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Deep Western-Boundary Currents in the Southwestern Pacific Ocean

WOCE PCM-9

February 1991 - December 1992

by

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INTRODUCTION

This report describes current meter measurements from an experiment to measure the deep western boundary current that carries dense water from the Antarctic to the Pacific Ocean. The field measurements were conducted as part of a joint two year experiment by Oregon State University, Texas A&M University, Woods Hole Oceanographic Institution and the New Zealand Oceanographic Institute.

The effective western boundary for deep waters in the South Pacific is located east of New Zealand and consists of the Campbell Plateau, Chatham Rise and the Kermadec and Tonga Ridges. Because there is no substantial source of dense bottom waters in the North Pacific, all the deep and bottom waters of both the North and South Pacific have their origin in the Antarctic, and are carried north in a deep western boundary current (DWBC). Neither the sinking of dense water in a few places near the Antarctic Continent nor the general upwelling of this water throughout the rest of the world ocean are easily measurable; since the DWBC is the sole source of deep inflow for the world's largest ocean, knowledge of its strength and variability is critical to a better understanding of the ventilation and heat balance of the Pacific.

No direct measurements had ever been made in the DWBC in the Pacific, and evidence of its width could only be made from hydrographic evidence. It was decided to deploy the U.S. resources along a 1000-km line at 32.5°S extending east from the western boundary (Fig. 1, Table 1). Three nominal depths were instrumented: about 200m above the bottom, 4500m, and 2500m (Fig. 2). The 2500m level was selected because it was anticipated that it is near the top of the DWBC in the west, and should show predominately northward flow in the eastern part of the array.

The array was deployed in January and February, 1991 from the R/V *Rapuhia* operated by the New Zealand Oceanographic Institute. It consisted of 20 sub-surface moorings, with a total of 60 current meters. It was recovered in November and December, 1992 by the F/V *Giljanas*. The acoustic releases failed on four of the mooring. Partial instrumentation on three of these were recovered by dragging. Mooring 8 was not recovered. The top instrument on Mooring 14 sunk during recovery. A total of 53 current meters were recovered. The experiment was called MAPKIWI, but nobody remembers why.

The MAPKIWI current meter array contributes to the World Ocean Circulation experiment and is identified by that program as PCM-9.

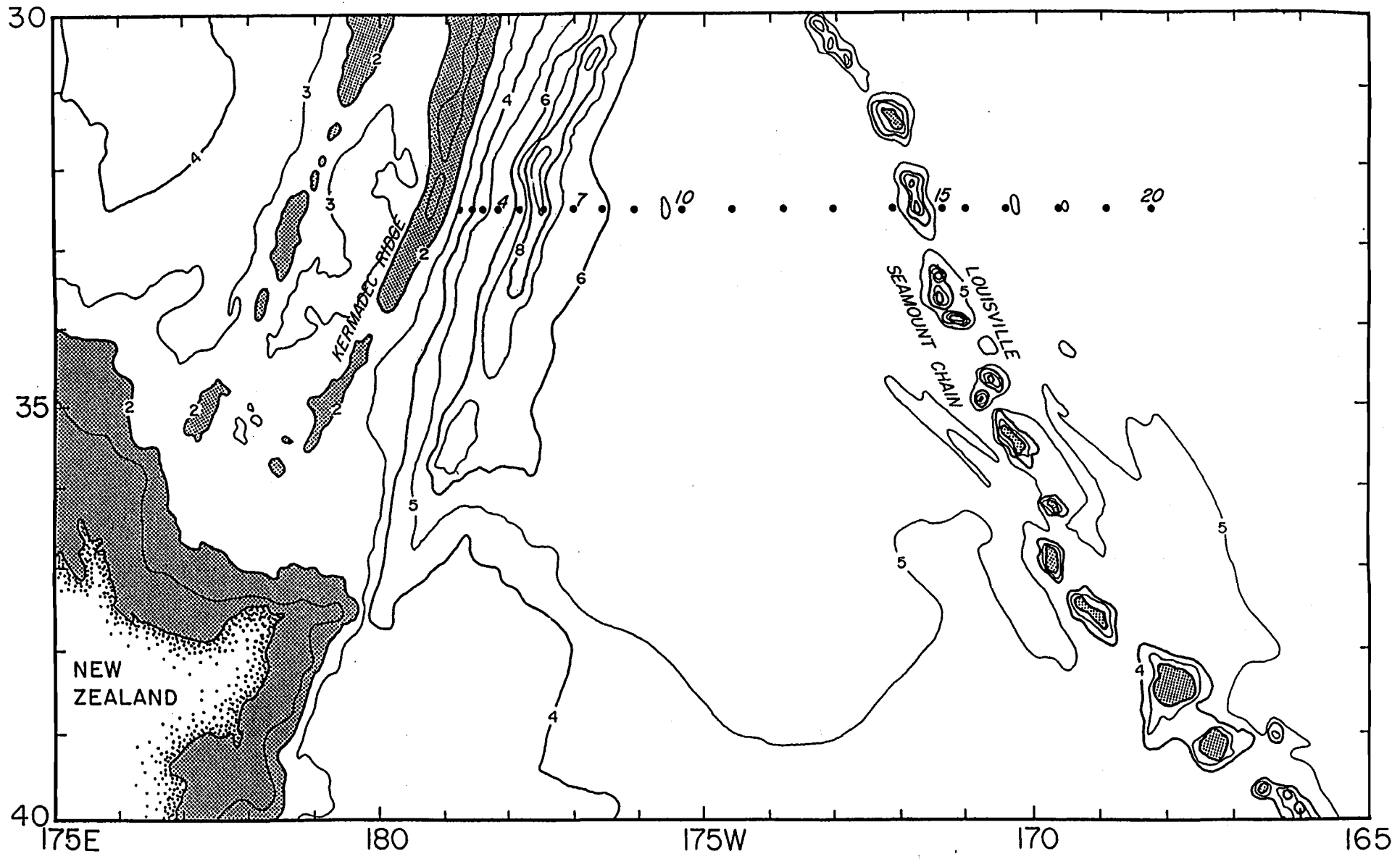


Figure 1. Site locations of MAPKIWI moorings 1-20.

SAMPLING AND PROCESSING INFORMATION

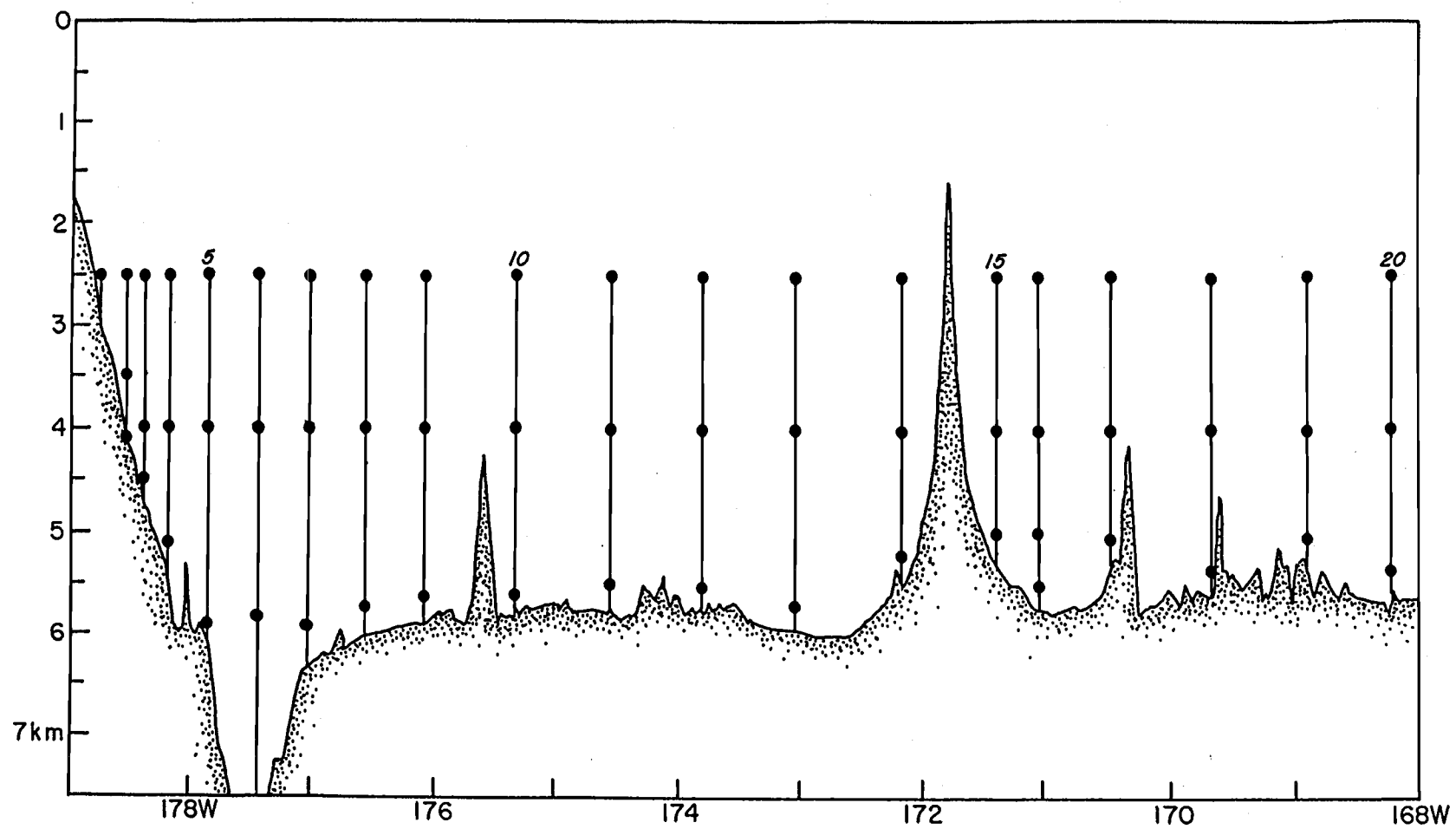
All moorings were instrumented with Aanderaa RCM 8 current meters (equipped with RCM-5 Savonius rotors and vanes) to record speed, direction, and temperature, with some meters equipped to record pressure.

Table 1. Latitude and Longitude of MAPKIWI Moorings.

Kiwi 1	32° 30.03' S 178° 45.20' W	Kiwi 11	32° 28.23' S 174° 33.58' W
Kiwi 2	32° 0.85' S 178° 33.12' W	Kiwi 12	32° 30.42' S 174° 49.24' W
Kiwi 3	32° 29.45' S 178° 23.63' W	Kiwi 13	32° 30.24' S 173° 02.82' W
Kiwi 4	32° 29.61' S 178° 10.57' W	Kiwi 14	32° 29.97' S 172° 11.16' W
Kiwi 5	32° 31.62' S 177° 50.14' W	Kiwi 15	32° 31.35' S 172° 24.04' W
Kiwi 6	32° 31.41' S 177° 29.10' W	Kiwi 16	32° 30.11' S 171° 02.72' W
Kiwi 7	32° 28.70' S 177° 01.65' W	Kiwi 17	32° 28.11' S 170° 28.10' W
Kiwi 8	(not recovered)	Kiwi 18	32° 28.87' S 169° 40.77' W
Kiwi 9	32° 29.82' S 176° 05.11' W	Kiwi 19	32° 30.36' S 168° 54.98' W
Kiwi 10	32° 29.72' S 175° 19.86' W	Kiwi 20	32° 27.18' S 168° 13.50' W

The current meter recording interval was set to 30 minutes. During the recording interval the number of rotor revolutions and compass directions are sampled 50 times. The combined data represents a current vector, its magnitude given by the rotor revolutions and its direction by the compass reading. The vector is resolved into two components, East-West and North-South. Successive components are added and intermediately stored. When the selected recording interval has elapsed, the resulting average vector and its angle are calculated and recorded (Aanderra Instruments, 1990).

Figure 2. Nominal depths of current meters on MAPKIWI moorings 1-20.



The nominal threshold of the savonious rotor on the OSU Buoy group Aanderaa current meters is 1.86 cm/sec. In processing, a zero in the speed sensor is set equal to 0.93 cm/sec, i.e., half the threshold. Temperature, and pressure are instantaneous measurements at the end of the sample interval.

Data from the current meter data storage units are stored binary numbers in the range [0, 1023] and each data record is assigned a time in Universal Coordinated Time (UCT). This product is known as the dated raw file. The sensors are routinely calibrated before and after deployment. The dated raw file, together with the calibration information, is then processed into metric units. Smith, et al. (1986) reviewed the calibration procedure used by the OSU Buoy Group with Aanderaa current meters. To form the LLP (6-hourly) records, the half-hourly data were first converted to low-passed (LP) data (hourly values, half-power at 2.9 hours.) The LP data records were then used to form low-low passed (LLP) records with a program that low pass filters (a 60 + 1 + 60 point Cosine-Lanczos filter with half-amplitude at 40 hours and half-power at 46.6 hours) the hourly data to remove the diurnal and shorter period tidal energy and any inertial frequency energy. The data are then resampled at 6-hour intervals.

Depths were obtained by one of two methods. Meters equipped with pressure sensors were assigned depths corresponding to the minimum pressure recorded. The minimum pressure was determined from unfiltered data. Conversion from pressure units to depth units, i. e. from decibars to meters, was done with a relationship developed by Professor J. L. Reid of Scripps Institution of Oceanography:

$$Z(m) = (0.992446)P - (2.28717 \times 10^{-6})P^2 + (2.08213 \times 10^{-11})P^3$$

This equation is based on a world average density profile. The depths of meters that did not have pressure sensors were estimated from those that did using the mooring line lengths as determined by a computer model that calculates line tension and the amount of stretch. Again, minimum rather than average or maximum depths were estimated. Bottom depth was calculated from the line lengths between the deepest instrument and the anchor.

Occasional problems appear in the data as isolated spikes, absence of data, or short runs of unexplainably erratic data. Problem areas of only a few cycles were corrected by linear interpolation; those longer than a few hours were bridged. The bridging technique employs Anderson's (1974) algorithm for a predictive filter which utilizes the spectral characteristics on both sides of the gap (Smylie et al. 1973; Ulrych et al. 1973). All corrections to the data are noted on the header pages at the beginning of each mooring section.

DATA PRESENTATION

Each of the current meter records is described in this report. The descriptions include start times and stop times, statistics for each variable, frequency histograms and spectra, and some representative time series plots of the velocity, temperature, and pressure.

The data are organized by mooring location. Each section begins with a mooring diagram followed by a header page showing information about the mooring, start and stop times for data and comments about the quality of each record. Any deletions or corrections to the data are listed here.

The page of statistics gives the mean, variance, and extrema for speed (s), eastward (u) and northward (v) components of the current, temperature (T), and pressure (P). Statistics for both unfiltered (30 min.) and filtered (LLP) information are provided.

The presentation of the 30 min. unfiltered data begins with histograms, and progressive vector diagrams. The histograms of speed, direction, temperature, pressure show the frequency of occurrence versus amplitude. The progressive vector diagrams are obtained by placing the velocity vectors tail-to-head to show the path that a particle would travel in a perfectly homogeneous flow. The squares mark the beginning of each month, and North is at the top of the page. Kinetic energy spectra of u and v concludes the presentation of unfiltered hourly data. LLP filtered data are presented next as time series plots. There are two series of plots for each current meter mooring: all variables (velocity vectors, u , v , temperature, and pressure) at each depth on the mooring, and each variable at all depths.

ACKNOWLEDGMENTS

The funds for this program were provided via grant OCE 9002709 from the National Science Foundation, Physical Oceanography Program which is gratefully acknowledged. We appreciate the assistance and cooperation given by the masters and crews of the *R/V Rapuhia* and the *F/V Giljanas* and by our seagoing colleagues and companions on the deployment and recovery cruises.

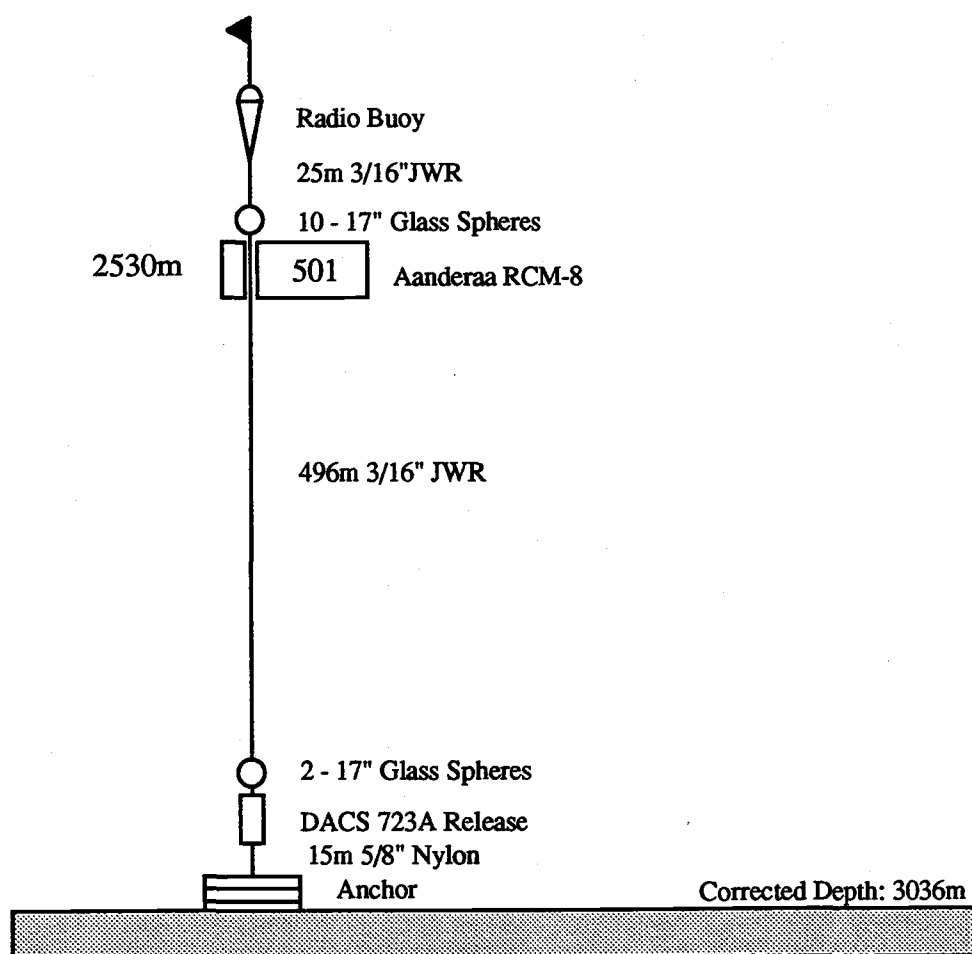
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- Smylie, D. E., G. K. C. Clarke and T. J. Ulrych. 1973. Analysis of irregularities in the earth's rotation. *Methods in Computational Phys.* 13., 391-430.
- Ulrych, T. J., D. E. Smylie, O. G. Jensen and G. K. C. Clarke. 1973. Predictive filtering and smoothing of short records by using maximum entropy. *J. Geophys. Res.* 78, 4959-4964.

MAPKIWI 1

Installed: 12 Feb 91
Recovered: 5 Dec 92

Latitude: 32° 30.03'S
Longitude: 178° 45.20'W



KIWI 1.

Position: 32° 30.03' S
178° 45.20' S
Depth of Water: 3036
Mooring Set: 0245 12 February 1991
Mooring Retrieved: 2255 05 December 1992
Data Interval 0400 12 February 1991 - 2230 05 December 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2530	501/69

Instrument 501 recorded u, v, temperature, and pressure every 30 minutes. No slack in bearings at recovery.

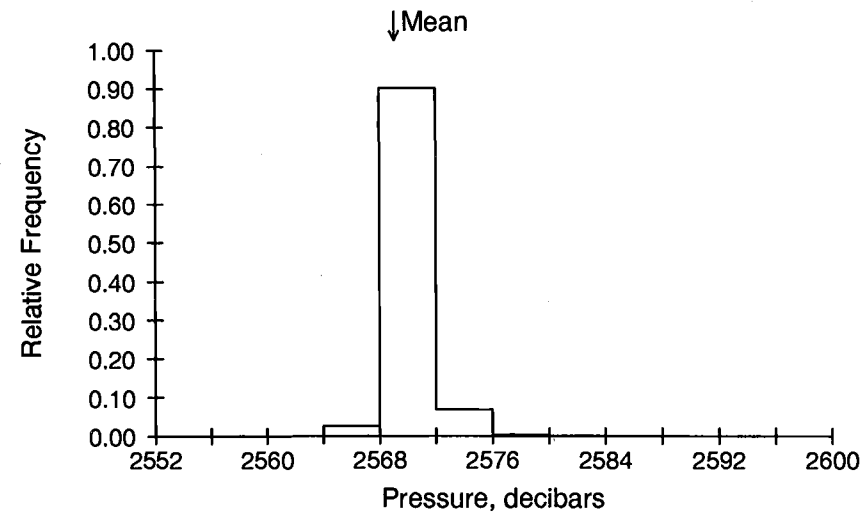
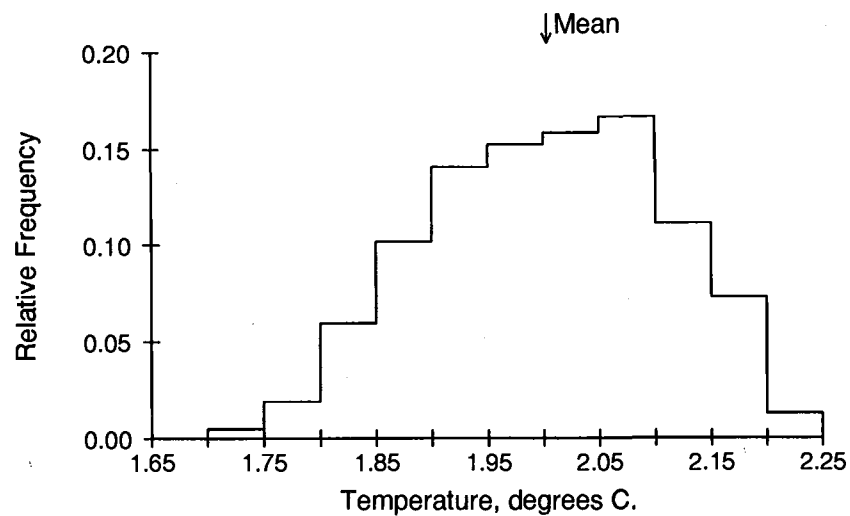
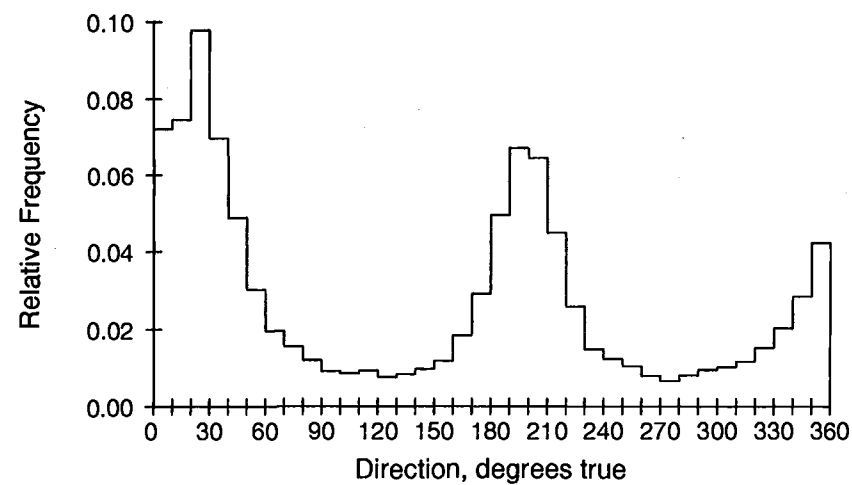
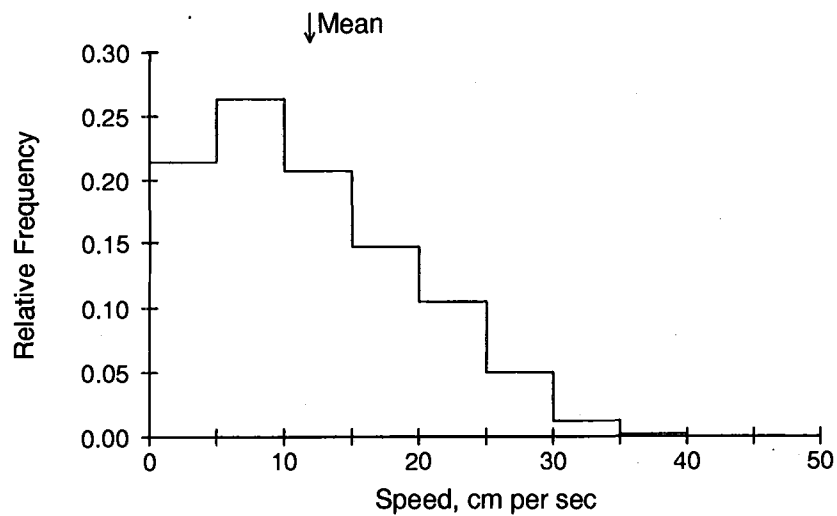
2530 meters at KIWI 1. 12 Feb 91 - 5 Dec 92. Tape 501/69.

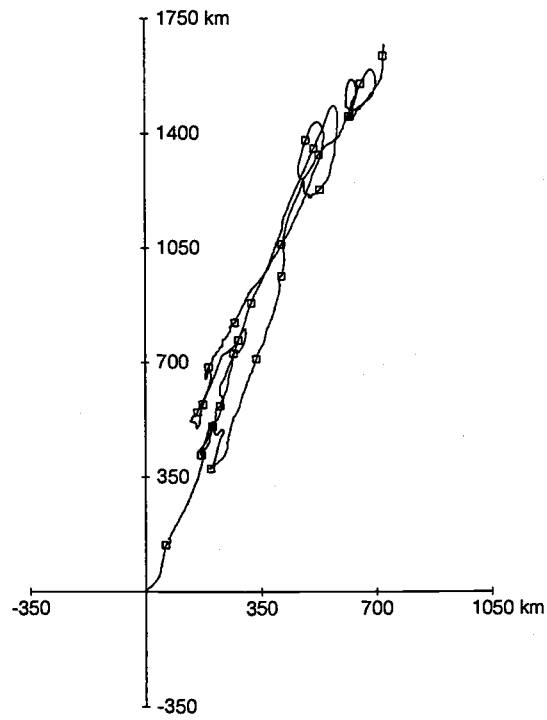
	min	mean	max	sd	num
Speed, cm/sec	0.92	11.83	47.16	7.58	31814
U, cm/sec	-21.82	1.23	35.33	6.16	31814
V, cm/sec	-31.13	2.84	38.81	12.24	31814
Temp, deg c	1.69	2.00	2.24	0.11	31814
Pressure, db	2565.93	2569.87	2580.90	1.28	31814

2530 meters at KIWI 1. 13 Feb 91 - 4 Dec 92. Tape 501/69.

	min	mean	max	sd	num
Speed, cm/sec	0.17	11.12	33.58	7.44	2641
U, cm/sec	-10.65	1.22	18.38	5.22	2641
V, cm/sec	-26.67	2.82	30.96	11.93	2641
Temp, deg c	1.74	2.00	2.23	0.10	2641
Pressure, db	2565.90	2569.88	2579.16	1.13	2641

2530m at Kiwi 1. 12 Feb 91 - 5 Dec 92. RCM 501/69.

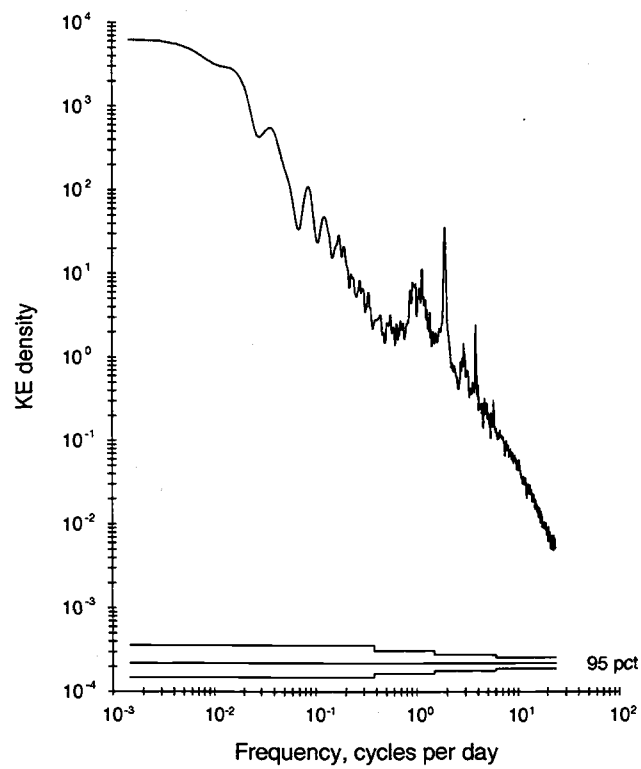


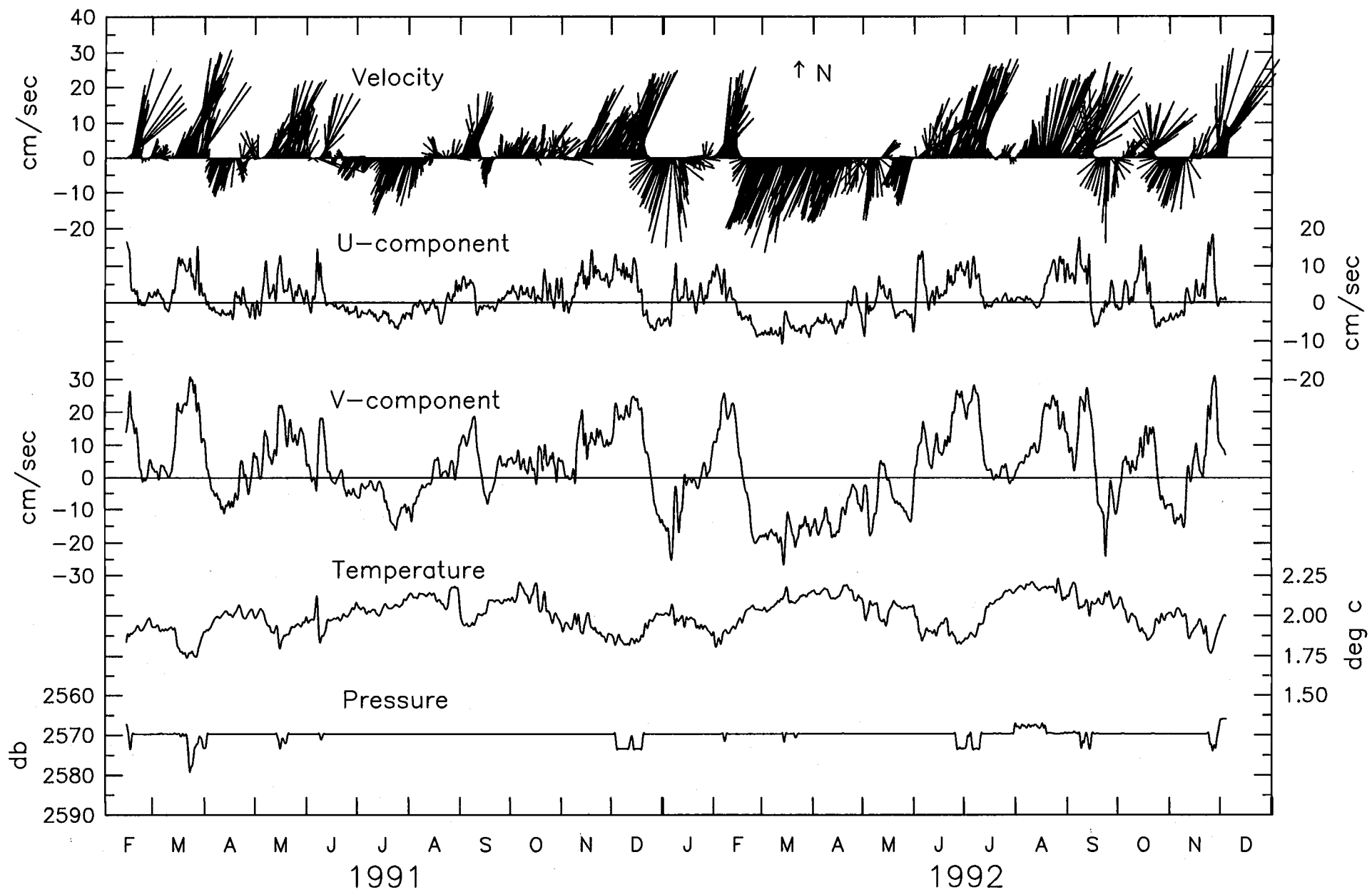


2530 m at KIWI 1. 662.8 days starting 0400 12 Feb 91.

Unfiltered Current (both components) Kiwi 1.

2530 m





2530m at KIWI 1. LLP 6-hourly Data.

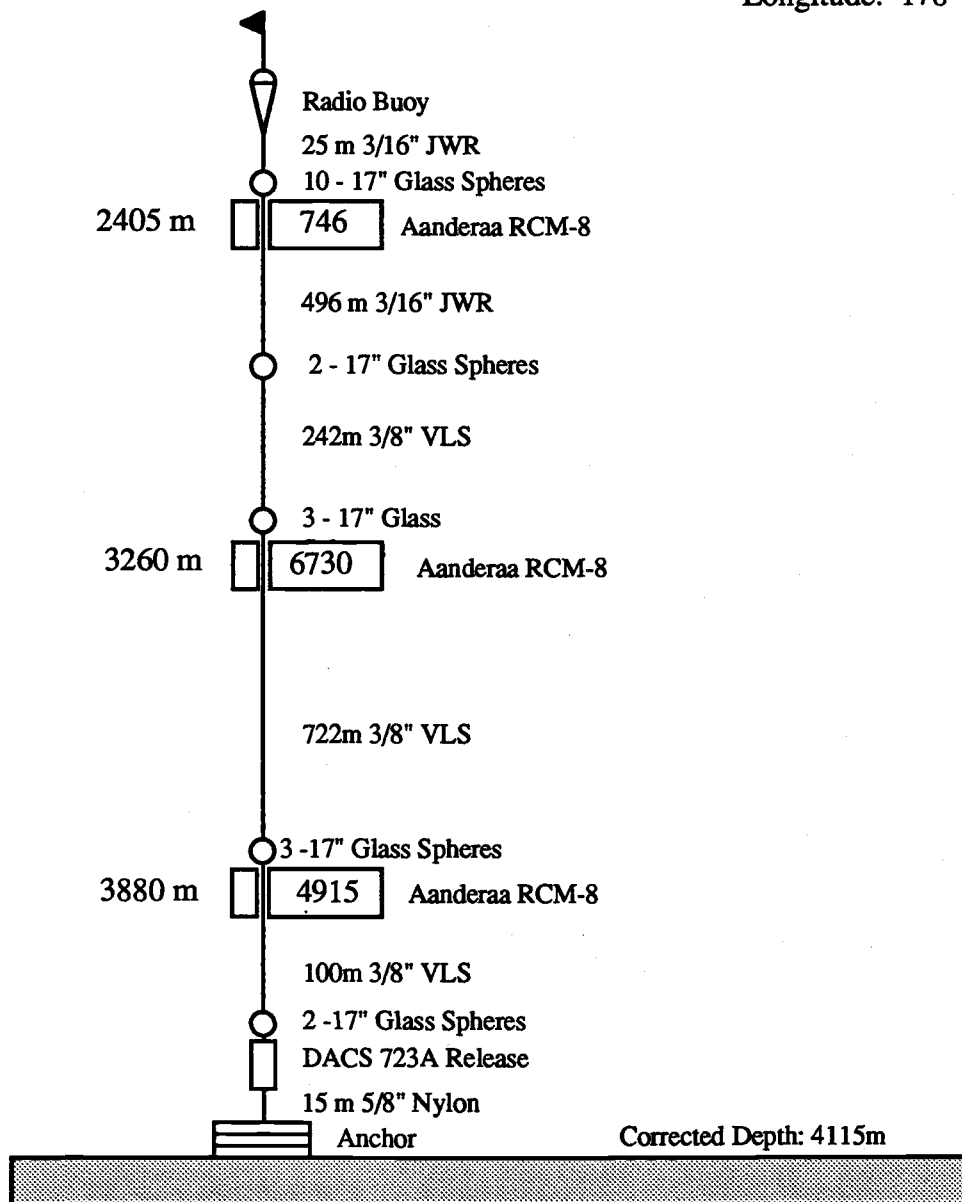
MAPKIWI 2

Installed: 12 Feb 91

Recovered: 5 Dec 92

Latitude: 32° 30.85'S

Longitude: 178° 33.12'W



KIWI 2.

Position: 32° 30.85' S
 178° 33.12' W
 Depth of Water: 4115 m
 Mooring Set: 0529 12 February 1991
 Mooring Retrieved: 0433 05 December 1992
 Data Interval 0700 12 February 1991 - 0400 05 December 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2405	746/70
3160	6730/33
3880	4915/22

Instrument 746 recorded u, v, temperature, & pressure every thirty minutes. Due to a speed dropout u & v were bridged lines 30463 - 30483 (2130 07 November 1992 to 0800 08 November 1992. No slack in bearings at recovery.

Instrument 6730 recorded u, v, & temperature every thirty minutes. The speed record was nullified lines 13060 - 13671 (0830 11 November 1991 to 0200 24 November 1991) and lines 31392 to 31771 (0630 27 November 1992 to 0400 5 December 1992. The rotor bearings were very stiff with no slack at recovery.

Instrument 4915 recorded u, v, & temperature every thirty minutes. The speed record was nullified lines 18194 - 20943 (0730 26 February 1992 to 1400 23 April 1992) and again lines 24737 to 31771 (1500 11 July 1992 to 0400 05 December 1992. No slack in bearings at recovery.

2405 meters at KIWI 2. 12 Feb 91 - 5 Dec 92. Tape 746/70.

	min	mean	max	sd	num
Speed, cm/sec	0.92	10.05	36.70	6.40	31771
U, cm/sec	-29.77	0.54	33.66	8.44	31771
V, cm/sec	-27.04	0.19	30.87	8.38	31771
Temp, deg c	1.80	2.11	2.36	0.07	31771
Pressure, db	2435.75	2443.16	2474.58	4.38	31771

3160 meters at KIWI 2. 12 Feb 91 - 5 Dec 92. Tape 6730/33.

	min	mean	max	sd	num
Speed, cm/sec	0.92	9.62	35.24	5.77	30779
U, cm/sec	-19.09	2.12	27.17	5.39	30779
V, cm/sec	-20.29	6.07	34.18	7.45	30779
Temp, deg c	1.22	1.52	1.76	0.10	31771

3880 meters at KIWI 2. 12 Feb 91 - 5 Dec 92. Tape 4915/22.

	min	mean	max	sd	num
Speed, cm/sec	0.93	9.19	29.28	4.46	21986
U, cm/sec	-15.71	2.09	17.99	4.46	21986
V, cm/sec	-17.76	6.51	28.64	6.13	21986
Temp, deg c	0.97	1.10	1.31	0.06	31771

2405 meters at KIWI 2. 13 Feb 91 - 3 Dec 92. Tape 746/70.

	min	mean	max	sd	num
Speed, cm/sec	0.19	9.12	30.25	5.71	2637
U, cm/sec	-20.32	0.53	26.01	7.42	2637
V, cm/sec	-24.43	0.16	26.55	7.78	2637
Temp, deg c	1.88	2.11	2.33	0.07	2637
Pressure, db	2438.93	2443.15	2462.12	3.94	2637

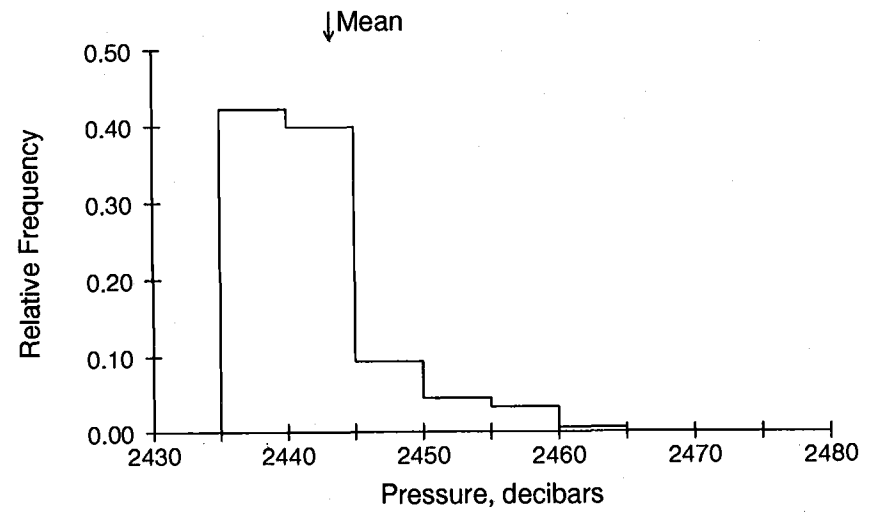
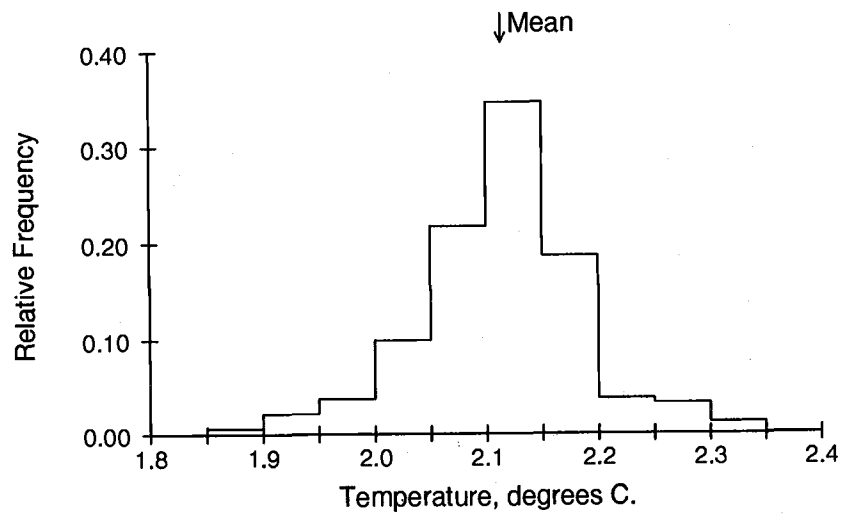
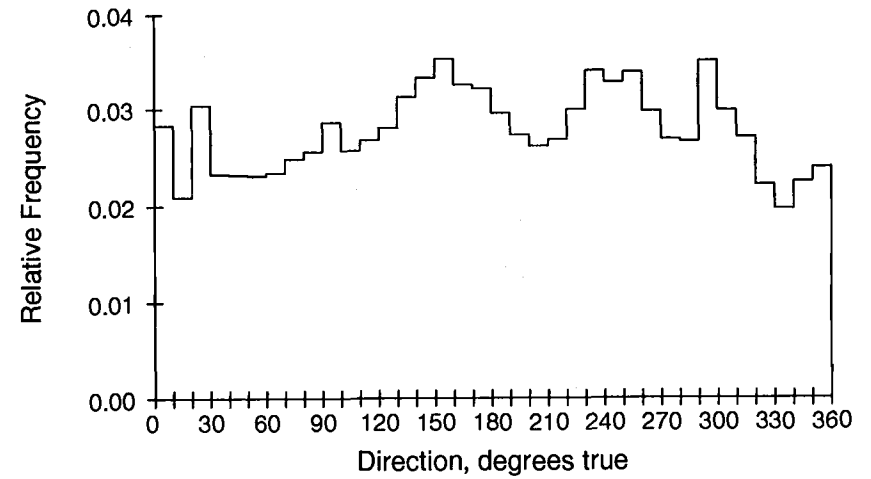
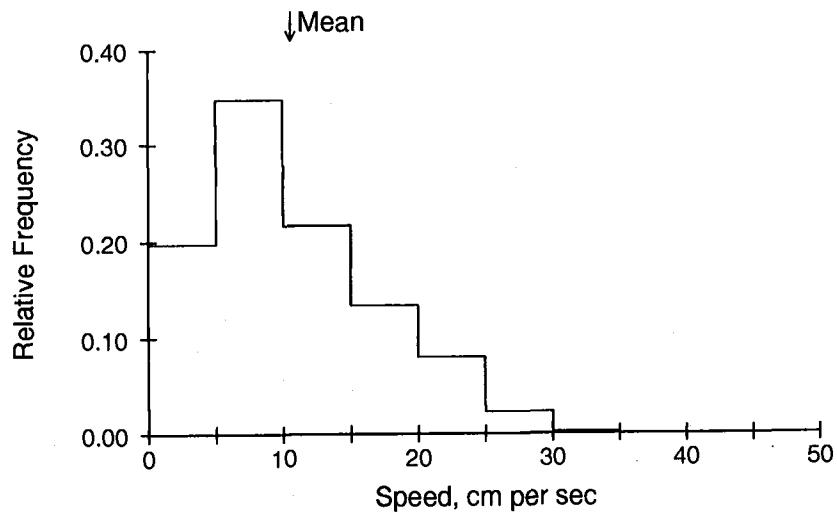
3160 meters at KIWI 2. 13 Feb 91 - 3 Dec 92. Tape 6730/33.

	min	mean	max	sd	num
Speed, cm/sec	0.04	8.69	28.42	5.56	2545
U, cm/sec	-9.18	2.10	20.81	4.15	2545
V, cm/sec	-17.01	6.05	26.92	6.94	2545
Temp, deg c	1.27	1.52	1.69	0.09	2637

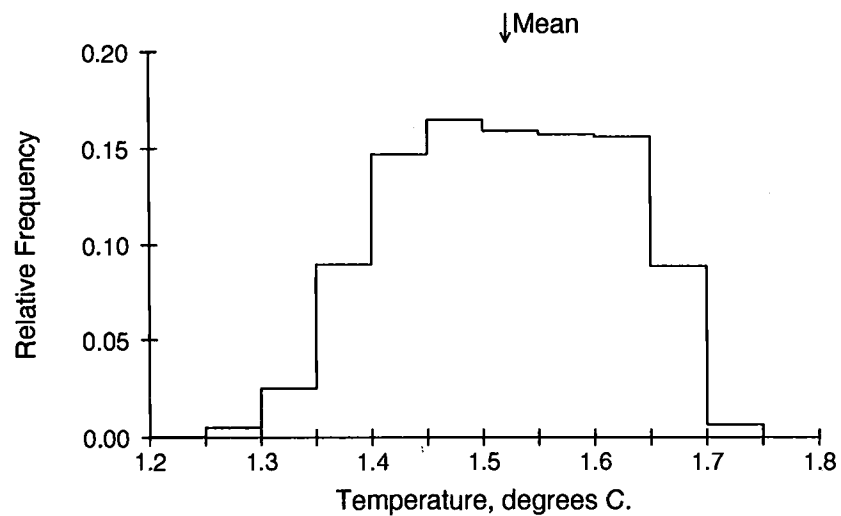
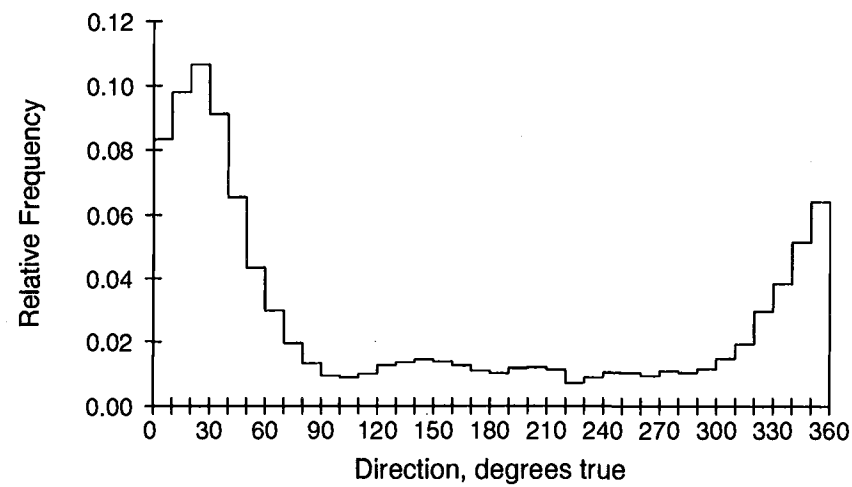
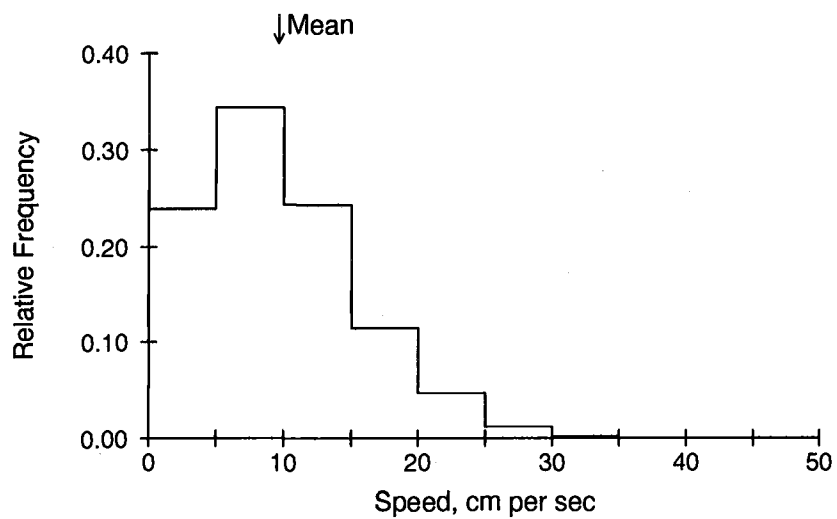
3880 meters at KIWI 2. 13 Feb 91 - 3 Dec 92. Tape 4915/22.

	min	mean	max	sd	num
Speed, cm/sec	0.15	7.95	21.00	4.39	1812
U, cm/sec	-4.60	2.09	8.25	2.23	1812
V, cm/sec	-14.57	6.51	20.69	5.54	1812
Temp, deg c	0.99	1.10	1.28	0.06	2637

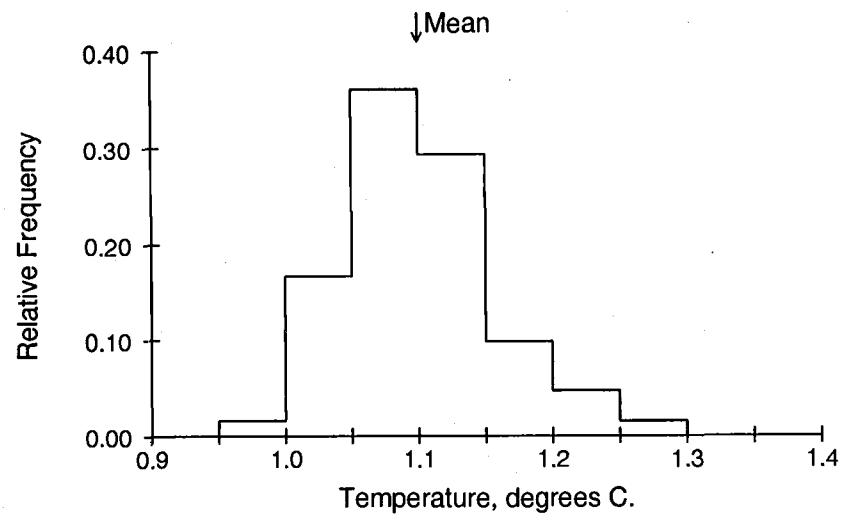
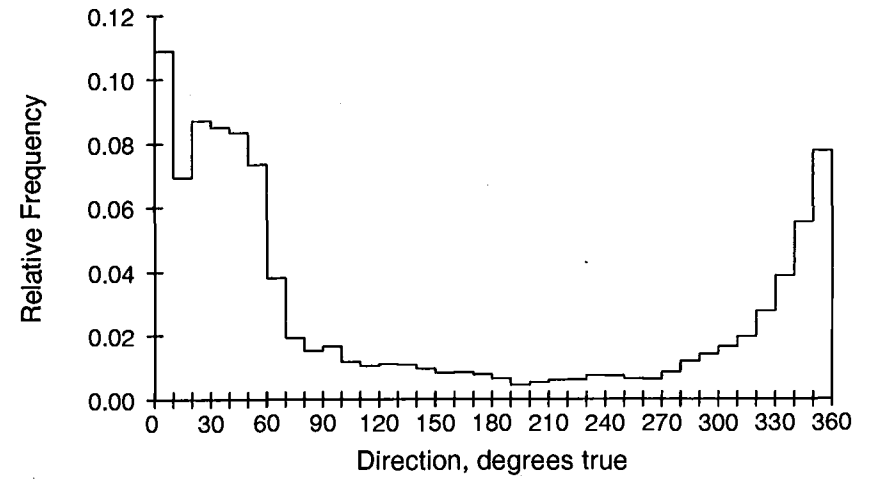
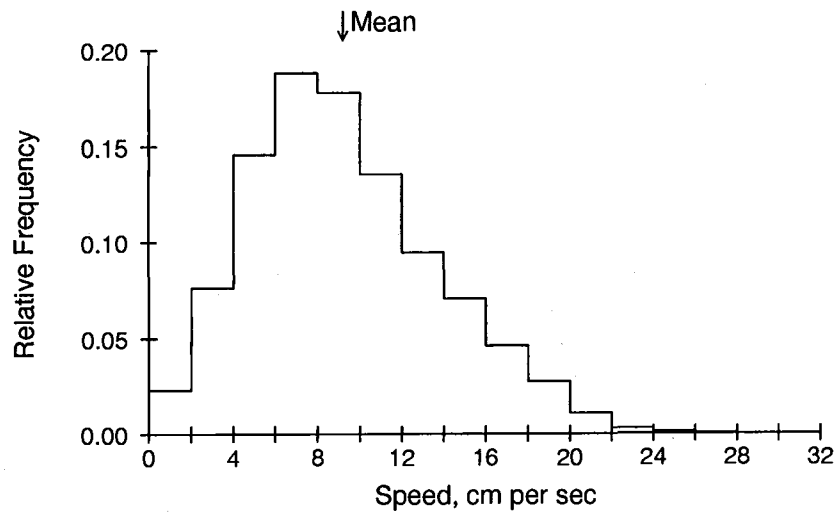
2405m at Kiwi 2. 12 Feb 91 - 5 Dec 92. RCM 746/70.

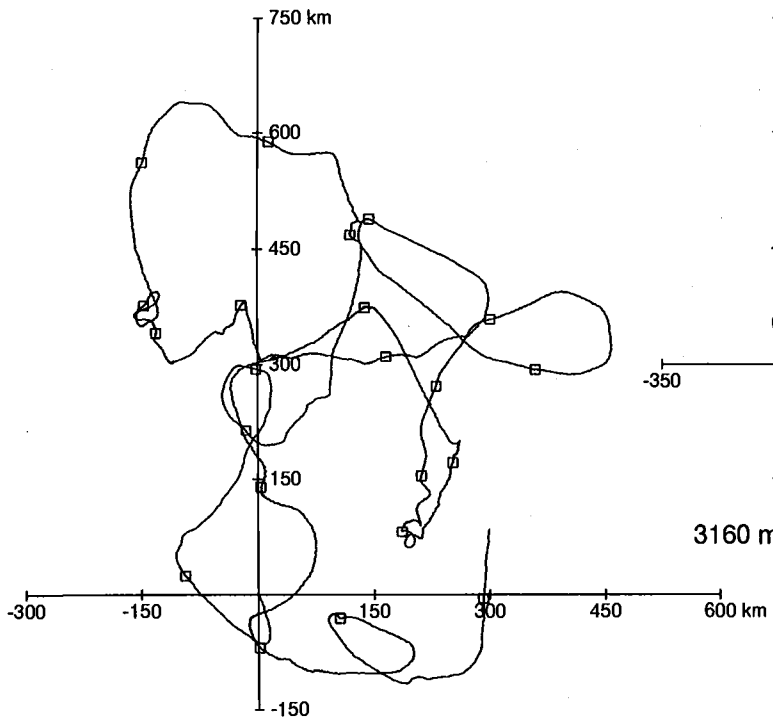


3160m at Kiwi 2. 12 Feb 91 - 5 Dec 92. RCM 6730/33.

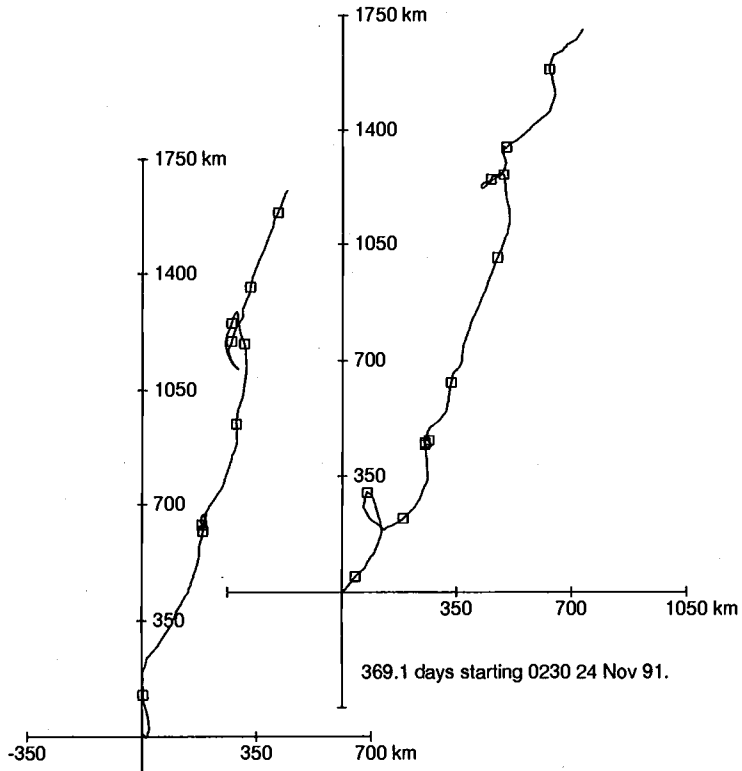


3880m at Kiwi 2. 12 Feb 91 - 5 Dec 92. RCM 4915/22.

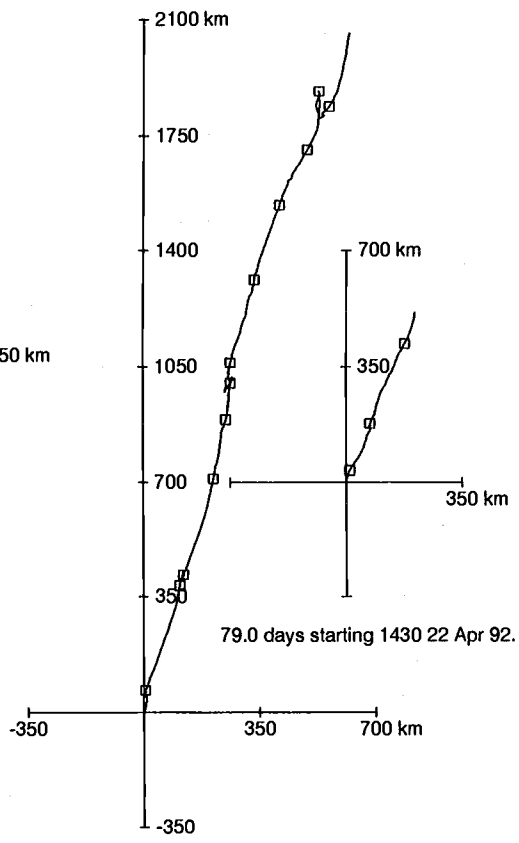




2405 m at KIWI 2. 661.9 days starting 0700 12 Feb 91.



3160 m at KIWI 2. 272.0 days starting 0700 12 Feb 91.

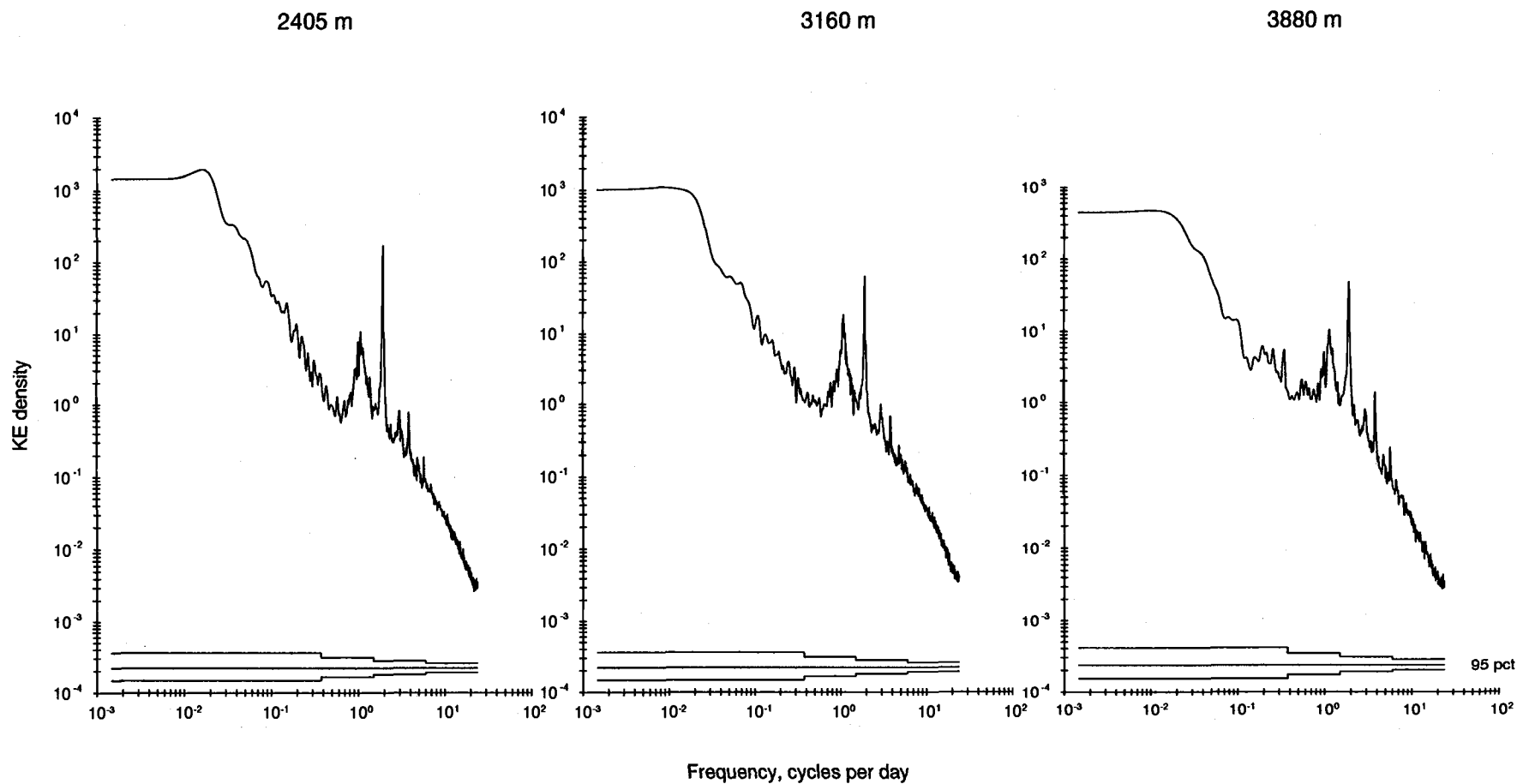


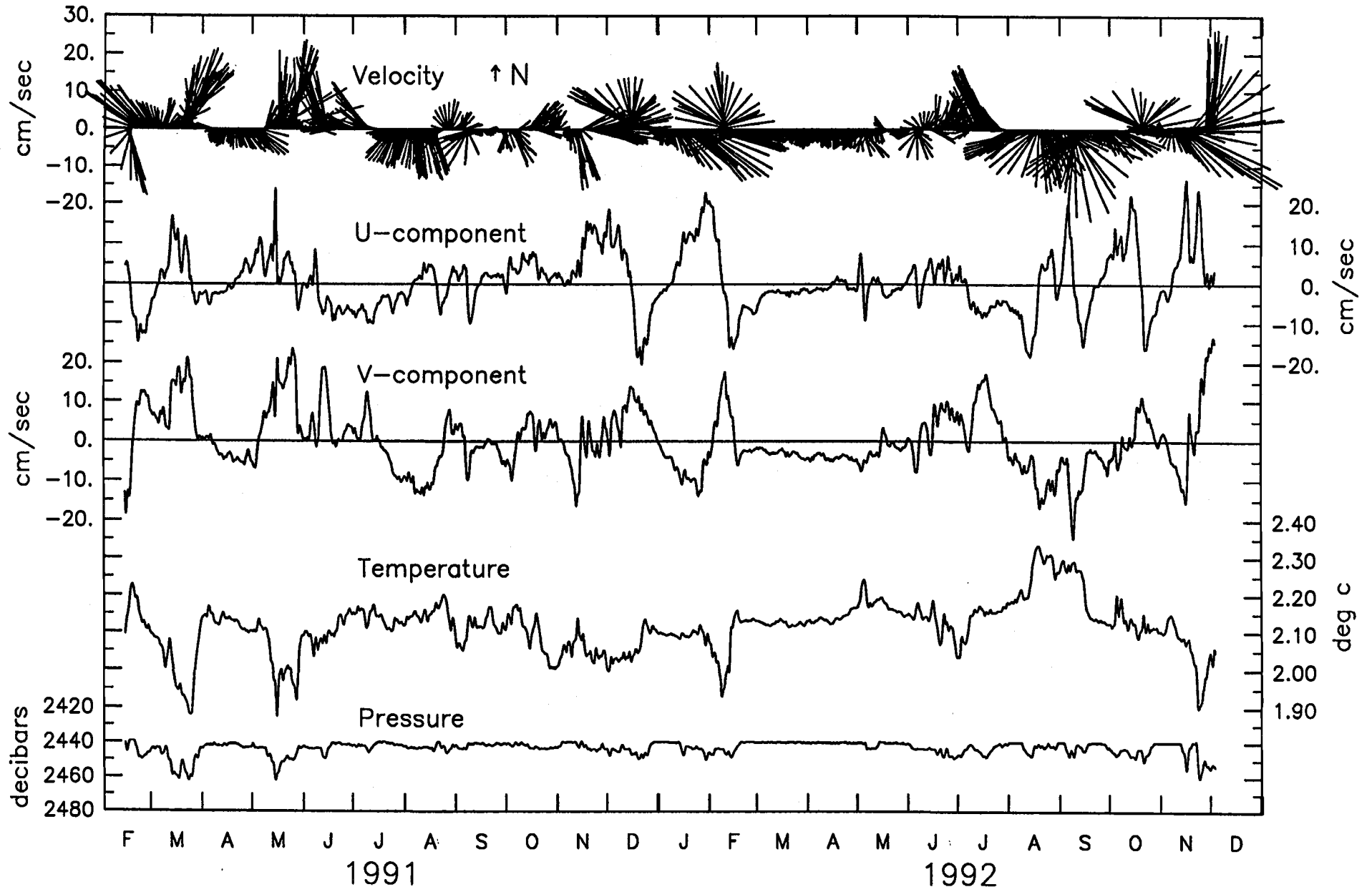
3880 m at KIWI 2. 379.0 days starting 0700 12 Feb 91.

369.1 days starting 0230 24 Nov 91.

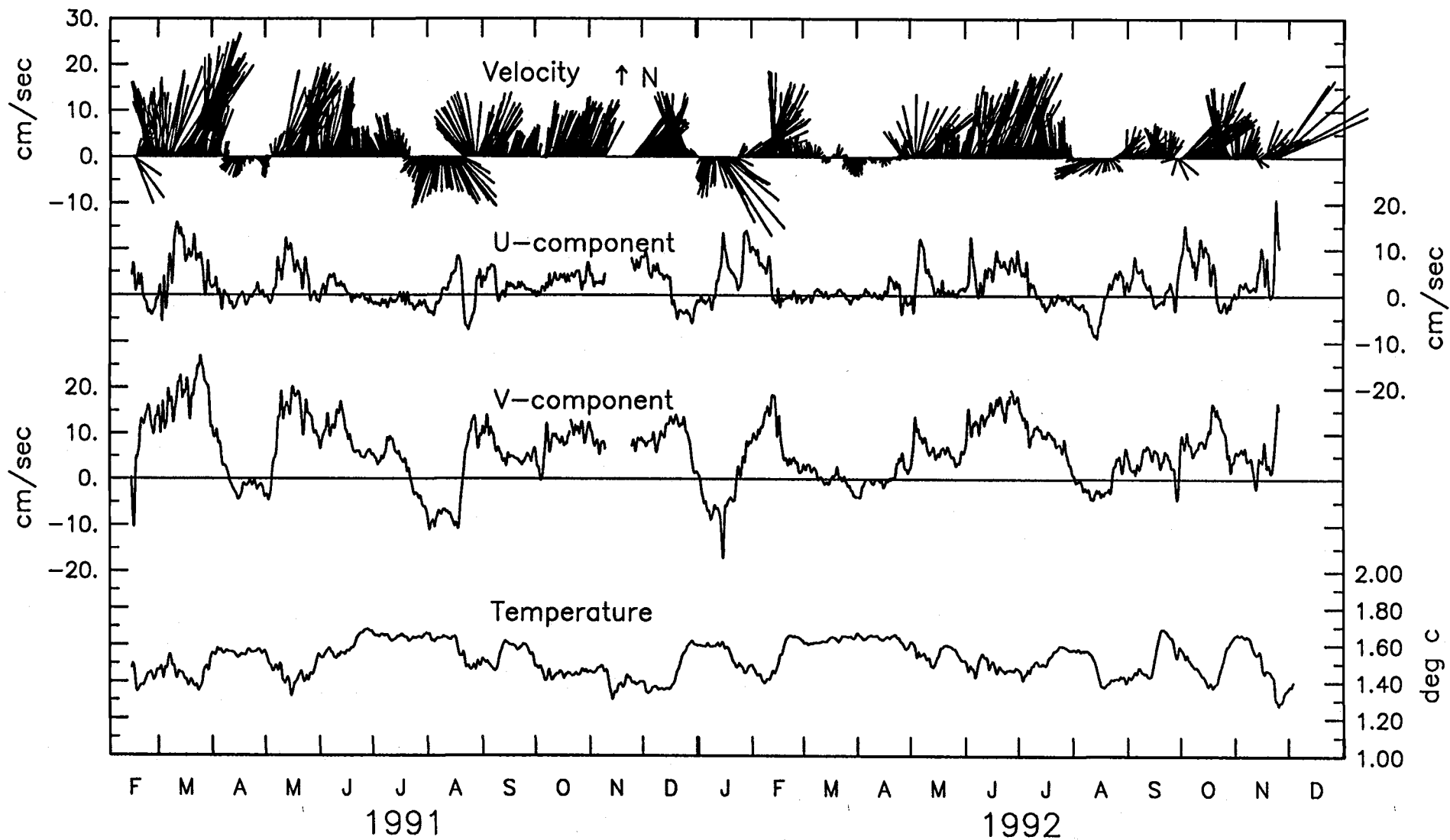
79.0 days starting 1430 22 Apr 92.

Unfiltered Current (both components) Kiwi 2.

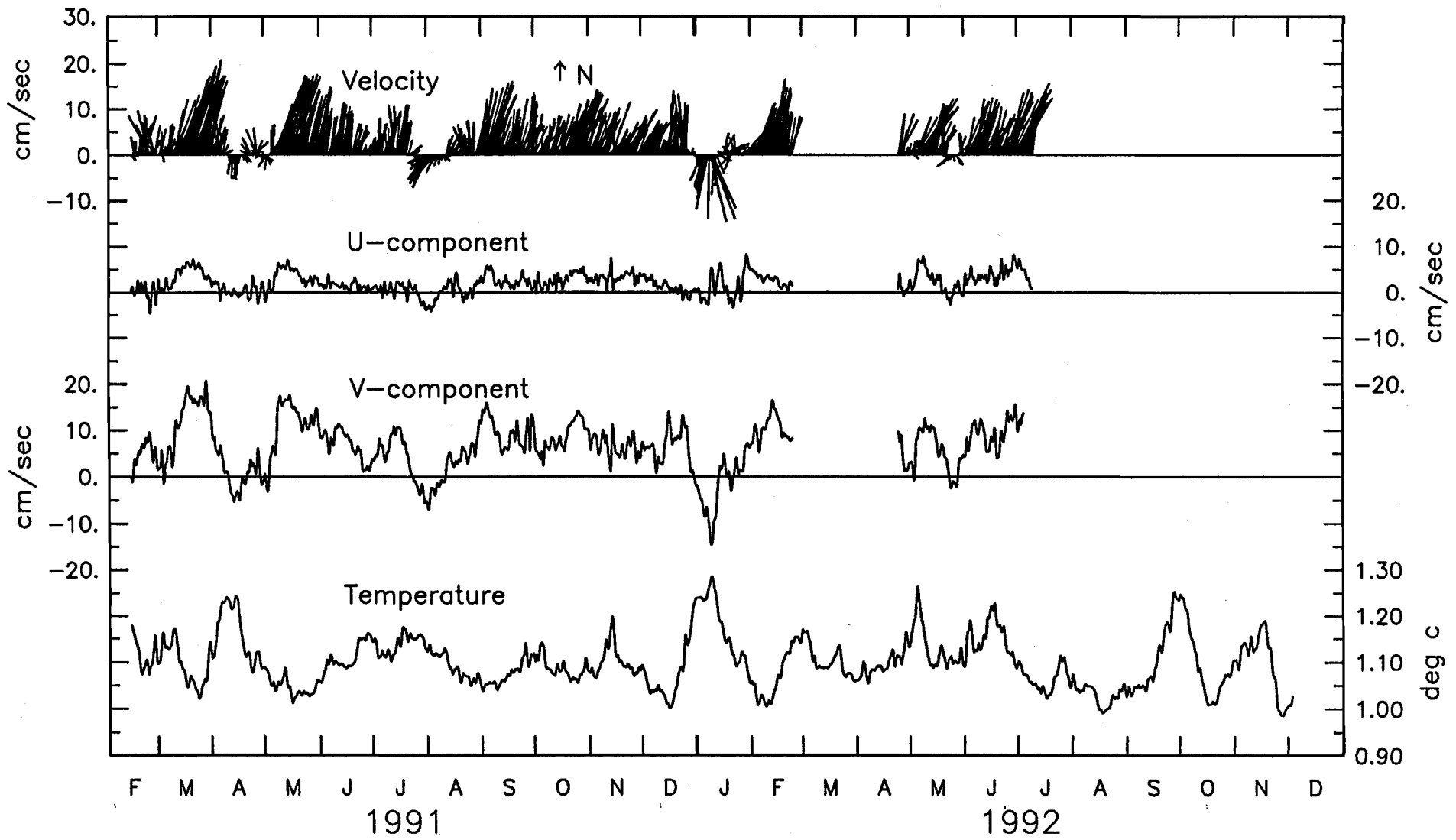




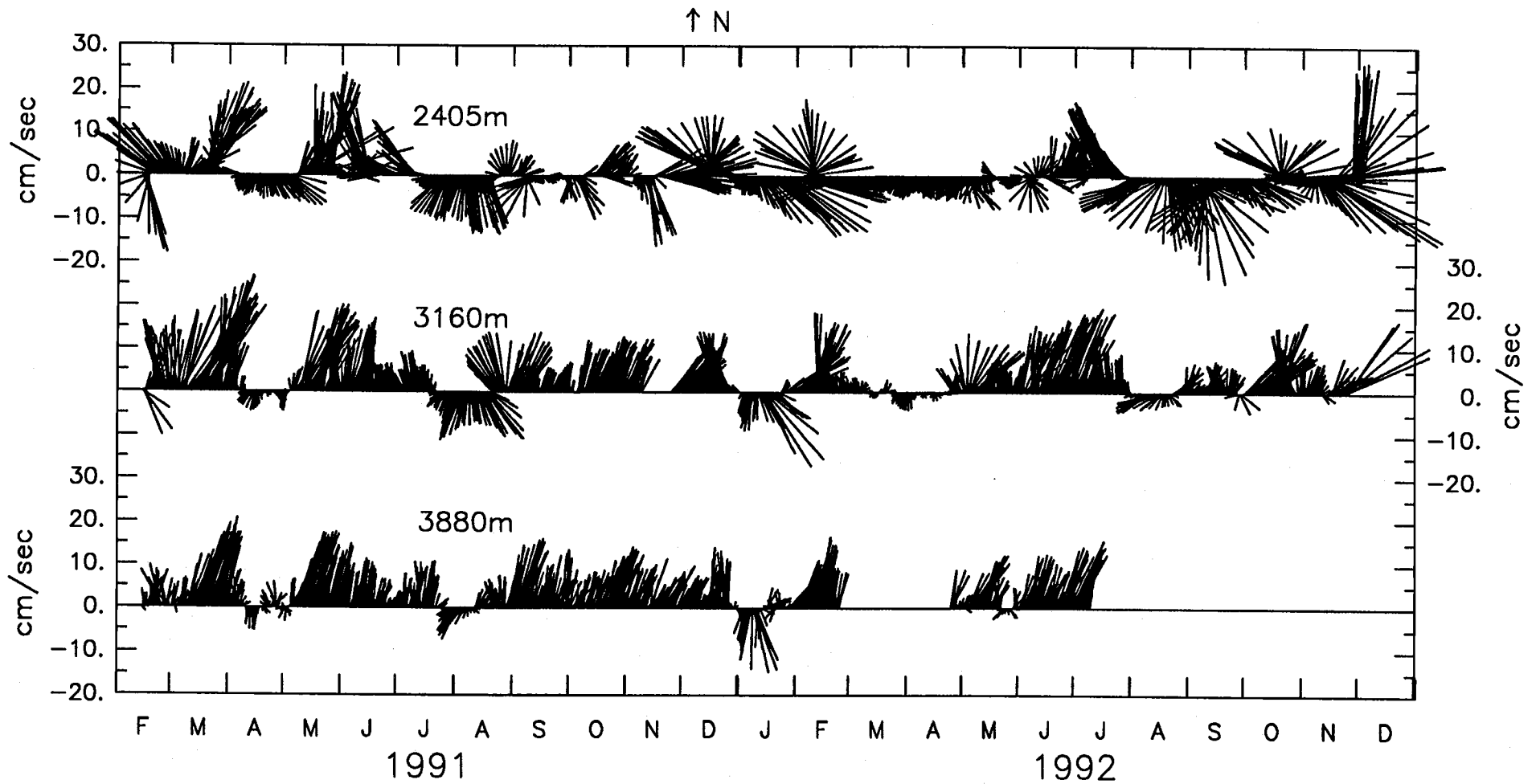
2405m at KIWI 2. LLP 6-hourly Data.



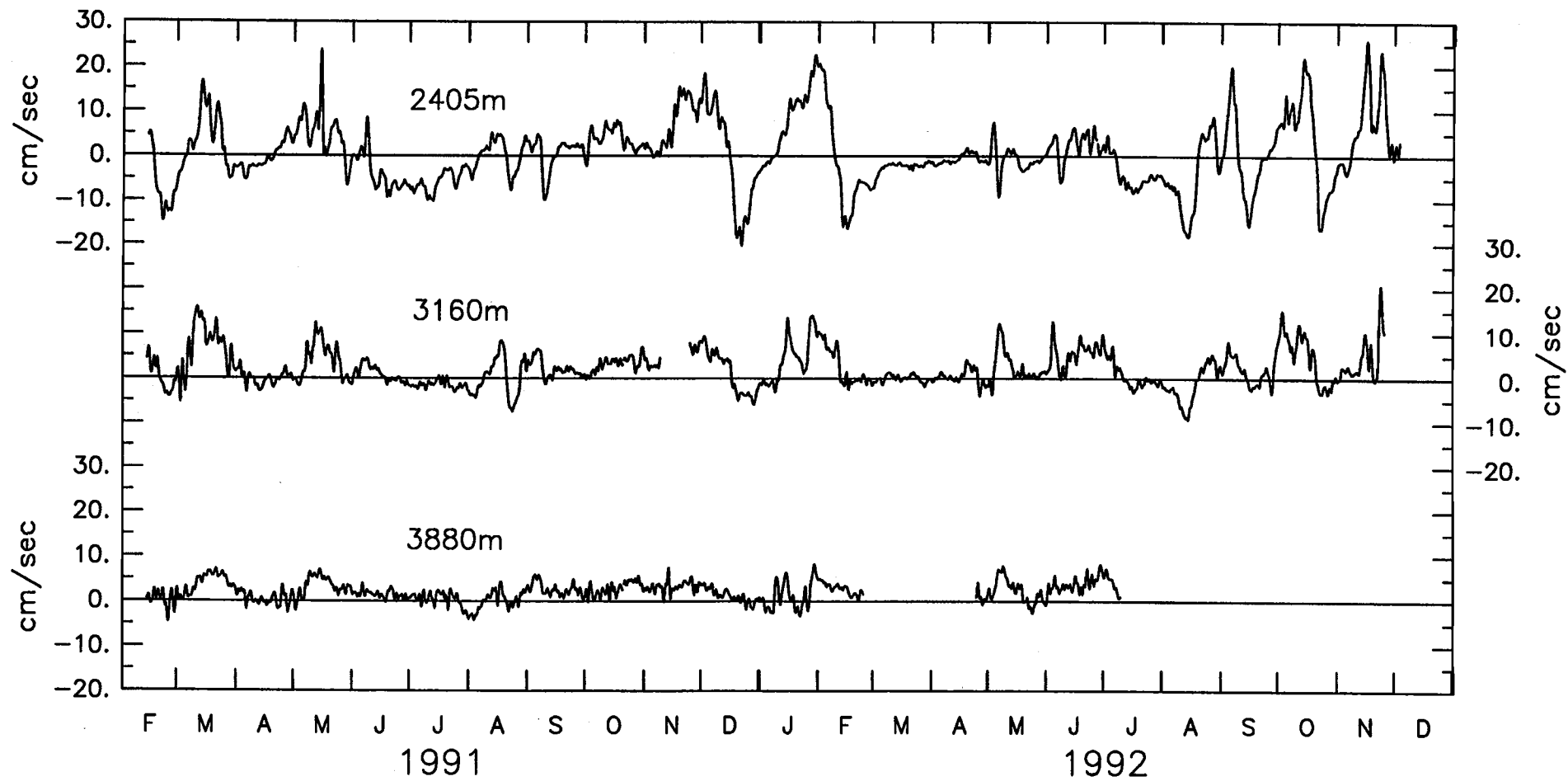
3160m at KIWI 2. LLP 6-hourly Data.



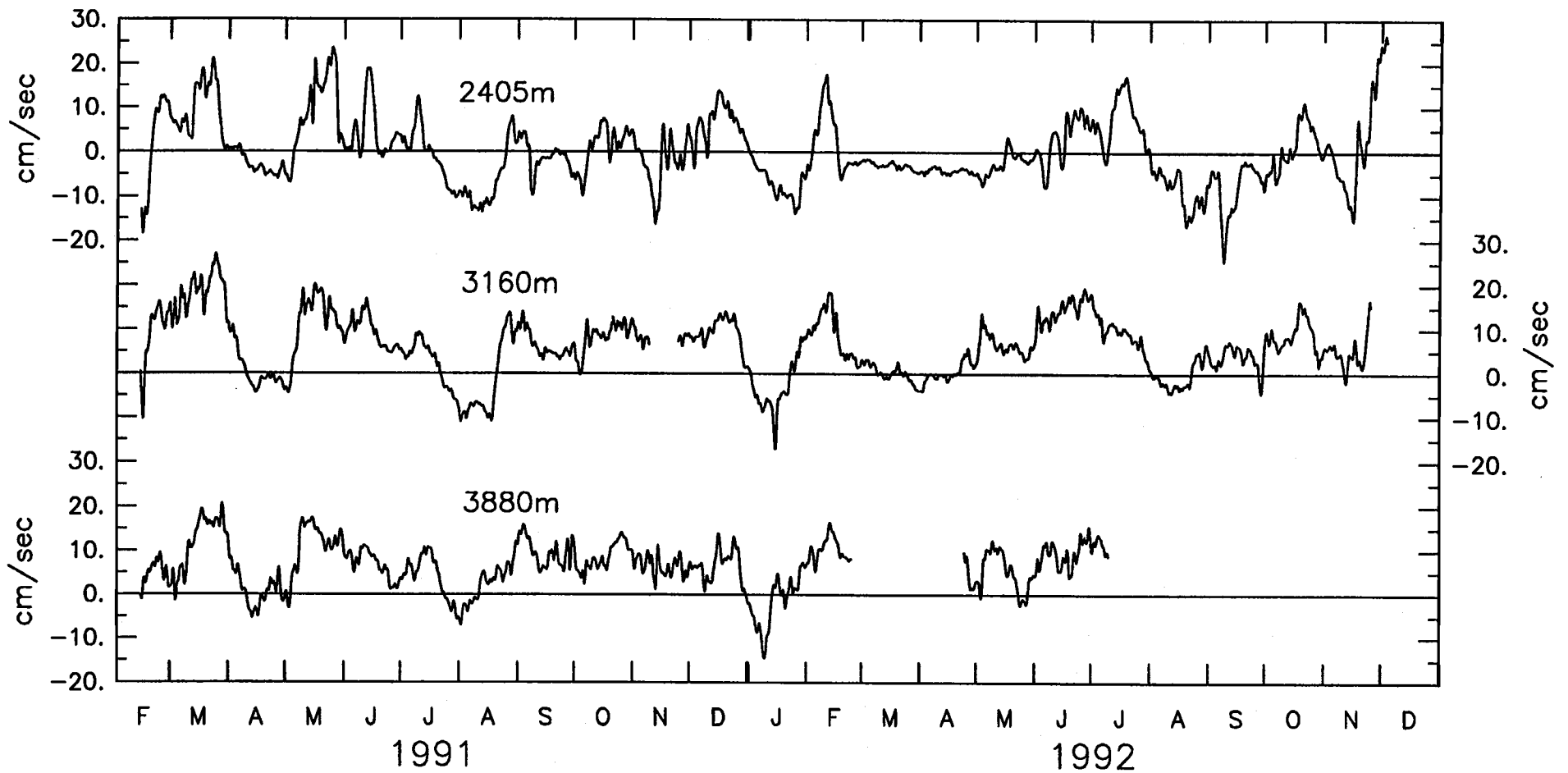
3880m at KIWI 2. LLP 6-hourly Data.



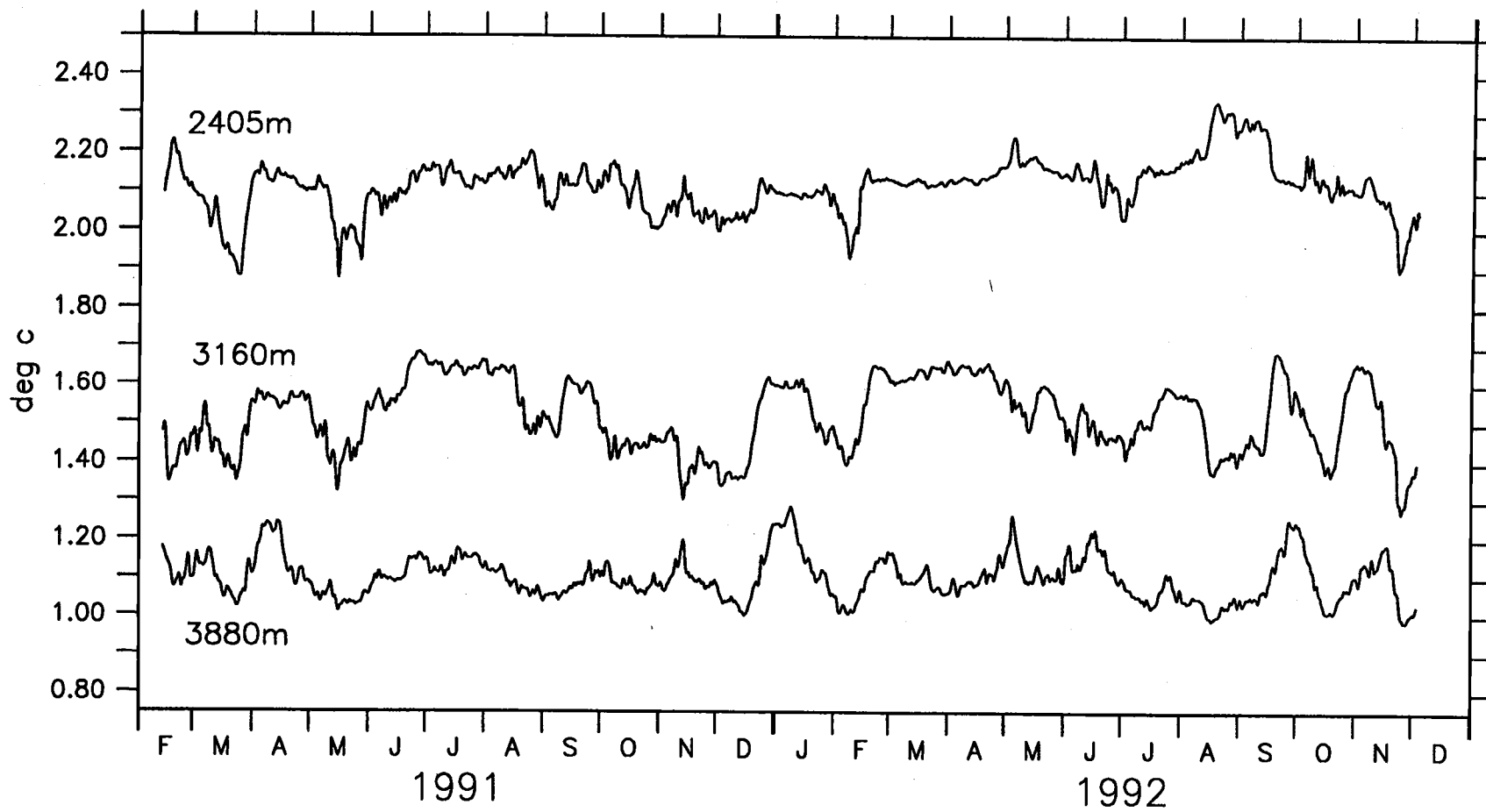
Velocity at KIWI 2. LLP 6-hourly Data.



U-component at KIWI 2. LLP 6-hourly Data.



V-component at KIWI 2. LLP 6-hourly Data.

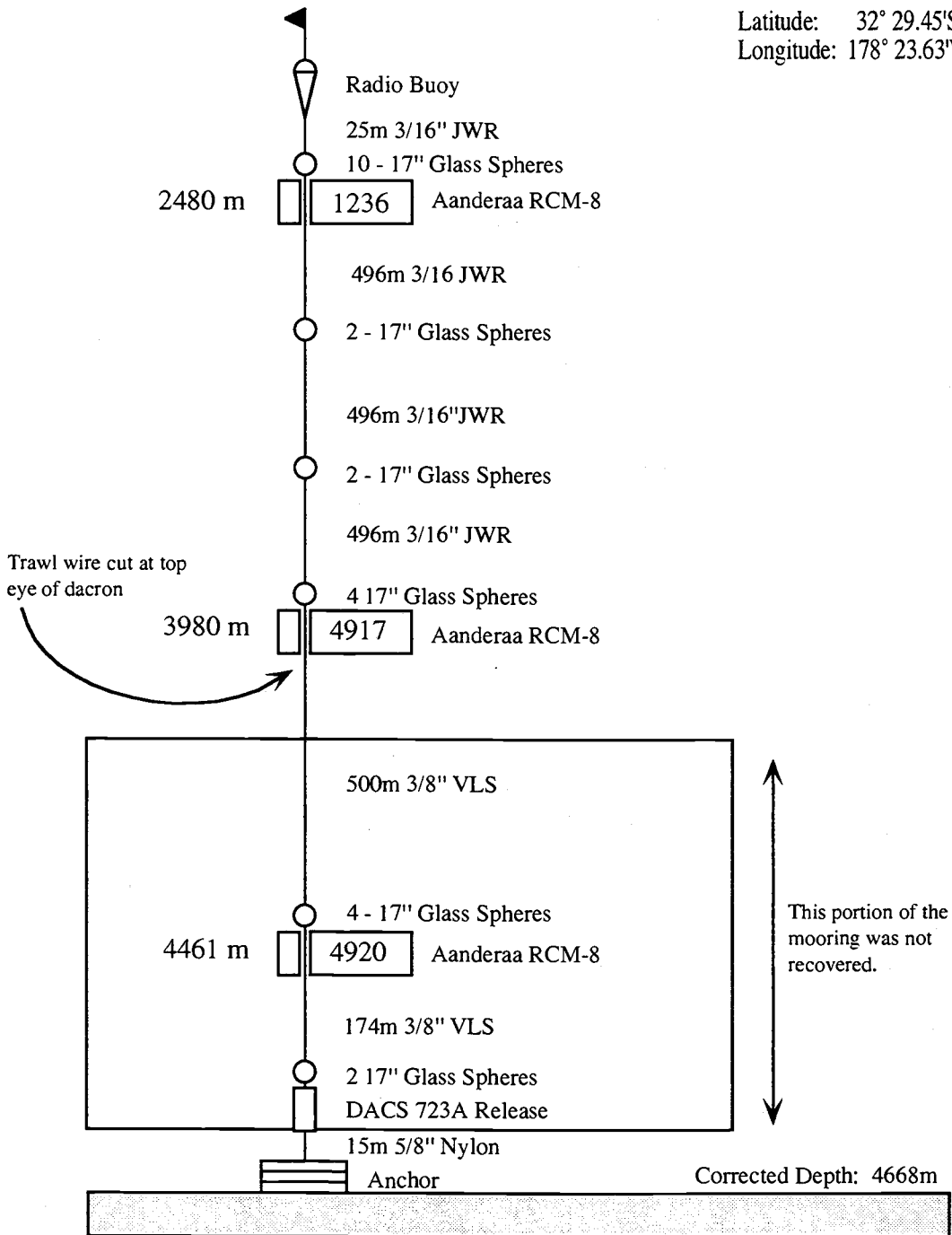


Temperature at KIWI 2. LLP 6-hourly Data.

MAPKIWI 3

Installed: 11 Feb 91
Recovered: 5 Dec 92

Latitude: 32° 29.45'S
Longitude: 178° 23.63'W



KIWI 3.

Position: 32° 29.45' S
 178° 23.63' W
 Depth of Water: 4668 m
 Mooring Set: 2324 11 February 1991
 Mooring Retrieved: 1600 05 December 1992
 Data Interval 0100 12 February 1991 - 1500 05 December 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2480	1236/63
3980	4917/23
4461	4920/

This mooring was recovered by dragging. The line was cut above RCM 4920 and that instrument was not recovered.

Instrument 1236 recorded u, v, temperature, and pressure every thirty minutes. The speed record was nullified lines 13593 - 16984 (0500 22 Nov 91 to 2030 31 Jan 92). During this time the speed record stuck at threshold.

Instrument 4917 recorded u, v. and temperature every thirty minutes. The speed record was nullified lines 8343 - 8452 (2000 4 Aug 91 to 0230 7 Aug 91). During this time the speed record stuck at threshold.

Instrument 4920 was not recovered.

2480 meters at KIWI 3. 12 Feb 91 - 5 Dec 92. Tape 1236/63.

	min	mean	max	sd	num
Speed, cm/sec	0.93	10.30	39.95	6.92	28413
U, cm/sec	-27.53	-0.68	38.08	8.18	28413
V, cm/sec	-39.89	-1.98	31.58	9.10	28413
Temp, deg c	1.78	2.09	2.27	0.06	31805
Pressure, db	2511.43	2524.11	2626.73	7.43	31805

3980 meters at KIWI 3. 12 Feb 91 - 5 Dec 92. Tape 4917/23.

	min	mean	max	sd	num
Speed, cm/sec	0.93	8.76	30.72	4.23	31695
U, cm/sec	-20.44	2.29	23.29	5.01	31695
V, cm/sec	-14.96	6.00	30.68	5.31	31695
Temp, deg c	0.95	1.07	1.31	0.05	31805

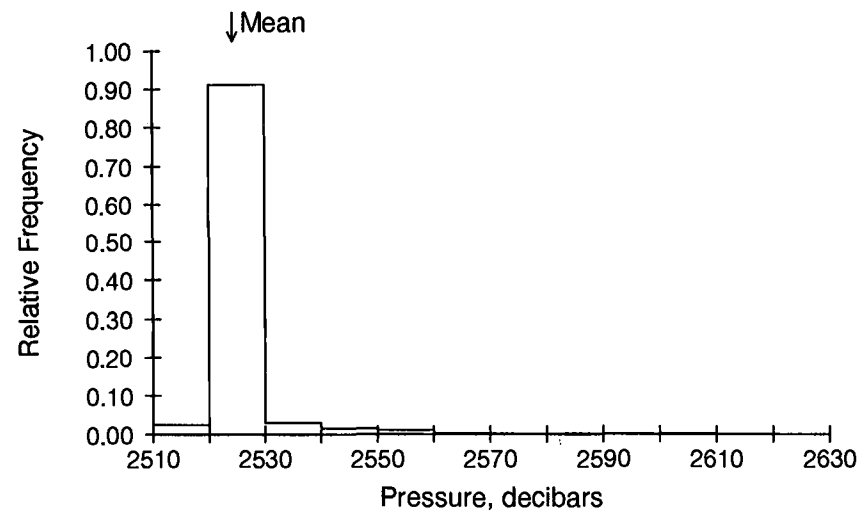
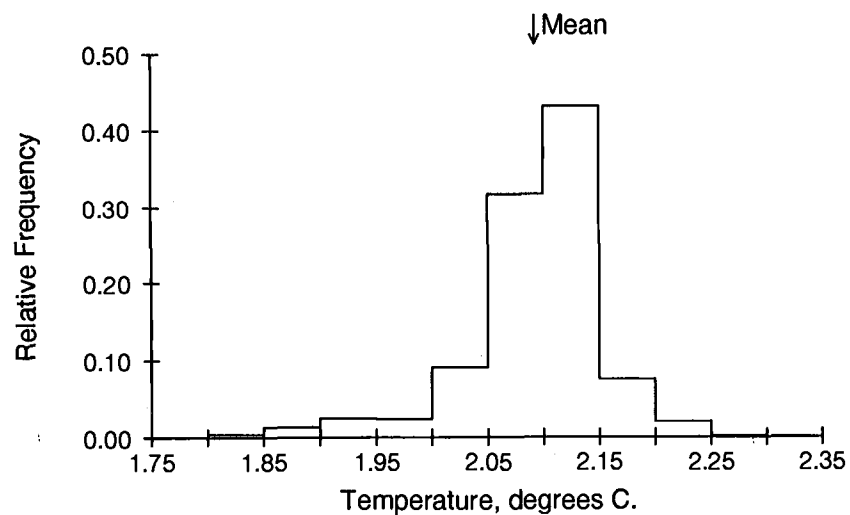
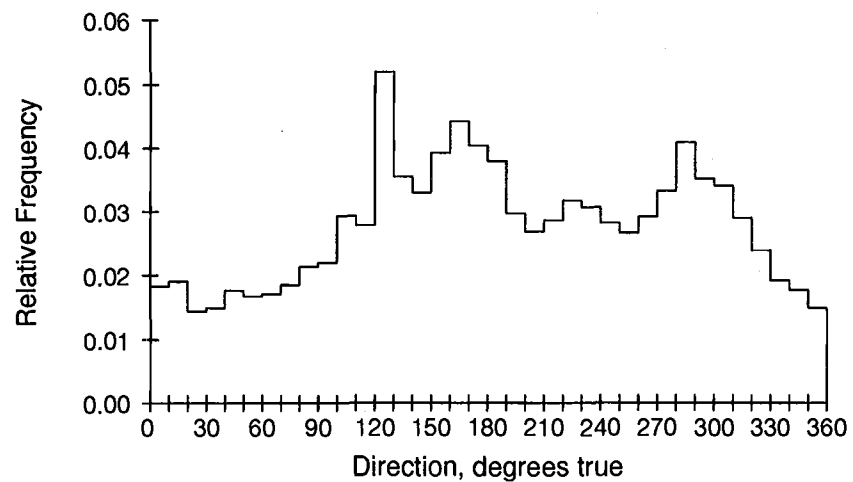
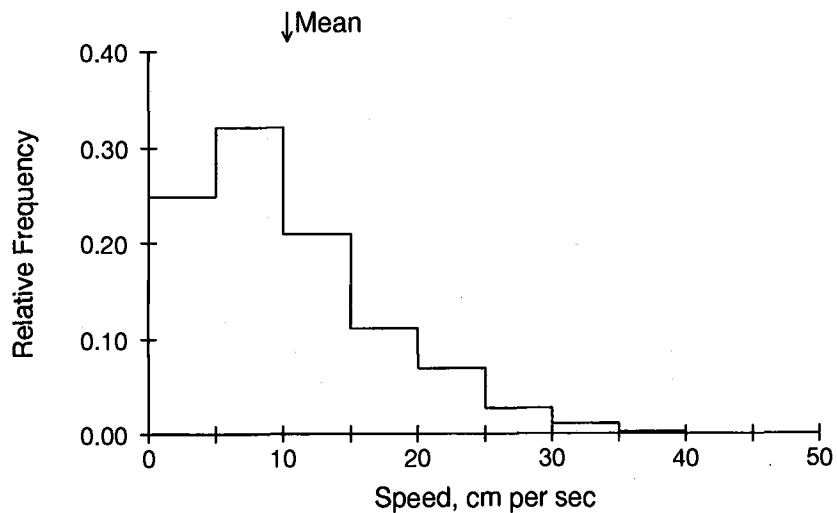
2480 meters at KIWI 3. 13 Feb 91 - 4 Dec 92. Tape 1236/63.

	min	mean	max	sd	num
Speed, cm/sec	0.14	9.39	32.97	6.78	2347
U, cm/sec	-21.74	-0.74	31.28	7.45	2347
V, cm/sec	-32.96	-2.02	24.36	8.60	2347
Temp, deg c	1.84	2.09	2.26	0.06	2640
Pressure, db	2511.19	2524.11	2590.95	6.87	2640

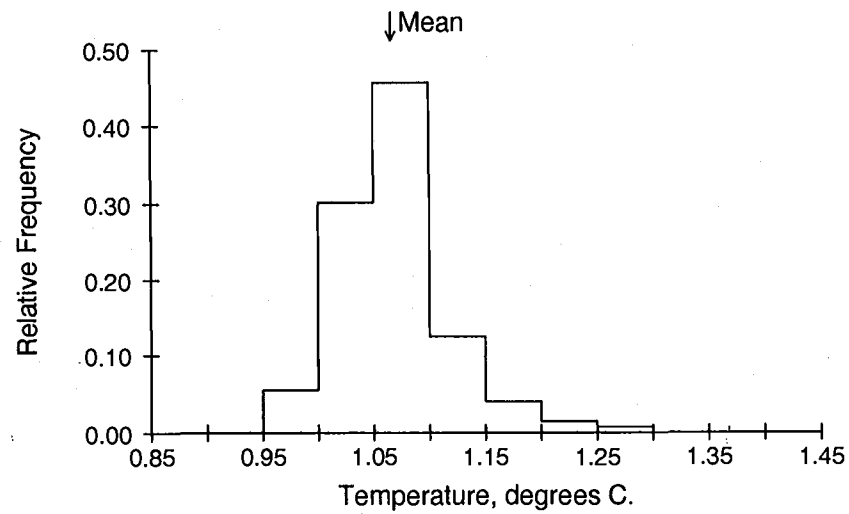
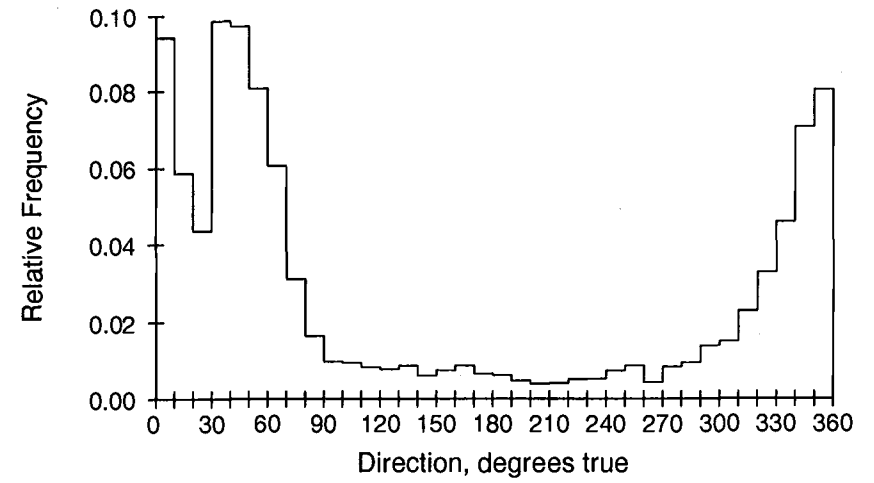
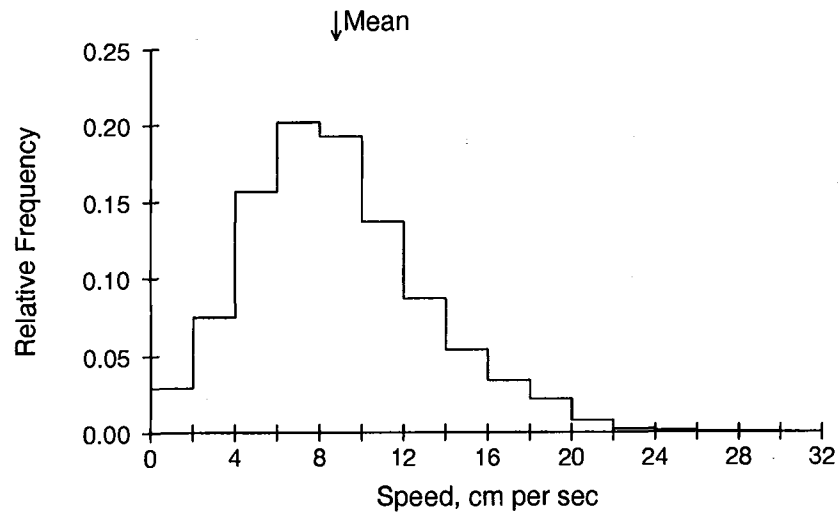
3980 meters at KIWI 3. 13 Feb 91 - 4 Dec 92. Tape 4917/23.

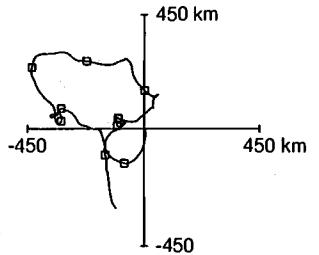
	min	mean	max	sd	num
Speed, cm/sec	0.03	7.41	21.62	4.01	2621
U, cm/sec	-9.91	2.30	15.92	2.75	2621
V, cm/sec	-6.31	6.03	21.44	4.67	2621
Temp, deg c	0.95	1.07	1.28	0.05	2640

2480m at Kiwi 3. 12 Feb 91 - 5 Dec 92. RCM 1236/63.

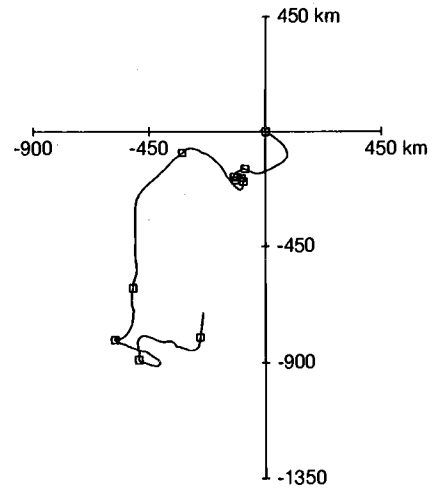


3980m at Kiwi 3. 12 Feb 91 - 5 Dec 92. RCM 4917/23.

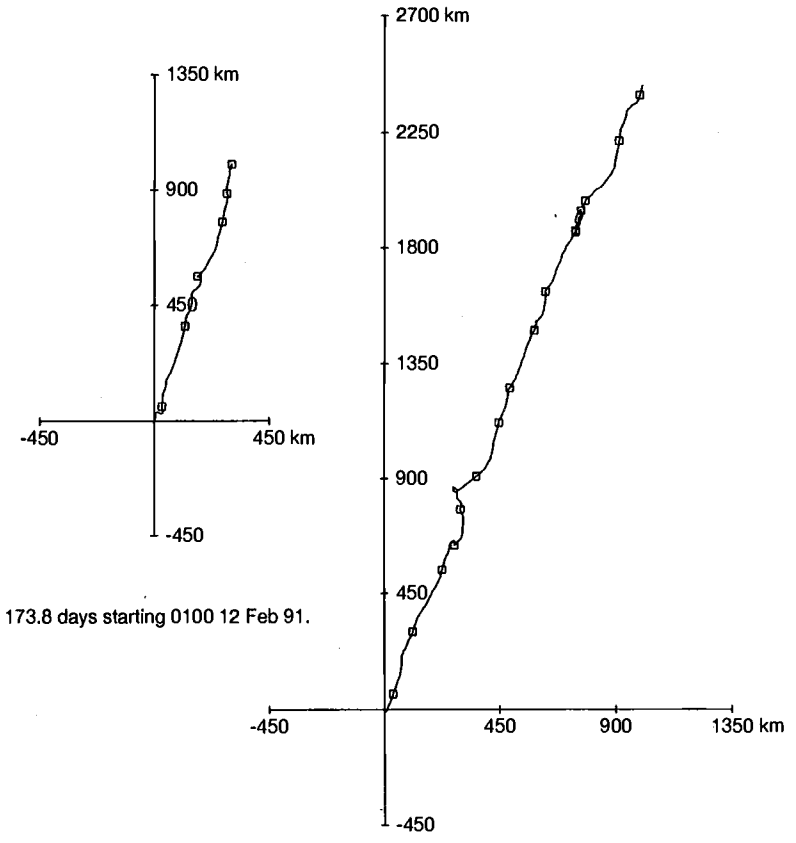




283.1 days starting 0100 12 Feb 91.



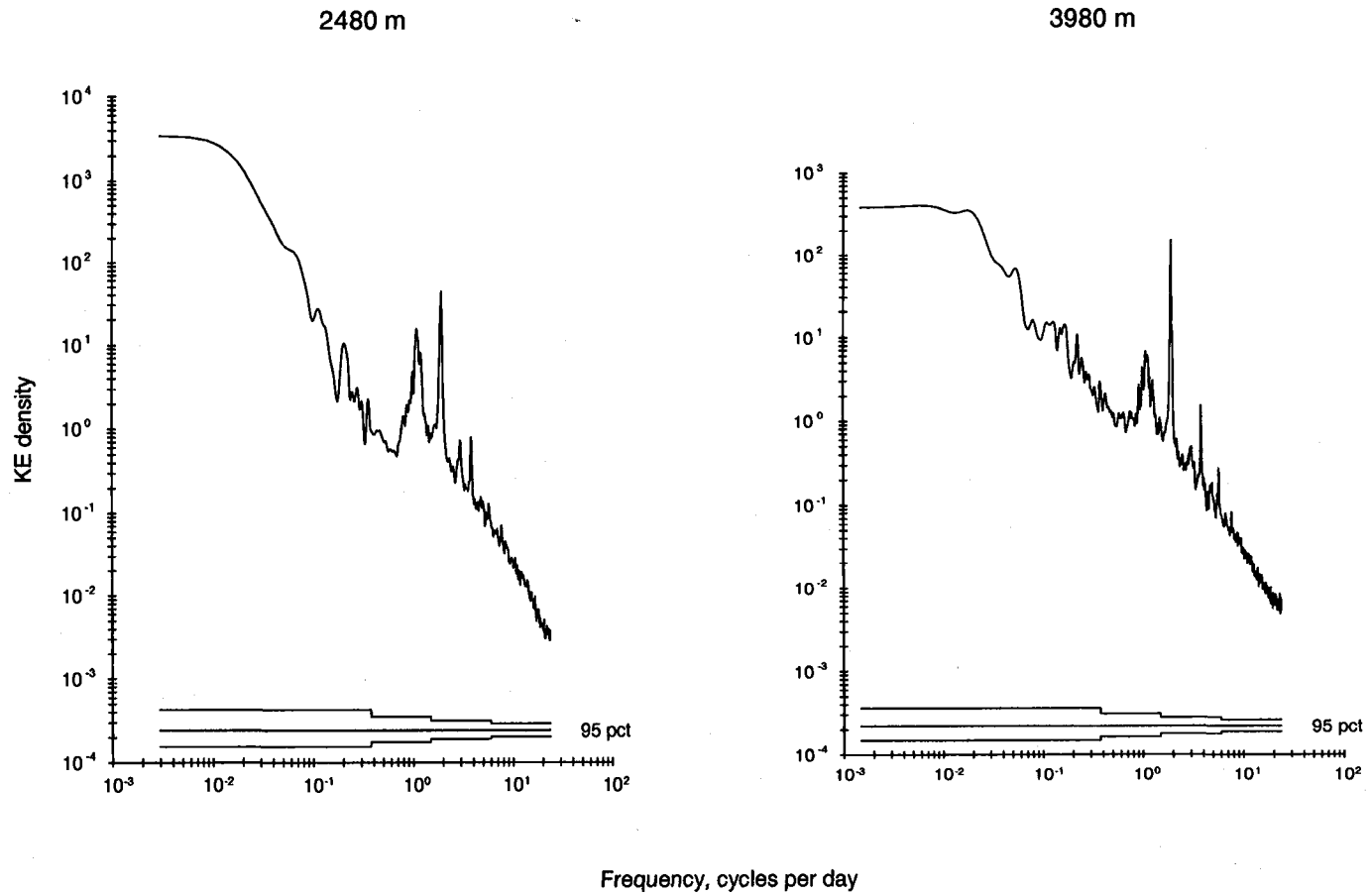
2480 m at KIWI 3. 308.8 days starting 2100 31 Jan 92.

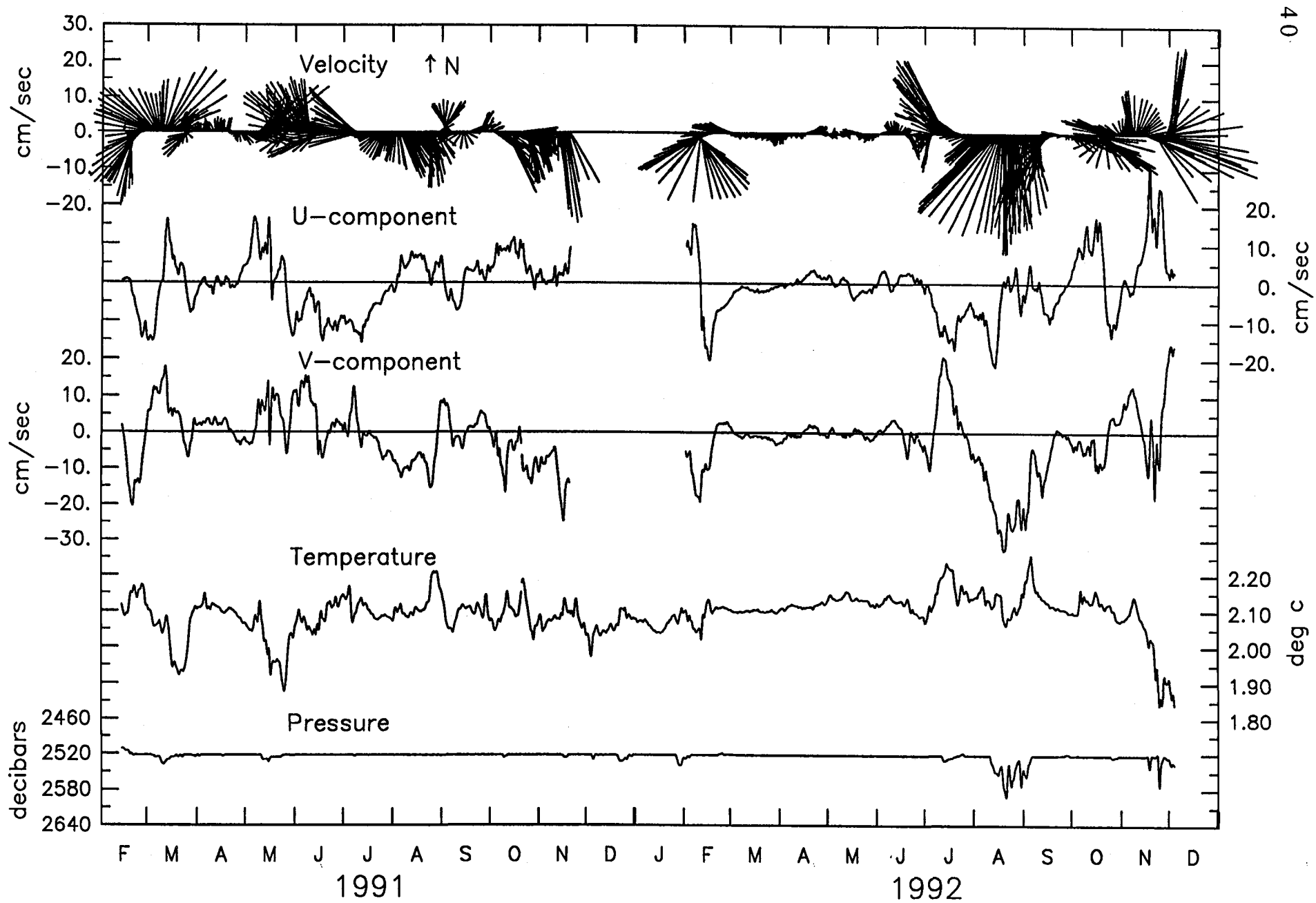


173.8 days starting 0100 12 Feb 91.

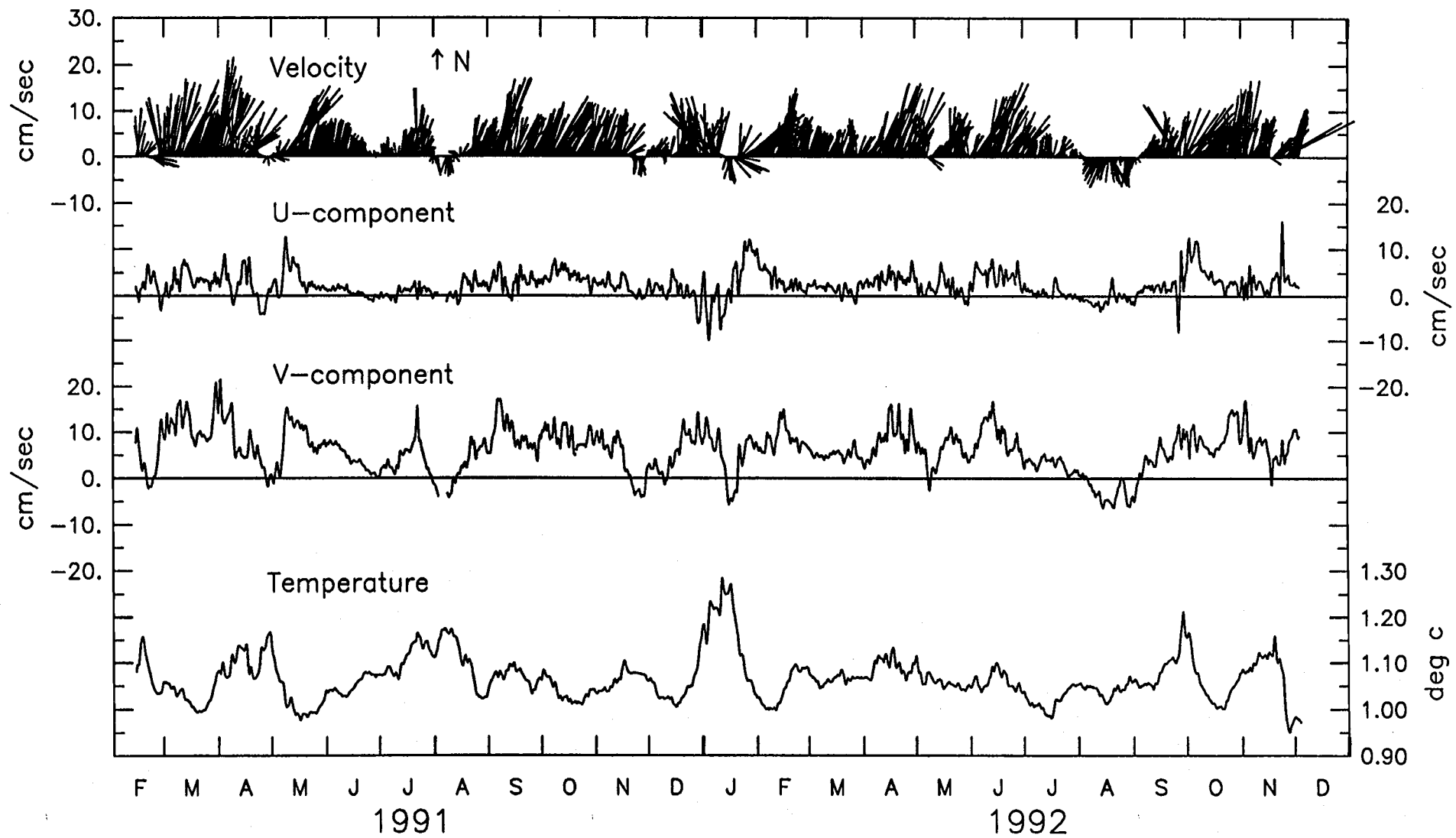
3980 m at KIWI 3. 486.5 days starting 0300 7 Aug 91.

