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ENVIRONMENTAL RESEARCH LABORATORIES

Solar-Geophysical Data

(Prompt Reports)

NUMBER 320-PART I
DATA FOR
MARCH 1971
FEBRUARY 1971

DATA COMPILED BY AERONOMY AND SPACE DATA CENTER
BOULDER, COLORADO

WASHINGTON, D.C.
APRIL 1971

SOLAR-GEOPHYSICAL DATA

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For obtaining bulletins on a data exchange basis, send request to World Data Center A, Upper Atmosphere Geophysics, NOAA, Boulder, Colorado 80302.

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ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

MARCH 1971

MAR. 1971	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400			SEVEN QUIET; SOLNIL
02	0400			EIGHT QUIET; SOLNIL
03	0400			EIGHT QUIET; SOLNIL
04	0400			SEVEN QUIET; SOLNIL
05	0400			EIGHT QUIET; SOLNIL
06	0400			SEVEN QUIET; SOLNIL
07	0400			SIX QUIET; SOLNIL
08	0400			SIX QUIET; SOLNIL
09	0400			FIVE QUIET; SOLNIL
10	0400			FOUR QUIET; SOLNIL
11	0400			THREE QUIET; SOLNIL
12	0400			FIVE QUIET; SOLNIL
13	0400			SIX QUIET; SOLNIL
14	0400			N08E50 ERUPTIVE; SEVEN QUIET; SOLNIL
15	0400			SEVEN QUIET; SOLNIL
16	0400			SEVEN QUIET; SOLNIL
17	0400			SEVEN QUIET; SOLNIL; STRATWARM EXISTS ASIA FINAL SPRINGTIME WARMING IN PROGRESS
18	0400			SIX QUIET; SOLNIL; STRATWARM CONTINUES ASIA
19	0400			NINE QUIET; SOLNIL; STRATWARM EXISTS EASTERN ASIA
20	0400			EIGHT QUIET; SOLNIL; STRATWARM EXISTS EASTERN SIBERIA
21	0400			FIVE QUIET; SOLNIL
22	0400			FIVE QUIET; SOLNIL
23	0400			FIVE QUIET; SOLNIL; STRATWARM CONTINUES SIBERIA
24	0400			FOUR QUIET; SOLNIL; STRATWARM EXISTS SIBERIA
25	0400			THREE QUIET; SOLNIL; STRATWARM EXISTS SIBERIA
26	0400			SEVEN QUIET; SOLNIL; STRATWARM EXISTS SIBERIA MOVING NORTHWARD
27	0400			FIVE QUIET; SOLNIL; STRATWARM ENDS WARM AIR ESTABLISHED POLAR REGION SPRINGTIME CIRCULATION REVERSAL IN PROGRESS
28	0400			FIVE QUIET; SOLNIL
29	0400			FIVE QUIET; SOLNIL
30	0400			S18E18 ERUPTIVE; FIVE QUIET; SOLNIL
31	0400			S18E03 ERUPTIVE; FIVE QUIET; SOLNIL

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

DAY	1970 FINAL APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1971 PROVISIONAL JAN.	FEB.	MAR.
1	112	118	102	137	77	98	63	86	91	58	77	76
2	105	118	92	153	68	104	57	82	78	62	78	90
3	121	122	64	155	64	110	43	80	78	62	68	82
4	116	119	63	159	59	115	55	78	76	69	80	70
5	120	113	59	165	65	120	75	67	88	52	65	53
6	115	115	57	161	68	133	53	89	90	52	73	47
7	123	98	58	125	72	136	72	86	91	56	75	47
8	147	87	61	115	82	125	76	69	100	66	60	46
9	172	90	60	104	76	116	78	77	96	74	37	35
10	188	111	92	90	71	103	79	78	110	70	37	34
11	183	132	122	81	75	82	75	97	120	68	62	43
12	163	134	138	74	73	76	80	89	110	75	50	63
13	141	142	153	79	92	73	84	105	90	70	63	76
14	124	145	165	68	94	76	87	117	85	67	60	65
15	106	159	168	61	108	75	87	125	84	61	69	68
16	92	161	153	61	100	68	94	133	68	65	66	76
17	82	169	148	59	99	65	84	135	63	68	62	76
18	68	173	134	56	108	75	76	135	79	86	68	79
19	67	176	105	92	113	98	83	132	95	98	87	63
20	65	146	99	92	117	114	70	128	104	104	91	50
21	64	143	96	120	117	129	69	119	101	106	91	51
22	57	125	96	122	108	109	73	105	97	105	100	55
23	67	106	87	106	101	104	89	96	85	96	87	55
24	90	122	102	110	116	129	100	77	66	99	98	51
25	93	110	126	122	114	114	111	62	75	82	93	48
26	81	125	127	138	109	107	117	65	64	88	69	49
27	88	126	114	153	91	87	142	74	53	111	66	55
28	106	106	113	146	101	85	131	89	50	99	71	49
29	112	118	124	153	114	81	139	78	59	95		44
30	116	116	127	122	120	77	126	103	74	74		56
31		127		108	111		117		68	76		52
MEAN	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	77.9	71.5	58.2

1970 yearly mean = 104.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

DAY	1970 APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1971 JAN.	FEB.	MAR.
1	160.8*	159.5	145.6	179.9	134.0*	154.1	128.7	163.3	146.4	130.5	165.6	129.2
2	167.1	160.7*	141.8	189.0*	128.5	156.7	125.4	159.1	148.4*	134.8	160.5	125.8
3	163.5	163.5	133.4	194.6*	127.9	163.2*	126.0	153.2*	148.1	134.7	154.7	121.7
4	170.4	162.3	131.7	195.0	127.4	163.4*	137.3	148.3	154.0	140.2	148.6*	116.0*
5	179.4*	167.9	132.9*	191.0	128.4	162.3*	134.5	147.5	161.9*	146.1	144.7	113.7
6	192.9	163.3	130.0	186.4	128.0	161.5	128.0*	149.8	167.5	146.9	143.7	109.1
7	193.4*	162.4	134.5*	166.3	128.2	164.4	133.3	150.6	166.5*	150.2	133.4	105.2
8	203.1*	156.7	134.2	160.4	131.8	156.9	142.0	141.1	167.3	149.1	123.2	104.0
9	218.5	154.9*	138.2	148.4	138.3	157.2	144.9*	141.9	171.5	152.8*	110.4	104.5
10	224.7*	162.8	145.9	143.8	137.3	143.9	147.6	147.8	170.9	152.1	109.5	107.0
11	206.4	176.2	169.5	137.7	127.2	134.4	142.8	155.6	172.6*	149.0	109.7	109.5
12	198.5*	180.3	171.7	135.4	136.9*	126.1	135.4	165.1*	178.4*	150.5	110.5	115.3
13	185.3	193.1	200.3*	130.7	149.7	120.1	131.8*	179.1	164.3	148.1	113.2	112.5
14	173.8*	196.8	207.4*	126.3	167.0*	121.9	134.9*	186.4*	154.6	153.9	114.8	111.7
15	163.6	206.3	209.2	121.9	169.1	118.0	140.2*	200.0	154.1	153.7	117.1*	110.3
16	152.2	206.0	198.6	121.4	162.5	118.4	134.0	193.5	146.7	156.4*	129.8	114.5
17	148.0	197.0	190.6	125.9	151.6*	116.9	131.5	184.1*	146.8	155.3	132.6	116.1
18	141.9	194.6	181.8	131.0	149.0	120.7	138.5	193.1*	151.6*	160.3	130.4	114.2
19	135.7	197.4	175.1*	135.8	145.4	134.7*	139.0	185.5*	152.4*	165.8	138.5*	109.1
20	131.2	183.9	163.3	136.4	148.6	146.9	137.2	173.7	155.6	169.2*	136.2*	106.3*
21	126.3	174.9	160.6	150.6*	142.8	149.4	136.5	163.3*	146.3*	178.7	136.1	112.6
22	128.6	170.3	150.1*	163.8	141.7	155.2	135.0	154.2	136.8*	180.6	143.6	112.4
23	130.1	163.7	143.7	158.7*	146.2	161.6	149.0	142.4	132.1	182.9	143.2	108.2
24	130.1	162.6*	142.3	164.0	140.2	156.0*	161.2*	133.9	124.4	177.0	147.5	107.8
25	134.8	160.6	149.3	169.0	136.5	155.8	168.6*	127.9	124.0	168.6*	146.4	108.3
26	135.3	162.8	151.4	176.3	135.7	155.9	187.1	129.3	122.3	164.9	143.2	107.8
27	138.0	155.2	160.0	185.9	137.2*	145.0	191.8	135.1	119.8	166.7	140.0	108.5
28	148.6	153.8	160.5	182.1	141.6	144.5*	190.3	148.9	117.3	166.2	136.6	106.2
29	156.1	158.5	168.0*	161.0	148.7	138.7	189.0	148.4	123.4	160.7		103.4
30	153.3	163.7	174.8	156.1	149.0	134.7	175.2	152.5	129.0*	163.0		100.9
31		165.2		141.5	154.5		168.6		133.3	170.1		102.9
MEAN	163.1	172.2	159.9	157.0	141.6	144.6	147.3	158.5	148.0	157.4	134.4	110.8

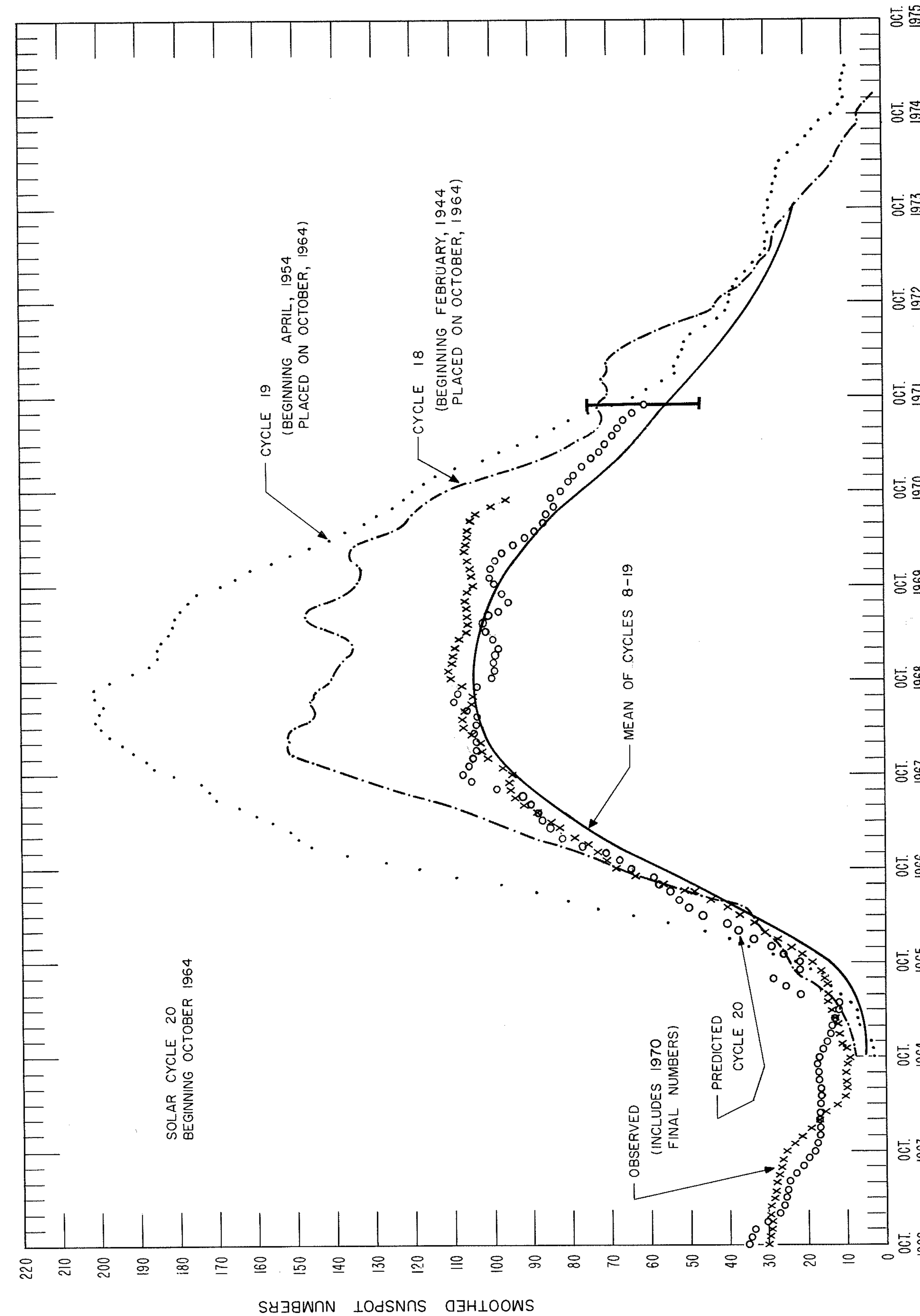
* adjusted for burst

DAILY SOLAR INDICES

MARCH 1971

MAR. 1971	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS R_Z	SUNSPOT NUMBERS $R_{A'}$	OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U. AFCRL 15400	AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 245
01	60	4	76	88	131.6	528	246	194	129.2	122.5	86.2	59.2	11.8
02	61	5	90	100	128.0	523	240	190	125.8	112.3	82.0	58.9	10.0
03	62	6	82	87	123.8	531	242	183	121.7	108.7	85.1	59.3	11.0
04	63	7	70	69	117.9*	531	236	185	116.0*	104.6	85.4	60.8	10.1
05	64	8	53	65	115.5	521	240	176	113.7	100.1	81.8	59.0	10.0
06	65	9	47	49	110.8	523	239	173	109.1	101.4	77.3	57.2	11.0
07	66	10	47	40	106.8	518	235	170	105.2	94.4	74.8	57.4	10.8
08	67	11	46	42	105.5	523	237	175	104.0	93.4	74.7	54.3	11.5
09	68	12	35	37	106.0	518	236	169	104.5	89.4	69.3	54.8	10.7
10	69	13	34	44	108.4	523	237	174	107.0	94.6	68.9	55.1	11.0
11	70	14	43	60	110.9	509	213	151	109.5	96.6	76.2	55.0	10.8
12	71	15	63	73	116.7	524	241	181	115.3	104.5	74.4	57.8	10.6
13	72	16	76	84	113.9	520	235	177	112.5	102.7	73.4	56.8	10.9
14	73	17	65	69	112.9	520	236	177	111.7	101.3	77.6	58.8	11.0
15	74	18	68	72	111.5	523	230	177	110.3	97.4	78.7	59.0	10.6
16	75	19	76	78	115.7	521	236	175	114.5	101.4	77.5	58.7	9.6
17	76	20	76	65	117.3	521	240	178	116.1	101.0	78.5	56.6	10.6
18	77	21	79	69	115.2	526	238	178	114.2	100.5	76.7	61.5	10.4
19	78	22	63	69	110.0	524	236	172	109.1	96.4	76.4	60.1	8.3
20	79	23	50	60	107.2*	522	239	175	106.3*	96.3	72.8	60.7	12.7
21	80	24	51	54	113.4	523	235	174	112.6	97.0	76.8	58.6	9.8
22	81	25	55	51	113.2	523	238	174	112.4	98.6	75.8	58.8	10.5
23	82	26	55	48	108.9	521	232	175	108.2	94.3	70.2	55.9	10.2
24	83	27	51	37	108.5	518	236	169	107.8	95.1	71.2	56.3	11.2
25	84	1	48	53	108.8	522	238	171	108.3	96.0	68.2	57.0	9.4
26	85	2	49	52	108.2	520	231	179	107.8	95.4	68.1	54.5	
27	86	3	55	55	108.9	520	234	172	108.5	95.4	70.4	54.8	10.3
28	87	4	49	55	106.5	520	232	170	106.2	91.8	72.8	53.9	16.7
29	88	5	44	53	103.7	515	229	169	103.4	90.5	65.6	54.8	10.2
30	89	6	56	57	101.1	516	229	167	100.9	85.6	66.0	54.6	10.3
31	90	7	52	59	103.1	516	236	170	102.9	90.3	64.2	52.7	10.3
MEAN			58.2	61.1	111.9	521	236	175	110.8	98.4	74.7	57.2	10.7

* Adjusted for Burst



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 20

MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1964										9.6	10.2	11.0
1965	11.7	12.0	12.5	13.6	14.6	15.0	15.5	16.4	17.4	19.7	22.3	24.5
1966	27.7	31.3	34.5	37.4	40.7	44.6	50.3	56.6	63.1	67.6	70.2	72.7
1967	75.0	78.8	82.2	84.6	87.4	91.3	94.1	95.3	95.3	95.0	97.1	100.6
1968	102.6	102.9	104.7	107.2	107.6	106.6	105.2	104.8	107.0	109.9	110.6	110.1
1969	110.0	109.6	108.0	106.4	106.2	106.1	105.8	106.4	105.4	104.1	104.6	104.9
1970	105.6	106.0	106.2	106.1	105.8	105.3	103.3	99.5	96.2	93.6 (4)	90.1 (6)	86.3 (7)
1971	82.4 (8)	78.6 (8)	75.8 (9)	72.7 (10)	69.2 (10)	66.6 (11)	65.1 (12)	63.4 (13)	61.0 (14)	58.6 (15)	57.1 (16)	55.5 (17)
1972	53.9 (18)	52.9 (19)	51.8 (18)	50.7 (18)	49.5 (18)	47.8 (19)	45.1 (20)	42.3 (21)	40.4 (23)	39.6 (25)	38.6 (25)	37.3 (26)
1973	36.0 (27)	35.0 (26)	33.8 (25)	32.3 (25)	31.1 (25)	30.1 (24)	29.3 (23)	28.8 (23)	28.0 (23)	26.7 (23)	25.5 (21)	24.5 (20)
1974	23.4 (20)	22.1 (20)	21.0 (21)	20.3 (21)	19.9 (21)	19.1 (21)	18.1 (20)	16.9 (19)	15.6 (18)	14.4 (18)	13.2 (17)	12.5 (17)
1975	12.1 (16)	11.8 (15)										

For each month, the upper figure is the observed or predicted Zürich smoothed sunspot number. The lower figure in parenthesis is the corresponding absolute value of the 90% prediction interval, an indication of the uncertainty above and below the predicted number. Observed numbers are those with no prediction intervals. The observed smoothed sunspot numbers are based on final Zürich numbers through 1970.

Beginning in July 1968 the predicted sunspot numbers were derived from a regression analysis based on Cycles 1 through 19. At that time new statistical tests were performed to determine whether the population was homogeneous. From the results of these tests it was not possible to prove conclusively that the first 7 cycles were from a different population. Recently, more sophisticated statistical techniques have been applied to this problem. Although it has still not been proven conclusively that the first 7 cycles are from a different population, there is more evidence now that this may be the case. Until this question has been resolved, the predicted sunspot numbers will be derived from a regression analysis based on Cycles 8 through 19 instead of 1 through 19.

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Mar 71

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

MARCH 1971

OBSERVATORY	OBSERVED UT DATE 1971 MAR	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
MANI	01	0413E	0432D	0413	S17	W69	.926	11165	24.0	19D	1N	2		0413	1.03	2.10			
MITK	01	0413E	0420		S18	W67	.913		24.2	7D	SF		C	0413	.62				E
RAMY	04	1504	1611	1513	S13	E41	.652		7.7	67	1N	3	C		4.23				F
MCMA	04	1504	1610	1511	S13	E39	.626	11181	7.6	66	1N		C	1511	2.17	2.70			EL
BOUL	04	1510E	1614	1514	S12	E40	.639	11181	7.6	64D	1N	2	V						
ATHN	04	1525E	1525D	1525	S14	E45	.703	11181	8.0		1N	1		1525	2.31	4.59	.70		
MITK	07	0234	0249	0237	N07	W89	1.000		28.4	15	1N		C	0237	.93				D
MANI	07	0236	0254	0240	N05	W85	.997		28.7	18	SN	2		0240	.41	1.20			
MANI	07	0247	0301	0250	N07	W75	.971		1.5	14	SN	2		0250	.83	1.92			
MITK	07	0247	0255	0249	N07	W75	.971	11173	1.5	8	1F		C	0249	1.03				D
HTPR	07	1023	1310	1059	S13	E05	.132	11181	7.8	167	1N		C	1059	1.96	2.00			GSU
ATHN	07	1023	1131	1114	S13	E06	.143	11181	7.9	68	1N	3		1114	3.30		.22		
TEHR	07	1030	1034	1032	S13	E08	.169		8.0	4	SF	3	C		.28				F
TEHR	07	1046E	1155	1108	S13	E06	.143		7.9	69D	1N	3	C		2.41				
TEHR	07			1050							SN				.59				SF
RAMY	07	1103E	1157	1107	S13	E06	.143		7.9	54D	1N	2	C		3.92				UF
LOCK	07	2300	0010	2320	S16	W 0	.152	11181	8.0	70	1F		C						
PALE	07	2308	2343	2318	S15	E01	.136		8.0	35	SF	2	C		1.08				HF
PALE	07			2334											1.63				
MANI	07	2311	2339	2333	S15	E03	.144		8.2	28	SF	2		2333	.52	.52			
MITK	08	0140	0155	0143	N04	W90	1.000	11173	1.3	15	1N		C	0143	.72				D
PALE	08	0143	0155	0145	N04	W90	1.000		1.3	12	SN	2	C		.45				
ARCE	12	0855	0938	0901	N19	E43	.764		15.6	43	SB		C	0901	1.22	1.90			
HTPR	12	0855	0910	0902	N17	E43	.754	11192	15.6	15	1N		C	0902	1.86	2.70			
ISTA	12	0857	0906		N19	E43	.764		15.6	9	SB								D
ATHN	12	0858	0920	0901	N18	E44	.768		15.7	22	SN	1		0901	.83	1.65	.77		
CATA	12	0900	0905D	0900	N18	E43	.759		15.6	5D	SB		P	0900	.69	1.08		209	D
CAPS	13	1324	1348		N07	E58	.862	11196	17.9	24	1N	2	V	1329	1.40	2.80		160	
RAMY	13	1325E	1351	1327	N09	E58	.866		17.9	26D	SB	3	C		1.03				D
ATHN	13	1327E	1339	1330	N10	E62	.899		18.2	12D	SN	1		1330	.66	1.34	.90		
LOCK	13	1810	1850	1820	N 7	E57	.854		18.0	40	SF		C						
PALE	13	1819	1837	1826	N08	E57	.856	11196	18.0	18	1N	3	C		1.80				F
RAMY	13	1820	1840	1824	N09	E57	.858		18.0	20	SN	3	C		.93				D
PALE	13	2328E	0020	2340	N08	E53	.819		18.0	52D	SB	2	C		1.35				D
PALE	13			2358						)	1B				3.25				
MANI	13	2328	2340	2334	N09	E53	.822		18.0	12	SN	2		2334	.93	1.57			
LOCK	13	2328	0030	2335	N 4	E54	.820		18.0	62	SN		C						K
LOCK	13			2352							1N								K
MANI	13	2344	0022	2359	N08	E52	.809	11196	17.9	38	1B	2		2359	3.92	6.52			
MITK	13	2355E	0105		N09	E53	.822		18.0	70D	1N		C	2355	2.27	4.00			E
CATA	15	0735E	0840	0750	N08	E34	.604	11196	17.9	65D	1B		P	0750	3.25	4.07		214	
ATHN	15	0740E	0800	0754	N10	E35	.627	11196	17.9	20D	1N	1		0754	1.98	3.92	.63		
ARCE	15	0825E	0922		N08	E34	.604	11196	17.9	57D	1F		C	0825	2.16	2.80			F
CATA	17	0645	0655	0645	N20	W20	.552		15.8	10	SB		C	0645	.75	.91		204	
MANI	17	0645E	0702		N17	W21	.527	11192	15.7	17D	1N	2		0647	2.06	2.40			
CAPF	18	1052E	1100D		S15	W88	.998	11198	11.9	8D	1N		P	1053	.62				A
ATHN	19	1109	1159	1117	S07	W53	.794		15.5	50	SN	1		1117	1.49	2.55	.77		
ISTA	19	1110	1145		S07	W50	.762		15.7	35	SN								
CAPS	19	1113	1150	1123	S07	W45	.703	11207	16.1	37	1N	3	P	1117	2.00	2.80		185	
RAMY	19	1125E	1157	1138	S07	W54	.804		15.4	32D	SN	2	C		1.13				D
CATA	19	1125E	1135D	1125	S08	W51	.772		15.7	10D	SN		P	1125	.52	.85		166	
CAPF	19	1128E	1155D		N02	W50	.774		15.7	27D	1N		P	1130	2.48	4.08			
ATHN	21	1405E	1425	1405	S15	E09	.206		22.3	20D	SN	1		1405	.33	.64	.21		
CAPF	21	1407E	1420D		S02	E09	.178	11209	22.3	13D	1N		P	1412	2.06	2.10			
RAMY	21	1408	1415	1410	S16	E10	.230		22.3	7	SF	1	C		.41				D
CATA	27	0615E	0640D	0615	N01	W90	1.000		20.5	25D	1F		P	0615	.58			127	T
CATA	29	0935E	1015D	0941	S15	W07	.187		28.9	40D	SN		P	0941	1.44	1.47		195	
ARCE	29	0936	1000D	0941	S13	W07	.162		28.9	24D	SB		C	0941	1.74	1.90			
HTPR	29	0937	0948D	0941	S14	W05	.153		29.0	11D	SN		C	0941	1.34	1.40			E
MANI	29	0942E	0955	0943	S14	W05	.153		29.0	13D	SN	1		0943	.62	.65			
HTPR	29	0952E	1006	0952	S14	W05	.153	11219	29.0	14D	1N		C	0952	3.40	3.40			
ATHN	30	1255E	1317D	1259	S15	W21	.378		29.0	22D	SN	1		1259	.50	.99	.39		
HTPR	30	1255	1333	1302	S15	W20	.364	11219	29.0	38	1B		C	1302	2.78	2.80			U
MCMA	30	1255	1335	1300	S16	W19	.355	11219	29.1	40	SN		C	1300	.83	.90			EL
CATA	30	1255	1340D	1302	S17	W18	.349	11219	29.2	45D	1B		P	1302	2.02	2.16		207	
RAMY	30	1255	1337	1302	S15	W20	.364		29.0	42	SN	3	C		1.86				UH
RAMY	30			1325											.57				

SOLAR FLARES

MARCH 1971

OBSERVATORY	OBSERVED UT: DATE 1971 MAR	START	END	MAX. PHASE	LOCATION: APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION — MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS: TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
CAPS	30	1257	1321		S16	W15	.299		29.4	24	SF		V	1259	.70	.70		150	E
BOUL	30	1300E	1320	1300E	S14	W21	.373		29.0	20D	SN	1	V						
CAPF	30	1306E	1315D		S03	W18	.314	11219	29.2	9D	1F		P	1308	2.27	2.42			
ATHN	30	1319E	1336D	1322	S17	W18	.349		29.2	17D	SF	1		1322	.25	.50	.35		
BOUL	30	1327	1335	1330	S18	W18	.357		29.2	8	SF	1	V						
TEHR	30	1421	1433	1424	S15	W20	.364		29.1	12	SN	3	C		.25				DS
RAMY	30	1421	1453	1426	S15	W20	.364		29.1	32	SN	3	C		.83				FS
RAMY	30			1434											1.24				
HTPR	30	1422	1450	1430	S15	W20	.364	11219	29.1	28	1B		C	1430	2.58	2.60			
BOUL	30	1423	1500U	1427U	S14	W22	.388		28.9	37U	1F	1	C	1427	1.94	2.10			
MCMA	30	1424E	1451D		S16	W19	.355	11219	29.2	27D	SN		C	1430	.83	.90			E
CAPS	30	1426	1451		S16	W16	.313	11219	29.4	25	1F	3	V	1427	3.00	3.00		150	
CATA	30	1430E	1450D	1443	S16	W21	.384		29.0	20D	SN		P	1443	.87	.95		170	
ATHN	30	1430E	1455D	1430	S22	W15	.360		29.5	25D	SN	1		1430	.66	1.34	.41		
RAMY	31	1512	1522	1516	S18	W02	.200		31.5	10	SN	1	C		.62				D
BOUL	31	1514	1555	1518	S18	W 3	.204		31.4	41	SN	1	C	1518	.32	.32			
MCMA	31	1516	1550D	1517	S18	W04	.209	11221	31.3	34D	SN		C	1517	.41	.40			E
ATHN	31	1516E	1528D	1518	S19	W02	.217		31.5	12D	SN	1		1518	.50	.99	.22		
CAPS	31	1517	1527		S18	W02	.200		31.5	10	SF	2	V	1518	.50	.50			
CAPF	31	1535E	1620D		N16	E88	1.000	11228	7.2	45D	1N		P	1539	.62				A
CAPF	31	1535E	1545D		S06	W02	.036	11221	31.5	10D	1N		P	1539	2.68	2.73			

Remarks:

A = Eruptive prominence, base at >90°.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No spots visible in the neighborhood.
H = Flare with high velocity dark surge.
I = Very extensive active region.
J = Plage with flare shows marked intensity variations.
K = Several intensity maxima.
L = Filaments show effects of sudden activation.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H or K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line.
S = Brightening follows disappearance of filament (same position).
T = Region active all day.
U = Close and somewhat parallel bright filaments (|| or Y shape).
V = Occurrence of an explosive phase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα emission.
Y = Onset of a system of loop-type prominences.
Z = Major sunspot umbra covered by flare.

SOLAR FLARES

Date, time (UT) and coordinates of Subflares not included in preceding table.

