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Glaciological Data Collected by the 44th Japanese Antarctic Research Expedition during 2003-2004

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1. Outline of field observations during 2003-2004

A five-year glaciological program, the deep ice coring project II at Dome Fuji (77°19'01"S, 39°42'11"E; 3810 m a.s.l.), East Antarctic ice sheet, was started in 2001. Shallow ice coring 112 m deep was carried out at Dome Fuji from November to December 2001 by the 42nd Japanese Antarctic Research Expeditions (JARE-42; Motoyama *et al.*, 2002). The coring site was about 42 m north from the first 2503 m deep ice coring hole during 1995-96 seasons by JARE-36 and -37. JARE-43 constructed a new ice coring shelter at Dome Fuji from November 2002 to January 2003 (Saito *et al.*, 2005, 2007).

In January 2003, the JARE-44 team started overwintering for preparation of deep ice coring and Glaciology, Meteorology and Upper Atmosphere Physics observations at Dome Fuji (Kameda *et al.*, 2005; Obinata, 2005). During 2003-04 five oversnow traverses were carried out by JARE-44 as shown in Table 1-1. Table 1-2 shows glaciological and meteorological observations conducted during the traverses. The participants for the traverses and their assignments in the JARE-44 program are listed in Table 1-3. Table 1-4 summarizes glaciological observations at Dome Fuji in the 2003-04 season. This report summarizes some of the results of glaciological observations carried out at Dome Fuji and also during the traverses.

We would like to express our sincere thanks to Dr. I. Obinata, Messrs. K. Takahashi, K. Taniguchi, T. Kurisaki and K. Nakano for their logistics support during our observations at Dome Fuji and during inland traverses. We also thank all other JARE-44 members who extended generous support. The final traverse was supported by JARE-45, led by Dr. H. Motoyama of the National Institute of Polar Research, Japan. Any use of trade, product or firm names in the report is for descriptive purposes only and does not imply endorsement by the authors.

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Table1-1. Oversnow traverses carried out by JARE-44 from December 2002 to February 2004.

Traverse No.	Period from	Period to	Traverse route from	Traverse route to	Distance (km)	Number of participants	Type of oversnow vehicle and numbers
1	30 Dec. 2002	19 Jan. 2003	S16	Dome Fuji	1000	8	SM100(5)
2 – a	26 Sep. 2003	1 Oct.	Syowa	Mizuho	255	7	SM100(3)
– b	2 Oct.	6 Oct.	Mizuho	Syowa	255	7	SM100(3)
3 – a	21 Oct.	22 Oct.	Syowa	H100	63	8	SM100(3)
– b	22 Oct.	24 Oct.	H100	Syowa	63	8	SM100(3)
4 – a	24 Nov.	28 Nov.	Dome Fuji	ARP 1*	410	3	SM100(2)
– b**	1 Dec.	5 Dec.	ARP 1	Dome Fuji	410	8	SM100(2)
5***	23 Jan. 2004	6 Feb. 2004	Dome Fuji	S16	1000	13	SM100(3)

* ARP1: abbreviation of Air Relay Point 1 (73°44'06"S, 35°00'18"E, 3030 m).
** Five members of JARE-45 were joined in the traverse No. 4-b.
*** Four members of JARE-45 were joined in the traverse No. 5.

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

Item	Interval or site name	Traverse No.	Observers
Snow stakes along routes	2km, 5km**	1, 2, 4-a, 5	K. Fujita, G. Hashida, K. Torii and I. Obinata
Stake farm	S16, H68, H180, S122 Z40, Mizuho, MD180 MD364 and MD560	1, 5***	K. Fujita and T. Kameda
Surface snow sampling	10km	1, 4-a, 5	T. Kameda, K. Fujita and K. Nakano
Photograph of surface snow	10km	1, 4-a, 5	T. Kameda and I. Obinata
Set-up and maintenance of AWS*	S16, Mizuho, MD180, MD364 and MD550	1, 5	T. Kameda
Continuous GPS measurements	30 seconds (s)	5	T. Kameda
Meteorological observations	three times per day	1, 2-a, 2-b, 3-a, 3-b, 4, 5	O. Sugita, K. Torii, T. Takahashi and K. Nakano

* AWS: abbreviation of Automatic Weather Station
** ARP1 route
*** Stake farms at H68, H180, S122, Z40 were not measured.

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Table 1-3. Participants in the oversnow traverses and their assignments in the JARE-44 program.

Name	Assignments	Traverse No.
Ichio Obinata*	Deputy leader, Medical doctor	1, 4-a, 4-b, 5
Takao Kameda*	Glaciology	1, 5
Koji Fujita*	Glaciology	1, 5
Kei Nakano*	Space and Atmospheric Sciences	1, 4-a, 4-b, 5
Akira Kadokura	Space and Atmospheric Sciences	3-a, 3-b
Kaoru Sato	Space and Atmospheric Sciences	3-a, 3-b
Gen Hashida	Atmospheric Science	2-a, 2-b
Okimasa Sugita*	Meteorology and Radio communication	1, 5
Katsuhiko Torii	Meteorology	2-a, 2-b
Takeshi Takahashi	Meteorology	3-a, 3-b
Kenji Taniguchi*	Mechanic	1, 5
Takashi Kurisaki*	Mechanic	1, 4-a, 4-b, 5
Kohichi Yamazaki	Mechanic	2-a, 2-b
Hiroyuki Kaneko	Mechanic	2-a, 2-b
Yasunori Utsumi	Mechanic	3-a, 3-b
Mitsuru Suzuki	Mechanic	3-a, 3-b
Kazuhisa Oshita	Radio communication	2-a, 2-b
Masato Sibasaki	Radio communication	3-a, 3-b
Kyo Takahashi*	Cook	1, 5
Yuji Furuhata	Cook	3-a, 3-b
Yukio Oda	Logistics	3-a, 3-b
Gen Sasaki	Broadcasting staff (NHK)	2-a, 2-b
Junji Matsuoka	Broadcasting staff (NHK)	2-a, 2-b

* Overwintering members at Dome Fuji Station during 2003-04 seasons.

Table 1-4. Glaciological observations carried out at Dome Fuji from January 2003 to January 2004.

Item	Interval	Observers
Snow accumulation measurements (36-stake farm)	15 days	T. Kameda
Surface snow density	15 days	T. Kameda
Surface snow sampling	15 days	T. Kameda
Surface snow sampling for isotope measurements	daily	K. Fujita
Pit observation of deposited snow	3 times	T. Kameda and K. Fujita
Grain size of deposited snow	3 months	K. Fujita
Sublimation from snow surface	daily	T. Kameda
Densification rate for shallow snow layer	10 min	T. Kameda
Concentration and number of blowing snow by snow particle counter (SPC)	1 min	T. Kameda
Microscopic observation of snow and ice crystals	several days	T. Kameda and K. Fujita
Cloud condition by cielometer	15 s	K. Fujita
Snow temperature	10 min	T. Kameda and K. Fujita
Observation of yukimarimo	sometimes	T. Kameda
Friction of surface snow	several times	T. Kameda
Dew point temperature	10 min	T. Kameda and K. Fujita
Air temperature at Dome Fuji Station by naturally and solar-battery ventilating shelters	10 min	T. Kameda
GPS measurements at Dome Fuji	monthly, continuous 2 to 3 days at 30 s interval	T. Kameda
Continuous GPS measurements from Dome Fuji to Summit (Summit route), and Summit to DF80 (DF route), and around Dome Fuji Station	one time, 30 s	T. Kameda
Horizontal line survey at Dome Fuji	one time	T. Kameda

2. Measurement of net snow accumulation by the stake method

Observers: Koji Fujita, Takao Kameda, Gen Hashida, Katsuhiko Torii and Ichio Obinata

Net accumulation of snow was measured by the stake method along the oversnow traverse routes in the 2003-04 season (Fig. 1).

2.1. Route Tottuki

Stake heights along the route from Syowa Station to Tottuki Point were measured in May and October 2003. Stake heights from Tottuki Point to S16 were measured on November 2002 by members of JARE-43 in February and October 2003. The height differences, which approximate the net balance of snow during the interval, are tabulated in Tables 2-1 and 2-2, respectively. The average value and its standard deviation (s.d.) for all measurements are shown as the last abscissa in Tables 2-1 and 2-2. The locations of these sites are also shown in Tables 2-1 and 2-2. Minimum readings of the stakes were 1 cm.

2.2. Route S-H-Z (Mizuho route)

Stake heights along the route were measured in January and October 2003, and January 2004. The height differences, which approximate the net snow balance during the intervals, are tabulated in Table 2-3. Minimum readings were 1 cm.

2.3. Route MD (Dome Fuji route)

Stake heights along the route from IM0 to MD732 were measured on January 2003 and January 2004. All data along the route are shown in Table 2-4. Minimum readings were 1 cm.

2.4. MD734 to DF80

Stake heights from MD734 to DF80 were measured on 1 March and on 16 December 2004. All data along the route are shown in Table 2-5. Minimum readings were 0.5 cm. Please refer to Kamiyama *et al.* (1994) for the positions of these sites.

2.5. DF72 to DF80 (Route DF, JARE-26 route)

Stake heights along the route from DF72 to DF79 were measured on 22 December 2003. Since the last measurements were done from 22 to 27 November 1997 by JARE-38 (Motoyama *et al.*, 1999), the data set gives the net accumulation for nearly six years. All data along the route are shown in Table 2-6. Average values for the annual net snow accumulation are also shown. Minimum readings were 0.5 cm. Please refer to Ageta *et al.* (1987) for the positions of these sites.

2.6. 36-stake farms, 50-stake row and 101-stake row along the route

Stake height of the 36-stake farms (100 m x 100 m in area, shown in Fig. 2) at S16, H68, H180, S122 and Z40 along the Mizuho route were measured on December 2002 (S16) and December 2003

(other sites) on the way to Dome Fuji Station. Stake farm at S16 was also measured on February 2004 during the traverse 5. The results of S16 are shown in Table 2-7. Due to strong wind condition at S16, some of the bamboo stakes were broken. Thus, missing data exist in Table 2-7. The last column of the table gives approximately the annual net accumulation of snow, and the last row gives averages and standard deviations of net accumulation of snow for each period. The other four site data including H68, H180, S122 and Z40 will be published in the next JARE Data Reports in Glaciology.

A 101-stake row located at Mizuho Station was measured on January 2003 and on January 2004. The results of the measurements are given in Table 2-8. The stake numbers are shown in Fig. 3. Some of the stakes were short, so we set up new stakes near the old ones.

50-stake rows were measured at MD180, MD364 and MD560 on January 2003 and on January 2004. 50-stake rows at DF80 were measured on 1 March and 16 December 2003. These 50-stake rows are perpendicular to the prevailing wind direction, and the distance between stakes is 2 m as shown in Fig. 4. The results are shown in Tables 2-9, -10, -11 and -12. Minimum readings of S16 and DF80 were 0.5 cm, and others were 1 cm.

2.7. 36-stake farm at Dome Fuji

A 36-stake farm at Dome Fuji was measured twice a month from 30 January 2003 to 15 January 2004. The stake farm is located 300 m northeast Dome Fuji Station buildings (Fig. 5). The snow stake configuration is the same as shown in Fig. 2. The results including the measurements on 13 January by JARE-43 are shown in Table 2-13. The last column of the table gives approximately the annual net accumulation of snow and its standard deviation, and the last row gives averages and standard deviations of the net accumulation of snow for each period. The data at the last lower corner (2.0) in Table 2-13 shows the standard deviation of all measurements from 13 January 2003 to 15 January 2004. The data above the corner (0.6) shows standard deviation of each stake height difference between 13 January 2003 and 15 January 2004. The data on the left side of the corner (5.1) shows standard deviation of the mean stake heights measured twice a month during the period. Minimum readings were 0.5 cm.

The results from 25 January 1995 to 15 January 1996 published in Azuma *et al.* (1997) mistook the number system of snow stakes (rows and lines were upside down), thus corrected data during the interval are reproduced in this report as shown in Table 2-14. The surface mass balance data at the 36-stake farm at Dome Fuji since 1995 is summarized in Kameda *et al.* (2007).

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Fig. 1. Map showing the oversnow traverse routes traced by JARE-44.

Fig. 2. 36-stake farm at S16, H68, H180, S122, Z40 and Dome Fuji.

Fig. 3. 101-stake row at Mizuho Station.

Fig. 4. 50-stake row at MD180, MD364, MD560 and DF80.

Fig. 5. Schematic diagram around Dome Fuji Station.

Table 2-1. Net snow accumulation from Syowa to Tottuki in 2003.

(cm in depth)

Station No.	Latitude (S) degree (°)	Latitude (S) minutes (')	Longtitude (E) degree (°)	Longtitude (E) minutes (')	26 May 2003 27 Oct. 2003 (154 days)
TT16	68	58.376	39	40.068	147
TT17	68	58.122	39	40.558	142
TT18	68	57.884	39	40.990	117
TT19	68	57.635	39	41.338	40
TT20	68	57.376	39	41.790	7
TT21	68	57.098	39	42.243	5
TT22	68	56.841	39	42.662	21
TT23	68	56.578	39	43.088	-1
TT24	68	56.325	39	43.490	6
TT25	68	55.995	39	43.778	75
TT26	68	55.797	39	44.393	23
TT27	68	55.643	39	45.049	20
TT28	68	55.499	39	45.814	16
TT29	68	55.355	39	46.557	4
TT30	68	55.153	39	47.106	59
TT31	68	54.982	39	47.656	23
TT32	68	54.914	39	48.415	-19
TT33	68	54.840	39	49.145	-4
				average	37.8
				s.d.	50.3

Table 2-2. Net snow accumulation from Tottuki to S16 in 2003.

(cm in depth)

Station No.	Latitude (S) degree (°)	Latitude (S) minutes (')	Longtitude (E) degree (°)	Longtitude (E) minutes (')	Elevation (m)	19 - 20 Nov. 2002 11 Feb. 2003 (83 to 84 days)	11 Feb. 2003 27 Oct. 2003 (258 days)	19 - 20 Nov. 2002 27 Oct. 2003 (341 to 342 days)
N0	68	54.814	39	49.872	16	-	-	-
N1	68	54.904	39	49.902	32	-	18	-
N2	68	55.004	39	49.853	45	-	-	-
N3	68	55.100	39	49.843	57	-	17	-
N4	68	55.193	39	50.226	85	-	-5	-
N5	68	55.247	39	50.397	107	-	14	-
N6	68	55.333	39	50.723	133	-	-5	-
N7	68	55.377	39	50.901	135	-	-9	-
N8	68	55.586	39	51.467	166	-	59	-
N9	68	55.708	39	52.001	204	-	4	-
N10	68	55.719	39	52.571	216	-	53	-
N11	68	55.711	39	52.831	220	-	-1	-
N12	68	55.706	39	53.161	226	-	-38	-
N13	68	55.706	39	53.354	231	-22	20	-2
N14	68	55.842	39	53.657	247	-	30	-
N15	68	55.947	39	54.038	254	-	26	-
N16	68	56.038	39	54.311	270	2	15	17
P14	68	56.164	39	54.471	267	-	-	-
P15	68	56.380	39	54.732	281	-7	28	21
P16	68	56.557	39	54.735	291	-	11	-
P17	68	56.809	39	54.768	299	-	38	-
P18	68	57.100	39	54.782	307	-	-	-
P19	68	57.242	39	54.766	317	-	-	-
P20	68	57.432	39	54.740	320	-14	55	41
P21	68	57.594	39	54.736	320	-7	53	46
P22	68	57.766	39	54.717	318	-	36	-
P23	68	57.988	39	54.724	323	-	7	-
P24	68	58.058	39	55.011	333	-	-	-
P25	68	58.158	39	55.405	322	-12	32	20
P26	68	58.240	39	55.836	341	-19	53	34
P27	68	58.319	39	56.243	339	-	-	-
P28	68	58.416	39	56.659	372	-	-	-
P29	68	58.497	39	57.091	387	-	-	-
P30	68	58.580	39	57.507	404	-5	75	70
P31	68	58.671	39	57.920	411	-10	79	69
P32	68	58.779	39	58.471	424	-	-	-
P33	68	58.867	39	58.911	435	-	-	-
P34	68	58.960	39	59.313	439	-	-	-
P35	68	59.109	39	59.470	456	-9	81	72
P36	68	59.268	39	59.645	474	-10	65	55
P37	68	59.446	39	59.698	489	-	-	-
P38	68	59.630	39	59.819	496	-	-	-
P39	68	59.778	39	59.793	493	-	-	-
P40	68	59.960	39	59.857	492	-5	97	92
P41	69	0.184	39	59.945	503	1	68	69
P42	69	0.389	40	0.025	516	-	-	-
P43	69	0.539	40	0.335	513	-	-	-
P44	69	0.674	40	0.574	531	-	-	-
P45	69	0.796	40	0.717	530	-1	34	33
P46	69	0.960	40	1.020	527	7	69	76
P47	69	1.142	40	1.387	529	-	-	-
P48	69	1.346	40	1.746	554	-	-	-
P49	69	1.489	40	2.088	549	-	-	-
P50	69	1.624	40	2.418	560	0	102	102
S16	69	1.770	40	3.110	567	-	-	-
					average	-6.9	35.8	50.9
					s.d.	7.7	33.1	29.4

Table 2-3. Net snow accumulation along Route S-H-Z (Mizuho route) in 2003-04.

(cm in depth)

Stake No.	30 Dec. 2002 - 04 Jan. 2003 (265 to 275 days)	26 Sep. 2003 - 01 Oct. 2003 (125 to 135 days)	03 Feb. 2004 - 06 Feb. 2004	30 Dec. 2002 - 4 Jan. 2003 to 03 - 06 Feb. 2004 (395 to 403 days)
S16				
S17				
S18				
S19				
S20	71	-3		68
S21	66	-7		59
S22	80	-9		71
S23	92	-19		73
S24	91	-20		71
S25	91	-2		89
S26	55	-2		57
S27	74	-8		66
S28	65	-11		54
S29	69	-17		52
S30	102	-19		83
H3	103	-15		88
H9	63	-11		52
H15	73	5		78
H21	49	-11		38
H27	39	-10		29
H35	92	-16		76
H42	33	-10		23
H48	79	-9		70
H54	80	-12		68
H60	71	-14		57
H64	68	-9		59
H68	55	-14		41
H72	76	-6		70
H76	54	-11		43
H80	3	-5		-2
H84	49	-17		32
H88	52	-16		36
H92	47	-5		42
H96	57	-10		47
H100	71	-18		53
H104	31	-4		27
H108	37	-5		32
H112	49	-7		42
H116	52	-3		49
H120	25	-13		12
H124	38	-11		27
H128	50	-2		48
H132	47	-12		35
H136	48	-6		42
H140	48	-6		42
H144	53	-10		43
H148	32	-8		24
H152	52	-6		46
H156	18	-20		-2
H160	63	-5		58
H164	54	3		57
H168	39	2		41
H172	43	-13		30
H176	53	-10		43
H180	42	-2		40
H184	52	-4		48
H188	29	-10		19
H192	59	-7		52
H196	45	-7		38
H200	36	-9		27
H204	31	-12		19
H208	52	-13		39
H212	43	-5		38
H216	36	-9		27
H220	45	-15		30

Table 2-3 (continued).

Stake No.	30 Dec. 2002 - 04 Jan. 2003 (265 to 275 days)	26 Sep. 2003 - 01 Oct. 2003	03 Feb. 2004 - 06 Feb. 2004 (125 to 135 days)	30 Dec. 2002 - 4 Jan. 2003 to 03 - 06 Feb. 2004 (395 to 403 days)
H224	33		2	35
H228	40		-1	39
H232	33		-1	32
H236	33		-9	24
H240	17		-9	8
H244	46		-3	43
H248	35		-9	26
H252	42		-12	30
H256	71		-12	59
H260	39		6	45
H264	28		-6	22
H268	31		-5	26
H272	62		-9	53
H276	32		-3	29
H280	63		0	63
H284	49		-8	41
H288	13		-12	1
H293	22		1	23
H297	10		0	10
H301	22		-4	18
S122	15		-6	9
Z2	23		-6	17
Z4	28		-14	14
Z6	18		-24	-6
Z8	34		-6	28
Z10	-1		0	-1
Z12	36		-16	20
Z14	50		-16	34
Z16	10		-9	1
Z18	0		-5	-5
Z20	14		-10	4
Z22	41		2	43
Z24	34		-13	21
Z26	25		-12	13
Z28	9		4	13
Z30	-1		-5	-6
Z32	15		4	19
Z34	21		2	23
Z36	26		-11	15
Z38	-1		-5	-6
Z40	6		-6	0
Z42	13		-10	3
Z46	-4		-1	-5
Z50	41		-2	39
Z54	61		-18	43
Z58	14		-4	10
Z62	-2		4	2
Z66	46		-18	28
Z70	39		-10	29
Z72	7		-10	-3
Z74	-1		-5	-6
Z76	7		-9	-2
Z78	43		-3	40
Z80	27		-1	26
Z82	55		-9	46
Z84	15		-12	3
Z86	26		-15	11
Z88	37		-4	33
Z90	22		-7	15
Z92	52		-29	23
Z94	-2		0	-2
Z96	52		-8	44
Z98	3		-7	-4
Z100	39		-16	23
Z102	33		3	36

Table 2-4. Net snow accumulation along Route MD (Dome Fuji route) in 2003-04.

(cm in depth)

Stake No.	04 - 19 Jan. 2003 / 23 Jan. 2004 - 03 Feb. 2004 369 to 395 days
IM0	
IM1	18
IM2	-6
MD0	-6
MD2	-6
MD4	-6
MD6	-6
MD8	-4
MD10	8
MD12	16
MD14	-8
MD16	18
MD18	73
MD20	61
MD22	18
MD24	80
MD26	45
MD28	6
MD30	8
MD32	3
MD34	9
MD36	28
MD38	32
MD40	-6
MD42	-5
MD44	31
MD46	22
MD48	32
MD50	33
MD52	45
MD54	-6
MD56	-3
MD58	-8
MD60	46
MD62	14
MD64	4
MD66	54
MD68	11
MD70	76
MD72	52
MD74	17
MD76	26
MD78	27
MD80	10
MD82	23
MD84	17
MD86	47
MD88	24
MD90	27
MD92	-2
MD94	-4
MD96	-3
MD98	34
MD100	4
MD102	31
MD104	23
MD106	
MD108	-6
MD110	8
MD112	21
MD114	50
MD116	31
MD118	-3
MD120	12
MD122	17

(cm in depth)

Stake No.	04 - 19 Jan. 2003 / 23 Jan. 2004 - 03 Feb. 2004 369 to 395 days
MD124	26
MD126	83
MD128	34
MD130	22
MD132	35
MD134	16
MD136	-3
MD138	25
MD140	9
MD142	34
MD144	30
MD146	16
MD148	67
MD150	38
MD152	46
MD154	-4
MD156	3
MD158	6
MD160	59
MD162	28
MD164	21
MD166	-4
MD168	51
MD170	36
MD172	29
MD174	39
MD176	86
MD178	-3
MD180	8
MD182	-4
MD184	-5
MD186	12
MD188	52
MD190	61
MD192	74
MD194	-3
MD196	-7
MD198	-2
MD200	-4
MD202	4
MD204	-2
MD206	-3
MD208	4
MD210	-3
MD212	-1
MD214	10
MD216	33
MD218	-6
MD220	-3
MD222	30
MD224	-4
MD226	1
MD228	46
MD230	42
MD232	6
MD234	11
MD236	-4
MD238	29
MD240	-2
MD242	0
MD244	-6
MD246	2
MD248	0
MD250	28
MD252	1

Table 2-4 (continued).

(cm in depth)

Stake No.	04 - 19 Jan. 2003	23 Jan. 2004 - 03 Feb. 2004
	369 to 395 days	
MD254	1	
MD256	33	
MD258	-2	
MD260	29	
MD262	14	
MD264	28	
MD266	27	
MD268	51	
MD270	37	
MD272	43	
MD274	7	
MD276	-1	
MD278	8	
MD280	12	
MD282	9	
MD284	-1	
MD286	17	
MD288	-4	
MD290	17	
MD292	12	
MD294	4	
MD296	-2	
MD298	-2	
MD300	9	
MD302	56	
MD304	30	
MD306	18	
MD308	19	
MD310	34	
MD312	8	
MD314	52	
MD316	19	
MD318	23	
MD320	3	
MD322	8	
MD324	9	
MD326	18	
MD328	5	
MD330	2	
MD332	-2	
MD334	-1	
MD336	-2	
MD338	4	
MD340	15	
MD342	19	
MD344	-7	
MD346	47	
MD348	51	
MD350	15	
MD352	14	
MD354	-2	
MD356	31	
MD358	2	
MD360	20	
MD362	-1	
MD364	2	
MD366	16	
MD368	5	
MD370	16	
MD372	8	
MD374	28	
MD376	21	
MD378	29	
MD380	15	
MD382	38	

(cm in depth)

Stake No.	04 - 19 Jan. 2003	23 Jan. 2004 - 03 Feb. 2004
	369 to 395 days	
MD384	9	
MD386	0	
MD388	-3	
MD390	7	
MD392	2	
MD394	-2	
MD396	35	
MD398	3	
MD400	23	
MD402	16	
MD404	30	
MD406	15	
MD408	0	
MD410	-2	
MD412	22	
MD414	16	
MD416	21	
MD418	-2	
MD420	13	
MD422	11	
MD424	-2	
MD426	15	
MD428	33	
MD430	30	
MD432	48	
MD434	15	
MD436	5	
MD438	7	
MD440	15	
MD442	6	
MD444	-4	
MD446	35	
MD448	7	
MD450	2	
MD452	24	
MD454	-1	
MD456	-3	
MD458	11	
MD460	8	
MD462	4	
MD464	-3	
MD466	24	
MD468	14	
MD470	34	
MD472	12	
MD474	2	
MD476	7	
MD478	18	
MD480	12	
MD482	3	
MD484	28	
MD486	15	
MD488	4	
MD490	11	
MD492	7	
MD494	26	
MD496	6	
MD498	14	
MD500	16	
MD502	10	
MD504	-1	
MD506	8	
MD508	25	
MD510	12	
MD512	12	

Table 2-4 (continued).

(cm in depth)

Stake No.	04 - 19 Jan. 2003	23 Jan. 2004 - 03 Feb. 2004
	369 to 395 days	
MD514	17	
MD516	1	
MD518	0	
MD520	2	
MD522	-1	
MD524	17	
MD526	1	
MD528	20	
MD530	12	
MD532	30	
MD534	14	
MD536	4	
MD538	9	
MD540	18	
MD542	5	
MD544	16	
MD546	16	
MD548	8	
MD550	9	
MD552	14	
MD554	-2	
MD556	0	
MD558	18	
MD560	17	
MD562	6	
MD564	33	
MD566	8	
MD568	4	
MD570	1	
MD572	14	
MD574	7	
MD576	-2	
MD578	12	
MD580	12	
MD582	16	
MD584	12	
MD586	9	
MD588	5	
MD590	-1	
MD592	13	
MD594	18	
MD596	6	
MD598	9	
MD600	14	
MD602	19	
MD604	23	
MD606	16	
MD608	13	
MD610	7	
MD612	20	
MD614	19	
MD616	2	
MD618	2	
MD620	11	
MD622	23	
MD624	4	
MD626	18	
MD628	10	
MD630	-2	
MD632	0	
MD634	6	
MD636	2	
MD638	5	
MD640	12	
MD642	9	

(cm in depth)

Stake No.	04 - 19 Jan. 2003	23 Jan. 2004 - 03 Feb. 2004
	369 to 395 days	
MD644	1	
MD646	9	
MD648	19	
MD650	26	
MD652	9	
MD654	7	
MD656	6	
MD658	5	
MD660	3	
MD662	4	
MD664	1	
MD666	22	
MD668	-1	
MD670	2	
MD672	5	
MD674	6	
MD676	17	
MD678	12	
MD680	-2	
MD682	-2	
MD684	11	
MD686	-1	
MD688	6	
MD690	9	
MD692	6	
MD694	14	
MD696	4	
MD698	5	
MD700	16	
MD702	8	
MD704	1	
MD706	3	
MD708	2	
MD710	5	
MD712	-2	
MD714	7	
MD716	10	
MD718	11	
MD720	9	
MD722	6	
MD724	2	
MD726	6	
MD728	1	
MD730	14	
MD732	5	

Table 2-5. Net snow accumulation from MD734 to DF80 in 2003.

(cm in depth)

Stake No.	01 Mar. 2003	16 Dec. 2003
	290 days	
MD734	5.0	
MD736	8.5	
MD738	10.5	
DF80	9.0	

Table 2-6. Net snow accumulation along Route DF in 1997-2003.

(cm in depth)

Stake No.	22 - 27 Nov. 1997	22 Dec. 2003	Convert to 365 days	Latitude (S)		Longtitude (E)	
	2216 to 2221 days (2218.5 days in average)			degree (°)	minutes (')	degree (°)	minutes (')
72	57.0		9.4	77	15.485	39	13.038
73	40.0		6.6	77	16.358	39	15.952
74	47.0		7.7	77	17.234	39	18.873
75	45.5		7.5	77	18.101	39	21.777
76	52.0		8.6	77	18.942	39	24.883
77	48.0		7.9	77	19.797	39	27.986
78	51.0		8.4	77	20.647	39	31.017
79	61.5		10.1	77	21.501	39	31.017
average	50.3		8.3				
s.d.	6.8		1.1				

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Table 2-7. Net snow accumulation in the 36-stake farm at S16 in 2002-04.

