

GLACIOLOGICAL RESEARCH PROGRAM
IN EAST QUEEN MAUD LAND, EAST ANTARCTICA

PART 7, 1986

Fumihiko NISHIO^{*}, Hirokazu OHMAE^{**} and Kazuo OSADA^{***}

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* National Institute of Polar Research, 9-10, Kaga 1-chome,
Itabashi-ku, Tokyo 173.

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

*** Water Research Institute, Nagoya University,
Furo-cho, Chikusa-ku, Nagoya 464.

I. Introduction

The 27th Japanese Antarctic Research Expedition 1985-1987 (JARE-27) extended the field work of the East Queen Maud Land Glaciological Project (abbreviated to EQGP). The details of the project were described by Higashi (1981) and Associate Committee on Glaciological Research Program in East Queen Maud Land (1982a, b), which was initiated by JARE-23 (Nishio, 1984). The major activities of JARE-27 involved oversnow traverses along flow line of the Shirase Glacier, in Meteorite Ice Field in the Yamato Mountains and toward the Sør Rondane Mountains, and ice core drillings of 100m, 30m and 50m in depth at G6 (73°07'S, 39°46'E), the Motoi Nunatak in the Yamato Meteorite Ice Field (71°49'S, 36°11'E) and the Asuka Camp (71°32'S, 24°08'E), respectively. Temperature distributions and variations of diameters of the drill-hole were measured at Mizuho Station using the hole of 700m in depth bored by JARE-24 and -25.

Oversnow traverses by JARE-27 are shown in Fig. A (see the end of this volume), and listed in Table I-1. Among the data obtained during these traverses, the following data are compiled in this report: net accumulation of snow measured by the stake method; surface meteorological data during the oversnow traverses. The other data will be presented in different publications.

Surface meteorological data at Mizuho Station was published as JARE Data Reports, No. 130 (Meteorology 20) by Ohmae et al. (1987). Present report includes following data at Mizuho Station; the net accumulation of snow and the temperature profiles in surface snow layer.

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References

- Associate Committee on Glaciological Research Program in East Queen Maud Land (1982a): A scheme of Japanese Antarctic Glaciological Research (1). *Seppyô* (J. Jpn. Soc. Snow Ice), 44(2), 115-124.
- Associate Committee on Glaciological Research Program in East Queen Maud Land (1982b): A scheme of Japanese Antarctic Glaciological Research (2). *Seppyô* (J. Jpn. Soc. Snow Ice), 44(3), 173-182.
- Higashi, A. (1981): Glaciological Research Project in the East Queen Maud Land, Antarctica. *Seppyô* (J. Jpn. Soc. Snow Ice), 43(2), 129-130.
- Nishio, F. (1984): Outline of glaciological research program in East Queen Maud Land, East Antarctica. *JARE Data Rep.*, 94 (Glaciol. 10), 1-2.
- Ohmae, H., Osada, K. and Nishio, F. (1987): Meteorological data at Mizuho Station, Antarctica in 1986. *JARE Data Rep.*, 130 (Meteorol. 20), 77p.

Table I-1. Oversnow traverses carried out by JARE-27, 1986-1987.

Period	Traverse route	Route name	Distance (km)	Net accumulation	Surface meteorological data
'86 Jan.7-15	S16-Mizuho	S,H,Z	260	TableII -1	
Jan.24-Feb.16	S16-Mizuho	S,H,Z	260	"	
Feb.26-Mar.1	Mizuho-G1	IM	90		
Mar.20-24	Mizuho-G15	NY	90	TableII -2	
Mar.31-Apr.12	Mizuho-G16	SZ	100	TableII -3	
May 1-6	Mizuho-Syowa	S,H,Z	290	TableII -1	
Aug.16-Sept.5	Syowa-Mizuho-Syowa	S,H,Z	580		
Sept.30-Oct.11	Syowa-Mizuho	S,H,Z	290	TableII -1	TableIV-1
Oct.12-17	Mizuho-Syowa	S,H,Z	290		
Oct.12-Nov.7	Mizuho-Yamato-Mizuho-G2	YM,SS	980		
Oct.12-Nov.7	Mizuho-G16-G2	SZ,YM,SS	470	TableII -4	TableIV-1
Oct.12-Dec.31	Syowa-Mizuho-Yamato Asuka	S,H,Z,YM,RY,L	1150		TableIV-2
Nov.8-	G2-G7-Yamato-Belgica	SS,K,RY,L	1500	TableII -5,6,	TableIV-2
'87 Feb.10	-Asuka			7	

II . Net Accumulation of Snow along Traverse Routes

Observers: JARE-26 Fumio OKUHIRA and Tokio KIKUCHI
JARE-27 Fumihiko NISHIO, Kazuo OSADA
and Hirokazu OHMAE

Net accumulation of snow was measured by the stake method along several traverse routes as shown in Table I-1 and Fig. A.

1. Route S-H-Z

The stake height of the route was measured several times in 1986-1987. The height differences which give the 3-5 months period and the annual net accumulation along the route are tabulated in Table II -1. The positions of the stations are given by Naruse and Yokoyama (1975).

2. Route NY

Route NY from Mizuho Station was extended to G 15 by JARE-24 in 1984. JARE-27 made round trip to resurvey the strain-grid station of G 15 along this route in March 1986. Net accumulation along Route NY is shown in Table II -2. The table gives approximately two years accumulation for 25 months. The position and elevation of the stations are shown in Nakawo et al. (1984).

3. Route SZ

Route SZ from Mizuho Station was extended to G 16 by JARE-24 in 1984. JARE-27 made two round trips to resurvey the strain-grid station of G 16 along this route in 1986. Net accumulation along Route SZ is shown in Table II -3. The table gives approximately three and half years net accumulation for 42 months. The position and elevation of the stations are shown in Nakawo et al. (1984).

4. Route YM

Route YM from Mizuho Station was extended to the Yamato Mountains by JARE-23 in 1982. JARE-27 made a trip along this route in October 1986. All data along Route YM are shown in Table II -4. The table gives approximately two years net accumulation for 22 months. The position and elevation of the stations are shown in Nishio et al. (1986).

5. Route SS

Route SS from G 2 to G 7 along the Shirase Glacier flow line was established by JARE-23 in 1982. JARE-27 made a trip along this route to resurvey the strain-grid of G 2 - G 7 in November 1986. All data along Route YM are shown in Table II -5. The table gives approximately four years net accumulation for 47 months. The position and elevation of the stations are shown in Nishio et al. (1986).

6. Route RY

Route RY was established by JARE-24 in December 1983 and by JARE-26 in January 1986. Net accumulation for about 38 months could be observed by JARE-27 on the way to Asuka Camp through Sør Rondane Mountains from RY 0 to RY 134. However, net accumulation at stations from RY 135 to RY 258 (Asuka Camp) established by JARE-26 was obtained for 12 months. The position and elevation of stations are shown in Nakawo et al. (1984) and Ageta et al. (1987).

7. Route L

Route L was established by JARE-25 up to Asuka Camp in January 1984. Net accumulation for two years could be obtained by JARE-27 and results are shown in Table II -7.

8. 36-stake farm along the routes

The 36-stake farms (100 m x 100 m in area) established at S16, H69, H180, S122 and Z40 were measured by JARE-27 on the way of each trips along Route S-H-Z between Mizuho Station and Syowa Station. Results are shown in Table II -8, 9, 10, 11 and 12 for approximately a year. The 36-stake farms established at G 6, G 13 and Asuka Camp could be observed by JARE-27 on the way to Asuka Camp through the Sør Rondane Mountains. The annual accumulation are shown in Table II -13, 14 and 15.

References

- Ageta, Y., Kikuchi, T., Kamiyama, K. and Okuhira, F. (1987):
Position, elevation and ice thickness of stations. JARE
Data Rep., 125 (Glaciol. 14), 5-29.
- Nakawo, M., Narita, H. and Isobe, T. (1984): Position, elevation
and ice thickness of stations. JARE Data Rep., 96 (Glaciol.
11), 4-38.
- Naruse, R. and Yokoyama, K. (1975): Position, elevation and ice
thickness of stations. JARE Data Rep., 28 (Glaciol. 3),
7-47.
- Nishio, F., Ohmae, H. and Ishikawa, M. (1986): Glaciological
research program in East Queen Maud Land, East Antarctica,
Part 3, 1982. JARE Data Rep., 110 (Glaciol. 3), 36p.

Table II -1. Net accumulation along Route S-H-Z.

		Jan.1986	May 1986	Oct.1986	Jan.1986
	Station	-May 1986	-Oct.1986	-Jan.1987	Jan.1987
	No.	(87days)	(155days)	(105days)	(365days)
S	16	-	16.8	15.2	-
	17	-1.0	15.4	34.6	49.0
	18	16.0	23.0	34.0	73.0
	19	15.0	-	29.0	-
	20	30.0	61.0	52.0	134.0
	21	-17.0	25.0	32.0	40.0
	22	42.5	40.5	35.0	118.0
	23	-22.0	41.0	43.0	62.0
	24	-0.5	48.5	58.0	106.0
	25	33.5	-7.5	24.0	50.0
	26	-12.0	47.0	-	72.0
	27	-3.0	20.0	55.0	72.0
	28	7.0	14.0	47.0	68.0
	29	9.0	34.0	44.0	87.0
H	30	10.0	76.0	16.0	102.0
	3	-1.0	3.0	40.0	42.0
	9	-	-	45.0	-
	15	22.5	25.5	41.0	89.0
	21	8.5	27.5	14.0	50.0
	27	13.5	47.5	20.0	81.0
	35	1.0	14.0	28.0	43.0
	42	9.0	7.0	23.0	39.0
	48	6.5	25.5	32.0	64.0
	54	10.0	36.0	15.0	61.0
	60	20.5	13.5	47.0	81.0
	64	22.0	48.0	-4.0	66.0
	68	10.0	38.0	-19.0	29.0
	72	23.0	42.0	25.0	80.0
76	-3.0	23.0	21.0	41.0	
80	-3.0	41.0	0.0	38.0	
84	3.0	12.0	23.0	38.0	
88	3.0	10.0	16.0	29.0	
92	-1.5	15.5	3.0	17.0	
96	5.5	44.5	18.0	68.0	
100	13.0	5.0	29.0	47.0	
104	6.0	-6.0	16.0	38.0	
108	-13.0	-1.0	50.0	36.0	
112	-9.0	32.0	21.0	44.0	
116	-3.0	11.0	15.0	23.0	
120	-10.0	25.0	22.0	37.0	
124	-6.0	4.0	4.0	2.0	
128	6.0	23.0	11.0	0.0	

Station No.	Jan.1986 -May 1986 (87days)	May 1986 -Oct.1986 (155days)	Oct.1986 -Jan.1987 (105days)	Jan.1986 Jan.1987 (365days)
H 132	-3.0	46.0	-4.0	39.0
136	-1.0	29.0	6.0	34.0
140	-1.0	1.0	34.0	34.0
144	-13.0	44.0	1.0	32.0
148	0.0	16.0	11.0	27.0
152	-3.0	21.0	23.0	41.0
156	-4.0	10.0	15.0	21.0
160	15.0	7.0	23.0	45.0
164	-3.0	17.0	34.0	48.0
168	4.5	25.5	7.0	37.0
172	-2.0	12.0	23.0	33.0
176	3.0	19.0	14.0	36.0
180	-4.0	14.0	2.0	12.0
184	2.0	37.0	-1.0	38.0
188	3.0	23.0	22.0	48.0
192	13.0	5.0	0.0	18.0
196	-2.0	29.0	14.0	41.0
200	-6.0	21.0	1.0	16.0
204	-1.0	13.0	14.0	26.0
208	2.0	16.0	40.0	58.0
212	-1.0	22.0	-8.0	13.0
216	4.0	31.0	10.0	45.0
220	20.0	8.0	-1.0	27.0
224	7.0	10.0	31.0	48.0
228	2.0	19.0	-11.0	10.0
232	5.0	23.0	5.0	33.0
236	7.0	4.0	44.0	55.0
240	4.0	12.0	35.0	51.0
244	0.5	6.5	4.0	11.0
248	0.0	10.0	-6.0	4.0
252	-1.0	3.0	19.0	21.0
256	18.0	19.0	3.0	40.0
260	9.0	23.0	7.0	39.0
264	2.0	25.0	18.0	45.0
268	3.0	32.0	20.0	55.0
272	21.0	17.0	9.0	47.0
276	-2.0	43.0	15.0	56.0
280	2.0	54.0	-1.0	55.0
284	-2.0	0.0	-5.0	-7.0
288	17.0	29.0	-11.0	35.0
293	-6.0	11.0	-1.0	26.0
297	0.0	1.0	8.0	9.0

