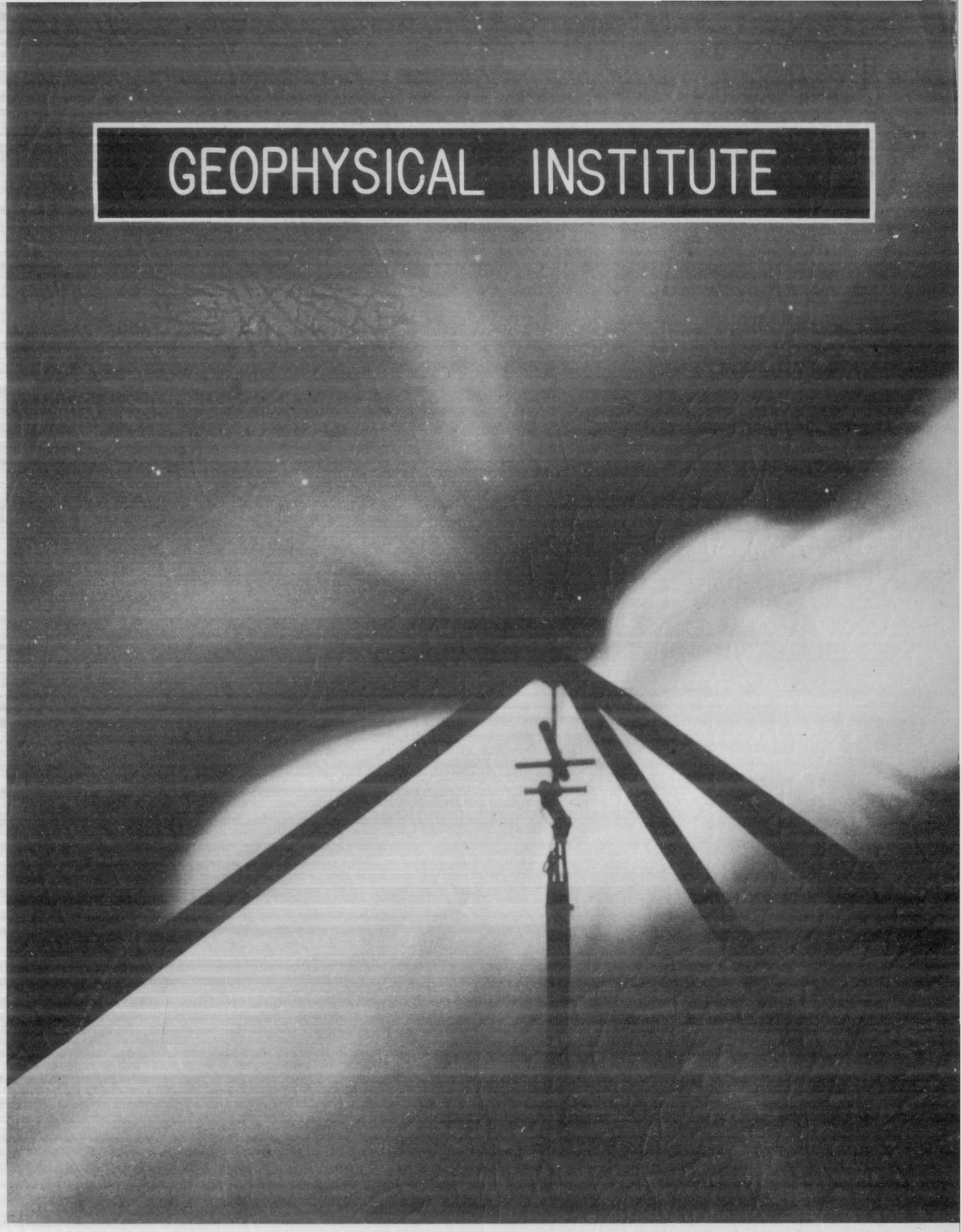

UNIVERSITY
OF ALASKA

COLLEGE
ALASKA

AURORAL INDEX FOR COLLEGE, ALASKA DERIVED FROM ALL-SKY CAMERA PHOTOGRAPHS

September 1957 - December 1958

by

Helen M. Tryon

Scientific Report No. 2
NSF Grant No. Y/22.6/327

Principal Investigator: C. T. Elvey, Director

GEOPHYSICAL INSTITUTE

of the

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Reviewed by:

T. Neil Davis

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The all-sky camera photographs of the aurora taken at College during the IGY period have been scaled to obtain a numerical index for each fifteen minute interval. The values increase with intensity from 0 through 6. The index is designed to present the degree of auroral activity observed by the all-sky camera in a form suitable for direct comparison with other data.

Operation at College

The camera at College was in operation throughout the hours of darkness during most of IGY. Because of the continuous light at auroral heights it was not operated during the summer months. There were also equipment difficulties which delayed the beginning of operation, so that the period covered is from Nov. 11, 1957 to Apr. 26, 1958 and from Sept. 2, 1958 to Dec. 31, 1958. The clock was not running from Feb. 28 - Mar. 5, 1958, and from Apr. 13-26, 1958, so that the observations of those periods are of limited value.

The camera is located at geographic coordinates 64° 52'N and 147° 49'W. The geomagnetic coordinates are 64.° 65 N and 256.° 56 E. The camera was correctly oriented to geomagnetic north on Dec. 5, 1957. Prior to that date it was oriented to a point 15° west of geomagnetic north.

Details of Photographs

The photographs are made on 16 mm film, with one exposure per minute, usually for 12 or 15 seconds. The camera photographs the entire sky except for the small portion higher than 76° above the horizon. This corresponds to a radius of 25 km from the zenith at a height of 100 km. The effective lower

limit is about 10° corresponding to a distance of 500 km at a height of 100 km. The all-sky camera stations in Alaska are spaced closely enough so that this range gives some overlap between the cameras. The Fort Yukon, Healy, Bettles, and Farewell cameras can see aurora which appears over College.

The elevation angles are indicated fairly accurately by a system of lights. On the north-south line there are lights at 60° and 30° elevation, and on the east-west line at 0°, 10°, 20°, 30°, 40°, 50°, 60°, and 70°. There is also a reflection of the 10° light which appears outside the 0° light on the horizon. The light on the horizon in the northeast quadrant is on a transmitter tower.

The time of the exposure appears in numerals on the edge of each frame. This is given in Alaska Standard Time (150th meridian time). If the frame is oriented so that the clock reading is on the right hand edge, north will be at the top, and east at the right.

The date and station are indicated by lights on the west side of the exposure, using a modified binary system. The month is indicated by the upper four lights; the station by the outside lower six, and the day of the month by the inside lower six. (See Figure I). College is station number 1. The light on the lower right is of no significance. It was intended to be a "fifteen-minute light", to indicate every fifteenth exposure, but did not operate dependably. Further information is available on the logs which are copied with the film.

Method of Scaling

The index is recorded in Table I at fifteen minute intervals centered on the hour and quarter hours. It is ordinarily determined by examining the three frames at the center of the fifteen minute interval (i.e. 2159, 2200, and 2201) and taking the value of the index of the frame having the greatest

activity. If, however, a maximum of activity appears between two such periods so briefly that it would not ordinarily be recorded in either, then that maximum value is substituted in the appropriate interval.

The value of the index is determined by the following descriptions.

0. No aurora visible.

1. Aurora just visible. May be very distant or very faint.

2. Moderate activity limited to small part of sky.

3. Moderate activity over most of sky, or small amount of intense activity.

4. Moderate activity over entire sky, or intense activity over most of sky.

5. Intense activity over entire sky, or very intense activity over most of sky.

6. Very intense activity over entire sky.

In general the moderate activity consists of homogeneous arcs and other quiet forms. The intense activity is brighter, and of more active forms, than the moderate. The very intense activity is so bright as to conceal the detail of the forms.

The prefix c indicates that the sky was cloudy and the index is only relatively significant. It may also have been used a few times when the index was unreliable because of snow or equipment trouble. Heavy clouds will obscure the aurora and reduce the apparent intensity, but light clouds may diffuse it so that the apparent area is considerably increased. Because of the difficulty in evaluating the actual effect of the cloud cover, the cloudy nights are judged by what is seen rather than by what may be assumed to be present. On cloudy nights, light areas are not scaled as aurora unless there

is positive evidence that they are indeed aurora and not light reflected from clouds or moonlight. Typical auroral forms, or continuity with aurora observed without cloud cover are considered as positive evidence. The presence of cloud cover was determined primarily by the absence of stars on the photographs and by the presence of reflected light above Fairbanks (in the southeast quadrant). More accurate indication of the cloud cover may be obtained from the auroral spectrograms made at College, by observing the amount of mercury light reflected from the clouds.

The suffixes n, z, and s indicate that the activity was in the north, zenith, or south, respectively. These suffixes are used only when the activity covers a limited part of the sky and the distinction is obvious.

The suffix m indicates that there was noticeable moonlight. In many such cases the aurora is still clearly visible, although the determination of intensity is less reliable. If the moonlight is so bright as to completely obscure the record, particularly on cloudy nights, or if the film is useless for some other reason, an x is used. A vertical line indicates that the index remains unchanged until a new value is given.

There were about 800 hours of aurora recorded during about 2800 hours of camera operation. For something like half the time the aurora was very faint, and about half of the observations are of reduced value because of clouds, moonlight, or equipment trouble. This leaves about 200 hours of aurora of at least moderate intensity photographed under good conditions on clear nights.

