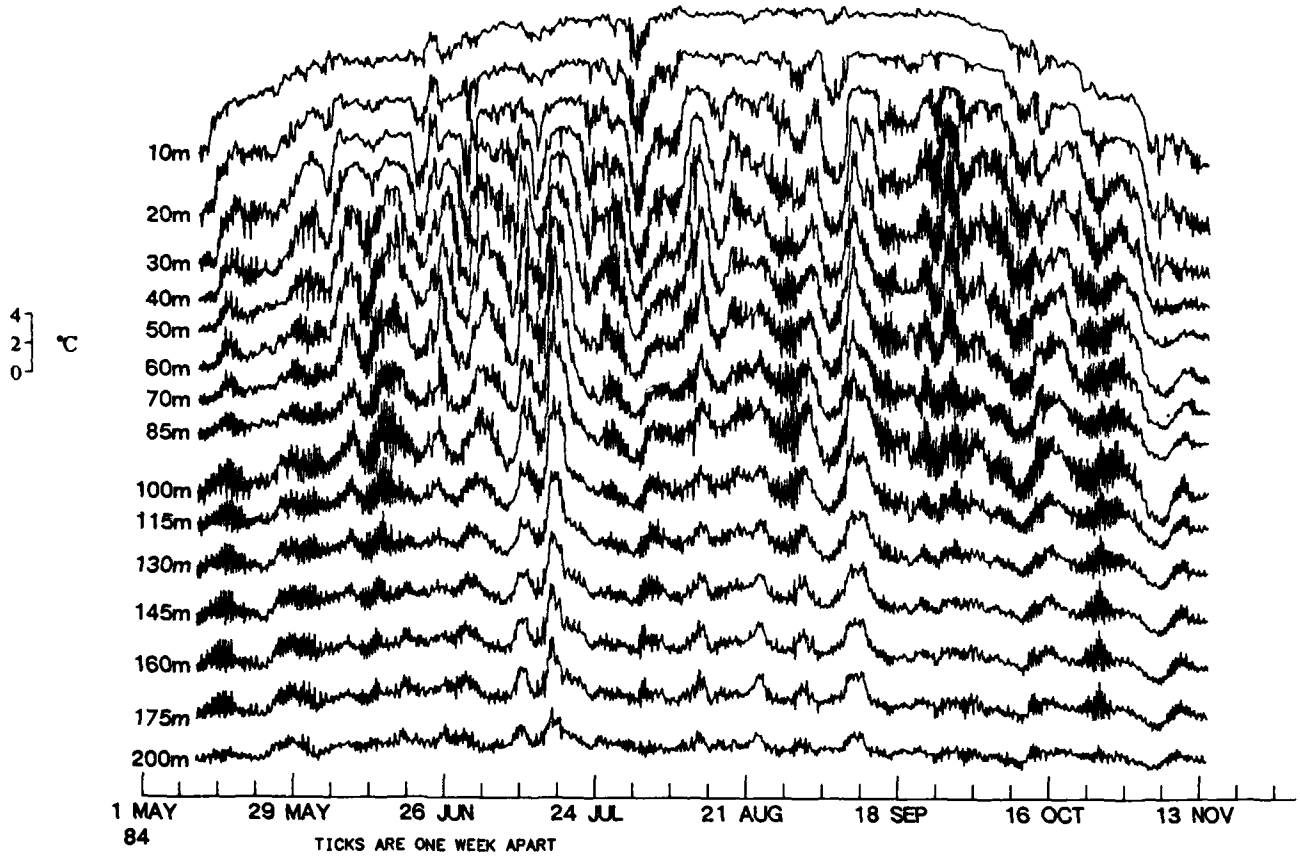
M7 : TEMPERATURE

May - Nov 84



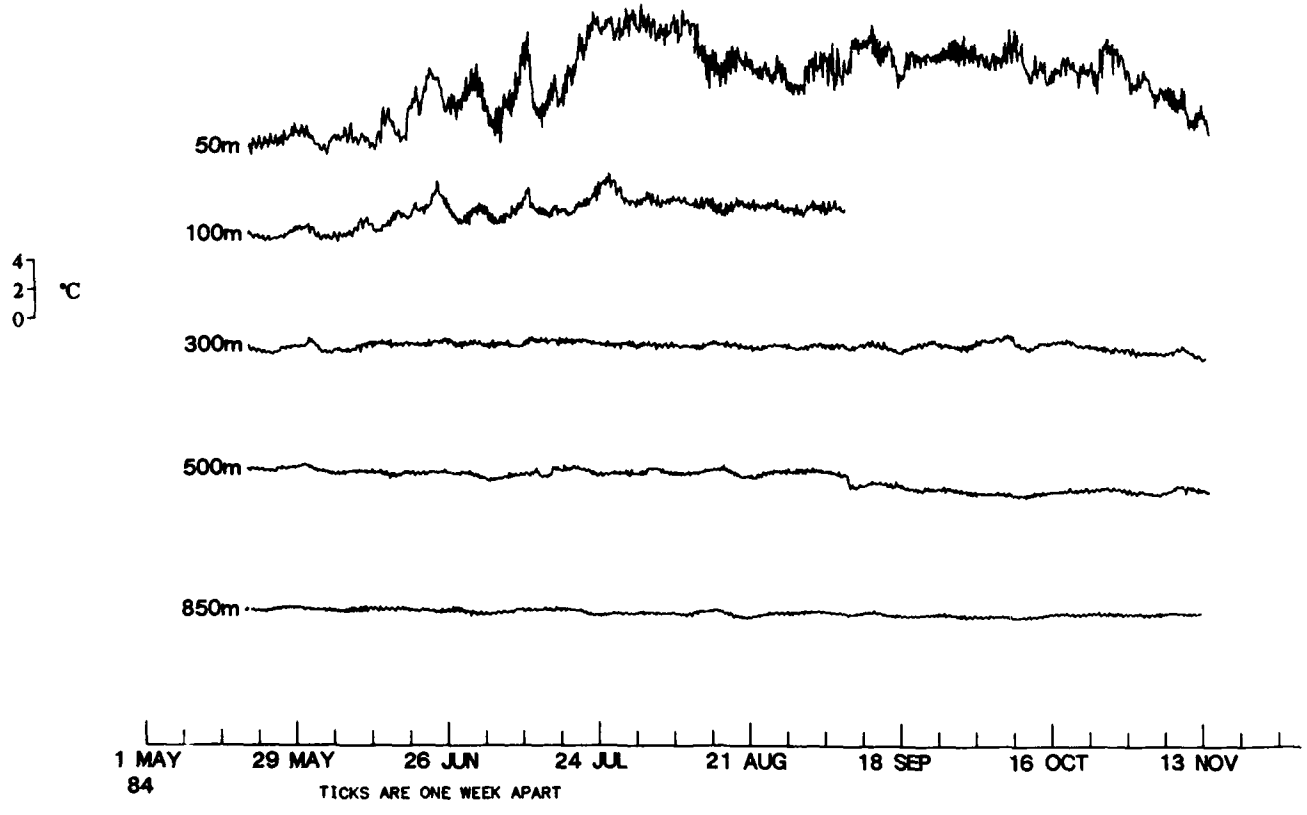
M8 : TEMPERATURE

May - Nov 84



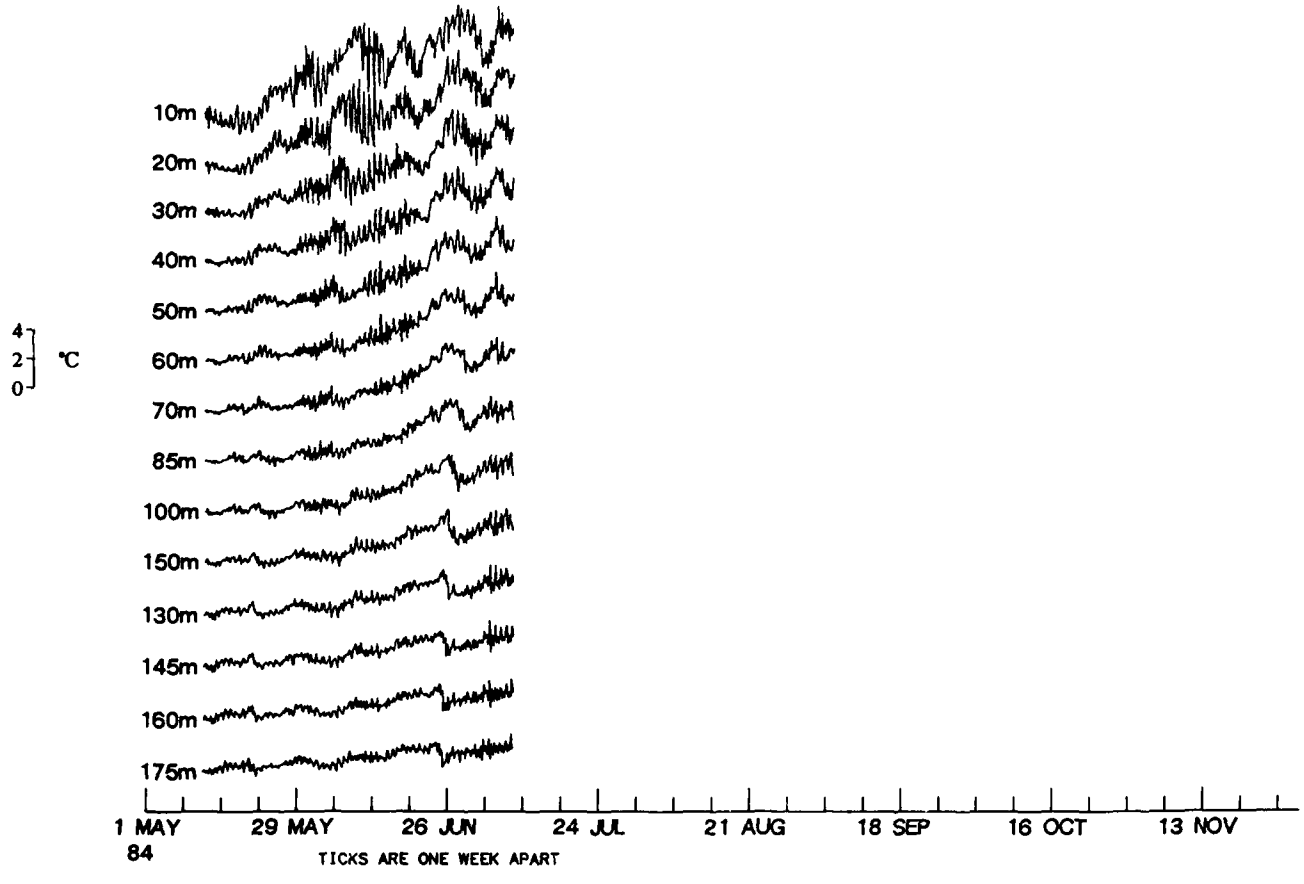
M9 : TEMPERATURE

May - Nov 84



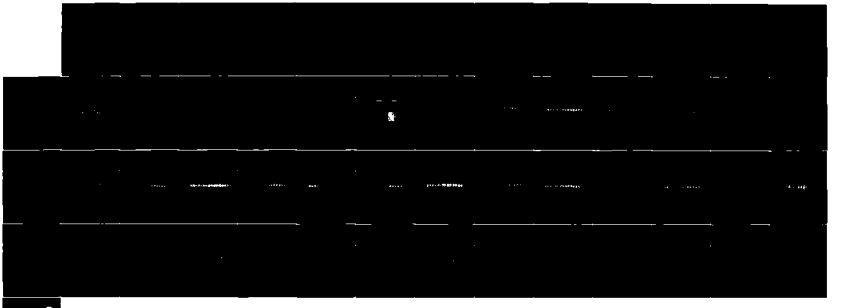
M1O : TEMPERATURE

May - Nov 84



AD-A171 432 OBSERVATIONS OF CURRENTS TEMPERATURE PRESSURE AND SEA LEVEL IN THE GULF O..(U) SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA M A MERRIFIELD ET AL. APR 86 2/2

UNCLASSIFIED SIO-REF-86-11 N00014-85-C-0184 F/G 8/3 NL



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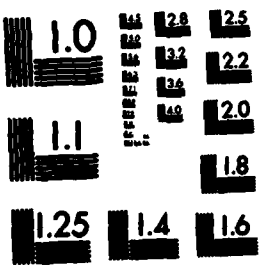
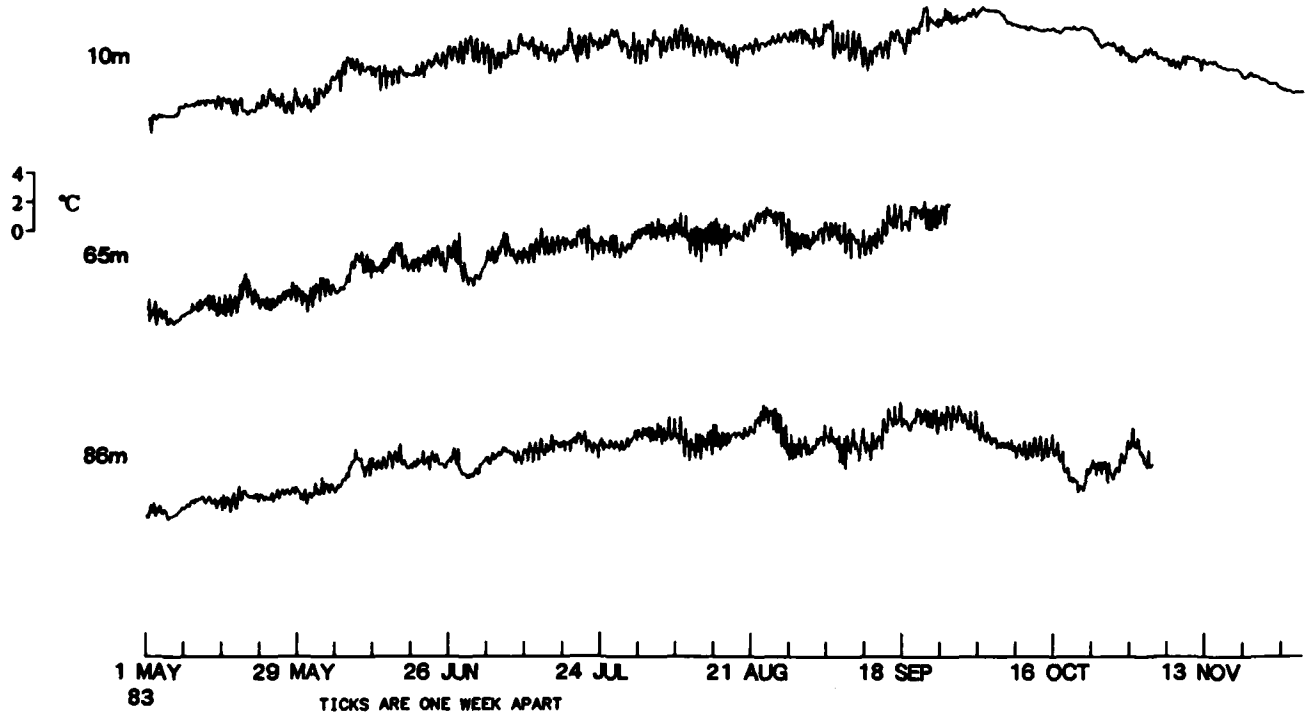
10-86