		Jan.1986	May 1986	Oct.1986	Jan.1986
	Station	-May 1986	-Oct.1986	-Jan.1987	-Jan.1987
	No.	(87days)	(155days)	(105days)	(365days)
H	301	-2.0	12.0	8.0	18.0
S	122	-2.0	10.0	21.0	29.0
Z	2	3.0	4.0	-8.0	-1.0
	4	-7.0	4.0	-3.0	-6.0
	6	-4.5	1.5	-7.0	-10.0
	8	-22.0	1.0	2.0	-19.0
	10	-2.0	0.0	18.0	16.0
	12	-2.0	0.0	20.0	18.0
	14	1.0	38.0	10.0	49.0
	16	4.0	-6.0	3.0	1.0
	18	-3.0	5.0	8.0	10.0
	20	11.5	7.5	3.0	22.0
	22	3.0	1.0	-3.0	1.0
	24	-3.0	0.0	5.0	2.0
	26	-0.5	-0.5	-4.0	-5.0
	28	-2.0	1.0	-3.0	-4.0
	30	-1.0	0.0	-4.0	-5.0
	32	-30.0	-2.0	11.0	-21.0
	34	-1.0	0.0	-3.0	-4.0
	36	-3.0	0.0	-3.0	-6.0
	38	0.0	0.0	-4.0	-4.0
	40	1.0	-1.0	27.0	27.0
	42	0.0	1.0	12.0	13.0
	46	-1.0	-1.0	-3.0	-5.0
	50	-2.0	45.0	0.0	43.0
	54	4.0	0.0	9.0	13.0
	58	0.0	0.0	31.0	31.0
	62	-2.0	-1.0	7.0	4.0
	66	-1.0	0.0	-4.0	-5.0
	70	6.0	-1.0	-3.0	2.0
	72	-5.0	1.0	-3.0	-7.0
	74	-4.0	1.0	-1.0	4.0
	76	8.0	-7.0	4.0	5.0
	78	-3.0	0.0	-3.0	-6.0
	80	0.0	0.0	7.0	7.0
	82	15.0	20.0	2.0	37.0
	84	11.0	10.0	-2.0	19.0
	86	-2.0	29.0	1.0	28.0
	88	-2.0	0.0	32.0	30.0
	90	-2.0	-6.0	8.0	0.0
	92	-6.0	0.0	7.0	1.0
	94	-1.0	2.0	6.0	7.0
	96	0.5	2.5	-9.0	-6.0
	98	-	-	4.0	-
	100	-1.5	13.5	10.0	22.0
	102	-	0.0	-1.0	-

Table II -2. Net accumulation along Route NY.

Station No.	Jan. 1984 -Mar. 1986 (756days)
NY	2
	4
	6
	8
	10
	12
	14
	16
	18
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	22
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	28
	30
	32
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	66
	68
	70
	72
	74
	76
	78
	80
	82
	84
	86
	88
	90
	92
	94
	96
	98
	100

Table II -3. Net accumulation along Route SZ.

Station No.	Mar.1983	Mar.1986
	-Mar.1986 (1105days)	-Oct.1986 (198days)
SZ 1.0	18.6	33.9
2.0	82.7	18.5
3.0	127.1	-
4.0	121.1	-
5.0	72.3	-
6.0	71.8	31.3
7.0	74.5	12.5
8.0	96.0	-
9.0	73.3	24.0
10.0	131.2	31.5
11.0	112.0	69.7
12.0	104.8	37.0
13.0	20.7	8.5
14.0	-7.0	8.5
15.0	25.0	21.7
16.0	16.5	29.5
17.0	35.0	13.5
18.0	29.4	34.5
19.0	48.3	0.5
20.0	13.2	34.0
21.0	-11.6	0.0
22.0	67.9	32.3
23.0	94.5	37.0
24.0	157.2	53.5
25.0	81.7	21.0
26.0	57.2	70.0
27.0	123.0	46.0
28.0	62.9	-24.0
29.0	77.3	32.0
30.0	21.5	37.0
31.0	94.0	14.5
32.0	78.3	29.0
33.0	62.0	20.0
34.0	-9.8	1.5
35.0	-2.9	-1.0
36.0	88.2	12.0
37.0	171.2	88.0
38.0	155.3	35.0
39.0	57.4	21.0
40.0	104.5	60.8

Table II -4. Net accumulation along Route YM.

		Dec.1984			Dec.1984
Station		-Oct.1986	Station		-Oct.1986
No.		(679days)	No.		(679days)
YM	1	19.0	YM	43	9.5
	2	-7.0		44	-7.0
	3	5.0		45	0.0
	4	-		46	-4.0
	5	33.5		47	14.0
	6	10.0		48	8.0
	7	8.0		49	26.0
	8	0.0		50	18.0
	9	23.0		51	-
	10	-		52	36.0
	11	46.5		53	72.0
	12	-		54	-
	13	13.0		55	-
	14	31.5		56	-
	15	-3.0		57	63.0
	16	7.0		58	53.0
	17	23.0		59	18.0
	18	-16.0		60	47.0
	19	7.0		61	118.5
	20	-2.0		62	-
	21	65.0		63	-53.0
	22	117.0		64	-
	23	-		65	-
	24	90.0		66	-
	25	72.0		67	-
	26	30.0		68	-
	27	56.0		69	-
	28	-5.0		70	-
	29	0.0		71	-
	30	-10.0		72	122.5
	31	26.0		73	142.0
	32	-9.0		74	-
	33	-2.0		75	-
	34	-5.0		76	-
	35	36.0		77	39.0
	36	-12.0		78	-
	37	6.0		79	-
	38	-		80	67.0
	39	-		81	-
	40	-		82	-
	41	86.0		83	53.0
	42	-7.0		84	-

	Station No.	Dec.1984 -Oct.1986 (679days)
YM	85	119.0
	86	45.0
	87	86.0
	88	80.0
	89	94.0
	90	67.0
	91	36.0
	92	46.0
	93	84.0
	94	51.0
	95	66.0
	96	-
	97	136.0
	98	-
	99	172.0
	100	96.0
	101	-3.5
	102	46.0
	103	-7.0
	104	11.0
	105	-4.0
	106	72.5
	107	38.0
	108	5.0
	109	-4.5
	110	8.0
	111	-3.0
	112	86.0
	113	71.0
	114	48.5
	115	7.5
	116	45.0
	117	20.0
	118	39.5
	119	93.5
	120	126.5
	121	128.0
	122	71.0
	123	52.5
	124	69.5
	125	-
	126	55.0

	Station No.	Dec.1984 -Oct.1986 (679days)
YM	127	14.0
	128	-
	129	13.0
	130	66.5
	131	-
	132	89
	133	117
	134	160
	135	109
	136	37
	137	-46
	138	42
	139	88
	140	32
	141	22
	142	15
	143	37
	144	193
	145	85
	146	-
	147	75
	148	49
	149	36
	150	39
	151	-4
	152	55
	153	64
	154	29
	155	34
	156	48
	157	50
	158	22
	159	1
	160	6
	161	-7
	162	4
	163	-6
	164	57
	165	-
	166	-
	167	-1
	168	4

	Station No.	Dec.1984 -Oct.1986 (679days)
YM	169	-10
	170	-
	171	-
	172	-
	173	-
	174	-1
	175	-
	176	-
	177	-
	178	-
	179	-

Table II -5. Net accumulation along Route SS.

Station		Nov. 1982		
No.		-Nov. 1986		
(1439-				
1458days) (cm/year)				
(G2)	SS	0	129.0	32.3
		1	82.0	20.5
		2	173.0	43.3
		3	-	-
		4	-	-
		5	-	-
		6	153.0	38.3
		7	-	-
		8	-	-
		9	-	-
		10	120.0	30.1
		11	-18.0	-4.5
		12	-17.0	-4.3
		13	36.5	9.2
		14	-	-
		15	20.0	5.0
		16	23.0	5.8
		17	157.0	39.4
		18	29.0	7.3
		19	10.0	2.5
		20	120.0	30.1
		21	126.0	31.6
		22	46.0	11.5
		23	153.5	38.5
		24	-	-
(G3)	SS	25	150.5	37.7
		26	55.5	14.0
		27	-	-
		28	-	-
		29	25.0	6.3
		30	32.5	8.2
		31	-13.0	-3.3
		32	86.0	21.8
		33	-	-
		34	86.0	21.8
		35	47.0	11.9
		36	123.0	31.2
		37	3.0	0.8
		38	132.0	33.5
		39	129.0	32.7
		40	140.5	35.6
		41	-	-
		42	60.0	15.2
		43	9.5	2.4
		44	38.5	9.8
		45	89.0	22.6
		46	164.5	41.7
		47	172.0	43.6
		48	128.0	32.4
		49	13.0	3.3

Station		Nov. 1982	Nov. 1986	
No.		(1439-1458days) (cm/year)		
(G4)	SS	50	-9.0	-2.3
		51	61.0	15.3
		52	100.5	25.2
		53	130.0	32.5
		54	146.5	36.7
		55	173.5	43.4
		56	170.0	42.6
		57	36.0	9.0
		58	-2.0	-0.5
		59	38.5	9.6
		60	81.0	20.3
		61	124.0	31.1
		62	131.0	32.8
		63	178.0	44.5
		64	169.0	42.4
		65	174.0	43.6
		66	11.0	2.8
		67	69.0	17.3
		68	125.0	31.3
		69	163.0	40.9
		70	141.0	35.3
		71	75.0	18.8
		72	32.0	8.0
		73	178.0	44.6
		74	178.0	44.6
(G4)	SS	75	75.0	18.8
		76	87.0	21.8
		77	150.0	37.7
		78	-9.0	-2.3
		79	-3.0	-0.8
		80	19.0	4.8
		81	22.0	5.5
		82	119.0	29.9
		83	152.0	38.2
		84	54.0	13.6
		85	161.0	40.4
		86	55.0	13.8
		87	6.0	1.5
		88	16.0	4.0
		89	29.0	7.3
		90	41.0	10.3
		91	6.0	1.5
		92	8.0	2.0
		93	84.0	21.1
		94	170.0	42.6
		95	17.0	4.3
		96	61.0	15.3
		97	21.5	5.4
		98	127.0	31.9
		99	7.0	1.8

Station		Nov. 1982	Nov. 1986
No.		(1439-1458days) (cm/year)	
(G6)	SS 100	63.5	15.9
	101	51.0	12.8
	102	96.0	24.1
	103	83.5	20.9
	104	-5.0	-1.3
	105	166.0	41.6
	106	159.0	39.9
	107	126.0	31.6
	108	-4.0	-1.0
	109	-5.0	-1.3
	110	17.0	4.3
	111	13.0	3.3
	112	43.5	10.9
	113	48.0	12.0
	114	166.0	41.6
	115	89.0	22.3
	116	76.0	19.1
	117	62.0	15.6
	118	13.0	3.3
	119	-8.0	-2.0
	120	0.0	0.0
	121	139.0	34.9
	122	75.5	18.9
	123	1.0	0.3
	124	87.0	21.8
(G7)	SS 125	54.0	13.5

Table II -6. Net accumulation along Route RY.

