

Records of All-Sky Camera Photographs at Syowa Station,
Antarctica in 1980

National Institute of Polar Research

This report gives information on all-sky photograph data obtained at Syowa Station in 1980. Copies of the data are available to users on request. The request should be addressed to:

Division of Data Collection and Processing

National Institute of Polar Research

9-10, Kaga 1-chome, Itabashi-ku

Tokyo 173, Japan.

1. Location of observatory

Station name	Geographic		Geomagnetic		Height 15 m above sea level
	Latitude	Longitude	Latitude	Longitude	
Syowa	69°00'S	39°35'E	-70.0°	79.4°	

2. Observer

Mr. Yutaka KATSUTA: National Institute of Polar Research

3. Compiler

Mr. Yutaka KATSUTA and Miss Keiko KOKUBUN: National Institute of
Polar Research

4. Instrumentation

A 35 mm cine-pulse camera with a fish-eye lens of f/1.4 was used.

The observation was carried out during clear nights between March 21 and October 10, 1980. In general, six photographs were taken every minute. The exposure time of each photograph was 7 seconds. During very low auroral activities, photographing rate was reduced to two frames per minute. The film used was Kodak 35 mm 4-X with the ASA number of 800.

5. Observation

The date and hour of the observations is given in Fig. 1 and Table 1. Symbols in Fig. 1 are as follows:

Dark area: All-sky camera was operated.

Blank area: Not operated due to bad weather conditions.

The underlines for the three-hourly K-indices in Table 1 represent the period in which the all-sky camera was operated. The clock in the all-sky photographs is indicates UT (UT = LT - 3 hours).

The classification of the K-indices at Syowa Station is as follows:

K-index:	0	0	<	25 nT
	1	25	<	50 nT
	2	50	<	100 nT
	3	100	<	200 nT
	4	200	<	350 nT
	5	350	<	600 nT
	6	600	<	1000 nT
	7	1000	<	1660 nT
	8	1660	<	2500 nT
	9	more than		2500 nT

MONTH \ DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
MARCH																															
APRIL																															
MAY																															
JUNE																															
JULY																															
AUGUST																															
SEPTEMBER																															
OCTOBER																															

Fig. 1. Days of observation by 35 mm all-sky camera in 1980.

Table 1. Hours of operation of the 35 mm all-sky camera at Syowa Station in 1980.

Date	Hours (Universal Time)	K-Index
Mar. 21	17 ^h 43 ^m 00 ^s	2331 23 <u>44</u>
22	- 01 ^h 00 ^m 37 ^s 22 37 00	<u>2341</u> 231 <u>4</u>
23	- 01 29 37	<u>2300</u> 0000
Apr. 4	17 ^h 55 ^m 00 ^s - 23 03 37	0011 00 <u>20</u>
10	00 40 00 - 01 08 37 21 29 00	<u>3542</u> 011 <u>0</u>
11	- 03 50 37	<u>3131</u> 1354
12	20 08 00	4431 11 <u>15</u>
13	- 01 15 37 18 32 00 - 22 49 37	<u>4341</u> 01 <u>22</u>
14	22 22 00	2200 01 <u>25</u>
15	- 02 44 37 22 37 00	<u>4310</u> 02 <u>44</u>
16	- 01 59 37 23 35 00	<u>3321</u> 02 <u>14</u>
17	- 00 45 40	<u>5510</u> 0012
18	02 40 00 - 03 14 37 21 50 00	<u>1200</u> 000 <u>2</u>
19	- 03 00 37	<u>0000</u> 0013
21	20 32 00	2100 00 <u>13</u>
22	- 01 05 37	<u>2110</u> 0013
24	23 55 00	3300 00 <u>13</u>
25	- 03 34 37	<u>3211</u> 1000
27	22 59 00 - 23 17 37	0000 000 <u>4</u>
May 5	23 14 00	0010 00 <u>23</u>
6	- 04 27 37 20 02 00	<u>3321</u> 20 <u>14</u>
7	- 01 18 52 21 50 00	<u>0000</u> 01 <u>22</u>
8	- 04 35 37 23 47 00	<u>3220</u> 000 <u>1</u>
9	- 04 21 37 22 58 00	<u>3221</u> 10 <u>24</u>

