

VII. SURFACE METEOROLOGICAL DATA DURING OVERSNOW TRAVERSE
IN 1982-1983

Hirokazu OHMAE*

Observers : Hirokazu OHMAE, Hideo OKADA

and Shuhei TAKAHASHI

Surface meteorological observation was carried out three times a day by the traverse party of JARE-23 along the inland oversnow traverse routes (see in Fig. A attached to the end of this volume) from S 16 to Mizuho Station, in the Shirase Glacier drainage basin and the Meteorite Ice Field in the vicinity of the Yamato Mountains in 1982 - 1983.

The periods and routes of the oversnow traverses are shown in Table 1, and items of observation and instruments used are shown in Table 2.

Table 1. The periods and routes of oversnow traverses in 1982-1983.

Period of observation	Routes of traverse	Table No.
January 14-26, 1982	S 16 - Mizuho Station	3
January 30-February 15, 1982	S 16 - Mizuho Station	4
March 10-15, 1982	Mizuho Station - G1 grid station	5
March 28-April 14, 1982	Mizuho Station - YM 102	6
October 12, 1982 - February 1, 1983	Mizuho Station - Yamato Mts. - Minami Yamato Nunataks - Mizuho Station - S 16	7

* The Institute of Low Temperature Science, Hokkaido University,
Kita-19, Nishi-8, Kita-ku, Sapporo 060.

Table 2. The items of observation and instruments.

Item	Instrument
Air temperature	Thermister thermometer
Wind speed	Portable cup anemometer*
Wind direction	Magnetic compass
Visibility	
Amount of cloud	
Weather	

* Occasionally continuous recording during the stay in some place.

The air temperature and wind speed were measured at about 2 m in height above snow surface. The notations for the tables are shown in the following.

LT : Local standard time at Syowa Station
(69°00'S, 39°35'E : GMT + 3h)

Station : Station number (The position and elevation of stations are tabulated in the next volume, published in 1984)

WD : Wind direction in true north

WS : Wind speed (m/s)

T : Air temperature (°C)

Vi : Visibility (km)

N : Amount of cloud

W : Present weather

○ Clear	‡ Drifting snow
① Fine	‡ Blowing snow
☉ Cloudy	* Snow
Ⓜ Cloudy (upper clouds are predominant)	*‡ Snowstorm
	≡ Fog

Table 3. Surface meteorological data along the Routes S, H and Z on January 14 - 26, 1982.

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Jan.								
14	0900	S 16	N	2.0	-4.2	10.0	7	⊙
14	1250	S 19	N	2.0	-3.0	10.0	4	⊙
14	1505	S 25	N	1.0	-7.2	10.0	1	⊙
14	1815	H 15	SW	1.0	-8.0	20.0	3	⊙
14	2100	H 15	S	3.0	-10.2	5.0	8	⊙
14	2200	H 15	SSE	3.0	-13.0	20.0	1	⊙
15	0900	H 15	E	4.0	-10.6	2.0	1	*
15	1200	H 21	NNE	5.0	-8.5	10.0	4	*
15	1500	H 21	NNE	5.0	-8.0	20.0	1	○
15	2100	H 21	E	4.0	-12.6	30.0	0+	○
16	0800	H 21	ENE	5.0	-10.0	30.0	0+	+○
16	0900	H 35	ENE	5.0	-9.2	30.0	0+	+○
16	1200	H 84	ENE	7.0	-7.2	30.0	0+	○
16	1500	H124	ENE	5.0	-8.2	30.0	0+	○
16	1650	H142	N	2.0	-8.8	30.0	3	⊙
16	1800	H160	N	1.0	-11.0	30.0	0+	○
16	2100	H180	ENE	1.0	-16.8	30.0	3	⊙
16	2300	H180	ENE	1.0	-19.8	30.0	1	○
17	0900	H180	ENE	3.0	-13.8	30.0	0+	○
17	1220	H224	NE	3.0	-10.1	30.0	0+	○
17	1500	H252	NNW	2.0	-9.5	30.0	0+	○
17	2100	S122	ENE	1.0	-16.4	30.0	5	⊙
17	2400	S122	-	0.0	-20.8	30.0	4	⊙
18	0900	S122	E	7.0	-16.0	30.0	0	○
18	1200	Z 18	ENE	7.0	-13.0	30.0	0+	+○
18	1500	Z 24	NNE	4.0	-12.6	30.0	6	⊙
18	1840	Z 50	NE	2.0	-17.2	30.0	0+	○
18	2120	Z 62	ENE	3.0	-21.8	30.0	0+	○
18	2300	Z 62	ENE	4.0	-23.2	30.0	0+	○
19	0900	Z 62	E	6.0	-16.2	30.0	7	+○
19	1200	Z 86	ENE	6.0	-14.8	30.0	10-	⊙
19	1500	M/S	ENE	5.0	-14.5	30.0	8	⊙
24	1500	Z 60	NNE	3.0	-15.2	30.0	0+	○
24	2100	H250	NNE	3.0	-18.5	30.0	1	○
25	0800	H250	NNE	5.0	-15.8	30.0	9	⊙
25	1500	H125	NE	7.0	-5.8	2.0	10	+⊙
25	2100	S 24	NE	8.5	-6.3	1.0	10	+⊙
26	1500	S 16	NE	6.0	-0.8	30.0	10-	●

Table 4. Surface meteorological data along the Routes S, H and Z on January 30 - February 15, 1982.

