

V. METEOROLOGICAL DATA

Shun'ichi KOBAYASHI*

Observers: Shun'ichi Kobayashi
and Renji Naruse

Surface meteorological observations were carried out three times a day by the traverse party of JARE-14 along the oversnow traverse routes in 1973-1974 (see Fig. A). The periods and routes of the oversnow traverses are shown in Table 1; the items of observation and instruments used are shown in Table 2.

Table 1. The periods and routes of the oversnow traverses.

Period of observation	Route of traverse	Observer	Table No.
15-27 January 1973	Syowa Station ↔ Mizuho Camp	S. Kobayashi	3
1-30 April 1973	Syowa Station ↔ Mizuho Camp	S. Kobayashi	4
10 August-13 October 1973	Syowa Station ↔ Mizuho Camp	S. Kobayashi	5
23-30 August 1973	Mizuho Camp → Syowa Station	R. Naruse	6
10 September -14 October 1973	Syowa Station → Mizuho Camp → Moraine → Syowa Station	R. Naruse	7
10 November 1973 -29 January 1974	Syowa Station ↔ Mizuho Camp ↔ Yamato Mountains	S. Kobayashi	8

* The Institute of Low Temperature Science, Hokkaido University, Sapporo 060.

Table 2. The items of observation and instruments.

Item	Instrument	
	during traverses	at Mizuho Camp
Wind speed	1 portable cup-anemometer	1 windmill-type anemometer
Wind direction	1 magnetic compass	"
Air temperature	1 sling thermometer	1 platinum-resistor-wire thermometer
Atmospheric pressure	1 aneroid barometer (Thommen)	1 aneroid barometer

Methods and the accuracy of the instruments are almost the same as those described in JARE Data Reports, No. 17 (Ageta and Fukushima, 1972).

Notations in Tables

- L. T. : Local standard time at Syowa Station (69°00'S; 39°35'E):
(L. T.) = (G. M. T. + 3 hours)
- St. No. : Station number (The position and elevation of station are tabulated in report II of this volume.)
- U : Wind speed at 1.5 m height
- D : Wind direction (north: 360°) in true
- p : Pressure at the surface of the ice sheet
- T : Air temperature
- N : Amount of cloud in tenths
- C_L, C_M, C_H: Genus of cloud (WMO code)
- Nc : Amount and genus of an individual cloud
- W : Present weather
- : Clear (☉: Without any clouds)

- ① : Fine
 ② : Cloudy (High clouds are predominant.)
 ③ : Cloudy (Middle clouds are predominant.)
 ④ : Cloudy (Low clouds are predominant.)
 (①̄ , ②̄ , ③̄ : The clouds concerned cover the whole sky.)
 * : Snow
 *↗ : Snow storm
 ↗ : Blowing snow
 ↘ : Drifting snow
 ↔ : Ice needles (Ice prisms)
 ⇄ : Ice fog
 V : Visibility

Reference

Ageta, Y. and Y. Fukushima (1972): Surface meteorological data of the Mizuho Plateau-West Enderby Land area, East Antarctica, 1969-1971. Glaciological Research Program in Mizuho Plateau-West Enderby Land, Part 1, 1969-1971. JARE Data Rep., 17 (Glaciology), 135-167.

Table 3. Surface meteorological data along route S-H-Z in 15-27 January 1973.

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
1973													
Jan. 15	15	S 16	<1	calm		- 0.5	0 ⁺	0	0	0	0 ⁺ Ci	○	70
	19	"	3	135°	992.5	- 1.8	0	0	0	0		○	70
	23	"	11	105	992.5	- 6.5	0	0	0	0		○→	70
16	7	"	11	105		- 2.8	1	0	0	1	1Ci	○→	70
	9	S 21	8.5	90		- 1.7	1	0	0	1	1Ci	○→	70
	12	H 30	9	105	973.8	- 1.4	2	0	0	5	1Ci, 1Cs	○→	70
	15	95	8.5	105	949.2	- 5.0	3	0	0	5	1Ci, 2Cs	①	70
	19	165	10	95	920	- 8.5	1	0	0	1	1Ci	○	70
	21	185	10.5	90	911.1	-11.5	1	0	0	1	1Ci	○→	70
17	7	"	10	135	912	-14.3	1	0	0	1	1Ci	○	60
	9	200	10.5	75	910	-11.0	1	0	0	1	1Ci	○	70
	12	255	10	60	895	- 9.6	2	0	0	2	2Ci	○→	60
	15	297	10	60	880	- 9.5	2	0	0	2	2Ci	○→	60
	19	Z 25	7.5	60	863	-13.7	4	0	0	5	1Ci, 3Cs	①→	50
18	9	31	11	60	860	-17.0	4	0	0	5	1Ci, 3Cs	①→	1
	12	65	10	60	854	-15.2	4	0	0	4	4Ci	①→	10
	15	89	9.5	75	850	-14.0	3	0	0	5	1Ci, 2Cs	①→	20
	19	Mizuho											
23	16	"											
	21	Z 79	6	75	853	-14.2	6	0	0	9	6Cc	①→	10
24	9	"	9.5	105	853	-17.5	1	0	0	1	1Ci	○	50
	15	30	10	105	864	-12.5	3	0	0	2	3Ci	①→	10
	21	S 122	5.5	105	880	-16.2	1	0	0	1	1Ci	○	40

Date	L. T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
1973													
Jan. 25	9	S 122	10	105°	885	-13.0	10	0	2	ẋ	10As	⊙ ↔	0.5
	15	H 256	5	60	904	- 8.5	9	0	2	3	8As, 1Ci	⊙	5
	21	222	4	75	915	-11.0	8	0	2	x	8As	⊙	10
26	9	200	6	75	922	-12.0	1	0	0	1	1Ci	○	40
	15	128	4	75	945	- 7.2	1	0	0	1	1Ci	○	40
	21	79	2	90	962	-12.7	1	0	0	1	1Ci	○	30
27	9	"	5.5	75	973	-12.4	2	0	0	1	2Ci	○	40
	16	S 30	6	60		- 7.5	1	0	0	1	1Ci	○	40

Table 4. Surface meteorological data along route S-H-Z in 1-30 April 1973.

Date	L. T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	CL	CM	CH	NC	W	V (km)
1973													
Apr. 1	13	S 16	12			-13						↗	
	21	17	21	90°	900	- 9.5						* ↗	
2	9	"	20	120	898	- 8.5	9		2		3Ac, 7As	* ↗	0.03
	15	"	24	150	902	- 9.0	x	x	x	x		* ↗	0.01
	21	"	25	120	900	-10						* ↗	
3	14	"	25	60	905	- 7.5	x	x	x	x		* ↗	0.005
	4	"	21	60	903	- 6.5	x	x	x	x		* ↗	0.01
5	22	"	16	45	910	- 4.5						* ↗	
	12	"	20	60	910	- 7.5	x	x	x	x		* ↗	0.01
	18	"	16	75	908	- 7.5	x	x	x	x		* ↗	0.05
6	12	"	22	90	917	-10	3	0	3	0	2Ac, 1As	⊙ ↗	0.03
	18	"	20	75	920	-12	2	0	3	8	1Ac, 1Cs	⊙ ↗	0.05
7	9	"	18	75	922	-14.5	3	0	0	5	1Ci, 1Cc, 1Cs	⊙ ↗	0.1
	15	"	25	90	915	-12.5	x	x	x	x		* ↗	0.01
	18	"	30	90	915	- 9	x	x	x	x		* ↗	0.005
8	12	"	30	90	904	- 9	x	x	x	x		* ↗	0.002
	9	"	21	75	904	- 9.5	10	4	x	x	10Sc	⊙	20
9	15	"	23	90	901	-10	10	4	x	x	10Sc	⊙ ↗	1
	23	"	25	90	900	-11						⊙ ↗	
	9	"	20	60	906	-13	x	x	x	x		↗	0.005
10	15	S 25	13	90	874	-17	6		4	5	3Ac, 1Cs, 1Ci	⊙ ↗	1
	21	H 30	10	90	850	-17						⊙ ↗	
11	9	H 69	7.5	90	842	-21	9	0	2	x	8As, 1Ac	⊗ ↗	5
	15	H160	4	60	810	-24	9	0	8	x	1Ac	⊙ *	2
12	21	H210	3	75	795	-26.7						⊙ *	
	9	H228	3	75	785	-23.5	10	x	x	x	White out, halo	⊙ *	1