Unfiltered Current (both components) Kiwi 3.

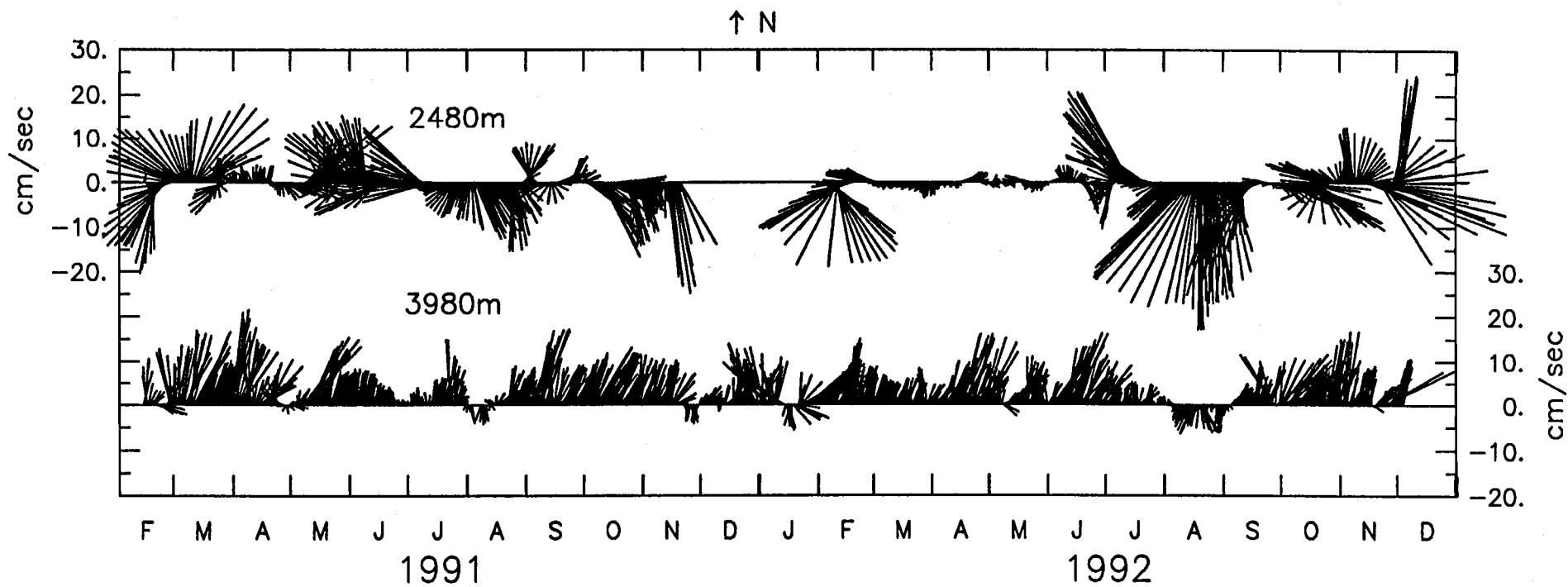




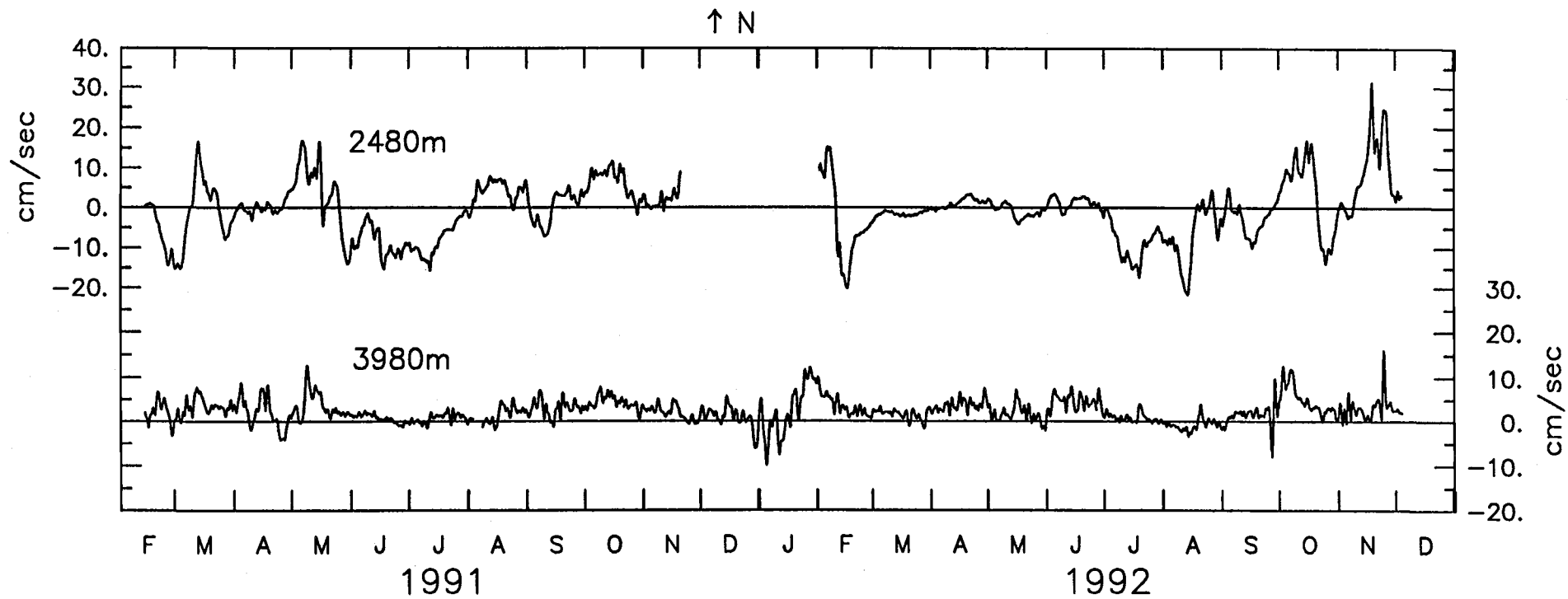
2480m at KIWI 3. LLP 6-hourly Data.



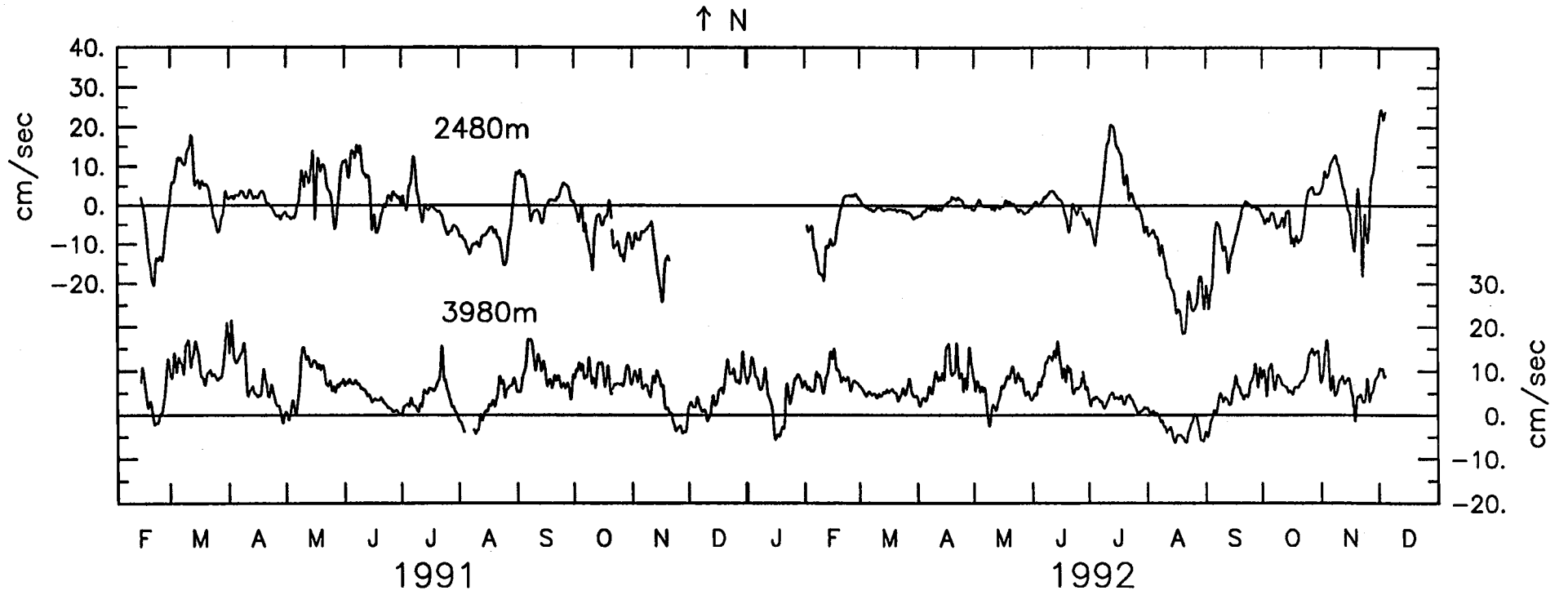
3980m at KIWI 3. LLP 6-hourly Data.



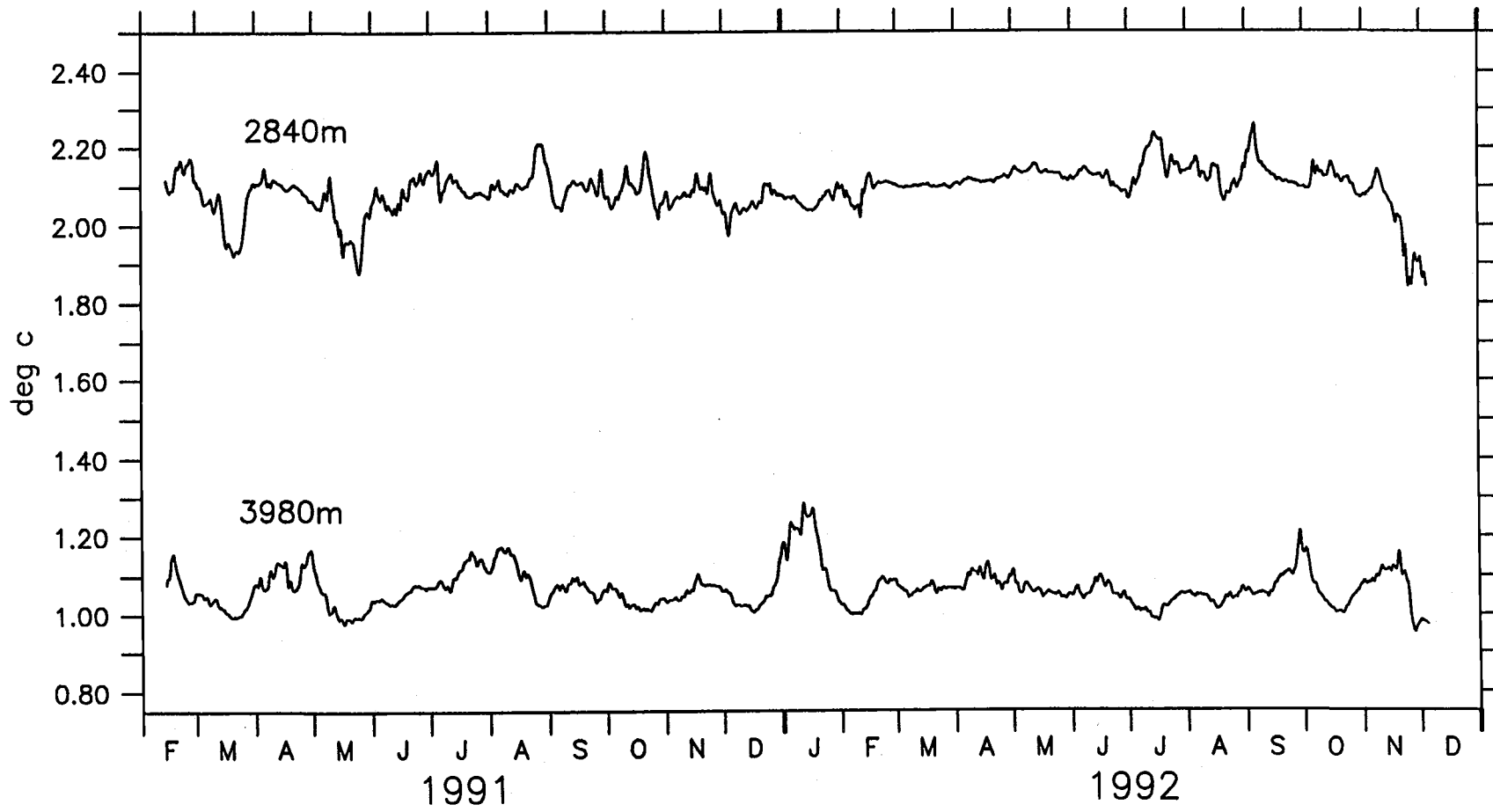
Velocity at KIWI 3. LLP 6-hourly Data.



U-component at KIWI 3. LLP 6-hourly Data.



V-component at KIWI 3. LLP 6-hourly Data.

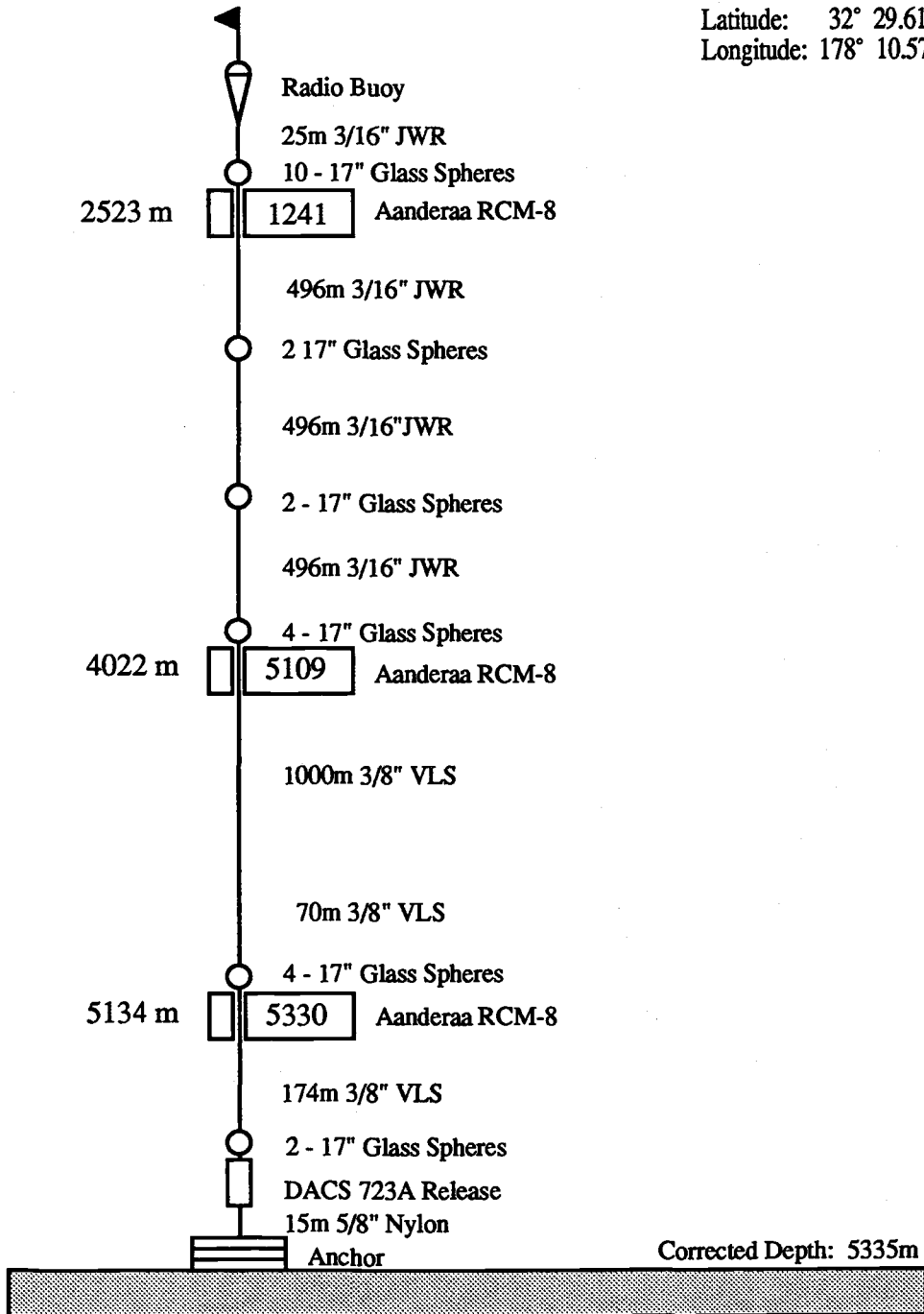


Temperature at KIWI 3. LLP 6-hourly Data.

MAPKIWI 4

Installed: 11 Feb 91
Recovered: 4 Dec 92

Latitude: 32° 29.61'S
Longitude: 178° 10.57'W



KIWI 4.

Position: 32° 29.61' S
178° 10.57' W
Depth of Water: 5335 m
Mooring Set: 1923 11 February 1991
Mooring Retrieved: 2112 04 December 1992
Data Interval: 2130 11 February 1991 - 2030 04 December 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2523	1241/
4022	5109/23
5134	5330/29

Instrument 1241 flooded through the pressure sensor. No data was recovered.

Instrument 5109 recorded u, v, and temperature every 30 minutes. The speed record was nullified lines 12464 - 13441 (1300 29 Oct 91 2130 18 Nov 91). The speed record stuck at threshold during this time.

Instrument 5330 recorded u, v, and temperature every 30 minutes.

4022 meters at KIWI 4. 11 Feb 91 - 4 Dec 92. Tape 5109/23.

	min	mean	max	sd	num
Speed, cm/sec	0.93	7.59	27.55	3.91	30797
U, cm/sec	-13.20	3.16	26.61	4.40	30797
V, cm/sec	-13.52	5.10	22.95	4.19	30797
Temp, deg c	0.96	1.07	1.28	0.05	31775

5134 meters at KIWI 4. 11 Feb 91 - 4 Dec 92. Tape 5330/29.

	min	mean	max	sd	num
Speed, cm/sec	0.93	10.56	28.99	4.72	31775
U, cm/sec	-13.80	5.43	25.83	4.77	31775
V, cm/sec	-6.99	7.89	23.19	4.41	31775
Temp, deg c	1.01	1.04	1.10	0.01	31775

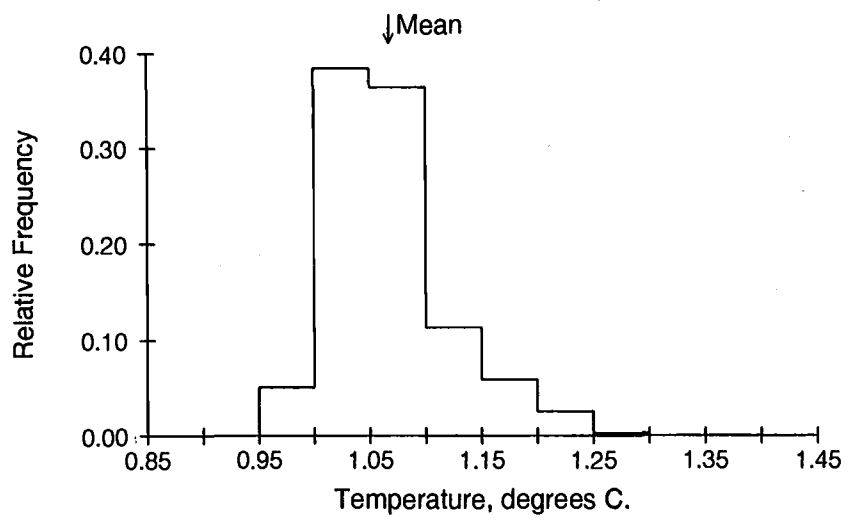
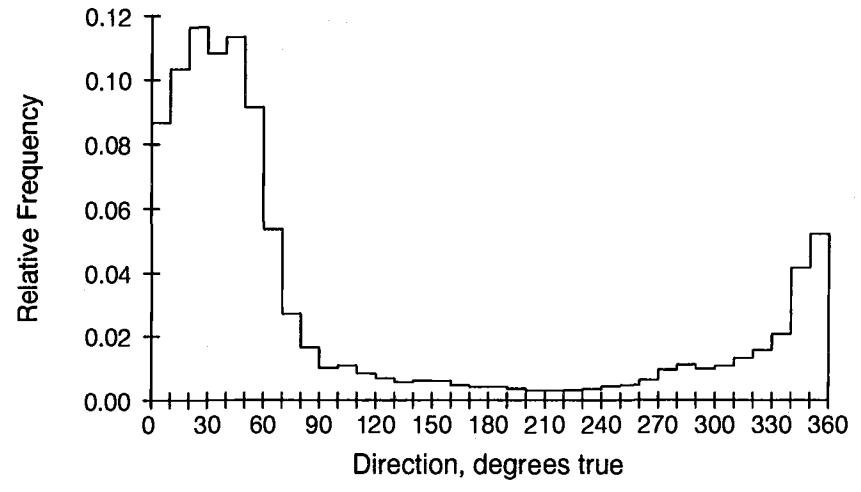
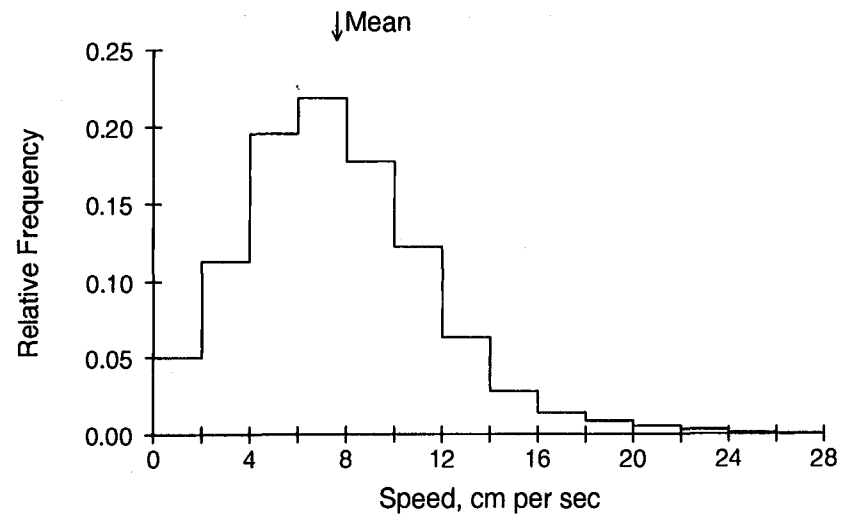
4022 meters at KIWI 4. 13 Feb 91 - 3 Dec 92. Tape 5109/23.

	min	mean	max	sd	num
Speed, cm/sec	0.27	6.98	23.14	3.61	2547
U, cm/sec	-6.52	3.15	19.31	3.45	2547
V, cm/sec	-8.02	5.10	20.76	3.73	2547
Temp, deg c	0.97	1.07	1.24	0.05	2638

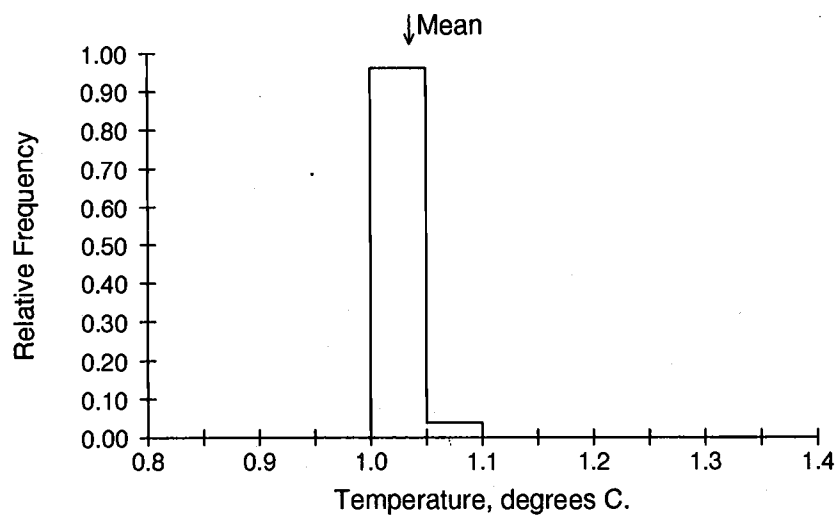
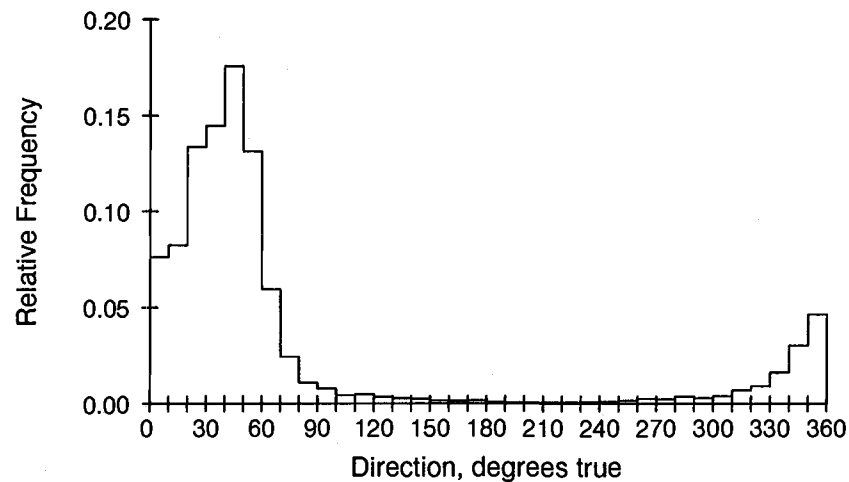
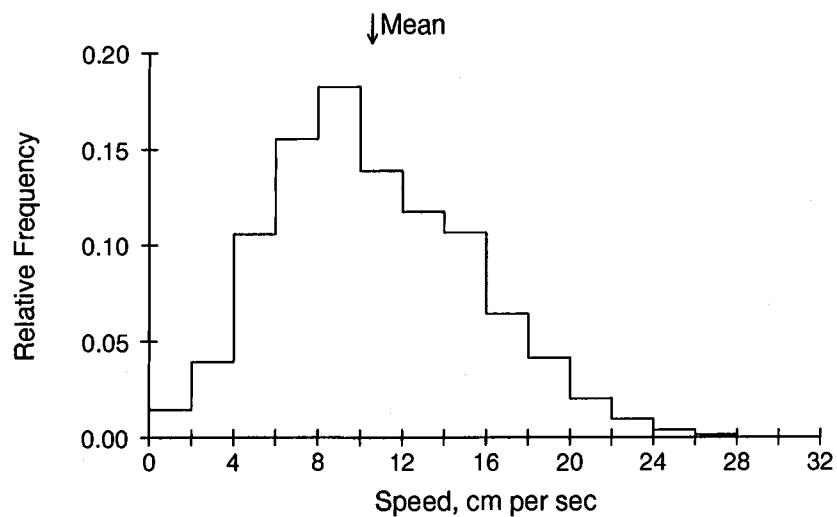
5134 meters at KIWI 4. 13 Feb 91 - 3 Dec 92. Tape 5330/29.

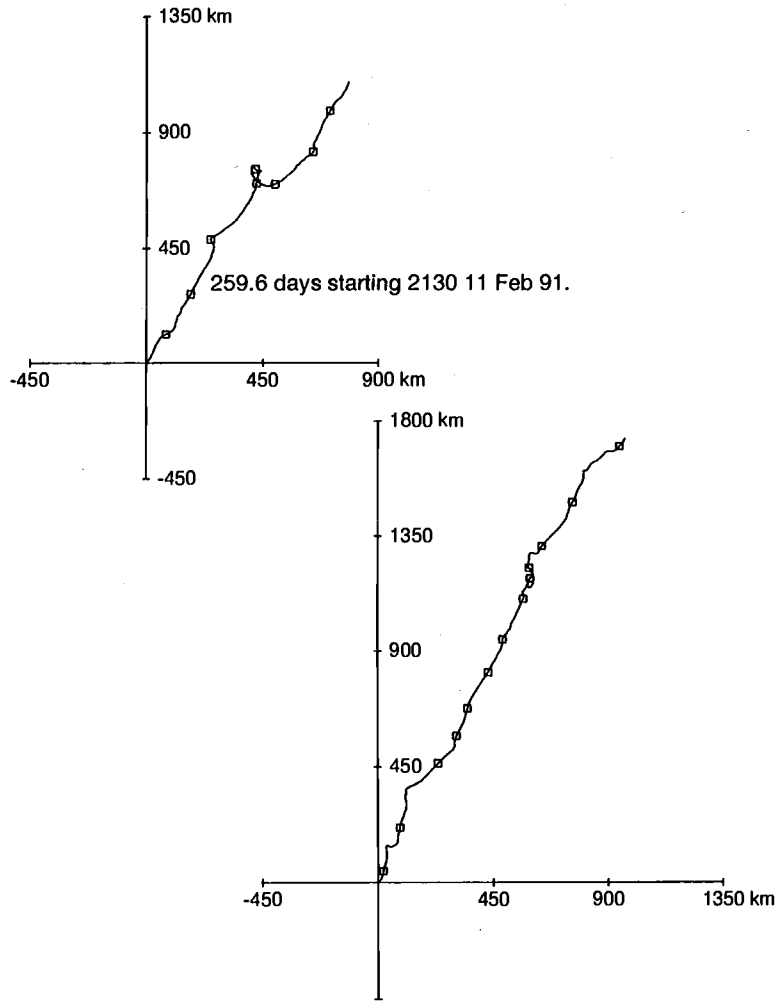
	min	mean	max	sd	num
Speed, cm/sec	0.23	9.70	24.66	4.70	2638
U, cm/sec	-1.11	5.42	18.81	3.14	2638
V, cm/sec	-2.25	7.87	19.59	3.88	2638
Temp, deg c	1.02	1.04	1.08	0.01	2638

4022m at Kiwi 4. 11 Feb 91 - 4 Dec 92. RCM 5109/23.

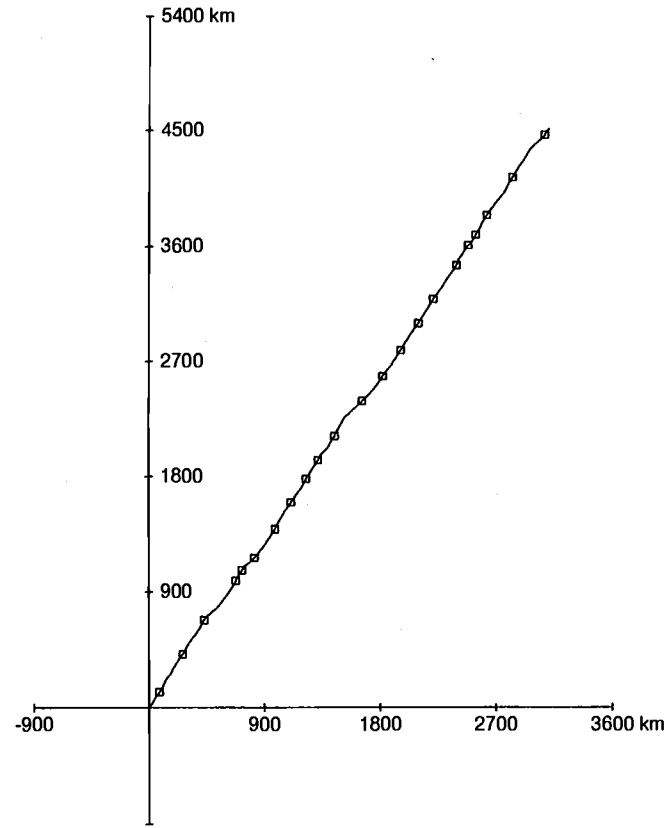


5134m at Kiwi 4. 11 Feb 91 - 4 Dec 92. RCM 5330/29.



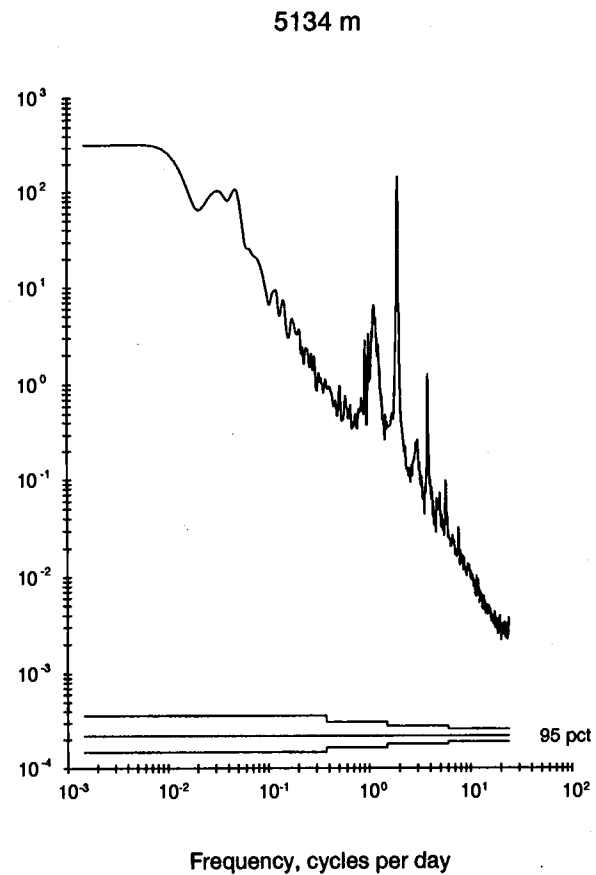
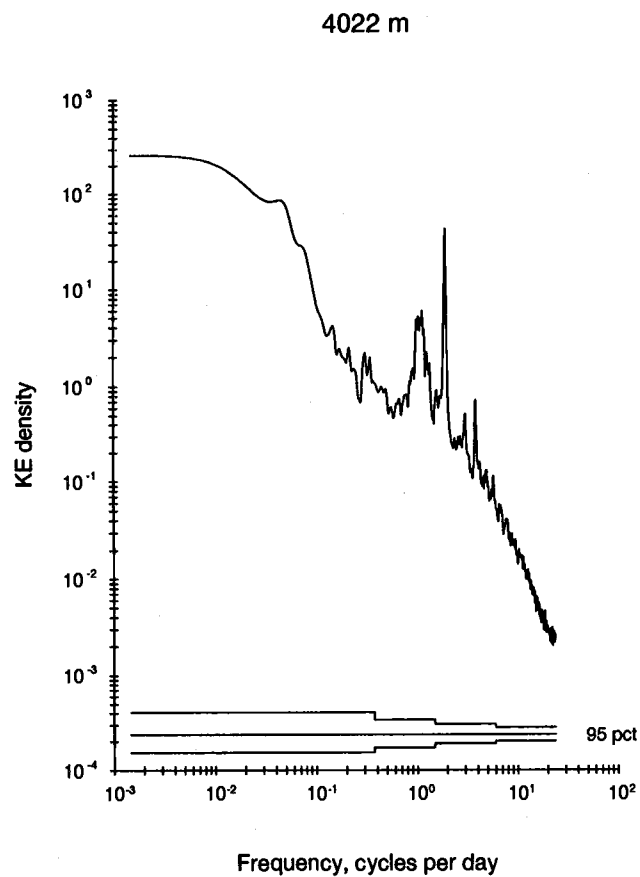


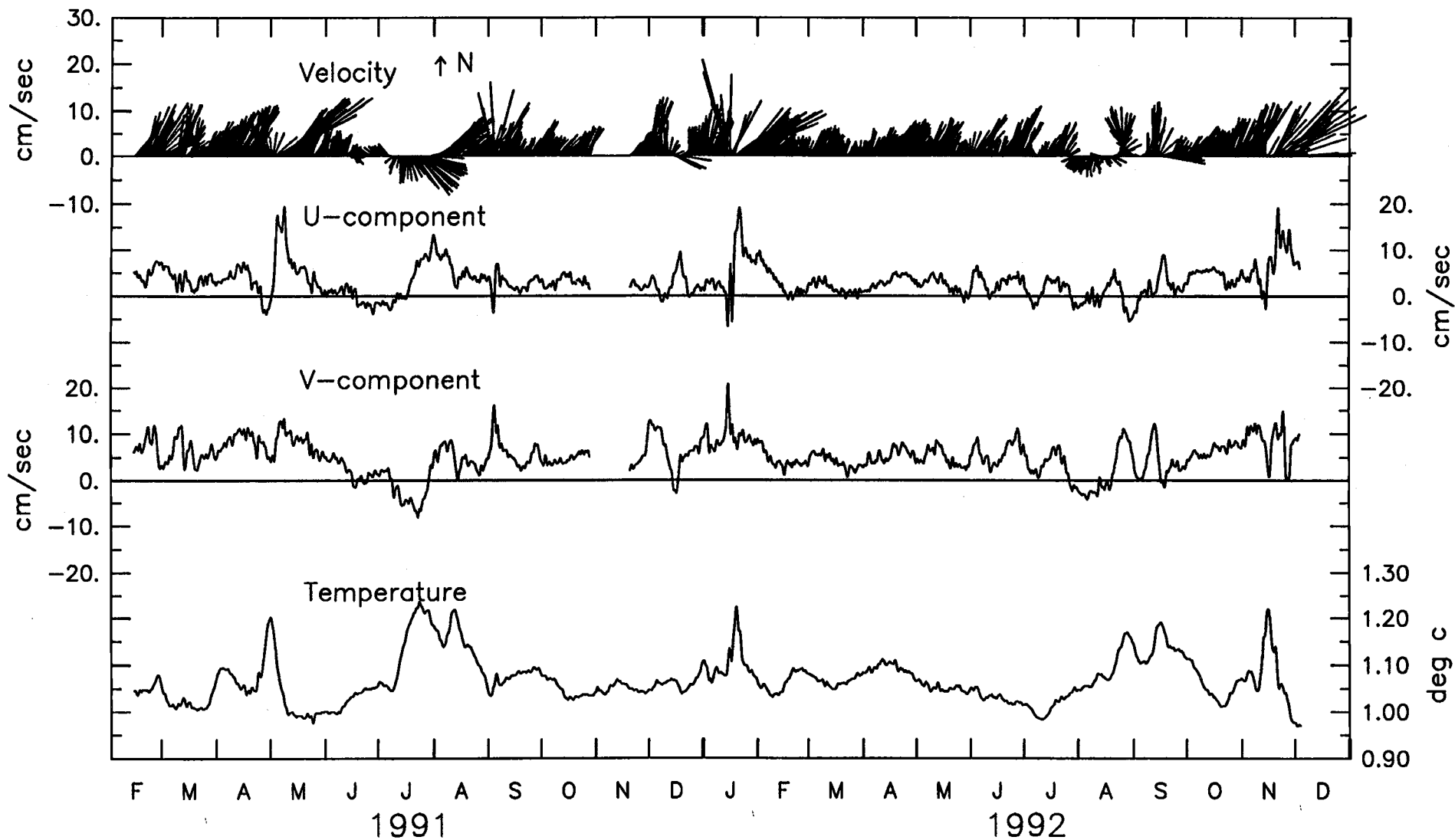
4022 m at KIWI 4. 381.9 days starting 2200 18 Nov 91.



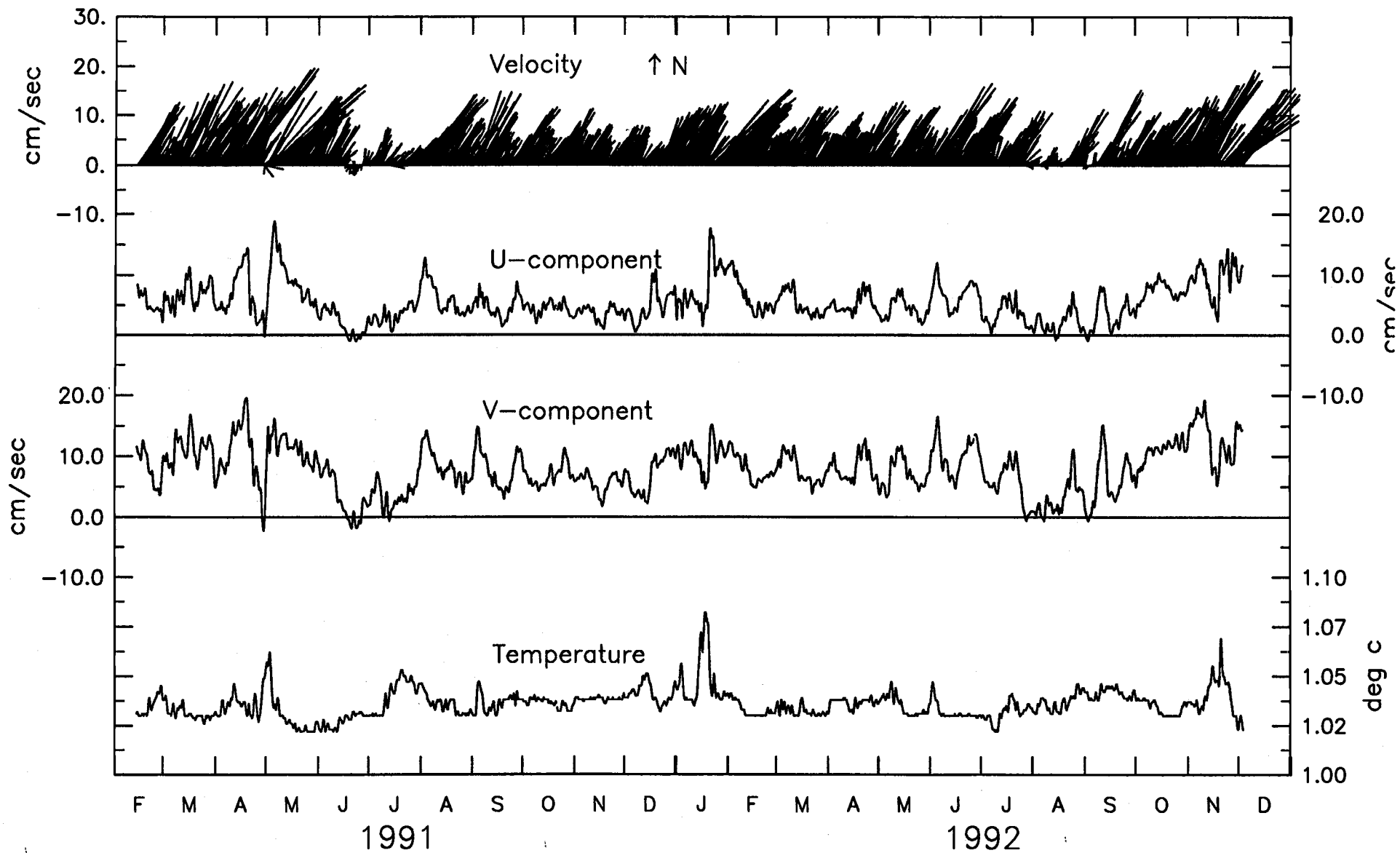
5134 m at KIWI 4. 662.0 days starting 2130 11 Feb 91.

Unfiltered Current (both components) Kiwi 4.

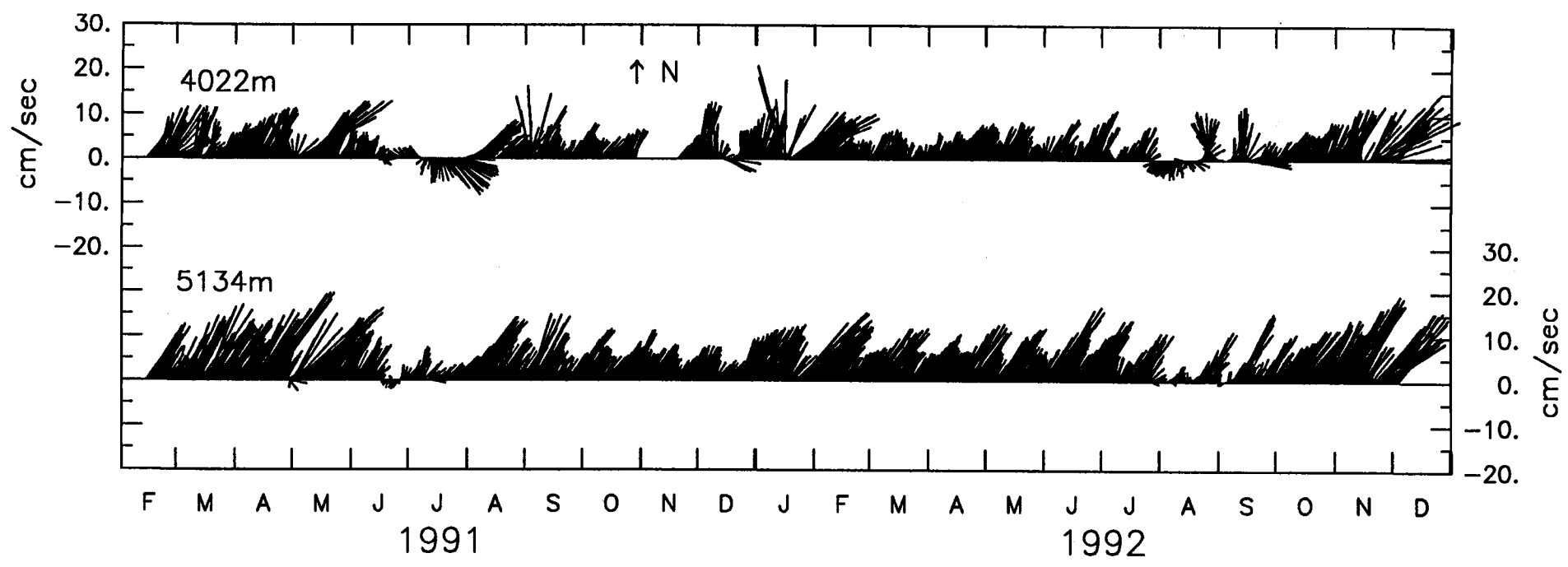




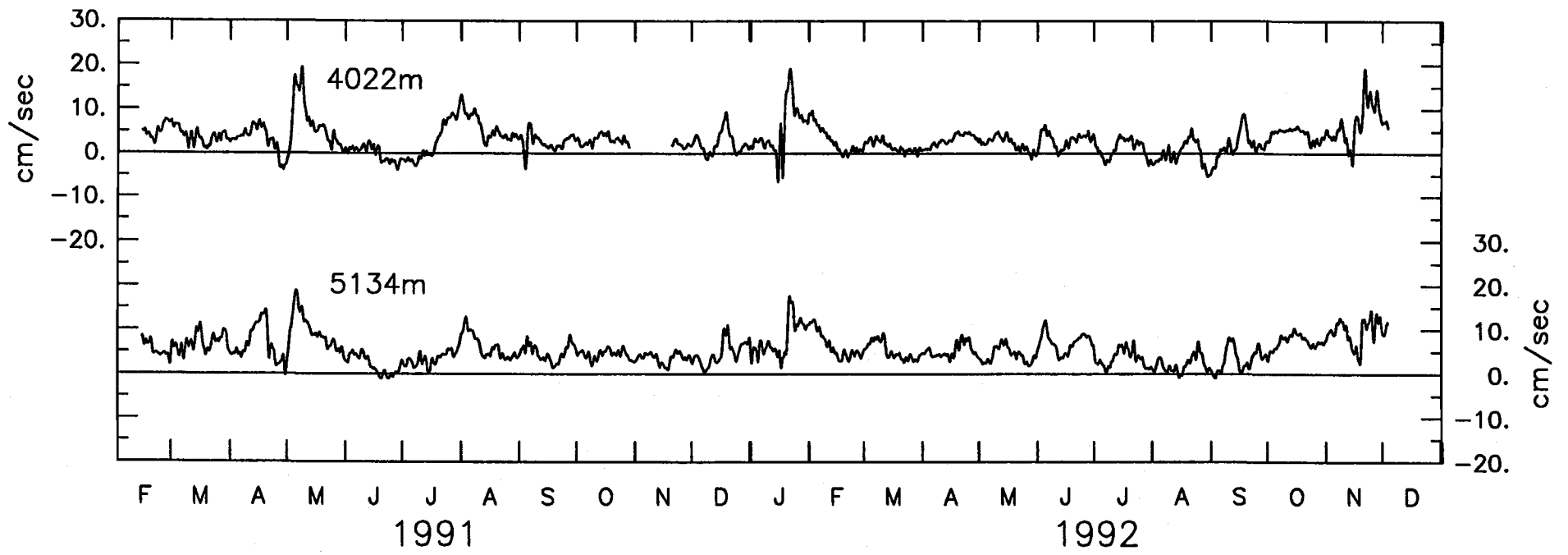
4022m at KIWI 4. LLP 6-hourly Data.



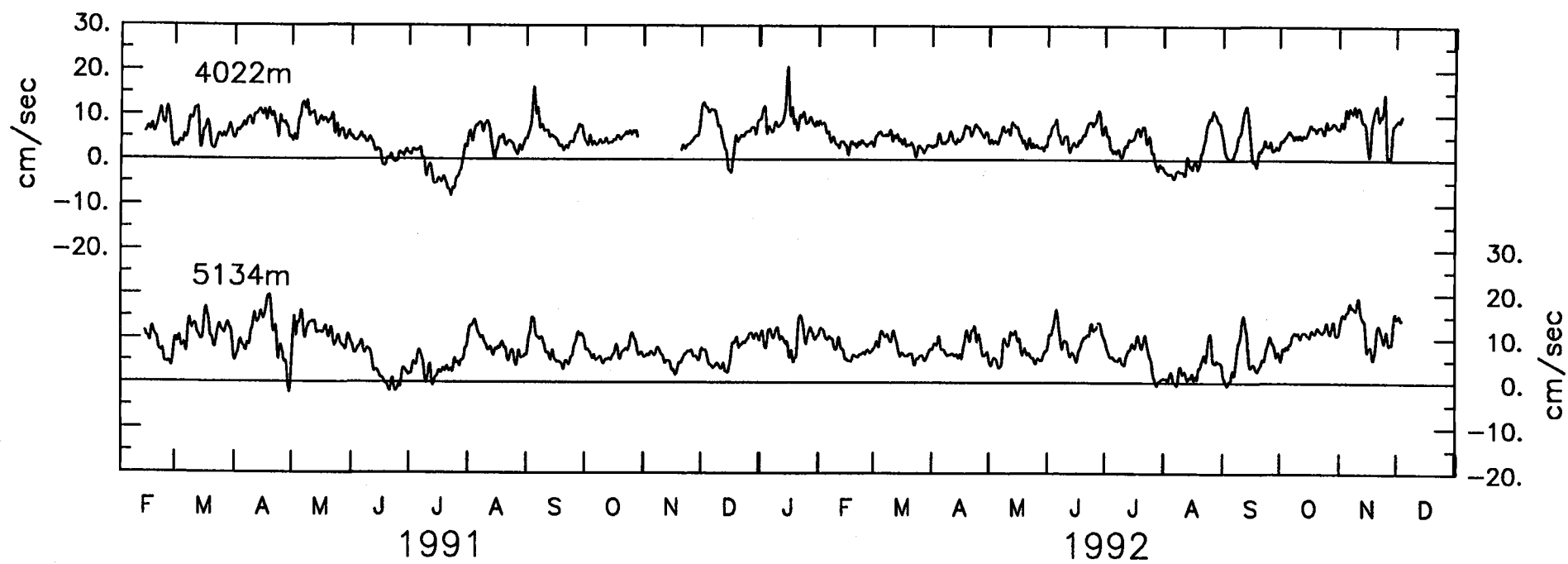
5134m at KIWI 4. LLP 6-hourly Data.



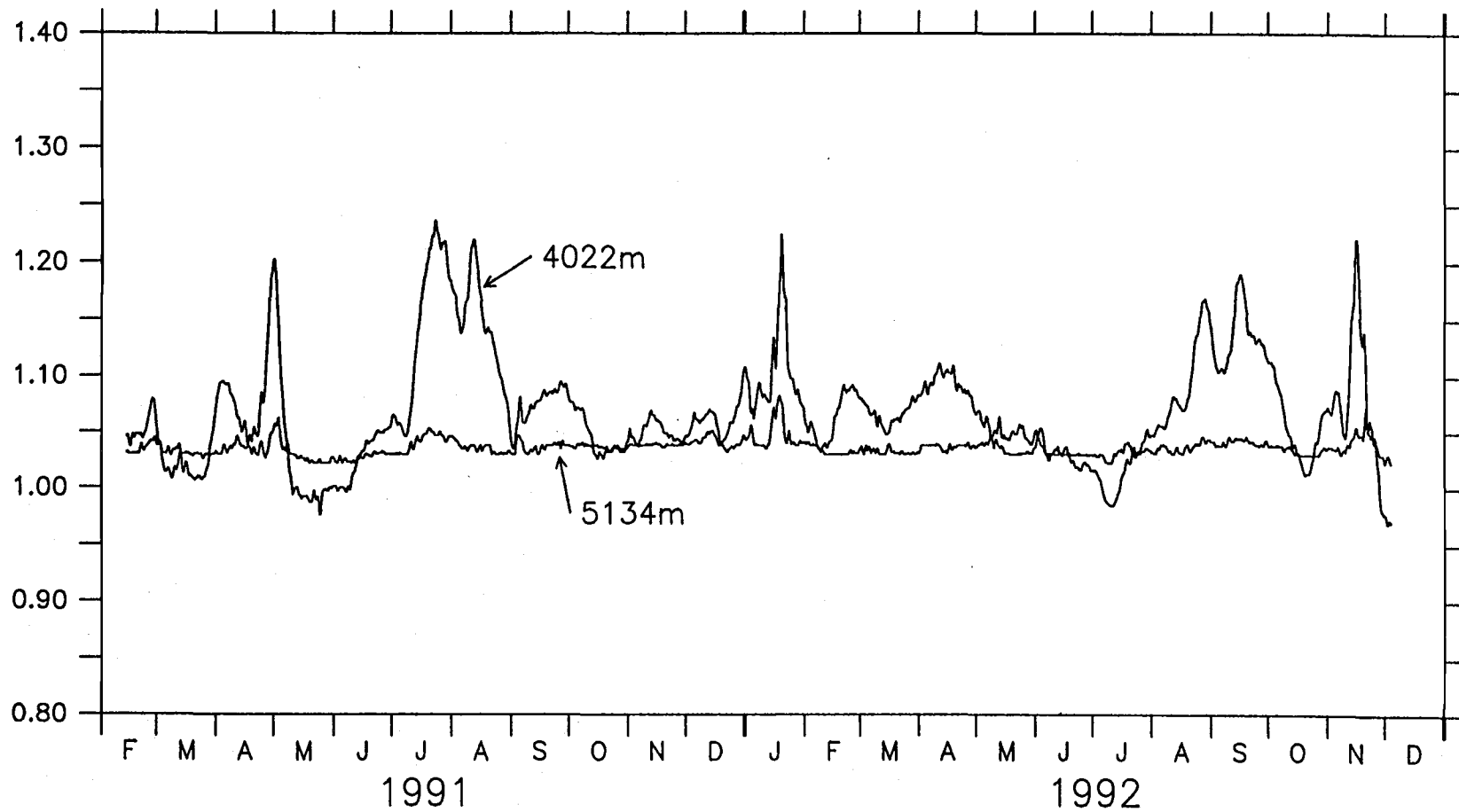
Velocity at KIWI 4. LLP 6-hourly Data.



U-component at KIWI 4. LLP 6-hourly Data.



V-component at KIWI 4. LLP 6-hourly Data.

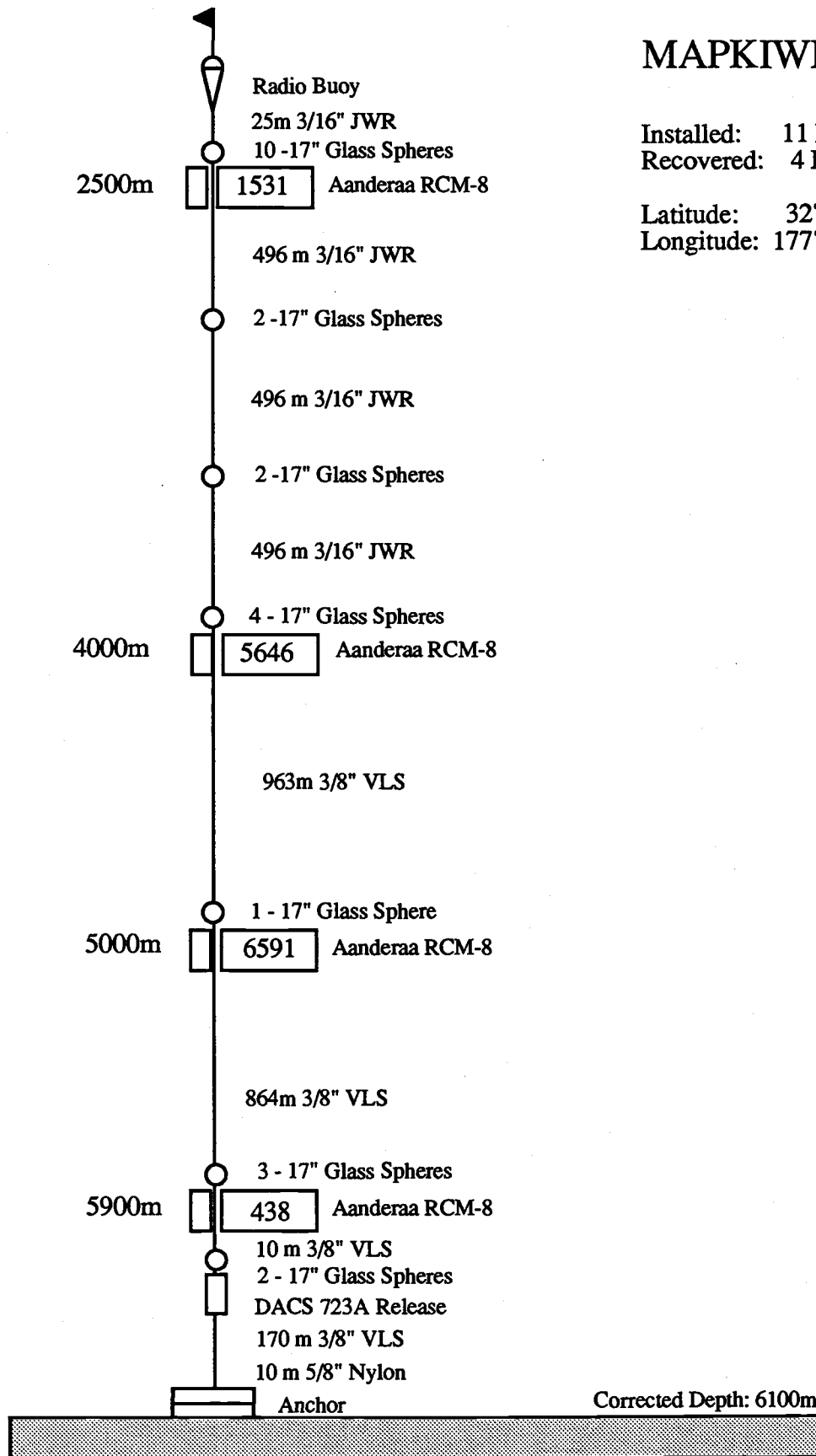


Temperature at KIWI 4. LLP 6-hourly Data.

MAPKIWI 5

Installed: 11 Feb 91
Recovered: 4 Dec 92

Latitude: 32° 31.62'S
Longitude: 177° 50.14'W



KIWI 5.

Position: 32° 31.62' S
 177° 50.14' W
 Depth of Water: 6100 m
 Mooring Set: 0752 11 February 1991
 Mooring Retrieved: 1603 04 December 1992
 Data Interval 1030 11 February 1991 - 1530 04 December 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2500	1531/37
4000	5646/35
5000	6591/22
5900	438/45

Instrument 1531 recorded u, v, temperature, and pressure every thirty minutes.

Instrument 5646 recorded u, v, and temperature every thirty minutes.

Instrument 6591 recorded u, v, and temperature every thirty minutes. The speed record was nullified lines 31162 - 31789 (1500 21 November 92 - 1530 4 December 1992).

Speed stuck at threshold during this time.

Instrument 438 recorded u, v, and temperature every thirty minutes.

2500 meters at KIWI 5. 11 Feb 91 - 4 Dec 92. Tape 1531/37.

	min	mean	max	sd	num
Speed, cm/sec	0.93	6.00	33.03	4.40	31787
U, cm/sec	-24.32	-0.43	18.07	4.73	31787
V, cm/sec	-32.18	-2.12	15.73	5.31	31787
Temp, deg c	1.83	2.11	2.22	0.03	31787
Pressure, db	2529.74	2539.19	2836.53	18.50	31787

4000 meters at KIWI 5. 11 Feb 91 - 4 Dec 92. Tape 5646/35.

	min	mean	max	sd	num
Speed, cm/sec	0.93	5.01	24.10	3.76	31787
U, cm/sec	-11.05	1.44	19.17	3.38	31787
V, cm/sec	-23.34	1.76	22.15	4.76	31787
Temp, deg c	1.01	1.14	1.42	0.05	31787

5000 meters at KIWI 5. 11 Feb 91 - 4 Dec 92. Tape 6591/22.

	min	mean	max	sd	num
Speed, cm/sec	0.93	5.72	21.22	3.16	31161
U, cm/sec	-5.73	1.61	12.02	1.90	31161
V, cm/sec	-6.92	4.92	21.16	3.50	31161
Temp, deg c	1.01	1.03	1.11	0.01	31787

5900 meters at KIWI 5. 11 Feb 91 - 4 Dec 92. Tape 438/45.

	min	mean	max	sd	num
Speed, cm/sec	0.93	7.13	22.37	3.61	31787
U, cm/sec	-8.43	2.48	18.24	2.39	31787
V, cm/sec	-7.71	6.16	20.34	3.74	31787
Temp, deg c	1.11	1.12	1.13	0.00	31787

2500 meters at KIWI 5. 12 Feb 91 - 3 Dec 92. Tape 1531/37.

	min	mean	max	sd	num
Speed, cm/sec	0.09	5.26	22.26	4.05	2639
U, cm/sec	-15.93	-0.43	14.32	4.08	2639
V, cm/sec	-21.96	-2.08	9.80	4.78	2639
Temp, deg c	1.91	2.11	2.19	0.03	2639
Pressure, db	2529.70	2539.14	2746.77	17.86	2639

4000 meters at KIWI 5. 12 Feb 91 - 3 Dec 92. Tape 5646/35.

	min	mean	max	sd	num
Speed, cm/sec	0.11	4.35	20.38	3.66	2639
U, cm/sec	-7.62	1.44	15.28	2.81	2639
V, cm/sec	-17.19	1.77	19.03	4.39	2639
Temp, deg c	1.03	1.14	1.39	0.05	2639

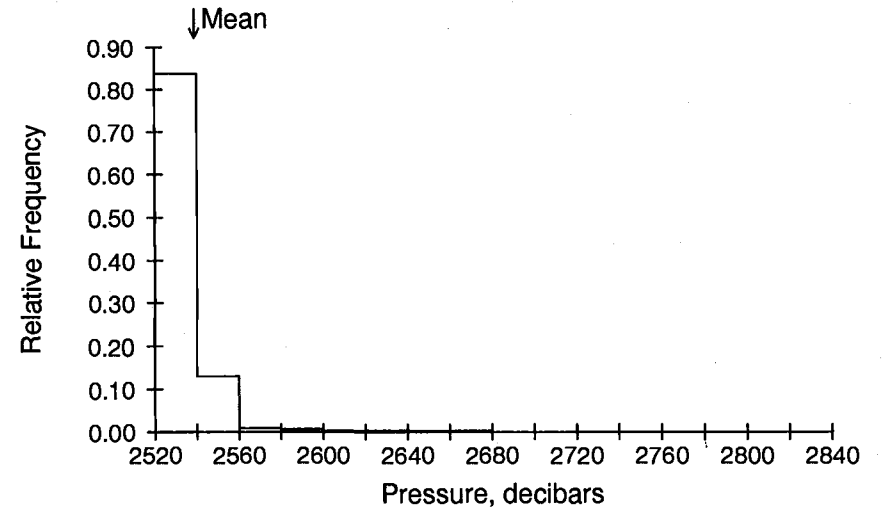
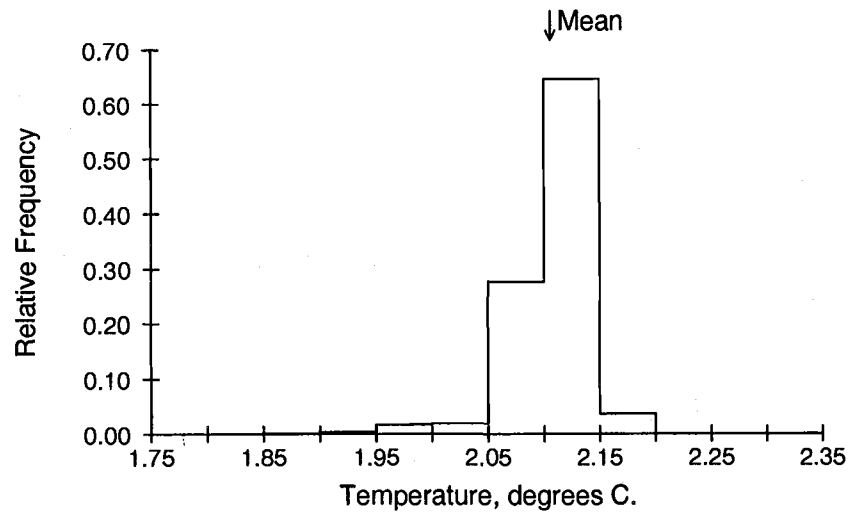
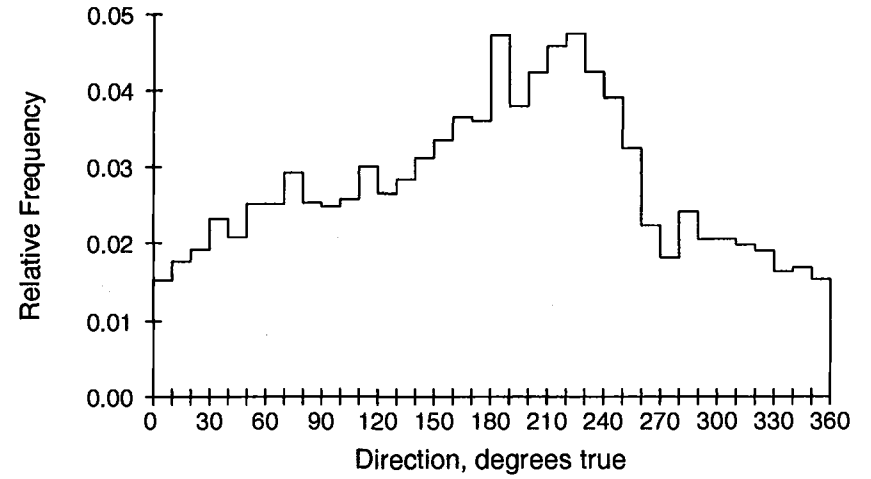
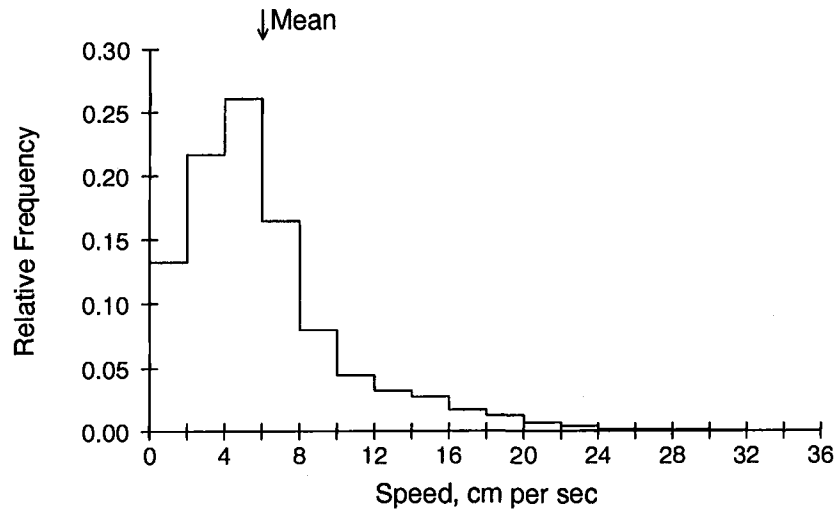
5000 meters at KIWI 5. 12 Feb 91 - 3 Dec 92. Tape 6591/22.

	min	mean	max	sd	num
Speed, cm/sec	0.04	5.38	15.40	2.96	2587
U, cm/sec	-1.39	1.61	7.26	1.19	2587
V, cm/sec	-3.02	4.91	15.25	3.10	2587
Temp, deg c	1.02	1.03	1.09	0.01	2639

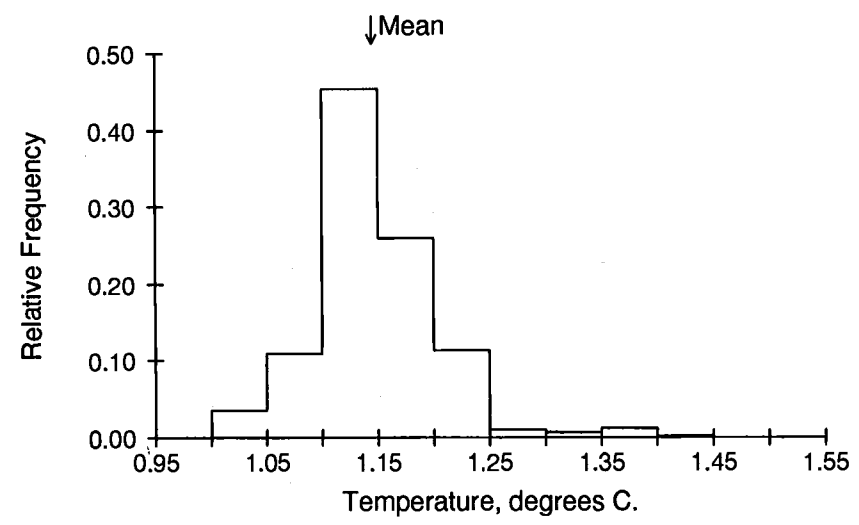
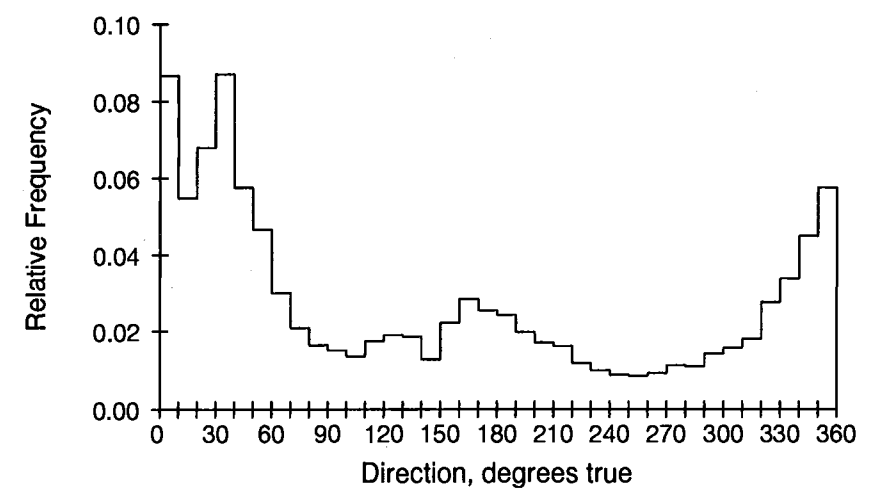
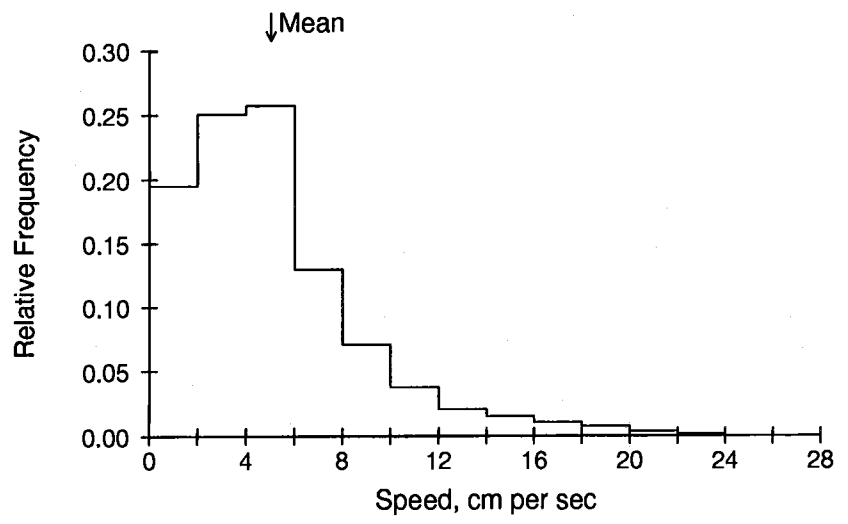
5900 meters at KIWI 5. 12 Feb 91 - 3 Dec 92. Tape 438/45.

	min	mean	max	sd	num
Speed, cm/sec	0.04	6.82	16.12	3.28	2639
U, cm/sec	-6.28	2.48	8.45	1.65	2639
V, cm/sec	-3.73	6.17	15.68	3.22	2639
Temp, deg c	1.12	1.12	1.13	0.00	2639

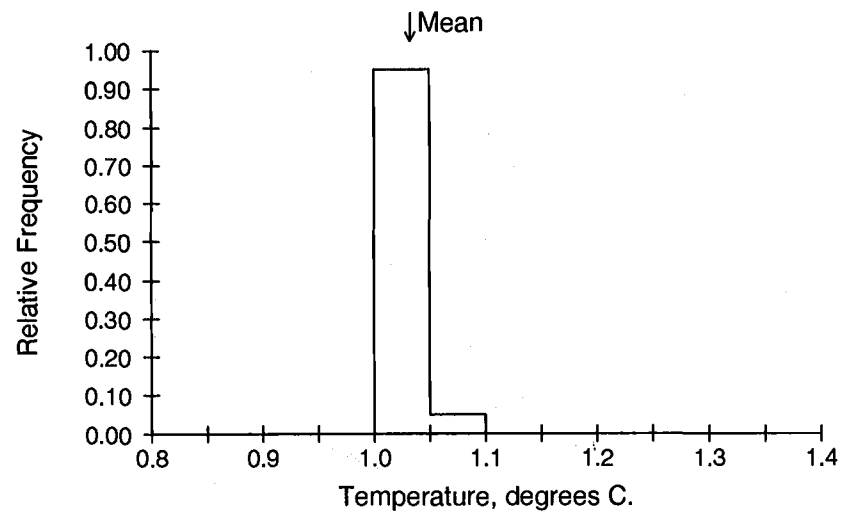
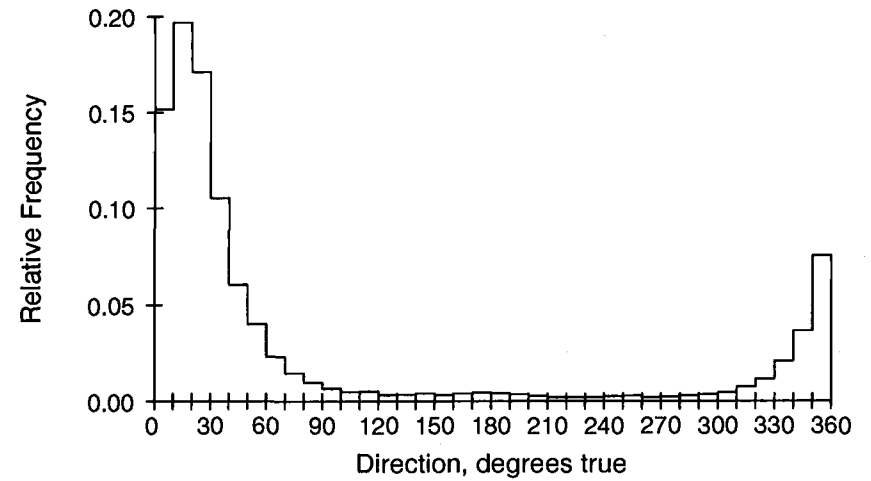
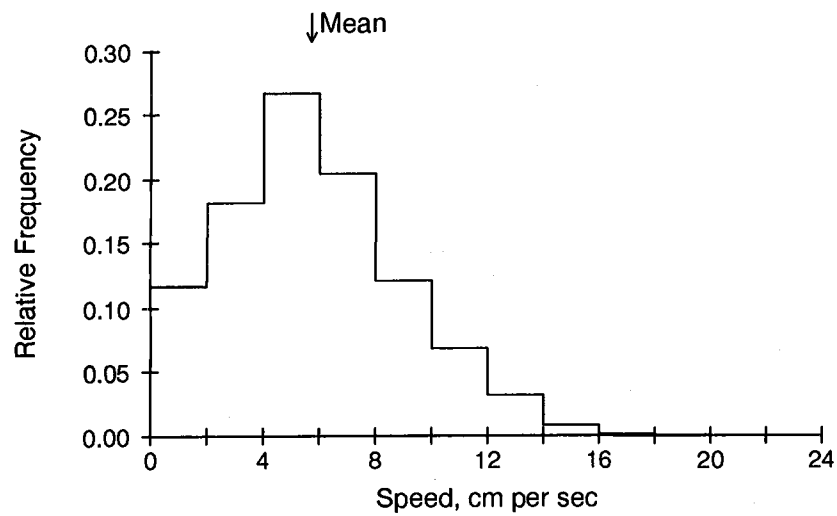
2500m at Kiwi 5. 11 Feb 91 - 4 Dec 92. RCM 1531/37.



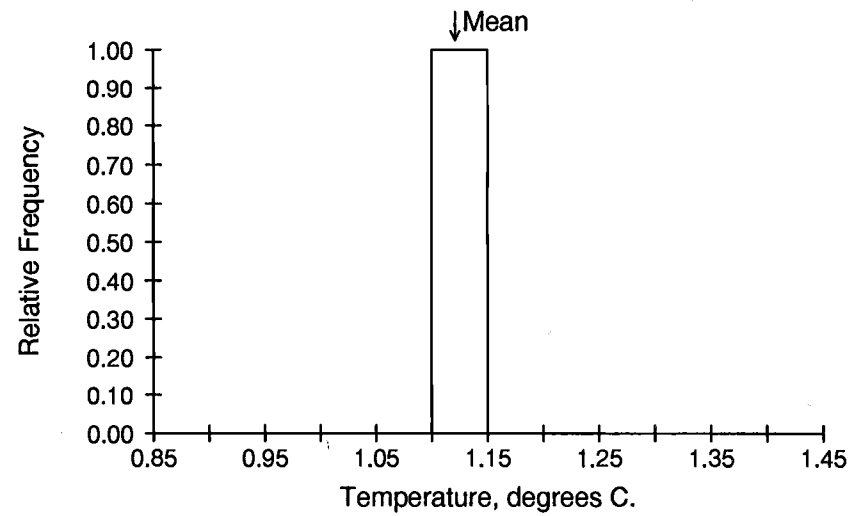
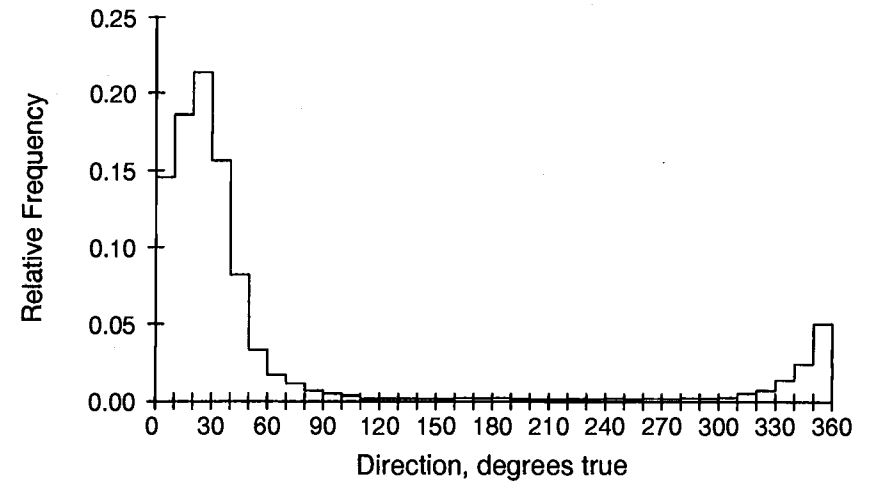
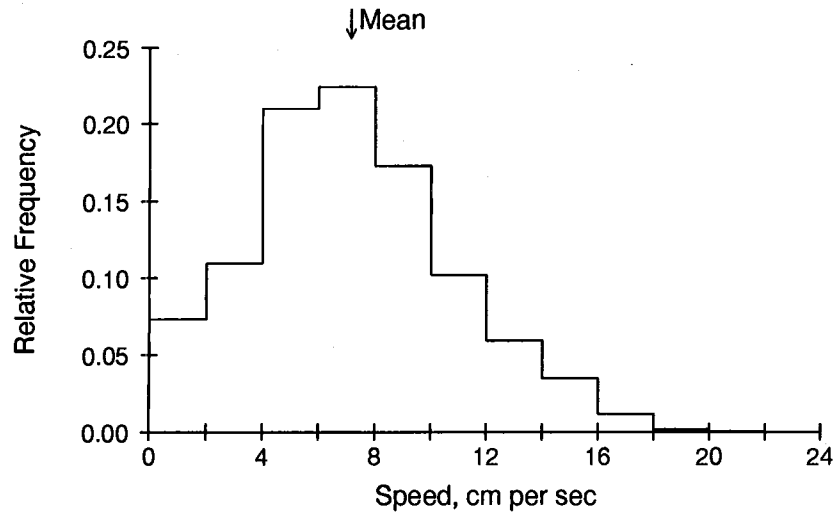
4000m at Kiwi5. 11 Feb 91 - 4 Dec 92. RCM 5646/35.

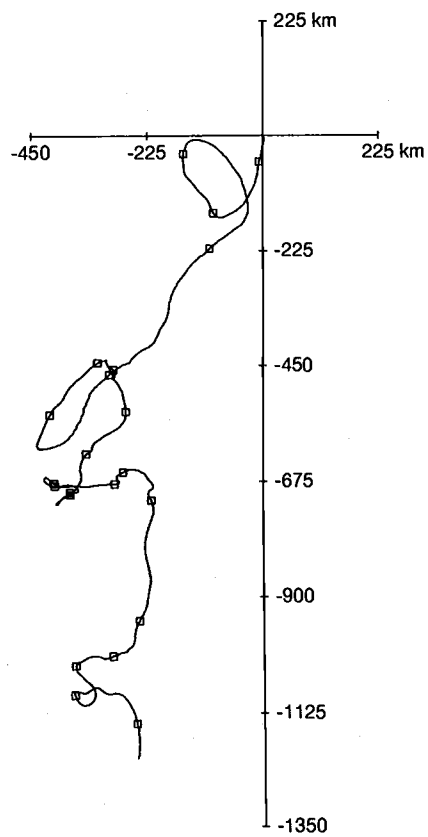


5000m at Kiwi 5. 11 Feb 91 - 4 Dec 92. RCM 6591/22.

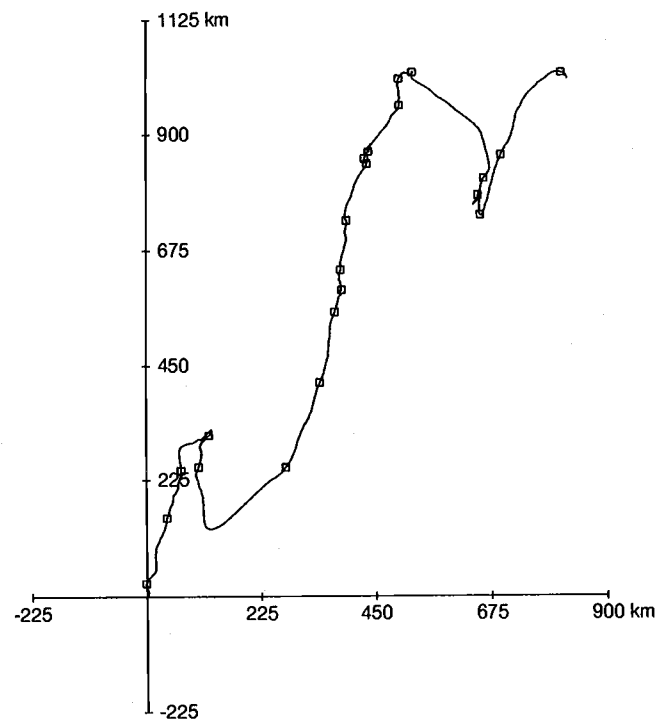


5900m at Kiwi 5. 11 Feb 91 - 04 Dec 92. RCM 438/45.

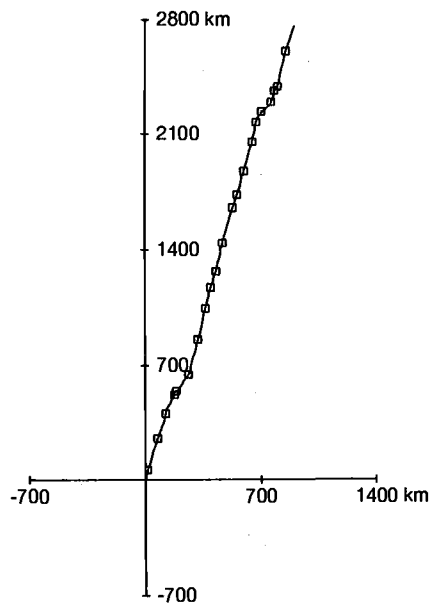




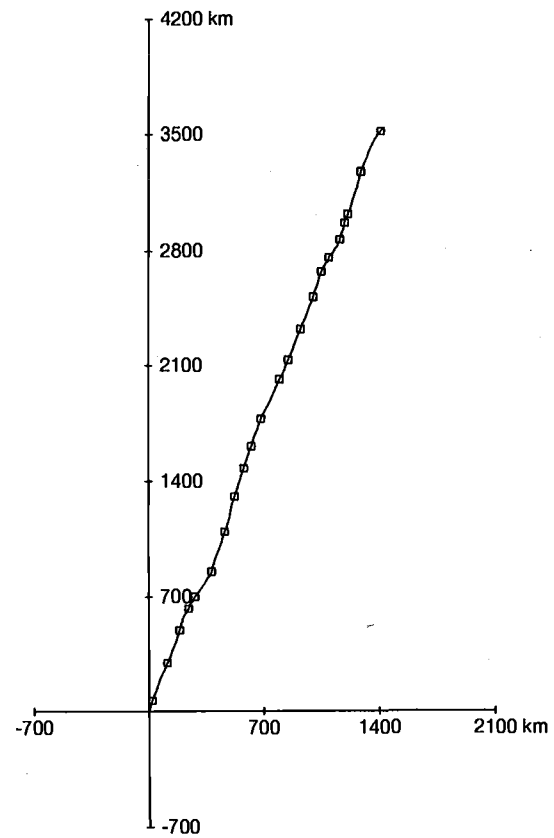
2500 m at KIWI 5. 662.2 days starting 1030 11 Feb 91.



4000 m at KIWI 5. 662.2 days starting 1030 11 Feb 91.

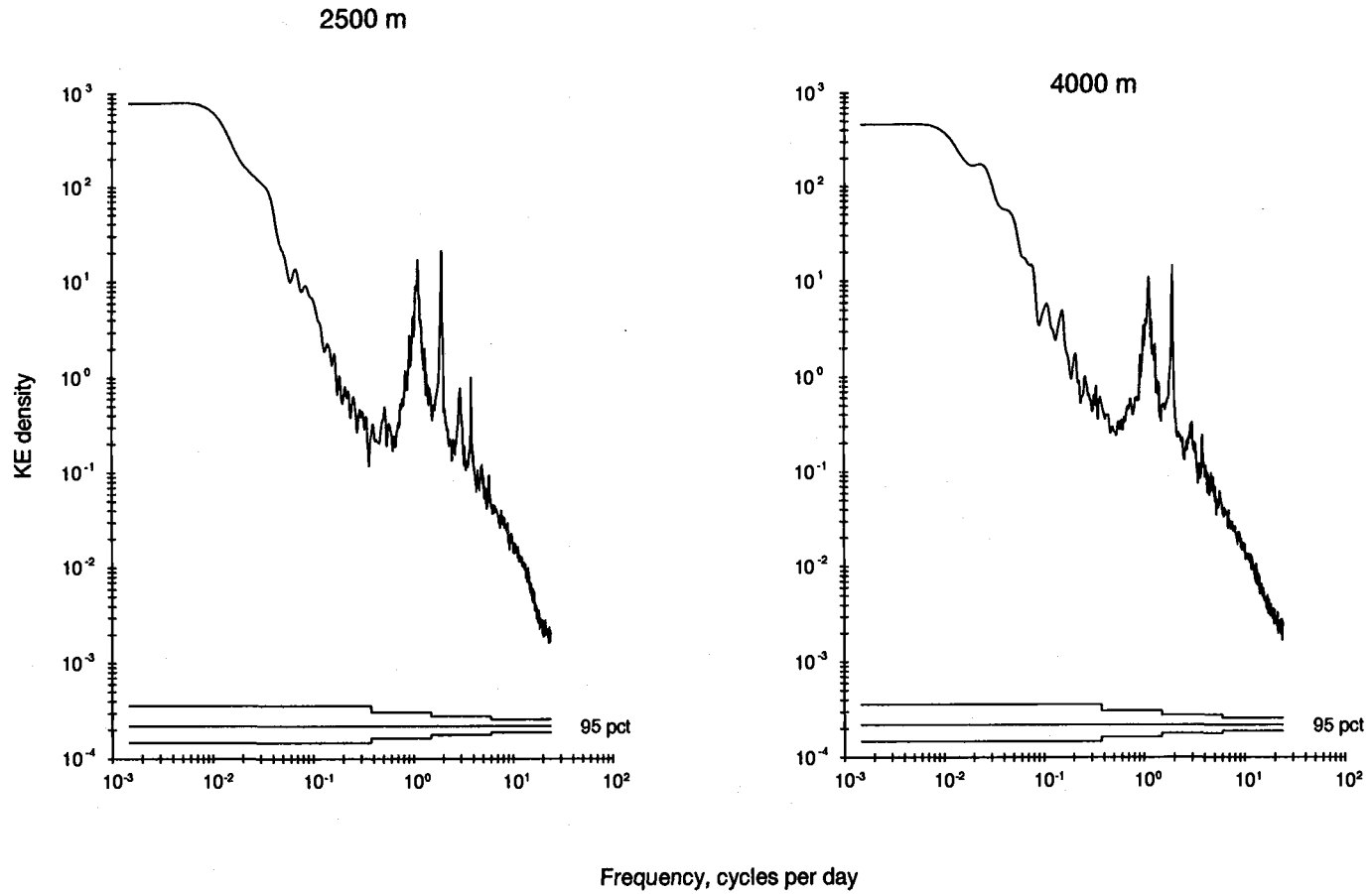


5000 m at KIWI 5. 649.2 days starting 1030 11 Feb 91.

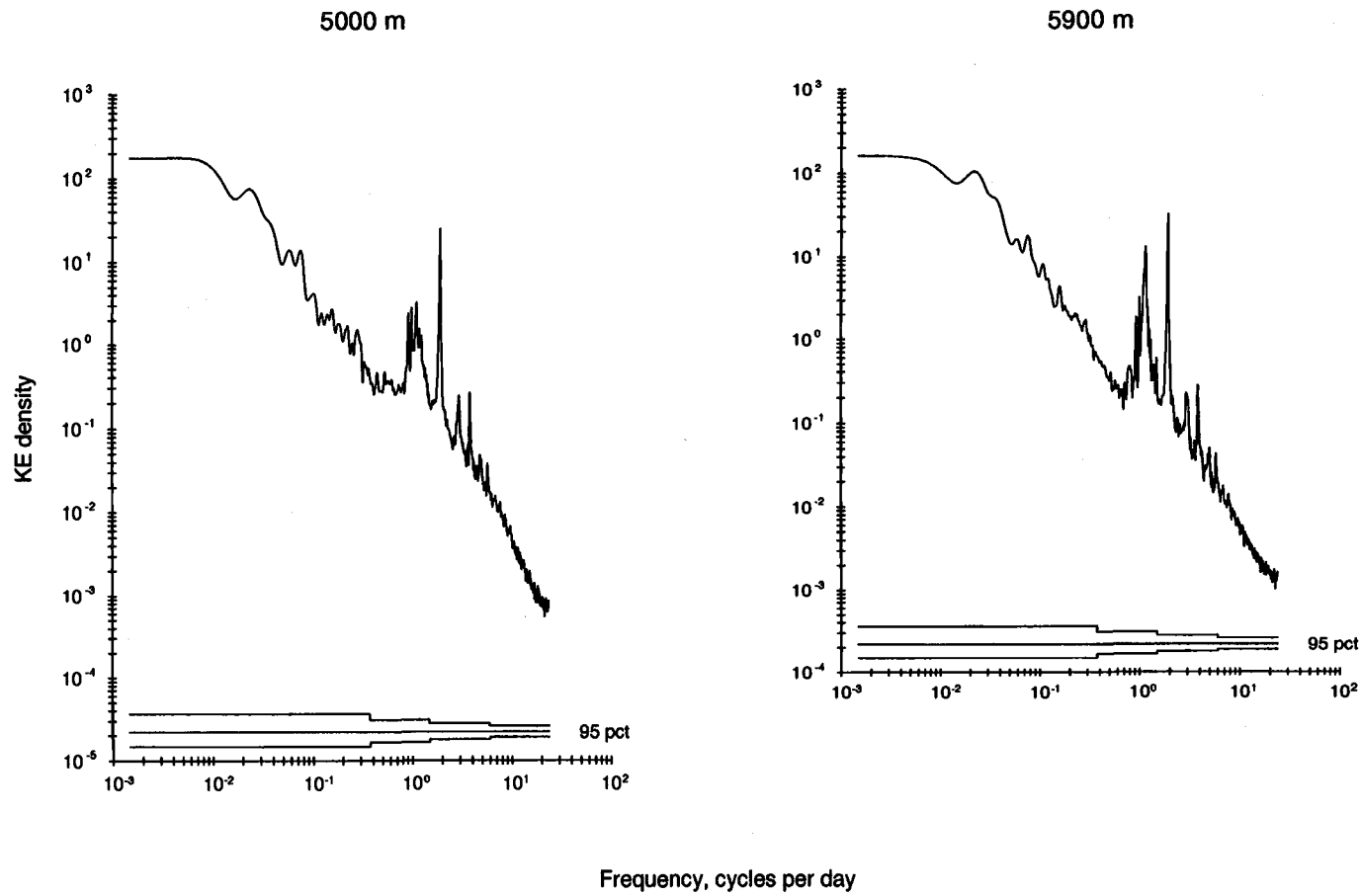


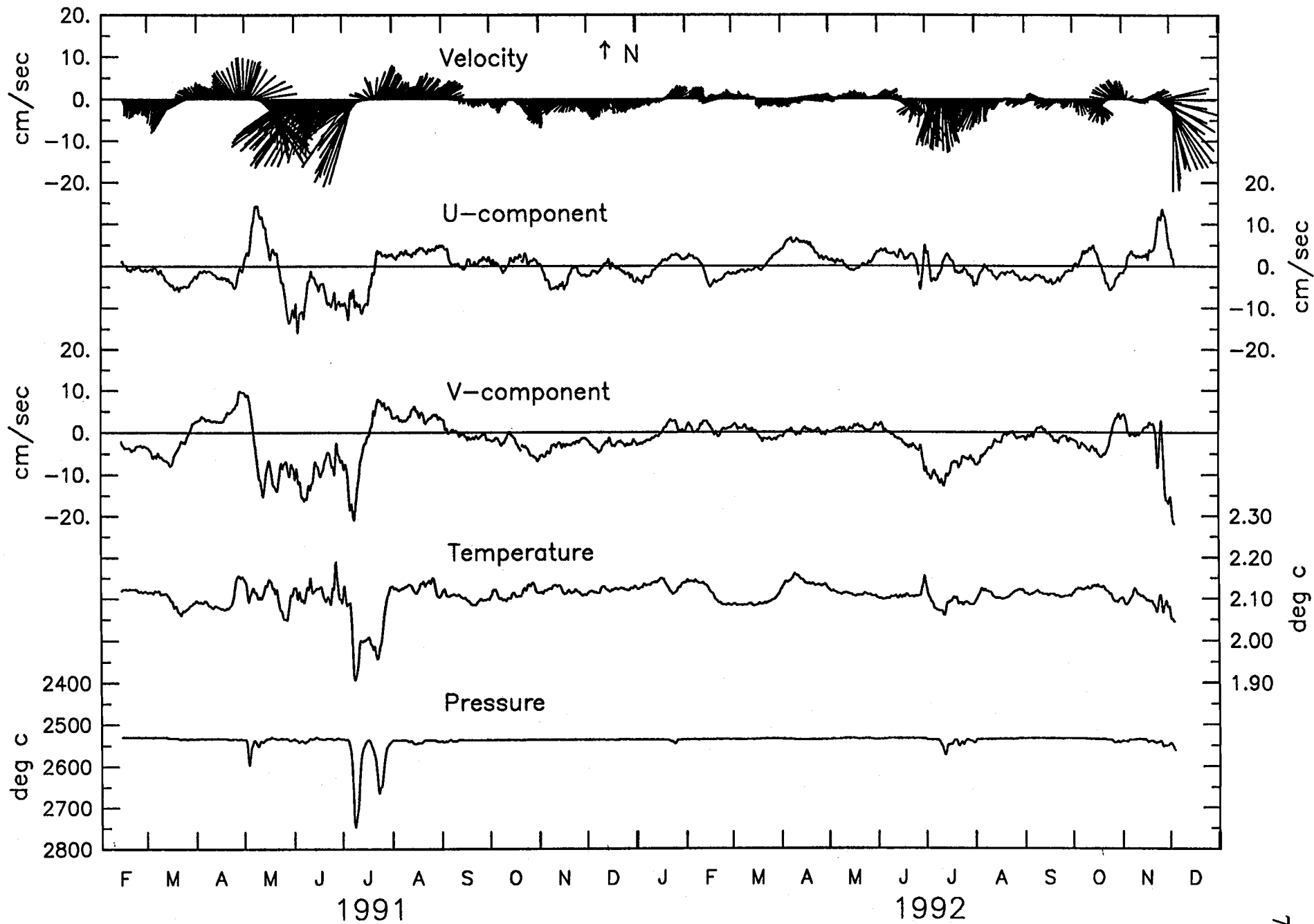
5900 m at KIWI 5. 662.2 days starting 1030 11 Feb 91.

Unfiltered Current (both components) Kiwi 5.

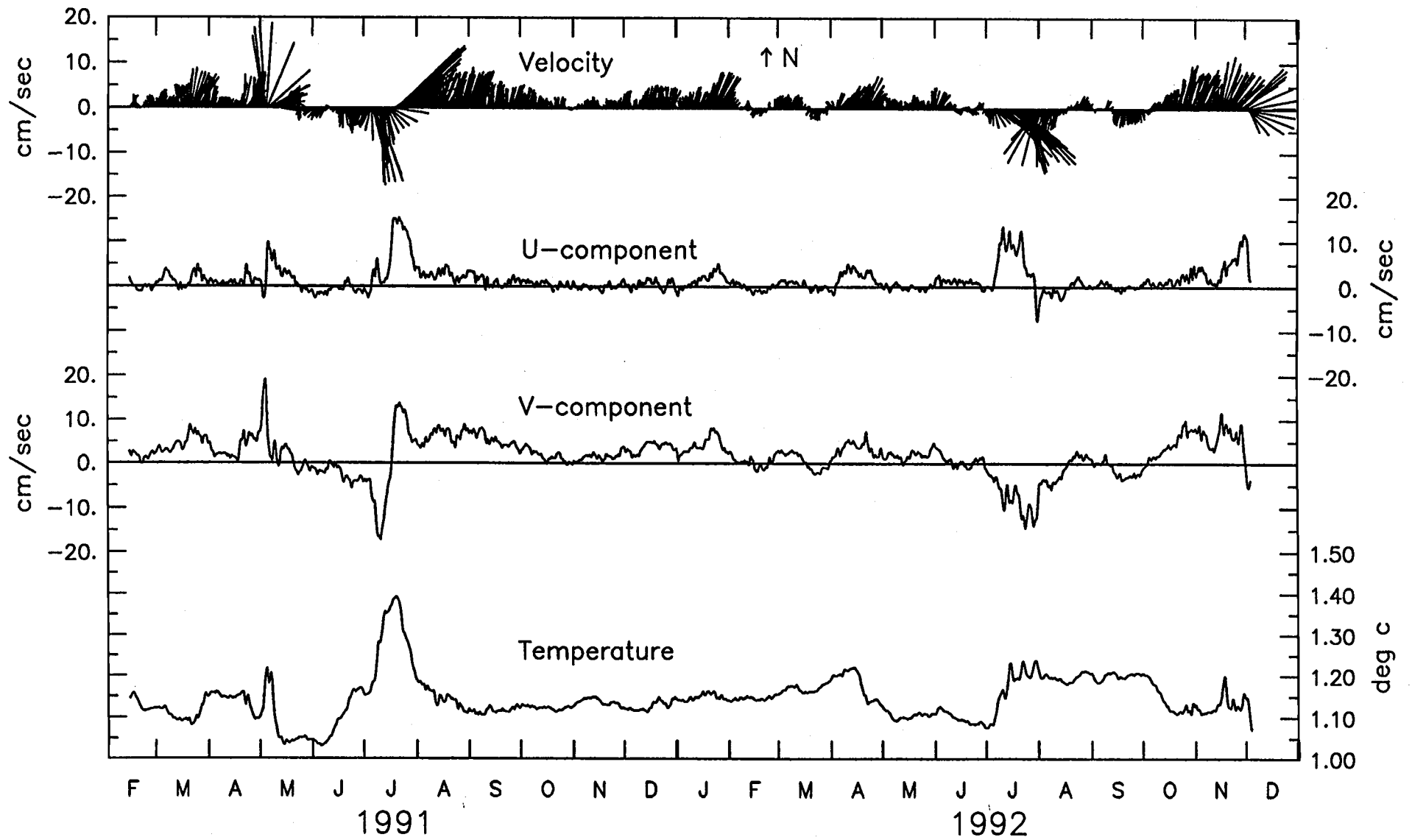


Unfiltered Current (both components) Kiwi 5.

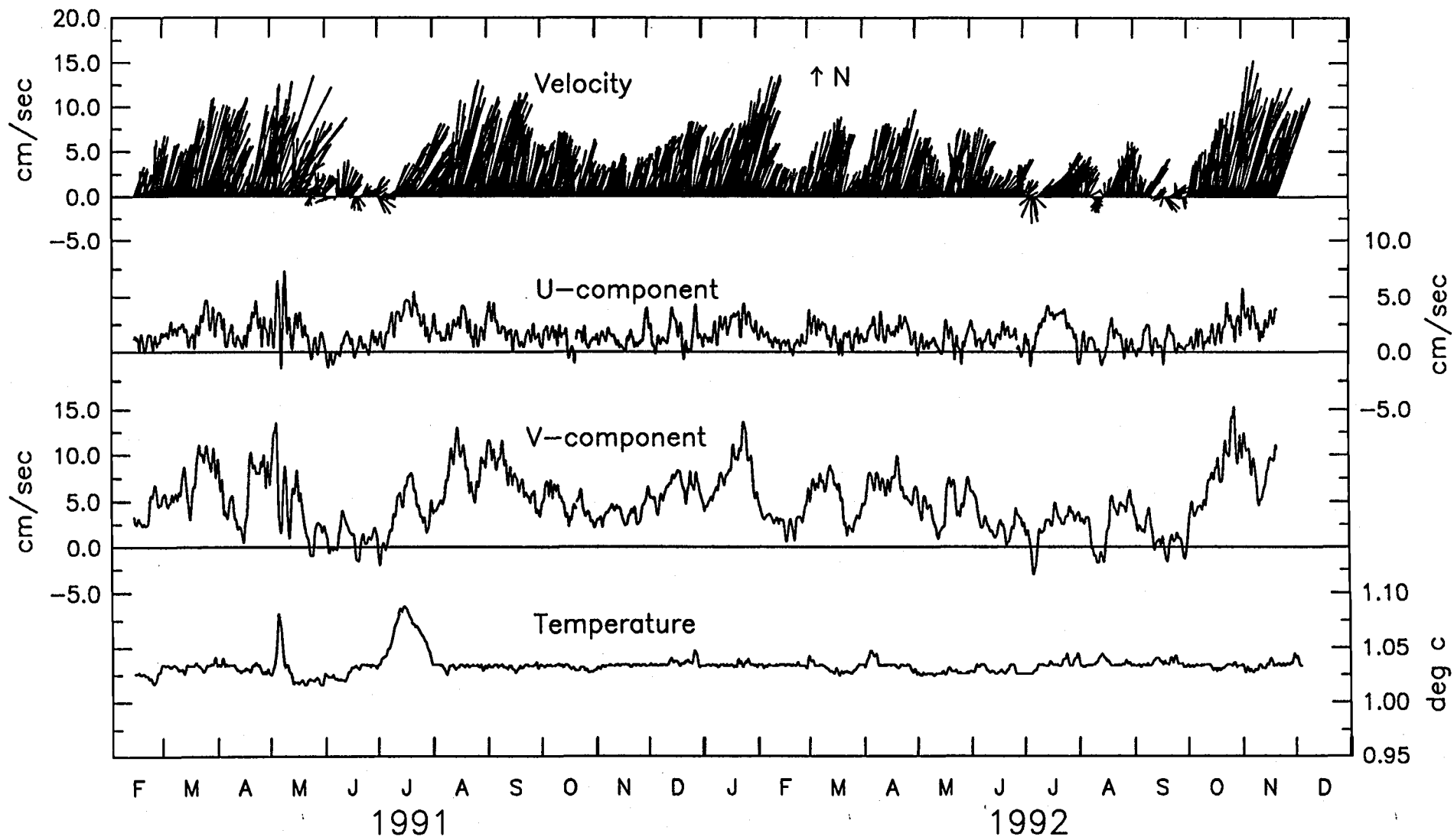




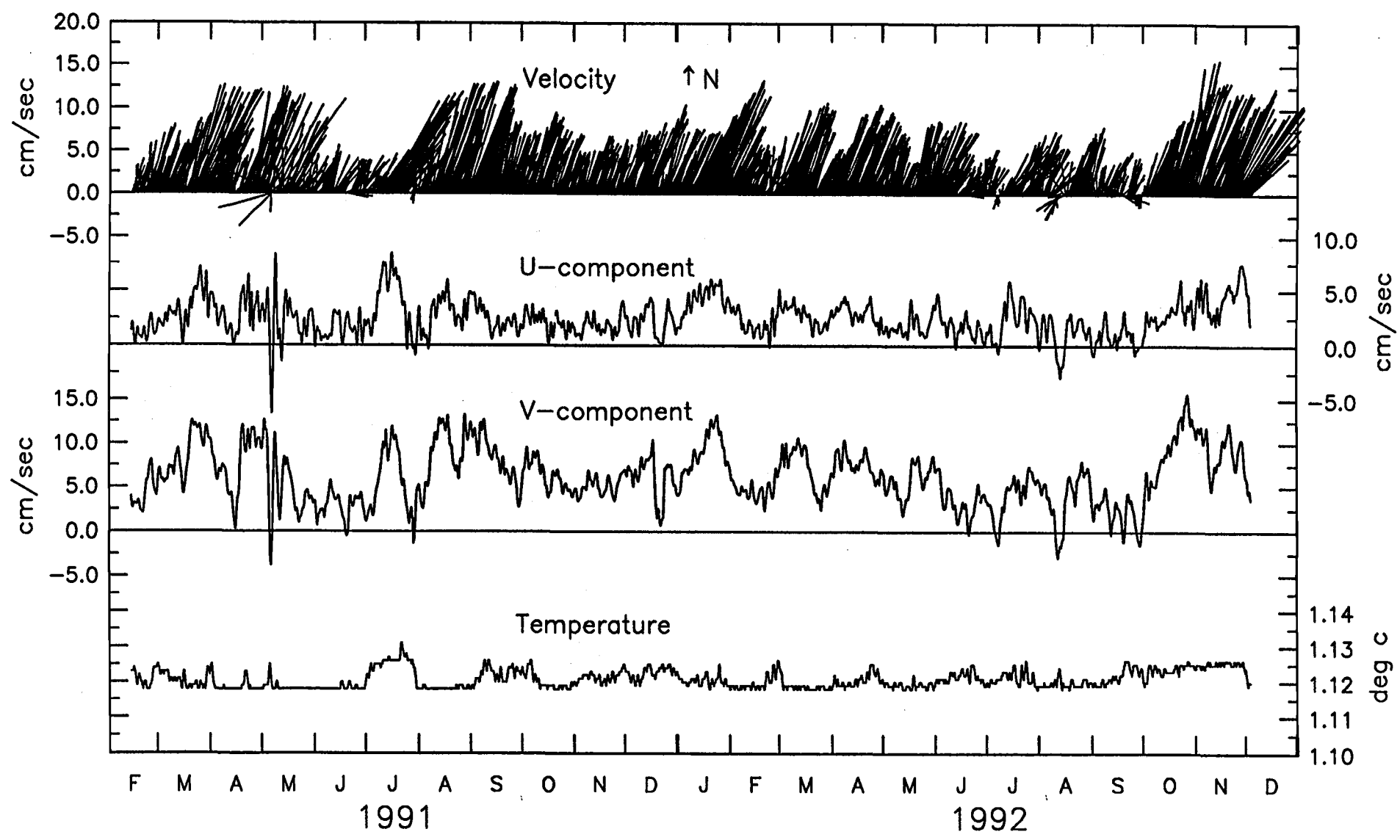
2500m at KIWI 5. LLP 6-hourly Data.



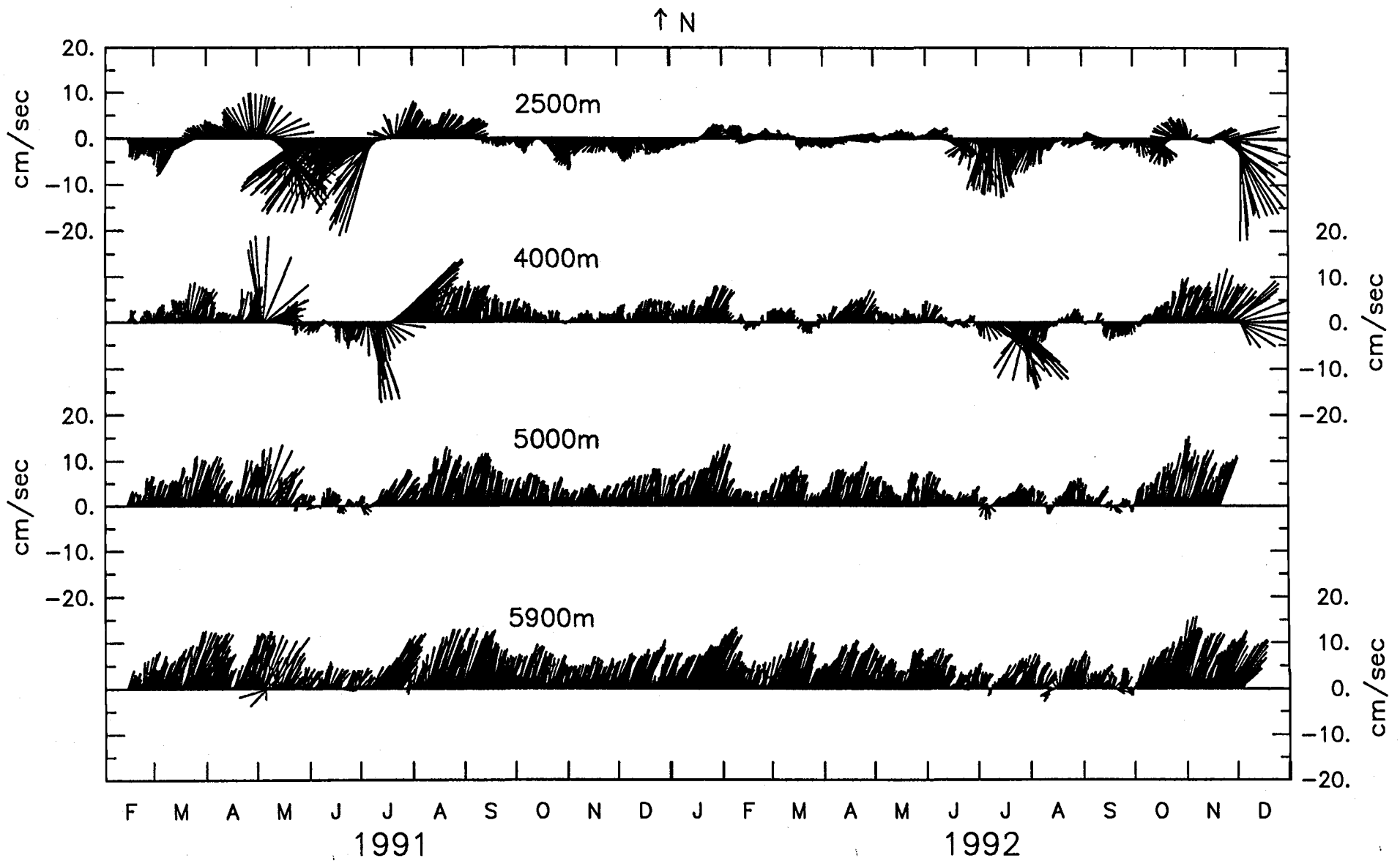
4000m at KIWI 5. LLP 6-hourly Data.



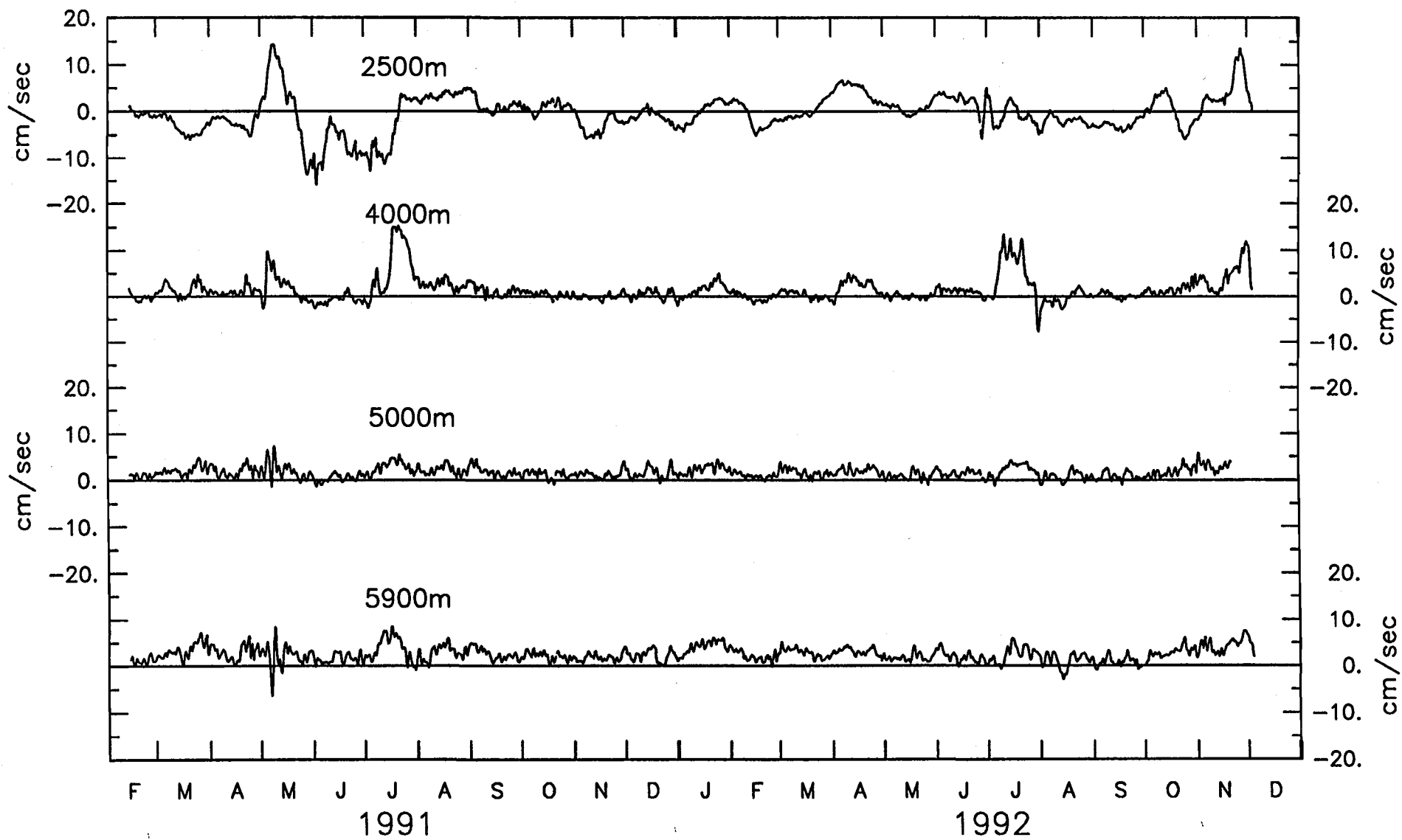
5000m at KIWI 5. LLP 6-hourly Data.



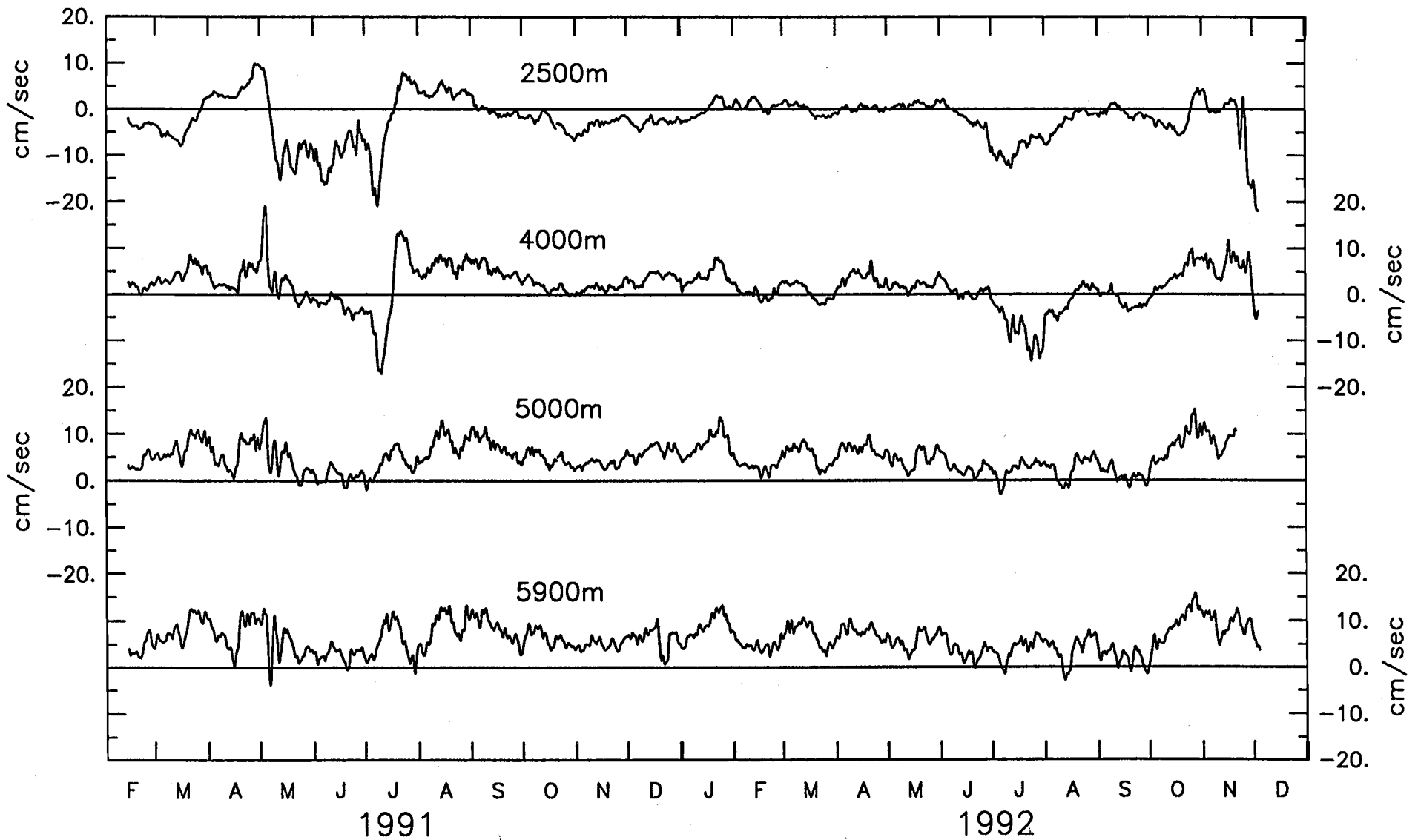
5900m at KIWI 5. LLP 6-hourly Data.