(cm in depth)

Stake No.	12 Oct. 2002 29 Dec. 2002 (78 days)	29 Dec. 2002 06 Feb. 2004 (404 days)	12 Oct. 2002 06 Feb. 2004 (482 days)
I - 1	-12.0	14.0	2.0
I - 2	-3.5	-	-
I - 3	-2.0	17.0	15.0
I - 4	-6.5	19.5	13.0
I - 5	-4.0	10.0	6.0
I - 6	-5.0	-	-
II - 1	0.0	16.0	16.0
II - 2	-3.0	5.0	2.0
II - 3	-4.0	24.0	20.0
II - 4	-4.5	9.5	5.0
II - 5	0.0	14.0	14.0
II - 6	7.0	8.5	15.5
III - 1	-2.5	14.5	12.0
III - 2	-7.5	17.5	10.0
III - 3	-7.5	21.0	13.5
III - 4	-5.0	15.0	10.0
III - 5	0.5	19.5	20.0
III - 6	-2.0	3.0	1.0
IV - 1	1.5	23.5	25.0
IV - 2	2.0	19.0	21.0
IV - 3	-5.5	31.5	26.0
IV - 4	-4.5	18.5	14.0
IV - 5	-7.5	-	-
IV - 6	-4.5	28.5	24.0
V - 1	-6.0	38.0	32.0
V - 2	0.5	-	-
V - 3	-12.0	25.0	13.0
V - 4	-9.0	27.0	18.0
V - 5	0.0	33.0	33.0
V - 6	0.0	27.0	27.0
IV - 1	-7.0	-	-
IV - 2	-3.5	31.5	28.0
IV - 3	-9.0	28.0	19.0
IV - 4	-3.0	18.0	15.0
IV - 5	-4.0	26.0	22.0
IV - 6	-5.5	28.0	22.5
average	-3.8	20.3	16.6
s.d.	3.9	8.5	8.5

Table 2-8. Net snow accumulation in the 101-stake farm at Mizuho Station in 2003-04.

(cm in depth)

Stake No.	04 Jan. 2003 03 Feb. 2004 (395 days)
102	-7
103	-5
104	-8
105	-4
106	-4
107	-5
108	-4
109	-6
110	-3
111	-3
112	-4
113	-4
114	-9
115	-6
116	-5
117	-6
118	-6
119	-7
120	-4
121	-3
122	2
123	1
124	-1
125	-8
126	-3
127	-9
128	-16
129	-9
130	-9
131	21
132	-4
133	-3
134	-6
135	13
136	20
137	31
138	27
139	30
140	30
141	-2
142	-8
143	-11
144	-8
145	-6
146	-6
147	3
148	8
149	9
150	2
151	-2
51	-4

(cm in depth)

Stake No.	04 Jan. 2003 03 Feb. 2004 (395 days)
152	-4
153	-10
154	-3
155	-2
156	0
157	5
158	10
159	8
160	8
161	13
162	19
163	16
164	24
165	33
166	31
167	30
168	32
169	38
170	45
171	39
172	42
173	31
174	25
175	23
176	21
177	15
178	5
179	3
180	-2
181	1
182	3
183	4
184	4
185	-3
186	1
187	-1
188	-4
189	-7
190	-6
191	-5
192	-6
193	-5
194	-6
195	-7
196	-5
197	-5
198	-7
199	-5
200	-5
201	-3
average	4.0
s.d.	14.3

Table 2-9. Net snow accumulation in the 50-stake row at MD180 in 2003-04.

Stake No.	(cm in depth) 08 Jan. 2003 01 Feb. 2004 (389 days)
1	6
2	2
3	7
4	5
5	8
6	0
7	-4
8	10
9	-1
10	-7
11	4
12	-1
13	9
14	15
15	0
16	-4
17	-1
18	7
19	11
20	7
21	8
22	5
23	3
24	-1
25	-4
26	-3
27	-3
28	-3
29	-3
30	-3
31	-2
32	-4
33	-3
34	-4
35	-7
36	-4
37	-4
38	3
39	-5
40	-4
41	-4
42	-4
43	-4
44	5
45	2
46	-4
47	-1
48	0
49	-2
50	0
average	0.5
s.d.	5.2

Table 2-10. Net snow accumulation in the 50-stake row at MD364 in 2003-04.

Stake No.	(cm in depth) 13 Jan. 2003 27 Jan. 2004 (379 days)
1	-1
2	-4
3	-2
4	-5
5	-5
6	-4
7	3
8	-2
9	2
10	-2
11	1
12	0
13	-2
14	-3
15	-2
16	6
17	5
18	8
19	-2
20	3
21	5
22	2
23	-1
24	4
25	15
26	26
27	30
28	15
29	18
30	11
31	4
32	0
33	2
34	11
35	18
36	19
37	16
38	14
39	-3
40	-2
41	1
42	12
43	-3
44	1
45	-4
46	-2
47	-3
48	5
49	1
50	2
average	4.2
s.d.	8.4

Table 2-11. Net snow accumulation in the 50-stake row at MD560 in 2003-04.

Stake No.	(cm in depth) 16 Jan. 2003 24 Jan. 2004 (373 days)
1	15
2	17
3	12
4	24
5	15
6	16
7	3
8	-3
9	1
10	-2
11	-4
12	-2
13	5
14	7
15	-1
16	2
17	-7
18	-3
19	-3
20	-1
21	-3
22	0
23	-1
24	2
25	8
26	5
27	9
28	10
29	13
30	1
31	6
32	16
33	15
34	23
35	17
36	18
37	14
38	12
39	0
40	-2
41	2
42	-3
43	-2
44	-5
45	-2
46	0
47	-1
48	-1
49	10
50	20
average	5.4
s.d.	8.4

Table 2-12. Net snow accumulation in the 50-stake row at DF80 in 2001-03.

(cm in depth)

Stake No.	19 Dec. 2001 01 Mar. 2003 (437 days)	01 Mar. 2003 16 Dec. 2003 (290 days)	19 Dec. 2001 16 Dec. 2003 (727 days)	Convert to 365 days value
1	7.0	2.0	9.0	4.5
2	6.5	6.5	13.0	6.5
3	13.5	9.0	22.5	11.3
4	13.0	4.5	17.5	8.8
5	14.5	0.0	14.5	7.3
6	14.0	-1.5	12.5	6.3
7	11.0	3.5	14.5	7.3
8	6.5	2.0	8.5	4.3
9	10.0	3.0	13.0	6.5
10	18.0	-2.0	16.0	8.0
11	12.5	-2.0	10.5	5.3
12	17.5	0.0	17.5	8.8
13	16.5	-0.5	16.0	8.0
14	15.5	0.5	16.0	8.0
15	13.5	-2.0	11.5	5.8
16	9.5	1.5	11.0	5.5
17	13.0	-1.5	11.5	5.8
18	13.0	-1.5	11.5	5.8
19	11.5	3.5	15.0	7.5
20	11.5	7.0	18.5	9.3
21	8.5	11.5	20.0	10.0
22	11.5	5.5	17.0	8.5
23	12.0	10.0	22.0	11.0
24	10.5	7.0	17.5	8.8
25	14.5	4.5	19.0	9.5
26	16.0	0.0	16.0	8.0
27	13.5	0.5	14.0	7.0
28	15.0	0.0	15.0	7.5
29	13.0	4.5	17.5	8.8
30	7.0	3.5	10.5	5.3
31	11.0	-17.5	-6.5	-3.3
32	12.5	7.0	19.5	9.8
33	11.0	-1.0	10.0	5.0
34	10.5	0.5	11.0	5.5
35	8.5	3.0	11.5	5.8
36	18.0	-10.5	7.5	3.8
37	11.0	1.0	12.0	6.0
38	8.0	12.0	20.0	10.0
39	17.0	1.0	18.0	9.0
40	7.0	12.0	19.0	9.5
41	7.0	1.5	8.5	4.3
42	5.5	2.5	8.0	4.0
43	8.0	1.0	9.0	4.5
44	8.0	3.0	11.0	5.5
45	11.0	6.0	17.0	8.5
46	13.0	1.0	14.0	7.0
47	10.5	9.5	20.0	10.0
48	12.0	4.0	16.0	8.0
49	11.5	1.5	13.0	6.5
50	17.0	-2.0	15.0	7.5
average	11.8	2.3	14.0	7.0
s.d.	3.3	5.1	4.9	2.4

Table 2-13. Net snow accumulation in the 36-stake farm at Dome Fuji in 2003-04.

(cm in depth)

Stake No.	13 Jan. 2003 30 Jan.	30 Jan. 15 Feb.	15 Feb. 01 Mar.	01 Mar. 15 Mar.	15 Mar. 31 Mar.	31 Mar. 15 Apr.	15 Apr. 30 Apr.	30 Apr. 15 May.	15 May. 30 May.
I - 1	0.5	1.5	-0.5	-1.0	1.0	2.0	0.5	-3.5	0.5
I - 2	-2.0	1.5	0.5	0.0	-2.5	0.5	1.0	-2.0	1.0
I - 3	0.0	1.0	2.0	0.0	0.0	-0.5	0.5	0.0	0.0
I - 4	2.0	0.0	1.0	0.5	-0.5	0.5	0.5	-1.0	0.0
I - 5	0.5	0.5	1.5	0.5	-1.0	1.5	-0.5	2.5	-3.5
I - 6	-0.5	1.0	1.5	-1.0	-1.0	1.0	0.0	-1.0	3.5
II - 1	1.0	1.5	0.0	-1.0	0.0	0.5	0.0	-1.5	1.0
II - 2	1.0	1.0	-0.5	-1.5	1.0	2.0	0.0	-1.0	1.0
II - 3	1.0	1.0	1.0	1.0	-1.5	2.0	-0.5	-1.5	-0.5
II - 4	0.5	0.5	0.5	1.5	-1.5	0.5	-1.0	-0.5	0.0
II - 5	0.0	1.5	0.5	1.0	-1.0	2.0	-1.0	10.5	0.0
II - 6	1.5	7.5	0.5	-0.5	-0.5	0.5	0.0	1.0	-1.5
III - 1	1.0	2.5	1.5	0.5	-2.0	0.5	0.5	0.0	-1.0
III - 2	1.5	1.5	1.5	-0.5	1.0	3.5	-0.5	-4.0	6.5
III - 3	1.5	1.0	1.0	0.0	-1.0	1.5	0.5	5.0	-1.0
III - 4	1.0	-0.5	2.5	0.0	0.5	-1.0	0.5	-0.5	-0.5
III - 5	-0.5	1.0	0.0	0.0	-1.0	-0.5	0.5	0.5	-0.5
III - 6	3.5	2.0	1.0	-0.5	0.0	2.5	0.5	-3.5	4.0
IV - 1	-1.0	0.0	0.0	-0.5	0.0	-0.5	0.0	-0.5	1.0
IV - 2	2.5	0.0	1.5	0.0	0.5	0.0	0.5	2.0	-3.0
IV - 3	0.5	1.0	0.5	-1.5	-0.5	0.5	0.5	0.0	0.0
IV - 4	1.0	1.0	3.5	0.5	-2.0	2.0	0.0	-1.5	-0.5
IV - 5	0.0	1.5	1.5	0.0	-1.0	0.5	0.0	-1.5	1.5
IV - 6	3.0	2.5	0.0	1.0	-1.5	0.0	1.0	3.0	-2.5
V - 1	0.0	0.5	0.0	-0.5	0.0	0.0	-0.5	0.5	0.0
V - 2	0.0	2.0	1.0	0.5	-0.5	1.0	0.5	-1.0	-1.0
V - 3	0.5	2.0	3.5	-1.5	-0.5	0.5	-0.5	1.5	1.0
V - 4	0.0	0.5	1.0	1.0	-2.0	2.5	-1.5	-0.5	-1.5
V - 5	1.0	5.5	0.0	-0.5	-0.5	0.0	0.0	12.5	-1.0
V - 6	0.0	1.5	0.5	0.5	-2.5	1.0	2.5	-2.0	-1.0
VI - 1	0.5	0.0	0.5	0.0	-0.5	0.0	0.5	-1.0	0.5
VI - 2	0.0	0.5	0.5	-0.5	0.5	0.5	1.0	-2.5	1.0
VI - 3	3.5	-0.5	1.5	-0.5	0.0	0.0	0.0	-0.5	-0.5
VI - 4	0.5	0.0	2.5	-0.5	0.0	0.0	0.5	-1.0	0.5
VI - 5	0.0	1.5	0.5	1.0	-1.0	0.0	1.0	-1.0	2.0
VI - 6	0.0	3.0	1.5	0.5	-0.5	-0.5	0.5	0.5	-2.0
average	0.7	1.3	1.0	-0.1	-0.6	0.7	0.2	0.2	0.1
s.d.	1.2	1.5	1.0	0.8	0.9	1.0	0.7	3.3	1.9

Table 2-13 (continued).

(cm in depth)

Stake No.	30 May. 14 Jun.	14 Jun. 30 Jun.	30 Jun. 15 Jul.	15 Jul. 30 Jul.	30 Jul. 15 Aug.	15 Aug. 30 Aug.	30 Aug. 15 Sep.	15 Sep. 30 Sep.	30 Sep. 15 Oct.	15 Oct. 30 Oct.
I - 1	0.0	0.0	5.5	-1.5	0.0	1.5	0.0	-1.0	-0.5	0.0
I - 2	1.5	-1.0	-1.5	3.0	-1.5	-1.5	0.0	2.5	0.0	-0.5
I - 3	0.0	6.5	3.0	0.0	1.5	0.5	0.0	-1.0	6.5	0.5
I - 4	0.0	0.0	0.0	1.5	-0.5	0.0	0.0	2.0	-2.0	0.5
I - 5	1.0	-1.5	2.5	0.0	4.5	-0.5	0.5	0.5	0.0	0.0
I - 6	0.0	-1.5	0.5	0.5	-1.5	4.0	0.5	1.0	-2.0	-0.5
II - 1	-0.5	-0.5	5.0	-2.0	1.0	1.0	-0.5	-0.5	-0.5	0.5
II - 2	0.0	0.0	-1.0	1.0	-1.5	0.0	0.0	0.0	3.0	0.5
II - 3	-0.5	2.0	0.0	0.5	-1.0	-0.5	0.5	0.0	0.0	0.0
II - 4	3.5	0.5	4.0	0.0	-3.5	1.5	0.0	1.0	-1.0	0.0
II - 5	-0.5	0.0	-5.5	0.5	-2.0	0.5	0.0	-0.5	0.5	1.0
II - 6	0.5	-0.5	0.0	0.0	0.0	0.5	-0.5	0.5	-0.5	0.5
III - 1	0.5	-0.5	5.0	0.0	3.0	-0.5	0.0	0.5	-0.5	0.0
III - 2	-1.0	0.5	4.5	0.0	3.0	-2.0	2.0	-1.5	0.5	0.0
III - 3	0.0	-0.5	-3.5	0.5	-1.5	0.0	0.0	0.5	0.5	0.0
III - 4	0.5	-0.5	15.5	0.5	-4.0	0.0	0.0	-0.5	1.0	0.5
III - 5	0.0	0.0	1.5	2.5	-3.5	-0.5	0.0	0.5	-1.5	1.0
III - 6	3.0	1.0	-5.5	0.0	-0.5	3.5	0.0	0.0	-0.5	0.0
IV - 1	0.0	1.5	-1.5	0.0	0.0	-0.5	0.0	0.5	0.0	1.0
IV - 2	1.5	-0.5	9.5	-0.5	7.0	0.5	0.0	-1.0	0.0	0.0
IV - 3	0.5	-1.0	0.0	0.5	0.0	-1.0	0.0	1.0	0.5	-0.5
IV - 4	1.0	-0.5	12.0	-0.5	-1.0	0.5	-0.5	0.5	-1.0	0.5
IV - 5	-0.5	7.5	-6.0	-1.0	-0.5	1.5	0.5	-1.0	1.0	1.5
IV - 6	-0.5	-1.0	6.5	1.0	-2.5	0.0	0.5	0.0	-0.5	0.5
V - 1	0.5	-0.5	9.5	0.5	-6.5	0.0	0.0	0.0	1.0	0.5
V - 2	0.0	0.0	2.0	-0.5	4.5	0.5	0.0	8.5	-3.0	0.0
V - 3	0.0	-2.0	-0.5	0.5	1.5	1.0	0.5	0.0	0.0	0.0
V - 4	1.5	1.0	2.5	0.5	-1.5	0.0	0.0	0.0	0.0	0.0
V - 5	-0.5	-2.5	-1.5	0.0	0.0	-1.0	-0.5	1.5	0.0	-0.5
V - 6	0.5	0.0	0.5	-1.0	0.5	-1.5	0.0	6.0	-2.5	-7.5
VI - 1	0.5	-0.5	-0.5	1.5	-1.0	6.5	0.5	-1.0	0.0	0.0
VI - 2	-7.5	9.0	5.0	0.5	0.0	1.5	0.5	1.0	0.0	0.0
VI - 3	1.0	0.0	-0.5	1.0	-0.5	-1.0	0.0	0.0	1.0	0.0
VI - 4	0.0	3.0	-2.5	-0.5	2.0	2.5	0.0	4.0	-2.0	0.0
VI - 5	-1.0	-0.5	13.5	0.5	-3.5	0.0	0.0	0.5	0.0	0.0
VI - 6	8.5	0.0	0.0	-0.5	0.0	2.0	1.5	-1.5	1.0	0.0
average	0.4	0.5	2.2	0.3	-0.3	0.5	0.2	0.6	0.0	0.0
s.d.	2.1	2.4	5.1	1.0	2.6	1.7	0.5	2.0	1.6	1.4

Table 2-13 (continued).

(cm in depth)

Stake No.	30 Oct. 14 Nov.	14 Nov. 30 Nov.	30 Nov. 15 Dec.	15 Dec. 30 Dec.	30 Dec. 15 Jan. 2004	13 Jan. 2003 15 Jan. 2004	s.d.
I - 1	1.0	-1.0	0.5	1.0	0.0	6.5	1.6
I - 2	0.5	0.0	1.5	-0.5	0.0	0.5	1.4
I - 3	-1.0	0.5	-0.5	0.0	0.0	19.5	2.0
I - 4	3.0	0.0	-0.5	1.0	0.0	8.0	1.0
I - 5	0.0	0.0	0.0	1.0	0.5	10.5	1.5
I - 6	1.0	1.0	0.0	0.5	0.5	7.5	1.4
II - 1	6.0	0.0	-0.5	0.0	0.0	10.0	1.8
II - 2	2.0	0.0	-0.5	0.5	0.0	7.0	1.1
II - 3	0.5	2.5	-2.5	1.0	0.5	5.0	1.2
II - 4	3.0	0.0	-0.5	0.0	0.0	9.0	1.6
II - 5	-1.5	1.0	-1.0	0.5	0.0	6.5	2.6
II - 6	0.5	-0.5	0.0	0.0	-0.5	8.5	1.6
III - 1	0.5	0.0	-0.5	0.0	0.0	11.0	1.4
III - 2	0.5	0.5	-1.5	0.0	0.0	16.0	2.2
III - 3	0.5	0.0	-0.5	0.0	0.0	4.5	1.5
III - 4	-1.0	2.0	-1.0	0.0	0.0	15.0	3.4
III - 5	1.0	1.5	-1.5	1.0	0.0	1.5	1.2
III - 6	0.5	1.0	-1.0	0.5	0.0	11.5	2.1
IV - 1	-1.0	0.5	3.5	0.0	-0.5	2.0	1.0
IV - 2	0.5	-0.5	-1.0	-0.5	-0.5	18.5	2.6
IV - 3	0.5	0.0	-0.5	2.5	1.5	5.0	0.8
IV - 4	-0.5	0.5	-1.0	0.0	0.0	14.0	2.7
IV - 5	0.5	-0.5	15.5	-0.5	0.5	21.0	3.8
IV - 6	2.5	0.0	5.0	0.0	-0.5	17.5	2.1
V - 1	0.5	0.0	2.5	0.5	0.5	9.0	2.5
V - 2	-1.0	0.5	-0.5	0.0	-0.5	13.0	2.2
V - 3	0.0	1.0	-1.0	1.5	1.0	10.0	1.2
V - 4	2.5	3.0	-0.5	0.0	0.0	8.5	1.3
V - 5	0.5	-0.5	1.5	-0.5	0.0	13.0	2.9
V - 6	13.0	0.5	-1.0	0.0	0.0	8.0	3.6
VI - 1	0.0	0.0	-0.5	4.0	0.0	10.0	1.6
VI - 2	0.5	0.0	1.0	0.5	0.0	13.0	2.7
VI - 3	0.0	0.0	0.0	1.0	0.0	5.0	0.9
VI - 4	0.0	0.5	1.5	2.5	0.5	14.0	1.5
VI - 5	-0.5	0.5	-0.5	0.0	1.0	14.0	3.0
VI - 6	0.0	0.0	1.5	-0.5	1.0	16.0	2.0
average	1.0	0.4	0.4	0.5	0.1	10.3	0.6
s.d.	2.5	0.8	3.0	0.9	0.5	5.1	2.0

Table 2-14. Net snow accumulation in the 36-stake farm at Dome Fuji in 1995- 96.

(cm in depth)

Stake No.	Stake No.	25 Jan. 1995 15 Feb.	15 Feb. 28 Feb.	28 Feb. 15 Mar.	15 Mar. 30 Mar.	30 Mar. 15 Apr.	15 Apr. 30 Apr.	30 Apr. 15 May.	15 May. 30 May.
I - 1	I - 1	1.0	-0.5	-0.5	0.5	0.5	-1.0	0.0	0.5
I - 2	I - 2	0.5	2.0	0.0	-0.5	0.0	5.0	-1.0	-3.0
I - 3	I - 3	0.0	0.5	-0.5	0.0	0.5	1.5	0.5	0.0
I - 4	I - 4	0.5	0.0	0.0	0.0	0.0	5.5	-1.0	-2.0
I - 5	I - 5	1.0	-1.0	0.5	0.0	0.5	0.5	-1.0	-0.5
I - 6	I - 6	-0.5	-0.5	-0.5	0.0	0.5	8.5	-1.5	0.5
II - 1	II - 1	1.5	0.0	0.0	-0.5	0.0	1.0	-0.5	0.0
II - 2	II - 2	1.0	-0.5	0.0	0.5	1.0	3.0	-2.0	-0.5
II - 3	II - 3	0.5	-0.5	1.0	1.0	0.5	0.0	-1.0	12.5
II - 4	II - 4	0.0	0.0	0.0	0.0	0.0	3.0	-2.0	4.5
II - 5	II - 5	2.0	-1.0	0.0	0.0	1.0	0.5	-1.0	-0.5
II - 6	II - 6	0.0	0.0	0.0	0.0	0.0	0.5	-0.5	3.5
III - 1	III - 1	0.5	0.0	3.0	-0.5	0.5	0.0	0.0	2.0
III - 2	III - 2	1.0	-0.5	0.0	0.0	0.0	0.5	0.0	0.0
III - 3	III - 3	1.0	-1.0	0.5	0.0	9.5	-1.0	-1.0	-1.5
III - 4	III - 4	1.5	-0.5	-0.5	0.5	0.0	0.0	0.0	0.0
III - 5	III - 5	1.0	-0.5	1.5	-0.5	1.0	4.5	-1.0	-2.0
III - 6	III - 6	-0.5	0.0	0.5	0.0	0.0	0.0	-0.5	-0.5
IV - 1	IV - 1	0.5	-0.5	0.0	0.0	4.0	-1.5	-2.5	0.0
IV - 2	IV - 2	4.0	-0.5	0.0	0.0	0.5	0.5	-0.5	-0.5
IV - 3	IV - 3	-0.5	0.0	-0.5	0.0	0.5	0.0	-0.5	9.0
IV - 4	IV - 4	-0.5	3.0	0.0	-0.5	7.5	-6.5	-0.5	0.0
IV - 5	IV - 5	1.5	2.5	0.0	-0.5	1.5	2.5	-1.0	-2.5
IV - 6	IV - 6	1.0	0.5	-0.5	0.5	-0.5	0.0	0.0	6.0
V - 1	V - 1	1.5	-0.5	3.5	-0.5	0.0	7.0	-2.5	-1.0
V - 2	V - 2	0.5	0.5	-0.5	0.0	2.0	-1.5	-0.5	0.0
V - 3	V - 3	1.5	-0.5	0.0	0.0	0.0	5.5	-1.0	-1.0
V - 4	V - 4	0.5	0.0	-0.5	0.0	0.0	1.0	-1.0	3.5
V - 5	V - 5	1.0	-0.5	0.0	0.5	0.5	1.0	-0.5	1.5
V - 6	V - 6	0.0	-0.5	0.0	0.0	0.5	1.0	-0.5	-7.0
VI - 1	VI - 1	1.5	0.0	1.0	-0.5	0.0	2.0	-2.0	2.0
VI - 2	VI - 2	1.0	7.0	1.5	0.0	-0.5	0.5	-0.5	-0.5
VI - 3	VI - 3	1.5	0.0	0.0	-0.5	0.5	-0.5	0.0	0.0
VI - 4	VI - 4	0.0	3.5	1.0	0.5	-0.5	1.5	-1.0	-0.5
VI - 5	VI - 5	1.0	0.5	0.5	-0.5	4.0	-1.5	-1.5	-1.0
VI - 6	VI - 6	0.5	1.0	5.5	0.0	7.0	-5.5	0.5	-2.0
average	average	0.8	0.3	0.4	0.0	1.2	1.0	-0.8	0.5
s.d.	s.d.	0.9	1.6	1.3	0.4	2.3	3.0	0.7	3.4

Table 2-14 (continued).

(cm in depth)

Stake No.	30 May. 15 Jun.	15 Jun. 30 Jun.	30 Jun. 15 Jul.	15 Jul. 30 Jul.	30 Jul. 15 Aug.	15 Aug. 30 Aug.	30 Aug. 15 Sep.	15 Sep. 30 Sep.	30 Sep. 15 Oct.
I - 1	14.0	-1.5	-9.5	4.0	-1.0	-0.5	0.5	0.5	-0.5
I - 2	-1.5	0.0	8.0	-1.5	1.0	0.0	1.0	1.0	0.5
I - 3	12.5	1.0	-8.0	-2.0	0.0	0.0	1.5	1.5	0.0
I - 4	2.0	0.0	7.0	-5.5	0.0	-0.5	0.5	0.0	-0.5
I - 5	0.0	0.0	0.0	3.5	0.0	1.0	-1.0	2.5	-1.5
I - 6	-6.0	0.5	2.5	-4.0	1.0	0.5	0.5	0.0	1.5
II - 1	-1.0	0.5	0.0	4.5	0.0	0.0	0.0	0.5	-0.5
II - 2	7.0	0.0	-9.0	6.0	0.0	1.0	0.5	5.0	-4.0
II - 3	-10.0	12.0	-12.5	-0.5	0.0	0.5	0.0	0.5	4.0
II - 4	3.0	0.5	-2.0	-3.5	0.5	0.0	1.5	1.5	-2.0
II - 5	0.0	0.0	0.0	3.0	0.5	0.5	0.0	0.5	0.0
II - 6	-2.0	0.0	-0.5	1.0	-0.5	0.5	0.0	0.5	6.0
III - 1	-3.0	0.5	5.0	-3.5	0.0	-0.5	0.5	2.5	9.0
III - 2	-1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	-0.5
III - 3	-5.5	1.0	13.5	-6.0	-0.5	0.0	1.0	1.0	-1.5
III - 4	1.0	0.0	-0.5	0.0	-0.5	0.0	0.0	0.0	0.5
III - 5	-2.5	0.5	5.0	7.5	0.0	0.0	0.5	0.0	0.0
III - 6	2.0	0.5	-2.5	1.5	-0.5	2.0	-1.0	0.0	1.0
IV - 1	19.0	0.0	-17.5	-0.5	1.5	1.5	0.5	1.5	4.0
IV - 2	-0.5	0.5	0.0	4.5	0.0	-0.5	0.5	0.0	0.0
IV - 3	-9.0	2.5	-1.5	7.0	3.0	-2.5	0.0	0.0	0.5
IV - 4	0.0	0.0	4.5	9.5	0.0	-0.5	0.5	0.0	0.5
IV - 5	-1.0	-0.5	4.0	-3.5	4.5	-2.0	1.5	0.5	-1.5
IV - 6	-6.5	0.0	0.5	5.5	0.0	0.0	0.0	0.0	0.5
V - 1	-1.5	0.5	-1.0	9.5	0.5	0.5	-0.5	1.5	-1.5
V - 2	-0.5	0.0	2.5	-2.5	0.5	0.0	0.5	3.0	4.0
V - 3	-2.0	4.5	3.5	-5.5	1.5	-1.5	0.0	1.0	-1.0
V - 4	15.0	-0.5	-12.0	-5.5	4.5	-0.5	1.5	-0.5	-3.0
V - 5	-3.5	0.0	0.5	0.0	1.0	0.0	3.5	1.0	7.0
V - 6	7.5	-1.0	3.5	-3.5	0.5	0.5	-0.5	0.5	0.0
VI - 1	3.5	-0.5	2.0	-5.0	6.5	-1.0	0.0	1.0	5.0
VI - 2	3.5	5.5	-8.5	-1.0	0.0	0.0	2.0	1.0	-2.0
VI - 3	0.0	0.5	-0.5	5.0	0.0	0.0	0.5	1.0	0.5
VI - 4	-0.5	0.0	4.0	-4.0	0.5	0.0	0.0	0.5	-0.5
VI - 5	23.5	0.0	-11.5	-2.0	6.0	-2.0	-0.5	0.5	-2.5
VI - 6	-4.5	0.5	4.0	-2.0	0.5	0.0	1.0	0.5	1.5
average	1.4	0.8	-0.8	0.3	0.9	-0.1	0.5	0.8	0.6
s.d.	7.4	2.3	6.5	4.5	1.8	0.9	0.9	1.1	2.8

Table 2-14 (continued).