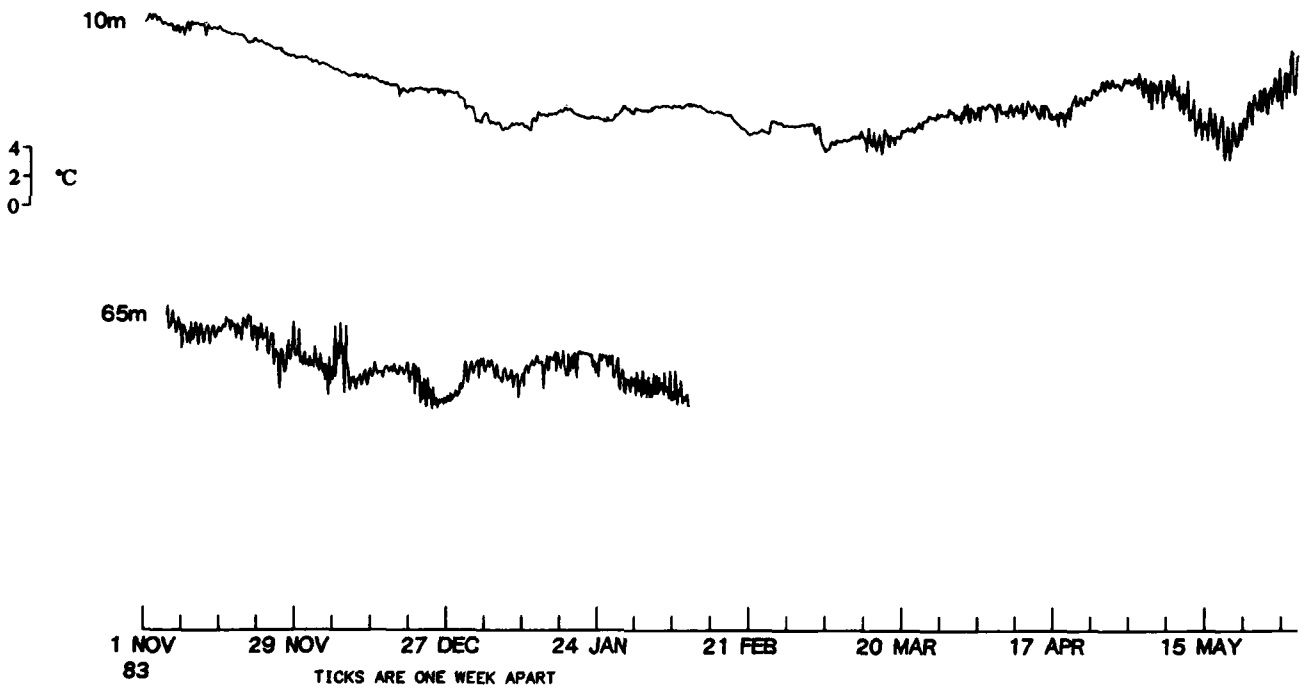
M11 : TEMPERATURE

May - Nov 83



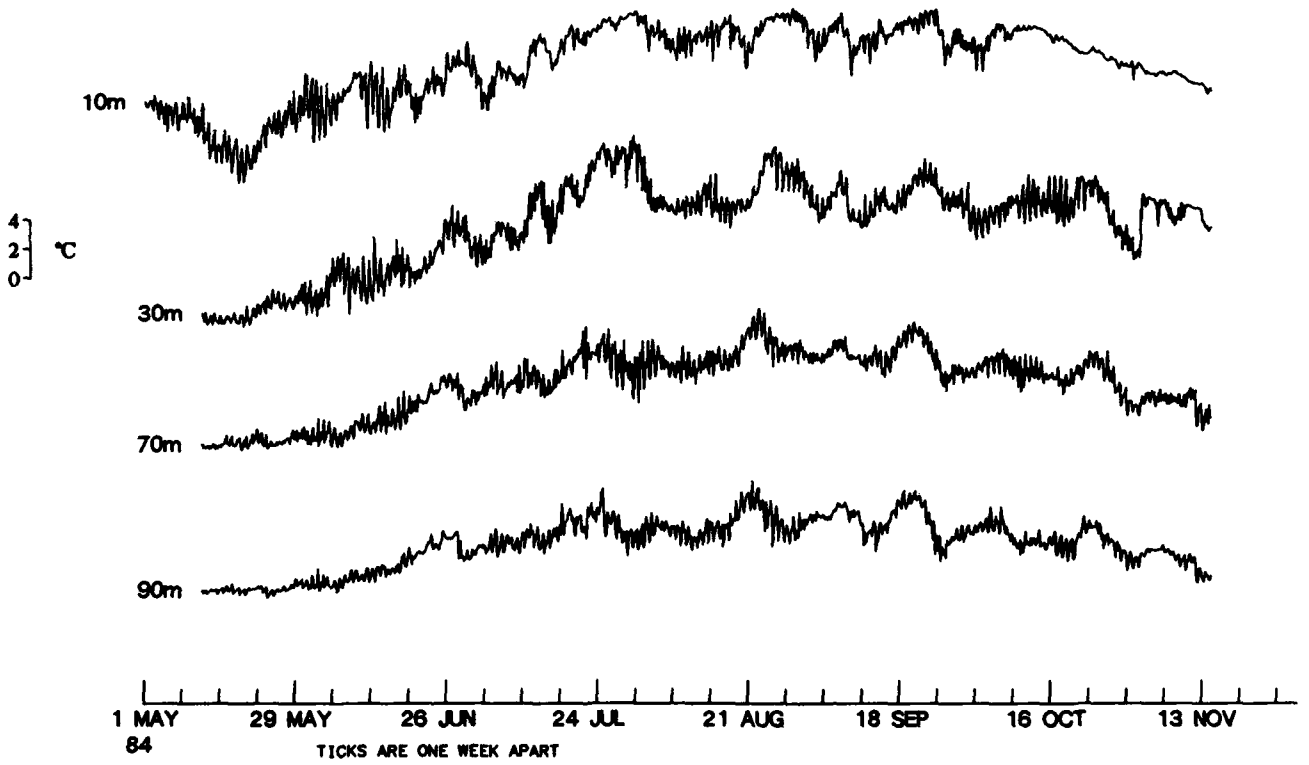
M11 : TEMPERATURE

Nov 83 - May 84



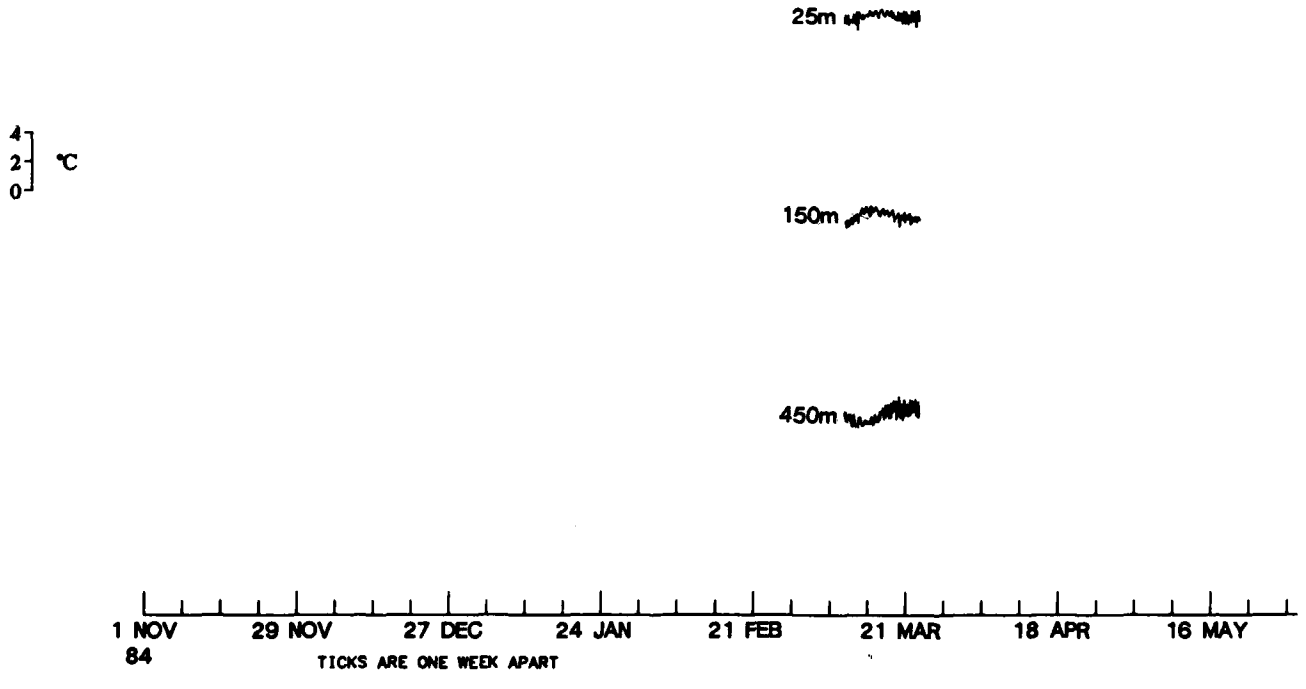
M11 : TEMPERATURE

May - Nov 84



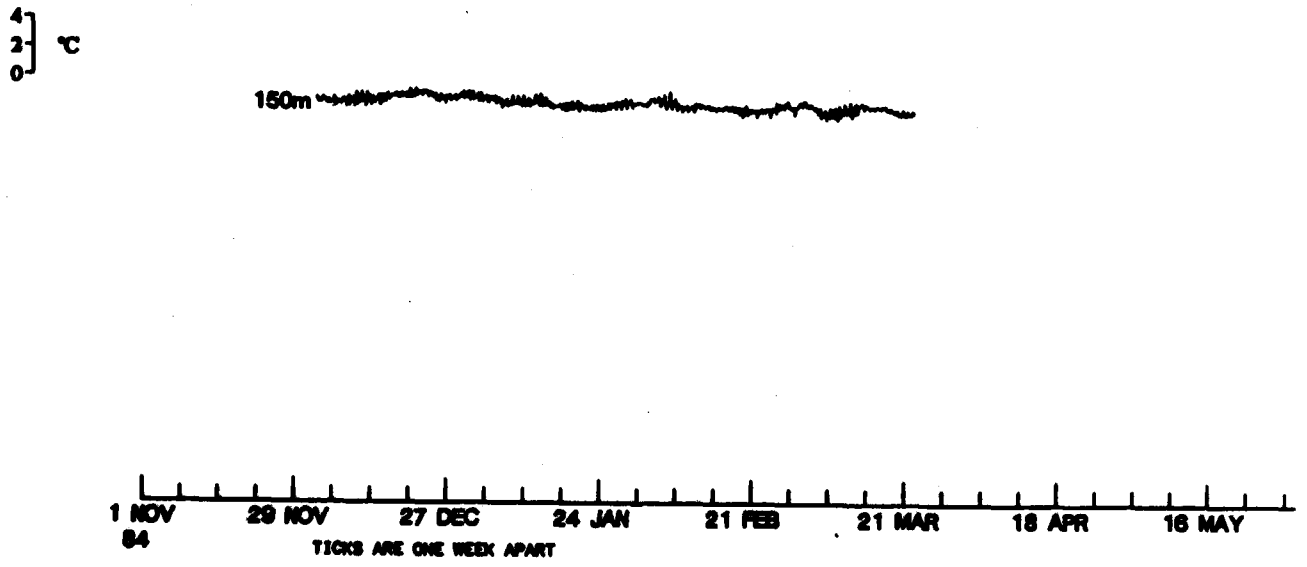
M12 : TEMPERATURE

Nov 84 - May 85



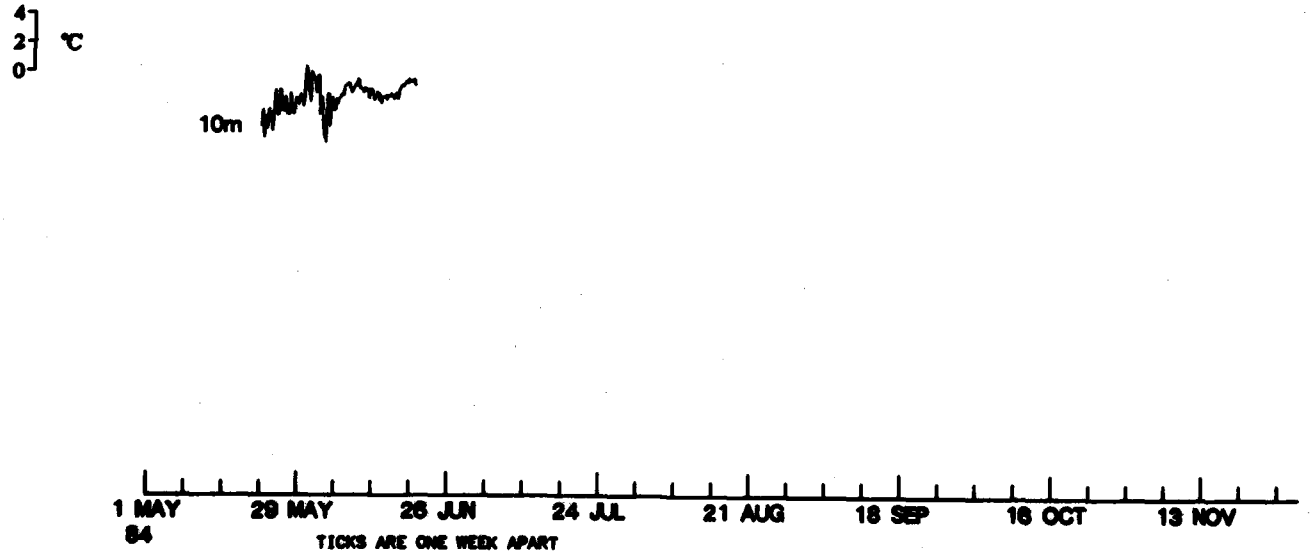
M13 : TEMPERATURE

Nov 84 - May 85



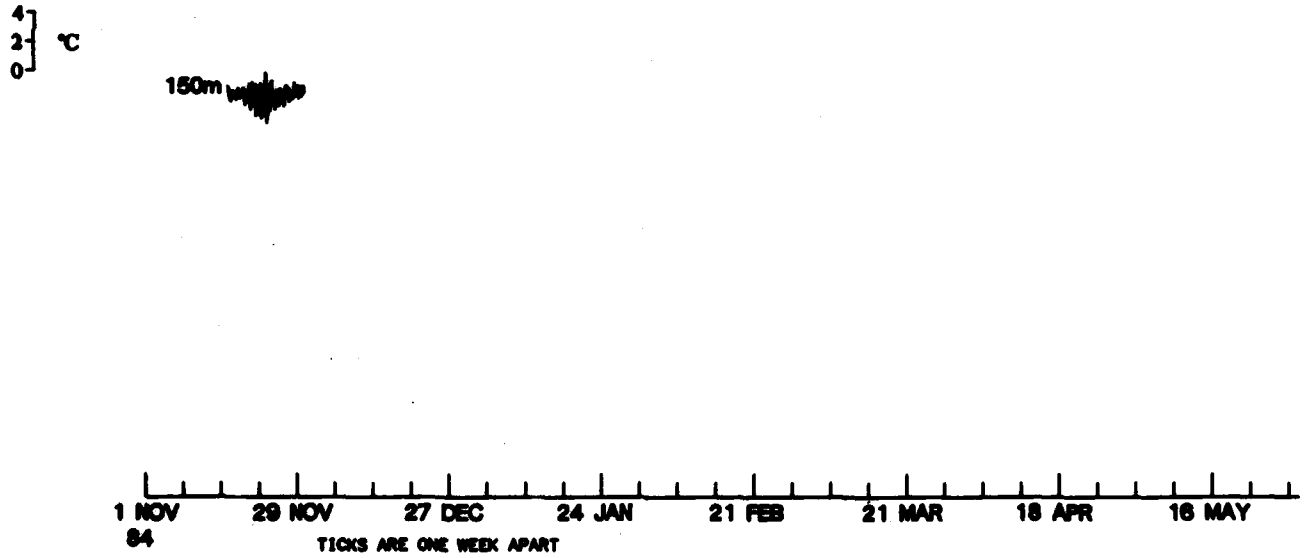
M14 : TEMPERATURE

May - Nov 84



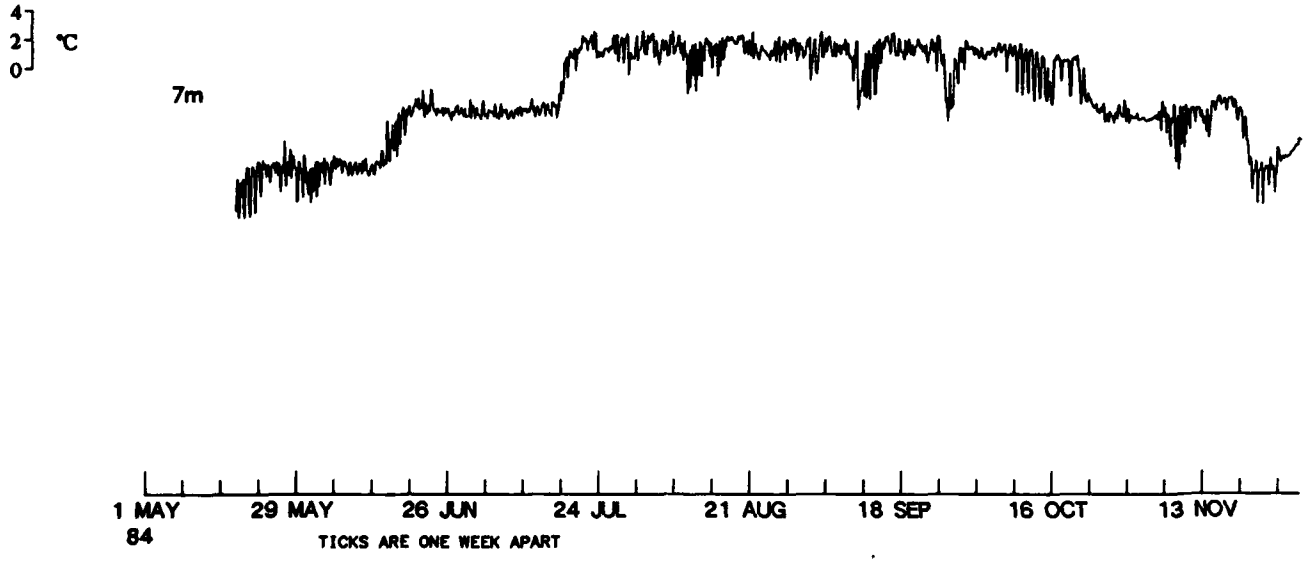
M15 : TEMPERATURE

Nov 84 - May 85

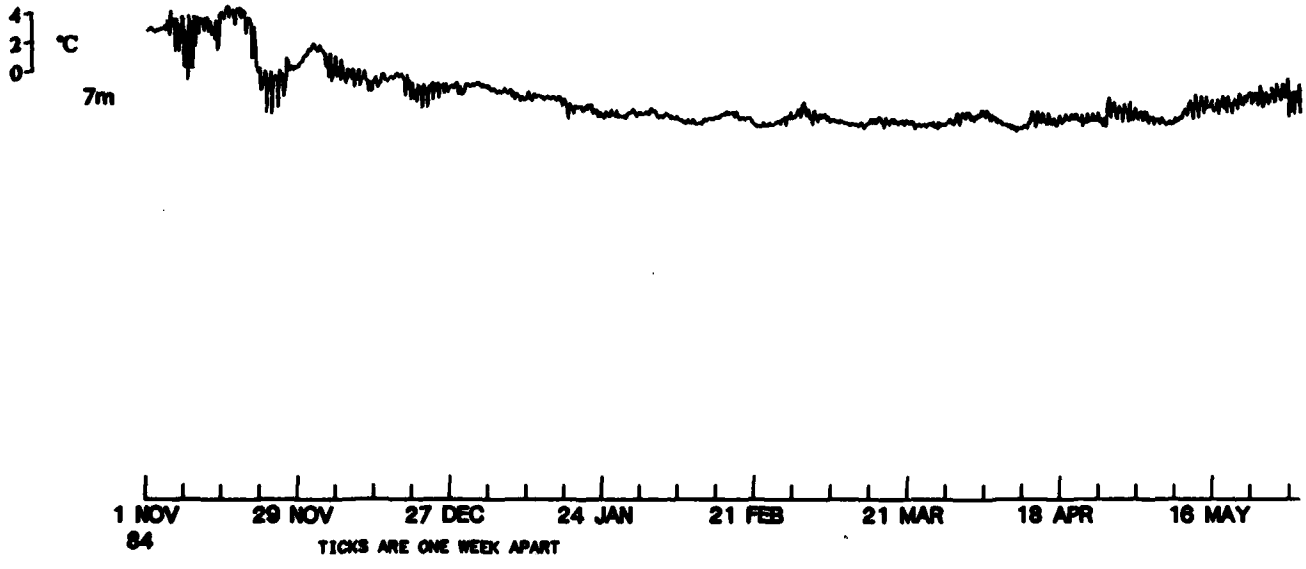


P7 : TEMPERATURE

May - Nov 84