MARCH 1971

01 0050 S17 W67	01 0313 N09 E03	01 1048 S08 W11	01 1138 S12 E86	01 1930 S12 W65	01 1930 S 9 W65
01 1931 S06 W65	01 1932 S08 W66	02 0002 S 8 W66	02 0004E S08 W69	02 0333 N05 W17	02 0417 S13 E68
02 0645 S12 E72	02 0945E S02 E38	02 1729 S17 W88	02 1822 N12 E13	02 1823 N10 E13	02 2050 N 8 W22
02 2222 S18 W84	03 0055 N09 W23	03 0056 N07 W24	03 0355E N07 W33	03 0408E S15 W13	03 0655E S15 W15
03 0658 S15 W15	03 0703 S15 W15	03 0709 N08 W27	03 0719 N06 W25	03 0756 S15 W16	03 0758 S14 W15
03 0830 S15 W16	03 0910 S01 E24	03 1114 S14 W17	03 1118 S14 W17	03 1739 N 9 E77	03 1942 N24 W 9
03 1943 N25 W14	03 2224 S 2 W82	04 0936 S13 W31	04 0938 S15 W30	04 1110E S03 E10	04 1246 S03 E09
04 1709 S14 W34	04 1710 S13 W35	04 2051E N16 W22	04 2151 N06 W49	05 0116 S19 W35	05 0424 N07 W63
05 0824E N11 W20	05 0954 N14 E18	05 1315E N07 W66	05 1354E N08 E49	05 1457 N08 W70	05 1733 S16 E30
05 1736 S14 E31	05 1736 S14 E31	05 1806 S16 E30	05 1810E S13 E29	06 0301E N06 W73	06 0308E S12 E22
06 0619 S10 E25	06 0835 N05 W74	06 0835 N05 W73	06 1124 S14 W90	06 1448 N08 W79	06 2146 N17 E79
07 0501E N25 W51	07 0604 N05 W87	07 0607E N07 W85	07 0609E S14 E88	07 0653E S07 E14	07 1050E N10 W75
07 1052 N04 W78	07 1110 N25 W53	07 1920 N 3 W81	07 2035 N 3 W81	07 2035 N06 W90	07 2116 S16 E 2
07 2119 S15 E03	07 2150 N 6 W55	08 0754 S14 W08	08 0757E S17 E48	08 0759E S13 W07	08 0829E S12 E95
08 0840E S08 E43	08 0907E S19 W88	08 1053 S08 E45	08 1532 S19 W05	08 1534 S19 W06	08 1845E S18 E68
08 2100 N21 W46	09 0217 S12 W19	09 0245 S12 W18	09 0417 S13 W18	09 0854E S14 E60	09 0920 S08 E28
09 1022 S14 W22	09 1027E S14 W23	09 1030E S14 W21	09 1041 S14 W22	09 1043E S14 W23	09 1445E N01 E25
09 1658 S18 E57	09 1700 S15 E57	09 1700 S17 E57	09 1742 N21 E87	09 1742 N19 E79	09 2120 N19 E79
09 2121 N20 E85	09 2123 N22 E85	10 0818 N20 E75	10 0823E N19 E74	10 0823 N21 E80	10 0824 S 5 E15
10 0929 S19 W10	10 1020E S14 E46	10 1951 S06 E07	10 2005E N05 E89	11 0732E S09 E05	11 0733E S08 E04
11 1004 N13 E56	11 1020 N15 W44	11 1302 N15 E25	11 1331 N08 E88	11 1611 S15 W50	11 2023E N08 E82
11 2043 S14 W54	11 2230 N 8 E81	11 2320 N 5 E78	12 0549 N09 W10	12 0659E N09 W10	12 0714E N07 E73
12 0714E S17 E22	12 0755 N18 E42	12 0815 N07 W14	12 0815E S09 E72	12 0818 N05 E72	12 0825 N09 E80
12 0908 N07 E80	12 1116 N13 E46	12 1207 N13 E12	12 1208E N18 E15	12 1335 S16 E18	12 1335 S17 E18
12 2156E S09 W19	13 1118 N18 E28	13 1321E N22 E32	13 1322 N18 E32	13 1325E N18 E28	13 1540E N21 E24
13 1808 S19 E80	13 1809 S19 E85	13 1841E S09 E73	13 1917 N18 E24	13 1924E N19 E23	13 2105 N 7 E54
13 2105 N 7 E54	13 2113E N08 E56	13 2128E N09 E54	13 2228 S20 E78	13 2302E N11 E55	13 2305 N 6 E53
13 2310E N10 E53	14 0536 S01 E44	14 0716E N18 W12	14 0745E N11 E49	14 0834E S15 W05	14 1703 S10 W45
14 1826 N08 E42	14 1826 N08 E42	14 2320 N 9 E41	15 0302 N18 E07	15 1316E N20 E02	15 1842E N06 E29
15 1843 N08 E29	15 2112 N 9 E27	15 2112 N11 E29	15 2117 N09 E32	15 2118 N10 E29	15 2213E N08 E28
15 2217U N18 W 3	16 0333 N06 E23	16 0413 N09 E23	16 0954 S13 W35	16 1132 N07 E18	16 1305 N07 E18
16 1307 N05 E18	16 1627E N12 E52	16 1838 N07 E16	16 1840 N 7 E14	16 1840E N 8 E15	16 1854E N08 E16
16 2118 N 8 E15	16 2121 N06 E14	16 2121E N08 E15	16 2225 N08 E15	16 2311 N10 E15	17 0640 S06 W21
17 0651 S08 W21	17 0712E S05 W22	17 0830 S05 W22	17 0830 S05 W22	17 0900E S06 W22	17 0954E S07 W21
17 1407 N21 W23	17 1408 N22 W23	17 1408 N22 W24	17 1437 S10 E83	17 1719 N19 W28	17 1719 N18 W27
17 1812 S05 W28	18 0024 S22 E13	18 0218 S07 W31	18 0222E S06 W30	18 0229 S07 W33	18 0244 S07 W31
18 0533 S07 W33	18 0539E S07 W33	18 0608 S04 W59	18 0725 S06 W34	18 0753 S18 W60	18 0754 S15 W35
18 0755 S18 W55	18 0826 S04 W59	18 1050 N05 W12	18 1155 N06 W06	18 1312E S05 W35	18 1344E S15 W58
18 1416 S06 W37	18 1437 S04 W38	18 1541E S20 E08	18 1552E S05 W39	18 1554E S19 E04	18 1606 S18 E47
18 1613E S14 E46	18 1618 N18 W41	18 1620 N18 W39	18 1715 S 6 W41	18 1830 S 6 W41	18 1855 S 7 W41
18 2145 S 7 W41	18 2147E S 7 W43	18 2220 S 7 W41	18 2224E S 7 W43	18 2243 S18 E46	18 2248 S15 E45
18 2330 S18 E46	18 2345 S 7 W41	19 0005 N17 W44	19 0053 S09 W42	19 0155 S09 W39	19 0233E S10 W45
19 0550 S07 W52	19 0553E S09 W47	19 0707 N07 W24	19 1010 N08 W22	19 1915 S06 W50	19 1943E N20 W55
19 1947E S06 W53	19 1949E S06 W50	19 2229U N 9 W26	19 2326U N 7 W29	20 0536E S15 W88	20 0750E S16 E25
20 0754E S14 E26	20 1322 S14 E23	20 1323E S14 E24	20 1426E S10 E50	20 1436E S14 E24	20 1515 N17 E03
20 1610 S16 E22	20 1950 S16 E22	20 2130 S16 E22	20 2103U S15 E19	21 0018E S05 W75	21 0108 S05 W74
21 0145 S04 W80	21 0222 S04 W80	21 0256E S03 W78	21 0330 S04 W77	21 0330 S04 W80	21 0523 N32 E28
21 0558 S04 W80	21 0633E S03 W79	21 0651E S04 W80	21 0720 S04 W80	21 0818E S15 E12	21 0919 S04 W80
21 1106E N07 W49	21 1107E N07 W53	21 1235 S14 E10	21 1457E N20 W85	21 1554E S09 E35	21 1725 S20 E 9
21 1926 S 4 W76	21 2035 S16 E 5	21 2330 S16 E 5	21 2343 N 4 E75	23 0400 N20 W10	23 0912 S14 W16
23 1025E S13 E76	23 1040 S12 E75	23 1102E S13 E76	23 1120 S14 E76	23 1215 S13 E75	23 1520E S12 E72
23 1525 S13 E72	23 1601E S17 W19	23 1738 N07 W80	24 0528 S14 W27	24 0529 S17 W25	24 0758 S13 E62
24 0854 S13 E64	24 0940E S15 W31	24 1225 S14 E63	24 1229E S12 E61	24 1231 S12 E63	24 1423E S12 E62
24 1424 S12 E60	24 1424 S12 E62	24 1425E S14 E58	24 2100 S14 E57	24 2108E S13 E58	24 2156U S13 E58
25 0318 S16 E89	25 0610 S12 E54	25 0802 S18 E80	25 0810 S16 E88	25 0958 S17 E80	25 0959 S16 E87
25 1042 S16 E80	25 1044E S15 E82	25 1045 S16 E87	25 1057E S16 E80	25 1204 S13 E47	25 1225 S18 E80
25 1252 S18 E78	25 1442 S16 E78	25 2306 S11 E44	26 0533 S17 E68	26 0636 S17 E66	26 2250 S18 E63
27 0741E N03 W90	27 0918E N03 W90	27 1120E N03 W90	27 1152 N12 E53	27 1330E N03 W90	27 1410 N13 E50
27 1413 S18 E46	27 1426 N03 W90	27 1427 S05 W90	27 1428E N01 W90	27 1611 N12 E49	27 1637 N26 E41
27 1718 N 3 W81	27 1805 N21 E29	27 1805 N20 E30	27 1807 N19 E31	27 1847 N17 E88	27 2028 S15 E50
27 2029 S16 E49	27 2113 N20 W71	27 2115E N21 W65	27 2234 S15 E50	27 2245E S16 E48	27 2323 S16 E49
28 0021 S16 E48	28 0139 S19 E52	28 0205 S16 E44	28 0235 S19 E48	28 0254 S18 E47	28 1050 N24 W90
28 1141 S20 E39	28 1223 S18 E40	28 1240 S15 E40	28 1315 S12 E41	28 1315E S15 E41	29 0714E S16 W06
29 0900E S19 E19	29 0901 S20 E25	29 1025 S18 E30	29 1025E S19 E29	29 1221 S18 E25	29 1225E S19 E25
29 1410 S21 E21	29 1412 S18 E23	29 1412 S17 E23	29 1412 S17 E23	29 1515 S20 E22	29 1520 S20 E22
29 1620 S15 W 8	29 1626 S15 W07	29 1635 S20 E26	29 1635 S18 E26	29 1635 S20 E25	29 1723 S15 W 8
29 1922 S20 E20	29 1943 S18 E21	29 1945 S18 E21	29 1945 S17 E21	29 1948E S18 E21	29 2058 S17 E20
29 2136 S16 W10	29 2140 S16 W11	29 2140 S16 W10	29 2142E S07 W10	29 2145 S15 E24	29 2155 S16 E23
29 2222 N13 E49	29 2300 S19 E15	29 2305 S20 E16	29 2312E S20 E24	29 2348 S15 E21	29 2350 S16 E18
30 0030 S19 E22	30 0347E S19 E18	30 0420 S17 W15	30 0420 S19 E14	30 0427E S14 W16	30 0427E S20 E17

SOLAR FLARES

MARCH 1971

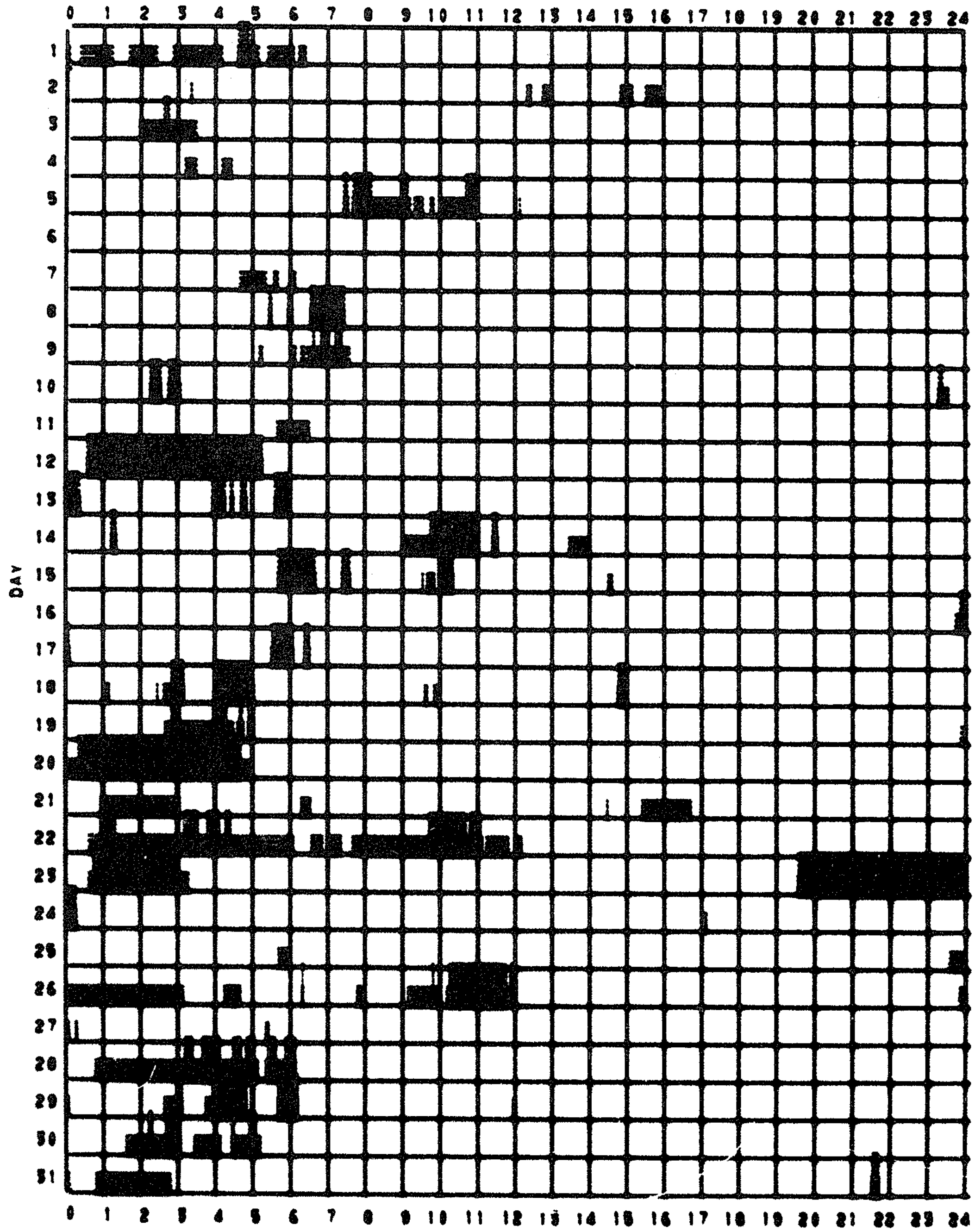
30 0556E S20 E17	30 0556E S19 E12	30 0605E S20 E12	30 0658 S19 E18	30 0700 S21 E12	30 0702E S19 E12
30 0703 S20 E12	30 0750E S19 E12	30 0753 S21 E12	30 0804E N13 E42	30 0810E S20 E10	30 0815 S21 E11
30 0816E S19 E10	30 0818 S20 E11	30 0818E S20 E12	30 0828E S19 E11	30 0830 S19 E08	30 0845E S20 E12
30 0845 S19 E11	30 0852 S20 E10	30 0853E S20 E12	30 0903E S20 E11	30 0906E S19 E10	30 0940 S20 E10
30 0958 S15 W16	30 1050 N22 W57	30 1051E N25 W57	30 1113 S20 E10	30 1115 S20 E10	30 1115E S20 E10
30 1553 S19 E 7	30 1556 S20 E08	30 1606 S16 E12	30 1628 N13 E38	30 1635 S19 E06	30 1802 N12 W 1
30 1803 N11 W00	30 1803 N10 E 0	30 2150 S20 E 5	30 2151 S18 E08	30 2156E S19 E16	31 0135 S20 E02
31 0822E S19 W02	31 0825 S20 W01	31 1143 S19 W00	31 1158E S19 W01	31 1200E S18 W02	31 1234 S19 W00
31 1236 S20 W01	31 1352 S19 W00	31 1407 S18 W01	31 1519E S14 E26	31 1616 N18 E20	31 1616 N18 E20
31 1715 S18 W04	31 1720 S18 W 5	31 1723E S18 W 5	31 1729E S19 W06	31 1731 S19 W00	31 1804 N10 E56
31 1836U S18 W 4	31 1841 S18 W 5	31 1848E S18 W04	31 1930 S17 W04	31 1935 S17 W 5	31 1938 S18 W07
31 2022 S17 W 5	31 2247 S20 W10				

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MARCH 1971

HOUR - UT



Observatories included in total patrol:

Arcetri	Capri-F (German)	Herstmonceux	Manila	Palehua
Athens	Capri-S (Swedish)	Hurbanovo	McMath-Hulbert	Ramey
Boulder	Catania	Istanboul	Mitaka	Tehran
Bucharest	Haute Provence	Lockheed	Ondrejov	Wendelstein

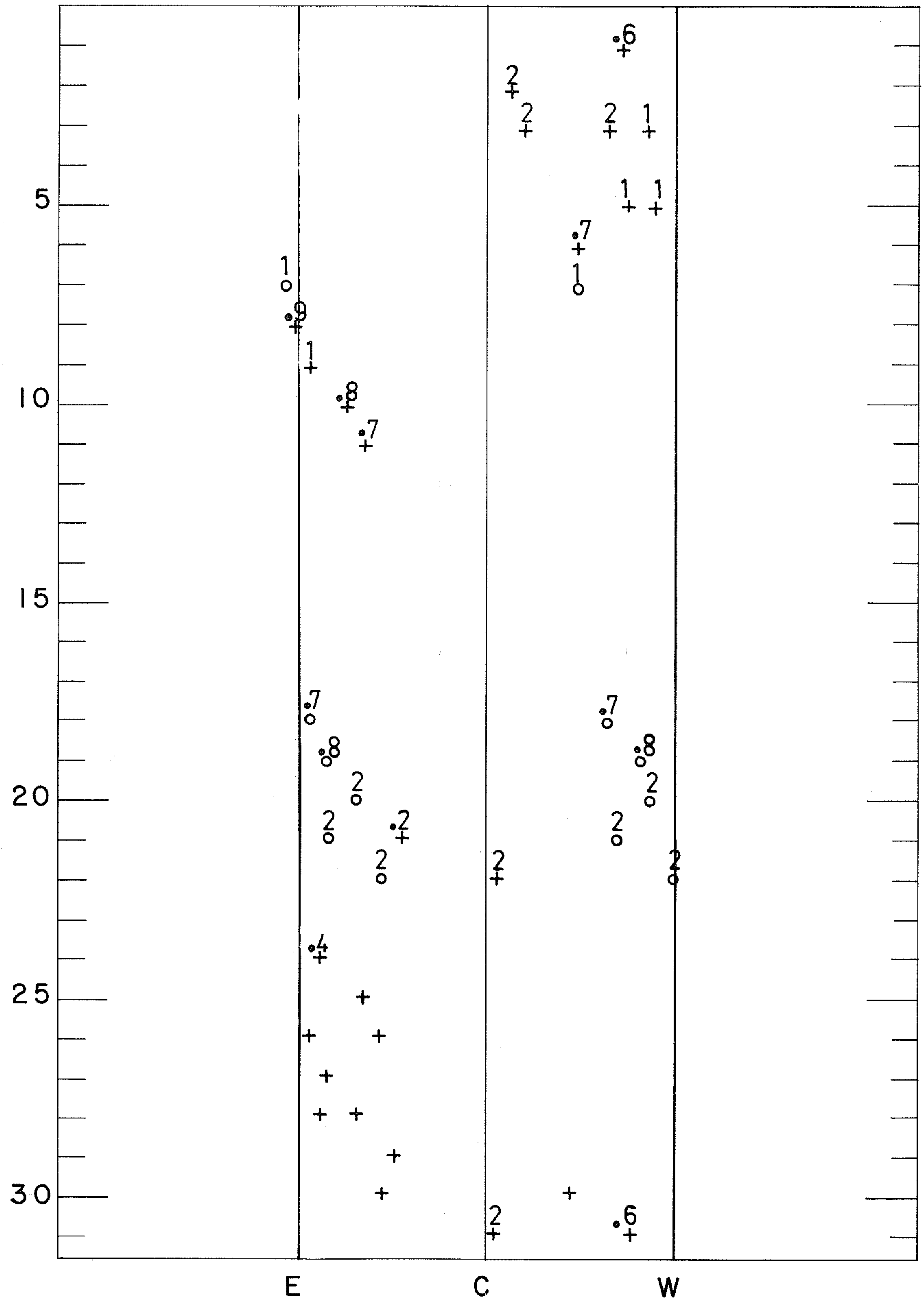
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

MARCH 1971

Nançay

408 MHz

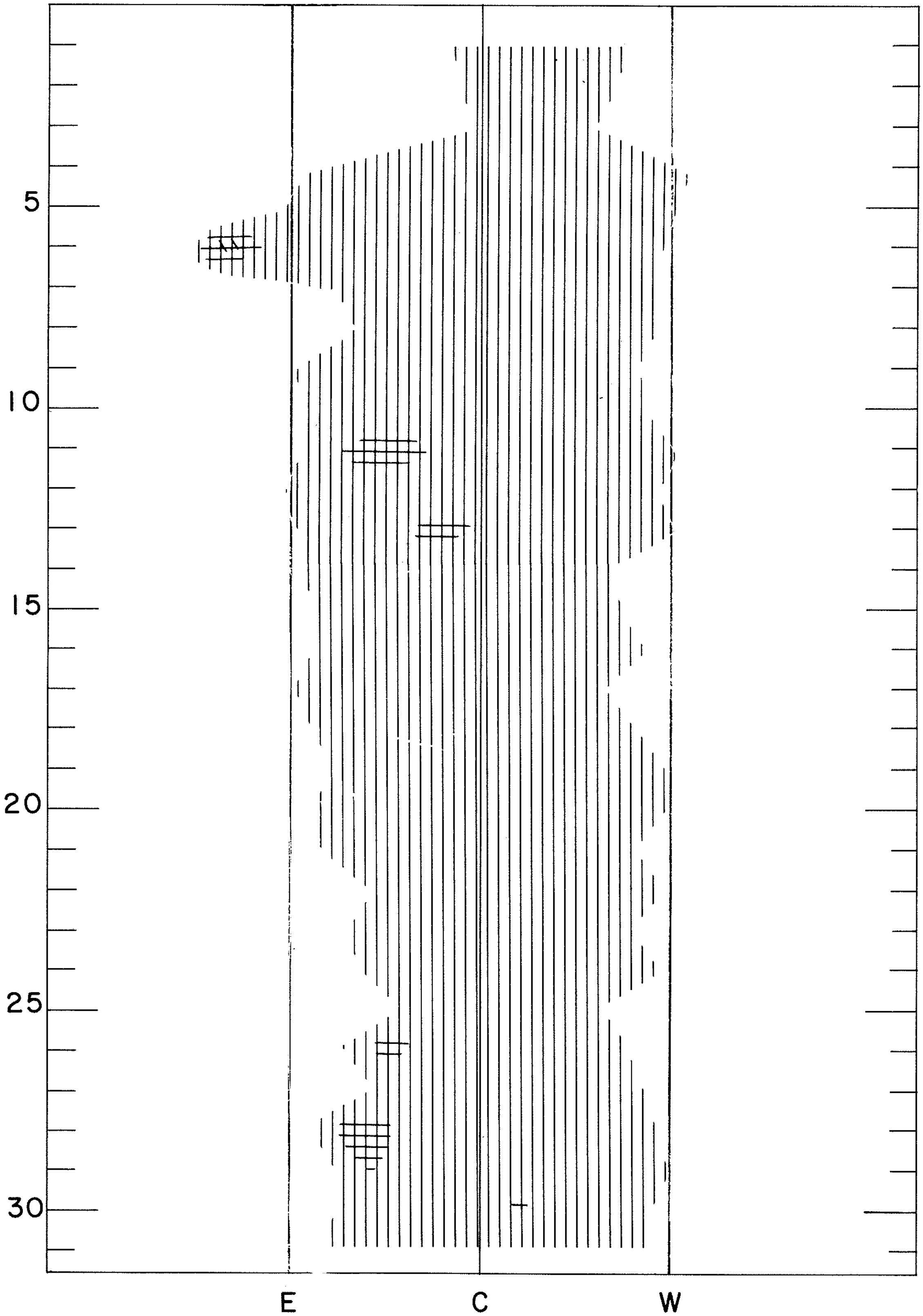


Because of the distance between the main lobes there is sometimes an ambiguity about the position East or West of the Center of Activity. The two possible positions are indicated by circles on the chart.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

MARCH 1971

Nançay 169 MHz

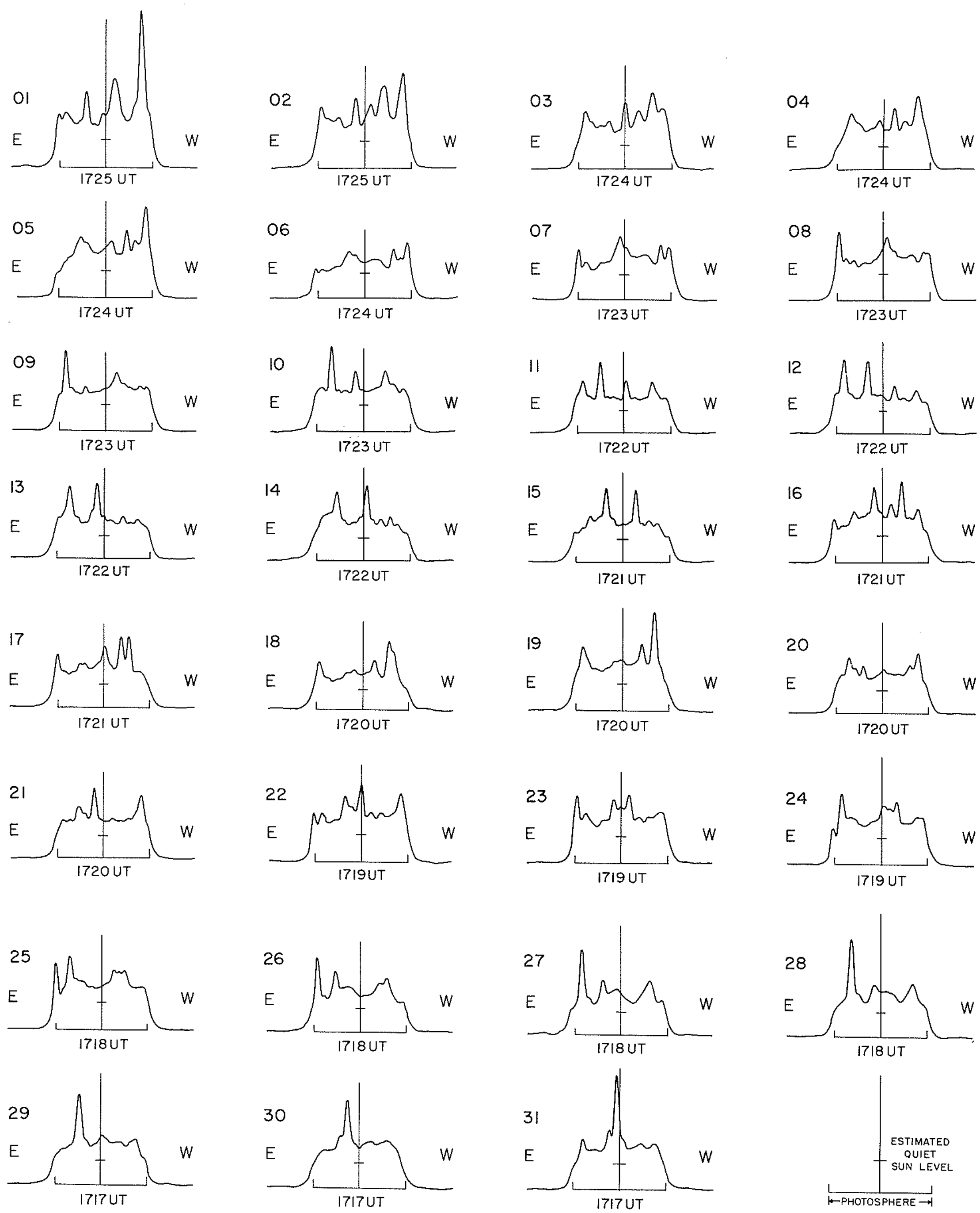


EAST - WEST SOLAR SCANS

March 1971

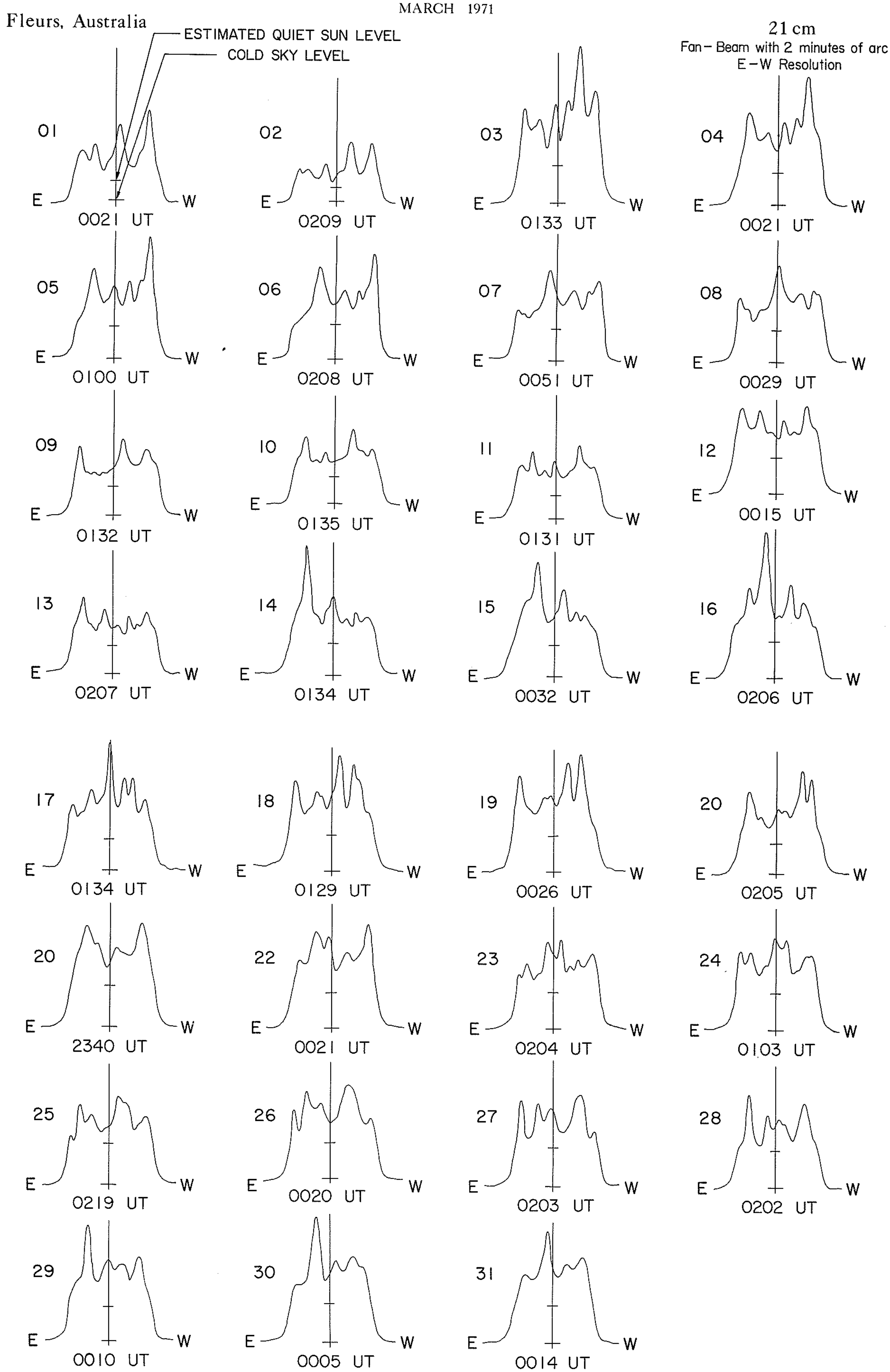
ALGONQUIN RADIO OBSERVATORY
CANADA

10.7 cm.
Fan - Beam with 1.5 minutes of arc
E - W Resolution



EAST-WEST SOLAR SCANS

MARCH 1971

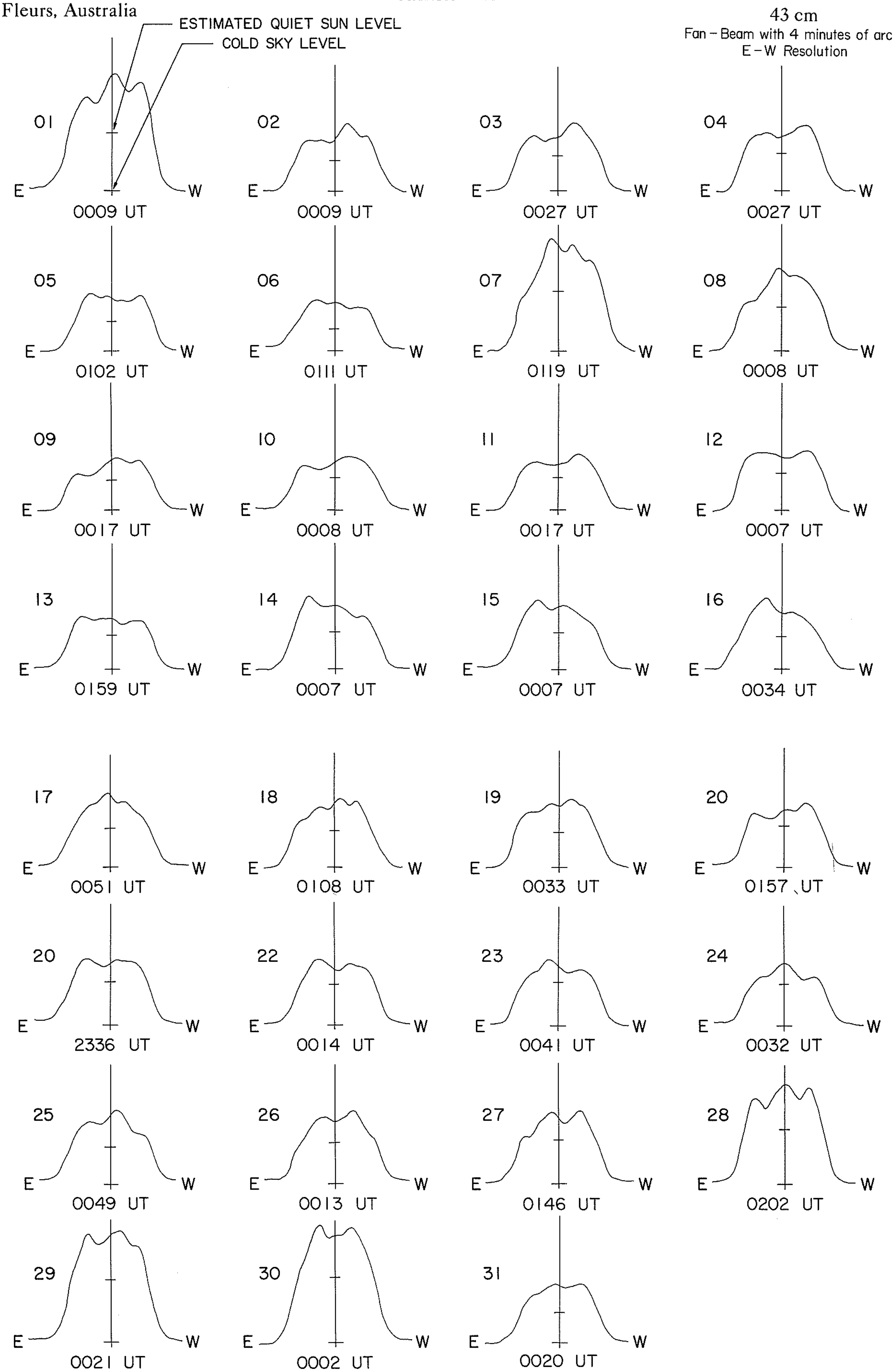


EAST-WEST SOLAR SCANS

MARCH 1971

Fleurs, Australia

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



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
MARCH 1971

MAR 1971	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$ PEAK	MEAN	INT	REMARKS
1	2695 BOUL	41	2224.5	2226.5	3.5			2	
2	2695 BOUL	41	1957	1957.5	6			1	
	2695 PENT	24	2230		20	2.2			
3	2695 PENT	20	2145	2255	140	3.2	1.6		
4	2800 OTTA	20	1505	1508	35	2.4	1.6		
	2800 OTTA	20	1540	1610	230	2.4	1.8		
8	2800 OTTA	32	2040	2115	85	-4.4	-2.2		
9	2695 BOUL	41	1712	1714.5	3			2	
	2800 OTTA	1	1742	1742.5	1	1.8	0.9		
10	2695 BOUL	40	2007	2020.1	14.5			1	
11	2695 BOUL	40	2259	2259.5	10.5			1	
12	2695 BOUL	4	2142.5	2143	1			1	
13	2695 BOUL	3	1351.5	1354.5	12			1	
	2695 PENT	21	2320	2400	90 D	9.8			
	2695 PENT	4	2347	2353.5	13	35.0	11.0		
	2695 CRON	3	2347.5	2353.5	10.5			1	
	2695 MANI	3	2350.2	2353.8	4.2	19.0	9.5		
15	2695 PENT	20	2120	2230	220	6.0			
16	2800 OTTA	20	1800	1845	160	3.0	1.4		
19	2695 PENT	1	0055.5	0056	1	3.0	1.5		
	2695 BOUL	41	2013.5	2015.5	2.5			1	
	2695 BOUL	41	2042	2042.5	2.5			1	
	2695 PENT	24	2225		15	2.2			
20	2800 OTTA	20	1615	1625	50	2.4	1.2		
	2800 OTTA	24	1725		25	2.0			
	2800 OTTA	1	2014	2015	3	2.2	1.0		
21	2800 OTTA	20	1340	1420	75	2.4	1.2		
	2800 OTTA	1	2035	2036	3	2.2	1.1		
22	2695 BOUL	40	2339.5	2341.5	5			2	
23	2695 BOUL	8	2008.5	2008.5	.5			2	
	2695 BOUL	41	2111.5	2112	2.5			1	
24	8800 SGMR	3	1424.5	1424.7	.3	22.9	4.6		
	2800 OTTA	20	2045	2115	135	3.2	1.6		
25	8800 MANI	3	0808.4	0808.7	2.3	35.9	27.6		
26	8800 MANI	2	0535.7	0535.9	1.2	5.7	2.9		
	8800 SGMR	3	1110	1111.8	3.6	26.0	5.0		
	8800 MANI	3	2222.7	2222.9	.5	54.8	21.9		
	2695 BOUL	41	2354	2354.5	2			2	
27	2695 BOUL	41	0013	0015	2.5			2	
	2800 OTTA	1	1333.5	1334.5	2.5	2.6	1.3		
	8800 SGMR	1	2028.9	2029.1	2.2	3.4	1.7		
	2695 SGMR	1	2028.8	2029.1	1.5	2.9	1.4		
28	2800 OTTA	22	1220	1223	25	4.0	2.0		
	2695 SGMR	20	1220.1	1222.6	38.7	5.7	2.8		
	8800 SGMR	20	1223.2	1223.3	41.9	4.6	2.3		
	2800 OTTA	20	1249	1250	40	2.2	1.1		
29	2695 CANR	3	1022.5	1023.5	2			1	
	2800 OTTA	21	1330	1419	155	8.4	4.0		
	2800 OTTA	20	1411.9	1413	5	54.0	20.0		
	2695 SGMR	3	1411.9	1413.4	3.6	42.4	10.0		
	2695 CANR	3	1413	1414	3			1	
	8800 SGMR	29	1415.5	1415.5	43.3	10.0	5.0		
	2695 SGMR	29	1415.5	1415.5	31.2	4.1	2.0		
	2800 OTTA	21	1700		210	2.0	1.7		
	2800 OTTA	21	1944	1948	15	4.0	1.6		
	8800 SGMR	22	1945.2	1945.3	13.3	3.8	1.8		
	2800 OTTA	1	1945	1945.5	1	5.2	2.6		
	2695 SGMR	2	1945.1	1945.5	9.7	5.7	2.0		
	2695 PENT	20	2205	0015	200	3.4	1.7		
30	2800 OTTA	20	1240	1440	200	3.8	2.0		
31	8800 SGMR	1	1515.9	1516.2	2.8	3.8	.7		
	2695 SGMR	4	1515.7	1516.5	2.3	83.7	16.8		
	2695 CANR	4	1516.5	1517.5	2			1	
	2695 BOUL	41	1517	1517.5	2			2	
	2800 OTTA	24	1610		15	2.6			
	2800 OTTA	40	1721	1724	6	13.5			