(cm in depth)

Stake No.	15 Oct. 30 Oct.	30 Oct. 15 Nov.	15 Nov. 30 Nov.	30 Nov. 15 Dec.	15 Dec. 30 Dec.	30 Dec. 15 Jan. 96	25 Jan. 1995 15 Jan. 1996	s.d.
I - 1	0.5	0.0	0.0	-0.5	0.0	0.0	6.5	3.7
I - 2	2.5	-0.5	0.0	-0.5	0.5	-1.0	12.5	2.3
I - 3	1.0	0.0	0.0	-0.5	4.0	-0.5	13.0	3.3
I - 4	0.0	0.0	0.5	0.0	1.0	-1.5	6.0	2.3
I - 5	0.0	0.0	3.5	-1.0	2.5	0.0	9.5	1.4
I - 6	7.5	-0.5	-1.0	0.0	0.0	-1.5	7.5	3.0
II - 1	0.0	0.0	0.0	0.0	0.0	-1.5	4.0	1.1
II - 2	0.5	0.5	0.5	-0.5	0.5	-1.5	9.0	3.2
II - 3	1.0	0.0	0.0	-0.5	0.5	-1.0	8.0	5.1
II - 4	0.5	0.0	-0.5	0.0	2.0	0.0	7.0	1.8
II - 5	0.0	0.0	0.0	0.0	1.0	0.0	6.5	0.9
II - 6	0.5	0.0	-0.5	0.0	0.0	1.5	10.0	1.6
III - 1	0.5	0.0	0.5	0.0	0.0	-1.5	15.5	2.5
III - 2	0.0	0.0	0.0	0.0	1.5	-1.5	0.5	0.6
III - 3	0.0	0.0	0.0	-0.5	1.5	0.5	11.0	4.0
III - 4	0.0	-0.5	0.0	0.0	0.0	-0.5	0.5	0.5
III - 5	-0.5	0.5	0.0	-0.5	0.0	-1.0	13.5	2.3
III - 6	1.0	-0.5	0.0	0.0	-0.5	0.0	2.0	1.0
IV - 1	0.5	0.0	-1.0	-0.5	1.0	-0.5	9.5	5.7
IV - 2	0.0	0.0	0.0	-0.5	0.5	-0.5	7.5	1.3
IV - 3	0.0	0.0	1.0	0.0	0.5	-2.0	7.5	3.3
IV - 4	-0.5	0.0	0.0	0.0	-1.0	-1.5	14.0	3.1
IV - 5	-1.0	0.0	-1.0	0.0	1.0	-0.5	4.5	2.0
IV - 6	0.0	-0.5	1.0	-0.5	1.0	-1.0	7.0	2.3
V - 1	0.5	0.0	0.0	-0.5	0.0	-0.5	15.0	2.7
V - 2	-0.5	0.0	-0.5	-0.5	0.0	-1.5	5.0	1.5
V - 3	1.0	0.0	0.0	0.5	3.5	1.5	11.5	2.3
V - 4	3.0	0.0	-0.5	0.0	1.0	-0.5	5.5	4.5
V - 5	0.0	-0.5	0.5	-1.5	-0.5	0.5	11.5	1.9
V - 6	1.0	0.0	0.0	0.5	0.5	1.5	4.5	2.5
VI - 1	0.0	0.0	-0.5	-0.5	0.0	-1.5	13.0	2.4
VI - 2	1.0	0.0	0.0	1.0	-0.5	-0.5	10.0	2.8
VI - 3	-0.5	-0.5	0.5	-0.5	1.5	-1.0	7.5	1.2
VI - 4	0.0	0.0	0.0	0.0	1.0	-1.0	4.5	1.5
VI - 5	-0.5	0.0	0.5	0.0	1.0	0.5	14.5	5.8
VI - 6	0.0	0.0	0.0	-0.5	3.5	0.0	11.5	2.7
average	0.5	-0.1	0.1	-0.2	0.8	-0.5	8.5	0.6
s.d.	1.4	0.2	0.8	0.4	1.1	0.9	4.0	2.8

3. Positions of ARP1 and Summit routes

Observers: Ichio Obinata, Takashi Kurisaki, Kei Nakano and Takao Kameda

Tables 3-1 and 3-2 show the positions of ARP1 and Summit routes. These routes were newly established by JARE-44. The ARP1 route connects Dome Fuji and Air Relay Point 1 (ARP1, 73°44'06"S, 35°00'18"E, 3030 m). Three members of JARE-44 (Dr. I. Obinata and Messrs. T. Kurisaki and K. Nakano) established the route and constructed a snow runway at ARP1 in the 2003 season. Snow stakes and empty fuel drums were set along the route at 5 km and 10 km intervals, respectively. Special versions of Dornier DO 228-101 type aircraft (POLAR2 and POLAR4, Alfred-Wegener Institute for Polar and Marine Research, Federal Republic of Germany) landed at ARP1 on 30 November 2003, and five JARE-45 members (leader: Dr. H. Motoyama) arrived.

The Summit route connects between Dome Fuji and "Summit" (77°14'57.83"S, 39°14'00.49"E, ca. 3811 m a.s.l.). "Summit" is a tentative name, this site seems to be the highest point around Dome Fuji area as observed by satellite (personal communication with Dr. Shuji Fujita, NIPR) and GPS measurements by JARE-44. The distance between Dome Fuji and Summit along the route is 13.1 km. Snow stakes were installed along the route at each 2 km interval.

Table 3-1. Positions along the ARP1 route.

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
1	77	18.540	39	41.760	1	MD732
3	77	17.542	39	39.944	3	
5	77	16.543	39	38.132	5	
7	77	16.044	39	37.227	7	stake
9	77	15.544	39	36.324	9	
11	77	14.545	39	34.522	11	
13	77	13.546	39	32.724	13	drum and stake
15	77	12.547	39	30.930	15	
17	77	11.547	39	29.142	17	
19	77	11.047	39	28.249	19	stake
21	77	10.547	39	27.357	21	
23	77	9.547	39	25.578	23	
25	77	8.547	39	23.803	25	drum and stake
27	77	7.547	39	22.032	27	
29	77	6.546	39	20.266	29	
31	77	6.046	39	19.385	31	stake
33	77	5.545	39	18.504	33	
35	77	4.544	39	16.747	35	
37	77	3.543	39	14.994	37	drum and stake
39	77	2.542	39	13.246	39	
41	77	1.540	39	11.502	41	
43	77	1.039	39	10.632	43	stake
45	77	0.539	39	9.763	45	
47	76	59.537	39	8.028	47	
49	76	58.534	39	6.297	49	drum and stake
51	76	57.532	39	4.571	51	
53	76	56.530	39	2.849	53	
55	76	56.028	39	1.990	55	stake
57	76	55.527	39	1.131	57	
59	76	54.524	38	59.418	59	
61	76	53.521	38	57.709	61	drum and stake
63	76	52.517	38	56.004	63	
65	76	51.514	38	54.304	65	
67	76	51.012	38	53.455	67	stake
69	76	50.510	38	52.607	69	
71	76	49.506	38	50.915	71	
73	76	48.502	38	49.228	73	drum and stake
75	76	47.498	38	47.544	75	
77	76	46.494	38	45.865	77	
79	76	45.991	38	45.026	79	stake
81	76	45.489	38	44.189	81	
83	76	44.484	38	42.518	83	
85	76	43.479	38	40.851	85	drum and stake
87	76	42.474	38	39.188	87	
89	76	41.469	38	37.530	89	
91	76	40.966	38	36.702	91	stake
93	76	40.463	38	35.875	93	
95	76	39.458	38	34.224	95	
97	76	38.452	38	32.578	97	drum and stake
99	76	37.446	38	30.935	99	
101	76	36.440	38	29.297	101	
103	76	35.936	38	28.479	103	stake
105	76	35.433	38	27.663	105	
107	76	34.427	38	26.032	107	
109	76	33.420	38	24.406	109	drum and stake
111	76	32.413	38	22.783	111	
113	76	31.406	38	21.165	113	
115	76	30.902	38	20.357	115	stake

Table 3-1 (continued).

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
117	76	30.399	38	19.550	117	
119	76	29.391	38	17.940	119	
121	76	28.383	38	16.333	121	drum and stake
123	76	27.376	38	14.730	123	
125	76	26.368	38	13.131	125	
127	76	25.864	38	12.333	127	stake
129	76	25.360	38	11.536	129	
131	76	24.351	38	9.945	131	
133	76	23.343	38	8.358	133	drum and stake
135	76	22.334	38	6.775	135	
137	76	21.325	38	5.195	137	
139	76	20.821	38	4.407	139	stake
141	76	20.316	38	3.619	141	
143	76	19.307	38	2.047	143	
145	76	18.298	38	0.479	145	drum and stake
147	76	17.289	37	58.914	147	
149	76	16.279	37	57.354	149	
151	76	15.774	37	56.575	151	stake
153	76	15.269	37	55.797	153	
155	76	14.259	37	54.244	155	
157	76	13.249	37	52.694	157	drum and stake
159	76	12.239	37	51.148	159	
161	76	11.228	37	49.606	161	
163	76	10.723	37	48.836	163	stake
165	76	10.218	37	48.068	165	
167	76	9.207	37	46.533	167	
169	76	8.196	37	45.002	169	drum and stake
171	76	7.185	37	43.474	171	
173	76	6.174	37	41.950	173	
175	76	5.668	37	41.190	175	stake
177	76	5.162	37	40.430	177	
179	76	4.151	37	38.913	179	
181	76	3.139	37	37.400	181	drum and stake
183	76	2.127	37	35.891	183	
185	76	1.115	37	34.385	185	
187	76	0.609	37	33.633	187	stake
189	76	0.103	37	32.883	189	
191	75	59.091	37	31.384	191	
193	75	58.078	37	29.888	193	drum and stake
195	75	57.066	37	28.397	195	
197	75	56.053	37	26.908	197	
199	75	55.546	37	26.165	199	stake
201	75	55.040	37	25.423	201	
203	75	54.027	37	23.942	203	
205	75	53.014	37	22.464	205	drum and stake
207	75	52.000	37	20.990	207	
209	75	50.987	37	19.519	209	
211	75	50.480	37	18.785	211	stake
213	75	49.973	37	18.051	213	
215	75	48.959	37	16.587	215	
217	75	47.945	37	15.126	217	drum and stake
219	75	46.931	37	13.669	219	
221	75	45.917	37	12.215	221	
223	75	45.410	37	11.489	223	stake
225	75	44.902	37	10.764	225	
227	75	43.888	37	9.317	227	
229	75	42.873	37	7.873	229	drum and stake
231	75	41.858	37	6.433	231	

Table 3-1 (continued).

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
233	75	40.843	37	4.995	233	
235	75	40.336	37	4.278	235	stake
237	75	39.828	37	3.561	237	
239	75	38.813	37	2.131	239	
241	75	37.797	37	0.703	241	drum and stake
243	75	36.782	36	59.279	243	
245	75	35.766	36	57.859	245	
247	75	35.258	36	57.149	247	stake
249	75	34.750	36	56.441	249	
251	75	33.734	36	55.027	251	
253	75	32.718	36	53.616	253	drum and stake
255	75	31.702	36	52.208	255	
257	75	30.686	36	50.803	257	
259	75	30.177	36	50.102	259	stake
261	75	29.669	36	49.402	261	
263	75	28.652	36	48.003	263	
265	75	27.635	36	46.608	265	drum and stake
267	75	26.619	36	45.217	267	
269	75	25.601	36	43.828	269	
271	75	25.093	36	43.135	271	stake
273	75	24.584	36	42.442	273	
275	75	23.567	36	41.060	275	
277	75	22.549	36	39.680	277	drum and stake
279	75	21.532	36	38.304	279	
281	75	20.514	36	36.931	281	
283	75	20.005	36	36.246	283	stake
285	75	19.496	36	35.561	285	
287	75	18.478	36	34.194	287	
289	75	17.460	36	32.830	289	drum and stake
291	75	16.442	36	31.469	291	
293	75	15.423	36	30.112	293	
295	75	14.914	36	29.434	295	stake
297	75	14.405	36	28.757	297	
299	75	13.386	36	27.405	299	
301	75	12.367	36	26.056	301	drum and stake
303	75	11.348	36	24.711	303	
305	75	10.329	36	23.368	305	
307	75	9.819	36	22.698	307	stake
309	75	9.310	36	22.029	309	
311	75	8.290	36	20.692	311	
313	75	7.271	36	19.358	313	drum and stake
315	75	6.251	36	18.027	315	
317	75	5.232	36	16.700	317	
319	75	4.722	36	16.037	319	stake
321	75	4.212	36	15.375	321	
323	75	3.192	36	14.053	323	
325	75	2.172	36	12.734	325	drum and stake
327	75	1.152	36	11.418	327	
329	75	0.131	36	10.104	329	
331	74	59.621	36	9.449	331	stake
333	74	59.111	36	8.794	333	
335	74	58.090	36	7.487	335	
337	74	57.069	36	6.182	337	drum and stake
339	74	56.049	36	4.880	339	
341	74	55.028	36	3.582	341	
343	74	54.517	36	2.933	343	stake
345	74	54.007	36	2.286	345	
347	74	52.985	36	0.993	347	

Table 3-1 (continued).

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
349	74	51.971	35	59.636	349	drum and stake
351	74	50.977	35	58.062	351	
353	74	49.983	35	56.491	353	
355	74	49.486	35	55.707	355	stake
357	74	48.989	35	54.924	357	
359	74	47.995	35	53.359	359	
361	74	47.000	35	51.799	361	drum and stake
363	74	46.006	35	50.241	363	
365	74	45.011	35	48.687	365	
367	74	44.514	35	47.911	367	stake
369	74	44.016	35	47.136	369	
371	74	43.021	35	45.589	371	
373	74	42.026	35	44.045	373	drum and stake
375	74	41.030	35	42.504	375	
377	74	40.035	35	40.966	377	
379	74	39.537	35	40.198	379	stake
381	74	39.039	35	39.432	381	
383	74	38.043	35	37.900	383	
385	74	37.047	35	36.372	385	drum and stake
387	74	36.050	35	34.848	387	
389	74	35.054	35	33.326	389	
391	74	34.555	35	32.567	391	stake
393	74	34.057	35	31.808	393	
395	74	33.060	35	30.293	395	
397	74	32.063	35	28.781	397	drum and stake
399	74	31.066	35	27.272	399	
401	74	30.068	35	25.767	401	
403	74	29.570	35	25.015	403	stake
405	74	29.071	35	24.264	405	
407	74	28.073	35	22.765	407	
409	74	27.075	35	21.269	409	drum and stake
411	74	26.077	35	19.776	411	
413	74	25.079	35	18.286	413	
415	74	24.579	35	17.542	415	stake
417	74	24.080	35	16.799	417	
419	74	23.082	35	15.316	419	
421	74	22.083	35	13.835	421	drum and stake
423	74	21.084	35	12.357	423	
425	74	20.085	35	10.883	425	
427	74	19.585	35	10.147	427	stake
429	74	19.085	35	9.412	429	
431	74	18.086	35	7.943	431	
433	74	17.086	35	6.478	433	drum and stake
435	74	16.086	35	5.016	435	
437	74	15.086	35	3.557	437	
439	74	14.586	35	2.828	439	stake
441	74	14.086	35	2.100	441	
443	74	13.086	35	0.647	443	
445	74	12.086	34	59.197	445	drum and stake
AC	74	12.033	34	59.133	447	JARE26
449	74	11.012	34	59.188	449	
451	74	9.936	34	59.217	451	
453	74	9.399	34	59.232	453	stake
455	74	8.861	34	59.246	455	
457	74	7.785	34	59.275	457	
459	74	6.710	34	59.303	459	drum and stake
461	74	5.634	34	59.332	461	
463	74	4.559	34	59.361	463	

Table 3-1 (continued).

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
465	74	4.021	34	59.375	465	stake
467	74	3.483	34	59.389	467	
469	74	2.408	34	59.418	469	
471	74	1.332	34	59.446	471	drum and stake
473	74	0.257	34	59.475	473	
475	73	59.181	34	59.503	475	
477	73	58.643	34	59.517	477	stake
479	73	58.106	34	59.531	479	
481	73	57.030	34	59.560	481	
483	73	55.954	34	59.588	483	drum and stake
485	73	54.879	34	59.616	485	
487	73	53.803	34	59.644	487	
489	73	53.266	34	59.658	489	stake
491	73	52.728	34	59.672	491	
493	73	51.652	34	59.700	493	
495	73	50.577	34	59.728	495	drum and stake
497	73	49.501	34	59.756	497	
499	73	48.426	34	59.784	499	
501	73	47.888	34	59.798	501	stake
503	73	47.350	34	59.812	503	
505	73	46.274	34	59.840	505	
507	73	45.199	34	59.867	507	drum and stake
ARP1	73	44.100	35	0.300	509	

Table 3-2. Positions along the Summit route.

Station	Latitude (S) degree (°)	minutes (')	Longtitude (E) degree (°)	minutes (')	Distance (km) from D/F	Remarks
0	77	18.540	39	41.787	0	MD732
2	77	17.995	39	37.543	2	
4	77	17.449	39	33.332	4	
6	77	16.902	39	29.127	6	
8	77	16.354	39	24.928	8	
10	77	15.805	39	20.734	10	
12	77	15.255	39	16.547	12	
"Summit"	77	14.940	39	14.160	13.1	

4. Surface snow density at Dome Fuji

Observer: Takao Kameda

Surface snow densities at Dome Fuji were measured twice a month from 30 January 2003 to 15 January 2004. Two types of snow sampler (rectangular and cylindrical shapes) were used. The rectangular type snow sampler (55.0 x 60.0 x 30.0 mm) was used from the surface to 3 cm depth, and cylindrical types (diameter 65 mm) were used from the surface to 10 cm and 20 cm depths. The weight of snow in the sampler was measured using an electronic balance (A&D Co. Ltd., Japan, Type GX-4000, minimum reading 0.01 g) using polyethylene vinyl. Errors of volume measurements are on the order of ±0.5 cm^3, and that of weight is ±0.01 g. Total error of the snow density measurements is thus ±0.002 g/cm^3.

Table 4 shows results. All data are averages of two measurements. Snow densities were measured near the 36-stake farm.

Table 4. Surface snow density at Dome Fuji in 2003-04.

Date	Snow density (g/cm^3) 0-3cm in depth	Snow density (g/cm^3) 0-10cm in depth	Snow density (g/cm^3) 0-20cm in depth
05 Feb. 2003	0.310	0.281	
15 Feb.	0.348	0.304	
01 Mar.	0.331	0.282	
15 Mar.	0.342	0.297	
31 Mar.	0.311	0.291	
16 Apr.	0.243	0.295	
30 Apr.	0.257	0.252	
16 May.	0.279	0.262	
30 May.	0.272	0.264	
14 Jun.	0.291	0.267	
30 Jun.	0.287	0.297	
15 Jul.	0.288	0.247	
30 Jul.	0.285	0.271	0.283
15 Aug.	0.248	0.230	0.262
30 Aug.	0.291	0.282	0.275
15 Sep.	0.279	0.266	0.287
30 Sep.	0.287	0.285	0.284
15 Oct.	0.278	0.263	0.271
30 Oct.	0.285	0.257	0.260
14 Nov.	0.299	0.275	0.273
30 Nov.	0.289	0.269	0.281
15 Dec.	0.367	0.348	0.307
30 Dec.	0.333	0.300	0.314
15 Jan. 2004	0.303	0.326	0.327
Average	0.296	0.280	0.285

5. Snow temperature at Dome Fuji

Observers: Takao Kameda and Koji Fujita

Snow temperatures at Dome Fuji were measured at depths of 0, 0.05, 0.1, 0.2, 0.4, 0.8, 1.2, 1.5, 2, 3, 6 and 11 m depths using platinum 100 ohm resistance sensors (3 wire type) with data logger (KADEC US6, Kona System Co. Ltd., Sapporo, Japan). The depths were measured on 5 February 2003. These measurements were carried out at the two sites (Site-1 and Site-2) shown in Fig. 5. The snow temperatures at six shallower depths were measured at Site-1 and snow temperatures at deeper six depths were measured at Site-2. The shallower six sensors were installed on 31 January 2003. The deeper six sensors were installed on 20 February 1995 by JARE-36 (Azuma *et al.*, 1997).

Table 5-1 shows snow temperature data at Dome Fuji at 12 hour intervals. Snow sometimes accumulated on sensors, thus sensor depths were changed. The snow heights on the sensors are summarized in Table 5-2. The accumulated snow on the sensors at the surface was only removed as fast as we can. The minimum resolution of snow temperatures was 0.01°C. The data logger was located in a room of Dome Fuji Station where air temperature ranges from about 15 to 25°C.

Reference

Azuma, N., Kameda, T., Nakayama, Y., Tanaka, Y., Yoshimi, H., Furukawa, T. and Ageta, Y. (1997): Glaciological data collected by the 36th Japanese Antarctic Research Expedition during 1995-1996. JARE Data Rep., **223** (Glaciology 26), 83 p.

Table 5-1. Snow temperature at Dome Fuji from 7 February 2003 to 17 January 2004.

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/2/7	0:00							-43.87	-46.19	-48.08	-52.54	-57.18	-57.15
2003/2/7	12:00							-43.89	-46.19	-48.06	-52.52	-57.17	-57.15
2003/2/8	0:00							-43.91	-46.18	-48.04	-52.48	-57.15	-57.15
2003/2/8	12:00							-43.93	-46.18	-48.02	-52.45	-57.14	-57.15
2003/2/9	0:00	-46.85	-41.64	-40.14	-39.78	-40.74	-42.46	-43.97	-46.19	-48.02	-52.43	-57.14	-57.16
2003/2/9	12:00	-35.18	-40.75	-41.48	-41.25	-40.90	-42.54	-44.00	-46.19	-48.00	-52.40	-57.12	-57.17
2003/2/10	0:00	-48.42	-42.70	-41.46	-40.85	-41.22	-42.62	-44.02	-46.19	-47.99	-52.37	-57.12	-57.17
2003/2/10	12:00	-36.78	-42.67	-43.17	-42.49	-41.51	-42.68	-44.04	-46.19	-47.98	-52.33	-57.10	-57.17
2003/2/11	0:00	-51.00	-44.45	-42.85	-41.96	-41.92	-42.80	-44.07	-46.19	-47.96	-52.29	-57.08	-57.16
2003/2/11	12:00	-37.22	-43.67	-44.35	-43.57	-42.22	-42.90	-44.10	-46.19	-47.95	-52.26	-57.07	-57.16
2003/2/12	0:00	-50.65	-44.74	-43.30	-42.64	-42.61	-43.05	-44.15	-46.20	-47.94	-52.24	-57.06	
2003/2/12	12:00	-37.57	-43.96	-44.68	-44.04	-42.81	-43.20	-44.21	-46.21	-47.93	-52.19	-57.04	-57.16
2003/2/13	0:00	-51.44	-45.74	-44.15	-43.24	-43.12	-43.36	-44.26	-46.22	-47.91	-52.16	-57.03	-57.17
2003/2/13	12:00	-37.97	-44.29	-45.02	-44.49	-43.32	-43.50	-44.34	-46.24	-47.91	-52.14	-57.00	-57.16
2003/2/14	0:00	-52.36	-46.36	-44.72	-43.76	-43.57	-43.67	-44.40	-46.26	-47.90	-52.10	-56.98	-57.15
2003/2/14	12:00	-40.03	-45.70	-46.20		-43.82	-43.82	-44.49	-46.28	-47.89	-52.06	-56.96	-57.15
2003/2/15	0:00	-53.67	-47.46	-45.76	-44.31	-44.15	-43.99	-44.57	-46.30	-47.89	-52.03	-56.95	-57.16
2003/2/15	12:00	-40.46	-46.14	-46.71	-45.84	-44.40	-44.13	-44.65	-46.33	-47.90	-52.02	-56.94	-57.16
2003/2/16	0:00	-52.55	-47.50	-46.07	-45.07	-44.71	-44.31	-44.75	-46.37	-47.90	-51.99	-56.93	-57.16
2003/2/16	12:00	-42.11	-46.87	-47.25	-46.30	-44.90	-44.47	-44.83	-46.42	-47.89	-51.96	-56.91	-57.15
2003/2/17	0:00	-55.01	-48.73	-46.97	-45.66	-45.20	-44.64	-44.94	-46.46	-47.90	-51.94	-56.90	-57.15
2003/2/17	12:00	-42.31	-48.13	-48.53	-47.28	-45.47	-44.79	-45.03	-46.50	-47.90	-51.91	-56.88	-57.14
2003/2/18	0:00	-54.76	-48.87	-47.33	-46.23	-45.80	-44.98	-45.14	-46.54	-47.92	-51.89	-56.86	-57.15
2003/2/18	12:00	-40.52	-47.47	-48.31	-47.58	-45.98	-45.14	-45.25	-46.58	-47.93	-51.86	-56.84	-57.14
2003/2/19	0:00	-40.08	-41.95	-43.44	-45.27	-46.05	-45.32	-45.36	-46.65	-47.94	-51.84	-56.83	-57.15
2003/2/19	12:00	-34.01	-40.79	-42.65	-44.20	-45.42	-45.49	-45.48	-46.69	-47.96	-51.82	-56.82	-57.14
2003/2/20	0:00	-43.15	-42.15	-42.20	-43.16	-44.94	-45.58	-45.59	-46.75	-47.97	-51.79	-56.80	-57.15
2003/2/20	12:00	-31.55	-39.54	-41.70	-43.36	-44.54	-45.58	-45.70	-46.80	-48.00	-51.77	-56.79	-57.15
2003/2/21	0:00	-44.93	-42.38	-41.60	-42.09	-44.15	-45.56	-45.77	-46.86	-48.02	-51.76	-56.78	-57.15
2003/2/21	12:00	-38.34	-42.91	-43.68	-43.54	-43.96	-45.48	-45.83	-46.93	-48.06	-51.73	-56.76	-57.15
2003/2/22	0:00	-52.83	-45.95	-44.19	-43.38	-44.14	-45.42	-45.87	-46.97	-48.08	-51.72	-56.75	-57.15
2003/2/22	12:00	-43.56	-47.56	-47.50	-45.75	-44.47	-45.36	-45.90	-47.03	-48.10	-51.71	-56.72	-57.15
2003/2/23	0:00	-57.04	-50.54	-48.16	-45.81	-45.09	-45.37	-45.91	-47.06	-48.13	-51.68	-56.71	-57.15
2003/2/23	12:00	-42.93	-48.31	-48.95	-47.56	-45.70	-45.45	-45.92	-47.10	-48.15	-51.67	-56.70	-57.15
2003/2/24	0:00	-52.31	-48.68	-47.52	-46.47	-46.10	-45.58	-45.94	-47.13	-48.17	-51.65	-56.68	-57.15
2003/2/24	12:00	-40.29	-46.10	-47.22	-46.83	-46.21	-45.73	-45.98	-47.16	-48.19	-51.64	-56.67	-57.15
2003/2/25	0:00	-46.37	-45.49	-45.51	-45.47	-46.23	-45.89	-46.04	-47.18	-48.21	-51.63	-56.65	-57.15
2003/2/25	12:00	-33.83	-41.73	-44.09	-45.27	-46.00	-46.03	-46.10	-47.20	-48.23	-51.61	-56.64	-57.15
2003/2/26	0:00	-46.82	-43.24	-42.71	-43.27	-45.59	-46.11	-46.19	-47.23	-48.24	-51.60	-56.63	-57.15
2003/2/26	12:00	-39.43	-43.53	-44.36	-44.28	-45.22	-46.13	-46.26	-47.27	-48.26	-51.59	-56.61	-57.15
2003/2/27	0:00	-48.07	-44.65	-44.13	-43.90	-45.24	-46.13	-46.32	-47.31	-48.28	-51.57	-56.59	-57.15
2003/2/27	12:00	-40.18	-44.72	-45.41	-44.86	-45.24	-46.10	-46.39	-47.36	-48.33	-51.57	-56.59	-57.15
2003/2/28	0:00	-47.96	-45.12	-44.63	-44.20	-45.36	-46.09	-46.42	-47.40	-48.34	-51.55	-56.57	-57.15
2003/2/28	12:00	-40.63	-45.26	-45.83	-45.11	-45.37	-46.09	-46.45	-47.43	-48.36	-51.54	-56.56	-57.15
2003/3/1	0:00	-45.96	-43.13	-43.14	-44.20	-45.48	-46.12	-46.47	-47.46	-48.38	-51.53	-56.54	-57.15
2003/3/1	12:00	-38.07	-43.04	-44.08	-44.65	-45.21	-46.14	-46.50	-47.49	-48.41	-51.51	-56.54	-57.15
2003/3/2	0:00	-49.87	-45.17	-44.14	-44.15	-45.12	-46.15	-46.52	-47.52	-48.43	-51.50	-56.52	-57.15
2003/3/2	12:00	-44.58	-47.34	-47.08	-45.92	-45.22	-46.13	-46.55	-47.54	-48.44	-51.50	-56.50	-57.15
2003/3/3	0:00	-56.67	-50.46	-48.21	-46.34	-45.68	-46.13	-46.56	-47.58	-48.47	-51.49	-56.50	-57.16
2003/3/3	12:00	-47.30	-51.06	-50.67	-48.52	-46.24	-46.17	-46.58	-47.60	-48.49	-51.48	-56.48	-57.16
2003/3/4	0:00	-56.63	-51.45	-49.81	-48.24	-46.91	-46.29	-46.59	-47.62	-48.50	-51.48	-56.45	-57.15
2003/3/4	12:00	-47.24	-50.81	-50.78	-49.38	-47.32	-46.43	-46.63	-47.64	-48.52	-51.48	-56.44	-57.14
2003/3/5	0:00	-54.05	-50.84	-49.81	-48.78	-47.71	-46.63	-46.69	-47.66	-48.53	-51.47	-56.42	-57.15
2003/3/5	12:00	-45.85	-49.80	-50.11	-49.38	-47.89	-46.81	-46.76	-47.70	-48.56	-51.47	-56.41	-57.15
2003/3/6	0:00	-56.16	-51.38	-49.86	-48.74	-48.04	-47.00	-46.85	-47.72	-48.57	-51.46	-56.40	-57.15
2003/3/6	12:00	-47.33	-50.96	-51.04	-49.91	-48.23	-47.16	-46.94	-47.76	-48.59	-51.45	-56.39	-57.15
2003/3/7	0:00	-55.44	-51.98	-50.67	-49.46	-48.51	-47.33	-47.03	-47.80	-48.61	-51.45	-56.38	-57.16
2003/3/7	12:00	-48.55	-51.54	-51.54	-50.42	-48.72	-47.48	-47.12	-47.85	-48.63	-51.44	-56.36	-57.15
2003/3/8	0:00	-56.87	-53.83	-51.96	-50.14	-48.98	-47.64	-47.23	-47.90	-48.65	-51.44	-56.35	-57.15
2003/3/8	12:00	-48.68	-53.35	-53.32	-51.58	-49.29	-47.79	-47.34	-47.95	-48.68	-51.44	-56.34	-57.16
2003/3/9	0:00	-61.88	-56.28	-53.90	-51.41	-49.68	-47.97	-47.43	-48.00	-48.69	-51.43	-56.32	-57.15
2003/3/9	12:00	-48.88	-54.09	-54.33	-52.76	-50.14	-48.15	-47.53	-48.07	-48.72	-51.43	-56.31	-57.14
2003/3/10	0:00	-59.73	-55.99	-54.25	-52.28	-50.49	-48.37	-47.65	-48.12	-48.76	-51.43	-56.30	-57.16
2003/3/10	12:00	-48.42	-53.90	-54.35	-53.13	-50.81	-48.56	-47.78	-48.19	-48.80	-51.44	-56.30	-57.15
2003/3/11	0:00	-58.80	-54.98	-53.64	-52.27	-50.97	-48.79	-47.90	-48.25	-48.83	-51.43	-56.27	-57.15
2003/3/11	12:00	-49.27	-54.09	-54.35	-53.12	-51.12	-48.98	-48.04	-48.34	-48.88	-51.43	-56.27	-57.16
2003/3/12	0:00	-60.03	-56.11	-54.38	-52.64	-51.28	-49.18	-48.16	-48.41	-48.90	-51.43	-56.25	-57.15
2003/3/12	12:00	-50.57	-55.92	-55.89	-54.03	-51.55	-49.35	-48.30	-48.48	-48.94	-51.42	-56.24	-57.16
2003/3/13	0:00	-60.06	-57.01	-55.46	-53.62	-51.87	-49.53	-48.42	-48.56	-48.99	-51.42	-56.22	-57.15
2003/3/13	12:00	-50.89	-55.68	-55.81	-54.42	-52.13	-49.71	-48.56	-48.64	-49.04	-51.42	-56.21	-57.15
2003/3/14	0:00	-60.11	-57.07	-55.61		-52.33	-49.90	-48.69	-48.72	-49.08	-51.42	-56.19	-57.15
2003/3/14	12:00	-51.87	-56.70	-56.61		-52.57	-50.10	-48.83	-48.81	-49.13	-51.43	-56.16	-57.15
2003/3/15	0:00	-64.35	-59.61	-57.42		-52.83	-50.28	-48.97	-48.89	-49.18	-51.43	-56.16	-57.15
2003/3/15	12:00	-53.74	-57.84	-57.87		-53.28	-50.46	-49.09	-48.98	-49.23	-51.43	-56.15	-57.15
2003/3/16	0:00	-54.14	-55.70	-55.55		-53.54	-50.67	-49.22	-49.08	-49.29	-51.43	-56.13	-57.15
2003/3/16	12:00	-46.60	-52.10	-53.51		-53.35	-50.87	-49.37	-49.16	-49.34	-51.44	-56.12	-57.15
2003/3/17	0:00	-51.91	-52.59	-52.44		-52.95	-51.04	-49.48	-49.25	-49.39	-51.44	-56.10	-57.14