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Jan.30	1500	S 16	-	0.0	-3.6	30.0	2	○
Feb. 1	1600	S 21-4	-	0.0	-6.8	30.0	0	○
2	1200	S 26-5	ENE	7.3	-7.5	15.0	0+	+○
2	1500	S 26-5	E	9.0	-7.6	15.0	0+	+○
3	1800	S 26-5	E	10.0	-8.0	5.0	10-	+⊙
4	0900	S 26-5	E	16.0	-8.2	0.1	9	+⊙
4	1500	S 26-5	E	12.0	-5.5	*	9	+⊙
5	1500	S 26-5	E	8.0	-5.5	5.0	9	+⊙
7	1230	H 97/98	E	3.3	-10.5	30.0	1	○
8	1545	H166	-	0.0	-8.5	30.0	10-	⊙
9	1630	H219	-	0.0	-15.5	30.0	8	⊙
10	1200	H245/246	ENE	3.0	-18.0	30.0	8	⊙
10	1500	H262	NE	3.0	-10.0	30.0	10-	⊙
11	1520	Z 2	NE	6.0	-19.0	30.0	2	○
12	1030	Z 16	ENE	11.5	-20.0	0.5	1	+○
12	1200	Z 16	ENE	11.5	-19.0	5.0	3	+○
12	1330	Z 16	ENE	12.5	-18.0	0.2	5	+⊙
13	1500	Z 31	ENE	6.5	-17.0	30.0	1	○
14	1530	Z 66	NE	5.0	-16.0	30.0	2	○
15	1030	Z 79/80	ENE	7.5	-17.0	0.5	9	+⊙
15	1200	Z 79/80	ENE	8.5	-15.0	0.5	5	+⊙

Table 5. Surface meteorological data along the Route IM between Mizuho Station and G1 grid station on March 10-15, 1982.

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Mar.								
10	1500	G 1-18	NE	4.0	-23.6	0.5	10	⊙
11	1430	G 1-32	NE	3.5	-25.4	10.0	9	⊙
12	1500	G 1	NE	7.3	-21.6	0.1	10	⊙*
13	1500	G 1	E	4.0	-24.2	5.0	9	⊙
14	1500	G 1	ENE	4.5	-27.0	3.0	7	⊙
15	1500	G 1-29	ENE	3.5	-27.4	20.0	3	⊙

Table 6. Surface meteorological data along the Route YM between Mizuho Station and YM 102 on March 28 - April 14, 1982.