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1971

MAR 1971	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	MEAN	INT	REMARKS
31	8800 SGMR	2	1722	1725.6	8	6.7	3.3		
	2695 SGMR	2	1722.9	1724.1	5.7	9.9	4.5		
	2695 CANR	41	1723.5	1724	2.5			1	
	8800 SGMR	2	1843.6	1844.8	3.1	5.6	1.5		
	2695 BOUL	41	2009	2010	3			1	
	2695 BOUL		2009	2011.5					
	2695 BOUL	40	2040.5	2041	3			1	

Observatories:

BOUL = Boulder
CANR = Canary Islands
CRON = Carnarvon
MANI = Manila
OTTA = Ottawa ARO
PENT = Penticton
SGMR = Sagamore Hill

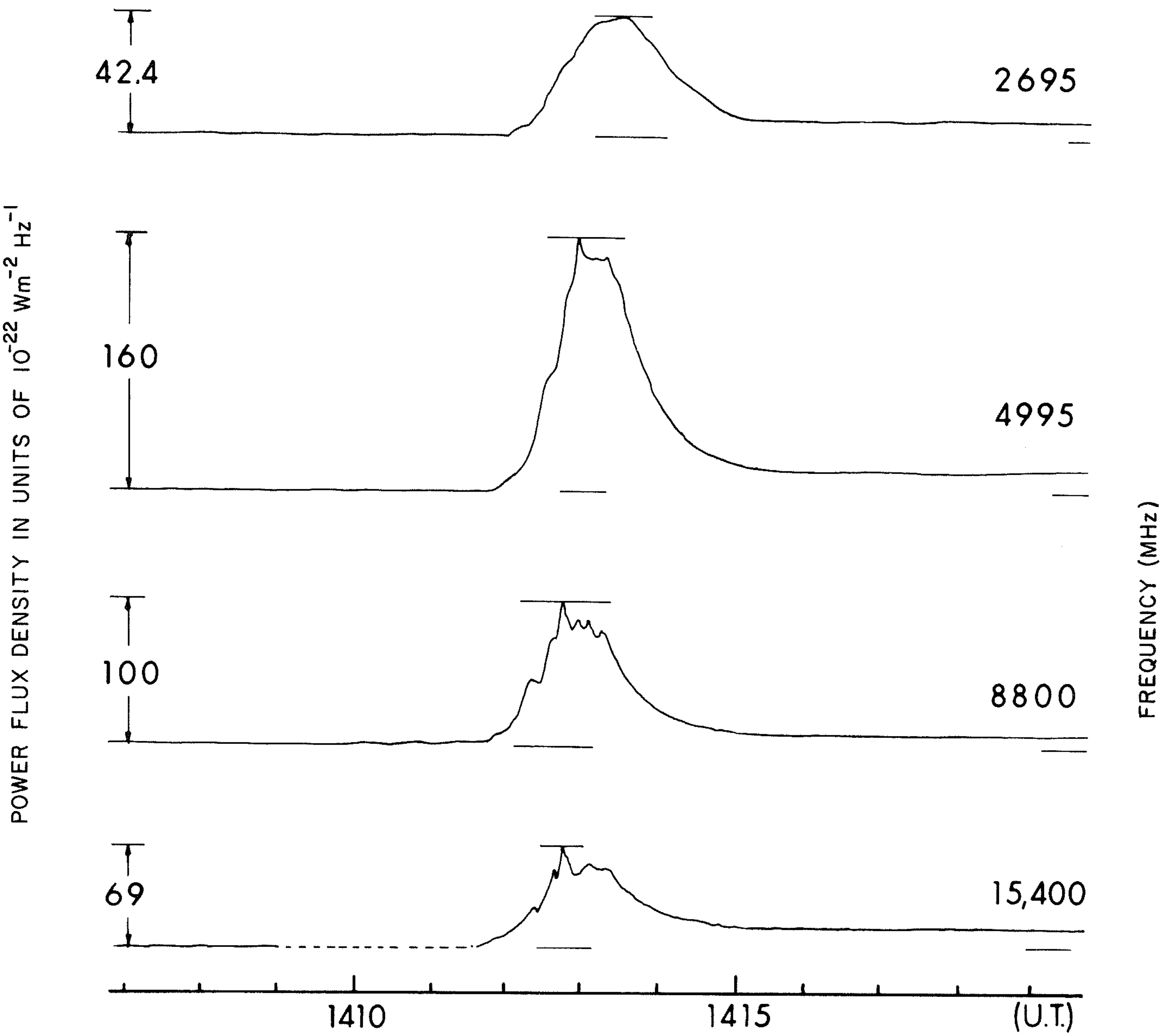
Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

Radio bursts observed at Boulder, Canary Islands and Carnarvon (1420, 2695 and 4995 MHz) are scaled on a relative intensity scale of 1-3 where, within a factor of three or less, 1 = <100 fu ($10^{-22}Wm^{-2}Hz^{-1}$), 2 = 100 - 1000 fu and 3 = >1000 fu.

SELECTED SOLAR NOISE BURST

29 MARCH 1971



SIMPLE 2 AND 2F RADIO BURST OBSERVED ON 29 MARCH 1971 SAGAMORE HILL RADIO OBSERVATORY. HAMILTON, MASS.

SOLAR WIND VELOCITY
and
CO-ROTATION DELAY TIMES

MARCH 1971

NASA Ames Research Center

DATE March 1971	PIONEER VI				PIONEER VII			
	Time (Z)	Pass	U_H^+	TAU	Time (Z)	Pass	U_H^+	TAU
1	0753	1902	448	3.4				
2	1732	1903	383	3.4				
3	0001	1903	383	3.4				
4	0002	1904	506	3.4				
5	0005	1905	448	3.4				
	0800	1906	448	3.4				
6	1943	1907	506	3.4	0033	1662	440	11.2
7								
8	0800	1909	448	3.4				
9	0800	1910	448	3.4				
10	0000	1910	566	3.4				
11	0000	1911	647	3.4				
12	0000	1912	566	3.4				
13	0000	1913	506	3.4				
14								
15	0100	1915	448	3.4				
16	0000	1916	383	3.5				
17	0000	1917	383	3.5				
	1800	1918	383	3.5				
18								
19	0000	1919	339	3.5				
	1646	1920	339	3.5				
20					2354	1677	440	11.3
21								
22								
23	0026	1923	506	3.4				
24	0002	1924	506	3.4				
25	0000	1925	448	3.5				
26	0026	1926	383	3.5				
27	0002	1927	448	3.5	0002	1683	500	11.4
28								
29	0011	1929	506	3.4				
	2355	1930	440	3.5				
30					0026	1686	500	11.4
31	0006	1931	506	3.4				
	2355	1932	506	3.4				

SOLAR WIND
VELA 3 & 5
MARCH 1971

Date	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})	Date	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})
01	1400	VELA-5A	446	1.5	20	0800	5A	424	--
	1300	5A	424	--		1000	5A	424	--
02	1924	5A	331	2.2		1200	5A	424	2.8
04	0500	5B	424	--	21	0800	5A	384	--
	0600	5B	424	--		1000	5A	384	--
	0800	5B	424	--		1100	5B	286	--
	0900	5B	424	--		1200	5A	348	--
06	0300	5A	365	1.5		1400	5B	331	2.6
07	1300	5B	300	--		1520	5A	365	1.7
	1551	5B	286	2.5		1600	5B	348	--
08	1600	5B	404	--	22	1958	5B	300	3.1
	2000	5B	404	2.1		2200	5B	315	--
09	0500	5B	348	--	23	0000	5B	286	--
10	2100	5A	470	--		0200	5B	300	3.4
	2300	5A	470	--		0300	5B	286	--
11	0000	5A	470	--		0600	5B	286	--
	0200	5A	495	2.1		0800	5B	286	6.3
	0400	5A	470	1.5		0900	5B	286	--
	2100	5B	423	--	24	1600	5A	520	--
	2300	5B	470	--		1800	5A	470	--
12	0100	5B	424	--		2100	5A	520	--
	0200	5B	424	2.1	25	0000	5A	470	--
	0500	5A	424	--		0100	5A	520	--
	0800	5A	384	3.5		0200	5A	495	3.1
13	0600	5B	470	--		0300	5A	520	--
	0800	5B	520	--		0500	5A	520	3.2
	1000	5B	520	5.5		0800	5A	520	--
	1100	5B	576	--		2300	5B	424	--
	1200	5B	576	--	26	0000	5B	470	--
	1300	5B	547	4.1		0100	5B	470	--
	1400	5B	520	--		0200	5B	470	3.2
	1500	5B	576	--		0500	5B	495	3.6
	1600	5B	576	--		0800	5B	520	--
	1700	5B	637	--		0900	5B	470	--
	1751	5B	576	2.5		1400	5A	470	--
16	1300	5B	520	--		1700	5A	520	--
	1500	5B	470	1.7	27	0700	5B	520	--
	1600	5B	495	--		0800	5B	470	.5
	1700	5B	470	--		1500	5B	470	--
	1800	5B	520	--		1800	5B	424	--
	1900	5B	520	--	30	1600	5A	315	--
	2000	5B	470	1.4		1700	5B	315	--
	2100	5B	495	--		1900	5B	315	--
17	0029	5A	520	1.8		2000	5B	315	--
	0200	5A	470	--		2200	5A	348	--
	0300	5A	424	--	31	0030	5A	348	7.2
18	0000	5B	424	--		0230	5B	365	5.4
	0100	5B	424	--		0400	5B	365	--
	0140	5B	404	2.9		1100	5A	384	--
	0500	5B	424	--		1300	5A	348	--
						2200	5B	520	--

COSMIC RAY PROTONS

MARCH 1971

Counting Rates (particles/sec)

Univ. of Chicago

PIONEER VI

Date Mar.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Mar.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	1000	.488	Q	Q					
1	1800	.530	Q	Q	15	0200	.218	Q	Q
2	0200	.672	Q	Q	15	1600	.441	Q	Q
2	1000	.831	Q	Q	16	0100	.816	Q	Q
2	1800	1.08	Q	Q	16	1500	.329	Q	Q
3	0200	.892	Q	Q	17	0100	.475	Q	Q
3	1000	.717	Q	Q	17	1300	101.8	Q	Q
3	1800	.653	Q	Q	17	1600	85.3	Q	Q
4	0200	.408	Q	Q	18	0100	1.52	Q	Q
4	1000	.408	Q	Q	19	1600	.962	Q	Q
4	1800	.515	Q	Q	20	0200	.580	Q	Q
5	0200	.554	Q	Q	23	0200	.224	Q	Q
5	1000	.497	Q	Q	24	0200	.184	Q	Q
5	1800	.714	Q	Q	24	1600	.180	Q	Q
6	2000	.394	Q	Q	25	0200	.181	Q	Q
8	1000	1.98	Q	Q	25	1600	.154	Q	Q
8	1800	.530	Q	Q	26	0200	.174	Q	Q
9	0700	.914	Q	Q	26	1600	.180	Q	Q
9	1600	.423	Q	Q	27	0200	.176	Q	Q
9	1800	.394	Q	Q	29	0200	1.76	Q	Q
10	0200	.380	Q	Q	30	0200	4.06	Q	Q
10	2300	.519	Q	Q	31	0200	3.66	Q	Q
11	1500	.238	Q	Q	31	2300	.731	Q	Q
11	2300	.200	Q	Q					
12	1600	.238	Q	Q					
12	2300	.238	Q	Q					

PIONEER VII

Date Mar.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Mar.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
5	2200	.245	Q	Q	25	2100	.085	Q	Q
20	2200	2.15	Q	Q	29	2200	.117	Q	Q

* Includes He 0.6-13 Mev/nucleons and electrons ∿0.5 Mev -see J. Retzler and J. A. Simpson, J. Geophys. Res., 74, 9, 2149-2160, 1969 for discussion of the electron response of Pioneer VII.

** Includes He >13 Mev/nucleon.

Q Used to indicate that a rate is at its quiescent level.

Notes:
(1) Data are subject to future determination of possible saturation during enhanced flux observations.
(2) Pioneer heliographic longitude is given in the solar wind tabulations in terms of "co-rotation" delay time (days).
(3) Unidirectional geometrical factors are 5.8×10^{-4}, 1.15×10^{-4}, $1.7 \times 10^{-4} m^2$ster for the three ascending energy intervals given above. The two higher energy intervals have a bidirectional response at energies greater than ∿100 Mev/nucleon. See Fan, Pick, Pyle, Simpson, and Smith, J. Geophys. Res., 73, 5, 1555-1582 for a description of the University of Chicago instruments.
(4) The symbol "Q" is used to indicate that a rate is at its quiescent level. Quiescent counting rates at present are approximately:
Pioneer 6 0.1, 0.055, 0.250 counts per second,
Pioneer 7 0.1, 0.055, ∿0.100 counts per second for the three ascending energy intervals.
(5) Times are only approximate (time accurate to approximately ± 15 minutes).

COSMIC RAY PROTONS

MARCH 1971

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII							
Date Mar.	Time (UT)	>13.9 Mev	>64 Mev	Date Mar.	Time (UT)	>13.9 Mev	>64 Mev
1	0500	4.65	.80	11	1130	4.35	.81
	1221	4.62	.88		2100	4.40	.80
2	0400	4.62	.60	12	1200	4.39	.80
	1200	4.62	.80	15	1201	4.45	.69
3	0400	4.62	.48		2030	4.43	.83
	1130	4.62	.91	16	1200	4.46	.83
4	0400	4.71	.78	18	0000	4.53	.63
	1130	4.67	.86	19	1200	4.70	.80
5	0400	4.46	.77	23	2200	4.58	.84
	1200	4.42	.71	24	1200	4.52	.81
8	0400	4.46	.79	25	1200	4.66	.68
	1218	4.54	.89	26	1200	4.68	.73
9	0400	4.48	.63	29	1900	4.89	.64
	1200	4.62	.77	30	2000	4.86	.79
10	2030	4.48	.81	31	1900	4.89	.86

Pioneer IX							
Date Mar.	Time (UT)	>13.9 Mev	>40 Mev	Date Mar.	Time (UT)	>13.9 Mev	>40 Mev
6	1600	3.51	.56	20	2000	3.94	.85
10	2100	3.63	.82	23	2200	3.82	.82
11	2100	3.65	.62	26	1730	3.77	.70
13	2022	3.63	.72	28	2300	3.98	.74
14	2300	3.58	.74				

SOLAR PROTON MONITORING ATS-1 (1966-110A)

MARCH 1971

AEROSPACE CORP

ENERGY LEVEL 5-21 MEV - HOURLY AVERAGES (PARTICLES CM^{-2} SEC^{-1})

DATE \ HOUR	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	0.36	0.31	0.31	0.26	0.10	0.10	0.10	0.15	--	--	--	--	--	--	0.26	--	--	--	--	--	--	--	0.42	--
02	0.31	0.36	0.52	0.15	0.15	0.15	0.26	0.15	0.31	--	--	--	--	--	--	0.36	0.36	--	--	--	--	--	0.31	0.36
03	0.36	0.21	0.21	0.15	0.31	0.36	0.31	0.26	0.73	--	--	--	--	--	--	1.10	0.58	--	0.68	--	--	--	--	--
04	0.41	0.41	0.14	0.81	0.54	0.27	0.27	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
05	--	--	0.31	0.15	0.05	0.36	0.15	0.21	--	--	--	--	--	--	--	--	--	0.21	0.31	0.42	0.27	--	0.41	0.41
06	--	0.27	0.27	0.14	0.27	0.27	0.27	0.27	0.14	--	--	--	--	--	--	--	0.41	0.27	--	0.42	0.27	0.42	0.10	0.21
07	0.36	0.58	0.42	0.42	0.05	0.10	0.63	0.36	0.21	--	--	--	0.47	0.26	0.42	0.63	0.42	0.36	0.10	0.36	--	0.26	0.52	0.52
08	0.68	0.05	0.42	0.84	0.42	0.52	0.36	0.63	0.52	--	--	--	0.42	0.68	0.52	0.52	0.26	0.36	--	0.26	0.27	0.42	--	--
09	0.21	0.36	0.36	0.31	0.26	0.26	0.21	0.36	0.31	--	--	--	--	--	--	0.47	0.68	0.42	0.52	0.36	0.27	0.42	0.47	0.36
10	0.21	0.15	0.42	--	0.10	0.10	0.31	--	0.27	0.14	--	--	0.68	--	--	--	0.79	1.26	0.63	0.47	0.54	0.42	0.27	0.42
11	0.47	--	--	--	--	--	0.54	0.54	0.27	--	--	--	--	--	--	--	0.27	0.42	0.15	0.15	--	--	--	--
12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.54	--	--	--	--	--	--	0.05	0.05	0.14
13	--	--	--	--	--	--	0.10	0.05	0.05	--	--	--	--	--	--	--	--	--	--	0.15	--	0.21	0.00	0.00
14	0.10	0.15	0.21	0.15	0.15	0.10	0.05	0.00	0.15	--	--	--	0.10	0.10	0.05	0.26	0.05	0.10	0.05	0.15	--	0.05	--	--
15	--	--	0.05	0.05	0.15	0.05	0.05	--	--	--	--	--	--	--	0.05	0.10	0.10	0.21	0.15	0.05	--	--	--	--
16	--	--	--	--	--	--	--	0.21	0.05	--	--	--	0.05	0.31	0.10	0.15	--	0.27	0.14	0.14	--	0.31	--	--
17	--	--	--	--	--	--	0.15	0.10	--	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--
18	--	--	--	--	--	--	0.05	0.21	0.10	--	--	--	0.14	0.14	0.05	0.15	--	--	0.31	0.31	--	0.21	--	--
19	--	--	--	--	--	--	0.10	0.21	0.21	--	--	--	0.52	0.15	0.26	0.05	--	0.21	--	0.14	0.14	0.21	--	--
20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--	--	--	0.10	0.15	0.10
21	0.10	0.10	0.21	0.26	0.05	0.10	0.05	0.10	0.21	--	--	--	0.15	0.15	0.21	0.21	0.26	--	0.10	--	0.05	0.26	0.15	0.26
22	0.05	0.15	0.10	0.31	0.10	0.05	0.10	0.42	0.21	--	--	--	0.15	0.31	0.21	0.21	0.26	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--	--	--	--	0.15	0.15	0.36	0.15	0.10	0.15	--	--	--	0.10	--	--
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	0.10	0.26	--	--	--	--	--
25	--	--	--	--	--	--	--	--	--	--	--	0.26	0.15	0.15	0.21	0.36	0.05	0.10	0.10	--	0.31	0.21	--	--
26	--	--	--	--	--	--	--	--	--	--	--	0.10	0.58	0.42	0.21	0.15	--	--	0.14	--	0.10	--	--	--
27	--	--	--	--	--	0.10	0.15	0.05	0.10	--	--	--	0.10	0.21	0.15	0.05	--	0.15	--	--	0.10	0.10	--	--
28	0.10	--	0.36	--	--	--	--	--	--	--	--	--	--	--	0.27	0.14	0.14	0.31	0.26	0.27	0.21	0.15	--	--
29	0.10	0.26	0.10	0.05	--	0.14	0.27	0.21	--	--	--	0.26	0.10	0.15	0.31	0.15	--	--	--	--	--	--	--	--
30	--	--	--	--	--	0.21	0.05	0.10	--	--	--	0.21	0.26	0.52	0.10	--	0.00	0.15	0.15	0.41	0.21	0.10	--	--
31	--	--	--	--	--	--	--	--	--	--	--	0.31	0.26	0.36	0.42	0.26	0.05	0.05	0.10	0.14	0.21	0.26	--	--

SOLAR PROTON MONITORING ATS-1 (1966-110A)

MARCH 1971

AEROSPACE CORP

ENERGY LEVEL 21-70 MEV - HOURLY AVERAGES (PARTICLES CM^{-2} SEC^{-1})

DATE \ HOUR	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	0.48	0.39	0.35	0.38	0.42	0.40	0.40	0.31	0.42	--	--	--	--	--	--	0.26	--	--	0.40	0.36	0.36	--	--	0.41
02	0.40	0.36	0.39	0.37	0.36	0.37	0.41	0.33	0.46	--	--	--	--	--	--	0.39	0.35	--	--	--	--	0.38	0.40	0.41
03	0.43	0.44	0.36	0.34	0.39	0.45	0.49	0.38	0.42	--	--	--	--	--	--	0.35	0.34	--	0.43	--	--	--	0.40	0.34
04	0.36	0.37	0.33	0.33	0.37	0.33	0.34	0.36	0.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
05	--	--	0.42	0.43	0.38	0.40	0.37	0.40	--	--	--	--	--	--	--	--	--	0.48	0.38	0.30	0.40	0.43	--	0.38
06	0.37	0.40	0.37	0.36	0.41	0.41	0.43	0.34	0.38	--	--	--	--	--	--	--	0.37	0.40	0.33	0.40	0.38	0.38	0.55	0.43
07	0.40	0.48	0.45	0.46	0.40	0.46	0.47	0.39	0.43	--	--	--	0.36	0.41	0.43	0.44	0.37	0.42	0.46	0.37	0.33	0.38	0.34	0.45
08	0.41	0.44	0.47	0.41	0.42	0.36	0.49	0.38	0.45	--	--	--	0.42	0.46	0.36	1.97	0.38	0.39	--	0.48	0.44		0.34	--
09	0.37	0.43	0.46	0.37	0.51	0.36	0.50	0.43	0.38	--	--	--	--	--	--	0.42	0.33	0.42	0.46	0.39	0.37	0.37	0.48	0.42
10	0.41	0.48	0.34	--	0.32	0.38	0.43	0.41	0.37	--	--	--	0.36	--	--	--	0.38	0.40	0.50	0.46	0.31	0.38	0.33	0.38
11	0.44	--	--	--	--	--	0.40	0.37	0.33	--	--	--	--	0.28	0.36	0.40	0.30	0.38	0.46	0.45	--	--	--	--
12	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	0.34	--	--	--	--	--	--	0.37	0.45	0.33
13	--	--	--	--	--	--	0.45	0.40	0.43	--	--	--	0.31	0.40	0.31	0.30	--	--	--	0.37	0.36	0.36	0.34	0.37
14	0.44	0.35	0.40	0.40	0.31	0.46	0.39	0.43	0.39	--	--	0.31	0.34	0.38	0.36	0.35	0.41	0.32	0.28	0.40	--	0.42	--	--
15	0.44	0.28	0.40	0.42	0.40	0.41	0.47	0.38	0.37	--	--	--	--	0.35	0.38	0.40	0.45	0.38	0.33	0.43	--	--	--	--
16	--	--	--	--	--	--	0.34	0.37	0.35	--	--	--	0.35	0.39	0.34	0.43	0.36	0.37	0.38	--	0.37	0.40	--	--
17	--	--	--	--	--	--	0.26	0.39	0.33	--	--	--	0.30	0.33	0.34	0.34	--	--	--	0.43	--	--	--	--
18	--	--	--	--	--	--	0.31	0.36	0.36	--	--	--	0.40	0.37	0.38	0.46	--	--	0.42	0.48	0.28	0.40	--	--
19	--	--	--	--	--	--	0.36	0.40	0.41	--	--	--	0.38	0.37	1.84	0.36	--	0.40	--	0.50	0.40	0.40	--	--
20	--	--	--	--	--	--	0.30	0.36	0.43	--	--	--	0.45	0.37	0.34	0.31	--	0.33	0.31	--	--	0.38	0.40	0.38
21	0.32	0.42	0.35	0.41	0.44	0.37	0.43	0.31	0.40	--	--	--	1.88	0.48	0.35	0.33	0.41	0.37	0.42	0.31	0.42	0.36	0.33	0.43
22	0.39	1.78	0.48	0.42	0.44	0.38	0.43	0.41	0.46	--	--	--	1.82	1.80	0.41	0.39	0.36	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--	--	--	--	0.37	0.35	0.41	0.49	0.45	0.34	--	--	--	0.49	--	--
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.41	0.37	0.32	0.45	--	--	--	--	--
25	--	--	--	--	--	--	--	--	--	--	--	0.38	3.20	0.36	0.45	0.36	0.46	0.37	0.43	0.38	0.46	0.37	--	--
26	--	--	--	--	--	--	--	--	--	--	--	1.78	0.37	0.42	0.40	0.38	0.38	0.35	0.35	--	0.38	0.44	--	--
27	--	--	--	--	--	0.40	0.41	0.48	0.40	--	--	--	0.49	1.78	0.49	0.38	0.37	0.41	--	--	0.35	0.41	--	--
28	0.48	0.40	0.31	0.33	--	--	--	--	--	--	--	--	--	--	--	0.34	0.34	0.45	0.36	0.41	0.40	0.37	--	--
29	0.39	0.34	0.51	0.40	0.43	0.43	0.34	0.37	--	--	--	1.87	0.33	1.83	0.45	0.46	--	--	0.34	0.38	--	--	--	--
30	--	--	--	--	--	0.36	0.42	0.41	--	--	--	1.86	1.81	1.85	0.37	--	0.37	0.47	0.36	0.45	0.38	0.41	--	--
31	--	--	--	--	--	--	--	--	--	--	--	0.41	0.33	0.36	0.43	0.32	0.42	0.41	0.40	0.41	0.42	0.41	--	--

Table of Contents
for February 1971 Data

Errata: See pages 75 & 92.

For explanations of the data contained herein see "Descriptive Text" published in February 1971.

FEBRUARY 1, 1971 (P=-11.97, B_o=-6.01, L_o=81.43)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

Not received in time for publication.

W

Sp

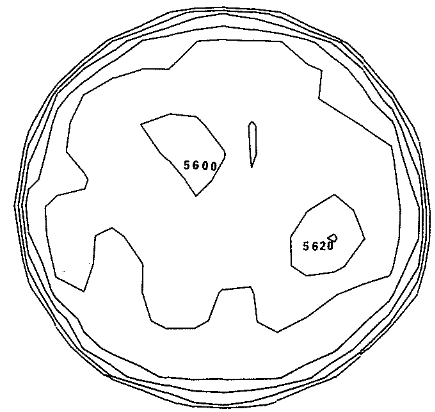
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

1809 UT

Sp

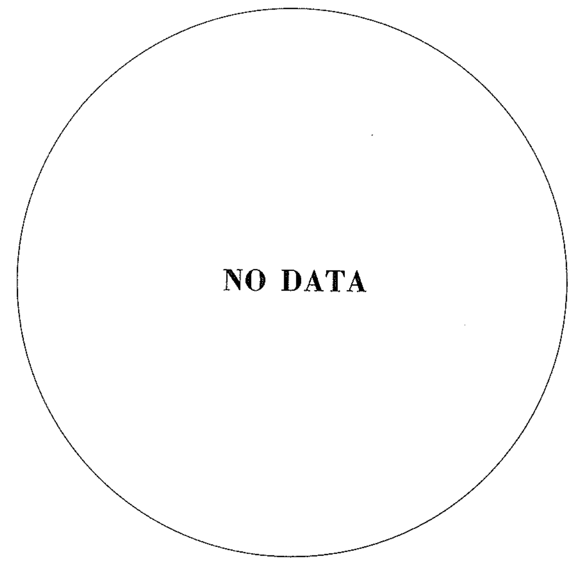
Contours in Intervals of 200° K

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E



W

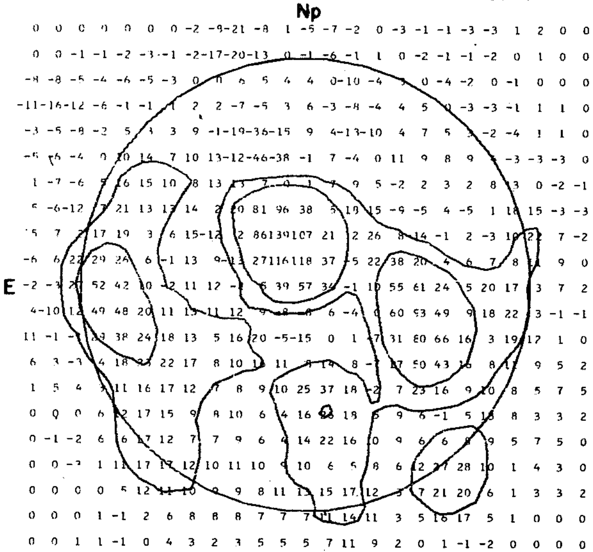
Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

E



W

Sp

20-21 UT

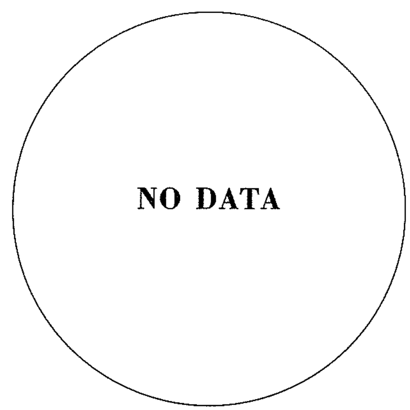
Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E



W

S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

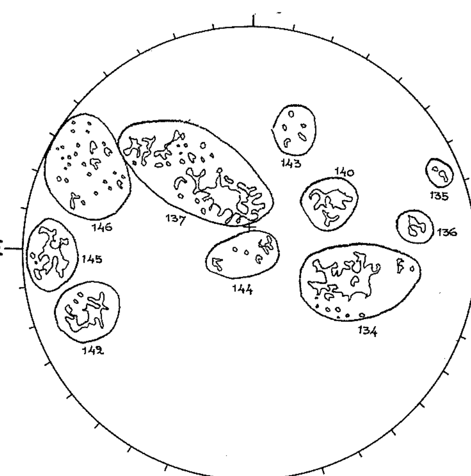
McMATH-HULBERT

CALCIUM REPORT

Sp

Np

E



W

FAIR	M
34-40-3.5	
36-08-3.0	
37-47-3.5	
40-13-3.5	
42-18-3.5	
45-23-3.5	

Sp

1700 UT

FEBRUARY 2, 1971 (P = -12.38, B_o = -6.08, L_o = 68.26)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

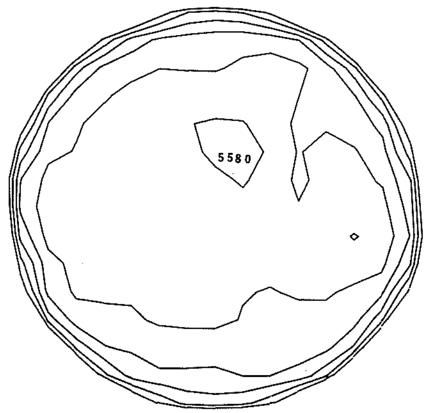
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

1642 UT

Contours in Intervals of 200° K

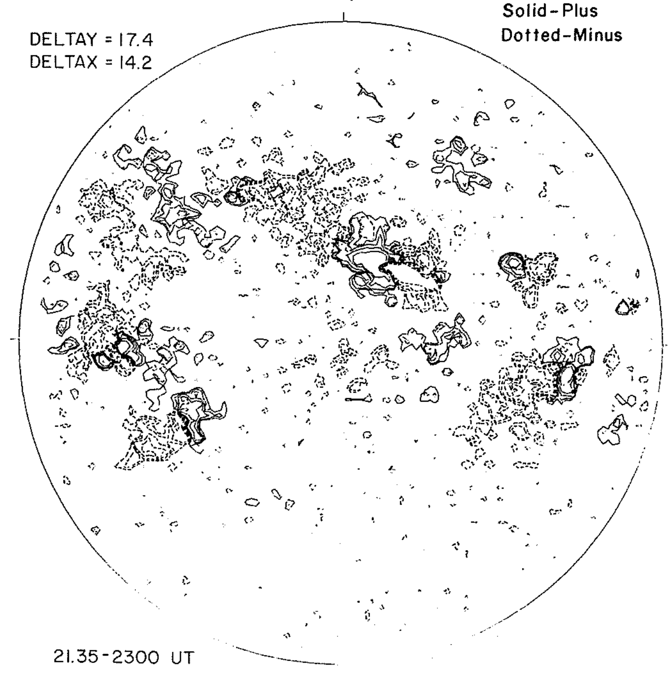
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.2