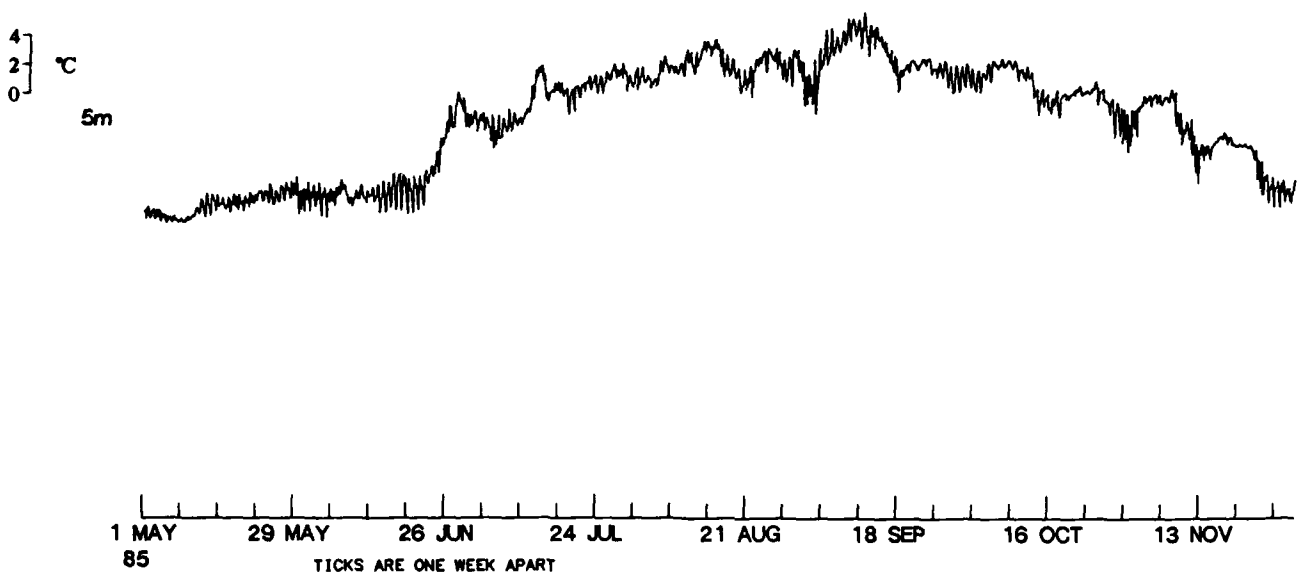


P7 : TEMPERATURE
Nov 84 - May 85



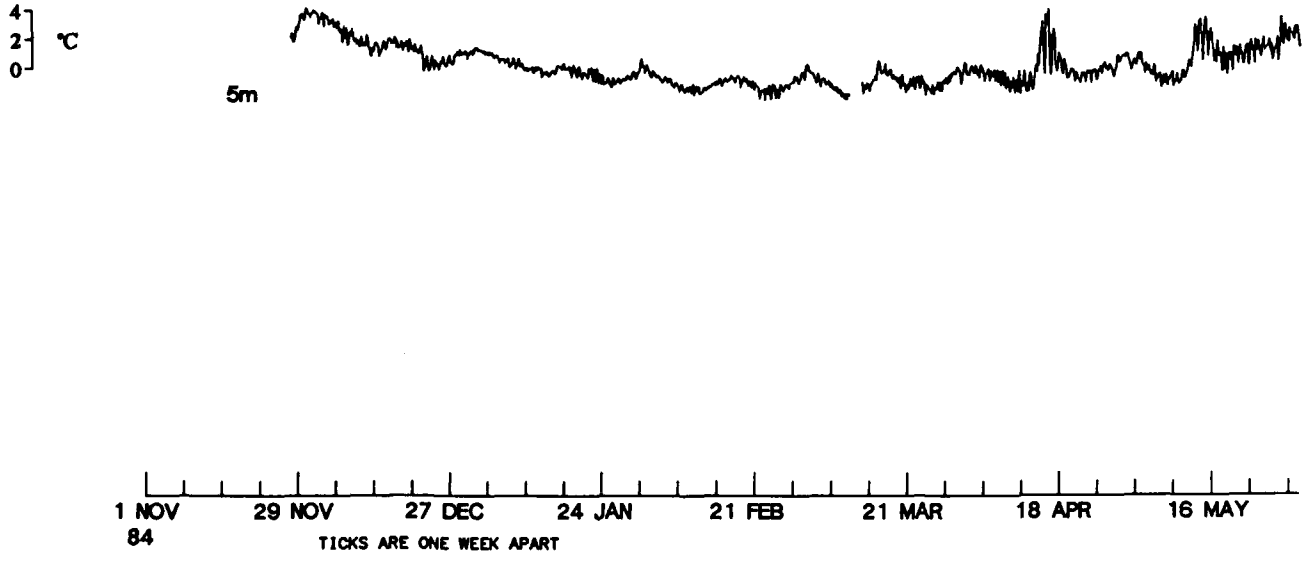
P7 : TEMPERATURE

May - Nov 85



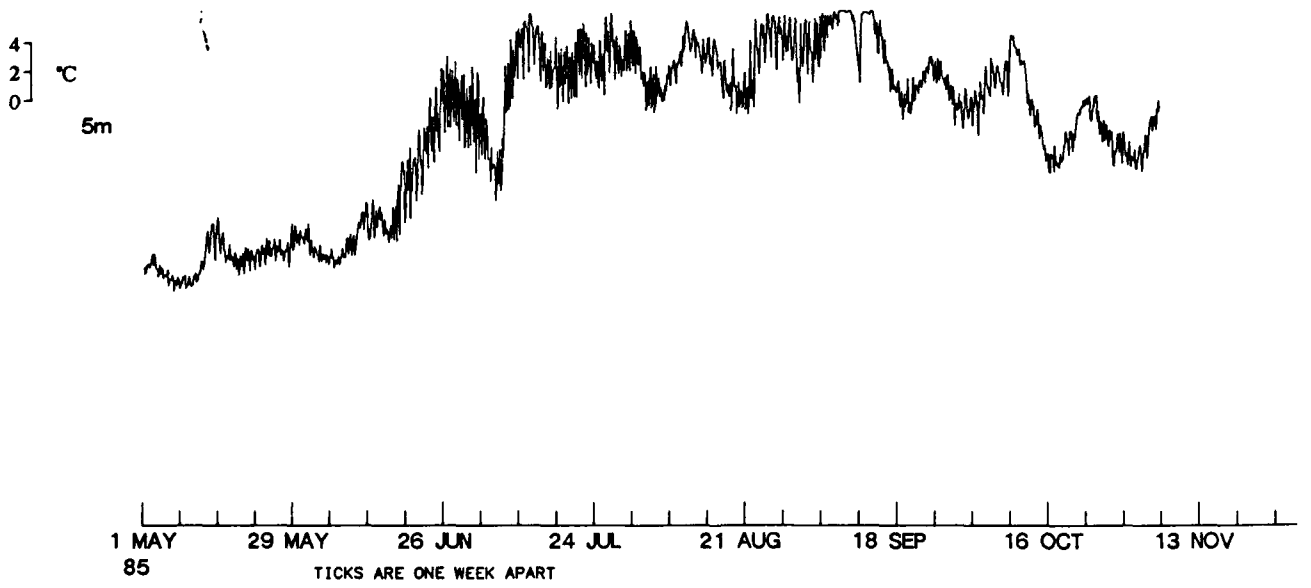
P8 : TEMPERATURE

Nov 84 - May 85



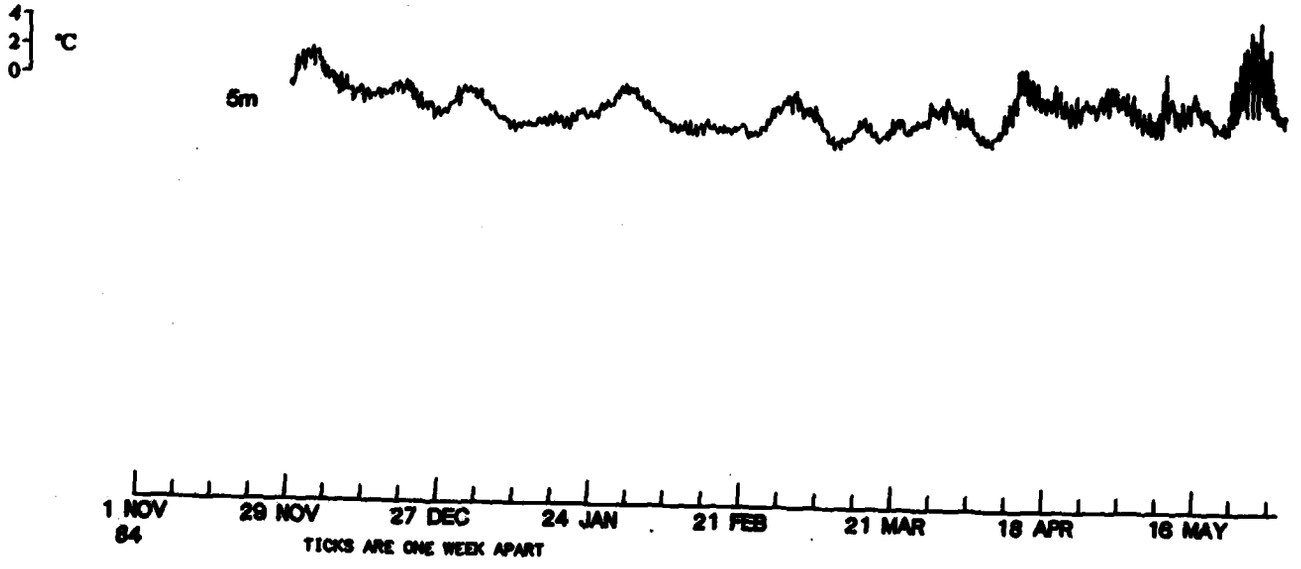
P8 : TEMPERATURE

May - Nov 85



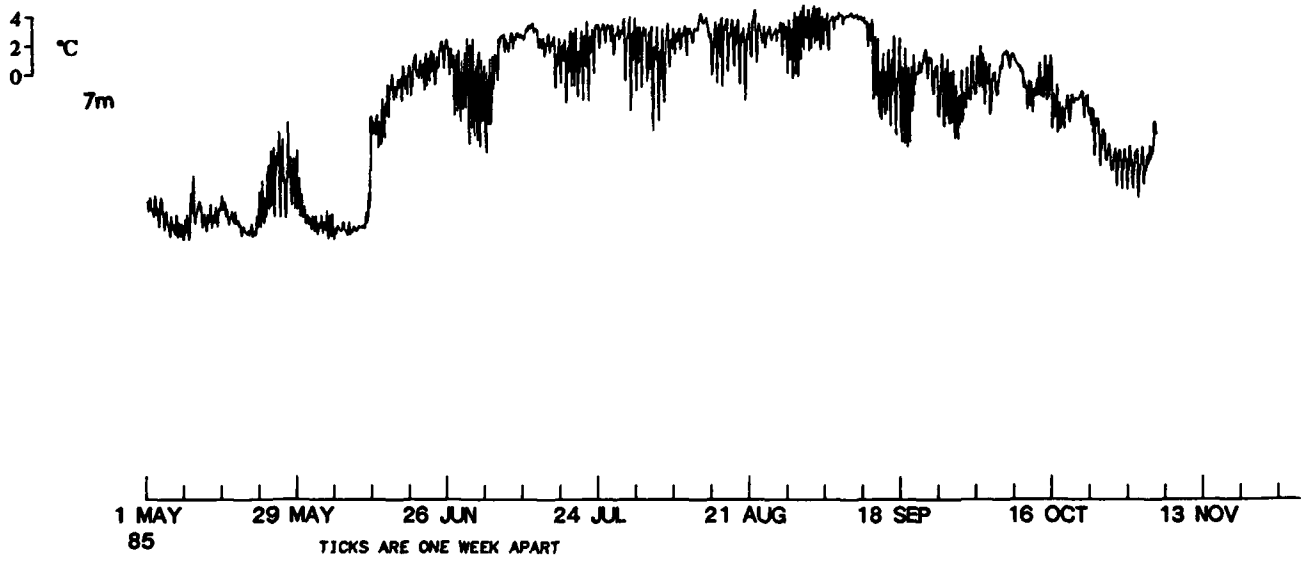
P9 : TEMPERATURE

Nov 84 – May 85



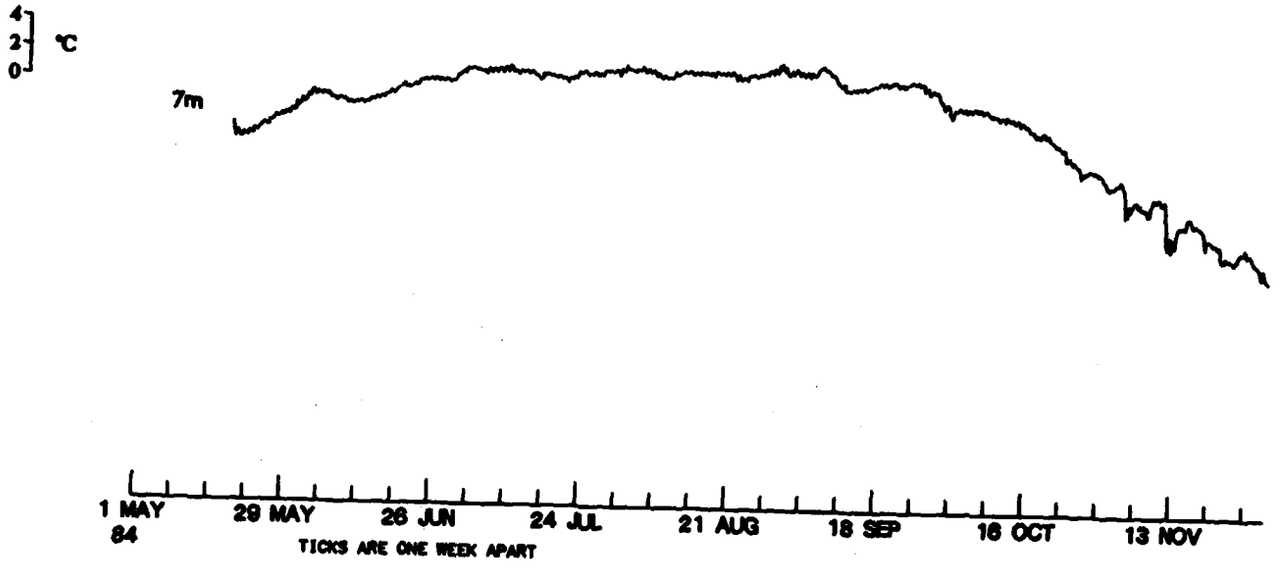
P9 : TEMPERATURE

May - Nov 85



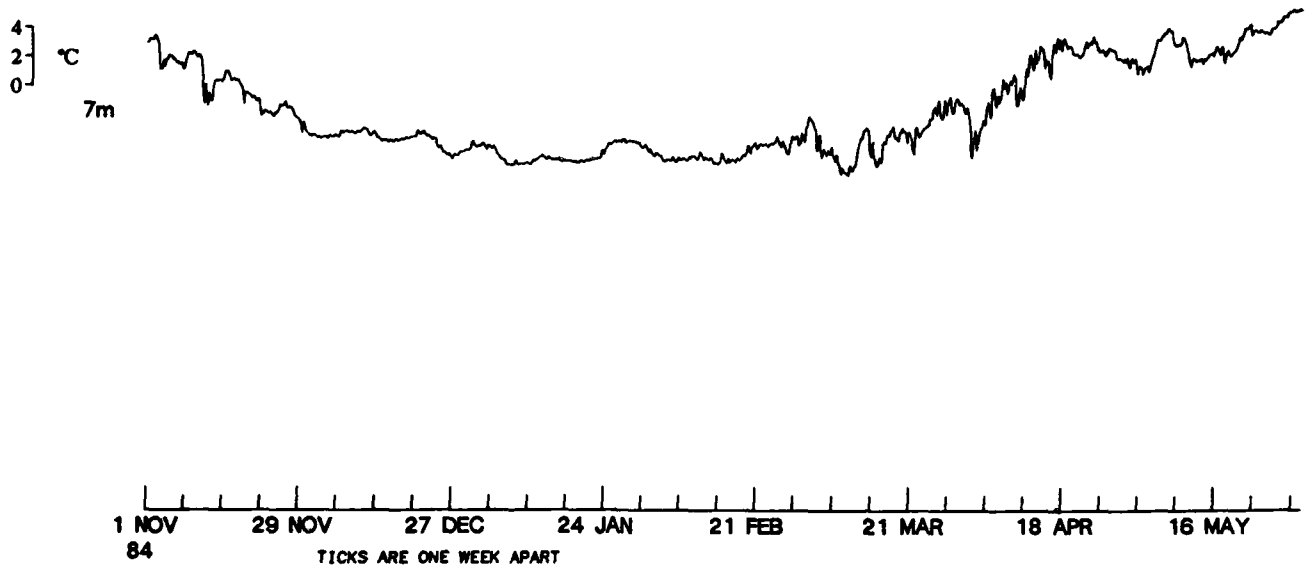
P10 : TEMPERATURE

May - Nov 84



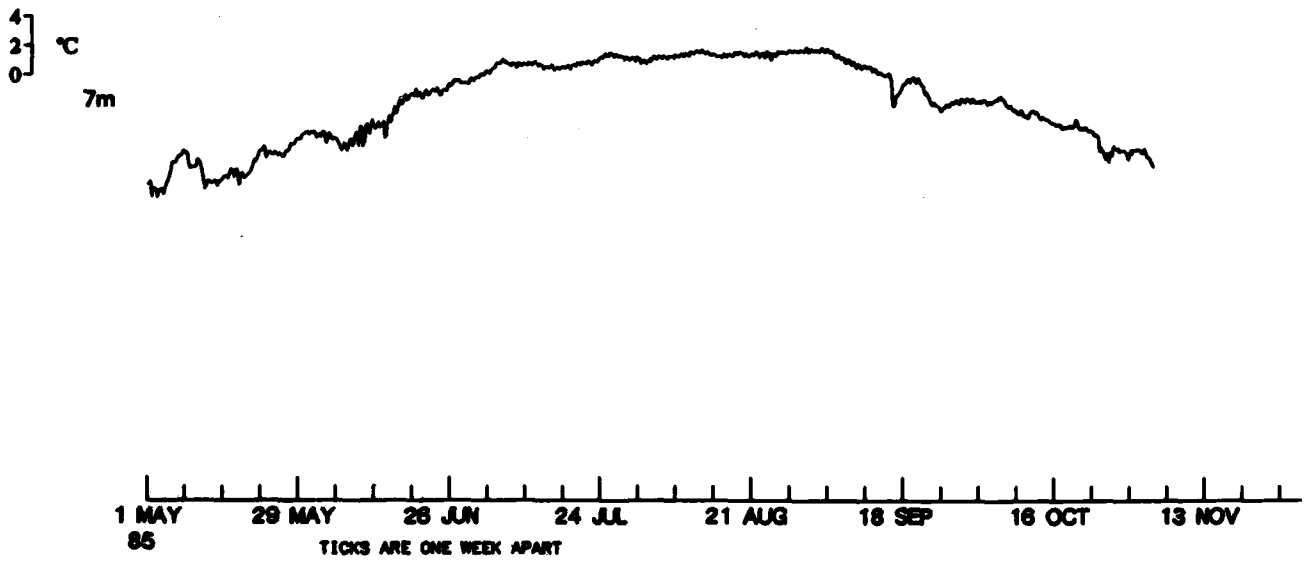
P10 : TEMPERATURE

Nov 84 - May 85