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Mar.								
28	1830	YM 7	E	7.5	-31.0	2.0	10	+⊙
29	0850	YM 7	E	8.5	-40.4	0.5	0	+⊙
29	1120	YM 7	E	11.0	-37.4	0.3	0+	+⊙
29	1530	YM13'	E	10.5	-37.6	0.2	0	+⊙
30	0800	YM13'	E	8.0	-47.2	0.5	0	+⊙
30	1500	YM 23	-	12.5	-45.0	0.2	0	+⊙
30	2000	YM 26	-	13.0	-48.0	*	0	+⊙
30	2100	YM 26	-	13.0	-48.2	*	10	+⊙
30	2200	YM 26	-	12.0	-47.8	*	10	+⊙
30	2300	YM 26	E	13.0	-47.8	*	-	
30	2400	YM 26	E	14.0	-47.8	*	-	
31	0340	YM 26	E	12.0	-47.0	*	-	
31	0900	YM 26	E	12.0	-46.0	0.1	10	+⊙
31	1500	YM 26	E	10.5	-42.0	0.2	7	+⊙
31	2100	YM 26	E	10.0	-44.8	0.2	2	+⊙
31	2400	YM 26	E	10.5	-44.9	0.2	0	+⊙
Apr. 1								
1	0900	YM 26	E	9.5	-43.8	0.4	8	+⊙
1	1300	YM29'	E	10.5	-38.0	0.1	10	+⊙
1	1530	YM 30	E	10.0	-37.1	0.2	10	+⊙
1	2100	YM 30	E	11.0	-36.4	0.2	2	+⊙
1	2400	YM 30	E	11.0	-35.8	*	-	
2	0900	YM 30	E	8.5	-34.1	2.0	10	+⊙
2	1500	YM 40	E	6.5	-33.4	5.0	10	+⊙
2	1800	YM 45	E	9.5	-33.7	0.5	10	+⊙
2	2100	YM 45	E	8.5	-32.8	*	10	+⊙
2	2400	YM 45	E	9.5	-34.5	*	0	+⊙
3	0900	YM 45	E	10.5	-38.1	0.3	7	+⊙
3	1500	YM54'	ESE	9.0	-40.7	0.3	0	+⊙
3	1800	YM 60	ESE	13.0	-43.9	0.2	0	+⊙
3	2100	YM 60	ESE	13.0	-44.7	0.2	0	+⊙
3	2400	YM 60	ESE	13.0	-43.7	*	-	
4	0900	YM 60	ENE	16.0	-35.0	0.05	10+	+⊙
4	1500	YM 60	NE	10.5	-24.4	0.1	10	+⊙
4	1800	YM 60	NE	10.5	-23.9	0.2	10	+⊙
4	2100	YM 60	NE	11.5	-24.2	0.2	10	+⊙
4	2400	YM 60	NE	9.0	-25.1	*	10	+⊙
5	0900	YM 60	NE	8.5	-26.4	0.3	10	+⊙
5	1500	YM 60	NE	8.0	-26.1	0.5	8	+⊙
5	2100	YM 60	NE	6.0	-26.9	*	10-	+⊙
5	2400	YM 60	NE	5.0	-26.2	*	10	+⊙
6	0900	YM 60	ENE	4.5	-27.1	2.0	10	+⊙
6	1500	YM 72	ENE	4.5	-26.2	5.0	10	+⊙
6	2100	YM 80	E	6.0	-29.1	*	10-	+⊙
6	2400	YM 80	-	7.0	-29.0	*	-	
7	0900	YM 80	ESE	6.0	-28.0	0.5	10	+⊙
7	1500	YM90'	E	7.0	-27.6	2.0	10	+⊙
7	1800	YM 96	E	5.5	-28.9	1.0	10-	+⊙
7	2100	YM 96	E	6.0	-31.2	*	10	+⊙
7	2400	YM 96	E	6.5	-32.2	*	10	+⊙
8	0900	YM 96	ESE	12.0	-37.7	0.1	10	+⊙
8	1500	YM102	ESE	16.0	-35.1	0.02	10	+⊙
8	1800	YM102	ESE	17.5	-34.9	0.02	10	+⊙
8	2100	YM102	ESE	17.5	-37.6	0.02	10	+⊙

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Apr.								
8	2400	YM102	ESE	17.5	-37.7	0.02	10	+⊙
9	0900	YM102	ESE	17.0	-40.0	0.01	10	+⊙
9	1500	YM102	ESE	15.0	-40.8	0.01	10	+⊙
9	1800	YM102	ESE	14.5	-44.0	0.02	5	+⊙
9	2100	YM102	ESE	14.5	-43.8	0.03	0	+⊙
9	2400	YM102	ESE	14.5	-43.6	*	0	+⊙
10	0900	YM102	ESE	12.5	-40.9	0.2	2	+⊙
10	1500	YM 95	SE	11.5	-38.0	0.2	3	+⊙
10	2100	YM 80	ESE	12.5	-42.1	*	0	+⊙
10	2400	YM 80	ESE	12.5	-40.1	*	0	+⊙
11	0900	YM 80	ESE	13.5	-35.7	0.05	10	+⊙
11	1500	YM 80	ESE	13.5	-33.8	0.05	10	+⊙
11	2100	YM 80	ESE	13.5	-34.8	*	5	+⊙
11	2400	YM 80	ESE	14.0	-35.1	*	0	+⊙
12	0900	YM 80	ESE	13.5	-39.8	0.02	3	+⊙
12	1500	YM 80	ESE	12.0	-37.7	0.02	3	+⊙
12	1800	YM 80	ESE	14.0	-38.5	0.02	3	+⊙
12	2100	YM 80	ESE	13.0	-38.2	0.02	0	+⊙
12	2400	YM 80	ESE	13.5	-40.4	*	0	+⊙
13	0900	YM 80	ESE	14.0	-39.0	0.02	0	+⊙
13	1530	YM 65	ESE	99.9	-34.8	0.02	0	+⊙
13	2100	YM64'	ESE	13.0	-36.3	*	0	+⊙
13	2400	YM64'	ESE	12.0	-36.4	*	0	+⊙
14	0900	YM64'	ESE	14.0	-34.9	0.02	0	+⊙
14	1500	YM 56	ESE	14.5	-33.6	0.02	0	+⊙
14	1800	YM55'	ESE	14.0	-34.9	0.02	0	+⊙

Table 7. Surface meteorological data during the oversnow traverse in the Shirase Glacier drainage basin and the Meteorite Ice Field from October 12, 1982 - February 1, 1983.