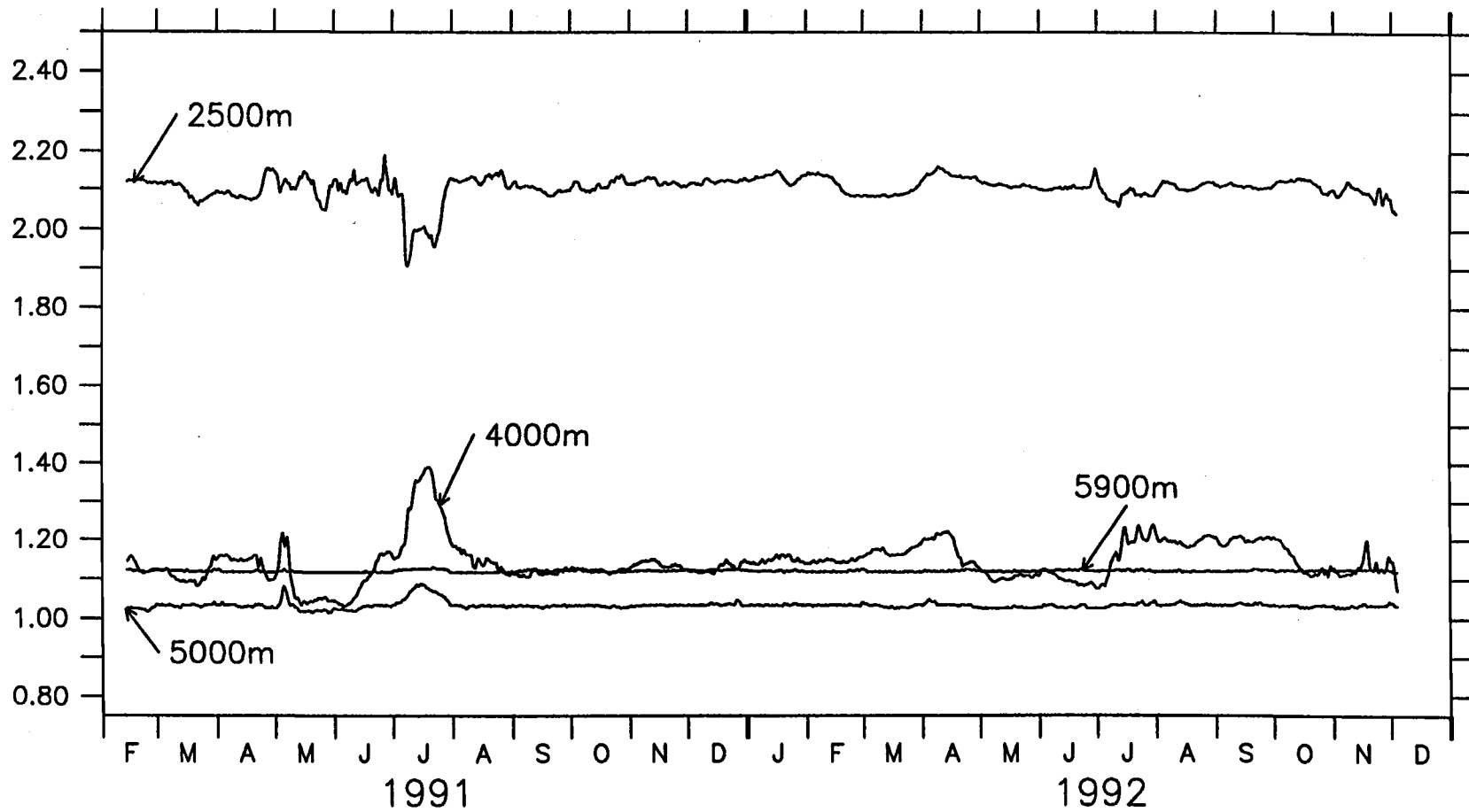
Velocity, KIWI 5, LLp 6-hourly Data.



U-component, KIWI 5, LLp 6-hourly Data.



V-component, KIWI 5, LLp 6-hourly Data.

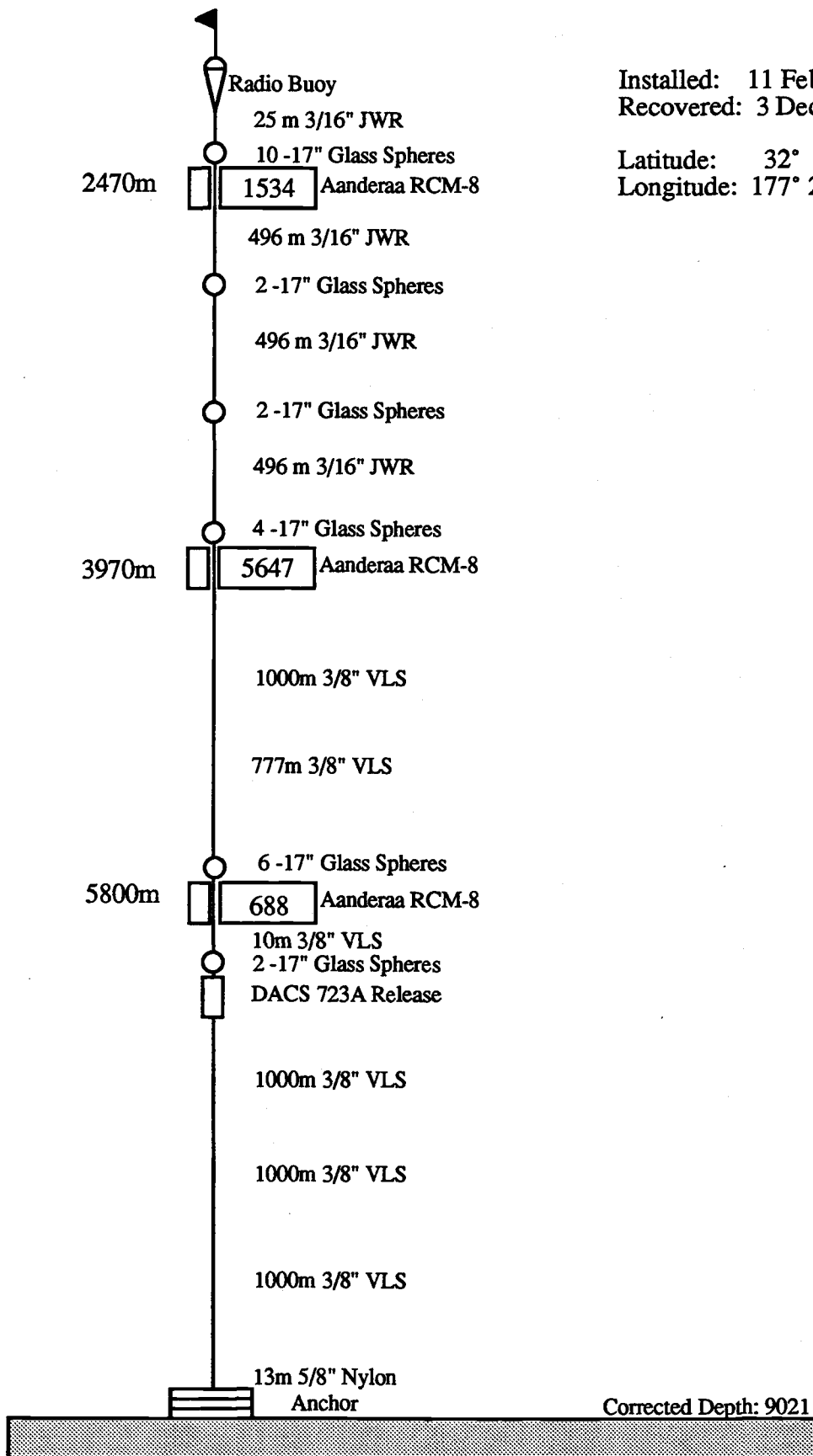


Temperature at KIWI 5. LLP 6-hourly Data.

MAPKIWI 6

Installed: 11 Feb 91
 Recovered: 3 Dec 92

Latitude: 32° 31.41'S
 Longitude: 177° 29.10'W



KIWI 6.

Position: 32° 31.41' S
 177° 29.10' W
 Depth of Water: 9021 m
 Mooring Set: 0254 11 February 1991
 Mooring Retrieved: 0212 03 December 1992
 Data Interval 0530 11 February 1991 - 0130 03 December 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2470	1534/44
3970	5647/38
5800	688/79

Instrument 1534 recorded u, v, temperature, and pressure every 30 minutes. The rotor bearings were very stiff with no slack at recovery.

Instrument 5647 recorded u, v, and temperature every 30 minutes. The speed record was nullified lines 31540 - 31721 (0700 29 November 1992 to 0130 3 December 1992), when the record stuck at threshold. There was no slack in the rotor bearings at recovery.

Instrument 688 recorded u, v, and temperature every 30 minutes. There are a lot of areas of below threshold speeds. The rotor broke during recovery so its condition is unknown.

2470 meters at KIWI 6. 11 Feb 91 - 3 Dec 92. Tape 1534/44.

	min	mean	max	sd	num
Speed, cm/sec	0.93	4.30	16.04	2.70	31721
U, cm/sec	-14.27	-0.34	10.45	3.16	31721
V, cm/sec	-15.97	-1.29	13.48	3.74	31721
Temp, deg c	1.98	2.12	2.21	0.02	31721
Pressure, db	2504.12	2511.10	2626.67	7.94	31721

3970 meters at KIWI 6. 11 Feb 91 - 3 Dec 92. Tape 5647/38.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.62	16.90	2.69	31539
U, cm/sec	-16.90	-0.69	12.71	2.56	31539
V, cm/sec	-15.69	-1.89	14.60	3.12	31539
Temp, deg c	1.09	1.20	1.36	0.04	31721

5800 meters at KIWI 6. 11 Feb 91 - 3 Dec 92. Tape 688/79.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.25	10.30	1.69	31721
U, cm/sec	-6.96	-0.55	8.28	1.19	31721
V, cm/sec	-10.20	-1.41	8.14	2.05	31721
Temp, deg c	1.12	1.13	1.15	0.00	31721

2470 meters at KIWI 6. 12 Feb 91 - 1 Dec 92. Tape 1534/44.

	min	mean	max	sd	num
Speed, cm/sec	0.04	3.37	11.08	2.37	2634
U, cm/sec	-10.28	-0.33	5.48	2.34	2634
V, cm/sec	-10.75	-1.26	7.42	3.12	2634
Temp, deg c	2.02	2.12	2.19	0.02	2634
Pressure, db	2504.12	2511.07	2592.89	7.70	2634

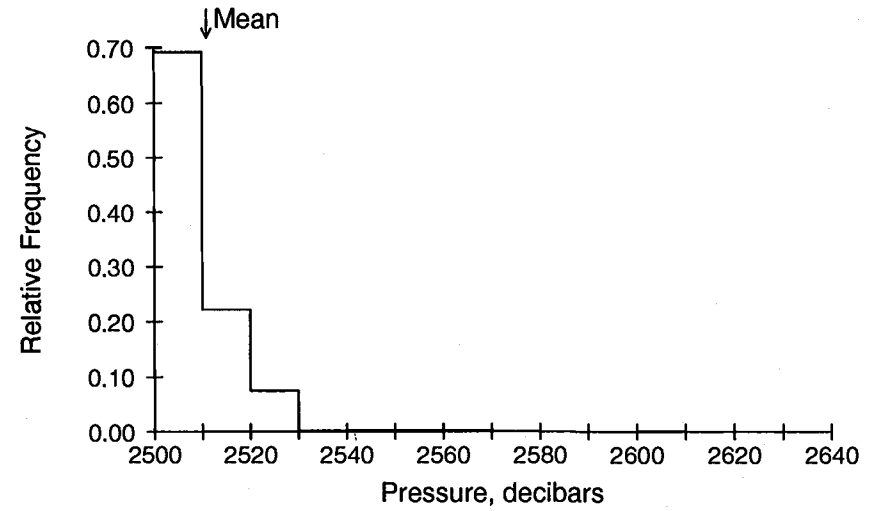
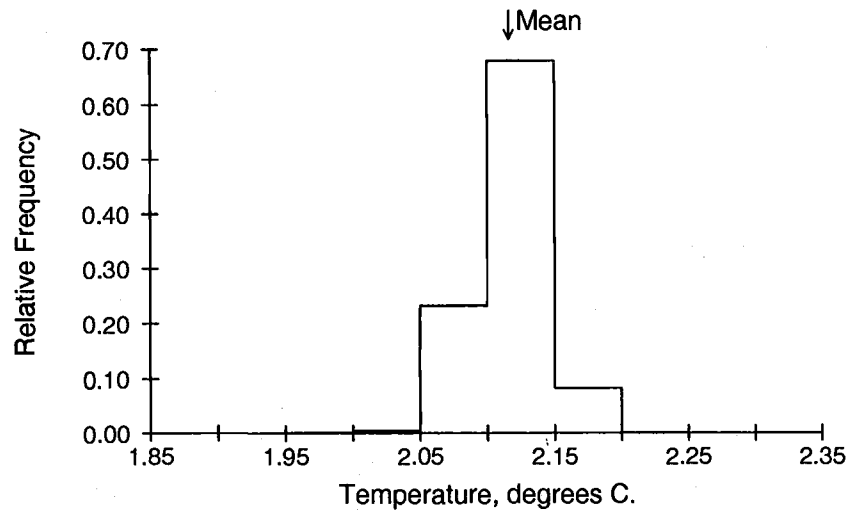
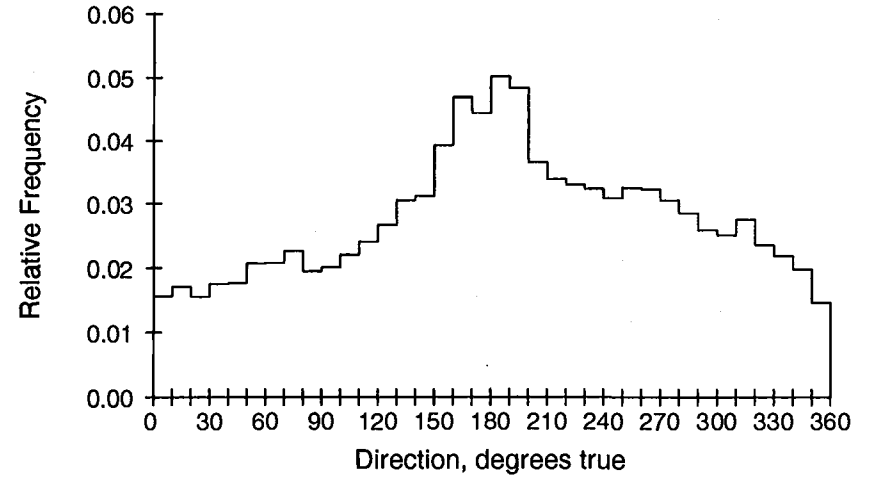
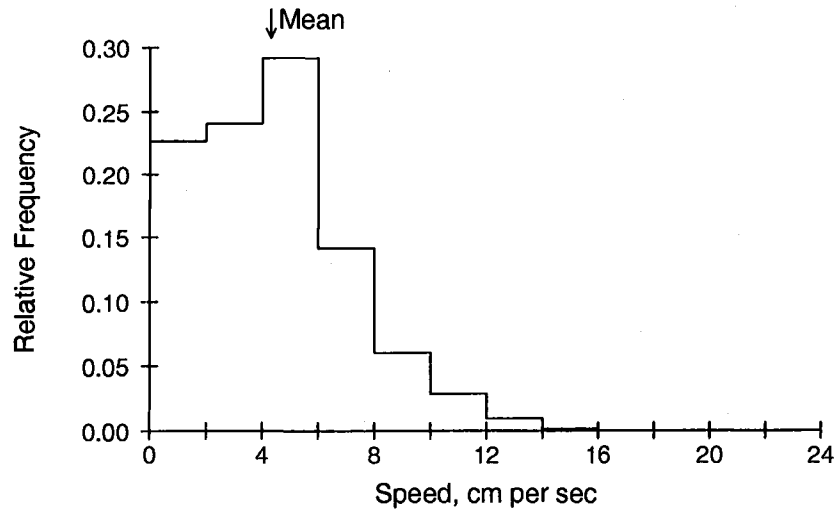
3970 meters at KIWI 6. 12 Feb 91 - 1 Dec 92. Tape 5647/38.

	min	mean	max	sd	num
Speed, cm/sec	0.07	3.22	14.45	2.32	2619
U, cm/sec	-14.41	-0.69	10.39	2.10	2619
V, cm/sec	-12.77	-1.88	12.51	2.70	2619
Temp, deg c	1.11	1.20	1.34	0.04	2634

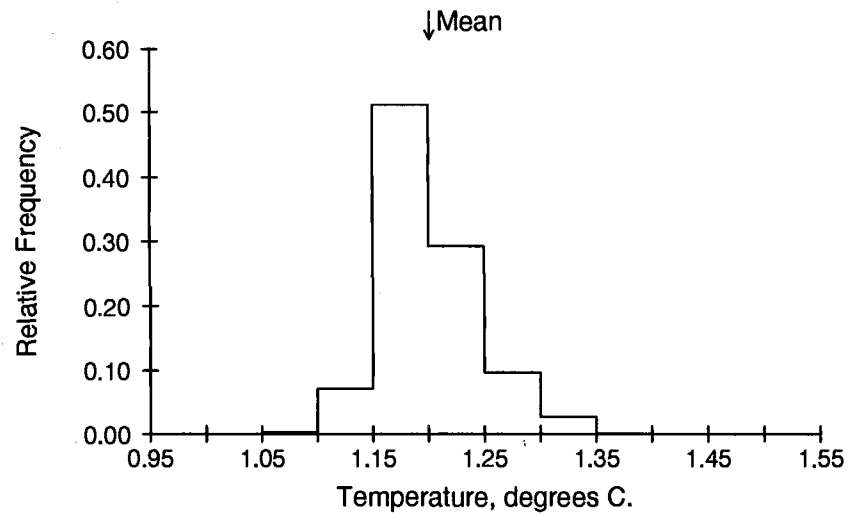
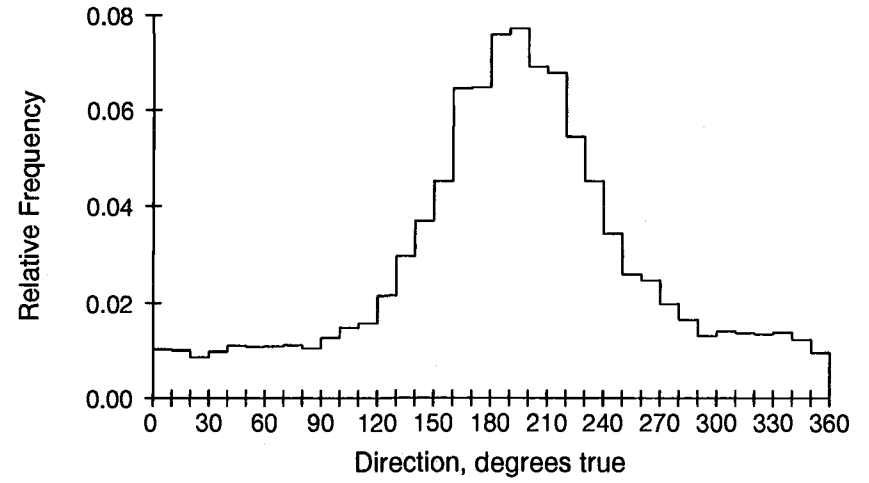
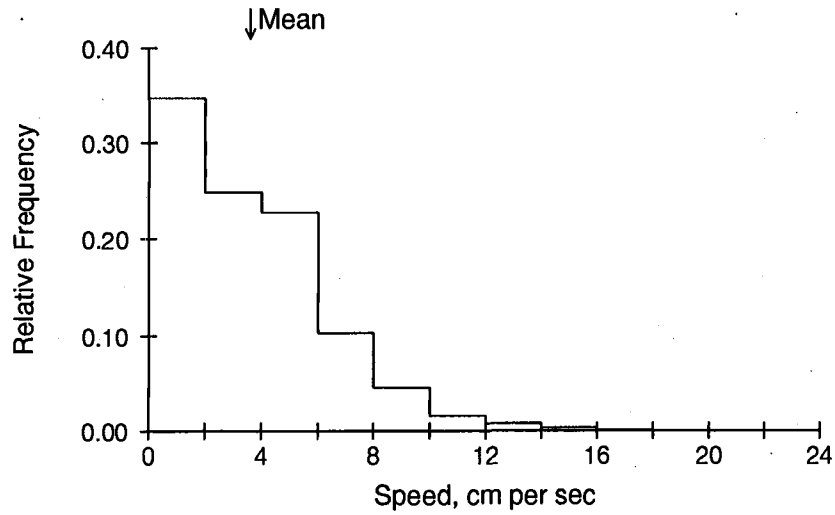
5800 meters at KIWI 6. 12 Feb 91 - 1 Dec 92. Tape 688/79.

	min	mean	max	sd	num
Speed, cm/sec	0.01	2.07	8.06	1.43	2634
U, cm/sec	-5.79	-0.55	7.12	0.92	2634
V, cm/sec	-7.98	-1.41	4.47	1.79	2634
Temp, deg c	1.12	1.13	1.14	0.00	2634

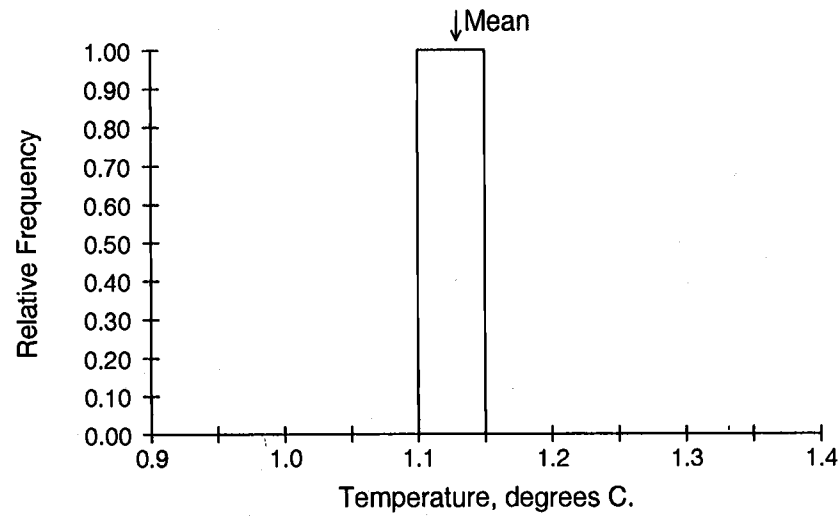
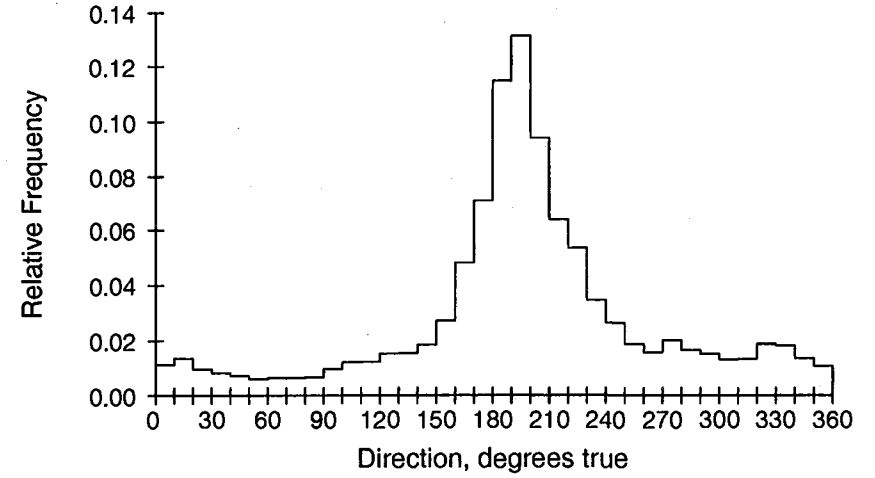
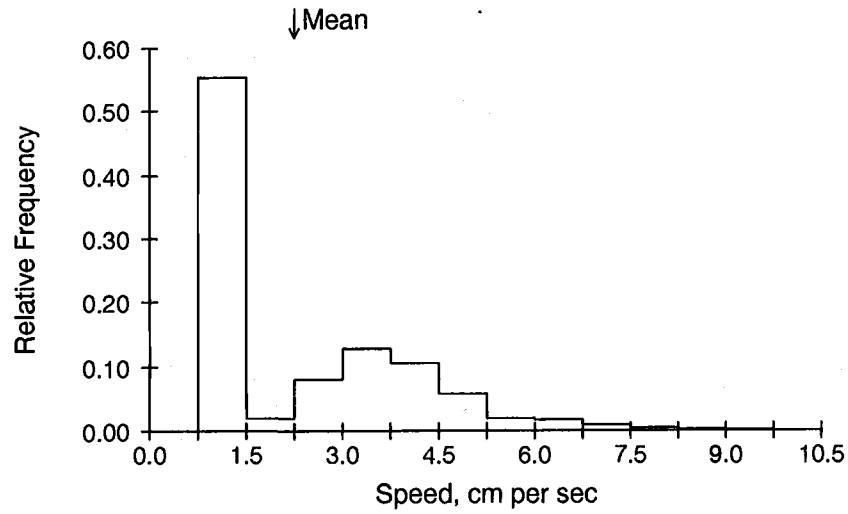
2470m at Kiwi 6. 11 Feb 91 - 3 Dec 92. RCM 1534/44.

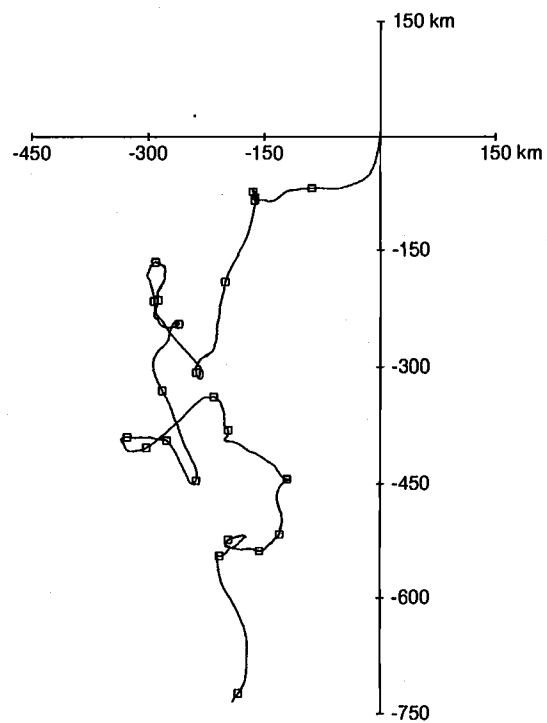


3970m at Kiwi 6. 11 Feb 91 - 3 Dec 92. RCM 5647/38.

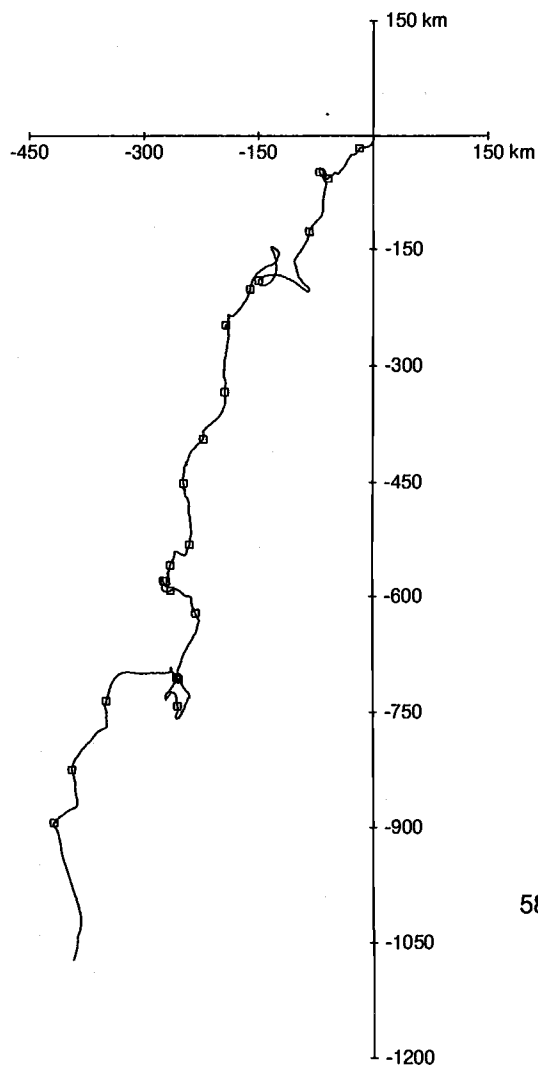


5800m at Kiwi 6. 11 Feb 91 - 3 Dec 92. RCM 688/79.

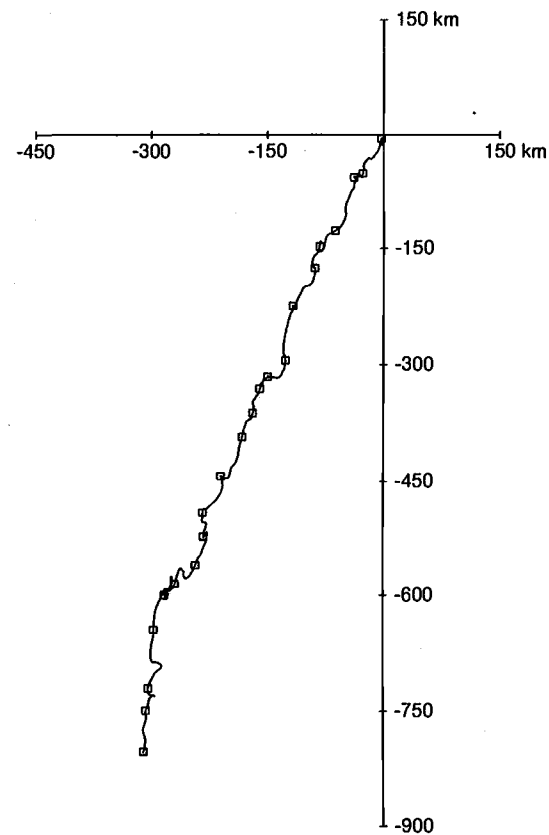




2470 m at KIWI 6. 660.8 days starting 0530 11 Feb 91.



3970 m at KIWI 6. 657.0 days starting 0530 11 Feb 91.



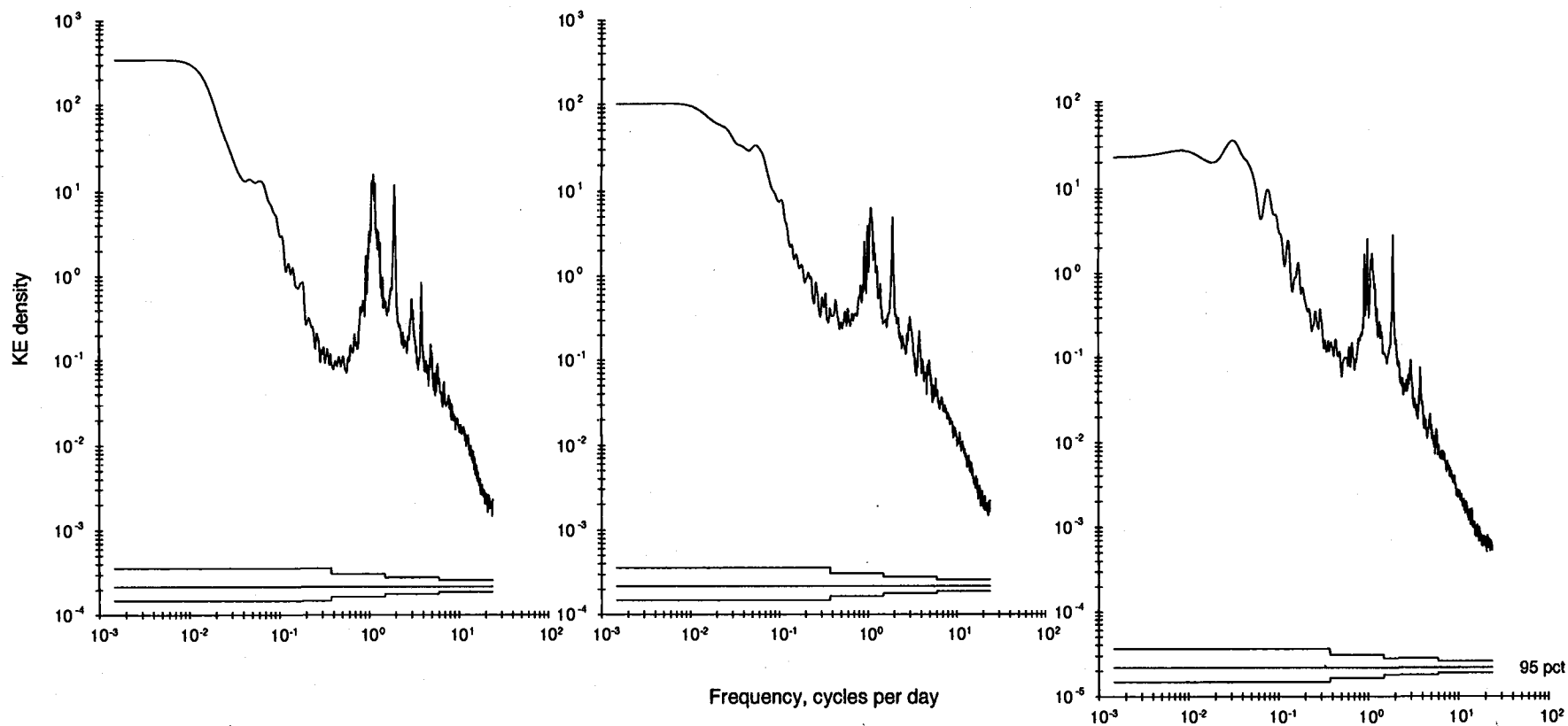
5800 m at KIWI 6. 660.8 days starting 0530 11 Feb 91.

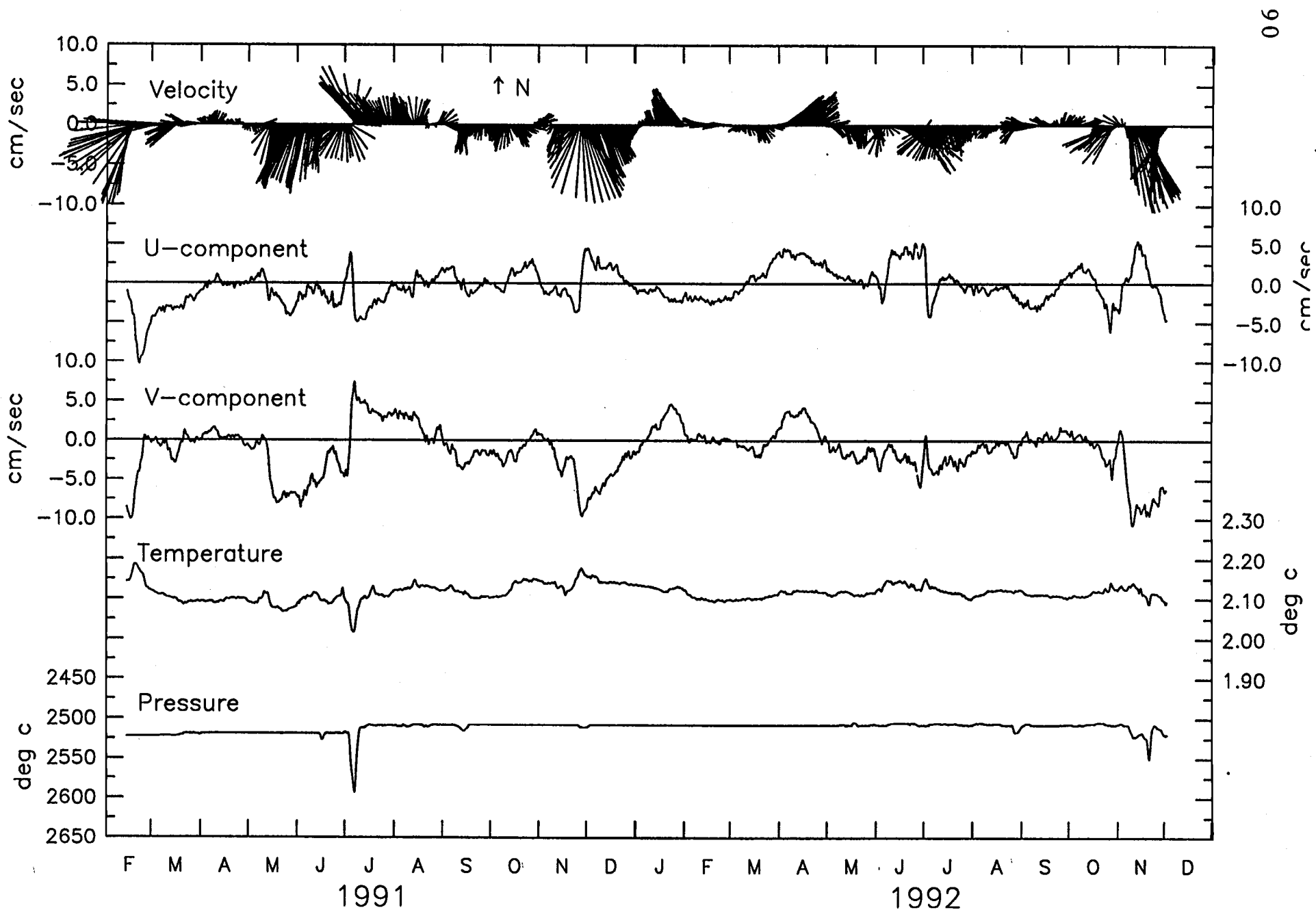
Unfiltered Current (both components) Kiwi 6.

2470 m

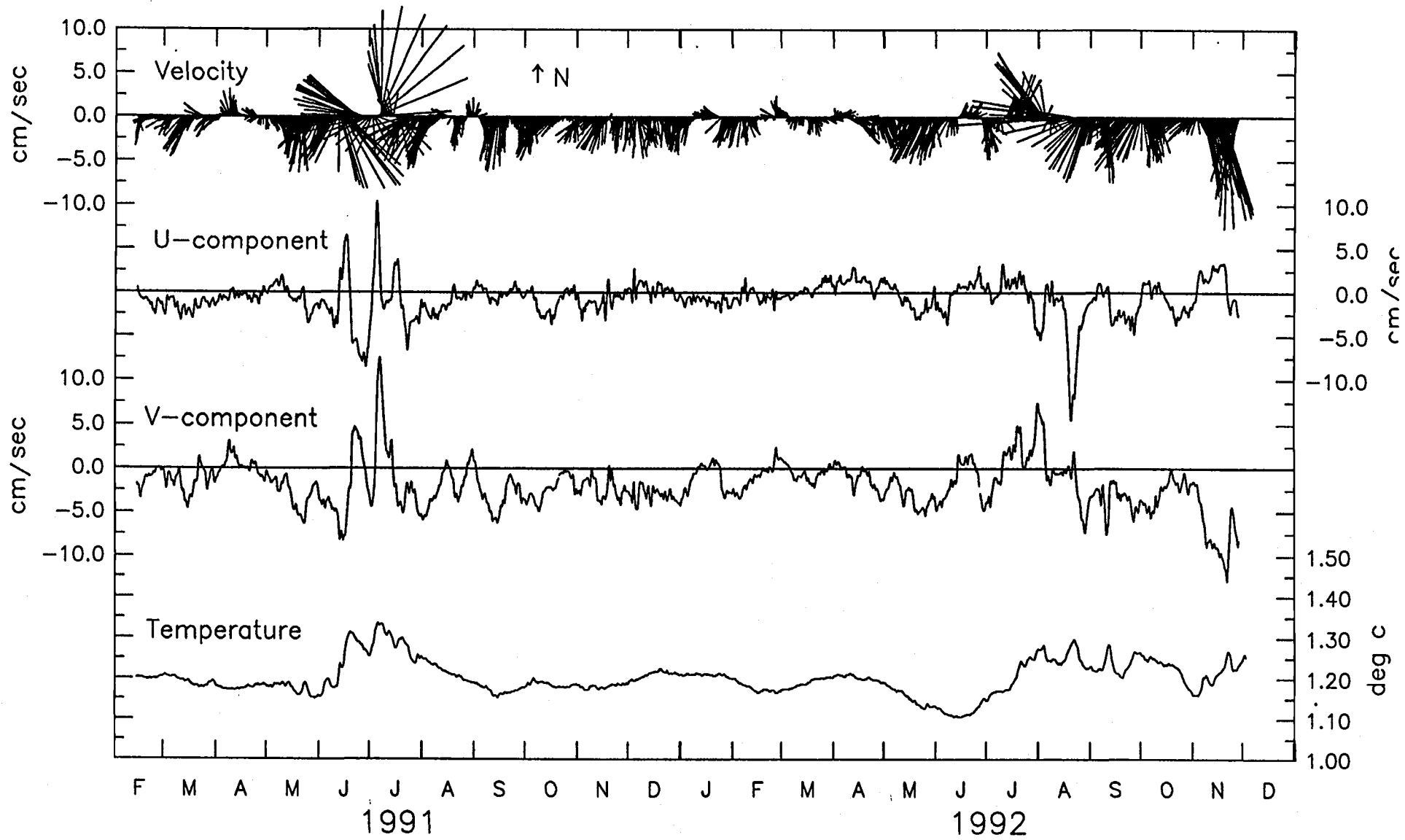
3970 m

5800 m

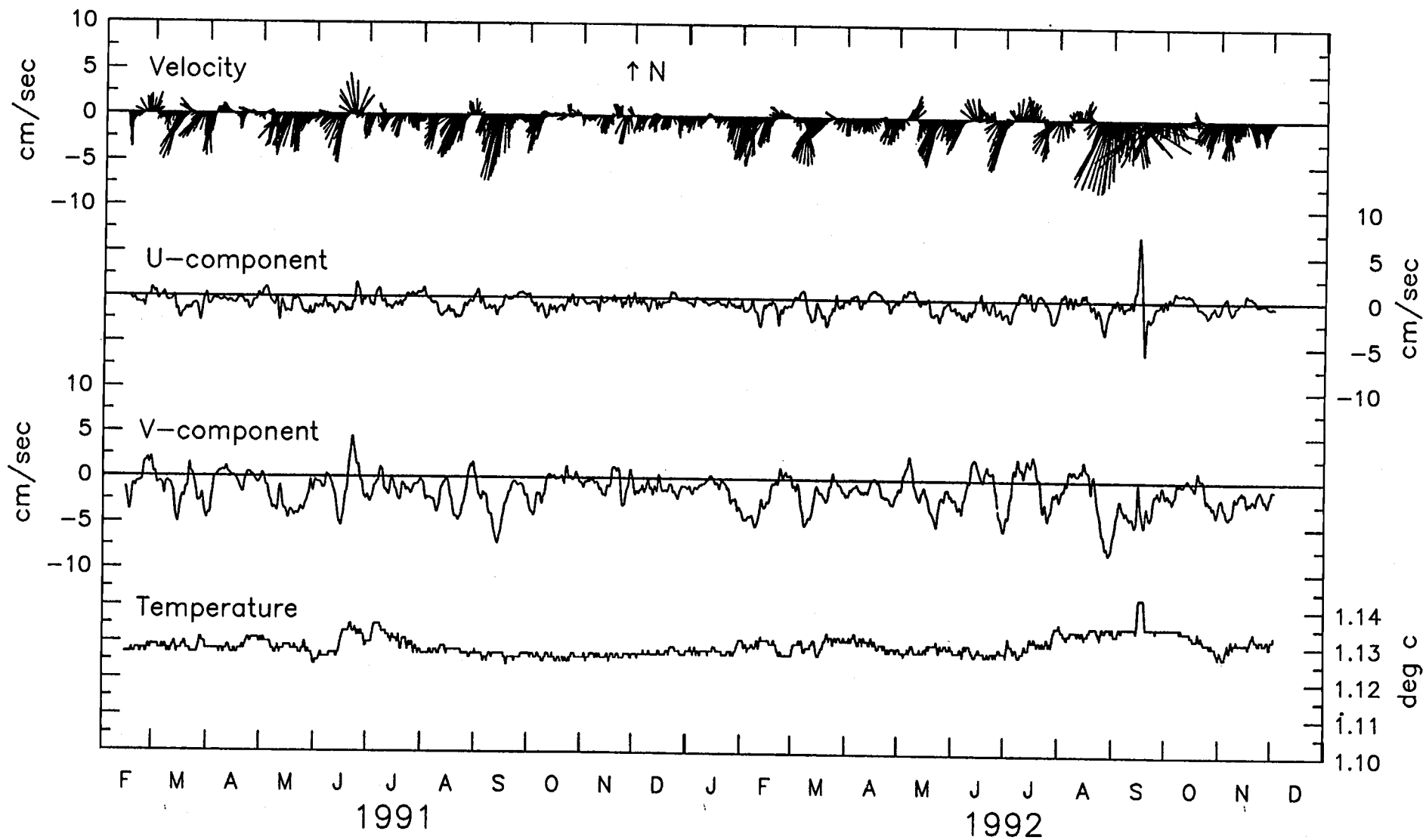




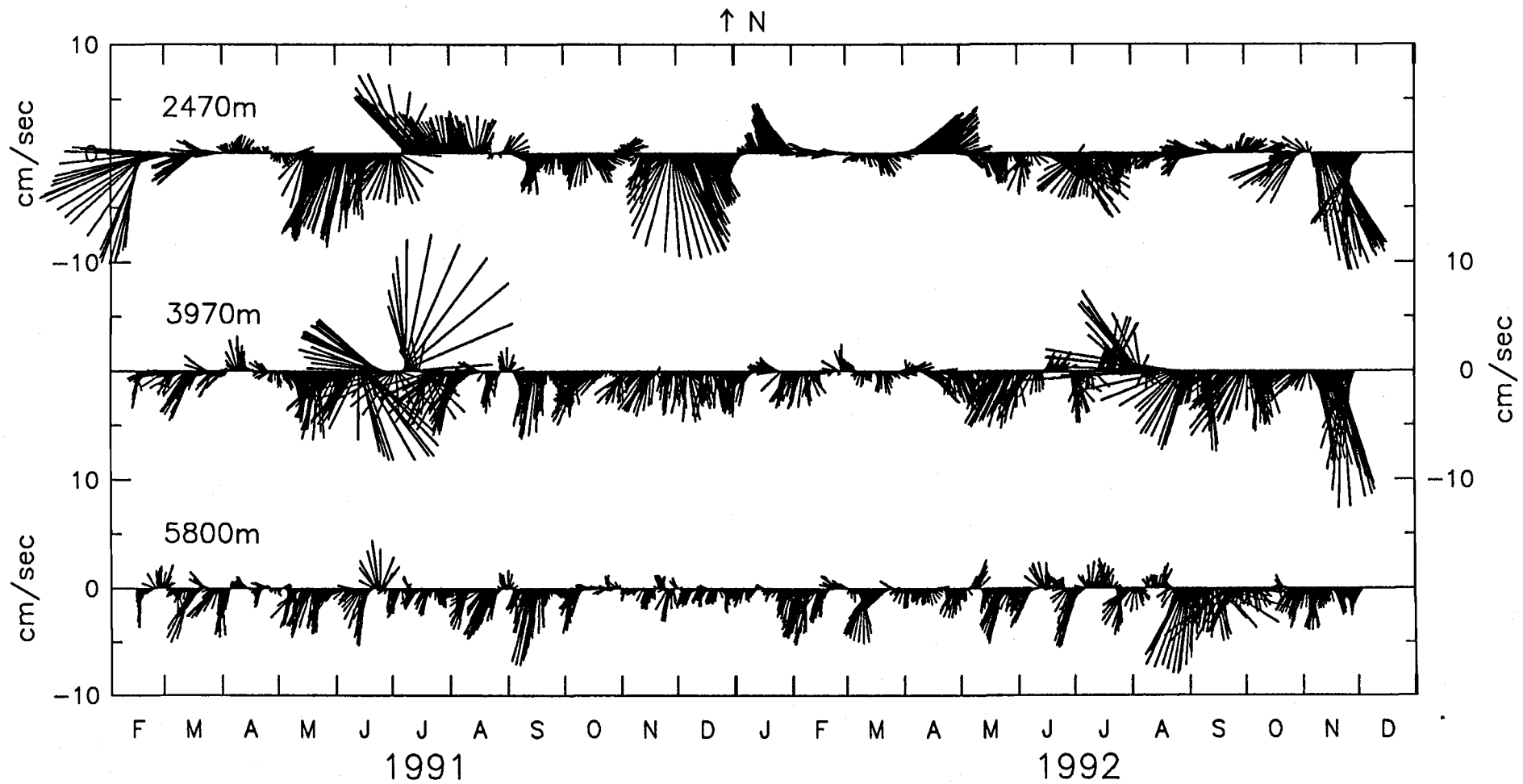
2470m at KIWI 6. LLP 6-hourly Data.



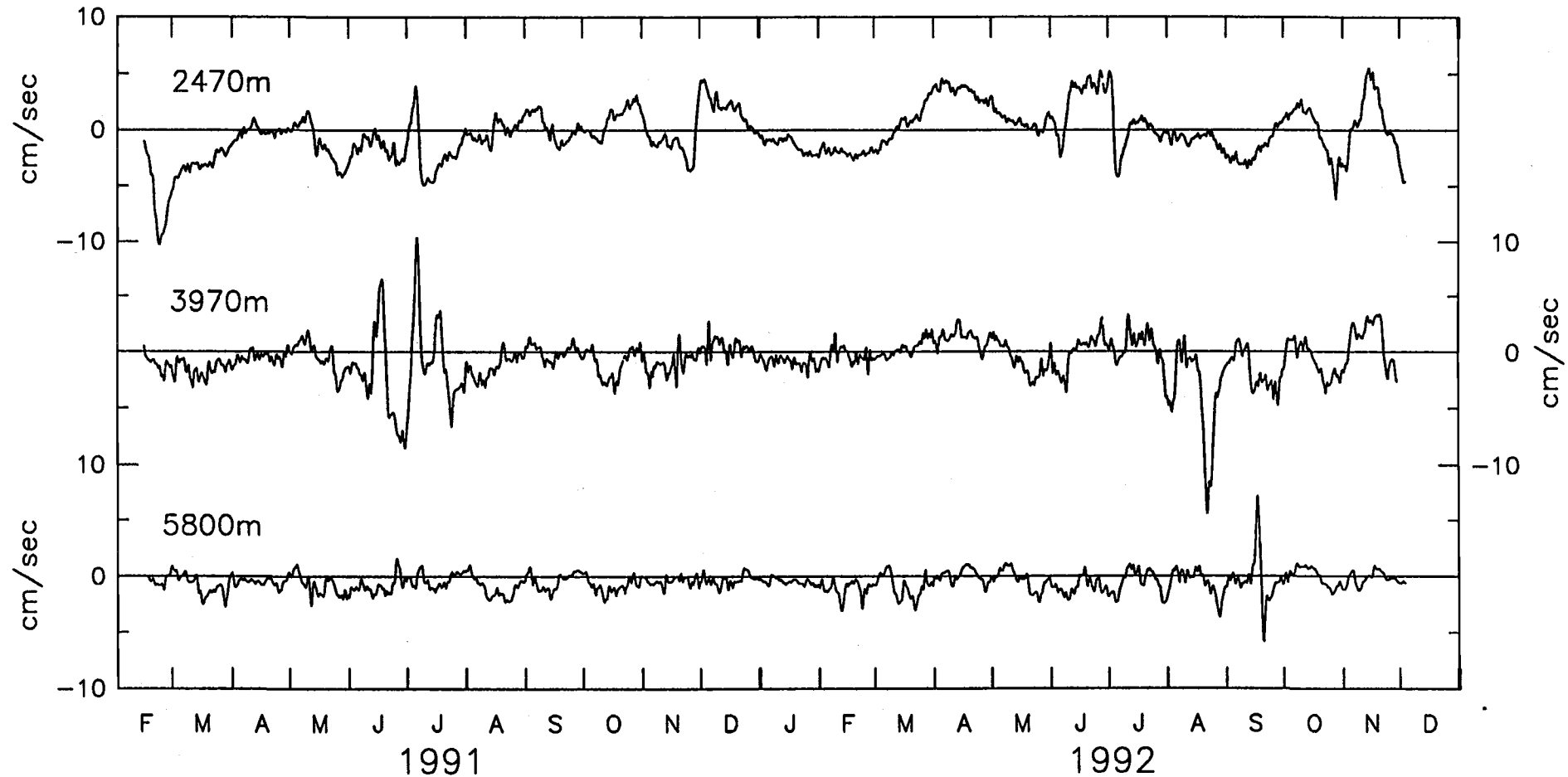
3970m at KIWI 6. LLP 6-hourly Data.



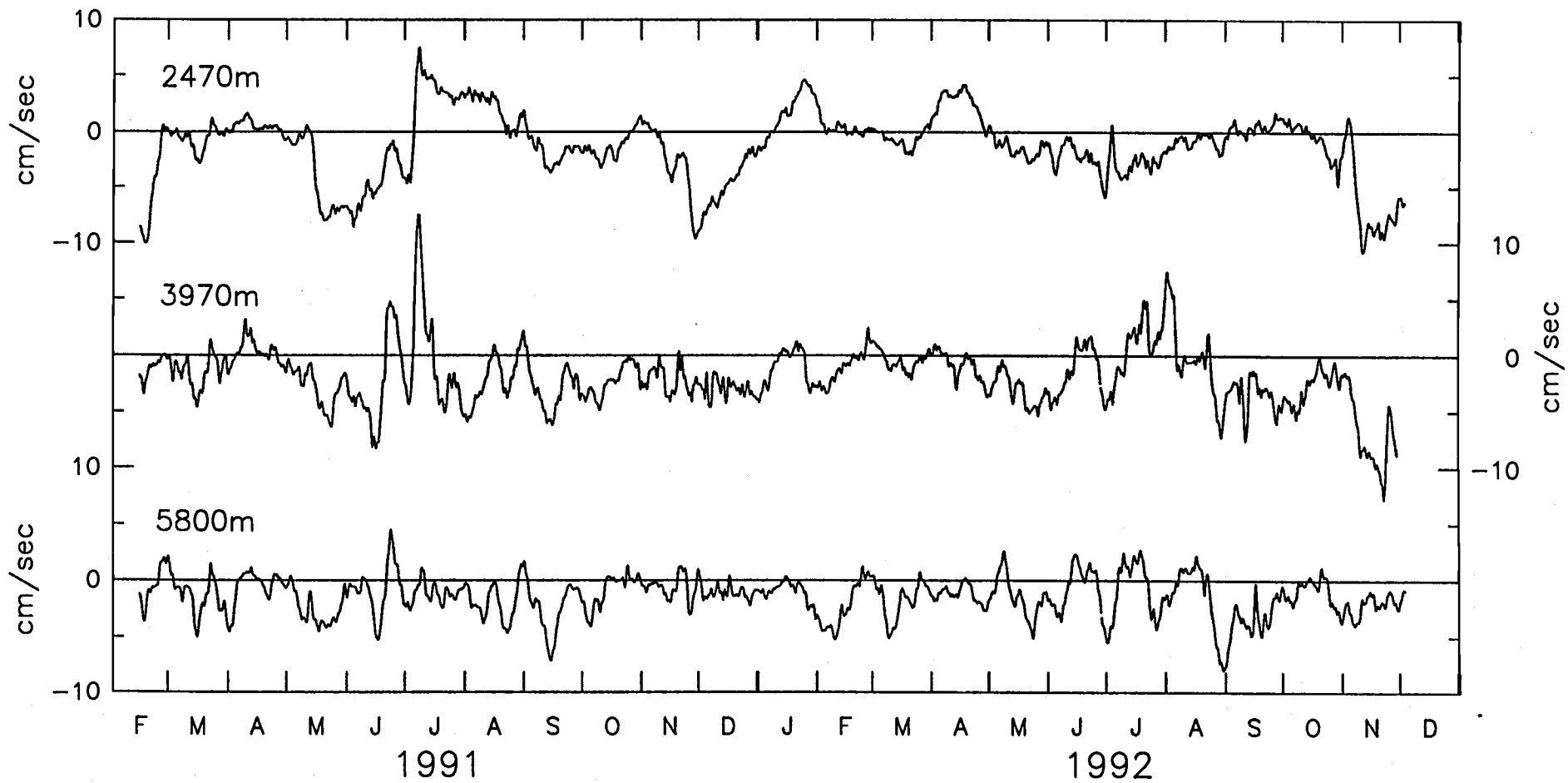
5800m at KIWI 6. LLP 6-hourly Data.



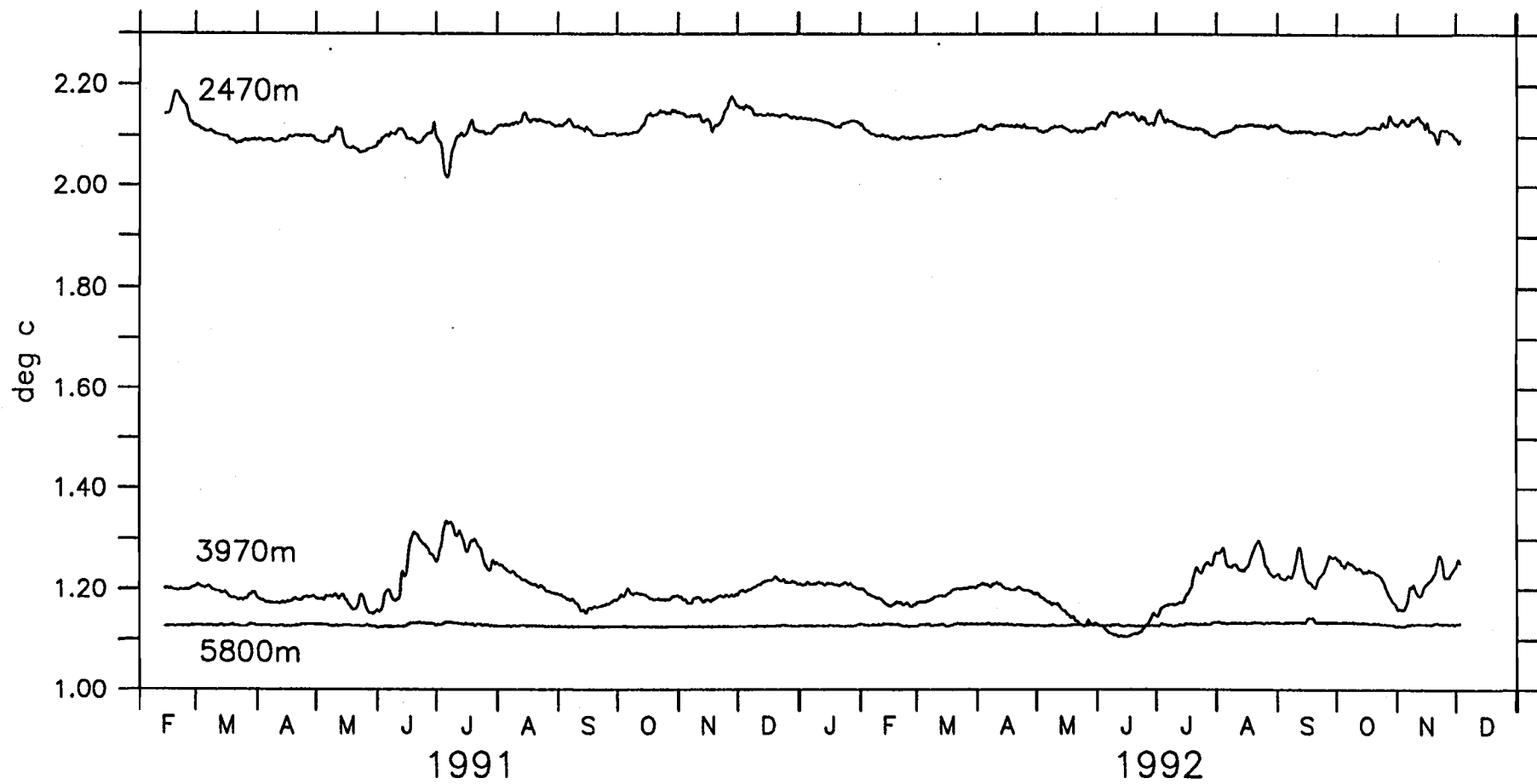
Velocity, KIWI 6, LLp 6-hourly Data.



U-component, KIWI 6, LLp 6-hourly Data.



V-component, KIWI 6, LLp 6-hourly Data.

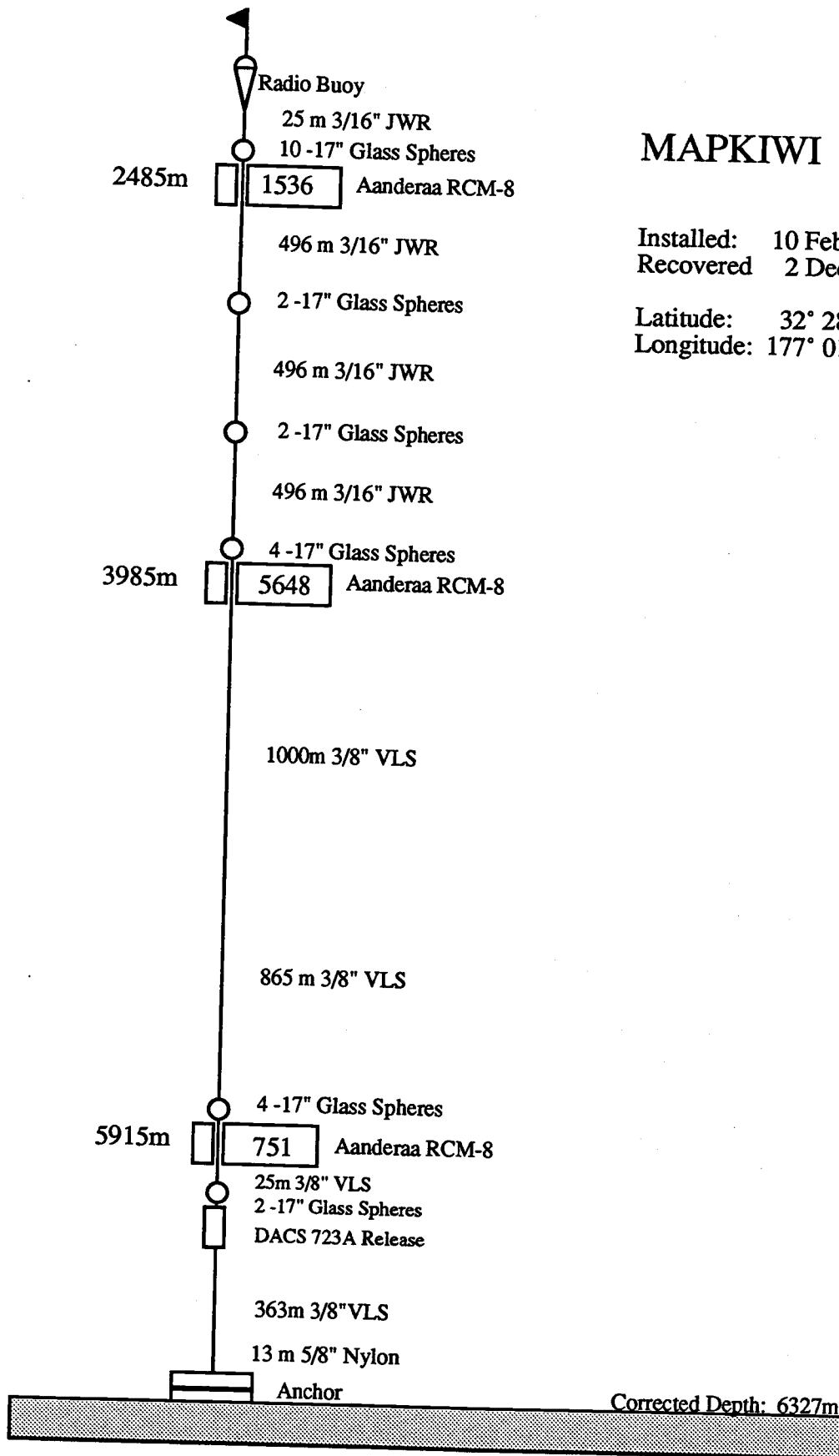


Temperature at KIWI 6. LLP 6-hourly Data.

MAPKIWI 7

Installed: 10 Feb 91
 Recovered: 2 Dec 92

Latitude: 32° 28.70'S
 Longitude: 177° 01.65'W



KIWI 7.

Position: 32° 28.70' S
177° 01.65' W
Depth of Water: 6327 m
Mooring Set: 2012 10 February 1991
Mooring Retrieved: 1943 02 December 1992
Data Interval 2230 10 February 1991 - 1900 02 December 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2485	1536/39
3985	5648/38
5915	751/73

Instrument 1536 recorded u, v, temperature, and pressure every 30 minutes. The first 47 lines (2230 10 February 1991 - 2130 11 February 1991) of the pressure record were nullified due to a series of spikes in the data.

Instrument 5648 recorded u, v, and temperature every 30 minutes.

Instrument 751 recorded u, v, and temperature every 30 minutes.

2485 meters at KIWI 7. 10 Feb 91 - 2 Dec 92. Tape 1536/39.

	min	mean	max	sd	num
Speed, cm/sec	0.93	4.39	16.04	2.61	31722
U, cm/sec	-11.98	1.10	14.62	3.46	31722
V, cm/sec	-8.57	1.47	14.50	3.29	31722
Temp, deg c	2.00	2.09	2.20	0.03	31722
Pressure, db	2510.75	2519.17	2591.10	7.75	31675

3985 meters at KIWI 7. 11 Feb 91 - 2 Dec 92. Tape 5648/38.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.71	22.08	2.97	31719
U, cm/sec	-18.48	0.36	10.87	3.10	31719
V, cm/sec	-9.72	1.02	18.05	3.43	31719
Temp, deg c	1.11	1.18	1.32	0.03	31719

5915 meters at KIWI 7. 10 Feb 91 - 2 Dec 92. Tape 751/73.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.75	10.87	1.67	31722
U, cm/sec	-10.76	-0.84	6.50	2.36	31722
V, cm/sec	-7.03	-0.45	6.59	1.97	31722
Temp, deg c	1.13	1.14	1.15	0.00	31722

2485 meters at KIWI 7. 12 Feb 91 - 1 Dec 92. Tape 1536/39.

	min	mean	max	sd	num
Speed, cm/sec	0.14	3.40	11.81	2.12	2634
U, cm/sec	-7.55	1.12	9.38	2.60	2634
V, cm/sec	-2.40	1.46	11.72	2.44	2634
Temp, deg c	2.04	2.09	2.17	0.02	2634
Pressure, db	2513.02	2519.18	2583.56	7.44	2630

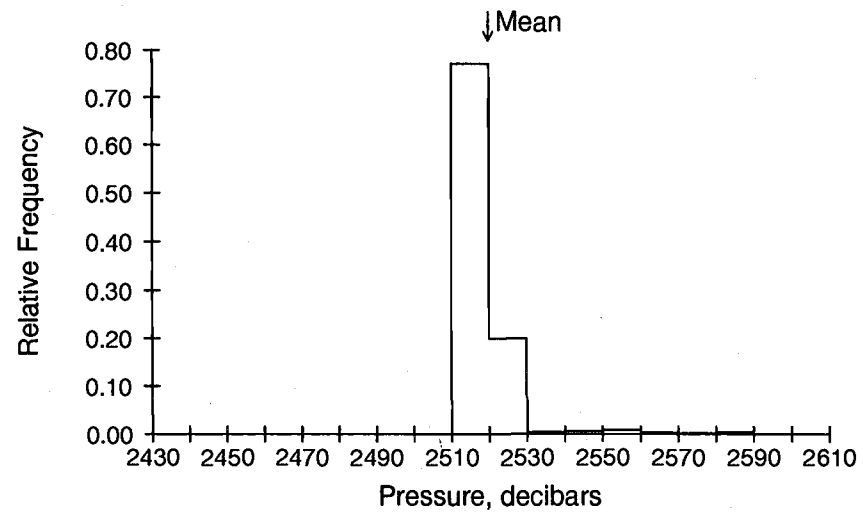
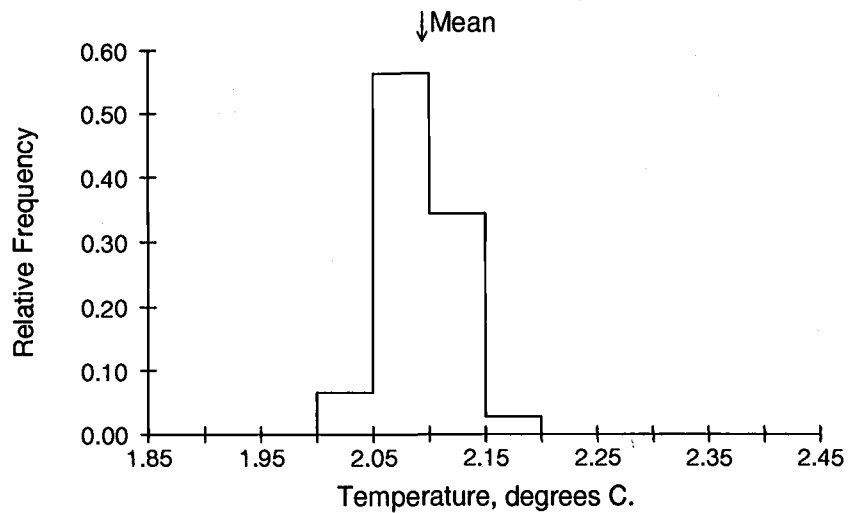
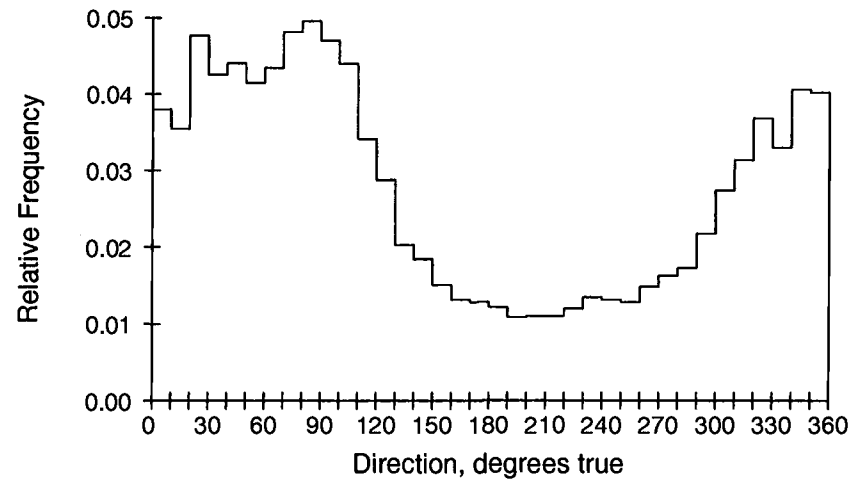
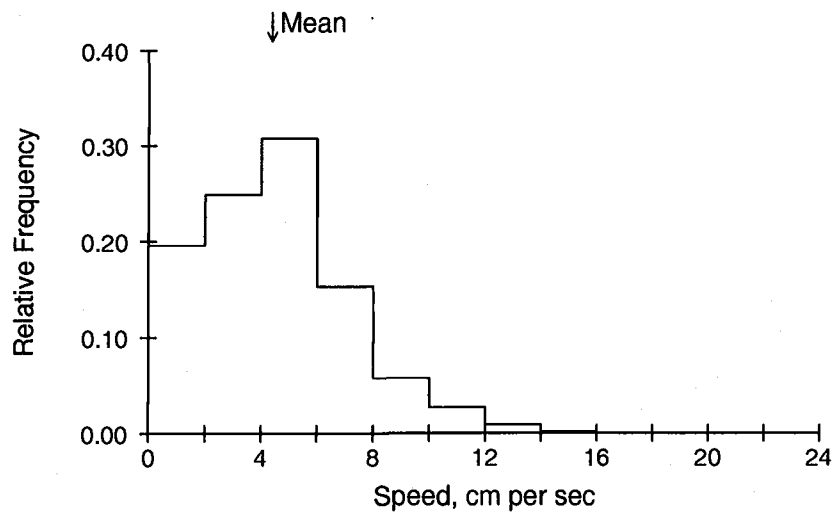
3985 meters at KIWI 7. 12 Feb 91 - 1 Dec 92. Tape 5648/38.

	min	mean	max	sd	num
Speed, cm/sec	0.03	2.89	17.30	2.61	2634
U, cm/sec	-15.04	0.36	5.47	2.27	2634
V, cm/sec	-4.40	1.01	14.61	2.97	2634
Temp, deg c	1.14	1.18	1.29	0.03	2634

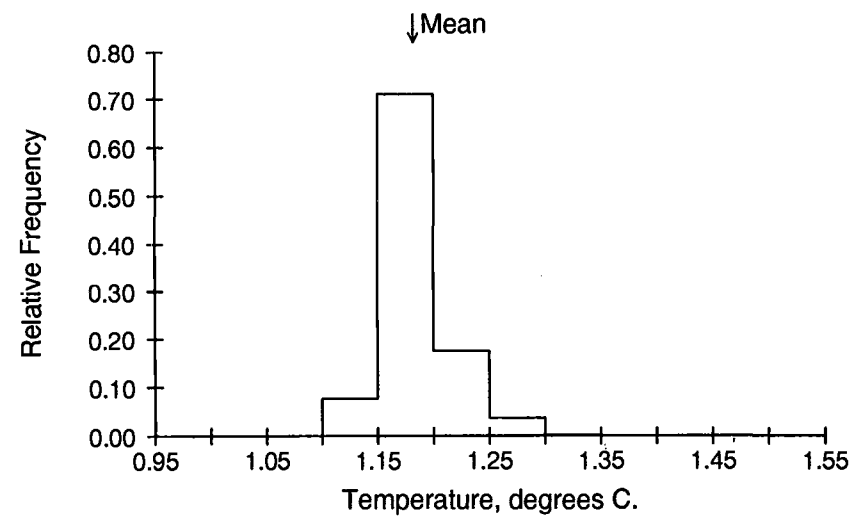
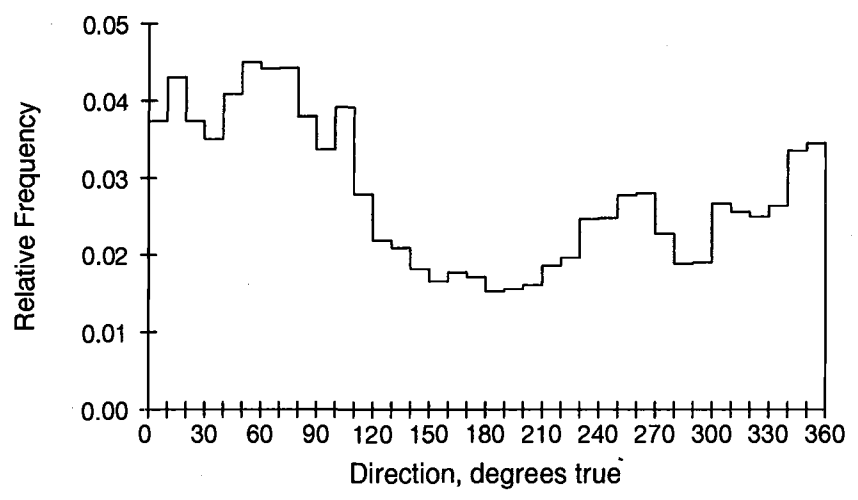
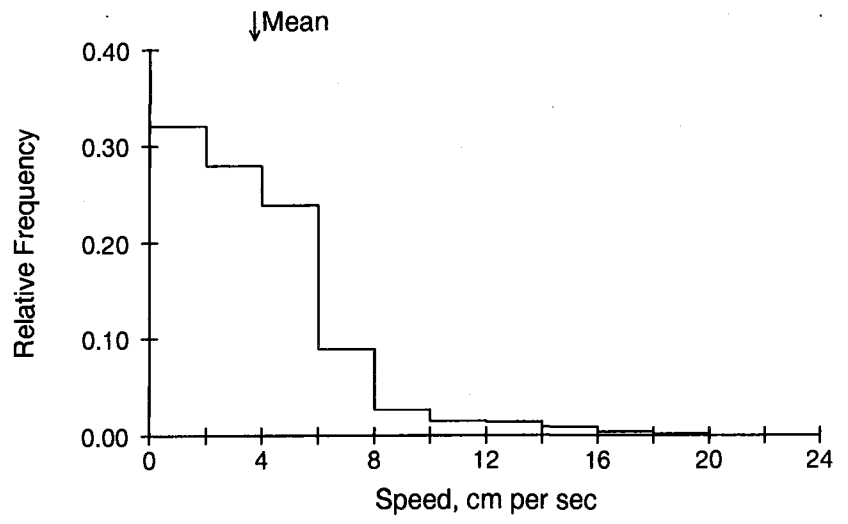
5915 meters at KIWI 7. 12 Feb 91 - 1 Dec 92. Tape 751/73.

	min	mean	max	sd	num
Speed, cm/sec	0.01	1.61	5.58	0.85	2634
U, cm/sec	-5.57	-0.84	2.38	1.08	2634
V, cm/sec	-3.42	-0.45	2.56	1.10	2634
Temp, deg c	1.13	1.14	1.14	0.00	2634

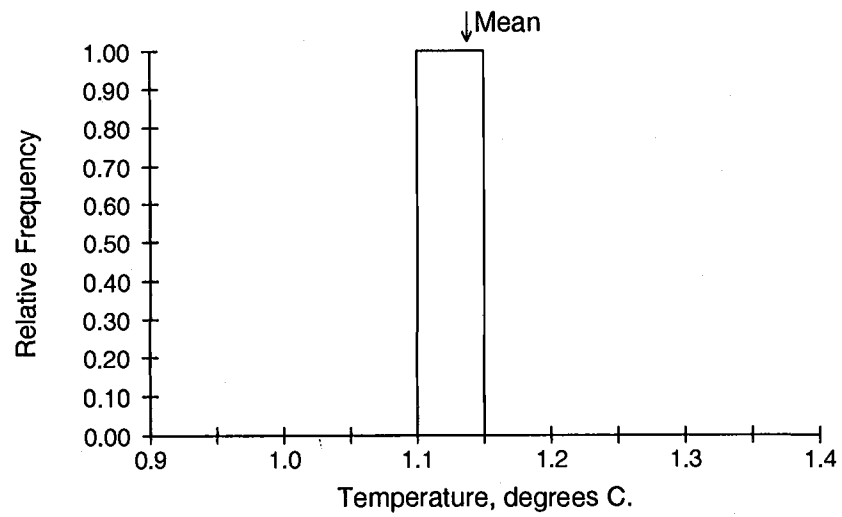
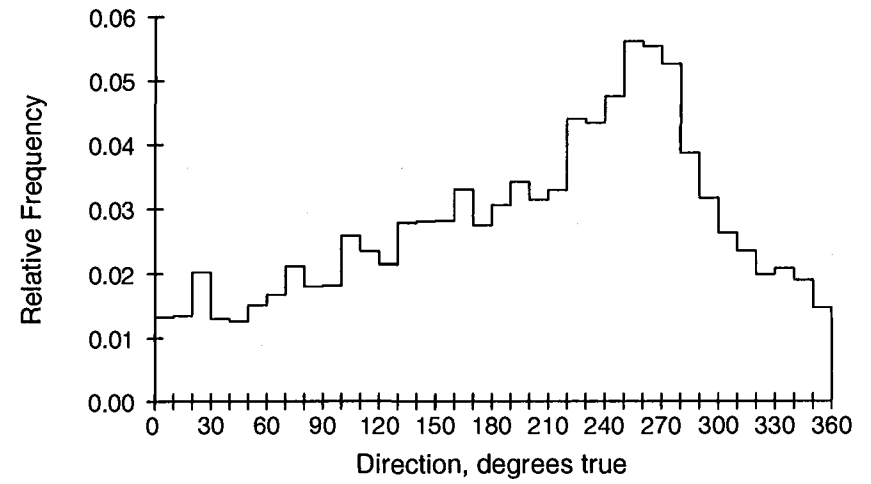
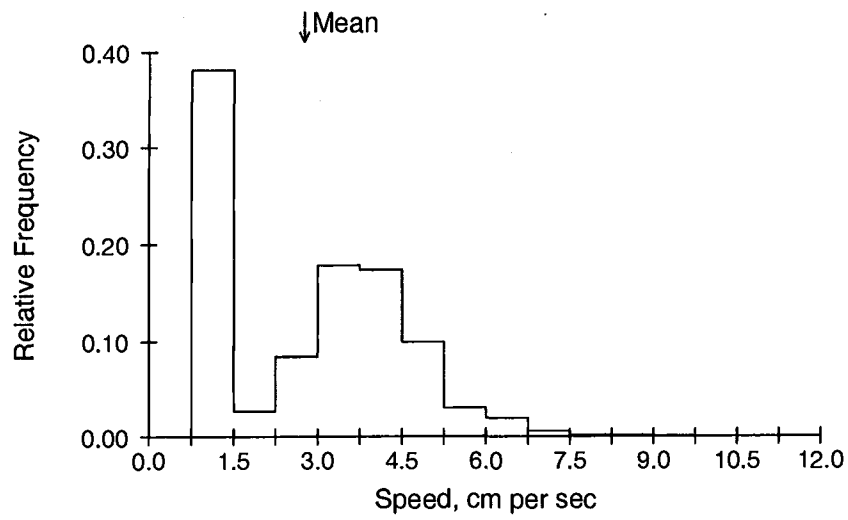
2485m at Kiwi 7. 10 Feb 91 - 2 Dec 92. RCM 1536/39.

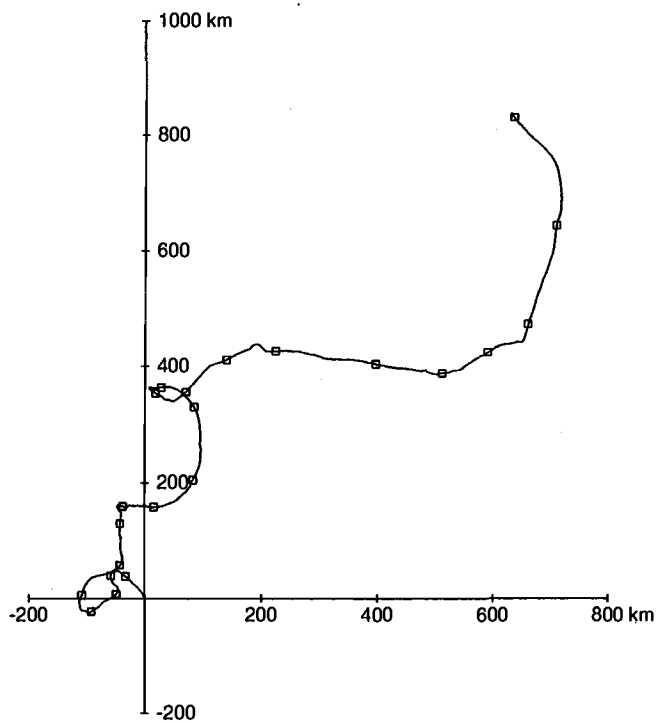


3985m at Kiwi 7. 10 Feb 91 - 2 Dec 92. Tape 5648/38.

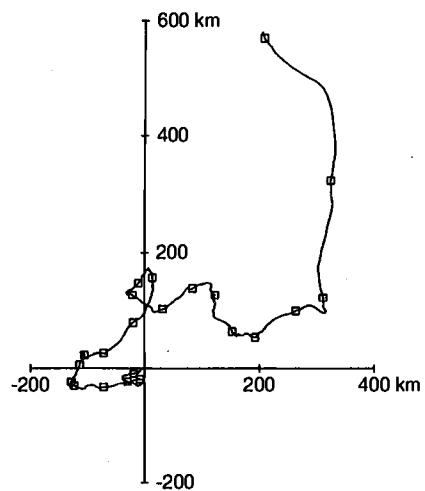


5915m at Kiwi 7. 10 Feb 91 - 2 Dec 92. Tape 751/73.

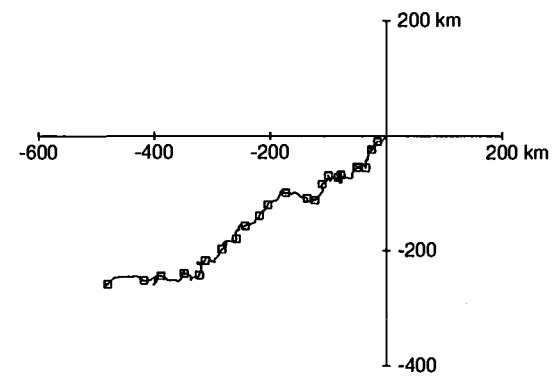




2485 m at KIWI 7. 660.9 days starting 2230 10 Feb 91.



3985 m at KIWI 7. 660.8 days starting 0000 11 Feb 91.



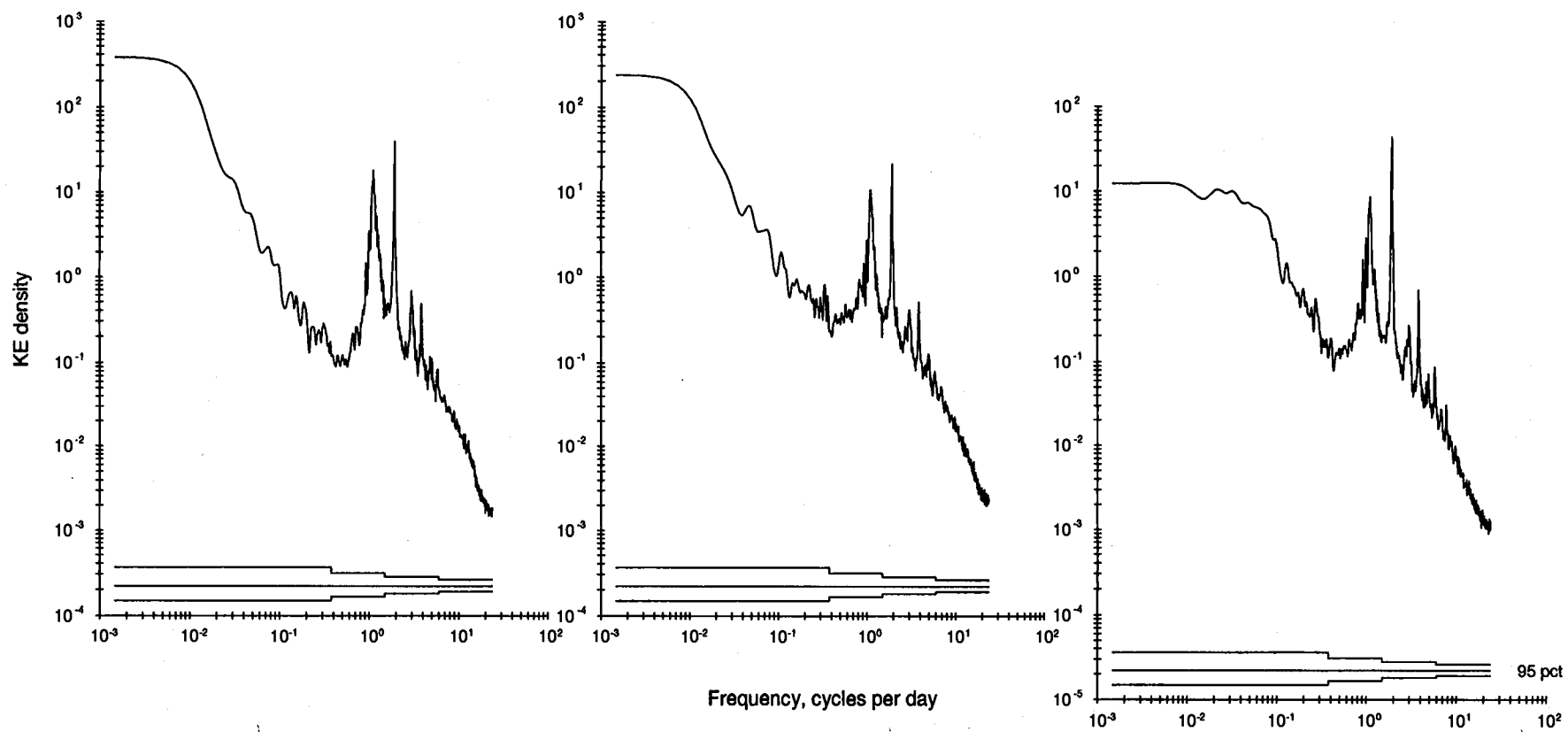
5915 m at KIWI 7. 660.9 days starting 2230 10 Feb 91.

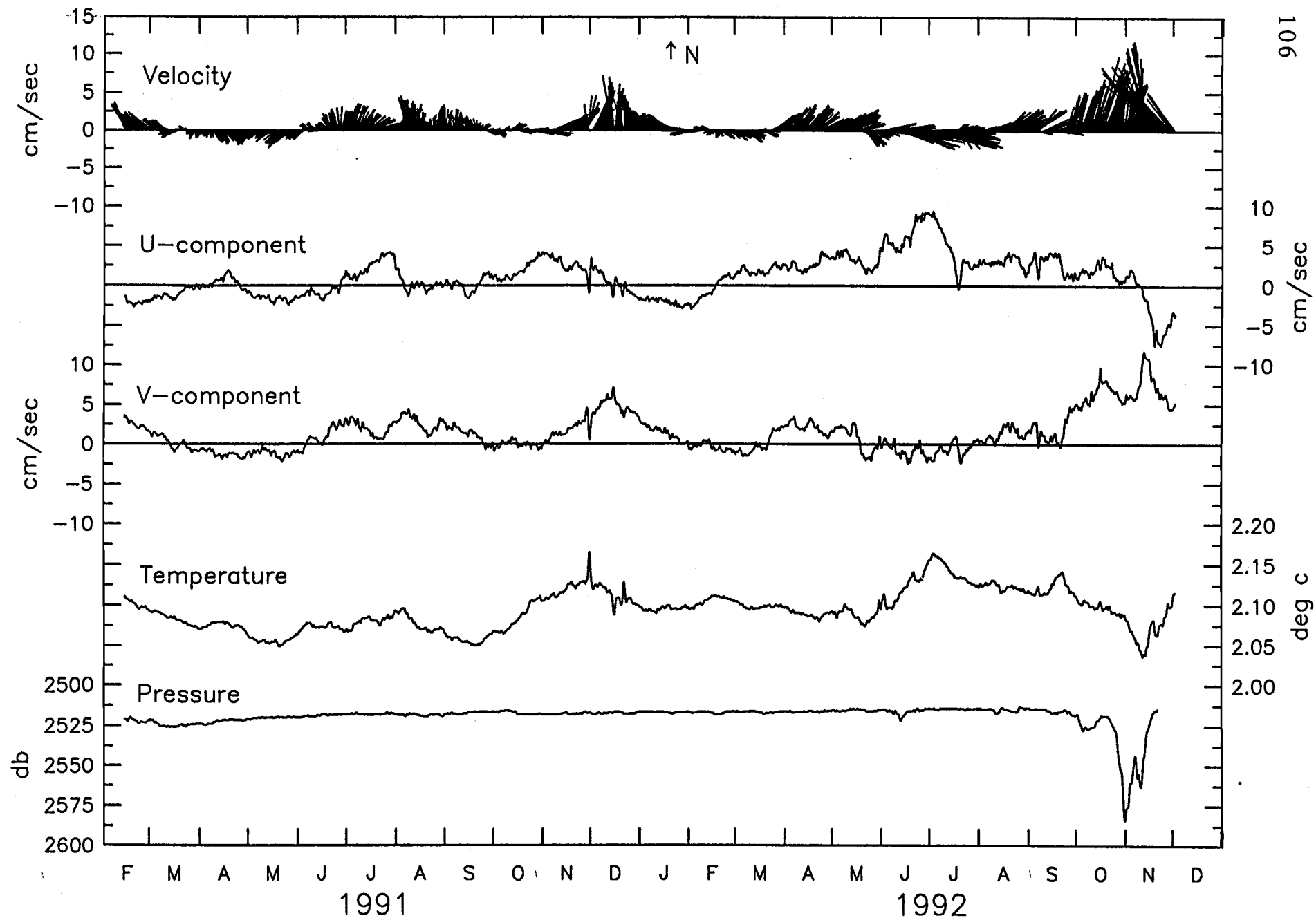
Unfiltered Current (both components) Kiwi 7.

2485 m

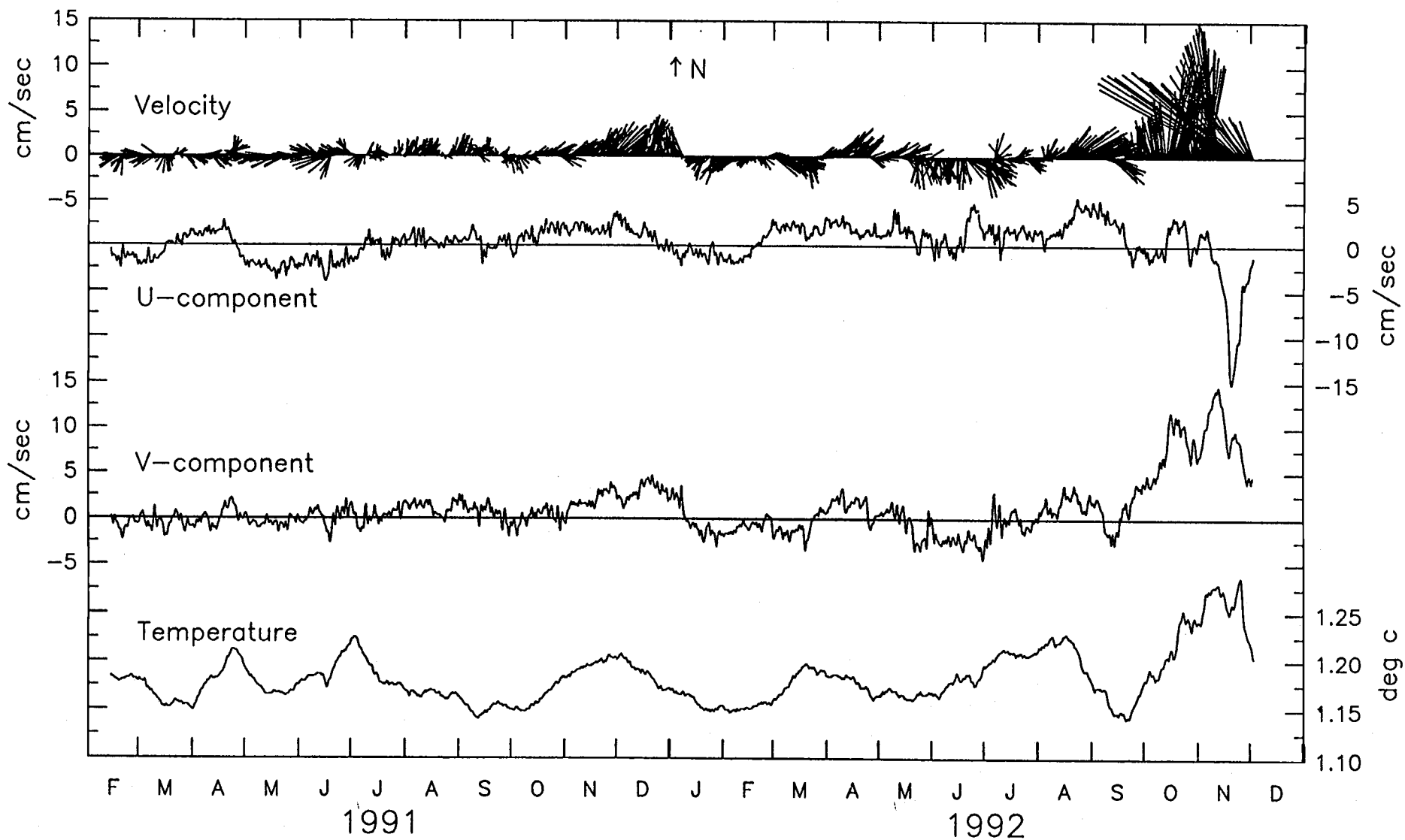
3985 m

5915 m

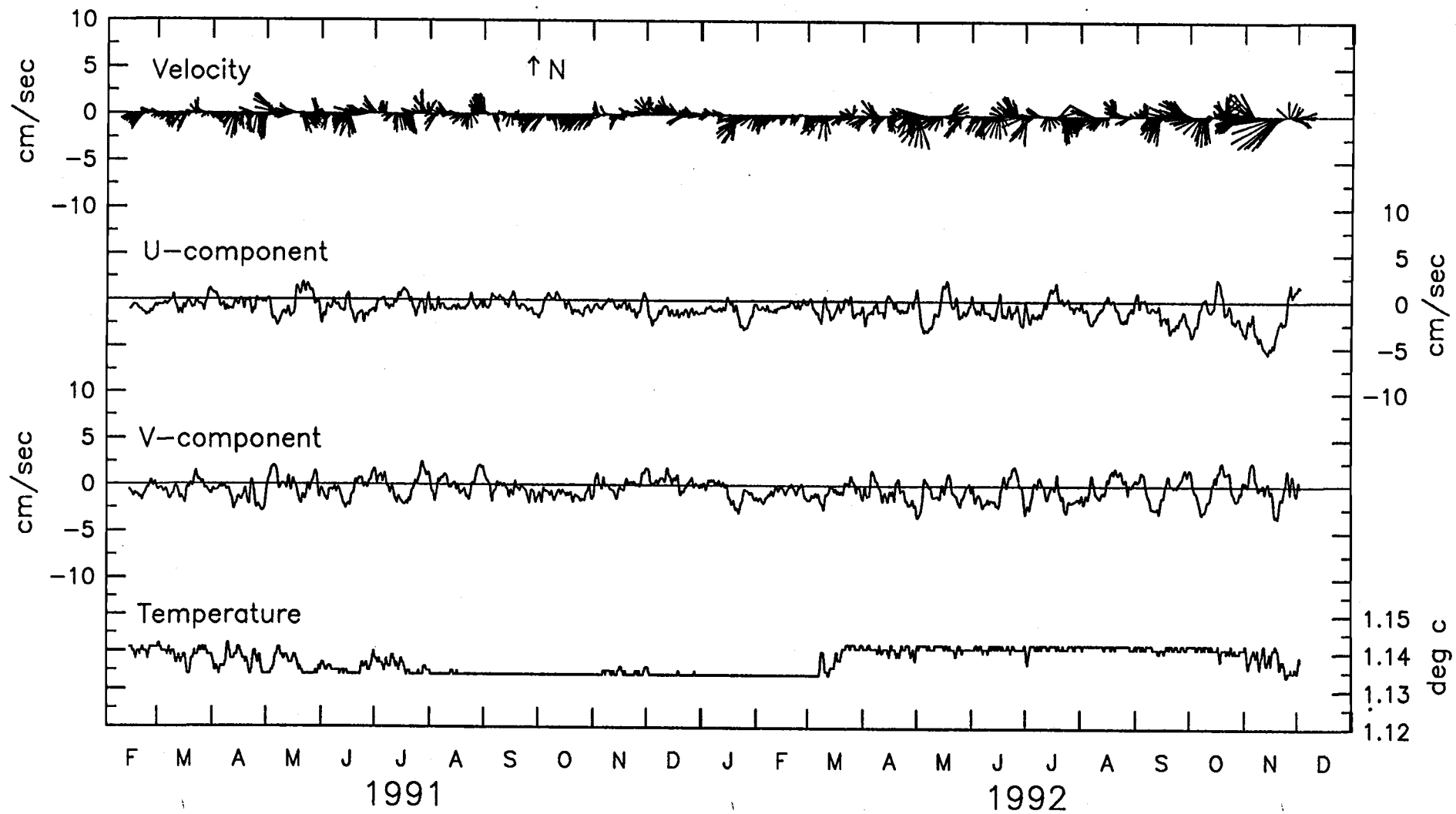




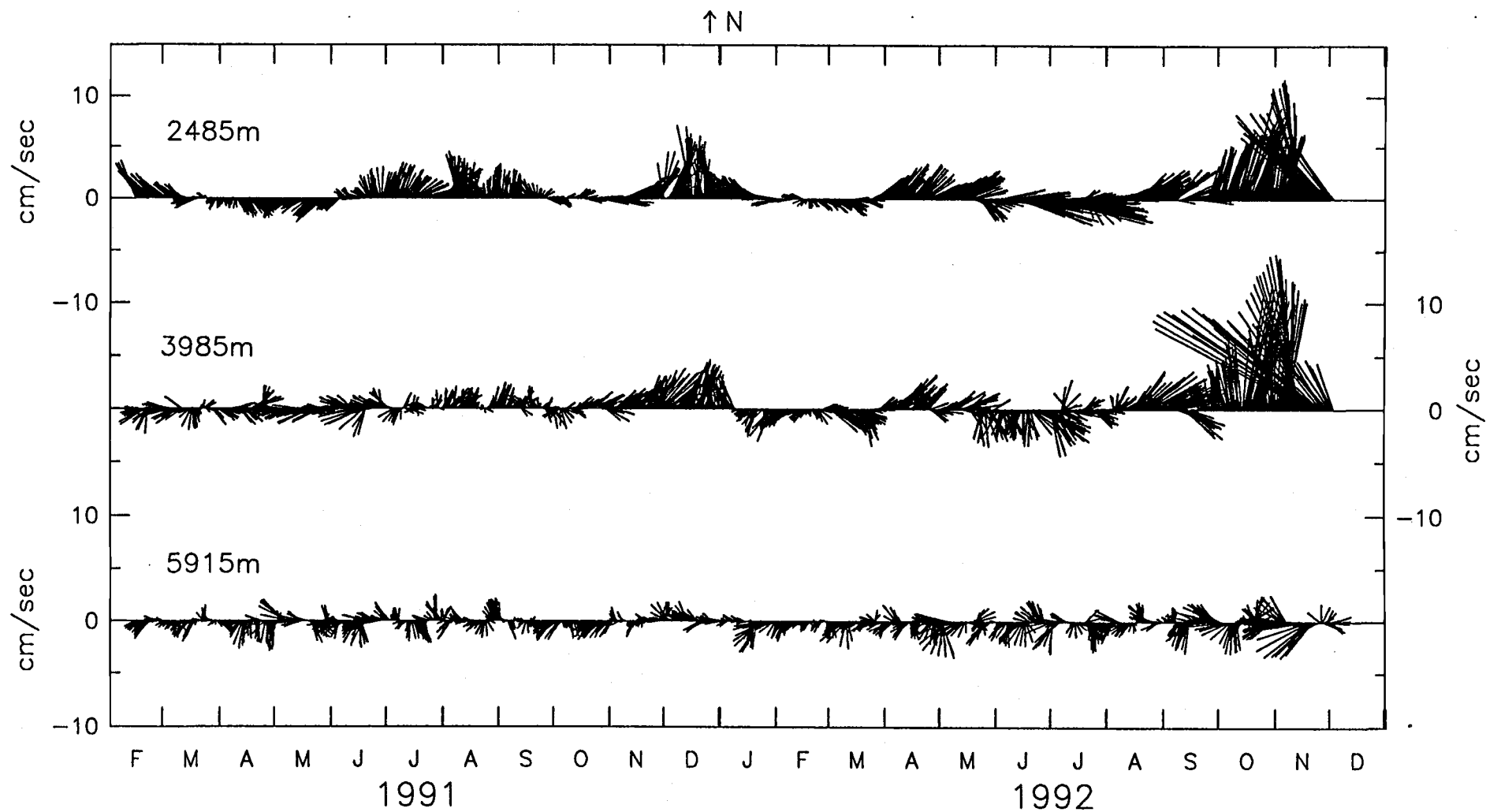
2485m at KIWI 7. LLP 6-hourly Data.



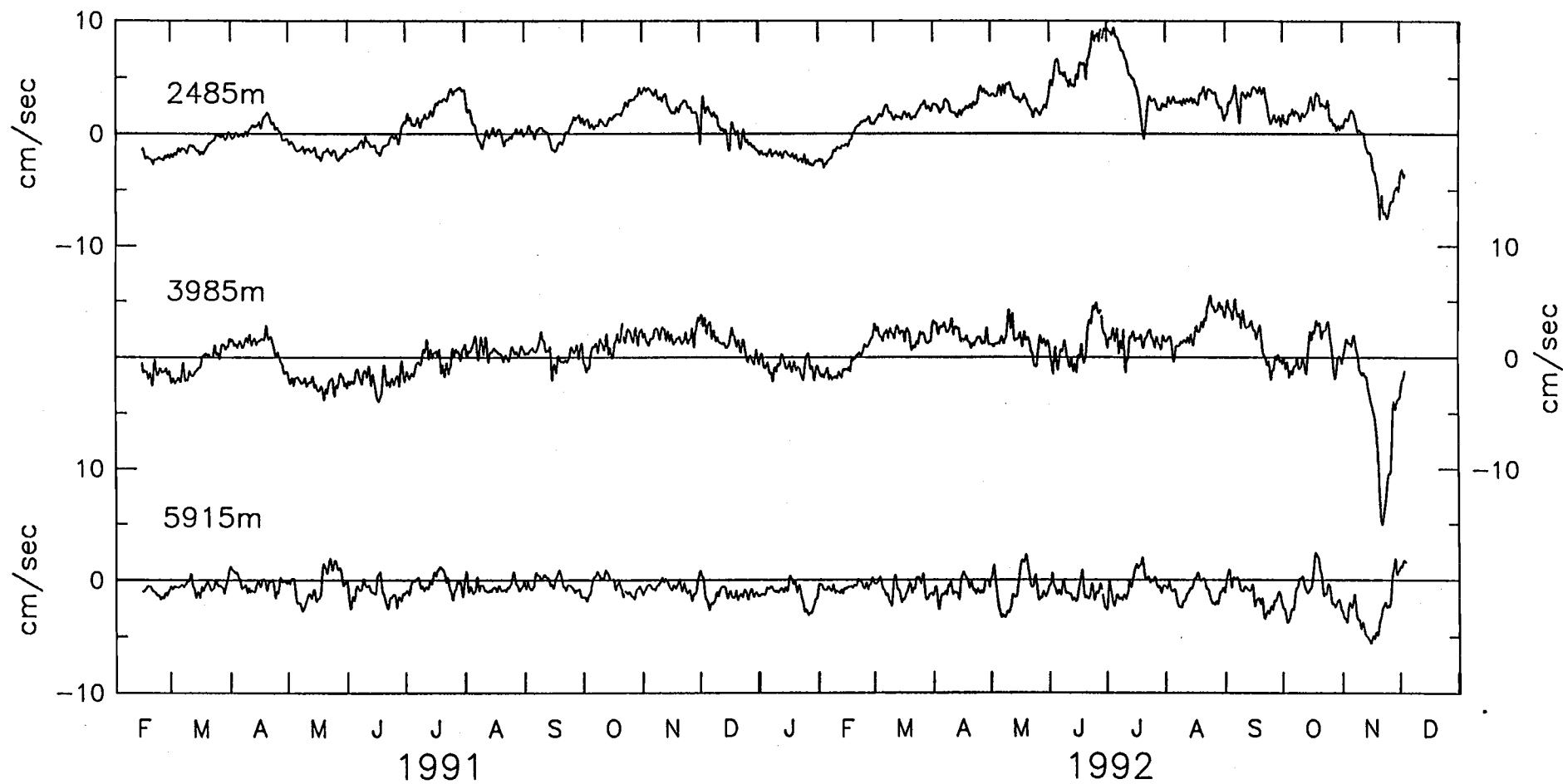
3985m at KIWI 7. LLP 6-hourly Data.



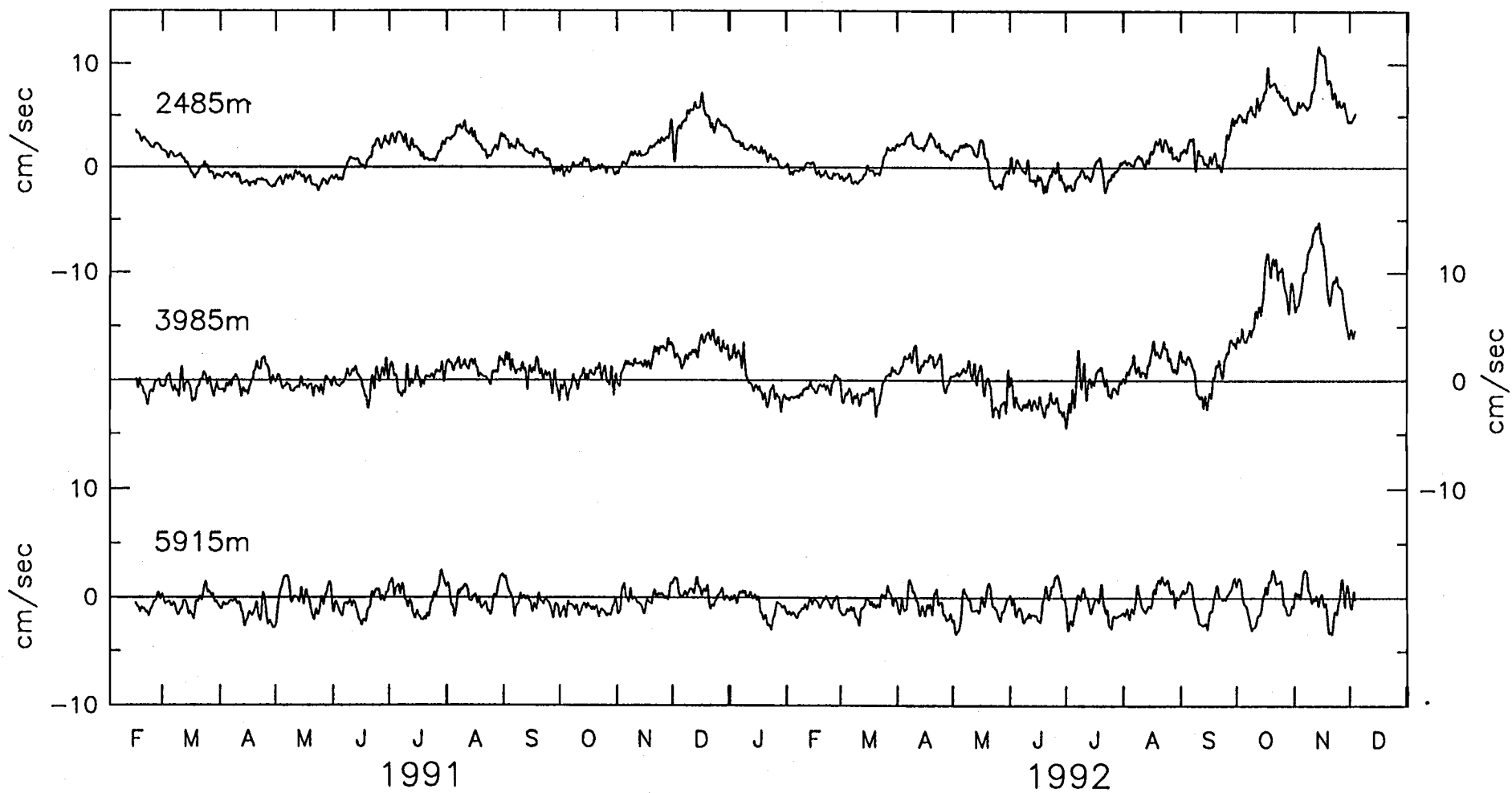
5915m at KIWI 7. LLP 6-hourly Data.



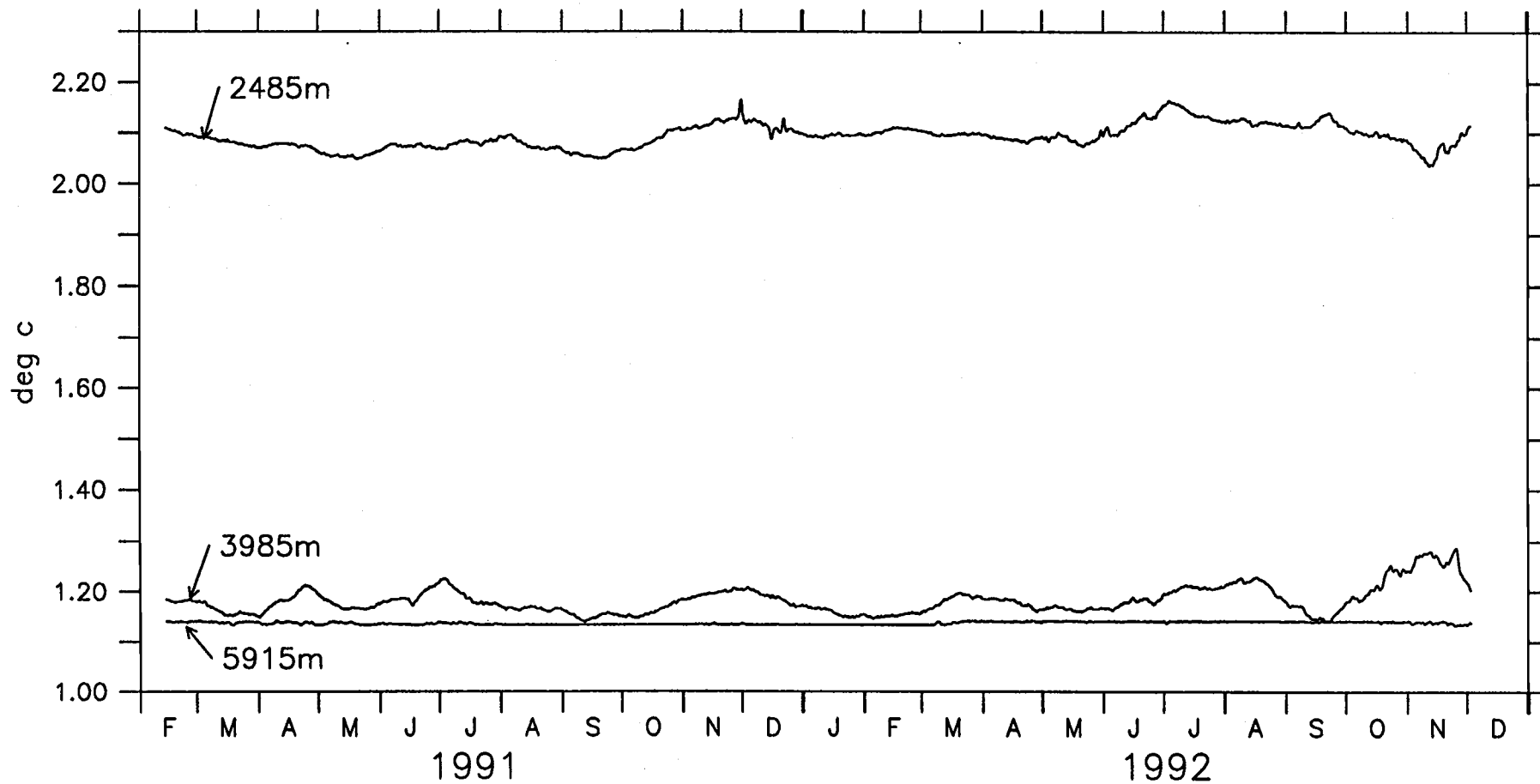
Velocity, KIWI 7, LLP 6-hourly Data.



'U-component, KIWI 7, LLP 6-hourly Data.

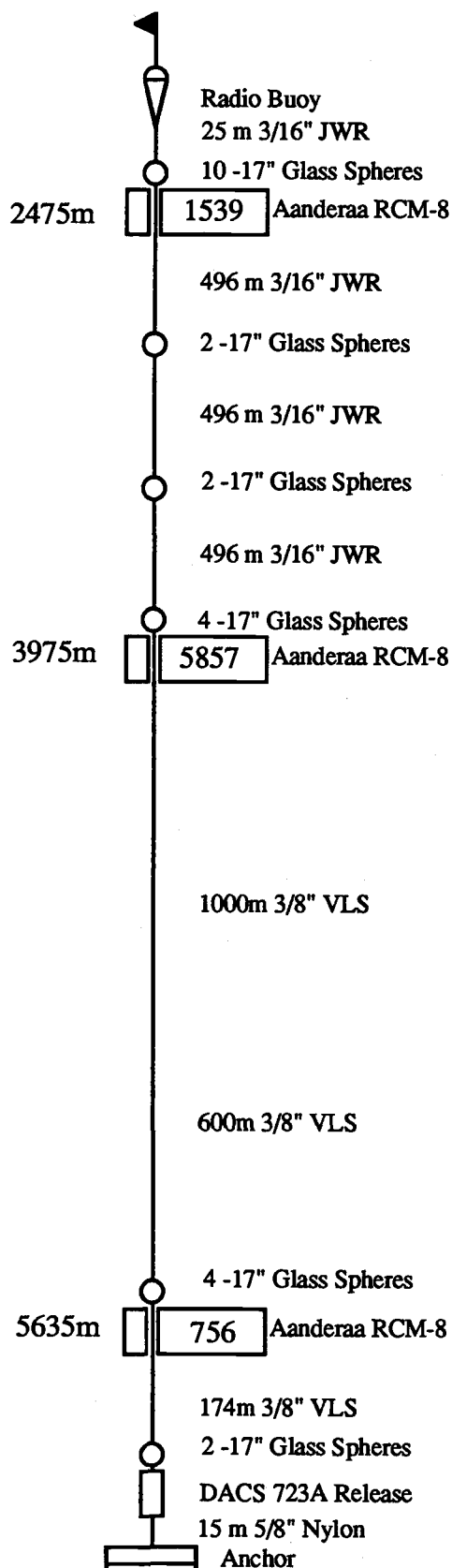


V-component, KIWI 7, LLP 6-hourly Data.



Temperature at KIWI 7. LLP 6-hourly Data.

MAPKIWI 9



Installed: 10 Feb 91
 Recovered: 2 Dec 92

Latitude: 32° 29.82'S
 Longitude: 176° 05.11'W

Corrected Depth: 5852m

KIWI 9.

Position: 32° 29.82' S
176° 05.11' W
Depth of Water: 5852 m
Mooring Set: 0606 10 February 1991
Mooring Retrieved: 0522 02 December 1992
Data Interval 0900 10 Feb 1991 - 0500 2 December 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2475	1539/47
3975	5857/13
5635	756/63

Instrument 1539 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5857 recorded u, v, and temperature every 30 minutes.

Instrument 756 recorded u, v, and temperature every 30 minutes.