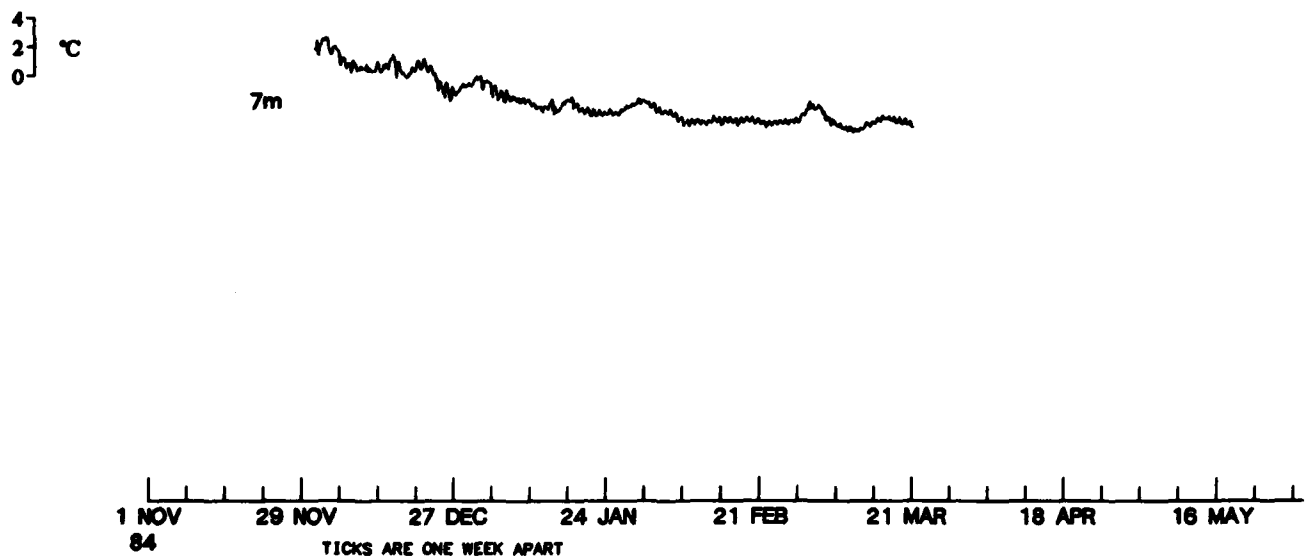
P10 : TEMPERATURE

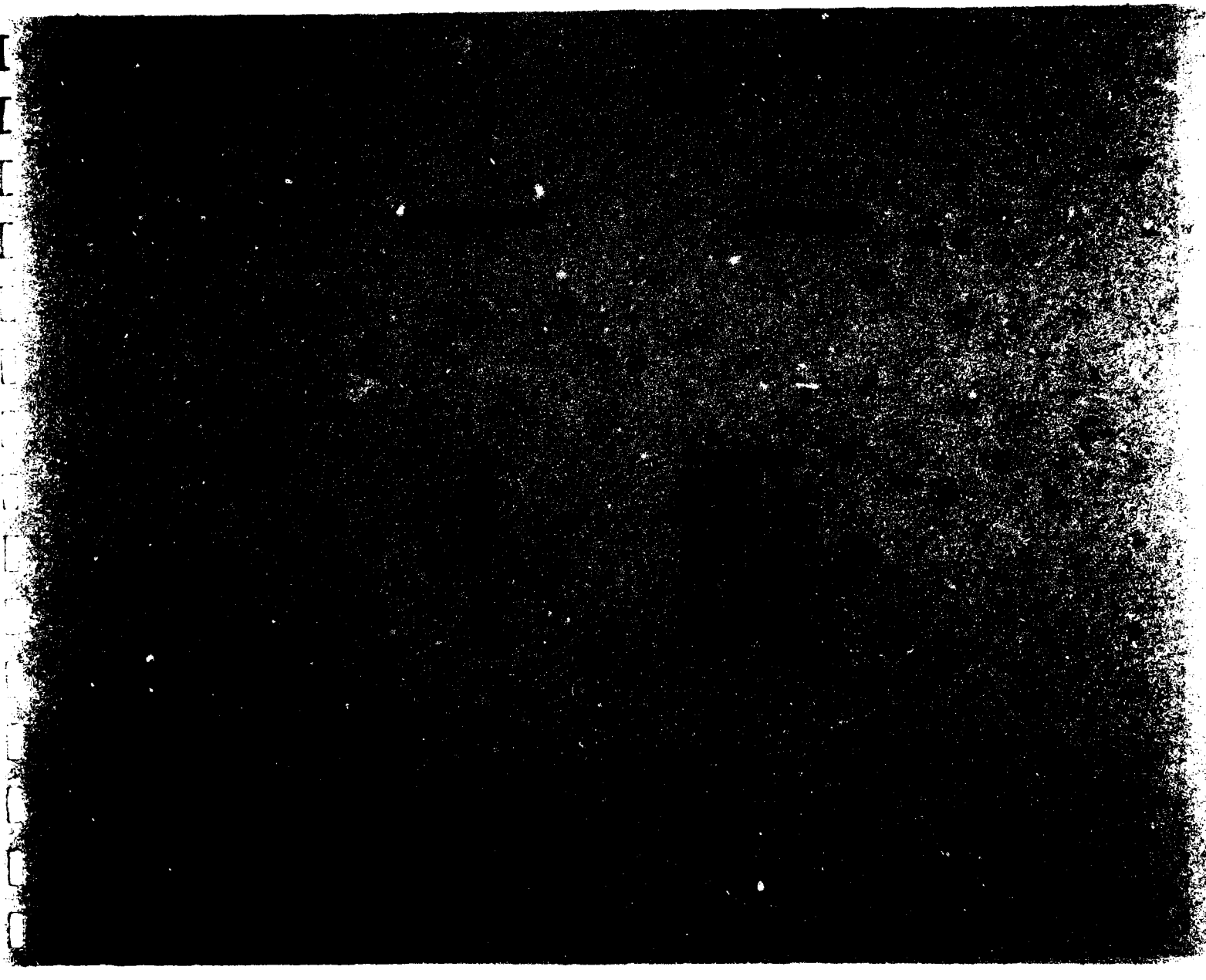
May - Nov 85



P11 : TEMPERATURE

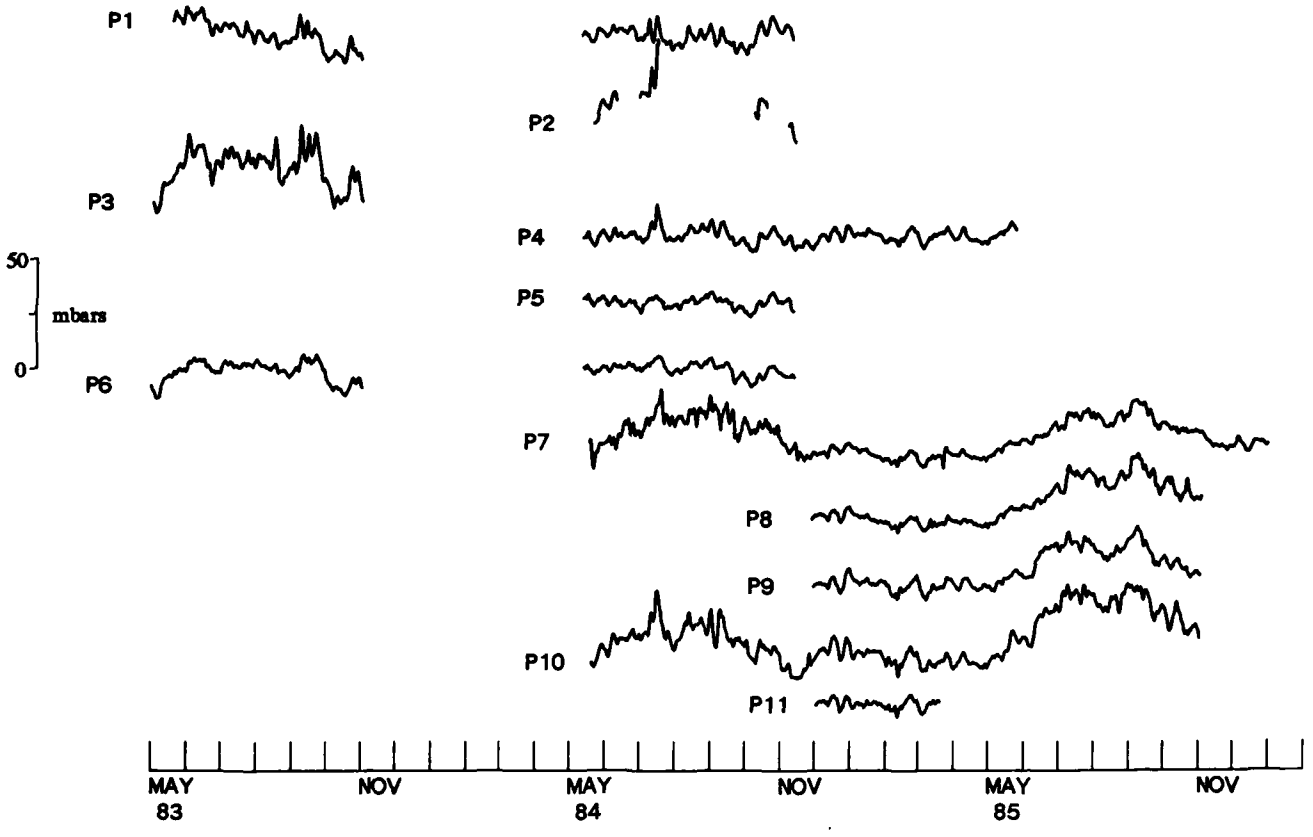
Nov 84 - May 85





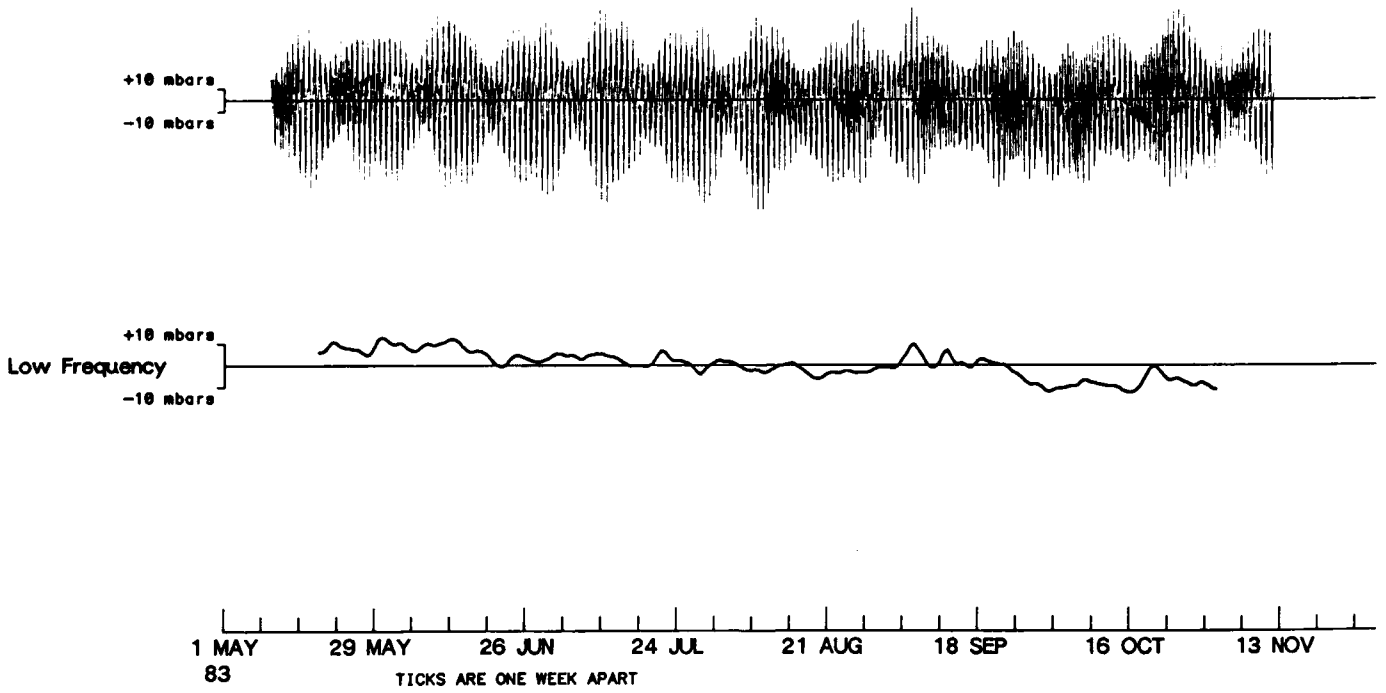
LOW FREQUENCY PRESSURE

May 83 - Jan 86



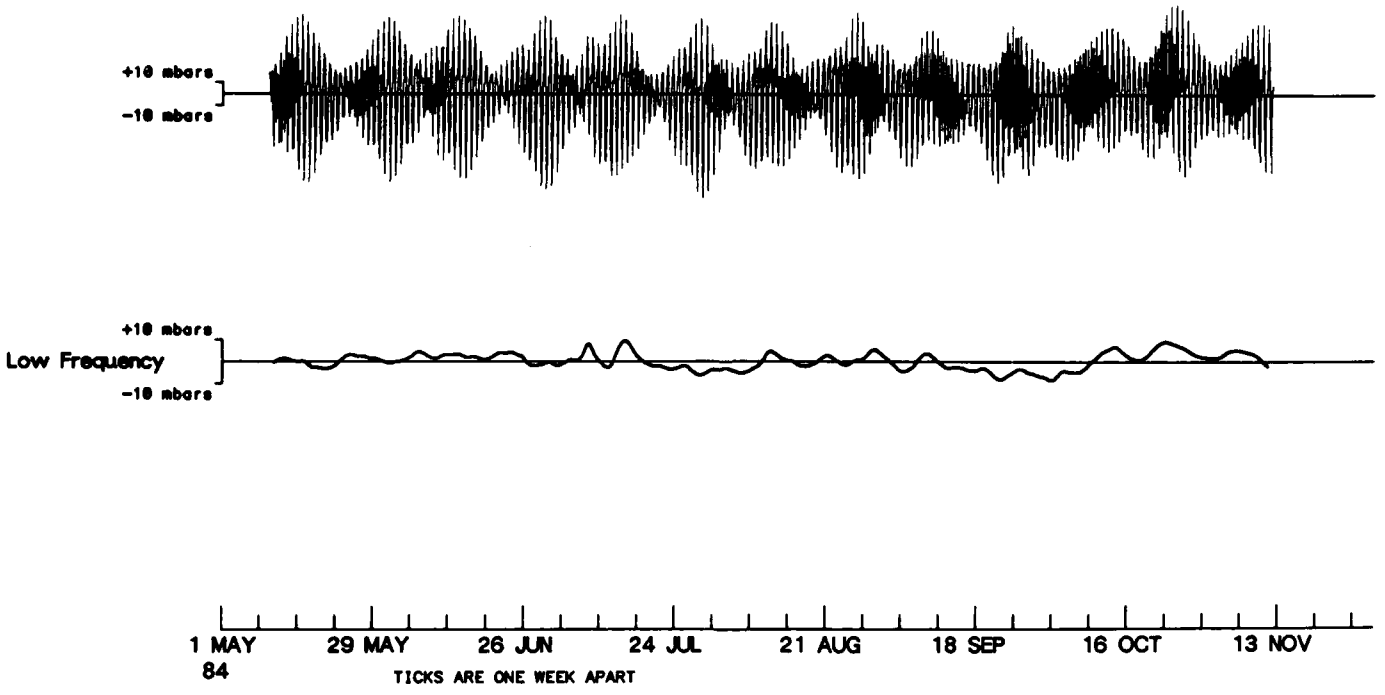
P1 : PRESSURE

depth = 100m May - Nov 83



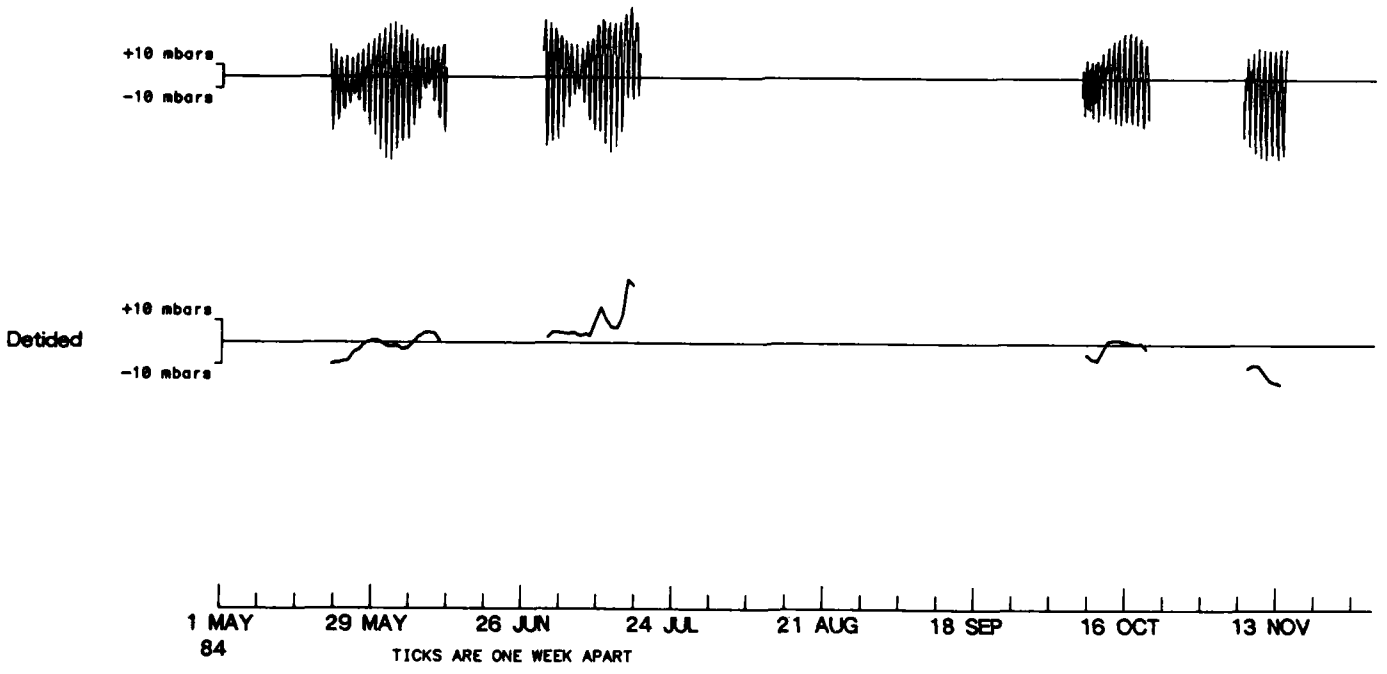
P1 : PRESSURE

depth = 100m May - Nov 84



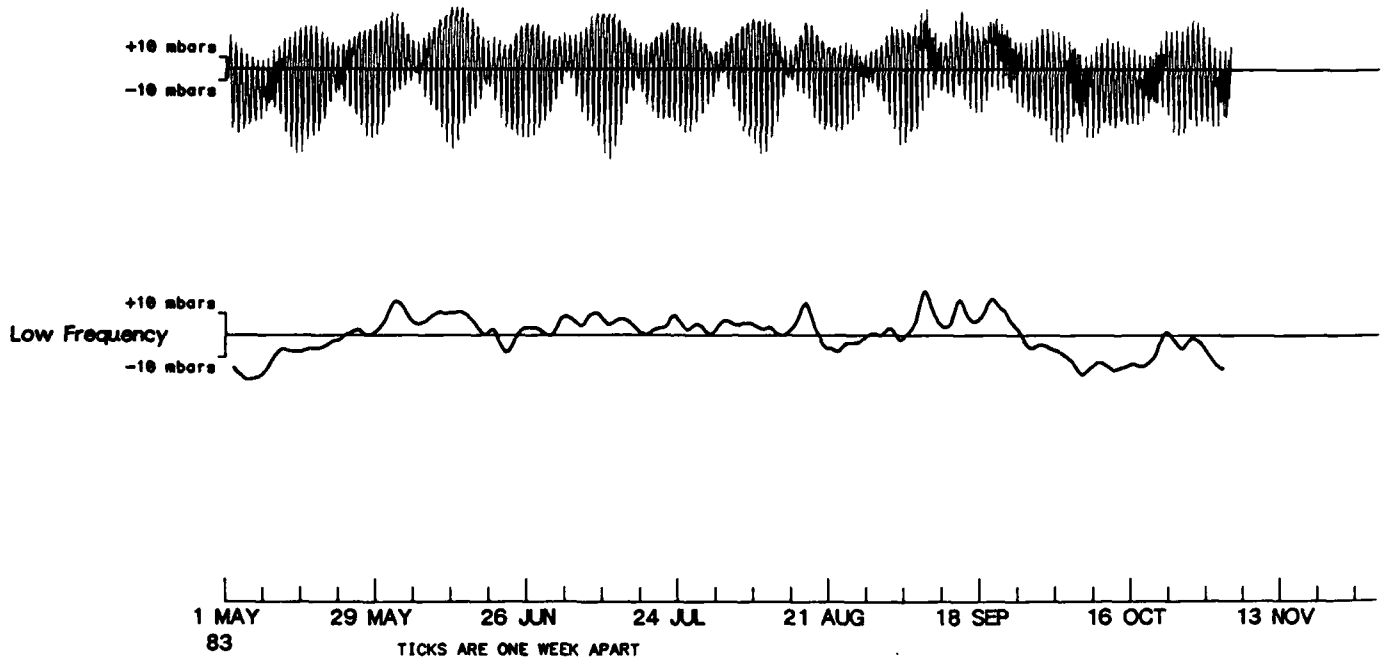
P2 : PRESSURE

depth = 8m May - Nov 84



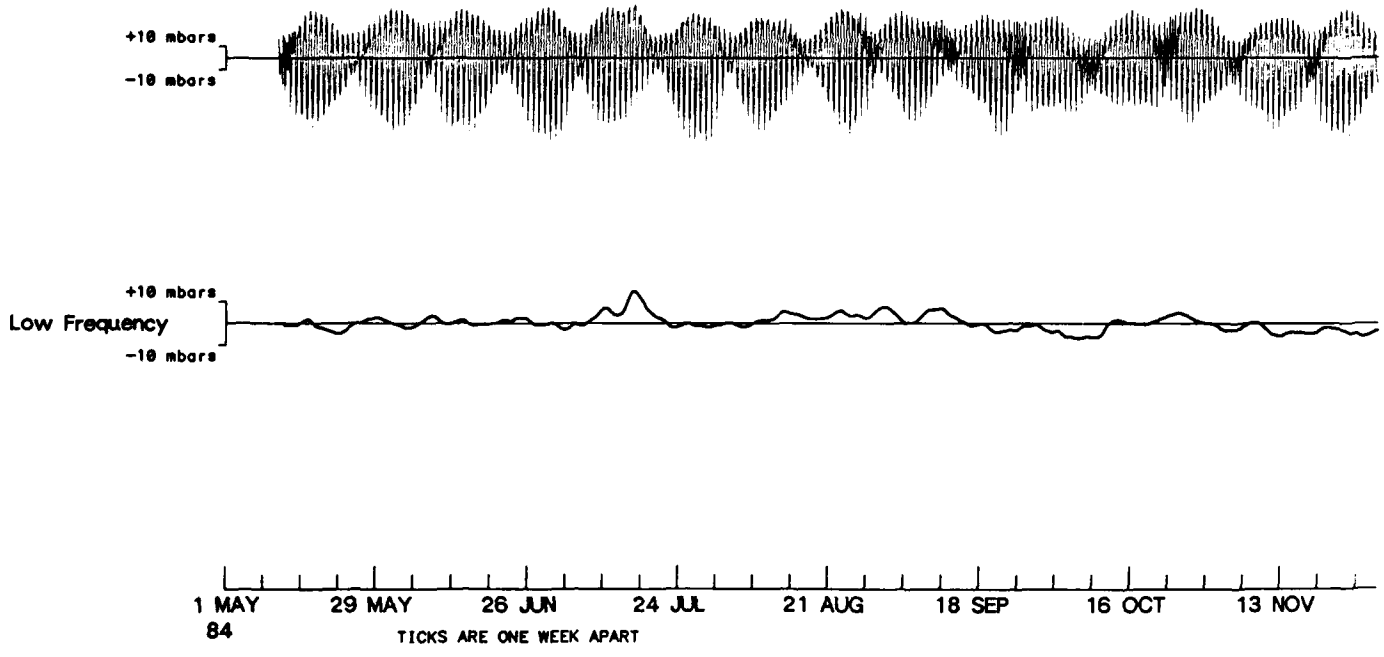
P3 : PRESSURE

depth = 35m May - Nov 83