The nights on which aurora was observed are listed in Table II. There were no clear nights with good observations on which no aurora was observed. The nights are divided into two classes; those with good observations, and those on which there were clouds, moonlight, snow, or equipment trouble during most of the night. In each class, the nights with considerable aurora are underlined.

TABLE I

AURORAL INDEX - COLLEGE SEPTEMBER 16 - 30, 1957

All-sky camera observations were begun at College on September 16, but the date and time marks were not visible for most of the period, probably because of underexposure. The auroral index was difficult to judge.

Sept. 16	record of no use	
17	"	
18	"	
19	"	
20	"	
21?	considerable aurora at some time	
22?	"	
23?	"	
24	small amount of aurora, behind clouds	
25	"	
26	no significant aurora	
27	"	
28	considerable aurora, behind clouds	
29	"	2230 - 0045
30	cloudy, no aurora visible	

AURORAL INDEX - COLLEGE OCTOBER 1 - 31, 1957

All-sky camera observations were made at College throughout the month of October, but there is some confusion as to date in the earlier part of the month and fogged film in the latter part. Added to this, there was bright moonlight early in the month and considerable cloudy weather, so the data are not of much use.

There appears to have been aurora on

Oct. 20
23
26
27
28
30

and two nights between Oct. 11 and Oct. 19

AURORAL INDEX - COLLEGE NOVEMBER 1 - 10, 1957

The all-sky camera records from November 1 to 10 are of no use because of tests, clouds, and moonlight, and some poor film.

AURORAL INDEX - COLLEGE NOVEMBER 11 - 20, 1957

AST	Nov 11	Nov 12	Nov 13	Nov 14	Nov 15	Nov 16	Nov 17	Nov 18	Nov 19	Nov 20
1715			c0	c0	c0	c0	0	0	0	c0
30										
45	-	-								
1800	0	0								
15										
30										
45							0		0	
1900	0						c0		c0	
15	1n	0								
30	1n	c0								
45	1n						c0	0		
2000	1n						c1	c0		
15	1n						c2			
30	1n			c0			c2			
45	1n			c2			c1			
2100	1n	c0		c1			c0			
15	0	c0m	c0	c0			c2		c0	
30			c0m				c3		0	
45							c3			
2200	0						c5			
15	1z						c1			
30	2z						c0		0	
45	2z	c0m							c0	c0
2300	4	c1m								0
15	3	c1m			c0					
30	2	c2m			c1n					
45	2	c2m			c2n		c0			
2400	0	c1m			c1z		c4			
15	0	c1m			c1z		c1			
30	0	c2m			c2z		c1			
45	1s	c1m			c4z		c0			
0100	1s	c1m			c1n		c2			
15	1s	c0m			c1n		c2			
30	2s				c1n		c1			
45	2s				c0		c0			
0200	2						c0			
15	2						c1s			
30	c0m						c1s			
45							c1s			
0300							c2			0
15							c0			1n
30							c1			1n
45							c0			1n
0400							c2s			1n
15							c3			1n
30							c3			0
45							c3	c0		0
0500					c0		c2	0		c0
15					--		--			--
30										
45								0		
0600	c0m	c0m	c0m	c0		c0		c0	c0	

AURORAL INDEX - COLLEGE NOVEMBER 21-30, 1957

	Nov 21	Nov 22	Nov 23	Nov 24	Nov 25	Nov 26	Nov 27	Nov 28	Nov 29	Nov 30
1700	--	--	--	0	0	--	c0	c0	c0m	1m
15,30	--	c0	0	|	|	--	|	|	|	2m
45,1800	c0	|	|	|	|	--	|	|	|	c0m
15,30	|	|	|	|	|	c0	|	|	|	|
45	|	|	|	|	|	c1	|	|	|	|
1900	|	|	|	0	|	c2	|	|	|	|
15	|	|	|	1n	0	c3	|	|	|	|
30	|	|	|	1n	1n	c2	|	|	|	|
45	|	|	|	1n	1n	c1	|	|	|	|
2000	|	|	|	3n	1z	c2	|	|	|	|
15	|	|	|	3	1z	c6	|	|	|	|
30	|	|	0	2	1z	c5	c0	|	|	|
45	|	|	1n	3	1z	c4	c3	|	|	|
2100	|	|	1n	4	2z	c4	c4	|	|	|
15	|	|	1n	5	2z	c3	c0	|	|	c0m
30	|	|	1n	5	1s	c2	|	|	|	c1m
45	|	|	1n	5	2s	c2	|	|	|	c1m
2200	|	|	1n	4	4	c1	|	c0	|	c1m
15	|	|	2n	4	6	c1	|	c1	|	c0m
30	|	|	2n	3	2s	c0	c0	c1	|	|
45	|	|	3n	3s	3	|	c3	c2	c0m	|
2300	|	|	3	2s	2z	|	c1	c3	c0	c0m
15	|	|	3	2s	2z	|	0	c3	|	c2m
30	|	|	2z	1s	2z	c0	0	c4	|	c0m
45	|	|	2z	2s	4	c1	c2	c2	|	c1m
2400	|	|	2z	5	3	c4	c3	c1	|	c2m
15	|	|	2n	6	2s	c4	c3	c1	|	c1m
30	|	|	1z	3	1s	c3	c4	c1	|	c1
45	|	|	2z	3z	1s	c2	c2	c1	|	c1
0100	|	|	2z	2z	1s	c1	c0	c1	|	c1
15	|	|	2z	2s	2s	c1	|	c1	|	c2
30	|	|	3z	3s	2s	c0	|	c1	|	c0
45	|	|	2z	3s	5	|	|	c1	|	c0
0200	|	|	2z	3s	6	|	|	c2	|	c0
15	|	|	3z	2s	4	|	|	c3	|	c0
30	|	|	3z	2s	2z	|	c0	c3	|	c0
45	|	|	3z	2s	2z	|	c1	c2	|	--
0300	|	|	2z	2s	1z	|	c4	c2	|	|
15	|	|	2z	2s	2z	|	c5	c3	|	|
30	|	|	2z	2s	3z	|	c5	c3	|	|
45	|	|	2z	2z	3z	|	c4	c4	|	|
0400	|	|	2z	2z	3s	|	c4	c2	|	|
15	|	|	2z	1z	3s	|	c5	c1	|	|
30	|	|	3z	1z	--	|	c3	c1	|	|
45	|	|	2z	1z	|	|	c3	c1	|	|
0500	|	|	2z	1s	|	|	c4	c1	|	|
15	|	|	2z	0	|	|	c3	c2	|	|
30	|	c0	2n	1s	|	|	c3	c2	|	|
45	|	--	2n	2z	|	|	c3	c1	|	|
0600	|	|	2n	3z	|	|	--	c1	|	|
15	|	|	2n	3z	|	c0	|	c1	|	|
30	c0	|	2n	4z	|	--	|	c1	c0	|

AURORAL INDEX - COLLEGE DECEMBER 1-10, 1957

AST	DEC 1	DEC 2	DEC 3	DEC 4	DEC 5	DEC 6	DEC 7	DEC 8	DEC 9	DEC 10
1630-										
2045	x	x		c0m	c0m	c0m	c0	x	x	c0
2100										
15						c0m				c0
30						c1m				c1
45						c1m				c2
2200						c2m				c0
15						c1m				
30						c0m				
45							c0			
2300				c0m			c1			
15				c1m			c2			
30				c2m			c1			
45				c0m			c0			
2400										
15										
30	x									
45	c1									
0100	c0m	x		c0m						
15		c1m		c1m						
30		c0m		c0m						
45		c0m								
0200		c0m								
15	c0m	c0m								
30	c0	c1m								
45		--								
0300										
15										
30	c0									
45	c2									
0400	c1									
15	c0									
30	c1									
45	c1					c0m				
0500	c0			c0m						
15	c0			c1m						
30	c0			c1m						
45	c1			c1m						
0600	c0			c1m						
15	c1			c1m						
30	c1			c2						c0
45	c2			c3						-
0700	c1			c3	c0m	c0m	c0	x	x	

Moon, clouds

Moon, clouds

probably considerable aurora much of night

overexposed or moonlight

overexposed or moonlight

AURORAL INDEX - COLLEGE DECEMBER 11-20, 1957

AST	Dec 11	Dec 12	Dec 13	Dec 14	Dec 15	Dec 16	Dec 17	Dec 18	Dec 19	Dec 20
1630,45	x	c0	c0	c0	0	0	c0	0	0	c0
1700,15										c0
1730,45										0
1800						0				0
15						1n			0	1n
30						0			1z	2n
45									1z	3z
1900									2z	5z
15									2z	2z
30								0	3z	1z
45								1n	2z	1z
2000					0	0		1n	3z	2z
15					1n	2n		1n	1z	3z
30					1n	3z		1n	1z	3z
45					1n	4n		1n	1z	2z
2100					2n	1n		2n	2	2s
15					1n	1z		2n	1z	2s
30					1n	1z		3n	1z	5
45					0	1n		3n	2z	c2
2200				c0	1n	1n		3n	2z	c1
15				c1	1n	0		4	2z	c1
30				c3	c1			4	3	c1
45				c2	c1		c0	2n	1z	c1
2300		c0		c1	c1		c1	0	1z	c2
15		c1		c0	c1		c1	0	1z	c3
30		c1			0		c0	1z	1z	c2
45		c2					c2	3	1z	c3
2400		c1					c2	4	1z	c1
15		c0			0		c3	3	2z	c0
30		c2			c3		c3	3	1z	
45		c0		c0	c2		c1	3	5	
0100				c1	c1		c5	2z	6	c0
15				c1	c2		c4	2	c1	c1
30				c0	c2		c4	6	c1	c1
45			c0		c1		c4	4	c0	c1
0200			--		--		c3	c3	c2	c1
15							c2	c5	c4	c0
30							c1	c6	c2	
45							c1	c3	c1	
0300							c1	c2	c1	
15							c1	c1	c1	
30							c1	c1	c1	
45							c1	c1	c1	
0400							c1	c1	c1	
15							c1	c1	c1	
30						0	c1	c1	c0	
45						1z	c1	c0	c0	
0500						1z	c2	c1		
15						0	c2	c1		
30							c1	c0		
45							c1			
0600,15							c0			
30,45	x	c0		c0		0	c0	c0	c0	c0

