

NOAA Data Report ERL PMEL-21



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FISHERIES-OCEANOGRAPHY COORDINATED INVESTIGATIONS (FOCI)  
SURFACE METEOROLOGICAL OBSERVATIONS AT CHERNI ISLAND AND  
UGAIUSHAK ISLAND - FISCAL YEAR 1986

S. Allen Macklin

Pacific Marine Environmental Laboratory  
Seattle, Washington  
January 1988

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NATIONAL OCEANIC AND  
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UNITED STATES  
DEPARTMENT OF COMMERCE

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Secretary

NATIONAL OCEANIC AND  
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Environmental Research  
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FISHERIES-OCEANOGRAPHY COORDINATED INVESTIGATIONS (FOCI)  
Surface Meteorological Observations at Cherni Island and  
Ugaiushak Island, Fiscal Year 1986\*

S. Allen Macklin

## 1. INTRODUCTION

The data presented in this report were collected in partial support of the Fisheries-Oceanography Coordinated Investigations (FOCI), a program conducted jointly by the Pacific Marine Environmental Laboratory (PMEL) and the Northwest and Alaska Fisheries Center (NWAFC). The goal of FOCI is to better understand the physical and biological causes of variations in abundance of fish and shellfish populations with an emphasis on recruitment and year-class phenomena. The long-range objective is to improve prediction of changes in abundance before recruitment to the fishable populations.

The major field sampling activities, including remote weather station operations, conducted by FOCI during fiscal year (FY) 1986 (1 October 1985 through 30 September 1986) are summarized by Incze et al. (1987). This report presents time series of wind, temperature, and pressure collected at two sites in the FOCI research area - Cherni Island and Ugaiushak Island (Fig 1). Both of these observatories were originally established by the Outer Continental Shelf Environmental Assessment Program (OCSEAP) Research Unit 666, Alaska Peninsula Winds. Operations were continued during FY86 in order to continue the historical record begun in FY85 (Macklin, 1987).

## 2. WEATHER STATION DESCRIPTIONS

An OCSEAP station established in June 1984 on Cherni Island, 65 km south of Cold Bay, continued to sample hourly measurements of surface wind, air pressure, and air temperature from the start of the fiscal year until mid-February when the station failed. Winds were measured at 6 m and temperature and pressure at 2 m above station elevation. Sensors employed were an R.M. Young 05103 wind monitor, a Paroscientific 215-AW-002 digiquartz pressure sensor (serial no. 16033), and a YSI 44212 thermistor (serial no. 10107) mounted in a radiation shield. The meteorological sensors were connected to a modified Synergetics 3400 data collection platform which averaged and transmitted the data. Winds were vector averaged over a 12-minute interval centered on the hour; pressure and temperature were sampled instantaneously at the end of the wind averaging period. Data were transmitted to the GOES-West satellite every three hours.

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On April 14, 1986, a remote weather station was deployed on Ugaiushak Island. This platform was located at the same site occupied during the previous spring for OCSEAP research. Station configuration, data averaging and transmission were similar to the Cherni Island station. Sensors serial numbers were 1085 for the wind monitor, 21538 for the pressure transducer, and 8601 for the thermistor.

### **3. DATA PRESENTATION**

Data from the two remote weather stations are presented in the form of time series plots. Cherni Island data are contained in Fig. 2a-e and Ugaiushak Island data in Fig. 3a-f. Each plot page contains data from one station collected during a calendar month. Variables are plotted hourly in the form of vector-averaged wind speed, maximum wind speed, vector-averaged wind direction, instantaneous wind direction (Cherni Island only), air temperature, east-west and north-south vector-averaged wind components, vector-averaged wind sticks, and station pressure.

Independent monitoring of Ugaiushak Island data transmissions by the National Weather Service suggested that a correction of +5.0 mb be applied to Ugaiushak Island station pressure to compute sea-level pressure.

### **4. ACKNOWLEDGMENTS**

The support of the Outer Continental Shelf Environmental Assessment Program is appreciated for the loan of equipment, as are NOAA's Office of Aircraft Operations and the U.S. Coast Guard for helicopter transportation. G. Galasso and P. Moen installed and maintained the weather stations.

This report is a contribution to the Marine Services program at NOAA's Pacific Marine Environmental Laboratory and is contribution FOCI-0024 to the Fisheries-Oceanography Coordinated Investigations.

### **5. REFERENCES**

- Incze, L.S., J. Gray, J.D. Schumacher, A.W. Kendall, Jr., K.M. Bailey, S.A. Macklin, 1987: Fisheries-Oceanography Coordinated Investigations (FOCI) Field Operations — 1986. NOAA Data Report ERL PMEL-20, 64 pp.
- Macklin, S.A., 1987: Coastal Winds of the Southeast Alaska Peninsula. NOAA Technical Memorandum ERL PMEL-73, 131 pp.

Table 1. Names, locations, elevations above mean sea level, and operating dates and times of Cherni Island and Ugaiushak Island remote weather stations during FY86.

Station Name	North Latitude & West Longitude (°, ')	Elevation (m)	Operating Period (GMT)	
Cherni Island	54 37.8 162 22.8	29.0	85/10/01 86/02/17	0000 to 0300
Ugaiushak Island	56 47.6 156 51.1	33.6	86/04/14 86/09/12	2200 to 1900