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/3/17	12:00	-44.40	-49.09	-50.46		-52.47	-51.12	-49.63	-49.35	-49.44	-51.45	-56.09	-57.15
2003/3/18	0:00	-55.80	-52.73	-51.64		-51.90	-51.16	-49.76	-49.43	-49.49	-51.45	-56.08	-57.14
2003/3/18	12:00	-53.92	-54.49	-53.90		-51.87	-51.12	-49.86	-49.53	-49.56	-51.46	-56.07	-57.15
2003/3/19	0:00	-59.01	-56.05	-54.65		-52.14	-51.09	-49.94	-49.62	-49.63	-51.47	-56.06	-57.14
2003/3/19	12:00	-53.98	-55.81	-55.52		-52.47	-51.09	-50.02	-49.70	-49.68	-51.48	-56.05	-57.15
2003/3/20	0:00	-60.22	-57.58	-56.11		-52.77	-51.15	-50.07	-49.79	-49.74	-51.48	-56.04	-57.14
2003/3/20	12:00	-54.49	-56.51	-56.34		-53.12	-51.25	-50.13	-49.85	-49.81	-51.50	-56.02	-57.14
2003/3/21	0:00	-57.42	-56.26	-55.55		-53.33	-51.37	-50.19	-49.91	-49.86	-51.50	-56.01	-57.14
2003/3/21	12:00	-56.38	-56.74	-56.19		-53.41	-51.50	-50.28	-49.98	-49.92	-51.53	-56.00	-57.14
2003/3/22	0:00	-61.16	-58.49	-57.01		-53.64	-51.62	-50.36	-50.05	-49.97	-51.54	-55.99	-57.13
2003/3/22	12:00	-59.66	-59.45	-58.47		-53.99	-51.74	-50.43	-50.11	-50.03	-51.55	-55.98	-57.13
2003/3/23	0:00	-65.26	-60.88	-59.07		-54.46	-51.91	-50.53	-50.18	-50.08	-51.58	-55.96	-57.13
2003/3/23	12:00	-61.14	-61.34	-60.28		-54.96	-52.07	-50.63	-50.25	-50.14	-51.59	-55.95	-57.14
2003/3/24	0:00	-63.69	-61.48	-60.18		-55.45	-52.27	-50.73	-50.32	-50.19	-51.60	-55.94	-57.13
2003/3/24	12:00	-59.73	-61.28	-60.51		-55.78	-52.50	-50.83	-50.39	-50.25	-51.62	-55.93	-57.13
2003/3/25	0:00	-66.12	-62.15	-60.56		-56.07	-52.75	-50.97	-50.48	-50.30	-51.63	-55.92	-57.13
2003/3/25	12:00	-55.89	-59.35	-59.75		-56.35	-52.95	-51.12	-50.55	-50.36	-51.65	-55.90	-57.13
2003/3/26	0:00	-57.75	-58.05	-57.96		-56.34	-53.18	-51.26	-50.63	-50.41	-51.66	-55.88	-57.13
2003/3/26	12:00	-58.39	-58.75	-58.22		-56.10	-53.36	-51.40	-50.72	-50.48	-51.68	-55.88	-57.14
2003/3/27	0:00	-65.88	-61.70	-59.92		-56.11	-53.52	-51.54	-50.81	-50.54	-51.70	-55.87	-57.13
2003/3/27	12:00	-61.39	-62.31	-61.35		-56.46	-53.62	-51.68	-50.90	-50.60	-51.72	-55.86	-57.13
2003/3/28	0:00	-67.96	-63.82	-61.98		-56.90	-53.76	-51.81	-51.01	-50.65	-51.73	-55.85	-57.13
2003/3/28	12:00	-62.88	-63.70	-62.73		-57.38	-53.92	-51.93	-51.09	-50.73	-51.74	-55.84	-57.13
2003/3/29	0:00	-69.37	-65.08	-63.19		-57.78	-54.12	-52.05	-51.19	-50.79	-51.77	-55.83	-57.13
2003/3/29	12:00	-63.61	-64.42	-63.58		-58.20	-54.34	-52.19	-51.29	-50.85	-51.79	-55.82	-57.13
2003/3/30	0:00	-66.80	-64.84	-63.52		-58.53	-54.57	-52.33	-51.37	-50.92	-51.81	-55.81	-57.13
2003/3/30	12:00	-66.21	-65.89	-64.50		-58.82	-54.81	-52.47	-51.47	-51.00	-51.83	-55.79	-57.12
2003/3/31	0:00	-71.99	-67.94	-65.66		-59.21	-55.04	-52.63	-51.58	-51.06	-51.85	-55.79	-57.13
2003/3/31	12:00	-65.81	-66.38	-65.40		-59.74	-55.29	-52.78	-51.68	-51.14	-51.88	-55.78	-57.13
2003/4/1	0:00	-68.45	-65.78	-64.58		-59.96	-55.54	-52.95	-51.78	-51.20	-51.89	-55.76	-57.12
2003/4/1	12:00	-64.30	-64.99	-64.41		-60.11	-55.78	-53.12	-51.88	-51.28	-51.92	-55.76	-57.12
2003/4/2	0:00	-67.81	-65.56	-64.42		-60.17	-56.03	-53.28	-51.99	-51.35	-51.94	-55.75	-57.12
2003/4/2	12:00	-65.56	-66.01	-65.04		-60.31	-56.23	-53.46	-52.11	-51.42	-51.96	-55.73	-57.12
2003/4/3	0:00	-69.08	-66.41	-65.03		-60.50	-56.41	-53.62	-52.23	-51.50	-51.98	-55.73	-57.12
2003/4/3	12:00	-67.15	-67.14	-65.97		-60.74	-56.62	-53.79	-52.34	-51.60	-52.01	-55.72	-57.12
2003/4/4	0:00	-66.83	-66.13	-65.34		-61.01	-56.78	-53.93	-52.46	-51.67	-52.03	-55.71	-57.12
2003/4/4	12:00	-62.68	-64.23	-64.03		-61.05	-56.97	-54.08	-52.57	-51.75	-52.06	-55.70	-57.12
2003/4/5	0:00	-66.86	-64.65	-63.80		-60.90	-57.16	-54.24	-52.69	-51.84	-52.09	-55.69	-57.11
2003/4/5	12:00	-60.13	-62.79	-62.89		-60.83	-57.29	-54.40	-52.80	-51.93	-52.12	-55.68	-57.11
2003/4/6	0:00	-62.46	-61.50	-61.34		-60.52	-57.37	-54.52	-52.93	-52.00	-52.15	-55.67	-57.11
2003/4/6	12:00	-61.33	-61.85	-61.59		-60.21	-57.45	-54.65	-53.04	-52.10	-52.17	-55.66	-57.11
2003/4/7	0:00	-63.58	-62.91	-62.32		-60.05	-57.45	-54.76	-53.15	-52.17	-52.20	-55.66	-57.12
2003/4/7	12:00	-58.10	-60.63	-61.26		-60.05	-57.47	-54.86	-53.26	-52.28	-52.24	-55.65	-57.11
2003/4/8	0:00	-57.87	-60.02	-60.33		-59.84	-57.48	-54.95	-53.35	-52.36	-52.27	-55.63	-57.11
2003/4/8	12:00	-58.79	-59.17	-59.25		-59.49	-57.49	-55.03	-53.46	-52.44	-52.30	-55.62	-57.11
2003/4/9	0:00	-61.39	-60.16	-59.73		-59.13	-57.46	-55.08	-53.55	-52.53	-52.33	-55.62	-57.11
2003/4/9	12:00	-62.46	-61.64	-60.94		-59.08	-57.39	-55.14	-53.63	-52.60	-52.37	-55.60	-57.10
2003/4/10	0:00	-65.27	-62.94	-61.91		-59.23	-57.36	-55.18	-53.71	-52.68	-52.40	-55.60	-57.10
2003/4/10	12:00	-68.21	-65.03	-63.53		-59.53	-57.35	-55.20	-53.79	-52.76	-52.44	-55.59	-57.10
2003/4/11	0:00	-68.45	-65.73	-64.40		-60.02	-57.37	-55.22	-53.84	-52.83	-52.47	-55.59	-57.10
2003/4/11	12:00	-69.11	-66.35	-64.95		-60.46	-57.48	-55.26	-53.91	-52.92	-52.50	-55.58	-57.10
2003/4/12	0:00	-69.01	-66.77	-65.53		-60.90	-57.59	-55.30	-53.97	-52.98	-52.54	-55.57	-57.10
2003/4/12	12:00	-65.53	-66.01	-65.42		-61.26	-57.78	-55.37	-54.03	-53.04	-52.57	-55.56	-57.09
2003/4/13	0:00	-62.06	-62.77	-62.97		-61.39	-57.95	-55.44	-54.09	-53.10	-52.60	-55.55	-57.09
2003/4/13	12:00	-64.04	-63.40	-62.89		-61.10	-58.13	-55.54	-54.16	-53.16	-52.65	-55.54	-57.09
2003/4/14	0:00	-68.61	-65.92	-64.49		-61.02	-58.24	-55.63	-54.23	-53.23	-52.68	-55.54	-57.09
2003/4/14	12:00	-63.85	-65.35	-64.86		-61.30	-58.32	-55.73	-54.30	-53.29	-52.71	-55.52	-57.09
2003/4/15	0:00	-65.61	-64.43	-63.91		-61.41	-58.38	-55.82	-54.37	-53.35	-52.74	-55.52	-57.09
2003/4/15	12:00	-69.92	-66.65	-65.14		-61.45	-58.50	-55.90	-54.44	-53.41	-52.77	-55.51	-57.08
2003/4/16	0:00	-69.33	-67.31	-66.18		-61.72	-58.58	-55.98	-54.51	-53.49	-52.81	-55.51	-57.09
2003/4/16	12:00	-69.08	-67.40	-66.31		-62.06	-58.69	-56.06	-54.59	-53.55	-52.84	-55.50	-57.08
2003/4/17	0:00	-67.22	-66.74	-66.07		-62.30	-58.81	-56.14	-54.66	-53.61	-52.87	-55.49	-57.08
2003/4/17	12:00	-68.25	-66.39	-65.42		-62.37	-58.97	-56.24	-54.73	-53.67	-52.93	-55.49	-57.08
2003/4/18	0:00	-67.03	-65.48	-64.79		-62.37	-59.09	-56.33	-54.80	-53.74	-52.97	-55.49	-57.08
2003/4/18	12:00	-67.73	-66.00	-65.06		-62.30	-59.20	-56.42	-54.89	-53.81	-53.00	-55.48	-57.09
2003/4/19	0:00	-63.82	-64.20	-64.11		-62.29	-59.29	-56.52	-54.96	-53.86	-53.03	-55.47	-57.08
2003/4/19	12:00	-64.27	-64.36	-63.94		-62.12	-59.35	-56.60	-55.04	-53.92	-53.07	-55.46	-57.08
2003/4/20	0:00	-66.29	-64.80	-64.14		-62.03	-59.43	-56.68	-55.12	-53.98	-53.10	-55.46	-57.07
2003/4/20	12:00	-68.35	-65.87	-64.90		-62.05	-59.46	-56.76	-55.20	-54.05	-53.14	-55.45	-57.07
2003/4/21	0:00	-70.12	-67.28	-66.02		-62.26	-59.49	-56.83	-55.26	-54.11	-53.18	-55.45	-57.07
2003/4/21	12:00	-71.14	-68.25	-66.98		-62.61	-59.55	-56.90	-55.33	-54.18	-53.22	-55.45	-57.07
2003/4/22	0:00	-70.63	-68.43	-67.20		-62.97	-59.65	-56.95	-55.40	-54.24	-53.24	-55.43	-57.06
2003/4/22	12:00	-72.03	-69.18	-67.87		-63.28	-59.77	-57.03	-55.47	-54.31	-53.28	-55.42	-57.06
2003/4/23	0:00	-74.57	-71.44	-69.42		-63.66	-59.93	-57.09	-55.54	-54.38	-53.31	-55.43	-57.06
2003/4/23	12:00	-72.46	-71.30	-70.02		-64.19	-60.11	-57.17	-55.61	-54.43	-53.35	-55.42	-57.06
2003/4/24	0:00	-62.62	-68.24	-68.52		-64.54	-60.30	-57.27	-55.68	-54.49	-53.39	-55.41	-57.05
2003/4/24	12:00	-70.48	-67.10	-66.25		-64.34	-60.51	-57.37	-55.75	-54.55	-53.42	-55.42	-57.06

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/4/25	0:00	-72.39	-69.42	-68.05		-64.19	-60.69	-57.49	-55.81	-54.61	-53.47	-55.41	-57.05
2003/4/25	12:00	-73.07	-70.54	-69.09		-64.42	-60.78	-57.62	-55.89	-54.67	-53.51	-55.40	-57.06
2003/4/26	0:00	-72.54	-70.29	-69.15		-64.74	-60.89	-57.73	-55.98	-54.73	-53.53	-55.40	-57.05
2003/4/26	12:00	-72.92	-70.26	-69.19		-64.99	-61.03	-57.85	-56.06	-54.79	-53.59	-55.40	-57.05
2003/4/27	0:00	-72.76	-71.14	-69.95		-65.20	-61.22	-57.96	-56.14	-54.88	-53.62	-55.39	-57.05
2003/4/27	12:00	-70.87	-69.88	-69.26		-65.45	-61.34	-58.07	-56.25	-54.94	-53.65	-55.39	-57.04
2003/4/28	0:00	-67.43	-68.13	-67.90		-65.44	-61.52	-58.19	-56.33	-55.01	-53.69	-55.39	-57.05
2003/4/28	12:00	-71.93	-69.51	-68.42		-65.27	-61.63	-58.32	-56.41	-55.08	-53.74	-55.38	-57.05
2003/4/29	0:00	-70.90	-69.62	-68.83		-65.35	-61.73	-58.45	-56.51	-55.16	-53.77	-55.38	-57.04
2003/4/29	12:00	-71.56	-69.70	-68.89		-65.46	-61.80	-58.56	-56.59	-55.22	-53.81	-55.38	-57.04
2003/4/30	0:00	-73.52	-70.78	-69.64		-65.59	-61.93	-58.67	-56.68	-55.29	-53.84	-55.37	-57.03
2003/4/30	12:00	-75.32	-71.85	-70.40		-65.80	-62.01	-58.78	-56.77	-55.37	-53.88	-55.38	-57.04
2003/5/1	0:00	-73.52	-71.86	-70.89		-66.16	-62.12	-58.88	-56.86	-55.44	-53.92	-55.37	-57.04
2003/5/1	12:00	-68.12	-68.83	-68.90		-66.32	-62.28	-59.01	-56.96	-55.51	-53.95	-55.37	-57.03
2003/5/2	0:00	-68.29	-68.40	-68.06		-66.07	-62.42	-59.12	-57.06	-55.59	-54.00	-55.35	-57.03
2003/5/2	12:00	-68.36	-67.43	-67.17		-65.78	-62.54	-59.23	-57.15	-55.68	-54.03	-55.35	-57.03
2003/5/3	0:00	-69.38	-67.52	-67.04		-65.54	-62.58	-59.33	-57.24	-55.74	-54.08	-55.35	-57.02
2003/5/3	12:00	-68.47	-67.91	-67.46		-65.40	-62.57	-59.41	-57.33	-55.81	-54.11	-55.35	-57.03
2003/5/4	0:00	-69.25	-67.93	-67.26		-65.32	-62.57	-59.49	-57.41	-55.89	-54.15	-55.35	-57.02
2003/5/4	12:00	-67.63	-67.66	-67.29		-65.29	-62.57						
2003/5/5	0:00	-70.67	-68.65	-67.62		-65.19	-62.58	-59.60	-57.58	-56.04	-54.24	-55.34	-57.02
2003/5/5	12:00	-68.06	-68.53	-67.92		-65.26	-62.54	-59.63	-57.64	-56.10	-54.29	-55.34	-57.03
2003/5/6	0:00	-65.38	-66.27	-66.41		-65.23	-62.56	-59.66	-57.71	-56.16	-54.32	-55.34	-57.02
2003/5/6	12:00	-71.38	-67.87	-66.61		-64.97	-62.57	-59.69	-57.78	-56.26	-54.37	-55.34	-57.02
2003/5/7	0:00	-71.93	-70.39	-69.08		-65.02	-62.57	-59.72	-57.84	-56.32	-54.41	-55.33	-57.00
2003/5/7	12:00	-66.06	-67.91	-67.96		-65.35	-62.54	-59.76	-57.89	-56.39	-54.44	-55.34	-57.00
2003/5/8	0:00	-55.27	-61.49	-63.39		-65.17	-62.60	-59.79	-57.94	-56.45	-54.49	-55.34	-57.00
2003/5/8	12:00	-53.02	-56.93	-58.97		-64.08	-62.61	-59.81	-57.99	-56.51	-54.52	-55.33	-57.00
2003/5/9	0:00	-54.15	-56.47	-57.85		-62.85	-62.53	-59.84	-58.04	-56.56	-54.58	-55.34	-56.99
2003/5/9	12:00	-58.11	-58.39	-58.81		-61.95	-62.28	-59.86	-58.08	-56.61	-54.61	-55.34	-56.99
2003/5/10	0:00	-62.40	-61.14	-60.76		-61.58	-61.98	-59.83	-58.13	-56.66	-54.65	-55.34	-56.99
2003/5/10	12:00	-65.00	-63.41	-62.63		-61.67	-61.69	-59.79	-58.16	-56.72	-54.69	-55.34	-56.98
2003/5/11	0:00	-66.73	-64.63	-63.76		-61.97	-61.49	-59.71	-58.19	-56.78	-54.73	-55.34	-56.99
2003/5/11	12:00	-69.68	-66.89	-65.55		-62.35	-61.37	-59.64	-58.20	-56.82	-54.77		-56.98
2003/5/12	0:00	-71.60	-68.38	-66.87		-62.90	-61.35	-59.60	-58.21	-56.85	-54.82	-55.34	-56.99
2003/5/12	12:00	-72.56	-69.88	-68.35		-63.52	-61.36	-59.55	-58.21	-56.90	-54.86	-55.34	-56.98
2003/5/13	0:00	-73.37	-70.53	-69.05		-64.16	-61.46	-59.56	-58.21	-56.93	-54.91	-55.34	-56.98
2003/5/13	12:00	-69.56	-69.59	-68.90		-64.69	-61.63	-59.60	-58.23	-56.96	-54.95	-55.34	-56.98
2003/5/14	0:00	-66.88	-67.34	-67.19		-64.89	-61.86	-59.66	-58.25	-57.00	-54.98	-55.34	-56.98
2003/5/14	12:00	-65.71	-66.08	-66.01		-64.73	-62.02	-59.76	-58.28	-57.03	-55.02	-55.34	-56.97
2003/5/15	0:00	-66.94	-66.17	-65.93		-64.52	-62.15	-59.85	-58.31	-57.06	-55.05	-55.34	-56.97
2003/5/15	12:00	-72.19	-69.06	-67.67		-64.48	-62.21	-59.95	-58.36	-57.09	-55.10	-55.35	-56.97
2003/5/16	0:00	-74.53	-70.98	-69.31		-64.87	-62.26	-60.03	-58.42	-57.13	-55.14	-55.34	-56.96
2003/5/16	12:00	-74.99	-71.59	-70.17		-65.39	-62.32	-60.09	-58.48	-57.16	-55.17	-55.34	-56.97
2003/5/17	0:00	-73.55	-72.10	-70.88		-65.88	-62.48	-60.14	-58.53	-57.20	-55.20	-55.34	-56.96
2003/5/17	12:00	-70.59	-69.82	-69.39		-66.23	-62.64	-60.20	-58.57	-57.24	-55.24	-55.34	-56.96
2003/5/18	0:00	-72.43	-69.87	-69.03		-66.18	-62.81	-60.26	-58.62	-57.29	-55.27	-55.35	-56.95
2003/5/18	12:00	-75.71	-72.89	-71.15		-66.28	-62.97	-60.36	-58.69	-57.34	-55.30	-55.37	-56.96
2003/5/19	0:00	-70.29	-71.45	-70.74		-66.66	-63.09	-60.44	-58.74	-57.38	-55.35	-55.35	-56.96
2003/5/19	12:00	-69.68	-69.97	-69.49		-66.75	-63.25	-60.52	-58.80	-57.42	-55.38	-55.34	-56.95
2003/5/20	0:00	-71.48	-69.79	-69.16		-66.67	-63.37	-60.61	-58.85	-57.47	-55.41	-55.35	-56.95
2003/5/20	12:00	-70.52	-69.54	-68.97		-66.61	-63.15	-60.68	-58.92	-57.52	-55.45	-55.35	-56.95
2003/5/21	0:00	-66.11	-68.64	-68.63		-66.56	-63.51	-60.77	-59.00	-57.59	-55.49	-55.39	-56.97
2003/5/21	12:00	-68.73	-66.94	-66.78		-66.30	-63.63	-60.85	-59.06	-57.62	-55.52	-55.37	-56.95
2003/5/22	0:00	-73.33	-70.29	-68.88		-66.06	-63.64	-60.91	-59.11	-57.68	-55.55	-55.38	-56.95
2003/5/22	12:00	-71.90	-70.68	-69.67		-66.25	-63.66	-60.97	-59.17	-57.73	-55.59	-55.37	-56.94
2003/5/23	0:00	-71.25	-69.65	-68.99		-66.44	-63.67	-61.02	-59.23	-57.78	-55.61	-55.37	-56.95
2003/5/23	12:00	-70.75	-69.89	-69.29		-66.51	-63.74	-61.07	-59.29	-57.84	-55.66	-55.38	-56.93
2003/5/24	0:00	-65.95	-67.82	-67.98		-66.55	-63.78	-61.11	-59.34	-57.89	-55.70	-55.38	-56.93
2003/5/24	12:00	-66.40	-66.57	-66.46		-66.26	-63.83	-61.17	-59.39	-57.93	-55.72	-55.38	-56.93
2003/5/25	0:00	-69.54	-67.92	-67.17		-65.92	-63.85	-61.22	-59.44	-57.98	-55.76	-55.39	-56.93
2003/5/25	12:00	-70.58	-69.19	-68.20		-65.88	-63.82	-61.25	-59.50	-58.03	-55.79	-55.39	-56.93
2003/5/26	0:00	-69.83	-68.84	-68.20		-65.99	-63.79	-61.28	-59.54	-58.08	-55.83	-55.39	-56.92
2003/5/26	12:00	-69.50	-69.64	-68.78		-66.06	-63.79	-61.31	-59.60	-58.13	-55.86	-55.39	-56.93
2003/5/27	0:00	-68.23	-68.04	-67.89		-66.13	-63.80	-61.33	-59.63	-58.18	-55.89	-55.40	-56.92
2003/5/27	12:00	-71.00	-69.35	-68.44		-66.09	-63.81	-61.35	-59.68	-58.23	-55.94	-55.40	-56.93
2003/5/28	0:00	-70.37	-69.49	-68.65		-66.19	-63.85	-61.37	-59.71	-58.27	-55.97	-55.40	-56.92
2003/5/28	12:00	-72.09	-69.81	-68.81		-66.27	-63.87	-61.40	-59.76	-58.31	-56.00	-55.41	-56.91
2003/5/29	0:00	-72.62	-71.57	-70.23		-66.43	-63.89	-61.43	-59.79	-58.35	-56.03	-55.41	-56.91
2003/5/29	12:00	-71.39	-70.88	-70.07		-66.72	-63.97	-61.47	-59.83	-58.39	-56.07	-55.42	-56.92
2003/5/30	0:00	-71.12	-70.26	-69.78		-66.92	-64.03	-61.49	-59.86	-58.43	-56.10	-55.42	-56.91
2003/5/30	12:00	-69.28	-69.30	-69.05		-66.99	-64.14	-61.53	-59.90	-58.47	-56.14	-55.42	-56.91
2003/5/31	0:00	-74.19	-71.66	-70.32		-66.95	-64.24	-61.57	-59.93	-58.51	-56.17	-55.43	-56.91
2003/5/31	12:00	-65.80	-68.94	-69.33		-67.20	-64.31	-61.62	-59.97	-58.55	-56.22	-55.44	-56.90
2003/6/1	0:00	-62.59	-64.72	-65.68		-66.89	-64.37	-61.68	-60.03	-58.58	-56.26	-55.43	-56.90
2003/6/1	12:00	-64.61	-64.50	-64.79		-66.13	-64.40	-61.73	-60.06	-58.62	-56.29	-55.43	-56.90
2003/6/2	0:00	-64.88	-65.16	-65.32		-65.66	-64.37	-61.80	-60.10	-58.66	-56.31	-55.44	-56.89

Table 5-1 (continued).