Nov.1983		Nov.1983	
Station	-Jan.1987	Station	-Jan.1987
No.	(1163days)	No.	(1163days)
RY	0	RY	40
	1		41
	2		42
	3		43
	4		44
	5		45
	6		46
	7		47
	8		48
	9		49
	10		50
	11		51
	12		52
	13		53
	14		54
	15		55
	16		56
	17		57
	18		58
	19		59
	20		60
	21		61
	22		62
	23		63
	24		64
	25		65
	26		66
	27		67
	28		68
	29		69
	30		70
	31		71
	32		72
	33		73
	34		74
	35		75
	36		76
	37		77
	38		78
	39		79
			80
			81

	Station No.	Nov.1983 -Jan.1987 (1156days)
RY	82	120.9
	83	158.3
	84	97.5
	85	74.1
	86	66.3
	87	35.9
	88	34.5
	89	-11.2
	90	-1.2
	91	14.4
	92	14.7
	93	15.3
	94	7.7
	95	134.2
	96	-
	97	-
	98	90.8
	99	-
	100	153.9
	101	11.3
	102	40.7
	103	117.6
	104	-
	105	19.2
	106	43.7
	107	53.0
	108	31.2
	109	105.8
	110	79.6
	111	42.7
	112	53.5
	113	79.0
	114	33.0
	115	81.7
	116	115.6
	117	103.7
	118	83.2
	119	98.1
	120	122.2
	121	94.1
	122	33.3

	Station No.	Nov.1983 -Jan.1987 (1156days)
RY	123	87.6
	124	179.3
	125	114.8
	126	97.6
	127	142.5
	128	166.3
	129	185.9
	130	128.0
	131	114.8
	132	-
	133	146.4
	134	109.6

	Station No.	Jan.1986 -Jan.1987 (366days)
RY	135	200.0
	136	47.5
	137	39.0
	138	110.0
	139	26.0
	140	26.0
	141	37.5
	142	152.0
	143	26.0
	144	14.5
	145	0.5
	146	11.5
	147	15.0
	148	18.0
	149	60.0
	150	92.5
	151	89.0
	152	20.0
	153	60.5
	154	28.0
	155	15.0
	156	1.5
	157	10.5
	158	38.0
	159	12.5
	160	-6.0
	161	2.5
	162	-0.5
	163	1.5
	164	12.0
	165	-8.0
	166	-7.5
	167	-11.5
	168	60.0
	169	-9.0
	170	-9.5
	171	-9.5
	172	6.0
	173	6.0
	174	-
	175	-3.0

	Station No.	Jan.1986 -Jan.1987 (364days)
RY	176	-12.0
	177	-10.5
	178	-16.0
	179	-4.5
	180	-14.5
	181	-16.0
	182	-16.5
	183	-
	184	5.0
	185	-
	186	-15.0
	187	-16.5
	188	-3.5
	189	-8.0
	190	6.0
	191	108.0
	192	89.0
	193	139.0
	194	21.0
	195	8.0
	196	7.0
	197	-17.5
	198	-11.5
	199	11.0
	200	-11.5
	201	-9.0
	202	18.5
	203	-16.0
	204	20.5
	205	24.0
	206	-16.5
	207	-16.0
	208	6.0
	209	20.5
	210	-13.5
	211	-24.0
	212	-19.0
	213	-21.0
	214	7.0
	215	5.0
	216	-3.5

	Station No.	Jan.1986 -Jan.1987 (361days)
RY	217	-19.5
	218	-4.0
	219	-12.0
	220	-16.0
	221	-16.5
	222	-33.0
	223	24.0
	224	5.5
	225	-0.5
	226	4.0
	227	-5.5
	228	1.0
	229	27.0
	230	69.0
	231	-0.5
	232	3.0
	233	22.0
	234	28.0
	235	26.0
	236	-5.0
	237	-21.0
	238	-5.0
	239	27.5
	240	27.0
	241	39.0
	242	-2.0
	243	37.5
	244	-5.0
	245	45.0
	246	25.5
	247	-21.0
	248	36.0
	249	34.0
	250	28.0
	251	38.5
	252	53.0
	253	54.0
	254	20.5
	255	24.5
	256	45.0
	257	0.0
	258	8.0

Table II -7. Net accumulation along Route L.

Station No.	Dec.1984	Dec.1985
	-Dec.1985 (366days)	-Jan.1987 (404days)
L 0	-	-
2	70.0	25.0
4	104.0	14.0
6	61.0	44.0
8	106.0	45.0
10	68.0	54.0
12	27.0	56.0
14	54.0	27.0
16	67.0	42.0
18	60.0	44.0
20	121.0	61.0
22	71.0	50.0
24	83.0	23.0
26	55.0	26.0
28	76.0	35.0
30	125.0	25.0
32	91.0	35.0
34	73.0	47.0
36	89.0	53.0
38	84.0	54.0
40	72.0	60.0
42	93.0	58.0
44	110.0	25.0
46	71.0	51.0
48	40.0	76.0
50	77.0	65.0
52	73.0	36.0
54	61.0	39.0
56	84.0	60.0
58	89.0	46.0
60	81.0	53.0
62	89.0	48.0
64	96.0	38.0
66	77.0	56.0
68	94.0	56.0
70	38.0	31.0
72	77.0	48.0
74	25.0	70.0
76	82.0	32.0
78	58.0	24.0
80	65.0	54.0
82	28.0	23.0
84	101.0	78.0
86	22.0	21.0
88	29.0	24.0
90	55.0	40.0
92	-6.0	-20.0
94	51.0	27.0
96	35.0	24.0
98	34.0	15.0
100	14.0	14.0
102	48.0	39.0
104	90.0	31.0
106	64.0	7.0
108	91.0	79.0
110	31.0	8.0
112	48.0	-3.0
114	24.0	-36.0
116	76.0	8.0
118	49.0	6.0
120	25.0	-19.0

Table II -8. Net accumulation with a 36-stake farm at Sl6.

	1/14- 3/24.1985 (69days)	3/24- 7/13.1985 (111days)	7/13- 8/30.1985 (48days)	8/30.1985- 1/27.1986 (150days)	1/27- 9/30.1986 (246days)
I -1	17.5	-	-1.0	-4.5	25.1
2	19.5	12.0	0.0	3.4	16.4
3	28.5	2.0	4.0	-3.2	-
4	11.5	5.0	-6.0	7.4	22.2
5	24.0	10.0	9.0	-8.5	26.5
6	24.5	15.5	10.5	-0.4	16.2
II-1	23.5	5.0	1.0	4.5	11.7
2	12.5	7.0	19.5	-16.9	24.1
3	7.0	-	2.5	1.2	33.5
4	11.5	-	0.5	0.3	27.9
5	25.0	1.5	2.0	7.6	28.1
6	24.5	4.0	10.0	-2.5	33.5
III-1	8.0	19.0	4.0	-6.7	7.7
2	9.5	-	1.0	-11.1	2.1
3	20.5	13.0	5.5	-1.7	27.9
4	6.5	-	-1.5	-0.3	29.2
5	2.0	19.0	1.0	2.8	48.8
6	22.0	-	7.0	-	-
IV-1	3.0	-	0.5	0.0	8.5
2	12.0	-	-1.0	-1.4	20.7
3	16.0	-	-1.0	7.7	20.2
4	27.0	13.5	-1.0	-	-
5	26.5	9.0	0.0	-3.2	50.8
6	6.0	21.0	-1.0	-2.7	39.3
V -1	3.5	18.0	-0.5	10.4	17.1
2	22.0	8.5	0.0	9.0	11.0
3	26.0	-	-0.5	-5.0	24.5
4	-5.0	-	-1.5	-13.9	23.3
5	18.5	26.0	-1.0	-12.6	20.7
6	14.5	18.5	-0.5	-	-
VI-1	0.0	-	0.0	-6.8	12.2
2	0.0	44.5	-2.5	-11.2	18.6
3	13.5	31.0	0.5	-8.3	8.7
4	2.0	27.5	-0.5	-6.4	13.7
5	26.0	11.0	1.0	8.3	-5.6
6	25.5	12.0	19.0	0.5	4.8
Mean	14.9	13.7	2.2	-1.9	19.9

Table II -9. Net accumulation with a 36-stake farm at H68.

	1/15- 3/23.1985 (67days)	3/23- 8/27.1985 (157days)	8/27.1985- 1/26.1986 (152days)	1/26- 10/1.1986 (248days)
I -1	2.0	1.0	-7.1	13.6
2	-1.5	0.5	5.1	7.3
3	-2.0	31.0	-2.1	-1.1
4	-5.5	21.5	9.8	-2.9
5	-1.5	9.5	-6.2	-3.1
6	15.5	3.0	1.6	-3.5
II-1	-1.5	-3.0	0.9	14.4
2	-4.0	3.5	6.4	-1.9
3	5.5	9.5	-2.4	-2.1
4	1.5	9.0	4.7	-2.9
5	9.0	12.0	-1.2	-1.2
6	-1.0	15.5	-3.7	8.1
III-1	-4.5	4.0	24.2	20.1
2	-4.5	4.5	29.5	-0.5
3	12.5	2.5	-4.2	4.0
4	5.0	17.0	-8.4	22.1
5	1.0	-37.0	37.4	13.8
6	-5.0	0.0	-4.1	47.0
IV-1	-1.0	25.5	2.3	18.9
2	-2.0	25.0	-10.5	25.6
3	10.0	5.0	-9.6	16.0
4	10.0	0.0	-5.8	14.7
5	14.5	-1.0	6.5	1.6
6	13.0	-1.5	-8.4	19.2
V -1	10.5	15.0	-7.6	8.5
2	-10.0	2.5	-0.6	20.5
3	3.5	0.0	4.9	11.9
4	-4.0	10.5	-3.5	10.7
5	-4.0	15.0	-12.4	4.6
6	20.5	-2.0	-7.6	9.1
VI-1	1.5	0.5	5.1	3.3
2	-2.0	0.5	7.3	-3.5
3	-2.0	23.0	-11.8	4.5
4	-3.0	18.0	-9.0	8.7
5	3.5	2.0	-1.7	19.4
6	-3.0	-1.0	-4.1	21.1
Mean	2.1	6.7	0.4	9.6

Table II -10. Net accumulation with a 36-stake farm at H180.

	1/15- 3/22.1985 (66days)	3/22- 8/25.1985 (156days)	8/25.1985- 1/25.1986 (153days)	1/25- 10/2.1986 (269days)
I -1	3.5	20.0	7.0	-0.5
2	5.0	24.5	-0.5	10.5
3	1.5	29.0	8.7	0.8
4	8.5	30.0	2.2	-0.7
5	0.0	25.0	17.7	-4.7
6	13.5	42.5	-8.5	10.0
II-1	0.0	26.5	9.9	-3.9
2	12.0	24.5	4.1	3.9
3	6.0	32.5	-3.0	9.0
4	6.0	23.0	9.5	7.0
5	7.0	21.5	6.4	18.1
6	22.0	7.0	3.9	23.1
III-1	1.5	22.5	8.8	22.7
2	-4.0	32.5	-1.2	40.7
3	3.5	29.0	4.8	19.2
4	6.0	24.0	0.8	24.2
5	-2.5	31.0	-1.3	19.3
6	2.5	16.0	13.0	10.0
IV-1	-2.5	29.0	1.1	26.4
2	-1.5	24.0	-5.6	20.6
3	1.0	37.5	-14.0	28.0
4	1.5	30.5	3.4	10.1
5	-1.5	24.0	4.7	4.8
6	-5.0	27.0	-2.5	9.5
V -1	3.5	23.5	2.5	32.5
2	-2.5	9.0	9.4	18.6
3	2.5	23.0	3.7	18.3
4	-2.0	25.0	2.2	28.3
5	8.5	55.0	-13.3	12.3
6	0.5	25.5	5.7	3.8
VI-1	7.0	31.0	-1.0	31.0
2	-1.0	30.0	-1.0	22.0
3	4.0	19.5	-1.7	14.2
4	2.5	25.0	-4.4	22.4
5	-2.0	36.0	-5.3	22.3
6	-4.0	25.0	-1.8	23.8
Mean	2.8	26.7	1.8	15.5

Table II -11. Net accumulation with a 36-stake farm at S122.

	1/16- 3/21.1985 (64days)	3/21- 8/24.1985 (156days)	8/24- 1/25.1986 (154days)	1/25- 10/2.1986 (250days)
I -1	13.0	0.0	-7.1	-4.2
2	-2.0	8.5	-3.3	-0.9
3	-1.5	35.0	-3.8	-0.9
4	-2.0	45.5	-10.8	-3.9
5	-1.0	0.0	-4.8	-2.7
6	7.0	-5.5	-4.1	1.1
II-1	1.5	1.5	-3.6	6.1
2	34.0	0.0	-0.3	-5.0
3	-0.5	-0.5	-2.2	-0.9
4	7.0	-4.0	-4.7	4.0
5	-1.0	1.0	-3.5	2.2
6	-1.5	1.0	-3.1	33.3
III-1	-5.5	0.5	0.9	0.1
2	-1.0	1.0	-2.4	9.2
3	-3.0	6.0	-4.4	6.8
4	1.0	0.5	-3.3	-2.6
5	0.5	0.0	15.8	-0.3
6	-2.5	18.5	1.8	9.2
IV-1	17.5	-10.0	-5.5	19.3
2	15.5	-0.5	-12.3	5.1
3	0.5	-0.5	-6.7	-2.2
4	0.5	0.5	-2.0	-1.5
5	-0.5	13.0	-9.6	-2.9
6	0.5	17.0	-1.6	-2.6
V -1	-0.5	7.5	-0.6	1.5
2	2.5	19.0	-10.8	-0.8
3	20.0	18.0	-10.1	-0.5
4	2.5	1.0	11.6	10.5
5	-1.0	0.5	0.8	-2.3
6	6.0	-4.5	1.0	22.1
VI-1	6.5	18.0	-1.9	4.2
2	-1.0	48.5	-9.9	15.9
3	-0.5	1.0	43.3	-2.2
4	6.5	8.0	0.8	5.0
5	-2.0	1.5	6.0	38.5
6	17.5	-0.5	-5.0	-2.7
Mean	3.7	6.9	-1.5	-4.3

Table II -12. Net accumulation with a 36-stake farm at Z40.