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

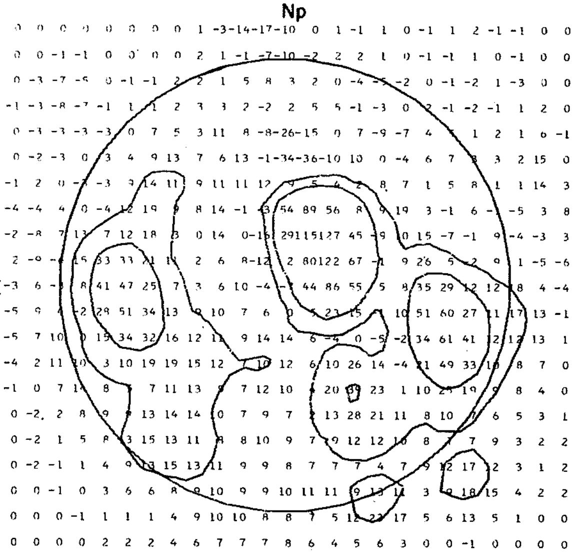
21.35-2300 UT

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

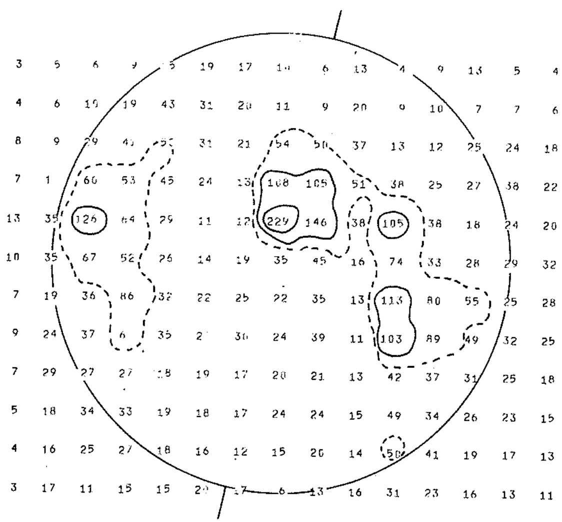
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

W E



S

02-03 UT

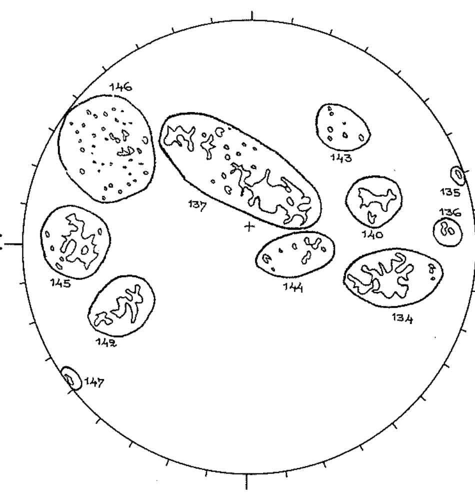
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E W



Sp

1500 UT

POOR	M
34-39	-3.5
37-51	-3.5
40-14	-3.0
42-20	-3.5
45-25	-3.0

FEBRUARY 3, 1971 (P=-12.78, B_o=-6.15, L_o=55.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

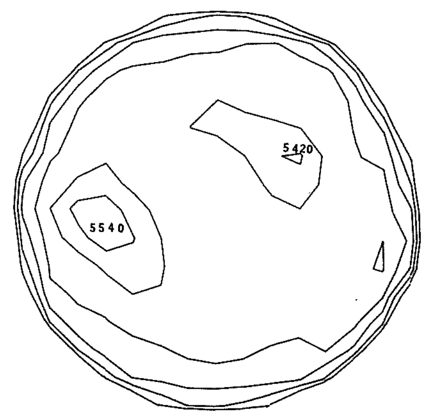
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



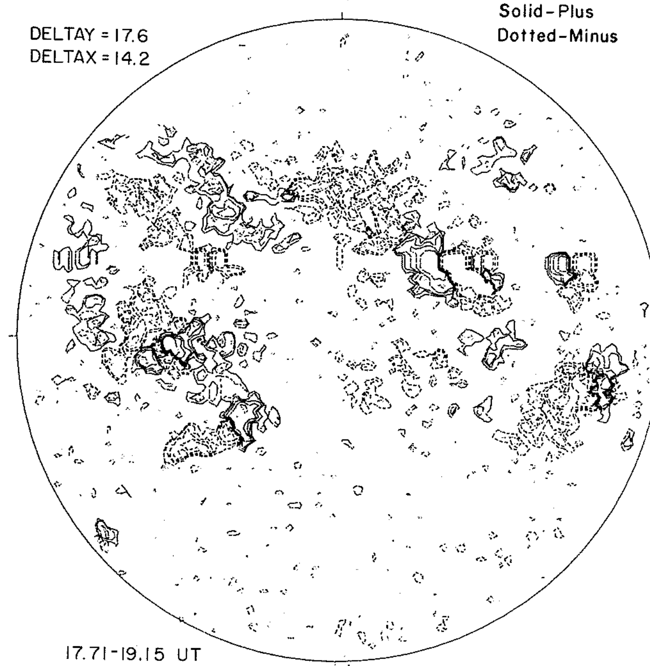
1617 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

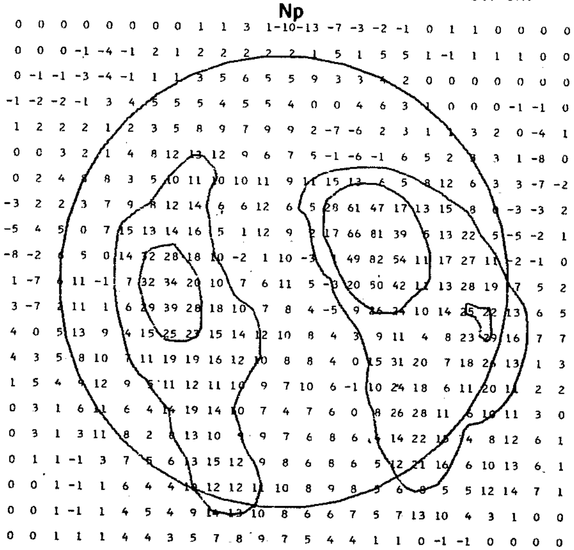


Levels
±5
±10
±20
±40
±80

17.71-19.15 UT

STANFORD

9.1 cm

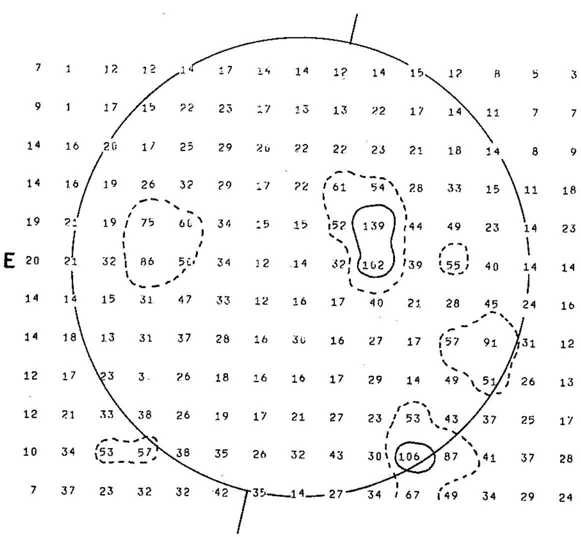


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

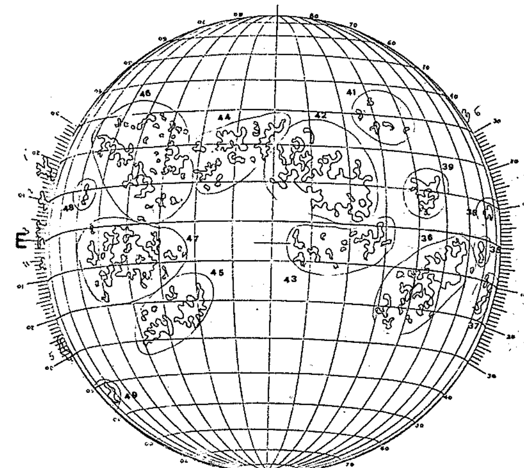


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



36-63-7.9
39-15-4.7
42-74-8.9
44-31-4.0
45-31-5.1
46-50-3.3
47-61-6.0

0845 UT

FEBRUARY 4, 1971 (P=-13.18, B_o=-6.22, L_o=41.93)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

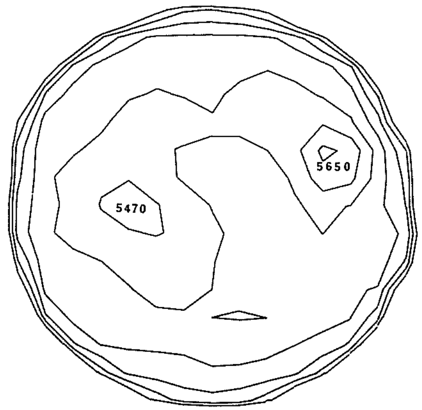
Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np



E W

Sp

1603 UT

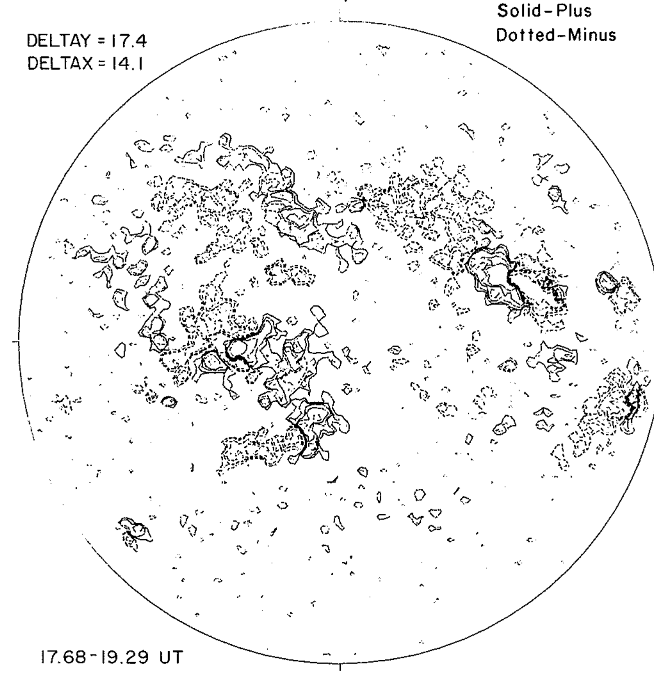
Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.1

Np



E W

Sp

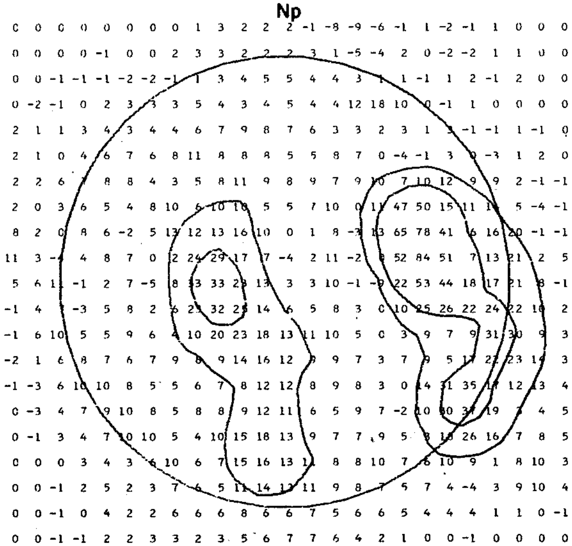
Levels
±5
±10
±20
±40
±80

17.68-19.29 UT

STANFORD

9.1 cm

Np



E W

Sp

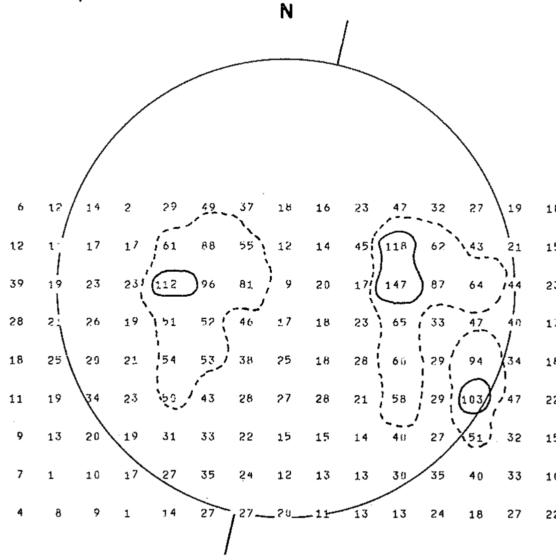
Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N



W E

S

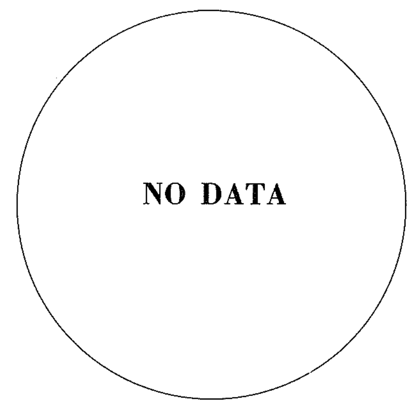
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np



E W

Sp

FEBRUARY 5, 1971 (P=-13.58, B_o=-6.29, L_o=28.76)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E **NO DATA** W

Sp

Contours in Intervals
of 200° K

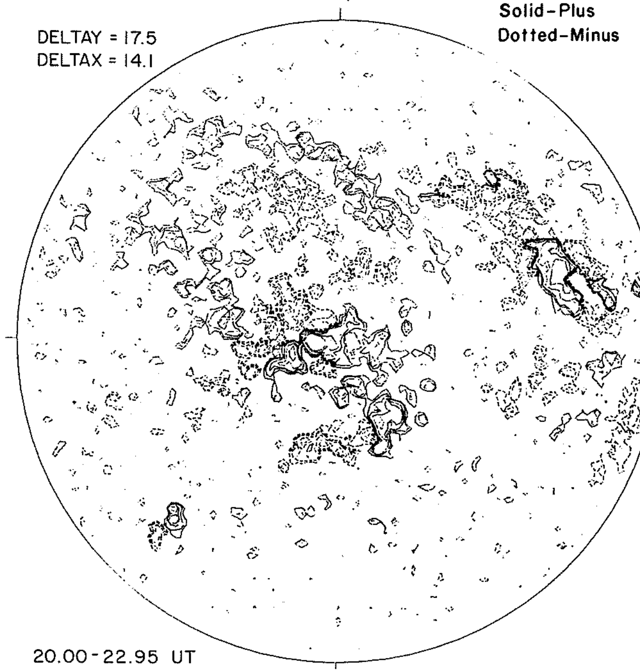
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.5
DELTAX = 14.1

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

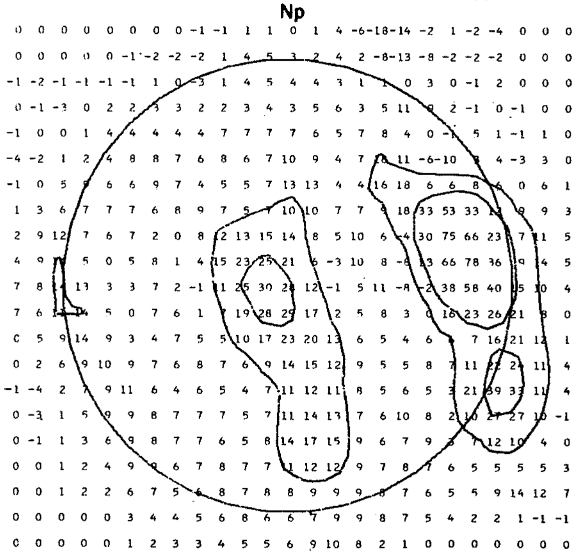
20.00-22.95 UT

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

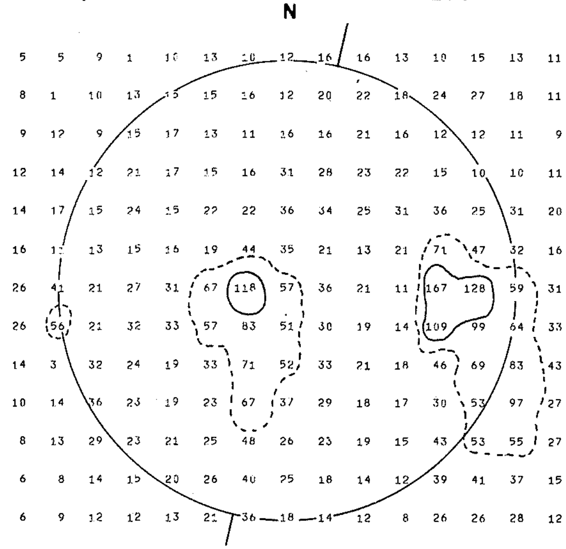
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E **NO DATA** W

Sp

FEBRUARY 6, 1971 (P=-13.97, B_o=-6.35, L_o=15.59)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W

NO DATA

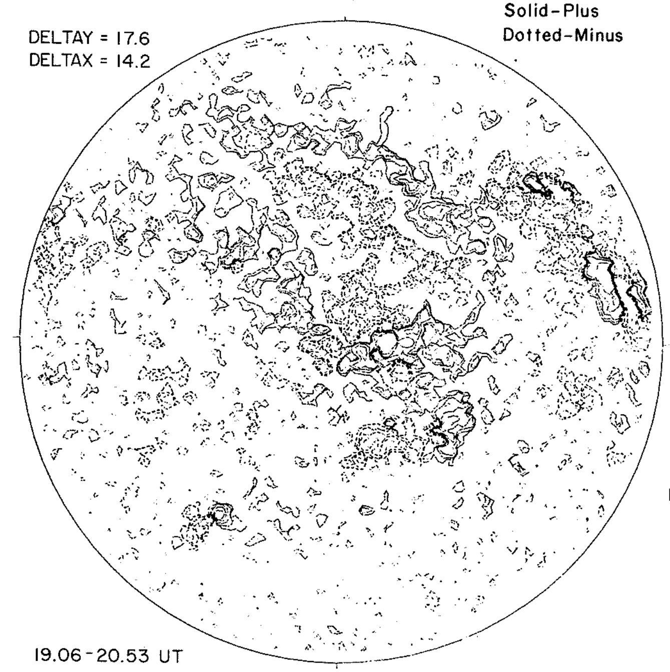
Sp

Contours in Intervals
of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

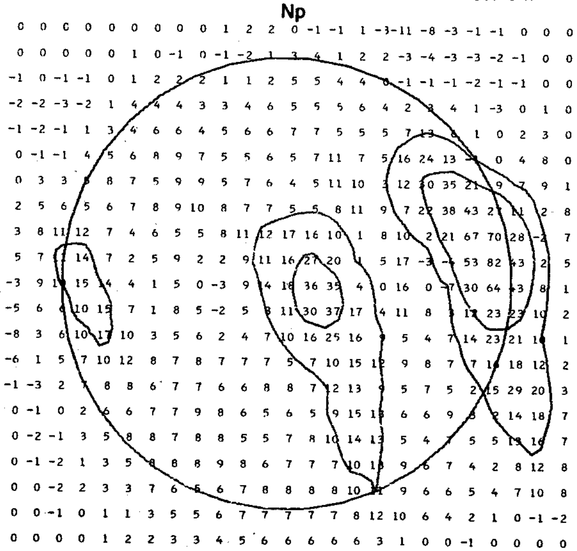


Levels
±5
±10
±20
±40
±80

19.06-20.53 UT

STANFORD

9.1 cm



Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W

NO DATA

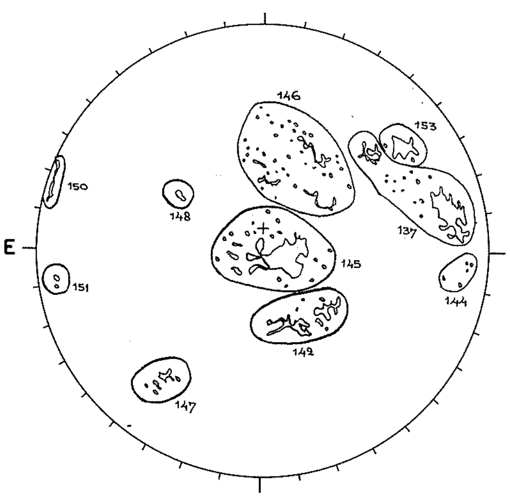
S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



POOR	0
37 - 50 - 3.5	
42 - 21 - 2.5	
45 - 27 - 3.0	
47 - 06 - 2.5	
53 - 15 - 3.0	

1545 UT

FEBRUARY 7, 1971 (P=-14.35, B_o=-6.41, L_o=2.43)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

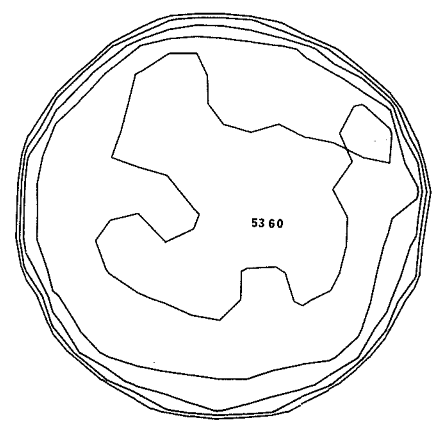
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



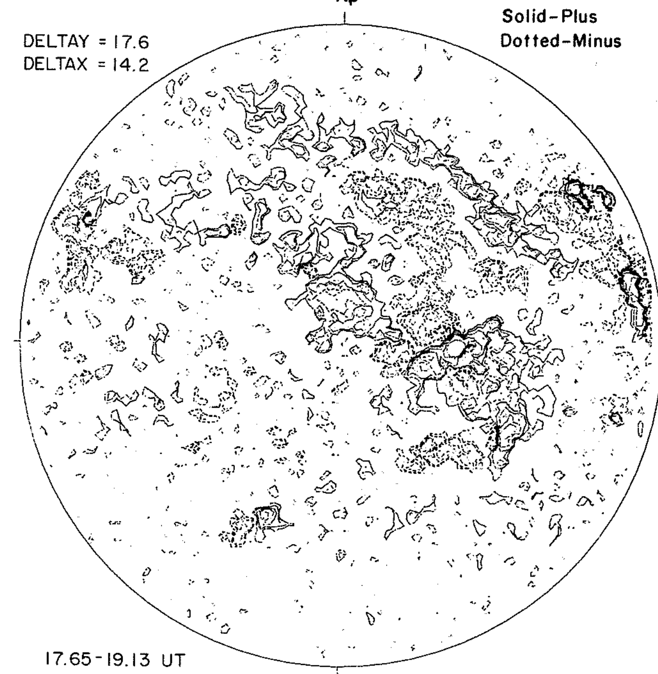
1549 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

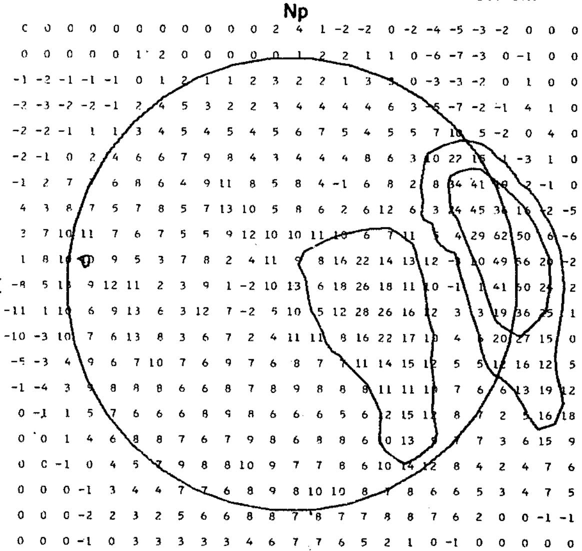


Levels
±5
±10
±20
±40
±80

17.65-19.13 UT

STANFORD

9.1 cm

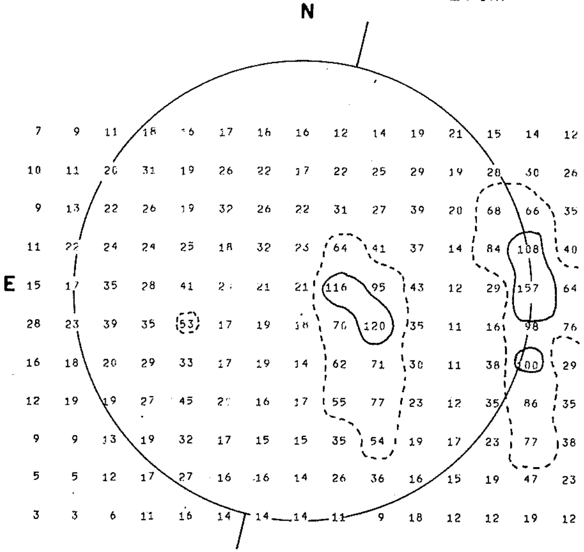


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

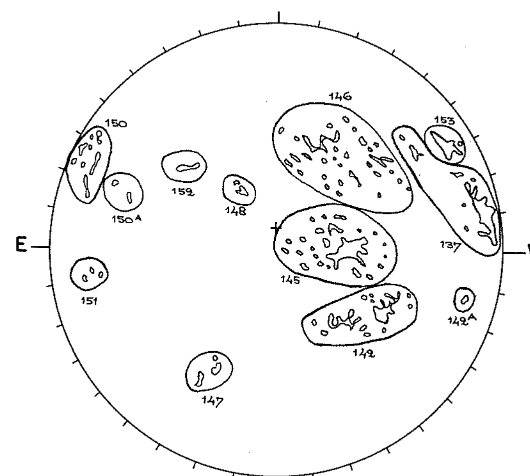


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



1425 UT

FAIR	0
37-45-3.5	
42-22-2.5	
45-27-3.0	
47-06-2.5	
53-20-3.0	

FEBRUARY 8, 1971 (P=-14.73, B_o=-6.47, L_o=349.26)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

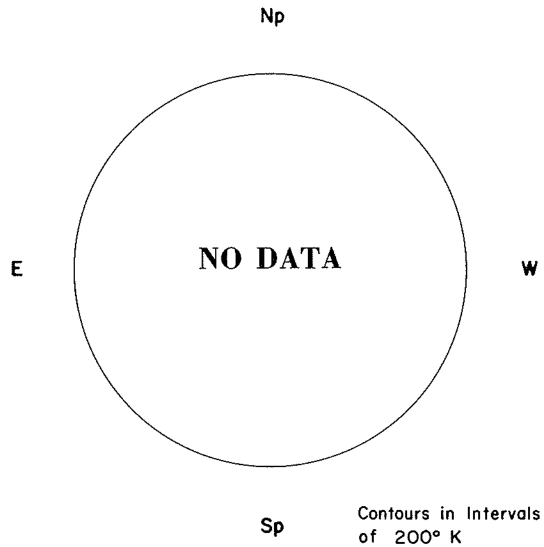
E W

Sp

Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

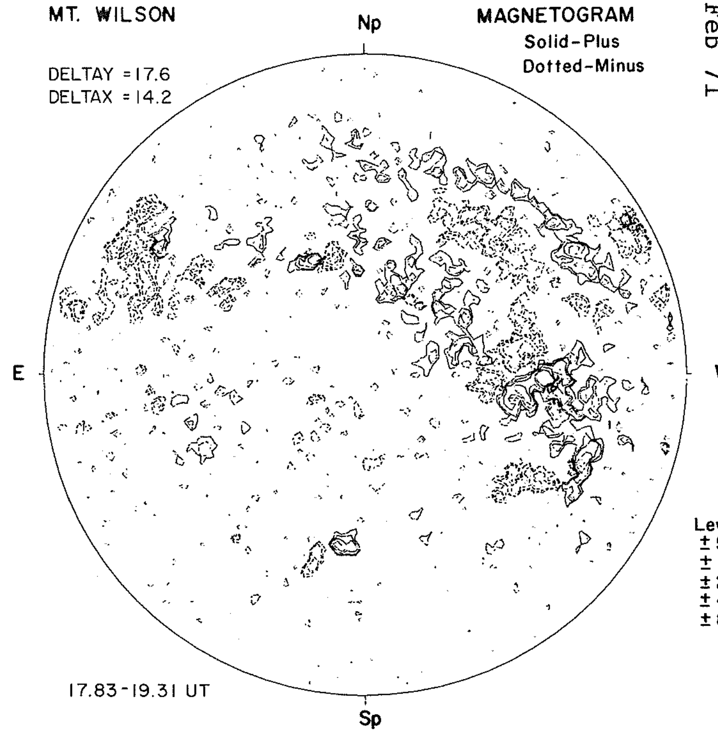


Contours in Intervals
of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

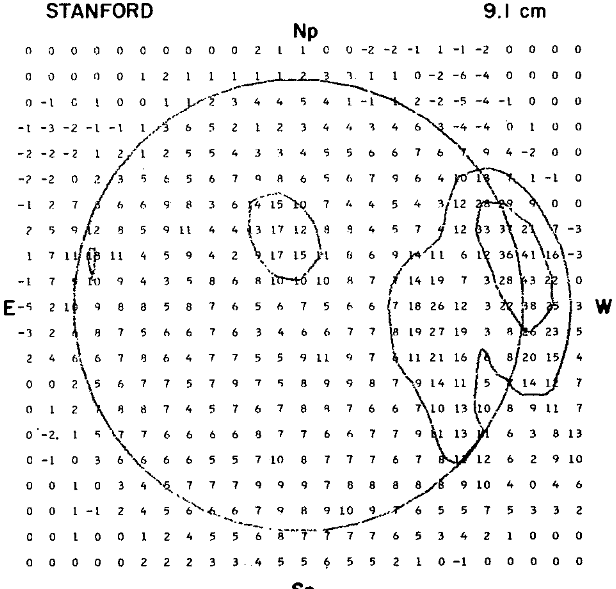


Levels
±5
±10
±20
±40
±80

17.83-19.31 UT

STANFORD

9.1 cm

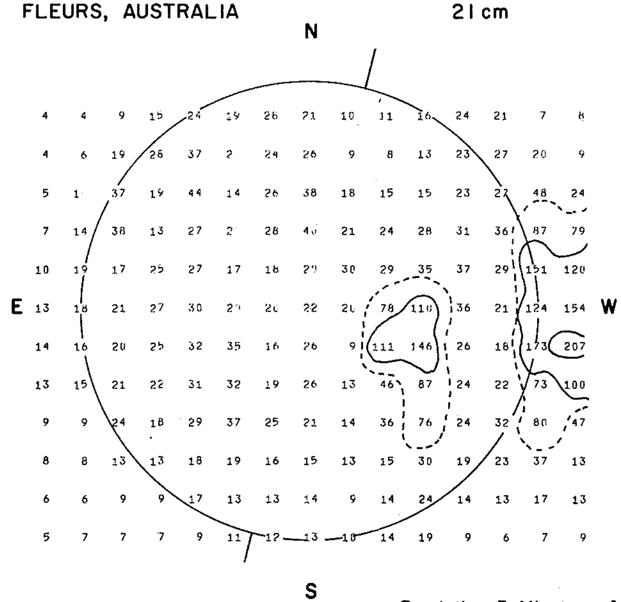


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

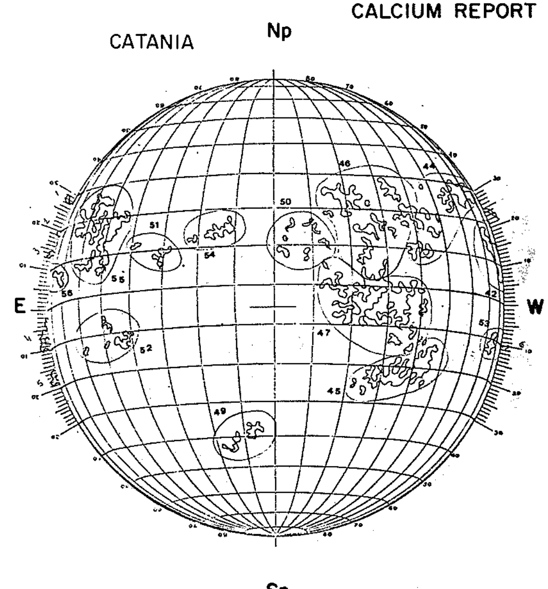


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



42-61-5.2
53-10-3.9
44-40-5.8
45-29-3.9
47-64-4.9
46-40-3.9
50-08-2.6
49-07-2.8
54-08-3.0
55-60-3.8

0855 UT

FEBRUARY 9, 1971 (P=-15.11, B_o=-6.53, L_o=336.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

W

Sp

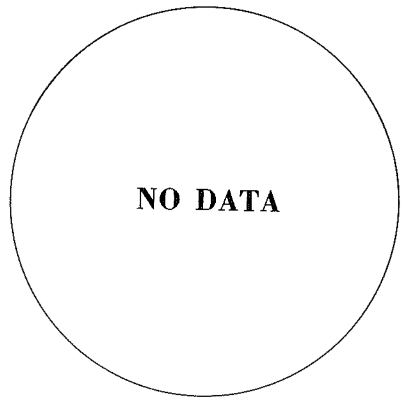
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

