U.S. DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY

CURRENT OBSERVATIONS IN BUZZARDS BAY, 1982-1986

DATA REPORT

by

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U. S. Geological Survey Open-File Report 88-5

Prepared in cooperation with
the U.S. Environmental Protection Agency
under Cooperative agreement CX-813547-01-0 with the
Woods Hole Oceanographic Institution

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December 1988

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FOREWORD

In 1984, Buzzards Bay was one of four estuaries in the country chosen to be part of the National Estuary Program. The Buzzards Bay Project was initiated in 1985 to protect water quality and the health of living resources in the bay by identifying resource management problems, investigating the causes of these problems, and recommending actions that will protect valuable resources from further environmental degradation. This multi-year project, jointly managed by United States Environmental Protection Agency and the Massachusetts Executive Office of Environmental Affairs, utilizes the efforts of local, state, and federal agencies, the academic community and local interest groups in developing a Master Plan that will ensure an acceptable and sustainable level of environmental quality for Buzzards Bay.

The Buzzards Bay Project is focusing on three priority problems: closure of shellfish beds, contamination of fish and shellfish by toxic metals and organic compounds, and high nutrient input and the potential pollutant effects. By early 1990, the Buzzards Bay Project will develop a Comprehensive Conservation and Management Plan to address the Project's overall objectives: to develop recommendations for regional water quality management that are based on sound information, to define the regulatory and management structure necessary to implement the recommendations, and to educate and involve the public in formulating and implementing these recommendations.

The Buzzards Bay Project has funded a variety of tasks that are intended to improve our understanding of the input, fate and effects of contaminants in coastal waters. The Project will identify and evaluate historic information as well as generate new data to fill information gaps. The results of these Project tasks are published in this Technical Series on Buzzards Bay.

This report represents the technical results of an investigation funded by the Buzzards Bay Project. The results and conclusions contained herein are those of the author(s). These conclusions have been reviewed by competent outside reviewers and found to be reasonable and legitimate based on the available data. The Management Committee of the Buzzards Bay Project accepts this report as technically sound and complete. The conclusions do not necessarily represent the recommendations of the Buzzards Bay Project. Final recommendations for resource management actions will be based upon the results of this and other investigations.

David A. Fierra

David Fierra, Chairman, Management Committee
Environmental Protection Agency

Table of Contents

List of Tables

List of Figures

Summary data plots

Scatter plots

Kinetic energy spectra

Individual data records

Data grouped by deployment

INTRODUCTION

Buzzards Bay is a semienclosed embayment located along the southeastern coast of Massachusetts (figure 1). Between 1982 and 1986, the U.S. Geological Survey (USGS) and the Woods Hole Oceanographic Institution (WHOI) made current and other observations at several locations throughout the bay. The major objective of these observations was to obtain a general description of the circulation, near-bottom flow and sediment movement in the bay. Much of the research was motivated by the discovery of PCB contamination of the sediments in New Bedford Harbor (Weaver, 1984; Farrington and others, 1982). Little was known about the processes that might transport these substances throughout the Bay if they escaped from the harbor or were dredged and dumped at some location in the bay.

FIELD PROGRAM

The measurements in Buzzards Bay can be separated into two major field programs; a moored array experiment and long-term near-bottom measurements at selected stations. The location of the moorings is shown in figure 1 and a time-line of the observations in figure 2. The latitude, longitude, and water depth of the stations, the start and stop time for each deployment, and the parameters measured during each deployment are tabulated in table 1. Analysis of some aspects of these measurements are presented in Signell (1987).

Moored array

In the fall of 1984, the Woods Hole Oceanographic Institution initiated a series of measurements across the mouth of the Bay at stations WHOIA, WHOIB, and WHOIC. One of the major objectives of this array was to provide boundary conditions for numerical simulations of the circulation within the Bay. The U.S. Geological Survey deployed tripods (see below for a description of these instruments) at stations B and D to provide observations of current and pressure in the Bay interior. Halfway through the WHOI deployment, the tripods at B and D were recovered and redeployed at stations A and C. The tripod at station B was replaced with a vector averaging current meter modified to also measure light transmission and water conductivity (VACM-TCT) 4 meters above bottom (mab). In addition to providing current and pressure observations, the tripods measure near-bottom light transmission which can be used to monitor near-bottom sediment resuspension and provide information on the transport of fine-grained sediments throughout the Bay.

Long-term near-bottom observations

Following the fall 1984 moored-array experiment, tripods were maintained at stations A and C and a VACM-TCT at station B through the fall of 1985, providing nearly continuous near-bottom observations in excess of one year. These observations were designed to assess the long-term variability of the bottom currents and sediment movement. Of particular interest were the spatial and temporal variability of sediment resuspension, and the transport of sediment during resuspension events. It was hypothesized that at least in the deep parts of Buzzards Bay, sediment resuspension and transport was episodic, caused by

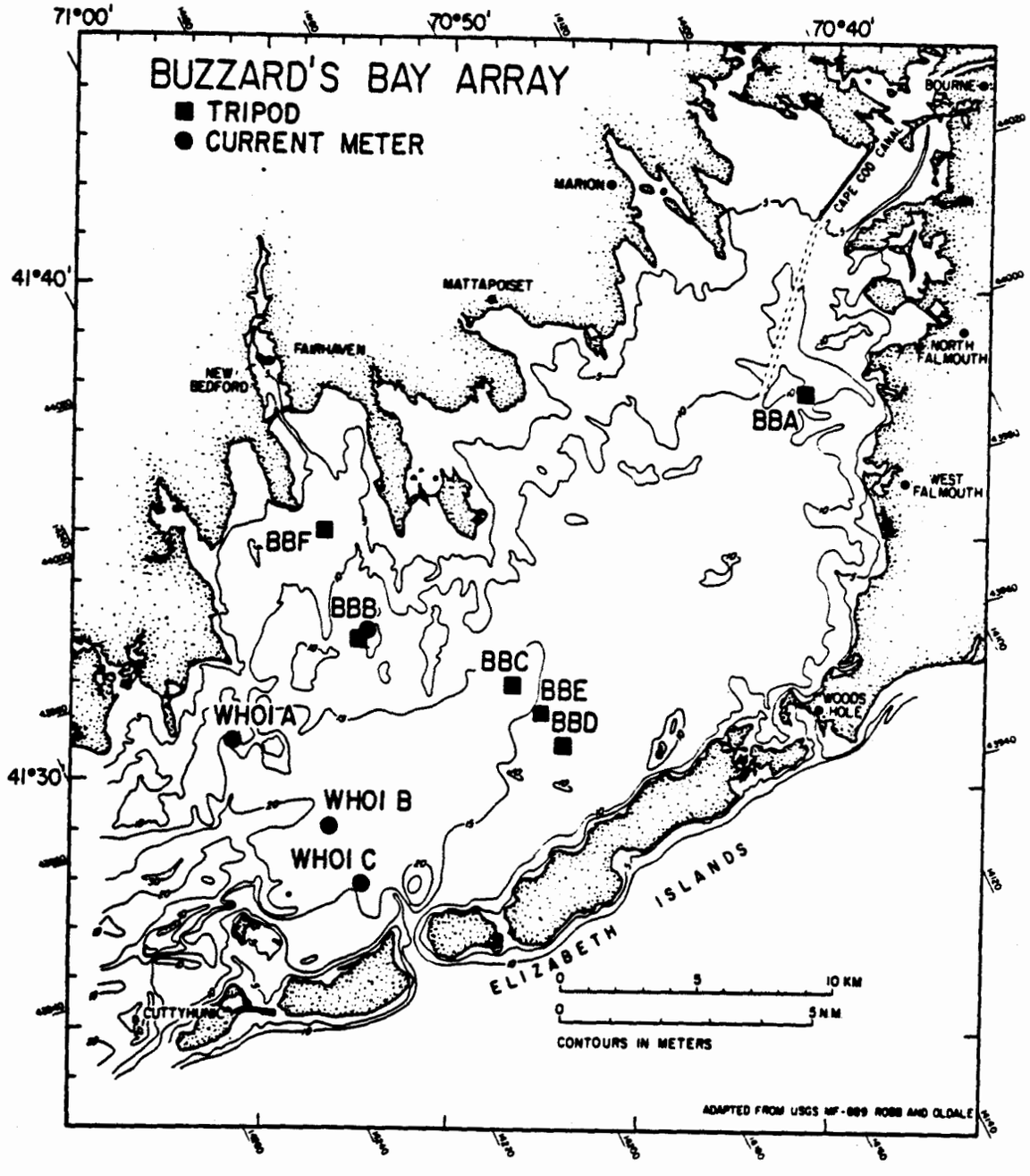

Figure 1. Map of Buzzards Bay showing location of current moorings deployed by USGS and WHOI. Sections labelled BBX are sometimes referenced in the text and figure captions without the prefix BB.

Table 1. Station name, mooring identification, water depth, latitude and longitude, mooring type, instrument type, data return, and dates of deployments for measurements made in Buzzards Bay.

Station	Moor. no.	Water* depth (m)	Latitude (N.)/ Longitude (W.)	Moor type[1]	Inst type[2]	Inst. depth (m)	Data[3] Current	Temp.	Pres.	Cond.	Trans.	Deployed (YrMoDy)	Recovered (YrMoDy)
BBA	263	12.5	41°37.8'	T	T	11.5	P	G	G	-	F	820705	820820
	265	12.0	70°40.5'	T	T	11.0	P	G	G	-	Q	820820	830105
	289	13.0	41°37.9'	T	T	12.0	G	G	G	G	G	841108	850114#
	291	13.1	70°40.6'	T	T	12.1	G	G	G	G	Q	850128	850329
	295	13.3		T	T	12.3	G	G	G	G	F	850409	850619
	299	12.0		T	T	11.0	G	G	G	G	F	850626	850814
	304	12.6		T	T	11.6	G	G	G	N	F	850814	851022
BBB	286	12.8	41°32.9'	T	T	11.8	G	G	G	G	F	840906	841022
	288	12.6	70°52.5'	SS	VTCT	8.6	P	P	-	P	F	841025	850114
	290	12.6	41°33.2'	SS	V	8.6	G	G	-	-	-	850114	850328
	293	13.3	70°52.2'	SS	V	9.3	F	G	-	-	-	850328	850619
	300	12.6		SS	VTCT	8.6	G	P	G	G	F	850619	850702
	303	13.0		SS	VTCT	9.0	P	G	-	Q	F	850807	851023
BBC	287	16.6	41°32.0'	T	T	15.6	G	G	G	G	G	841025	850114
	292	16.6	70°48.3'	T	T	15.6	G	Q	G	G	G	850128	850328
	294	16.6		T	T	15.6	G	P	G	G	G	850329	850628
	302	15.7		T	T	14.7	P	G	G	G	F	850807	851205
BBD	285	14.2	41°30.8' 70°47.0'	T	T	13.2	G	G	G	-	N	840821	841022
BBE	298	15.4	41°31.4' 70°47.8'	T	T	14.4	G	G	G	N	N	850619	850807
BBF	312	9.1	41°35.0' 70°53.3'	T	T	8.1	G	G	G	G	Q	860709	860904
WHOIA	812	15.5	41°30.8' 70°55.7'	SS	VMCM VMCM	5.0 10.0	G G	G G	-	-	-	840824	850118
WHOIB	813	18.0	41°29.1' 70°53.1'	SS	VMCM VMCM	5.0 10.0	G G	G G	-	-	-	840827	850118
WHOIC	814	16.0	41°28.0' 70°52.3'	SS	VMCM VMCM	5.0 10.0	G G	G G	-	-	-	840828	850118

*Water depth not corrected for tide (range ~ 1.2 m).
#Data ends 841228.
[1]T = tripod; SS = subsurface.
[2]T = tripod, V = vector averaging current meter; VTCT = vector averaging current meter modified for conductivity and transmission; VMCM = vector measuring current meter.
[3]G = good; Q = questionable data; F = fouled; P = partial record; N = failed.

BUZZARDS BAY ARRAY

CURRENT

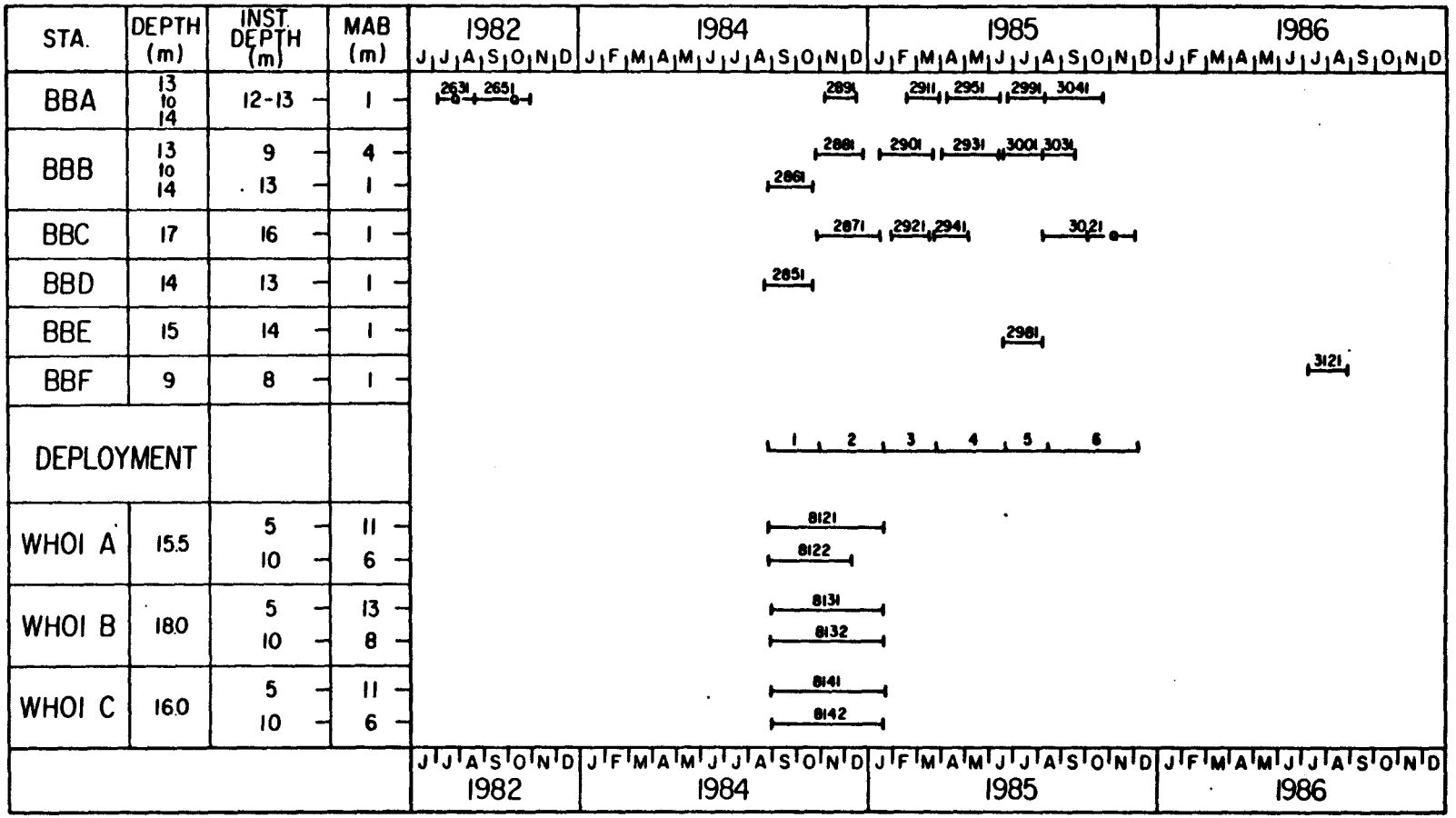

Figure 2a. Timeline of current observations. The number above the horizontal line indicates the USGS or WHOI record identification number. Deployments 1-6 are indicated. No observations were made in 1983 and that year is omitted from the time-line.

BUZZARDS BAY ARRAY

TEMPERATURE

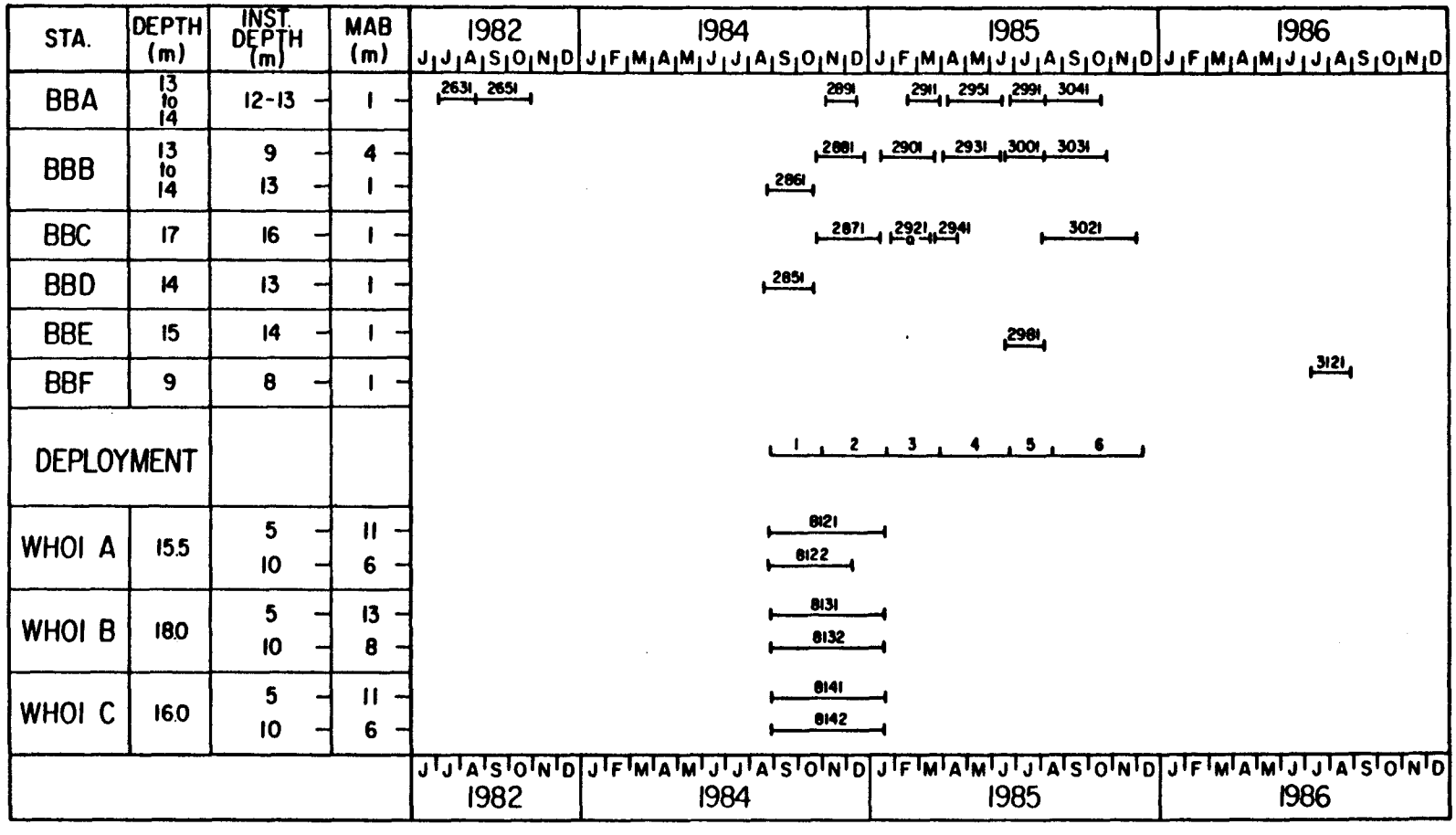

Figure 2b. Timeline of temperature observations.

BUZZARDS BAY ARRAY

SALINITY

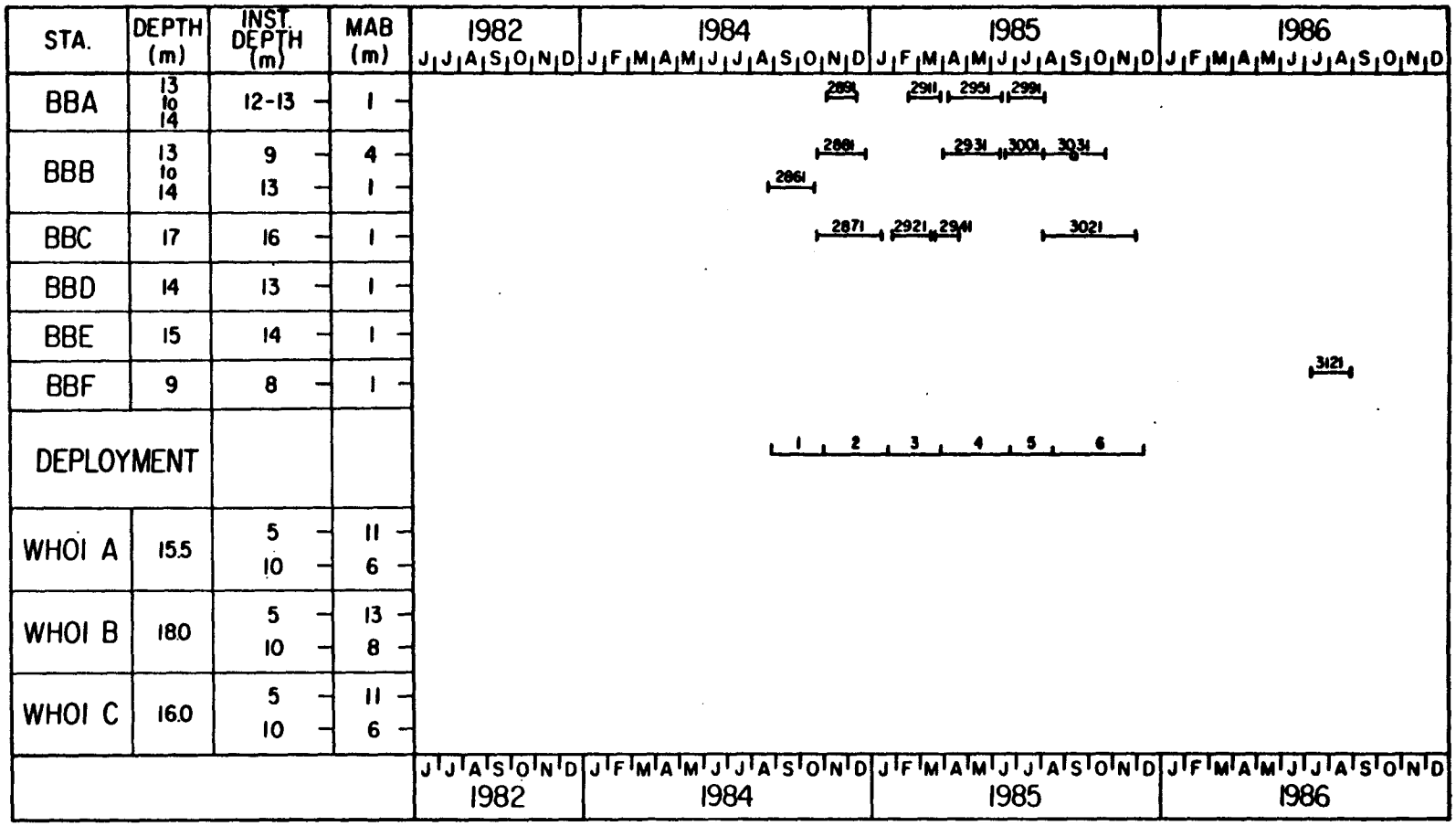

Figure 2c. Timeline of salinity observations.

BUZZARDS BAY ARRAY

TRANSMISSION

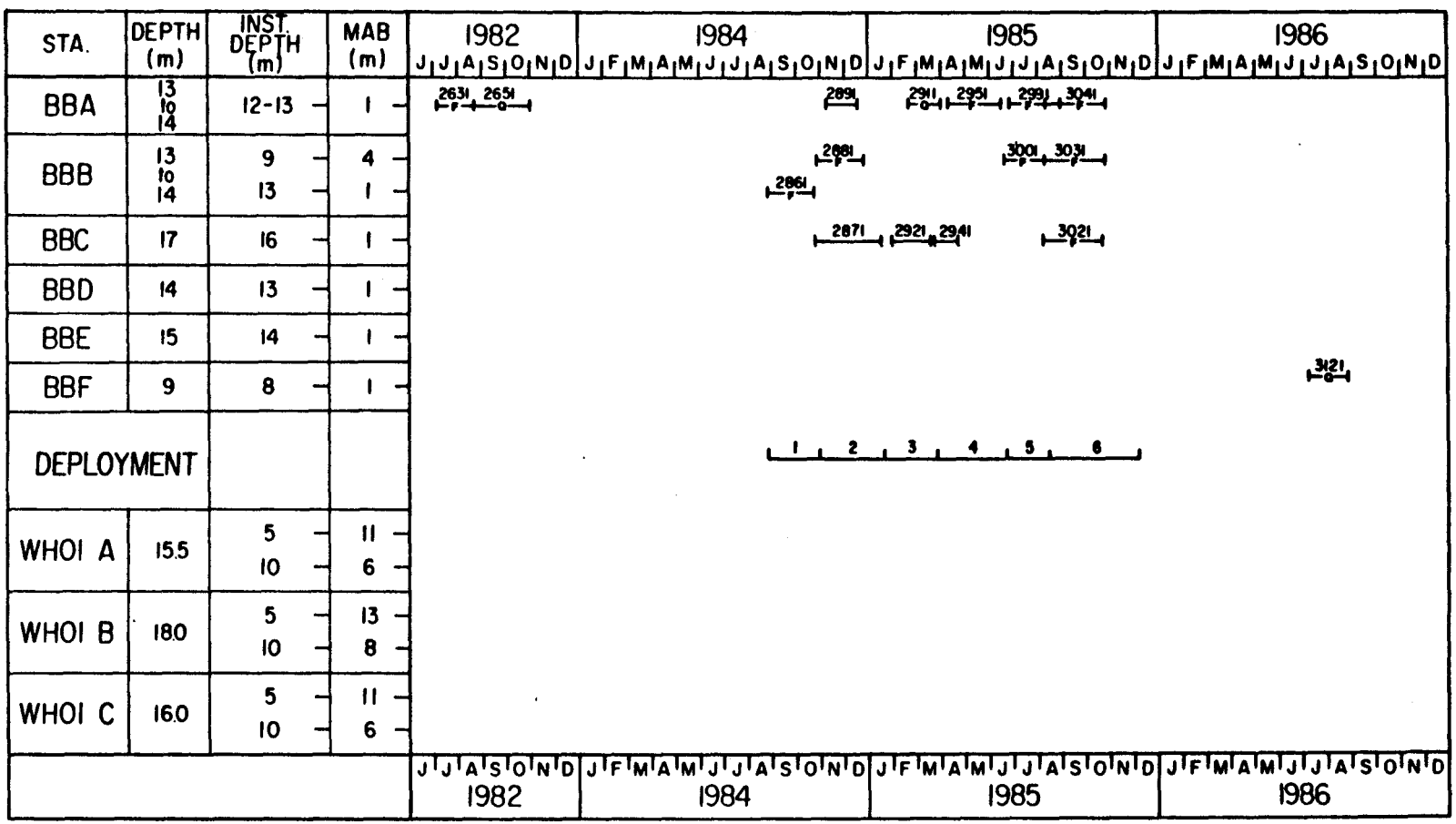

Figure 2d. Timeline of transmission observations.

BUZZARDS BAY ARRAY

PRESSURE

STA.	DEPTH (m)	INST. DEPTH (m)	MAB (m)
BBA	13 10 14	12-13	1
BBB	13 10 14	9 13	4 1
BBC	17	16	1
BBD	14	13	1
BBE	15	14	1
BBF	9	8	1
DEPLOYMENT			
WHOI A	15.5	5 10	11 6
WHOI B	18.0	5 17	13 1
WHOI C	16.0	5 10	11 6

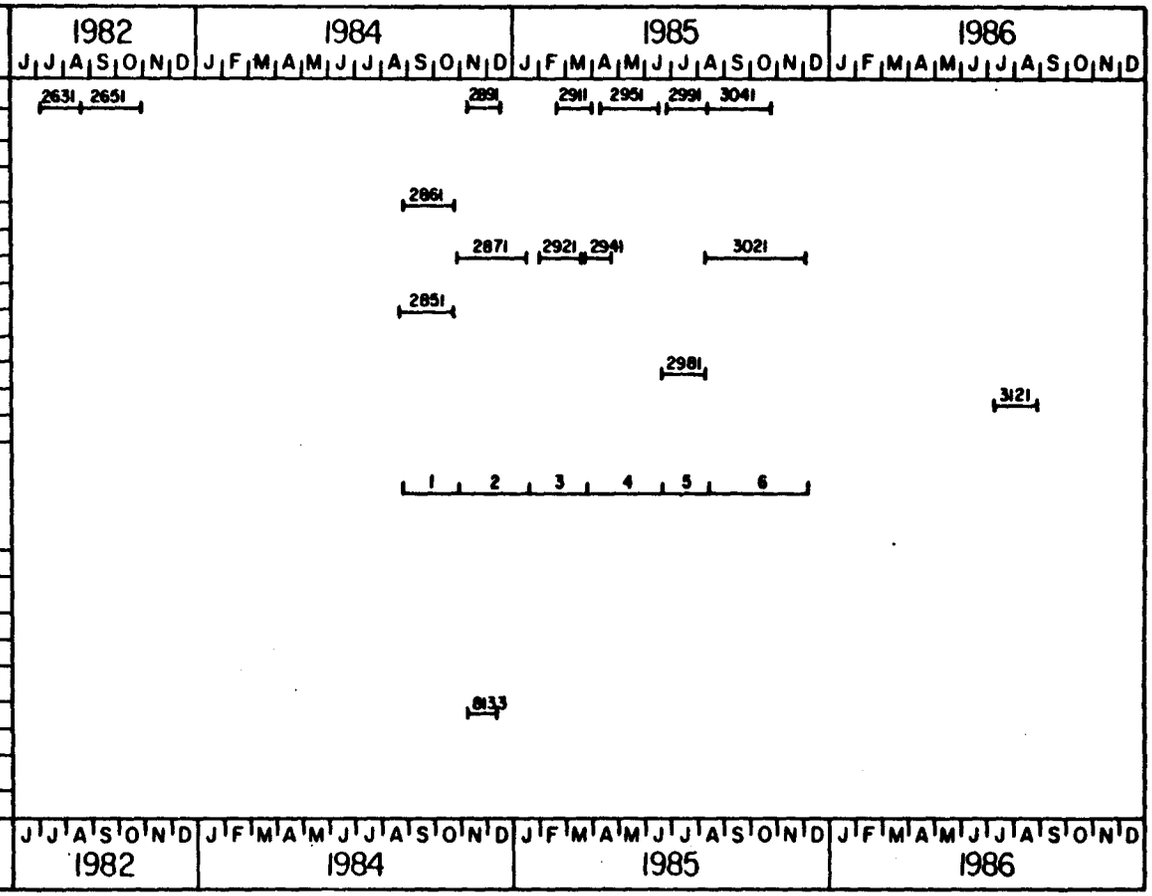

Figure 2e. Timeline of pressure observations.

the combined effects of surface waves and currents during strong storms. Station C (D and E) provided information in the central deep portion of the bay and station A, information near the shallow head. In addition, the instruments at A and C provided direct measurements of the along-bay setup, hypothesized as an important driving element of the along-bay flow. Station B was selected to provide observations of the near-bottom flow in the outer approaches to New Bedford Harbor and the coupling of this flow to the flow in Buzzards Bay. In total, six deployments of instruments were made as part of this long-term study, the first two during the moored array experiment (figure 2).

Short-term observations at stations A and F in 1982 and 1986, respectively, were cooperative bottom boundary layer-biological experiments with Dr. Cheryl Ann Butman and Dr. William Grant of the Woods Hole Oceanographic Institution.

Wind observations

Wind observations made at the hurricane barrier at the entrance to New Bedford Harbor by the U.S. Army Corps of Engineers (anemometer height 15 m above sea level) were digitized hourly and converted to wind stress using a quadratic drag law with a constant drag coefficient of 1.8×10^{-2}. Analysis by Signell (1987) suggests that these winds are an adequate representation of the winds over Buzzards Bay.

INSTRUMENTATION

Several types of instruments and mooring configurations were used to make measurements of current, temperature, pressure, salinity and light transmission. Each instrument is briefly described below.

Vector-averaging current meter

Measurements of current and temperature were made by means of EG&G vector-averaging current meters (VACM), which have a Savonius rotor and small vane to detect current speed and direction. The VACM samples direction every 1/16 rotor turn and vector-averages the current for a specified interval. In these experiments, the sampling interval was 3.75 minutes. Most of the VACMs used in this study were modified to measure light transmission and water conductivity (called VACM-TCT, Strahle and Butman, 1985). The 0.25-m red LED (light-emitting diode) transmission sensor was manufactured by Sea Tech Inc. (Bartz and others, 1978). The transmission sensor voltage was measured for about 0.1 sec in the center of the VACM sampling interval. Conductivity was measured by means of a Sea Bird Inc. conductivity sensor (Peterson and Gregg, 1979). Output of the sensor was averaged for 1.875 sec in the center of the VACM sampling interval. The VACM's were deployed on a taut subsurface mooring with the speed sensor approximately 4 mab and the floatation approximately 7 mab.

Vector-measuring current meter

Vector-measuring current meters (VMCMs) were used to measure temperature and velocity at WHOI sites A, B, and C (Weller and Davis, 1980). The VMCMs use

orthoganal bidirectional propellor speed sensors and were deployed beneath slack-moored surface buoys. The sampling interval was 3.75 minutes.

Bottom Tripod

An instrument system (Butman and Folger, 1979) which measured near-bottom current, temperature, pressure, light transmission and water conductivity, and which photographed the sea floor every few hours was deployed to monitor near-bottom currents and sediment resuspension (figure 3). This instrument system was developed for long-term studies of sediment movement on the Continental Shelf. For the Buzzards Bay measurements, the instrument sampled average rotor speed and pressure every 3.75 or 7.5 minutes. Measurements of temperature and light transmission were made in the center of this sampling interval. The instrument also burst-sampled current speed, current direction, and pressure, typically for 48 or 96 sec at 1.0 or 0.5 hertz (48 samples), or for 48 or 60 sec at 0.5 hertz (24 or 30 samples) beginning in the center of each 3.75 or 7.5 minute interval. The burst current measurements were vector-averaged to obtain current speed and direction. The standard deviation of the high-frequency burst pressure measurements (called PSDEV) was computed as a measure of the bottom-pressure fluctuations caused by surface waves. Estimates of wave amplitude and period can be computed from spectra of the burst pressure observations and linear wave theory used to calculate the amplitude of the bottom-wave currents (these calculations are not presented in this data report).

Temperature depth recorders

Pressure and temperature were measured at several coastal sites using temperature-depth recorders (TDRs) manufactured by Sea Data Inc.

DATA PROCESSING

Data in all instruments were recorded on 1/4" cassette tapes on Sea Data, Inc. recorders. These tapes were transcribed to 9T tape using a Sea Data Reader. The data were decoded to engineering variables and stored in WHOI Buoy format on tape and DISC. All subsequent processing was conducted using the WHOI Buoy Group Processing System. The data were carefully checked for instrument malfunctions and then edited. The beginning and end of the records were truncated and wild points deleted. Most data gaps were filled by linear interpolation. The data were carefully checked at each stage of processing. Fouling of some of the sensors presented a serious problem (see below).

After editing, the basic version of the data file included all variables recorded at the basic sampling interval. An hour-averaged data file and a low-passed file were created from the basic file. The low-passed version was created using a digital filter that essentially removed all fluctuations having periods shorter than 33 hours (PL33, Flagg and others, 1976).

Beam attenuation coefficient (units of 1/m) was computed from the light transmission observations as -4(ln(T/100), where T is percent light transmission over 0.25 m. The beam attentuation coefficient is linearly proportional to the concentration of suspended material in the water if the particles are of uniform

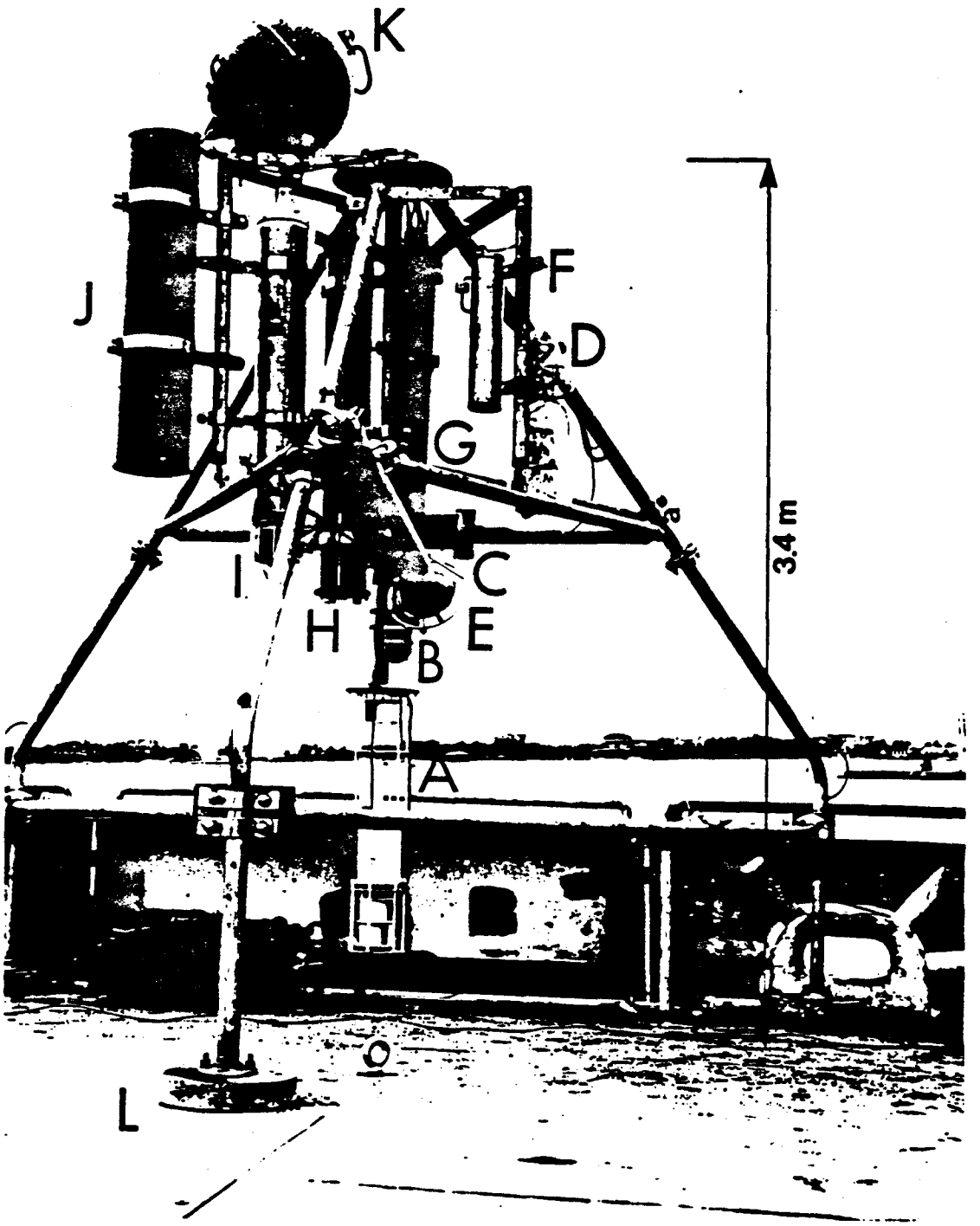

Figure 3. USGS bottom tripod system. A is the current sensor, B the pressure sensor, C the transmissometer, D the camera (wrapped in a protective plastic bag prior to deployment), E the camera strobe light, F the camera battery, G the electronics, H the battery pressure housing, I the acoustic release-transponder, J the rope cannister, K the recovery float, and L the lead anchor feet. The systems used in Buzzards Bay were slightly modified from this configuration for use in shallow water and for deployment and recovery from small boats.

size and composition (Moody and others, 1987). However, the size of the particles in the water changes with time, especially during resuspension events, and thus the beam attenuation measurements must be interpreted with care. The transmissometer measures light transmission, not particle concentration.

Principle axes for both the hour-averaged and low-frequency currents were computed from the east (u) and north (v) current components as:

$$\text{major axis} = [(0.5\ (uu + vv) + R)/n]^{1/2}$$

$$\text{minor axis} = [(0.5\ (uu + vv) - R)/n]^{1/2}$$

$$\text{orientation} = 90° - 0.5 \tan^{-1}[2uv/(uu-vv)]$$

$$\text{ellipicity} = 1-(\text{minor axis/major axis})$$

where

$$uv = \Sigma(u_i v_i) - n \bar{u}\bar{v}$$

$$uu = \Sigma(u_i u_i) - n \bar{u}^2$$

$$vv = \Sigma(v_i v_i) - n \bar{v}^2$$

$$R = [(0.5\ (uu - vv))^2 + (uv)^2]^{1/2}$$

$$\bar{u} = \Sigma u_i/n$$

$$\bar{v} = \Sigma v_i/n$$

$$n = \text{number of data points}$$

ALONG-BAY/CROSS-BAY COORDINATE SYSTEM

The currents in many of the plots in this report are presented in an along-bay/cross-bay coordinate system. For stations B, C, D, E, F, WHOIA, WHOIB, and WHOIC the orientation of the positive along-bay axis is 55° and the orientation of the positive cross-bay axis is 145° (figure 4). For station A the orientation of the positive along-bay axis is 20° and the orientation of the positive cross-bay axis is 110° (figure 4). The orientation of the coordinate system was chosen based on the orientation of the semidiurnal tidal and low-frequency current ellipses, and the bay geometry. In general, the flow in the rotated coordinate system is a simpler and physically more meaningful presentation than in east and north coordinates because the tidal and low-frequency currents are primarily along-bay. All plots of current components are labelled as either along-bay or cross-bay (i.e. the rotated coordinate system) or as east and north components (i.e. in the unrotated coordinate system). Stickplots are labelled as along-bay is up (data presented in the rotated coordinate system; positive along-bay is up and positive cross-bay is to the right) or as north is up (data presented in the unrotated coordinate system; positive north is up and positive east is

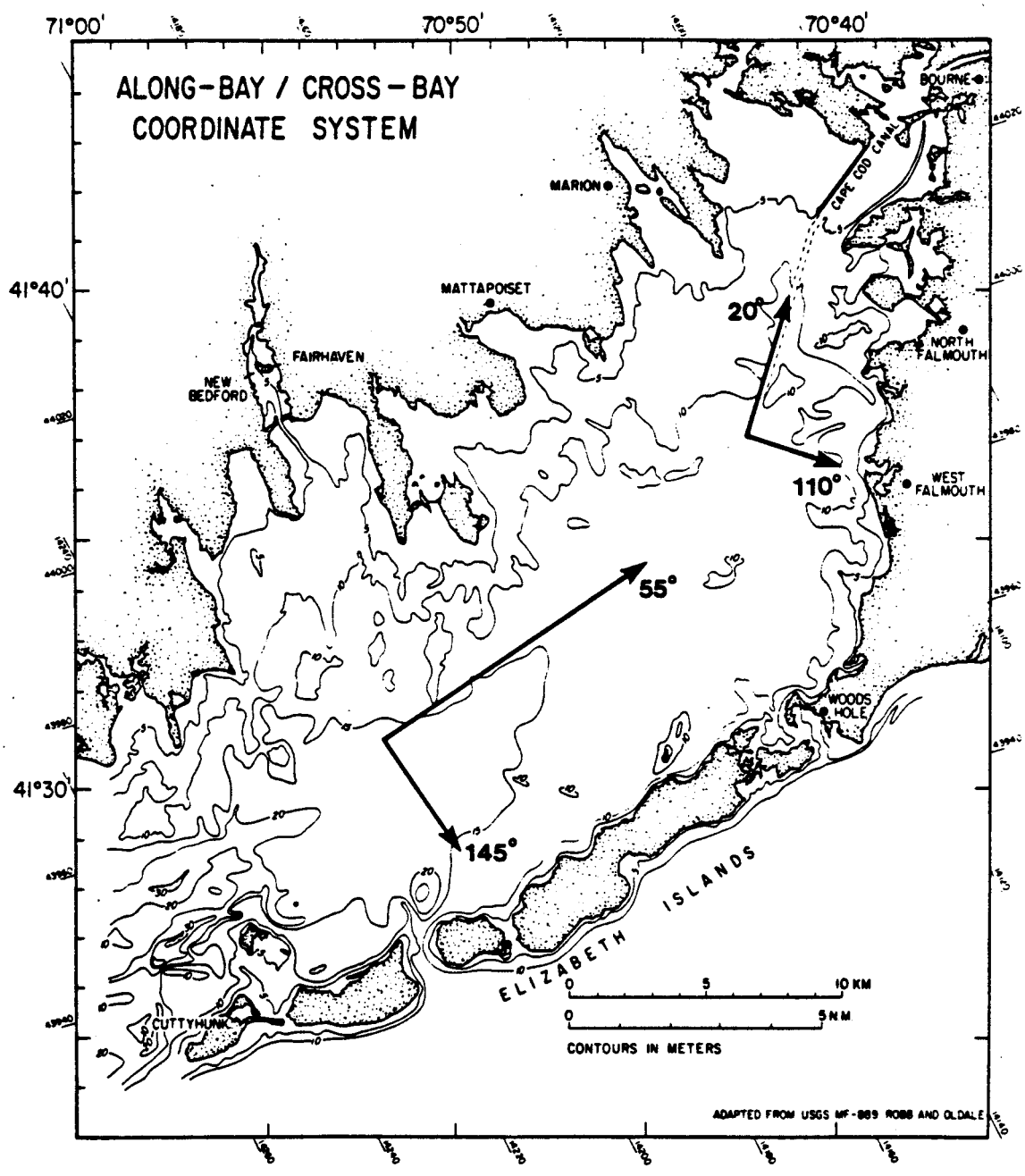

Figure 4. Definition of along-bay and cross-bay coordinate system.

to the right). Direction plots are always relative to true north. Tabular data and the tidal analysis is presented in conventional east and north coordinate system.

INSTRUMENT FOULING

Despite antifouling paint on all of the VACM and tripod sensors (except on the camera lens and transmissometer), many of the instruments fouled during the nominal three-month deployments, especially in the summer and fall. The transmission and current sensors were occassionally inspected and cleaned by divers. Nevertheless, many of the beam attenuation records (derived from the transmission data) gradually deteriorate, and any absolute calibration of the beam attenuation coefficient is suspect; the data are presented without correction for fouling and should be used with caution. A gradual drift toward higher beam attenuation or constant beam attenuation values above 4 indicate fouling of the transmissometer optics. Times when the sensors were cleaned are noted in the figure captions. In most cases, the current records have been truncated when fouling occurred. Fouling was determined by sticking of the speed sensors at low speeds (the speed dropped to zero at low speeds) and/or by a gradual decrease in the amplitude of the tidal current. For almost all deployments, the low light transmission characteristic of Buzzards Bay and fouling of the camera windows obscured the bottom in the photographs.

Some of the salinity records appear to drift toward lower values over the deployment period caused by fouling of the sensors. The salinity records are presented here without correction for completeness, but further analysis and processing of the salinity data is needed. At present the data should only be used to roughly estimate the amplitudes of the salinity fluctuations.

The VMCMs were not treated with anti-fouling paint and fouled significantly during the five month deployment. The instruments were cleaned on November 8, 1984. Based on results of tidal analysis, it was decided to correct the time series for the observed decay in response. Harmonic analysis was computed over the entire record to obtain the relationship between M_2 and N_2 tidal constituents. The record was then analyzed in 15 day pieces with 50% overlap to obtain a time series of M_2 amplitude, using inference to separate N_2 from M_2. The M_2 amplitude at points between tidal analyses were obtained by linear interpolation, while the M_2 amplitude during the first and last weeks of the record, as well as the two weeks bracketing November 8, was obtained by linear extrapolation. Observed speeds were then boosted by the ratio of the instantaneous estimate of M_2 amplitude to the M_2 amplitude at the beginning of the record. The oridinal uncorrected time series aere shown in figures 14-19c. All other figures and the statistics in the tables were derived using the corrected time series.

RECORD IDENTIFICATION

All USGS and WHOI moorings are assigned a unique 3-digit mooring number. USGS moorings deployed in Buzzards Bay had numbers ranging from 263 to 304 (table 1, and figure 2). WHOI moorings were assigned numbers 812- 814. Individual data records are labeled by a 4-digit identifier that indicates mooring number and the relative position of the instruments on that mooring (for example MMMP).

The mooring number is the first 3 numbers in the data record label (MMM), and the fourth digit (P) indicates the position of the instrument in the mooring from the surface. Thus record 8131 is the upper-most instrument on mooring 813, record 8132 the next instrument down, etc. For most of the measurements reported here, there was only one instrument on a mooring and thus the records are identified with the mooring number followed by a 1.

EXPLANATION OF DATA REPORT

This report contains data in graphical and tabular form.

Summary data plots

The mean current at all stations for all instruments deployed in Buzzards Bay is shown in figure 5 and the orientation and amplitude of the major axis of the low-frequency currents is shown in figure 6. The semi-diurnal tidal current ellipses are shown in figure 7.

Tabular data

Statistics of the current and tripod data are tabulated in tables. The mean and standard deviation of the hour-averaged and low-passed east current and north current, and the mean, standard deviation, minimum and maximum hour-averaged temperature are tabulated in table 2. Current ellipse parameters for the hour-averaged and low-passed data are tabulated in table 3. The amplitude and phase for M_4, M_2, N_2, S_2, K_1, and O_1 tidal constituents are tabulated in table 4 for elevation and in table 5 for current. Sorts of the current by direction (in 45^0 bins) and speed (by 5 cm/sec bins) are presented in table 6.

Individual data records

The current, temperature, salinity, pressure and transmission data from each instrument is presented graphically in several ways.

Scatter plots

Scatter plots of the hour-averaged and low-passed current for each instrument are shown in figure 8. Note the change in scale for the two plots. The hour-averaged data was subsampled by 2 and the low-passed data subsampled by 6 for these plots.

Spectra

Variance-conserving kinetic energy spectra of the currents for the along-bay and cross-bay currents and for the total current are shown in figure 9. The data records were broken into pieces 360 hours long and spectra averaged over the pieces.

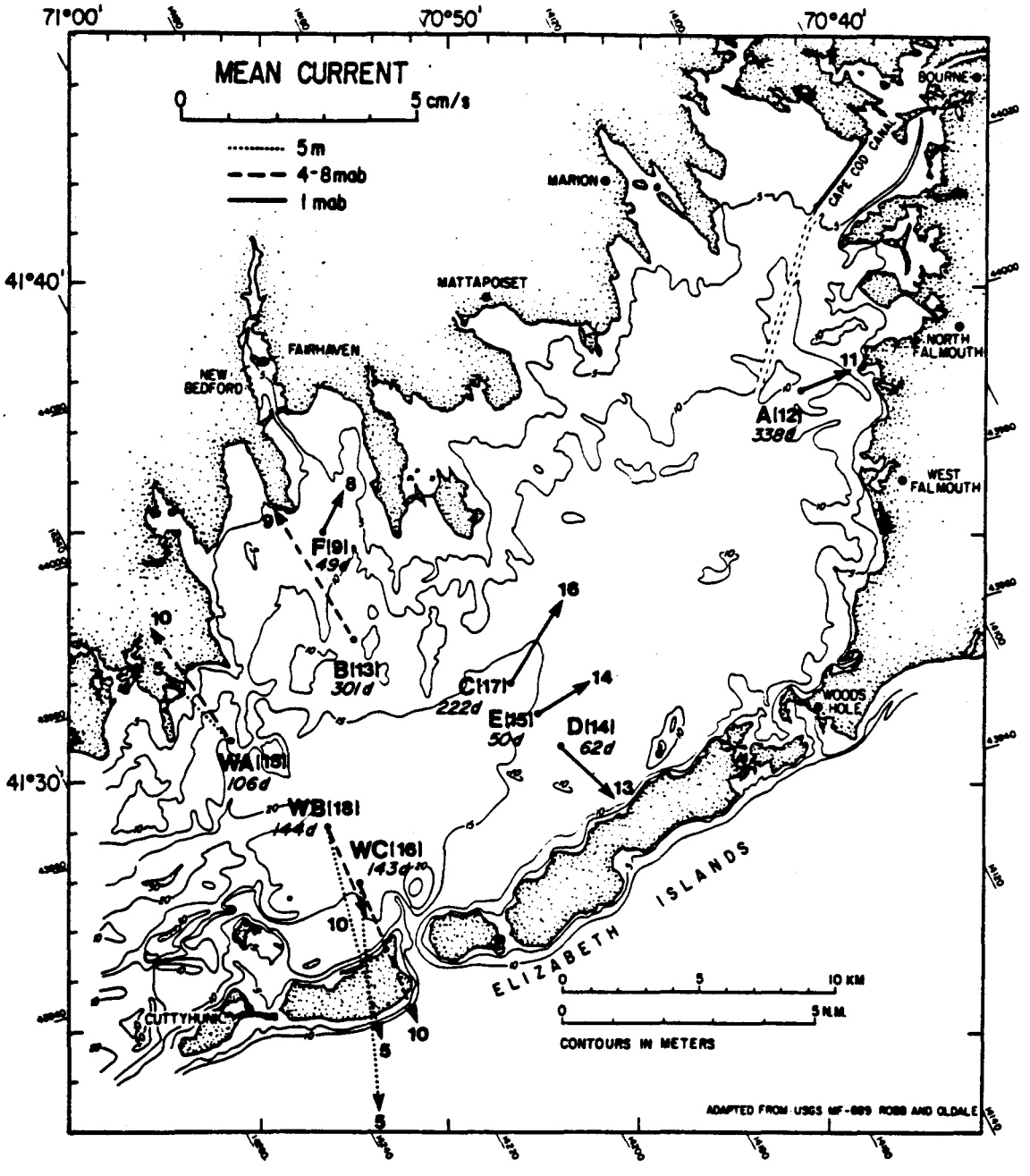

Figure 5. Mean currents observed during all observations. At stations where more than one observation was made, all records were averaged together. The number in parenthesis following the station letter is the depth of water at the station in meters and the number in italics is the number of days of current observations at that station. The number at the tip of the arrow is the depth of the current measurement in meters. See table 2.

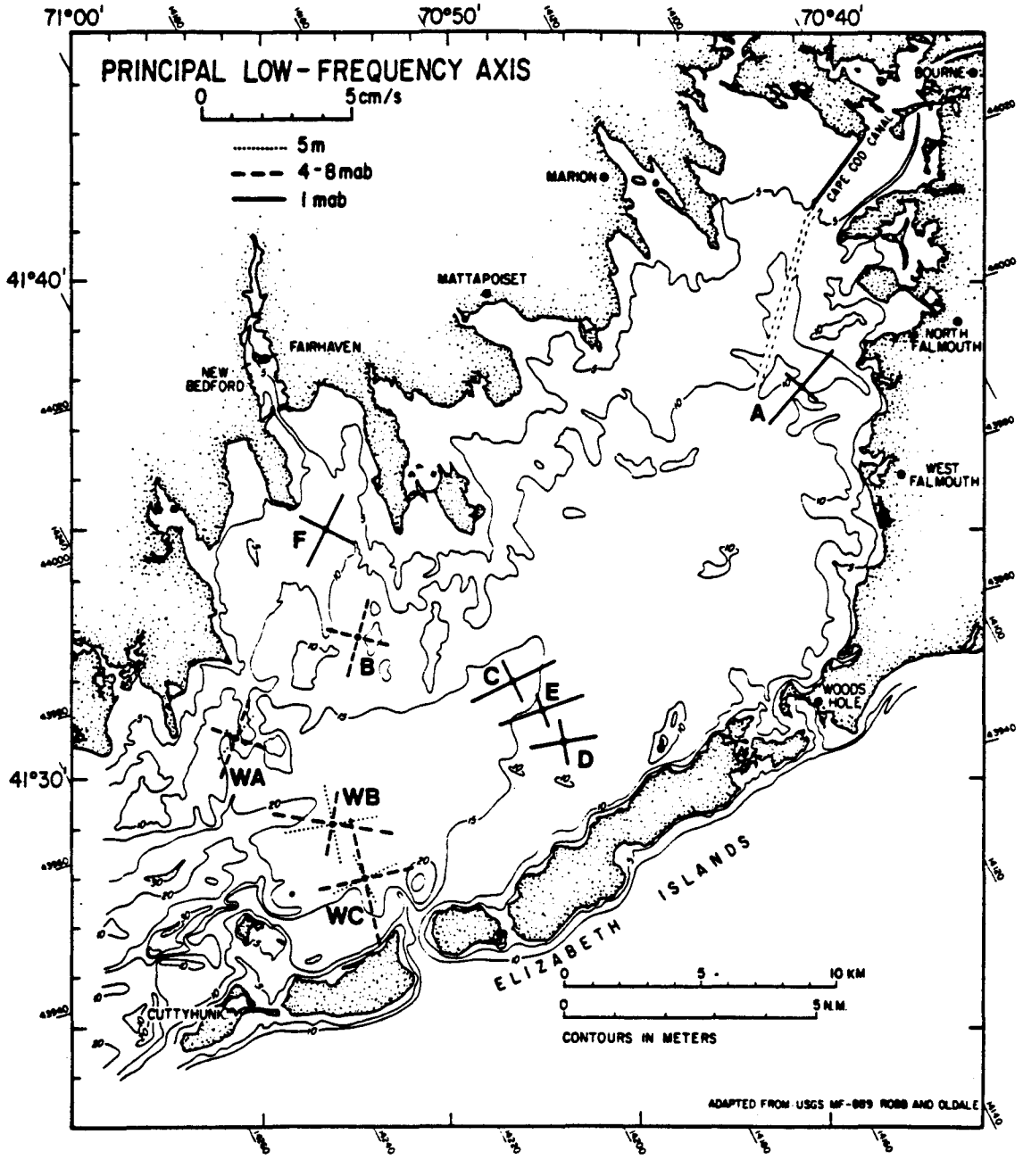

Figure 6. Principal axis of low-frequency currents. See table 3.

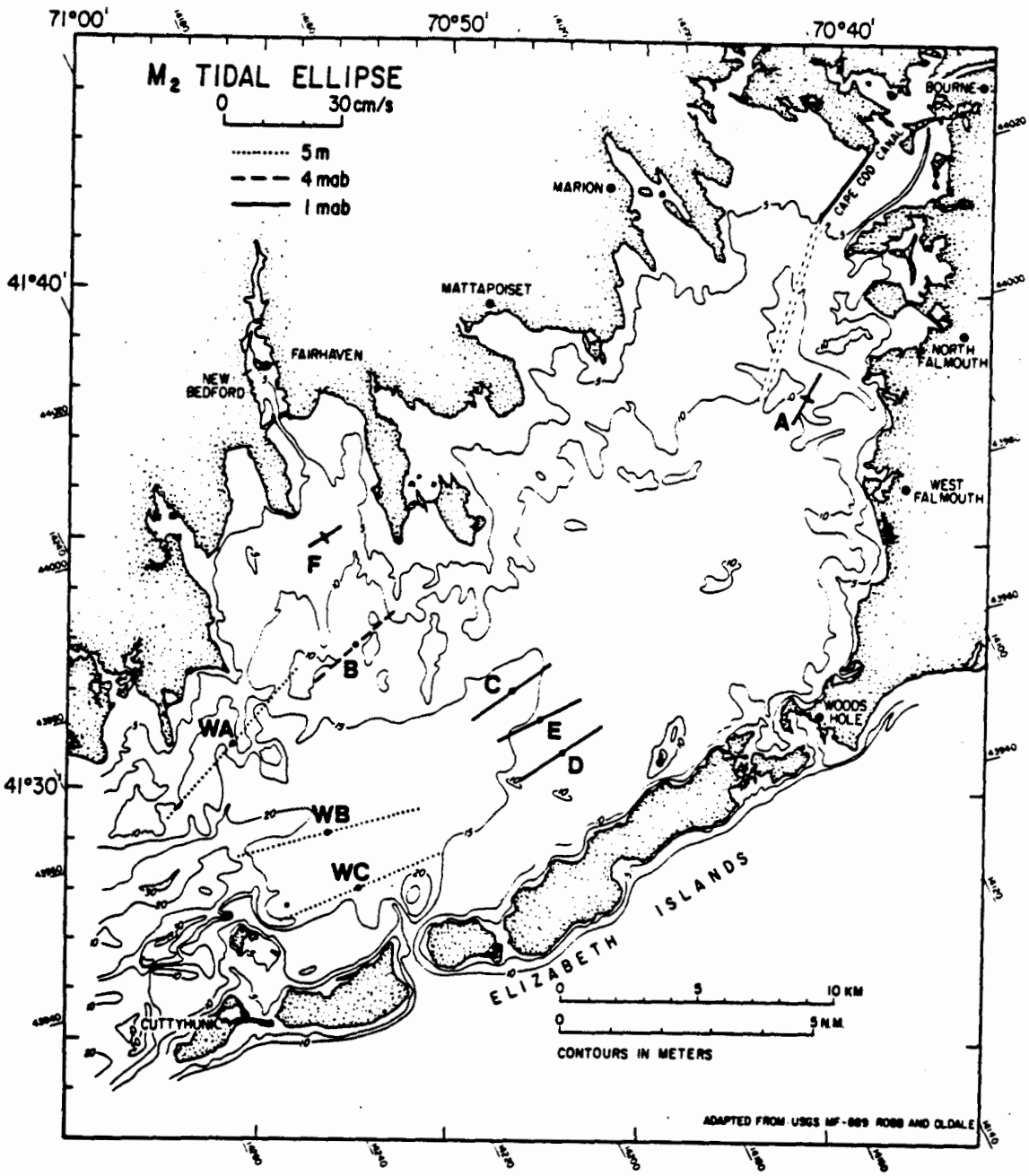

Figure 7. M_2 tidal current ellipses. Speed scale is such that the displacement over one tidal excursion is twice map scale. See table 5b.

Stackplots

Several stackplots are shown for each data record (figures 10-34). The variables in each plot depend on the instrument type:

a. Stackplot of hour-averaged temperature, salinity, beam attenuation, speed and PSDEV (for tripods and VACM-TCT, except without pressure for VACM-TCT).

b. Stackplot of hour-averaged temperature, cross-bay current, along-bay current, current direction, and current speed (for all instruments except tripod data series, which are without temperature and with pressure).

c. Stackplot of low-passed temperature, cross-bay current, along-bay current, vector stickplot (data subsampled every 4 hours), and pressure (for all instruments except VMCM and VACM data series which are without pressure).

Data grouped by Deployment

For each deployment, stackplots of selected variables from all stations are presented in figures 36-41 to illustrate the Bay-wide response.

a. Stickplots of low-passed current and wind stress.
b. Stackplots of hour-averaged PSDEV and beam attenuation.
c. Stackplots of hour-averaged temperature and salinity
d. Stackplots of low-passed pressure, pressure differences and wind stress.

Long-term time series

Measurements at stations A, B, and C (data from stations D and E are included with the station C data) were obtained for over one year. Stackplots of current speed, PSDEV, temperature, beam attenuation, and salinity for all deployments at these stations are in figures 41-44 to illustrate long-term variability. Wind stress at New Bedford for deployments 1-6 is shown in figure 45.

ACKNOWLEDGEMENTS

The bottom tripod observations were supported by the USGS. The WHOI measurements were supported by The U.S. Department of Commerce, NOAA Office of Sea Grant under Grants R/P-13 and R/P-21, the National Science Foundation Grant OCE 84-17769, the Battelle Memorial Institute Subcontract C-8184(8818)-381, the WHOI Coastal Research Center, and the WHOI Education Program. The U.S. Environmental Protection Agency provided partial support for the preparation of this data report under Cooperative Agreement CX-813547-01-0 with the WHOI. The New England Division of the U.S. Army Corps of Engineers kindly allowed use of their data. B. Strahle and J. Moody (USGS) deployed and recovered the USGS instruments. Most of the field work was conducted from the RV ASTERIAS; we thank Captain Arthur D. Colburn Jr. for his capable assistance. We also thank C.A.

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Table 2. Statistics of current observations. SD_{hr} and SD_{lp} are the standard deviations computed from the hour-averaged and low-passed time-series respectively.

							EAST			NORTH			SPEED				TEMPERATURE			
Sta	*Water Depth	Inst Depth	Moor ID	Start YYMMDD	Stop YYMMDD	# Hours	Mean	SD_{hr}	SD_{lp}	Mean	SD_{hr}	SD_{lp}	Mean	SD	Min	Max	Mean	SD	Min	Max
A	12.5	11.5	2631	820705	820801	639	1.11	2.61	1.36	1.04	5.55	2.33	5.48	3.13	0.08	19.61	21.50	1.04	18.67	23.71
	12.0	11.0	2651	820820	821007	1141	0.53	3.86	2.14	0.54	6.78	3.34	6.67	4.11	0.00	21.04	17.77	2.73	12.47	21.92
	13.0	12.0	2891	841108	841216	923	0.33	3.63	2.32	1.06	7.50	1.84	7.59	3.59	0.48	22.58	8.13	2.18	5.53	12.55
	13.1	12.1	2911	850219	850329	910	0.83	4.22	2.78	1.17	6.45	2.17	7.18	3.16	0.37	18.64	2.41	1.34	-0.32	4.52
	13.3	12.3	2951	850409	850618	1679	1.28	4.39	2.57	0.75	6.73	2.89	7.31	3.52	0.31	28.94	12.18	3.46	6.47	17.99
	12.0	11.0	2991	850626	850814	1175	0.70	4.17	2.26	-0.58	6.94	2.68	7.35	3.50	1.01	24.37	21.51	2.00	17.36	23.67
	12.6	11.6	3041	850814	851022	1658	1.45	3.01	1.67	0.71	7.16	2.68	6.95	3.82	0.04	32.74	20.20	2.38	15.51	24.61
B	12.8	11.8	2861	840906	841022	1106	-0.18	5.29	1.62	1.53	7.38	2.35	8.12	4.33	0.36	28.92	17.34	1.92	14.55	20.03
	12.6	8.6	2881	841025	841228	1540	-1.10	8.47	1.73	2.56	8.02	1.79	10.91	4.97	0.14	28.91	9.59	3.14	5.36	15.05
	12.6	8.6	2901	850114	850323	1640	-1.34	9.13	2.87	2.76	8.11	2.10	11.26	5.63	0.59	33.05	0.49	1.64	-1.80	3.55
	13.3	9.3	2931	850402	850619	1880	-1.92	7.52	1.96	2.53	8.07	2.73	10.14	5.36	0.24	36.94	10.97	3.78	4.35	17.22
	12.6	8.6	3001	850619	850807	1171	-2.56	7.76	2.39	2.94	6.78	2.78	10.11	4.37	0.07	25.04	19.50	1.75	16.18	22.71
	13.0	9.0	3031	850807	850918	1016	-1.70	8.52	2.41	3.59	7.85	3.12	11.16	5.04	1.20	31.82	19.54	3.85	15.16	23.09
C	16.6	15.6	2871	841025	850114	1946	0.41	7.93	2.50	1.12	7.82	2.18	9.75	5.51	0.23	30.54	8.68	3.48	1.69	14.97
	16.6	15.6	2921	850128	850318	1174	0.73	8.64	2.82	1.53	5.88	1.73	9.23	5.18	0.59	28.50	0.67	1.35	-1.81	3.36
	16.6	15.6	2941	850329	850504	858	1.39	8.76	2.99	2.22	6.59	1.37	9.78	5.59	0.58	40.37	6.36	1.26	4.05	9.00
	15.7	14.7	3021	850807	851003	1361	2.19	8.76	2.91	2.72	6.88	2.58	10.16	5.74	0.58	33.34	16.68	3.70	7.97	22.08
D	14.2	13.2	2851	840821	841022	1484	1.21	8.78	2.20	-1.08	6.31	1.53	9.72	5.00	0.37	28.23	17.83	2.02	14.62	21.18
E	15.4	14.4	2981	850619	850807	1175	1.07	9.25	2.99	0.66	5.49	1.59	9.39	5.39	0.22	26.97	19.11	1.47	16.56	21.71
F	9.1	8.1	3121	860709	860827	1180	0.44	4.29	2.06	0.88	4.27	2.54	5.67	2.31	0.26	15.38	21.18	1.22	18.19	23.15
WA	15.5	5.0	8121	840824	850118	3526	-1.37	13.17	1.31	1.47	15.76	1.49	17.33	11.19	0.13	52.56	12.26	5.66	0.76	21.29
		10.0	8122	840824	841208	2543	-1.69	10.79	1.91	2.44	14.79	2.62	15.37	9.93	0.17	53.35	14.98	4.02	6.75	21.14
WB	18.0	5.0	8131	840827	850118	3453	1.15	19.18	3.13	-4.59	7.20	2.38	17.79	11.21	0.16	59.95	12.23	5.23	0.88	21.02
		10.0	8132	840827	850118	3453	0.80	16.65	3.97	-1.90	7.42	2.26	15.19	10.28	0.03	58.68	12.21	5.14	1.08	20.04
WC	16.0	5.0	8141	840828	050118	3427	0.39	16.70	2.01	-4.95	6.56	1.70	16.58	8.47	0.10	44.70	12.21	5.14	1.10	20.83
		10.0	8142	840828	050118	3427	1.20	16.27	3.32	-3.00	8.39	4.23	16.19	9.13	0.14	51.92	12.18	5.08	1.36	20.08

*Water depth not corrected for tide (range ~ 1.2m)

Table 3. Ellipse parameters computed from hour-averaged and lowpassed data series. ID is the data record identifier and hours is the length of the data series. Major and minor axis, O is the elliipse orientation measured clockwise from true north, and E is ellipticity.

			Hour-averaged data				Low-passed data			
Sta	ID	Hours	Major	Minor	θ	E	Major	Minor	θ	E
A	2631	639	5.77	2.06	17	0.64	2.53	0.92	25	0.64
	2651	1141	7.47	2.24	26	0.70	3.74	1.31	29	0.65
	2891	923	7.80	2.92	17	0.63	2.47	1.62	63	0.34
	2911	910	7.00	3.23	26	0.54	3.04	1.77	60	0.42
	2951	1679	7.38	3.03	27	0.59	3.55	1.53	40	0.57
	2991	1175	7.45	3.17	24	0.58	3.18	1.45	38	0.55
	3041	1658	7.37	2.47	14	0.66	2.90	1.24	25	0.57
B	2861	1106	8.59	2.93	33	0.66	2.47	1.43	22	0.42
	2881	1540	11.32	2.80	47	0.75	1.79	1.73	5	0.03
	2901	1640	11.76	3.29	50	0.72	2.90	2.06	78	0.29
	2931	1880	10.42	3.61	42	0.65	2.73	1.96	1	0.28
	3001	1171	9.36	4.29	51	0.54	2.83	2.33	161	0.18
	3031	1016	10.79	4.19	48	0.61	3.13	2.39	6	0.23
C	2871	1946	10.85	2.51	45	0.77	2.91	1.58	52	0.46
	2921	1174	10.03	2.93	58	0.71	2.85	1.68	80	0.41
	2941	858	10.54	3.00	55	0.72	3.08	1.15	73	0.63
	3021	1361	10.59	3.45	54	0.68	3.69	1.23	49	0.67
D	2851	1484	10.44	2.81	56	0.73	2.23	1.50	79	0.33
E	2981	1175	10.40	2.73	62	0.74	3.16	1.23	70	0.61
F	3121	1180	5.00	3.40	45	0.32	2.67	1.88	26	0.30
WHA	8121	3526	20.44	1.91	40	0.91	1.82	0.79	39	0.57
	8122	2543	17.77	3.22	36	0.82	2.71	1.78	20	0.34
WHB	8131	3453	19.85	5.10	75	0.74	3.16	2.35	79	0.26
	8132	3453	17.58	4.79	70	0.73	4.00	2.19	99	0.45
WHC	8141	3427	17.23	4.99	75	0.71	2.09	1.60	65	0.23
	8142	3427	16.99	6.81	72	0.60	4.27	3.26	167	0.24

Table 4. Tidal constants (amplitude and Greenwich Phase) for tidal constituents M_4, M_2, N_2, S_2, K_1, and O_1.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	M4 AMP (MB)	M4 PHASE (DEG-G)	M2 AMP (MB)	M2 PHASE (DEG-G)	N2 AMP (MB)	N2 PHASE (DEG-G)	S2 AMP (MB)	S2 PHASE (DEG-G)	K1 AMP (MB)	K1 PHASE (DEG-G)	O1 AMP (MB)	O1 PHASE (DEG-G)
BBA (Cleveland Ledge) 41°38'N. 70°41'W.	261	13	1	8.2±0.4	38± 7	53.8±1.0	6± 2	13.9±0.9	352± 3	12.3±0.7	29± 2	7.1±1.2	176± 9	4.8±0.6	202± 5
BBB (Phinney Rock) 41°33'N. 70°52'W.	29	12	1	6.4±0.0	31± 0	50.4±0.0	6± 0	12.5±0.0	349± 0	11.3±0.0	26± 0	7.9±0.0	178± 0	5.3±0.0	203± 0
BBC (Mid-Channel) 41°32'N. 70°48'W.	174	16	1	6.7±0.3	37± 8	50.2±0.7	6± 1	12.7±0.8	354± 3	11.6±0.8	27± 1	6.9±0.7	174± 8	4.8±0.8	200± 2
BBD (Naushon) 41°31'N. 70°47'W.	58	13	1	6.5±0.2	31± 8	51.8±0.4	6± 0	12.6±0.0	347± 2	11.4±0.1	26± 1	7.0±0.3	170± 4	5.1±0.7	200± 4
BBE (Mid-channel) 41°31'N. 70°48'W.	29	14	1	7.2±0.0	30± 0	51.8±0.0	5± 0	12.9±0.0	351± 0	10.8±0.0	31± 0	6.2±0.0	163± 0	5.1±0.0	202± 0
BBF (Clark's Point) 41°35'N. 70°53'W.	29	8	1	6.9±0.0	41± 0	50.5±0.0	6± 0	12.6±0.0	354± 0	11.4±0.0	31± 0	6.4±0.0	165± 0	5.0±0.0	205± 0

Table 5a. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for M4 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	0.6±0.1	329± 97	1.7±0.2	315± 14	1.8±0.2	-0.1±0.3	316± 14	17± 4
BBB (Phinney Rock)											
41°33'N.	232	9	4	2.2±0.1	295± 7	2.7±0.2	315± 7	3.4±0.2	0.6±0.2	308± 6	39± 4
70°52'W.	29	12	1	1.5±0.0	274± 0	2.1±0.0	314± 0	2.5±0.0	0.8±0.0	301± 0	34± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	2.4±0.3	316± 8	2.4±0.4	305± 5	3.4±0.4	-0.3±0.2	311± 6	45± 5
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	2.2±0.2	320± 7	1.9±0.1	316± 15	2.9±0.2	-0.1±0.2	319± 10	49± 1
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	2.5±0.0	305± 0	2.3±0.0	310± 0	3.4±0.0	0.2±0.0	307± 0	48± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	0.6±0.0	304± 0	1.3±0.0	314± 0	1.4±0.0	0.1±0.0	312± 0	25± 0
WHOI A											
41°31'N.	145	5	10	3.6±0.1	307± 7	5.2±0.3	312± 5	6.3±0.3	0.3±0.2	311± 5	35± 1
70°56'W.	87	10	5	3.4±0.1	305± 4	4.5±0.2	307± 8	5.6±0.1	0.1±0.5	306± 5	36± 1
WHOI B											
41°29'N.	116	5	13	4.6±0.7	327± 11	2.2±0.2	310± 5	5.0±0.8	-0.5±0.4	324± 8	66± 2
70°53'W.	116	10	8	4.2±0.3	323± 7	2.6±0.3	313± 6	5.0±0.2	-0.4±0.1	321± 7	59± 4
WHOI C											
41°28'N.	116	5	11	1.6±0.1	323± 14	2.7±0.2	257± 7	2.8±0.3	-1.4±0.2	263± 11	15± 11
70°52'W.	116	10	6	1.7±0.1	312± 12	2.7±0.2	259± 12	2.9±0.2	-1.2±0.2	270± 12	25± 7

Table 5b. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for M2 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	FOURIER COEFFICIENTS NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	3.0±0.7	249± 17	7.6±1.0	285± 7	8.0±1.0	1.6 0.6	281± 9	18± 5
BBB (Phinney Rock)											
41°33'N.	232	9	4	10.0±1.0	289± 5	9.0±1.1	287± 4	13.4±1.3	-0.3±0.9	288± 2	48± 3
70±52'W.	29	12	1	5.7±0.0	272± 0	8.9±0.0	289± 0	10.5±0.0	1.4±0.0	284± 0	32± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	10.0±0.7	280± 11	7.6±1.4	294± 3	12.5±0.8	1.5±1.0	284± 8	53± 7
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	10.4±0.1	278± 8	7.3±1.1	288± 0	12.7±0.6	1.0±0.7	281± 6	55± 5
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	10.7±0.0	273± 0	5.8±0.0	285± 0	12.1±0.0	1.0±0.0	276± 0	62± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	4.0±0.0	220± 0	3.2±0.0	276± 0	4.6±0.0	2.3±0.0	238± 0	57± 0
WHOI A											
41°31'N.	145	5	10	16.3±0.4	297± 2	19.5±0.3	296± 1	25.4±0.3	-0.3±0.4	296± 2	40± 1
70°56'W.	87	10	5	12.8±0.7	293± 1	21.7±0.4	298± 1	21.7±0.4	0.9±0.4	296± 1	36± 1
WHOI B											
41°29'N.	116	5	13	23.7±0.5	315± 2	8.2±0.9	277± 4	24.6±0.5	-4.9±0.4	312± 2	74± 2
70°53'W.	116	10	8	20.1±0.8	313± 1	7.8±0.5	283± 3	21.2±0.9	-3.8±0.3	310± 1	71± 1
WHOI C											
41°28'N.	116	5	11	21.6±0.1	309± 1	6.9±0.4	268± 1	22.3±0.1	-4.5±0.3	306± 1	76± 1
70°52'W.	116	10	6	20.5±1.2	309± 1	6.9±0.4	272± 5	21.3±1.1	-4.0±0.1	306± 1	74± 2

Table 5c. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for N2 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	0.7±0.2	235± 27	2.0±0.2	269± 9	2.1±0.2	0.3±0.2	265± 12	17± 8
BBB (Phinney Rock)											
41°33'N.	232	9	4	2.3±0.5	264± 13	2.2±0.3	269± 7	3.1±0.5	0.2±0.4	267± 6	46± 6
70°52'W.	29	12	1	1.6±0.0	243± 0	2.4±0.0	263± 0	2.9±0.0	0.5±0.0	257± 0	33± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	2.5±0.3	270± 14	2.1±0.4	279± 8	3.2±0.3	0.3±0.4	273± 9	50± 7
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	2.7±0.1	243± 13	1.5±0.5	275± 6	3.0±0.2	0.6±0.2	248± 14	64± 12
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	2.6±0.0	254± 0	1.8±0.0	276± 0	3.1±0.0	0.6±0.0	261± 0	56± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	1.0±0.0	201± 0	1.2±0.0	270± 0	1.3±0.0	0.9±0.0	250± 0	29± 0
WHOI A											
41°31'N.	145	5	10	4.5±0.4	275± 6	5.3±0.8	276± 6	7.0±0.9	0.1±0.2	276± 6	41± 2
70°56'W.	87	10	5	3.2±0.2	269± 12	4.1±0.3	275± 5	5.2±0.2	0.2±0.3	272± 7	38± 4
WHOI B											
41°29'N.	116	5	13	6.6±0.6	297± 5	2.2±0.3	260± 8	6.9±0.6	-1.3±0.4	294± 5	75± 3
70°53'W.	116	10	8	5.7±0.9	295± 9	2.2±0.9	275± 9	6.1±1.1	-0.7±0.4	293± 8	70± 6
WHOI C											
41°28'N.	116	5	11	5.3±0.7	285± 8	1.8±0.3	242± 21	5.5±0.7	-1.2±0.5	282± 9	76± 4
70°52'W.	116	10	6	5.2±0.6	281± 12	1.6±0.3	248± 22	5.4±0.7	-0.8±0.5	280± 12	76± 6

Table 5d. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for S2 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	0.5±0.3	257±105	1.4±0.4	317± 20	1.5±0.4	0.0±0.2	316± 23	6± 22
BBB (Phinney Rock)											
41°33'N.	232	9	4	1.7±0.7	312± 40	2.1±0.2	305± 14	2.7±0.4	-0.1±0.3	306± 11	37± 16
70°52'W.	29	12	1	1.1±0.0	266± 0	1.8±0.0	310± 0	2.0±0.0	0.7±0.0	301± 0	25± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	1.8±0.4	303± 9	1.8±0.1	321± 11	2.5±0.4	0.4±0.3	314± 5	45± 7
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	1.7±0.5	292± 1	1.4±0.1	322± 11	2.2±0.4	0.6±0.1	305± 11	50± 11
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	1.6±0.0	274± 0	1.1±0.0	333± 0	1.8±0.0	0.8±0.0	287± 0	65± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	0.2±0.0	254± 0	0.7±0.0	310± 0	0.7±0.0	0.2±0.0	308± 0	10± 0
WHOI A											
41°31'N.	145	5	10	3.9±0.6	312± 4	4.6±0.5	309± 4	6.0±0.7	-0.1±0.2	310± 3	41± 2
70°56'W.	87	10	5	2.9±0.0	313± 5	3.7±0.2	309± 2	4.7±0.1	-0.2±0.1	311± 3	38± 2
WHOI B											
41°29'N.	116	5	13	5.1±0.8	330± 4	2.1±0.3	307± 4	5.5±0.8	-0.7±0.1	327± 4	69± 4
70°53'W.	116	10	8	4.9±0.8	330± 10	2.3±0.5	311± 11	5.4±0.8	-0.7±0.4	327± 11	66± 4
WHOI C											
41°28'N.	116	5	11	4.5±0.4	324± 3	1.8±0.1	280± 11	4.7±0.4	-1.2±0.3	320± 2	73± 2
70°52'W.	116	10	6	4.6±0.5	327± 9	2.0±0.5	290± 11	4.9±0.6	-1.1±0.4	322± 8	71± 2

Table 5e. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for K1 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTOM (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	0.6±0.2	356± 83	1.0±0.5	64± 87	1.1±0.5	0.2±0.4	53± 84	22± 15
BBB (Phinney Rock)											
41°33'N.	232	9	4	0.8±0.4	74± 38	0.8±0.4	66± 78	1.1±0.5	-0.1±0.3	74± 71	42± 25
70°52'W.	29	12	1	1.2±0.0	97± 0	1.8±0.0	68± 0	2.1±0.0	-0.5±0.0	76± 0	32± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	1.1±0.5	82± 51	1.2±0.6	104± 60	1.6±0.7	-0.1±0.4	104± 33	29± 51
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	1.4±0.1	104± 77	1.3±0.1	64± 67	1.8±0.0	-0.7±0.1	85± 69	47± 5
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	1.0±0.0	27± 0	0.3±0.0	117± 0	1.0±0.0	0.3±0.0	27± 0	90± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	0.7±0.0	325± 0	1.0±0.0	13± 0	1.2±0.0	0.5±0.0	360± 0	31± 0
WHOI A											
41°31'N.	145	5	10	1.2±0.2	86± 10	1.4±0.2	81± 5	1.9±0.3	-0.1±0.1	83± 7	39± 3
70°56'W.	87	10	5	1.0±0.2	79± 6	1.7±0.4	92± 17	2.0±0.4	0.2±0.3	89± 11	30± 5
WHOI B											
41°29'N.	116	5	13	2.2±0.2	106± 8	0.5±0.1	98± 45	2.3±0.2	-0.1±0.3	106± 10	79± 3
70°53'W.	116	10	8	1.9±0.3	103± 14	0.9±0.1	80± 33	2.1±0.3	-0.3±0.4	99± 13	67± 5
WHOI C											
41°28'N.	116	5	11	1.9±0.2	83± 5	0.7±0.1	98± 23	2.0±0.2	0.2±0.3	86± 5	70± 3
70°52'W.	116	10	6	2.2±0.5	79± 7	1.1±0.2	94± 18	2.4±0.5	0.2±0.2	82± 10	63± 5

Table 5f. Fourier coefficients (amplitude and Greenwich phase) for east and north currents, and ellipse parameters (major axis, minor axis, orientation measured clockwise from north, and phase) for O1 tidal currents.