	1/17- 3/21.1985 (63days)	3/21- 8/24.1985 (156days)	8/24- 1/24.1986 (153days)	1/24- 10/3.1986 (252days)
I -1	-2.0	5.0	-5.2	9.2
2	-1.5	-1.0	-2.1	-0.4
3	-1.0	0.0	5.4	-2.4
4	-1.5	11.0	-10.0	-1.0
5	-0.5	0.0	2.2	12.8
6	-3.0	21.5	-4.1	-0.4
II-1	2.0	0.0	-1.3	12.3
2	6.5	3.0	5.0	-1.0
3	-2.0	7.5	-10.5	3.5
4	-0.5	1.5	9.5	-1.5
5	-1.5	1.5	-1.6	10.6
6	3.5	4.0	2.2	1.8
III-1	15.0	0.5	-2.6	0.4
2	-4.0	0.5	3.8	-1.3
3	1.5	2.0	10.5	2.5
4	-4.0	0.0	-4.0	1.0
5	-2.5	1.0	0.2	-0.7
6	12.0	0.0	-5.3	-1.7
IV-1	-1.0	3.5	-2.7	11.2
2	-3.5	0.0	-0.4	-1.6
3	-1.5	0.5	-0.6	-0.9
4	9.0	0.5	-5.1	0.6
5	-1.5	0.0	-3.0	-0.5
6	-2.0	0.0	-0.9	-1.1
V -1	3.0	0.5	-1.1	-1.4
2	-2.5	-0.5	-2.1	16.1
3	-1.0	-0.5	-2.9	20.4
4	-3.0	0.0	-1.8	-1.7
5	26.0	1.0	-1.5	0.5
6	2.0	1.0	8.0	-1.0
VI-1	-1.5	0.0	10.2	-0.7
2	-1.0	-0.5	-2.0	-1.5
3	-1.5	2.5	-4.8	6.8
4	-2.5	-0.5	-3.2	0.2
5	-1.5	9.0	-5.2	0.7
6	1.0	29.0	-27.0	0.0
Mean	0.9	2.9	-1.5	2.5

Table II -13. Net accumulation with 36-stake farm at G6.

	<u>1/6.1986</u> <u>12/1.1986</u> (329days)
I -1	-8.4
2	22.9
3	59.7
4	18.4
5	42.0
6	24.6
II-1	32.3
2	5.2
3	-1.7
4	14.0
5	30.8
6	30.2
III-1	11.2
2	17.5
3	0.3
4	11.5
5	8.4
6	25.6
IV-1	7.0
2	-3.0
3	-0.5
4	6.0
5	9.1
6	-1.3
V -1	-1.5
2	4.0
3	20.0
4	-2.5
5	0.8
6	-0.6
VI-1	9.8
2	14.8
3	30.4
4	13.0
5	35.2
6	5.2
Mean	<u>14.1</u>

Table II -14. Net accumulation with 36-stake farm at G13.

	<u>1/18.1986</u> <u>1/18.1987</u> (365days)
I -1	63.2
2	80.5
3	60.0
4	106.7
5	82.3
6	76.2
II-1	67.9
2	70.8
3	62.6
4	89.9
5	93.0
6	87.0
III-1	71.7
2	82.3
3	49.5
4	61.8
5	72.2
6	65.1
IV-1	46.2
2	62.4
3	72.6
4	71.0
5	70.0
6	68.7
V -1	67.9
2	64.4
3	68.7
4	63.4
5	76.4
6	60.2
VI-1	95.1
2	65.3
3	104.0
4	58.5
5	65.6
6	58.2
Mean	<u>71.7</u>

Table II-15. Net accumulation
with a 36-stake farm at Asuka
Camp.

	12/27.1985 -1/29.1986 (398days)	1/29.1986 1/25.1987 (361days)
I -1	-8.0	30.0
2	-2.0	38.5
3	-13.0	14.0
4	-5.0	10.5
5	-5.0	15.5
6	-1.0	19.5
II-1	-6.0	13.5
2	-3.0	18.0
3	-2.0	17.0
4	-4.0	7.5
5	-5.0	19.5
6	-6.0	34.0
III-1	-13.0	10.5
2	-14.0	30.0
3	-4.0	16.5
4	-3.0	1.5
5	-8.0	13.0
6	8.0	13.5
IV-1	-3.0	11.0
2	-7.0	49.5
3	-4.0	19.0
4	-2.0	10.5
5	-13.0	-
6	-2.0	13.0
V -1	-3.0	15.0
2	-3.0	14.0
3	-2.0	20.5
4	-6.0	7.0
5	4.0	2.0
6	-9.0	12.0
VI-1	-8.0	7.5
2	-3.0	17.0
3	-10.0	16.5
4	-7.0	7.0
5	-12.0	-
6	-6.0	3.0
Mean	-5.3	16.1

III. Net Accumulation of Snow at Mizuho Station

Observer: Hirokazu OHMAE
and
Kazuo OSADA

The measurements were made once a month using a 36-stake farm and a 101-stake row. The former was installed in 1972, in which 36 bamboo stakes in a square of 100m sides were arranged in a rectangular lattice with a spacings of 20m. The farm was adopted for the routine accumulation measurements in 1986 as well. The results of the measurements are given in Table III-1. The stakes of this farm are distributed and numbered as shown in Fig. 1 of Ageta et al. (1987).

Another stake farm of 201 stakes with 1 m spacing was prepared in 1973, which basically consisted of two rows of stakes, one perpendicular and the other parallel to the direction of the prevailing wind. They crossed each other, forming an X shape as shown in Fig. 2 of Ageta et al. (1987). This stake farm also had been adopted for the accumulation measurements at Mizuho Station. However, the measurements on the stakes of the parallel row to the wind direction was determined to discontinue, and the row of 101 stakes, which was aligned perpendicular to the wind direction, was left for further measurements of snow accumulation, as explained by Nakawo et al. (1984). The results of the measurements are given in Table III-2.

References

- Ageta, Y., Kikuchi, T., Kamiyama, K. and Okuhira, F. (1987): Net accumulation of snow at Mizuho Station. JARE Data Rep., 125 (Glaciol. 14), 62-70.
- Nakawo, M., Narita, H. and Isobe, T. (1984): Net accumulation of snow at Mizuho Station. JARE Data Rep., 96 (Glaciol. 11), 66-78.

Table III-1. Net accumulation with a 36-stake farm at Mizuho Station in 1986.

		(cm in depth)									
No.		Dec.30 (24days)	Jan.23 (35)	Feb.27 (28)	Mar.27 (33)	Apr.29 (30)	May 29 (30)	June 28 (32)	July 30 (32)	Aug.31 (31)	Oct. 1
I	-1	-1.7	-1.4	0.9	-0.3	0.3	-0.1	0.9	-0.8	0.0	
	2	-6.2	0.8	-0.7	0.1	0.2	0.2	-0.1	0.2	0.0	
	3	-1.6	-0.6	-1.1	0.0	2.5	0.1	0.0	0.1	0.0	
	4	-2.0	-1.2	0.3	0.1	0.1	-0.1	0.2	0.0	0.0	
	5	-2.4	-1.0	-1.7	-0.3	0.1	0.0	0.5	-0.4	0.1	
	6	2.4	-0.8	0.4	0.0	0.2	0.1	-0.2	0.3	0.1	
II	-1	-10.7	-3.0	9.0	-7.4	-0.1	4.7	-4.8	-0.9	0.7	
	2	-3.6	-2.0	2.6	1.1	5.9	-0.1	0.2	0.1	-0.2	
	3	-1.2	-0.6	0.1	0.0	0.1	0.0	-0.2	0.2	-0.2	
	4	-1.1	-0.6	13.4	0.1	0.1	0.0	0.0	0.0	0.0	
	5	9.0	-0.8	0.4	-0.1	0.2	-0.2	1.2	0.1	0.0	
	6	-5.4	-2.0	0.5	0.0	0.1	-0.1	19.0	-6.7	-1.0	
III	-1	0.4	1.2	0.3	0.0	0.0	0.2	0.0	0.1	-0.1	
	2	7.0	-0.8	0.0	0.0	0.2	-0.2	0.3	0.0	0.0	
	3	-1.2	-1.0	0.4	0.0	0.0	0.1	0.1	0.0	0.0	
	4	3.4	-0.6	0.0	0.0	0.2	0.2	0.1	-0.3	0.7	
	5	-2.2	-0.8	0.6	0.1	0.0	0.1	-0.1	0.1	0.3	
	6	-1.9	-0.8	0.7	-0.2	0.1	-0.2	0.3	0.2	0.0	
IV	-1	-4.9	-1.6	1.4	-0.2	0.0	0.0	0.0	0.2	0.1	
	2	-4.0	-0.8	0.6	-0.8	-0.1	0.0	0.3	1.0	-1.0	
	3	-3.0	-0.8	-0.3	0.0	0.9	-0.7	0.7	-0.2	-0.3	
	4	2.3	-1.2	0.4	0.0	0.1	0.9	-0.9	-0.1	0.0	
	5	-0.4	-1.4	2.5	0.1	0.2	-0.2	0.1	0.0	-0.1	
	6	-1.0	-1.0	0.5	-0.2	0.3	0.1	0.2	0.0	0.2	
V	-1	-1.0	-1.0	0.8	-0.9	-0.9	0.3	0.6	-0.1	0.6	
	2	-9.2	-9.4	10.3	-0.9	-0.2	0.1	0.7	-0.5	0.3	
	3	-1.0	-0.7	0.2	-0.1	0.1	0.1	0.1	0.1	-0.1	
	4	-1.0	-1.4	0.2	0.4	0.2	0.3	0.3	0.9	-0.7	
	5	-7.5	-4.2	0.4	0.0	0.1	-0.1	0.7	-0.4	-0.4	
	6	-2.1	-2.4	3.3	-3.6	0.0	-0.1	0.0	0.2	0.0	
VI	-1	-4.4	-1.4	-1.2	-0.1	0.0	0.2	0.3	-0.3	0.0	
	2	-4.0	-1.8	0.3	0.0	0.0	0.1	1.9	-1.7	-0.1	
	3	0.0	-0.8	1.7	-0.1	0.4	-0.3	0.0	0.3	0.2	
	4	-4.1	-1.0	0.5	0.1	0.0	-0.2	0.2	0.3	-0.1	
	5	-3.6	-2.8	2.4	-3.7	0.2	0.0	-0.1	0.2	-0.1	
	6	-2.6	-3.8	1.3	-2.8	0.8	-0.7	0.2	0.0	-0.1	
Mean		-1.96	-1.49	1.43	-0.54	0.34	0.13	0.63	-0.22	-0.03	

Table III-2. Net accumulation with a 10l-stake farm at Mizuho Station in 1986.