2475 meters at KIWI 9. 10 Feb 91 - 2 Dec 92. Tape 1539/47.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.85	16.04	2.23	31721
U, cm/sec	-10.34	0.12	15.56	3.06	31721
V, cm/sec	-10.24	0.56	12.16	3.18	31721
Temp, deg c	2.01	2.08	2.15	0.02	31721
Pressure, db	2509.38	2513.42	2516.71	1.29	31721

3975 meters at KIWI 9. 10 Feb 91 - 2 Dec 92. Tape 5857/13.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.27	14.89	2.10	31721
U, cm/sec	-7.65	0.49	14.87	2.52	31721
V, cm/sec	-8.38	1.22	11.70	2.64	31721
Temp, deg c	1.08	1.16	1.25	0.02	31721

5635 meters at KIWI 9. 10 Feb 91 - 2 Dec 92. Tape 756/63.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.89	10.58	1.92	31721
U, cm/sec	-9.25	0.69	8.82	2.67	31721
V, cm/sec	-7.59	0.29	8.76	2.09	31721
Temp, deg c	1.08	1.10	1.12	0.00	31721

2475 meters at KIWI 9. 11 Feb 91 - 30 Nov 92. Tape 1539/47.

	min	mean	max	sd	num
Speed, cm/sec	0.07	2.57	9.36	1.44	2633
U, cm/sec	-4.39	0.12	9.18	1.96	2633
V, cm/sec	-5.31	0.56	7.45	2.12	2633
Temp, deg c	2.04	2.08	2.12	0.01	2633
Pressure, db	2511.84	2513.42	2516.86	1.04	2633

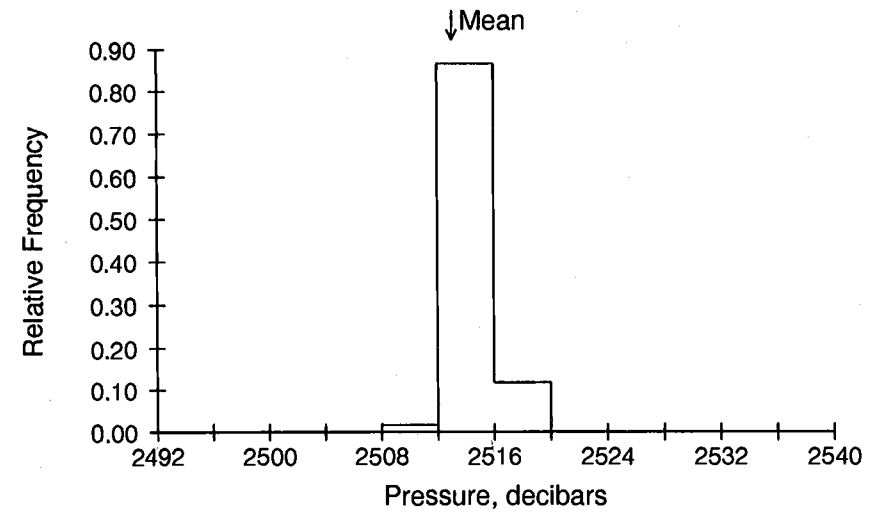
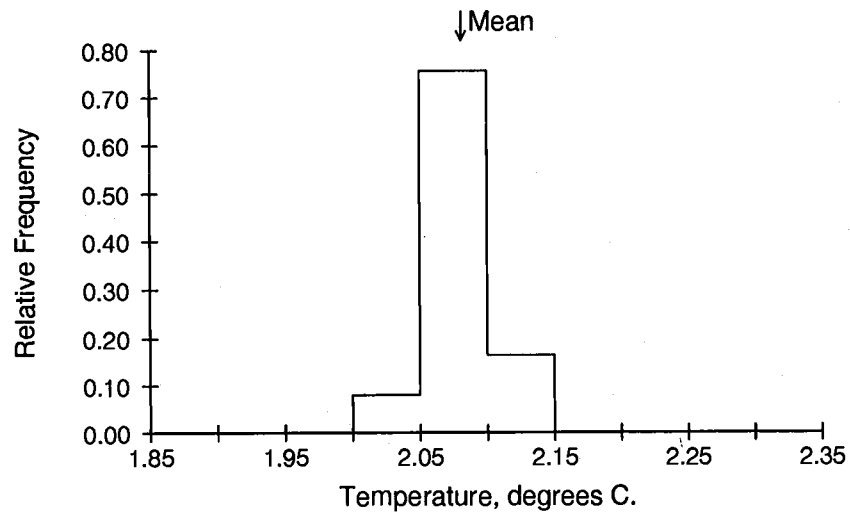
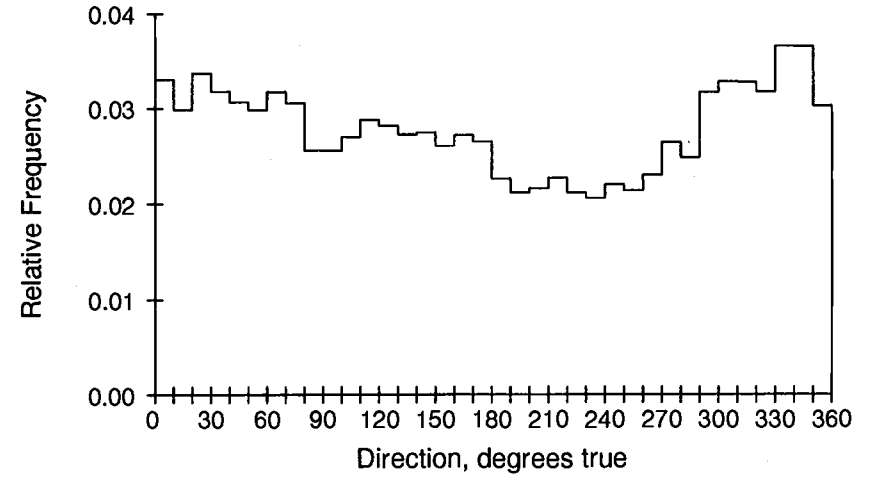
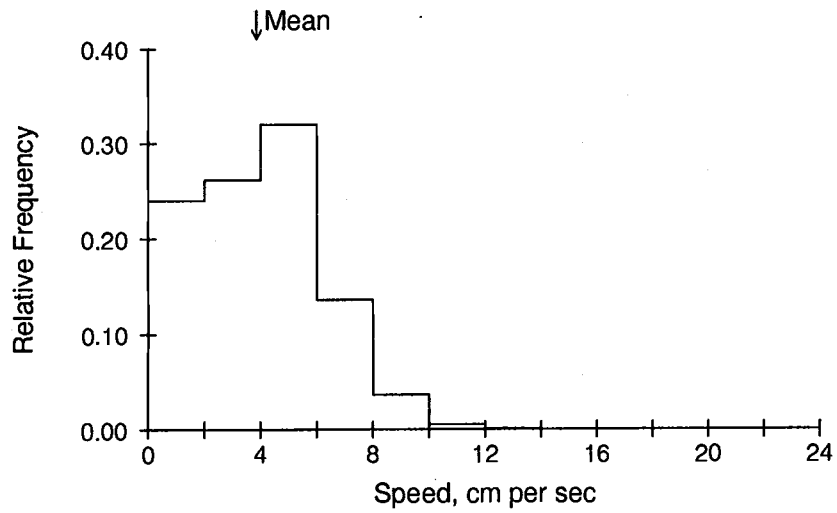
3975 meters at KIWI 9. 11 Feb 91 - 30 Nov 92. Tape 5857/13.

	min	mean	max	sd	num
Speed, cm/sec	0.04	2.41	9.99	1.82	2633
U, cm/sec	-4.48	0.48	9.68	1.83	2633
V, cm/sec	-3.09	1.22	8.82	2.02	2633
Temp, deg c	1.11	1.16	1.23	0.02	2633

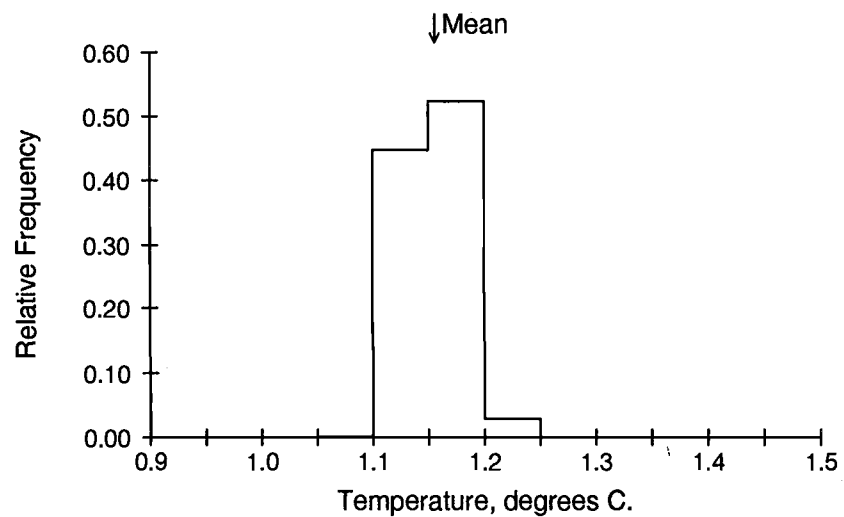
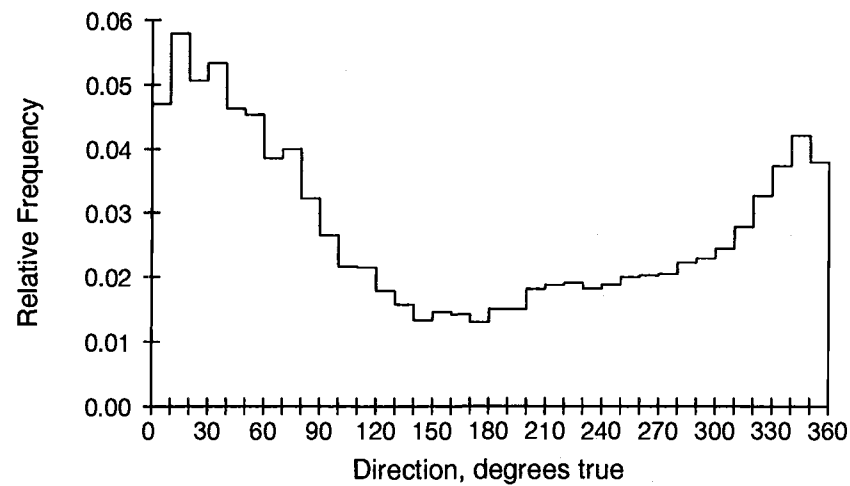
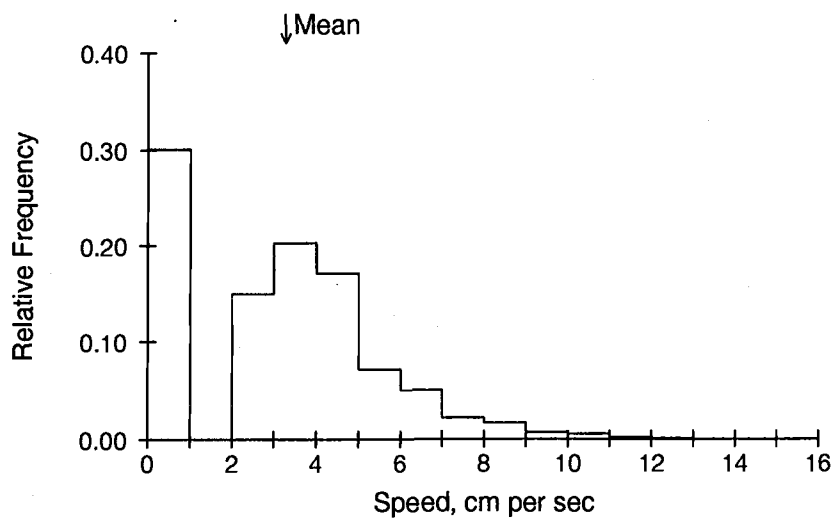
5635 meters at KIWI 9. 11 Feb 91 - 30 Nov 92. Tape 756/63.

	min	mean	max	sd	num
Speed, cm/sec	0.03	2.56	8.16	1.59	2633
U, cm/sec	-6.74	0.69	7.03	2.37	2633
V, cm/sec	-5.15	0.29	5.77	1.71	2633
Temp, deg c	1.09	1.10	1.11	0.00	2633

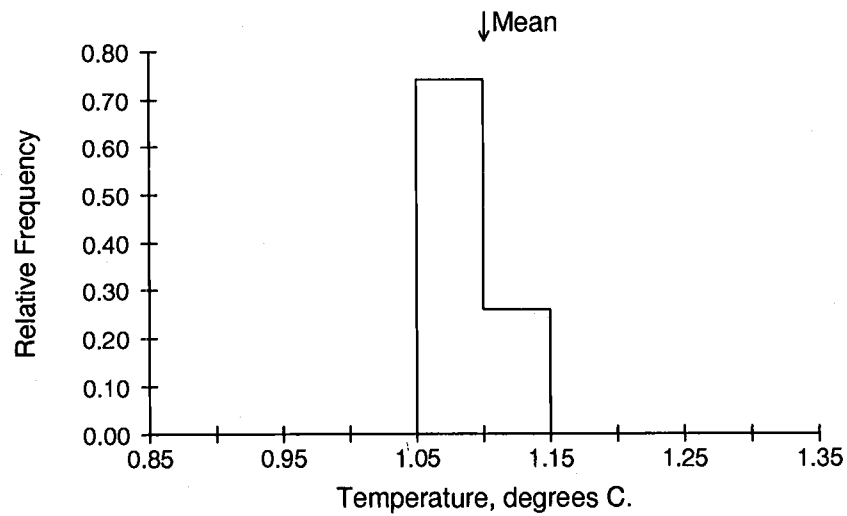
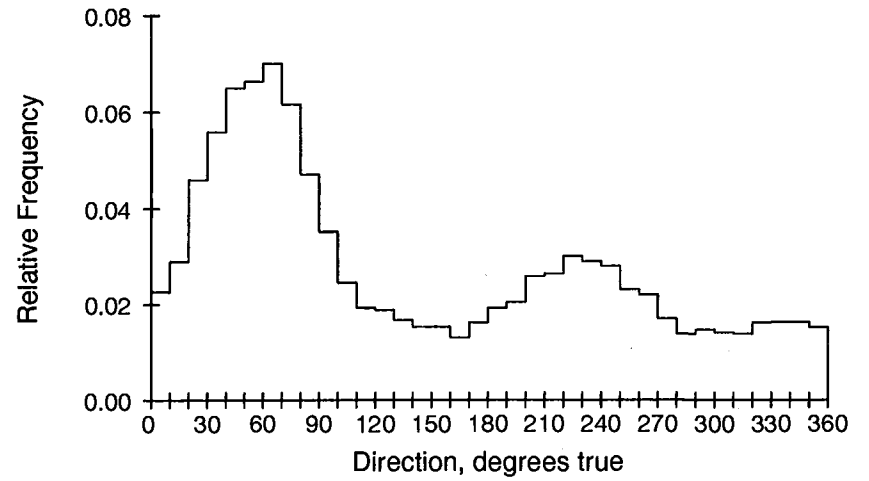
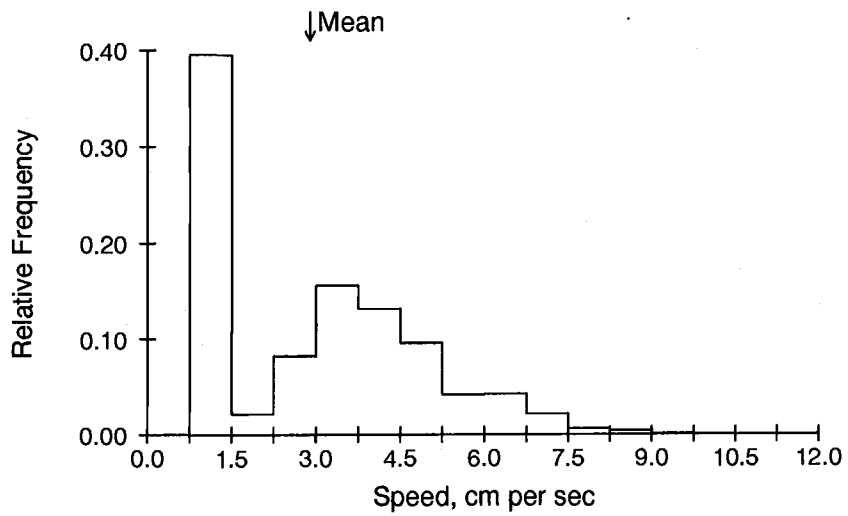
2475m at Kiwi 9. 10 Feb 91 - 2 Dec 92. RCM 1539/47.

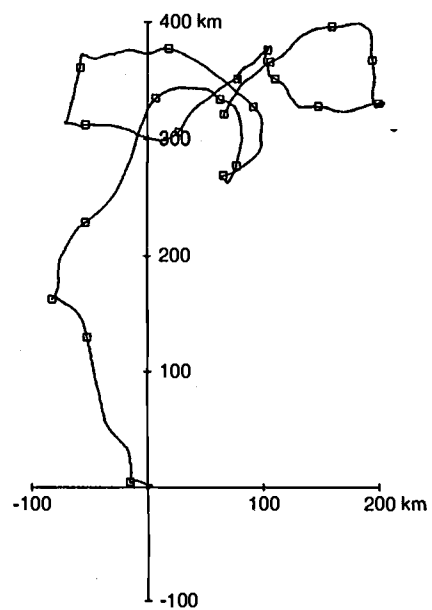


3975m at Kiwi 9. 10 Feb 91 - 2 Dec 1992. RCM 5857/13.

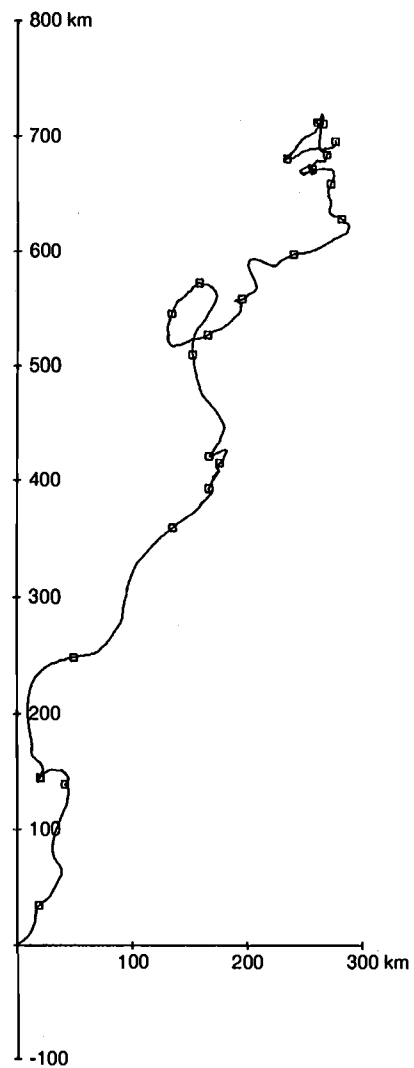


5635m at Kiwi 9. 10 Feb 91 - 2 Dec 92. RCM 756/63.

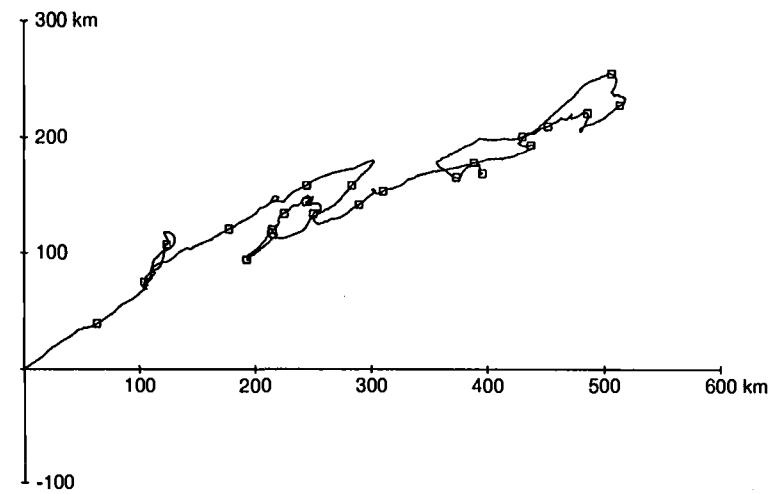




2475 m at KIWI 9. 660.8 days starting 0900 10 Feb 91.



3975 m at KIWI 9. 660.8 days starting 0900 10 Feb 91.



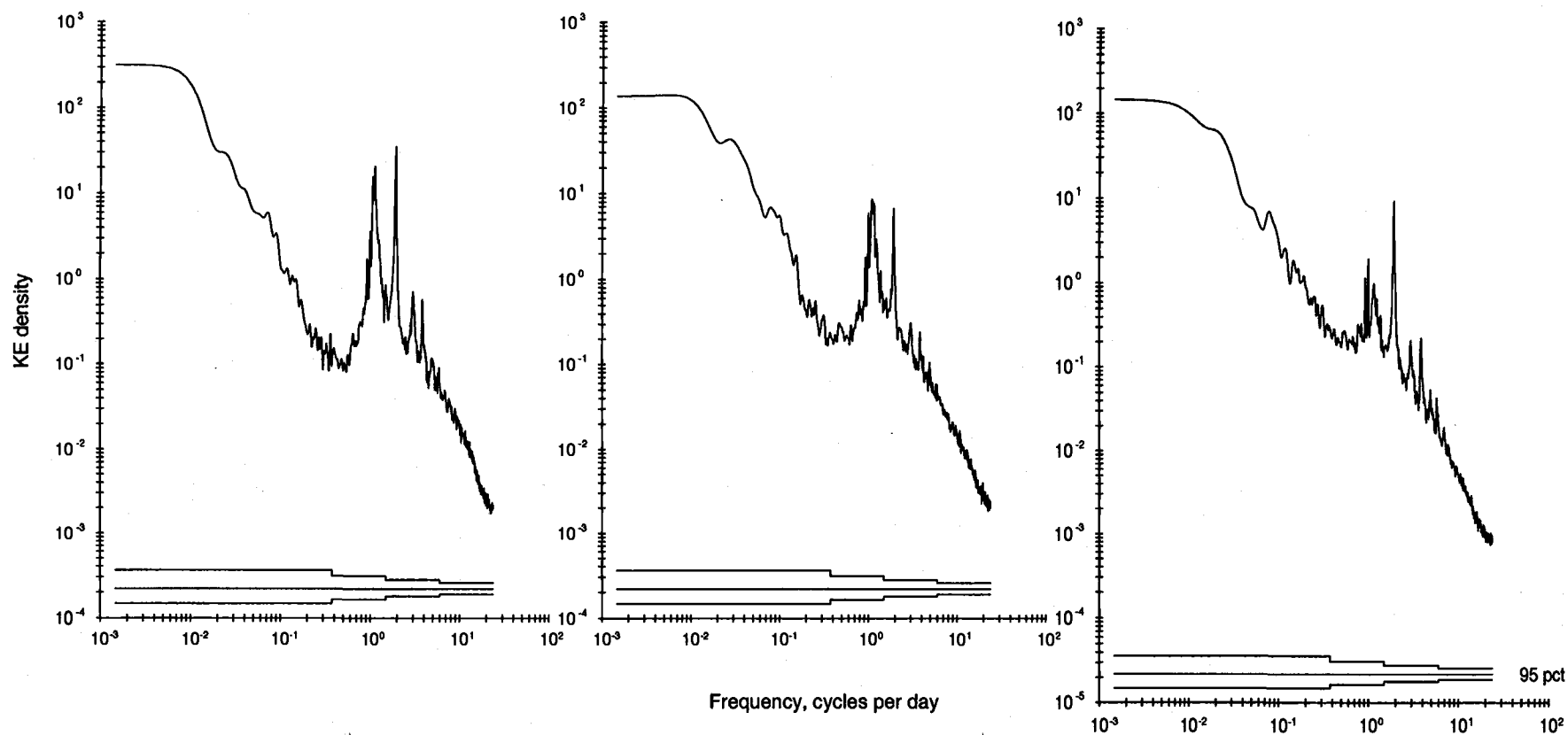
5635 m at KIWI 9. 660.8 days starting 0900 10 Feb 91.

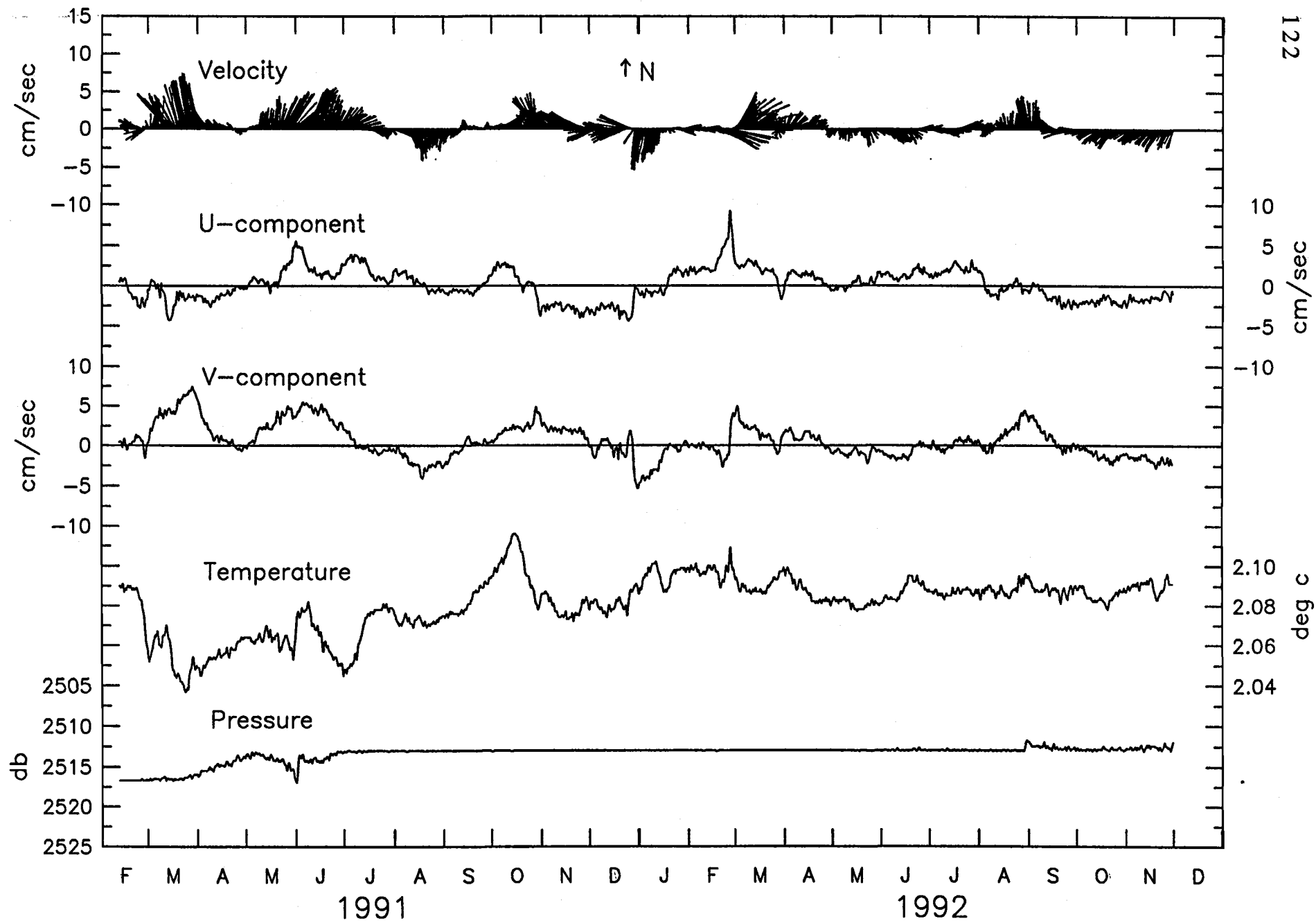
Unfiltered Current(both components) Kiwi 9.

2475 m

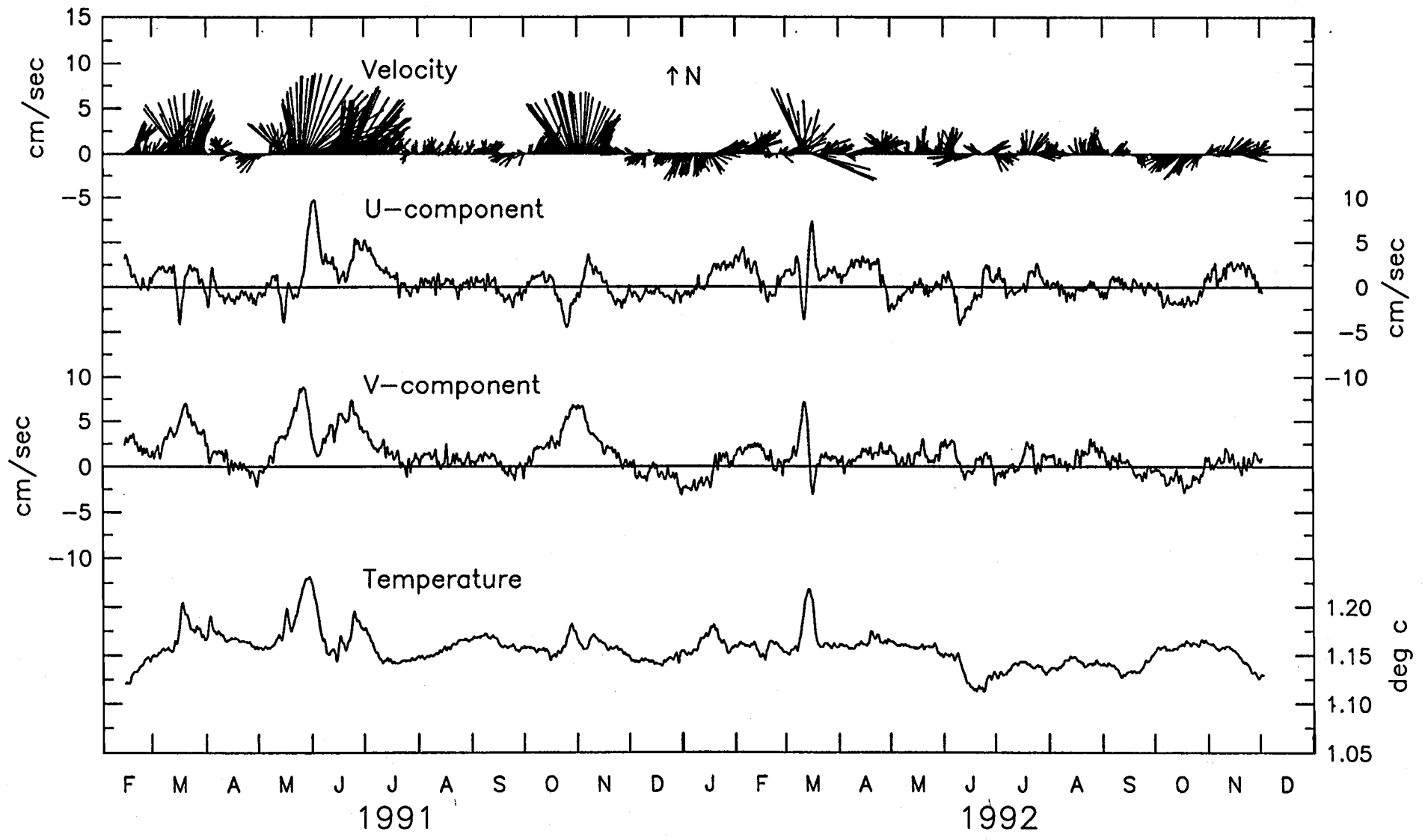
3975 m

5635 m

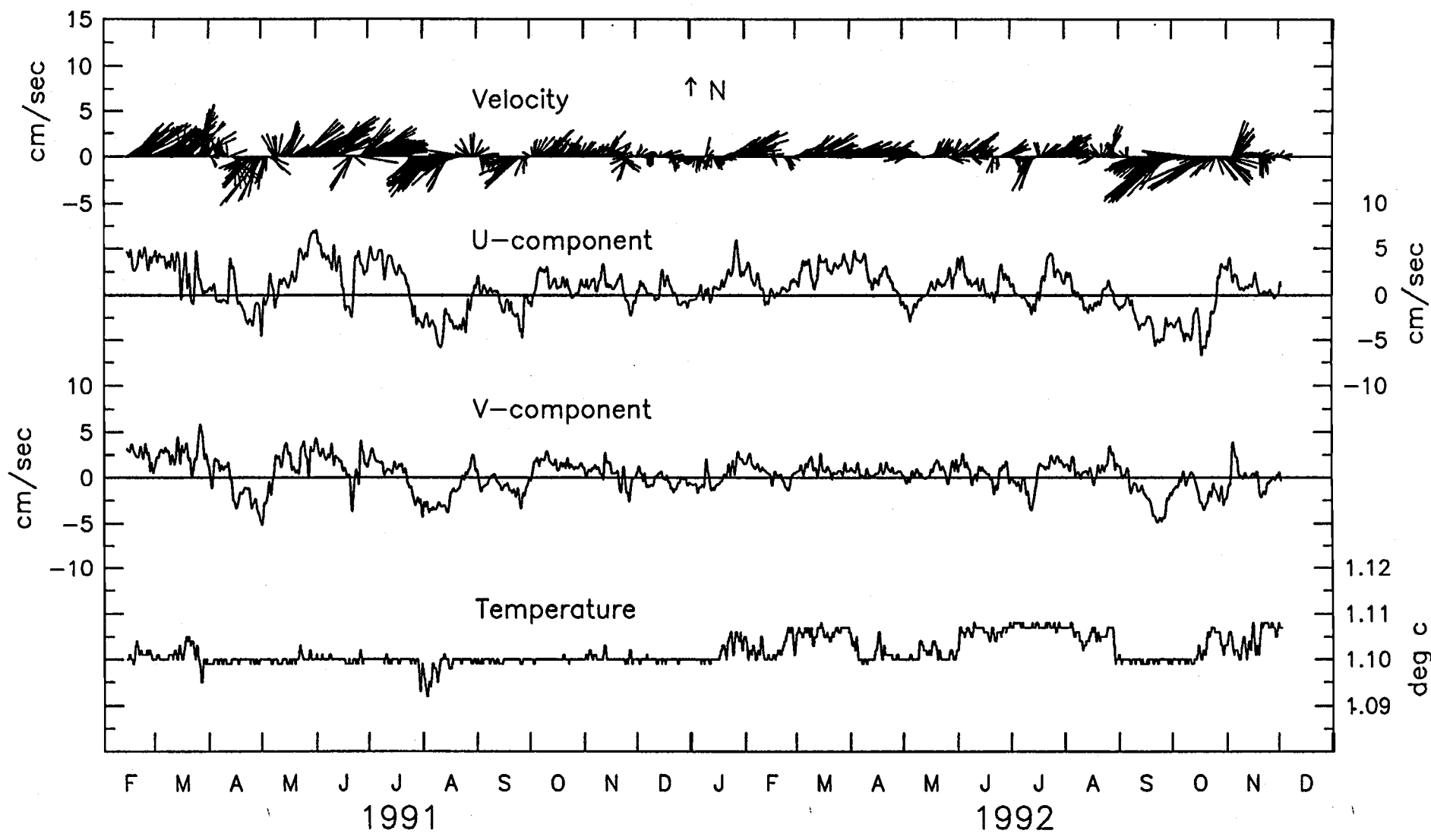




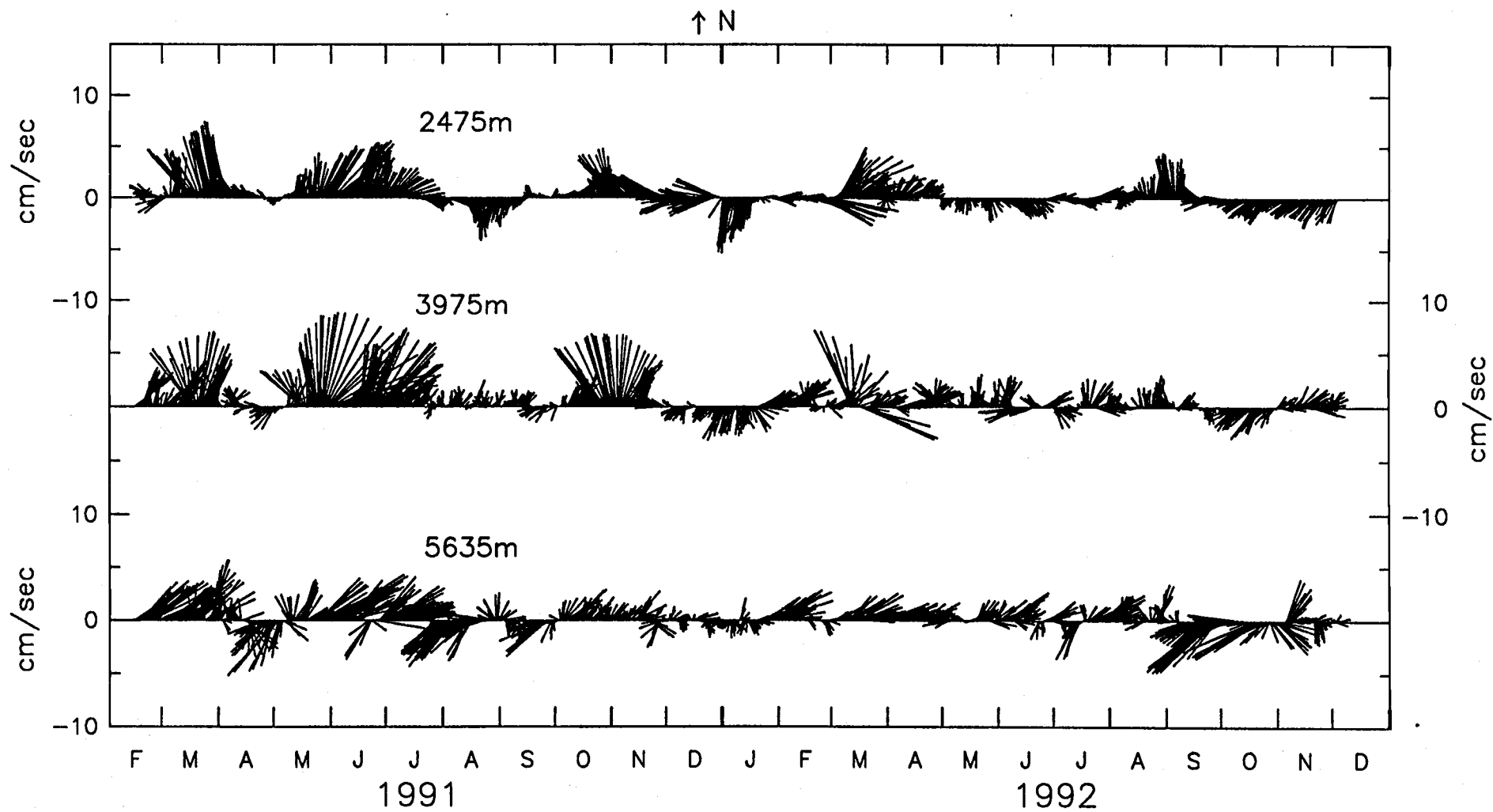
2475m at KIWI 9. LLP 6-hourly Data.



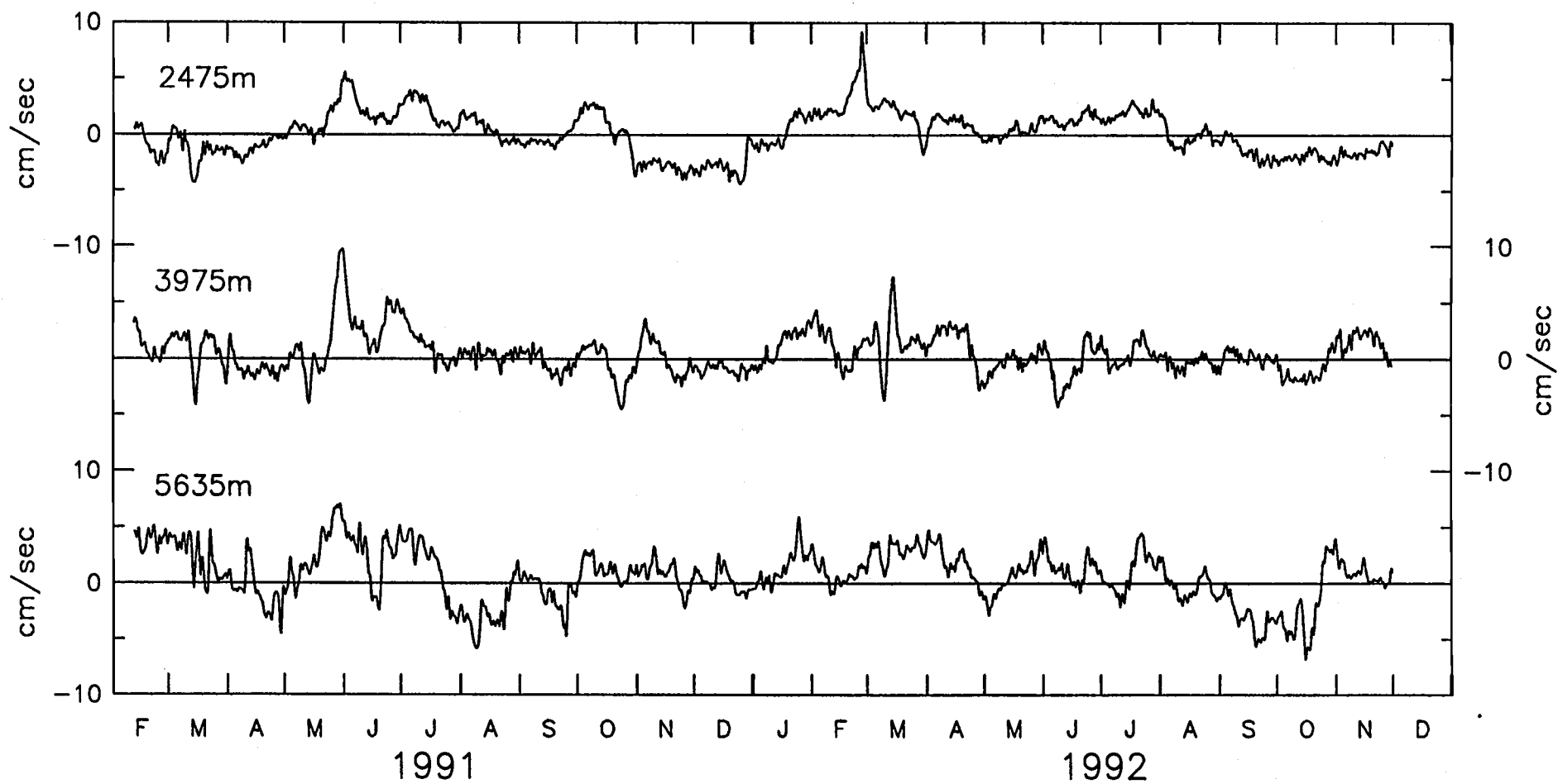
3975m at KIWI 9. LLP 6-hourly Data.



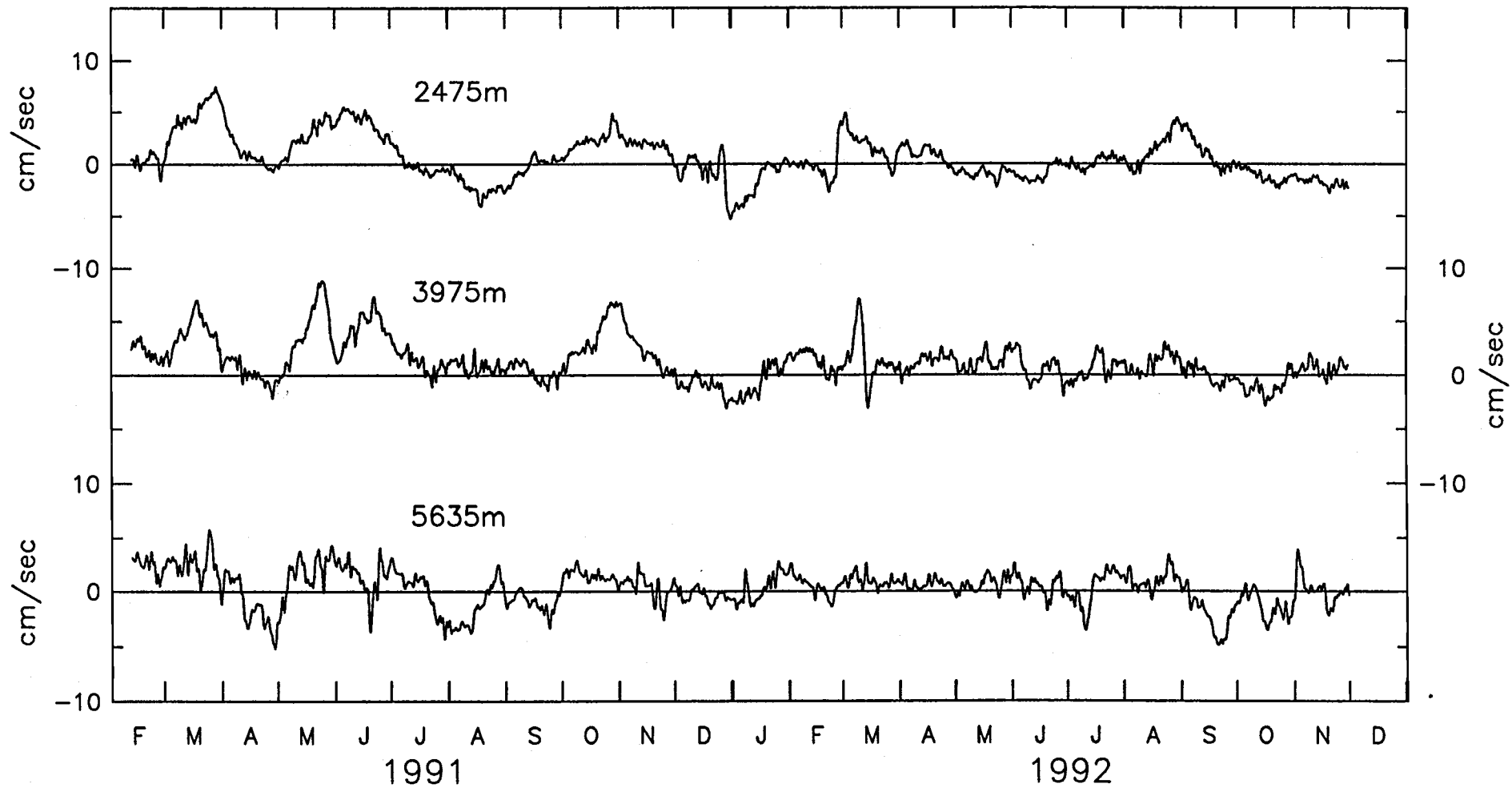
5635m at KIWI 9. LLP 6-hourly Data.



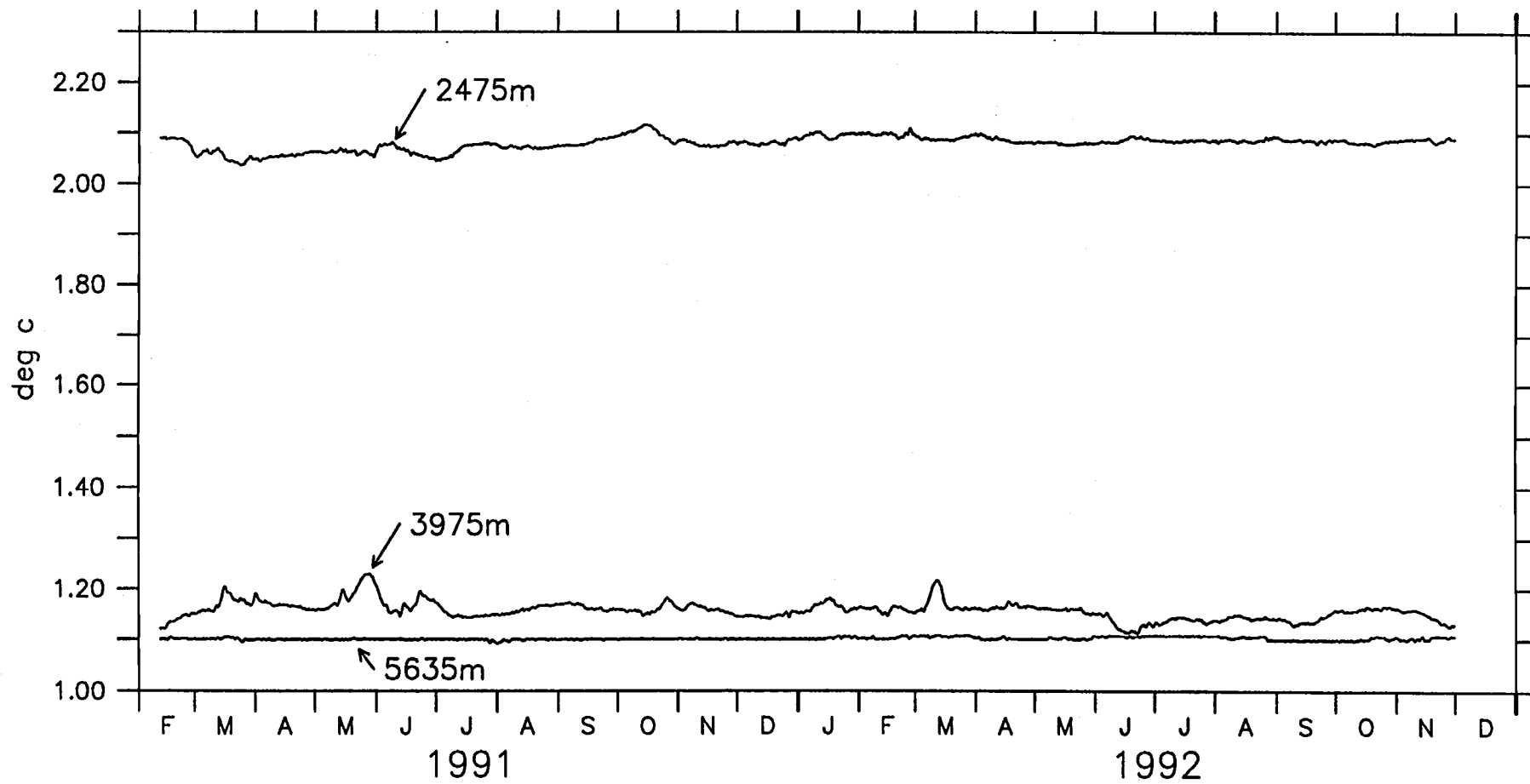
Velocity, KIWI 9, LLp 6-hourly Data.



U-component, KIWI 9, LLP 6-hourly Data.



V-component, KIWI 9, LLP 6-hourly Data.

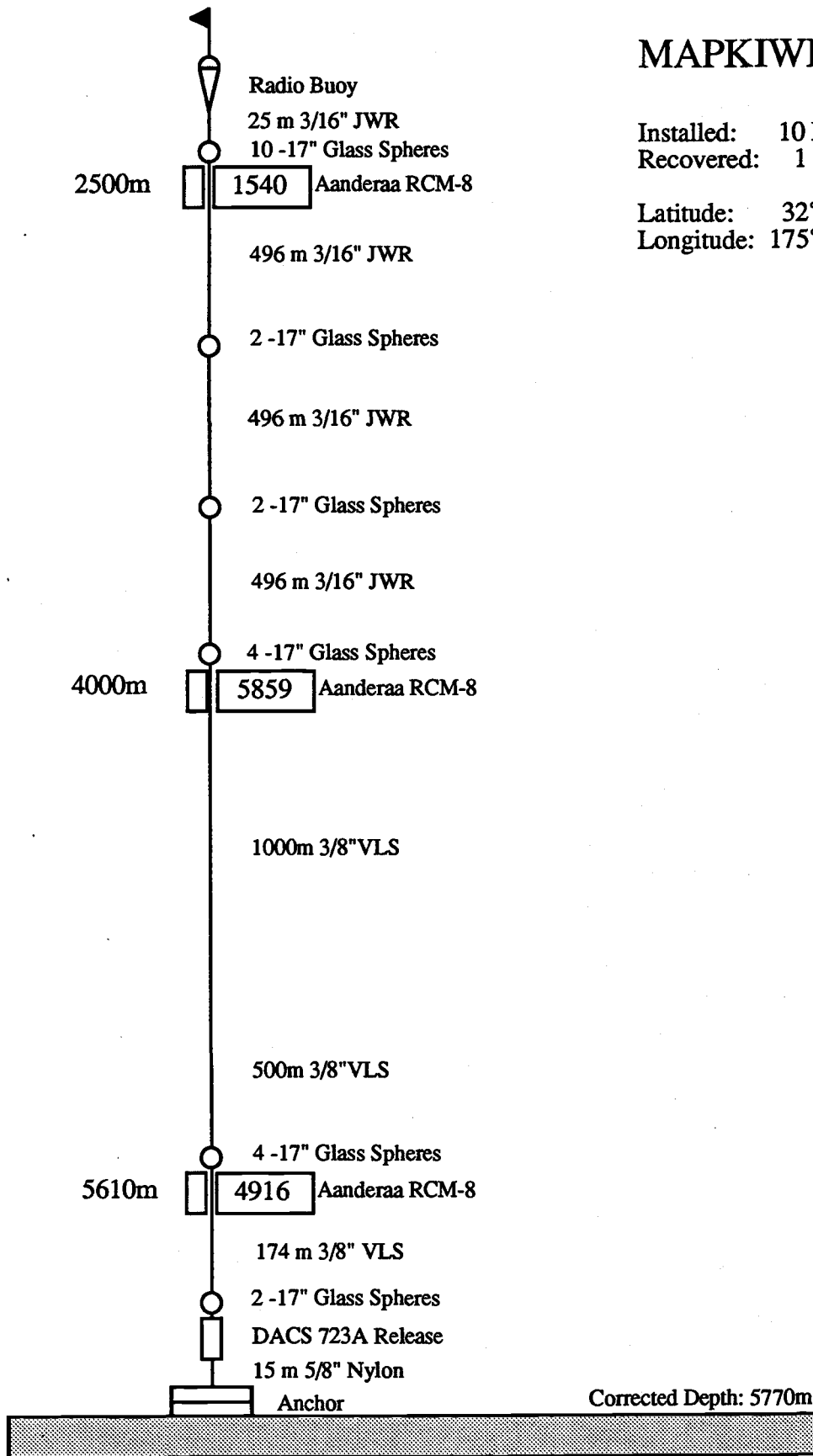


Temperature at KIWI 9. LLP 6-hourly Data.

MAPKIWI 10

Installed: 10 Feb 91
 Recovered: 1 Dec 92

Latitude: 32° 29.72'S
 Longitude: 175° 19.86'W



KIWI 10.

Position: 32° 29.72' S
175° 19.86' W
Depth of Water: 5770 m
Mooring Set: 0032 10 February 1991
Mooring Retrieved: 2222 01 December 1992
Data Interval 0300 10 February 1991 - 2200 1 December 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2500	1540/50
4000	5859/20
5610	4916/29

Instrument 1540 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5859 recorded u, v, and temperature every 30 minutes.

Instrument 4916 recorded u, v, and temperature every 30 minutes.

2500 meters at KIWI 10. 10 Feb 91 - 1 Dec 92. Tape 1540/50.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.77	15.75	2.11	31719
U, cm/sec	-11.99	0.52	11.24	3.19	31719
V, cm/sec	-12.82	-0.86	10.96	2.73	31719
Temp, deg c	2.00	2.08	2.20	0.02	31719
Pressure, db	2528.53	2535.80	2539.58	2.59	31719

4000 meters at KIWI 10. 10 Feb 91 - 1 Dec 92. Tape 5859/20.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.94	13.45	1.99	31719
U, cm/sec	-10.73	0.52	13.06	2.75	31719
V, cm/sec	-8.48	0.39	8.35	2.15	31719
Temp, deg c	1.08	1.16	1.23	0.02	31719

5610 meters at KIWI 10. 10 Feb 91 - 1 Dec 92. Tape 4916/29.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.99	10.87	1.89	31719
U, cm/sec	-10.21	0.37	10.11	2.66	31719
V, cm/sec	-8.16	-0.40	7.89	2.27	31719
Temp, deg c	1.08	1.09	1.10	0.01	31719

2500 meters at KIWI 10. 11 Feb 91 - 30 Nov 92. Tape 1540/50.

	min	mean	max	sd	num
Speed, cm/sec	0.02	2.54	11.15	1.26	2633
U, cm/sec	-5.25	0.51	7.44	2.02	2633
V, cm/sec	-8.71	-0.86	7.60	1.71	2633
Temp, deg c	2.03	2.08	2.12	0.02	2633
Pressure, db	2530.44	2535.81	2539.56	2.29	2633

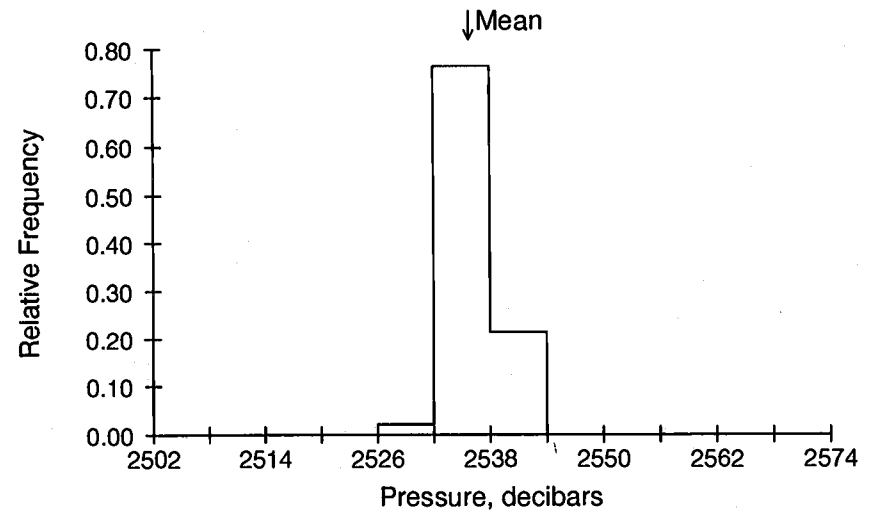
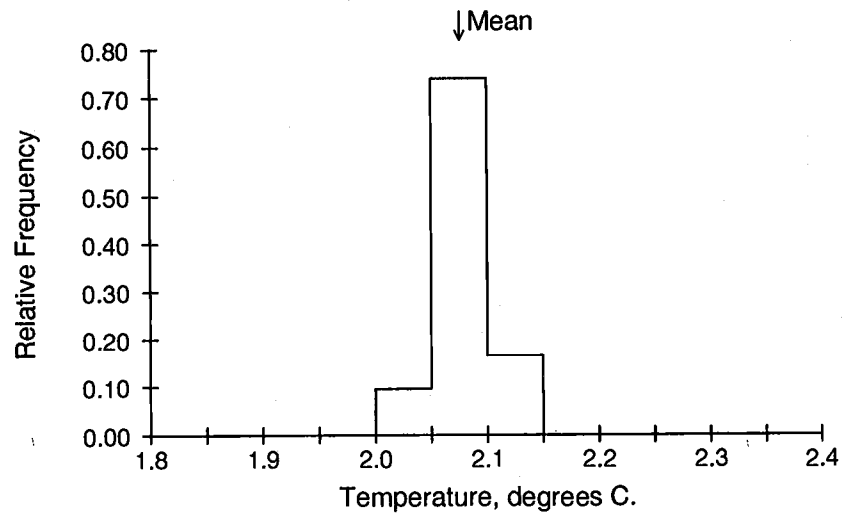
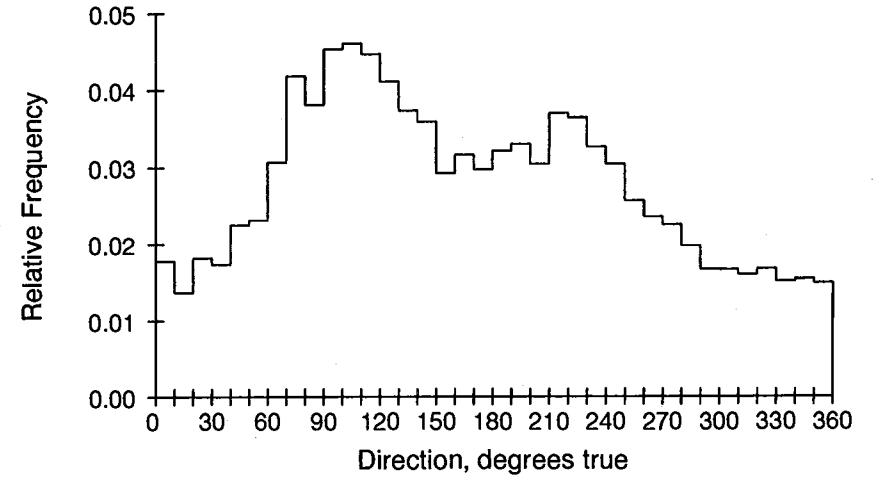
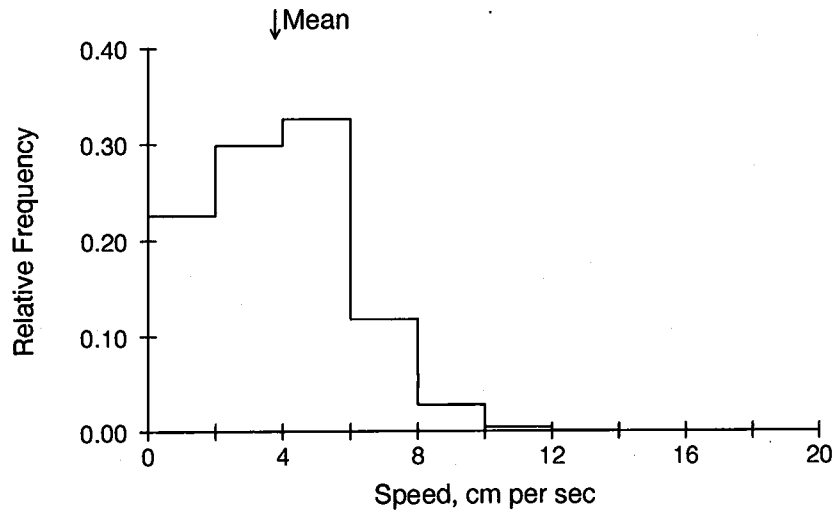
4000 meters at KIWI 10. 11 Feb 91 - 30 Nov 92. Tape 5859/20.

	min	mean	max	sd	num
Speed, cm/sec	0.07	2.06	11.02	1.34	2633
U, cm/sec	-3.44	0.52	9.88	1.94	2633
V, cm/sec	-3.12	0.39	5.11	1.37	2633
Temp, deg c	1.10	1.16	1.20	0.02	2633

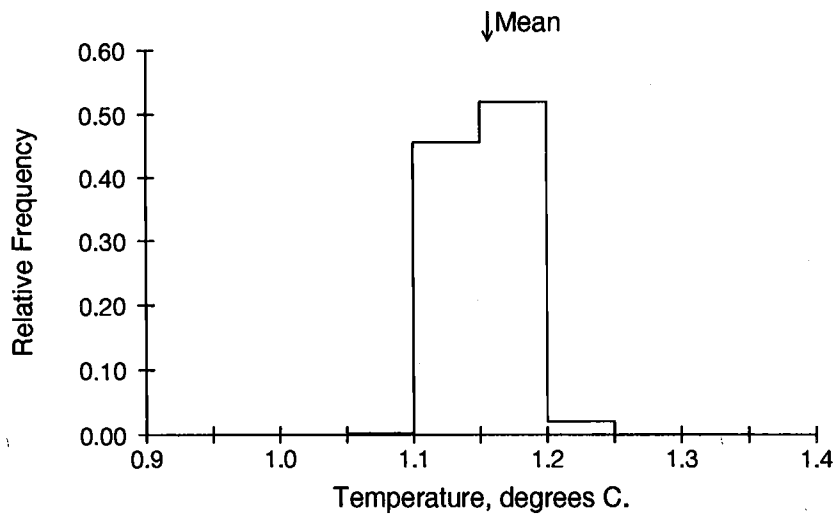
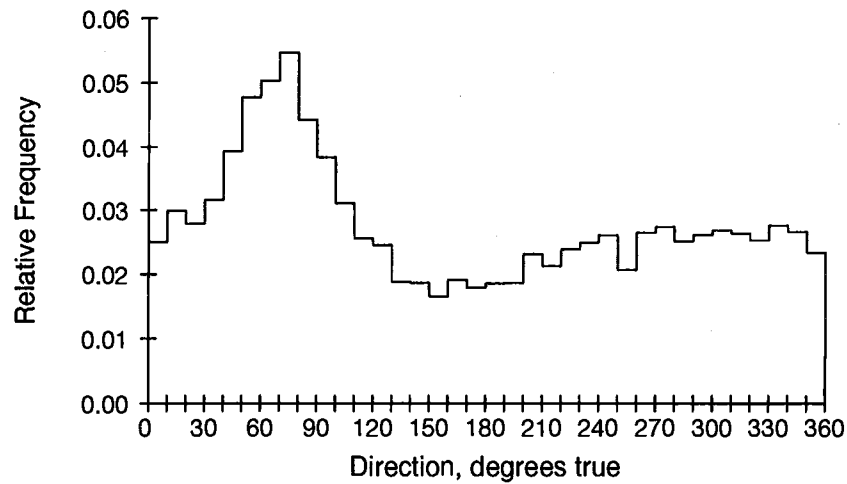
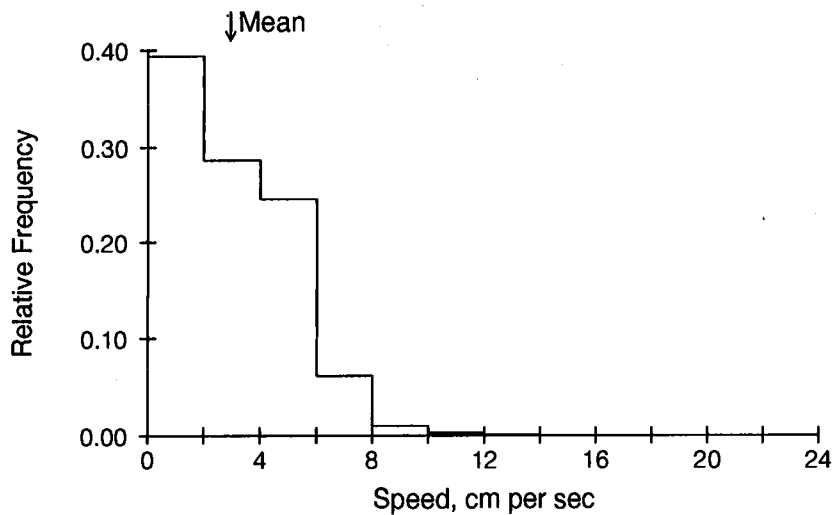
5610 meters at KIWI 10. 11 Feb 91 - 30 Nov 92. Tape 4916/29.

	min	mean	max	sd	num
Speed, cm/sec	0.04	2.45	8.94	1.43	2633
U, cm/sec	-5.25	0.36	8.37	2.07	2633
V, cm/sec	-5.17	-0.40	5.26	1.86	2633
Temp, deg c	1.08	1.09	1.10	0.00	2633

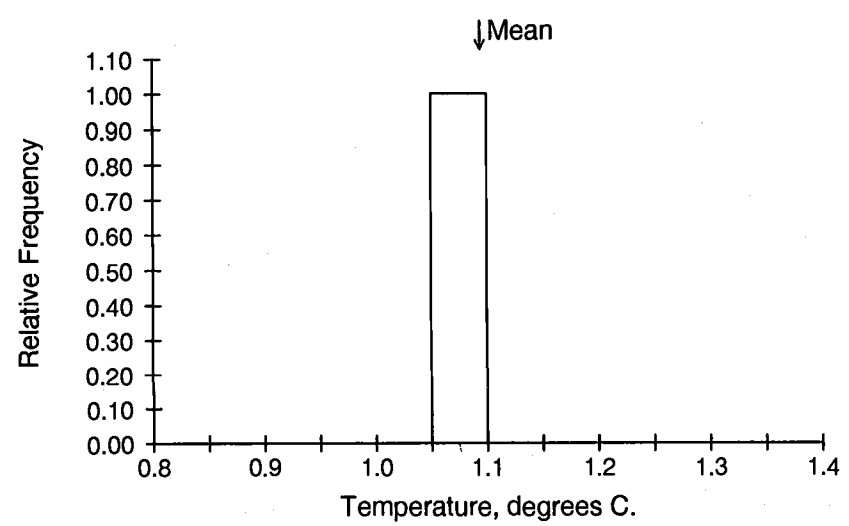
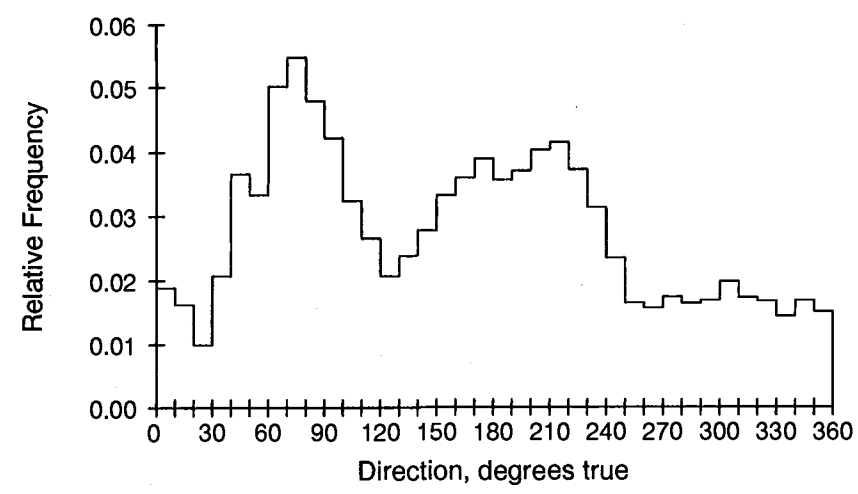
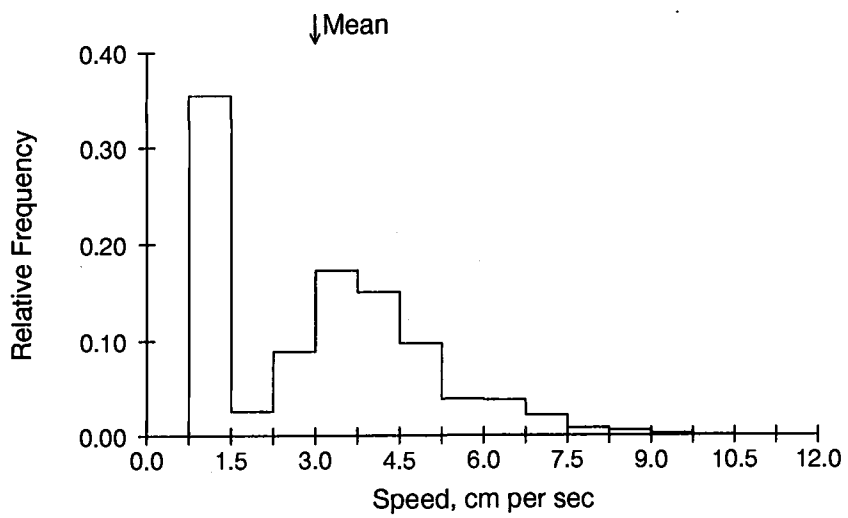
2500m at Kiwi 10. 10 Feb 91 - 01 Dec 92. RCM 1540/50.

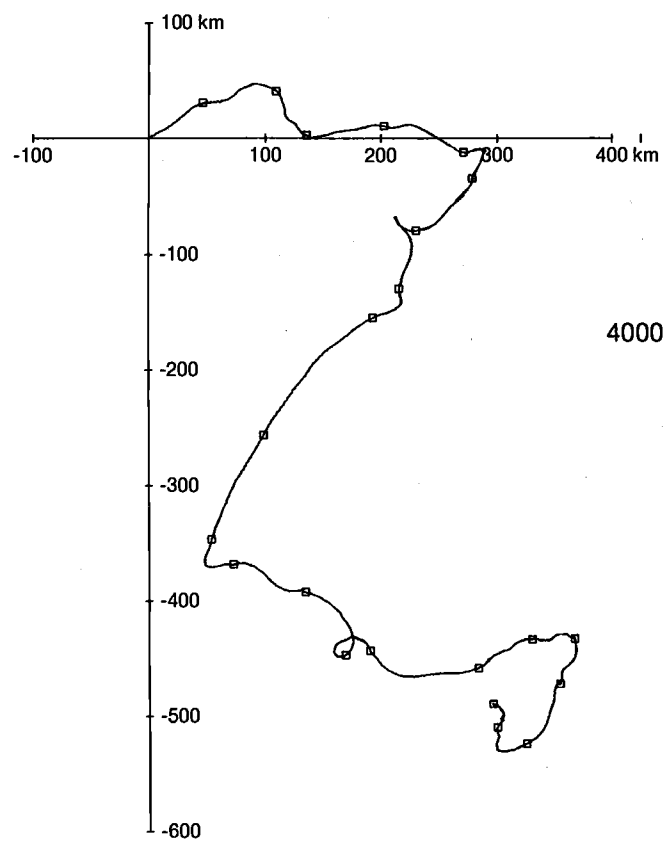


4000m at Kiwi 10. 10 Feb 91 01 Dec 92. RCM 5859/20.

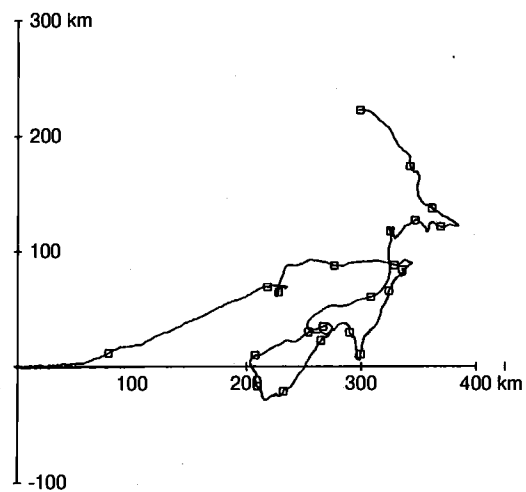


5610m at Kiwi 10. 10 Feb 91 - 01 Dec 92. RCM 4916/29.

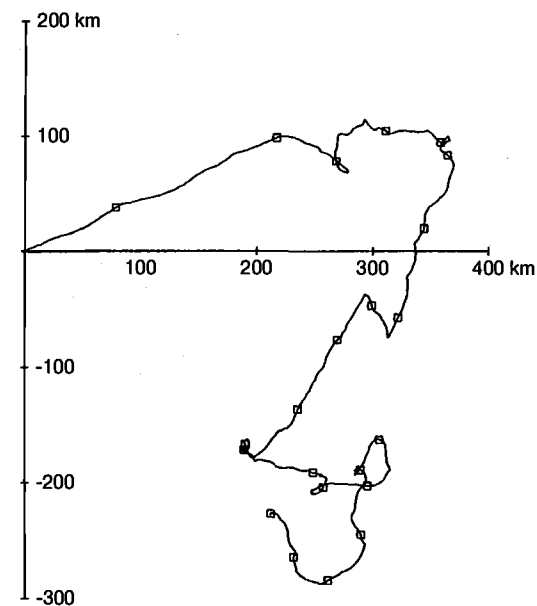




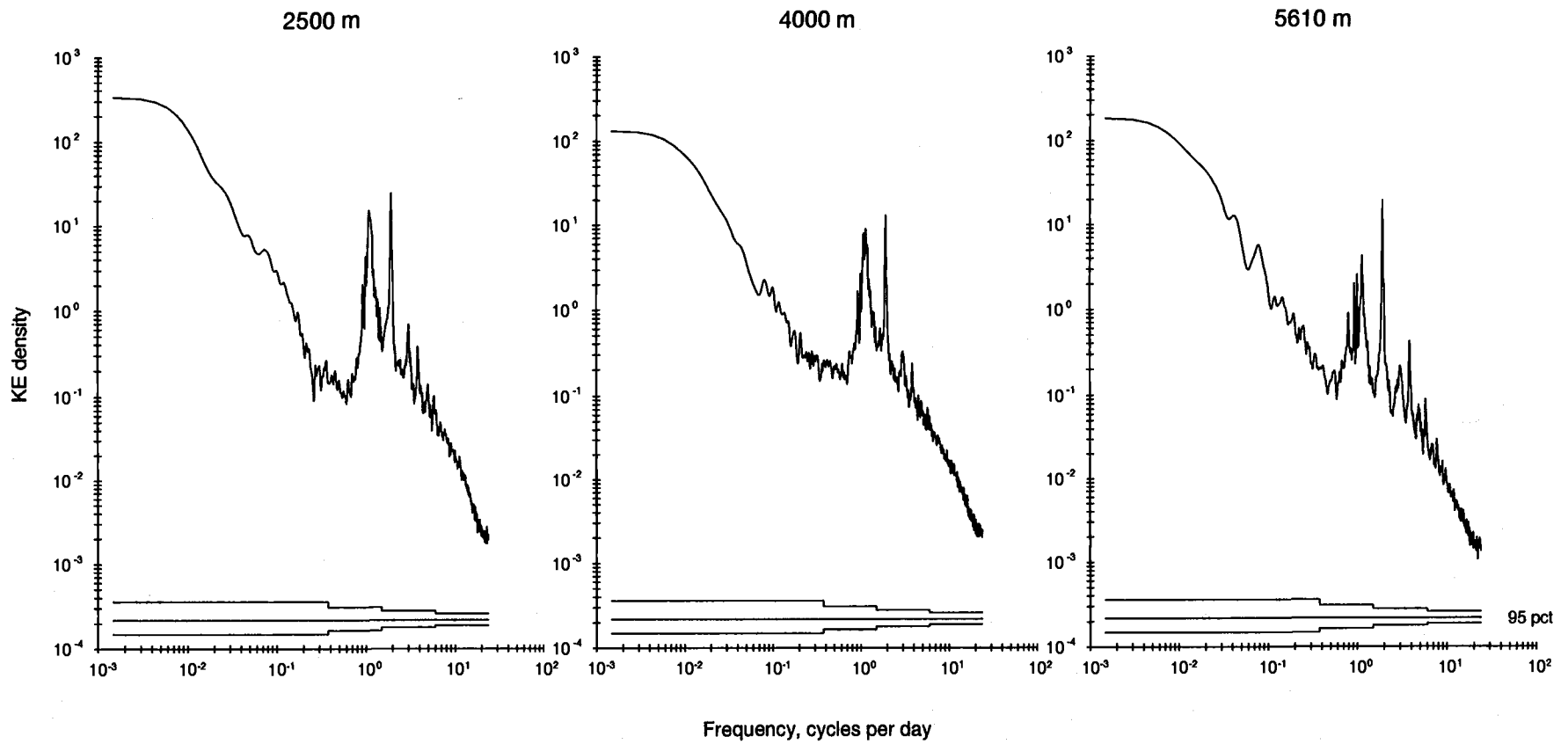
4000 m at KIWI 10. 660.8 days starting 0300 10 Feb 91.

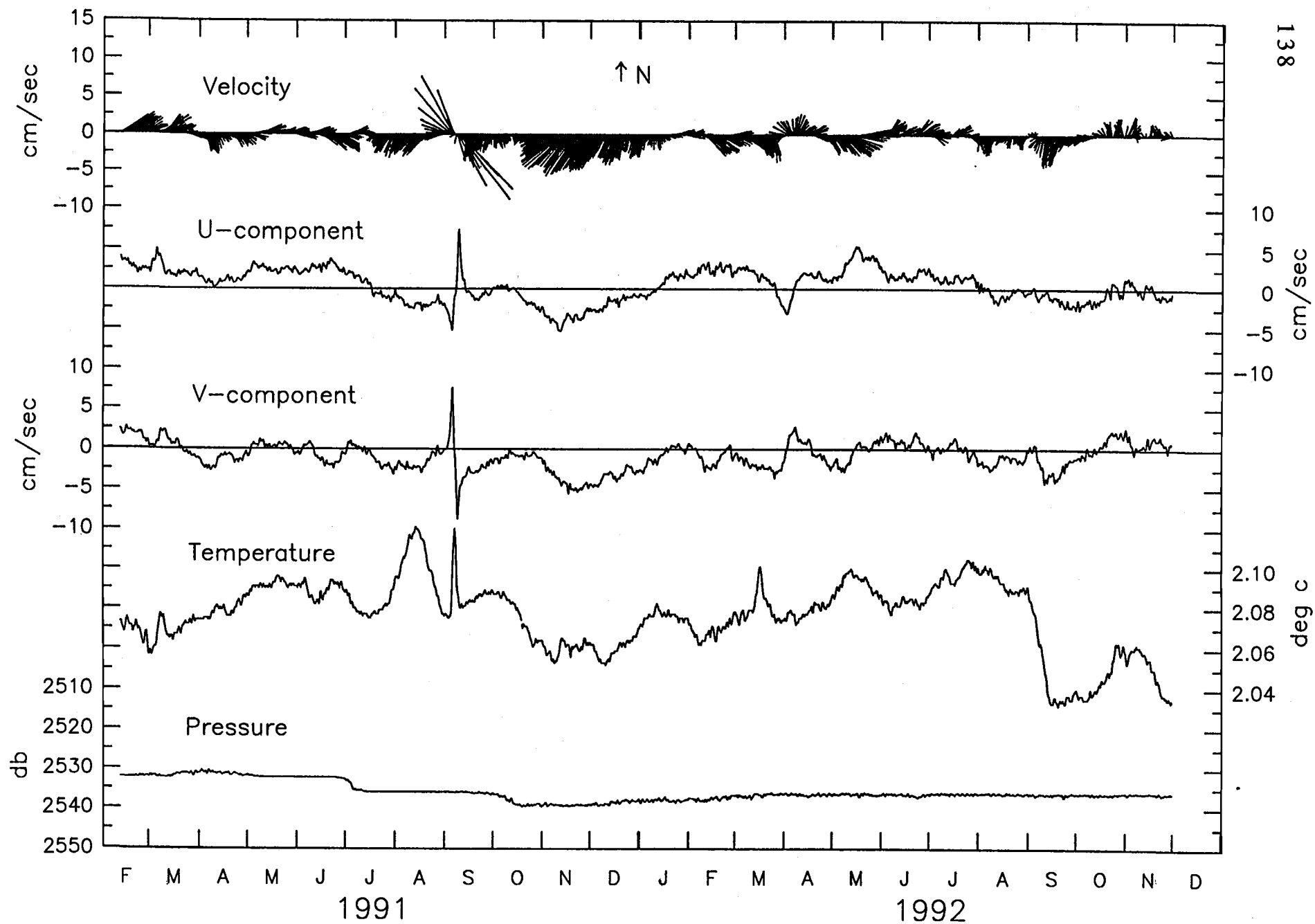


5610 m at KIWI 10. 660.8 days starting 0300 10 Feb 91.

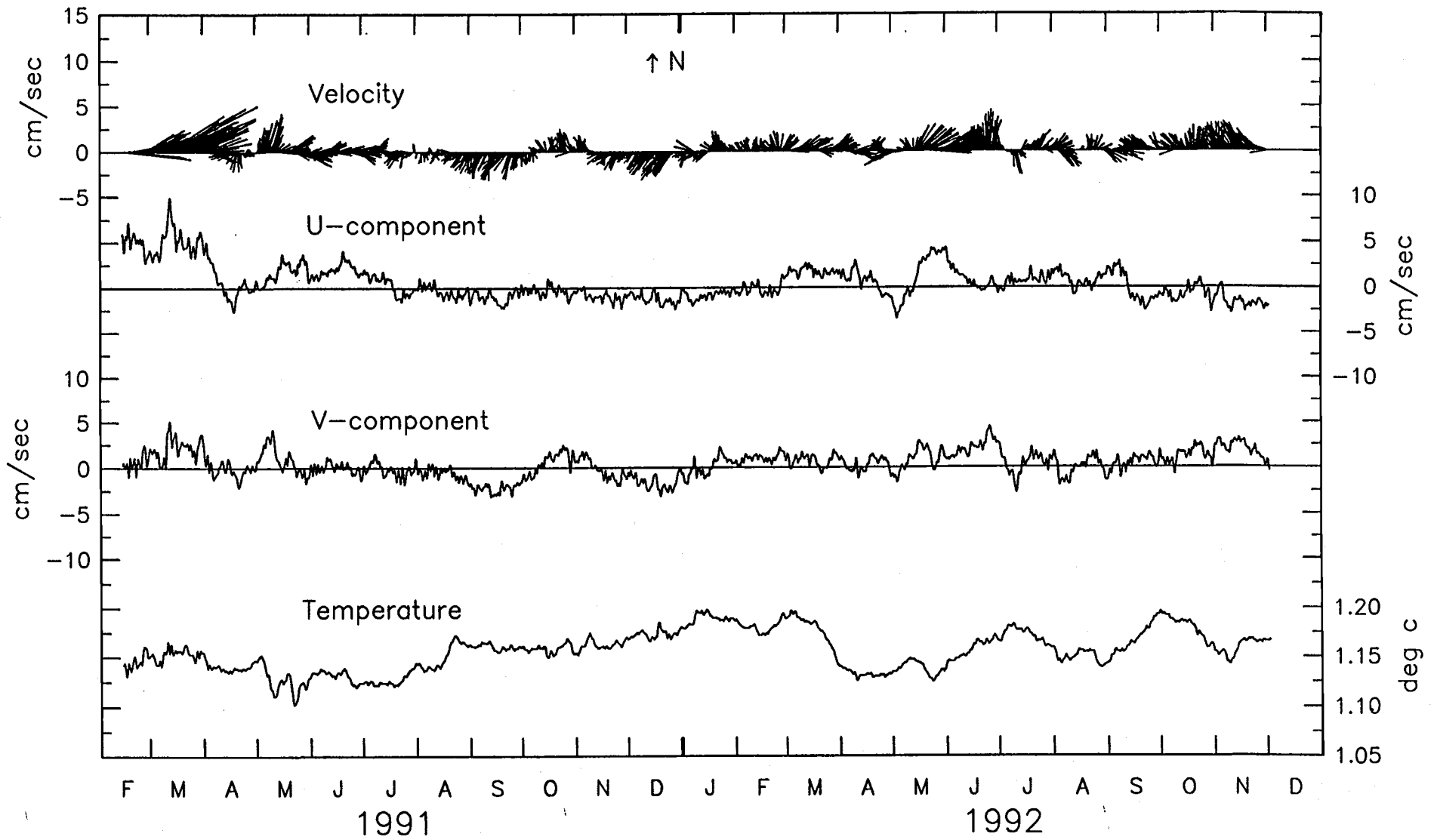


Unfiltered Current (both components) Kiwi 10.

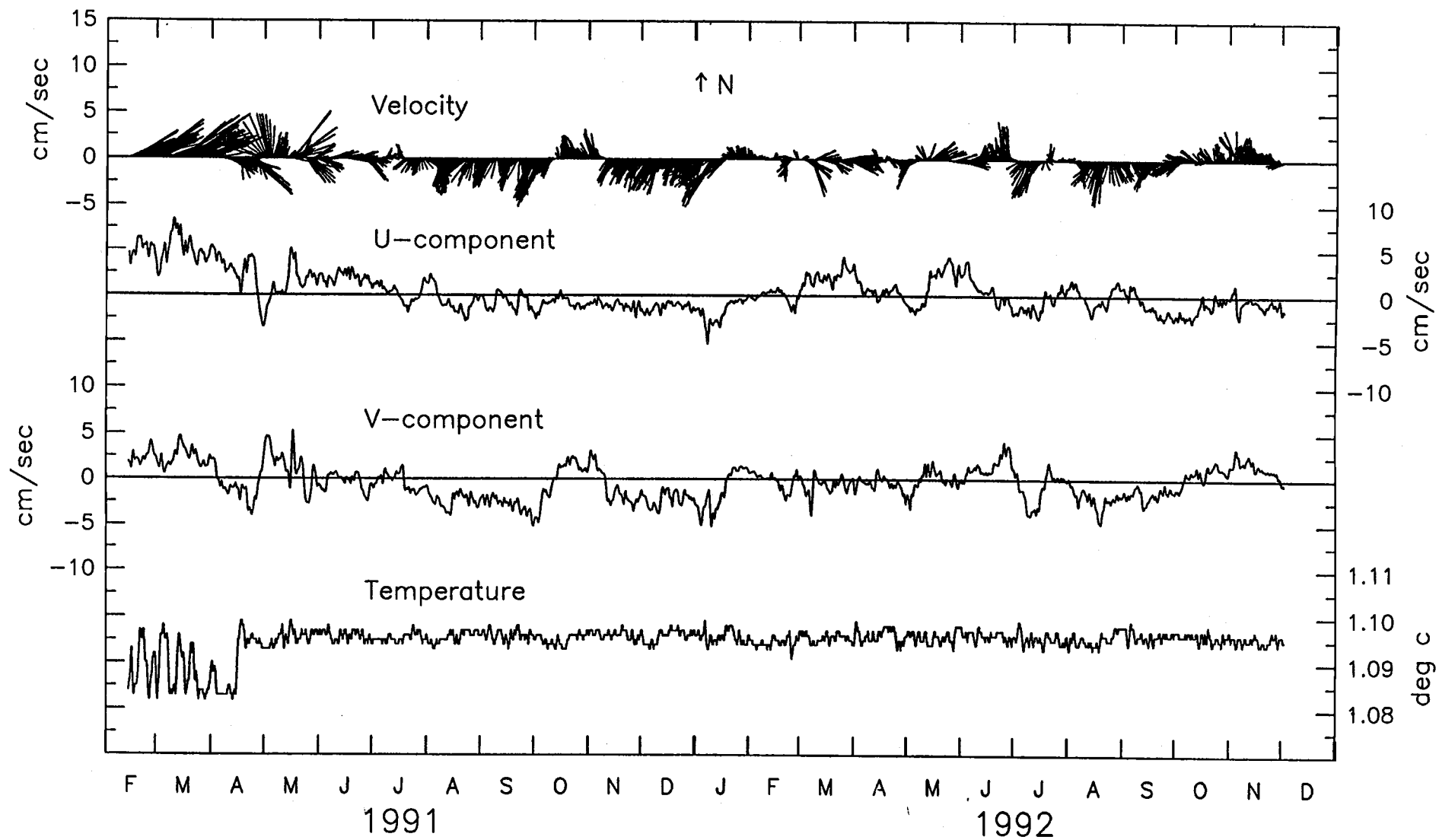




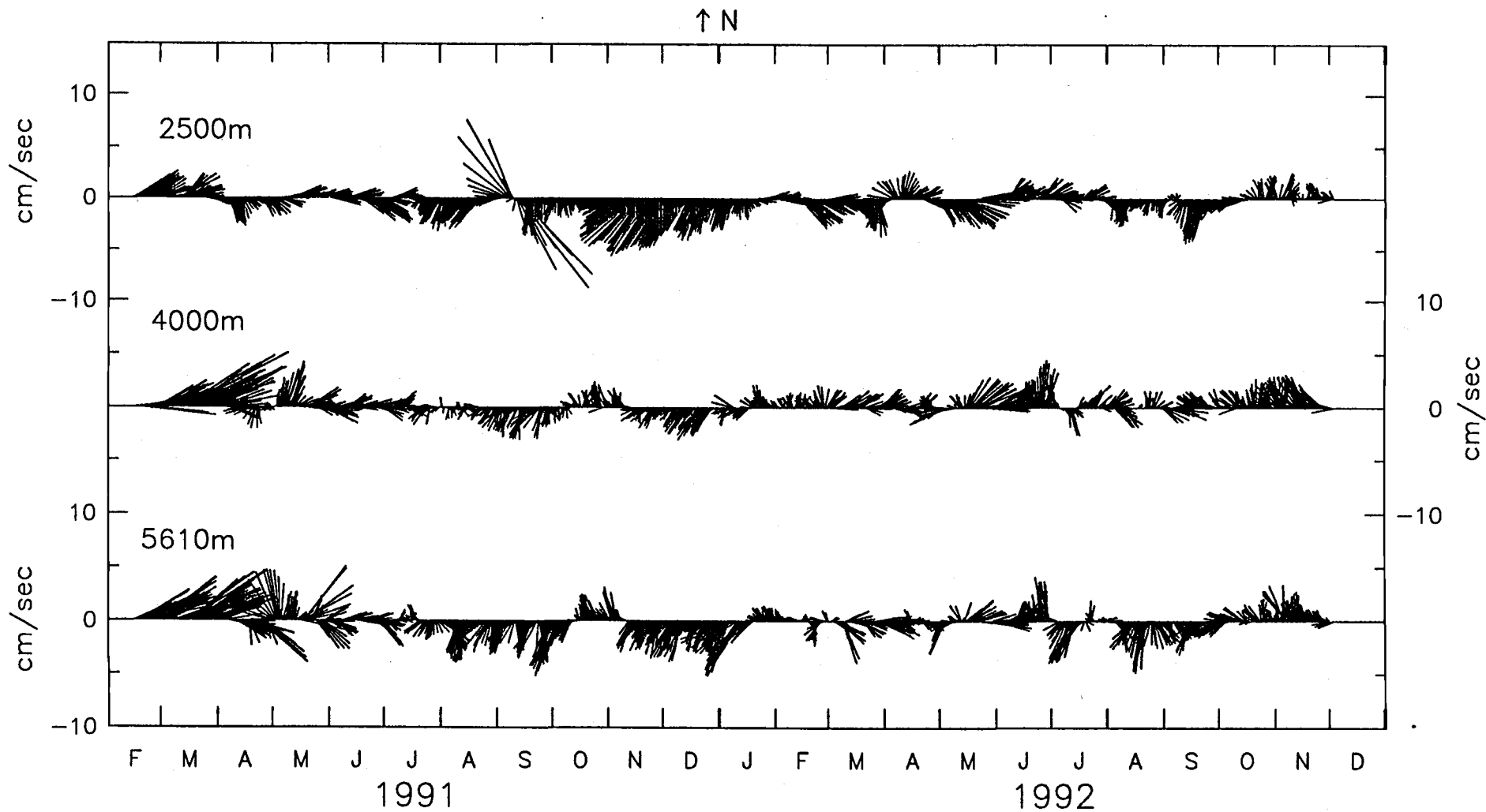
2500m at KIWI 10. LLP 6-hourly Data.



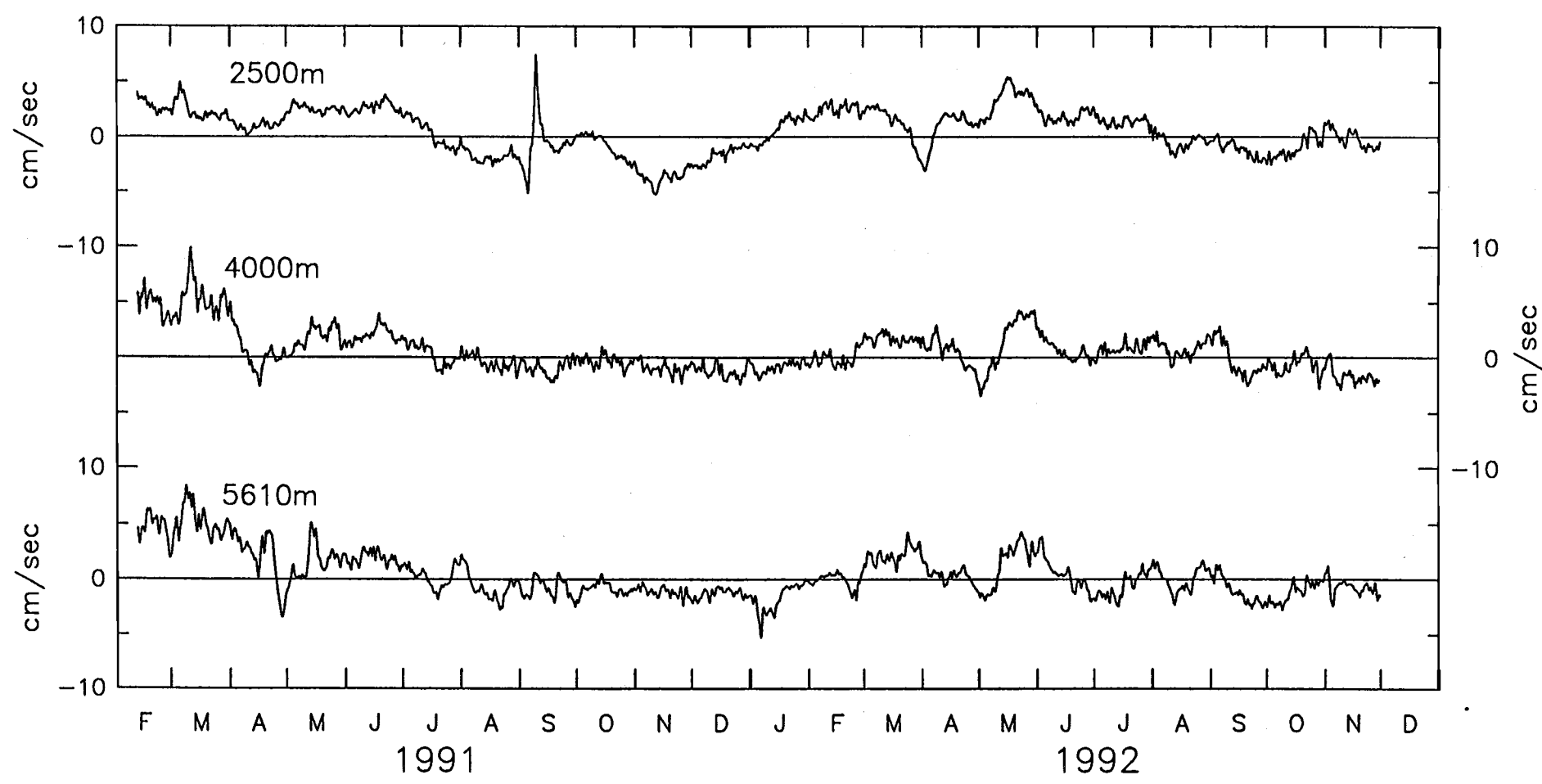
4000m at KIWI 10. LLP 6-hourly Data.



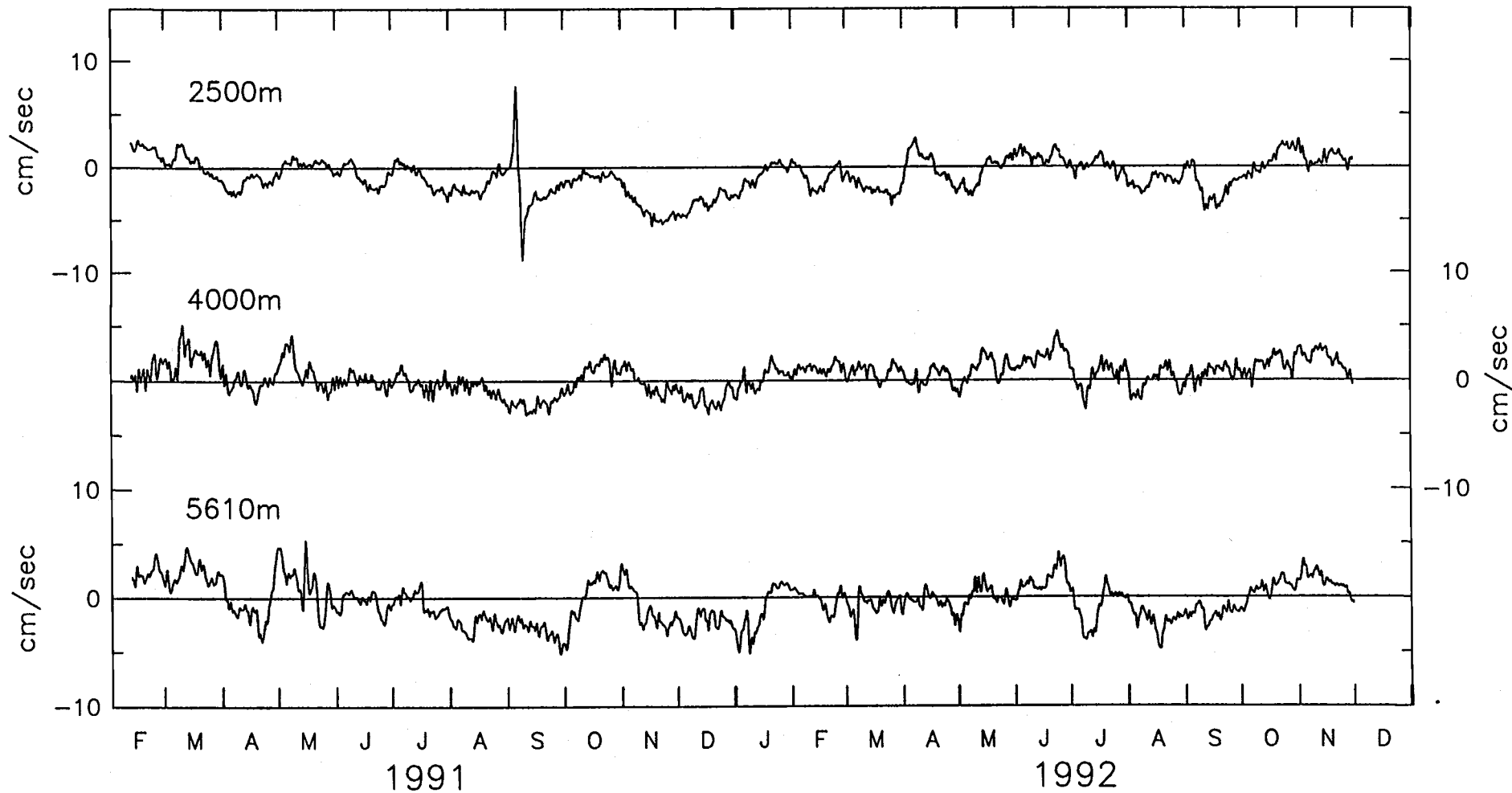
5610m at KIWI 10. LLP 6-hourly Data.



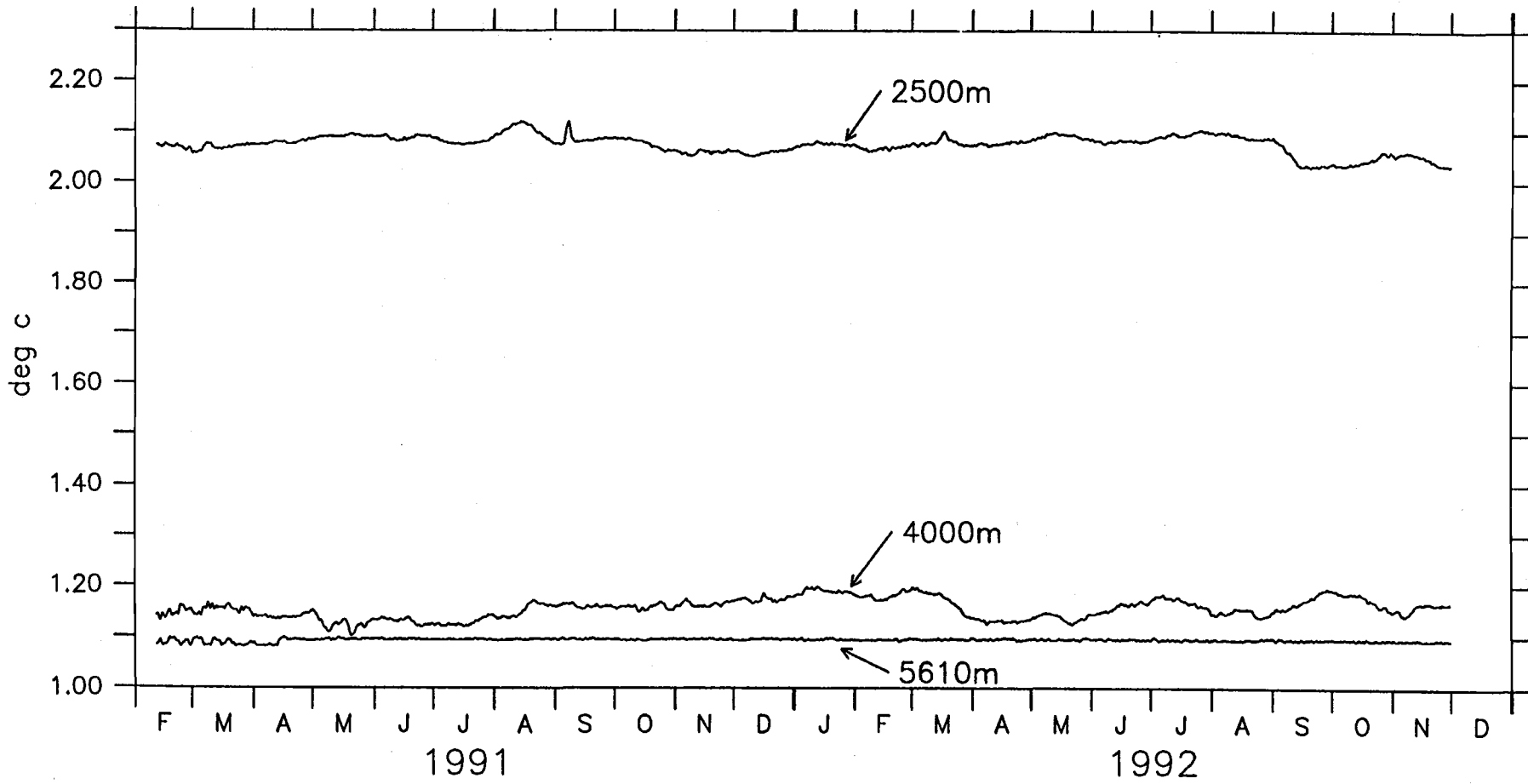
Velocity, KIWI 10, LLP 6-hourly Data.



U-component, KIWI 10, LLP 6-hourly Data.



V-component, KIWI 10, LLP 6-hourly Data.

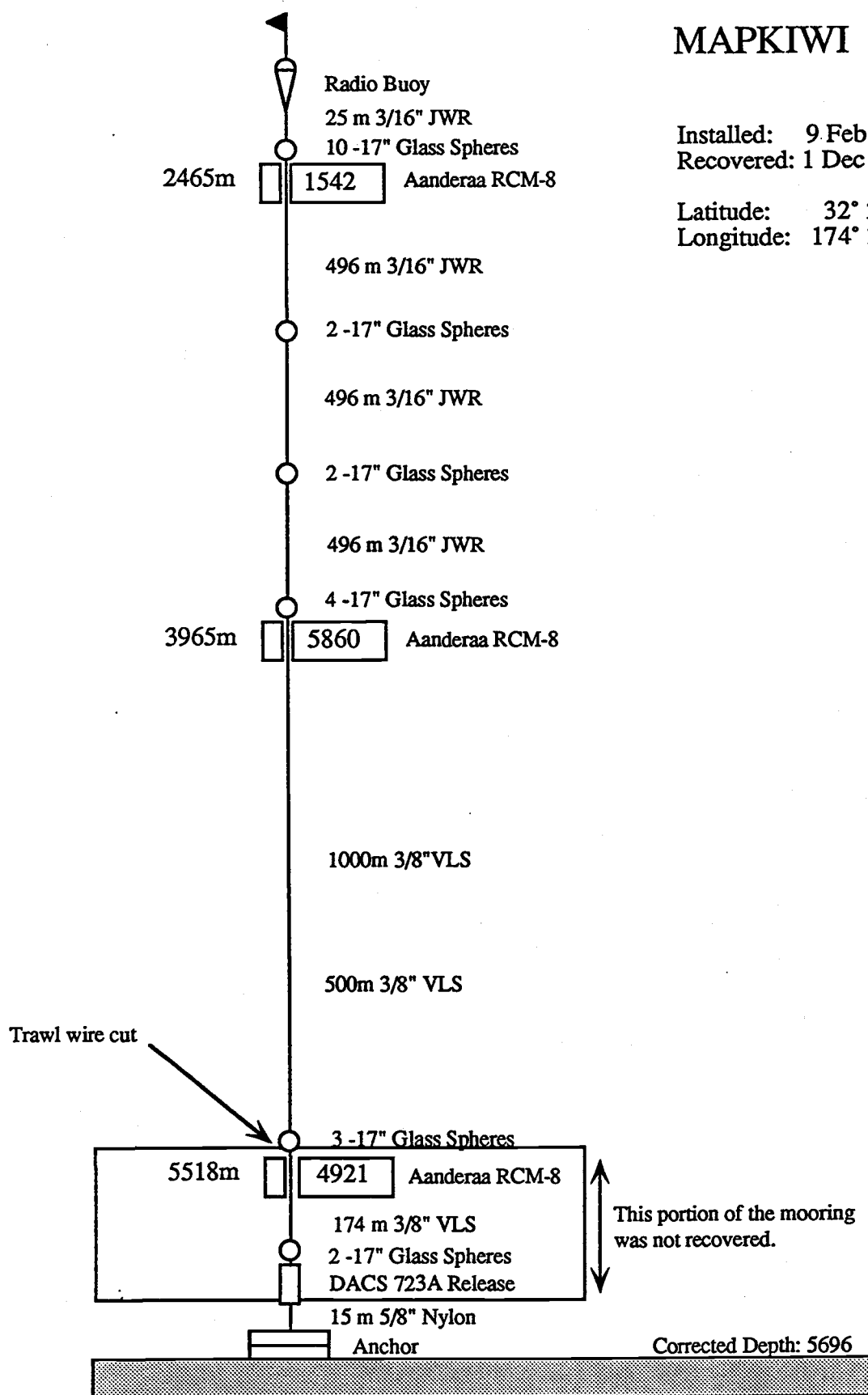


Temperature at KIWI 10. LLP 6-hourly Data.

MAPKIWI 11

Installed: 9 Feb 91
 Recovered: 1 Dec 92

Latitude: 32° 28.23'S
 Longitude: 174° 33.58'W



KIWI 11.

Position: 32° 28.23'S
 174° 33.58'W
 Depth of Water: 5718
 Mooring Set: 1837 9 February 1991
 Mooring Retrieved: 1 December 1992
 Data Interval: 2030 09 February 1991 - 0230 1 December 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2465	1542/55
3965	5860/19
5518	4921/21

This mooring was recovered in two sections by dragging.

Instrument 1542 recorded u, v, temperature, and pressure every thirty minutes. The pressure data has been discarded due to a faulty pressure sensor.

Instrument 5860 recorded u, v, and temperature every thirty minutes. Three areas of the speed record are suspiciously low but have not been set to nul values. They are lines 3135-3795 (0330 16 April - 2130 29 April 1991); 3977 - 4807 (1630 3 May - 2330 20 May 1991); and 13873 - 13952 (2030 25 Nov - 1200 27 Nov 1991).

Instrument 4921 was not recovered.

2465 meters at KIWI 11. 9 Feb 91 - 1 Dec 92. Tape 1542/55

	min	mean	max	sd	num
Speed, cm/sec	0.93	5.45	31.30	4.78	31693
U, cm/sec	-18.24	0.73	23.54	4.92	31693
V, cm/sec	-9.99	1.44	30.72	5.08	31693
Temp, deg c	2.01	2.10	2.23	0.03	31693

3965 meters at KIWI 11. 9 Feb 91 - 1 Dec 92. Tape 5860/19.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.94	13.45	2.18	31693
U, cm/sec	-7.55	1.57	12.29	2.71	31693
V, cm/sec	-6.59	1.96	13.10	2.57	31693
Temp, deg c	1.11	1.21	1.32	0.03	31693

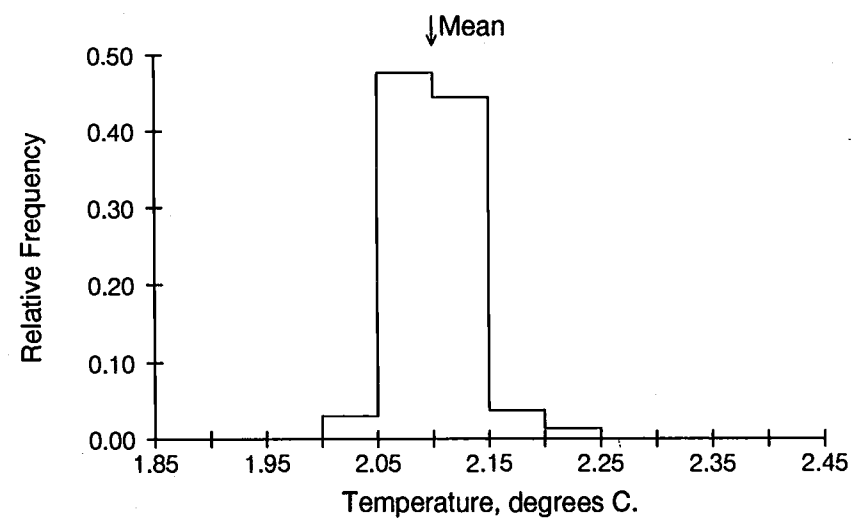
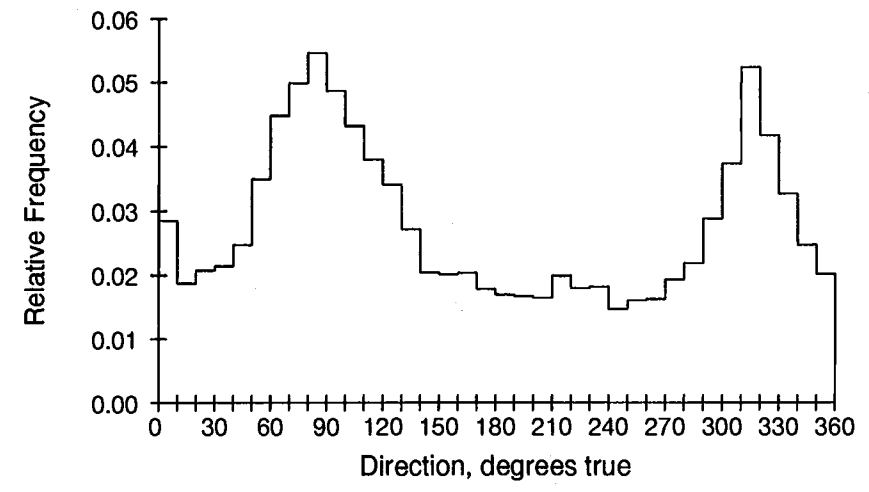
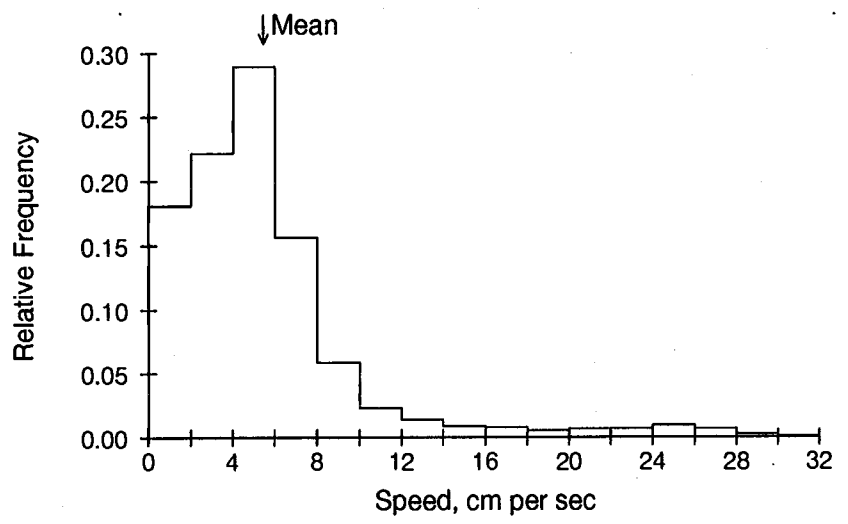
2465 meters at KIWI 11. 11 Feb 91 - 29 Nov 92. Tape 1542/55.

	min	mean	max	sd	num
Speed, cm/sec	0.03	4.57	27.58	4.71	2631
U, cm/sec	-12.43	0.72	20.41	4.33	2631
V, cm/sec	-4.69	1.44	26.46	4.66	2631
Temp, deg c	2.03	2.10	2.21	0.03	2631

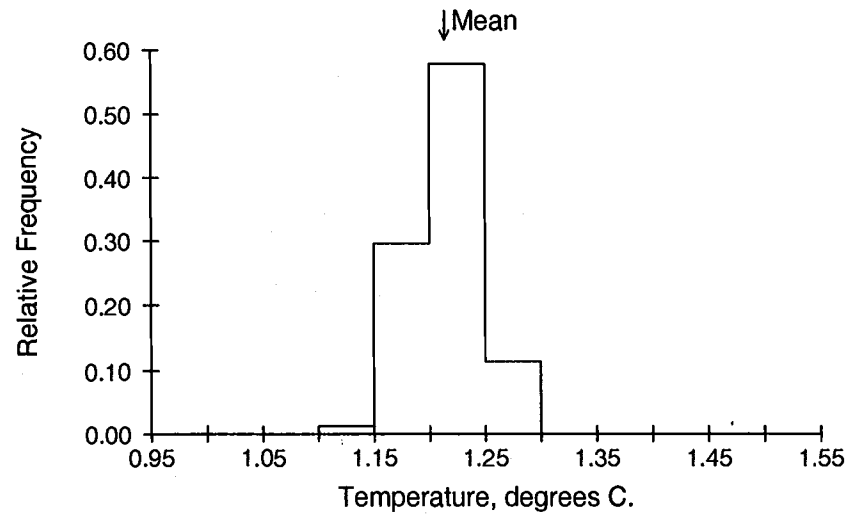
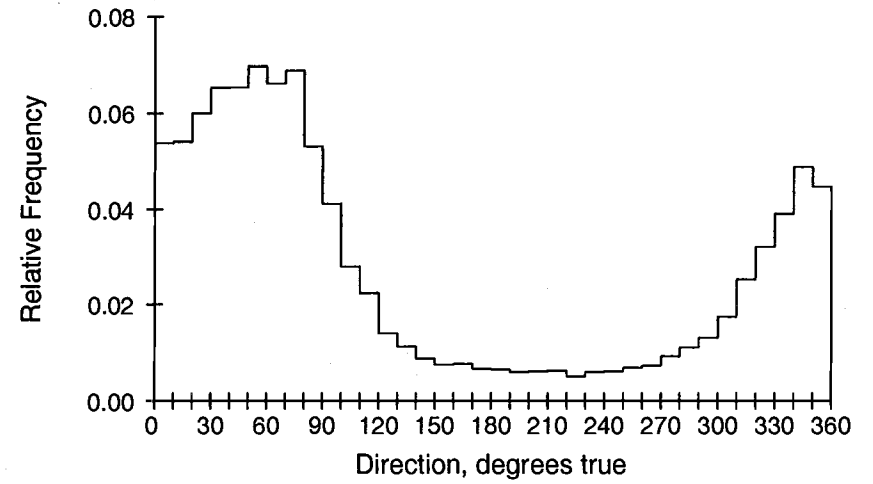
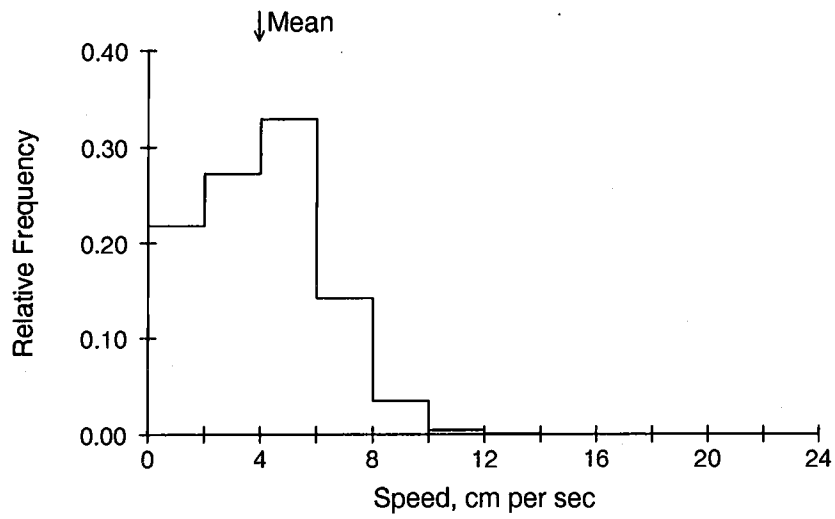
3965 meters at KIWI 11. 11 Feb 91 - 29 Nov 92. Tape 5860/19.

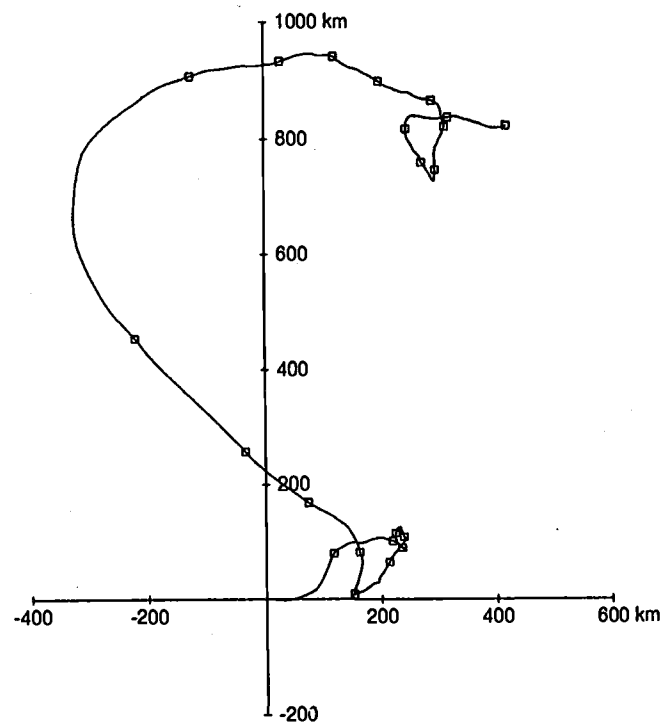
	min	mean	max	sd	num
Speed, cm/sec	0.05	3.23	9.00	1.62	2631
U, cm/sec	-3.12	1.57	7.18	1.74	2631
V, cm/sec	-3.48	1.96	8.87	1.93	2631
Temp, deg c	1.14	1.21	1.28	0.02	2631

2465m at Kiwi 11. 9 Feb 91 - 01 Dec 92. RCM 1542/55.

