



**U.S. DEPARTMENT OF COMMERCE**

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**ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION**

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**ENVIRONMENTAL DATA SERVICE**

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INSTITUTES FOR ENVIRONMENTAL RESEARCH

# Solar-Geophysical Data

Number 273

for April 1967

March 1967

November 1966

& Miscellanea

DATA COMPILED BY THE INSTITUTE FOR TELECOMMUNICATION SCIENCES AND AERONOMY  
BOULDER, COLORADO :

WASHINGTON, D.C.

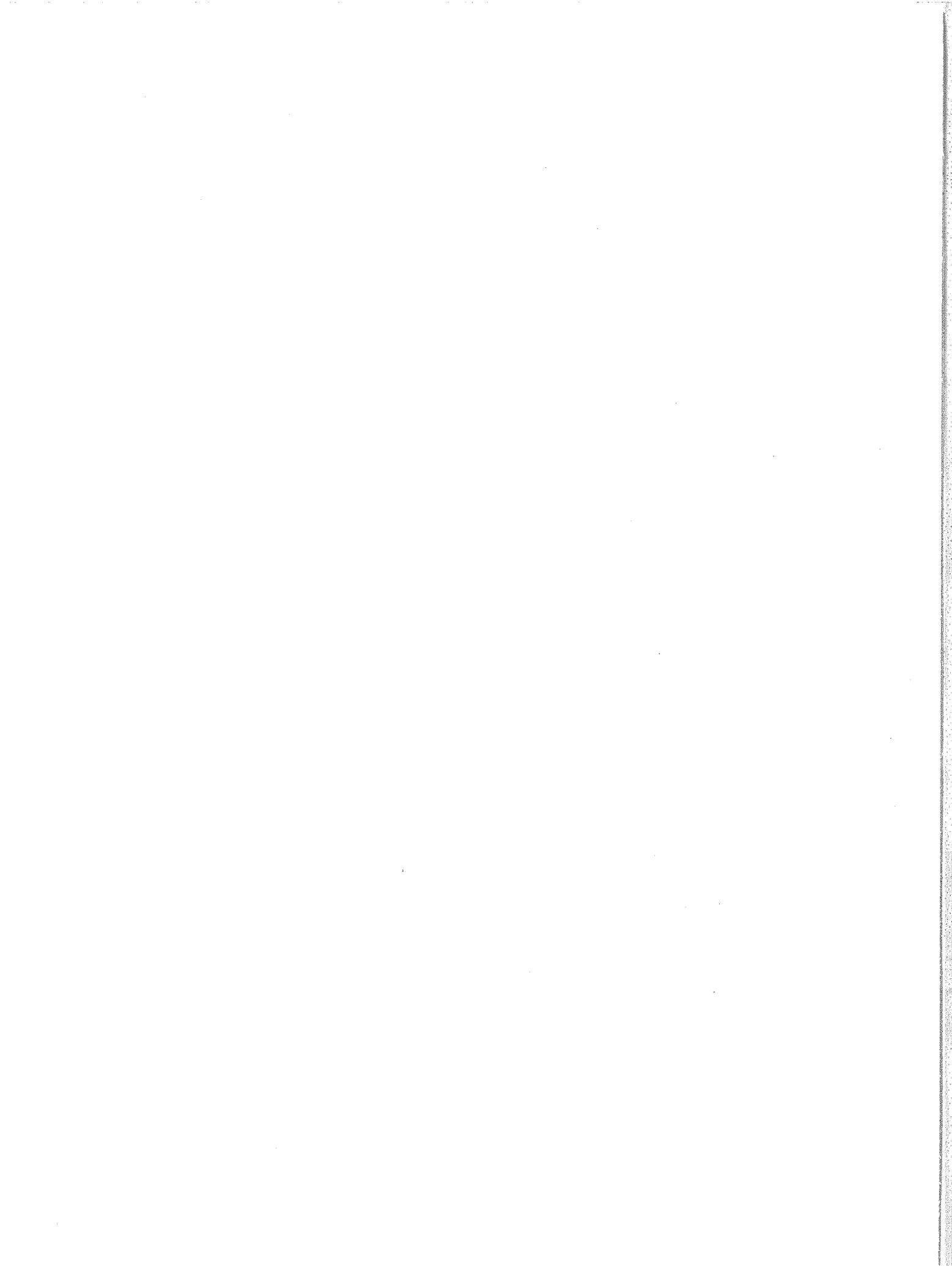
MAY 1967

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For explanations of the data contained herein see "Descriptive Text" published in February 1967.

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# ALERT PERIODS

## INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

APRIL 1967

Apr. 1967	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
1	0400 1836	ADALERTPRESTO TENFLARE Ottawa 270 percent 011620Z	500	Solar Flares	Expected	N21W64
2	0400		501	Solar Flares	Alert Ends	
11	2145	McMath, Solar Flare 2B S20W68 112105Z				
21	0400			Stratos.Warming*	Starts	Siberia Spring circulation change in progress
22	0400			"	Exists	Eastern Siberia moving east slowly
23	0400			"	Exists	Eastern Siberia
24	0400			"	Exists	Northeast Siberia
25	0400			"	Exists	East Siberian Sea
26	0400			"	Exists	Arctic Ocean North of Eastern Siberia
27	0400			"	Ends	Spring Circulation change nearly complete

\* The Stratospheric Warming Alerts are special alerts distributed, when appropriate, with the daily Geophysical Alert (GEOALERT) messages. They provide information concerning the final breakdown in winter circulation at stratospheric heights and are of particular interest to meteorologists. They are also of interest in ionospheric and space studies.



# RELATIVE SUNSPOT NUMBERS

ZURICH, R<sub>Z</sub>

DAY	1966 (FINAL)					1967 (PROVISIONAL)						
	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1	50	71	49	78	44	57	43	35	60	93	172	105
2	52	74	49	74	44	55	42	33	93	88	179	79
3	57	41	54	72	25	50	38	30	124	92	191	54
4	61	60	53	68	18	36	38	57	148	100	172	52
5	43	48	48	60	26	40	20	69	150	72	164	62
6	32	47	46	50	30	44	32	68	148	89	148	63
7	29	40	58	33	36	53	48	64	134	138	137	79
8	17	35	68	13	38	48	55	88	116	109	98	104
9	8	33	60	13	39	44	59	86	111	112	85	67
10	0	25	65	0	37	65	63	112	111	97	86	62
11	14	43	52	16	42	66	72	125	104	96	74	62
12	14	34	62	36	38	64	80	130	90	79	65	51
13	23	34	56	30	33	72	68	118	86	77	49	63
14	50	31	42	37	35	64	66	113	85	58	44	48
15	46	22	34	41	38	60	66	107	56	58	49	51
16	47	40	48	40	57	70	52	116	56	60	58	32
17	35	46	42	41	76	70	59	88	59	60	70	42
18	28	40	49	39	83	70	57	76	72	70	73	58
19	35	36	38	33	76	76	65	57	82	57	58	56
20	58	42	65	28	78	96	74	46	82	60	73	44
21	80	33	55	22	89	91	77	37	102	71	88	60
22	72	35	66	38	86	83	78	34	134	86	108	76
23	68	62	56	65	71	75	76	38	152	84	111	94
24	68	66	70	71	67	64	72	45	122	100	121	74
25	64	80	67	89	68	50	74	60	133	106	131	78
26	70	82	74	95	54	47	67	65	136	123	137	66
27	66	76	65	90	48	39	59	48	130	186	122	55
28	60	52	70	84	42	36	41	48	125	166	120	76
29	42	47	76	89	45	27	37	51	122		130	79
30	56	55	59	76	42	27	37	70	132		130	66
31	58		62	66		35		68	108		115	
MEAN	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	108.5	92.4	108.3	65.3

1966 Yearly Mean = 47.0

## DAILY SOLAR FLUX AT 2800 Mc/s OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S<sub>a</sub>

DAY	1966					1967						
	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.
1	91.7	104.8	100.1	125.9	116.6	101.4	94.6	92.2	124.4	151.6	194.2	158.6
2	94.0	103.9	98.2	119.6	106.3	102.0	96.7	95.1	143.0*	143.5	197.8	141.0
3	94.0	102.6	99.3	118.2*	103.2	103.2	93.1		154.0	138.7	196.4	133.3
4	92.5	102.0	104.8	116.0*	101.9	100.6*	91.7	104.8	160.7	137.3*	205.9	125.0
5	88.6	101.7	105.0	110.5	100.5	100.0	97.9	110.9*	168.2	146.8*	179.2	122.1
6	87.5	101.9	109.7	106.0	97.9	101.9*	104.7	115.6*	160.5	148.8	177.4	119.0
7	89.9	96.9	112.6	101.5	95.8*	103.1	113.4	117.7	153.6	162.5	163.8	126.2
8	87.8	99.5	114.4	97.7	96.2*	99.4	116.9	123.7	142.9	148.3	156.1	135.7
9	87.5	98.9	107.8	96.4	95.3	103.5	117.2	146.2	144.7	145.9	157.9	133.3
10	86.6	96.8	108.1*	94.3	93.9	106.5	121.9	157.3*	145.6	140.5	148.4	130.3
11	88.3	96.1	109.0	92.5	96.6	109.8	126.1	162.8*	139.8	133.7	141.6	131.1
12	92.6	95.9	102.7	92.8	100.8*	114.8	126.2	157.6	139.1	132.9	134.3	129.8
13	92.9	96.1	100.4	93.2	102.4	122.8*	126.4	155.5	138.1	130.0	129.1	126.8
14	97.2	96.9	99.8	92.8	107.4	120.3	124.0	149.5	135.2	129.2	127.2	133.5
15	99.2	94.7	101.1	93.7	112.0	120.6	122.6	144.9	126.6	126.4	132.4	124.1
16	100.1	97.9	102.8	95.1	124.6*	120.3*	121.2	135.1	120.2	124.9	132.1	126.1
17	98.9	99.5	101.2	96.8	129.1	120.5*	113.2	124.9*	116.9	122.2*	132.6	125.9
18	98.7	98.2	101.3	97.5	142.6	118.5*	113.4	111.2	117.4	124.2	132.2	128.7
19	107.1*	96.9	101.5	100.0	146.6	115.6*	111.0	112.3	116.4	121.0	136.0	126.7
20	115.5*	94.3	101.8	101.6	146.0*	124.1	110.9	107.6	127.0	128.6	140.4	127.1
21	123.6	93.5	103.7	102.7	137.2	120.9*	110.7*	106.5	138.2	131.8*	147.2	134.0
22	121.0	96.1	106.5	105.5	131.5*	119.8*	116.5	105.5*	139.9	146.0	149.5	131.5
23	113.9	99.2	114.9	114.7	127.5*	111.1	114.7*	110.6*	148.8*	149.3*	155.7	128.0
24	117.7	103.5	120.6	122.0*	126.0	106.1	113.8	110.5	146.8	162.2	161.9	130.5
25	115.1	104.8*	126.0	126.3*	118.8*	100.8	110.7	111.6	142.7*	159.5*	169.2	132.9
26	112.3	105.6*	127.6	130.2	109.4	97.7	107.3	110.9	154.3	173.3*	163.9	125.4
27	108.5	100.8	123.8	133.4	102.9	92.0	111.1*	109.6	158.3	176.7	162.8	129.2
28	**	101.4	124.2	132.6*	97.9	94.1	104.1	107.5	156.2	180.2	180.7	135.1
29	106.8	99.8	132.9	129.8	98.6	99.7	98.0	109.3	158.2*		178.4	137.5
30	101.6	100.7	128.0	126.1	95.7	95.7	94.6*	115.1	159.0		175.8	135.3
31	105.6		124.6	120.9		97.1		120.5*	156.4		167.6	
MEAN	100.6	99.4	110.1	109.2	112.4	107.9	110.8	121.4	143.0	143.4	159.0	130.8

\* Adjusted for Burst

\*\* Burst in Progress

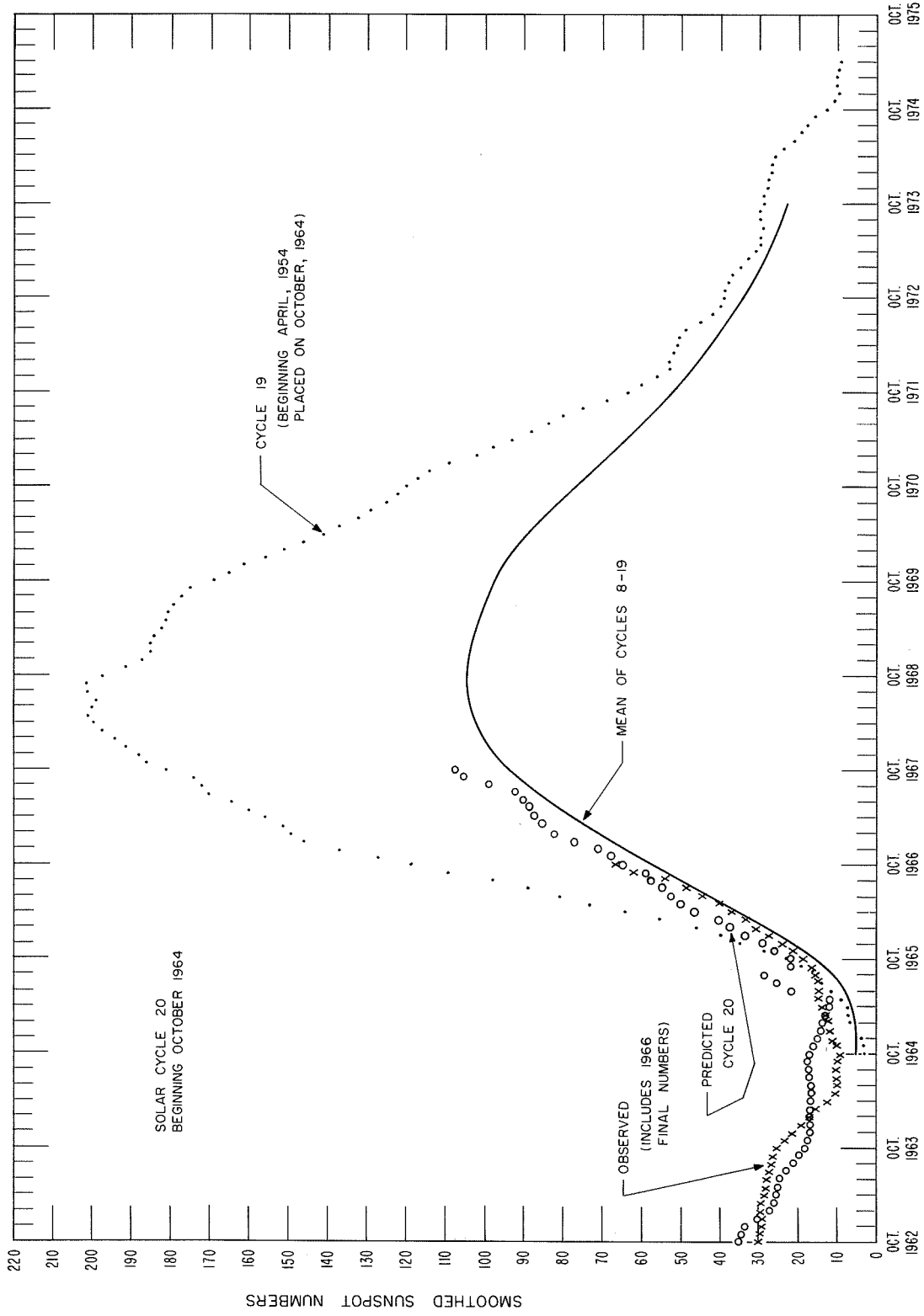
# DAILY SOLAR INDICES

APRIL 1967

APR. 1967	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO I. A. U.					
			R <sub>Z</sub>	R <sub>A</sub> '		AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606
01	91	5	105	88	158.8	316	189	158.6	148.7	100.6	69.8
02	92	6	79	50	141.2	308	174	141.0	129.6	90.9	66.3
03	93	7	54	38	133.3	300	160	133.3	124.3	94.9	63.8
04	94	8	52	49	124.9	295	161	125.0	123.7	82.8	62.3
05	95	9	62	64	122.0	293	158	122.1	117.2	80.8	60.0
06	96	10	63	63	118.8	292	161	119.0	120.6	80.4	61.2
07	97	11	79	91	126.0*	295	166	126.2*	128.0	86.3	61.4
08	98	12	104	107	135.3	302	169	135.7	130.2	86.2	62.1
09	99	13	67	78	132.9	291	171	133.3	128.9	83.7	61.1
10	100	14	62	64	129.8	292	161	130.3	121.3	81.8	61.6
11	101	15	62	55	130.5*	297	168	131.1*	128.9	80.0	62.7
12	102	16	51	47	129.2*	296	170	129.8*	125.0	80.4	62.5
13	103	17	63	55	126.1	294	162	126.8	119.8	76.6	60.3
14	104	18	48	51	132.7	304	165	133.5	118.6	74.6	58.3
15	105	19	51	37	123.2	296	164	124.1	122.7	76.2	57.6
16	106	20	32	14	125.2	298	164	126.1	125.9	75.2	58.8
17	107	21	42	36	124.9	293	161	125.9	121.8	77.2	57.5
18	108	22	58	40	127.4	291	157	128.7	123.9	78.4	57.2
19	109	23	56	35	125.5	309	166	126.7	126.9	80.7	59.4
20	110	24	44	51	125.9	297	163	127.1	120.4	79.4	61.0
21	111	25	60	67	132.7	300	172	134.0	125.0	85.5	64.5
22	112	26	76	78	130.1	311	175	131.5	131.5	87.4	65.4
23	113	27	94	76	126.6	294	163	128.0	123.8	80.2	61.0
24	114	1	74	81	129.0	293	160	130.5	127.3	91.8	65.2
25	115	2	78	75	131.3	301	169	132.9	126.9	85.6	66.2
26	116	3	66	55	123.8	294	165	125.4	118.8	79.5	61.8
27	117	4	55	79	127.4	294	172	129.2	124.0	79.9	61.6
28	118	5	76	78	133.2	299	176	135.1	129.1	86.1	63.5
29	119	6	79	83	135.5	300	177	137.5	129.7	87.0	65.9
30	120	7	66	71	133.3	299	172	135.3	126.8	82.5	64.2
MEAN			65.3	61.9	129.9	298	167	130.8	125.6	83.1	62.1

\* Adjusted for Burst

In the Daily Solar Indices table for March 1967 part of the asterisks appeared in the wrong column. They should have appeared with Ottawa 2800 Adjusted Flux rather than with AFCRL 2695.



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED SUNSPOT NUMBERS  
ZURICH,  $R_z$ 

	1964	1965	1966
JAN		11.7	27.7
FEB		12.0	31.3
MAR		12.5	34.5
APR		13.6	37.4
MAY		14.6	40.7
JUN		15.0	44.6
JUL		15.5	48.8
AUG		16.4	55.0
SEP		17.4	62.7
OCT	9.6	19.7	66.8
NOV	10.2	22.3	
DEC	11.0	24.5	

# CALCIUM PLAGE AND SUNSPOT REGIONS

APRIL 1967

Apr. 1967	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTA- TIONS)	DATE FIRST SEEN	DURA- TION (DAYS)	CMP VALUES		HISTORY
				AREA	INT.					AREA	COUNT	
1.6	S22	8745	8711	(3800)	(3.0)	l A l	3	3/25	15	140	28	l A d
1.7	N16	8746	8714	(1400)	(2.0)	l A ?	2	3/25	>12			
3.1	N32	8751	8713	1400	3.0	l - l	4	3/28	>12	(10)	(1)	b - d
3.1	S13	8762	New	(200)	(2.0)	b - d	1	4/3	2			
4.1	N19	8752	8715	2100	3.5	l - l	3	3/28	13	10	14	l - d
6.1	N25	8754	8715	3900	3.5	l / l	3	3/30	14	10	1	l - d
6.2	S23	8753	8716	(2500)	(2.5)	l / l	2	3/30	14	(10)	(1)	b - d
6.6	S05	8769	New	(100)	(2.5)	b - d	1	4/9	2			
8.1	N10	8757	New	1600	2.5	l / l	1	4/2	13			
8.2	S34	8759	New	400	2.0	l \ l	1	4/2	≥11	(10)	(3)	b - d
8.3	N29	8764	8719	900	2.0	l / d	2	<4/5	>8	(10)	(3)	b - d
8.7	S25	8758 (1)	New	1400	2.5	l / ?	1	4/2	>11	40	17	b / l
8.9	S15	8770	New	(300)	(1.5)	b - d	1	4/10	>3			
9.7	N24	8760 (2)	8719	3000	3.0	l A l	2	4/3	13	40	10	b / l
9.9	S22	8765	8721	700	1.0	l - d	2	4/4	≥9			
10.1	N09	8761	New	2000	2.5	l \ l	1	4/3	14	(10)	(1)	b - d
11.7	N20	8766	8722	2500	3.0	l A l	2	<4/8	>10	(10)	(3)	b - d
14.2	N16	8767	8731	1800	3.0	l \ l	2	4/8	13	20	1	l \ d
15.1	S17	8768	8727	2500	3.0	l \ l	2	4/8	13			
16.3	N12	8772	8730	700	1.5	l - l	6	4/10	13	10	1	b - d
16.8	N21	8771	8730	1500	2.0	l A l	6	4/10	≥11			
18.4	N26	8774	8733	(1200)	(2.5)	l / l	6	4/12	13	(10)	(5)	b - d
18.5	S23	8773	8736	(700)	(1.5)	l - d	3	4/12	≥1			
18.8	S23	8777	New	(1200)	(3.0)	? / l	1	≤4/14	≥12	10	3	b / l
19.7	N23	8776 (3)	New	(3800)	(3.5)	l A l	1	4/14	13	310	4	l - l
20.8	N01	8780	New	(200)	(2.0)	b - d	1	4/17	≥1			
23.1	S45	8783	New	500	3.0	b \ d	1	≤4/22	≥6	10	6	b - d
23.6	N22	8779 (4)	8739	5300	3.0	l \ l	2	4/16	14	80	5	l \ l
23.7	N22	8778 (5)	8740	7600	3.0	l - l	4&3	4/16	15	120	1	l - l
24.4	S14	8781	New	2000	3.0	l A l	1	4/19	≥12	10	3	b - d
25.3	N16	8782	8741	500	1.5	l - d	3	4/20	>10	20	3	b - d
25.9	S24	8786	New	800	2.5	b A l	1	4/23	≥8	(10)	(1)	b - d
26.4	N33	8793	New	(900)	(3.0)	b - l	1	4/28	5	(20)	(7)	b - d
28.0	S20	8784	8745	1500	2.0	l A l	4	4/22	>12			
28.1	N23	8785 (6)	New	3000	3.5	l / l	1	4/22	>12	80	14	l \ d
30.2	S23	8788	8745	(2700)	(3.0)	l / l	4	4/24	>12	120	10	b / l
30.6	N32	8789	8751	500	1.5	l \ l	5	4/24	13			

- (1) Region 8758 is a new plage that has developed in the position of old plage 8724 of the previous rotation.
- (2) Region 8760 is a return of the new part of region 8719 that developed on the disk near the west limb during the previous rotation.
- (3) Region 8776 is primarily a new plage, although it also contains some remnants of the return of region 8733.
- (4) Region 8779 is primarily the return of region 8739, but also contains weak remnants of region 8742.
- (5) Region 8778 is a return of regions 8740 and part of region 8741.
- (6) Region 8785 is primarily a new region, although it also contains remnants of old plage 8746.

No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on April 1, 6, 7, 13, 18, 21 and 26, 1967.



10  
Apr 67

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

APRIL 1967

APR. 1967	TIME MEAS. UT	LAT.	MER. DIST.	TYPE	No.		TIME MEAS. UT	LAT.	MER. DIST.	TYPE	No.		
23*	1645	N24	W62	$\alpha$ p	16336	29*	1755	N27	W23	$\beta$	16344		
		N22	W13	$\alpha$ p	16338			S19	E02	$\beta$ p	16348		
		S23	W11	$\alpha$ p	16340			S21	E52	$\beta$	16350		
				S10	E01	$\beta$	16341	30	1900	N26	W35	$\beta$	16344
				S23	W46	$\alpha$ p	16342			S19	W14	$\beta$ p	16348
				N32	E45	$\beta$ p	16344			S21	E49	$\beta$ p	16350
				N18	E05	$\beta$	16345			N13	E10	$\beta$ p	16351
S16	E23			$\beta$	16346								
24*	1440	N24	W50	$\alpha$ p	16336	* From April 9 through the remainder of the month observations were hampered by a series of storms. Observations marked with an asterisk were taken elsewhere. Due to scale differences apparent errors appear.							
		N22	W25	$\alpha$ p	16338								
		S23	W23	$\beta$	16340								
		S10	W11	$\alpha$ p	16341								
		N32	E33	$\beta$ p	16344								
		N18	W07	$\beta$	16345								
		S23	W60	$\beta$ p	16347								
25*	1540	N24	W64	$\alpha$ p	16336								
		N22	W39	$\alpha$ p	16338								
		S23	W37	$\beta$	16340								
		S10	W25	$\beta$	16341								
		N32	E20	$\beta$ p	16344								
		N18	W20	$\alpha$ p	16345								
		S23	W73	$\alpha$ p	16347								
S17	E68	$\beta$ p	16348										
26	2245	N22	W46	( $\alpha$ p)4	16338								
		N26	E13	( $\beta$ p)3	16344								
		S23	W46	( $\alpha$ p)2	16347								
		S19	E40	( $\beta$ p)1	16348								
27	1555	N23	W56	( $\alpha$ p)4	16338								
		N27	E04	( $\beta$ )3	16344								
		S22	W56	( $\alpha$ p)2	16347								
		S19	E30	( $\beta\gamma$ )3	16348								
		N32	W12	( $\alpha$ p)1	16349								
		S20	E80	( $\beta$ )3	16350								
		N13	E53	( $\alpha$ p)2	16351								
28	1450	N23	W69	( $\alpha$ p)5	16338								
		N27	W09	( $\beta\gamma$ )3	16344								
		S23	W68	( $\alpha$ p)1	16347								
		S19	E16	( $\beta$ p)4	16348								
		N33	W24	( $\beta$ p)3	16349								
		S21	E67	( $\beta$ )3	16350								
		N13	E39	( $\alpha$ p)1	16351								
S14	W56	( $\alpha$ p)1	16352										

# SOLAR FLARES

PRELIMINARY

APRIL 1967

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS. COND. TYPE	MEASUREMENTS				REMARKS		
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha		MAX. INT. %	
	1967																		
	APR																		
MANI	01	0010E	0032	0013	N23	W62	.923	8740	27.4	220	1N	2	0013	1.13	2.35				
MITK	01	0010	0035	0015	S23	W68	.922	8739	26.9	25	2N		0015	2.37				F	
MANI	01	0010E	0051	0016	S21	W67	.915	8739	27.0	41D	1B	2	0016	1.75	3.57				
MANI	01	0119	0145	0122	N27	W75	.984	8740	26.4	26	1B	2	0122	1.03	2.65				
MITK	01	0120	0135	0123	N24	W75	.982	8740	26.4	15	1N		0123	.72				E	
MITK	01	0151	0204D	0157	N18	W68	.948	8740	27.0	13D	1N		0157	1.44					
MANI	01	0158E	0213	0202	N19	W66	.939		27.1	15D	-B	2	0202	.83	1.77				
MANI	01	0236	0302		N19	W67	.944	8740	27.1	26	1N	2	0238	1.44	3.10				
MITK	01	0240	0252	0244	N18	W72	.966	8740	26.7	12	1N		0244	1.34					
MITK	01	0314	0327	0317	N18	W70	.958	8740	26.9	13	1B		0317	.93					
MITK	01	0330	0339	0333	N18	W73	.971	8740	26.7	9	1N		0333	1.55					
MITK	01	0347	0400	0349	N19	W73	.971	8740	26.7	13	1B		0349	1.44					
MANI	01	0348	0403	0351	N20	W67	.945		27.1	15	-B	2	0351	.52	1.10				
MANI	01	0617	0635	0620	N19	W68	.949	8740	27.2	18	1B	2	0620	1.55	3.36				
MITK	01	0618	0630	0622	N19	W73	.971	8740	26.8	12	1B		0622	1.03					
CAPS	01	0622E	0635D		N19	W73	.971	8740	26.8	13D	1N	2	0626	2.00			200		
CAPS	01	0632	0726D		S20	W06	.253	8745	31.8	54D	2N	2	0635	4.50	4.70		176		
ARCE	01	0810	0850	0825	S19	W08	.253	8745	31.7	40	1N		0825	3.85	4.00			F	
CAPS	01	0824E	0827D		S20	W06	.253	8745	31.9	3D	1N	2	0825	3.00	3.10				
CATA	01	0826E	0830D	0826	S20	W07	.260		31.8	4D	-B		0826	.92	.90			282	
MANI	01	0830E	0835D		S18	W09	.249		31.7	5D	-N	1	0832	.31	.32				
MANI	01	0835E	0855		N17	W74	.974		26.8	20D	-B	1	0837	.62	1.50				
ARCE	01	0835	0905	0840	N20	W78	.988	8740	26.5	30	1N		0840	.69	2.10				
CATA	01	0835E	0945D	0835	N21	W72	.969	8740	27.0	70D	1B		0835	.64			371		
CAPS	01	0839E	0853D		N19	W75	.979	8740	26.7	14D	1N	1						H	
CAPS	01	1026E	1058D		S23	W70	.934	8739	27.2	32D	2F	2	1027	2.60			153	KW	
CAPS	01												1047	4.60					
CAPS	01	1224E	1228D		N19	W70	.959		27.3	4D	-F	3	1226	.40					
CAPF	01	1235E	1250D		N18	W75	.978	8740	26.9	15D	1N		1242	1.18				D	
CAPF	01	1407E	1420D		N22	W77	.986	8740	26.8	13D	1N		1411	1.18				H	
CAPS	01	1411	1425D		N19	W75	.979	8740	27.0	14D	1B	1	1412	.80				H	
HUAN	01	1414E	1433D		N21	W85	.999	8740	26.2	19D	1N	1	1417	.88				E	
HUAN	01	1414E	1427		S25	W72	.945	8739	27.2	13D	1N	1	1422	2.12				E	
CAPS	01	1418	1425D		S24	W75	.960	8739	27.0	7D	2N	1	1424	3.00				E	
SACP	01	2108U	2220	2128U	N29	E10	.599	8751	2.6	72U	2N			7.59	8.23				
HUAN	01	2130E	2156D		N28	E13	.598	8751	2.9	26D	1F	1	2133	3.76	4.13			EK	
HALE	01	2247E	2307	2251	S35	W75	.961	8739	27.3	20D	1B	2	2251	1.13					
MANI	01	2252E	2319	2253	S22	W82	.985	8739	26.8	27D	1F	1	2253	1.80	4.83				
MANI	02	0135	0215	0200	S22	W83	.988	8739	26.8	40	1N	2	0200	1.03	2.82				
HALE	02	0407	0431D	0418	N26	W87	1.000	8740	26.6	24D	1N	2	0418	.72				F	
MANI	02	0413	0445	0423	N21	W84	.998	8740	26.9	32	1N	2	0423	.93	2.78				
MANI	02	0526	0555		S22	W78	.972	8739	27.4	29	1F	1	0528	1.03	2.44				
ISTA	02	0710E	0835		S24	W77	.968	8739	27.5	85D	1N								
CAPS	02	0755E	0843		S20	W80	.980	8739	27.3	48D	2N	2	0825	2.00			230		
MONT	02	0803E	0840		S26	W80	.979	8739	27.3	37D	1B		0820	1.24				TO	
MANI	02	0818	0834	0820	S22	W77	.968		27.6	16	-B	2	0820	.62	1.41				
ARCE	02	0820	0845	0825	S25	W80	.979	8739	27.3	25	1N		0825	1.57	5.00				
MONT	02	0925	1000	0940	S26	W81	.982	8739	27.3	35	1N		0940	1.00				TO	
ARCE	02	0930	1000D	0950	S26	W81	.982	8739	27.3	30D	1N		0950	.69	2.30				
MANI	02	0934	0957	0939	S22	W80	.979		27.4	23	-N	2	0939	.31	.80				
MONT	02	1055	1215D		S26	W81	.982	8739	27.4	80D	1B		1120	1.00				TO	
CAPS	02	1118E	1150		S23	W80	.979	8739	27.5	32D	2N	2	1121	2.50				C	
CAPS	02	1321E	1325D		S16	W90	1.000	8739	26.8	4D	1N	3	1321	1.50				DH	
CAPF	02	1505E	1555D		S23	W84	.990	8739	27.3	50D	1N		1508	1.46				H	
MCMA	02	1552	1601D	1555	S25	W90	.999	8739	26.9	9D	-F		1555					D	
SACP	02	1629	1718	1642U	S24	W89	.998	8739	27.0	49	1N			1.20					
MCMA	02	1637E	1654	1642	S25	W90	.999	8739	26.9	17D	-N		C	1642				D	
LOCK	02	1700	1720	1704	S25	W82	.985		27.6	20	-F		C	1704	.40	1.40		10	
MCMA	02	1701	1716		S25	W90	.999	8739	27.0	15	-N		C	1704					E
ARCE	03	0937	0945D		S26	W90	.999	8739	27.7	8D	1B		C	0945	.40	2.30			
MCMA	03	1230E	1500D		S25	W90	.999	8739	27.8	150D	1N		C						
HUAN	03	1446E	1503D		S25	W90	.999	8739	27.9	17D	1F	1	P	1446	1.24				
MCMA	04	1729	1855	1738	S25	E51	.789	8758	8.6	86	-B		C	1738	1.03	1.80			EK
MCMA	04			1745															
SACP	04	1730	1750	1741	S25	E51	.789	8758	8.6	20	1F		C		2.48	3.20			
SACP	04	2014	2120	2032U	S20	E20	.402		6.3	66	-F		C		1.10	1.10			
MCMA	04	2020	2045	2025	S20	E24	.454	8753	6.6	25	-N		C	2025	.62	.70			EH
HALE	04	2021	2048	2026	S20	E20	.402	8753	6.3	27	1B	3	C	2026	2.58	2.80			HF
MONT	05	0710E	0810		S22	E43	.699		8.5	60D	-N		C	0740	1.90				O
CAPF	05	0727E	0842		S26	E44	.723	8758	8.6	75D	1N		P	0735	1.46	2.13			
MITK	05	0734	0743D	0740	S25	E45	.730	8758	8.7	9D	1N		C	0740	1.55	2.20			
CAPS	05	0735E	0750D		S24	E40	.672		8.3	15D	-N	3	C	0738	1.30	1.80		152	C
ARCE	05	0755E	0805		S25	E42	.698		8.5	10D	-N		C	0755	.94	1.30			H







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Apr 67

# SOLAR FLARES

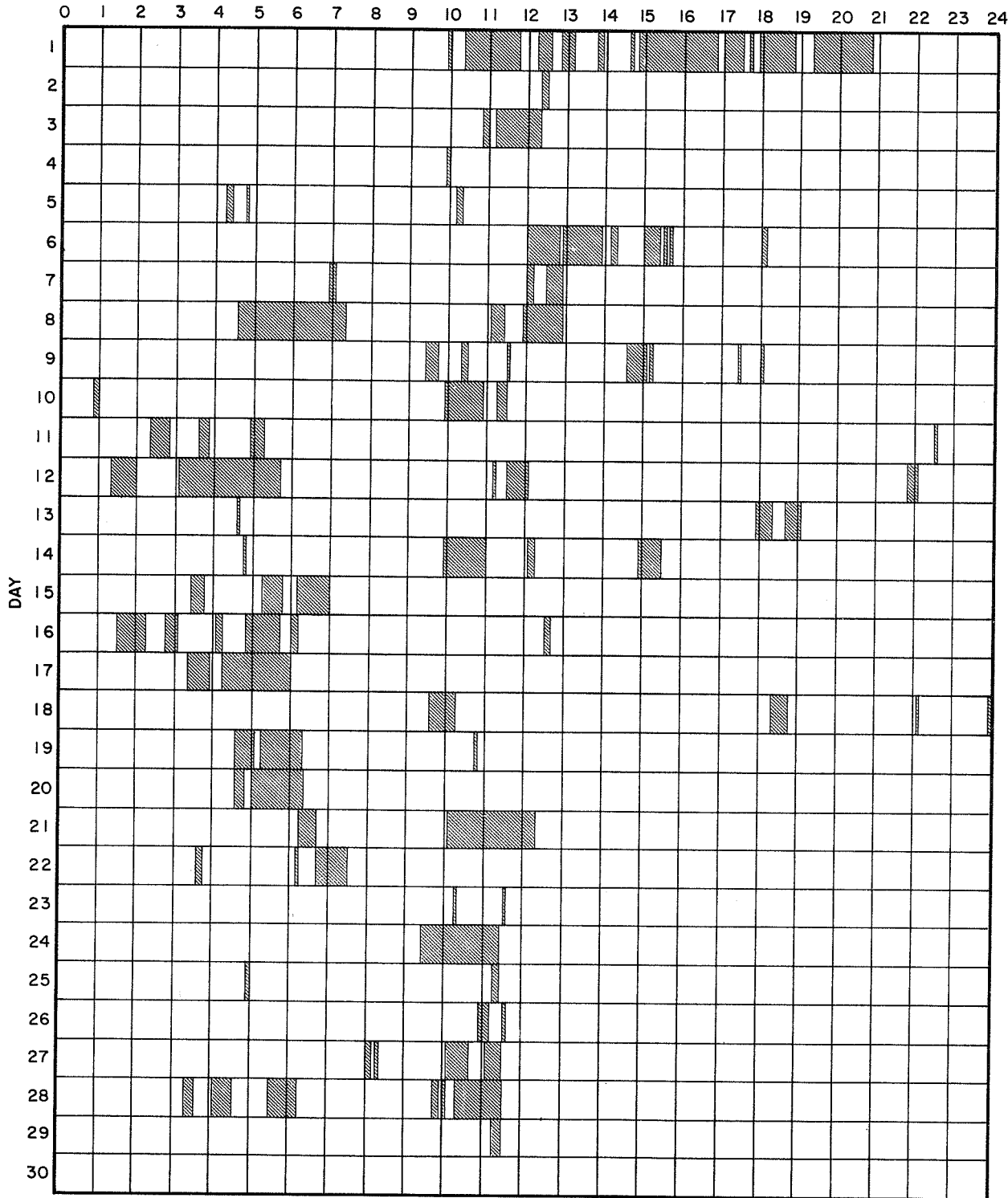
PRELIMINARY

APRIL 1967

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS. COND. TYPE	MEASUREMENTS				REMARKS	
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H $\alpha$		MAX. INT. %
MITK	30	0453E	0517D		S21	E43	.707	8791	3.4	24D	1N	V						
WEND	30	0530E	0632		S20	E42	.692	8791	3.4	62D	1N	V		5.16				
MITK	30	0602	0652	0603	S21	E44	.718	8791	3.6	50	1B	C	0603	1.65	2.40			F
CAPS	30	0604E	0612D		S21	E45	.728	8791	3.6	8D	2N	1						J
MITK	30	0718	0740	0727	S20	E44	.714	8791	3.6	22	1N	C	0727	1.86	2.60			F
CATA	30	0728E	0739D	0728	S23	E43	.714		3.5	11D	-B		0728	1.19	1.60		214	J
MONT	30	0750E	1230D	0945	S23	E43	.714	8791	3.6	280D	1B	C	0945	2.10				TJO
ARCE	30	0917	0930	0918	S22	E41	.688	8791	3.5	13	1B	C	0918	2.42	3.30			
WEND	30	0938E	1003D		S20	E40	.669	8791	3.4	25D	2N	V		6.19				
MANI	30	0944E	0950D	0946	S19	E44	.712		3.7	6D	-N	1	0946	.52	.74			
CAPS	30	0944E	1001D		S21	E45	.728	8791	3.8	17D	1B	2	0947	2.50	3.50		208	J
CATA	30	0945E	1010D	0945	S23	E42	.703	8791	3.6	25D	1B		0945	2.35	3.30		214	
ARCE	30	0835	0900	0850	S24	W85	.994	8786	24.0	25	1N	C	0850	.64	2.60			
MONT	30	0835	0930	0840	S13	W76	.968		24.7	55	-N	C	0840	.50				O
ARCE	30	0917	1000D	0918	S24	W85	.994	8786	24.0	43D	1N	C	0918	1.02	4.10			O
WEND	30	0920E	1007		S25	W82	.988	8786	24.2	47D	1F	V		4.13				
MONT	30	0930	1030	0933	S13	W77	.972		24.6	6D	-N	C	0933	.50				O
MONT	30	0750E	1230D	1120	S23	E43	.714	8791	3.6	280D	1B		1120	2.50				
CAPS	30	1044	1114D		S22	E44	.721	8791	3.7	30D	1B	2	1100	2.00	2.80		201	J
WEND	30	1050E	1123		S20	E39	.657	8791	3.4	33D	2N	V		6.19				
HUAN	30	1123E	1131		S22	E42	.699		3.6	8D	-F	1	1126	.45	.53			E
MONT	30	0750E	1230D	1203	S23	E43	.714	8791	3.6	280D	1B		1203	2.50				
HUAN	30	1151E	1207D		S22	E42	.699		3.6	16D	-N	1	1155	1.55	1.81			E
WEND	30	1152E	1215		S20	E39	.657	8791	3.4	23D	1N	V		5.16				
CAPP	30	1152E	1225D		S20	E43	.703	8791	3.7	33D	1N	V	1158	2.94	4.27			
CAPS	30	1201E	1215D		S23	E42	.703		3.7	14D	1N	2	1203	2.00	2.80		166	J
WEND	30	1258	1340		S20	E38	.645	8791	3.4	42	2N	V		7.22				
SACP	30	1302	1346	1309	S22	E40	.677	8791	3.5	44	1B	C		3.38	3.88			
HUAN	30	1305	1332	1307	S23	E41	.692		3.6	27	-N	2	1307	.62	.72			
CAPS	30	1305	1339		S22	E42	.699	8791	3.7	34	1N	2	1310	2.60	3.60		170	J
CAPS	30	1310E	1325		N22	E90	1.000		7.3	15D	2F	2	1311	2.00			150	A
HUAN	30	1355	1415	1357	N27	W32	.694		28.2	20	-F	2	1357	.37	.48			E
WEND	30	1359	1414		N27	W30	.678	8785	28.3	15	1N	V		3.09				
CAPS	30	1404E	1415		N27	W27	.653		28.6	11D	-N	2	1406	.60	.80			CE
WEND	30	1445	1507		S20	E38	.645	8791	3.5	22	1F	V		4.13				
HUAN	30	1447	1508	1450	S22	E40	.677		3.6	21	-N	2	1450	.88	1.00			
CAPS	30	1448E	1503D		S22	E41	.688	8791	3.7	15D	1N	2	1453	2.60	3.60		176	J
LOCK	30	1610	1640	1620	S22	W82	.988	8779	24.5	30	1F	C	1620	.80	2.70		10	L
HALE	30	1614E	1723	1628	S18	W89	.999		24.0	69D	-B	1	1628	.62				
HALE	30	1630	1648	1636	S19	E38	.641		3.5	18	-N	1	1636	.41	.50			
SACP	30	1631	1646	1637	S21	E39	.661		3.6	15	-N	C		1.78	2.01			
LOCK	30	1632	1645	1636	S21	E38	.649		3.5	13	-N	C	1636	1.10	1.40		20	
WEND	30	1632	1648		S20	E37	.633	8791	3.5	16	1N	V		4.13				
HUAN	30	1634	1646	1636	S22	E39	.665		3.6	12	-N	2	1636	.88	1.00			
LOCK	30	1818	1833	1825	N24	E82	.995	8798	6.9	15	1N	C	1825	1.00	3.40		20	H
MCMA	30	1820E	1830		N15	E90	1.000	8798	7.5	10D	-B	C	1823					
LOCK	30	1855	1908	1900	S20	W90	1.000	8779	24.0	13	1F	C	1900	.60	2.40		10	H
SACP	30	2317	2330D	2329	N27	W38	.746	8785	28.1	13D	1B	C		2.70	3.32			
LOCK	30	2318	2430	2332	N26	W41	.765	8785	27.9	72	1N	C	2332	2.80	4.50		20	
MANI	30	2321E	2335	2324	N26	W36	.722		28.3	14D	-B	2	2324	.72	1.06			
LOCK	30	2318	2337	2325	N14	E82	.993	8798	7.1	19	1N	C	2325	1.00	3.40		20	
SACP	30	2319	2330D	2327	N15	E89	1.000	8798	7.6	11D	1N	C		.84				
LOCK	30	2337	2355	2342	S18	W90	1.000	8779	24.2	18	1F	C	2342	.70	2.80		10	H

# INTERVALS OF NO FLARE PATROL OBSERVATIONS PROVISIONAL

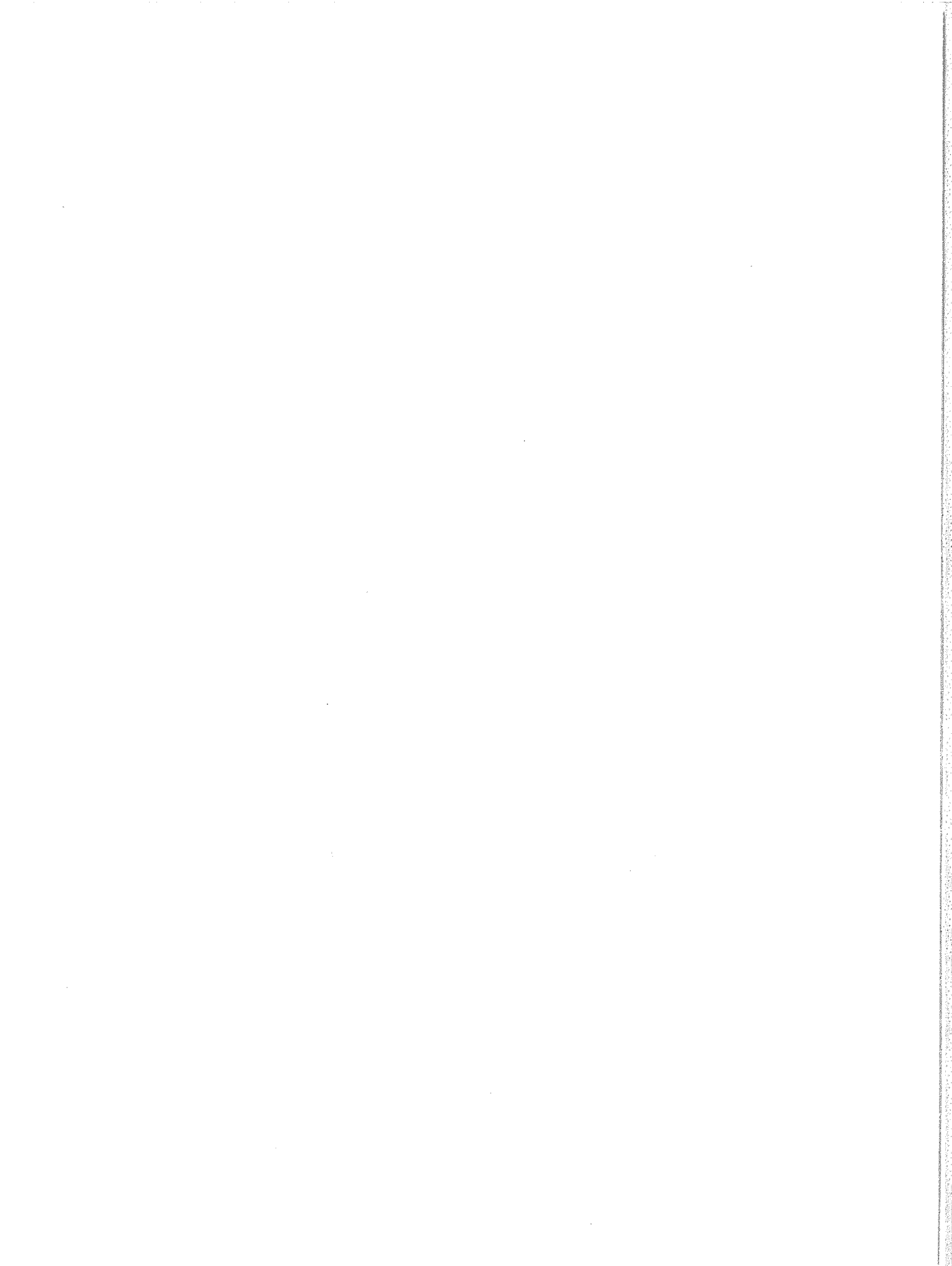
APRIL 1967  
HOUR-UT



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Observatories included:

- |                  |           |              |          |                |             |                 |
|------------------|-----------|--------------|----------|----------------|-------------|-----------------|
| Arcetri          | Catania   | Herstmonceux | Istanbul | Manila         | Mitaka      | Sacramento Peak |
| Capri-F (German) | Haleakala | Huancayo     | Lockheed | McMath-Hulbert | Monte Mario | Wendelstein     |



# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

APRIL 1967

APR. 1967	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{22} \text{ W}_m^{-2} (\text{c/s})^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
1	2700 PENT	4	0119	0120	4	38.0	22.0		
	2700 PENT	29	0123		8	9.4	4.7		
	606 SGMR	41	1049	1101.8	41	146.4	10.0		
	8800 SGMR	3	1114.8	1115.8	4.4	20.1	6.5		
	4995 SGMR	3	1115.4	1115.8	1.2	12.6	4.2		
	2695 SGMR	1	1115.3	1115.8	1.3	6.2	2.1		
	1415 SGMR	1	1115.6	1115.9	1	5.0	1.6		
	8800 SGMR	3	1143.3	1143.9	3.2	33.5	11.0		
	4995 SGMR	3	1143.3	1144	4.7	16.8	5.3		
	2695 SGMR	45	1143.3	1144.1	4.7	7.8	2.5		
	2695 SGMR	45	1143.3	1147	4.7	7.8	2.5		
	1415 SGMR	45	1143.4	1147	4.6	6.3	1.5		
	606 SGMR	46	1134.5	1145.8	26	203.0	25.0		
	10700 PENN	3	1215.4	1216.2	4.9	21.5	10.8		
	10700 PENN	3	1217.1	1217.3	1.7	43.0	16.4		
	8800 SGMR	45	1215.4	1217.1	4.1	40.2	13.3		
	4995 SGMR	45	1215.4	1217.1	4.1	14.7	5.0		
	2800 OTTA	41	1215		26				
	2800 OTTA	46	1215	1217	6	17.0	8.0		
	2700 PENN	1	1215.4	1216.4	5.6	6.9	2.4		
	2700 PENN	45	1217	1217.3	3.2	18.1	6.9		
	2695 SGMR	45	1215.4	1217.1	4.1	18.6	6.2		
	1415 SGMR	45	1215.4	1217.2	4.1	12.5	4.0		
	960 PENN	1	1215	1216	5.8	2.6	0.8		
	960 PENN	45	1217.1	1217.4	3	5.0	2.0		
	606 SGMR	46	1215.4	1217	81.6	979.0	98.0		
	2700 PENN	1	1221.2	1221.6	1.8	2.9	1.5		
	960 PENN	1	1221.1	1221.7	1.4	.8	0.4		
	10700 PENN	3	1223.6	1224.4	4.2	123.6	31.6		
	8800 SGMR	3	1223	1224.3	6	140.6	45.0		
	4995 SGMR	3	1223	1224.3	6	95.6	32.0		
	2800 OTTA	3	1223.5	1224.2	4	37.0	10.0		
	2700 PENN	3	1223.4	1224.5	6.6	34.2	7.0		
	2695 SGMR	3	1223	1224.4	6	34.1	11.3		
	1415 SGMR	3	1224	1224.4	5.1	25.0	8.0		
	960 PENN	45	1223.6	1224.4	2.6	14.5	1.7		
	10700 PENN	3	1230.8	1231.6	1.8	11.8	5.9		
	8800 SGMR	1	1231	1231.4	8	6.7	2.2		
	4995 SGMR	3	1231	1231.4	8	33.6	11.2		
	2800 OTTA	3	1231	1231.5	3	130.0	65.0		
	2700 PENN	3	1231.2	1231.6	9.2	109.3	17.8		
	2695 SGMR	3	1231	1231.4	8	141.6	46.0		
	1415 SGMR	3	1231	1231.7	6	119.5	40.0		
	960 PENN	45	1229.8	1231.7	5.6	9.9	2.5		
	328 PENN	45	1214.8	1231.4	22.7				
	2800 OTTA	29	1234		8	12.0	6.0		
	8800 SGMR	1	1311.3	1311.6	1.7	3.4	1.1		
	4995 SGMR	1	1311.3	1311.6	1.7	2.2	.7		
	2800 OTTA	1	1311.5	1312	1.5	5.0	2.5		
	2700 PENN	1	1311.5	1311.7	2	6.4	3.6		
	2695 SGMR	3	1311.4	1311.7	1.6	7.8	2.6		
	1415 SGMR	1	1309.5	1311.8	3.5	6.3	2.1		
	960 PENN	1	1311.5	1311.5	1	2.8	1.4		
	8800 SGMR	1	1317.5	1317.9	4.5	6.7	2.2		
	4995 SGMR	1	1317.5	1317.9	4.5	6.3	2.1		
	2800 OTTA	3	1317.5	1318	3	12.0	6.0		
	2700 PENN	3	1317.5	1317.9	1.4	12.5	7.3		
	2695 SGMR	3	1317.5	1317.9	4.5	12.4	4.1		
	1415 SGMR	4	1317.8	1317.9	4.2	7.5	2.5		
	960 PENN	45	1317.3	1319.1	4.1	3.1	1.0		
	184 BOUL	6	1317	1317	2				2
	2700 PENN	29	1318.9	1318.9	2.8	2.9	1.5		
	10700 PENN	3	1409.8	1411.2	4.2	637.5	173.9		
	8800 SGMR	45	1410	1411.3	20	500.0	125.0		
	4995 SGMR	45	1410	1411.2	20	338.0	75.0		
	2800 OTTA	45	1410	1411.5	10	330.0	84.0		
			1410	1411.5	4.5	330.0			
	2700 PENN	3	1410.4	1411.3	3.4	249.3	105.2		
	2695 SGMR	45	1410	1411.2	20	382.0	95.0		
	1415 SGMR	45	1410	1411.3	33	230.5	75.0		
	960 PENN	45	1410.4	1410.9	3.1	35.0D	11.0D		
	606 SGMR	45	1408	1411	35	689.0	150.0		
	328 PENN	45	1410.1	1411	7.1				
	184 BOUL	6	1409	1409	8				3
	10700 PENN	29	1414	1414	11.6	22.2	11.1		
	2700 PENN	29	1413.8	1413.8	10.4	47.0	23.5		
	960 PENN	29	1413.5	1413.5	6.7	3.9	1.9		
	10700 PENN	3	1414.7	1415.2	1.3	36.1	18.0		
	2800 OTTA	45	1414.5	1415.5	5.5	200.0			
	2700 PENN	3	1414.3	1415.2	4	114.8	35.1		
	2700 PENN	3	1416.6	1416.8	.8	16.0	8.0		
	960 PENN	45	1416.6	1417	2.2	6.9	2.8		
	960 PENN	45	1413.5	1415.6	3.1	24.9	6.5		
	2800 OITA	29	1420	1420	18	15.0	6.0		
	2700 PENN	45	1421.4	1423	2.8	7.8	2.6		
	960 PENN	45	1422.3	1422.6	.9	3.3	1.3		
	8800 SGMR	45	1607.1	1608	9.9	45.0	15.0		
	4995 SGMR	45	1606.8	1608	8.7	21.0	7.0		
	2800 OTTA	1	1607	1608	2	4.6	2.3		
	2695 SGMR	45	1606.8	1608	10.9	7.0	2.3		
	1415 SGMR	45	1606.4	1608.2	11.6	8.0	2.7		