No.	(cm in depth)							
	Dec.30 (31days)	Jan.31 (27)	Feb.27 (28)	Mar.27 (33)	Apr.29 (30)	May 29 (30)	June 28 (34)	Aug. 1 (32)
102	-6.6	0.5	0.6	0.1	0.3	7.8	-7.9	0.3
103	-4.6	-1.6	1.6	0.1	0.3	6.4	-6.4	0.2
104	1.0	-1.8	1.8	-0.3	0.2	0.3	0.0	3.0
105	-3.2	-0.2	0.5	-0.9	0.1	0.4	-0.1	0.5
106	-7.2	-0.9	0.7	-0.2	0.0	0.5	0.6	0.0
107	-6.3	0.0	0.6	0.0	-0.2	-0.4	0.3	0.0
108	-2.0	0.2	0.5	-0.2	-0.4	0.0	0.1	0.1
109	-4.7	-0.9	0.2	0.0	0.1	1.5	-0.2	0.2
110	-1.0	-0.7	0.1	0.6	-0.5	0.4	0.0	0.0
111	-2.5	-0.7	0.4	0.0	0.3	-0.3	0.0	0.2
112	-5.0	-1.7	0.6	-0.3	0.3	0.0	0.5	0.1
113	-4.9	-0.6	0.3	0.0	0.1	0.0	0.2	0.1
114	-3.2	-0.4	0.3	0.0	-0.1	-0.1	0.1	0.2
115	-4.8	-0.9	0.5	-0.1	0.0	-0.1	-1.7	2.5
116	-2.3	0.2	0.4	0.0	-0.3	-0.1	0.4	-0.2
117	-3.1	-0.2	0.3	-4.8	4.8	-0.2	1.1	-0.8
118	-2.8	-0.7	0.0	0.6	-0.5	-0.1	-0.1	0.1
119	-3.9	0.0	0.4	0.0	-0.1	-0.2	10.3	-1.8
120	-2.0	1.0	0.3	-0.2	-0.7	0.3	5.2	0.2
121	-4.7	0.5	0.7	-0.3	0.2	-0.1	-0.1	0.5
122	-11.1	-0.6	0.3	0.7	-0.3	-0.4	2.0	0.1
123	-2.8	-0.9	1.5	-0.3	0.1	-0.4	-0.2	0.3
124	0.3	-0.5	0.5	-0.2	0.2	-0.1	-0.2	0.4
125	-2.2	0.4	0.3	0.3	-0.2	-0.6	0.4	0.2
126	-4.7	-0.1	0.3	-0.1	0.1	-0.4	0.4	0.0
127	-3.5	0.3	0.2	0.2	-0.2	-0.2	0.0	0.2
128	-2.9	-0.2	0.5	-0.1	0.1	-0.6	0.2	0.4
129	-3.1	0.0	0.5	-0.1	0.2	-0.2	0.1	0.1
130	-3.4	-0.5	0.4	-0.6	0.6	-0.3	0.0	0.2
131	-3.8	-1.0	4.0	-2.6	0.3	0.1	5.1	-1.2
132	-1.3	0.4	1.2	0.0	4.6	-0.1	1.1	-1.4
133	-2.4	-0.3	4.7	1.1	-0.1	0.3	0.6	0.0
134	-4.7	0.4	1.0	0.1	0.6	0.1	-0.2	0.2
135	-1.1	-0.4	0.4	0.1	0.1	0.0	-0.2	0.4
136	-2.7	-0.1	0.6	0.1	2.9	0.1	0.1	0.0

No.	Dec.30 (31days)	Jan.31 (27)	Feb.27 (28)	Mar.27 (33)	Apr.29 (30)	May 29 (30)	June 28 (34)	Aug. 1 (32)	Sep. 3
137	-1.5	-0.4	0.6	-0.2	0.2	0.0	-0.1	-8.9	
138	-0.8	-0.8	0.4	0.1	5.0	-0.1	0.0	0.2	
139	-1.1	-0.9	0.5	0.9	1.6	0.9	-0.9	-0.2	
140	3.8	0.1	0.5	-0.1	-0.2	0.1	0.0	0.0	
141	0.2	-0.6	0.5	0.0	0.1	0.1	-0.1	0.2	
142	2.4	-0.6	2.6	0.0	0.0	0.1	0.0	0.1	
143	-3.6	-0.2	2.3	0.0	-1.1	0.0	-0.4	0.3	
144	-3.1	0.4	0.6	-0.2	-0.1	0.2	0.0	0.1	
145	0.2	-0.7	0.5	0.8	-1.0	0.3	0.1	0.2	
146	5.7	-0.4	0.4	0.0	-0.2	0.2	0.2	0.0	
147	12.1	-0.7	1.3	-0.1	0.0	0.1	0.1	0.2	
148	-6.1	-0.2	0.3	0.1	0.0	5.2	-5.0	0.3	
149	-2.7	0.0	0.3	0.3	0.0	0.8	-0.4	0.5	
150	-2.8	-0.4	1.1	0.1	0.0	0.2	-0.2	0.5	
151	-1.7	-0.7	0.4	0.0	0.0	0.0	0.0	0.3	
51	-3.7	-0.9	0.6	0.0	0.5	-0.2	0.4	-0.2	
152	3.5	-0.3	0.4	0.0	0.0	0.0	-0.1	0.3	
153	5.7	-0.6	0.6	0.1	-0.3	0.0	0.0	0.2	
154	9.0	-0.4	0.1	0.5	0.0	0.0	0.1	-0.1	
155	0.5	-0.7	0.9	0.1	-0.1	0.0	0.0	0.0	
156	-3.0	0.4	0.4	0.4	-0.7	0.0	0.0	0.3	
157	-2.3	-11.1	-0.2	10.4	-0.2	0.0	0.6	-0.4	
158	-5.7	-1.0	0.6	0.0	0.1	0.0	-0.1	0.1	
159	-5.0	-0.3	0.5	0.1	0.0	0.1	0.1	0.5	
160	-5.7	-2.8	0.7	-0.1	0.2	-0.1	0.0	0.0	
161	-5.4	-0.6	0.6	-0.1	0.1	0.0	0.0	-0.8	
162	-6.9	-0.1	-0.1	1.0	-1.0	0.4	0.1	0.1	
163	-2.4	0.5	2.9	0.0	0.1	-0.1	0.1	0.0	
164	9.2	-0.4	0.1	0.4	0.1	-0.1	0.0	0.2	
165	6.9	-0.7	0.7	-0.1	0.6	-0.4	0.2	0.3	
166	-5.0	-0.2	3.4	-0.1	0.4	0.1	0.2	0.1	
167	-5.7	-1.5	10.9	-4.9	0.2	-0.2	0.2	0.2	
168	-7.4	-1.1	10.7	0.3	-0.2	0.2	-0.1	0.1	
169	-7.6	-0.7	9.7	0.1	0.2	-0.1	-0.1	0.1	
170	-1.8	-1.6	6.9	-0.1	0.3	2.7	-2.8	-0.1	

No.	Dec.30 (31days)	Jan.31 (27)	Feb.27 (28)	Mar.27 (33)	Apr.29 (30)	May 29 (30)	June 28 (34)	Aug. 1 (32)	Sep. 3
171	-1.3	-0.4	3.5	0.0	0.3	0.2	-0.2	0.2	
172	-7.6	-0.6	7.1	0.0	0.2	0.0	0.1	-0.1	
173	-0.6	1.4	0.6	-0.1	0.3	0.0	6.6	0.0	
174	1.2	-0.2	0.9	-0.1	0.3	-0.2	0.3	0.2	
175	1.6	-0.4	0.4	0.3	-0.2	0.3	-0.1	0.0	
176	0.8	-0.5	0.6	0.0	0.1	0.1	1.3	0.1	
177	-6.5	-2.1	1.0	0.1	0.1	-0.2	8.4	-1.6	
178	-10.3	-0.7	5.1	-0.6	0.9	0.7	8.8	-5.8	
179	-10.3	-0.1	6.4	0.4	0.2	-0.3	5.5	-2.3	
180	-5.2	-1.0	2.8	0.0	0.1	0.2	5.2	0.0	
181	-3.8	0.0	11.2	-0.1	0.1	-0.1	0.1	0.0	
182	-2.6	0.2	0.7	-0.5	-0.1	1.0	-0.5	0.1	
183	-2.7	-0.3	0.5	1.2	-1.2	0.2	0.1	0.0	
184	-2.2	-1.5	0.5	0.6	-1.1	0.3	-0.1	0.1	
185	-3.9	8.4	0.0	0.2	0.1	0.1	0.1	0.1	
186	-13.5	10.3	1.6	0.5	0.4	0.5	-0.9	0.2	
187	-2.1	-0.1	0.8	0.3	-0.1	0.1	0.2	0.2	
188	-1.4	-0.8	0.2	0.2	0.2	0.0	-0.2	0.2	
189	1.2	2.4	0.4	-0.1	0.2	-0.1	0.0	0.1	
190	-1.7	3.4	1.1	-0.1	0.1	2.2	-2.2	0.2	
191	4.4	-0.3	0.6	-0.1	2.1	0.0	-0.1	0.2	
192	2.7	-0.2	6.0	-3.9	0.2	-0.2	0.0	0.1	
193	1.1	1.5	5.2	-0.2	0.3	0.1	-0.1	0.1	
194	-6.2	3.2	4.0	2.8	0.8	-0.3	-0.1	-0.2	
195	-6.7	-1.1	9.4	-2.4	1.4	-0.5	0.0	-0.2	
196	-11.6	-0.4	1.5	-0.3	0.5	-0.2	0.0	0.2	
197	-9.5	-0.7	0.5	0.1	0.5	-0.6	2.0	-1.9	
198	-6.0	-0.8	0.8	0.1	-0.2	1.0	-1.0	0.1	
199	-10.1	-1.0	1.9	-1.7	2.4	0.0	4.2	-0.4	
200	-6.2	-1.0	0.9	0.8	-0.4	-0.1	0.3	-0.1	
201	-6.2	-0.7	0.4	5.6	0.3	-3.8	1.6	0.2	
Mean	-2.7	-0.3	1.6	0.1	0.3	0.2	0.4	-0.1	

IV. Surface Meteorological Data During Oversnow Traverses

Observer: Kazuo OSADA and Hirokazu OHMAE

The observations were made during the oversnow traverses listed in Table I-1. The item, instrument and accuracy of the observations are given below.

Item	Instrument	Accuracy
Air temperature	Alcohol thermometer	$\pm 0.2^{\circ}\text{C}$
Wind speed	Portable 3-cup anemometer or Vane anemometer	$\pm 1.0\text{m/s}$ $\pm 0.5\text{m/s}$
Wind direction	Magnetic compass	$\pm 5^{\circ}$
Visibility	Visual observation	
Amount of cloud	Visual observation	
Weather and phenomena	Visual observation	

Notations in the tables are as follows:

LT: Local standard time (GMT+3h)

Ta: Air temperature ($^{\circ}\text{C}$)

WS: Wind speed (m/s)

WD: Wind direction

V: Visibility (km)

N: Amount of cloud (in tenth)

W: Present weather and phenomena

○ clear

⊙ fine

☉ cloudy

⊕ cloudy (upper cloud is predominant)

* snow

*† snowstorm

† blowing snow

‡ drifting snow

↔ ice prism

⊕ halo

Table IV-1. Surface meteorological data by the glaciological surveying party during Sept. 30, 1986-Feb. 8, 1987.

Date	LT	Station	Ta	WD	WS	V	N	W
Sept. 30	15	S16	-23.3	ENE	8.1	30.	0	☉
	22	S30	-34.0	E	6.8	10.	0+	☉ 0+As
Oct. 1	07	S30	-34.5	E	6.5	20	0+	☉ 0+As
	15	H104	-31.1	E	5.1	30	0+	○ 0+As
	21	H172	-37.9	E	8.3	10	0+	☉ 0+St
Oct. 2	07	H172	-35.0	E	11.0	0.2	10	☉ 10Cs
	15	H259	-31.3	E	10.5	1	3	☉ 3Ci
	20	Z5	-37.8	E	10.8	2	0+	☉ 0+Ci
Oct. 3	09	Z5	-36.2	E	8.5	2	0	☉