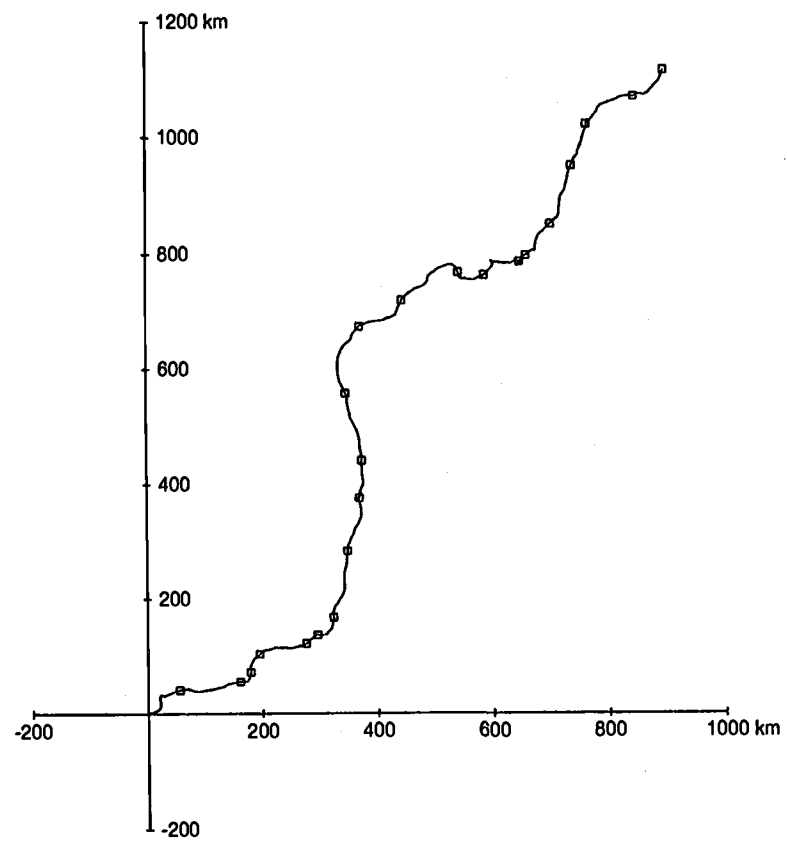


3965m at Kiwi 11. 9 Feb 91 - 1 Dec 92. RCM 5860/19.



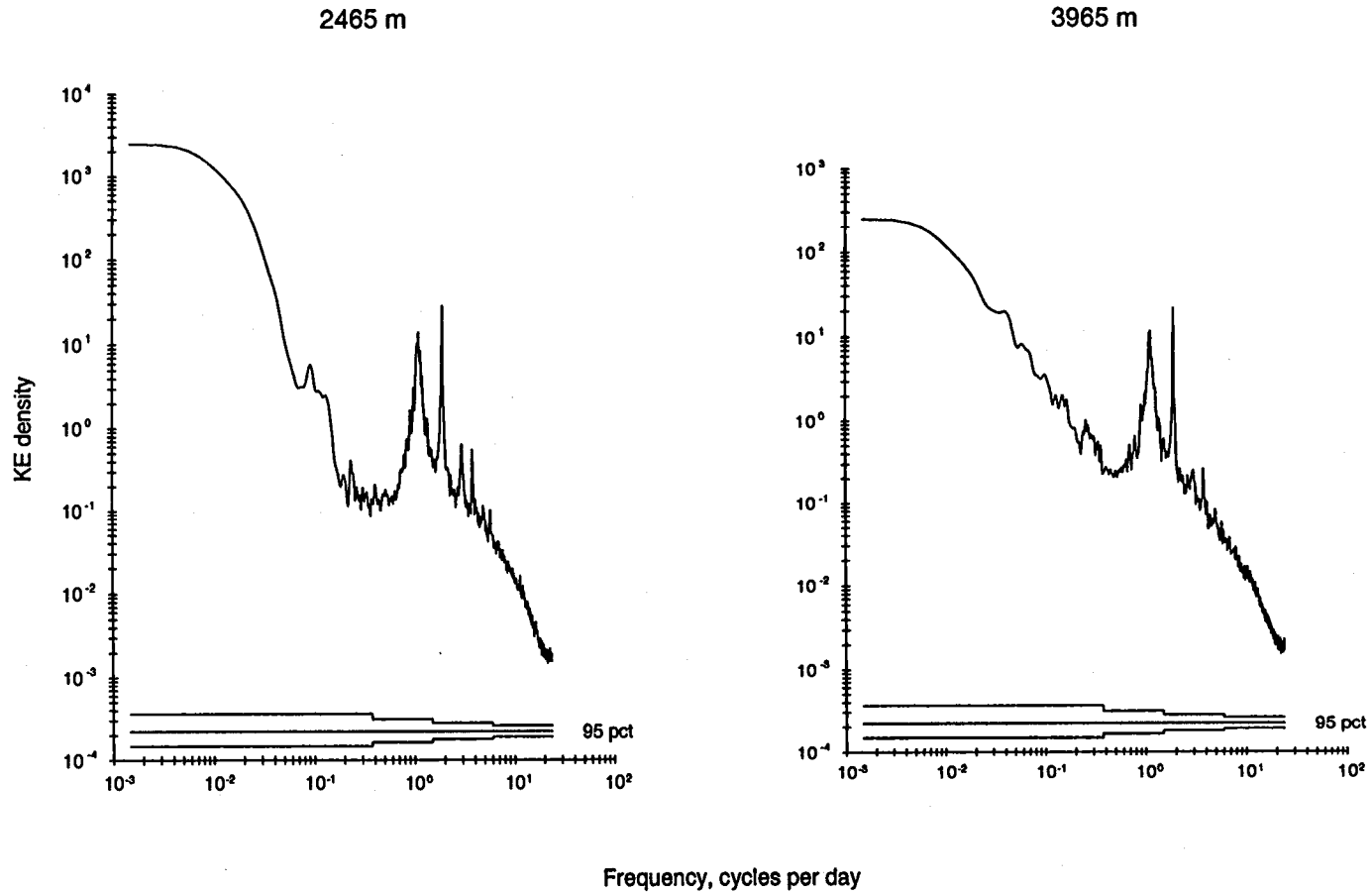


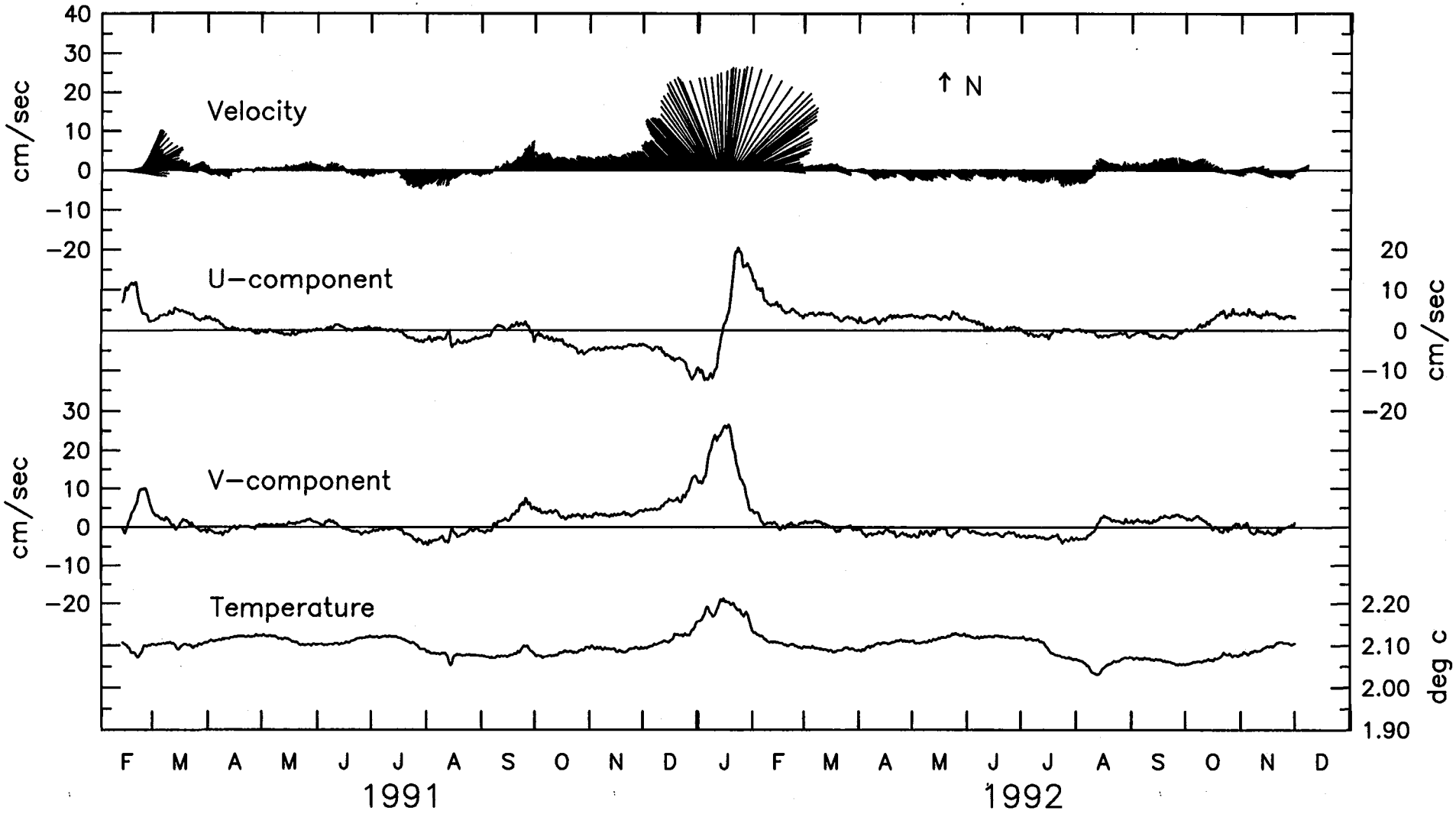
2465 m at KIWI 11. 660.2 days starting 2030 9 Feb 91.



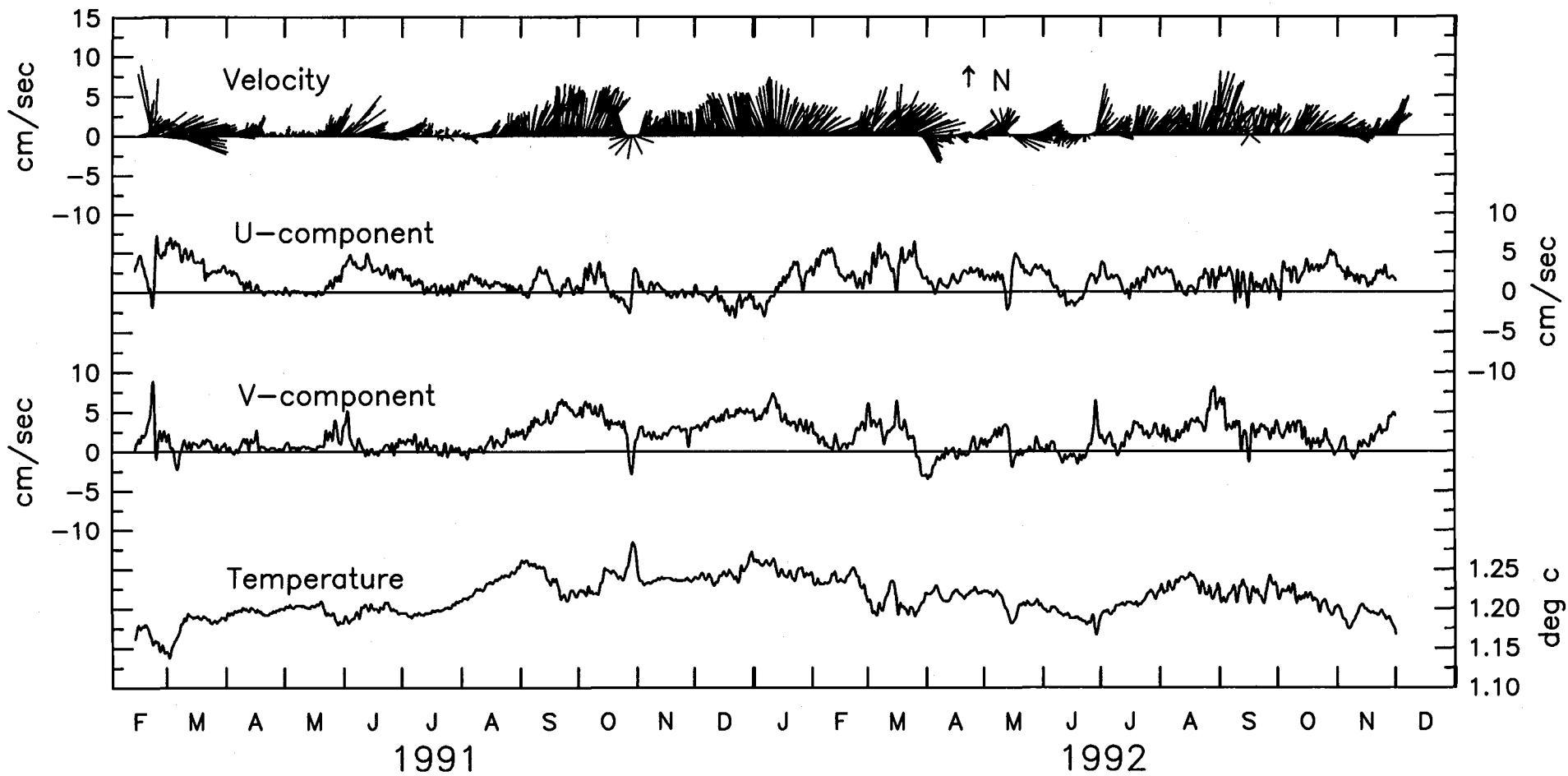
3965 m at KIWI 11. 660.2 days starting 2030 9 Feb 91.

Unfiltered Current (both components) Kiwi 11.

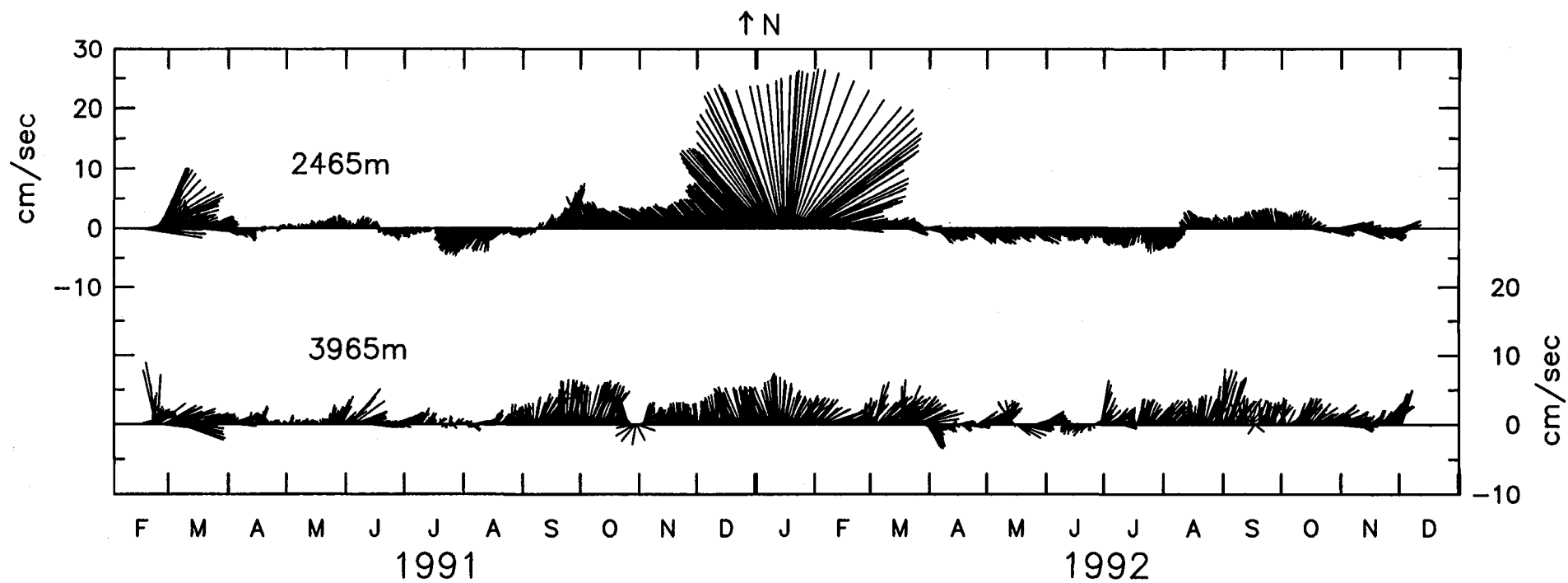




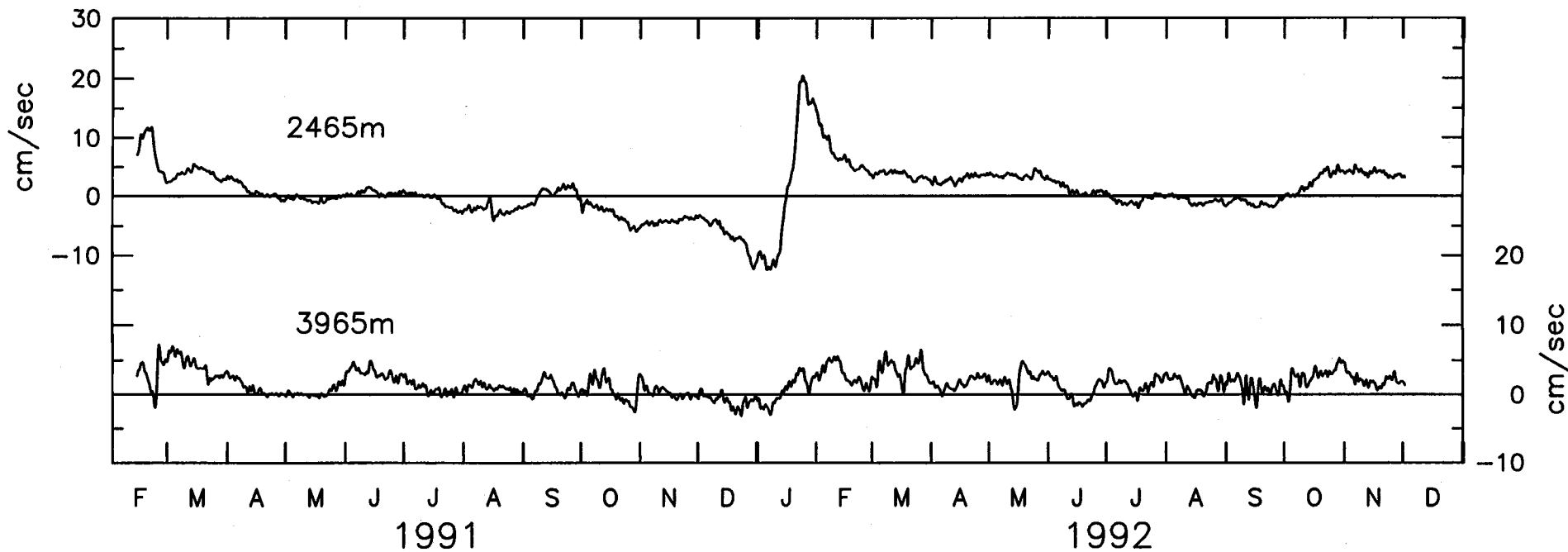
2465m at KIWI 11. LLP 6-hourly Data.



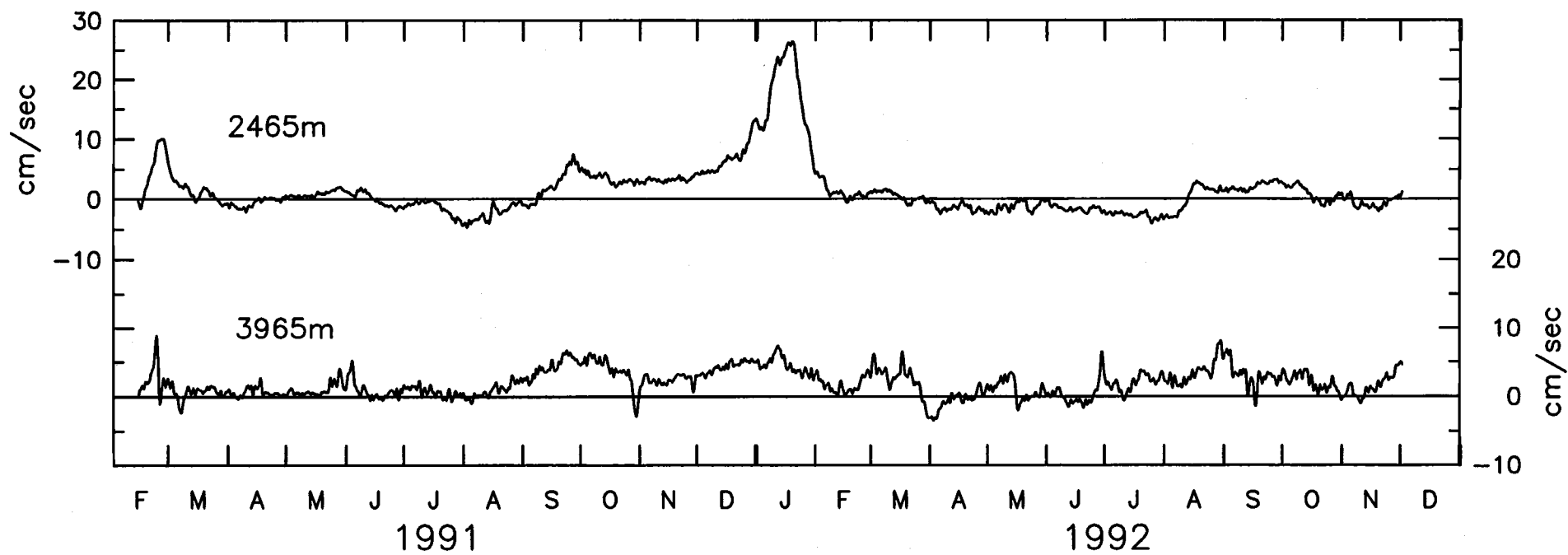
3965m at KIWI 11. LLP 6-hourly Data.



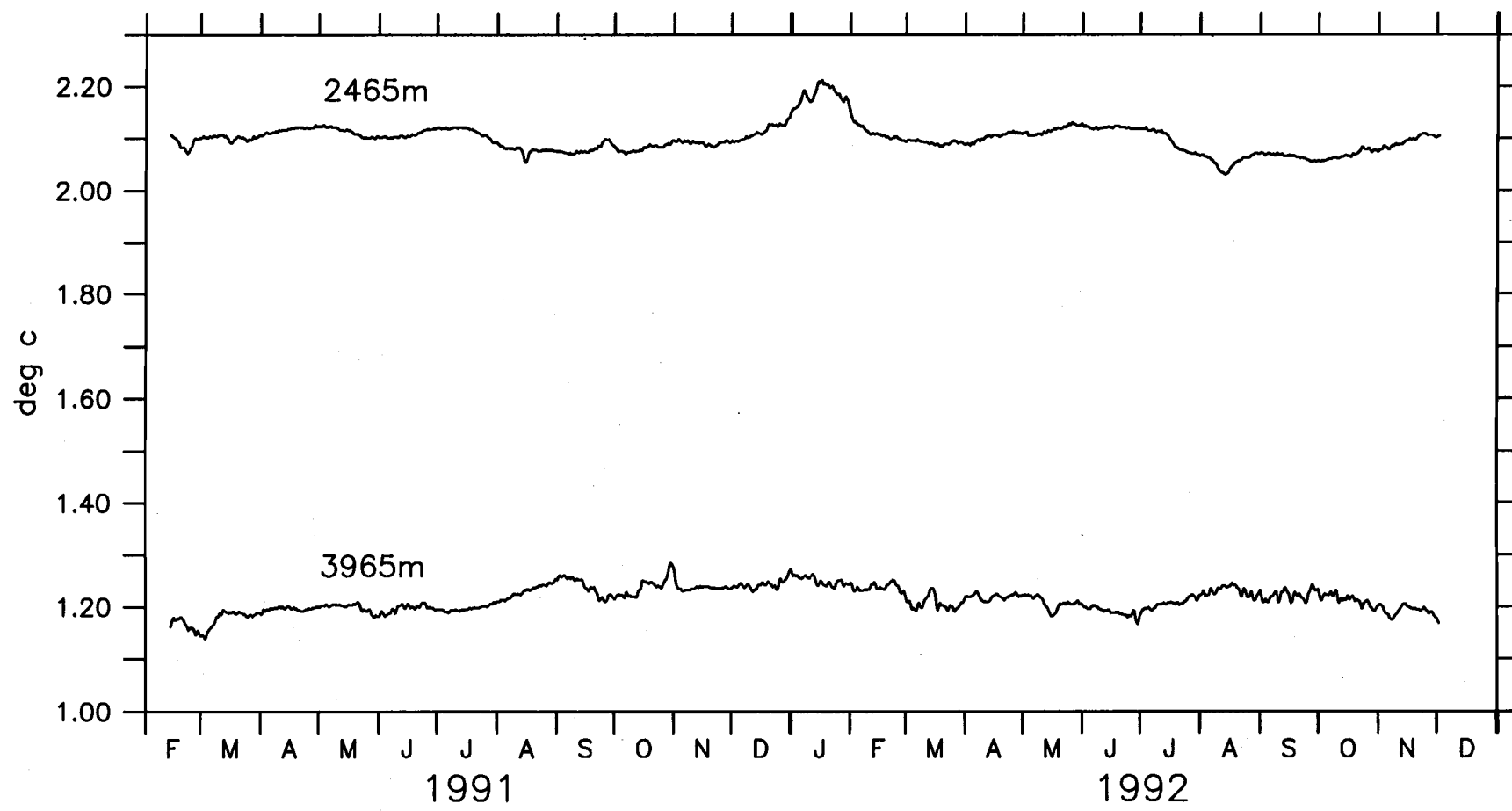
Velocity at KIWI 11. LLP 6-hourly Data.



U-component at KIWI 11. LLP 6-hourly Data.



V-component at KIWI 11. LLP 6-hourly Data.

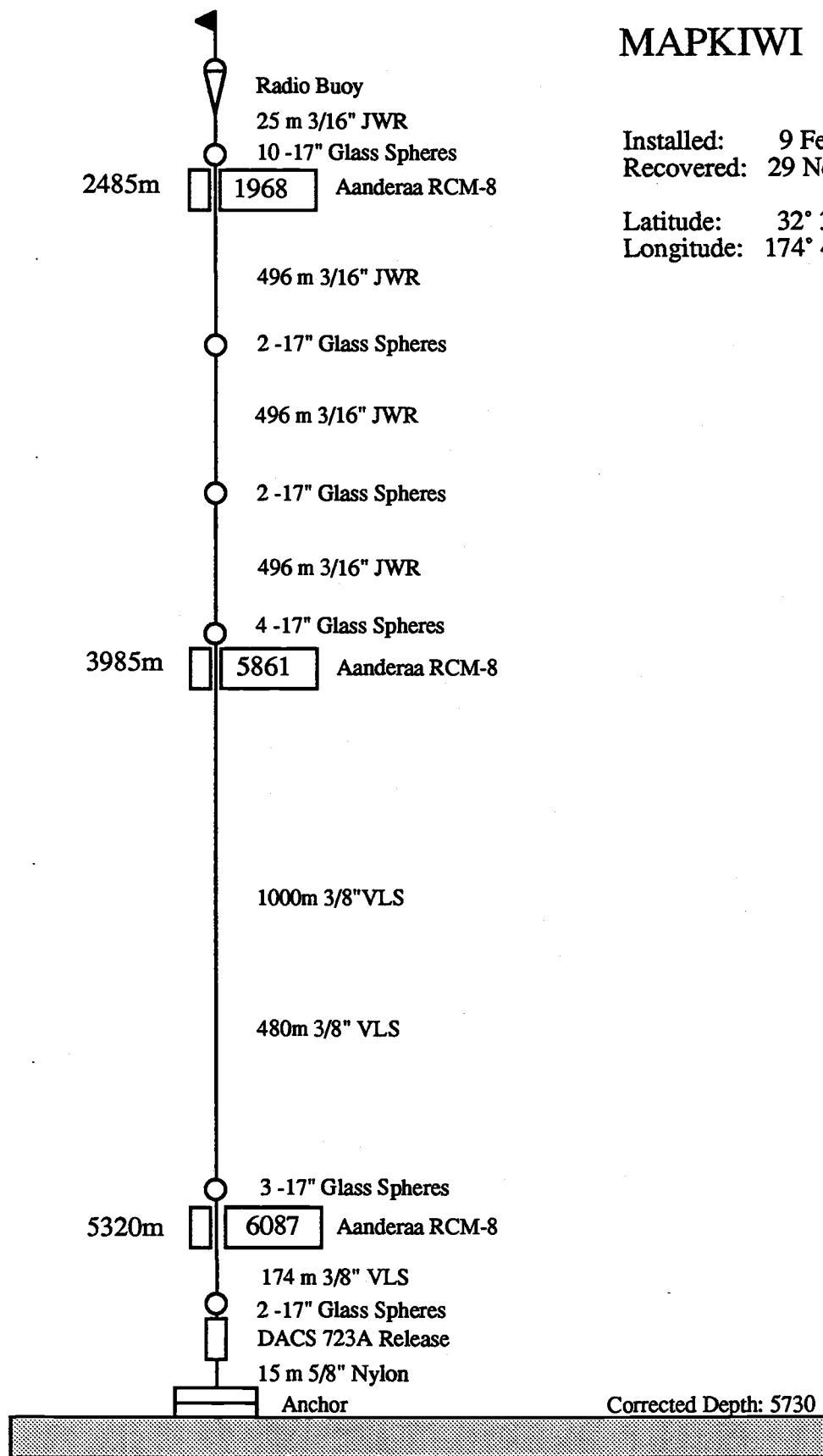


Temperature at KIWI 11. LLP 6-hourly Data.

MAPKIWI 12

Installed: 9 Feb 91
 Recovered: 29 Nov 92

Latitude: 32° 30.42'S
 Longitude: 174° 49.24'W



KIWI 12.

Position: 32° 30.42'S
173° 49.24'W
Depth of Water: 5730 m
Mooring Set: 0648 9 February 1991
Mooring Retrieved: 2314 29 November 1992
Data Interval 0930 9 February 1991 - 2200 29 November 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2485	1968/56
3985	5861/14
5320	6087/27

Instrument 1968 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5861 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 6087 recorded u, v, temperature, and pressure every 30 minutes.

2485 meters at KIWI 12. 9 Feb 91 - 29 Nov 92. Tape 1968/56.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.48	11.44	2.05	31658
U, cm/sec	-10.08	-0.63	8.29	2.48	31658
V, cm/sec	-10.84	-1.08	8.80	2.92	31658
Temp, deg c	1.99	2.06	2.13	0.02	31658
Pressure, db	2516.14	2516.14	2516.14	0.00	31658

3985 meters at KIWI 12. 9 Feb 91 - 29 Nov 92. Tape 5861/14.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.25	11.44	2.00	31657
U, cm/sec	-7.75	-0.14	9.28	2.34	31657
V, cm/sec	-11.13	-1.46	7.62	2.63	31657
Temp, deg c	1.13	1.20	1.27	0.02	31657

5320 meters at KIWI 12. 9 Feb 91 - 29 Nov 92. Tape 6087/27.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.55	9.15	1.72	31657
U, cm/sec	-7.72	0.14	6.84	1.79	31657
V, cm/sec	-9.01	-1.48	4.88	2.01	31657
Temp, deg c	1.06	1.08	1.09	0.00	31657

2485 meters at KIWI 12. 10 Feb 91 - 28 Nov 92. Tape 1968/56.

	min	mean	max	sd	num
Speed, cm/sec	0.03	2.47	6.46	1.38	2628
U, cm/sec	-4.29	-0.63	2.45	1.32	2628
V, cm/sec	-6.29	-1.07	3.71	2.17	2628
Temp, deg c	2.03	2.06	2.10	0.02	2628
Pressure, db	2516.14	2516.14	2516.14	0.00	2628

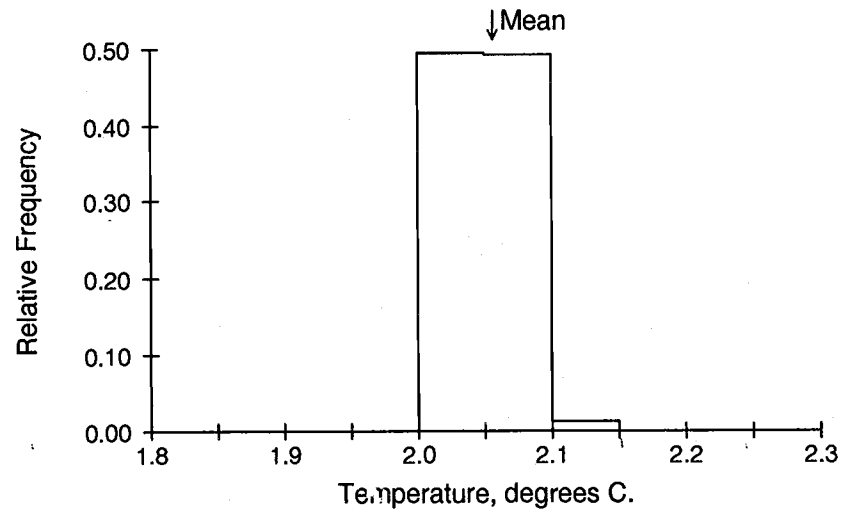
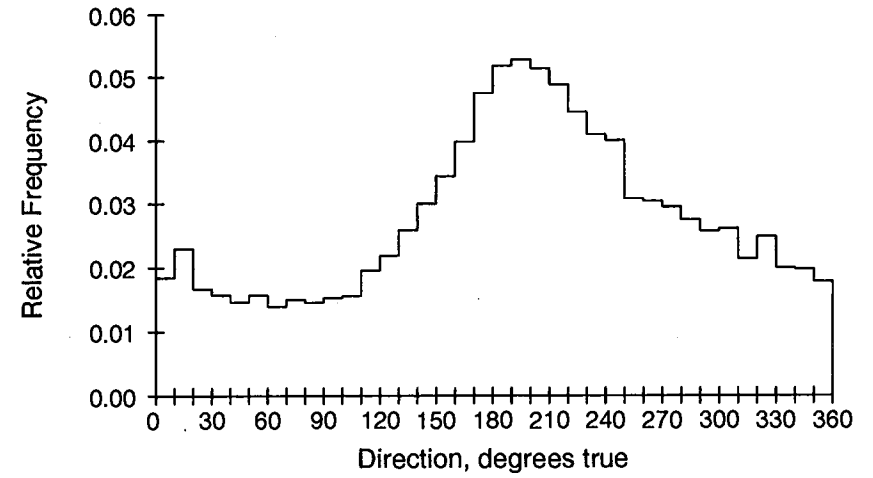
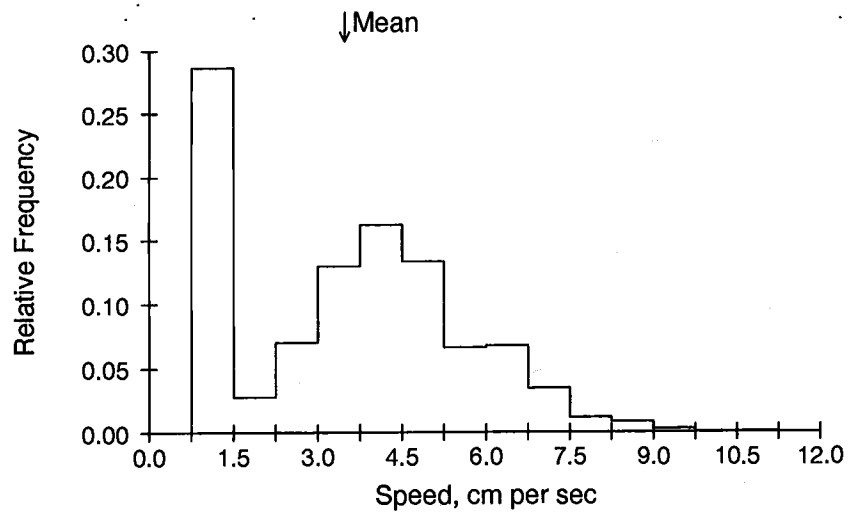
3985 meters at KIWI 12. 10 Feb 91 - 28 Nov 92. Tape 5861/14.

	min	mean	max	sd	num
Speed, cm/sec	0.04	2.22	6.67	1.34	2628
U, cm/sec	-3.37	-0.13	4.45	1.05	2628
V, cm/sec	-6.51	-1.46	2.28	1.87	2628
Temp, deg c	1.16	1.20	1.24	0.02	2628

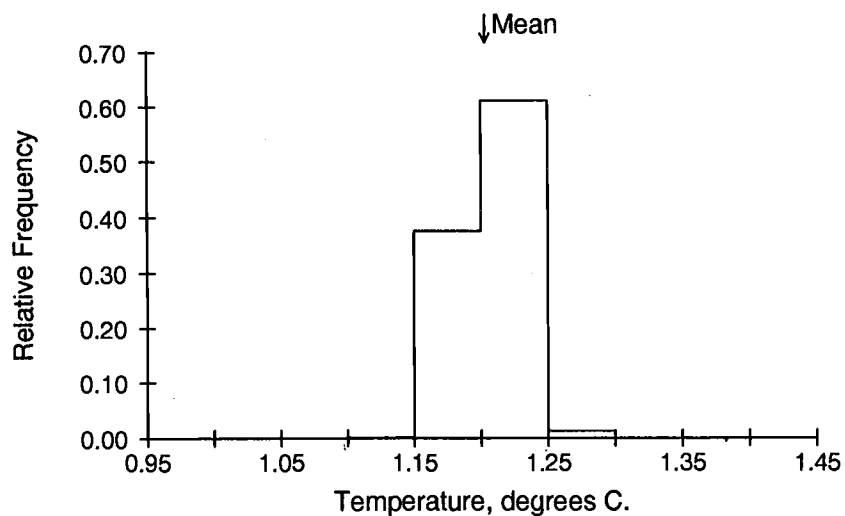
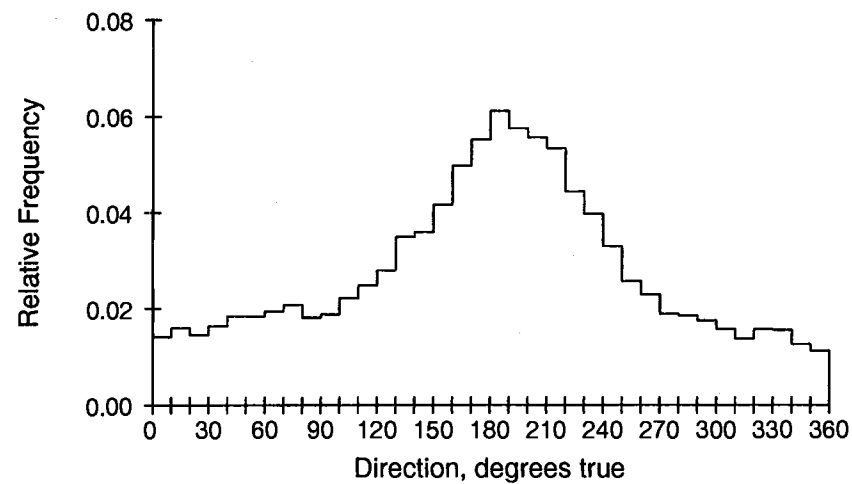
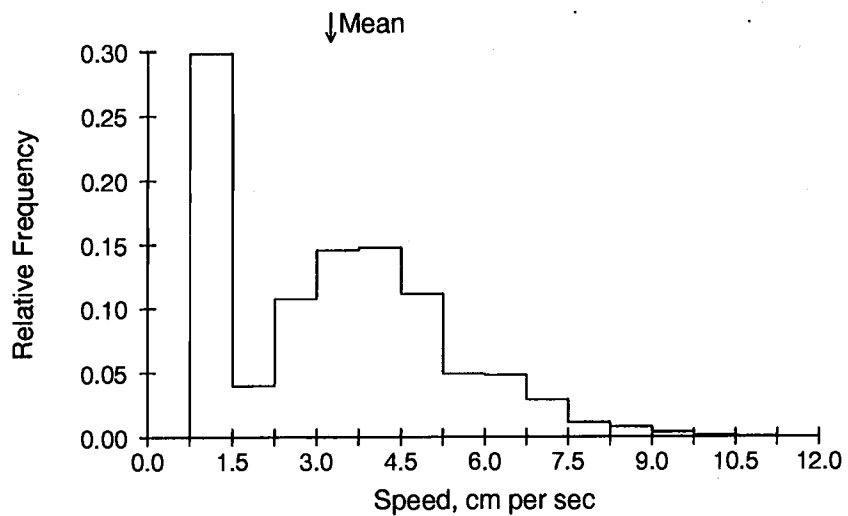
5320 meters at KIWI 12. 10 Feb 91 - 28 Nov 92. Tape 6087/27.

	min	mean	max	sd	num
Speed, cm/sec	0.02	2.04	6.40	1.35	2628
U, cm/sec	-2.96	0.14	3.59	1.08	2628
V, cm/sec	-6.33	-1.47	1.85	1.62	2628
Temp, deg c	1.07	1.08	1.08	0.00	2628

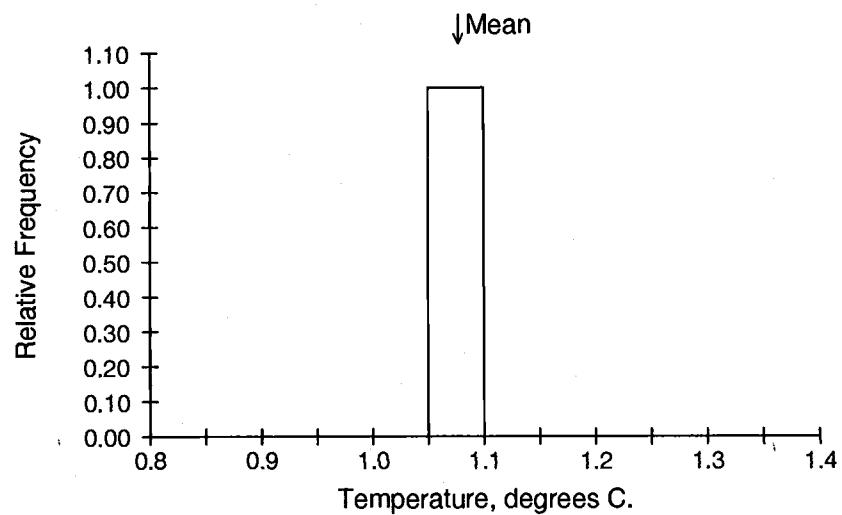
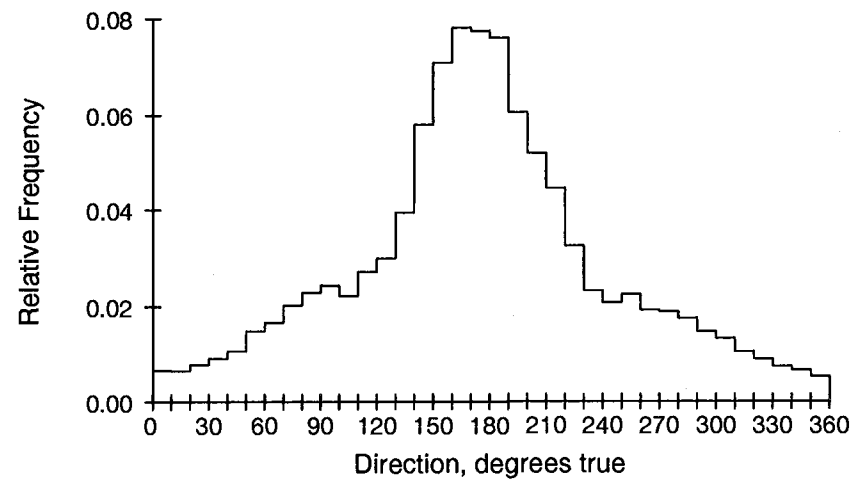
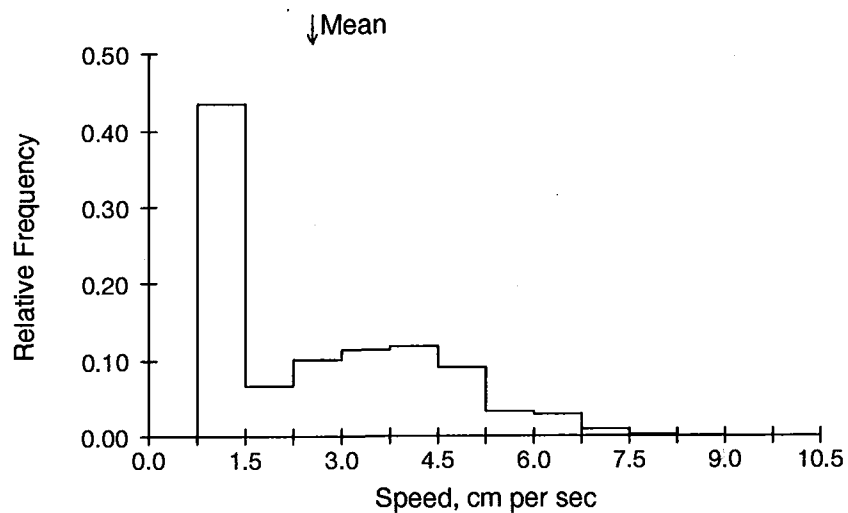
2485m at Kiwi 12. 9 Feb 91 - 29 Nov 92. RCM 1968/56

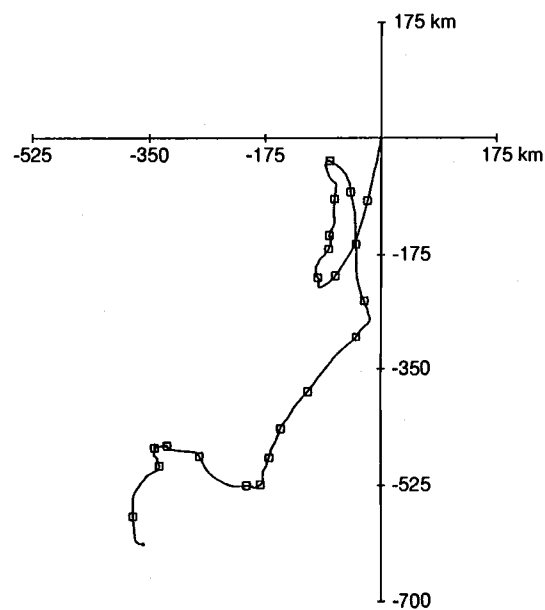


3985m at Kiwi 12. 9 Feb 91 - 29 Nov 92. RCM 5861/14.

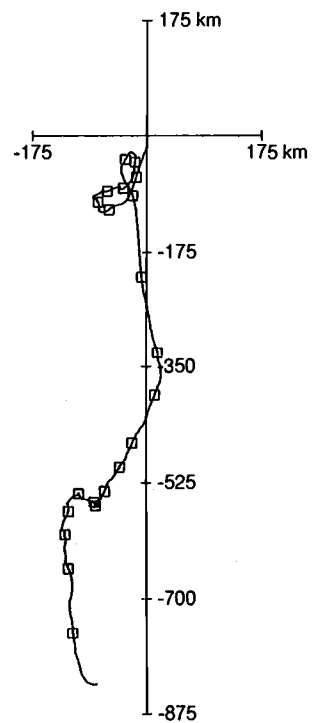


5320m at Kiwi 12. 9 Feb 91 - 29 Nov 92. RCM 6087/27.

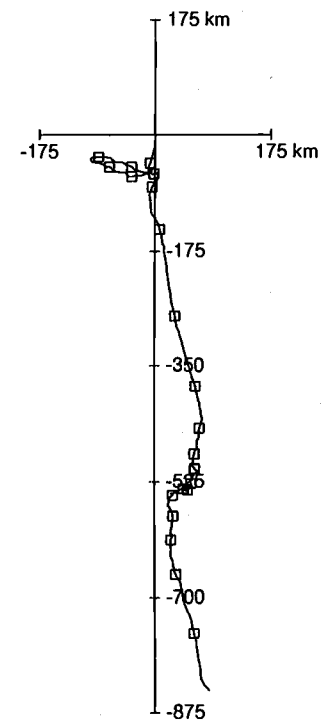




2485 m at KIWI 12. 659.5 days starting 0930 9 Feb 91.



3985 m at KIWI 12. 659.5 days starting 1000 9 Feb 91.



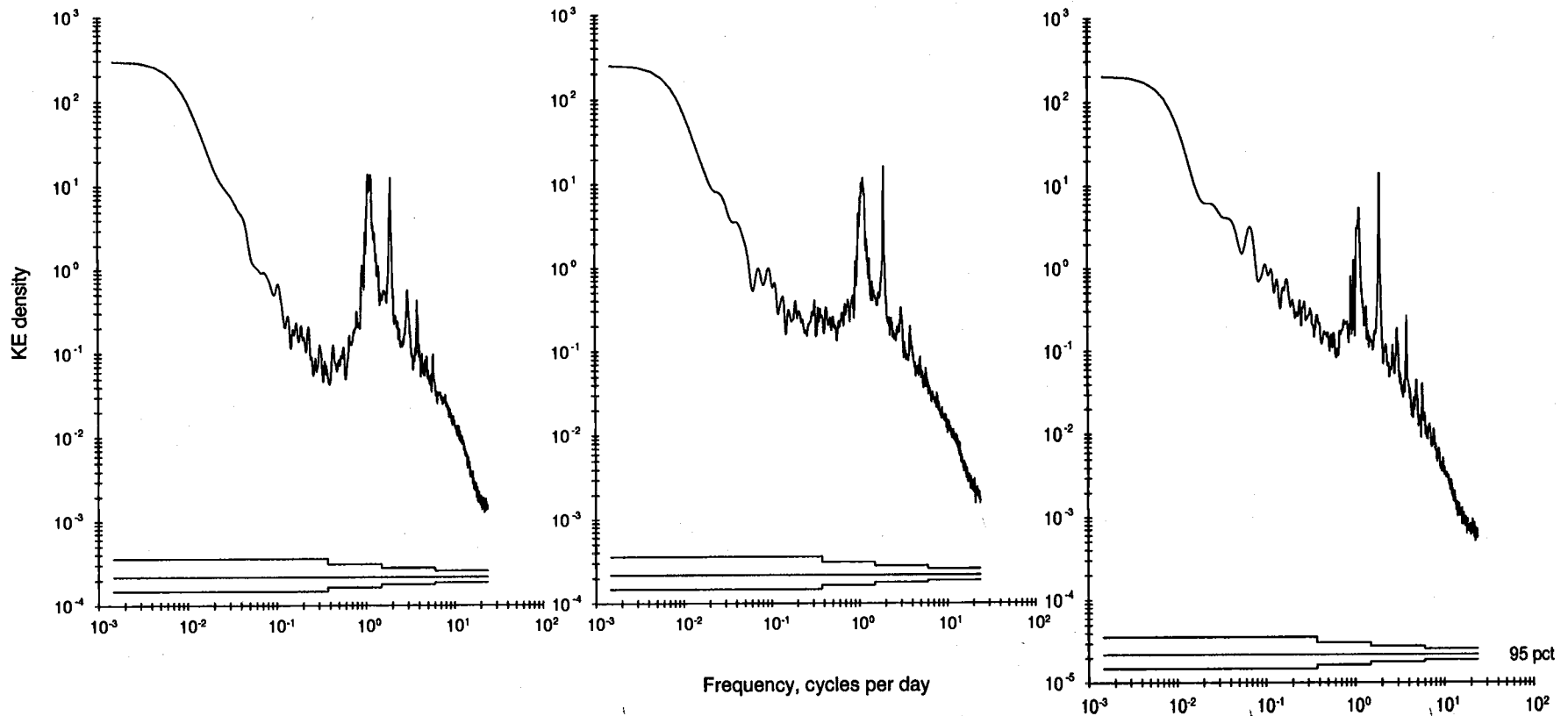
5320 m at KIWI 12. 659.5 days starting 1000 9 Feb 91.

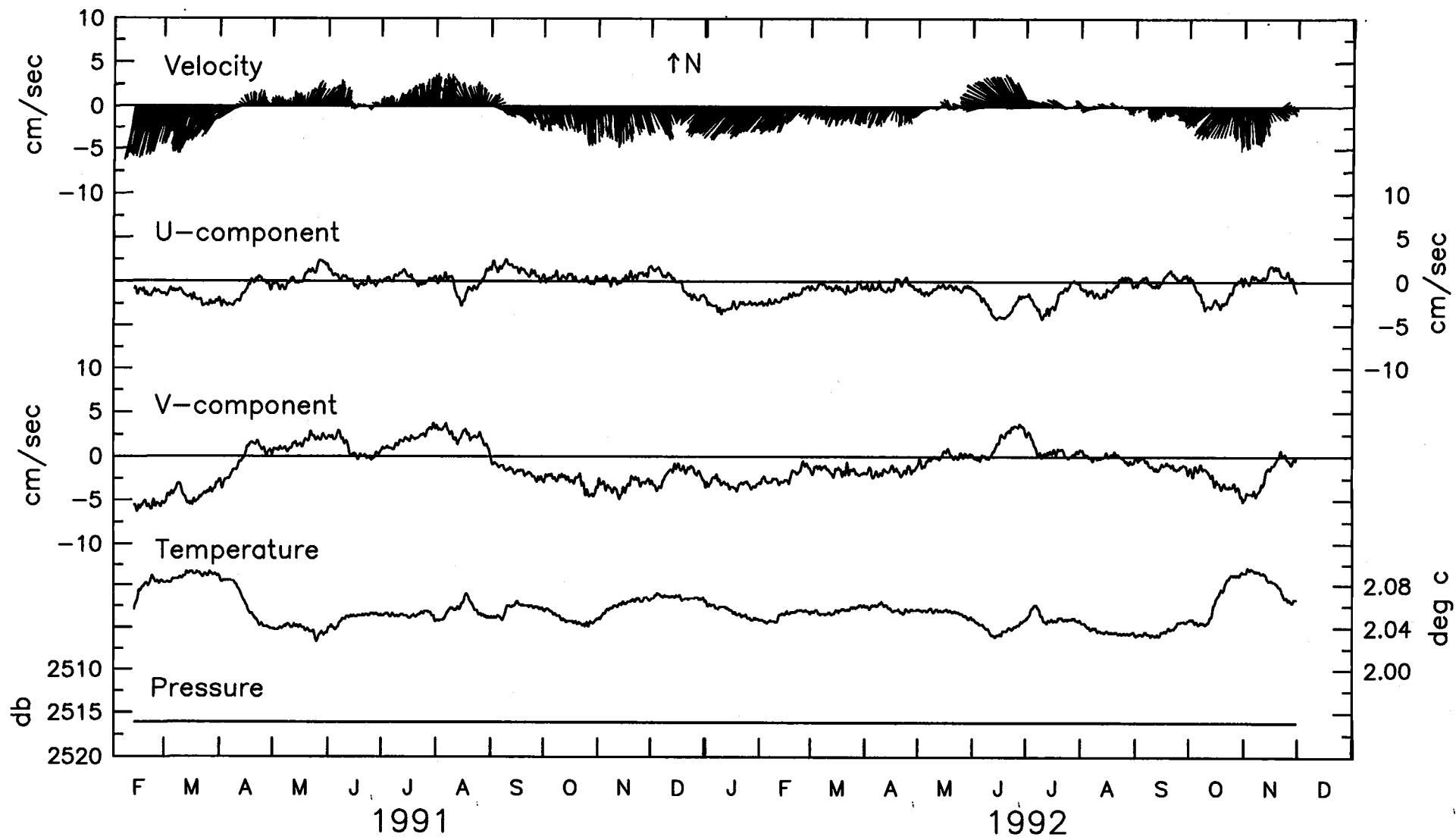
Unfiltered Current (both components) Kiwi 12.

2485 m

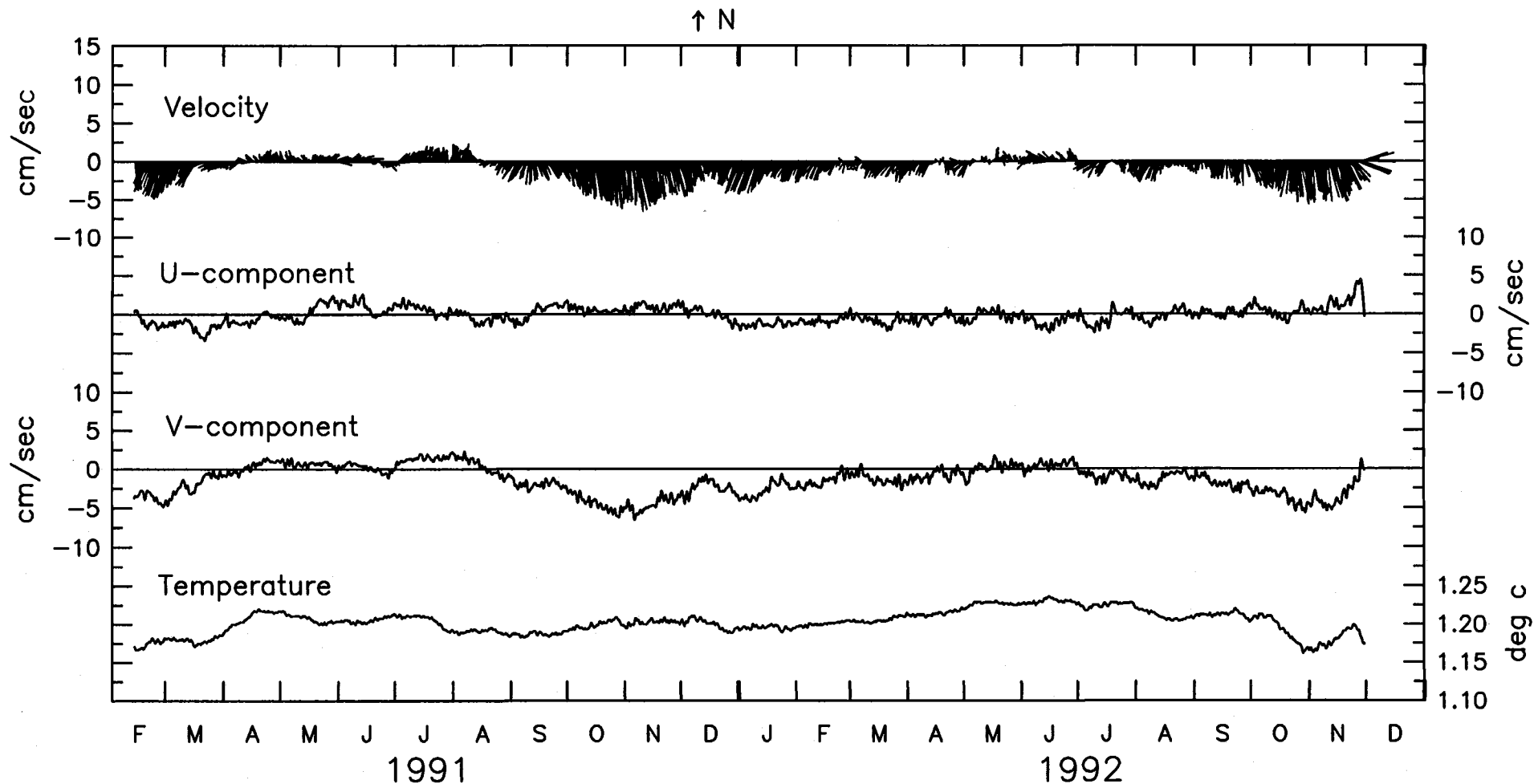
3985 m

5320 m

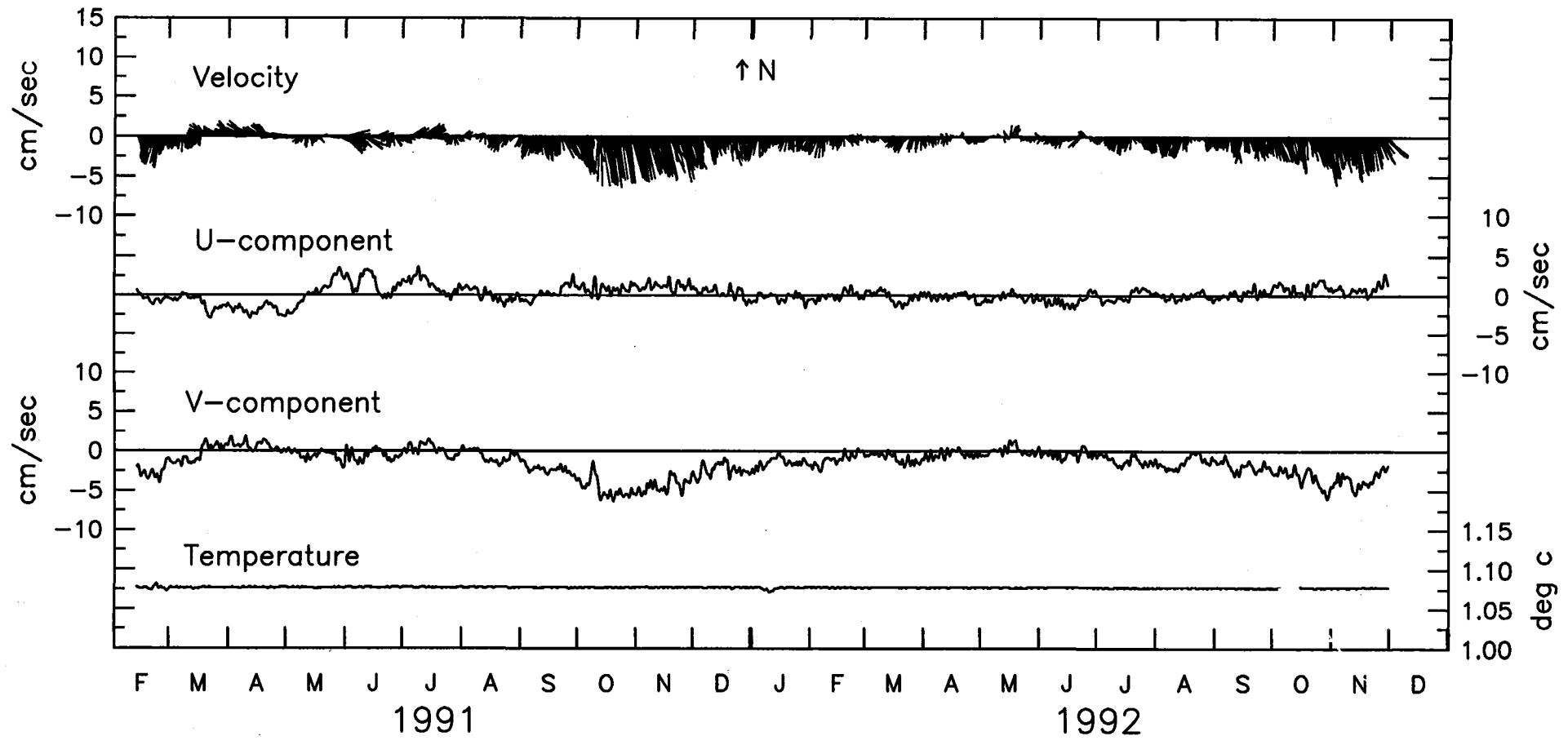




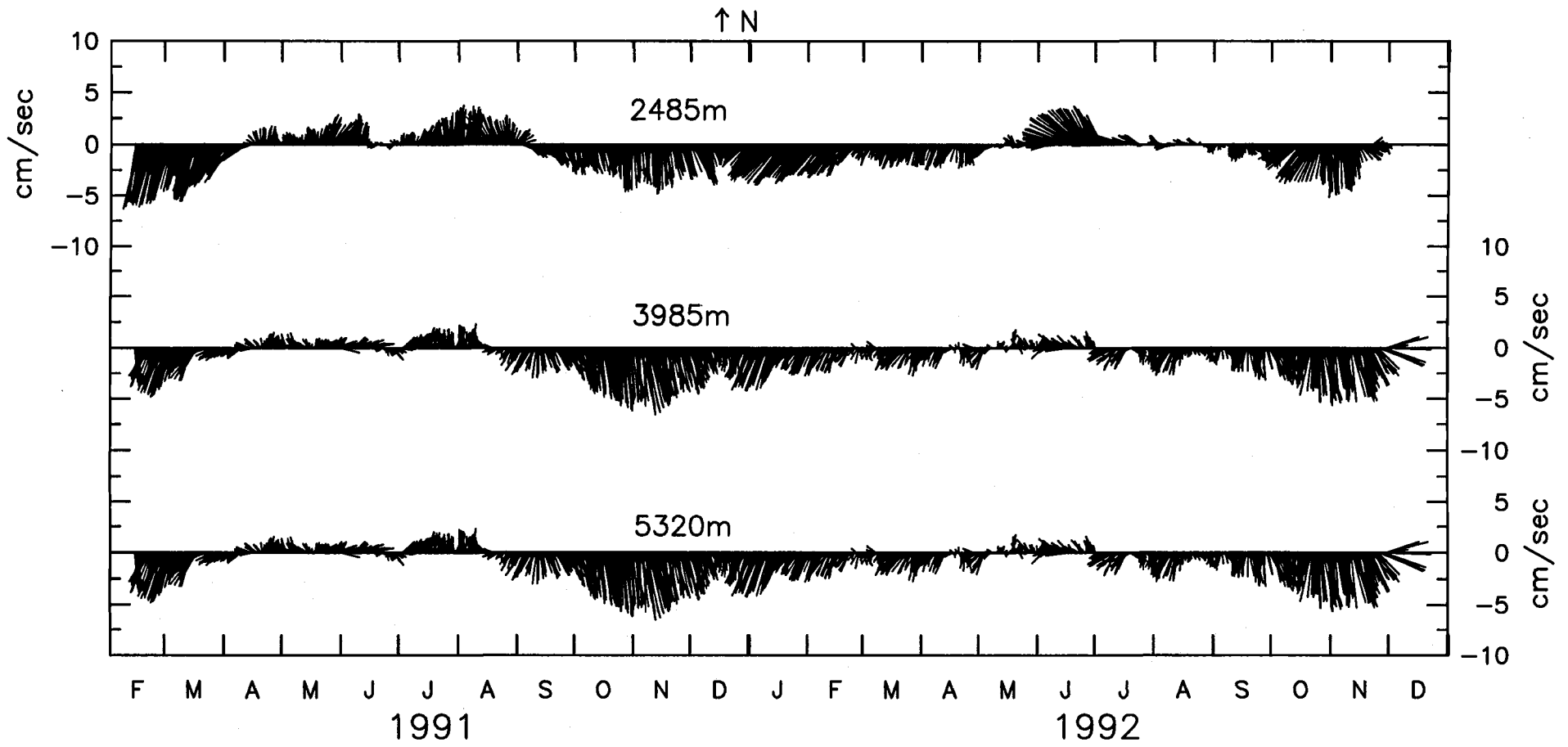
2485m at KIWI 12. LLP 6-hourly Data.



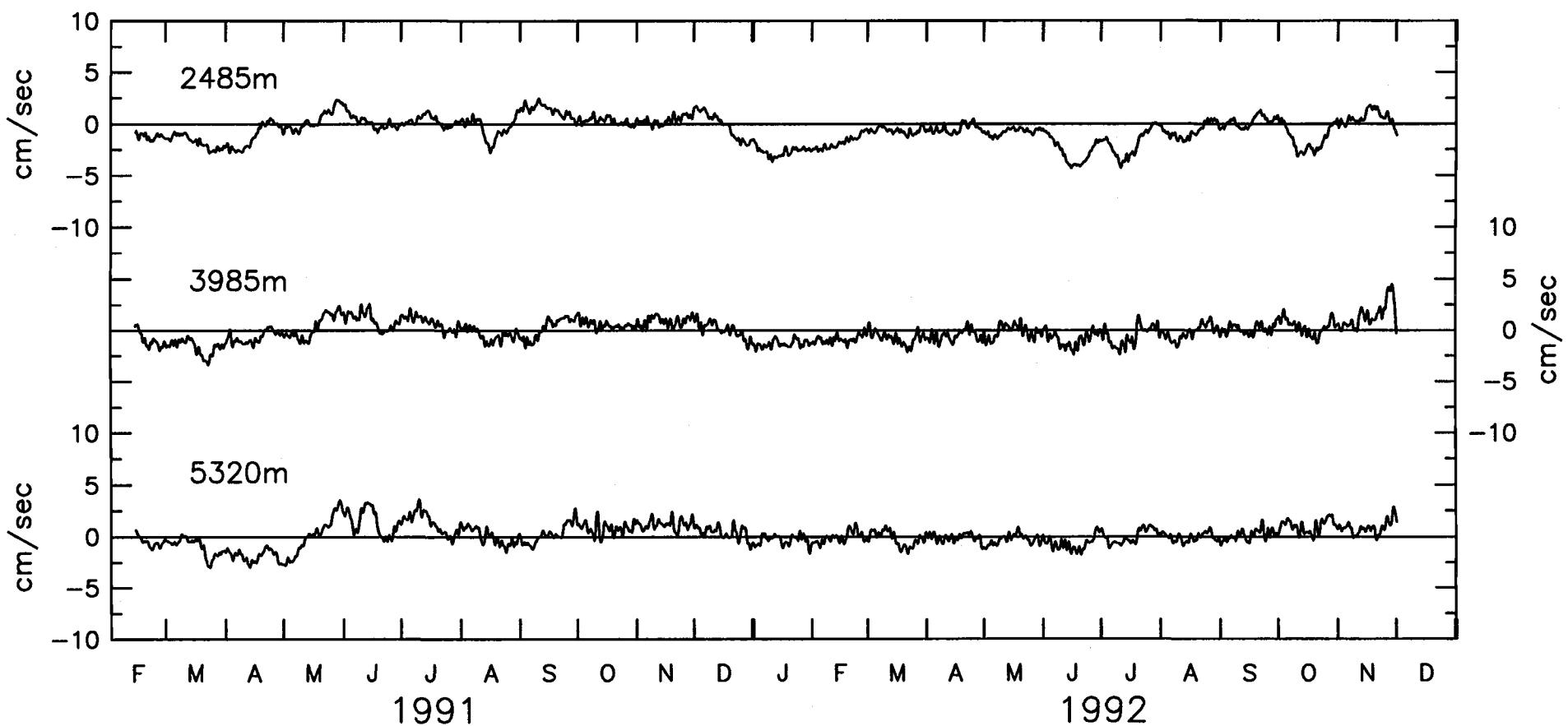
3985m at KIWI 12. LLP 6-hourly Data.



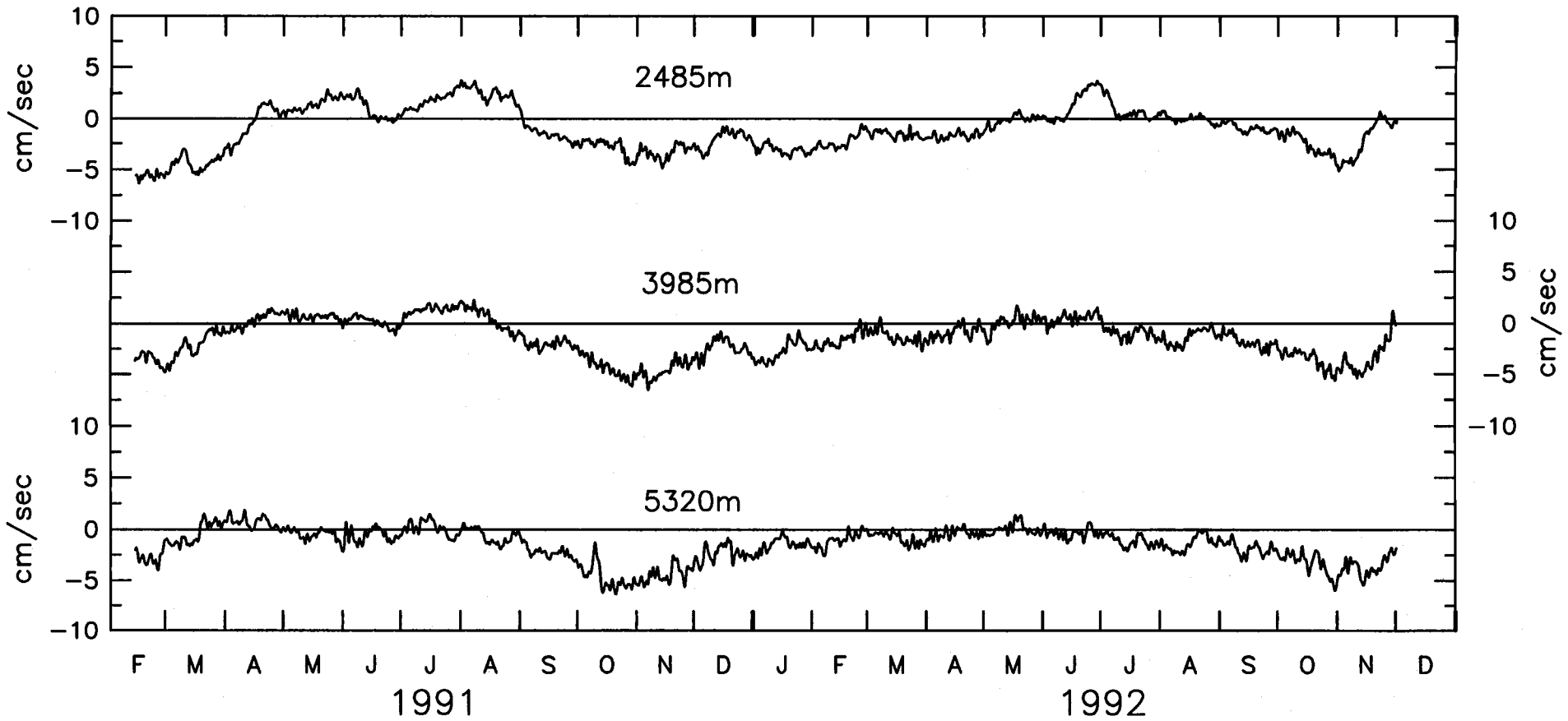
5320m at KIWI 12. LLP 6-hourly Data.



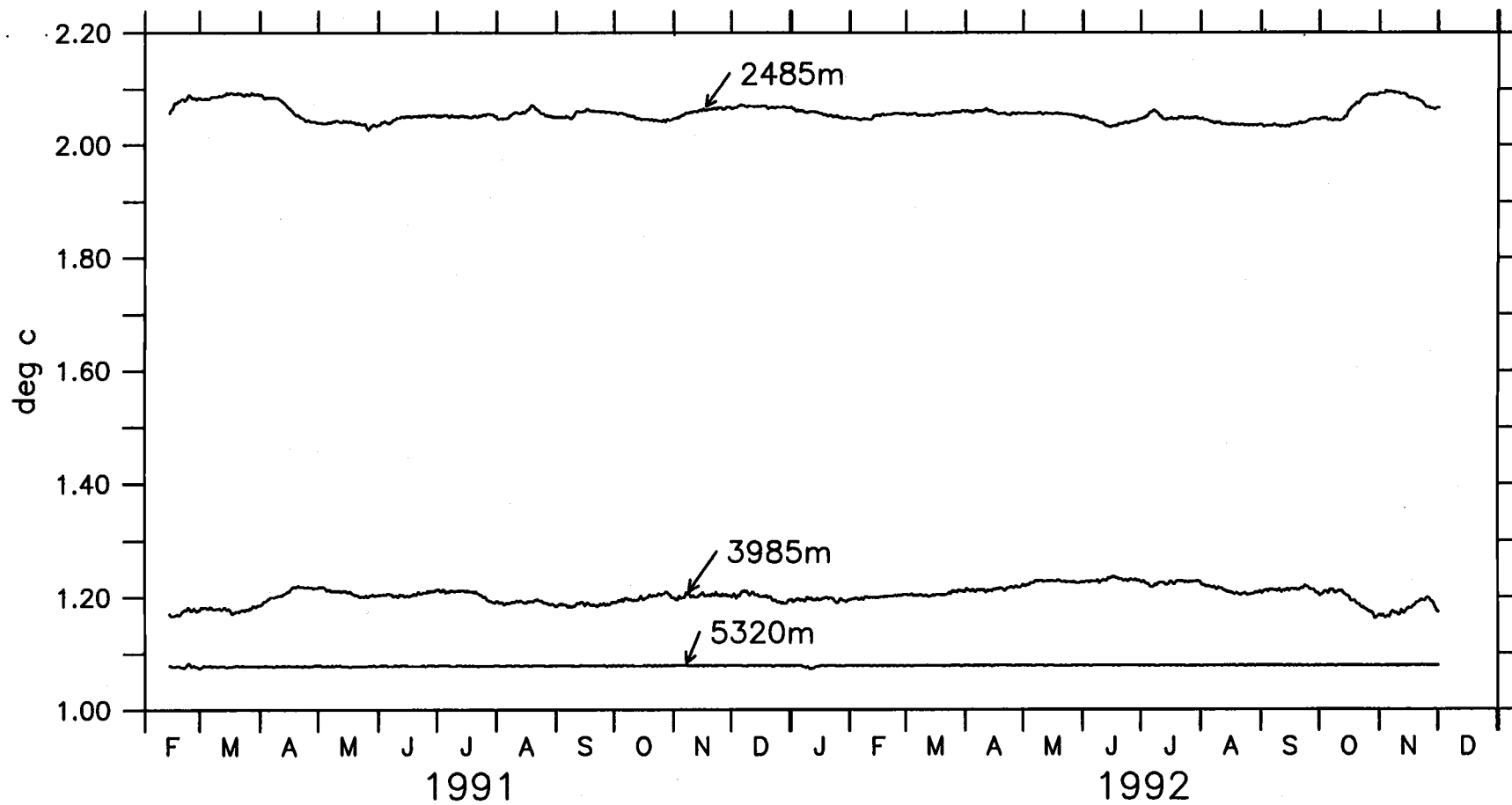
Velocity at KIWI 12. LLP 6-hourly Data.



U-component at KIWI 12. LLP 6-hourly Data.



V-component at KIWI 12. LLP 6-hourly Data.

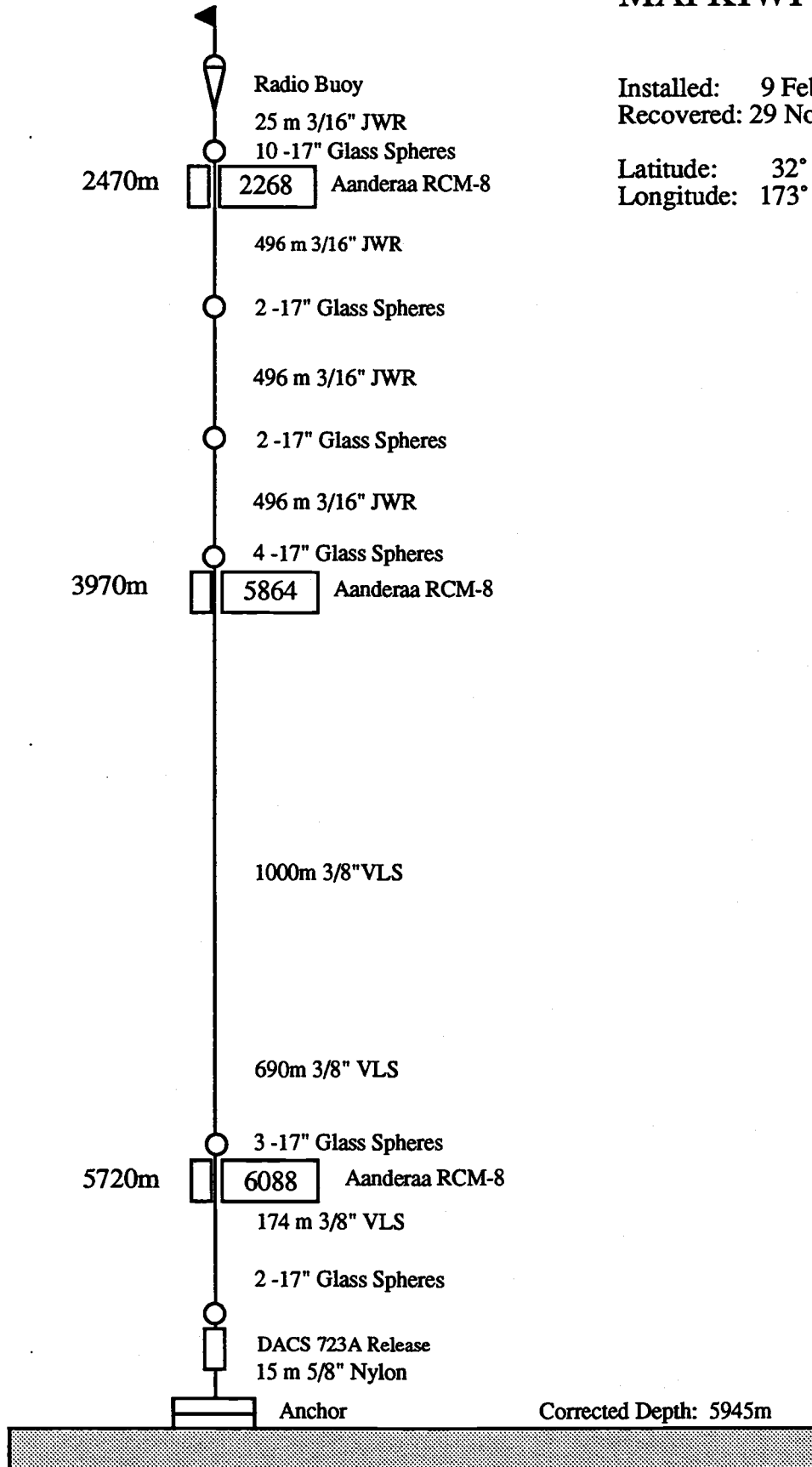


Temperature at KIWI 12. LLP 6-hourly Data.

MAPKIWI 13

Installed: 9 Feb 91
 Recovered: 29 Nov 92

Latitude: 32° 30.24'S
 Longitude: 173° 02.82'W



KIWI 13.

Position: 32° 30.24'S
 173° 02.82'W
 Depth of Water: 5945 m
 Mooring Set: 0048 9 February 1991
 Mooring Retrieved: 1612 29 November 1992
 Data Interval 0300 9 February 1991 - 1530 29 November 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2470	2268/45
3970	5864/16
5720	6088/28

Instrument 2268 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5864 recorded u, v, and temperature. The compass failed to clamp and there were no directions recorded. Two suspicious areas of no speed were set to null values: lines 4019 - 4369 (2000 3 May 91 to 0300 11 May 91; and lines 17135 - 17211 (0200 1 February 1992 to 1600 2 February 1992).

Instrument 6088 recorded u, v, and temperature every 30 minutes .

2470 meters at KIWI 13. 9 Feb 91 - 29 Nov 92. Tape 2268/45.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.07	11.44	1.94	31658
U, cm/sec	-11.05	-0.34	9.16	2.41	31658
V, cm/sec	-9.04	0.57	10.17	2.64	31658
Temp, deg c	2.00	2.05	2.10	0.01	31658
Pressure, db	2499.98	2499.99	2503.63	0.07	31658

3970 meters at KIWI 13. 9 Feb 91 - 29 Nov 92. Tape 5864/16.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.19	11.15	1.76	31230
Temp; deg c	1.18	1.24	1.31	0.02	31658

5720 meters at KIWI 13. 9 Feb 91 - 29 Nov 92. Tape 6088/28.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.15	10.58	1.84	31658
U, cm/sec	-10.50	-1.39	6.38	1.84	31658
V, cm/sec	-6.31	1.94	8.17	2.05	31658
Temp, deg c	1.09	1.10	1.11	0.00	31658

2470 meters at KIWI 13. 10 Feb 91 - 28 Nov 92. Tape 2268/45.

	min	mean	max	sd	num
Speed, cm/sec	0.07	1.84	4.65	1.00	2628
U, cm/sec	-4.23	-0.34	2.18	1.09	2628
V, cm/sec	-4.26	0.57	4.61	1.66	2628
Temp, deg c	2.02	2.05	2.07	0.01	2628
Pressure, db	2499.97	2499.98	2499.99	0.00	2628

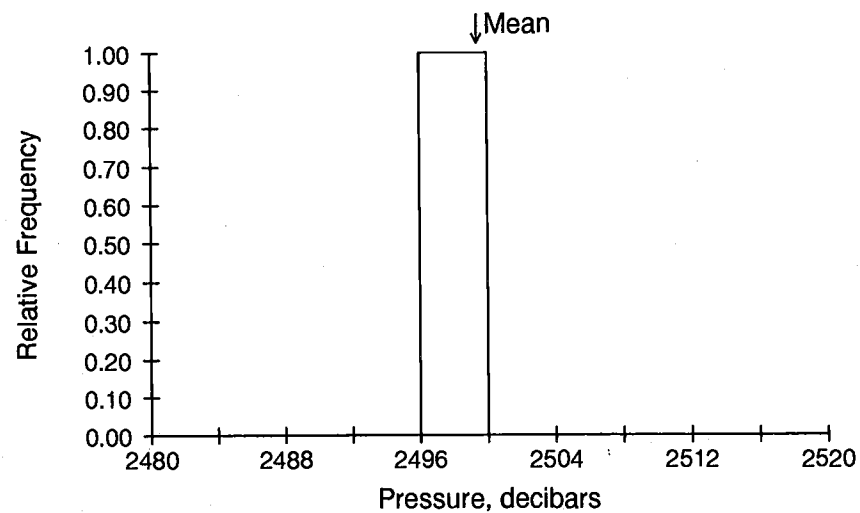
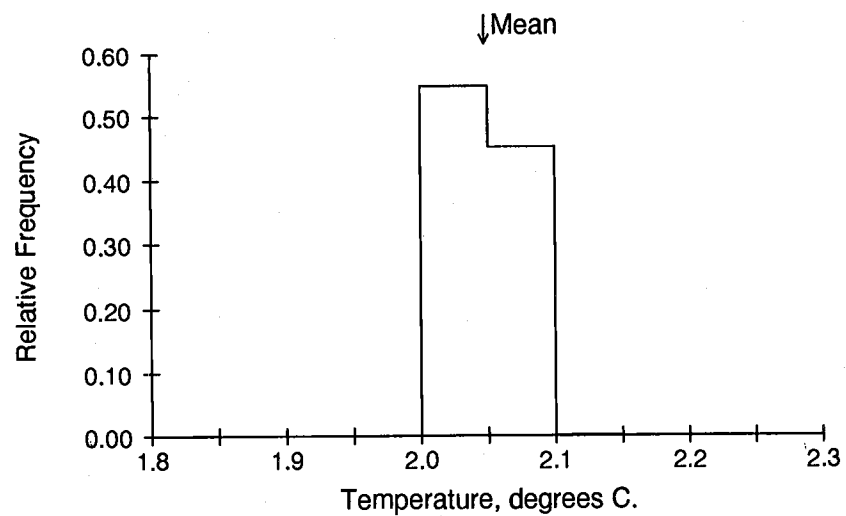
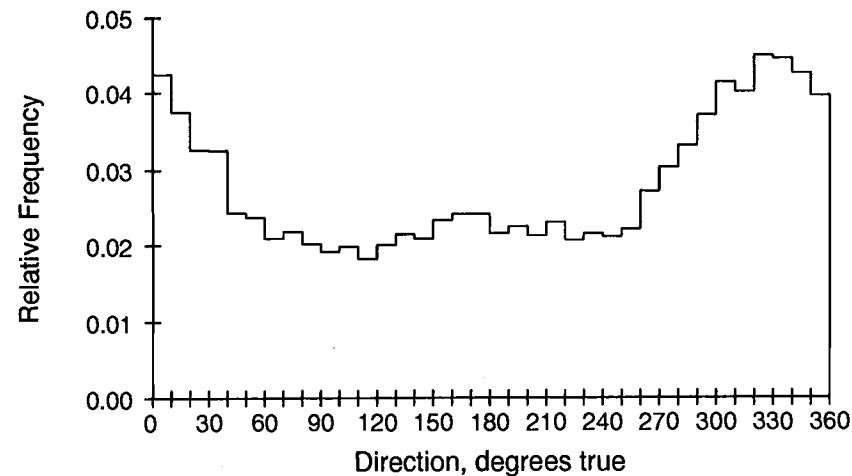
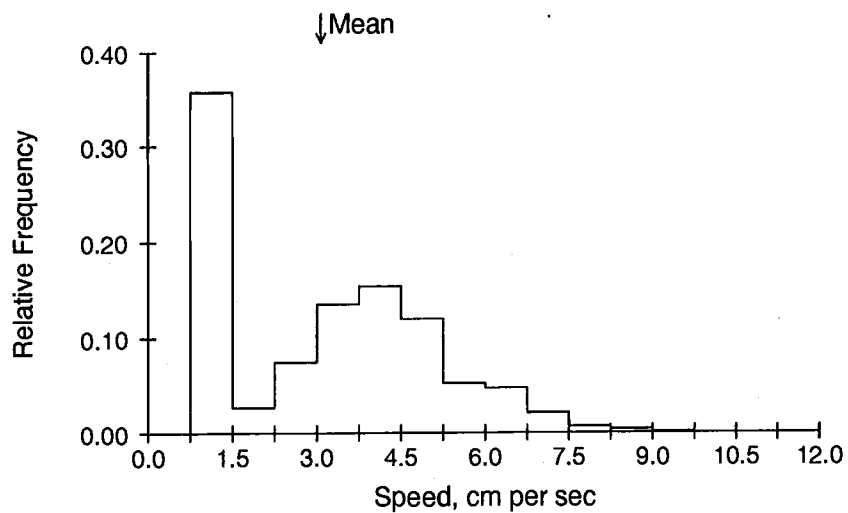
3970 meters at KIWI 13. 10 Feb 91 - 28 Nov 92. Tape 5864/16.

	min	mean	max	sd	num
Speed, cm/sec	1.08	3.19	6.93	0.89	2573
Temp, deg c	1.22	1.24	1.26	0.01	2628

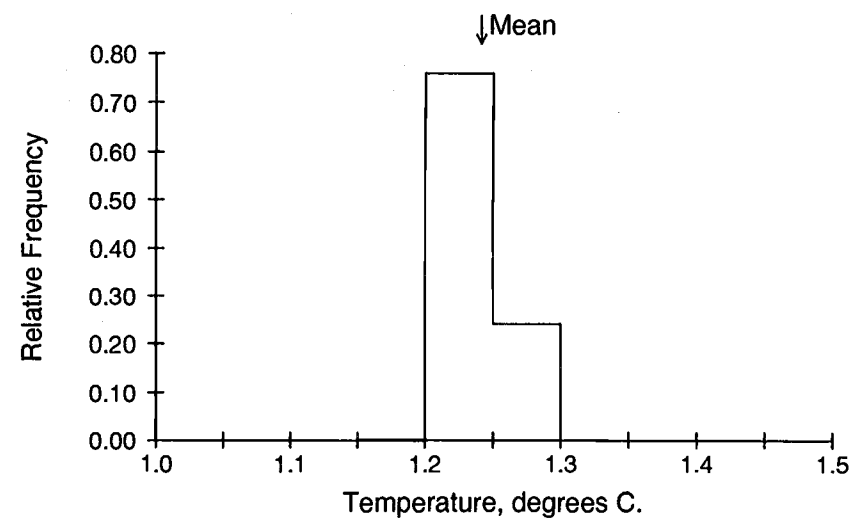
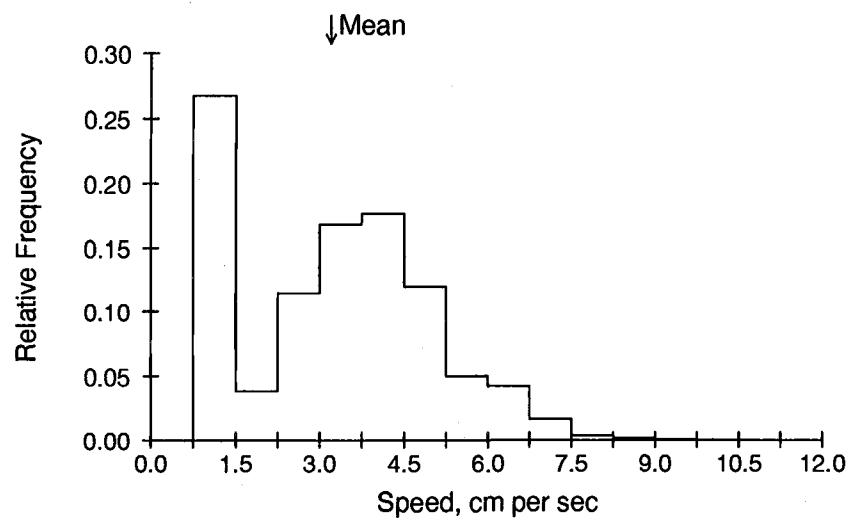
5720 meters at KIWI 13. 10 Feb 91 - 28 Nov 92. Tape 6088/28.

	min	mean	max	sd	num
Speed, cm/sec	0.13	2.71	7.02	1.17	2628
U, cm/sec	-4.57	-1.39	2.12	1.01	2628
V, cm/sec	-1.75	1.94	6.07	1.41	2628
Temp, deg c	1.10	1.10	1.11	0.00	2628

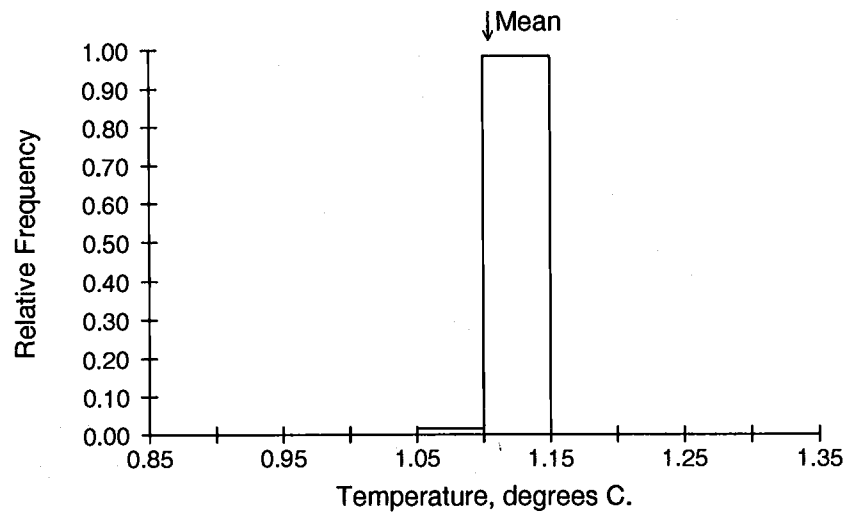
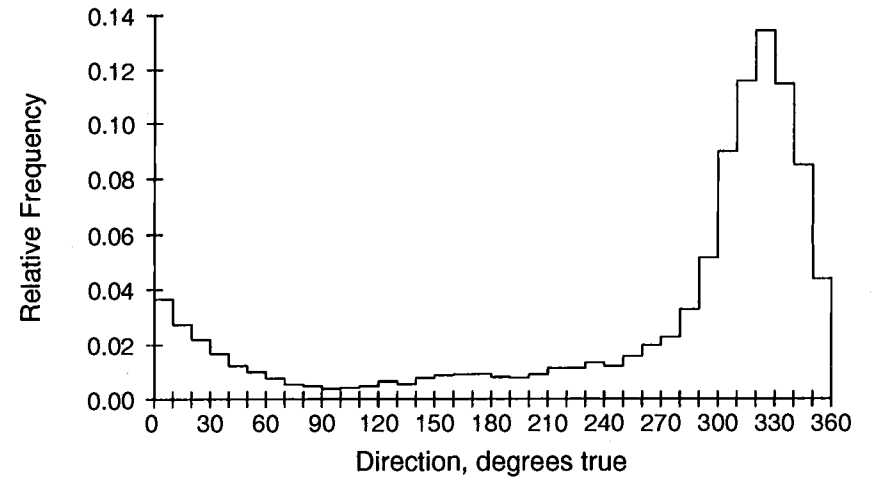
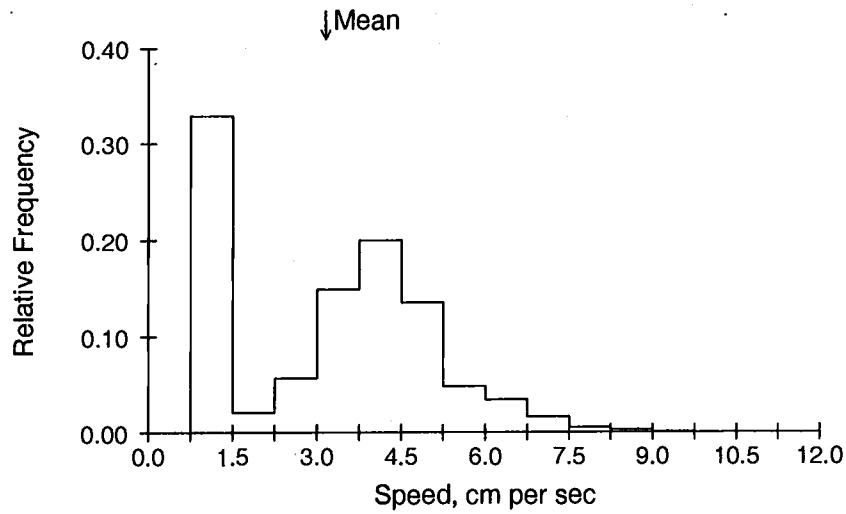
2470m at Kiwi 13. 9 Feb 91 - 29 Nov 92. RCM 2268/45.

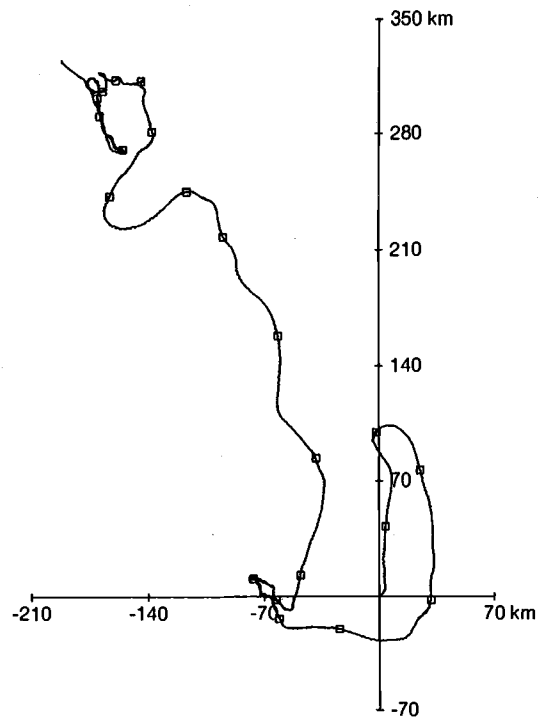


3970m at Kiwi 13. 9 Feb 91 - 29 Nov 92. RCM 5864/16.

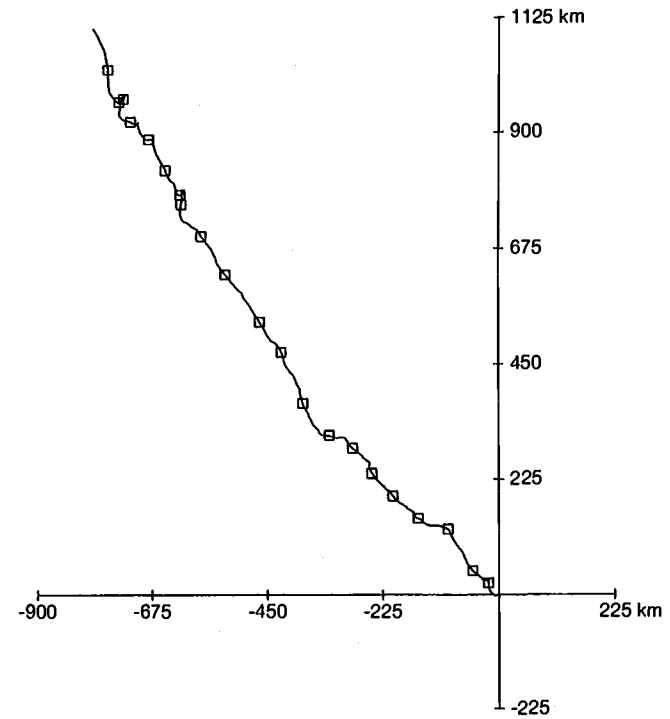


5720m at Kiwi 13. 9 Feb 91 - 29 Nov 92. RCM 6088/28.



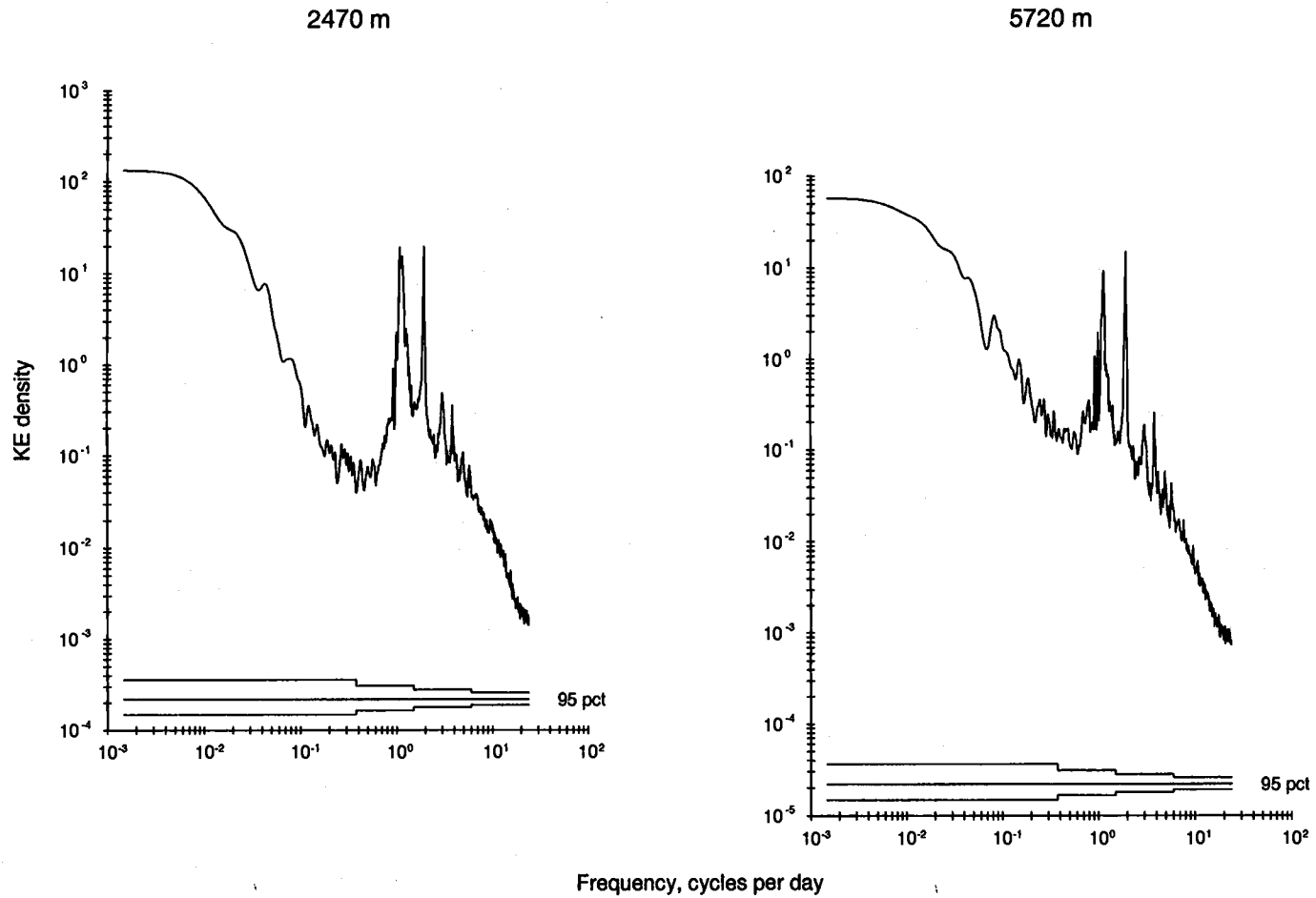


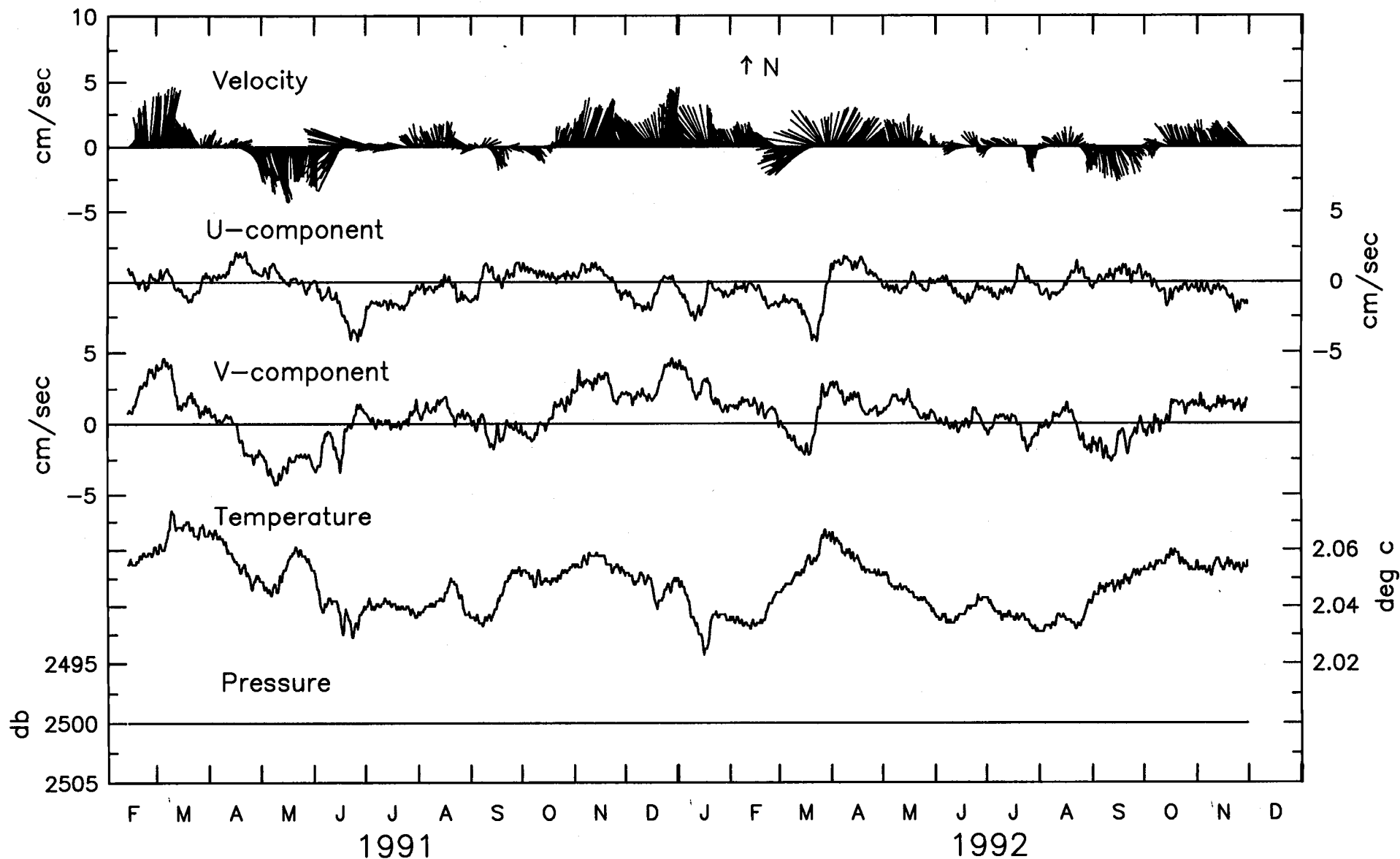
2470 m at KIWI 13. 659.5 days starting 0300 9 Feb 91.



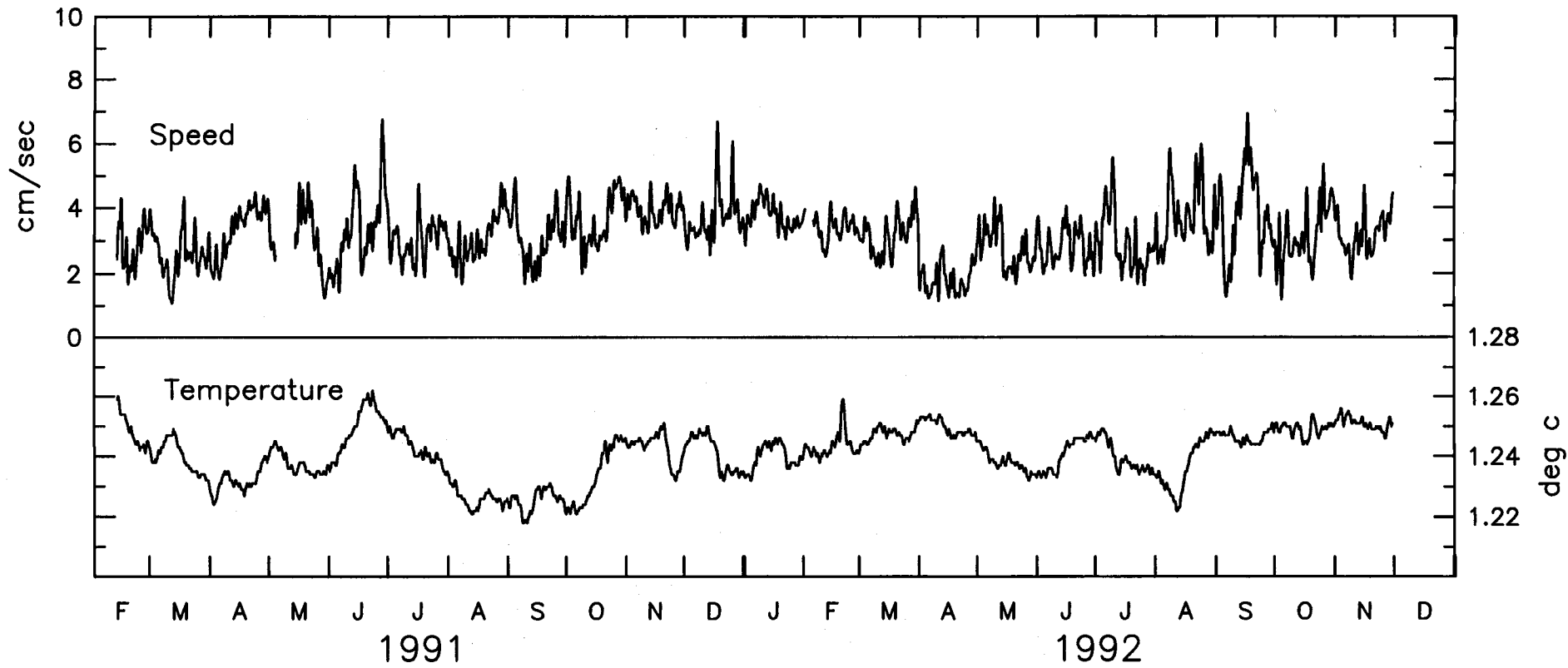
5720 m at KIWI 13. 659.5 days starting 0300 9 Feb 91.

Unfiltered Current (both components) Kiwi 13.

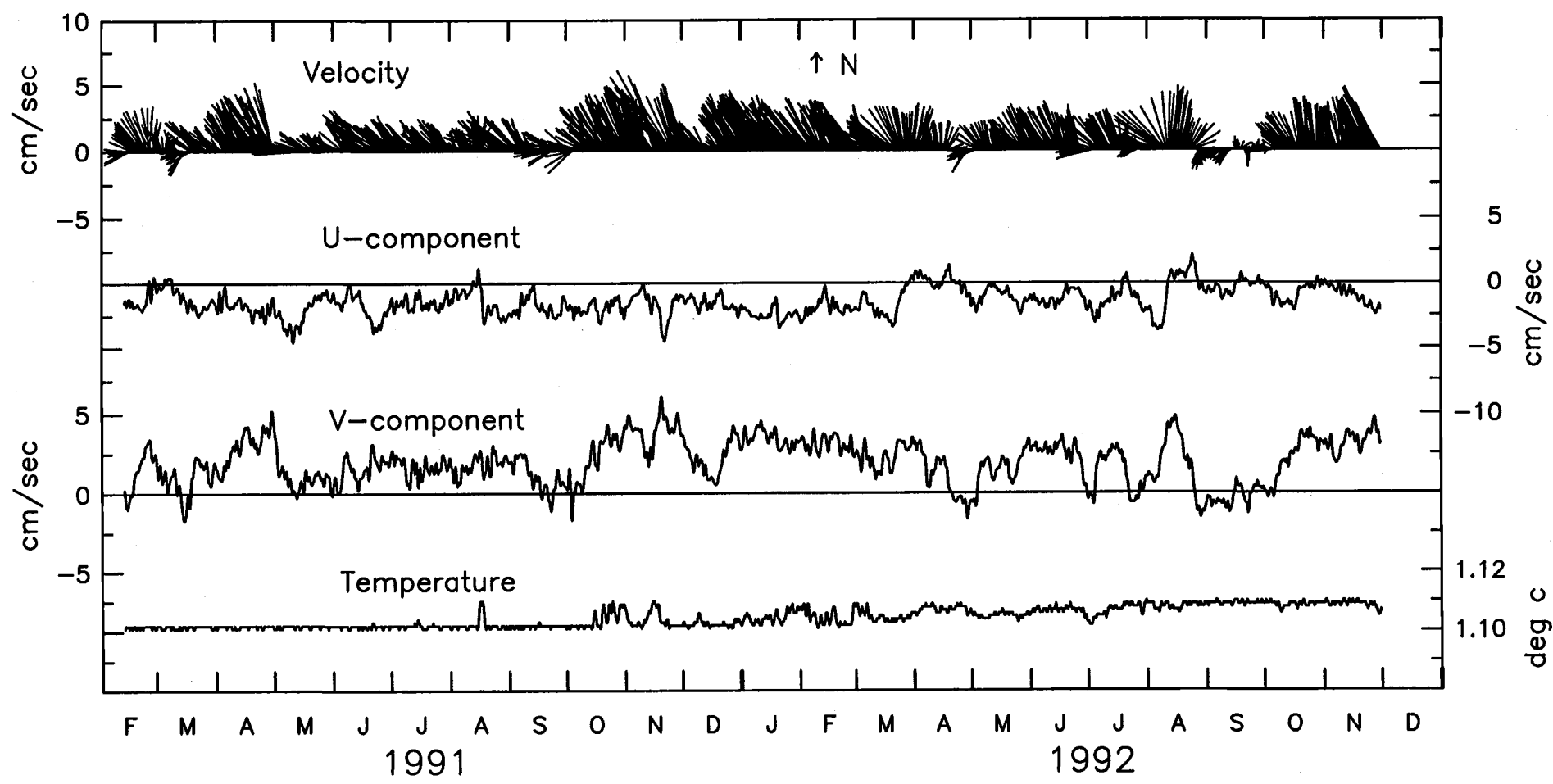




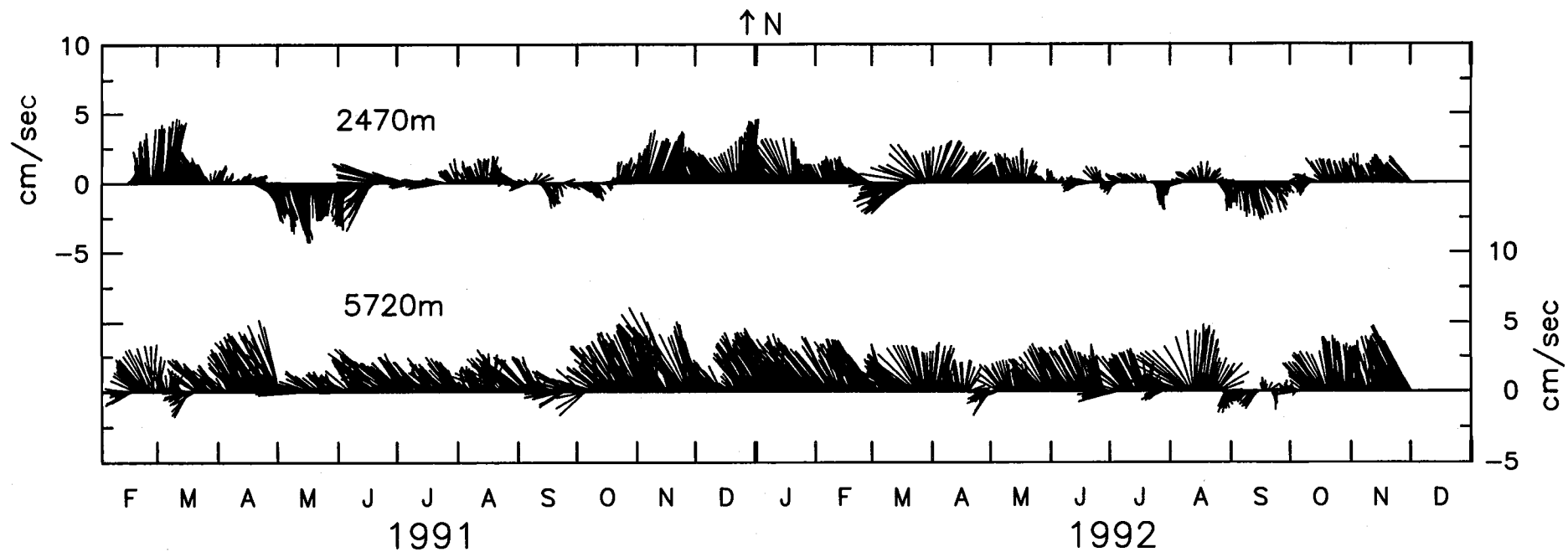
2470m at KIWI 13. LLP 6-hourly Data.



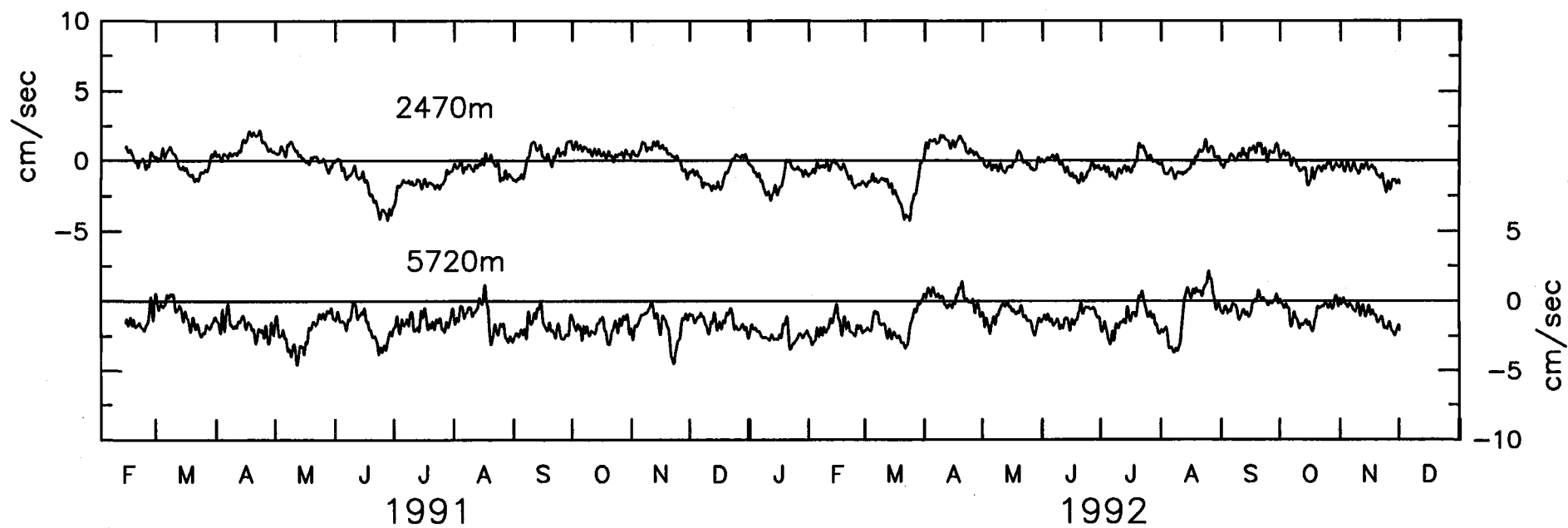
3970m at KIWI 13. LLP 6-hourly Data.