Sp

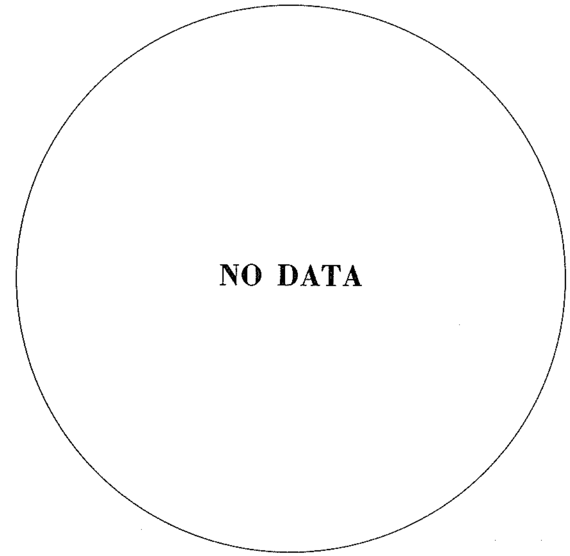
Contours in Intervals of 200° K

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

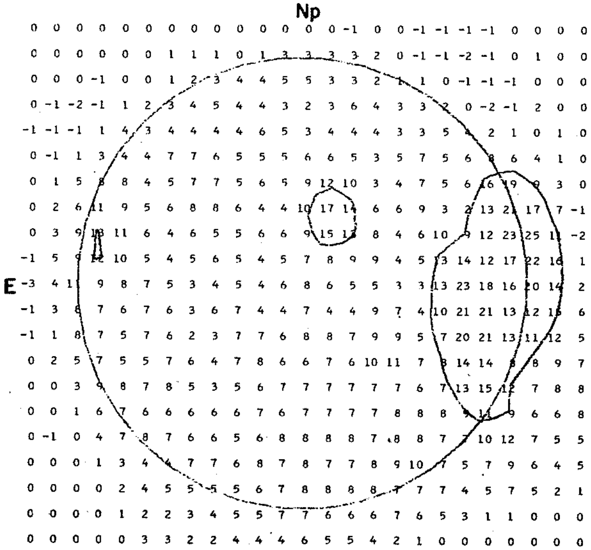


W

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



Brightness Unit 5,000° K

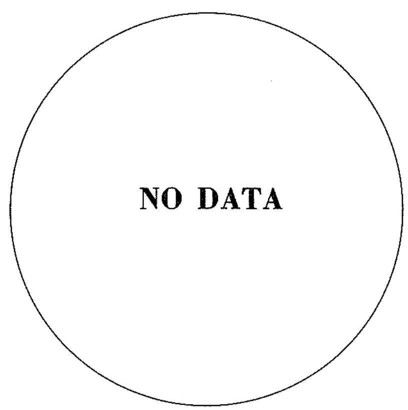
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E



W

S

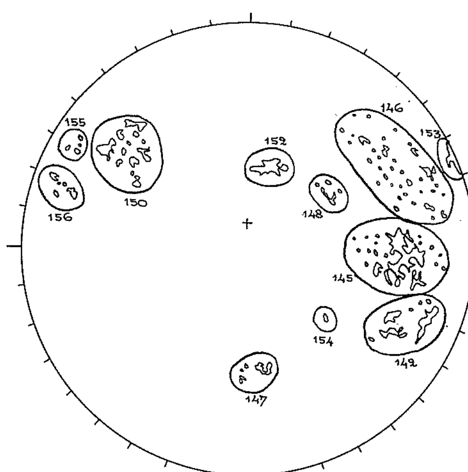
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Sp



FAIR M
42-21-2.5
45-30-2.5
47-04-2.5
52-10-3.5

1540 UT

FEBRUARY 10, 1971 (P = -15.48, B_o = -6.58, L_o = 322.93)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

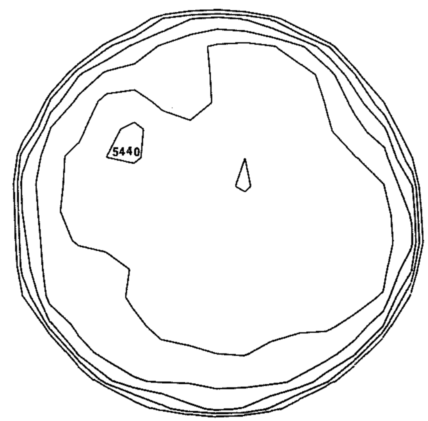
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

1633 UT

Contours in Intervals of 200° K

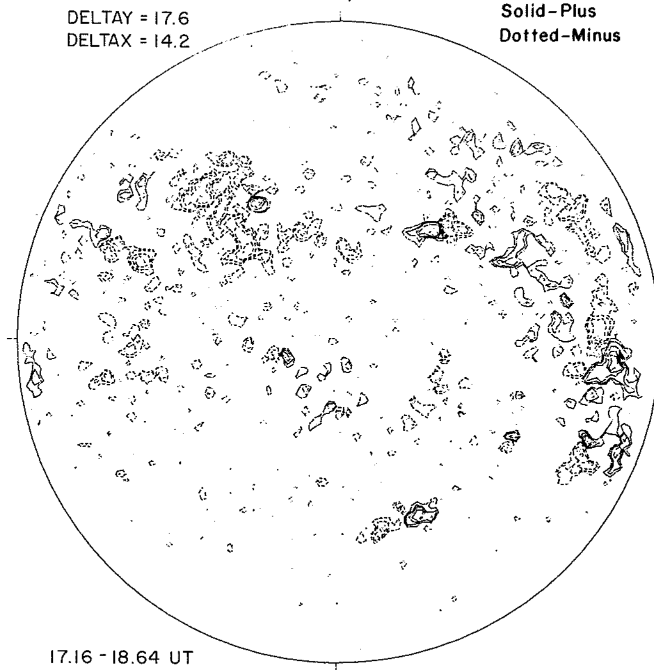
MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

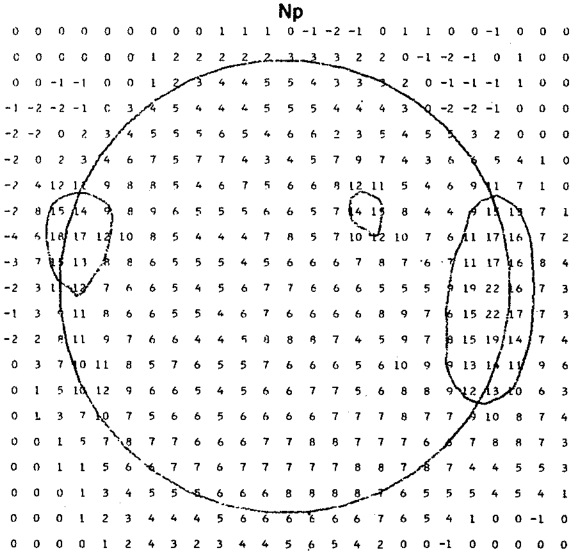
17.16 - 18.64 UT

STANFORD

9.1 cm

Np

E W



Sp

20-21 UT

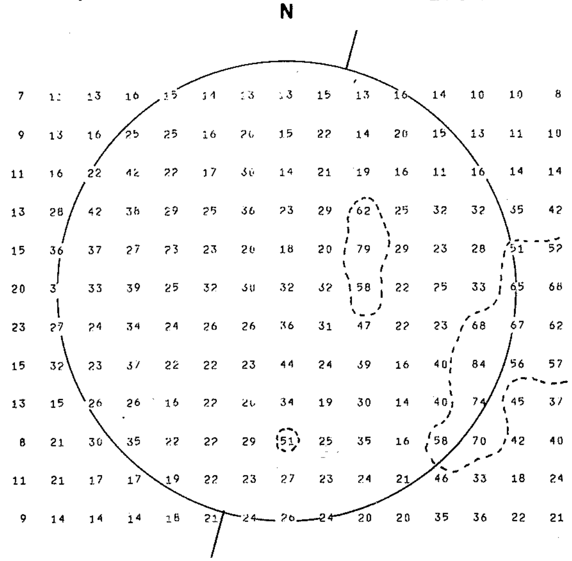
Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

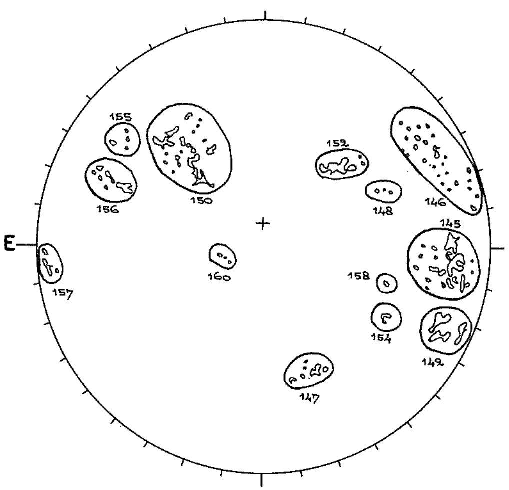
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E W



Sp

1640 UT

FAIR	M
42-18-2.5	
45-27-2.5	
52-10-3.0	

FEBRUARY 11, 1971 (P=-15.84, B_o=-6.63, L_o=309.76)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

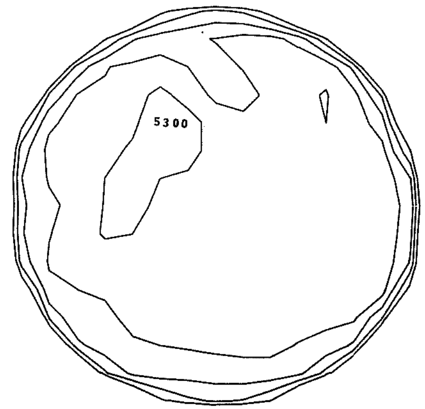
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



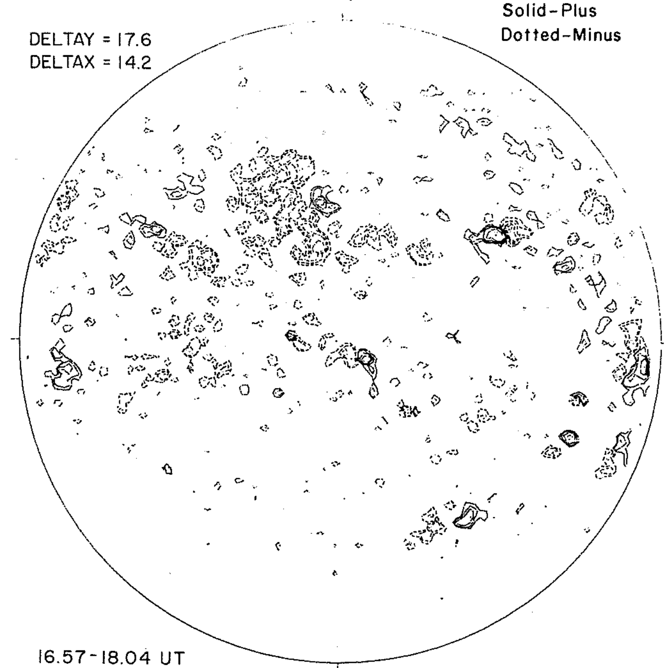
1612 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2



Levels
±5
±10
±20
±40
±80

16.57-18.04 UT

STANFORD

9.1 cm

Np

0	0	0	0	0	0	0	0	0	1	0	0	1	-1	-2	-3	-2	0	0	-1	-1	-1	0	0	0
0	0	0	0	0	-1	0	1	1	1	2	2	2	3	3	2	1	0	0	-1	-1	0	0	0	0
0	0	-1	-1	-1	0	1	2	3	3	4	3	4	4	4	4	4	3	1	0	-1	-2	1	0	0
-2	-6	-4	-2	0	1	4	6	5	4	5	4	4	6	6	5	5	4	1	-1	-2	-2	2	0	0
-5	-7	-3	2	3	3	5	6	5	4	5	4	4	6	6	4	4	4	4	4	1	0	1	1	0
-3	-2	4	6	4	5	8	8	6	5	5	5	5	5	4	5	7	5	3	4	6	4	4	1	0
-2	6	18	15	8	7	10	9	5	4	5	5	8	8	3	2	9	11	9	6	9	11	8	2	0
-2	8	27	30	14	6	12	11	5	3	4	4	5	8	6	3	9	15	12	5	6	12	11	6	1
-3	7	26	30	17	7	9	9	5	3	5	5	6	7	6	4	4	8	12	8	6	12	12	6	2
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E 0	7	12	12	10	9	6	4	5	4	3	6	8	7	7	5	4	5	6	4	7	18	18	8	2 W
1	8	13	11	9	8	6	4	5	4	3	5	7	8	9	7	5	5	7	6	7	16	20	12	3
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0	0	0	1	2	3	5	5	5	4	6	7	6	5	6	5	6	6	4	3	1	0	0	0	0
0	0	0	0	1	3	5	6	4	2	3	5	5	4	5	4	1	0	0	0	0	0	0	0	0

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E W

NO DATA

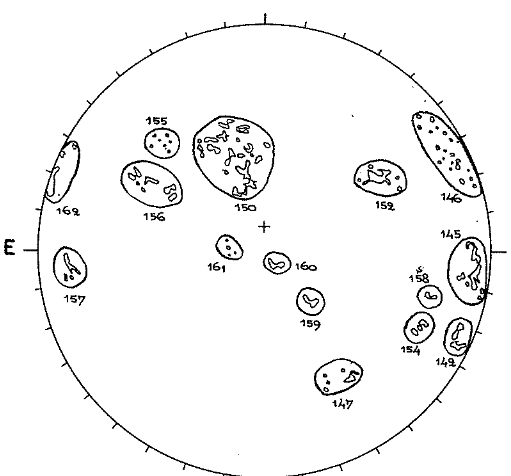
S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M

45-23-2.5
52-10-3.0
62-25-2.5

1500 UT

FEBRUARY 12, 1971 (P=-16.20, B_o=-6.68, L_o=296.59)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

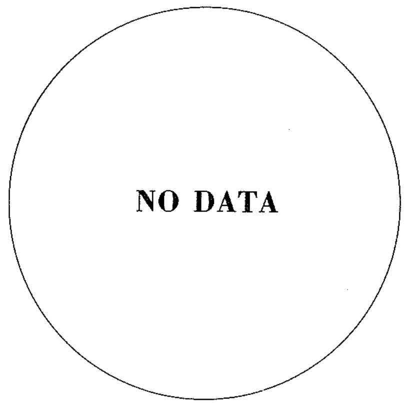
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

Contours in Intervals of 200° K

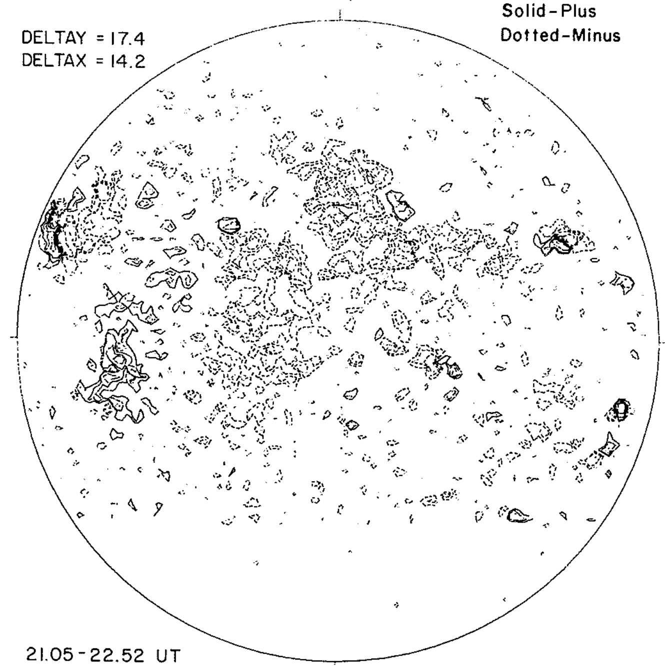
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.2

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

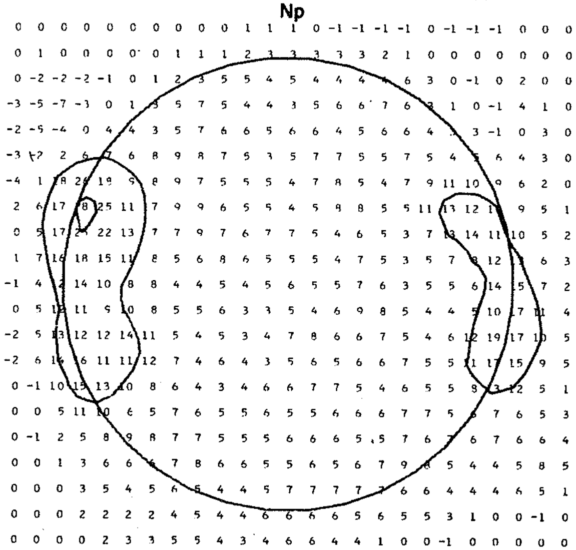
21.05-22.52 UT

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

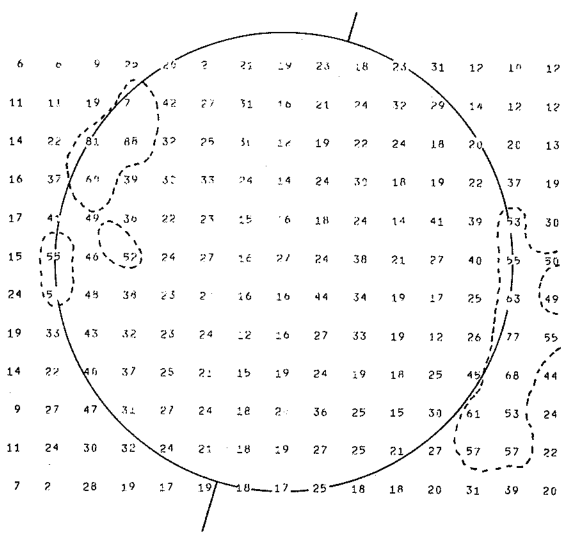
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

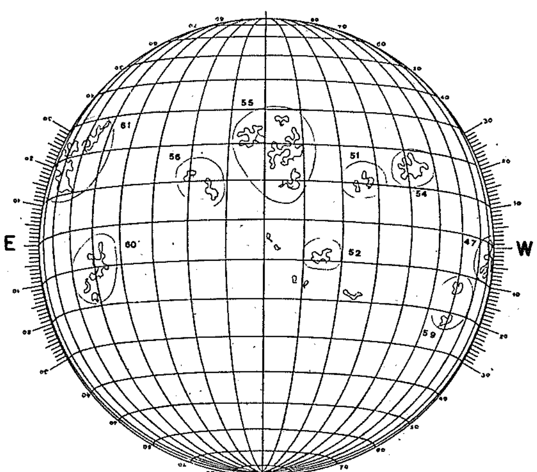
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA

Np

E W



Sp

1020 UT

59-08-4.6
54-11-4.4
56-05-2.5
60-11-2.5
61-52-3.1

FEBRUARY 13, 1971 (P=-16.55, B_o=-6.73, L_o=283.42)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

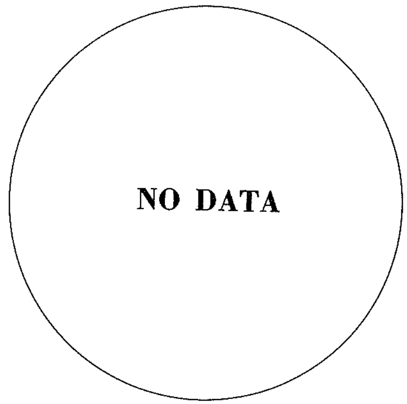
Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E  W

Sp

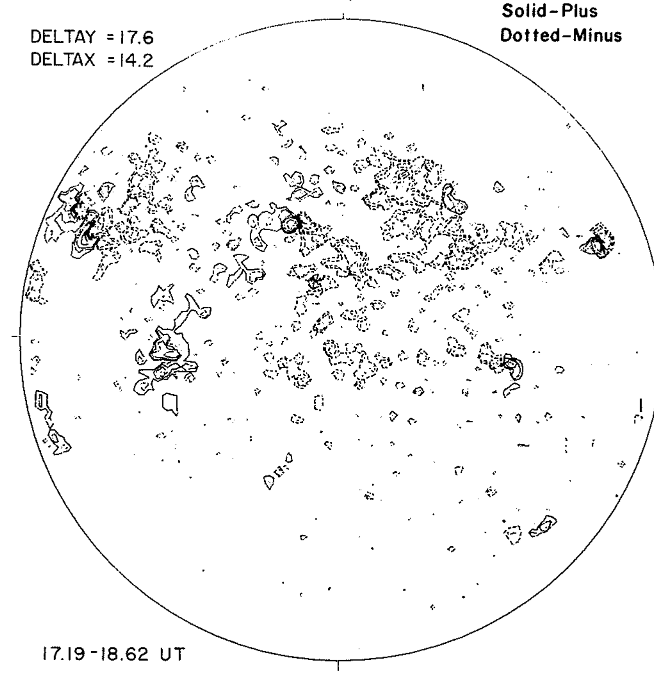
Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

Np

E  W

Levels
±5
±10
±20
±40
±80

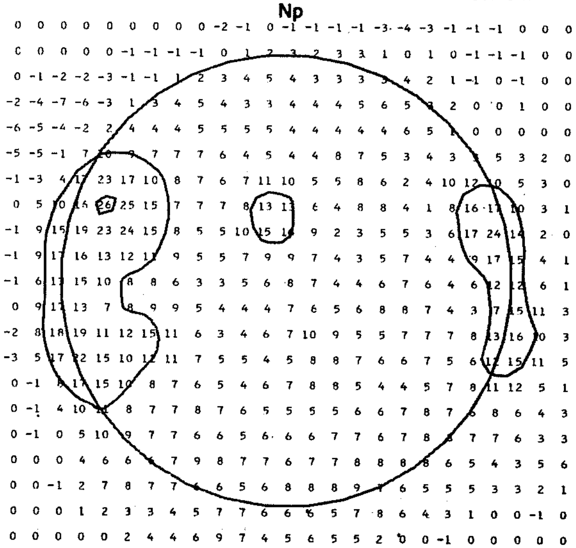
17.19-18.62 UT

Sp

STANFORD

9.1 cm

Np

E  W

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

W  E

S

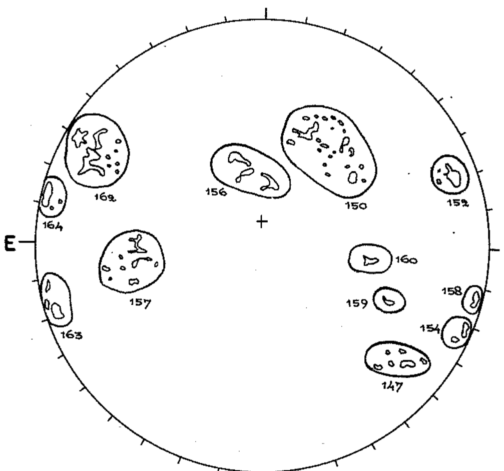
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

W E  W

POOR: 0
52-10-4.0
56-09-3.0
58-04-2.5
62-32-2.5
64-16-2.5

Sp

1555 UT

FEBRUARY 14, 1971 (P=-16.90, B_o=-6.78, L_o=270.25)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

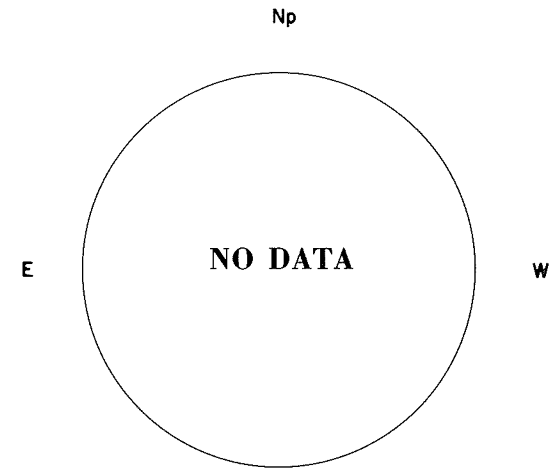
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

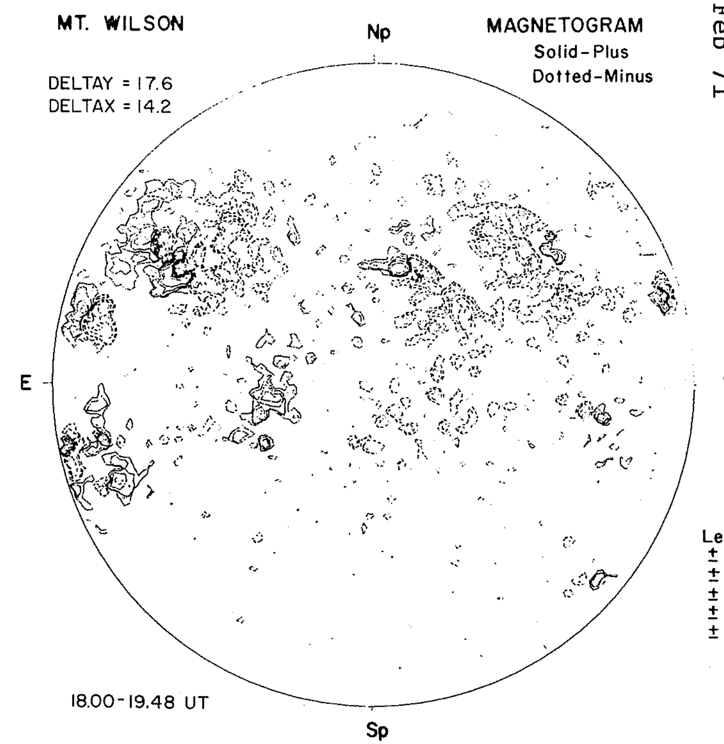


Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

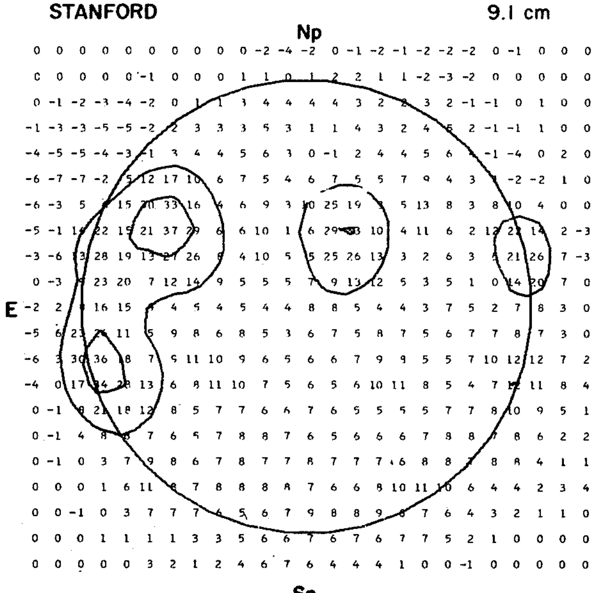


Levels
±5
±10
±20
±40
±80

18.00-19.48 UT

STANFORD

9.1 cm

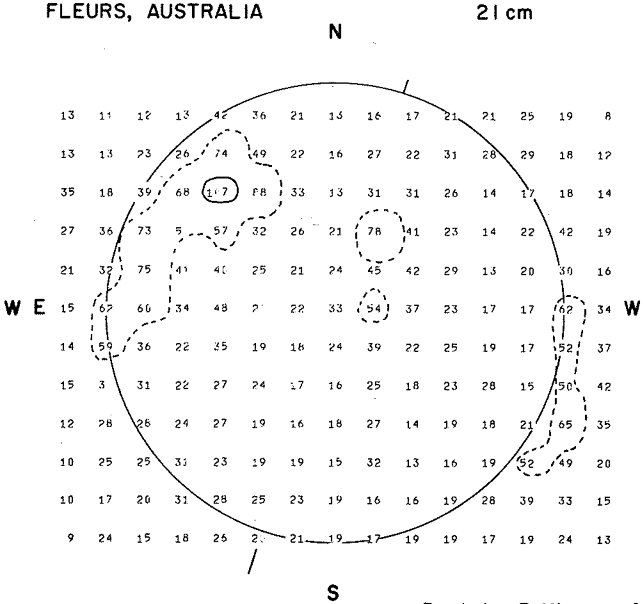


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

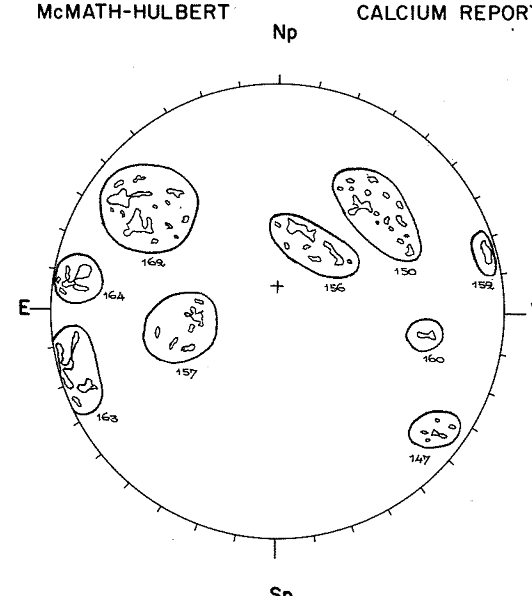


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



POOR	0
52-12-4.0	
56-12-3.0	
62-33-2.5	
63-34-2.5	
64-20-2.5	

1400 UT

FEBRUARY 15, 1971 (P=-17.24, B_o=-6.82, L_o=257.09)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

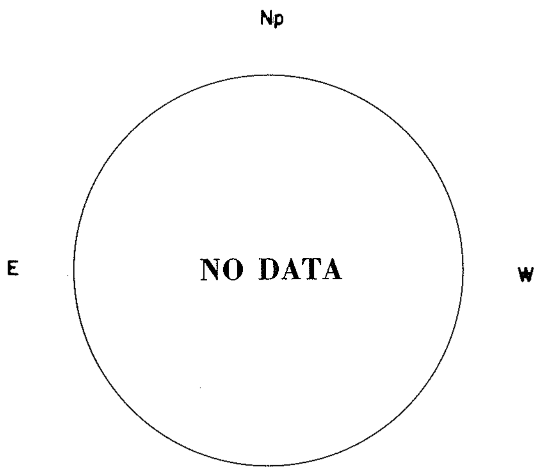
W

Sp

Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

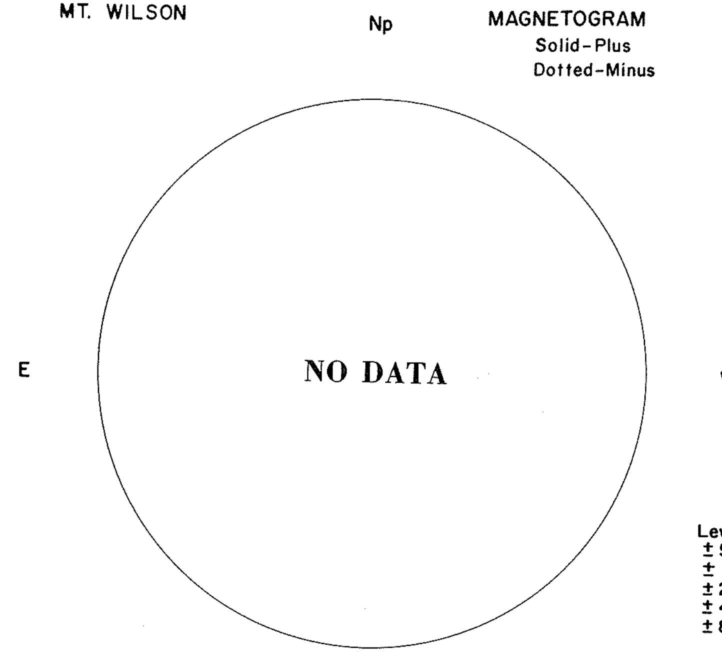
8.6 mm



Contours in Intervals
of 200° K

MT. WILSON

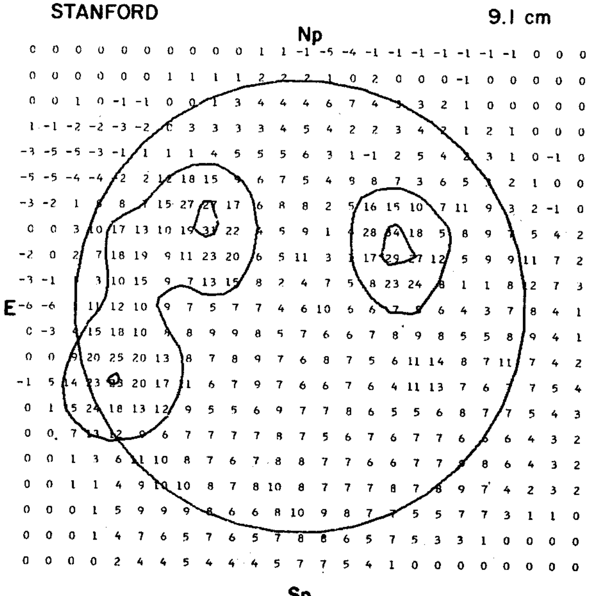
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

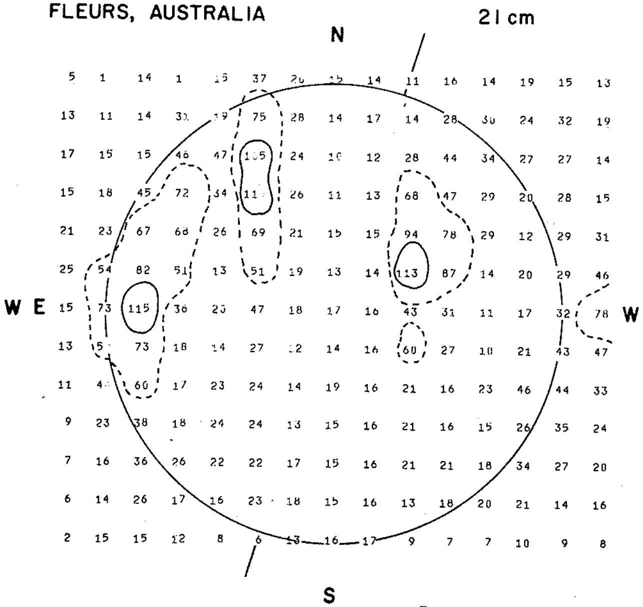


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

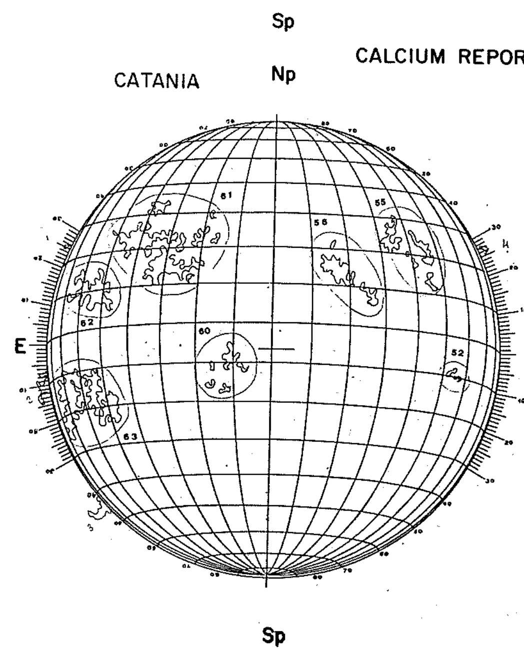


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

CALCIUM REPORT



52-03 -3.0
56-18 -3.6
60-08 -3.9
61-59 -3.7
62-35 -3.9
63-79 -4.3

0810 UT

FEBRUARY 16, 1971 (P=-17.58, B_o=-6.87, L_o=243.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