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APR. 1967	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} W_m^{-2} (c/s)^{-1}$		INT	REMARKS		
			UT	UT	MINUTES	PEAK	MEAN				
1	606 SGMR	45	1606.9	1612.5	10.1	39.0	.9	2			
	486 WASH	3	1611	1614	2	60.0					
	184 BOUL	6	1611	1612	3						
	10700 PENN	45	1620	1621.3	7 D						
	8800 SGMR	45	1619.8	1621	24.4	180.0	60.0				
	4995 SGMR	45	1619.8	1624.3	23.4	170.0	43.3				
	2800 OTTA	45	1620	1623.7	10	220.0	60.0				
				1620	1621	3	90.0				
				1623	1623.7	7	220.0				
	2700 PENN	45	1620	1624	7 D						
	2695 SGMR	45	1619.7	1623.8	29.5	242.0	34.0				
	1415 SGMR	45	1620.4	1624.1	44.6	121.0	13.9				
	960 PENN	45	1620.2	1621.2	1.6	9.3	2.8				
	960 PENN	29	1621.8	1621.8	8	1.6	0.8				
	960 PENN	45	1623.4	1624.4	4.2	5.6	2.4				
	606 SGMR	45	1620.3	1620.5	44.7	141.0	47.0				
	486 WASH	45	1621	1626	5	150.0D			OFF SCALE		
	328 PENN	5	1620.6	1620.8	.4						
	328 PENN	5	1623.3	1623.6	.7						
	2800 OTTA	30	1630		55	13.0	4.0				
	2800 OTTA	3	1636.5	1637	2	18.0	9.0				
	486 WASH	45	1637	1637	2	130.0D			OFF SCALE		
	606 SGMR	4	1858.9	1859.6	1.7	9.2	3.1				
	2800 OTTA	1	1949	1950	2	3.0	1.5				
	606 SGMR	45	1948.5	1949.2	1.8	51.0	17.0				
	606 SGMR	45	1958.7	1959	2.7	71.0	24.0				
	8800 SGMR	3	2005.2	2005.6	2.2	25.0	8.0				
	4995 SGMR	3	2005	2005.5	6.4	71.0	24.0				
	2700 PENT	4	2005	2005.5	3	96.0	40.0				
	2695 SGMR	3	2004.8	2005.4	7.8	111.0	34.0				
	1415 SGMR	3	2005	2005.6	12.6	59.0	20.0				
	606 SGMR	45	2004.9	2005	13.4	961.0	12.0				
	486 WASH	45	2005	2006	4	120.0D			OFF SCALE		
	2700 PENT	29	2008		5	10.0	4.0				
	606 SGMR	45	2016.9	2017.2	1.1	53.1	17.6				
	2800 OTTA	21	2120	2200	105	5.2	2.6				
	2700 PENT	1	2249.5	2250.3	1.5	2.2	1.1				
	2700 PENT	20	2305	2335	75	2.8	1.4				
	2	486 WASH	45	0015	0016	2	145.0D			OFF SCALE	
		184 BOUL	6	0031	0033	2					
		606 SGMR	3	1103.3	1104.2	1.9	90.0		31.0		
		606 SGMR	40	1106.2	1114.9	89.8	9.9		2.4		
		606 SGMR	3	1120.4	1120.4	1.4	224.0		65.0		
		606 SGMR	45	1140	1141	6.4	649.0		195.0		
		606 SGMR	3	1238.9	1239.4	3.1	13.2		4.3		
		606 SGMR	3	1259.4	1259.7	.8	19.8		6.6		
		2800 OTTA	1	1320.5	1321	2.5	3.8		1.9		
		606 SGMR	45	1320.7	1320.8	1.3	34.0		10.0		
606 SGMR		3	1349	1350	1.1	146.0	40.7				
2800 OTTA		25	1415		140	10.0					
2800 OTTA		21	1705	2030	295	5.8	2.9				
				1705	135	2.8					
				1920	160	5.8					
606 SGMR		45	1713.2	1713.3	.7	12.1	3.0				
486 WASH		3	1714	1715	1	95.0					
2800 OTTA		1	1901.7		.3	3.8					
606 SGMR		45	1934.4	1935.8	1.9	52.0	13.0				
184 BOUL		6	1934	1935	1						
8800 SGMR		3	1949.5	1950.2	6.5	7.7	2.5				
4995 SGMR		1	1949.6	1950.1	6.4	5.0	2.0				
2800 OTTA		1	1949.5	1950.5	1	3.8	1.9				
2695 SGMR		1	1949.6	1950	6.4	5.0	2.0				
1415 SGMR		1	1944	1948	12	3.6	1.5				
606 SGMR		40	1944.8	1950.3	11.2	7.3	1.5				
486 WASH		45	1950	1951	2	130.0					
2800 OTTA		1	2128.5	2128.7	1	1.2	0.6				
606 SGMR		40	2128.4	2134.3	6.5	19.8	3.0				
486 WASH		45	2133	2135	2	65.0					
606 SGMR		45	2238.2	2241.5	4.2	40.5	6.6				
184 BOUL		6	2240	2240	.5						
2700 PENT		1	2253	2253.5	1	3.0	1.5				
3		184 BOUL	6	0010	0010	.2			2		
		184 BOUL	6	0026	0026	.2			1		
		2700 PENT	1	0051	0052.5	4	2.8	1.4			
		184 BOUL	6	1819	1819	.2			1		
		486 WASH	3	1858	1858	1	50.0				
		2800 OTTA	1	2207	2207.3	1.5	4.0	2.0			
		2700 PENN	1	2207.5	2207.8	1.3	5.6	2.8			
		486 WASH	3	2208	2208	2	60.0				
		4	184 BOUL	44	1250 E		780 D			1	
		5	2800 OTTA	1	1633.7	1633.9	2	4.2	2.0		
			2700 PENN	1	1633.7	1633.8	1.1	4.5	2.3		
			2695 SGMR	1	1633.8	1634	1.5	3.3	1.1		
1415 SGMR			1	1633.8	1634	3.2	1.8	.6			
606 SGMR			1	1633.8	1633.9	3.2	2.8	.9			
2700 PENN			20	1707.6	1725	48.5	6.2	3.1			
1415 SGMR	40	2205	2208.8	6.5	2.5	.8					

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APR. 1967	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} (\text{c/s})^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
5	606 SGMR	4	2206	2209.2	5.5	10.1	3.5		
	486 WASH	3	2350	2351	5	70.0			
6	2700 PENN	20	1326.8	1326.8	15	6.1	1.6		
	960 PENN	1	1321.4	1321.5	.2	2.5	1.3		
	960 PENN	1	1324.8	1325	.4	.9	0.4		
	960 PENN	1	1457.8	1458.6	2.2	1.6	0.8		
	960 PENN	3	1930.8	1931	.4	15.6	7.8		
	960 PENN	1	1935.3	1935.4	.3	4.3	2.2		
7	2800 OTTA	20	1245	1250	45	2.2	1.1		
	2800 OTTA	20	1605	1725	155	3.6	1.3		
	2800 OTTA	20	1840	1905	110	4.6	2.3		
	960 PENN	1	1846.6	1847.1	1.2	1.2	0.6		
	606 SGMR	45	1843.5	1847	8.5	18.1	4.2		
8	2700 PENT	1	0110	0111	2	1.6	0.8		
	2800 OTTA	1	1252	1252.5	1	2.0	1.0		
	2800 OTTA	20	1655	1713	65	2.4	1.6		
	2700 PENN	1	1729.4	1730.1	2.5	3.8	2.2		
	2800 OTTA	21	2025	2035	70	2.4	1.2		
	2800 OTTA	28	2052.5		1.5	3.0	1.5		
	2800 OTTA	4	2054	2054.5	1	13.0	9.0		
	2700 PENN	20	2052.6	2053	12.8	2.9	0.5		
	2700 PENN	3	2054.2	2054.4	1.6	12.5	6.7		
	1415 SGMR	28	2052.8	2054.2	1.4	1.8	.9		
	1415 SGMR	3	2054.2	2054.6	6.8	12.6	4.0		
	606 SGMR	1	2054.2	2054.5	2.5	5.4	2.0		
	2800 OTTA	30	2055		20	5.8	2.0		
	2800 OTTA	1	2057.5	2058	1	2.0	1.0		
	2700 PENN	29	2055.8	2057.8	4.2	3.8	1.9		
2800 OTTA	1	2104	2104.7	1	2.4	1.2			
2700 PENN	1	2104.3	2104.6	.5	1.9	1.0			
1415 SGMR	40	2102	2108.3	7	6.8	2.0			
9	486 WASH	45	0006	0007	4	85.0			
	2800 OTTA	1	1217	1217.2	2	3.2	1.6		
	2800 OTTA	1	1220.5	1221	1	2.6	1.3		
	8800 SGMR	45	1754.6	1754.9	2	51.0	10.0		
	4995 SGMR	45	1754.6	1755.2	2	29.2	5.0		
	2800 OTTA	4	1754.5	1755.3	2	11.8	5.9		
	2695 SGMR	45	1754.6	1755	2.1	14.0	3.0		
	1415 SGMR	45	1754.5	1755	1.5	20.0	5.0		
	2800 OTTA	21	2030	2050	80	2.0	1.0		
	2800 OTTA	1	2037.2	2037.4	1	3.0	1.5		
	2700 PENN	1	2037.4	2037.5	.5	2.7	1.3		
	960 PENN	45	2037.4	2037.5	.9	9.1	3.0		
10	2800 OTTA	21	1500		80	2.4	1.8		
	10700 PENN	45	1600	1601.8	10	68.7	11.1		
	8800 SGMR	3	1600.3	1602	3.6	38.9	13.3		
	4995 SGMR	3	1600.4	1602	14.4	23.9	7.9		
	2800 OTTA	21	1600.7	1601	15	4.8	2.4		
	2800 OTTA	4	1601.5	1602	1.5	7.6	3.8		
	2700 PENN	45	1600.5	1601.9	6.4	10.8	3.0		
	2695 SGMR	3	1600.5	1602	5.6	11.3	3.7		
	10700 PENN	3	2015.6	2015.9	.7	23.5	11.7		
	2800 OTTA	1	2016	2017	2	4.8	2.4		
	2700 PENN	1	2015	2016.1	2.4	6.0	2.8		
	486 WASH	45	2330	2330	3	75.0			
	11	2700 PENN	26	1205.6	1303.4		8.2		
2700 PENN		1	1310.5	1312.5	5.2	4.1	2.1		
4995 SGMR		1	1355.1	1358.7	11	5.5	1.8		
2800 OTTA		21	1335	1343	245	3.6	1.8		
2800 OTTA		1	1357	1359	6	5.0	3.0		
2700 PENN		20	1323.6	1430	194	4.8	2.4		
2700 PENN		1	1323.8	1325.4	3.9	3.7	1.9		
2700 PENN		1	1337.6	1339.5	3.1	5.5	3.3		
2700 PENN		29	1340.7	1340.7	109.3	2.8	1.4		
2700 PENN		20	1355.7	1358.5	9.9	7.6	3.8		
2695 SGMR		3	1356.3	1358.6	8.9	8.9	3.0		
1415 SGMR		1	1357.2	1358.2	7.8	4.4	1.4		
606 SGMR		40	1354	1357	19.7	7.0	2.3		
2700 PENN		1	1418.8	1419.4	3.2	2.8	1.4		
10700 PENN		3	1510.3	1510.6	.5	7.5	3.8		
10700 PENN		3	1709.8	1713	7.6	10.4	5.2		
10700 PENN		20	1730.2	1732	8.6	5.2	2.6		
10700 PENN		3	2106.4	2108.9	4	91.7	39.0		
2700 PENN		3	2106.8	2109.1	3.8	39.7	17.6		
10700 PENN		29	2110.4	2110.4	86.6	34.4	20.1		
10700 PENN		3	2110.6	2110.8	2.2	28.7	17.8		
2800 OTTA	29	2113		150	11.4	5.7			
2800 OTTA	4	2117	2119	6	43.0	21.0			
2700 PENN	29	2110.6	2110.6	89.4	16.8	11.4			
2700 PENN	3	2110.7	2110.9	2.2	13.7	9.6			
12	2700 PENT	1	0037	0037.5	1	2.0	1.0		
	2700 PENT	1	0126	0126.5	1	2.0	1.0		
	2695 SGMR	20	1155	1159.8	10	5.1	2.5		
	1415 SGMR	20	1155	1159.5	15	3.2	1.6		



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APR. 1967	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} (\text{c/s})^{-1}$		INT	REMARKS			
			UT	UT	MINUTES	PEAK	MEAN					
12	606 SGMR	45	1155.9	1201.2	10.1	48.1	14.0	1				
	606 SGMR	3	1210.7	1212	3.3	29.6	7.4					
	184 BOUL	41	1709	1717	8							
	2800 OTTA	20	1905	1930	155	3.2	1.6					
	184 BOUL	41	2110	2132	28							
	184 BOUL	48	2159	2200	5							
	184 BOUL	41	2219	2219	6							
13	2700 PENN	1	1808.1	1808.2	.3	5.1	2.6					
	960 PENN	1	1809	1809.1	.1	3.9	2.0					
	2700 PENN	1	1816.3	1816.4	.2	4.9	2.4					
	2800 OTTA	20	1932	1939	20	2.4	1.2					
14	2700 PENN	45	1630.2	1630.9	5.2	13.7	5.5					
	960 PENN	45	1631.4	1632	.8	5.0	2.5					
	2700 PENN	26	1636	1713.2	50	7.7	3.8					
	2800 OTTA	1	1707	1708.7	3	4.2	2.1					
	2700 PENN	1	1707.7	1708.6	2.1	3.9	2.0					
	2695 SGMR	1	1709.7	1709.8	.4	2.9	.9					
	1415 SGMR	3	1708.8	1709.8	2.3	16.7	5.5					
	606 SGMR	3	1708.2	1708.7	.8	33.3	11.1					
15	2700 PENN	1	1641.4	1642.2	2.1	3.4	1.7					
16	2700 PENN	20	1128.2	1131.7	12.1	4.3	2.1					
17	2700 PENN	20	1721.3	1736.8	29.9	3.3	1.7					
18	2700 PENN	20	1717	1729.6	29.8	2.9	1.4					
	10700 PENN	20	1928	1930.2	17.2	4.8	2.4					
	2800 OTTA	1	1928.4	1930.4	4.5	2.8	1.4					
	2700 PENN	1	1928.5	1930.4	5.9	4.3	1.5					
19	2800 OTTA	20	1930	1949	75	2.8	1.4					
	2800 OTTA	5	1942.5	1944.9	4	2.8	1.4					
20	2800 OTTA	24	2115		20	4.6						
	2700 PENN	20	2103	2141.8	76	8.3	4.1					
22	2700 PENN	26	1533.8	1719		11.0						
	2800 OTTA	20	2020	2028	40	2.2	1.1					
23	2700 PENT	1	0026	0027	2	7.0	3.5					
24	2800 OTTA	20	1805	1815	55	2.4	1.2	2	OFF SCALE			
	2700 PENN	20	1805	2259	294	6.8	3.4					
	10700 PENN	24	2104	2259		7.3						
	2700 PENN	20	2056	2107	81	2.4	1.2					
	960 PENN	45	2103.6	2104.1	1.7	1.4	0.7					
	960 PENN	45	2107.2	2107.6	1.9	1.4	0.7					
	960 PENN	45	2115.9	2116.4	.7	3.5	0.9					
	960 PENN	1	2121.6	2121.7	.3	1.4	0.9					
	960 PENN	1	2204	2204.1	.3	1.2	0.7					
	960 PENN	1	2214.9	2215.2	.4	1.7	1.2					
	184 BOUL	6	2305	2305	.5							
	486 WASH	3	2334	2334	1	125.0D						
	25	10700 PENN	20	1130.6	1217.2	106.8	3.4			1.7		
		2700 PENN	20	1151.4	1152.6	87.2	2.6			2.3		
	26	10700 PENN	1	1113.8	1115	3						
8800 SGMR		20	1110.8	1114.7	7.2	13.0	5.0					
4995 SGMR		20	1110	1114.7	8.5	21.2	10.0					
2800 OTTA		21	1108	1111	10	2.6	1.3					
2800 OTTA		4	1113.5	1114.8	4	16.0	8.0					
2700 PENN		45	1113.7	1114.7	5							
2695 SGMR		20	1110.6	1114.7	8.7	20.7	9.0					
1415 SGMR		20	1110.5	1114.2	9.5	6.4	2.5					
2800 OTTA		2	1132	1133	6	4.8	2.4					
10700 PENN		1	1244.2	1245.8	5.6	5.4	2.7					
8800 SGMR		1	1244.2	1246	3.7	3.9	1.5					
4995 SGMR		3	1244.2	1244.7	6.3	14.1	5.5					
2800 OTTA		3	1244	1245	4	24.0	12.0					
2700 PENN		3	1242.5	1244.6	6.9	24.8	8.0					
2695 SGMR		3	1243.9	1244.7	4.6	27.0	10.0					
1415 SGMR		1	1243.9	1244.8	4.1	4.4	1.5					
606 SGMR		1	1244	1244.6	1.6	1.4	.3					
2800 OTTA		20	1815	1935	145	2.4	1.2					
2800 OTTA		21	2120	2135	100	3.0	1.5					
10700 PENN		3	2122	2123.3	3.5	17.2	10.8					
2800 OTTA		1	2122	2123.2	3	7.0	3.5					
2700 PENN		3	2121.4	2123.6	3.5	9.5	5.0					
1415 SGMR		1	2123	2123.5	1.4	4.1	1.3					
606 SGMR		1	2123.2	2123.3	1.8	2.1	.7					
10700 PENN		29	2125.5	2126.8	34.5	8.8	4.5					
2700 PENN		29	2124.9	2124.9	28	3.6	1.8					
10700 PENN		26	2207	2211.2	10	4.0	2.0					
27		2800 OTTA	1	1547.5	1548	1.5	2.8	1.4				
		2700 PENN	1	1547.6	1548.4	2	2.8	1.4				
		2695 SGMR	1	1547.3	1547.8	.7	2.5	1.0				

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

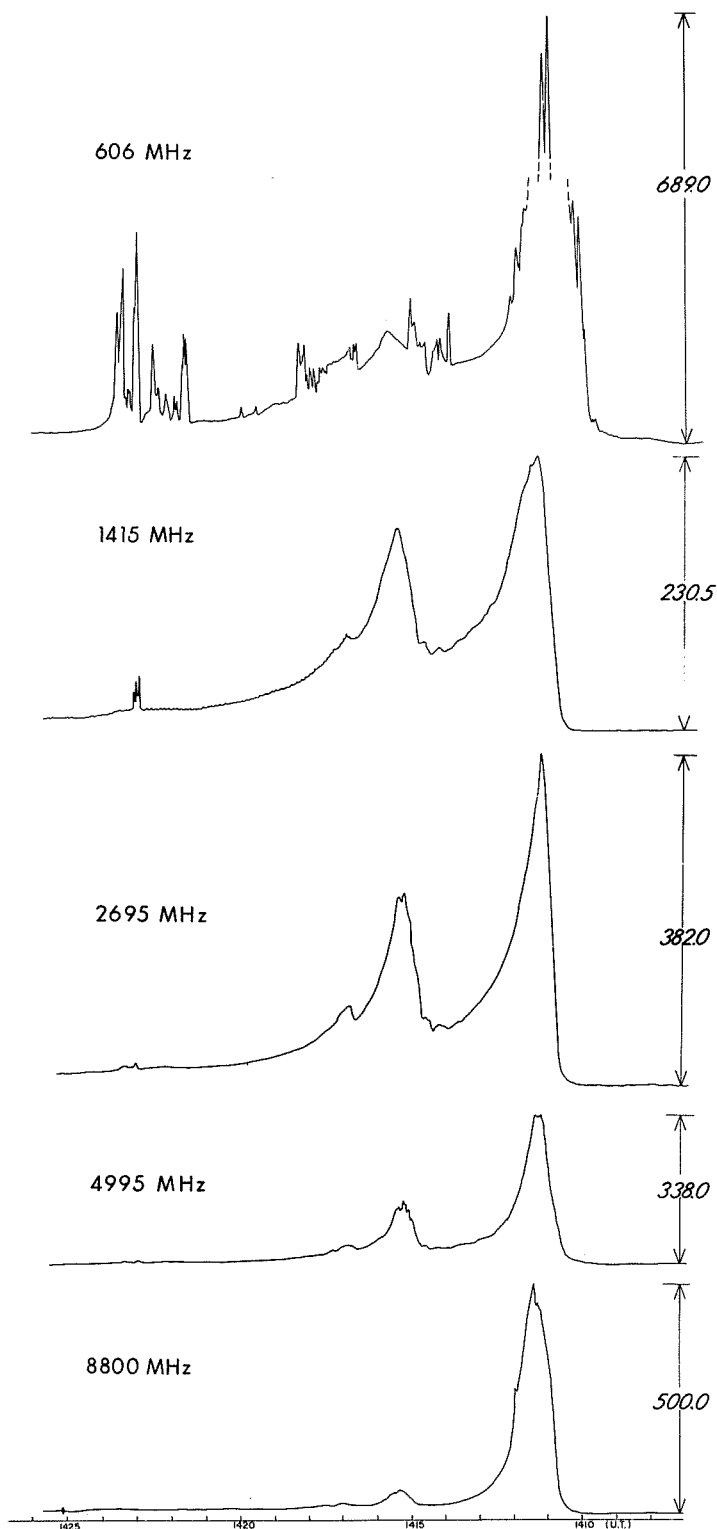
APRIL 1967

APR. 1967	FREQUENCY STATION	TYPE	STARTING	TIME OF	DURATION	FLUX DENSITY		INT.	REMARKS	
			TIME	MAXIMUM		$(10^{-22} \text{ Wm}^{-2} (\text{c/s})^{-1})$				
			UT	UT	MINUTES	PEAK	MEAN			
27	1415 SGMR	3	1547.5	1547.9	1.1	10.6	4.0			
	606 SGMR	1	1547.3	1547.9	2.7	1.9	.5			
	2800 OTTA	21	1600	1604	25	3.6	1.3			
	2800 OTTA		1604.5		.5	14.0			SPIKES	
	2700 PENN	26	1605	1710	80	6.4	3.2			
	2695 SGMR	21	1601	1605.8	11.1	4.3	2.0			
	2695 SGMR	4	1604.5	1604.5	.5	17.3	3.0			
	1415 SGMR	21	1559	1604.5	9	4.1	2.0			
	1415 SGMR	4	1604.5	1604.7	.5	8.7	2.0			
	606 SGMR	1	1603.9	1607.8	5.1	2.6	1.0			
	10700 PENN	3	1754		8.8				DUR. CAL.	
	28	486 WASH	45	2351	2351	4	125.0D			OFF SCALE
	29	2800 OTTA	20	1450	1520	110	3.4	1.7		
2800 OTTA		20	2058	2110	50	2.4	1.2			
30	2800 OTTA	21	1215	1320	170	3.2	1.6			
	2800 OTTA	1	1304.5	1305.2	1	3.0	1.5			
	2800 OTTA	1	1634	1634.3	.5	1.4	0.7			
	2800 OTTA	1	2137.5	2138	1	1.8	0.9			
	2700 PENN	20	2133	2137.7	21	2.8	0.7			
	2700 PENN	1	2236	2236	.2	2.8	0.7			
	2700 PENN	1	2239.7	2240.5	1.5	1.9	1.0			
	10700 PENN	1	2320	2321	1 D				DUR. SUNSET	
	2700 PENT	4	2318.5	2321.2	6	40.0	10.0			
	2700 PENN	3	2320	2321	1 D				DUR. SUNSET	
	960 PENN	1	2320	2321.1	.5D				DUR. SUNSET	
2700 PENT	29	2324.5		40	3.8	1.9				

No data are available from Haleakala for April 1967.

SELECTED SOLAR NOISE BURST  
AFCRL SAGAMORE HILL

APRIL 1967



COMPLEX RADIO BURST OBSERVED ON 1 APRIL, 1967  
AT SAGAMORE HILL RADIO OBSERVATORY - HAMILTON, MASS.

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATION

APRIL 1967

University of Colorado

7.6-41 Mc/s

Date April 1967	Bursts				Date April 1967	Bursts				
	Type	Time (U. T. )	Inten- sity	Frequency Range (Mc/s)		Type	Time (U. T. )	Inten- sity	Frequency Range (Mc/s)	
1	III	1255.4-1256.0	2	27-35	3	IIIg	1853.9-1855.5	2	16-41	
	III	1317.7-1319.5	3	25-41		IIIg	1932.1-1934.0	1	28-41	
	III	1354.3-1354.7	2	21-41		III	1939.0-1939.5	1	27-41	
	IIIg	1410.5-1412.8	3	20-41		IIIG	1944.0-1951.8	2	24-41	
	IIIG	1605.7-1615.1	3	16-41		IIIg	1954.7-1956.5	1	24-41	
	IIIg	1632.4-1634.5	2	27-30		III	2015.7-2016.0	2	28-41	
	IIIg	1702.8-1704.1	3	19-41		III	2022.4-2023.1	3	16-41	
	III	1714.3-1714.6	2	31-41		IIIg	2034.8-2035.4	2	26-41	
	IIIg	1801.3-1802.0	2	25-41		III	2042.2-2042.7	2	27-41	
	III	1820.3-1820.8	2	25-41		III	2048.7-2049.0	1	26-41	
	III	1841.3-1841.6	2	28-41		IIIg	2055.4-2057.3	2	25-41	
	III	1853.2-1855.2	3	16-41		IIIg	2102.0-2104.8	1	28-41	
	III	2027.1-2027.5	3	30-41		IIIg	2132.6-2133.6	2	24-41	
	II	2103.8-2108.5	2	24-39		III	2146.4-2146.7	1	28-41	
	IIIG	2110.3-2121.9	2	22-41		III	2150.5-2151.8	2	21-41	
	II	2126.9-2132.4	2	29-41		IIIg	2237.8-2239.9	1	26-41	
	III	2151.2-2152.3	2	25-41		IIIg	2244.3-2247.8	3	20-41	
	III	2215.6-2216.0	1	28-38		III	2359.1-2359.6	1	26-41	
IIIg	2223.5-2229.3	1	26-41	IIIg	2458.1-2458.7	2	29-37			
III	2235.6-2235.9	1	28-41	III	1320.3-1321.3	2	22-41			
2	IIIg	2302.1-2303.1	3	21-41	4	III	1423.7-1425.0	2	25-41	
	IIIg	2327.5-2331.8	1	26-41		III	1539.8-1540.2	1	27-41	
	IIIg	2338.0-2339.4	3	19-41		III	1625.8-1626.2	2	32-41	
	III	1546.6-1547.0	1	28-41		IIIg	1707.5-1709.2	3	25-41	
	IIIg	1757.3-1800.4	2	24-41		III	1834.8-1835.0	1	29-41	
	III	1832.8-1833.0	2	25-41		III	1927.0-1927.4	1	26-38	
	IIIg	1908.2-1909.0	3	13-41		III	1948.3-1948.6	2	25-41	
	continuum	1934.4-1940.5	3	12-41		III	2027.7-2027.9	2	27-39	
	III	2008.0-2008.4	1	24-41		no obser.	2303-2313			
	IIIG	2237.1-2245.5	3	22-41		5	IIIg	1311.5-1312.9	1	24-35
	III	2411.6-2412.3	3	30-41		III	1341.5-1341.7	1	24-41	
	IIIg	2427.0-2429.6	1	33-41		III	1355.5-1355.8	1	24-38	
	IIIg	1249.0-1251.0	2	26-41		IIIg	1359.2-1400.4	3	21-41	
	IIIg	1349.6-1350.9	1	29-41		III	1517.4-1517.8	3	13-41	
	IIIg	1413.2-1417.7	1	29-41		IIIg	1539.4-1543.0	2	16-41	
	IIIG	1420.5-1428.9	1	29-41		III	1552.5-1552.8	1	26-38	
	III	1453.2-1453.5	1	29-39		III	1557.2-1557.4	1	26-36	
	IIIg	1526.6-1528.6	1	27-30		III	1622.4-1622.7	1	25-41	
IIIg	1541.1-1544.0	1	26-41	IIIg	1629.3-1633.7	2	25-41			
III	1553.9-1554.1	1	20-41	III	1656.4-1656.7	1	29-40			
IIIg	1623.4-1626.8	3	21-41	III	1710.4-1710.8	1	26-38			
IIIG	1630.6-1635.1	2	21-41	III	1721.8-1722.0	1	25-41			
IIIg	1645.1-1648.8	1	28-39	III	1740.3-1744.0	1	26-41			
IIIg	1655.1-1700.2	2	25-41	IIIg	1803.4-1804.4	1	25-41			
IIIg	1714.2-1720.0	3	24-41	IIIg	1816.8-1820.4	1	24-41			
IIIg	1739.4-1742.9	2	28-41	IIIg	1825.8-1826.3	1	27-38			
IIIg	1808.3-1809.9	1	26-41	III	1837.6-1837.9	1	24-38			
IIIg	1817.8-1820.3	2	16-41	IIIg	1846.4-1847.2	1	28-39			
IIIG	1825.7-1834.8	2	13-41	IIIg	1851.2-1855.0	1	24-41			
IIIg	1848.4-1850.4	1	24-41	IIIg	1902.2-1907.8	3	12-41			

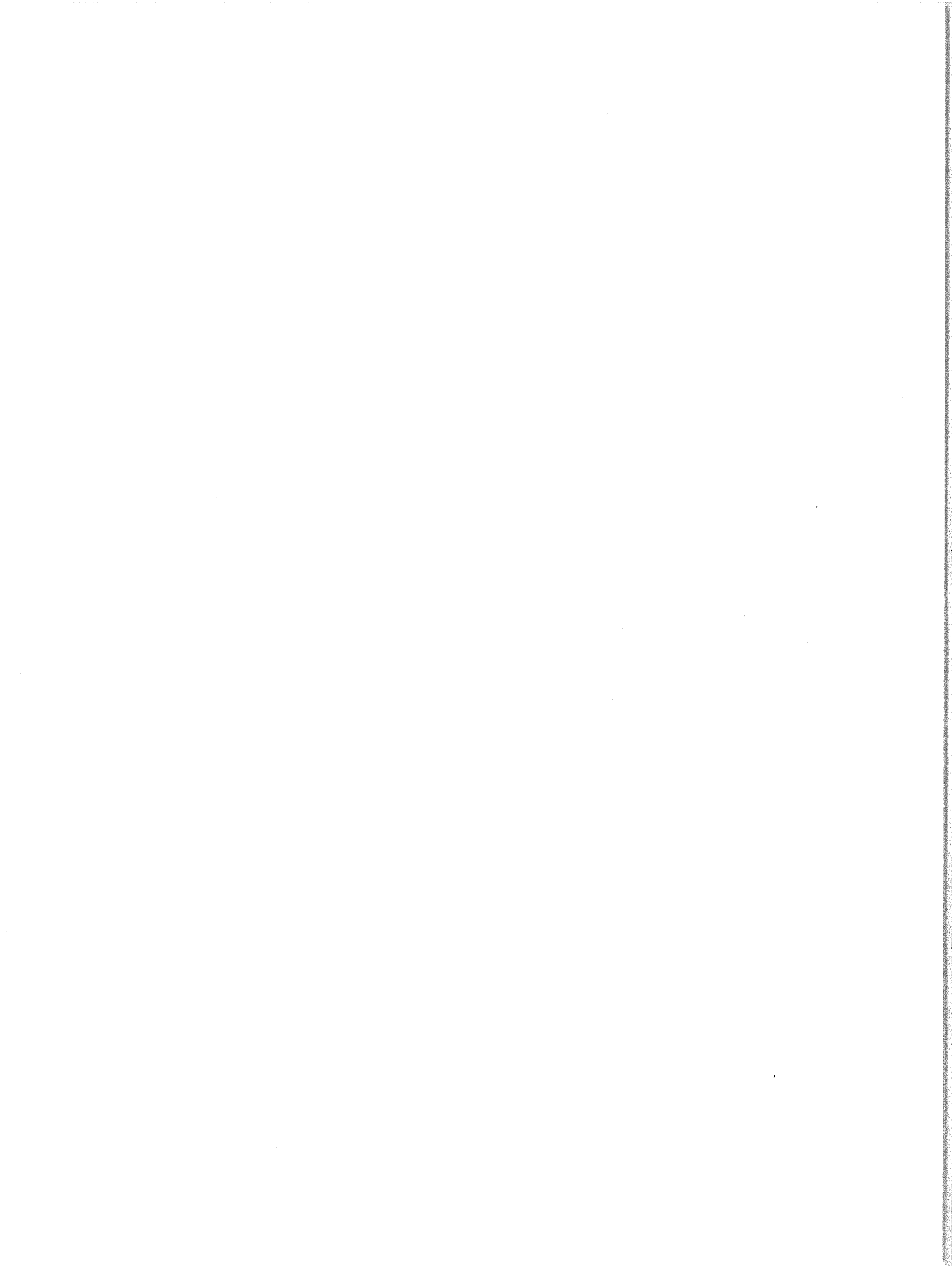
SOLAR RADIO EMISSION  
SPECTRAL OBSERVATION

APRIL 1967

University of Colorado

7.6-41 Mc/s

Date April 1967	Bursts				Date April 1967	Bursts			
	Type	Time (U. T. )	Inten- sity	Frequency Range (Mc/s)		Type	Time (U. T. )	Inten- sity	Frequency Range (Mc/s)
5	continuum	2026.7-a2530.0	1	24-41	21	III	2050.8-2051.2	1	28-41
	IIIg	2052.7-2055.0	2	25-41		II	2052.8-2056.5	1	29-41
	IIIg	2112.0-2112.6	2	21-41	22	IIIg	2317.4-2318.2	2	16-41
	IIIg	2215.9-2216.9	2	22-41	23	IIIg	2031.7-2032.2	1	30-41
	IIIg	2313.4-2314.8	2	24-41	24	IIIg	1235.6-1237.0	2	27-41
6	continuum	b1221-a2435	1	25-41		IIIg	2337.7-2339.0	2	27-41
7	IIIg	1844.3-1851.5	2	16-41		III	2344.2-2344.8	2	21-41
	II	1856.8-1905.7	2	27-41		III	2351.3-2351.6	2	28-41
8	III	1636.1-1636.3	1	23-41		IIIg	2426.2-2428.9	1	26-41
9	III	1838.6-1838.8	1	33-41	25	IIIg	1329.2-1332.0	2	19-41
10	III	1600.9-1601.2	2	28-41	26	IIIg	1243.7-1247.7	1	22-41
	IIIg	1609.7-1611.0	2	24-41		IIIg	1315.5-1316.6	1	25-41
	IIIg	1622.6-1624.7	1	28-41		III	1712.7-1713.1	1	34-41
	III	2230.9-2231.6	2	21-41		III	2249.3-2249.8	1	25-39
	IIIg	2248.6-2249.8	1	28-38	27	IIIg	1405.3-1406.5	1	22-38
	III	2331.8-2332.0	1	29-40		IIIg	1604.0-1606.6	1	26-41
	III	2436.8-2437.1	1	31-41		III	1923.0-1923.3	1	25-40
	III	2512.0-2512.3	1	28-37		IIIg	2229.4-2231.2	2	25-41
11	IIIg	1658.0-1701.2	2	16-41	28	III	1600.1-1600.5	1	19-41
	III	1716.2-1716.7	1	22-39		III	1705.8-1706.2	1	25-41
12	continuum	1751.0-2213.7	1	26-41		IIIg	1738.5-1740.0	2	11-41
	III	1718.0-1719.7	2	22-41		III	2006.1-2006.4	1	26-38
	IIIg	1819.6-1821.7	2	22-41		continuum	2121.4-2149.2	1	26-41
	continuum	1938.3-2008.3	1	26-41		IIIg	2327.2-2328.0	2	25-41
	IIIg	2111.5-2112.0	1	27-41	29	III	1526.1-1626.4	1	35-40
	IIIg	2128.0-2130.6	1	28-41		IIIg	1552.9-1554.9	1	26-41
	IIIg	2151.4-2154.5	1	28-38		IIIg	1637.6-1638.6	2	14-41
	IIIg	2204.6-2208.1	2	24-41		III	1703.2-1703.6	1	28-41
	III	2249.9-2250.1	1	30-41		III	1904.3-1904.7	1	19-41
13	IIIg	1936.6-1946.0	1	27-40		III	1958.7-1959.1	1	24-41
	III	2500.7-2501.0	1	30-41		III	2041.2-2041.5	2	30-39
14	IIIg	2512.1-2515.5	2	26-41		III	2247.2-2247.6	1	27-39
	IIIg	1600.0-1607.7	1	25-41		III	2303.4-2303.7	1	24-40
	III	1627.1-1627.4	1	26-38		IIIg	2525.5-2529.1	1	25-39
	III	1637.0-1637.3	1	26-38	30	IIIg	1607.0-1608.3	2	22-41
	continuum	1703.2-1712.2	2	25-41		IIIg	1637.2-1638.2	1	30-41
II	1712.2-1724.2	1	28-41		III	1833.7-1834.0	1	26-41	
continuum	1724.2-1737.7	2	24-41		IIIg	1850.9-1852.5	1	26-41	
III	1726.2-1727.0	2	16-41		III	2122.3-2122.5	1	21-39	
IIIg	1759.5-1800.2	1	28-41		IIIg	2140.3-2140.7	1	25-41	
	III	1831.8-1832.2	1	26-40		III	2337.8-2338.0	1	24-34
	III	1920.5-1921.0	1	26-41		IIIg	2409.3-2412.2	1	26-39
	III	2258.4-2258.8	2	23-41					
	IIIg	2319.9-2321.7	1	24-41					
16	III	2349.4-2349.6	1	33-40					
	IIIg	1731.4-1734.3	2	16-41					
	III	1815.5-1815.9	1	25-38					
18	no obser.	2010-2400							
19	III	2457.4-2457.6	1	22-41					
20	IIIg	2121.8-2123.4	2	24-41					

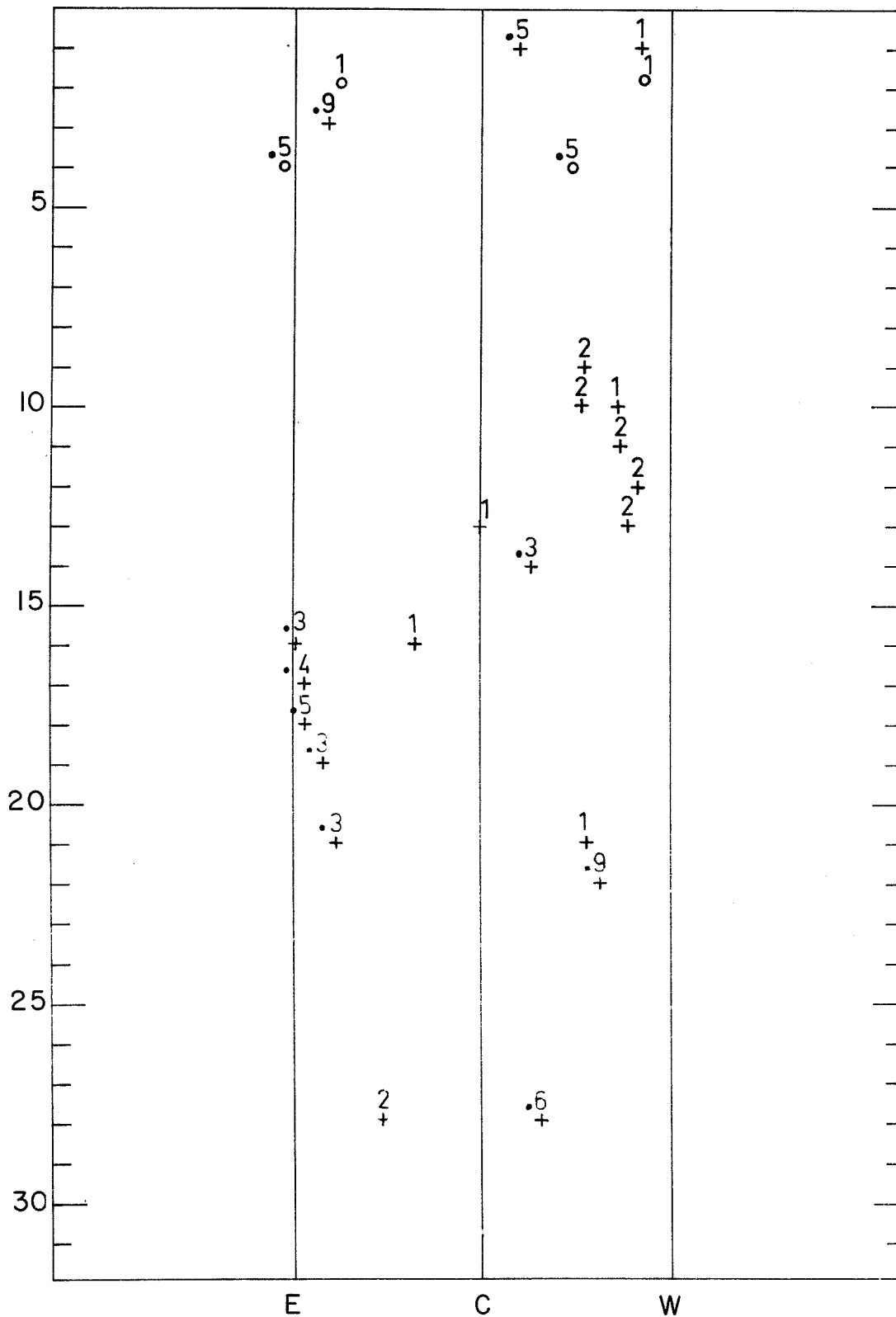


# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

APRIL 1967

Nançay

408 Mc/s

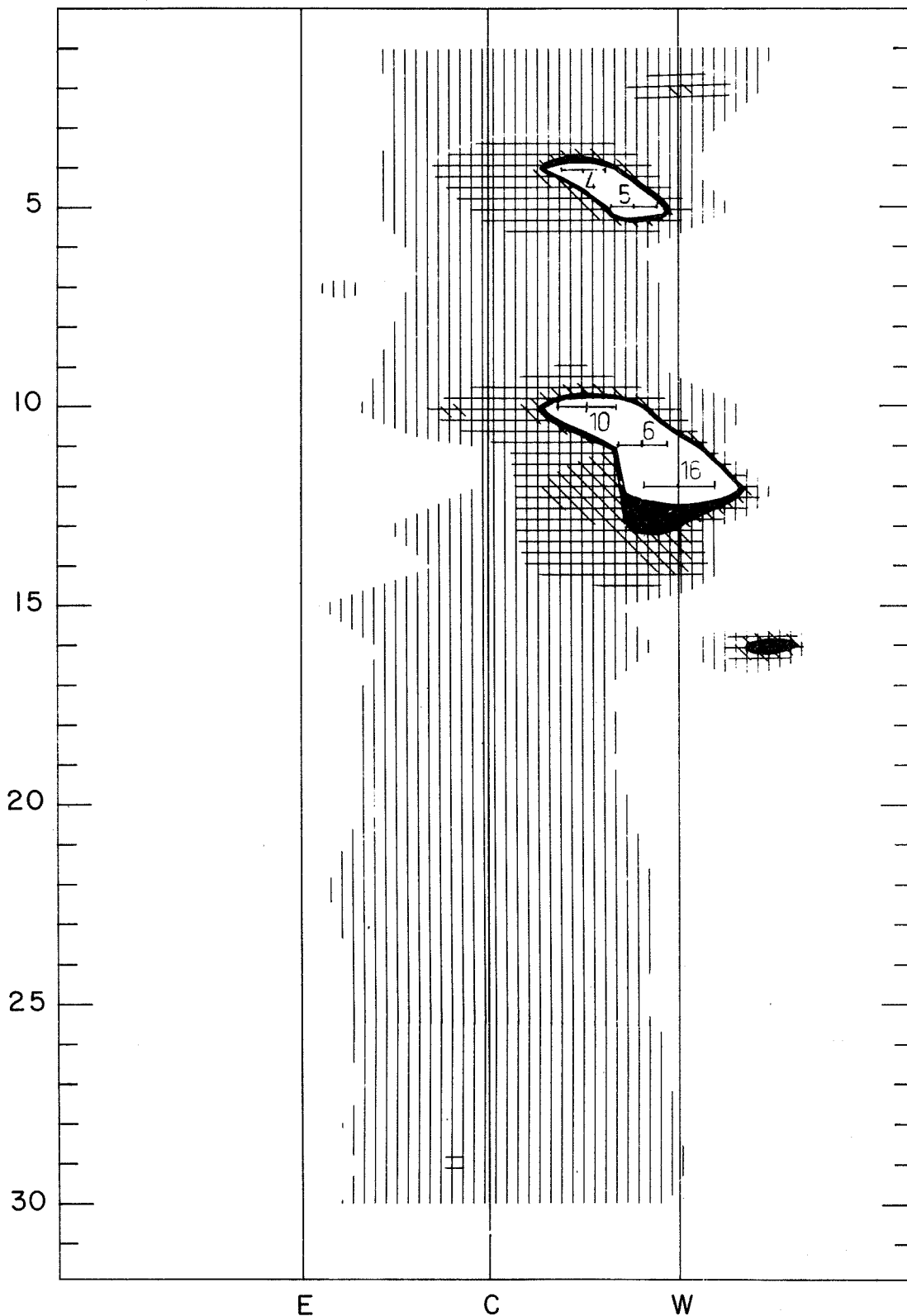


# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

APRIL 1967

Nançay

169 Mc/s

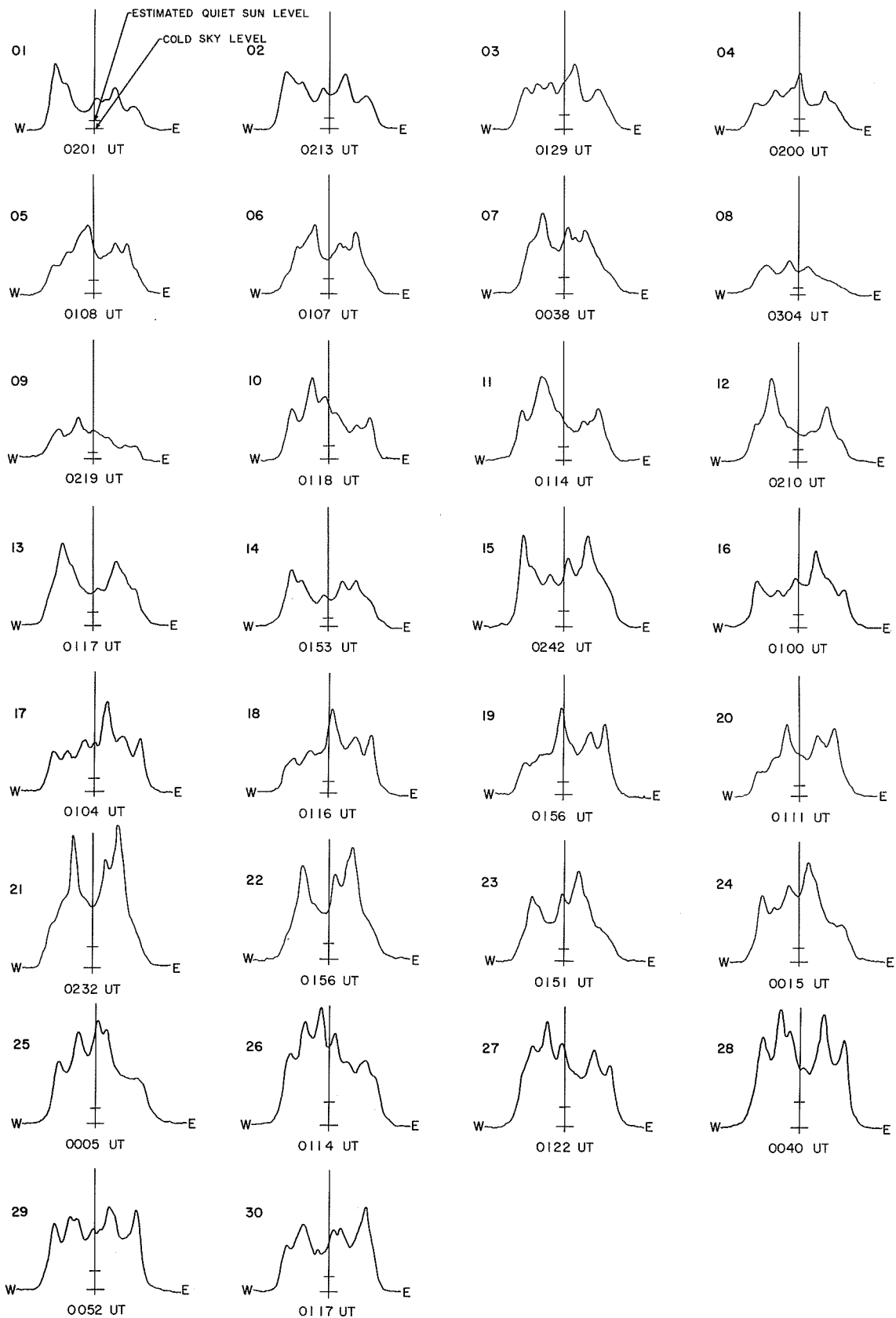




EAST - WEST SOLAR SCANS  
April 1967

FLEURS, AUSTRALIA

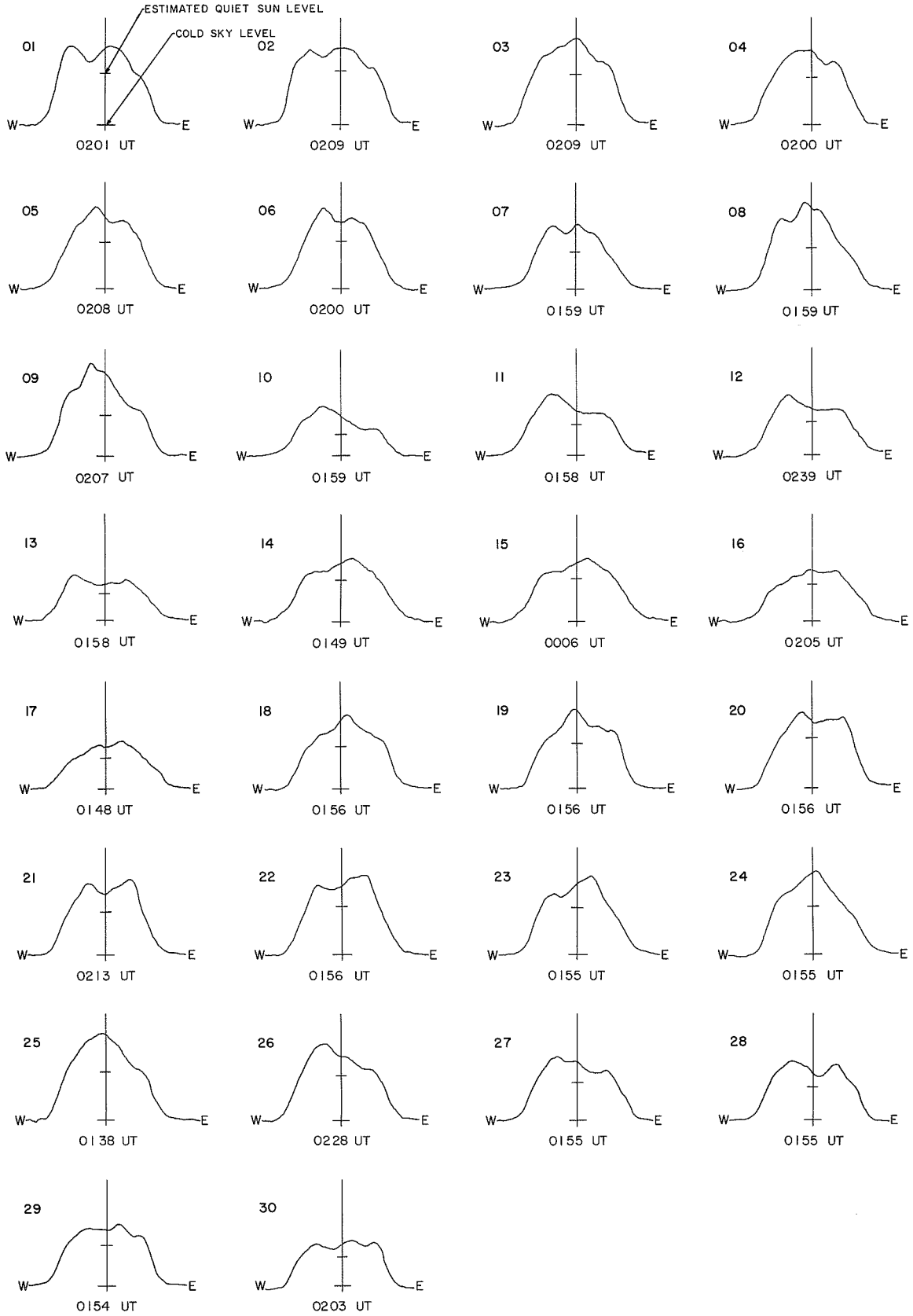
21 cm  
Fan-Beam with 2 minutes of arc  
E - W Resolution



