

**Glaciological Data Collected by the 39th and 40th
Japanese Antarctic Research Expedition during 1998-2000**

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1. Outline of field observations during 1998-2000

A new five-year glaciological program, which mainly consists of observations related to GLOCHANT (Global Change and the Antarctic)/ITASE (International Trans Antarctic Scientific Expedition) and ice sheet dynamics in east Dronning Maud Land was started in 1997 by JARE-38.

To clarify the change in surface mass balance of the ice sheet, shallow ice core drillings were conducted at Dome Fuji Station and H72 point by JARE-39. And to identify the ice flow effect on mass balance of the ice sheet, new traverse routes for measurements of the surface elevation, ice flow velocity and internal layers of the ice sheet were newly established along the principal flow line (MD240-YM60) and the contour lone (2,200 m in elevation) by JARE-40. GPS differential measurements and 3 frequencies radio echo sounding were carried out along the traverse routes.

Oversnow traverses were carried out along the traverse routes shown in Fig. 1. Various observations including surface accumulation, surface flow velocity and chemistry in surface snow have been conducted since JARE-32 during inland traverses from coast to Mizuho Station, Relay Point and Dome Fuji Station (Fujii, 1992; Kamiyama *et al.*, 1994; Motoyama *et al.*, 1995, 1999; Shiraiwa *et al.*, 1996; Azuma *et al.*, 1997; Fujita *et al.*, 1998).

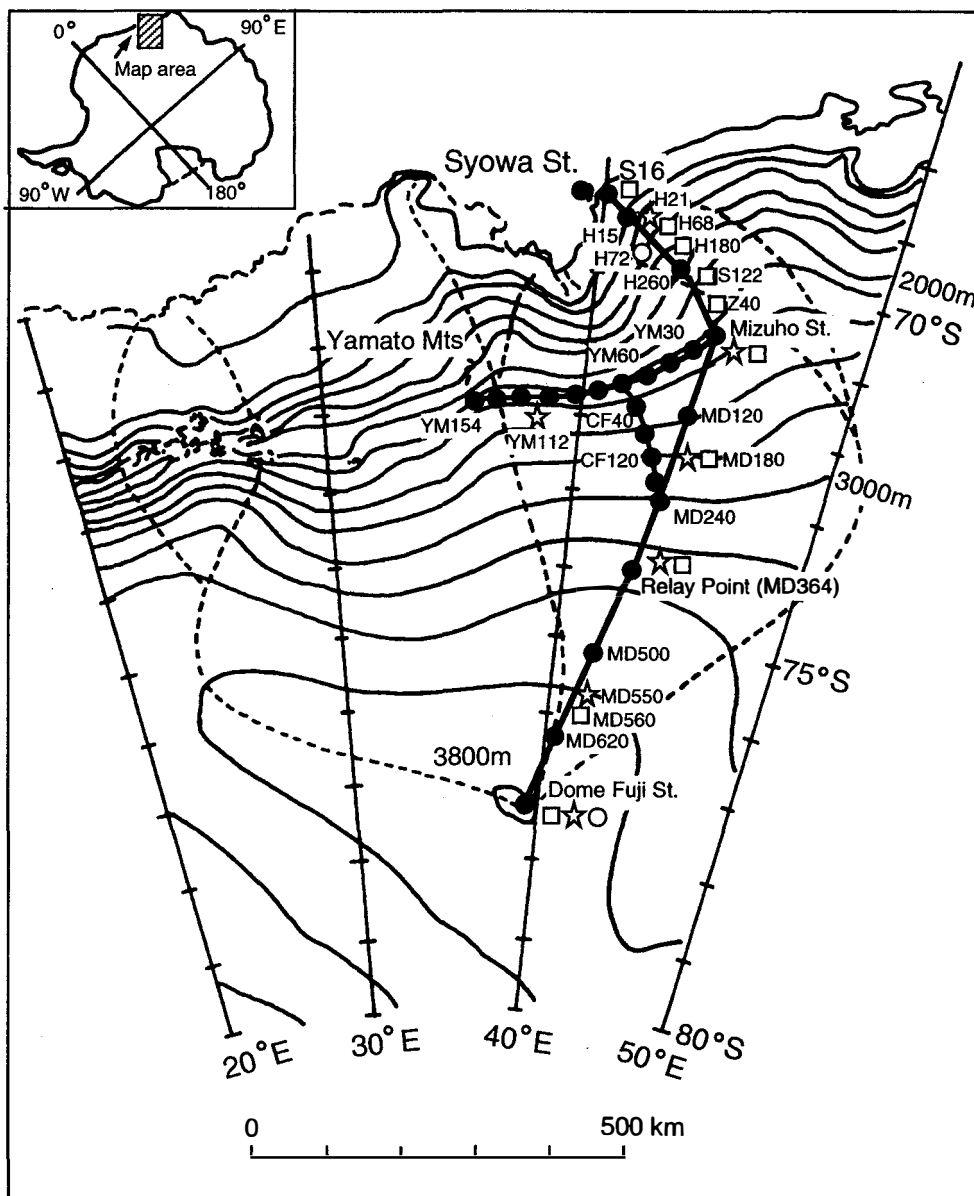
Oversnow traverses conducted by JARE-39 and -40 are listed in Table 1-1. Table 1-2 shows the items of glaciological and meteorological observations conducted during the oversnow traverses. The participants and their assignments in the JARE-39 and JARE-40 program are listed in Table 1-3.

We would like to express our sincere thanks to all members of JARE-39 and JARE-40 who extended generous and long term support in the fieldwork.

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- : Snow Stake, radio echo sounding and surface snow sampling
- : GPS Station ☆ : AWS
- : Shallow Ice Coring □ : Snow Stake Farm

Fig. 1. Map showing the traverse routes traced by JARE-39 and JARE-40.

Table 1-1. Oversnow traverses carried out by JARE-39 and JARE-40 from December 1997 to February 2000.

Traverse No.	Period		Traverse Route			Distance (km)	Participants	Oversnow Vehicle
	from	to	from	through	to			
1-a	23 Dec. 1997	8 Jan. 1998	S16		Dome F	1,000	5	SM100(3)
-b	24 Jan. 1998	6 Feb. 1998	Dome F		S16	1,000	8	SM50(2),SM100(3)
2-a	3 Sep. 1998	3 Sep. 1998	Syowa		H72	85	10	SM100(2),SM50(1)
-b	23 Sep. 1998	24 Sep. 1998	H72		Syowa	85	10	SM100(2),SM50(2)
3-a	16 Oct. 1998	2 Nov. 1998	Syowa		Yamato	620	8	SM100(3),SM50(1)
-b	14 Jan. 1998	3 Feb. 1998	Yamato		S16	590	8	SM100(3),SM50(1)
4-a	7 Nov. 1998	2 Dec. 1998	Syowa		Dome F	1,030	6	SM100(3)
-b	29 Dec. 1998	13 Feb. 1999	Dome F		S16	1,000	6	SM100(3)
5-a	30 Dec. 1998	21 Jan. 1999	S16		Dome F	1,000	6	SM100(1),SM50(2)
-b	28 Jan. 1999	11 Feb. 1999	Dome F		S16	1,000	6	SM100(1),SM50(2)
6-a	23 Aug. 1999	2 Sep. 1999	Syowa		Mizuho	287	8	SM100(2),SM50(1)
-b	6 Sep. 1999	13 Sep. 1999	Mizuho		Syowa	287	8	SM100(2),SM50(1)
7-a	1 Nov. 1999	26 Nov. 1999	Syowa		Dome F	1,030	7	SM100(4)
-b	10 Dec. 1999	29 Dec. 1999	Dome F		Mizuho	372	7	SM100(4)
-c	30 Dec. 1999	8 Jan. 2000	Mizuho		YM154	304	7	SM100(4)
-d	14 Jan. 2000	18 Jan. 2000	YM154		YM60	183	7	SM100(4)
-e	19 Jan. 2000	24 Jan. 2000	YM60	CF80	MD240	171	7	SM100(4)
-f	25 Jan. 2000	7 Feb. 2000	MD240		S16	505	7	SM100(4)

SM50 and SM100 are types of oversnow vehicles. The numbers of each type vehicle are shown in parentheses.

Traverse 1-b was joint traverse with JARE-38.

Table 1-2. Glaciological and meteorological observations during the oversnow traverses.

Item	Interval	Traverse No.	Main observers
Positioning along routes	2 km	3 and 7-e	Kojima, Furukawa and Matsuoka
Snow accumulation along routes	2km	1, 4, 6 and 7	Yamada, K. Suzuki, Furukawa and Matsuoka
Stake farm and stake row		1, 4, 6 and 7	Yamada, K. Suzuki, Furukawa and Matsuoka
Snow sampling	10km	1, 4, 5, 6 and 7	K. Suzuki, Yamada and T. Suzuki
Pit observation and sampling		4, 5	Yamada, K. Suzuki and Iizuka
Shallow ice coring		2 and 4	Yamada, K. Suzuki and Hashida
GPS observation		5 and 7	Furukawa
Radio echo sounding	continuous	7	Matsuoka
Aerosol sampling		7	T. Suzuki
Firn air sampling		2 and 4	Hashida, Yamada and K. Suzuki
Set-up and maintenance of AWS		4, 6 and 7	K. Suzuki and Matsuoka
Meteorological observations		1, 2, 3, 4, 5, 6 and 7	Saito, Hashida, Horikawa, Yasuda, Ohno, Iizuka, Murakata and Yasugahira
Meteorite collecting		3	Kojima, Y. Sato and Kaiden

AWS: abbreviation of Automatic Weather Station

Table 1-3. Participants in the oversnow traverses and their assignments in the JARE-39 and JARE-40 programs.

Name	Assignments	Traverse No.
Tomomi Yamada ¹	Glaciologist	1-a,1-b,2-a,2-b,4-a,4-b
Keisuke Suzuki ¹	Glaciologist	1-a,1-b,2-a,2-b,4-a,4-b
Kazuhiko Yamamoto ¹	Engineer	1-a,1-b
Kiyoaki Saito ²	Journalist	1-a
Michio Kawabata ³	Pilot	1-a,1-b
Susumu Kaneto ³	Meteorologist	1-b
Hideaki Motoyama ³	Glaciologist	1-b
Masahiko Hayashi ³	Atmospheric science	1-b
Yoichi Sato ³	Engineer	1-b
Gen Hashida ¹	Atmospheric science	2-a,2-b
Tomoya Morita ¹	Engineer	2-a,2-b,4-a,4-b
Hiroyuki Ogawa ¹	Field assistant	2-a,2-b,4-a,4-b
Takahiro Miyata ¹	Medical doctor	2-a,2-b
Shigemitsu Iino ¹	Field assistant	2-a,2-b
Kazuhisa Horikawa ¹	Meteorologist	2-a,2-b,4-a,4-b
Hajime Yoshida ¹	Chef	2-a,2-b,4-a,4-b
Yukio Oda ¹	Environmental manager	2-a,2-b
Takehiko Yasuda ¹	Meteorologist	2-a,2-b
Sachio Masakawa ¹	Engineer	2-a,2-b
Hideyasu Kojima ¹	Geologist	3-a,3-b
Yasuhiro Sato ¹	Field assistant	3-a,3-b
Hiroshi Kaiden ¹	Geologist	3-a,3-b
Toru Yada ¹	Geologist	3-a,3-b
Giichiro Ohno ¹	Medical doctor	3-a,3-b
Hideo Handa ¹	Engineer	3-a,3-b
Hiroshi Kiriyama ¹	Radio operator	3-a,3-b
Kazuo Meki ¹	Upper atmospheric scientist	3-a,3-b
Teruo Furukawa ⁴	Glaciologist	5-a,5-b, 6-a,6-b, 7-a-f
Toshitaka Suzuki ⁴	Glaciologist	5-a,5-b, 7-a-f
Kenichi Matsuoka ⁴	Glaciologist	5-a,5-b, 7-a-f

Name	Assignments	Traverse No.
Kenji Ikarashi ⁴	Engineer	5-a,5-b
Hiromitsu Kusagaya ⁴	Medical doctor	5-a,5-b
Yoshinori Iizuka ⁵	Glaciologist	5-a,5-b
Yasutaka Tsuchiya ⁴	Marine biologist	6-a,6-b
Eishin Murakata ⁴	Meteorologist	6-a,6-b
Shigetoshi Matsunaga ⁴	Engineer	6-a,6-b
Nobuhiko Endo ⁴	Engineer	6-a,6-b,7-a-f
Koji Horimoto ⁴	Radio operator	6-a,6-b
Yoshiaki Kitakaze ⁴	Field assistant	6-a,6-b
Kikuo Yanagiya ⁴	Environmental manager	6-a,6-b
Kazuya Yasugahira ⁴	Meteorologist	7-a-f
Hiroto Kameya ⁴	Engineer	7-a-f
Shinji Ohtani ⁴	Medical doctor	7-a-f

- 1: JARE-39 overwintering party in 1998.
- 2: JARE-39 summer party.
- 3: JARE-38 overwintering party in 1997.
- 4: JARE-40 overwintering party in 1999.
- 5: JARE-40 summer party.

2. Position

Observers: Teruo Furukawa and Kenichi Matsuoka

Two routes were newly established in 1998 and 1999 by JARE-39 and JARE-40. Route YM between Mizuho Station and Yamato Mountains was restored in 1998 by JARE-39 roughly along Route YM established in 1982 by JARE-23 (Nishio *et al.*, 1986). JARE-40 newly established Route CF from YM60 (CF=0) to MD240 (CF=172) along the principal flow line in 1999. On Routes YM and CF, snow stakes were installed every 2 km. These stakes were used for snow accumulation measurements.

Positions (latitude and longitude) of stakes were determined every 2 km along new routes with GPS (Global Positioning System). The GPS data were calculated on the WGS-84 earth ellipsoid with broadcast ephemerides. The positions of the stations were shown in Table 2-1 and 2-2. The error of positioning with GPS is a few tens of meters, which is good enough for navigation.

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Table 2-1. Positions along Route YM.

Stations	Latitude (S)	Longitude (E)	Stations	Latitude (S)	Longitude (E)
Mizuho St.	70 ° 42.04 '	44 ° 17.18 '	YM 44	71 ° 16.79 '	42 ° 37.06 '
YM 1	70 43.02	44 13.68	YM 45	71 17.54	42 34.63
YM 2	70 43.68	44 11.26	YM 46	71 18.36	42 32.54
YM 3	70 44.25	44 08.47	YM 47	71 19.16	42 30.13
YM 4	70 44.90	44 06.02	YM 48	71 19.91	42 27.77
YM 5	70 45.82	44 03.48	YM 49	71 20.68	42 25.32
YM 6	70 46.90	44 02.15	YM 50	71 21.41	42 23.24
YM 7	70 47.77	44 00.50	YM 51	71 22.25	42 21.15
YM 8	70 48.55	43 58.14	YM 52	71 23.13	42 18.90
YM 9	70 49.41	43 56.24	YM 53	71 23.90	42 16.85
YM 10	70 50.19	43 54.34	YM 54	71 24.35	42 13.44
YM 11	70 51.03	43 52.03	YM 55	71 24.80	42 10.45
YM 12	70 51.91	43 49.85	YM 56	71 25.25	42 07.53
YM 13	70 52.75	43 47.83	YM 57	71 25.62	42 04.23
YM 14	70 53.5	43 45.07	YM 58	71 25.97	42 01.20
YM 15	70 54.26	43 43.40	YM 59	71 26.31	41 58.12
YM 16	70 55.07	43 41.27	YM 60	71 26.58	41 54.79
YM 17	70 55.89	43 38.92	YM 61	71 27.02	41 51.71
YM 18	70 56.73	43 36.68	YM 62	71 27.54	41 48.87
YM 19	70 57.62	43 34.38	YM 63	71 27.86	41 45.81
YM 20	70 58.45	43 32.41	YM 64	71 28.04	41 42.57
YM 21	70 59.18	43 29.85	YM 65	71 28.22	41 39.10
YM 22	70 59.95	43 27.33	YM 66	71 28.52	41 35.97
YM 23	71 00.66	43 24.62	YM 67	71 28.89	41 32.82
YM 24	71 01.47	43 22.37	YM 68	71 29.31	41 29.79
YM 25	71 02.20	43 19.87	YM 69	71 29.73	41 26.73
YM 26	71 02.97	43 17.66	YM 70	71 30.13	41 23.67
YM 27	71 03.76	43 15.55	YM 71	71 30.51	41 20.74
YM 28	71 04.54	43 13.41	YM 72	71 30.77	41 18.41
YM 29	71 05.29	43 11.23	YM 73	71 31.16	41 15.34
YM 30	71 06.16	43 09.20	YM 74	71 31.53	41 12.39
YM 31	71 06.94	43 07.00	YM 75	71 31.93	41 09.17
YM 32	71 07.74	43 04.81	YM 76	71 32.40	41 06.12
YM 33	71 08.58	43 02.63	YM 77	71 32.85	41 03.16
YM 34	71 09.28	43 00.30	YM 78	71 33.11	40 59.84
YM 35	71 10.15	42 58.08	YM 79	71 33.43	40 57.21
YM 36	71 10.92	42 55.94	YM 80	71 33.77	40 53.71
YM 37	71 11.73	42 53.67	YM 81	71 34.24	40 50.15
YM 38	71 12.48	42 51.42	YM 82	71 34.70	40 47.64
YM 39	71 13.32	42 49.17	YM 83	71 35.18	40 44.75
YM 40	71 14.03	42 46.91	YM 84	71 35.50	40 42.04
YM 41	71 14.70	42 44.34	YM 85	71 35.98	40 39.21
YM 42	71 15.33	42 41.89	YM 86	71 36.33	40 36.22
YM 43	71 16.07	42 39.42	YM 87	71 37.11	40 33.86

Stations	Latitude (S)	Longitude (E)	Stations	Latitude (S)	Longitude (E)
YM 88	71° 37.92'	40° 31.79'	YM 122	71° 45.66'	38° 43.44'
YM 89	71 38.41	40 29.19	YM 123	71 45.79	38 40.12
YM 90	71 38.99	40 27.25	YM 124	71 45.93	38 36.83
YM 91	71 39.44	40 24.26	YM 125	71 46.11	38 33.48
YM 92	71 39.91	40 21.21	YM 126	71 46.32	38 30.24
YM 93	71 40.46	40 18.34	YM 127	71 46.45	38 26.88
YM 94	71 40.94	40 15.64	YM 128	71 46.68	38 23.56
YM 95	71 41.03	40 12.19	YM 129	71 46.82	38 20.25
YM 96	71 41.26	40 08.91	YM 130	71 47.03	38 17.00
YM 97	71 41.35	40 05.51	YM 131	71 47.17	38 13.78
YM 98	71 41.59	40 02.32	YM 132	71 47.33	38 10.50
YM 99	71 41.77	39 58.95	YM 133	71 47.49	38 07.15
YM 100	71 41.89	39 55.59	YM 134	71 47.66	38 03.80
YM 101	71 42.05	39 52.34	YM 135	71 47.84	38 00.35
YM 102	71 42.27	39 49.04	YM 136	71 48.03	37 56.99
YM 103	71 42.42	39 45.80	YM 137	71 48.18	37 53.61
YM 104	71 42.64	39 42.53	YM 138	71 48.41	37 50.46
YM 105	71 42.81	39 39.32	YM 139	71 48.56	37 47.02
YM 106	71 42.95	39 36.04	YM 140	71 48.73	37 43.67
YM 107	71 43.14	39 32.80	YM 141	71 48.91	37 40.35
YM 108	71 43.28	39 29.52	YM 142	71 49.08	37 37.01
YM 109	71 43.47	39 26.17	YM 143	71 49.21	37 33.78
YM 110	71 43.63	39 22.87	YM 144	71 49.39	37 30.63
YM 111	71 43.74	39 19.60	YM 145	71 49.60	37 27.49
YM 112	71 43.96	39 16.31	YM 146	71 49.64	37 24.13
YM 113	71 44.13	39 12.95	YM 147	71 49.88	37 20.57
YM 114	71 44.30	39 09.50	YM 148	71 50.12	37 17.29
YM 115	71 44.47	39 06.20	YM 149	71 50.26	37 13.88
YM 116	71 44.66	39 03.00	YM 150	71 50.42	37 10.55
YM 117	71 44.85	38 59.67	YM 151	71 50.61	37 07.29
YM 118	71 44.98	38 56.44	YM 152	71 50.82	37 05.12
YM 119	71 45.11	38 53.13	YM 153	71 51.79	37 04.42
YM 120	71 45.30	38 49.90	YM 154	71 52.93	37 03.64
YM 121	71 45.48	38 46.69			

Table 2-2. Positions along Route CF.

Stations	Latitude (S)	Longitude (E)	Stations	Latitude (S)	Longitude (E)
CF0(YM60)	71 ° 26.6 '	41 ° 54.7 '	CF 88	72 ° 11.90 '	42 ° 41.43 '
CF 2	71 27.6	41 55.9	CF 90	72 12.91	42 42.48
CF 4	71 28.6	41 56.8	CF 92	72 13.95	42 43.57
CF 6	71 29.7	41 57.9	CF 94	72 14.95	42 44.63
CF 8	71 30.7	41 58.9	CF 96	72 15.95	42 45.67
CF 10	71 31.7	41 59.9	CF 98	72 16.96	42 46.96
CF 12	71 32.8	42 00.93	CF 100	72 17.98	42 47.99
CF 14	71 33.78	42 01.92	CF 102	72 19.01	42 49.05
CF 16	71 34.81	42 03.02	CF 104	72 20.06	42 50.26
CF 18	71 35.84	42 03.95	CF 106	72 21.10	42 51.39
CF 20	71 36.87	42 05.04	CF 108	72 22.13	42 52.47
CF 22	71 37.89	42 06.01	CF 110	72 23.20	42 53.62
CF 24	71 38.96	42 07.10	CF 112	72 24.22	42 54.79
CF 26	71 39.98	42 08.17	CF 114	72 25.27	42 55.91
CF 28	71 40.98	42 09.14	CF 116	72 26.28	42 57.02
CF 30	71 42.01	42 10.22	CF 118	72 27.31	42 58.20
CF 32	71 43.06	42 11.28	CF 120	72 28.37	42 59.29
CF 34	71 44.12	42 12.33	CF 122	72 29.26	43 00.26
CF 36	71 45.12	42 13.44	CF 124	72 30.35	43 01.45
CF 38	71 46.16	42 14.45	CF 126	72 31.43	43 02.74
CF 40	71 47.20	42 15.55	CF 128	72 32.46	43 03.88
CF 42	71 48.21	42 16.58	CF 130	72 33.45	43 05.08
CF 44	71 49.24	42 17.51	CF 132	72 34.49	43 06.22
CF 46	71 50.27	42 18.73	CF 134	72 35.39	43 07.04
CF 48	71 51.30	42 19.71	CF 136	72 36.39	43 08.30
CF 50	71 52.32	42 20.75	CF 138	72 37.39	43 09.50
CF 52	71 53.36	42 21.77	CF 140	72 38.42	43 10.59
CF 54	71 54.36	42 22.94	CF 142	72 39.52	43 11.80
CF 56	71 55.41	42 23.94	CF 144	72 40.55	43 12.94
CF 58	71 56.47	42 25.09	CF 146	72 41.58	43 14.10
CF 60	71 57.49	42 26.15	CF 148	72 42.62	43 15.37
CF 62	71 58.52	42 27.17	CF 150	72 43.69	43 16.57
CF 64	71 59.47	42 28.15	CF 152	72 44.70	43 17.77
CF 66	72 00.52	42 29.22	CF 154	72 45.74	43 18.89
CF 68	72 01.56	42 30.37	CF 156	72 46.82	43 20.01
CF 70	72 02.63	42 31.60	CF 158	72 47.49	43 20.93
CF 72	72 03.68	42 32.60	CF 160	72 48.34	43 21.94
CF 74	72 04.69	42 33.68	CF 162	72 49.27	43 22.99
CF 76	72 05.71	42 34.74	CF 164	72 50.31	43 24.14
CF 78	72 06.72	42 35.86	CF 166	72 51.32	43 25.36
CF 80	72 07.78	42 36.95	CF 168	72 52.14	43 26.21
CF 82	72 08.85	42 37.94	CF 170	72 53.06	43 27.30
CF 84	72 09.85	42 39.15	CF 172	72 54.01	43 28.44
CF 86	72 10.87	42 40.30	(=MD240)		

3. Net accumulation of snow

Observers: JARE-38: Hideaki Motoyama and others

JARE-39: Tomomi Yamada, Keisuke Suzuki and others

JARE-40: Teruo Furukawa and others

Net accumulation of snow was measured by stake method along oversnow traverse routes in 1997-2000 (Fig. 1).