Cloudy, no aurora distinguishable, probably aurora after midnight

AURORAL INDEX - COLLEGE DECEMBER 21-31, 1957

AST	Dec 21	Dec 22	Dec 23	Dec 24	Dec 25	Dec 26	Dec 27	Dec 28	Dec 29	Dec 30	Dec 31
1630-1715	0	0	c0	0	0	c0	c0	c0	c0m	-	c0m
1730-1815					0					x	
1830					1n	c0					
45			c0		1n	0					
1900			0		1n						
15					1n						
30					1n						
45					1n						
2000				0	c1						
15				1n	c0						
30				1n							
45				2z							
2100				2z							
15				3n							
30		0		1z			c0				
45		1n		1			-				
2200	0	1n		1	c0		-				
15	1n	1n		0	c1		c0				
30	1n	1n		1n	c2		-				
45	1n	2n		1n	2		-				
2300	1n	1n		0	1s		-				c0m
15	0	1n			1s		c0				c1m
30	0	0			1s		c0				c2m
45	0				3		-	c0			c4m
2400	1n				3		-	0			c2m
15	1n				3		0				c1m
30	1n		0		2						c0m
45	1n		2		c2						
0100	1n		2		c2				c0m		
15	0		1		c2			0	c2m		
30			--		c1			1n	c1m		
45			2		c2		0	2n	c1m		
0200			2		c1		--	2	c2m		
15			1	0	c1			1	c2m		
30		0	1	2n	c1			c1	c3m		
45		1n	1	1n	c2			c2	c3		
0300		1n	0	2	c2			c2	c3		
15		1n		2	c3	0		c1	c4		
30		2n		c2	c3	c0		c1	c2		
45		1n		c2	c4	c0		c1	c2		c0m
0400		1n		c2	c4	c1		c1	c2		c1
15		1n		c2	c3	c1		c1	c2		c2
30		1n		c1	c2	c1		c0	c3		c2
45		1n		c0	c2	c1		c1	c2		c3
0500		0			c3	c1		c1	c2		c2
15					c3	c0		c0	c2		c1
30					c3				c1		c1
45					c2				c1	x	c1
0600					c2				c1		c1
15	0	0	0	c0	c2	c0		c0	c0		c1

bright moonlight

AURORAL INDEX - COLLEGE JANUARY 1-10, 1958

AST	Jan 1	Jan 2	Jan 3	Jan 4	Jan 5	Jan 6	Jan 7	Jan 8	Jan 9	Jan 10
1630-45	x	c0m	x	x	c0m	c0m	-	-	-	-
1700-15							c0	c0	c0	-
1730-45										c0
1800										
15					c0m					
30					x					
45										
1900-15										
1930-45										
2000		c0m								
15		x				c0m				
30						x				
45										
2100										
15							c0		c0	
30							c0m		c1	
45									c1	
2200									c1	
15								c0	c1	
30								c0m	c0	
45							c0m	c0m	c1	
2300		x					x	c0m	c1	
15	x	c0m						c0m	c0	
30	c0m							x	c0	
45									c1	c0
2400									c1	c1
15		c0m							c0m	c0
30		c2m	x						c0m	c0
45		c1m	-						c1m	c0
0100		c0m							c2m	c0
15									c1m	c1
30									c0m	c1
45									c0m	c1
0200										c1
15										c0m
30-45										
0300										
15	c0m									
30	-								c0m	
45									c2m	
0400									c1m	
15		c0m		x					c0m	
30		c0		c0m					c0m	
45									c0m	
0500									c0m	
15										
30,45										
0600										
15-45										
0700-15		c0		c0m	x	x	x	x	c0m	c0m

AURORAL INDEX - COLLEGE JANUARY 11-20, 1958

AST	Jan 11	Jan 12	Jan 13	Jan 14	Jan 15	Jan 16	Jan 17	Jan 18	Jan 19	Jan 20
1700	0	0	0	c0	0	c0	c0	c0	-	-
15									0	1z
30										2z
45										1z
1800					0					1z
15	0	0			c0					1z
30	1	1					c0			1
45	1						1			1
1900	1		0				1			1
15	2		c0				1			1
30	2						1			1
45	3						1			1
2000	4						0			0
15	4						0			0
30	2						1		0	0
45	2						1		1n	0
2100	3	1					c0		1n	0
15	3	2	c0				c0		c2n	1s
30	4	2	c1				c0		c2n	2s
45	3	c2	c1				c3		c3	2
2200	3	c1	c1				c0		c0	2
15	3	c1	c2							2
30	4	c1	c3							1
45	4	c1	c1							1
2300	4	c0	c1							1
15	4	c1	c1							1
30	3	c1	c1							2
45	2	c1	c1							4
2400	2	c0	c1					c0		1
15	2	c0	c1	c0				c1		c1
30	2	c1	c2	c1				c0		c1
45	2	c3	c1	c3				c1	c0	c1
0100	2	c4	c1	c2				c2	c1	c1
15	2	c3	c1	c1				c1	c0	c1
30	4	c3	c1	c1				c2	c0	c2
45	5	c4	c2	c0				c3	c0	c2
0200	5	c3	c3	c0				c4	c1	c1
15	4	c4	c3	c1				c4	c1	c1
30	4	c3	c4	c0				c4	c0	c1
45	3m	c4	c4	c2				c4		c1
0300	2m	c4	c4	c2				c5		c1
15	2m	c3	c4	c2	c0			c3		c1
30	2m	c2	c3	c2	c1			c3		c1
45	2m	c1	c3	c2	c1			c3		c1
0400	3m	c1	c3	c3	c0			c4		c1
15	c3m	c1	c2	c2				c4		c1
30	c3m	c1	c1	c3				c3		c1
45	c2m	c1	c1	c3				c3		c0
0500	c2m	c2	c1	c1				c2		c1
15	c2m	c1	c1	c0				c1		c1
30	c1m	c1	c1	c0				c1		c1
45	c1m	c1	c1	c0				c1		c1
0600-15	c1m	c1m	c0	c0				c1		c0
0630-45	c1m	c1m	c0	c0	c0	c0	c0	c1	c0	c0

AURORAL INDEX - COLLEGE JANUARY 21-31, 1958

AST	Jan 21	Jan 22	Jan 23	Jan 24	Jan 25	Jan 26	Jan 27	Jan 28	Jan 29	Jan 30	Jan 31
1730	0	0	0	0	0	0	0	-	-	-	-
45	|	0	|	|	1z	|	|	c1m	c0m	x	x
1800	|	0	|	|	1z	|	|	|	|	|	|
15	|	1n	|	|	1z	|	|	|	|	|	|
30	|	0	|	|	2z	|	|	|	|	|	|
45	|	1n	|	0	2z	|	|	|	|	|	|
1900	|	1n	|	1n	3z	|	|	|	|	|	|
15	0	1n	|	|	3z	|	|	|	|	|	|
30	1n	1n	0	|	3z	|	|	|	|	|	|
45	1n	2	c0	|	2z	|	|	|	|	|	|
2000	1n	c2	|	|	3z	|	|	|	|	|	|
15	1n	c2	|	|	3z	|	|	|	|	|	|
30	2n	c3	|	1n	4	|	|	|	|	|	|
45	2n	c4	|	2n	4	|	|	|	|	|	|
2100	c2	c5	|	2n	3	|	|	|	|	|	|
15	c2	c4	|	1n	4	|	0	|	|	|	|
30	c2	c3	|	1n	4	|	1n	|	|	|	|
45	c1	c4	|	1n	4	|	1n	|	|	|	|
2200	c1	c3	|	1n	4	0	1n	|	|	|	|
15	c1	c2	|	2n	3	1n	2n	|	|	|	|
30	c1	c2	|	1n	3	2n	3z	c1m	|	|	|
45	c1	c3	|	2n	2	2n	3	c2m	|	moonlight	|
2300	c1	c4	|	5	3	2n	4	c3m	|	|	moonlight
15	c0	c4	|	c2	4	1n	5	c4m	|	|	|
30	c0	c4	|	c2	3	|	c2	c3m	|	|	|
45	c0	c2	|	c2	c3	|	c2	c2m	|	|	|
2400	c1	c1	c0	c1	c2	|	c1	c2m	|	|	|
15	c2	c1	c2	c1	c2	|	c1	c4m	|	|	|
30	c2	c1	c1	c1	c1	|	1n	c2m	|	|	|
45	c1	c2	c1	c1	c1	|	2n	c1m	|	|	|
0100	c1	c1	c2	c1	c1	|	2n	c1m	|	|	|
15	c2	c1	c1	c1	c1	|	2	c1m	|	|	|
30	c2	c1	c3	c1	c1	1n	3	c1m	|	|	|
45	5	c1	c3	c1	c1	0	3	c1m	|	|	|
0200	4	c1	c4	c1	1n	0	4	c1m	|	|	|
15	c3	c2	c0	c1	1n	|	4	c1m	|	|	|
30	c3	c5	c0	c1	1n	|	3	c2	c0m	x	|
45	c3	c6	c2	c1	1n	|	3	c2	c0	c0	|
0300	c3	c1	c0	c2	0	|	3	c2	|	|	|
15	c4	c0	c0	c2	|	|	c3	c2	|	|	|
30	c3	c1	c1	c3	|	|	c3	c2	|	|	|
45	c4	c1	c1	c4	0	|	c2	c2	|	|	x
0400	c5	c0	c1	c4	1n	|	c2	c2	|	|	c0
15	c3	c0	c2	c4	1n	|	c1	c1	|	|	|
30	c4	c1	c2	c2	1n	|	c2	c1	|	|	|
45	c2	c2	c1	c2	1n	0	c1	c2	|	|	|
0500	c1	c3	c1	c4	2n	1n	c1	c2	|	|	|
15	c1	c3	c2	c3	2	|	c1	c2	|	|	|
30	c2	c1	c1	c3	-	|	c1	c2	|	|	|
45	c2	c1	c2	c3	|	|	c1	c2	|	|	|
0600	c1	c1	c2	c5	|	1n	c1	c3	|	|	|
15	c1	c1	c1	c4	|	2n	c1	c3	|	|	|
30	c1	c1	c1	c3	|	2n	c1	c3	c0	c0	c0
45	c1	c1	-	c3	|	-	-	-	-	-	-

