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Records of All-Sky Camera Photographs at Syowa Station,
Antarctica in 1978

National Institute of Polar Research

This report gives information on all-sky photograph data obtained at Syowa Station in 1978. 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
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Tokyo 173, Japan.

1. Location of observatory

CSAGI code	Station name	Geographic		Geomagnetic		Height
		Lat.	Long.	Lat.	Long.	
A984	Syowa	69°00'S	39°35'E	-69.6°	77.1°	15 m above sea level

2. Observer

Mr. Kazuharu KOIKE: Kakioka Magnetic Observatory
The Japan Meteorological Agency

3. Compiler

Mr. Ryoki SAKAI 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 1 and October 3, 1978. 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 or four 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 time in Table 1 is given by UT, while the clock which is put in all-sky photographs gives LT (LT=UT + 3 hours). The underlines for the three-hourly K-indices in Table 1 represent the period in which the all-sky camera was operated.

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

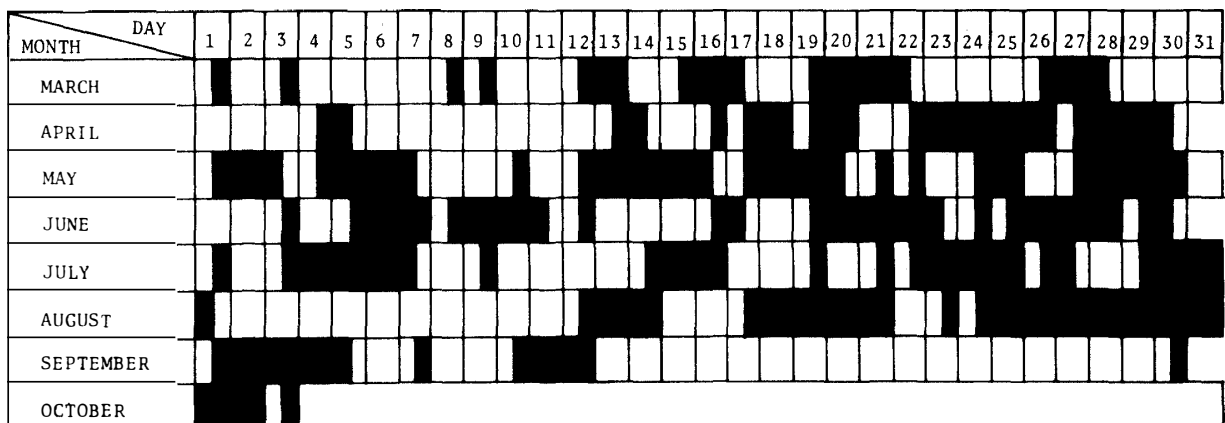


Fig. 1. Days of observation by 35 mm all-sky camera in 1978.

Table 1. Hours of operation of the 35 mm all-sky camera at Syowa Station in 1978.

Date	Hours (Universal Time)		K-Index	
Mar. 1	19 ^h 15 ^m 00 ^s	-23 ^h 39 ^m 37 ^s	5533	34 <u>65</u>
3	20 31 00	-23 51 37	5442	12 <u>66</u>
8	19 00 00	-23 59 37	1010	32 <u>63</u>
9	18 30 00	-23 29 37	4432	21 <u>43</u>
12		18 30 00	1010	00 <u>00</u>
13	-01 ^h 01 ^m 37 ^s	18 30 00	-23 11 37	<u>3423</u> 21 <u>53</u>
15		19 45 00	5541	21 <u>36</u>
16	-00 59 37		17 52 00	<u>5552</u> 2 <u>336</u>
17	-01 00 37			<u>4542</u> 2345
19		17 44 00	5521	3 <u>313</u>
20	-01 01 37		18 00 00	<u>4311</u> 12 <u>24</u>
21	-00 59 37		17 41 00	<u>4420</u> 1 <u>103</u>
22	-01 15 37			<u>2222</u> 1245
26		16 16 00	4422	3 <u>665</u>
27	-01 55 37		17 03 00	<u>6662</u> 3 <u>776</u>
28	-01 09 37			<u>5634</u> 3323
Apr. 4		18 10 00	7553	14 <u>66</u>
5	-02 26 37	15 51 00	-23 09 00	<u>6430</u> 12 <u>33</u>
13		15 45 00	4411	3 <u>246</u>
14	-02 02 37			<u>4554</u> 4355
16		20 35 00	-20 56 58	4410 10 <u>23</u>
17		15 39 00		3121 1 <u>101</u>