2.1. Route S-H-Z (Mizuho Route)

Stake heights along the route were measured in September 1997 by JARE-38 (Motoyama *et al.*, 1999), in January and October 1998 by JARE-39, and September 1999 and January-February 2000 by JARE-40. The heights of differences, which approximate the net balance of snow along the routes, are tabulated in Table 3-1. The minimum readings were 1 cm.

2.2. Route MD (Dome Fuji Route)

Stake heights along the route from IM0 to MD364 (Relay Point) were measured in October 1997 by JARE-38 (Motoyama *et al.*, 1999), in November-December 1998 by JARE-39, and in December 1999 by JARE-40. The height differences are tabulated in Table 3-2. The minimum readings were 1 cm.

2.4. 36-Stake farms, 50-stake row and 101-stake row along the route

36-stake farms (100 m x 100 m in area, see Fig. 2 in Azuma *et al.*, 1997) are set at S16, H68, H180, S122 and Z40 along the Mizuho route and Dome Fuji Station. Stake heights of the farms were measured by JARE-38, -39 and -40 on the way to and from Dome Fuji Station. The results are shown in Tables 3-3, 3-4, 3-5, 3-6, 3-7 and 3-8. The last row gives averages and standard deviations of net snow accumulation for each period.

50-stake rows are set at MD180, MD364 and MD560. These stake rows are perpendicular to the prevailing wind direction, and the distance between stakes is 2 m (see Fig. 4 in Azuma *et al.*, 1997). The results are shown in Table 3-9, 3-10 and 3-11.

A 101-stake row located at Mizuho Station was measured (see Fig. 3 in Azuma *et al.*, 1997). The results of the measurements are given in Table 3-12.

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Table 3-1. Net accumulation along Routes S-H-Z in 1997-2000.

Station No.	(cm in depth)			
	Sep.15-Sep.26 1997 (389-403 days)	Oct.20-Oct.23 1998 (306-317 days)	Aug.25-Sep.2 1999 (151-162 days)	Jan.31-Feb.3 2000
S 16	-	-	20	-
S 17	-	-	9	-
S 18	50	-	59	-
S 19	65	-	27	-
S 20	68	-	29	-
S 21	75	-	40	-
S 22	-	-	59	-
S 23	-	-	48	-
S 24	62	-	43	-
S 25	93	-	40	-
S 26	80	-	43	-
S 27	56	-	40	-
S 28	59	-	42	-
S 29	76	-	59	-
S 30	-	-	57	-
H 3	93	-	43	-
H 9	65	-	47	-
H 15	-	-	59	-
H 21	61	-	40	-
H 27	77	-	28	-
H 35	70	-	39	-
H 42	32	-	30	-
H 48	69	-	36	-
H 54	66	-	43	-
H 60	78	-	49	-
H 64	48	-	36	-
H 68	9	-	8	-
H 72	-	-	40	-
H 76	46	-	50	-
H 80	31	-	-	-
H 84	26	-	18	-
H 88	28	-	42	-
H 92	27	-	-	-
H 96	50	-	49	-
H 100	46	-	-	-
H 104	35	-	21	-
H 108	17	-	35	-
H 112	49	-	-	-
H 116	37	-	22	-
H 120	30	-	18	-
H 124	14	-	29	-
H 128	29	-	-	-

Station No.	(cm in depth)			
	Sep.15-Sep.26	Oct.20-Oct.23	Aug.25-Sep.2	Jan.31-Feb.3
	1997 (389-403 days)	1998 (306-317 days)	1999 (151-162 days)	2000
H 132	34	27	-	-
H 136	46	-	-	-
H 140	22	41	-	-
H 144	43	2	-	-
H 148	35	27	-	-
H 152	33	21	-	-
H 156	11	36	-	-
H 160	24	13	-	-
H 164	40	32	-	-
H 168	46	28	-	-
H 172	18	22	-	-
H 176	27	19	-	-
H 180	28	11	-	-
H 184	26	24	-	-
H 188	30	20	-	-
H 192	38	24	-	-
H 196	21	37	13	
H 200	11	12	5	
H 204	29	12	28	
H 208	25	17	-5	
H 212	22	21	11	
H 216	24	15	17	
H 220	38	11	11	
H 224	29	19	4	
H 228	32	8	16	
H 232	30	28	0	
H 236	38	10	10	
H 240	21	24	9	
H 244	15	15	4	
H 248	27	5	13	
H 252	9	17	-39	
H 256	41	34	3	
H 260	31	8	30	
H 264	40	6	4	
H 268	52	-	8	
H 272	49	19	28	
H 276	40	3	0	
H 280	41	34	11	
H 284	-4	16	2	
H 288	27	14	5	
H 293	17	7	28	
H 297	21	4	1	
H 301	10	-	15	
S 122	21	9	10	

Station No.	(cm in depth)			
	Sep.15-Sep.26 1997	Oct.20-Oct.23 1998	Aug.25-Sep.2 1999	Jan.31-Feb.3 2000
	(389-403 days)	(306-317 days)	(151-162 days)	
Z 2	21	-13	20	
Z 4	21	-29	-3	
Z 6	54	-	-2	
Z 8	19	15	0	
Z 10	6	30	24	
Z 12	14	-6	1	
Z 14	54	35	23	
Z 16	29	13	18	
Z 18	3	-3	3	
Z 20	-8	9	16	
Z 22	46	21	18	
Z 24	19	7	-8	
Z 26	1	13	6	
Z 28	-2	-3	4	
Z 30	12	-4	-5	
Z 32	-10	-1	-4	
Z 34	-1	6	-3	
Z 36	-2	4	-4	
Z 38	22	-12	-1	
Z 40	-5	10	-7	
Z 42	20	14	-1	
Z 46	8	-7	5	
Z 50	24	18	17	
Z 54	21	40	-1	
Z 58	51	11	28	
Z 62	43	3	-3	
Z 66	-5	5	0	
Z 70	21	30	11	
Z 72	19	7	-3	
Z 74	5	7	-3	
Z 76	33	1	0	
Z 78	21	30	-4	
Z 80	7	1	6	
Z 82	33	13	8	
Z 84	35	15	27	
Z 86	56	-	-	
Z 88	36	9	-2	
Z 90	-2	33	16	
Z 92	15	6	-2	
Z 94	33	2	18	
Z 96	-7	7	-3	
Z 98	0	-6	21	
Z 100	-	18	-3	
Z 102	23	-	-	

Table 3-2. Net accumulation along Route MD in 1997-1999.

(cm in depth)			(cm in depth)				
Station No.	Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999	Station No.	Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999
IM 0	-	-		MD 80	28		50
IM 1	-	-		MD 82	6		28
IM 2	-	-		MD 84	75		8
MD 0	-	-		MD 86	-3		7
MD 2	-	-		MD 88	26		35
MD 4	-1	2		MD 90	82		67
MD 6	-1	-5		MD 92	-6		4
MD 8	49	-2		MD 94	-3		-2
MD 10	58	53		MD 96	8		21
MD 12	42	-6		MD 98	3		12
MD 14	38	3		MD 100	49		22
MD 16	11	35		MD 102	23		18
MD 18	70	-10		MD 104	31		13
MD 20	48	41		MD 106	28		-5
MD 22	-10	16		MD 108	-3		0
MD 24	51	38		MD 110	-5		-2
MD 26	28	38		MD 112	30		33
MD 28	7	11		MD 114	16		13
MD 30	16	9		MD 116	27		9
MD 32	22	-3		MD 118	4		22
MD 34	14	32		MD 120	-6		30
MD 36	38	12		MD 122	46		57
MD 38	58	6		MD 124	30		56
MD 40	66	-7		MD 126	11		36
MD 42	23	0		MD 128	71		73
MD 44	11	24		MD 130	63		17
MD 46	39	11		MD 132	28		1
MD 48	51	11		MD 134	26		-3
MD 50	31	12		MD 136	5		10
MD 52	47	38		MD 138	39		12
MD 54	-10	-5		MD 140	13		30
MD 56	-2	-6		MD 142	63		17
MD 58	-4	8		MD 144	9		53
MD 60	28	41		MD 146	62		33
MD 62	46	35		MD 148	39		11
MD 64	28	2		MD 150	20		-
MD 66	32	1		MD 152	-2		8
MD 68	35	54		MD 154	63		34
MD 70	15	53		MD 156	59		-
MD 72	52	30		MD 158	30		21
MD 74	89	5		MD 160	41		22
MD 76	42	63		MD 162	4		16
MD 78	61	46		MD 164	39		-4

Station No.	(cm in depth)			Station No.	(cm in depth)		
	Oct.13-28 1997	Nov.20-Dec.2 1998	Dec.9-29 1999		Oct.13-28 1997	Nov.20-Dec.2 1998	Dec.9-29 1999
	(388-415 days)		(372-404 days)		(388-415 days)		(372-404 days)
MD 166	18	32	MD 256	45	-9		
MD 168	-9	1	MD 258	16	36		
MD 170	-1	-4	MD 260	12	32		
MD 172	15	52	MD 262	2	-3		
MD 174	40	-4	MD 264	25	21		
MD 176	8	25	MD 266	41	-4		
MD 178	-4	-1	MD 268	24	18		
MD 180	-4	-2	MD 270	27	33		
MD 182	9	-9	MD 272	26	16		
MD 184	56	-2	MD 274	50	-8		
MD 186	44	-4	MD 276	66	4		
MD 188	20	50	MD 278	24	33		
MD 190	-72	7	MD 280	47	-1		
MD 192	58	63	MD 282	40	-2		
MD 194	33	-4	MD 284	-3	45		
MD 196	18	-2	MD 286	34	13		
MD 198	-3	-2	MD 288	49	11		
MD 200	-3	-3	MD 290	31	-2		
MD 202	0	-3	MD 292	10	19		
MD 204	50	0	MD 294	-3	2		
MD 206	12	2	MD 296	22	3		
MD 208	-1	11	MD 298	-5	-1		
MD 210	28	6	MD 300	16	4		
MD 212	32	14	MD 302	18	21		
MD 214	13	-1	MD 304	21	3		
MD 216	46	6	MD 306	11	-3		
MD 218	-2	0	MD 308	19	39		
MD 220	-5	0	MD 310	19	13		
MD 222	20	-5	MD 312	10	63		
MD 224	26	34	MD 314	11	22		
MD 226	62	-2	MD 316	19	6		
MD 228	65	26	MD 318	13	32		
MD 230	57	9	MD 320	24	25		
MD 232	58	-3	MD 322	-1	19		
MD 234	-3	-2	MD 324	8	7		
MD 236	0	4	MD 326	42	30		
MD 238	33	0	MD 328	-3	-2		
MD 240	56	-6	MD 330	55	1		
MD 242	0	6	MD 332	-1	-1		
MD 244	-1	14	MD 334	26	2		
MD 246	9	-3	MD 336	-4	-1		
MD 248	-5	-3	MD 338	-2	-2		
MD 250	26	11	MD 340	23	11		
MD 252	32	5	MD 342	-4	24		
MD 254	36	13	MD 344	9	2		

Station No.	(cm in depth)			Station No.	(cm in depth)		
	Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999		Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999
MD 346	15	14		MD 436	10	-1	
MD 348	26	25		MD 438	23	19	
MD 350	18	11		MD 440	28	2	
MD 352	10	10		MD 442	8	14	
MD 354	25	-1		MD 444	22	8	
MD 356	36	4		MD 446	11	8	
MD 358	35	-3		MD 448	6	10	
MD 360	16	42		MD 450	20	16	
MD 362	9	-1		MD 452	19	13	
MD 364	25	-3		MD 454	11	10	
MD 366	-6	21		MD 456	10	33	
MD 368	32	-1		MD 458	16	9	
MD 370	44	1		MD 460	-1	14	
MD 372	33	24		MD 462	34	8	
MD 374	38	0		MD 464	15	-2	
MD 376	23	-7		MD 466	39	-8	
MD 378	47	3		MD 468	3	14	
MD 380	22	28		MD 470	22	30	
MD 382	21	35		MD 472	23	-1	
MD 384	-2	-2		MD 474	8	-1	
MD 386	8	24		MD 476	15	6	
MD 388	33	5		MD 478	13	28	
MD 390	10	7		MD 480	5	9	
MD 392	1	33		MD 482	13	10	
MD 394	53	0		MD 484	-5	18	
MD 396	0	11		MD 486	24	4	
MD 398	39	2		MD 488	9	11	
MD 400	5	7		MD 490	26	3	
MD 402	7	3		MD 492	12	3	
MD 404	18	27		MD 494	30	-3	
MD 406	9	21		MD 496	28	-10	
MD 408	11	13		MD 498	0	22	
MD 410	10	-3		MD 500	30	-1	
MD 412	23	2		MD 502	14	13	
MD 414	28	16		MD 504	24	-2	
MD 416	18	23		MD 506	8	9	
MD 418	8	48		MD 508	18	22	
MD 420	14	18		MD 510	16	1	
MD 422	14	37		MD 512	17	7	
MD 424	-1	21		MD 514	3	2	
MD 426	8	25		MD 516	17	17	
MD 428	17	21		MD 518	12	8	
MD 430	34	9		MD 520	15	3	
MD 432	25	0		MD 522	13	6	
MD 434	14	14		MD 524	20	15	

Station No.	(cm in depth)			Station No.	(cm in depth)		
	Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999		Oct.13-28 1997 (388-415 days)	Nov.20-Dec.2 1998 (372-404 days)	Dec.9-29 1999
MD 526	17	3		MD 616	18	11	
MD 528	24	-1		MD 618	12	7	
MD 530	22	4		MD 620	1	16	
MD 532	17	0		MD 622	21	-3	
MD 534	23	8		MD 624	16	21	
MD 536	16	14		MD 626	6	6	
MD 538	24	-3		MD 628	-8	22	
MD 540	22	8		MD 630	18	12	
MD 542	-2	37		MD 632	19	13	
MD 544	6	1		MD 634	-9	17	
MD 546	14	32		MD 636	8	19	
MD 548	24	11		MD 638	12	4	
MD 550	22	-3		MD 640	14	11	
MD 552	21	10		MD 642	26	9	
MD 554	22	42		MD 644	15	21	
MD 556	16	7		MD 646	7	10	
MD 558	6	5		MD 648	6	15	
MD 560	1	13		MD 650	-3	11	
MD 562	21	9		MD 652	10	16	
MD 564	6	10		MD 654	22	-1	
MD 566	-6	11		MD 656	25	4	
MD 568	19	2		MD 658	14	12	
MD 570	9	1		MD 660	12	9	
MD 572	15	4		MD 662	27	11	
MD 574	2	8		MD 664	15	9	
MD 576	8	9		MD 666	6	11	
MD 578	5	12		MD 668	12	9	
MD 580	12	12		MD 670	24	-1	
MD 582	16	17		MD 672	-1	8	
MD 584	11	13		MD 674	24	4	
MD 586	13	7		MD 676	14	17	
MD 588	2	18		MD 678	20	23	
MD 590	9	8		MD 680	8	7	
MD 592	4	19		MD 682	14	16	
MD 594	11	14		MD 684	15	11	
MD 596	23	5		MD 686	14	0	
MD 598	9	12		MD 688	0	14	
MD 600	25	10		MD 690	7	8	
MD 602	3	33		MD 692	10	21	
MD 604	41	-11		MD 694	17	15	
MD 606	5	10		MD 696	9	13	
MD 608	6	21		MD 698	5	16	
MD 610	13	6		MD 700	12	21	
MD 612	11	12		MD 702	7	14	
MD 614	3	9		MD 704	18	12	

Station No.	(cm in depth)		
	Oct.13-28	Nov.20-Dec.2	Dec.9-29
	1997	1998	1999
	(388-415 days) (372-404 days)		
MD 706	-7		24
MD 708	-4		20
MD 710	7		12
MD 712	11		9
MD 714	3		12
MD 716	4		6
MD 718	6		10
MD 720	-2		5
MD 722	29		-2
MD 724	23		1
MD 726	17		8
MD 728	0		10
MD 730	13		8
MD 732	15		9
MD 734	-		-

Table 3-3. Net accumulation in a 36-stake farm at S16 in 1997-1999.

Stake No.	(cm in depth)		
	15 Sep. 1997	22 Dec. 1997	8 Nov. 1998
	22 Dec. 1997 (98 days)	8 Nov. 1998 (321 days)	12 Sep. 1999 (308 days)
I -1	-5	28	-2
-2	-4	25	5
-3		14	12
-4	-7	20	7
-5	-7	13	14
-6	-4	6	22
II -1	-1	16	37
-2	-5	14	21
-3	-2	13	25
-4	-4	13	
-5		7	17
-6	-6	8	3
III -1	-5		
-2	-2	28	
-3	-3	3	24
-4	-5	15	20
-5	-5	6	
-6	-12	7	-4
IV -1	-8	10	15
-2	-5	15	13
-3	-5	13	
-4	-6	10	18
-5	-4	14	15
-6	0	16	9
V -1	-3	15	14
-2	-9	23	
-3	-4	17	12
-4	1	11	8
-5	-2	20	6
-6		26	15
VI -1	-2	21	7
-2	-6	34	1
-3	2	28	3
-4	-1	46	
-5	-5	26	17
-6		28	11
average	-4	17	13
s.d.	3	9	9

Table 3-4. Net accumulation in a 36-stake farm at H68 in 1997-1999.

Stake No.	(cm in depth)		
	25 Sep. 1997 23 Dec. 1997 (89 days)	23 Dec. 1997 9 Nov. 1998 (321 days)	9 Nov. 1998 10 Sep. 1999 (305 days)
I -1	6	13	18
-2	-3	36	-7
-3	-3	22	5
-4	-4	11	21
-5	-15		7
-6	-11	22	2
II -1	-4	27	14
-2	-17	17	13
-3	-3	21	9
-4	-2	27	0
-5	8	8	19
-6	-4	18	13
III -1	-7	32	-10
-2	-4	20	4
-3	-2	23	0
-4	14	30	0
-5	-7	21	11
-6	-5	28	21
IV -1	2	25	4
-2	-4	43	-10
-3	9	1	11
-4	-5	21	13
-5	-5	31	-11
-6	-5	28	2
V -1	0	45	-4
-2	-1	24	26
-3	-2	6	24
-4	-2	9	30
-5	-3	10	25
-6	14	6	10
VI -1	-8	33	7
-2	-2	23	15
-3	-5	11	8
-4	-6	10	11
-5		7	18
-6	-7	25	11
average	-3	21	9
s.d.	7	11	10

Table 3-5. Net accumulation in a 36-stake farm at H180 in 1997-1999.

Stake No.	(cm in depth)	
	17 Sep. 1997	17 Nov. 1998
	17 Nov. 1998 (426 days)	9 Sep. 1999 (296 days)
I -1	21	5
-2	28	17
-3	33	24
-4	39	15
-5	41	10
-6	25	29
II -1	30	27
-2	31	26
-3	22	23
-4	28	28
-5	29	19
-6	37	9
III -1	29	17
-2	20	22
-3	19	26
-4	16	23
-5	30	22
-6	30	12
IV -1	31	20
-2	24	22
-3	18	21
-4	24	17
-5	33	26
-6	33	11
V -1	32	13
-2	30	9
-3	12	30
-4	24	33
-5	34	20
-6	22	23
VI -1	16	26
-2	20	29
-3	19	31
-4	21	28
-5	11	22
-6	22	15
average	26	21
s.d.	7	7

Table 3-6. Net accumulation in a 36-stake farm at S122 in 1997-1999.

Stake No.	(cm in depth)		
	23 Sep. 1997 25 Dec. 1997 (93 days)	25 Dec. 1997 11 Jan. 1999 (382 days)	11 Jan. 1999 7 Sep. 1999 (239 days)
I -1	-3	15	29
-2	-2	10	20
-3	-1	12	3
-4	1	21	17
-5	16	7	11
-6	-4	42	-6
II -1	-3	24	13
-2	-4	8	47
-3	-3	9	3
-4	-4	8	17
-5	-2	13	8
-6	-2	10	12
III -1	-6	50	4
-2	-5	29	17
-3	-4	10	32
-4	-3	23	24
-5	-2	24	0
-6	-2	6	0
IV -1	-2	45	-1
-2	-2	35	0
-3	-4	23	1
-4	-2	31	-1
-5	-2	22	10
-6	0	18	14
V -1	-1	14	5
-2	0	35	-2
-3	-2	19	6
-4	-3	35	-3
-5	-3	20	-2
-6	3	29	-3
VI -1	-3	-5	26
-2	-6	-5	19
-3	-2	5	15
-4	-3	21	-1
-5	-2	19	-5
-6	-4	10	-3
average	-2	19	9
s.d.	4	13	12

Table 3-7. Net accumulation in a 36-stake farm at Z40 in 1997-2000.

Stake No.	(cm in depth)			
	3 Sep. 1997 26 Dec. 1997 (114 days)	26 Dec. 1997 19 Nov. 1998 (328 days)	19 Nov. 1998 7 Sep. 1999 (292 days)	7 Sep. 1999 1 Feb. 2000 (147 days)
I -1	-3	5	-3	-2
-2	-2	-4	-3	-1
-3	-3	-7	5	-3
-4	-2	12	-3	-4
-5	-1	10	-3	-3
-6	-5	-5	-2	13
II -1	-4	-3	-5	-2
-2	-13	8	3	
-3	-4	12	-1	-2
-4	0	-2	14	-10
-5	-3	-2	-4	-2
-6	-8	-2	-2	-3
III -1	-9	0	-2	-3
-2	-2	-5	-7	0
-3	5	8		
-4	-5	7	-5	-1
-5	-11	-3	-1	-2
-6	-3	18	-6	-2
IV -1	1	4	1	-3
-2	-5	-5	-4	-2
-3	-2	7	-3	-3
-4	-4	-6	-5	-2
-5	-4	10	2	2
-6	0	12	23	-6
V -1	-4	-11	-3	-3
-2	-2	7	-4	
-3	-3	6	-1	9
-4	-4	14	11	-4
-5	-3	-2	-6	-3
-6	-3	-2	-3	1
VI -1	-6	-3	1	-2
-2	-2	10	-6	10
-3	-2	-1	14	5
-4	-12	-3	-3	8
-5	-3	-3	-6	3
-6	-3	-8	-1	-4
average	-4	2	-1	-1
s.d.	3	7	7	5

Table 3-8. Net accumulation in a 36-stake farm at Dome Fuji Station in 1998-1999.

Stake No.	(cm in depth)	
	15 Jan 1998 17 Dec. 1998 (336 days)	17 Dec. 1998 6 Dec. 1999 (354 days)
I -1	11	8
-2	3	14
-3	-1	17
-4	11	16
-5	3	11
-6	-1	8
II -1	-1	5
-2	1	8
-3	29	1
-4	7	6
-5	13	6
-6	5	5
III -1	-6	16
-2	-5	10
-3	14	2
-4	12	11
-5	20	-1
-6	13	21
IV -1	15	3
-2	11	17
-3	7	12
-4	12	5
-5	2	13
-6	10	3
V -1	-2	10
-2	18	0
-3	9	10
-4	-3	25
-5	0	16
-6	11	10
VI -1	18	8
-2	30	15
-3	22	15
-4	-8	6
-5	1	0
-6	-4	16
average	8	10
s.d.	9	6

Table 3-9. Net accumulation along a 50-stake row at MD180 in 1997-1999.