EAST - WEST SOLAR SCANS  
April 1967

FLEURS, AUSTRALIA

43 cm  
Fan-Beam with 4 minutes of arc  
E-W Resolution



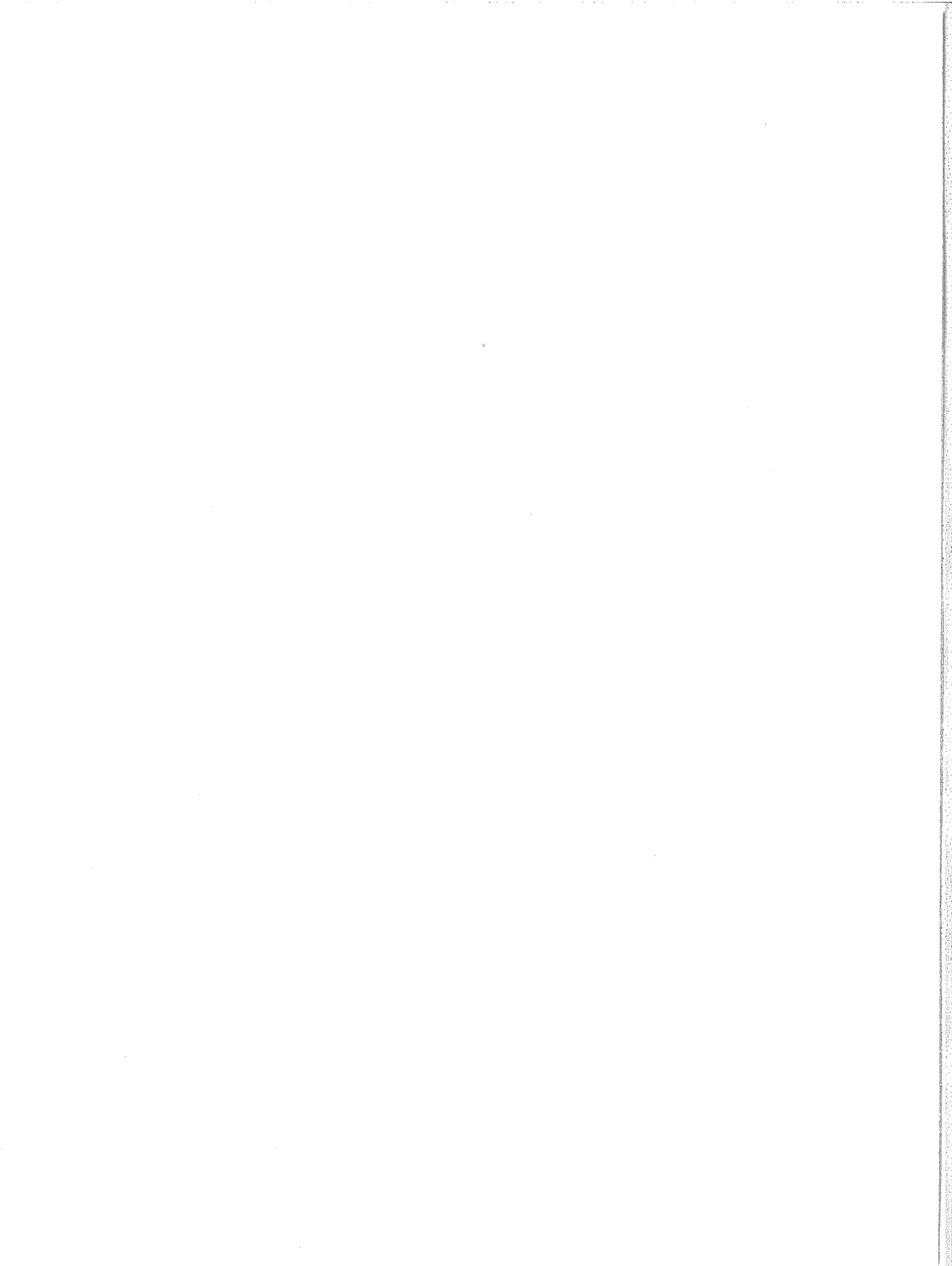
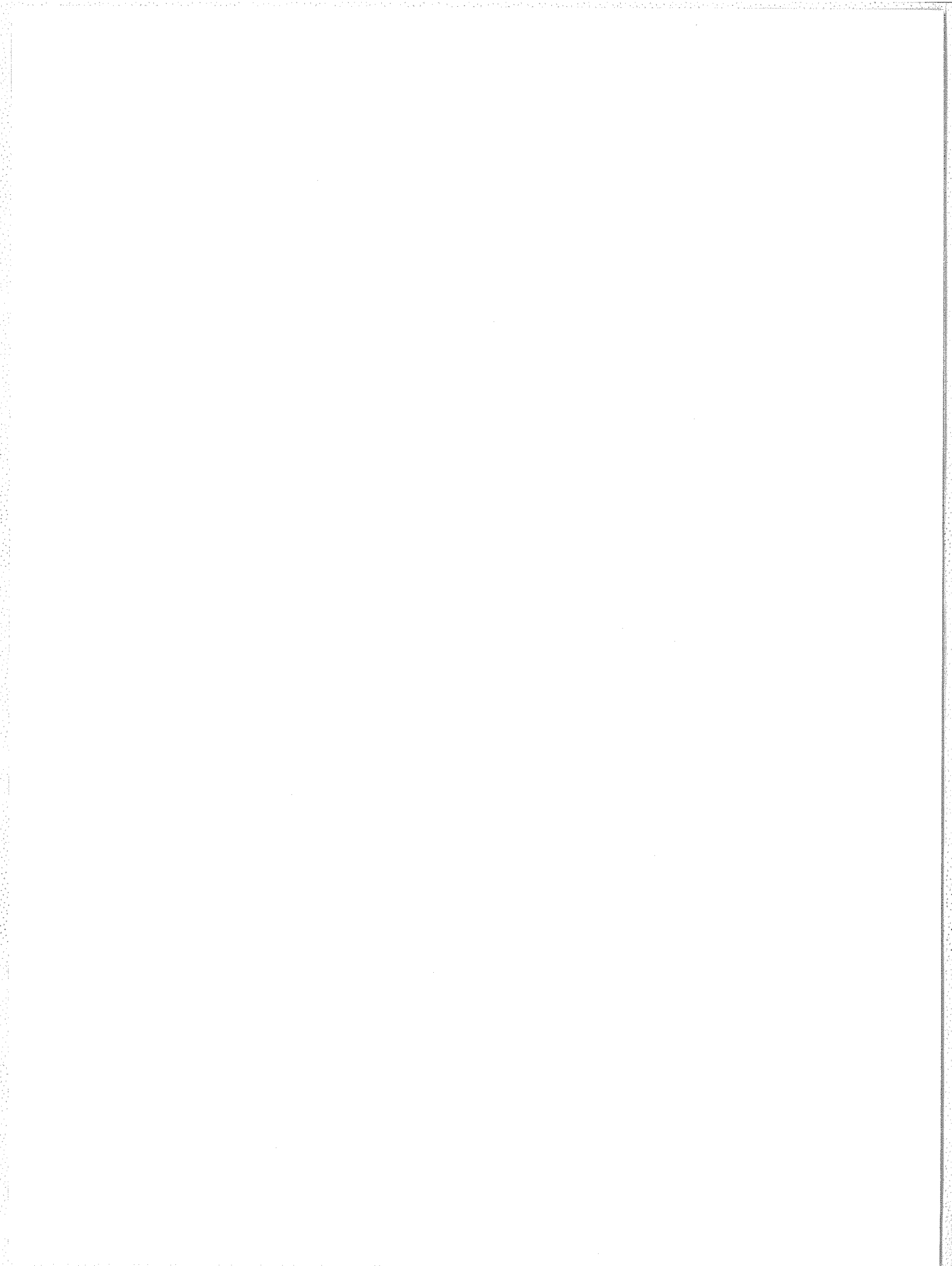


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for March 1967 Data

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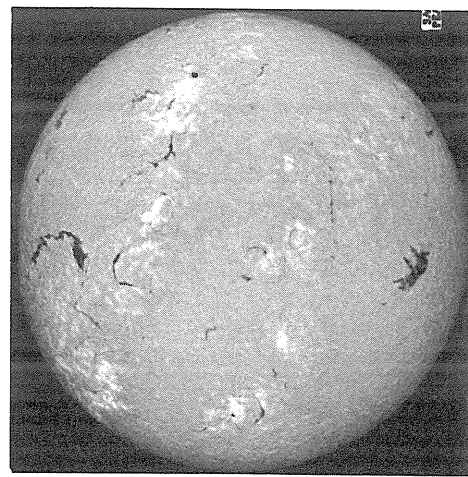
Note regarding Mt. Wilson Magnetograms:  
Starting with the magnetogram for March 5, 1967 the ragged appearance of some isogauss lines due to mechanical backlash in the scanning system has been eliminated.

For explanations of the data contained herein see "Descriptive Text" published in February 1967.



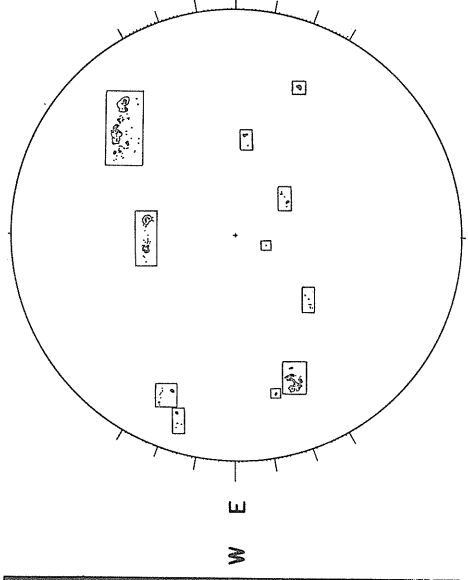
MARCH 1, 1967 (P=-21.42, B<sub>0</sub>=-7.22, L<sub>0</sub>=276.13)

SACRAMENTO PEAK N



Ha

ESSA-BOULDER Np



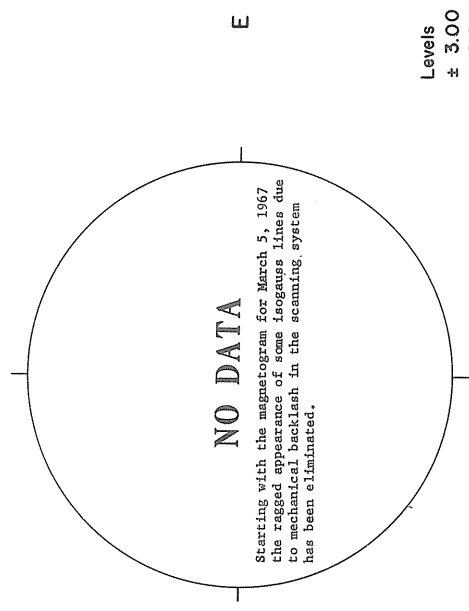
SUNSPOTS

MT. WILSON

Np

MAGNETOGRAM

Solid-Plus  
Dotted-Minus



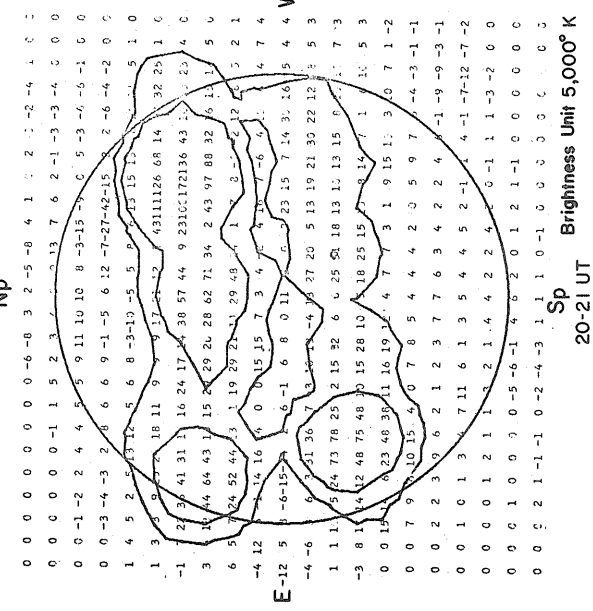
Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

03-21-25  
04-81-3  
06-22-35  
07-25-35  
08-34-25  
09-11-3  
10-07-3  
11-32-55  
14-33-25

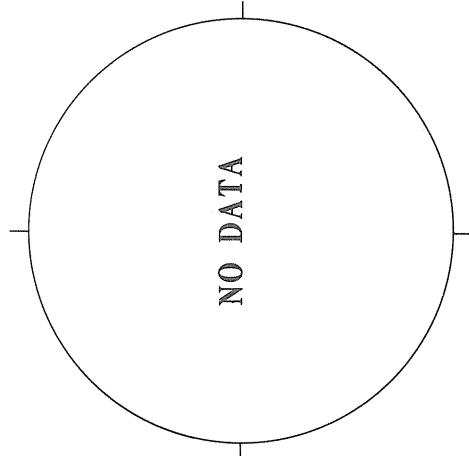
33  
Mar 67

S  
1616 UT

STANFORD Np  
9.1 cm.

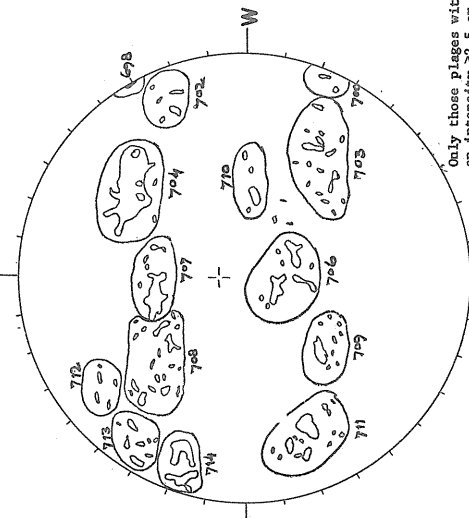


FLEURS, AUSTRALIA Np  
1950 UT



21 cm.

McMATH-HULBERT Np  
CALCIUM REPORT



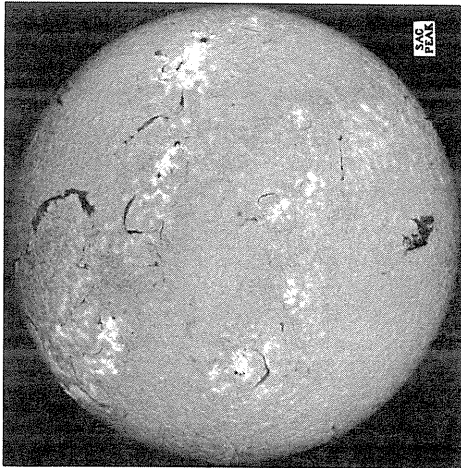
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

S  
20-21 UT  
Brightness Unit 5,000° K

Only those places with either an intensity > 2.5 or an area > 3000 are listed in the above table.

MARCH 2, 1967 (P=-21.68, B<sub>0</sub>=-7.23, L<sub>0</sub>=262.96)

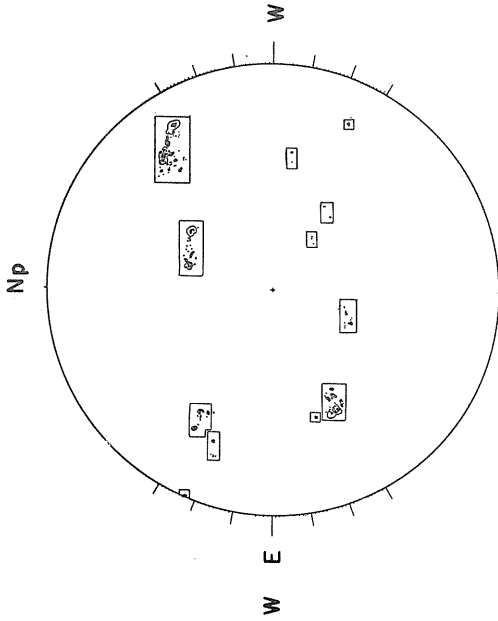
SACRAMENTO PEAK N



H $\alpha$

ESSA-BOULDER

SUNSPOTS



1509 UT

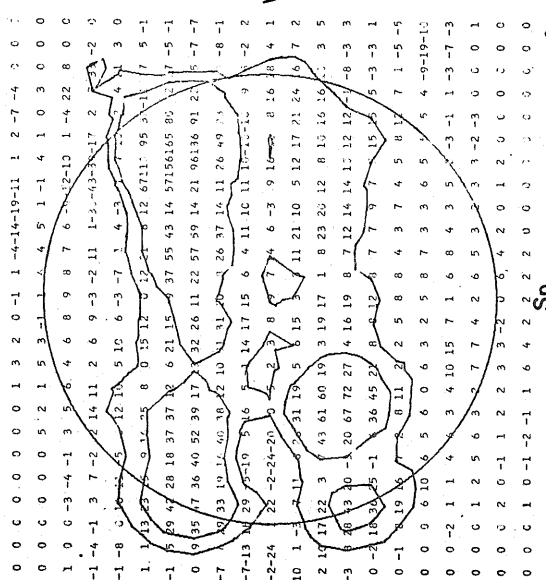
STANFORD

9.1 cm.

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT



20-21 UT

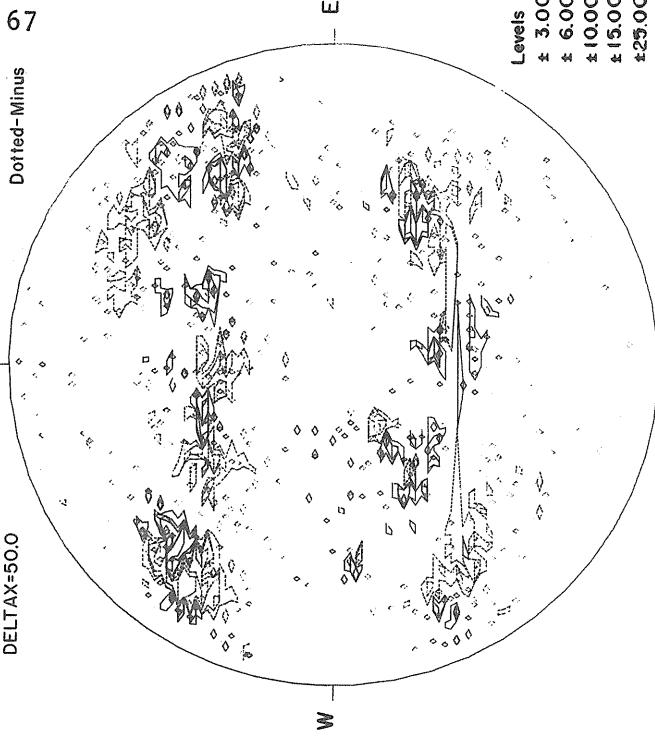
Brightness Unit, 5,000° K

Resolution 3 Minutes of Arc

02-03 UT Brightness Unit, 1,700° K

MT. WILSON  
DELAY=62.0  
DELTA X=50.0

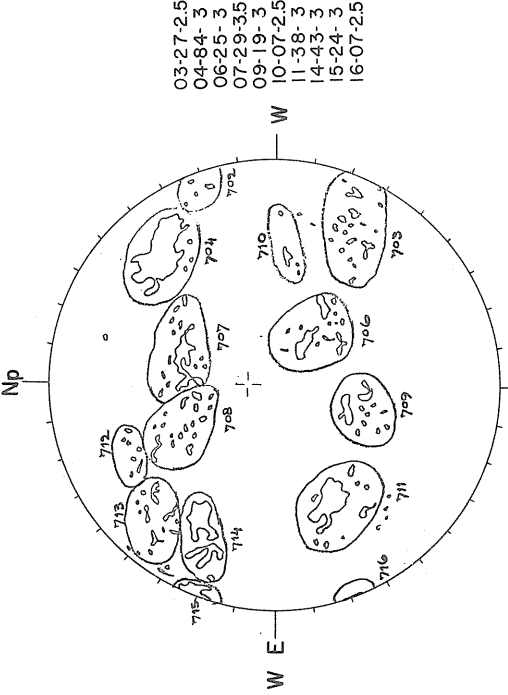
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

18:42-19:92 UT

CALCIUM REPORT



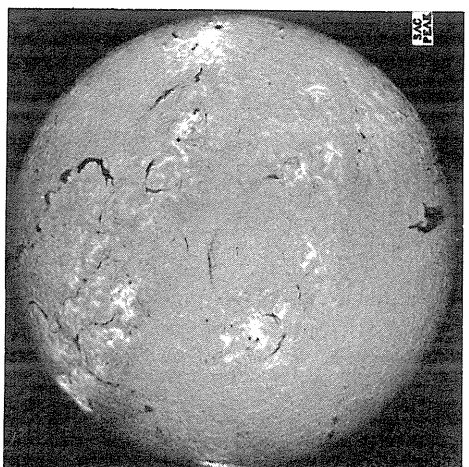
1620 UT

03-27-25  
04-84-3  
06-25-3  
07-29-35  
09-19-3  
10-07-25  
11-38-3  
14-43-3  
15-24-3  
16-07-25

MARCH 3, 1967 (P=21.93, B<sub>0</sub>=7.24, L<sub>0</sub>=249.78)

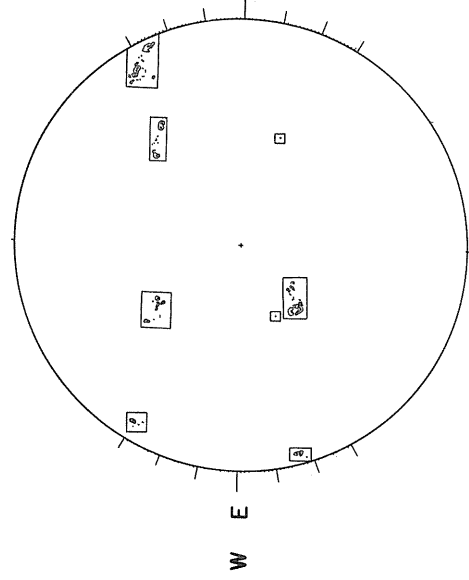
SACRAMENTO PEAK N

H $\alpha$



ESSA-BOULDER Np

SUNSPOTS



1524 UT

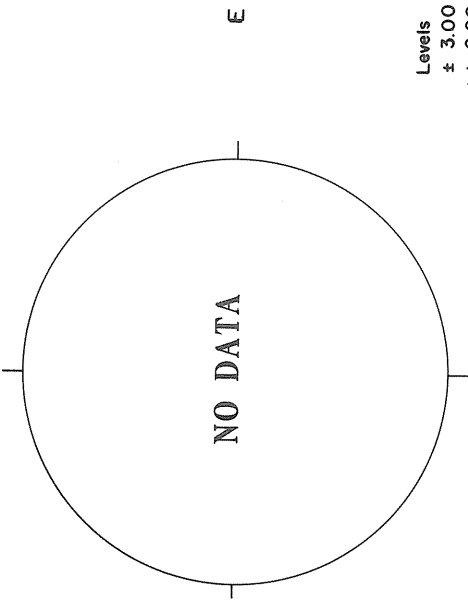
1935 UT

MT. WILSON

Np

MAGNETOGRAM

Solid-Plus  
Dotted-Minus



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD

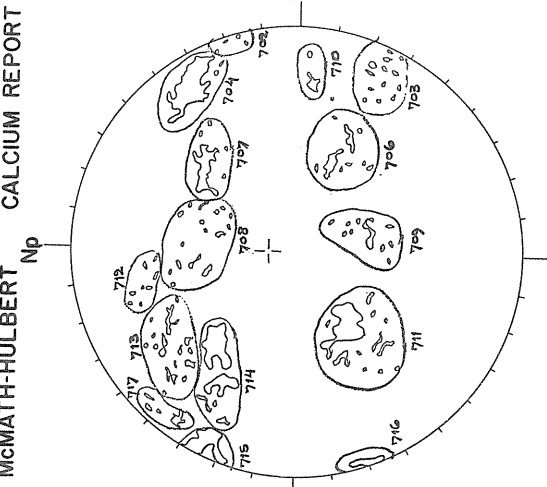
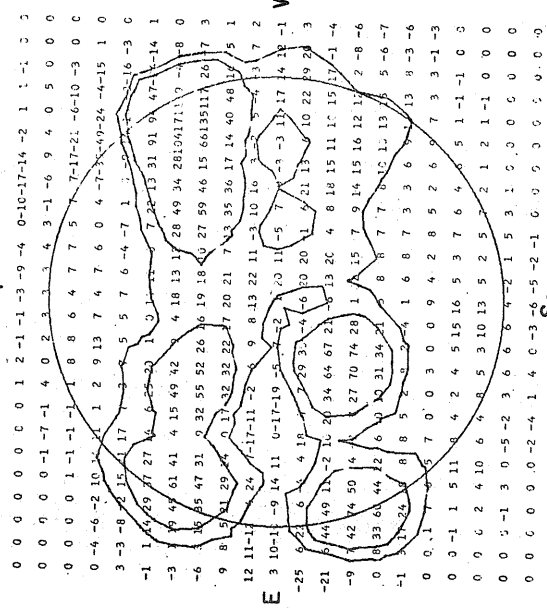
20-21 UT

9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np  
CALCIUM REPORT



Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K



MT. WILSON  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

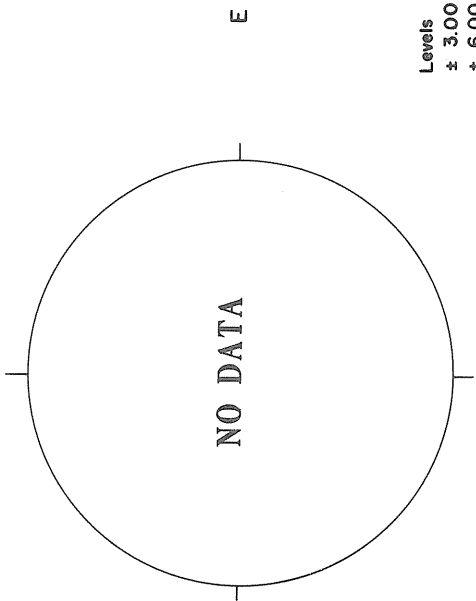
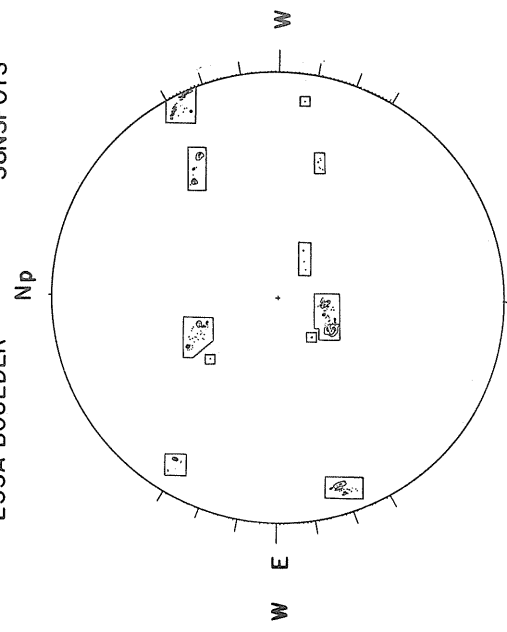
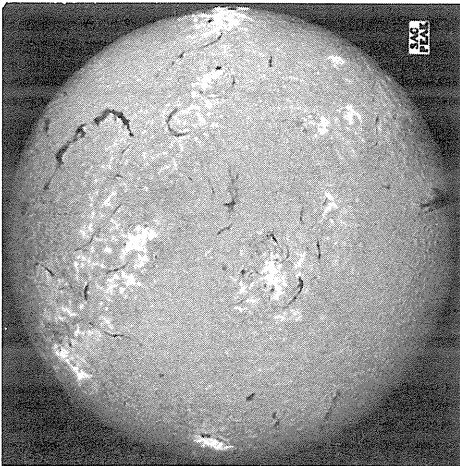
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
NP

SUNSPOTS

MARCH 4, 1967 (P=-22.17, B $_0$ =-7.24, L $_0$ =236.61)



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1620 UT

STANFORD

9.1 cm.

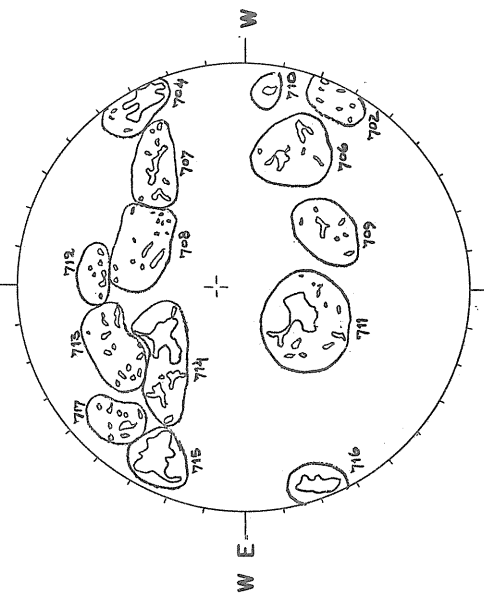
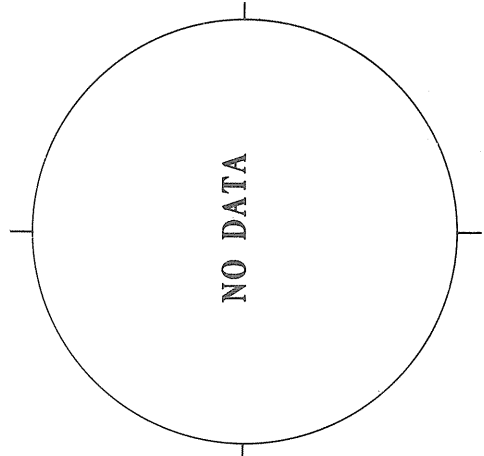
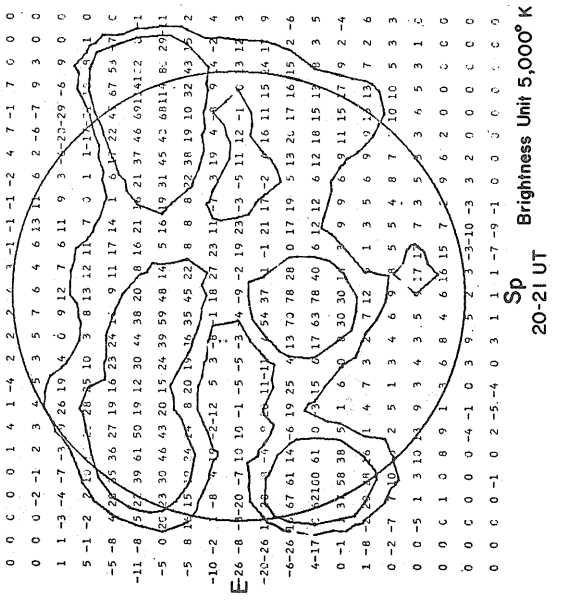
FLEURS, AUSTRALIA  
N

21 cm.

McMATH-HULBERT  
Np

Sp

CALCIUM REPORT



04-69-3  
06-14-3  
07-21-25  
09-10-25  
10-06-25  
11-43-25  
14-58-35  
15-68-3  
16-49-4

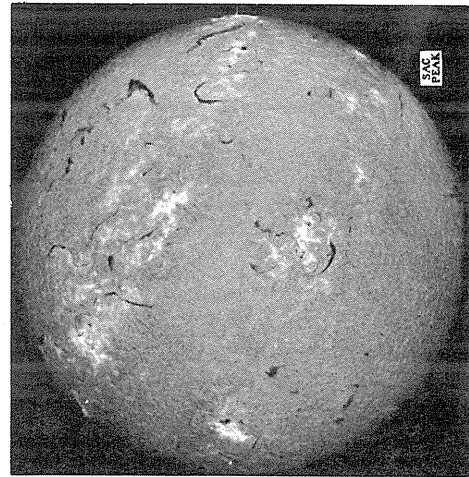
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
20-21 UT  
Brightness Unit 5,000° K

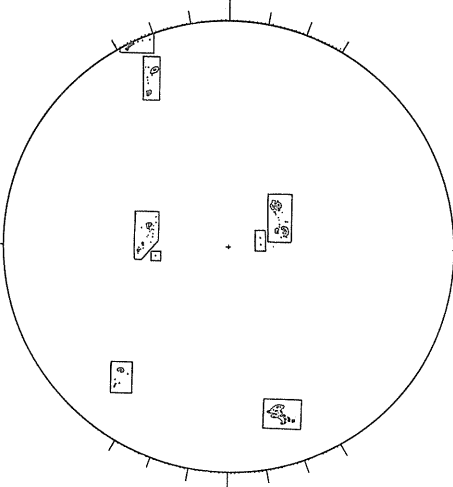
Sp  
1320 UT

MARCH 5, 1967 (P=-22.40, B<sub>0</sub>=-7.25, L<sub>0</sub>=223.44)

SACRAMENTO PEAK N

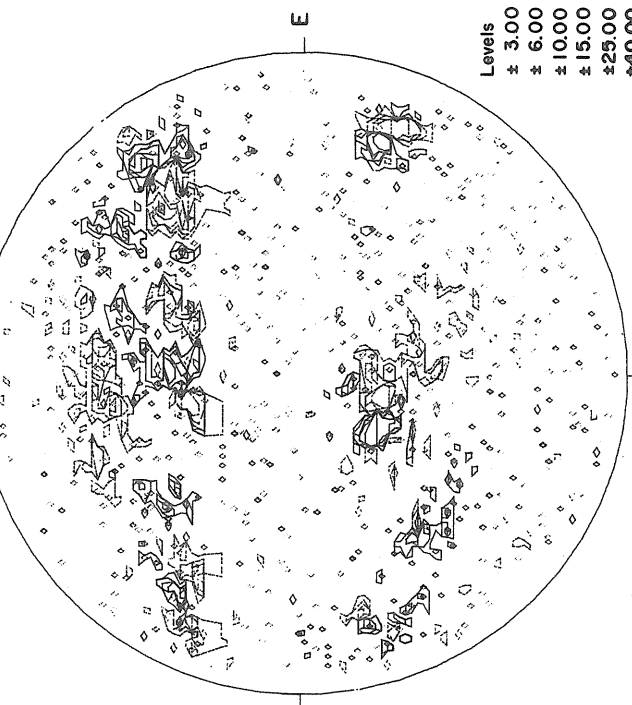


ESSA-BOULDER (SAC PEAK) Np



SUNSPOTS

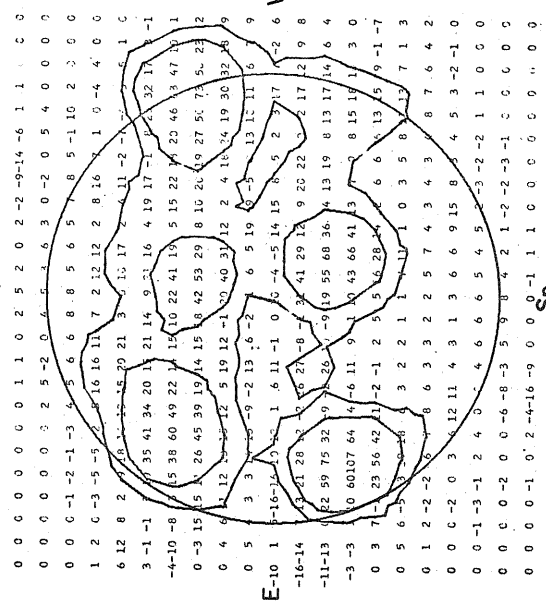
MT. WILSON DELTAY=645 DELTAX=500



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD 1608 UT

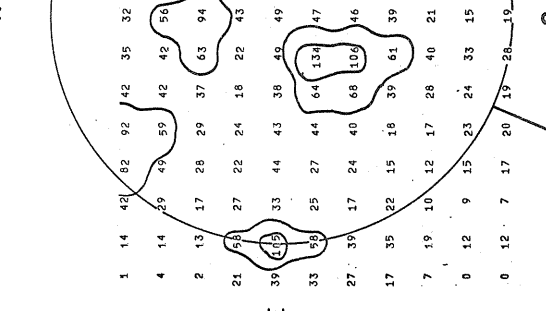
9.1 cm.



Brightness Unit 5,000° K

FLEURS, AUSTRALIA N

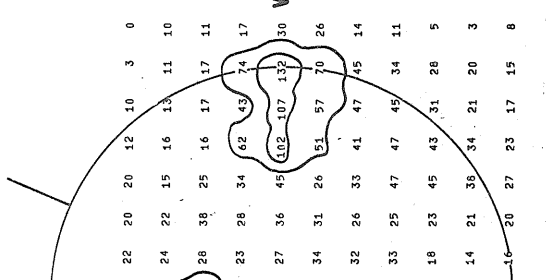
1705 UT



Brightness Unit 1,700° K

McMATH-HULBERT Np

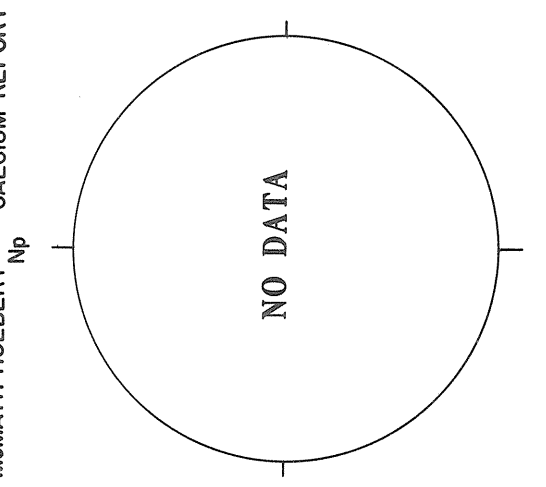
21 cm.



Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

16:08-17:54 UT

CALCIUM REPORT



NO DATA

Mt. Wilson

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

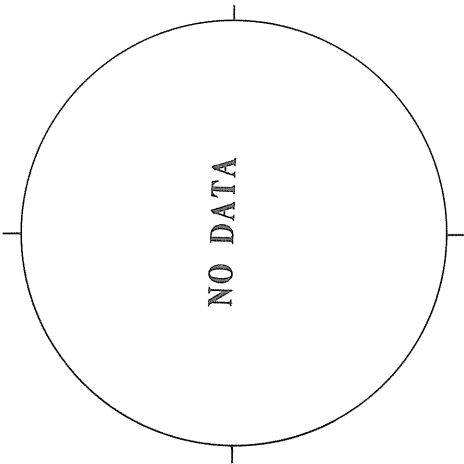
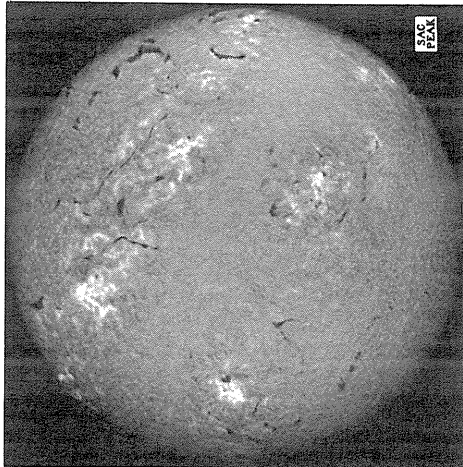
MARCH 6, 1967 (P=-22.63, B<sub>0</sub>=-7.25, L<sub>0</sub>=210.26)

SACRAMENTO PEAK N

H $\alpha$

ESSA-BOULDER NP

SUNSPOTS NP



1559 UT

1550 UT

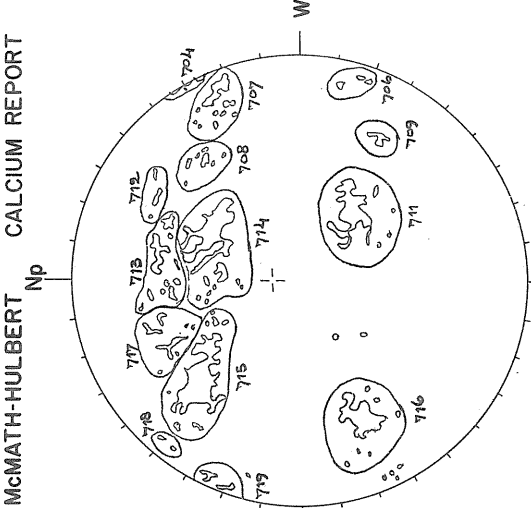
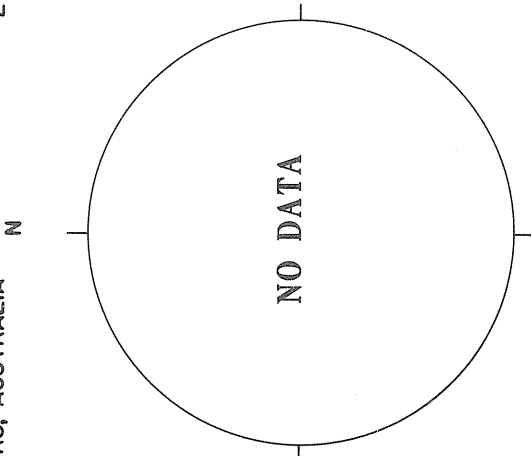
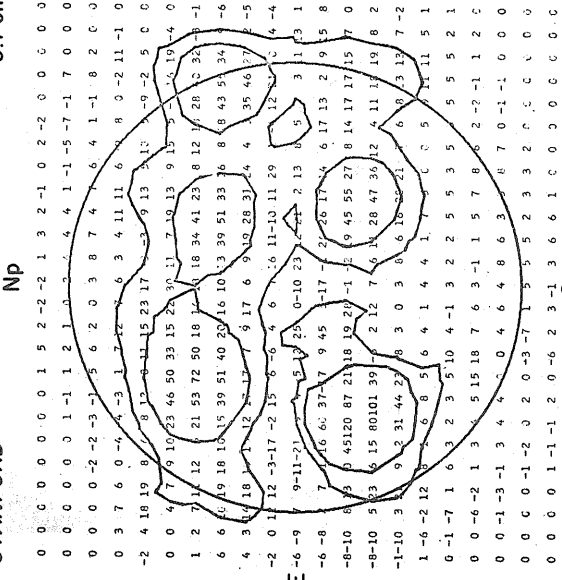
STANFORD

9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

07-23-3  
08-09-25  
09-06-25  
11-38-3  
14-84-3  
15-73-3  
16-50-35  
17-13-25  
19-12-3

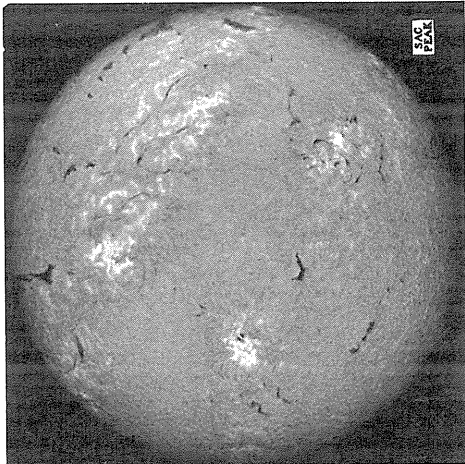
Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp 1450 UT

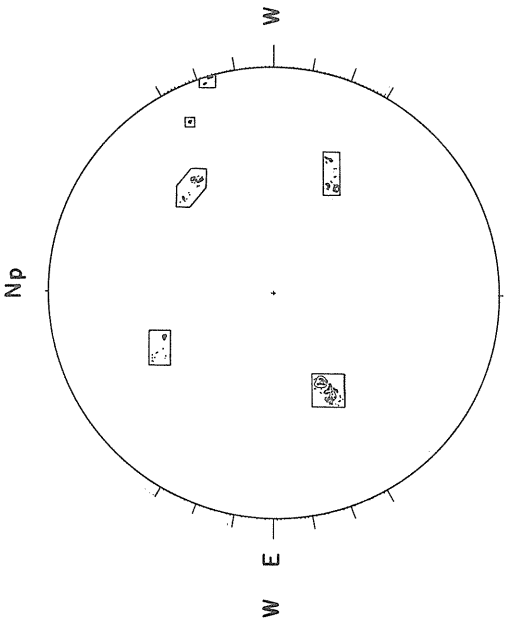
MARCH 7, 1967 (P=-22.85, B<sub>0</sub>=-7.25, L<sub>0</sub>=197.09)

SACRAMENTO PEAK N



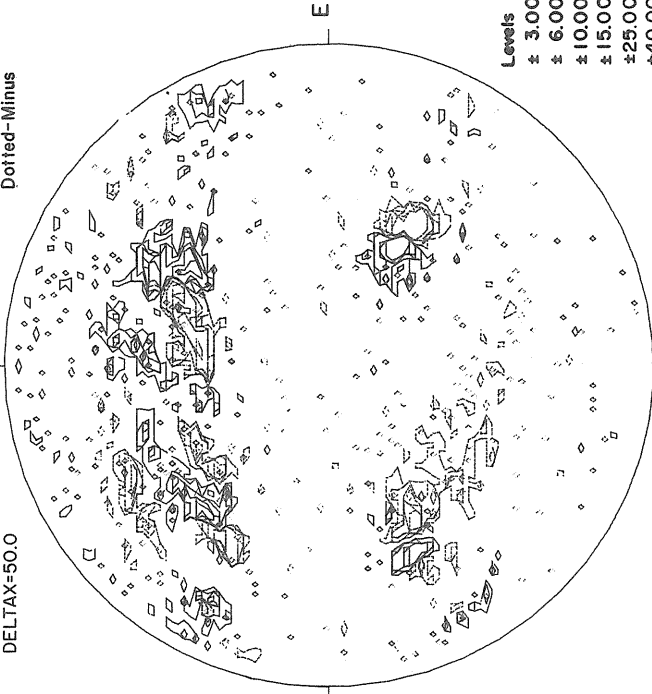
ESSA-BOULDER Np

SUNSPOTS



MT. WILSON  
DELAY=62.0  
DELTA X=50.0

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

1533 UT

1655 UT

1853-2003 UT

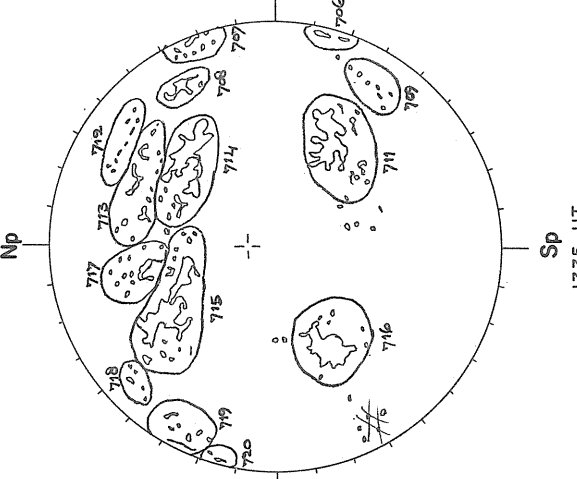
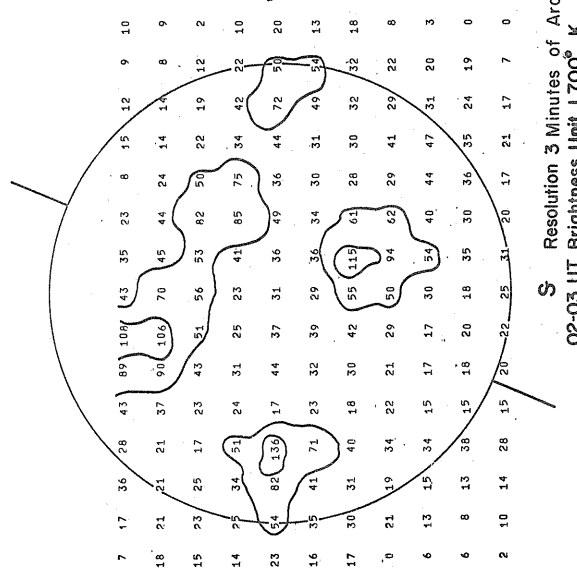
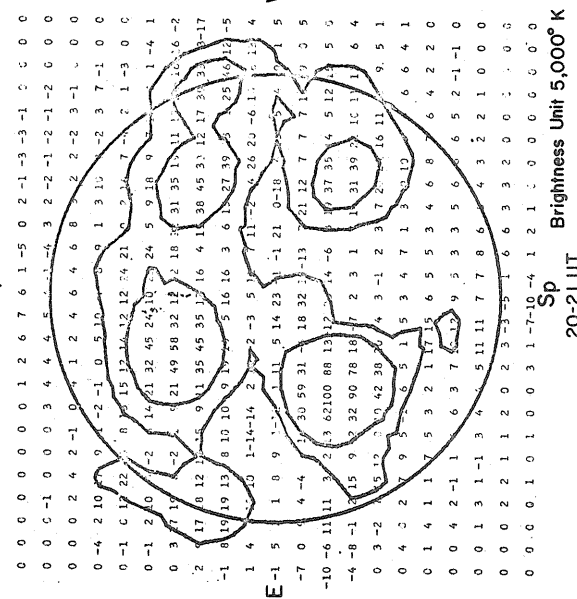
STANFORD

9.1 cm.

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT  
CALCIUM REPORT



1853-2003 UT

1655 UT

1533 UT

20-21 UT

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Brightness Unit 5,000° K

Sp

20-21 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

MARCH 8, 1967 (P=-23.07, B<sub>0</sub>=-7.25, L<sub>0</sub>=183.91)

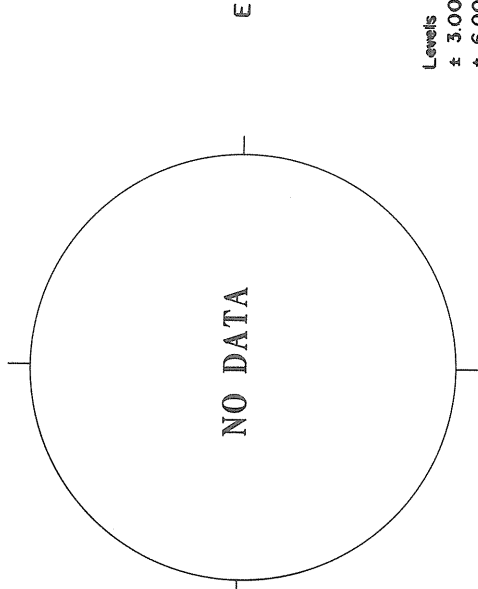
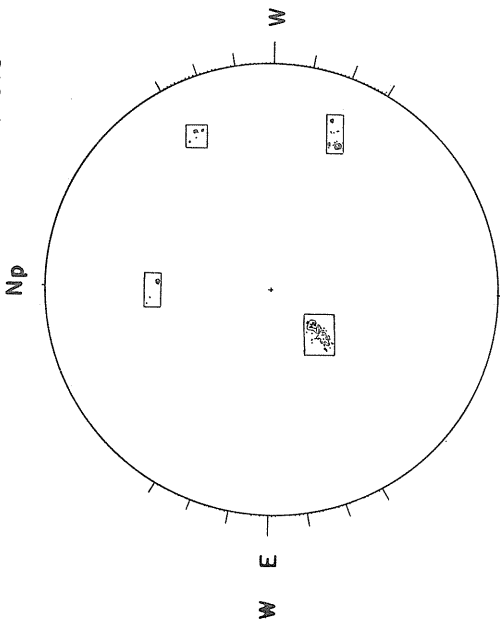
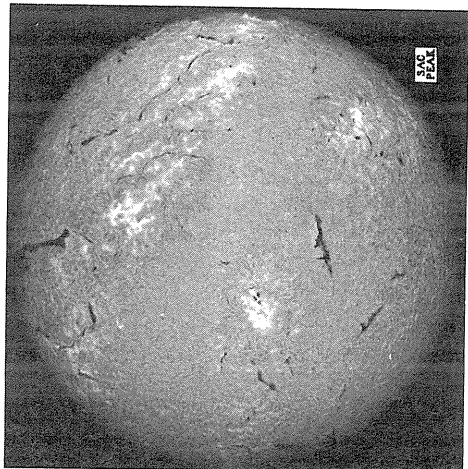
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1500 UT

STANFORD

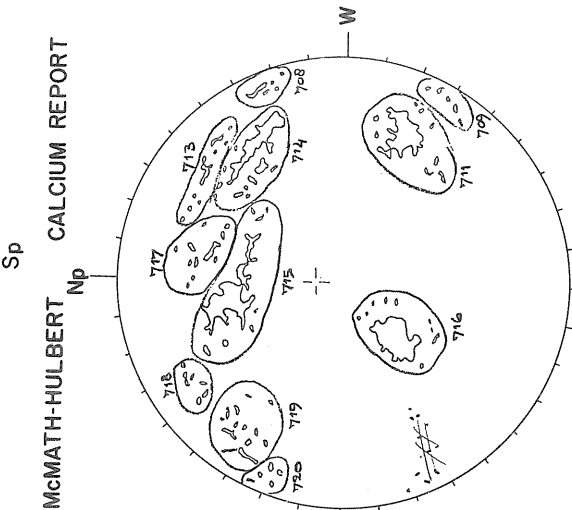
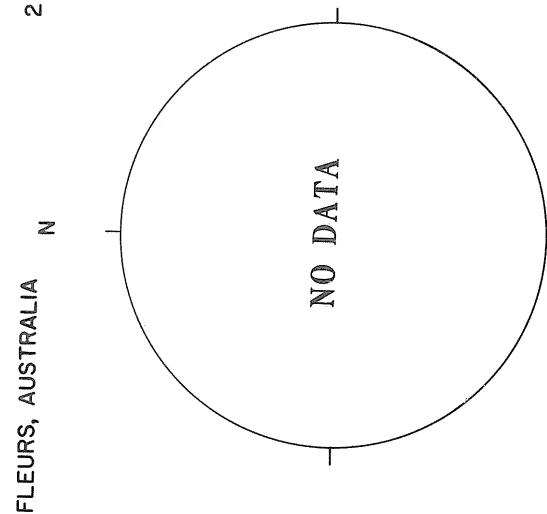
9.1 cm.