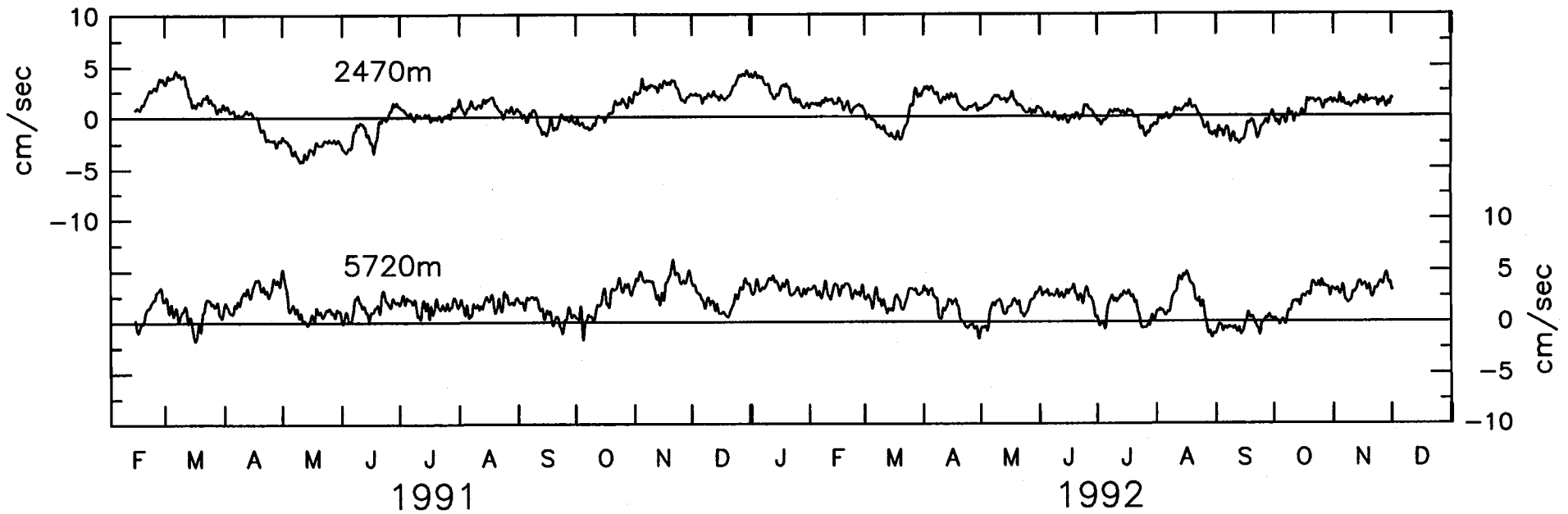
5720m at KIWI 13. LLP 6-hourly Data.



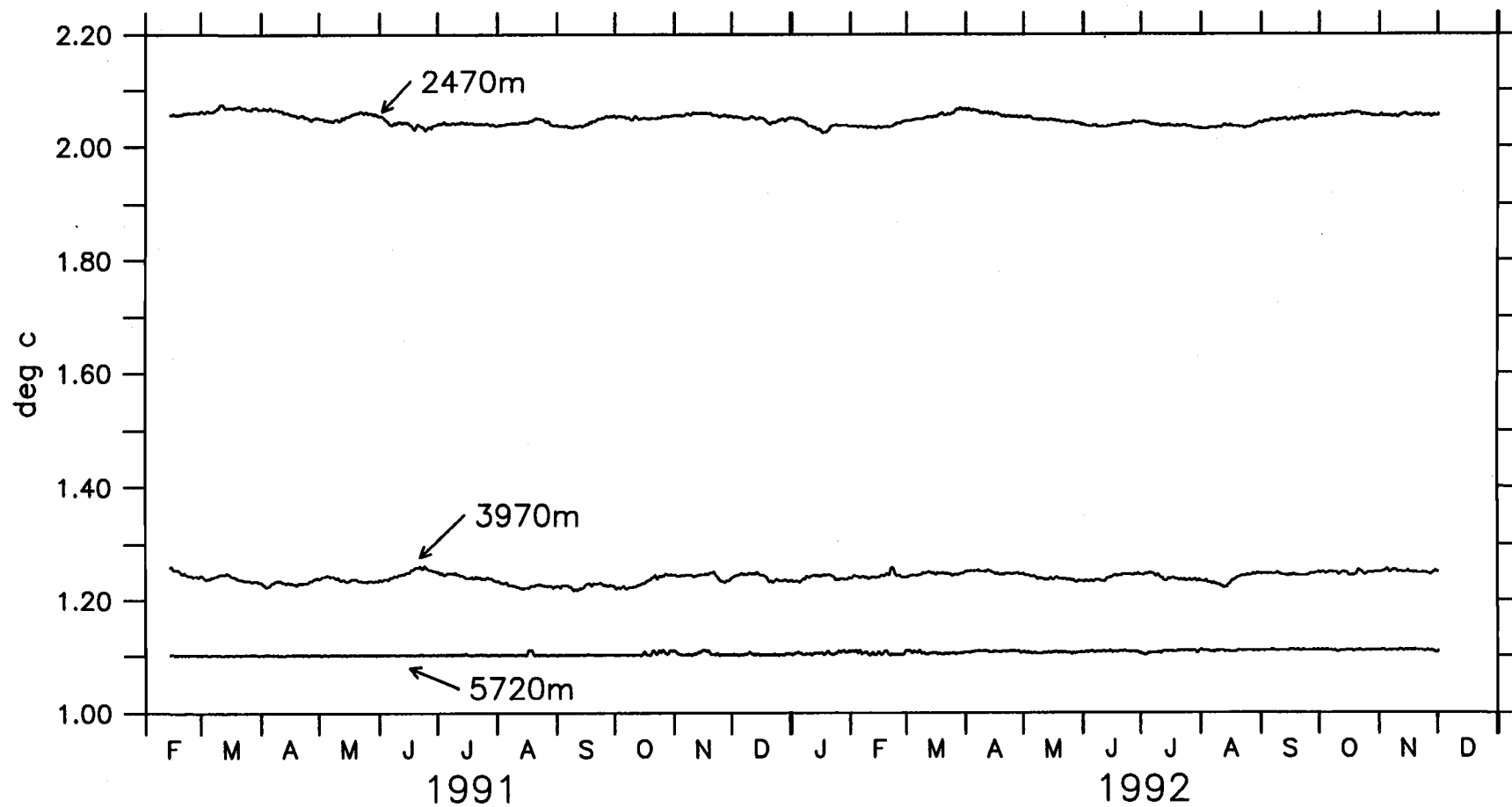
Velocity at KIWI 12. LLP 6-hourly Data.



U-component at KIWI 13. LLP 6-hourly Data.



V-component at KIWI 13. LLP 6-hourly Data.

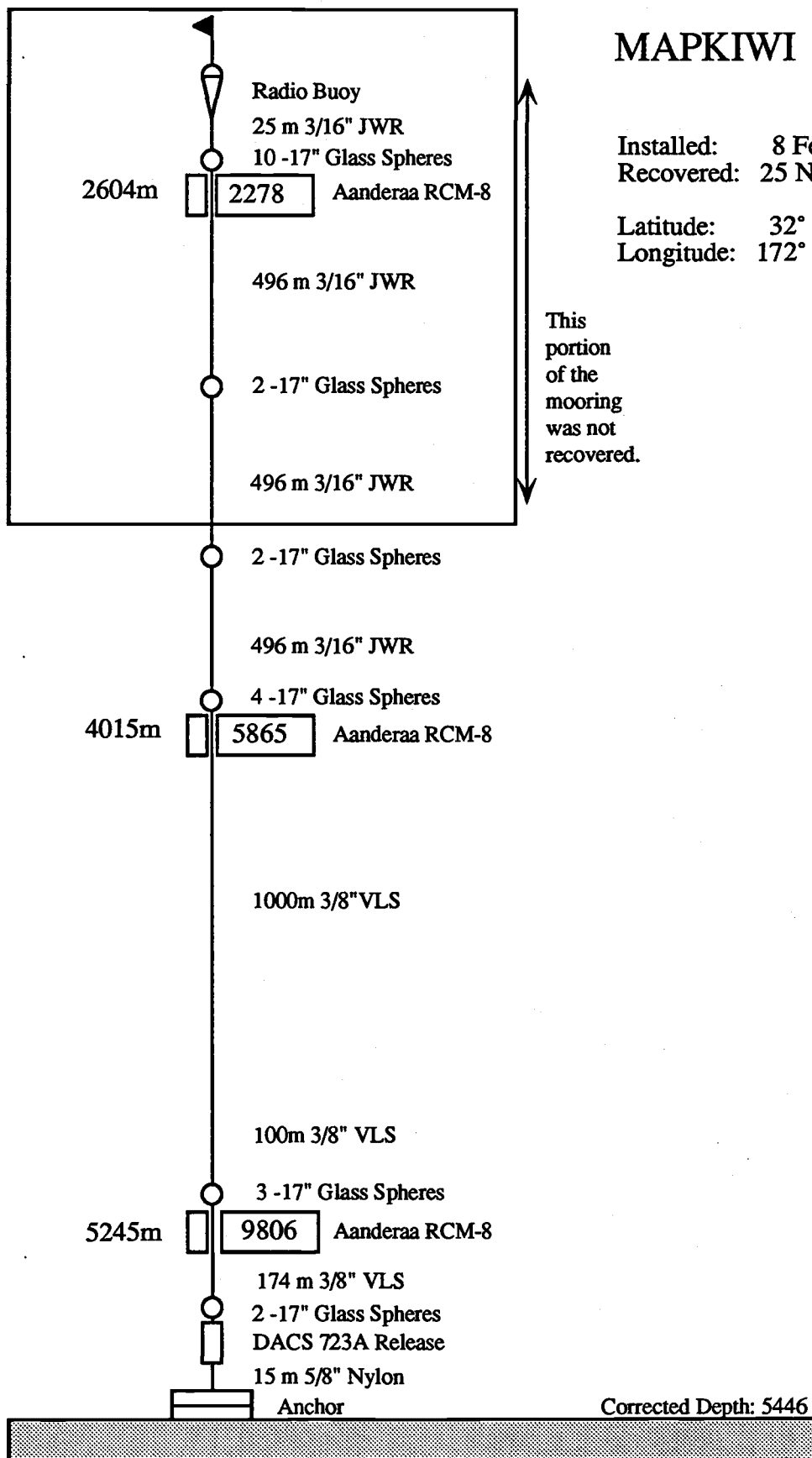


Temperature at KIWI 13. LLP 6-hourly Data.

MAPKIWI 14

Installed: 8 Feb 91
Recovered: 25 Nov 92

Latitude: 32° 29.97'S
Longitude: 172° 11.16'W



KIWI 14.

Position: 32° 29.97'S
 172° 11.16'W
 Depth of Water: 5446 m
 Mooring Set: 1819 8 February 1991
 Mooring Retrieved: 1611 25 November 1992
 Data Interval 2030 8 February 1991 - 1600 25 November 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2605	2278/
4105	5865/19
5245	9806/7

Instrument 2278 was sunk and lost during recovery.

Instrument 5865 recorded u, v, and temperature. The speed record stuck at threshold from 1830 3 April 1991 to the end of the record, 1600 25 November 1992, (lines 2589 - 31480).

Instrument 9806 recorded u, v, and temperature every half hour.

4105 meters at KIWI 14. 8 Feb 91 - 25 Nov 92. Tape 5865/19.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.28	6.88	1.42	2588
U, cm/sec	-6.87	-0.18	5.87	1.99	2588
V, cm/sec	-5.33	-0.38	5.53	1.76	2588
Temp, deg c	1.09	1.15	1.21	0.02	31480

5245 meters at KIWI 14. 8 Feb 91 - 25 Nov 92. Tape 9806/7.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.75	14.02	2.00	31480
U, cm/sec	-11.85	-0.54	9.50	3.31	31480
V, cm/sec	-11.36	0.03	12.27	2.60	31480
Temp, deg c	1.04	1.05	1.06	0.00	31480

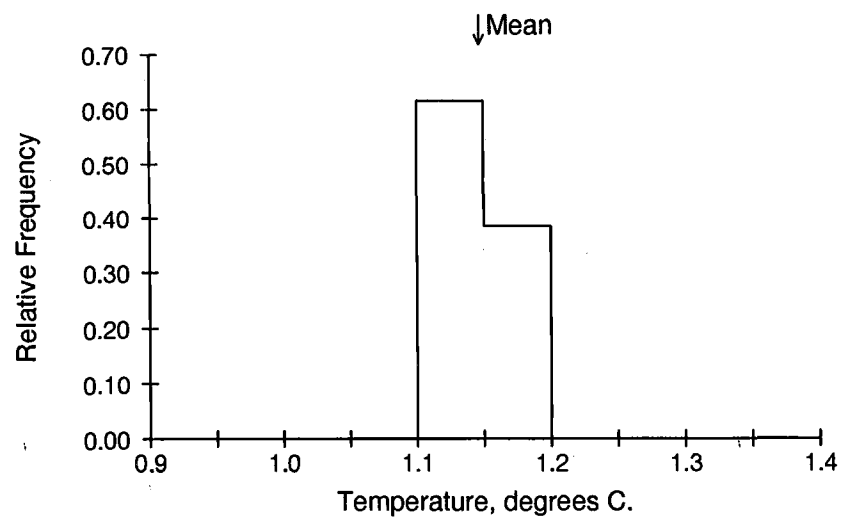
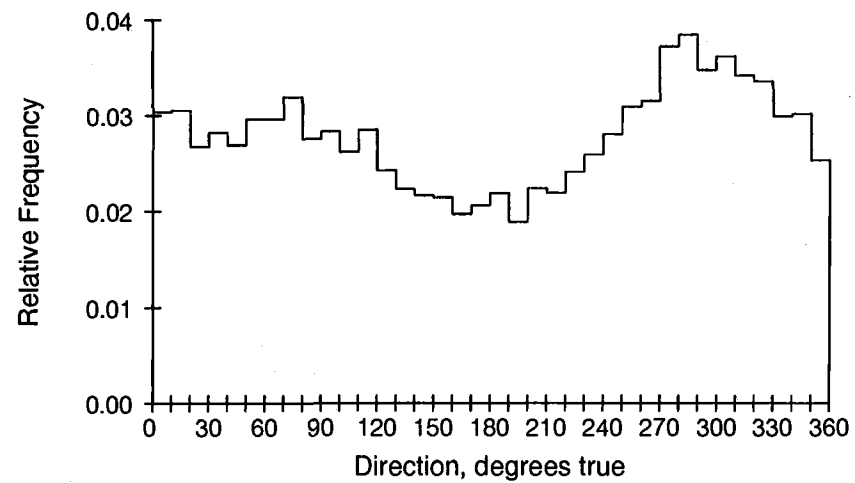
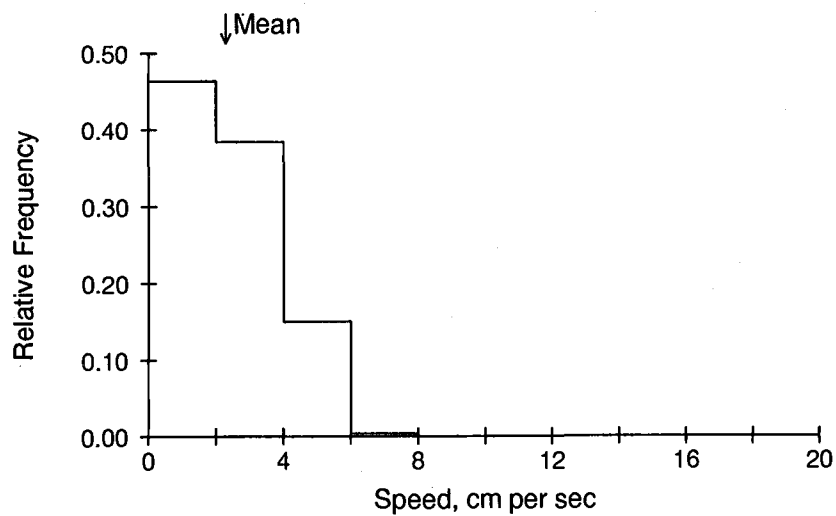
4105 meters at KIWI 14. 10 Feb 91 - 24 Nov 92. Tape 5865/19.

	min	mean	max	sd	num
Speed, cm/sec	0.03	0.97	2.05	0.43	205
U, cm/sec	-1.80	-0.18	1.38	0.63	205
V, cm/sec	-2.01	-0.37	1.15	0.74	205
Temp, deg c	1.12	1.15	1.19	0.01	2613

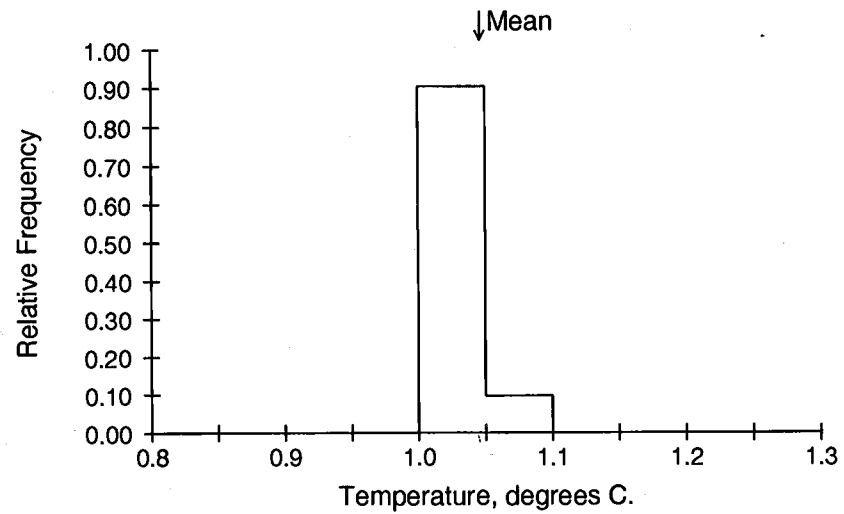
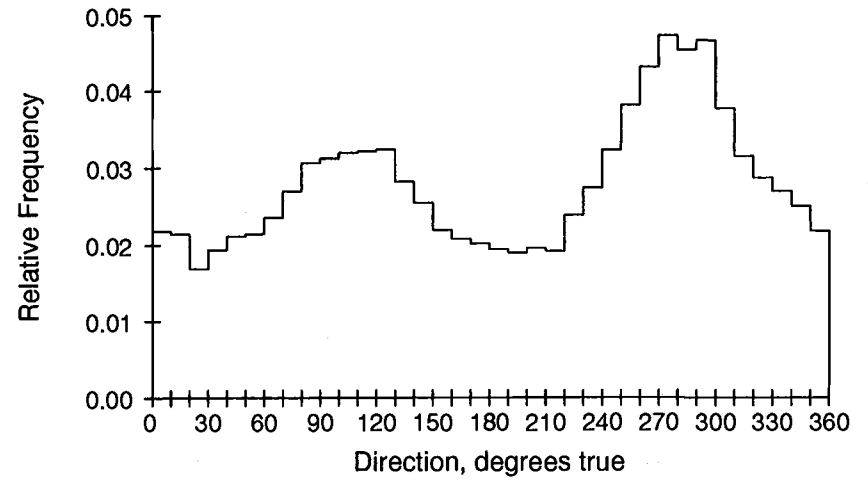
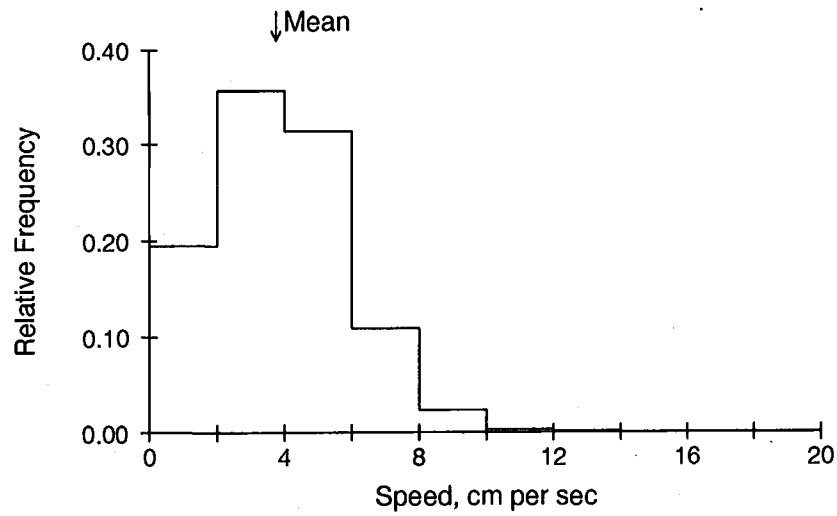
5245 meters at KIWI 14. 10 Feb 91 - 24 Nov 92. Tape 9806/7.

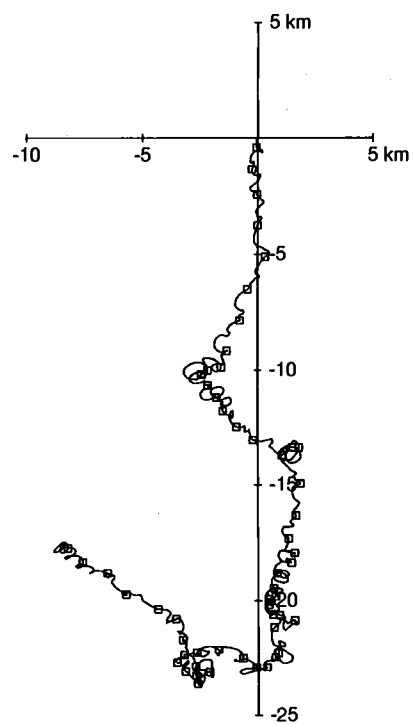
	min	mean	max	sd	num
Speed, cm/sec	0.04	2.20	8.49	1.46	2613
U, cm/sec	-6.69	-0.54	5.33	1.91	2613
V, cm/sec	-6.73	0.03	5.95	1.74	2613
Temp, deg c	1.04	1.05	1.06	0.00	2613

4105m at Kiwi 14. 8 Feb 91 - 25 Nov 92. RCM 5865/19.

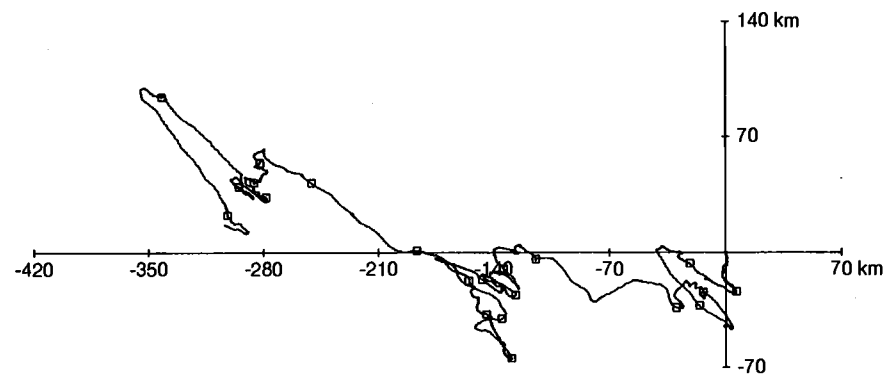


5245m at Kiwi 14. 8 Feb 91 - 25 Nov 92. RCM 9806/7.



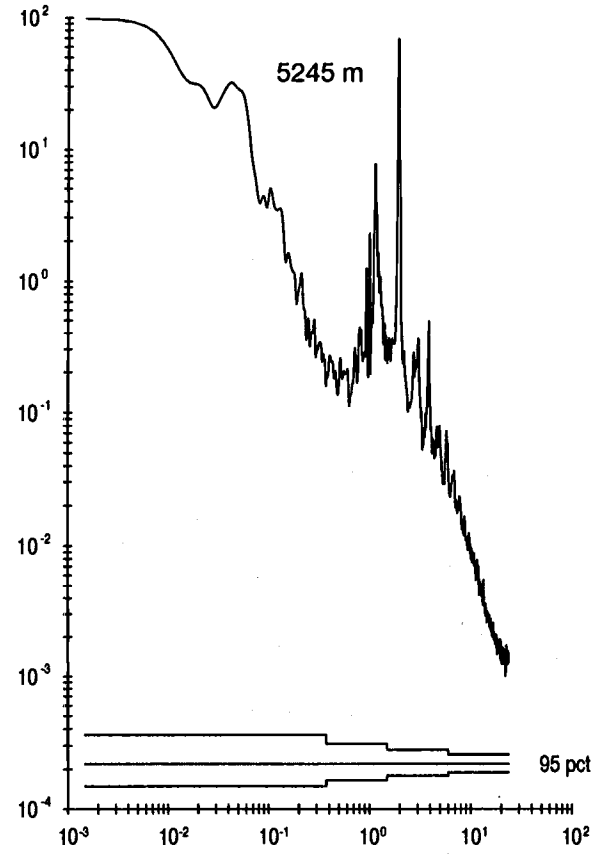
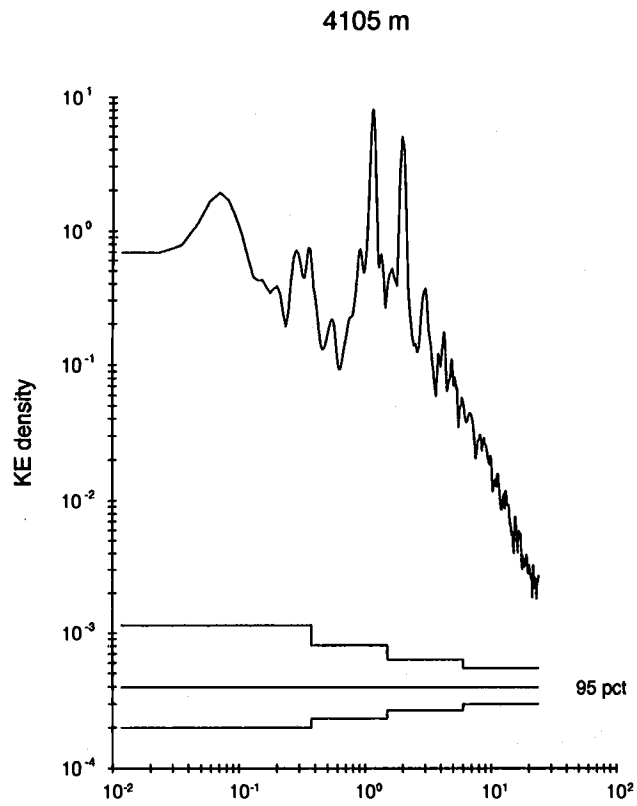


4105 m at KIWI 14. 53.9 days starting 2030 8 Feb 91.

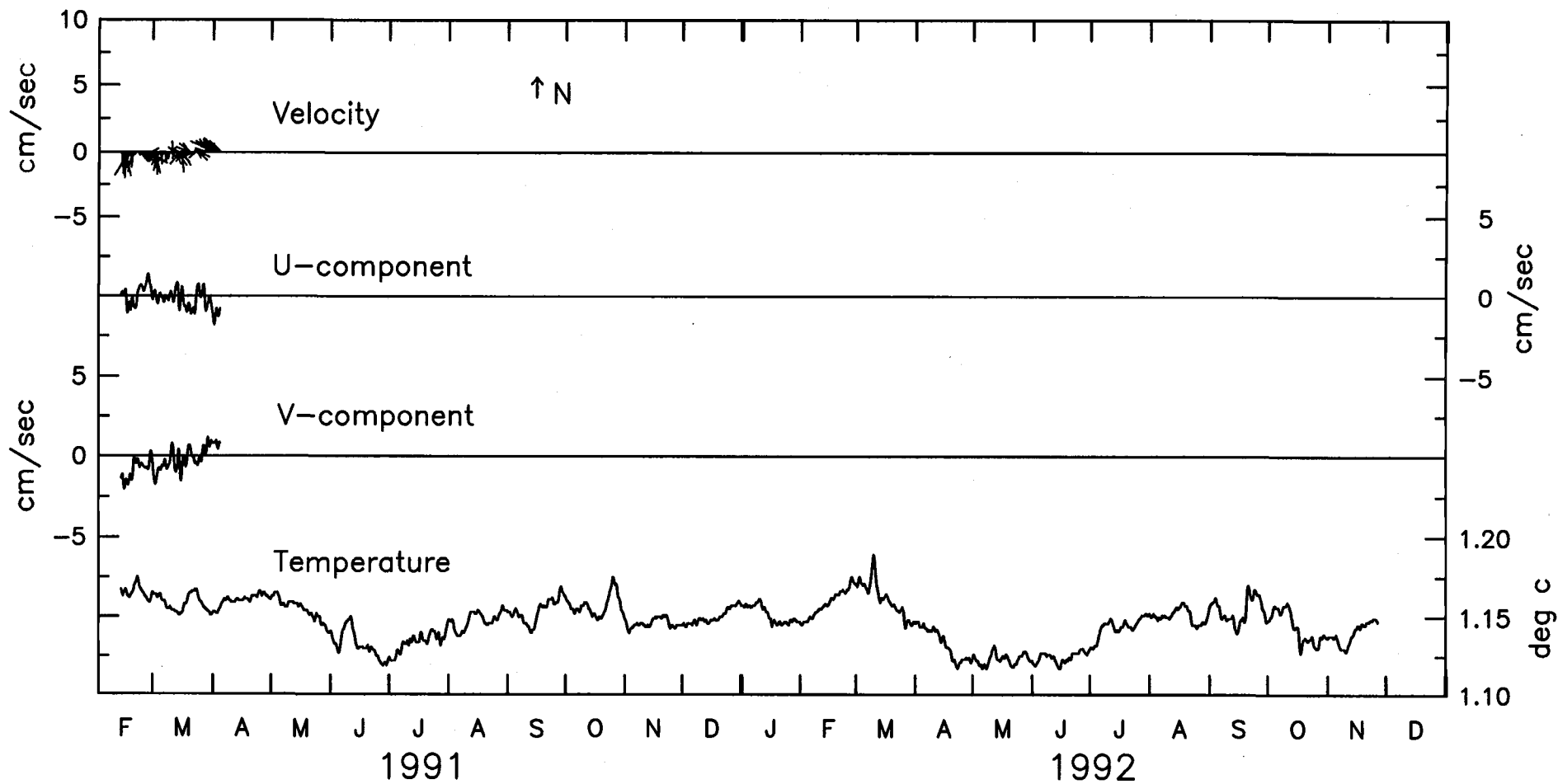


5245 m at KIWI 14. 655.8 days starting 2000 8 Feb 91.

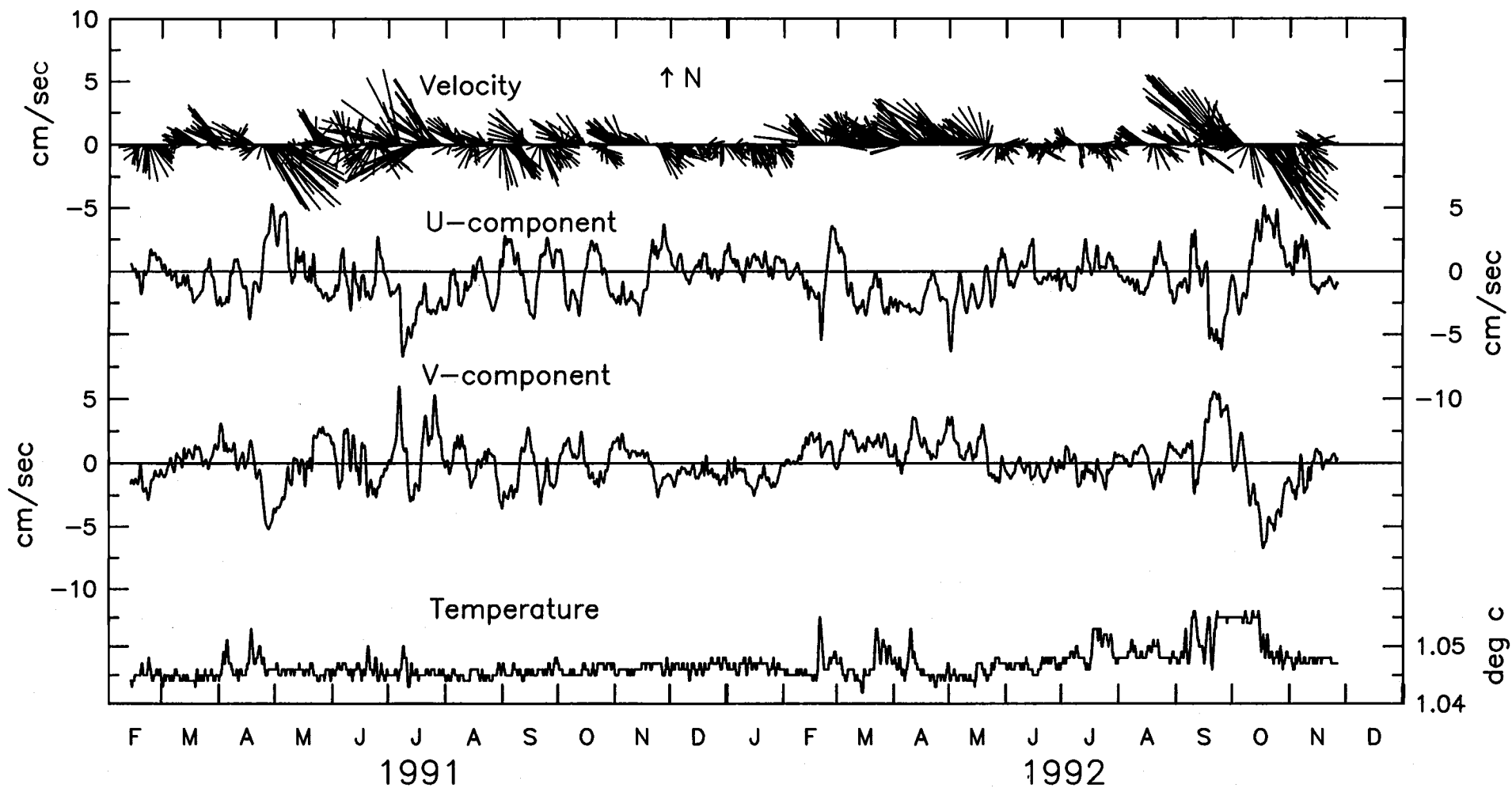
Unfiltered Current (both components) Kiwi 14.



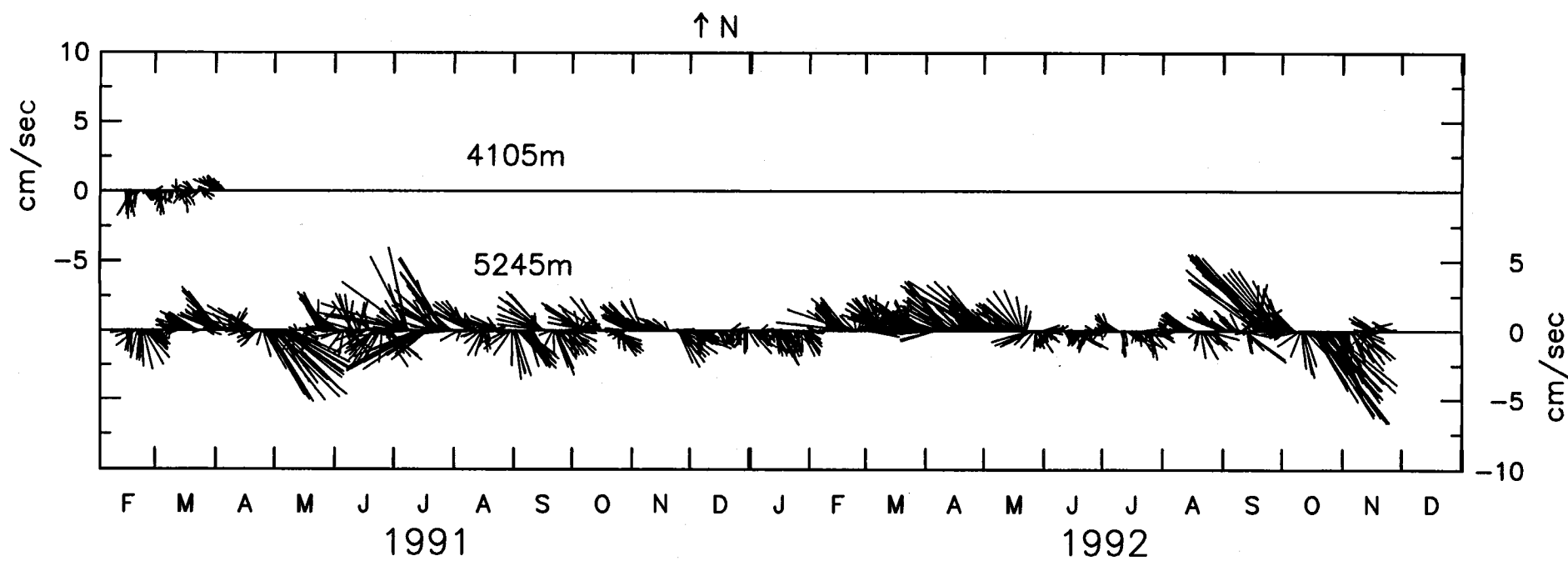
Frequency, cycles per day



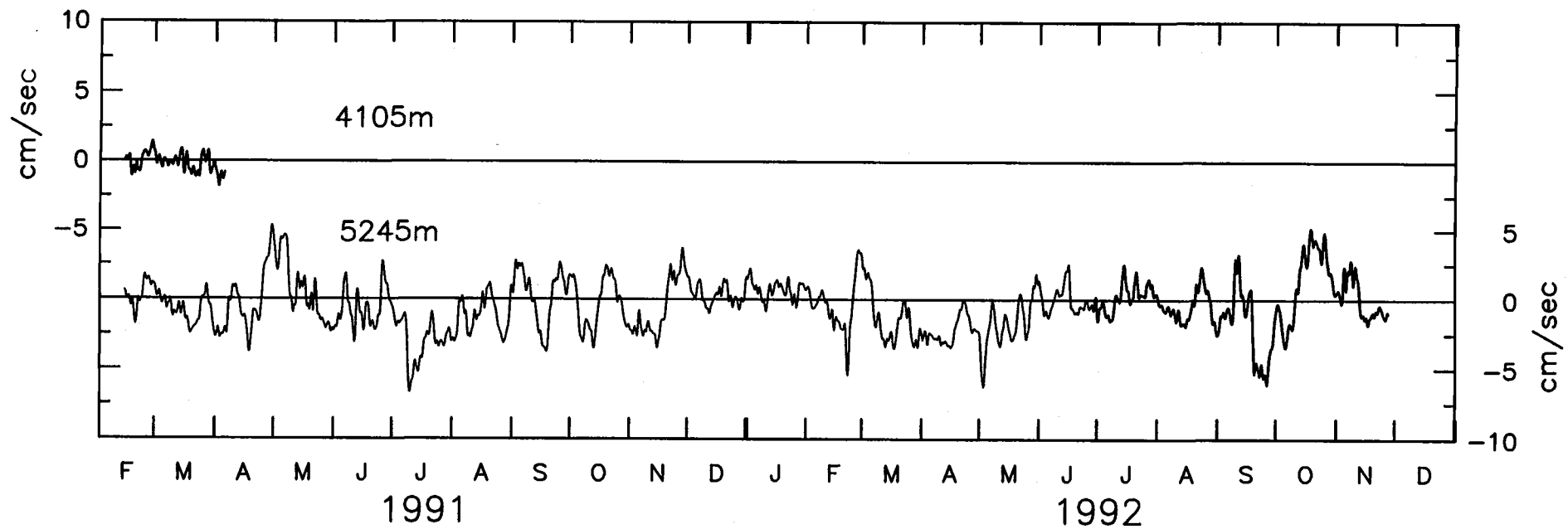
4105m at KIWI 14. LLP 6-hourly Data.



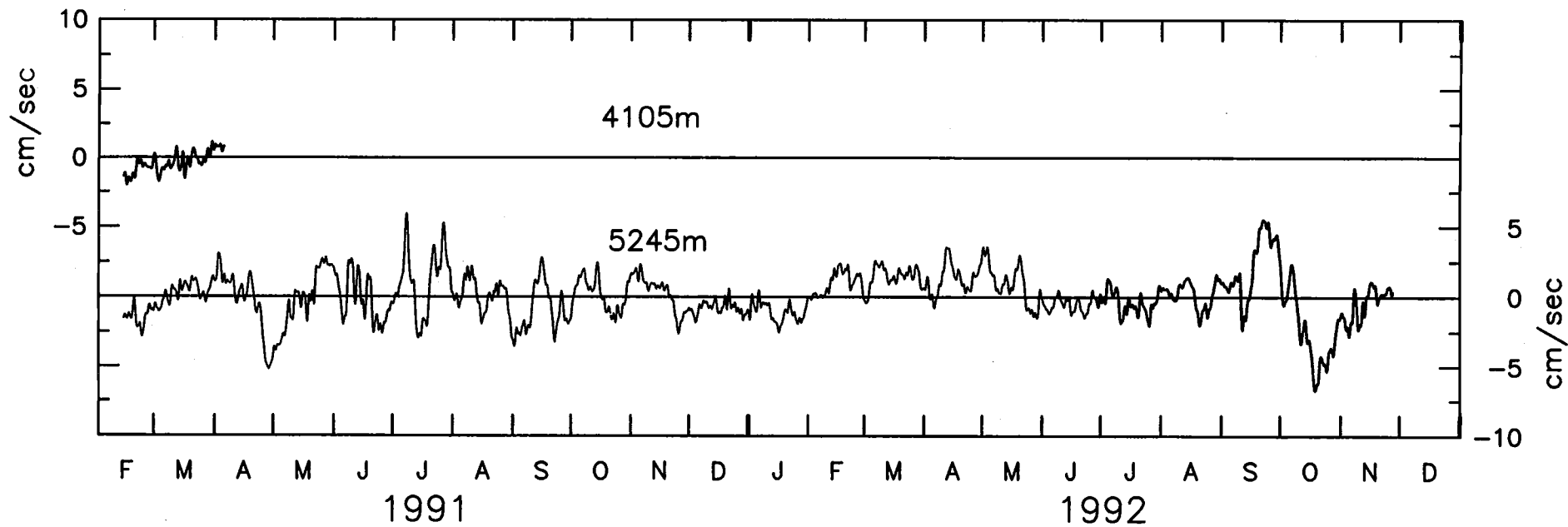
5245m at KIWI 14. LLP 6-hourly Data.



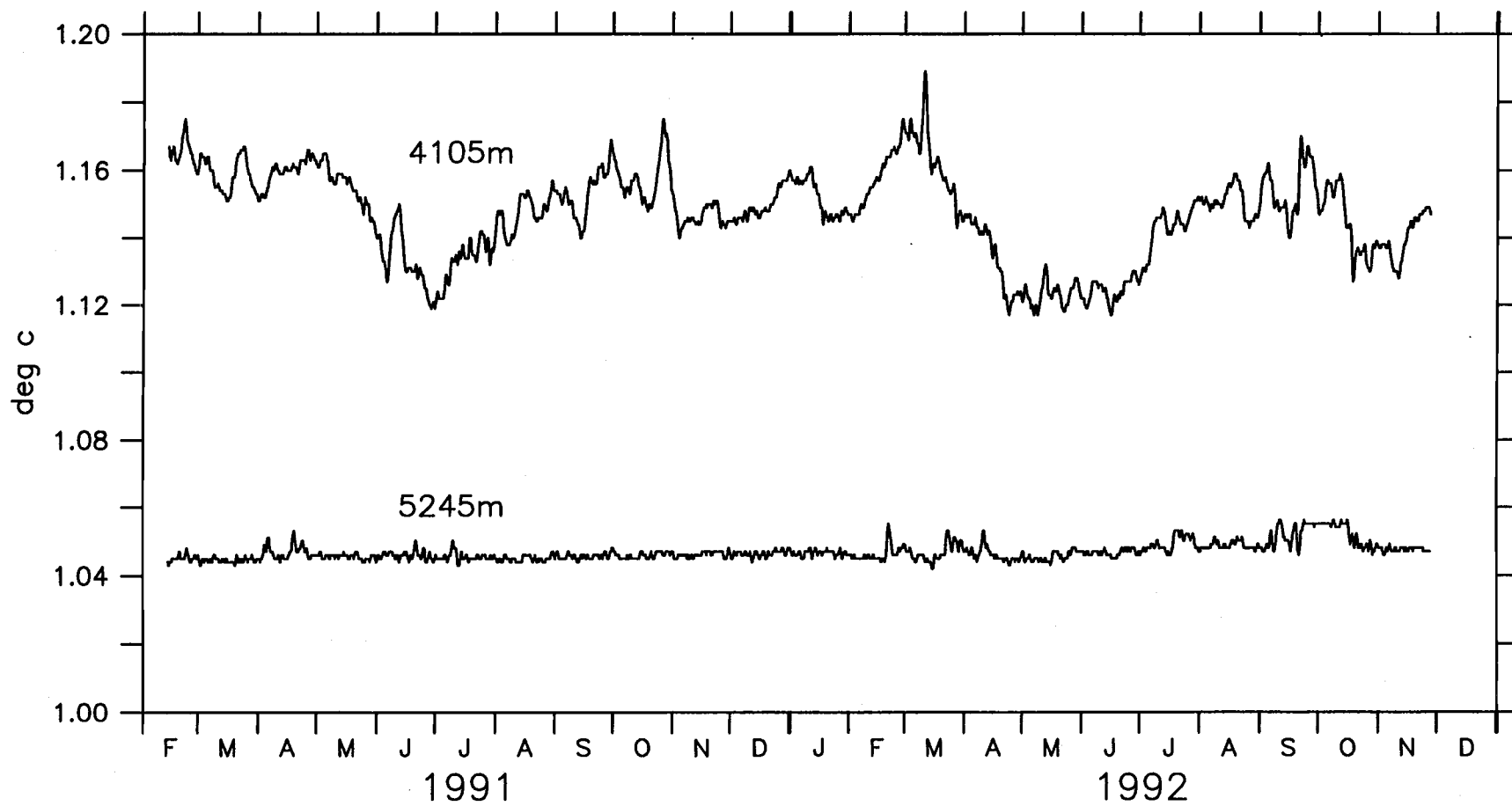
Velocity at KIWI 14. LLP 6-hourly Data.



U-component at KIWI 14. LLP 6-hourly Data.



V-component at KIWI 14. LLP 6-hourly Data.

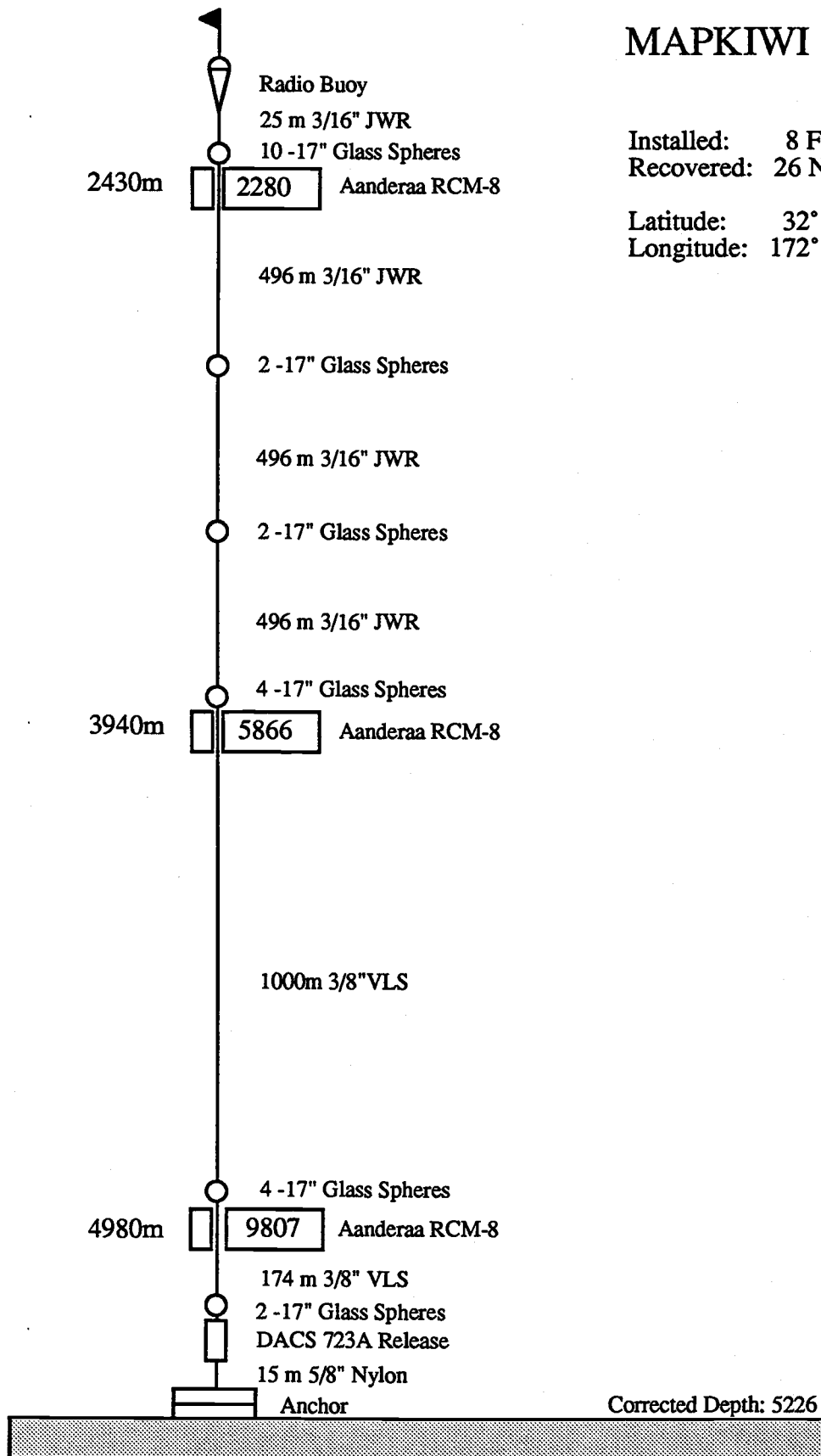


Temperature at KIWI 14. LLP 6-hourly Data.

MAPKIWI 15

Installed: 8 Feb 91
 Recovered: 26 Nov 92

Latitude: 32° 31.35'S
 Longitude: 172° 24.04'W



KIWI 15.

Position: 32° 31.35'S
171° 24.04'W
Depth of Water: 5226
Mooring Set: 0546 8 February 1991
Mooring Retrieved: 0001 26 November 1992
Data Interval 0800 8 February 1991 - 2330 25 November 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2430	2280/46
3940	5866/18
4980	9807/6

Instrument 2280 recorded u, and v every thirty minutes. The temperature sensor failed and there were no temperatures recorded.

Instrument 5866 recorded u, v, and temperature every thirty minutes.

Instrument 9807 recorded u, v, and temperature every thirty minutes.

2430 meters at KIWI 15. 8 Feb 91 - 25 Nov 92. Tape 2280/46.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.53	10.87	1.88	31520
U, cm/sec	-9.99	0.14	9.72	2.34	31520
V, cm/sec	-8.95	-0.45	8.22	2.06	31520
Pressure, db	2462.08	2466.31	2469.58	1.38	31520

3940 meters at KIWI 15. 8 Feb 91 - 25 Nov 92. Tape 5866/18.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.40	11.44	1.93	31520
U, cm/sec	-10.11	-1.04	10.17	2.58	31520
V, cm/sec	-8.00	1.36	10.75	2.38	31520
Temp, deg c	1.16	1.24	1.33	0.02	31520

4980 meters at KIWI 15. 8 Feb 91 - 25 Nov 92. Tape 9807/6.

	min	mean	max	sd	num
Speed, cm/sec	0.93	4.80	18.63	2.73	31521
U, cm/sec	-16.09	-2.19	8.58	3.04	31521
V, cm/sec	-6.29	2.96	14.35	2.76	31521
Temp, deg c	1.01	1.02	1.05	0.01	31521

2430 meters at KIWI 15. 9 Feb 91 - 24 Nov 92. Tape 2280/46.

	min	mean	max	sd	num
Speed, cm/sec	0.05	1.58	4.52	0.86	2616
U, cm/sec	-3.89	0.14	3.85	1.33	2616
V, cm/sec	-3.24	-0.45	3.28	1.11	2616
Temp, deg c	2464.48	2466.31	2469.83	1.31	2616

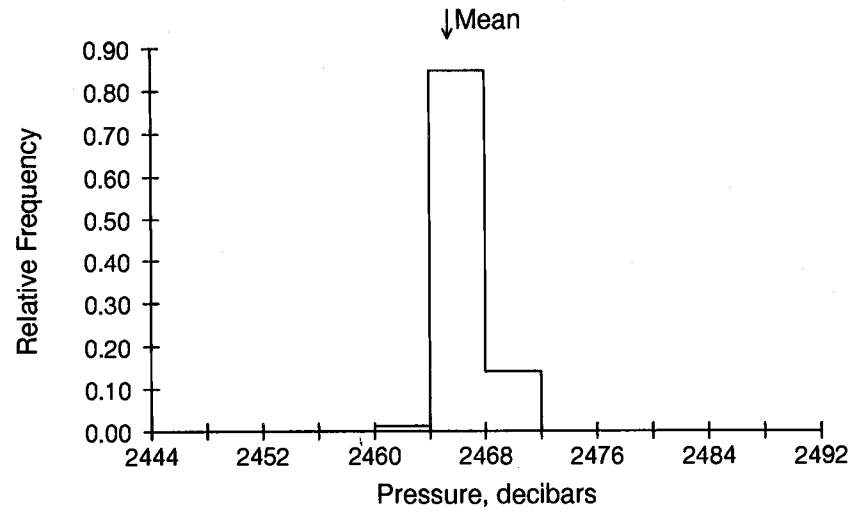
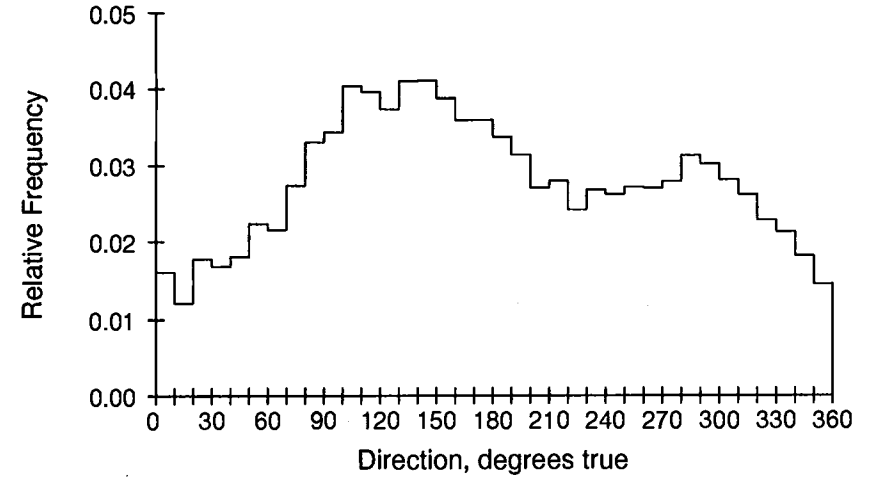
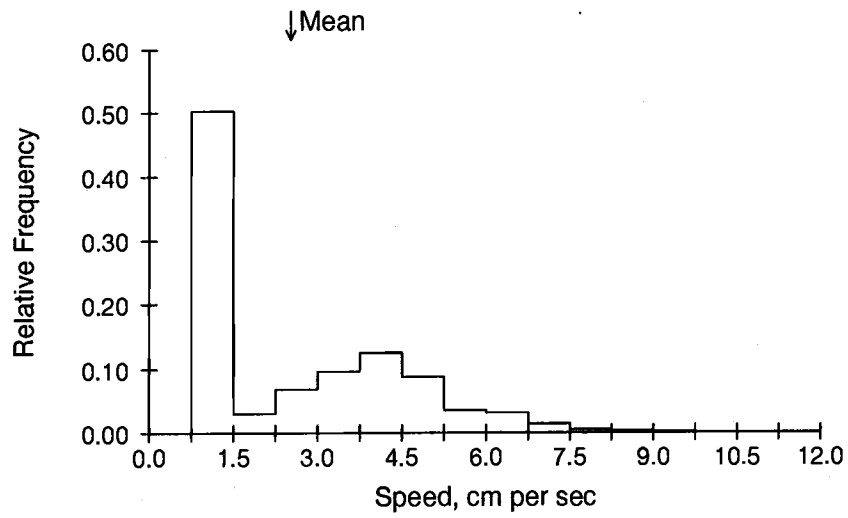
3940 meters at KIWI 15. 9 Feb 91 - 24 Nov 92. Tape 5866/18.

	min	mean	max	sd	num
Speed, cm/sec	0.04	2.21	6.80	1.17	2616
U, cm/sec	-5.32	-1.04	2.82	1.17	2616
V, cm/sec	-5.44	1.35	6.55	1.41	2616
Temp, deg c	1.20	1.24	1.30	0.02	2616

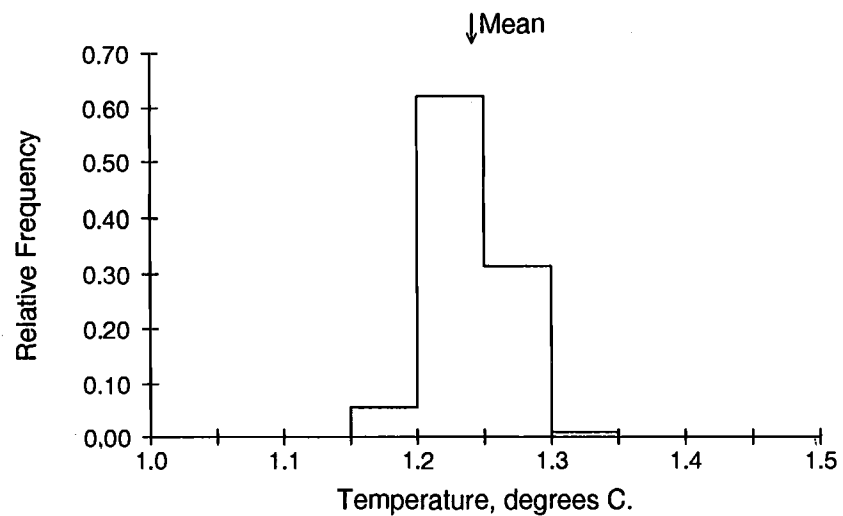
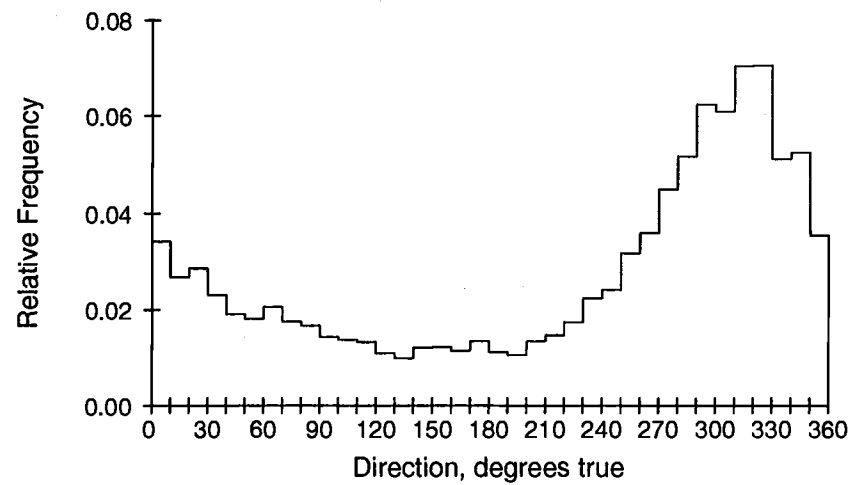
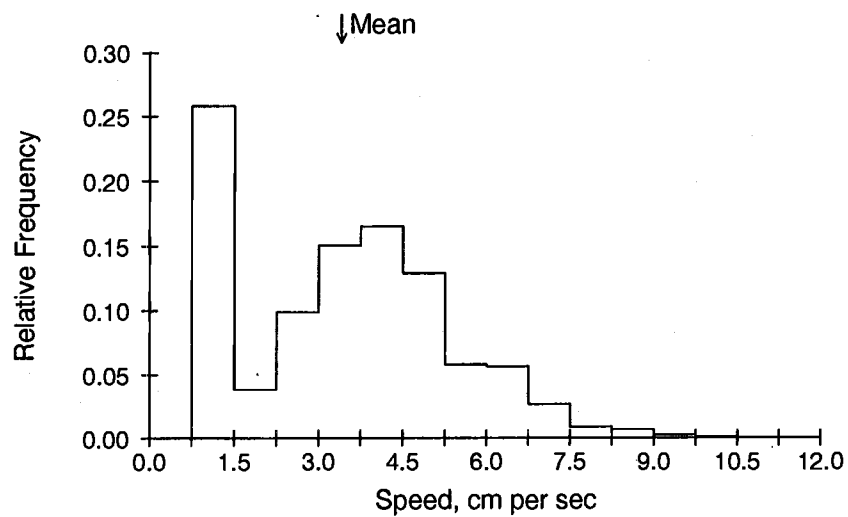
4980 meters at KIWI 15. 9 Feb 91 - 24 Nov 92. Tape 9807/6.

	min	mean	max	sd	num
Speed, cm/sec	0.05	4.08	13.37	2.49	2616
U, cm/sec	-10.43	-2.18	3.97	2.12	2616
V, cm/sec	-1.80	2.96	10.70	2.20	2616
Temp, deg c	1.01	1.02	1.03	0.00	2616

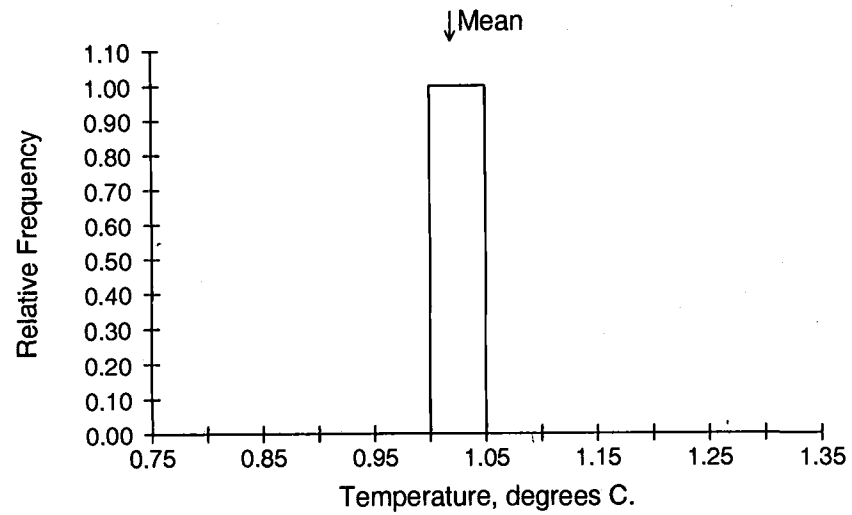
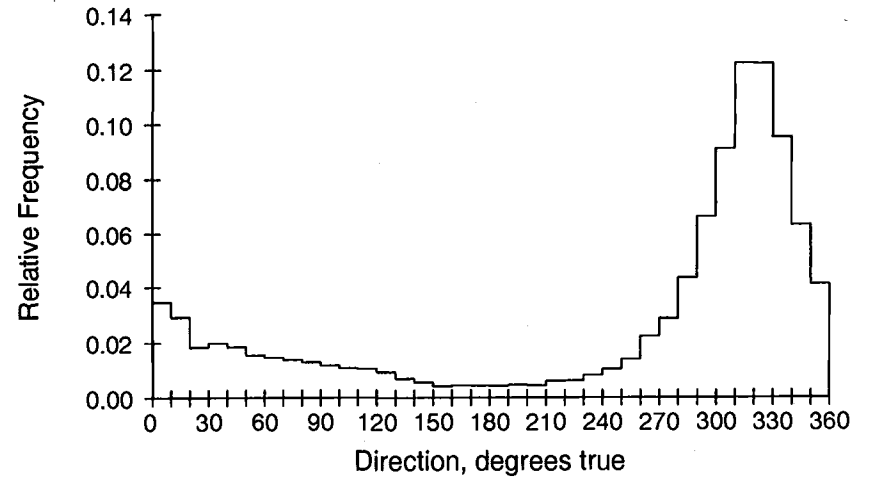
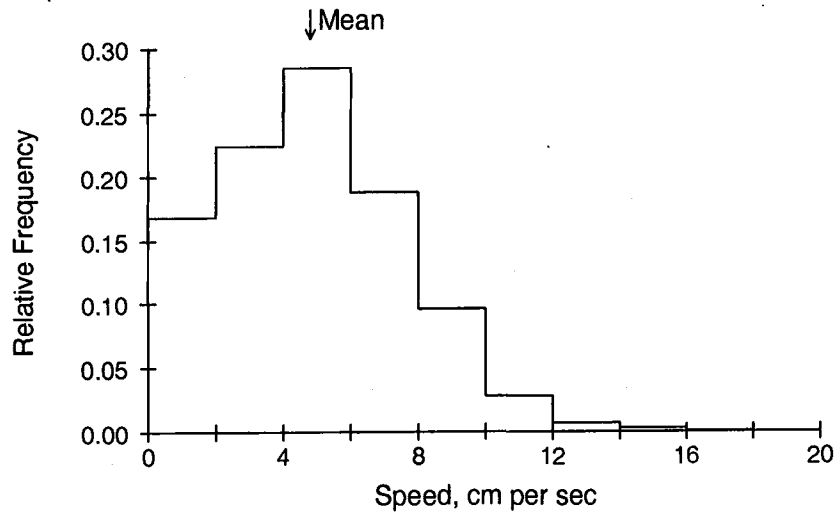
2430m at Kiwi 15. 8 Feb 91 - 26 Nov 92. RCM 2280/46.

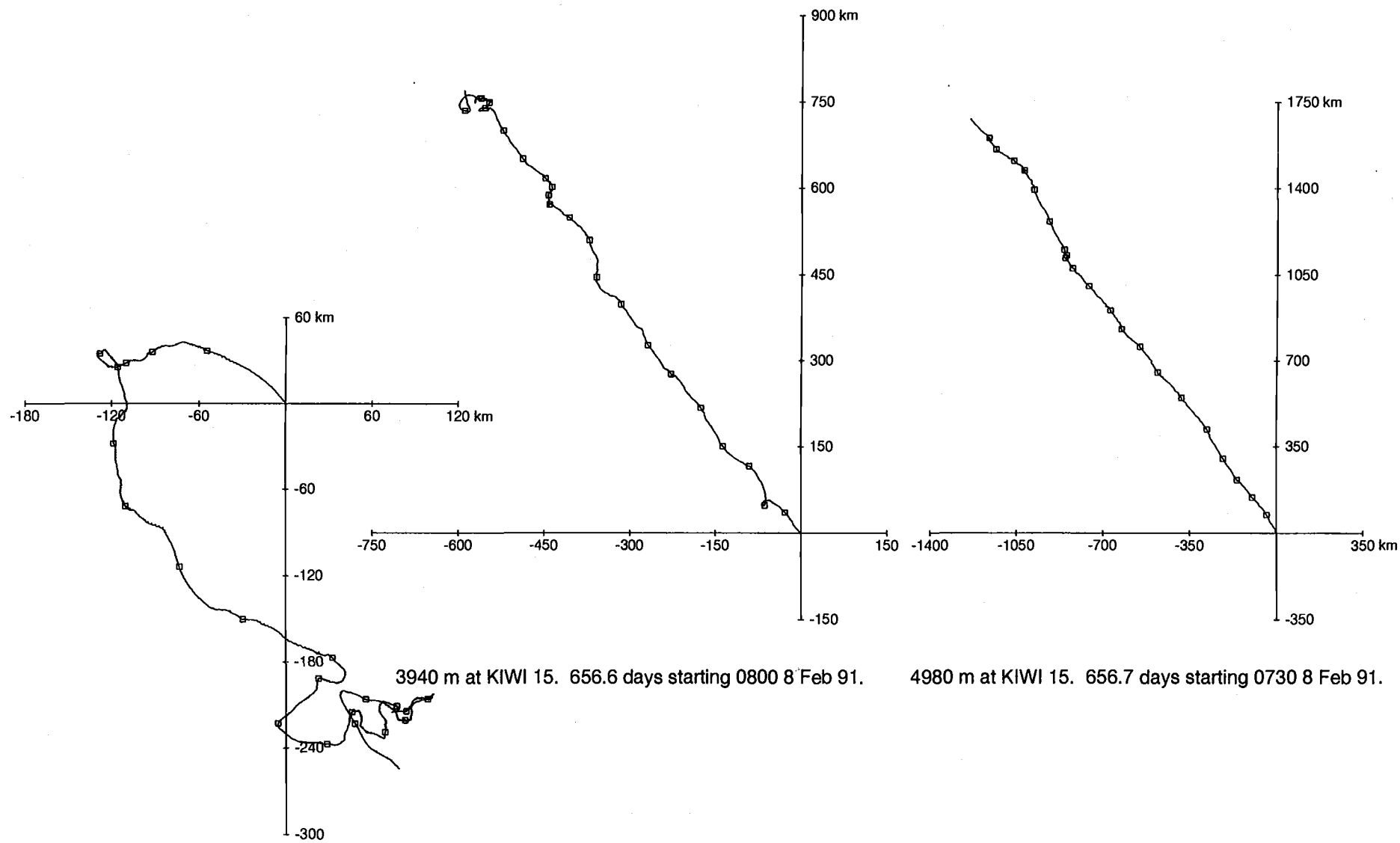


3940m at Kiwi 15. 8 Feb 91 - 26 Nov 92. RCM 5866/18.



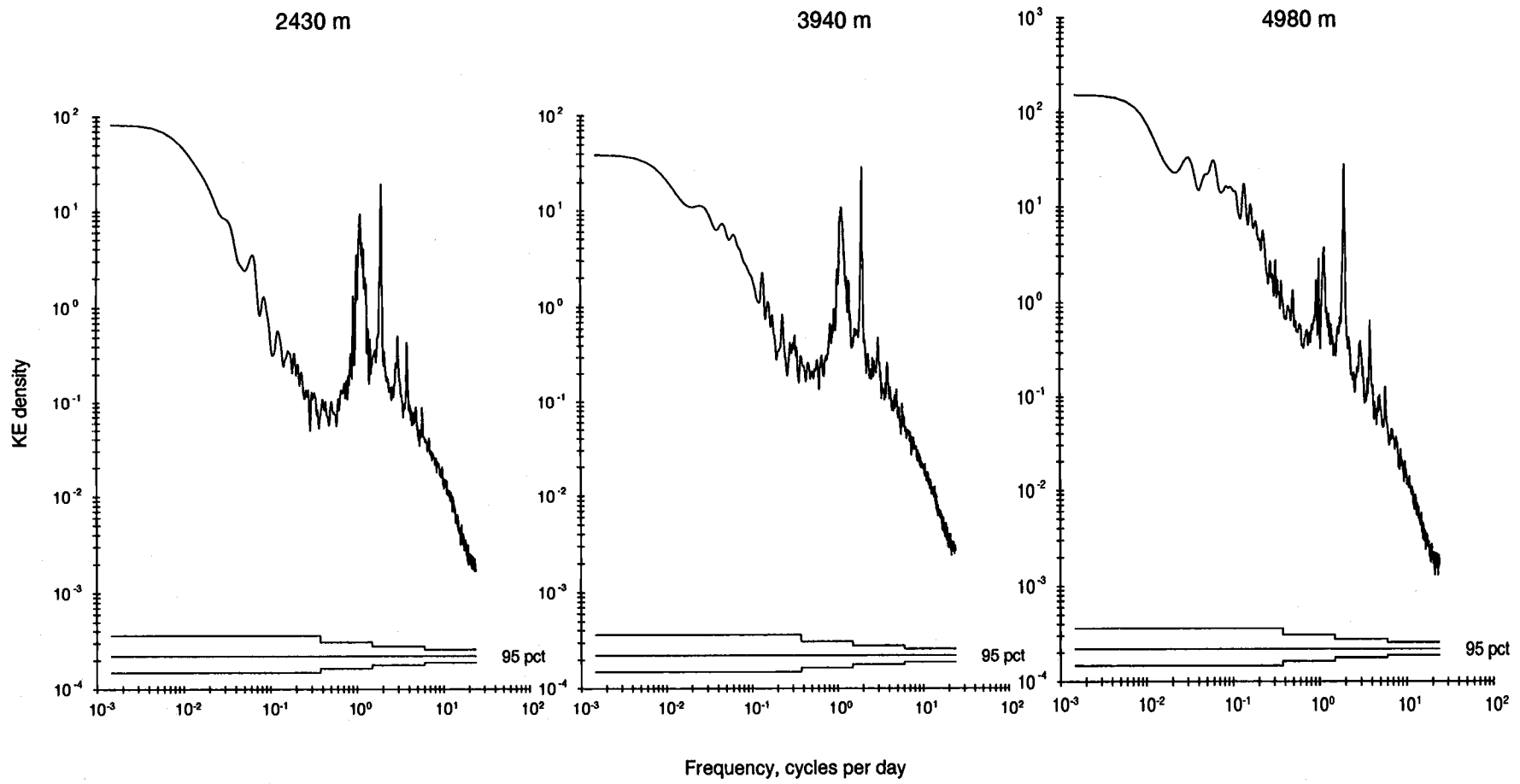
4980m at Kiwi 15. 8 Feb 91 - 25 Nov 92. RCM 9807/6.

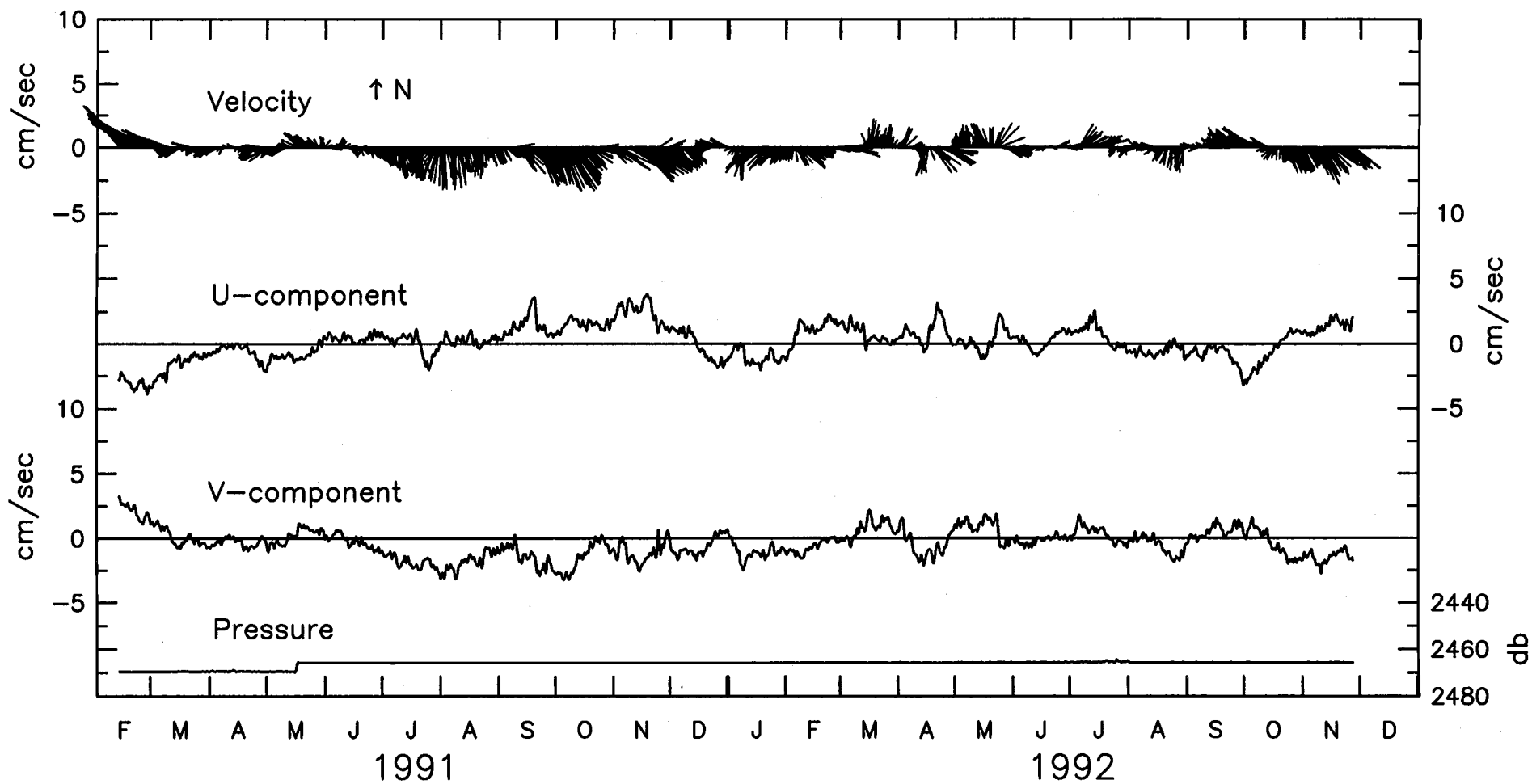




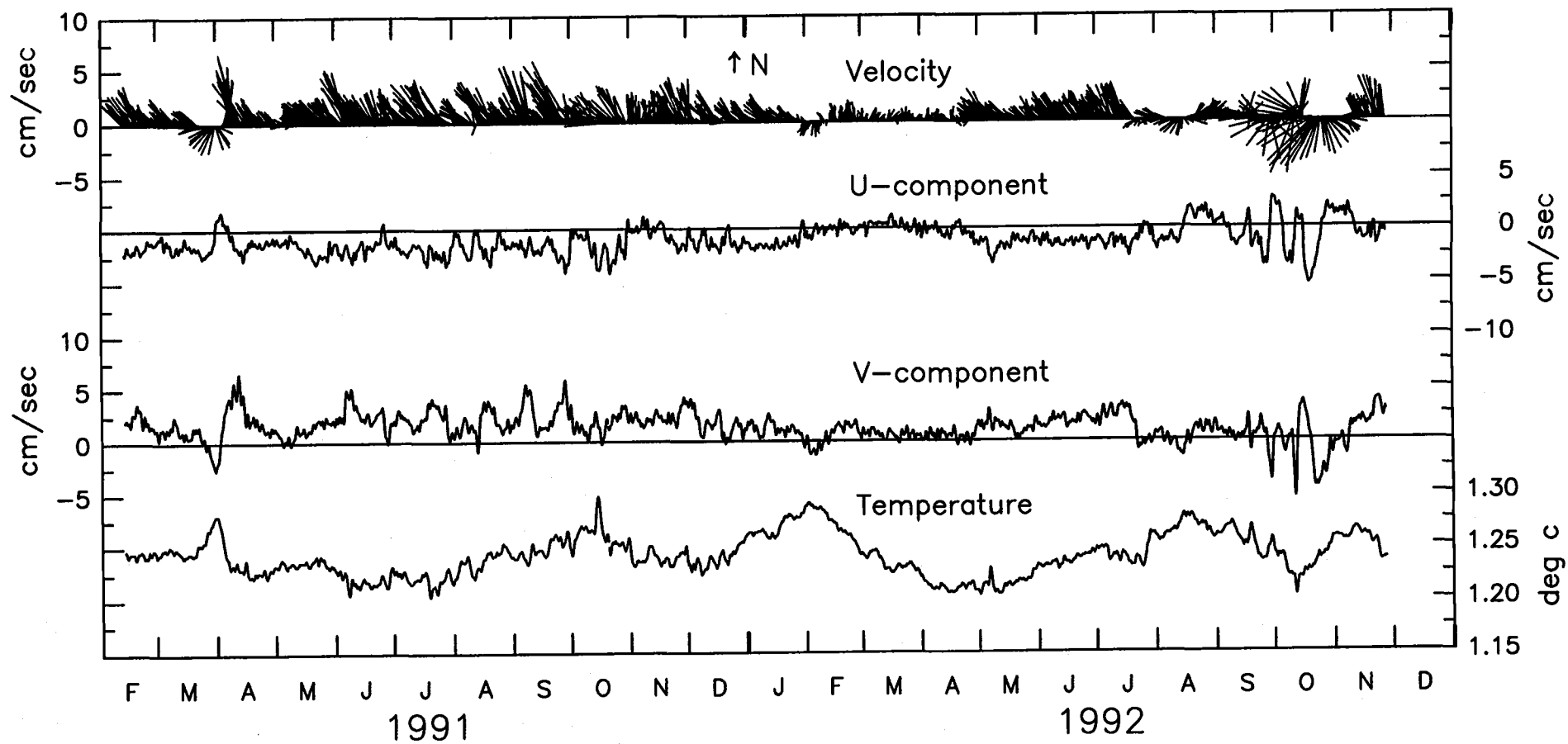
2430 m at KIWI 15. 656.6 days starting 0800 8 Feb 91.

Unfiltered Current (both components) Kiwi 15.

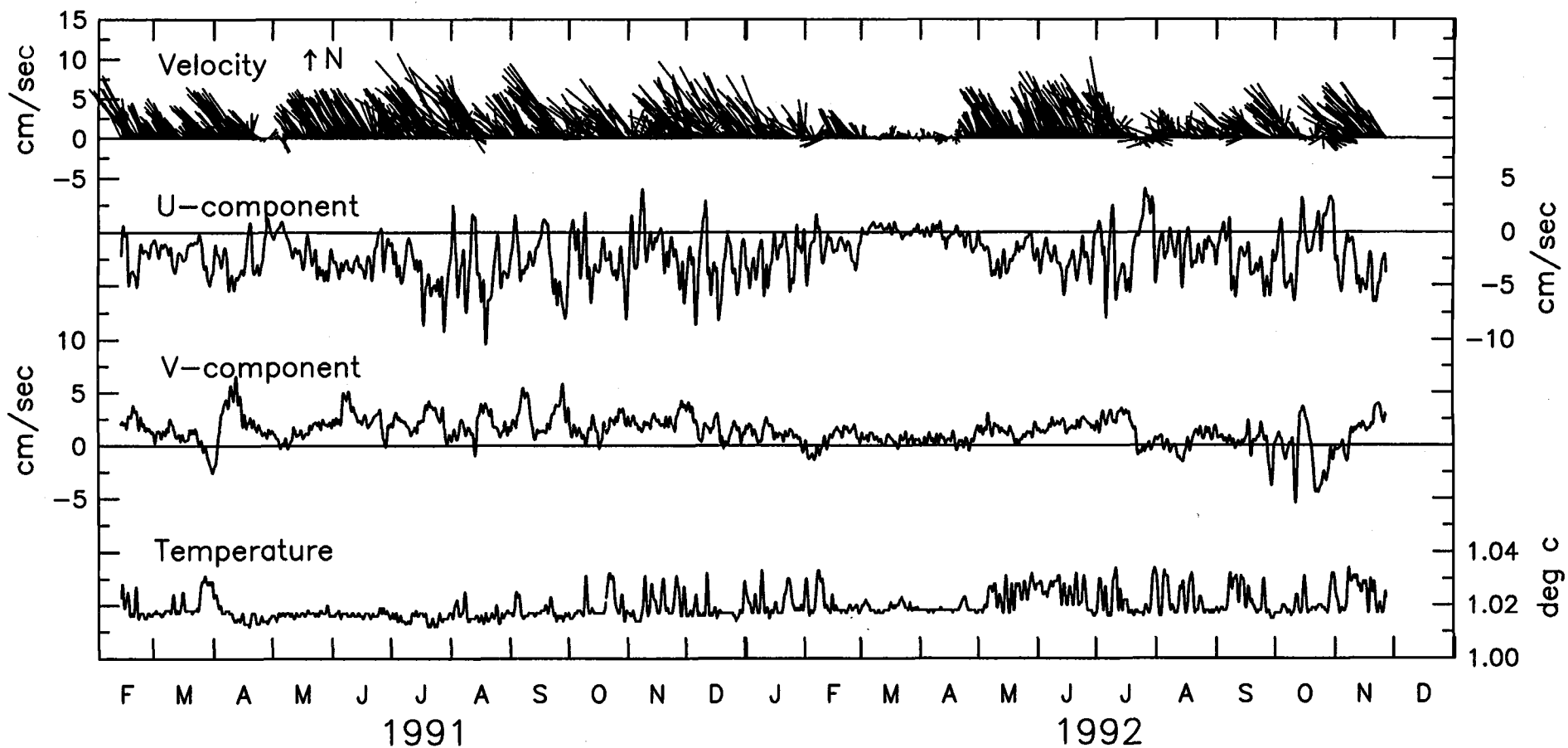




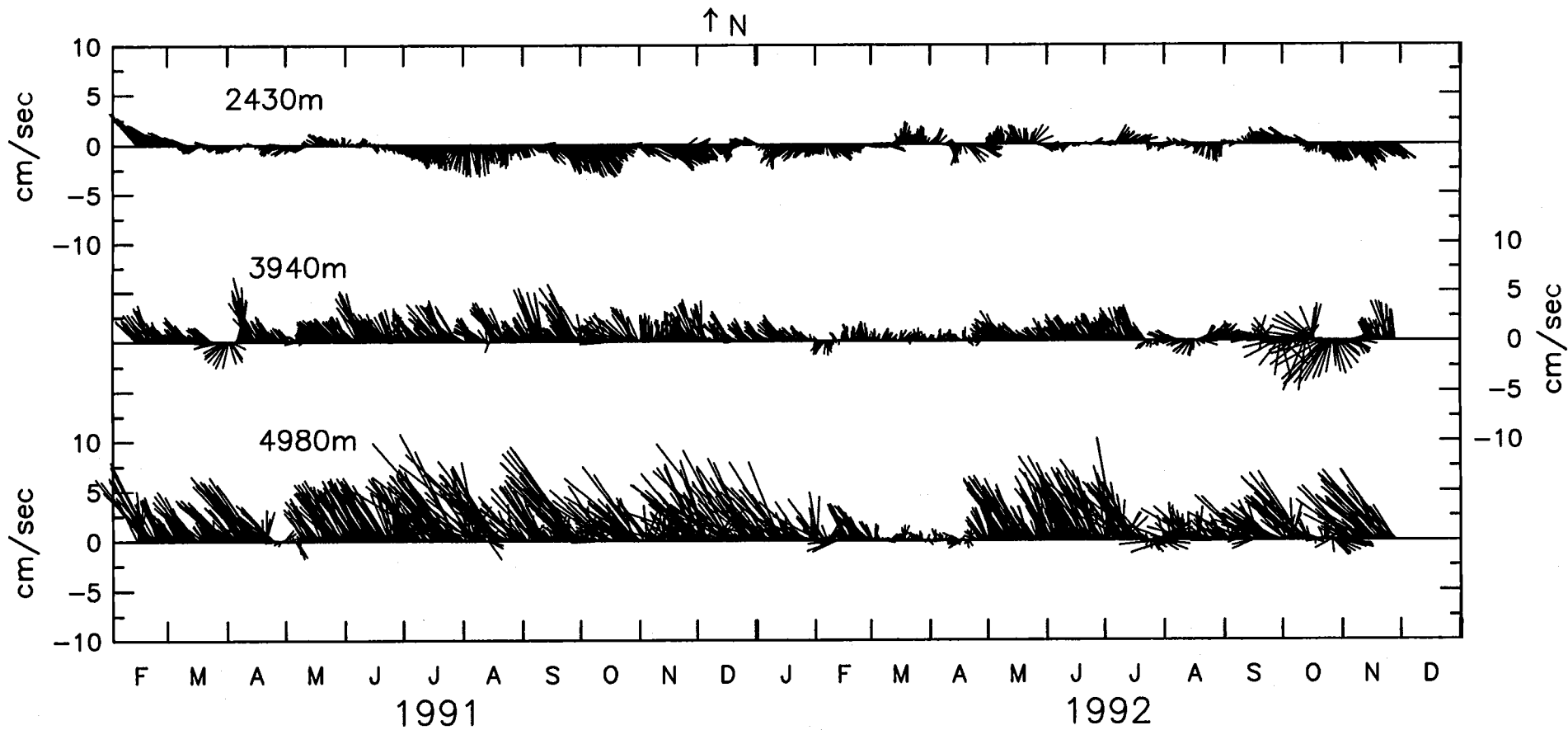
2430m at KIWI 15. LLP 6-hourly Data.



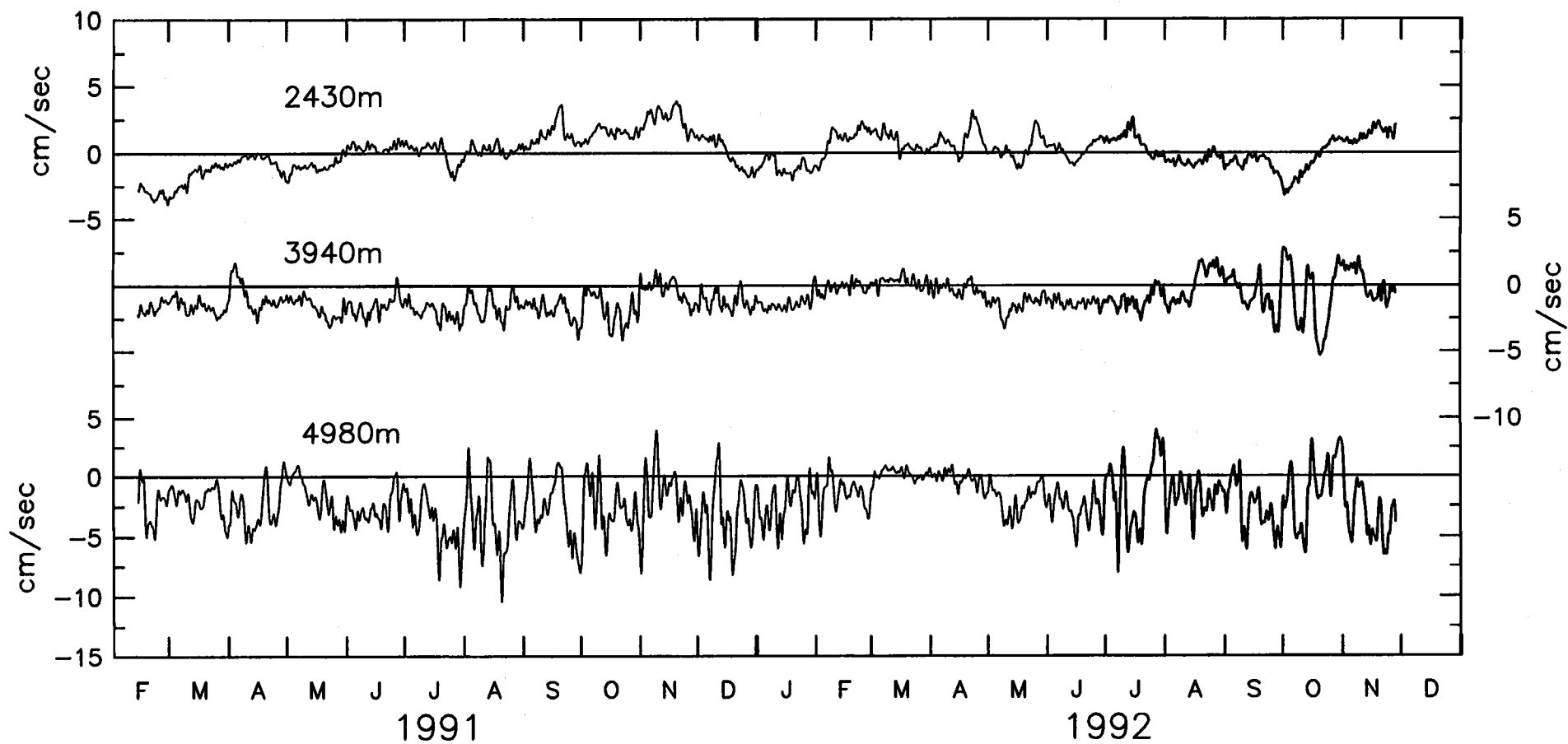
3940m at KIWI 15. LLP 6-hourly Data.



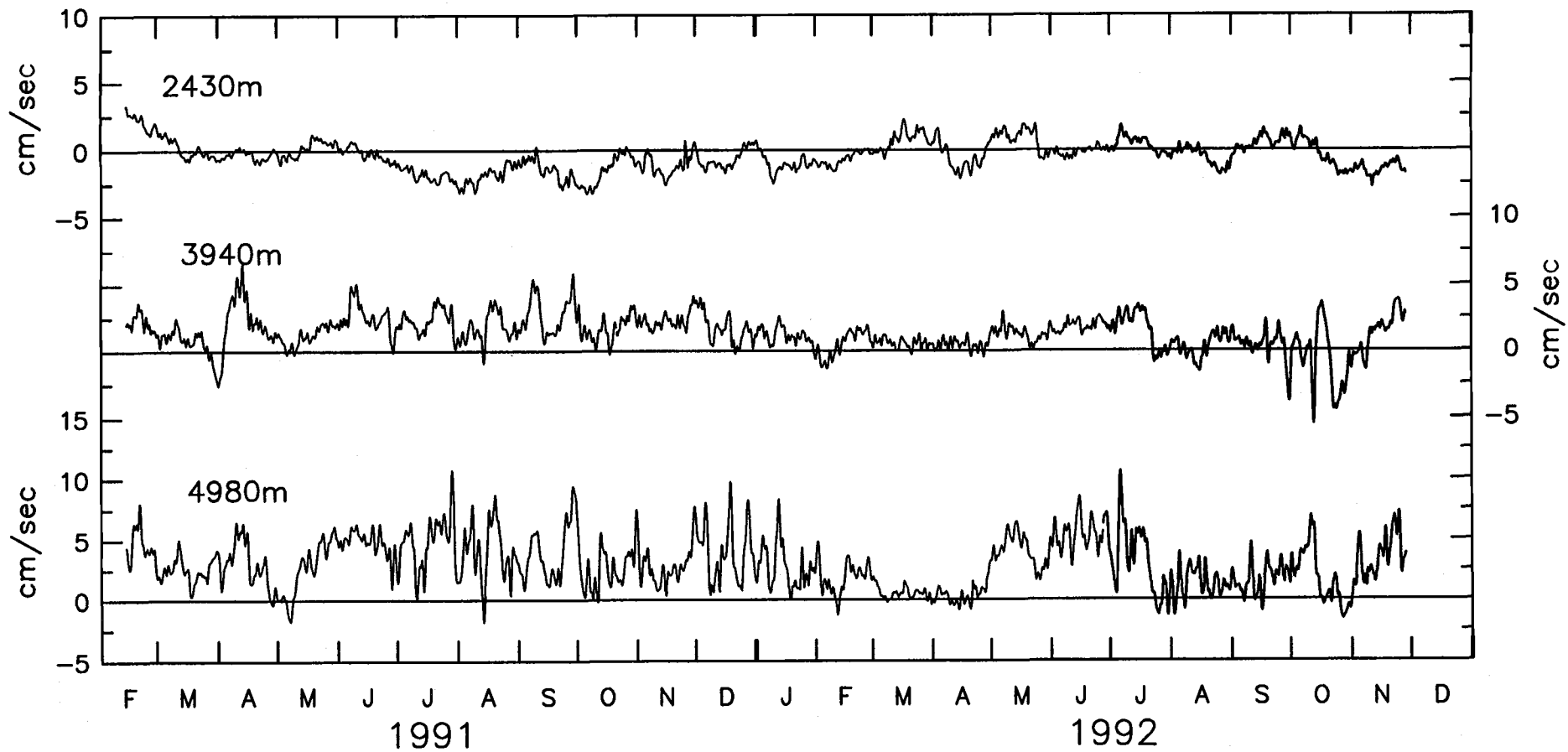
4980m at KIWI 15. LLP 6-hourly Data.



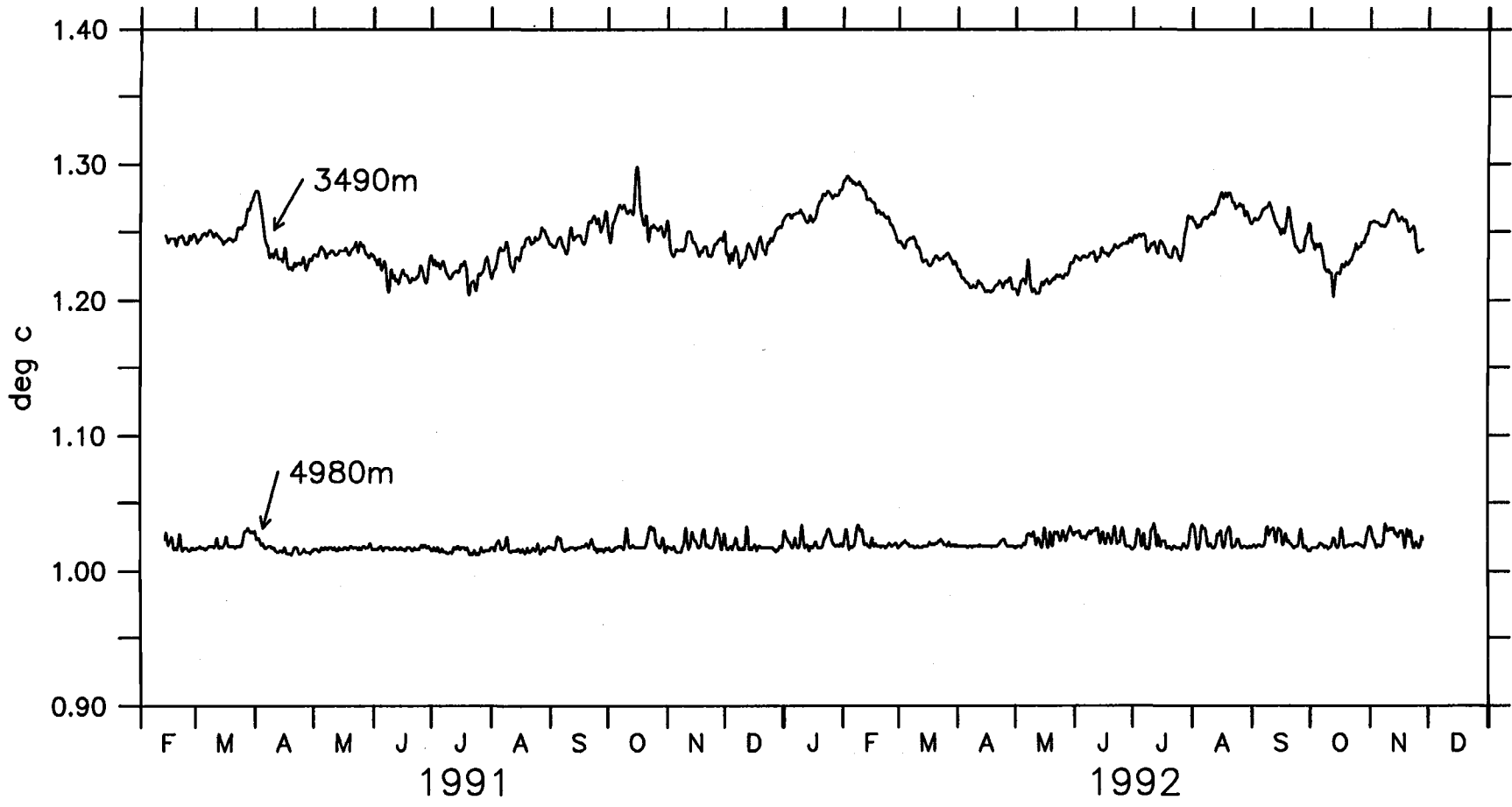
Velocity at KIWI 15. LLP 6-hourly Data.



U-component at KIWI 15. LLP 6-hourly Data.



V-component at KIWI 15. LLP 6-hourly Data.

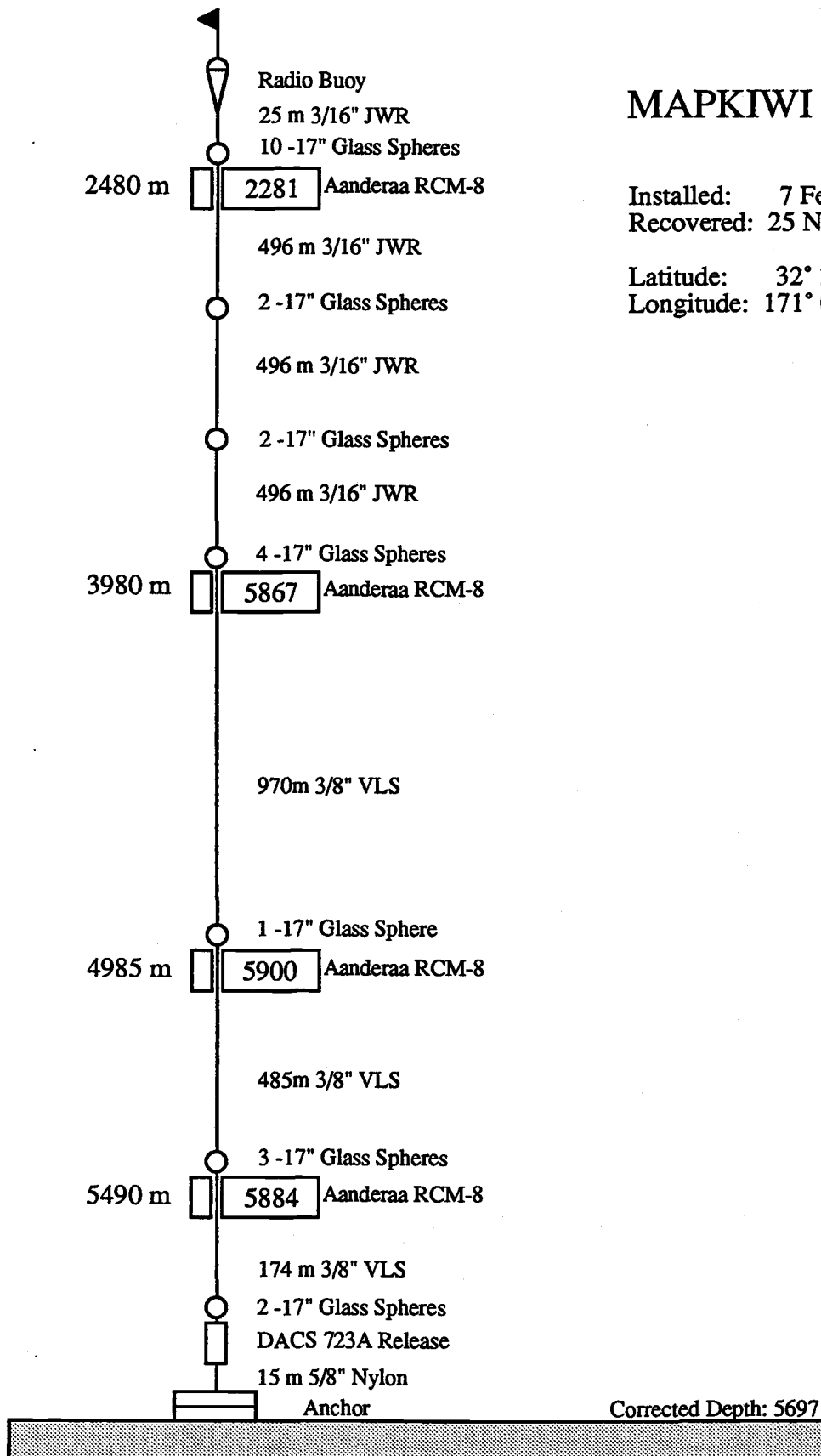


Temperature at KIWI 15. LLP 6-hourly Data.

MAPKIWI 16

Installed: 7 Feb 91
 Recovered: 25 Nov 92

Latitude: 32° 30.11'S
 Longitude: 171° 02.72'W



KIWI 16.

Position: 32° 30.11'S
 171° 02.72'W
 Depth of Water: 5697
 Mooring Set: 2353 7 February 1991
 Mooring Retrieved: 0406 25 November 1992
 Data Interval: 0200 8 February 1991 - 0330 25 November 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2480	2281/40
3980	5867/14
4985	5900/11
5490	5884/16

Instrument 2281 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5867 recorded u, v, and temperature every 30 minutes. The temperature sensor started producing erratic data and the temperature record was nullified from 2230 12 September 1991 to the end of the record (0330 25 November 1992); lines 10410 to 31492.

Instrument 5900 recorded u, v, and temperature every 30 minutes.

Instrument 5884 recorded u, v, and temperature. The speed record dropped to threshold and remained there lines 10911 - 13854 (0900 23 September 1991 to 1630 23 November 1991). This section has been nullified.

2480 meters at KIWI 16. 8 Feb 91 - 25 Nov 92. Tape 2281/40.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.50	11.44	1.94	31492
U, cm/sec	-10.54	0.60	11.38	2.82	31492
V, cm/sec	-9.41	-0.98	8.56	2.59	31492
Temp, deg c	1.95	2.02	2.07	0.02	31492
Pressure, db	2514.12	2517.46	2517.83	1.10	31492

3980 meters at KIWI 16. 8 Feb 91 - 25 Nov 92. Tape 5867/14.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.61	13.74	2.16	31492
U, cm/sec	-8.33	1.52	12.56	2.60	31492
V, cm/sec	-11.77	-0.96	8.57	2.77	31492
Temp, deg c	1.19	1.25	1.32	0.02	10409

4985 meters at KIWI 16. 8 Feb 91 - 25 Nov 92. Tape 5900/11.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.35	15.46	1.96	31492
U, cm/sec	-6.61	1.41	11.96	2.34	31492
V, cm/sec	-11.49	-0.07	7.98	2.75	31492
Temp, deg c	1.03	1.04	1.06	0.00	31492

5490 meters at KIWI 16. 8 Feb 91 - 25 Nov 92. Tape 5884/16.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.15	15.75	2.04	28548
U, cm/sec	-9.43	0.94	11.33	2.34	28548
V, cm/sec	-11.65	0.11	8.73	2.78	28548
Temp, deg c	1.07	1.08	1.09	0.00	31492

2480 meters at KIWI 16. 9 Feb 91 - 23 Nov 92. Tape 2281/40.

	min	mean	max	sd	num
Speed, cm/sec	0.13	2.46	6.44	1.29	2614
U, cm/sec	-4.66	0.59	6.11	1.84	2614
V, cm/sec	-5.07	-0.98	5.40	1.75	2614
Temp, deg c	1.97	2.02	2.05	0.01	2614
Pressure, db	2514.18	2517.46	2517.87	0.42	2614

3980 meters at KIWI 16. 9 Feb 91 - 23 Nov 92. Tape 5867/14.

	min	mean	max	sd	num
Speed, cm/sec	0.05	2.61	9.10	1.55	2614
U, cm/sec	-2.87	1.51	6.46	1.62	2614
V, cm/sec	-7.24	-0.97	3.14	1.84	2614
Temp, deg c	1.22	1.25	1.29	0.01	857

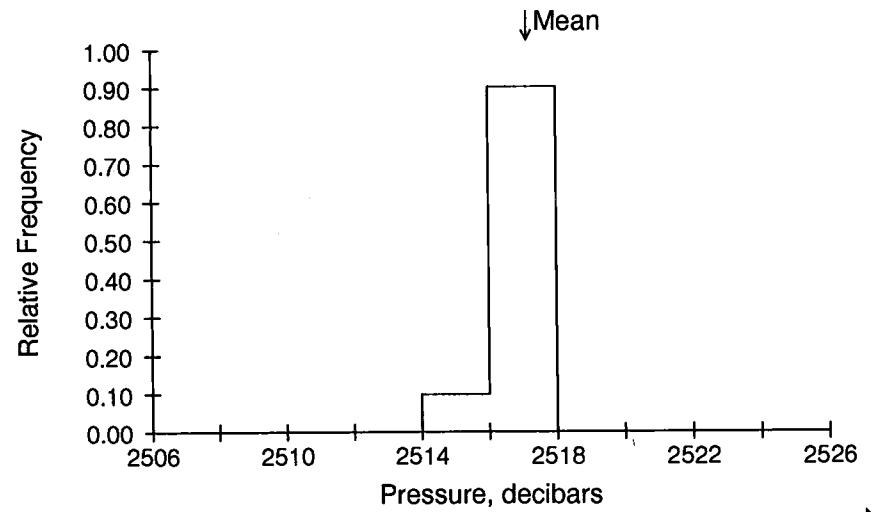
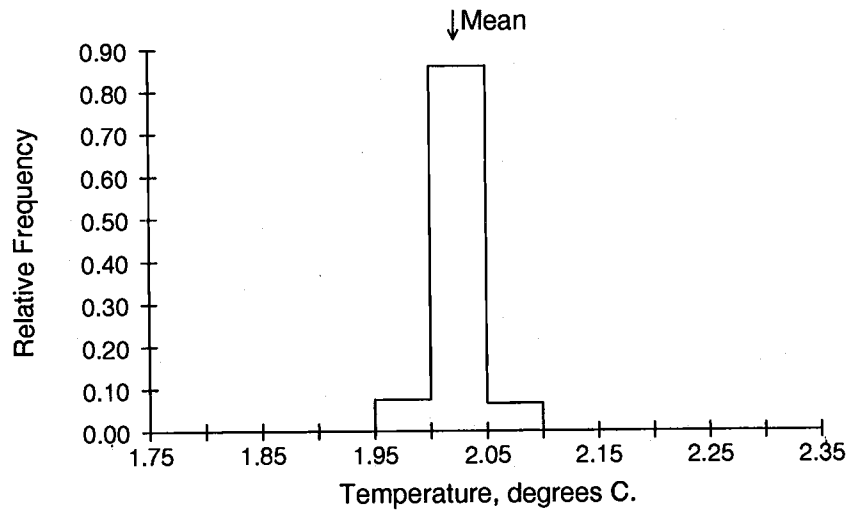
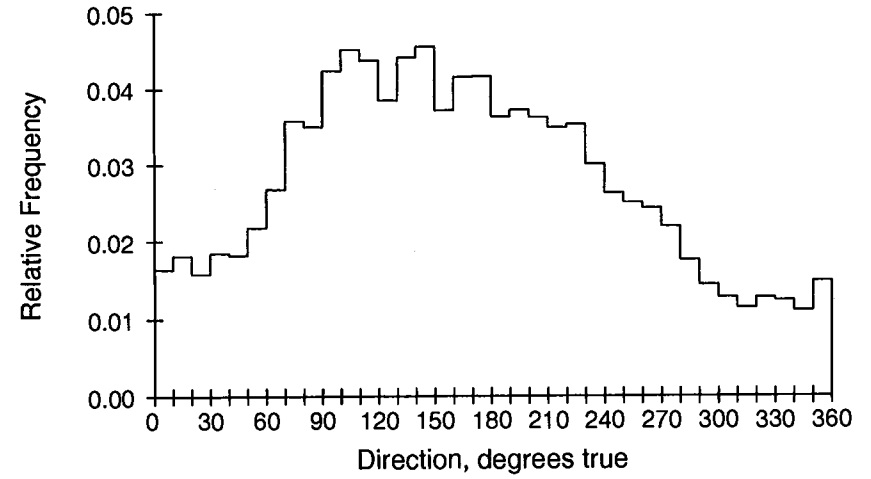
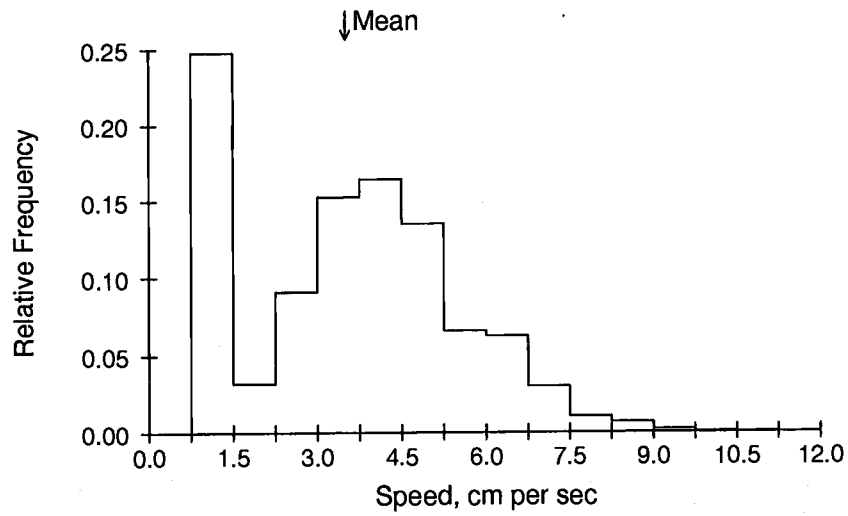
4985 meters at KIWI 16. 9 Feb 91 - 23 Nov 92. Tape 5900/11.

	min	mean	max	sd	num
Speed, cm/sec	0.02	2.85	10.24	1.46	2614
U, cm/sec	-3.86	1.41	6.88	1.74	2614
V, cm/sec	-7.93	-0.07	5.85	2/20	2614
Temp, deg c	1.03	1.04	1.05	0.00	2614

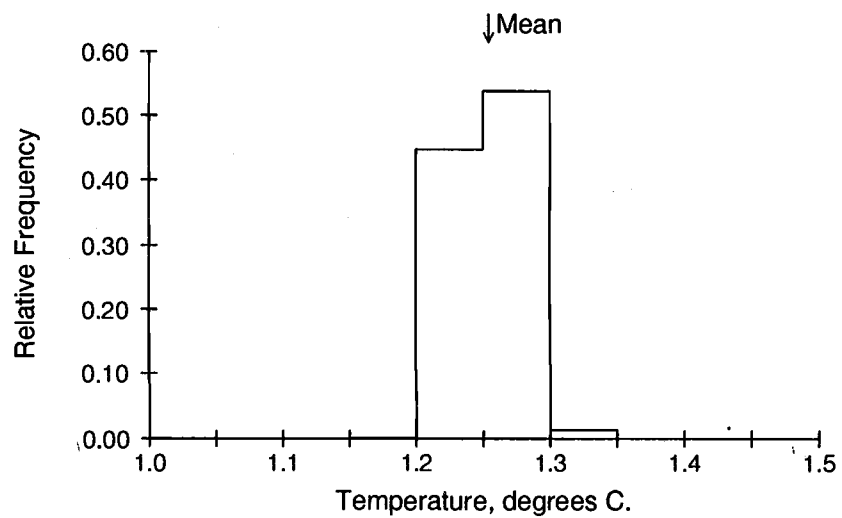
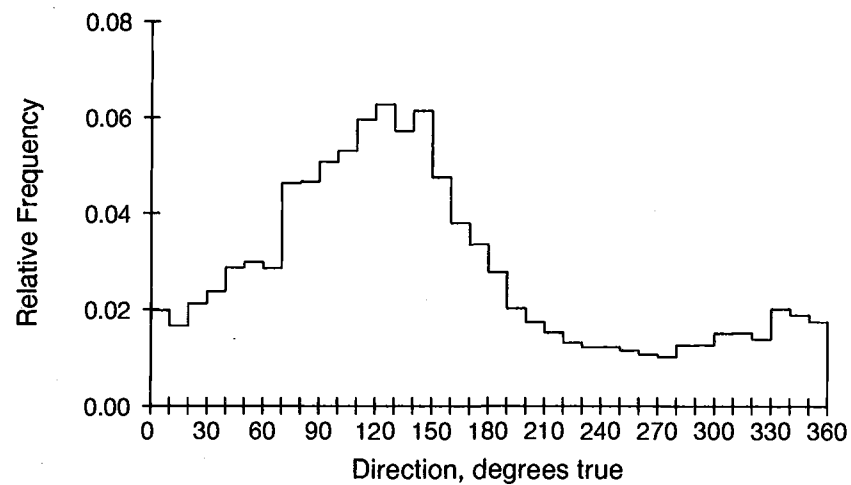
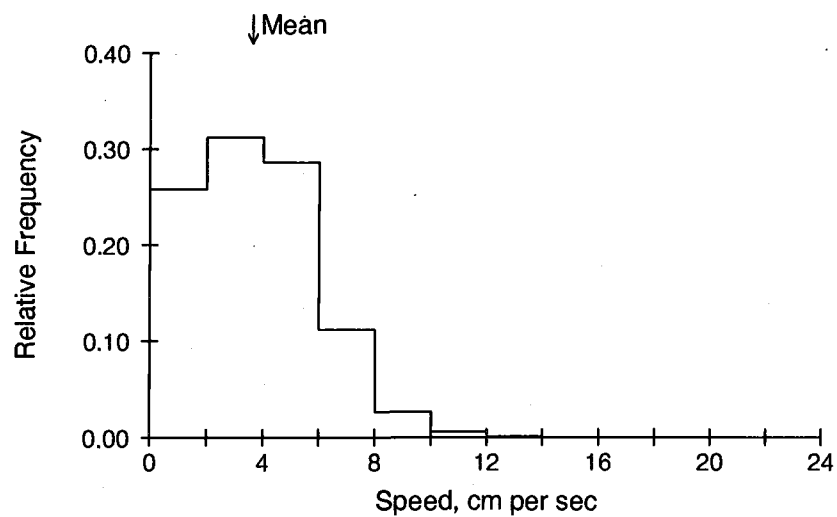
5490 meters at KIWI 16. 9 Feb 91 - 23 Nov 92. Tape 5884/16.

	min	mean	max	sd	num
Speed, cm/sec	0.07	2.53	9.82	1.43	2359
U, cm/sec	-3.83	0.93	6.64	1.64	2359
V, cm/sec	-7.31	0.09	4.81	2.21	2359
Temp, deg c	1.08	1.08	1.09	0.00	2614

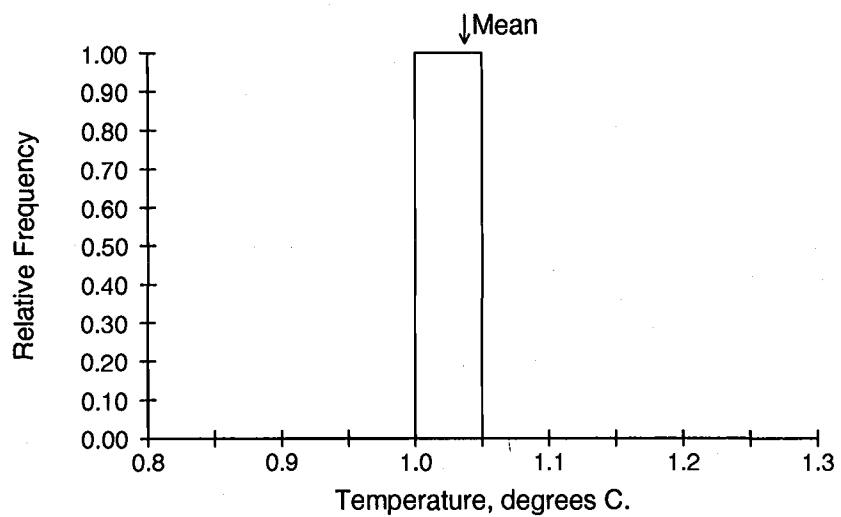
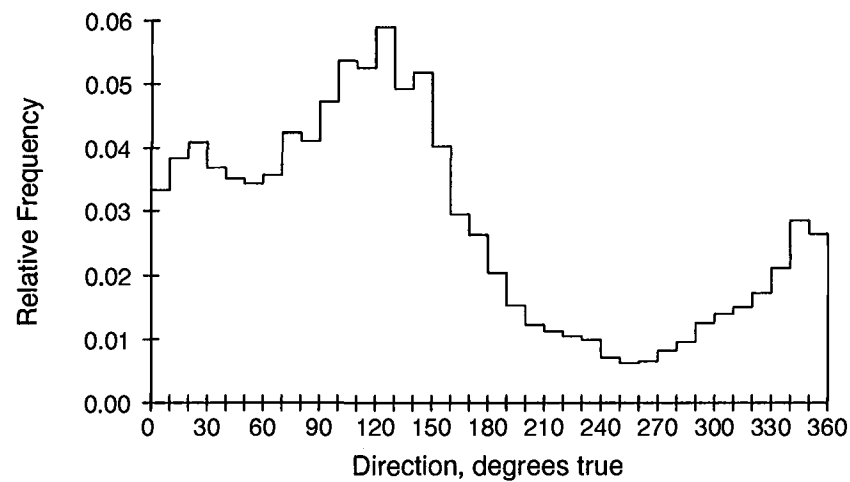
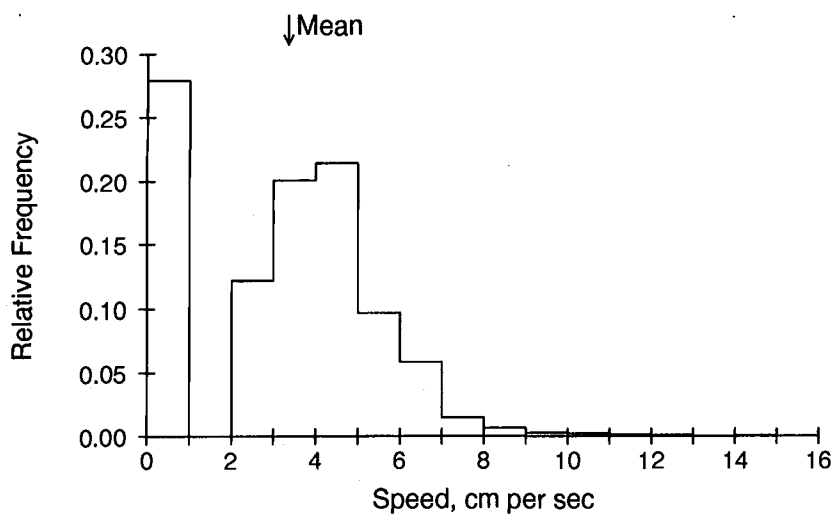
2480m at Kiwi 16. 8 Feb 91 - 25 Nov 92. RCM 2281/40.



