

Records of All-Sky Camera Photographs at Syowa Station,
Antarctica in 1977

National Institute of Polar Research

This report gives information on all-sky photograph data obtained at Syowa Station in 1977. 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

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. Shigeo OTAKI: Geographical Survey Institute

3. 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 February 23 and October 20, 1977. 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.

Table 1. Hours of operation of the 35 mm all-sky camera at Syowa Station in 1977.

Date	Hours (Universal Time)			K-Index
	h m s	h m s	h m s	
Feb. 23		22 22 00	- 23 08 57	3 3 1 1 2 4 3 <u>6</u>
24		21 03 00	- 23 20 57	4 2 1 1 3 2 5 <u>2</u>
25		20 11 00	- 23 08 57	4 3 2 1 1 2 <u>5</u> <u>5</u>
Mar. 4		19 48 00	- 22 07 57	1 1 1 0 0 0 <u>1</u> <u>2</u>
5		22 11 00	- 22 29 57	1 1 1 0 1 0 0 <u>1</u>
6		19 34 00	- 23 36 57	1 1 1 1 1 1 <u>4</u> <u>4</u>
7		20 00 00	- 23 27 57	3 2 2 1 0 1 <u>1</u> <u>2</u>
8		19 39 00	- 23 27 57	3 2 1 1 0 2 <u>3</u> <u>4</u>
9			19 39 00	5 4 4 2 3 4 <u>4</u> <u>7</u>
10	- 00 33 57			<u>6</u> 5 4 2 2 3 3 5
11		17 53 00	- 22 36 57	5 2 2 1 2 <u>3</u> <u>4</u> <u>6</u>
22		20 36 00	- 23 26 57	5 4 2 1 1 0 0 <u>3</u>
25		20 24 00	- 21 25 57	4 2 1 1 0 1 <u>4</u> <u>5</u>
26			17 20 00	5 5 1 1 1 <u>3</u> <u>1</u> <u>0</u>
27	- 01 54 57			<u>2</u> 0 1 1 0 0 3 5
28			19 02 00	4 5 2 1 1 4 <u>3</u> <u>5</u>
29	- 01 45 57	17 15 00	- 22 07 57	<u>6</u> 4 1 0 1 <u>1</u> <u>2</u> <u>0</u>
30			22 29 00	0 0 2 1 0 1 0 <u>3</u>
31	- 01 14 57	22 20 00	- 23 19 57	<u>3</u> 1 1 0 0 0 0 <u>2</u>
Apr. 1			22 02 00	2 1 2 1 0 0 1 <u>1</u>
2	- 00 30 57		19 14 00	<u>2</u> 2 2 2 0 0 0 <u>3</u>
3	- 01 01 57			<u>5</u> 3 2 1 0 0 1 5
4			17 54 00	6 6 4 1 2 <u>3</u> <u>5</u> <u>5</u>