Date	Time	0 m (°C)	0.05 m (°C)	0.1 m (°C)	0.2 m (°C)	0.4 m (°C)	0.8 m (°C)	1.2 m (°C)	1.5 m (°C)	2 m (°C)	3 m (°C)	6 m (°C)	11 m (°C)
2003/6/2	12:00	-65.93	-65.87	-65.73		-65.43	-64.24	-61.82	-60.14	-58.71	-56.35	-55.45	-56.89
2003/6/3	0:00	-67.73	-66.61	-66.21		-65.34	-64.13	-61.83	-60.19	-58.74	-56.40	-55.46	-56.91
2003/6/3	12:00	-67.23	-67.06	-66.71		-65.37	-64.04	-61.83	-60.22	-58.78	-56.41	-55.46	-56.89
2003/6/4	0:00	-67.96	-67.30	-66.85		-65.43	-63.96	-61.83	-60.25	-58.83	-56.45	-55.46	-56.90
2003/6/4	12:00	-67.30	-67.52	-67.19		-65.50	-63.91	-61.81	-60.28	-58.86	-56.49	-55.46	-56.89
2003/6/5	0:00	-65.86	-66.58	-66.52		-65.55	-63.90	-61.79	-60.31	-58.92	-56.52	-55.47	-56.89
2003/6/5	12:00	-69.81	-67.91	-66.93		-65.43	-63.87	-61.79	-60.34	-58.95	-56.55	-55.47	-56.88
2003/6/6	0:00	-76.14	-71.61	-69.68		-65.62	-63.87	-61.78	-60.34	-58.97	-56.58	-55.48	-56.88
2003/6/6	12:00	-76.56	-73.55	-71.75		-66.27	-63.87	-61.78	-60.35	-59.00	-56.61	-55.48	-56.86
2003/6/7	0:00	-76.00	-74.08	-72.53		-66.99	-63.95	-61.78	-60.37	-59.03	-56.64	-55.50	-56.88
2003/6/7	12:00	-76.89	-74.27	-72.78		-67.56	-64.13	-61.79	-60.38	-59.06	-56.67	-55.49	-56.88
2003/6/8	0:00	-76.59	-74.19	-72.97		-68.00	-64.31	-61.83	-60.41	-59.07	-56.70	-55.51	-56.86
2003/6/8	12:00	-75.73	-73.76	-72.64		-68.33	-64.53	-61.89	-60.43	-59.11	-56.74	-55.49	-56.88
2003/6/9	0:00	-75.28	-73.64	-72.65		-68.53	-64.76	-61.97	-60.45	-59.12	-56.77	-55.54	-56.86
2003/6/9	12:00	-77.32	-74.74	-73.34		-68.71	-64.96	-62.07	-60.49	-59.15	-56.79	-55.51	-56.86
2003/6/10	0:00	-78.15	-75.57	-74.17		-69.05	-65.12	-62.17	-60.54	-59.17	-56.82	-55.55	-56.85
2003/6/10	12:00	-72.24	-73.47	-73.27		-69.41	-65.31	-62.27	-60.59	-59.23	-56.86	-55.56	-56.85
2003/6/11	0:00	-72.86	-72.24	-71.81		-69.37	-65.49	-62.40	-60.64	-59.26	-56.89	-55.55	-56.85
2003/6/11	12:00	-63.73	-67.55	-68.85		-69.09	-65.64	-62.51	-60.70	-59.29	-56.91	-55.56	-56.84
2003/6/12	0:00	-64.51	-65.89	-66.60		-68.31	-65.76	-62.60	-60.76	-59.32	-56.95	-55.56	-56.86
2003/6/12	12:00	-67.05	-66.80	-66.94		-67.55	-65.72	-62.69	-60.82	-59.36	-56.97	-55.56	-56.85
2003/6/13	0:00	-70.76	-68.78	-68.04		-67.22	-65.64	-62.76	-60.90	-59.40	-57.00	-55.57	-56.85
2003/6/13	12:00	-73.58	-71.12	-69.95		-67.26	-65.53	-62.80	-60.95	-59.45	-57.03	-55.57	-56.84
2003/6/14	0:00	-75.02	-72.96	-71.62		-67.63	-65.42	-62.82	-61.02	-59.50	-57.05	-55.59	-56.84
2003/6/14	12:00	-73.52	-72.50	-71.66		-68.07	-65.42	-62.83	-61.06	-59.55	-57.08	-55.58	-56.83
2003/6/15	0:00	-70.48	-71.39	-71.05		-68.27	-65.46	-62.84	-61.10	-59.60	-57.12	-55.58	-56.84
2003/6/15	12:00	-60.35	-65.20	-66.87		-68.11	-65.55	-62.85	-61.15	-59.65	-57.14	-55.60	-56.83
2003/6/16	0:00	-59.11	-61.65	-63.26		-67.20	-65.59	-62.86	-61.17	-59.69	-57.16	-55.60	-56.83
2003/6/16	12:00	-66.13	-64.10	-63.84		-66.17	-65.50	-62.89	-61.20	-59.72	-57.19	-55.61	-56.83
2003/6/17	0:00	-67.28	-66.61	-66.20		-65.81	-65.33	-62.89	-61.23	-59.77	-57.22	-55.62	-56.83
2003/6/17	12:00	-64.96	-65.46	-65.70		-65.86	-65.12	-62.87	-61.26	-59.80	-57.25	-55.63	-56.82
2003/6/18	0:00	-68.67	-66.52	-65.99		-65.71	-64.99	-62.83	-61.28	-59.84	-57.29	-55.66	-56.84
2003/6/18	12:00	-71.79	-69.26	-68.14		-65.80	-64.86	-62.78	-61.29	-59.89	-57.32	-55.66	-56.81
2003/6/19	0:00	-69.27	-68.65	-68.21		-66.16	-64.80	-62.73	-61.30	-59.91	-57.35	-55.66	-56.84
2003/6/19	12:00	-71.03	-69.58	-68.78		-66.34	-64.75	-62.69	-61.31	-59.93	-57.38	-55.66	-56.82
2003/6/20	0:00	-71.23	-69.94	-69.08		-66.56	-64.78	-62.64	-61.30	-59.96	-57.41	-55.68	-56.83
2003/6/20	12:00	-70.54	-69.99	-69.35		-66.75	-64.78	-62.61	-61.30	-59.98	-57.43	-55.68	-56.81
2003/6/21	0:00	-71.98	-70.47	-69.59		-66.90	-64.83	-62.61	-61.30	-59.99	-57.45	-55.67	-56.82
2003/6/21	12:00	-71.90	-70.58	-69.86		-67.12	-64.90	-62.61	-61.29	-60.01	-57.48	-55.70	-56.80
2003/6/22	0:00	-69.47	-69.67	-69.32		-67.24	-64.96	-62.61	-61.31	-60.03	-57.51	-55.68	-56.80
2003/6/22	12:00	-69.40	-69.01	-68.73		-67.23	-65.01	-62.64	-61.31	-60.06	-57.57	-55.70	-56.80
2003/6/23	0:00	-64.48	-67.98	-68.32		-67.15	-65.06	-62.67	-61.32	-60.06	-57.58	-55.71	-56.80
2003/6/23	12:00	-53.86	-59.80	-62.56		-66.72	-65.09	-62.71	-61.34	-60.07	-57.61	-55.72	-56.80
2003/6/24	0:00	-64.87	-62.39	-62.28		-65.53	-65.08	-62.74	-61.36	-60.10	-57.64	-55.72	-56.81
2003/6/24	12:00	-69.28	-67.41	-66.46		-65.13	-64.93	-62.76	-61.38	-60.12	-57.66	-55.73	-56.81
2003/6/25	0:00	-73.16	-69.75	-68.35		-65.49	-64.74	-62.75	-61.40	-60.14	-57.69	-55.74	-56.81
2003/6/25	12:00	-70.65	-70.24	-69.37		-66.02	-64.64	-62.73	-61.42	-60.15	-57.72	-55.75	-56.80
2003/6/26	0:00	-70.78	-69.85	-69.13		-66.40	-64.64	-62.69	-61.42	-60.17	-57.74	-55.76	-56.80
2003/6/26	12:00	-73.65	-71.24	-69.97		-66.66	-64.69	-62.66	-61.43	-60.20	-57.76	-55.76	-56.78
2003/6/27	0:00	-70.92	-72.37	-71.29		-67.04	-64.74	-62.66	-61.46	-60.20	-57.78	-55.77	-56.81
2003/6/27	12:00	-71.34	-69.98	-69.42		-67.29	-64.84	-62.64	-61.43	-60.21	-57.81	-55.76	-56.78
2003/6/28	0:00	-70.49	-69.09	-68.63		-67.24	-64.96	-62.67	-61.47	-60.24	-57.84	-55.80	-56.78
2003/6/28	12:00	-72.24	-70.60	-69.66		-67.17	-65.05	-62.71	-61.45	-60.25	-57.86	-55.78	-56.81
2003/6/29	0:00	-73.00	-71.41	-70.49		-67.35	-65.10	-62.75	-61.47	-60.29	-57.88	-55.81	-56.80
2003/6/29	12:00	-72.67	-71.41	-70.60		-67.61	-65.16	-62.78	-61.51	-60.29	-57.91	-55.81	-56.79
2003/6/30	0:00	-73.10	-71.81	-70.93		-67.80	-65.26	-62.81	-61.50	-60.32	-57.93	-55.81	-56.80
2003/6/30	12:00	-75.75	-73.32	-72.04		-68.04	-65.34	-62.86	-61.53	-60.32	-57.96	-55.82	-56.77
2003/7/1	0:00	-78.08	-74.89	-73.24		-68.43	-65.44	-62.91	-61.57	-60.34	-57.98	-55.82	-56.78
2003/7/1	12:00	-79.87	-76.13	-74.35		-68.93	-65.58	-62.99	-61.59	-60.37	-58.00	-55.84	-56.78
2003/7/2	0:00	-77.56	-77.16	-75.62		-69.52	-65.75	-63.06	-61.62	-60.39	-58.01	-55.85	-56.78
2003/7/2	12:00	-72.81	-73.14	-72.90		-69.88	-65.97	-63.13	-61.64	-60.40	-58.04	-55.86	-56.79
2003/7/3	0:00	-71.16	-71.98	-71.94		-69.74	-66.19	-63.22	-61.70	-60.45	-58.06	-55.87	-56.79
2003/7/3	12:00	-74.36	-72.29	-71.67		-69.56	-66.36	-63.33	-61.75	-60.46	-58.07	-55.88	-56.78
2003/7/4	0:00	-76.01	-74.16	-72.99		-69.52	-66.46	-63.43	-61.80	-60.49	-58.11	-55.88	-56.77
2003/7/4	12:00	-72.40	-73.20	-72.76		-69.70	-66.54	-63.51	-61.85	-60.50	-58.12	-55.87	-56.78
2003/7/5	0:00	-73.21	-72.50	-71.95		-69.68	-66.61	-63.58	-61.91	-60.54	-58.15	-55.89	-56.77
2003/7/5	12:00	-76.38	-74.09	-72.98		-69.66	-66.70	-63.67	-61.97	-60.60	-58.18	-55.92	-56.77
2003/7/6	0:00	-74.11	-73.79	-73.10		-69.87	-66.78	-63.75	-62.03	-60.63	-58.19	-55.92	-56.77
2003/7/6	12:00	-54.63	-64.06	-67.63		-69.85	-66.85						
2003/7/7	0:00	-51.68	-59.11	-61.93		-68.54	-66.92						
2003/7/7	12:00	-57.36	-58.28	-59.83		-66.82	-66.85	-63.94	-62.18	-60.74	-58.26	-55.94	-56.75
2003/7/8	0:00	-65.62	-61.48	-61.32		-65.65	-66.55	-63.98	-62.24	-60.78	-58.28	-55.94	-56.76
2003/7/8	12:00	-71.60	-67.67	-66.16		-65.35	-66.18	-63.98	-62.28	-60.82	-58.30	-55.95	-56.77
2003/7/9	0:00	-71.10	-69.26	-68.23		-65.86	-65.85	-63.93	-62.32	-60.87	-58.33	-55.96	-56.76
2003/7/9	12:00	-59.88	-65.87	-67.12		-66.36	-65.64	-63.84	-62.35	-60.91	-58.35	-55.97	-56.75
2003/7/10	0:00	-65.45	-63.94	-64.28		-66.13	-65.55	-63.75	-62.36	-60.94	-58.39	-55.98	-56.76
2003/7/10	12:00	-73.92	-69.40	-67.74		-65.86	-65.47	-63.67	-62.35	-60.98	-58.41	-55.99	-56.75

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/7/11	0:00	-70.00	-70.09	-69.50		-66.33	-65.38	-63.58	-62.33	-61.01	-58.43	-56.00	-56.76
2003/7/11	12:00	-70.68	-70.34	-69.58		-66.81	-65.33	-63.52	-62.32	-61.03	-58.45	-56.01	-56.75
2003/7/12	0:00	-72.98	-70.88	-69.51		-67.00	-65.37	-63.48	-62.30	-61.04	-58.48	-56.01	-56.76
2003/7/12	12:00	-64.46	-68.49	-68.74	-68.40	-67.22	-65.43	-63.44	-62.29	-61.06	-58.50	-56.02	-56.75
2003/7/13	0:00	-55.87	-61.99	-64.11	-66.29	-66.95	-65.48	-63.43	-62.28	-61.06	-58.53	-56.03	-56.75
2003/7/13	12:00	-58.24	-61.01	-62.23	-64.24	-66.00	-65.51	-63.42	-62.27	-61.07	-58.55	-56.04	-56.75
2003/7/14	0:00	-61.45	-62.77	-63.03	-63.83	-65.22	-65.41	-63.41	-62.27	-61.08	-58.57	-56.05	-56.74
2003/7/14	12:00	-69.38	-66.32	-65.32	-64.57	-64.95	-65.22	-63.40	-62.26	-61.09	-58.59	-56.06	-56.75
2003/7/15	0:00	-72.20	-69.83	-68.50	-66.64	-65.32	-65.02	-63.37	-62.26	-61.09	-58.61	-56.06	-56.75
2003/7/15	12:00	-68.78	-68.74	-68.36	-67.38	-65.92	-64.93	-63.31	-62.26	-61.10	-58.63	-56.07	-56.74
2003/7/16	0:00	-70.42	-68.75	-68.08	-67.22	-66.20	-64.93	-63.26	-62.24	-61.11	-58.67	-56.08	-56.74
2003/7/16	12:00	-69.90	-69.44	-68.79	-67.68	-66.38	-64.96	-63.21	-62.23	-61.11	-58.69	-56.09	-56.74
2003/7/17	0:00	-74.00	-71.05	-69.73	-68.13	-66.63	-65.00	-63.19	-62.21	-61.12	-58.71	-56.10	-56.74
2003/7/17	12:00	-71.66	-71.18	-70.25	-68.75	-67.00	-65.07	-63.18	-62.20	-61.12	-58.73	-56.11	-56.74
2003/7/18	0:00	-69.17	-69.08	-69.00	-68.51	-67.24	-65.16	-63.18	-62.19	-61.12	-58.75	-56.12	-56.74
2003/7/18	12:00	-75.82	-72.08	-70.48	-68.70	-67.27	-65.28	-63.19	-62.19	-61.12	-58.77	-56.12	-56.74
2003/7/19	0:00	-72.42	-71.31	-70.75	-69.61	-67.64	-65.37	-63.22	-62.19	-61.12	-58.79	-56.13	-56.74
2003/7/19	12:00	-73.97	-71.90	-70.92	-69.56	-67.87	-65.44	-63.25	-62.19	-61.13	-58.80	-56.14	-56.72
2003/7/20	0:00	-75.96	-73.65	-72.25	-70.27	-68.12	-65.59	-63.28	-62.21	-61.13	-58.82	-56.15	-56.72
2003/7/20	12:00	-77.40	-74.59	-73.22	-71.11	-68.57	-65.70	-63.35	-62.21	-61.15	-58.83	-56.16	-56.72
2003/7/21	0:00	-78.72	-75.85	-74.27	-71.87	-69.08	-65.86	-63.40	-62.23	-61.15	-58.85	-56.17	-56.74
2003/7/21	12:00	-77.70	-75.72	-74.51	-72.39	-69.58	-66.05	-63.45	-62.26	-61.16	-58.87	-56.19	-56.72
2003/7/22	0:00	-76.79	-76.87	-75.39	-72.84	-69.97	-66.26	-63.53	-62.28	-61.17	-58.88	-56.21	-56.71
2003/7/22	12:00	-73.03	-73.15	-73.06	-72.37	-70.28	-66.50	-63.63	-62.31	-61.19	-58.91	-56.22	-56.71
2003/7/23	0:00	-73.25	-72.56	-72.16	-71.57	-70.13	-66.69	-63.73	-62.35	-61.20	-58.92	-56.22	-56.71
2003/7/23	12:00	-77.47	-74.84	-73.56	-71.86	-70.01	-66.84	-63.84	-62.42	-61.21	-58.94	-56.24	-56.72
2003/7/24	0:00	-78.35	-76.07	-74.64	-72.58	-70.24	-66.96	-63.96	-62.46	-61.24	-58.97	-56.24	-56.71
2003/7/24	12:00	-78.72	-76.39	-75.03	-73.06	-70.60	-67.08	-64.05	-62.51	-61.26	-58.98	-56.25	-56.70
2003/7/25	0:00	-69.68	-72.29	-72.82	-72.66	-70.86	-67.22	-64.15	-62.57	-61.31	-59.00	-56.26	-56.71
2003/7/25	12:00	-66.03	-68.15	-69.25	-70.54	-70.42	-67.38	-64.26	-62.63	-61.33	-59.01	-56.27	-56.72
2003/7/26	0:00	-73.31	-72.54	-71.45	-70.31	-69.73	-67.47	-64.35	-62.69	-61.36	-59.02	-56.28	-56.71
2003/7/26	12:00	-74.66	-73.21	-72.29	-71.00	-69.72	-67.43	-64.46	-62.75	-61.40	-59.04	-56.28	-56.72
2003/7/27	0:00	-72.87	-71.34	-71.00	-70.69	-69.77	-67.42	-64.53	-62.81	-61.45	-59.05	-56.29	-56.71
2003/7/27	12:00	-74.39	-72.75	-71.96	-70.85	-69.65	-67.41	-64.58	-62.87	-61.48	-59.07	-56.31	-56.71
2003/7/28	0:00	-75.26	-73.12	-72.30	-71.11	-69.74	-67.39	-64.62	-62.92	-61.52	-59.09	-56.31	-56.71
2003/7/28	12:00	-75.99	-74.46	-73.21	-71.58	-69.87	-67.40	-64.65	-62.97	-61.56	-59.10	-56.32	-56.71
2003/7/29	0:00	-75.77	-74.47	-73.44	-71.87	-70.06	-67.43	-64.68	-63.02	-61.60	-59.12	-56.33	-56.71
2003/7/29	12:00	-76.99	-74.56	-73.59	-72.10	-70.26	-67.49	-64.71	-63.07	-61.64	-59.14	-56.34	-56.71
2003/7/30	0:00	-78.34	-75.85	-74.54	-72.60	-70.46	-67.54	-64.75	-63.11	-61.68	-59.16	-56.35	-56.71
2003/7/30	12:00	-72.05	-74.55	-74.35	-73.03	-70.79	-67.62	-64.79	-63.15	-61.72	-59.19	-56.36	-56.72
2003/7/31	0:00	-75.30	-74.02	-73.39	-72.38	-70.81	-67.74	-64.84	-63.18	-61.75	-59.22	-56.37	-56.70
2003/7/31	12:00	-76.39	-74.31	-73.54	-72.39	-70.80	-67.84	-64.89	-63.23	-61.80	-59.23	-56.37	-56.71
2003/8/1	0:00	-60.46	-69.80	-71.60	-72.13	-70.84	-67.91	-64.94	-63.26	-61.83	-59.25	-56.38	-56.70
2003/8/1	12:00	-54.61	-61.03	-64.02	-67.91	-69.98	-67.96	-65.01	-63.31	-61.86	-59.27	-56.39	-56.71
2003/8/2	0:00	-59.68	-62.38	-63.60	-65.93	-68.45	-67.94	-65.05	-63.36	-61.90	-59.30	-56.39	-56.69
2003/8/2	12:00	-54.29	-58.76	-61.11	-64.48	-67.36	-67.74	-65.09	-63.40	-61.94	-59.32	-56.41	-56.70
2003/8/3	0:00	-62.23	-61.30	-61.70	-63.48	-66.21	-67.42	-65.10	-63.44	-61.97	-59.34	-56.41	-56.70
2003/8/3	12:00	-63.27	-63.77	-63.90	-64.44	-65.75	-67.02	-65.06	-63.47	-62.01	-59.36	-56.43	-56.70
2003/8/4	0:00	-63.09	-62.83	-63.28	-64.34	-65.60	-66.64	-64.97	-63.49	-62.04	-59.39	-56.44	-56.69
2003/8/4	12:00	-69.65	-66.82	-65.85	-65.13	-65.46	-66.32	-64.87	-63.50	-62.08	-59.40	-56.44	-56.69
2003/8/5	0:00	-72.10	-68.96	-67.70	-66.36	-65.75	-66.09	-64.73	-63.48	-62.11	-59.43	-56.47	-56.70
2003/8/5	12:00	-71.16	-69.32	-68.56	-67.49	-66.29	-65.93	-64.61	-63.47	-62.13	-59.45	-56.48	-56.71
2003/8/6	0:00	-69.88	-69.95	-69.28	-68.08	-66.74	-65.89	-64.49	-63.43	-62.14	-59.48	-56.49	-56.71
2003/8/6	12:00	-69.50	-68.16	-67.95	-67.79	-66.99	-65.87	-64.38	-63.41	-62.15	-59.50	-56.49	-56.70
2003/8/7	0:00	-70.50	-69.43	-68.70	-67.91	-67.08	-65.93	-64.31	-63.36	-62.16	-59.52	-56.50	-56.69
2003/8/7	12:00	-70.14	-69.46	-68.96	-68.20	-67.21	-65.94	-64.26	-63.33	-62.16	-59.55	-56.52	-56.70
2003/8/8	0:00	-70.02	-69.29	-68.79	-68.18	-67.34	-65.99	-64.22	-63.30	-62.16	-59.57	-56.53	-56.68
2003/8/8	12:00	-72.33	-70.34	-69.51	-68.47	-67.42	-66.03	-64.17	-63.26	-62.15	-59.60	-56.53	-56.69
2003/8/9	0:00	-69.70	-69.39	-69.18	-68.62	-67.61	-66.06	-64.15	-63.24	-62.14	-59.62	-56.52	-56.70
2003/8/9	12:00	-75.07	-72.05	-70.63	-69.03	-67.68	-66.12	-64.13	-63.22	-62.14	-59.65	-56.54	-56.69
2003/8/10	0:00	-73.47	-71.91	-70.90	-69.49	-67.98	-66.17	-64.13	-63.21	-62.13	-59.66	-56.55	-56.70
2003/8/10	12:00	-74.48	-72.63	-71.58	-70.04	-68.27	-66.22	-64.13	-63.19	-62.14	-59.67	-56.55	-56.69
2003/8/11	0:00	-73.79	-72.48	-71.66	-70.36	-68.59	-66.32	-64.13	-63.18	-62.13	-59.69	-56.56	-56.70
2003/8/11	12:00	-74.64	-73.10	-72.05	-70.59	-68.82	-66.43	-64.14	-63.18	-62.15	-59.70	-56.57	-56.69
2003/8/12	0:00	-76.37	-73.93	-72.71	-71.00	-69.07	-66.55	-64.17	-63.17	-62.13	-59.73	-56.58	-56.69
2003/8/12	12:00	-79.10	-75.50	-73.89	-71.72	-69.39	-66.67	-64.20	-63.18	-62.13	-59.74	-56.60	-56.68
2003/8/13	0:00	-79.95	-76.63	-75.00	-72.60	-69.87	-66.83	-64.25	-63.18	-62.12	-59.77	-56.61	-56.70
2003/8/13	12:00	-77.15	-76.41	-75.47	-73.35	-70.40	-66.99	-64.30	-63.19	-62.13	-59.78	-56.61	-56.70
2003/8/14	0:00	-65.58	-70.69	-71.90	-72.32	-70.69	-67.18	-64.36	-63.21	-62.13	-59.79	-56.62	-56.69
2003/8/14	12:00	-60.74	-64.98	-66.79	-69.11	-69.97	-67.40	-64.45	-63.23	-62.14	-59.80	-56.63	-56.70
2003/8/15	0:00	-67.67	-67.75	-67.55	-67.94	-68.87	-67.47	-64.53	-63.26	-62.15	-59.82	-56.64	-56.69
2003/8/15	12:00	-71.81	-69.61	-68.73	-68.25	-68.40	-67.40	-64.60	-63.30	-62.16	-59.83	-56.65	-56.68
2003/8/16	0:00	-74.50	-72.43	-71.16	-69.55	-68.46	-67.25	-64.65	-63.34	-62.18	-59.84	-56.66	-56.69
2003/8/16	12:00	-71.27	-71.17	-70.85	-70.10	-68.84	-67.17	-64.68	-63.37	-62.19	-59.86	-56.66	-56.68
2003/8/17	0:00	-63.19	-67.88	-68.91	-69.51	-68.93	-67.14	-64.68	-63.41	-62.21	-59.88	-56.67	-56.69
2003/8/17	12:00	-57.78	-62.74	-64.66	-67.12	-68.35	-67.17	-64.69	-63.43	-62.24	-59.88	-56.68	-56.68
2003/8/18	0:00	-64.12	-64.41	-64.69	-65.79	-67.38	-67.12	-64.70	-63.44	-62.26	-59.90	-56.69	-56.68

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/8/18	12:00	-64.57	-64.57	-64.97	-65.78	-66.84	-66.93	-64.70	-63.46	-62.27	-59.91	-56.70	-56.69
2003/8/19	0:00	-70.82	-68.15	-67.21	-66.51	-66.64	-66.73	-64.68	-63.48	-62.29	-59.93	-56.71	-56.68
2003/8/19	12:00	-71.43	-70.18	-69.13	-67.79	-66.88	-66.56	-64.65	-63.48	-62.31	-59.94	-56.72	-56.70
2003/8/20	0:00	-73.93	-71.44	-70.16	-68.63	-67.29	-66.40	-64.61	-63.49	-62.33	-59.95	-56.74	-56.70
2003/8/20	12:00	-62.96	-66.96	-67.94	-68.46	-67.66	-66.38	-64.56	-63.49	-62.35	-59.97	-56.74	-56.69
2003/8/21	0:00	-69.02	-67.83	-67.47	-67.41	-67.41	-66.39	-64.51	-63.49	-62.36	-59.98	-56.76	-56.68
2003/8/21	12:00	-67.28	-66.96	-67.14	-67.38	-67.26	-66.37	-64.48	-63.47	-62.38	-60.00	-56.76	-56.69
2003/8/22	0:00	-60.86	-64.97	-66.09	-66.96	-67.12	-66.35	-64.46	-63.47	-62.39	-60.01	-56.78	-56.68
2003/8/22	12:00	-69.27	-66.80	-66.46	-66.53	-66.81	-66.30	-64.43	-63.46	-62.39	-60.04	-56.78	-56.68
2003/8/23	0:00	-68.73	-68.06	-67.68	-67.20	-66.80	-66.24	-64.41	-63.46	-62.40	-60.05	-56.79	-56.68
2003/8/23	12:00	-68.31	-68.38	-68.05	-67.47	-66.90	-66.16	-64.39	-63.45	-62.40	-60.06	-56.80	-56.68
2003/8/24	0:00	-69.14	-69.10	-68.50	-67.66	-66.99	-66.13	-64.37	-63.44	-62.41	-60.08	-56.81	-56.69
2003/8/24	12:00	-64.55	-68.14	-68.46	-68.04	-67.13	-66.10	-64.35	-63.44	-62.41	-60.09	-56.82	-56.68
2003/8/25	0:00	-69.42	-68.57	-68.02	-67.54	-67.14	-66.09	-64.34	-63.43	-62.41	-60.11	-56.83	-56.70
2003/8/25	12:00	-69.74	-69.23	-68.72	-67.92	-67.17	-66.12	-64.33	-63.42	-62.41	-60.12	-56.84	-56.68
2003/8/26	0:00	-70.38	-69.54	-68.90	-68.11	-67.29	-66.10	-64.33	-63.42	-62.42	-60.13	-56.85	-56.69
2003/8/26	12:00	-72.34	-70.73	-69.87	-68.65	-67.45	-66.11	-64.33	-63.41	-62.42	-60.14	-56.85	-56.69
2003/8/27	0:00	-72.68	-70.73	-70.00	-68.94	-67.68	-66.15	-64.32	-63.41	-62.42	-60.16	-56.88	-56.68
2003/8/27	12:00	-73.03	-71.76	-70.86	-69.42	-67.88	-66.19	-64.34	-63.41	-62.43	-60.17	-56.88	-56.68
2003/8/28	0:00	-74.95	-72.72	-71.61	-69.98	-68.21	-66.27	-64.35	-63.41	-62.42	-60.18	-56.89	-56.69
2003/8/28	12:00	-70.25	-71.33	-71.13	-70.23	-68.50	-66.35	-64.37	-63.41	-62.42	-60.20	-56.90	-56.68
2003/8/29	0:00	-63.17	-68.21	-69.07	-69.32	-68.55	-66.50	-64.40	-63.42	-62.43	-60.21	-56.91	-56.68
2003/8/29	12:00	-59.05	-62.88	-64.55	-66.90	-68.03	-66.58	-64.45	-63.44	-62.44	-60.22	-56.92	-56.68
2003/8/30	0:00	-61.77	-62.37	-63.48	-65.42	-67.12	-66.59	-64.49	-63.44	-62.45	-60.23	-56.93	-56.69
2003/8/30	12:00	-64.99	-64.70	-64.78	-65.40	-66.48	-66.52	-64.54	-63.46	-62.45	-60.25	-56.94	-56.68
2003/8/31	0:00	-68.85	-65.97	-65.30	-65.38	-66.18	-66.33	-64.56	-63.47	-62.46	-60.25	-56.94	-56.69
2003/8/31	12:00	-69.20	-68.69	-67.94	-66.84	-66.24	-66.16	-64.55	-63.50	-62.47	-60.28	-56.96	-56.69
2003/9/1	0:00	-68.37	-68.59	-68.11	-67.33	-66.58	-66.02	-64.51	-63.50	-62.47	-60.28	-56.96	-56.69
2003/9/1	12:00	-69.82	-68.55	-67.75	-67.10	-66.66	-65.97	-64.46	-63.51	-62.48	-60.31	-56.97	-56.69
2003/9/2	0:00	-73.10	-70.52	-69.17	-67.78	-66.81	-65.95	-64.42	-63.50	-62.50	-60.31	-56.99	-56.69
2003/9/2	12:00	-71.58	-71.67	-70.78	-69.02	-67.22	-65.94	-64.39	-63.50	-62.51	-60.32	-56.99	-56.70
2003/9/3	0:00	-75.41	-72.77	-71.51	-69.62	-67.68	-65.98	-64.35	-63.49	-62.51	-60.34	-57.00	-56.70
2003/9/3	12:00	-70.32	-71.79	-71.39	-70.12	-68.13	-66.07	-64.34	-63.48	-62.51	-60.35	-57.02	-56.68
2003/9/4	0:00	-64.97	-68.31	-69.05	-69.28	-68.29	-66.21	-64.33	-63.48	-62.52	-60.35	-57.02	-56.69
2003/9/4	12:00	-65.48	-65.96	-66.49	-67.48	-67.86	-66.30	-64.36	-63.47	-62.52	-60.37	-57.03	-56.68
2003/9/5	0:00	-71.19	-69.07	-68.26	-67.62	-67.44	-66.34	-64.37	-63.47	-62.52	-60.38	-57.05	-56.69
2003/9/5	12:00	-69.05	-69.83	-69.39	-68.46	-67.51	-66.35	-64.40	-63.48	-62.52	-60.39	-57.05	-56.70
2003/9/6	0:00	-67.98	-68.36	-68.42	-68.27	-67.64	-66.32	-64.42	-63.49	-62.52	-60.40	-57.06	-56.68
2003/9/6	12:00	-67.81	-68.36	-68.29	-68.08	-67.55	-66.33	-64.43	-63.49	-62.53	-60.41	-57.06	-56.68
2003/9/7	0:00	-70.59	-69.39	-68.80	-68.12	-67.51	-66.31	-64.46	-63.50	-62.53	-60.42	-57.07	-56.70
2003/9/7	12:00	-73.58	-71.48	-70.28	-68.75	-67.60	-66.31	-64.46	-63.51	-62.53	-60.44	-57.08	-56.69
2003/9/8	0:00	-80.14	-75.11	-72.95	-70.24	-68.03	-66.32	-64.48	-63.51	-62.55	-60.43	-57.10	-56.68
2003/9/8	12:00	-77.30	-76.33	-74.82	-71.98	-68.81	-66.38	-64.49	-63.53	-62.56	-60.44	-57.10	-56.69
2003/9/9	0:00	-78.72	-75.98	-74.50	-72.24	-69.48	-66.52	-64.50	-63.53	-62.56	-60.45	-57.11	-56.69
2003/9/9	12:00	-73.85	-74.76	-74.26	-72.64	-69.97	-66.72	-64.54	-63.54	-62.57	-60.46	-57.11	-56.68
2003/9/10	0:00	-73.74	-73.13	-72.71	-71.87	-70.13	-66.94	-64.58	-63.54	-62.58	-60.47	-57.12	-56.69
2003/9/10	12:00	-70.80	-71.88	-71.79	-71.27	-70.02	-67.14	-64.64	-63.57	-62.59	-60.49	-57.14	-56.69
2003/9/11	0:00	-75.80	-73.57	-72.46	-71.15	-69.86	-67.28	-64.70	-63.58	-62.59	-60.50	-57.15	-56.69
2003/9/11	12:00	-75.95	-75.25	-74.07	-72.05	-70.00	-67.38	-64.77	-63.63	-62.61	-60.50	-57.15	-56.70
2003/9/12	0:00	-70.17	-71.27	-71.65	-71.61	-70.27	-67.47	-64.85	-63.66	-62.61	-60.52	-57.17	-56.69
2003/9/12	12:00	-70.54	-71.13	-71.06	-70.81	-70.00	-67.56	-64.92	-63.69	-62.63	-60.52	-57.17	-56.69
2003/9/13	0:00	-71.65	-71.69	-71.31	-70.66	-69.79	-67.62	-64.97	-63.72	-62.65	-60.53	-57.17	-56.71
2003/9/13	12:00	-68.41	-70.34	-70.54	-70.43	-69.69	-67.66	-65.03	-63.77	-62.67	-60.54	-57.18	-56.70
2003/9/14	0:00	-69.38	-69.44	-69.51	-69.64	-69.44	-67.66	-65.08	-63.80	-62.70	-60.55	-57.20	-56.71
2003/9/14	12:00	-70.69	-70.75	-70.41	-69.80	-69.19	-67.64	-65.12	-63.84	-62.72	-60.55	-57.20	-56.69
2003/9/15	0:00	-76.40	-73.16	-71.87	-70.36	-69.23	-67.61	-65.18	-63.87	-62.74	-60.58	-57.22	-56.69
2003/9/15	12:00	-73.21	-73.92	-73.23	-71.58	-69.59	-67.57	-65.20	-63.92	-62.77	-60.58	-57.23	-56.70
2003/9/16	0:00	-71.92	-72.54	-72.33	-71.45	-69.90	-67.60	-65.24	-63.95	-62.79	-60.60	-57.22	-56.68
2003/9/16	12:00	-58.98	-65.74	-68.10	-69.95	-69.79	-67.68	-65.26	-63.97	-62.81	-60.61	-57.24	-56.70
2003/9/17	0:00	-60.72	-63.49	-64.88	-67.21	-68.90	-67.74	-65.30	-64.01	-62.83	-60.62	-57.25	-56.71
2003/9/17	12:00	-59.58	-62.91	-64.25	-66.19	-67.92	-67.67	-65.34	-64.04	-62.85	-60.64	-57.27	-56.70
2003/9/18	0:00	-64.05	-63.76	-64.15	-65.47	-67.22	-67.49	-65.37	-64.06	-62.87	-60.65	-57.27	-56.70
2003/9/18	12:00	-63.04	-64.35	-64.95	-65.86	-66.80	-67.24	-65.37	-64.09	-62.89	-60.65	-57.27	-56.70
2003/9/19	0:00	-63.83	-64.37	-64.70	-65.54	-66.56	-67.00	-65.35	-64.11	-62.91	-60.67	-57.29	-56.71
2003/9/19	12:00	-63.39	-64.68	-64.99	-65.55	-66.31	-66.83	-65.31	-64.13	-62.94	-60.68	-57.30	-56.70
2003/9/20	0:00	-64.11	-64.45	-64.64	-65.24	-66.11	-66.62	-65.25	-64.14	-62.96	-60.70	-57.31	-56.69
2003/9/20	12:00	-61.94	-63.65	-64.30	-65.17	-65.94	-66.44	-65.20	-64.14	-62.99	-60.71	-57.32	-56.71
2003/9/21	0:00	-62.40	-63.07	-63.49	-64.55	-65.69	-66.30	-65.10	-64.13	-63.00	-60.72	-57.33	-56.71
2003/9/21	12:00	-62.90	-63.73	-63.95	-64.52	-65.40	-66.11	-65.03	-64.12	-63.01	-60.74	-57.33	-56.71
2003/9/22	0:00	-62.59	-63.19	-63.57	-64.36	-65.28	-65.96	-64.95	-64.10	-63.02	-60.75	-57.34	-56.71
2003/9/22	12:00	-63.21	-63.90	-64.03	-64.41	-65.09	-65.80	-64.86	-64.08	-63.03	-60.76	-57.36	-56.71
2003/9/23	0:00	-62.79	-63.47	-63.78	-64.36	-65.00	-65.66	-64.78	-64.05	-63.03	-60.77	-57.36	-56.70
2003/9/23	12:00	-64.76	-64.32	-64.17	-64.37	-64.90	-65.55	-64.69	-64.02	-63.05	-60.79	-57.36	-56.72
2003/9/24	0:00	-66.80	-65.26	-64.84	-64.72	-64.94	-65.42	-64.61	-63.99	-63.02	-60.80	-57.37	-56.71
2003/9/24	12:00	-68.65	-66.98	-66.20	-65.43	-65.09	-65.33	-64.51	-63.95	-63.02	-60.82	-57.39	-56.71
2003/9/25	0:00	-67.98	-67.00	-66.55	-65.98	-65.39	-65.24	-64.42	-63.90	-63.01	-60.83	-57.38	-56.71
2003/9/25	12:00	-67.80	-67.52	-67.04	-66.32	-65.63	-65.24	-64.36	-63.86	-63.00	-60.85	-57.39	-56.70