Date		Hours (Universal Time)	K-Index	
May	10	h m s - 04 32 37	<u>4</u> 000	0000
	14	03 10 00 - 04 ^h 50 ^m 37 ^s 18 ^h 04 ^m 00 ^s	<u>4</u> 511	<u>0</u> 22 <u>4</u>
	15	- 00 49 52	<u>1</u> 010	<u>0</u> 00 <u>1</u>
	16	- 04 41 52	<u>2</u> 000	0000
	19		0000	<u>1</u> 02 <u>1</u>
	20	- 01 49 52	<u>2</u> 200	0000
	24		3000	<u>1</u> 33 <u>3</u>
	25	- 00 06 52	<u>2</u> 244	2103
	26	01 04 00 - 03 26 52	<u>3</u> 110	0003
June	11		5444	<u>3</u> 35 <u>6</u>
	12	- 02 22 52	<u>4</u> 433	2245
	16		0100	<u>0</u> 21 <u>2</u>
	17	- 00 19 52	<u>1</u> 000	0000
	22		2100	<u>0</u> 00 <u>2</u>
	23	- 04 52 52	<u>2</u> 100	0003
	25		3220	<u>0</u> 00 <u>3</u>
	26	- 03 54 37	<u>4</u> 100	1423
	27		2100	<u>0</u> 00 <u>2</u>
	28	- 03 54 37	<u>2</u> 000	0001
	30		3000	<u>1</u> 01 <u>2</u>
July	1	- 04 53 37	<u>2</u> 100	<u>0</u> 00 <u>1</u>
	2	- 04 52 37	<u>0</u> 000	0001
	4		0000	<u>0</u> 00 <u>3</u>
	5	- 03 56 37	<u>3</u> 411	0222
	7	19 25 00 - 22 18 37	4312	<u>1</u> 13 <u>2</u>
	8	00 30 00 - 05 16 37	<u>5</u> 321	<u>1</u> 34 <u>4</u>

Date		Hours (Universal Time)			K-Index	
		h m s	h m s	h m s		
July	9	01 37 37	18 57 00	— 21 17 37	<u>3311</u>	00 <u>10</u>
	10			23 58 00	0000	000 <u>1</u>
	11	— 06 00 37			<u>3300</u>	0113
	12			23 12 00	3000	000 <u>2</u>
	13	— 05 01 52	17 53 00	— 22 55 52	<u>2320</u>	00 <u>00</u>
	16			23 21 00	2100	000 <u>1</u>
	17	— 05 56 37			<u>2100</u>	0012
	18			19 49 00	3200	11 <u>55</u>
	19	— 00 23 57			<u>4430</u>	0003
	22	01 18 00	— 04 44 57		<u>2310</u>	0002
	25			18 06 00	1101	03 <u>56</u>
	26	— 04 52 47			<u>7311</u>	0022
	29			22 54 00	0100	001 <u>3</u>
	30	— 04 52 37		21 50 00	<u>3201</u>	000 <u>3</u>
	31	— 04 59 37			<u>2211</u>	1002
Aug.	2			21 03 00	0000	102 <u>3</u>
	3	— 04 30 37		23 03 00	<u>4442</u>	210 <u>1</u>
	4	— 04 27 52			<u>1100</u>	1001
	7			20 59 00	3311	102 <u>4</u>
	8	— 04 20 52		21 26 00	<u>3200</u>	000 <u>2</u>
	9	— 04 01 52			<u>1000</u>	0003
	11			21 12 00	1010	001 <u>2</u>
	12	— 03 56 52		22 51 00	<u>5100</u>	000 <u>1</u>
	13	— 03 59 57			<u>1000</u>	0102
	15			22 25 00	2000	000 <u>1</u>
	16	— 03 56 52			<u>2200</u>	2321

Date	Hours (Universal Time)	K-Index
Aug. 17	03 ^h 11 ^m 00 ^s — 03 ^h 58 ^m 52 ^s	0000 0032
19	20 58 00 — 23 ^h 07 ^m 57 ^s	4311 1133
21	23 20 00	4321 0000
22	— 03 58 52	2310 0145
26	00 48 00 — 03 39 52	4410 0002
29	21 20 00	0000 0022
30	— 03 00 52 17 56 00 — 19 43 52	22 27 00 1300 0011
31	— 03 55 52	21 17 00 3300 0002
Sep. 1	— 03 00 52	3211 0000
2	00 27 00 — 03 00 52	22 22 00 2200 0000
3	— 03 30 52	0000 0344
5	16 47 00	3231 1243
6	— 02 53 57	22 28 00 2110 0003
7	— 03 00 57	21 49 00 2201 0134
8	— 01 55 57	21 21 00 3200 0003
9	— 01 56 57	2210 0313
12	21 10 00	2242 1335
13	— 01 04 57	2432 2111
14	00 53 00 — 02 33 57	22 15 00 4400 0004
15	— 02 23 37	17 33 00 2100 0013
16	— 02 31 37	21 32 00 0110 0033
17	— 00 36 52	4412 1104
20	00 32 00 — 02 27 52	23 17 00 3300 0001
21	— 01 58 37	1000 0000
28	21 56 00	1000 0022
29	— 01 27 37	1110 0042

Date		Hours (Universal Time)						K-Index		
		h	m	s	h	m	s			
Oct.	3	20	15	00	—	23	58	37	0000	00 <u>13</u>
	6					18	43	00	3322	01 <u>13</u>
	7	—	00	56	37	22	13	00	<u>4311</u>	10 <u>12</u>
	8	—	01	05	37	20	36	00	<u>2211</u>	10 <u>23</u>
	9	—	01	05	37	19	47	00	<u>4222</u>	01 <u>23</u>
	10	—	00	24	37				<u>4310</u>	1236