FLEURS, AUSTRALIA

21 cm.

Sp  
McMATH-HULBERT  
Np  
CALCIUM REPORT

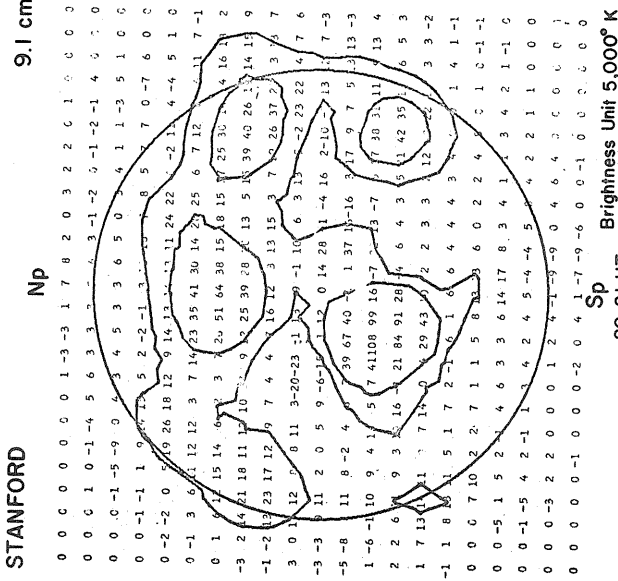
08-11-25  
11-43-3  
14-51-3  
15-67-35  
16-47-35



Np

20-21 UT

Brightness Unit 5,000° K



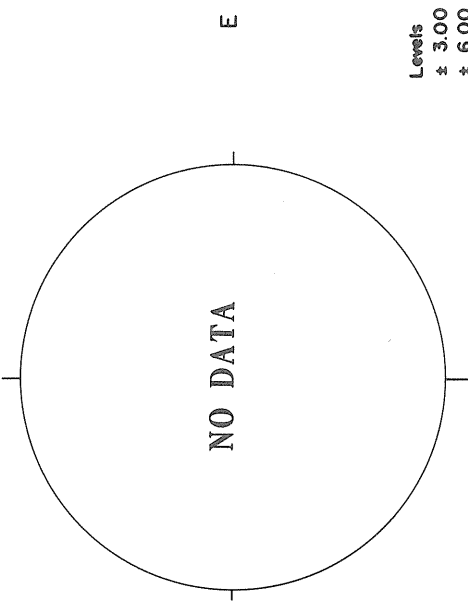
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
1610 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

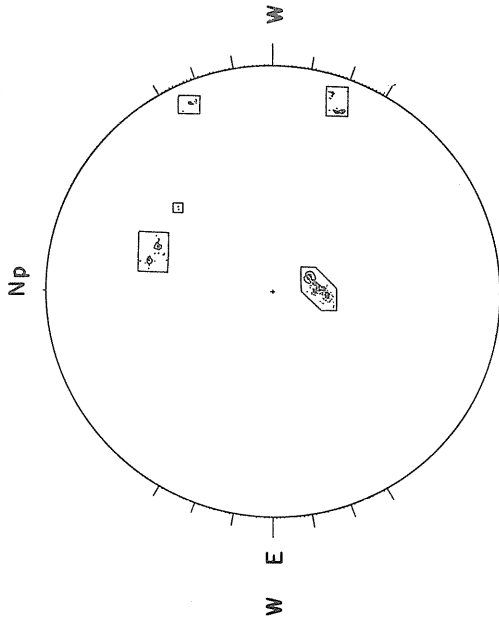
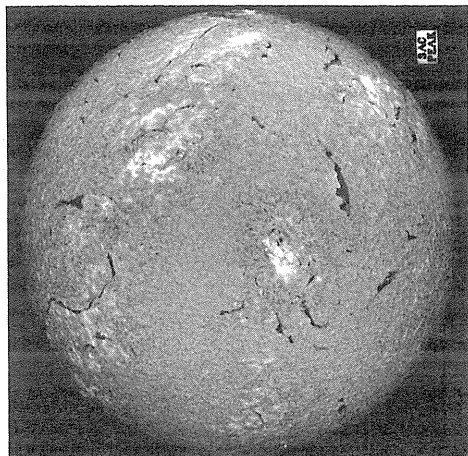
MARCH 9, 1967 (P=-23.27, B<sub>0</sub>=-7.24, L<sub>0</sub>=170.73)

SUNSPOTS

ESSA-BOULDER

H $\alpha$

SACRAMENTO PEAK



1556 UT

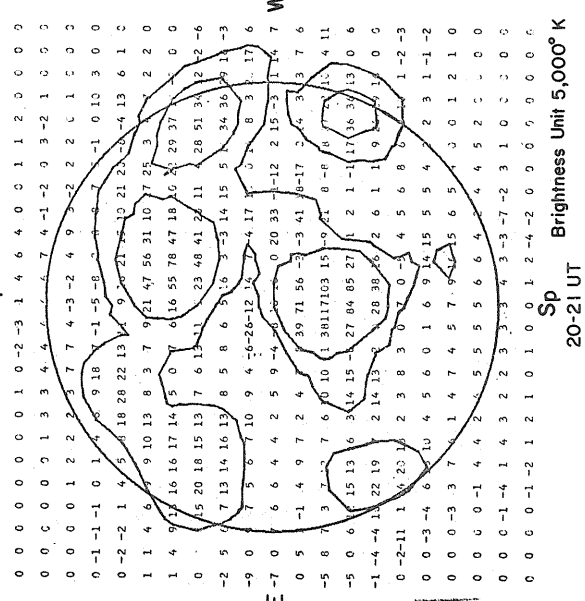
STANFORD

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT

CALCIUM REPORT

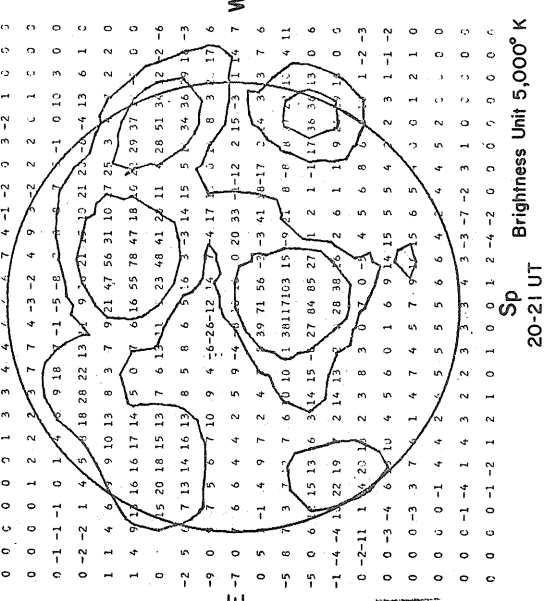


1850 UT

21 cm.

McMATH-HULBERT

CALCIUM REPORT

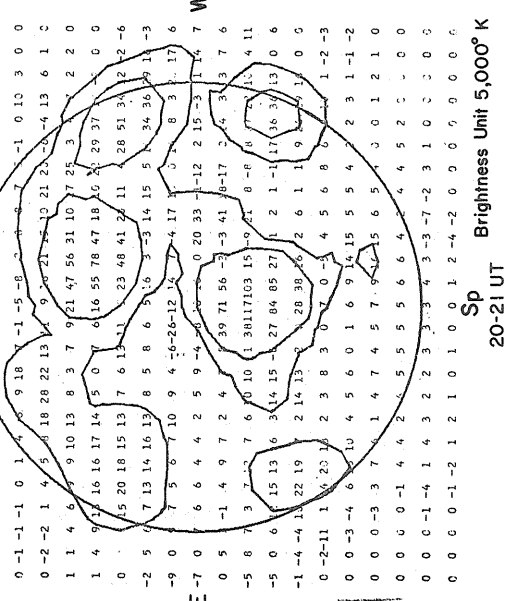


1350 UT

21 cm.

McMATH-HULBERT

CALCIUM REPORT



08-09-25  
11-45-25  
14-48-3  
15-61-35  
16-45-35

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Brightness Unit 5,000° K

Sp  
20-21 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON

Np

MARCH 10, 1967 (P=-23.48, B<sub>0</sub>=7.24, L<sub>0</sub>=157.56)

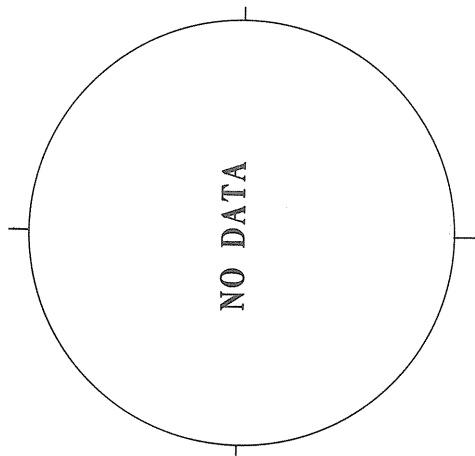
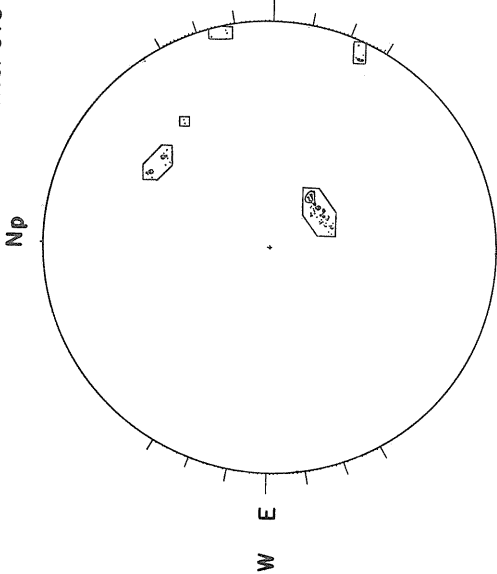
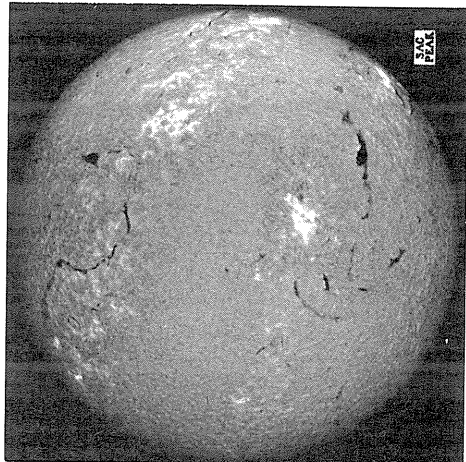
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

Np

SUNSPOTS



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

11-31-3  
14-4-35  
15-63-35  
16-52-35  
19-21-25  
22-23-3

Sp  
1510 UT

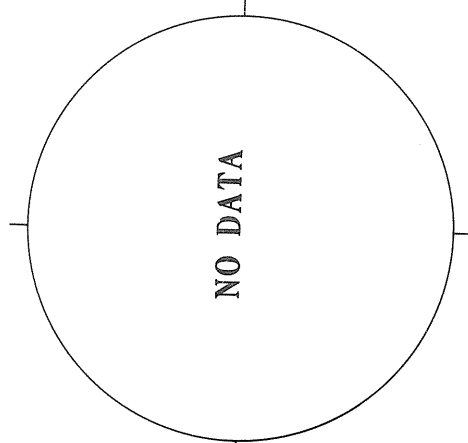
FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT  
Np  
CALCIUM REPORT

Sp

N



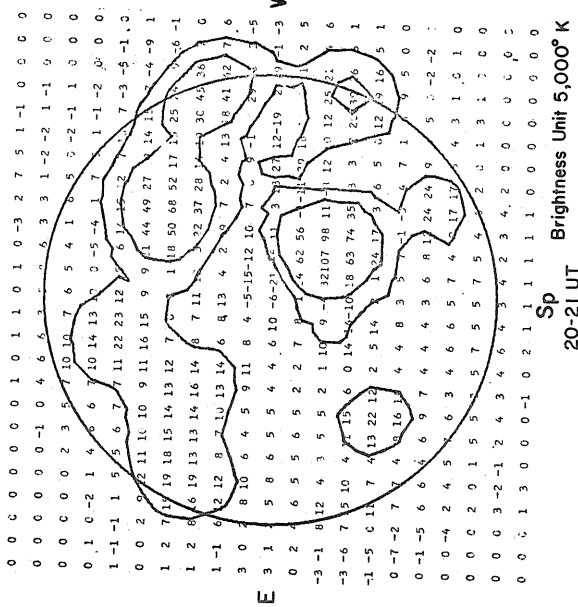
9.1 cm.

STANFORD

Np

1722 UT

S



S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700<sup>0</sup> K

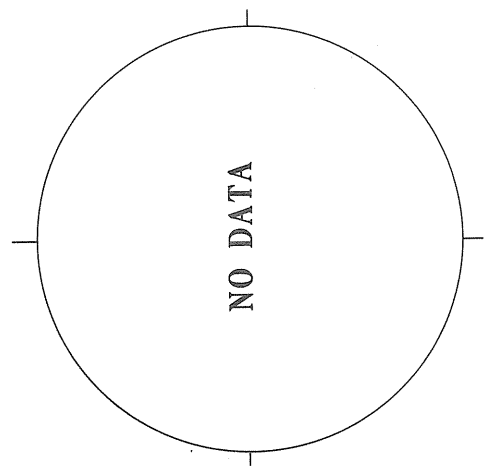
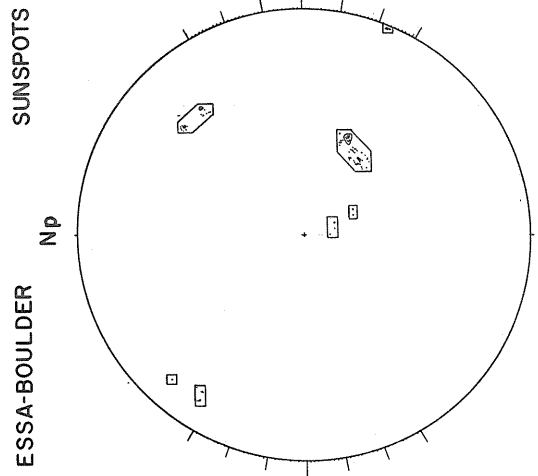
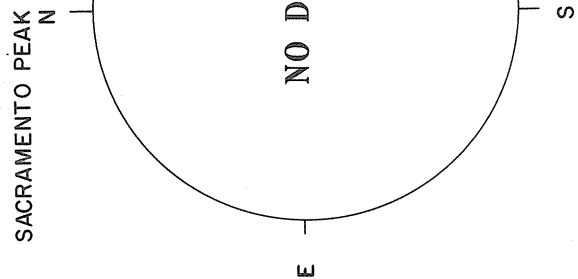
Brightness Unit 5,000<sup>0</sup> K

20-21 UT

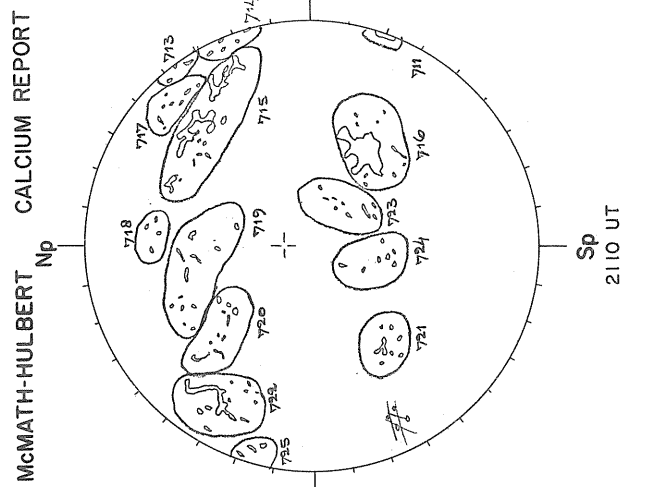
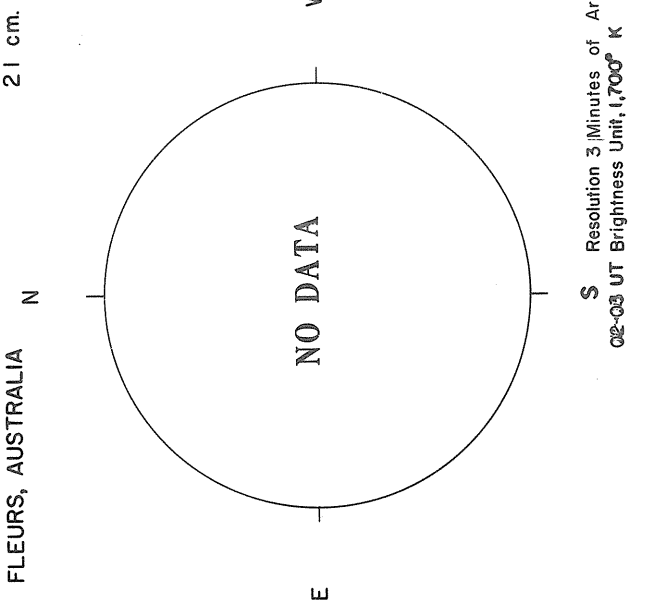
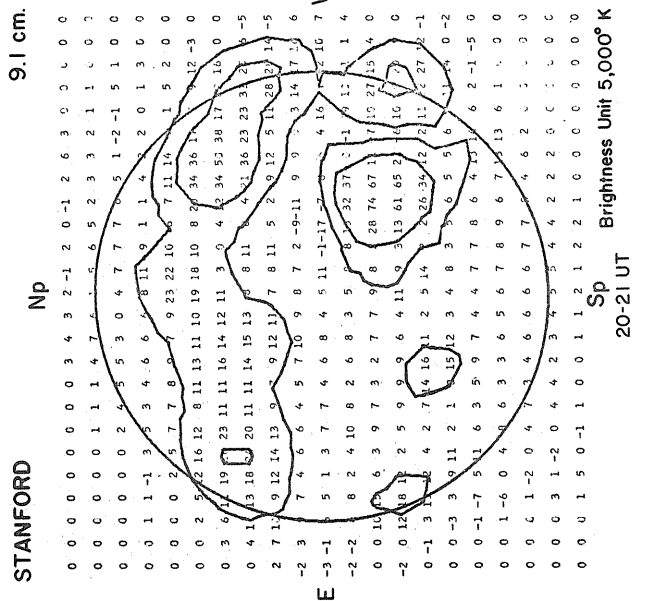
Sp  
1405 UT

MARCH 11, 1967 (P=-23.67, B<sub>0</sub>=7.23, L<sub>0</sub>=|44.38)

MT. WILSON Np  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00





MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

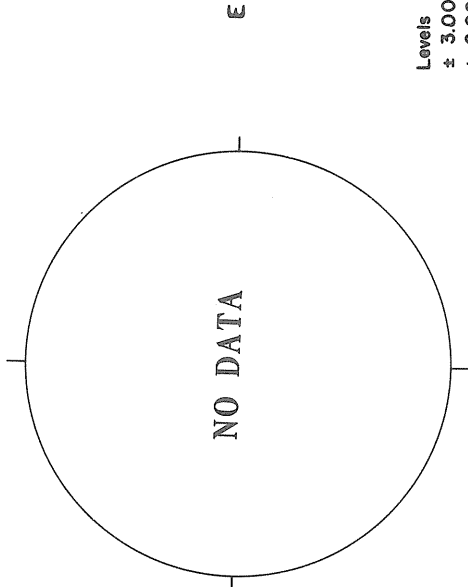
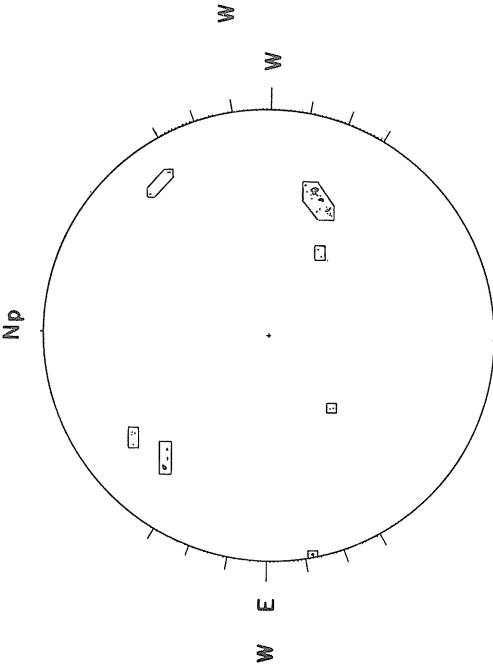
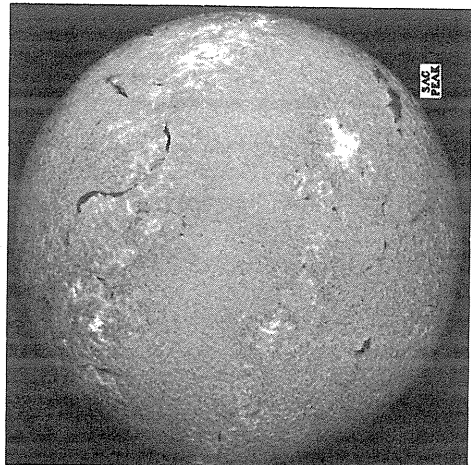
MARCH 12, 1967 (P=-23.86, B<sub>0</sub>=-7.22, L<sub>0</sub>=131.20)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS  
Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 29.00  
± 40.00

S  
1508 UT

STANFORD

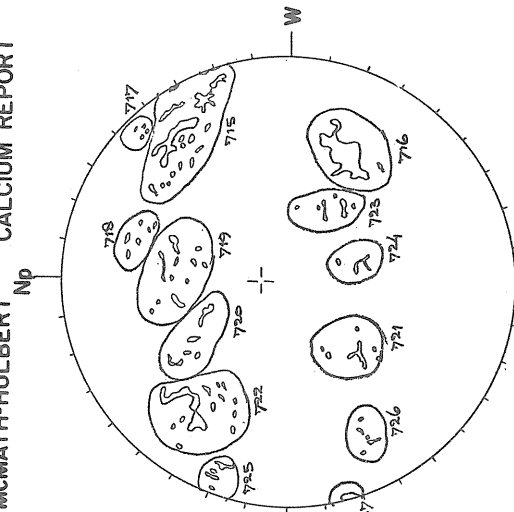
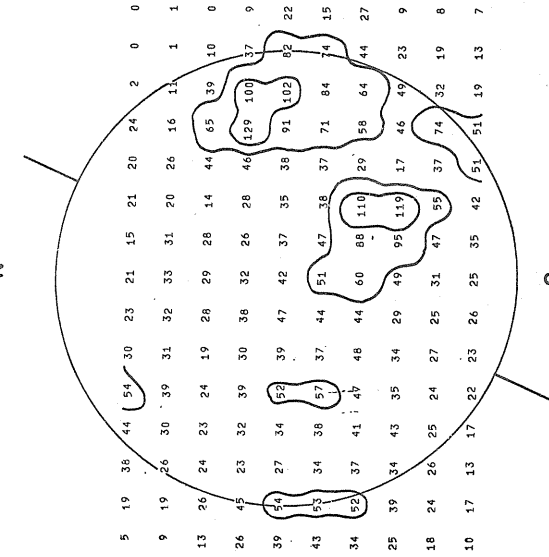
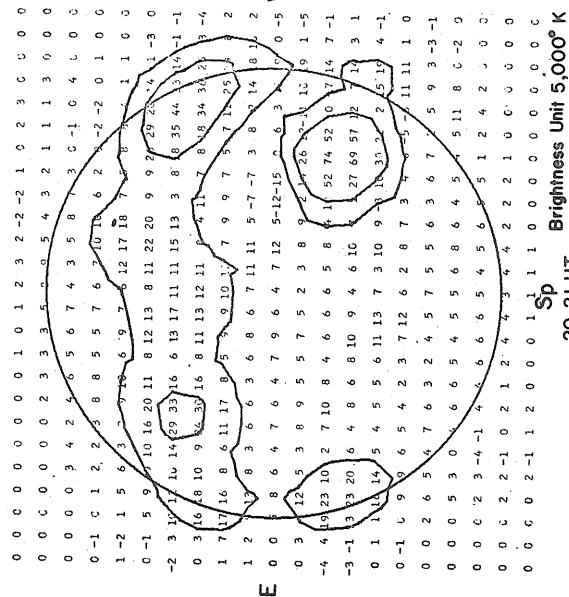
9.1 cm.

FLEURS, AUSTRALIA  
N

21 cm.

McMATH-HULBERT  
Np

CALCIUM REPORT  
Sp



15-43-3  
16-40-35  
21-09-25  
22-27-35  
27-11-3

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

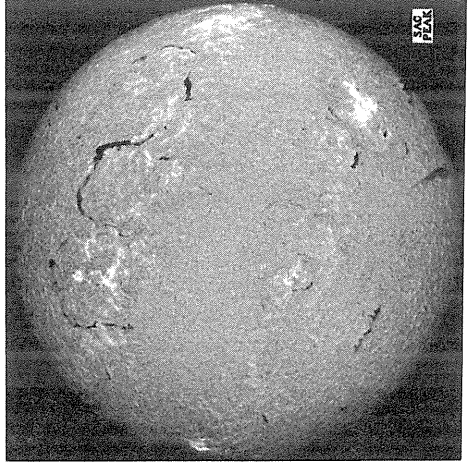
Sp Brightness Unit 5,000° K

20-21 UT

Sp  
1335 .UT

MARCH 13, 1967 (P=-24.04, B<sub>0</sub>=-7.20, L<sub>0</sub>=118.03)

SACRAMENTO PEAK N

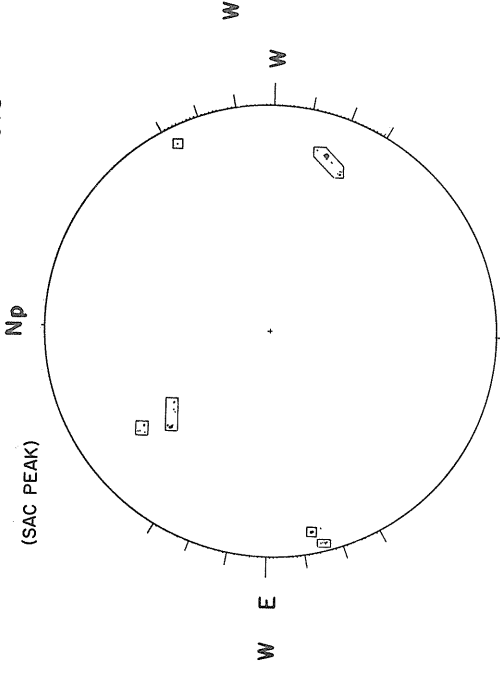


H $\alpha$

ESSA-BOULDER (SAC PEAK)

Np

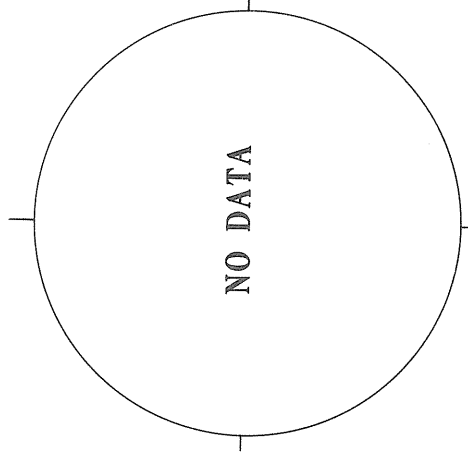
SUNSPOTS



Sp 1549 UT

FLEURS, AUSTRALIA N

21 cm.



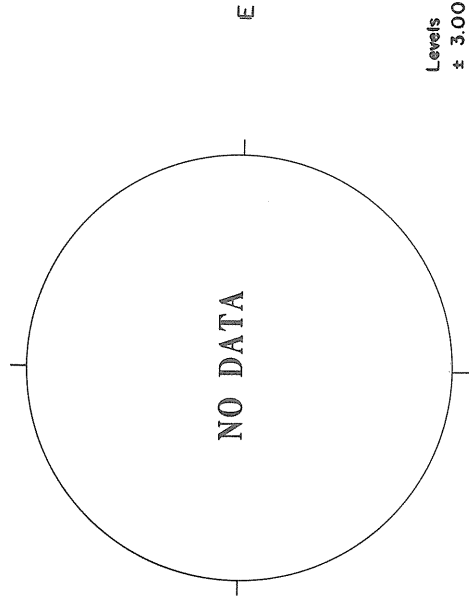
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700<sup>o</sup> K

MT. WILSON

MAGNETOGRAM

Solid-Plus  
Dotted-Minus

Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

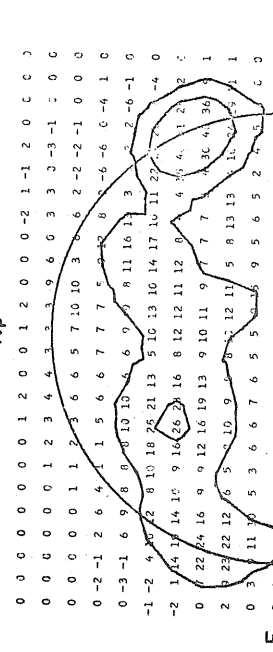
15-40-35  
16-40-4  
19-14-25  
20-12-25  
21-09-3  
22-28-3  
23-14-2.5  
27-32-3  
28-04-25  
29-05-4

45  
Mar 67

STANFORD

S 1538 UT

Np 9.1 cm.



E

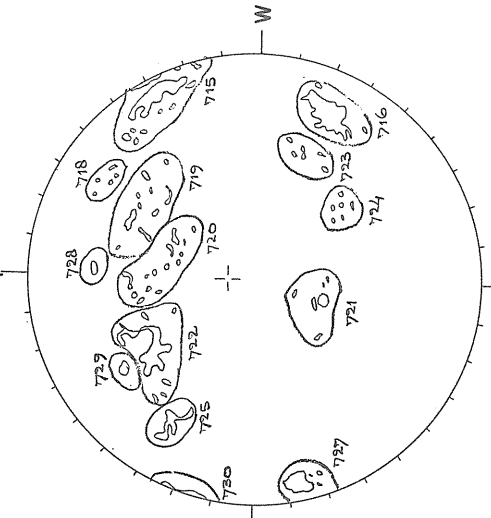
W

E

Sp 20-21 UT  
Brightness Unit 5,000<sup>o</sup> K

McMATH-HULBERT Np  
Sp CALCIUM REPORT

21 cm.

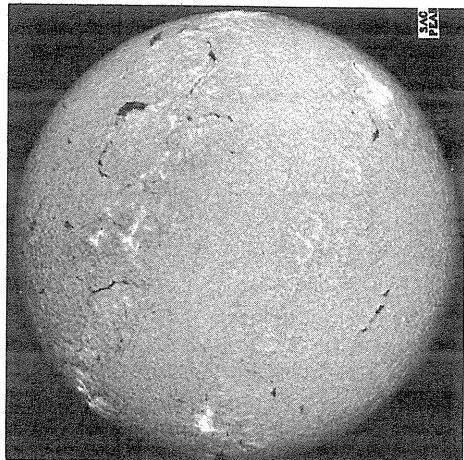


Sp 1918 UT

MARCH 14, 1967 (P=-24.22, B<sub>c</sub>=-7.19, L<sub>c</sub>=104.85)

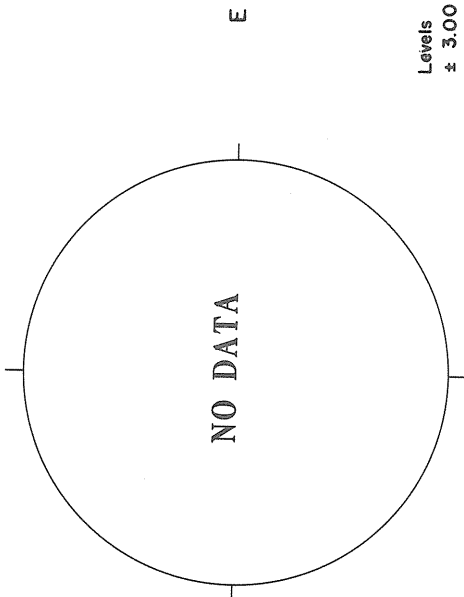
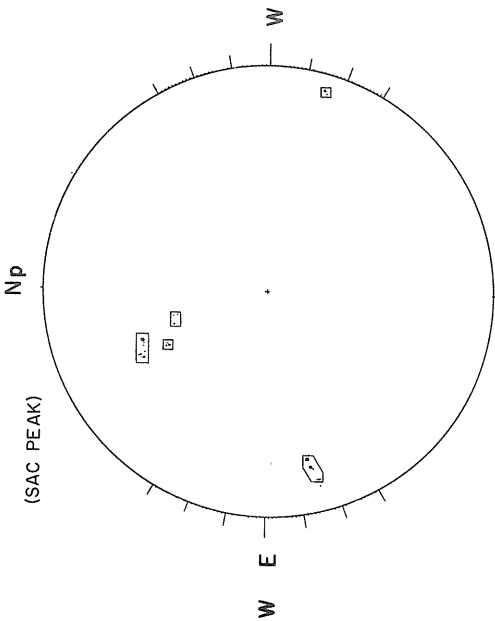
SACRAMENTO PEAK  
N

H $\alpha$



ESSA-BOULDER  
(SAC PEAK)

SUNSPOTS



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD

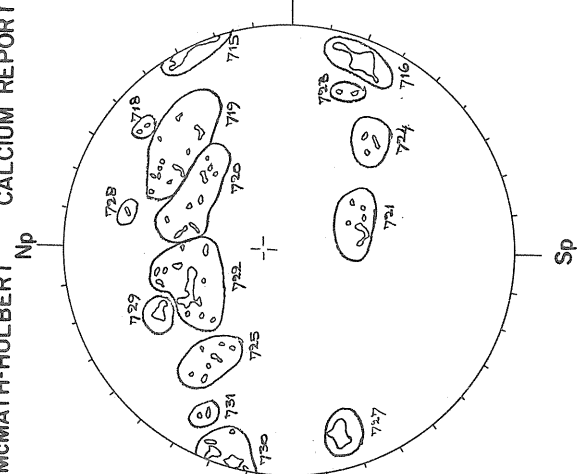
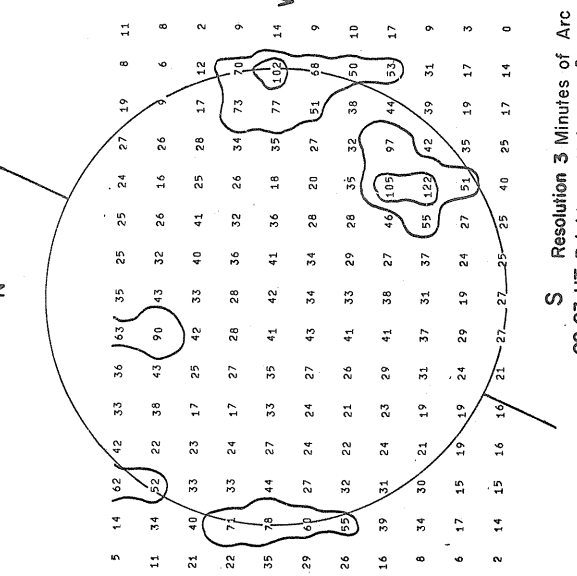
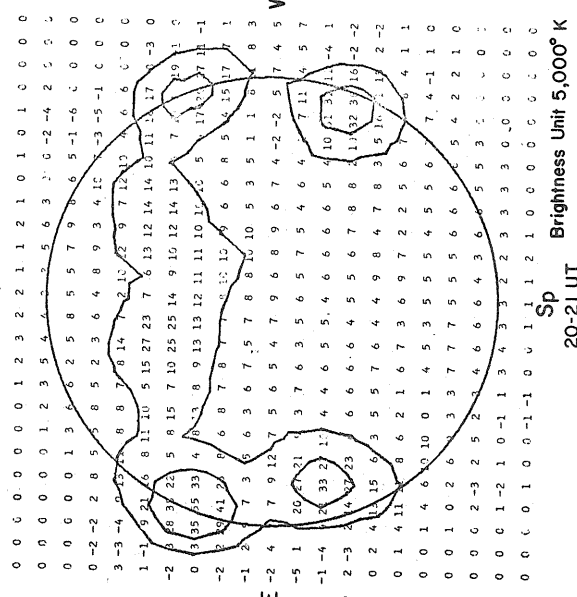
S  
1638 UT

9.1 cm.

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT  
Sp  
Np  
CALCIUM REPORT



15-30-3  
16-40-35  
21-07-25  
22-22-3  
27-28-35  
29-07-4  
30-32-25  
31-03-25

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Brightness Unit 5,000° K

Sp  
20-21 UT

Sp  
1545 UT

MARCH 15, 1967 (P=-24.39, B<sub>0</sub>=-7.17, L<sub>0</sub>=91.67)

MT. WILSON

Np

MAGNETOGRAM

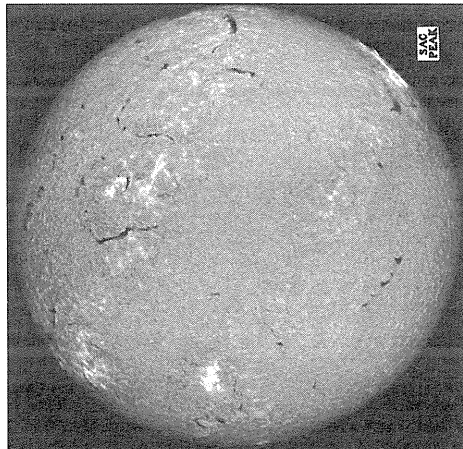
Solid-Plus  
Dotted-Minus

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

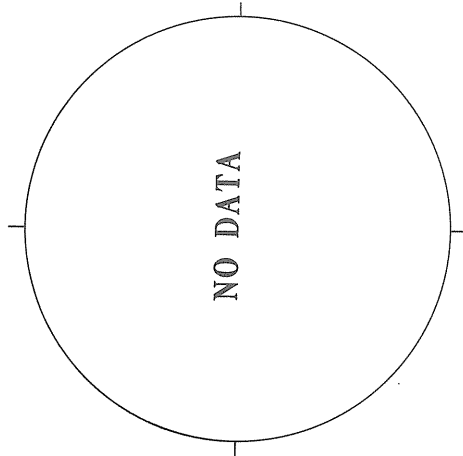
SUNSPOTS



(SAC PEAK)

Np

SUNSPOTS



E

W

W

W

E

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1441 UT

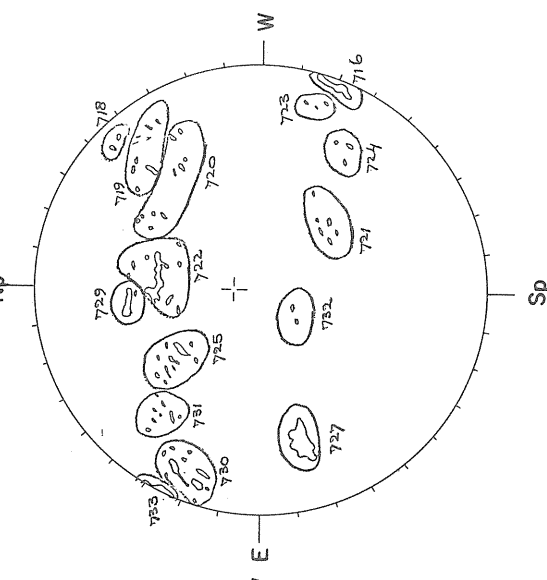
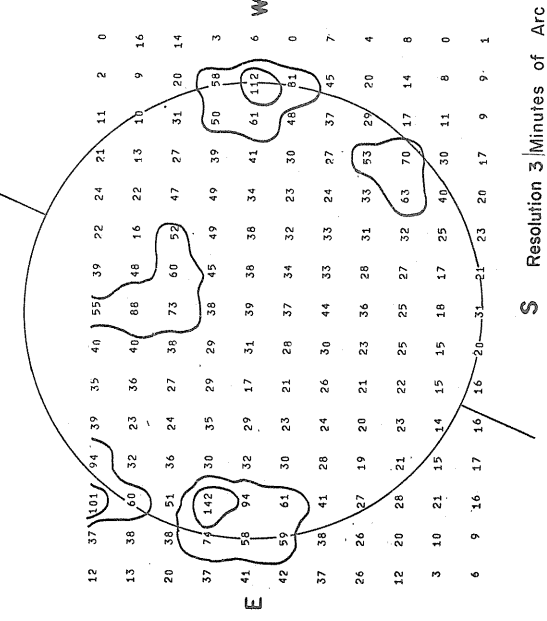
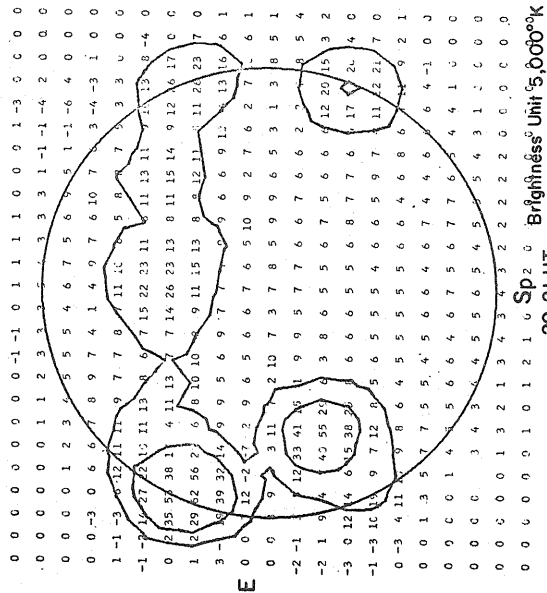
Sp  
1524 UT

STANFORD

Np  
9.1 cm.

FLEURS, AUSTRALIA  
N  
21 cm.

Sp  
MCMATH-HULBERT  
Np  
CALCIUM REPORT



16-29-3  
22-20-25  
29-11-2.5  
27-33-35  
29-10-3  
30-29-25  
35-21-25

47  
Mar 67

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

20-21 UT  
Sp2.0 Brightness Unit '5,000°K

20-21 UT  
Sp2.0 Brightness Unit '5,000°K

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

MARCH 16, 1967 (P=-24.55, B<sub>0</sub>=-7.15, L<sub>0</sub>=78.49)

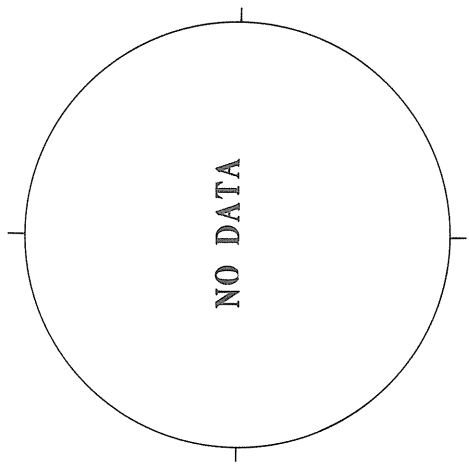
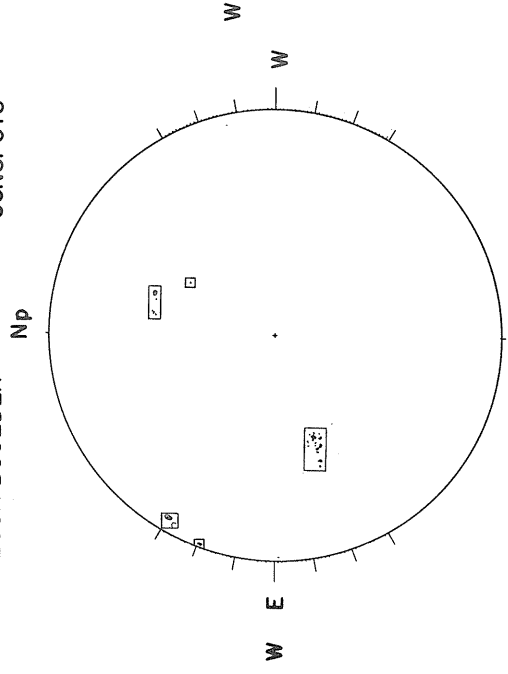
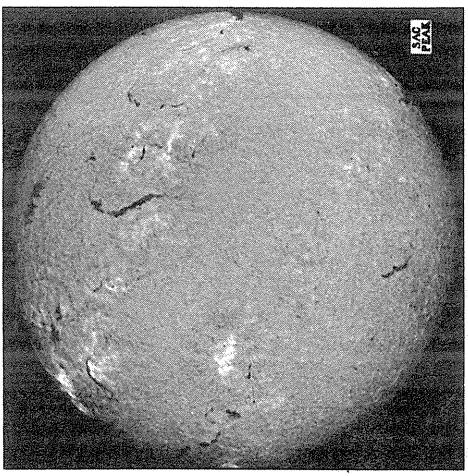
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

Np

SUNSPOTS



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

22-24-25  
27-31-35  
29-08-3  
30-24-25  
33-57-3  
36-12-25

STANFORD  
Np

9.1 cm.

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT  
Np

CALCIUM REPORT

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

Sp

Np

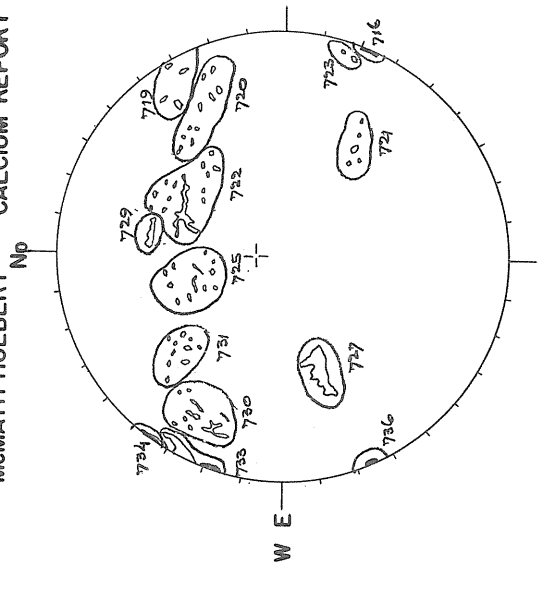
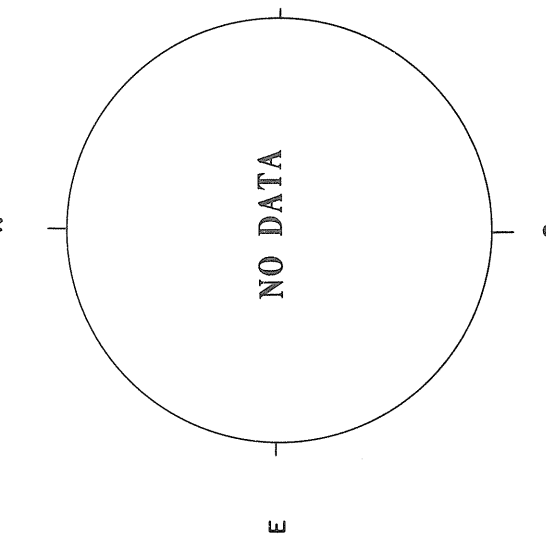
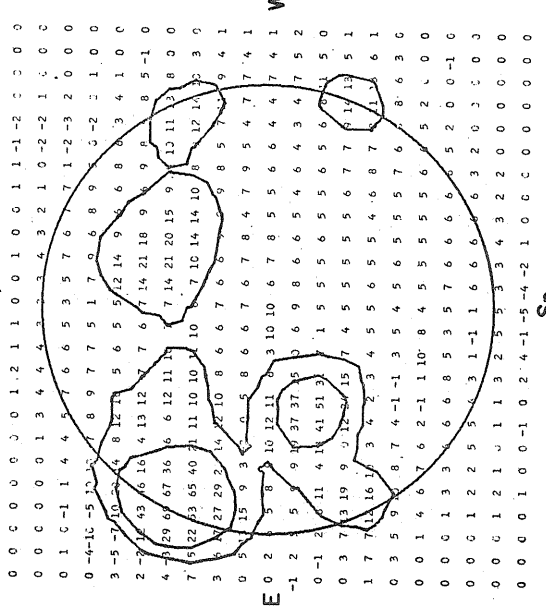
Sp

Np

Sp

Np

Sp



Brightness Unit 5,000° K

Resolution 3 Minutes of Arc

02-03 UT Brightness Unit, 1,700° K

1420 UT

MARCH 17, 1967 (P=-24.70, B<sub>0</sub>=-7.13, L<sub>0</sub>=65.31)

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

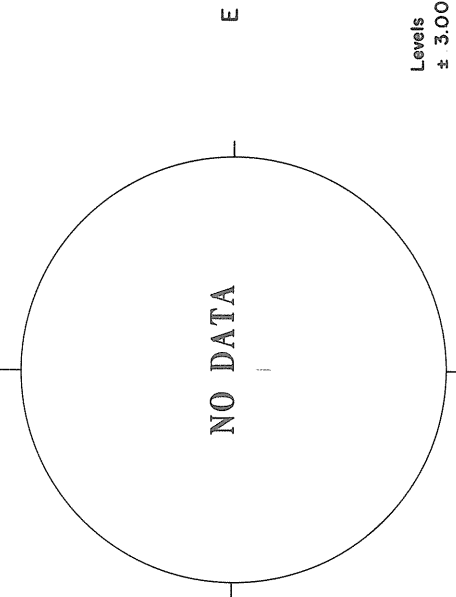
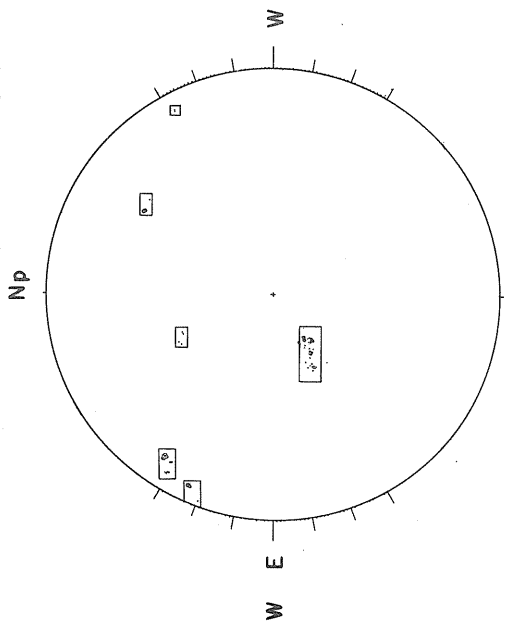
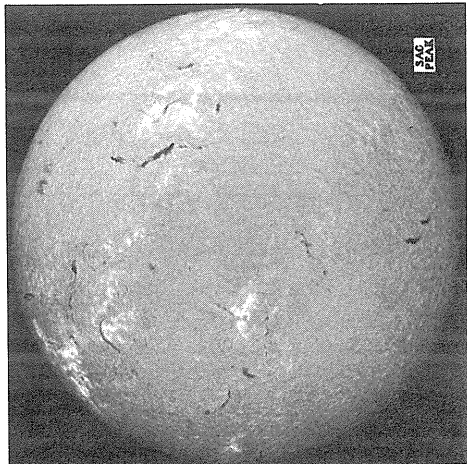
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1518 UT

Sp  
1517 UT

STANFORD

FLEURS, AUSTRALIA

21 cm.