AURORAL INDEX - COLLEGE FEBRUARY 1-10, 1958

AST	Feb 1	Feb 2	Feb 3	Feb 4	Feb 5	Feb 6	Feb 7	Feb 8	Feb 9	Feb10
1800	x	x	x	c0	1n	0	--	1n	--	--
15	|	|	|	|	1n	0	1n	1n	0	--
30	|	|	|	|	1n	0	1n	0	0	4
45	|	|	|	|	2n	0	1n	|	1n	4
1900	|	|	|	|	2n	1n	1n	|	1n	4
15	|	|	|	c0	1n	1n	2n	|	1n	3s
30	|	|	|	c0m	2n	1n	2n	|	1n	3s
45	|	|	|	|	1n	2n	2n	|	1n	2s
2000	|	|	|	|	1n	1n	2n	|	0	2s
15	|	|	|	|	1n	1n	2n	|	|	1s
30	|	|	|	|	0m	1n	2	|	|	2s
45	|	|	|	|	|	1n	2	|	|	4s
2100	|	|	|	c0m	|	1n	4	|	|	4s
15	|	|	|	c1m	|	1n	3	0	|	5
30	|	|	|	c1m	|	2n	4	1n	|	5
45	|	|	|	c1m	0m	1n	2	1n	|	6
2200	|	|	|	c1m	1m	1n	1	1n	|	4s
15	|	|	|	c0m	3m	2n	2	1	|	3s
30	|	|	|	|	3m	3	2	1	|	2s
45	|	|	|	|	1m	5	2	1	|	2s
2300	|	|	|	|	0m	3	2	1	|	1s
15	|	|	|	|	|	2m	4	1	|	2s
30	|	|	|	|	|	0m	4	1	0	2s
45	|	|	|	|	|	|	5	1	1n	2s
2400	|	|	|	|	0m	|	3	2n	3n	2s
15	moonlight, cloudy	moonlight, cloudy	moonlight, cloudy	|	1m	|	1m	2	2n	2s
30	|	|	|	|	1m	|	2m	2z	4n	3s
45	|	|	|	|	1m	|	2m	4	3n	6
0100	|	|	|	|	3m	0m	1m	2	2n	6
15	|	|	|	|	2m	1m	1m	2	2n	5
30	|	|	|	|	1m	1m	1m	2	2n	5
45	|	|	|	|	0m	3m	1m	2	2n	5
0200	|	|	|	|	|	0m	1m	1m	2n	4
15	|	|	|	|	|	1m	1m	0m	2	4s
30	|	|	|	c0m	|	0m	1m	|	2	4s
45	|	|	|	c1m	0m	0m	2m	|	4	3s
0300	|	|	|	c0m	0m	1m	2m	|	4	3s
15	|	|	|	|	1m	0m	1m	|	5	6
30	|	|	|	|	2m	|	2m	|	5	4
45	|	|	|	c0m	3m	|	2m	0m	4	4
0400	|	x	|	c2m	2m	|	2m	1m	4	4
15	|	c0	|	c0m	2m	|	2m	2m	4	4
30	x	|	|	|	1m	|	1m	1m	4	6
45	c0	|	|	|	1m	0m	2m	1m	4	5
0500	|	|	|	|	1m	1m	3m	2m	4	4
15	|	|	|	|	1m	1m	4m	2m	4	3
30	|	|	|	c0m	2m	2m	4m	3m	4	4
45	|	|	|	c1m	2m	3m	3m	4m	4	4
0600	c0	c0	x	c2m	--	3m	3m	4m	4	4

AURORAL INDEX - COLLEGE FEBRUARY 11-20, 1958

AST	Feb 11	Feb 12	Feb 13	Feb 14	Feb 15	Feb 16	Feb 17	Feb 18	Feb 19	Feb 20
1900	0	0	2n	c0	--	2z	1	1n	0	0
15	1n	0	2n	|	0	2z	2	1n	1n	|
30	1n	0	2n	|	|	1z	1	1n	1	|
45	1	1n	2n	|	|	x	2	2n	1	|
2000	2	1n	c2	|	|	|	1	2n	0	|
15	2	0	c2	|	|	|	0	3z	x	|
30	2	0	c2	|	|	|	x	3n	1n	|
45	4	0	c1	|	|	x	0	3n	1	0
2100	5	0	c1	|	|	0	1	1n	0	2
15	6	1n	c1	|	|	0	2	1	1	2
30	3	1n	c1	|	|	1	2	2	2	3
45	4	1n	c2	|	|	1	1	2	2	4
2200	3	1n	c3	|	0	1	1	2	2	5
15	2	2n	c2	|	1	2	2	2	3	1
30	1	3z	c2	|	1	3	2	2	2	1
45	2n	4	4z	|	1	2	4	3	3	1
2300	2n	2n	4n	|	1	x	2	2n	2	0
15	3	3	4z	|	1	x	2	1n	1z	0
30	4	2	4z	|	1	x	2	1n	2z	1
45	3	2	4	|	1	x	4	2n	3	|
2400	3	2n	c2	|	2n	2	5	2n	1	|
15	5	1	c1	|	2	0	2	3n	1	|
30	4	1n	c1	|	1	1	3	3	0	|
45	4	1n	c1	|	1	3	2	2	|	|
0100	6	1	4	|	1	3	2	2	|	|
15	5	2z	5	|	1	2	0	2	|	1
30	3	3z	5	|	1	2	0	2s	|	2z
45	4	4	c4	|	1	3	1	2s	0	2z
0200	3	5	c3	|	0	4	1	4	1	c0
15	3	5	c3	|	0	x	2	1	2	|
30	3z	6	c3	|	0	x	3	x	3	|
45	3s	6	c2	|	x	x	4	2	4	|
0300	2z	4	c2	|	x	x	3	2	2	|
15	2z	3	c3	|	x	0	4	2	1	|
30	2z	2	c4	|	x	1	2	2	1	|
45	2z	2s	c4	|	1	1	1	1	2	|
0400	2z	3z	c2	|	0	1	1	x	2	|
15	1	3	c2	|	|	1	0	|	2	|
30	1	3	c3	|	|	1	x	|	1	|
45	2	2	c3	|	0	x	x	|	|	|
0500	2n	2	c2	|	x	|	1	|	|	|
15	1	1	c2	|	|	|	1	|	|	|
30	c1	2z	c2	|	|	|	2	|	|	|
45	c1	2	c2	|	x	x	1	x	1	c0
0600	c1	2	c2	c0	--	--	--	--	--	--