Date	L. T.	St. No.	U (m/s)	D	p (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
1973													
Apr. 12	15	Z 3	9	75°	755	-28.5	9	0	7	2	1Ac, 2Ci	⊕ →	2
	21	Z 20	11	75	748	-33.0						* →	
13	9	Z 21	14	75	752	-32.0	7	0	3	1	5Ac, 1Ci, 1Cc	⊕ →	0.2
	15	Z 60	15	90	742	-36	0	0	0	0		○ →	0.2
	23	Z 85	14	90	735	-40						○ →	
14	9	Z 88	12	90	735	-34	0	0	0	0		○ →	0.5
	15	Mizuho	9		730		1	0	1	0	1Ac	○ →	1
15	9	"	12	90		-40	2	0	2	8	4As, 1Cs	○ →	0.4
16	9	"	10	105	730	-46	0	0	0	0		○ →	1
17	9	"	12	105	734	-42	3	0	0	8	1Cs	⊕ →	0.1
18	9	"	15	105	736	-36	10	x	x	x		* →	0.05
19	9	"	14	105	728	-40	0	0	0	0		○ →	0.1
20	9	"	11	105	734	-36	8	0	2	0	8As	⊗ →	0.05
21	9	"	16	105	727	-38	0	0	0	0		○ →	0.1
22	12	"	15	105	735	-38	2	0	0	8	2Cs	○ →	0.1
23	10	"	11	120	737	-42	3	0	0	9	3Cc	○ →	0.3
24	9	"	12	105	736	-42	0	0	0	0		○ →	0.1
25	9	"	13	105	725	-45	0	0	0	0		○ →	0.05
	15	Z 90	10	90	730	-42	0	0	0	0		○ →	0.1
	21	Z 60	12	90	739	-43.5						○ →	
26	9	"	12	90	739	-43	3	0	1	9	1As, 2Cc	○ →	0.3
	15	Z 35	10	90	746	-40.5	2	0	0	1	2Ci	○ →	1
	21	S 122	11	90	764	-37						○ →	
27	9	"	10	90	770	-42	1	0	0	1	1Ci	○ →	1
	15	H 204	3.5	105	803	-34.5	4	0	1	9	2As, 2Cs	⊕ →	10
	21	H 133	10	75	826	-30						⊕ →	

Date	L. T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	CL	C _M	C _H	N _C	W	V (km)
Apr. 28	9	H 130	11	105°	820	-37.5	2	0	1	1	1As, 1Ci	○ ↗	0.1
	15	H 90	13	90	833	-25	3	0	1	1	1As, 2Ci	○ ↗	0.1
	21	"	15	90	835	-22						○ ↗	
29	9	"	13	90	837	-22	4	0	3	0	1Ac	⊕ ↗	0.5
	15	S 23	11	90	889	-18.2	5	0	5	1	4Ac, 1Ci	⊕ ↗	10
30	21	S 16	8	75	922	-17						○	
	9	"	7	75	917	-22	1	0	0	1	1Ci	○	30

Table 5. Surface meteorological data along route S-H-Z and at Mizuho Camp in 10 August-13 October 1973.

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
1973													
Aug.10	15	S 18	10	105°		-30.5	1	0	0	1	1Ci	○ ↗	20
	21	S 27	11	60	880	-30.0	2					○ ↗	
11	9	"	14	60	883	-26.5	2	0	0	2	2Ci	○ ↗	2
	15	H 55	12	75	857	-31.0	4	0	3	3	2Ac, 2Cc	⊖ ↗	1
	21	H 82	11	90	845	-33.0	2					⊖ ↗	
12	9	"	7	90	842	-36.0	2	0	3	1	1Ac, 1Ci	○ ↗	15
	15	H160	6	120	815	-37.0	5	0	5	3	2Ac, 1As, 1Cc, 1Ci	⊖	10
	21	H204	5	90	804	-39.0	4					⊖	
13	9	"	4	75	808	-39.5	2	0	3	1	1Ac, 1Ci	○	20
	15	H250	5	75	796	-40.0	3	0	3	1	2Ac, 1Ci	○	15
	21	H278	3	90	790	-41.0	2					○ ↖	
14	9	"	12	90	788	-40.5	1	0	3	0	1Ac	○ ↗	0.1
	15	Z 10	13	90	767	-45.0	1	0	0	1	1Ci	○ ↗	0.1
	21	Z 21	14	105	760	-49.0	2					○ ↗	
15	9	"	15	90	752	-52.0	0	0	0	0		○ ↗	0.1
	15	"	16	105	751	-51.5	0	0	0	0		○ ↗	0.1
	21	"	14	90	751	-50.0	0	0	0	0		○ ↗	
16	9	"	14	105	755	-44.0	0	0	0	0		○ ↗	0.05
	15	"	14.5	90	755	-43.0	0	0	0	0		○ ↗	0.05
	21	"	13	75	751	-44.0	0	0	0	0		○ ↗	
17	9	"	10	75	748	-44.5	0	0	0	0		○ ↗	0.1
	15	Z 39	15	90	738	-43.0	0	0	0	0		○ ↗	0.03
	21	Z 80	14	90	732	-45.0	0	0	0	0		○ ↗	
18	9	"	17	90	730	-43.5	x	x	x	x		↗	0.03

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Aug.18	15	Z 80	18	90°	722	-40.0	x	x	x	x		↑	0.02
	21	"	18	90	720	-37.5	x	x	x	x		① ↑	
19	9	"	10	90	720	-37.0	0	0	0	0		○ ↑	0.1
	15	Mizuho	10	105		-42.5	2	0	3	1	3Ac, 1Ci	○ ↑	0.1
20	21	"	12	105	715	-45.0	0	0	0	0		○ ↑	
	9	"	14	115	710	-45	x	x	x	x		↑	0.05
	15	"	12	"	707	-46	x	x	x	x		↑	0.1
21	21	"	10	"	706	-47						○ ↑	
	9	"	10	"	705	-51	0	0	0	0		○ ↑	0.2
22	15	"	12	"	705	-50	1	0	1	1	1As, 1Ci	○ ↑	0.2
	21	"	13	"	707	-51						○ ↑	
	9	"	14	"	707	-52	0	0	0	0		○ ↑	0.1
	15	"	14	"	708	-51	0	0	0	0		○ ↑	0.1
	21	"	14	"	708	-51	0	0	0	0		○ ↑	
23	9	"	13	"	707	-51	0	0	0	0		○ ↑	0.2
	15	"	11	"	705	-50	0	0	0	0		○ ↑	0.5
24	21	"	10	"	703	-52						○ ↑	
	9	"	9	"	704	-52	0	0	0	0		○ ↑	0.5
	15	"	9	"	703	-53	0	0	0	0		○ ↑	0.5
25	21	"	11	"	703	-55						○ ↑	
	9	"	11	105	706	-53	0	0	0	0		○ ↑	0.5
	15	"	11	"	707	-52	0	0	0	0		○ ↑	0.5
26	21	"	11	"	709	-53	0	0	0	0		○ ↑	
	9	"	13	"	712	-49	x	x	x	x		① ↑	0.05
	15	"	15	"	712	-42	x	x	x	x		① ↑	0.03
	21	"	15	90	710	-35	x	x	x	x		↑	