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Oct.								
12	1500	YM 17	E	13.2	-36.0	0.6	0	†O
12	2100	YM 28	E	12.2	-43.0	0.5	0	†
13	0900	YM 28	E	12.2	-41.0	0.3	0	†O
13	2030	YM 39	E	11.3	-41.0	0.3	3	†
14	0830	YM 39	E	14.3	-35.0	0.2	0	†
14	1230	YM 40'	E	17.5	-32.0	0.1	7	†
14	1500	YM 40'	E	15.5	-31.0	0.1	5	†
14	2000	YM 40'	E	17.2	-33.8	0.1	9	†
15	0800	YM 40'	E	14.5	-33.8	0.1	2	†O
15	1500	YM 50	E	10.5	-27.8	0.4	1	†O
16	0900	YM 60	E	11.0	-34.2	0.5	2	†
16	1430	YM 71'	ESE	11.5	-30.6	0.4	0	†O
16	2100	YM 80	ESE	13.8	-36.2	0.4	2	†
17	1500	YM 88/88'	ESE	9.8	+99.9	1.5	0	†O
17	2100	YM 96	ESE	10.7	-38.5	2.0	2	†
18	0930	YM 96	ESE	12.0	-35.2	0.8	0	†
18	1500	YM 102	ESE	11.2	-33.6	5.0	0+	†
18	2100	YM 102	ESE	11.0	-38.6	2.0	0+	†
19	1500	YM 102	ESE	8.7	-32.8	10.0	1	O
19	2030	YM 102	ESE	9.5	-37.9	10.0	1	O
20	0900	YM 102	ESE	7.8	-34.8	10.0	10	⊙
20	1500	SS 21'	ESE	2.0	-21.0	10.0	10	⊙
20	2100	SS 15	ESE	5.5	-28.0	5.0	10	*
21	0900	SS 15	ESE	8.0	-25.2	3.0	10	*
21	1500	SS 9	ESE	5.3	-19.0	5.0	10	*
21	2100	SS 0	E	6.5	-22.5	2.0	10	*
22	1500	SS 0	E	4.0	-19.5	2.0	10	*
22	2100	SS 0	ESE	4.0	-27.0	5.0	8	†
23	1000	SS 0	ESE	6.7	-20.0	2.0	10	*
23	1600	SS 0	E	7.0	-18.8	2.0	10	*
23	2030	SS 0	ESE	4.5	-22.0	5.0	10	*
24	0930	SS 0	ESE	10.5	-22.0	2.0	10	†
24	1500	SS 0	E	10.0	-18.2	1.0	10-	†
24	2100	SS 0	E	10.2	-21.8	0.2	10	†*
25	1000	SS 0	E	13.5	-23.0	0.05	10	†*
25	1440	SS 0	E	10.5	-19.4	0.2	10	†*
25	2100	SS 0	E	10.2	-21.2	2.0	10	†*
26	0900	SS 0	E	10.5	-22.0	2.0	10	†
26	1500	SS 0	E	6.0	-17.6	5.0	10	†
26	2100	SS 0	E	4.0	-26.8	10.0	9	†
27	0930	SS 0	E	15.0	-29.5	0.5	5	†
27	1500	SS 0	E	18.5	-26.0	0.2	2	†
27	2100	SS 0	E	16.0	-30.0	0.1	0	†
28	1030	SS 0	E	20.0	-30.0	0.01	-	†
28	1500	SS 0	-	17.5	-28.5	0.01	-	†
28	2100	SS 0	-	13.2	-28.8	0.05	-	†
29	0930	SS 0	-	14.0	-32.0	0.1	-	†
29	1500	SS 0	-	12.5	-27.0	0.2	2	†
29	2100	SS 0	-	13.0	-27.7	0.1	10	†
30	0900	SS 0	E	11.5	-25.5	0.05	10	†
30	1500	SS 0	ENE	11.0	-22.0	0.05	10	†
30	2100	SS 0	ENE	8.7	-25.0	0.3	10	†
31	0900	SS 0	E	4.5	-27.5	10.0	10	O

