

Records of All-Sky Camera Utilization
at Syowa Station, Antarctica
in 1967

Compiled by

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An all-sky camera was used in aurora observations during 1967 at Syowa Station, Antarctica.

This report describes the availability of data to upper atmosphere physicists. The original records are deposited at the Department of Polar Research, National Science Museum.

Enquiries about the details of the data should be addressed to:

Department of Polar Research
National Science Museum
Ueno Park
Tokyo
Japan

1. Location

Table 1. Location.

CSAGI NO.	Station	Geographic		Geomagnetic		Remarks
		Lat.S	Long.E	Lat.	Long.	
A984	Syowa	69°00'	39°36'	-69.6°	77.1°	Height about 15m(a. s. l.)

2. Observers

Dr. Katsutada KAMINUMA

(Earthquake Research Institute,
University of Tokyo).

Dr. Takeo HIRASAWA

(Geophysical Research Laboratory,
University of Tokyo).

3. Instrumentation

A 16mm Bolex movie camera was used (model H-16RX with f/1.4, 25mm in focal length).

The camera was operated during clear days between March 5 and October 20, 1967.

Fifteen-second exposure was made at intervals of 30 seconds, with black and white film, "Fuji 16mm HS, sensitivity: ASA 320". The film in a reel was 100 feet long.

4. Obtained Records

Availability of data is shown in Fig. 1 (days of observation) and Table 2 (hours of observation). No malfunctioning of the camera was experienced. Explanation of marks in Fig. 1 is as follows:

- Dark area : All-sky camera was operated.
- Cross : Not operated due to blizzard.
- Blank : Not operated due to overcast.

The second column of Table 2 is the hours of operation (Universal Time) of the camera. The third column shows K-indices, among which the figures with underlines represent the intensity of geomagnetic activity during the operation of all-sky camera.

The "X" marks in the third column denote lack of data due to trouble of 3-axis fluxgate magnetometer with pen-recorders.

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

K-Index:	0	(	0 r	~	<	25 r)
	1	(	25 r	~	<	50 r)
	2	(	50 r	~	<	100 r)
	3	(	100 r	~	<	200 r)
	4	(	200 r	~	<	350 r)
	5	(	350 r	~	<	600 r)
	6	(	600 r	~	<	1000 r)
	7	(	1000 r	~	<	1660 r)
	8	(	1660 r	~	<	2500 r)
	9	(	more than	>	2500 r)	

5. Distribution

Copies of all recorded films will be sent to the following organization after the compilation:

I.G.Y. World Data Center C (Instrumental)
Department of Electronics
Royal Institute of Technology
Stockholm 70
Sweden