Stake No.	(cm in depth)		
	10 Nov. 1997	31 Dec. 1997	24 Nov. 1998
	31 Dec. 1997 (51 days)	24 Nov. 1998 (328 days)	24 Dec. 1999 (395 days)
1	-1	-1	-2
2	-2	-1	-2
3	9	-2	-3
4	7	-3	-7
5	2	-2	-3
6	-1	-2	-3
7	-2	-1	-2
8	13	-15	0
9	-2	0	-1
10	-2	-2	-2
11	0	-1	-2
12	-1	-1	2
13	-2	-2	-3
14	-2	0	-3
15	-1	-1	-1
16	1	-2	-4
17	-3	0	-6
18	-2	-2	-2
19	0	-1	-4
20	9	-6	-3
21	4	-5	-1
22	2	-2	-2
23	1	-4	-1
24	-1	0	-4
25	-10	-1	-9
26	-2	-1	-3
27	-8	2	-2
28	-2	0	-5
29	-2	-1	-2
30	-3	1	-3
31	-1	-3	-2
32	-1	3	-7
33	-1	-2	-2
34	-1	3	-6
35	2	1	-8
36	-5	0	-3
37	-4	-1	-5
38	-3	-3	-1
39	3	-5	1
40	1	-4	-2
41	-2	2	-5
42	-1	-1	-4
43	-1	-2	-4
44	-2	-3	-1
45	-2	-3	-1
46	-4	0	-3
47	-1	-2	-1
48	-3	-3	0
49	-1	-1	-12
50	-3	-2	-4
average	-1	-2	-3
s.d.	4	3	3

Table 3-10. Net accumulation along a 50-stake row at MD364 in 1997-1999.

Stake No.	(cm in depth)		
	21 Oct. 1997 4 Jan. 1998 (75 days)	4 Jan. 1998 28 Nov. 1998 (328 days)	28 Nov. 1998 20 Dec. 1999 (387 days)
1	11	6	0
2	0	11	-1
3	-2	5	-4
4	-4	0	0
5	0	0	4
6	9	14	1
7	7	17	-7
8	4	12	9
9	5	23	-2
10	1	22	0
11	-2	12	4
12	-1	9	2
13	0	7	2
14	-2	12	-1
15	-1	34	-8
16	8	24	-3
17	4	13	1
18	3	11	-1
19	2	7	-3
20	-1	10	2
21	7	5	11
22	0	7	0
23	-2	0	9
24	-2	-2	9
25	-2	6	6
26	0	4	10
27	-1	8	7
28	5	12	5
29	20	10	0
30	10	25	-4
31	11	21	-4
32	13	17	-2
33	11	30	4
34	16	29	2
35	14	29	9
36	5	19	16
37	13	4	16
38	10	9	6
39	15	2	-3
40	11	-3	8
41	7	0	15
42	2	-1	9
43	-1	0	13
44	-2	5	4
45	-2	5	5
46	-1	-2	15
47	2	-1	0
48	10	-2	-2
49	-1	2	-3
50	2	4	4
average	4	10	3
s.d.	6	10	6

Table 3-11. Net accumulation along a 50-stake row at MD560 in 1997-1999.

Stake No.	(cm in depth)		
	25 Oct. 1997 7 Jan. 1998 (74 days)	7 Jan. 1998 1 Dec. 1998 (328 days)	1 Dec. 1998 14 Dec. 1999 (378 days)
1	11	9	16
2	4	15	13
3	-2	21	4
4	-3	17	15
5	-5	21	1
6	-2	15	2
7	-6	21	1
8	-3	22	-3
9	-1	20	15
10	-1	5	38
11	0	12	39
12	-9	28	26
13	-1	27	11
14	-2	12	33
15	2	19	14
16	2	9	26
17	5	6	30
18	7	0	34
19	-1	7	22
20	-1	9	23
21	-3	10	18
22	-3	20	1
23	-3	19	0
24	-3	21	0
25	-1	33	-1
26	3	19	17
27	-7	22	27
28	-1	23	18
29	1	19	25
30	-8	11	23
31	2	20	6
32	5	8	-2
33	-1	4	4
34	1	-1	2
35	-3	7	0
36	-3	10	3
37	-2	14	4
38	-4	8	1
39	-2	5	12
40	3	13	14
41	8	12	7
42	1	21	10
43	1	25	7
44	-3	25	1
45	4	43	-3
46	3	41	-3
47	6	27	5
48	-4	16	5
49	2	12	1
50	0	16	3
average	0	16	11
s.d.	4	9	12

Table 3-12. Net accumulation along a 101-stake row at Mizuho Station in 1997-2000.

Stake No.	(cm in depth)			
	20 Sep. 1997 27 Dec. 1997 (98 days)	27 Dec. 1997 20 Nov. 1998 (328 days)	20 Nov. 1998 4 Sep. 1999 (288 days)	4 Sep. 1999 31 Jan. 2000 (149 days)
102	3	20	1	14
103	7	9	3	13
104	3	11	3	11
105	-3	13	5	15
106	-3	12	9	13
107	-4	6	10	14
108	-2	2	14	19
109	-3	5	11	14
110	0	12	-1	16
111	-3	3	3	13
112	-5	-3	-1	29
113	-3	-2	6	19
114	-3	-4	1	26
115	-17	2	1	25
116	-12	7	6	22
117	-4	15	2	19
118	-18	15	18	9
119	6	4	18	11
120	3	9	14	9
121	4	10	7	8
122	-4	29	-2	6
123	-5	28	-8	10
124	-1	14	-1	19
125	-2	8	8	19
126	3	10	11	10
127	4	6	17	4
128	-1	2	17	3
129	-2	7	2	8
130	0	7	9	1
131	-1	0	5	13
132	-3	8	-4	10
133	0	0	-3	9
134	-1	0	1	8
135	-1	-3	-4	9
136	-1	2	-5	10
137	-2	9	-3	4
138	1	7	-6	-1
139	-3	14	-6	-2
140	-1	14	-7	-3
141	-2	22	-5	-4
142	-1	41	-10	-3
143	-1	32	-3	-4
144	0	17	8	-3
145	-1	2	16	-4
146	-2	3	13	-3
147	-1	0	19	-3
148	1	-2	18	-5
149	6	7	1	-4
150	-1	-2	2	-4
151	0	-3	-3	-3
51	-1	-1	-1	-1

Stake No.	(cm in depth)			
	20 Sep. 1997 27 Dec. 1997 (98 days)	27 Dec. 1997 20 Nov. 1998 (328 days)	20 Nov. 1998 4 Sep. 1999 (288 days)	4 Sep. 1999 31 Jan. 2000 (149 days)
152	0	-4	-2	1
153	-1	-4	-3	4
154	-2	3	-2	-4
155	1	2	-2	-6
156	-1	-3	4	-5
157	6	0	2	-3
158	9	-6	2	-4
159	1	1	-4	-3
160	-1	2	-2	-3
161	-1	-3	-1	-3
162	-2	-3	0	5
163	-1	-3	13	-3
164	-1	-3	15	-2
165	-2	-2	11	1
166	0	5	9	-3
167	0	1	12	1
168	0	2	13	3
169	4	3	7	7
170	-2	9	6	-2
171	-2	8	5	-2
172	-2	9	1	-3
173	0	19	-9	-3
174	-1	12	0	-3
175	-3	8	0	-2
176	-2	-1	8	-2
177	-1	8	2	-2
178	-2	8	3	-3
179	-2	9	3	-3
180	-1	3	3	-2
181	-1	0	6	-4
182	-2	-3	8	-3
183	-1	-2	10	-2
184	-1	0	10	-3
185	-2	-4	7	-3
186	-1	-4	10	-3
187	-4	-5	15	-3
188	-2	-3	15	-2
189	-2	-2	14	-2
190	-2	-4	17	-2
191	-2	0	15	-2
192	-2	-3	15	-1
193	-1	-4	17	-2
194	-3	-5	18	-2
195	-2	-4	20	-2
196	-2	-3	21	-4
197	-3	-2	16	-3
198	-1	-3	23	-3
199	-3	11	7	-2
200	0	2	9	-2
201	2	0	2	-4
average	-1	5	6	3
s.d.	4	9	8	8

4. Surface meteorological data during oversnow traverses

Observers: Kiyooki Saito:	Traverse 1-a
Kazuhisa Horikawa:	Traverses 2 and 4
Yoshinori Iizuka:	Traverse 5
Eishin Murakata:	Traverse 6
Kazuya Yasugahira:	Traverse 7

Meteorological observations were carried out during the oversnow traverses several times a day. We measured air pressure (Pa), air temperature (Ta), wind direction (WD) and wind speed (WS) with the instruments and observed visibility (V), weather (W), hydrometeors (Hydro), cloud amount in tenths (N), individual cloud amount and types (CL) and atmospheric phenomena. The instruments and accuracy of the measurements are given in Table 4-1 and 4-2. The notation used in this section is shown in Table 4-3. In case of using portable instruments, “*” was added to the right of the data.

Tables 4-4, 4-5, 4-6, 4-7 4-8 and 4-9 show meteorological data observed during traverses 1-a, 2, 4, 5, 6 and 7, respectively.

Table 4-1. Instruments and accuracy of meteorological observations.

Item	Instrument	Accuracy
Air pressure	Aneroid gauge	$\pm 0.1\text{hPa}$
Air temperature	Platinum resistance	$\pm 0.1^\circ\text{C}$
Wind direction	Magnetic compass	$\pm 5^\circ$
Wind speed	3-cup anemometer	$\pm 0.1\text{m/s}$
Visibility	Visual observation	
Cloud amount	Visual observation	
Weather	Visual observation	
Individual	Visual observation	

Table 4-2. Portable instruments and accuracy of meteorological observations.

("*" is added to the right of the data)

Item	Instruments	Accuracy
Air pressure	Aneroid gauge	$\pm 1\text{hPa}$
Air temperature	Sling type glass thermometer	$\pm 0.5^\circ\text{C}$
Wind direction	Magnetic compass	$\pm 5^\circ$
Wind speed	Portable 3-cup anemometer	$\pm 0.5\text{m/s}$
Visibility	Visual observation	
Cloud amount	Visual observation	
Weather	Visual observation	
Individual cloud	Visual observation	

Table 4-3. Notation used in tables in this section.

LT	Local standard time at Syowa station (UTC + 3 hours)
Pa	Air pressure (hPa)
Ta	Air temperature ($^\circ\text{C}$)
WD	Wind direction in 16directions
WS	Wind speed (m/s)
V	Visibility (km)
W	Weather ○ Clear, ⊙ Fine, ⊕ Cloudy (upper cloud are predominant) ⊙ Cloudy, ✕ Snow, † Drifting snow, ‡ Blowing snow †‡ Snow storm, ↔ Diamond dust, ≡ Ice fog, ≡ Fog, (≡) Partially fog
N	Cloud amount in tenth
CL	Individual cloud amount and genus
AP	Atmospheric phenomenon

Table 4-4. Meteorological data observed during traverse 1-a.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
23 Dec. 1997	10:00	S16	940 *	-3.6 *		7 *					
23 Dec. 1997	14:40	S30	889 *	-2.5 *		4 *					
23 Dec. 1997	19:00	H68	869 *	-7.0 *		3 *					
24 Dec. 1997	8:30	H68	875 *	-8.0 *		4 *					
24 Dec. 1997	12:10	H68	875 *	-5.0 *		4 *					
24 Dec. 1997	18:45	H160	831 *	-10.5 *		3 *					
25 Dec. 1997	7:00	H160	836 *	-12.5 *		5 *					
25 Dec. 1997	13:10	H240	812 *	-6.0 *		3 *					
25 Dec. 1997	20:10	S122	790 *	-11.0 *		3 *					
26 Dec. 1997	7:00	S122	795 *	-12.5 *		6 *					
26 Dec. 1997	13:00	Z40	775 *	-10.0 *		6 *					
26 Dec. 1997	19:50	Mizuho	761 *	-16.0 *		7 *					
27 Dec. 1997	7:00	Mizuho	763 *	-17.5 *		7 *					
27 Dec. 1997	15:00	Mizuho	763 *	-12.5 *		7 *					
27 Dec. 1997	18:30	Mizuho	764 *	-14.0 *		3 *					
28 Dec. 1997	7:00	Mizuho	761 *	-14.0 *		3 *					
28 Dec. 1997	20:30	Mizuho	760 *	-16.0 *		3 *					
29 Dec. 1997	7:00	Mizuho	761 *	-19.0 *		8 *					
29 Dec. 1997	13:00	MD24	752 *	-12.0 *		6 *					
29 Dec. 1997	19:00	MD56	740 *	-15.5 *		4 *					
30 Dec. 1997	6:45	MD56	761 *	-19.0 *		8 *					
30 Dec. 1997	13:00	MD80	732 *	-11.5 *		4 *					
30 Dec. 1997	21:00	MD120	712 *	-17.0 *		8 *					
31 Dec. 1997	6:50	MD120	725 *	-21.0 *		9 *					
31 Dec. 1997	12:30	MD160		-14.0 *		8 *					
31 Dec. 1997	19:00	MD180		-18.0 *		8 *					
1 Jan. 1998	11:30	MD180		-12.5 *		14 *					
1 Jan. 1998	19:30	MD226		-18.0 *		11 *					
2 Jan. 1998	7:00	MD226		-20.5 *		9 *					
2 Jan. 1998	12:30	MD260		-15.5 *		10 *					
2 Jan. 1998	18:00	MD286		-18.0 *		9 *					
3 Jan. 1998	7:00	MD286		-21.5 *		10 *					
3 Jan. 1998	12:30	MD320		-19.0 *		10 *					
3 Jan. 1998	19:00	MD364		-21.5 *		5 *					
4 Jan. 1998	11:00	MD364		-21.0 *		7 *					
4 Jan. 1998	19:00	MD364		-21.0 *		5 *					
5 Jan. 1998	7:00	MD364		-27.0 *		3 *					
5 Jan. 1998	13:00	MD394		-20.5 *		5 *					
5 Jan. 1998	19:00	MD440		-22.5 *		2 *					
6 Jan. 1998	7:00	MD444		-22.5 *		3 *					
6 Jan. 1998	12:30	MD486		-21.5 *		3 *					
6 Jan. 1998	19:30	MD544		-25.5 *		4 *					
7 Jan. 1998	7:00	MD544		-31.0 *		4 *					
7 Jan. 1998	12:30	MD584		-27.0 *		4 *					
7 Jan. 1998	18:00	MD634		-27.5 *		5 *					
8 Jan. 1998	5:45	MD634		-34.5 *		4 *					

Table 4-5. Meteorological data observed during traverse 2.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
3 Sep. 1998	1800	S16		-32.0 *	NE	7 *		⊕			
4 Sep. 1998	1200	S16	910 *	-16.5 *	E	14 *					+
4 Sep. 1998	1500	S16	905 *	-13.7 *	NE	15 *					+
4 Sep. 1998	1800	S16	902 *	-11.5 *	NE	18 *					+
5 Sep. 1998	900	S16	901 *	-10.2 *	NE	17 *					+
5 Sep. 1998	1200	S16	905 *	-10.3 *	NE	13 *					+
5 Sep. 1998	1500	S16	909 *	-10.2 *	NE	13 *					+
5 Sep. 1998	1800	S16	909 *	-10.7 *	NE	13 *					+
6 Sep. 1998	745	S16	921 *	-13.7 *	E	11 *		⊕			
6 Sep. 1998	1315	S20	905 *	-12.7 *	NE	15 *					+
6 Sep. 1998	1500	S20	904 *	-12.3 *	E	15 *					+
6 Sep. 1998	1800	S20	903 *	-12.4 *	E	17 *					+
7 Sep. 1998	900	S20	900 *	-11.1 *	E	18 *					+
7 Sep. 1998	1200	S20	903 *	-10.9 *	E	13 *					+
7 Sep. 1998	1500	S20	903 *	-11.5 *	E	14 *					+
7 Sep. 1998	1800	S20	901 *	-12.5 *	E	13 *					+
8 Sep. 1998	700	S20	902 *	-16.5 *	E	12 *		⊕			
8 Sep. 1998	1300	H72	841 *	-21.5 *	E	11 *		⊕			
8 Sep. 1998	1545	H72	841 *	-22.5 *	E	9 *		⊕			
8 Sep. 1998	1900	H72	842 *	-25.1 *	E	8 *		⊕			
9 Sep. 1998	900	H72	846 *	-28.5 *	E	9 *	15	⊕			
9 Sep. 1998	1200	H72	849 *	-27.3 *	E	8 *	15	⊕			
9 Sep. 1998	1500	H72	849 *	-27.5 *	E	6 *	15	⊙			
9 Sep. 1998	1800	H72	850 *	-30.3 *	E	7 *	15	⊕			
9 Sep. 1998	2100	H72	851 *	-32.4 *	E	6 *	15	⊕			
10 Sep. 1998	900	H72	852 *	-34.3 *	E	7 *		⊕			
10 Sep. 1998	1220	H72	851 *	-32.3 *	E	7 *		○			
10 Sep. 1998	1500	H72	849 *	-33.6 *	E	7 *		○			
10 Sep. 1998	1800	H72	851 *	-35.8 *	E	8 *		○			
10 Sep. 1998	2100	H72	849 *	-36.3 *	E	9 *		○			
11 Sep. 1998	900	H72	849 *	-33.5 *	E	12 *		○			
11 Sep. 1998	1500	H72	845 *	-32.0 *	E	10 *		○			
11 Sep. 1998	2100	H72	842 *	-39.8 *	E	12 *		○			
12 Sep. 1998	900	H72	843 *	-36.8 *	ENE	11 *		○			
12 Sep. 1998	1500	H72	839 *	-32.5 *	ENE	10 *		⊙			
12 Sep. 1998	2100	H72	842 *	-32.2 *	ENE	12 *		⊕			
13 Sep. 1998	900	H72	840 *	-33.0 *	ENE	8 *		⊕			
13 Sep. 1998	1500	H72	842 *	-28.2 *	ENE	11 *		⊕			
13 Sep. 1998	2100	H72	840 *	-27.9 *	ENE	15 *		⊕			
14 Sep. 1998	900	H72	829 *	-21.2 *	E	18 *	0.05	+			+
14 Sep. 1998	1430	H72	821 *	-17.4 *	E	25 *	0.05	+			+
14 Sep. 1998	2200	H72	823 *	-27.7 *	ENE	16 *					+
15 Sep. 1998	830	H72	831 *	-27.2 *	E	20 *					+
15 Sep. 1998	1430	H72	841 *	-24.9 *	ENE	13 *	0.05	+			+
15 Sep. 1998	2030	H72	842 *	-27.5 *	E	12 *		⊕			
16 Sep. 1998	900	H72	839 *	-24.8 *	E	9 *		⊙			
16 Sep. 1998	1530	H72	833 *	-17.4 *	ENE	6 *		⊙			

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
16 Sep. 1998	2030	H72	834 *	-20.5 *	E	6 *		①			
17 Sep. 1998	830	H72	838 *	-20.5 *	ENE	8 *		⊙			
17 Sep. 1998	1530	H72	840 *	-21.5 *	ENE	2 *		✕			✕
17 Sep. 1998	2100	H72	841 *	-31.5 *	ENE	3 *		○			
18 Sep. 1998	830	H72	841 *	-21.5 *	ENE	8 *		⊙			
18 Sep. 1998	1930	H72	842 *	-23.6 *	NE	9 *		✕			✕
19 Sep. 1998	830	H72	835 *	-19.4 *	ENE	20 *					†
19 Sep. 1998	1500	H72	832 *	-16.0 *	ENE	22 *					†
20 Sep. 1998	830	H72	832 *	-16.0 *	ENE	13 *		⊙			
20 Sep. 1998	2100	H72	840 *	-17.3 *	ENE	12 *		⊙			
21 Sep. 1998	830	H72	842 *	-20.4 *	ENE	15 *		⊙			
21 Sep. 1998	2100	H72	837 *	-20.8 *	ENE	17 *		⊙			
22 Sep. 1998	830	H72	838 *	-23.4 *	ENE	13 *		⊙			
22 Sep. 1998	2100	H72	842 *	-24.8 *	E	8 *		①			
23 Sep. 1998	830	H72	842 *	-28.2 *	E	8 *		○			
23 Sep. 1998	1820	H20	852 *	-27.2 *	E	7 *		○			
23 Sep. 1998	2100	H20	851 *	-28.5 *	E	7 *		○			
24 Sep. 1998	700	H20	846 *	-31.5 *	E	7 *		○			

Table 4-6. Meteorological data observed during traverse 4.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
7 Nov. 1998	1800	S16	910	* -8.1 *			10 ✕	10 -	0+Sc,9Ac,Xci	✕	
7 Nov. 1998	2100	S16	908	* -11.1 *	ENE	2 *	6 ✕	10 -	3Ac,10-Ci	✕	
8 Nov. 1998	900	S16	905	* -9.4 *	NE	10 *	0.2 †	10 -	8†,XCi	†	
8 Nov. 1998	1200	S16	905	* -8.8 *	NE	13 *	0.2 †	10 -	10-Ci	†	
8 Nov. 1998	1500	S25	872	* -10.2 *	ENE	11 *	0.3 †	10 -	10-Ci	†	
8 Nov. 1998	1815	H51	842	* -13.7 *	ENE	9 *	2 ⊙	10 -	0+Sc,9Ac,XCi	†	
8 Nov. 1998	2100	H51	841	* -16.6 *	ENE	7 *	10 ⊕	10 -	0+Sc,4Ac,10-Ci		
9 Nov. 1998	900	H64	841	* -15.0 *	E	5 *	30 ⊕	10 -	10-Ci		
9 Nov. 1998	1200	H68	841	* -13.5 *	ENE	3 *	30 ⊕	10 -	10-Ci		
9 Nov. 1998	1500	H72	842	* -14.0 *			30 ⊕	8	8Ci		
9 Nov. 1998	1800	H72	844	* -14.0 *			30 ⊕	3	3Ci		
9 Nov. 1998	2040	H72	839.7	-21.1		5.9	30 ⊕	2	0+Sc,1Ac,1Ci		
10 Nov. 1998	620	H72		-23.7 *	E	3 *	30 ⊙	0 +	0+Ac		
10 Nov. 1998	1800	H72	841.4	-18.7	ENE	1.6	30 ⊙	1	0+Ac,1Ci		
10 Nov. 1998	2100	H72	839.5	-19.5	ENE	9.8	30 ⊙	10 -	10-Ac		
10 Nov. 1998	2400	H72	838.1	-21.2		7.7					
11 Nov. 1998	300	H72	834.8	-19.2		10.8					
11 Nov. 1998	600	H72	830.8	-16.3		11.4					
11 Nov. 1998	900	H72	826.8	-14.2	ENE	13.5	0.08 ✕	10	10†	†	
11 Nov. 1998	1200	H72	822.3	-13.3	ENE	12.8	0.08 ✕	10	10†	†	
11 Nov. 1998	1500	H72	818.8	-12.6	E	11.9	0.1 ✕	10	10†	†	
11 Nov. 1998	1800	H72	816.2	-13.5	ENE	12.4	0.1 ✕	10	10†	†	
11 Nov. 1998	2100	H72	814.9	-14.9		17.8	0.01 ✕	10	10†	†	
12 Nov. 1998	300	H72	817.6	-16.0		16.4					
12 Nov. 1998	600	H72	818.6	-16.2							
12 Nov. 1998	900	H72			ENE		0.01 ✕	10	10†	†	
12 Nov. 1998	1200	H72			ENE		0.01 ✕	10	10†	†	
12 Nov. 1998	1500	H72			ENE		0.01 ✕	10	10†	†	
12 Nov. 1998	1800	H72			ENE		0.03 †	10	10†	†	
12 Nov. 1998	2400	H72	832.0	-17.5		11.4					
13 Nov. 1998	1810	H72	835.1	-15.7	NE	2.6	20 ⊙	9	0+Sc,9Ac		
13 Nov. 1998	2100	H72	834.3	-21.3	NE	3.2	⊕	2	2Ac,0+Ci		
13 Nov. 1998	2400	H72	834.0	-24.5		7.0					
14 Nov. 1998	300	H72	833.7	-25.0		8.5					
14 Nov. 1998	600	H72	832.5	-23.3		8.6					
14 Nov. 1998	900	H72	831.6	-19.3	ENE	6.8	30 ⊙	0	-		
14 Nov. 1998	1200	H72	831.6	-15.6	E	4.5	30 ⊙	0	-		
14 Nov. 1998	1500	H72	831.8	-13.8	NE	4.5	30 ⊙	0	-		
14 Nov. 1998	1800	H72	832.1	-16.8	ENE	1.0	30 ⊙	0 +	0+Ci		
14 Nov. 1998	2100	H72	832.5	-20.5	ENE	6.8	30 ⊙	0 +	0+Ci	†	
14 Nov. 1998	2400	H72	834.8	-23.2		7.9					
15 Nov. 1998	300	H72	836.0	-23.0		10.7					
15 Nov. 1998	600	H72	837.2	-21.5		10.2					
15 Nov. 1998	900	H72	837.6	-18.1	ENE	9.2	30 ⊙	1	1Ci	†	
15 Nov. 1998	1200	H72	838.1	-15.6	ENE	8.3	30 ⊕	8	8Ci	†	
15 Nov. 1998	1500	H72	838.1	-15.4	ENE	8.6	30 ⊕	10 -	10-Ci	†	
15 Nov. 1998	1800	H72	838.2	-16.9	ENE	6.6	30 ⊕	10 -	10-Ci	†	
15 Nov. 1998	2100	H72	838.5	-19.8	ENE	8.2	30 ⊕	10 -	10-Ci	†	
15 Nov. 1998	2400	H72	839.9	-20.8		10.4					
16 Nov. 1998	300	H72	840.5	-21.0		10.9					