Date	Hours(Universal Time)			K-Index	
Apr. 18	-03 ^h 16 ^m 37 ^s	15 ^h 48 ^m 00 ^s	-23 ^h 32 ^m 37 ^s	6632	<u>0243</u>
19			15 48 00	1463	<u>3465</u>
20	-03 10 57	15 02 00	-21 43 57	<u>5443</u>	<u>1144</u>
22			15 02 00	1200	<u>1124</u>
23	-03 27 37		14 38 00	<u>5432</u>	<u>2345</u>
24	-03 28 57		14 37 00	<u>5664</u>	<u>3436</u>
25	-03 25 57		14 32 00	<u>6433</u>	<u>3224</u>
26	-03 23 57	18 55 00	-21 26 37	<u>6652</u>	<u>2265</u>
27			14 31 00	4321	<u>1326</u>
28	-03 58 37		14 21 00	<u>5521</u>	<u>1053</u>
29	-03 52 57		14 30 00	<u>4200</u>	<u>0056</u>
30	-04 01 57			<u>5445</u>	4636
May 1			15 20 00	4555	<u>6447</u>
2	-03 58 57		14 55 00	<u>6675</u>	<u>4335</u>
3	-03 59 57			<u>5665</u>	5366
4			18 15 00	6775	<u>4342</u>
5	-00 56 37		21 32 00	<u>2110</u>	<u>0005</u>
6	-04 24 37		16 02 00	<u>0010</u>	<u>0003</u>
7	-04 17 37			<u>4121</u>	0131
10		14 38 00	-23 12 37	2200	<u>0035</u>
12			14 10 00	4443	<u>2244</u>
13	-04 27 57		16 51 00	<u>6210</u>	<u>1105</u>
14	-04 31 37		13 33 00	<u>3320</u>	<u>0154</u>

Date		Hours(Universal Time)		K-Index	
May	15	-04 ^h 34 ^m 57 ^s	13 ^h 32 ^m 00 ^s	<u>3000</u>	<u>0000</u>
	16	-04 40 37		<u>3300</u>	1112
	17		13 27 00	3231	<u>0015</u>
	18	-04 35 37	13 29 00	<u>3400</u>	<u>0111</u>
	19	-00 20 57	19 02 00	<u>0000</u>	<u>1000</u>
	20	-04 28 37		<u>2000</u>	0032
	21		14 ^h 13 ^m 00 ^s -19 10 37	1410	<u>2147</u>
	22		13 48 00 -21 19 57	5422	<u>2445</u>
	24		20 43 00	5444	<u>3236</u>
	25	-04 59 37	13 54 00 -17 53 37	<u>6432</u>	<u>2125</u>
	27		13 59 00	2220	<u>0015</u>
	28	-01 19 37	19 55 00	<u>3111</u>	<u>1143</u>
	29	-05 29 37	12 34 00	<u>4000</u>	<u>1023</u>
	30	-05 27 57	12 41 00 -20 52 57	<u>7652</u>	<u>1113</u>
June	3		13 31 00 -14 35 57	7554	<u>3242</u>
	5		12 30 00	7753	<u>3334</u>
	6	-06 02 57	12 05 00	<u>3222</u>	<u>2335</u>
	7	-06 02 57	16 17 00 -23 11 57	<u>5331</u>	<u>1134</u>
	8		12 41 00	6531	<u>1322</u>
	9	-06 29 57	12 12 00	<u>1310</u>	<u>0012</u>
	10	-05 54 37	12 58 00	<u>2233</u>	<u>3335</u>
	11	-04 38 57		<u>5553</u>	2101
	12		13 19 00 -18 52 37	2211	<u>3232</u>