Fig. 1. Days of observation by all-sky camera

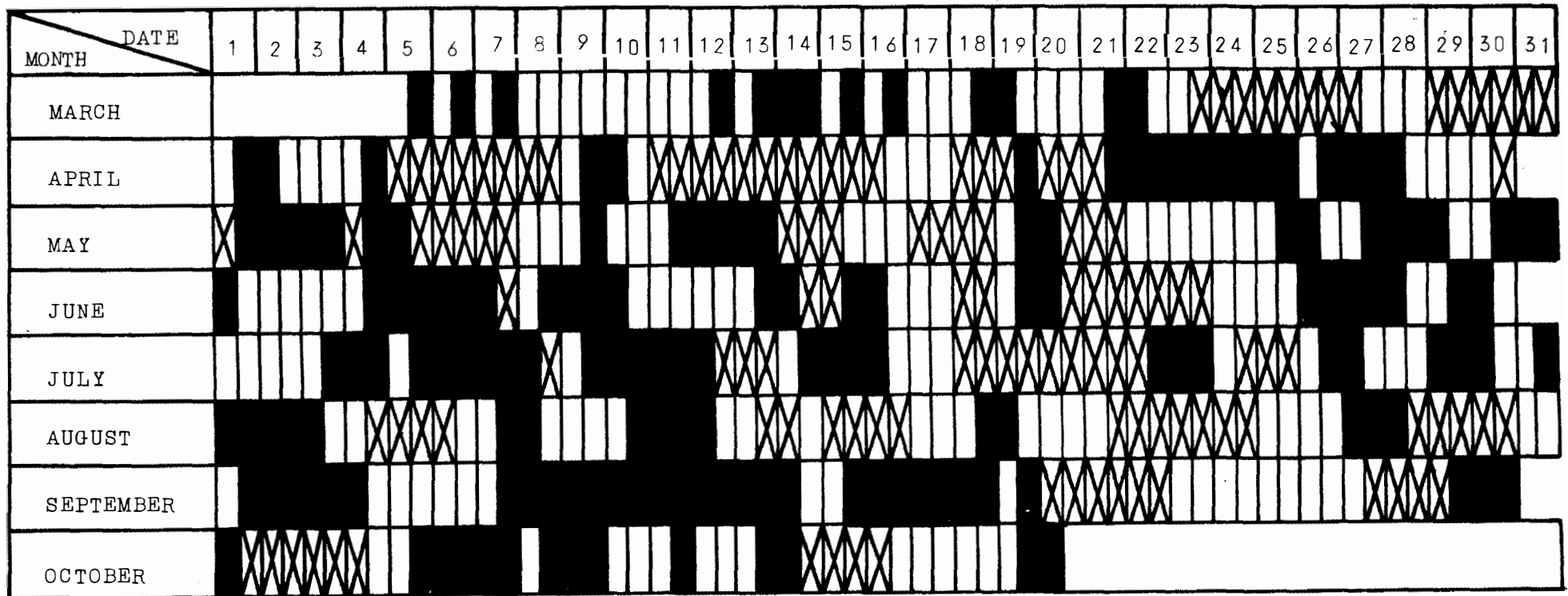


Table 2. Hours of operation of all-sky camera at Syowa Station in 1967.

March-April, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
Mar. 5	22 ^h 56 ^m 00 ^s ~ 23 ^h 56 ^m 45 ^s	3,4,2,0, 2,3,2, <u>4</u> .
6	19-13-47 ~ 23-31-47	4,3,1,0, 0,1, <u>2</u> , <u>3</u> .
7	18-40-00 ~ 22-54-00	0,1,1,0, 0,1, <u>1</u> , <u>1</u> .
12	18-10-30 ~ 23-55-00	0,0,0,1, 0,0, <u>0</u> , <u>0</u> .
13	18-13-00 ~	0,1,1,1, 0,0, <u>1</u> , <u>3</u> .
14	~00 ^h 30 ^m 30 ^s ; 18-02-00 ~ 23-40-00	<u>4</u> ,1,0,1, 0,0, <u>2</u> , <u>2</u> .
15	17-53-00 ~ 21-32-00	2,0,0,1, X, <u>X</u> , <u>X</u> , <u>X</u> .
16	20-38-00 ~ 23-36-30	X,X,1,1, 0,0, <u>1</u> , <u>2</u> .
18	21-55-00 ~	1,5,2,2, 3,2,4, <u>4</u> .
19	~00-51-30;	<u>5</u> ,5,5,1, 2,6,5,6.
21	19-11-00 ~	5,4,0,0, 1,2, <u>3</u> , <u>6</u> .
22	~00-32-30;	<u>X</u> ,X,0,2, 0,0,1,0.
Apr. 1	20-52-00 ~	2,0,0,1, 2,2, <u>2</u> , <u>4</u> .
2	~01-16-30;	<u>5</u> ,2,1,1, 1,1,3,3.
4	19-50-00 ~ 23-21-30	1,3,3,1, 2,2, <u>2</u> , <u>4</u> .
9	19-54-00 ~	5,1,0,0, 0,0, <u>0</u> , <u>4</u> .
10	~00-45-00;	<u>4</u> ,4,0,0, 0,0,3,2.
19	18-24-30 ~ 21-49-00	5,5,4,4, 2,2, <u>5</u> , <u>4</u> .