Table 5-1 (continued).

Date	Time	0 m (°C)	0.05 m (°C)	0.1 m (°C)	0.2 m (°C)	0.4 m (°C)	0.8 m (°C)	1.2 m (°C)	1.5 m (°C)	2 m (°C)	3 m (°C)	6 m (°C)	11 m (°C)
2003/9/26	0:00	-67.34	-66.74	-66.56	-66.31	-65.81	-65.26	-64.32	-63.82	-62.97	-60.86	-57.41	-56.70
2003/9/26	12:00	-69.17	-67.90	-67.23	-66.51	-65.89	-65.29	-64.28	-63.79	-62.97	-60.88	-57.41	-56.71
2003/9/27	0:00	-67.26	-67.29	-67.11	-66.71	-66.06	-65.31	-64.26	-63.76	-62.95	-60.89	-57.42	-56.72
2003/9/27	12:00	-67.55	-67.24	-66.96	-66.61	-66.10	-65.36	-64.25	-63.73	-62.93	-60.89	-57.43	-56.72
2003/9/28	0:00	-66.60	-66.65	-66.61	-66.51	-66.15	-65.39	-64.24	-63.70	-62.91	-60.90	-57.43	-56.70
2003/9/28	12:00	-67.54	-67.09	-66.74	-66.43	-66.10	-65.40						
2003/9/29	0:00	-67.58	-66.91	-66.67	-66.47	-66.12	-65.42	-64.25	-63.67	-62.90	-60.92	-57.45	-56.70
2003/9/29	12:00	-68.50	-67.77	-67.24	-66.65	-66.11	-65.42	-64.25	-63.66	-62.88	-60.93	-57.46	-56.72
2003/9/30	0:00	-67.60	-67.22	-67.03	-66.73	-66.24	-65.44	-64.25	-63.65	-62.87	-60.94	-57.47	-56.74
2003/9/30	12:00	-67.15	-67.34	-67.10	-66.73	-66.24	-65.45	-64.24	-63.65	-62.86	-60.94	-57.48	-56.71
2003/10/1	0:00	-65.38	-66.07	-66.28	-66.47	-66.24	-65.45	-64.25	-63.63	-62.85	-60.95	-57.48	-56.72
2003/10/1	12:00	-64.17	-65.76	-65.96	-66.11	-66.08	-65.44	-64.25	-63.63	-62.84	-60.97	-57.49	-56.72
2003/10/2	0:00	-63.86	-64.39	-64.83	-65.51	-65.89	-65.44	-64.25	-63.63	-62.84	-60.98	-57.50	-56.72
2003/10/2	12:00	-62.32	-64.40	-64.81	-65.27	-65.61	-65.39	-64.26	-63.63	-62.83	-60.97	-57.50	-56.71
2003/10/3	0:00	-63.38	-63.52	-63.89	-64.68	-65.38	-65.35	-64.25	-63.62	-62.83	-60.98	-57.51	-56.72
2003/10/3	12:00	-63.83	-64.52	-64.49	-64.71	-65.09	-65.26	-64.22	-63.62	-62.82	-60.99	-57.52	-56.74
2003/10/4	0:00	-65.05	-64.32	-64.30	-64.61	-65.01	-65.16	-64.18	-63.61	-62.82	-60.99	-57.53	-56.74
2003/10/4	12:00	-66.47	-66.05	-65.53	-65.05	-64.95	-65.04	-64.14	-63.59	-62.82	-61.00	-57.54	-56.74
2003/10/5	0:00	-66.98	-65.86	-65.47	-65.28	-65.08	-65.00	-64.09	-63.57	-62.82	-61.00	-57.57	-56.72
2003/10/5	12:00	-66.95	-67.20	-66.62	-65.81	-65.22	-64.95	-64.04	-63.56	-62.81	-61.01	-57.57	-56.72
2003/10/6	0:00	-67.33	-66.32	-66.03	-65.79	-65.41	-64.93	-64.01	-63.53	-62.80	-61.01	-57.58	-56.72
2003/10/6	12:00	-65.96	-66.69	-66.47	-66.00	-65.45	-64.89	-63.97	-63.51	-62.79	-61.01	-57.59	-56.75
2003/10/7	0:00	-67.28	-66.24	-65.95	-65.78	-65.55	-64.94	-63.96	-63.49	-62.78	-61.02	-57.60	-56.72
2003/10/7	12:00	-65.97	-66.64	-66.44	-66.04	-65.53	-64.96	-63.94	-63.47	-62.78	-61.03	-57.60	-56.75
2003/10/8	0:00	-67.14	-66.08	-65.88	-65.79	-65.60	-64.98	-63.94	-63.46	-62.78	-61.02	-57.62	-56.72
2003/10/8	12:00	-66.78	-67.12	-66.71	-66.10	-65.58	-64.95	-63.95	-63.44	-62.76	-61.03	-57.62	-56.72
2003/10/9	0:00	-67.81	-66.51	-66.21	-66.03	-65.67	-64.98	-63.95	-63.44	-62.75	-61.03	-57.63	-56.75
2003/10/9	12:00	-67.90	-68.03	-67.41	-66.50	-65.71	-64.99	-63.95	-63.43	-62.75	-61.03	-57.63	-56.74
2003/10/10	0:00	-69.01	-67.28	-66.84	-66.48	-65.90	-65.01	-63.95	-63.42	-62.74	-61.04	-57.65	-56.76
2003/10/10	12:00	-68.36	-68.68	-68.07	-67.02	-66.01	-65.03	-63.96	-63.42	-62.73	-61.04	-57.66	-56.74
2003/10/11	0:00	-70.23	-68.00	-67.43	-66.93	-66.21	-65.08	-63.98	-63.42	-62.72	-61.05	-57.66	-56.76
2003/10/11	12:00	-68.69	-69.43	-68.81	-67.60	-66.34	-65.13	-64.00	-63.41	-62.72	-61.05	-57.67	-56.75
2003/10/12	0:00	-65.79	-66.50	-66.82	-67.04	-66.52	-65.19	-64.03	-63.42	-62.71	-61.05	-57.67	-56.77
2003/10/12	12:00	-66.37	-67.10	-66.94	-66.68	-66.31	-65.28	-64.06	-63.42	-62.71	-61.05	-57.69	-56.75
2003/10/13	0:00	-66.23	-66.06	-66.15	-66.34	-66.23	-65.30	-64.09	-63.42	-62.70	-61.06	-57.68	-56.75
2003/10/13	12:00	-66.53	-67.02	-66.77	-66.38	-66.06	-65.31	-64.13	-63.44	-62.71	-61.07	-57.71	-56.75
2003/10/14	0:00	-65.73	-65.79	-65.92	-66.16	-66.05	-65.30	-64.16	-63.45	-62.71	-61.06	-57.72	-56.76
2003/10/14	12:00	-63.84	-65.76	-66.00	-66.04	-65.93	-65.29	-64.18	-63.47	-62.71	-61.06	-57.72	-56.75
2003/10/15	0:00	-64.18	-64.18	-64.55	-65.31	-65.73	-65.28	-64.18	-63.48	-62.72	-61.06	-57.72	-56.76
2003/10/15	12:00	-62.94	-64.79	-65.02	-65.26	-65.46	-65.22	-64.20	-63.50	-62.73	-61.07	-57.73	-56.75
2003/10/16	0:00	-63.64	-63.76	-64.07	-64.76	-65.32	-65.16	-64.18	-63.50	-62.74	-61.07	-57.73	-56.77
2003/10/16	12:00	-60.76	-63.38	-63.96	-64.61	-65.07	-65.06	-64.17	-63.51	-62.74	-61.08	-57.74	-56.76
2003/10/17	0:00	-62.57	-62.28	-62.74	-63.83	-64.78	-65.00	-64.14	-63.50	-62.75	-61.08	-57.75	-56.75
2003/10/17	12:00	-60.89	-63.13	-63.48	-63.91	-64.48	-64.88	-64.12	-63.50	-62.75	-61.08	-57.76	-56.77
2003/10/18	0:00	-61.58	-61.53	-62.10	-63.27	-64.30	-64.77	-64.07	-63.50	-62.75	-61.08	-57.76	-56.76
2003/10/18	12:00	-62.15	-63.20	-63.25	-63.46	-64.03	-64.66	-64.03	-63.49	-62.75	-61.09	-57.77	-56.76
2003/10/19	0:00	-62.65	-62.43	-62.65	-63.27	-63.97	-64.52	-63.97	-63.47	-62.76	-61.08	-57.78	-56.77
2003/10/19	12:00	-62.11	-63.11	-63.21	-63.43	-63.84	-64.42	-63.90	-63.45	-62.76	-61.09	-57.79	-56.77
2003/10/20	0:00	-62.99	-62.45	-62.62	-63.22	-63.60	-64.33	-63.83	-63.43	-62.74	-61.09	-57.79	-56.77
2003/10/20	12:00	-60.76	-62.72	-63.02	-63.33	-63.69	-64.20	-63.76	-63.40	-62.73	-61.10	-57.80	-56.76
2003/10/21	0:00	-60.26	-61.19	-61.78	-62.78	-63.60	-64.15	-63.68	-63.37	-62.73	-61.10	-57.81	-56.77
2003/10/21	12:00	-60.77	-61.91	-62.14	-62.61	-63.34	-64.05	-63.62	-63.34	-62.72	-61.10	-57.81	-56.77
2003/10/22	0:00	-61.13	-61.01	-61.45	-62.31	-63.21	-63.94	-63.54	-63.31	-62.70	-61.11	-57.82	-56.77
2003/10/22	12:00	-62.60	-62.88	-62.68	-62.62	-63.05	-63.84	-63.47	-63.26	-62.69	-61.11	-57.84	-56.79
2003/10/23	0:00	-63.40	-62.36	-62.36	-62.69	-63.10	-63.74	-63.40	-63.22	-62.66	-61.12	-57.85	-56.78
2003/10/23	12:00	-63.17	-63.84	-63.57	-63.21	-63.14	-63.66	-63.33	-63.18	-62.65	-61.12	-57.85	-56.77
2003/10/24	0:00	-62.36	-62.34	-62.58	-63.05	-63.27	-63.59	-63.25	-63.14	-62.63	-61.12	-57.87	-56.77
2003/10/24	12:00	-60.72	-62.55	-62.80	-63.02	-63.20	-63.55	-63.19	-63.10	-62.60	-61.12	-57.87	-56.78
2003/10/25	0:00	-60.05	-60.69	-61.32	-62.36	-63.12	-63.54	-63.13	-63.06	-62.58	-61.13	-57.88	-56.78
2003/10/25	12:00	-60.51	-61.71	-61.90	-62.25	-62.86	-63.47						
2003/10/26	0:00	-61.73	-61.10	-61.35	-62.02	-62.76	-63.42	-63.02	-62.96	-62.54	-61.12	-57.89	-56.79
2003/10/26	12:00	-60.60	-62.21	-62.28	-62.35	-62.65	-63.32	-62.96	-62.93	-62.51	-61.13	-57.90	-56.77
2003/10/27	0:00	-60.15	-60.71	-61.22	-62.02	-62.64	-63.27	-62.91	-62.89	-62.49	-61.12	-57.91	-56.78
2003/10/27	12:00	-59.65	-61.55	-61.77	-62.05	-62.50	-63.19	-62.86	-62.85	-62.47	-61.12	-57.91	-56.78
2003/10/28	0:00	-59.27	-59.80	-60.43	-61.53	-62.41	-63.12	-62.80	-62.81	-62.45	-61.13	-57.91	-56.79
2003/10/28	12:00	-58.75	-60.74	-61.03	-61.50	-62.18	-63.03	-62.75	-62.78	-62.42	-61.12	-57.92	-56.80
2003/10/29	0:00	-58.62	-59.20	-59.87	-61.02	-62.05	-62.98	-62.69	-62.74	-62.39	-61.12	-57.92	-56.79
2003/10/29	12:00	-58.79	-60.27	-60.54	-61.04	-61.81	-62.88	-62.64	-62.70	-62.36	-61.12	-57.93	-56.80
2003/10/30	0:00	-60.28	-59.65	-59.95	-60.80	-61.71	-62.79	-62.57	-62.66	-62.33	-61.10	-57.94	-56.80
2003/10/30	12:00	-58.98	-60.79	-60.94	-61.13	-61.61	-62.68	-62.50	-62.61	-62.29	-61.11	-57.94	-56.80
2003/10/31	0:00	-58.59	-59.03	-59.64	-60.71	-61.63	-62.58	-62.44	-62.57	-62.27	-61.10	-57.96	-56.78
2003/10/31	12:00	-54.00	-57.99	-59.10	-60.33	-61.39	-62.42	-62.36	-62.54	-62.25	-61.11	-57.95	-56.79
2003/11/1	0:00	-50.00	-54.53	-56.46	-58.98	-61.02	-62.42	-62.28	-62.48	-62.21	-61.10	-57.96	-56.81
2003/11/1	12:00	-46.76	-52.36	-54.53	-57.52	-60.28	-62.27	-62.21	-62.44	-62.18	-61.09	-57.96	-56.79
2003/11/2	0:00	-46.59	-50.14	-52.32	-55.92	-59.46	-62.10	-62.13	-62.39	-62.15	-61.09	-57.98	-56.79
2003/11/2	12:00	-43.46	-49.52	-51.75	-55.04	-58.56	-61.84	-62.03	-62.32	-62.12	-61.09	-57.98	-56.80
2003/11/3	0:00	-42.77	-47.39	-49.83	-53.72	-57.78	-61.54	-61.91	-62.26	-62.09	-61.07	-57.99	-56.80

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/11/3	12:00	-41.94	-46.94	-49.19	-52.75	-56.88	-61.18	-61.77	-62.21	-62.05	-61.07	-57.99	-56.81
2003/11/4	0:00	-43.90	-46.33	-48.28	-51.91	-56.14	-60.80	-61.60	-62.14	-62.02	-61.07	-58.00	-56.81
2003/11/4	12:00	-43.28	-47.38	-48.97	-51.76	-55.54	-60.39	-61.40	-62.05	-61.97	-61.06	-58.00	-56.80
2003/11/5	0:00	-43.56	-46.41	-48.20	-51.34	-55.12	-59.98	-61.21	-61.97	-61.93	-61.05	-58.01	-56.80
2003/11/5	12:00	-44.54	-47.68	-48.97	-51.28	-54.63	-59.61	-60.99	-61.86	-61.89	-61.05	-58.02	-56.81
2003/11/6	0:00	-44.49	-46.85	-48.39	-51.10	-54.43	-59.24	-60.74	-61.74	-61.83	-61.03	-58.03	-56.81
2003/11/6	12:00	-44.73	-47.64	-48.83	-50.98	-54.10	-58.91	-60.50	-61.62	-61.78	-61.03	-58.04	-56.80
2003/11/7	0:00	-45.25	-46.93	-48.28	-50.81	-53.88	-58.60	-60.28	-61.49	-61.71	-61.01	-58.04	-56.82
2003/11/7	12:00	-46.18	-48.52	-49.32	-51.00	-53.65	-58.33	-60.04	-61.35	-61.63	-61.01	-58.05	-56.81
2003/11/8	0:00	-47.67	-48.26	-49.15	-51.06	-53.63	-58.06	-59.83	-61.22	-61.57	-61.00	-58.06	-56.83
2003/11/8	12:00	-48.51	-50.09	-50.50	-51.54	-53.56	-57.82	-59.62	-61.09	-61.49	-60.99	-58.06	-56.82
2003/11/9	0:00	-49.75	-49.66	-50.29	-51.69	-53.67	-57.64	-59.40	-60.93	-61.40	-60.98	-58.06	-56.81
2003/11/9	12:00	-50.33	-51.65	-51.80	-52.31	-53.75	-57.45	-59.23	-60.80	-61.32	-60.95	-58.06	-56.82
2003/11/10	0:00	-50.49	-50.68	-51.25	-52.45	-53.95	-57.35	-59.04	-60.66	-61.23	-60.94	-58.08	-56.83
2003/11/10	12:00	-49.97	-51.87	-52.21	-52.80	-53.99	-57.23	-58.87	-60.53	-61.15	-60.93	-58.07	-56.83
2003/11/11	0:00	-49.28	-50.29	-51.18	-52.60	-54.14	-57.15	-58.73	-60.39	-61.06	-60.90	-58.11	-56.82
2003/11/11	12:00	-49.70	-51.59	-51.99	-52.73	-54.06	-57.11	-58.60	-60.26	-60.95	-60.88	-58.09	-56.83
2003/11/12	0:00	-50.48	-50.61	-51.25	-52.59	-54.15	-57.03	-58.48	-60.14	-60.86	-60.87	-58.12	-56.83
2003/11/12	12:00	-50.43	-52.14	-52.37	-52.91	-54.08	-56.96	-58.37	-60.04	-60.77	-60.83	-58.12	-56.84
2003/11/13	0:00	-49.62	-50.41	-51.29	-52.73	-54.18	-56.91	-58.28	-59.92	-60.68	-60.81	-58.13	-56.82
2003/11/13	12:00	-49.89	-51.59	-52.00	-52.78	-54.09	-56.86	-58.18	-59.83	-60.60	-60.78	-58.12	-56.84
2003/11/14	0:00	-49.83	-50.50	-51.21	-52.58	-54.10	-56.78	-58.08	-59.73	-60.50	-60.76	-58.13	-56.84
2003/11/14	12:00	-49.94	-51.73	-52.10	-52.80	-54.05	-56.72	-58.01	-59.63	-60.42	-60.74	-58.13	-56.84
2003/11/15	0:00	-49.84	-50.48	-51.21	-52.58	-54.05	-56.68	-57.93	-59.53	-60.35	-60.71	-58.14	-56.85
2003/11/15	12:00	-49.84	-51.69	-52.07	-52.76	-53.97	-56.60	-57.85	-59.44	-60.26	-60.68	-58.15	-56.85
2003/11/16	0:00	-49.47	-50.21	-51.06	-52.51	-54.00	-56.55	-57.77	-59.36	-60.18	-60.65	-58.15	-56.84
2003/11/16	12:00	-49.20	-51.32	-51.76	-52.57	-53.86	-56.49	-57.70	-59.29	-60.11	-60.61	-58.15	-56.84
2003/11/17	0:00	-49.78	-50.14	-50.86	-52.32	-53.89	-56.45	-57.63	-59.21	-60.04	-60.60	-58.16	-56.84
2003/11/17	12:00	-50.09	-51.84	-52.07	-52.61	-53.75	-56.37	-57.54	-59.13	-59.95	-60.56	-58.17	-56.84
2003/11/18	0:00	-48.97	-50.09	-50.93	-52.40	-53.85	-56.30	-57.48	-59.05	-59.89	-60.53	-58.16	-56.84
2003/11/18	12:00	-48.17	-50.68	-51.31	-52.31	-53.70	-56.23	-57.41	-58.98	-59.82	-60.50	-58.18	-56.84
2003/11/19	0:00	-47.59	-48.96	-50.01	-51.87	-53.62	-56.18	-57.35	-58.89	-59.74	-60.46	-58.18	-56.84
2003/11/19	12:00	-47.34	-49.90	-50.63	-51.75	-53.36	-56.12	-57.29	-58.83	-59.68	-60.44	-58.19	-56.86
2003/11/20	0:00	-46.95	-48.31	-49.42	-51.33	-53.27	-56.04	-57.21	-58.75	-59.62	-60.39	-58.19	-56.84
2003/11/20	12:00	-46.98	-49.38	-50.11	-51.27	-53.02	-55.96	-57.15	-58.70	-59.55	-60.37	-58.19	-56.84
2003/11/21	0:00	-46.79	-48.00	-49.04	-50.94	-52.91	-55.85	-57.08	-58.62	-59.48	-60.34	-58.20	-56.85
2003/11/21	12:00	-46.49	-49.05	-49.75	-50.94	-52.71	-55.75	-57.00	-58.55	-59.41	-60.29	-58.20	-56.84
2003/11/22	0:00	-46.58	-47.64	-48.71	-50.57	-52.63	-55.64	-56.93	-58.49	-59.35	-60.25	-58.21	-56.85
2003/11/22	12:00	-46.69	-49.17	-49.70	-50.70	-52.36	-55.50	-56.84	-58.43	-59.29	-60.22	-58.21	-56.85
2003/11/23	0:00	-46.48	-47.53	-48.59	-50.44	-52.38	-55.39	-56.75	-58.34	-59.24	-60.19	-58.23	-56.86
2003/11/23	12:00	-46.27	-48.84	-49.46	-50.53	-52.19	-55.30	-56.66	-58.28	-59.16	-60.15	-58.23	-56.88
2003/11/24	0:00	-46.07	-47.20	-48.33	-50.18	-52.14	-55.20	-56.57	-58.20	-59.11	-60.13	-58.23	-56.85
2003/11/24	12:00	-45.92	-48.51	-49.17	-50.26	-51.97	-55.08	-56.49	-58.13	-59.05	-60.09	-58.24	-56.88
2003/11/25	0:00	-45.29	-46.77	-47.94	-49.89	-51.93	-55.00	-56.38	-58.05	-58.99	-60.06	-58.23	-56.89
2003/11/25	12:00	-45.19	-47.87	-48.57	-49.84	-51.69	-54.88	-56.29	-57.98	-58.94	-60.03	-58.25	-56.88
2003/11/26	0:00	-44.51	-46.19	-47.42	-49.45	-51.62	-54.80	-56.21	-57.90	-58.86	-59.98	-58.26	-56.89
2003/11/26	12:00	-44.63	-47.18	-47.96	-49.37	-51.36	-54.69	-56.10	-57.82	-58.79	-59.95	-58.26	-56.88
2003/11/27	0:00	-43.16	-45.28	-46.69	-48.94	-51.21	-54.54	-56.00	-57.75	-58.73	-59.90	-58.27	-56.88
2003/11/27	12:00	-43.34	-46.12	-47.10	-48.68	-50.92	-54.42	-55.92	-57.67	-58.67	-59.88	-58.26	-56.90
2003/11/28	0:00	-43.12	-44.73	-46.07	-48.31	-50.77	-54.30	-55.81	-57.58	-58.59	-59.85	-58.26	-56.88
2003/11/28	12:00	-43.64	-46.06	-46.85	-48.26	-50.44	-54.17	-55.72	-57.51	-58.54	-59.82	-58.27	-56.89
2003/11/29	0:00	-43.13	-44.72	-45.94	-48.04	-50.36	-54.00	-55.61	-57.42	-58.47	-59.78	-58.28	-56.89
2003/11/29	12:00	-43.46	-45.90	-46.70	-48.03	-50.15	-53.86	-55.50	-57.35	-58.42	-59.74	-58.28	-56.90
2003/11/30	0:00	-42.79	-44.37	-45.63	-47.78	-50.06	-53.73	-55.40	-57.26	-58.35	-59.70	-58.27	-56.89
2003/11/30	12:00	-42.95	-45.68	-46.38	-47.76	-49.84	-53.60	-55.28	-57.18	-58.29	-59.67	-58.27	-56.90
2003/12/1	0:00	-41.76	-43.79	-45.17	-47.44	-49.80	-53.48	-55.18	-57.10	-58.21	-59.64	-58.27	-56.90
2003/12/1	12:00	-42.01	-44.79	-45.69	-47.27	-49.52	-53.32	-55.07	-57.02	-58.14	-59.60	-58.28	-56.89
2003/12/2	0:00	-41.12	-43.17	-44.57	-46.90	-49.42	-53.21	-54.97	-56.93	-58.06	-59.55	-58.28	-56.90
2003/12/2	12:00	-41.89	-44.17	-45.09	-46.77	-49.11	-53.06	-54.86	-56.83	-58.01	-59.53	-58.29	-56.91
2003/12/3	0:00	-39.86	-42.43	-43.92	-46.39	-49.01	-52.95	-54.74	-56.76	-57.94	-59.49	-58.30	-56.92
2003/12/3	12:00	-40.18	-43.03	-44.05	-46.03	-48.66	-52.82	-54.64	-56.66	-57.88	-59.45	-58.30	-56.92
2003/12/4	0:00	-40.89	-42.44	-43.66	-45.82	-48.49	-52.63	-54.52	-56.57	-57.79	-59.41	-58.29	-56.91
2003/12/4	12:00	-41.67	-43.77	-44.50	-45.96	-48.27	-52.51	-54.41	-56.50	-57.74	-59.38	-58.30	-56.92
2003/12/5	0:00	-40.57	-42.36	-43.63	-45.81	-48.22	-52.33	-54.30	-56.40	-57.67	-59.35	-58.28	-56.93
2003/12/5	12:00	-41.46	-43.69	-44.38	-45.77	-48.02	-52.19	-54.16	-56.31	-57.59	-59.30	-58.30	-56.92
2003/12/6	0:00	-40.17	-42.06	-43.41	-45.57	-47.98	-52.07	-54.04	-56.22	-57.50	-59.26	-58.29	-56.92
2003/12/6	12:00	-40.67	-43.09	-43.94	-45.49	-47.78	-51.91	-53.92	-56.12	-57.43	-59.23	-58.30	-56.92
2003/12/7	0:00	-38.91	-41.35	-42.77	-45.12	-47.71	-51.79	-53.80	-56.02	-57.36	-59.18	-58.30	-56.93
2003/12/7	12:00	-38.90	-41.71	-42.84	-44.78	-47.39	-51.63	-53.68	-55.94	-57.29	-59.14	-58.30	-56.92
2003/12/8	0:00	-38.09	-40.28	-41.76	-44.35	-47.22	-51.52	-53.57	-55.84	-57.21	-59.11	-58.30	-56.93
2003/12/8	12:00	-38.95	-41.49	-42.40	-44.22	-46.85	-51.37	-53.45	-55.76	-57.13	-59.07	-58.30	-56.92
2003/12/9	0:00	-38.14	-40.09	-41.47	-43.93	-46.72	-51.19	-53.33	-55.66	-57.06	-59.03	-58.30	-56.93
2003/12/9	12:00	-38.69	-41.38	-42.23	-43.92	-46.48	-51.03	-53.22	-55.57	-56.99	-59.00	-58.30	-56.93
2003/12/10	0:00	-37.52	-39.58	-41.11	-43.61	-46.36	-50.90	-53.08	-55.46	-56.91	-58.95	-58.30	-56.94
2003/12/10	12:00	-38.26	-40.93	-41.86	-43.55	-46.13	-50.70	-52.97	-55.37	-56.83	-58.91	-58.30	-56.93
2003/12/11	0:00	-37.54	-39.35	-40.77	-43.27	-46.02	-50.55	-52.83	-55.26	-56.75	-58.86	-58.31	-56.93
2003/12/11	12:00	-38.54	-40.96	-41.69	-43.29	-45.81	-50.40	-52.72	-55.17	-56.67	-58.82	-58.30	-56.94

Table 5-1 (continued).