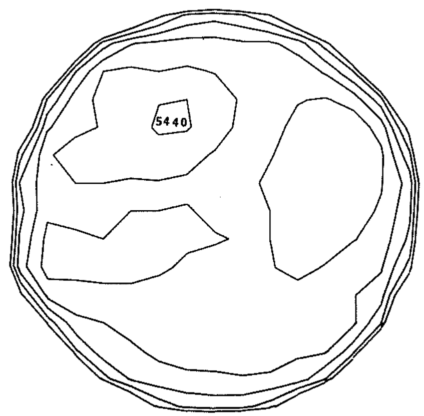
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

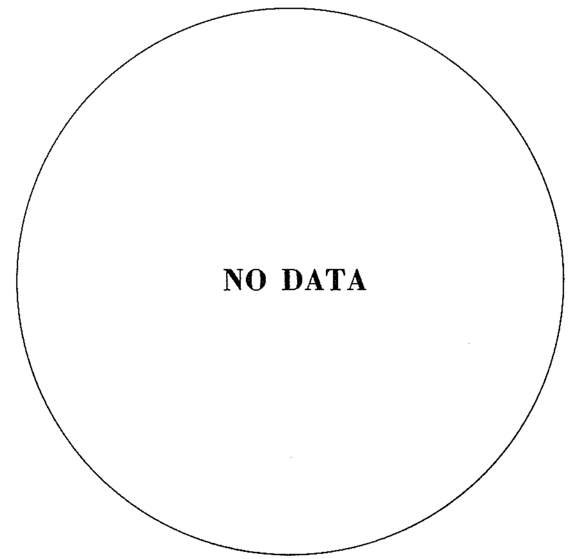


1524 UT

Contours in Intervals of 200° K

MT. WILSON

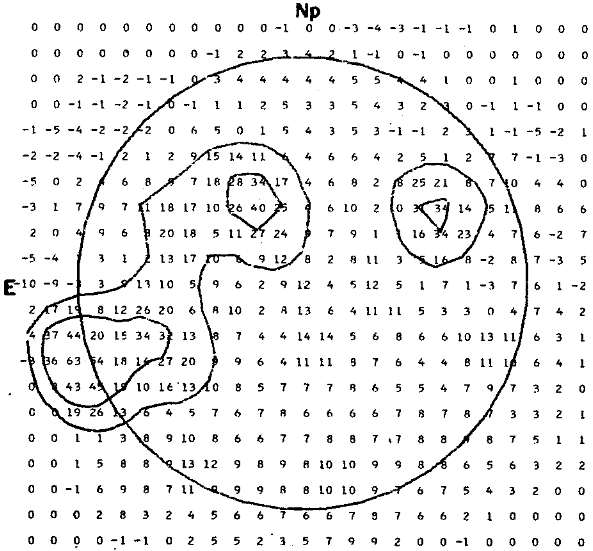
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

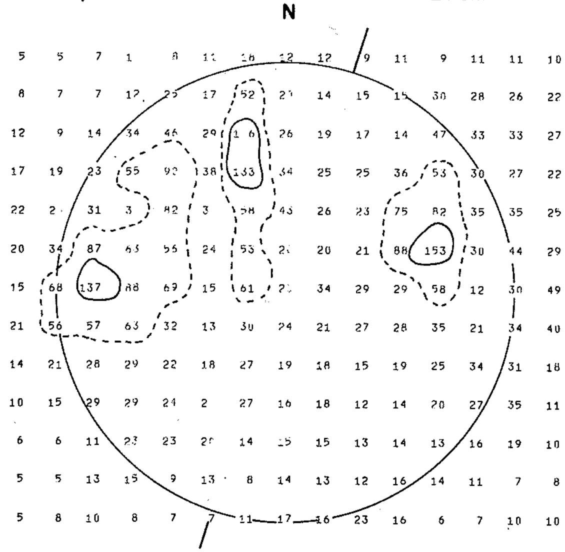


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

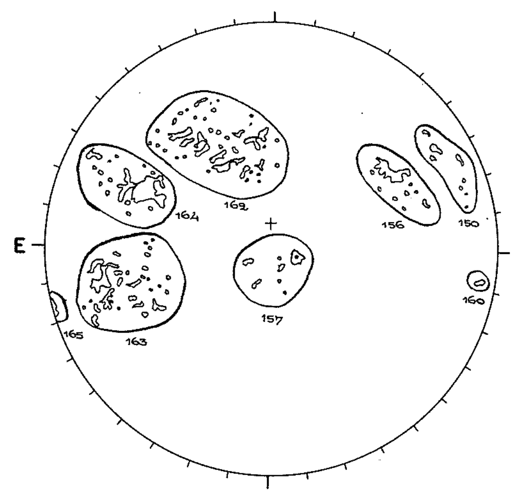


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	S
56-18-3.0	
62-34-3.0	
63-32-2.5	
64-34-2.5	

1600 UT

FEBRUARY 17, 1971 (P=-17.91, B_o=-6.91, L_o=230.75)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

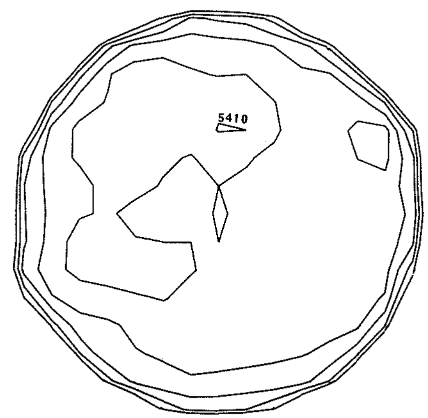
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

1540 UT

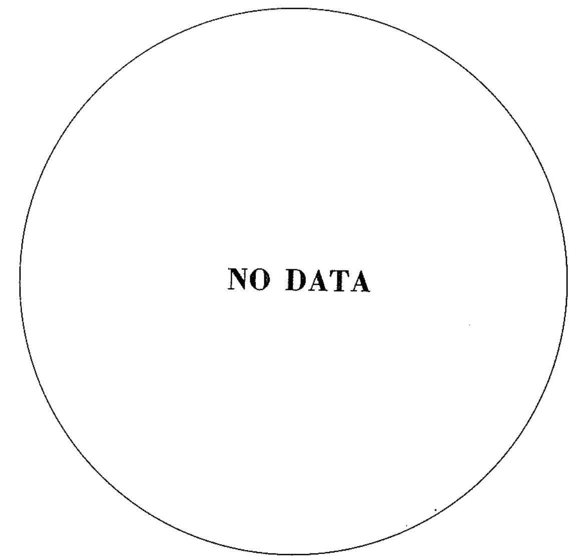
Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E W



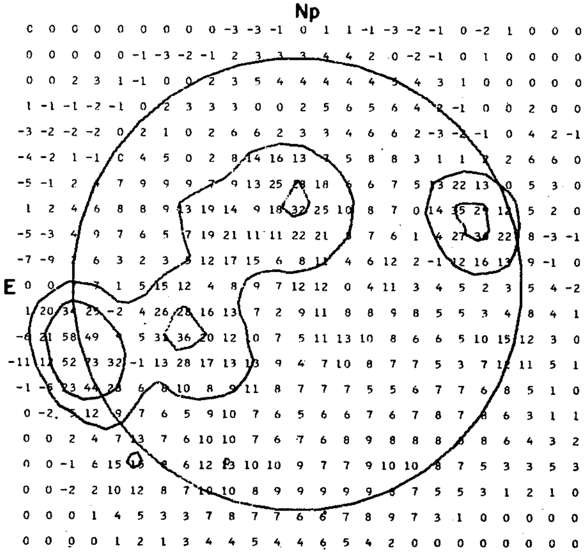
Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

E W



Sp

20-21 UT

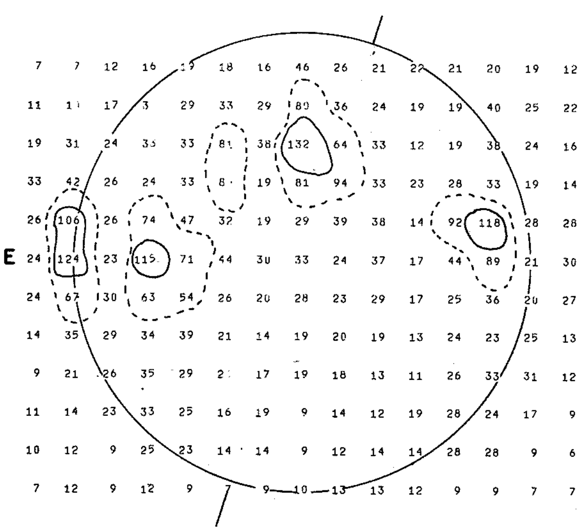
Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

W E



S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

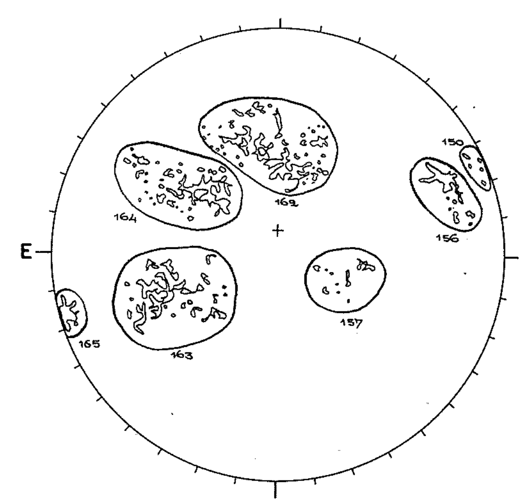
McMATH-HULBERT

CALCIUM REPORT

Sp

Np

E W



FAIR	M
56-17-4.0	
62-36-2.5	
63-32-2.5	
64-33-2.5	
65-18-3.5	

Sp

1915 UT

FEBRUARY 18, 1971 (P=-18.24, B$_\circ$=-6.94, L$_\circ$=217.58)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

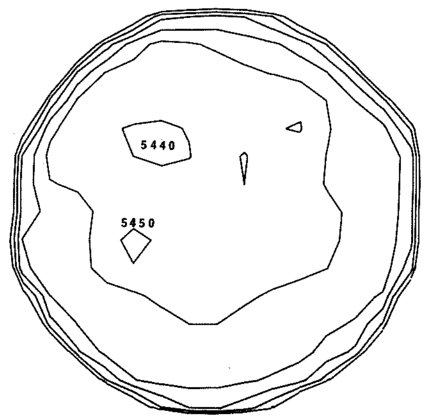
Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

1859 UT

Contours in Intervals
of 200° K

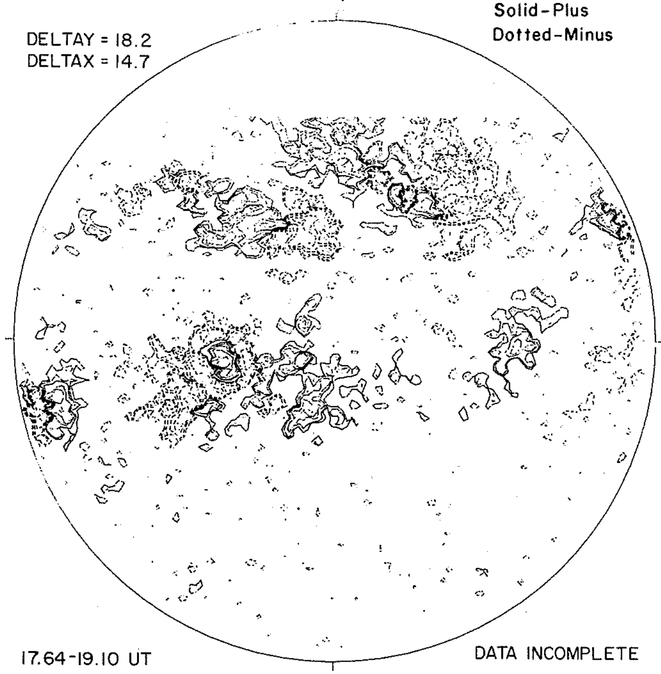
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 18.2
DELTAX = 14.7

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

17.64-19.10 UT

DATA INCOMPLETE

STANFORD

9.1 cm

Np

E W

0	0	0	0	0	0	0	0	0	0	0	-3	-2	-1	-1	0	0	-4	-4	-1	0	1	0	0	0
0	0	0	0	0	0	1	-1	-2	0	2	1	2	3	2	2	1	-2	-3	0	0	2	0	0	0
0	0	0	1	1	1	1	0	0	3	4	5	6	5	5	5	4	5	5	3	0	-1	-1	0	0
3	0	-2	0	0	0	1	3	4	3	4	3	3	4	4	6	6	6	6	2	0	0	0	0	0
-1	-2	-2	0	0	1	1	2	3	3	3	6	8	7	5	4	6	9	7	2	-2	-1	0	0	0
-8	-8	-2	1	1	2	6	8	7	4	3	7	13	17	14	9	7	7	6	3	[illegible]	4	0	1	0
-6	-6	-1	4	6	7	9	9	8	7	8	9	13	21	26	19	9	8	7	10	17	12	2	-3	0
1	4	4	6	6	6	8	11	10	12	16	14	11	18	25	22	13	6	2	8	23	31	14	-1	-4
-3	-6	-3	5	7	5	8	6	3	6	15	19	13	12	12	13	11	8	2	4	18	[illegible]	24	4	-2
-1	-4	-4	3	4	2	5	8	8	6	[illegible]	10	13	10	7	7	11	8	0	0	8	19	22	10	-1
1	10	17	13	10	5	8	9	9	8	7	7	12	14	7	5	9	8	5	4	6	[illegible]	6	4	0
-8	12	45	47	21	4	7	16	16	18	14	[illegible]	7	10	10	8	9	10	6	5	6	7	9	6	0
-11	[illegible]	44	60	44	12	9	16	14	14	14	13	9	9	10	9	12	11	8	7	7	7	7	5	2
-10	-8	17	54	48	[illegible]	3	9	14	14	14	12	10	9	7	9	10	10	7	5	5	[illegible]	8	10	6
-1	-5	3	[illegible]	34	18	6	7	7	7	8	11	10	8	7	6	4	4	8	8	7	6	5	4	2
0	-1	0	12	18	8	14	4	7	9	9	10	6	4	5	8	8	9	9	8	[illegible]	6	5	3	2
0	0	-2	4	12	20	12	6	6	6	6	7	9	7	8	7	8	9	9	8	6	5	2	3	4
0	0	-3	1	14	15	11	7	6	9	10	11	9	9	8	7	8	9	9	7	5	3	2	4	4
0	0	-1	-2	3	14	15	9	[illegible]	6	7	8	8	8	8	8	7	7	5	6	5	3	2	0	0
0	0	0	-1	1	5	5	3	3	5	6	6	6	7	6	6	7	7	5	2	0	0	0	0	0
0	0	0	-1	0	2	3	3	4	4	4	5	6	8	6	4	2	0	-1	-1	0	0	0	0	0

A

Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

W E

NO DATA

S

02-03 UT

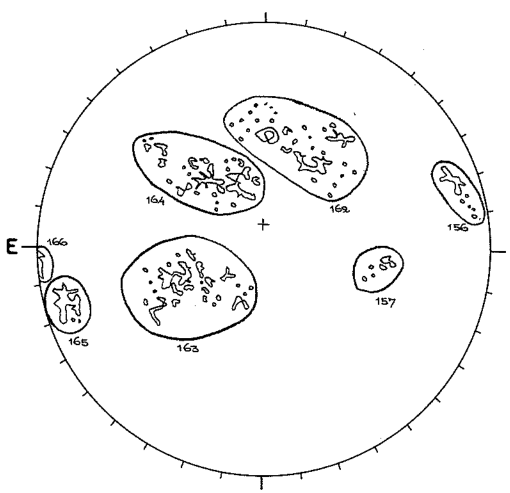
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E W



Sp

1415 UT

POOR	M
56-20-3.0	
62-31-3.5	
63-28-2.5	
64-26-2.5	
65-24-3.5	
66-20-2.5	

FEBRUARY 19, 1971 (P=-18.56, B_o=-6.98, L_o=204.41)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

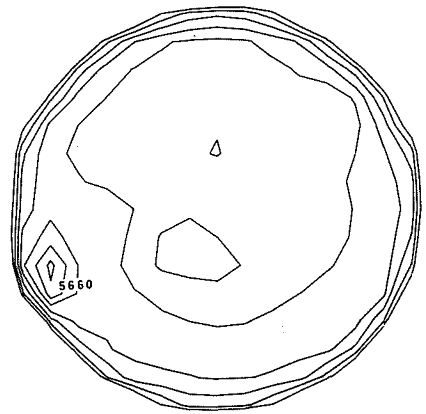
Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

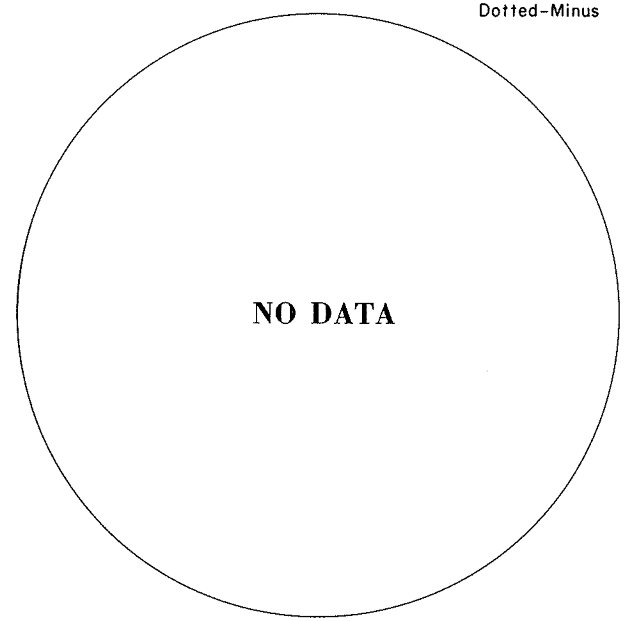
Contours in Intervals
of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E W



Sp

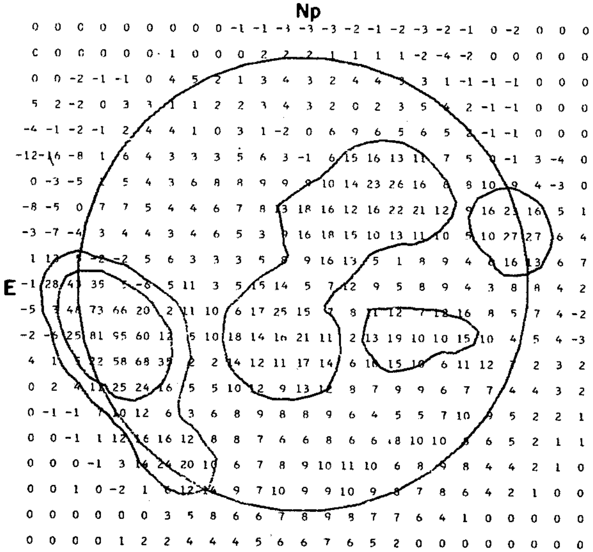
Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

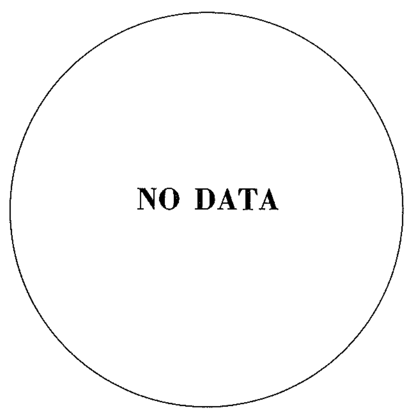
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

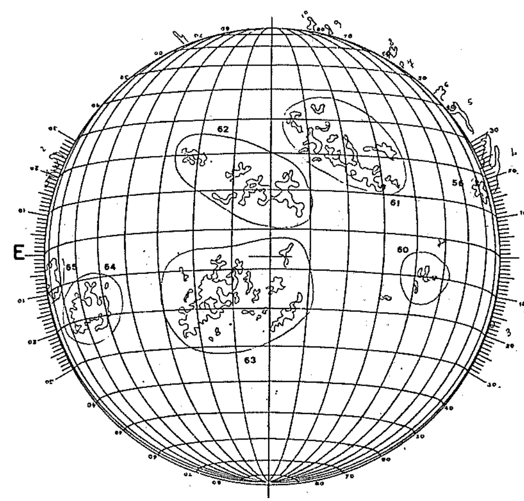
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

CALCIUM REPORT

Np

E W



56 -17-4.8
60 -05-2.6
61 -45-3.2
62 -32-3.6
63 -54-5.8
64 -48-5.8
65 -42-4.0

Sp

0910 UT

FEBRUARY 20, 1971 (P=-18.87, B_o=-7.01, L_o=191.24)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E NO DATA W

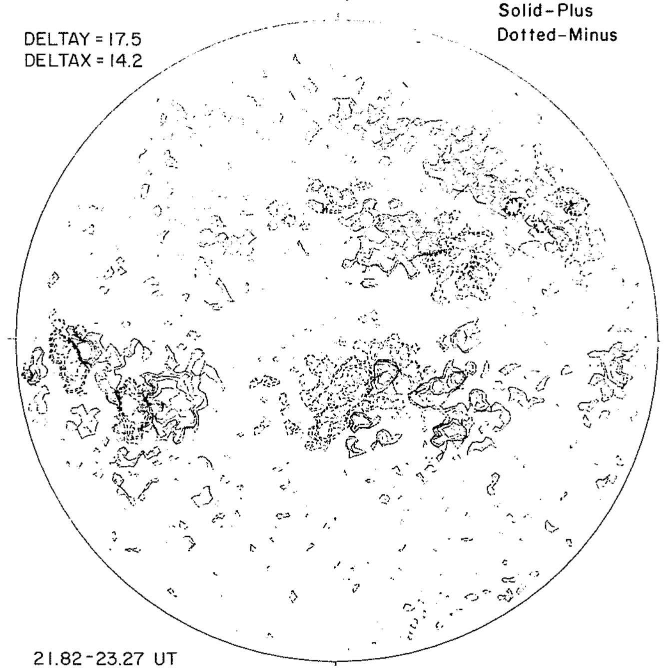
Sp

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.5
DELTAX = 14.2



Levels
±5
±10
±20
±40
±80

21.82-23.27 UT

STANFORD

9.1 cm

Np

0	0	0	0	0	0	0	0	0	1	1	1	-1	-1	-2	-3	-2	-1	-1	-1	-1	-1	0	0	0
0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	2	1	1	-1	0	-1	0	0	0	0
0	0	1	3	-1	0	1	0	1	4	4	4	4	4	3	3	5	6	3	0	0	0	1	0	0
-5	-3	2	0	-1	-1	2	4	3	3	2	2	3	4	5	5	2	0	0	1	2	0	3	0	0
-5	-8	-7	-4	0	2	2	2	3	4	3	4	4	0	2	4	5	4	3	3	3	0	2	1	0
-1	0	-2	-5	1	4	5	3	5	6	5	3	2	3	1	5	8	10	10	7	4	2	2	0	0
-2	-1	0	3	5	6	5	3	3	5	8	8	7	6	4	3	7	15	19	19	16	9	7	0	0
1	1	1	-2	4	6	4	3	6	8	6	5	6	8	9	9	10	14	23	9	21	20	12	3	-2
-2	4	0	-6	-4	3	6	2	1	6	8	7	7	8	10	13	13	14	15	18	22	20	12	-1	-1
-5	7	25	20	-2	10	1	6	4	5	6	5	2	3	11	15	12	9	10	7	8	12	5	4	-3
-7	-4	24	41	36	9	-2	1	10	5	1	6	10	10	11	12	10	9	12	12	8	8	6	3	-1
-5	-1	7	34	62	68	36	11	9	14	8	2	8	14	15	13	14	16	11	9	13	17	10	2	1
-3	7	8	12	40	78	75	36	12	4	14	13	8	15	21	11	8	14	16	11	15	17	10	1	2
-6	5	13	3	10	28	54	50	18	4	11	14	7	9	16	13	9	13	11	9	9	10	8	4	3
0	0	5	9	7	15	18	21	11	4	6	10	9	9	9	7	6	7	9	9	11	9	3	1	3
0	0	1	3	11	16	14	9	7	6	8	8	5	5	5	6	8	10	9	10	9	8	7	5	3
0	0	-2	0	4	12	18	18	12	9	7	8	7	6	7	9	9	8	9	12	11	7	3	2	1
0	0	-2	0	3	5	9	16	19	18	12	10	9	11	9	9	12	12	10	6	4	2	4	3	3
0	0	-1	0	0	1	4	8	15	11	10	9	10	10	10	10	7	7	6	7	5	3	1	0	0
0	0	0	1	2	1	1	4	5	9	7	8	6	7	7	6	8	8	7	2	0	0	0	0	0
0	0	0	0	0	-1	2	4	5	0	1	3	4	6	7	6	2	0	-1	0	0	0	0	0	0

E W

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E NO DATA W

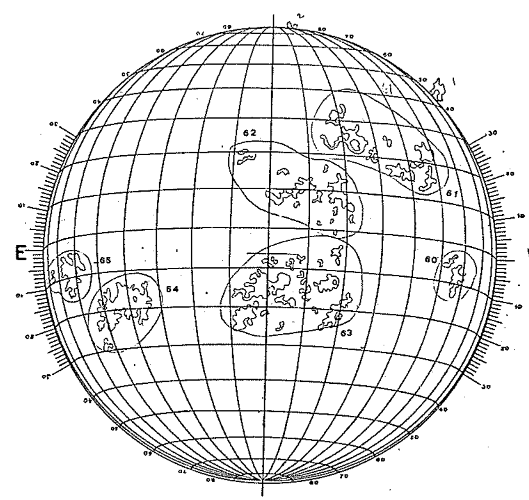
S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



61-47-4.9
62-28-4.1
63-52-4.9
64-47-5.2
65-31-4.9

0920 UT

FEBRUARY 21, 1971 (P=-19.18, B_o=-7.04, L_o=178.07)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

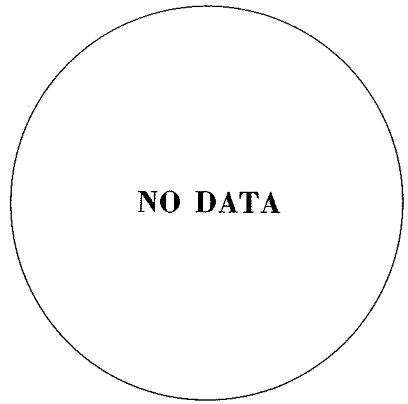
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

Contours in Intervals of 200° K

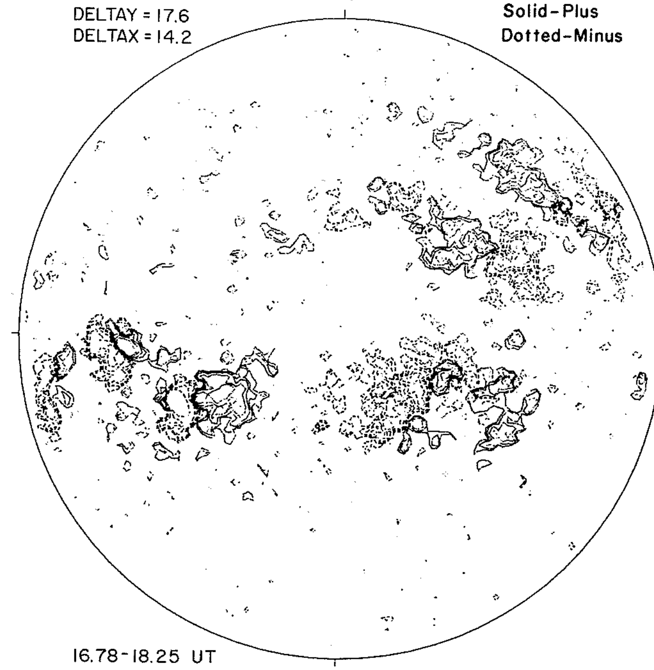
MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E W



Sp

Levels
±5
±10
±20
±40
±80

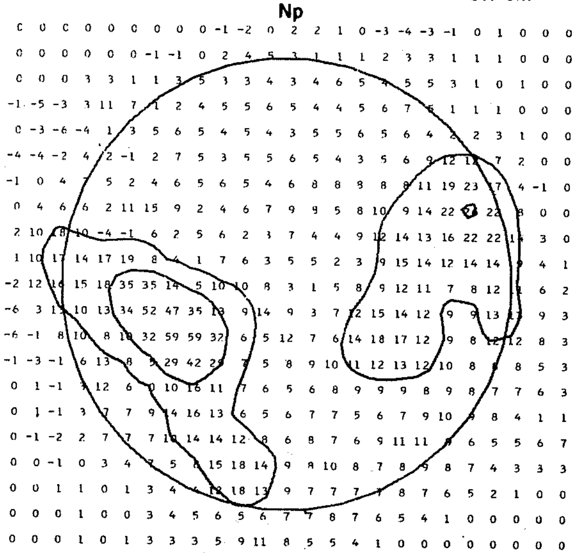
16.78-18.25 UT

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

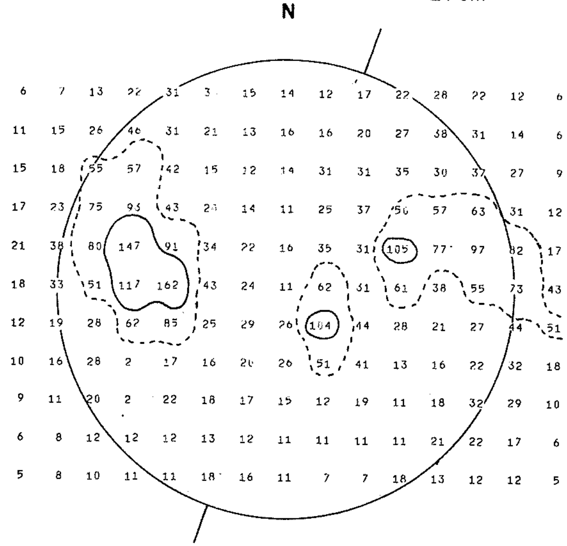
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

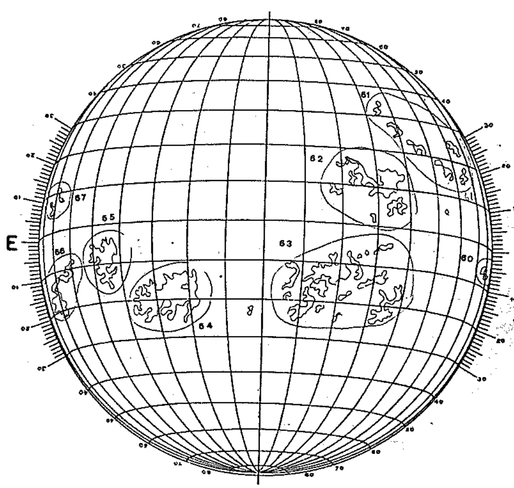
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

CALCIUM REPORT

Np

E W



Sp

1355 UT

61-26 - - -
62-34 - - -
63-26 - - -
64-56 - - -
66-29 - - -

FEBRUARY 22, 1971 (P=-19.48, B_o=-7.07, L_o=164.91)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

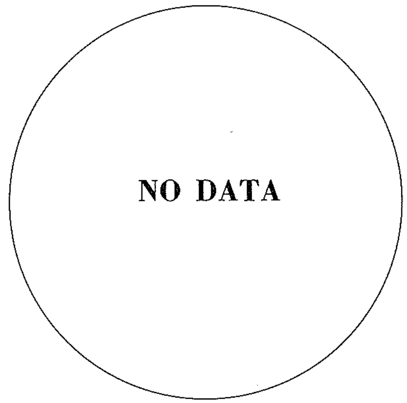
Intensities in Units
of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

Contours in Intervals
of 200° K

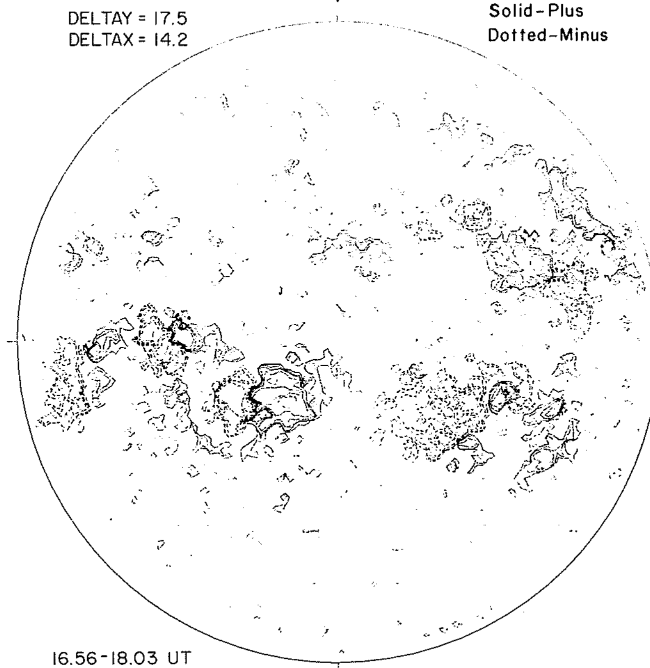
MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E W