Date	Hours (Universal Time)			K-Index															
	h	m	s	h	m	s													
Apr. 5	-	01	59	57	16	55	00	-	22	54	57	<u>6</u>	2	1	1	0	<u>2</u>	<u>4</u>	<u>6</u>
8									23	18	00	6	4	4	3	3	4	3	<u>6</u>
9	-	00	39	57								<u>6</u>	4	3	3	3	3	3	5
10									22	58	00	6	5	1	1	1	3	3	<u>4</u>
11	-	03	24	57					18	46	00	<u>5</u>	<u>3</u>	3	1	1	3	<u>4</u>	<u>5</u>
12	-	01	53	57	16	43	00	-	19	57	57	<u>5</u>	1	1	1	0	<u>1</u>	<u>2</u>	<u>6</u>
13					21	09	00	-	21	39	57	3	0	1	1	0	0	0	<u>4</u>
16					19	13	00	-	21	09	57	2	3	2	1	0	3	<u>4</u>	<u>5</u>
17									17	28	00	4	4	2	1	1	<u>0</u>	<u>2</u>	<u>4</u>
18	-	02	42	57					16	26	00	<u>4</u>	1	1	1	1	<u>2</u>	<u>2</u>	<u>2</u>
19	-	00	23	57					16	33	00	<u>6</u>	7	6	3	3	<u>3</u>	<u>3</u>	<u>6</u>
20	-	02	38	57	17	06	00	-	23	22	57	<u>6</u>	4	4	2	1	<u>4</u>	<u>3</u>	<u>3</u>
21		01	23	00	-	02	50	57	18	01	00	<u>5</u>	3	3	1	0	1	<u>2</u>	<u>5</u>
22	-	01	50	57	17	24	00	-	19	58	57	<u>3</u>	2	1	1	0	<u>2</u>	<u>2</u>	0
23									20	38	00	2	3	2	0	0	0	<u>1</u>	<u>2</u>
24	-	01	57	57					16	39	00	<u>2</u>	1	1	1	0	<u>2</u>	<u>1</u>	<u>4</u>
25	-	03	02	57								<u>7</u>	<u>3</u>	2	2	0	0	1	1
May 3									20	40	00	5	4	3	2	1	1	<u>1</u>	<u>0</u>
4	-	03	39	57								<u>0</u>	<u>1</u>	1	0	1	3	4	5
8									17	33	00	3	0	0	0	0	<u>0</u>	<u>1</u>	<u>2</u>
9	-	01	52	57					17	56	00	<u>3</u>	2	1	1	1	<u>2</u>	<u>1</u>	<u>1</u>
10	-	02	30	57					20	53	00	<u>1</u>	1	3	2	1	1	<u>2</u>	<u>5</u>
11	-	03	09	57					16	36	00	<u>4</u>	1	3	2	2	<u>4</u>	<u>6</u>	<u>4</u>

Date	Hours (Universal Time)		K-Index
	h m s	h m s	
May 12	- 02 39 57	21 50 00	<u>3</u> <u>6</u> <u>5</u> <u>2</u> 1 1 1 <u>3</u>
13	- 03 44 57		<u>0</u> <u>3</u> 0 1 0 0 4 4
16		16 46 00	6 6 3 2 2 <u>3</u> <u>4</u> <u>5</u>
17	- 03 49 57		<u>6</u> <u>5</u> 4 2 3 2 3 4
18		17 25 00	4 3 2 1 2 <u>3</u> <u>1</u> <u>2</u>
19	- 03 20 57	20 25 00	<u>3</u> <u>1</u> 1 0 0 1 <u>1</u> <u>3</u>
20	- 04 03 57	17 12 00	<u>4</u> <u>4</u> 2 0 1 <u>3</u> <u>4</u> <u>3</u>
21	- 02 38 57	22 13 00	<u>1</u> 1 1 0 0 0 0 <u>0</u>
22	- 03 27 57	21 42 00	<u>1</u> <u>3</u> 2 0 0 0 <u>0</u> <u>1</u>
23	- 02 13 57	20 15 00	<u>3</u> 2 0 0 0 1 <u>2</u> <u>3</u>
24	- 02 43 57	18 00 00	<u>2</u> 2 1 0 0 2 <u>2</u> <u>2</u>
25	- 02 58 57		<u>3</u> 2 1 1 0 1 0 0
26		23 43 00	0 0 0 0 0 0 0 <u>0</u>
27	- 02 42 57		<u>2</u> 0 0 0 0 0 0 0
28	00 27 00 - 03 13 57	19 33 00	<u>1</u> <u>0</u> 0 1 1 0 <u>2</u> <u>1</u>
29	- 02 18 57		<u>0</u> 0 0 0 0 0 0 0
31	02 18 00 - 04 19 57		<u>3</u> <u>3</u> 2 0 0 1 0 1
June 3		22 05 00	2 2 2 1 1 1 0 <u>2</u>
4	- 02 56 57	20 08 00	<u>3</u> 1 0 0 0 0 0 <u>1</u>
5	- 01 04 57		<u>1</u> 3 1 1 2 1 0 0
6	01 49 00 - 04 08 57	21 55 00	<u>4</u> <u>3</u> 1 0 0 0 0 <u>0</u>
7	- 03 12 57	19 18 00	<u>1</u> <u>0</u> 1 1 0 0 <u>2</u> <u>2</u>
8	- 01 31 57		<u>0</u> 0 1 1 0 0 0 4