STATION LAT. LONG.	RECORD LENGTH (DAYS)	INSTR DEPTH (M)	ABOVE BOTTON (M)	FOURIER COEFFICIENTS EAST (CM/SEC)	EAST PHASE (DEG-G)	NORTH (CM/SEC)	NORTH PHASE (DEG-G)	CURRENT ELLIPSE PARAMETERS UMAJOR (CM/SEC)	UMINOR (CM/SEC)	PHASE (DEG-G)	ORIEN (DEG-TRUE)
BBA (Cleveland Ledge)											
41°38'N. 70°41'W.	261	13	1	0.3±0.1	279± 80	0.3±0.2	65± 76	0.5±0.2	0.0±0.2	67± 74	18± 60
BBB (Phinney Rock)											
41°33'N.	232	9	4	0.5±0.3	106± 23	0.5±0.3	111± 96	0.8±0.2	-0.1±0.3	110± 94	43± 23
70°52'W.	29	12	1	0.3±0.0	82± 0	0.5±0.0	159± 0	0.5±0.0	0.3±0.0	152± 0	12± 0
BBC (Mid-channel)											
41°32'N. 70°48'W.	174	16	1	0.4±0.1	68± 29	0.5±0.3	104± 28	0.7±0.2	0.2±0.2	90± 29	38± 19
BBD (Naushon)											
41°31'N. 70°47'W.	58	13	1	0.4±0.2	188± 62	0.6±0.1	128± 0	0.7±0.0	-0.2±0.1	131± 9	22± 41
BBE (Mid-channel)											
41°31'N. 70°48'W.	29	14	1	0.4±0.0	192± 0	0.3±0.0	160± 0	0.5±0.0	-0.1±0.0	178± 0	50± 0
BBF (Clark's Point)											
41°35'N. 70°53'W.	29	8	1	0.4±0.0	264± 0	0.1±0.0	134± 0	0.4±0.0	-0.1±0.0	85± 0	280± 0
WHOI A											
41°31'N.	145	5	10	1.0±0.4	114± 6	0.8±0.3	106± 11	1.3±0.5	-0.1±0.1	110± 8	50± 6
70°56'W.	87	10	5	0.7±0.2	105± 23	0.8±0.1	131± 9	1.0±0.2	0.2±0.2	117± 8	43± 12
WHOI B											
41°29'N.	116	5	13	1.4±0.1	106± 11	0.4±0.1	109± 44	1.4±0.1	-0.0±0.2	105± 11	76± 9
70°53'W.	116	10	8	1.0±0.3	110± 14	0.4±0.2	110± 21	1.1±0.3	0.0±0.0	110± 14	70± 6
WHOI C											
41°28'N.	116	5	11	1.4±0.2	73± 5	0.9±0.2	99± 14	1.7±0.2	0.4±0.1	80± 8	58± 7
70°52'W.	116	10	6	1.3±0.2	65± 8	1.0±0.3	103± 16	1.6±0.3	0.5±0.3	83± 14	50± 14

Table 6. Percent occurrence of currents sorted by current speed (in 5 cm/sec bins) and direction (by 45° bins). The bins are listed by the upper-bound of the bin. For example, the bin in the column 5 and 22.5 contains the percent occurrence of speeds between 0 and 5 cm/sec and between 337.5° and 22.5°.

2631DS-A1H ERA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 82- VII-05 10.00.00 STOP TIME : 82-VIII-01 00.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 639

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	7.199	9.546	5.164	4.069	11.111	5.790	2.973	4.695	50.548
10	9.859	15.180	0.469	1.095	10.485	2.973	0.000	0.939	41.002
15	2.817	2.034	0.000	0.000	2.034	0.469	0.000	0.000	7.355
20	0.469	0.626	0.000	0.000	0.000	0.000	0.000	0.000	1.095
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	20.344	27.387	5.634	5.164	23.631	9.233	2.973	5.634	

Table 6a. Percent occurrence of currents sorted by current speed and direction for record 2631, station A. See caption for Table 6 for full explanation of bins.

2651DS-A1E BBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 82-VIII-20 12.00.00 STOP TIME : 82- X -07 00.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1141

	VDIR.1								
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	4.733	8.326	4.294	3.769	7.450	4.294	2.629	3.330	38.826
10	4.996	13.322	0.876	0.701	7.713	7.537	1.139	1.490	37.774
15	2.191	10.517	0.000	0.000	3.506	5.083	0.088	0.175	21.560
20	0.000	0.351	0.000	0.000	0.789	0.613	0.000	0.000	1.753
25	0.000	0.000	0.000	0.000	0.088	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	11.919	32.515	5.171	4.470	19.544	17.528	3.856	4.996	

Table 6b. Percent occurrence of currents sorted by current speed and direction for record 2651, station A. See caption for Table 6 for full explanation of bins.

2891-A1E BBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84- XI -08 11.00.00 STOP TIME : 84- XII-16 21.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 923

	VDIR.1								
VSPD.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	3.359	3.792	2.925	2.492	3.900	2.709	2.275	2.059	23.510
10	13.543	12.351	1.950	1.408	12.134	6.176	2.384	3.900	53.846
15	7.151	4.442	0.000	0.000	5.525	1.950	0.000	0.000	19.068
20	1.408	0.433	0.000	0.000	1.192	0.108	0.000	0.000	3.142
25	0.000	0.000	0.000	0.000	0.433	0.000	0.000	0.000	0.433
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	25.460	21.018	4.875	3.900	23.185	10.943	4.659	5.959	

Table 6c. Percent occurrence of currents sorted by current speed and direction for record 2891, station A. See caption for Table 6 for full explanation of bins.

2911-A1K EBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- II -19 14.00.00 STOP TIME : 85- III-29 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 910

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	4.066	3.407	3.956	3.736	3.407	3.077	1.868	2.637	26.154
10	11.099	15.055	3.846	2.418	7.912	9.780	3.516	1.538	55.165
15	5.495	6.374	0.000	0.110	1.978	3.297	0.110	0.000	17.363
20	0.330	0.440	0.000	0.000	0.220	0.330	0.000	0.000	1.319
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	20.989	25.275	7.802	6.264	13.516	16.484	5.495	4.176	

Table 6d. Percent occurrence of currents sorted by current speed and direction for record 2911, station A. See caption for Table 6 for full explanation of bins.

2951-A1K RBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- IV -09 11.00.00 STOP TIME : 85- VI -18 09.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1679

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	4.169	3.633	4.407	3.752	2.978	3.097	2.442	2.740	27.219
10	6.909	17.749	3.097	2.859	9.172	8.398	1.668	1.965	51.817
15	3.157	7.624	0.060	0.000	3.395	4.229	0.000	0.000	18.463
20	0.417	1.310	0.000	0.000	0.417	0.060	0.000	0.000	2.204
25	0.119	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.179
30	0.060	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.119
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	14.830	30.435	7.564	6.611	15.962	15.783	4.110	4.705	

Table 6e. Percent occurrence of currents sorted by current speed and direction for record 2951, station A. See caption for Table 6 for full explanation of bins.

2991-A1E BBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- VI -26 08.00.00 STOP TIME : 85-VIII-14 06.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1175

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	3.064	3.489	3.830	5.021	5.447	3.404	2.128	2.043	28.426
10	6.979	12.681	4.851	2.894	9.957	9.957	1.106	2.213	50.638
15	3.234	4.426	0.000	0.000	6.813	3.106	0.000	0.000	18.979
20	0.426	0.511	0.000	0.000	0.511	0.085	0.000	0.000	1.532
25	0.426	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.426
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	14.128	21.106	8.681	7.915	22.128	16.553	3.234	4.255	

Table 6f. Percent occurrence of currents sorted by current speed and direction for record 2991, station A. See caption for Table 6 for full explanation of bins.

3041-A1K BBA , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85-VIII-14 08.00.00 STOP TIME : 85- X -22 09.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1658

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	4.343	7.177	3.679	6.333	7.419	2.413	1.749	1.930	35.042
10	10.193	12.666	1.689	2.955	12.123	3.197	0.241	1.025	44.089
15	5.187	6.092	0.060	0.362	6.212	0.483	0.000	0.000	18.396
20	1.448	0.060	0.000	0.060	0.422	0.060	0.000	0.000	2.051
25	0.121	0.000	0.000	0.000	0.060	0.121	0.000	0.000	0.302
30	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	21.291	25.995	5.428	9.710	26.297	6.333	1.990	2.955	

Table 6g. Percent occurrence of currents sorted by current speed and direction for record 3041, station A. See caption for Table 6 for full explanation of bins.

2861-A1E BEB , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84- IX -06 10.00.00 STOP TIME : 84- X -22 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1106

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	3.165	3.255	3.255	1.447	2.984	4.069	3.436	2.803	24.412
10	8.228	12.116	2.622	0.904	2.260	12.568	5.154	3.074	46.926
15	3.255	8.590	0.000	0.000	0.633	9.222	0.452	0.000	22.152
20	0.995	2.803	0.000	0.000	0.090	1.175	0.000	0.000	5.063
25	0.181	0.904	0.000	0.000	0.000	0.181	0.000	0.000	1.266
30	0.000	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.181
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	15.823	27.848	5.877	2.351	5.967	27.215	9.042	5.877	

Table 6h. Percent occurrence of currents sorted by current speed and direction for record 2861, station B. See caption for Table 6 for full explanation of bins.

2881-A1E BBB , 9m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84- X -25 11.00.00 STOP TIME : 84- XII-28 14.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1540

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	1.948	1.039	0.714	0.649	0.455	1.753	3.052	2.922	12.532
10	5.779	6.234	0.455	0.065	0.065	6.558	7.208	5.519	31.883
15	2.468	15.000	0.195	0.000	0.130	12.597	4.610	0.130	35.130
20	0.260	8.896	0.000	0.000	0.000	6.169	0.519	0.000	15.844
25	0.065	3.182	0.000	0.000	0.000	0.584	0.065	0.000	3.896
30	0.000	0.519	0.000	0.000	0.000	0.195	0.000	0.000	0.714
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	10.519	34.870	1.364	0.714	0.649	27.857	15.455	8.571	

Table 61. Percent occurrence of currents sorted by current speed and direction for record 2881, station B. See caption for Table 6 for full explanation of bins.

2901-A1E BEB , 9m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- I -14 16.00.00 STOP TIME : 85- III-23 23.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1640

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.890	2.012	1.280	0.427	0.671	1.707	1.951	3.049	12.988
10	5.610	6.280	1.341	0.183	0.305	4.756	8.780	4.817	32.073
15	2.866	10.793	0.000	0.000	0.183	9.207	5.671	0.610	29.329
20	0.549	9.878	0.061	0.000	0.000	6.098	1.646	0.000	18.232
25	0.000	4.268	0.000	0.000	0.000	1.220	0.976	0.000	6.463
30	0.000	0.549	0.000	0.000	0.000	0.183	0.061	0.000	0.793
35	0.000	0.122	0.000	0.000	0.000	0.000	0.000	0.000	0.122
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	10.915	33.902	2.683	0.610	1.159	23.171	19.085	8.476	

Table 6j. Percent occurrence of currents sorted by current speed and direction for record 2901, station B. See caption for Table 6 for full explanation of bins.

2931-A1E BEB , 9m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- IV -02 02.03.45 STOP TIME : 85- VI -19 09.03.45

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1880

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	2.553	2.500	1.596	1.064	1.064	1.223	2.872	3.777	16.649
10	7.447	6.330	1.436	0.745	0.957	6.064	8.989	5.638	37.606
15	4.734	7.606	0.160	0.000	0.053	9.043	5.426	0.798	27.819
20	1.489	5.372	0.000	0.000	0.000	4.840	1.330	0.000	13.032
25	0.691	2.181	0.000	0.000	0.000	1.064	0.106	0.000	4.043
30	0.160	0.426	0.000	0.000	0.000	0.053	0.000	0.000	0.638
35	0.053	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.160
40	0.000	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	17.128	24.574	3.191	1.809	2.074	22.287	18.723	10.213	

Table 6k. Percent occurrence of currents sorted by current speed and direction for record 2931, station B. See caption for Table 6 for full explanation of bins.

3001-A1E BBB , 9m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- VI -19 13.00.00 STOP TIME : 85-VIII-07 07.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1171

	VDIR.1								
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.110	1.452	1.623	1.196	0.342	0.939	1.879	1.537	10.077
10	9.052	5.636	2.989	2.220	1.537	3.160	9.991	8.967	43.553
15	4.611	6.576	0.512	0.000	0.171	6.149	12.041	2.989	33.049
20	1.708	4.355	0.000	0.000	0.000	2.135	2.562	0.000	10.760
25	0.085	1.964	0.000	0.000	0.000	0.342	0.085	0.000	2.477
30	0.000	0.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	16.567	20.068	5.124	3.416	2.050	12.724	26.558	13.493	

Table 61. Percent occurrence of currents sorted by current speed and direction for record 3001, station B. See caption for Table 6 for full explanation of bins.

3031-A1M BBB , 9m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85-VIII-07 09.00.00 STOP TIME : 85- X -23 13.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1853

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	6.908	8.041	1.403	0.486	1.079	6.206	7.663	5.990	37.777
10	3.778	7.124	1.403	0.378	0.917	3.886	5.828	4.425	27.739
15	2.644	7.717	0.162	0.162	0.270	3.994	5.181	1.079	21.209
20	0.917	4.533	0.054	0.054	0.216	2.752	1.295	0.000	9.822
25	0.270	1.835	0.000	0.000	0.000	0.486	0.270	0.000	2.860
30	0.054	0.432	0.000	0.000	0.054	0.000	0.000	0.000	0.540
35	0.000	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	14.571	29.736	3.022	1.079	2.536	17.323	20.237	11.495	

Table 6m. Percent occurrence of currents sorted by current speed and direction for record 3031, station B. See caption for Table 6 for full explanation of bins.

2851-A1H BED , 13m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-21 13.00.00 STOP TIME : 84- X -22 08.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1484

	VDIR.1								
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.685	2.426	3.032	2.763	3.032	3.100	1.213	0.741	17.992
10	0.809	8.423	11.523	2.358	3.100	10.310	2.156	0.539	39.218
15	0.000	8.962	8.593	0.202	0.674	10.175	1.078	0.000	26.685
20	0.000	3.976	1.482	0.000	0.067	6.806	0.000	0.000	12.332
25	0.000	1.348	0.202	0.000	0.000	1.819	0.000	0.000	3.369
30	0.000	0.202	0.000	0.000	0.000	0.202	0.000	0.000	0.404
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	2.493	25.337	21.833	5.323	6.873	32.412	4.447	1.280	

Table 6n. Percent occurrence of currents sorted by current speed and direction for record 2851, station D. See caption for Table 6 for full explanation of bins.

2871-A1E RBC , 16m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84- X -25 10.00.00 STOP TIME : 85- I -14 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1946

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.696	3.392	3.546	2.107	3.135	3.340	2.672	1.799	21.686
10	2.621	11.819	2.724	0.308	1.028	11.819	3.957	0.874	35.149
15	0.822	12.282	0.411	0.000	0.051	10.740	0.925	0.000	25.231
20	0.051	7.811	0.051	0.000	0.000	4.625	0.257	0.000	12.795
25	0.000	2.878	0.000	0.000	0.000	1.233	0.000	0.000	4.111
30	0.000	0.514	0.000	0.000	0.000	0.462	0.000	0.000	0.976
35	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	5.190	38.695	6.732	2.415	4.214	32.271	7.811	2.672	

Table 6o. Percent occurrence of currents sorted by current speed and direction for record 2871, station C. See caption for Table 6 for full explanation of bins.

2921-A1K EBC , 16m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- I -28 13.00.00 STOP TIME : 85- III-18 10.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1174

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	2.385	2.470	4.174	2.896	2.215	3.578	3.578	1.959	23.254
10	3.492	11.073	6.218	0.341	0.852	5.707	8.944	2.641	39.267
15	0.085	10.647	1.193	0.000	0.000	6.303	4.514	0.000	22.743
20	0.000	6.729	0.511	0.000	0.000	2.726	0.852	0.000	10.818
25	0.000	2.470	0.170	0.000	0.000	0.767	0.000	0.000	3.407
30	0.000	0.256	0.000	0.000	0.000	0.256	0.000	0.000	0.511
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	5.963	33.646	12.266	3.237	3.066	19.336	17.888	4.600	

Table 6p. Percent occurrence of currents sorted by current speed and direction for record 2921, station C. See caption for Table 6 for full explanation of bins.

2941-A1E BBC , 16m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- III-29 12.00.00 STOP TIME : 85- V -04 05.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 858

	VDIR.1								
VSPD.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	3.147	3.147	1.981	1.166	1.865	2.331	3.030	3.380	20.047
10	2.214	12.937	6.643	1.049	1.049	5.828	7.576	1.981	39.277
15	0.233	13.054	1.981	0.000	0.000	6.294	3.846	0.117	25.524
20	0.000	6.294	0.233	0.000	0.117	2.797	0.583	0.000	10.023
25	0.000	2.797	0.000	0.000	0.000	0.932	0.000	0.000	3.730
30	0.000	0.816	0.000	0.000	0.000	0.117	0.000	0.000	0.932
35	0.000	0.233	0.000	0.000	0.000	0.000	0.000	0.000	0.233
40	0.000	0.117	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.117	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	5.594	39.510	10.839	2.214	3.030	18.298	15.035	5.478	

Table 6q. Percent occurrence of currents sorted by current speed and direction for record 2941, station C. See caption for Table 6 for full explanation of bins.

2981-A1E EBE , 14m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85- VI -19 11.00.00 STOP TIME : 85-VIII-07 09.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1175

	VDIR.1								
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.957	5.702	4.936	2.553	1.872	2.043	2.638	2.894	24.596
10	1.362	8.766	9.617	1.532	0.681	6.128	6.128	0.851	35.064
15	0.340	7.404	4.000	0.000	0.000	8.766	3.574	0.000	24.085
20	0.000	5.021	1.191	0.000	0.000	4.426	1.447	0.000	12.085
25	0.000	2.723	0.255	0.000	0.000	0.511	0.255	0.000	3.745
30	0.000	0.426	0.000	0.000	0.000	0.000	0.000	0.000	0.426
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	3.660	30.043	20.000	4.085	2.553	21.872	14.043	3.745	

Table 6r. Percent occurrence of currents sorted by current speed and direction for record 2981, station E. See caption for Table 6 for full explanation of bins.

3021-A1E EBC , 16m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 85-VIII-07 08.00.00 STOP TIME : 85- XII-05 13.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 2886

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	3.569	5.405	3.222	3.049	3.326	7.103	4.505	3.257	33.437
10	2.010	10.499	4.401	0.554	0.520	6.965	3.534	1.040	29.522
15	0.312	11.400	1.871	0.000	0.069	5.717	2.322	0.069	21.760
20	0.035	7.415	0.069	0.000	0.000	2.841	0.416	0.000	10.776
25	0.000	2.460	0.000	0.000	0.000	0.693	0.000	0.000	3.153
30	0.000	0.832	0.000	0.000	0.000	0.035	0.000	0.000	0.866
35	0.000	0.347	0.000	0.000	0.000	0.139	0.000	0.000	0.485
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	5.925	38.358	9.563	3.604	3.915	23.493	10.776	4.366	

Table 6s. Percent occurrence of currents sorted by current speed and direction for record 3021, station C. See caption for Table 6 for full explanation of bins.

3121-A1K REF , 8m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 86- VII-09 13.00.00 STOP TIME : 86-VIII-27 16.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 1180

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	4.068	5.932	5.085	4.576	4.407	6.949	4.407	4.831	40.254
10	7.203	16.017	5.763	1.356	6.186	8.220	5.593	5.085	55.424
15	0.932	1.949	0.763	0.000	0.254	0.254	0.000	0.085	4.237
20	0.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	12.288	23.898	11.610	5.932	10.847	15.424	10.000	10.000	

Table 6t. Percent occurrence of currents sorted by current speed and direction for record 3121, station F. See caption for Table 6 for full explanation of bins.

8121-A1K WHOI A , 5m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-24 14.00.00 STOP TIME : 85- I -18 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 3526

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	4.056	1.843	0.227	0.085	0.199	8.070	4.509	2.382	15.372
10	3.460	4.368	0.000	0.000	0.000	5.445	2.864	0.652	16.790
15	1.220	4.821	0.000	0.000	0.000	7.516	0.482	0.000	14.039
20	0.340	5.956	0.000	0.000	0.000	7.998	0.028	0.000	14.322
25	0.142	6.665	0.000	0.000	0.000	7.289	0.000	0.000	14.095
30	0.028	5.956	0.000	0.000	0.000	5.048	0.000	0.000	11.032
35	0.000	3.403	0.000	0.000	0.000	3.261	0.000	0.000	6.665
40	0.000	2.326	0.000	0.000	0.000	1.843	0.000	0.000	4.169
45	0.000	1.475	0.000	0.000	0.000	0.851	0.000	0.000	2.326
50	0.000	0.539	0.000	0.000	0.000	0.425	0.000	0.000	0.964
55	0.000	0.170	0.000	0.000	0.000	0.057	0.000	0.000	0.227
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	9.246	37.521	0.227	0.085	0.199	41.804	7.884	3.035	

Table 6u. Percent occurrence of currents sorted by current speed and direction for record 8121, station WA. See caption for Table 6 for full explanation of bins.

8122-A1K WHOI A , 10m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-24 14.00.00 STOP TIME : 84- XII-08 12.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 2543

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	3.578	2.084	0.315	0.354	0.236	2.831	4.247	2.910	16.555
10	4.640	3.185	0.157	0.039	0.315	6.292	3.736	1.455	19.819
15	3.303	4.758	0.000	0.000	0.118	8.140	0.904	0.197	17.420
20	2.359	4.444	0.000	0.000	0.157	8.258	0.236	0.039	15.494
25	1.612	5.112	0.000	0.000	0.000	5.859	0.079	0.000	12.662
30	0.944	4.365	0.000	0.000	0.000	3.932	0.039	0.000	9.280
35	0.275	2.084	0.000	0.000	0.000	1.888	0.000	0.000	4.247
40	0.433	1.534	0.000	0.000	0.000	1.062	0.039	0.000	3.067
45	0.393	0.629	0.000	0.000	0.000	0.118	0.000	0.000	1.140
50	0.079	0.157	0.000	0.000	0.000	0.039	0.000	0.000	0.275
55	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	17.656	28.352	0.472	0.393	0.826	38.419	9.280	4.601	

Table 6v. Percent occurrence of currents sorted by current speed and direction for record 8122, station WA. See caption for Table 6 for full explanation of bins.

8131-A1E WHOI B , 5m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-27 15.00.00 STOP TIME : 85- I -18 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 3453

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	0.550	0.811	1.825	2.143	1.911	2.433	1.738	0.753	12.163
10	0.087	0.579	3.707	2.317	2.635	3.562	2.838	0.232	15.957
15	0.029	0.521	4.402	2.172	1.853	3.445	3.186	0.145	17.753
20	0.000	0.405	5.416	1.245	0.840	3.213	3.186	0.087	16.392
25	0.000	0.232	5.647	0.348	0.203	4.981	1.593	0.000	13.003
30	0.000	0.116	4.344	0.203	0.000	4.025	1.477	0.000	10.165
35	0.000	0.029	3.244	0.000	0.000	2.462	0.695	0.000	6.429
40	0.000	0.000	2.056	0.000	0.000	1.448	0.405	0.000	3.910
45	0.000	0.000	1.506	0.000	0.000	0.724	0.232	0.000	2.462
50	0.000	0.000	0.666	0.000	0.000	0.087	0.029	0.000	0.782
55	0.000	0.000	0.550	0.000	0.000	0.087	0.029	0.000	0.666
60	0.000	0.000	0.319	0.000	0.000	0.000	0.000	0.000	0.319
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	0.666	2.693	33.681	8.427	7.443	30.466	15.407	1.216	

Table 6w. Percent occurrence of currents sorted by current speed and direction for record 8131, station WB. See caption for Table 6 for full explanation of bins.

8132-A1H WHOI B , 10m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-27 15.00.00 STOP TIME : 85- I -18 11.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 3453

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	1.158	1.825	2.520	1.767	2.114	2.722	3.099	1.506	16.710
10	0.666	1.998	3.968	2.635	2.143	4.054	4.836	0.811	21.112
15	0.145	1.332	4.749	1.100	1.072	4.981	4.344	0.145	17.869
20	0.116	1.158	4.807	0.232	0.174	4.344	3.099	0.203	14.133
25	0.058	0.724	5.300	0.000	0.000	3.823	2.143	0.174	12.221
30	0.029	0.434	4.286	0.000	0.000	2.983	1.158	0.000	8.891
35	0.000	0.203	2.404	0.000	0.000	1.390	0.492	0.000	4.489
40	0.000	0.232	1.245	0.000	0.000	0.869	0.261	0.000	2.606
45	0.000	0.058	0.608	0.000	0.000	0.261	0.116	0.000	1.043
50	0.000	0.174	0.348	0.000	0.000	0.087	0.029	0.000	0.637
55	0.000	0.000	0.145	0.000	0.000	0.058	0.000	0.000	0.203
60	0.000	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.087
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	2.172	8.225	30.379	5.734	5.502	25.572	19.577	2.838	

Table 6x. Percent occurrence of currents sorted by current speed and direction for record 8132, station WB. See caption for Table 6 for full explanation of bins.

8141-A1N WHOI C , 5m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-28 16.00.00 STOP TIME : 85- I -18 10.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 3427

VSPD.1 \ VDIR.1	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
5	0.117	0.233	1.955	2.159	1.663	1.634	0.467	0.000	8.229
10	0.000	0.379	4.990	2.626	3.735	3.881	1.634	0.089	17.275
15	0.000	0.233	5.486	2.480	2.509	6.215	2.247	0.000	19.171
20	0.000	0.175	8.170	1.868	1.605	6.274	3.677	0.000	21.768
25	0.000	0.233	6.886	0.584	0.438	5.165	3.006	0.000	16.312
30	0.000	0.088	4.523	0.233	0.000	2.860	2.743	0.000	10.446
35	0.000	0.000	2.247	0.029	0.029	1.050	1.488	0.000	4.844
40	0.000	0.000	0.642	0.000	0.000	0.467	0.525	0.000	1.634
45	0.000	0.000	0.088	0.000	0.000	0.058	0.175	0.000	0.321
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	0.117	1.342	34.987	9.980	9.980	27.604	15.961	0.000	

Table 6y. Percent occurrence of currents sorted by current speed and direction for record 8141, station WC. See caption for Table 6 for full explanation of bins.

8142-A1E WEDI C , 10m

COORDINATE SYSTEM NOT ROTATED
NORTH IS TOWARDS 0 DEGREES

START TIME : 84-VIII-28 16.00.00 STOP TIME : 85- I -18 10.00.00

SAMPLING INTERVAL : 60 MINUTES

TOTAL # PTS: 3427

				VDIR.1					
	22.5	67.5	112.5	157.5	202.5	247.5	292.5	337.5	CUM AVG
VSPD.1									
5	0.496	0.613	1.663	1.868	1.634	1.371	1.138	0.409	9.192
10	0.292	1.109	3.852	2.889	3.968	4.435	2.539	0.379	19.463
15	0.233	1.021	5.544	2.451	2.159	6.011	3.239	0.350	21.010
20	0.204	1.401	5.894	1.313	1.401	4.931	3.618	0.029	18.792
25	0.263	0.730	5.603	0.671	0.350	3.560	3.297	0.058	14.532
30	0.263	0.875	4.027	0.117	0.117	1.722	1.809	0.029	8.958
35	0.175	0.467	2.013	0.088	0.000	1.021	0.875	0.000	4.640
40	0.146	0.204	0.905	0.029	0.000	0.379	0.467	0.000	2.130
45	0.058	0.146	0.321	0.000	0.000	0.233	0.175	0.000	0.934
50	0.000	0.029	0.117	0.000	0.000	0.029	0.058	0.000	0.233
55	0.029	0.000	0.058	0.000	0.000	0.029	0.000	0.000	0.117
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
999	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUM AVG	2.159	6.595	29.997	9.425	9.629	23.723	17.216	1.255	

Table 6z. Percent occurrence of currents sorted by current speed and direction for record 8142, station WC. See caption for Table 6 for full explanation of bins.

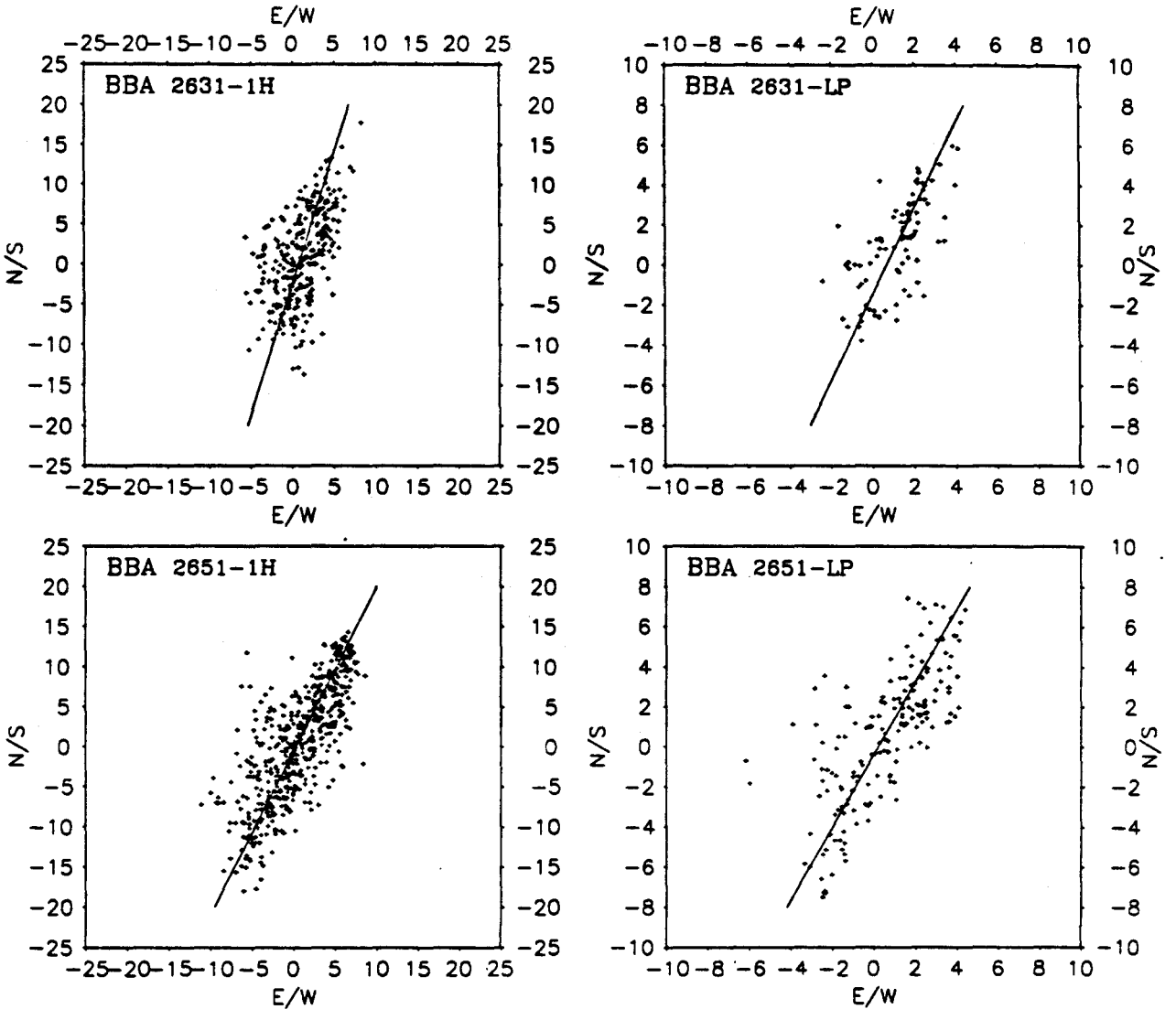


Figure 8a. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) at Station A, records 263 and 265. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

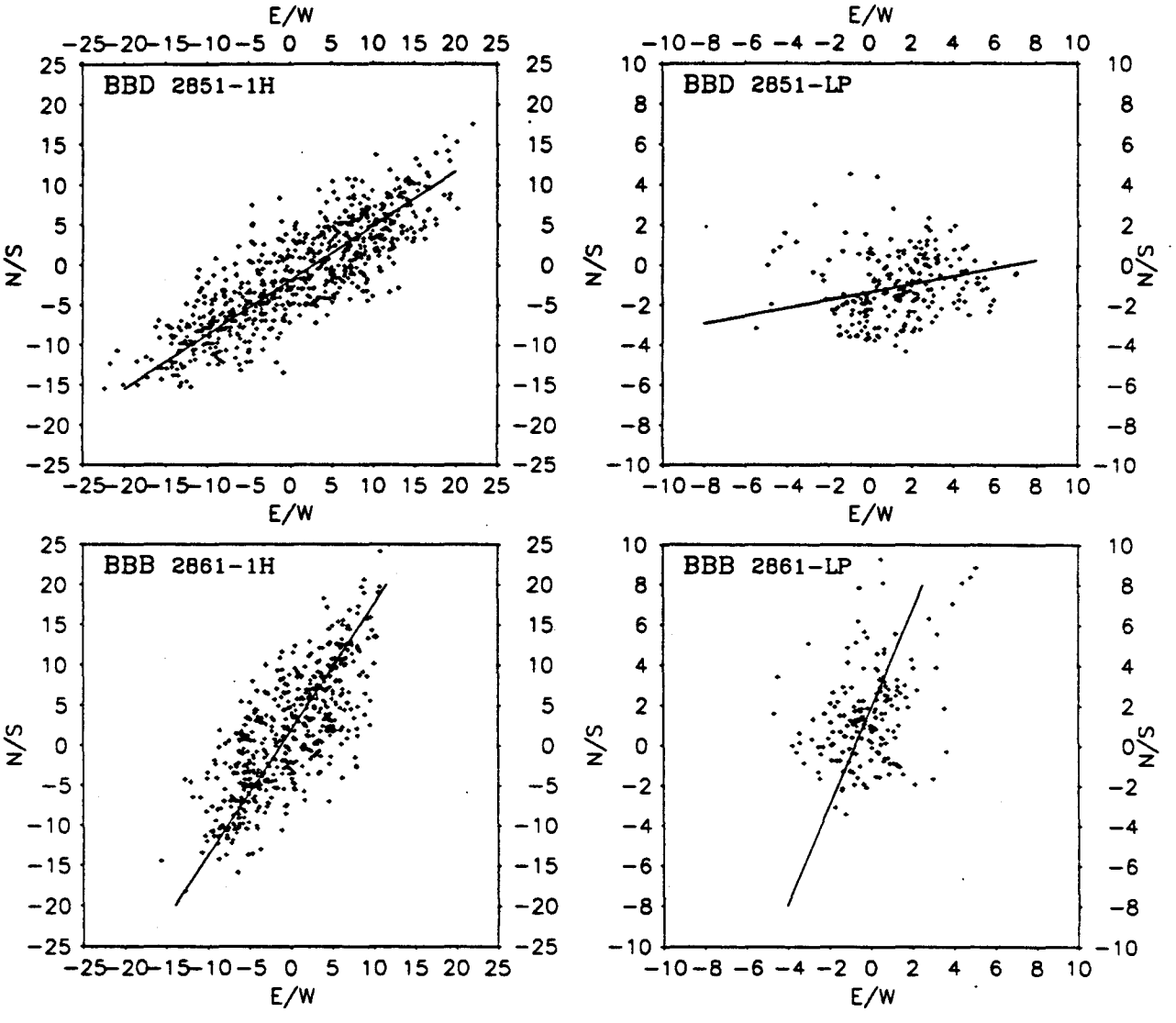


Figure 8b. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 1. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

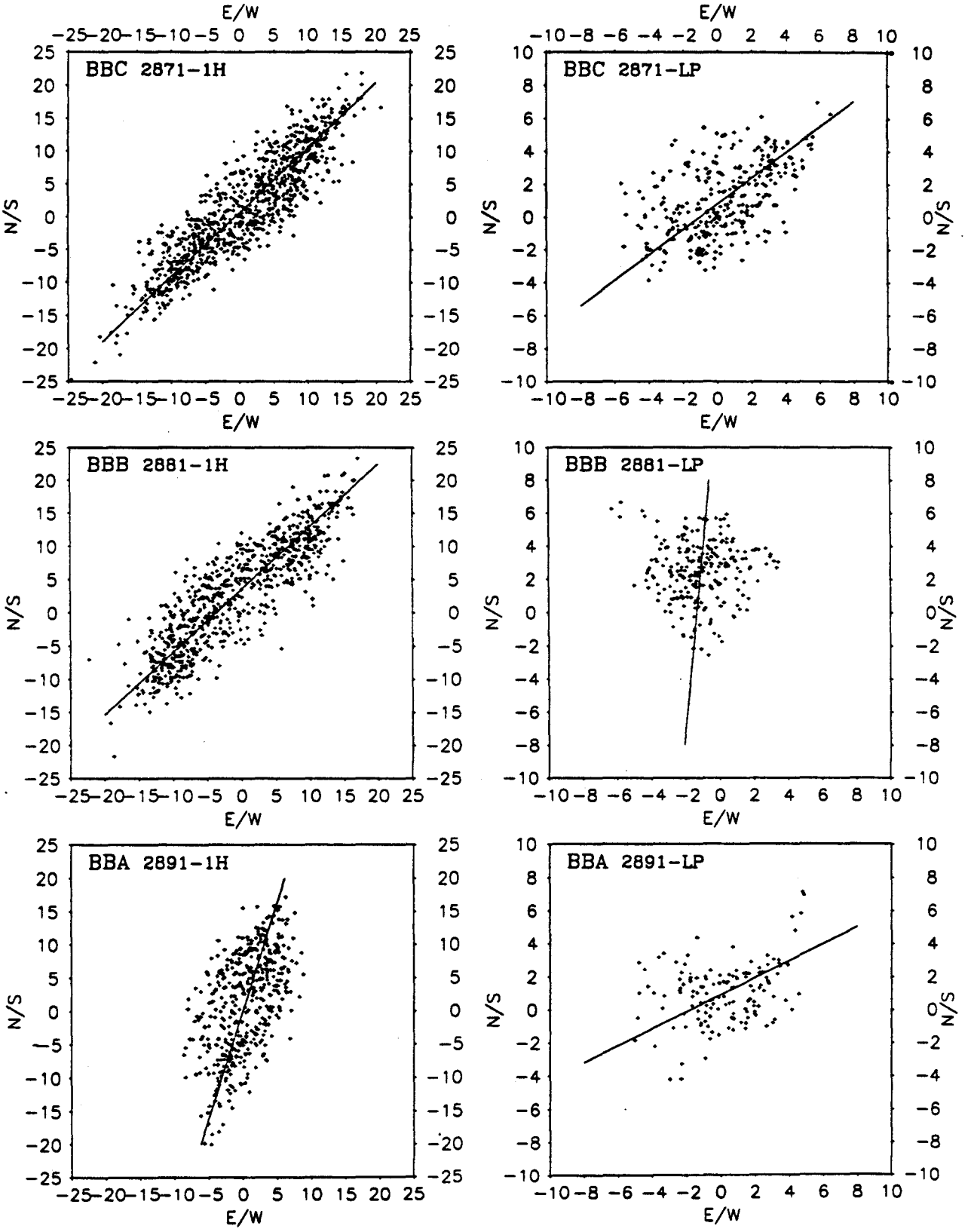


Figure 8c. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 2. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

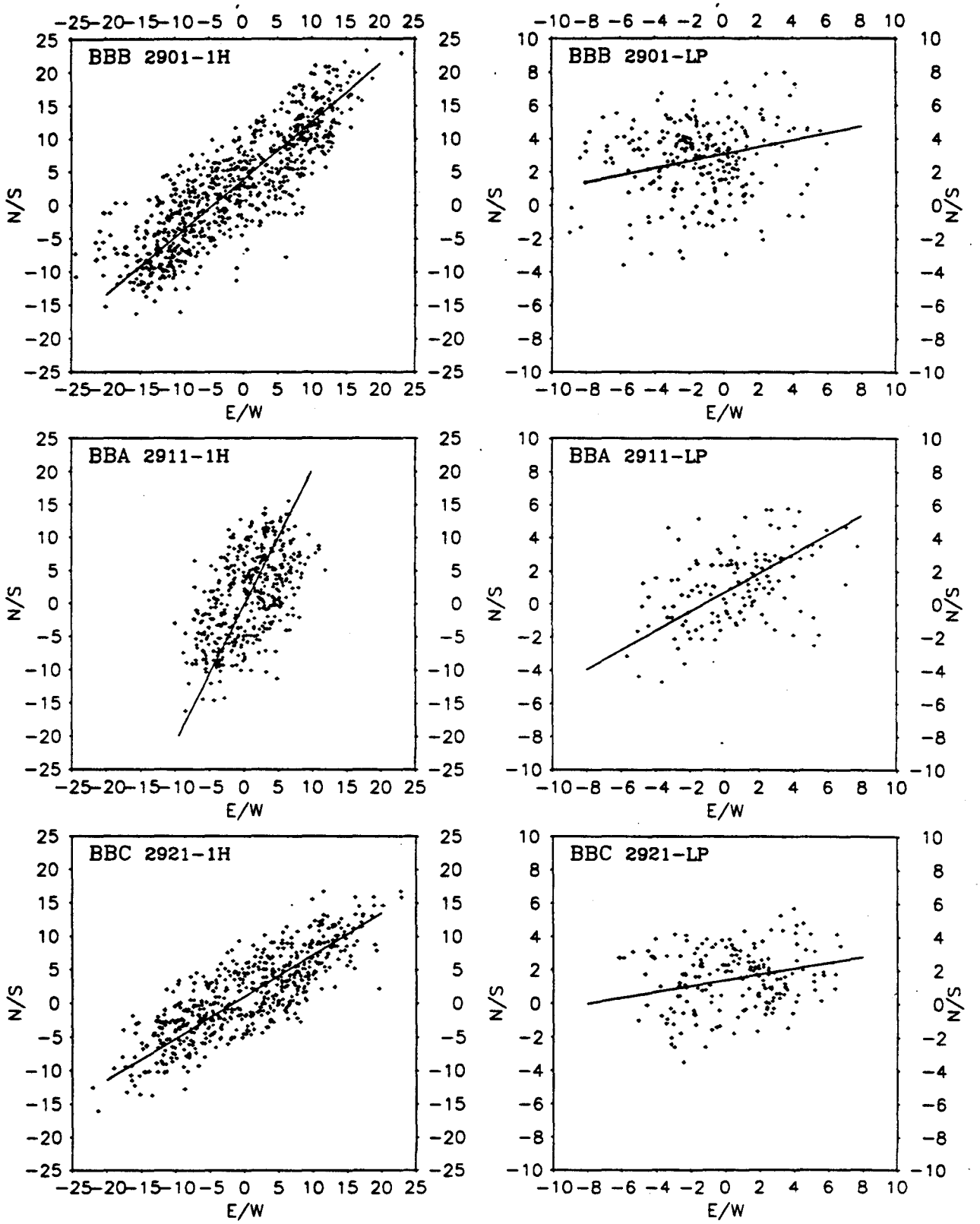


Figure 8d. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 3. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

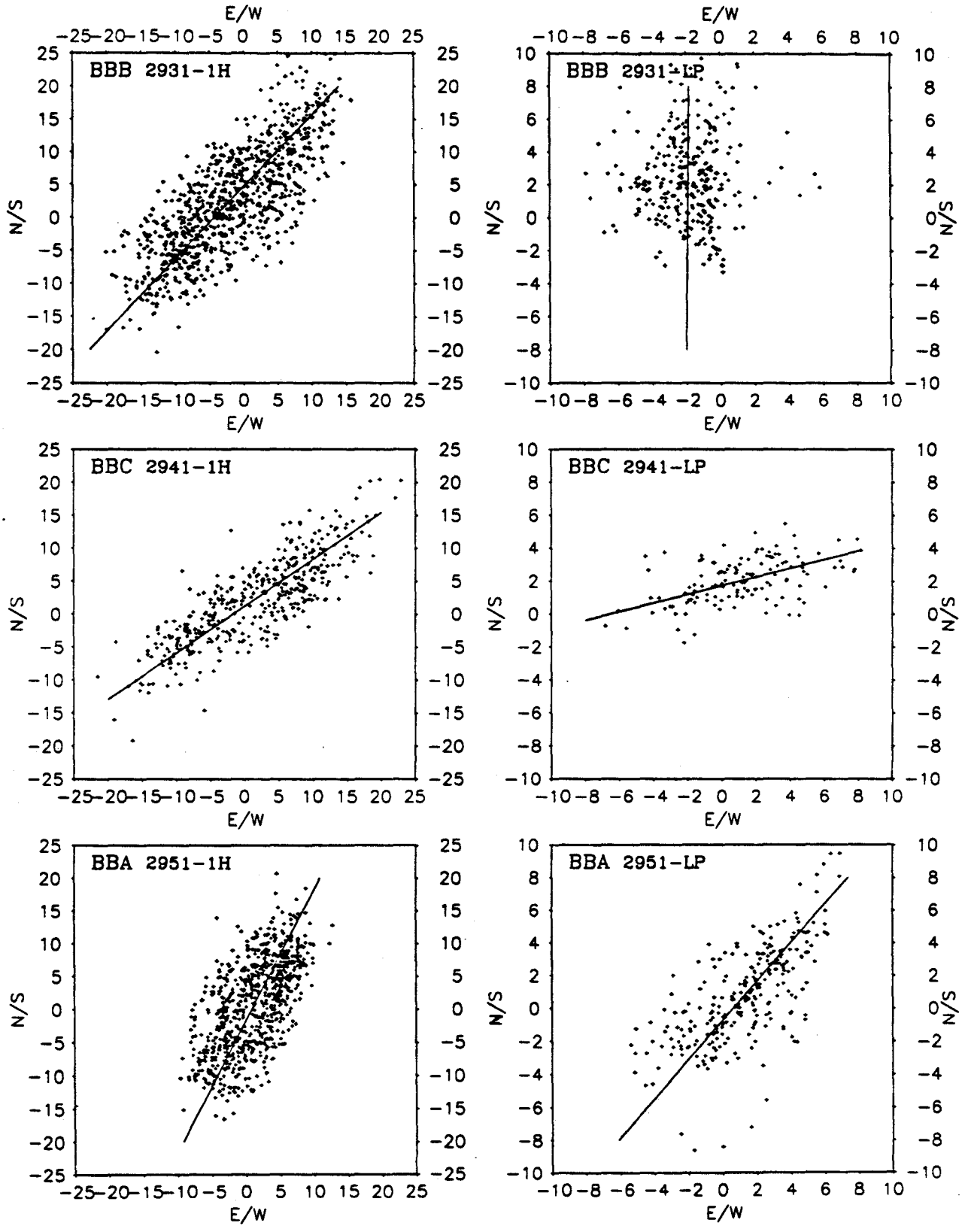


Figure 8e. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 4. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

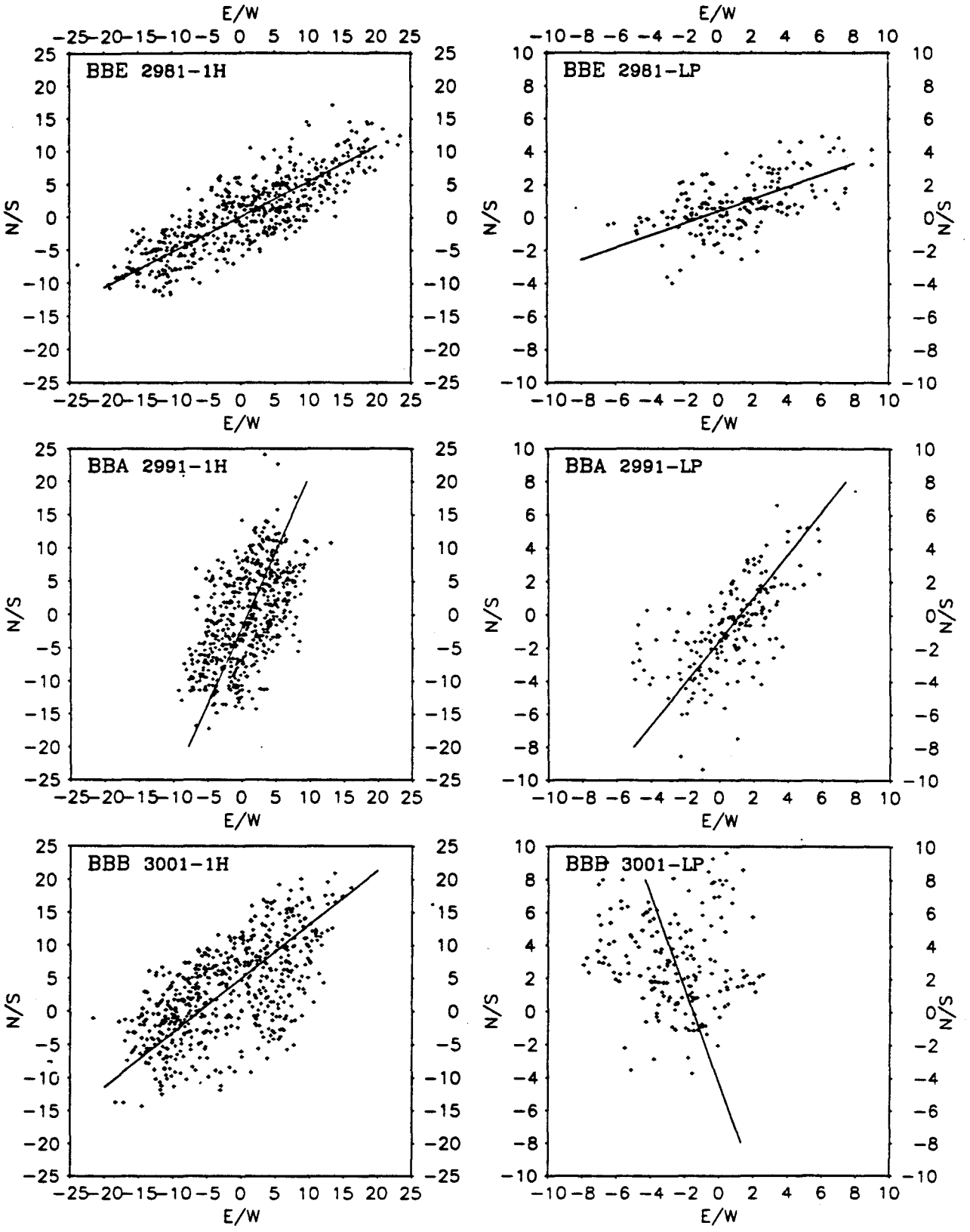


Figure 8f. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 5. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

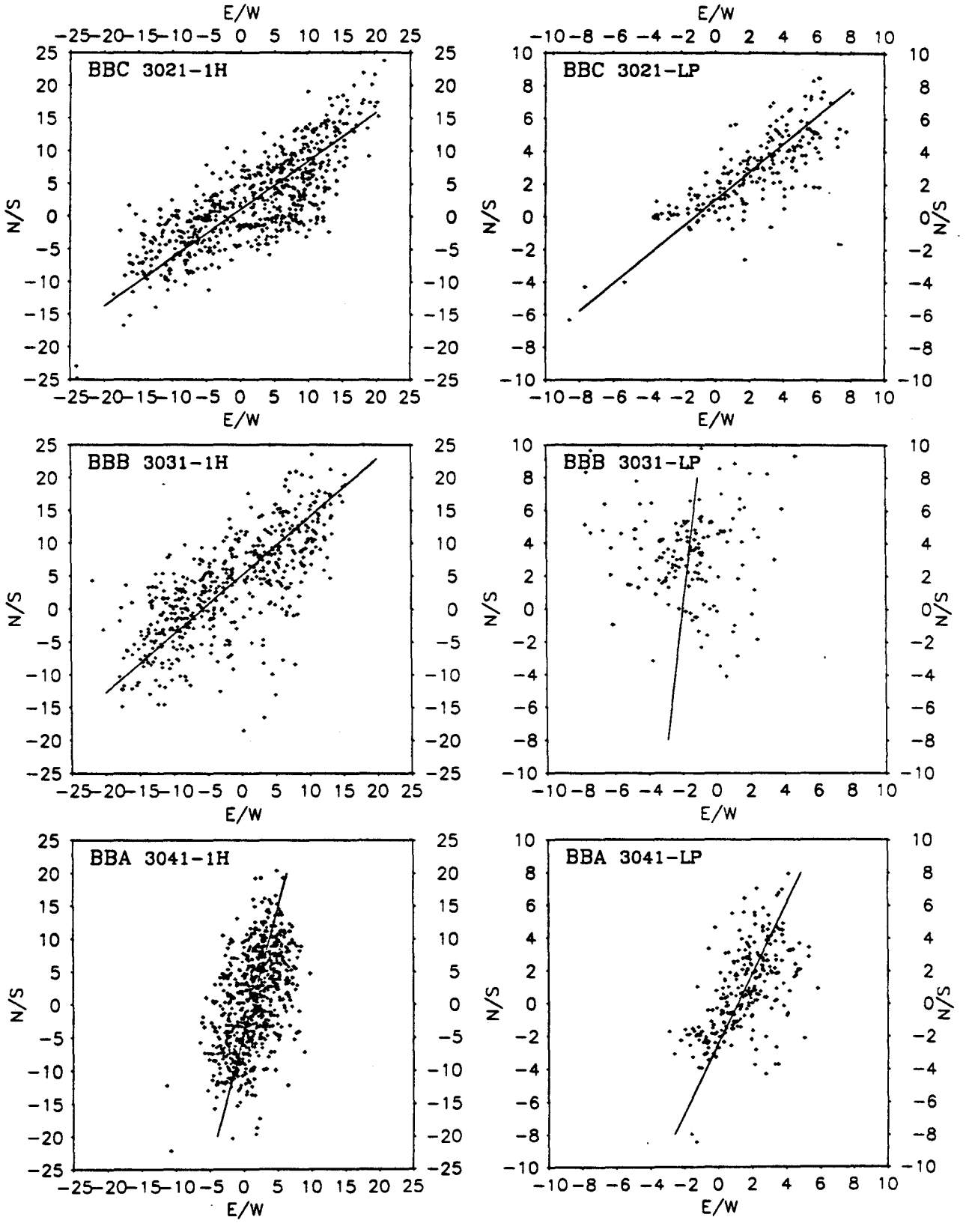


Figure 8g. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) during deployment 6. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

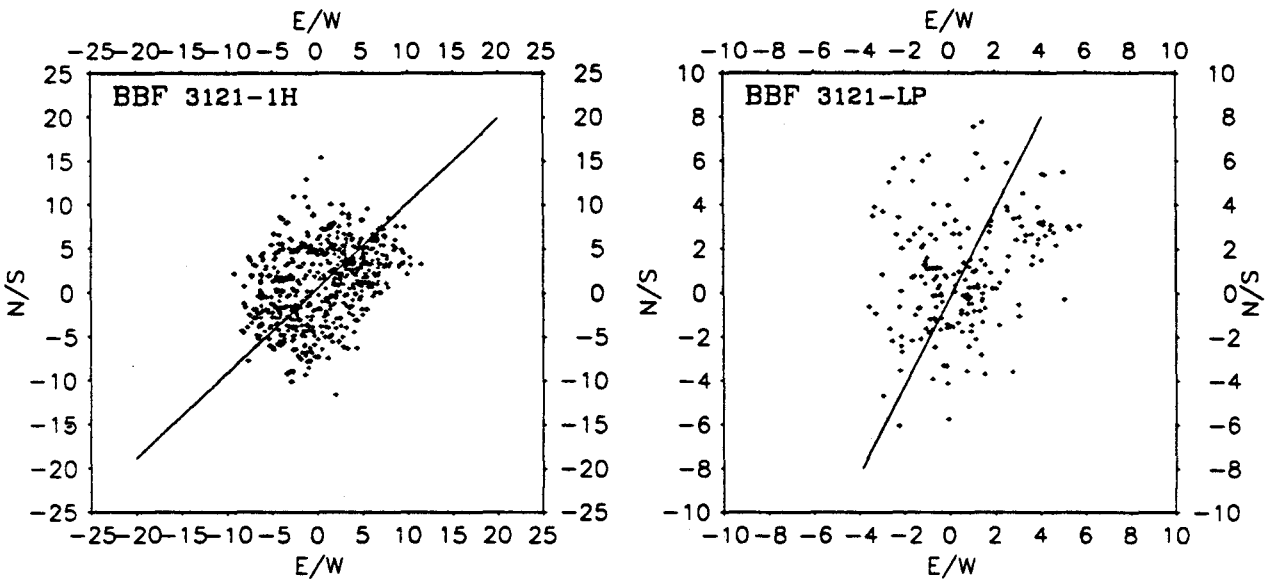


Figure 8h. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) at Station F. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

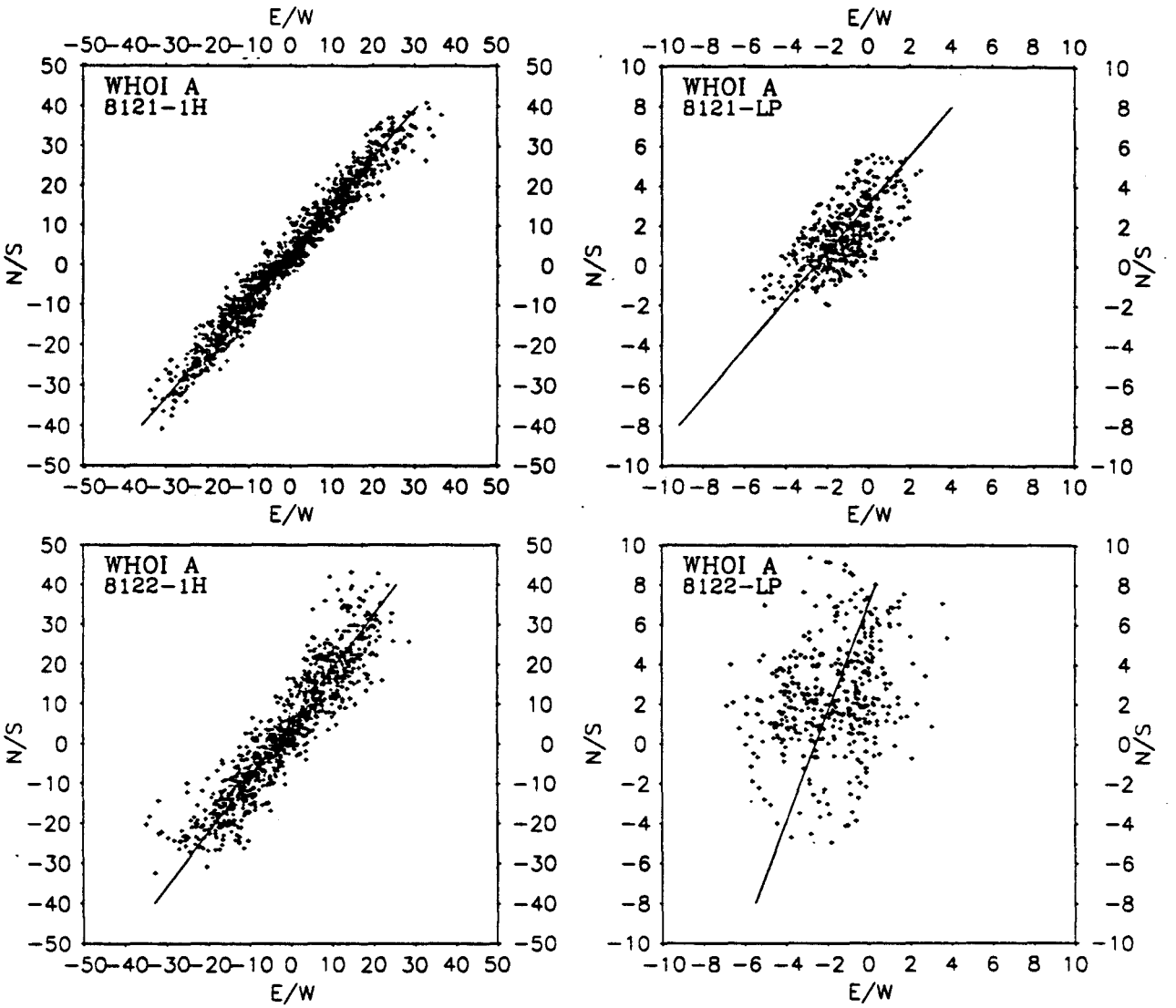


Figure 8i. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) at station WHOI A. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

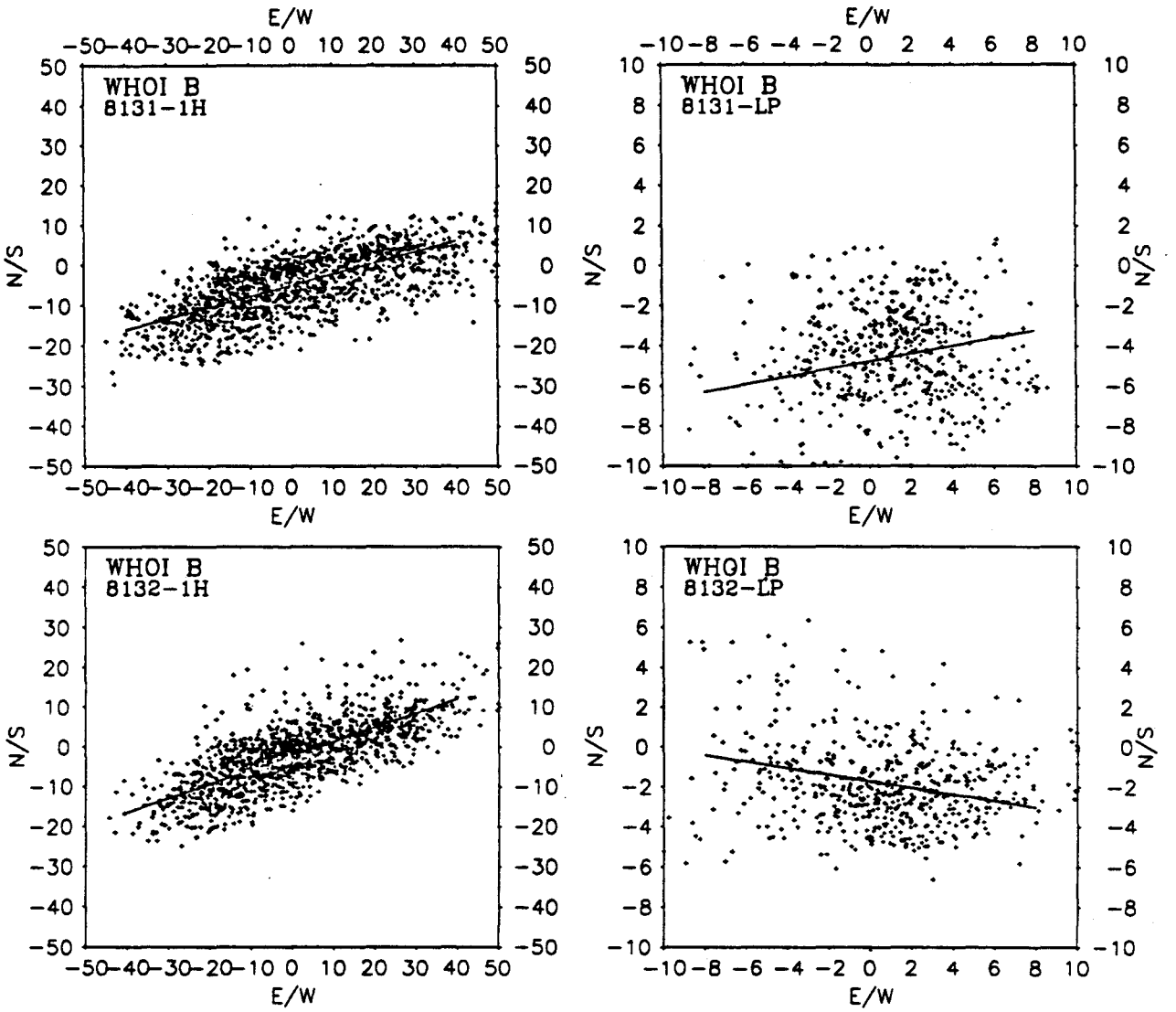


Figure 8j. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) at Station WHOI B. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

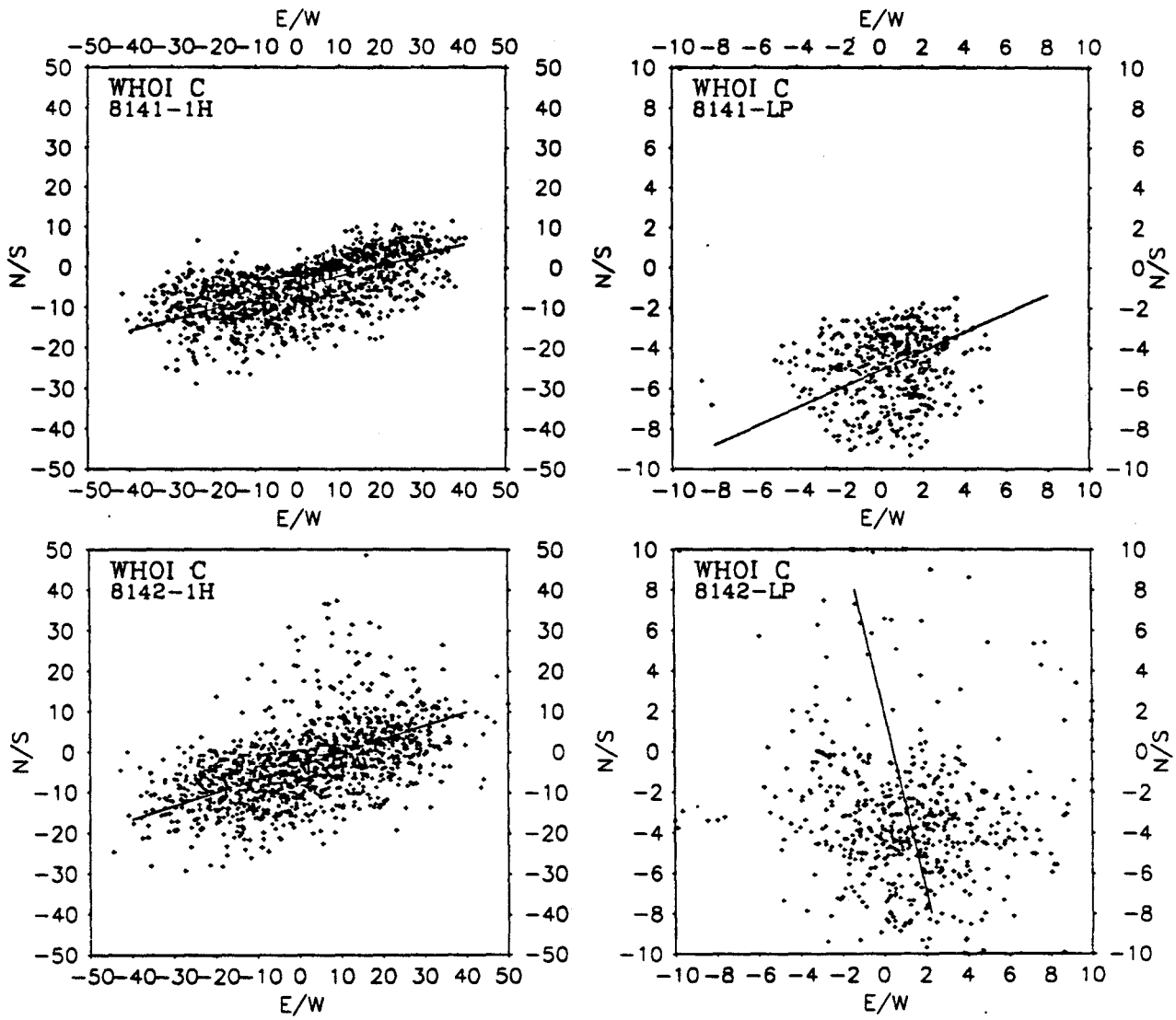


Figure 8k. Scatterplots of hour-averaged (left) and low-passed (right) current observations (in cm/sec) at Station WHOI C. Hour-averaged data plotted every 2 hours, low-passed every 6 hours. Note change of scale.

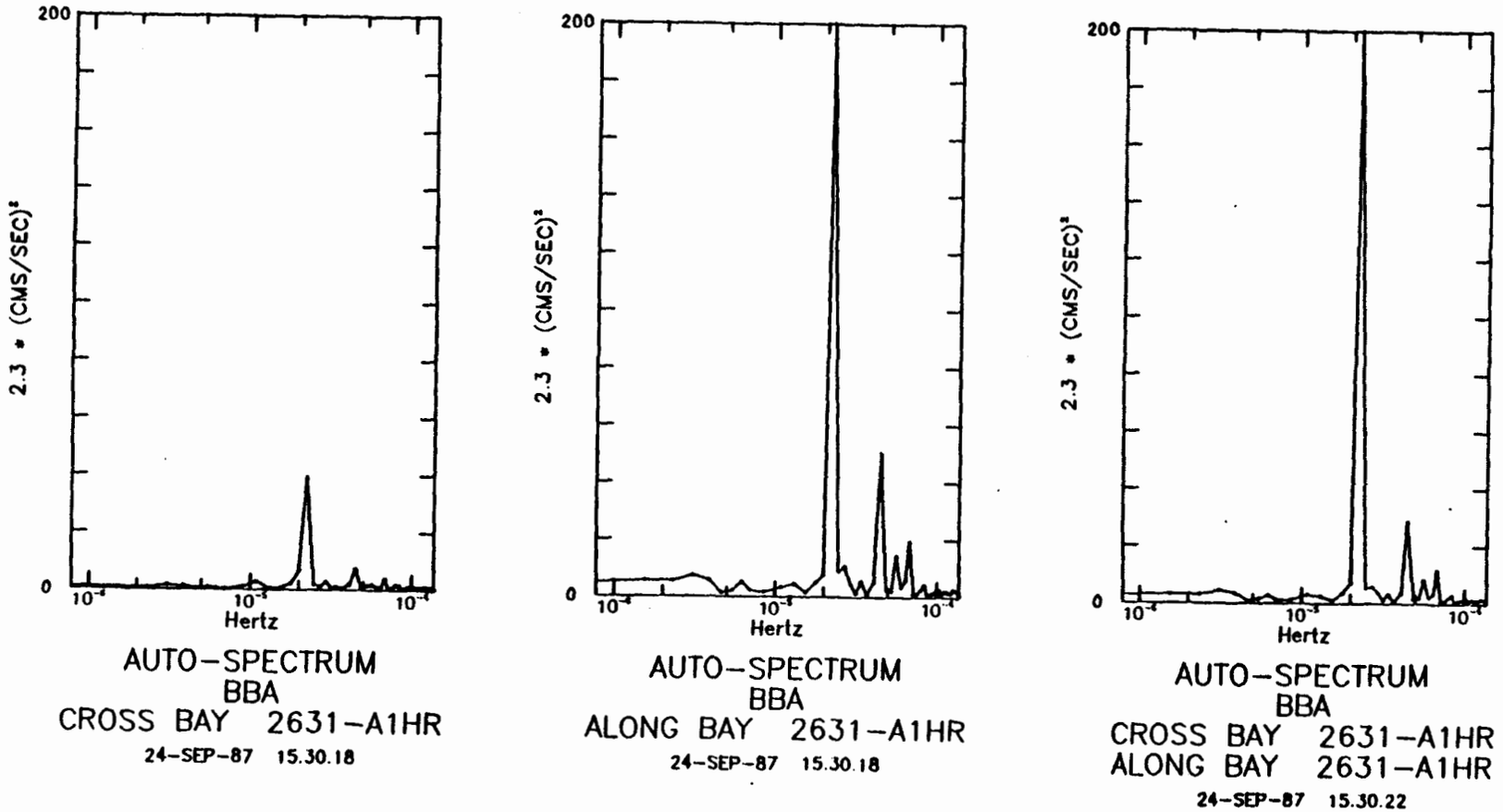


Figure 9a. Spectra for record 2631, station A (2 pieces). Variance conserving kinetic energy spectra for each current component and for the total current. The spectral estimates were computed from the hour-averaged time series. The estimates were computed from hanned and overlapped data pieces 360 hours long. In the variance-conserving spectra, the energy in each frequency band times the frequency of the band is plotted on a linear scale vs. the log of the frequency; the area under the spectral curve is the total variance of the data record.

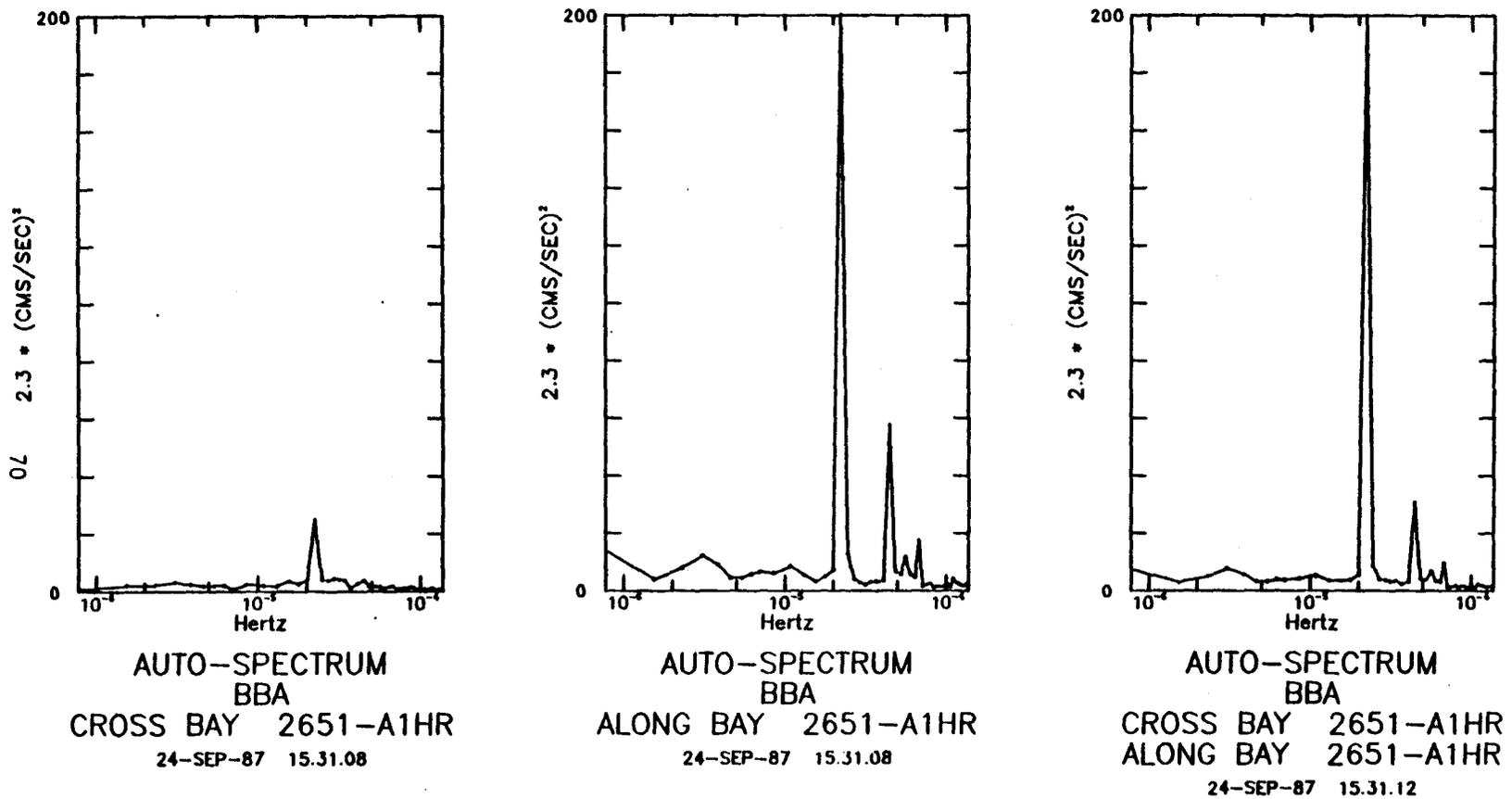


Figure 9b. Spectra for record 2651, station A (5 pieces).

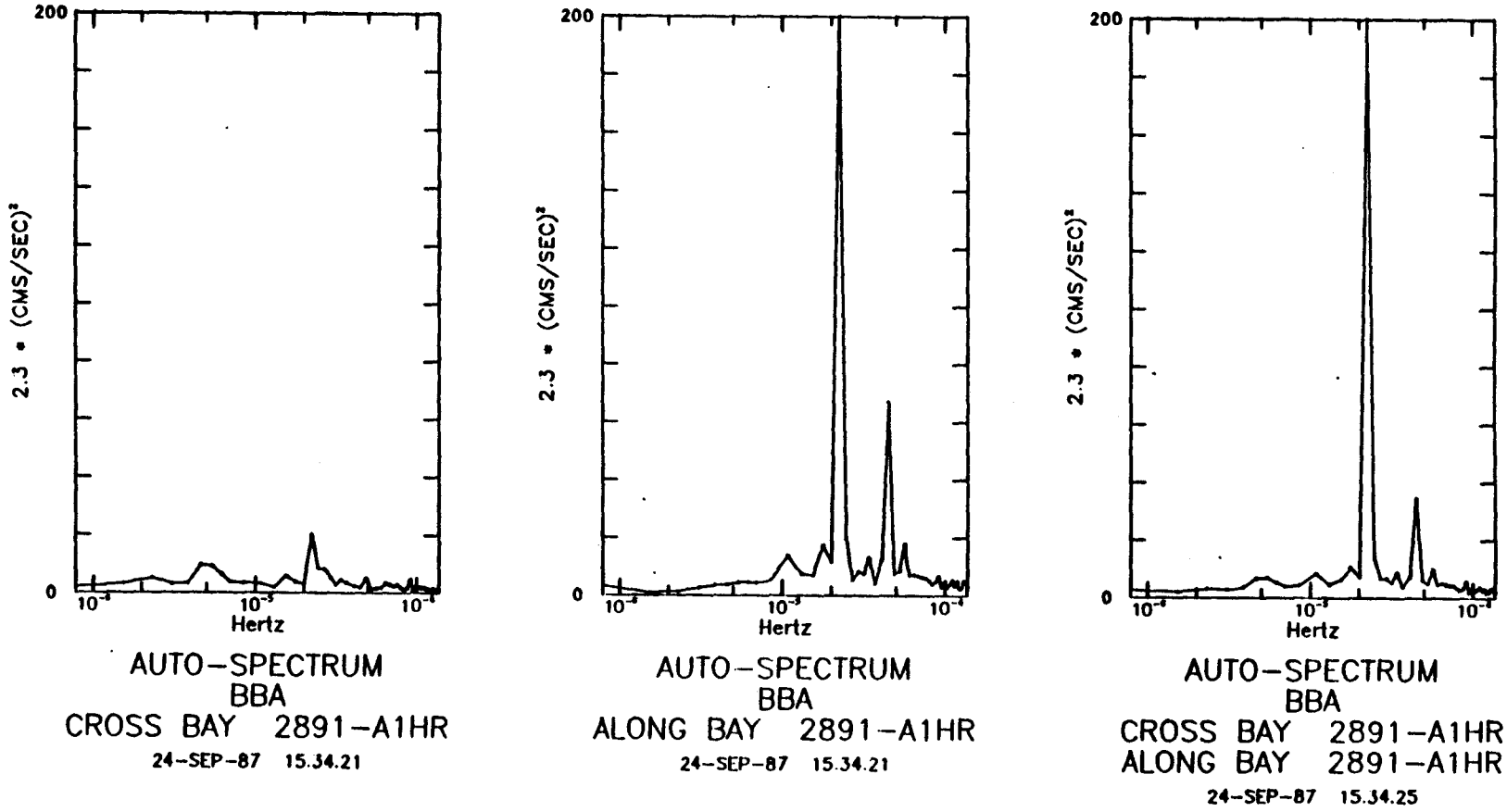


Figure 9c. Spectra for record 2891, station A (4 pieces).