Levels
±5
±10
±20
±40
±80

16.56-18.03 UT

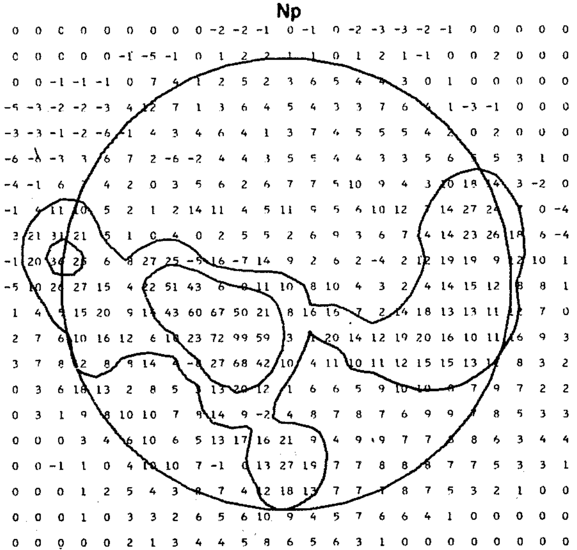
Sp

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

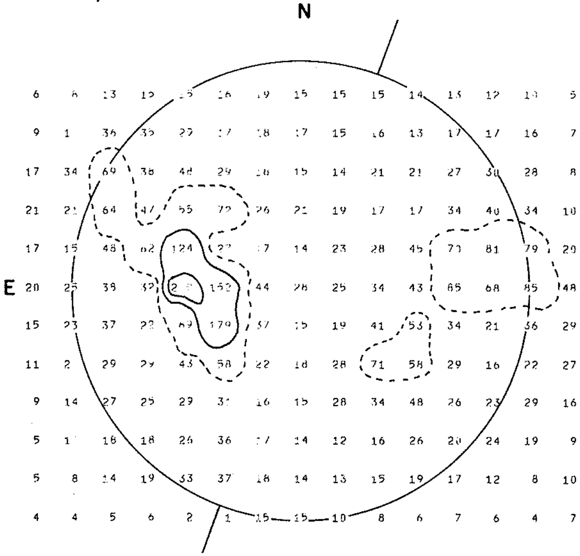
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

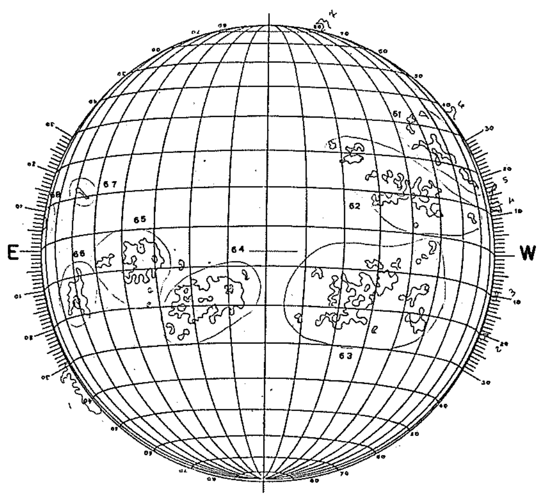
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA

Np

E W



61 -29 -3.0
62 -39 -3.8
63 -25 -4.3
64 -56 -4.7
65 -38 -3.3
66 -19 -2.8

Sp

1210 UT

FEBRUARY 23, 1971 (P=-19.78, B_o=-7.10, L_o=151.74)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

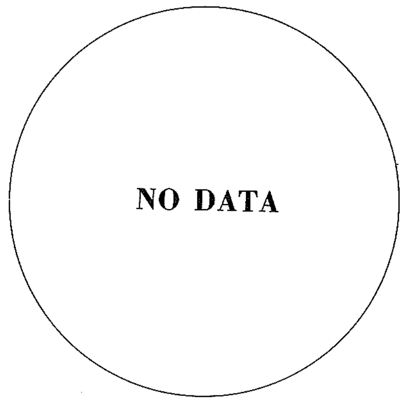
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

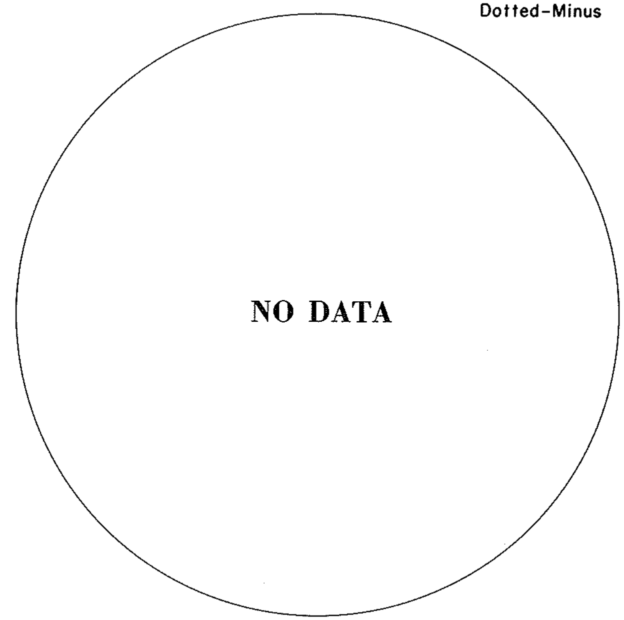
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

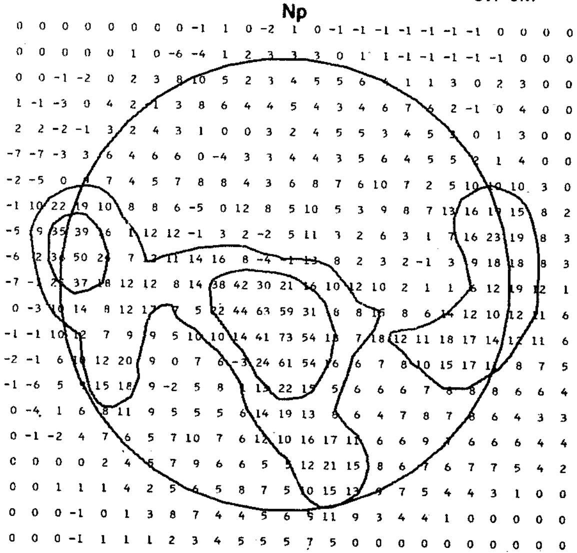
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

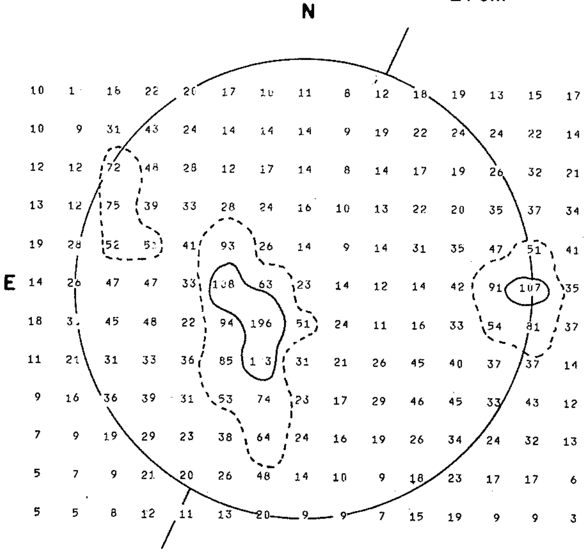


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

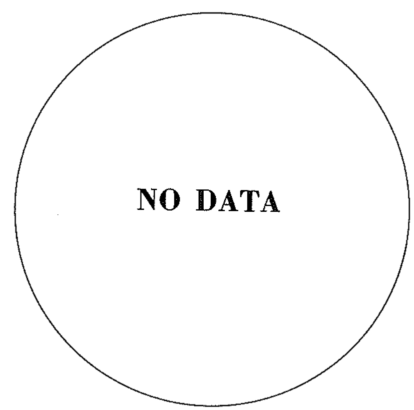


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FEBRUARY 24, 1971 (P=-20.07, B_o=-7.12, L_o=138.57)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

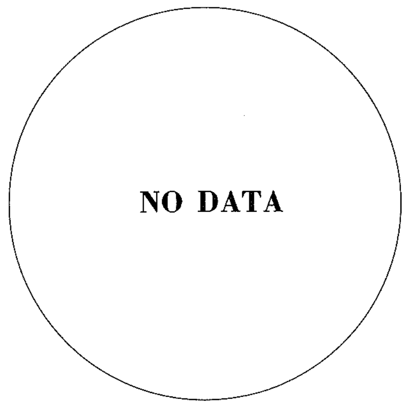
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W



Sp

Contours in Intervals of 200° K

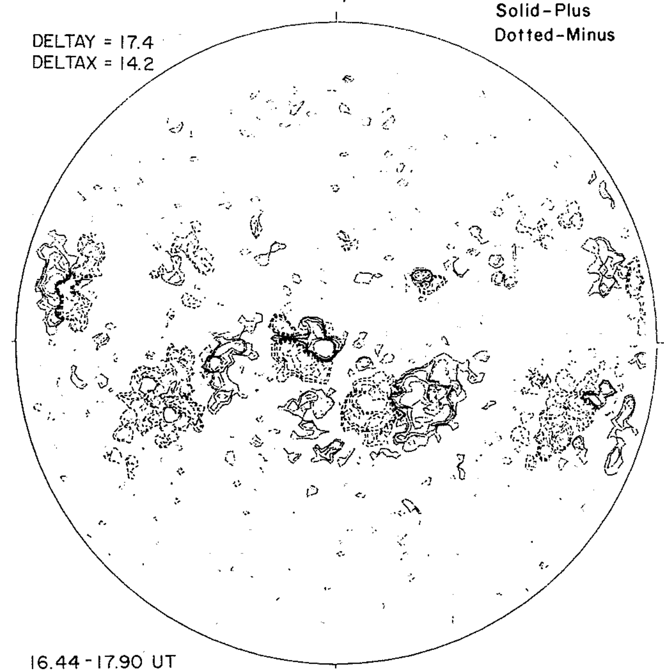
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.2

Np

E W



Levels
±5
±10
±20
±40
±80

16.44-17.90 UT

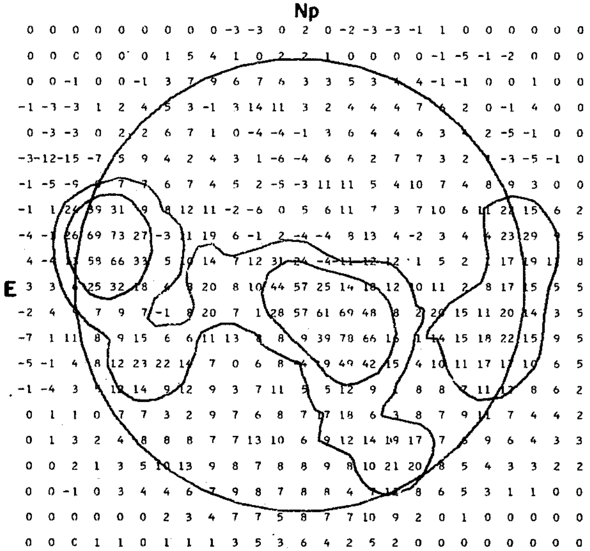
Sp

STANFORD

9.1 cm

Np

E W



Sp

Brightness Unit 5,000° K

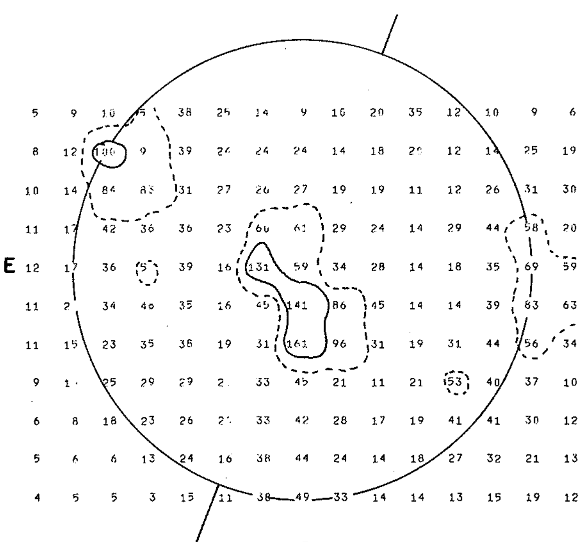
20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W



S

02-03 UT

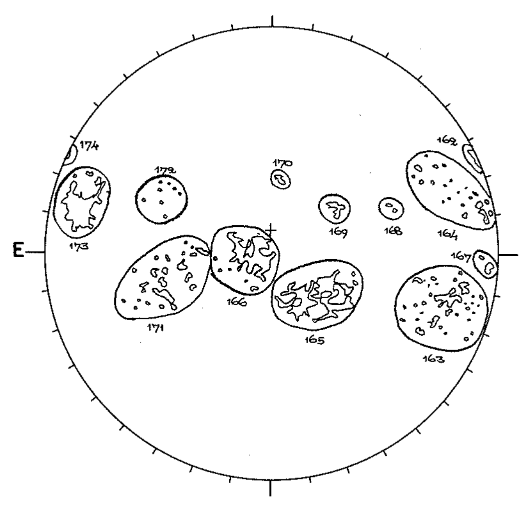
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E W



FAIR	M
63-24-2.5	
65-30-3.5	
66-23-3.5	
69-04-2.5	
71-17-2.5	
73-40-3.5	

Sp

1710 UT

FEBRUARY 25, 1971 (P=-20.35, B_o=-7.15, L_o=125.40)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

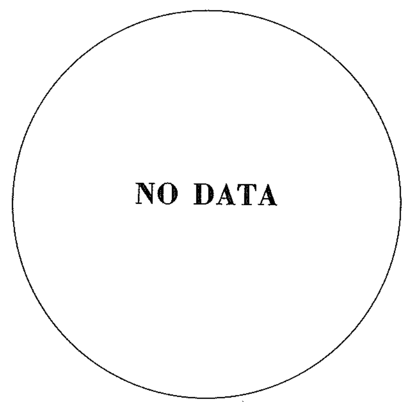
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

Sp

Contours in Intervals of 200° K

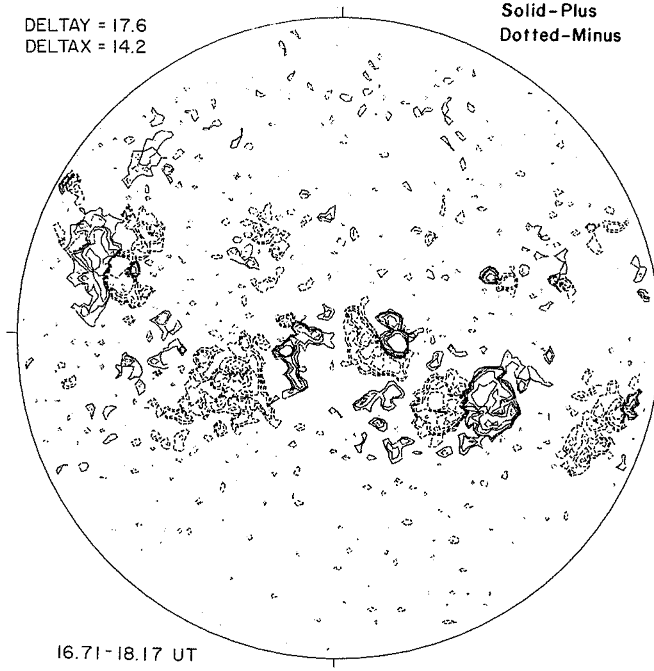
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.6
DELTAX = 14.2

Np

E



W

Sp

Levels
±5
±10
±20
±40
±80

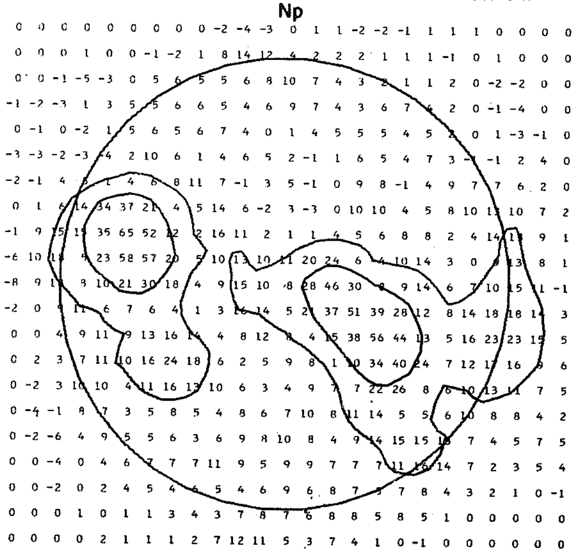
16.71-18.17 UT

STANFORD

9.1 cm

Np

E



W

Sp

20-21 UT

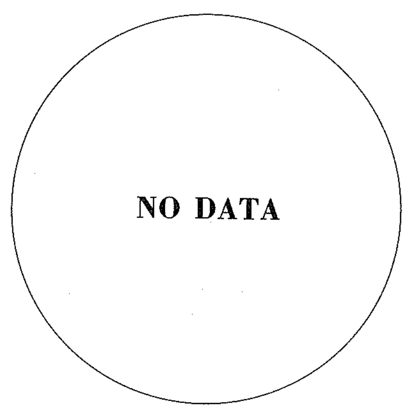
Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E



W

S

02-03 UT

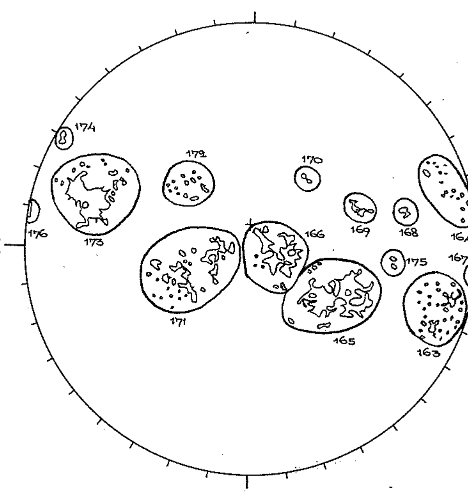
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E



W

Sp

1430 UT

FAIR	M
63-19	-2.5
65-33	-3.5
66-20	-3.5
67-04	-2.5
68-03	-2.5
69-04	-2.5
71-20	-2.5
73-41	-3.5

FEBRUARY 26, 1971 (P=-20.63, B_o=-7.17, L_o=112.22)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

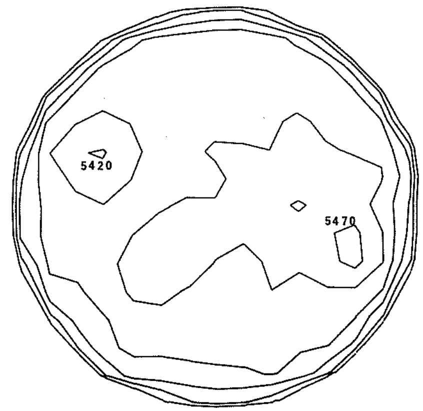
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm



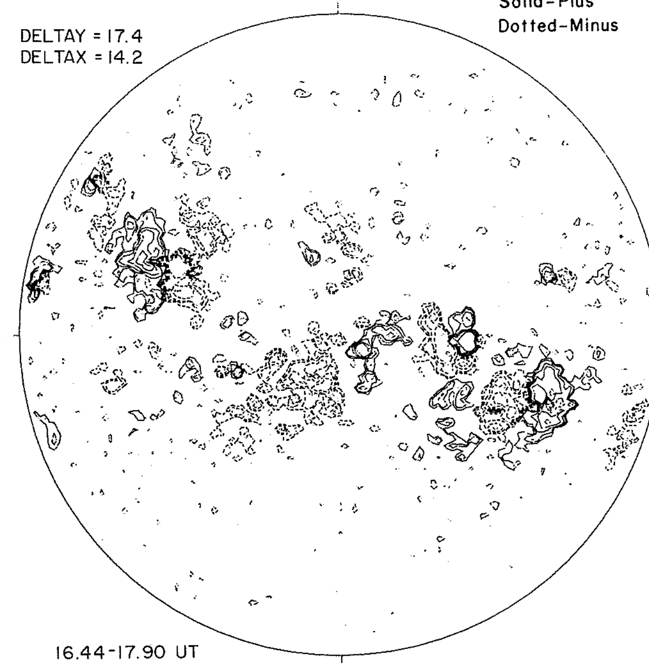
1618 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.2

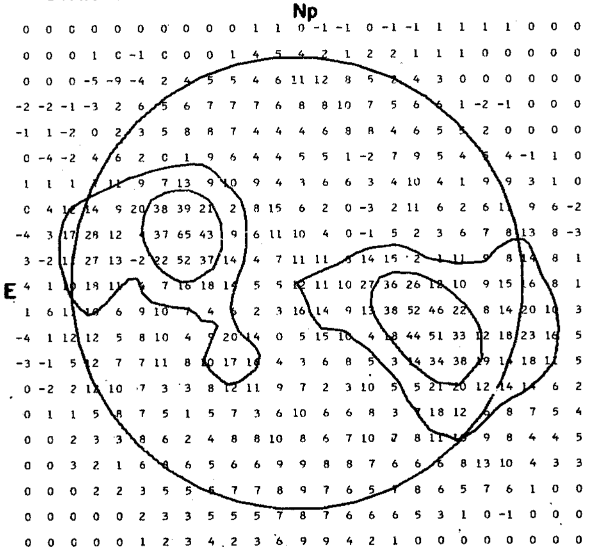


Levels
±5
±10
±20
±40
±80

16.44-17.90 UT

STANFORD

9.1 cm

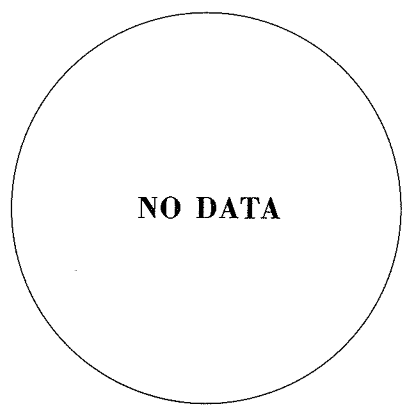


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

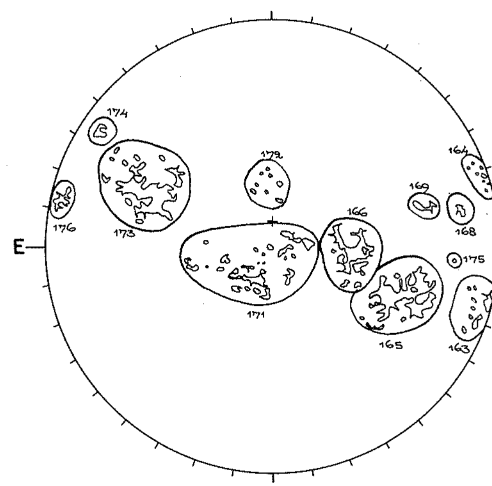


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
65-34-3.5	
66-21-3.0	
71-20-2.5	
73-40-3.5	
76-12-3.0	

1430 UT

FEBRUARY 27, 1971 (P=-20.90, B_o=-7.19, L_o=99.05)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E W

NO DATA

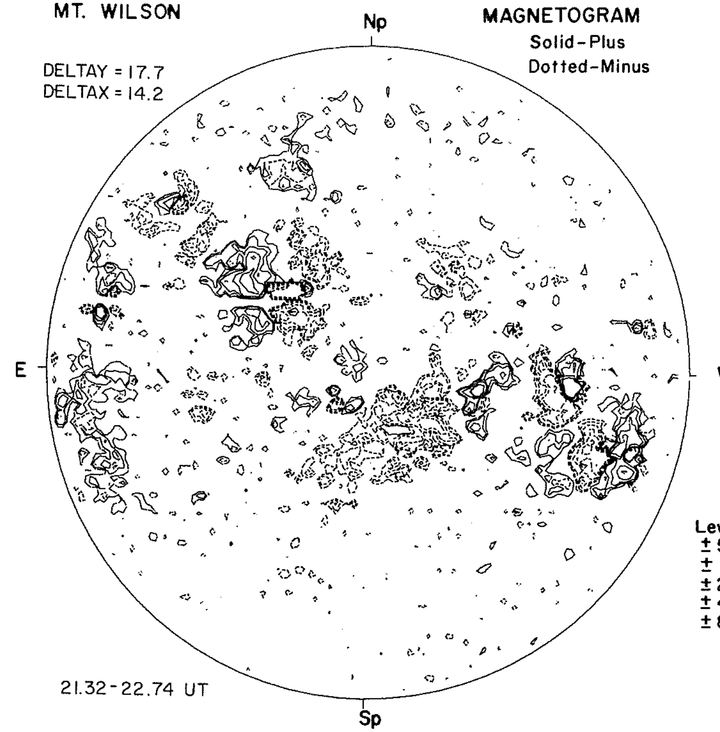
Sp

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.7
DELTAX = 14.2

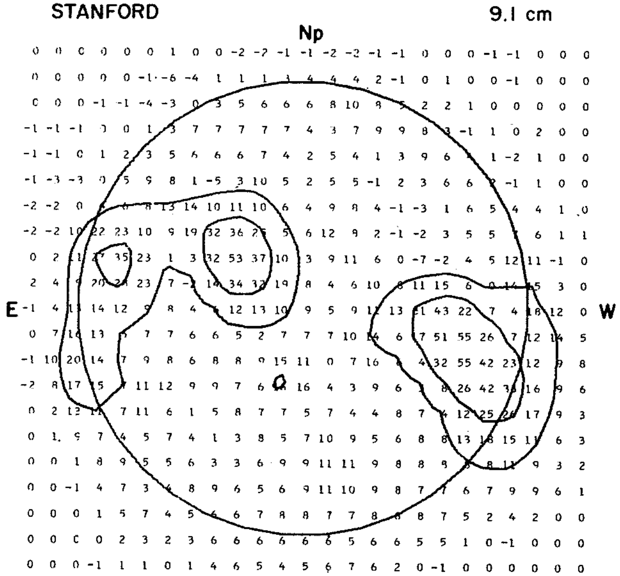


Levels
±5
±10
±20
±40
±80

21.32-22.74 UT

STANFORD

9.1 cm



Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E W

NO DATA

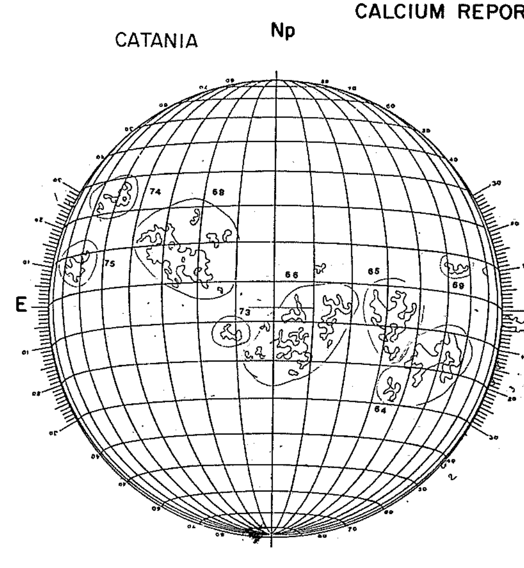
S

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



64-47-6.2
65-27-3.6
68-53-2.6
75-15-2.6

0745 UT

FEBRUARY 28, 1971 (P=-21.17, B_o=-7.20, L_o=85.88)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

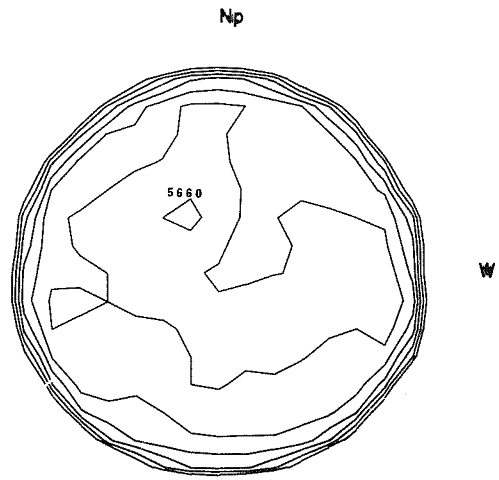
E W

Sp

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

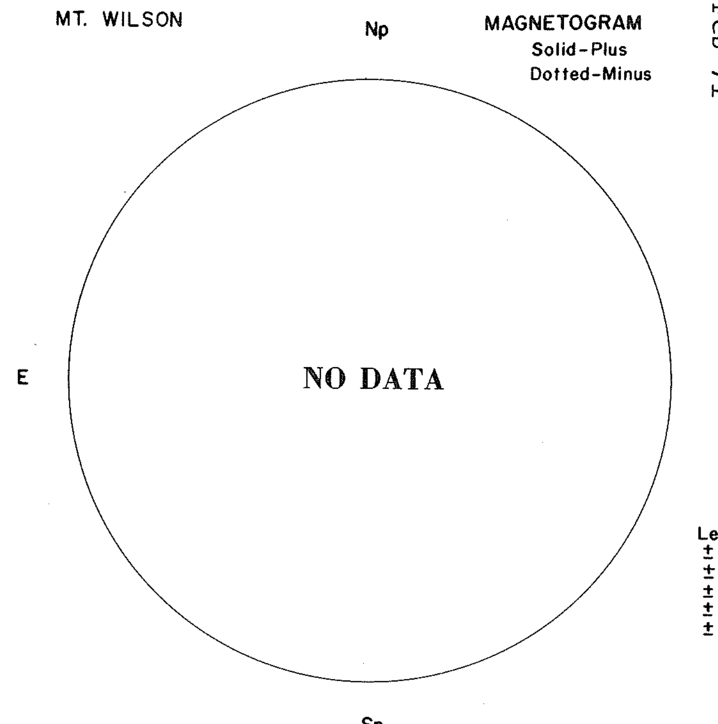


1600 UT

Contours in Intervals of 200° K

MT. WILSON

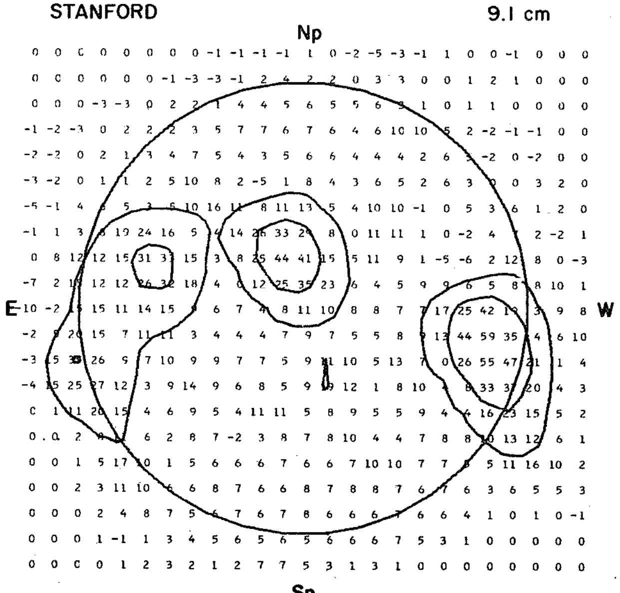
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