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
Aug.27	9	Mizuho	15	90°	713	-37	x	x	x	x		↑	0.05
	15	"	14	"	715	-34	x	x	x	x		↑	0.05
	21	"	17	105	716	-37	x	x	x	x		↑	
28	9	"	14	"	716	-40	x	x	x	x		↑	0.05
	15	"	14	"	714	-38	x	x	x	x		① ↑	0.05
	21	"	13	"	715	-36	x	x	x	x		↑	
29	9	"	13	115	715	-40	4	0	2	8	2As, 2Cs	① ↑	0.1
	15	"	12	"	716	-39	6	0	7	6	4Ac, 2Cs	① ↑	0.1
	21	"	14	180	717	-38						① ↑	
30	9	"	12	115	721	-42	1	0	0	1	1Ci	○ ↑	0.5
	15	"	10	"	722	-40	1	0	0	1	1Ci	○ ↓	15
	21	"	10	"	725	-42						○ ↓	
31	9	"	11	135	729	-44	0	0	0	0		○ ↑	1
	15	"	12	"	730	-43	2	0	0	5	2Ci	○ ↓	5
	21	"	13	"	732	-45						○ ↑	
Sep. 1	9	"	12	125	734	-43	0	0	0	0		○ ↑	1
	15	"	13	"	734	-41	0	0	0	0		○ ↑	0.5
	21	"	13	"	734	-41						○ ↑	
2	9	"	13	115	734	-39	2	0	0	9	2Cc	○ ↑	0.5
	15	"	14	"	733	-37	4	0	2	9	3As, 1Cc	○ ↑	0.5
	21	"	14	90	733	-38						○ ↑	
3	9	"	14	"	732	-33	x	x	x	x		○ ↑	0.1
	15	"	15	"	732	-35	x	x	x	x		⊗ ↑	0.05
	21	"	17	"	730	-36						↑	
4	9	"	17	"	730	-33	x	x	x	x		↑	0.05
	15	"	17	"	730	-33	x	x	x	x		⊗ ↑	0.05

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Sep. 4	21	Mizuho	16	90°	731	-36						↑	
5	9	"	15	"	731	-35	10	0	9	x	10Ac	⊙ ↑	0.1
	15	"	13	115	730	-36	4	0	2	8	1Ac, 2As, 1Cs, halo	⊙ ↑	0.2
	21	"	14	"	728	-38						⊙ ↑	
6	9	"	15	"	728	-39	4	0	2	0	4As	⊙ ↑	0.1
	15	"	15	"	729	-35	10	0	9	x	10Ac	⊙ ↑	0.1
	21	"	15	105	730	-35						⊙ ↑	
7	9	"	14	"	734	-31	10	0	9	x	10Ac	⊙ ↑	0.05
	15	"	15	90	734	-29	10	0	9	x	10Ac	⊙ ↑	0.05
	21	"	15	105	735	-30						↑	
8	9	"	15	"	737	-30	x	x	x	x		⊗ ↑	0.05
	15	"	13	90	737	-29	x	x	x	x		⊗ ↑	0.1
	21	"	14	115	736	-31						↑	
9	9	"	14	"	733	-34	10	0	9	x	10Ac	⊙ ↑	0.1
	15	"	15	"	730	-34	10	0	9	x	10Ac	⊙ ↑	0.1
	21	"	17	"	727	-36	x	x	x	x		⊙ ↑	
10	9	"	16	"	724	-37	5	0	0	6	5Cs	⊙ ↑	0.1
	15	"	16	"	724	-36	4	0	0	6	4Cs	⊙ ↑	0.1
	21	"	15	"	724	-40						⊙ ↑	
11	9	"	14	90	724	-40	1	0	0	1	1Ci	⊙ ↑	1
	15	"	14	"	725	-38	3	0	0	5	1Ci, 2Cs	⊙ ↓	5
	21	"	12	"	727	-41						⊙ ↓	
12	9	"	8	"	731	-35	8	0	2	x	8As	⊗ ↓	1
	15	"	8	115	732	-32	10	0	2	x	10As	⊙ ↓	0.5
	21	"	11	"	730	-42						⊙ ↑	
13	9	"	14	"	727	-40	0	0	0	0		⊙ ↑	0.1

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
Sep. 13	15	Mizuho	14	125°	726	-37	0	0	0	0		○ ↗	0.1
	21	"	16	"	726	-42						○ ↗	
14	9	"	16	"	724	-43	0	0	0	0		○ ↗	0.5
	15	"	12	135	722	-41	0	0	0	0		○ ↗	5
21	"	"	13	"	719	-46						○ ↗	
	9	"	13	115	714	-48	0	0	0	0		○ ↗	5
15	15	"	11	90	716	-43	0	0	0	0		○ ↗	10
	21	"	10	"	720	-46						○ ↗	
16	9	"	10	115	725	-48	0	0	0	0		○ ↗	10
	15	"	11	"	726	-43	2	0	0	9	2Cc	○ ↗	5
21	"	"	13	"	727	-45						○ ↗	
	9	"	14	"	728	-42	1	0	0	1	1Ci	○ ↗	1
17	15	"	14	"	728	-40	3	0	0	6	2Cs, 1Ci	○ ↗	0.5
	21	"	14	"	727	-43						○ ↗	
18	9	"	14	90	730	-39	3	0	0	9	3Cc	⊙ ↗	0.1
	15	"	12	"	730	-34	10	x	x	x		⊗ ↗	0.1
21	"	"	11	"	731	-36						↗	
	9	"	9	115	734	-35	10	0	0	7	7Cs	⊗ ↗	2
19	15	"	8	90	734	-33	6	0	0	6	5Cc, 1Ci	⊗ ↗	2
	21	"	9	"	735	-38						⊙ ↗	
20	9	"	9	115	737	-40	1	0	0	1	1Ci	○ ↗	5
	15	"	8	"	738	-37	4	0	3	5	1Ac, 2Cs, 1Ci	⊙ ↗	10
21	"	"	9	"	737	-43						⊙ ↗	
	9	"	12	"	733	-43	1	0	0	1	1Ci	○ ↗	0.5
15	"	"	12	"	730	-39	4	0	0	5	2Cc, 2Ci	⊙ ↗	0.2
	21	"	15	"	726	-44						⊙ ↗	