McMATH-HULBERT  
Np

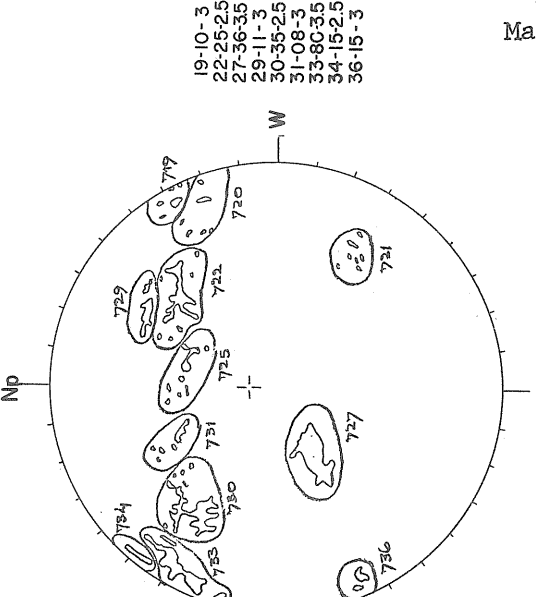
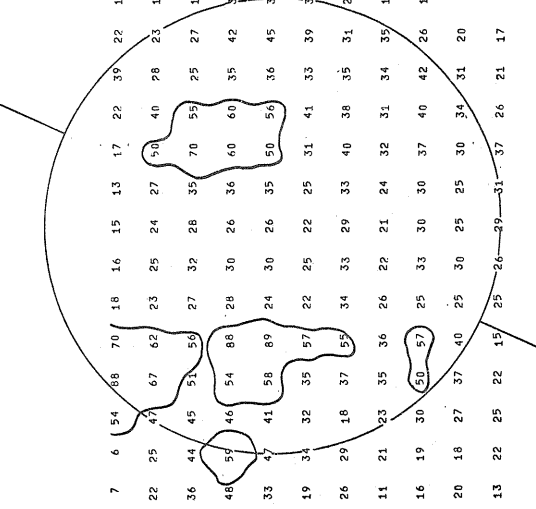
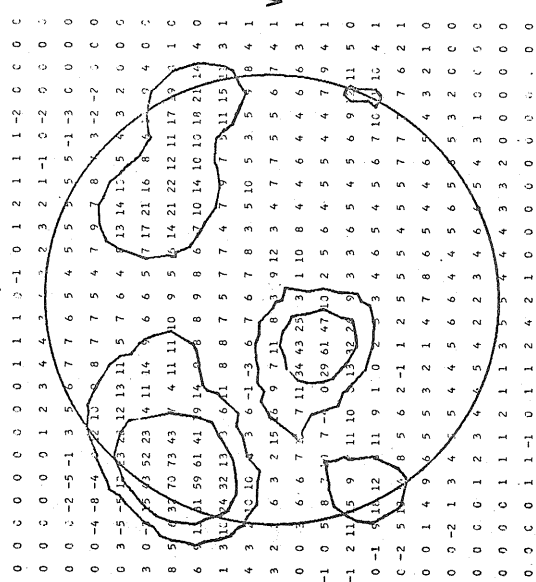
N

Sp

CALCIUM REPORT

Np

Sp



19-10-3  
22-25-5  
27-36-35  
29-11-3  
30-35-25  
31-08-3  
33-80-35  
34-15-25  
36-15-3

49  
Mar 67

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
20-21 UT  
Brightness Unit 5,000° K

Sp  
1420 UT

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

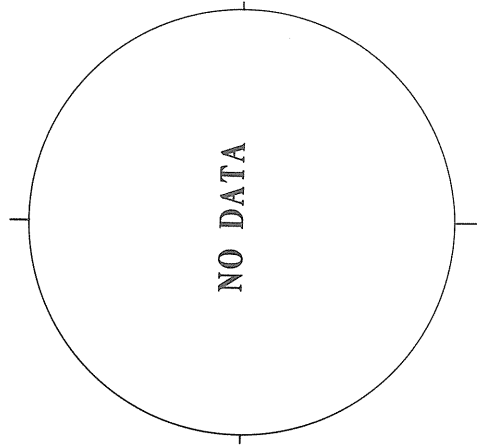
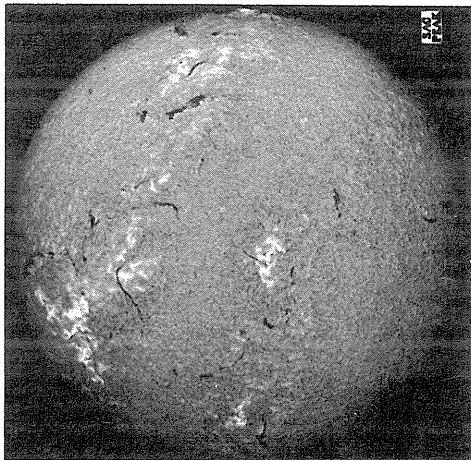
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS  
Np

MARCH 18, 1967 (P=-24.85, B $\phi$ =-7.11, L $\phi$ =52.12)



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1723 UT

Sp  
1535 UT

STANFORD

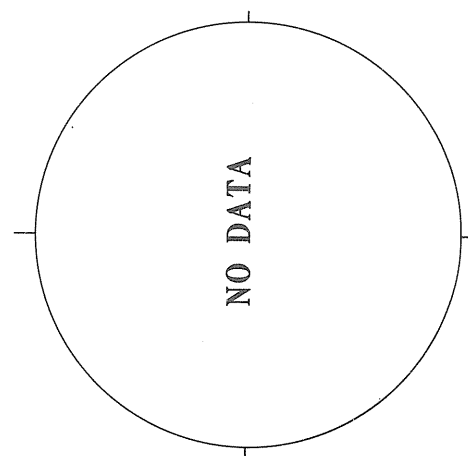
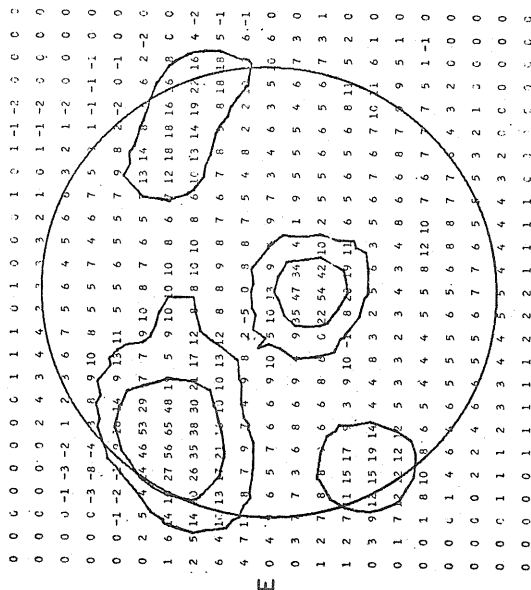
9.1 cm.

FLEURS, AUSTRALIA  
N

21 cm.

McMATH-HULBERT  
Np

CALCIUM REPORT  
Sp



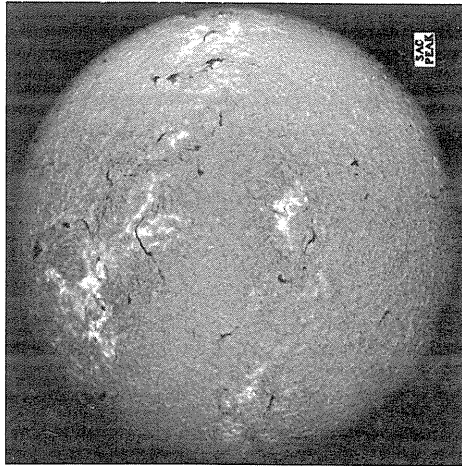
19-13-3.5  
27-32-3  
29-13-2.5  
30-34-2.5  
33-82-5  
34-18-2.5  
36-13-2.5

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
20-21 UT  
Brightness Unit 5,000° K

MARCH 19, 1967 (P=-24.99, B<sub>0</sub>=-7.08, L<sub>0</sub>=38.94)

SACRAMENTO PEAK N

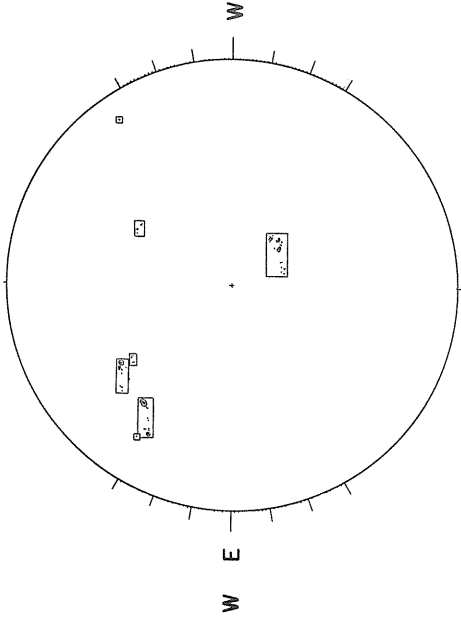


H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np



S 1819 UT

STANFORD

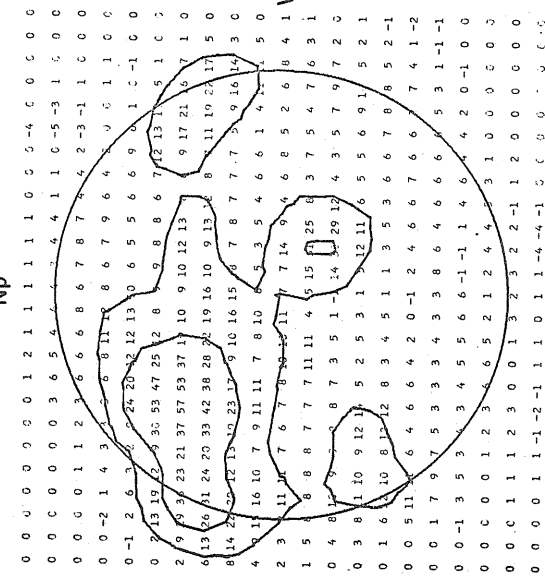
9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np

CALCIUM REPORT



Sp 20-21 UT

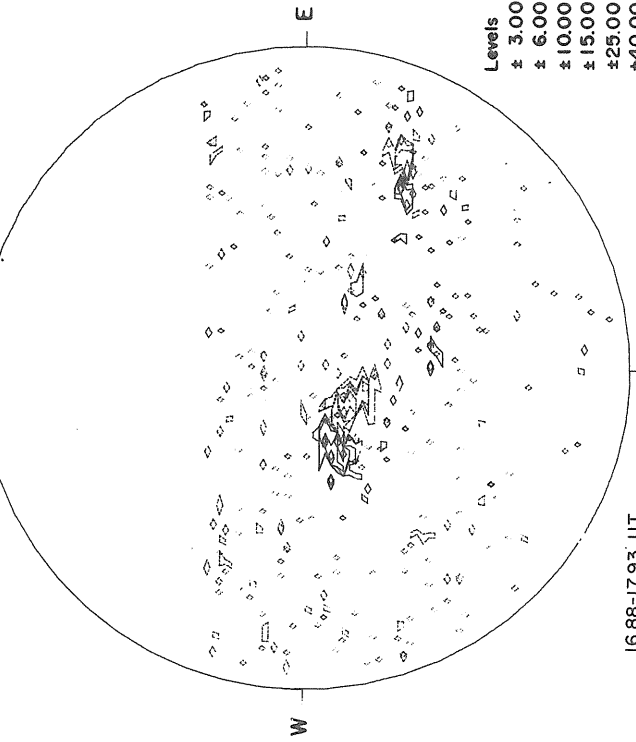
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

MT. WILSON DELTAY=62.0 DELTAX=50.0

MAGNETOGRAM Solid-Plus Dotted-Minus

Np

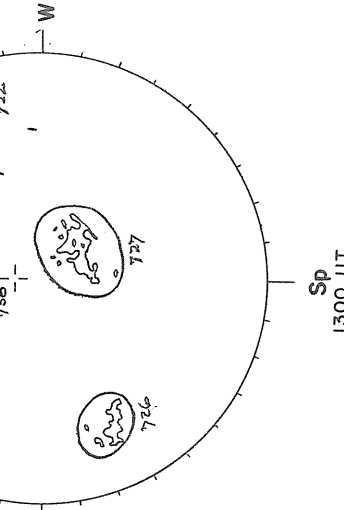
16.88-17.93 UT



16.88-17.93 UT

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

27-30-3  
30-33-25  
33-84-3  
34-12-25

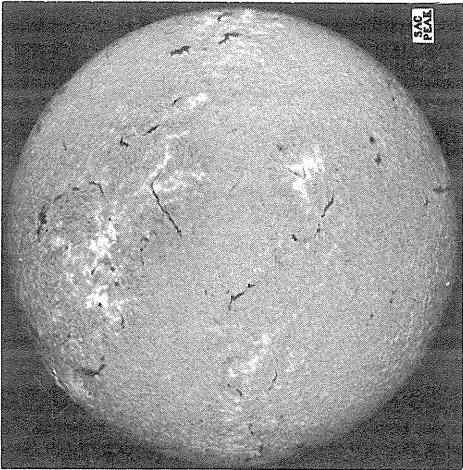


Sp 1300 UT



MARCH 20, 1967 (P=-25.13, B<sub>0</sub>=-7.05, L<sub>0</sub>=25.76)

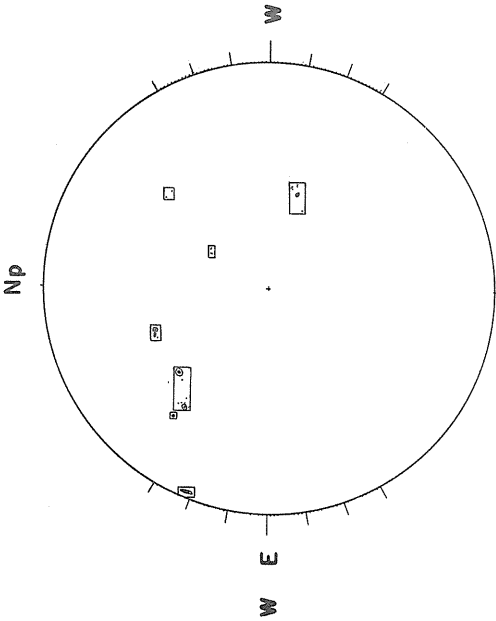
SACRAMENTO PEAK N



H $\alpha$

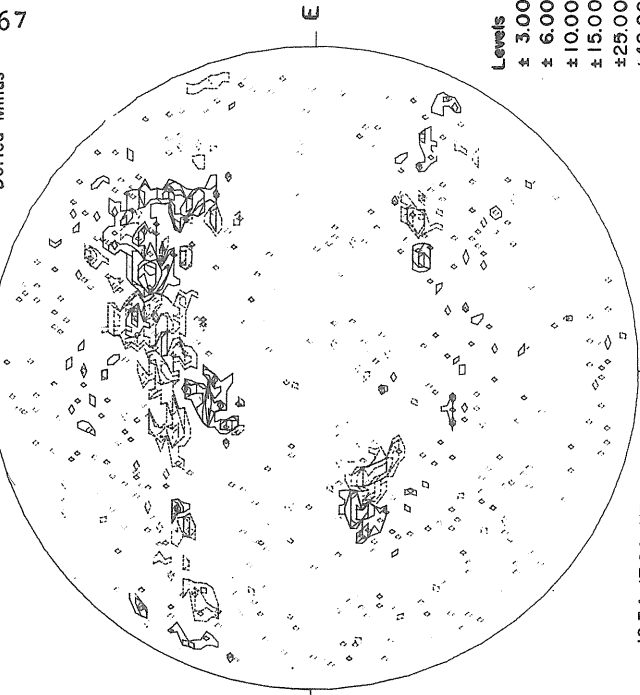
ESSA-BOULDER

SUNSPOTS



MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

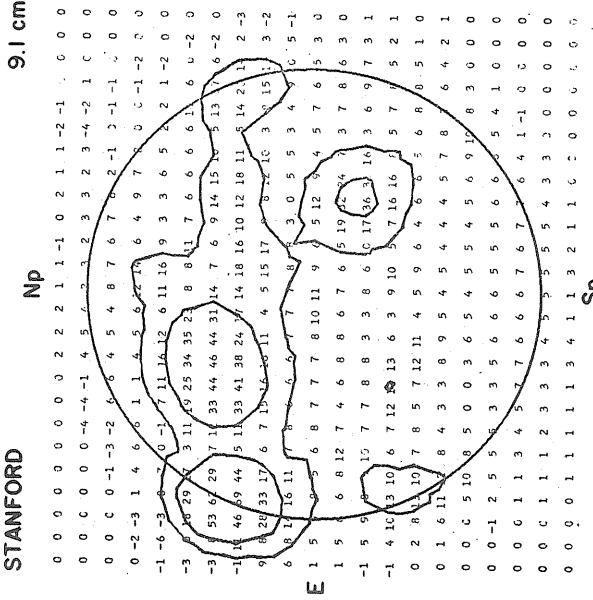
MT. WILSON  
DELTA $\gamma$ =62.0  
DELTA $\tau$ =50.0



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

1545 UT

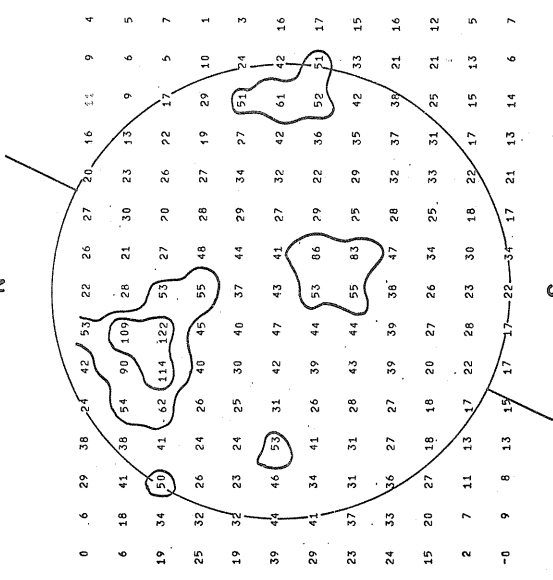
STANFORD



Brightness Unit 5,000<sup>o</sup> K

20-21 UT

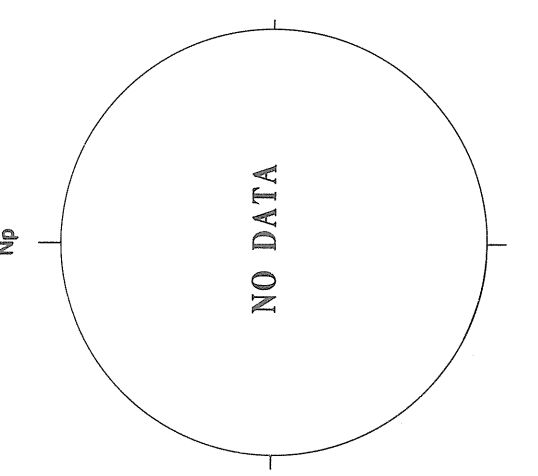
FLEURS, AUSTRALIA



Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700<sup>o</sup> K

21 cm.

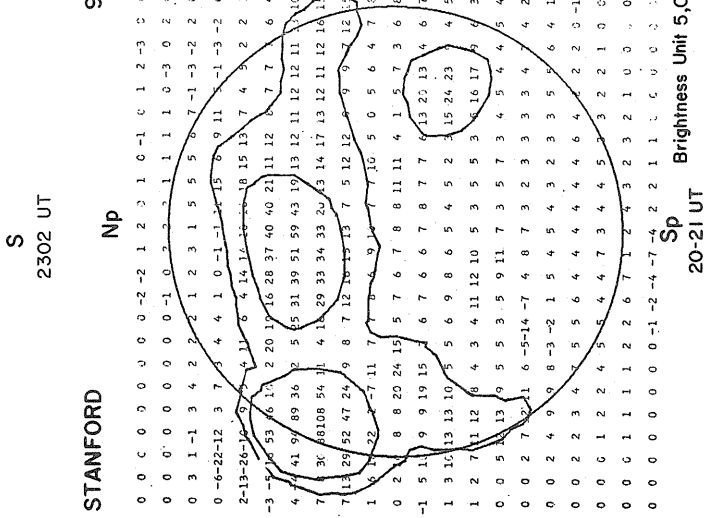
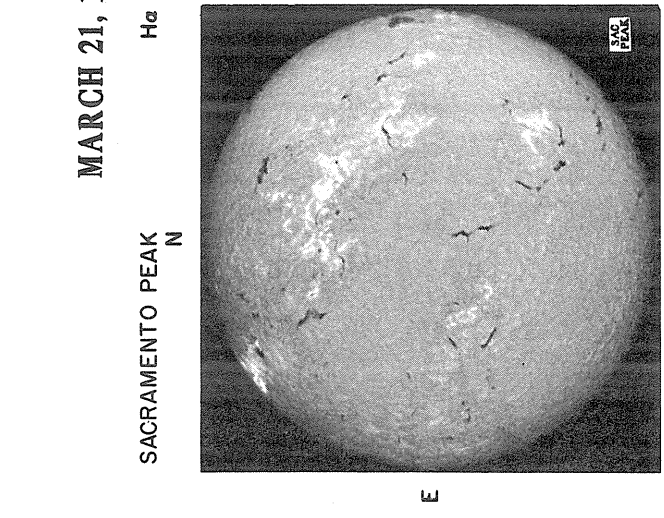
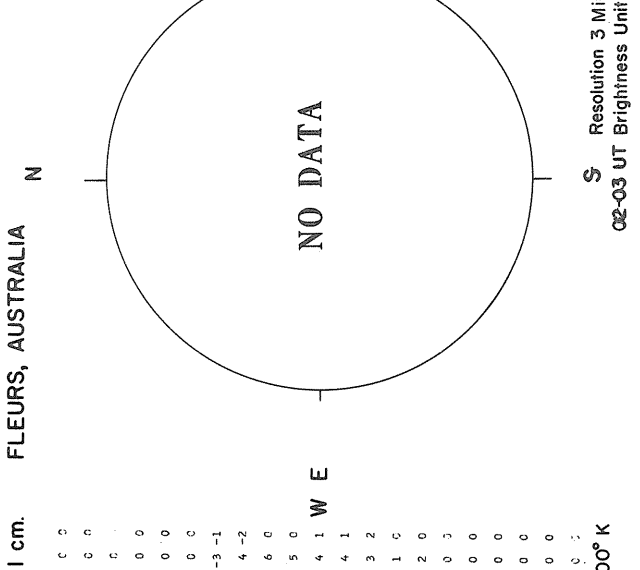
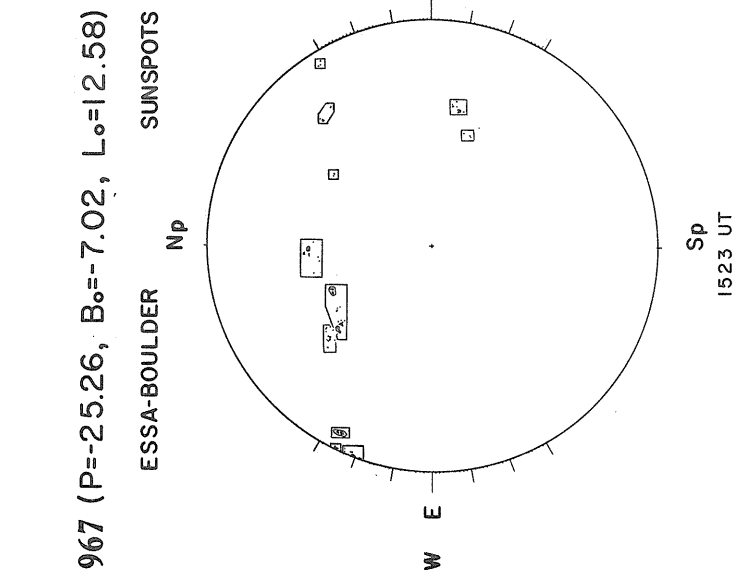
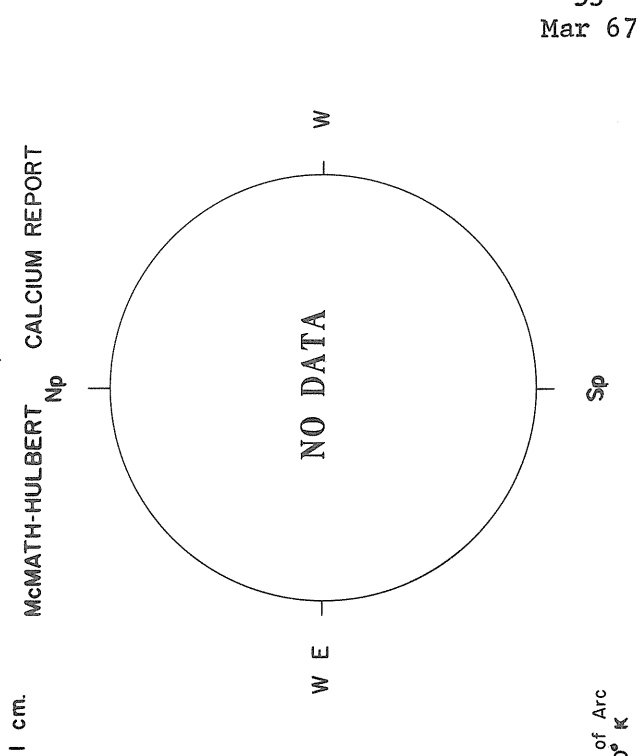
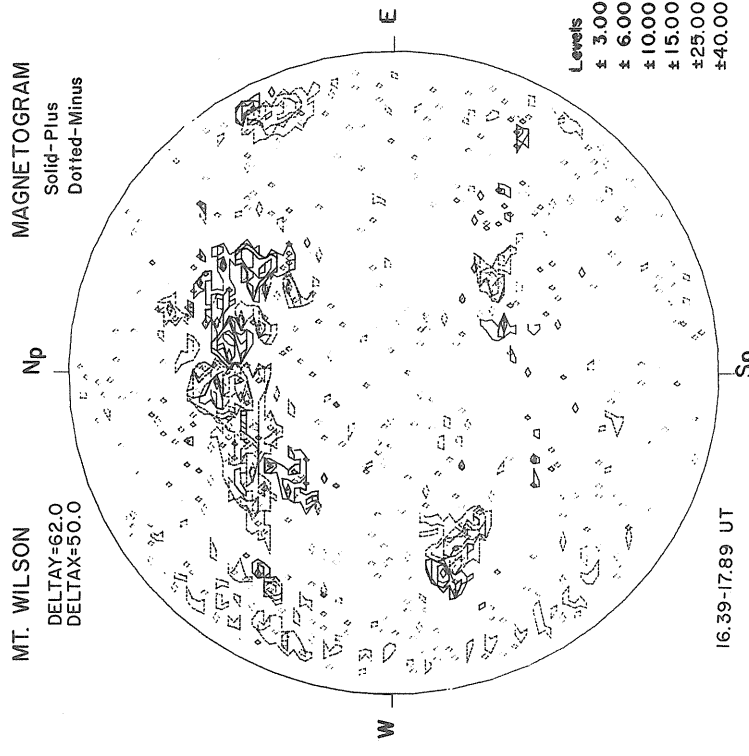
McMATH-HULBERT



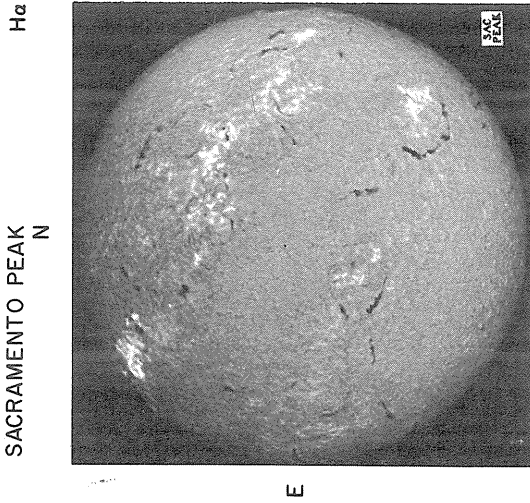
CALCIUM REPORT

1430 UT

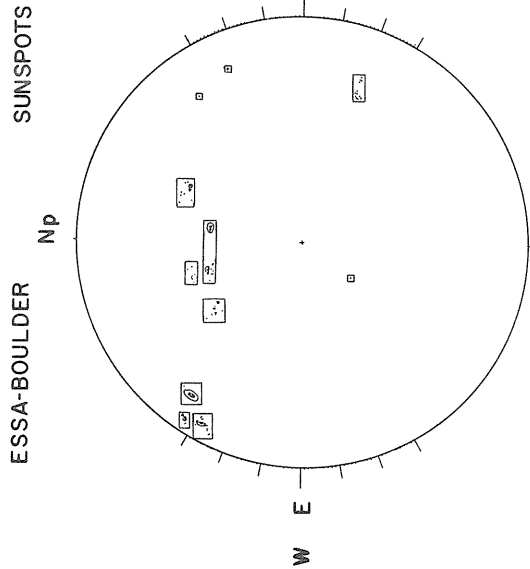
16.34-17.80 UT



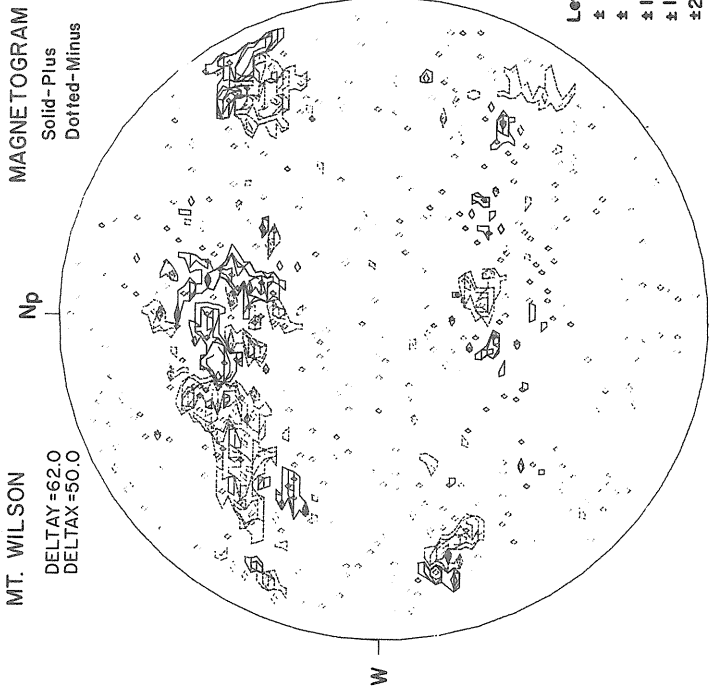
MARCH 22, 1967 (P=-25.38, B<sub>0</sub>=-6.99, L<sub>0</sub>=359.39)



S 1730 UT



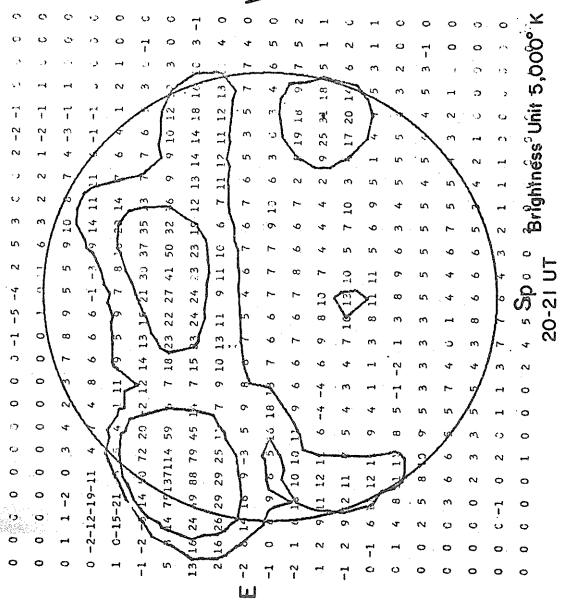
Sp 1455 UT



18.32-19.83 UT

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

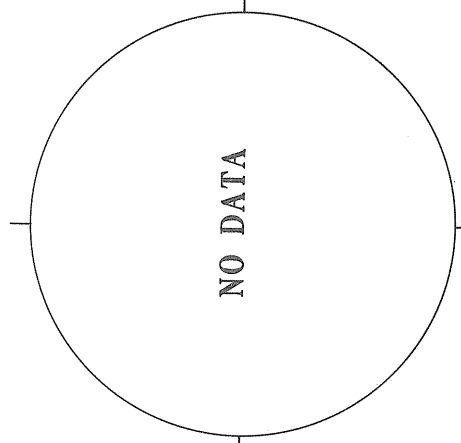
STANFORD



S Resolution 3 Minutes of Arc

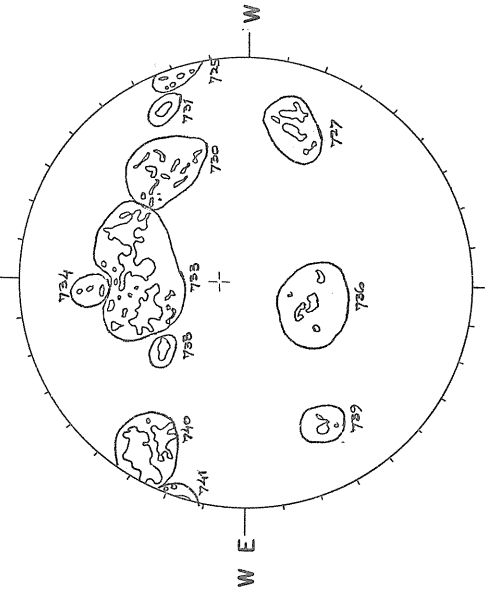
02-03 UT Brightness Unit, 1,700° K

FLEURS, AUSTRALIA



21 cm.

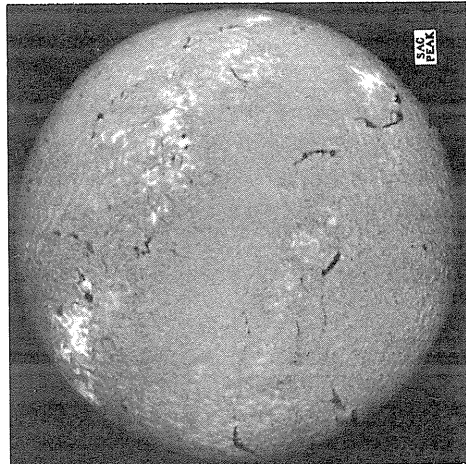
McMATH-HULBERT CALCIUM REPORT



02-03 UT Brightness Unit, 1,700° K

MARCH 23, 1967 (P=-25.49, B<sub>0</sub>=-6.95, L<sub>0</sub>=346.21)

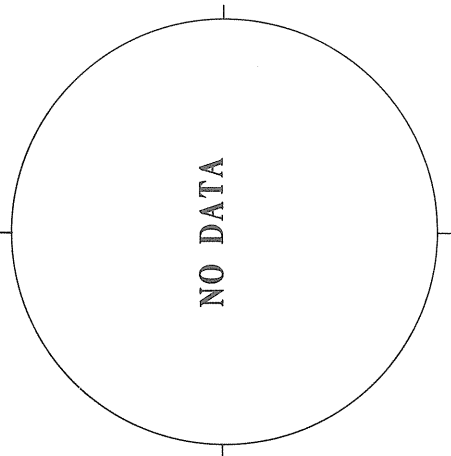
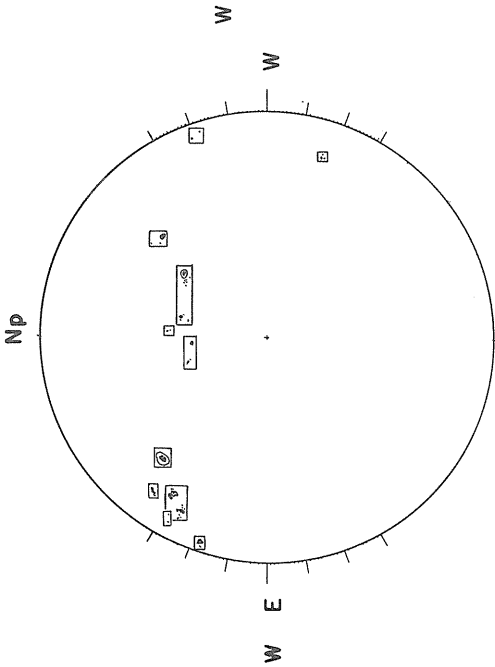
SACRAMENTO PEAK N



H $\alpha$

ESSA-BOULDER

SUNSPOTS



MT. WILSON

Np

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S 1518 UT

STANFORD Np

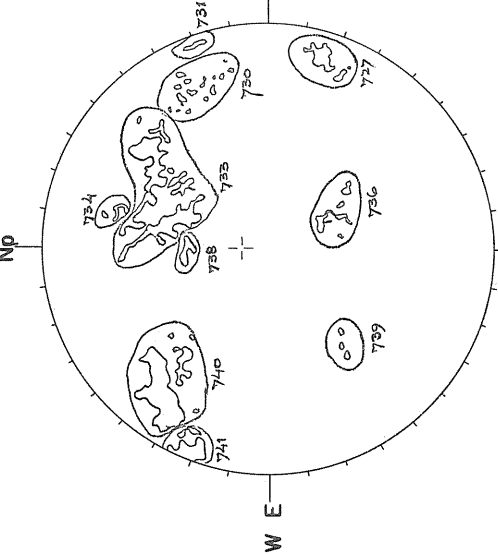
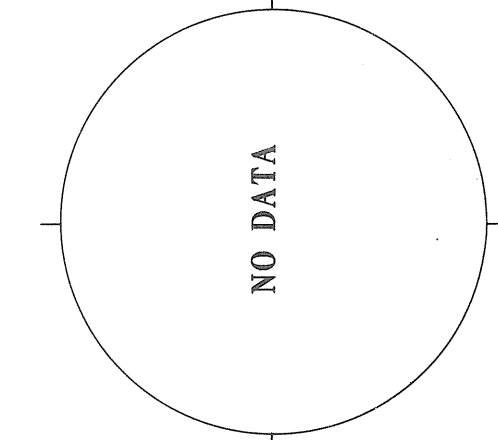
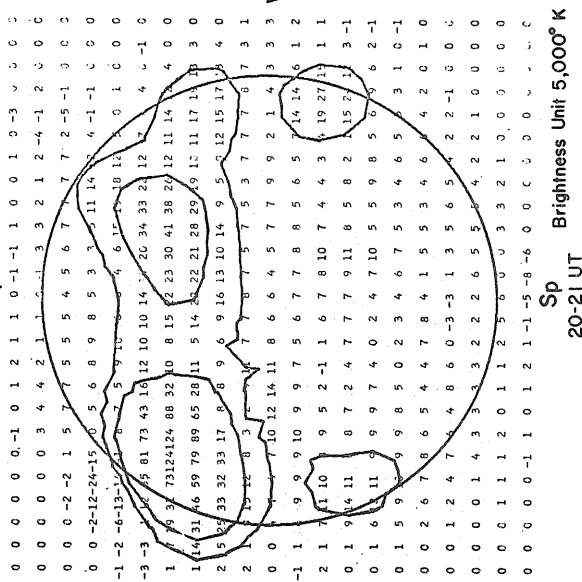
FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np

Sp

CALCIUM REPORT



27-26-3  
30-14-25  
31-08-3  
33-78-35  
36-09-3  
38-06-35  
40-85-35  
41-35-3

55  
Mar 67

Sp 1835 UT

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700<sup>o</sup> K

Sp 20-21 UT  
Brightness Unit 5,000<sup>o</sup> K

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON

Np

MARCH 24, 1967 (P=-25.60, B<sub>0</sub>=-6.92, L<sub>0</sub>=333.02)

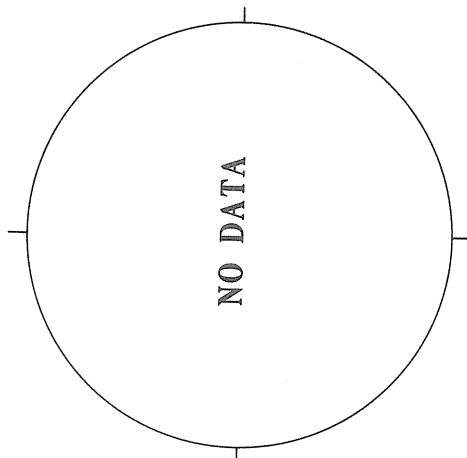
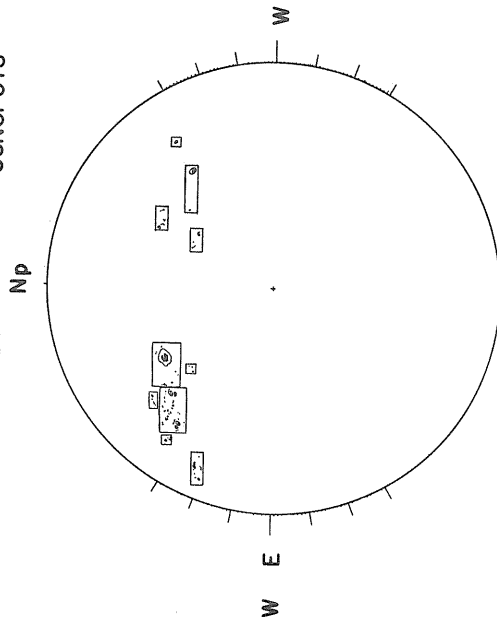
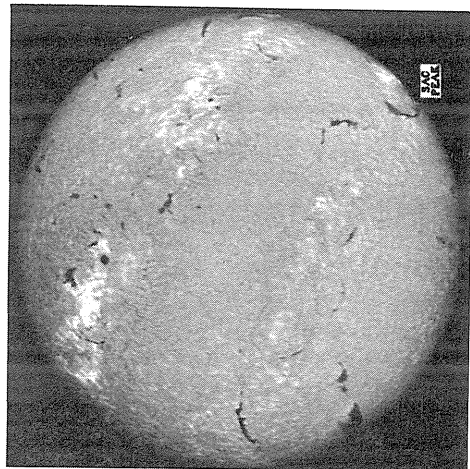
SACRAMENTO PEAK N

H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1517 UT

Sp  
1815 UT

STANFORD

9.1 cm.

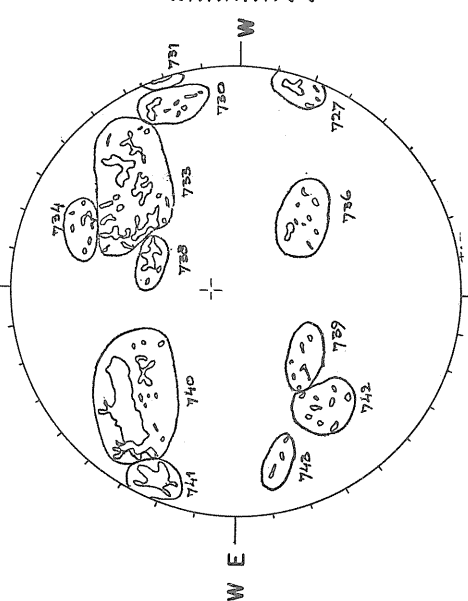
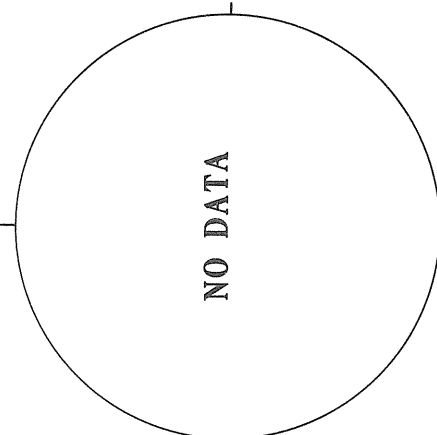
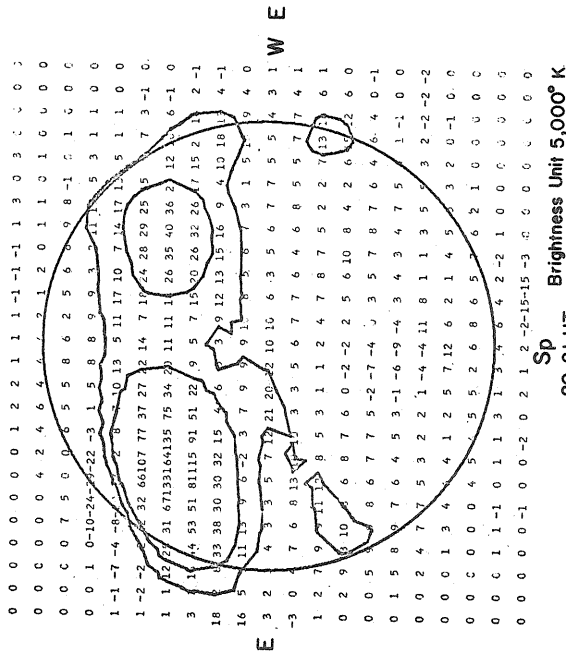
FLEURS, AUSTRALIA

21 cm.

N

McMATH-HULBERT  
Np

CALCIUM REPORT  
Sp



S  
20-21 UT

Sp  
1340 UT

S Resolution 3 Minutes of Arc  
02-03 UT - Brightness Unit, 1,700° K

Brightness Unit 5,000° K

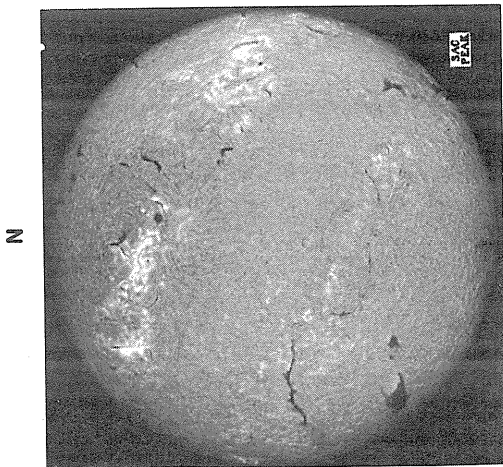
MARCH 25, 1967 (P=-25.70, B<sub>0</sub>=-6.88, L<sub>0</sub>=319.83)

SACRAMENTO PEAK N

H $\alpha$

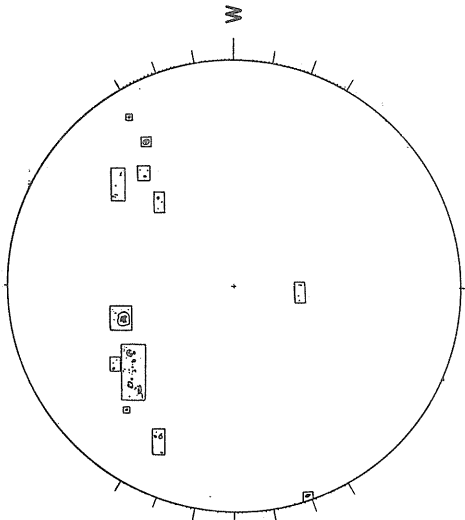
ESSA-BOULDER

SUNSPOTS



S 1532 UT

Np



Sp 1524 UT

STANFORD 9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np

17.03-18.69 UT

CALCIUM REPORT

27-11-25  
33-57-3  
36-10-25  
38-05-25  
39-06-25  
40-96-35  
41-41-3  
45-19-25

20-21 UT

NO DATA

1350 UT

Sp 1350 UT

W E

W E

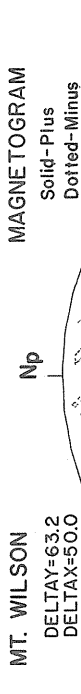
MT. WILSON DELTAY=63.2 DELTAX=50.0

MAGNETOGRAM Solid-Plus Dotted-Minus

Np

Sp

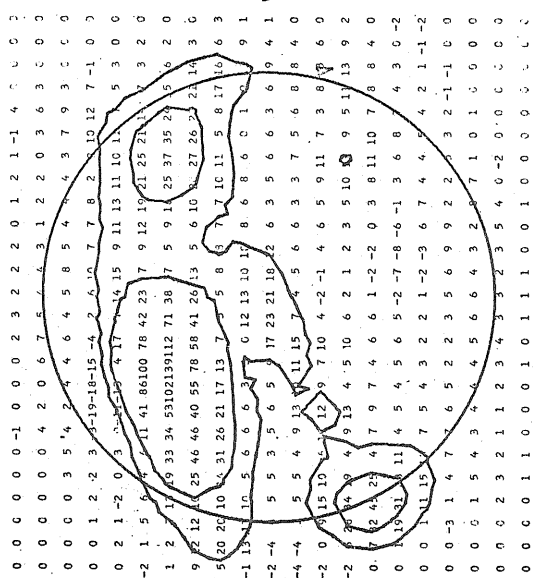
17.03-18.69 UT



W E

W E

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00



0 0 0 0 0 -1 0 0 0 2 3 2 2 2 0 1 2 1 1 -1 4 0 0 0  
0 0 0 0 0 4 2 0 6 7 5 7 4 3 1 2 2 0 3 6 3 0 0 0  
0 0 0 3 5 4 2 4 6 4 5 8 5 4 4 4 3 7 9 3 0 0 0  
0 0 1 2 2 3 5 19 18 15 4 2 6 10 7 7 8 2 10 12 7 -1 0 0  
0 2 1 -2 0 3 8 8 5 4 17 14 15 9 11 13 11 10 11 5 3 0 0  
-2 1 5 6 11 41 86100 78 42 23 7 9 12 19 21 25 21 11 7 3 2 0  
1 2 1 5 9 33 34 53102139112 71 38 7 5 9 11 35 37 35 21 5 6 2 0  
9 2 12 25 46 46 40 55 78 58 41 26 13 5 6 10 8 27 26 23 21 4 3 0  
5 20 25 10 31 26 21 17 13 7 5 8 5 7 7 10 11 5 8 17 10 6 3  
-1 13 10 5 6 6 0 3 0 12 13 10 11 8 6 8 6 0 1 0 9 1  
E -2 -4 5 5 3 5 6 5 17 23 21 10 2 6 3 5 6 3 6 9 4 1  
-4 -4 5 5 4 9 13 11 15 7 4 5 6 6 3 3 7 5 6 6 8 3 4 0  
-2 0 15 10 6 12 9 7 10 4 -2 -1 4 6 5 9 11 7 3 6 6 6 0  
-2 6 24 9 4 9 13 4 5 10 6 2 1 2 3 5 10 9 5 11 13 9 2  
0 9 2 4 2 4 7 9 7 4 6 6 1 -2 -2 0 3 8 11 10 7 8 8 4 0  
0 1 19 31 11 4 5 4 5 6 5 -2 -7 -8 -6 -1 3 6 8 4 3 0 -2  
0 0 1 11 15 7 5 4 3 2 2 1 -2 -3 6 7 4 4 4 2 1 -1 -2  
0 0 -3 1 4 7 1 6 5 2 2 3 5 6 9 9 2 2 3 2 -1 -1 0 0  
0 0 6 1 5 4 3 4 4 5 6 4 3 2 3 7 1 0 1 0 0 0 0  
0 0 0 2 3 2 1 1 2 3 4 3 3 2 3 5 4 0 -2 0 0 0 0 0  
0 0 0 0 1 1 0 0 0 1 0 1 1 1 0 0 1 0 0 0 0 0 0 0

Sp 20-21 UT

NO DATA

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp 1350 UT

W E

W E

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

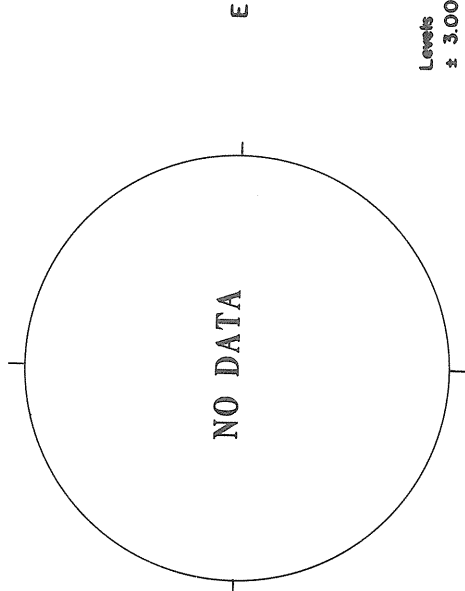
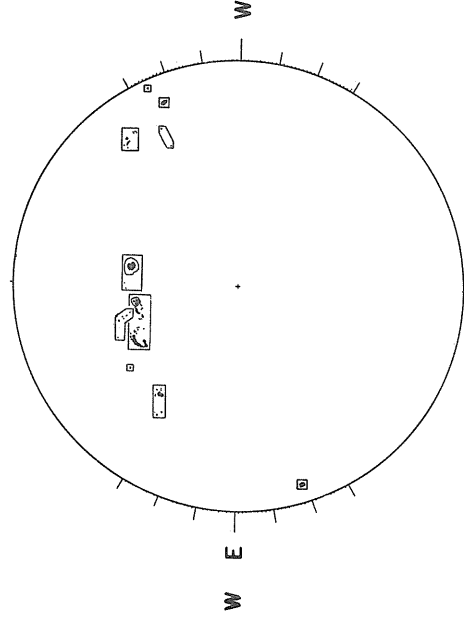
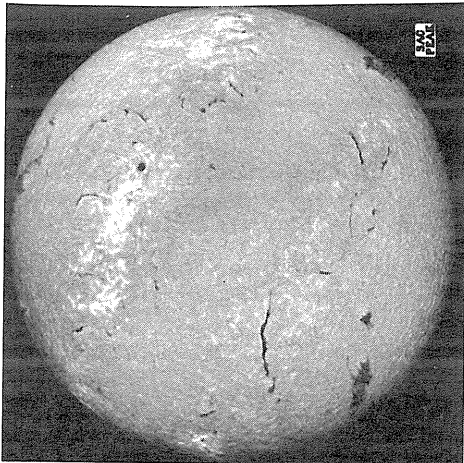
MARCH 26, 1967 (P=-25.79, B<sub>0</sub>=-6.84, L<sub>0</sub>=306.64)

SACRAMENTO PEAK N

H $\alpha$

ESSA-BOULDER Np

SUNSPOTS



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

33-51-3  
38-04-25  
39-06-25  
40-98-35  
41-37-3  
43-07-25  
45-30-25  
46-18-25  
47-02-25

S  
1540 UT

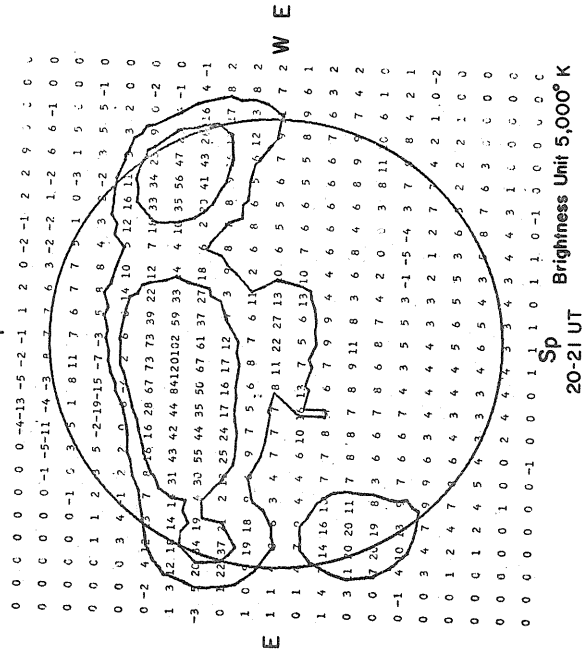
STANFORD

9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np  
CALCIUM REPORT



Sp

Np

Sp

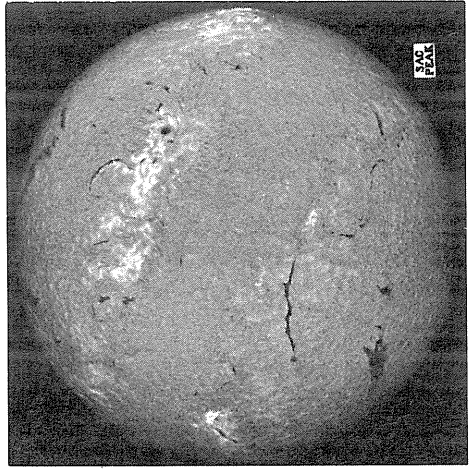
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
20-21 UT  
Brightness Unit 5,000° K