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
16 Nov. 1998	600	H72	840.3	-19.5		9.8					
16 Nov. 1998	900	H72	839.1	-16.8	ENE	9.4	10	⊕	10 -	10-Ci	+
16 Nov. 1998	1200	H72	838.5	-14.4	ENE	9.5	6	⊕	10 -	0+Ac,10-Ci	+
16 Nov. 1998	1500	H72	837.5	-13.3	ENE	9.2	5	⊕	10 -	0+Ac,10-Ci	+
16 Nov. 1998	1800	H72	836.4	-14.3	ENE	9.7	5	⊕	10 -	1Ac,10-Cs	+
16 Nov. 1998	2100	H72	835.9	-16.1	ENE	10.2	6	⊕	10 -	4Ac,9Cs	+
16 Nov. 1998	2400	H72	836.2	-18.3		11.3					
17 Nov. 1998	300	H72	835.1	-18.4		11.5					
17 Nov. 1998	600	H72	833.5	-17.2		13.0					
17 Nov. 1998	900	H72	841.4	-14.5 *	E	13 *	0.5	+	10 -	3Ac,5Cs,4Ci	+
17 Nov. 1998	1230	H128	808.3	-15.2 *	E	14 *	0.7	+	10 -	5Ac,10-Ci	+
17 Nov. 1998	1500	H156	798.3	-15.0 *	E	13 *	0.5	+	10 -	3Ac,10-Ci	+
17 Nov. 1998	1900	H210	781.8	-18.4	ENE	13.8	0.3	+	10 -	3Ac,10-Ci	+
17 Nov. 1998	2100	H210			ENE	14.0	0.3	+	10 -	1Ac,10-Ci	+
17 Nov. 1998	2400	H210		12.4							
18 Nov. 1998	300	H210		12.0							
18 Nov. 1998	600	H210		12.3							
18 Nov. 1998	900	H212		-18.0 *	E	9 *	2	⊕	10 -	0+SC,2Ac,10-Ci	+
18 Nov. 1998	1215	H280		-16.7 *	E	5 *	5	⊕	10 -	0+Ac,10-Ci	+
18 Nov. 1998	1510	Z6		-17.0 *	ENE	13 *	3	⊕	10 -	0+Ac,10-Ci	+
18 Nov. 1998	1910	Z21	752.5	-20.9	E	10.6	5	⊕	10 -	1Ac,10-Ci	+
18 Nov. 1998	2100	Z21	748.1	-23.2	E	10.4	5	⊕	10 -	1Ac,10-Ci	+
18 Nov. 1998	2400	Z21	750.5	-26.1		10.3					
19 Nov. 1998	300	Z21	752.1	-26.1		10.0					
19 Nov. 1998	600	Z21	753.0	-24.5		11.5					
19 Nov. 1998	900	Z24		-29.0 *	E	10 *	3	⊕	2	0+Sc,1Ac,1Ci	+
19 Nov. 1998	1230	Z68		-19.0 *	E	12 *	8	⊕	2	0+Ac,2Ci	+
19 Nov. 1998	1510	Z88		-19.0 *	E	10 *	8	○	1	0+Ac,1Ci	+
19 Nov. 1998	1800	Mizuho		-21.0 *	E	8 *	20	○	1	0+Ac,1Ci	+
19 Nov. 1998	2100	Mizuho	738.1	-24.6	ESE	10.2	15	○	0 +	0+Ci	+
19 Nov. 1998	2400	Mizuho	738.8	-28.1		11.5					
20 Nov. 1998	300	Mizuho	739.9	-29.6		11.3					
20 Nov. 1998	600	Mizuho	739.7	-27.6		11.4					
20 Nov. 1998	900	Mizuho	742.9	-23.0 *	E	11 *	20	○	0 +	0+Ac,0+Ci	+
20 Nov. 1998	1200	Mizuho	738.6	-20.2 *	ESE	10 *	30	○	0 +	0+Ac	+
20 Nov. 1998	1500	MD16		-19.0 *	E	10 *	30	○	0 +	0+Ac	+
20 Nov. 1998	1940	MD30			E		30	⊕	3	1Ac,2Ci	
20 Nov. 1998	2100	MD30	726.3	-24.0	E	8.0	30	⊕	8	1Ac,8Ci	
20 Nov. 1998	2400	MD30	727.1	-25.0		8.6					
21 Nov. 1998	300	MD30	728.0	-22.5		8.6					
21 Nov. 1998	600	MD30	728.5	-21.0		9.5					
21 Nov. 1998	900	MD32	731.6	-17.9 *	E	9 *	0.6	✕	10 -	10-Ac	+
21 Nov. 1998	1210	MD44	727.3	-16.8 *	E	8 *	0.7	✕	10 -	7Ac,10-Ci	+
21 Nov. 1998	1500	MD52	729.4	-16.7 *	ENE	8 *	0.8	✕	10 -	4Ac,10-Ci	+
21 Nov. 1998	1940	MD68	723.2	-19.6	ENE	5.9	20	⊕	10 -	3Ac,10-Ci	+
21 Nov. 1998	2100	MD68	723.5	-21.6	E	4.5	20	✕	10 -	3Ac,10-Ci	+
21 Nov. 1998	2400	MD68	724.5	-22.9		5.4					
22 Nov. 1998	300	MD68	724.7	-25.6		6.1					
22 Nov. 1998	600	MD68	724.3	-23.1		6.7					
22 Nov. 1998	900	MD70		-18.2 *	E	7 *		⊙	10 -	10-Ac	+
22 Nov. 1998	1240	MD90		-18.1 *	E	11 *	0.6	+	9	9+	+
22 Nov. 1998	1500	MD104		-19.8 *	E	11 *	0.4	+	7	7+	+

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
22 Nov. 1998	1930	MD124	704.9	-23.0	E	9.6	2	○	1	1Ci	†
22 Nov. 1998	2100	MD124	704.9	-24.4	ESE	8.9	3	○	0 +	0+Ci	†
22 Nov. 1998	2400	MD124	704.5	-27.8		10.4					
23 Nov. 1998	300	MD124				12.3					
23 Nov. 1998	900	MD126	701.1	-23.7 *	ESE	13 *	0.5	†	10 -	10-Ci	†
23 Nov. 1998	1230	MD148	691.9	-19.6 *	ESE	11 *	0.7	†	10 -	10-Ci	†
23 Nov. 1998	1510	MD156	688.3	-21.0 *	ESE	13 *	0.4	✕	10	10†	†
23 Nov. 1998	1940	MD174	681.3	-25.6	ESE	9.2	0.7	†	5	0+Ac,5Ci	†
23 Nov. 1998	2100	MD174	680.9	-26.8	ESE	8.1	5	⊕	10 -	10-Ci	†
23 Nov. 1998	2400	MD174	680.7	-27.5		7.7					
24 Nov. 1998	300	MD174	680.9	-28.0		7.1					
24 Nov. 1998	600	MD174	681.5	-27.7		8.5					
24 Nov. 1998	910	MD176	684.8	-25.2 *	ESE	9 *	2	⊕	9	9Ci	†
24 Nov. 1998	1230	MD198	675.3	-22.3 *	ESE	11 *	0.4	†	10	10Cs	†
24 Nov. 1998	1500	MD214	670.6	-22.5 *	E	10 *	0.6	†	10 -	10-Ci	†
24 Nov. 1998	1940	MD238	665.1	-25.0	ESE	9.8	0.5	†	10 -	10-Ci	†
24 Nov. 1998	2100	MD238			ESE		0.3	†	10	10†	†
25 Nov. 1998	1500	MD238		-23.0 *	ESE	18 *	0.01	✕	10	10†	†
25 Nov. 1998	1930	MD238		-24.5	ESE	14 *	0.1	✕	10	10†	†
25 Nov. 1998	2130	MD238		-25.4	ESE	14 *	0.2	✕	10	10†	†
26 Nov. 1998	900	MD240		-22.5 *	ESE	10 *	0.2	†	10 -	10-Ci	†
26 Nov. 1998	1200	MD260		-21.5 *	ESE	11 *	0.2	†	10 -	10-†,XCi	†
26 Nov. 1998	1510	MD274		-21.5 *	ESE	9 *	0.5	†	10 -	10-Ci	†
26 Nov. 1998	1920	MD294		-23.7 *	ESE	8 *	0.8	†	10 -	10-Ci	†
26 Nov. 1998	2100	MD294		-26.6 *	E	6 *	10	⊕	10 -	2Ac,9Ci	†
26 Nov. 1998	2400	MD294	645.8								
27 Nov. 1998	300	MD294	647.0								
27 Nov. 1998	600	MD294	647.6								
27 Nov. 1998	900	MD300	648.6	-25.7 *	ESE	6 *	10	⊕	8	8Ci	†
27 Nov. 1998	1230	MD324	643.9	-22.3 *	E	7 *	1	✕	10 -	0+Sc,3Ac,9Ci	†
27 Nov. 1998	1500	MD342	639.9	-22.3 *	E	8 *	1.5	⊕	10 -	2Ac,10-Ci	†
27 Nov. 1998	1920	MD364	632.7	-24.1	E	6.5	2	⊕	10 -	1Ac,10-Ci	†
27 Nov. 1998	2100	MD364	633.1	-26.3	E	5.6	2	⊕	10 -	0+Ac,10-Ci	†
27 Nov. 1998	2400	MD364	634.4	-28.4	E	7.3					
28 Nov. 1998	300	MD364	635.2	-30.3		6.9					
28 Nov. 1998	600	MD364	635.2	-30.2		7.3					
28 Nov. 1998	900	MD366	638.5	-29.0 *	E	8 *	1	⊕	10 -	10-Ci	†
28 Nov. 1998	1230	MD396	628.5	-24.9 *	ENE	10 *	0.5	✕	10 -	2Ac,10-Ci	†
28 Nov. 1998	1500	MD414	626.1	-24.5 *	ENE	9 *	0.5	✕	10 -	2Ac,10-Ci	†
28 Nov. 1998	2100	MD442			E		1.5	⊕	10 -	0+Ac,10-Ci	†
29 Nov. 1998	900	MD442	623.1	-29.5	E	10.7	0.5	†	3	3Ci	†
29 Nov. 1998	1200	MD442	622.6	-28.0	E	12.1	0.3	†	1	1Ci	†
29 Nov. 1998	1500	MD442			E		0.5	†	0	-	†
29 Nov. 1998	1800	MD442			E		0.8	†	0	-	†
29 Nov. 1998	2100	MD442			E	9.2	0.5	†	0	-	†
29 Nov. 1998	2400	MD442		8.7							
30 Nov. 1998	300	MD442		7.7							
30 Nov. 1998	600	MD442		7.7							
30 Nov. 1998	900	MD448		-30.0 *	ESE	7 *	15	○	1	1Ci	†
30 Nov. 1998	1230	MD478		-27.0 *	ESE	9 *	15	○	0 +	0+Ci	†
30 Nov. 1998	1510	MD502		-23.5 *	SE	6 *	20	○	0 +	0+Ci	†
30 Nov. 1998	1930	MD532			SE	7.2	20	○	1	1Ci	†

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
30 Nov. 1998	2100	MD532	615.2	-33.3	ESE	6.2	30	⊕	10 -	10-Ci	
30 Nov. 1998	2400	MD532	615.7	-38.2		5.5					
1 Dec. 1998	300	MD532	618.4	-41.0		5.6					
1 Dec. 1998	600	MD532	618.6	-40.2		6.0					
1 Dec. 1998	900	MD534	622.3	-36.7 *	SE	7 *	0.8	⊕	0 +	0+Ci	⊕
1 Dec. 1998	1210	MD570	615.2	-33.7 *	SE	6 *	1.5	⊕	7	7Ci	⊕
1 Dec. 1998	1500	MD592	615.2	-32.5 *	ESE	6 *	5	⊕	7	7Ci	⊕
1 Dec. 1998	1910	MD628	614.1	-36.0	SE	4.1	30	○	1	1Ci	⊕
1 Dec. 1998	2140	MD628	612.8	-40.2	SSE	3.0	30	⊕	10 -	10-Ci	↔
1 Dec. 1998	2400	MD628	613.6	-43.6		2.6					
2 Dec. 1998	300	MD628	614.9	-44.3		3.9					
2 Dec. 1998	600	MD628	615.1	-40.7		3.6					
2 Dec. 1998	900	MD634	618.0	-34.5 *	SSE	6 *	15	○	0 -		↔
2 Dec. 1998	1200	MD672	612.0	-31.4 *	SSE	7 *	30	○	0 +	0+Ci	
2 Dec. 1998	1500	MD696	611.0	-30.3 *	SSE	8 *	30	○	0 +	0+Ci	
2 Dec. 1998	1910	Dome F	603.9	-33.3 *	SSE	4 *	30	○	0 +	0+Ci	
2 Dec. 1998	2110	Dome F	605.8	-35.5 *	SSE	3 *	30	○	1	1Ci	
2 Dec. 1998	2400	Dome F	605.3								
3 Dec. 1998	900	Dome F	601.7	-34.8 *	ESE	5 *	30	○	0 -		↔
3 Dec. 1998	1200	Dome F	599.7	-32.3 *	SSE	8 *	6	○	0 -		⊕
3 Dec. 1998	1500	Dome F	598.4	-31.4 *	SE	10 *	0.5	⊕	10	10+	⊕
3 Dec. 1998	1930	Dome F	600.1	-35.2	ESE	6.7	0.9	⊕	10 -	10-Ci	⊕
3 Dec. 1998	2100	Dome F	600.1	-37.0	ESE	4.9	5	⊕	2	2Ci	⊕
3 Dec. 1998	2400	Dome F	600.0	-41.1		4.3					
4 Dec. 1998	300	Dome F	600.5	-42.1		4.4					
4 Dec. 1998	600	Dome F	600.8	-40.6		5.1					
4 Dec. 1998	920	Dome F		-38.1	ESE	5.5	3	⊕	9	9Ci	⊕,↔
4 Dec. 1998	1200	Dome F		-36.2	ESE	5.7	3	○	1	1Ci	⊕,↔
4 Dec. 1998	1500	Dome F			ESE		5	○	0 +	0+Ci	⊕,↔
4 Dec. 1998	1800	Dome F		-35.5 *	E	4 *	10	○	0 -		⊕,↔
4 Dec. 1998	2100	Dome F			E		10	○	0 +	0+Ci	↔
4 Dec. 1998	2400	Dome F	597.8	-44.1							
5 Dec. 1998	300	Dome F	596.8	-45.6		2.3					
5 Dec. 1998	600	Dome F	595.4	-43.2		2.9					
5 Dec. 1998	1000	Dome F	591.7	-37.6	E	4.7	10	○	1	1Ci	↔
5 Dec. 1998	1200	Dome F	594.1	-35.4	ENE	5.6	5	○	1	1Ci	⊕,↔
5 Dec. 1998	1500	Dome F	592.6	-34.5	E	4.7	15	○	0 +	0+Ci	↔
5 Dec. 1998	1800	Dome F	590.4	-35.5	E	3.8	10	○	1	1Ci	↔
5 Dec. 1998	2100	Dome F	590.4	-39.5	E	2.7	30	○	1	1Ci	
5 Dec. 1998	2400	Dome F	589.2	-43.9		2.3					
6 Dec. 1998	300	Dome F	589.5	-45.4		1.6					
6 Dec. 1998	600	Dome F	589.9	-43.3		1.7					
6 Dec. 1998	900	Dome F	590.7	-39.0	ENE	1.6	30	○	1	1Ci	
6 Dec. 1998	1200	Dome F	591.5	-35.3	NNE	3.5	30	⊕	3	0+Ac,3Ci	↔
6 Dec. 1998	1500	Dome F	592.2	-34.2	NNE	3.5	30	⊕	5	5Ci	↔
6 Dec. 1998	1800	Dome F		-35.1	N	2.2	30	⊕	5	5Ci	
6 Dec. 1998	2100	Dome F	593.8	-39.6	NNE	1.9	30	⊕	3	3Ci	↔
6 Dec. 1998	2400	Dome F	594.7	-43.5		1.9					
7 Dec. 1998	300	Dome F	594.1	-44.8		1.4					
7 Dec. 1998	600	Dome F	594.5	-42.9		1.6					
7 Dec. 1998	900	Dome F	594.7	-38.0	WNW	1.2	30	⊕	4	4Ci	↔
7 Dec. 1998	1200	Dome F	594.9	-33.4	NNW	1.8	30	⊕	4	4Ci	↔

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
7 Dec. 1998	1500	Dome F	594.8	-32.8	WNW	3.3	30	⊕	9	9Ci	
7 Dec. 1998	1800	Dome F	595.1	-33.1	NW	1.6	30	⊕	10 -	10-Ci	
7 Dec. 1998	2100	Dome F	594.8	-36.8	NW	1.4	30	⊕	7	0+Ac,7Ci	
7 Dec. 1998	2400	Dome F	593.8	-41.5		1.2					
8 Dec. 1998	300	Dome F	594.3	-42.3		0.7					
8 Dec. 1998	600	Dome F	593.9	-41.1		0.4					
8 Dec. 1998	900	Dome F	593.7	-37.7	ESE	1.0	30	⊕	3	3Ci	↔
8 Dec. 1998	1200	Dome F	593.4	-34.7	ESE	1.7	30	⊕	3	3Ci	↔
8 Dec. 1998	1800	Dome F	593.8	-34.8	E	1.5	30	⊕	9	9Ci	
8 Dec. 1998	2100	Dome F			ESE	1.4	30	⊕	9	9Ci	
8 Dec. 1998	2400	Dome F	592.4	-43.5		1.7					
9 Dec. 1998	300	Dome F	592.2	-44.8		1.7					
9 Dec. 1998	600	Dome F	592.5	-42.1		1.4					
9 Dec. 1998	1000	Dome F	593.1	-35.8	ENE	2.0	25	⊕	10 -	10-Ci	↔
9 Dec. 1998	1200	Dome F	593.5	-33.8	ENE	2.7	30	⊕	7	7Ci	↔
9 Dec. 1998	1500	Dome F	593.7	-32.6	NE	2.5	30	⊕	6	6Ci	↔
9 Dec. 1998	1800	Dome F	594.1	-33.5	ENE	1.2	30	⊕	10 -	10-Ci	↔
9 Dec. 1998	2100	Dome F	594.2	-38.3	ENE	0.8	30	⊕	4	4Ci	↔
9 Dec. 1998	2400	Dome F	594.1	-41.5		0.3					
10 Dec. 1998	900	Dome F					30	○	1	1Ci	
10 Dec. 1998	1200	Dome F			ESE		30	⊕	2	2Ci	
10 Dec. 1998	1500	Dome F			ESE		30	⊕	3	3Ci	
10 Dec. 1998	1800	Dome F			SE		30	⊕	3	3Ci	
10 Dec. 1998	2100	Dome F		-37.7	ESE		30	○	1	1Ci	
10 Dec. 1998	2400	Dome F	591.1	-42.1		1.2					
11 Dec. 1998	300	Dome F	593.5	-43.6		1.4					
11 Dec. 1998	600	Dome F	593.5	-40.6		1.1					
11 Dec. 1998	900	Dome F	593.7	-36.1	SE	1.8	30	⊕	2	2Ci	↔
11 Dec. 1998	1200	Dome F	594.2	-33.2	SE	1.5	30	○	1	1Ci	↔
11 Dec. 1998	1500	Dome F	593.2	-33.3	SE	2.4	30	○	0 +	0+Ci	↔
11 Dec. 1998	1800	Dome F	593.2	-34.0	SSE	2.1	30	○	1	1Ci	↔
11 Dec. 1998	2100	Dome F	593.3	-37.6	S	0.8	30	○	1	1Ci	↔
11 Dec. 1998	2400	Dome F	592.8	-41.0		0.7					
12 Dec. 1998	300	Dome F	593.0	-43.3		1.1					
12 Dec. 1998	600	Dome F	593.2	-41.4		0.7					
12 Dec. 1998	900	Dome F	593.5	-36.6	S	1.4	30	○	1	1Ci	↔
12 Dec. 1998	1200	Dome F	593.2	-34.4	S	3.7	30	○	0 +	0+Ci	↔
12 Dec. 1998	1500	Dome F	593.3	-33.7	SSE	3.7	30	○	0 +	0+Ci	↔
12 Dec. 1998	1800	Dome F	594.4	-34.3	S	2.8	30	○	0 +	0+Ci	
12 Dec. 1998	2100	Dome F	593.9	-38.9	S	1.7	30	○	0 +	0+Ci	
12 Dec. 1998	2400	Dome F	593.7	-43.8		1.7					
13 Dec. 1998	300	Dome F	594.1	-45.4		1.8					
13 Dec. 1998	600	Dome F	594.5	-43.0		1.7					
13 Dec. 1998	900	Dome F	595.0	-37.1	SSE	3.0	30	○	0	-	
13 Dec. 1998	1200	Dome F	595.1	-34.2	SE	2.8	30	○	0 +	0+Ci	↔
13 Dec. 1998	1500	Dome F	594.9	-33.6	SE	3.0	30	⊕	8	8Ci	↔
13 Dec. 1998	1800	Dome F	595.6	-33.6	SE	2.1	30	○	1	1Ci	↔
13 Dec. 1998	2100	Dome F	597.0	-37.6	SE	1.5	30	○	1	1Ci	
13 Dec. 1998	2400	Dome F	596.0	-42.1		1.5					
14 Dec. 1998	300	Dome F	596.8	-43.5		1.3					
14 Dec. 1998	600	Dome F	597.2	-40.5		1.0					
14 Dec. 1998	900	Dome F	597.8	-35.2	SE	1.6	30	○	1	1Ci	↔