film reticulated, emulsion missing in places

AURORAL INDEX - COLLEGE FEBRUARY 21-28

AST	Feb 21	Feb 22	Feb 23	Feb 24	Feb 25	Feb 26	Feb 27	Feb 28
1900	c0	0	0	0	0	c0	x	
15	|	c0	|	0	0	|	|	
30	|	|	|	1n	1	|	|	
45	|	|	|	1n	1n	|	|	
2000	|	|	|	1n	1n	|	|	
15	|	|	|	2n	1n	|	|	
30	|	c0	|	2n	1n	|	|	
45	|	c2n	|	2n	0	|	|	
2100	|	c1	|	1n	1n	|	|	
15	|	c0	0	1n	0	|	|	
30	|	c0	1n	0	0	|	|	
45	|	c1	1n	0	0	|	|	
2200	c	c1	2n	1n	0	|	|	
15	|	c1	2n	1n	-	|	|	
30	c0	c2	2n	2n		|	|	
45	c1	c4	2n	2n		|	|	
2300	c2	c4	2n	2n		|	|	
15	c1	c4	2n	1n		|	|	
30	c2	c4	2n	1n		|	|	
45	c1	c5	c2	1n		|	|	
2400	c1	c2	c2	0	-	|	|	
15	c1	c3	c2	0	2n	|	|	
30	c2	c1	c3	1	2	|	|	
45	c3	c4	c1	1	-	|	|	
0100	c2	c5	c1	1		|	|	
15	c2	c4	c2	1		|	|	
30	c3	c3	c2	1		|	|	
45	c3	c0	c2	0		|	|	
0200	c2	c0	c3	|		|	|	
15	c2	c0	c3	|		|	|	
30	c2	c1	c3	|		|	|	
45	c4	c1	c3	|		|	|	
0300	c3	c1	c1	|		|	|	
15	c2	c1	c1	|		|	|	
30	c2	c1	c1	|		|	|	
45	c1	c1	c1	0		|	|	
0400	c1	c1	c1	1n		|	moonlight, film blurred, no time marks	
15	c1	c0	c0	1		|	|	
30	c1	c1	c1	1		|	|	
45	c2	c1	c1	1		|	|	
0500	c1	c1	c1	1		|	|	
15	c1	c1	c1	0		c0	x	

no observation

AURORAL INDEX - COLLEGE MARCH 1-10, 1958

AST	Mar 1	Mar 2	Mar 3	Mar 4	Mar 5	Mar 6	Mar 7	Mar 8	Mar 9	Mar 10
1900	x	x	x	x	x	c0				
15										
30									-	-
45									c0	0
2000										
15							-	-		
30							0	c0		
45							1n	c1		
2100							1n	c1		
15							2n	c0		
30							2n			
45							3			
2200							3			
15							4			
30							5			
45							5	c0		
2300							4	c1	c0	
15							5m	c2	c1	
30							4m	c5	c2	
45							2m	c3	c0	
2400							0m			
15							1m			
30							1m			
45							1m	c3	c0	0
0100							2m	c1	c1	1
15							2m	c4		3
30						c0	1m	c4		1
45						c2m	0m	c2		2
0200						c2m	1m	c0	c1	2
15						c1m	1m	c0	c0	4
30						c0m	0m	c0m	c0	4
45									c1	c4
0300									c2	c4
15									c3	c4
30									c0	c4
45										c3
0400								c0m		c3
15								c1m		c2
30								c1m		c2
45	x	x	x	x	x	c0m	0m	c2m	c0	c2

bright moonlight, blurred film, no time marks

AURORAL INDEX - COLLEGE MARCH 11-20, 1958

AST	Mar 11	Mar 12	Mar 13	Mar 14	Mar 15	Mar 16	Mar 17	Mar 18	Mar 19	Mar 20
1930	c0	c2	0	-						
45	|	c2	|	-	-	-	-	-	-	
2000	|	c1	|	c0	-	-	-	-	-	-
15	|	c2	|	|	0	2	1	c0	0	-
3030	|	c2	|	|	|	1	2	|	0	c0
45	|	c1	|	|	|	2	3	|	1	|
2100	|	c1	|	|	|	2	2	|	1	|
15	|	c3	|	|	|	2	5	|	1	|
30	|	c3	|	|	0	2	2	|	0	|
45	|	c2	|	|	1	3	c1	|	0	|
2200	|	c5	|	|	1	3	c0	|	1	|
15	|	c2	|	|	1	4	|	|	c1	|
30	|	c2	|	|	1	2	|	|	c2	|
45	|	c2	|	c0	0	5	|	|	c3	|
2300	|	c2	|	c2	1	c2	|	|	c0	|
15	|	c3	0	c0	1	c0	|	|	c0	|
30	|	c2	c0	c1	1	|	c0	|	c0	|
45	|	c5	c3	c1	0	|	c3	|	c0	|
2400	|	c1	c2	c1	|	|	c1	|	c2	|
15	|	c1	c2	c2	|	|	c0	|	c0	|
30	|	c1	c2	c1	|	|	|	c0	|	|
45	|	c1	c3	c1	|	|	|	c3	|	|
0100	|	c1	c2	c3	|	|	|	c2	|	|
15	|	c1	c2	c2	|	|	|	c1	|	|
30	|	c1	c3	c1	|	c0	|	c4	|	|
45	|	c1	c3	c1	|	c2	|	c1	|	|
0200	|	c2	c4	c0	|	c1	|	c0	|	|
15	|	c2	c2	c1	|	c1	|	c1	|	|
30	|	c1	c2	c1	0	c1	|	c1	|	|
45	|	c1	c2	c2	1	c1	|	c0	|	|
0300	|	c1	c2	c2	0	c1	|	c0	c0	|
15	|	c3	c1	c3	|	c0	|	c2	c1	|
30	|	c2	c1	c1	|	c3	|	c2	c0	|
45	|	c1	c0	c0	|	c2	|	c1	c0	c0
0400	|	c1	c0	c0	|	c2	|	c1	c0	c2
15	|	c1	c0	c0	0	c2	c0	c0	c0	c2
30	c0	c1	c0	c1	-	-	-	-	-	-

No clock, times estimated for entire night, Mar 13

AURORAL INDEX - COLLEGE MARCH 21-31

AST	Mar 21	Mar 22	Mar 23	Mar 24	Mar 25	Mar 26	Mar 27	Mar 28	Mar 29	Mar 30	Mar 31
2015	0	c0	0	c0	-	-	-				
30	|	c0	1	c0	c0m	c0m	c0	-	-	-	-
45	|	c2	2	c0	|	|	|	c0m	c0m	c0m	c0
2100	|	c2	4	c2	|	|	|	|	|	|	|
15	|	c3	4	c1	|	|	|	|	|	|	|
30	|	c3	4	c1	|	|	|	|	|	|	|
45	|	c4	4	c4	|	|	c0	|	|	|	|
2200	|	c4	4	c4	|	|	c1	|	c0m	|	|
15	|	c4	2	c1	|	c0m	c1	|	c1m	|	|
30	0	c3	c1	c1	|	c2	c1	|	c4m	|	|
45	2	c2	c1	c2	|	c2	c2	c0m	c5m	|	|
2300	1	c1	c1	c2	c0m	c2	c2	c1m	c3m	|	|
15	2	c1	c1	c2	c1z	c3	c1	c2m	c4m	|	|
30	2	c1	c2	c2	c3	c5	c1	c2m	c1m	|	|
45	1	c1	c3	c2	c2	c5	c0	c2m	|	c0m	|
2400	1	c3	c3	c2	c0	c2	|	c1m	|	c1m	|
15	1	c3	c3	c3	c0	c3	|	c0m	|	c0m	|
30	1	c5	c4	c3	c0	c1	|	|	|	c2m	|
45	c0	c1	c5	c2	c2	c3	|	|	|	c2m	|
0100	c0	c1	c5	c3	c0	c1	|	|	c1m	c2m	|
15	c2	c1	c2	c5	|	c1	|	|	c3m	c3m	|
30	c1	c1	c1	c5	|	c1	|	|	c3m	c1m	|
45	c0	c1	c1	c3	|	c1	|	|	c3m	c2m	|
0200	|	c2	c2	c2	|	c1	c0	|	c2m	c1m	|
15	|	c2	c2	c3	|	c1	c1	|	c0m	c1m	|
30	|	c2	c1	c2	|	c0	c1	|	c0m	c2m	|
45	|	c3	c3	c2	|	|	c0	|	c1m	c1m	|
0300	|	c4	c2	c3	|	|	|	|	c1m	c0m	|
15	|	c4	c2	c3	|	|	|	|	c0m	c0m	c0
30	|	c4	c1	c3	c0	c0	c0	c0m	-	-	-
45	c0	c4	c1	-	-	-	-	-			

blotches on film

AURORAL INDEX - COLLEGE APRIL 1-10, 1958

AST	Apr 1	Apr 2	Apr 3	Apr 4	Apr 5	Apr 6	Apr 7	Apr 8	Apr 9	Apr 10
2045	c1m	c0m	-	2	-	-				
2100	c1m		c0m	3	0	1				
15	c1m			c1	0	2				
30	c0m	c0m	c0m	c0	1	2	-	-	-	-
45		c1m	c1m	c0	3	2	0	0	0	0
2200		c0m	c1m	c1m	c3	3		1n		
15			c1m	c1m	c3	4		1		
30			c0m	c1m	c3	4	0	1		
45			c4m	c1m	c3	4	1n	1	0	
2300			c4m	c2m	c4	3	1n	2	1	
15			c2m	c1m	c4	3	1n	2	2	0
30			c0m	c1m	c3	2	1n	2	1	2
45				c2m	c4m	3	0	2	1	3
2400				c3m	c5m	3		4	1	3
15	c0m	c0m		c4m	c5m	5		3	1	2
30		c1m		c2m	c1m	4	0	2	1	2
45		c0m		c2m	c1m	c2	1	2	0	1
0100		c1m		c0m	c2m	c0	1	3	1	1
15		c1m			c2m		1	2	1	1
30		c1m			c1m		1	1	1	2
45		c0m			c0m		1	1	1	3
0200							c0	0	2	1
15									0	0
30			c0m						0	-
45			c2m	c0m		c0	c0	0	-	
0300			c2m	c0m	c0m	-	-	-		
15		c0m	-	-	-					
30	c0m	-								