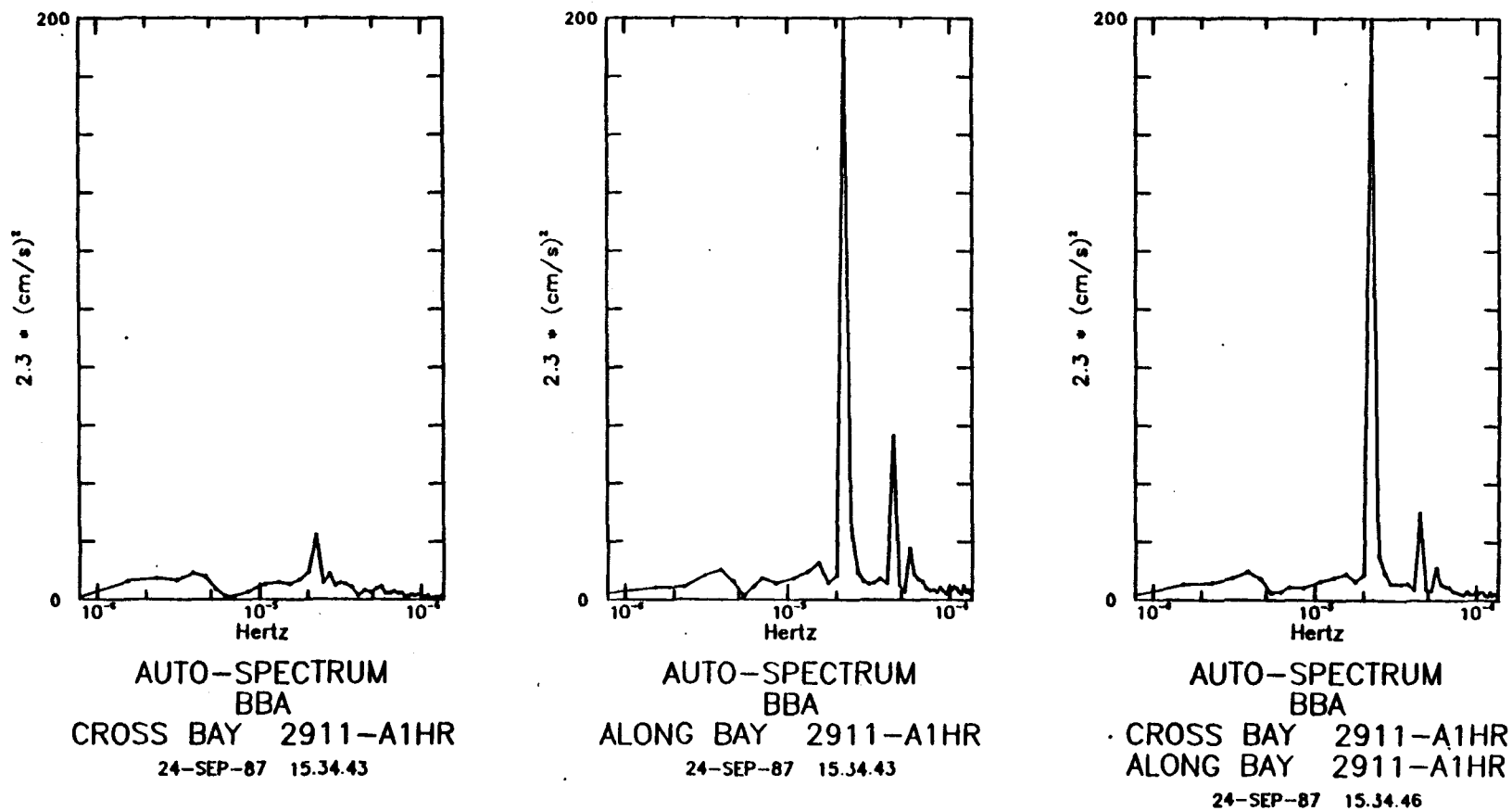


Figure 9d. Spectra for record 2911, station A (4 pieces).

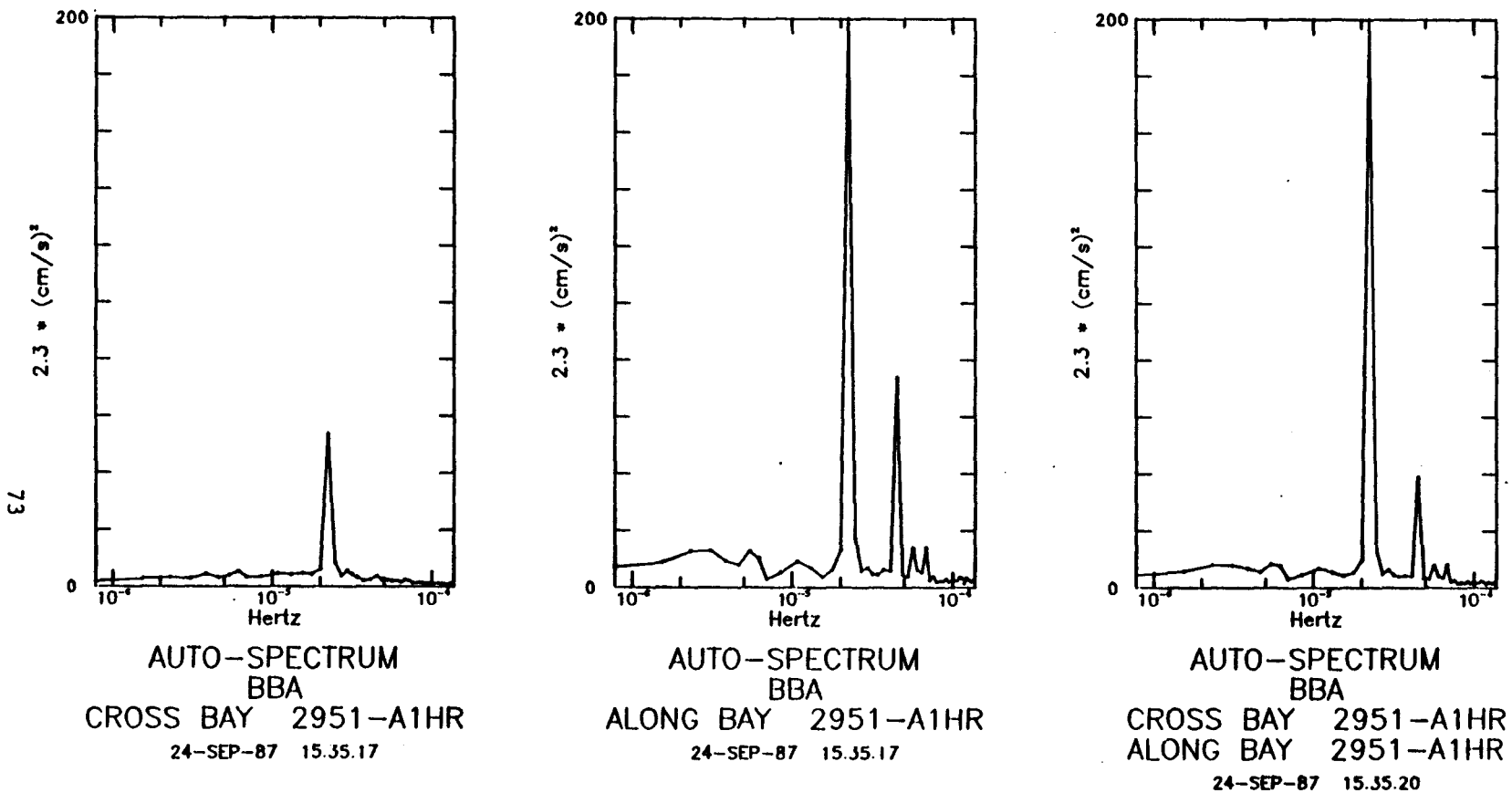


Figure 9e. Spectra for record 2951, station A (8 pieces).

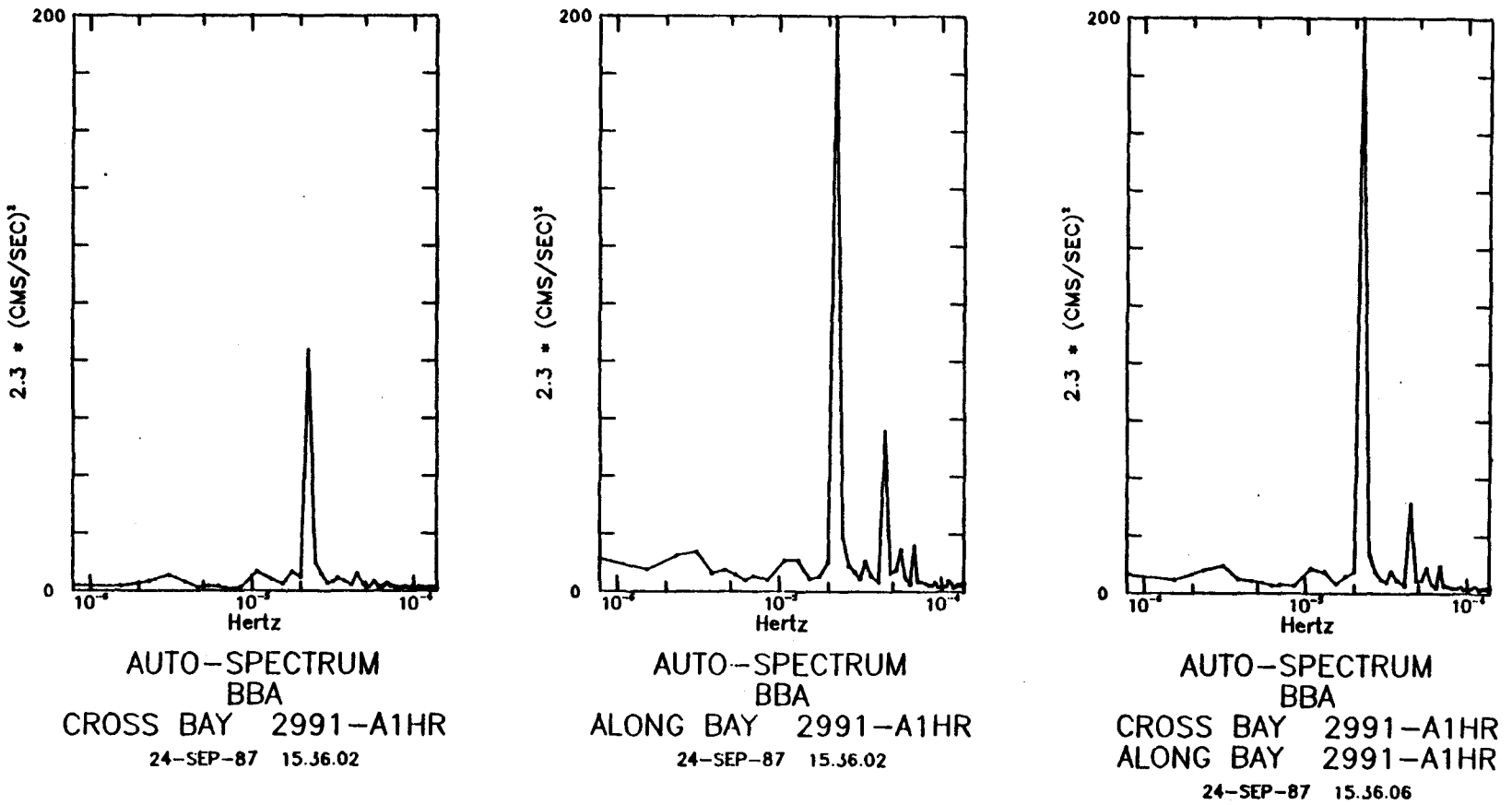


Figure 9f. Spectra for record 2991, station A (5 pieces).

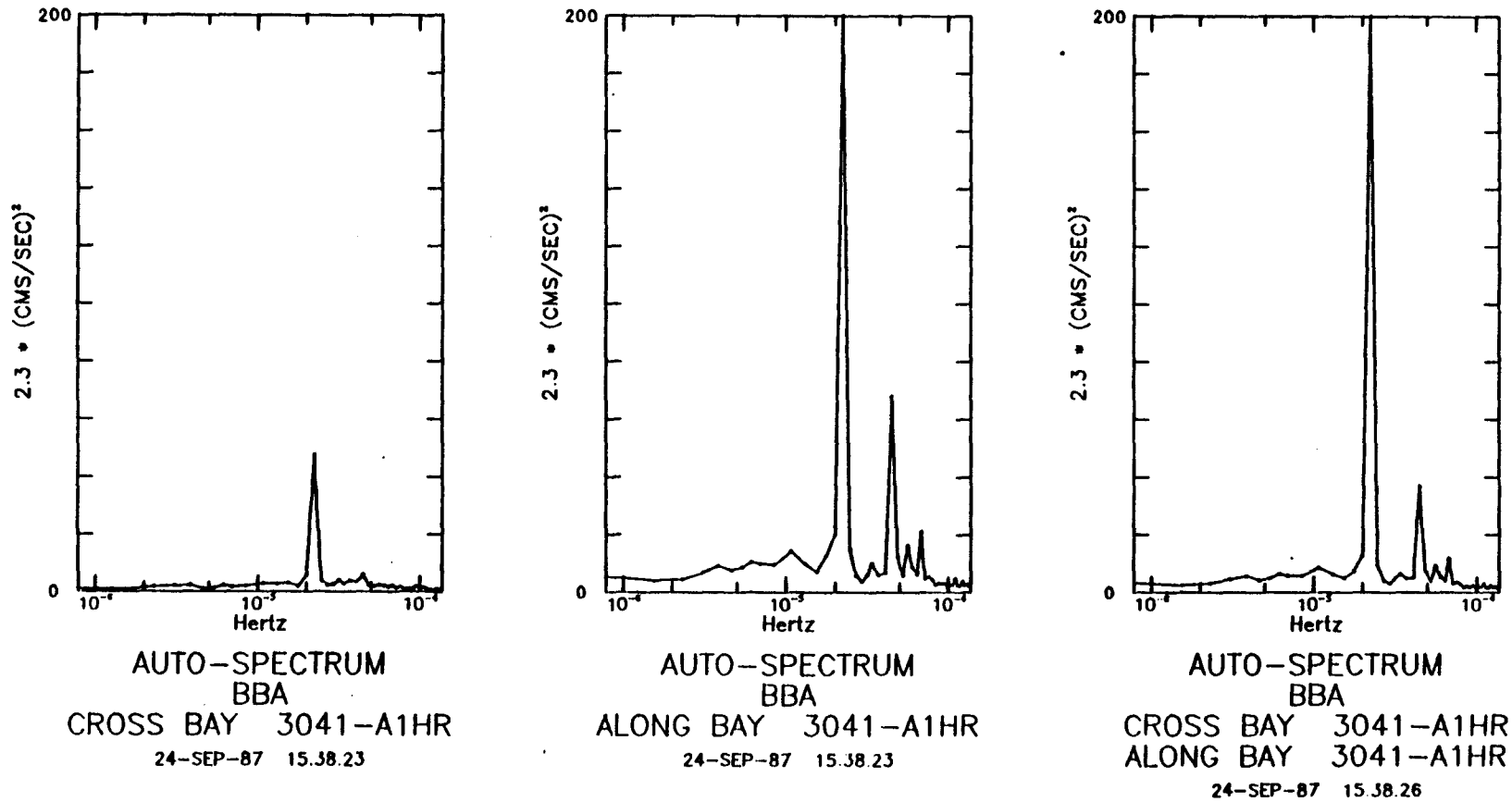


Figure 9g. Spectra for record 3041, station A (8 pieces).

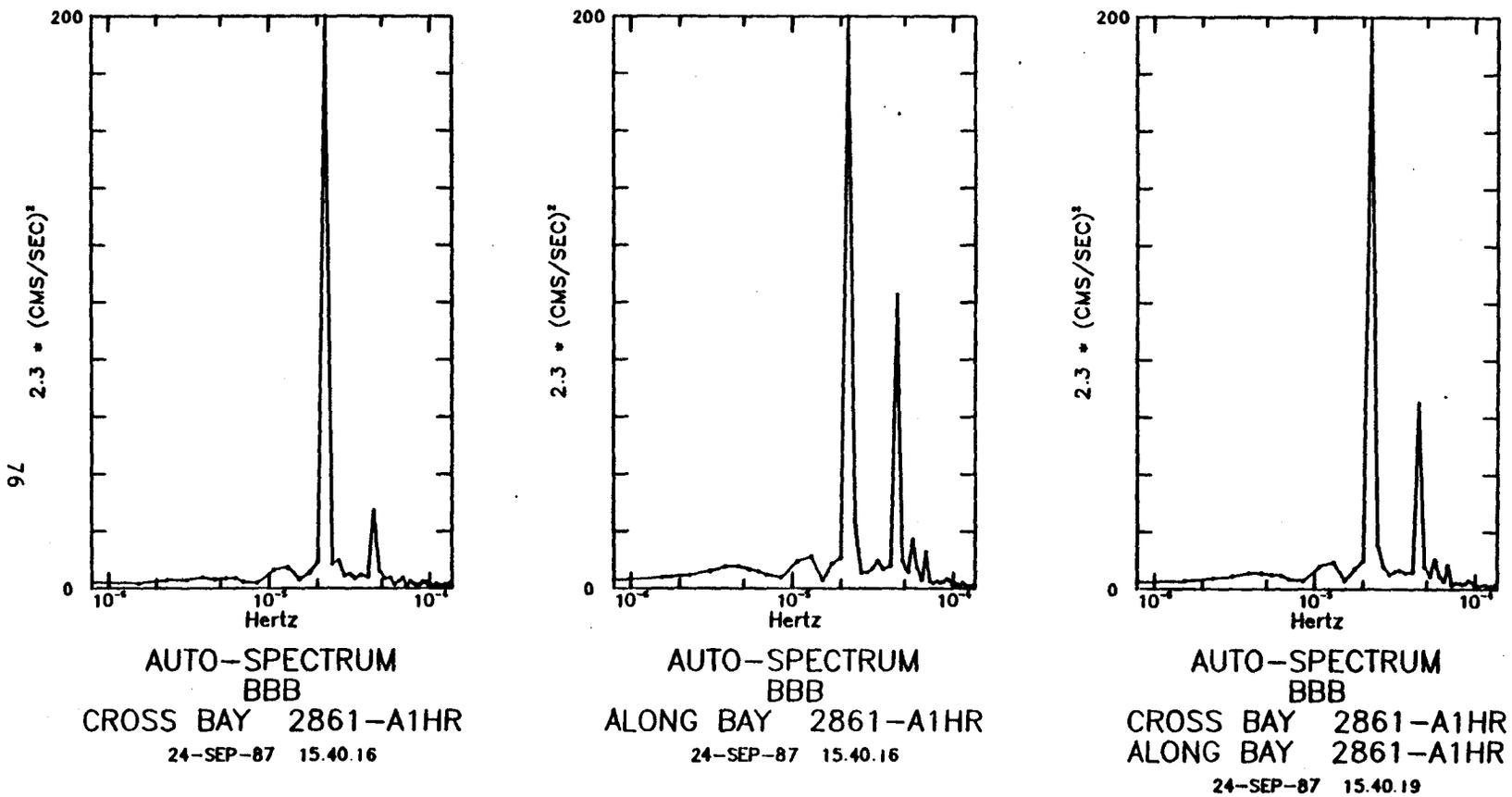


Figure 9h. Spectra for record 2861, station B (5 pieces).

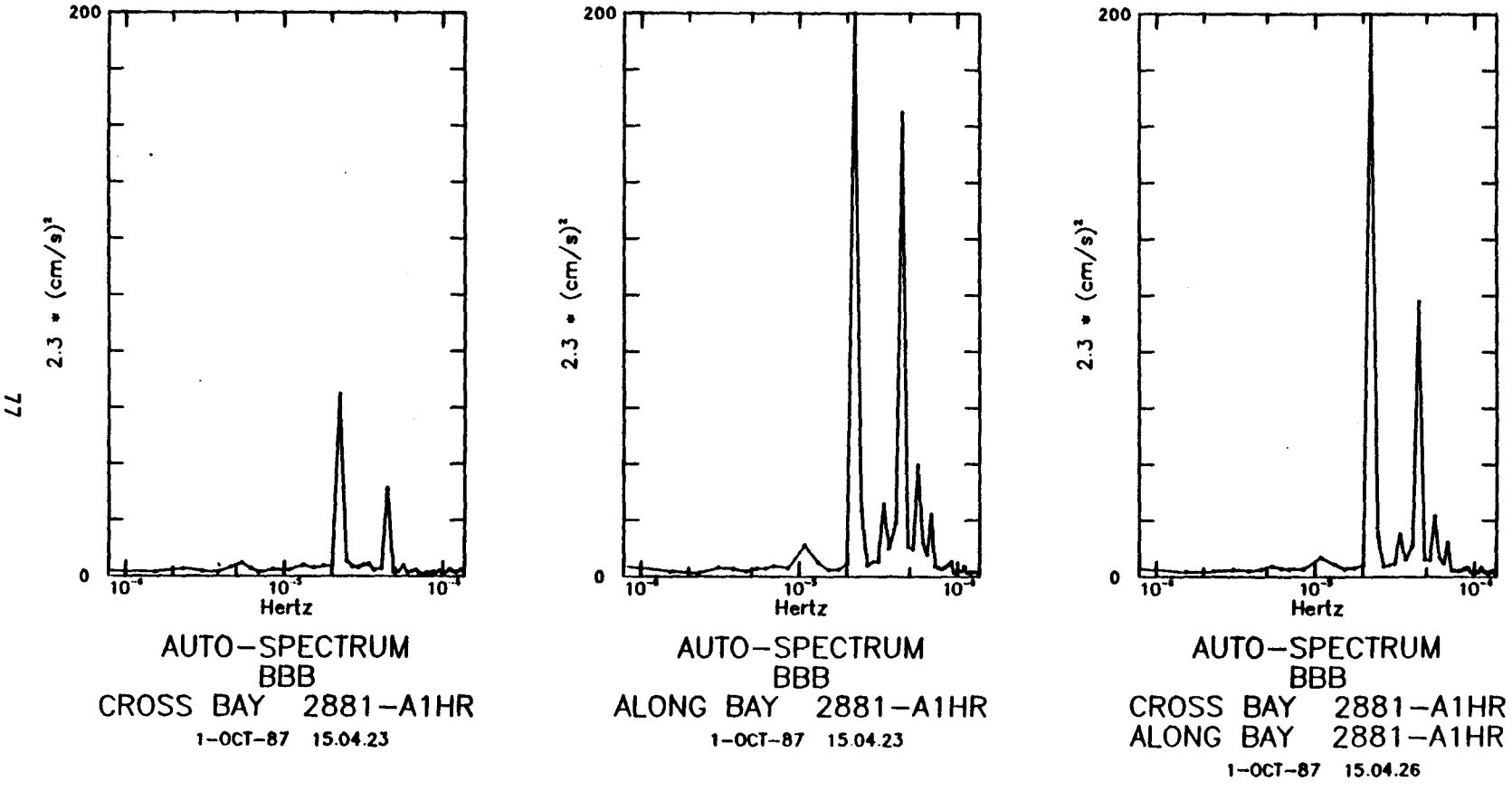


Figure 91. Spectra for record 2881, station B (7 pieces).

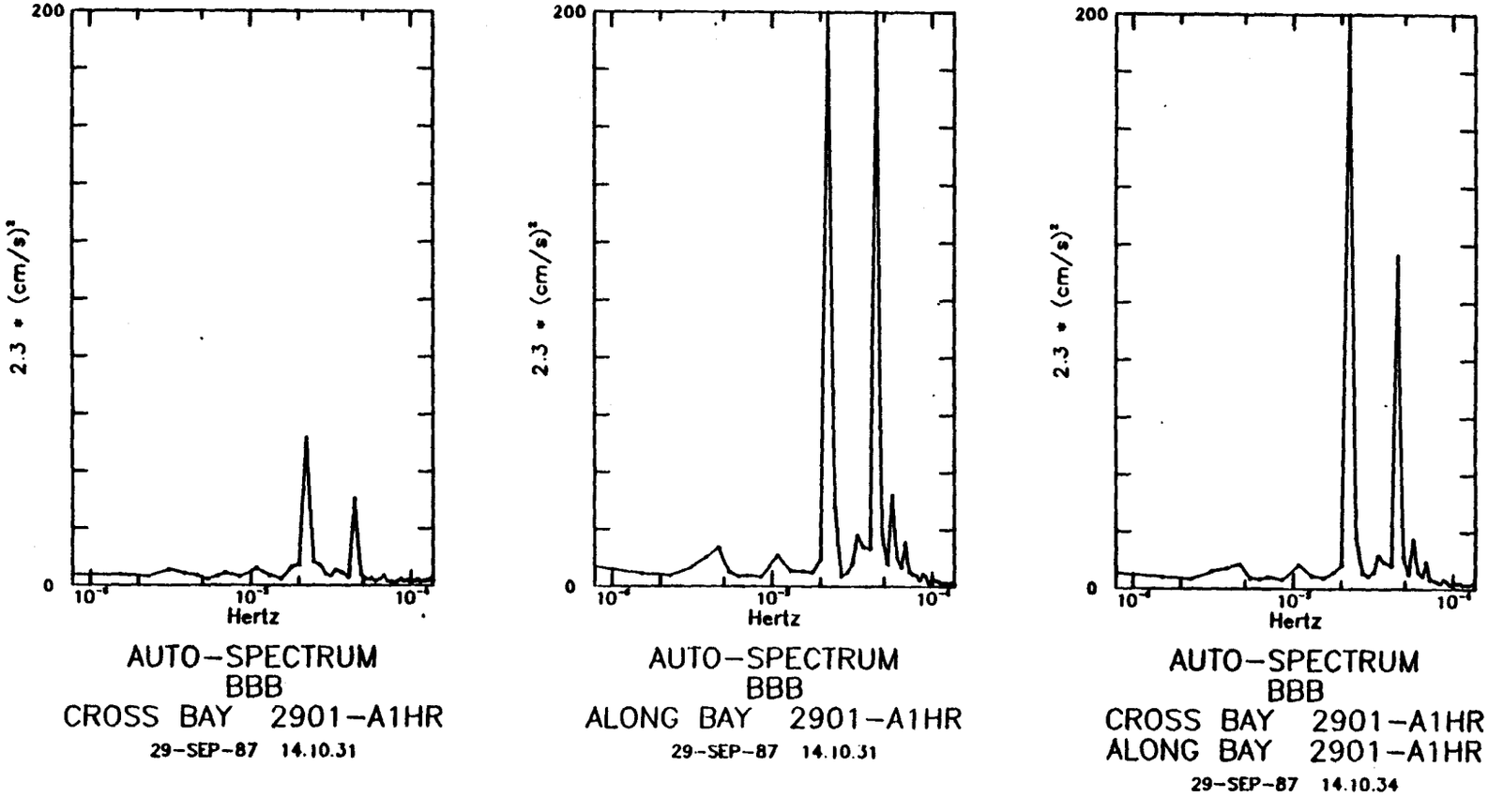


Figure 9j. Spectra for record 2901, station B (8 pieces).

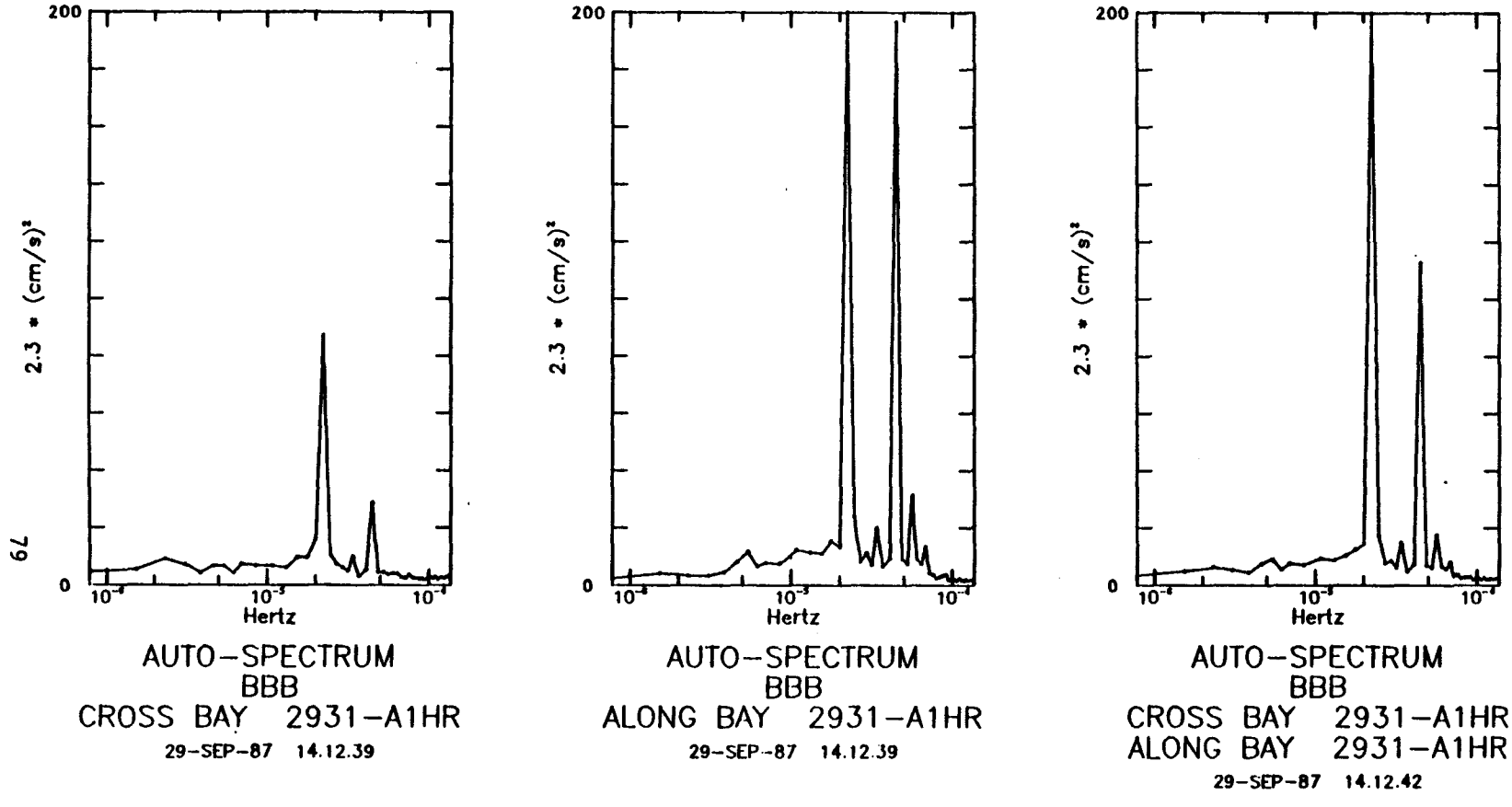


Figure 9k. Spectra for record 2931, station B (9 pieces).

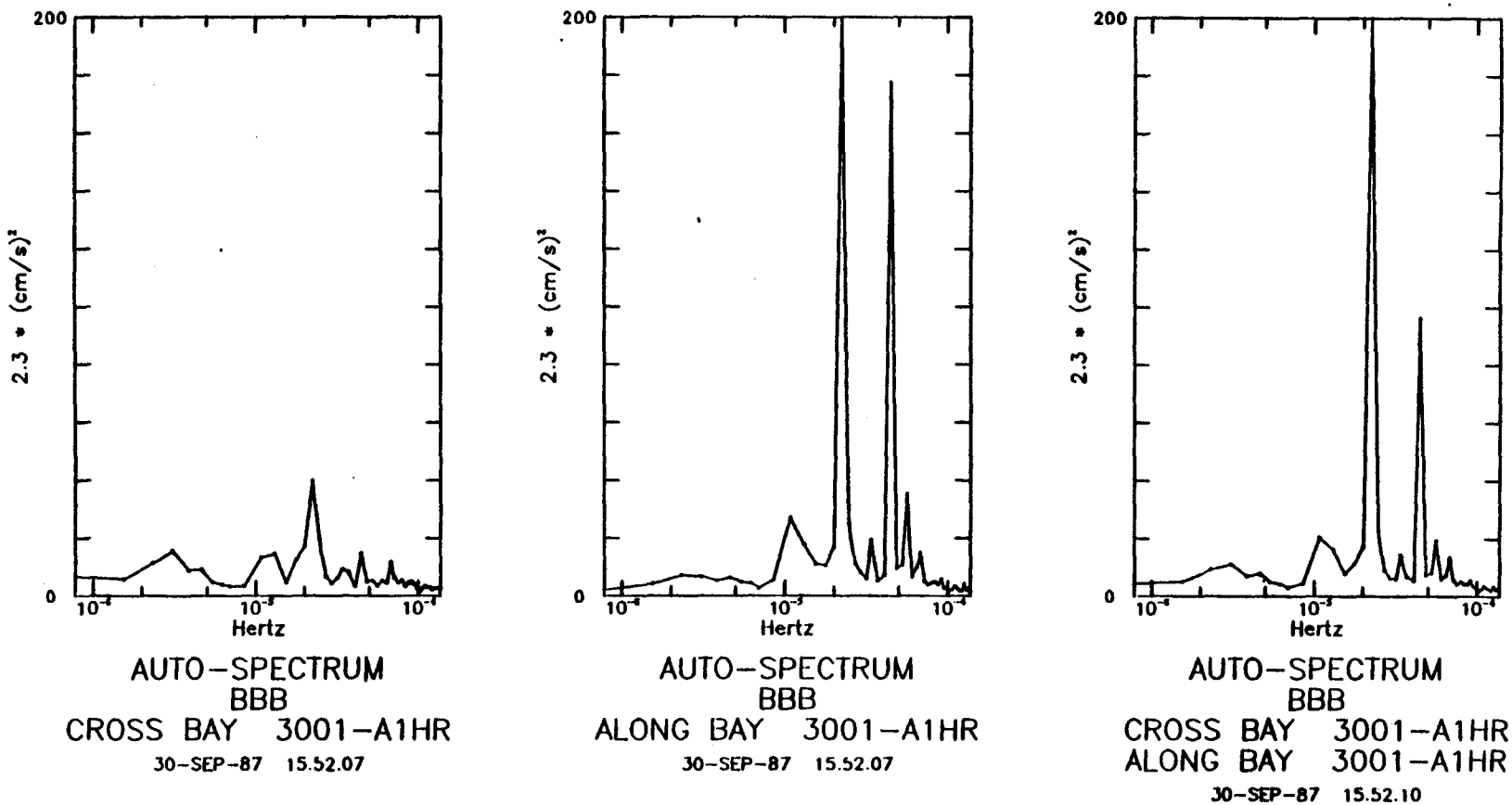


Figure 91. Spectra for record 3001, station B (5 pieces).

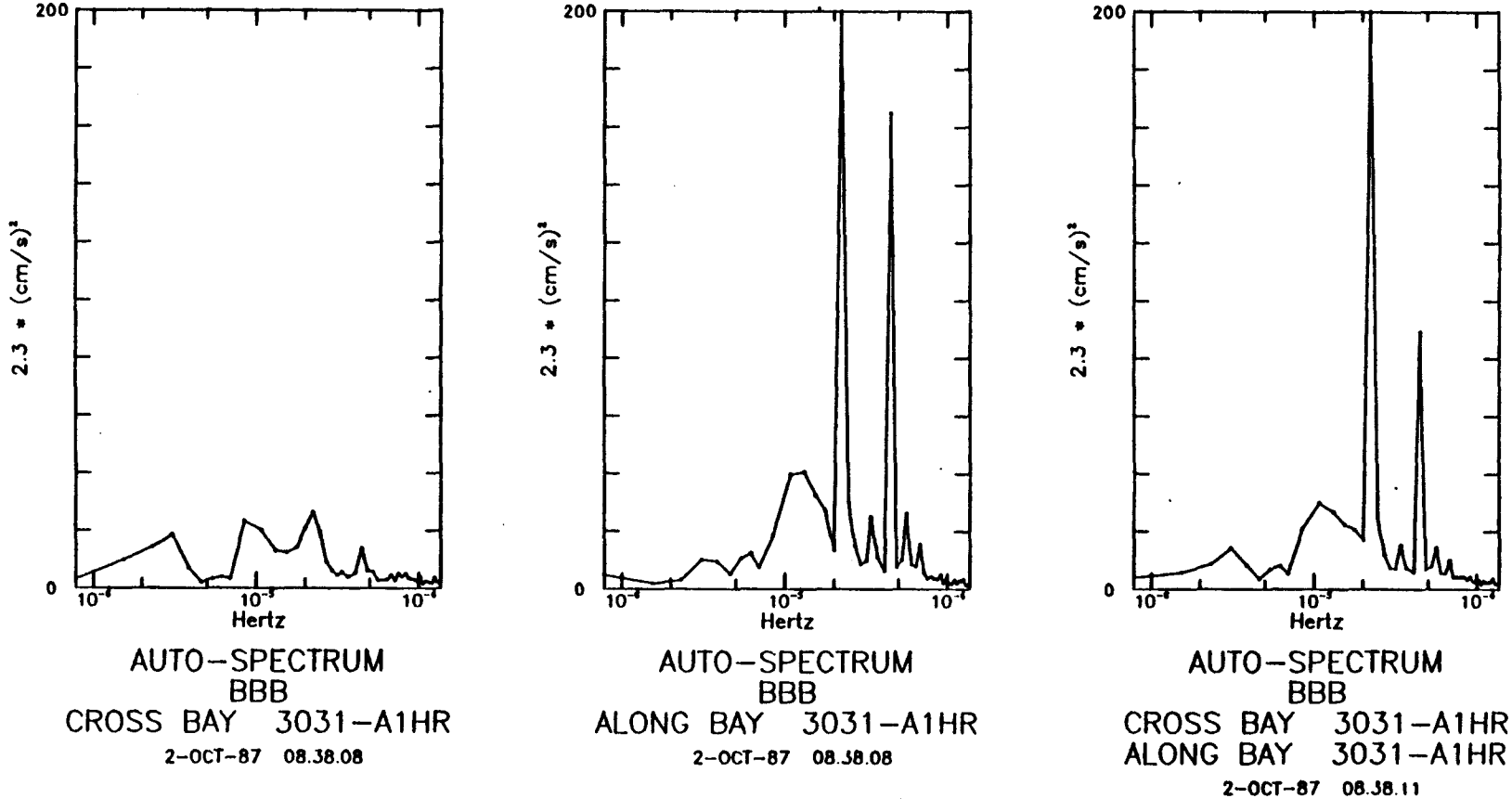


Figure 9m. Spectra for record 3031, station B (4 pieces).

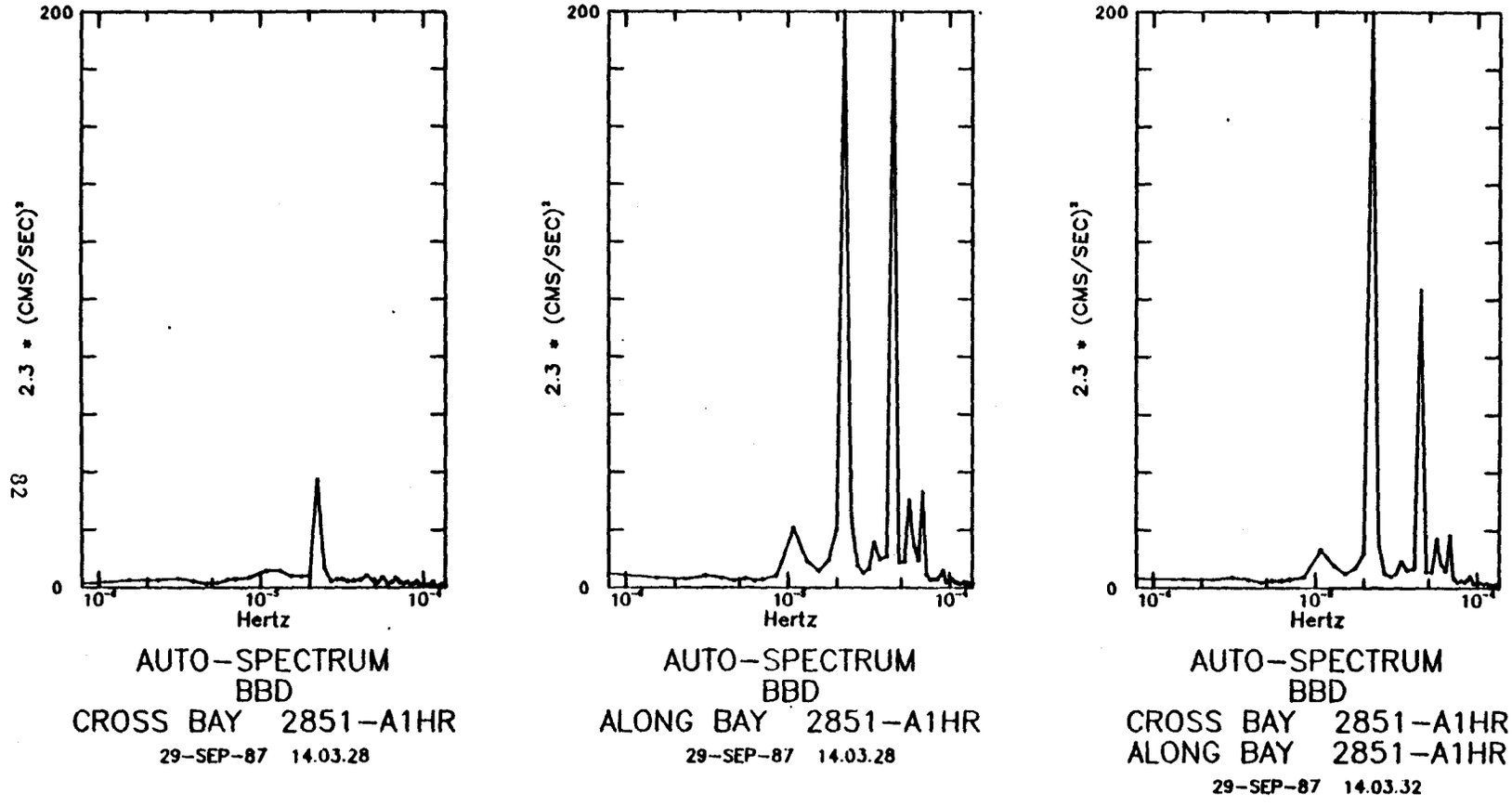


Figure 9n. Spectra for record 2851, station D (7 pieces).

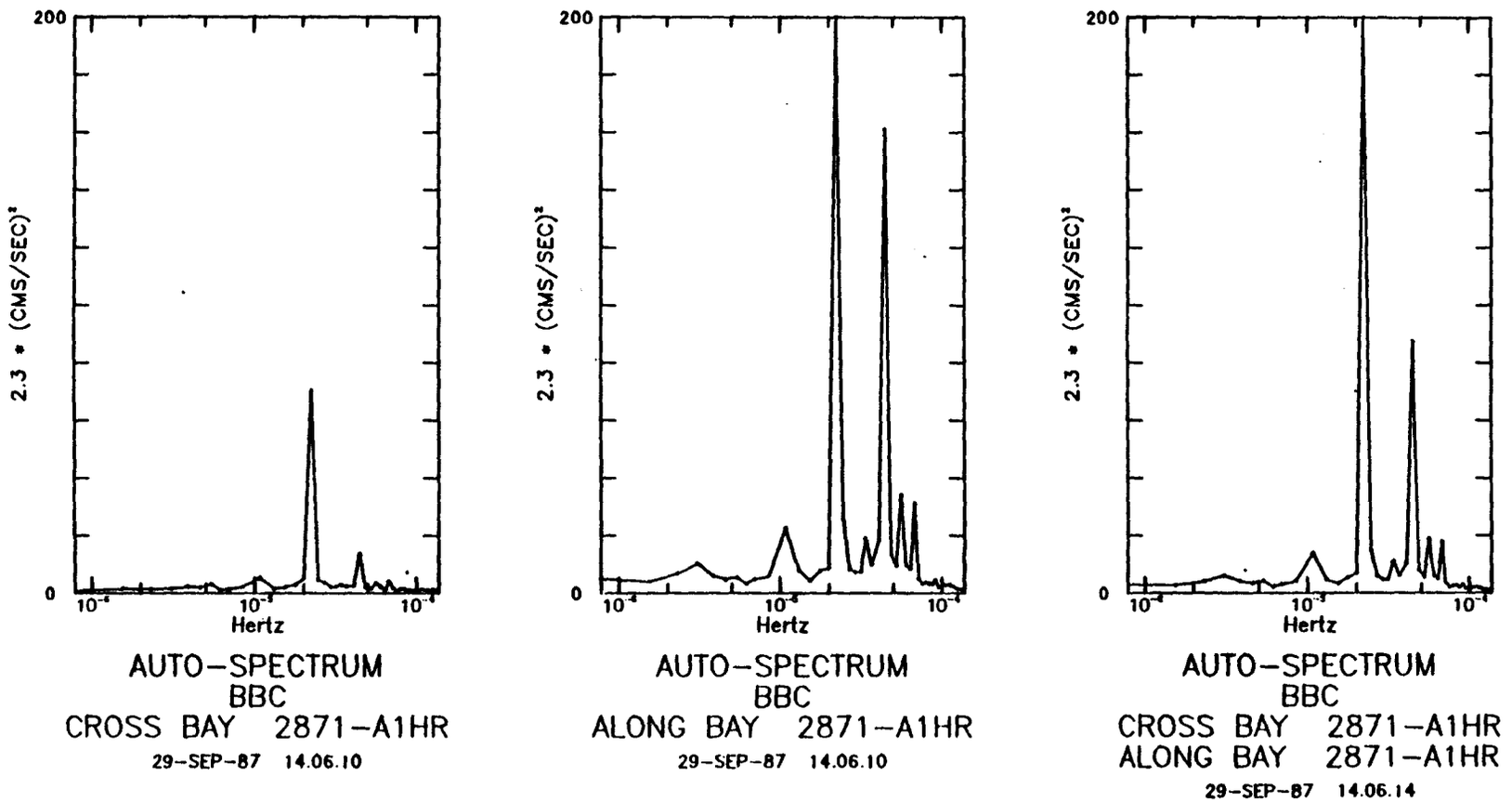


Figure 9o. Spectra for record 2871, station C (9 pieces).

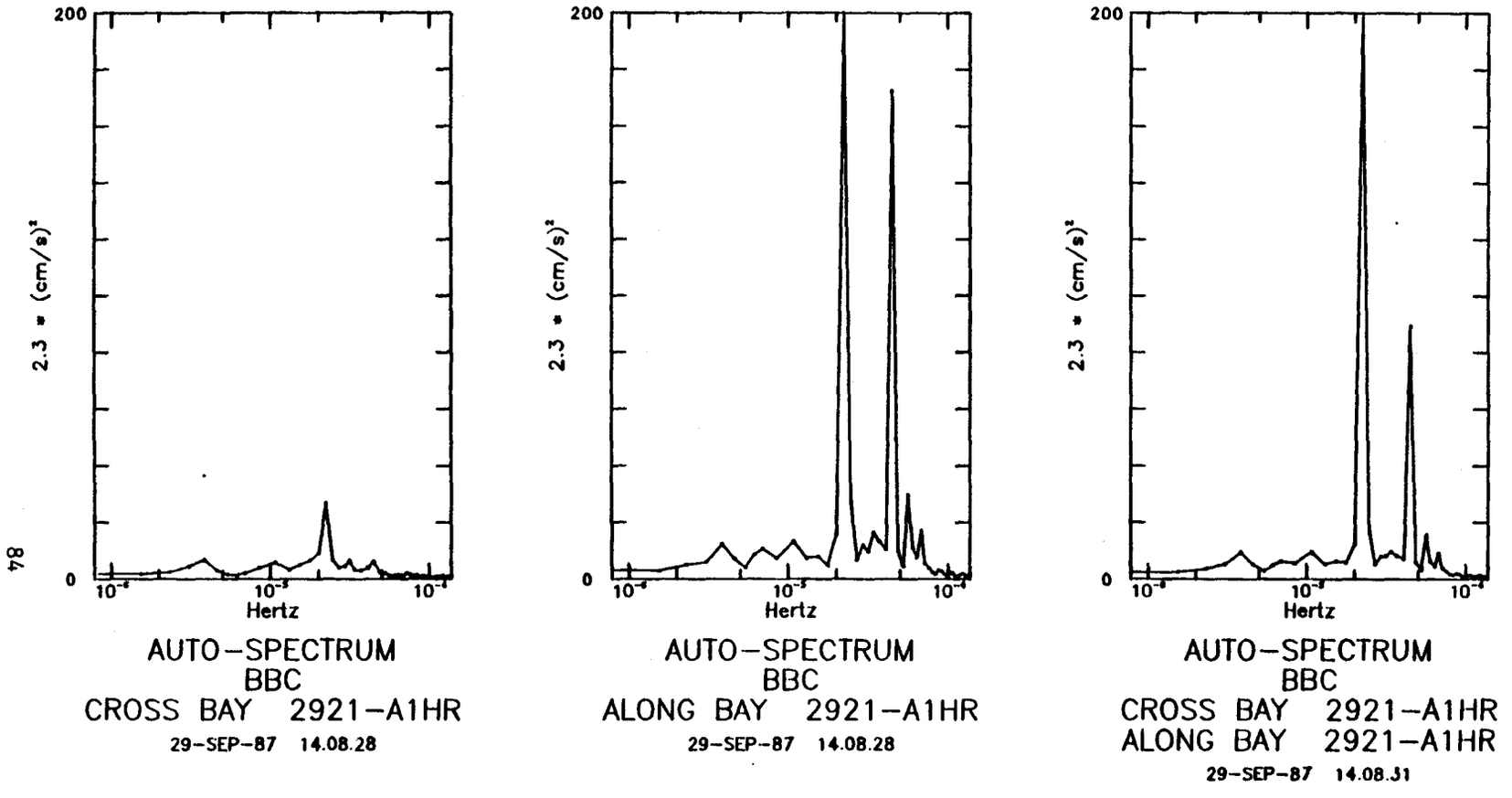


Figure 9p. Spectra for record 2921, station C (5 pieces).

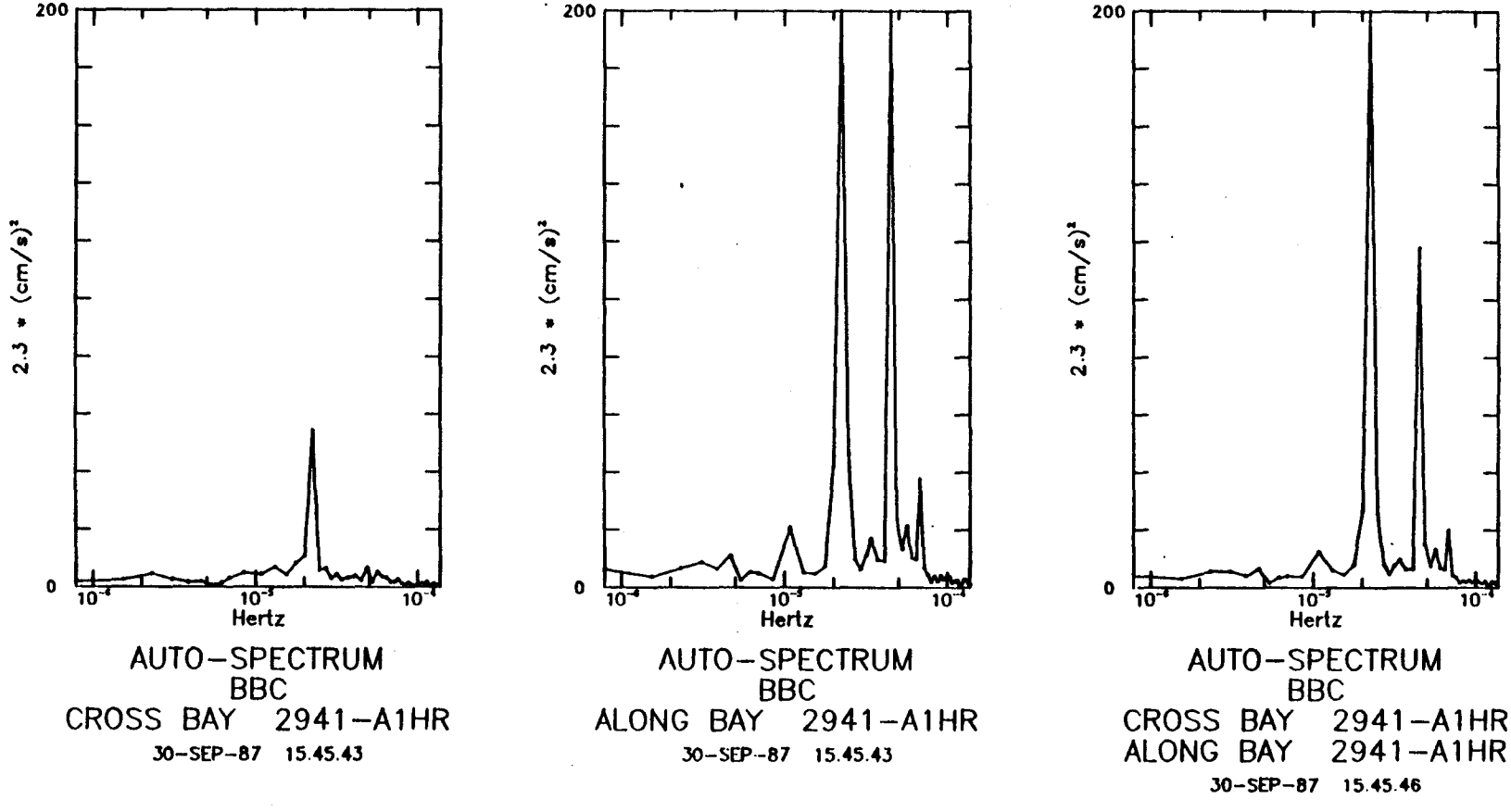


Figure 9q. Spectra for record 2941, station C (3 pieces).

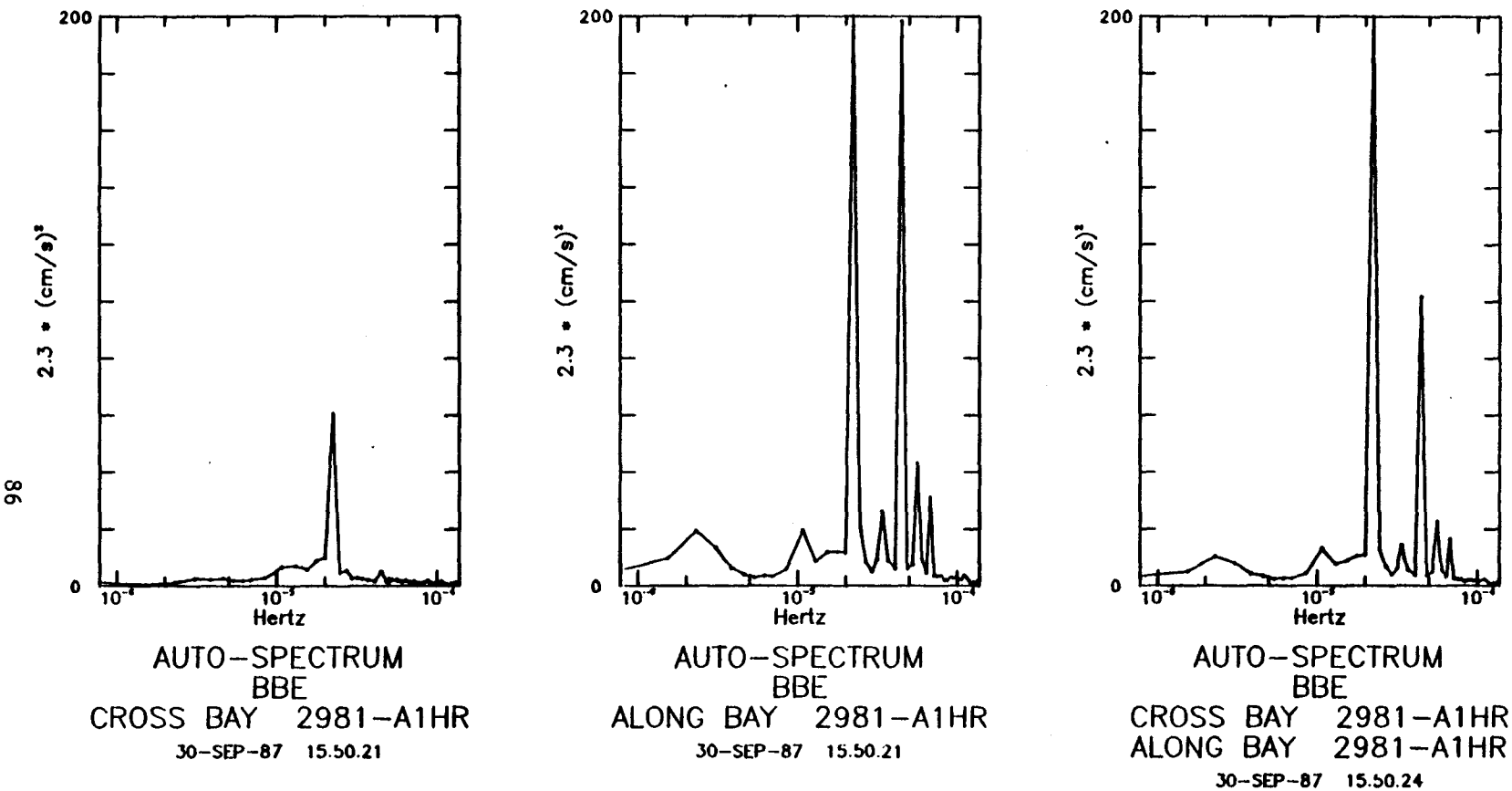


Figure 9r. Spectra for record 2981, station E (5 pieces).

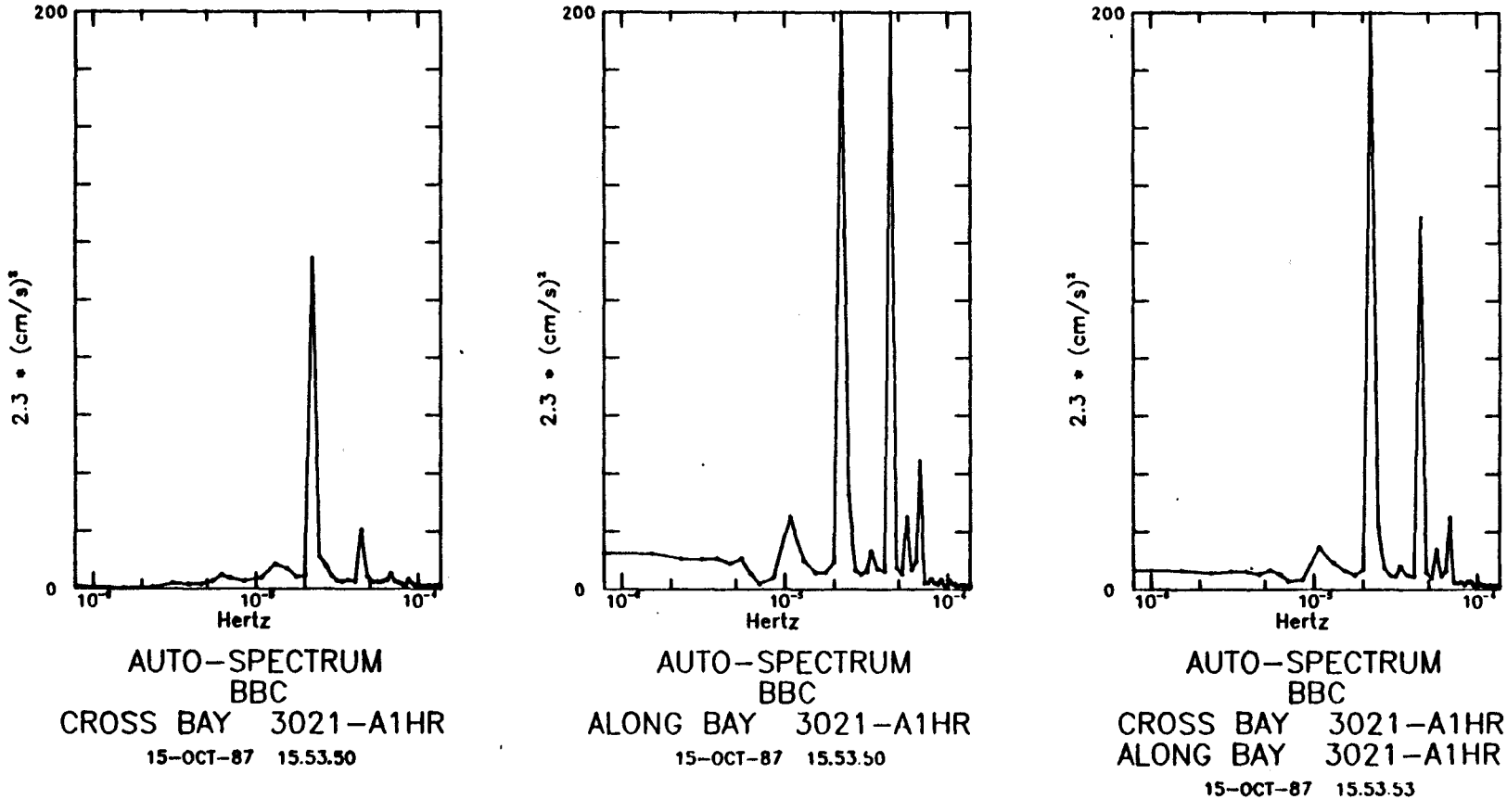


Figure 9s. Spectra for record 3021, station C (6 pieces).

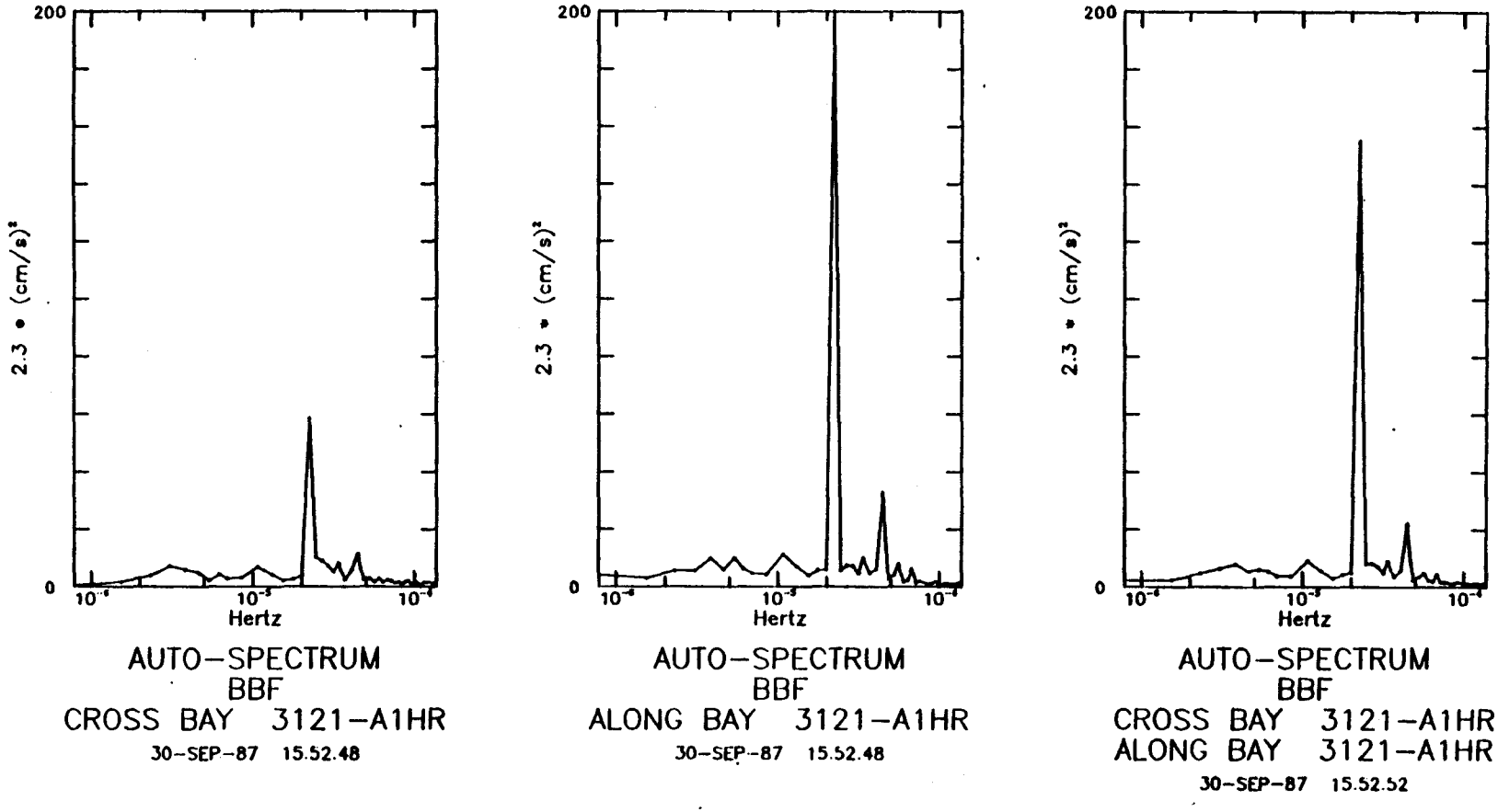


Figure 9t. Spectra for record 3121, station F (5 pieces).

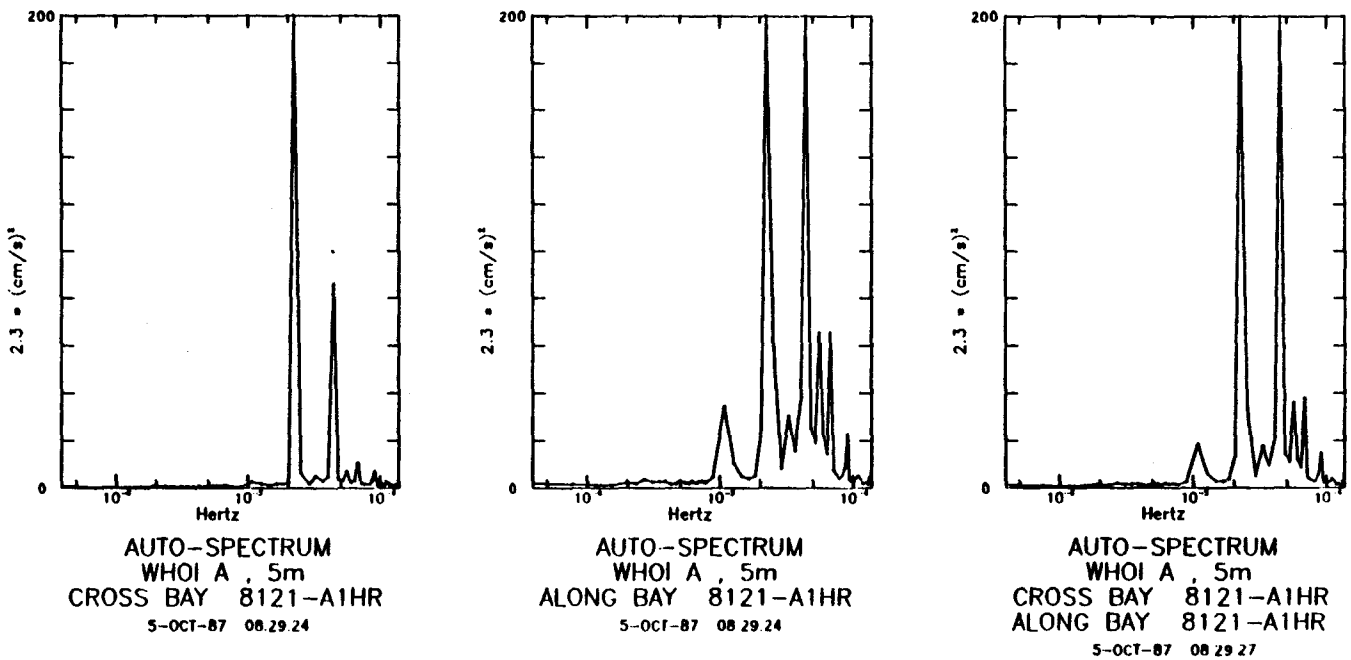


Figure 9u. Spectra for record 8121, station WA (8 pieces).

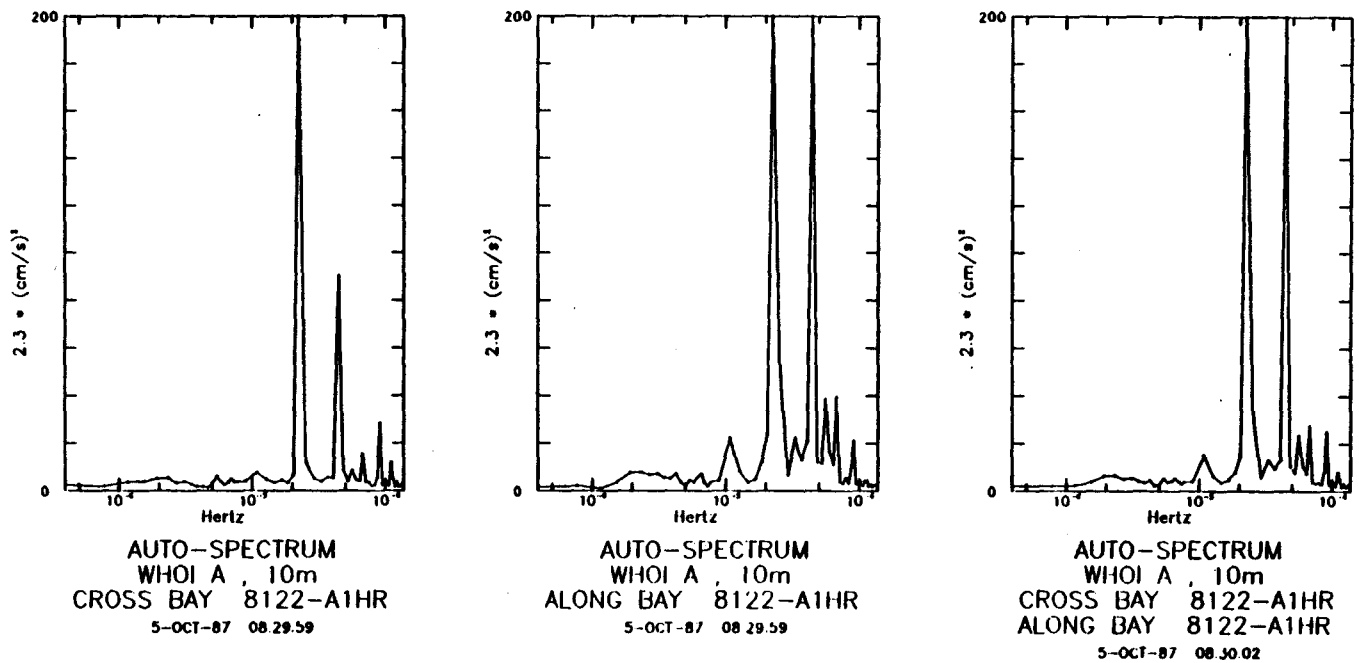


Figure 9v. Spectra for record 8122, station WA (6 pieces).

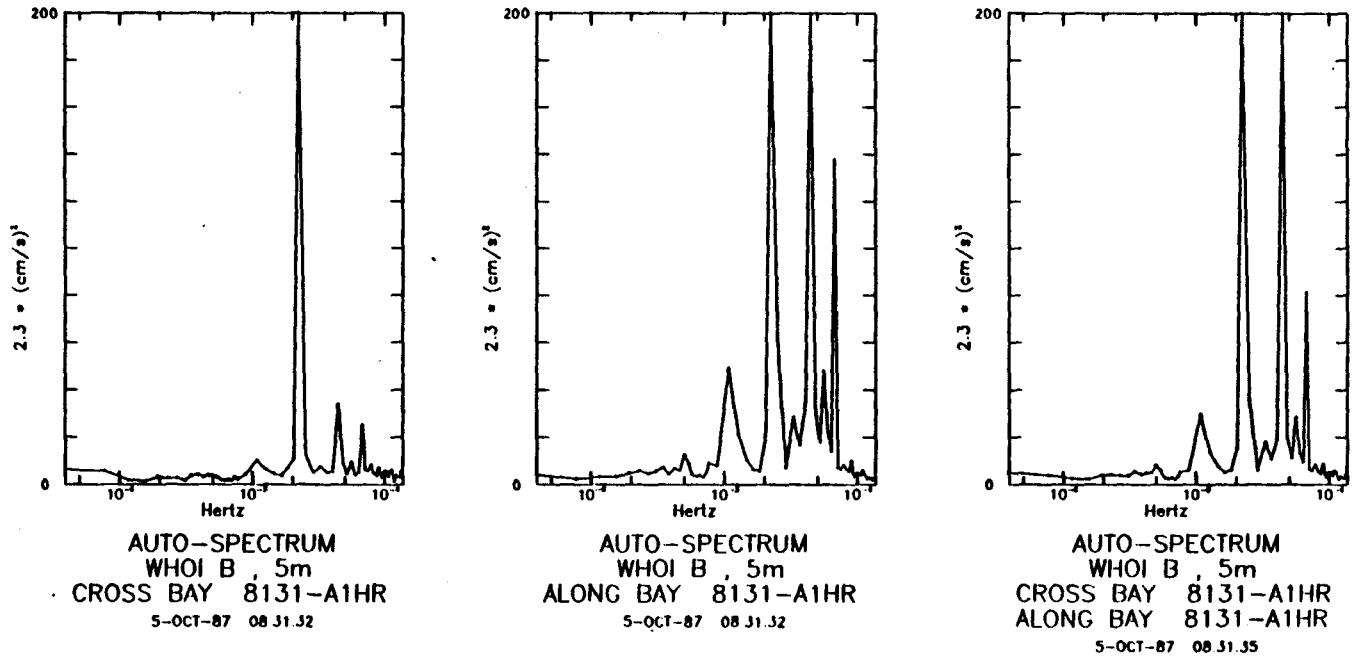


Figure 9w. Spectra for record 8131, station WB (8 pieces).

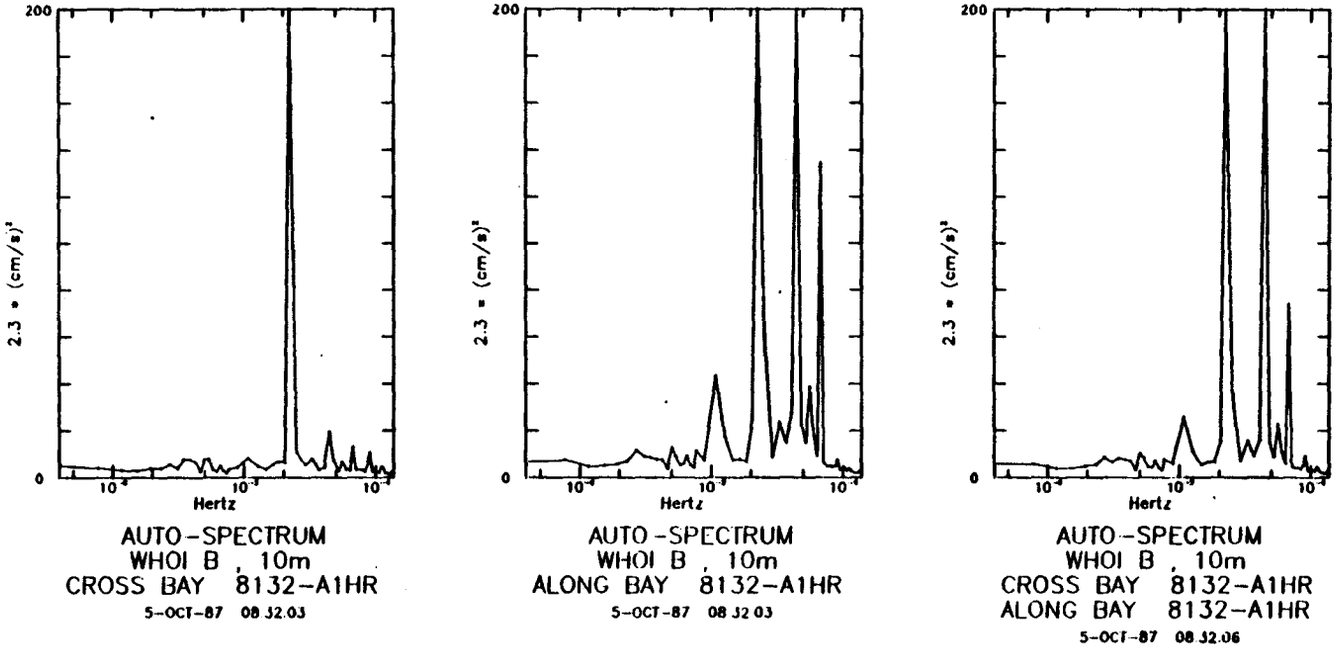


Figure 9x. Spectra for record 8132, station WB (8 pieces).

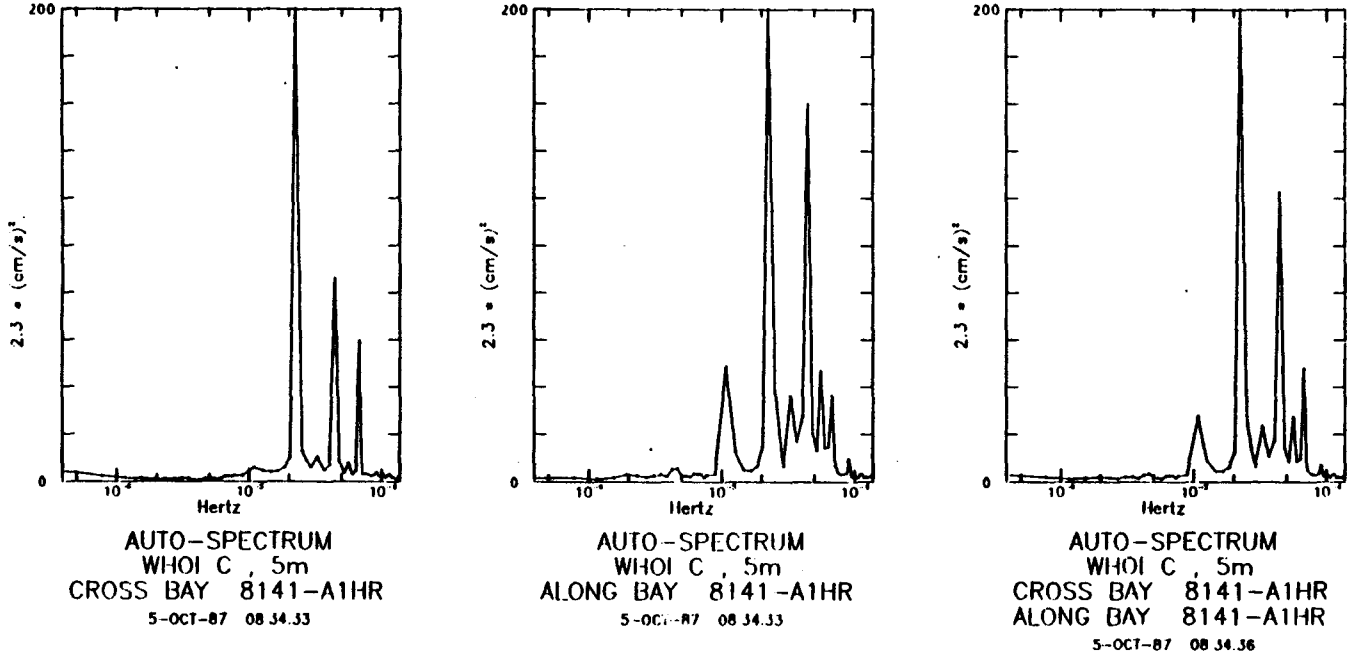


Figure 9y. Spectra for record 8141, station WC (8 pieces).

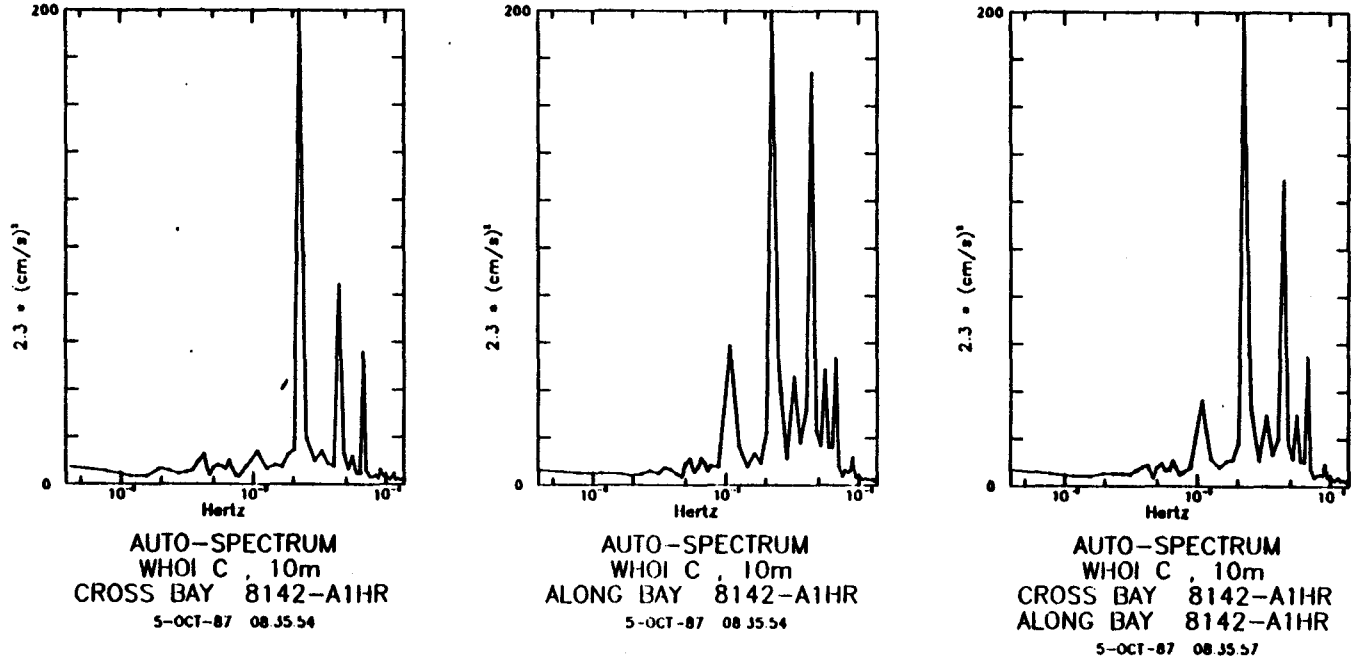


Figure 9z. Spectra for record 8142, station WC (8 pieces).

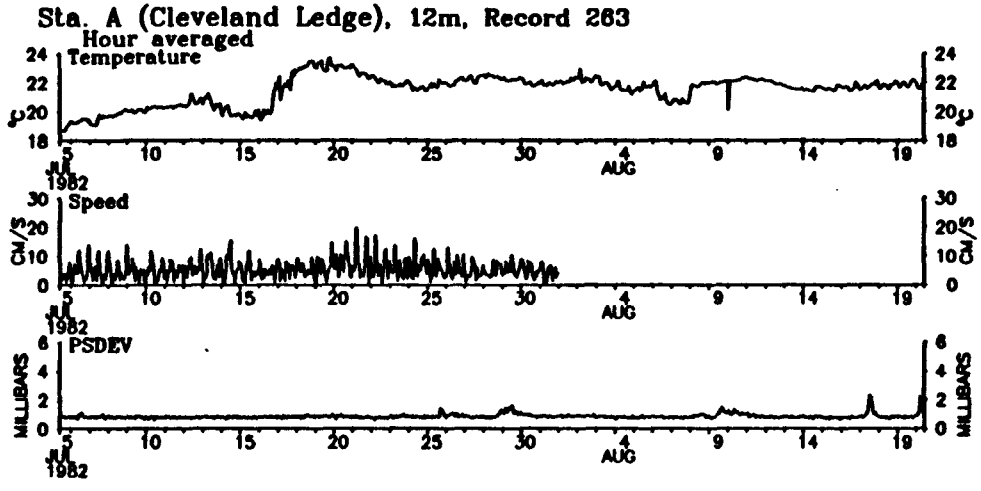


Figure 10a. Station A, record 2631, hour-averaged temperature, current speed, and PSDEV.