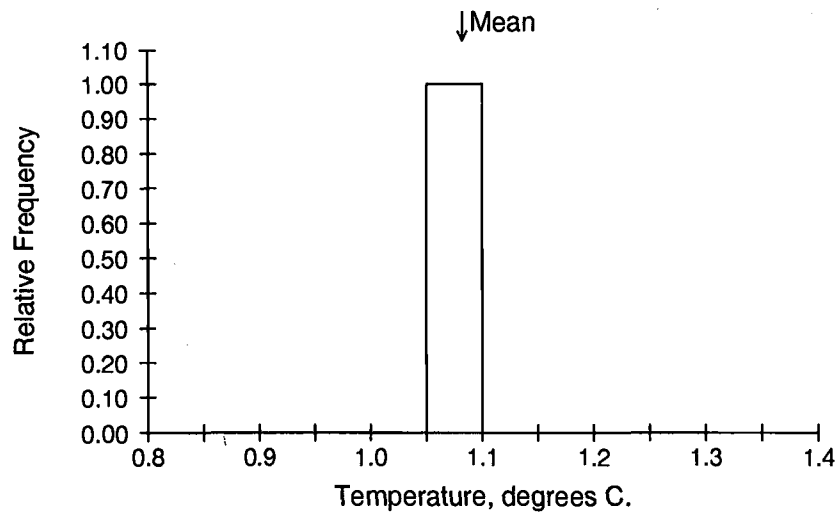
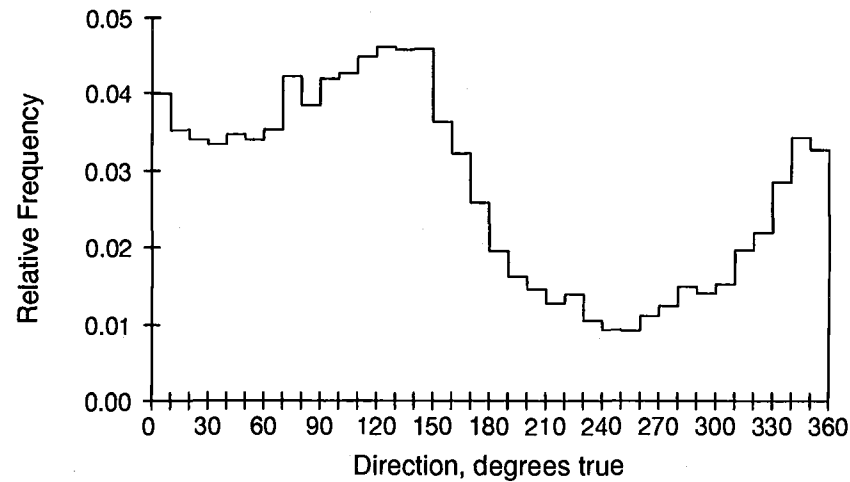
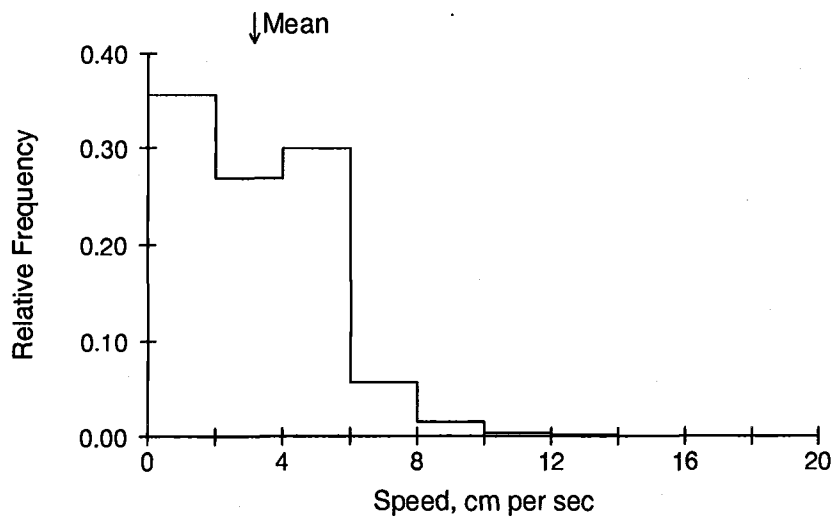
3980m at Kiwi 16. 8 Feb 91 - 25 Nov 92. RCM 5867/14.

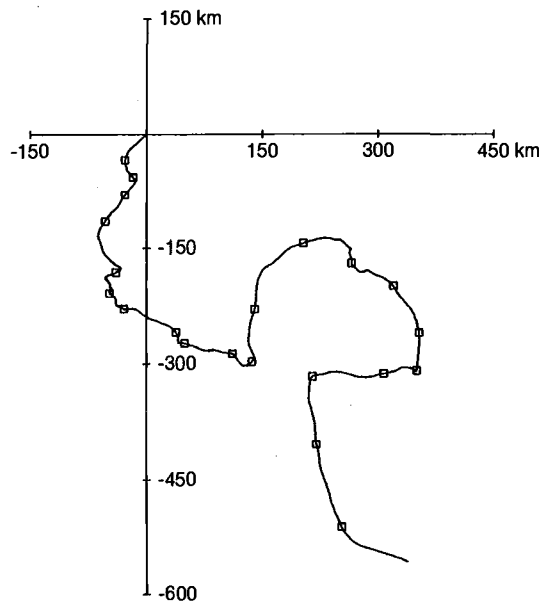


4985m at Kiwi 16. 8 Feb 91 - 25 Nov 92. RCM 5900/11.

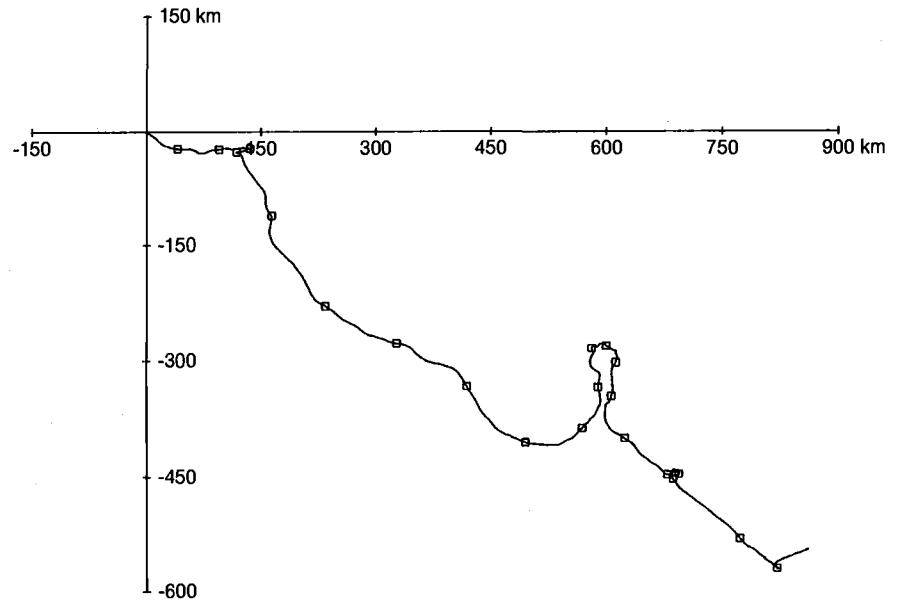


5490m at Kiwi 16. 8 Feb 91 - 25 Nov 92. RCM 5884/16.

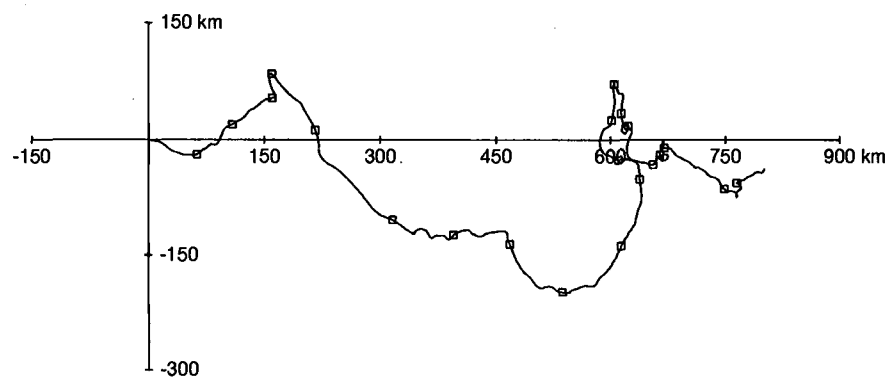
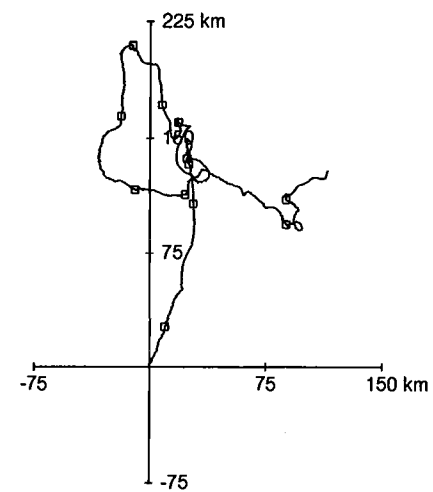




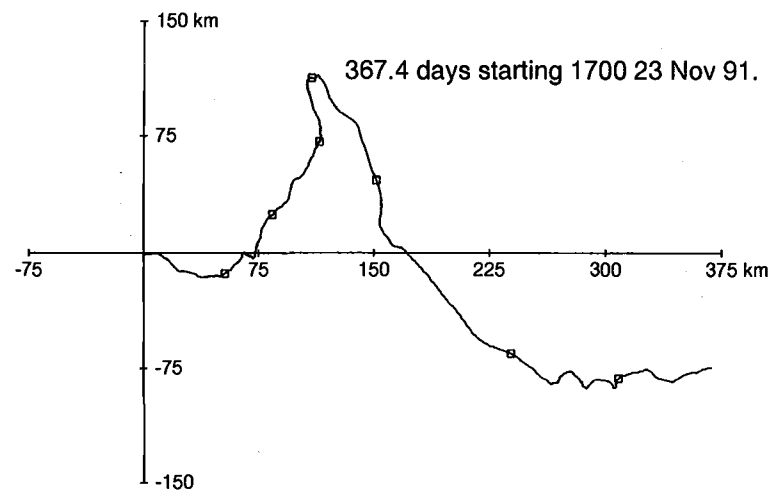
2480 m at KIWI 16. 656.1 days starting 0200 8 Feb 91.



3980 m at KIWI 16. 656.1 days starting 0200 8 Feb 91.



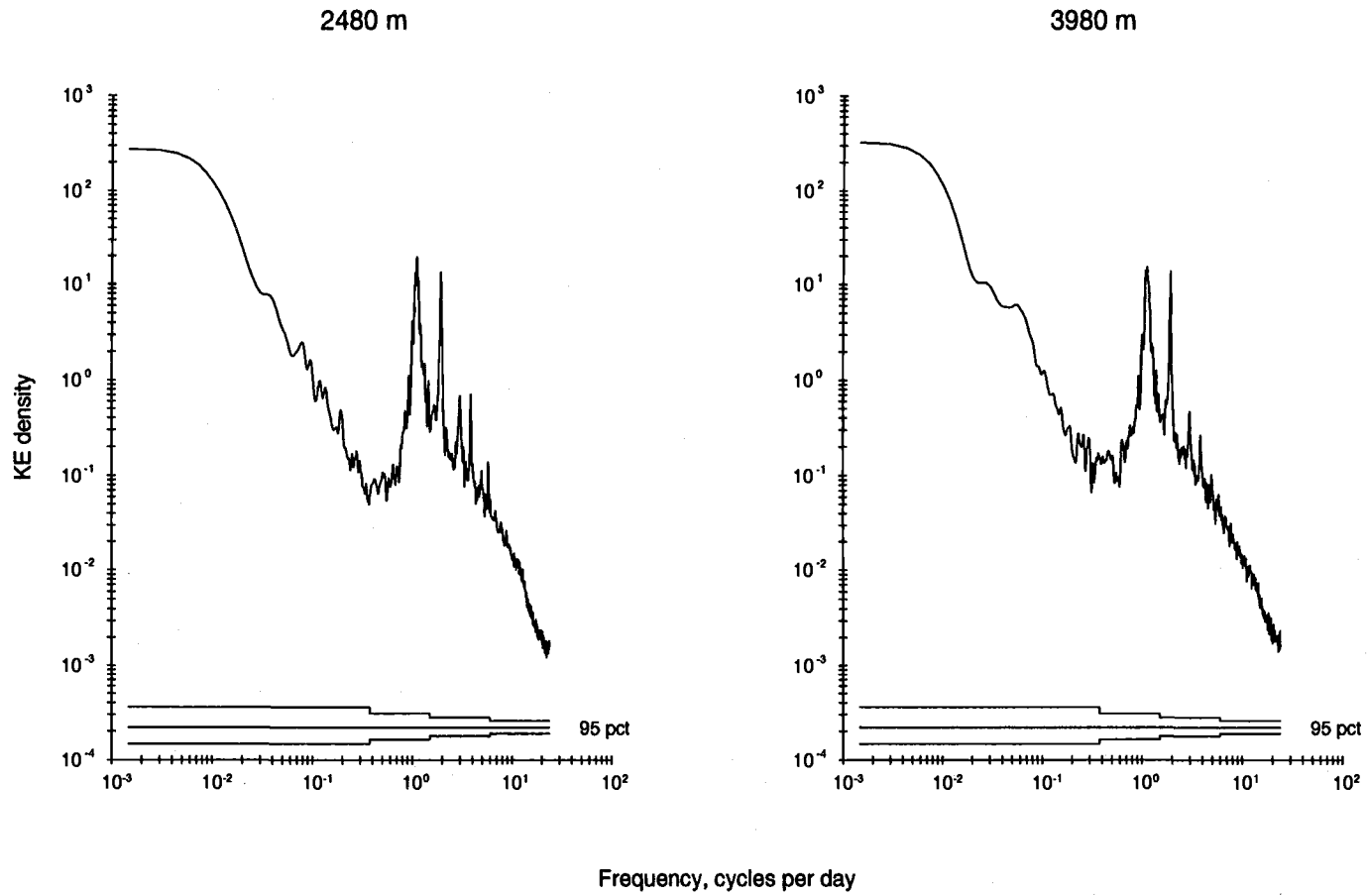
4985 m at KIWI 16. 656.1 days starting 0200 8 Feb 91.



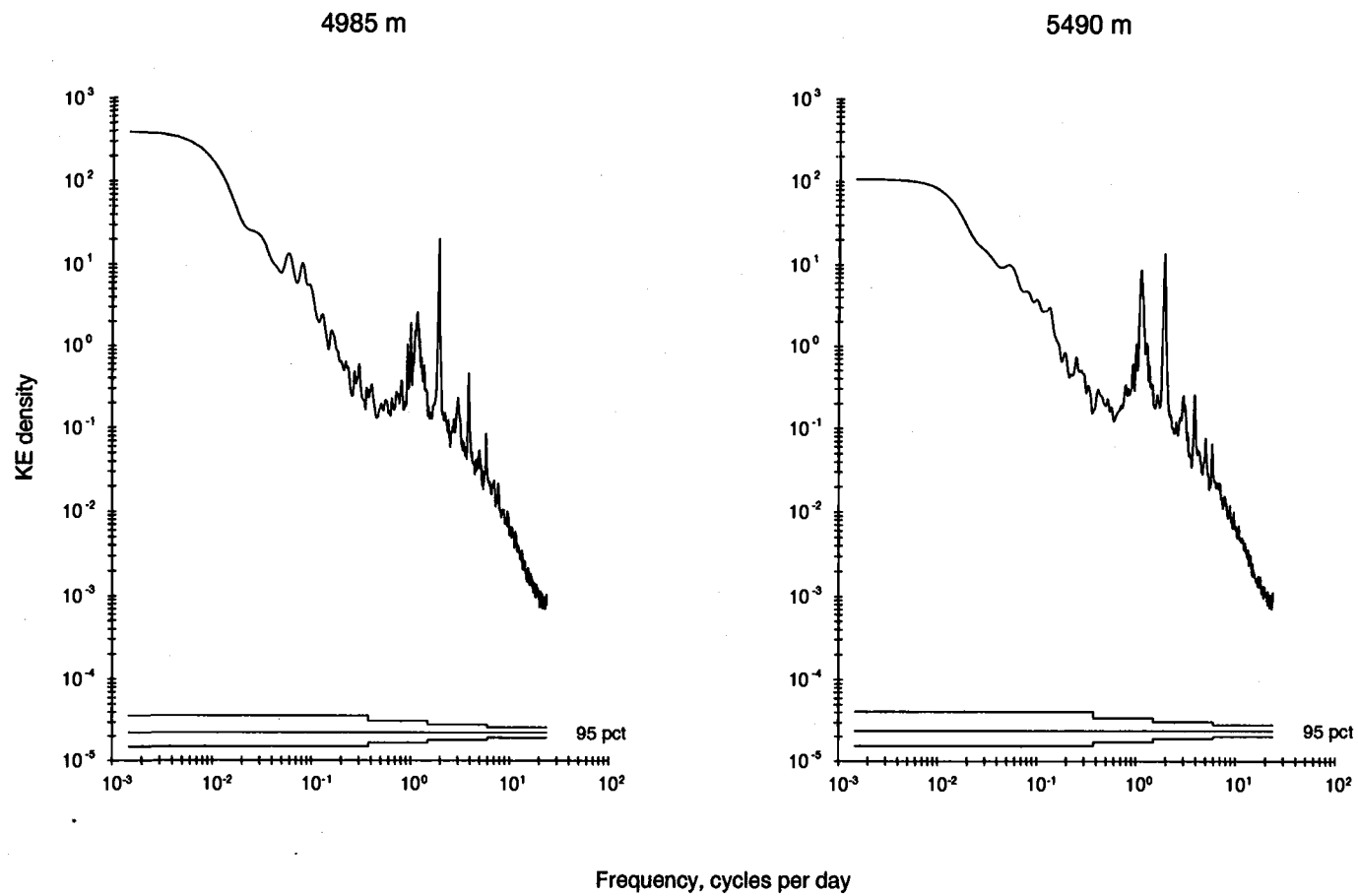
5490 m at KIWI 16. 227.3 days starting 0200 8 Feb 91.

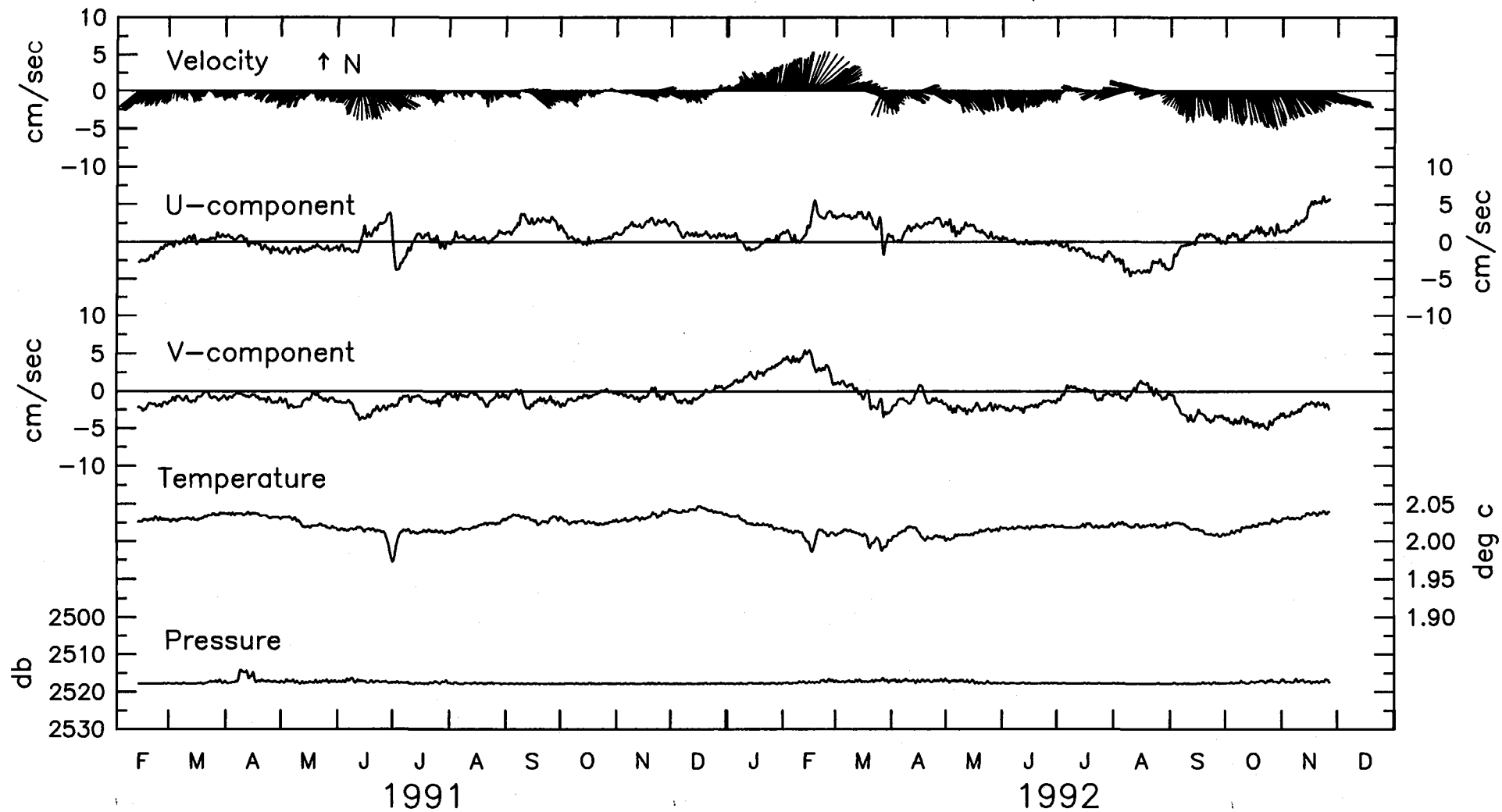
367.4 days starting 1700 23 Nov 91.

Unfiltered Current (both components) Kiwi 16.

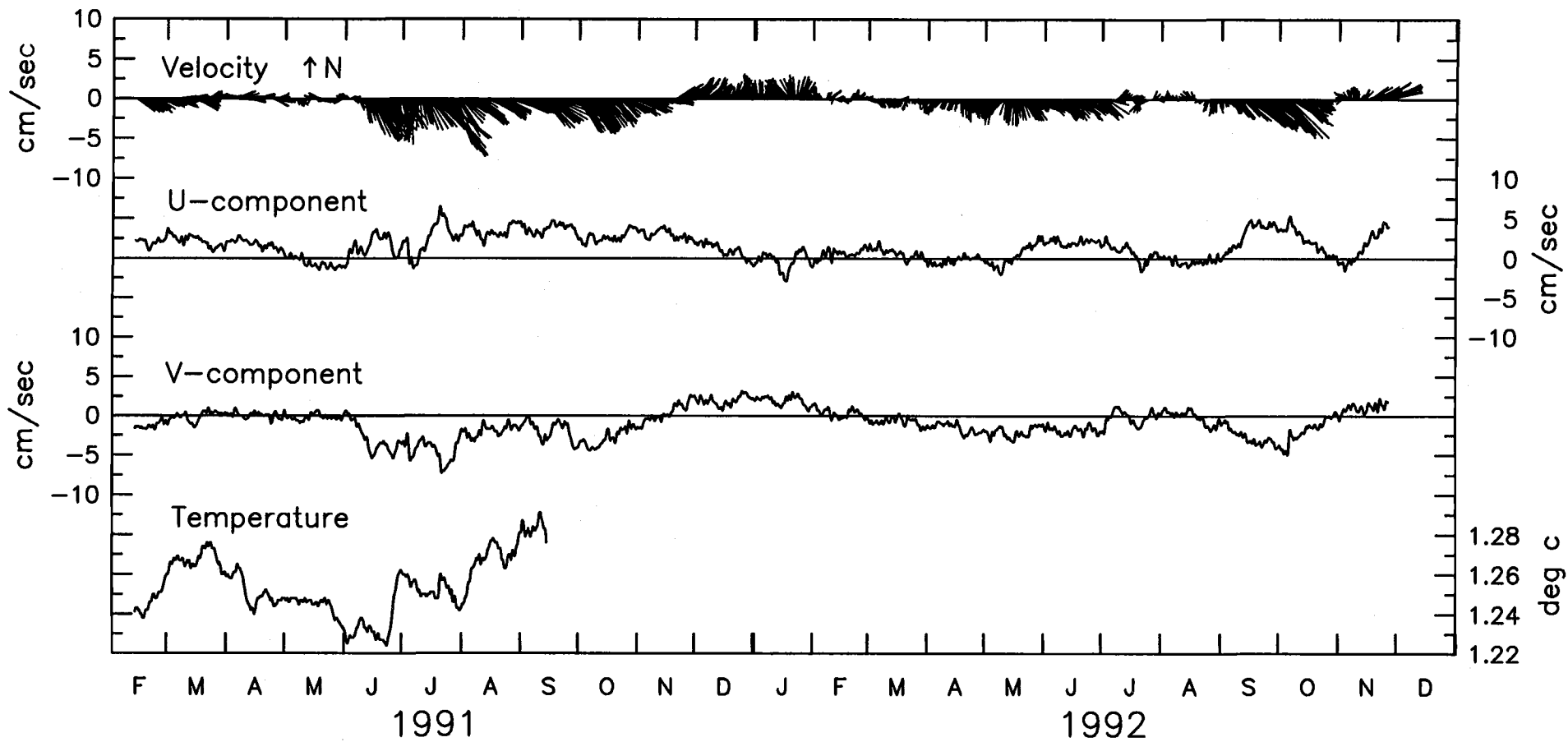


Unfiltered Current (both components) Kiwi 16.

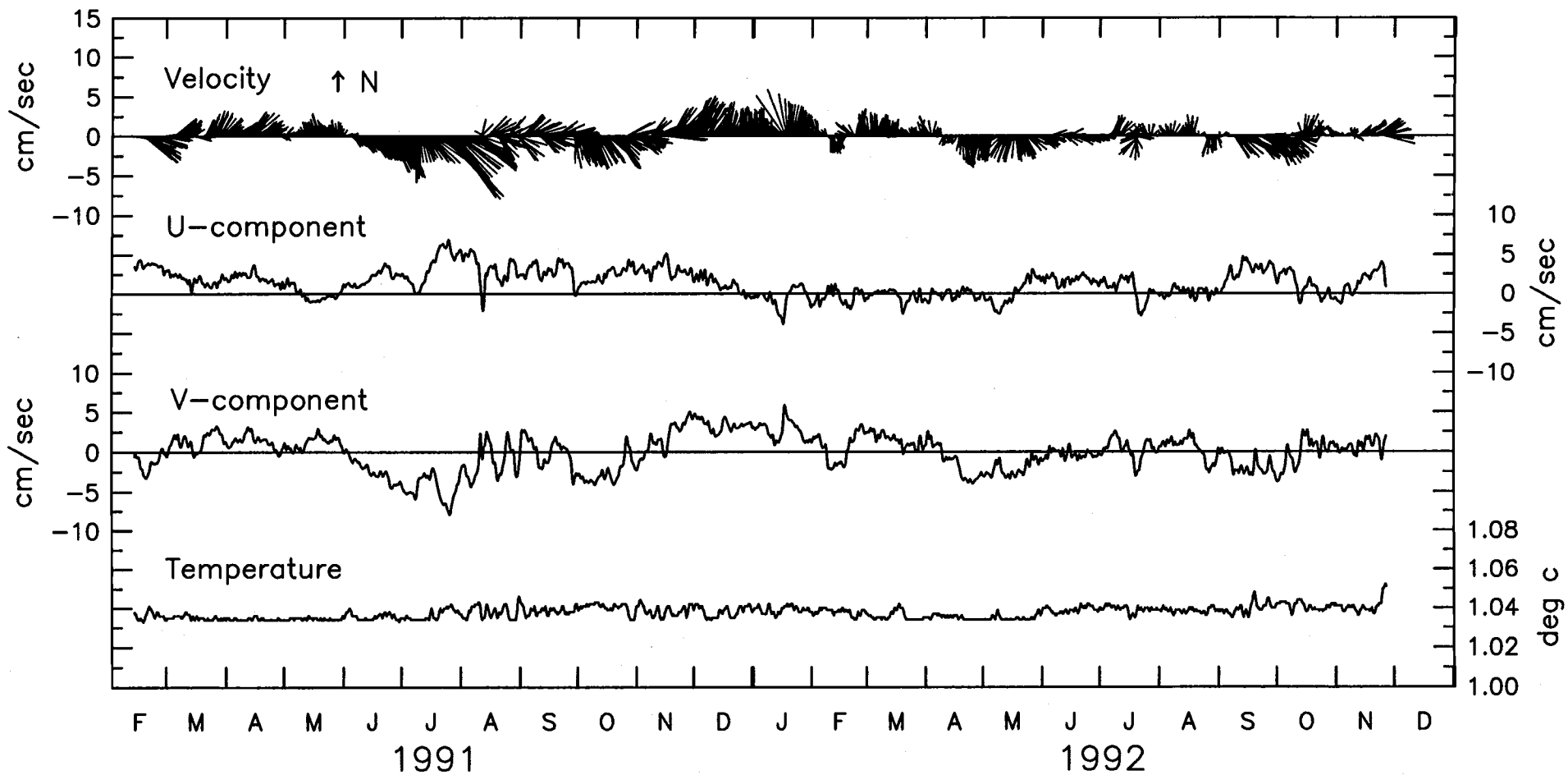




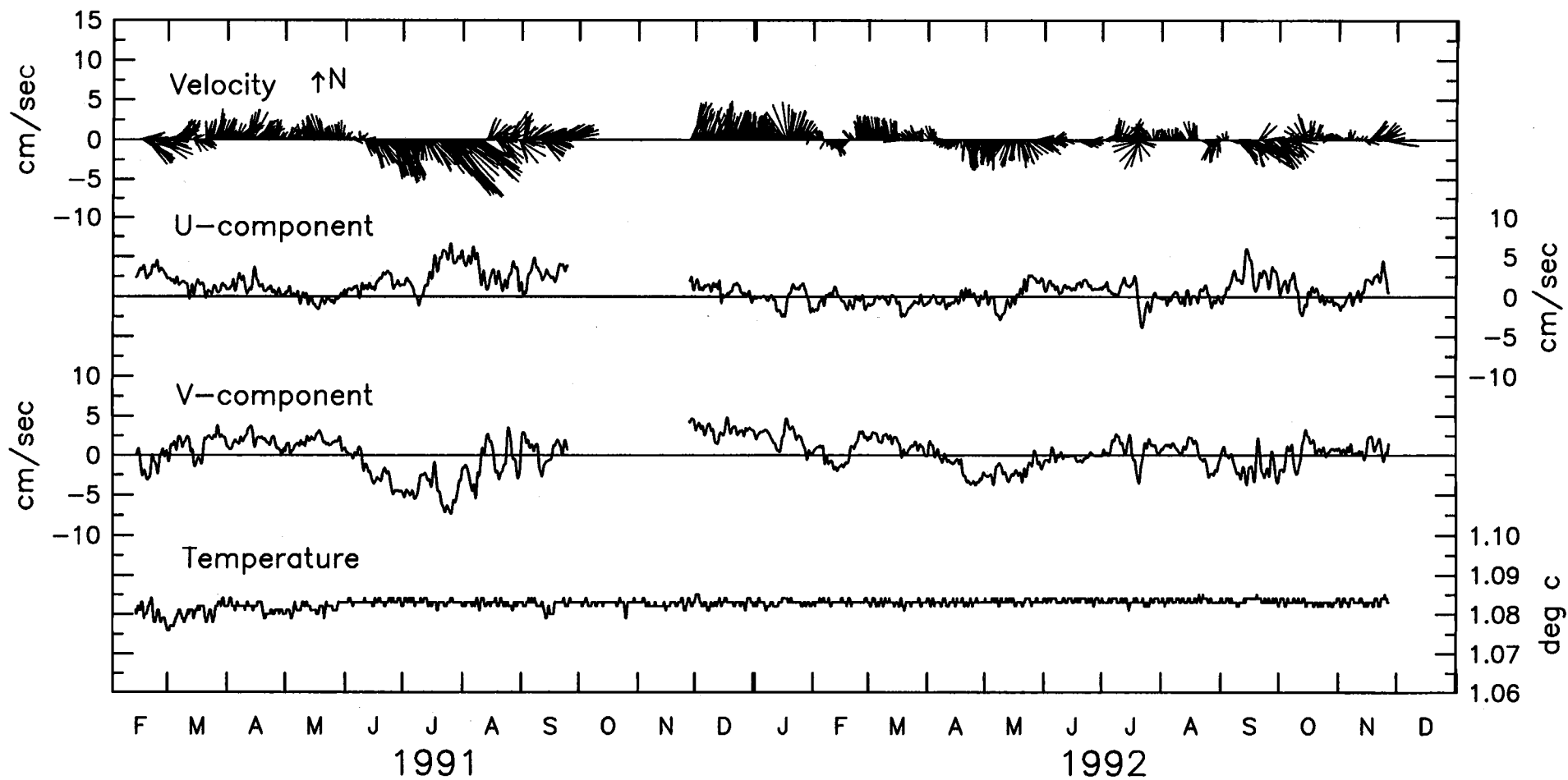
2480m at KIWI 16. LLP 6-hourly Data.



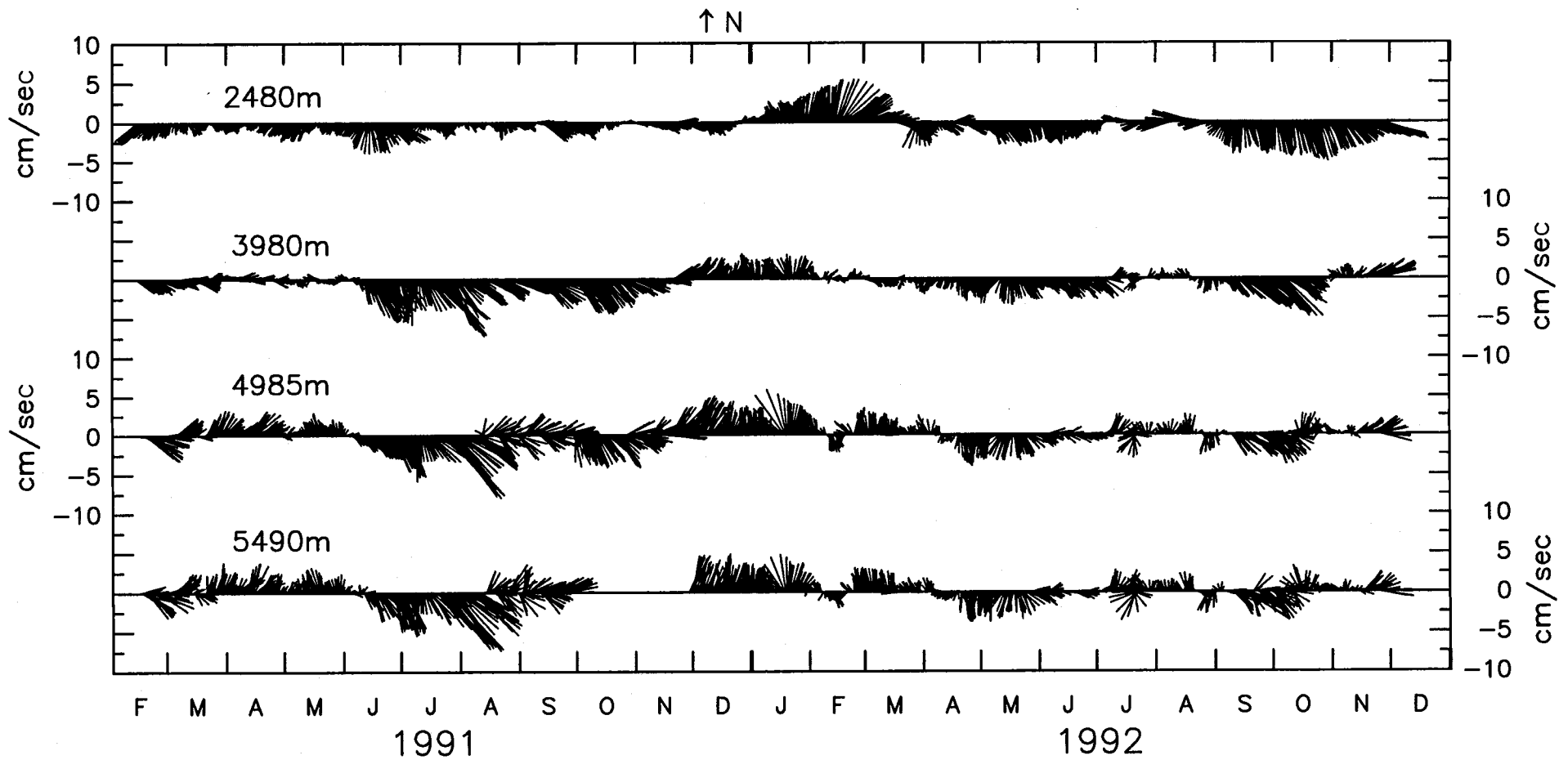
3980m at KIWI 16. LLP 6-hourly Data.



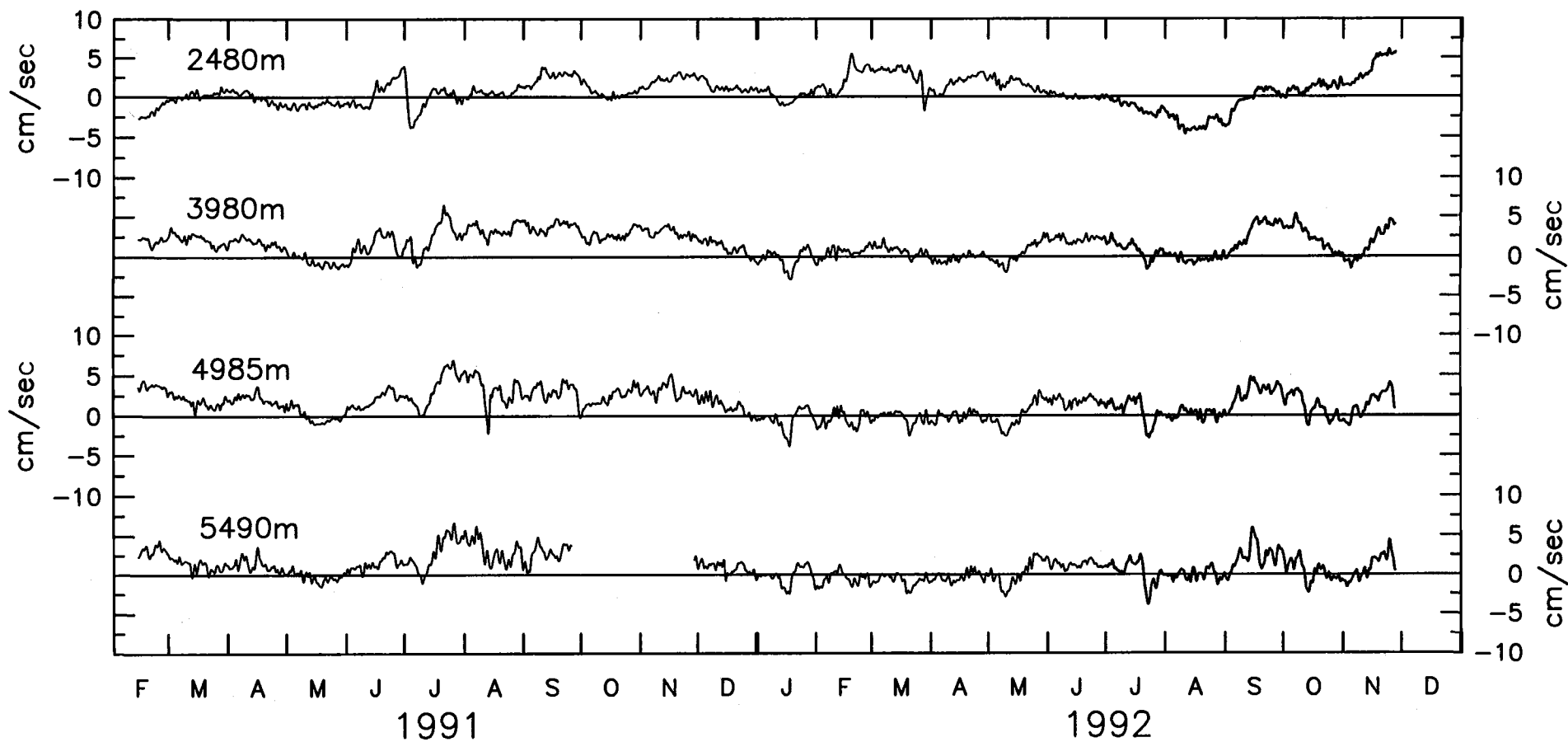
4985m at KIWI 16. LLP 6-hourly Data.



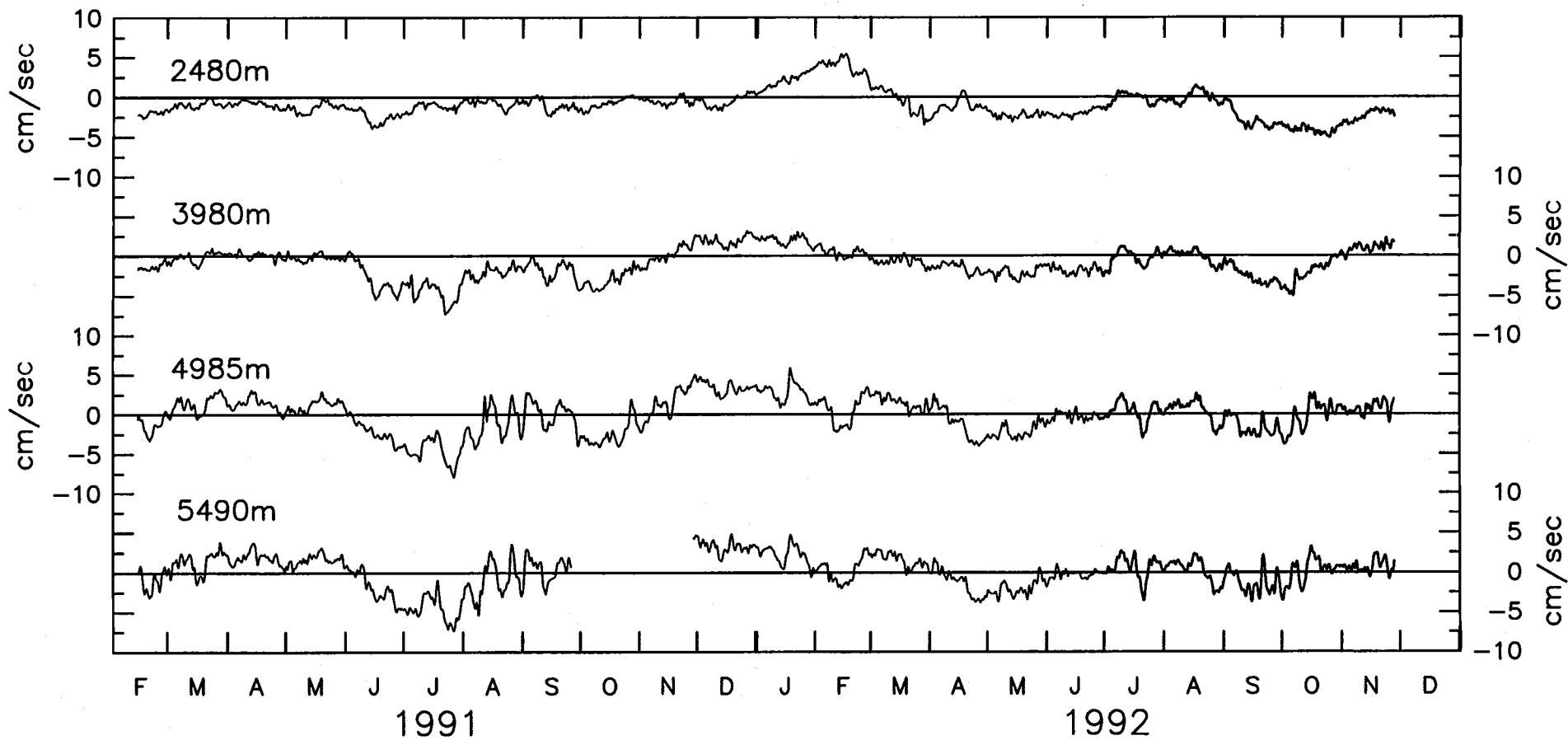
5490m at KIWI 16. LLP 6-hourly Data.



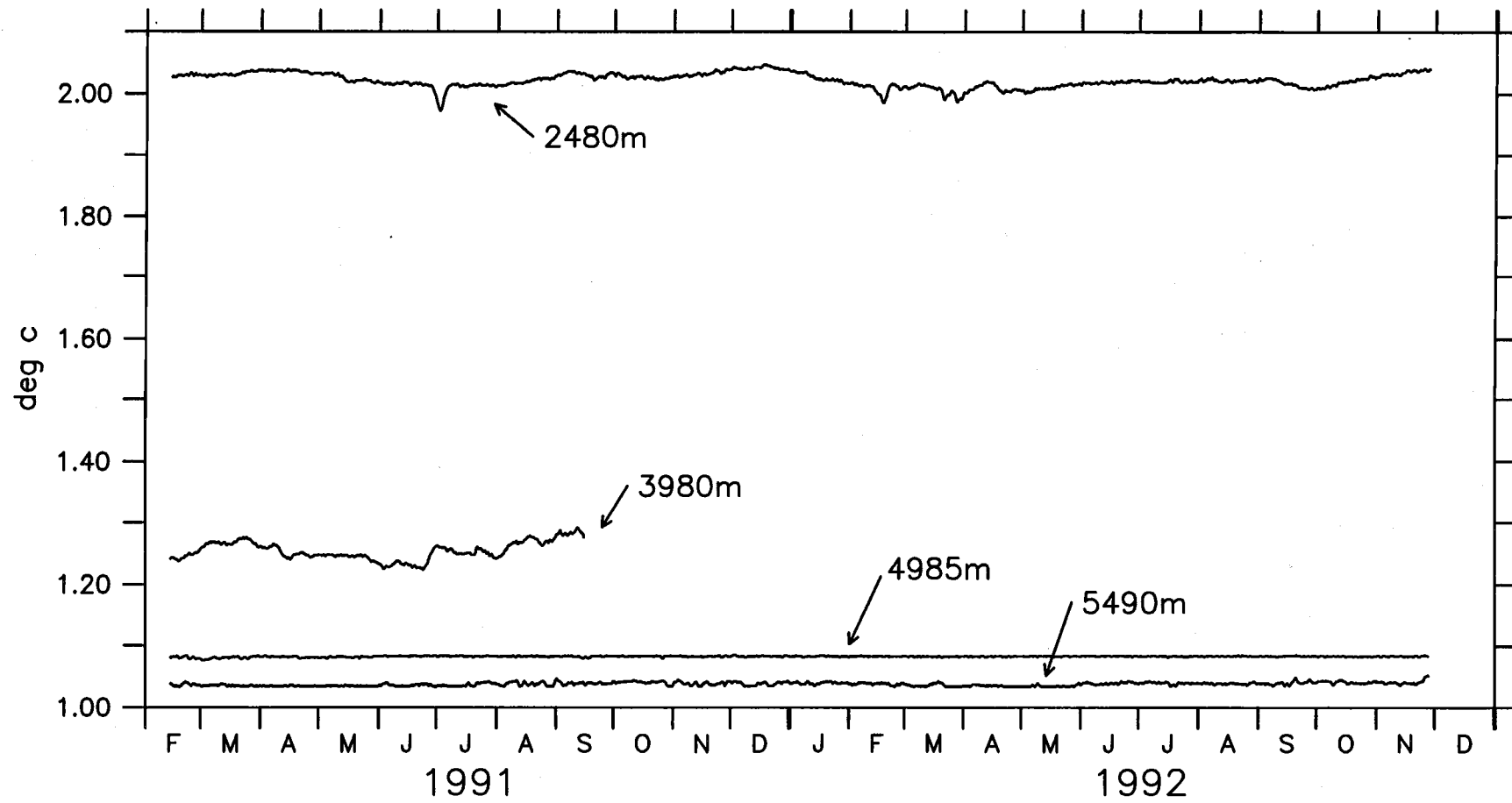
Velocity at KIWI 16. LLP 6-hourly Data.



U-component at KIWI 16. LLP 6-hourly Data.



V-component at KIWI 16. LLP 6-hourly Data.

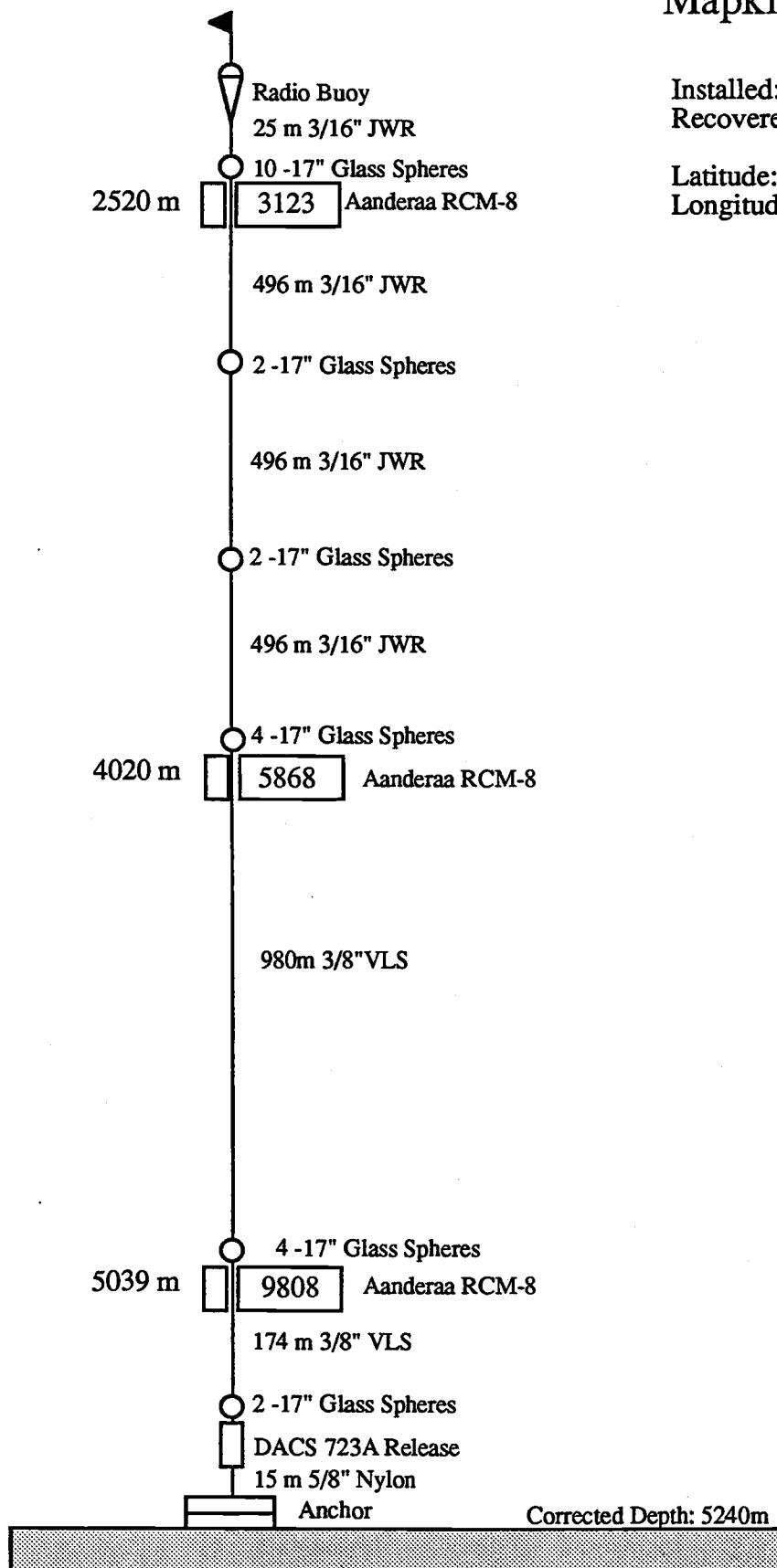


Temperature at KIWI 16. LLP 6-hourly Data.

Mapkiwi 17

Installed: 7 Feb 91
Recovered: 24 Nov 92

Latitude: 32° 28.11'S
Longitude: 170° 28.10'W



KIWI 17.

Position: 32° 28.11'S
170° 28.10'W
Depth of Water: 5240
Mooring Set: 1754 7 February 1991
Mooring Retrieved: 2111 24 November 1992
Data Interval: 2030 7 February 1991 - 2100 24 November 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2520	3123/50
4020	5868/20
5039	9808/7

Instrument 3123 recorded u, v, temperature, and pressure every 30 minutes. The entire pressure record was nullified because of large spikes and shifts in the mean.

Instrument 5868 recorded u, v, and temperature every 30 minutes.

Instrument 9808 recorded u, v, and temperature every 30 minutes.

2520 meters at KIWI 17. 7 Feb 91 - 24 Nov 92. Tape 3123/50.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.94	17.47	2.12	31490
U, cm/sec	-11.02	-0.29	17.21	3.31	31490
V, cm/sec	-11.93	0.85	11.14	2.87	31490
Temp, deg c	1.88	1.95	2.03	0.02	31490

4020 meters at KIWI 17. 7 Feb 91 - 24 Nov 92. Tape 5868/20.

	min	mean	max	sd	num
Speed, cm/sec	0.93	4.28	16.61	2.19	31489
U, cm/sec	-14.00	0.12	12.25	3.60	31489
V, cm/sec	-16.32	0.63	11.44	3.11	31489
Temp, deg c	1.10	1.17	1.27	0.02	31489

5039 meters at KIWI 17. 7 Feb 91 - 24 Nov 92. Tape 9808/7.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.66	16.90	2.12	31489
U, cm/sec	-16.86	-0.89	10.82	3.47	31489
V, cm/sec	-10.73	-0.24	13.27	2.24	31489
Temp, deg c	1.04	1.05	1.07	0.01	31489

2520 meters at KIWI 17. 9 Feb 91 - 23 Nov 92. Tape 3123/50.

	min	mean	max	sd	num
Speed, cm/sec	0.10	2.53	5.76	1.14	2614
U, cm/sec	-5.74	-0.29	4.01	1.99	2614
V, cm/sec	-2.70	0.86	4.69	1.71	2614
Temp, deg c	1.90	1.95	1.99	0.02	2614

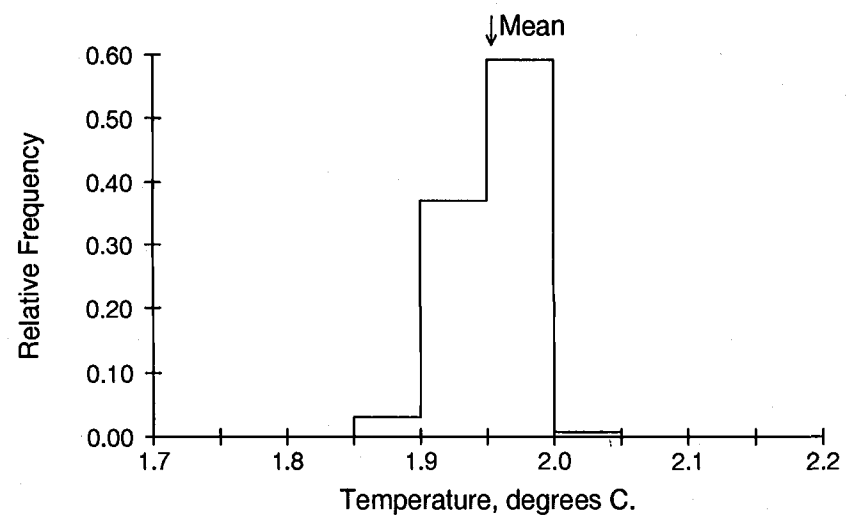
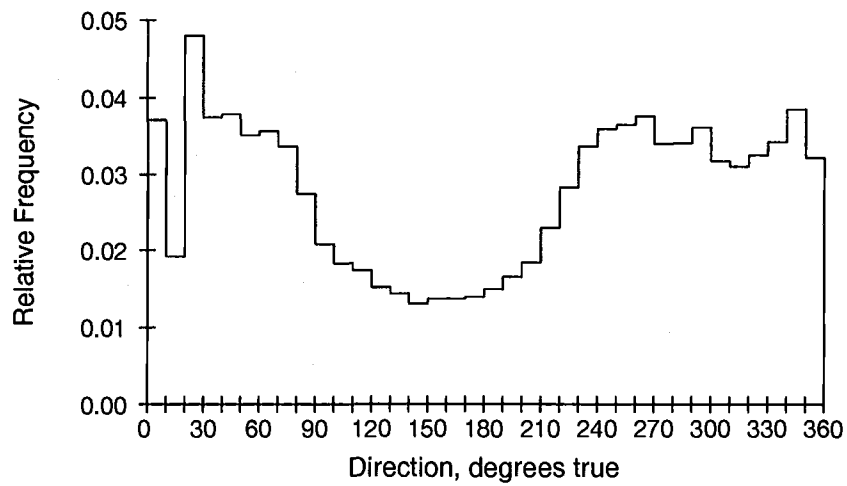
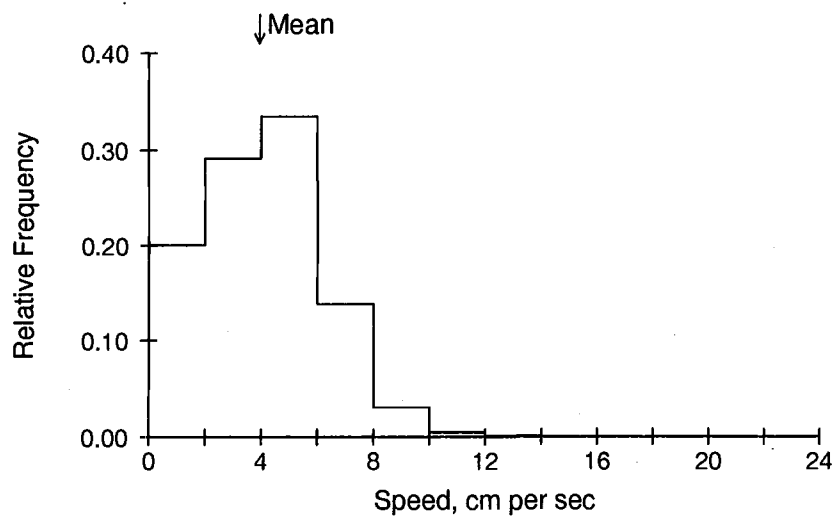
4020 meters at KIWI 17. 9 Feb 91 - 23 Nov 92. Tape 5868/20.

	min	mean	max	sd	num
Speed, cm/sec	0.02	2.01	5.77	1.02	2614
U, cm/sec	-3.96	0.12	3.35	1.33	2614
V, cm/sec	-5.77	0.63	4.55	1.70	2614
Temp, deg c	1.12	1.17	1.20	0.02	2614

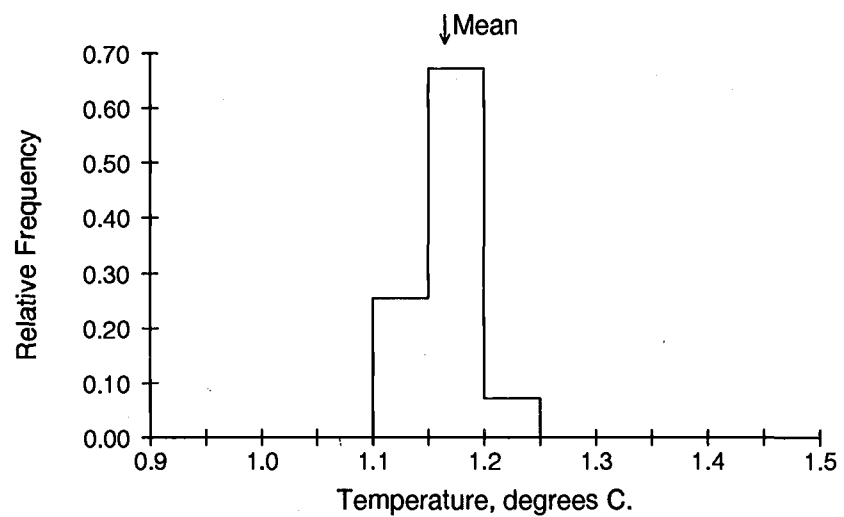
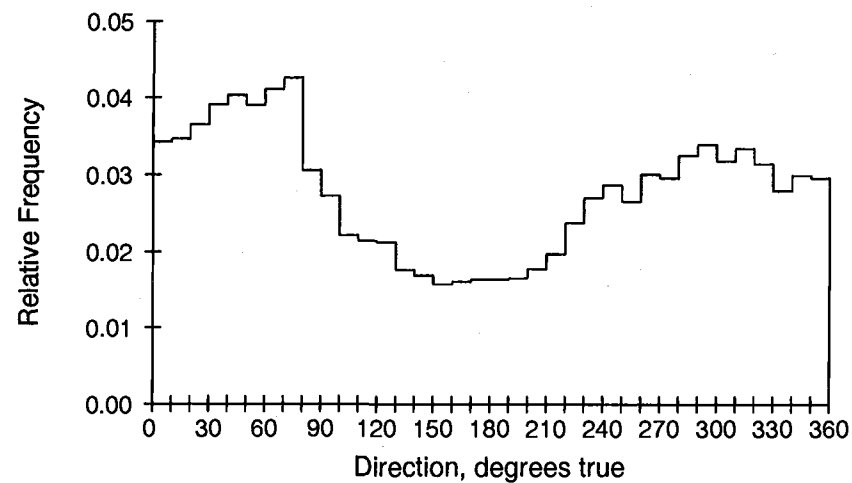
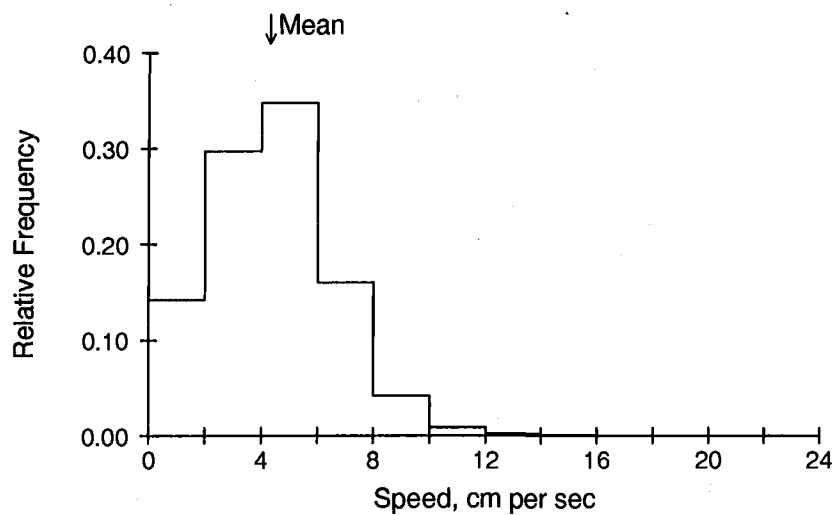
5039 meters at KIWI 17. 9 Feb 91 - 23 Nov 92. Tape 9808/7.

	min	mean	max	sd	num
Speed, cm/sec	0.04	1.73	6.30	1.14	2614
U, cm/sec	-5.96	-0.89	3.33	1.43	2614
V, cm/sec	-5.92	-0.24	2.73	1.18	2614
Temp, deg c	1.04	1.05	1.06	0.00	2614

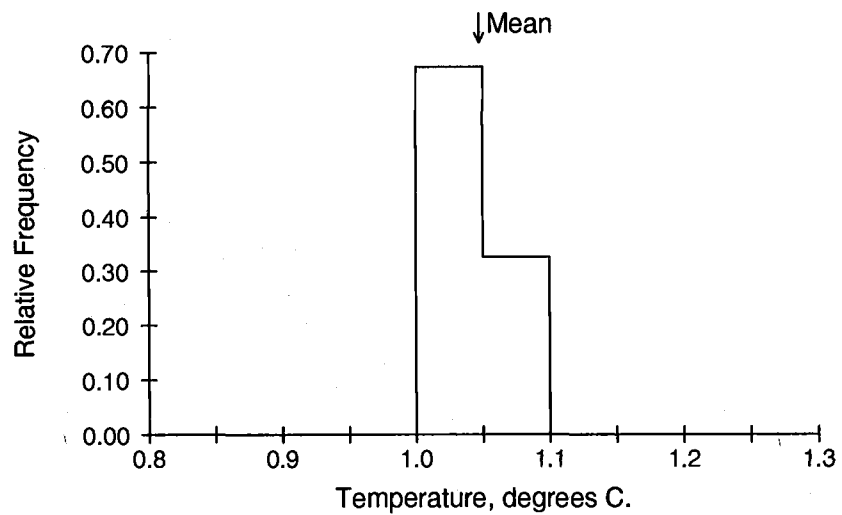
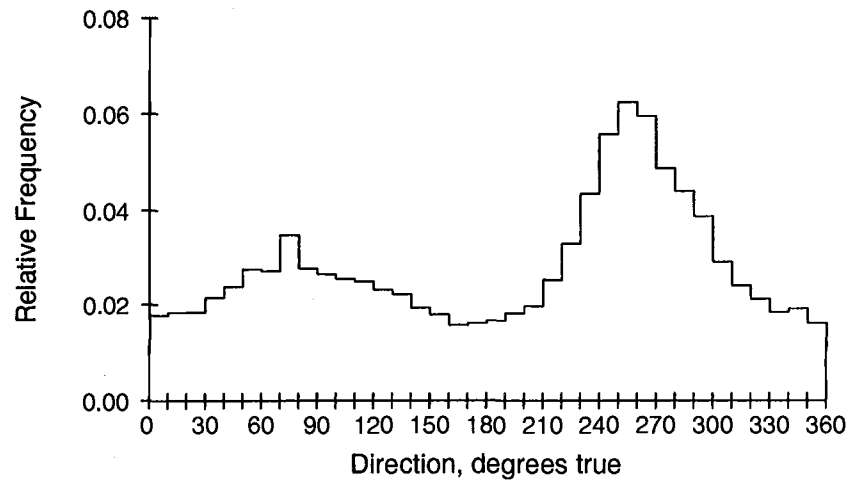
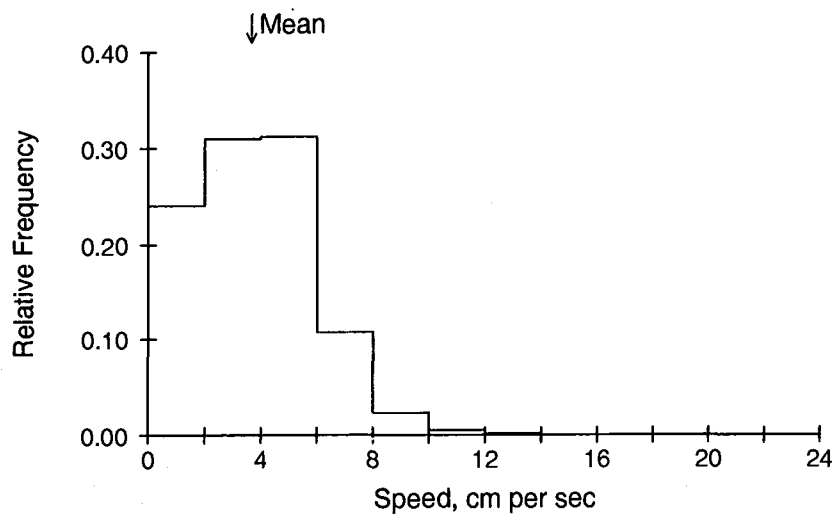
2520m at Kiwi 17. 7 Feb 91 - 24 Nov 92. RCM 3123/50.

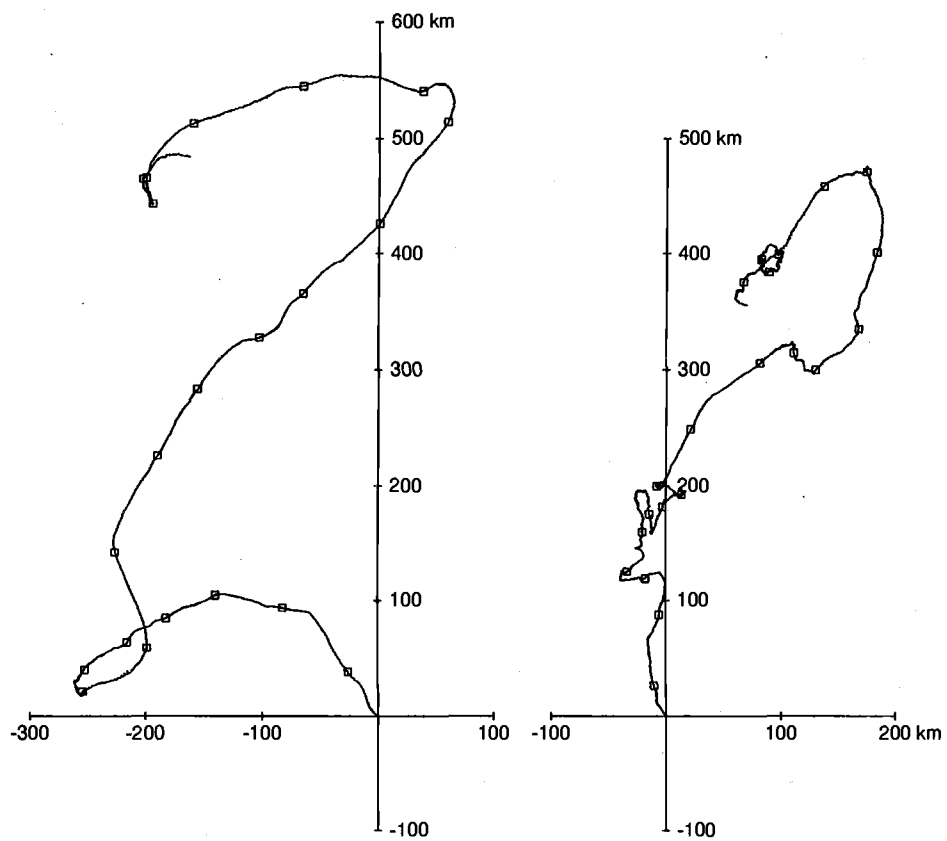


4020m at Kiwi 17. 7 Feb 91 - 24 Nov 92. RCM 5868/20.



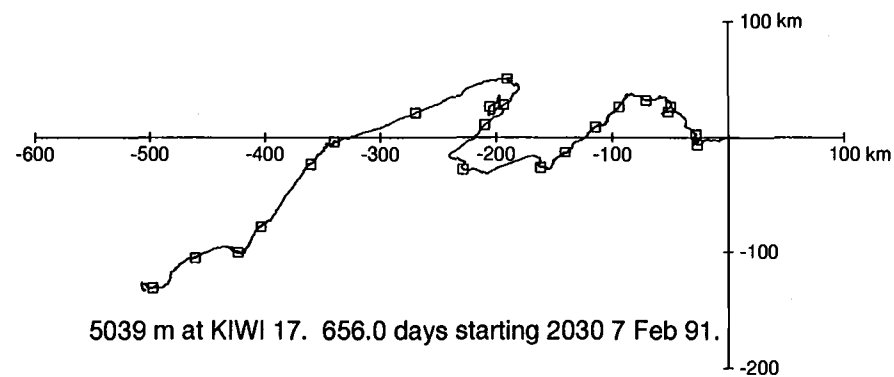
5039m at Kiwi 17. 7 Feb 91 - 24 Nov 92. RCM 9808/7.





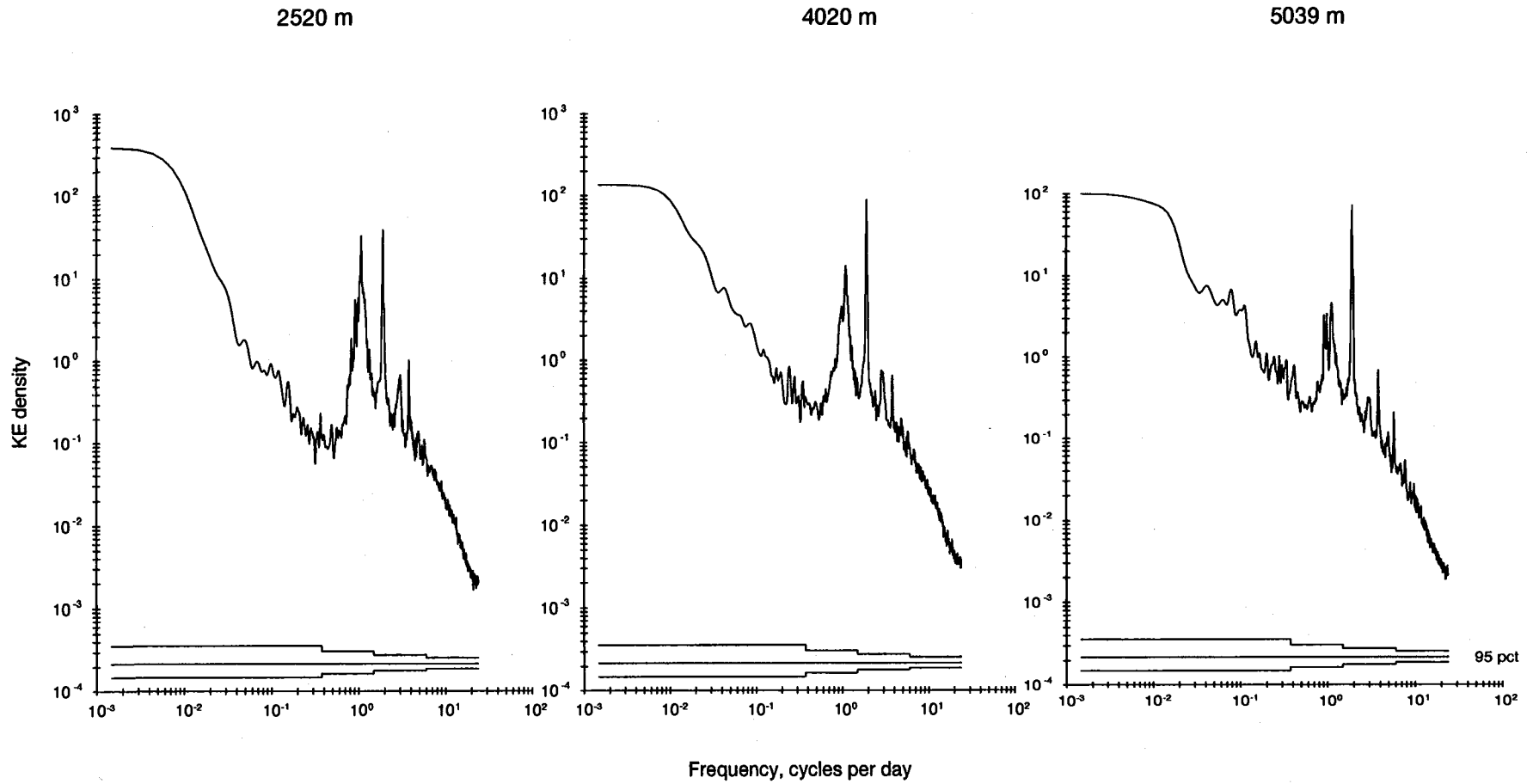
2520 m at KIWI 17. 656.0 days starting 2030 7 Feb 91.

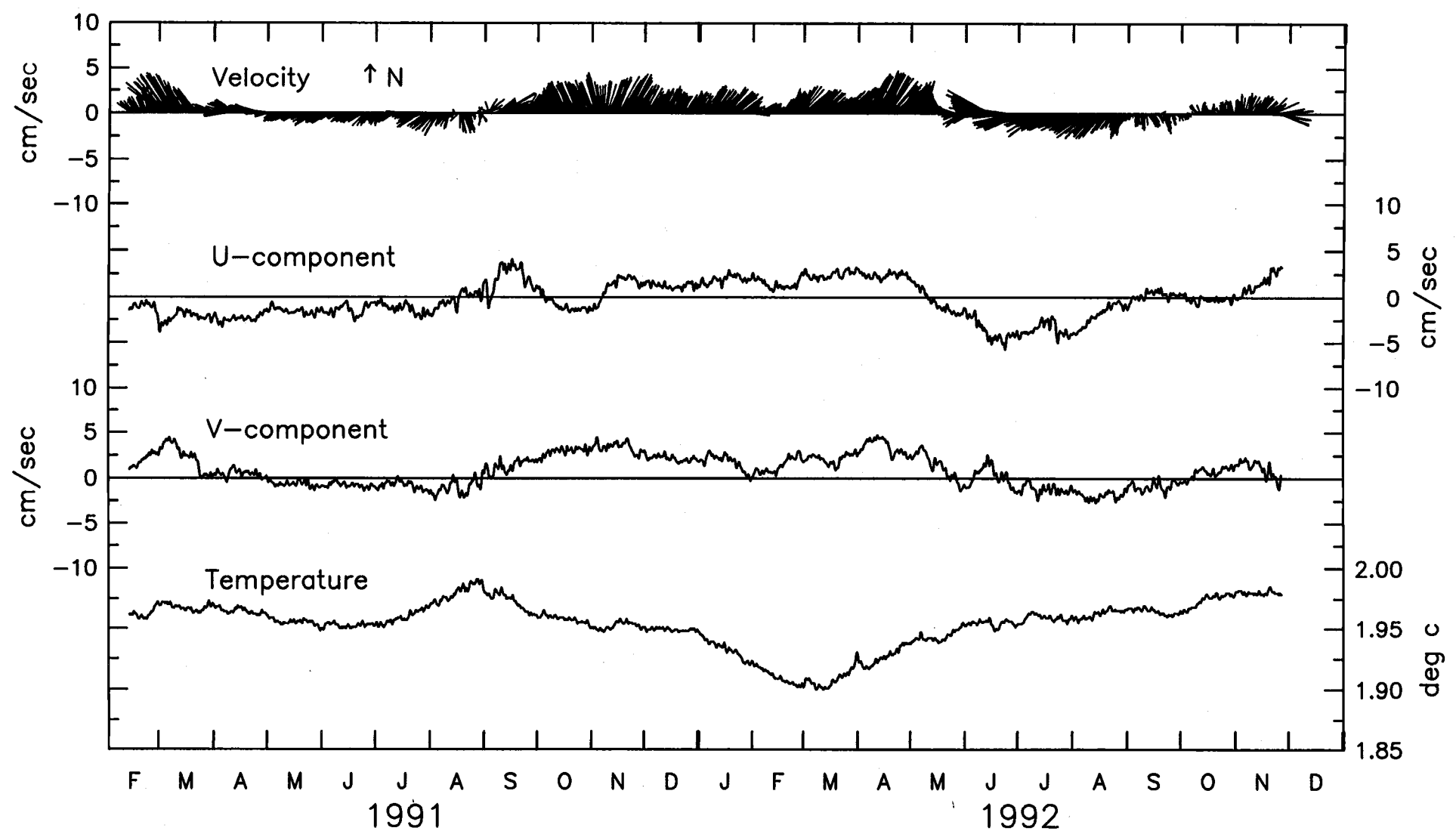
4020 m at KIWI 17. 656.0 days starting 2030 7 Feb 91.



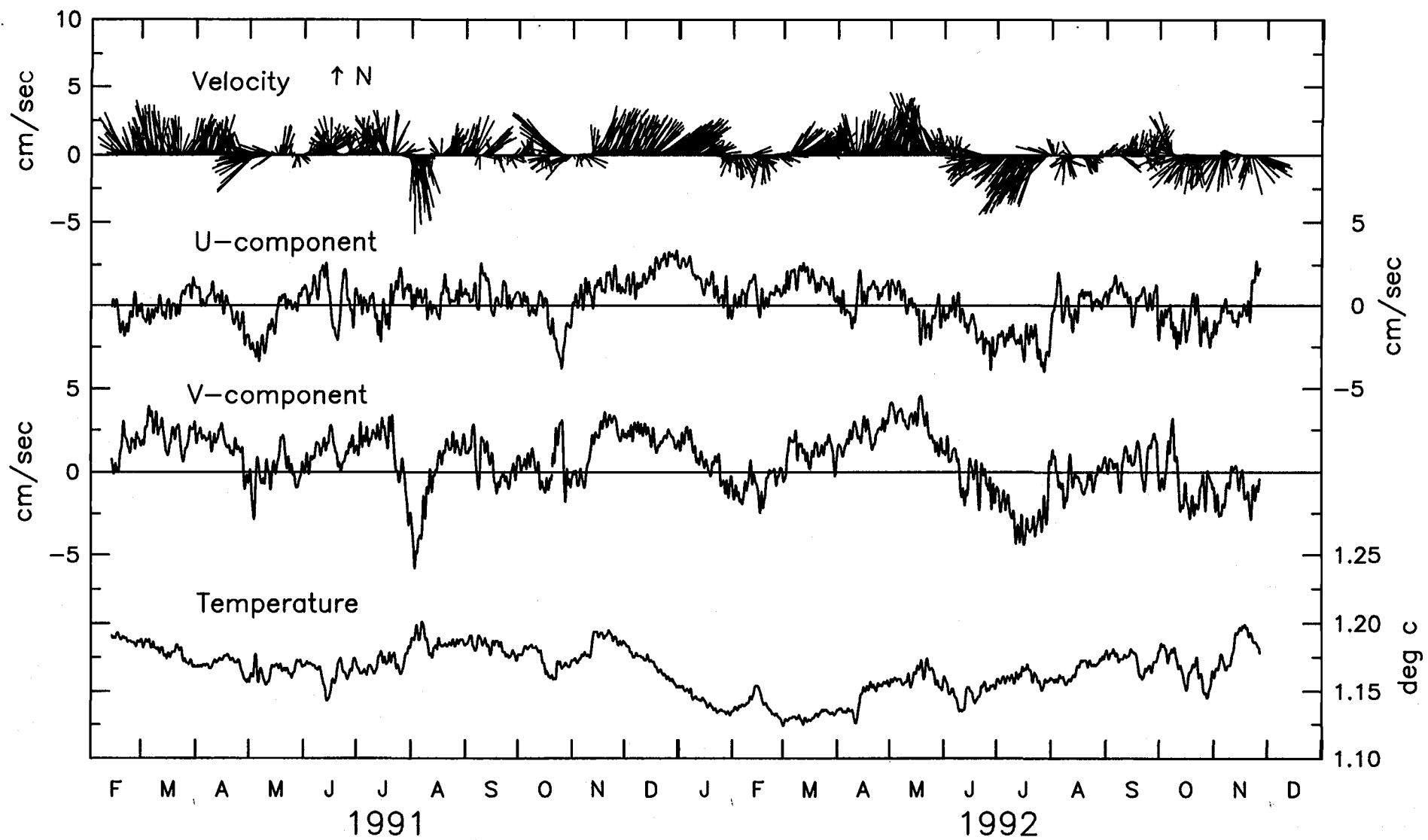
5039 m at KIWI 17. 656.0 days starting 2030 7 Feb 91.

Unfiltered Current (both components) Kiwi 17.

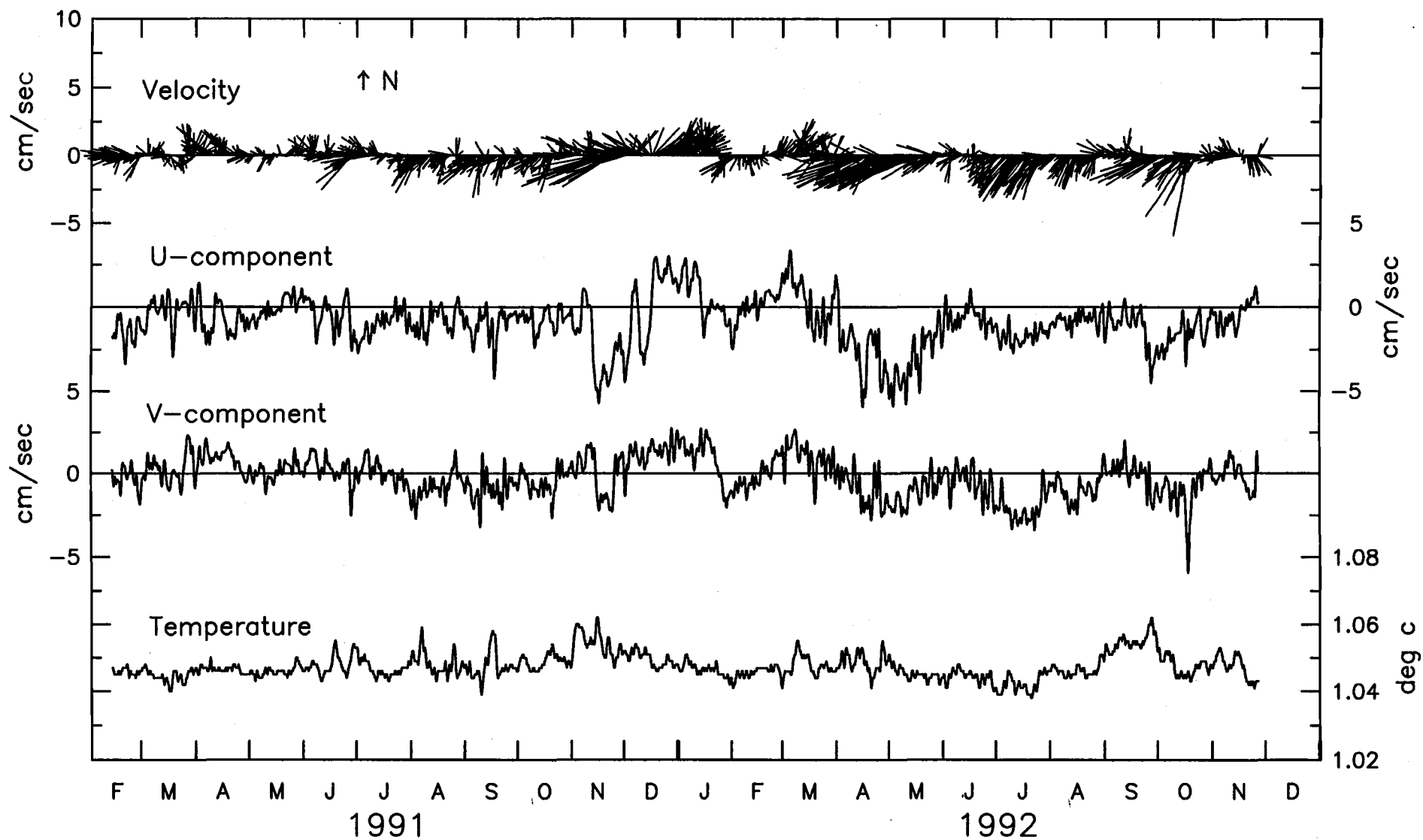




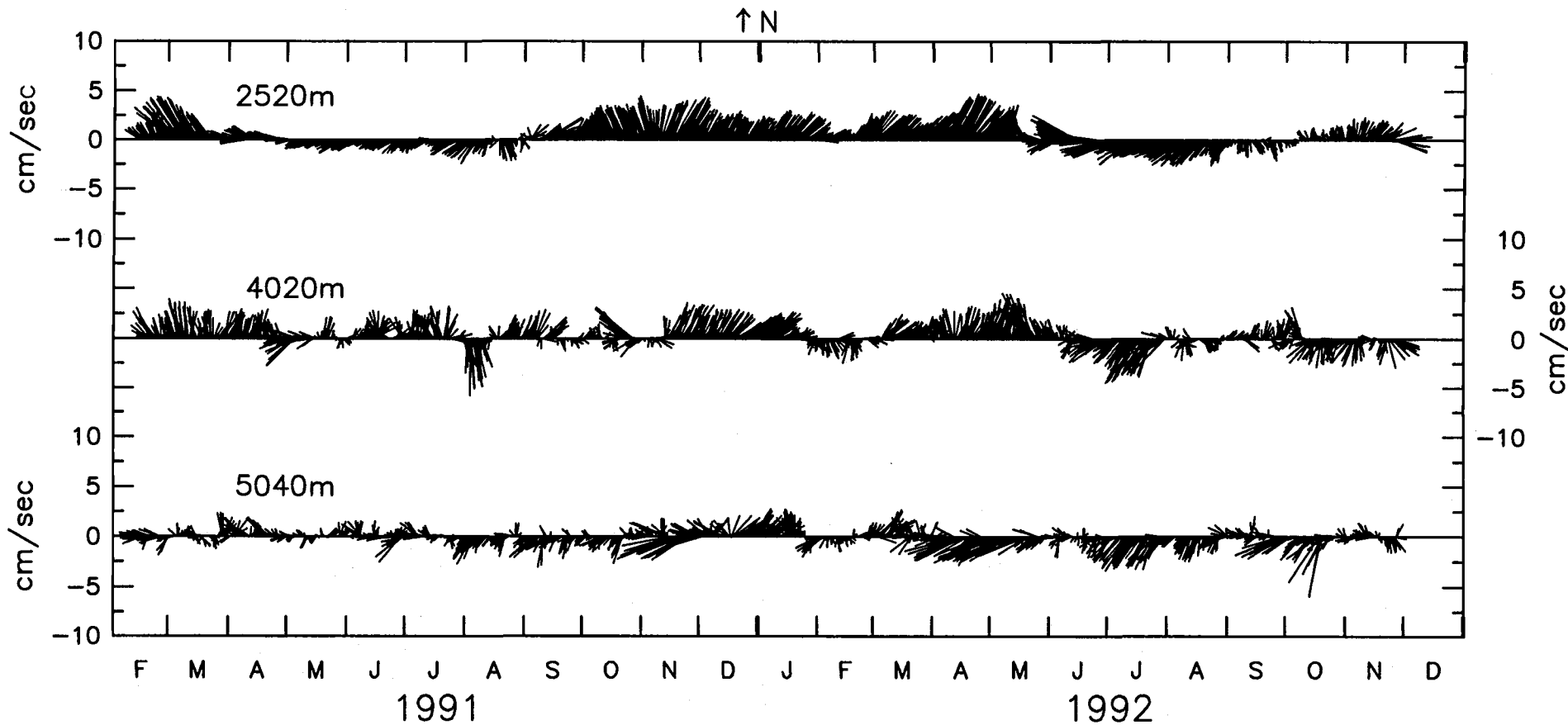
2520m at KIWI 17. LLP 6-hourly Data.



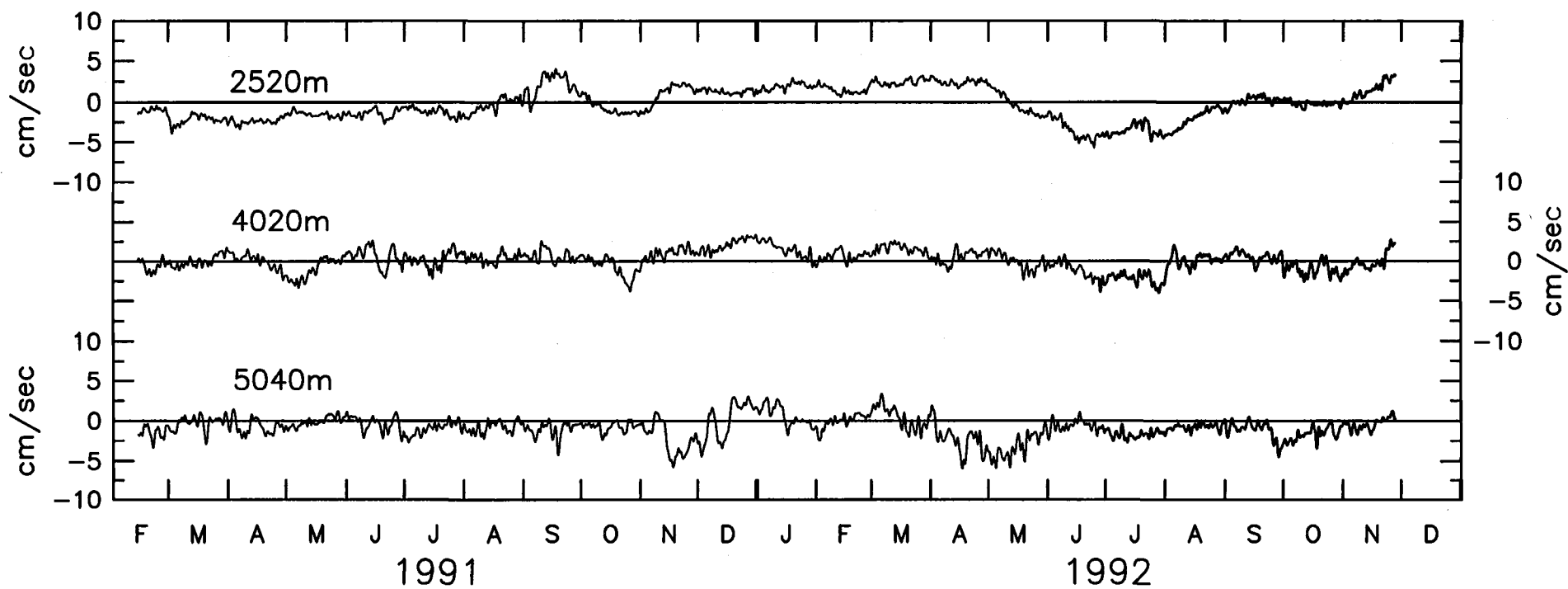
4020m at KIWI 17. LLP 6-hourly Data.



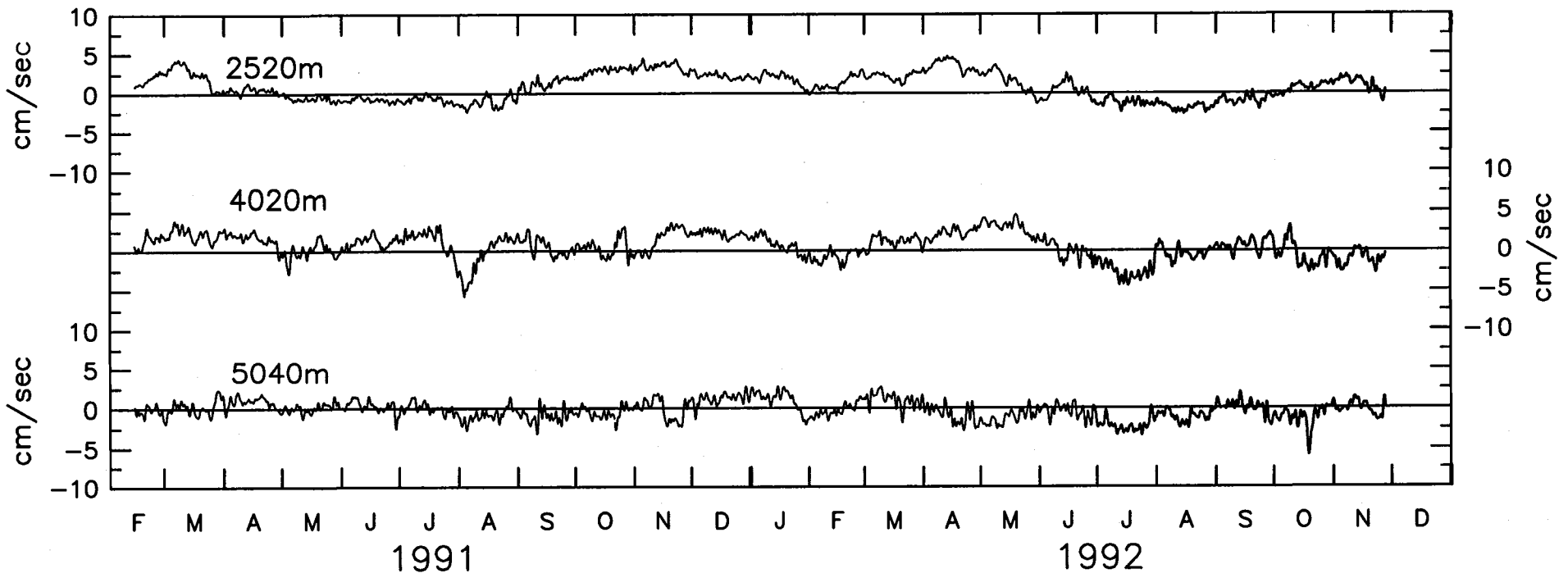
5039m at KIWI 17. LLP 6-hourly Data.



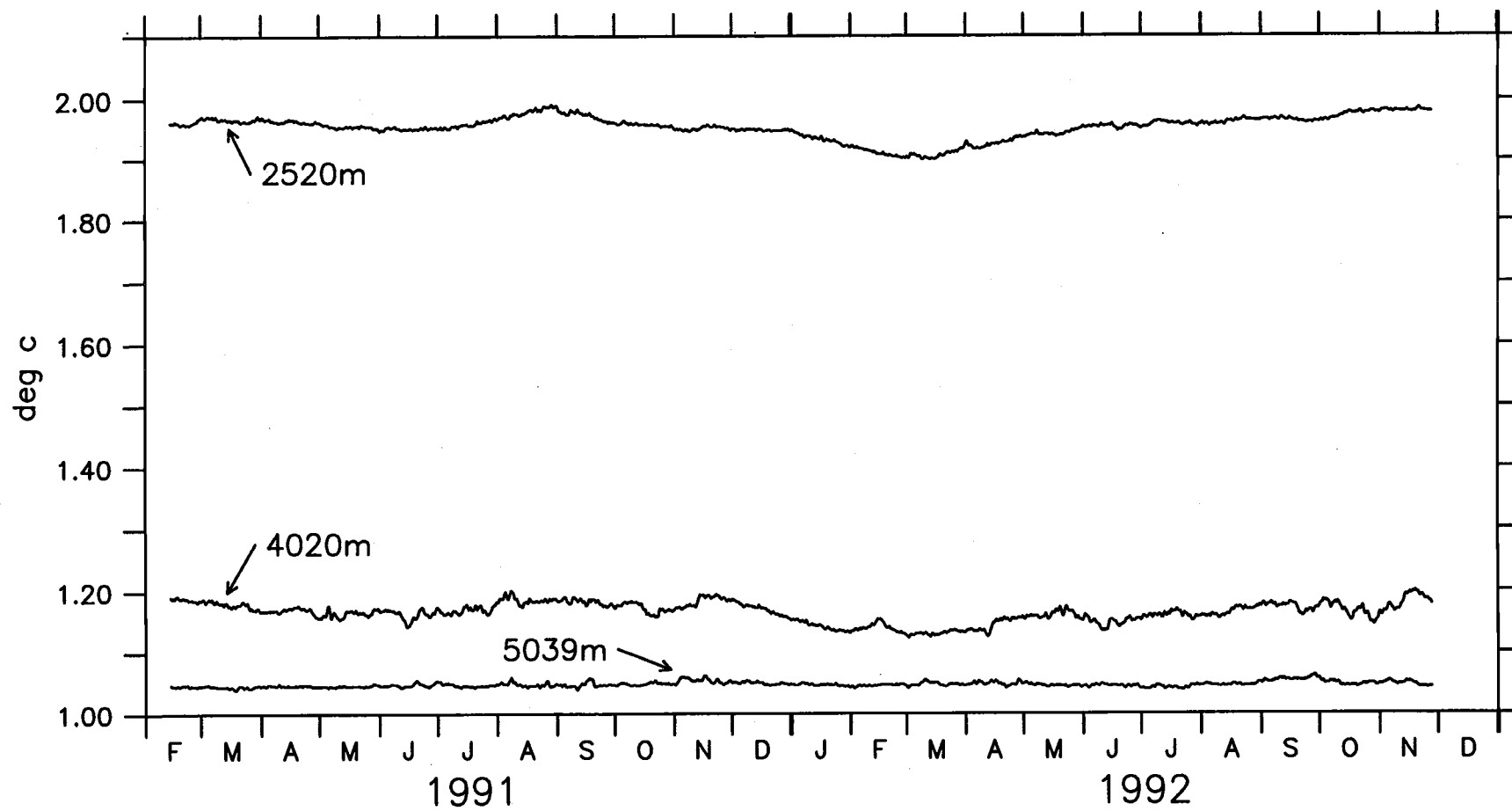
Velocity at KIWI 17. LLP 6-hourly Data.



U-component at KIWI 17. LLP 6-hourly Data.

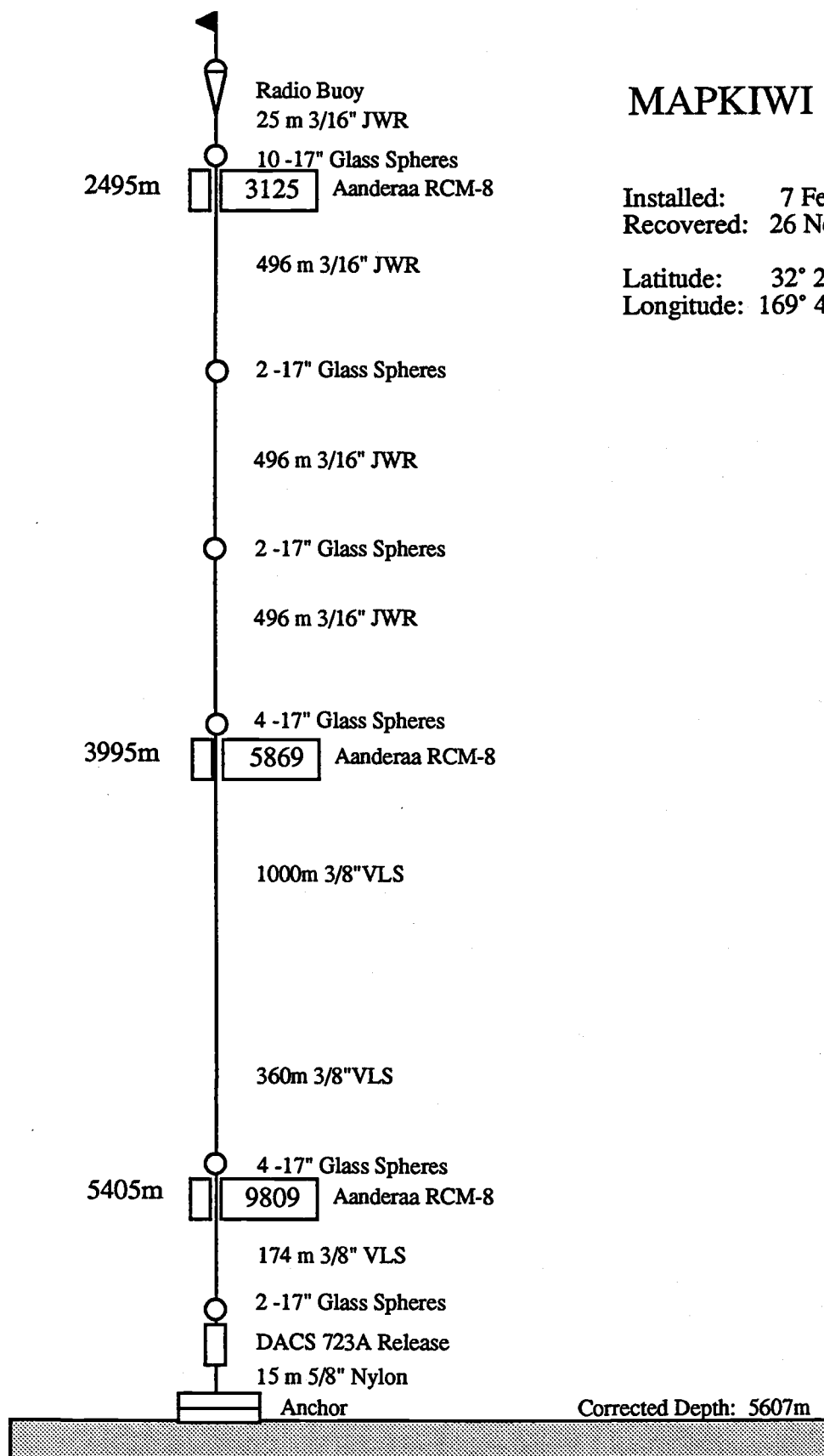


V-component at KIWI 17. LLP 6-hourly Data.



Temperature at KIWI 17. LLP 6-hourly Data.

MAPKIWI 18



Installed: 7 Feb 91
Recovered: 26 Nov 92

Latitude: 32° 28.87'S
Longitude: 169° 40.77'W

KIWI 18.

Position: 32° 28.87'S
 169° 40.77'W
 Depth of Water: 5607
 Mooring Set: 1808 7 February 1991
 Mooring Retrieved: 1612 26 Nov 1992
 Data Interval 0300 7 February 1991 - 1530 26 November 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2495	3125/49
3995	5869/18
5405	9809/7

Instrument 3125 recorded u, v, temperature and pressure every 30 minutes for 5.6 days, after which time it flooded through the endcap. Data from this instrument are not included.

Instrument 5869 recorded u, v and temperature every 30 minutes.

Instrument 9809 recorded u, v, and temperature every 30 minutes. The very low (mostly at threshold speeds at the beginning of the record look suspicious. Data from line 1 to 3393 (0300 7 February 1991 - 1900 18 April 91) should be treated with caution.

3995 meters at KIWI 18. 7 Feb 91 - 26 Nov 92. Tape 5869/18.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.51	12.30	1.98	31610
U, cm/sec	-11.43	0.36	12.11	2.78	31610
V, cm/sec	-10.87	-0.13	10.00	2.90	31610
Temp, deg c	1.15	1.25	1.34	0.03	31610

5405 meters at KIWI 18. 7 Feb 91 - 26 Nov 92. Tape 9809/7.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.23	14.89	2.18	31610
U, cm/sec	-8.29	-0.02	8.45	2.26	31610
V, cm/sec	-13.48	-0.64	8.22	3.11	31610
Temp, deg c	1.06	1.07	1.08	0.00	31610

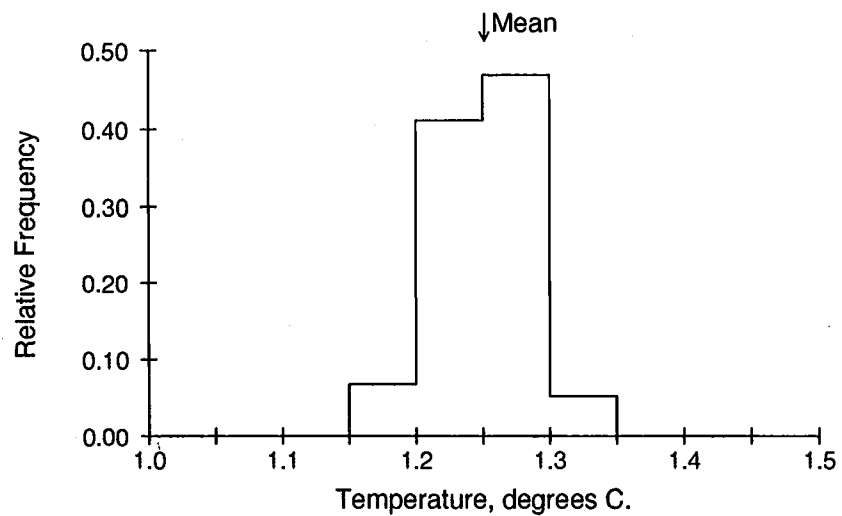
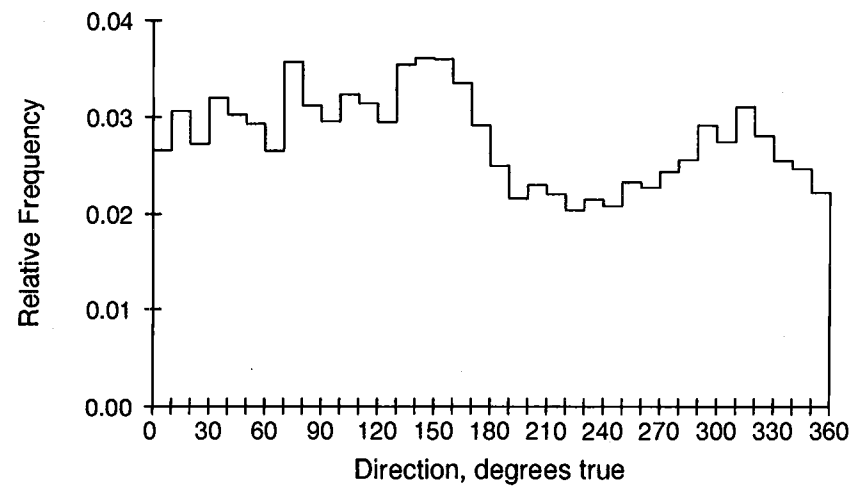
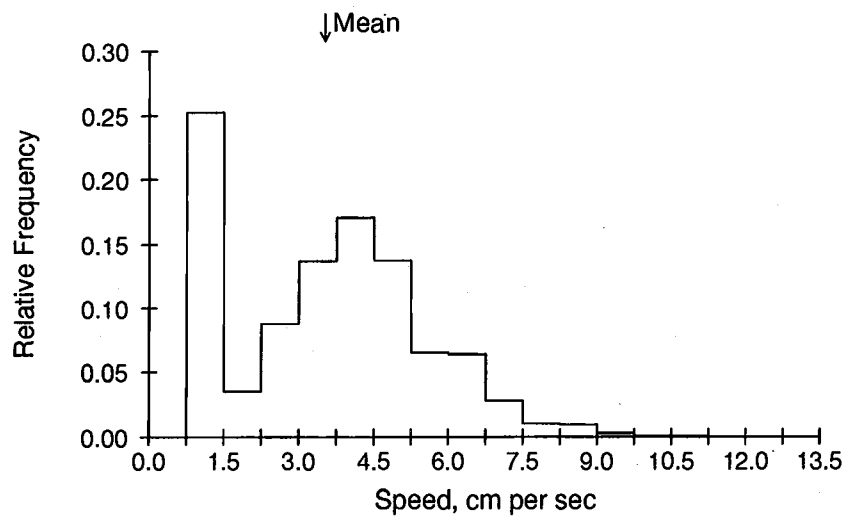
3995 meters at KIWI 18. 8 Feb 91 - 25 Nov 92. Tape 5869/18.

	min	mean	max	sd	num
Speed, cm/sec	0.04	2.07	6.77	1.18	2624
U, cm/sec	-2.94	0.36	5.38	1.23	2624
V, cm/sec	-6.42	-0.13	4.40	2.00	2624
Temp, deg c	1.18	1.25	1.31	0.03	2624

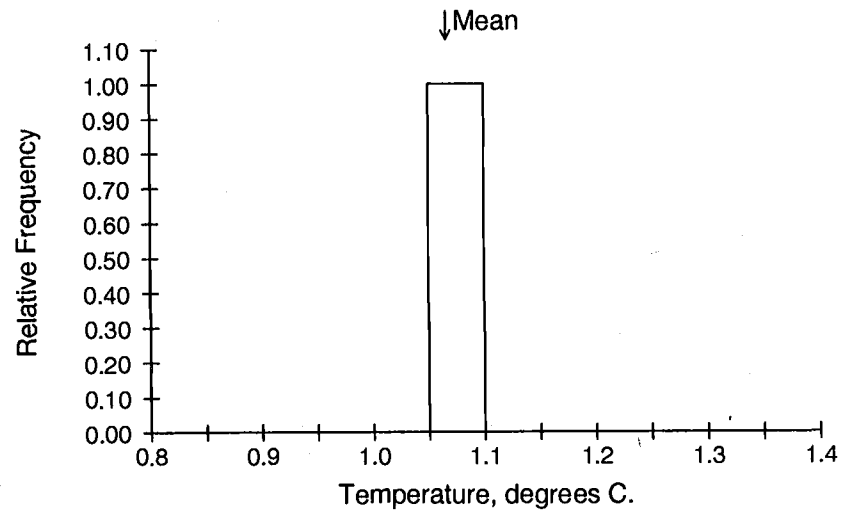
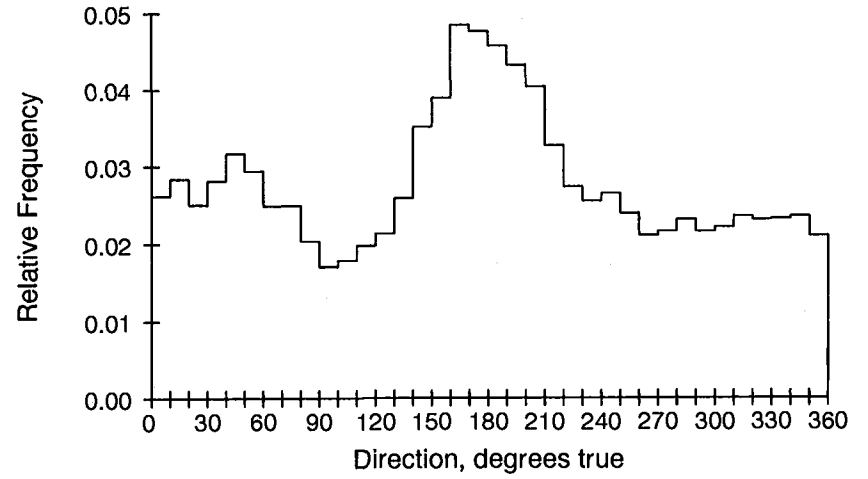
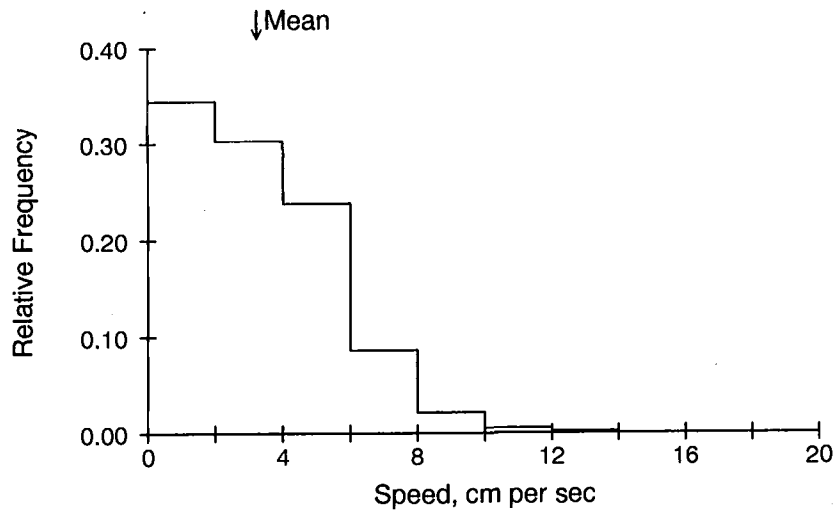
5405 meters at KIWI 18. 8 Feb 91 - 25 Nov 92. Tape 9809/7.

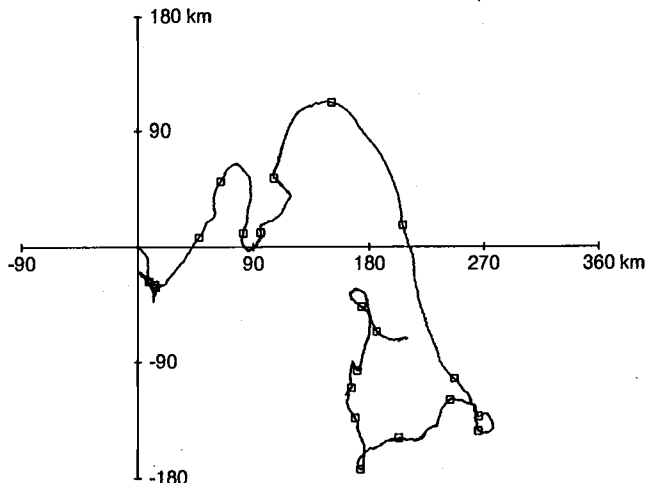
	min	mean	max	sd	num
Speed, cm/sec	0.06	2.58	11.95	1.75	2624
U, cm/sec	-3.96	-0.02	5.23	1.31	2624
V, cm/sec	-11.36	-0.64	6.52	2.75	2624
Temp, deg c	1.06	1.07	1.07	0.00	2624

3995m at Kiwi 18. 7 Feb 91 - 26 Nov 92. RCM 5869/18.

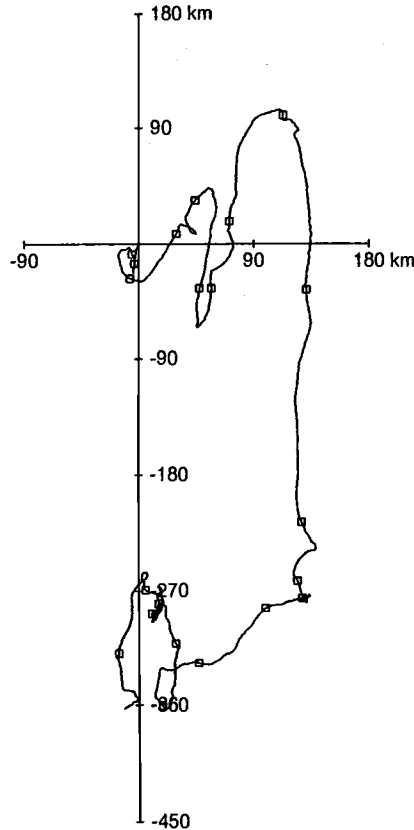


5405m at Kiwi 18. 7 Feb 91 - 26 Nov 92. RCM 9809/7.