April-May, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
Apr. 21	20 ^h 47 ^m 30 ^s ~	5,4,4,2, 2,1, <u>1</u> , <u>4</u> .
22	~01 ^h 17 ^m 00 ^s ;18-16-00 ~	<u>5</u> ,5,5,4, 3,2, <u>4</u> , <u>5</u> .
23	~01-07-00 ;18-11-30 ~	<u>1</u> ,0,0,1, 0,4, <u>4</u> , <u>5</u> .
24	~01-07-30 ;19-00-00 ~	<u>5</u> ,5,4,4, 4,3, <u>4</u> , <u>6</u> .
25	~01-25-00 ;21-14-00 ~ 23 ^h 10 ^m 30 ^s	<u>5</u> ,5,1,2, 0,0,0, <u>2</u> .
26	;17-46-00 ~	1,0,0,0, 0, <u>0</u> , <u>0</u> , <u>0</u> .
27	~01-19-30 ;20-01-00 ~	<u>0</u> ,0,1,0, 0,0, <u>0</u> , <u>1</u> .
28	~00-54-30 ;	<u>0</u> ,1,0,0, 0,0,0,1.
May 1	18-46-00 ~	3,4,0,0, 0,0, <u>3</u> , <u>6</u> .
2	~01-11-00 ;16-42-30 ~	<u>4</u> ,2,2,2, 1, <u>3</u> , <u>5</u> , <u>6</u> .
3	~01-38-40 ;15-00-00 ~ 21-32-00	<u>5</u> ,5,6,5, 5, <u>3</u> , <u>6</u> , <u>4</u> .
4	20-05-00 ~	4,5,2,1, 2,2, <u>3</u> , <u>4</u> .
5	~00-38-00 ;	<u>5</u> ,5,3,1, X,X,X,4.
9	18-06-00 ~ 23-52-00	2,2,2,0, 0,0, <u>0</u> , <u>0</u> .
11	22-53-00 ~	5,4,2,0, 0,0,0, <u>5</u> .
12	~00-33-30 ;18-00-00 ~	<u>5</u> ,5,2,2, 0,1, <u>3</u> , <u>5</u> .
13	~00-03-00 ;21-46-00 ~ 22-39-00	<u>5</u> ,5,3,2, 1,0,3, <u>4</u> .
19	22-48-00 ~	5,5,4,2, 1,1,1, <u>0</u> .
20	~01-12-00 ;	<u>5</u> ,2,2,1, 0,0,1,2.

May-June, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
May 25	15 ^h 10 ^m 00 ^s ~	2,1,0,4, <u>6</u> , <u>5</u> , <u>5</u> , <u>7</u> .
26	~ 01 ⁿ 14 ^m 30 ^s ;	<u>8</u> ,7,6,5, 5,2,3,5.
27	15-39-30 ~	5,5,3,2, 3, <u>0</u> , <u>4</u> , <u>5</u> .
28	~ 01-49-00 ; 18-41-00 ~	<u>3</u> ,4,4,4, 3,5, <u>6</u> , <u>6</u> .
29	~ 01-18-30 ;	<u>6</u> ,6,6,4, 4,2,1,3.
30	14-58-00 ~	3,2,3,2, <u>4</u> , <u>4</u> , <u>7</u> , <u>6</u> .
31	~ 02-13-30 ; 15-41-00 ~	<u>6</u> ,6,6,2, 0, <u>2</u> , <u>2</u> , <u>2</u> .
June 1	~ 02-21-00 ;	<u>0</u> ,1,0,0, 0,0,0,1.
4	15-26-00 ~	4,0,0,0, 2, <u>4</u> , <u>4</u> , <u>5</u> .
5	~ 03-10-00 ; 15-59-00 ~	<u>5</u> , <u>3</u> ,0,0, 2, <u>1</u> , <u>6</u> , <u>6</u> .
6	~ 03-02-00 ; 16-23-00 ~	<u>7</u> , <u>4</u> ,3,0, <u>2</u> , <u>1</u> , <u>3</u> , <u>5</u> .
7	~ 00-27-30 ;	<u>7</u> ,5,5,2, 0,0,0,0.
8	16-06-00 ~	1,1,1,3, 4, <u>1</u> , <u>5</u> , <u>4</u> .
9	~ 01-16-00 ; 23-17-00 ~	<u>4</u> ,5,3,3, 3,1,2, <u>7</u> .
10	~ 04-42-30 ;	<u>5</u> , <u>2</u> , <u>2</u> ,0, 0,0,0,2.
13	15-41-00 ~	4,4,0,0, 0, <u>0</u> , <u>0</u> , <u>3</u> .
14	~ 01-03-30 ;	<u>4</u> ,3,3,2, 2,3,3,5.
15	21-08-00 ~	6,4,4,0, 0,0,0, <u>3</u> .
16	~ 00-09-30 ;	<u>0</u> ,0,0,2, 0,0,0,3.
19	20-08-00 ~	0,0,0,0, 0,1, <u>0</u> , <u>0</u> .