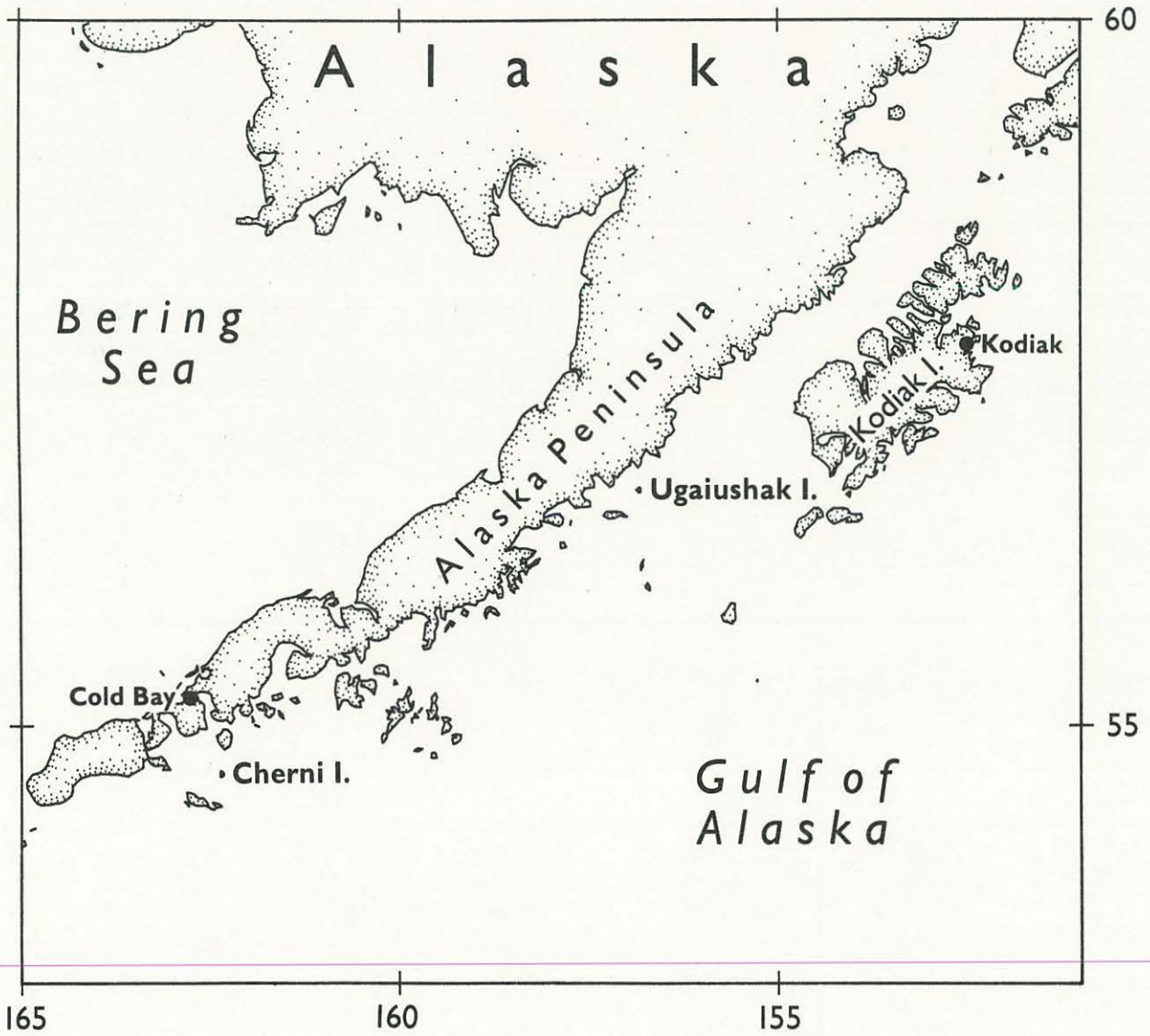


Figure 1.--Locations of weather stations on Cherni and Ugaiushak Islands.



TIME SERIES PLOT FOR CHERNI ISLAND  
 1 OCT 85 TO 31 OCT 85    INTERVAL= 60.0 MINS

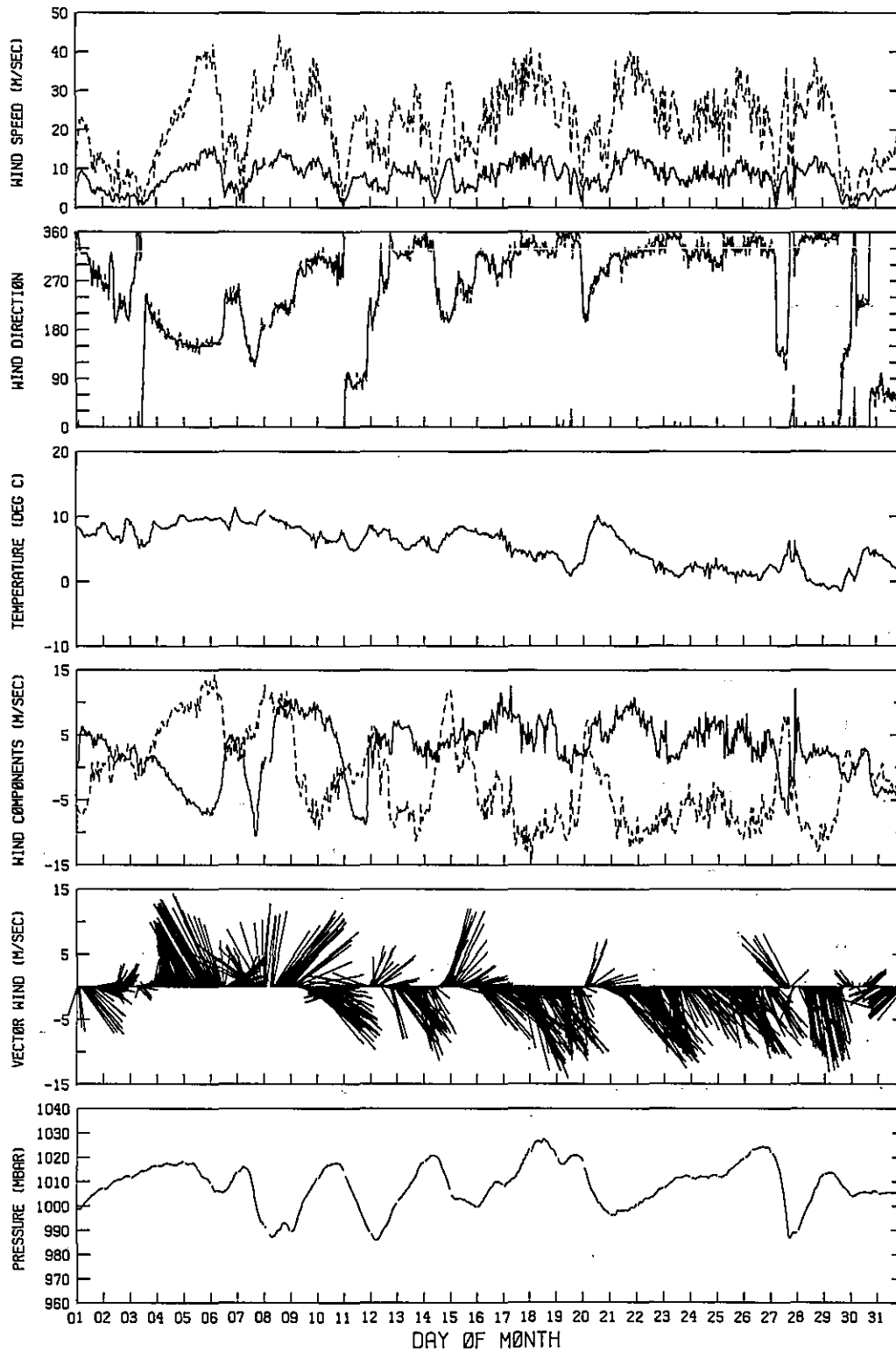


Figure 2a.--Cherni Island. Hourly observations of wind speed (solid line), wind gust (dashed line), wind direction (meteorological convention; solid line is averaged, dashed line is instantaneous), air temperature, east-west (solid line) and north-south (dashed line) wind components (oceanographic convention), vector wind (oceanographic convention) and station pressure, October 1985.