Date	LT	Station	Ta	WD	WS	V	N	W	
Oct. 12	21	SZ17	-40.5	E	6.0	0.5	0	☉	
	13	07	SZ17	-39.7	E	8.5	0.1	0	☉
	15	15	SZ17	-30.6	E	13.5	0.2	0	☉
14	21	SZ17	-38.1	ESE	13.2	0.1	0	☉	
	07	SZ17	-37.2	ESE	12.8	0.05	0	☉	
	15	SZ17	-31.3	ESE	13.5	0.1	0	☉	
15	21	SZ17	-38.0	E	11.5	0.05	0	☉	
	09	SZ17	-35.2	E	11.3	0.1	8	☉ 8Cs	
	15	SZ19	-38.0	E	9.8	0.5	8	☉ 8Cs	
16	21	SZ40	-30.0	E	7.0	20	7	☉ 7Cs	
	08	SZ40	-31.8	E	10.0	0.2	0	☉	
	21	SZ40	-32.2	E	6.5	20	1	☉ 1Cs	
17	08	SZ40	-31.0	E	6.5	1	4	☉ 4Cs	
	16	SZ8'	-30.0	E	6.4	20	0+	☉ 1Ci	
	21	M/S	-37.3	E	8.5	10	0+	☉ 1Ci	
18	09	M/S	-36.5	E	8.5	0.5	1	☉ 1Ci	
	21	M/S	-38.0	E	7.3	20	1	☉ 1Cc	
19	07	M/S	-36.1	E	8.2	1	8	☉ 8Cs	
	12	M/S	-31.2	E	10.1	5	2	☉ 2Cs	
	21	M/S	-35.0	E	8.8	1	2	☉ 2Cs	
20	08	M/S	-31.3	E	9.2	0.5	0+	☉ 0+Cs	
	15	YM8	-26.8	E	11.6	0.5	0+	☉ 0+Cs	
	21	YM22	-32.9	E	12.8	0.5	4	☉ 4Cs	
21	08	YM22	-29.8	E	12.8	0.1	9	☉ 9As	
	15	YM30	-24.3	E	8.0	0.5	10	☉ 10Cs	
	21	YM30	-29.3	E	3.8	5	10	☉ 10Ac	
22	08	YM30	-28.2	E	6.2	1	10	☉ 2As 8Cs	
	15	YM40	-24.6	ENE	5.1	20	1	☉ 1As	
	21	YM57'	-35.1	E	4.7	20	9	☉ 9As	
23	10	YM60	-27.0	E	5.0	10	10	☉ 2As 8Cs	
	15	YM60	-23.3	E	5.2	10	10	☉ 3As 7Cs	
	21	YM60	-34.0	E	6.5	10	10	☉ 3As 7Cs	
24	08	YM60	-32.3	E	3.3	20	10-	☉ 2As 8Cs	
	15	YM73'	-29.8	NE	3.2	30	7	○ 1As 6Cs	

Date	LT	Station	Ta	WD	WS	V	N		W
	21	YM80	-35.2	E	4.0	20	10	*	10Cs
25	08	YM80	-33.0	ESE	7.5	0.5	10	*↗	10As
	15	YM93	-27.1	E	9.2	0.5	10	*↗	10As
	21	YM102	-32.8	ESE	8.8	0.5	10-	↗⊙	2As 8Cs
26	11	YM102	-30.8	ESE	11.0	0.5	4	↗⊙	2As 2Cs
	17	YM102	-29.0	ESE	11.5	0.5	1	↗⊙	1Cs
	21	YM102	-33.0	ESE	12.0	0.5	1	↗⊙	1Cs
27	08	YM102	-31.3	ESE	12.2	0.2	10	↗⊙	10As
	15	SS33	-24.7	E	7.6	0.5	10	*↗	10As
	21	SS40	-31.6	ESE	8.3	1	6	↗⊙	4As 2Cs
28	08	SS40	-31.2	ESE	9.6	1	2	↗⊙	2Cs
	16	SS47'	-29.1	ESE	9.8	1	4	↗⊙	2As 2Cs
	21	SS50	-34.9	ESE	7.9	10	3	↗⊙	2Ac 1Cs
29	09	SS50	-32.0	ESE	9.0	0.5	1	↗⊙	1As
	15	SS50	-26.7	ESE	7.5	5	0	↗⊙	
	21	SS50	-35.1	ESE	6.2	30	0	↗⊙	
30	11	SS50	-31.2	ESE	7.8	2	4	↗⊙	2Ci
	15	SS50	-28.2	ESE	9.3	2	10-	↗⊙	10-Cs
	21	SS50	-31.2	ESE	6.7	2	10	↗⊙	10As
31	09	SS50	-27.1	E	3.2	1	10	*↗	10As
	15	SS37'	-22.3	E	6.3	5	10	*↗	10As
	21	SS28	-24.5	ESE	9.7	0.1	10	*↗	10As
Nov. 1	09	SS28	-21.9	E	12.1	0.05	10	*↗	10As
	15	SS28	-19.1	E	9.7	0.05	10	*↗	10As
	21	SS28	-23.6	E	9.5	0.2	10	*↗	2As 8Cs
2	08	SS28	-30.0	ESE	9.5	0.1	10	↗⊙	10As
	15	SS28	-25.6	ESE	9.8	0.2	0	↗⊙	
	21	SS25	-31.1	SE	12.6	0.2	0	↗⊙	
3	09	SS25	-29.0	SE	13.8	0.2	0	↗⊙	
	15	SS25	-22.8	SE	11.0	0.3	0	↗⊙	
	21	SS25	-25.1	SE	7.2	20	9	↗⊙	2As 7Cs
4	09	SS25	-25.0	E	7.0	5	10-	↗⊙	10-Ac
	15	SS25	-21.0	E	6.8	5	10	↗⊙	1As 9Cs
	21	SS25	-24.8	E	3.9	2	10	*	10As
5	08	SS25	-27.7	ESE	12.5	0.1	10	*↗	3As 7Cs
	15	SS25	-22.3	E	9.6	0.2	10	*↗	5St 5Ac
	22	SS15	-26.8	ESE	9.0	2	10	↗⊙	10As
6	09	SS15	-25.1	ESE	13.5	0.1	10	*↗	10As
	15	SS15	-22.3	E	13.8	0.1	10	*↗	10As
	21	SS15	-21.1	E	9.0	0.2	10	*↗	10As
7	09	SS15	-19.7	E	8.0	1	10	↗⊙	10As
	15	SS6	-15.5	E	8.3	20	10	↗⊙	10As
	21	SS0	-21.4	E	7.1	10	10	↗⊙	5Ac 5Cs
8	12	SS0	-16.9	E	6.5	1	10	*↗	10As
	15	SS0	-13.8	ENE	3↓	10	10	*↗	10Cs
	21	SS0	-23.6	E	3↓	10	10	*	10As
9	09	SS0	-22.8	ESE	11.0	0.5	0+	↗⊙	0+As

Date	LT	Station	Ta	WD	WS	V	N		W
Nov. 9	15	SS0	-17.2	ESE	10.0	2	0+	↗○	0+Cs
	21	SS0	-24.6	ESE	9.1	5	0	↗⊙	
10	09	SS0	-25.5	ESE	10.2	0.5	0	↗○	
	16	SS0	-18.4	E	6.5	2	10	*	10As
	21	SS0	-20.7	E	3.8	2	10	*	10As
11	09	SS0	-19.8	E	7.0	1	10	↗⊙	6Ac 4As
	21	SS0	-24.8	ESE	9.0	2	10	↗⊙	2As 8Cs
12	09	SS0	-24.1	ESE	13.0	0.5	10	↗⊙	10Cs
	15	SS0	-18.5	ESE	10.0	1	10	↗⊙	10Cs
	21	SS0	-24.4	ESE	10.1	2	10	↗⊙	10Cs
13	15	SS9	-20.2	ESE	11.0	5	4	↗⊙	4Cs
	21	SS22'	-27.2	ESE	10.2	1	0	↗○	
14	09	SS22'	-26.8	ESE	12.3	0.5	0	↗○	
	15	SS32'	-22.1	ESE	13.5	1	0	↗○	
	21	SS43	-27.1	ESE	12.6	1	0	↗○	
15	09	SS43	-20.8	E	10.5	2	10	↗⊙	10As
	15	SS50	-18.5	E	8.5	5	10	↗⊙	10As
	21	SS60	-25.4	ESE	7.8	5	10	↗⊙	10Cs
16	09	SS60	-24.1	ESE	8.8	2	10	↗⊙	10Cs
	15	SS65	-20.0	E	8.2	10	3	↗⊙	3Ci
	21	SS75	-27.0	ESE	8.0	3	3	⊙	3Ci
17	09	SS75	-25.2	E	10.4	20	1	○	1Ci
	15	SS75	-22.6	ESE	9.2	5	1	↗⊙	1Ci
	21	SS75	-28.1	E	6.5	20	8	↗⊙	8Cc
18	12	SS75	-24.8	E	10.0	5	8	↗⊙	8Cs
	15	SS75	-23.4	E	10.5	5	10	↗⊙	9Ci 1Cs
	21	SS75	-28.2	ESE	7.2	20	10	↗⊙	9Ci 1Cs
19	09	SS75	-27.0	ESE	8.0	5	10	↗⊙	10Cs
	15	SS82	-24.5	ESE	10.0	5	10	↗⊙	10Cs
	21	SS92	-29.6	E	6.5	30	9	↗⊙	9Ci
20	21	SS100	-33.0	E	5.5	30	0+	○	0+Ci
21	09	SS100	-30.2	E	8.0	30	1	○	1Ci
	21	SS100	-33.1	ESE	3.7	30	1	○	1Cs
22	09	SS100	-30.1	ESE	5.3	30	1	○	1Ci
	21	SS100	-32.0	ESE	4.0	30	0	○	
23	09	SS100	-32.0	ESE	4.5	30	0	○	
	21	SS100	-32.8	ESE	3.2	30	0	○	
24	09	SS100	-30.2	E	8.0	10	0.5	*↗	10Cs
	21	SS100	-32.4	ESE	3.5	30	1	○	1Cs
25	09	SS100	-28.8	E	6.7	0.5	10	*↗	10As
	21	SS100	-31.1	ESE	4.8	30	4	⊙	4Ci
26	21	SS100	-28.0	E	5.2	0.5	10	↗⊙	7Ac 3As
27	12	SS100	-23.2	E	12.3	0.5	10	*↗	10As
	21	SS100	-24.5	E	5.3	5	10	*	10As
28	21	SS100	-25.1	E	5.0	5	10	↗⊙	10As
29	09	SS100	-23.5	E	7.1	1	10	↗⊙	10As
	21	SS100	-24.8	ESE	3.5	30	10	↗⊙	10Cs

Date	LT	Station	Ta	WD	WS	V	N		W
30	09	SS100	-25.5	ESE	12.3	0.5	10	↗⊙	10Cs
	21	SS100	-28.0	ESE	10.0	2	2	↗⊙	2Cs
Dec. 1	09	SS100	-26.0	ESE	10.1	2	0+	↗⊙	0+Ci
	21	SS100	-28.0	ESE	9.0	2	1	↗⊙	1Ci
2	21	SS100	-27.8	ESE	7.0	30	0	↗⊙	
3	09	SS100	-25.0	ESE	6.5	30	0	↗⊙	
	21	SS100	-29.0	ESE	3↓	30	0	○	
4	21	SS100	-30.8	ESE	3↓	30	0	○	
5	21	SS100	-29.2	ESE	4.0	30	0	○	
6	09	SS100	-27.5	ESE	11.0	0.5	4	↗⊙	4Cs
	15	YG 6 7	-24.0	ESE	10.5	1	6	↗⊙	6Cs
	21	YG 6 25	-27.0	ESE	8.0	3	2	↗⊙	2Cs
7	09	YG 6 25	-27.3	ESE	10.7	0.5	10	↗⊙	10Cs
	15	YG 6 37	-24.0	ESE	12.1	1	8	↗⊙	8Cs
	21	YG 6 55	-26.0	E	7.8	30	0	↗⊙	
8	09	YG 6 55	-25.9	E	8.5	1	6	↗⊙	6Cs
	15	YG 6 70	-22.5	E	7.8	1	8	↗⊙	5Cs 3Ci
	21	YG 6 85	-25.0	E	3.5	30	1	○	1Ci
9	09	YG 6 85	-23.3	E	8.0	5	9	↗⊙	9Ac
	15	YG 6 100	-18.8	E	6.8	5	10	*	10Ac
	21	K22	-19.0	E	3↓	30	10	⊙	10Ac
10	09	K22	-17.8	E	8.0	2	10	↗⊙	10Ac
	21	K3	-17.2	E	9.0	30	0	○	
11	09	K3	-17.8	E	13.2	1	10	↗⊙	10Cs
	21	K3	-16.0	E	7.6	30	10	⊙	10Cs
12	21	K3	-16.2	E	9.8	30	10	⊙	10Cs
13	09	K3	-15.8	E	7.8	20	10	⊙	10As
	21	K3	-16.8	E	10.1	30	1	○	1Ci
14	21	K3	-16.8	E	6.2	30	1	○	1Ci
15	09	K3	-16.0	E	8.2	30	10	⊙	10Cs
	21	K12	-15.8	E	8.3	30	8	⊙	8Cs
16	09	K12	-18.0	E	10.8	1	10	↗⊙	10Cs
	21	K12	-17.3	E	12.4	1	10	↗⊙	10Cs
17	13	K12	-16.2	E	15.0	1	10	↗⊙	10Cs
	21	K12	-18.1	E	12.8	30	10	⊙	10Ci
18	11	K12	-17.2	E	11.8	30	0	○	
	23	K22	-19.2	E	6.0	30	0	○	
19	09	K22	-17.3	E	5.8	30	4	⊙	4Cc
20	21	K32	-18.1	E	5.0	30	10	⊙	10Cs
21	09	K32	-19.0	E	8.3	5	10	↗⊙	10Cs
	21	K32	-18.0	E	4.8	10	10	*	10Cs
22	21	K3	-15.8	E	7.8	30	5	⊙	5Cs
23	09	K3	-18.0	E	11.2	30	0	○	
	21	K3	-17.0	E	13.4	30	1	○	1Ci
24	12	K3	-16.4	E	12.0	30	0	○	
	21	K3	-17.0	E	13.0	30	0	○	
25	11	K3	-12.0	E	9.7	30	10	⊙	10Ci
	21	RY12	-12.0	E	5.0	30	10	⊙	10As