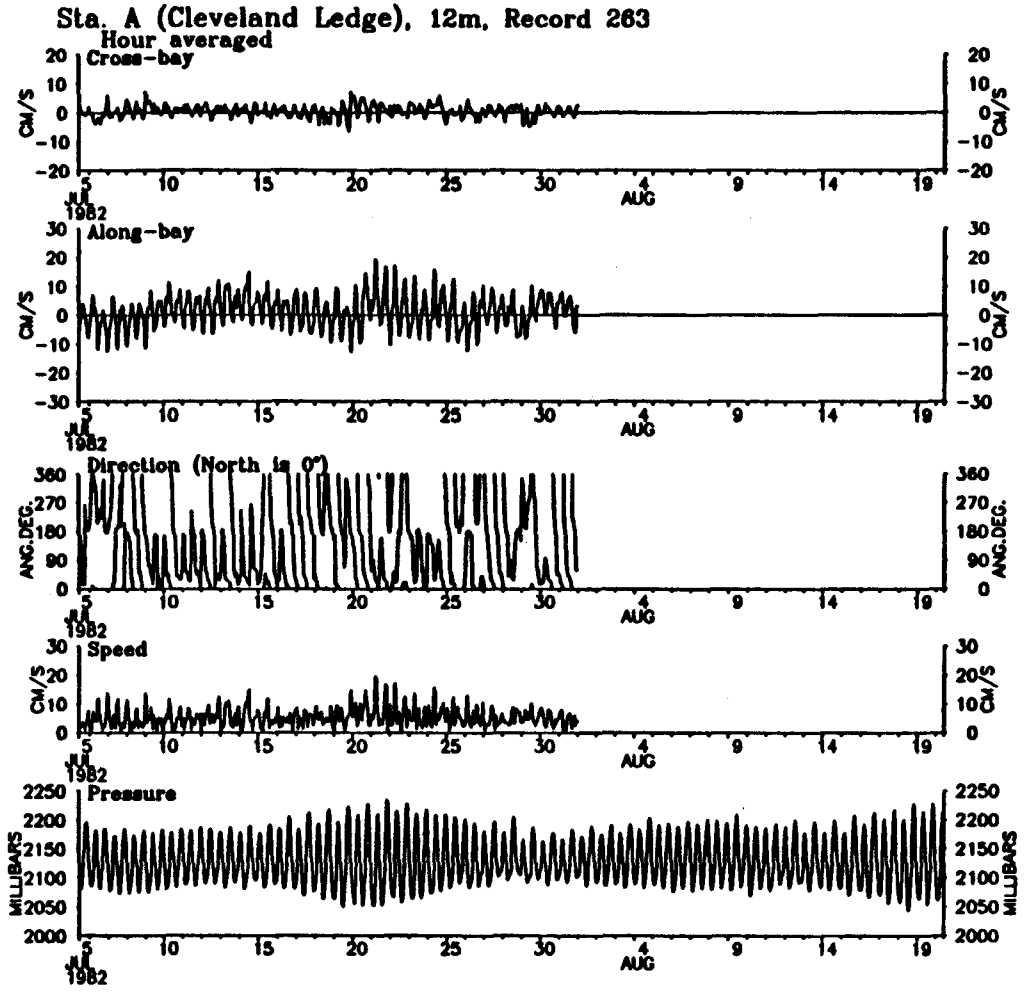


Figure 10b. Station A, record 2631, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

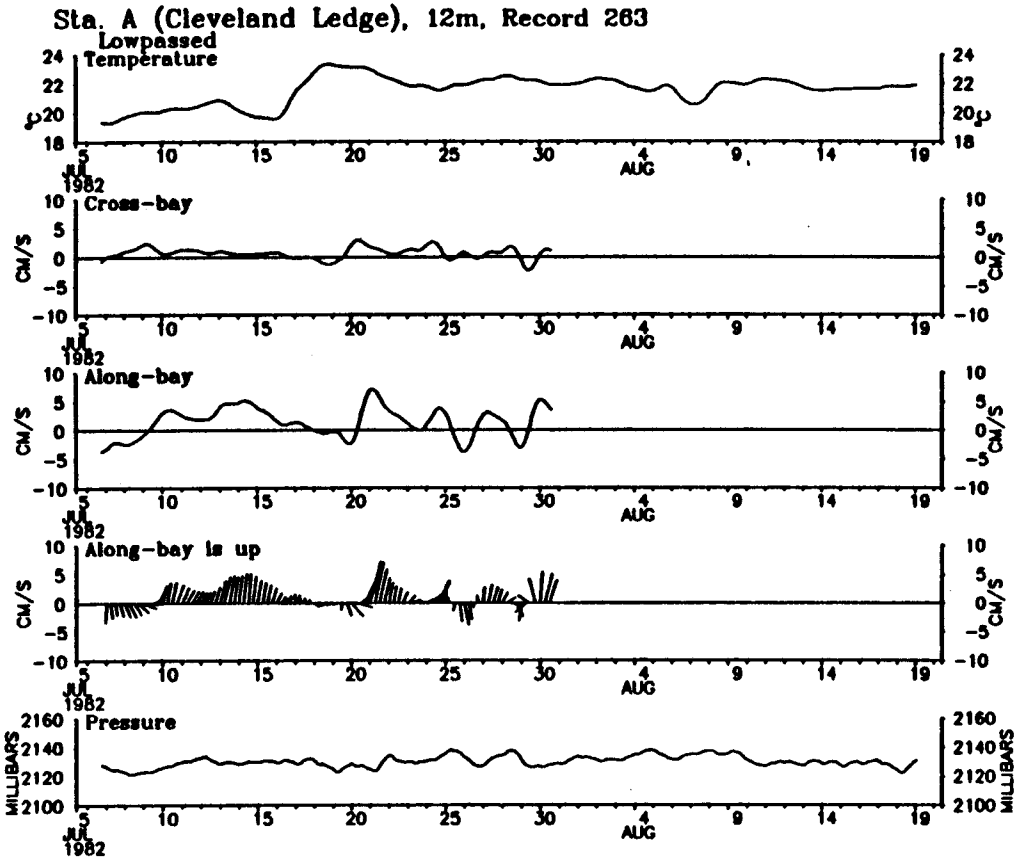


Figure 10c. Station A, record 2631, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

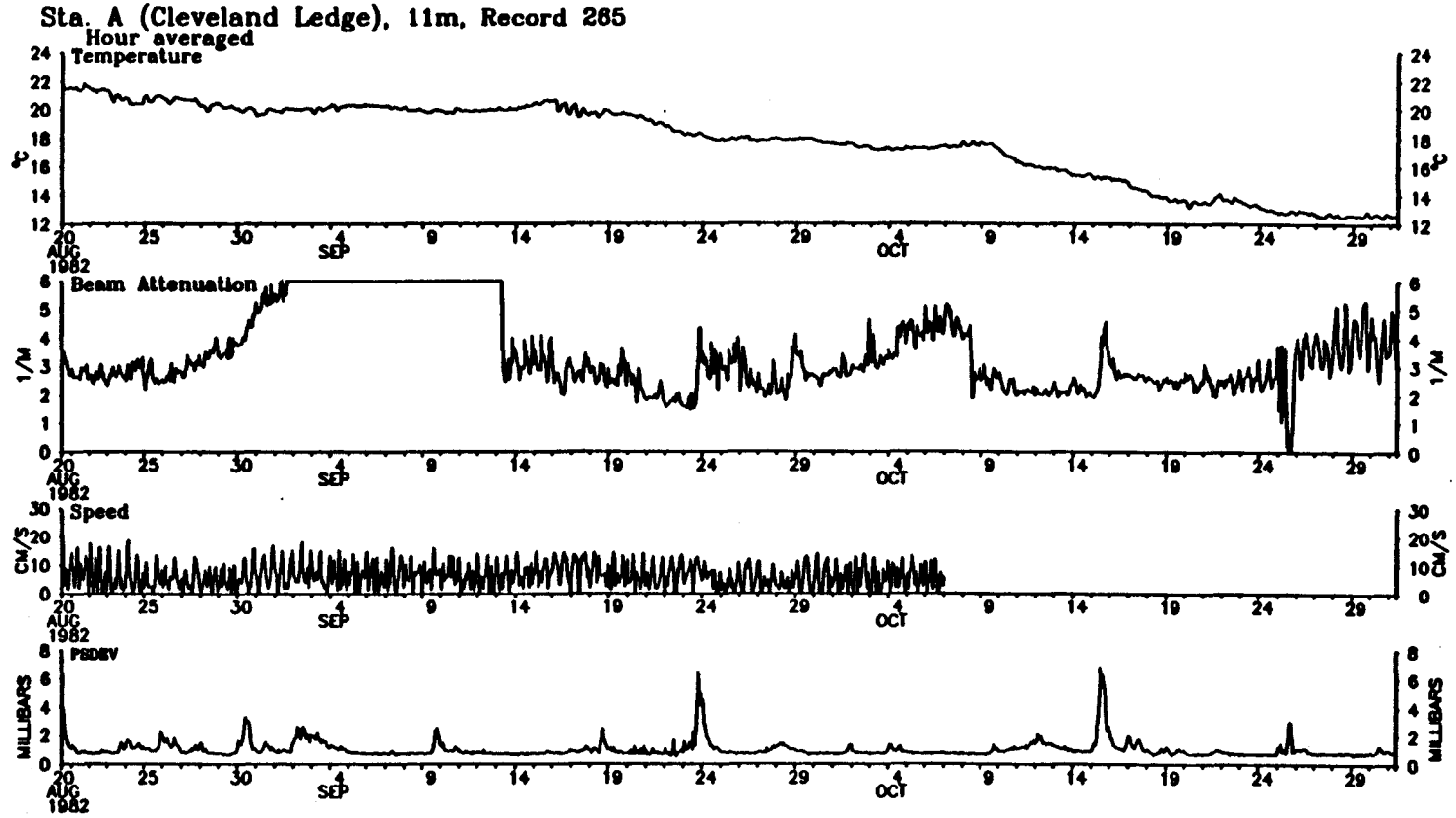
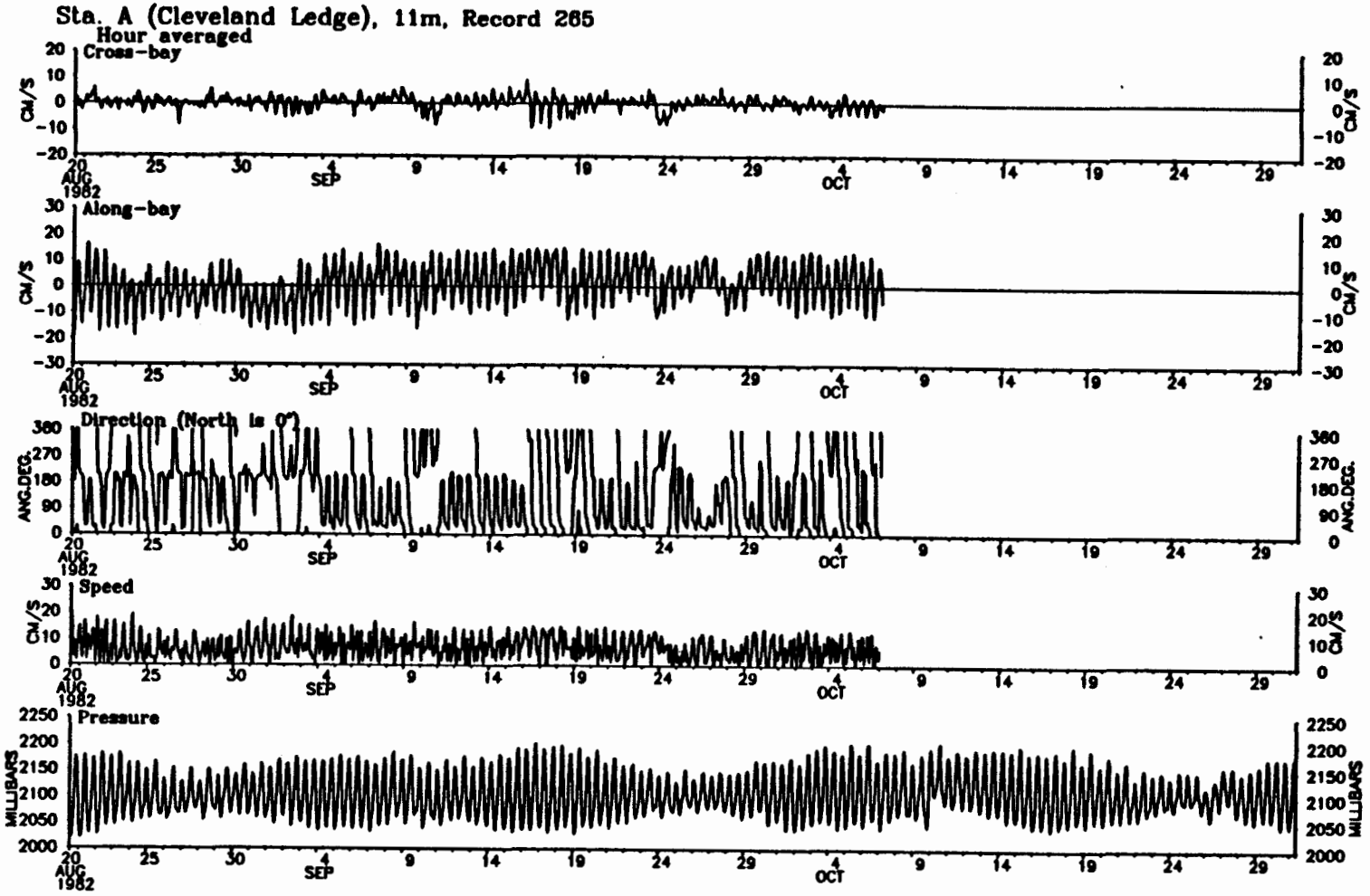


Figure 11a. Station A, record 2651, hour-averaged temperature, beam attenuation, speed, and PSDEV. The transmissometer fouled extensively during the deployment and was cleaned on September 13 and October 8.


Sta. A (Cleveland Ledge), 11m, Record 265
Hour averaged
Cross-bay
Along-bay
Direction (North is 0°)
Speed
Pressure
CM/S
ANG.DEG.
MILLIBARS
20 25 30 4 9 14 19 24 29 4 9 14 19 24 29
AUG SEP OCT
1982

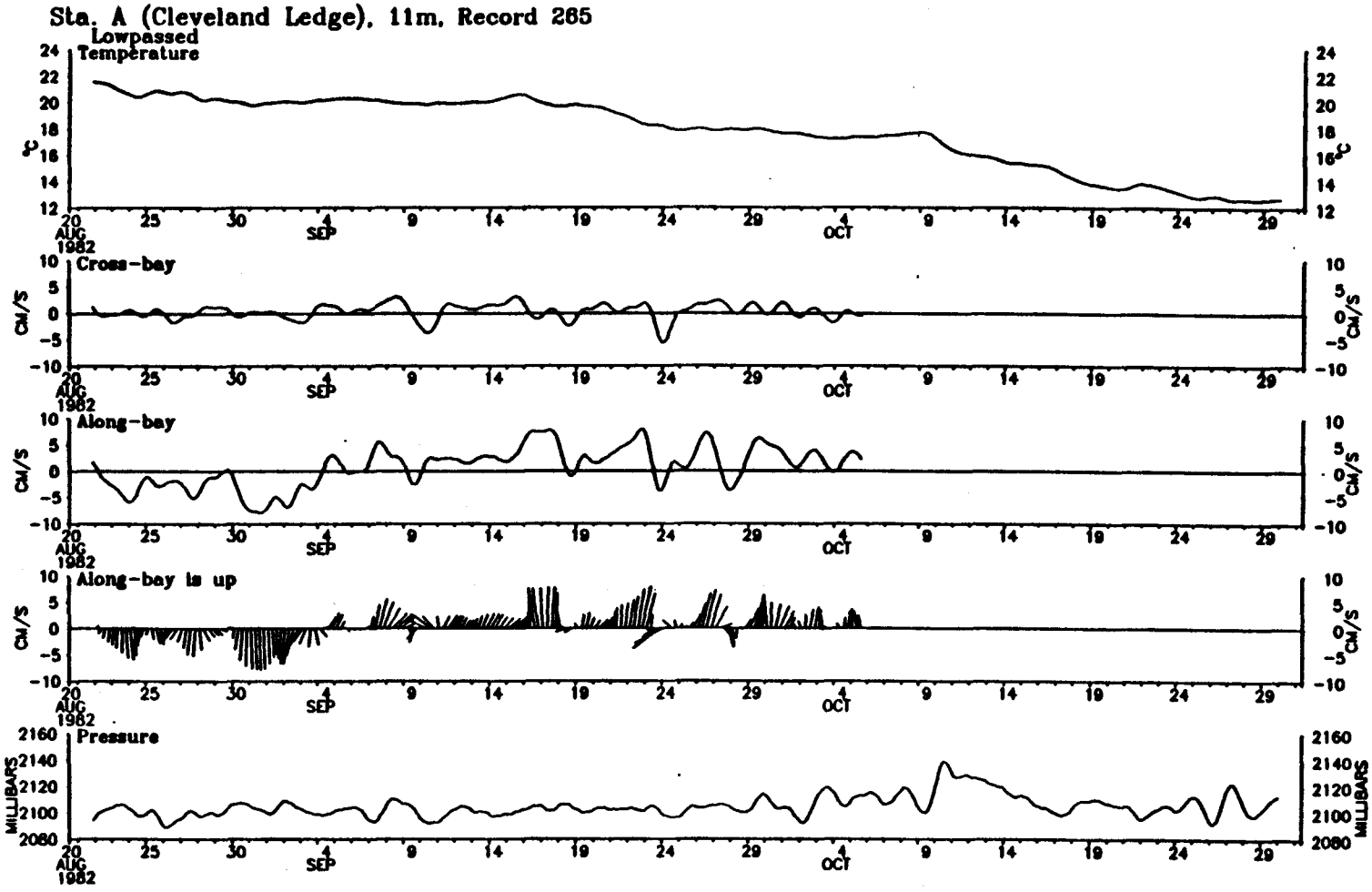
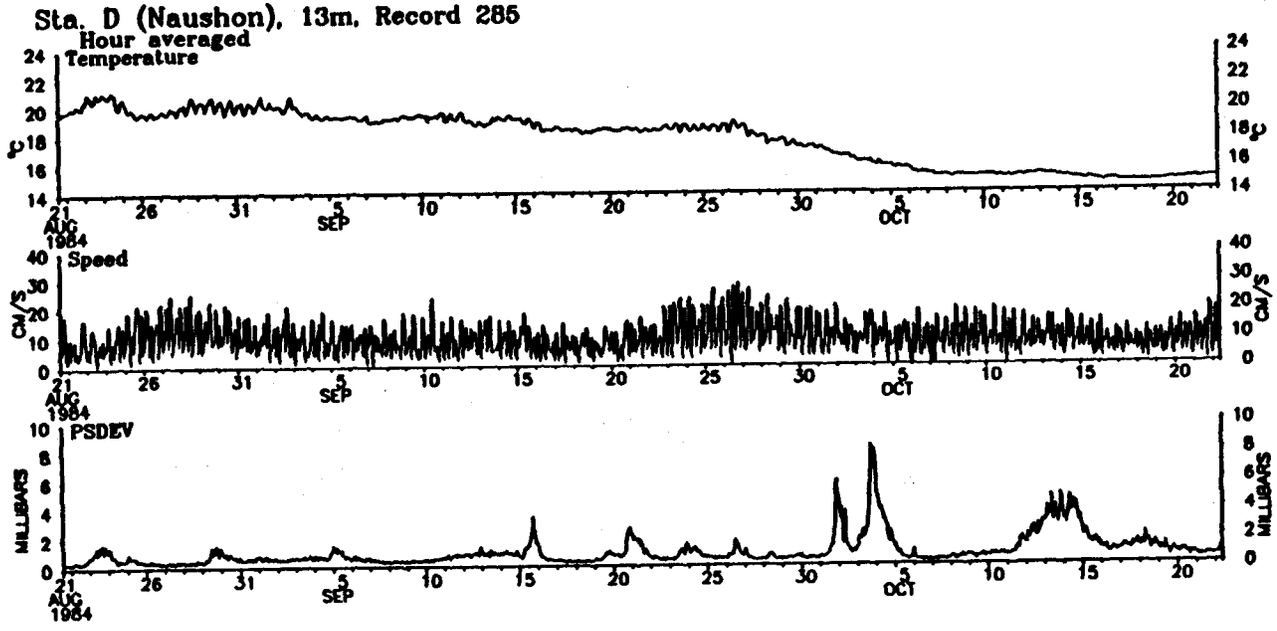


Figure 11c. Station A, record 2651, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.


Sta. D (Naushon), 13m, Record 285
Hour averaged
Temperature
°C
Speed
CM/S
PSDEV
MILLIBARS
21 26 31 5 10 15 20 25 30 5 10 15 20
AUG 1984
SEP
OCT

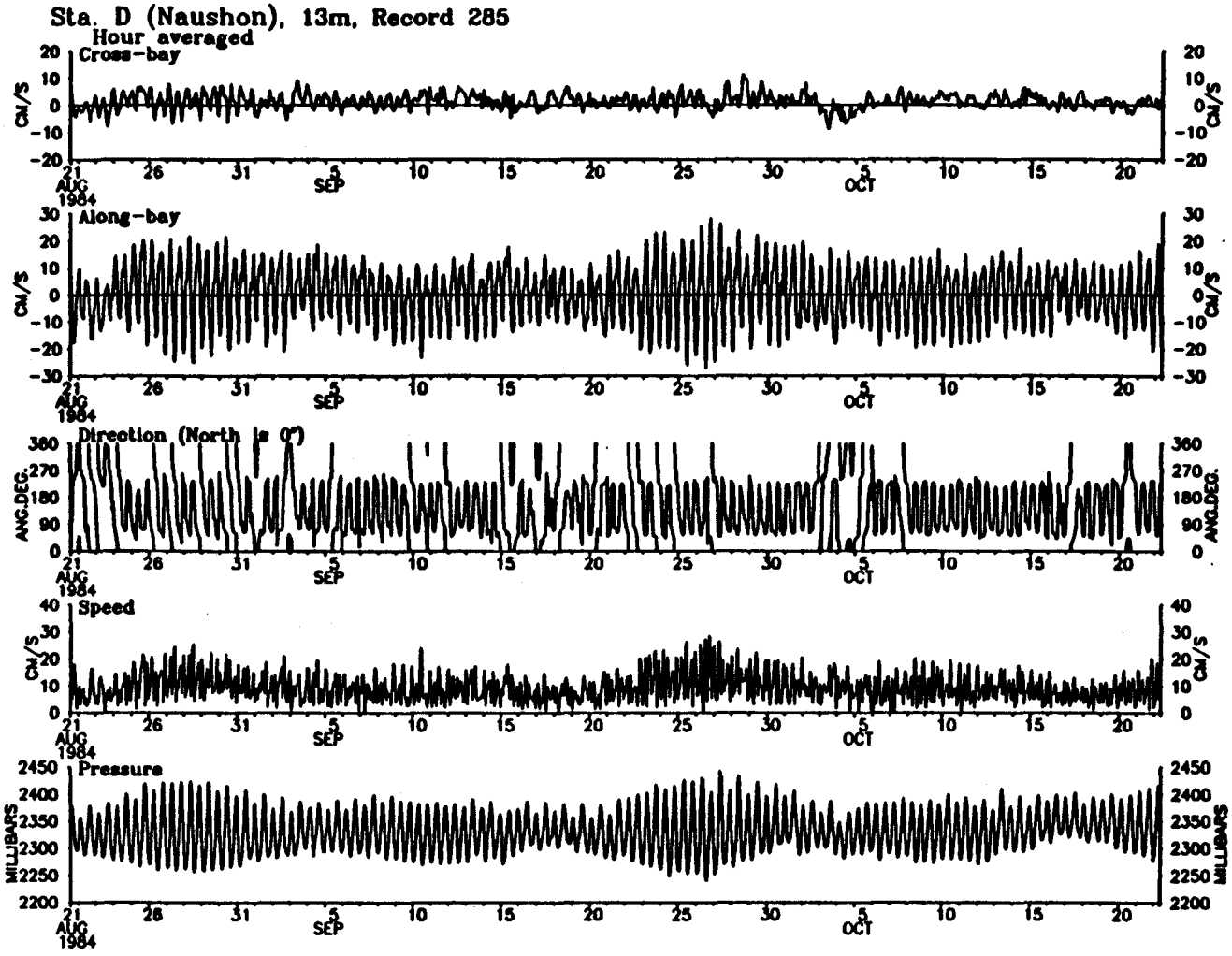


Figure 12b. Station D, record 2851, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

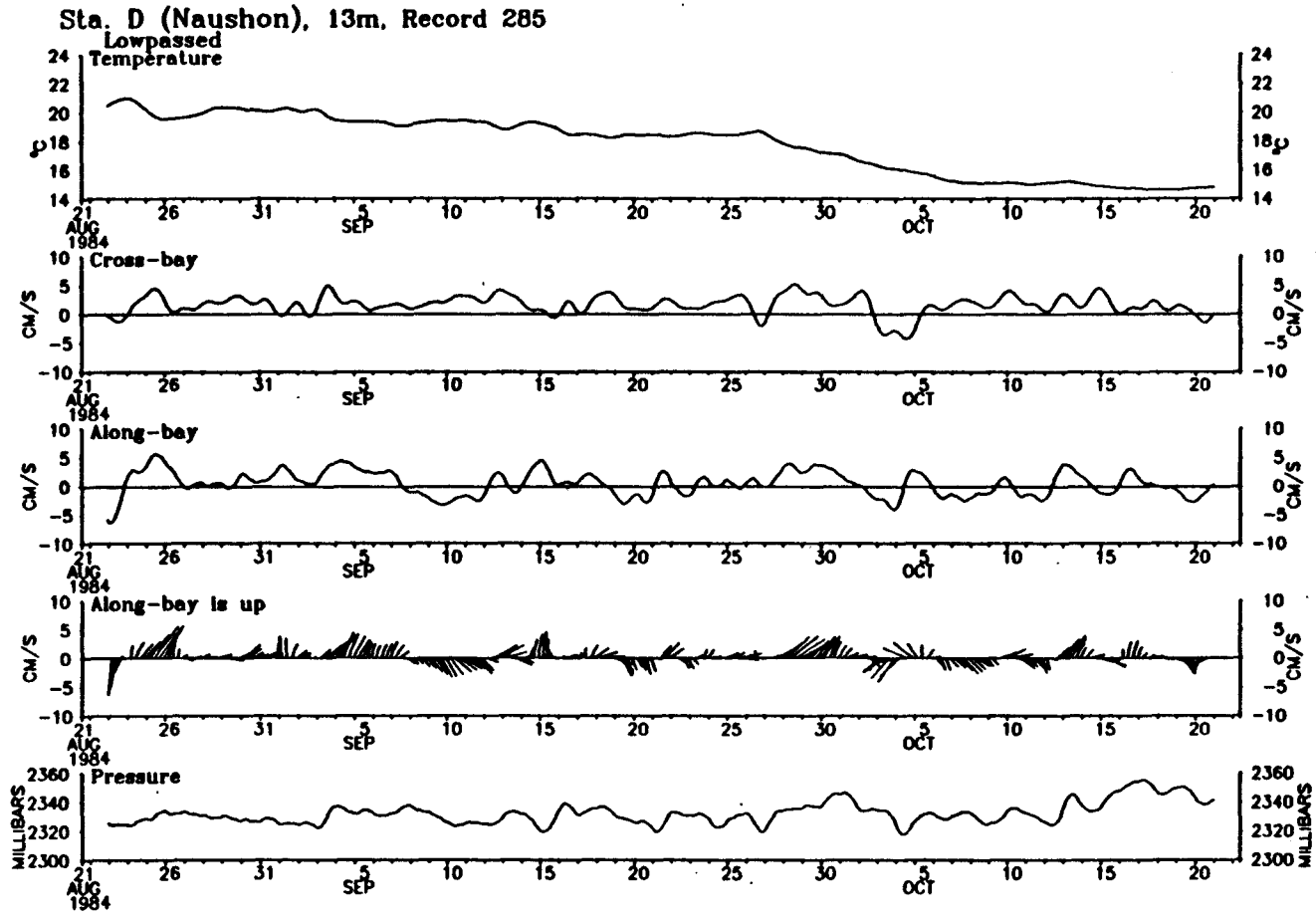


Figure 12c. Station D, record 2851, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 8 hours), and bottom pressure.

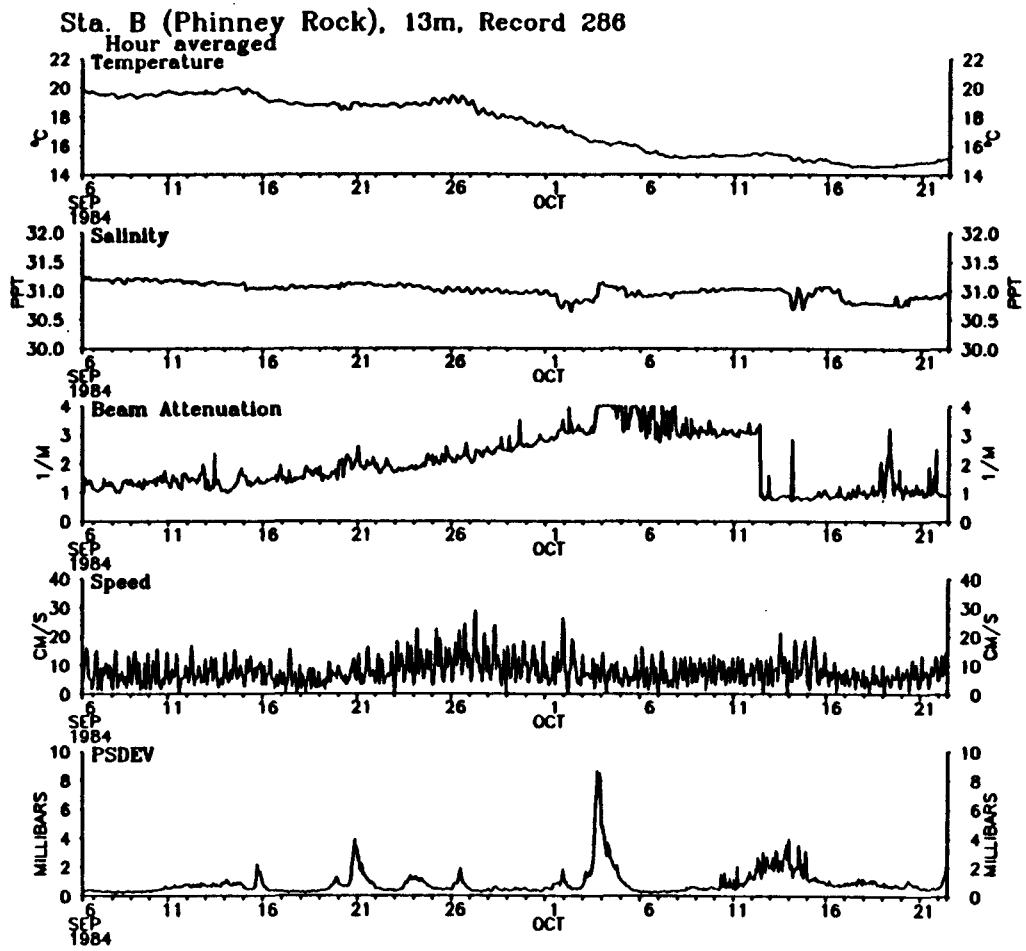


Figure 13a. Station B, record 2861, hour-averaged temperature, salinity, beam attenuation, speed, and PSDEV. The transmissometer fouled during the deployment and was cleaned on September 12.

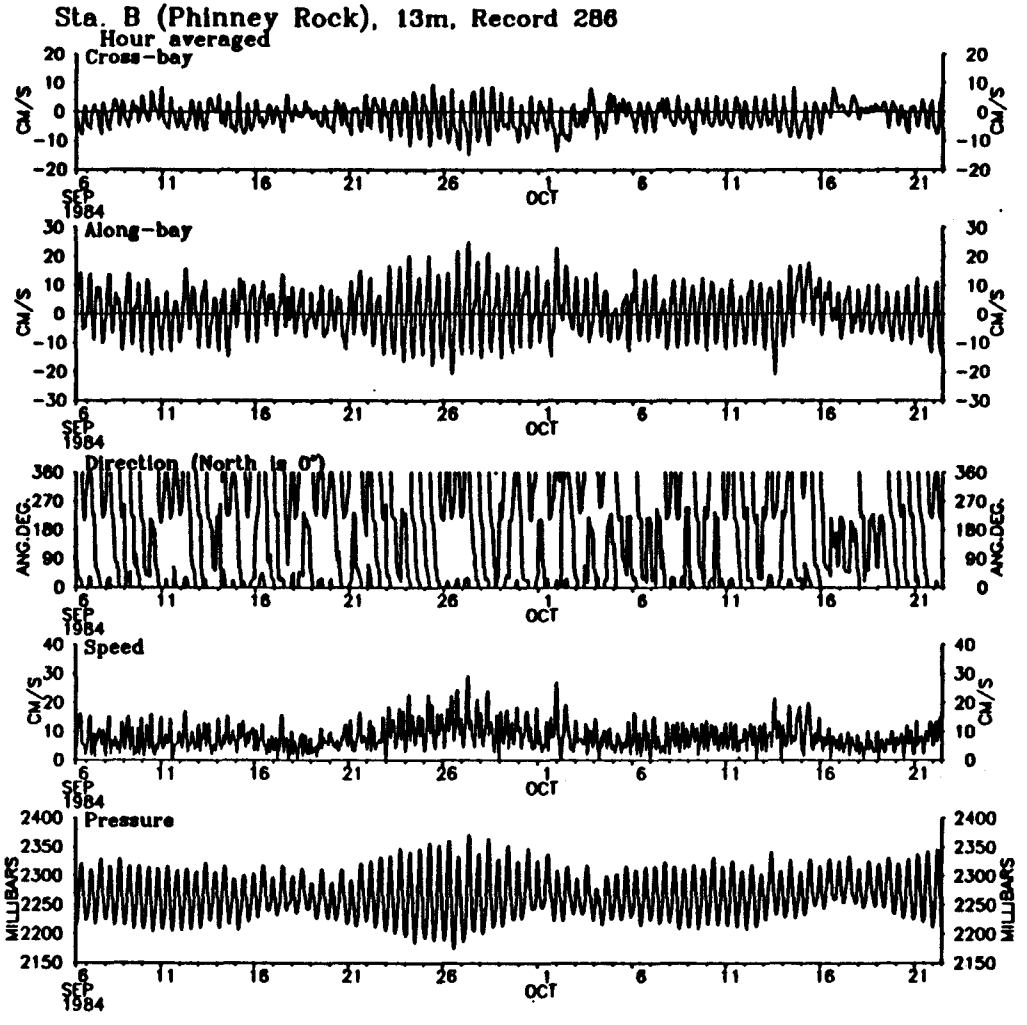


Figure 13b. Station B, record 2861, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

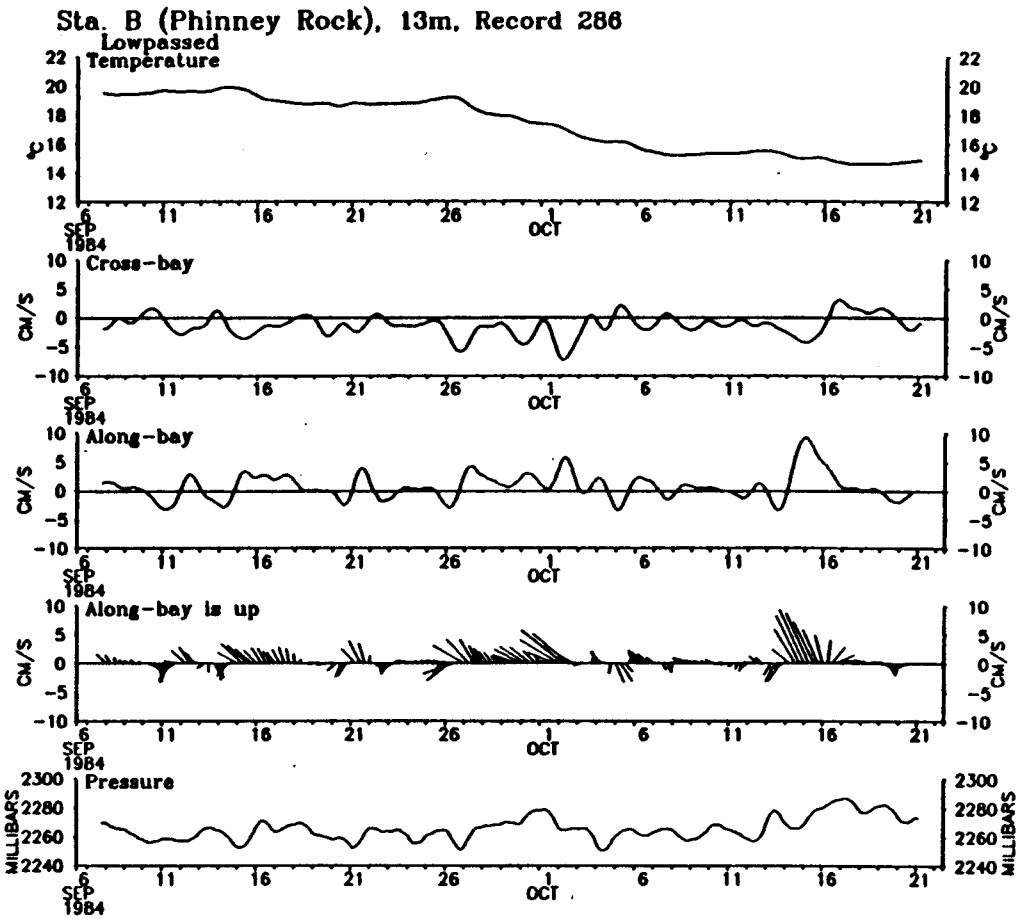


Figure 13c. Station B, record 2861, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

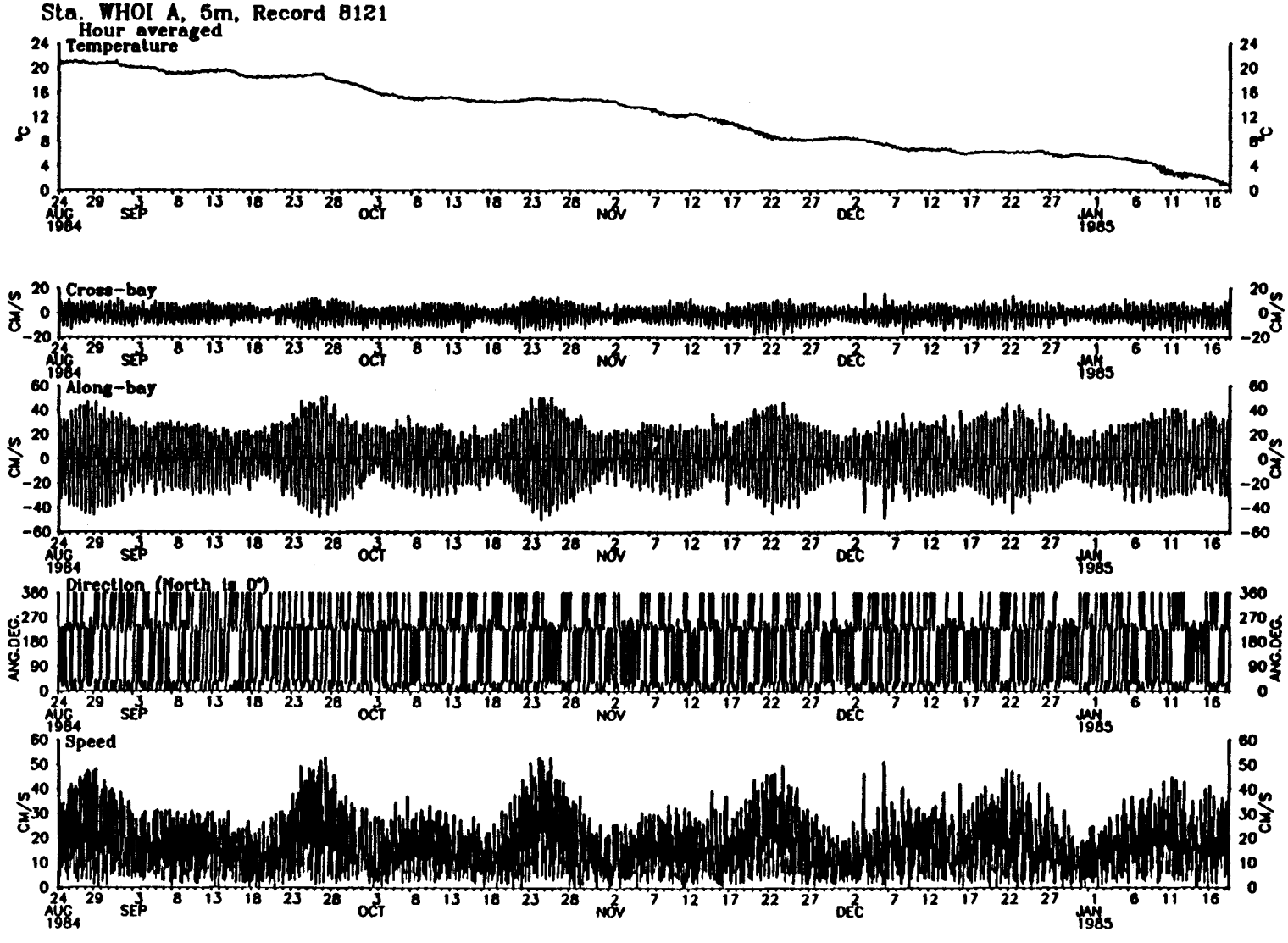


Figure 14a. Station WHOIA, record 8121, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

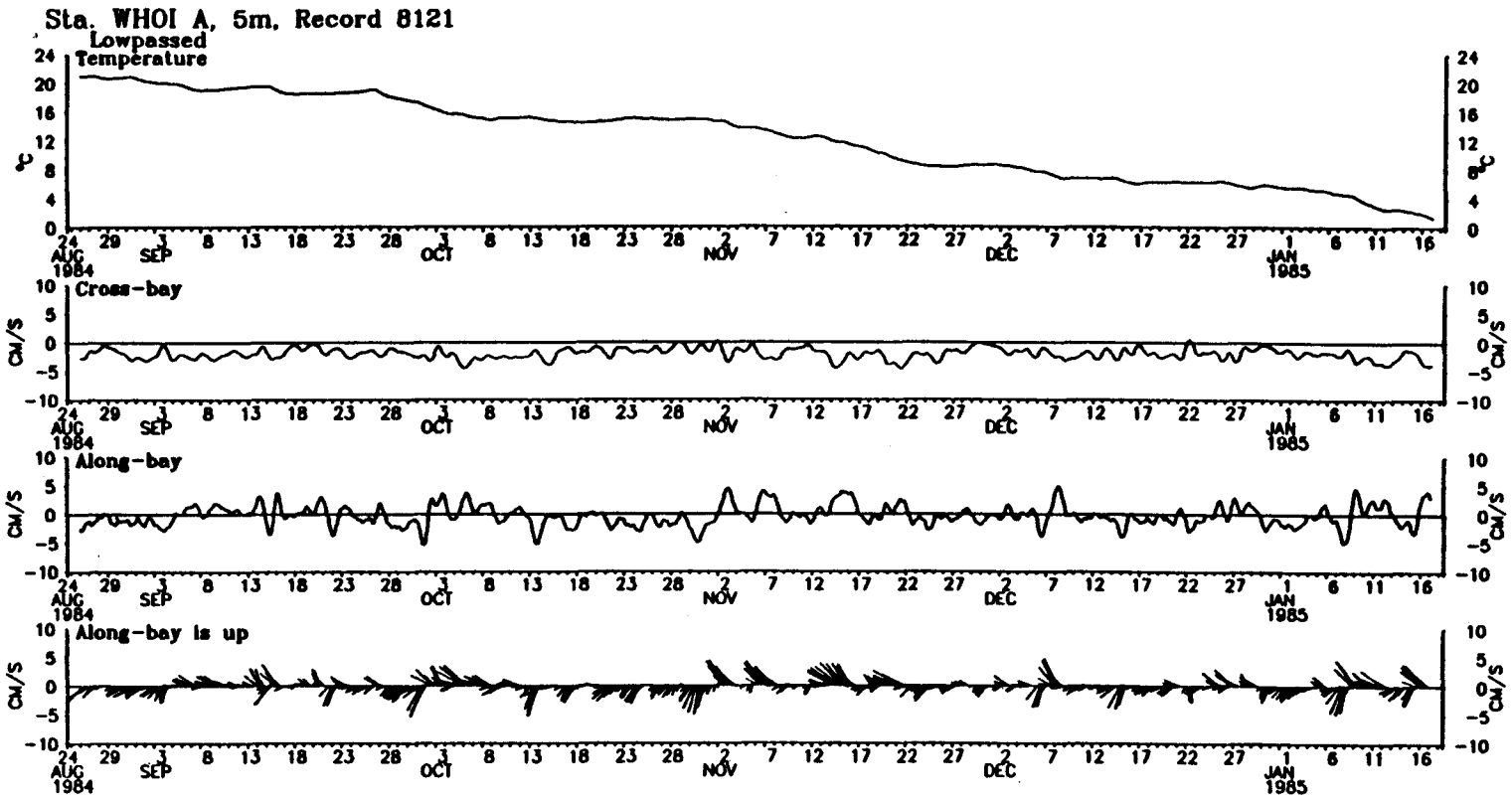


Figure 14b. Station WHOIA, record 8121, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

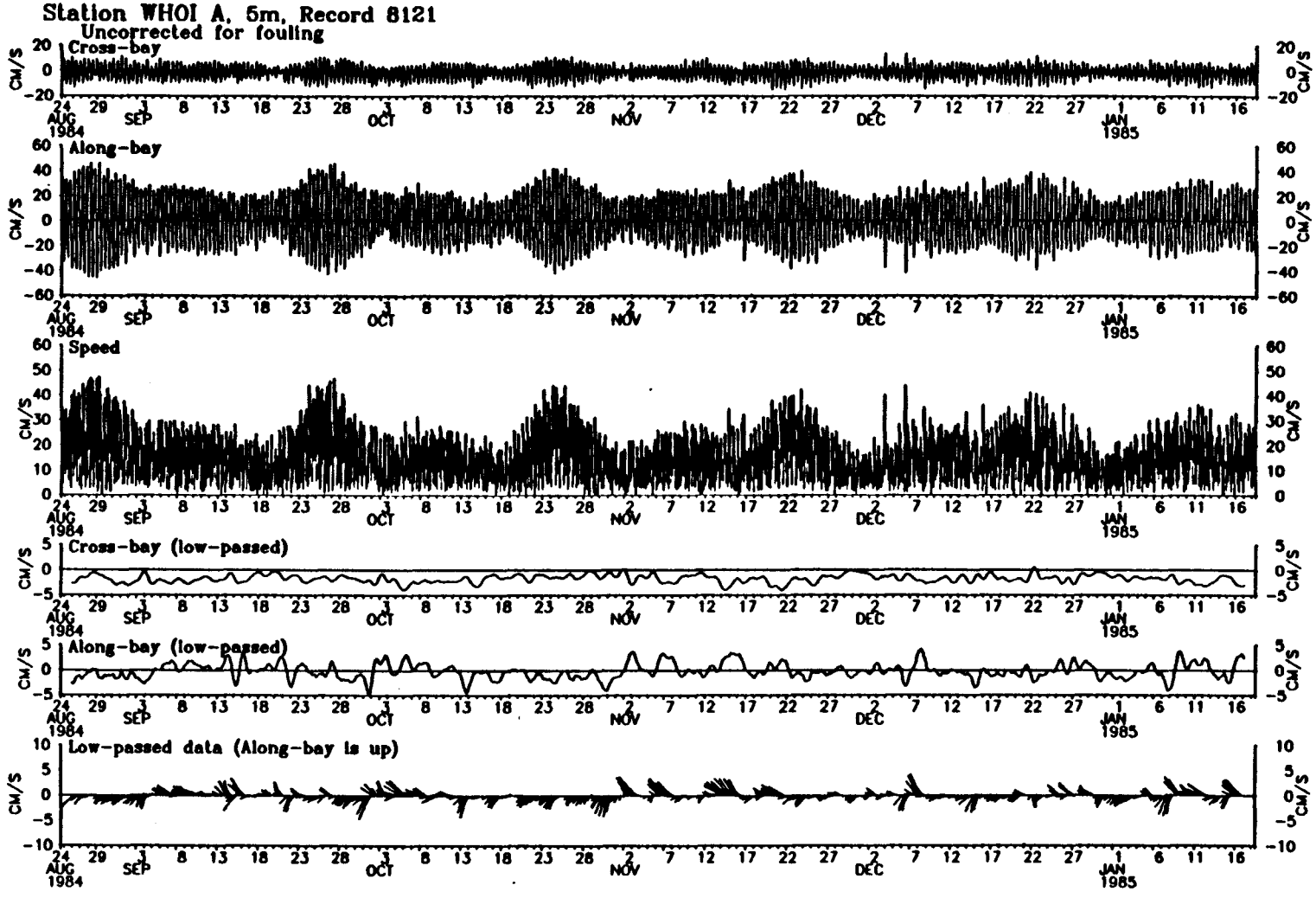


Figure 14c. Station WHOIA, record 8121, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

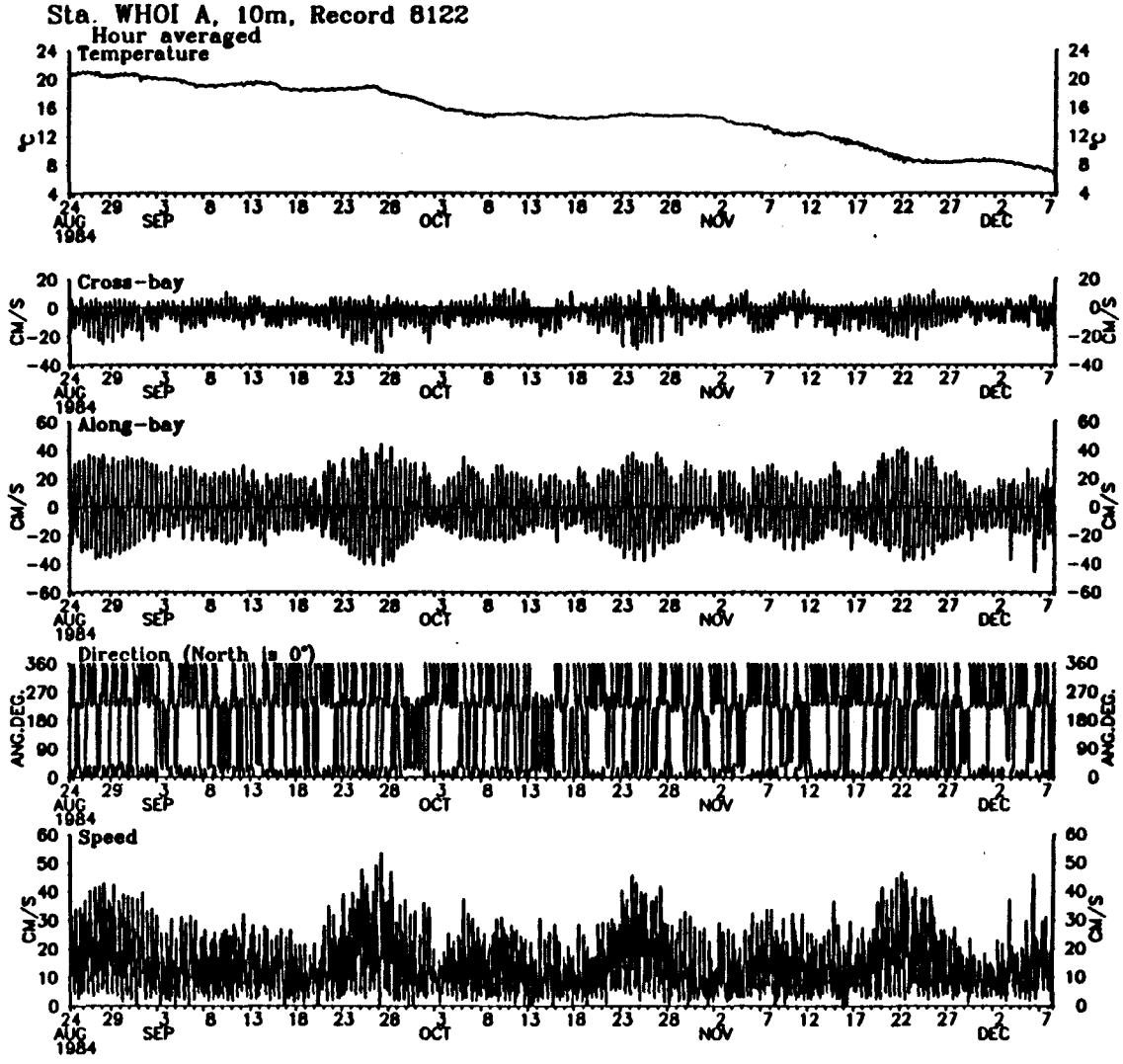


Figure 15a. Station WHOIA, record 8122, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

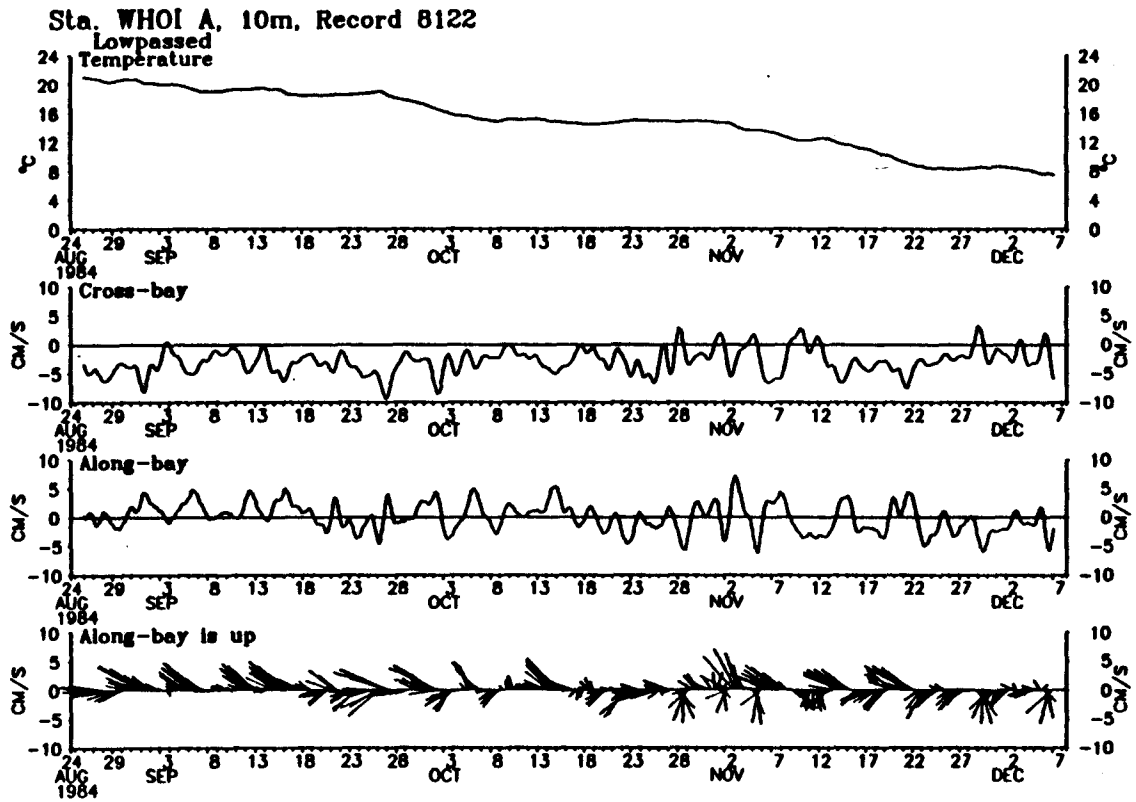


Figure 15b. Station WHOIA, record 8122, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

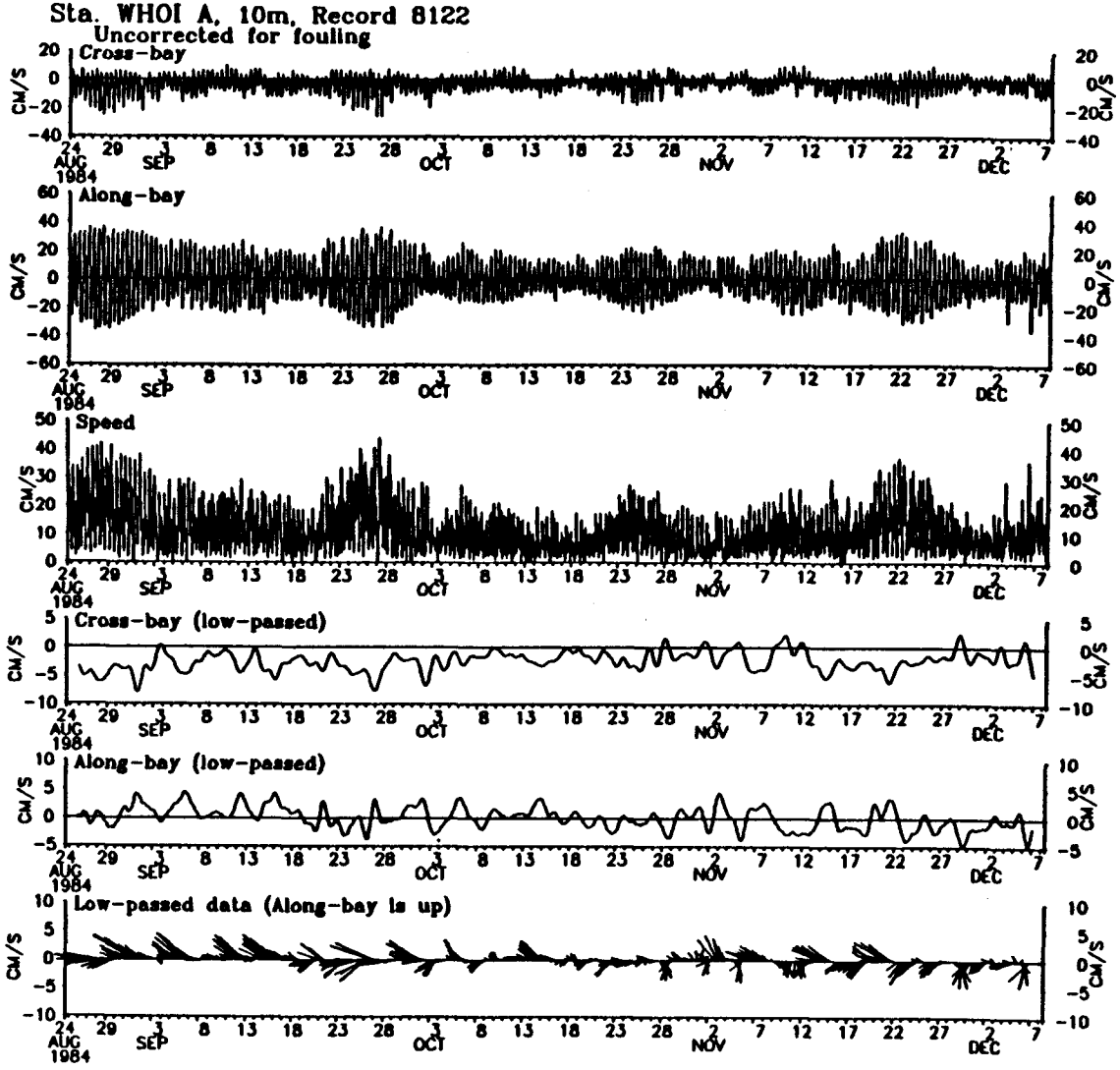


Figure 15c. Station WHOIA, record 8122, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

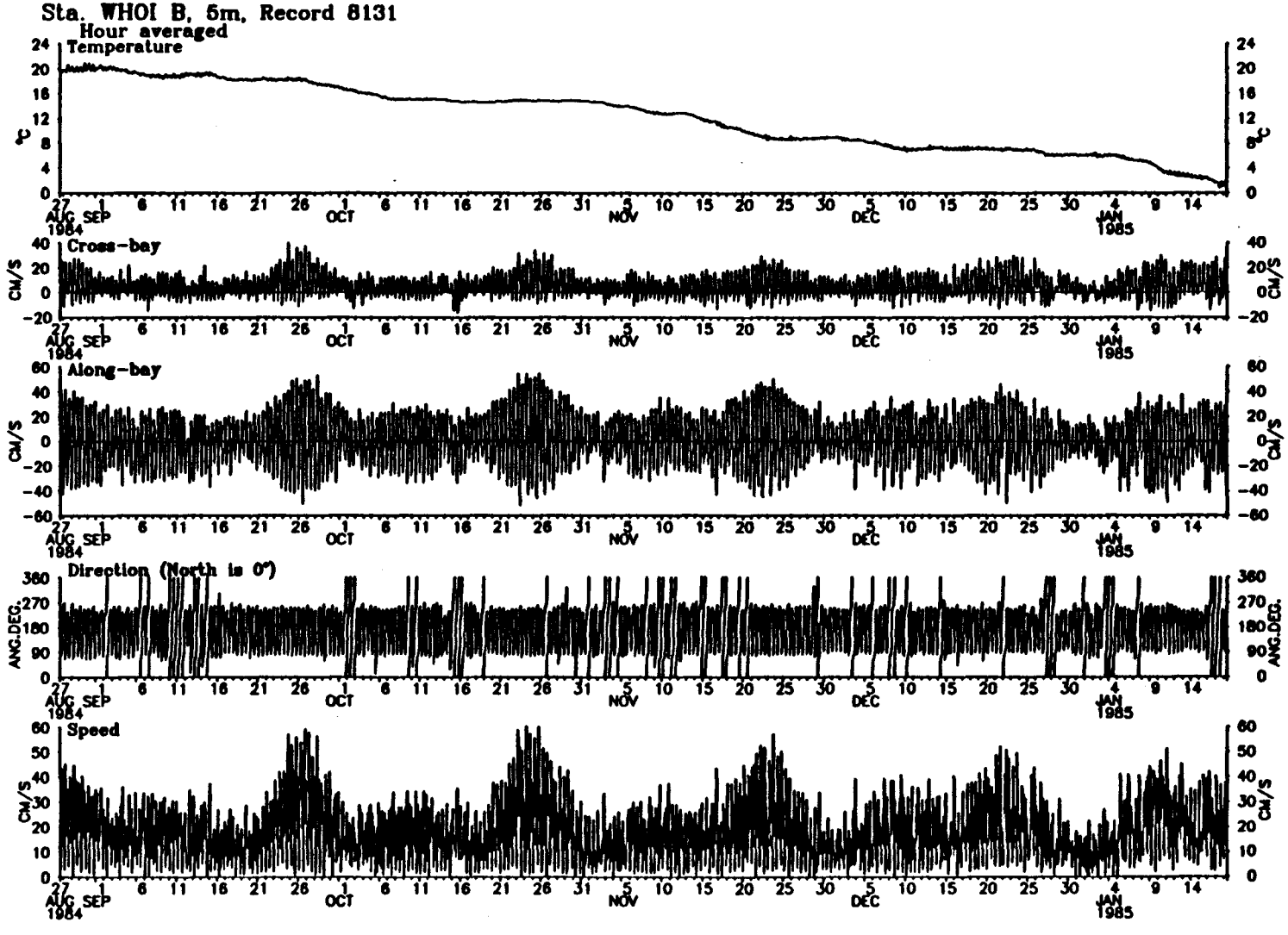


Figure 16a. Station WHOIB, record 8131, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

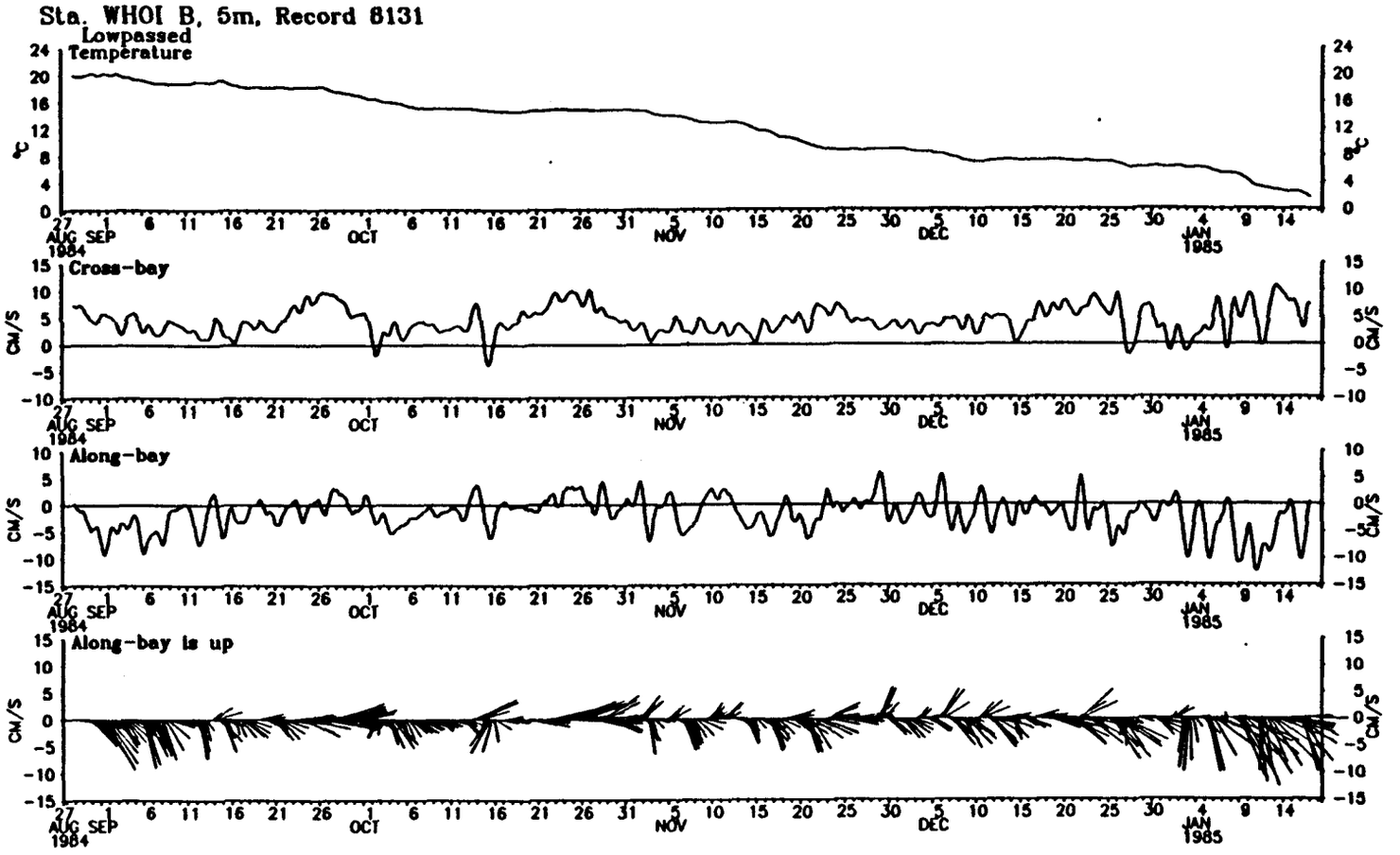


Figure 16b. Station WHOIB, record 8131, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

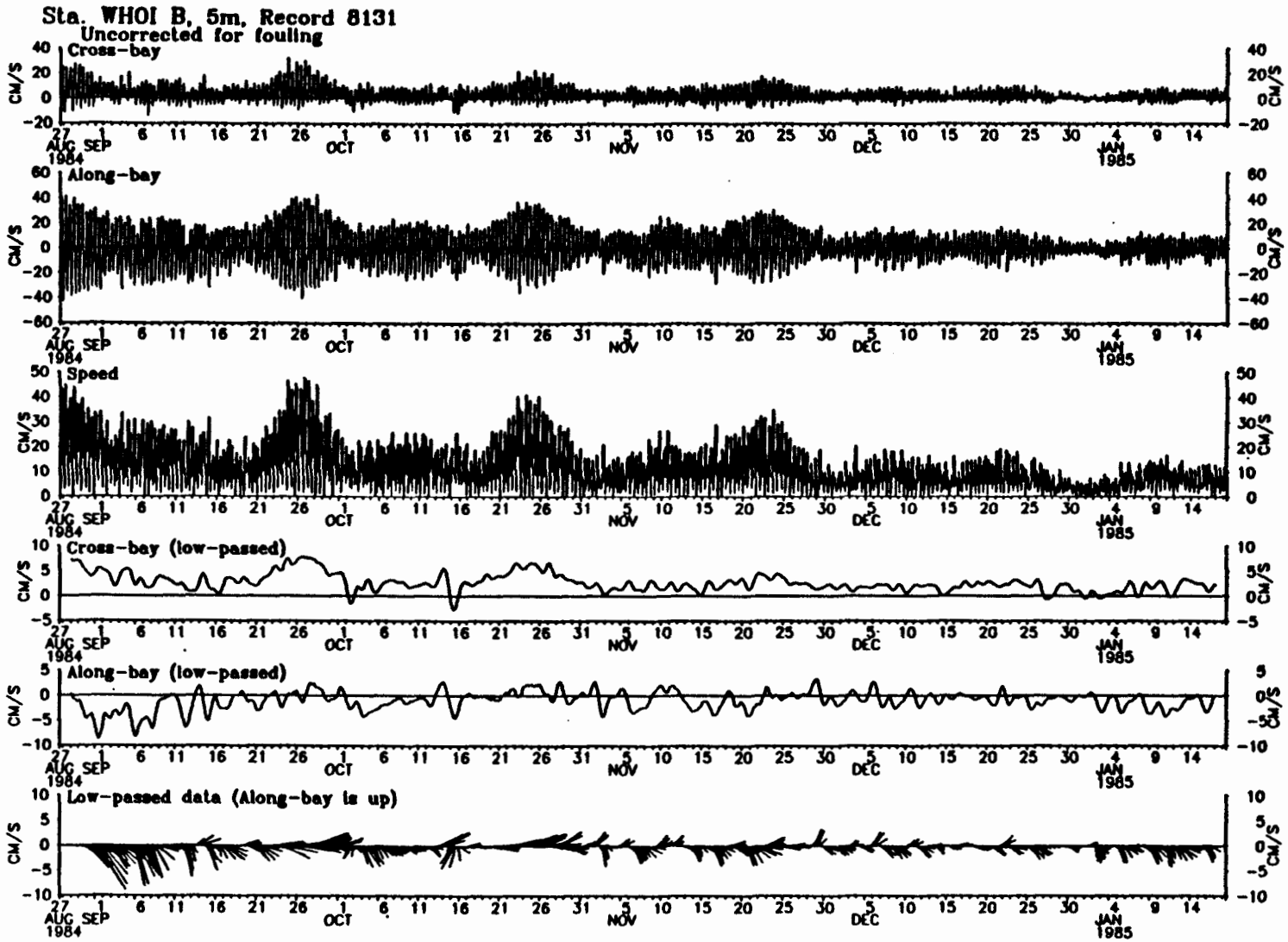


Figure 16c. Station WHOIB, record 8131, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

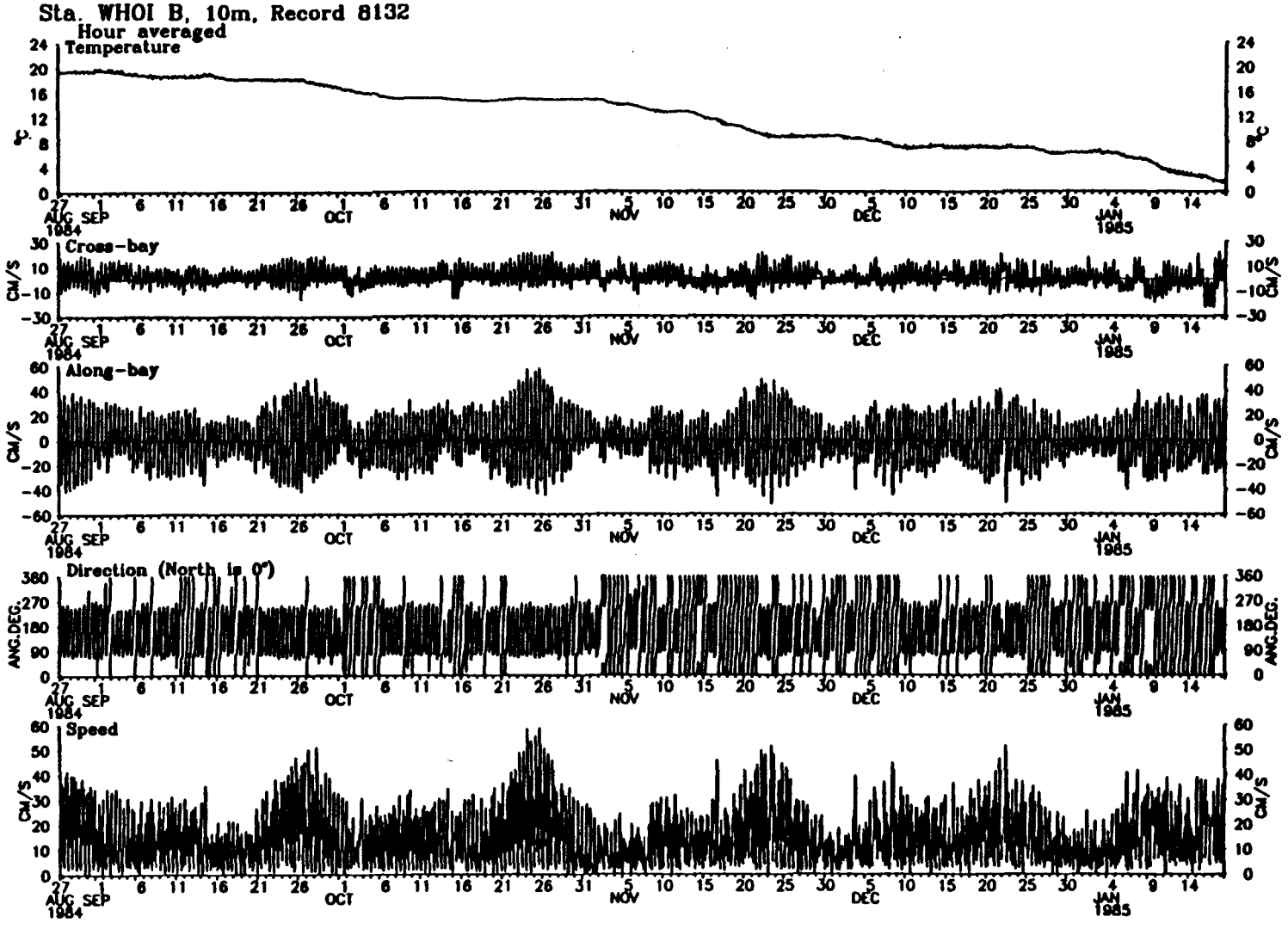


Figure 17a. Station WHOIB, record 8132, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

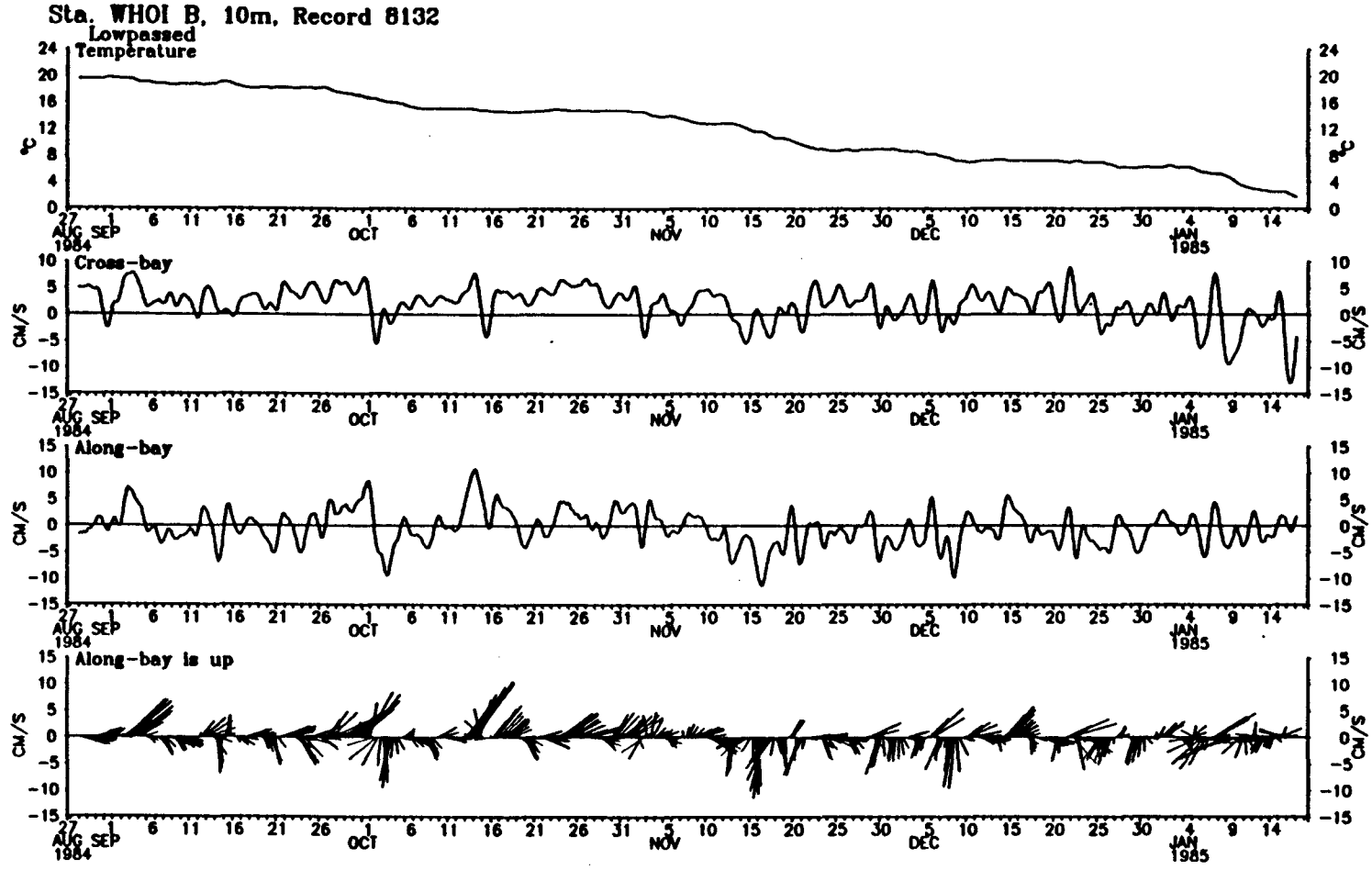


Figure 17b. Station WHOIB, record 8132, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

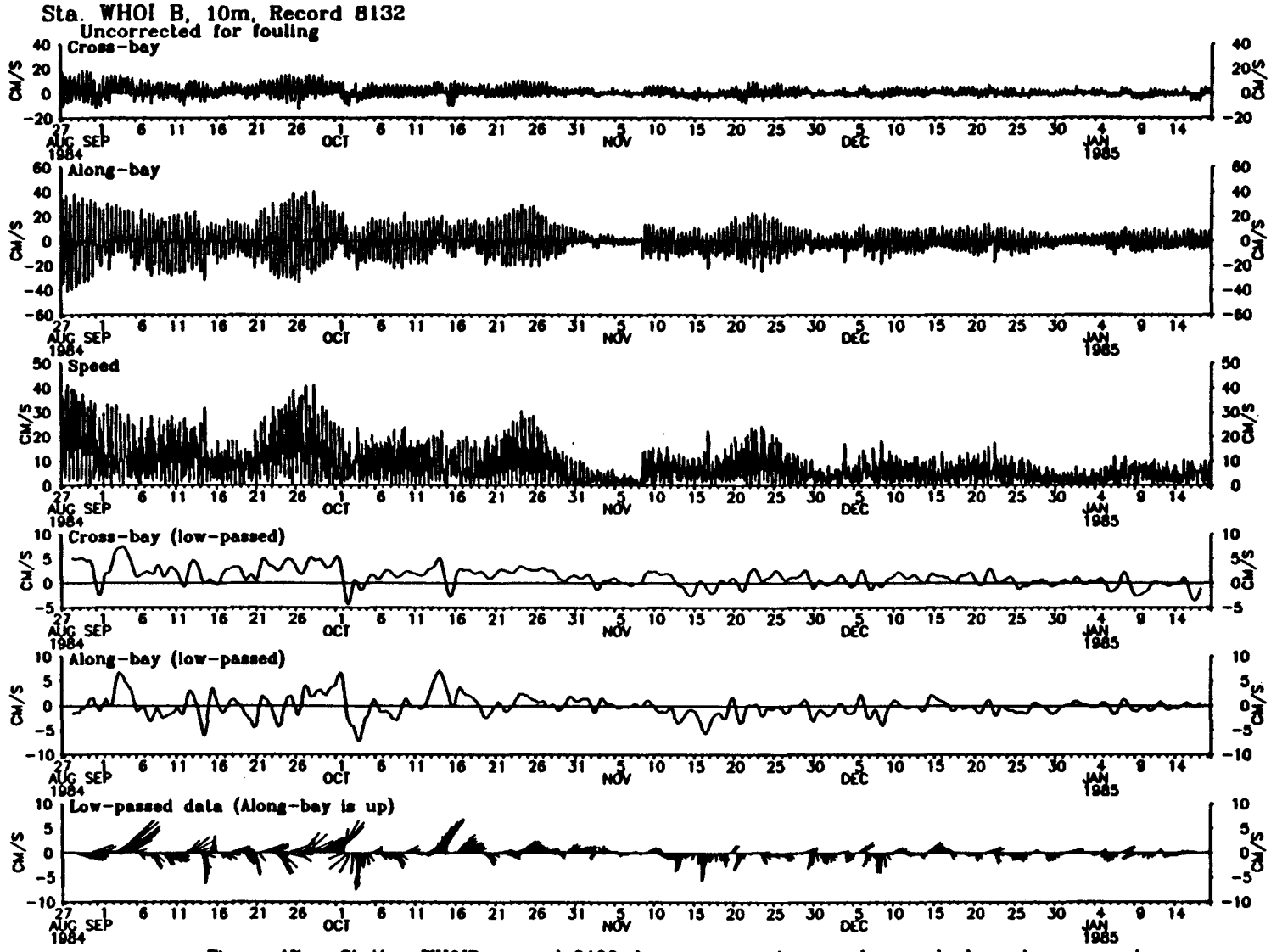


Figure 17c. Station WHOIB, record 8132, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