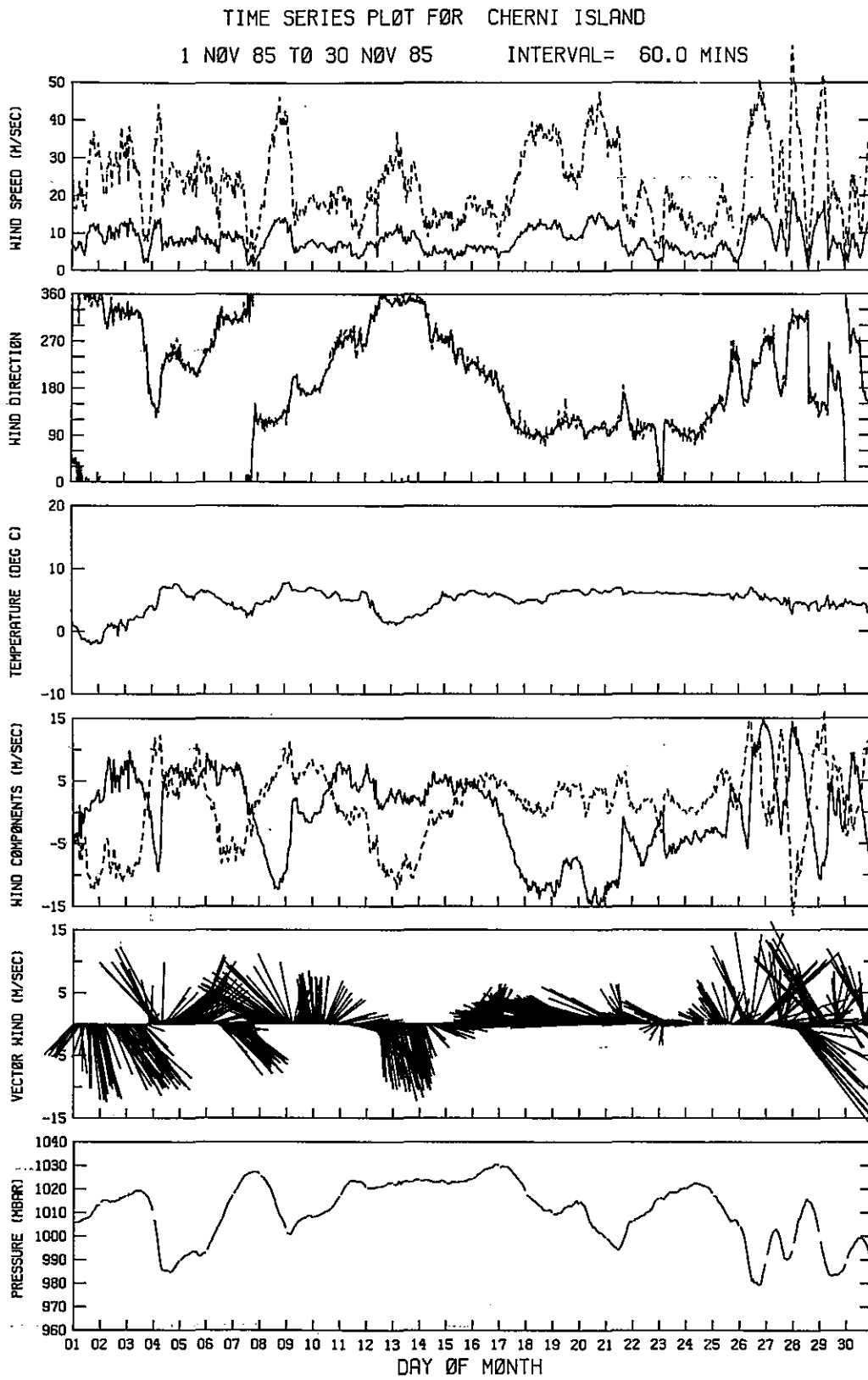


Figure 2b.--Same as Figure 2a, except for November 1985.