Date	L.T.	St.No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Sep. 22	9	Mizuho	10	90°	724	-38	10	0	2	x	10As	⊗ ↓	1
	15	"	9	"	722	-38	1	0	0	1	1Ci	○ ↓	10
	21	"	8	"	720	-40						○ ↓	
23	9	"	8	"	730	-40	2	0	0	1	2Ci	○ ↓	10
	15	"	7	"	732	-38	1	0	0	1	1Ci	○	20
	21	"	9	"	732	-43						○ ↓	
24	9	"	10	"	734	-38	10	x	x	x		⊗ ↑	0.2
	15	"	13	"	735	-32	10	x	x	x		⊗ ↑	0.2
	21	"	17	"	732	-31						* ↑	
25	9	"	21	65	728	-24	x	x	x	x		* ↑	0.02
	15	"	20	"	728	-22	x	x	x	x		* ↑	0.05
	21	"	18	"	728	-23						* ↑	
26	9	"	8	25	726	-27	9	0	3	6	5Ac, 4Ci	⊗	15
	15	"	1	45	722	-28	7	0	3	6	5Ac, 2Ci	⊗	10
	21	"	2	"	719	-41						○	
27	9	"	9	115	718	-45	1	0	0	1	1Ci	○ ↑	1
	15	"	9	"	718	-40	5	0	0	5	4Cs, 1Ci	⊙ ↑	2
	21	"	10	"	716	-33						○ ↑	
28	9	"	10	105	716	-42	2	0	0	1	2Ci	○ ↑	3
	15	"	7	90	716	-37	6	0	5	1	4Ac, 1Ci	⊙ ↓	15
	21	"	8	115	715	-40						⊙ ↓	
29	9	"	10	105	714	-41	3	0	0	2	3Ci	⊙ ↑	2
	15	"	9	115	714	-37	7	0	2	1	6As, 1Ci, halo	⊗ ↓	2
	21	"	8	105	714	-43						⊙ ↓	
30	9	"	7	"	721	-44	0	0	0	0		○ ↓	20
	15	"	9	90	722	-38	1	0	0	1	1Ci	○ ↓	15

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
Sep. 30	21	Mizuho	13	90°	720	-37						⊗ ↗	
Oct. 1	9	"	11	"	716	-25	10	x	x	x		⊙ ↗	0.5
	15	"	8	65	716	-23	10	x	x	x		⊙ ↗	0.5
2	21	"	11	90	721	-25	x	x	x	x		⊙ ↗	
	9	"	19	"	725	-26	10	x	x	x		* ↗	0.05
3	15	"	19	"	724	-25	x	x	x	x		* ↗	0.03
	21	"	16	105	726	-27						* ↗	
4	9	"	17	115	725	-31	x	x	x	x		⊙ ↗	0.1
	15	"	14	"	724	-29	2	0	0	9	2C _c	⊙ ↗	0.15
5	21	"	15	"	724	-34						⊙ ↗	
	9	"	16	125	721	-36	x	x	x	x		⊙ ↗	0.05
6	15	"	16	"	716	-34	x	x	x	x		⊙ ↗	0.05
	21	"	17	"	714	-42						⊙ ↗	
7	9	"	13	115	718	-41	0	0	0	0		⊙ ↗	0.5
	15	"	10	105	719	-37	0	0	0	0		⊙ ↘	40
8	21	"	11	"	720	-42	0	0	0	0		⊙ ↘	
	9	"	13	105	722	-39	1	0	0	1	1Ci	⊙ ↗	0.5
9	15	Z104	12	"		-32	2	0	0	1	2Ci	⊙ ↗	0.5
	21	Z 74	11	"		-38.5	3					⊙ ↘	
10	9	"	9	120		-36.5	x	x	x	x		⊗ ↗	0.5
	15	Z 30	7	90	745	-31.5	2	0	0	1	2Ci, halo	⊙ ↘	10
11	21	S122	10	105	757	-36.5	1	0	0	1	1Ci	⊙ ↘	
	9	"	11	90	760	-34.5	1	0	0	1	1Ci	⊙ ↘	5
12	15	"	8	"	765	-30	0	0	0	0		⊙ ↘	30
	21	H294	9.5	"	770	-36.5	0	0	0	0		⊙ ↘	
13	9	"	4	"	772	-34	1	0	0	1	1Ci	⊙	30

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Oct. 9	15	H226	3	90°	791	-25.5	1	0	0	1	1Ci	○	50
	21	H143	9	"	823	-27.5	8	0	2	x	8As	⊙	
10	9	"	16	"	816	-16	x	x	x	x		* ↗	0.02
	15	"	18	75	816	-14.5	x	x	x	x		* ↗	0.02
	21	"	20	135	815	-15.5	x	x	x	x		* ↗	0.01
11	9	"	18	120	814	-15.5	x	x	x	x		* ↗	0.05
	15	"	13	90	814	-15	9	0	2	1	8As, 1Ci	* ↗	0.1
12	21	H 97	14	"	826	-18	8	0	2	1	7As, 1Ci	⊗ ↗	
	9	"	11	"	830	-17	7	0	1	9	3As, 4Cc	⊗ ↗	2
	15	S 28	13	"	865	-13	6	0	1	6	3As, 3Cs	① ↗	1
13	21	S 19	17	105	900	-14	9	0	9	x	9Ac	⊙ ↗	
	9	"	14	90	903	-14	4	0	3	0	3Ac	① ↗	0.2

Table 6. Surface meteorological data along route S-H-Z in 23-30 August 1973.

Date	L.T.	St.No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	CH	NC	W	V (km)
1973													
Aug.23	21	Z 50	9		710	-52	0					○	
24	7	"				-54							
	9	Z 43	5	85°	708	-55	0					○	20
	15	Z 5	7	85	727	-50.5	0					○	5
	21	H278	6	100	744	-50	0					○↓	
25	9	"	5	85	746	-50	0					○↓↔	0.5
	15	H216	4	85	771		2				Ci	○	10
	21	H140	8	80	797	-39	0					○↓	
26	9	"	12	90	796	-29	10					*↑	0.1
	22	H137	16	70	792	-22	10					*↑	0.2
27	9	"	17	90	797	-24	10					*↑	0.01
	15	"	18	80	799	-27	10					*↑	0.01
	21	"	15	70	801	-30						⊙↑	0.01
28	9	"	16	70	799	-28	9					⊙↑	0.05
	15	"	13	70	799	-26	10					⊙↑	0.10
	21	"	12	90	798	-25						*↑	0.05
29	9	"	9	40	800	-29	10					↔	0.2
	15	H 58	13	60	832	-29	5				White out Ac, Ci	①↓	0.3
	21	S27-4			857	-29						○↓	
30	9	S 22	8	85	880	-28	7				As, Ci	①	10

Table 7. Surface meteorological data along routes S-H-Z and M in 10 September-14 October 1973.