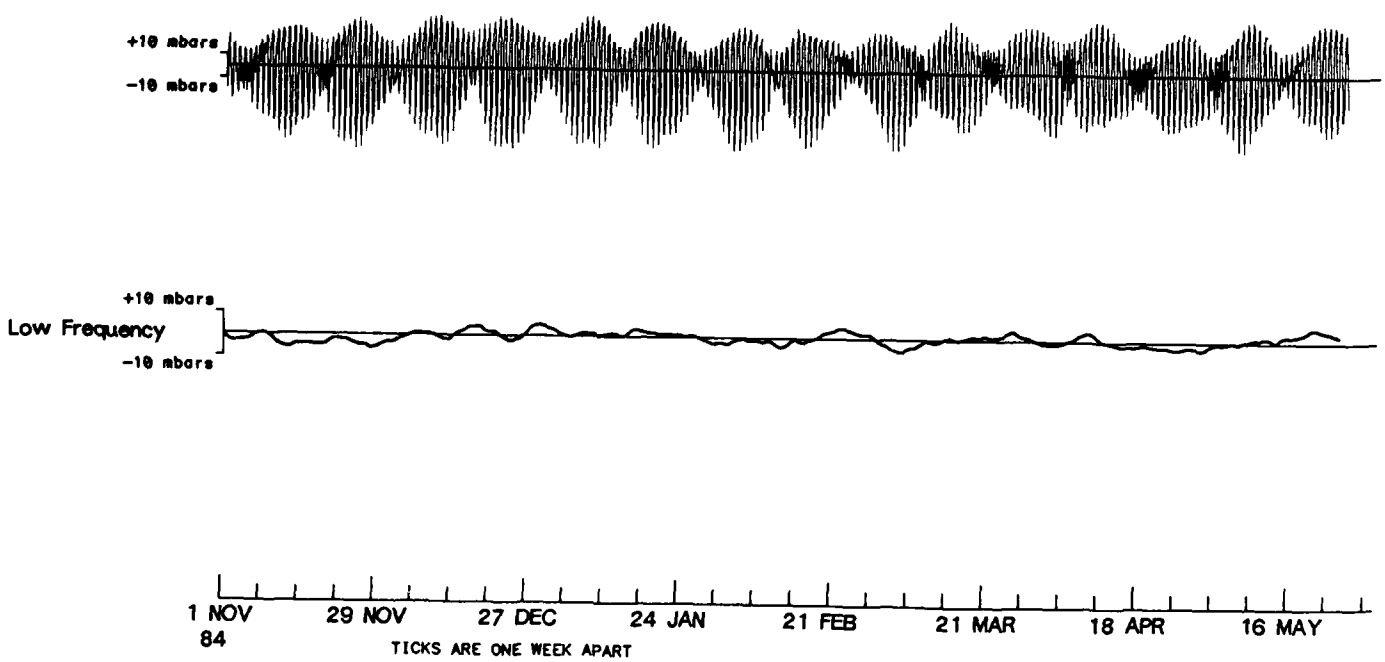
P4 : PRESSURE

depth = 100m May - Nov 84



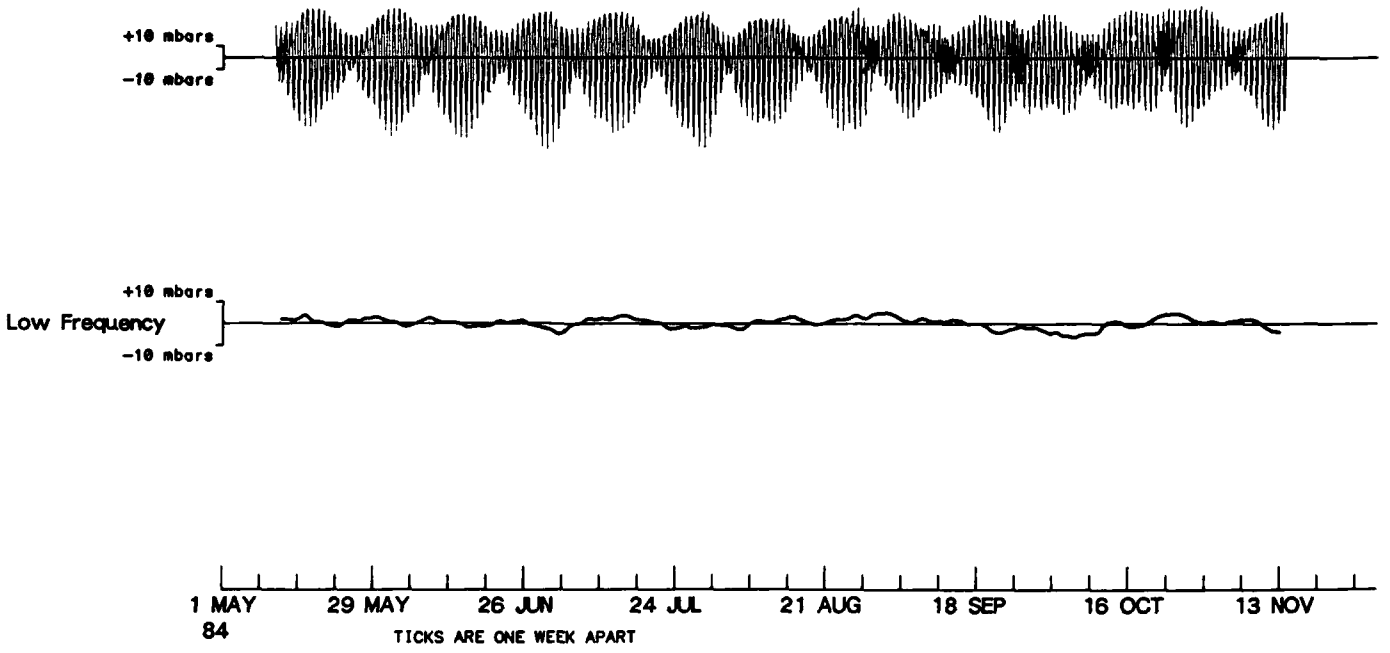
P4 : PRESSURE

depth = 100m Nov 84 - May 85



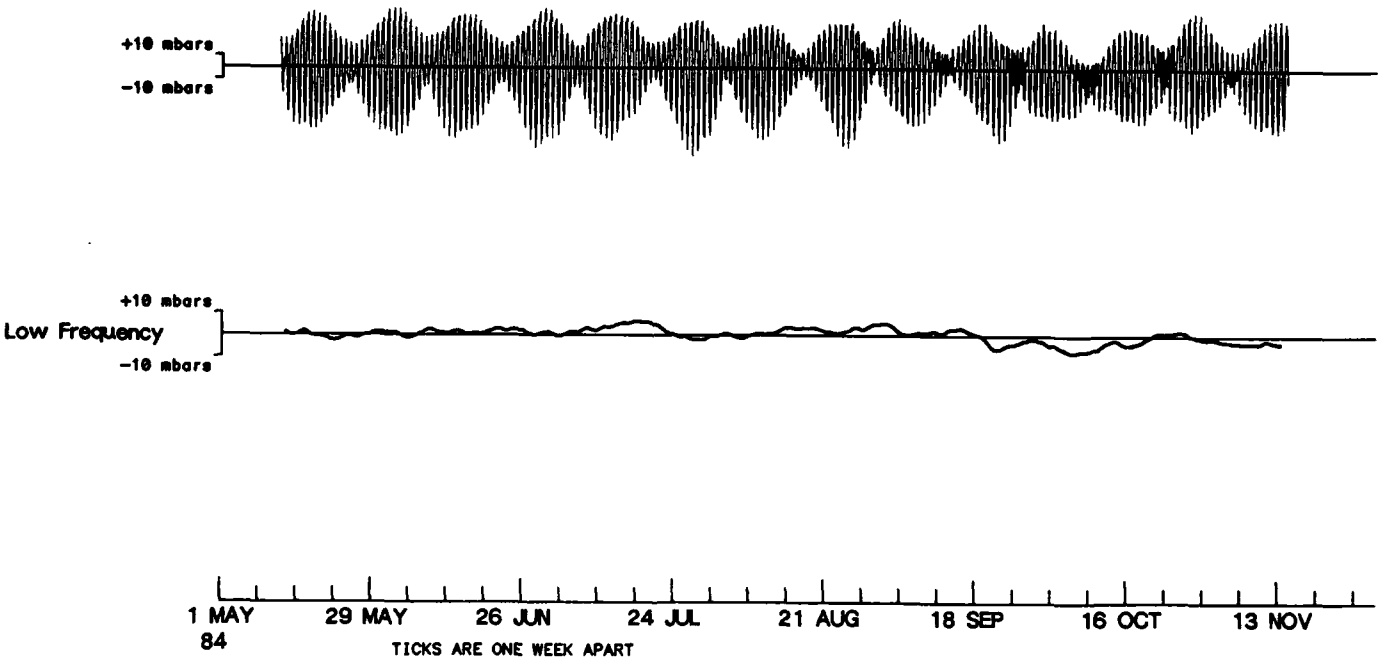
P5 : PRESSURE

depth = 200m May - Nov 84



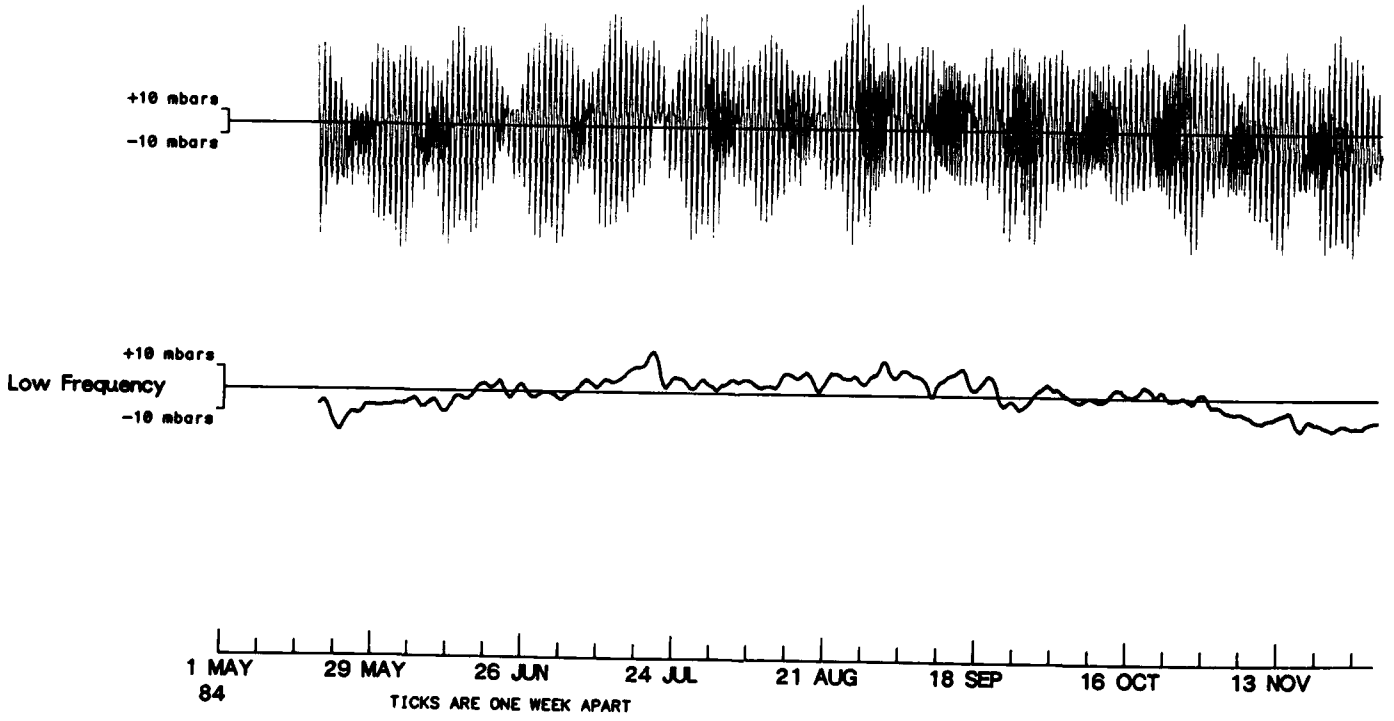
P6 : PRESSURE

depth = 90m May - Nov 84



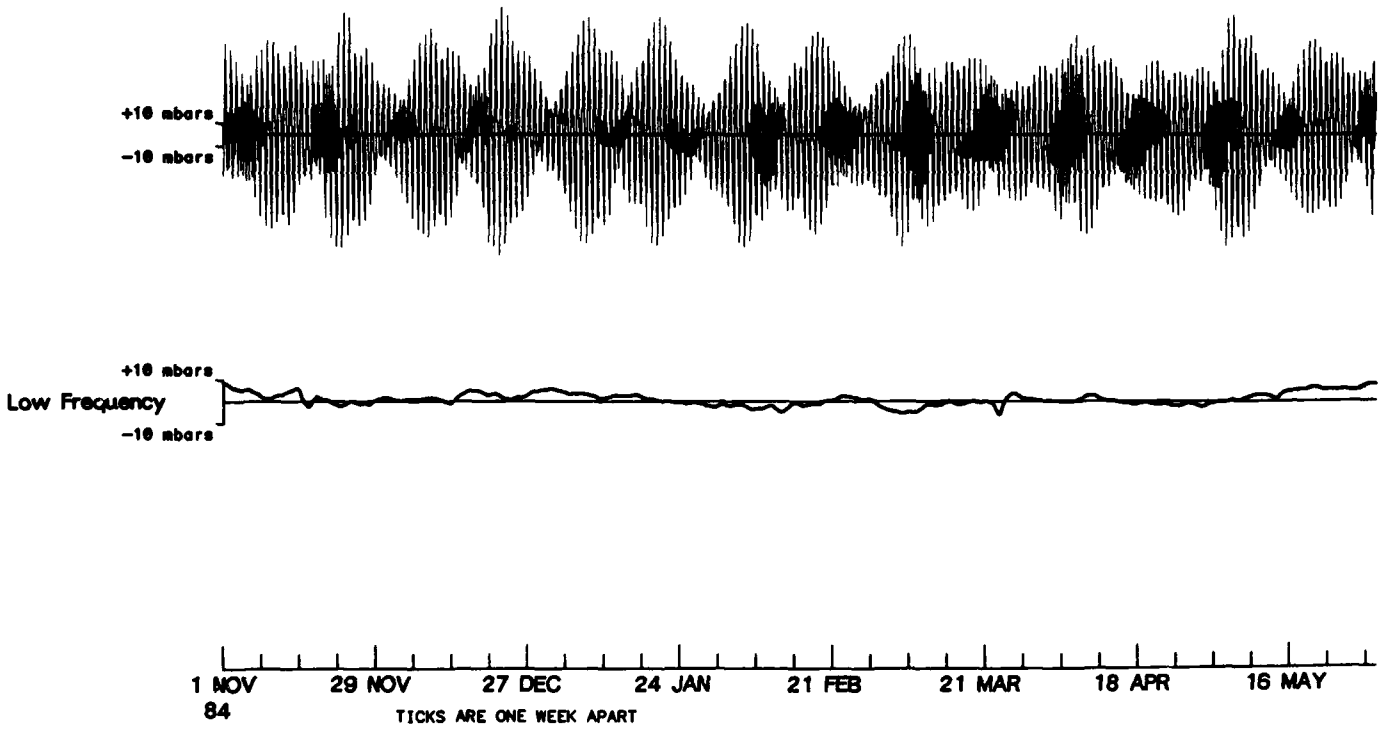
P7 : PRESSURE

depth = 7m May - Nov 84



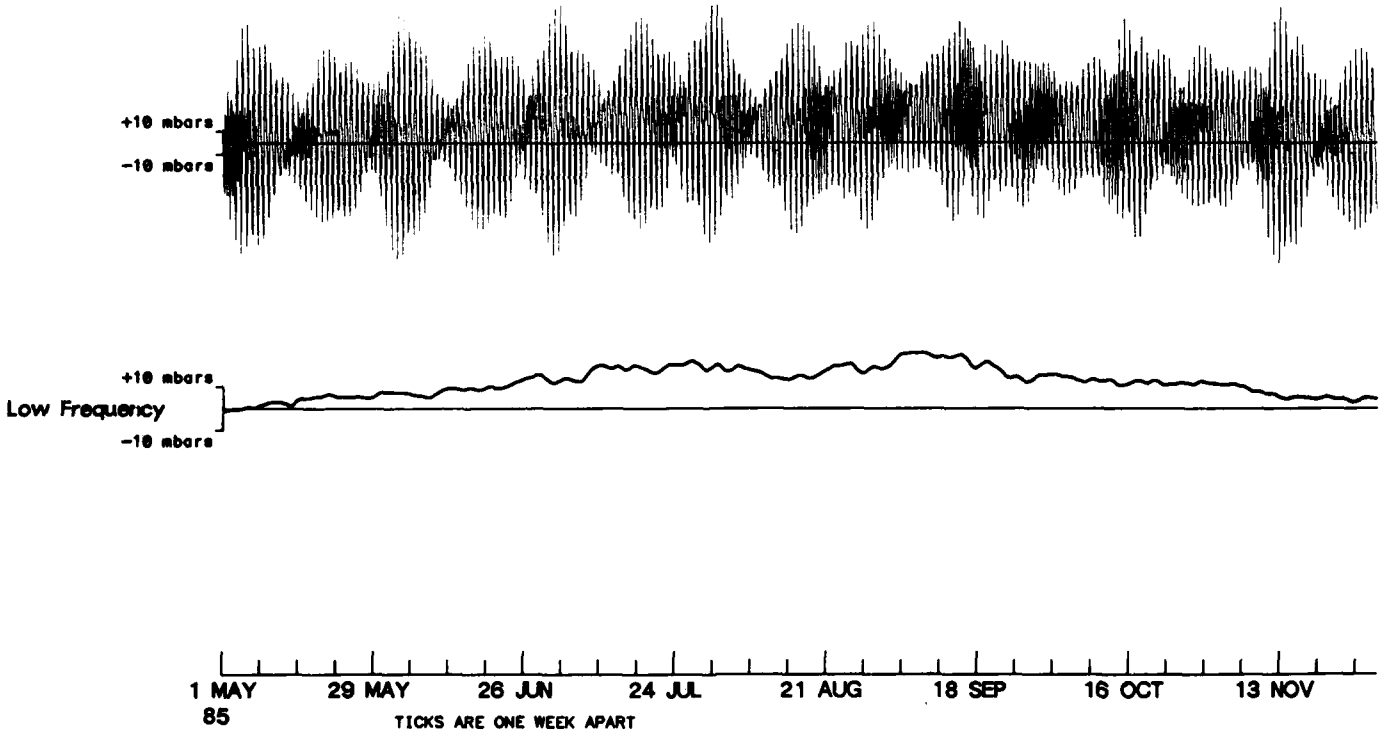
P7 : PRESSURE

depth = 7m Nov 84 - May 85



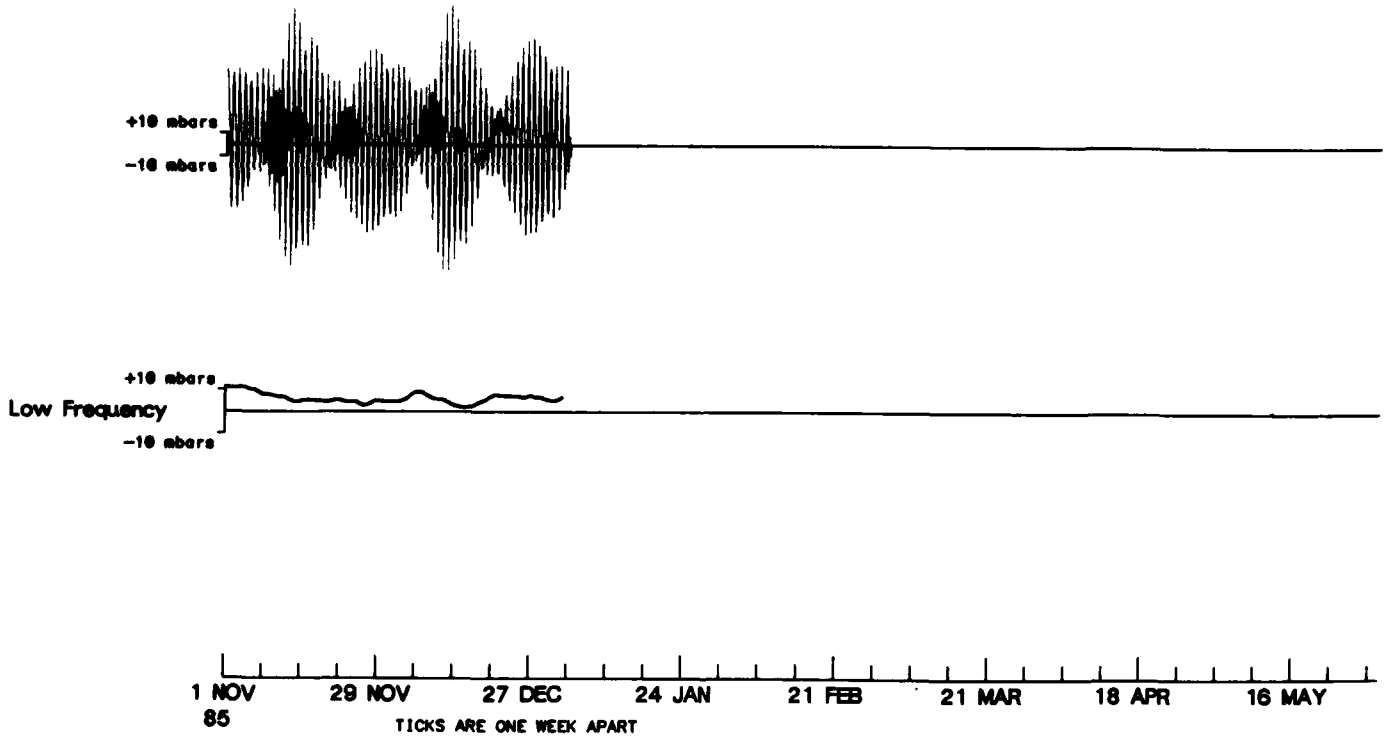
P7 : PRESSURE

depth = 7m May - Nov 85



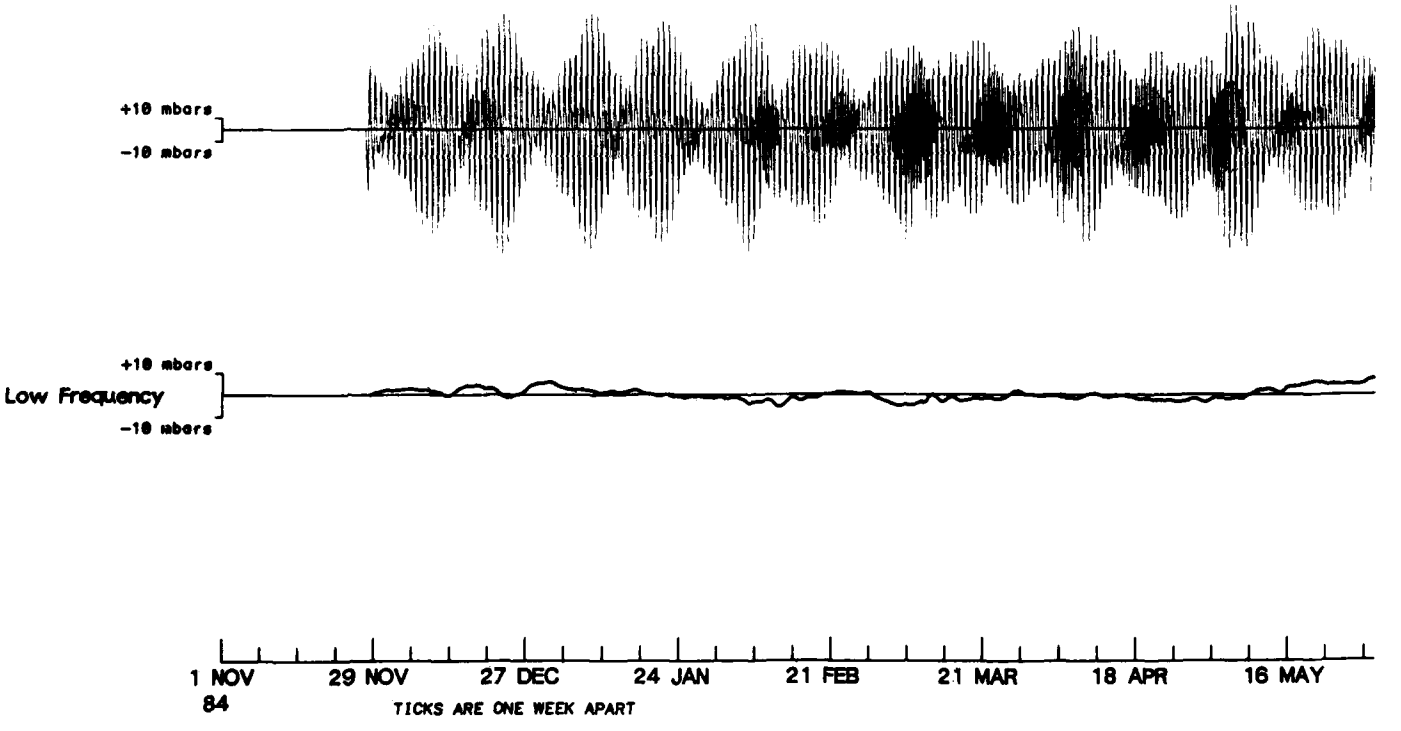