June-July, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
June 20	~01 ^h 00 ^m 00 ^s ;	<u>3</u> ,1,2,1, 0,0,0,0.
26	~ 00-17-00~02 ^h 36 ^m 30 ^s ;16 ^h 57 ^m 00 ^s	<u>6</u> ,3,3,2, 1, <u>0</u> , <u>2</u> , <u>4</u> .
27	~03-55-00 ;17-12-00~	<u>5</u> , <u>5</u> ,3,2, 0, <u>0</u> , <u>1</u> , <u>2</u> .
28	~01-58-30 ;	<u>4</u> ,0,0,0, 0,0,3,0.
29	18-38-00~	0,2,3,0, 0,0, <u>0</u> , <u>2</u> .
30	~02-35-00 ;	<u>4</u> ,2,2,1, 1,0,3,4.
July 3	19-01-00~	X,X,X,X, 0,0, <u>0</u> , <u>3</u> .
4	~01-23-30 ;18-47-00~ 23-27-00~	<u>2</u> ,2,2,0, 0,0, <u>0</u> , <u>5</u> .
5	16-40-00~	5,3,4,3, 3, <u>2</u> , <u>1</u> , <u>4</u> .
6	~02-09-30 ;16-49-00~	<u>2</u> ,3,0,0, 2, <u>2</u> , <u>3</u> , <u>5</u> .
7	~02-10-00 ;16-51-00~	<u>5</u> ,6,3,1, 2, <u>1</u> <u>1</u> , <u>3</u> .
8	~05-34-30 ;	<u>4</u> , <u>2</u> ,0,0, 0,0,0,0.
9	20-49-30~	0,0,0,0, 0,0, <u>0</u> , <u>0</u> .
10	~01-28-00 ;16-47-00~	<u>0</u> ,0,0,0, 0, <u>0</u> , <u>0</u> , <u>3</u> .
11	~05-36-00 ;16-25-00~	<u>5</u> , <u>3</u> ,3,3, 1, <u>1</u> , <u>3</u> , <u>4</u> .
12	~05-35-00	<u>4</u> , <u>5</u> ,5,3, 0,0,0,4.
14	21-43-00~	3,3,2,1, 2,1,1, <u>4</u> .
15	~05-35-30 ;19-46-00~	<u>1</u> , <u>0</u> ,0,0, 1,2, <u>6</u> , <u>3</u> .
16	~01-31-00 ;	<u>3</u> ,5,2,1, 0,0,0,1.
22	20-46-00~	3,0,0,0, 0,0, <u>0</u> , <u>1</u> .

July-August, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
July 23	~01 ^h 38 ^m 00 ^s ; 17 ^h 12 ^m 00 ^s ~ 20 ^h 53 ^m 30 ^s	<u>0</u> , 0, 0, 0, 0, <u>0</u> , <u>4</u> , <u>5</u> .
26	18-51-00 ~	5, 4, 0, 1, 1, 0, <u>0</u> , <u>0</u> .
27	~05-26-30 ;	<u>0</u> , <u>0</u> , 0, 0, 0, 0, 0, 3.
29	~00-00-00~01-35-30 ; ~ 19-52-00	<u>4</u> , 5, 4, 0, 0, 2, <u>4</u> , <u>5</u> .
30	~03-06-30 ;	<u>6</u> , <u>6</u> , 6, 1, 0, 0, 0, 0.
31	21-39-00 ~	0, 1, 0, 0, 0, 0, 0, <u>0</u> .
Aug. 1	~01-59-30 ; 18-39-00 ~	<u>0</u> , 0, 0, 0, 0, 0, <u>0</u> , <u>0</u> .
2	~01-52-00 ; 19-43-00 ~	<u>0</u> , 0, 0, 0, 0, 0, <u>0</u> , <u>0</u> .
3	~01-42-00 ;	<u>0</u> , 0, 0, 0, 0, 0, 0, 0.
7	23-11-00 ~	4, 1, 1, 1, 0, 0, 3, <u>4</u> .
8	~01-28-00 ;	<u>5</u> , 4, 3, 2, 1, 3, 1, 4.
10	18-11-00 ~	3, 2, 1, 2, 2, 0, <u>1</u> , <u>5</u> .
11	~06-22-00 ; 19-21-30 ~	<u>5</u> , <u>5</u> , <u>3</u> , 2, 2, 1, <u>5</u> , <u>5</u> .
12	~05-29-30 ;	<u>5</u> , <u>1</u> , 2, 1, 1, 0, 4, 4.
18	19-38-00 ~	5, 3, 3, 2, 1, 2, <u>2</u> , <u>4</u> .
19	~02-11-30 ;	<u>5</u> , 2, 3, 1, 1, 2, 2, 3.
27	~01-02-00~03-15-00 ; 18-22-00	<u>4</u> , <u>5</u> , 1, 0, 0, 0, <u>0</u> , <u>5</u> .
28	~01-42-00 ;	<u>1</u> , 0, 0, 0, 0, 0, 0, 0.

September, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
Sept. 1	18 ^h 01 ^m 00 ^s ~	5,5,6,2, 1,3, <u>3</u> , <u>5</u> .
2	~02 ^h 21 ^m 30 ^s ;18-28-00 ~	<u>5</u> ,4,3,3, 2,3, <u>1</u> , <u>2</u> .
3	~01-41-00 ;18-09-00 ~	<u>1</u> , <u>1</u> , <u>1</u> , <u>1</u> , 0,0, <u>0</u> , <u>3</u> .
4	~00-58-30 ;	<u>1</u> ,3,0,0, 0,1,0,2.
7	18-12-00 ~	0,0,1,0, 0,3, <u>2</u> , <u>2</u> .
8	~00-55-30 ;19-10-00 ~	<u>1</u> ,0,0,0, 1,2, <u>4</u> , <u>5</u> .
9	~01-31-30 ;18-56-00 ~	<u>5</u> ,6,2,2, 1,0, <u>5</u> , <u>4</u> .
10	~01-53-30 ;18-11-00 ~	<u>3</u> ,4,0,0, 0,0, <u>0</u> , <u>0</u> .
11	~01-07-30 ;17-04-00 ~	<u>0</u> ,0,0,0, 0, <u>0</u> , <u>0</u> , <u>0</u> .
12	~02-01-00 ;19-12-00 ~	<u>0</u> ,0,0,0, 0,0, <u>0</u> , <u>0</u> .
13	~03-09-30 ;17-16-00 ~	<u>2</u> , <u>5</u> ,4,3, <u>2</u> , <u>5</u> , <u>4</u> , <u>5</u> .
14	~00-12-00 ;	<u>4</u> ,3,3,3, 3,3,4,6.
15	18-36-00 ~	5,4,4,1, 0,1, <u>4</u> , <u>4</u> .
16	~02-44-30 ;22-10-00 ~	<u>5</u> ,4,1,1, 1,1,1, <u>2</u> .
17	~02-30-00 ;17-07-00 ~	<u>2</u> ,3,1,1, 0, <u>0</u> , <u>1</u> , <u>0</u> .
18	~02-53-00 ;16-58-00 ~21 ^h 45 ^m 00 ^s	<u>0</u> ,0,0,1, 1, <u>2</u> , <u>5</u> , <u>4</u> .
19	18-10-00 ~21-51-00	5,3,4,1, 2,2, <u>5</u> , <u>3</u> .
29	18-02-00 ~	6,5,6,4, 3,4, <u>5</u> , <u>7</u> .
30	~00-28-00 ;19-05-00 ~	<u>6</u> ,4,4,3, 3,3, <u>1</u> , <u>0</u> .

October, 1967

Day	Hours (Universal Time)	Remarks (K-Index)
Oct. 1	~01 ^h 22 ^m 00 ^s ;	<u>6</u> ,3,2,1, 1,1,0,2.
5	18 ^h 57 ^m 00 ^s ~	3,3,2,0, 0,2, <u>2</u> , <u>1</u> .
6	~01-50-00 ;19-25-00 ~	<u>3</u> ,5,0,0, 1,0, <u>0</u> , <u>3</u> .
7	~00-21-00 ;19-03-00 ~ 23 ^h 29 ^m 00 ^s	<u>2</u> ,2,1,1, 1,1, <u>1</u> , <u>1</u> .
8	20-09-00 ~	0,0,0,0, 2,2, <u>3</u> , <u>4</u> .
9	~00-30-00 ;18-49-00 ~ 23-31-00	<u>4</u> ,3,1,2, 1,3, <u>6</u> , <u>7</u> .
11	20-19-00 ~ 23-22-00	3,3,1,1, 1,4, <u>2</u> , <u>3</u> .
13	18-58-00 ~	6,4,0,1, 1,2, <u>1</u> , <u>4</u> .
14	~01-37-00 ;	<u>1</u> ,1,1,1, 1,2,5,4.
19	20-07-00 ~	2,1,0,0, 0,0, <u>0</u> , <u>1</u> .
20	~00-31-00 ;	<u>2</u> ,4,1,1, 0,0,0,0.