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
14 Dec. 1998	1200	Dome F	598.1	-33.8	ESE	1.7	30	⊕	2	2Ci	↔
14 Dec. 1998	1500	Dome F	598.4	-32.0	E	1.7	30	○	1	1Ci	↔
14 Dec. 1998	1800	Dome F	599.2	-32.6	E	0.8	20	⊕	3	0+Ac,3Ci	↔
14 Dec. 1998	2100	Dome F	600.5	-34.1	SE	0.3	30	○	0 +	0+Ac,0+Ci	
14 Dec. 1998	2400	Dome F	598.8	-36.7	---						
15 Dec. 1998	300	Dome F	599.7	-37.6		0.5					
15 Dec. 1998	600	Dome F	599.7	-38.5		0.5					
15 Dec. 1998	900	Dome F	599.9	-35.5	SSE	1.0	20	⊕	10 -	1Ac,10-Ci	↔
15 Dec. 1998	1200	Dome F	599.6	-32.0	SE	1.8	30	⊕	2	1Ac,1Ci	↔
15 Dec. 1998	1500	Dome F		-32.5	SSE	1.9	30	○	0 +	0+Ci	↔
15 Dec. 1998	1800	Dome F	600.6	-33.0	ESE	1.6	30	⊕	3	0+Ac,3Ci	↔
15 Dec. 1998	2100	Dome F	599.9	-36.6	SE	1.0	30	⊕	2	0+Ac,2Ci	
15 Dec. 1998	2400	Dome F	599.7	-42.1		0.9					
16 Dec. 1998	300	Dome F	600.2	-43.9		0.9					
16 Dec. 1998	600	Dome F	600.5	-41.3		0.5					
16 Dec. 1998	900	Dome F	601.1	-36.0	ENE	1.2	30	⊕	4	0+Ac,4Ci	↔
16 Dec. 1998	1200	Dome F	601.5	-34.2	NE	2.2	30	⊕	5	5Ci	↔
16 Dec. 1998	1500	Dome F	601.3	-33.0	NE	2.1	30	⊕	4	4Ci	↔
16 Dec. 1998	1800	Dome F	602.8	-33.8	NE	1.5	30	⊕	4	0+Ac,4Ci	↔
16 Dec. 1998	2100	Dome F	602.2	-38.1	E	1.0	30	○	1	1Ci	
16 Dec. 1998	2400	Dome F	601.6	-40.8		1.2					
17 Dec. 1998	300	Dome F	602.1	-42.4		0.7					
17 Dec. 1998	600	Dome F	602.3	-40.6		1.5					
17 Dec. 1998	900	Dome F	602.4	-36.3	ENE	2.2	30	⊕	10 -	10-Ci	↔
17 Dec. 1998	1200	Dome F	602.2	-33.7	E	3.4	30	⊕	9	9Ci	↔
17 Dec. 1998	1500	Dome F	601.6	-32.4	E	4.1	30	⊕	10 -	10-Ci	↔
17 Dec. 1998	1800	Dome F	602.4	-33.0	ENE	2.8	30	○	1	1Ci	↔
17 Dec. 1998	2100	Dome F	601.2	-36.9	NE	2.5	30	⊕	10 -	1Ac,10-Ci	
17 Dec. 1998	2400	Dome F	599.9	-41.4		2.4					
18 Dec. 1998	300	Dome F	600.3	-42.6		2.1					
18 Dec. 1998	600	Dome F	600.0	-40.6		2.0					
18 Dec. 1998	900	Dome F	599.7	-37.0	ESE	3.6	30	⊕	3	3Ci	↔
18 Dec. 1998	1200	Dome F	599.4	-35.3	ENE	4.6	30	⊕	2	2Ci	↔
18 Dec. 1998	1500	Dome F	598.3	-34.2	ENE	5.0	30	⊕	3	3Ci	↔
18 Dec. 1998	1900	Dome F	597.8	-35.1	NE	4.4	30	⊕	10 -	10-Ci	
18 Dec. 1998	2100	Dome F	598.0	-37.0	NE	3.2	30	⊕	10 -	10-Ci	
18 Dec. 1998	2400	Dome F	597.7	-40.2		2.1					
19 Dec. 1998	300	Dome F	598.2	-41.9		1.8					
19 Dec. 1998	600	Dome F	598.4	-40.0		2.2					
19 Dec. 1998	900	Dome F	598.9	-36.3	NNE	3.1	20	⊕	10 -	10-Ci	↔
19 Dec. 1998	1200	Dome F	599.2	-33.9	NNE	4.8	20	⊕	10 -	10-Ci	↔
19 Dec. 1998	1500	Dome F	599.0	-33.1	NNE	5.1	20	⊕	10 -	10-Ci	↔
19 Dec. 1998	1800	Dome F	599.9	-32.8	NNE	4.5	20	⊕	10 -	10-Ci	↔
19 Dec. 1998	2100	Dome F	599.9	-35.5	NNE	2.5	20	⊕	10 -	10-Ci	↔
19 Dec. 1998	2400	Dome F	599.8	-40.6		2.0					
20 Dec. 1998	300	Dome F	600.5	-42.0		1.7					
20 Dec. 1998	600	Dome F	600.7	-40.6		1.7					
20 Dec. 1998	900	Dome F	601.3	-37.2	NNE	1.8	20	⊕	10 -	10-Ci	↔
20 Dec. 1998	1200	Dome F	601.0	-34.4	N	3.5	20	⊕	10 -	10-Ci	↔
20 Dec. 1998	1500	Dome F	600.4	-33.7	N	2.3	30	⊕	10 -	10-Ci	↔
20 Dec. 1998	1800	Dome F	600.4	-34.1	NNE	0.7	30	⊕	10 -	10-Ci	↔
20 Dec. 1998	2100	Dome F	600.7	-36.6	NE	0.5	30	⊕	10 -	10-Ci	↔

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
20 Dec. 1998	2400	Dome F	600.3	-39.3		0.6					
21 Dec. 1998	300	Dome F	600.4	-40.0							
21 Dec. 1998	600	Dome F	600.6	-38.7		0.7					
21 Dec. 1998	900	Dome F	600.9	-35.6	SE	0.9	30	⊕	3	3Ci	↔
21 Dec. 1998	1200	Dome F	600.7	-33.6	ESE	1.2	30	⊙	1	1Ci	↔
21 Dec. 1998	1500	Dome F	601.1	-33.3	ESE	1.5	30	⊙	1	1Ci	↔
21 Dec. 1998	1800	Dome F	601.4	-33.5	ESE	0.7	30	⊙	1	1Ci	
21 Dec. 1998	2100	Dome F	602.7	-36.9	ESE	0.8	30	⊙	1	1Ci	
21 Dec. 1998	2400	Dome F	603.1	-41.1		0.8					
22 Dec. 1998	300	Dome F	604.2	-40.6		0.6					
22 Dec. 1998	600	Dome F	605.3	-39.4		0.4					
22 Dec. 1998	900	Dome F	606.3	-35.8	WSW	0.2	30	⊙	1	0+Ac,1Ci	↔
22 Dec. 1998	1200	Dome F	606.7	-33.8	N	0.7	30	⊕	3	3Ci	↔
22 Dec. 1998	1500	Dome F	607.4	-31.8	NNW	1.2	30	⊙	1	1Ci	↔
22 Dec. 1998	1800	Dome F	609.0	-32.3	W	1.4	30	⊙	0 +	0+Ci	
22 Dec. 1998	2100	Dome F	608.1	-35.0	SW	0.7	30	⊙	0 +	0+Ci	
22 Dec. 1998	2400	Dome F	607.5	-38.6		1.4					
23 Dec. 1998	300	Dome F	607.3	-41.0		0.6					
23 Dec. 1998	600	Dome F	606.7	-39.8		1.6					
23 Dec. 1998	900	Dome F	605.7	-35.5	SSE	2.5	30	⊕	3	1Ac,2Ci	↔
23 Dec. 1998	1200	Dome F	603.9	-32.7	SSE	3.8	30	⊙	0 +	0+Ac,0+Ci	↔
23 Dec. 1998	1500	Dome F	602.2	-32.2	SSE	4.4	30	⊙	0 +	0+Sc,0+Ac	↔
23 Dec. 1998	1930	Dome F	600.6	-34.8	SE	2.8	30	⊙	0 +	0+Ac	↔
23 Dec. 1998	2100	Dome F	600.0	-37.4	SSE	2.1	30	⊙	0 +	0+Ac	
23 Dec. 1998	2400	Dome F	598.8	-41.6		1.7					
24 Dec. 1998	300	Dome F	598.7	-43.4		1.4					
24 Dec. 1998	600	Dome F	599.5	-39.7		0.9					
24 Dec. 1998	900	Dome F	601.1	-36.4	ENE	0.5	30	⊙	0 +	0+Ci	
24 Dec. 1998	1200	Dome F	602.0	-32.6	NE	2.8	30	⊙	1	1Ci	
24 Dec. 1998	1500	Dome F	603.2	-31.7	NE	4.2	30	⊕	7	7Ci	↔
24 Dec. 1998	1800	Dome F	605.6	-31.4	NE	2.7	30	⊕	10	10-Ci	
24 Dec. 1998	2100	Dome F	605.5	-33.6	NE	2.9	30	⊕	10	10-Ci	
24 Dec. 1998	2400	Dome F	605.6	-36.4		3.1					
25 Dec. 1998	300	Dome F	606.4	-36.3		4.4					
25 Dec. 1998	600	Dome F	606.4	-35.5		4.3					
25 Dec. 1998	900	Dome F	606.3	-33.4	NE	5.5	5	⊕	10	10Cs	↔, †
25 Dec. 1998	1200	Dome F	606.3	-29.8	NE	6.4	8	⊕	10	10Cs	↔, †
25 Dec. 1998	1500	Dome F	605.4	-27.8	NE	5.6	10	⊕	10 -	10-Ci	↔, †
25 Dec. 1998	1800	Dome F	605.3	-27.4	NE	4.5	15	⊕	10 -	0+Ac,10-Ci	↔, †
25 Dec. 1998	2100	Dome F	606.1	-29.7	NE	2.9	15	⊕	10 -	1Ac,10-Ci	↔
25 Dec. 1998	2400	Dome F	606.0	-32.6		4.3					
26 Dec. 1998	300	Dome F	606.9	-33.0		3.2					
26 Dec. 1998	600	Dome F				4.7					
26 Dec. 1998	900	Dome F			NNE	5.8	5	⊕	10 -	0+Ac,10-Ci	↔, †
26 Dec. 1998	1200	Dome F	608.4	-26.7	NNE	6.4	5	⊕	6	6Ci	↔, †
26 Dec. 1998	1500	Dome F	609.5	-25.5	NNE	6.6	5	⊕	10 -	0+St,10-Ci	↔, †
26 Dec. 1998	1800	Dome F	608.8	-26.3	NNE	4.9	15	⊕	4	2Sc,2Ci	↔, †
26 Dec. 1998	2100	Dome F	610.4	-27.1	N	4.1	20	⊙	10 -	9Sc,XCi	
26 Dec. 1998	2400	Dome F	609.8	-34.6		2.3					
27 Dec. 1998	300	Dome F	610.7	-35.9		3.1					
27 Dec. 1998	600	Dome F	611.4	-34.1		2.3					
27 Dec. 1998	900	Dome F	612.4	-29.2	NE	3.6	30	⊕	10 -	0+Sc,10-Ci	

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
27 Dec. 1998	1200	Dome F	612.0	-26.9	NNE	4.3	20	☉	10 -	0+Sc,4Ac,10-As	
27 Dec. 1998	1500	Dome F	611.0	-26.7	NNE	3.9	15	☉	10 -	1Ac,10-Ci	+
27 Dec. 1998	1830	Dome F	611.5	-26.8	NE	3.7	15	☉	10 -	1Ac,10-Ci	→,+
27 Dec. 1998	2100	Dome F	611.7	-28.1	ENE	4.5	10	☉	10 -	10-Ci	→,+
27 Dec. 1998	2400	Dome F	611.0	-29.6		3.7					
28 Dec. 1998	300	Dome F	611.7	-29.9		4.1					
28 Dec. 1998	600	Dome F	612.0	-29.6		2.9					
28 Dec. 1998	900	Dome F	612.0	-25.6	NE	7.7	0.5	+	10 -	10-Ci	+
28 Dec. 1998	1200	Dome F	613.4	-25.6	NNE	7.2	0.8	+	10 -	4Ac,10-Ci	+
28 Dec. 1998	1800	Dome F	611.4	-25.9	NNE	4.2	20	☉	10 -	0+Ac,10-Ci	→
28 Dec. 1998	2100	Dome F	611.2	-28.5	NNE	2.1	15	☉	10 -	10-Ci	→
28 Dec. 1998	2400	Dome F	611.0	-33.1		1.9					
29 Dec. 1998	300	Dome F	611.5	-34.6		1.8					
29 Dec. 1998	600	Dome F	612.0	-34.3		2.1					
29 Dec. 1998	900	Dome F	611.9	-32.5	* SW	4 *	10	☉	3	3Ci	→
29 Dec. 1998	1200	MD702	613.4	-28.9	* SW	3 *	30	☉	0 +	0+Ci	→
29 Dec. 1998	1500	MD680	614.4	-23.4	* WSW	3 *	30	☉	0	-	
29 Dec. 1998	1800	MD642	618.3	-29.5	*		20	☉	0 +	0+Ci	
29 Dec. 1998	2100	MD642	619.5	-35.6	SSW	2.0	30	☉	1	1Ci	
29 Dec. 1998	2400	MD642	618.4	-41.2		2.0					
30 Dec. 1998	300	MD642	618.5	-42.6		2.3					
30 Dec. 1998	600	MD642	618.6	-39.3		2.1					
30 Dec. 1998	900	MD636	618.2	-30.3	*		30	☉	1	0+Sc,0+Ac,1Ci	→
30 Dec. 1998	1200	MD604	619.5	-29.0	* SSW	3 *	30	☉	1	1Ci	→
30 Dec. 1998	1500	MD580	621.9	-27.6	* SSE	4 *	30	☉	1	1Ci	→
30 Dec. 1998	1950	MD550	627.1	-30.4	SSE	1.2	30	☉	1	0+Ac,1Ci	
30 Dec. 1998	2100	MD550	627.1	-32.8	SW	1.2	30	☉	0 +	0+Ci	
30 Dec. 1998	2400	MD550	626.5	-36.6		2.6					
31 Dec. 1998	300	MD550	626.3	-38.2		1.4					
31 Dec. 1998	600	MD550	626.0	-35.7		1.8					
31 Dec. 1998	900	MD544	626.1	-29.9	*		30	☉	0 +	0+Ac,0+Ci	
31 Dec. 1998	1220	MD506	628.6	-25.5	*		30	☉	0 +	0+Ci	
31 Dec. 1998	1500	MD482	630.5	-24.5	*		30	☉	1	1Ci	
31 Dec. 1998	1910	MD442	634.8	-27.9	ESE	1.0	30	☉	2	2Ci	
31 Dec. 1998	2100	MD442	635.5	-31.3	ESE	1.4	30	☉	4	4Ci	
31 Dec. 1998	2400	MD442	631.9	-38.0		1.0					
1 Jan. 1999	300	MD442	635.6	-39.4		1.1					
1 Jan. 1999	600	MD442	635.5	-35.8		1.8					
1 Jan. 1999	900	MD442	635.5	-30.4	ESE	1.7	30	☉	6	6Ci	
1 Jan. 1999	1200	MD442	635.4	-26.5	SE	2.2	30	☉	10 -	10-Ci	
1 Jan. 1999	1500	MD442	634.5	-24.7	SE	2.1	30	☉	10 -	10-Ci	
1 Jan. 1999	1800	MD442	633.1	-25.6	SE	1.6	30	☉	10 -	10-Ci	
1 Jan. 1999	2100	MD442	633.3	-30.3	SE	2.1	30	☉	8	8Ci	
1 Jan. 1999	2400	MD442	632.4	-35.8		3.1					
2 Jan. 1999	300	MD442	632.4	-37.0		3.1					
2 Jan. 1999	600	MD442	632.2	-34.1		3.8					
2 Jan. 1999	900	MD438	632.9	-26.8	* ESE	7 *	1.5	☉	10 -	10-Ci	+
2 Jan. 1999	1220	MD396	638.2	-24.3	* ENE	9 *	3	☉	10 -	10-Ci	+
2 Jan. 1999	1500	MD374	643.7	-21.6	* ENE	8 *	1.5	☉	10 -	10-Ci	+
2 Jan. 1999	1930	MD356	649.1	-24.9	E	8.3	1	☉	10 -	6Ac,10-Ci	+
2 Jan. 1999	2100	MD356	648.4	-25.9	E	7.7	2	☉	10 -	4Ac,10-Ci	+
2 Jan. 1999	2400	MD356	648.3	-27.8		6.9					

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
3 Jan. 1999	300	MD356	647.3	-31.5		6.7					
3 Jan. 1999	600	MD356	646.6	-30.9		8.1					
3 Jan. 1999	900	MD352	646.6	-26.7 *	E	10 *	3	⊖	3	3Ci	†
3 Jan. 1999	1220	MD324	651.1	-24.0 *	E	12 *	3	⊖	3	3Ci	†
3 Jan. 1999	1500	MD310	652.9	-23.2 *	E	10 *	3	⊖	3	3Ci	†
3 Jan. 1999	2010	MD282	663.6	-24.8	ESE	7.7	6	⊖	3	3Ci	†
3 Jan. 1999	2100	MD282	663.8	-26.7	ESE	7.7	6	⊖	2	2Ci	†
3 Jan. 1999	2400	MD282	663.2	-30.3		7.9					
4 Jan. 1999	300	MD282	663.6	-32.4		8.1					
4 Jan. 1999	600	MD282	663.5	-31.5		8.2					
4 Jan. 1999	900	MD278	663.3	-28.1 *	ESE	10 *	1.5	○	0 +	0+Ci	†
4 Jan. 1999	1220	MD252	666.4	-22.5 *	ESE	14 *	0.8	†	9	9†	†
4 Jan. 1999	1500	MD236	672.3	-24.9 *	E	12 *	0.5	†	9	9†	†
4 Jan. 1999	1900	MD208	681.7	-25.5	ESE	8.4	2	○	1	0+St,0+Sc,1Ci	†
4 Jan. 1999	2100	MD208	681.9	-27.1	ESE	6.3	8	○	0 +	0+Ci	†
4 Jan. 1999	2400	MD208	681.5	-30.7		6.0					
5 Jan. 1999	300	MD208	681.9	-32.8		6.8					
5 Jan. 1999	600	MD208	682.0	-31.5		7.5					
5 Jan. 1999	900	MD196	684.2	-26.4 *	ESE	8 *	3	○	0	-	†
5 Jan. 1999	1200	MD180	686.9	-25.0 *	ESE	7 *	4	○	0	-	†
5 Jan. 1999	1500	MD166	693.5	-22.2 *	E	8 *	10	⊖	5	5Sc,0+Ci	†
5 Jan. 1999	2000	MD136	703.0	-22.4	E	4.2	30	⊙	10 -	9Sc,1Ac,0+Ci	
5 Jan. 1999	2100	MD136	702.9	-22.4	ESE	4.8	30	⊙	10 -	10-Sc	
5 Jan. 1999	2400	MD136	702.8	-28.4		4.5					
6 Jan. 1999	300	MD136	703.6	-26.5		4.0					
6 Jan. 1999	600	MD136	704.2	-27.3		5.4					
6 Jan. 1999	900	MD132	705.6	-21.4 *	E	6 *	15	⊙	9	9Ac	†
6 Jan. 1999	1220	MD112	710.2	-18.2 *	NE	3 *	10	⊙	10 -	9Sc,XAs	†
6 Jan. 1999	1500	MD98	715.7	-20.5 *			20	⊖	4	4Ac	
6 Jan. 1999	1940	MD68	725.0	-20.8	E	2.2	30	⊙	9	9Ac	
6 Jan. 1999	2100	MD68	725.8	-21.6	E	1.5	20	⊙	9	9Ac	
6 Jan. 1999	2400	MD68	724.5	-26.6	1.8						
7 Jan. 1999	300	MD68	724.0	-27.9		4.7					
7 Jan. 1999	600	MD68	723.4	-27.1		7.9					
7 Jan. 1999	900	MD64	722.9	-21.8 *	E	11 *	1.5	○	1	1Ac,0+Ci	†
7 Jan. 1999	1200	MD38	729.5	-17.7 *	E	12 *	1.5	⊖	3	2Ac,3Ci	†
7 Jan. 1999	1500	MD24	733.6	-14.8 *	ENE	12 *	0.08	✖	10	10†	†
7 Jan. 1999	1830	MD10	737.6	-15.1	NE	9.7	0.08	✖	10	10†	†
7 Jan. 1999	2100	MD10	739.6	-15.6	E	7.8	0.1	✖	10	10†	†
7 Jan. 1999	2400	MD10	739.8	-16.1		9.8					
8 Jan. 1999	300	MD10	739.2	-15.8		11.1					
8 Jan. 1999	600	MD10	739.3	-15.1		11.2					
8 Jan. 1999	900	MD2	740.2	-13.5 *	ENE	14 *	0.08	✖	10	10†	†
8 Jan. 1999	1200	Mizuho	741.2	-12.5 *	NE	12 *	0.1	✖	10	10†	†
8 Jan. 1999	1500	Z92	744.8	-12.2 *	ENE	10 *	0.15	✖	10	10†	†
8 Jan. 1999	2000	Z50	751.0	-13.2	ENE	13.4	0.2	✖	10	10†	†
8 Jan. 1999	2100	Z50	751.4	-13.5	ENE	15.2	0.2	✖	10	10†	†
8 Jan. 1999	2400	Z50	750.3	-14.6		16.2					
9 Jan. 1999	300	Z50	749.7	-14.3		15.6					
9 Jan. 1999	600	Z50	750.6	-14.3		12.9					
9 Jan. 1999	900	Z48	749.5	-12.3 *	E	14 *	0.1	†	10 -	8†,XCi	†
9 Jan. 1999	1200	Z22'	760.6	-10.5 *	ENE	14 *	0.1	†	10 -	9†,XAc,XCi	†