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Oct.								
31	1500	SS 0	E	3.8	-27.0	10.0	1	○
31	2100	SS 0	-	3.5	-38.5	10.0	0+	○
Nov. 1	0900	SS 0	-	10.7	-33.0	2.0	0	+○
1	1500	SS 0	E	9.5	-27.7	5.0	0	+○
1	2100	SS 0	E	10.0	-32.0	5.0	0	+○
2	0900	SS 0	E	7.2	-23.0	0.05	10	+○
2	1500	SS 0	E	8.3	-17.5	0.5	10-	+○
2	2100	SS 0	-	10.5	-22.0	1.0	10	+○
3	0900	SS 0	E	11.5	-18.0	0.2	10	+○
3	1500	SS 0	E	13.5	-15.2	0.1	10	+○
3	2100	SS 0	E	15.0	-18.0	0.05	10	+○
4	0900	SS 0	E	10.5	-16.0	0.1	10	+*
4	1500	SS 0	NE	9.8	-13.0	0.2	10	+*
4	2100	SS 0	NE	8.5	-15.5	5.0	9	+*
5	0900	SS 0	E	14.1	-17.7	2.0	10	+○
5	1500	SS 0	E	8.0	-14.8	10.0	9	+○
5	2100	SS 0	E	6.8	-20.2	10.0	8	+○
6	0900	SS 0	E	9.0	-15.0	10.0	5	+○
6	1500	SS 0	E	4.8	-13.0	10.0	8	+○
6	2100	SS 0	E	6.0	-20.2	10.0	6	+○
7	0930	SS 0	E	6.0	-11.5	0.5	10	+*
7	1500	SS 0	E	4.8	-9.0	0.5	10	+*
7	2100	SS 0	E	6.5	-13.0	0.5	10	+*
8	1030	SS 0	E	6.1	-13.0	10.0	4	+○
8	1500	SS 0	E	6.1	-14.0	20.0	4	+○
8	2100	SS 0	E	10.0	-18.0	5.0	9	+○
9	0900	SS 0	ESE	17.2	-17.2	0.05	0	+○
9	1500	SS 0	ESE	13.2	-14.2	0.2	4	+○
9	2100	SS 0	ESE	16.2	-19.0	0.2	4	+○
10	0930	SS 0	E	16.8	-18.0	0.2	0	+○
10	1500	SS 0	E	15.0	-17.0	0.3	0	+○
10	2300	SS 0	E	12.8	-23.0	0.5	2	+○
11	1000	SS 0	E	15.8	-18.0	0.3	2	+○
11	2100	SS 0	E	13.8	-20.0	0.5	0	+○
12	0900	SS 0	E	12.8	-18.2	0.5	0	+○
12	1500	SS 0	E	12.0	-13.0	2.0	0	+○
12	2140	SS 10	ESE	11.0	-21.2	0.2	0	+○
13	0900	SS 10	ESE	13.5	-21.5	2.0	0	+○
13	1500	SS 21'	ESE	10.5	-20.0	2.0	0+	+○
13	2100	SS 25	ESE	9.0	-25.5	30.0	3	+○
14	0900	SS 25	ESE	9.6	-24.5	2.0	0	+○
14	1500	SS 25	ESE	8.5	-21.5	30.0	0	+○
14	2100	SS 25	ESE	4.0	-26.5	30.0	0	+○
15	0900	SS 25	ESE	8.8	-25.5	10.0	0+	+○
15	2100	SS 25	ESE	5.2	-27.5	30.0	1	+○
16	0900	SS 25	ESE	8.5	-24.5	2.0	10-	+○
16	1500	YM 102	ESE	7.0	-22.5	2.0	5	+○
16	2100	YM 102	ESE	10.5	-25.0	10.0	9	+○
17	1130	YM 102	ESE	11.2	-23.0	5.0	10	+○
17	1500	SS 33	ESE	10.2	-26.3	5.0	10-	+○
17	2100	SS 40	E	9.0	-24.5	5.0	10	+○
18	0900	SS 40	E	10.0	-25.5	5.0	9	+○
18	1500	SS 47'	ESE	6.8	-22.0	30.0	2	+○