Date	LT	Station	Ta	WD	WS	V	N		W
26	21	M.B.S.	-15.6	E	7.0	30	3	⊙	1Sc 2As
27	21	M.B.S.	-16.7	E	17.0	0.5	10	*↔	10As
28	10	M.B.S.	-13.8	E	16.3	0.2	10	*↔	10As
	21	M.B.S.	-14.2	E	12.5	0.5	10	*↔	10As
29	11	M.B.S.	-15.0	E	15.3	0.5	10	*↔	7As 3Cs
	21	M.B.S.	-17.0	E	13.5	1	10	*↔	10Ac
30	09	M.B.S.	-16.0	E	10.5	2	4	↔⊙	4Cs
	21	M.B.S.	-16.3	E	9.5	2	8	↔⊙	8Cs
31	10	M.B.S.	-16.0	E	10.1	1	10	↔⊙	10Cs
	21	M.B.S.	-15.2	E	5.3	30	8	⊙	1Sc 7Ci
Jan. 1	21	M.B.S.	-16.4	E	6.7	30	9	⊙	9Ac
2	09	M.B.S.	-15.1	E	6.0	5	6	↔⊙	6Sc
3	21	M.D	-9.0		Calm	30	4	⊙	4Ci
4	09	M.D	-10.0	E	5.3	30	4	⊙	4Ci
	21	RY12	-14.7	E	4.0	30	8	⊙	8Ac
5	09	RY12	-14.2	E	7.8	30	0	○	
	21	RY25	-15.8	E	7.6	30	0	○	
6	09	RY25	-15.0	E	10.1	0.5	10	*↔	10Cs
	13	RY25	-13.2	E	11.8	0.1	10	*↔	10Cs
	21	RY25	-14.0	E	15.0	0.05	10	*↔	10As
7	12	RY25	-9.7	E	10.5	0.1	10	*↔	10As
	21	RY25	-11.2	E	7.5	0.2	10	*↔	10As
8	09	RY25	-9.8	E	5.0	30	10	↔⊙	10Ac
	23	RY57	-19.0	SE	7.0	30	2	⊙	2Cs
9	09	RY57	-16.4	E	9.6	2	3	↔⊙	3Cc
	21	RY57	-15.4	E	3.8	30	10	↔⊙	2As 8Cs
10	09	RY57	-15.3	E	8.0	10	2	↔⊙	1As 1Cc
	21	RY85	-18.0	E	5.2	30	6	⊙	6As 1Cc
11	09	RY85	-18.3	E	8.8	0.5	6	↔⊙	6Cc
	21	RY85	-19.0	SE	13.5	1	0	↔⊙	
12	09	RY85	-18.0	SE	17.6	0.05	0	↔⊙	
	21	RY85	-19.0	ESE	9.7	5	0	↔⊙	
13	09	RY85	-17.2	ESE	7.4	2	10-	↔⊙	10As
	21	RY90'	-19.3	ESE	7.1	20	10-	↔⊙	10Ac
14	09	RY90'	-19.2	ESE	7.5	10	4	↔⊙	4Ci
	21	RY110	-15.6	ESE	4.5	30	10	⊙	1As 9Cs
15	09	RY110	-16.1	ESE	9.8	20	10	↔⊙	10Cs
	21	B.Mts	-9.8	ESE	14.0	30	8	⊙	8Cs
16	09	B.Mts	-8.9	ESE	7.5	30	10	⊙	3As 7Cs
	21	RY110	-12.4	ESE	4.2	30	3	⊙	3As
17	21	RY135	-12.0	ESE	4.6	30	2	⊙	2Cs
18	21	RY135	-11.2	ESE	6.3	30	10-	⊙	10-Ac
19	09	RY135	-13.5	ESE	9.7	5	10-	↔⊙	10-Ac
	21	RY175	-9.0	SE	3.2	30	10	⊙	10Ac
20	09	RY175	-10.0	SE	8.3	30	5	⊙	5Ac
	21	RY190	-5.1	SSE	6.2	30	5	⊙	5Cc
21	09	RY190	-8.0	SSE	9.3	30	5	⊙	5Ci
	21	RY218	-3.9	SSE	3↓	30	0	○	

Date	LT	Station	Ta	WD	WS	V	N	W
22	09	RY218	-4.2	SSE	7.0	30	0	○
	21	RY232	-4.9	SE	7.2	30	5	⊙
23	09	RY232	-6.1	SE	7.3	20	10	⊕
	21	Asuka	-6.0	ESE	8.9	30	10	⊙
24	21	Asuka	-6.6	ESE	11.6	30	4	⊕
25	09	Asuka	-7.0	ESE	10.2	20	2	⊕
	21	Asuka	-7.3	ESE	10.8	20	4	⊕
27	09	Asuka	-7.0	ESE	12.5	0.5	0	⊕
	21	Asuka	-3.3	ESE	12.7	10	9	⊕
28	12	Asuka	-3.0	ESE	12.8	20	4	⊕
	21	Asuka	-2.1	ESE	3↓	30	5	⊙
29	09	Asuka	-3.4	ESE	3↓	30	1	○
	21	Asuka	-1.8	ESE	4.0	30	0+	○
30	09	Asuka	-2.8	ESE	8.0	30	0+	○
	21	Asuka	-7.8	ESE	9.8	10	1	⊕
31	09	Asuka	-12.0	ESE	18.5	0.2	0	⊕
	21	RY257	-11.2	ESE	11.0	0.5	1	⊕

Date	LT	Station	Ta	WD	WS	V	N	W
Jan.31	21	RY257	-12.0	ESE	11.0	0.2	1	⊕
Feb. 1	09	RY257	-10.3	ESE	10.1	2	2	⊕
	21	RY257	-10.2	ESE	10.5	5	4	⊕
2	09	RY257	-12.3	ESE	10.3	20	2	⊕
	21	RY257	-10.1	ESE	11.5	5	10	⊕
3	09	RY257	-8.5	ESE	6.3	20	9	⊙
	21	RY257	-12.8	ESE	3.2	30	2	⊙
5	09	RY257	-10.2	ESE	8.0	30	1	○
	21	L30	-8.3	ESE	5.1	30	5	⊙
6	12	L30	-6.0	ESE	10.0	0.5	10	✕
	21	L30	-5.4	ESE	10.2	0.4	10	✕
7	09	L30	-5.0	ESE	10.8	0.4	10	✕
	21	L30	-6.0	ESE	9.8	0.5	10	✕
8	09	L30	-6.0	ESE	8.7	5	10	⊕

Date	LT	Station	Ta	WD	WS	V	N	W
Mar.31	21	SZ8'	-29.3	E	15.0	0.5	0	⊕
Apr. 1	18	SZ31	-32.0	E	10.5	2	1	⊕
	2	18	SZ31	-33.0	E	15.0	0.2	5
	4	18	G16	-27.0	E	8.5	0.5	10
	6	09	G16	-35.0	E	12.5	0.1	10-
	7	09	G16	-27.0	ENE	7.8	0.05	10
	8	14	G16	-36.0	E	12.0	0.05	0
	9	10	G16	-37.2	E	13.0	0.1	0
	10	10	G16	-40.5	E	15.5	0.05	0
	11	11	G16	-39.0	E	18.0	0.05	0

Table IV-2. Surface meteorological data by the airborne party during Nov. 14, 1986 - Dec. 29, 1986.

Date	LT	Station	Ta	WD	WS	V	N	W
Oct. 14	21	H162	-29.0	E	14.0	0.1	10	*↗
15	09	H162	-24.0	ENE	9.0	0.1		↗
	15	H162	-21.0	E	9.0	0.1		↗
	21	H162	-23.0	E	5.5	1		↗⊙
16	06	H162	-32.5	E	3.0	30	0	○
	09	H164	-28.0	E	6.0	30	0	○
	15	H232	-26.0	E	5.0	30	0	○
	22	Z6	-36.0	E	9.0			↗○
17	09	Z6	-34.0	E	9.0	2		↗○
	15	Z62	-31.5	E	7.0	10		○
20	09	M/S	-32.0	E	11.0	2	1	↗○
	15	YM9	-29.0	E	12.0	1		↗⊙
	21	YM19	-33.0	E	8.5	2		↗
21	09	YM20	-27.0	E	9.5	0.2	9	↗⊙
	15	YM34	-24.0	E	7.0	1		↗⊙
	21	YM44'	-29.0	E	8.0	2	9	↗⊙
22	09	YM44'	-26.8	E	5.0	4	4	⊙
	15	YM59	-25.1	NE	4.5	20	0+	○
	21	YM75	-33.5	E	3.5	2	9	⊙
23	09	YM75	-28.8	E	3.0	10	7	⊙
	15	YM88	-25.1	E	4.8	5	6	↔⊙
	21	YM103	-31.5	E	4.5	5	4	⊙
24	09	YM104	-31.5	E	6.5	1	9	↗⊙
	15	YM121	-29.6	E	4.5	5	4	↔⊙
	21	YM128	-37.4	E	3.0		6	⊙
25	09	YM128	-31.5	ESE	7.0	0.4		↗⊙
	15	YM138	-27.5	E	7.0	0.03		↗
	21	YM138	-31.6	E	7.0	0.02		↗
26	09	YM138	-31.2	E	7.5	0.03		↗
	15	YM142	-29.0	ESE	10.0	0.4		↗○
	21	YM157	-34.5	SE	10.0	1		↗○
27	09	YM157	-30.7	E	11.0	0.03		↗⊙
	15	YM157	-25.5	E	11.0	0.03		↗
	21	YM157	-29.0	E	8.5	0.1		↗⊙
28	09	YM157'	-30.7	E	9.5	0.1	9	↗⊙
	15	YM171	-26.3	E	10.8	0.4	2	↗⊙
	21	YM179	-28.5	E	10.0	20	1	↗○
29	08		-30.2	ESE	10.0	20	1	↗○
	09		-29.0	ESE	10.0	30	0	↗○
	10		-28.0	ESE	10.0	30	0	○
	21		-28.5	E	9.8	30	0	○
30	09		-28.5	ESE	10.7	2	5	↗⊙
	16		-23.1	ESE	9.5	2	10	⊙
	21		-25.0	E	8.5	2	10	⊙
31	08		-24.0	E	8.0	0.2	10	↗⊙
	15		-20.0	E	10.0	0.2	10	↗⊙
	21	YM179	-23.0	E	14.5	0.01	10	*↗