Date	L.T.	St. No.	U (m/s)	D	p (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
1973													
Sep. 10	15	S 16	9	60°	896	-17	4				Cs	⊙	50
	21	S18-3	9	80	887	-22.5	0					○	
11	9	S21-3	8	70	877	-25	2				Ci	○	30
	15	S28-1	8	70	855	-24	2				Cs	○	30
	21	H 6-1	9	70	848		0					○	30
12	9	"	12	70	850	-24.5	0					○↕	0.3
	15	H48-1	11	50	840	-24	0					○↕	1
	21	H 65	7	70	836	-29.5	0					○	10
13	9	H 70	10	80	825	-30.5	0					○↕	2
	16	"	9	80	824	-25.5	0					○↕	2
	21	H 83	11	80	817	-30	0					○↕	1
14	9	H97-1	9	80	814	-31	1				Cs	○↕	3
	15	H127	9	90	801	-30	0					○	4
	21	H124	9	80	797	-35	0					○	
15	9	H137	6	70	792	-38	0					○	60
	15	H178	4	70	780	-35	0					○	60
	21	H189	7	90	782	-37	0					○	30
16	9	"	7	70	785	-34	4				Cs	⊙↕	0.5
	15	H231	4	70	775	-34	5				Cs	⊙	10
	21	H252	5		767	-38	3					⊙	
17	9	H254	5	90	767	-36.5	3				Cs	⊙↕↔	1
	15	H256	9	70	765	-32	3				Ci	⊙↕	0.3

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Sep. 17	21	H253	14	40°	764	-34						⊙ ↗	
18	10	"	7	70	767	-28	10				White out	* ↗	0.1
	15	"	0	-	769	-29	0				Halo	⊙ ↔	1
	21	"	4		770	-29	10					⊙	
19	9	H262	7	95	771	-28	8				As	⊙	4
	15	H295-1	7	80	758	-28	6				As, Cs	⊙	3
	21	S122	8	70	755	-31	3					⊙	
20	10	Z 4-1	7	80	753	-34	2				Ci	⊙	2
	15	Z 26	6	90	745	-31	10				Ac, Cc	⊙	10
	21	Z 37	10		740	-39	0					⊙	
21	10	Z 37	12	90	732	-37	7				Ci, Cs	⊙ ↗	
	18	"	13	90	726	-39	0					⊙ ↗	
	21	"	11		725	-40	0					⊙ ↗	
22	9	"	7	80	723	-32	10					* ↗	0.3
	21	Z 66	6		721	-39	2					⊙	
23	9	Z 70	5	80	723	-39	1				Halo	⊙ ↔	0.5
	15	Z 85	5	80	723	-37.5	2				Cs	⊙ ↔	5
27	15	Z 83	7	70	726.7		7				Halo	⊙	2
	21	Z 45				-41	2					⊙ ↗	
28	10	Z 29	4		736.0	-34.5	3				Cs, Cc	⊙	5
	15	M 6	5	60	740.5	-32.5	4				As, Ci, Cs	⊙	5
	21	M 11				-39.5	0					⊙ ↗	
Sep. 29	9	M 11	7	65	735	-36	10					⊙ ↗	0.1
	15	"	7	60	737	-32.5	7				Cc	⊙ ↗	2
	21	M 13	4		738	-42	2					⊙	
30	9	"	6	70	744	-41	0					⊙	4

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Sep. 30	16	M 22	8.5	80°	740	-34.5	7				Cs	⊕ ↗	
	21	"	12.5		734	-29	10				Cs	* ↗	0.05
Oct. 1	9	"	19		729	-20.5	10					* ↗	0.02
	15	"		730	-19	10						* ↗	0.02
	21	"			736	-22	10					* ↗	0.02
2	9	"	17		737	-22	10				As	* ↗	0.05
	15	"		740	-22							⊕ ↗	0.05
	21	"			742	-25.5						⊕ ↗	
3	10	"	12		741	-28	7				Ci, Cs	⊕ ↗	
	15	"		10	70	740	-26.5	1				Ci	○ ↗
	21	"			738							↗	
4	10	"	13		734	-29						⊕ ↗	0.1
	15	"		14		731	-29	10					⊙ ↗
	21	"			730	-35						⊕ ↗	
5	9	"	10		734	-37	0					○ ↗	0.2
	22	M28-1		Calm			-38	0					○
6	9	"	12	90		-35	3				Cs	⊕ ↗	1
7	10	M32	11			-33					Cs	⊕ ↗	0.3
	15	"	8		741	-32	4					⊕	4
	21	"	7		741	-37.5	0					○	
8	10	"	9		745	-35.5	2				Cs	○ ↗	1
	17	M37-1					-32.5						
9	7	M 46	Calm			-36.5	0					○	40
	9	M 49	5			-33	2				Ci	○	20
	21	moraine	8	95	788	-28.5	9					⊙ ↗	2
10	11	"			785	-18.5	0					* ↗	0.01

Date	L.T.	St. No.	U (m/s)	D	p (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Oct. 10	16	moraine			785							* ↗	0.01
	21	"	15		784	-19						* ↗	
11	12	"	12		781.5	-19	9					⊙ ↗	0.05
	16	"	13	50	781	-18.5	7					⊙ ↗	
12	21	"										⊙ ↗	0.1
	9	"										⊙ ↗	
13	15	M 65										⊙ ↗	0.2
	21	H160	14		809	-22.5						⊙ ↗	
13	9	H150	13		814.8	-20.5	4				Ac, Ci, Cs	⊙ ↗	0.5
14	8	S24-3				-13						⊙ ↗	

Table 8. Surface meteorological data along routes S-H-Z, X, C, D, A and S in
10 November 1973 - 29 January 1974.

Date	L.T.	St.No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	N _C	W	V (km)
1973													
Nov. 10	15	S 16	8.5	75°	924	- 2.5	1	0	0	1	1Cc, 1Ci	○	60
	21	S 23	9.0	75	890	-11.5	1	0	3	1	1Ac, 1Cc, 1Ci	○	50
11	9	"	8.5	90	888	- 9.5	0	0	0	0		○	60
	15	H 49	8.5	90	847	- 8.5	0	0	0	0		○	60
12	21	H101	9.0	90	828	-17.5	0	0	0	0		○	50
	9	"	13.0	90	827	-18.5	0	0	0	0		○ ↗	0.5
13	15	H146	11.0	90	815	-15.5	0	0	0	0		○ ↗	1.0
	21	H210	5.5	90	796	-22.0	1	0	1	0	1Ac	○	50
14	9	"	8.5	90	796	-22.0	0	0	0	0		○ ↗	5
	15	H268	6.5	85	778	-18.0	0	0	0	0		○	50
15	21	Z 11	6.5	90	755	-27.0	0	0	0	0		○	50
	9	"	11.0	75	753	-26.0	0	0	0	0		○ ↗	0.5
16	15	Z 40	12.5	105	739	-22.0	0	0	0	0		○ ↗	30
	21	Z 82	11.0	90	733	-29.0	0	0	0	0		○ ↗	20
17	9	"	13.0	90	732	-27.2	0	0	0	0		○ ↗	1
	15	Z 92	8.0	90	720	-21.6	1	0	3	0	1Ac	○ ↗	20
18	21	Mizuho	9.0	90	725	-27.0	2	0	3	0	2Ac	○ ↗	20
	9	"	11.0	85	722	-23.0	5	0	5	0	5Ac	⊖ ↗	1.5
19	15	"	13.0	105	723	-19.0	5	0	5	0	5Ac, halo	⊖ ↗	5
	23	"	8.0	80	732	-26.5	4	0	3	1	3Ac, 1Cc	⊖ ↗	5
20	9	"	13.0	70	728	-24.5	4	0	5	0	4Ac	⊖ ↗	1
	15	"	13.0	80	730	-20.0	4	0	5	0	4Ac	⊖ ↗	2