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Nov.								
18	2100	SS 50	E	5.3	-27.0	30.0	0	○
19	0900	SS 50	E	9.8	-26.5	2.0	10	⊙
19	1700	SS 50	E	7.0	-23.0	10.0	8	⊙
19	2100	SS 50	E	7.5	-27.0	30.0	8	⊙
20	0900	SS 50	ESE	10.5	-26.5	2.0	10	†
20	1500	G 4	ESE	9.0	-25.0	10.0	9	
20	2100	SS 60	ESE	6.0	-25.2	30.0	10	⊕
21	0900	SS 60	ESE	8.0	-25.0	20.0	10	⊕
21	1500	SS 69	ESE	8.0	-22.5	30.0	10	⊕
21	2100	SS 75	ESE	7.0	-25.5	30.0	0	○
22	1130	SS 75	ESE	11.3	-23.0	1.0	9	†⊙
22	1500	SS 75	ESE	13.0	-20.0	0.2	10	†
22	2100	SS 75	ESE	9.0	-23.0	0.2	10	†
23	0900	SS 75	ESE	8.6	-24.0	0.5	10	†
23	1520	SS 75	ESE	6.8	-19.0	1.0	10	†
23	2100	SS 75	ESE	0.0	-23.8	30.0	3	⊕
24	0900	SS 75	ESE	7.8	-24.5	3.0	1	†○
24	1500	SS 75	ESE	8.0	-16.0	10.0	6	†⊕
24	2100	SS 75	ESE	6.2	-27.0	30.0	0	○
25	1130	SS 75	ESE	10.5	-25.2	1.0	0	†○
25	1500	SS 75	ESE	10.2	-22.8	1.0	0	†○
25	2100	SS 75	ESE	9.8	-26.0	1.0	0	†○
26	0900	SS 75	ESE	13.2	-25.5	0.3	0	†○
26	1500	SS 76	ESE	12.3	-23.5	0.3	0	†○
26	2100	SS 85	ESE	11.2	-28.0	1.0	0	†
27	0900	SS 85	ESE	12.2	-28.2	0.5	0	†
27	1500	SS 95	ESE	11.2	-26.0	0.3	0	†
27	2100	SS 100	ESE	9.5	-29.2	30.0	0	†
28	0900	SS 100	ESE	8.7	-29.8	2.0	0	†
28	1530	SS 100	ESE	9.0	-27.2	5.0	0	†
28	2100	SS 100	ESE	6.3	-29.3	30.0	0	○
29	0900	SS 100	ESE	9.2	-28.8	2.0	0	†○
29	1530	SS 100	ESE	9.0	-26.8	10.0	0	†○
29	2100	SS 100	ESE	6.8	-29.7	30.0	0	○
30	0900	G 6	ESE	9.6	-30.8	3.0	0	†○
30	1500	SS 109	ESE	9.5	-28.0	5.0	1	†
30	2100	SS 115	E	6.9	-30.5	30.0	7	⊕
Dec. 1	0900	SS 115	E	6.9	-29.5	0.5	10	†⊙
1	1500	SS 125	E	5.9	-25.0	3.0	8	*
1	2100	SS 125	E	4.2	-27.5	30.0	10-	⊕
2	1130	SS 125	E	6.5	-23.5	1.0	9	⊕
2	1500	SS 125	NE	4.2	-23.8	2.0	5	⊕
2	2100	SS 125	NE	3.0	-26.2	10.0	9	*
3	1130	SS 125	E	4.5	-26.5	10.0	1	○
3	1500	SS 125	-	2.0	-23.0	30.0	0	○
4	1130	SS 125	ENE	5.0	-23.8	10.0	9	⊙
4	1500	SS 132	E	4.2	-22.5	30.0	6	*
4	2130	SS 145	E	4.2	-30.0	30.0	5	⊙
5	1130	SS 145	E	5.5	-24.0	5.0	8	⊕
5	1500	SS 150	E	6.2	-24.0	2.0	10	*
5	2130	SS 150	E	5.0	-30.0	10.0	9	⊕
6	1130	SS 150	E	10.8	-28.0	0.5	8	†
6	1500	SS 157	E	11.2	-25.5	0.5	10-	†

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
	Dec.							
6	2120	SS 170	E	8.2	-28.0	1.0	10-	+
7	1130	SS 170	E	9.8	-24.5	2.0	2	+
7	1500	SS 175	E	7.5	-24.5	30.0	0	○
7	2100	SS 175	E	4.9	-27.5	30.0	0	○
8	1120	SS 175	E	7.0	-24.0	5.0	0	+
8	1500	SS 178	E	7.8	-23.0	20.0	0+	+
9	1130	SS 178	E	5.5	-25.8	20.0	1	○
9	1500	SS 184	E	7.2	-23.8	30.0	2	○
9	2030	SS 196	E	4.2	-25.8	30.0	8	⊗
10	1230	SS 200	E	10.5	-20.0	10.0	1	+
10	1500	SS 200	E	8.0	-18.5	10.0	3	+
10	2130	SS 200	E	6.5	-23.0	30.0	1	○
11	1130	SS 200	ESE	10.0	-20.0	1.0	2	+
11	1500	SS 205	ESE	11.2	-21.0	1.0	2	+
11	2230	SS 225	ESE	11.0	-22.0	1.0	1	+
12	1200	SS 225	ESE	12.6	-21.0	0.5	0	+
12	1500	SS 229	ESE	11.2	-13.5	0.5	0	+
12	2100	SS 235	E	7.8	-18.0	30.0	0	○
13	1100	SS 235	E	11.2	-19.2	2.0	0	+
13	1500	YM162	ESE	12.0	-13.0	2.0	0	+
13	2100	YM170'	ESE	10.0	-15.8	30.0	0	○
14	1100	YM170'	ESE	15.2	-15.5	5.0	1	○
14	1600	YM165'	ESE	10.2	-12.0	30.0	3	⊗
14	2100	YM165'	ESE	6.5	-15.3	30.0	1	○
15	1100	YM165'	ESE	10.5	-11.0	10.0	9	⊗
15	1500	YM165'	E	10.0	-12.2	10.0	9	⊗
15	2100	YM165'	E	4.5	-13.0	10.0	10-	⊗
16	1130	YM165'	E	6.5	-10.5	10.0	10-	⊗
16	1500	YM 179	E	8.0	-10.5	10.0	9	⊗
16	2100	YM 179	E	8.0	-12.5	30.0	6	+
17	1500	YM 179	E	13.0	-9.8	2.0	0	+
17	2100	YM 179	E	14.5	-11.8	1.0	9	+
18	1030	YM 179	E	18.5	-13.0	0.1	10	+
18	1500	YM 179	E	18.3	-10.5	0.1	10	+
18	2100	YM 179	E	12.0	-11.5	0.5	10-	+
19	1130	YM 179	E	19.0	-10.4	0.5	9	+
19	1500	YM 179	E	18.5	-10.0	0.5	5	+
19	2100	YM 179	E	20.5	-12.5	0.5	2	+
20	1100	YM 179	E	22.5	-11.0	0.5	0	+
20	1500	YM 179	E	18.7	-10.5	0.5	2	+
20	2100	YM 179	E	14.2	-12.0	10.0	0+	+
21	1100	YM 179	E	22.1	-13.5	0.5	0	+
21	1500	YM 179	E	19.8	-12.2	1.0	0	+
22	1000	YM149'	E	10.5	-15.0	0.5	10	+
22	1500	YM136'	E	9.5	-14.0	1.0	10-	*
22	2100	YM130'	ESE	6.5	-15.0	10.0	9	⊗
23	1030	YM130'	E	9.5	-13.0	0.5	10-	+
23	1500	YM125'	E	9.3	-13.0	5.0	2	○
23	1500	YM111'	E	8.8	-16.5	30.0	0	○
24	1030	YM111'	E	12.0	-12.0	5.0	0	○
24	1500	YM 102	E	12.5	-13.0	5.0	0	+
24	2100	YM 102	E	7.0	-14.2	30.0	0	○
25	1030	YM 102	E	11.6	-14.0	3.0	0+	+