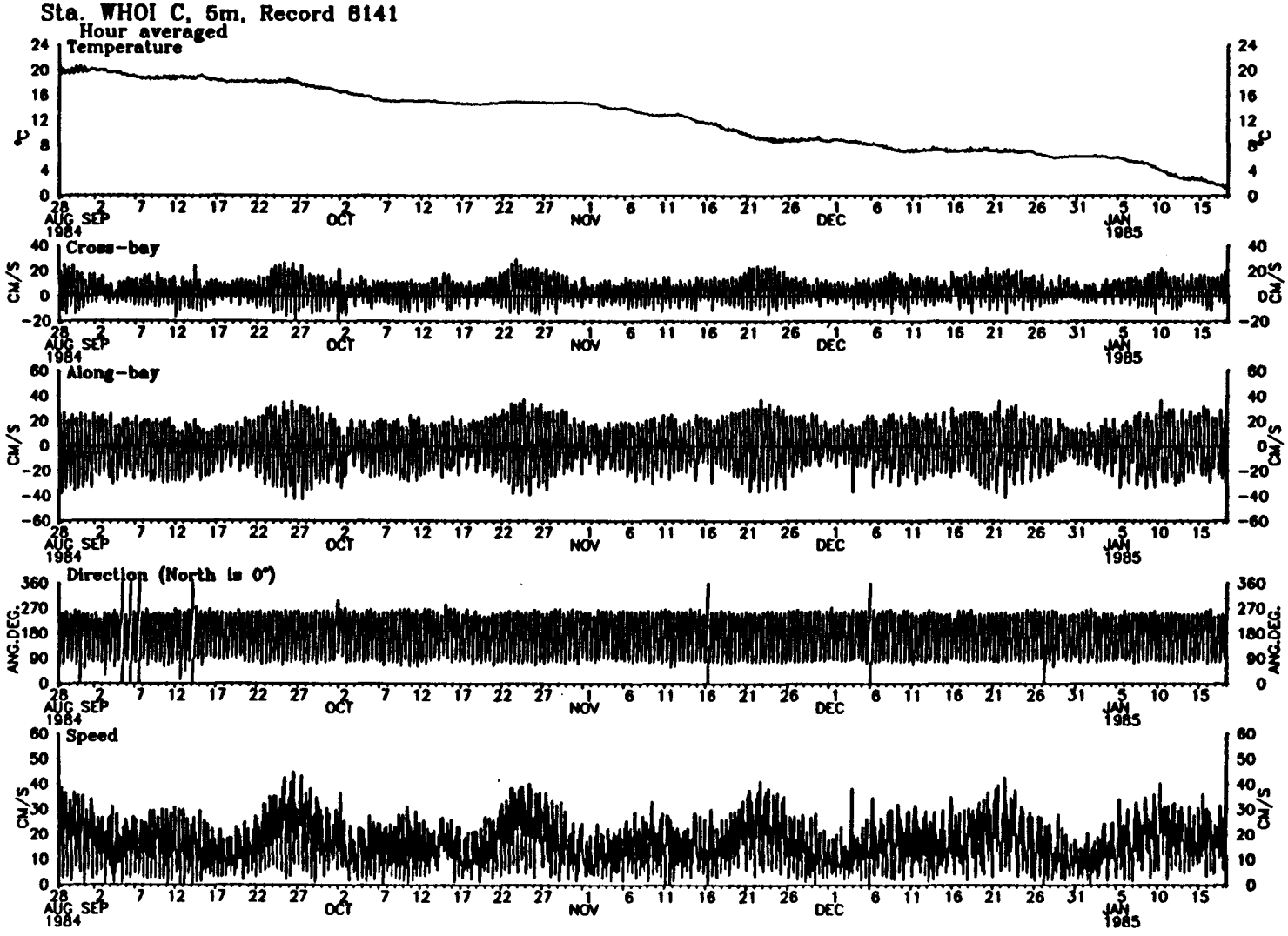


Figure 18a. Station WHOIC, record 8141, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

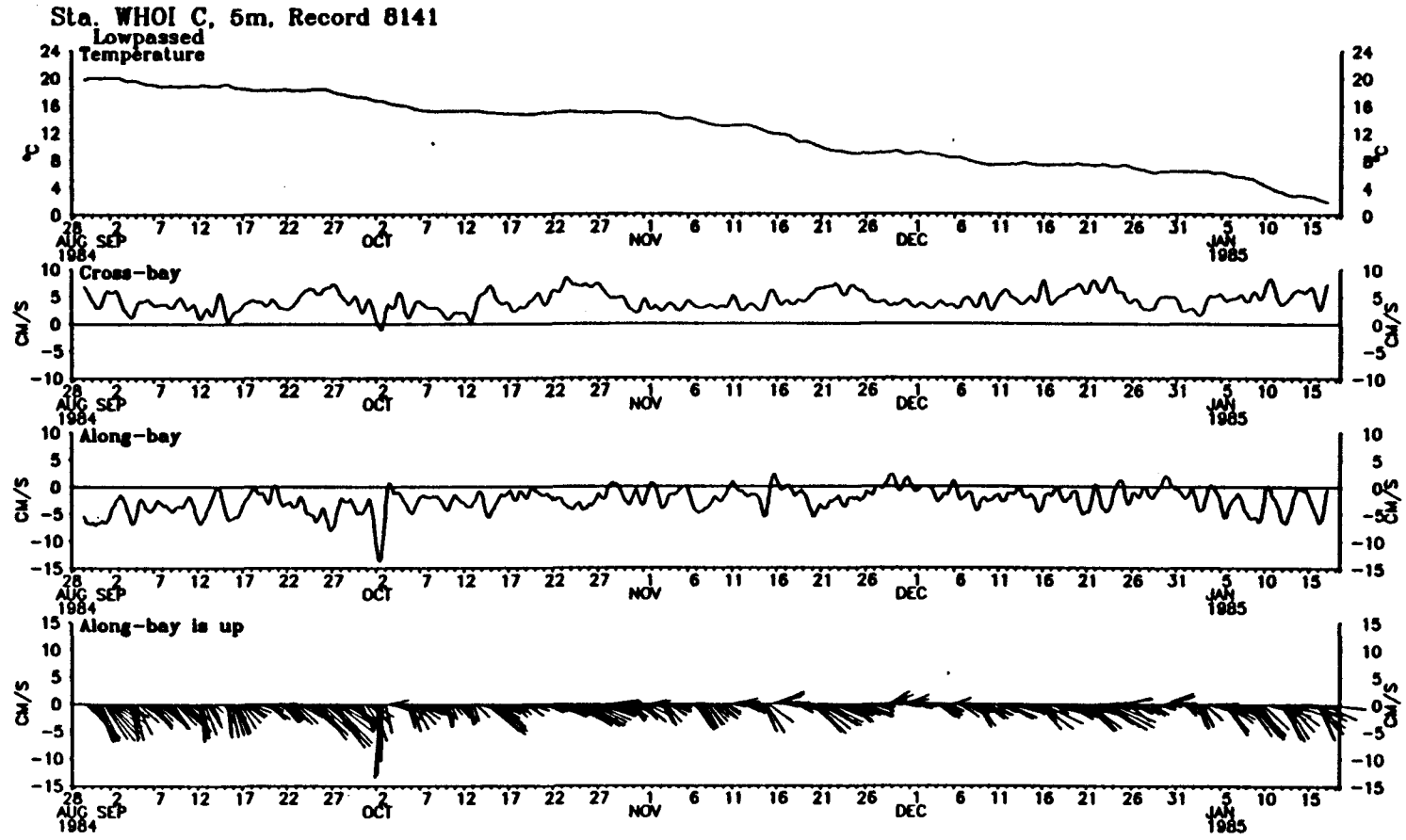


Figure 18b. Station WHOIC, record 8141, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

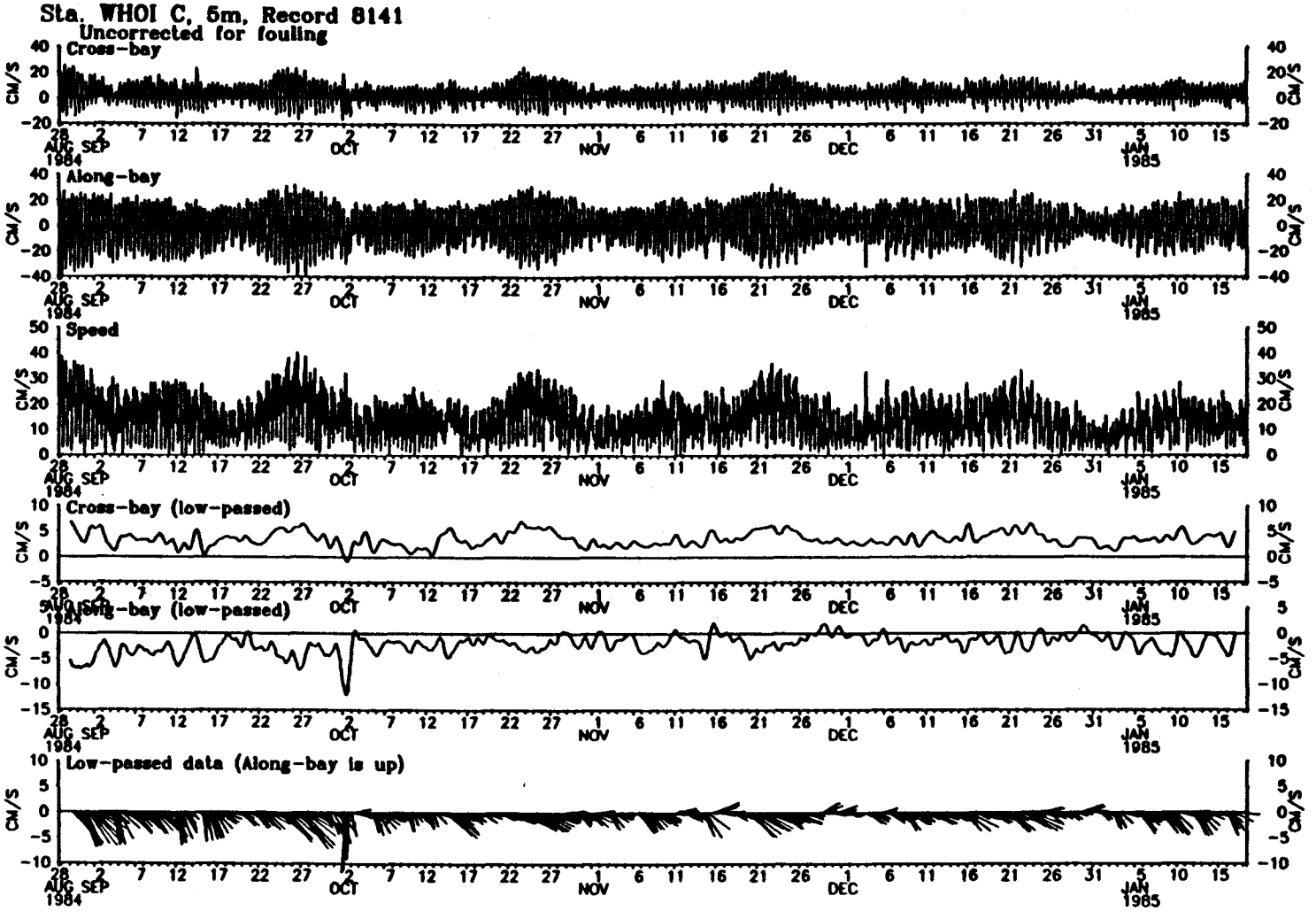


Figure 18c. Station WHOIC, record 8141, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

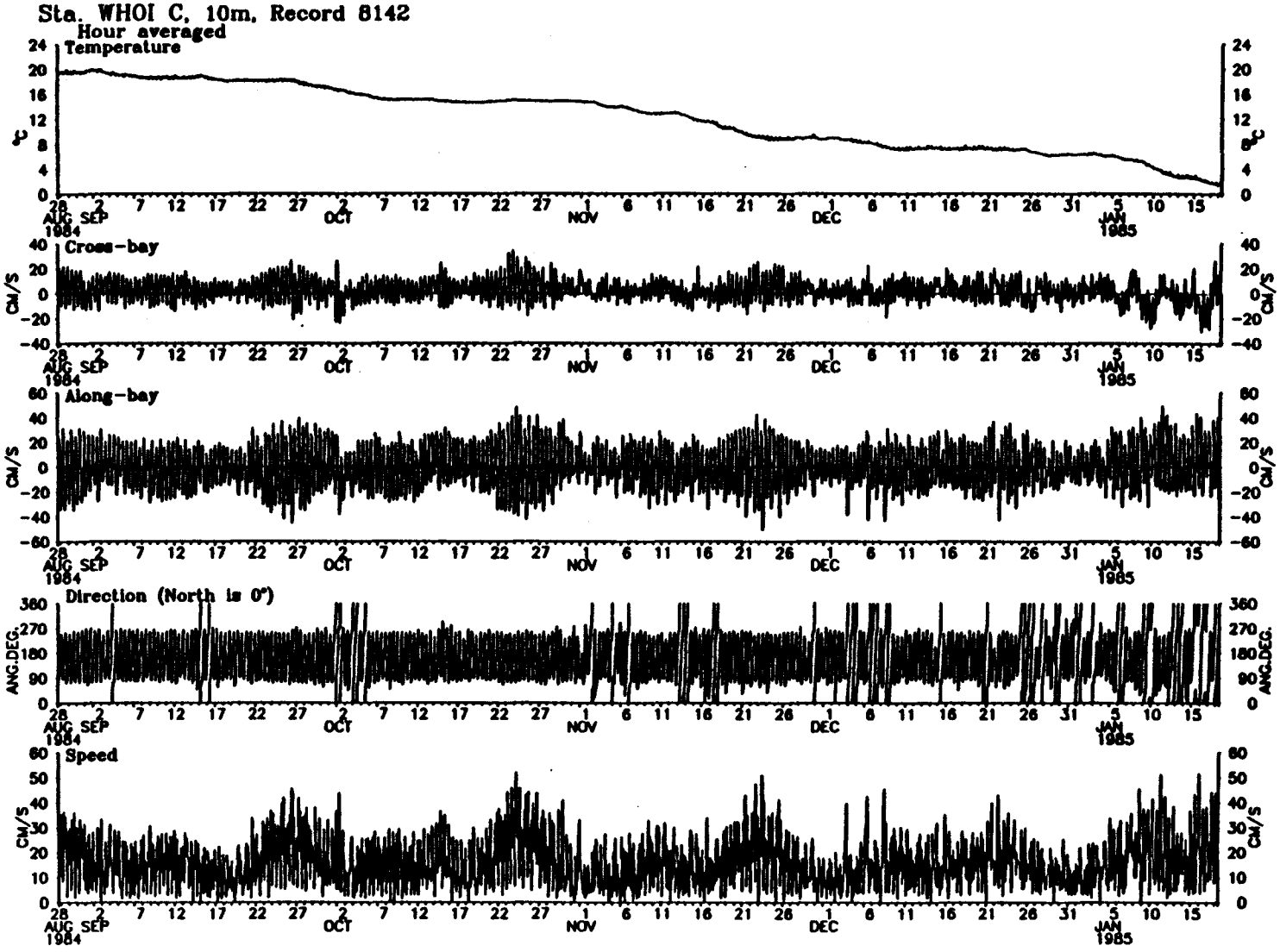


Figure 19a. Station WHOIC, record 8142, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

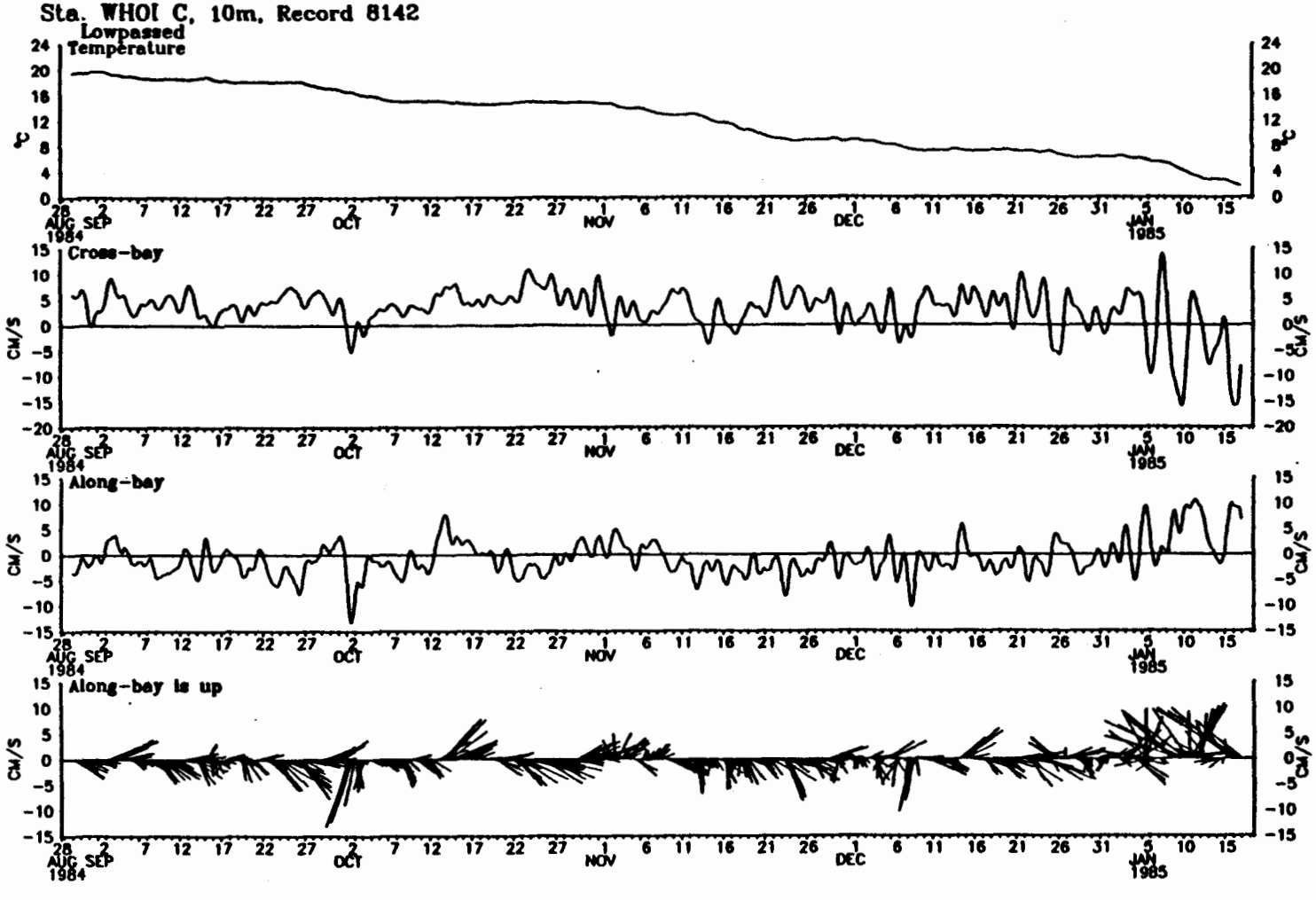


Figure 19b. Station WHOIC, record 8142, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours).

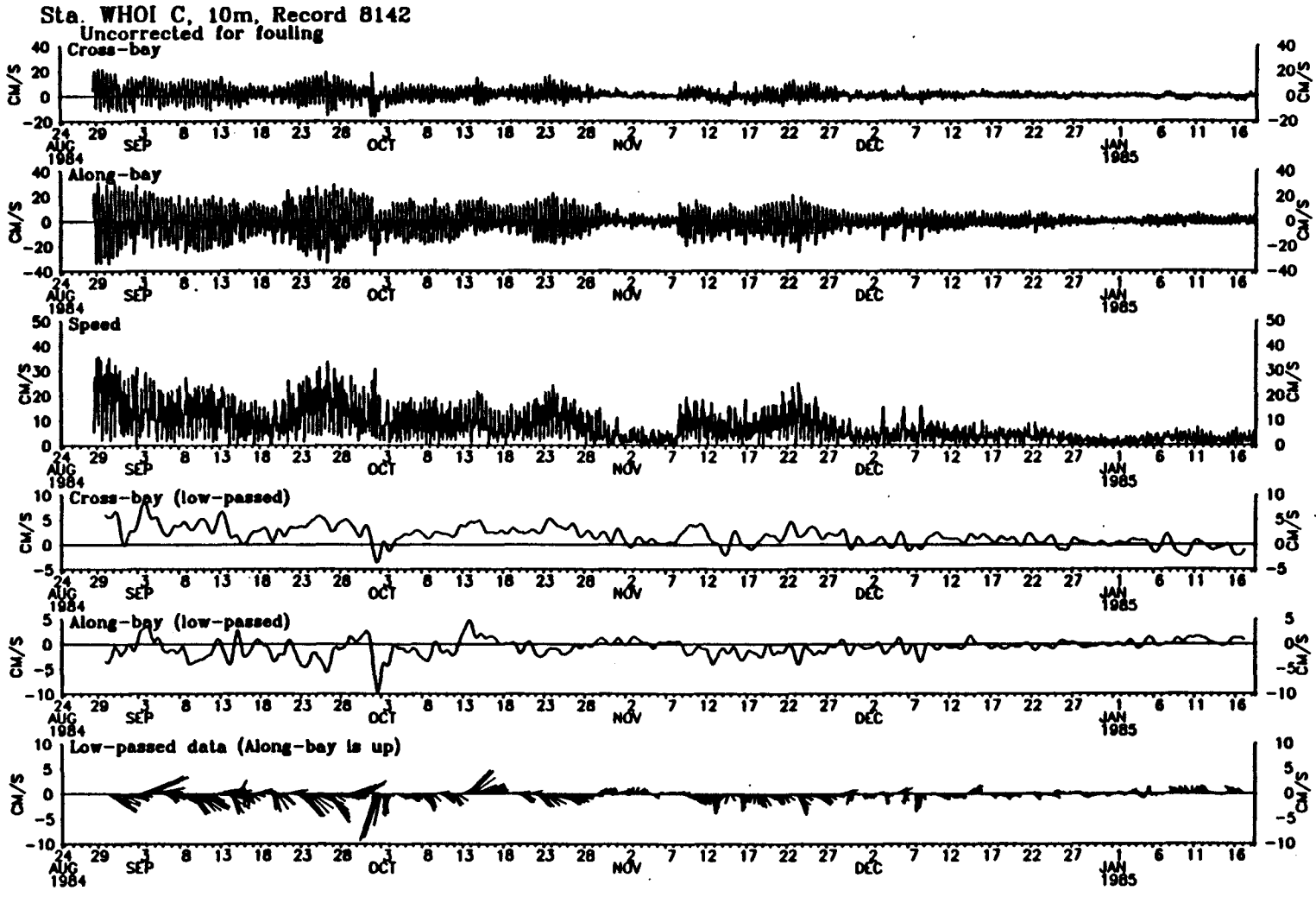


Figure 19c. Station WHOIC, record 8142, hour-averaged cross-bay and along-bay current, current speed, low-passed cross-bay and along-bay current, and low-passed stickplot (along-bay is up, data plotted every 6 hours). Data uncorrected for fouling.

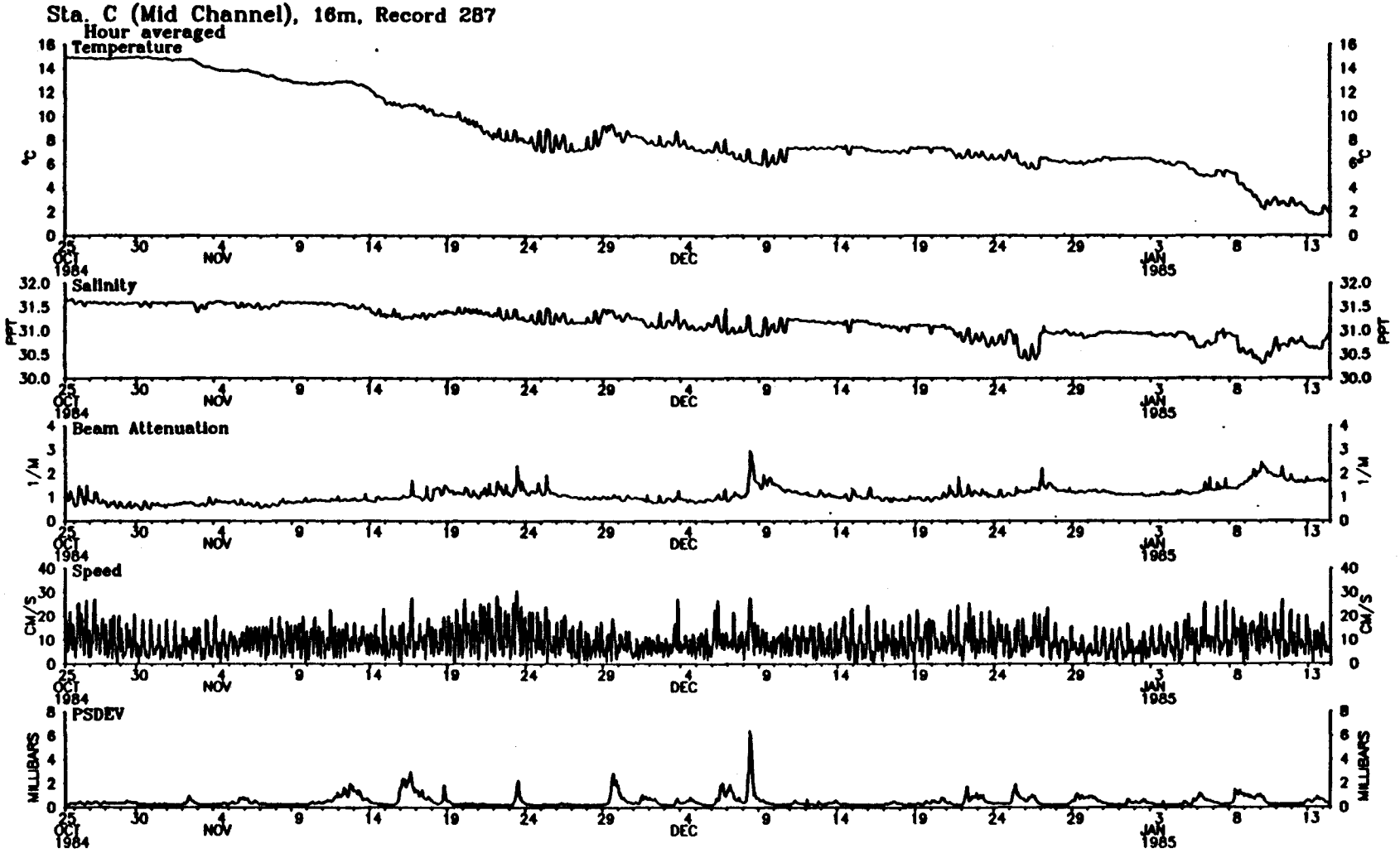


Figure 20a. Station C, record 2871, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV.

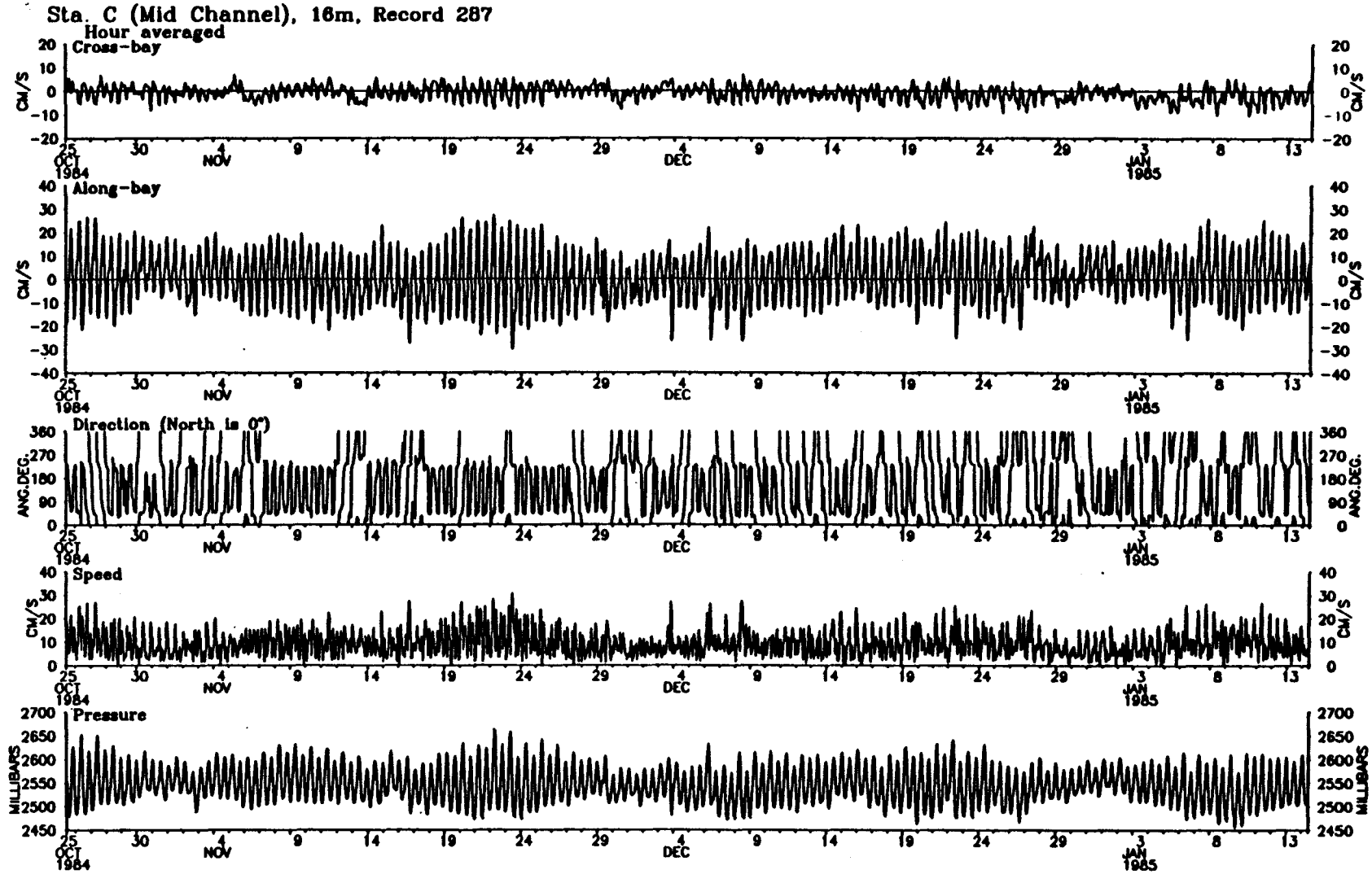


Figure 20b. Station C, record 2871, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

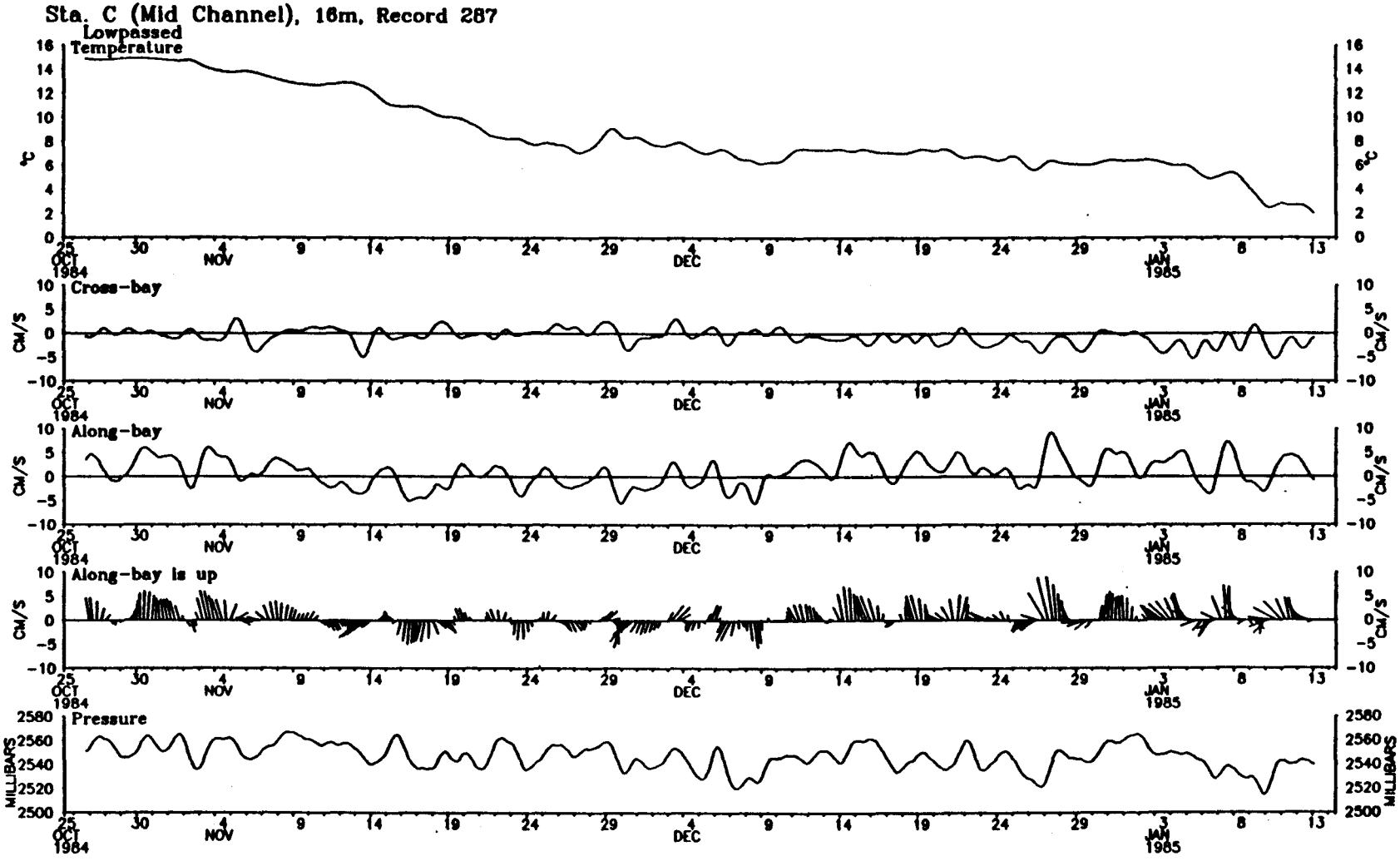


Figure 20c. Station C, record 2871, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 8 hours), and bottom pressure.

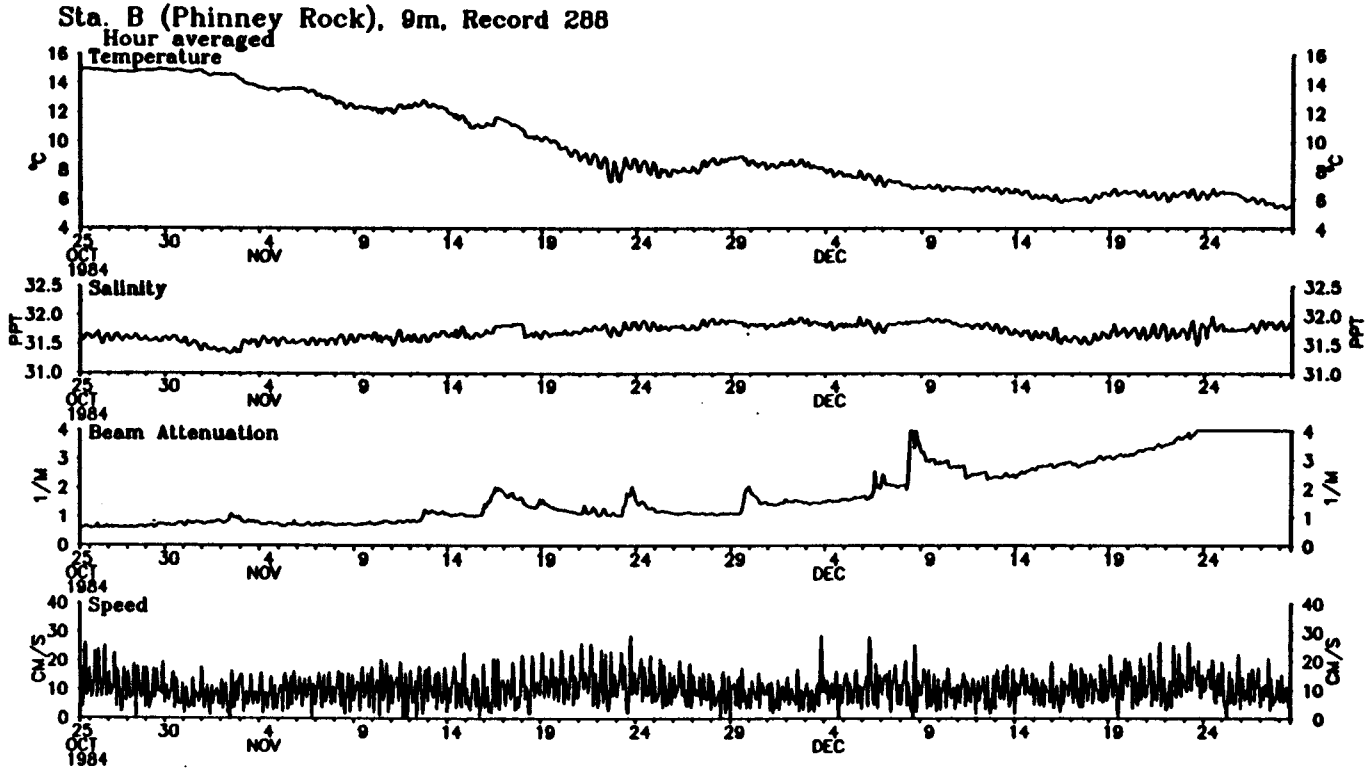


Figure 21a. Station B, record 2881, hour-averaged temperature, salinity, beam attenuation, and current speed. The transmissometer fouled during the deployment.

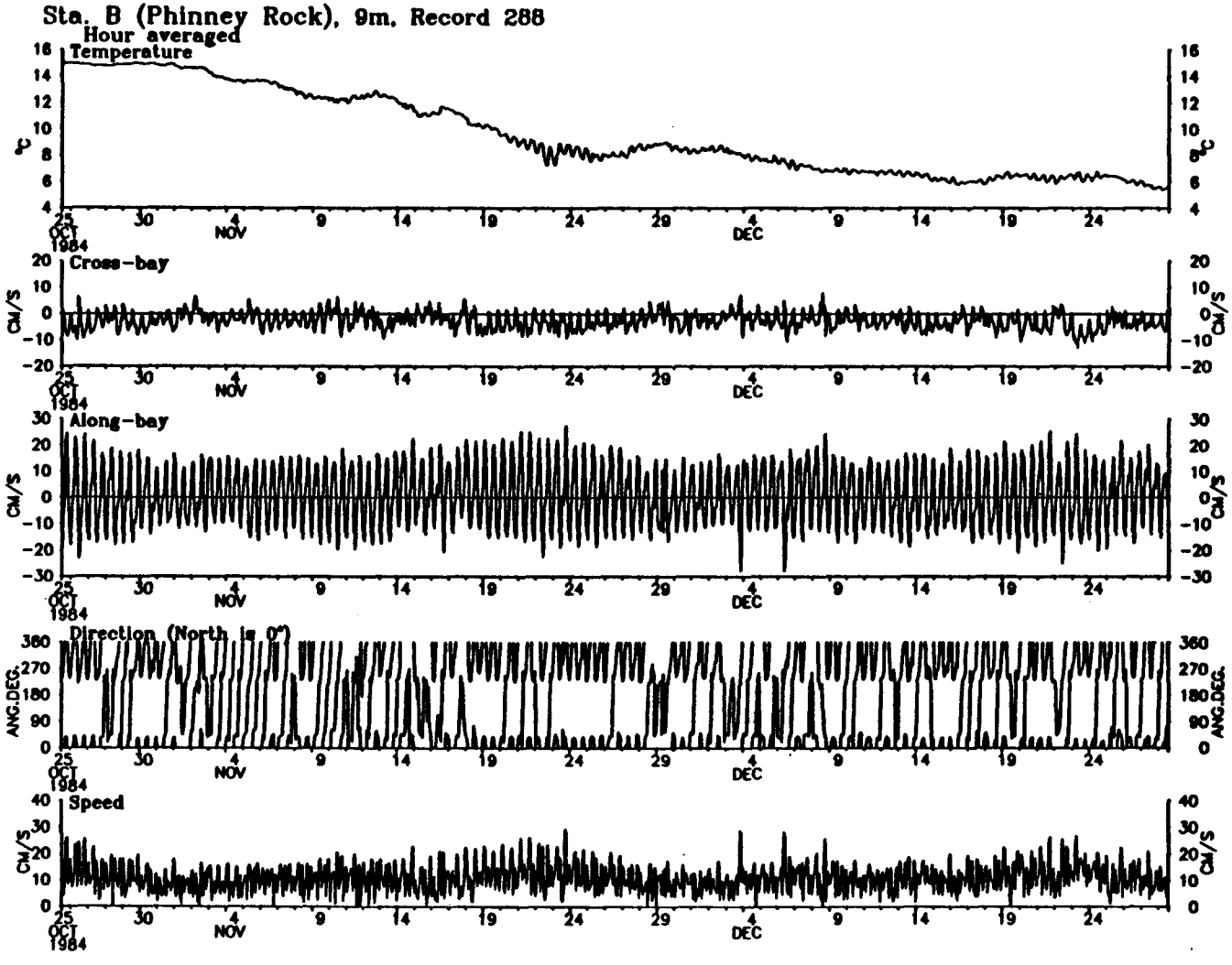


Figure 21b. Station B, record 2881, hour-averaged temperature, cross-bay and along-bay current, current direction and speed.

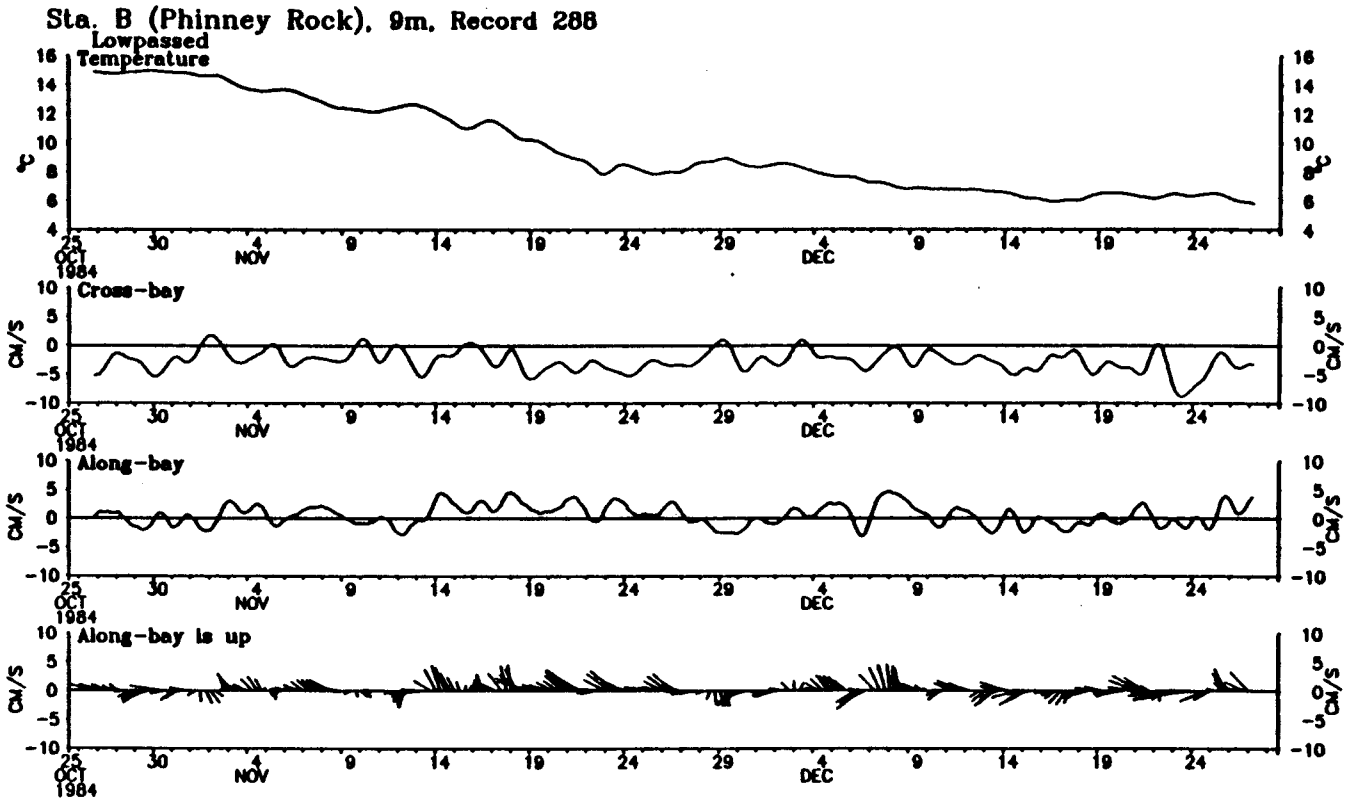


Figure 21c. Station B, record 2881, low-passed temperature, cross-bay and along-bay current, and stickplot (the along-bay direction is up, data plotted every 6 hours).

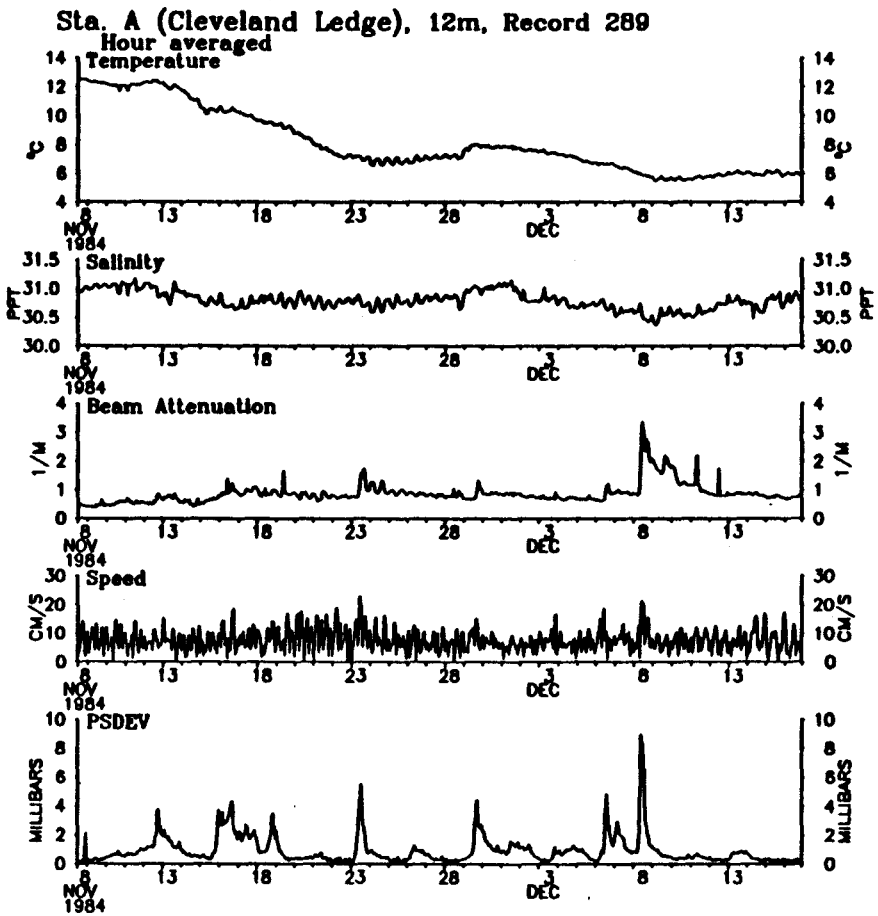


Figure 22a. Station A, record 2891, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV.

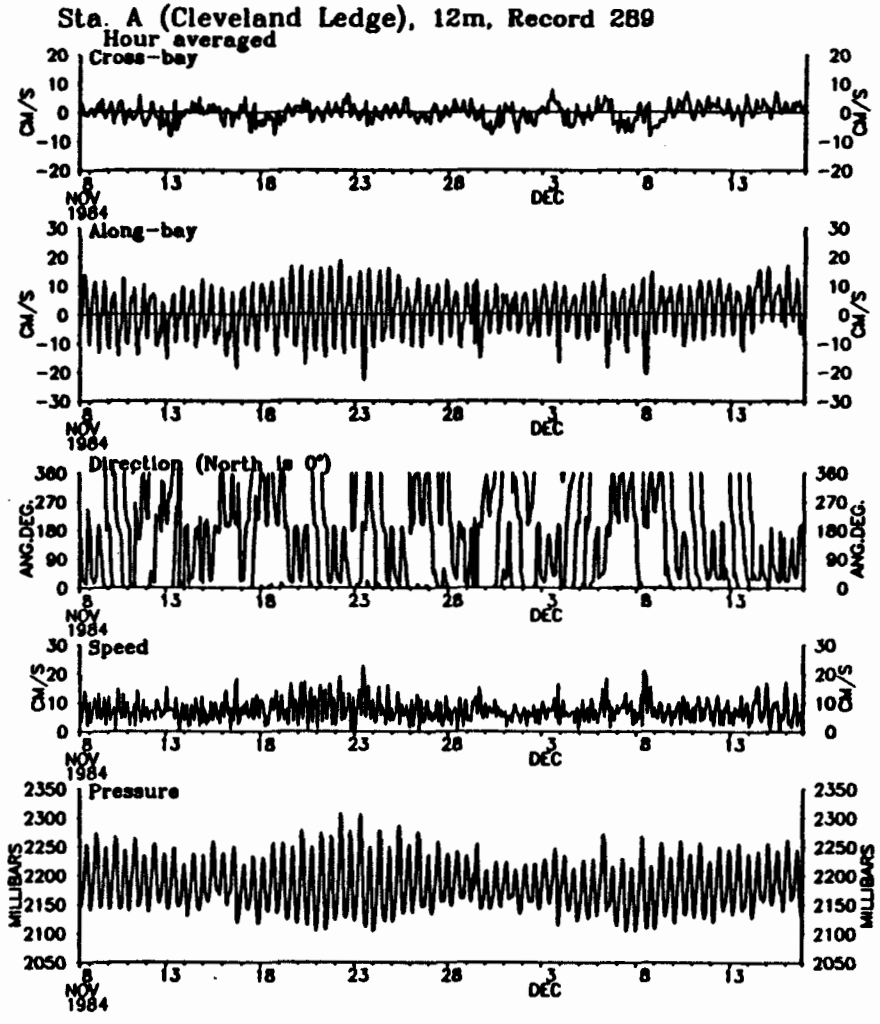


Figure 22b. Station A, record 2891, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

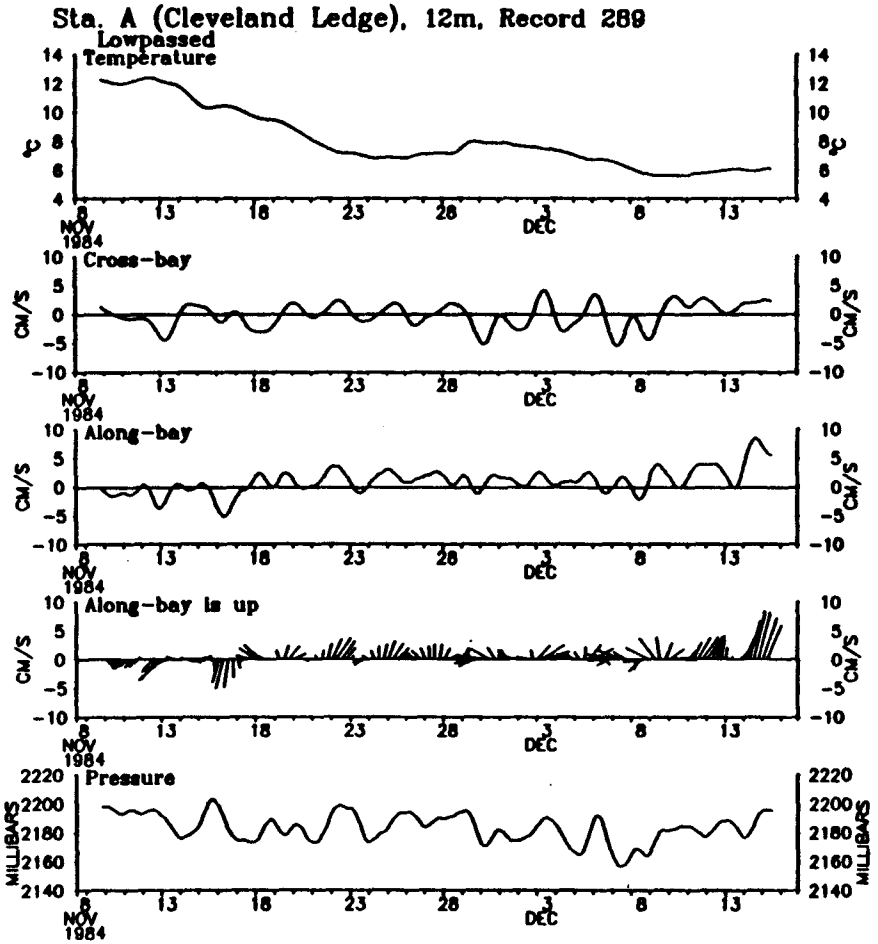


Figure 22c. Station A, record 2891, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

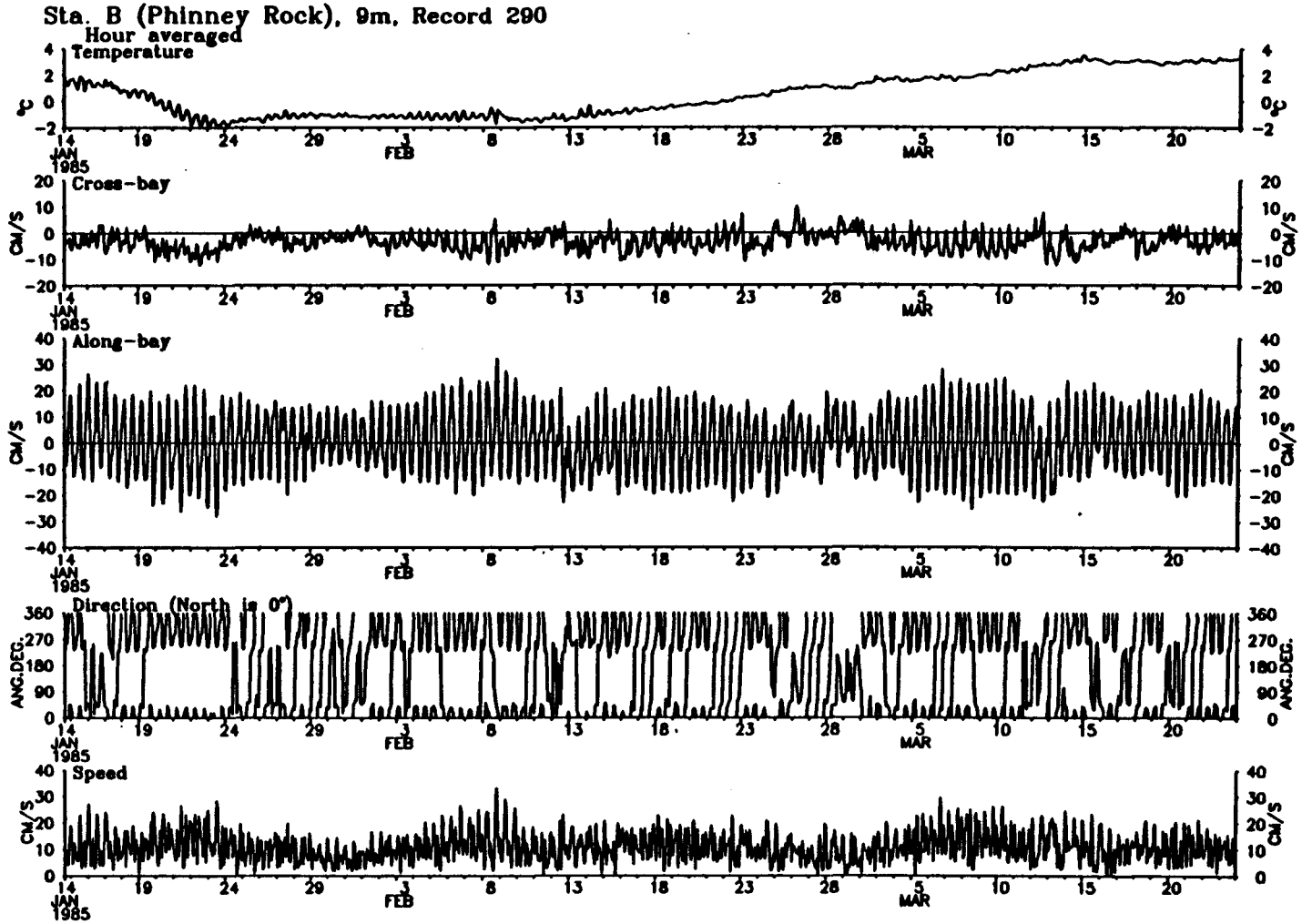


Figure 23a. Station B, record 2901, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

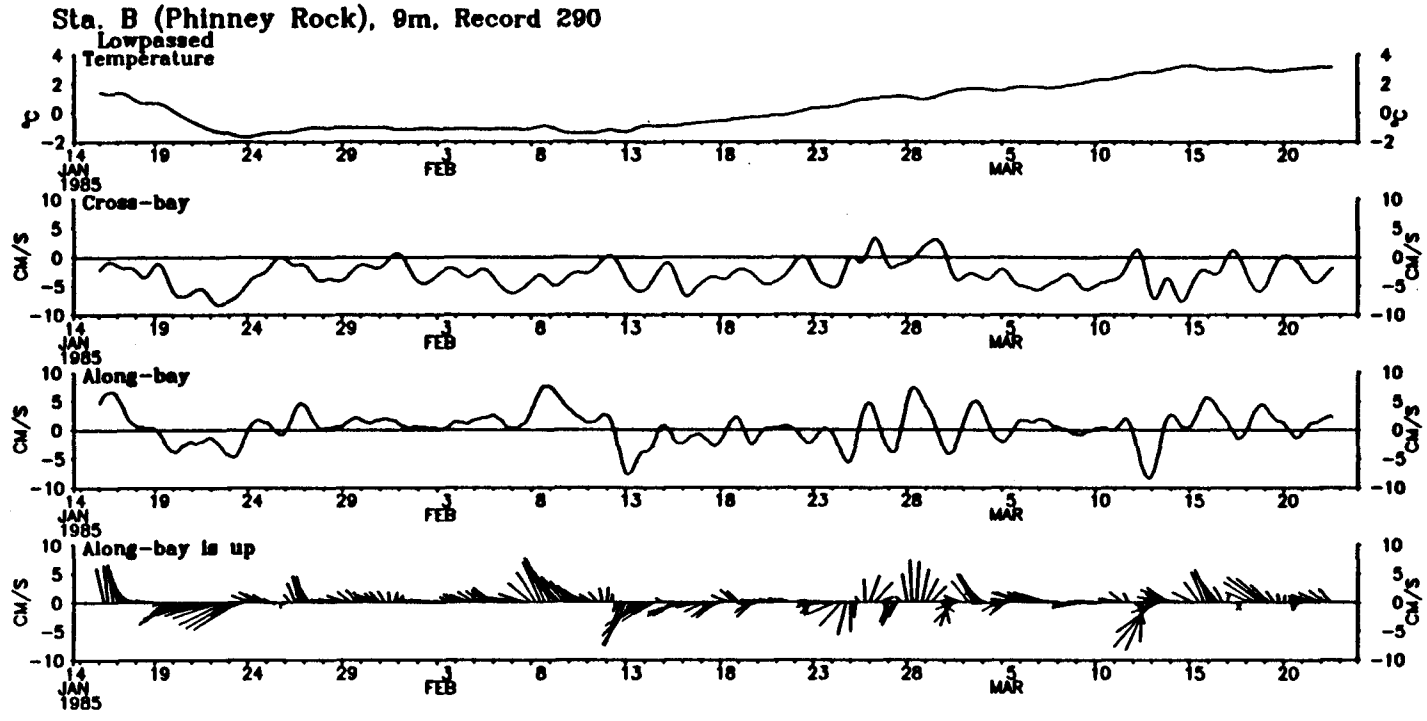


Figure 23b. Station B, record 2901, low-passed temperature, cross-bay and along-bay current, and stickplot (the along-bay direction is up, data plotted every 6 hours).

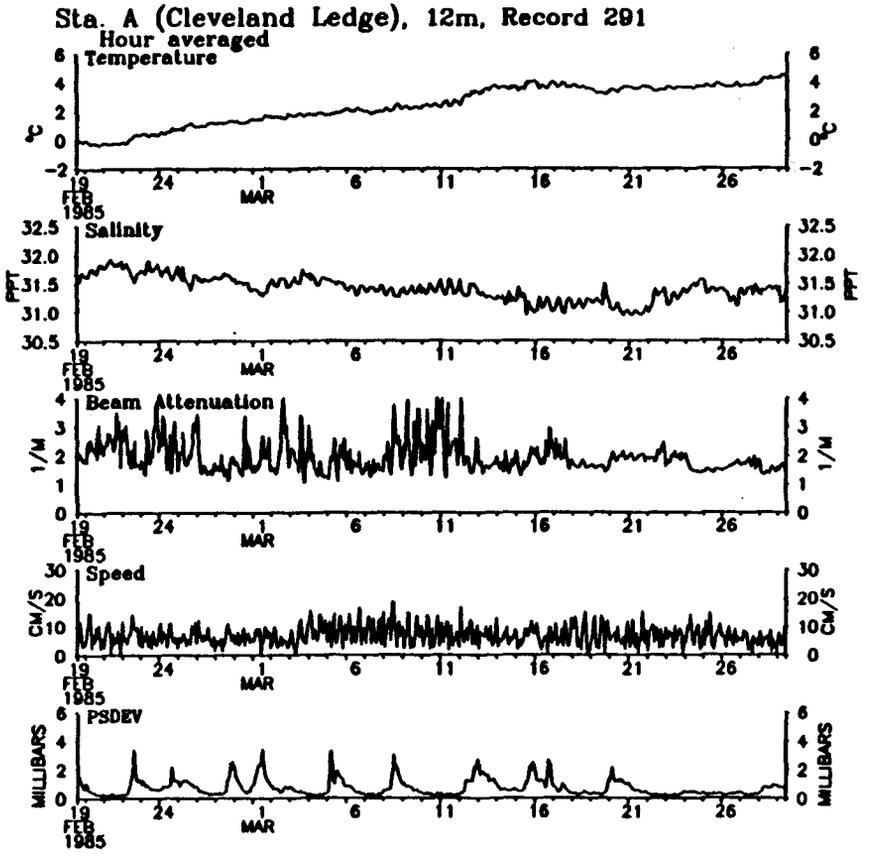


Figure 24a. Station A, record 2911, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV.

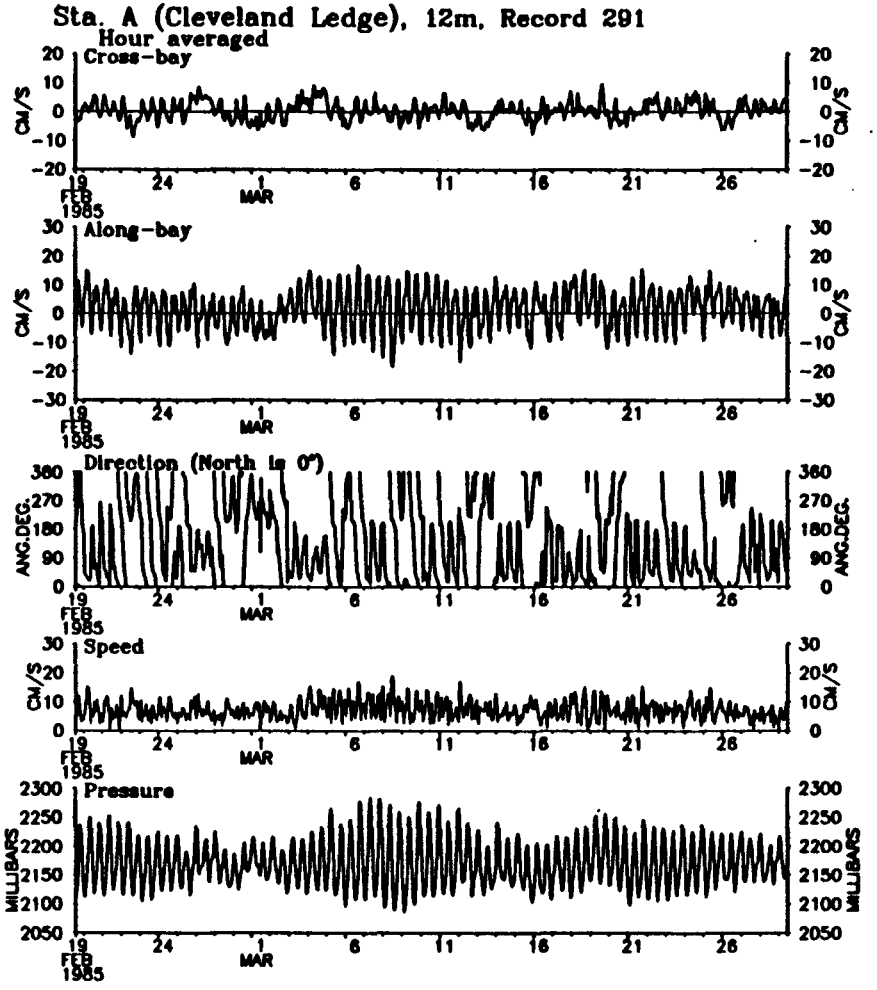


Figure 24b. Station A, record 2911, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

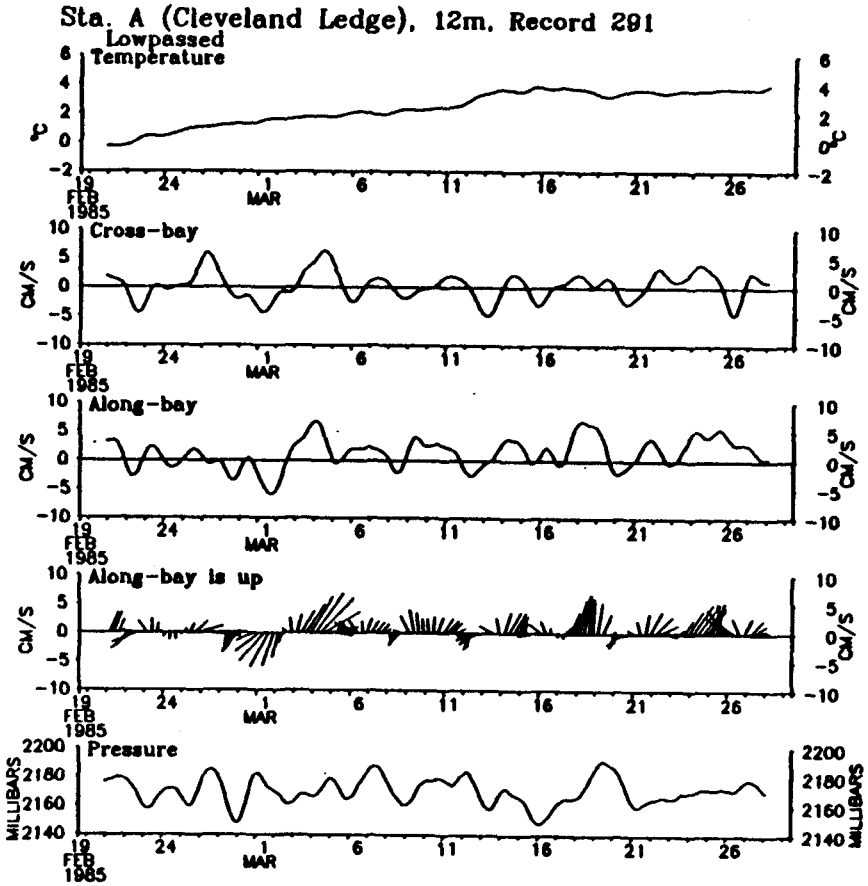


Figure 24c. Station A, record 2911, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

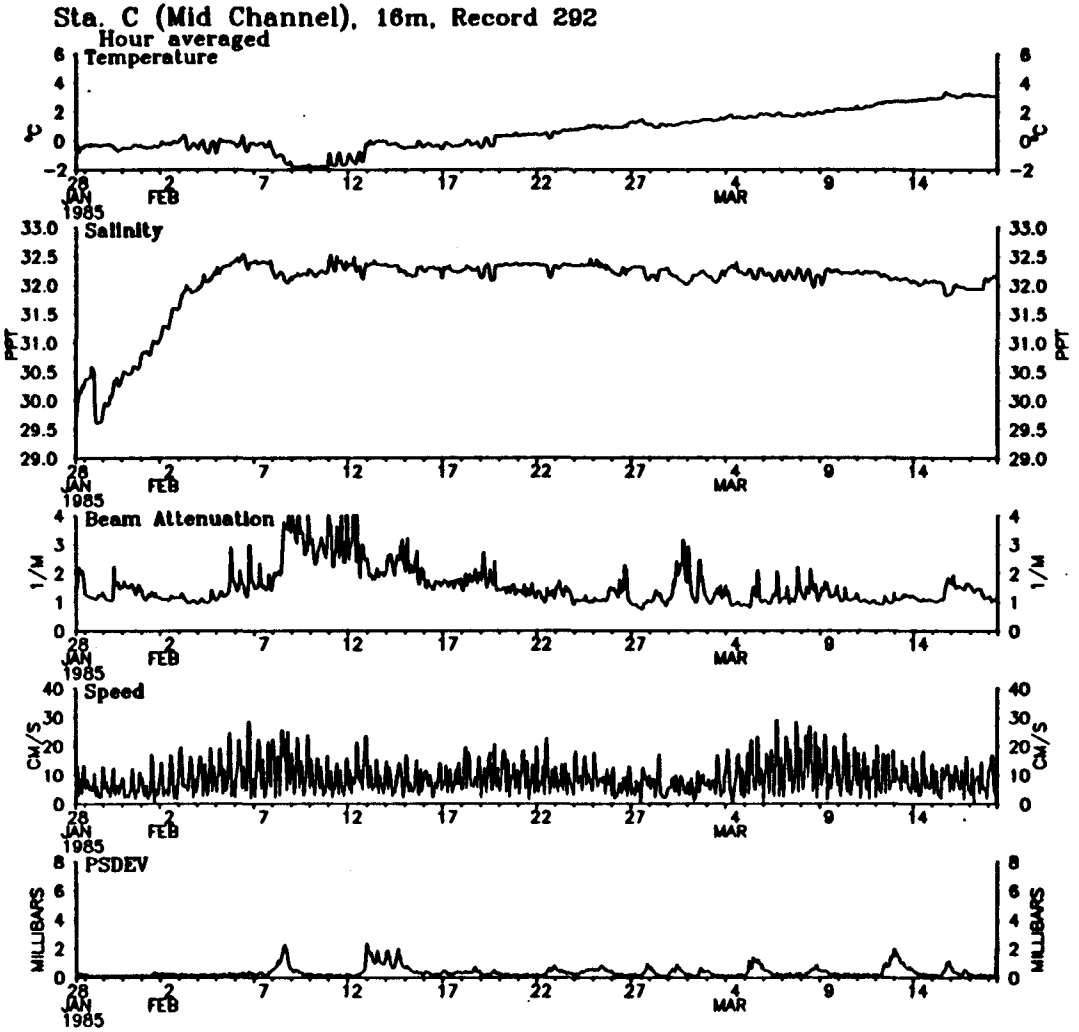


Figure 25a. Station C, record 2921, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. The salinity data is questionable.

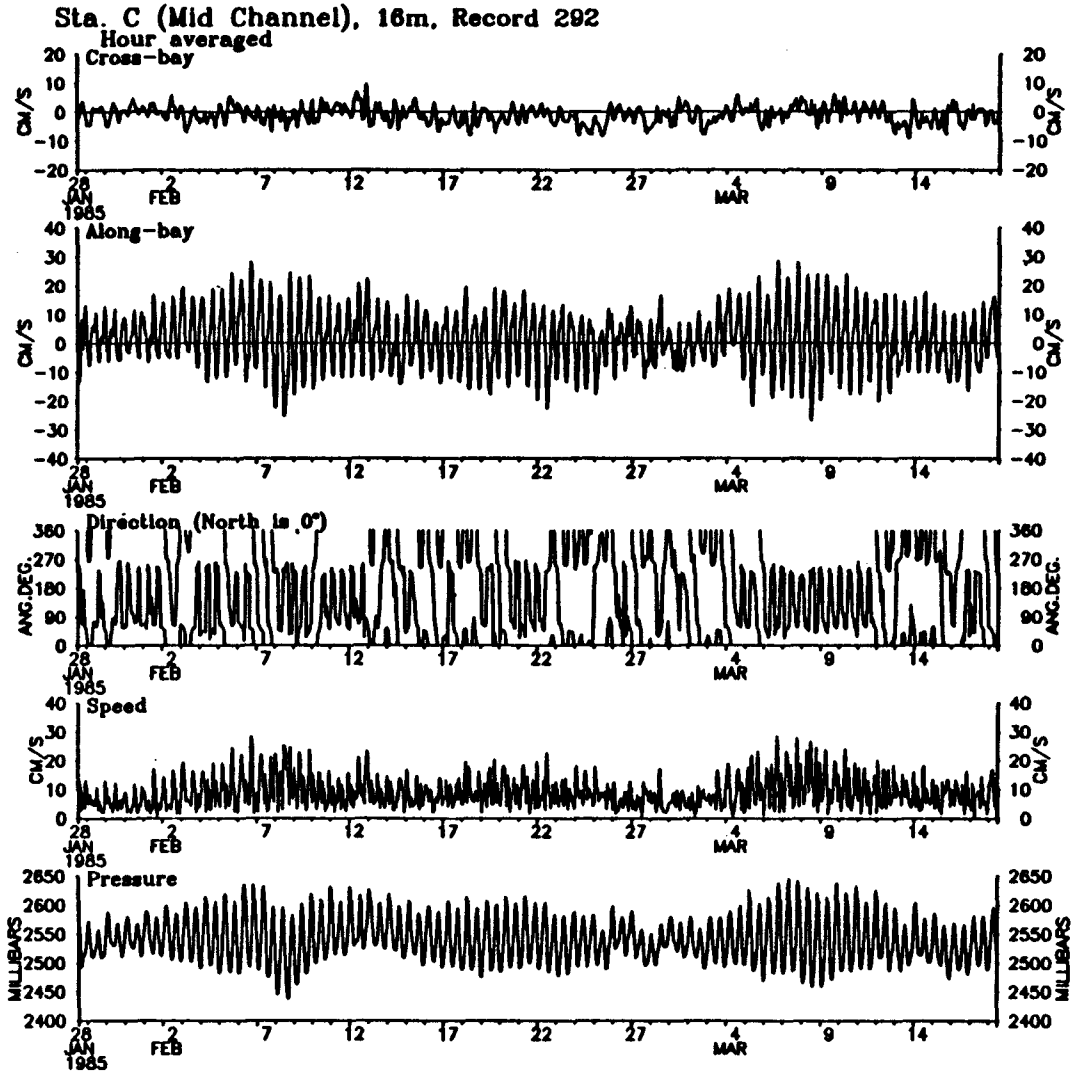


Figure 25b. Station C, record 2921, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

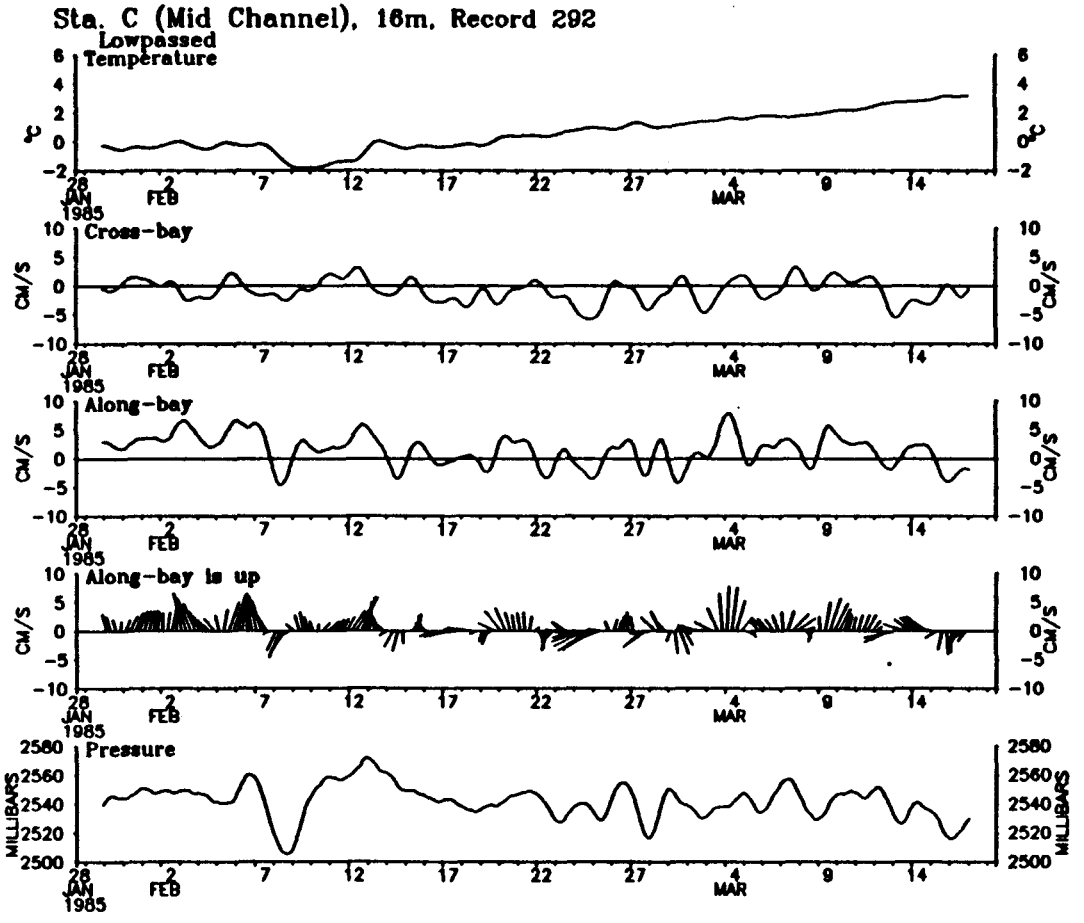


Figure 25c. Station C, record 2921, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

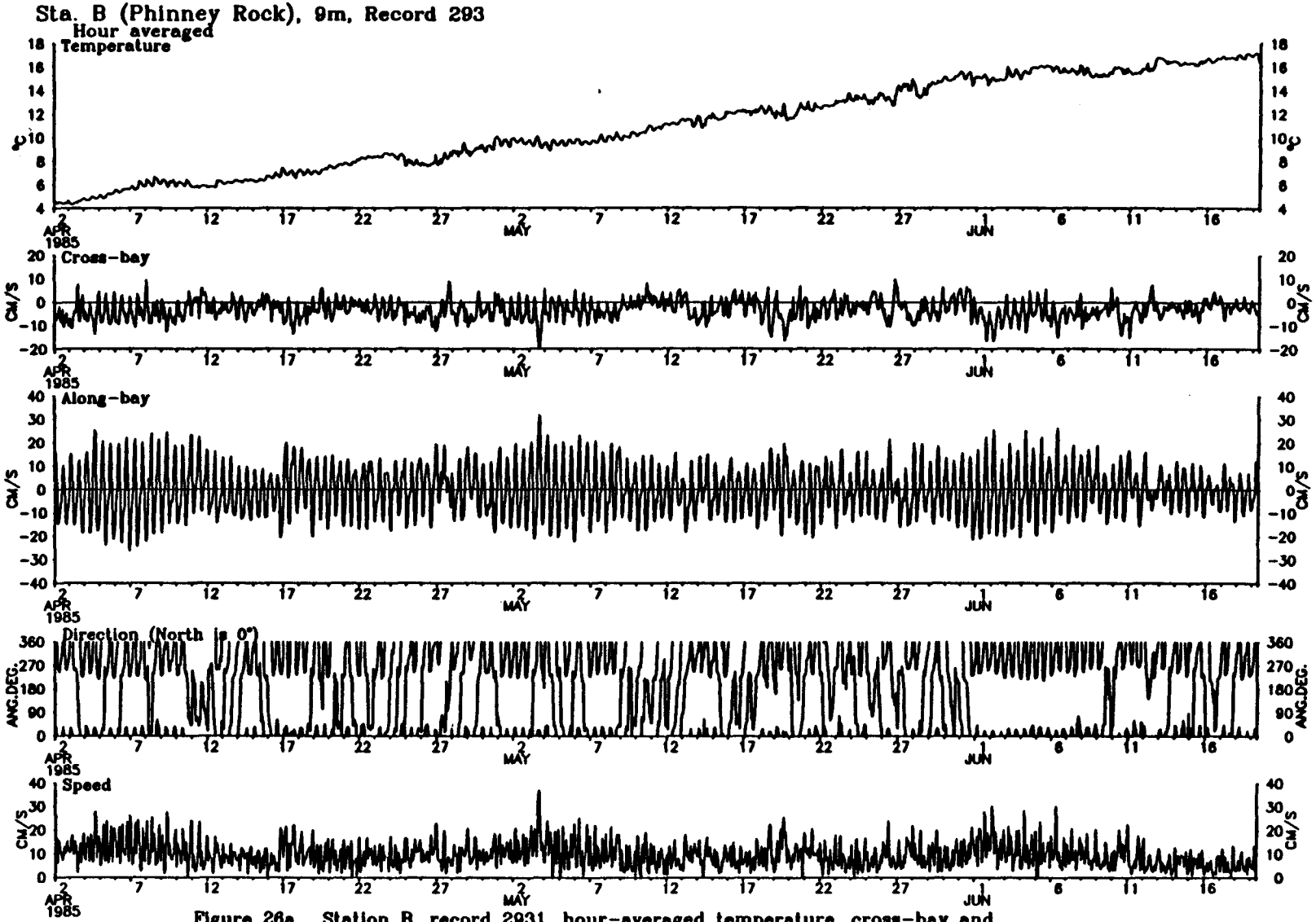


Figure 26a. Station B, record 2931, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

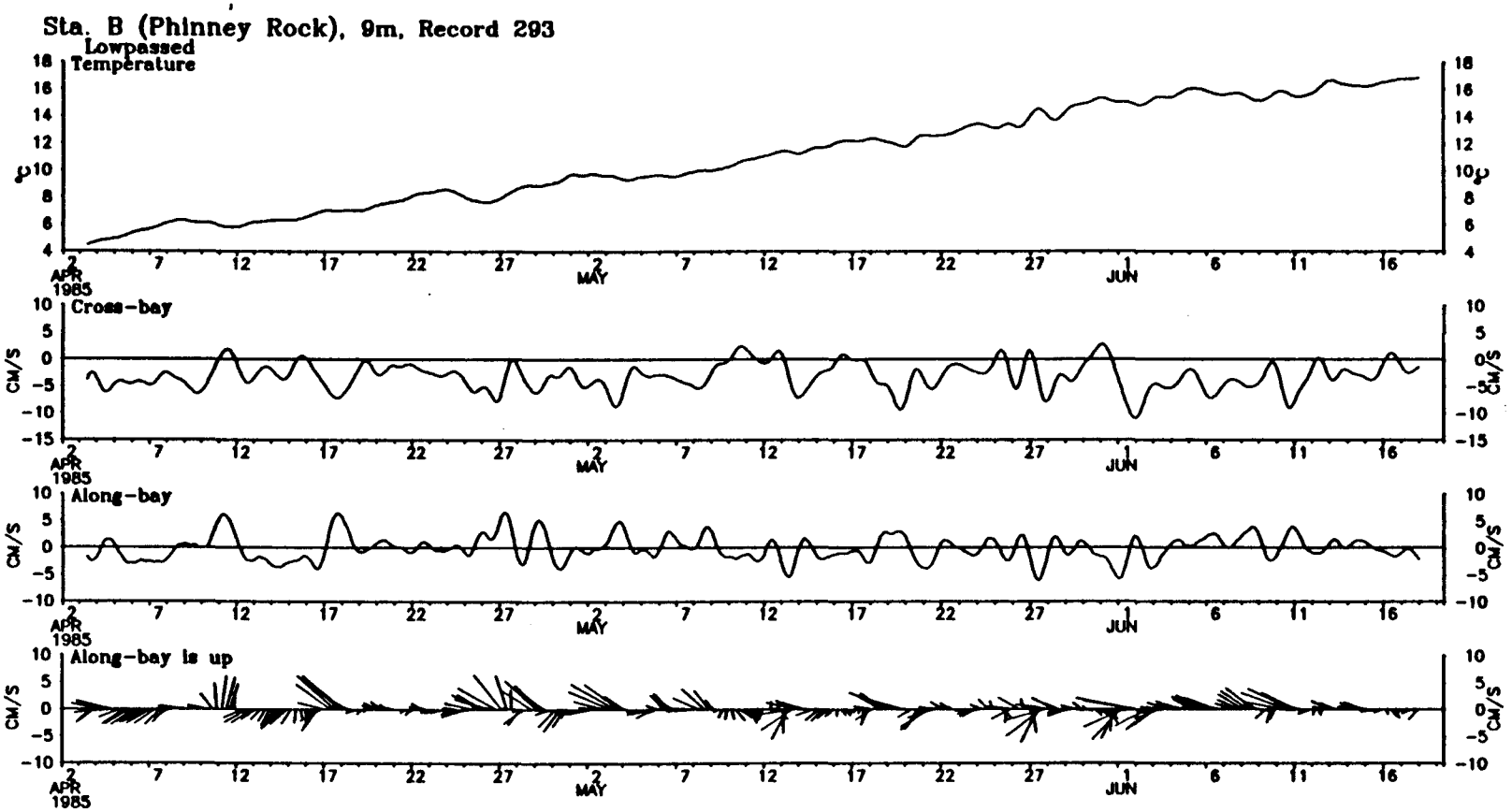


Figure 26b. Station B, record 2931, low-passed temperature, cross-bay and along-bay current, and stickplot (the along-baydirection is up, data plotted every 6 hours).