TIME SERIES PLOT FOR CHERNI ISLAND  
1 DEC 85 TO 31 DEC 85      INTERVAL= 60.0 MINS

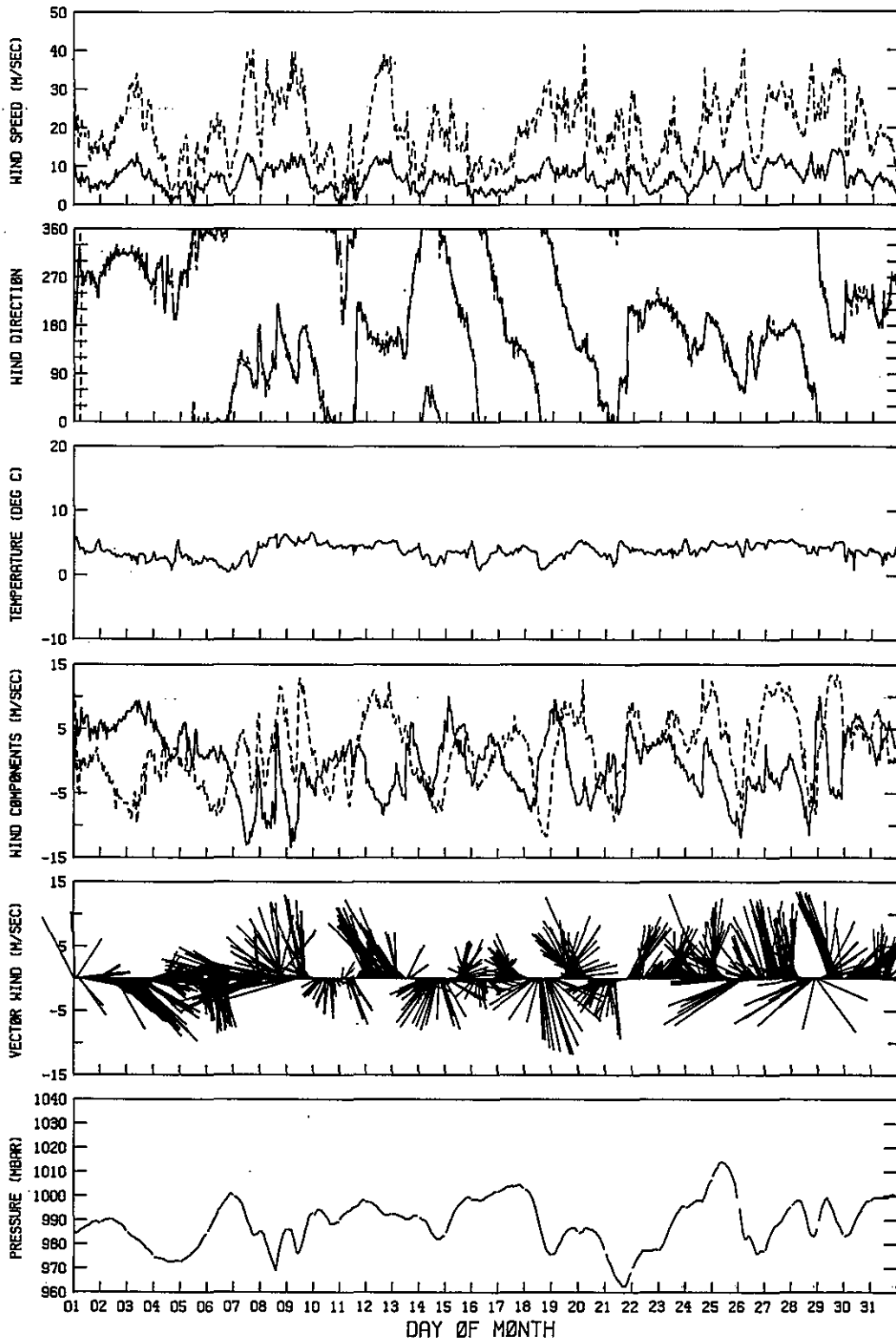


Figure 2c.--Same as Figure 2a, except for December 1985.

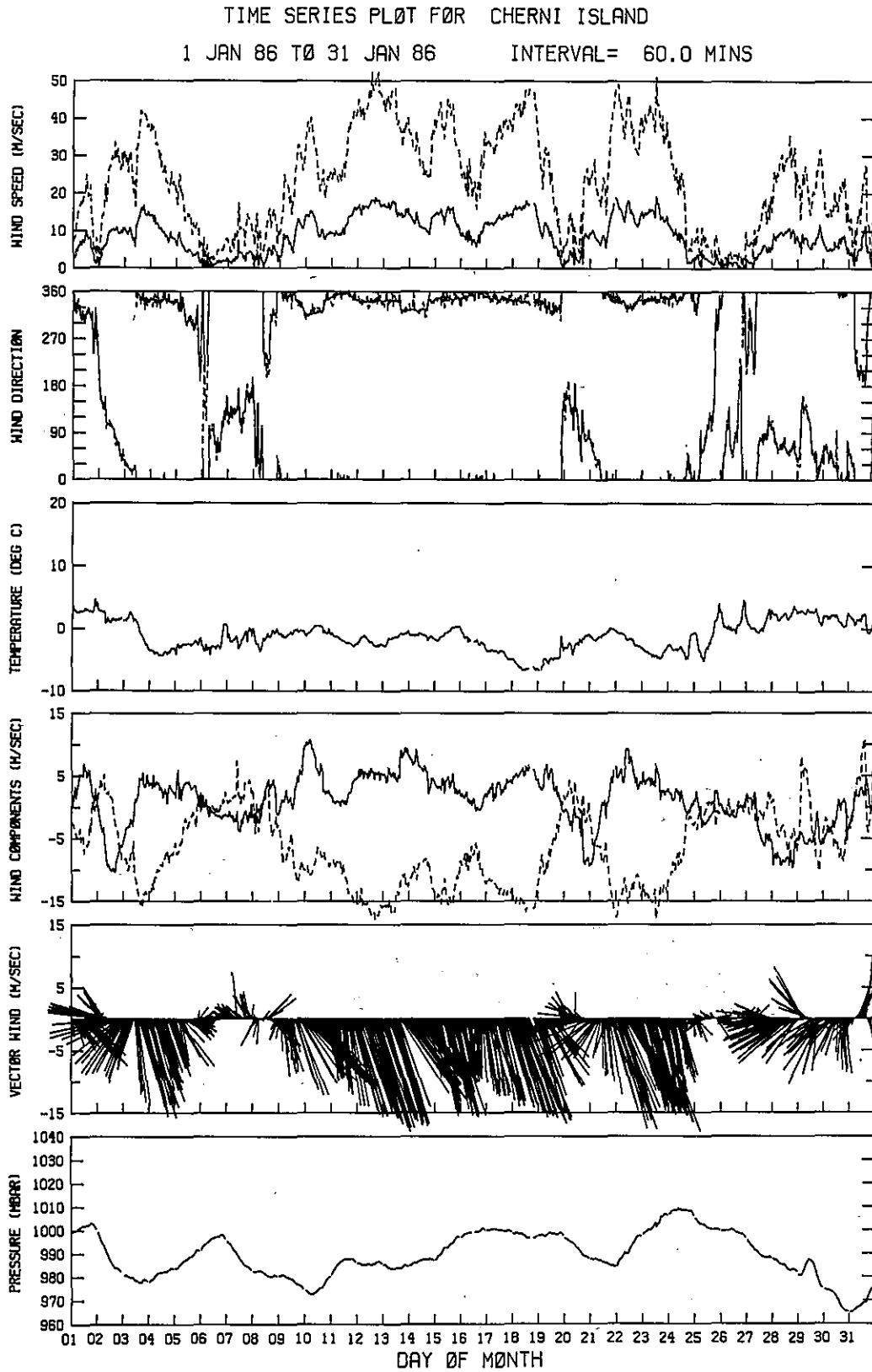


Figure 2d.--Same as Figure 2a, except for January 1986.