Date	L.T.	St. No.	U (m/s)	D	p (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Nov. 17	21	X 14	8.0	100°	737	-27.0	1	0	0	1	1Ci	○ →	50
18	9	"	10.0	90	735	-25.0	0	0	0	0		○ →	5
	15	S171	10.0	90	742	-20.5	1	0	3	0	1Ac	○	40
	21	C140	5.5	95	745	-25.0	1	0	3	0	1Ac	○	40
19	9	C138	7.5	90	749	-23.8	1	0	3	0	1Ac	○	40
	15	C130	7.0	105	747	-18.2	2	0	3	0	2Ac	○	40
	21	C120	7.0	105	747	-24.0	3	0	5	0	3Ac	⊖	40
20	9	C117	9.0	110	755	-23.0	8	0	9	x	5Ac, 4As	⊗	5
	15	C110	5.0	85	755	-18.0	1	0	3	1	1Ac, 1Cc	○	50
	21	C100	4.0	100	764	-23.7	1	0	3	0	1Ac	○	40
21	10	C 98	12.5	95	765	-20	3	0	3	1	2Ac, 1Cc	⊖ →	5
	17	"	5.0	100	764	-17	3	0	3	1	2Ac, 1Cc	⊖	40
	21	"	7.0	95	764	-21.5	2	0	3	1	1Ac, 1Ci	○	40
22	9	"	9.0	100	765	-20.5	4	0	3	0	4Ac	⊖	10
	15	C 91	7.5	100	767	-15.5	1	0	0	1	1Cc	○	60
	21	C 81	8.5	120	770	-19.2	1	0	0	1	1Cc	○	40
23	10	C 80	10.5	100	776	-20.0	0	0	0	0		○ →	1
	15	C 74	8.5	100	780	-14.5	0	0	0	0		○	50
	21	C 66	7.0	115	780	-19.0	1	0	0	1	1Cc	○	40
24	9	C 64	11.5	120	780	-20.8	1	0	0	8	1Cs	○	30
	15	C 56	8.0	75	783	-16.3	0	0	0	0		○	60
	21	C 43	5.5	60	776	-20.5	0	0	0	0		○	70
25	11	C 37	11.0	55	775	-20.0	1					○ →	30
	17	"	6.0	65	775	-16.3	1	0	0	8	1Cs	○	60
	22	"	6.0	65	774	-21.8	0	0	0	0		○	60
26	9	"	10.0	65	772	-22.3	2	0	0	5	2Cs	○	60

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Nov. 26	15	C 25	8.5	65°	775	-16.0	1	0	0	8	1Cs	○	60
	21	C 16	3.5	65	775	-20.8	3	0	1	8	2As, 1Cs	①	60
27	9	C 15	8.0	70	777	-18.0	4	0	4	8	3Ac, 1Cs	①	50
	15	C 7	8.0	75	776	-16.0	2	0	3	0	2Ac	○	60
28	21	C 0	3.5	90	774	-17.5	9	6	8	x	6St, 4Ac	⊗*	40
	9	"	10.0	85	771	-20.0	10	7	x	x	10St	⊗*↕	0.2
	17	D 0	9.0	90	787	-15.0	10	7	x	x	10St	⊗*	2
29	21	"	5-10	85	785	-16.0	1	1	0	0	1Cu	○	60
	11	"	15-22	85	778	-20.3	2	0	0	6	2Cc	○*↕	0.15
	15	"	15-22	100	774	-15.5	x	x	x	x		*↕	0.15
30	21	"	15-22	85	770	-17.5	6	0	5		2Ac, 4As	①*↕	0.15
	9	"	8-15	85	768	-15.0	9	0	9	x	10Ac	⊗*↕	0.5
	15	"	10	85	773	-11.0	9	0	9	x	10Ac	⊗↕	2
Dec. 1	21	"	8-13	85	777	-11.5	8	4	6	6	4Cu, 4Ac, 2Ci	⊗↕	5
	9	"	8-12	100	780	-11.5	x	x	x	x		*↕	0.2
	15	"	7.0	110	785	-10.5	9	0	9	x	9Ac	⊗*↕	2
	21	"	12.0	110	785	-11.2	8	0	9	9	6Ac, 2Cc	⊗*↕	2
2	9	"	10-18	65	785	-15.0	1	0	0	1	1Ci	○↕	10
	15	"	8-12	65	787	-10.0	1	0	0	8	1Cs	○	60
3	21	"	8-11	70	785	-13.3	1	0	0	8	1Cs	○	60
	9	"	15.0	60	780	-17.0	0	0	0	0		○↕	1
4	15	"	8-12	85	782	-12.0	2	0	3	0	2Ac	○↕	10
	21	"	6.0	120	781	-14.6	4	0	7	0	4Ac	①	50
	9	"	6.5	100	784	-14.2	10	0	2	x	10As	⊗*	5
4	15	"	3.0		787	-12.7	10	0	2	x	10As	⊗*	10
	21	"	1.0		787	-13.8	10	0	2	x	10As	⊗*	10

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Dec. 5	9	D 0	7.0	120°	789	-15.5	10	0	2	x	10As	⊗*	10
	15	"	9.5	105	788	-14.0	9	0	2	x	9As	⊗↓	10
	21	"	10-15	95	787	-16.0	4	0	1	9	2As, 2Cc, halo	⊙↓	5
6	9	"	15-20	75	785	-17.5	3	0	0	8	3Cc	⊙↓	2
	15	"	13	95	787	-14.0	3	0	0	5	1Ci, 2Cs	⊙	40
	21	"	8	95	789	-14.2	10	0	2	x	10As	⊗*	2
7	9	"	8	75	793	-15.5	7	0	5	x	3Ac, 4As	⊙↓	2
	15	"	10	90	794	-13.8	8	4	6	6	1Cu, 5Ac, 2Cc	⊗	30
	24	"	13	85	786	-18.3	3	0	3	6	1Ac, 2Cc	⊙↓	5
8	9	"	15-23	70	777	-16.5	7	0	1	6	2Ac, 5Cs	⊙↑	1
	15	"	13	90	778	-12.3	10	7	x	x	10St	⊙*↓	0.5
	21	"	13	85	779	-13.5	9	7	8	x	4Sc, 5Ac	⊗*↑	1
9	9	"	14	85	778	-13.5	9	4	0	7	2Cu, 8Cs	⊙↑	0.3
	15	"	13	105	792	-11.5	8	4	8	x	4Cu, 4Ac	⊗*↑	1
	24	"	1	105	795	-14.0	1	0	4	0	1As, 1Ac	⊙	50
10	9	"	14	70	790	-16.3	0	0	0	0		⊙↓	2
	15	"	6-12	75	790	-12.1	0	0	0	0		⊙	60
	22	"	7-12	85	786	-14.5	0	0	0	0		⊙	70
11	9	"	12-19	65	779	-17.0	0	0	0	0		⊙↓	5
	15	"	8-13	65	778	-12.0	0	0	0	0		⊙	50
	21	"	7-12	80	778	-13.5	0	0	0	0		⊙	70
12	10	"	8-16	65	784	-13.0	0	0	0	0		⊙↓	10
	23	"	13-22	55	787	-14.5	0	0	0	0		⊙	70
13	9	"	8-22	55	786	-13.0	1	0	1	0	1As	⊙↑	10
	15	"	10-15	60	785	-11.5	1	0	0	1	1As	⊙↓	30
	21	"	8-13	70	782	-12.5	1	0	0	1	1Ci	⊙↓	40