Sp  
1600 UT

MARCH 27, 1967 (P=-25.88, B<sub>0</sub>=-6.80, L<sub>0</sub>=293.46)

SACRAMENTO PEAK N

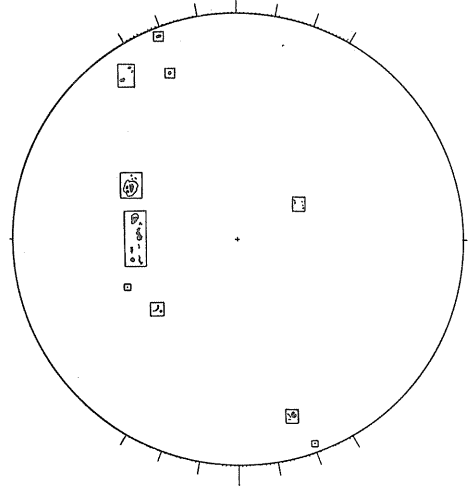


H $\alpha$

ESSA-BOULDER

Np

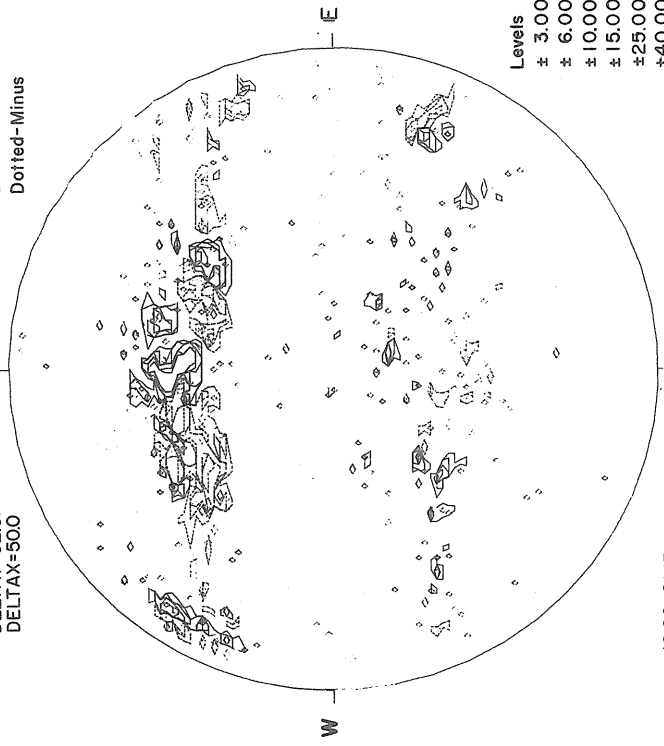
SUNSPOTS



MT. WILSON  
DELTA Y=62.0  
DELTA X=50.0

MAGNETOGRAM

Solid-Plus  
Dotted-Minus



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

19.60-21.13 UT

STANFORD

9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

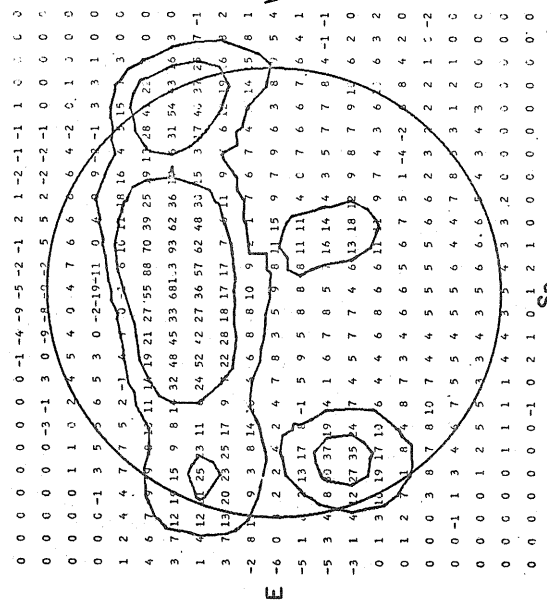
McMATH-HULBERT Np

CALCIUM REPORT

S 1532 UT

SP 1620 UT

19.60-21.13 UT



W E

NO DATA

W E

NO DATA

W

Sp  
Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

20-21 UT



MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

MARCH 28, 1967 (P=-25.95, B<sub>0</sub>=-6.75, L<sub>0</sub>=280.27)

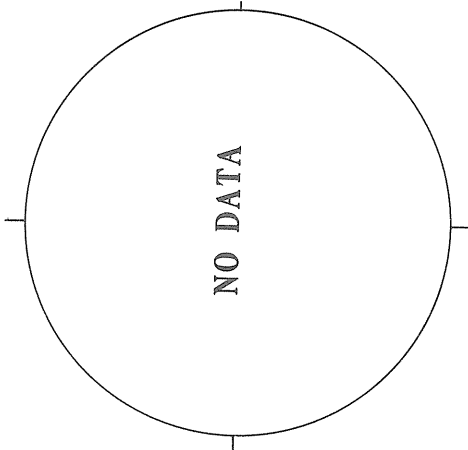
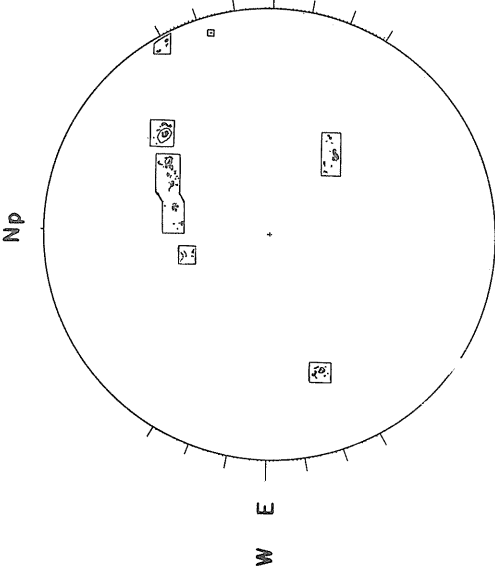
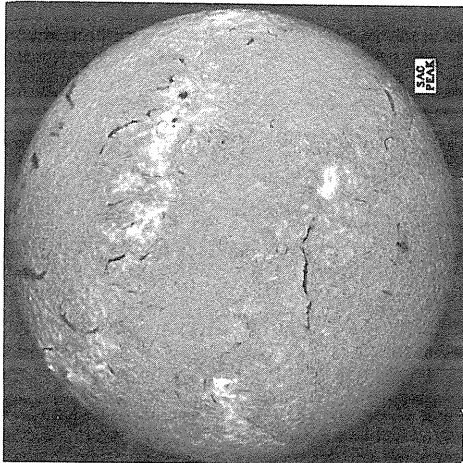
SACRAMENTO PEAK N

H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

S  
1451 UT

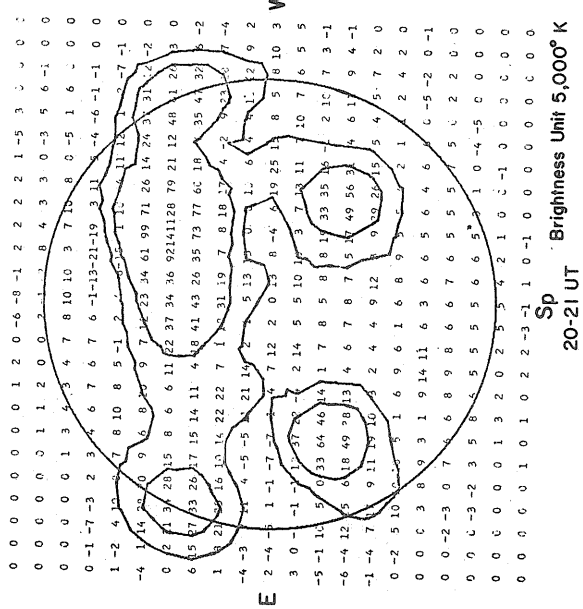
STANFORD

9.1 cm.

FLEURS, AUSTRALIA

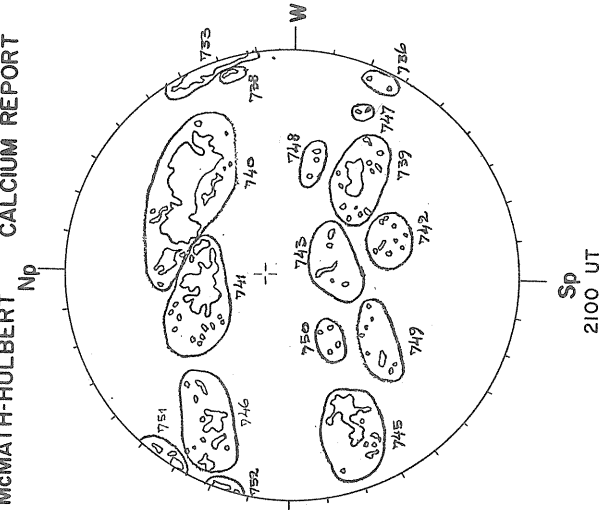
21 cm.

N



Sp  
1615 UT

McMATH-HULBERT  
Np  
CALCIUM REPORT



33-35-3  
39-21-3  
40-15-3.5  
41-51-3  
42-06-25  
43-06-25  
45-38-35  
46-22-25  
51-23-4

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

Sp  
20-21 UT  
Brightness Unit 5,000° K

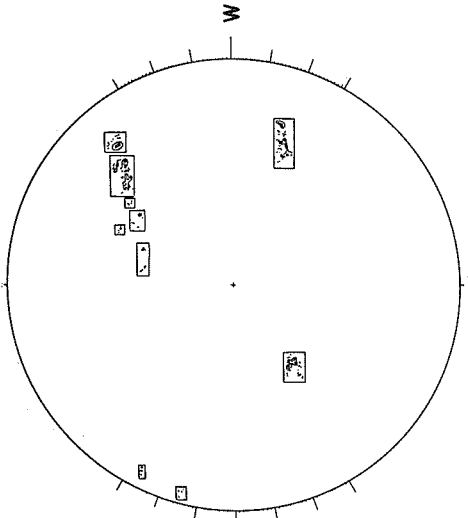
MARCH 29, 1967 (P=-26.03, B<sub>0</sub>=-6.70, L<sub>0</sub>=267.08)

SACRAMENTO PEAK N

H $\alpha$

ESSA-BOULDER Np

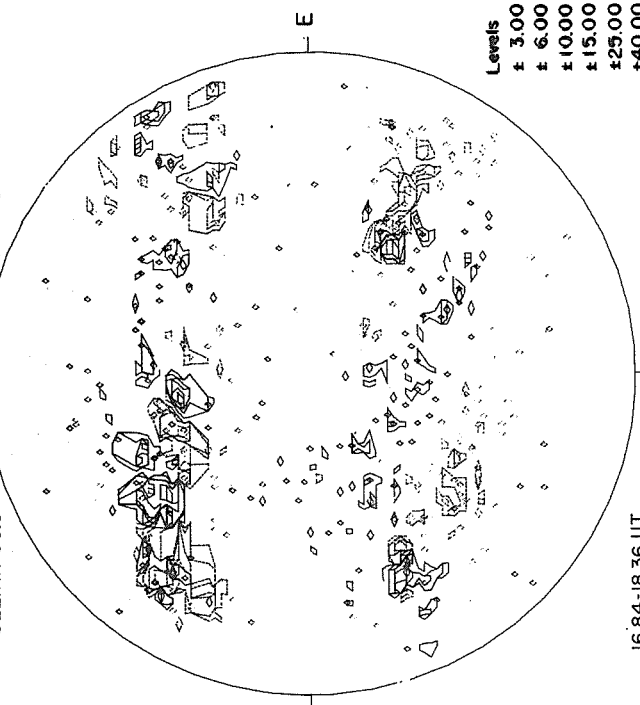
SUNSPOTS



Sp 1930 UT

MT. WILSON DELTAY=64.5 DELTAX=50.0

MAGNETOGRAM Solid-Plus Dotted-Minus



16:84-18:36 UT

Levels  
 ± 3.00  
 ± 6.00  
 ± 10.00  
 ± 15.00  
 ± 25.00  
 ± 40.00

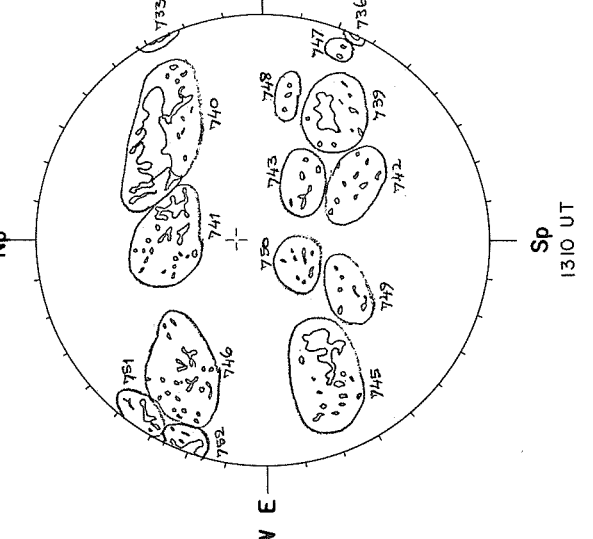
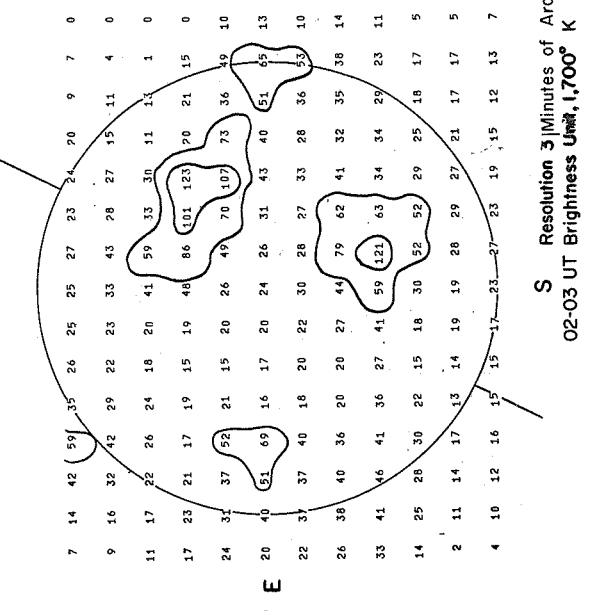
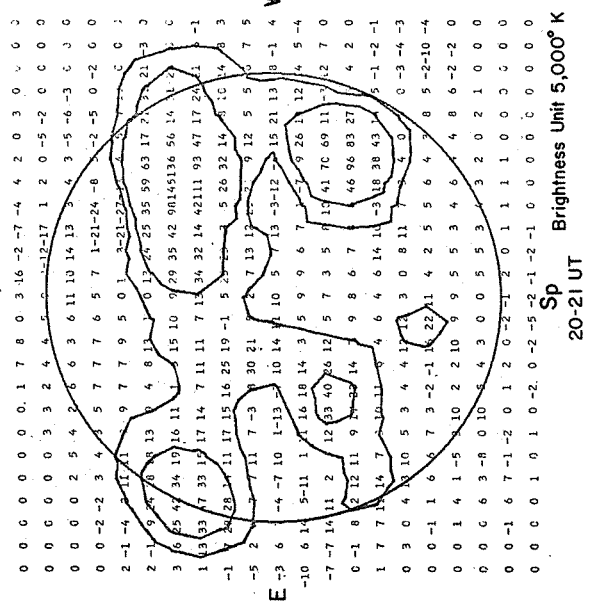
STANFORD Np

9.1 cm.

FLEURS, AUSTRALIA N

21 cm.

McMATH-HULBERT Np CALCIUM REPORT



Resolution 3 Minutes of Arc  
 02-03 UT Brightness Unit, 1,700° K

Brightness Unit 5,000° K  
 Sp 20-21 UT

Sp 13:10 UT

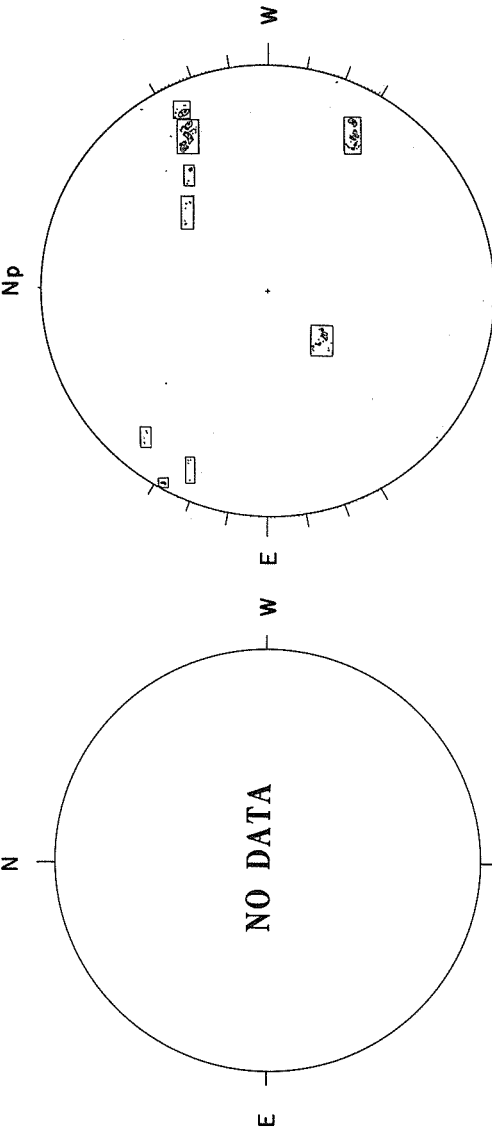
MARCH 30, 1967 (P=-26.09, B<sub>0</sub>=-6.66, L<sub>0</sub>=253.89)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

SUNSPOTS



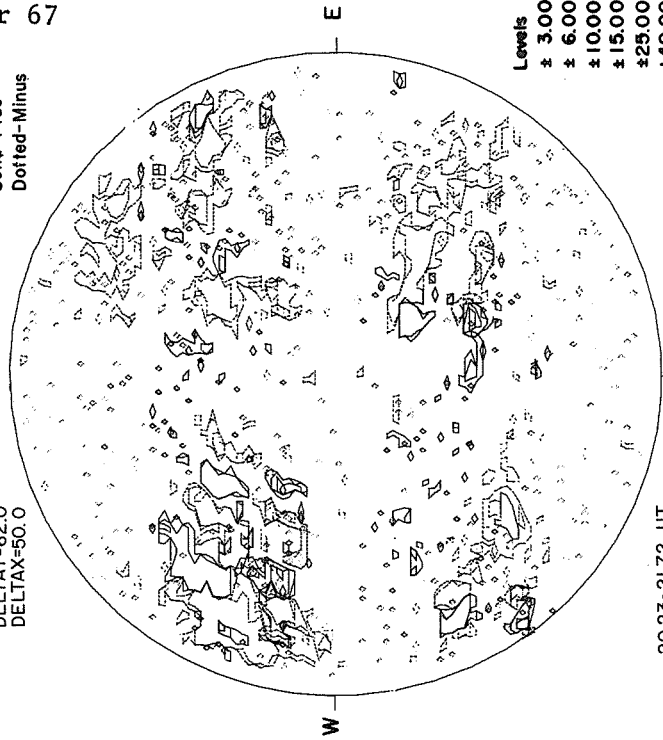
Sp  
1445 UT

MAGNETOGRAM

Solid-Plus  
Dotted-Minus

MT. WILSON

DELTA TAY=62.0  
DELTA TAX=50.0



20.23-21.72 UT

Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD  
Np

9.1 cm.

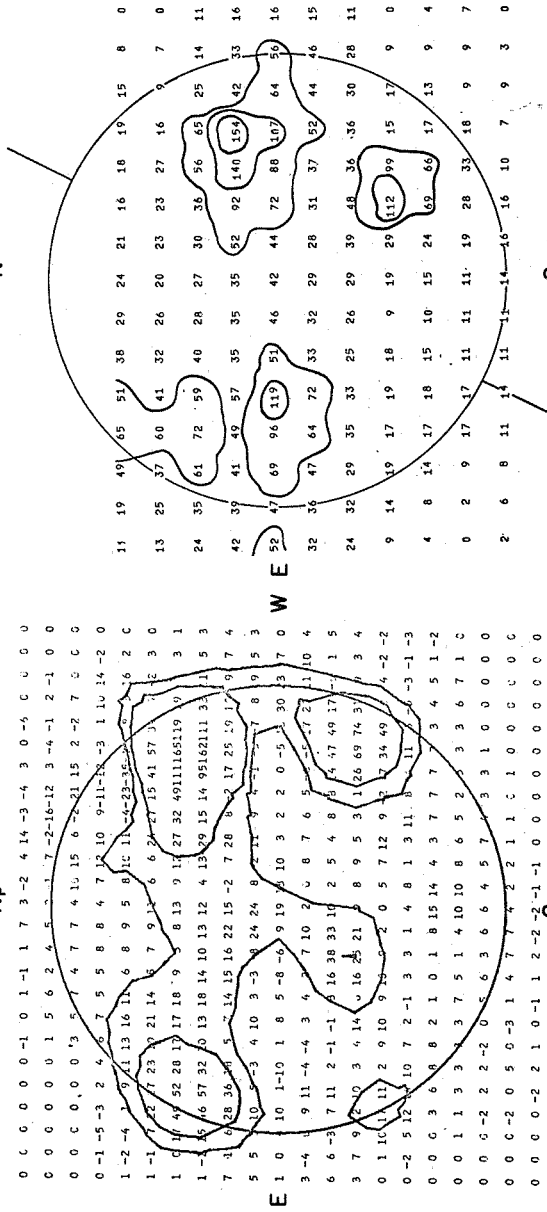
FLEURS, AUSTRALIA

N

21 cm.

McMATH-HULBERT  
Np

CALCIUM REPORT



Brightness Unit 5,000° K

Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

39-28 3.5  
40-10-35  
41-31-3  
45-47-3  
46-28-2.5  
51-15-2.5  
52-24-2.5

Sp  
1315 UT

MARCH 31, 1967 (P=-26.15, B<sub>0</sub>=-6.61, L<sub>0</sub>=240.69)

MT. WILSON

Np

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

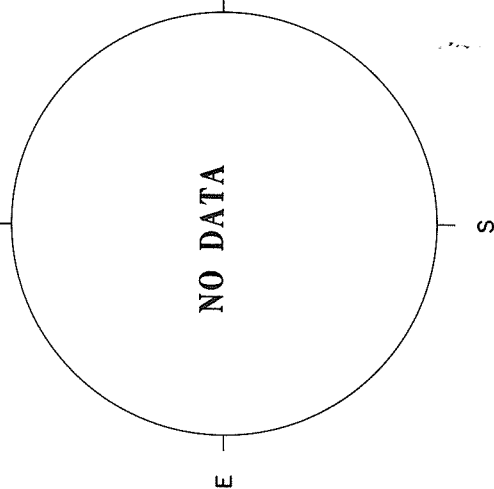
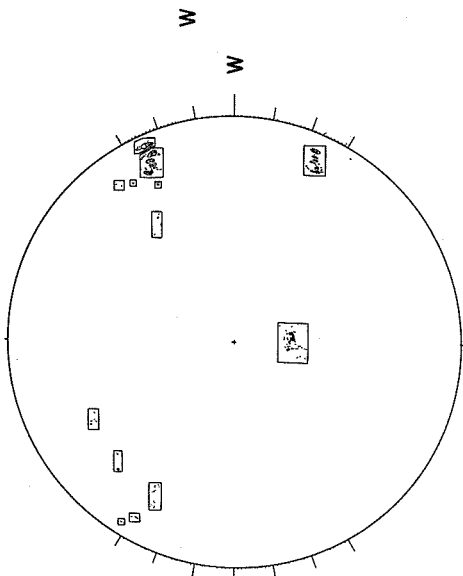
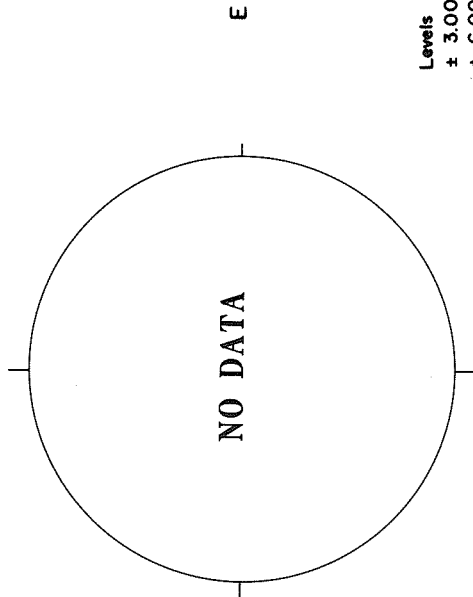
SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

SUNSPOTS

Np

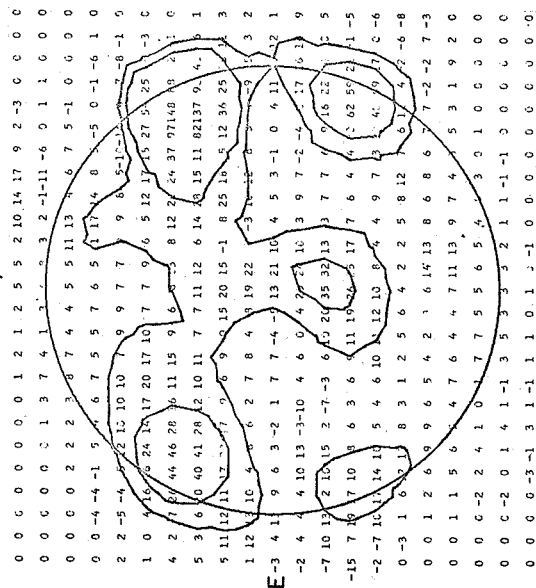


Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD

Np

9.1 cm.



Brightness Unit 5,000° K

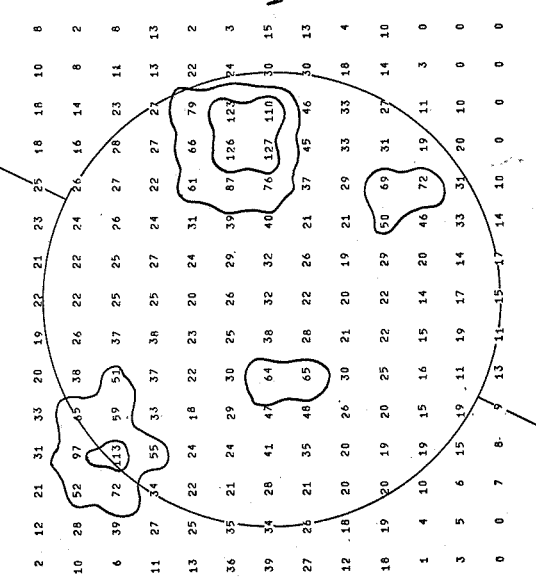
Sp

20-21 UT

FLEURS, AUSTRALIA

N

21 cm.

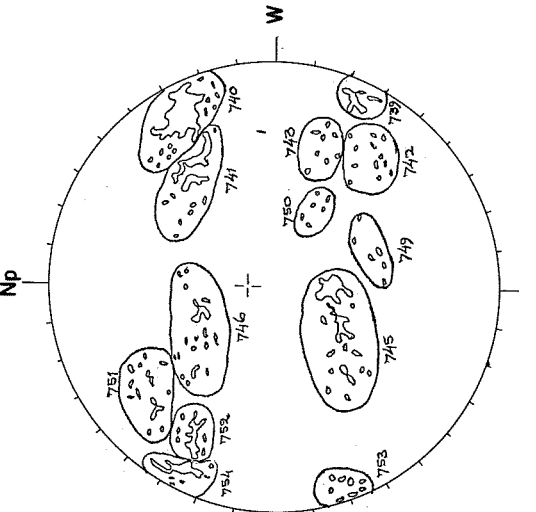


Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit, 1,700° K

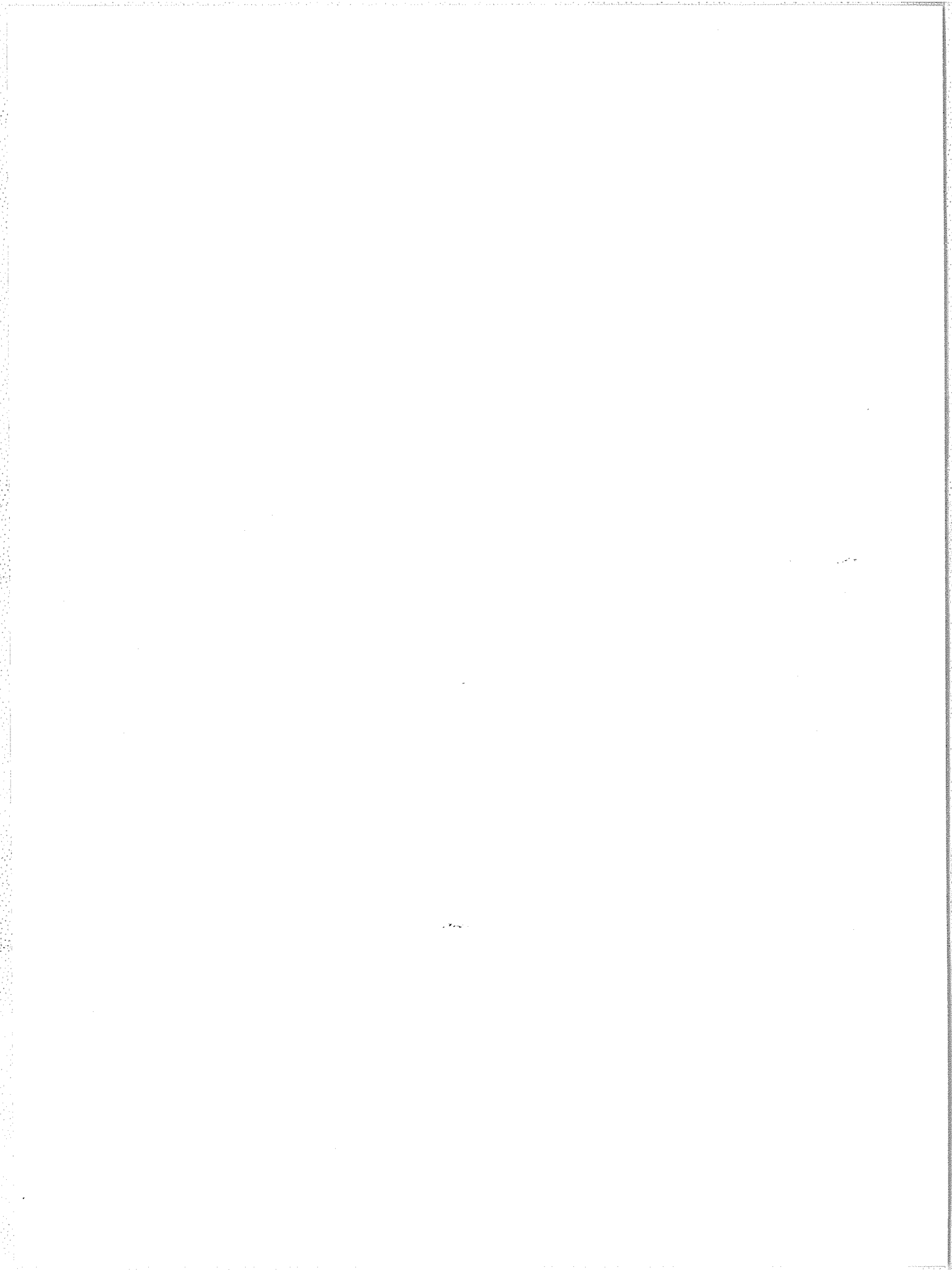
McMATH-HULBERT

Np

CALCIUM REPORT



Sp  
1445 UT



FINAL CORONAL LINE EMISSION INDICES

MARCH 1967

CMP March 1967	North East Quadrant (Observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>
1	73	127	14	20	58	73	12	24	63	108	29	64	71	104	34	61
2	70	91	31	46	54	71	17	23	x	x	x	x	x	x	x	x
3	x	x	x	x	46	53	23	39	75	111	39	78	108	127	31	50
4	56	75	32	46	x	x	x	x	52	65	10	15	63	80	11	21
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	132	160	x	x	63	93	x	x	34	55	5	11	74	94	9	19
7	x	x	x	x	39	51	7	14	51	63	14	25	165	231	27	55
8	170	266	23	39	39	51	x	x	76	90	38	54	156	210	66	162
9	x	x	x	x	x	x	x	x	80	129	17	34	136	188	17	23
10	x	x	x	x	x	x	x	x	73	109	20	25	118	156	17	27
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	30	45	x	x	110	137	x	x
13	x	x	x	x	x	x	x	x	32	40	14	22	125	151	34	64
14	126	167	x	x	57	92	x	x	25	29	x	x	107	138	x	x
15	102	167	46	87	43	69	14	29	19	21	12	16	94	135	30	66
16	x	x	x	x	x	x	x	x	37	56	x	x	62	82	x	x
17	x	x	x	x	x	x	x	x	34	54	13	29	82	138	25	42
18	64	87	36	99	39	52	26	39	50	84	20	45	90	150	28	49
19	71	104	12	23	48	93	18	52	75	113	x	x	104	145	x	x
20	100	164	19	33	44	85	24	60	44	57	18	63	46	88	22	42
21	142	213	28	40	71	98	30	42	x	x	x	x	x	x	x	x
22	107	147	69	105	69	120	38	82	x	x	x	x	x	x	x	x
23	130	163	25	34	68	124	19	26	71	106	2	3	116	178	10	17
24	144	169	32	44	75	89	11	16	30	47	8	15	51	90	25	41
25	x	x	x	x	x	x	x	x	24	28	7	17	33	53	8	13
26	98	110	x	x	67	76	x	x	44	59	x	x	64	93	x	x
27	122	165	37	56	82	94	15	21	61	79	7	13	140	214	19	24
28	157	193	x	x	86	101	x	x	69	82	6	8	122	188	25	36
29	125	158	23	33	78	92	10	16	x	x	x	x	x	x	x	x
30	111	138	x	x	95	116	x	x	69	84	x	x	102	140	x	x
31	112	166	17	26	70	90	15	24	54	80	24	50	34	40	20	27

### SUDDEN IONOSPHERIC DISTURBANCES

SHORT WAVE RADIO FADEOUTS SUDDEN PHASE ANOMALIES  
SUDDEN COSMIC NOISE ABSORPTION SUDDEN ENHANCEMENTS OF SIGNAL  
SUDDEN ENHANCEMENTS OF ATMOSPHERICS SUDDEN FREQUENCY DEVIATIONS

MARCH 1967

MAR	UNIVERSAL TIME			WIDE SPREAD INDEX	SWF TYPE IMP	IMPORTANCE					STATIONS	KNOWN FLARE	
	START	END	MAX			ABS	SCNA	SEA	SPA	SES			SFD
1967													
01	0153	0209	0158	1	S 1-							MA	0144
01	0156	0200	0156	1							03	HA(WVH5-0.3)	
01	0203	0302	0215	1								AN(NPM26-36)	
01	0426	0442	0431	1		46	2					MA	*
01	0426	0519	0433	1								MA(NPG18-121)	
01	0426	0610	0432	1							2	ND	
01	0427	0447	0428	5	S 1+							MA CA HK OK TO	
01	1702		1715	5							31	UM(NPG18-31,NSS21-27)	1701
												HA(WWVL20-7)	
01	1818	1935	1855	5								UM(NPG18-37,NSS21-23)	
01												HA(WWVL20-25)	
01	1835	1900	1841	1				1+				A6	
01	1836	1851	1841	1							1-	A1	
01	1838	1857	1841	1	S 1-							HU	
01	1949	1953	1950	5								HA(WVH5-0.7,WVH10-0.2)	1949
01												BO(WWI11-0.3)	
01	1949	2000	1952	1	S 1-							HU	
01	1955	2155	1957	1							22	HA(WWVL20-22)	
02	0211	0252	0217	1								MA(NPG18-96)	0206
02	0212		0214	1								HA(WVH5-1.2,WVH10-0.6)	
02	0212	0234	0214	5	S 1+						12	MA CA OK TO	
02	0214	0224	0217	1		40	2					MA	*
02	0445	0530	0448	5	S 1							MA CA HK OK TO	
02	0446	0615	0504	1							99	MA(NPG18-104)	
02	0500	0510	0505	1		45	2					MA	
02	0615	0705	0625	1								ND	*
02	0616	0650	0620	1							2	MA(NPG18-18)	
02	1227	1301	1237	1				1				UC	1259E
02	1230	1310	1255	1								UM(NPG18-67,NSS21-12)	
02	1310	1340	1330	1								UM(NPG18-34,NSS21-30)	1306
02	1314	1345	1323	3				2-				LO UC	
02	1424	1428	1425	1								BO(WWI11-0.2)	1424
02	1436	1440	1437	1								BO(WWI9-0.3)	1436
02	1550	1715	1632	1								UM(NPG18-81,NSS21-62)	1606
02	1610	1649	1625	1							81	UC	
02	1610	1700	1620	5	SL 1-							BE HU MC	
02	2100	2108	2101	1								BO(WWI9-0.3)	2055
02	2356	2358	2357	1							03	HA(WVH5-0.2)	2356
03	0004	0105	0012	5								MA(NPG18-35)	
03												HA(WWVL20-29)	
03	0028	0052		1	1							NZ	0028E
03	0035		0039	1								HA(WWVL20-14)	
03	0321	0322	0321	1								HA(WVH5-0.7,WVH10-0.3)	0315E
03	0628	0720	0630	5	S 1							MA HK OK TO	*
03	0629		0632	1								A1	
03	0629	0712	0637	1								MA(NPG18-65)	
03	0630	0654	0636	1		7	1-					MA	
03	1242	1330	1302	1								UM(NPG18-83,NSS21-39)	1240
03	1246	1351	1256	3								UC LO	
03	1702	1710	1703	1								BO(WWI11-0.3)	1658
03	1805	1940	1830	1								HA(WWVL20-50)	
03	1815	1840	1828	5	G 1-							MC TR	
03	1821	1845	1826	1								A1	
03	1821	1848	1826	1								A6	
03	2035	2120	2040	1								HA(WWVL20-14)	2044
03	2044	2048	2046	5								BO(WWI8-0.4)	
												HA(WVH5-0.3)	
03	2107	2235	2150	5								MA(NPG18-84)	2137E
03												AN(NPM26-30)	
03												HA(WWVL20-36)	
03	2109	2112	2110	1								BO(WWI8-0.3)	
03	2139		2141	5								HA(WVH5-0.5)	
03												BO(WWI9-0.3)	
03	2145	2201	2146	1		5	1					MA	
04	0123	0215	0138	5								MA(NPG18-68)	0123
04												HA(WWVL20-11)	
04	0124	0200	0131	4	G 1							MA TO	
04	0129	0150	0140	1		10	1-					MA	
04	1208	1225	1216	1								UC	1210
04	1210	1229	1217	1	SL 1							TR	
04	1215	1228	1217	1		*	*					RO	
04	1218		1250	1								UM(NPG18-107,NSS21-62)	
04	1322	1354	1329	5	SL 1							TR HU	1320
04	1328	1445	1340	3								LO UC	
04	1328	1520	1403	1								UM(NPG18-114,NSS21-69)	
04	1714	1800	1717	3								A6 BO	1715
04	1715	1918	1735	5								UM(NPG18-134,NSS21-93)	
04												AN(NPM26-40)	
04												HA(WWVL20-43)	
04	1716	1721	1716	1								BO(WWI11-8.2)	
04	1716	1740	1718	5	S 1+							MC BE HU TR WS	
04	1716	1744	1717	1		31	2					BO	
04	1717	1745	1721	1								A1	
04	1724	1732	1726	1								BO(WWI11-1.3)	

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1967

MAR	UNIVERSAL TIME			WIDE SPREAD INDEX	SWF TYPE IMP	IMPORTANCE						STATIONS	KNOWN FLARE			
	START	END	MAX			ABS	SCNA	SEA	SPA	SES	SFD					
1967																
[04	1918	1934	1923	5	S 1							HU MC WS	1906			
04	1918	2038	1928	5							36	HA(WWVL20-36) UM(NSS21-31)				
[04	2104	2109	2107	5								HA(WVH10-0.6,WVH5-0.6)	2102			
04	2105	2114	2111	3	SL 1-							BO(WWI12-0.4,WWI12-0.3)				
04	2105	2215	2115	1							18	WS MC HA(WWVL20-18)				
[05	0204	0303	0231	1								61	MA(NPG18-61)	0221		
05	0221	0248	0222	1	S 1							MA				
05	0940	1110	1000	1							2	ND	0936E			
[05	1555	1700	1612	1								40	UM(NPG18-40,NSS21-30)	1605E		
05	1600	1645	1618	1							3	UM				
05	1602	1617	1606	1								1	UC			
07	0944	1007	0950	1								38	SL(GBR16-38)	0927		
[09	1010	1045		1								*	2	KU	1017E	
09	1015	1100		1	S 2									KU		
09	1016	1114	1037	1									95	SL(GBR16-95)		
11	1315		1340	5									87	UM(NPG18-87,NSS21-23) SL(GBR16-75)	*	
15	2054	2056	2055	5									08	BO(WWI11-0.8) HA(WVH5-0.7,WVH10-0.4)	2053	
[16	2345	0055	2355	1									52	MA(NPG18-52)	2343	
16	2348		2355	1	S 1-									MA		
16	2353	2355	2354	1									03	HA(WVH5-0.3,WVH10-0.3)		
[19	0245	0330	0251	1									1	ND	0244E	
19	0245	0335	0258	1									36	MA(NPG18-36)		
19	0307	0324	0312	1								10	1-	MA		
[20	1142	1430	1212	1									99	UM(GBR16-162)	1155E	
20	1148	1258		1								*	*	JU		
20	1149	1306	1209	5									1+	UC UM		
20	1150	1305		5	S 1+									LI BY DA JU SO PU		
20	1355	1430	1403	1									1	UC	1356	
20	2304	0015	2319	5									72	MA(NPG18-72)	2300	
[20	2305	2343	2323	1									17	1-	HA(WWVB60-22,WWVL20-25)	
20														MA		
[21	0323	0430	0343	1									42	MA(NPG18-42)	*	
21	0324	0427	0344	4	S 1									MA TO		
[21	1819	1822	1820	1									02	BO(WWI13-0.2)	1814	
21	1820	1900	1824	1									14	HA(WWVL20-14)		
[21	2158	2206	2159	1									06	BO(WWI8-0.6)	2155	
21	2200	2230	2204	5									50	MA(NPG18-50)		
														HA(WWVL20-25,WWVB60-22)		
[22	0025		0027	1										10	HA(WVH5-1.0,WVH10-0.9, WVH15-0.7)	0022
22														MA AN BO		
[22	0025	0048	0037	5									58	2		
22	0025	0049	0032	1												
[22	0025	0530	0040	5										99	HA(WVH10-1.9,WVH15-1.0) MA(NPG18-328,NAA17-285) AN(WWVL20-36,NPM26-115)	
22															HA(WWVB60-122, WWVL20-126)	
[22	0028	0105	0040	5	S 3									AN CA HK MA NZ OK TO WS		
22	2331	0015		1										BO		
[22	2332	0000D	2339	5									40	2	BO MA	
[23	1922	2010	1930	1										2	A6	1849E
23	1925	1930	1929	5											BO(WWI13-1.9)	
[23	1925	1950	1933	5	SL 1										HA(WVH10-1.1,WVH5-1.5)	
23	1928	1933	1933	5											HU BE BO MC TR	
															AN(NPM26-80,WWVL20-18)	
															HA(WWVB60-36,WWVL20-43)	
															UM(GBR16-25,WWVL20-58)	
															MA(NPG18-100)	
[23	2330	0022	2338	5											AN(NPM26-32,WWVL20-76)	2327
23															HA(WWVB60-40,WWVL20-40)	
[23	2332		2343	5	S 1										MA AN BE OK TO TR WS	
25	2352	2354	2352	1											BO(WWI11-0.2)	
[25	2355	0005	0001	1	G 1-										MA	
25	2355	0040	2358	5											MA(NPG18-40)	
															HA(WWVL20-14)	
[26	0505	0550	0513	1											MA(NPG18-54)	*
26	0506	0526	0508	4	S 1-										MA TO	
[26	0518	0543	0540	1											MA	
26	1445	1530	1459	1											UM(GBR16-36)	1446
[26	1448	1456	1451	1											BO(WWI8-0.8)	
26	1603	1637	1612	5											UM(GBR16-63,WWVL20-58)	1541



SUDDEN IONOSPHERIC DISTURBANCES  
MARCH 1967

MAR	UNIVERSAL TIME			WIDE SPREAD INDEX	SWF TYPE IMP	IMPORTANCE					STATIONS	KNOWN FLARE	
	START	END	MAX			SCNA	SEA	SPA	SES	SFD			
1967													
26	1603	1637	1612										
26	1604	1630U	1611	5	SL 1								
26	1605	1608	1605	1						11			
26	1605	1630	1610	5				1					
26	1640	1725	1707	1					50				
26	1646	1736	1657	5	SL 2								1630
26	1700	1702	1701	1							04		
27	1600		1627	1					59				
27	1610	1621	1611	1							04		
27	1610	1645D	1619	4	SL 2								
27	2110	2130	2112	1							05		
27	2110	2300	2125	5					54				2107
27	2123	2136	2128	5	SL 1								
28	0615	0654	0625	4	SL 1-								*
28	0618	0647	0623	1					25				
28	1437	1545	1448	1					35				
28	1440	1459	1448	4	S 1								1429
28	1442	1448	1442	1							02		
28	1442	1448	1444	1							04		
28	1442U	1507	1449	1				1					
28	1615	1700	1632	1					17				1616
28	1625	1640		1	1-								
28	1735		1740	1					58				1731
28	1736	1744	1738	5							14		
28	1736	1755	1740	5	S 1								
28	1738	1803	1742	5				2					
28	1738	1805	1739	1									
28	1912	1947	1920	5	SL 1-	34	2						
28	1916	1919	1917	1									1909
28	2253	2236	2356	1							03		
28	2258	2259	2258	5							04		
29	0930	1005	0938	1						99			
29	0931	0941	0935	1		*	*						
29	0937	1010	0943	3					1+				
29	1142		1236	5						99			1132E
29	1655	1732	1703	5						58			1658
29	1658	1730	1702	5					1				
29	1700	1705	1701	1							03		
29	1700	1711	1704	5	S 1								
29	1731	1810	1737	5					2+				1725
29	1732	1805	1741	5	SL 1								
29	1733	1738	1830	5						65			
29	1733	1740	1734	5							15		
29	1733	1754	1739	1									
29	2246	2255	2247	1				40	2				2245
29	2246	2255	2250	1							04		
29	2249	2257		1	S 1-						04		
29	2257		2258	5							22		
30	0021	0149	0024	5	S 1								0022
30	0022	0024	0022	1							10		
30	0022	0024	0023	1							07		
30	0023	0147	0035	5									
30	0452	0540	0502	1						46			*
30	0455	0526	0502	1	S 1-								
30	0748	0835	0807	1					1				0755E
30	0755	0830	0807	1						99			
30	0759			1		*	1						
30	0800	0821	0805	5	S 1								
30	0845	0908	0945	1						99			
30	0853	0922	0903	5				20	1				0851
30	0856	0928		5	S 2+								
30	0858	0938	0908	1					2				
30	0952	1045		1	S 1-								0950
30	1000		1012	1							1		
30	1143	1300	1258	5						99			
30	1147		1154	1									
30	1148	1249		1	S 1						1		
30	1230	1325	1245	1							1		
30	1938	1942	1939	5							05		1920

# SUDDEN IONOSPHERIC DISTURBANCES

MARCH 1967

MAR	UNIVERSAL TIME		WIDE SPREAD INDEX	SWF TYPE	IMP	IMPORTANCE			STATIONS	KNOWN FLARE
	START	END				MAX	SCNA	SEA		
▲ 1967										
30	1940	2040	1943	1	SL	1		11	HA(WWVL20-11) MA CA TO	*
30	2343	0004	2355	5					BO(WWI9-0.2)	
30	2343	2346	2344	1				97	MA(NPG18-97)	
30	2344	0203	2356	5					HA(WWVB60-29, WWVL20-36)	
31	0408	0500	0414	5	SL	1		83	MA CA HK TO	0353
31	0409	0504	0423	1					MA(NPG18-83, NAA17-75)	
31	0410	0500	0420	1				1	ND	
31	1335	1402	1345	1					UC	*
31	1335	1412	1343	5				70	SL(GBR16-70)	
31	1336	1343	1337	1					UM(GBR16-58, WWVL20-36)	
31	1338	1402		1	S	1		46	BO(WWI8-0.3)	
31	1627	1730	1636	5					JU	
31	1628	1636	1629	1					UM(GBR16-46, WWVL20-43)	1622E
31	1629	1654	1632	5				05	AN(WWVL20-14)	
31	1710	1711	1710	1	S	1+		02	BO(WWI11-0.5)	
31	2215	2248	2220	5					TR BE HU MC	
31	2348	0017	0010	5				36	BO(WWI11-0.2)	2212
31								99	MA(NPG18-36)	
									AN(WWVL20-18)	
									HA(WWVB60-11, WWVL20-14)	
									MA(NPG18-158)	
									HA(WWVL20-50, WWVB60-36)	2335

Hawaii SCNA-SEA out of operation. No SCNA-SEA received from McMath-Hulbert for inclusion in this month's table.

No Boulder SPA records are included. No Slough SPA observations were made during these intervals:

March 1, 0000UT - March 6, 1900UT; March 12, 0900-1220, March 13, 1215-1300, March 14, 1200 - March 15, 0900, and March 21, 1200 - March 28, 1200.

Boulder SWF records are not available for the following intervals: March 1 to March 23, 0120UT; March 23, 2000 to March 29, 1700; March 29, 1930 to March 31. (All UT times are approximate.)

RIOMETER EVENTS

MARCH 1967

South Pole

30 Mc/s

MARCH 1967	START UT	END UT	MAX UT	MAX. ABS. .1DB	NO. OF PKS	MARCH 1967	START UT	END UT	MAX UT	MAX. ABS. .1DB	NO. OF PKS
02	0318	1648	0555	4	1	20	2207		2210		
03	1438	1725	1528	3	2	21		0026		72	8
06	0250	0911	0309	4	2	21	0208	0522	0210	4	3
06	1346	1642	1433	4	3	21	1344	1717	1450	4	2
09	1304	2210	2031	12	6	21	2233		2237		
10	0008	0337	0026	23	3	22		0330		28	5
11	2017					26	0000	0000	0000	0	0
12			0347			27	0000	0000	0000	0	0
13		2308		13	3	28	0000	0000	0000	0	0
15	0025	0108	0034	5	3	29	0000	0000	0000	0	0
18	1241	1808	1253	5	2	30	0241	0600	0324	13	7
19	2149	2307	2205	66	4	30	1430	1649	1517	8	4
20	1300	1536	1319	7	4	30	2245	2309	2249	55	3

THIS TABULATION SHOWS ALL EVENTS STARTING ON ANY DAY OF THIS MONTH. SEE PREVIOUS MONTH TABLE FOR EVENTS WHICH MAY NOT HAVE ENDED BY THE FIRST DAY OF THIS MONTH. MAX IS THE TIME OF EVENT MAXIMUM. ABS IS ABSORPTION. PKS IS PEAKS.

NO DATA ZEROS FOR ALL VALUES OF A DAY.

Beginning with data for March 1967, the periods of absorption reported will be from South Pole, Antarctica (S90° W00°). The equipment operates at 30 MHz and uses a zenithal antenna with 34° half-width to 3db power points.

South Pole is located in the polar cap area, therefore it may be expected that the riometer will record less auroral type absorption and more proton event type absorption than Great Whale River whose data has been published since June 1965.