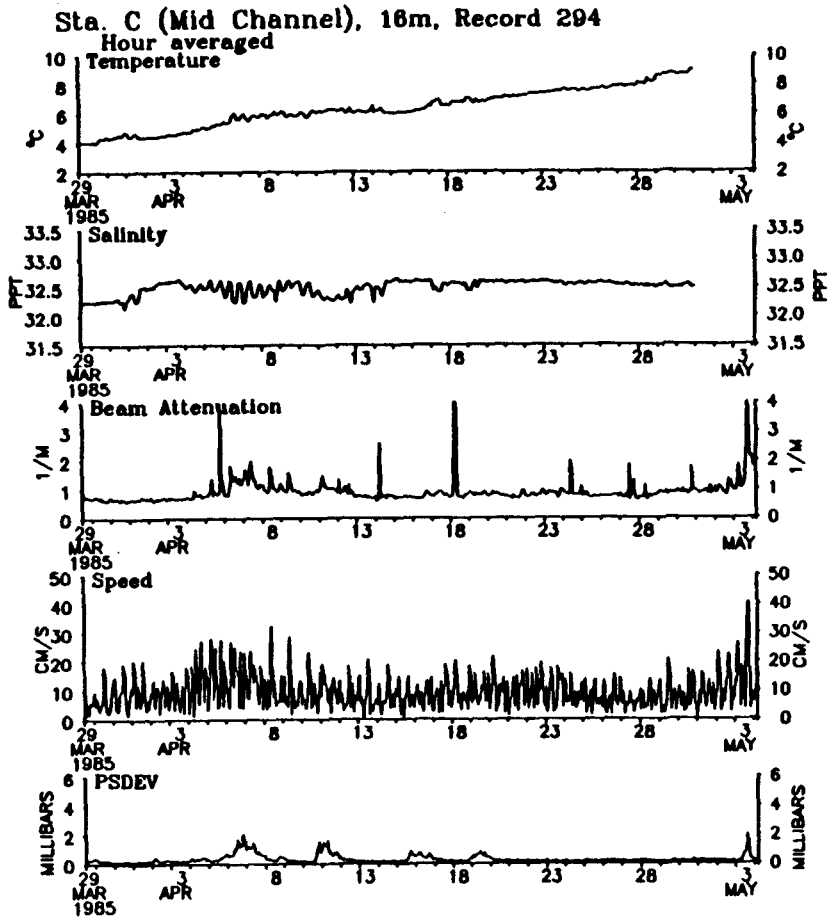


Figure 27a. Station C, record 2941, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. Spikes in beam attenuation which are uncorrelated with physical events may be organisms blocking the beam path.

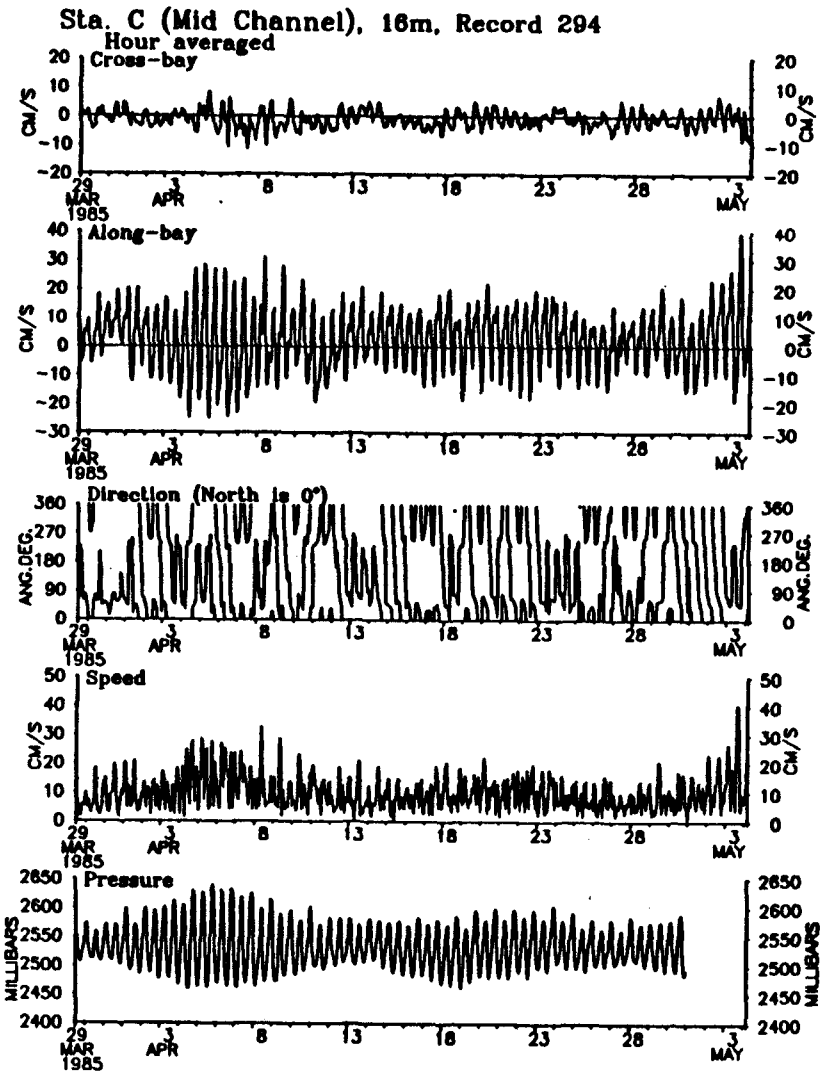


Figure 27b. Station C, record 2941, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

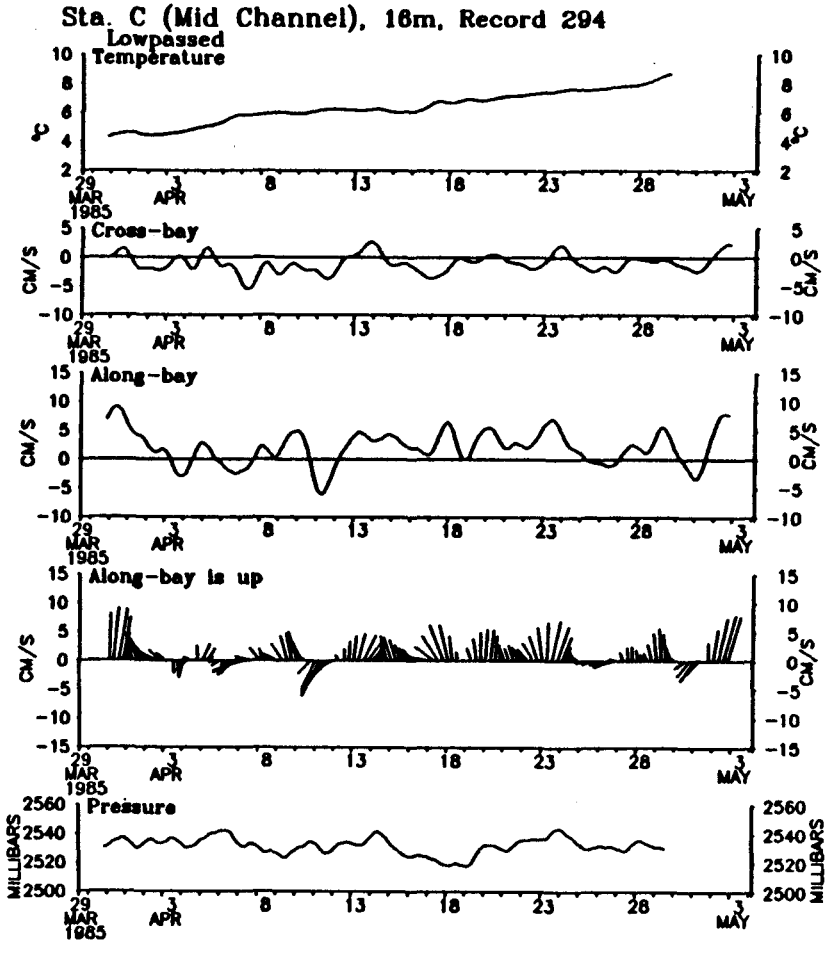


Figure 27c. Station C, record 2941, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

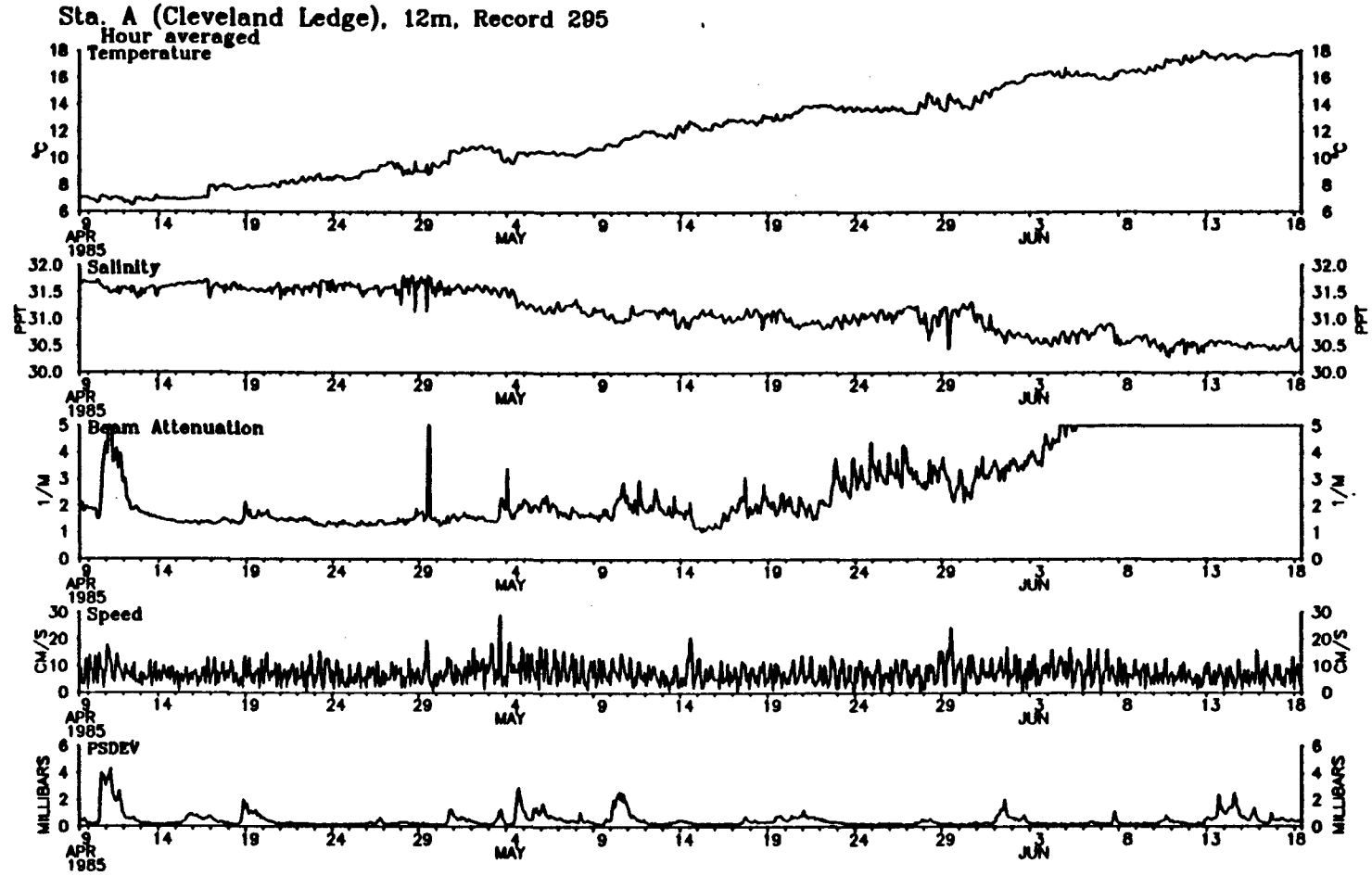


Figure 28a. Station A, record 2951, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. The transmissometer fouled during the last month of deployment.

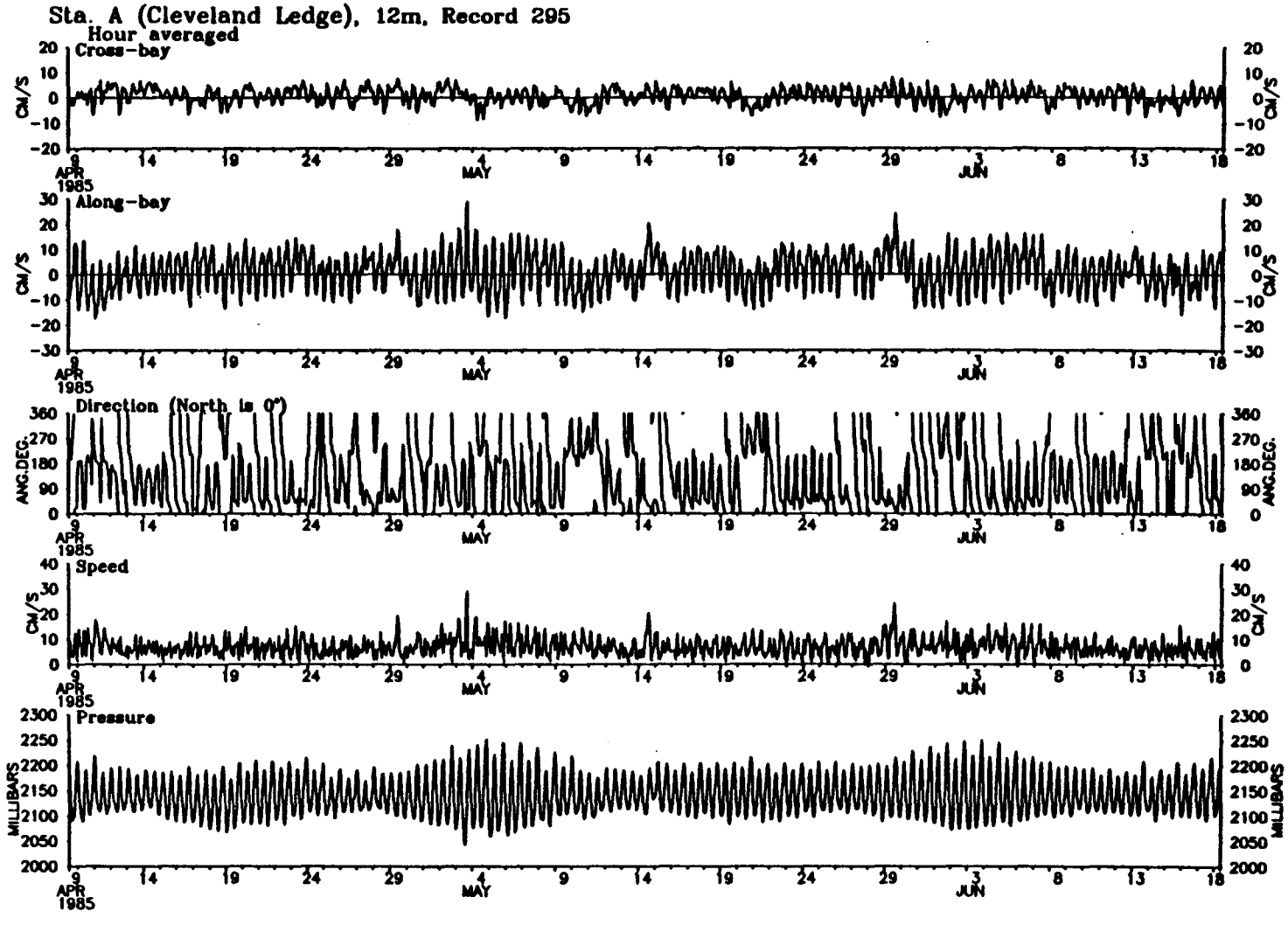


Figure 28b. Station A, record 2951, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

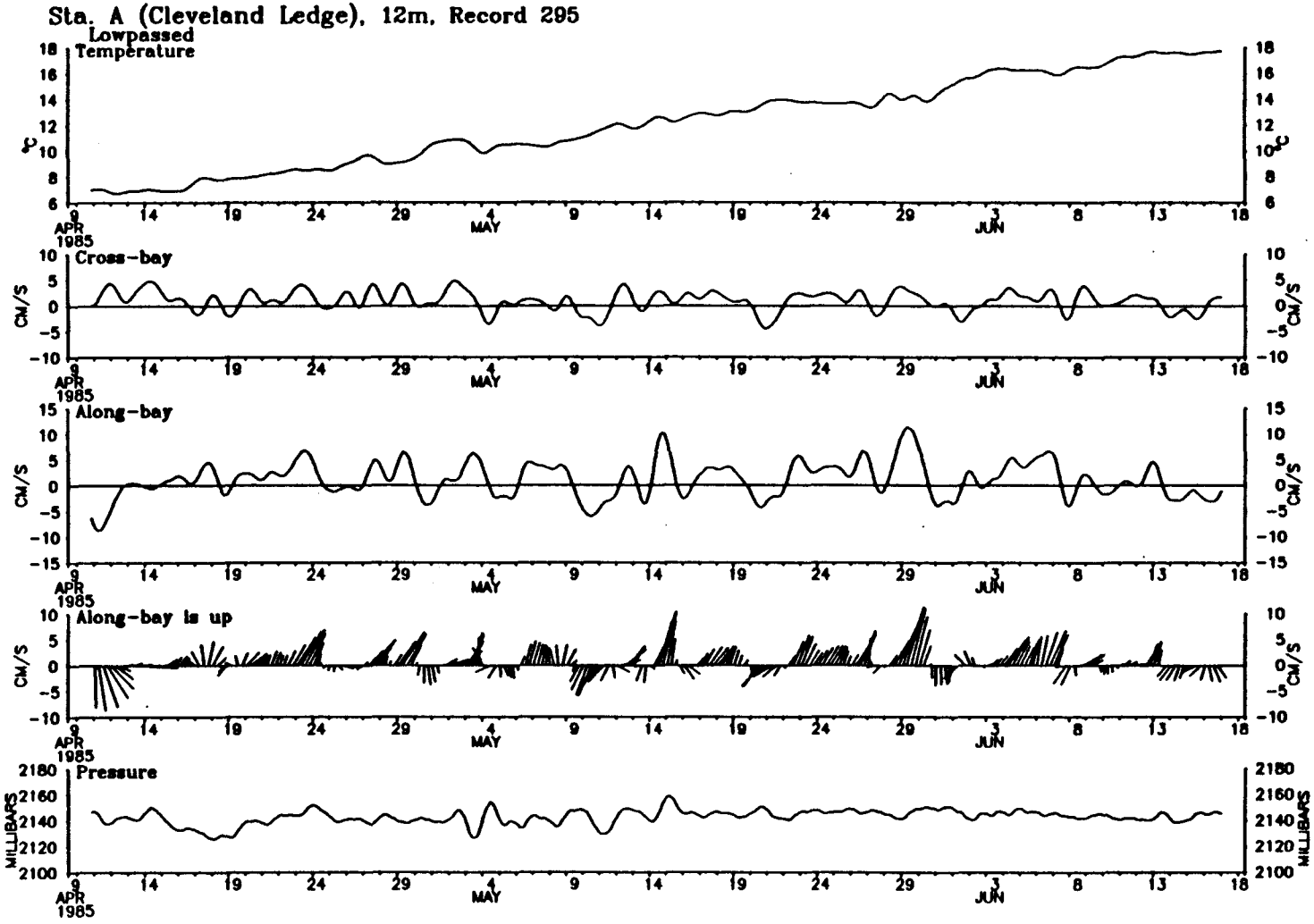


Figure 28c. Station A, record 2951, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

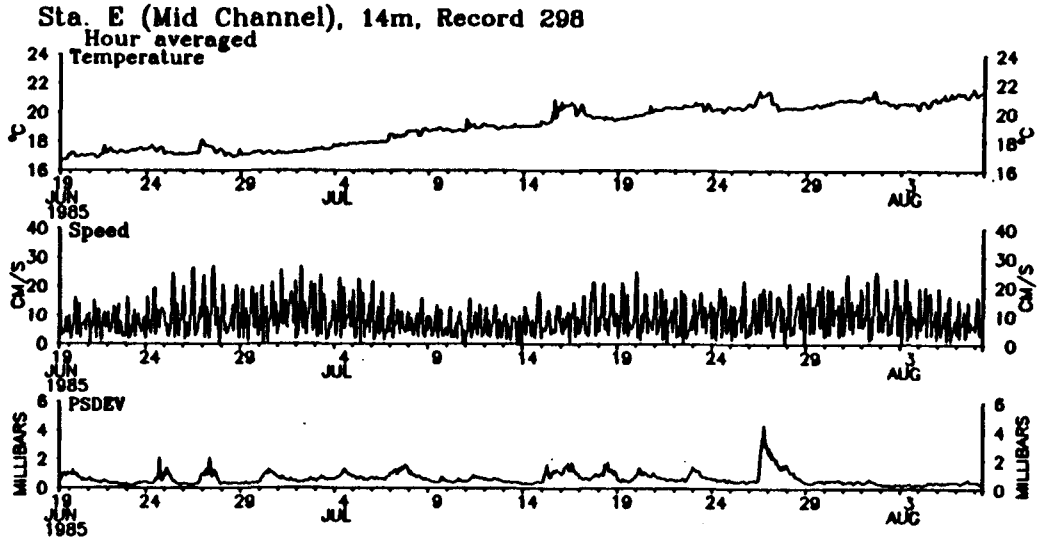


Figure 29a. Station E, record 2981, hour-averaged temperature, current speed, and PSDEV.

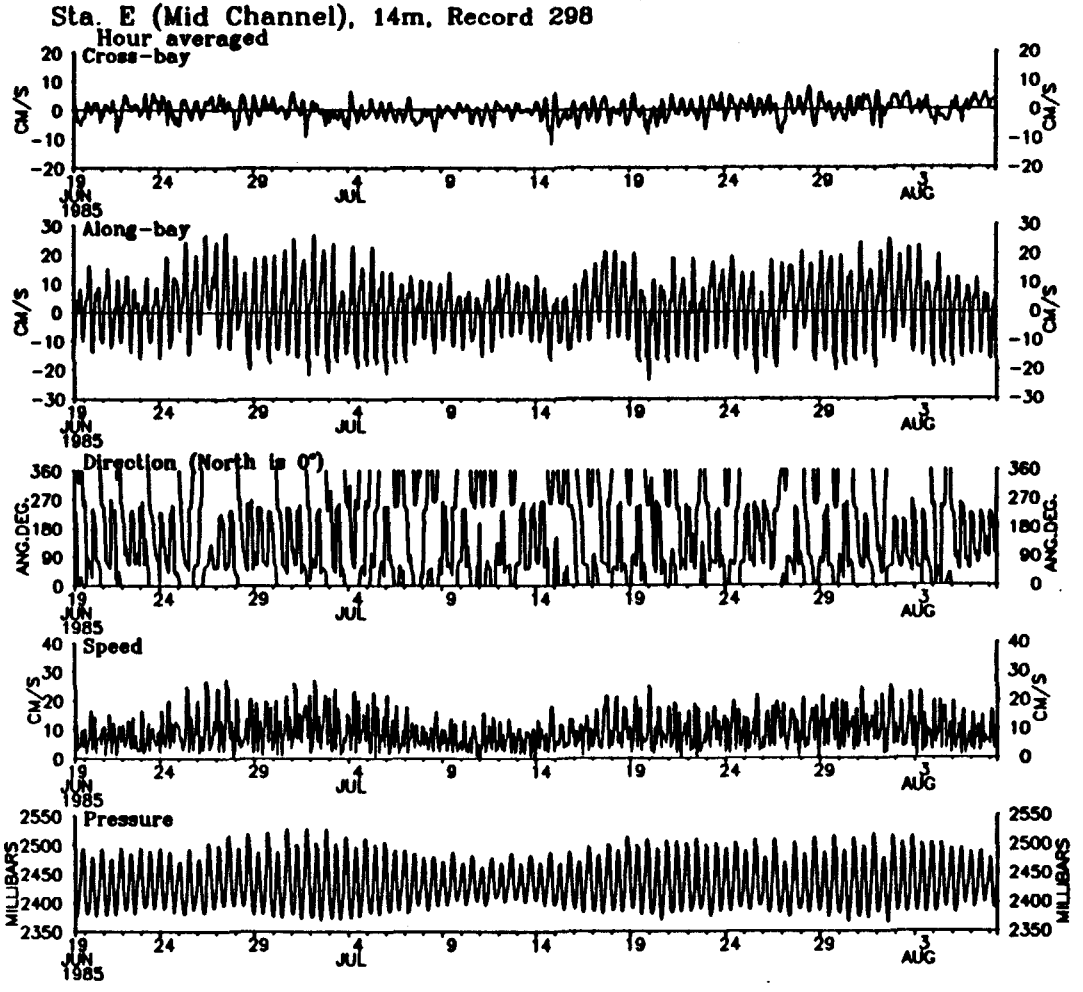


Figure 29b. Station E, record 2981, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

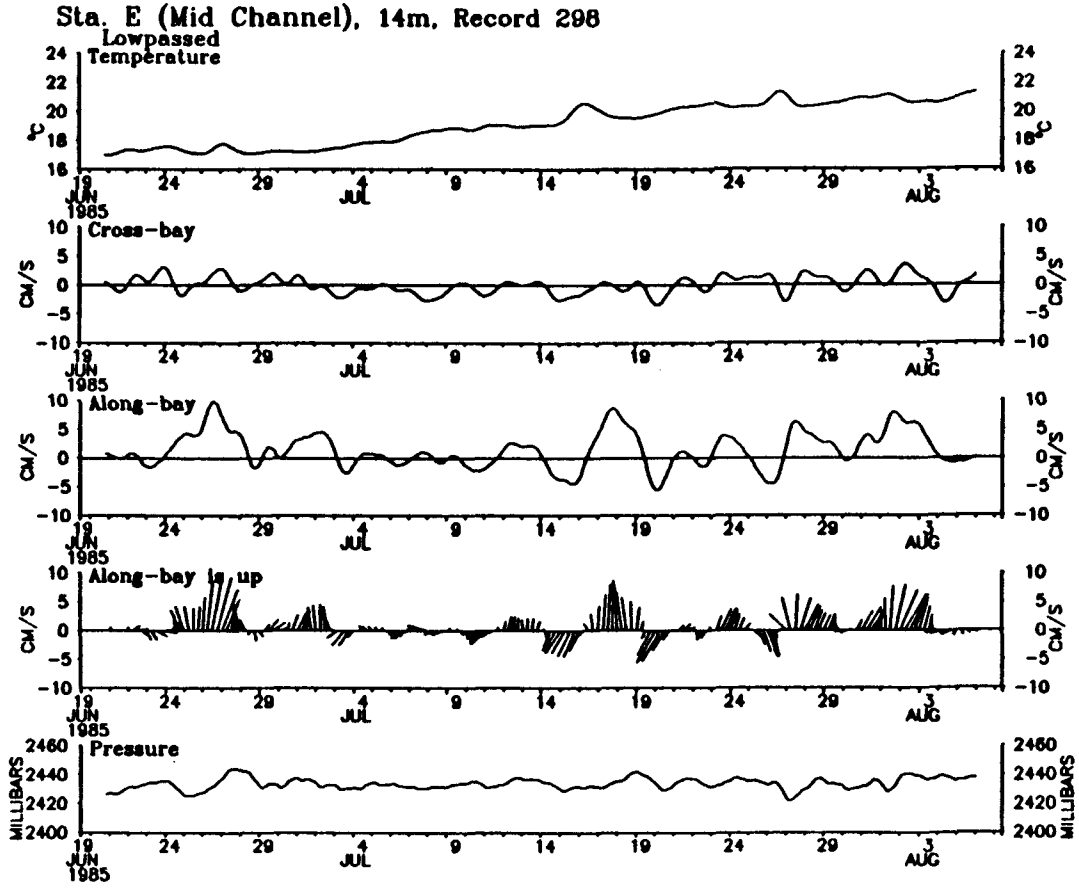


Figure 29c. Station E, record 2981, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

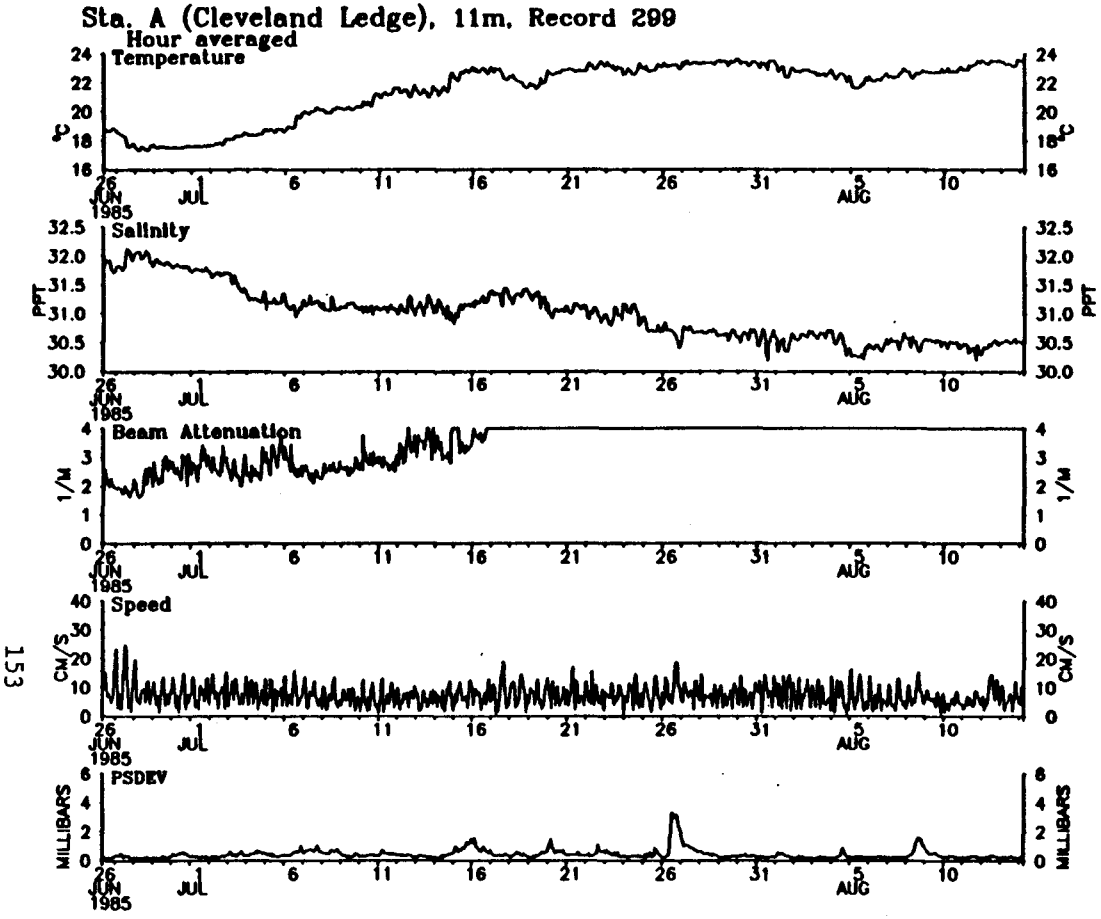


Figure 30a. Station A, record 2991, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. The transmissometer fouled during the last month of deployment.

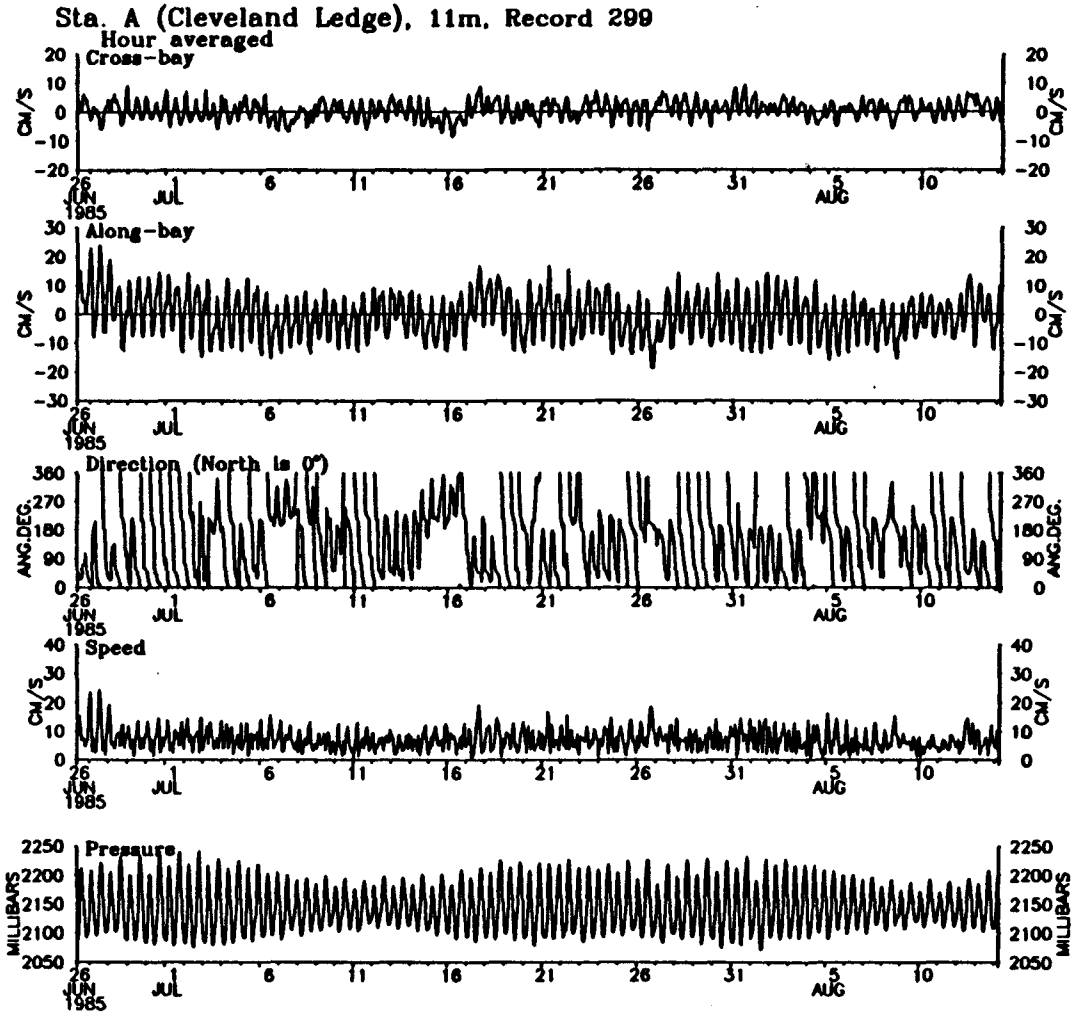


Figure 30b. Station A, record 2991, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

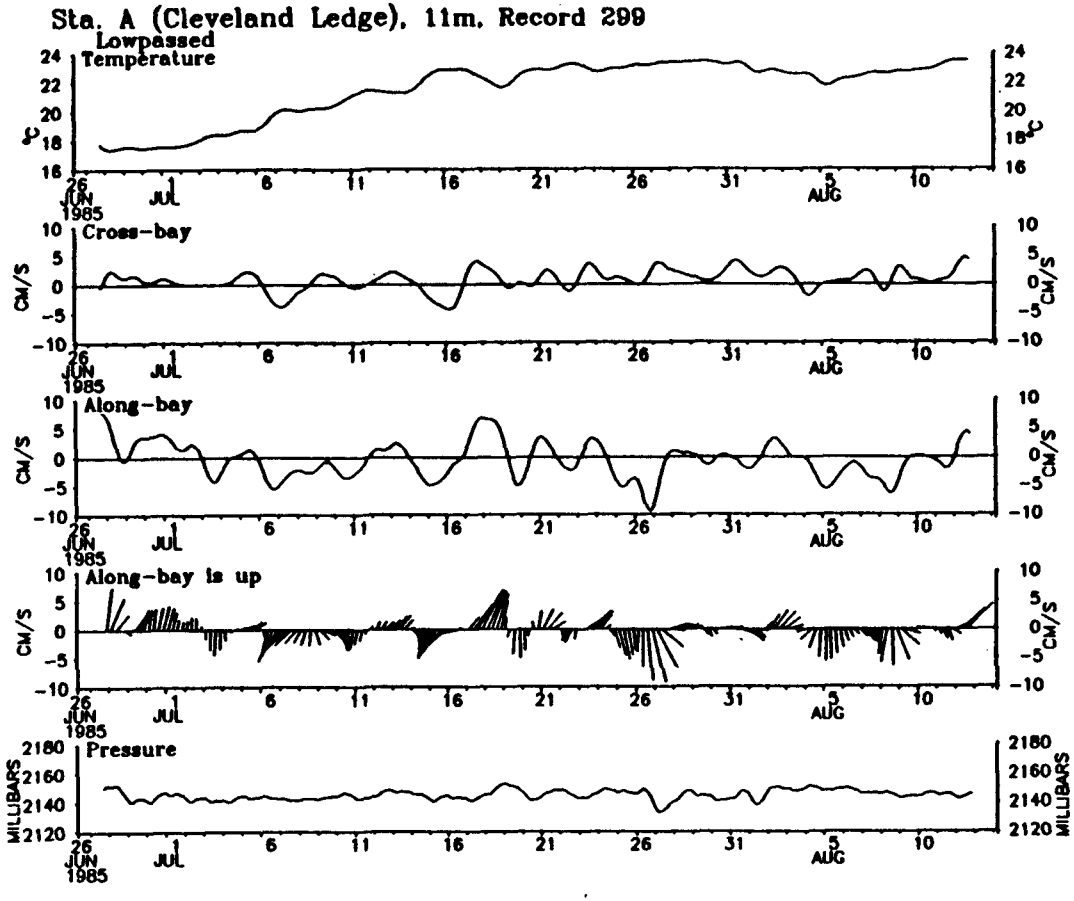


Figure 30c. Station A, record 2991, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

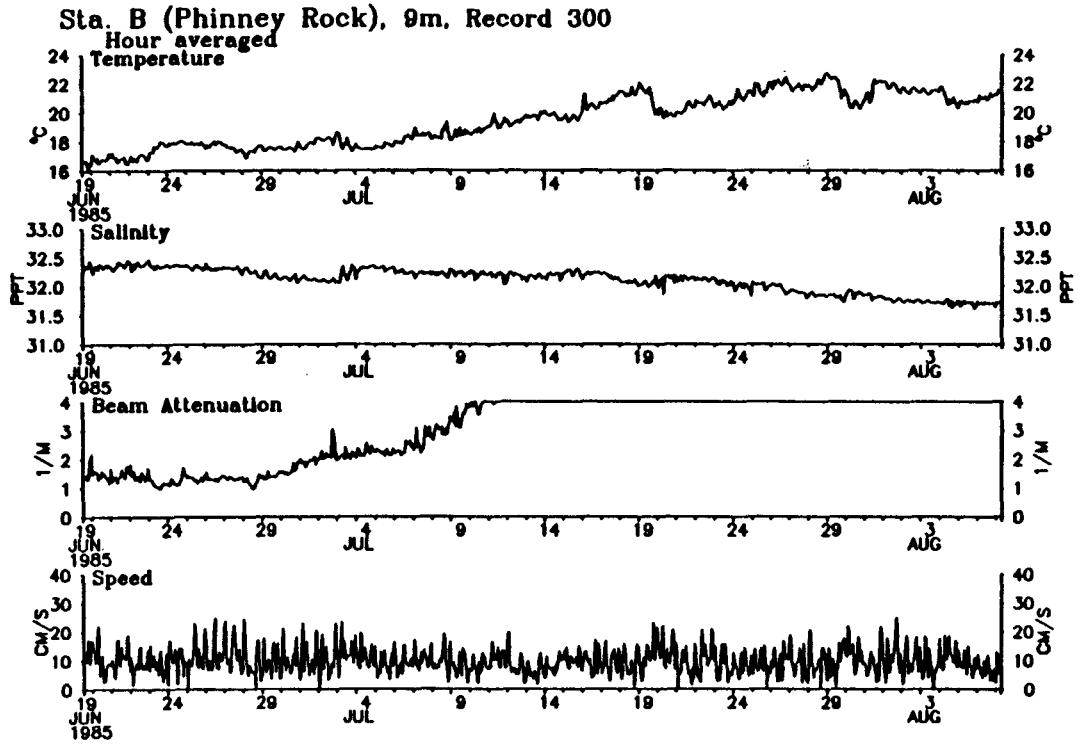


Figure 31a. Station B, record 3001, hour-averaged temperature, salinity, beam attenuation, and current speed. The transmissometer fouled from July 29 on.

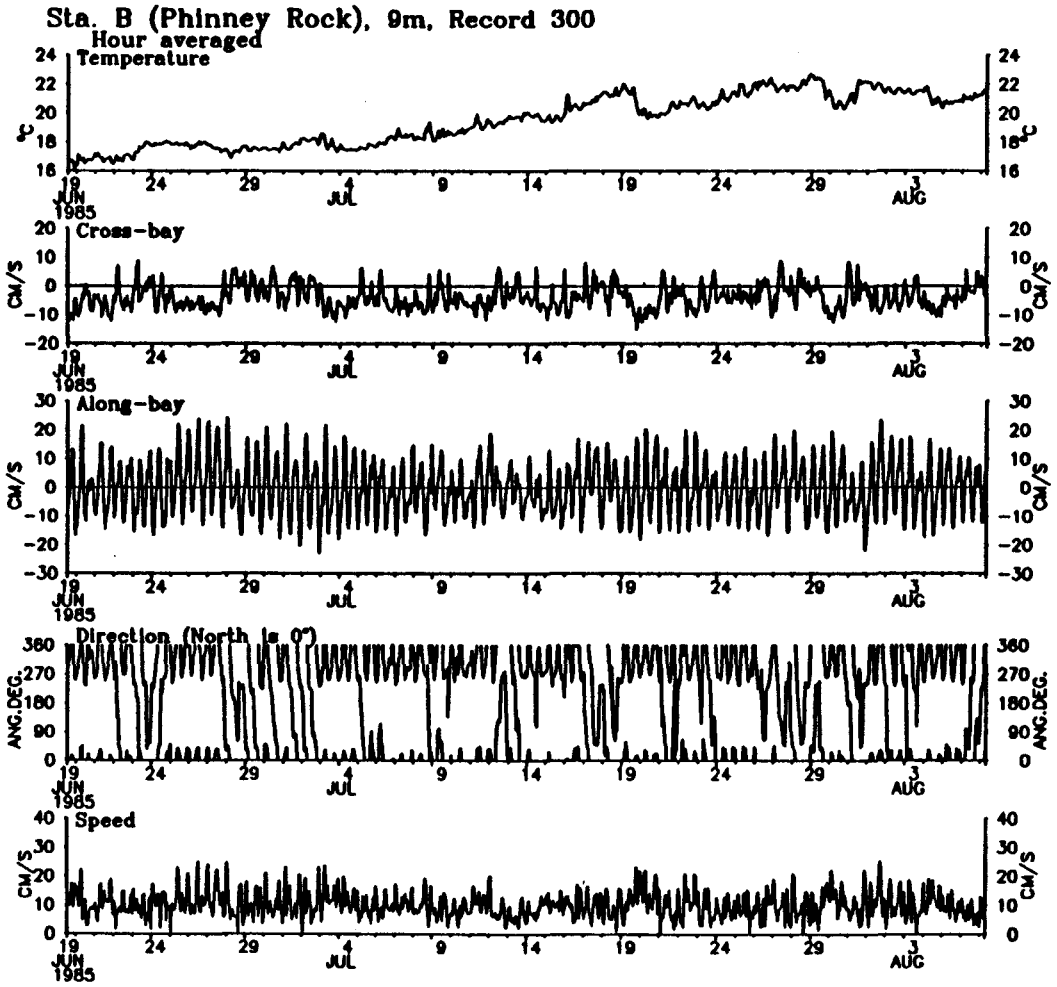


Figure 31b. Station B, record 3001, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

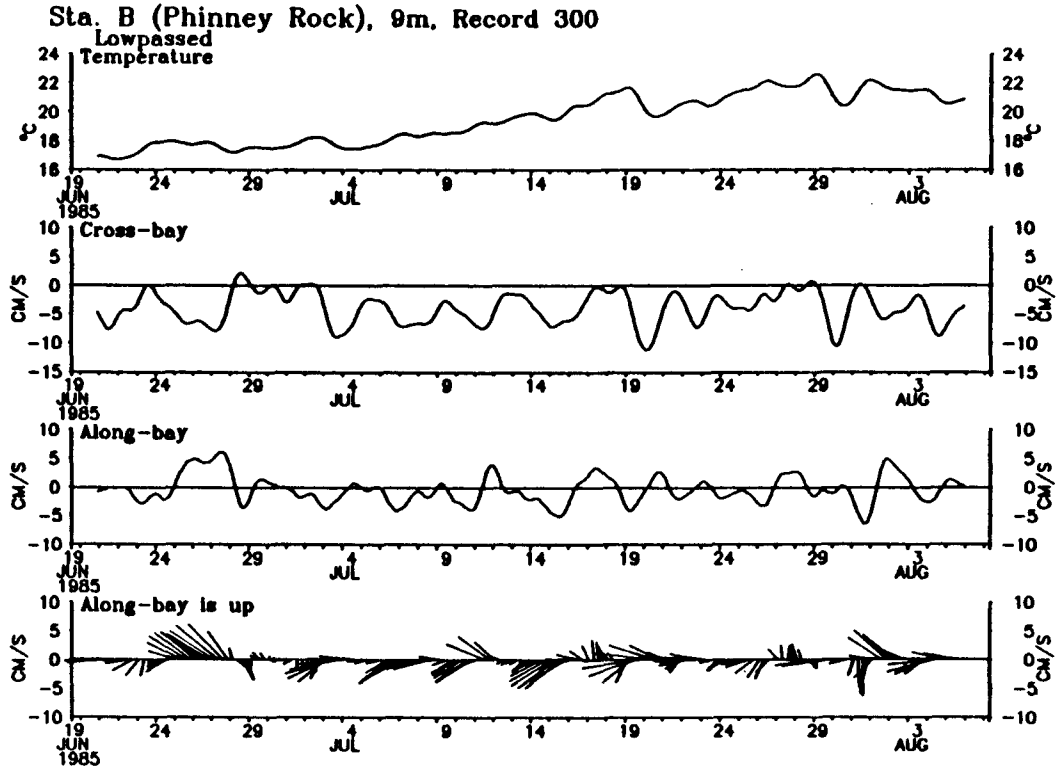


Figure 31c. Station B, record 3001, low-passed temperature, cross-bay and along-bay current, and stickplot (the along-bay direction is up, data plotted every 6 hours).

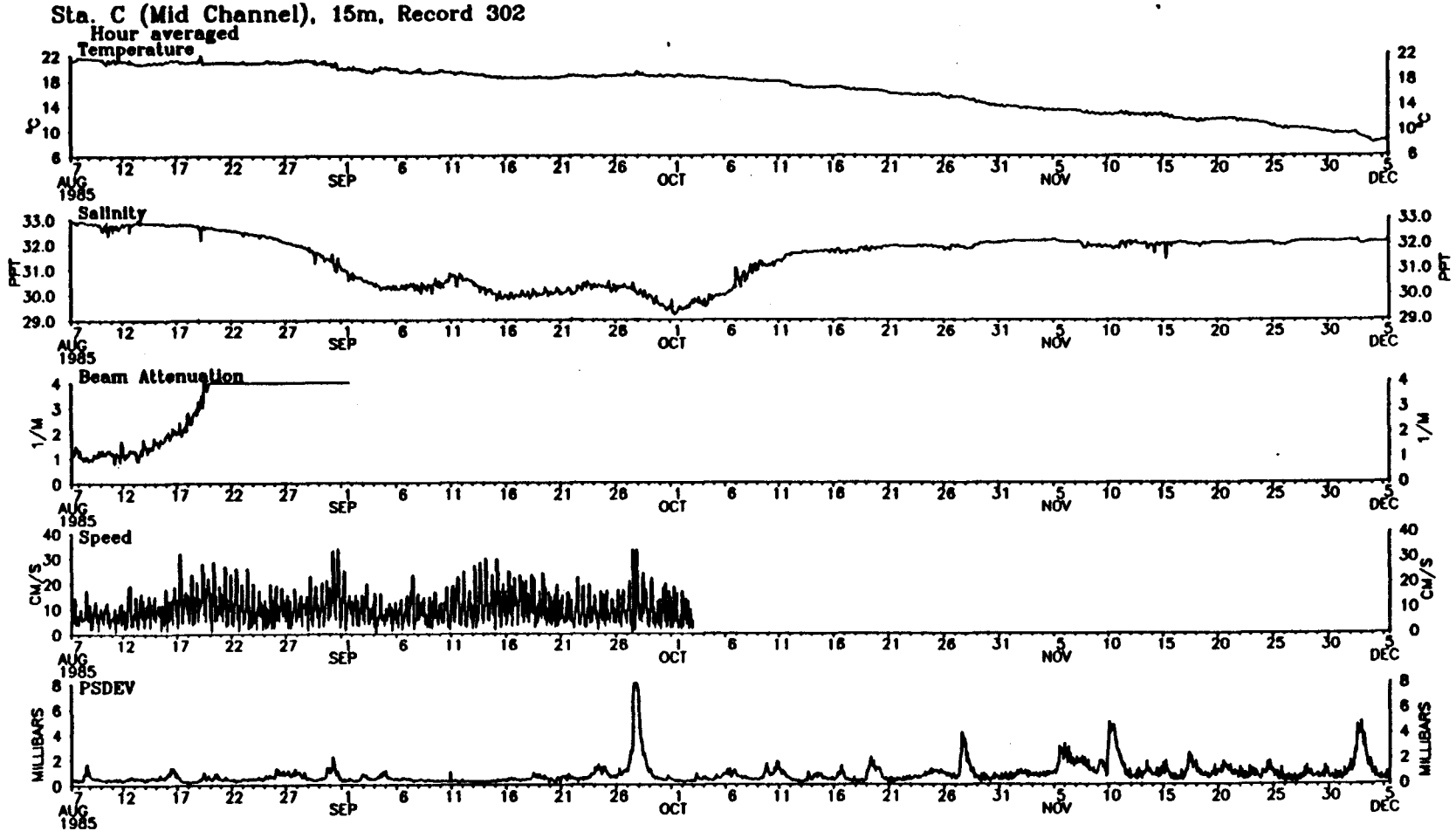


Figure 32a. Station C, record 3021, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. The transmissometer fouled rapidly after August 12.

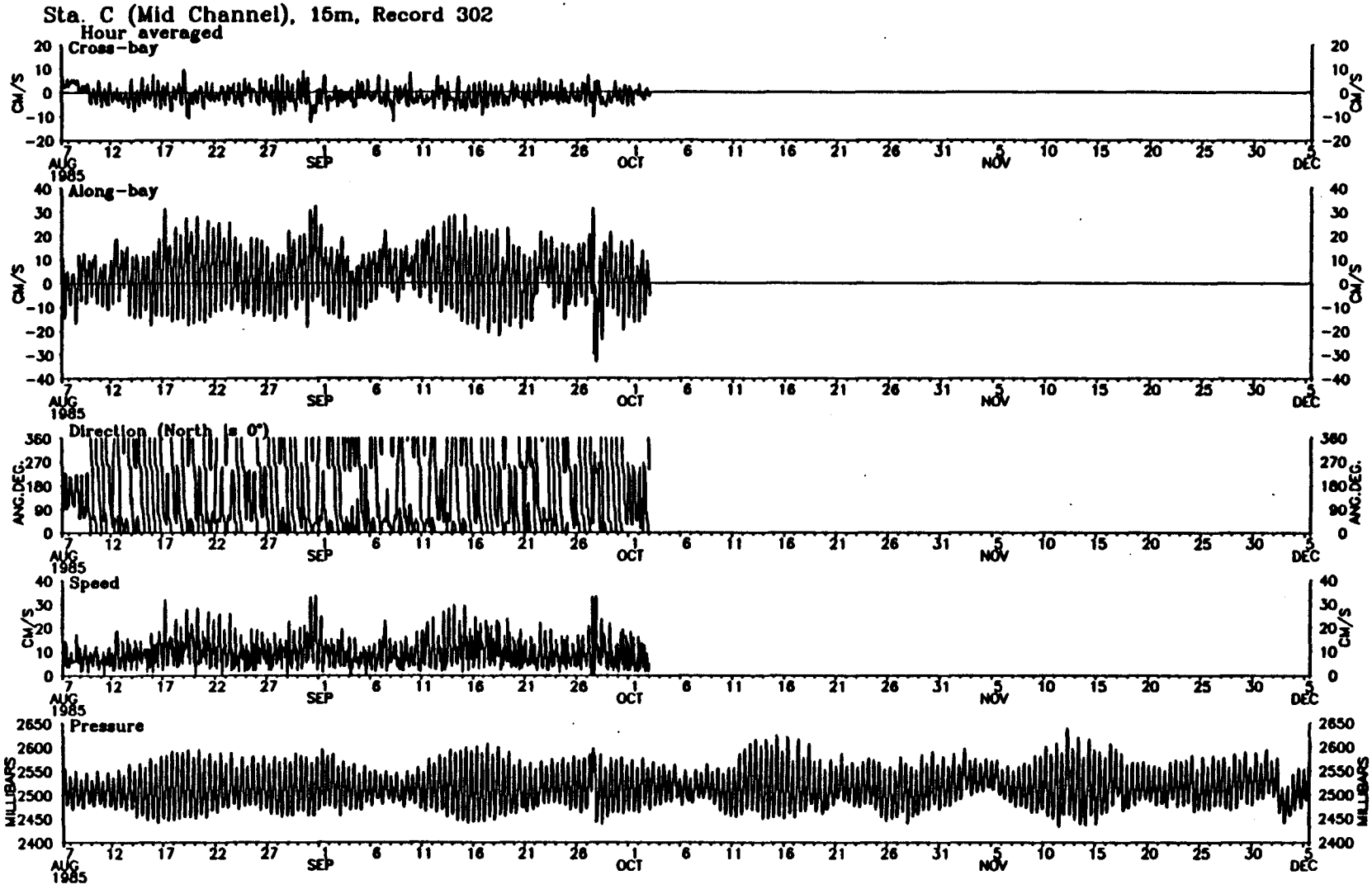


Figure 32b. Station C, record 3021, hour-averaged cross-bay and along-bay currents, current direction, current speed, and pressure.

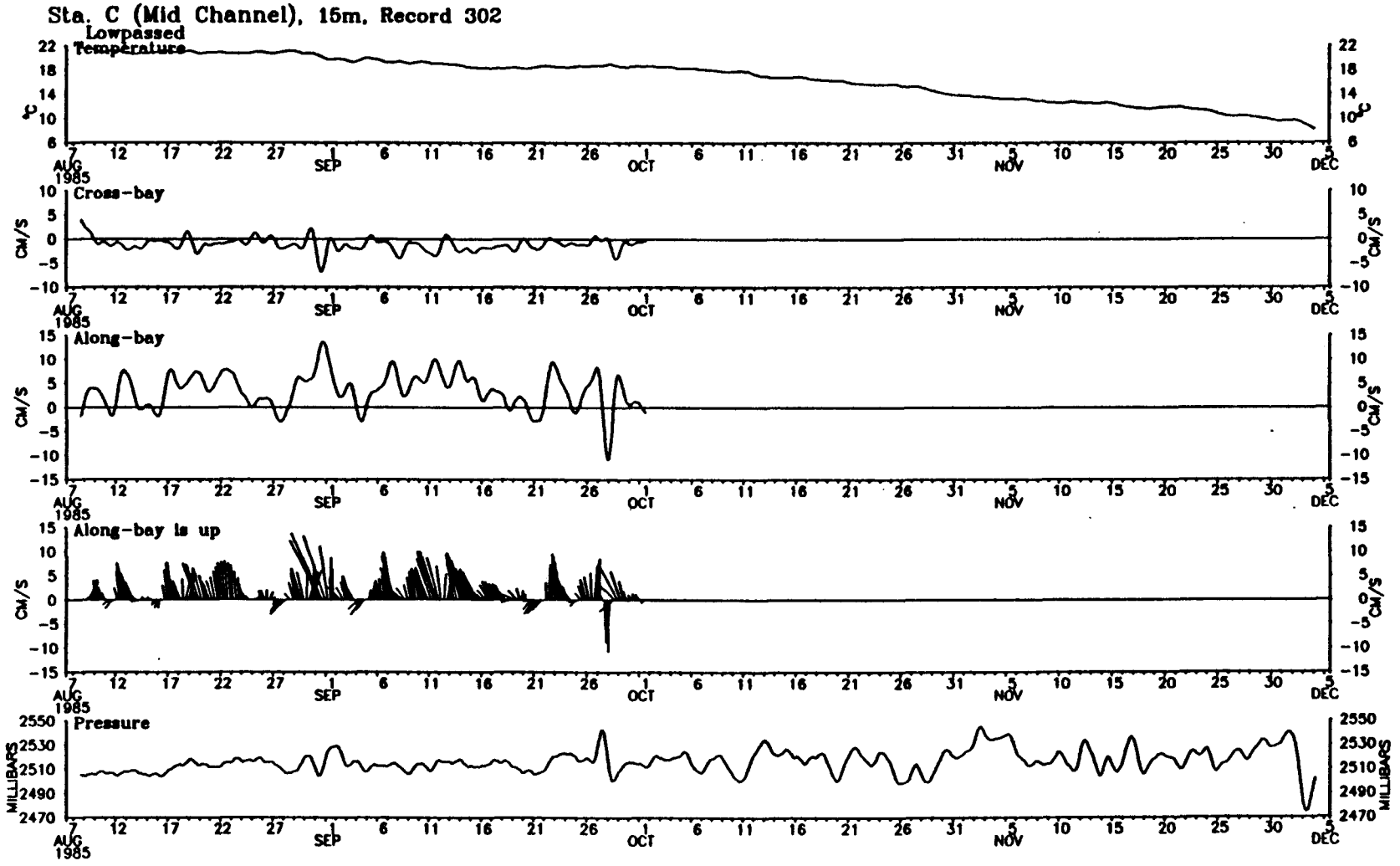


Figure 32c. Station C, record 3021, low-passed temperature, cross-bay and along-bay currents, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

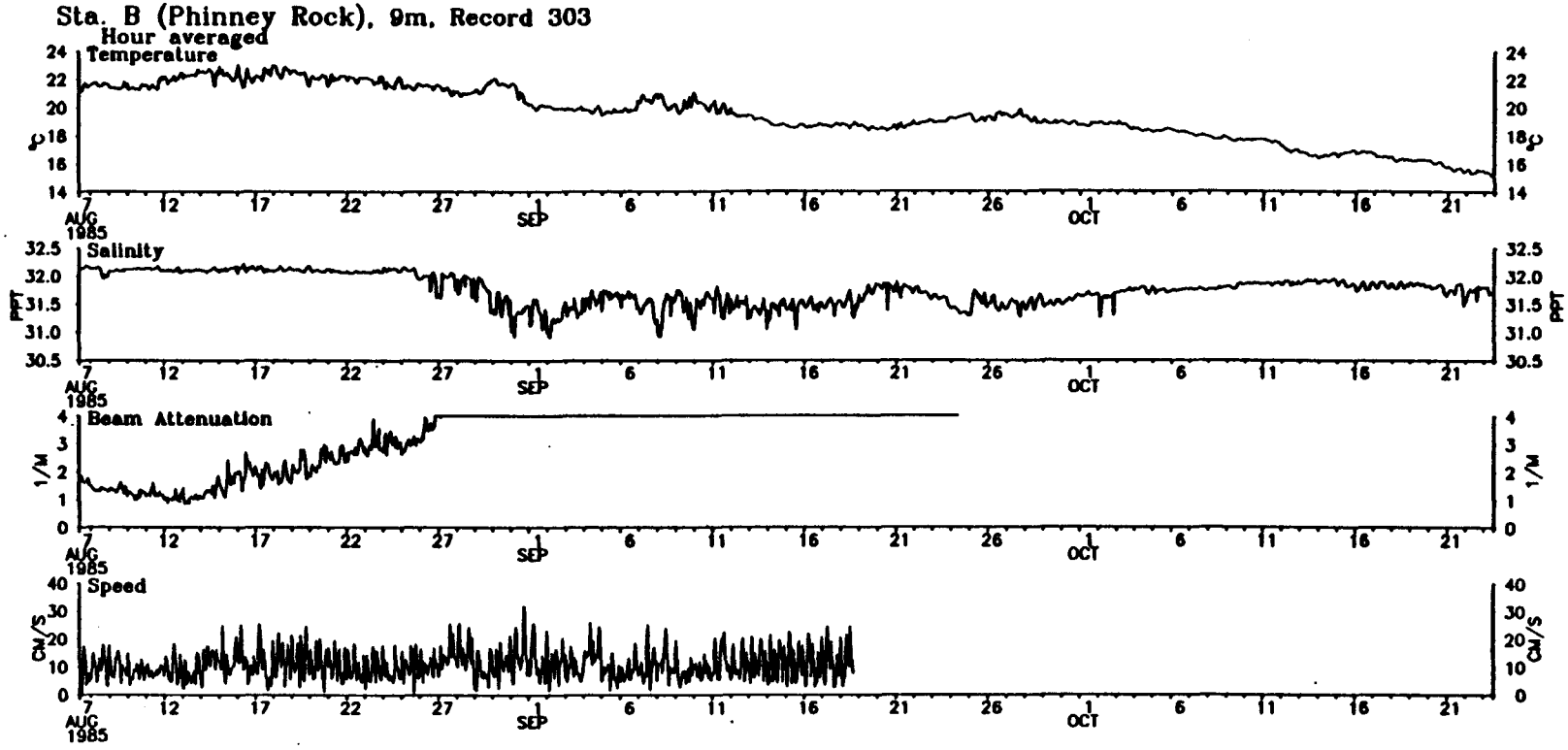


Figure 33a. Station B, record 3031, hour-averaged temperature, salinity, beam attenuation, and current speed. The transmissometer fouled rapidly after August 12.

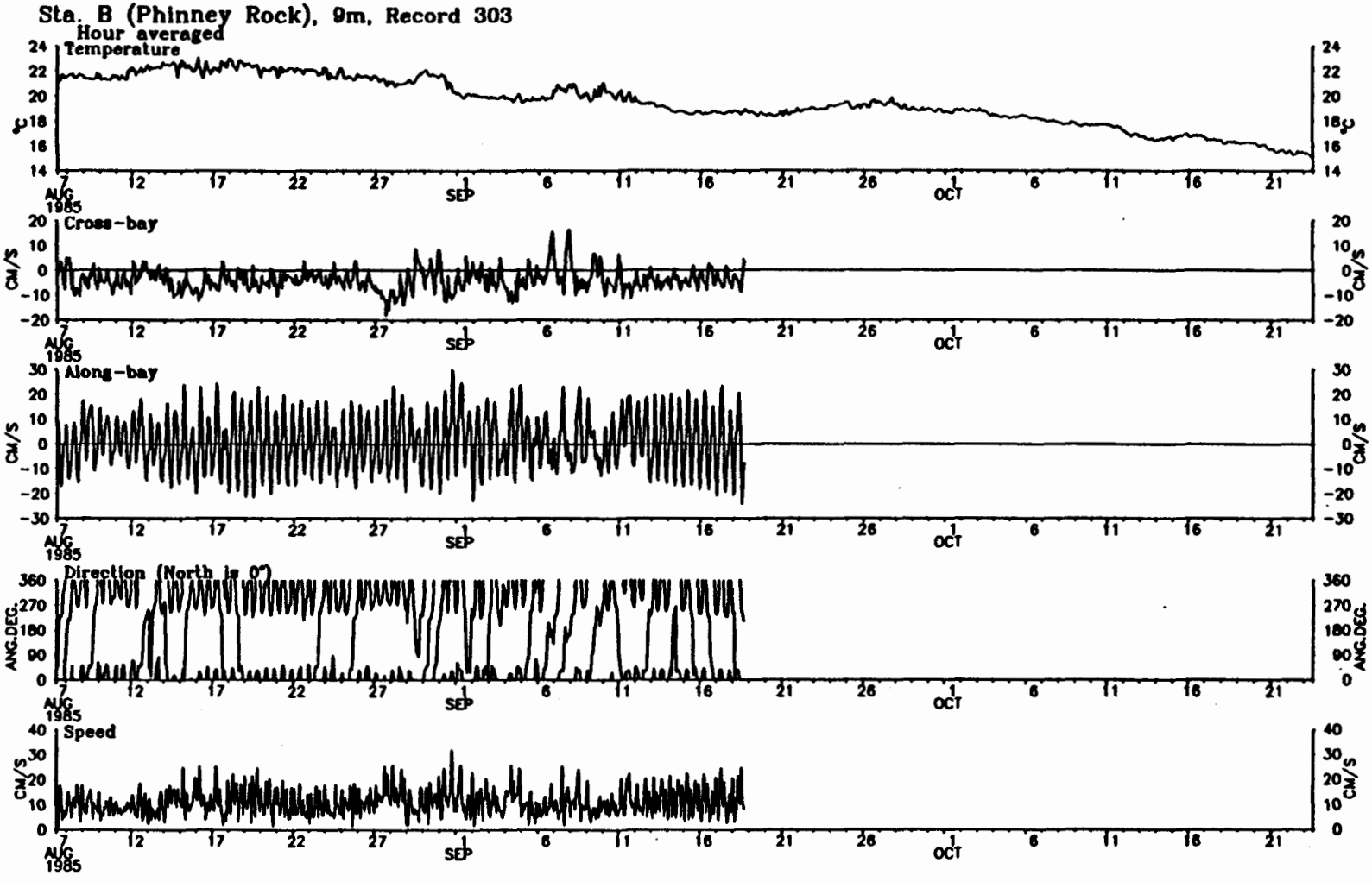


Figure 33b. Station B, record 3031, hour-averaged temperature, cross-bay and along-bay current, current direction, and current speed.

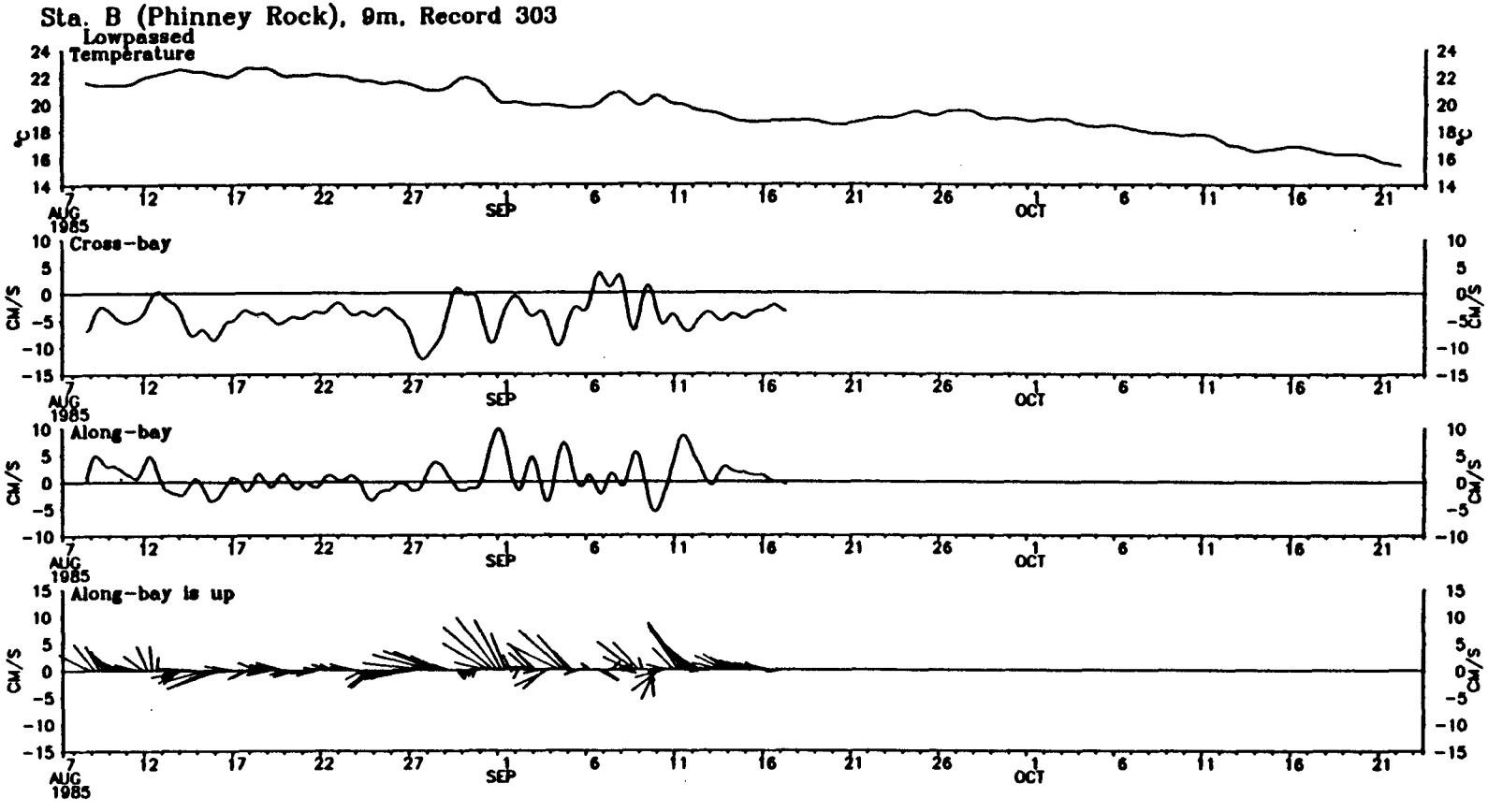


Figure 33c. Station B, record 3031, low-passed temperature, cross-bay and along-bay currents, and stickplot (the along-bay direction is up, data plotted every 6 hours).

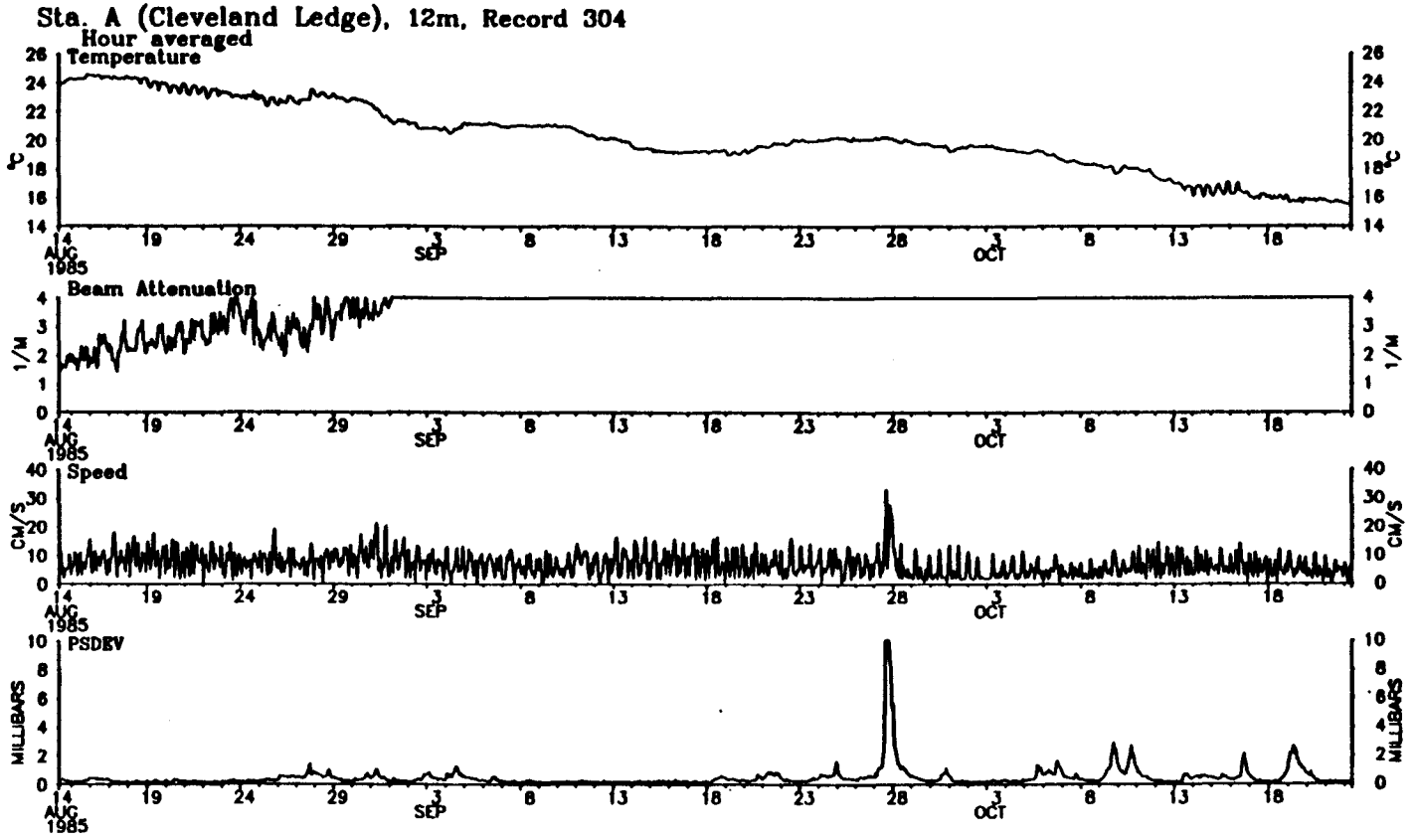


Figure 34a. Station A, record 3041, hour-averaged temperature, beam attenuation, current speed, and PSDEV. The transmissometer fouled rapidly from the beginning of the deployment.

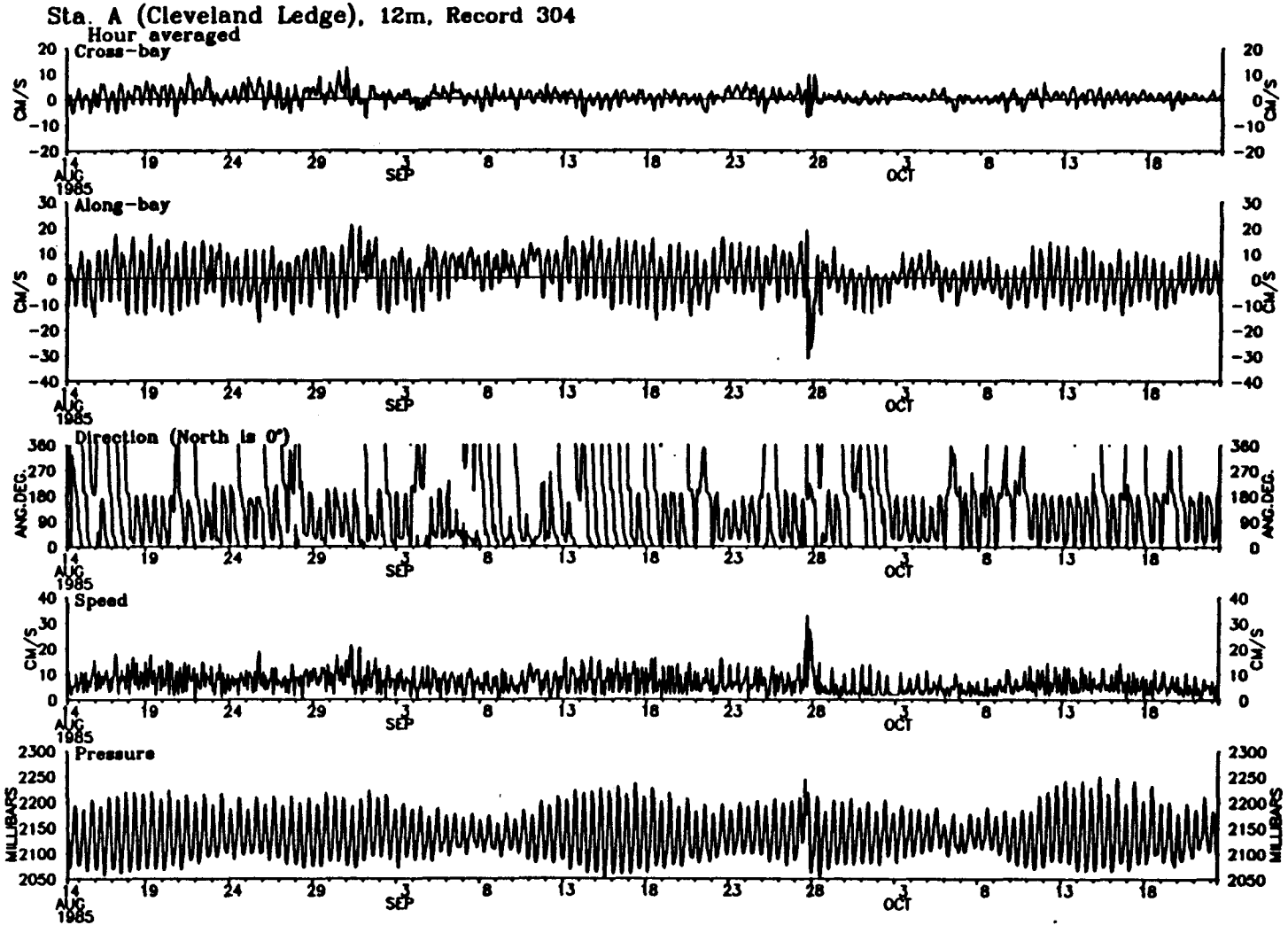


Figure 34b. Station A, record 3041, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

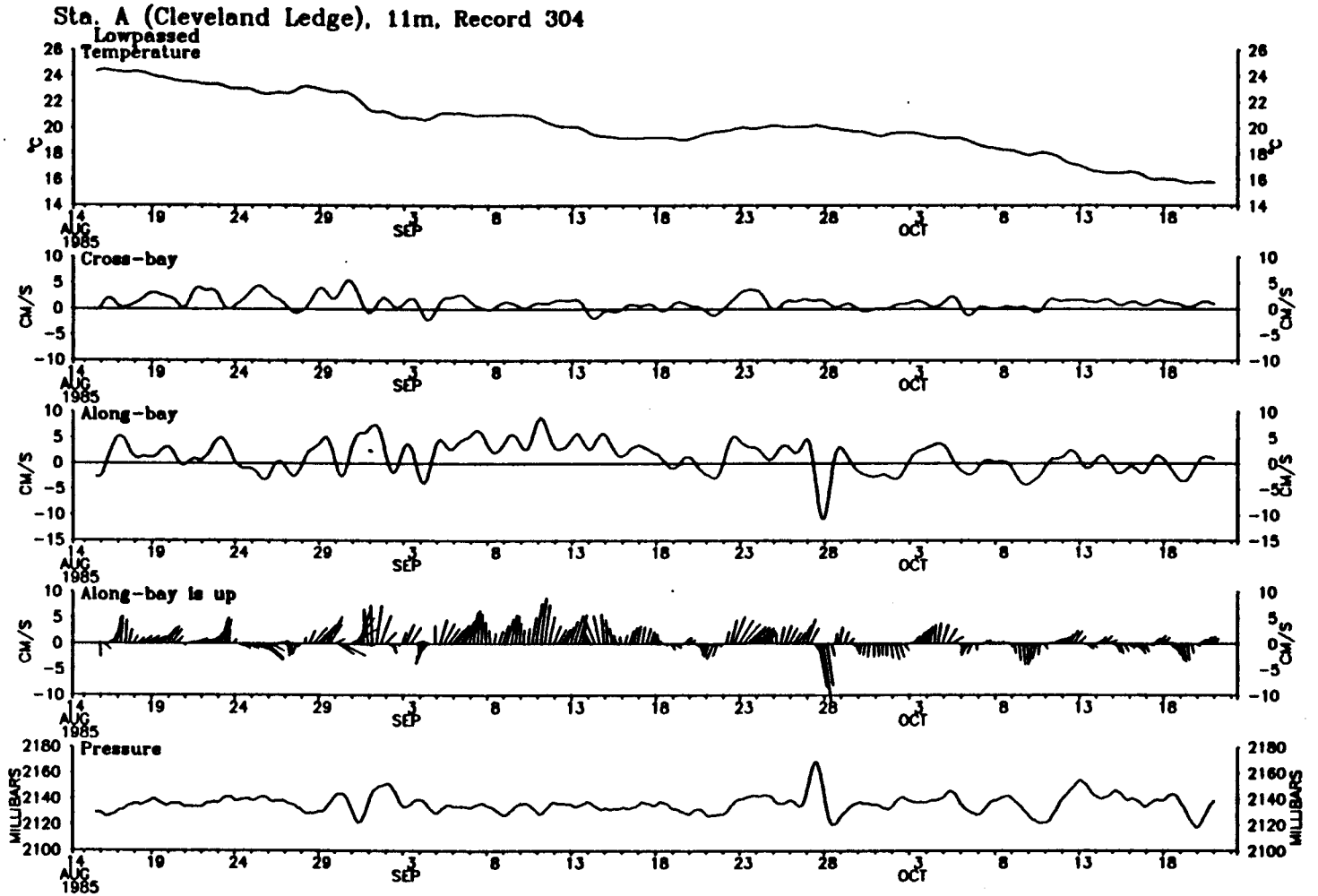


Figure 34c. Station A, record 3041, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

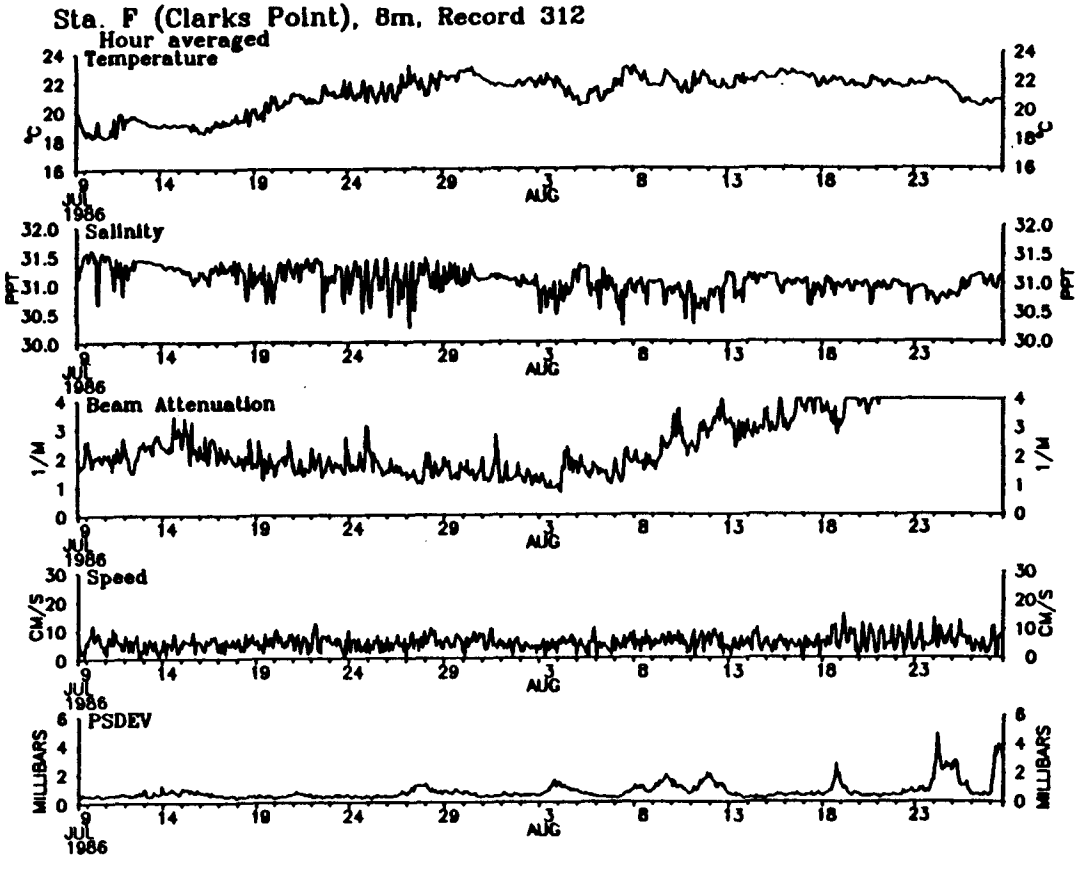


Figure 35a. Station F, record 3121, hour-averaged temperature, salinity, beam attenuation, current speed, and PSDEV. The transmissometer fouled from about August 8 on.