Date	LT	Station	Ta	WD	WS	V	N	W
Nov. 1	08	YM179	-22.0	E	18.0	0.01	10	*↔
	15		-18.2	ESE	13.5	0.02	9	↔⊙
	21		-21.2	E	7.5	0.05	9	↔⊙
2	09		-26.5	ESE	14.0	0.03	0	↔○
	15		-23.0	ESE	14.0	0.2	0	↔○
	21		-28.0	ESE	14.0	0.2	0	↔○
3	09		-24.4	ESE	14.0	0.2	0	↔○
	15		-18.2	ESE	17.0	1	0	↔○
	21		-20.0	ESE	7.0	20	5	⊙
4	08		-23.6	E	7.0	20	3	⊙
	15		-21.1	ENE	8.0	20	9	⊙
	21		-24.3	E	9.0	0.4	9	↔⊙
5	09		-25.5	ESE	18.0	0.02		↔⊙
	21		-25.0	ENE	13.0	0.03	1	↔○
6	09		-25.0	E	16.0	0.05		*↔
	15		-21.7	ENE	18.5	0.03		*↔
	21		-26.0	ENE	14.0	0.03		*↔
7	09		-19.2	E	15.0	0.01		*↔
	15		-16.0	E	12.0	0.02		*↔
	21		-19.2	E	8.5	0.02		*↔
8	09		-20.4	ENE	8.0	0.6	8	↔⊙
	15		-15.6	E	4.0	20	2	⊙
	21		-23.5	E	4.0	20	2	⊙
9	09		-23.0	ESE	11.0	0.2	2	↔⊙
	15		-18.0	E	10.0	20	0	↔○
	19		-21.0	E	10.0	0.4	0	↔○
	21		-23.0	E	11.5	0.4	0	↔○
10	09		-26.5	ESE	14.5	0.4	1	↔○
	15		-22.0	E	13.0	0.4	1	↔○
	21		-24.2	E	9.5	1	9	↔⊙
11	09		-22.5	E	10.0	0.1	10	↔⊙
	15		-19.5	E	8.5	0.2	10	↔⊙
	21		-25.6	E	13.0	0.4	8	↔⊙
12	09		-24.0	ESE	14.0	0.4	8	↔⊙
	15		-21.0	ESE	11.0	0.4	8	↔⊙
	21		-24.6	ESE	12.5	0.4	8	↔⊙
13	09		-25.3	ESE	15.0	0.2	4	↔⊙
	15		-21.2	E	18.5	0.1	1	↔○
	21		-25.0	ESE	18.0	0.1	0	↔○
14	08		-25.2	ESE	23.0	0.05	0	↔○
	15		-20.0	E	15.5	0.1	0	↔○
	21		-23.0	E	14.0	0.4	0	↔○
15	09		-20.8	E	17.0	0.2	8	↔⊙
	15		-26.0	E	12.0	5	10-	↔⊙
	19		-18.0	ENE	12.0	5	10-	↔⊙
	21	YM179	-20.0	E	11.5	10	7	↔⊙

Date	LT	Station	Ta	WD	WS	V	N	W
Nov.16	09	YM179	-19.7	E	11.5	5	2	☉
	21		-20.3	E	10.0	20	1	☉
17	09		-20.0	ESE	12.5	10	0	☉
	15		-16.5	E	12.5	20	0	☉
18	21		-18.3	ESE	11.5	20	0	☉
	09		-21.8	E	13.5	2	1	☉
	16	RY4	-16.0	ESE	13.0	30	3	☉
19	21	RY19	-18.2	E	11.0	30	9	☉
	09	RY19	-20.0	E	10.0	30	10	☉
	15	RY32	-17.0	E	9.5	1	7	☉
20	21	RY46	-18.2			30		☉
	09	RY46	-20.0	ESE	8.0	30	4	☉
	15	RY50	-18.5	ENE	9.0	30	4	☉
21	21	RY65	-22.0	E	7.5	20	9	☉
	09	RY65	-22.5	E	11.0	20	8	☉
	15	RY78	-18.1	E	9.0	10	3	☉
22	21	RY95'	-24.1	E	5.0	30	0	☉
	09	RY95'	-23.0	E	7.0	30	1	☉
	15	RY107'	-16.3	E	6.0	30	1	☉
23	21	RY122'	-20.5	ESE	4.5	30	1	☉
	09	RY122'	-24.7	ESE	3↓	30	0	☉
	15	RY138	-16.2	ESE	4.0	30	0	☉
24	09	RY150	-22.5	SE	5.0	30	0	☉
	15	RY169	-16.3	SE	7.5	30	0	☉
	21	RY182	-14.0	ESE	6.0	30	0	☉
25	09	RY182	-15.0	ESE	9.5	20	9	☉
	15	RY199	-8.5	E	5.0	10	10-	☉
	21	RY230	-10.9	ESE	4.0	30	5	☉
26	09	RY230	-14.0	SE	11.0	5	5	☉
	21	Asuka	-12.4	E	4.0	30	2	☉
27	09		-9.2	E	7.0	30	4	☉
	21		-12.3	E	4.5	30	1	☉
28	09		-10.6	E	9.0	30	4	☉
	15		-6.7	ESE	7.0	30	8	☉
	21		-12.6	E	3↓	30	3	☉
29	07		-12.6	E	6.5	30	1	☉
	08		-11.0	E	5.0	30	1	☉
	09		-9.0	E	5.0	30	1	☉
	11		-7.8	E	9.5	30	2	☉
	12		-6.0	E	9.5	30	3	☉
	13		-5.0	E	10.5	30	3	☉
	14		-5.2	ESE	11.0	30	3	☉
	15		-5.2	ESE	10.0	30	2	☉
30	21		-10.8	ESE	6.2	30	3	☉
	08		-10.0	ESE	9.5	20	4	☉
Dec. 1	09		-8.8	ESE	9.5	10	7	☉
	15	Asuka	-8.8	ESE	12.0	5	4	☉

Date	LT	Station	Ta	WD	WS	V	N	W
Dec. 1	21	Asuka	-10.5	ESE	10.0	10	4	↻⊙
	2		-9.5	ESE	13.5	4	4	↻⊙
	15			ESE	10.0			↻⊙
	21		-10.3	E	8.0	30	1	○
	3		-8.5	ESE	12.0	30	0	↻⊙
	21		-8.0	ESE	6.0	30	0	○
	4		-9.2	E	11.0	30	0	↻⊙
	21		-10.2	SSW	4.0	30	0+	○
	5		-8.5	ESE	8.5	30	0	○
	15		-6.5	ESE	11.0	2	0	↻⊙
	21		-12.5	SE	4.0	30	0+	○
	6		-9.3	ESE	14.0	20	1	↻⊙
	15		-8.4	ESE	8.5	20	0+	↻⊙
	21		-11.8	E	3↓	30	1	○
	7		-9.0	ESE	9.0	20	0+	↻⊙
	15		-8.3	ESE	10.0	20	1	↻⊙
	21		-11.0	ESE	8.0	30	2	⊙
	8		-7.6	E	8.5	30	1	↻⊙
	21		-10.0	ESE	8.0	30	0	○
	9		-9.0	ESE	9.0	20	4	↻⊙
	12		-11.0	ESE	3↓	30	2	⊙
	13		-11.0	ESE	3↓	30	5	⊙
	14		-7.5	ESE	5.0	30	3	⊙
	15		-6.8		10.0	30	2	⊙
	21		-8.4	ESE	8.0	30	3	⊙
	16		-7.0		4.5	30	9	⊙
	17		-7.5	ESE	11.0	30	7	↻⊙
	15		-4.8	E	9.0	30	4	↻⊙
	18		-6.5	ESE	10.0	20	5	↻⊙
	19		-4.6	ESE	7.5	30	6	⊙
	19		-7.5	ESE	11.0	10	1	○
	12		-6.2	ESE	9.0	5	1	○
	15		-6.0	ESE	8.5	30	1	○
	18		-5.5	E	5.5	30	1	○
	21		-8.0	ESE	3↓	30	1	○
	20		-8.5	E	5.5	30	1	○
	09		-7.0	ESE	9.0	30	1	○
	12		-5.2	ESE	9.0	30	1	○
	15		-5.9	E	7.5	30	1	○
	18		-6.1	ESE	5.5	30	1	○
	21		-8.2	ESE	3.5	30	3	⊙
	21	Asuka	-10.1	ESE	7.0	30	3	⊙
	09		-8.6	ESE	8.5	30	3	⊙
	12		-7.3	E	8.5	30	4	⊙
	15		-6.0	E	7.5	10	9	⊙
	18		-6.9	ESE	8.0	10	7	⊙
	21		-8.0	ESE	6.5	10	10	⊙

Date	LT	Station	Ta	WD	WS	V	N	W
Dec. 22	08	Asuka	-8.5	E	8.0	1	9	☉
	09		-8.9	E	7.5	5	10	☉
	12		-6.1	ESE	9.0	30	8	☉
	15		-5.1	E	9.5	30	6	☉
	18		-5.4	ESE	6.0	30	6	☉
	21		-7.6	ESE	3↓	30	6	☉
23	08		-9.1	ESE	6.5	30	5	☉
	09		-7.5	ESE	8.0	30	8	☉
	12		-6.6	ESE	9.5	30	5	☉
	15		-5.2	ESE	7.0	30	1	○
	18		-5.4	ESE	4.0	30	1	○
	21		-7.9	ESE	4.0	30	1	○
24	08		-10.0	ESE	12.0	10	0	○
	12		-7.5	ESE	11.0	30	0	○
	15		-5.5	ESE	9.0	30	1	○
	18		-5.9	ESE	6.5	30	1	○
	21		-9.6	ESE	6.0	30	1	○
25	08		-9.5	ESE	9.0	30	3	☉
	09		-9.0	ESE	9.0	30	3	☉
	12		-6.5	ESE	8.5	30	4	☉
	15		-5.0	E	7.5	30	5	☉
	18		-5.5	ESE	4.0	30	8	☉
26	08		-7.9	ESE	5.0	30	2	☉
	09		-7.0	ESE	6.5	30	6	☉
	10		-7.0	ESE	10.0	30	3	☉
	12		-6.5	E	8.0	30	3	☉
	15		-4.5	ESE	9.0	30	9	☉
	18		-4.0	ESE	8.0	30	8	☉
27	08		-3.9	ESE	8.0	30	3	☉
	09		-5.6	ESE	8.0	30	2	☉
	12		-7.2	ESE	6.5	30	1	○
	15		-6.4	ESE	9.0	30	1	○
	18		-4.5	ESE	9.0	30	1	○
	21		-3.5	ESE	9.0	30	0	○
28	08		-3.5	ESE	8.0	30	1	○
	09		-6.4	ESE	8.0	30	2	☉
	12		-6.4	ESE	8.0	30	2	☉
	15		-6.5	E	11.5	0.05	10	*↕
	18		-5.0	ESE	13.0	0.05	10	*↕
	21		-4.1	ESE	12.5	0.05	10	*↕
29	08		-4.5	E	11.0	0.05	10	*↕
	09		-6.0	E	10.0	0.05	10	*↕
	12		-6.0	E	8.0	0.2	10	↕☉
	15		-5.9	ESE	10.0	0.2	10	↕☉
	18	Asuka	-5.4	ESE	10.5	10	4	☉
		-4.5	ESE	10.0	10	9	☉	
		-5.5	ESE	10.0	30	2	☉	

V. Temperature Profiles in Surface Snow Layer at Mizuho Station

Observer: Hirokazu OHMAE

The measurements were made using platinum resistance thermometers placed in metal pipes, which were installed in 1980 by Wada et al. (1981) at several depths in a surface snow layer. A spot reading of the resistance for each thermometer was made approximately twice a month with a standard digital voltmeter as was described by Nakawo et al. (1984).

The change in the levels of the thermometers was monitored during the observation period in 1986. The difference between the lowest and the highest surface levels, however, was as small as 6 cm and the net difference in the layer was 4 cm. Therefore, we considered the change in depths of the thermometers was negligible (Fujii et al., 1986).

References

- Fujii, Y., Kawada, K., Yoshida, M. and Matsumoto, S. (1986):
Temperature profiles in surface snow layer at Mizuho Station.
JARE Data Rep., 116 (Glaciol. 13), 69-70.
- Nakawo, M., Narita, H. and Isobe, T. (1984) : Temperature profiles
in surface snow layer at Mizuho Station. JARE Data Rep.,
96 (Glaciol. 11), 79-80.
- Wada, M., Yamanouchi, T., Mae, S., Kawaguchi, S. and Kusunoki, K.
(1981) : POLEX-South data, Part 2. Micrometeorological data
at Mizuho Station, Antarctica in 1979. JARE Data Rep., 62
(Meteorol. 9), 321p.

Table V-1. Temperature profile at Mizuho Station.

Depth in m		1.2	1.7	3.7	5.7	10.7
1986	Feb. 1	-26.4	-27.7	-31.7	-33.8	-33.8
	Mar. 3	-26.5	-27.4	-30.6	-32.9	-32.9
	Mar. 28	-28.1	-28.4	-29.9	-32.4	-33.3
	May 7	-33	-32.5	-31	-32.3	-34.1
	May 29	-34.5	-34	-31.6	-32.6	-33.3
	July 2	-37.2	-36.1	-32.9	-32.6	-32.8
	Aug. 2	-37.8	-36.7	-34	-33.2	-32.9
	Sep. 5	-38	-37.6	-34.9	-33.8	-33