TIME SERIES PLOT FOR CHERNI ISLAND  
1 FEB 86 TO 28 FEB 86      INTERVAL= 60.0 MINS

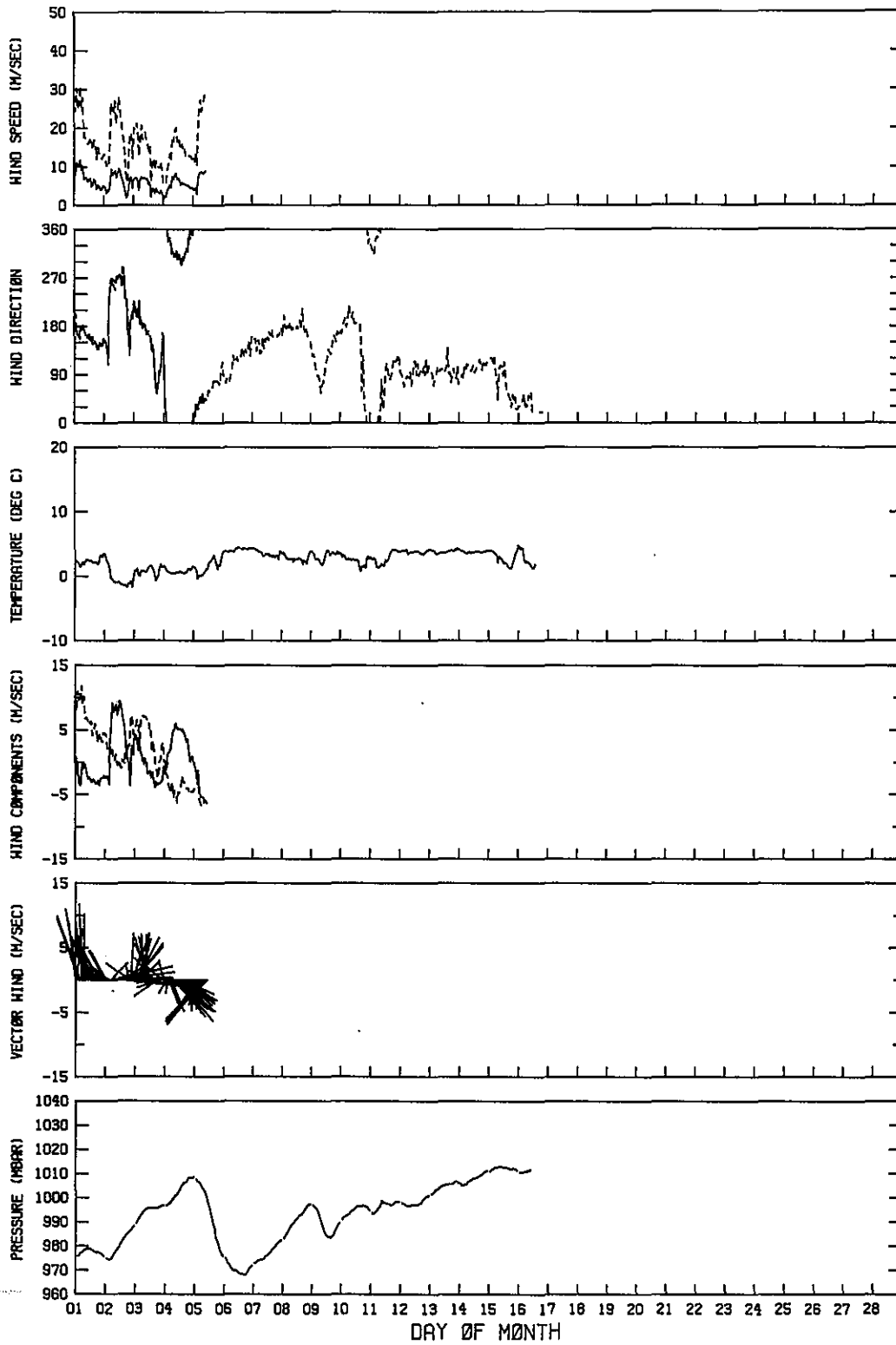


Figure 2e.--Same as Figure 2a, except for February 1986.

TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
 1 APR 86 TO 30 APR 86      INTERVAL= 60.0 MINS

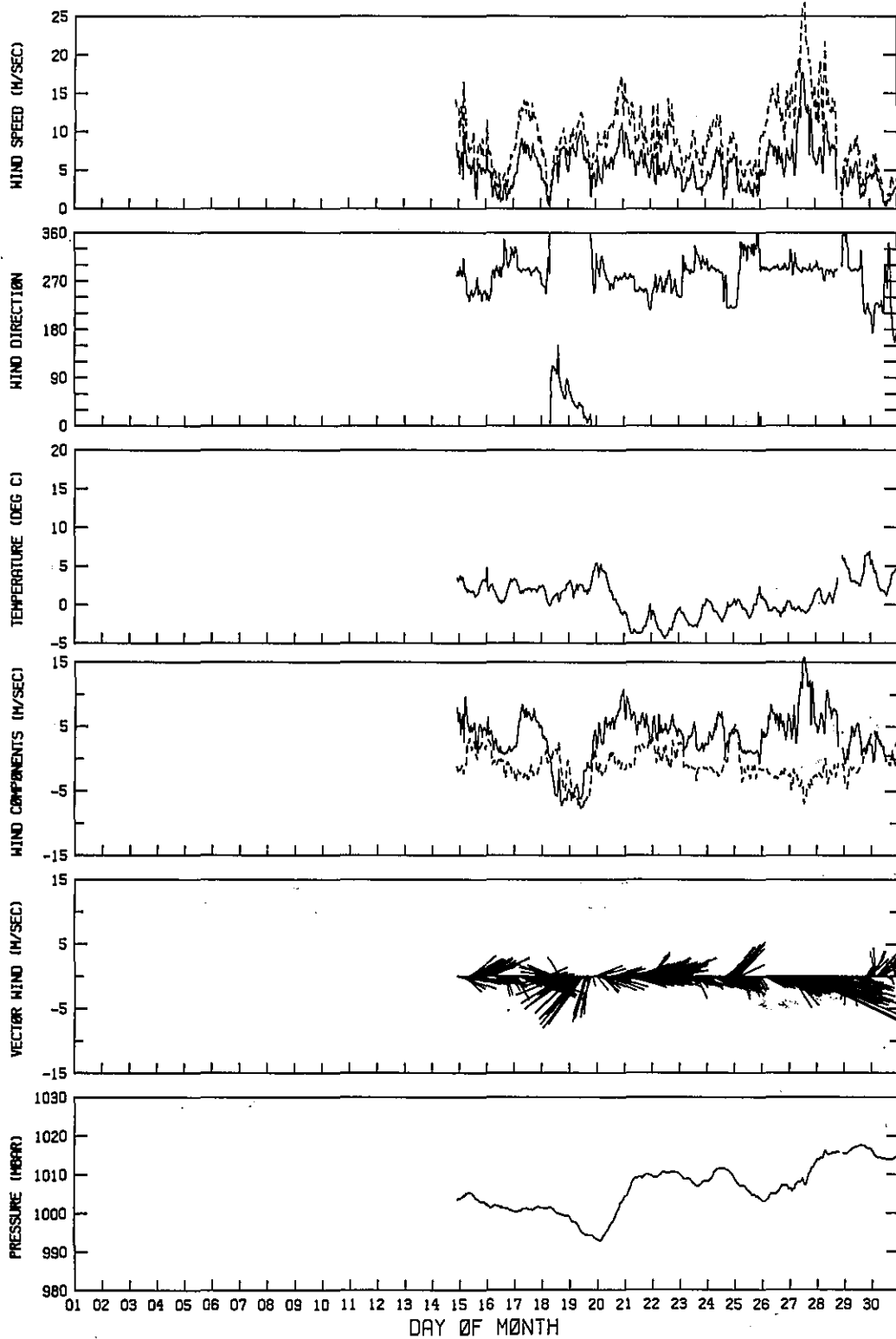


Figure 3a.--Ugaiushak Island. Hourly observations of wind speed (solid line), wind gust (dashed line), wind direction (meteorological convention), air temperature, east-west (solid line) and north-south (dashed line) wind components (oceanographic convention), vector wind (oceanographic convention) and station pressure, April 1986.

TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
1 MAY 86 TO 31 MAY 86      INTERVAL= 60.0 MINS

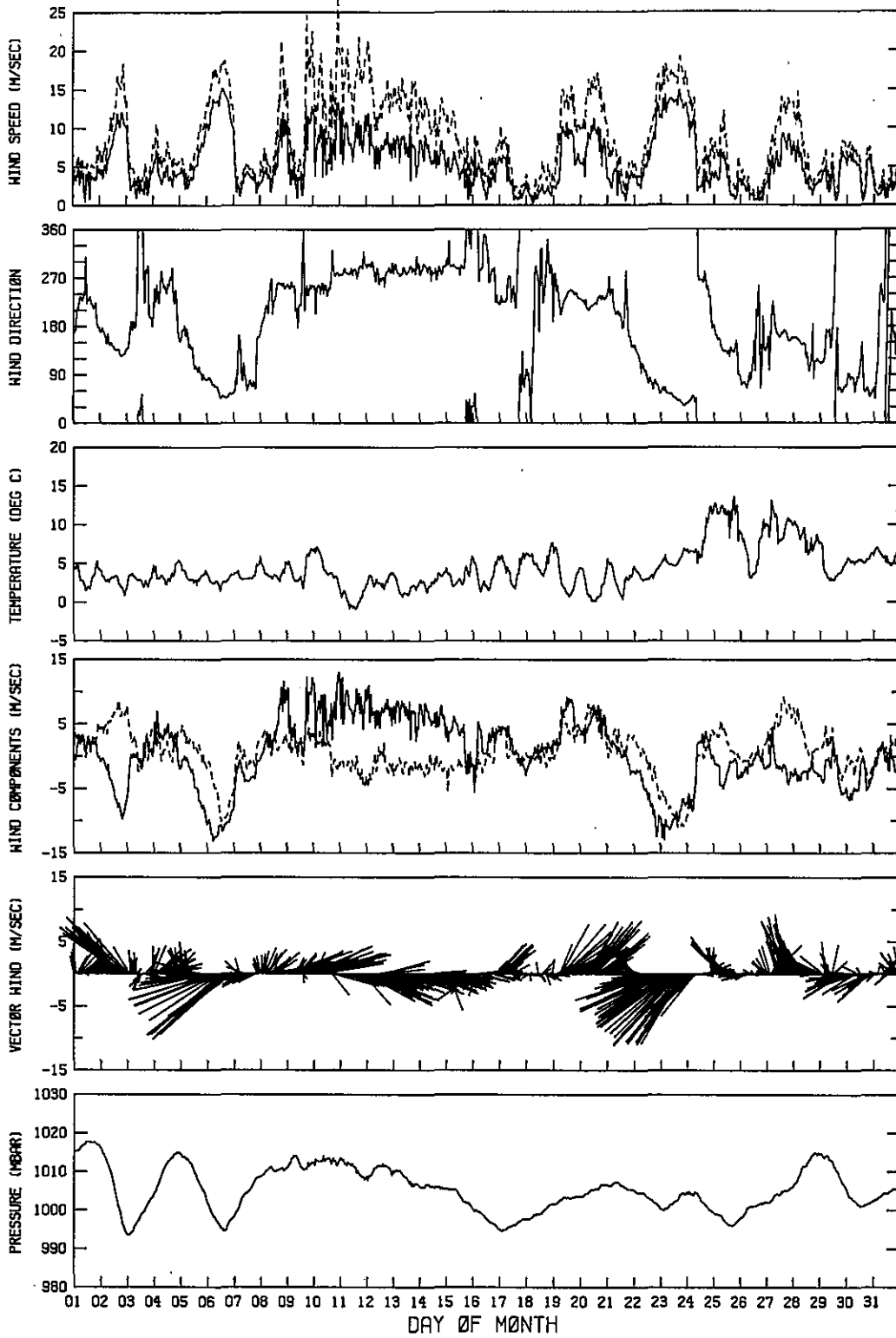


Figure 3b.--Same as Figure 3a, except for May 1986.

TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
1 JUN 86 TO 30 JUN 86      INTERVAL= 60.0 MINS