SOLAR RADIATION MONITORING SATELLITE  
X-RAY

MARCH 1967

OUTSTANDING EVENTS FOR MARCH 1967							
DATE	STA	START	STOP	8-20 x10 <sup>-3</sup>	0-8 x10 <sup>-4</sup>	0-3 x10 <sup>-5</sup>	COMMENTS
1	NRL	0841	0853	45.66	33.07	2.95	
1	NRL	1215	1226	43.59	33.07	3.69	
2	ABRD	0958	1005	110	47	2.7 E	DECREASING
2	NRL	1145	1156	85.58	93.47	5.02	
2	ABRD	1147	1152	950	150	5.0 E	
2	NRL	1330	1343	99.59	99.79	5.19	
3	ABRD	0925	0936	190	67	42	DECREASING
3	NRL	0928	0938	174.28	919.00	35.62	
3	ABRD	1110	1122	180	22	5.7 E	
3	ABRD	1259	1308	410	35	5.7 E	
3	NRL	1259	1313		464.59	11.18	
4	NRL	1045	1054		66.01	38.69	
29	NRL	1950	1957	69.97	203.02	13.09	I AND D
30	ABRD	0058	0112	118.00U	206.00U	14.10U	
30	NRL	0102	0112	136.18	218.16	15.53	
31	ABRD	0027	0039	43.70U	35.20U	3.50U	DECREASING I AND D
31	NRL	0030	0042	52.02	41.56	4.06	
31	NRL	2029	2043	33.88	25.40	3.58	
31	NRL	2212	2228	60.80	87.79	14.61	
31	ABRD	2213	2227	46.20U	51.50U	7.18U	
31	ABRD	2357	0009	64.60D	160.00D	28.90D	
31	NRL	2359	0012	73.23D	168.13	20.04	

NRL SOLAR X-RAY DATA (PRELIMINARY)

DAILY AVERAGES FOR MARCH 1967			
DATE	44-60 x10 <sup>-1</sup>	8-20 x10 <sup>-3</sup>	0-8 x10 <sup>-4</sup>
1		33.27	18.68
2		66.80	55.77
3	6.52	87.89	66.96
4	13.78		24.52
27	6.73		5.56
28	5.78	74.54	13.83
29	5.79	70.70	43.12
30		41.64	21.43
31		50.94	54.81

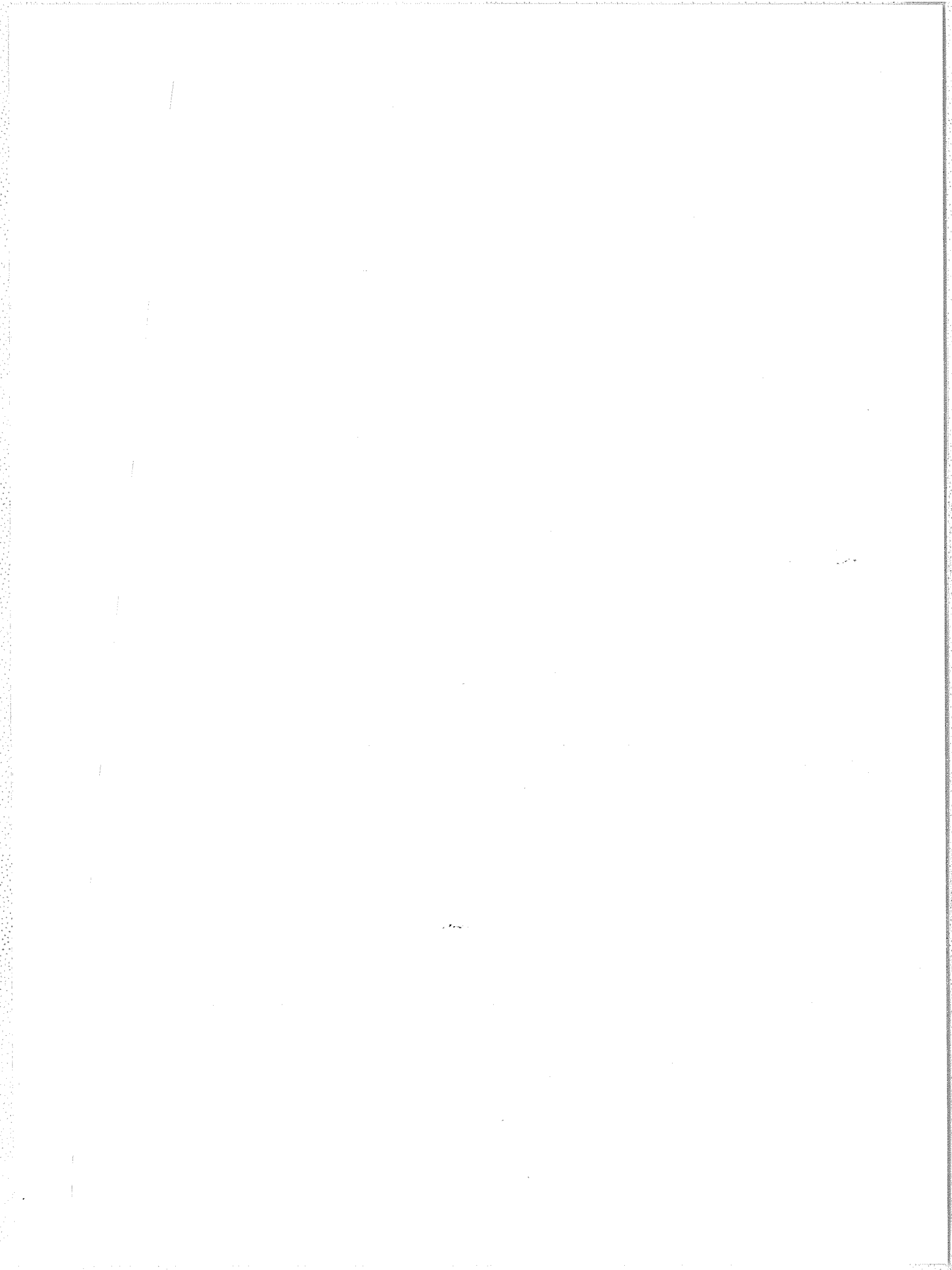
Only the daily averages as given by NRL are presented. This is because they have available the maximum number of records from a single station from which to calculate the averages.

72  
Mar 67

SOLAR RADIATION MONITORING SATELLITE  
X-RAY

MARCH 1967

OBSERVING TIMES FOR MARCH 1967									
DATE	STA	START	STOP	ASPECT ANGLE	DATE	STA	START	STOP	ASPECT ANGLE
1	NRL	0841	0853	-15.6	27	NRL	2049	2059	-34.8
1	ABRD	1025	1036		27	NRL	2229	2245	-34.4
1	NRL	1030	1039	-15.8					
1	ABRD	1211	1223		28	NRL	0015	0029	-33.9
1	NRL	1215	1226	-15.6	28	NRL	0203	0214	-33.6
1	ABRD	1400	1410		28	NRL	0350	0401	-33.2
1	NRL	1400	1414	-16.2	28	NRL	2019	2028	-29.0
1	ABRD	1545	1554		28	NRL	2158	2215	-28.6
1	NRL	1545	1556	-16.6	28	ABRD	2343	2356	-28.40
					28	NRL	2344	2359	-28.0
2	NRL	0810	0823	-22.6					
2	ABRD	0958	1005		29	ABRD	0128	0139	-28.60
2	NRL	0958	1008	-22.8	29	NRL	0132	0144	-27.6
2	NRL	1145	1156	-23.0	29	ABRD	0314	0325	-28.20
2	ABRD	1147	1152		29	NRL	0319	0331	-27.4
2	ABRD	1330	1339		29	ABRD	0501	0506	-28.00
2	NRL	1330	1343	-23.4	29	NRL	1950	1957	-23.5
2	BOUL	1510	1526	-24	29	NRL	2129	2144	-23.0
2	ABRD	1513	1521		29	ABRD	2133	2140	-22.40
2	NRL	1514	1526	-23.8	29	BOUL	2310	2324	-23
2	BOUL	1654	1715	-24	29	ABRD	2313	2327	-22.80
2	ABRD	1657	1706		29	NRL	2314	2329	-22.7
3	NRL	0739	0752	-29.2	30	ABRD	0058	0112	-22.80
3	ABRD	0925	0936		30	NRL	0102	0112	-22.4
3	NRL	0928	0938	-29.5	30	ABRD	0243	0256	-22.80
3	ABRD	1110	1122		30	NRL	0249	0255	-22.0
3	NRL	1115	1125	-29.7	30	ABRD	0430	0437	-22.00
3	ABRD	1259	1308		30	NRL	2059	2114	-17.5
3	NRL	1259	1313	-30.2	30	BOUL	2240	2254	-17
3	BOUL	1436	1450	-30	30	NRL	2242	2259	-17.0
3	ABRD	1444	1453		30	ABRD	2246	2255	-17.60
3	NRL	1446	1458	-30.0					
3	BOUL	1624	1638	-31	31	ABRD	0027	0039	-17.00
3	ABRD	1630	1637		31	NRL	0030	0042	-17.0
3	NRL	1631	1635	-31.0	31	ABRD	0213	0224	-17.00
					31	NRL	0221	0229	-16.5
4	NRL	0858	0906	-36.2	31	NRL	2029	2043	-12.6
4	NRL	1045	1054	-36.2	31	BOUL	2210	2225	-12
4	NRL	1229	1242	-36.6	31	NRL	2212	2228	-12.3
4	NRL	1413	1426	-37.0	31	ABRD	2213	2227	-12.60
4	NRL	1600	1608	-37.5	31	BOUL	2354	0010	-12
					31	ABRD	2357	0009	-12.20
					31	NRL	2359	0012	-12.0



74  
Mar 67

COSMIC RAY INDICES  
(Neutron Monitors)

MARCH 1967

MAR. 1967	CHURCHILL	DEEP RIVER	CLIMAX	DALLAS
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	*	6772.5	4035.8	*
2		6742.0	4037.3	
3		6693.0	3996.7	
4		6660.4	3976.3	
5		6609.1	3965.8	
6		6622.9	3957.3	
7		6637.0	3961.8	
8		6654.2	3960.3	
9		6632.6	3955.6	
10		6605.0	3964.1	
11		6627.5	3965.5	
12		6660.5	3968.7	
13		6662.9	3982.6	
14		6680.5	3996.2	
15		6708.9	4002.3	
16		6759.5	3999.7	
17		6740.6	3977.6	
18		6730.8	3983.9	
19		6723.2	4026.7	
20		6717.1	4022.3 (32)	
21		6763.9	4068.1 (14)	
22		6785.9	4057.9	
23		6781.2	4046.3	
24		6796.4	4070.5	
25		6813.0	4087.7	
26		6814.0	4085.4	
27		6771.1	4069.6	
28		6712.7	4029.2	
29		6746.9	4039.8	
30		6743.8	4063.5	
31		6750.8	4073.5	

\* The data from Dallas and Churchill have not been processed.  
It will be published when it becomes available.

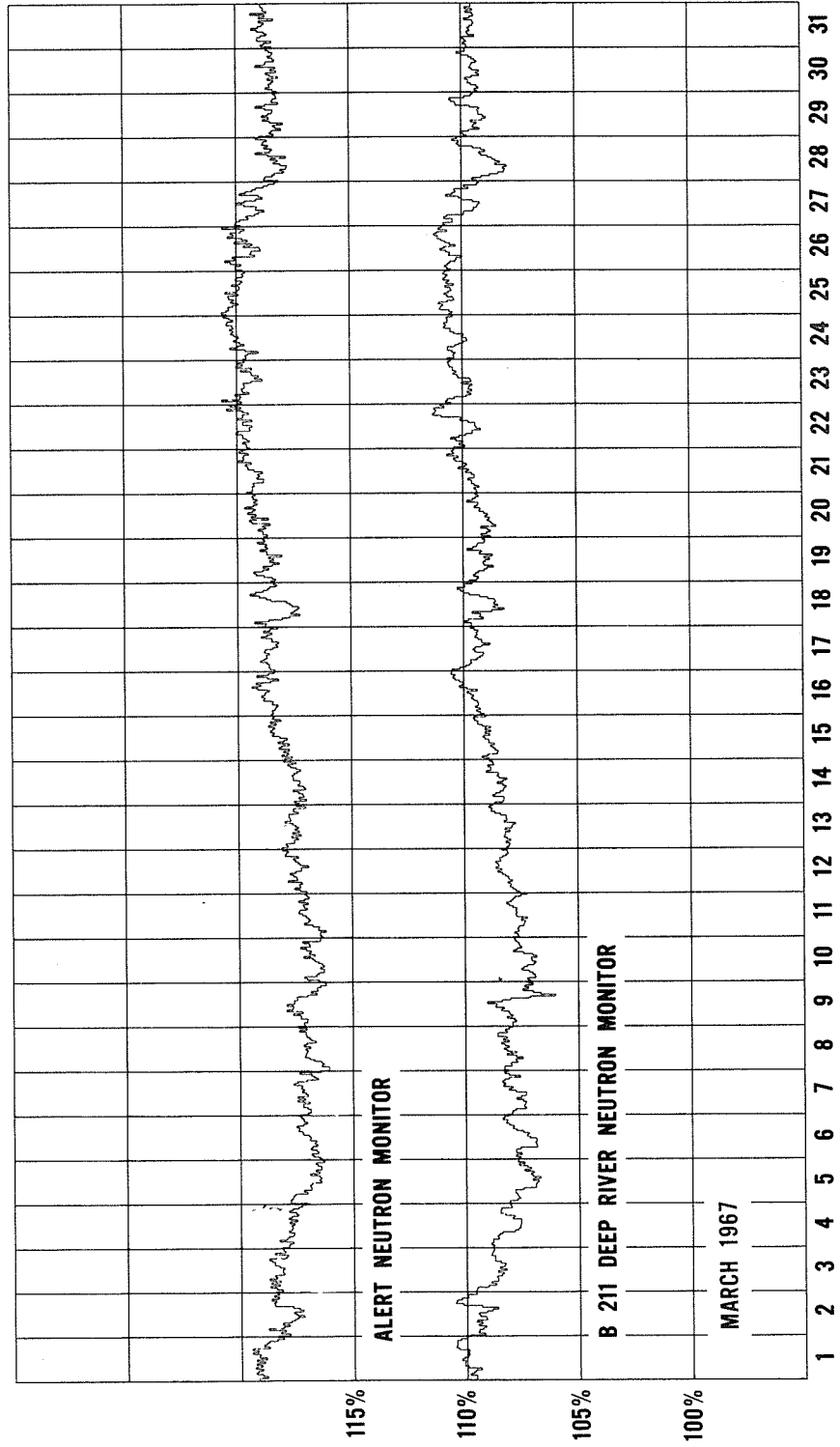
( ) Number of section hours for which data are available if less than 40.

Deep River Neutron Monitor, Scaling Factor 300.

Climax IGC Station B305, Scaling Factor 100.

**COSMIC RAY INDICES**  
(Pressure Corrected Hourly Totals)

MARCH 1967





GEOMAGNETIC ACTIVITY INDICES

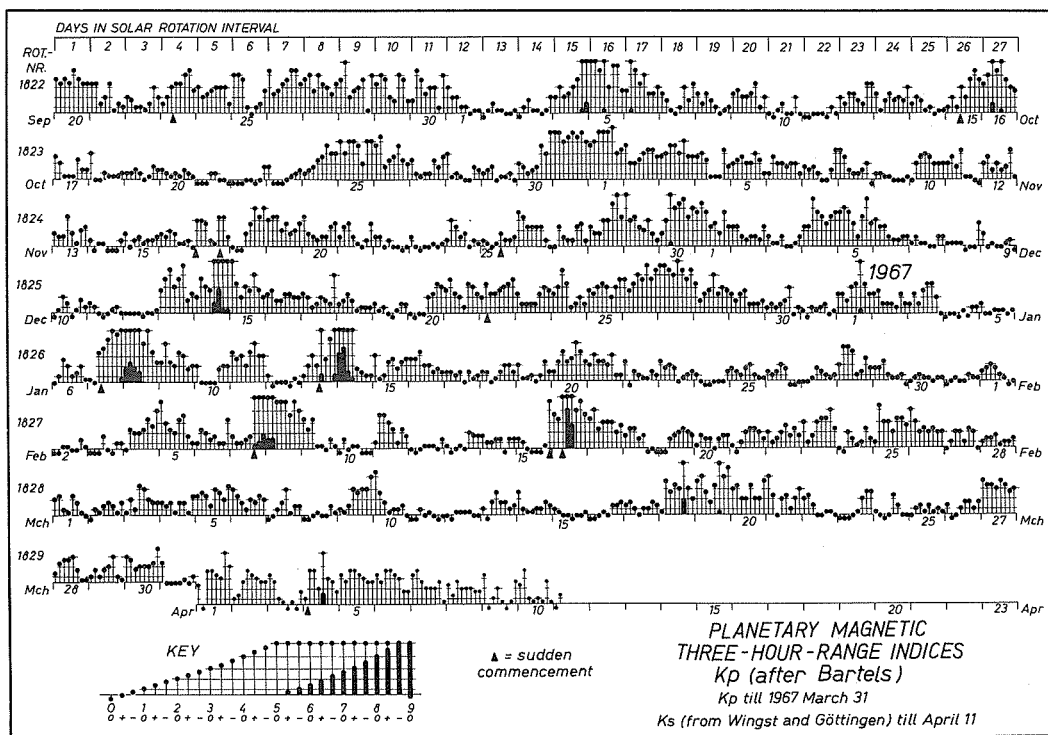
MARCH 1967

DAY	Kp								SUM	Ci	Cp	Ap	
	THREE-HOUR RANGE INDICES												
	1	2	3	4	5	6	7	8					
1		2	2+	1	1-	2+	2-	1-	0+	11	0.3	0.2	5
2	Q	0	1	1-	1+	2-	1+	1-	2-	8+	0.2	0.1	4
3		1-	2	1	3+	3	2	2-	2-	15+	0.5	0.4	8
4		2-	1+	2-	1-	2-	2-	1-	2+	12-	0.5	0.2	6
5		2+	3-	2+	1+	3	3-	2	3+	20-	0.8	0.6	11
6		3	2+	2-	1	2	2-	2+	2	16	0.4	0.4	8
7		0	0+	1	2-	3	1-	1+	1+	9+	0.3	0.2	5
8	QQ	0	0	0+	1-	0+	0+	1+	1-	4-	0.1	0.0	2
9	D	1	1-	1+	3	3-	3	3	4	19-	0.9	0.7	12
10		4+	3-	2-	1-	1	1	1+	0+	13	0.6	0.5	8
11	QQ	0	0	1	0+	1-	0+	0	0+	3-	0.0	0.0	2
12	QQ	0+	0	1-	1-	1-	1-	0+	0+	4-	0.1	0.0	2
13		1	0	2-	3-	2-	2-	1	1+	11	0.3	0.2	5
14		3-	1	1-	1-	1	1	2-	1+	10	0.3	0.2	5
15	QQ	1	1-	0+	0+	0	0+	0+	1-	4-	0.1	0.0	2
16	QQ	0	0	0+	1-	0+	1+	1+	2-	6-	0.2	0.1	3
17		1+	2-	1	0+	1	1	2-	1+	9+	0.2	0.2	4
18	D	1-	4-	3-	3+	3	6+	3	2	25-	1.0	1.1	23
19	D	4-	4	3-	2-	3+	5+	4	5-	29+	1.2	1.2	26
20	D	3	3+	2	2	3+	2	2	4-	21+	0.8	0.7	13
21		4	2+	0+	2	2+	1	2	3	17	0.6	0.6	10
22	Q	2	2+	1+	0+	0+	1-	1-	0+	8	0.1	0.1	4
23		0	0	0	0+	1-	2	3-	3-	8+	0.4	0.2	4
24	Q	1-	0+	0	0+	2+	1+	0+	0+	6-	0.2	0.1	3
25	Q	0+	1	1+	1-	1+	1-	1	1-	7	0.1	0.1	4
26		1+	0	0+	1	2-	2-	1	2-	9-	0.3	0.1	4
27	D	4-	3+	3+	3	4-	3+	3-	3	26	1.0	1.0	18
28		1+	2+	3-	3-	3	2-	1-	1-	15	0.5	0.4	8
29		1	2-	1	2-	2	3	1	1-	12	0.4	0.3	6
30		3	3-	2-	2	2	2	2+	4-	19+	0.7	0.6	11
31	Q	2+	0+	0+	0+	0+	1-	0+	1	9-	0.1	0.1	3
										MEAN	0.43	0.34	7

The Kp values given as integers represent the values normally given with a small zero following the number, i.e., 0=0o, 1=1o, etc., because the table is prepared by computer and lower case symbols are not available.

No preliminary storm sudden commencements (ssc) occurred in March 1967.

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1966					1967						
	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.
1	18	8	12	5	6	22	6	31	17	18	4	5
2	13	12	10	4	1	15	3	14	6	7	2	4
3	7	5	7	4	7	92	4	17	4	10	2	8
4	8	12	4	14	8	112	26	9	19	2	11	6
5	6	6	5	5	10	13	36	9	20	3	15	11
6	7	7	4	5	6	24	22	7	7	6	7	8
7	10	4	9	4	5	14	8	6	4	28	30	5
8	10	5	4	22	5	42	5	7	4	60	46	2
9	5	5	3	36	9	19	9	3	3	12	8	12
10	5	2	2	25	12	19	3	9	4	4	2	8
11	2	10	3	8	14	7	2	6	3	16	11	2
12	3	6	7	15	14	5	10	8	2	2	2	2
13	15	7	5	3	6	4	8	7	20	26	4	5
14	8	2	4	4	9	10	4	2	48	61	4	5
15	4	2	6	8	5	20	14	4	18	9	7	2
16	3	5	6	6	4	10	20	4	8	9	64	3
17	4	7	4	11	2	9	6	11	9	4	15	4
18	3	5	3	4	10	3	4	12	5	5	5	23
19	2	3	6	5	20	17	4	12	3	5	5	26
20	5	8	7	6	7	21	4	8	7	13	5	13
21	5	4	4	14	5	10	2	6	12	9	6	10
22	13	4	3	8	4	6	2	3	14	4	7	4
23	10	2	17	6	22	17	2	2	8	5	14	4
24	6	2	16	6	16	12	11	6	12	2	4	3
25	3	5	16	4	8	13	22	4	14	5	15	4
26	3	78	6	6	6	22	15	10	24	4	11	4
27	1	5	4	11	5	18	6	6	34	4	5	18
28	4	5	5	10	4	22	5	19	14	12	4	8
29	6	4	6	5	13	17	4	15	7	4	6	6
30	10	6	6	6	82	16	13	28	6	3	11	11
31		48		5	23		34		3	2		3
MEAN	7	9	6	9	11	21	10	9	11	11	11	7

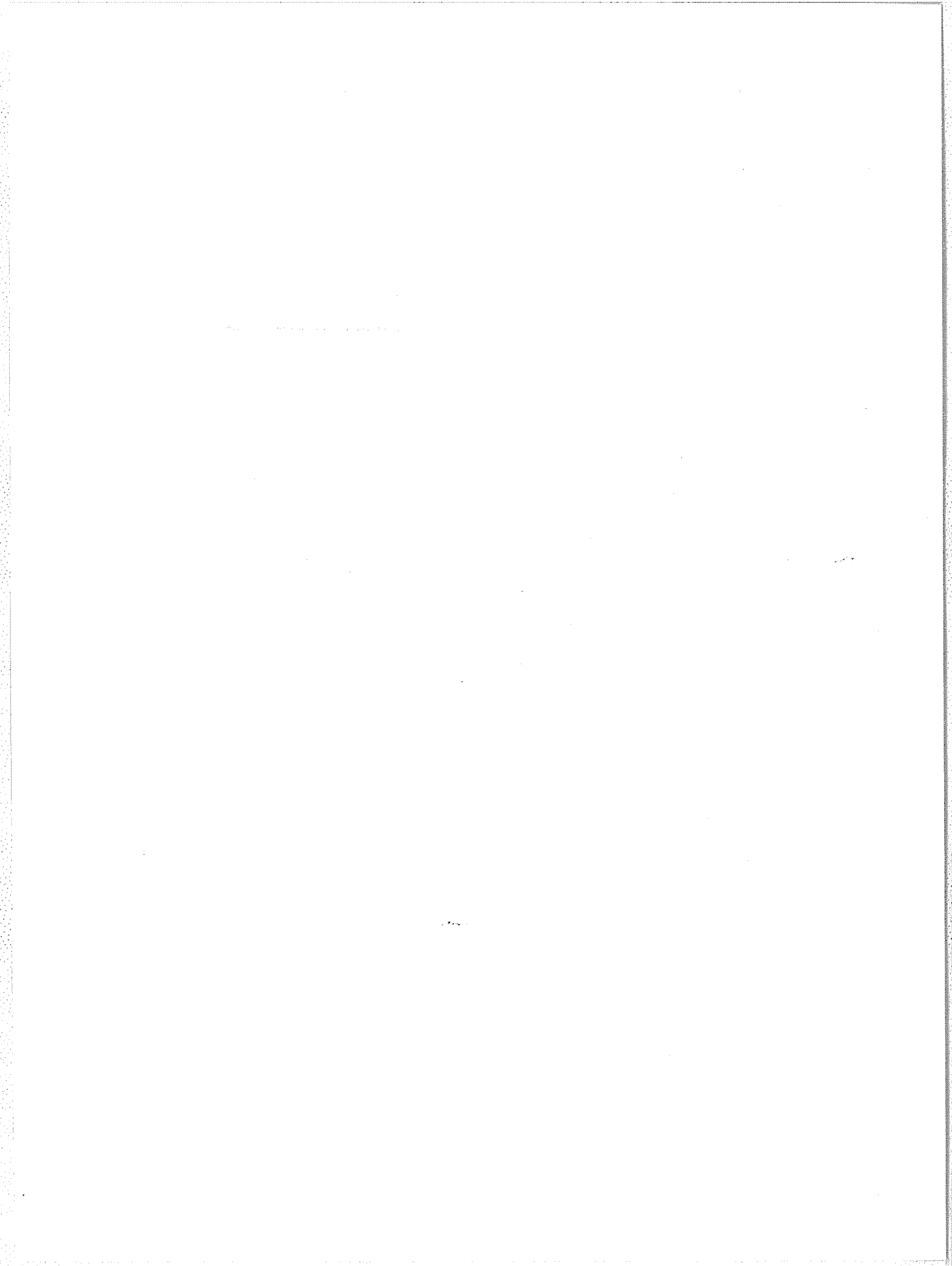
# PRINCIPAL MAGNETIC STORMS

MARCH 1967

DATE 1967 MO. DA.	STORM TIME		OBS	GEO- MAG. LAT.	SUDDEN COMMENCEMENT			C FIGURE DEGREE OF AC- TIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9		RANGES			STORM NUMBERS	
	UT START	UT END MO. DA. HR.			TYPE	D (°)	H (°)		Z (°)	MO. DA.	3-HOUR PERIOD	K INDEX	D (°)		H (°)
03 13	0834	03 13 20	HYDE	7.6N	SC	- 0.1	+ 4	- 0.4	M	-- --	--	2	74	8	12
03 18	03--	03 21 04	COLL	64.6N	..	..	..	..	MS	03 18	4	103	960	550	13
	10--	03 18 20	IRKU	40.8N	..	..	..	..	M	03 19	5	10	72	19	13
	0400	03 21 04	TUCS	40.4N	..	..	..	..	MS	03 18	4,5,6,7	10	90	5	13
	0345	03 19 01	HYDE	7.6N	..	..	..	..	M	03 19	8	4	106	22	13
03 19	13--	03 19 24	IRKU	40.8N	..	..	..	..	M	03 19	5,6,7,8	10	53	20	13
	0002	-- --	HYDE	7.6N	SI	- 0.4	-15	- 1	-	-- --	--	--	--	--	13
	0700	03 20 02	HYDE	7.6N	..	..	..	..	M	-- --	--	3	83	10	13
	1700	03 20 03	KGLN	57.3S	..	..	..	..	MS	03 19	8	--	--	--	13
03 26	1130	03 27 22	HYDE	7.6N	..	..	..	..	M	-- --	--	4	103	28	14
03 27	08--	03 28 18	COLL	64.6N	..	..	..	..	M	03 27	5,6	90	720	410	14
										03 28	3,4				14
03 30	0140	03 31 01	HYDE	7.6N	..	..	..	..	M	-- --	--	4	88	29	15
	0852	-- --	HYDE	7.6N	SI	- 0.4	+10	- 3	-	-- --	--	--	--	--	15

The following observatories reported that no principal magnetic storms were observed during March 1967:

Alibag	Fredricksburg	Honolulu	San Juan
Amberley	Gnangara	Huancayo	Sitka
Annamalainagar	Guam	M'Hour	Toolangi
Apia	Hermanus	Port Moresby	Trivandrum



RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

MARCH 1967

NORTH ATLANTIC, NORTH PACIFIC

MARCH 1967	WHOLE DAY INDICES			ADVANCE FORECASTS (Jc- REPORTS) FOR WHOLE DAY	NORTH ATLANTIC				NORTH PACIFIC				GEOMAGNETIC INDICES													
	NORTH ATLANTIC	NORTH PACIFIC	AVERAGE HIGH LATITUDE		6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:				6-HOURLY QUALITY FIGURES		K <sub>FR</sub>		A <sub>FR</sub>		K <sub>SI</sub>		A <sub>SI</sub>					
					00 TO 06	06 TO 12	12 TO 18	18 TO 24	00	06	12	18	00	06	12	18	TO	TO	TO	TO	HALF DAY (1)	HALF DAY (2)	OB- SERVED	PRE- DICTED	HALF DAY (1)	HALF DAY (2)
					06	12	18	24	00	06	12	18	06	12	18	24	(1)	(2)								
01	7-	6+	6	7	7-	7-	7-	7-	6	6	6	5	6	7	6	6	1	2	7	3	0	1	3			
02	7-	6o	6	4	7-	7-	7-	7o	5	5	7	7	6	6	6	6	1	1	3	<u>65</u>	1	1	4			
03	7-	6o	6	5	7-	6+	7-	7-	7	6	7	7	6	6	6	6	1	2	6	20	1	2	8			
04	7-	6o	6	6	7-	6+	7o	7o	7	6	7	7	6	6	6	6	1	1	4	<u>10</u>	0	1	3			
05	7-	6+	6	6	7-	6+	7o	7o	7	6	7	7	6	7	6	6	2	2	10	7	1	2	8			
06	7o	6o	7	6	7o	7-	7-	7o	7	6	7	7	6	6	6	6	2	2	7	7	1	2	5			
07	7-	6+	6	6	7-	7-	7o	7o	7	6	7	7	6	6	7	6	1	1	4	5	0	2	4			
08	7o	6o	7	7	7-	7-	7o	7o	7	7	7	7	6	6	6	6	0	1	2	5	0	1	1			
09	7-	6o	6	7	7-	6+	7o	7o	7	7	7	7	6	6	6	6	1	3	9	<u>3</u>	1	2	7			
10	7-	6o	6	7	7-	7-	7-	7o	7	6	7	7	5	6	6	6	2	1	5	7	2	0	3			
11	7-	6-	6	7	7-	7-	7-	7o	7	7	7	7	6	6	6	5	0	1	1	7	0	0	0			
12	7-	6o	6	7	7-	7-	7-	7o	7	7	7	7	6	6	6	6	1	1	2	4	0	0	0			
13	7-	6o	6	7	7-	7-	7-	7o	7	7	7	7	6	6	6	6	1	1	4	4	1	1	5			
14	7-	6o	6	7	7o	7-	7-	7-	7	7	7	7	6	6	6	6	1	1	3	7	1	0	2			
15	7o	6o	7	6	7o	7-	7-	7o	7	7	7	7	6	6	6	6	1	1	2	9	0	0	0			
16	7-	6o	6	7	7o	7-	7o	7o	7	7	7	7	6	6	6	6	0	1	2	<u>7</u>	0	1	2			
17	7-	6o	6	7	7-	7-	7-	7+	7	7	7	7	6	6	6	6	2	2	5	<u>5</u>	0	1	3			
18	7-	6o	6	7	7-	7-	7-	7o	7	6	7	7	6	6	6	6	3	2	11	3	2	3	16			
19	7-	6-	6	7	7-	7-	7-	6+	7	6	7	7	6	6	6	5	3	3	18	3	3	(4)	24			
20	6+	6o	6	7	6+	6+	7-	7-	6	6	7	7	6	6	6	6	3	3	11	6	2	2	9			
21	7-	6o	6	7	6+	6o	7-	7-	7	6	7	7	6	6	6	6	2	2	8	9	2	2	7			
22	7-	6+	6	6	7-	6+	7-	7-	6	6	7	7	6	7	6	6	2	1	4	12	1	0	3			
23	7-	6+	6	5	7-	7-	7-	7-	7	6	7	7	6	7	6	6	0	2	4	<u>48</u>	0	1	2			
24	7-	6o	6	5	7-	7-	7-	7o	7	6	7	7	6	6	6	6	0	1	2	<u>30</u>	0	0	1			
25	7o	6+	7	6	7-	7-	7o	7o	7	7	7	7	6	7	7	6	1	1	2	15	1	0	2			
26	7-	7o	7	6	7-	7-	7-	7-	7	7	7	7	6	7	7	6	0	2	3	7	0	1	2			
27	7-	6o	6	7	7-	7-	7-	7-	7	6	7	7	6	6	6	6	3	3	13	5	2	2	10			
28	7-	6-	6	7	7-	7-	7-	7-	6	7	7	7	6	6	5	6	2	1	7	5	3	1	14			
29	7-	6+	6	7	7-	7-	7o	7o	7	7	7	7	6	6	7	6	2	2	6	5	1	2	5			
30	7-	6o	6	7	7o	7-	7-	7o	7	7	7	7	6	6	6	6	2	2	10	<u>5</u>	2	2	6			
31	7-	6o	6	7	7-	7-	7-	7-	7	7	7	7	6	6	6	6	1	1	2	5	0	0	1			
QUIET				P S U F	5 25 0 1					26	20	30	29													
DISTURBED				P S U F	0 0 0 0					0	0	0	0													
										4	10	1	1													
										1	1	0	1													
										0	0	0	0													
										0	0	0	0													
										0	0	0	0													

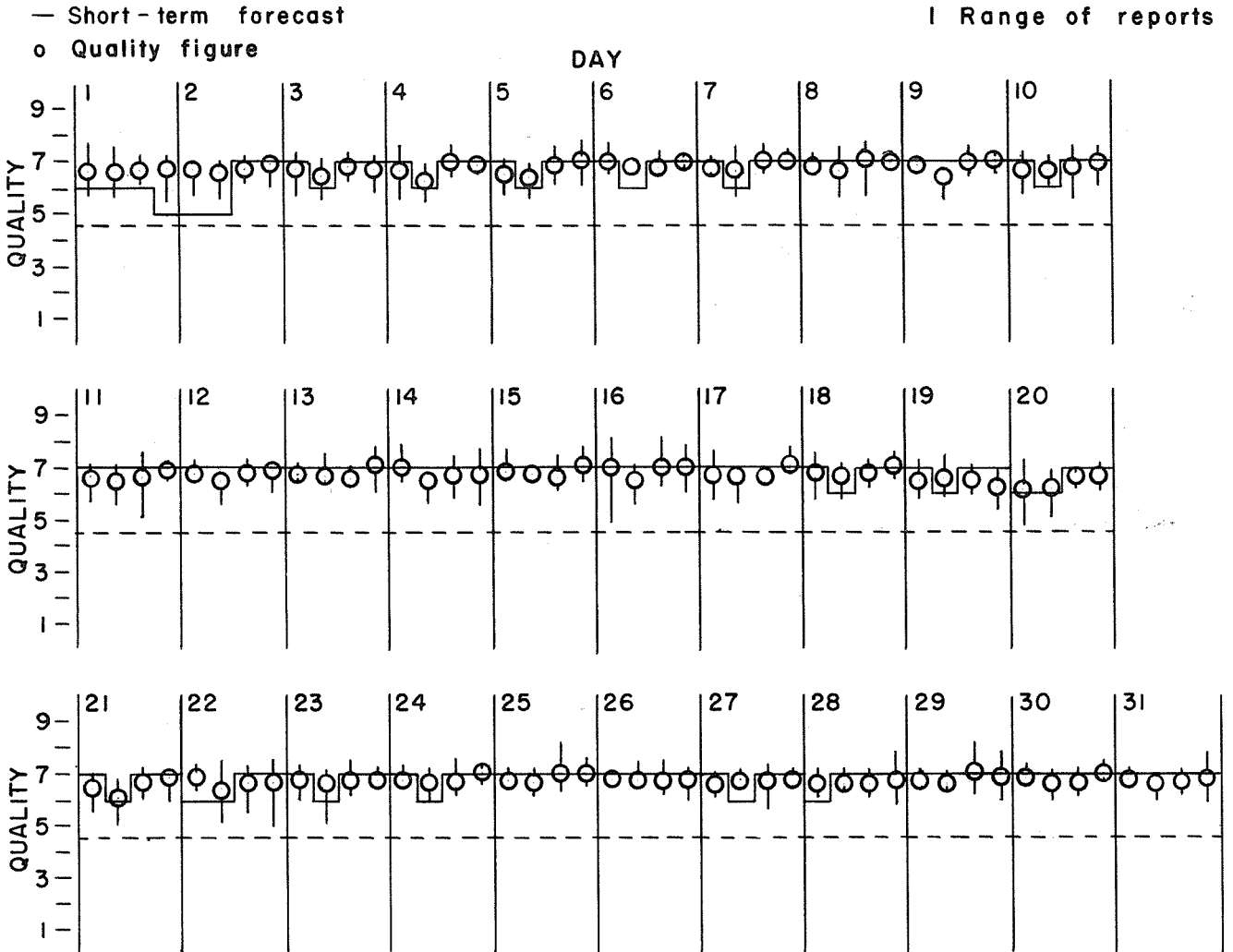
1) THE ADVANCE JC-FORECASTS ARE SCORED AGAINST THE AVERAGE HIGH LATITUDE WHOLE-DAY INDICES

2) THE PREDICTED AFR INDICES ARE ISSUED EACH WEDNESDAY FOR THE COMING SEVEN DAYS. THE VALUE FOR THE FIRST DAY OF EACH PREDICTION PERIOD IS UNDERScoreD.

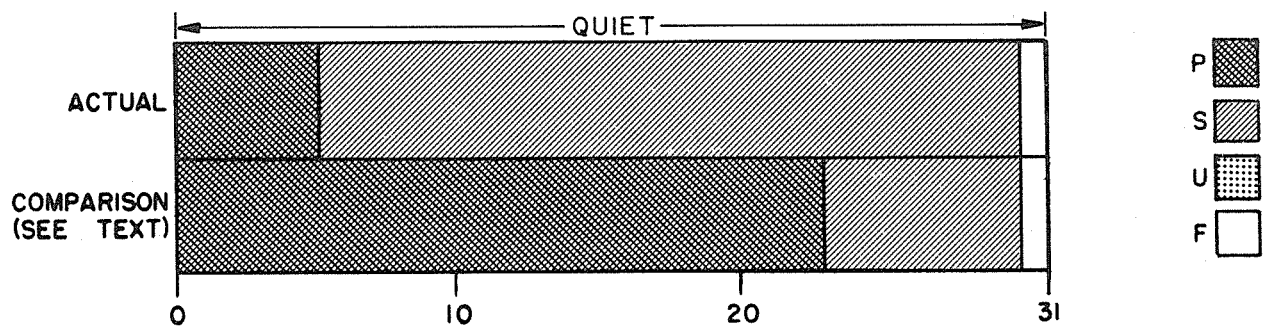
# RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

MARCH 1967

NORTH ATLANTIC

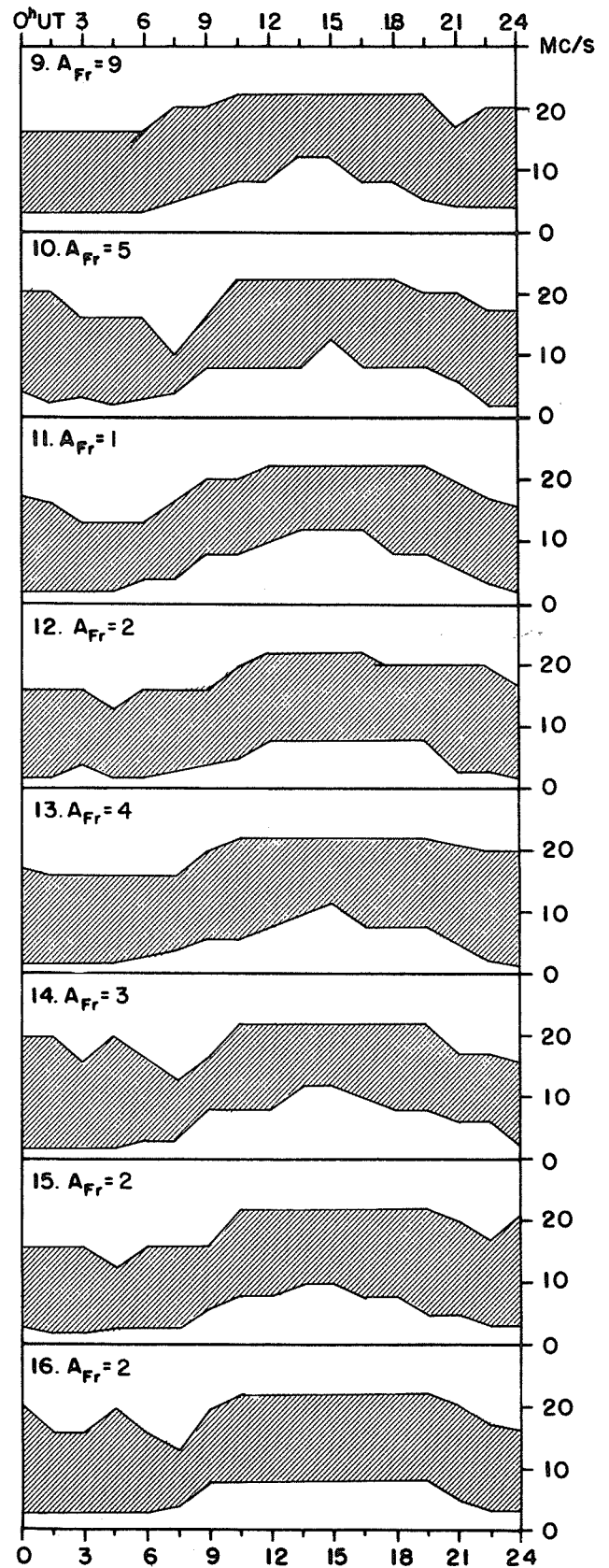
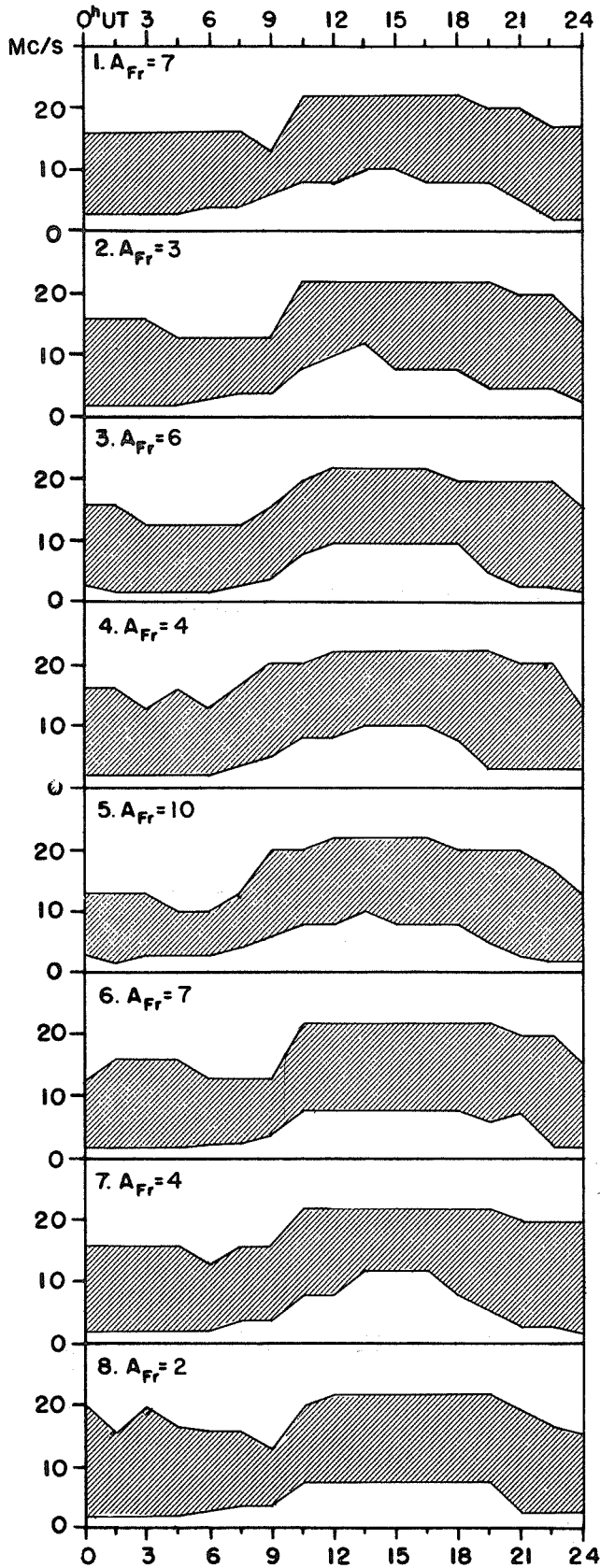


HIGH LATITUDE



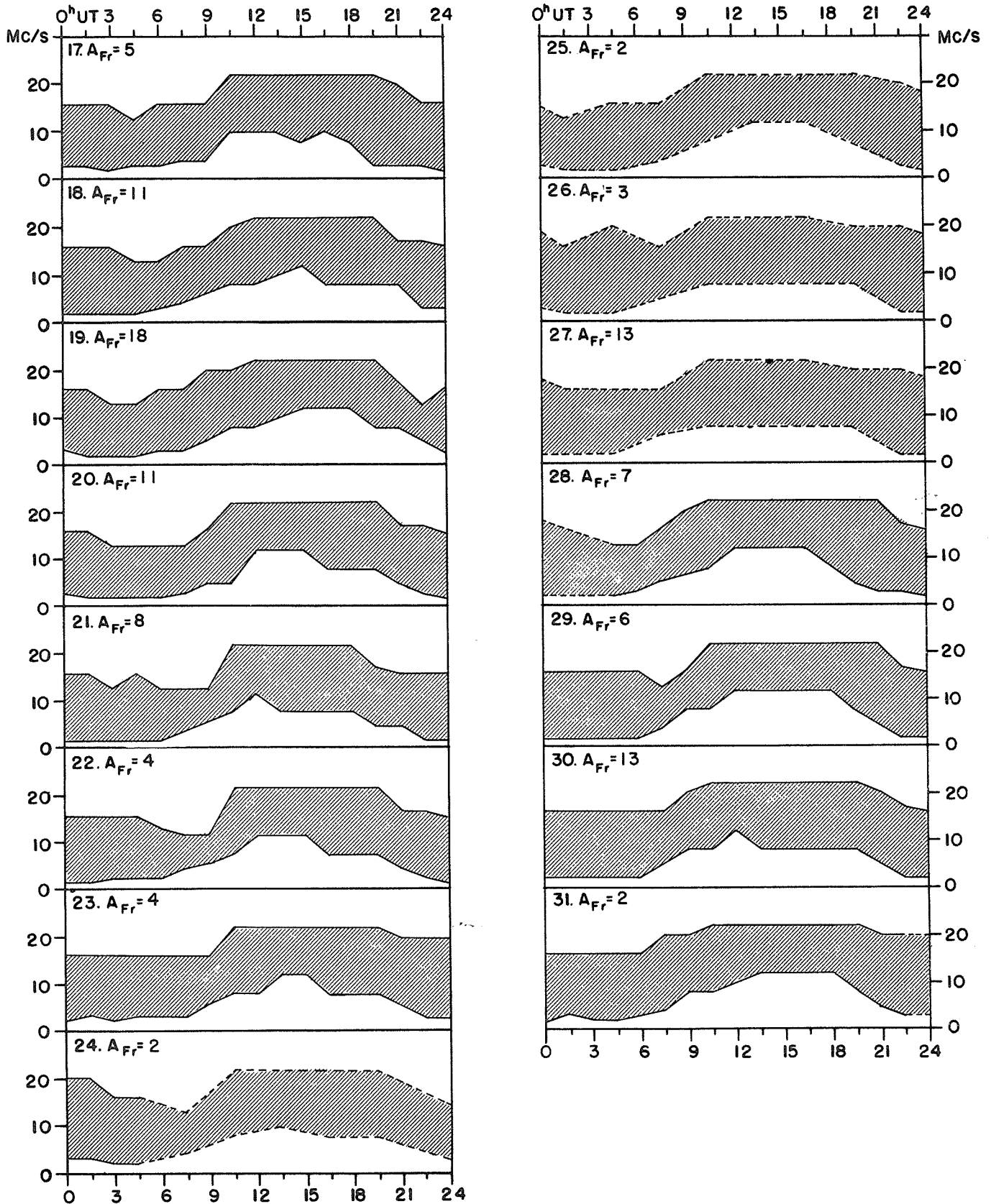
TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

MARCH 1967



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

MARCH 1967





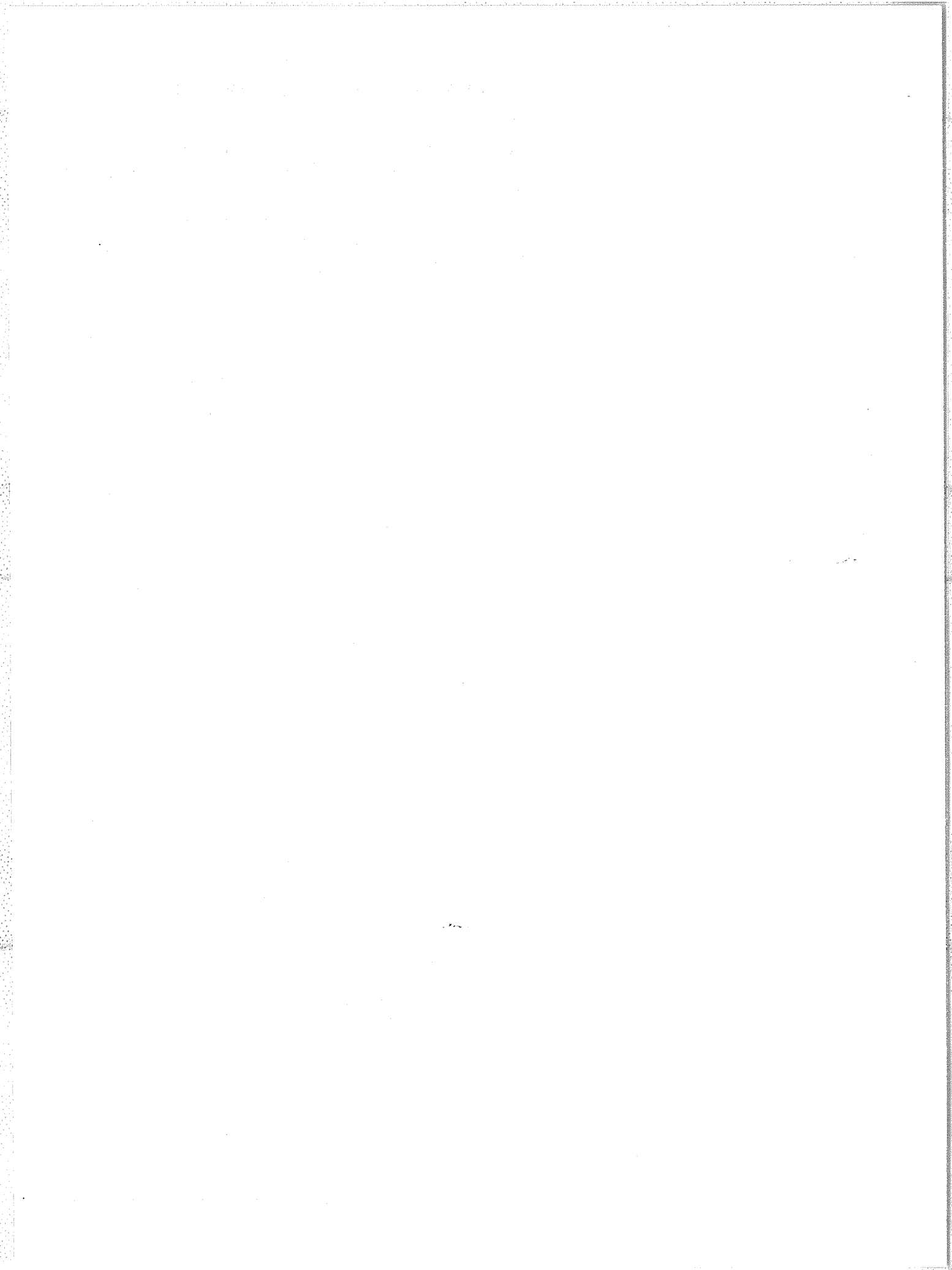
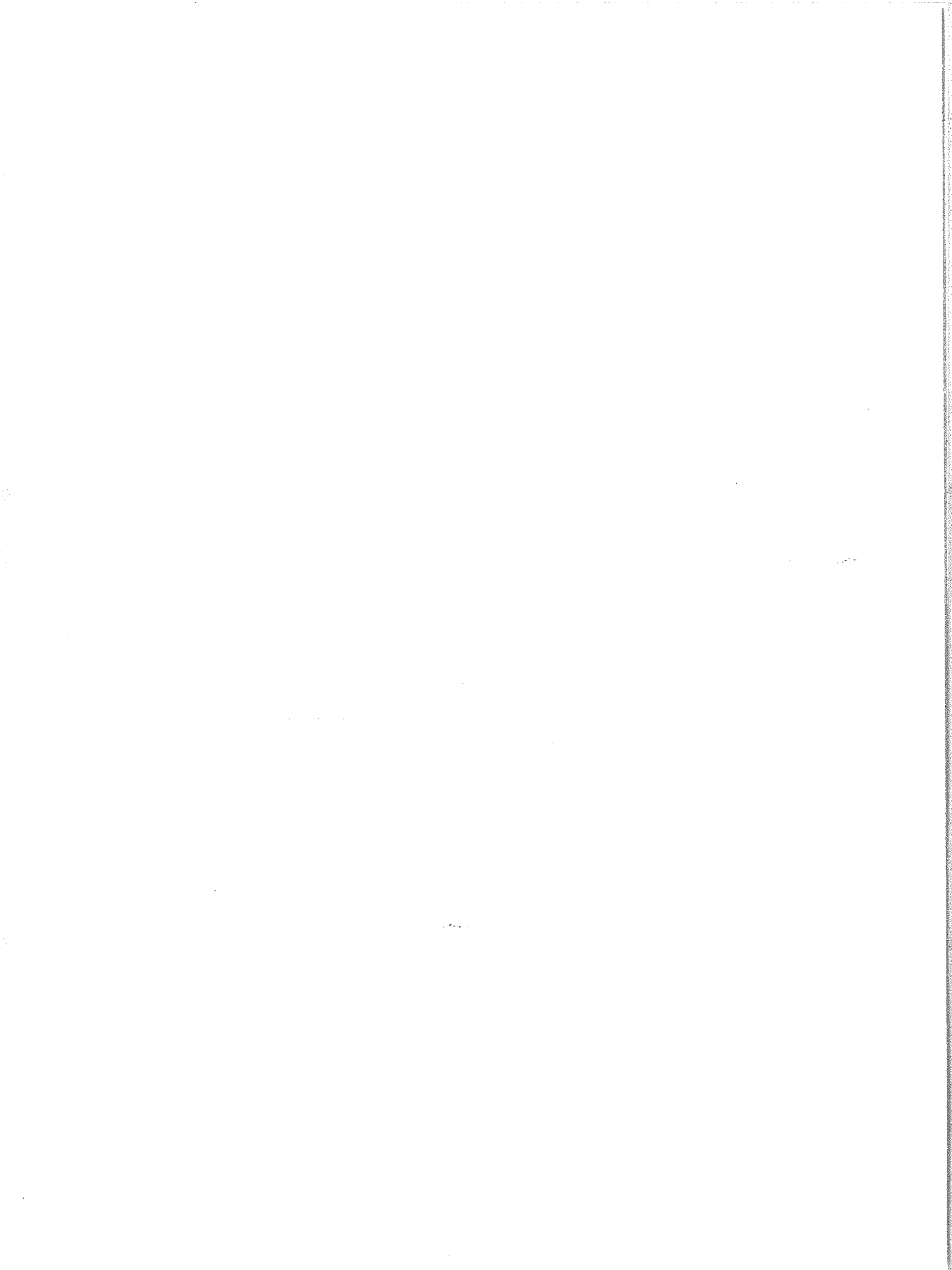


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For explanations of the data contained herein see "Descriptive Text" published in February 1967.