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
9 Jan. 1999	1830	Z22'	760.3	-12.0	E	12.2	0.2	†	10	3Sc,10Ac	†
9 Jan. 1999	2100	Z22'	761.8	-12.6	E	10.0	0.5	†	10	2Sc,10Ac	†
9 Jan. 1999	2400	Z22'	763.5	-13.5		8.5					
10 Jan. 1999	300	Z22'		-14.6		9.6					
10 Jan. 1999	600	Z22'		-14.9		11.5					
10 Jan. 1999	900	Z22'		-13.3	E	10.3	0.5	†	10	2Sc,10Ac	†
10 Jan. 1999	1200	Z22'	768.6	-11.8	ENE	8.2	2	⊙	10 -	10-Ac	†
10 Jan. 1999	1500	Z22'	769.9	-11.0	NE	6.5	20	⊕	7	5Ac,3Ci	†
10 Jan. 1999	1800	Z22'	770.2	-12.2	NNE	2.1	30	⊕	3	1Ac,3Ci	
10 Jan. 1999	2100	Z22'	770.1	-14.3	E	2.9	30	⊙	10	6Ac,5Ci	
10 Jan. 1999	2400	Z22'	769.9	-19.0		5.9					
11 Jan. 1999	300	Z22'	769.6	-19.7		6.8					
11 Jan. 1999	600	Z22'	769.0	-19.1		7.0					
11 Jan. 1999	900	Z20'	767.9	-16.1 *	E	6 *	30	⊙	1	1Ci	†
11 Jan. 1999	1210	H276	788.1	-8.5 *	NNE	4 *	30	⊕	2	2Ci	
11 Jan. 1999	1500	H232	801.4	-8.4 *	N	3 *	30	⊕	3	0+Cu,3Ci	
11 Jan. 1999	1950	H128	830.7	-9.6 *	NNE	3.7	10	✕	10 -	1Sc,10-Ac	✕
11 Jan. 1999	2100	H128	830.6	-10.0	NNE	3.5	10	✕	10	10Sc	✕
11 Jan. 1999	2400	H128		-10.4		3.0					
12 Jan. 1999	300	H128		-11.3		3.9					
12 Jan. 1999	600	H128		-11.0		3.1					
12 Jan. 1999	900	H116	831.1	-9.0 *	NE	3 *	10	✕	10 -	10-Ac	✕
12 Jan. 1999	1200	H72	848.4	-6.6 *	ENE	3 *	8	✕	10	10Ac	✕
12 Jan. 1999	1500	H21	863.2	-6.3 *			20	⊙	10 -	0+Cu,0+Sc,10-Ac	
12 Jan. 1999	1800	S30	871.2	-9.5	SW	0.7	30	⊙	10 -	0+Sc,10-As	
12 Jan. 1999	2100	S30	872.6	-12.7	SW	2.5	30	⊙	9	9Sc	
12 Jan. 1999	2400	S30	874.5	-9.8		2.0					
13 Jan. 1999	300	S30	876.3	-9.6		2.1					
13 Jan. 1999	600	S30	879.5	-9.6	SSE	4.2	30	⊙	10 -	9Ac,1Ci	
13 Jan. 1999	900	S30	879.4	-8.1	SSW	1.7	30	⊙	1	1Sc	
13 Jan. 1999	1200	S30	880.9	-6.9	SSW	3.4	30	⊕	3	3St,0+Cu	
13 Jan. 1999	1500	S22	908.7	-4.3 *	WSW	3 *	30	⊙	0 +	0+Ac,0+Ci	
13 Jan. 1999	1910	S16	929.4	-5.2 *	WSW	1.4	30	⊕	2	1Sc,2Ci	
13 Jan. 1999	2100	S16	930.8	-9.9 *	E	2.2	30	⊕	2	1Sc,2Ci	
13 Jan. 1999	2400	S16	929.8	-12.9		5.6					
14 Jan. 1999	300	S16	928.4	-13.6		7.2					
14 Jan. 1999	540	S16	929.0	-11.0	ESE	6.3	30	⊕	9	0+Ac,9Ci	†
14 Jan. 1999	900	S16	927.4	-6.0 *	E	4 *	30	⊕	2	0+Ac,2Ci	
14 Jan. 1999	1200	S16		-2.5 *			30	⊙	1	1Ci	
14 Jan. 1999	1500	S16		-1.5 *			30	⊙	0 +	0+Ac,0+Ci	
14 Jan. 1999	1800	S16	925.0	-1.3	ENE	1.0	30	⊙	0 +	0+Ac,0+Ci	
14 Jan. 1999	2100	S16	924.1	-5.1	E	7.2	30	⊙	0 +	0+Ac,0+Ci	
14 Jan. 1999	2400	S16	924.2	-7.9		13.2					
15 Jan. 1999	300	S16	925.7	-9.2		13.5					
15 Jan. 1999	600	S16	924.6	-8.1		15.5					
15 Jan. 1999	900	S16	924.9	-5.4	ESE	15.5	0.3	†	10 -	10-Ci	†
15 Jan. 1999	1200	S16	923.7	-2.9	E	11.4	3	⊕	3	3Ci	†
15 Jan. 1999	1500	S16	920.4	-2.1	E	11.6	3	⊕	2	2Ci	†

Table 4-7. Meteorological data observed during traverse 5.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
27 Dec. 1998	20:00	S16	928 *	-7.1 *	W	1 *	0.1	≡	10		
28 Dec. 1998	5:50	S16	926 *	-9.8 *	E	3 *	30	○	0 +		
28 Dec. 1998	6:50	S16	925 *	-8.5 *	E	3 *	30	○	0 +		
28 Dec. 1998	20:00	S16	927 *	-3.8 *	W	1 *	30	○	0 +		
29 Dec. 1998	9:00	S16	927 *	-3.3 *	E	3 *	20	⊕	2		
30 Dec. 1998	5:50	S16	924 *	-5.0 *	E	6 *	20	⊙	10		
30 Dec. 1998	9:00	S16	928 *	-2.8 *	E	6 *	20	⊙	10 -		
30 Dec. 1998	15:00	S16	928 *	-2.5 *	E	5 *	30	⊕	7		
31 Dec. 1998	9:00	S26	880 *	-4.8 *	E	11 *	0.05	†	10		†
31 Dec. 1998	15:00	S26	884 *	-5.3 *	NE	17 *	0.05	†	10		†
1 Jan. 1999	9:00	S26	888 *	-3.0 *	NE	6 *	20	⊙	9		
1 Jan. 1999	15:00	H65	854 *	-3.2 *	ENE	2 *	30	⊙	8		
2 Jan. 1999	12:00	H114	843 *	-8.3 *	E	23 *	0.02	†	10		†
2 Jan. 1999	15:00	H114	824 *	-9.2 *	NNE	21 *	0.02	†	10		†
3 Jan. 1999	9:00	H114	822 *	-9.0 *	NE	9 *	5	⊙	10 -		
3 Jan. 1999	13:00	H114	823 *	-7.0 *	ENE	7 *	10	⊙	10 -		
3 Jan. 1999	15:00	H114	828 *	-7.5 *	NE	7 *	1	⊙	10 -		
4 Jan. 1999	5:50	H114	826 *	-10.7 *	NE	6 *	1	⊙	10		
4 Jan. 1999	6:50	H114	826 *	-10.6 *	E	8 *	1	⊕	8		†
4 Jan. 1999	7:50	H114	826 *	-10.2 *	ENE	8 *	1	⊙	9		†
4 Jan. 1999	8:50	H114	827 *	-9.3 *	NE	8 *	1	⊕	8		†
4 Jan. 1999	9:50	H114	827 *	-9.5 *	NE	7 *	2	⊕	6		
4 Jan. 1999	15:00	H114	827 *	-7.0 *	ENE	8 *	2	⊙	8		
5 Jan. 1999	9:00	H114	828 *	-8.7 *	NNE	1 *	2	⊙	10		
5 Jan. 1999	15:00	H160	816 *	-6.5 *		0 *	2	×	10		×
6 Jan. 1999	0:00	H186	809 *	-21.2 *	NNE	1 *	20	×	7		×
6 Jan. 1999	9:00	H186	810 *	-13.5 *	NNE	2 *	30	⊙	10 -		
6 Jan. 1999	17:00	H260	791 *	-11.0 *	ENE	2 *	10	⊙	9		
7 Jan. 1999	9:00	H301	766 *	-15.5 *	E	12 *	0.1	†	4		†
7 Jan. 1999	15:00	Z19	758 *	-11.5 *	E	17 *	0.05	†	10		†
8 Jan. 1999	10:00	Z22	758 *	-9.0 *	NNE	10 *	0.1	≡	10		≡
8 Jan. 1999	15:00	Z22	757 *	-10.6 *	NNE	10 *	0.5	⊙	10		†
9 Jan. 1999	18:30	Z22	762 *	-13.0 *	NE	10 *	0.2	†	10		†
10 Jan. 1999	8:30	Z22	765 *	-12.0 *	E	12 *	0.2	†	10		†
10 Jan. 1999	15:00	Z38	761 *	-11.0 *	ENE	6 *	20	⊕	6		
11 Jan. 1999	9:00	Z92	748 *	-15.5 *	SE	12 *	30	○	1		†
11 Jan. 1999	15:00	MD2	749 *	-11.8 *	E	10 *	30	○	0 +		†
12 Jan. 1999	9:00	MD42	727 *	-17.8 *	E	9 *	30	⊕	9		
12 Jan. 1999	15:00	MD72	719 *	-11.8 *	E	9 *	30	⊕	5		
13 Jan. 1999	9:00	MD112	715 *	-20.5 *	ENE	10 *	20	○	1		†
13 Jan. 1999	15:00	MD146	708 *	-17.0 *	E	5 *	30	○	0 +		
14 Jan. 1999	9:00	MD190	694 *	-21.4 *	ENE	6 *	30	○	0		
14 Jan. 1999	15:00	MD230	685 *	-19.0 *	ESE	8 *	30	○	0		†
15 Jan. 1999	9:00	MD250	678 *	-20.0 *	ESE	14 *	1	†	0		†
15 Jan. 1999	15:00	MD280	670 *	-16.0 *	ESE	13 *	1	†	0		†
16 Jan. 1999	9:00	MD320	654 *	-22.5 *	ESE	10 *	1	†	0		†

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
16 Jan. 1999	15:00	MD364	643 *	-21.0 *	ESE	10 *	1 †	0			†
17 Jan. 1999	9:00	MD384	638 *	-28.5 *	ES	6 *	1 ○	0			↔
17 Jan. 1999	15:00	MD424	631 *	-26.2 *	ESE	7 *	5 ○	0+			
18 Jan. 1999	9:00	MD454	629 *	-32.6 *	NE	5 *	30 ⊕	8			
18 Jan. 1999	15:00	MD500	625 *	-26.5 *	E	6 *	20 ○	0			
19 Jan. 1999	9:00	MD530	626 *	-31.0 *	ENE	5 *	30 ○	1			
19 Jan. 1999	15:00	MD570	621 *	-23.0 *	ENE	5 *	20 ⊕	5			
20 Jan. 1999	9:00	MD600	621 *	-31.5 *	ENE	6 *	2 ⊕	2			↔
20 Jan. 1999	15:00	MD650	618 *	-28.5 *	ENE	8 *	2 ⊕	2			†
21 Jan. 1999	9:00	MD680	612 *	-32.7 *	ES	5 *	1 ⊕	2			↔
21 Jan. 1999	15:00	MD730	610 *	-27.5 *	E	7 *	1 ⊕	4			†
22 Jan. 1999	15:00	Dome F	610 *	-29.6 *	E	6 *	10 ○	0+			†
23 Jan. 1999	9:00	Dome F	601 *	-29.6 *	ES	9 *	0.2 †	10			†
23 Jan. 1999	15:00	Dome F	603 *	-26.6 *	E	7 *	1 ⊕	2			†
24 Jan. 1999	9:00	Dome F	602 *	-27.5 *	ENE	6 *	20 ○	0+			
24 Jan. 1999	15:00	Dome F	603 *	-24.8 *	E	6 *	30 ○	0			
25 Jan. 1999	9:00	Dome F	603 *	-33.0 *	E	4 *	30 ○	0+			
25 Jan. 1999	15:00	Dome F	602 *	-27.5 *	ES	5 *	30 ○	2			
26 Jan. 1999	9:00	Dome F	601 *	-35.5 *	E	5 *	30 ○	0			↔
26 Jan. 1999	15:00	Dome F	604 *	-28.6 *	ESE	5 *	30 ○	0			
27 Jan. 1999	15:00	Dome F	601 *	-31.5 *	E	2 *	30 ○	0+			
28 Jan. 1999	15:00	MD714	603 *	-33.5 *	E	5 *	10 ⊕	7			
29 Jan. 1999	9:00	MD664	604 *	-37.5 *	ESE	3 *	20 ⊕	2			
29 Jan. 1999	15:00	MD614	608 *	-32.5 *	E	5 *	20 ⊕	3			
30 Jan. 1999	9:00	MD574	608 *	-35.5 *	ES	4 *	30 ○	1			
30 Jan. 1999	15:00	MD550	614 *	-31.0 *	E	7 *	30 ○	0+			
31 Jan. 1999	9:00	MD544	608 *	-35.0 *	ES	5 *	1 ⊕	5			†
31 Jan. 1999	15:00	MD488	619 *	-28.8 *	E	4 *	2 ⊕	3			†
1 Feb. 1999	9:00	MD438	621 *	-31.6 *	ESE	9 *	0.5 †	10-			†
1 Feb. 1999	15:00	MD388	630 *	-31.0 *	ESE	8 *	1 ⊕	7			†
2 Feb. 1999	9:00	MD344	643 *	-35.0 *	ESE	6 *	2 ⊕	5			
2 Feb. 1999	15:00	MD304	653 *	-26.5 *	E	8 *	5 ⊕	2			†
3 Feb. 1999	9:00	MD264	664 *	-30.6 *	ESE	10 *	0.2 †	0			†
3 Feb. 1999	15:00	MD224	676 *	-22.5 *	E	13 *	0.2 †	0			†
4 Feb. 1999	9:00	MD194	687 *	-25.4 *	ES	13 *	0.2 †	0			†
4 Feb. 1999	15:00	MD164	696 *	-20.0 *	ESE	13 *	0.5 †	0			†
5 Feb. 1999	9:00	MD134	706 *	-24.5 *	E	11 *	1 †	2			†
5 Feb. 1999	15:00	MD96	715 *	-15.5 *	ES	10 *	10 ○	0+			†
6 Feb. 1999	9:00	MD66	721 *	-21.0 *	E	9 *	20 ⊙	9			†
6 Feb. 1999	15:00	MD16	734 *	-13.5 *	E	8 *	20 ⊕	7			
7 Feb. 1999	9:00	Z96	744 *	-22.4 *	E	13 *	2 ⊙	10-			†
7 Feb. 1999	15:00	Z32	752 *	-16.0 *	ENE	11 *	10 ⊙	10-			
8 Feb. 1999	9:00	Z2	765 *	-19.6 *	E	7 *	1 ⊙	10-			†
8 Feb. 1999	15:00	H220	797 *	-9.5 *	ENE	4 *	30 ○	0+			
9 Feb. 1999	9:00	H160	818 *	-15.0 *	ENE	12 *	0.2 †	0			†
9 Feb. 1999	15:00	H60	859 *	-11.0 *	ENE	15 *	0.5 †	2			†
9 Feb. 1999	22:00	H21	868 *	-13.8 *	E	19 *	0.2 †	2			†
10 Feb. 1999	9:00	S30	872 *	-10.5 *	ENE	20 *	0.1 †	6			†

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
10 Feb. 1999	15:00	S18	917 *	-6.5 *	ENE	22 *	0.5 †	8			†
11 Feb. 1999	9:00	S18	914 *	-8.5 *	E	7 *	20 ⊕	7			
11 Feb. 1999	15:00	S16	914 *	-4.7 *	ENE	3 *	20 ⊕	4			
12 Feb. 1999	15:00	S16	917 *	-4.3 *	E	5 *	10 ⊕	4			
13 Feb. 1999	5:50	S16	917 *	-8.4 *	E	6 *	5 ✕	7			✕
13 Feb. 1999	6:50	S16	917 *	-8.4 *	E	6 *	5 ✕	10			✕
13 Feb. 1999	7:50	S16	919 *	-6.5 *	E	6 *	10 ⊙	10 -			
13 Feb. 1999	15:00	S16	931 *	-4.5 *	W	3 *	20 ⊙	10 -			
14 Feb. 1999	6:50	S16	928 *	-8.5 *	E	2 *	10 ⊙	10 -			
14 Feb. 1999	8:50	S16	928 *	-8.0 *	E	2 *	10 ⊙	10 -			
14 Feb. 1999	10:50	S16	928 *	-7.4 *	E	3 *	10 ⊙	10 -			
14 Feb. 1999	12:50	S16	928 *	-6.5 *	NNE	4 *	5 ✕	10 -			✕
14 Feb. 1999	13:50	S16	928 *	-6.5 *	NE	5 *	10 ✕	10 -			✕
15 Feb. 1999	5:50	S16	928 *	-8.7 *	E	9 *	5 ⊙	9			†
15 Feb. 1999	6:50	S16	929 *	-9.5 *	E	9 *	5 ⊙	10 -			†

Table 4-8. Meteorological data observed during traverse 6.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
24 Aug.1999	21:00	S16	921.5	-24.1	E	9.4	5	○	0 +	0+Ci	†
25 Aug.1999	03:00	S16		-23.7		9.4					
25 Aug.1999	09:00	S16	922.4	-24.3	E	8.2	20	○	1	1 Ci	†
25 Aug.1999	14:59	S26	879.4	-27.5	E	7.4	30	⊕	6	0+Ac; 6 Ci	†
25 Aug.1999	21:00	H9	857.2	-29.2	E	8.6	10	○	0 +	0+Ac; 0+Ci	†
26 Aug.1999	03:00	H9		-29.2		10.1					
26 Aug.1999	09:00	H9	847.8	-29.0	E	10.8	8	○	0 +	0+Ac; 0+Ci	†
26 Aug.1999	15:00	H72	826.5	-32.4	E	7.6	30	○	0 +	0+Ci	†
26 Aug.1999	21:00	H96	818.4	-36.6	E	9.4	8	○	0 +	0+Ci	†
27 Aug.1999	03:00	H96		-30.7		7.6					
27 Aug.1999	09:00	H96	828.5	-30.9	ENE	9.0	8	⊕	10 -	2 Sc; 1 Ac;10-Ci	†
27 Aug.1999	14:59	H144	813.2	-29.4	E	8.3	3	⊕	10 -	2 Sc;10-Ci	†
27 Aug.1999	21:00	H172	801.2	-33.6	E	8.7	4	⊕	4	0+Ac; 4 Ci	†
28 Aug.1999	03:00	H172		-33.9		9.5					
28 Aug.1999	09:00	H172	801.1	-31.7	E	7.8	4	⊕	10 -	2 Ac;10-Ci	†
28 Aug.1999	15:00	H228	788.1	-30.6	E	3.5	30	⊙	10 -	10-Sc	
28 Aug.1999	21:00	H256	781.5	-39.7	ESE	4.8	10	⊕	3	1 Sc; 0+Ac; 3 Ci	→
29 Aug.1999	03:00	H256		-41.4		4.8					
29 Aug.1999	09:00	H256	786.3	-40.6	ESE	4.2	30	⊕	7	7 Ci	
29 Aug.1999	15:00	H298	773.7	-34.6	E	5.7	5	✖	10	4 Ac;10 As	✖
29 Aug.1999	21:00	H298	776.6	-31.1	E	5.4	5	✖	10	4 Ac;10 As	✖
30 Aug.1999	03:00	H298		-27.9		1.8					
30 Aug.1999	09:00	H298	781.7	-31.1	E	8.4	2	⊕	10 -	10-Ci	†
30 Aug.1999	15:00	Z14	768.0	-29.5	E	11.1	0.08	✖	10	10 †	†
30 Aug.1999	22:00	Z14	758.1	-24.3	E	15.8	0.02	✖	10	10 †	†
31 Aug.1999	03:00	Z14		-24.2		9.4					
31 Aug.1999	09:00	Z14	762.7	-26.2	NE	3.9	5	✖	10	6 Ac;10 As	✖
31 Aug.1999	15:10	Z46	753.4	-30.9	ENE	4.9	20	⊕	10 -	0+Sc; 3 Ac; 7 Cs; 3 Ci	
31 Aug.1999	21:00	Z76	747.5	-39.6	ENE	6.1	7	○	1	1 Ci	†
01 Sep.1999	03:00	Z76		-42.2		7.5					
01 Sep.1999	09:00	Z76	740.3	-40.7	E	9.7	0.3	†	0	-	†
01 Sep.1999	15:00	Z90	729.9	-37.5	E	12.7	0.07	†	0	-	†
01 Sep.1999	21:00	Z96	724.2	-39.1	ESE	13.0	0.03	†	1	1 Sc	†
02 Sep.1999	03:00	Z96		-41.4		13.5					
02 Sep.1999	09:00	Z96	723.9	-41.4	ESE	12.9	0.03	†	0	-	†
02 Sep.1999	15:00	Mizuho	719.0	-42.1	ESE	11.2	0.05	†	0	-	†
02 Sep.1999	21:30	Mizuho	717.9	-46.4	ESE	12.4	0.05	†	0	-	†
03 Sep.1999	03:00	Mizuho		-47.7		12.0					
03 Sep.1999	09:00	Mizuho	719.0	-47.9	ESE	12.1	0.05	†	0	-	†
03 Sep.1999	15:00	Mizuho	721 *	-47.2 *	ESE	13 *	0.1	†	0	-	†
03 Sep.1999	23:10	Mizuho	723 *	-49.0 *	ESE	9.8	0.2	†	0	-	†
04 Sep.1999	03:00	Mizuho		-47.3		10.3					
04 Sep.1999	09:00	Mizuho	725.4	-46.5 *	E	10.6	0.2	†	0	-	†
04 Sep.1999	15:00	Mizuho	726.9	-41.7 *	E	10.4	0.7	†	10 -	10-Ci	†
04 Sep.1999	21:00	Mizuho	727.9	-41.0	E	11.7	0.2	†	3	3 Ci	†
05 Sep.1999	03:00	Mizuho		-35.9		12.5					
05 Sep.1999	09:00	Mizuho	726.7	-32.9	E	12.3	0.03	✖	10	10 †	†
05 Sep.1999	15:00	Mizuho	724.6	-30.0	E	12.1	0.05	†	10	7 Ac;10 As	†
05 Sep.1999	21:00	Mizuho	725.9	-31.2	ENE	9.4	0.05	†	10 -	6 Ac;10-Ci	†

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
06 Sep.1999	03:00	Mizuho		-33.7		8.1					
06 Sep.1999	08:00	Mizuho	729.6	-35.5	E	8.5	0.2	⊕	10 -	5 Ac;10-Ci	⊕
06 Sep.1999	15:00	Z70	738.1	-35.1	E	4.7	20	⊕	10 -	10-Ci	⊕
06 Sep.1999	21:00	Z46	743.1	-38.9	E	4.3	15	⊕	4	4 Ci	
07 Sep.1999	03:00	Z46		-39.7		6.7					
07 Sep.1999	08:00	Z46	743.7	-40.5	E	8.5	7	⊕	3	0+Ac; 3 Ci	⊕
07 Sep.1999	15:00	Z4	756.4	-35.4	E	8.6	5	⊕	10 -	0+Sc; 2 Ac;10-Ci	⊕
07 Sep.1999	21:00	H288	767.0	-39.3	E	9.7	1	⊕	5	5 Ci	⊕
08 Sep.1999	03:00	H288		-42.9		8.8					
08 Sep.1999	08:00	H288	768.0	-44.8	ESE	8.9	0.6	⊕	0	-	⊕
08 Sep.1999	15:00	H236	786.6	-38.9	E	7.1	10	⊕	3	3 Ci	⊕
08 Sep.1999	21:00	H236	786.7	-42.5	E	8.3	5	⊕	3	3 Ci	⊕
09 Sep.1999	03:00	H236		-42.9		8.7					
09 Sep.1999	08:11	H236	782.3	-42.4	E	9.7	1	○	0 +	0+Ac; 0+Ci	⊕
09 Sep.1999	15:00	H164	799.4	-37.0	E	6.3	30	○	0 +	0+Ac; 0+Ci	⊕
09 Sep.1999	21:00	H136	810.0	-41.1	E	5.7	20	○	0 +	0+Ci	⊕
10 Sep.1999	03:00	H136		-41.5		6.1					
10 Sep.1999	08:00	H136	812.8	-45.5	ESE	9.5	0.1	⊕	0 +	0+Ci	⊕
10 Sep.1999	15:00	H84	834.3	-35.0	ESE	12.3	0.05	⊕	10	10 ⊕	⊕
10 Sep.1999	21:00	H68	849.8	-30.7	E	13.6	0.03	⊕	10	10 ⊕	⊕
11 Sep.1999	03:00	H68		-25.8		12.3					
11 Sep.1999	08:00	H68	856.4	-20.8	ENE	11.8	0.5	⊕	10	0+Sc;10 Ac	⊕
11 Sep.1999	15:00	H3	876.2	-17.0	ENE	11.4	1	⊙	10	4 Ac;10 As	⊕
11 Sep.1999	23:00	S16	927.8	-14.8	ENE	12.5	0.05	⊕	10	10 ⊕	⊕
12 Sep.1999	03:00	S16		-19.1		0.9					
12 Sep.1999	09:00	S16	929.5	-21.2	E	4.7	30	⊕	10 -	10-Ci	
12 Sep.1999	15:00	S16	932 *	-20.1 *	ENE	3 *	30	⊕	10 -	10-Ci	
12 Sep.1999	21:00	S16	926 *	-20.5 *	E	12 *	8	⊕	5	5 Ci	⊕
13 Sep.1999	06:00	S16	919 *	-19.4 *	E	13 *	0.1	⊕	4	4 Ci	⊕

Table 4-9. Meteorological data observed during traverse 7.