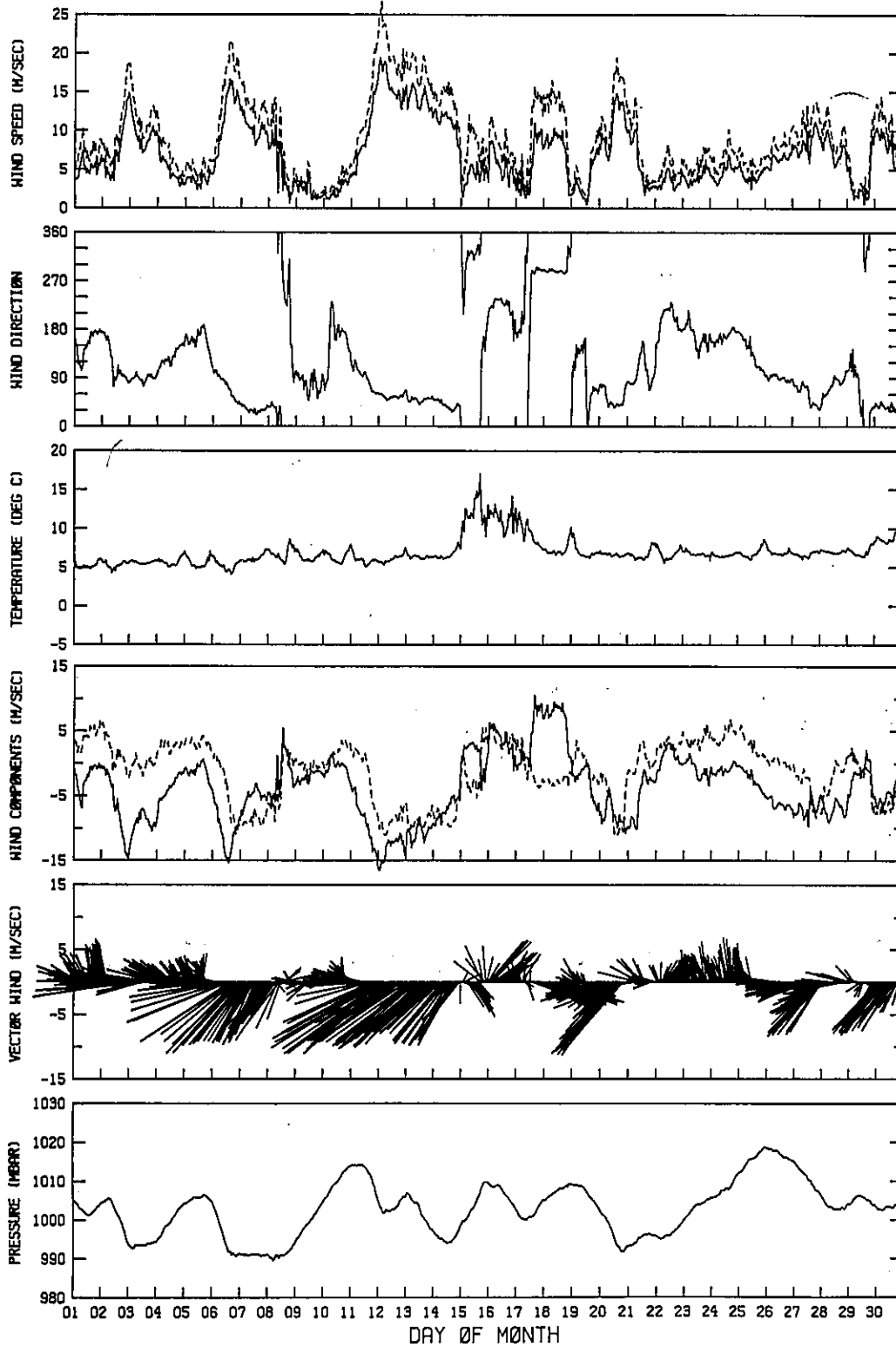


Figure 3c.--Same as Figure 3a, except for June 1986.



TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
1 JUL 86 TO 31 JUL 86      INTERVAL= 60.0 MINS

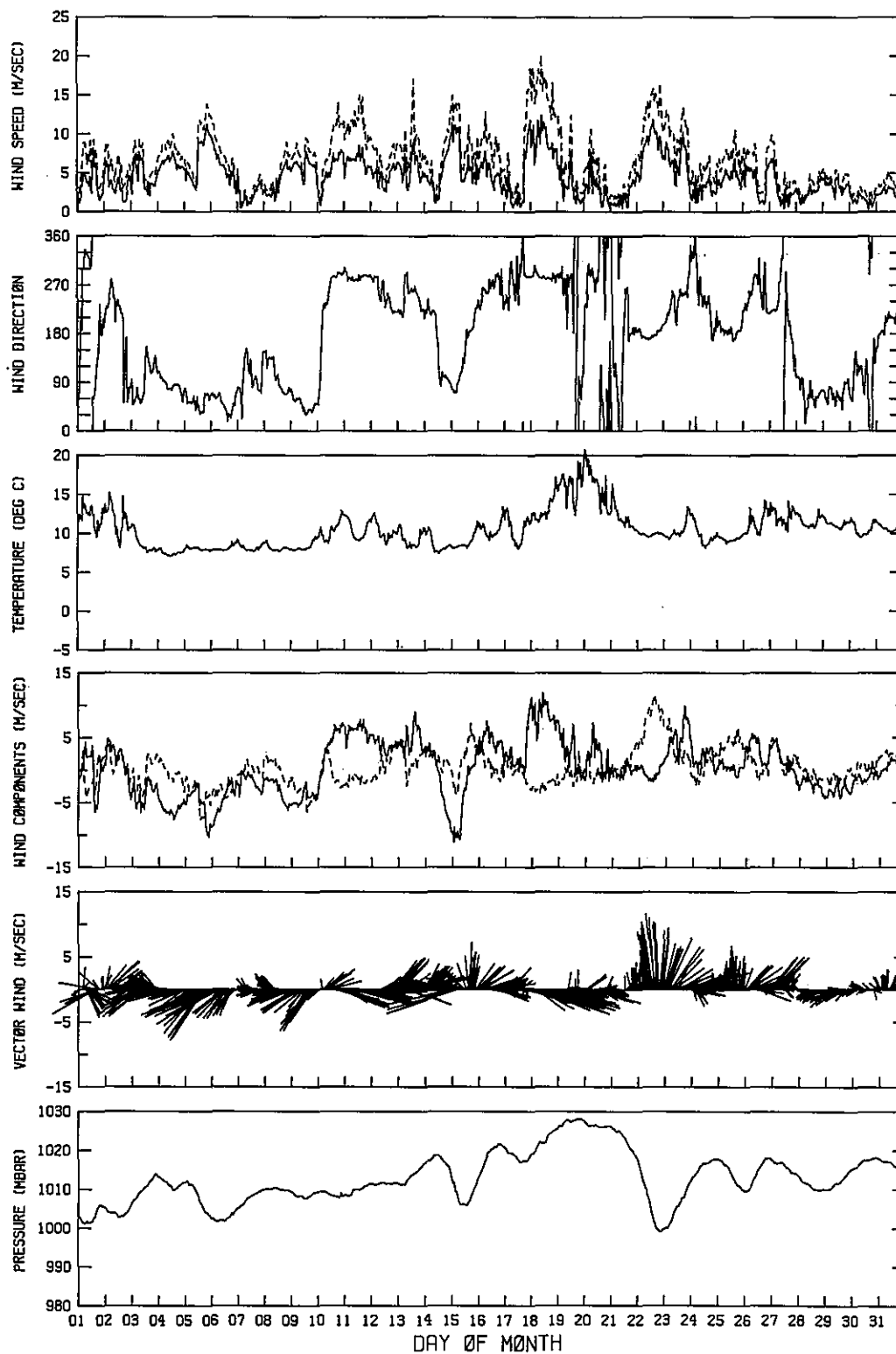


Figure 3d.--Same as Figure 3a, except for July 1986.

TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
1 AUG 86 TO 31 AUG 86 INTERVAL= 60.0 MINS