Date	LT	Station	WD	WS	T	Vi	N	W
1982								
Dec.								
25	1500	YM 115	ESE	10.6	-13.5	10.0	0+	+
25	2300	YM 130	E	7.0	-17.5	30.0	1	○
26	1120	YM 130	E	10.0	-11.5	30.0	1	○
26	1500	YM 140	ESE	8.0	-12.5	20.0	4	⊙
26	2100	YM 162	ESE	11.0	-12.0	10.0	9	*
27	1130	YM 162	ESE	17.0	-11.0	0.1	10	+
27	1500	YM 170	E	13.5	-5.5	0.3	10-	+
27	2100	YM 179	E	12.2	-17.2	10.0	9	⊙
28	1500	YM 179	ENE	9.0	-9.8	0.2	10	*
28	2100	YM 179	ENE	4.2	-12.5	5.0	10-	*
29	1100	YM 179	ENE	9.5	-10.2	1.0	10	+*
29	1500	YM 179	ENE	13.0	-8.5	1.0	7	+
29	2200	YM 179	ENE	13.0	-9.0	0.5	10-	+
30	1100	YM 179	ENE	17.6	-8.0	1.0	9	+
30	1500	YM 179	ENE	12.0	-8.0	5.0	5	+
30	2300	SY 54	E	13.5	-10.0	30.0	9	⊙
31	1030	SY 54	E	11.5	-9.0	30.0	1	○
31	1500	SY 54	-	0.0	+0.0	30.0	3	
1983								
Jan. 1								
1	1500	SY 54	ENE	10.2	-11.5	30.0	0	○
1	2100	SY 54	ENE	18.0	-13.0	30.0	0	○
2	1500	SY 54	ENE	15.8	-10.5	30.0	0	○
2	2100	SY 54	ENE	13.0	-13.0	30.0	0	○
3	1100	SY 54	ENE	16.0	-12.0	30.0	1	○
3	1700	KUWAET	ENE	12.0	-8.0	30.0	0	○
3	2200	SY 54	ENE	11.5	+0.0	30.0	0	○
4	1100	SY 54	ENE	14.0	-12.0	30.0	0	○
4	1630	K 9	ENE	10.5	-10.0	30.0	1	○
5	1500	K 11	ENE	8.0	-12.5	20.0	9	⊙
5	2100	K 11	ENE	7.0	-14.0	30.0	3	○
6	1130	K 11	ENE	12.0	-15.5	5.0	0	+○
6	1500	K 11	ENE	11.0	-15.5	10.0	1	+○
6	2100	K 15	ENE	6.5	-16.0	30.0	1	○
7	1030	K 15	ENE	11.0	-14.0	30.0	5	○
7	1500	K 5	ENE	6.8	+0.0	30.0	5	○
7	2100	K 20	ENE	7.0	-15.0	3.0	10-	*
8	1100	K 20	ENE	9.5	-12.0	20.0	6	⊙
8	1500	K 23	ENE	8.2	-13.0	10.0	8	+⊙
8	2100	K 22	ENE	5.0	-16.0	30.0	3	⊙
9	1130	K 22	ENE	12.8	-14.0	2.0	3	+
9	1500	K 22	ENE	9.3	-15.5	10.0	1	○
9	2130	K 28	ENE	8.0	-19.0	30.0	1	○
10	1130	K 28	ENE	14.0	-14.0	10.0	1	○
10	1530	K 31	ENE	9.2	-10.0	30.0	3	○
10	2100	K 32	ENE	11.0	-17.5	2.0	4	+
11	1100	K 32	ENE	17.2	-16.5	0.5	0	+
11	1500	K 32	ENE	13.5	-16.5	1.0	0	+
11	2100	K 32	ENE	11.5	-15.5	10.0	0+	+
12	1230	K 32	ENE	12.0	-15.0	5.0	1	+
12	1500	K 32	ENE	11.8	+0.0	2.0	10	+
12	2100	K 37	ENE	9.8	-10.0	0.5	10	+*
13	1130	K 32	ENE	12.7	-13.2	1.0	10-	+
13	1500	K 32	ENE	19.0	-14.0	0.2	9	+