AURORAL INDEX - COLLEGE

APRIL 11-20, 1958

APRIL 21-26, 1958

AST	Apr 11	Apr 12	Apr 13	Apr 14	Apr 15	Apr 16	Apr 17	Apr 18	Apr 19	Apr 20
2145	0	c0	0							
2200	0					c4				
15	0							c0		
30	1									
45	0								0	c0
2300	2								2	
15	2		0					c0	3	
30	2		1					1	2	
45	1		2			c5		4	2	
2400	0		4					3	2	
15			4					2	2	
30			4					c1	0	c0
45			4					c1		
0100			4					c1		
15			3			c4		c1		
30			3							
45		c0	3							
0200	0	-								

cloudy, perhaps some aurora

cloudy, probably considerable aurora

cloudy, considerable aurora

cloudy, some aurora

No clock, camera jumped exposures, times guessed

Apr 21	Apr 22	Apr 23	Apr 24	Apr 25	Apr 26
c0					
3					
4					
3	c0	no record?	c0	c0	c0m
c2					
c1					
c1					
c2					

AURORAL INDEX - COLLEGE SEPTEMBER 2-10, 1958

AST	Sept 1	Sept 2	Sept 3	Sept 4	Sept 5	Sept 6	Sept 7	Sept 8	Sept 9	Sept10
2030					-	-	-	-	c0	c0
45		-	-	-	c0	0	c0	c0	|	|
2100		0	c0	c0	|	|	|	|	|	|
15		|	c0	|	|	|	|	|	|
30		|	c0	|	|	|	|	|	|
45		|	-	|	|	|	|	|	|
2200		|		|	|	|	|	|	|
15		|		|	|	|	|	|	|
30		0		|	|	0	|	|	|	|
45		0m		|	|	c0	c0	c0	|	|
2300		2m		|	|	|	c1	c2	|	|
15		0m		|	|	|	c3	c3	|	|
30		1m		|	|	|	c2	c4	|	|
45		2m		|	|	|	c3	c3	|	|
2400		1m		|	|	|	c2	c2	|	|
15		1m		|	|	|	c1	c0	c0	|
30		0m		|	|	|	c1	|	0	|
45		0m		|	|	|	c0	|	|	|
0100		2m		|	|	|	|	|	|	|
15		1m		|	|	|	|	|	|	|
30		1m		|	|	|	|	|	|	|
45		0m		|	|	|	c0	|	|	|
0200		|		|	|	|	c1	|	|	|
15		|		|	|	|	c1	|	|	|
30		|		|	|	|	c0	|	|	|
45		0m		c0	c0	|	c0	|	|	|
0300		-		-	-	c0	c0	c0	0	c0

AURORAL INDEX - COLLEGE SEPTEMBER 11-20, 1958

AST	Sept 11	Sept 12	Sept 13	Sept 14	Sept 15	Sept 16	Sept 17	Sept 18	Sept 19	Sept 20
1945						-	-	-	c0	c0
2000	-	-			-	0	0	c0		
15	0	x			x					
30		x			x					
45		c0			c0					
2100					c1					
15					1					
30					2	0				
45					1	x				
2200		c0			x	x				
15		x			2	1				
30		c0			1	2				
45		c0			2	2				
2300		c0			2	c1				
15		x			3	0	0			
30		c0			c3		1			
45		c0	no data	no data	c3		1			
2400		c0			c3		x			
15		c0			x		0			
30		x			c0	0	0			
45		c0			c1	x	x			
0100		x			c0	1	x			
15		c0			x	0	0			
30	0				x	0	0			
45	c0				x	0	0	c0		
0200	c0				1	0	0	c1		
15	c0				1	1	0			
30	c0				1	c1	1			
45	x				x	c1	1			
0300	c0				x	x	c1			
15	c0	c0			x	x	c0			
30	-	-			-	-	-	c1	c0	c0

Possible confusion on dates

AURORAL INDEX - COLLEGE SEPTEMBER 21-30, 1958

AST	Sept 21	Sept 22	Sept 23	Sept 24	Sept 25	Sept 26	Sept 27	Sept 28	Sept 29	Sept 30
1900								-	c0	c0
15	-	-	-	-	-	-	-	0m		
30	c0	c0	c0	c1	c0m	c0m	c0m			
45				c1						
2000				c1						
15				c1m						
30				c1m						
45				c0m						
2100				c1m						
15				c2m						
30				c1m	c0m					
45				c0m	c1m					
2200					c0m			0m		
15					c0m			c0m		
30					c0m					
45					c1m					
2300					c0m					
15					c0m					
30				c0m						
45				c0						
2400					c0m					
15					c4m					
30					c4m					
45			c0		c3m			c0m		
0100			c1		c1m	c0m		0m		
15			c0		c1m	-				c0
30					c1m					c0m
45					c3m					
0200					c4m			0m		
15					c1m			1m		
30					c3m			2m		
45					c2m			0m		
0300					c0m					
15					c2m					
30	c0				c2m					
45	-	c0	c0	c0	c2m					
0400		-	-	-	c3m		c0m	0m		
15					-		-	-	c0	c0m

AURORAL INDEX - COLLEGE OCTOBER 1-10, 1958

AST	Oct 1	Oct 2	Oct 3	Oct 4	Oct 5	Oct 6	Oct 7	Oct 8	Oct 9	Oct 10
1830	-	-	-	-	-	0	c0	0	0	0
45	-	-	c0	0	c0	0				
1900	c0	c0				1				
15	c1	c0				2				
30	c0	c0				2				
45		c0				2				
2000		c0		0		3				
15		2		1		4				
30		3		1	c0	4				
45		1m		1	0	1				
2100		0m		0		1				
15		1m				0				
30		1m				0				
45		2m			0	0				
2200		0m			c0	1		0		0
15		0m				0		1		1
30		c0				0		1		1
45				0		1		1		2
2300				c0	c0	3		1		2
15					c1	3		2		1
30					c1	2		2		1
45			c0		c0	2		2		2
2400			c1		c0	2		c2		2
15			c1		c0	1		c2		2
30			c0	c0	c0	5		c2		2
45				0m	c0	c3		c1	0	1
0100				1m	c2	c0		c1	1	1
15				1m	c0	c0		c2		2
30				0m	c1	c1		c2		2
45				1m	c0	c0		c2		1
0200				c0m	c0			c2		
15				c0m	c0			c2		
30				c1m	c1			c1		
45				c0m	c2			c1		
0300					c2			c1		
15					c1			c1		
30					c0			c2		
45								c1		
0400								c1		
15								c1		
30	c0	c0	c0	c0m	c0	c0	c0	c0	1	1

AURORAL INDEX - COLLEGE OCTOBER 11-20, 1958

AST	Oct 11	Oct 12	Oct 13	Oct 14	Oct 15	Oct 16	Oct 17	Oct 18	Oct 19	Oct 20
1815	-	-	0	c0	0	c0	c0	c0	c0	0
30	0	0	0		1					
45		0	0		2					
1900		0	0		2					
15		0	0		3					
30		c0	c0		4					
45					2					
2000					2					
15					1					
30					1					
45					2					
2100					1					
15										
30										
45										
2200										0
15							c0			c0
30					1		c1			
45					x		c1			
2300					2		c1			
15					3		c0			
30					2					
45					2					
2400				c0	c2					
15				c1	c1					
30			c0	c2	c0					
45	0		0	-						c0
0100	1		0							c1
15	0		1							
30			c0							
45										
0200										
15										
30										
45										c1
0300										c2
15										c2
30										c2
45										c2
0400										c2
15					c0					c1
30	0				x					c1
45	-	c0	c0		x	c0	c0			c1
0500		-	-		-	-	-	c0	c0	c1

AURORAL INDEX - COLLEGE OCTOBER 21-31, 1958

AST	Oct 21	Oct 22	Oct 23	Oct 24	Oct 25	Oct 26	Oct 27	Oct 28	Oct 29	Oct 30	Oct 31
1730						-	-	-	c0	c0	0
45	-	-	-	-	-	0m	c0m	c0	c0		
1800	1m	1m	0m	x	0m				c0		
15	1m	x	0m						c0		
30	1m	1m	1m						c0m		
45	1m	1m	1m								
1900	1m	2m	x								
15	1m	4m	x					c0			0
30	2m	x	1m	x				c0m			0m
45	3m	x	1m	0m							0m
2000	5m	x	x								0m
15	4m	x	x				c0m				0m
30	2m	0m	x				0m				c0m
45	3m	1m	4m								x
2100	3m	x	x								c0m
15	1m	3m	1m		0m						
30	3m	2m	0m		2m						
45	3m	3m	x		2m						
2200	3m	2m	2m		1m						
15	4m	2m	x		0m	0m					c0m
30	4m	x				1m				c0	x
45	3m					3m	0m			c0m	c0m
2300	5m					1m	2m				c0m
15	5m					1m	1m	c0m			c0m
30	4m		x		0m	1m	0m	c1m	c0m		x
45	4m		0m		2m	1m	0m	c2m	0m		c0m
2400	3m		1m		3m	0m	2m	c1m	0m		
15	3m	x	x		0m	0m	4m	c0m	3m		
30	3m	3m	-		1m	1m	c0m		2m		
45	3m	x			0m	0m			0m		
0100	2m					0m			0m		c0m
15	2m					1m			1m		x
30	c2					0m			3m		x
45	c2						c0m		4m		c0m
0200	c2				0m		0m		1m		c0m
15	c2	x			1m		0m		1m		c0m
30	c1	c1			1m		1m		0m		x
45	c1	x			1m		0m		0m		x
0300	c0				0m		1m		1m		c0m
15	c1						1m		1m		c0m
30	c1						1m		1m		c0m
45	c1	x					1m		0m		c0m
0400	c1	3					1m		0m		x
15	c1	x					0m		0m		0m
30	c1	x					1m		0m		
45	c1	3					0m		2m		
0500	c1	x					0m		2m		
15	-	-		0m	0m	0m	0m	c0m	2m	c0m	0m