Date	Time	0 m (° C)	0.05 m (° C)	0.1 m (° C)	0.2 m (° C)	0.4 m (° C)	0.8 m (° C)	1.2 m (° C)	1.5 m (° C)	2 m (° C)	3 m (° C)	6 m (° C)	11 m (° C)
2003/12/12	0:00	-36.80	-39.16	-40.62	-43.09	-45.76	-50.26	-52.59	-55.06	-56.59	-58.78	-58.30	-56.95
2003/12/12	12:00	-35.50	-39.22	-40.55	-42.74	-45.50	-50.10	-52.48	-54.97	-56.52	-58.74	-58.30	-56.95
2003/12/13	0:00	-34.12	-37.15	-39.01	-42.05	-45.24	-49.97	-52.36	-54.86	-56.42	-58.69	-58.29	-56.95
2003/12/13	12:00	-34.28	-37.54	-38.96	-41.53	-44.83	-49.81	-52.23	-54.76	-56.36	-58.66	-58.30	-56.94
2003/12/14	0:00	-34.20	-36.75	-38.29	-41.12	-44.53	-49.64	-52.10	-54.66	-56.27	-58.61	-58.30	-56.95
2003/12/14	12:00	-35.06	-37.47	-38.65	-40.96	-44.15	-49.43	-51.98	-54.56	-56.19	-58.56	-58.29	-56.96
2003/12/15	0:00	-33.95	-36.53	-38.06	-40.74	-43.99	-49.22	-51.85	-54.46	-56.10	-58.53	-58.30	-56.95
2003/12/15	12:00	-35.56	-37.47	-38.47	-40.58	-43.68	-48.99	-51.71	-54.36	-56.03	-58.49	-58.30	-56.95
2003/12/16	0:00	-34.51	-36.91	-38.26	-40.58	-43.57	-48.87	-51.57	-54.26	-55.95	-58.45	-58.30	-56.97
2003/12/16	12:00	-36.85	-37.89	-38.65	-40.52	-43.43	-48.65	-51.42	-54.15	-55.86	-58.40	-58.30	-56.96
2003/12/17	0:00	-35.70	-37.84	-38.93	-40.80	-43.41	-48.49	-51.28	-54.05	-55.78	-58.36	-58.29	-56.97
2003/12/17	12:00	-36.79	-38.22	-39.00	-40.79	-43.35	-48.37	-51.13	-53.93	-55.70	-58.31	-58.29	-56.97
2003/12/18	0:00	-35.22	-37.64	-38.80	-40.86	-43.34	-48.23						
2003/12/18	12:00	-36.79	-38.11	-38.94	-40.69	-43.28	-48.08	-50.82	-53.70	-55.50	-58.20	-58.27	-56.96
2003/12/19	0:00	-35.64	-37.80	-38.90	-40.78	-43.24	-48.00	-50.68	-53.59	-55.42	-58.16	-58.27	-56.97
2003/12/19	12:00	-37.44	-38.58	-39.23	-40.78	-43.12	-47.87	-50.56	-53.48	-55.33	-58.12	-58.27	-56.97
2003/12/20	0:00	-35.76	-37.98	-39.10	-40.92	-43.16	-47.79						
2003/12/20	12:00	-37.41	-38.58	-39.26	-40.79	-43.13	-47.65	-50.30	-53.26	-55.17	-58.02	-58.27	-56.98
2003/12/21	0:00	-35.78	-37.97	-39.10	-40.87	-43.13	-47.59	-50.15	-53.13	-55.06	-57.98	-58.26	-56.97
2003/12/21	12:00	-36.74	-38.20	-39.04	-40.71	-42.98	-47.49	-50.04	-53.03	-54.99	-57.94	-58.27	-56.98
2003/12/22	0:00	-35.27	-37.67	-38.77	-40.69	-42.98	-47.43	-49.91	-52.92	-54.90	-57.88	-58.25	-56.97
2003/12/22	12:00	-36.54	-38.04	-38.79	-40.48	-42.84	-47.33	-49.79	-52.80	-54.79	-57.84	-58.25	-56.98
2003/12/23	0:00	-34.75	-37.17	-38.40	-40.44	-42.83	-47.26	-49.67	-52.70	-54.70	-57.78	-58.24	-56.98
2003/12/23	12:00	-35.84	-37.58	-38.45	-40.14	-42.65	-47.11	-49.56	-52.60	-54.62	-57.74	-58.25	-56.98
2003/12/24	0:00	-34.61	-36.94	-38.10	-40.10	-42.60	-47.06	-49.44	-52.50	-54.53	-57.69	-58.25	-56.99
2003/12/24	12:00	-34.95	-36.88	-37.87	-39.85	-42.40	-46.97	-49.34	-52.40	-54.44	-57.65	-58.25	-56.99
2003/12/25	0:00	-33.99	-36.30	-37.55	-39.65	-42.30	-46.85	-49.22	-52.29	-54.36	-57.60	-58.25	-57.00
2003/12/25	12:00	-35.33	-36.87	-37.69	-39.52	-42.07	-46.77	-49.10	-52.18	-54.26	-57.53	-58.25	-56.99
2003/12/26	0:00	-34.24	-36.37	-37.57	-39.59	-42.08	-46.67	-48.97	-52.08	-54.16	-57.47	-58.24	-56.99
2003/12/26	12:00	-35.85	-37.16	-37.89	-39.50	-41.96	-46.55	-48.84	-51.97	-54.08	-57.43	-58.24	-57.00
2003/12/27	0:00	-34.58	-36.70	-37.75	-39.61	-41.94	-46.48	-48.72	-51.88	-53.98	-57.38	-58.24	-57.00
2003/12/27	12:00	-35.79	-37.16	-37.83	-39.44	-41.77	-46.37	-48.61	-51.78	-53.91	-57.33	-58.23	-57.02
2003/12/28	0:00	-34.13	-36.43	-37.52	-39.44	-41.76	-46.24	-48.50	-51.69	-53.83	-57.27	-58.23	-57.02
2003/12/28	12:00	-35.27	-36.82	-37.59	-39.25	-41.68	-46.19	-48.39	-51.59	-53.74	-57.22	-58.21	-57.02
2003/12/29	0:00	-33.69	-36.08	-37.26	-39.23	-41.65	-46.10	-48.28	-51.47	-53.64	-57.17	-58.20	-57.02
2003/12/29	12:00	-35.09	-36.52	-37.29	-39.00	-41.45	-45.95	-48.18	-51.38	-53.56	-57.12	-58.20	-57.02
2003/12/30	0:00	-33.38	-35.63	-36.89	-38.92	-41.39	-45.88	-48.08	-51.29	-53.47	-57.07	-58.20	-57.03
2003/12/30	12:00	-34.83	-36.32	-37.03	-38.74	-41.19	-45.81	-47.97	-51.19	-53.38	-57.03	-58.18	-57.02
2003/12/31	0:00	-32.84	-35.32	-36.55	-38.69	-41.17	-45.69	-47.88	-51.10	-53.30	-56.97	-58.19	-57.02
2003/12/31	12:00	-33.81	-35.66	-36.53	-38.41	-40.96	-45.58	-47.78	-51.01	-53.22	-56.92	-58.18	-57.03
2004/1/1	0:00	-32.47	-34.82	-36.11	-38.28	-40.89	-45.51	-47.69	-50.90	-53.13	-56.86	-58.18	-57.02
2004/1/1	12:00	-33.12	-35.05	-36.02	-37.99	-40.68	-45.38	-47.59	-50.82	-53.06	-56.81	-58.18	-57.03
2004/1/2	0:00	-31.79	-34.16	-35.47	-37.77	-40.53	-45.25	-47.48	-50.73	-52.97	-56.75	-58.16	-57.03
2004/1/2	12:00	-33.26	-34.92	-35.75	-37.60	-40.26	-45.11	-47.39	-50.63	-52.87	-56.70	-58.16	-57.03
2004/1/3	0:00	-31.84	-34.10	-35.35	-37.55	-40.23	-45.00						
2004/1/3	12:00	-33.85	-35.11	-35.76	-37.43	-40.03	-44.89						
2004/1/4	0:00	-32.01	-34.32	-35.49	-37.54	-40.01	-44.78	-47.11	-50.37	-52.63	-56.53	-58.14	-57.03
2004/1/4	12:00	-32.42	-34.52	-35.45	-37.34	-39.88	-44.65	-47.00	-50.28	-52.55	-56.49	-58.14	-57.04
2004/1/5	0:00	-31.43	-33.63	-34.87	-37.14	-39.82	-44.57	-46.91	-50.17	-52.47	-56.42	-58.14	-57.04
2004/1/5	12:00	-33.01	-34.45	-35.17	-36.95	-39.61	-44.43	-46.80	-50.10	-52.40	-56.37	-58.13	-57.04
2004/1/6	0:00	-31.59	-33.67	-34.87	-37.00	-39.58	-44.34	-46.72	-50.02	-52.31	-56.32	-58.13	-57.05
2004/1/6	12:00	-33.46	-34.67	-35.31	-36.92	-39.39	-44.25	-46.63	-49.92	-52.24	-56.27	-58.12	-57.04
2004/1/7	0:00	-31.98	-34.01	-35.05	-37.01	-39.39	-44.14	-46.53	-49.84	-52.15	-56.22	-58.11	-57.05
2004/1/7	12:00	-33.89	-34.88	-35.41	-36.95	-39.29	-44.04	-46.45	-49.76	-52.06	-56.15	-58.09	-57.05
2004/1/8	0:00	-32.63	-34.39	-35.35	-37.10	-39.32	-43.91	-46.34	-49.67	-51.99	-56.10	-58.09	-57.05
2004/1/8	12:00	-34.63	-35.37	-35.81	-37.12	-39.24	-43.83	-46.26	-49.58	-51.91	-56.05	-58.09	-57.05
2004/1/9	0:00	-33.01	-34.77	-35.67	-37.30	-39.36	-43.77	-46.18	-49.48	-51.84	-56.00	-58.07	-57.05
2004/1/9	12:00	-33.46	-34.98	-35.68	-37.21	-39.32	-43.71	-46.09	-49.40	-51.75	-55.94	-58.06	-57.06
2004/1/10	0:00	-32.74	-34.41	-35.36	-37.14	-39.32	-43.66	-46.02	-49.32	-51.68	-55.88	-58.06	-57.06
2004/1/10	12:00	-34.87	-35.49	-35.90	-37.14	-39.24	-43.55	-45.96	-49.24	-51.61	-55.83	-58.06	-57.07
2004/1/11	0:00	-34.04	-35.25	-35.96	-37.40	-39.30	-43.54	-45.89	-49.16	-51.51	-55.77	-58.04	-57.06
2004/1/11	12:00	-36.29	-36.56	-36.76	-37.56	-39.31	-43.45	-45.82	-49.10	-51.44	-55.74	-58.04	-57.06
2004/1/12	0:00	-34.61	-35.98	-36.65	-37.88	-39.49	-43.43	-45.75	-49.01	-51.37	-55.67	-58.02	-57.06
2004/1/12	12:00	-36.51	-36.97	-37.17	-37.98	-39.51	-43.38	-45.68	-48.93	-51.30	-55.62	-58.02	-57.06
2004/1/13	0:00	-34.58	-36.14	-36.90	-38.15	-39.69	-43.34	-45.62	-48.87	-51.22	-55.56	-58.01	-57.07
2004/1/13	12:00	-36.49	-37.10	-37.32	-38.13	-39.65	-43.32	-45.58	-48.80	-51.15	-55.50	-58.00	-57.07
2004/1/14	0:00	-34.77	-36.23	-37.02	-38.28	-39.79	-43.32	-45.54	-48.73	-51.09	-55.45	-58.00	-57.07
2004/1/14	12:00	-36.73	-37.26	-37.47	-38.28	-39.80	-43.36	-45.50	-48.67	-51.02	-55.41	-57.99	-57.07
2004/1/15	0:00	-34.81	-36.36	-37.16	-38.45	-39.92	-43.35						
2004/1/15	12:00	-36.63	-37.27	-37.52	-38.34	-39.88	-43.32	-45.44	-48.55	-50.88	-55.29	-57.96	-57.08
2004/1/16	0:00							-45.41	-48.49	-50.80	-55.23	-57.94	-57.07
2004/1/16	12:00							-45.37	-48.44	-50.75	-55.19	-57.94	-57.07
2004/1/17	0:00							-45.35	-48.39	-50.68	-55.13	-57.93	-57.07
2004/1/17	12:00							-45.33	-48.36	-50.63	-55.08	-57.92	-57.08

Table 5-2. Snow height on the sensors.

(cm in height)

	shallow five sensers (0.05, 0.1, 0.2, 0.4 and 0.8m in depths)	deep six sensers (1.2, 1.5, 2, 3, 6 and 11m in depth)
2003/2/5	-	0.0
2003/3/31	-	2.0
2003/4/30	-	3.0
2003/5/16	-	5.0
2003/5/30	-	4.0
2003/6/14	-	4.3
2003/6/30	-	4.0
2003/7/15	-	5.8
2003/7/30	-	5.5
2003/8/15	-	8.0
2003/8/30	-	13.0
2003/9/15	-	13.0
2003/9/30	-	13.0
2003/10/15	-	13.0
2003/10/30	-	13.0
2003/11/14	-	12.8
2003/11/30	-	12.0
2003/12/15	-	12.3
2003/12/30	-	14.0
2004/1/15	21.3	13.8

6. Horizontal line survey around Dome Fuji

Observer: Hideaki Motoyama

The vertical angle of a horizontal line at Dome Fuji was surveyed using a Wild T-2 transit on 8 January 1997. The measuring site (HLS 1997, northwest of the station buildings) is shown in Fig. 5. Figure 6-1 shows the result. The horizontal line at Dome Camp (77°00'01"S, 39°35'00"E; 3760 m a.s.l.) and DFS ice coring site (79°00'02"S, 42°29'49"E; 3699 m a.s.l., Kameda *et al.* 2002) were also surveyed at 25 November and 15 December in 1997. Figures 6-2 and 6-3 show the results. The positions of Dome Camp (DC) and the DFS ice coring site (DFS) are shown in Fig. 1. The line 0° in Fig. 6-1 is true north. These results show height variations of the snow surface at about 4 to 8 km from the survey points. Since the results of JARE-44 around Dome Fuji (Dome Fuji and DF75) seem to be not precise enough, the data are not shown here.

Reference

Kameda, T., Motoyama, H. and Nishio, F. (2002): Analyses of Antarctic shallow ice cores, purposes and recent results. Seppyo (J. Jpn. Soc. Snow and Ice), **64**, 397-404 (in Japanese).

Fig. 6-1. Horizontal line survey at Dome Fuji by JARE-38.

Fig. 6-2. Horizontal line survey at Dome Camp by JARE-38.

Fig. 6-3. Horizontal line survey at DFS site by JARE-38.

7. Snow crystals, ice crystals and blowing snow at Dome Fuji

Observer: Takao Kameda

Snow crystals, ice crystals and blowing snow were photographed about once per week from 20 February 2003 to 15 January 2004 using a microscope with a camera (Nikon new FM-2 with SUPERIALA ISO100 film by Fujifilm Cooperation, Japan). A glass shale of 10 cm diameter was set on the snow surface 20 m from the Dome Fuji Station buildings during over nights, and the snow on the glass was photographed using the above photography system. Table 7 summarizes the observation date and time interval for collecting snow samples. Plates 1 to 16 show snow crystals, ice crystals and blowing snows on the glass shale. These plates were prepared by Mr. Kazunori Furuya as a graduate thesis of the Department of Civil Engineering, Kitami Institute of Technology, in 2004.

Table 7. Date and time for collecting snow samples and taking pictures in 2003-04.

No.	Period for collecting snow crystals Start	End	Time interval for collecting samples	Date and time for taking pictures
1	2/15 18:00	2/16 13:30	19:30	2003/2/16 14:00
2	3/9 9:20	3/9 17:00	7:40	3/9 17:30
3	3/9 9:20	3/9 17:00	7:40	3/9 17:30
4	3/14 9:20	3/14 17:30	8:10	3/14 18:00
5	3/21 9:20	3/21 17:30	8:10	3/21 18:00
6	3/21 9:20	3/21 17:30	8:10	3/21 18:00
7	3/22 17:30	3/23 9:30	16:00	3/23 10:00
8	3/22 17:30	3/23 9:30	16:00	3/23 10:00
9	3/27 17:50	3/28 9:20	15:30	3/28 09:50
10	3/27 17:50	3/28 9:20	15:30	3/28 09:50
11	3/29 17:30	3/30 9:40	16:10	3/30 10:10
12	3/29 17:30	3/30 9:40	16:10	3/30 10:10
13	4/3 9:30	4/3 17:30	8:00	4/3 18:00
14	4/6 10:30	4/6 11:30	1:00	4/6 12:00
15	4/6 10:30	4/6 11:30	1:00	4/6 12:00
16	4/19 18:00	4/20 9:40	15:40	4/20 10:10
17	4/19 18:00	4/20 9:40	15:40	4/20 10:10
18	4/26 17:30	4/27 10:30	17:00	4/27 11:00
19	4/26 17:30	4/27 10:30	17:00	4/27 11:00
20	4/28 18:30	4/29 10:20	15:50	4/29 10:50
21	4/28 18:30	4/29 10:20	15:50	4/29 10:50
22	5/4 9:30	5/4 11:00	1:30	5/4 11:30
23	5/4 9:30	5/4 11:00	1:30	5/4 11:30
24	5/10 9:20	5/10 17:30	8:10	5/10 18:00
25	5/10 9:20	5/10 17:30	8:10	5/10 18:00
26	5/30 17:30	5/31 9:30	16:00	5/31 10:00
27	5/30 17:30	5/31 9:30	16:00	5/31 10:00
28	6/7 17:40	6/8 9:50	16:10	6/8 10:20
29	6/7 17:40	6/8 9:50	16:10	6/8 10:20
30	6/13 17:30	6/14 9:10	15:40	6/14 09:40
31	6/13 17:30	6/14 9:10	15:40	6/14 09:40
32	6/20 17:30	6/21 9:30	16:00	6/21 10:00
33	6/20 17:30	6/21 9:30	16:00	6/21 10:00
34	6/28 17:30	6/29 9:30	16:00	6/29 10:00
35	6/28 17:30	6/29 9:30	16:00	6/29 10:00
36	7/4 17:20	7/5 10:00	16:40	7/5 10:30
37	7/4 17:20	7/5 10:00	16:40	7/5 10:30
38	7/13 10:00	7/13 17:00	7:00	7/13 17:30
39	7/19 9:20	7/19 16:20	7:00	7/19 16:50
40	7/19 9:20	7/19 16:20	7:00	7/19 16:50
41	7/19 16:20	7/20 9:00	16:40	7/20 09:30
42	7/19 16:20	7/20 9:00	16:40	7/20 09:30
43	7/23 17:30	7/23 18:08	0:38	7/23 18:38
44	7/23 17:30	7/23 18:08	0:38	7/23 18:38
45	7/26 17:20	7/27 9:40	16:20	7/27 10:10
46	7/26 17:20	7/27 9:40	16:20	7/27 10:10
47	8/2 17:20	8/3 9:30	16:10	8/3 10:00
48	8/2 17:20	8/3 9:30	16:10	8/3 10:00
49	8/9 9:30	8/9 17:20	7:50	8/9 17:50

Table 7 (continued).

No.	Period for collecting snow crystals Start	End	Time interval for collecting samples	Date and time for taking pictures
50	2003/8/9 9:30	2003/8/9 17:20	7:50	2003/8/9 17:50
51	8/9 17:20	8/10 9:30	16:10	8/10 10:00
52	8/9 17:20	8/10 9:30	16:10	8/10 10:00
53	8/16 9:20	8/16 17:25	8:05	8/16 17:55
54	8/30 17:40	8/31 9:30	15:50	8/31 10:00
55	8/30 17:40	8/31 9:30	15:50	8/31 10:00
56	9/6 9:00	9/6 17:30	8:30	9/6 18:00
57	9/6 9:00	9/6 17:30	8:30	9/6 18:00
58	9/13 9:30	9/13 17:40	8:10	9/13 18:10
59	9/13 17:40	9/14 9:30	15:50	9/14 10:00
60	9/13 17:40	9/14 9:30	15:50	9/14 10:00
61	9/24 9:30	9/24 17:00	7:30	9/24 17:30
62	9/24 9:30	9/24 17:00	7:30	9/24 17:30
63	9/27 17:30	9/28 9:30	16:00	9/28 10:00
64	9/27 17:30	9/28 9:30	16:00	9/28 10:00
65	10/4 9:10	10/4 17:20	8:10	10/4 17:50
66	10/4 9:10	10/4 17:20	8:10	10/4 17:50
67	10/4 17:30	10/5 9:48	16:18	10/5 10:18
68	10/4 17:30	10/5 9:48	16:18	10/5 10:18
69	10/6 18:00	10/7 9:30	15:30	10/7 10:00
70	10/6 18:00	10/7 9:30	15:30	10/7 10:00
71	10/11 17:50	10/12 9:20	15:30	10/12 09:50
72	10/11 17:50	10/12 9:20	15:30	10/12 09:50
73	10/18 17:50	10/19 9:30	15:40	10/19 10:00
74	10/18 17:50	10/19 9:30	15:40	10/19 10:00
75	10/25 9:30	10/25 17:20	7:50	10/25 17:50
76	10/25 17:30	10/26 9:00	15:30	10/26 09:30
77	10/25 17:30	10/26 9:00	15:30	10/26 09:30
78	11/8 17:40	11/9 9:00	15:20	11/9 09:30
79	11/13 9:30	11/13 17:40	8:10	11/13 18:10
80	11/13 9:30	11/13 17:40	8:10	11/13 18:10
81	11/15 17:10	11/16 9:00	15:50	11/16 09:30
82	11/15 17:10	11/16 9:00	15:50	11/16 09:30
83	11/18 18:00	11/19 9:00	15:00	11/19 09:30
84	11/18 18:00	11/19 9:00	15:00	11/19 09:30
85	11/22 17:00	11/23 9:00	16:00	11/23 09:30
86	11/29 17:30	11/30 10:00	16:30	11/30 10:30
87	12/30 9:20	12/30 17:30	8:10	12/30 18:00
88	12/30 9:20	12/30 17:30	8:10	12/30 18:00
89	2004/1/4 17:40	2004/1/5 9:50	16:10	2004/1/5 10:20
90	1/4 17:40	1/5 9:50	16:10	1/5 10:20
91	1/15 18:20	1/16 9:30	15:10	1/16 10:00
92	1/15 18:20	1/16 9:30	15:10	1/16 10:00

PLATE 1

No. 1 0 1mm

No. 4

No. 2 0 1mm

No. 5

No. 3 0 1mm

No. 6

SCALE

0 1mm

PLATE 2

No. 7 0.2mm

No. 10 0.2mm

No. 8 0.2mm

No. 11

No. 9 0.2mm

No. 12

SCALE

0 1mm

PLATE 3

No. 13

No. 16

No. 14

No. 17

No. 15

No. 18

SCALE

0 1mm

PLATE 4

No. 19

No. 22

No. 20

No. 23

No. 21

No. 24

SCALE

0 1mm

PLATE 5

No. 25

No. 28

No. 26

No. 29

No. 27

No. 30

SCALE

0 1mm

PLATE 6

No. 31

No. 34

No. 32

No. 35

No. 33

No. 36

SCALE

0 1mm

PLATE 7

No. 37

No. 40

No. 38

No. 41

No. 39

No. 42

SCALE

0 1mm

PLATE 8

No. 43

No. 46

No. 44

No. 47

No. 45

No. 48

SCALE

0 1mm

PLATE 9

No. 49

No. 52

No. 50

No. 53

No. 51

No. 54

SCALE

0 1mm

PLATE 10

No. 55

No. 58

No. 56

No. 59

No. 57

No. 60

SCALE

0 1mm

PLATE 11

No. 61

No. 64

No. 62

No. 65

No. 63

No. 66

SCALE

0 1mm

PLATE 12

No. 67

No. 70

No. 68

No. 71

No. 69

No. 72

SCALE

0 1mm

PLATE 13

No. 73

No. 76

No. 74

No. 77

No. 75

No. 78

SCALE

0 1mm

PLATE 14

No. 79

No. 82

No. 80

No. 83

No. 81

No. 84

SCALE

0 1mm

PLATE 15

No. 85

No. 88

No. 86

No. 89

No. 87

No. 90

SCALE

0 1mm

PLATE 16

No. 91

No. 92

SCALE

0 1mm

8. Snow surface features from S16 to Dome Fuji

Observer: Takao Kameda

The snow surface was photographed using a camera (Nikon FM-2 with PROVIA 100F film by Fujifilm Corporation, Japan) at every 2 km during traverses 1 and 5 as shown in Table 1-2. Plates 17 to 24 show the snow surface features from 31 December 2002 to 19 January 2004 (Traverse 1) and Plates 25 to 36 show them from 23 January 2003 to 6 February 2004 (Traverse 5). The site name and the photograph date are shown at the upper left of each photograph. The positions of each site were summarized in Kamiyama *et al.* (1994).

Snow surface roughness (N) at every 2 km was recorded at 5 levels of the occurrence of sastrugi according to Motoyama (unpublished). The definition of the N is summarized in Table 8. Glazed surface (G) and thermal cracks (TC) on the snow surface were also recorded. This information is also shown at the upper right of each photograph. These plates were prepared by Mr. Seiichiro Chiba as a graduate thesis of the Department of Civil Engineering, Kitami Institute of Technology, in 2004.

Reference

Kamiyama, K., Furukawa, T., Maeno, H., Kishi, T. and Kanao, M. (1994): Glaciological data collected by the 33rd Japanese Antarctic Research Expedition in 1992. JARE Data Rep., **194** (Glaciology 21), 67 p.

Table 8. Classification of snow surface features.

Level	Surface snow conditions
1	Flat region where sasturgi rarely observed.
2	Intermediate between 1 and 3
3	Flat and sastrugi regions equaly observed.
4	Intermediate between 3 and 5
5	Sastrugi region where flat surface rarely observed.