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Dec.14	10	D 0	11-20	75°	780	-13.5	2	0	0	1	2Ci	○↓	20
	15	"	10-17	75	786	-11.5	2	0	0	1	2Ci	○	50
	21	"	7-11	85	784	-12.5	1	0	0	1	1Ci	○	60
15	10	"	8-13	75	788	-13.5	0	0	0	0		○	60
	15	"	10	75	788	-10.0	1	0	0	1	1Ci	○	70
16	21	D 10	3	115	793	-10.5	1	0	0	1	1Cs	○	70
	9	"	13	85	790	-13.8	3	0	0	2	3Ci	⊙	60
	15	D 20	8	85	780	-12.0	5	0	1	1	4As, 1Ci	⊙	50
17	21	D 25	9-15	105	778	-14.0	5	0	1	1	4As, 1Ci	⊙	60
	9	"	11	85	778	-13.0	9	0	8	x	9Ac	⊗	40
	15	D 30	9	100	770	-12.0	9	0	8	x	9Ac	⊗	40
18	21	D 33	8	75	765	-14.0	5	0	3	1	4Ac, 1Ci	⊙	50
	9	B 12	8	65	754	-14.0	10	0	8	x	10Ac	⊗	5
	15	"	5	65	757	-12.0	9	5	8	x	2Sc, 7Ac	⊗	10
19	22	"	<1	65	755	-14.0	8	5	8	x	2Sc, 6Ac	⊗	40
	9	"	9	75	754	-14.5	9	0	2	x	9As	⊗	10
	15	"	7	70	755	-12.0	8	1	3	9	2Cu, 4Ac, 2Cc	⊗	10
20	21	A003	10	70	732	-13.0	7	1	8	x	1Cu, 6Ac	⊙↓	5
	9	"	11	90	729	-16.5	8	6	8	x	5St, 3Ac	⊙*↑	1
	15	"	11	90	732	-15.0	10	6	2	x	8St, 2As	⊙*↑	1
21	21	"	11	90	733	-16.5	9	6	2	x	4St, 5As	⊗*↑	1
	9	"	11	90	734	-15.0	10	6	1	x	4St, 6As	⊗*↑	1
	15	"	12	90	740	-13.6	10	6	1	x	2St, 8As	⊗*↑	1
22	21	"	10	75	740	-17.5	2	0	0	8	2Cs	○↓	5
	9	"	13	75	736.5	-18.5	1	0	0	8	1Cs	○↓	2
	15	A004	14	80	730	-16.0	3	0	0	8	3Cs	⊙↓	5

Date	L.T.	St.No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Dec. 22	21	A004	9	100°	730	-18.0	4	0	1	1	2As, 2Ci	⊙↗	40
23	11	A006	8	75	734.6	-17.4	6	0	1	5	2As, 4CiCs	⊙↗	6
	15	A008	9	100	738.0	-14.5	3	0	1	1	2As, 1Ci	⊙↗	10
	21	"	11	75	737.0	-20.0	0	0	0	0		⊙↗	10
24	3	A010	11	75	730.5	-25.5	0	0	0	0		⊙↗	10
	12	"	15	75	729.2	-18.0	0	0	0	0		⊙↗	0.3
	15	"	15	80	730.9	-19.0	1	x	0	0		⊙↗	0.3
	21	"	12	65	729.0	-21.0	0	0	0	0		⊙↗	2
25	11	"	11	75	728.8	-17.0	8	7	1	7	2St, 1As, 5Cs	⊙↗	0.5
	15	"	9	95	729.9	-16.0	9	7	1	7	5St, 1As, 4Cs	⊙↗	0.5
	21	"	8	95	731.0	-17.5	7	5	1	1	4Sc, 1As, 2Ci	⊙↗	2
26	9	"	10	90	735.8	-17.0	4	5	0	8	3Sc, 1Cs	⊙↗	0.5
	15	A012	10	85	736.5	-16.5	2	0	1	1	1As, 1Ci	⊙↗	20
	21	A016	10	75	733.5	-19.0	0	0	0	0		⊙↗	30
27	3	"	12	65	734.0	-23.5	0	0	0	0		⊙↗	0.5
	11	"	14	75	735.1	-18.5	0	0	0	0		⊙↗	0.3
	15	"	14	80	735.5	-18.0	0	0	0	0		⊙↗	0.5
28	1	"	14	75	733.5	-23.0	0	0	0	0		⊙↗	0.3
	11	"	14	90	732.3	-18.5	9	7	8	x	4St, 5Ac	⊙↗	0.2
	15	"	12	90	734.2	-17.0	4	7	1	1	2St, 1As, 1Ci	⊙↗	0.7
	21	"	10	90	736.1	-18.0	4	6	1	8	5St, 3As, 1Cs	⊙↗	30
29	3	A020	10	90	737.2	-19.0	10	7	x	x	10St	⊙↗	0.2
	11	"	13	85	737.8	-16.5	1	0	4	0	1Ac	⊙↗	0.3
	15	"	14	85	737.1	-16.0	2	0	3	1	1Ac, 1Ci	⊙↗	0.3
	21	A021	11	100	736.0	-18.0	1	0	1	0	1As	⊙↗	2
30	3	A020	10	100	736.5	-23.0	2	0	4	0	2Ac	⊙↗	3

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)	
Dec. 30	11	A020	11	85°	735.5	-16.5	2	0	1	0	2As	○↗	1	
	15	"	13	95	735.9	-15.3	4	7	1	0	3St, 1As	⊙*↗	0.5	
	21	A021	9	90	737.5	-15.0	10	7	x	x	10Cu	⊙*↗	0.1	
	31	11	A022	11	85	738.7	-13.0	8	0	1	7	2As, 6Cs	⊙*↗	0.5
		15	"	11	75	738.2	-12.0	3	6	1	0	2St, 1As	⊙↗	0.7
		21	"	11	85	737.5	-13.5	1	0	1	0	1As	○↗	1
1974	Jan. 1	11	"	13	75	732.9	-17.5	0	0	0	0	○↗	0.5	
		15	"	14	75	731.7	-16.3	0	0	0	0	○↗	0.5	
		21	"	11	75	729.7	-18.5	0	0	0	0	○↗	1	
	2	3	A021	12	90	726.2	-23.5	0	0	0	0	○↗	10	
		8	A523	12	65	725.0	-21.0	0	0	0	0	○↗	5	
		15	"	10	75	723.8	-17.0	0	0	0	0	○↗	20	
	3	21	A026	8	90	725.6	-18.0	1	0	1	0	1As, halo	○	70
		3	A031	6.5	85	727.5	-23.0	0	0	0	0	Halo	○↔	2
		12	"	11	75	729.5	-15.5	0 ⁺	0	0	0	0 ⁺ As	○↗	20
	4	15	A030	10	90	729.0	-13.5	0	0	0	0		○↗	50
		21	A034	7	115	728.0	-17.5	0	0	0	0		○↗	70
		3	A038	9	65	727.6	-21.0	0	0	0	0		○	40
		12	"	10	70	728.2	-12.5	0	0	0	0		○	50
		15	A538	8	100	728.4	-13.3	0	0	0	0		○	60
	5	21	A042	5	110	731.0	-16.5	1	0	3	0	1Ac	○	60
		3	A046	6	65	731.2	-22.0	2	0	3	9	1Ac, 1Cc, Ci	○	60
		12	"	8	75	731.5	-12.5	<1	0	1	0	1As	○	50
		15	"	8	90	731.7	-11.5	0 ⁺	0	0	0	0 ⁺ As	○	40
21		A550	6.5	110	728.5	-15.0	0 ⁺	0	0	0	0 ⁺ As	○	60	