P7 : PRESSURE

depth = 7m Nov 85 - May 86



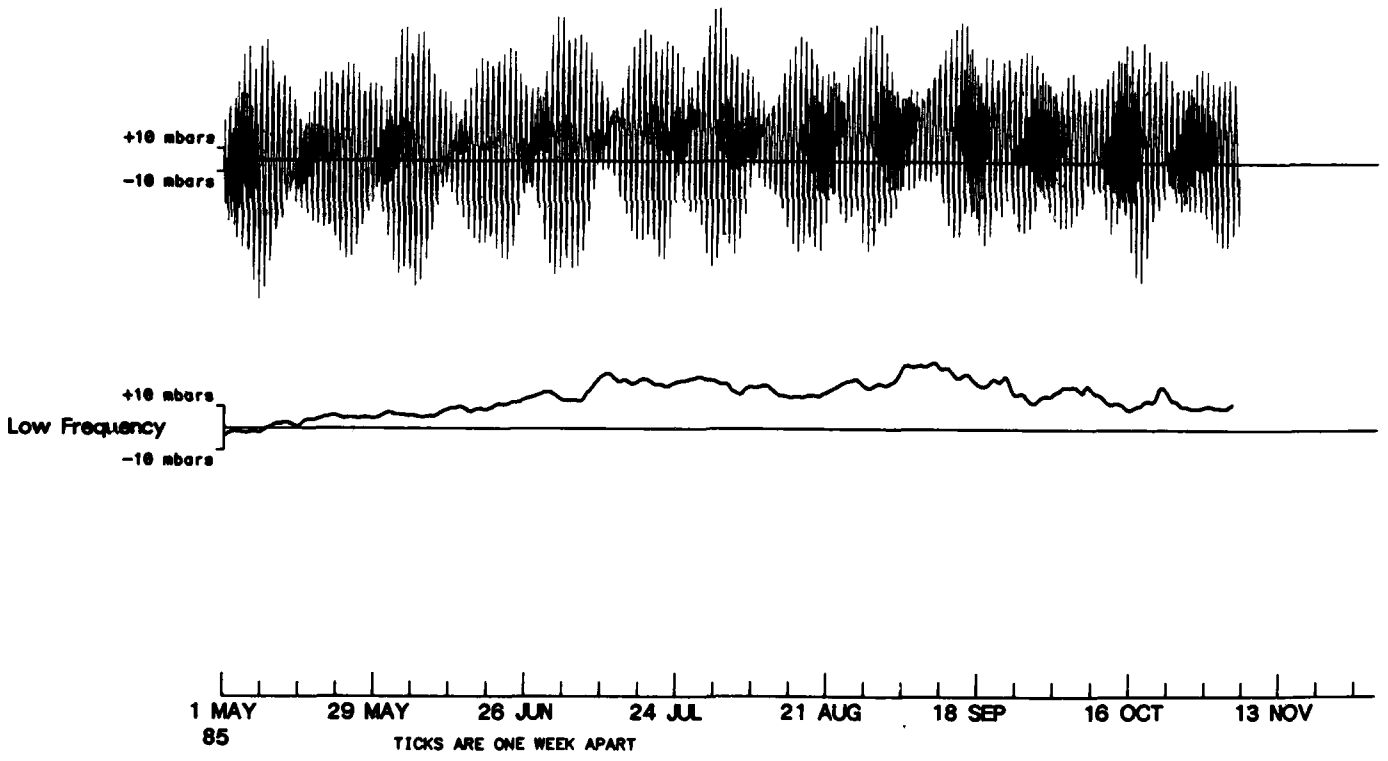
P8 : PRESSURE

depth = 5m Nov 84 - May 85



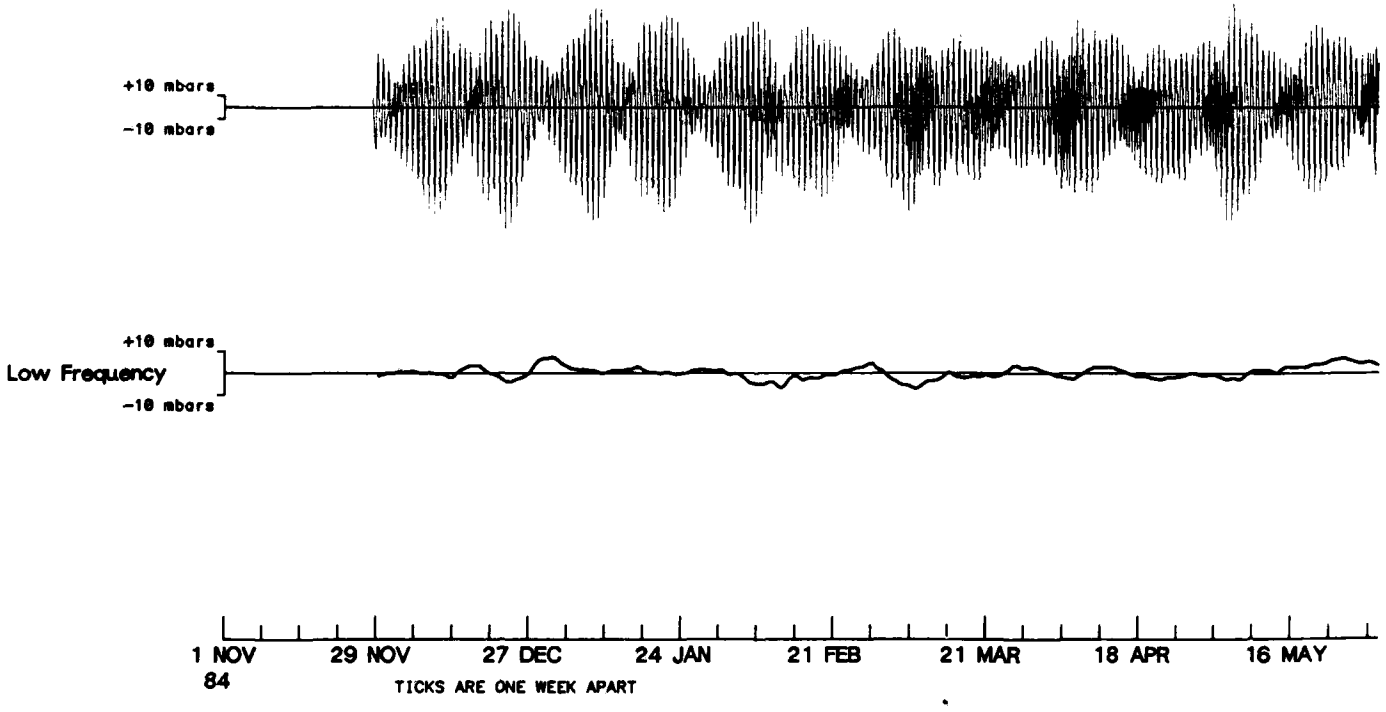
P8 : PRESSURE

depth = 5m May - Nov 85



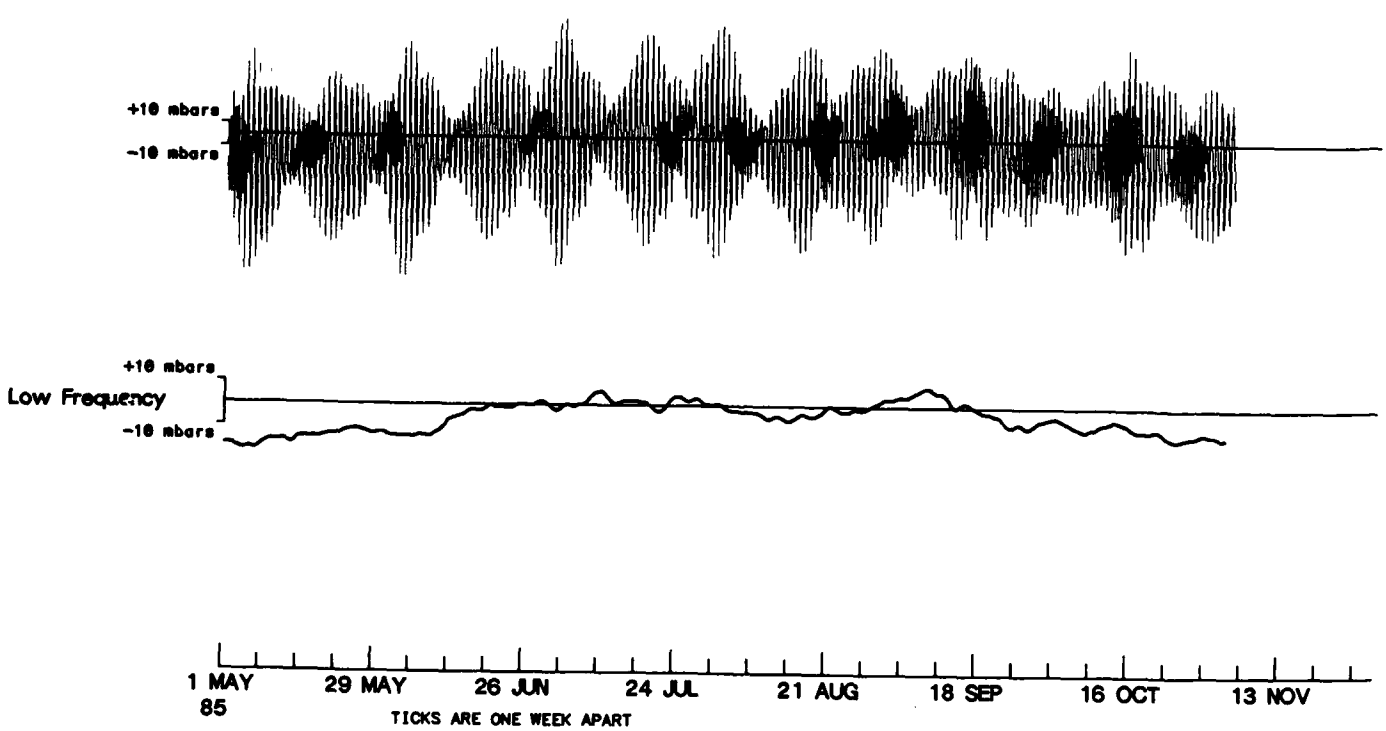
P9 : PRESSURE

depth = 5m Nov 84 - May 85



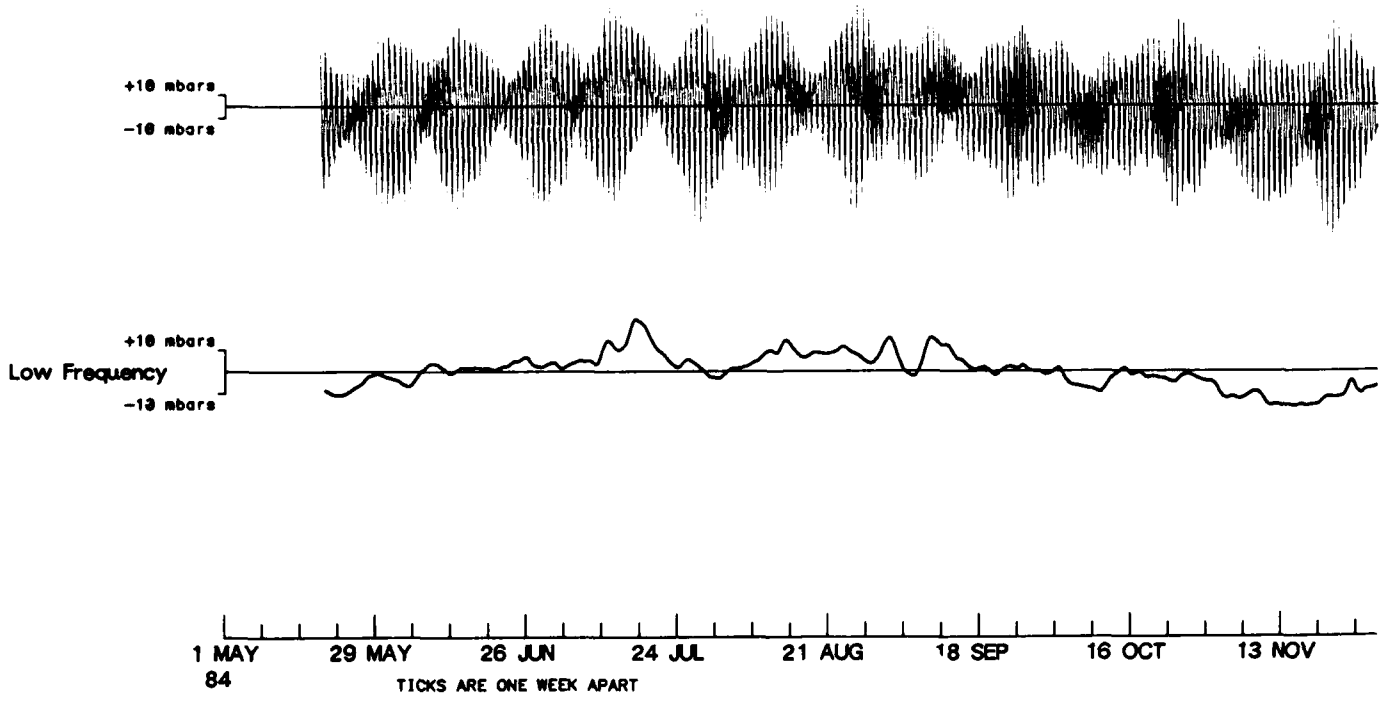
P9 : PRESSURE

depth = 5m May - Nov 85



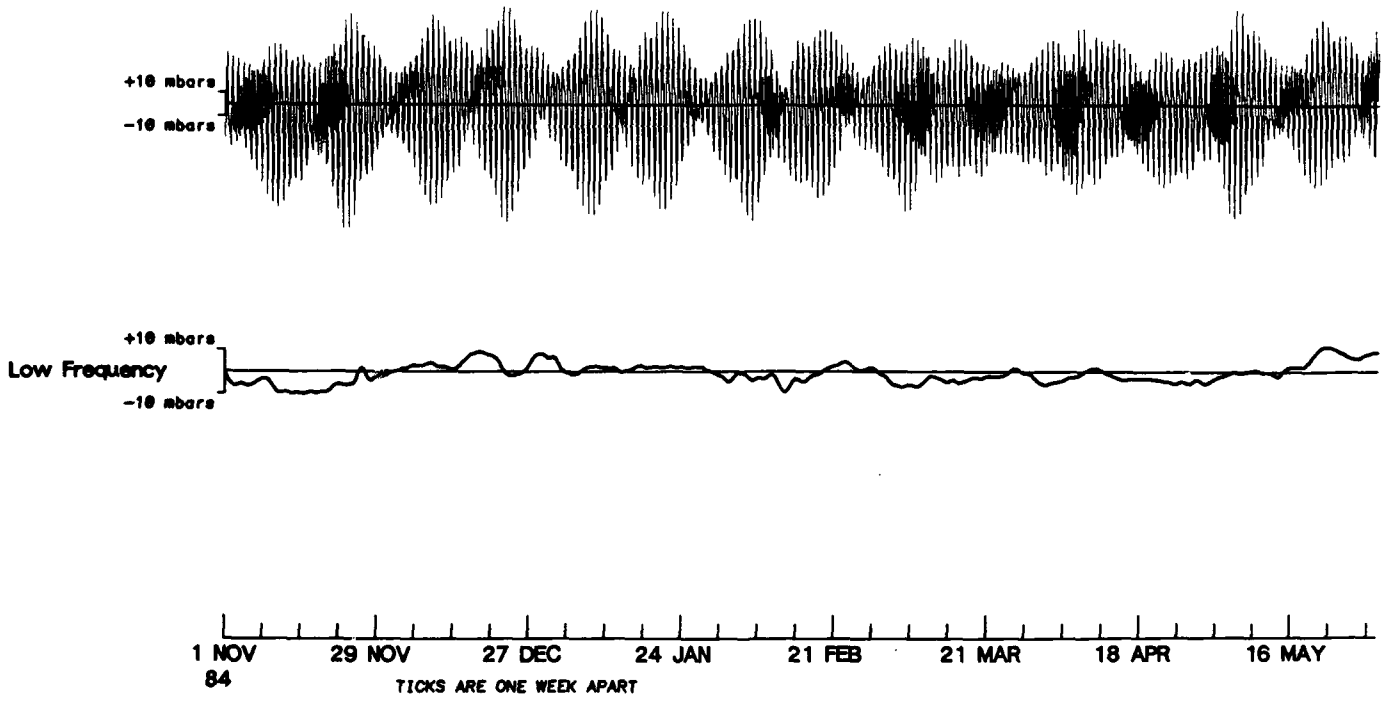
P10 : PRESSURE

depth = 7m May - Nov 84



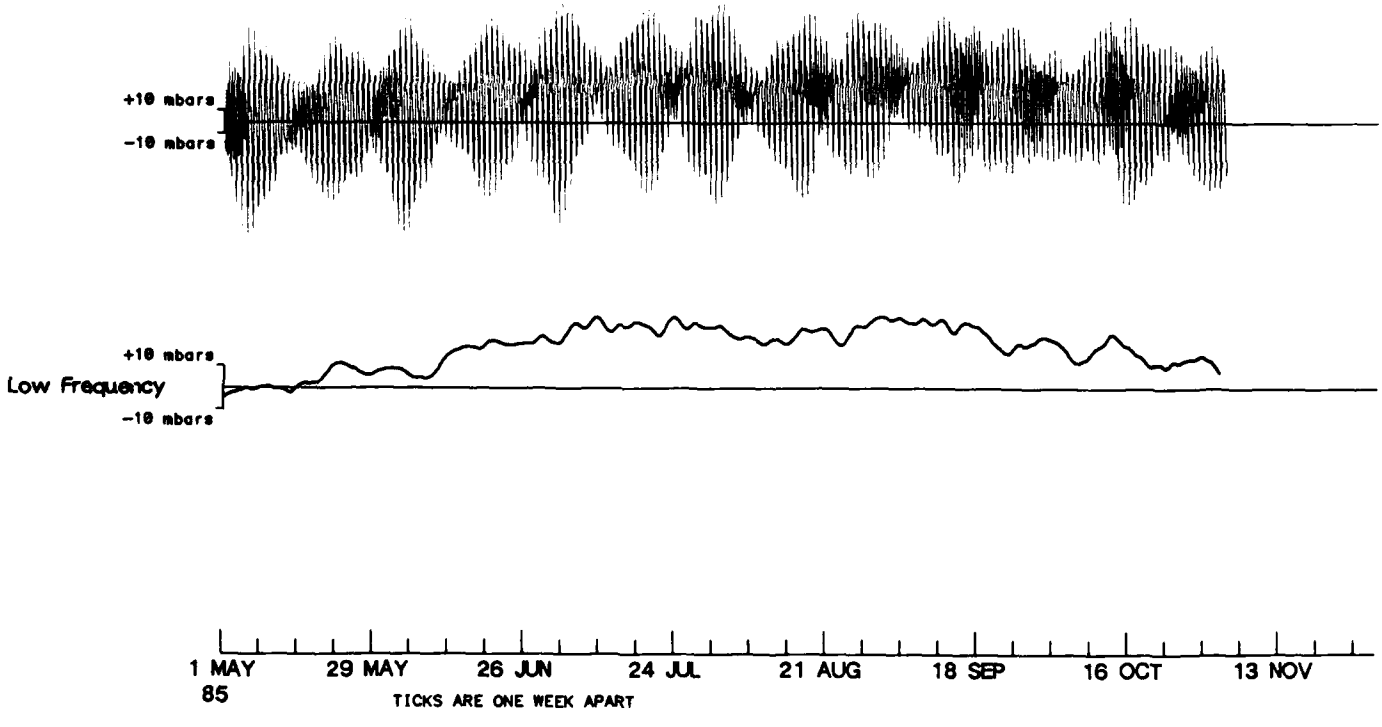
P10 : PRESSURE

depth = 7m Nov 84 - May 85



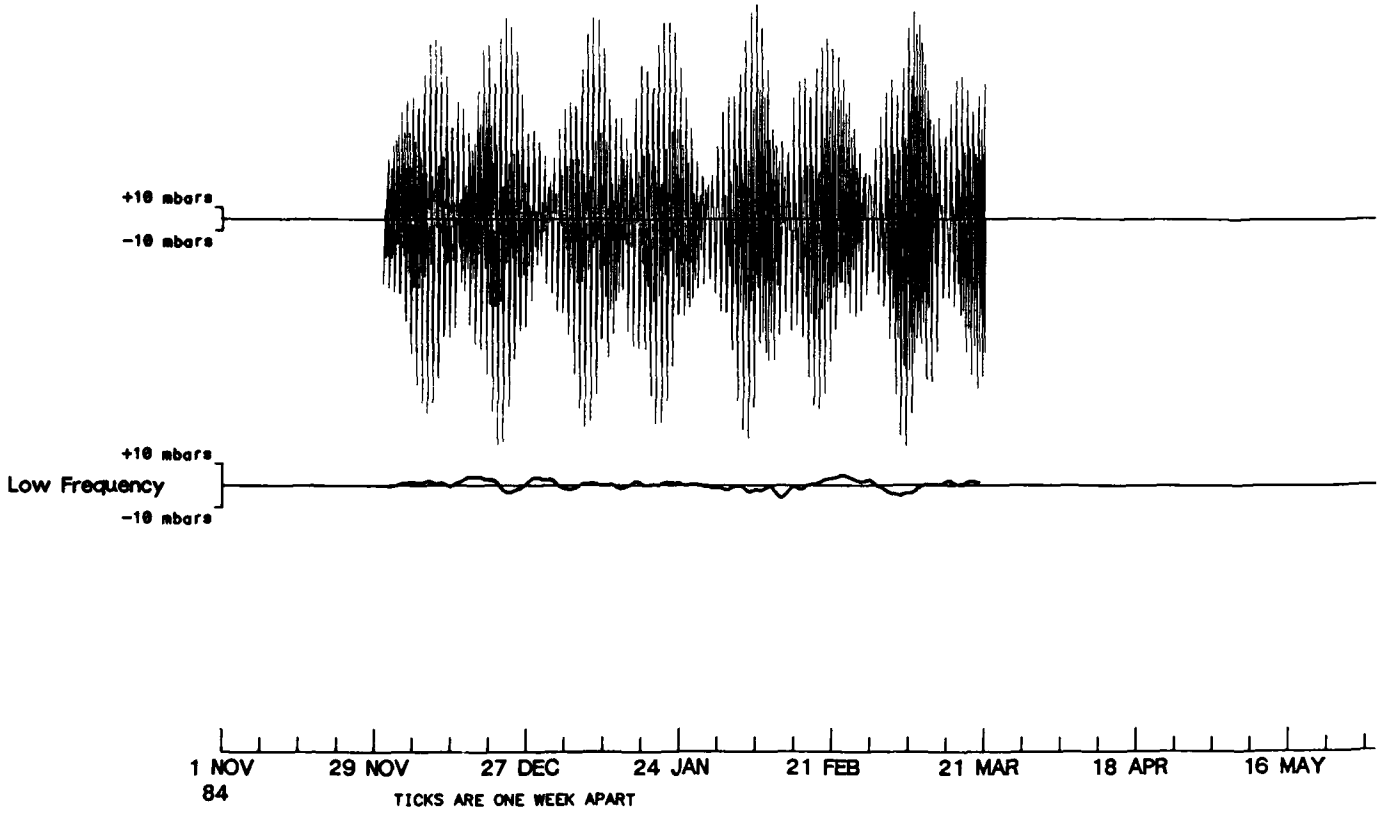