PLATE 17

1. H68 (31 Dec. 2002): N 1

2. H72 (31 Dec. 2002): N 1

3. H180 (1 Jan. 2002): N 1

4. S122 (2 Jan. 2003): N 1

5. Z14 (3 Jan. 2003): N 1

6. Z33 (3 Jan. 2003): N 1

7. Z38 (3 Jan. 2003): N 1

8. Z40 (3 Jan. 2003): N 4

PLATE 18

9. Z84 (4 Jan. 2003): N 2-3

10. MD48 (6 Jan. 2003): N 3

11. MD52 (6 Jan. 2003): 4 TC

12. MD76 (7 Jan. 2003): N 3

13. Z160 (8 Jan. 2003): N 3

14. MD190 (9 Jan. 2003): N 2

15. MD192 (9 Jan. 2003): N 3

16. MD228 (9 Jan. 2003): N 1

PLATE 19

17. MD244 (10 Jan. 2003): N 1, G, TC

18. MD246 (10 Jan. 2003): N 1, G, TC

19. MD306 (11 Jan. 2003): N 1

20. MD320 (11 Jan. 2003): N 1

21. MD334 (11 Jan. 2003): N 1, G, TC

22. MD340 (11 Jan. 2003): N 1

23. MD350 (11 Jan. 2003): N 1

24. MD360 (11 Jan. 2003): N 1

PLATE 20

25. MD364 (12 Jan. 2003): N 2, TC

26. MD370 (13 Jan. 2003): N 1

27. MD380 (13 Jan. 2003): N 1

28. MD392 (13 Jan. 2003): N 1, G

29. MD410 (13 Jan. 2003): N 1

30. MD420 (14 Jan. 2003): N 1

31. MD426 (14 Jan. 2003): N 1

32. MD430 (14 Jan. 2003): N 1

PLATE 21

33. MD440 (14 Jan. 2003): N 1

34. MD450 (14 Jan. 2003): N 1

35. MD460 (14 Jan. 2003): N 1

36. MD470 (14 Jan. 2003): N 2

37. MD474 (14 Jan. 2003): N 1

38. MD490 (15 Jan. 2003): N 1

39. MD500 (15 Jan. 2003): N 1

40. MD510 (15 Jan. 2003): N 1

PLATE 22

41. MD520 (15 Jan. 2003): N 1

42. MD530 (15 Jan. 2003): N 1

43. MD540 (15 Jan. 2003): N 1

44. MD550 (15 Jan. 2003): N 1

45. MD560 (16 Jan. 2003): N 1

46. MD570 (16 Jan. 2003): N 1

47. MD580 (16 Jan. 2003): N 1

48. MD590 (16 Jan. 2003): N 1

PLATE 23

49. MD600 (16 Jan. 2003): N 1

50. MD610 (17 Jan. 2003): N 1

51. MD620 (17 Jan. 2003): N 1

52. MD630 (17 Jan. 2003): N 1

53. MD640 (17 Jan. 2003): N 1

54. MD650 (17 Jan. 2003): N 1

55. MD660 (17 Jan. 2003): N 1

56. MD670 (18 Jan. 2003): N 1

PLATE 24

57. MD680 (18 Jan. 2003): N 1

58. MD690 (18 Jan. 2003): N 1

59. MD700 (18 Jan. 2003): N 1

60. MD710 (18 Jan. 2003): N 1

61. MD720 (18 Jan. 2003): N 1

62. MD730 (19 Jan. 2003): N 1

PLATE 25

1. S22 (6 Feb. 2004): N 1

2. S27 (6 Feb. 2004): N 1

3. H9 (6 Feb. 2004): N 1

4. H48 (6 Feb. 2004): N 1

5. H72 (5 Feb. 2004): N 1

6. H92 (5 Feb. 2004): N 1

7. H112 (5 Feb. 2004): N 1

8. H132 (5 Feb. 2004): N 1

PLATE 26

9. H152 (5 Feb. 2004): N 1

10. H172 (5 Feb. 2004): N 1

11. H192 (5 Feb. 2004): N 1

12. H212 (4 Feb. 2004): N 1

13. H232 (4 Feb. 2004): N 1

14. H252 (4 Feb. 2004): N 1

15. H272 (4 Feb. 2004): N 1, G

16. H293 (4 Feb. 2004): N 1

PLATE 27

17. Z80 (4 Feb. 2004): N 1

18. Z90 (4 Feb. 2004): N 3, G

19. MD0 (3 Feb. 2004): N 2, G, TC

20. MD10 (3 Feb. 2004): N 3

21. MD20 (3 Feb. 2004): N 4

22. MD30 (3 Feb. 2004): N 3

23. MD40 (3 Feb. 2004): N 3

24. MD50 (3 Feb. 2004): N 2, G

PLATE 28

25. MD60 (2 Feb. 2004): N 3

26. MD70 (2 Feb. 2004): N 4

27. MD80 (2 Feb. 2004): N 5

28. MD90 (2 Feb. 2004): N 3

29. MD100 (2 Feb. 2004): N 4

30. MD110 (2 Feb. 2004): N 4, TC

31. MD120 (2 Feb. 2004): N 5

32. MD130 (2 Feb. 2004): N 4

PLATE 29

33. MD140 (1 Feb. 2004): N 4

34. MD150 (1 Feb. 2004): N 5

35. MD160 (1 Feb. 2004): N 4

36. MD170 (1 Feb. 2004): N 5

37. MD180 (1 Feb. 2004): N 1, G, TC

38. MD190 (1 Feb. 2004): N 5

39. MD200 (31 Jan. 2004): N 1, G, TC

40. MD210 (31 Jan. 2004): N 4, G, TC

PLATE 30

41. MD220 (31 Jan. 2004): N 2, G

42. MD230 (31 Jan. 2004): N 5

43. MD240 (31 Jan. 2004): N 4

44. MD250 (28 Jan. 2004): N 2

45. MD260 (28 Jan. 2004): N 3

46. MD270 (28 Jan. 2004): N 4

47. MD280 (28 Jan. 2004): N 4

48. MD290 (28 Jan. 2004): N 3

PLATE 31

49. MD300 (28 Jan. 2004): N 3

50. MD310 (28 Jan. 2004): N 3

51. MD320 (27 Jan. 2004): N 4, G

52. MD330 (27 Jan. 2004): N 1,G, TC

53. MD340 (27 Jan. 2004): N 2

54. MD350 (27 Jan. 2004): N 3

55. MD360 (27 Jan. 2004): N 2

56. MD370 (26 Jan. 2004): N 2, G

PLATE 32

57. MD380 (26 Jan. 2004): N 1, G

58. MD390 (26 Jan. 2004): N 1, G

59. MD400 (26 Jan. 2004): N

60. MD410 (26 Jan. 2004): N 1

61. MD420 (26 Jan. 2004): N 2

62. MD430 (26 Jan. 2004): N 2

63. MD440 (26 Jan. 2004): N 2

64. MD450 (26 Jan. 2004): N 2

PLATE 33

65. MD460 (26 Jan. 2004): N 2

66. MD470 (26 Jan. 2004): N 2

67. MD480 (26 Jan. 2004): N 1

68. MD490 (26 Jan. 2004): N 2

69. MD500 (26 Jan. 2004): N

70. MD510 (26 Jan. 2004): N 1

71. MD520 (26 Jan. 2004): N 1

72. MD530 (25 Jan. 2004): N 1

PLATE 34

73. MD540 (25 Jan. 2004): N 2

74. MD550 (25 Jan. 2004): N 2

75. MD560 (25 Jan. 2004): N 1

76. MD570 (25 Jan. 2004): N 1

77. MD580 (25 Jan. 2004): N 1

78. MD590 (25 Jan. 2004): N 1

79. MD600 (25 Jan. 2004): N

80. MD610 (25 Jan. 2004): N 1

PLATE 35

81. MD620 (25 Jan. 2004): N 1

82. MD630 (24 Jan. 2004): N 1

83. MD640 (24 Jan. 2004): N 1

84. MD650 (24 Jan. 2004): N 1

85. MD660 (24 Jan. 2004): N 1

86. MD670 (24 Jan. 2004): N 1

87. MD680 (24 Jan. 2004): N

88. MD690 (23 Jan. 2004): N 1

PLATE 36

89. MD700 (23 Jan. 2004): N 1

90. MD710 (23 Jan. 2004): N 1

91. MD720 (23 Jan. 2004): N 1

92. MD730 (23 Jan. 2004): N 1

9. Surface meteorological data during oversnow traverses

Observers: Traverses 1 and 5: Okimasa Sugita
Traverse 2: Katsuhiko Torii
Traverse 3: Takeshi Takahashi
Traverse 4: Kei Nakano

Meteorological observations were carried out during oversnow traverses three times per day. Atmospheric pressure (P), air temperature (Ta), wind direction (WD), wind speed (WS), visibility (V), weather (W), cloud amount in tenths (N) and individual cloud amount and genus (CL) were observed. The instruments and accuracy of these measurements are given in Table 9-1. The notations used in this section are shown in Table 9-2.

Tables 9-3, 9-4, 9-5, 9-6 and 9-7 show meteorological data during traverses 1, 2, 3, 4 and 5, respectively.

Table 9-1. Instruments and accuracy of meteorological observations.

Components	Instruments (type, products company)	Accuracy	Traverse No.
Atmospheric pressure	Altimeter (Tx-22, Thommen)	± 1hPa	1, 2-a, 2-b, 3-a, 3-b
	Electronic barometer (PTA427, Vaisala K.K.)	± 0.5hPa	1
	Electronic barometer (Field Syscom, Empex Instruments Inc.)	± 0.5hPa	4-a, 4-b
	Electronic barometer (F4711, Yokogawa Electric Co.)	± 0.1hPa	5
Air temperature	Sling type glass thermometer (SY-HM, Yoshino)	± 0.5℃	All traverses
Wind direction	Magentic compass (HB-65G2, Saura Co. Ltd.)	± 5°	〃
Wind speed	Portable 3-cup anemometer (W41, Yoshino Co. Ltd.)	± 0.5 m/s	〃
Visibility	Visual observation		
Cloud amount	Visual observation		
Weather	Visual observation		
Individual cloud amount and genus	Visual observation		

Table 9-2. Notation used in tables in this section.

Notation	Explanation
LT	Local time at Syowa Station (UTC + 3 hours)
P	Atmospheric pressure (hPa)
Ta	Air temperature (℃)
WD	Wind direction in 16 directions
WS	Wind speed (m/s)
V	Visibility (km)
W	Weather Clear, Fine, Cloudy (upper clouds are predominant), Cloudy Snow, Drifting snow, Blowing snow, Snow storm Diamond dust, SH (Solar halo)
N	Cloud amount in tenth
CL	Individual cloud amount and genus

Table 9-3. Meteorological data observed during traverse 1.

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2002/12/21	20:30	S16	915	-5.0	ESE	10.0	25	○	1	1Ci	
2002/12/22	5:30	S16	910	-7.9	SE	22.0	0.1	○	1	1Ac;0+Ci	⊹
2002/12/22	21:00	S16	924	-8.1	SSE	13.0	30	○	0	–	
2002/12/23	5:30	S16	926	-8.2	SSE	8.0	30	○	0	–	
2002/12/23	12:05	S16	923	0.0	SSE	1.0	30	○	0	–	
2002/12/23	20:20	S16	916	-4.5	SE	7.0	30	⦶	10-	–	
2002/12/24	5:30	S16	915	-8.5	SE	12.0	30	⦶	10-	–	⊹
2002/12/24	13:25	S16	909	-0.5	E	6.0	30	○	0+	0+Ci	
2002/12/25	5:30	S16	918	-8.9	ESE	12.0	30	⦶	2	1Ac;1Ci	⊹
2002/12/25	13:10	S16	923	-0.4	E	2.0	30	⦶	2	1Sc;1Ac	
2002/12/25	20:50	S16	923	-4.5	S	4.0	20	◎	9	9Ac	
2002/12/26	9:00	S16	927	-2.9	SE	11.0	30	⦶	4	2Sc;2Ac	
2002/12/26	14:10	S16	929	-2.1	E	10.0	10	◎	10-	1Sc;10-Ac	
2002/12/26	20:50	S16	929	-4.5	ESE	6.0	20	◎	10-	1Sc;10-Ac	
2002/12/27	5:30	S16	929	-6.0	SE	8.0	10	◎	10-	0+Sc;10-Ac	
2002/12/27	12:30	S16	927	-1.9	E	6.0	0.5	✱	10	10As	⊹
2002/12/27	20:50	S16	929	-3.5	ENE	3.0	15	✱	9	0+Sc;6Ac;5As	
2002/12/28	5:30	S16	928	-4.9	E	5.0	2.0	✱	10	10As	⊹
2002/12/28	13:00	S16	929	-1.4	ENE	6.0	15	◎	10-	9Sc;10-Ac	
2002/12/28	20:50	S16	927	-5.7	SSW	1.0	20	◎	10-	1Sc;10-Ac	
2002/12/29	5:30	S16	927	-7.5	–	0.0	15	◎	10-	10-St,Sc	
2002/12/29	20:50	S16	931	-9.3	S	5.0	30	○	1	1Ac	
2002/12/30	5:30	S16	934	-12.5	SSE	6.0	30	○	0+	0+Ac	
2002/12/30	20:50	S16	925	-1.8	E	6.0	30	○	0+	0+Ac	
2002/12/31	8:00	S27	897	-9.0	SE	10.0	30	⦶	4	4Ci	
2002/12/31	20:30	H100	846	-12.9	SE	6.0	30	○	0+	0+Ac	
2003/01/01	7:00	H100	845	-14.9	SE	10.0	30	○	0+	0+Ac	
2003/01/01	16:50	H184	820	-7.0	E	7.0	30	○	0	–	
2003/01/01	20:50	H214	806	-16.0	ESE	3.0	30	○	0+	0+Ac	
2003/01/02	6:20	H214	812	-17.0	SE	10.0	25	○	0+	0+Ci	⊹
2003/01/02	13:50	H259	795	-11.5	SE	9.0	30	○	0+	0+Ac;0+Ci	
2003/01/02	20:50	Z5	772	-18.0	SE	4.0	30	○	0	–	
2003/01/03	6:40	Z5	778	-20.5	ESE	9.0	25	○	0+	0+Ac	
2003/01/03	13:20	Z22	776	-12.5	SE	8.0	30	○	0+	0+ac	
2003/01/03	20:50	Z56	763	-19.1	ESE	5.0	30	○	0+	0+Ac	
2003/01/04	6:30	Z56	766	-19.0	SE	9.0	15	⦶	9	9Ci	⊹
2003/01/04	13:10	Z85	761	-15.5	E	6.0	30	○	0+	0+Ac;0+Ci	
2003/01/04	20:20	Mizuho	750	-18.2	SE	3.0	20	○	0+	0+Ac	
2003/01/05	9:50	Mizuho	755	-15.0	SSE	8.0	20	⦶	4	4Ci	
2003/01/05	20:40	MD10	750	-14.1	SE	6.0	10	✱	10	10Ac	
2003/01/06	6:30	MD10	755	-14.5	SE	8.0	20	⦶	10-	4Ac;10-Ci	
2003/01/06	13:00	MD27	749	-10.5	SE	9.0	20	⦶	2	0+Ac;4Ci;7Cc;2Cs	
2003/01/06	20:40	MD64	736	-17.5	SSE	4.0	30	○	1	1Ac;1Ci	
2003/01/07	6:40	MD64	741	-21.0	SSE	10.0	20	○	1	1Ac;0+Ci	
2003/01/07	13:20	MD76	736	-15.5	SSE	8.0	20	○	1	1Ac	
2003/01/07	20:50	MD116	730	-19.0	SSE	6.0	20	○	1	1Ac	
2003/01/08	6:20	MD116	708	-19.0	SSE	10.0	10	◎	10-	10-Ac	⊹
2003/01/08	13:00	MD140	701	-18.0	SSE	10.0	15	○	0+	0+Ac;0+Ci	⊹
2003/01/09	7:40	MD179	690	-24.6	S	11.0	15	○	0	–	⊹

Table 9-3 (continued).

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2003/01/09	13:30	MD196	686	-19.8	SE	12.0	20	○	0	—	⊹
2003/01/09	20:30	MD234	676	-24.6	SSE	7.0	30	○	0	·	⊹
2003/01/10	6:20	MD234	676	-28.1	S	10.0	20	○	0	·	⊹
2003/01/10	13:40	MD260	667	-19.5	SSE	7.0	25	○	0	·	⊹
2003/01/10	20:50	MD290	660	-26.4	S	4.0	30	○	0	·	
2003/01/11	6:30	MD290	661	-29.9	S	7.0	20	○	0+	0+Ac	
2003/01/11	13:50	MD322	654	-25.3	SSE	10.0	5	⊹	1	1Ac	⊹
2003/01/11	20:40	MD364	650	-29.0	SSE	6.0	20	◐	2	1Ac;1Ci	
2003/01/12	7:20	MD364	646	-28.4	SSE	7.0	10	◎	9	7Ac;3Ci	
2003/01/12	15:40	MD364	646	-24.5	SSE	9.0	8	◐	7	7Ci	
2003/01/12	20:50	MD364	645	-28.2	SSE	6.0	20	◍	-10	4Ac;10-Ci	
2003/01/13	7:20	MD364	642	-29.8	S	6.0	10	◍	-10	0+Ac;10-Ci	
2003/01/13	13:40	MD376	639	-24.0	SSE	10.0	0.5	⊹	-10	0+Ac;10-Ci	⊹
2003/01/13	20:40	MD410	629	-28.8	SSE	4.0	10	×	-10	0+Ac;10-Ci	×
2003/01/14	7:00	MD410	629	-27.5	SE0	7.0	1.5	◎	-10	10-Ac	⊹
2003/01/14	13:10	MD432	628	-23.4	SE	8.0	2	◍	-10	10-Ci	⊹
2003/01/14	20:40	MD474	623	-27.5	SE	5.0	1.5	×	-10	4As;2Cs;8Ci	×
2003/01/15	6:30	MD474	627	-31.1	SE	4.0	10	×	-10	0+Ac;10-Ci	×
2003/01/15	13:00	MD502	626	-24.0	ESE	4.0	15	◍	-10	10-Ci	
2003/01/15	20:30	MD540	622	-29.0	SE	3.0	20	◍	-10	10-Ci	—
2003/01/16	6:20	MD540	625	-27.0	SE	3.0	3	◎	10	10As	
2003/01/16	13:50	MD560	622	-24.6	SE	7.0	15	◐	3	3Ci	
2003/01/16	20:40	MD600	615	-31.1	SSE	3.0	20	○	1	0+Ac;1Ci	
2003/01/17	7:10	MD600	616	-32.0	SE	4.0	20	◍	-10	10-Ci	
2003/01/17	13:40	MD626	614	-27.1	SE	6.0	5	◐	3	0+Ac;3Ci	
2003/01/17	19:40	MD660	611	-31.0	ESE	3.0	30	○	0+	0+Ac;0+Ci	
2003/01/18	7:00	MD660	613	-36.1	SSE	3.0	20	◐	2	2Ci	
2003/01/18	13:40	MD686	611	-29.1	ESE	5.0	20	○	1	1Ci	—
2003/01/18	20:30	MD724	609	-32.5	E	3.0	20	◐	3	0+Ac;3Ci	
2003/01/19	7:30	MD724	611	-35.0	NNW	3.0	5	○	0+	0+Ci	
2003/01/19	20:30	DF	611	-30.4	-	0.0	20	○	1	1CI	

Table 9-4. Meteorological data observed during traverses 2-a and 2-b.

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2004/9/26	19:00	S23	890	-28.4	E	3.0	30	⦶	10-	0+Sc;2Ac;10-Ci	
2004/9/27	10:00	S26	876	-27.7	E	3.0	30	⦶	4	0+Ac;4Ci	
2004/9/27	15:00	H3	862	-26.0	ENE	5.0	30	○	0+	0+Ac;0+Ci	
2004/9/27	19:00	H54	846	-32.9	ENE	4.0	30	○	0+	0+Ac	
2004/9/28	12:00	H102	826	-28.0	E	10.0	1	○	0+	0+Sc;0+Ac	⊹
2004/9/28	20:00	H181	800	-35.7	E	6.0	2	○	0+	0+Sc	⊹
2004/9/29	11:00	H214	786	-24.2	E	14.0	10	⦶	10-	0+Sc;0+Ac;0+Ci	
2004/9/29	18:00	H280	770	-26.2	E	15.0	0.8	⦶	10-	3Ac;7Ci	⊹
2004/9/30	15:00	Z20	759	-30.6	E	8.0	0.5	⦶	5	0+Ac;5Ci	⊹
2004/9/30	20:20	Z65	745	-37.2	ESE	10.0	3	⦶	4	0+Ac;4Ci	⊹
2004/10/1	17:10	Mizuho	738	-38.2	E	12.0	0.5	○	0	-	⊹
2004/10/1	19:00	Mizuho	738	-40.2	E	12.0	1	○	0	-	⊹
2004/10/2	6:30	Mizuho	738	-40.7	E	10.0	1	○	0	-	⊹
2004/10/2	13:00	Z88	748	-34.3	E	10.0	3	○	0	-	⊹
2004/10/2	16:00	Z76'	747	-34.4	E	7.0	10	○	0+	0+Ci	⊹
2004/10/2	20:30	Z37'	752	-37.3	E	11.0	10	○	0+	0+Ac;0+Ci	⊹
2004/10/3	12:30	Z16'	761	-32.7	E	10.0	2	○	0	-	⊹
2004/10/3	19:30	H259	788	-37.2	E	12.0	5	○	1	1Ci	⊹
2004/10/4	10:00	H244	793	-33.2	E	3.0	30	⦶	2	0+Sc;0+Ac;2Ci	
2004/10/4	19:50	H124	824	-28.2	ENE	10.0	0.5	⦶	7	3Ac;7Ci	⊹
2004/10/5	6:40	H124	820	-28.2	ENE	7.0	1	⦶	10-	0+Sc;4Ac;8Ci	⊹
2004/10/5	12:30	H66	844	-22.0	ENE	11.0	1	⦶	10-	1Sc;3Ac;4Cs;5C	⊹
2004/10/5	19:00	S21	897	-19.4	ENE	12.0	0.5	⦶	10-	2Sc;4Ac;5Ci	⊹
2004/10/6	6:10	S21	901	-22.5	ENE	7.0	5	⦶	10-	1Sc;2Ac;10-Ci	⊹

Table 9-5. Meteorological data observed during traverses 3-a and 3-b.

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2003/10/21	19:00	H15	848	-21.5	145	1.0	30	⦶	10-	0+Sc,0+Ac,8Cs,2Ci	
2003/10/22	7:20	H15	854	-21.0	95	4.0	10	✱	10-	10-Sc	✱
2003/10/22	12:00	H100	826	-22.0	75	2.0	10	✱	10	10Sc	✱
2003/10/22	19:00	S29	867	-18.5	100	6.0	0.7	⊹	10	10Sc	⊹
2003/10/23	7:00	S29	867	-18.4	120	8.0	0.1	⊹	10	10SS,XAc	⊹
2003/10/23	12:00	S29	864	-16.6	130	11.0	0.05	⊹	10	10SS	⊹
2003/10/23	18:00	S29	865	-16.8	120	8.0	0.5	⊹	10	10-Sc,XAc	⊹
2003/10/24	7:00	S29	863	-23.8	155	5.0	30	○	0+	0+Sc,0+Ci	
2003/10/24	13:00	P50	913	-9.8	100	2.0	30	◎	10-	10-Sc	

Table 9-6. Meteorological data observed during traverses 4-a and 4-b.

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2003/11/24	13:40	31	595	-29.5	SSW	6.0	20	○	0	-	⊸
2003/11/24	20:45	85	593	-40.0	SSW	3.0	20	○	0	-	⊸
2003/11/25	7:50	85	590	-39.5	SSE	3.0	5	○	0	-	⊸
2003/11/25	13:10	133	601	-32.5	SSE	6.0	10	◐	3	Ac,Ci	⊸
2003/11/25	20:30	205	609	-34.5	SE	5.0	20	◐	6	Ci	⊸
2003/11/26	7:30	205	609	-38.0	SE	4.0	20	○	1	Ci	
2003/11/26	14:10	241	619	-29.0	SE	6.0	10	◐	8	Cs,Ci	⊸
2003/11/26	20:50	301	628	-30.5	SE	5.0	20	○	1	Ci	
2003/11/27	6:00	301	621	-36.0	SE	6.0	10	○	0	-	
2003/11/27	14:10	361	641	-24.0	SE	9.0	0.2	⊹	4	Ci	
2003/11/27	20:50	415	647	-28.0	SSE	10.0	10	◐	2	Ci	
2003/11/28	11:28	445	632	-26.5	SE	9.0	10	○	0+	Ci	
2003/11/28	20:40	508.5	651	-25.5	SSE	8.0	20	○	1	Ac	
2003/11/29	10:45	508.5	653	-24.5	SSE	12.0	3	⊹	7	Ci	
2003/11/29	14:00	ARP1	654	-24.0	SSE	11.0	3	⊹	8	Ci	
2003/11/29	20:12	ARP1	655	-26.5	SSE	7.0	20	◐	5	Ac,Ci	
2003/11/30	9:00	ARP1	645	-26.0	SSE	10.0	1	⊹	4	Ci	
2003/11/30	10:00	ARP1	642	-25.5	SSE	10.0	1.0	⊹	3	Ci	
2003/11/30	11:00	ARP1	650	-23.5	SSE	11.0	1	⊹	5	Ci	
2003/11/30	12:00	ARP1	645	-22.5	SSE	11.0	1	⊹	7	Ci	
2003/11/30	13:00	ARP1	649	-22.0	SSE	10.0	1	⊹	3	Ci	
2003/11/30	14:00	ARP1	653	-21.5	SSE	10.0	1	⊹	5	Ci	
2003/11/30	15:00	ARP1	653	-21.5	SSE	11.0	1	⊹	4	Ci	
2003/11/30	18:00	ARP1	651	-21.5	SSE	11.0	1	⊹	5	Ac,Ci	
2003/12/1	10:30	ARP1	646	-23.0	SSE	11.0	5	⊹	0+	Ci	
2003/12/1	20:15	439	645	-25.0	SSE	9.0	1	⊹	0+	Ci	
2003/12/2	7:45	439	639	-30.5	SSE	11.0	0.5	⊹	4	Ci	
2003/12/2	13:11	391	635	-26.5	S	14.0	0.2	⊹	X	X	
2003/12/2	20:30	319	626	-30.0	SSE	7.0	20	○	0+	Ci	
2003/12/3	7:30	319	620	-34.0	SSE	9.0	1	⊹	0+	Ci	
2003/12/3	13:00	271	610	-29.5	SSE	10.0	0.5	⊹	10	Cs,Ci	
2003/12/3	20:30	193	606	-34.5	SSE	6.0	20	◐	10	Ci	
2003/12/4	7:40	193	602	-35.5	SSE	6.0	3	⊹	10	Ci	
2003/12/4	12:30	145	604	-31.5	ESE	7.0	3	⊹	10	Ac,Ci,C	
2003/12/4	20:15	67	601	-35.0	SE	1.0	20	◐	3	Ci	⊸
2003/12/5	6:55	67	599	-39.0	SE	4.0	20	○	0+	Ac	
2003/12/5	13:16	19	604	-30.5	ESE	5.0	20	○	0+	Ci	

Table 9-7. Meteorological data observed during traverse 5.

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL	
2004/1/22	9:00	DF	X	-31.0	155	8.0	2	⊹	9	6Cs;3Ci	HL
2004/1/22	12:00	DF	X	-27.0	135	10.0	0.2	⊹	10	10As	
2004/1/22	15:00	DF	X	-25.5	145	10.0	0.2	⊹	10	10As	
2004/1/22	18:00	DF	X	-26.0	160	7.0	2	⊹	10	10Ci	
2004/1/22	21:00	DF	X	-30.6	145	6.0	8	⊹	10-	10-Ci	
2004/1/22	24:00	DF	X	-33.0	140	6.0	1.5	⊹	10	10As	
2004/1/23	6:00	DF	X	-33.5	170	6.0	10	◎	10-	10-Ac	
2004/1/23	12:40	MD715	608	-28.8	120	4.0	8	◍	9	9Ci	
2004/1/23	21:00	MD655	611	-33.0	145	3.0	10	×	10-	10-Ci	
2004/1/24	6:30	MD655	610	-39.0	225	3.0	10	◑	4	4Ci	
2004/1/24	14:05	MD609	613	-29.0	165	7.0	8	◑	4	4Ci	
2004/1/24	21:15	MD560	617	-31.0	170	6.0	15	◑	3	0+Ac;3Ci	—
2004/1/25	6:20	MD560	617	-29.8	185	3.0	15	◑	2	0+Ac;2Ci	—
2004/1/25	14:10	MD514	X	-33.6	180	8.0	8	◑	4	4Ci	
2004/1/25	20:45	MD466	626	-30.0	150	4.0	10	◎	9	6Ac;4Ci;1Cc	
2004/1/26	6:20	MD466	627	-29.5	190	4.0	10	×	10	9Ac;10As	
2004/1/26	14:10	MD414	634	-24.5	170	6.0	15	◎	10-	9Ac;1Ci	
2004/1/26	20:30	MD366	643	-28.5	150	3.0	15	○	1	0+Ac;1Ci	
2004/1/27	6:10	MD366	644	-33.0	175	5.0	10	◍	10-	1Ac;9Ci	
2004/1/27	14:15	MD330	653	-24.5	175	8.0	10	○	0+	0+Ac;0+Ci	
2004/1/27	20:40	MD292	652	-27.4	185	5.0	20	◎	9	9Ac	
2004/1/28	6:20	MD292	662	-27.8	175	7.0	0.8	⊹	10-	10-Ci	
2004/1/28	14:00	MD256	671	-21.2	160	9.0	0.6	⊹	10-	6Ac;10-Ci	
2004/1/28	20:05	MD246	672	-24.3	140	5.0	15	◎	10-	8Ac;1Ci	
2004/1/29	6:00	MD246	671	-26.0	150	7.0	0.2	⊹	10-	10-Ac	
2004/1/29	9:00	MD246	671	-24.0	125	8.0	0.5	⊹	10-	2Ac;10-Ci	
2004/1/29	12:00	MD246	671	-21.6	125	8.0	0.8	⊹	7	0+Ac;7Ci	
2004/1/29	15:00	MD246	670	-22.0	135	8.0	15	◑	5	5Ac	
2004/1/29	18:00	MD246	670	-22.0	140	5.0	10	◎	9	9Ac	
2004/1/29	21:00	MD246	671	-23.5	135	7.0	10	◎	10-	10-Ac	
2004/1/30	6:00	MD246	672	-25.0	140	7.0	3	⊹	10	10As	
2004/1/30	9:00	MD246	673	-24.2	140	7.0	1	⊹	10-	10-Ac	
2004/1/30	12:00	MD246	673	-24.4	150	9.0	2	⊹	10-	10-Ci	
2004/1/30	15:00	MD246	675	-24.5	150	8.0	15	◑	7	7Ci	
2004/1/30	18:00	MD246	676	-24.0	140	6.0	20	◑	2	0+Ac;2Ci	
2004/1/30	21:00	MD246	677	-23.2	150	5.0	20	◑	4	4Ci	
2004/1/31	6:00	MD246	680	-29.5	140	5.0	10	◎	10-	10-Ac	
2004/1/31	9:00	MD246	680	-29.7	140	8.0	1	⊹	10-	10-Ac	
2004/1/31	14:25	MD230	690	-19.0	150	7.0	20	◑	4	4Ci	
2004/1/31	21:20	MD184	702	-26.0	160	7.0	20	○	1	1Ci	
2004/2/1	6:15	MD184	699	-29.9	165	9.0	20	○	0+	0+Ci	
2004/2/1	14:30	MD150	708	-18.8	155	8.0	20	◑	4	4Ac	
2004/2/1	21:05	MD120	714	-25.0	155	7.0	20	○	0+	0+Ac	
2004/2/2	6:15	MD120	712	-30.0	170	11.0	2	⊹	4	4Ci	
2004/2/2	14:30	MD84	721	-17.8	155	11.0	1	⊹	1	1Ci	
2004/2/2	21:15	MD50	726	-13.2	155	10.0	0.3	⊹	10	10As	
2004/2/3	6:20	MD50	730	-15.5	120	11.0	0.5	⊹	10	10Ac	
2004/2/3	14:30	MD10	742	-13.0	140	11.0	15	◑	6	1Ac;5Ci	
2004/2/3	21:00	Z80	754	-15.1	150	10.0	20	◎	10-	10-Ac	

Table 9-7 (continued).

Date	LT	Station	P	Ta	WD	WS	V	W	N	CL
2004/2/4	6:20	Z80	757	-19.0	150	8.0	15	⦶	10-	10-Ci
2004/2/4	14:30	Z14	774	-11.5	130	4.0	20	○	0+	0+Ac
2004/2/4	21:40	H212	812	-17.5	155	3.0	20	○	0+	0+Ac;0+Ci
2004/2/5	6:10	H212	811	-20.0	155	4.0	15	○	0+	0+Ac
2004/2/5	14:10	H112	843	-6.3	120	4.0	20	⦶	8	8Ci
2004/2/5	22:00	S20	920	-11.2	150	4.0	20	⦶	4	3Ac;1Ci
2004/2/6	6:20	S20	917	-12.2	170	6.0	20	⦶	4	4Ci