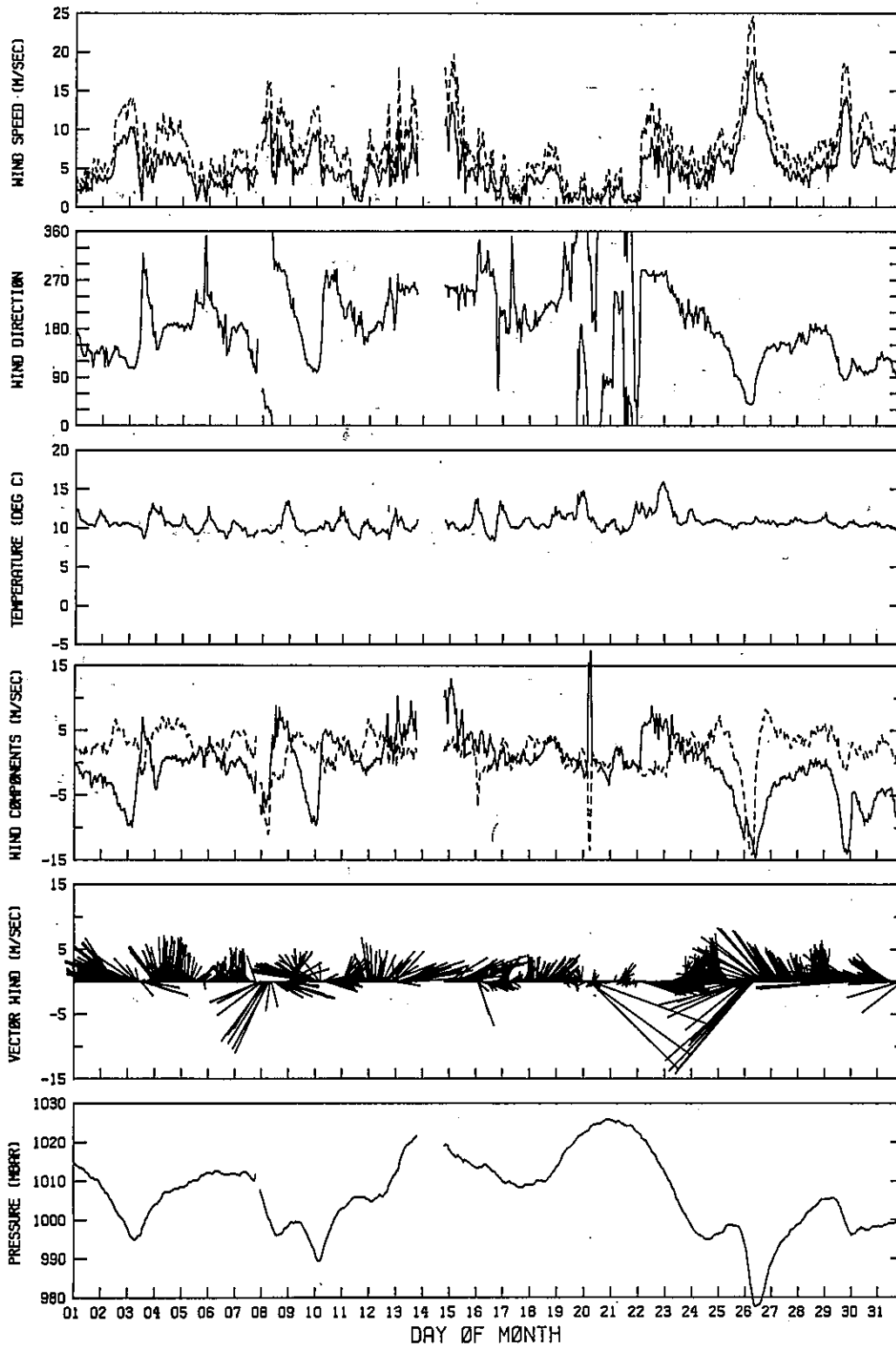


Figure 3e.--Same as Figure 3a, except for August 1986.

TIME SERIES PLOT FOR UGAIUSHAK ISLAND  
1 SEP 86 TO 30 SEP 86      INTERVAL= 60.0 MINS

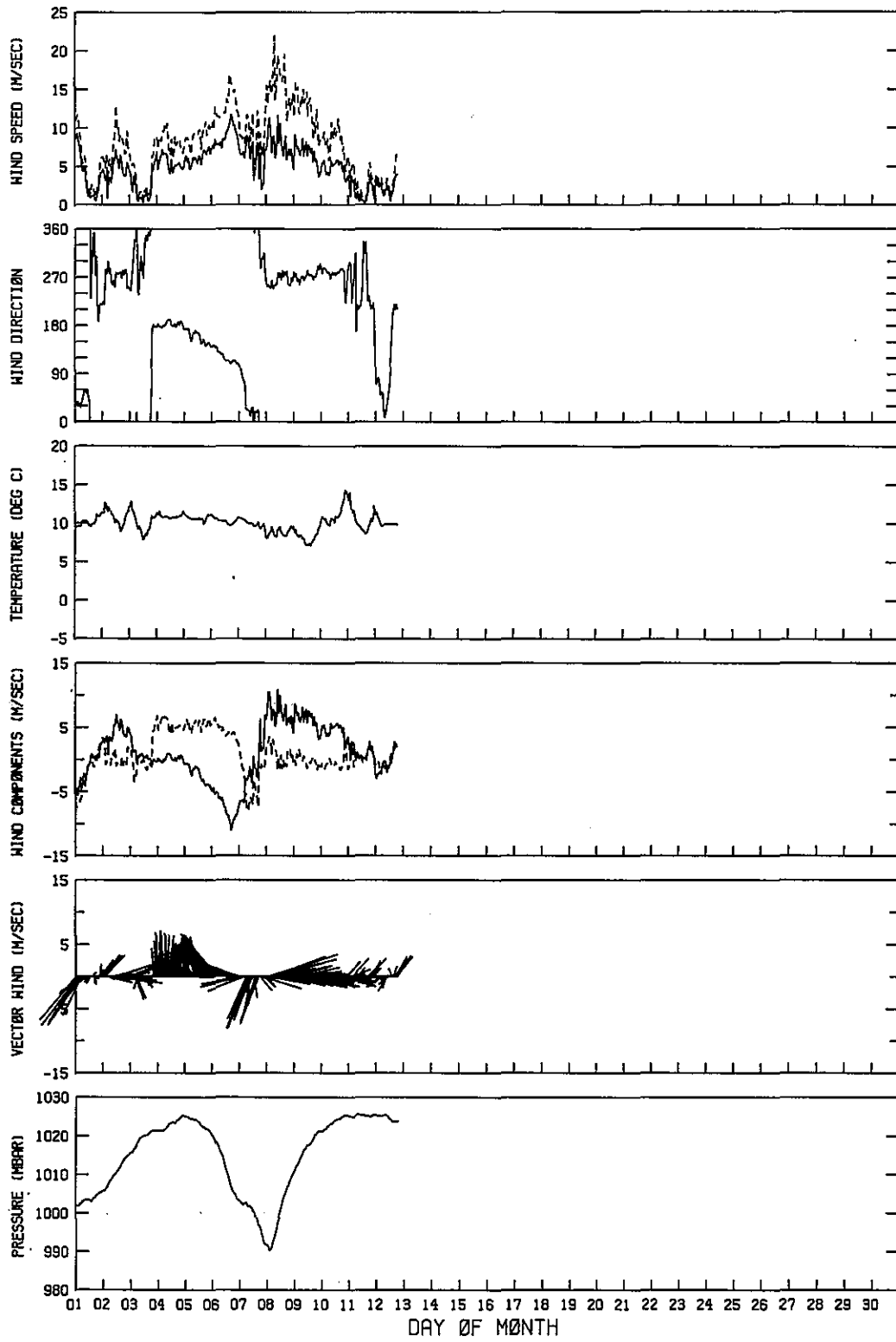


Figure 3f.--Same as Figure 3a, except for September 1986.