Date	Hours (Universal Time)		K-Index
June 16		12 ^h 59 ^m 00 ^s	0110 <u>1023</u>
17	-03 ^h 57 ^m 47 ^s		<u>3421</u> 2133
19		14 50 00	4432 <u>2225</u>
20	-05 00 57	13 00 00	<u>4431</u> <u>1115</u>
21	-05 24 57	12 41 00	<u>6642</u> <u>3266</u>
22	-05 10 57	13 13 00	<u>5533</u> <u>3334</u>
23	-01 40 37		<u>5323</u> 2346
24		19 ^h 47 ^m 00 ^s -23 30 57	5443 <u>2225</u>
25		12 53 00	4543 <u>2445</u>
26	-05 26 57	12 40 00	<u>4674</u> <u>3556</u>
27	-05 31 57	12 32 00	<u>2442</u> <u>2242</u>
28	-05 34 57	12 32 00 -21 15 57	<u>4422</u> <u>2212</u>
29		13 00 00	1223 <u>2326</u>
30	-05 44 57		<u>4353</u> 3141
July 1		18 35 00 -22 58 57	1111 <u>1000</u>
3		14 50 00	2221 <u>1016</u>
4	-05 28 57	12 37 00	<u>7563</u> <u>3527</u>
5	-05 38 57	16 31 00	<u>5874</u> <u>2254</u>
6	-05 44 57	12 32 00	<u>3131</u> <u>2321</u>
7	-05 59 57		<u>5311</u> 1223
9		12 51 00 -21 15 57	5000 <u>1102</u>
14		19 03 00	6644 <u>4454</u>
15	-05 15 57	13 10 00	<u>2310</u> <u>0001</u>

Date	Hours (Universal Time)		K-Index
July 16	-05 ^h 11 ^m 57 ^s		<u>5</u> 100 0012
19	13 ^h 04 ^m 00 ^s	-17 ^h 56 ^m 57 ^s	5440 <u>1</u> 111
21	18 25 00	-19 26 57	4211 <u>1</u> 111
22		12 56 00	3431 <u>1</u> 025
23	-04 46 57	14 01 00	<u>3</u> 321 <u>0</u> 044
24	-04 42 57	14 56 00	<u>3</u> 211 <u>0</u> 044
25	-04 32 57	14 19 00	4311 <u>1</u> 136
26		14 43 00	4320 0003
27	-04 45 57		<u>1</u> 000 0004
29		16 45 00	0011 <u>1</u> 004
30	-03 48 37	13 55 00	<u>3</u> 200 <u>0</u> 000
31	-04 39 37	13 57 00	<u>0</u> 000 <u>0</u> 000
Aug. 1	-04 42 37		<u>2</u> 211 0003
12		20 01 00	3554 3224
13	-04 02 57	16 21 00	<u>4</u> 422 <u>2</u> 234
14		14 03 00	4221 <u>1</u> 001
17		14 54 00	3101 <u>2</u> 223
18	-04 00 57	14 44 00	<u>5</u> 210 <u>1</u> 266
19	-03 59 37	19 23 00	5122 2212
20	-03 58 37	14 49 00	<u>1</u> 110 <u>0</u> 012
21	-03 41 37	15 47 00	<u>2</u> 211 <u>0</u> 015
23		16 10 00	1111 <u>1</u> 113
24		20 20 00	2110 <u>1</u> 111

Date	Hours (Universal Time)		K-Index
Aug. 25	-03 ^h 14 ^m 37 ^s	20 ^h 29 ^m 00 ^s	<u>3121</u> <u>2122</u>
26	-03 03 37	16 37 00	<u>3101</u> <u>1111</u>
27	-03 10 57	15 49 00	<u>3432</u> <u>3236</u>
28	-03 15 57	15 47 00	<u>5775</u> <u>5546</u>
29	-03 01 57	16 03 00	<u>6553</u> <u>2235</u>
30	-02 59 57	15 59 00	<u>4443</u> <u>3465</u>
31	-02 59 57	16 02 00	<u>6444</u> <u>2443</u>
Sep. 1	-03 02 57	16 35 00	<u>4543</u> <u>3235</u>
2	-02 37 57	16 05 00	<u>3341</u> <u>3245</u>
3	-02 50 57	16 36 00	<u>3332</u> <u>2233</u>
4	-02 50 57	16 14 00	<u>4222</u> <u>2144</u>
5	-02 47 57		<u>2111</u> <u>2123</u>
7		22 ^h 01 ^m 00 ^s -23 05 57	0212 <u>1112</u>
10		16 55 00	5311 <u>2123</u>
11	-02 10 57	17 04 00	<u>2212</u> <u>2343</u>
12	-02 06 57	20 15 00 -21 28 57	<u>4432</u> <u>3345</u>
30		19 32 00	1443 <u>1134</u>
Oct. 1	-00 04 57	18 44 00	<u>4322</u> <u>2235</u>
2	-00 07 37	20 16 00 -23 52 37	<u>3421</u> <u>3245</u>
3		19 17 00 -23 53 37	4322 <u>1034</u>