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
01 Nov. 1999	21:00	S16	903.9	-21.4	E	4.8	15	⊕	4	0+Sc;4Ac	
02 Nov. 1999	03:00	S16		-16.3		2.7					
02 Nov. 1999	08:00	S16	910.5	-14.3	ESE	6.7	15	⊙	10	1Sc;10Ac	
02 Nov. 1999	15:00	S21	894.6	-10.9	ENE	9.3	5	⊕	10 -	1Sc;3Ac;10-Cs	‡
02 Nov. 1999	21:00	S27	869.9	-14.6	E	10.7	0.2	‡	10	6‡;xCs	‡
03 Nov. 1999	03:00	S27		-14.0		12.8					
03 Nov. 1999	08:00	S27	871.3	-11.2	ENE	12.1	0.05	‡	10	10‡	‡
03 Nov. 1999	15:00	S27	869.9	-8.8	ENE	16.4	0.02	✖	10	10‡	‡
03 Nov. 1999	21:00	S27	869.0	-7.9	NE	12.7	0.02	✖	10	10‡	‡
04 Nov. 1999	03:00	S27		-6.8							
04 Nov. 1999	08:00	S27	869.2	-6.7	NE	11.9	0.03	✖	10	10‡	‡
04 Nov. 1999	15:00	S27	865.5	-7.1	NE	18.2	0.01	✖	10	10‡	‡
04 Nov. 1999	21:00	S27	864.5	-8.1	NE	18.4	0.01	✖	10	10‡	‡
05 Nov. 1999	03:00	S27		-8.7		12.3					
05 Nov. 1999	08:00	S27	874.0	-8.3	NE	8.1	0.2	✖	10	10‡	‡
05 Nov. 1999	15:00	H27	859.9	-8.5	NE	6.7	0.5	✖	10	10Sc	‡
05 Nov. 1999	21:00	H80	845.1	-10.9	E	5.3	15	⊙	10	1Sc;5Ac;10As	
06 Nov. 1999	03:00	H80		-12.1		6.8					
06 Nov. 1999	08:00	H80	844.2	-12.3	E	8.5	0.8	‡	10 -	0+Sc;0+Ac;7Cs;3Ci	‡
06 Nov. 1999	15:00	H152	819.8	-11.3	ENE	10.4	0.5	‡	10 -	2Ac;10-Cs	‡
06 Nov. 1999	21:00	H188	811.7	-13.0	E	9.7	0.5	‡	10 -	1Ac;10-Cs	‡
07 Nov. 1999	03:00	H188		-15.7		11.6					
07 Nov. 1999	08:00	H188	817.7	-15.4	E	9.5	1	⊕	10	10Cs	‡
07 Nov. 1999	15:00	H268	795.5	-15.4	E	10.2	0.4	‡	10 -	1Ac;1Cc;10-Cs	‡
07 Nov. 1999	21:00	H293	786.8	-19.0	E	10.4	1	⊕	10 -	3Ac;2Cc;10-Ci	‡
08 Nov. 1999	03:00	H293		-23.5		10.7					
08 Nov. 1999	08:00	H293	787.1	-20.8	E	13.5	0.2	‡	0 +	0+Ci	‡
08 Nov. 1999	15:00	Z34	766.7	-17.9	E	9.8	1	○	0 +	0+Ac;0+Ci	‡
08 Nov. 1999	21:00	Z70	758.2	-27.0	ESE	12.3	0.2	‡	0 +	0+Ci	‡
09 Nov. 1999	03:00	Z70		-31.3		12.3					
09 Nov. 1999	08:00	Z70	753.0	-24.5	ESE	13.0	0.2	‡	0 -		‡
09 Nov. 1999	15:00	IM0	744	* -21.0 *	ESE	14 *	0.3	‡	0 -		‡
09 Nov. 1999	21:00	IM0	739.1	-27.3	ESE	11.9	0.3	‡	0 +	0+Ac	‡
10 Nov. 1999	03:00	IM0		-32.5		10.6					
10 Nov. 1999	08:00	IM0	737.0	-28.0	ESE	12.4	0.3	‡	0 -		‡
10 Nov. 1999	15:00	MD24	728.3	-23.2	ESE	7.9	10	○	0 +	0+Ac;0+Cc;0+Ci	‡
10 Nov. 1999	21:00	MD38	725.3	-31.3	ESE	7.4	20	○	1	0+Ac;0+Cc;1Ci	‡
11 Nov. 1999	03:00	MD38		-36.2		8.3					
11 Nov. 1999	08:00	MD38	725.1	-30.8	ESE	9.5	1	⊕	10 -	0+Ac;10-Ci	‡
11 Nov. 1999	15:00	MD70	713.0	-26.7	E	7.8	10	○	1	0+Ac;0+Cc;1Ci	‡
11 Nov. 1999	21:00	MD86	708.7	-33.0	ESE	7.4	20	○	0 -		‡
12 Nov. 1999	03:00	MD86		-36.9		8.8					
12 Nov. 1999	08:00	MD86	711.1	-31.4	ESE	7.1	15	○	0 +	0+Ac;0+Ci	‡
12 Nov. 1999	15:00	MD118	701.1	-24.7	E	6.1	30	○	0 +	0+Ac;0+Ci	
12 Nov. 1999	21:00	MD134	695.7	-31.9	ESE	6.0	30	⊕	7	0+Ac;3Cc;4Ci	
13 Nov. 1999	03:00	MD134		-36.6		6.6					
13 Nov. 1999	08:00	MD134	695.6	-31.9	ESE	7.7	8	○	0 +	0+Ac;0+Ci	‡
13 Nov. 1999	15:00	MD160	684.8	-26.5	ESE	7.4	10	○	0 +	0+Ci	‡
13 Nov. 1999	21:00	MD172	680.5	-33.0	ESE	5.5	30	○	0 +	0+Ci	
14 Nov. 1999	03:00	MD172		-36.9		4.7					
14 Nov. 1999	08:00	MD172	681.3	-31.1	ESE	7.0	10	⊕	10 -	0+Ac;0+Cc;4Ci;6Cs	→
14 Nov. 1999	15:00	MD202	669.0	-25.6	ENE	5.9	5	✖	10	10St	✖

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
14 Nov. 1999	21:00	MD220	664.3	-31.0	ESE	3.5	5	✕	10	7Ac;10Cs	✕
15 Nov. 1999	03:00	MD220		-37.5		4.5					
15 Nov. 1999	08:00	MD220	664.6	-32.4	SE	5.0	8	⊕	7	0+Ac;3Cc;7Ci	→
15 Nov. 1999	15:00	MD244	656.6	-26.4	ENE	4.9	10	⊕	10 -	0+Ac;7Cs;3Ci	→
15 Nov. 1999	21:00	MD244	657.9	-34.2	SE	2.9	15	⊕	10 -	3Ac;4Cc;9Ci	→
16 Nov. 1999	03:00	MD244		-40.2		6.1					
16 Nov. 1999	08:00	MD244	659.2	-35.3	SE	6.8	5	○	0 +	0+Ac;0+Cc;0+Ci	→, †
16 Nov. 1999	15:00	MD276	650.5	-30.0	ESE	5.6	10	○	0 +	0+Ac;0+Ci	→, †
16 Nov. 1999	21:00	MD294	644.4	-37.1	SE	5.9	8	⊕	10 -	0+Ac;7Cs;3Ci	→, †
17 Nov. 1999	03:00	MD294		-40.6		5.9					
17 Nov. 1999	08:00	MD294	646.0	-35.9	SE	6.5	3	⊕	10 -	0+Ac;10-Cs	→, †
17 Nov. 1999	15:00	MD326	639.5	-30.6	ESE	5.7	3	⊕	10 -	0+Ac;6Cs;4Ci	→, †
17 Nov. 1999	21:00	MD348	635.7	-38.8	SE	4.1	20	⊕	10 -	0+Ac;10-Cs	
18 Nov. 1999	03:00	MD348		-42.9		3.3					
18 Nov. 1999	08:00	MD348	638.8	-36.7	SE	5.6	30	○	1	0+Ac;1Ci	
18 Nov. 1999	15:00	MD370	634.1	-31.8	SE	5.2	30	⊕	4	4Ci	
18 Nov. 1999	21:00	MD388	630.6	-41.3	SSE	4.1	30	○	0 +	0+Cc;0+Ci	→
19 Nov. 1999	03:00	MD388		-45.8		5.8					
19 Nov. 1999	08:00	MD388	630.8	-39.0	SE	6.9	1.5	○	0 +	0+Ci	→, †
19 Nov. 1999	15:00	MD420	622.1	-33.6	SE	6.7	4	⊕	9	7Cs;2Ci	†
19 Nov. 1999	21:00	MD440	617.7	-41.6	SE	5.8	10	⊕	4	2Cs;2Ci	†
20 Nov. 1999	03:00	MD440		-46.3		6.6					
20 Nov. 1999	08:00	MD440	615.9	-40.1	SE	7.5	3	○	1	1Ci	†
20 Nov. 1999	15:00	MD440	613.5	-33.2	SE	8.7	0.8	†	10 -	9Cs;1Ci	†
20 Nov. 1999	21:00	MD440	613.5	-38.7	SE	6.3	1	⊕	10 -	2Ac;10-Cs	†
21 Nov. 1999	03:00	MD440		-45.5		4.1					
21 Nov. 1999	08:00	MD440	614.4	-41.0	SE	5.2	1.5	○	1	1Ci	→, †
21 Nov. 1999	15:00	MD474	610.1	-34.7	E	3.6	10	⊕	3	0+Ac;2Cs;1Ci	→
21 Nov. 1999	21:00	MD494	608.6	-43.6	ESE	1.8	20	⊕	6	0+Ac;1Cc;3Cs;3Ci	→
22 Nov. 1999	03:00	MD494		-47.7		1.1					
22 Nov. 1999	08:00	MD494	609.1	-41.3	SE	2.2	8	⊕	7	7Cs	→
22 Nov. 1999	15:00	MD528	605.7	-35.7	ENE	1.7	8	⊕	7	3Ac;0+Cc;7Ci	→
22 Nov. 1999	21:00	MD546	603.8	-43.5	SE	1.0	15	⊕	9	0+Ac;7Cs;2Ci	→
23 Nov. 1999	03:00	MD546		-46.2		1.3					
23 Nov. 1999	08:00	MD546	604.6	-42.3	ESE	1.7	20	⊕	4	2Cs;2Ci	→
23 Nov. 1999	15:00	MD580	598.6	-36.6	NE	1.9	20	⊕	8	0+Ac;5Cs;3Ci	→
23 Nov. 1999	21:00	MD598	595.8	-43.5	E	0.5	8	⊕	10	2Ac;3As;10Cs	→
24 Nov. 1999	03:00	MD598		-48.7		0.5					
24 Nov. 1999	08:00	MD598	596.4	-44.1	ESE	1.5	20	○	0 +	0+Ci	→
24 Nov. 1999	15:00	MD632	594.1	-37.8	-	0.0	30	○	1	0+Ac;1Ci	→
24 Nov. 1999	21:00	MD652	592.4	-45.8	-	0.0	30	○	0 +	0+Ac;0+Ci	→
25 Nov. 1999	03:00	MD652		-50.8		0.6					
25 Nov. 1999	08:00	MD652	594.6	-45.6	WSW	1.3	30	⊕	3	0+Ac;3Ci	→
25 Nov. 1999	15:00	MD690	592.2	-36.4	WNW	2.0	30	○	0 +	0+Ac;0+Ci	→
25 Nov. 1999	21:00	MD710	591.1	-48.0	NW	1.3	20	⊕	2	0+Ac;2Ci	→
26 Nov. 1999	03:00	MD710		-39.2		0.2					
26 Nov. 1999	08:00	MD710	591.2	-44.3	-	0.0	20	⊕	2	0+Ac;2Ci	→
26 Nov. 1999	15:00	DomeF	590.6	-37.0	NE	2.0	30	⊕	4	0+Ac;4Ci	→
26 Nov. 1999	21:00	DomeF	587.2	-45.1	NE	2.3	30	○	0 +	0+Ac;0+Ci	→
27 Nov. 1999	03:00	DomeF		-48.3		1.4					
27 Nov. 1999	08:00	DomeF	589.5	-44.1	NNE	1.5	10	⊕	5	0+Ac;5Ci	→
27 Nov. 1999	15:00	DomeF	588.0	-36.7	NNW	3.9	20	⊕	3	3Ci	→
27 Nov. 1999	21:00	DomeF	586.9	-46.1	NNE	1.6	15	○	1	0+Ac;1Ci	→
28 Nov. 1999	03:00	DomeF		-47.7		1.2					

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
28 Nov. 1999	08:00	DomeF	588.5	-44.7	WNW	0.3	20	○	0 +	0+Ac;0+Ci	↔
28 Nov. 1999	15:00	DomeF	587.0	-37.7	W	1.2	30	○	0 +	0+Ac;0+Ci	↔
28 Nov. 1999	21:00	DomeF	586.5	-42.5	N	0.3	30	○	0 +	0+Ac;0+Ci	↔
29 Nov. 1999	03:00	DomeF		-45.6		0.0					
29 Nov. 1999	08:00	DomeF	586.7	-44.9	ESE	0.7	30	○	0 +	0+Ci	↔
29 Nov. 1999	15:00	DomeF	586.0	-37.9	E	3.0	20	⊕	5	5Ci	↔
29 Nov. 1999	21:00	DomeF	587.6	-45.2	ENE	2.6	8	⊕	9	1Ac;9Cs	↔
30 Nov. 1999	03:00	DomeF		-50.6		2.6					
30 Nov. 1999	08:00	DomeF	588.4	-42.0	NE	2.6	20	⊕	9	0+Ac;7Cs;2Ci	↔
30 Nov. 1999	15:00	DomeF	586.8	-35.4	NE	5.1	15	⊕	10 -	10-Cs	↔
30 Nov. 1999	21:00	DomeF	584.1	-44.4	ENE	2.5	20	⊕	7	0+Ac;1Cc;7Ci	↔
01 Dec. 1999	03:00	DomeF		-49.1		2.3					
01 Dec. 1999	08:00	DomeF	587.6	-43.7	NE	1.4	20	⊕	9	0+Ac;9Ci	↔
01 Dec. 1999	15:00	DomeF	586.3	-36.4	NE	2.5	30	⊕	7	1Cc;7Ci	↔
01 Dec. 1999	21:00	DomeF	586.7	-45.0	E	2.5	30	○	0 +	0+Ac;0+Ci	↔
02 Dec. 1999	03:00	DomeF		-49.6		2.3					
02 Dec. 1999	08:00	DomeF	586.4	-42.4	NNE	2.2	15	⊕	10	0+Ac;10Cs	↔
02 Dec. 1999	15:00	DomeF	584.8	-36.3	NNW	3.9	20	⊕	4	0+Ac;3Cs;1Ci	↔
02 Dec. 1999	21:00	DomeF	583.7	-46.2	N	1.6	20	⊕	2	2Ci	↔
03 Dec. 1999	03:00	DomeF		-51.9		1.4					
03 Dec. 1999	08:00	DomeF	585.2	-44.1	W	0.8	30	○	0 +	0+Ac;0+Ci	↔
03 Dec. 1999	15:00	DomeF	586.4	-36.7	W	2.9	30	○	0 +	0+Ci	↔
03 Dec. 1999	21:00	DomeF	585.0	-46.4	WNW	1.1	30	○	0 +	0+Ci	↔
04 Dec. 1999	03:00	DomeF		-50.8		0.6					
04 Dec. 1999	08:00	DomeF	585.3	-42.0	-	0.2	30	○	0 +	0+Ac	↔
04 Dec. 1999	15:00	DomeF	585.1	-37.6	ENE	1.1	30	○	0	-	↔
04 Dec. 1999	21:00	DomeF	585.1	-41.7	-	0.2	30	○	0 +	0+Ac	↔
05 Dec. 1999	03:00	DomeF		-42.6		0.7					
05 Dec. 1999	08:00	DomeF	585.9	-44.0	SW	0.9	15	○	0	-	↔
05 Dec. 1999	15:00	DomeF	587.5	-37.4	SSW	1.6	30	○	0	-	
05 Dec. 1999	21:00	DomeF	587.9	-43.6	SSW	0.6	30	○	0	-	
06 Dec. 1999	03:00	DomeF		-45.6		0.8					
06 Dec. 1999	08:00	DomeF	589.7	-43.0	SW	0.8	20	○	0	-	↔
06 Dec. 1999	15:00	DomeF	589.9	-37.0	NE	0.8	30	○	0 +	0+Ac	
06 Dec. 1999	21:00	DomeF	590.4	-40.8	ENE	2.3	30	○	0 +	0+Ci	
07 Dec. 1999	03:00	DomeF		-44.9		2.7					
07 Dec. 1999	08:00	DomeF	591.5	-39.8	ENE	4.2	20	⊕	10 -	8Cs;2Ci	
07 Dec. 1999	15:00	DomeF	591.2	-32.6	NE	7.6	1	⊕	10 -	10-Cs	†,↔
07 Dec. 1999	21:00	DomeF	591.7	-34.7	NE	6.3	2	⊕	10 -	1Ac;10-Cs	†
08 Dec. 1999	03:00	DomeF		-36.1		5.5					
08 Dec. 1999	08:00	DomeF	593.7	-32.5	NE	7.3	0.8	†	10	3Ac;10Cs	†
08 Dec. 1999	15:00	DomeF	593.4	-29.1	NNE	8.0	0.5	†	10	10As	†
08 Dec. 1999	21:00	DomeF	593.4	-32.0	NNE	4.1	8	⊙	10	9Ac;10As	†
09 Dec. 1999	03:00	DomeF		-34.7		1.7					
09 Dec. 1999	08:00	DomeF	595.3	-33.4	WNW	1.9	20	⊕	7	4Cc;3Ci	
09 Dec. 1999	15:00	DomeF	594.4	-28.7	NNW	2.9	30	⊕	10 -	0+Ac;9Cc;1Ci	
09 Dec. 1999	21:00	DomeF	594.5	-33.1	SW	0.8	30	⊕	9	4Cc;5Ci	
10 Dec. 1999	03:00	DomeF		-34.7		0.7					
10 Dec. 1999	08:00	DomeF	592.9	-34.6	W	1.1	20	⊕	10 -	0+Ac;10-Cs	
10 Dec. 1999	15:00	MD698	593.5	-26.3	NNW	2.8	30	⊕	10	0+Ac;10Cs	
10 Dec. 1999	21:00	MD676	593.6	-28.8	NNW	2.3	15	✱	10	1Ac;2As;10Cs	✱
11 Dec. 1999	03:00	MD676		-32.4		1.4					
11 Dec. 1999	08:00	MD676	590.4	-32.0	NNW	2.5	15	⊕	10	10Cs	
11 Dec. 1999	15:00	MD636	590.7	-28.7	NNW	5.0	30	⊕	10 -	1Ac;1Cc;10-Cs	↔

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
11 Dec. 1999	21:00	MD620	591.8	-35.5	W	1.6	20	⊕	10 -	0+Ac;4Cc;6Ci	↔
12 Dec. 1999	03:00	MD620		-37.4		1.8					
12 Dec. 1999	08:00	MD620	591.8	-38.5	W	1.0	30	○	1	0+Ac;1Ci	↔
12 Dec. 1999	15:00	MD620	592.5	-32.8	WNW	0.9	30	⊕	7	0+Ac;3Cc;4Ci	↔
12 Dec. 1999	21:00	MD620	592.2	-35.5	WSW	1.5	20	⊕	5	0+Ac;5Ci	↔
13 Dec. 1999	03:00	MD620		-36.1		1.8					
13 Dec. 1999	08:00	MD620	592.9	-39.0	WNW	2.0	20	⊕	3	0+Ac;1Cc;2Ci	↔
13 Dec. 1999	15:00	MD594	596.1	-31.5	NW	4.0	15	⊕	7	7Ac;0+Ci	↔
13 Dec. 1999	21:00	MD572	599.2	-37.7	NW	1.0	30	○	1	0+Ac;1Ci	↔
14 Dec. 1999	03:00	MD572		-33.3		0.6					
14 Dec. 1999	08:00	MD572	601.0	-37.1	SE	0.4	15	⊕	10 -	0+Ac;10-Cs	↔
14 Dec. 1999	15:00	MD542	605.4	-29.5	ESE	1.9	20	⊕	7	0+Ac;3Cc;4Ci	↔
14 Dec. 1999	21:00	MD522	609.0	-37.4	SSE	1.6	20	⊕	6	1Ac;2Cc;4Ci	↔
15 Dec. 1999	03:00	MD522		-41.0		3.9					
15 Dec. 1999	08:00	MD522	610.6	-35.8	ESE	5.6	8	⊕	10 -	3Cc;7Ci	‡,↔
15 Dec. 1999	15:00	MD500	612.4	-30.6	E	5.1	20	○	0 +	0+Ac;0+Cc;0+Ci	↔
15 Dec. 1999	21:00	MD500	614.7	-36.6	ESE	2.7	20	⊕	10 -	0+Ac;2Cc;8Ci	
16 Dec. 1999	03:00	MD500		-39.5		2.9					
16 Dec. 1999	08:00	MD500	617.7	-34.8	ESE	4.5	8	⊕	10 -	10-Cs	‡,↔
16 Dec. 1999	15:00	MD484	619.9	-29.6	ENE	5.6	8	⊕	10 -	10-Cs	‡,↔
16 Dec. 1999	21:00	MD478	621.2	-34.6	ESE	3.3	10	⊕	7	0+Ac;1Cc;7Ci	↔
17 Dec. 1999	03:00	MD478		-39.3		3.9					
17 Dec. 1999	08:00	MD478	621.8	-35.0	ESE	5.9	6	⊕	7	7Ci	‡,↔
17 Dec. 1999	15:00	MD478	620.2	-29.6	ESE	8.2	0.5	‡	10 -	4Ac;1Cc;8Ci	‡
17 Dec. 1999	21:00	MD478	619.7	-34.4	ESE	4.5	15	⊕	7	0+Ac;2Cc;5Ci	↔
18 Dec. 1999	03:00	MD478		-38.1		4.0					
18 Dec. 1999	08:00	MD478	620.7	-34.1	SE	6.2	5	○	1	1Ac;0+Ci	‡,↔
18 Dec. 1999	15:00	MD438	624.4	-27.8	E	6.7	4	⊕	9	5Cc;4Ci	‡,↔
18 Dec. 1999	21:00	MD418	628.3	-32.3	ESE	3.1	30	○	0 +	0+Ac;0+Ci	↔
19 Dec. 1999	03:00	MD418		-35.7		2.9					
19 Dec. 1999	08:00	MD418	628.8	-32.7	SSE	4.2	30	○	0 +	0+Ac;0+Ci	↔
19 Dec. 1999	15:00	MD380	635.6	-26.6	SE	5.0	30	○	0 +	0+Ac	
19 Dec. 1999	21:00	MD364	637.5	-31.4	SSE	3.2	30	○	0	-	
20 Dec. 1999	03:00	MD364		-35.9		4.3					
20 Dec. 1999	08:00	MD364	639.6	-31.7	SE	5.8	30	○	0 +	0+Ac;0+Ci	
20 Dec. 1999	15:00	MD364	640.4	-26.3	SE	6.6	30	○	0 +	0+Ac	‡
20 Dec. 1999	21:00	MD364	640.7	-31.3	SE	3.6	30	○	0 +	0+Ac;0+Ci	
21 Dec. 1999	03:00	MD364		-35.5		4.3					
21 Dec. 1999	08:00	MD364	643.7	-31.2	SE	6.9	15	○	0 +	0+Ac;0+Ci	‡
21 Dec. 1999	15:00	MD330	652.2	-24.0	SE	7.3	10	○	1	0+Cc;1Ci	‡
21 Dec. 1999	21:00	MD312	656.2	-28.7	SE	4.8	30	○	0 +	0+Cc;0+Ci	
22 Dec. 1999	03:00	MD312		-32.4		6.7					
22 Dec. 1999	08:00	MD312	653.8	-27.8	SE	7.6	10	○	0 +	0+Ac;0+Ci	‡
22 Dec. 1999	15:00	MD278	660.3	-21.8	ESE	8.5	5	○	0 +	0+Ac	‡
22 Dec. 1999	21:00	MD260	661.8	-26.2	SE	5.5	20	○	0 +	0+Ac	‡
23 Dec. 1999	03:00	MD260		-29.5		8.0					
23 Dec. 1999	08:00	MD260	658.3	-26.2	SE	9.0	1.2	○	0 +	0+Ac	‡
23 Dec. 1999	15:00	MD226	665.6	-21.4	ESE	10.2	1	⊕	2	2Ci	‡
23 Dec. 1999	21:00	MD222	666.1	-25.3	SE	5.8	20	○	1	0+Ac;1Ci	‡
24 Dec. 1999	03:00	MD222		-29.6		5.6					
24 Dec. 1999	08:00	MD222	666.5	-26.6	SE	8.9	6	○	0 +	0+Ac;0+Ci	‡
24 Dec. 1999	15:00	MD188	677.8	-21.1	ESE	6.7	10	○	0 +	0+Ac;0+Ci	‡
24 Dec. 1999	21:00	MD172	686.6	-25.6	ESE	4.1	30	○	0 +	0+Ci	
25 Dec. 1999	03:00	MD172		-30.5		5.2					