SOLAR FLARES  
REVISED  
NOVEMBER 1966

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IM-POR-TANCE	OBS. COND. TYPE	MEASUREMENTS				REMARKS	
	DATE	START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MC MATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H $\alpha$		MAX. INT. %
GRP 1382	01	0218	0224		N22	W34	.606	8566	29.5	6	1-						1 1 1	
MANI	01	0218E	0224		N22	W34	.606	8566	29.5	6D	-N	2	0218	.23	.33		1 1 0	
GRP 1383	01	1053	1118		N20	W15	.364	8567	31.3	25	1+						1 1 0	
NERA	01	1053E	1118		N20	W15	.364	8567	31.3	25D	2N	2					1 1 1	
GRP 1384	01	1120	1130	1121	N21	W19	.420	8567	31.0	10	1-		1121	1.78	1.74	170	1 1 1	
CATA	01	1120E	1130D	1121	N21	W19	.420	8567	31.0	10D	-N						1 1 1	
	01	1130	1150		NO FLARE PATROL													
	01	1155	1230		NO FLARE PATROL													
	01	1315	1420		NO FLARE PATROL													
	01	1500	1520		NO FLARE PATROL													
GRP 1385	01	1630	1647	1637	N37	W32	.692	8560	30.3	17	1-			.19			2 2 2	
LOCK	01	1630	1648	1636	N36	W33	.692	8560	30.2	18	-F	C	1636	.20	.30	10	H	
HALE	01	1632E	1645	1638	N38	W31	.693	8560	30.4	13D	-N	3	1638	.15	.20		2 1 1	
GRP 1386	01	1703	1943	1723	N22	W53	.811	8566	28.7	160	1-			.43			K	
HALE	01	1703	1943	1723	N21	W52	.800	8566	28.8	160	-B	1	1723	.36	.60		D	
HUAN	01	1830E	1835D		N22	W53	.811	8566	28.8	5D	-N	1	1830	.41	.56		1 1 1	
GRP 1387	01	1708	1727	1713	N04	W28	.468	8567	30.6	19	1-			.25			G	
HALE	01	1708	1727	1713	N04	W28	.468	8567	30.6	19	-N	2	1713	.21	.23		1 1 1	
GRP 1388	01	1733	1741		N28	W85	.994	8555	26.4	8	1			.17			D	
HUAN	01	1733	1741		N28	W85	.994	8555	26.4	8	-F	1	1735	.25			1 1 1	
GRP 1389	01	1741	1812	1745	N37	W33	.700	8560	30.3	31	1-			.31			H	
HALE	01	1741	1812	1745	N37	W33	.700	8560	30.3	31	-N	2	1745	.26	.40		2 2 2	
GRP 1390	01	1938	2004	1947	N37	W34	.708	8560	30.3	26	1-			.33			H	
HALE	01	1935	2008	1949	N37	W34	.708	8560	30.3	33	-F	1	1949	.31	.40	10	1 1 1	
LOCK	01	1940	2000	1945	N36	W33	.692	8560	30.3	20	-N	C	1945	.30	.40		1 1 1	
GRP 1391	01	2008	2026	2012	N12	E59	.855	8571	6.3	18	1-			.18			F	
HALE	01	2008E	2026	2012	N12	E59	.855	8571	6.3	18D	-F	1	2012	.15	.30		1 1 1	
GRP 1392	01	2010	2056	2034	N36	W33	.692	8560	30.4	46	1-			.55			1 1 1	
HALE	01	2010	2056	2034	N36	W33	.692	8560	30.4	46	-N	1	2034	.46	.60		1 1 1	
GRP 1393	01	2151	2201	2158	N22	W56	.838	8566	28.7	10	1-			.25			2 2 2	
HALE	01	2151	2201	2158	N22	W56	.838	8566	28.7	10	-N	1	2158	.21	.40		1 1 1	
GRP 1394	01	2209	2224	2216	N36	W34	.700	8560	30.4	15	1-			.36			2 2 2	
HALE	01	2206	2223	2216	N35	W35	.701	8560	30.3	17	-N	1	2216	.26	.40		1 1 1	
LOCK	01	2211	2225	2216	N36	W33	.692	8560	30.4	14	-N	C	2216	.40	.60	10	L	
GRP 1395	02	0002	0031	0008	N21	W55	.828	8566	28.9	29	1-			.37			1 1 1	
HALE	02	0002U	0031	0008	N21	W55	.828	8566	28.9	29U	-F	1	0008	.31	.60		1 1 1	
GRP 1396	02	0207	0209	0208	N21	W59	.862	8566	28.7	2	1-			.17			1 1 1	
MANI	02	0207E	0209D	0208	N21	W59	.862	8566	28.7	2D	-N	2	0208	.21	.38		1 1 1	
GRP 1397	02	0250	0310	0253	N17	W46	.729	8566	29.7	20	1-			.49			1 1 1	
HALE	02	0250	0310	0253	N17	W46	.729	8566	29.7	20	-N	1	0253	.41	.60		T	
GRP 1398	02	0315	0339	0319	N17	W45	.718	8566	29.8	24	1-			.37			1 1 1	
HALE	02	0315	0339	0319	N17	W45	.718	8566	29.8	24	-F	1	0319	.31	.40		T	
GRP 1399	02	0550	0622	0614	N19	W31	.554	8567	30.9	32	1-			.19			1 1 1	
CULG	02	0550E	0622	0614	N19	W31	.554	8567	30.9	32D	-N	P	0614	.21	.24		L	
GRP 1400	02	0835	0835		N38	W38	.747	8560	30.5		1-			.65			1 1 1	
MONT	02	0835E	0835D		N38	W38	.747	8560	30.5		-N			.65	.80		1 1 0	
GRP 1401	02	0900	0913		N23	W59	.865	8566	29.0	13	1-						1 1 0	
KAND	02	0900E	0913D		N23	W59	.865	8566	28.9	13D	-F	C					3 1 1	
GRP 1402	02	0950	1013	0957	N22	W60	.872	8566	28.9	23	1			1.17			3 1 1	
ATHN	02	0950	1007	0953	N23	W59	.865	8566	29.0	17	1B	1	0953	1.16	2.20	2.00	200	
MONT	02	0958E	0958D		N22	W61	.879	8566	28.8		-N			.78	1.20		200	
CATA	02	0958E	1018D	1000	N22	W60	.872	8566	28.9	20D	-B			.21	.43		3 2 2	
GRP 1403	02	1004	1042	1020	N18	E39	.650	8568	5.3	38	1			.67			3 2 2	
MONT	02	1004	1040	1020	N20	E37	.633	8568	5.2	36	1B			1.08	1.20		160	
CATA	02	1018E	1038D	1020	N19	E39	.653	8568	5.4	20D	-N			.25	.32		1.40	
ATHN	02	1021E	1043	1021	N16	E42	.680	8568	5.6	22D	-N	1	1021	.83	1.20		2 2 2	
GRP 1404	02	1014	1035	1020	N22	W30	.560	8567	31.2	21	1			1.65			2 2 2	
MONT	02	1014	1020D	1020	N21	W32	.578	8567	31.0	6D	1B			3.07	3.30		180	
CATA	02	1019E	1035D	1020	N23	W28	.543	8567	31.3	16D	-N			.23	.27		1 1 1	
GRP 1405	02	1140	1144	1142	N23	W68	.928	8566	28.4	4	1-			.72			D	
UCCL	02	1140	1144	1142	N23	W68	.928	8566	28.4	4	1N	C	1142	1.03			3 3 3	
	02	1555	1605		NO FLARE PATROL													
GRP 1406	02	1706	1800	1724	N21	W35	.614	8567	31.1	54	1-			1.17			3 3 3	
HALE	02	1702	1755	1711	N21	W35	.614	8567	31.1	53	-N	1	1711	.62	.80		TE	
LOCK	02	1707	1755	1723	N22	W35	.619	8567	31.1	48	-N	C	1723	.90	1.20	20	3 3 3	
SACP	02	1708	1810	1724	N21	W34	.602	8567	31.2	62	1N	C		2.02	2.20		3 3 3	
GRP 1407	02	1936	2018	1942	N26	E43	.725	8568	6.0	42	1-			.76			3 3 3	
HALE	02	1935	2010	1941	N26	E42	.715	8568	6.0	35	-N	1	1941	.83	1.20		TE	
LOCK	02	1936	2010	1943	N25	E44	.732	8568	6.1	34	-N	C	1943	.80	1.20	20	3 3 3	
CULG	02	1940E	2035	1942	N26	E44	.735	8568	6.1	55D	-N	P	1942	.52	.75		L	
GRP 1408	03	0125	0150	0132	N26	E43	.726	8568	6.3	25	1-			.19			1 1 1	
CULG	03	0125	0150	0132	N26	E43	.726	8568	6.3	25	-N	C	0132	.21	.28		L	
GRP 1409	03	0304	0324	0309	N21	W79	.979	8566	28.2	20	1-			.19			1 1 1	
CULG	03	0304	0324	0309	N21	W79	.979	8566	28.2	20	-N	C	0309	.21			1 1 1	













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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS. COND. TYPE	MEASUREMENTS				REMARKS
	DATE 1966 NOV	START	END	MAX. PHASE	APPROX. LAT. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	TIME UT				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH "arc	MAX. INT. %	
GRP 1539	13	1343	1401	1345	N09 W03	.115	8573	13.3	18	1-			1.35				4 3 3
ATHN	13	1342E	1359	1342	N08 W03	.100	8573	13.3	17D	-B	1	1342	1.65	1.60	2.00		
SACP	13	1343	1401	1347	N09 W04	.124	8573	13.3	18	-F			1.84	1.80			
HUAN	13	1344	1401	1347	N09 W03	.115	8573	13.3	17	-F	2	C 1347	.36	.36			E
MCMA	13	1353E	1403		N09 W03	.115	8573	13.4	10D	-N		C 1353	.26	.30			D
GRP 1540	13	1424	1433	1429	N08 W10	.192	8573	12.9	9	1-			.68				1 1 1
SACP	13	1424	1433	1429	N08 W10	.192	8573	12.8	9	-F		C	.75	.73			
GRP 1541	13	1618	1625	1621	N31 E32	.657	8573	16.1	7	1-			.29				1 1 1
LOCK	13	1618	1625	1621	N31 E32	.657	8573	16.1	7	-F		C 1621	.30	.40			10
GRP 1542	13	1735	1739	1736	N15 W05	.223	8573	13.4	4	1-			.18				1 1 1
HALE	13	1735	1739	1736	N15 W05	.223	8573	13.4	4	-N	2	C 1736	.15	.20			
GRP 1543	13	1857	1906	1900	N14 W08	.233	8573	13.2	9	1-			.92				3 3 3
SACP	13	1857	1905	1900	N14 W08	.233	8573	13.2	8	-F		C	1.32	1.29			
LOCK	13	1857	1909	1859	N14 W09	.243	8573	13.1	12	-N		C 1859	.70	.70			20
HALE	13	1858	1903	1900	N15 W08	.247	8573	13.2	5	-N	2	C 1900	.72	.73			E
GRP 1544	13	1909	1926	1911	N11 W07	.183	8573	13.3	17	1-			.38				2 2 2
LOCK	13	1908	1922	1911	N10 W08	.183	8573	13.2	14	-N		C 1911	.50	.50			10
HALE	13	1909	1929	1911	N11 W05	.162	8573	13.4	20	-N	2	C 1911	.21	.22			
GRP 1545	13	2033	2043	2036	N25 W51	.806	8572	10.0	10	1-			.19				1 1 1
CULG	13	2033	2043	2036	N25 W51	.806	8572	10.0	10	-N		C 2036	.21	.32			
GRP 1546	13	2055	2117	2100	N22 W50	.788	8572	10.1	22	1-			.44				3 3 3
HALE	13	2054	2116	2059	N23 W50	.791	8572	10.1	22	-B	1	C 2059	.46	.80			E
LOCK	13	2055	2100D	2059	N19 W50	.781	8572	10.1	5D	-F		C 2100	.50	.80			10
CULG	13	2056	2118	2100	N23 W51	.800	8572	10.0	22	-N		C 2100	.31	.48			
GRP 1547	13	2103	2132	2109	N10 W12	.238	8573	13.0	29	1-			.64				3 3 3
CULG	13	2056	2128	2108	N11 W12	.247	8573	13.0	32	-N		C 2108	.52	.52			F
LOCK	13	2106	2127	2109	N09 W12	.230	8573	13.0	21	-N		C 2109	.80	.80			20
HALE	13	2107	2140U	2109	N10 W13	.253	8573	12.9	33U	-B	2	P 2109	.52	.53			
GRP 1548	13	2138	2145	2140	N25 E69	.938	8575	19.1	7	1-			.49				1 1 1
HALE	13	2138	2145	2140	N25 E69	.938	8575	19.1	7	-F	2	C 2140	.41				
GRP 1549	14	0037	0052	0038	N23 W52	.810	8572	10.1	15	1-			.39				2 2 2
CULG	14	0036	0053	0038	N23 W52	.810	8572	10.1	17	-N		C 0038	.31	.51			
HALE	14	0037	0050	0037	N23 W52	.810	8572	10.1	13	-N	2	C 0037	.41	.70			E
GRP 1550	14	0047	0058	0050	N25 E68	.933	8578	19.1	11	1-			.27				2 2 2
HALE	14	0047	0055	0049	N24 E66	.920	8578	19.0	8	-F	2	C 0049	.21				
CULG	14	0047	0101	0050	N25 E70	.943	8578	19.3	14	-N		C 0050	.31				
GRP 1551	14	0550	0601	0552	N23 E80	.984	8578	20.2	11	1-			.57				1 1 1
ATHN	14	0550E	0601	0552	N23 E80	.984	8578	20.2	11D	-F	1	0552	.50		1.30		
GRP 1552	14	0556	0624	0602	N18 W13	.337	8573	13.3	28	1-			1.19				3 3 3
CULG	14	0551	0630D	0600	N19 W13	.349	8573	13.3	39D	-N		P 0600	.62	.63			
ATHN	14	0559E	0627	0603	N16 W16	.349	8573	13.0	28D	1N	1	0603	1.98	2.10	1.80		
MANI	14	0600	0615	0604	N18 W11	.317	8573	13.4	15	-F	2	0604	.67	.70			
GRP 1553	14	0724	0734	0725	N14 W08	.234	8573	13.7	10	1-			.74				1 1 1
ATHN	14	0724E	0734	0725	N14 W08	.234	8573	13.7	10D	-N	2	0725	.66	.70	1.70		
GRP 1554	14	0727	0735	0729	N14 W52	.793	8572	10.4	8	1-			.50				1 1 1
ATHN	14	0727	0735	0729	N14 W52	.793	8572	10.4	8	-N	2	0729	.50	.80	1.40		
GRP 1555	14	0932	0957	0933	N16 W12	.302	8573	13.5	25	1-			.93				2 1 1
ATHN	14	0932E	0958	0933	N16 W10	.281	8573	13.6	26D	-N	2	0933	.83	.90	1.40		
CAPS	14	0951E	0956		N16 W14	.325	8573	13.4	5D	-F	1						
GRP 1556	14	0940	0952	0941	N22 E80	.984	8578	20.4	12	1-			.57				1 1 1
ATHN	14	0940	0952	0941	N22 E80	.984	8578	20.4	12	-N	2	0941	.50		1.60		
GRP 1557	14	1002	1012	1004	N09 W13	.246	8573	13.4	10	1-			.94				1 1 1
ATHN	14	1002	1012	1004	N09 W13	.246	8573	13.4	10	-N	2	1004	.83	.80	1.40		
GRP 1558	14	1215	1341	1227	N22 E74	.962	8578	20.1	86	2-			2.82				7 3 2
ATHN	14	1215	1327	1227	N25 E70	.943	8578	19.8	72	2B	2	1227	2.64		2.00		
ONDR	14	1224E	1335		N20 E78	.977	8578	20.4	71D	1N		V 1228			3.30		ADEG
CAPS	14	1225E	1317D		N25 E72	.953	8578	19.9	52D	2N	1	1228	3.00				
WEND	14	1238E	1352		N18 E74	.961	8578	20.1	74D	1N			5.16				
CAPP	14	1243E	1330D		N20 E75	.965	8578	20.2	47D	3N		P 1246	5.88				
HUAN	14	1253E	1300D		N21 E76	.970	8578	20.2	70	1F	1	P 1254	1.75				E
MCMA	14	1312E	1350		N22 E76	.970	8578	20.3	38D	1B		P 1319	.72	2.00			BE
GRP 1559	14	1946	2005	1953	N23 E75	.966	8578	20.4	19	1-			.28				1 1 1
CULG	14	1946	2005D	1953	N23 E75	.966	8578	20.4	19D	-N		P 1953	.31				
GRP 1560	14	2038	2155	2054	N22 W11	.371	8573	14.0	77	1-			2.58				3 3 3
SACP	14	2036U	2210U	2054	N21 W12	.366	8573	14.0	94U	-N		C	4.17	4.15			
CULG	14	2039	2209D	2055	N23 W12	.393	8573	14.0	90D	-N		C 2055	1.86	1.89			LF
HUAN	14	2040	2140	2054	N22 W10	.364	8573	14.1	60	1N	2	C 2054	2.58	2.58			E
GRP 1561	15	0019	0058	0033	N09 W29	.492	8573	12.8	39	1-			1.42				3 3 3
CULG	15	0014	0110D	0037	N08 W30	.504	8573	12.8	56D	-N		P 0037	1.65	1.84			
HALE	15	0023	0055	0029	N10 W29	.495	8573	12.8	32	-B	2	C 0029	1.44	1.70			F
MANI	15	0028E	0050		N10 W29	.495	8573	12.8	22D	-N	1	0030	1.13	1.31			
GRP 1562	15	0050	0108		N20 E71	.947	8578	20.4	18	1-			.64				1 1 1
MANI	15	0050E	0108		N20 E71	.947	8578	20.4	18D	-N	1	0051	.77	1.68			



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Table with columns: OBSERVATORY, OBSERVED UT (DATE, START, END, MAX. PHASE), LOCATION (APPROX. LAT., MER. DIST., CENTRAL DISTANCE, MCMATH PLAGE REGION, CMP DAY), DURATION, IM-POR-TANCE, OBS. COND., TYPE, MEASUREMENTS (TIME, MEAS. AREA, CORR. AREA, MAX. WIDTH, MAX. INT.), and REMARKS.













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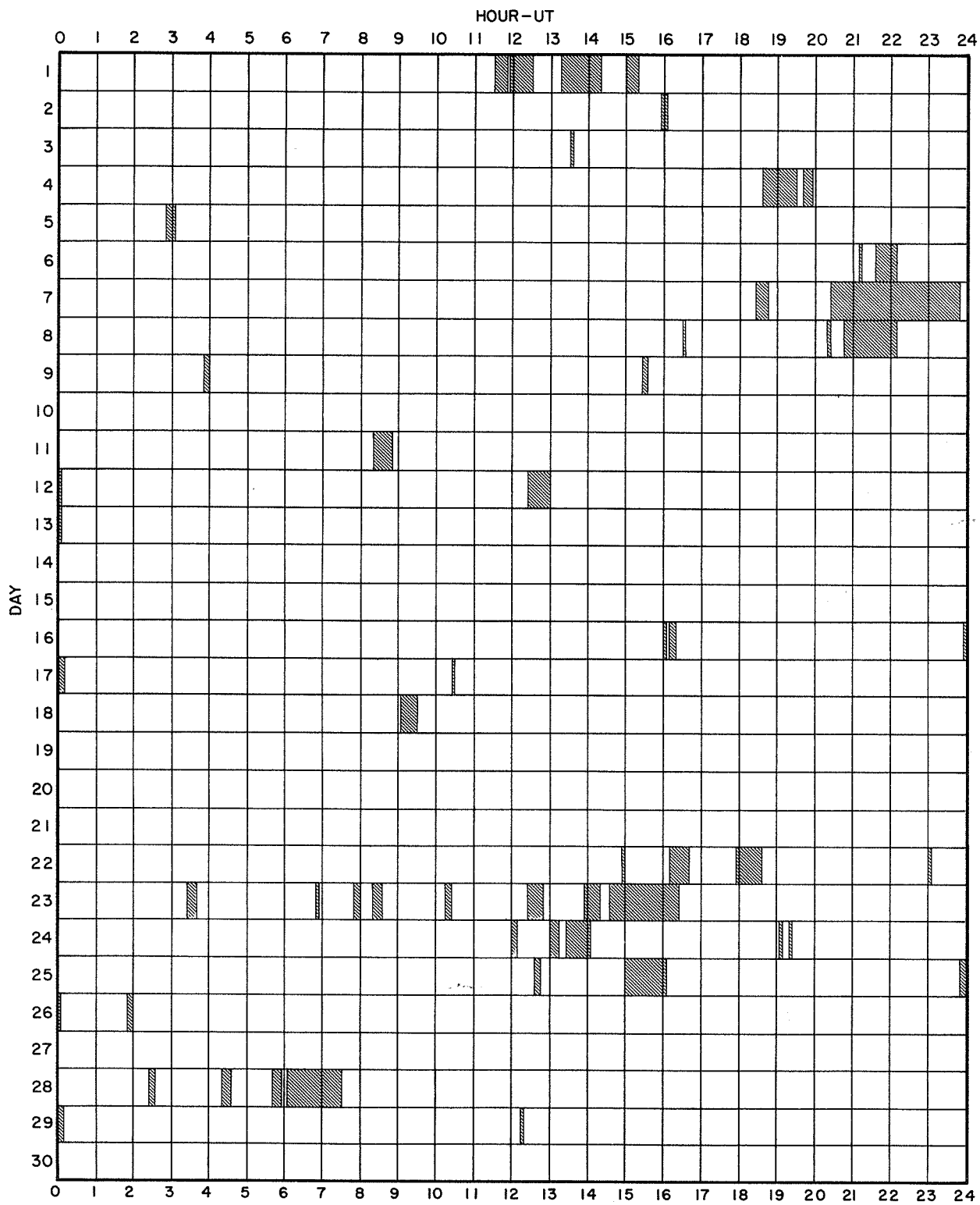
OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS. COND. TYPE	MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX.		CENTRAL DISTANCE	MGMATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.												
1966 NOV																		
GRP 1757	27	0503	0513		N20	W90	1.000	8589	20.5	10	1-						1 1 0	
IKOM	27	0503	0513D		N20	W90	1.000	8589	20.5	10D	-F	V					D	
GRP 1758	27	0817	0839	0819	N24	W32	.620	8586	24.9	22	1-						2 1 1	
ATHN	27	0817	0832	0819	N23	W32	.613	8586	24.9	15	-B	1	0819	.66	.80	2.00		
ARCE	27	0820E	0845D		N25	W32	.627	8586	24.9	25D	-N	C	0835	.68	.90			
GRP 1759	27	0820	1000		N21	W90	1.000	8589	20.6	100	1-						1 1 1	
ARCE	27	0820E	1000D		N21	W90	1.000	8589	20.6	100D	-N	C	0830	.25	1.40			
GRP 1760	27	0935	1000		N25	W32	.627	8586	25.0	25	1-						1 1 1	
ARCE	27	0935E	1000D		N25	W32	.627	8586	25.0	25D	-N	C	0955	.62	.80		H	
GRP 1761	27	1055	1200		N25	W30	.607	8586	25.2	65	1-			3.02			1 1 1	
MONT	27	1055	1200D		N25	W30	.607	8586	25.2	65D	1N		1100	3.02	3.30			
GRP 1762	27	1707	1730	1715	N26	W33	.645	8586	25.2	23	1-			.50			1 1 1	
LOCK	27	1707	1730	1715	N26	W33	.645	8586	25.2	23	-F	C	1715	.50	.70		10	
GRP 1763	27	1820	1900	1830	N26	W34	.655	8586	25.2	40	1-			.86			1 1 1	
HALE	27	1820	1900	1830	N26	W34	.655	8586	25.2	40	-N	1 C	1830	.72	.90		TE	
GRP 1764	27	2002	2015	2003	N27	W35	.672	8586	25.2	13	1-			.37			1 1 1	
HALE	27	2002	2015	2003	N27	W35	.672	8586	25.2	13	-N	1 C	2003	.31	.40		T	
GRP 1765	27	2318	2339	2322	N28	W38	.707	8586	25.1	21	1-			.82			2 2 2	
SACP	27	2316	2335	2321	N27	W38	.701	8586	25.1	19	-N	C		1.27	1.48			
HALE	27	2320	2342	2322	N28	W37	.698	8586	25.2	22	-N	1 C	2321	.41	.60		T	
GRP 1766	27	2355	0015		N20	W90	1.000	8589	21.2	20	1-						1 1 0	
IKOM	27	2355E	0015D		N20	W90	1.000	8589	21.2	20D	-F	V					D	
GRP 1767	28	0035	0051		N20	W90	1.000	8589	21.3	16	1-						1 1 0	
IKOM	28	0035E	0051D		N20	W90	1.000	8589	21.3	16D	-N	V	0040				95	
GRP 1768	28	0104	0114	0107	N26	W40	.716	8586	25.0	10	1-			.37			1 1 1	
HALE	28	0104	0114	0107	N26	W40	.716	8586	25.0	10	-B	1 C	0107	.31	.40			
GRP 1769	28	0156	0218	0205	N15	E27	.500	8593	30.1	22	1-			.74			2 1 1	
IKOM	28	0156E	0218D	0200	N15	E27	.500	8593	30.1	22D	1N	V	0200	1.75	2.10		100	
HALE	28	0209E	0216D	0210U	N14	E27	.493	8593	30.1	7D	-B	1 P	0210	1.03	1.20		E	
GRP 1770	28	0225	0235		NO FLARE PATROL													
HALE	28	0242	0246	0245	N26	W40	.716	8586	25.1	4	1-			.37			1 1 1	
GRP 1771	28	0345	0409	0350	N25	W42	.731	8586	25.0	24	1-			.31	.40		1 1 1	
MITK	28	0345	0409	0350	N25	W42	.731	8586	25.0	24	1-			1.27			1 1 1	
GRP 1772	28	0823	0902	0833	N26	W41	.726	8586	25.3	39	1-			2.35			4 3 3	
CAPS	28	0823E	0854D	0833	N26	W40	.716	8586	25.3	31D	-B	3	0835	2.10	2.90		208	
CATA	28	0828E	0850D	0833	N25	W41	.721	8586	25.3	22D	-B		0833	1.09	1.63		240	
CAPP	28	0830E	0910		N26	W40	.716	8586	25.4	40D	2N	P	0830	4.70	6.61			
ARCE	28	0838E	0858D		N28	W42	.745	8586	25.2	20D	1B	C	0842	3.01	4.50		F	
GRP 1773	28	0832	0910		N21	W90	1.000	8589	21.6	38							1 0 0	
CAPP	28	0832E	0910D		N21	W90	1.000	8589	21.6	38D		P					A	
GRP 1774	28	1112	1200		N34	W61	.910	8584	23.9	48	1-			.72			1 1 1	
MONT	28	1112E	1200D		N34	W61	.910	8584	23.9	48D	-N		1112	.71	1.20			
GRP 1775	28	1720	1750	1727	N18	E19	.423	8593	30.1	30	1-			.49			1 1 1	
HALE	28	1720	1750	1727	N18	E19	.423	8593	30.1	30	-N	1 C	1727	.41	.50			
GRP 1776	28	2140	2155	2144	N33	W61	.908	8584	24.3	15	1-			.31			1 1 1	
HALE	28	2140	2155	2144	N33	W61	.908	8584	24.3	15	-N	1 C	2144	.26				
GRP 1777	28	2200	2215	2201	N24	W50	.803	8586	25.2	15	1-			.62			1 1 1	
HALE	28	2200	2215	2201	N24	W50	.803	8586	25.2	15	-B	1 C	2201	.52	.90			
GRP 1778	29	0122	0140	0125	NO FLARE PATROL													
HALE	29	0122	0140	0125	S26	E29	.629	8597	1.2	18	1-			.49			1 1 1	
GRP 1779	29	0124	0133	0128	S26	E29	.629	8597	1.2	18	-N	2 C	0125	.41	.50			
MANI	29	0124	0133D	0128	S26	E02	.458	8592	29.2	9	1-			.19			1 1 1	
GRP 1780	29	0226	0236	0227	S25	E30	.631	8597	1.4	10	1-			.21	.26		1 1 1	
HALE	29	0226	0236	0227	S25	E30	.631	8597	1.4	10	-F	2 C	0227	.26	.30		E	
GRP 1781	29	0623	0632	0623	N24	E40	.706	8599	2.3	9	1-			.67			1 1 1	
ATHN	29	0623E	0632D	0623	N24	E40	.706	8599	2.3	9D	-N	2	0623	.66	.90	1.40		
GRP 1782	29	0827	0851	0832	N17	E15	.369	8594	30.5	24	1-			2.16			1 1 1	
ATHN	29	0827	0851	0832	N17	E15	.369	8594	30.5	24	-N	2	0832	1.82	1.90	1.50		
GRP 1783	29	0901	0946	0908	N17	E14	.358	8593	30.4	45	1-			1.51			3 3 2	
ATHN	29	0900	0957	0905	N17	E15	.369	8593	30.5	57	-B	2	0905	1.82	1.90	2.00		
CATA	29	0900E	0935D	0910	N17	E13	.348	8593	30.4	35D	-B		0910	.85	.91		210	
ISTA	29	0902	0935		N18	E14	.370	8593	30.4	33	-F							
GRP 1784	29	1115	1124	1117	N15	E85	.996	8601	5.8	9	1-			.58			1 1 1	
ATHN	29	1115E	1124D	1117	N15	E85	.996	8601	5.8	9D	-F	2	1117	.50		1.20		
GRP 1785	29	1144	1150	1147	N23	E37	.669	8599	2.3	6	1-			.24			1 1 1	
ATHN	29	1144E	1150D	1147	N23	E37	.669	8599	2.3	6D	-N	2	1147	.25	.40	1.40		
GRP 1786	29	1215	1220		NO FLARE PATROL													
HUAN	29	1307	1311		N25	W59	.880	8586	25.1	4	1-			.21			1 1 1	
	29	1307	1311D		N25	W59	.880	8586	25.1	4D	-F	1 P	1309	.25	.38		D	

SOLAR FLARES  
REVISED  
NOVEMBER 1966

OBSERV- ATORY	OBSERVED UT				LOCATION					DURA- TION — MIN.	IM- POR- TANCE	OBS. COND. TYPE	MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H $\alpha$	MAX. INT. %	
	1966 NOV																	
GRP 1787	29	1317	1334		N32	W70	.954	8584	24.3	17	1-						1 1 1	
HUAN	29	1317	1334		N32	W70	.954	8584	24.3	17	-B	2	P	1326	.52		E	
GRP 1788	29	1510	1525	1513	N26	W59	.882	8586	25.2	15	1-				.72		1 1 1	
HUAN	29	1510	1525	1513	N26	W59	.882	8586	25.2	15	-N	1	C	1513	.95	1.45	E	
GRP 1789	29	1713	1740	1718	S26	E22	.566	8597	1.4	27	1-				.74		3 3 3	
LOCK	29	1712	1742	1716	S26	E22	.566	8597	1.4	30	-N		C	1716	.60	.70		
HALE	29	1713	1747	1717	S26	E21	.558	8597	1.3	34	-B	2	C	1717	.46	.60	20	
SACP	29	1714	1732	1720	S27	E22	.577	8597	1.4	18	-N		C		1.17	1.24		
GRP 1790	29	1743	1815	1748	N18	E08	.319	8593	30.3	32	1-				.96		3 3 3	
LOCK	29	1742	1815	1750	N17	E10	.320	8593	30.5	33	-N		C	1750	.90	1.00	20	
HUAN	29	1742	1818	1746	N18	E08	.319	8593	30.3	36	-N	1	C	1746	1.19	1.20		
HALE	29	1744	1812	1747	N18	E06	.306	8593	30.2	28	-N	2	C	1747	.72	.80	U	
GRP 1791	29	2010	2038	2014	N33	W77	.980	8584	24.1	28	1				.89		2 2 2	
LOCK	29	2008	2036	2013	N33	W77	.980	8584	24.1	28	1N		C	2013	1.00	3.10	20	
HALE	29	2012	2040	2014	N33	W77	.980	8584	24.1	28	1B	2	C	2014	.72		H	
GRP 1792	30	0007	0018	0010	N18	W01	.292	8593	29.9	11	1-				.47		1 1 1	
MANI	30	0007E	0018	0010	N18	W01	.292	8593	29.9	11D	-F	2		0010	.52	.54		
GRP 1793	30	0446	0524	0501	N24	W67	.931	8586	25.2	38	1-				.28		1 1 1	
MANI	30	0446	0524	0501	N24	W67	.931	8586	25.2	38	-N	2		0501	.36	.76		
GRP 1794	30	0626	0642	0630	N18	E01	.292	8593	30.3	16	1-				.30		2 2 2	
CULG	30	0624	0642	0628	N18	E02	.294	8593	30.4	18	-N		C	0628	.41			
MANI	30	0628	0641	0632	N17	W01	.275	8593	30.2	13	-F	2		0632	.26	.27		
GRP 1795	30	0711	0756	0718	S27	E14	.517	8597	1.3	45	1-				.28		1 1 1	
CULG	30	0711	0756D	0718	S27	E14	.517	8597	1.3	45D	-N		P	0718	.31	.34		
GRP 1796	30	0727	0743	0730	N34	W83	.994	8584	24.1	16	1-				.28		1 1 1	
CULG	30	0727	0743	0730	N34	W83	.994	8584	24.1	16	-N		C	0730	.31			
GRP 1797	30	1628	1717	1634	N16	W05	.271	8593	30.3	49	1+				3.29		3 3 3	
LOCK	30	1627	1730	1633	N15	W06	.262	8593	30.2	63	1B		C	1633	4.00	4.00	40	
SACP	30	1628	1715	1634	N16	W05	.271	8593	30.3	47	1N		C		3.21	3.15		
HUAN	30	1630	1706	1635	N17	W05	.287	8593	30.3	36	1N	2	C	1635	2.17	2.16	E	
GRP 1798	30	1755	1830	1801	N17	W05	.287	8593	30.4	35	1-				.82		1 1 1	
HALE	30	1755E	1830	1801U	N17	W05	.287	8593	30.4	35D	-N	1	P	1801	.52	.53		

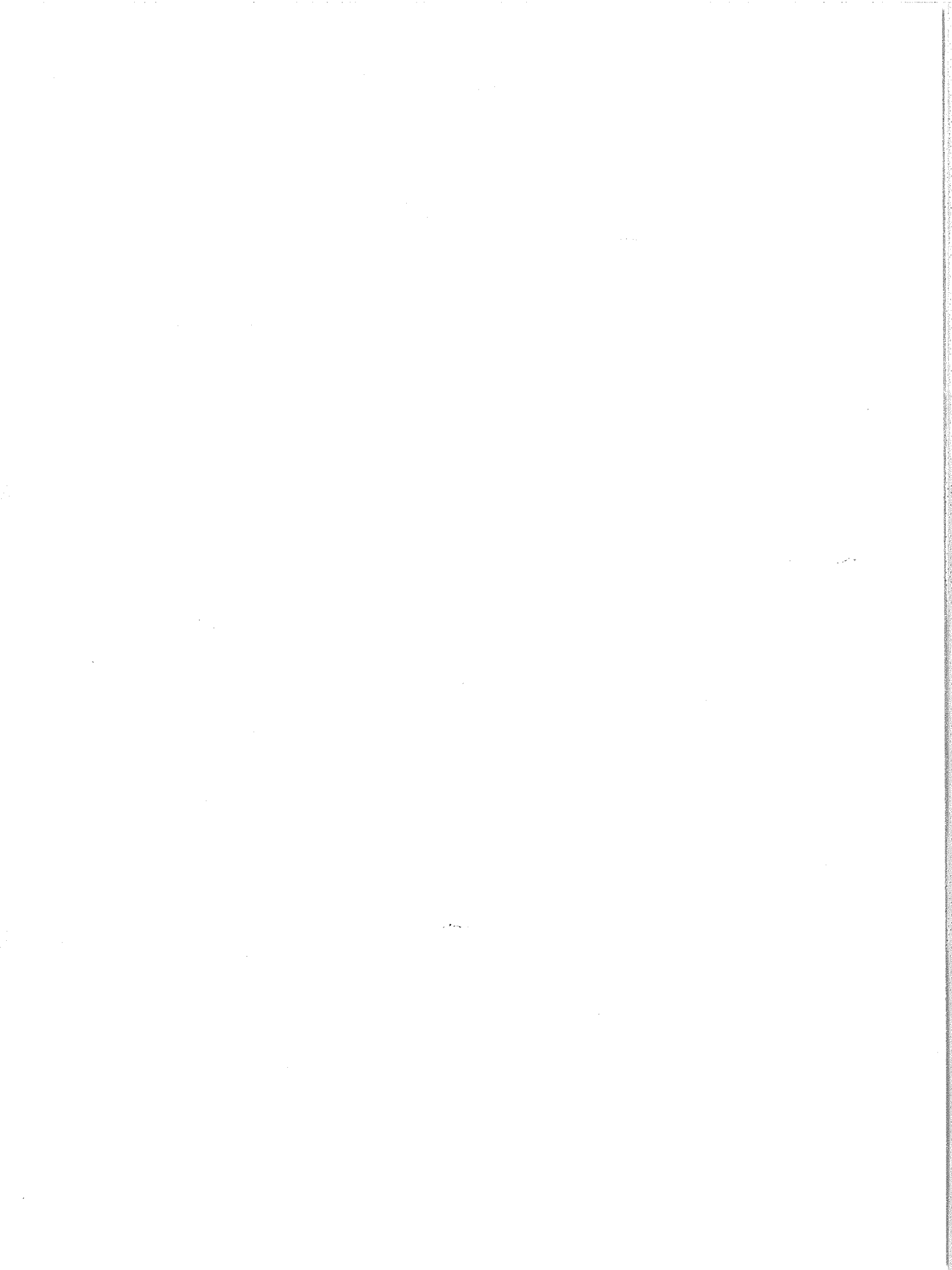
# INTERVALS OF NO FLARE PATROL OBSERVATIONS

NOVEMBER 1966



Observatories included:

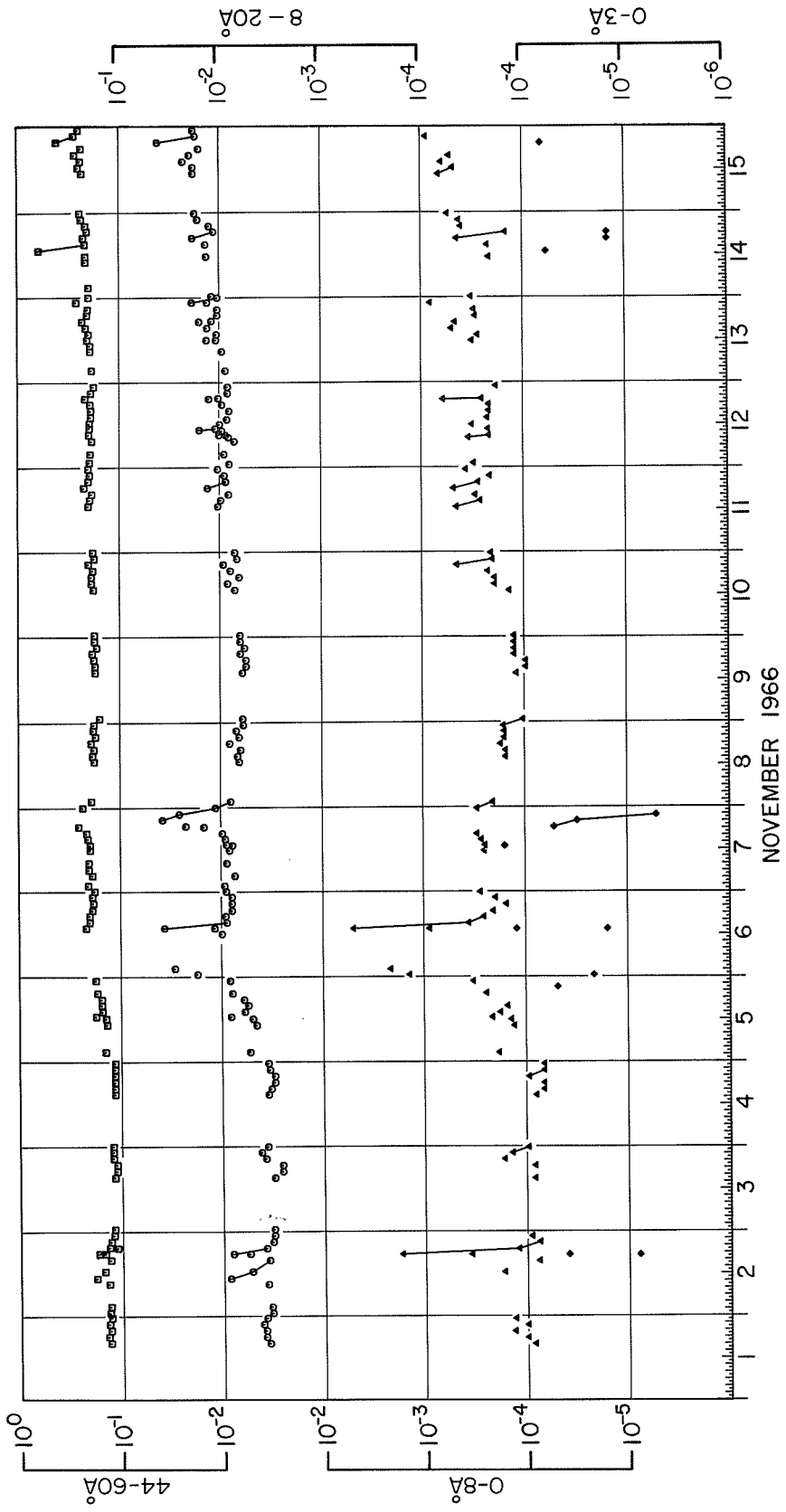
- |            |                   |               |            |                |                 |             |
|------------|-------------------|---------------|------------|----------------|-----------------|-------------|
| Abastumani | Capri-F (German)  | Herstmonceaux | Kharkov    | Manila         | Ondrejov        | Uccle       |
| Arcetri    | Capri-S (Swedish) | Huancayo      | Kiev       | McMath-Hulbert | Sacramento Peak | Vorochilov  |
| Athens     | Catania           | Ikomasan      | Kodaikanal | Meudon         | Siberie         | Wendelstein |
| Bakou      | Culgoora          | Istanbul      | Lockheed   | Mitaka         | Tachkent        | Zdrich      |
| Bucaresti  | Haleakala         | Kandilli      | Locarno    | Monte Mario    | Tortosa         |             |



# SOLAR RADIATION MONITORING SATELLITE X-RAY

NOVEMBER 1966

NRL



SOLAR RADIATION MONITORING SATELLITE  
X-RAY

NOVEMBER 1966

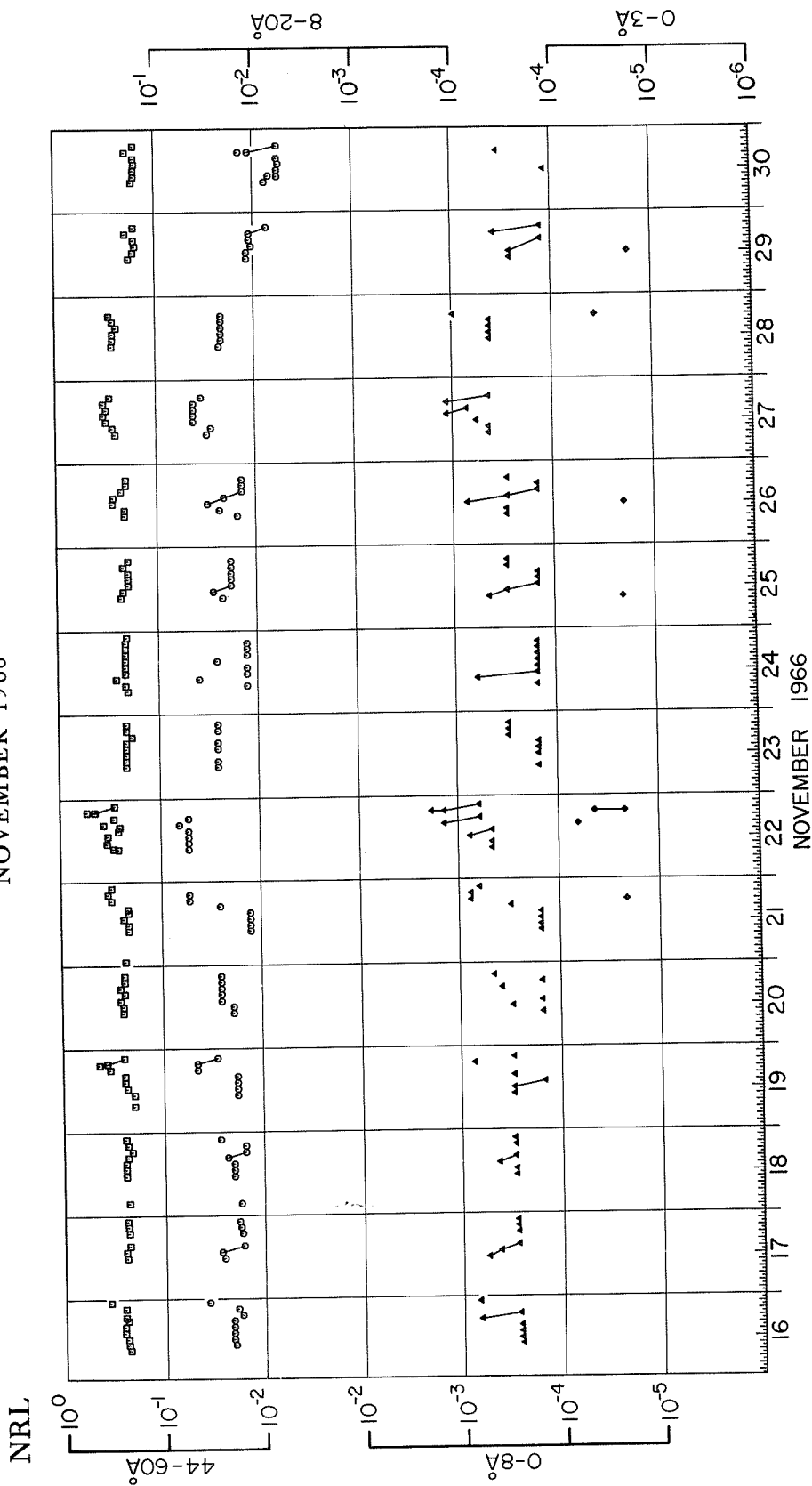


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October - December 1966

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For explanations of the data contained herein see "Descriptive  
Text" published in February 1967.



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SUDDEN COMMENCEMENTS AND SOLAR-FLARE EFFECTS  
OCTOBER - DECEMBER 1966

## Preliminary Report of Sudden Commencements

These reports are provided by Dr. A. Romana for the International Association of Geomagnetism and Aeronomy Commission IV: Magnetic Activity and Disturbances.

S.c.'s given by ten or more stations are underlined. Times are mean values obtained from normal magnetograms. When the names of the observatories are not given, the letters in square brackets indicate the quality of the observations.

Sudden commencements followed by a magnetic storm or a period of storminess (s.s.c.)

1966 October 03d 04h 24m: Es SM Ae PM. -04d 13h 24m: twelve (ssc: 11 [A: 1; B: 7; C: 3]; si: 1). -15d 09h 54m: forty-five (ssc: 44 [A: 16; B: 26; C: 2]; si: 1). -23d 15h 01m: Es SM MB Gu Mc PM Tn (si: H1 Ky; sfe: V1). -24d 02h 15m: Su Ae. -30d 10h 59m: Hb? Ci Ta Gu.

1966 November 17d 00h 17m: thirty-eight (ssc: 33 [A: 7; B: 21; C: 5]; si: 4; bs: 1). -17d 17h 20m: thirty-five (ssc: 25 [A: 4; B: 18; C: 3]; si: 7; pi2: 1; pc5: 1; sfe: SJ). -18d 11h 01m: thirteen (ssc: 12 [B: 4; C: 8]; pc5: 1). -25d 13h 39m: thirty-two (ssc: 28 [A: 2; B: 18; C: 8]; si: 4). -26d 01h 21m: Co Vi Gu Ap To.

1966 December 04d 06h 06m: V1 Ta Gu PM Tn (si: H1). -04d 07h 46m: Ae SF (si: Mc; pg: Le). -13d 01h 09m: nineteen (ssc: 17 [A: 2; B: 11; C: 4]; si: 1; pc5: 1). -14d 10h 51m: V1 Ci. -14d 12h 25m: Wn Fu Lg T1 Ae SF MB Tn (pi2: SJ). -22d 04h 41m: thirty-four (ssc: 23 [A: 9; B: 12; C: 2]; si: 11 [A: 4; B: 6; C: 1]). -26d 06h 02m: Wn Ci T1.

Sudden impulses found in the magnetograms (s.i.)

1966 October 04d 04h 19m: Ae (ssc: St). -12d 06h 07m: Mb Eb Pe SF Ka Ky Mc (ssc:Ae). -15d 18h 19m: Me Eb Te Mc. -16d 03h 09m: Mb Ka Ky Te (ssc: Gu; bp: Hu). -17d 17h 02m: fifteen (si: 13 [B: 7; C: 6]; ssc: 1; sfe: Sw). -30d 16h 09m: Mb Ka Ky.

1966 November 01d 14h 59m: Le Ma Hb? Lg Ae (pg: Es Bi). -02d 13h 29m: Nu Le Es V1. -10d 12h 31m: V1 Mc. -12d 00h 50m: Ks (ssc: Hb?). -18d 12h 43m: Es Me (ssc: V1 Hb). -18d 13h 54m: Es Lg T1 Mc. -18d 15h 01m: Es Ma. 27d 05h 06m: H1 (ssc: Hb). -30d 12h 33m: Hb Lg SM Ae.

1966 December 04d 07h 19m: Hb (ssc: T1). -04d 10h 33m: Te Mc. -04d 12h 10m: Lg Te Mc. -04d 18h 51m: Lg Ta Te (ssc: Hb SF). -09d 09h 07m: Es Wn Lg. -13d 02h 31m: Be Te. -13d 16h 03m: Es MB Mc. -13d 17h 35m: twenty-three (si: 20 [A: 14; B: 6]; ssc: 2; sfe: Hb). -14d 15h 26m: T3 Ap. -15d 01h 22m: Es Mc. -15d 11h 25m: Lg T1 (ssc: SF). -16d 17h 23m: twenty-seven (si: 17 [A: 4; B: 13]; ssc: 8; bs: 1; pi2: 1). -22d 14h 37m: Mc Ap (ssc: Gu PM). -23d 12h 10m: So H1. -26d 08h 00m: Lg (ssc: T1). -26d 11h 14m: Wn V1 Fu.

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Misc.

Preliminary report on solar-flare effects (s.f.e.)

Effects confirmed by ionospheric or solar observations are underlined.

1966 October 10d 11h 09m - 11h 18m: H1 V1 Eb MB (si: SM Ae). -13d 04h 30m: Mb Ka Ky PM. -13d 13h 42m - 13h 51m: Eb. -14d 05h 30m - 05h 40m: Mb Ka Ky PM Tn? Gn To. -22d 14h 30m - 14h 33m: Hu. -23d 10h 23m - 10h 30m: Eb Ks Ta MB Mc Tn.

1966 November 02d 10h 02m - 10h 24m: Hb. -04d 13h 00m - 13h 08m: Hu. 06d 08h 11m: H1 Hb?. -10d 09h 06m - 09h 26m: Hb. -12d 14h 45m - 16h 00m: Hu. -16d 12h 00m - 12h 20m: Hu. -20d 09h 12m - 09h 20m: Ks. -20d 12h 30m - 12h 50m: Hu (bp: Tr). -22d 09h 29m: H1 (si: Lg). -30d 16h 30m - 16h 40m: Hu.

1966 December 01d 16h 19m - 16h 22m: Hu (si: SM). -06d 08h 34m - 08h 54m: Hb (si: Lg). -08d 17h 03m - 17h 20m: Hu.