Date	Hours (Universal Time)	K-Index
June 9	h m s 22 44 00	3 0 1 0 0 0 0 <u>5</u>
10	h m s - 05 22 57	22 07 00 <u>4</u> <u>3</u> 3 1 0 0 0 <u>3</u>
11	- 02 35 57	20 15 00 <u>2</u> 2 1 0 0 0 <u>2</u> <u>2</u>
12	- 04 21 57	20 09 00 <u>4</u> <u>3</u> 0 0 0 0 0 <u>1</u> <u>3</u>
13	- 03 42 57	<u>2</u> <u>2</u> 3 1 0 0 0 2
18		21 11 00 1 2 2 2 1 1 3 <u>3</u>
19	- 03 35 57	<u>3</u> <u>3</u> 4 2 2 1 1 1
20		22 11 00 5 3 2 2 1 1 1 <u>1</u>
21	- 04 02 57	<u>2</u> <u>2</u> 3 1 1 1 0 0
22	01 31 00 - h m s 02 46 57	18 41 00 <u>2</u> 1 1 1 1 1 3 <u>4</u>
23	- 04 17 57	21 56 00 <u>4</u> <u>3</u> 2 1 1 1 1 <u>2</u>
24	- 03 22 57	22 20 00 <u>3</u> <u>3</u> 2 1 0 1 0 <u>3</u>
25	- 04 39 57	<u>3</u> <u>1</u> 1 0 1 1 0 1
26	01 22 00 - 02 29 57	<u>3</u> 1 1 1 0 0 0 0
27	00 32 00 - 04 36 57	<u>3</u> <u>3</u> 1 1 0 1 0 1
July 3		21 17 00 0 1 1 1 1 2 1 <u>2</u>
4	- 03 22 57	21 24 00 <u>4</u> <u>3</u> 3 1 1 0 0 <u>5</u>
5	- 02 46 57	<u>3</u> 0 0 1 0 1 3 3
6	19 15 00 - 19 53 57	4 0 0 1 1 1 <u>3</u> 2
8	21 50 00 - 23 31 57	5 6 2 1 1 2 1 <u>4</u>
9		19 46 00 5 3 2 3 2 1 <u>4</u> <u>6</u>
10	- 04 50 57	17 19 00 <u>7</u> <u>4</u> 2 1 2 <u>2</u> <u>4</u> <u>6</u>
11	- 02 11 57	20 06 00 <u>4</u> 5 2 1 1 1 <u>2</u> <u>5</u>

Date	Hours (Universal Time)			K-Index							
July 12	h m s	16 05 00	h m s	3	1	1	1	0	0	0	3
	- 03 43 57	- 16 43 57	23 37 00	<u>3</u>	<u>1</u>	1	1	0	<u>0</u>	<u>0</u>	<u>3</u>
13	- 05 15 57		19 58 00	<u>4</u>	<u>5</u>	2	0	0	0	<u>3</u>	<u>4</u>
14	- 05 14 57			<u>4</u>	<u>6</u>	2	2	2	1	1	2
16		h m s	19 29 00	3	4	5	4	3	4	<u>4</u>	<u>6</u>
		- 23 38 57									
17		17 20 00	- 19 42 57	4	4	4	3	1	<u>2</u>	<u>3</u>	<u>3</u>
18			20 23 00	3	3	2	1	2	1	<u>3</u>	<u>2</u>
19	- 03 55 57			<u>5</u>	<u>1</u>	5	4	2	2	4	4
20		19 13 00	- 23 13 57	5	5	4	3	3	3	<u>4</u>	<u>4</u>
22			21 47 00	4	3	2	2	1	1	1	<u>5</u>
23	- 03 12 57		22 36 00	<u>4</u>	<u>4</u>	1	1	1	0	0	<u>2</u>
24	- 02 08 57		23 04 00	<u>2</u>	0	0	1	1	1	3	<u>3</u>
25	- 03 03 57	16 51 00	- 16 51 57	<u>4</u>	<u>1</u>	1	0	0	<u>0</u>	<u>0</u>	2
26		15 33 00	- 15 39 57	0	1	0	0	0	<u>0</u>	<u>0</u>	0
Aug. 1			23 00 00	3	2	1	0	1	0	1	<u>1</u>
2	- 02 39 57			<u>4</u>	3	0	1	0	0	0	0
3	00 32 00	- 02 54 57	21 00 00	<u>3</u>	1	1	0	0	1	3	<u>3</u>
4	- 02 35 57			<u>3</u>	5	0	1	0	0	3	2
11			21 20 00	5	5	4	2	2	2	2	<u>3</u>
12	- 04 19 57		21 56 00	<u>2</u>	<u>5</u>	2	2	1	1	2	<u>3</u>
13	- 01 16 57			<u>4</u>	5	4	3	2	2	1	4
15		21 48 00	- 22 00 57	4	5	2	3	2	0	2	<u>3</u>
25		15 59 00	- 17 46 57	0	0	2	2	2	<u>4</u>	4	5