AURORAL INDEX - COLLEGE NOVEMBER 1-10, 1958

AST	Nov 1	Nov 2	Nov 3	Nov 4	Nov 5	Nov 6	Nov 7	Nov 8	Nov 9	Nov 10
1715	-	-	-	-	-	-	c0	0	c0	c0
30	0	c0	0	c0	0	c0	c0			
45	0						c0			
1800	x						c0			
15	0						0			
30	0									
45	0		0					0		
1900	0		1					1n		
15	c0		1							
30			0							
45			0		0					
2000			c0		c0					
15										
30										
45	c0									
2100	c0m						0	1n		c0
15							1	0		c2
30							1	0		c3
45	c0m	c0					1			c1
2200		c0m					c2			c2
15				c0			c2			c1
30				x			c2		c0	c0
45	c0m		c0	c0			c2	0		
2300	0m		c1	c0			c2	1n		
15	0m		c1	x			c2			
30	1m		c1	c0			c3			
45	2m		c1m	c0			c2			
2400	1m		c1m	x			c1			
15	0m		c1m	c0			c1			
30			c0m				c1			
45			c0m				c2			
0100			c0m				c1			
15			c0m				c1			
30			x				c1			
45	0m		x				c0			
0200	x		c0m							
15	c0m		c0m							
30			x							
45			c3m							
0300			c2m							
15			c1m							
30			c1m							
45			c0m	c0						
0400			c0m	0m				1n		
15				0m				0		
30				x						
45				0m						
0500			c0m	0m						
15			x	0m						
30	c0m	c0m	x	0m						
45	-	-	c0m	0m	c0	c0	c0	0		
0600			-	-	-	-	-	-	c0	c0

AURORAL INDEX - COLLEGE NOVEMBER 11-20, 1958

AST	Nov 11	Nov 12	Nov 13	Nov 14	Nov 15	Nov 16	Nov 17	Nov 18	Nov 19	Nov 20
1715	c0	c0	0	c0	c0	c0		c0	c0	0m
30										
45										
1800										
15							-			
30							c0			
45										
1900										
15										
30										
45										
2000										
15										
30										
45										
2100										
15										
30						c0				
45						c2				
2200					c0	c1				
15		c0			c1	c1				
30		c1			c0	c1				
45		c1				c2				
2300		c2				c1				
15		c2				c0				
30		2				c0				0m
45		3				c0				1m
2400		2				c0				1m
15		2				c1				1m
30		1	0			c0				3m
45		1	1			c0				2m
0100		1	1			c0				2m
15		1	1			c1				2m
30		2	0		c0	c1				3m
45		1			c2	c1				1m
0200		0			c3	c1				1
15					c1	c1				1
30					c0	c0				1
45					c2	c0				2
0300					c0	c0				
15					c0	c0				
30		0			c1	c0				
45		c0			c0	c1				
0400		c0								
15		c0	0							
30		c0	c0							
45		0								
0500		0				c1				2
15		0				c0				-
30		0				c0				
45		c0				c0				
0600	c0	c0	c0	c0	c0	c0	c0	c0	c0	

AURORAL INDEX - COLLEGE NOVEMBER 21-30, 1958

AST	Nov 21	Nov 22	Nov 23	Nov 24	Nov 25	Nov 26	Nov 27	Nov 28	Nov 29	Nov 30
1700	0m	0m	0m	c0m	c0m	c0m	c0m	c0	c0	0
15										
30										
45										
1800										
15										
30								c0		
45							c0m	c0m		
1900							x			
15										
30					c0m					
45			0m		c1m					
2000			c0m		c1m	c0m			c0	
15					c2m	x		c0m	c0m	0
30					c2m			x	c0m	0m
45					c1m				0m	
2100					c0m					
15		0m								
30		1m								
45	0m	1m								
2200	c0m	1m								
15		0m								
30		0m							0m	
45		0m								
2300		0m								
15		c0m								
30										
45										
2400										
15										
30										
45										
0100										
15										
30										0m
45										1m
0200										1m
15	c0m					x				1m
30	c0					-				0m
45										0m
0300			c0m					x		0m
15			-					-		-
30										
45		c0m								
0400		c0		c0m						
15				c1m						
30										
45										
0500										
15										
30				c1m						
45				c2m						
0600	c0			c2m						
15	-	c0		c1m						
30		-		-	c0m		x		0m	

AURORAL INDEX - COLLEGE DECEMBER 1-10, 1958

AST	Dec 1	Dec 2	Dec. 3	Dec 4	Dec 5	Dec 6	Dec 7	Dec 8	Dec 9	Dec 10
1630	-	-	-	-	-	-	0	0	0	0
1645,1700	0	0	0	0	0	0	|	0,1	|	|
1715,30	|	1,0	|	1,2	|	0	|	1,0	|	|
1745	|	1	|	3	|	0	|	0	|	|
1800,15	|	0	|	3	|	1n	|	1	|	|
1830	|	c0	|	3	|	|	|	1	|	|
1845	|	c0	|	4	|	|	|	0	|	|
1900,15	|	c0	|	4	|	|	|	1	|	|
1930,45	|	0	|	4	|	|	|	0	|	|
2000	|	0	0	4	|	|	|	0	|	|
15	|	0	1	4	|	|	|	1	|	|
30	|	c0	1	3	|	|	|	1	0	|
45	|	|	1	3	|	|	|	1	1	|
2100	|	|	2	4	|	|	|	2	1	|
15	|	|	2	3	|	|	|	3	1	|
30	|	|	2	3	|	|	|	4	0	0
45	|	|	2	3	|	|	|	5	|	1n
2200	|	|	3	4	|	|	|	4	|	1n
15	|	c0	3	4	|	|	0	3	|	1n
30	|	c0m	4	4	|	|	1	2	|	2n
45	|	|	4	4	|	|	1	3	|	2n
2300	|	|	5	4	|	|	1	2	0	1n
15	|	|	5	4	0	|	1	2	1n	1n
30	|	c0m	4	4	1	1n	1	2	1n	1n
45	0	0m	4	4	2	0	2	3	1n	1n
2400	0m	0m	4	3	5	0	2	2	1n	2
15	|	1m	4	3	5	1n	3	3	1n	2
30	|	2m	4	2	4	|	2	3	1n	2
45	|	2m	3	3	4	|	3	2	1n	2
0100	|	2m	4	3	2	|	3	2	1n	2
15	0m	1m	4m	4	3	|	4	1	1n	2
30	1m	1m	5m	4	3	|	4	1	1n	1
45	1m	1m	5m	2	3	1n	3	1	|	|
0200	0m	4m	4m	1m	4	2n	3	1	|	|
15	1m	0m	2m	2m	4	2n	2	2	|	|
30	2m	0m	2m	1m	3	3n	2	3	|	|
45	1m	0m	3m	1m	2	3n	2	3	|	|
0300	0m	x	3m	2m	2	3	2	4	|	|
15	|	|	2m	2m	4	3	2	3	|	2
30	|	|	4m	2m	5	3	4	3	|	2
45	|	|	5m	1m	4	3	3	3	|	2
0400	|	|	3m	1m	3	3	4	3	|	2
15	|	|	2m	1m	3	2	4	3	1n	1
0430	|	|	c2m	0m	2	2	3	2	0	0
45	|	|	c2m	|	2m	2	3	2	|	1
0500	|	x	c1m	|	2m	2	3	1	|	1
15	|	0m	c1m	|	3m	1n	3	1	|	1
30	|	0m	c0m	|	3m	1n	4	0	|	0
45	|	0m	c0m	|	3m	0	3	0	|	1
0600,15	0m	0m	c0m	|	3m	0	4,3	0	|	1
30	0	0m	c0m	0m	2m	0	3	0	0	1
45	-	-	-	-	-	0	3	0	0	2
0700						-	3	-	-	2