P10 : PRESSURE

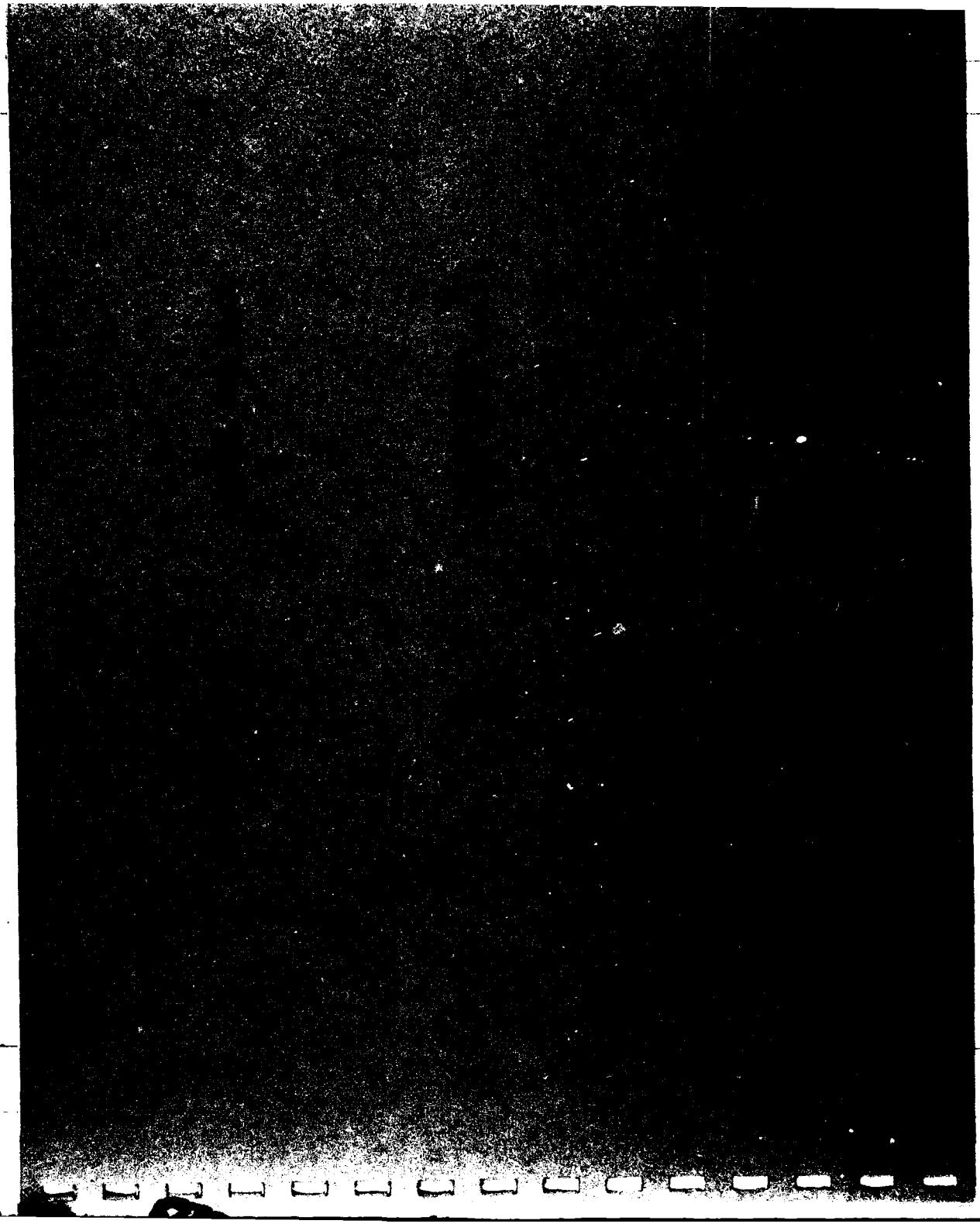
depth = 7m May - Nov 85



P11 : PRESSURE

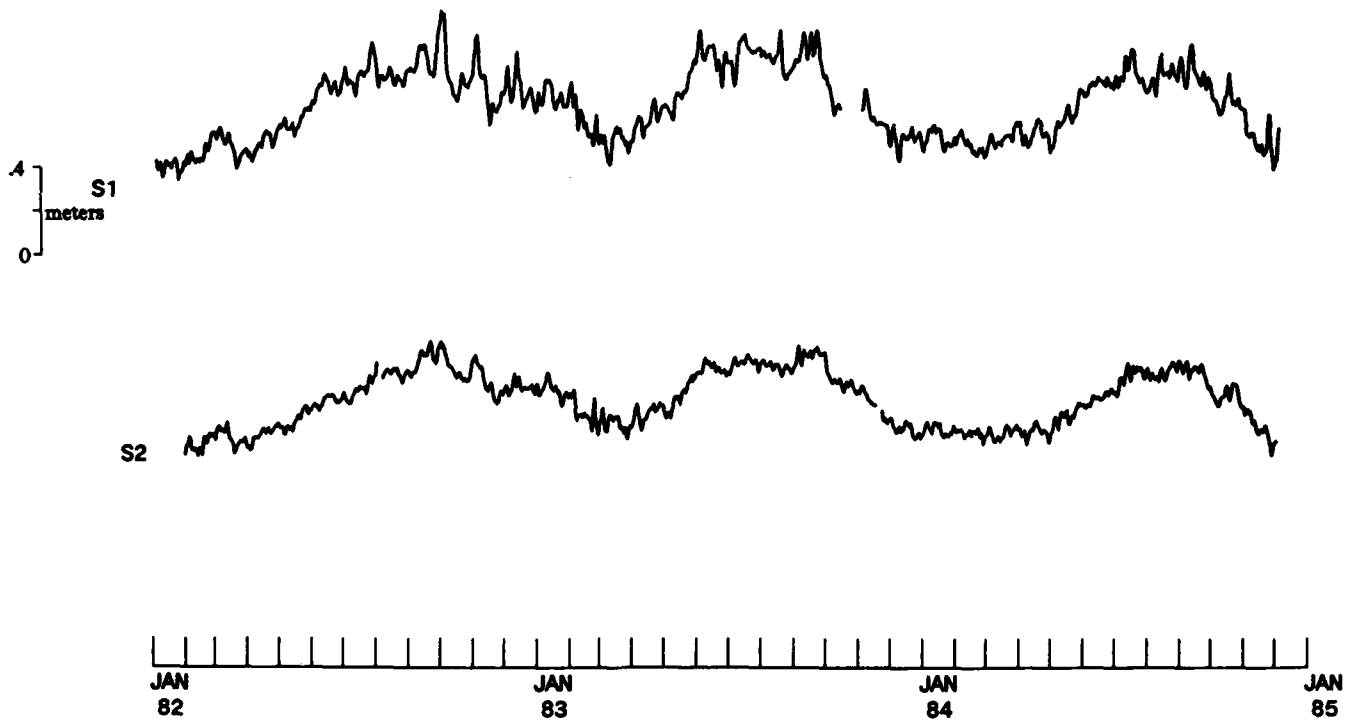
depth = 5m Nov 84 - May 85





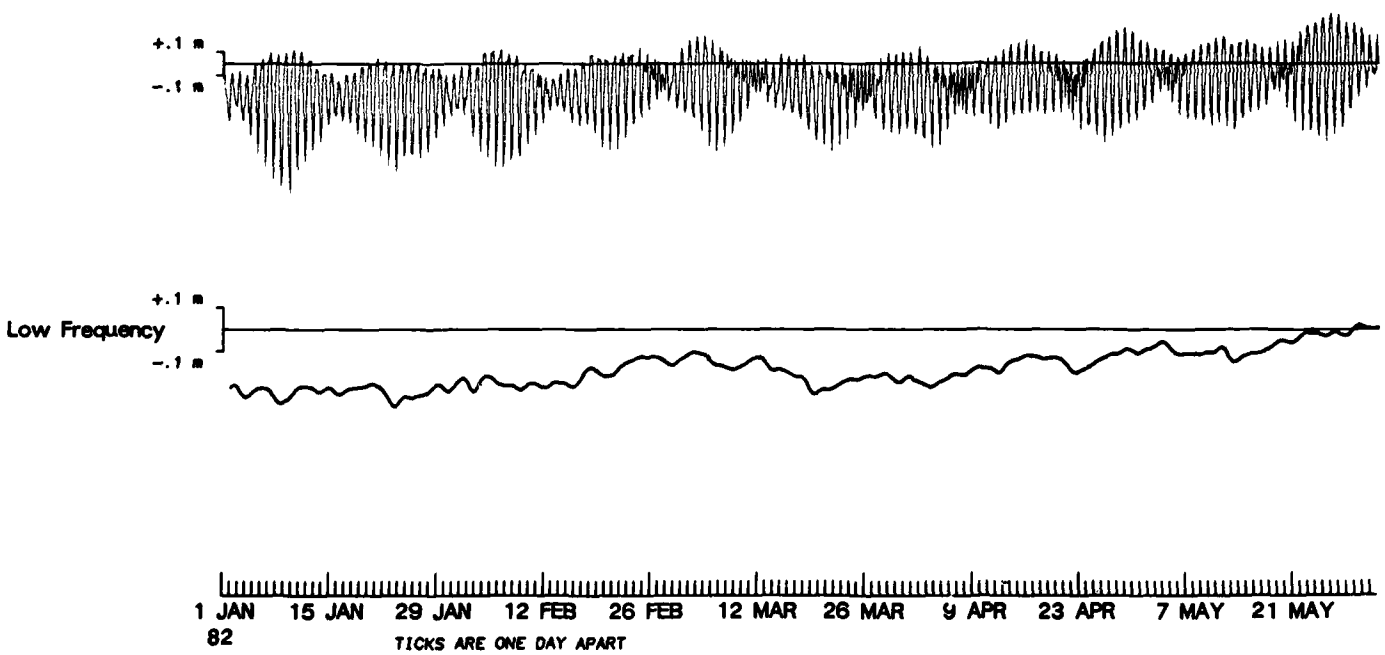
LOW FREQUENCY SEA LEVEL

Jan 82 - Dec 84



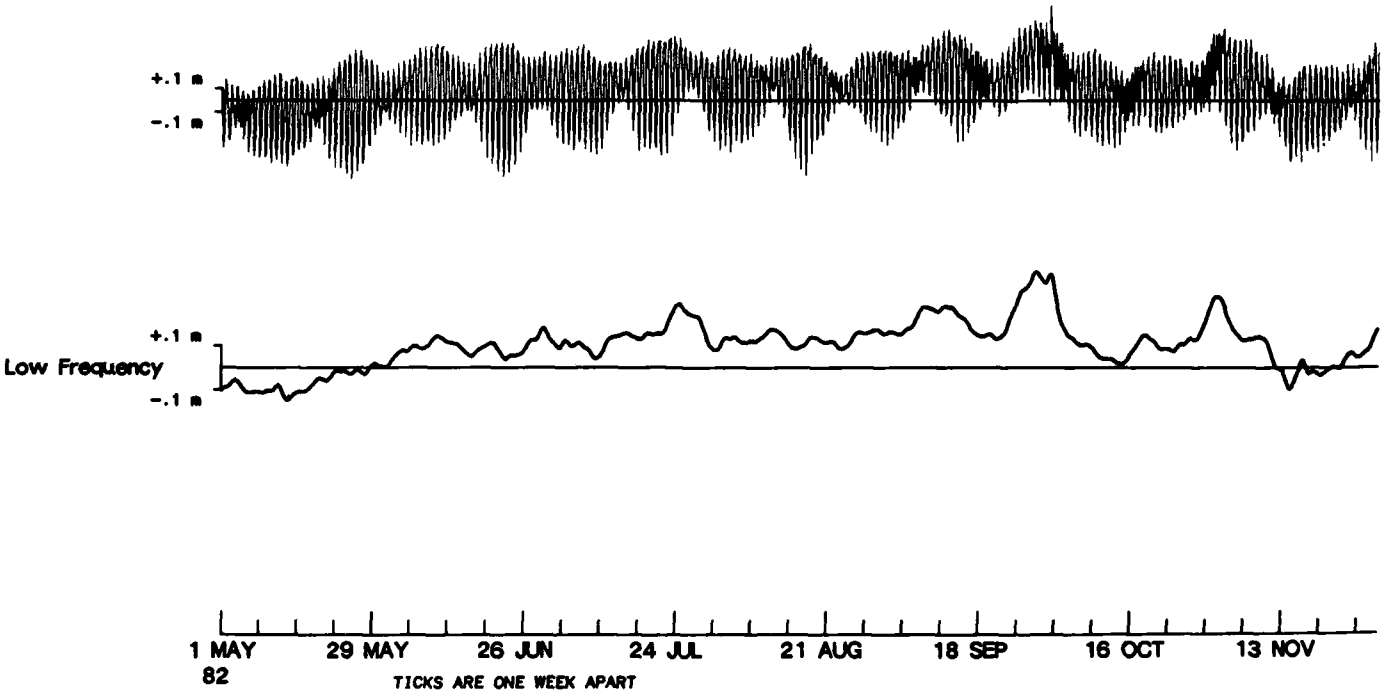
S1 : SEA LEVEL

Jan - May 82



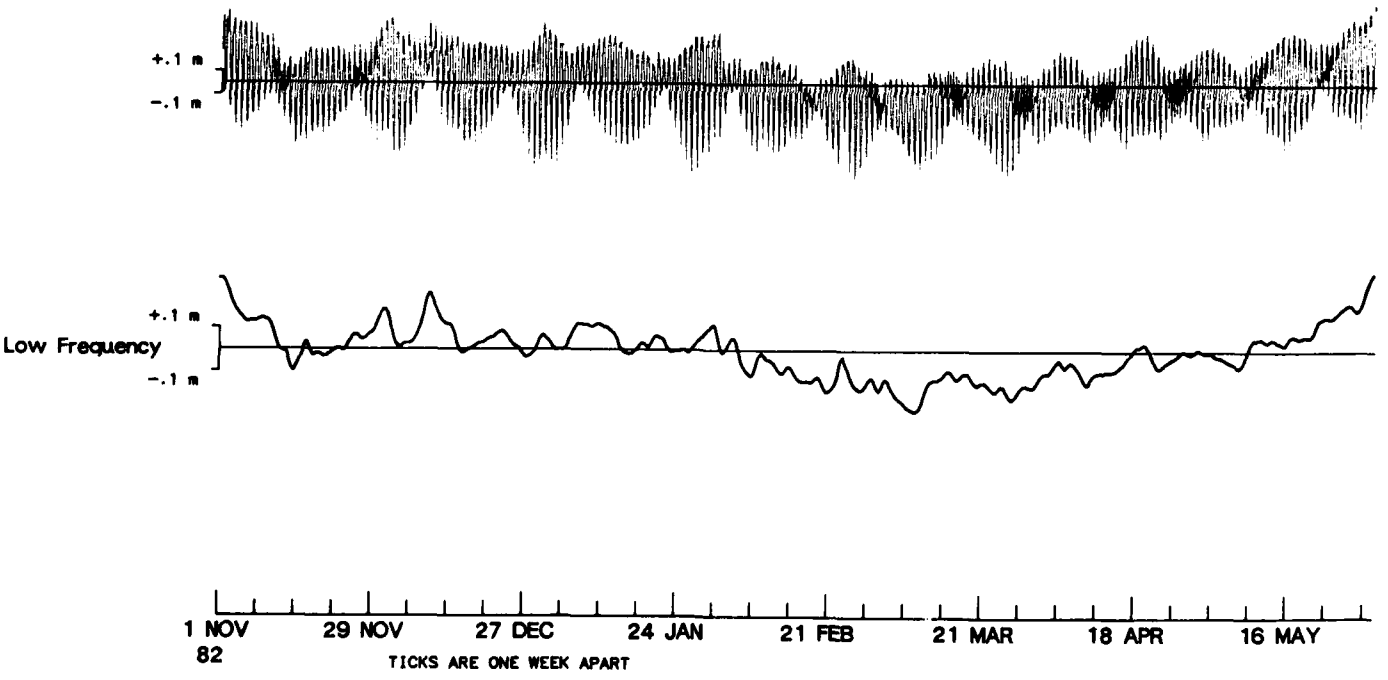
S1 : SEA LEVEL

May - Nov 82



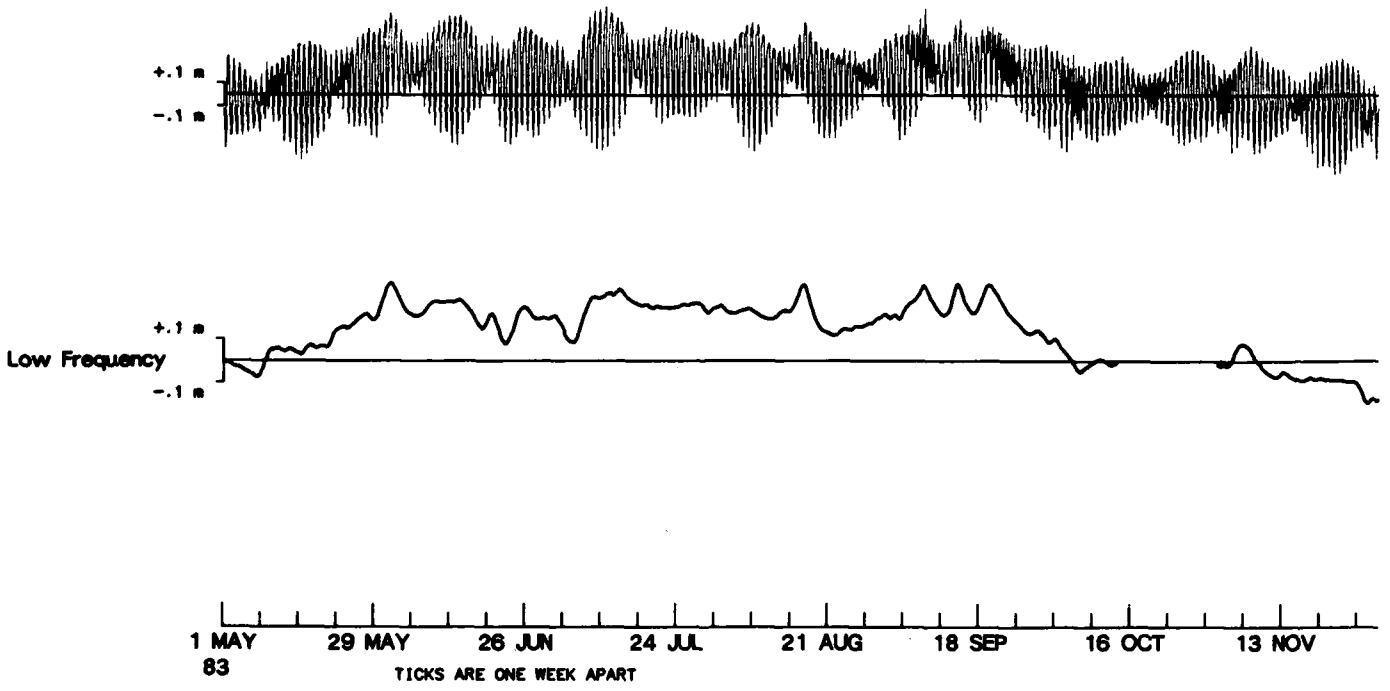
S1 : SEA LEVEL

November 1982 - May 1983



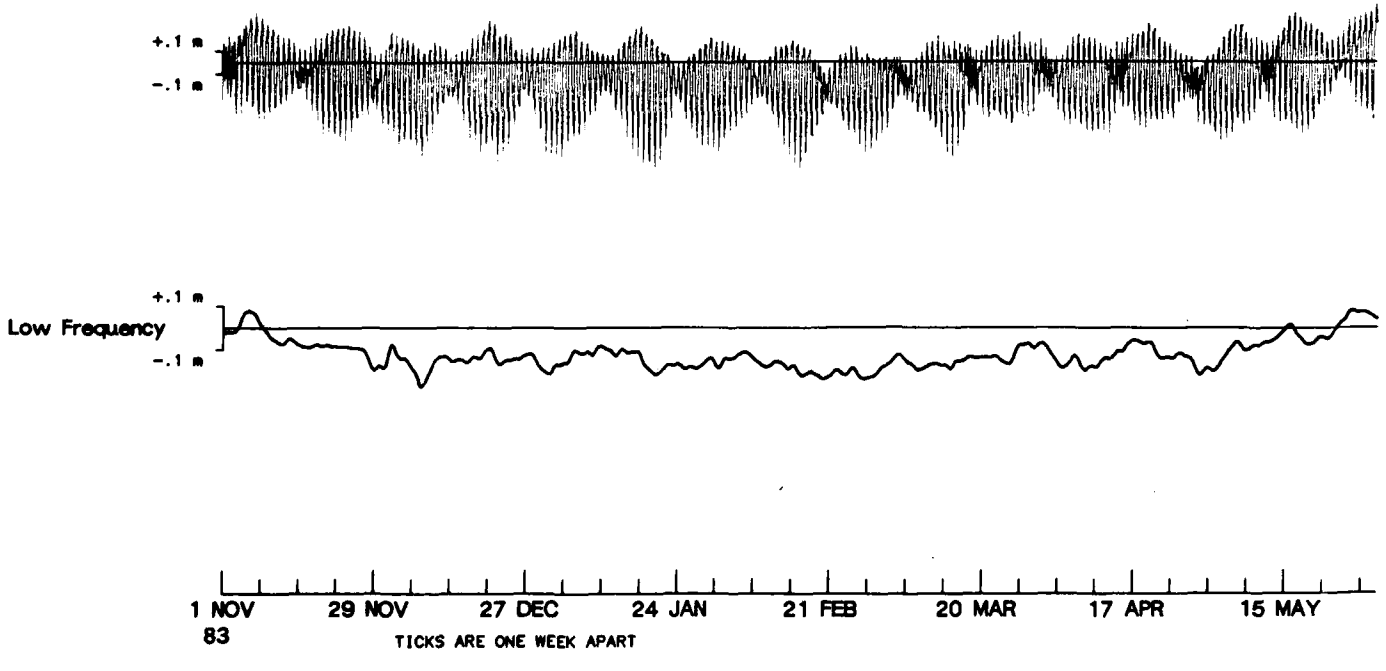
S1 : SEA LEVEL

May - November 1983



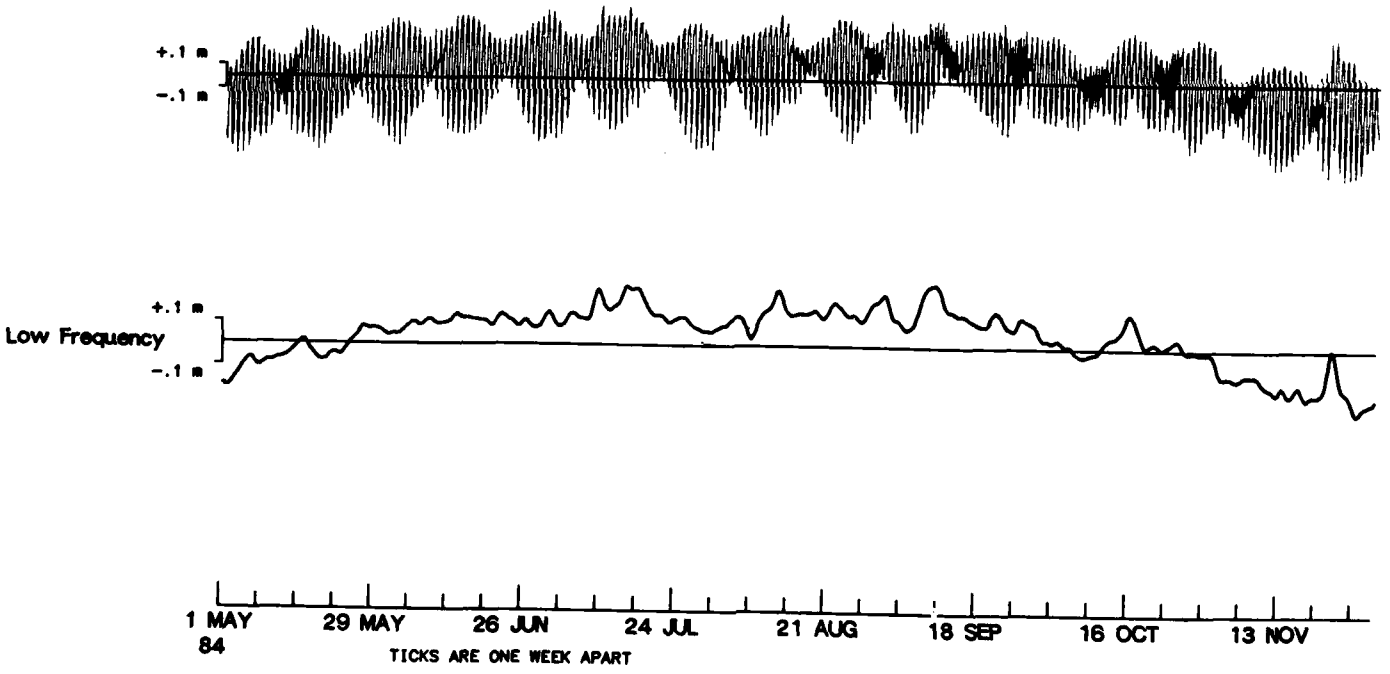
S1 : SEA LEVEL