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
25 Dec. 1999	08:00	MD172	690.7	-26.3	ESE	5.2	30	○	0 +	0+Ac	
25 Dec. 1999	15:00	MD144	698.6	-22.7	E	5.4	30	○	0 +	0+Ac	
25 Dec. 1999	21:00	MD128	704.2	-26.2	S	1.2	30	○	0 +	0+Ac;0+Ci	
26 Dec. 1999	03:00	MD128		-29.6		4.0					
26 Dec. 1999	08:00	MD128	703.9	-25.3	ESE	4.5	30	⊕	3	0+Ac;2Cc;1Ci	
26 Dec. 1999	15:00	MD96	710.7	-19.5	E	4.7	30	⊕	5	3Ac;2Ci	
26 Dec. 1999	21:00	MD78	718.3	-22.1	ESE	2.8	30	⊙	10 -	10-Ac;XCi	
27 Dec. 1999	03:00	MD78		-22.8		2.2					
27 Dec. 1999	08:00	MD78	716.7	-19.7	ESE	3.7	15	⊙	10	10Ac	
27 Dec. 1999	15:00	MD46		-16.2 *	SE	1.8	10	✱	10 -	2Sc;10-Ac	✱
27 Dec. 1999	21:00	MD32		-19.8 *	ESE	4.8	10	✱	10 -	8Sc;XAc	✱
28 Dec. 1999	03:00	MD32		-27.2		3.4					
28 Dec. 1999	08:00	MD32		-22.8 *	E	4.9	8	⊕	2	2Ac	→, ⊕
28 Dec. 1999	15:00	MD0	736	* -17.7 *	NE	3.9	30	⊙	9	9Sc;0+Ac	
28 Dec. 1999	21:00	IM2	737	* -21.3 *	WNW	2.0	20	⊕	5	4Sc;0+Ac;1Ci	
29 Dec. 1999	03:00	IM2		-22.2		2.9					
29 Dec. 1999	08:00	IM2	738	* -21.9 *	ENE	3.6	15	⊕	6	0+Sc;2Ac;1Cc;4Ci	
29 Dec. 1999	15:00	IM2	738	* -17.8 *	E	5.9	10	⊕	10 -	0+Sc;0+Ac;8Cs;2Ci	
29 Dec. 1999	21:00	IM2	733.7	-22.4	ESE	4.5	20	⊕	10 -	0+Sc;0+Ac;10-Cs;0+Cc	
30 Dec. 1999	03:00	IM2		-25.2		7.4					
30 Dec. 1999	08:00	IM2	734.5	-22.0	E	8.4	6	⊕	7	0+Ac;7Cs	⊕
30 Dec. 1999	15:00	YM13	738.8	-17.6	ENE	6.9	10	⊕	9	0+Ac;0+Cc;7Cs;2Ci	⊕
30 Dec. 1999	21:00	YM15	738.8	-22.4	ESE	4.0	20	⊕	10 -	0+Ac;1Cc;10-Cs	
31 Dec. 1999	03:00	YM15		-26.1		5.9					
31 Dec. 1999	08:00	YM15	741.5	-19.5	E	4.5	20	⊕	7	0+Sc;1Ac;0+Cc;7Ci	
31 Dec. 1999	15:00	YM30	745.2	-16.2	ENE	5.0	20	⊕	10 -	4Sc;10-Cs	
31 Dec. 1999	21:00	YM30	745.0	-21.6	ESE	2.8	30	⊕	10 -	0+Sc;0+Ac;0+Cc;7Cs;3Ci	
01 Jan. 2000	03:00	YM30		-25.2		5.3					
01 Jan. 2000	08:00	YM30	743.1	-20.9	E	6.2	20	⊕	9	3Cc;6Ci	⊕
01 Jan. 2000	15:00	YM30	739.3	-17.1	ESE	8.0	15	⊕	2	0+Ac;2Ci	⊕
01 Jan. 2000	21:00	YM30	737.7	-20.8	ESE	6.5	20	○	0 +	0+Ci	⊕
02 Jan. 2000	03:00	YM30		-24.6		6.8					
02 Jan. 2000	08:00	YM30	736.7	-19.7	E	5.2	20	⊕	10 -	3Ac;1Cc;1Ci;7Cs	
02 Jan. 2000	15:00	YM45	727.5	-16.7	E	4.6	30	⊕	7	0+Ac;2Ci;5Cs	
02 Jan. 2000	21:00	YM50	728.9	-22.2	ESE	2.7	30	⊕	7	0+Ac;2Ci;5Cs	
03 Jan. 2000	03:00	YM50		-27.5		4.5					
03 Jan. 2000	08:00	YM50	726.9	-22.4	E	4.7	20	⊕	10 -	0+Ac;1Cc;10-Cs	
03 Jan. 2000	15:00	YM65	729.3	-17.1	ENE	5.1	20	⊙	10 -	9Sc;XAc;XCi	
03 Jan. 2000	21:00	YM70	729.9	-19.3	E	3.7	20	✱	10 -	10-Sc;XAc	✱
04 Jan. 2000	03:00	YM70		-20.9		2.7					
04 Jan. 2000	08:00	YM70	731.2	-19.6	E	6.6	6	✱	10	10Sc	✱
04 Jan. 2000	15:00	YM80	729.6	-17.8	ENE	5.1	6	✱	10	10Sc	✱
04 Jan. 2000	21:00	YM85	732.7	-19.2	N	1.9	15	✱	10	8Sc;10Ac	✱
05 Jan. 2000	03:00	YM85		-19.5		2.1					
05 Jan. 2000	08:00	YM85	735.3	-19.3	E	3.1	5	✱	10 -	10-Sc;XCi	✱
05 Jan. 2000	15:00	YM94	733.1	-17.0	ENE	4.0	20	⊙	10 -	4Sc;10-Ac;XCi	
05 Jan. 2000	21:00	YM100	734.5	-22.7	SE	3.5	30	○	1	0+Sc;0+Ac;1Ci	
06 Jan. 2000	03:00	YM100		-27.1		5.2					
06 Jan. 2000	08:00	YM100	733.1	-24.1	SE	6.8	15	⊕	5	5Ci	⊕
06 Jan. 2000	15:00	YM114	730.2	-18.1	E	5.3	20	⊕	9	9Ci	⊕
06 Jan. 2000	21:00	YM120	727.5	-22.1	SE	4.6	30	⊕	5	0+Ac;2Cc;3Ci	
07 Jan. 2000	03:00	YM120		-26.1		6.5					
07 Jan. 2000	08:00	YM120	726.8	-22.5	SE	6.5	15	⊙	10 -	10-Ac	
07 Jan. 2000	15:00	YM134	722.4	-17.9	ENE	5.1	20	⊕	8	3Sc;1Ac;0+Cc;7Ci	

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
07 Jan. 2000	21:00	YM140	721.9	-20.4	E	3.7	15	✖	10	4Sc;10Ac	✖
08 Jan. 2000	03:00	YM140		-26.8		2.2					
08 Jan. 2000	08:00	YM140	724.7	-22.3	SE	3.5	20	⊕	10	0+Cc;10-Cs	
08 Jan. 2000	15:20	YM154	721.3	-18.3	ENE	2.2	15	✖	6	0+Sc;2Ac;2Cc;6Ci	✖
08 Jan. 2000	21:00	YM154	722.3	-19.5	E	3.3	10	✖	10	10-Sc;XAc;XCi	✖
09 Jan. 2000	03:00	YM154		-23.6		3.0					
09 Jan. 2000	08:00	YM154	725.9	-20.8	ESE	6.7	5	✖	10	7Sc;10-Ci	✚
09 Jan. 2000	15:00	YM154	725.9	-16.8	E	10.4	0.3	✖	10	3✚;XCc;XCc	✚
09 Jan. 2000	21:00	YM154	723.2	-20.4	E	11.0	0.15	✖	10	10✚	✚
10 Jan. 2000	03:00	YM154		-23.7		12.4					
10 Jan. 2000	08:00	YM154	718.0	-22.2	ESE	14.5	0.1	✖	10	5✚;XCc	✚
10 Jan. 2000	15:00	YM154	712.4	-17.8	E	15.0	0.02	✖	10	10✚	✚
10 Jan. 2000	21:00	YM154	711.6	-16.7	E	7.1	0.5	✖	10	3✚;XCc	✚
11 Jan. 2000	03:00	YM154		-18.7		5.9					
11 Jan. 2000	08:00	YM154	711.8	-16.5	E	8.1	0.15	✖	10	10✚	✚
11 Jan. 2000	15:00	YM154	710.6	-14.0	E	9.5	0.3	✖	10	4✚;XCc	✚
11 Jan. 2000	21:00	YM154	708.9	-14.7	E	6.3	1	✖	10	10As	✚
12 Jan. 2000	03:00	YM154		-15.6		7.7					
12 Jan. 2000	08:00	YM154	712.1	-16.3	E	9.7	0.2	✖	10	4✚;XCc	✚
12 Jan. 2000	15:00	YM154	715.8	-15.6	ENE	8.3	0.3	✚	7	1Sc;0+Ac;4Cc;6Ci	✚
12 Jan. 2000	21:00	YM154	717.7	-16.4	E	8.5	1	⊙	10	9Sc;XAc;XCi	✚
13 Jan. 2000	03:00	YM154		-20.0		11.1					
13 Jan. 2000	08:00	YM154	718.0	-18.7	E	12.8	0.1	✚	10	10-✚;XAc	✚
13 Jan. 2000	15:00	YM154	717.3	-14.6	E	12.2	0.1	✚	10	10-✚	✚
13 Jan. 2000	21:00	YM154	716.9	-17.2	E	11.3	0.2	✚	9	9Ac;XCc	✚
14 Jan. 2000	03:00	YM154		-19.9		11.5					
14 Jan. 2000	08:00	YM154	716.3	-18.2	E	12.2	0.15	✚	3	1Ac;0+Cc;3Ci	✚
14 Jan. 2000	15:00	YM139	721.3	-15.5	E	12.1	0.4	✚	8	1Sc;4Cc;4Ci	✚
14 Jan. 2000	21:00	YM129	724.2	-18.2	ESE	9.0	5	⊕	9	0+Ac;0+Cc;6Cs;3Ci	✚
15 Jan. 2000	03:00	YM129		-22.7		11.7					
15 Jan. 2000	08:00	YM129	720.9	-21.7	ESE	13.7	0.15	✚	1	1Ci	✚
15 Jan. 2000	15:00	YM116	722.6	-18.3	ESE	15.1	0.05	✚	3	3✚	✚
15 Jan. 2000	21:00	YM112	724.8	-21.9	ESE	10.9	1	⊕	5	0+Sc;0+Ac;4Cc;1Ci	✚
16 Jan. 2000	03:00	YM112		-25.1		9.7					
16 Jan. 2000	08:00	YM112	728.7	-22.2	ESE	10.7	1	⊙	10	10-Ac;XCi	✚
16 Jan. 2000	15:00	YM92	729.5	-18.3	E	9.8	1.5	⊕	7	0+Ac;2Cc;5Ci	✚
16 Jan. 2000	21:00	YM84	732.5	-19.9	ESE	9.3	8	⊕	9	0+Ac;9Cs	✚
17 Jan. 2000	03:00	YM84		-22.5		10.7					
17 Jan. 2000	08:00	YM84	734.6	-20.8	ESE	12.2	0.4	✚	10	1Ac;10-Ci	✚
17 Jan. 2000	15:00	YM67	735.1	-15.5	E	10.3	1.5	⊕	10	10-Cs	✚
17 Jan. 2000	21:00	YM60	731.0	-20.4	ESE	7.3	15	⊕	4	1Ac;3Cc;1Ci	✚
18 Jan. 2000	03:00	YM60		-22.6		10.8					
18 Jan. 2000	08:00	YM60	730.4	-21.6	ESE	10.3	1.2	⊕	2	1Ac;2Ci	✚
18 Jan. 2000	15:00	YM60	731.8	-14.6	E	9.6	5	⊙	10	1Sc;9Ac;XCi	✚
18 Jan. 2000	21:00	YM60	736.1	-16.3	E	6.8	3	✖	10	3Sc;10Ac	✚
19 Jan. 2000	03:00	YM60		-20.1		7.4					
19 Jan. 2000	08:00	YM60	742.6	-19.6	ESE	8.4	1.5	⊕	10	1Ac;10-Cs	✚
19 Jan. 2000	15:00	CF22	731.5	-16.9	ESE	7.1	15	⊕	5	0+Ac;1Cc;4Ci	✚
19 Jan. 2000	21:00	CF40	722.5	-22.1	SE	5.7	30	○	0	0+Ac;0+Ci	
20 Jan. 2000	03:00	CF40		-27.4		8.5					
20 Jan. 2000	08:00	CF40	721.1	-24.5	ESE	8.0	10	○	0	0+Ac;0+Ci	✚
20 Jan. 2000	15:00	CF62	709.3	-18.8	ESE	9.3	10	○	0	0+Ci	✚
20 Jan. 2000	21:00	CF80	700.8	-23.7	SE	7.1	20	○	0	0+Ci	✚
21 Jan. 2000	03:00	CF80		-28.4		10.1					

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
21 Jan. 2000	08:00	CF80	700.2	-26.0	SE	9.8	1.5	○	0	-	+
21 Jan. 2000	15:00	CF80	698.9	-20.9	ESE	9.0	3	○	0	-	+
21 Jan. 2000	21:00	CF80	699.3	-26.2	ESE	6.5	20	○	0	-	+
22 Jan. 2000	03:00	CF80		-31.1		7.8					
22 Jan. 2000	08:00	CF80	701.3	-26.3	ESE	8.4	8	⊕	8	8Ac	+
22 Jan. 2000	15:00	CF102	691.0	-22.7	E	7.1	10	✖	10	- 10-Ac	✖, +
22 Jan. 2000	21:00	CF120	685.7	-25.8	ESE	6.5	15	✖	10	- 10-Ac	✖, +
23 Jan. 2000	03:00	CF120		-31.4		7.5					
23 Jan. 2000	08:00	CF120	686.0	-29.7	ESE	8.2	10	○	0	+ 0+Ac;0+Ci	+
23 Jan. 2000	15:00	CF146	674.3	-25.0	ESE	9.4	1.5	○	0	+ 0+Ac	+
23 Jan. 2000	21:00	CF162	669.1	-28.6	ESE	5.7	20	⊕	6	6Ac	
24 Jan. 2000	03:00	CF162		-31.1		5.6					
24 Jan. 2000	08:00	CF162	669.7	-27.1	E	6.3	20	○	1	1Ac	
24 Jan. 2000	15:00	MD240	666.3	-20.9	E	9.3	0.8	+	3	1Cc;3Ci	+
24 Jan. 2000	21:00	MD240	666.8	-25.4	ESE	5.8	20	⊕	7	0+Cc;7Ci	
25 Jan. 2000	03:00	MD240		-30.8		6.7					
25 Jan. 2000	08:00	MD240	668.6	-27.9	ESE	7.3	8	⊕	7	5Cc;2Ci	+
25 Jan. 2000	15:00	MD208	677.3	-21.2	E	7.6	10	⊕	7	7Ci	+
25 Jan. 2000	21:00	MD192	681.2	-24.3	ESE	7.6	10	⊕	10	- 3Ac;10-Ci	+
26 Jan. 2000	03:00	MD192		-26.4		8.7					
26 Jan. 2000	08:00	MD192	683.2	-24.9	E	9.2	0.8	+	10	- 10-Cs	+
26 Jan. 2000	15:00	MD164	691.7	-18.9	E	9.4	5	⊕	4	0+Ac;4Ci	+
26 Jan. 2000	21:00	MD150	695.5	-21.8	ESE	7.6	20	⊕	8	3Ac;8Ci	+
27 Jan. 2000	03:00	MD150		-30.4		9.9					
27 Jan. 2000	08:00	MD150	696.2	-27.6	ESE	10.4	3	○	1	1Ci	+
27 Jan. 2000	15:00	MD150	694.1	-21.0	ESE	9.5	8	○	0	+ 0+Ci	+
27 Jan. 2000	21:00	MD150	693.6	-27.0	SE	4.6	30	○	0	+ 0+Ac	
28 Jan. 2000	03:00	MD150		-32.1		7.2					
28 Jan. 2000	08:00	MD150	692.9	-28.7	ESE	8.5	20	○	1	1Ci	+
28 Jan. 2000	15:00	MD116	701.8	-22.6	E	5.1	30	○	0	+ 0+Ac;0+Ci	
28 Jan. 2000	21:00	MD96	706.4	-27.9	ESE	3.2	30	○	1	0+Ac;1Cc;0+Ci	
29 Jan. 2000	03:00	MD96		-32.6		4.9					
29 Jan. 2000	08:00	MD96	708.4	-28.2	E	5.3	15	⊕	2	1Ac;1Ci	↔
29 Jan. 2000	15:00	MD64	718.4	-20.0	NE	3.7	20	⊕	7	0+Sc;0+Ac;1Cc;6Ci	
29 Jan. 2000	21:00	MD44	724.3	-25.4	E	2.8	15	✖	10	- 2Sc;1Ac;10-Ci	✖
30 Jan. 2000	03:00	MD44		-32.9		4.4					
30 Jan. 2000	08:00	MD44	726.1	-29.5	ESE	5.0	30	○	1	0+Sc;1Ac;0+Ci	
30 Jan. 2000	15:00	MD6	736.1	-20.4	E	4 *	30	⊕	2	2Ac	
30 Jan. 2000	21:00	IM1	738.8	-27.5	SE	3.4	30	○	0	+ 0+Ac	
31 Jan. 2000	03:00	IM1		-34.5		4.8					
31 Jan. 2000	08:00	IM1	743.1	-29.9	ESE	4.5	30	○	0	+ 0+Ac	
31 Jan. 2000	15:00	IM1	744.5	-20.5	ESE	4.9	30	○	0	+ 0+Ci	
31 Jan. 2000	21:00	Z94	751.9	-25.9	E	8.1	15	⊕	2	2Ci	+
01 Feb. 2000	03:00	Z94		-29.5		11.5					
01 Feb. 2000	08:00	Z94	754.5	-24.3	E	11.9	0.4	+	7	1Cc;6Ci	+
01 Feb. 2000	15:00	Z46	762.0	-16.8	E	11.4	0.5	+	10	- 1Ac;10-Cs	+
01 Feb. 2000	21:00	Z21	770.7	-19.4	E	12.9	0.4	+	10	- 1Ac;1Cc;10-Cs	+
02 Feb. 2000	03:00	Z21		-25.1		14.0					
02 Feb. 2000	08:00	Z21	768.8	-21.3	E	15.4	0.15	+	2	2Ci	+
02 Feb. 2000	15:00	H290	780.5	-15.4	ESE	13.7	0.15	+	0	+ 0+Ac	+
02 Feb. 2000	21:00	H244	792.6	-18.6	ESE	11.9	0.8	+	0	+ 0+Ac	+
03 Feb. 2000	03:00	H244		-22.5		12.6					
03 Feb. 2000	08:00	H244	790.4	-18.7	E	10.2	1.5	○	0	-	+
03 Feb. 2000	15:00	H192	803.0	-13.8	E	9.4	6	⊕	2	2Cu	+

Date	LT	Station	Pa	Ta	WD	WS	V	W	N	CL	AP
03 Feb. 2000	21:00	H136	820.3	-17.0	E	7.0	20	○	1	0+Sc;1Ac	‡
04 Feb. 2000	03:00	H136		-20.7		8.2					
04 Feb. 2000	08:00	H136	823.5	-17.6	E	9.9	2	○	0 +	0+Sc;0+Ac;0+Ci	‡
04 Feb. 2000	15:00	H21	859.6	-10.1	ENE	7.6	0.8	✕	10	10As	‡‡
04 Feb. 2000	21:00	H3	863.5	-10.8	ENE	9.1	0.2	✕	10 -	10-Sc	‡‡
05 Feb. 2000	03:00	H3		-11.9		11.1					
05 Feb. 2000	08:00	S30	866	* -10.3 *	E	8 *	1.2	◎	10 -	1Sc;10-Ac	‡
05 Feb. 2000	15:00	S30	863	* -7.1 *	E	9 *	15	⊕	10 -	0+Cu;0+Ac;1Cc;10-Cs	
05 Feb. 2000	21:00	S30	853.1	-11.7	ESE	7.1	30	⊕	10 -	0+Sc;0+Ac;3Cc;10-Ci	
06 Feb. 2000	03:00	S30		-11.4		11.7					
06 Feb. 2000	08:00	S30	851.0	-9.6	E	14.5	20	⊕	7	0+Sc;4Ac;1Cc;7Ci	
06 Feb. 2000	15:00	S18	900	* -4.5 *	E	16 *	0.2	‡	3	1Sc;1Ac;2Ci	‡
06 Feb. 2000	21:00	S18	898.5	-5.9	ENE	14.8	0.2	‡	3	0+Sc;1Ac;1Cc;1Ci	‡
07 Feb. 2000	03:00	S18		-6.7		8.2					
07 Feb. 2000	08:00	S18	907.6	-5.7	ENE	9.4	0.3	‡	10 -	5Ac;10-Ci	‡
07 Feb. 2000	15:20	S16	917	* -4.7 *	ENE	10 *	0.6	‡	10 -	3Ac;10-Ci	‡
07 Feb. 2000	21:00	S16	915.0	-7.2	ENE	8.7	1.5	◎	10 -	3Sc;7Ac;10-Ci	‡
08 Feb. 2000	03:00	S16		-11.1		6.3					
08 Feb. 2000	08:00	S16	915	* -11.5 *	ESE	6 *	30	⊕	2	0+Sc;2Ac	
08 Feb. 2000	15:00	S16	914	* -4.3 *	SSW	1 *	20	○	0 +	0+Sc;0+Ac;0+Ci	
08 Feb. 2000	21:00	S16	914	* -12.9 *	ESE	4 *	15	⊕	3	3Sc;0+Ac	
09 Feb. 2000	03:00	S16									
09 Feb. 2000	08:00	S16	917	* -8.5 *	NNE	5 *	8	✕	10	0+St;10Sc	✕
09 Feb. 2000	15:00	S16	919	* -8.1 *	NE	9 *	1	✕	10	10Sc	✕
09 Feb. 2000	21:00	S16	919	* -8.1 *	NE	10 *	0.7	✕	10	10Sc	‡‡
10 Feb. 2000	03:00	S16									
10 Feb. 2000	08:00	S16	916	* -7.1 *	NE	12 *	0.5	✕	10	10Sc	‡‡
10 Feb. 2000	15:00	S16	916	* -7.3 *	NNE	10 *	1	✕	10	10Sc	‡‡
10 Feb. 2000	21:00	S16	919	* -8.5 *	NE	7 *	8	◎	10	0+St;10Sc	‡