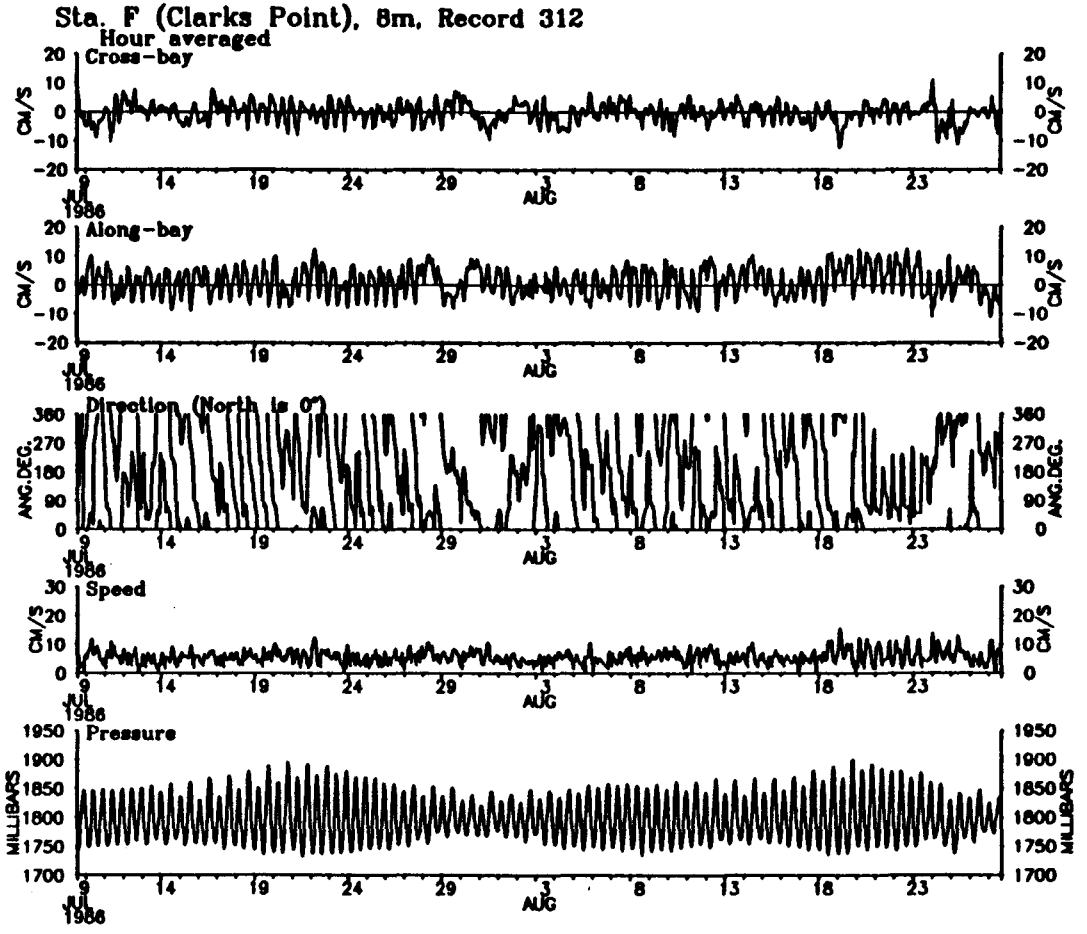


Figure 35b. Station F, record 3121, hour-averaged cross-bay and along-bay current, current direction, current speed, and pressure.

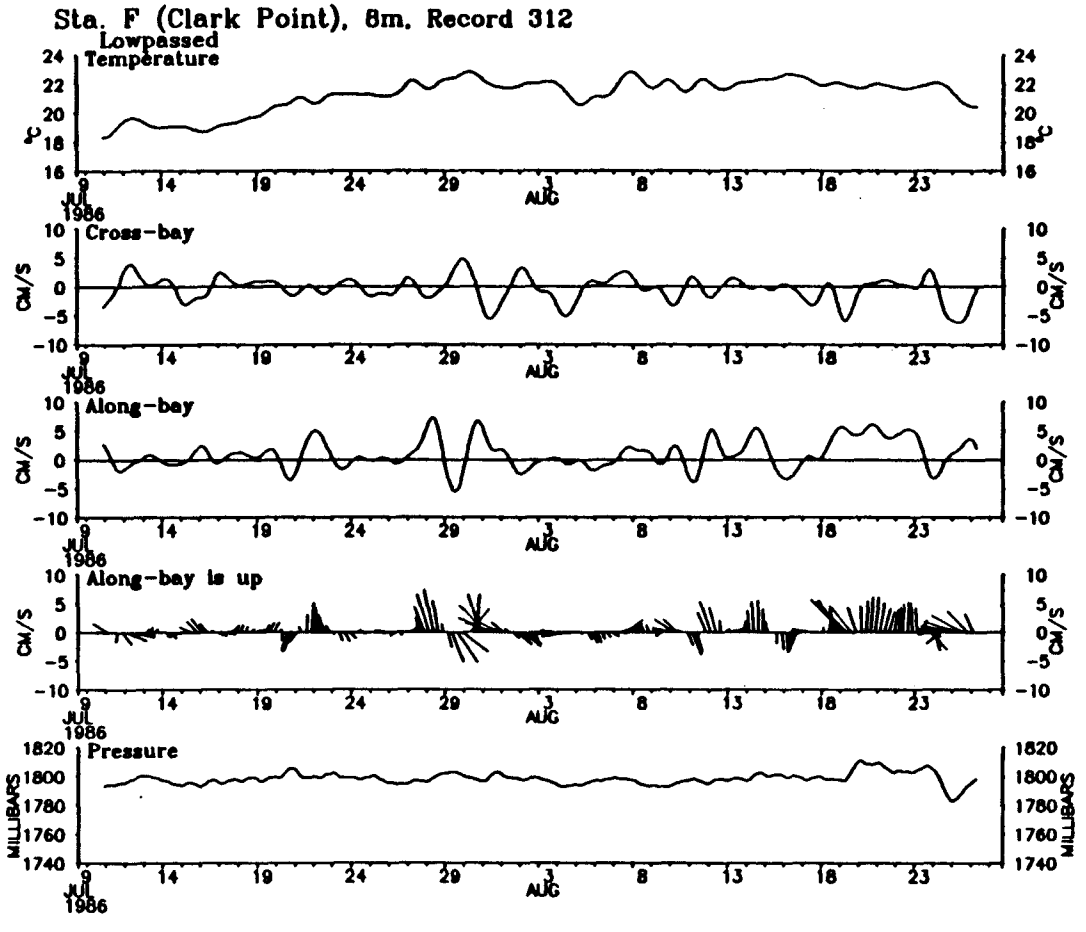


Figure 35c. Station F, record 3121, low-passed temperature, cross-bay and along-bay current, stickplot (the along-bay direction is up, data plotted every 6 hours), and bottom pressure.

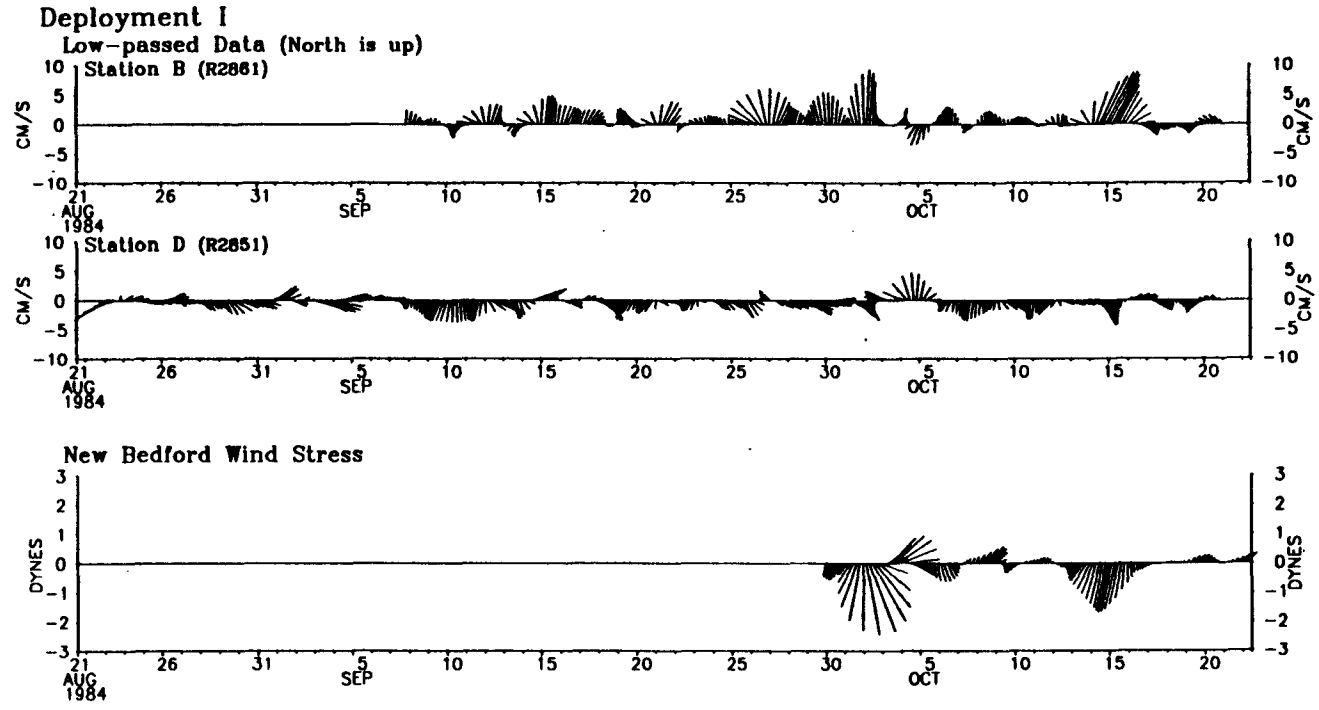


Figure 36a. Low-passed current at stations B and D and wind stress at New Bedford during deployment 1.

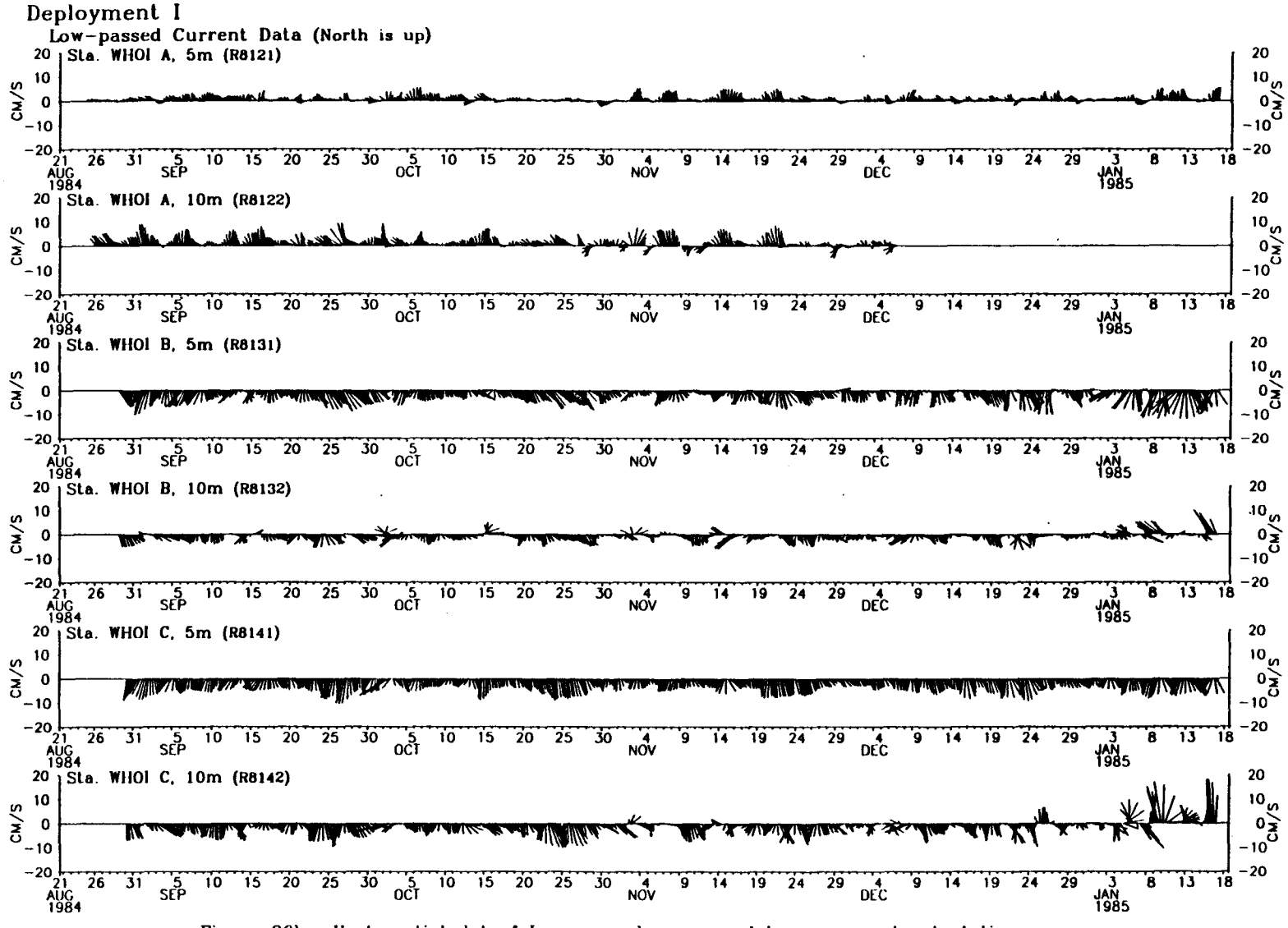


Figure 36b. Vector stickplot of Low-passed upper and lower currents at stations WHOIA, WHOIB, and WHOIC during moored array experiment. North is up. Data plotted every 6 hours.

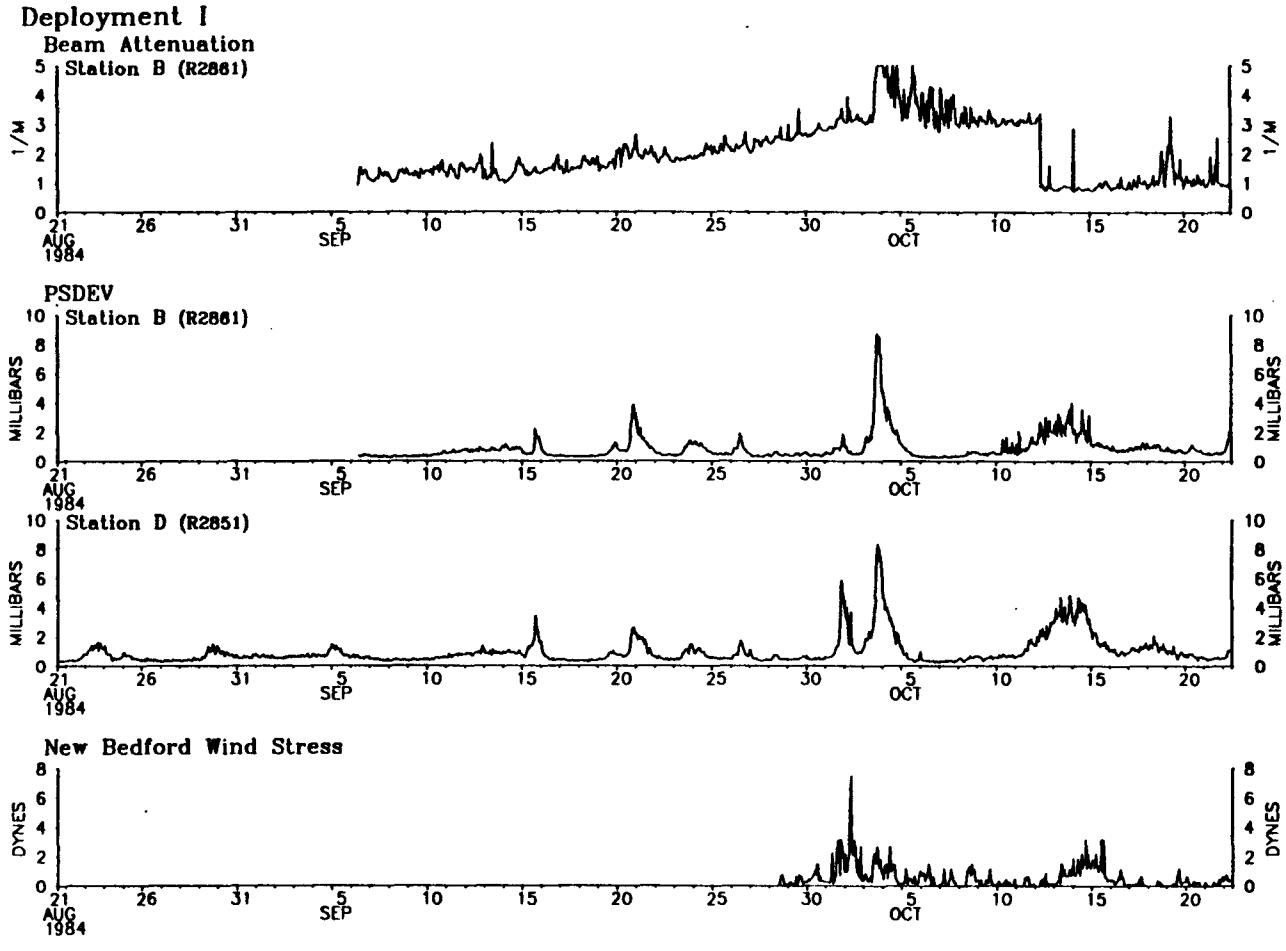


Figure 36c. Hour-averaged PSDEV at stations B and D, beam attenuation at station B, and wind stress amplitude at New Bedford during deployment 1.

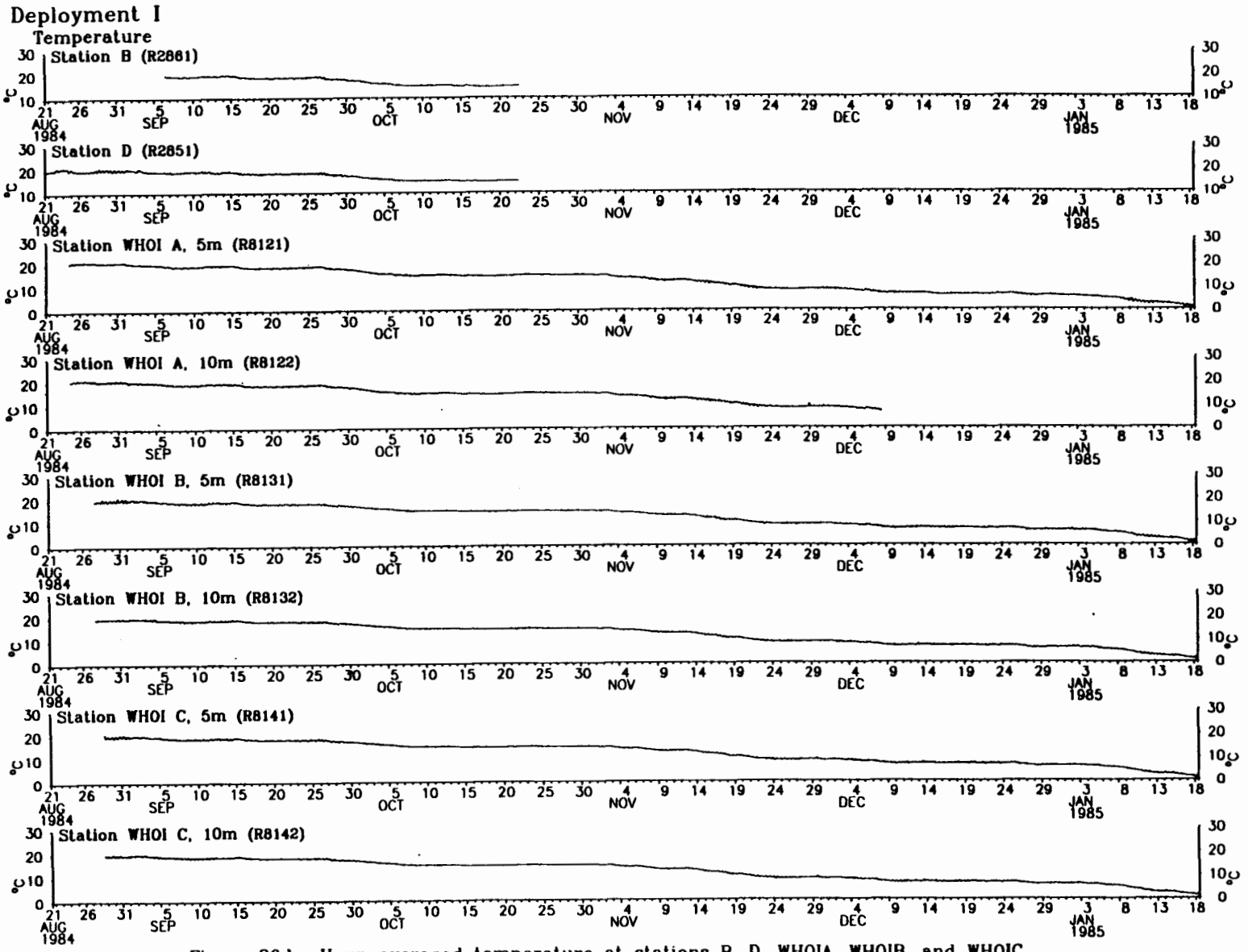


Figure 36d. Hour-averaged temperature at stations B, D, WHOIA, WHOIB, and WHOIC during deployment I.

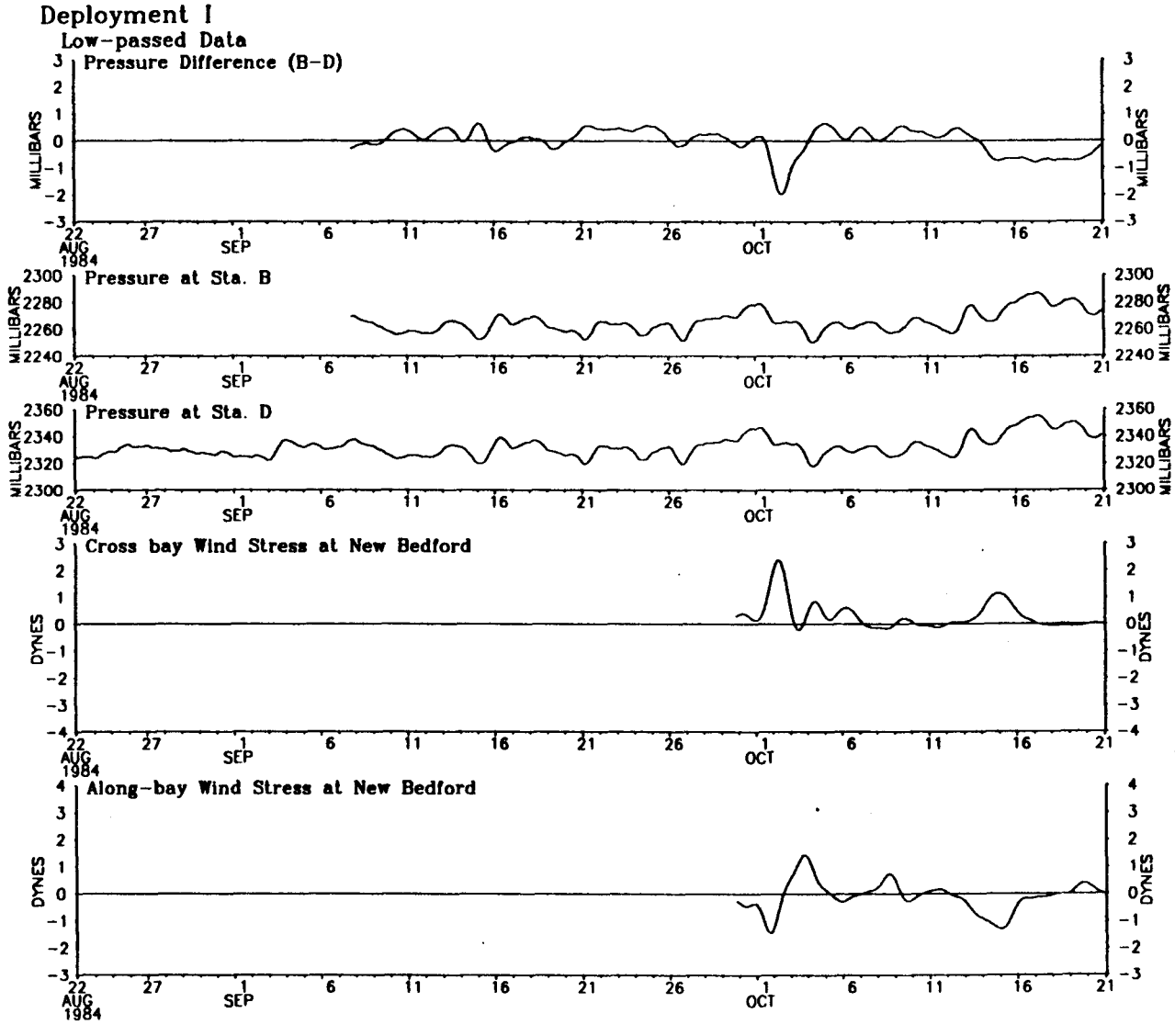


Figure 36e. Low-passed pressure at stations B and D, pressure difference (B-D) and along-bay and cross-bay wind stress at New Bedford during deployment 1

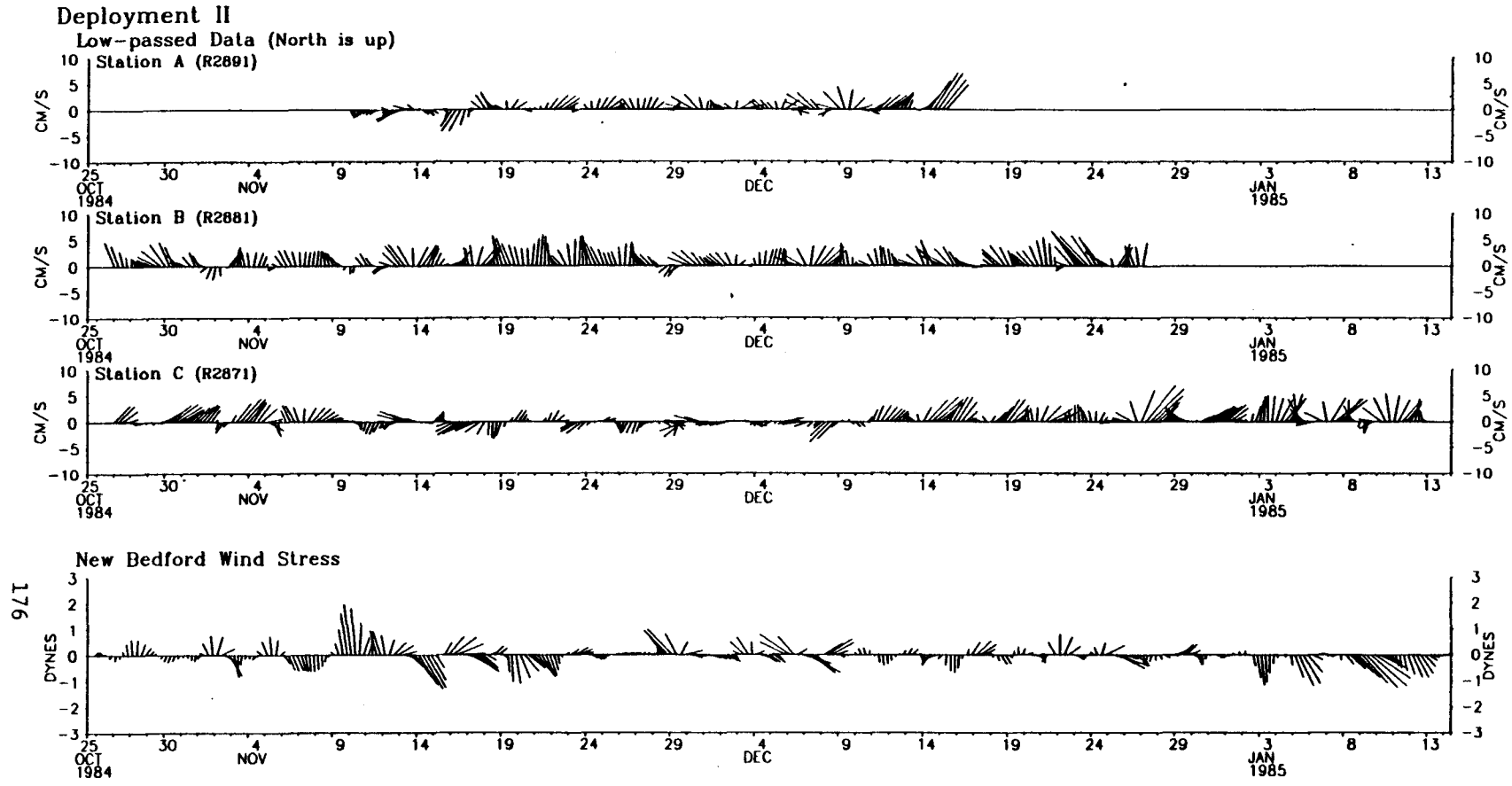


Figure 37a. Vector stickplot of low-passed current at stations A, B, and C and wind stress at New Bedford during deployment 2. North is up. Data plotted every 6 hours.

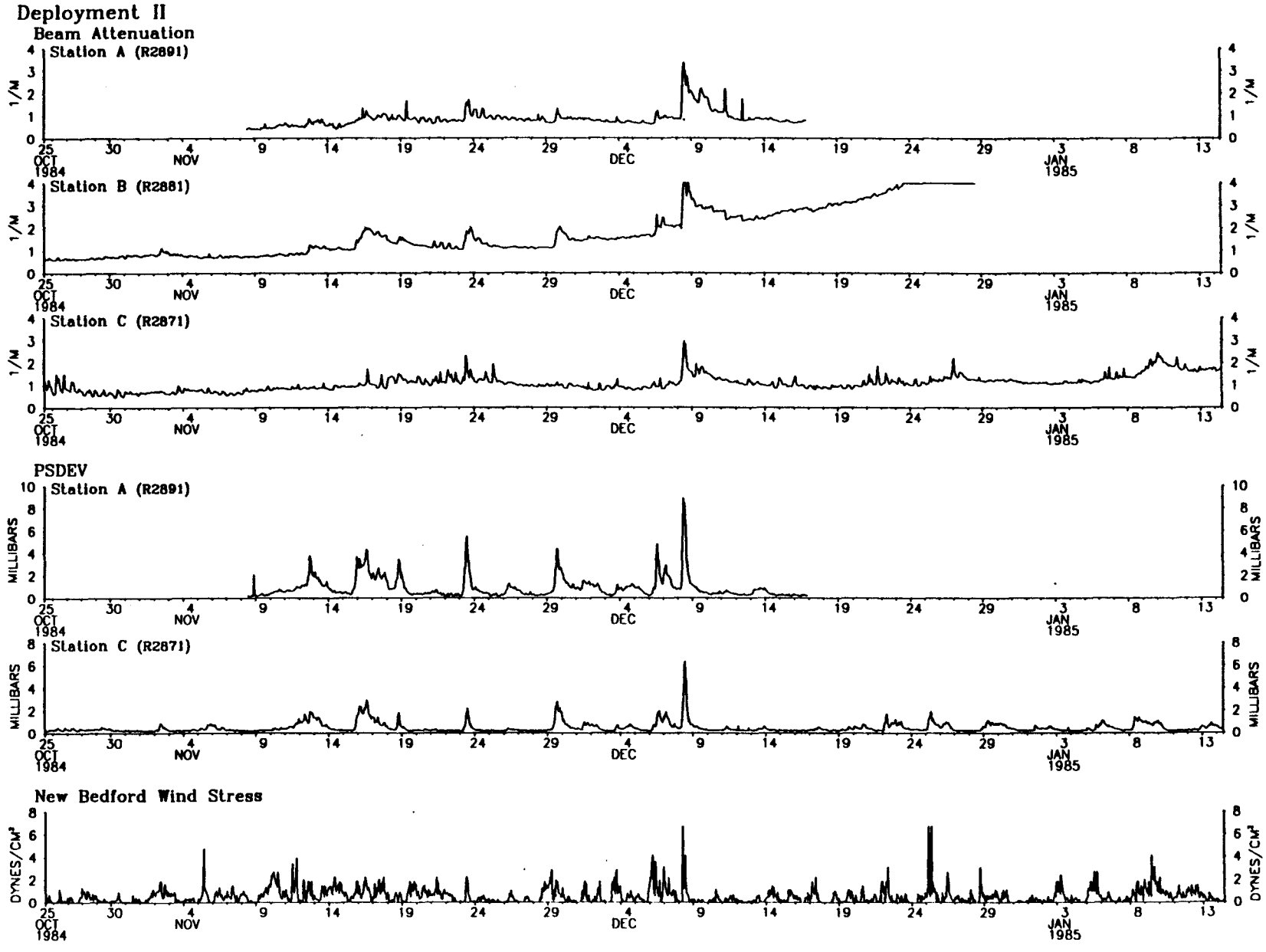


Figure 37b. Hour-averaged PSDEV at stations A and C, beam attenuation at stations A, B, and C, and wind stress amplitude at New Bedford during deployment 2.

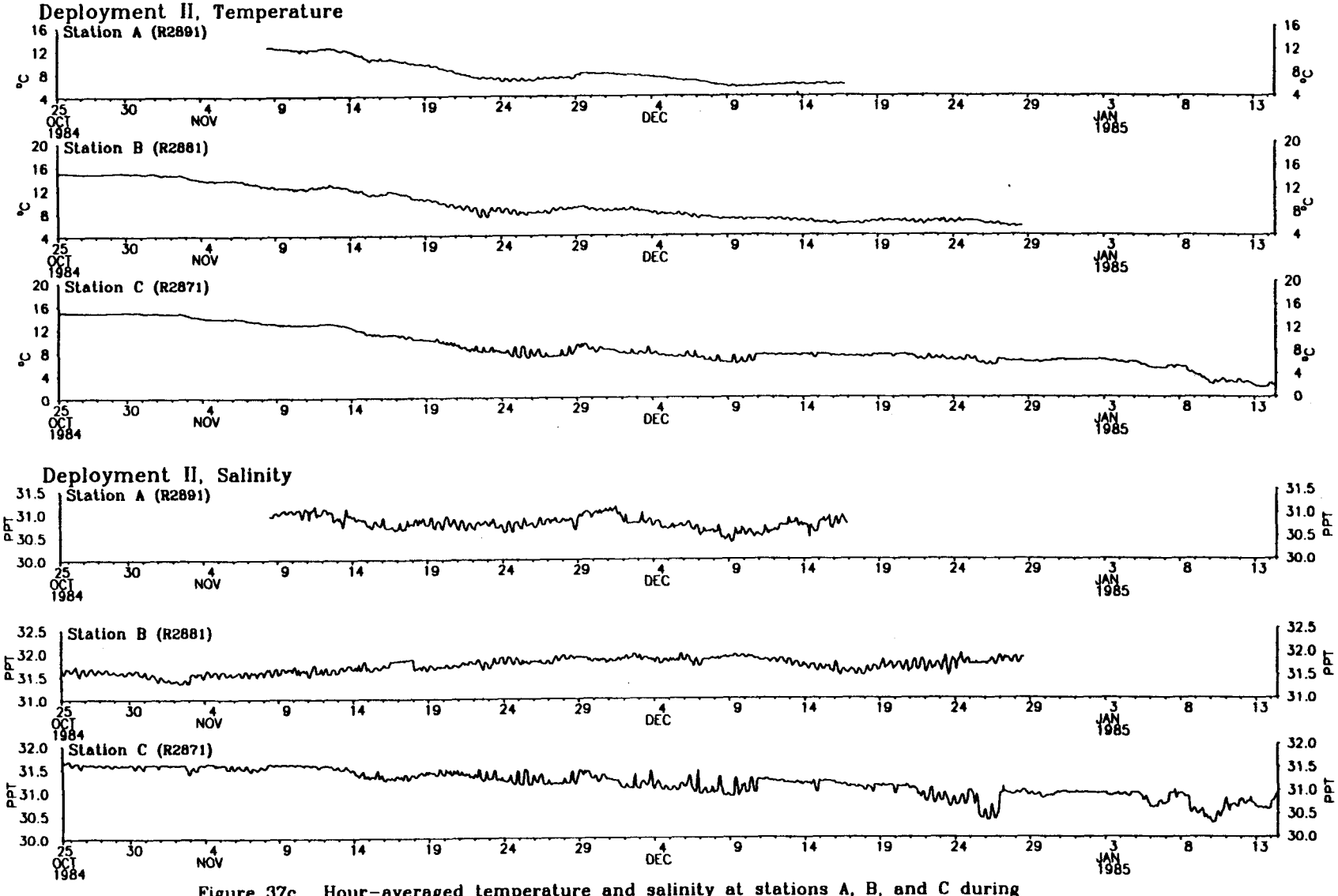


Figure 37c. Hour-averaged temperature and salinity at stations A, B, and C during deployment 2.

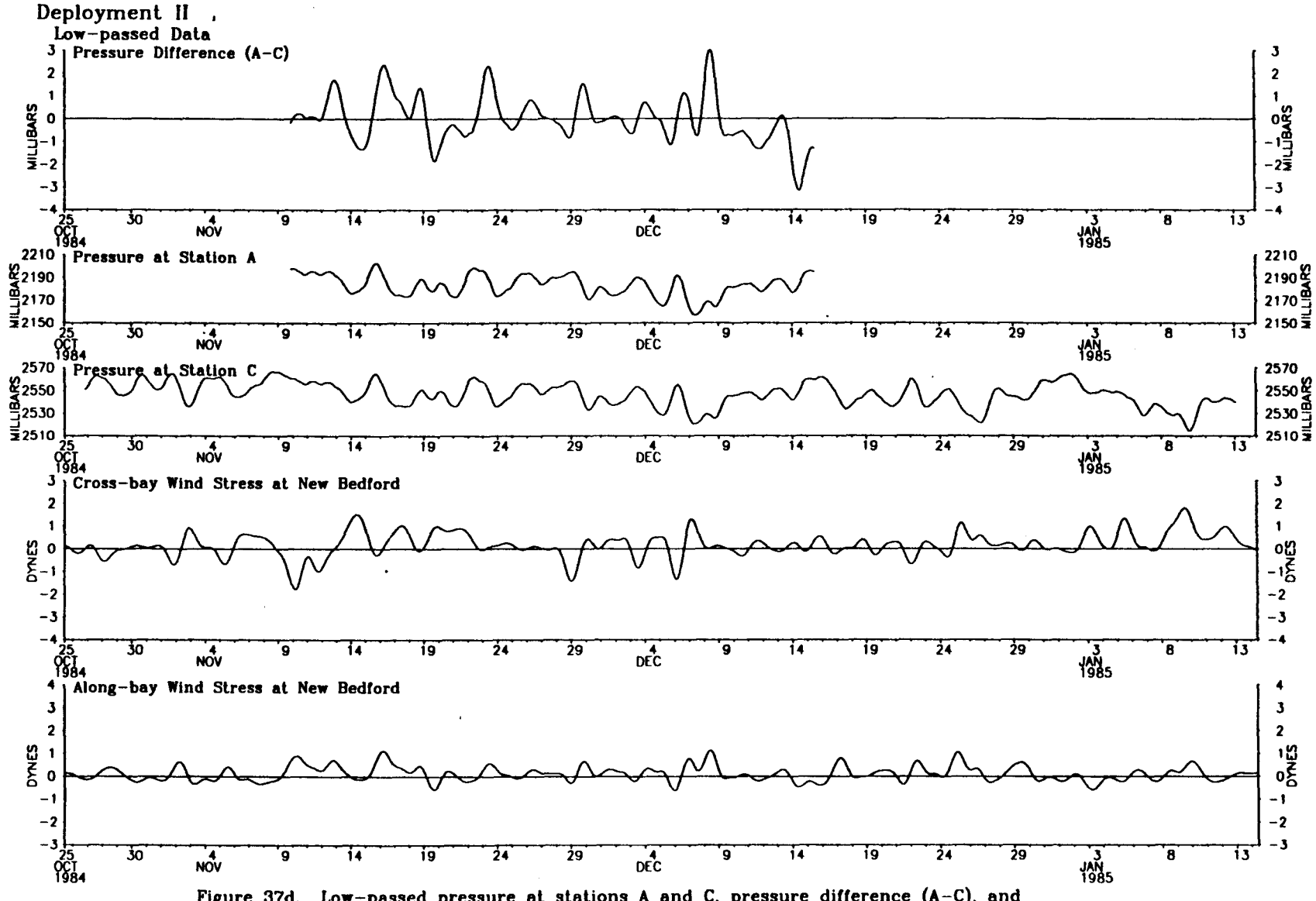


Figure 37d. Low-passed pressure at stations A and C, pressure difference (A-C), and along-bay and cross-bay wind stress at New Bedford during deployment 2.

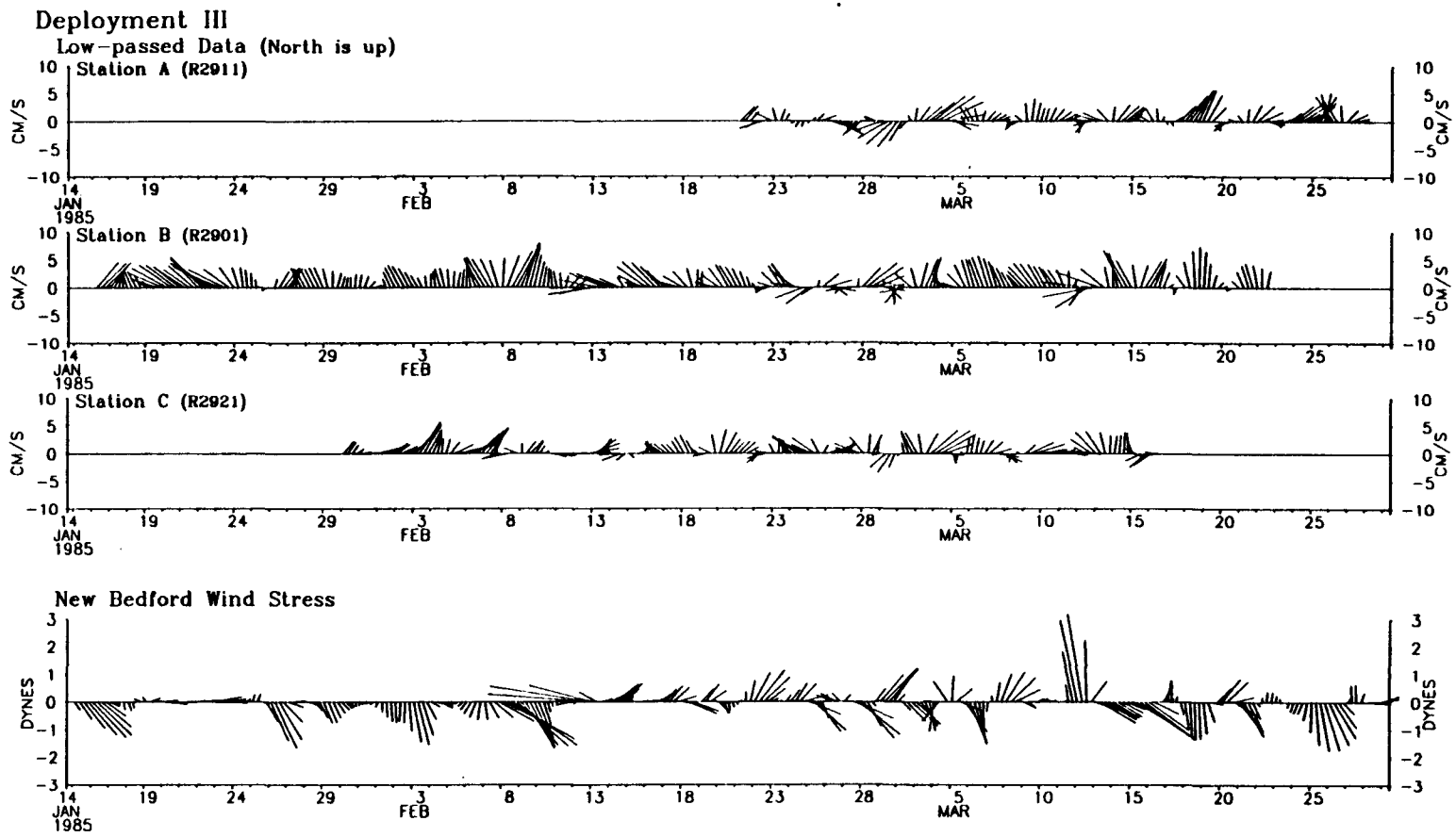


Figure 38a. Vector stickplot of low-passed current at stations A, B, and C and wind stress at New Bedford during deployment 3. North is up. Data plotted every 6 hours.

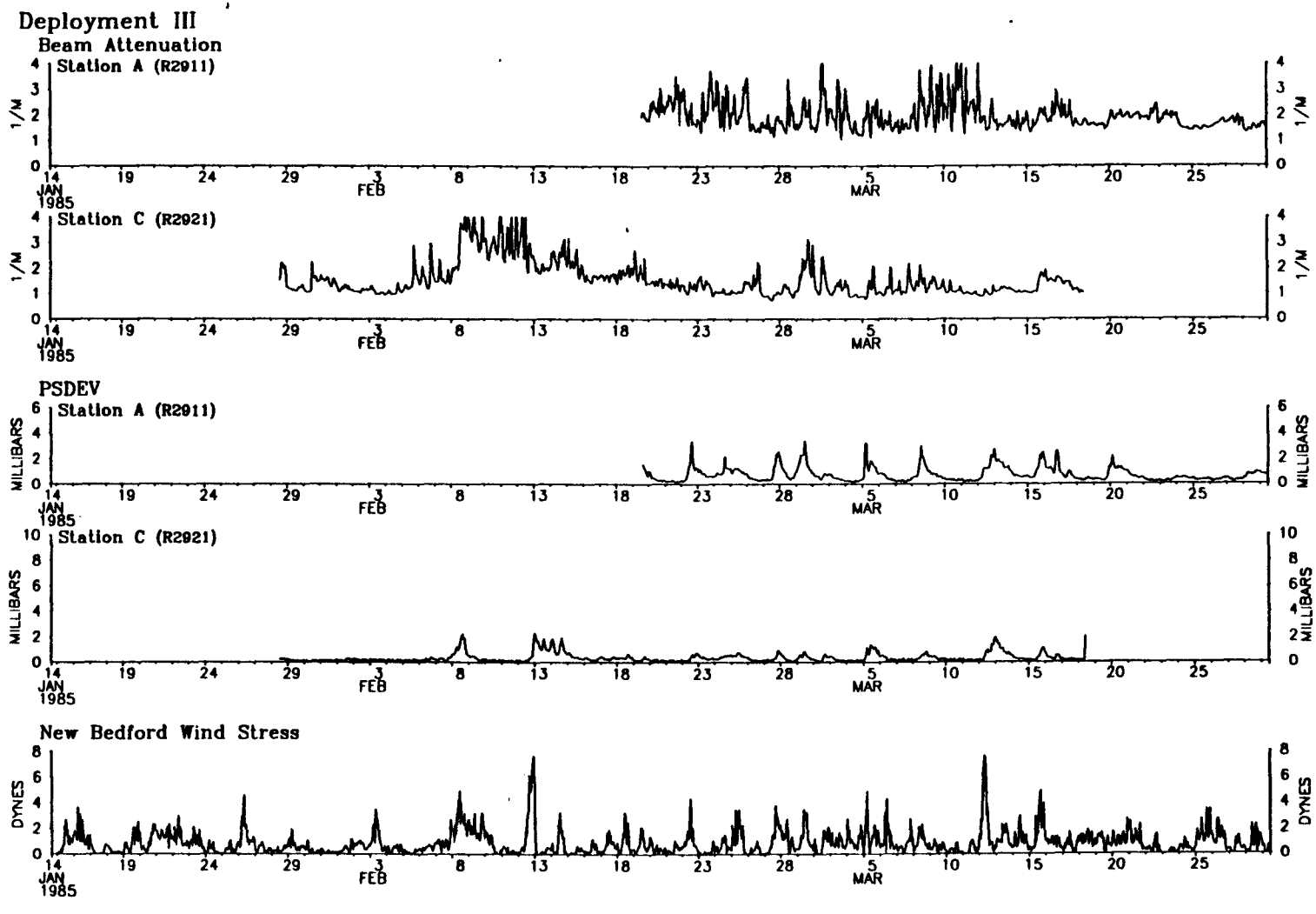


Figure 38b. Hour-averaged PSDEV and beam attenuation at stations A and C, and wind stress amplitude at new Bedford during deployment 3.

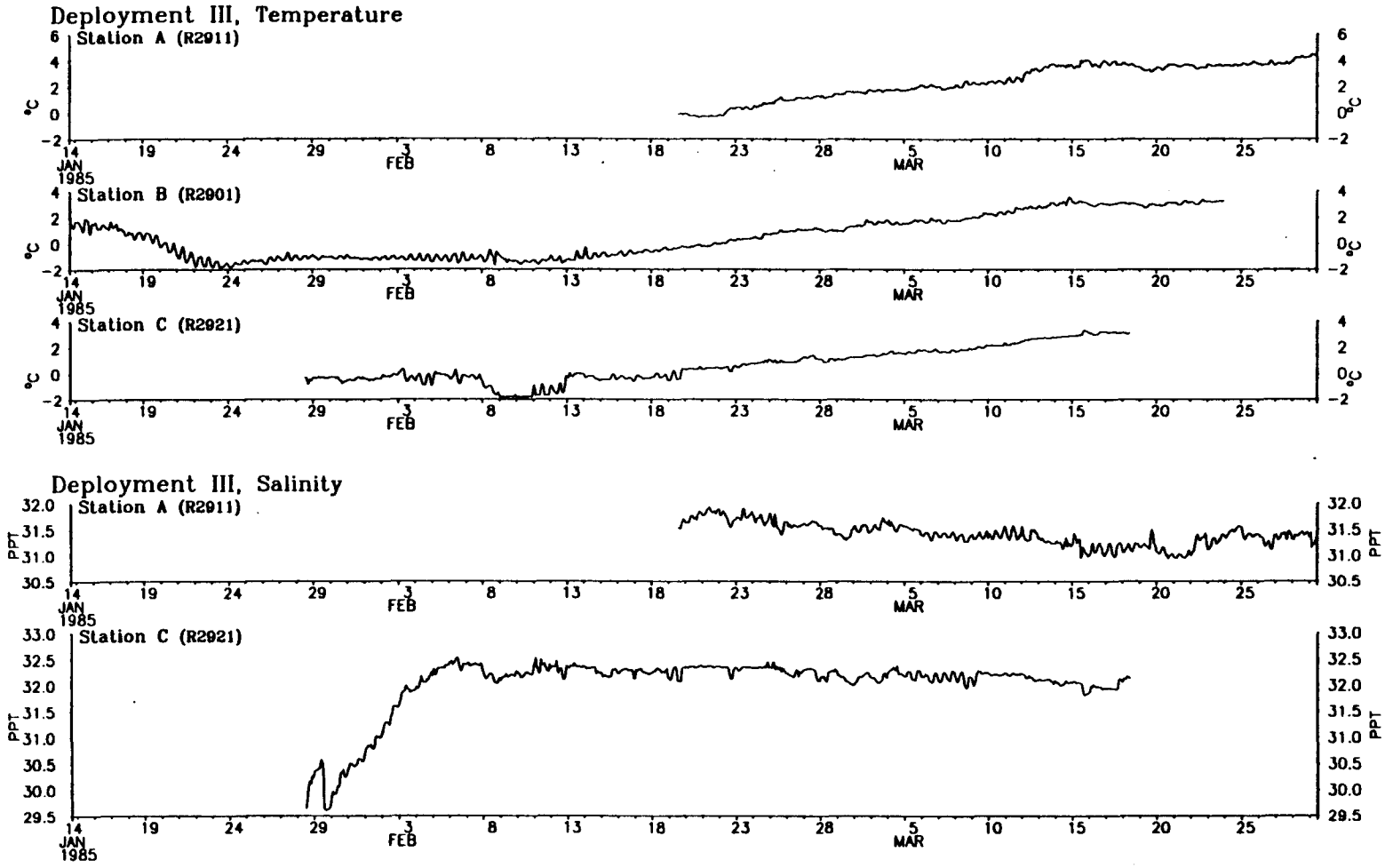


Figure 38c. Hour-averaged temperature at stations A, B, and C, and salinity at stations A and C duringdeployment 3.

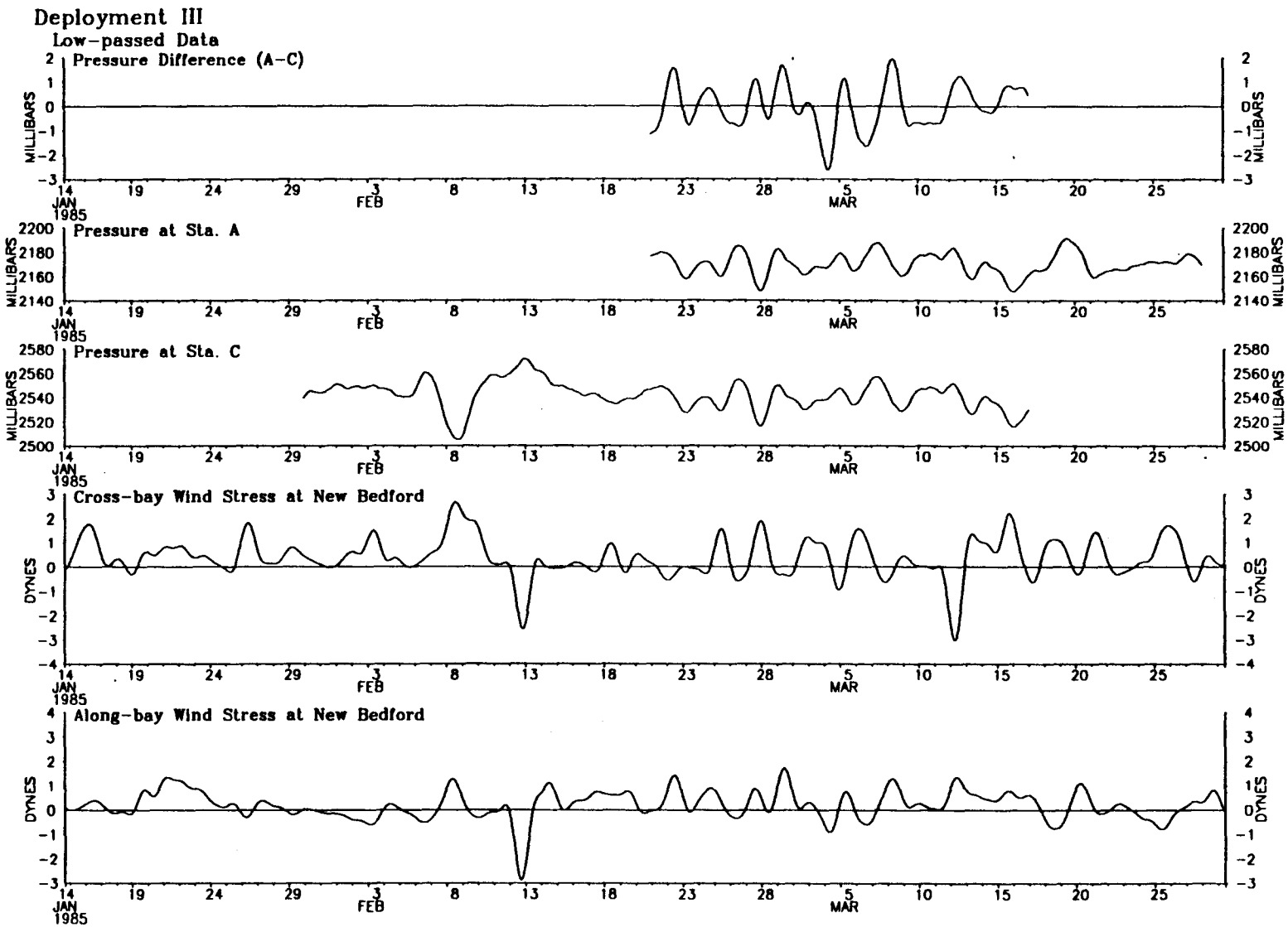


Figure 38d. Low-passed pressure at stations A and C, pressure difference (A-C), and along-bay and cross-bay wind stress at New Bedford during deployment 3.

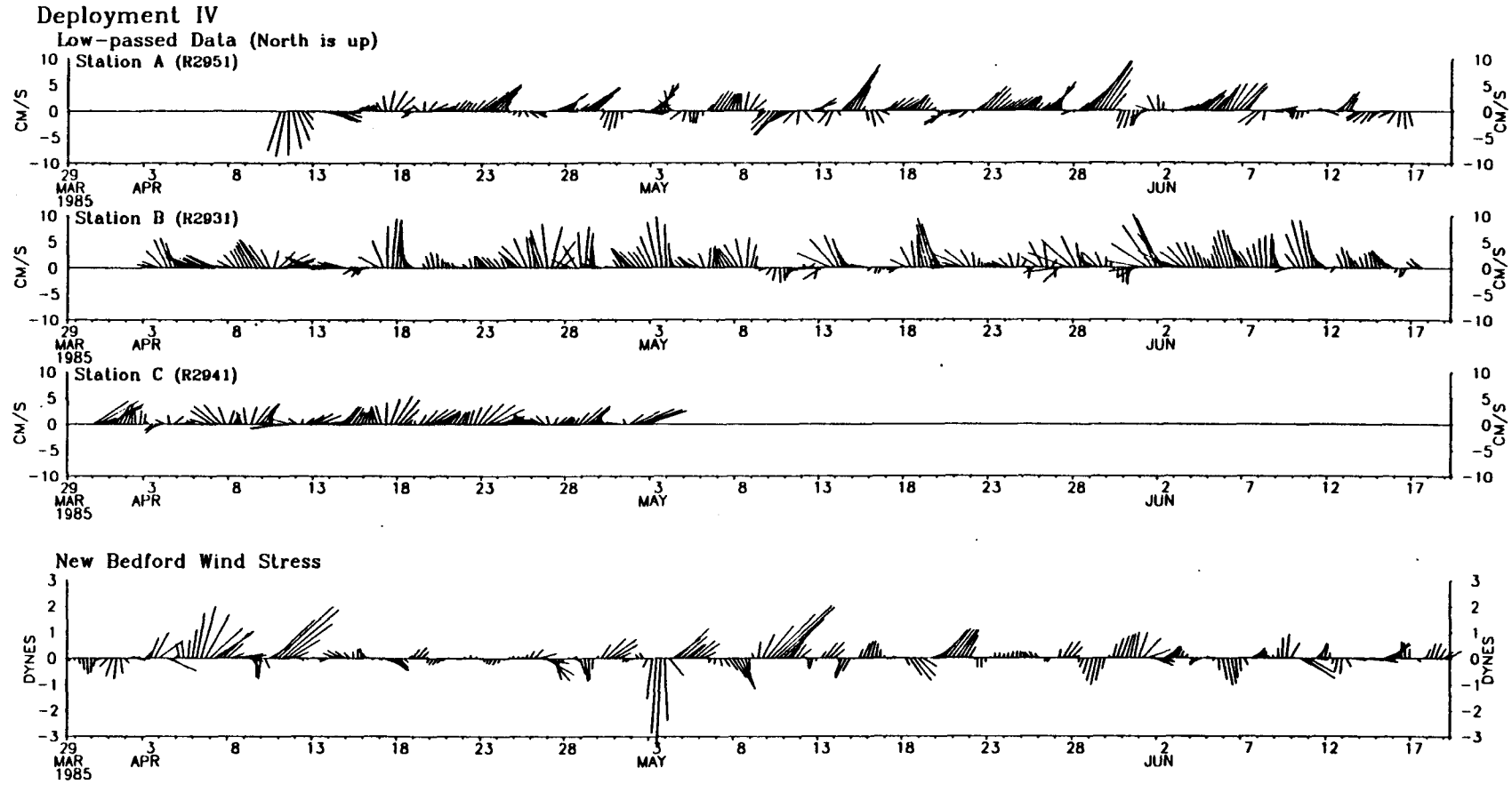


Figure 39a. Vector stickplot of low-passed current at stations A, B, and C and wind stress at New Bedford during deployment 4. North is up. Data plotted every 6 hours.

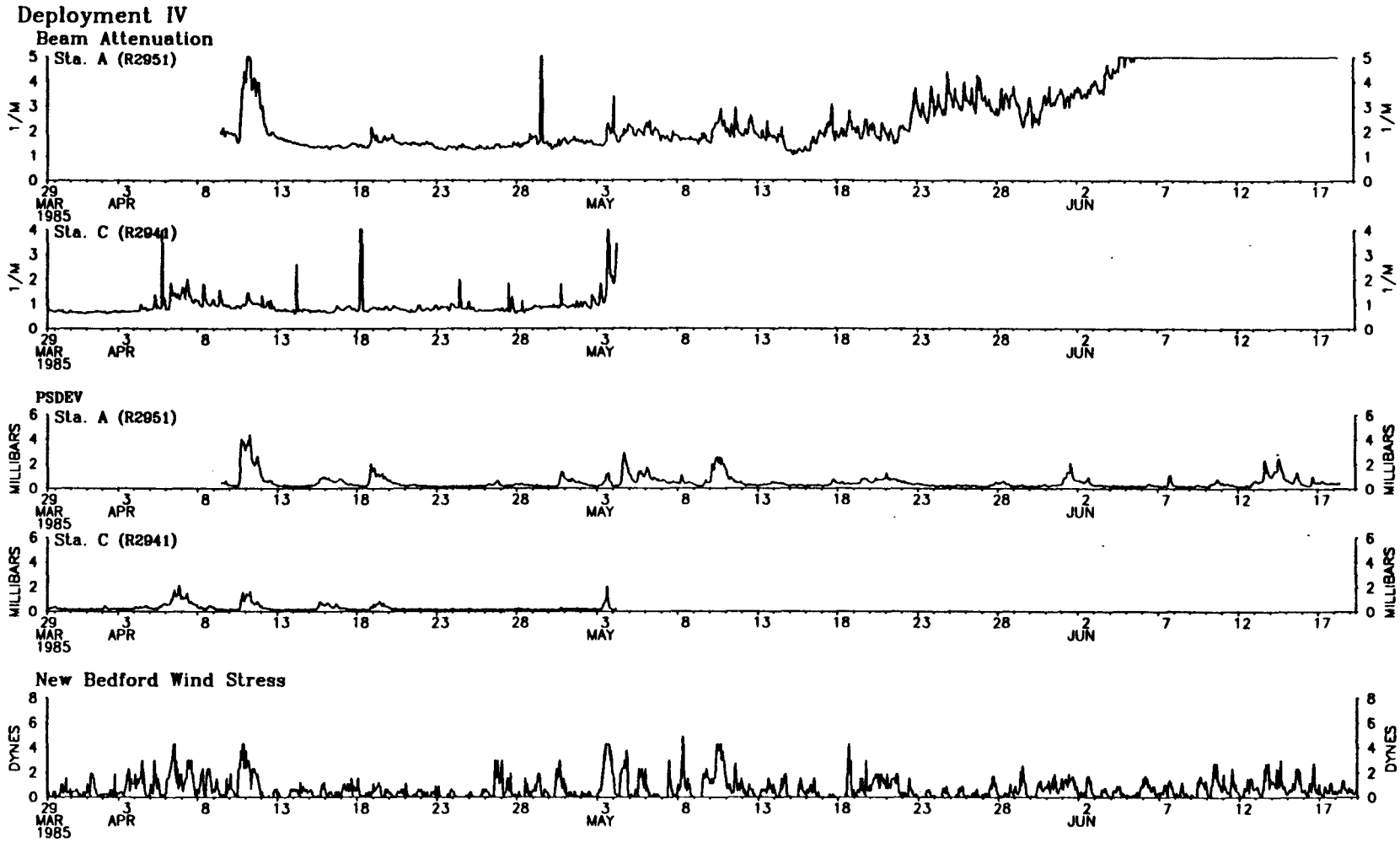


Figure 39b. Hour-averaged PSDEV at stations A and C, beam attenuation at stations A and C, and wind stress amplitude at New Bedford during deployment 4.

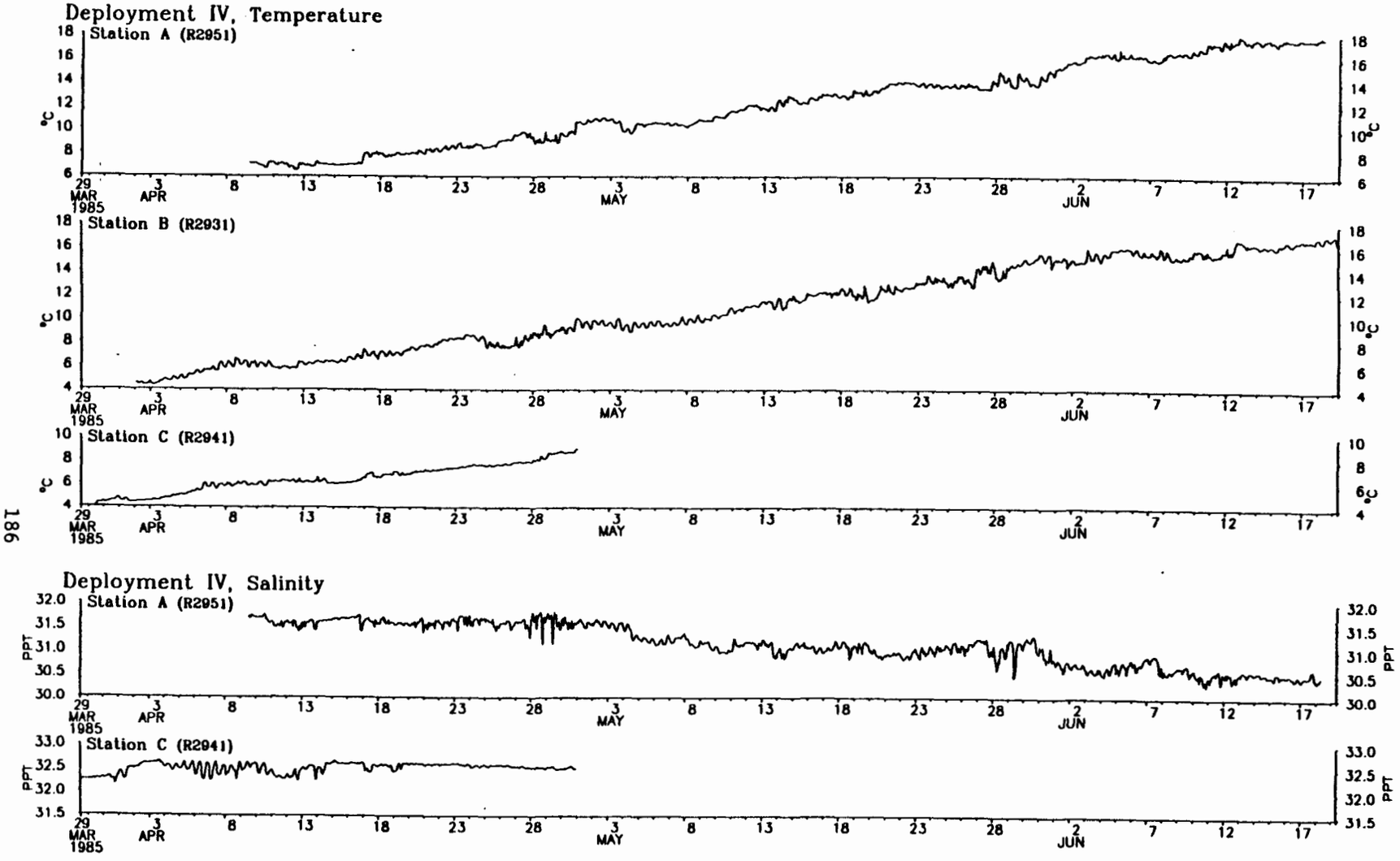


Figure 39c. Hour-averaged temperature and salinity at stations A, B, and C, during deployment 4.

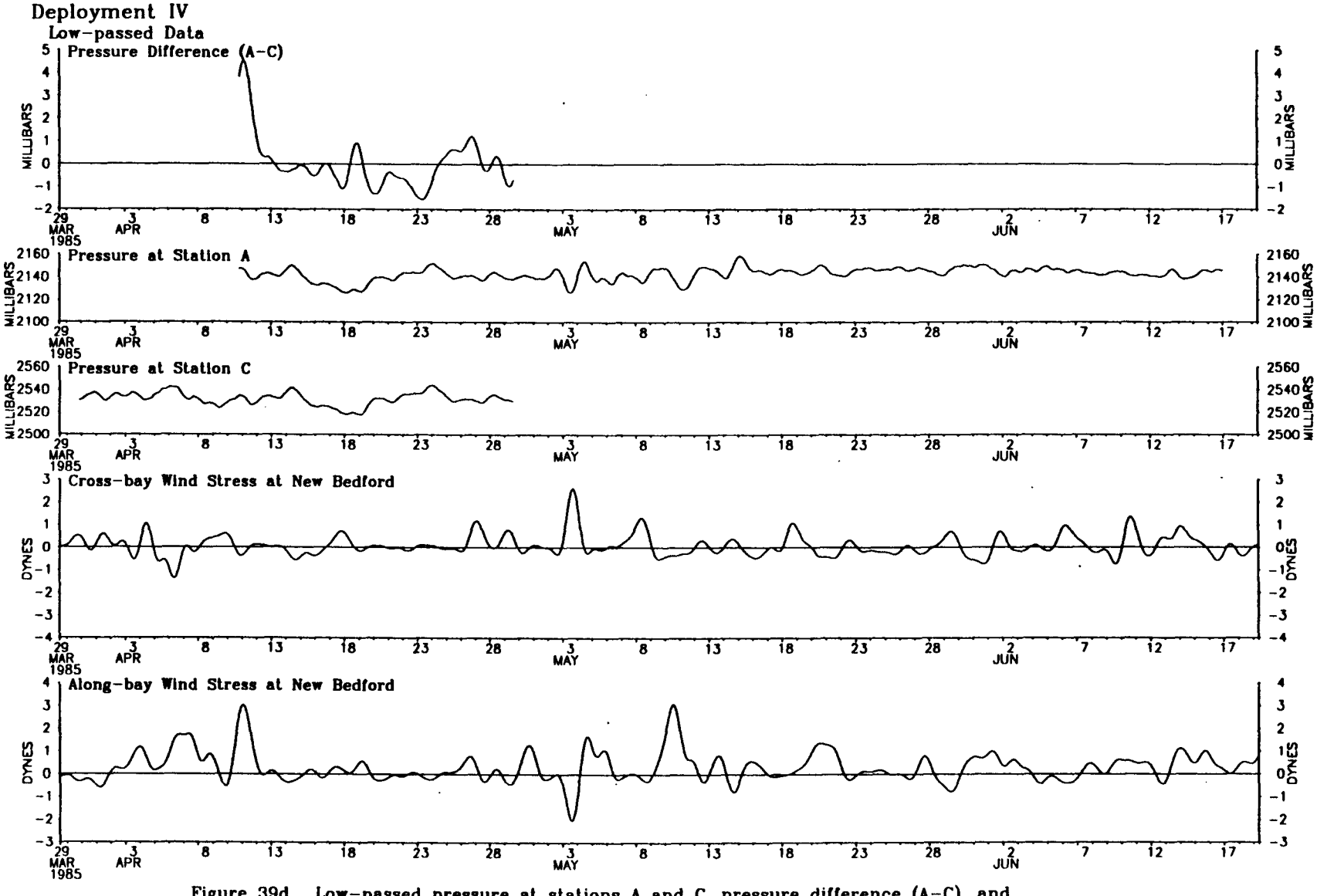


Figure 39d. Low-passed pressure at stations A and C, pressure difference (A-C), and along-bay and cross-bay wind stress at New Bedford during deployment 4.

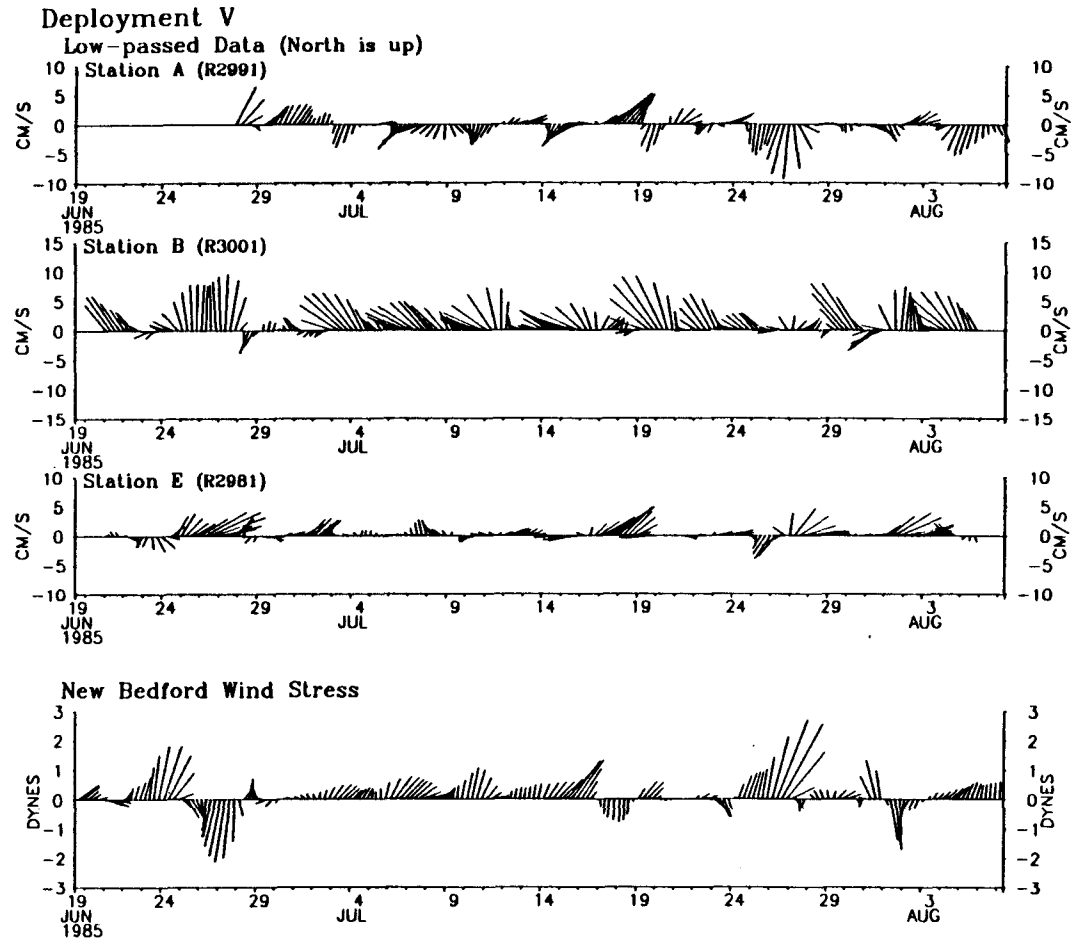


Figure 40a. Vector stickplot of low-passed current at stations A, B, and C and wind stress at New Bedford during deployment 5. North is up. Data plotted every 6 hours.

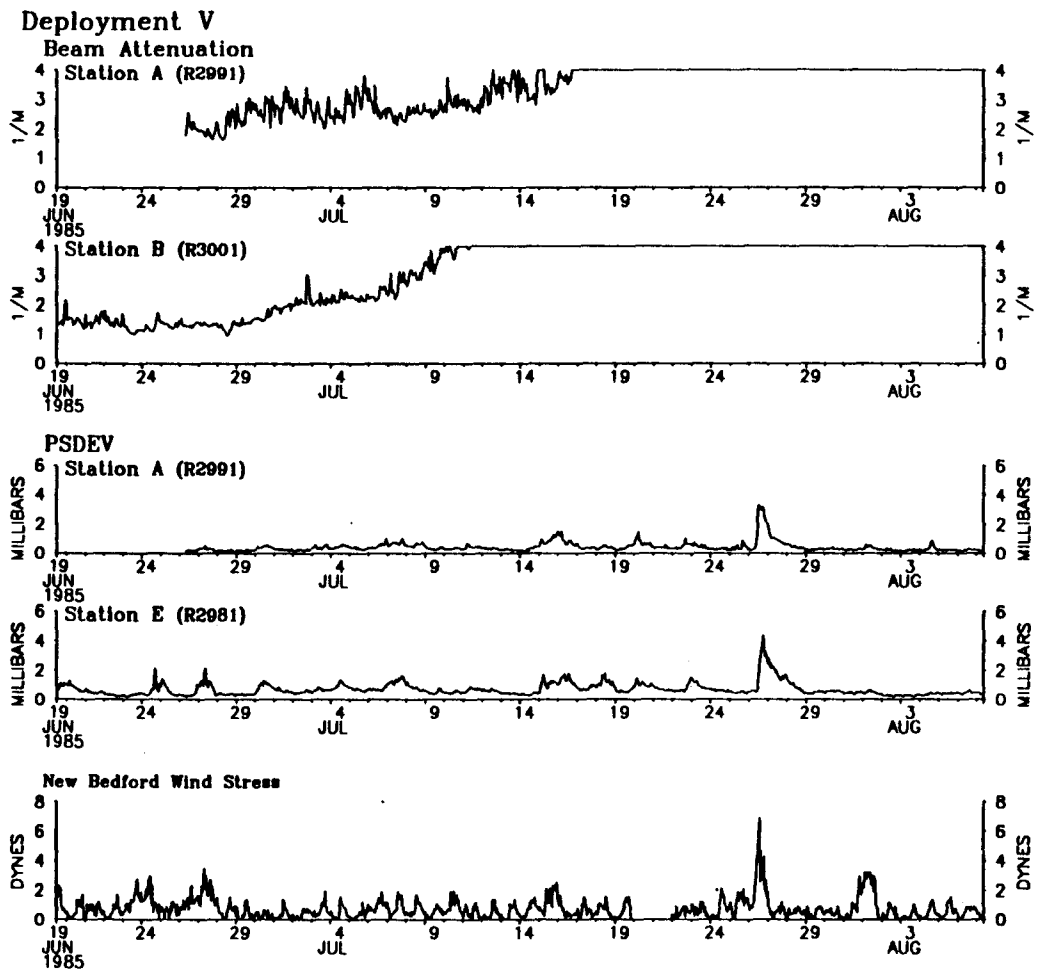


Figure 40b. Hour-averaged PSDEV at stations A and E, beam attenuation at stations A and B, and wind stress amplitude at New Bedford during deployment 5.