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Jan. 6	3	A055	11	55°	728.2	-18.3	1	0	0	8	1Cs	○	50
	12	"	10	85	725.9	-13.5	1	0	1	0	1As	○↕	2
	15	A054	8	105	725.5	-12.2	2	0	1	8	1As, 2Cs	○↕	40
	21	A060	5	100	729.7	-15.5	5	0	1	6	1As, 4Cs, Ci	⊕	60
7	3	A065	7	77	736.0	-13.5	9	0	6	x	9Ac	⊗	30
	12	"	11	77	740.4	-12.5	2	0	0	9	2Cc	○↕	10
	15	A066	10	113	737.0	-12.0	1	0	0	8	1Cs	○↕	40
8	21	A070	7.5	103	736.2	-12.0	4	0	2	8	1As, 3Cs	⊕	50
	3	A071	8	62	737.5	-16.3	8	0	5	x	7Ac, 1As	⊗	30
	12	"	10	82	735.0	-6.5	2	0	0	9	2Cc	○	30
	15	A072	10	72	733.2	-6.5	2	0	0	8	2Cs	○↕	5
9	21	A078	7	113	733.7	-10	0	0	0	0		○	>70
	3	A083	7	67	733.5	-13.5	0	0	0	0		○	>70
	15	A082	6	77	732.5	-5.5	0	0	0	0		○	70
	21	A588	6.5	107	732.2	-9.5	0	0	0	0		○	60
10	3	A093	7	73	737.8	-15.2	0	0	0	0		○↕	40
	15	A094	6	82	734.8	-7.7	0	0	0	0		○	>70
	21	A098	3.5	107	732.2	-13.5	0	0	0	0		○	>70
11	3	A101	5.5	68	730.0	-18	0	0	0	0		○	60
	15	A102	5	112	726.5	-8.2	0	0	0	0		○	>70
	21	A110	4	112	720.0	-14.0	0	0	0	0		○	>70
12	3	A113	7	68	721.5	-19.2	0	0	0	0		○↕	40
	12	"	7.5	68	722.8	-11.5	0	0	0	0		○↕	40
	15	A116	7	83	721.8	-12.7	1	0	0	8	1Cs	○↕	30
13	21	A122	5	112	722.0	-18.5	2	0	0	6	2Cc	○	70
	3	A125	6	73	725.0	-24.0	1	0	0	6	1Cc	○	50

Date	L.T.	St. No.	U (m/s)	D	P (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Jan. 13	12	A125	7.5	88°	726.5	-16.2	3	0	0	9	3Cc	⊙	50
	15	A128	5.5	78	725.5	-17.3	1	0	0	9	1Cc	○	50
	21	A634	3	101	726.5	-21.0	2	0	0	8	2Cs	○	60
14	3	A637	5.5	79	725.2	-25.7	6	0	5	9	4Ac, 2Cc	⊙	40
	12	"	7	79	721.3	-15.0	1	0	0	8	1Cs	○	60
	15	A138	7	111	721.5	-14.0	4	0	0	6	4Cc	⊙	40
15	21	A146	5.5	113	716.4	-18.2	5	0	1	6	1As, 1Cs, 2Cc, 1Ci	⊙	40
	3	A147	6	69	718.0	-23.5	6	0	8	6	4Ac, 2Cc	⊙	30
	12	"	7.5	89	718.5	-16.0	3	0	0	6	1Ci, 1Cs	⊙	30
16	15	A146	7	86	717.2	-16.2	5	0	0	6	4Cs, 1Ci	⊙	30
	21	A154	5	91	715.0	-17.5	6	0	0	6	3Cs, 3Cc	⊙	30
	3	A155	8.5	69	716.0	-23.5	7	0	5	6	1Ac, 5Cs, 1Ci	⊙	30
17	15	A157	8	95	713.0	-16.3	6	0	0	6	4Cs, 2Ci	⊙	40
	21	A161	8.5	85	709.0	-18.0	7	0	1	6	3As, 4Cs	⊙	30
	3	A164	10.5	90	708.2	-24.5	9	6	2	6	2St, 4As, 3Cc	● ↘	10
18	15	S240	11	100	704.7	-17.2	9	0	0	7	9Cs	⊙ ↘	2
	21	"	9	95	703.5	-21.2	8	0	2	6	3As, 5Cs	⊙ ↘	5
	12	"	12	90	703.5	-19.5	2	0	0	5	2Cs	○ ↗	0.5
19	15	"	10	95	704.0	-17.3	1	0	0	8	1Cs	○ ↗	1
	21	"	7.5	100	705.3	-19.8	1	0	0	5	1Cs	○	40
	9	"	11	95	705.0	-19.5	2	0	0	5	2Cs	○ ↘	5
20	15	S232	9	90	713.6	-14.8	3	0	0	8	3Cs	⊙ ↘	5
	21	S219	6	105	724.2	-19.0	3	0	0	8	3Cs	⊙	50
	9	S215	9	90	728.5	-17.2	3	0	0	8	3Cs	⊙ ↘	30
20	15	S207	5	90	734.9	-12.5	2	0	0	8	2Cs	○	50
	21	S200	5	95	738.3	-18.5	1	0	0	8	1Cs	○	60

Date	L.T.	St. No.	U (m/s)	D	p (mb)	T (°C)	N	C _L	C _M	C _H	NC	W	V (km)
Jan. 21	9	S 200	9	100*	738.0	-18.0	2	0	0	8	2Cs	○	50
	15	S 191	8	90	747.5	-11.3	7	0	0	6	6Cs, 1Ci	⊖	50
	21	S 177	<3	85	759.5	-16.5	6	0	0	6	3Cs, 3Ci	⊖	40
22	9	S 174	9	85	762.2	-16.2	5	0	0	6	3Cs, 2Ci	⊖	40
	15	X 12	8	75	752.2	-13.0	4	0	0	6	2Cs, 2Ci	⊖	40
	21	Mizuho	6	85	745.2	-19.7	3	0	3	8	1Ac, 2Cs	⊖	50
23	9	"	7.5	85	745.7	-18.5	0	0	0	0		○	50
	15	"	5	65	746.1	-13.6	1	0	0	8	1Cs	○	70
	21	"	5	110	744.0	-20.0	1	0	0	8	1Cs	○	>70
24	9	"	12	90	742.0	-21.0	0	0	0	0		○	>70
	15	"	9	110	740.0	-14.0	0	0	0	0		○	70
	21	"	7	90	739.5	-17.5	9	6	9	x	4St, 5Ac	⊗*	5
25	9	"	10	100	740.0	-19.0	10	6	8	x	4St, 6As	⊗*	1
	15	"	9	110	740.5	-18.0	0	0	0	0		○↓	30
	21	"	7	110	738.5	-22.0	3	0	5	0	3Ac	⊖	40
26	9	"	8	110	739.5	-22.0	3	0	5	8	2Ac, 1Cs	⊖	30
	15	Z 41	8	70	752.9	-15.8	1	0	0	8	1Cs	○↓	40
	21	Z 10	4	70	763.2	-21.0	0	0	0	0		○	40
27	9	"	9	70	762.0	-19.5	3	0	0	6	3Cc	⊖↓	30
	15	S 115	3	60	775.3	-13.7	3	0	3	9	1Ac, 1Cc, 1Cs.	⊖	40
	21	S 95	<3	85	794.8	-17.5	2	0	3	9	1Ac, 1Cc	○	40
28	9	"	7.5	85	797.2	-18.0	2	0	2	0	2As	○↓	10
	15	S 70	4	45	821.0	-11.0	2	0	8	9	1Ac, 1Cc,	○	50
	21	S 45	<1	122	847.8	-18.0	3	0	2	9	2As, 1Cc	⊖	40
29	9	"	5	100	849.8	-15.3	3	0	8	0	3Ac	⊖	40
	15	S 16	<2	265	929.0	- 2.5	8	0	5	x	4As, 4Ac	⊗	30