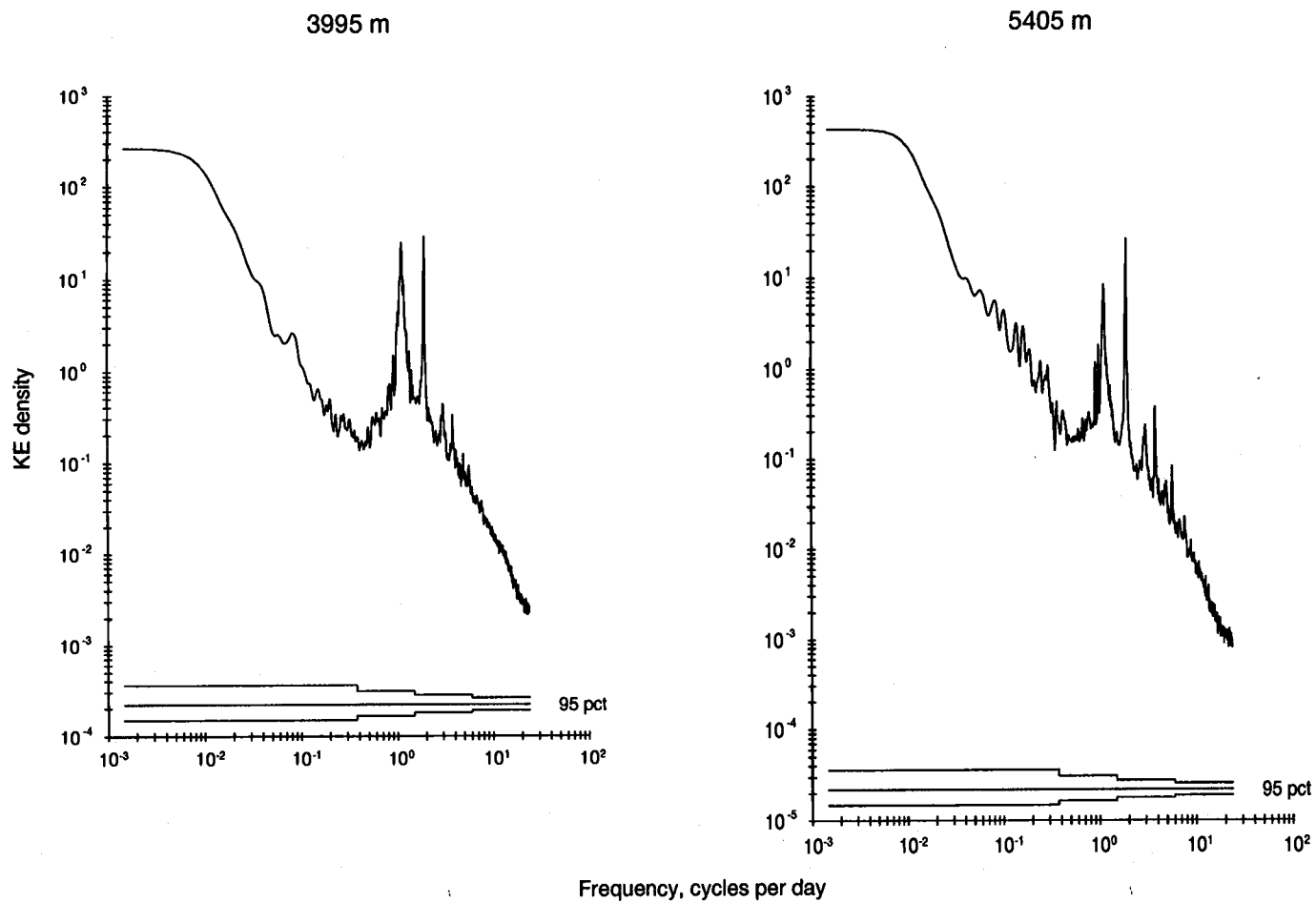


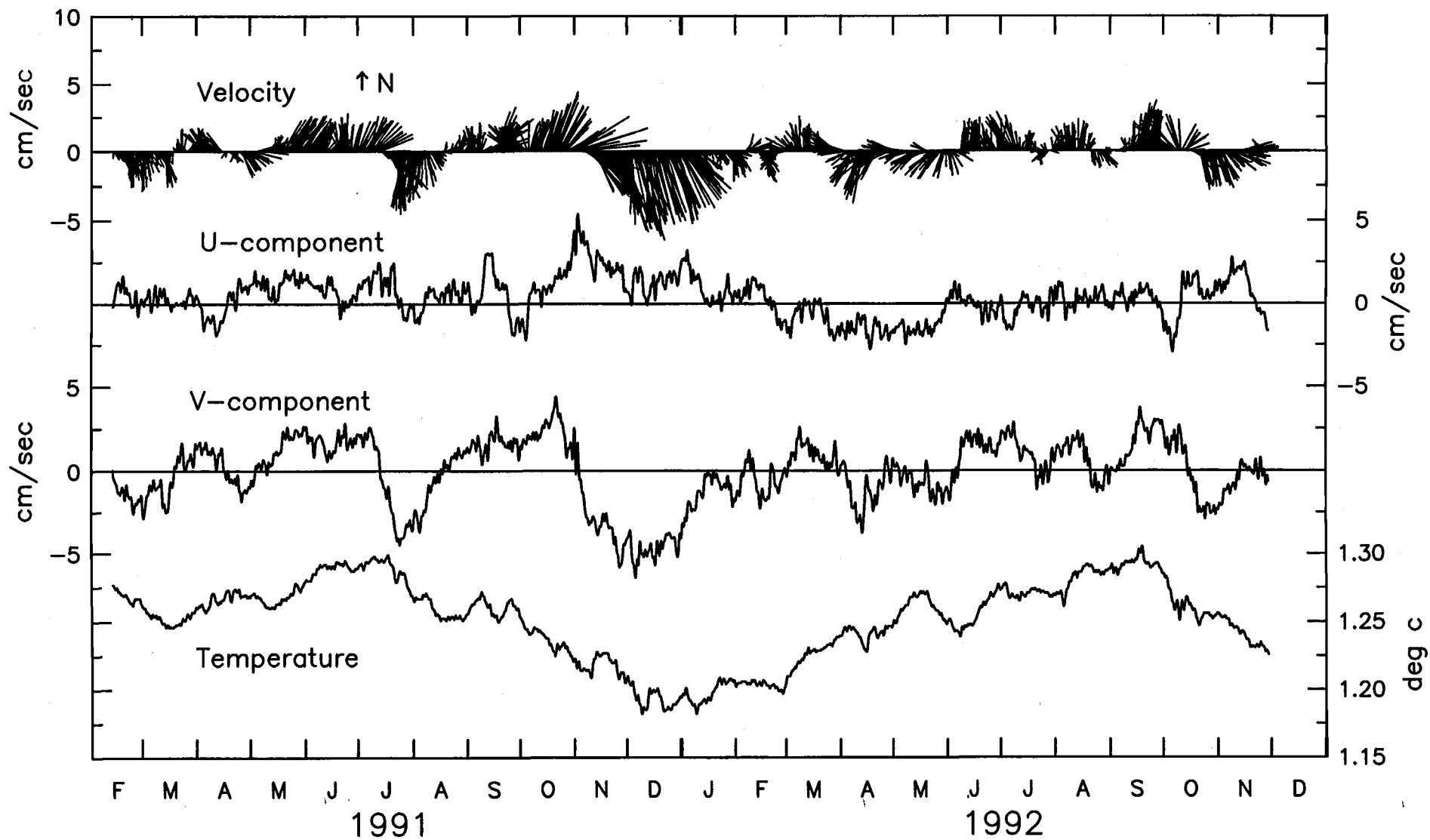
3995 m at KIWI 18. 658.5 days starting 0300 7 Feb 91.



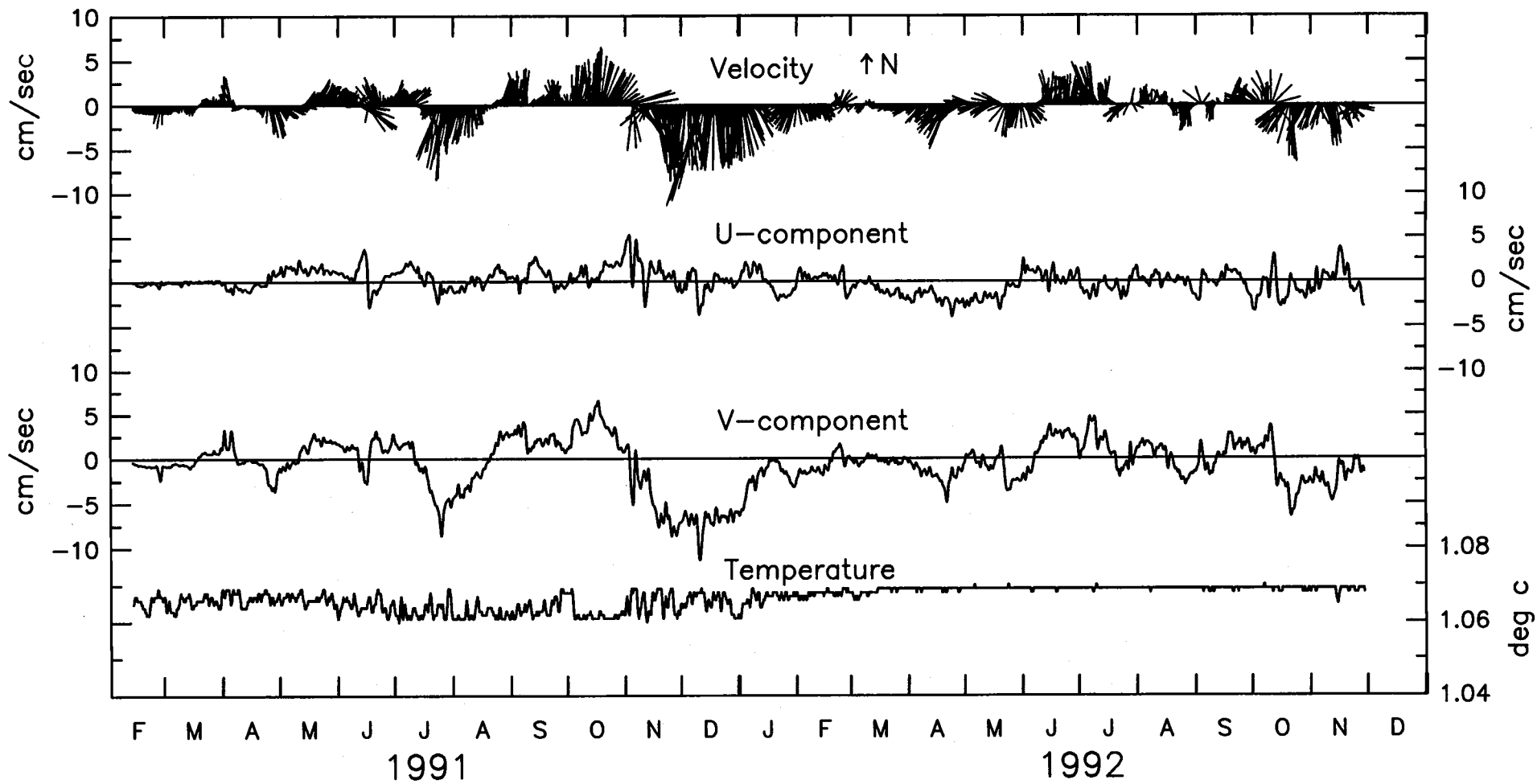
5405 m at KIWI 18. 658.5 days starting 0300 7 Feb 91.

Unfiltered Current (both components) Kiwi 18.

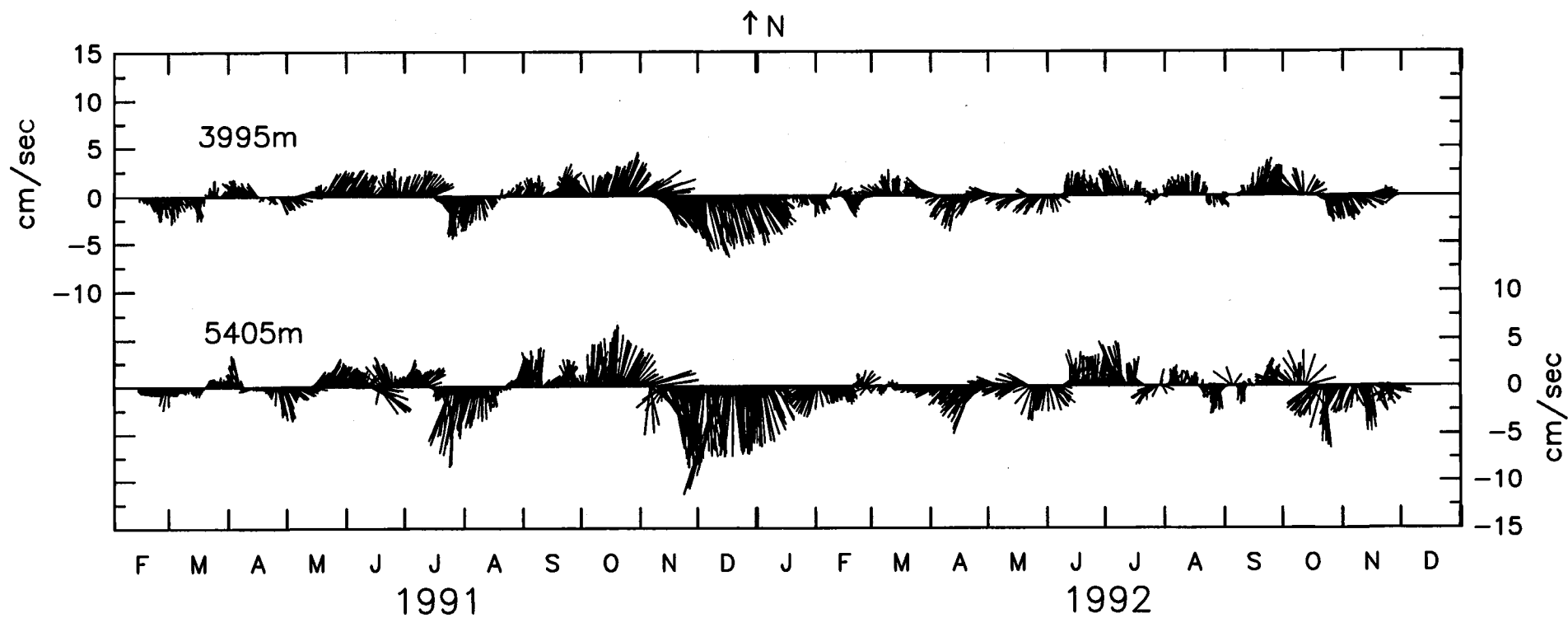




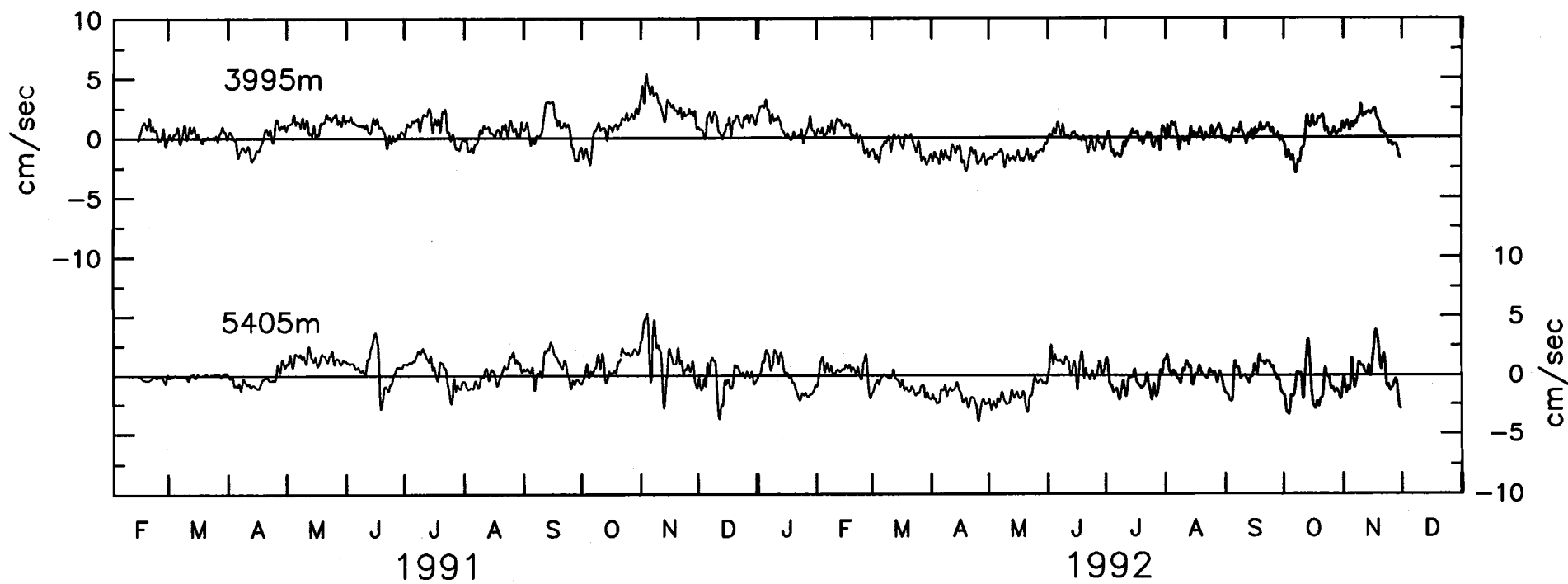
3995m at KIWI 18. LLP 6-hourly Data.



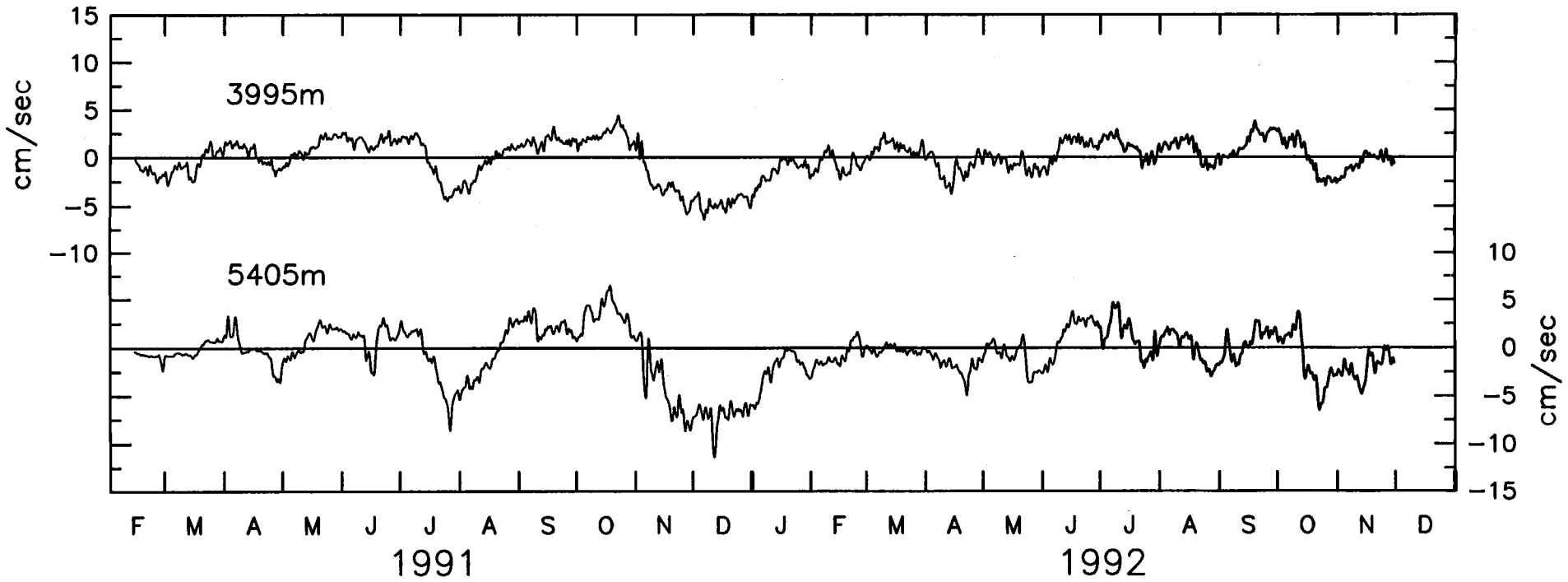
5405m at KIWI 18. LLP 6-hourly Data.



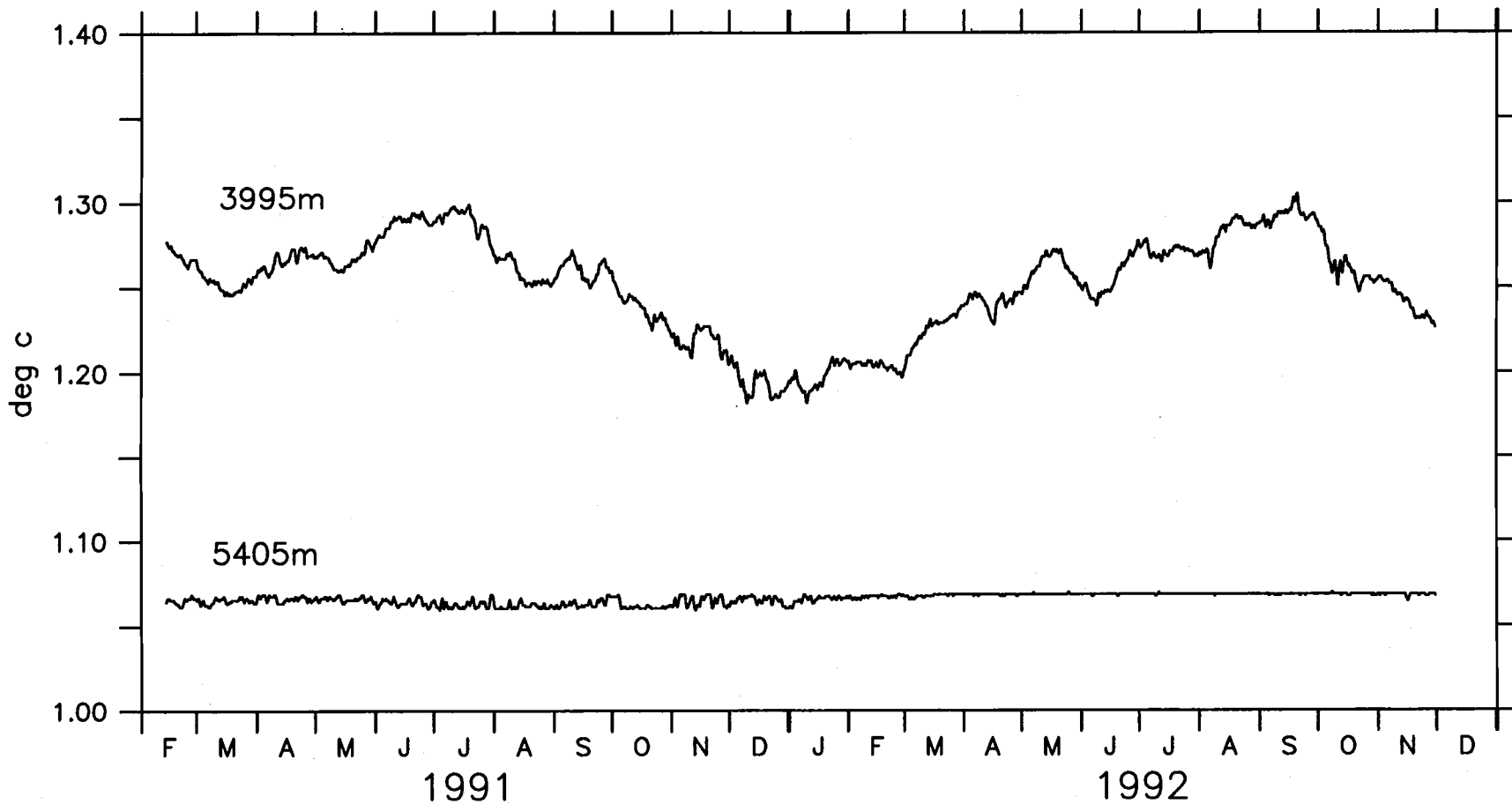
Velocity at KIWI 18. LLP 6-hourly Data.



U-component at KIWI 18. LLP 6-hourly Data.



V-component at KIWI 18. LLP 6-hourly Data.

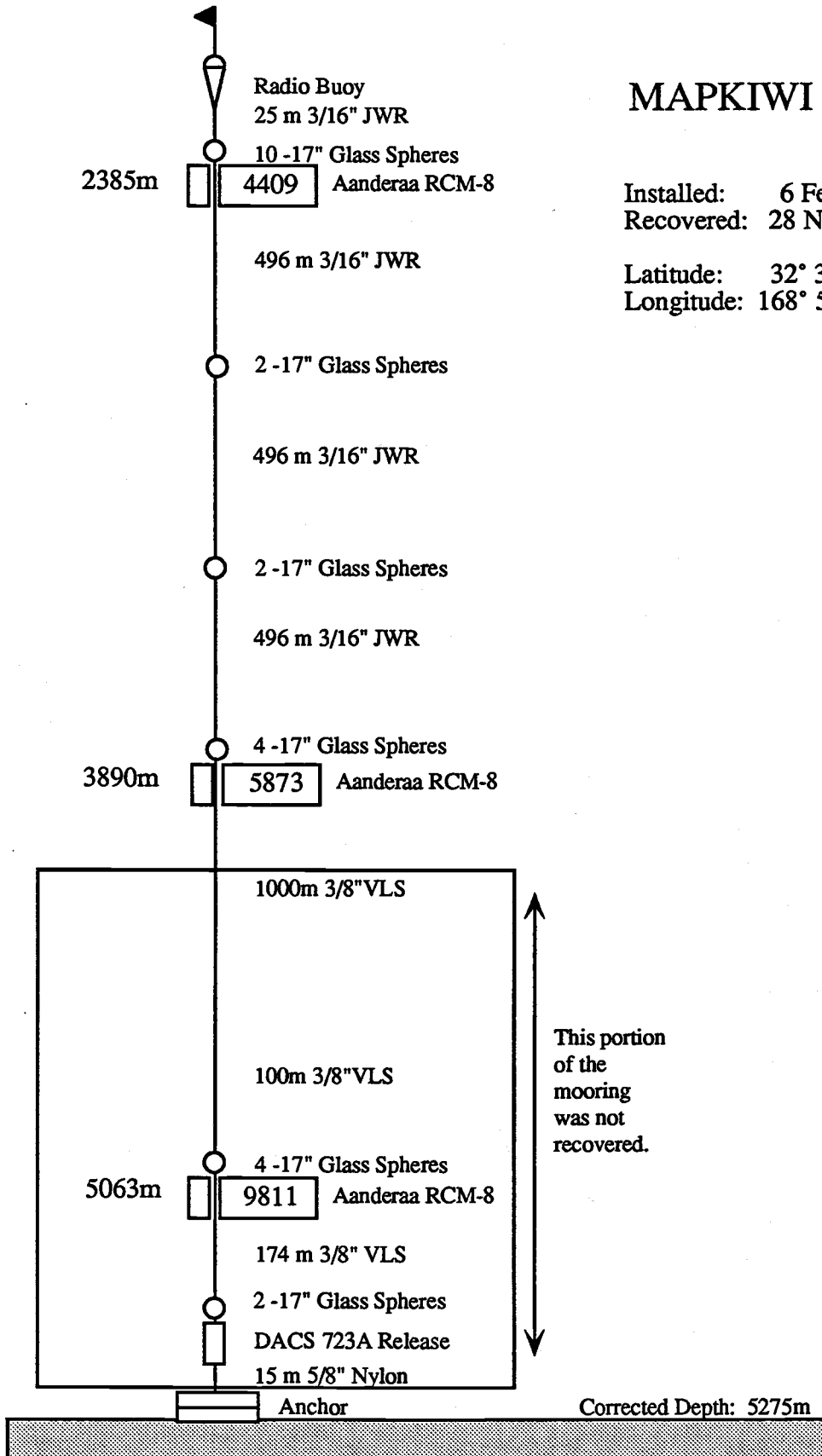


Temperature at KIWI 18. LLP 6-hourly Data.

MAPKIWI 19

Installed: 6 Feb 91
 Recovered: 28 Nov 92

Latitude: 32° 30.36'S
 Longitude: 168° 54.98'W



KIWI 19.

Position: 32° 30.36'S
168° 54.98'W
Depth of Water: 5275
Mooring Set: 1843 6 February 1991
Mooring Retrieved: 0515 28 November 1992
Data Interval 2100 6 February 1991 - 0400 28 November 1992

Instrumentation:

<u>Depth m</u>	<u>RCM8 Serial No./ Sequence No.</u>
2385	4409/33
3890	5873/18
5074	9811/

This mooring was recovered by dragging. The bottom meter was not recovered.

Instrument 4409 recorded u, v, temperature, and pressure every 30 minutes.

Instrument 5873 recorded u, v, and temperature every 30 minutes.

Instrument 9811 was not recovered.

2385 meters at KIWI 19. 6 Feb 91 - 28 Nov 92. Tape 4409/33.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.18	12.59	2.08	31695
U, cm/sec	-8.95	0.04	10.28	2.65	31695
V, cm/sec	-12.59	-0.38	11.15	2.70	31695
Temp, deg c	1.99	2.05	2.11	0.02	31695
Pressure, db	2417.61	2419.60	2425.19	1.89	31695

3890 meters at Kiwi 19. 6 Feb 91 - 28 Nov 92. Tape 5873/18.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.30	10.58	1.83	31695
U, cm/sec	-10.52	-0.20	9.44	2.78	31695
V, cm/sec	-8.48	0.59	8.83	2.48	31695
Temp, deg c	1.23	1.31	1.39	0.02	31695

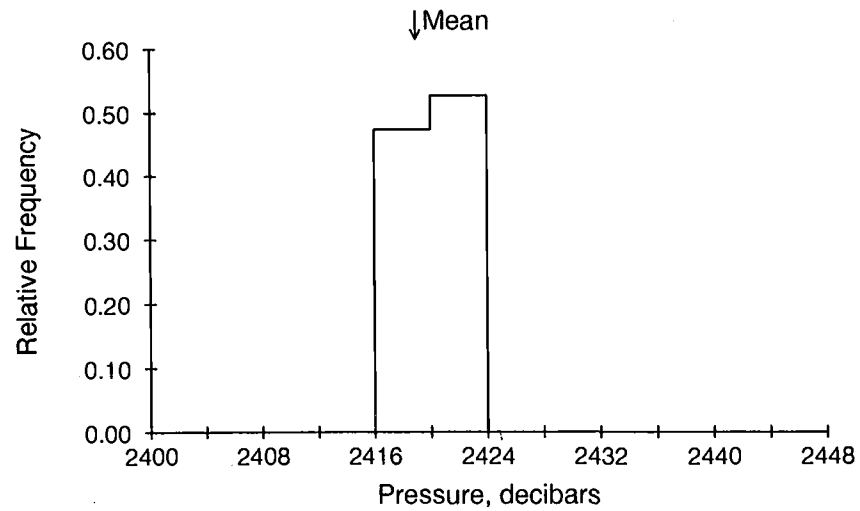
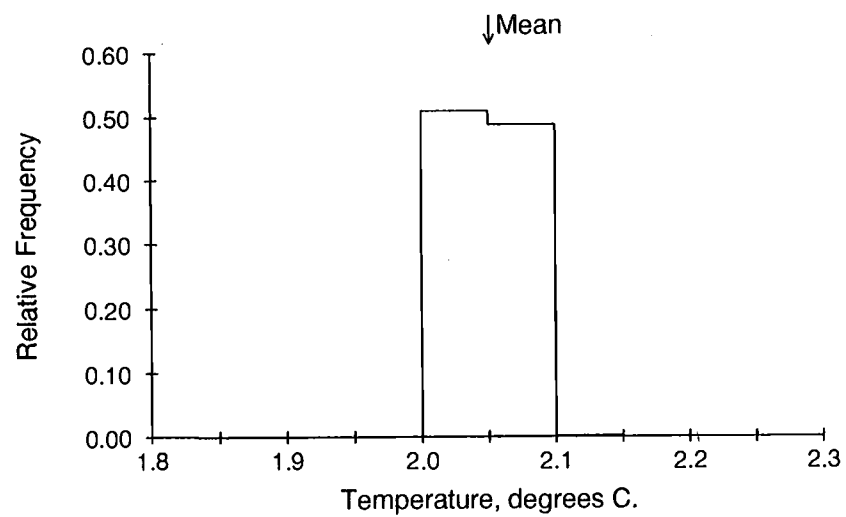
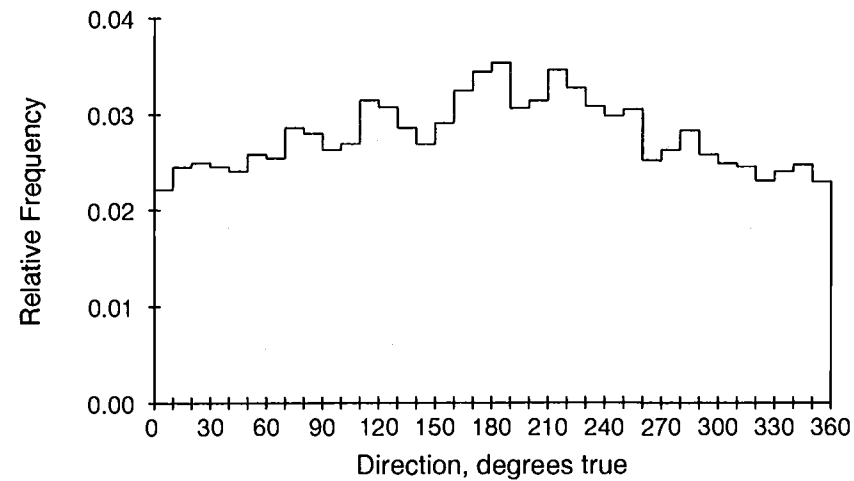
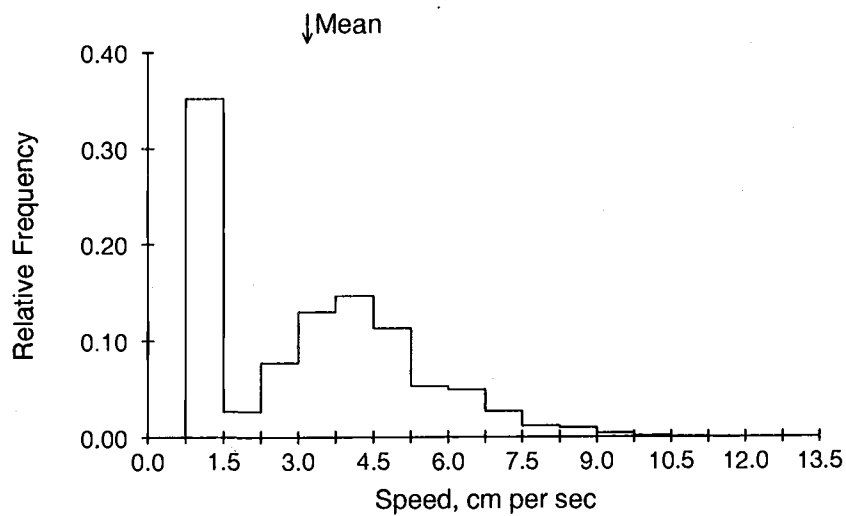
2385 meters at KIWI 19. 8 Feb 91 - 26 Nov 92. Tape 4409/33.

	min	mean	max	sd	num
Speed, cm/sec	0.02	1.92	5.39	1.10	2631
U, cm/sec	-3.40	0.05	4.25	1.43	2631
V, cm/sec	-4.43	-0.37	3.51	1.64	2631
Temp, deg c	2.03	2.05	2.08	0.01	2631
Pressure, db	2417.41	2419.60	2421.45	1.70	2631

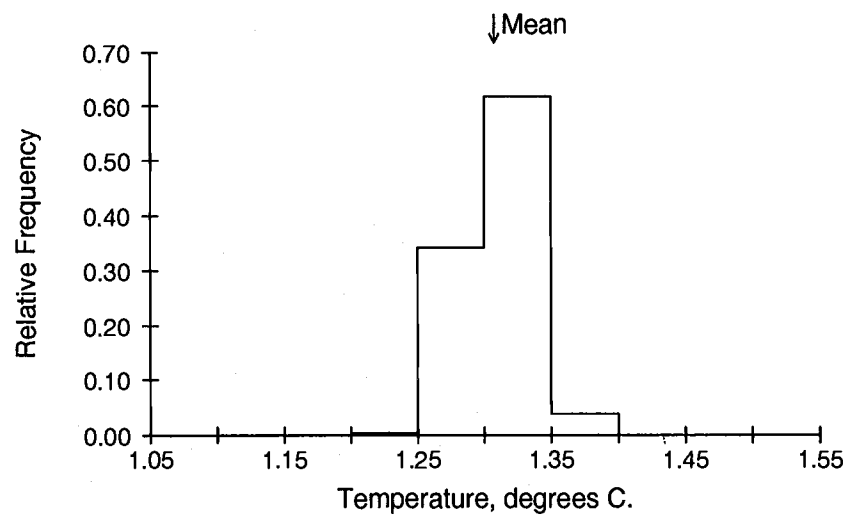
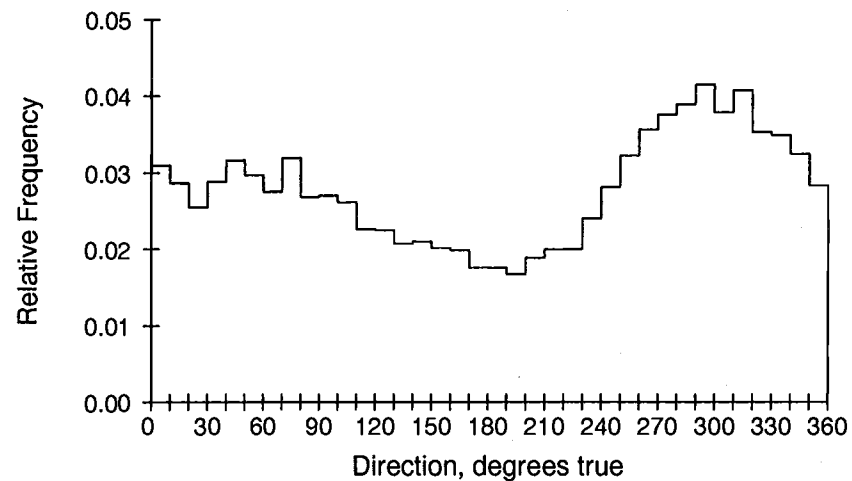
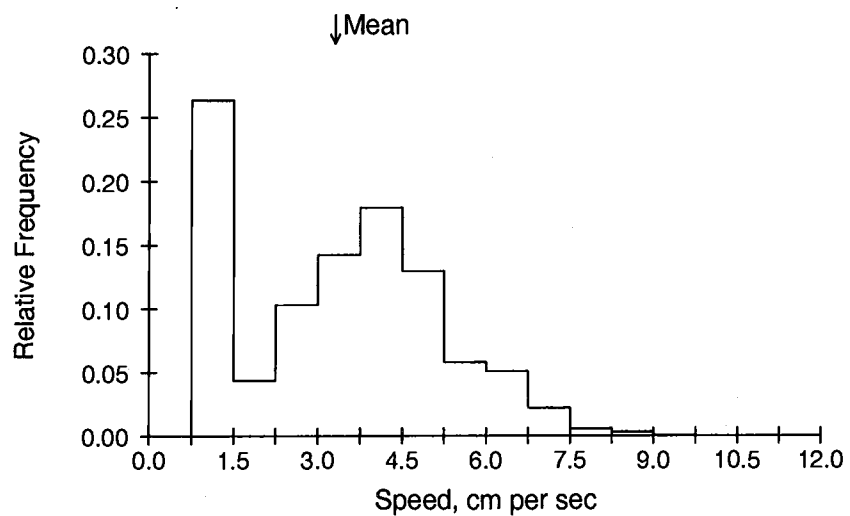
3890 meters at KIWI 19. 8 Feb 91 - 26 Nov 92. Tape 5873/18.

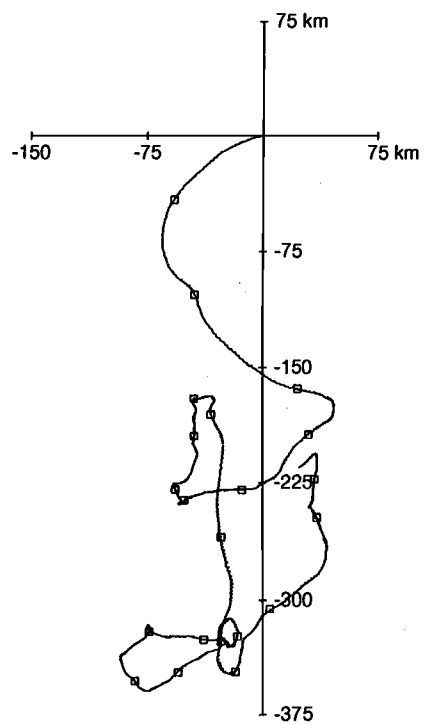
	min	mean	max	sd	num
Speed, cm/sec	0.01	1.31	4.30	0.82	2631
U, cm/sec	-4.24	-0.20	2.97	0.84	2631
V, cm/sec	-2.26	0.60	4.12	1.13	2631
Temp, deg c	1.27	1.31	1.33	0.01	2631

2385m at Kiwi 19. 6 Feb 91 - 28 Nov 92. RCM 4409/33.

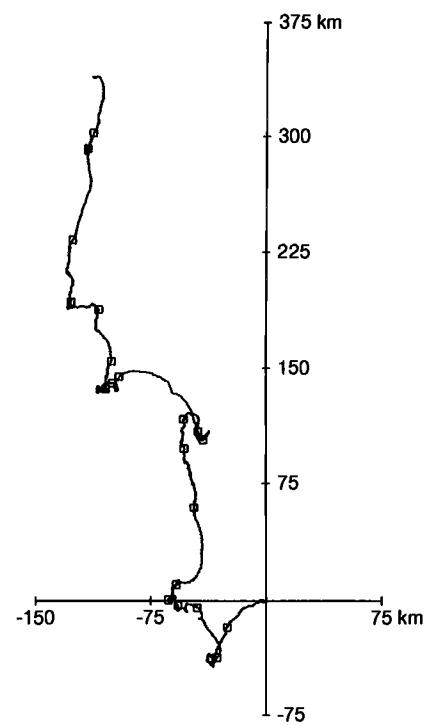


3890m at Kiwi 19. 6 Feb 91 - 28 Nov 92. RCM 5873/18.



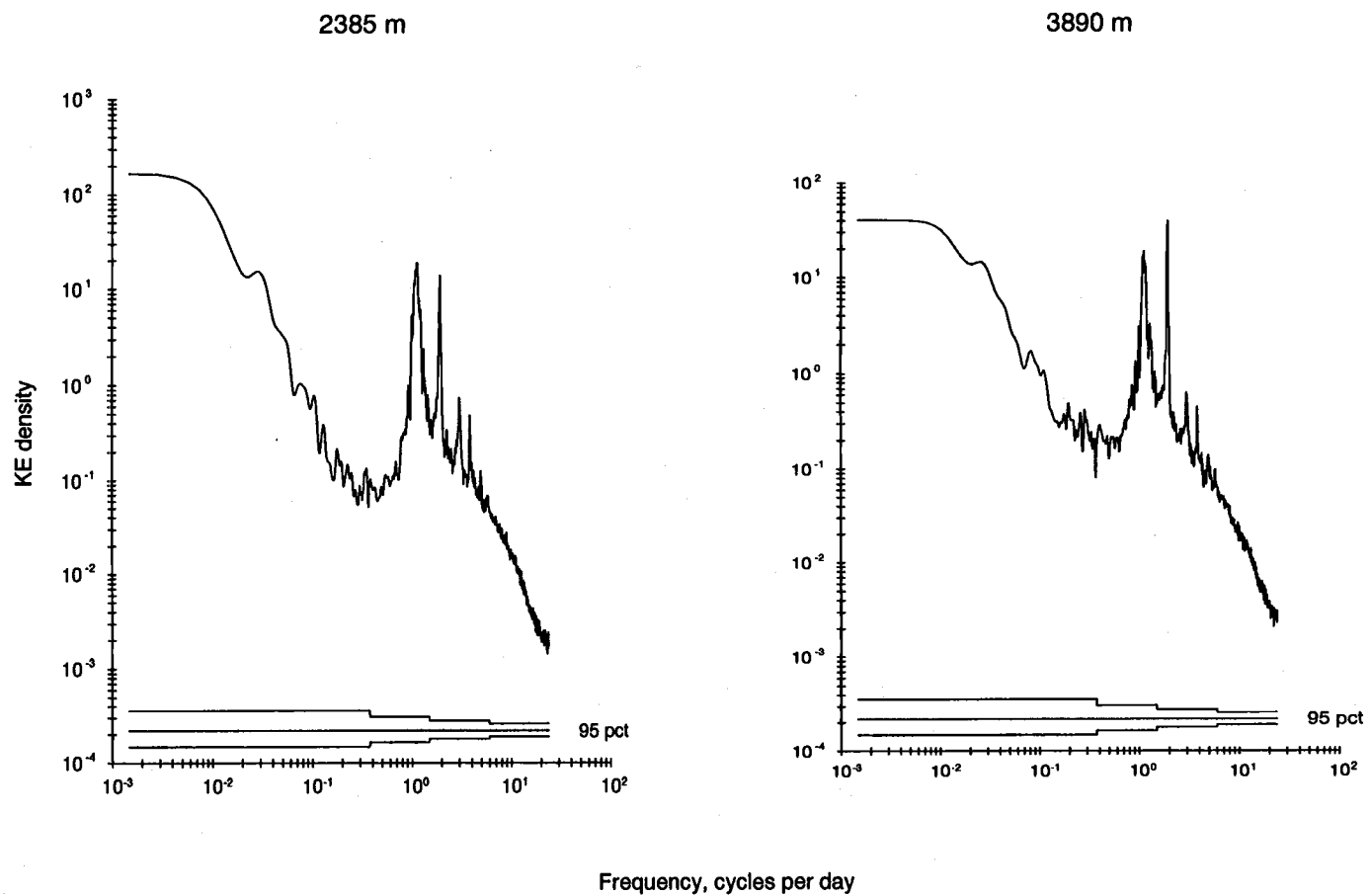


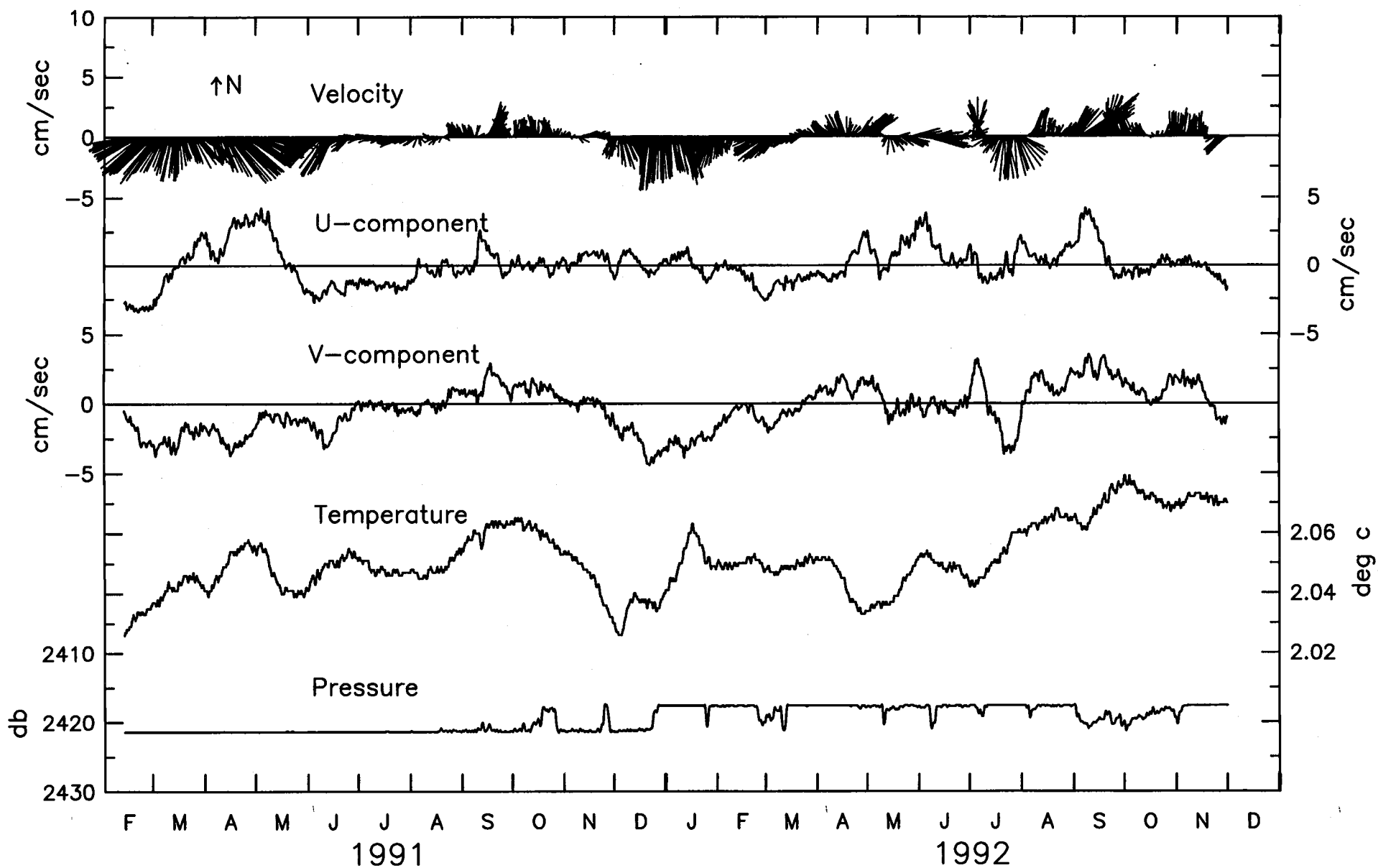
2385 m at KIWI 19. 660.3 days starting 2100 6 Feb 91.



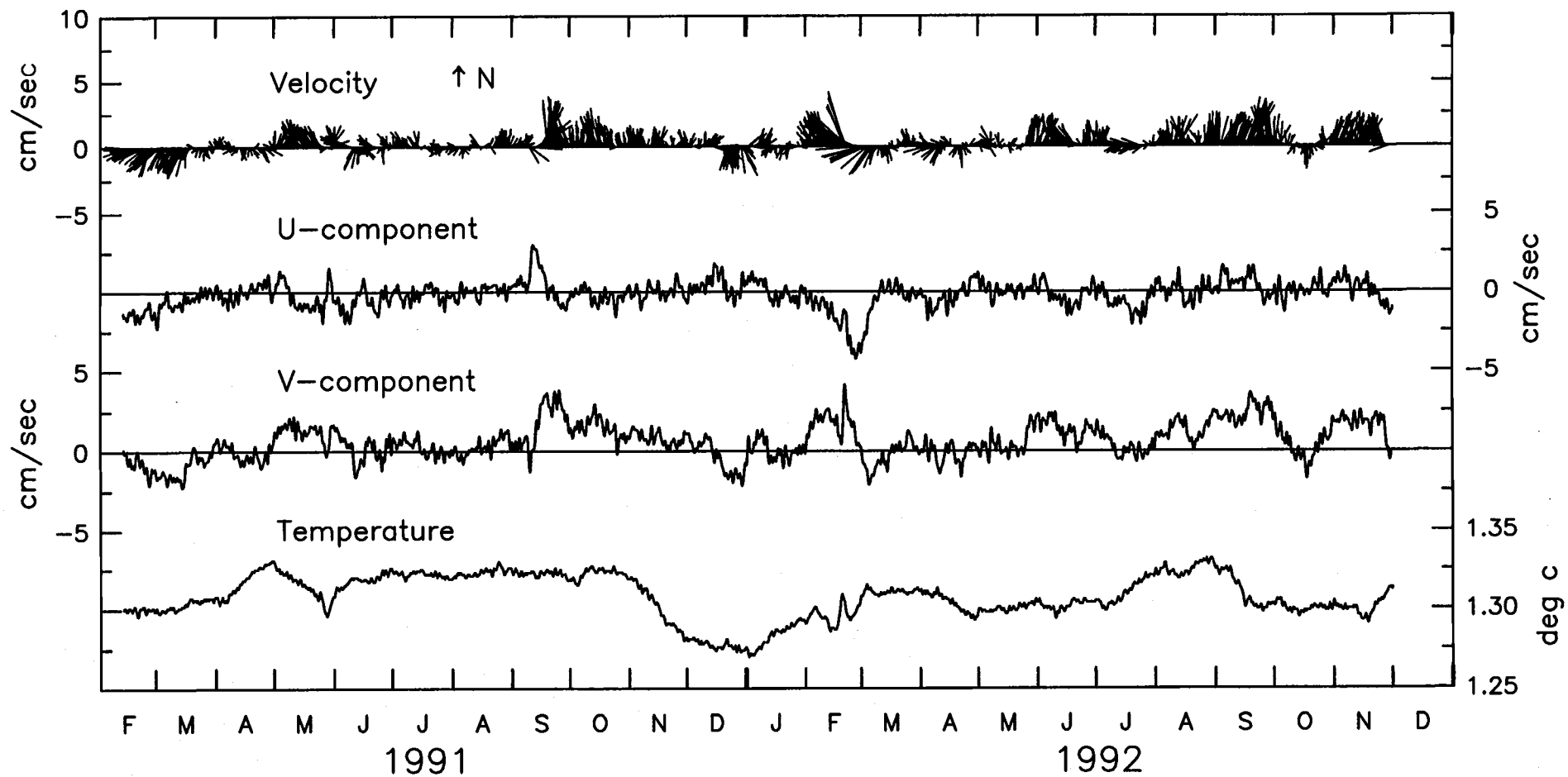
3890 m at KIWI 19. 660.3 days starting 2100 6 Feb 91.

Unfiltered Current (both components) Kiwi 19.

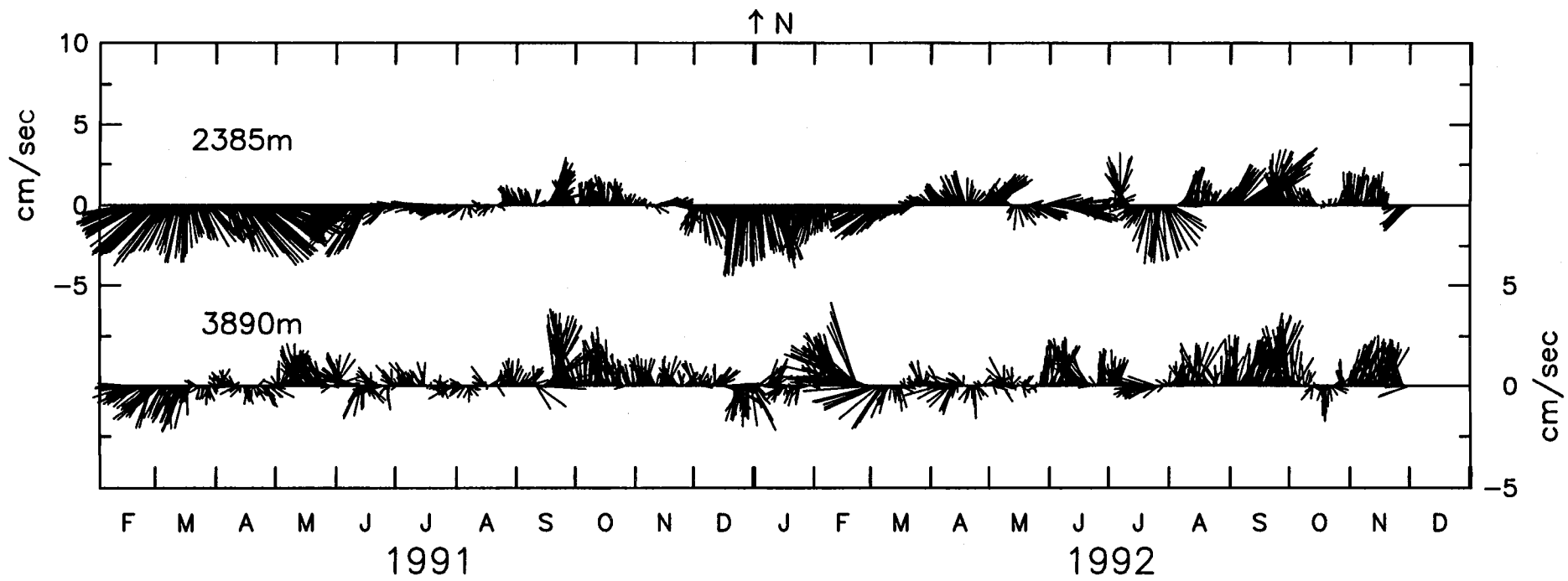




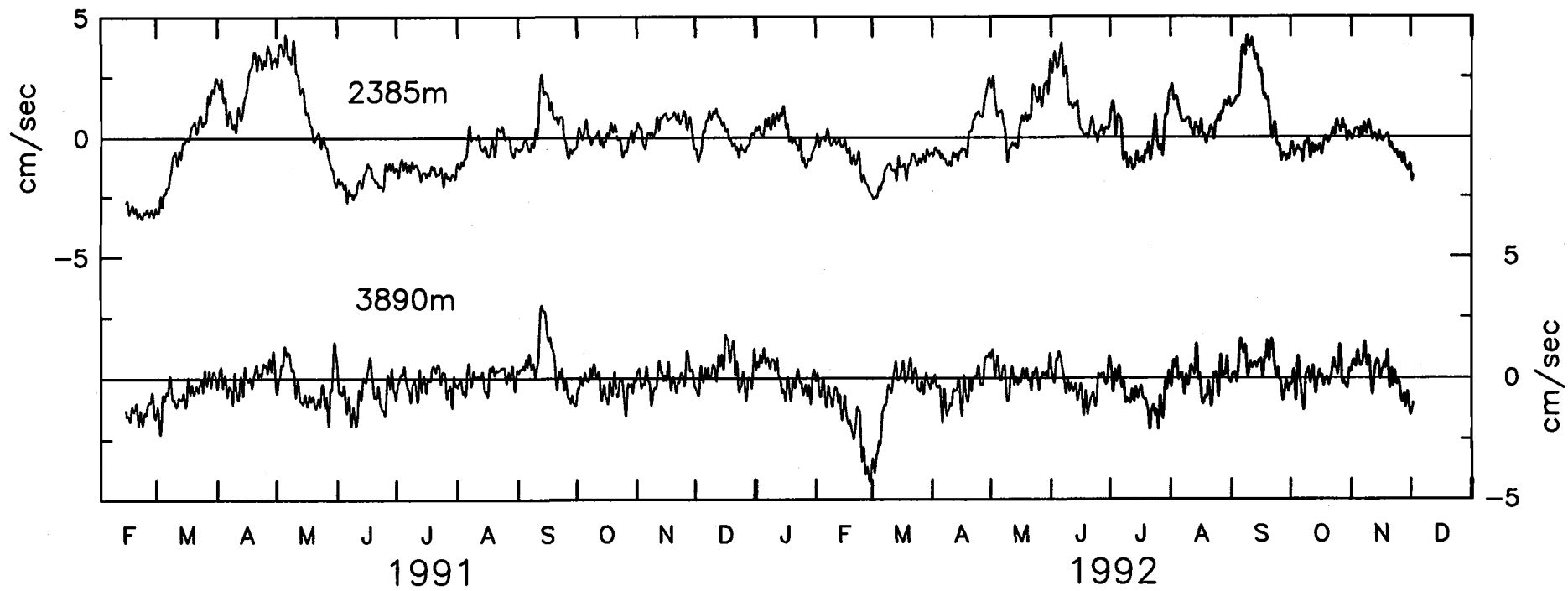
2385m at KIWI 19. LLP 6-hourly Data.



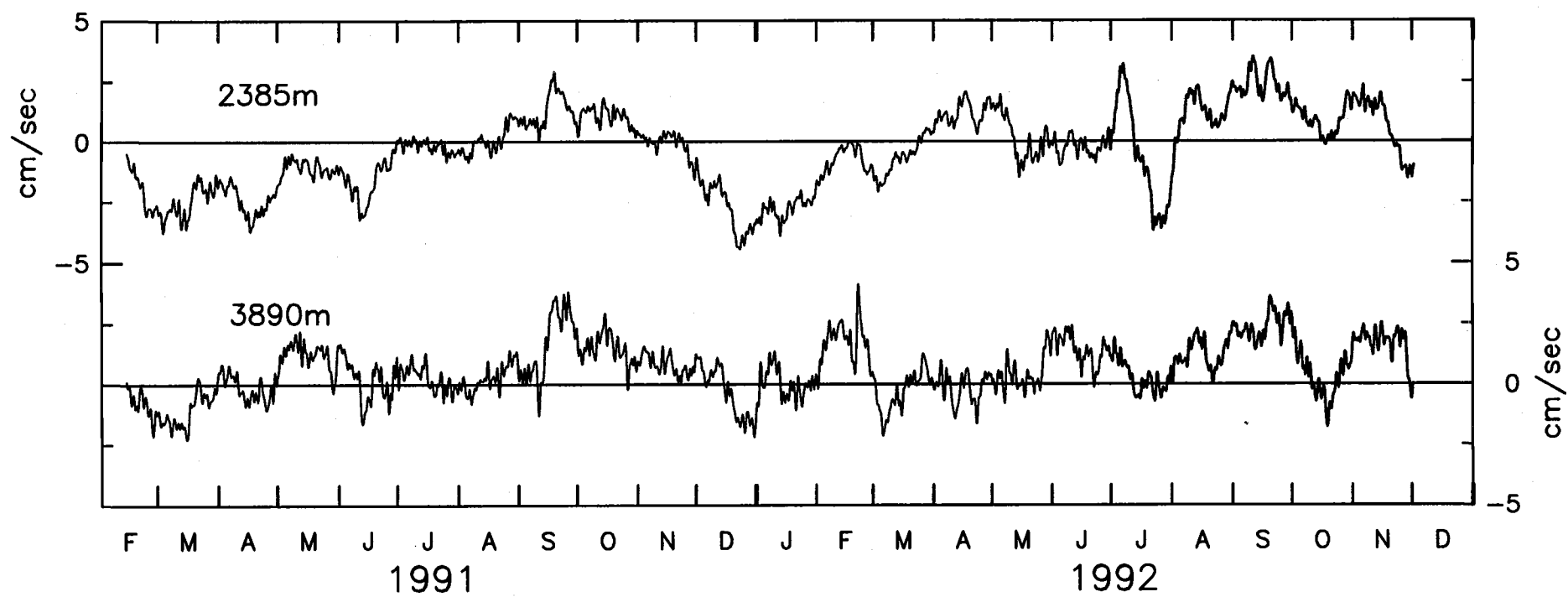
3890m at KIWI 19. LLP 6-hourly Data.



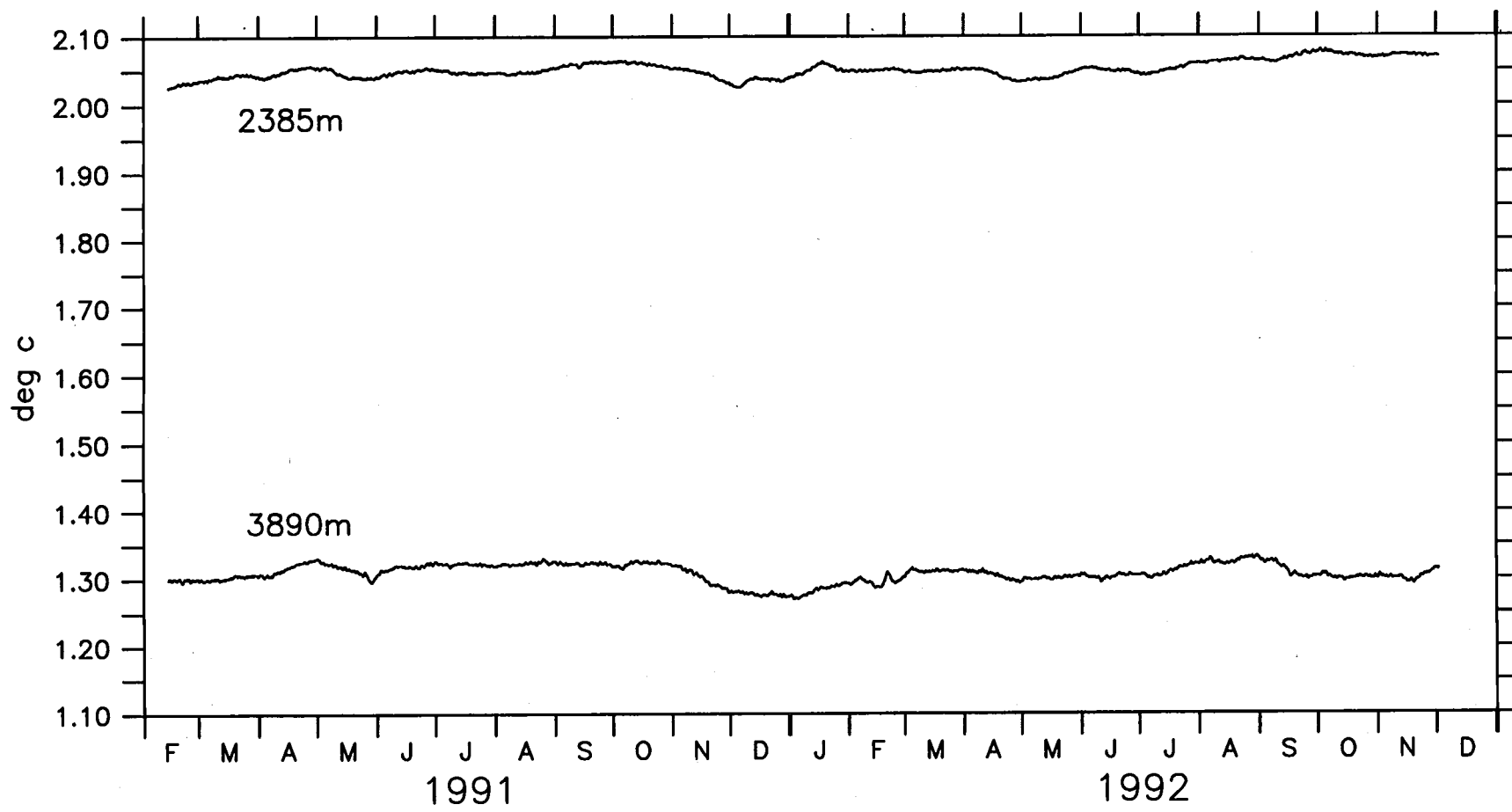
Velocity at KIWI 19. LLP 6-hourly Data.



U-component at KIWI 19. LLP 6-hourly Data.



V-component at KIWI 19. LLP 6-hourly Data.

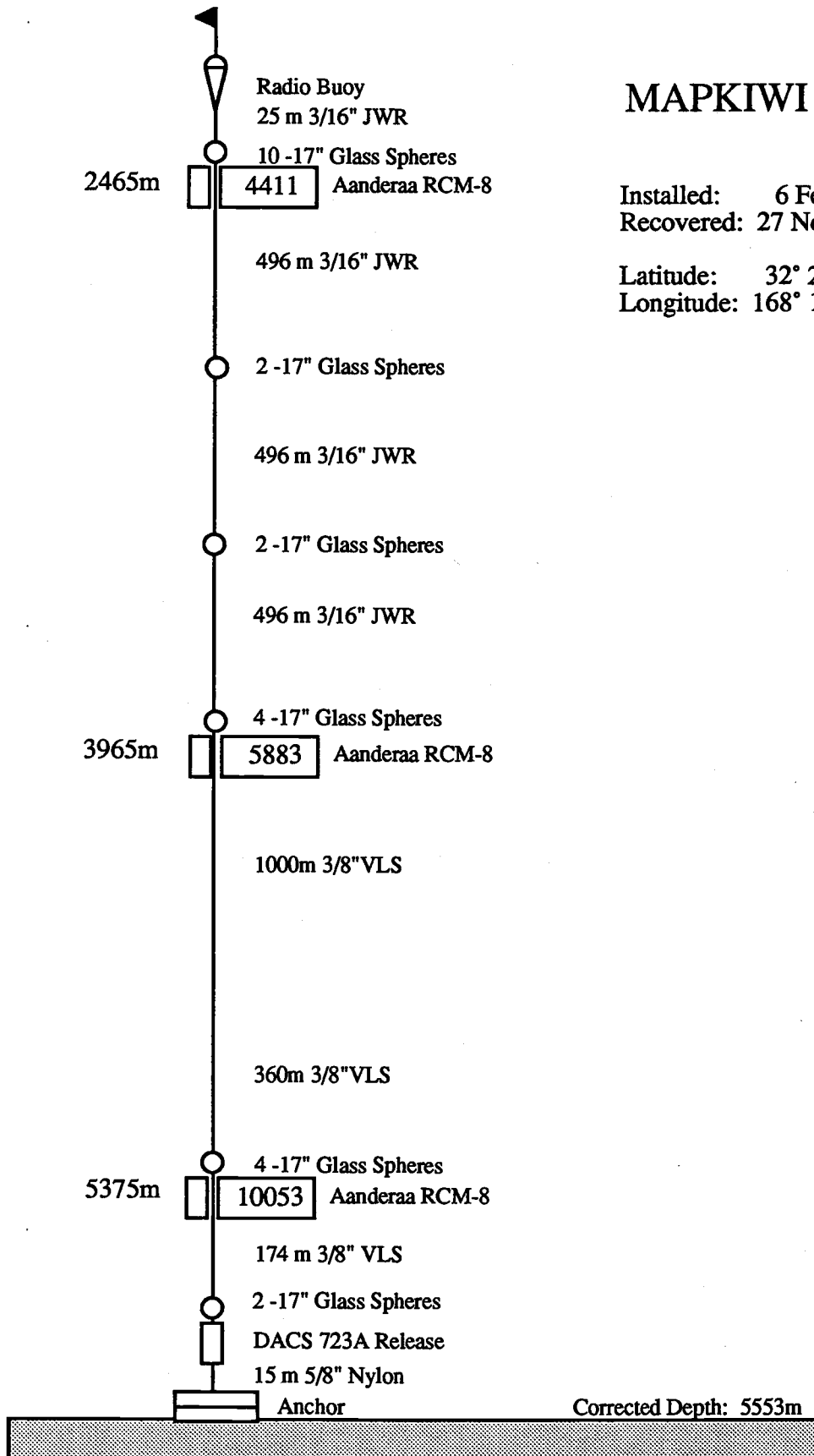


Temperature at KIWI 19. LLP 6-hourly Data.

MAPKIWI 20

Installed: 6 Feb 91
 Recovered: 27 Nov 92

Latitude: 32° 27.18'S
 Longitude: 168° 13.50'W



KIWI 20.

Position: 32° 27.18'S
 168° 13.50'W
 Depth of Water: 5553
 Mooring Set: 0540 6 February 1991
 Mooring Retrieved: 0105 27 November 1992
 Data Interval 0800 6 February 1991 - 0030 27 November 1992

Instrumentation:

Depth m	RCM8 Serial No./ Sequence No.
2465	4411/32
3965	5883/25
5375	10053/5

Instrument 4411 recorded u, v, temperature, and pressure every 30 minutes. Speed values have been set to null lines 19900 to 20284 (2130 26 Mar 1992 to 2130 3 April 1992). The speed record remained at threshold during that time.

Instrument 5883 recorded u, v, and temperature every 30 minutes.

Instrument 10053 recorded u, v, and temperature every 30 minutes. Due to a speed dropout lines 11982 to 12383 (2230 13 October 1991 to 0700 22 October 1992) were set to null.

2465 meters at KIWI 20. 6 Feb 91 - 27 Nov 92. Tape 4411/32.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.86	11.44	1.86	31281
U, cm/sec	-11.11	-0.26	10.72	2.56	31281
V, cm/sec	-8.49	-0.21	7.72	2.23	31281
Temp, deg c	1.96	2.01	2.06	0.01	31666
Pressure, db	2500.34	2505.33	2507.60	1.99	31666

3965 meters at KIWI 20. 6 Feb 91 - 27 Nov 92. Tape 5883/25.

	min	mean	max	sd	num
Speed, cm/sec	0.93	3.06	10.58	1.76	31666
U, cm/sec	-9.32	-0.35	10.20	2.64	31666
V, cm/sec	-8.19	-0.07	9.47	2.33	31666
Temp, deg c	1.22	1.28	1.38	0.02	31666

5375 meters at KIWI 20. 6 Feb 91 - 27 Nov 92. Tape 10053/5.

	min	mean	max	sd	num
Speed, cm/sec	0.93	2.54	9.15	1.63	31264
U, cm/sec	-7.99	0.52	8.98	2.45	31264
V, cm/sec	-6.61	-0.23	6.77	1.66	31264
Temp, deg c	1.06	1.07	1.08	0.00	31666

2465 meters at KIWI 20. 7 Feb 91 - 25 Nov 92. Tape 4411/32.

	min	mean	max	sd	num
Speed, cm/sec	0.02	1.55	4.23	0.89	2587
U, cm/sec	-3.14	-0.26	3.81	1.34	2587
V, cm/sec	-3.80	-0.20	2.85	1.14	2587
Temp, deg c	1.99	2.01	2.03	0.01	2629
Pressure, db	2500.38	2505.33	2507.65	1.73	2629

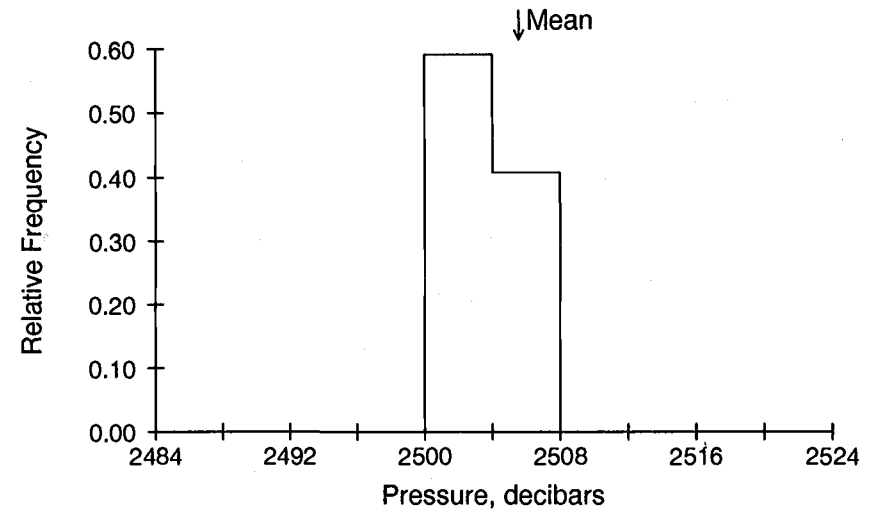
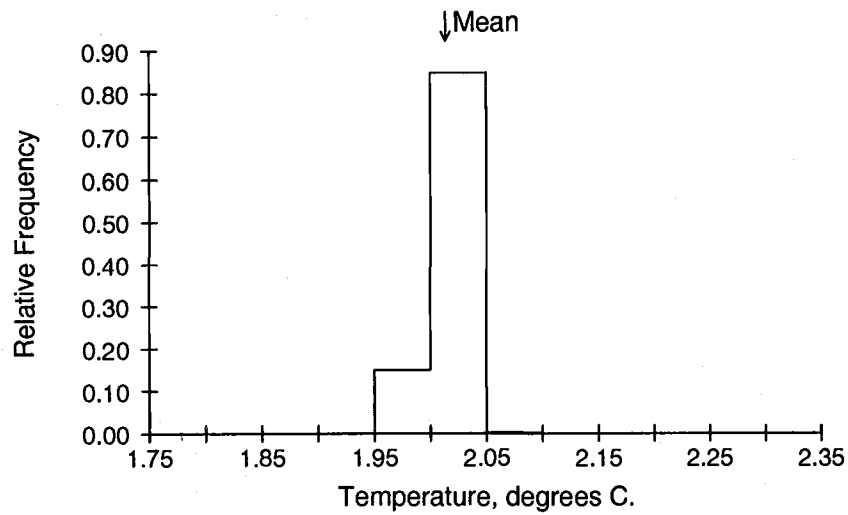
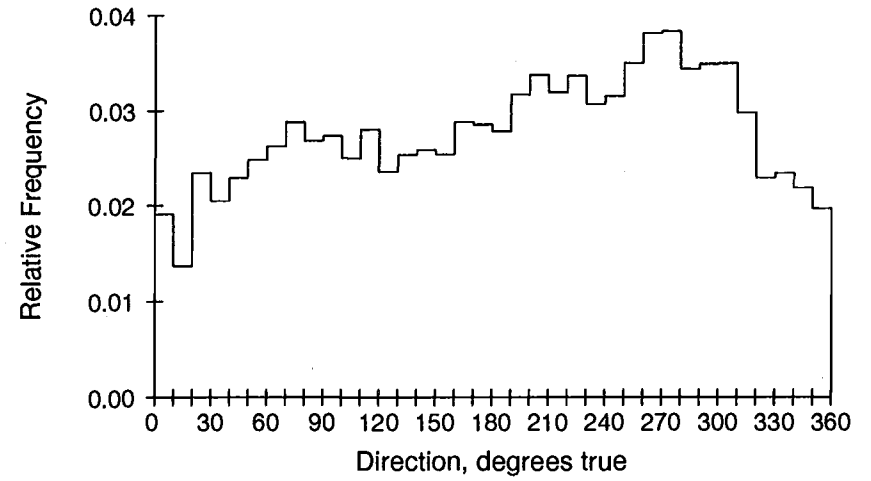
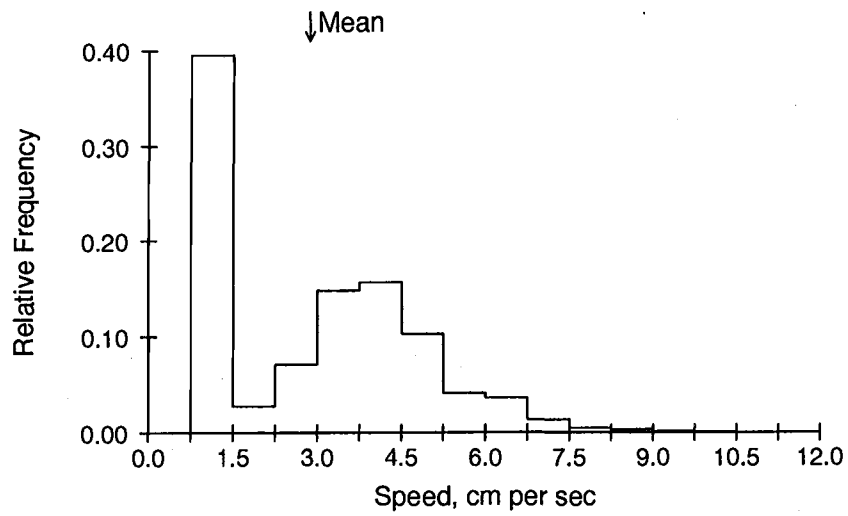
3965 meters at KIWI 20. 7 Feb 91 - 25 Nov 92. Tape 5883/25.

	min	mean	max	sd	num
Speed, cm/sec	0.00	1.15	4.05	0.74	2629
U, cm/sec	-3.99	-0.35	2.21	0.96	2629
V, cm/sec	-2.33	-0.07	2.87	0.91	2629
Temp, deg c	1.26	1.28	1.32	0.01	2629

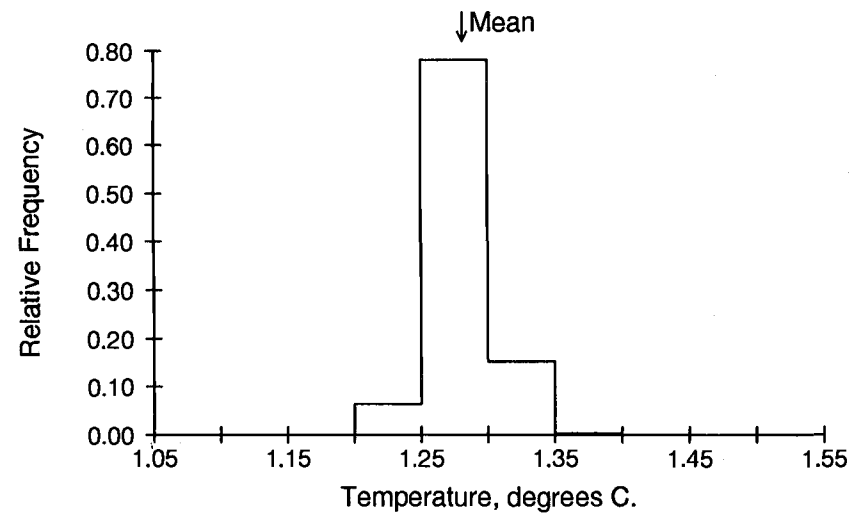
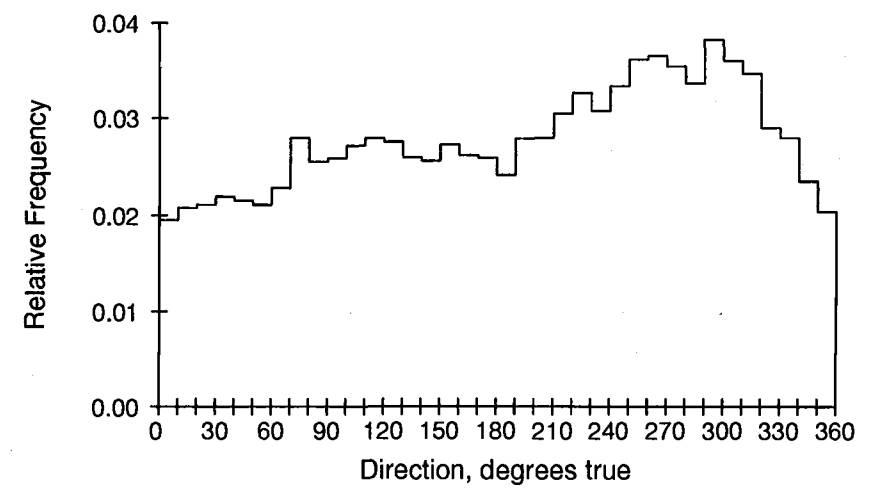
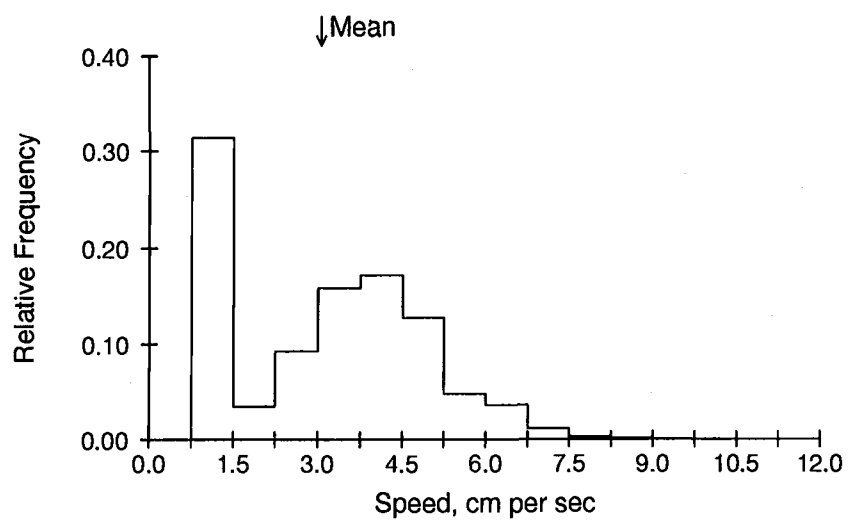
5375 meters at KIWI 20. 7 Feb 91 - 25 Nov 92. Tape 10053/5.

	min	mean	max	sd	num
Speed, cm/sec	0.05	1.35	4.03	0.70	2585
U, cm/sec	-3.53	0.53	3.14	1.08	2585
V, cm/sec	-2.74	-0.23	3.23	0.90	2585
Temp, deg c	1.07	1.07	1.08	0.00	2629

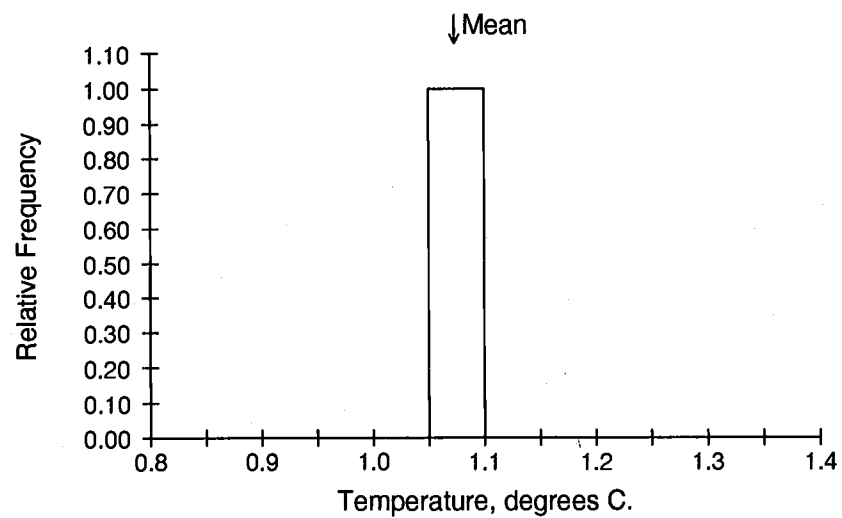
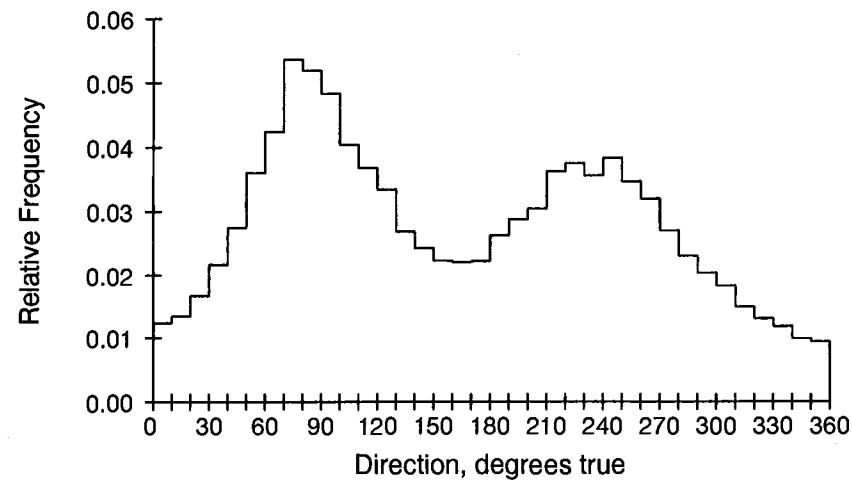
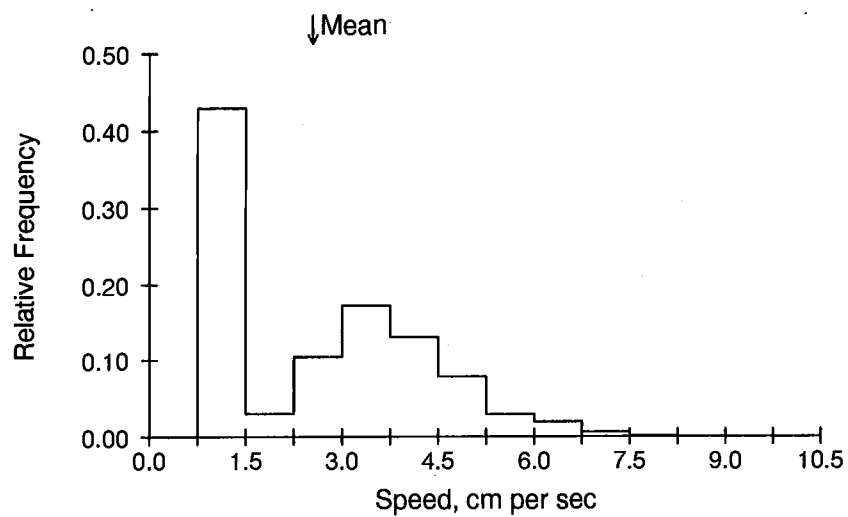
2465m at Kiwi 20. 6 Feb 91 - 27 Nov 92. RCM 4411/32.

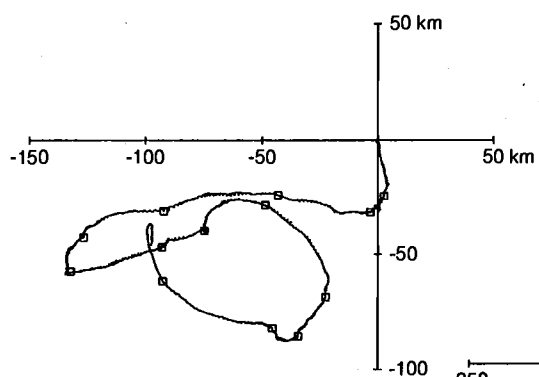


3965m at Kiwi 20. 6 Feb 91 - 27 Nov 92. RCM 5883/25.

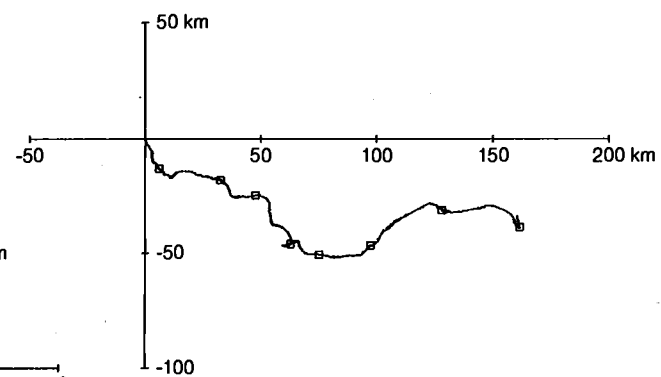
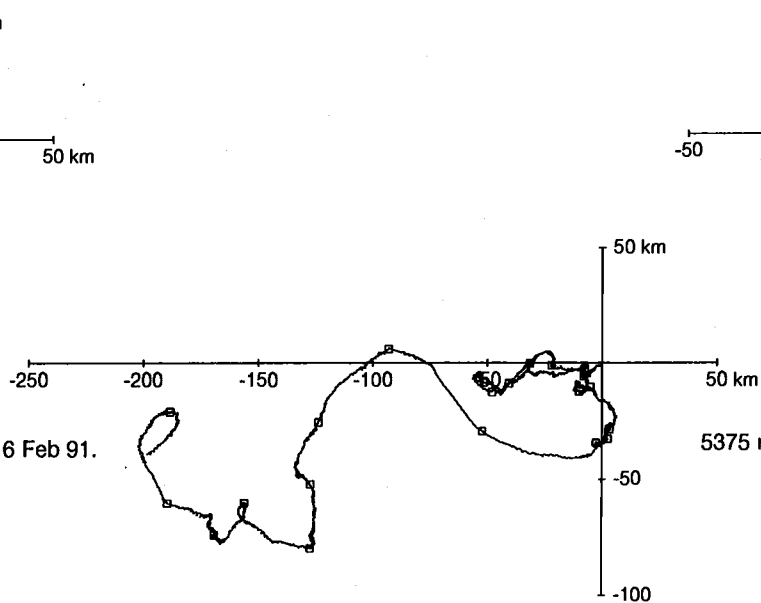


5375m at Kiwi 20. 6 Feb 91 - 27 Nov 92. RCM 10035/5.

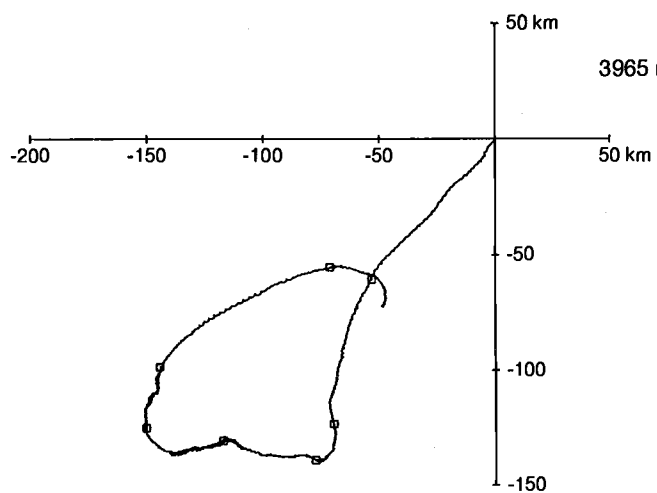




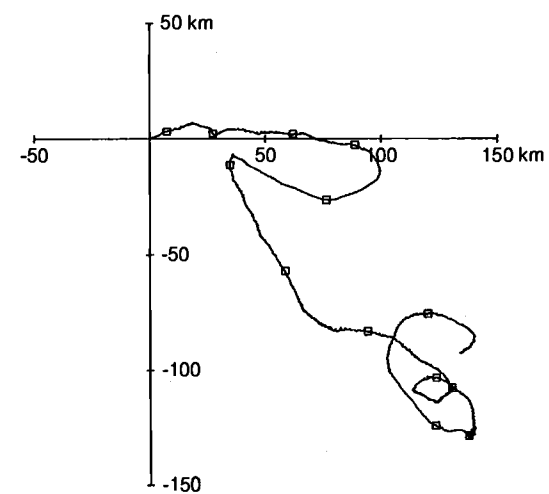
2465 m at KIWI 20. 414.5 days starting 0800 6 Feb 91.



5375 m at KIWI 20. 249.6 days starting 0800 6 Feb 91.



3965 m at KIWI 20. 659.7 days starting 0800 6 Feb 91.



2465 m at KIWI 20. 237.1 days starting 2200 2 Apr 92.

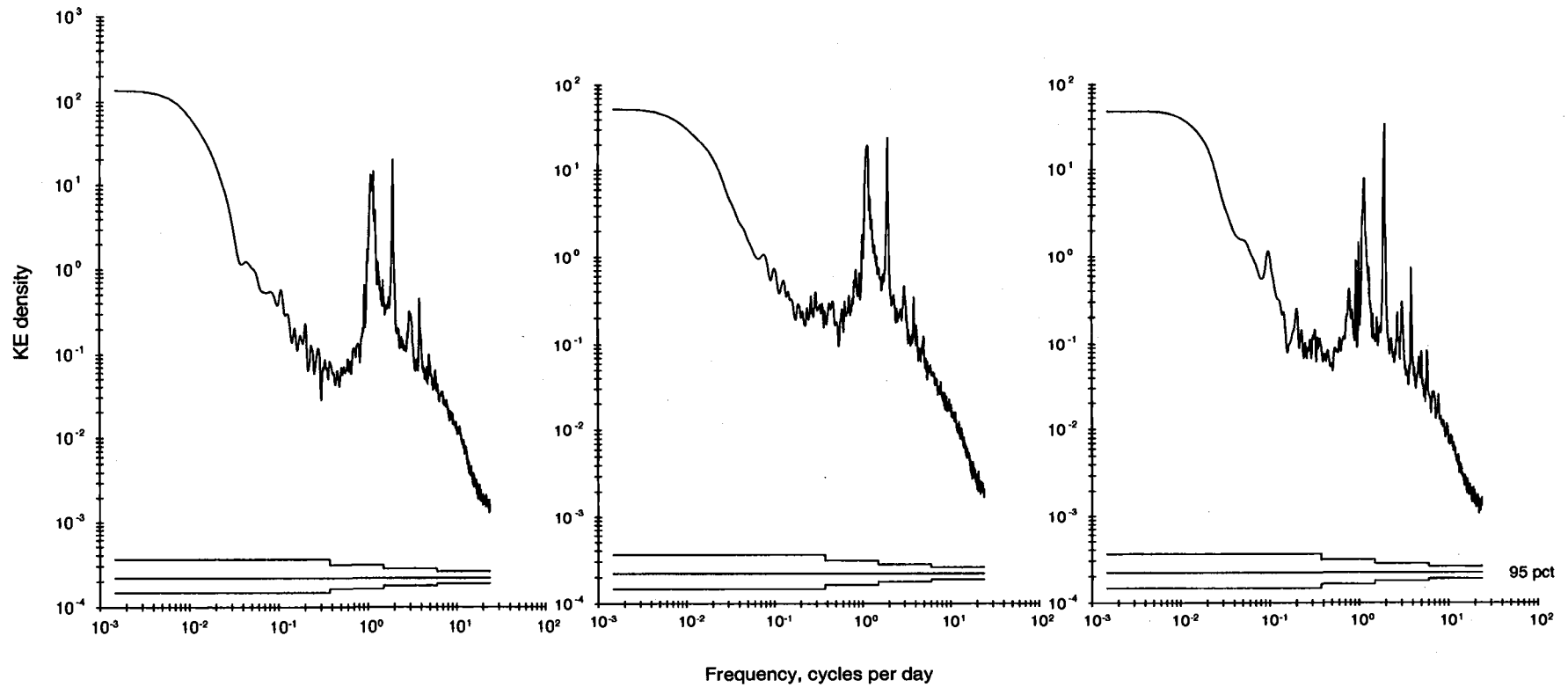
5375 m at KIWI 20. 401.7 days starting 0730 22 Oct 91.

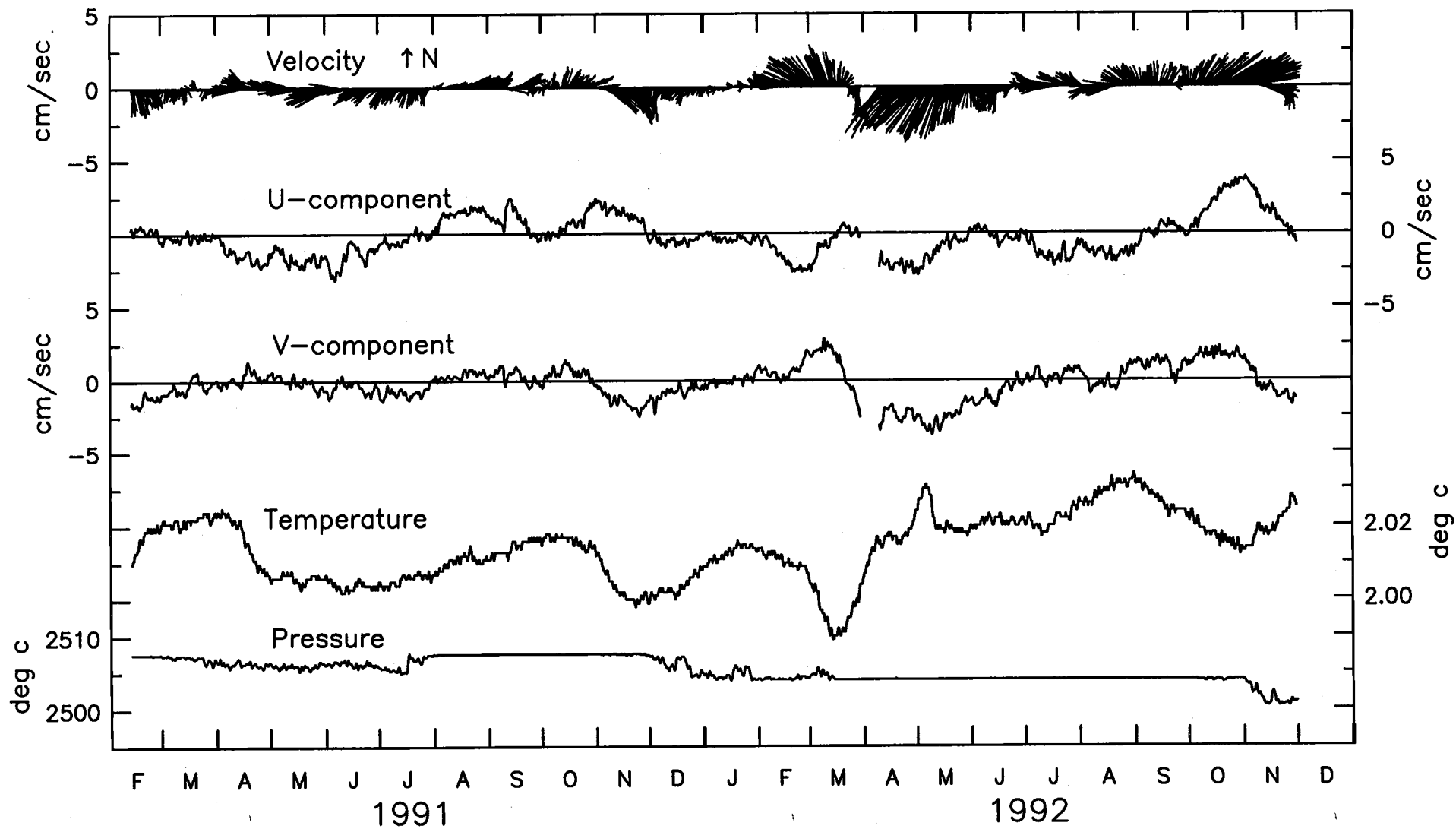
Unfiltered Current (both components) Kiwi 20.

2465 m

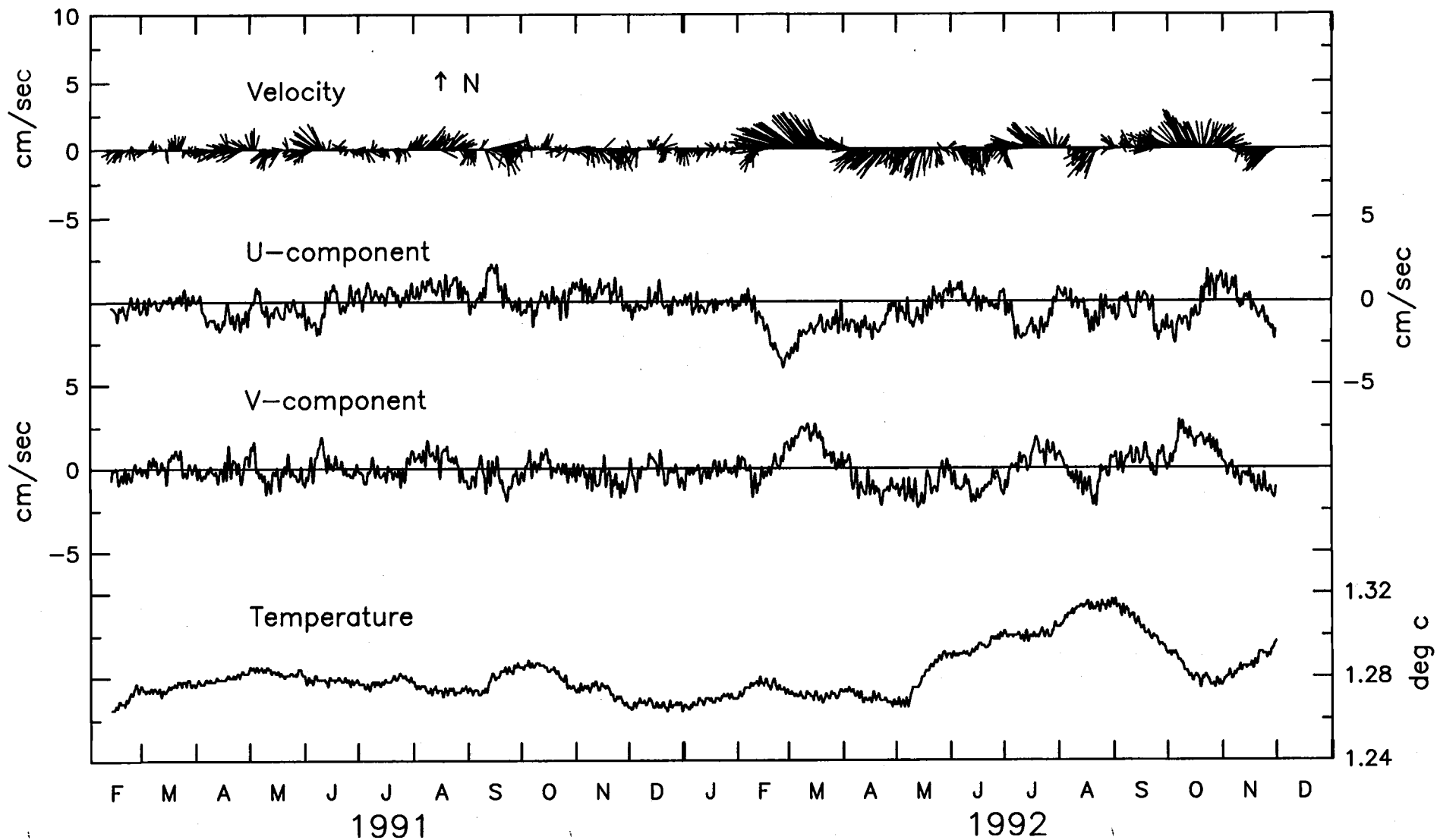
3965 m

5375 m

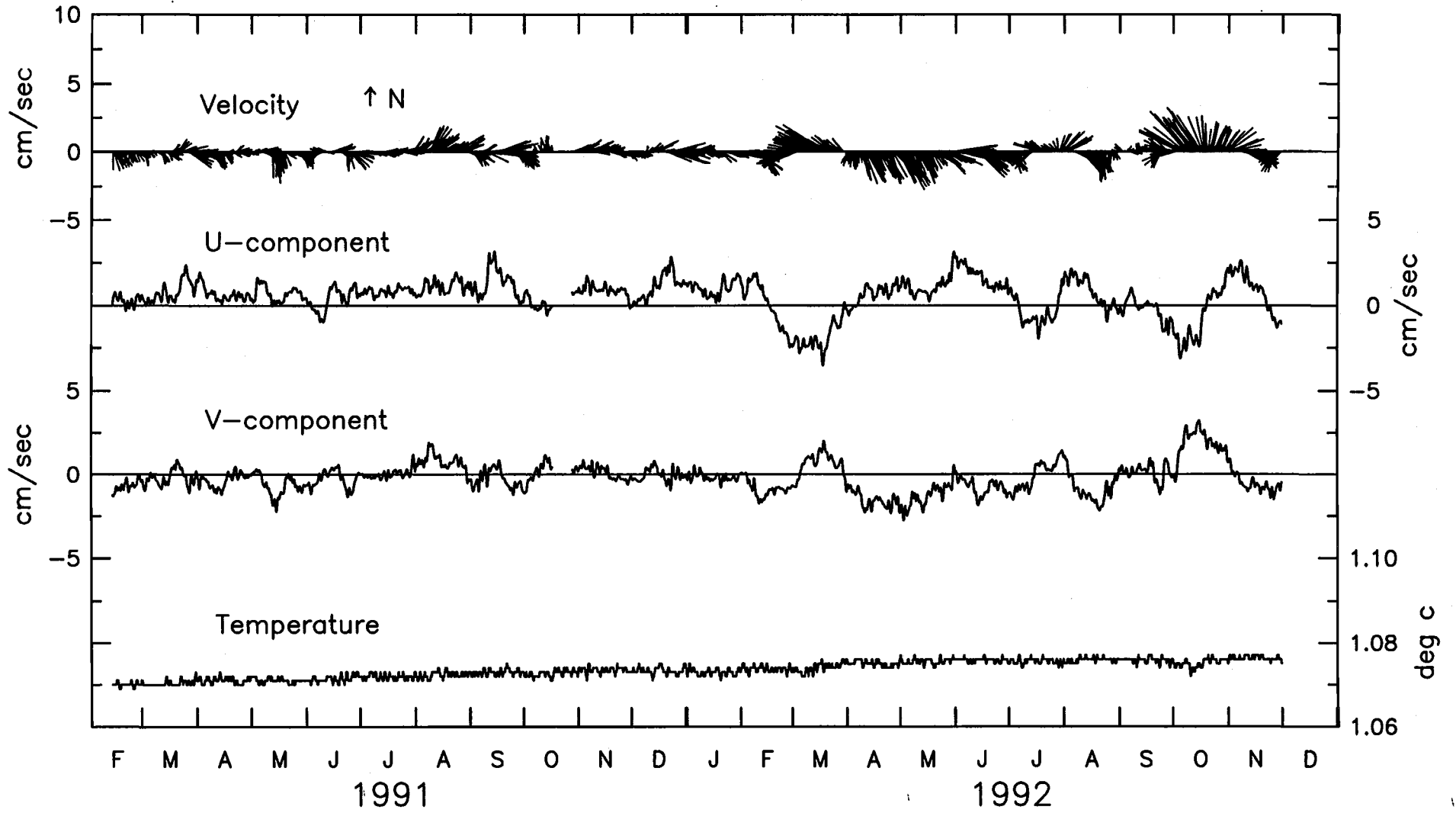




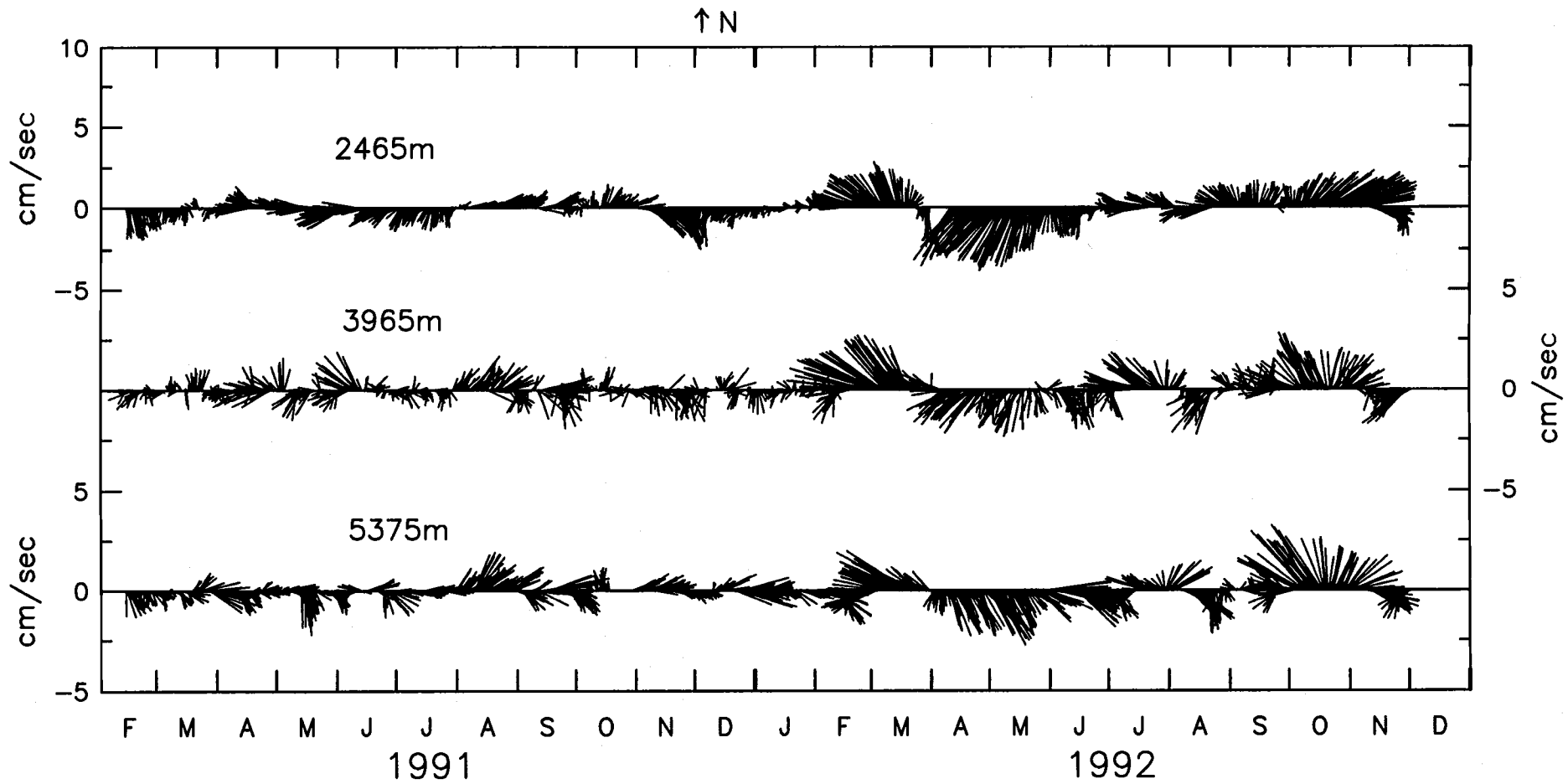
2465m at KIWI 20. LLP 6-hourly Data.



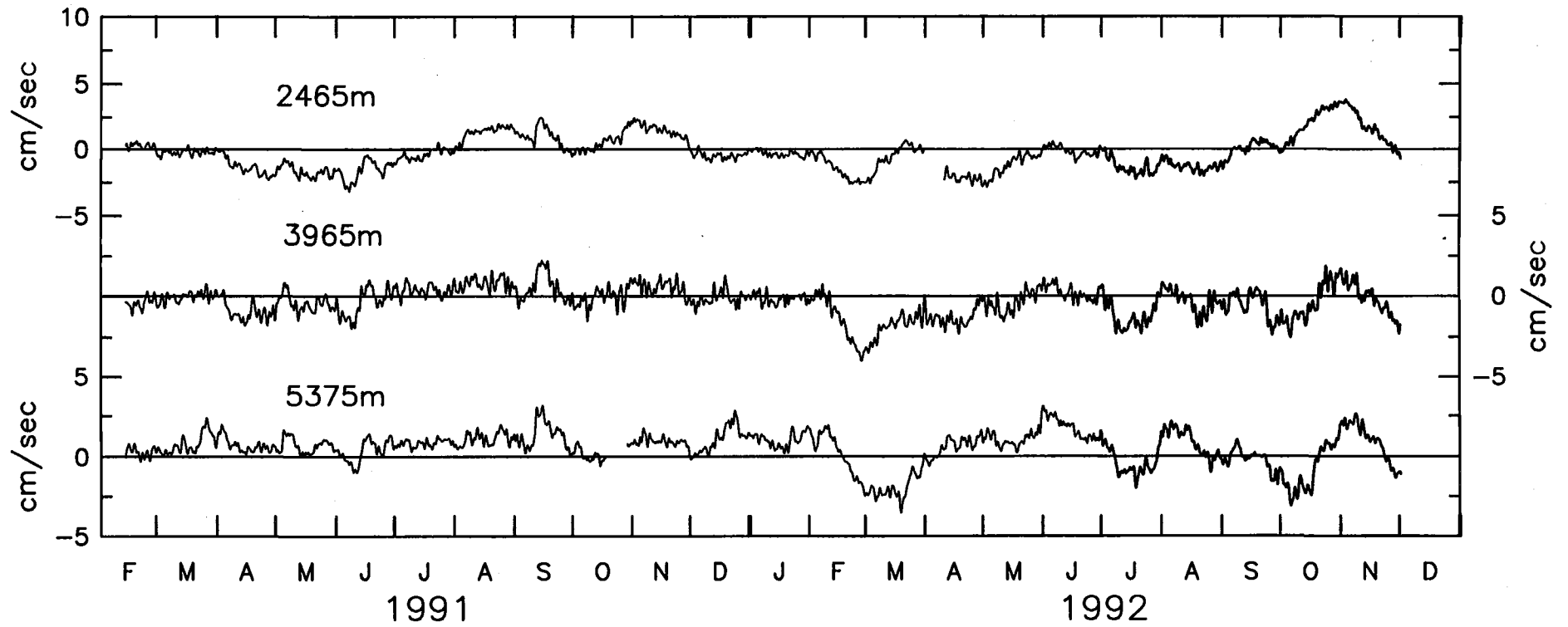
3965m at KIWI 20. LLP 6-hourly Data.



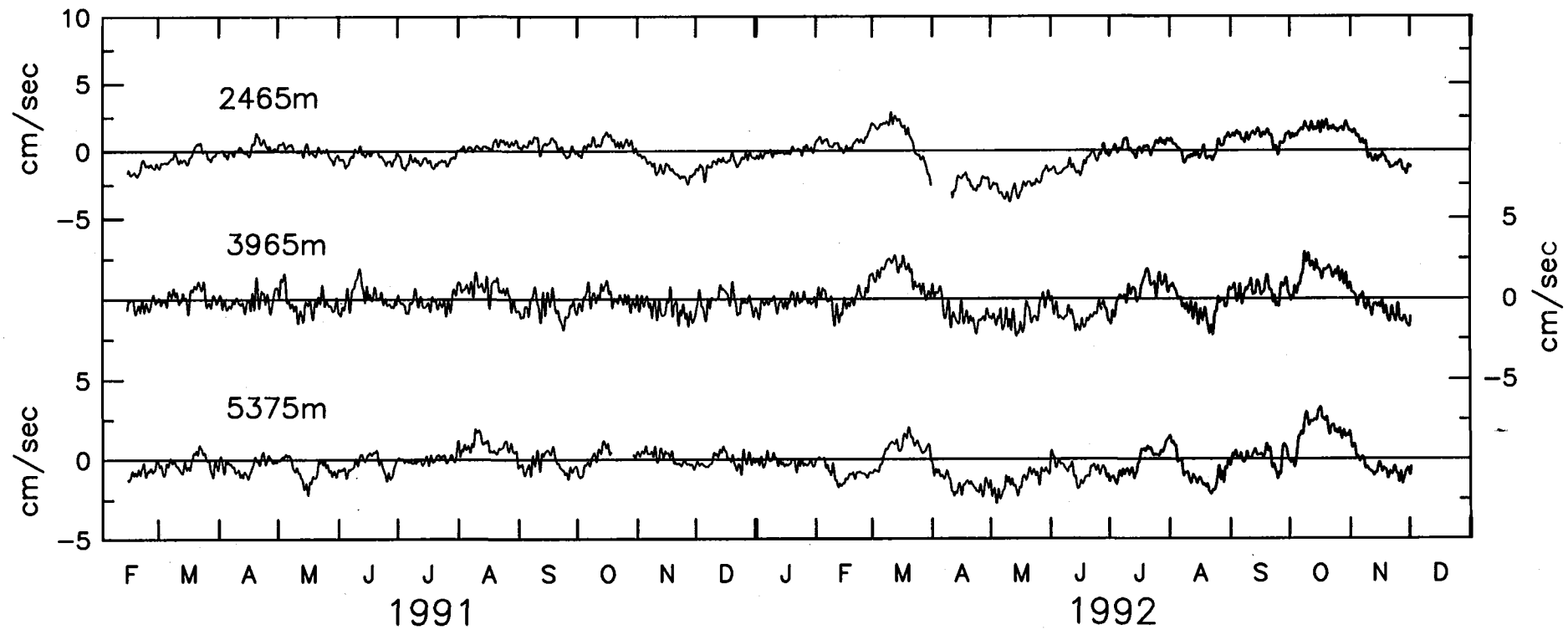
5375m at KIWI 20. LLP 6-hourly Data.



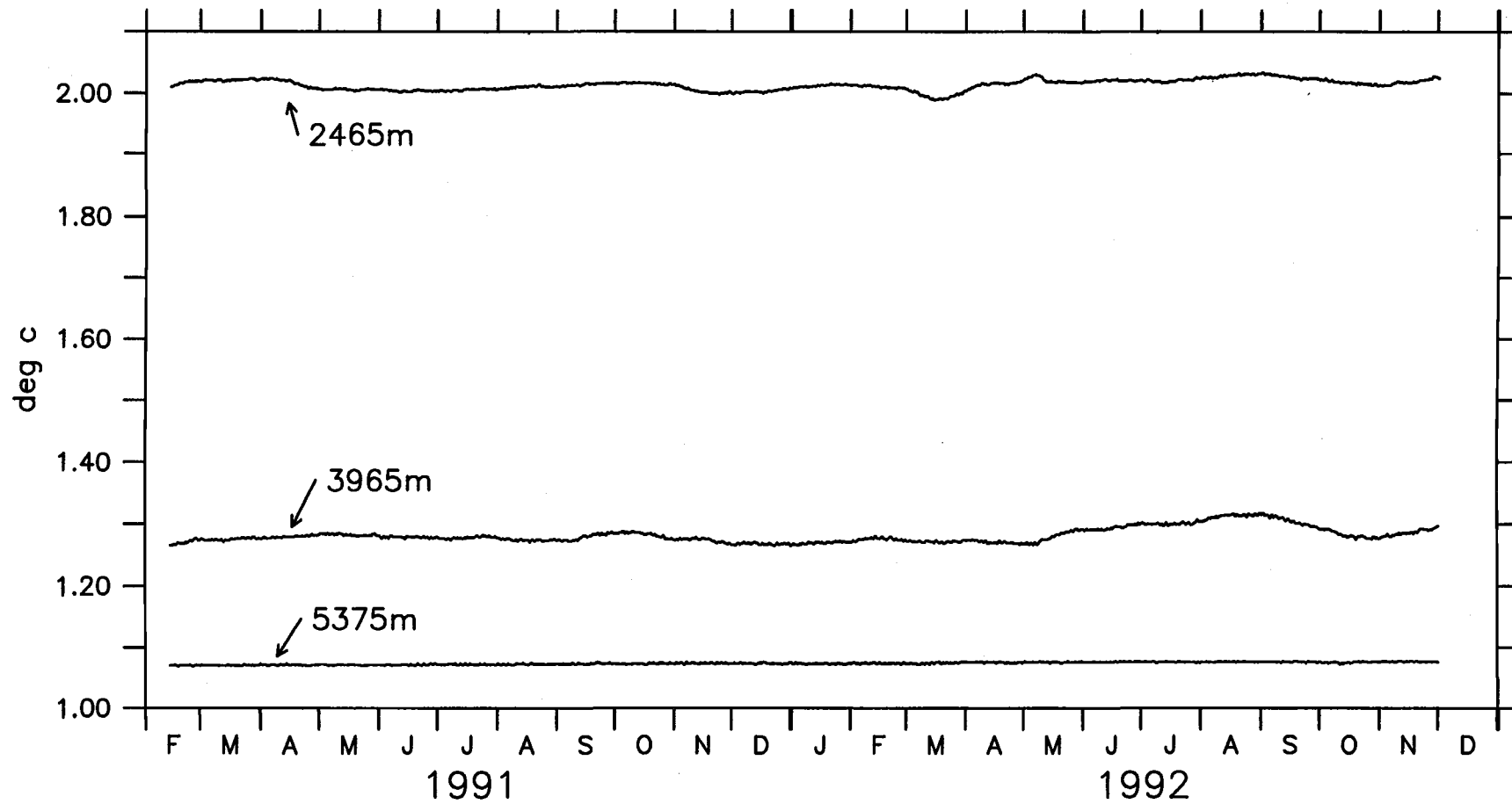
Velocity at KIWI 20: LLP 6-hourly Data.



U-component at KIWI 20. LLP 6-hourly Data.



V-component at KIWI 20. LLP 6-hourly Data.



Temperature at KIWI 20. LLP 6-hourly Data.