AURORAL INDEX - COLLEGE DECEMBER 11-20, 1958

AST	Dec 11	Dec 12	Dec 13	Dec 14	Dec 15	Dec 16	Dec 17	Dec 18	Dec 19	Dec 20
1630	0	2	c0	-	-	c0	1m	0m	0m	c0m
1645,1700	|	2	|	0	c0	|	1m	1m	|	|
1715	|	2	|	|	|	|	1m	1m	|	|
1730	|	3	|	|	|	|	1m	2m	|	|
1745	|	2	|	|	|	|	1m	1m	|	|
1800,15	|	2	|	|	|	|	0m	1m	|	|
1830	|	2	|	|	|	|	0m	0m	|	|
45	|	1	|	|	|	|	1m	0m	|	|
1900	|	1	|	|	|	|	2m	c1m	|	|
15	|	1	|	0	|	|	1m	c1m	|	|
30	|	1	|	c0	|	c0	0m	c0m	|	|
45	|	1	|	|	|	0m	|	|	|	|
2000,15	|	c1	|	|	|	|	|	|	|	|
30,45	|	c1	|	|	|	|	|	|	|	|
2100,15	|	c1	|	|	|	0m	|	|	0m	|
30,45	|	c1	|	|	|	1m	|	|	1m	|
2200	|	c0	|	|	|	2m	|	|	3m	|
15	|	c0	|	|	|	3m	|	|	3m	c0m
30	|	c0	|	|	|	3	|	c0m	2m	c1m
45	|	c0	|	|	|	4	0m	c1m	5m	c1m
2300	|	c0	|	|	|	4	c0m	c4m	2m	c0m
15	|	c1	|	|	|	4	c0m	c1m	1m	|
30	|	c1	|	|	|	c4	c0m	c3m	1m	|
45	|	c1	|	|	|	c3	c1	c1m	1m	|
2400	|	c1	|	|	c0	c3	c2	c1m	c1m	c0m
15	0	c0	|	|	c1	c3	c0	c0	c1m	c2m
30	2	|	|	|	c0	c2	0	|	c0m	c2m
45	3	|	|	|	|	c2	0	|	c2m	c2m
0100	2	|	|	|	|	c2	0	|	c1m	c0m
15,30	1	|	c0	|	|	c2	0	c0	c0	c1m
45	|	|	1	|	c0	c2	1	c2	|	c1m
0200	|	|	1	|	c1	c3	1	c0	|	c0m
15	|	|	1	|	c1	c2	x	c1	|	c1m
30	|	|	1	|	c2	c2	x	c0	|	c2m
45	|	|	2	|	c4	c2	2	c1	|	c2m
0300	|	c0	2	|	c3	c2	0	c2	|	c1m
15	|	c5	1	|	c1	c2	|	c1	|	c1m
30	1	c1	0	|	c4	c2	|	cX0	cX0	c1m
45	0	c4	0	|	c3	c1	|	|	c1	c2
0400	|	c4	1	|	c2	c1	|	|	c2	c3
15	|	c3	3	|	c2	c1	|	|	c1	c3
30	|	c4	3	|	c1	c1	|	|	c0	c3
45	|	c3	3	|	c1	c1	|	|	|	c3
0500	|	c4	3	|	c3	c1	|	|	|	c4
15	|	c3	4	|	c0	1	|	|	|	c3
30	|	c2	4	|	|	|	|	|	|	c2
45	|	c3	4	|	|	|	|	|	|	c2
0600	|	c2	3	|	|	|	|	|	|	c1
15	|	c3	3	|	|	|	|	|	|	c1
30	|	c1	4	|	|	|	|	|	|	c1
0645,0700	0	c3	4	c0	c0	1	0	c0	c0	c1

AURORAL INDEX - COLLEGE DECEMBER 21-31, 1958

AST	Dec 21	Dec 22	Dec 23	Dec 24	Dec 25	Dec 26	Dec 27	Dec 28	Dec 29	Dec30	Dec 31
1630,45	0m	c0m	0m	c0m	0m	c0m	c0m	c0m	c0	0	0
1700,15			0m		c0m						
1730,45			0m		c0m						
1800,15			c0m	c0m	c0m						
1830,45				x	x						
1900,15											
1930,45						c0m					
2000						x				0	
15										1	
30										1	
45							c0m			2	
2100							x			2	
15									c0	3	
30				x					c0m	3	
45				c0m						1	
2200	0m									1	
15	1m									1	0
30	2m									0m	1
45	0m										1
2300											1
15											1
30											1
45											1m
2400											0m
15	0m								c0m		
30	c0m								c1m		
45									c2m		
0100									c1m		
15									c1m		
30									c1m		
45									c1m		
0200				c0m					c1m		
15				0m					c1m		
30									c2m		
45						x			c1m		
0300						c0m			c1m		
15					x				c0m	0m	
30					c0m				0m	1m	
45										0m	
0400	c0m	c0m								0m	
15	c0	c0								1m	
30	c0										
45	c0		c0m								
0500	c0		c0								
15	c1										
30,45	c0					c0m	x			1m	
0600,15	c0					0m	c0m			0m	
30,45	c0					0m	c0m			0m	
0700	c0	c0	c0	0m	c0m	0m	c0m	c0m	0m	0m	0m

TABLE II

Nights with good observations:

1957

Nov. 11, 23, 24, 25

Dec. 16, 18, 19, 20, 21, 23, 24

1958

Jan. 11, 20, 25, 26, 27

Feb. 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20, 24, 25

Mar. 7, 15, 16, 17, 21, 23

Apr. 6, 7, 8, 9, 10, 11

Oct. 6, 10, 15

Dec. 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 30

Nights with clouds, or other interference:

1957

Sept. 21, 22, 23, 24, 25, 28, 29

Nov. 12, 14, 15, 17, 20, 26, 27, 28.

Dec. 1, 2, 4, 5, 6, 7, 10, 12, 14, 15, 17, 25, 26, 28, 29, 31

1958

Jan. 2, 9, 10, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 28

Feb. 4, 5, 13, 21, 22, 23

Mar. 6, 8, 9, 10, 12, 13, 14, 18, 19, 20, 22, 24, 25, 26, 27, 28, 29, 30

Apr. 1, 2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19

Sept. 2, 7, 8, 15, 16, 17, 18, 23, 24, 25, 28

Oct. 1, 2, 3, 4, 5, 8, 9, 11, 13, 14, 17, 20, 21, 22, 23, 25, 27, 28, 29, 31

Nov. 1, 3, 7, 8, 10, 12, 13, 15, 16, 20, 22, 24, 25, 30

Dec. 1, 2, 12, 15, 16, 17, 18, 19, 20, 21, 29, 31

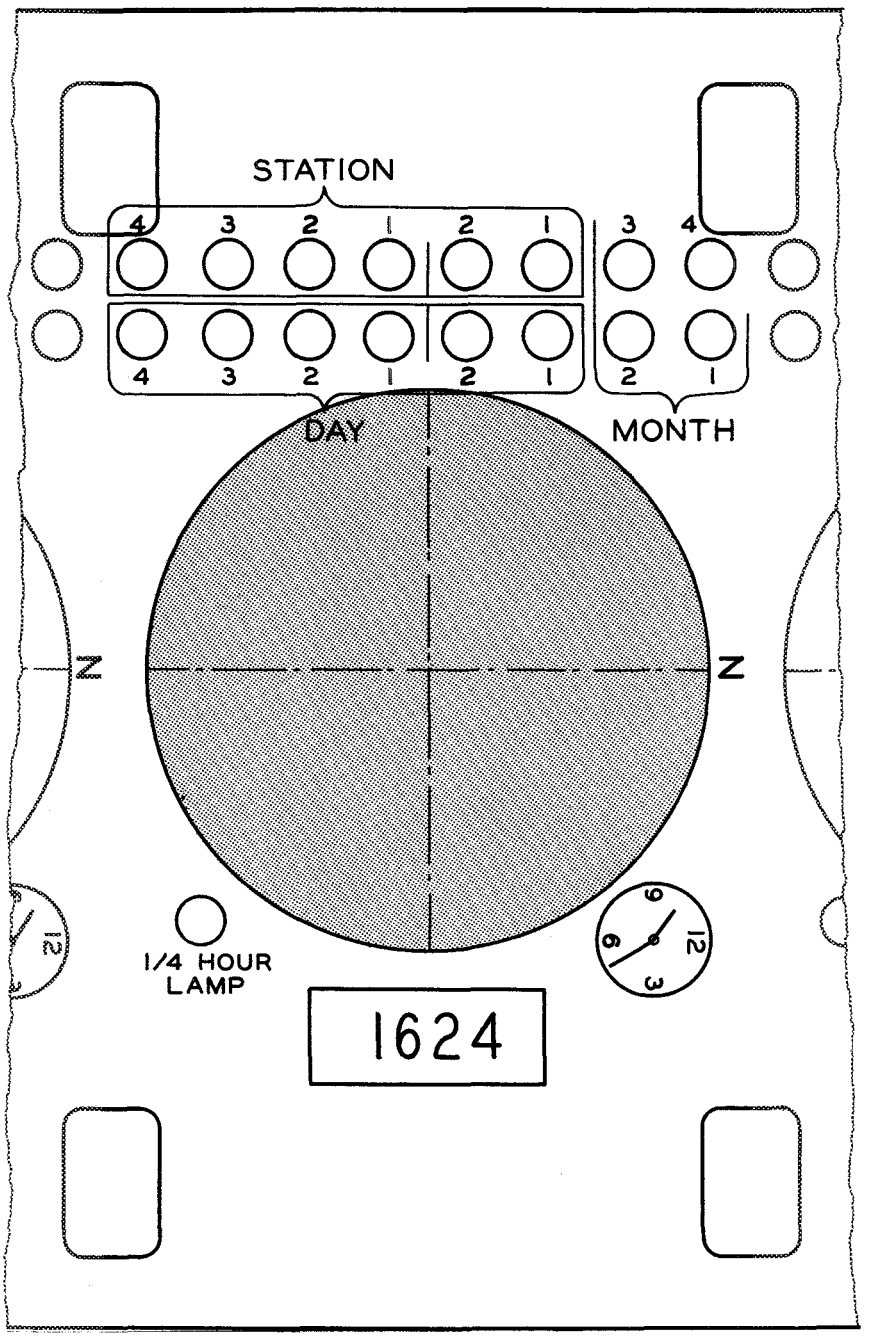

Fig. 1. Format of all-sky photographs.