Date	LT	Station	WD	WS	T	Vi	N	W
1983								
Jan.								
13	2100	K 22	ENE	9.0	-12.0	30.0	9	⊙
14	1130	K 3	ENE	12.5	-10.5	30.0	4	⊙
15	1530	K 3	ENE	12.2	-10.0	30.0	1+	⊙
15	2100	YM 179	E	12.2	-13.0	30.0	0	⊙
15	1100	YM 179	E	16.0	-10.5	10.0	0	⊙
15	1530	YM 179	E	17.5	-10.0	30.0	0	⊙
15	2100	YM 179	E	10.5	-12.5	30.0	0	⊙
16	1100	YM 179	E	15.5	-10.5	30.0	0	⊙
16	1630	YM 179	E	15.0	-11.0	30.0	0	⊙
16	2100	YM 179	E	11.5	-13.0	30.0	0	⊙
17	1200	YM 179	E	11.5	-10.0	30.0	0	⊙
17	1500	YM 179	E	11.0	-10.5	30.0	0	⊙
17	2100	YM 179	E	12.5	-13.0	30.0	0	⊙
18	1130	YM 179	E	16.2	-13.0	30.0	0	+⊙
18	1600	YM 179	E	12.0	-13.0	30.0	0+	⊙
18	2100	YM 179	E	11.8	-15.0	30.0	0+	⊙
19	1200	YM 179	E	13.5	-12.0	30.0	1	⊙
19	1500	YM 179	E	11.5	-13.0	30.0	1	⊙
19	2100	YM 179	E	10.5	-15.2	30.0	0	⊙
20	1100	YM 179	E	18.0	-15.0	30.0	0	+⊙
20	1500	C/D	E	11.0	-10.0	30.0	1	⊙
20	2100	C/D	E	13.0	-17.5	30.0	0	⊙
21	1500	C/D	E	15.5	-15.0	30.0	0	⊙
21	2200	YM 142	E	8.5	-20.5	30.0	0	⊙
22	1130	YM 142	E	12.2	-17.5	5.0	0+	+⊙
22	1500	YM 126	ESE	12.0	-19.5	10.0	0+	+⊙
22	2100	YM 102	ESE	6.7	-20.5	30.0	0	⊙
23	1100	YM 102	ESE	13.2	-15.5	5.0	10-	⊙
23	1400	YM 102	ESE	9.8	-14.2	10.0	9	⊙
23	2100	YM 72	E	7.0	-12.0	30.0	9	⊙
24	1100	YM 72	E	8.5	-11.0	30.0	4	⊙
24	1500	YM 54'	E	5.5	-10.5	30.0	6	⊙
24	2100	YM 30	E	5.2	-15.2	30.0	8	⊙
25	1130	YM 30	E	11.0	-15.0	30.0	0	⊙
25	1500	YM 13	E	11.0	-13.0	30.0	0+	+⊙
28	1500	YM 13	-	0.0	+0.0	30.0	3	⊙
28	2100	Z 22	-	0.0	-13.0	30.0	8	⊙
29	0900	Z 22	E	9.5	-9.0	30.0	2	⊙
29	1500	H 206	ENE	11.0	-11.0	5.0	1	+⊙
29	2100	H 120	ENE	13.0	-11.0	0.2	10-	+⊙
30	1300	H 120	ENE	18.0	-6.5	0.2	9	+⊙
30	1500	H 120	ENE	19.0	-8.0	0.2	7	+⊙
30	2100	H 120	ENE	18.0	-11.0	0.2	1	+⊙
31	0900	H 120	ENE	15.5	-6.0	0.5	9	+⊙
31	1430	H 70	ENE	13.5	-6.5	0.5	5	+⊙
Feb. 1	1500	S 16	ENE	3.0	+1.5	30.0	1	⊙