Date	Hours (Universal Time)			K-Index
	h m s	h m s	h m s	
Aug. 26	00 35 00	- 01 55 57	19 31 00	<u>5</u> 4 1 1 3 2 <u>2</u> 0
27	- 03 33 57		20 34 00	<u>4</u> <u>5</u> 3 1 1 3 <u>3</u> <u>3</u>
28	- 00 40 57		23 24 00	<u>2</u> 4 2 1 1 1 2 <u>1</u>
29	- 03 02 57			<u>4</u> <u>2</u> 2 1 0 0 0 0
30			21 29 00	3 1 2 1 0 1 2 <u>3</u>
31	- 00 58 57		21 13 00	<u>3</u> 2 1 0 0 0 0 <u>2</u>
Sep. 1	- 02 29 57			<u>4</u> 2 1 1 0 0 0 0
2	00 26 00	- 02 30 57	18 39 00	<u>2</u> 1 1 1 0 0 <u>2</u> <u>3</u>
3	- 01 39 57		23 31 00	<u>5</u> 6 1 0 0 0 0 <u>2</u>
4	- 02 05 57			<u>3</u> 2 1 2 2 0 0 3
12			20 01 00	2 5 1 0 0 0 <u>2</u> <u>4</u>
13	- 01 51 57	17 36 00	- 13 22 57	<u>5</u> 4 2 2 2 <u>3</u> <u>5</u> 4
15			21 36 00	4 4 2 2 1 1 0 <u>3</u>
16	- 00 29 57		20 01 00	<u>0</u> 1 1 1 0 1 <u>3</u> <u>3</u>
17	- 01 40 57			<u>3</u> 3 3 1 1 1 0 2
21			17 43 00	5 6 5 4 3 <u>2</u> <u>4</u> <u>7</u>
22	- 01 14 57	18 10 00	- 19 18 57	<u>7</u> 6 3 2 4 5 <u>5</u> 5
24			18 16 00	4 4 2 0 2 2 <u>3</u> 5
25	- 00 04 57		20 04 00	5 4 1 1 2 1 <u>3</u> <u>3</u>
26	- 00 33 57			<u>1</u> 3 2 2 2 4 4 5
27			18 05 00	6 7 5 1 0 0 0 <u>1</u>
28	- 00 20 57			<u>1</u> 1 1 2 1 4 1 2
Oct. 1			19 06 00	1 1 1 1 0 0 <u>0</u> <u>0</u>

Date	Hours (Universal Time)		K-Index
Oct. 2	h m s 00 10 57	h m s 20 03 00	<u>3</u> 2 2 1 0 0 <u>0</u> <u>1</u>
3	- 00 07 57	18 34 00	<u>2</u> 1 2 2 1 2 <u>2</u> <u>1</u>
4	- 00 36 57	h m s 19 10 00 - 23 20 57	<u>5</u> 3 2 1 0 0 <u>2</u> <u>3</u>
16		20 07 00 - 22 42 57	3 4 1 0 0 1 <u>2</u> <u>4</u>
13		19 41 00 - 22 19 57	4 4 5 1 2 2 <u>5</u> <u>6</u>
19		20 37 00 - 22 02 57	5 5 3 2 3 3 <u>2</u> <u>0</u>