November 1983 - May 1984



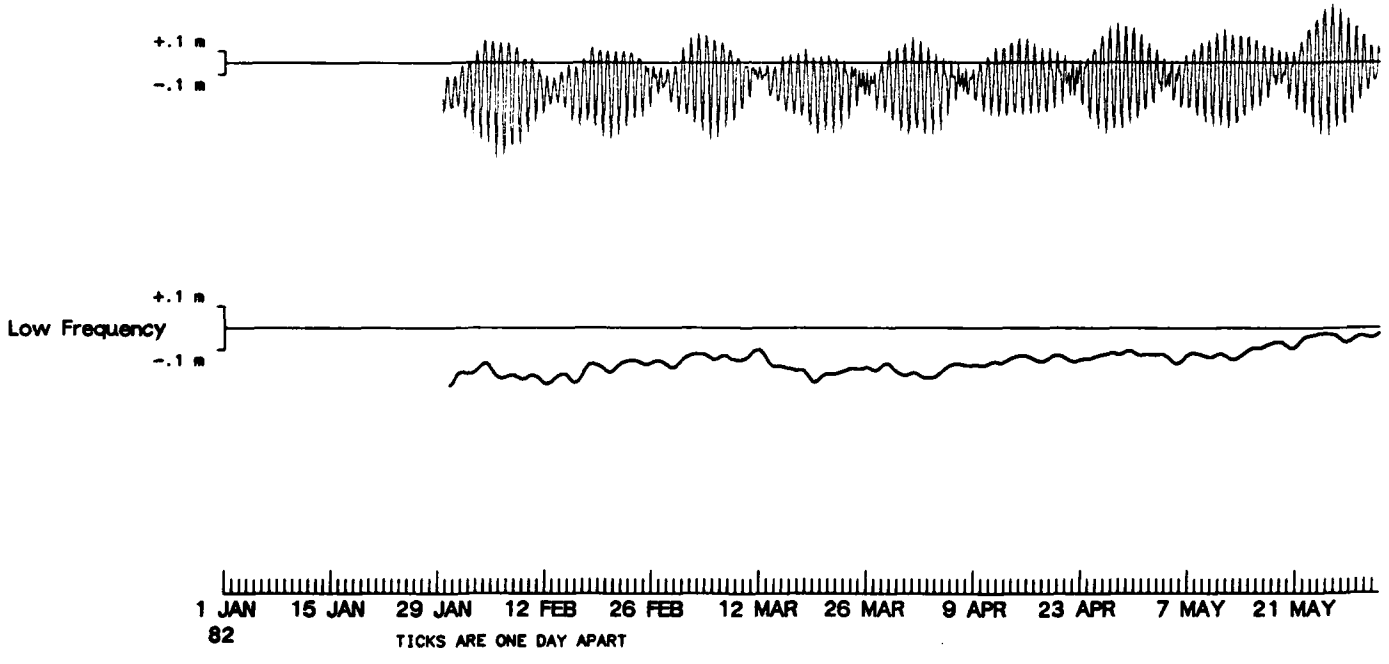
S1 : SEA LEVEL

May - November 1984



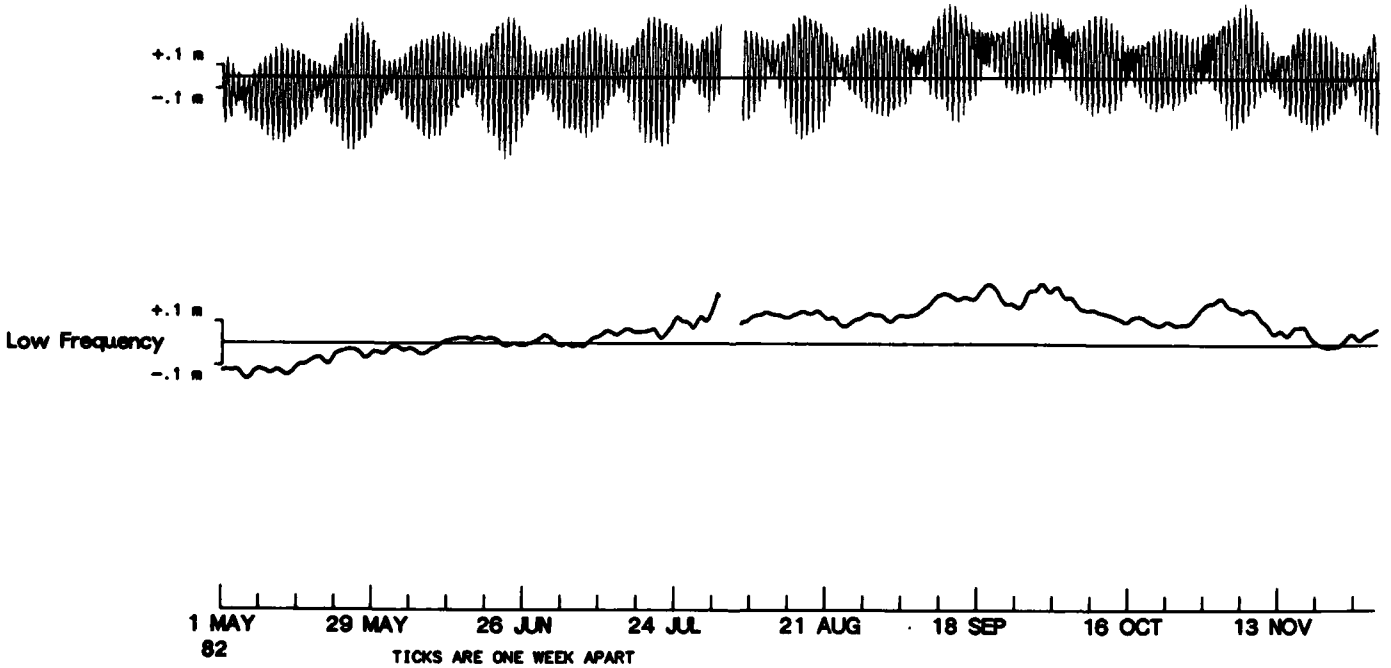
S2 : SEA LEVEL

Jan - May 82



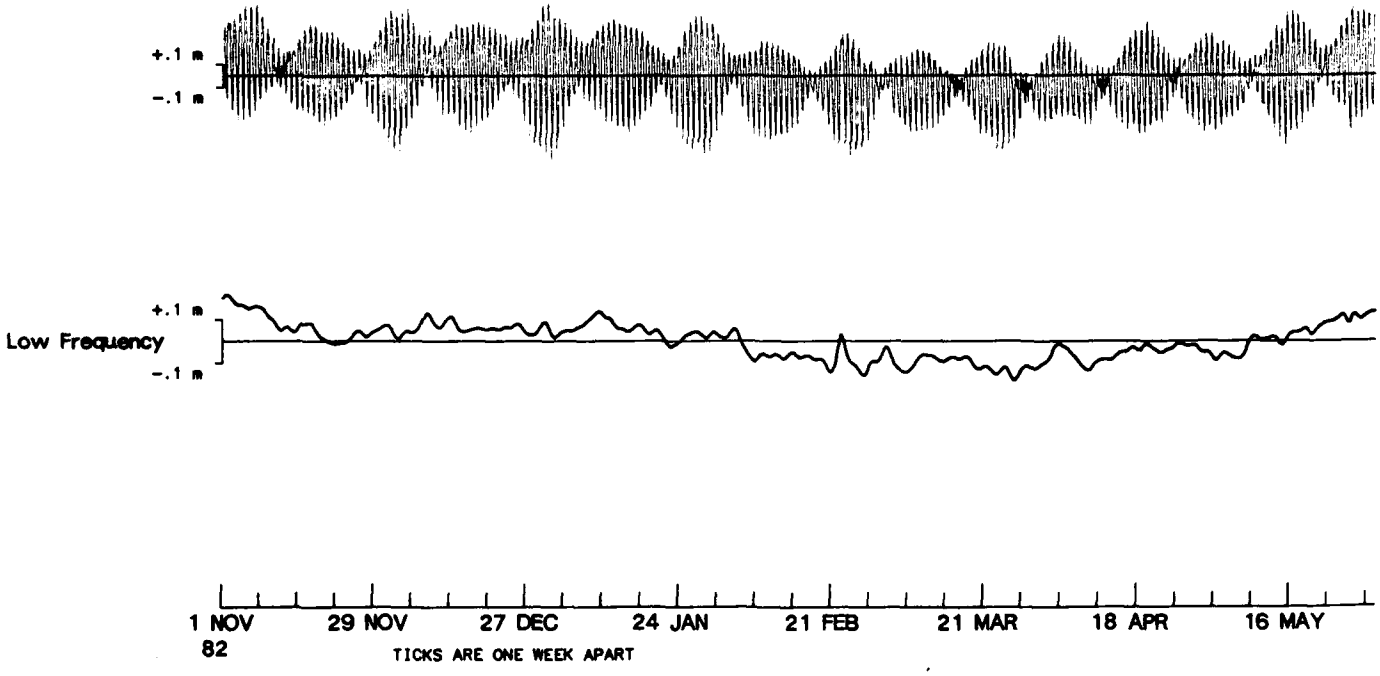
S2 : SEA LEVEL

May - Nov 82



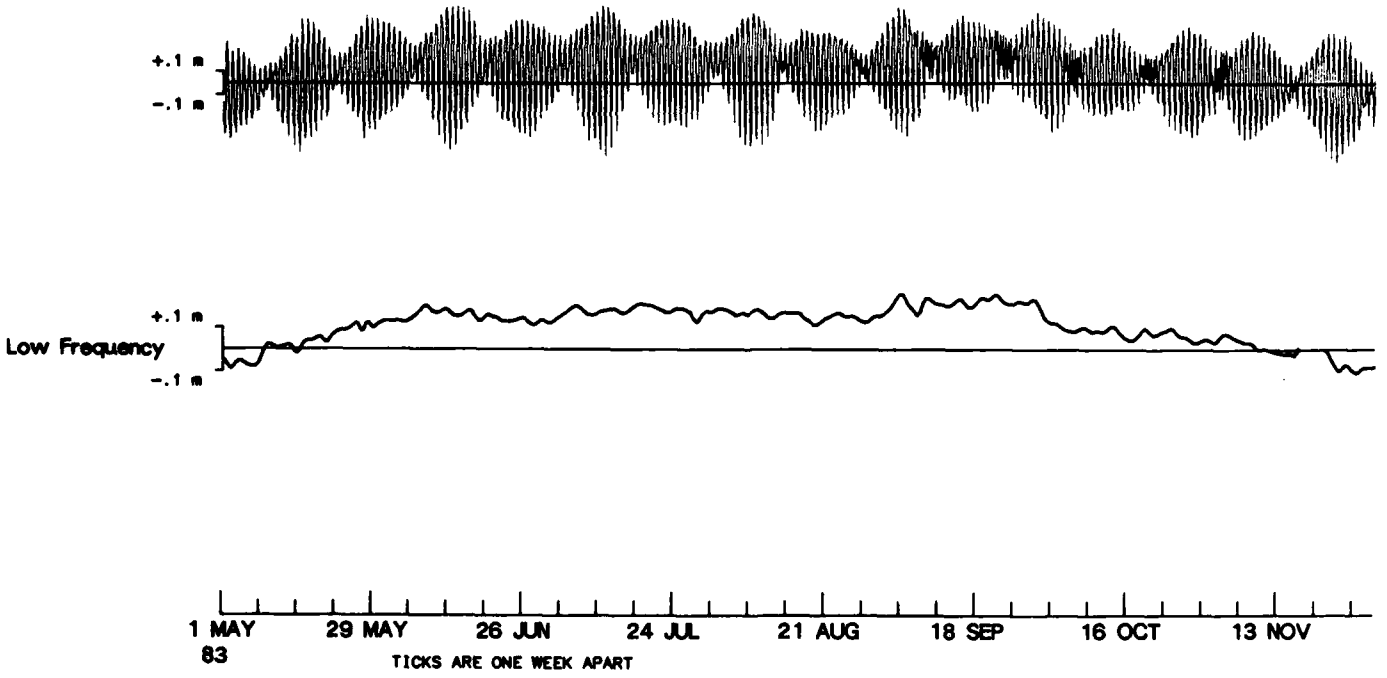
S2 : SEA LEVEL

November 1982 - May 1983



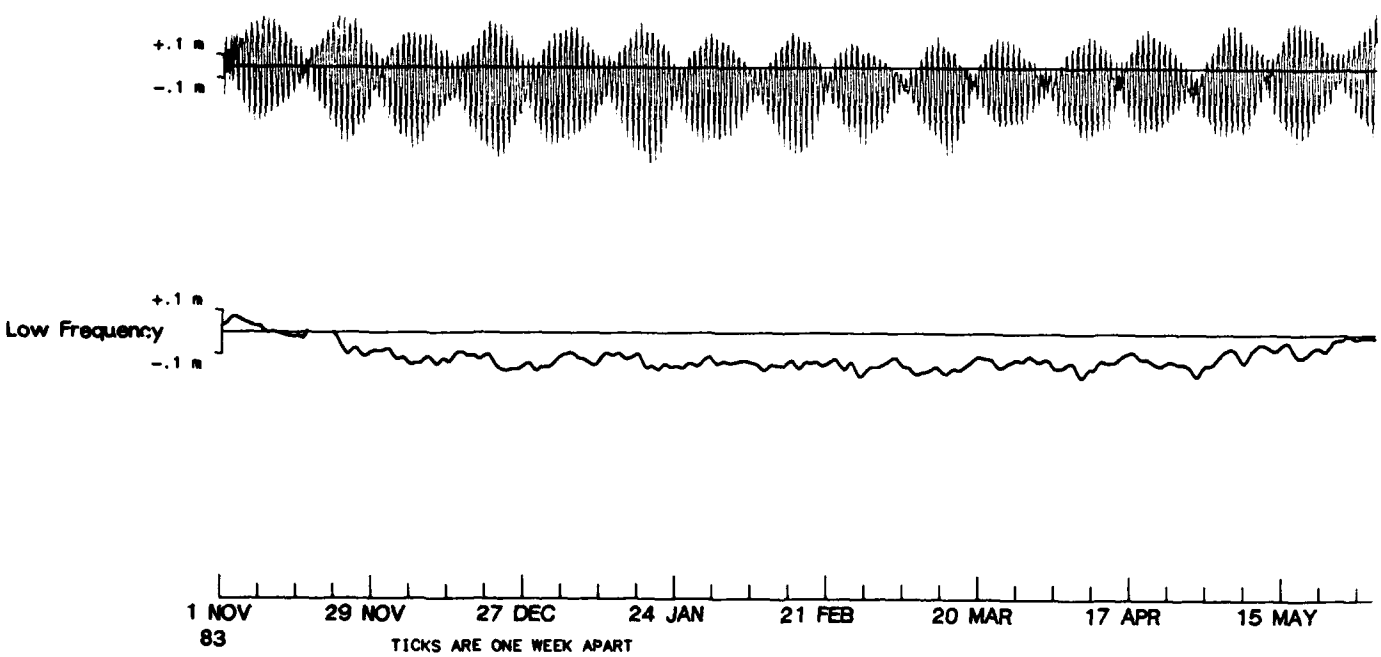
S2 : SEA LEVEL

May - November 1983



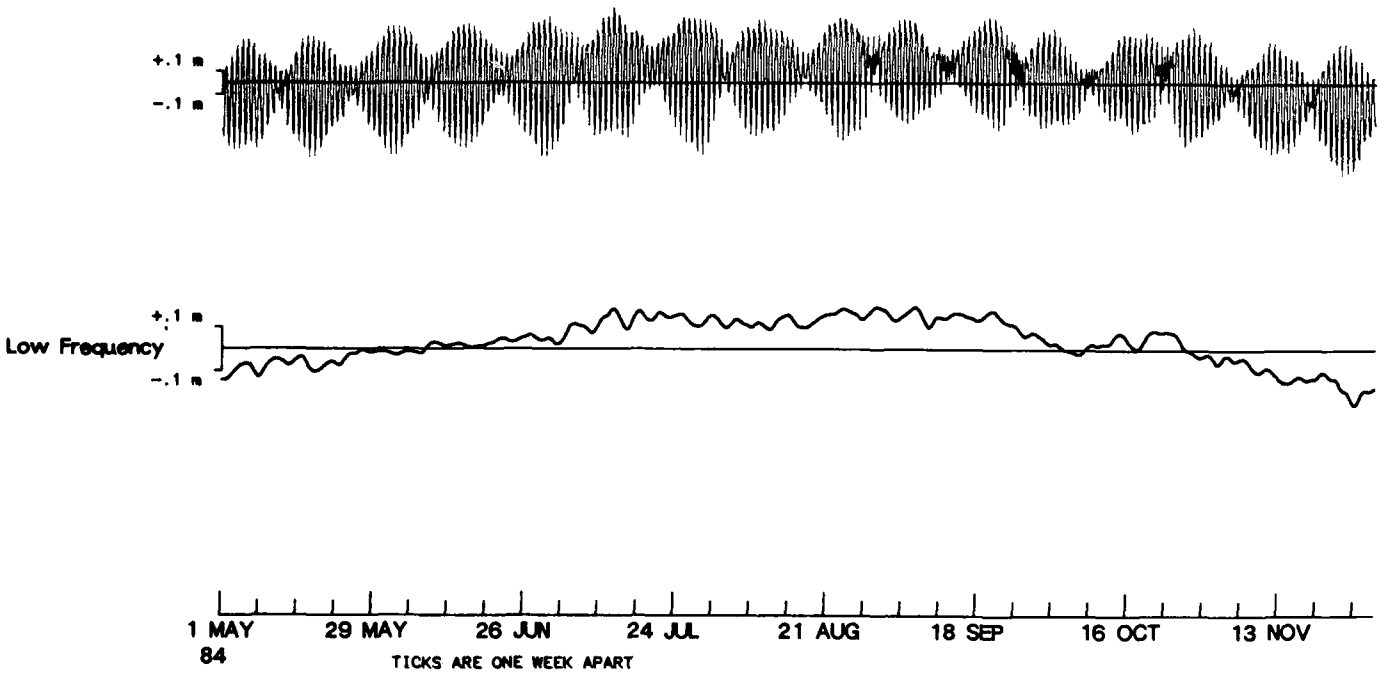
S2 : SEA LEVEL

November 1983 - May 1984



S2 : SEA LEVEL

May - November 1984



END

DATE
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10-86