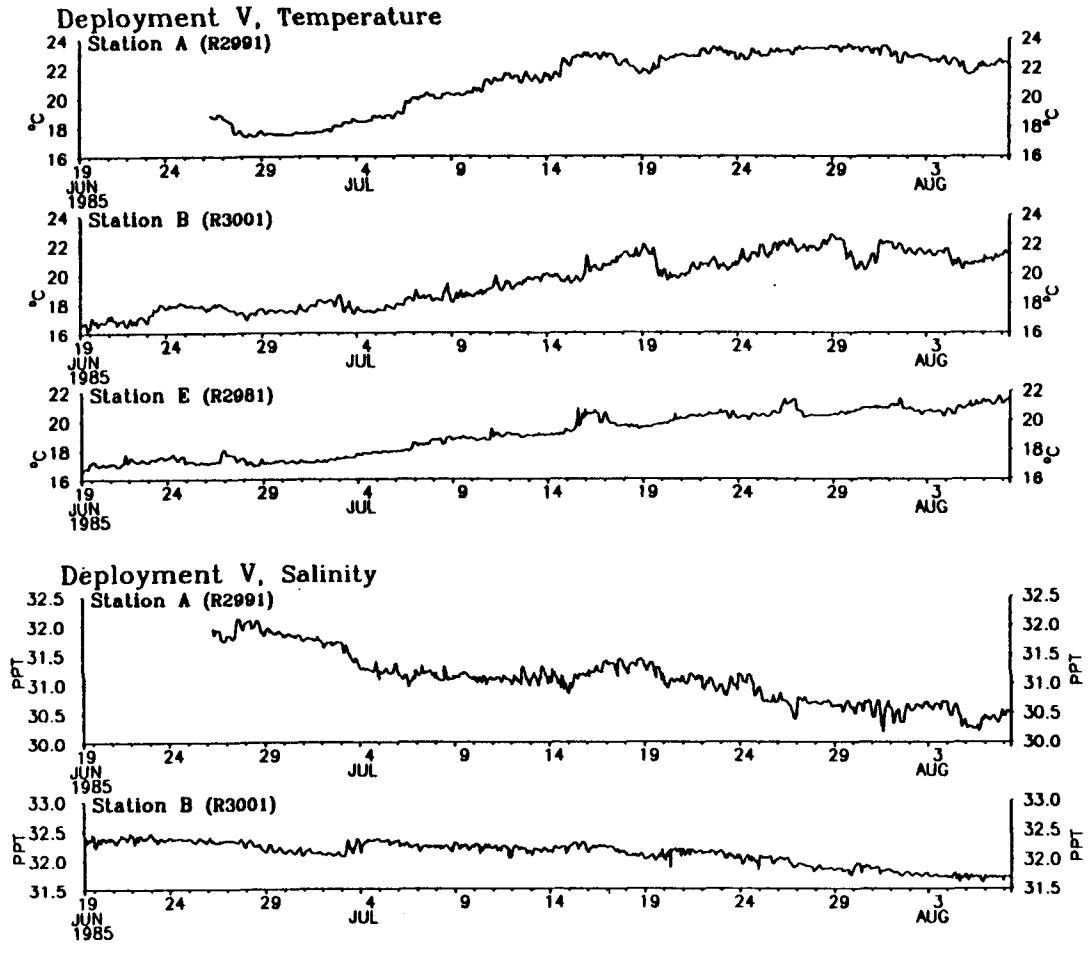


Figure 40c. Hour-averaged temperature at stations A, B, and E and salinity at stations A and B during deployment 5.

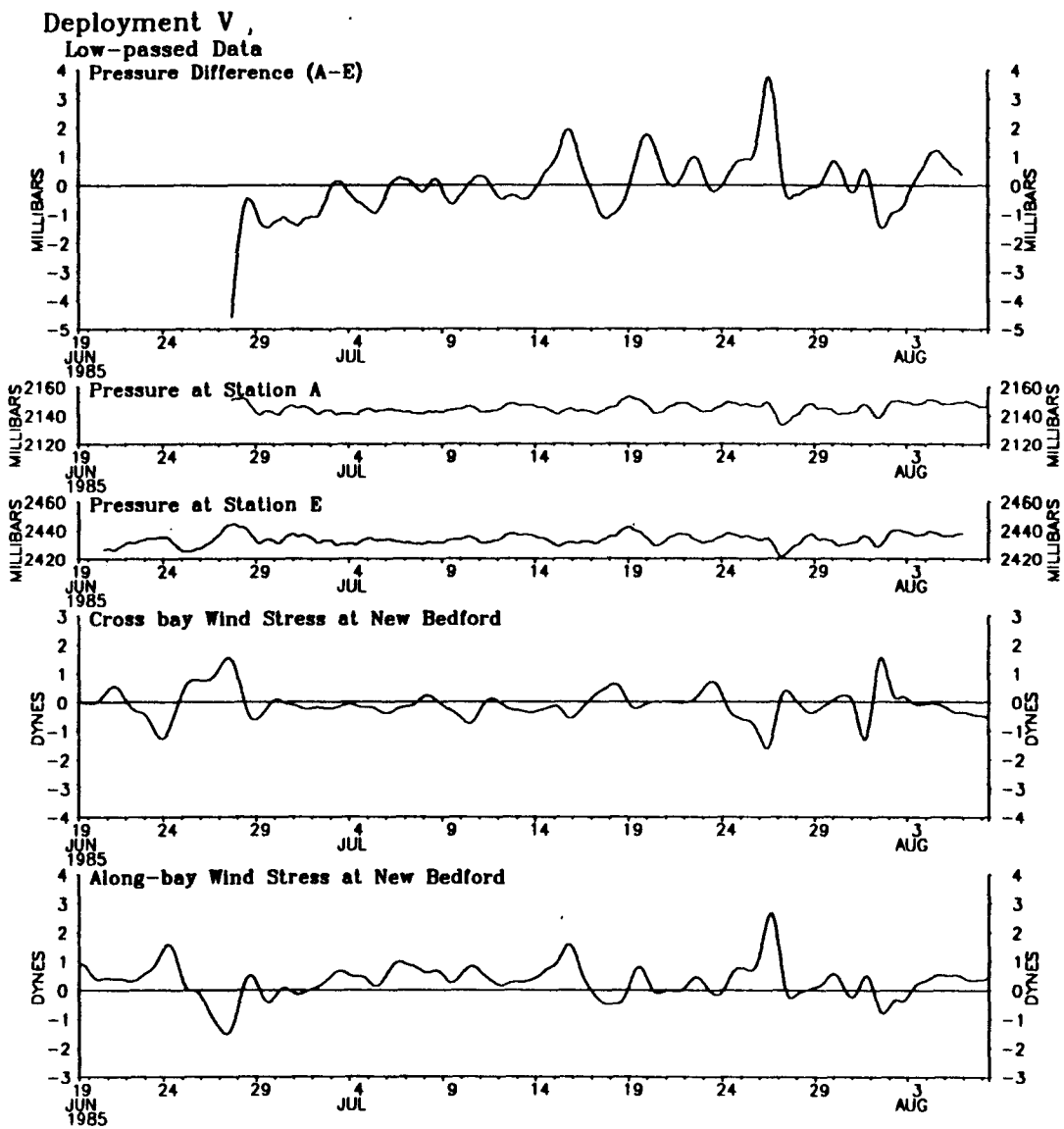


Figure 40d. Low-passed pressure at stations A and E, pressure difference (A-E), and along-bay and cross-bay wind stress at New Bedford during deployment 5.

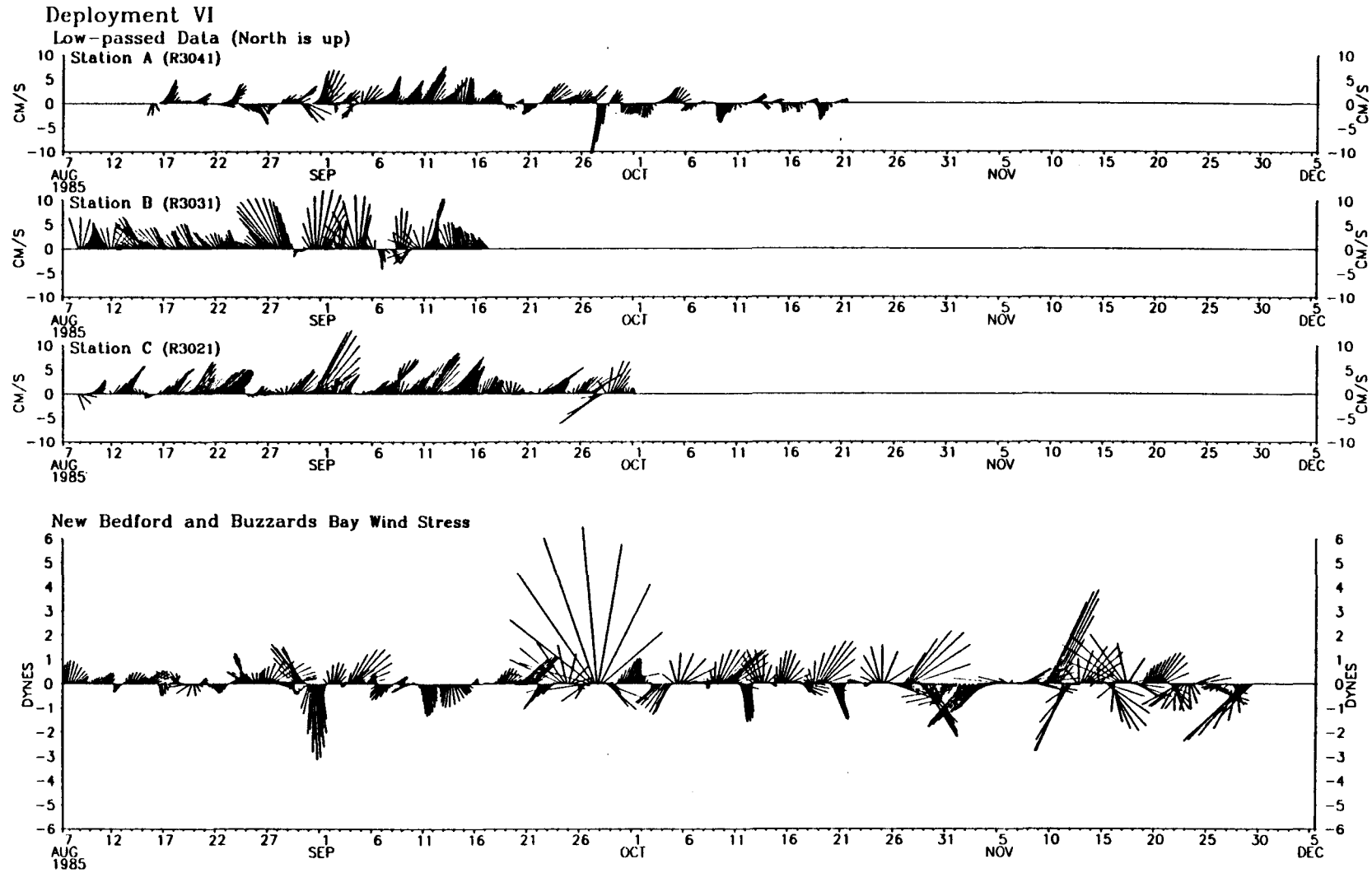


Figure 41a. Vector stickplot of low-passed current at stations A, B, and C and wind stress at New Bedford during deployment 2. North is up. Data plotted every 6 hours.

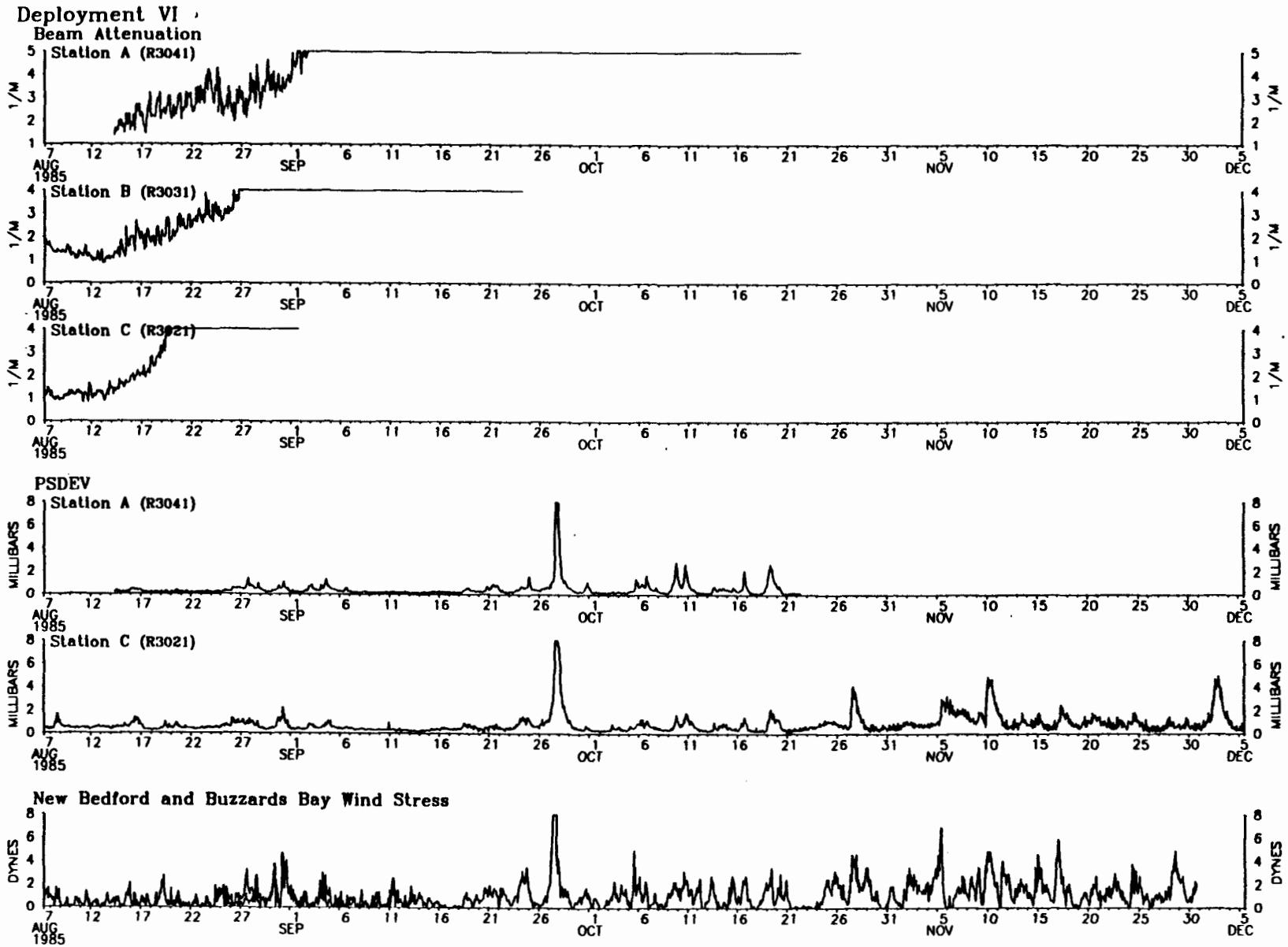


Figure 41b. Hour-averaged PSDEV at stations A and C, beam attenuation at stations A, B, and C, and wind stress at New Bedford (beginning – Sept13) and Buzzards Bay Tower (Aug 1 – end) during deployment 6.

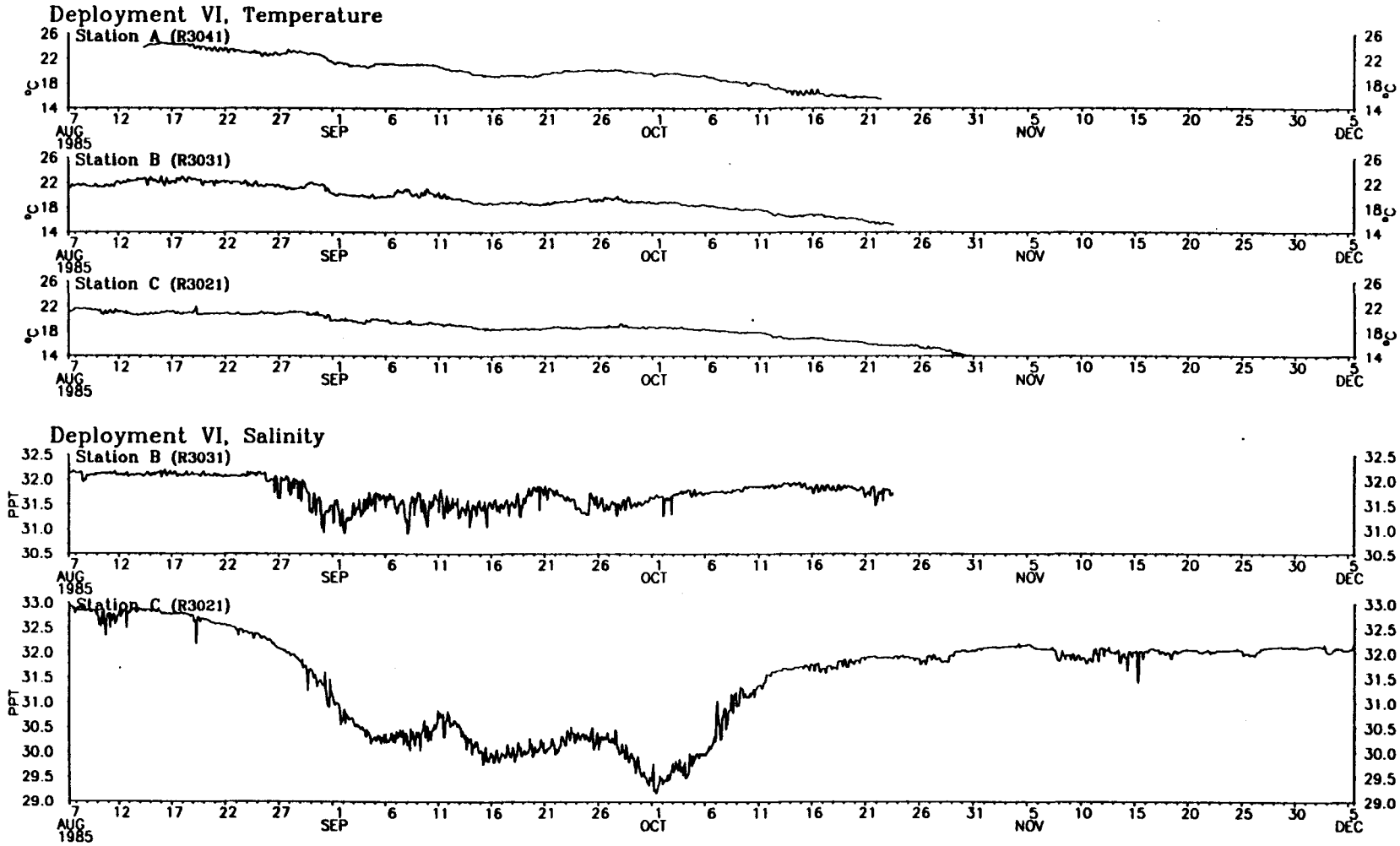


Figure 41c. Hour-averaged temperature at stations A, B, and C and salinity at stations B and C during deployment 6.

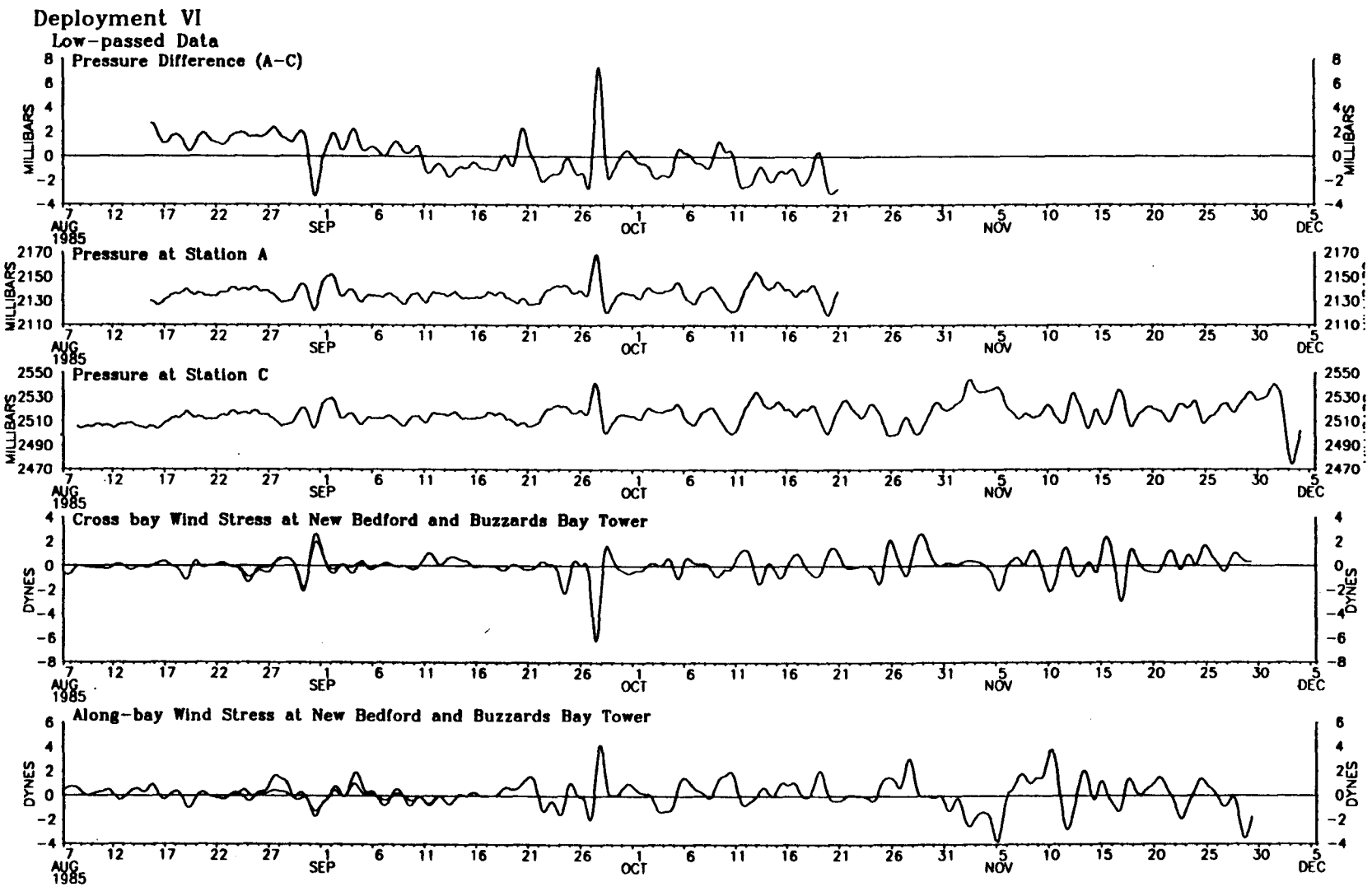


Figure 41d. Low-passed pressure at stations A and C, pressure difference (A-C), and along-bay and cross-bay wind stress at New Bedford during deployment 6.

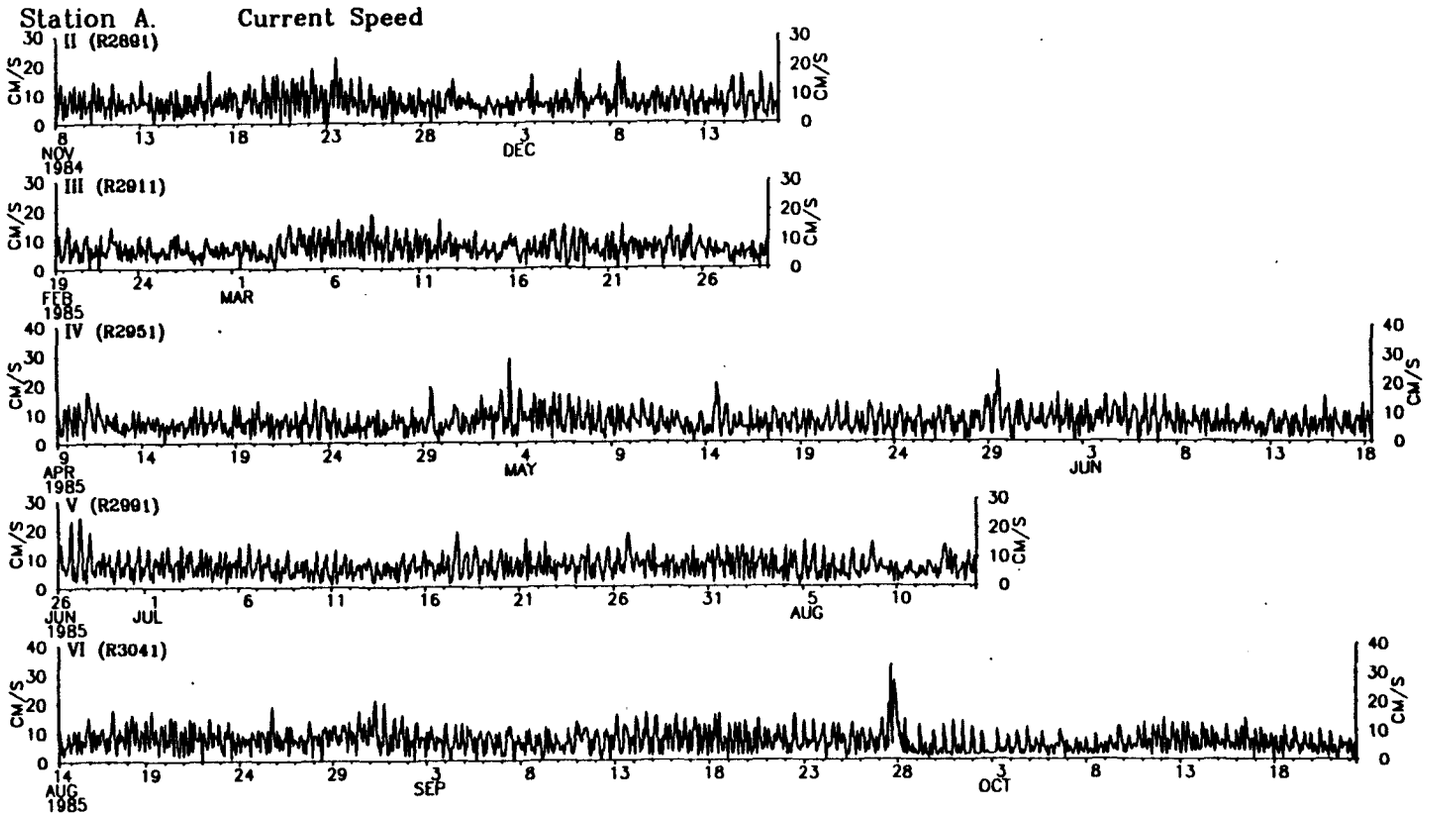


Figure 42a. Current speed at station A for deployments 2, 3, 4, 5, and 6.

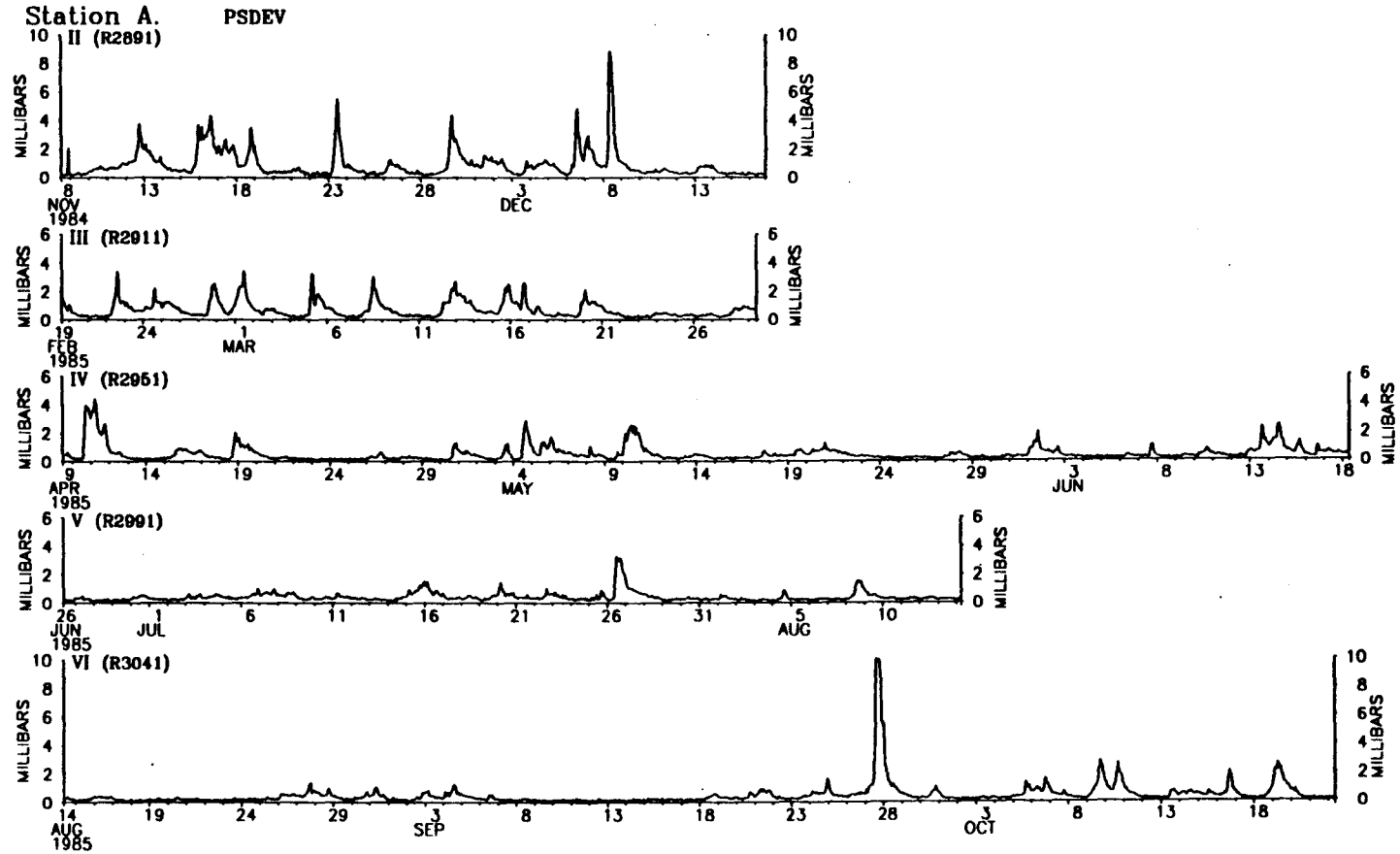


Figure 42b. PSDEV at station A for deployments 2, 3, 4, 5, and 6.

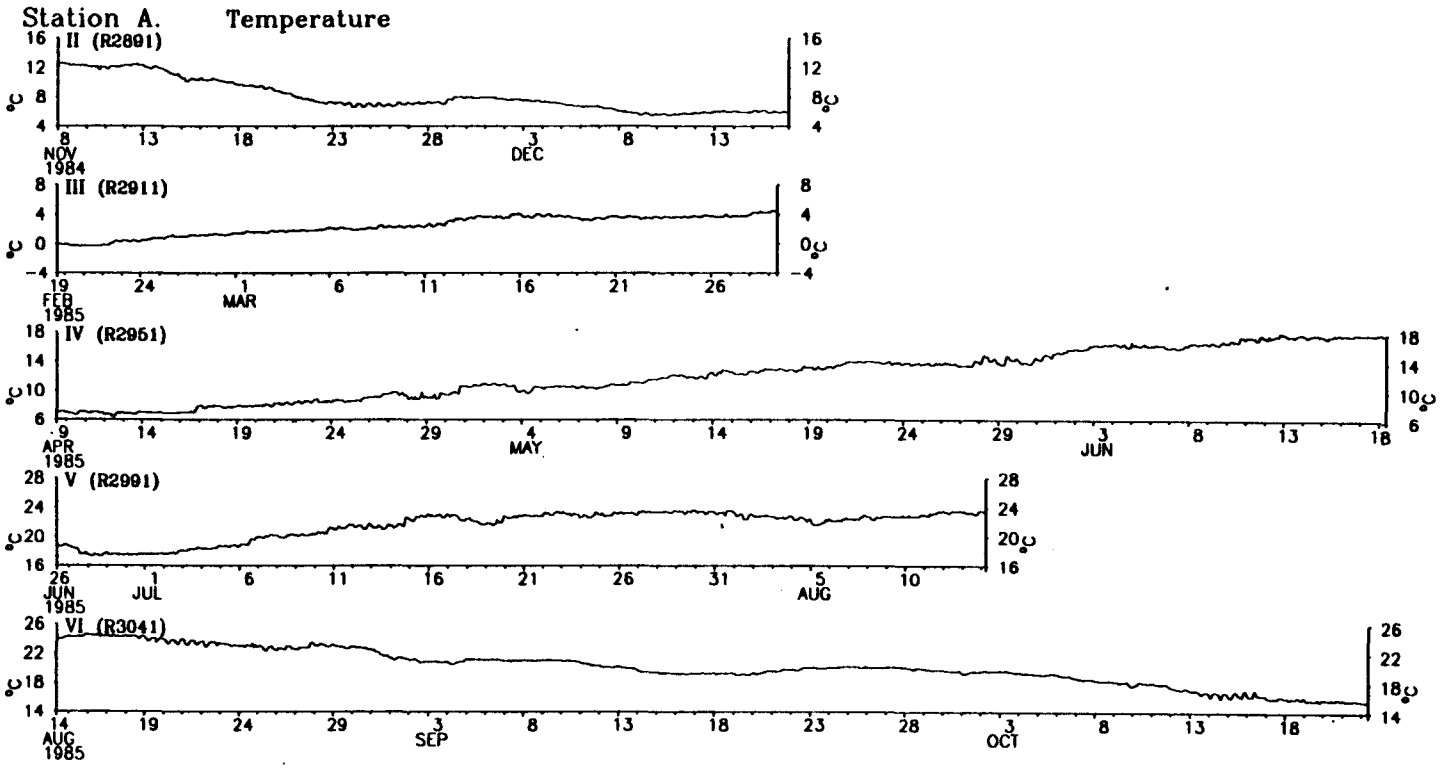


Figure 42c. Temperature at station A for deployments 2, 3, 4, 5, and 6.

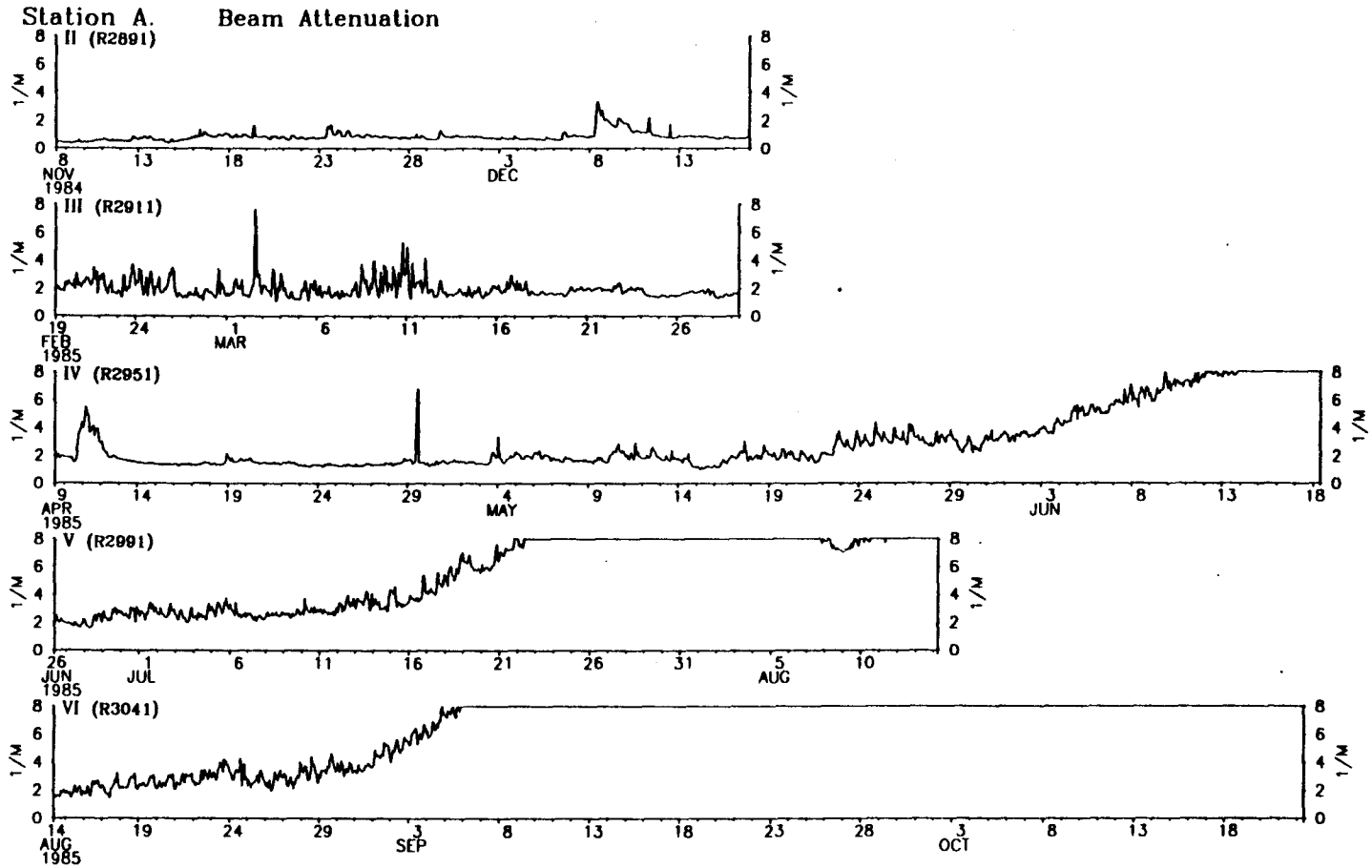


Figure 42d. Beam attenuation at station A for deployments 2, 3, 4, 5, and 6.

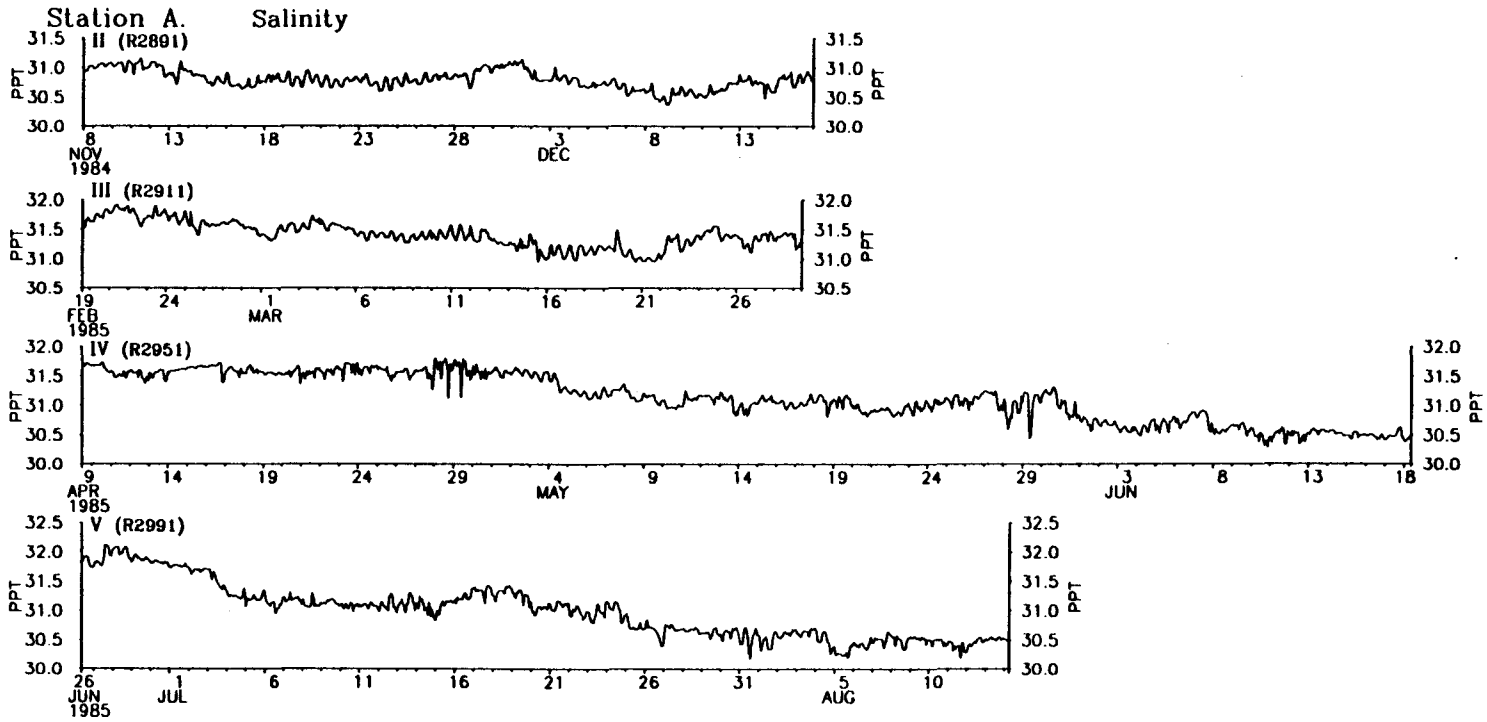


Figure 42e. Salinity at station A for deployments 2, 4, 5, and 6. The salinity sensors fouled during most deployments. See Instrument Fouling section for cautions on salinity data accuracy.

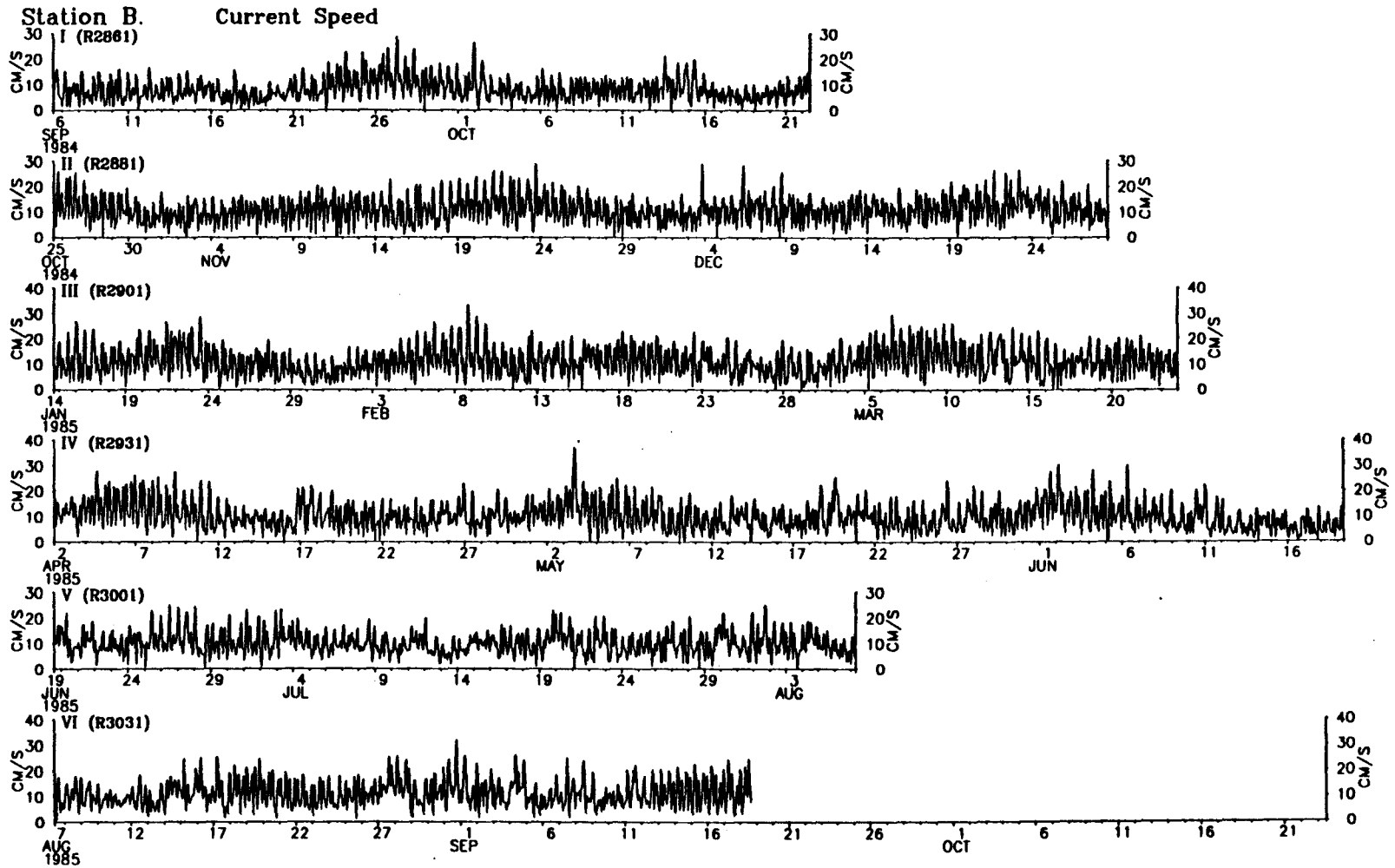


Figure 43a. Current speed at station B for deployments 1 (1mab), 2, 3, 4, 5, and 6 (4mab).

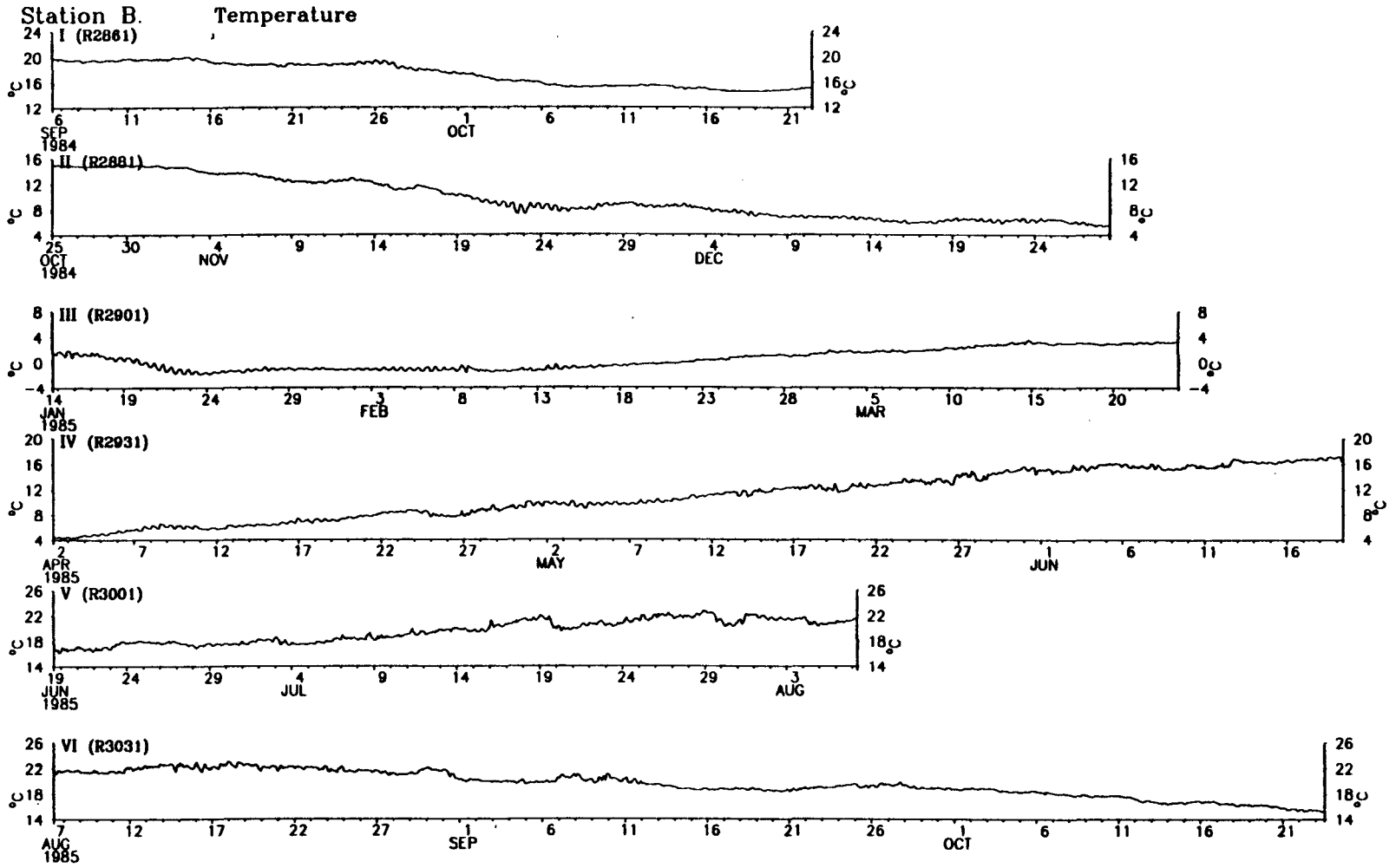


Figure 43b. Temperature at station B for deployments 1, 2, 3, 4, 5, and 6.

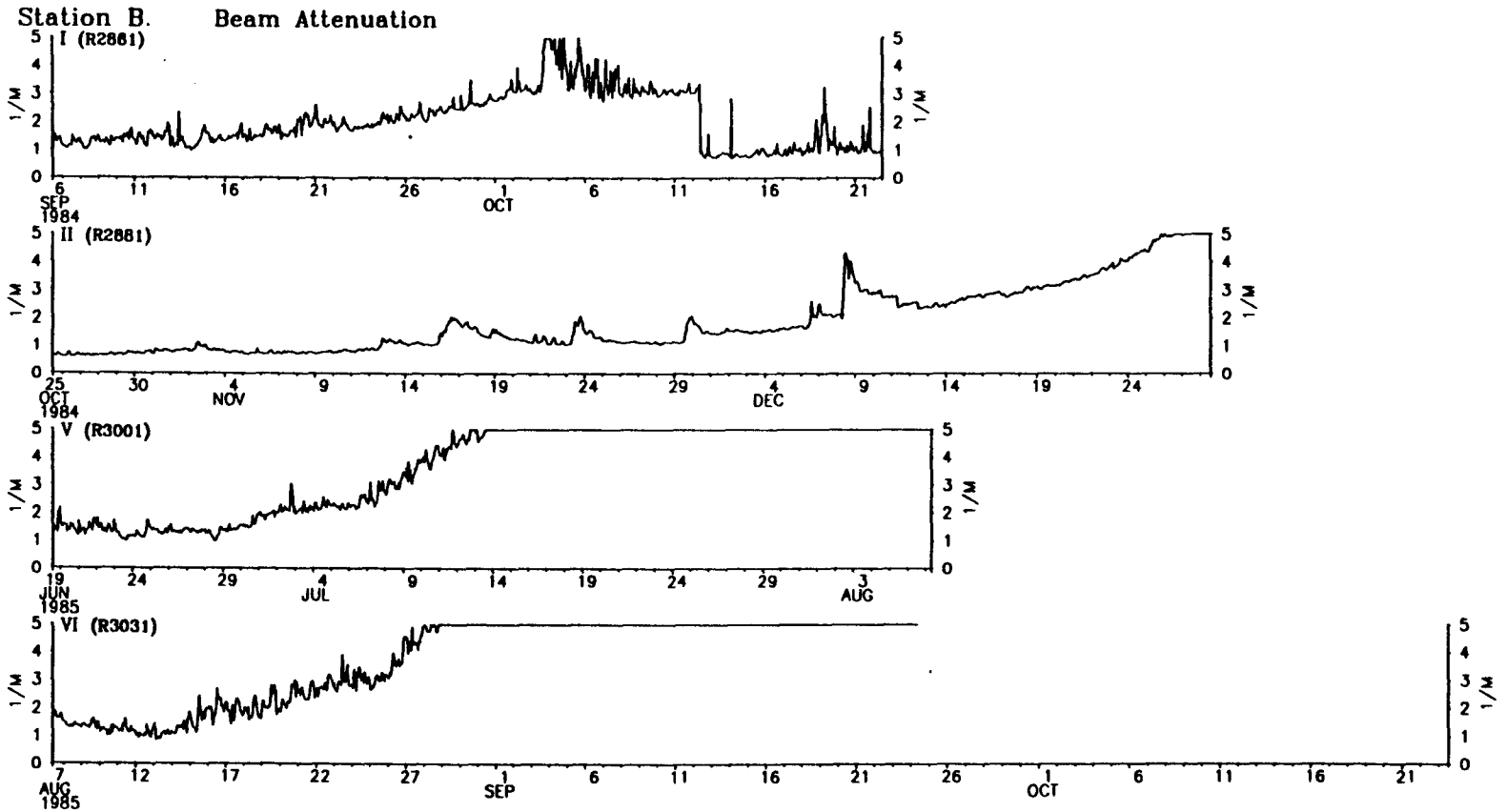


Figure 43c. Beam attenuation at station B for deployments 1, 2, 5, and 6.

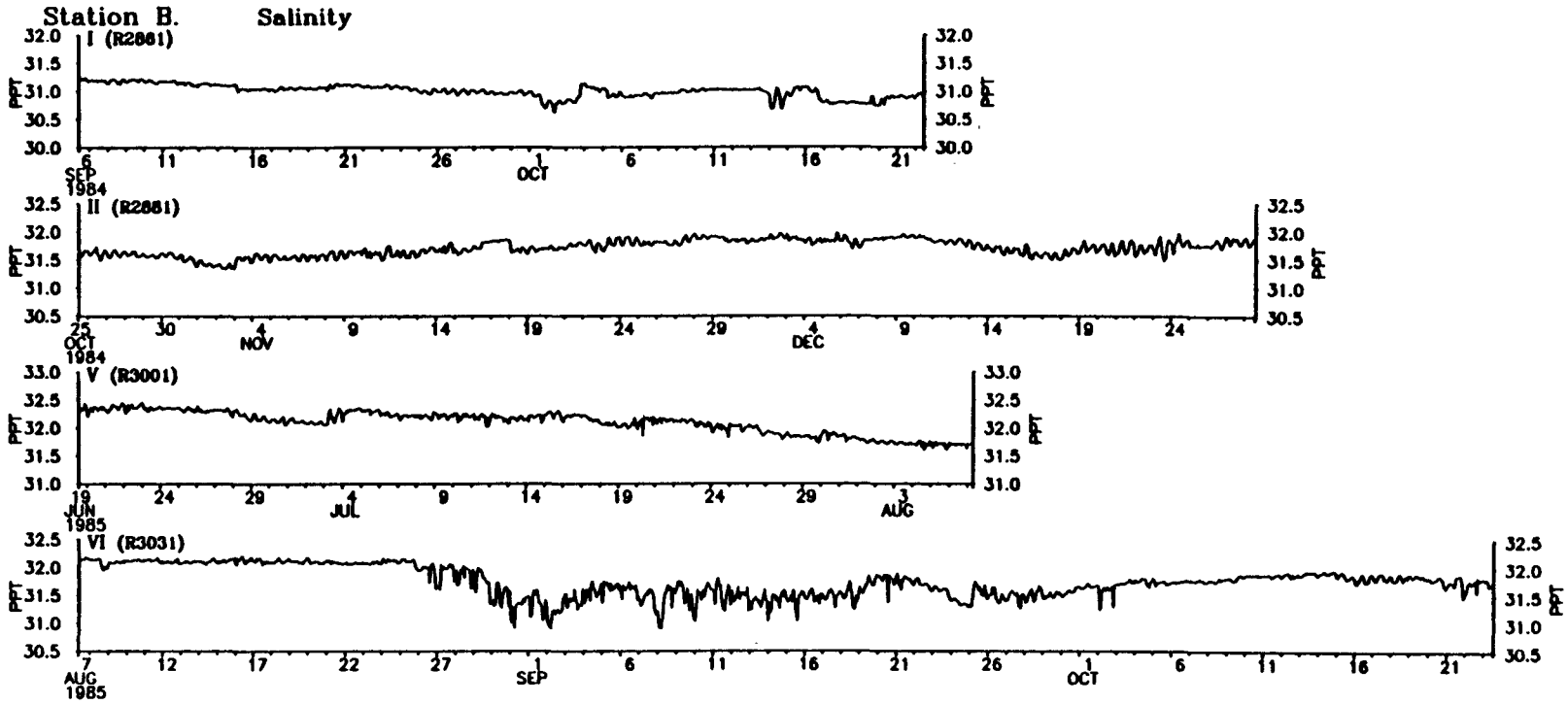


Figure 43d. Salinity at station B for deployments 1, 2, 5, and 6. The salinity sensors fouled during most deployments. See Instrument Fouling section for cautions on salinity data accuracy.

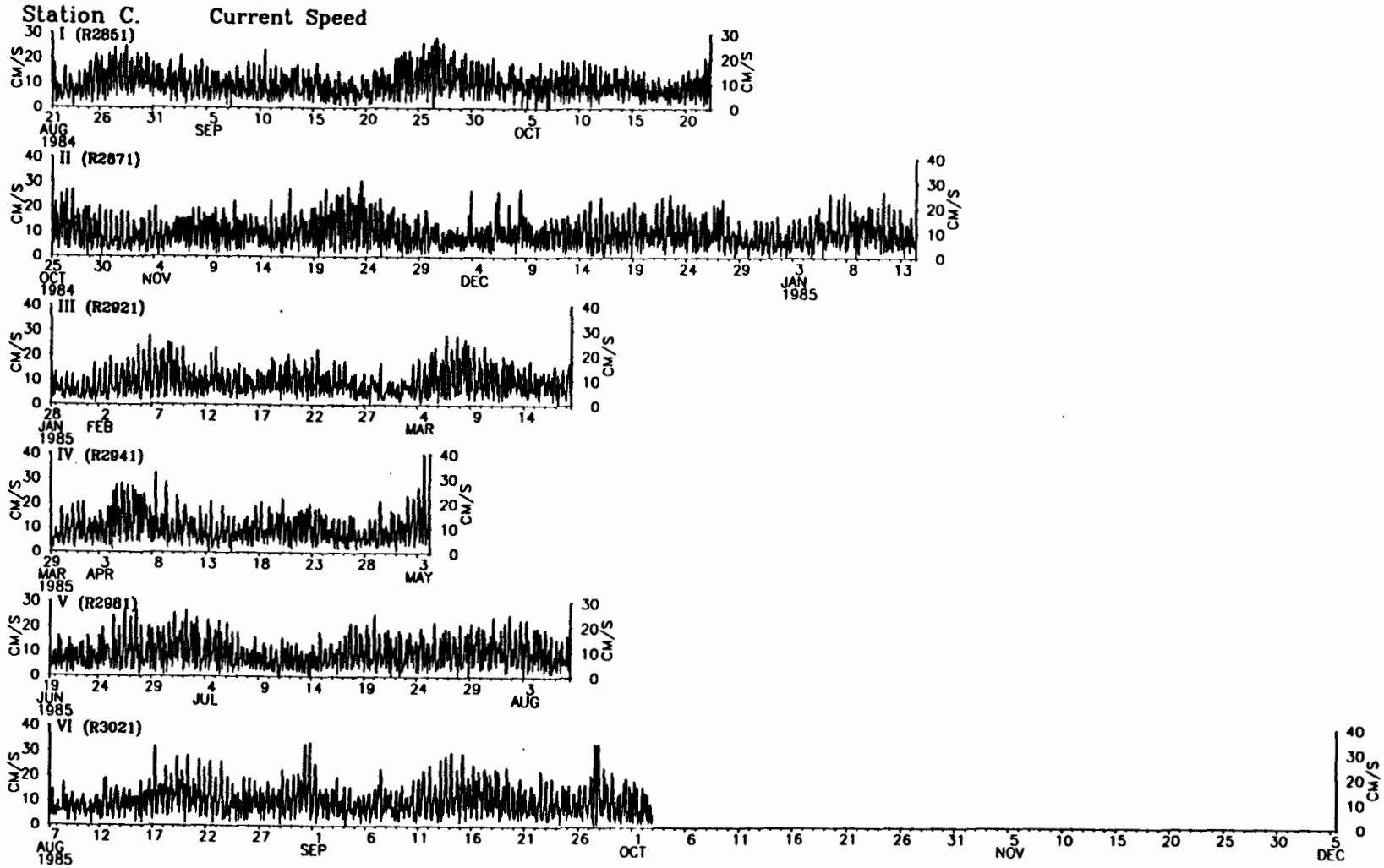


Figure 44a. Current speed at station C for deployments 1 (D), 2, 3, 4, 5 (E), and 6.

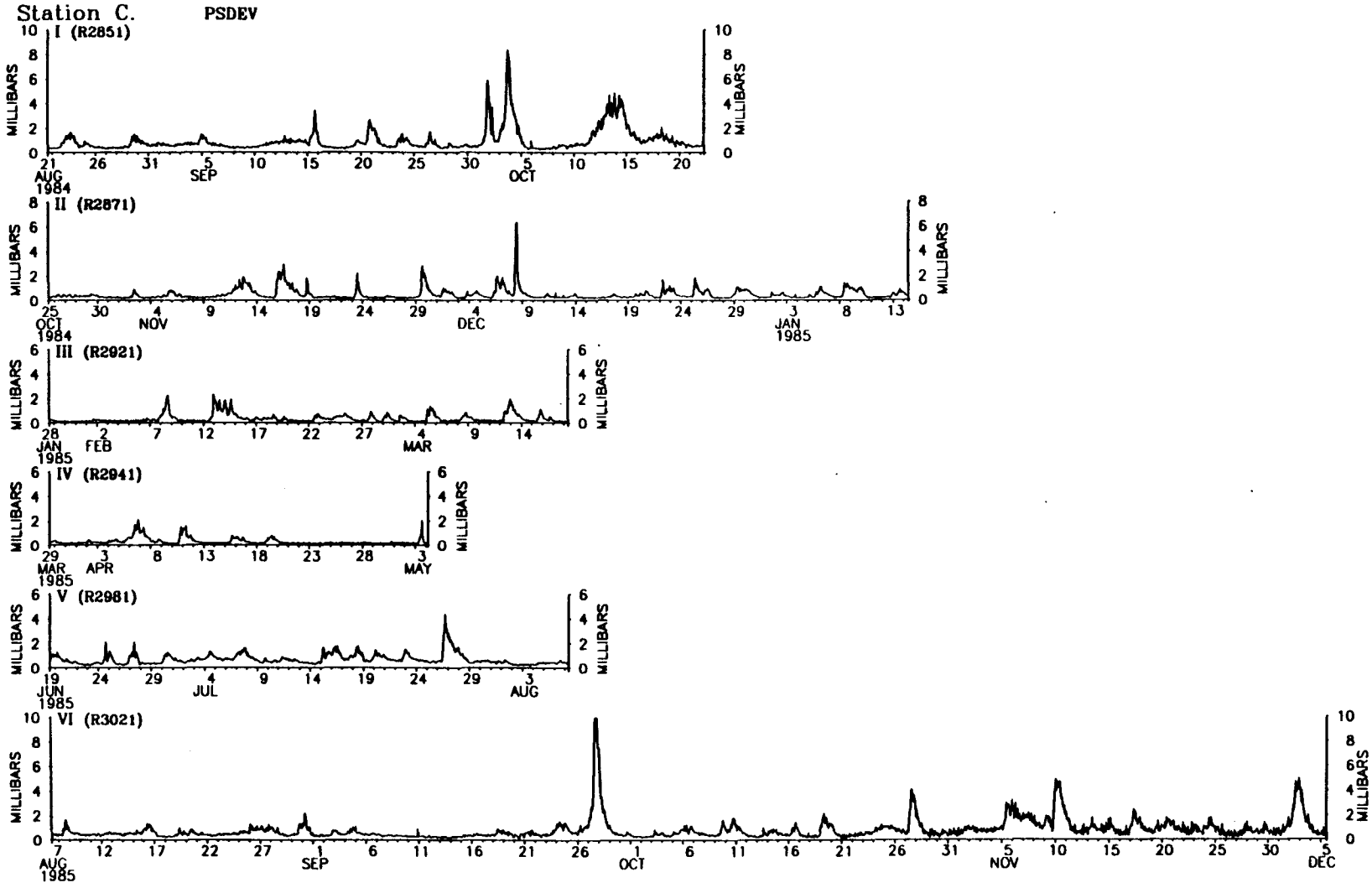


Figure 44b. PSDEV at station C for deployments 1 (D), 2, 3, 4, 5 (E), and 6.

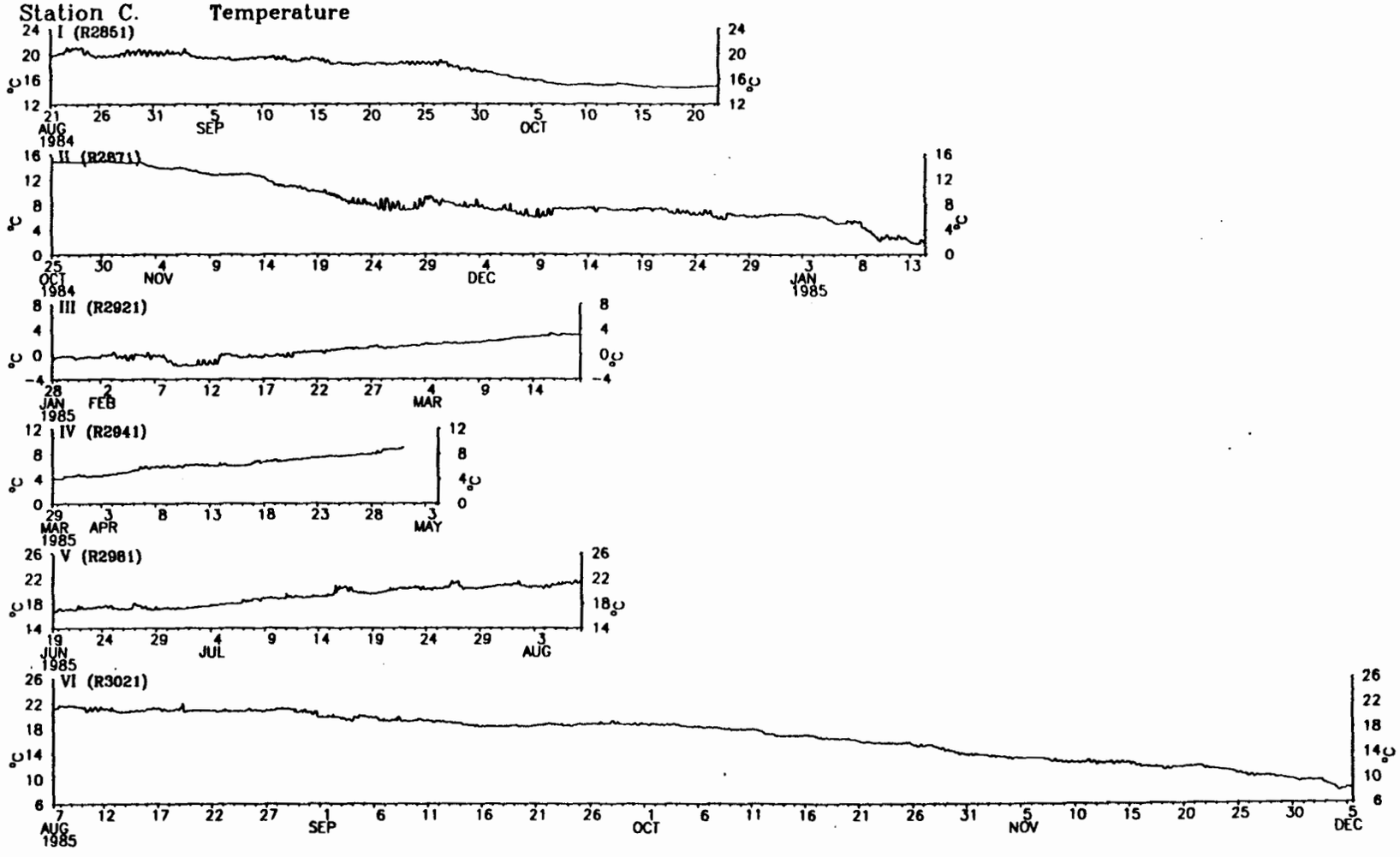


Figure 44c. Temperature at station C for deployments 1 (D), 2, 3, 4, 5 (E), and 6.

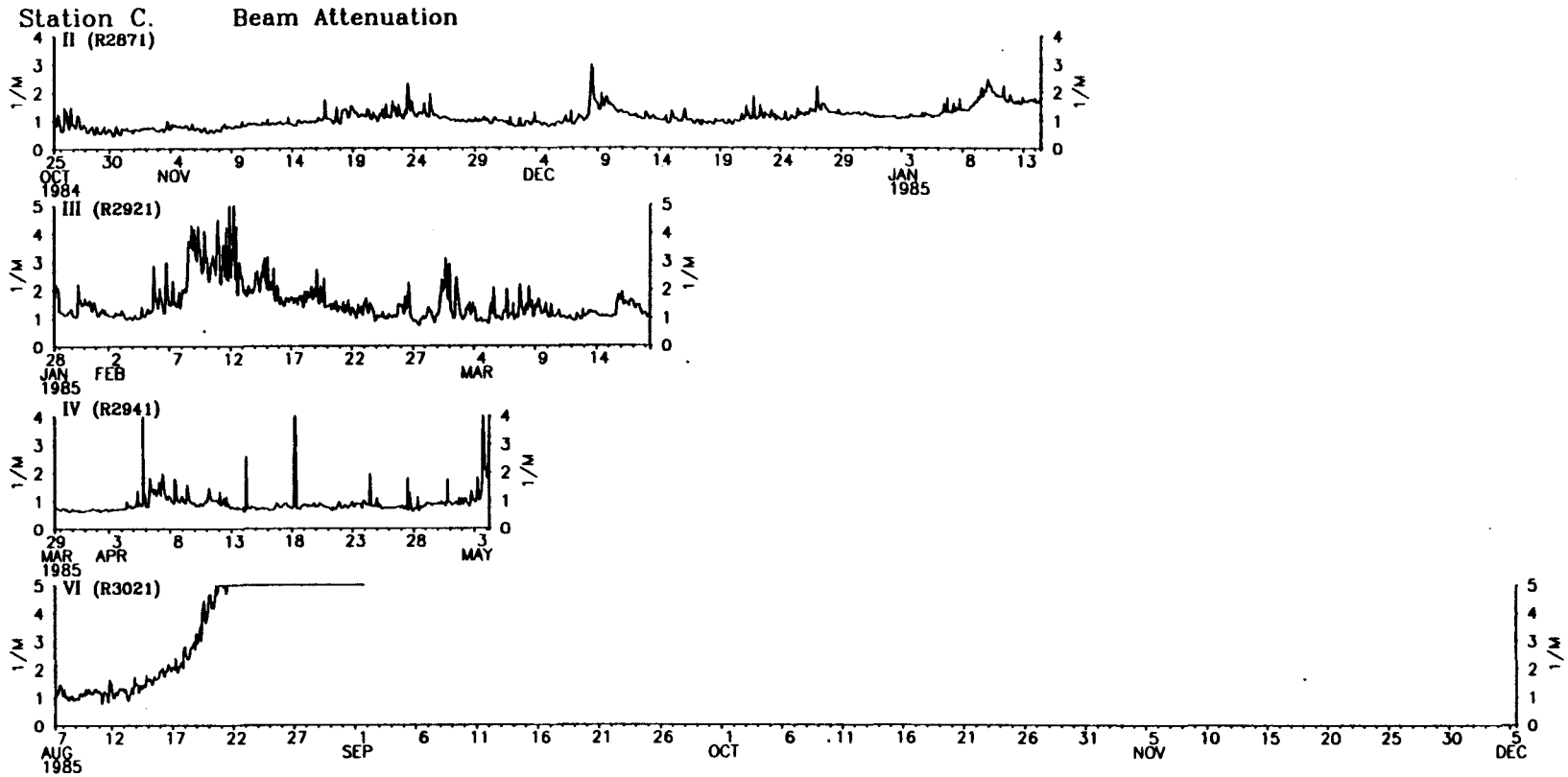


Figure 44d. Beam attenuation at station C for deployments 2, 3, 4, and 6.

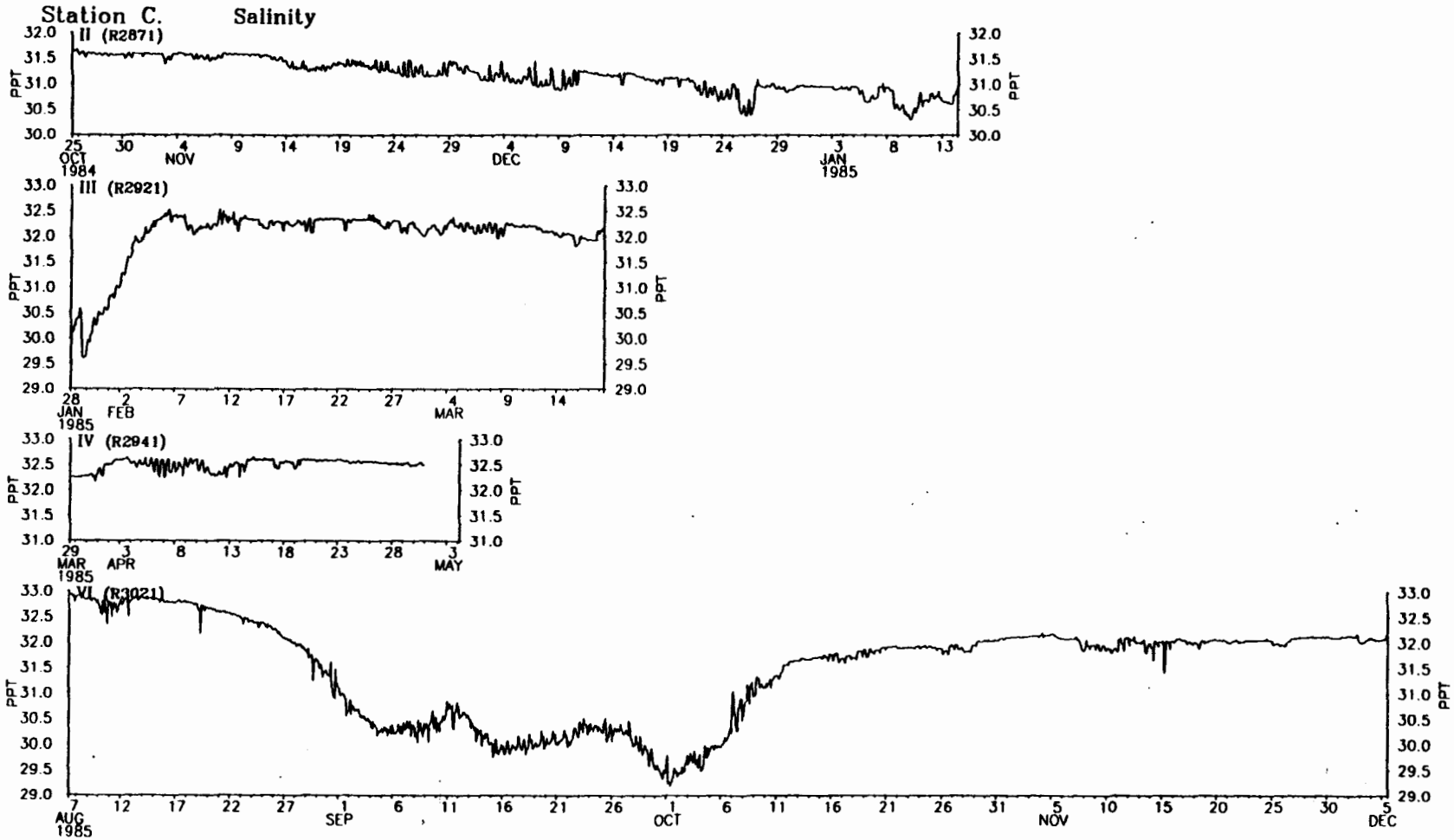


Figure 44e. Salinity at station C for deployments 2, 3, 4, and 6. The salinity sensors fouled during most deployments. See Instrument Fouling section for cautions on salinity data accuracy.

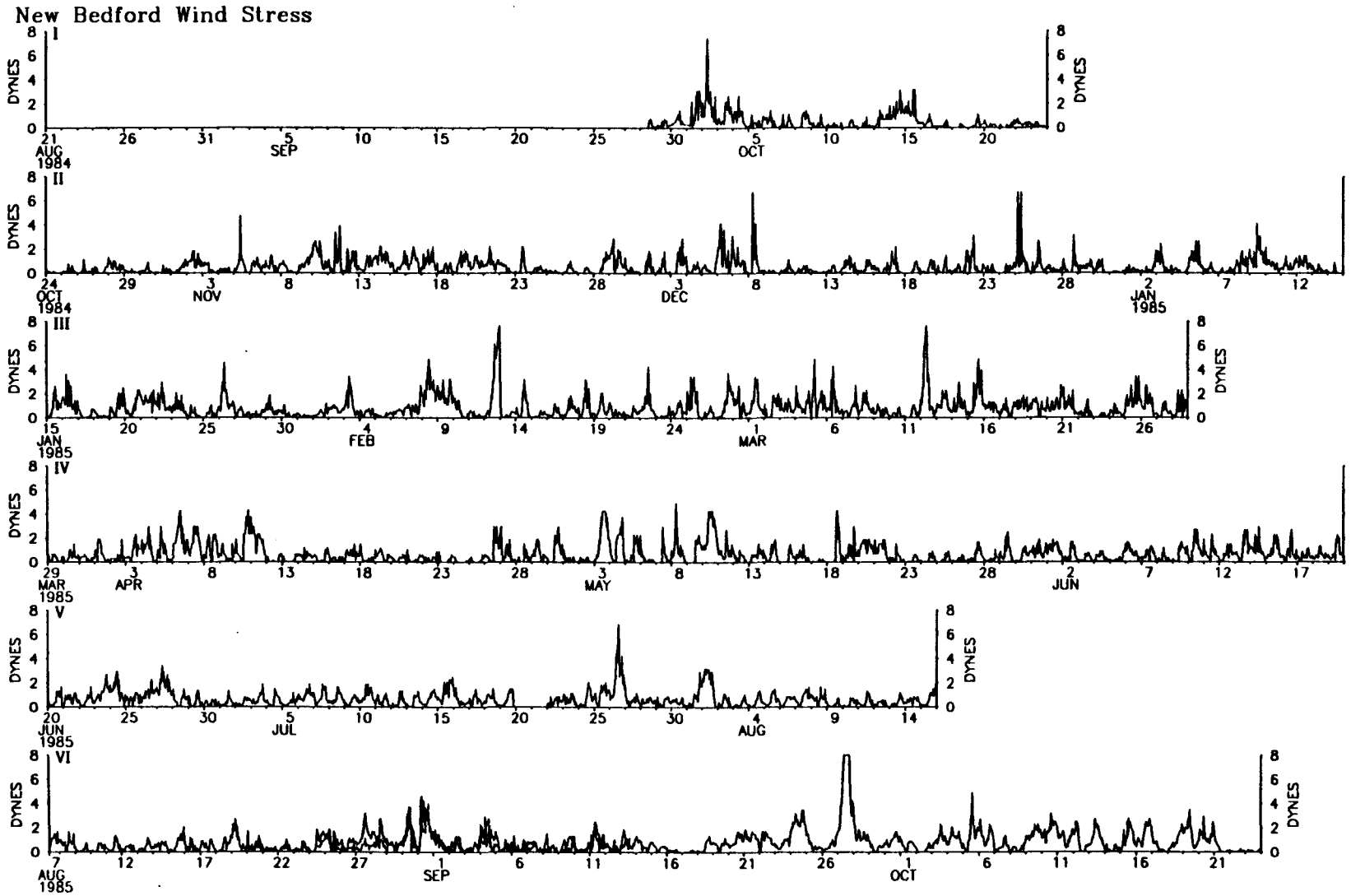


Figure 45a. Wind stress amplitude at New Bedford for deployments 1, 2, 3, 4, 5, and 6. (Note For deployment 6, wind stress from Buzzards Bay Tower was used from Aug 20 – end).

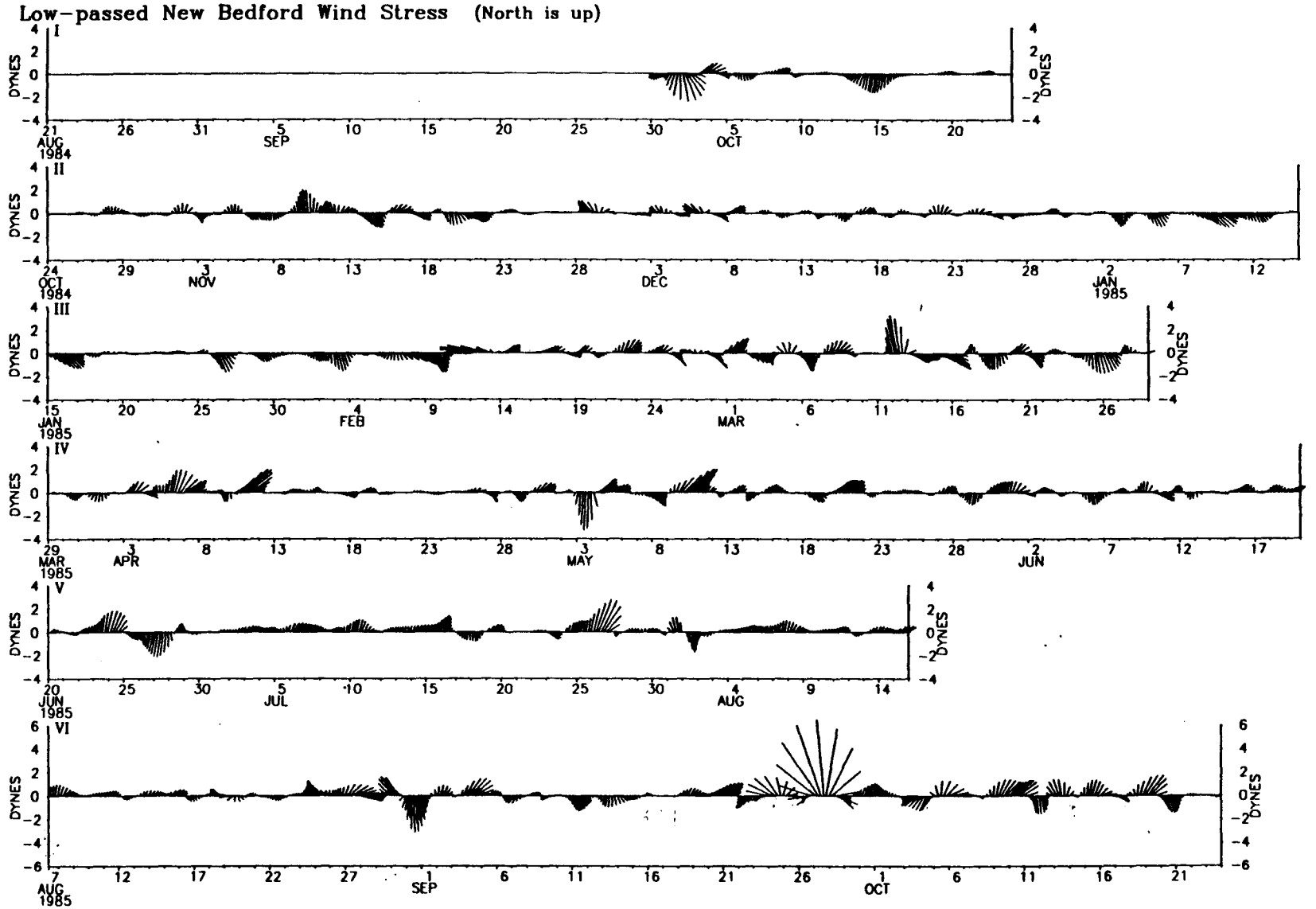


Figure 45b. Low-passed wind stressat New Bedford for deployments 1, 2, 3, 4, 5, and 6. (Note For deployment 6, wind stress from Buzzards Bay Tower was used from Aug 20 – end).