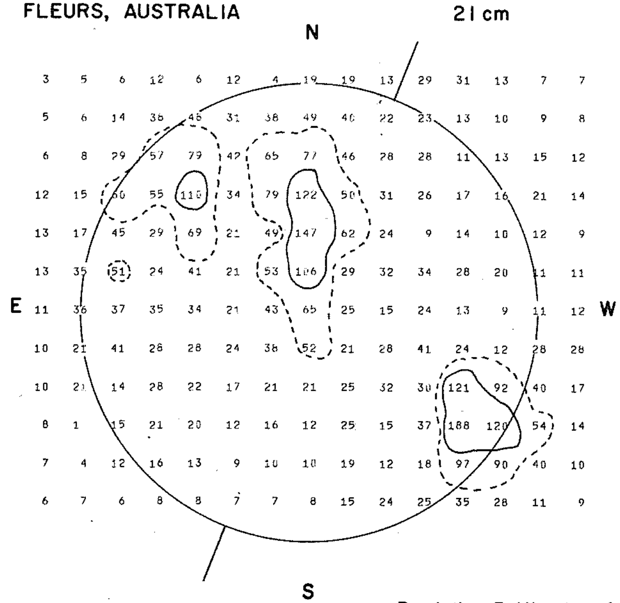


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

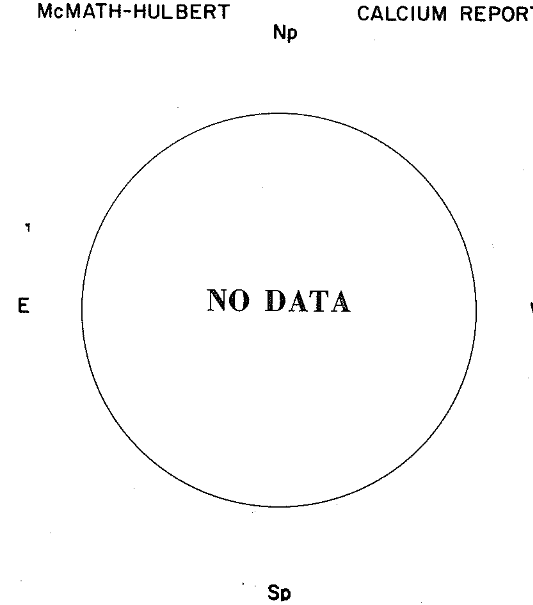


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

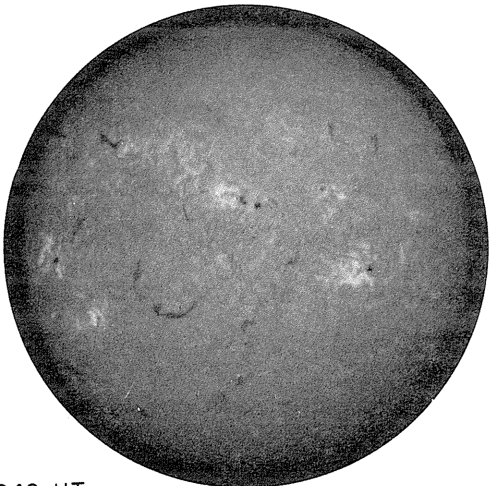
McMATH-HULBERT

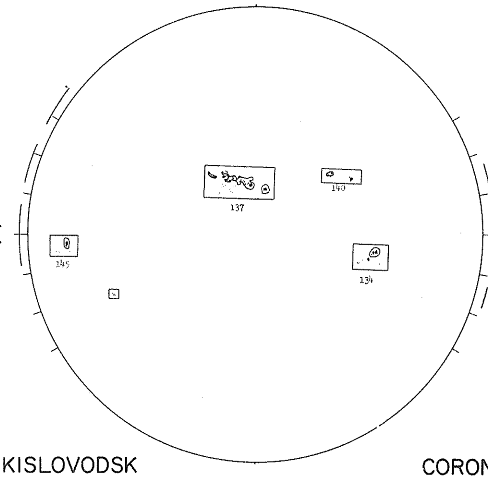
CALCIUM REPORT



Hα SPECTROHELIOGRAMS — SUNSPOTS AND CORONA

FEBRUARY, 1971

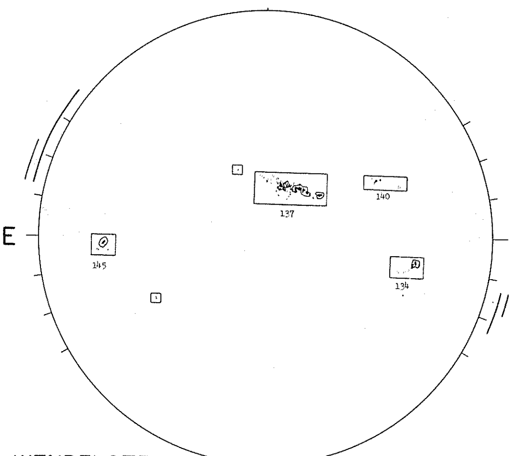
BOULDER
1
Np
Hα
E
W

2040 UT
Sp

BOULDER
Np
SUNSPOTS
E
W


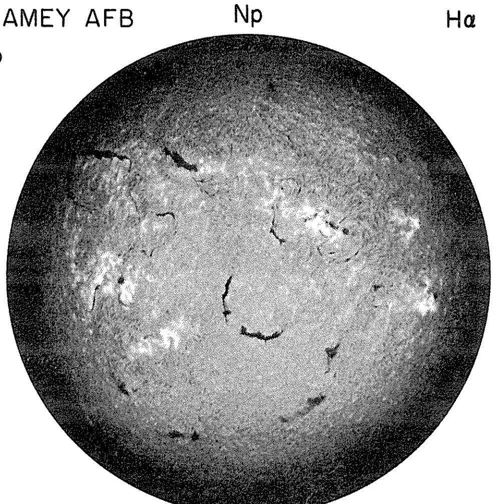
KISLOVODSK
CORONA
Sp

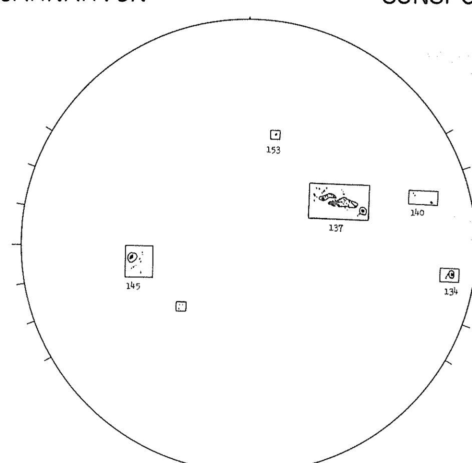
BOULDER
2
Np
Hα
E
W

1608 UT
Sp

BOULDER
Np
SUNSPOTS
E
W


WENDELSTEIN
1510 UT
CORONA
Sp

RAMEY AFB
3
Np
Hα
E
W

1244 UT
Sp

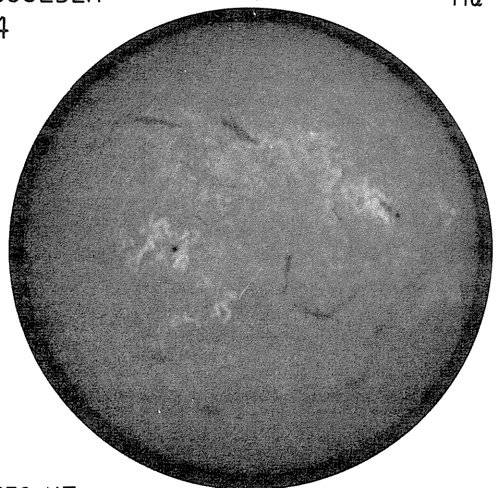
CARNARVON
Np
SUNSPOTS
E
W


2300 UT
Sp
CORONA
NO DATA

FEBRUARY, 1971

BOULDER Np Hα
4

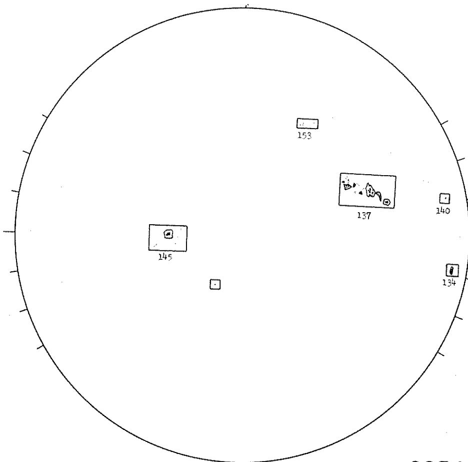
E W



1539 UT Sp

BOULDER Np SUNSPOTS

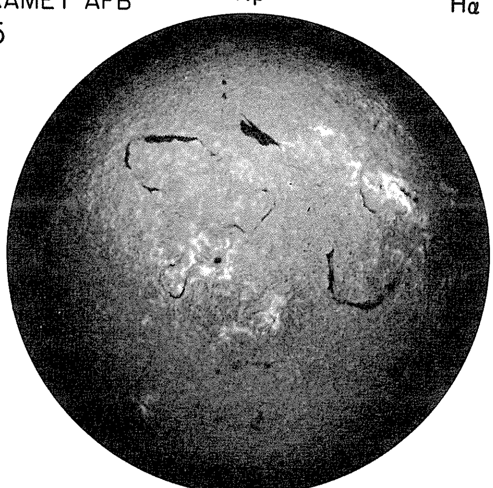
E W



1615 UT Sp CORONA NO DATA

RAMEY AFB Np Hα
5

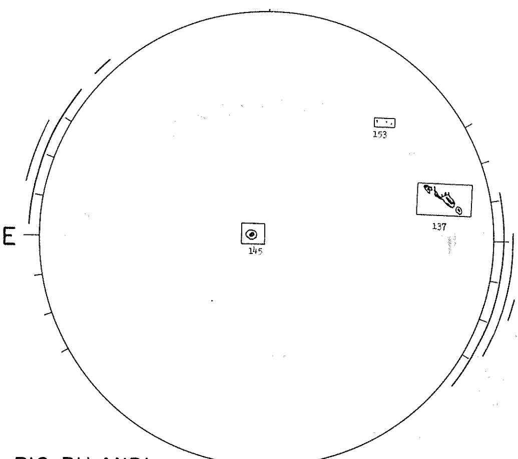
E W



1215 UT Sp

CULGOORA Np SUNSPOTS

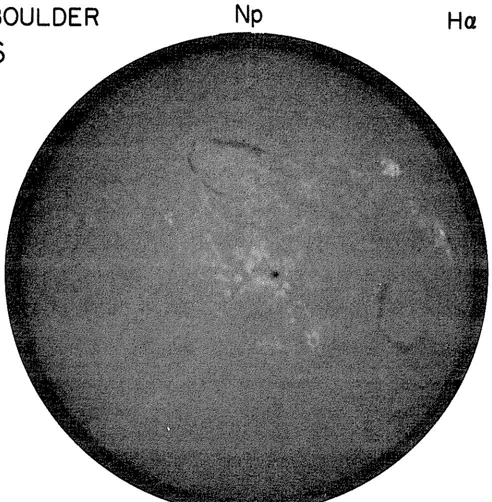
E W



PIC-DU-MIDI
2045 UT Sp CORONA

BOULDER Np Hα
6

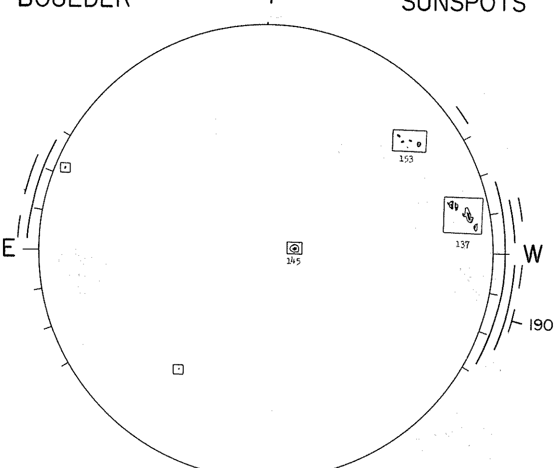
E W



1553 UT Sp

BOULDER Np SUNSPOTS

E W

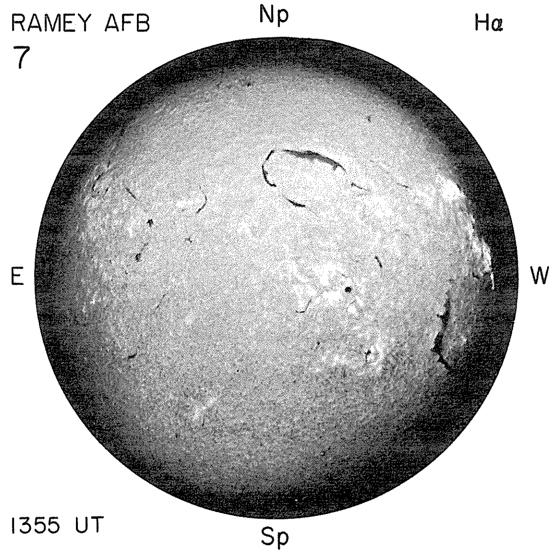


PIC-DU-MIDI
1625 UT Sp CORONA

FEBRUARY, 1971

RAMEY AFB
7

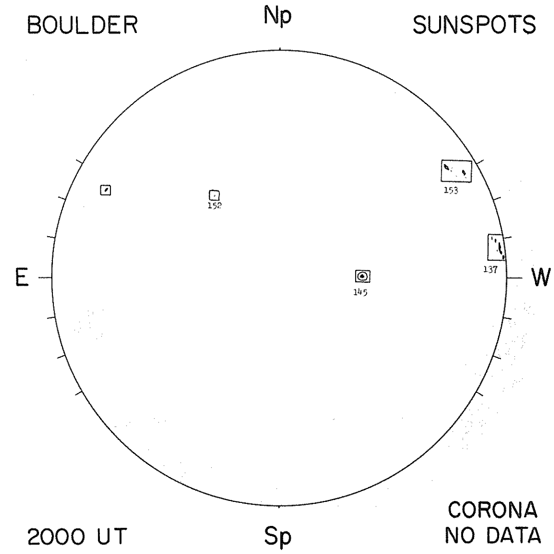
Hα



1355 UT

BOULDER

SUNSPOTS

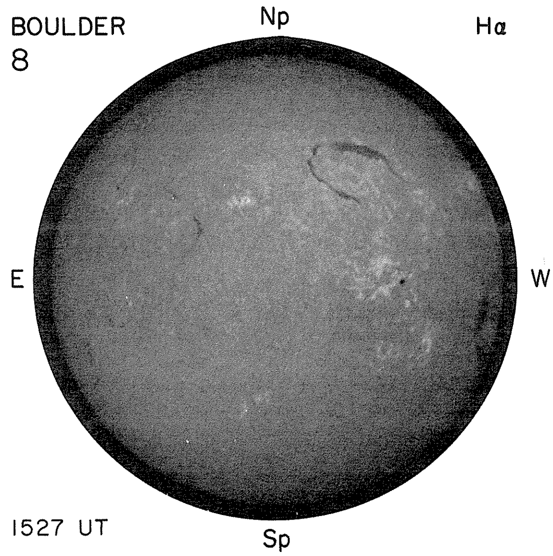


2000 UT

CORONA
NO DATA

BOULDER
8

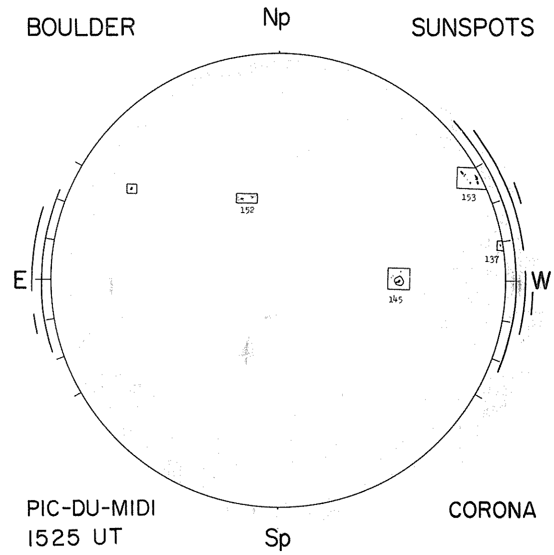
Hα



1527 UT

BOULDER

SUNSPOTS

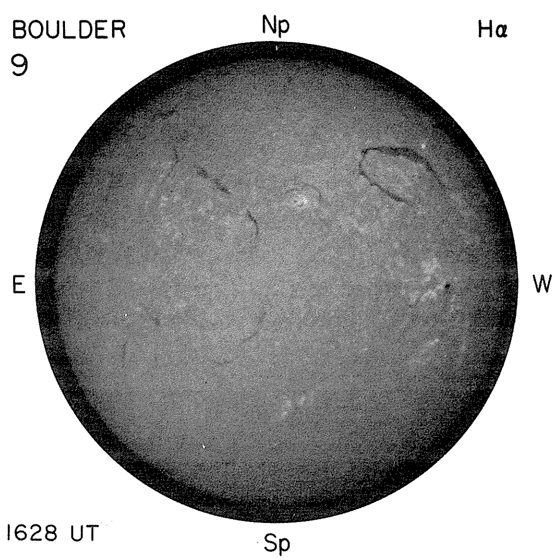


PIC-DU-MIDI
1525 UT

CORONA

BOULDER
9

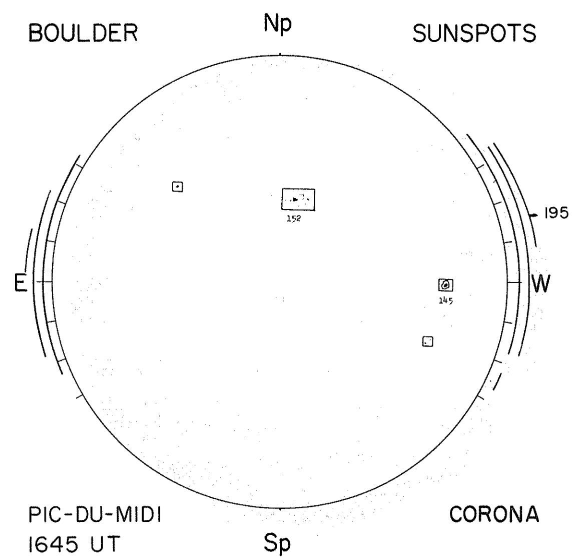
Hα



1628 UT

BOULDER

SUNSPOTS

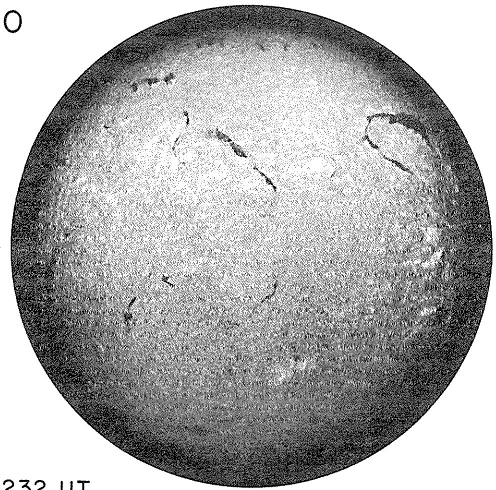


PIC-DU-MIDI
1645 UT

CORONA

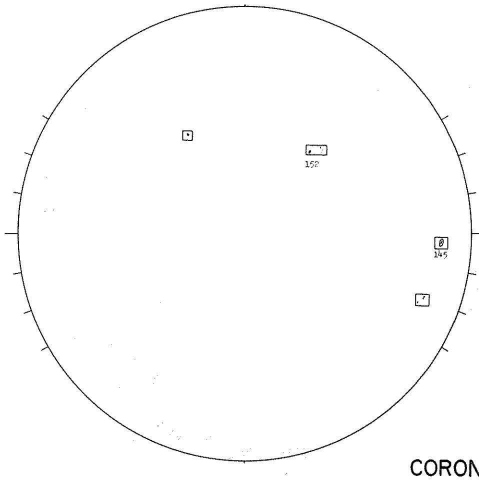
FEBRUARY, 1971

RAMEY AFB Np Hα
10

E  W

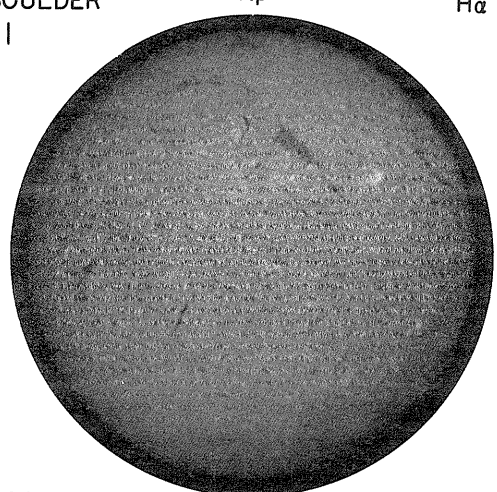
1232 UT Sp

BOULDER Np SUNSPOTS

E  W

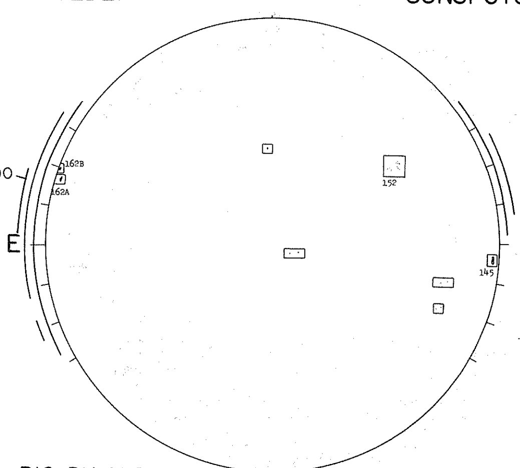
1800 UT Sp CORONA
NO DATA

BOULDER Np Hα
11

E  W

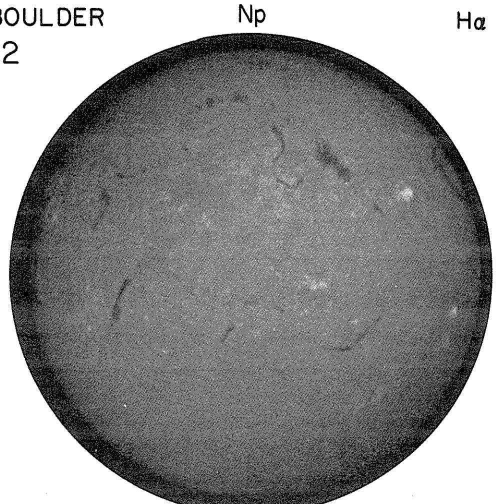
2025 UT Sp

BOULDER Np SUNSPOTS

190 E  W

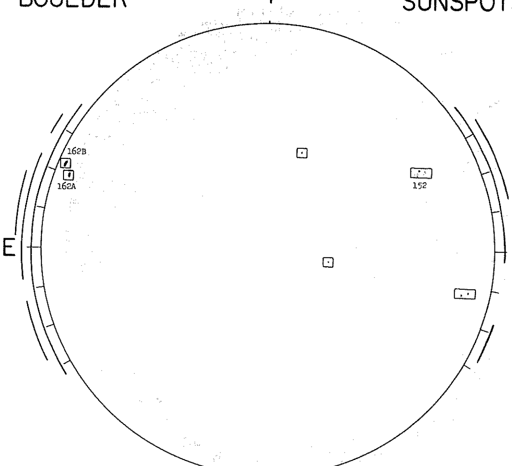
PIC-DU-MIDI
2000 UT Sp CORONA

BOULDER Np Hα
12

E  W

1526 UT Sp

BOULDER Np SUNSPOTS

E  W

PIC-DU-MIDI
1515 UT Sp CORONA

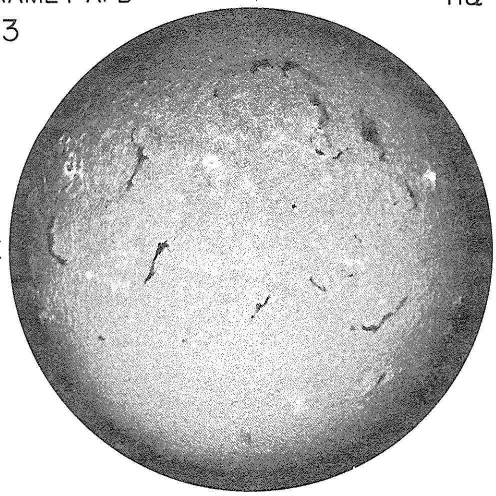
FEBRUARY, 1971

RAMEY AFB
13

Np

Hα

E



W

1311 UT

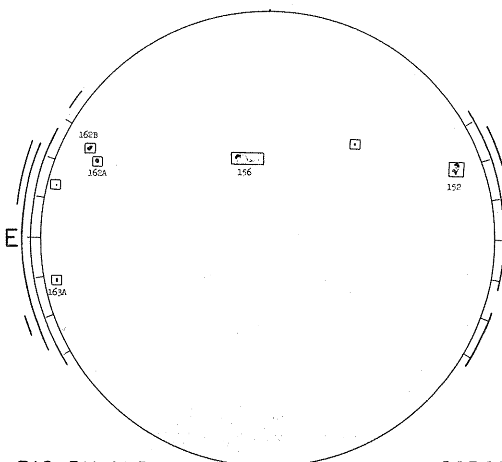
Sp

BOULDER

Np

SUNSPOTS

E



W

PIC-DU-MIDI
1835 UT

Sp

CORONA

RAMEY AFB
14

Np

Hα

E

W

1229 UT

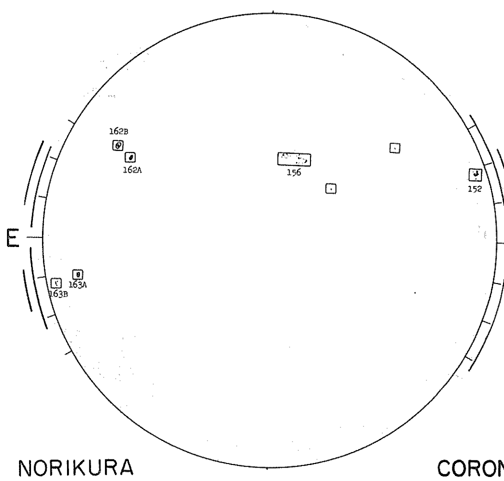
Sp

BOULDER

Np

SUNSPOTS

E



W

NORIKURA
1630 UT

Sp

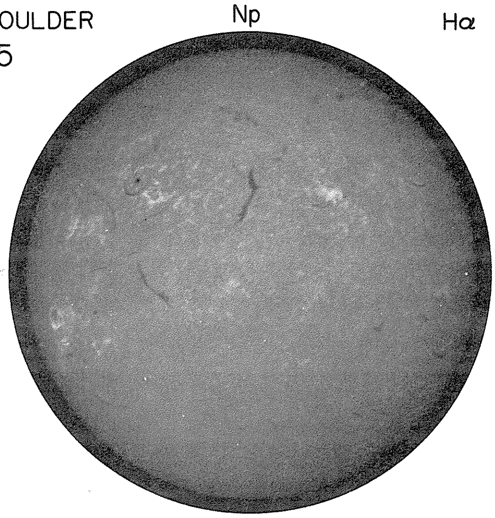
CORONA

BOULDER
15

Np

Hα

E



W

1848 UT

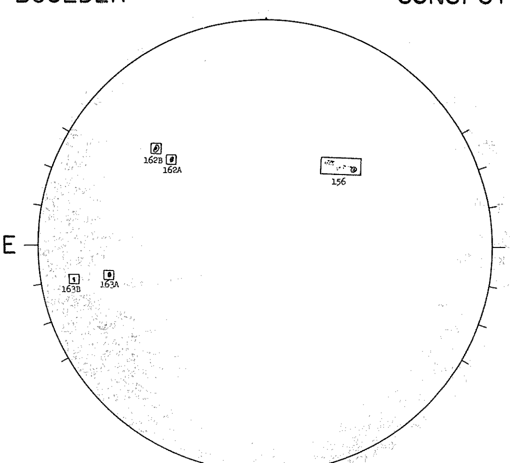
Sp

BOULDER

Np

SUNSPOTS

E



W

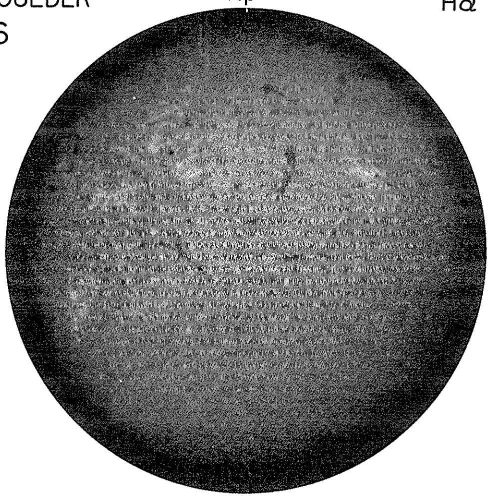
1825 UT

Sp

CORONA
NO DATA

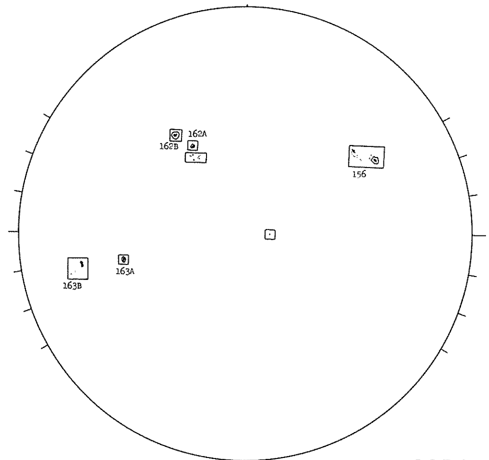
FEBRUARY, 1971

BOULDER
16
Np
Hα
E
W



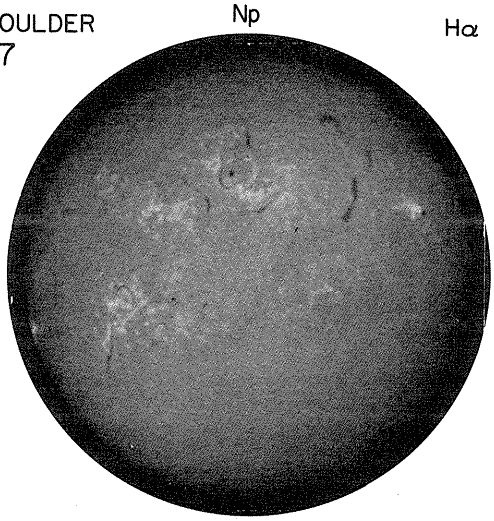
1452 UT
Sp

BOULDER
Np
SUNSPOTS
E
W



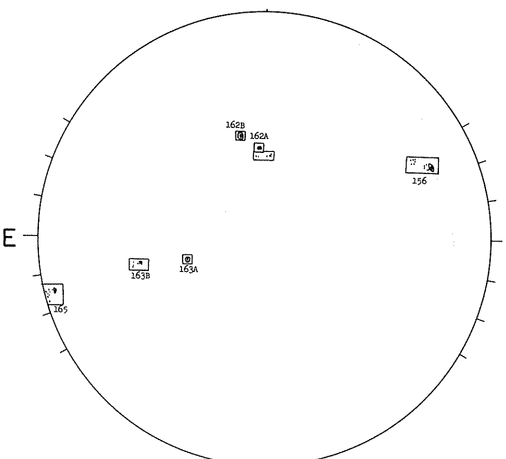
1510 UT
Sp
CORONA
NO DATA

BOULDER
17
Np
Hα
E
W



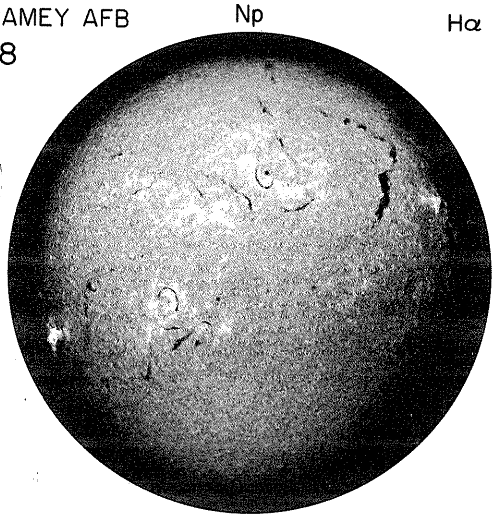
1644 UT
Sp

BOULDER
Np
SUNSPOTS
E
W



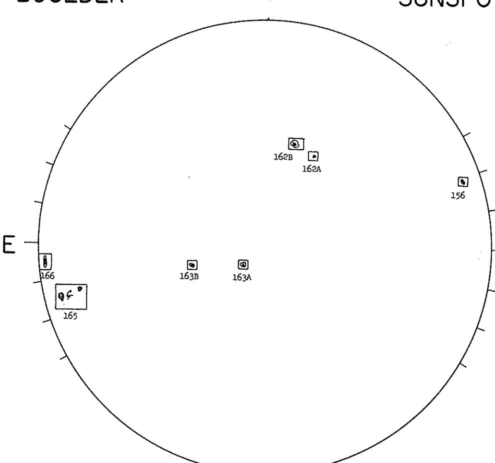
1525 UT
Sp
CORONA
NO DATA

RAMEY AFB
18
Np
Hα
E
W



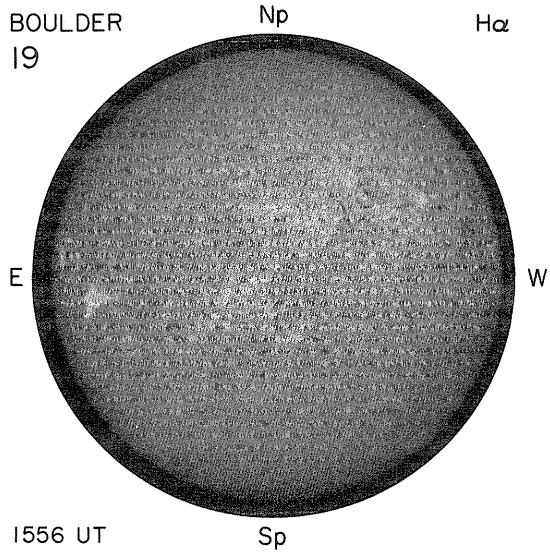
1228 UT
Sp

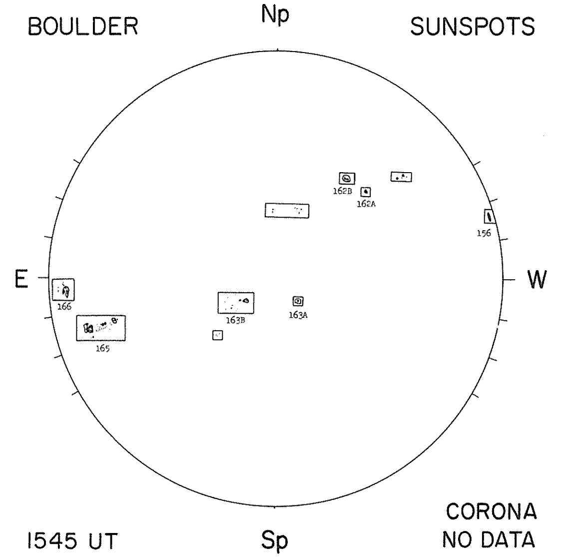
BOULDER
Np
SUNSPOTS
E
W

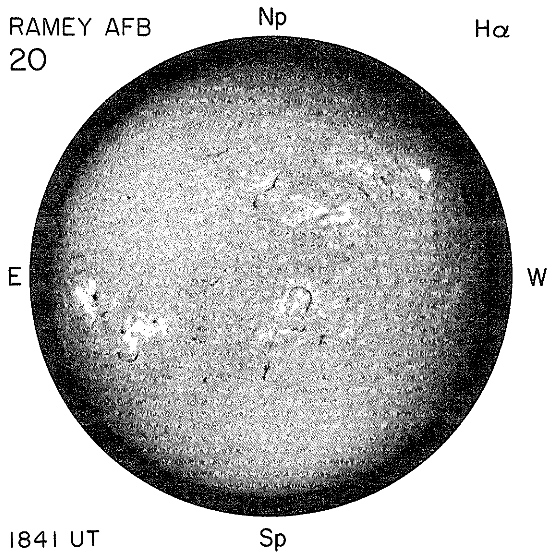


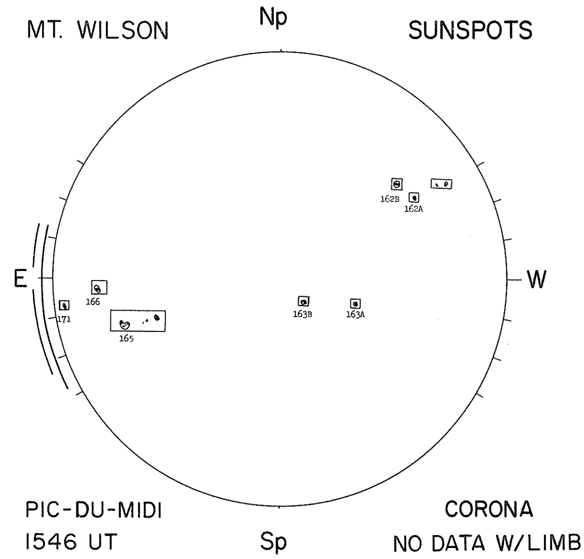
1930 UT
Sp
CORONA
NO DATA

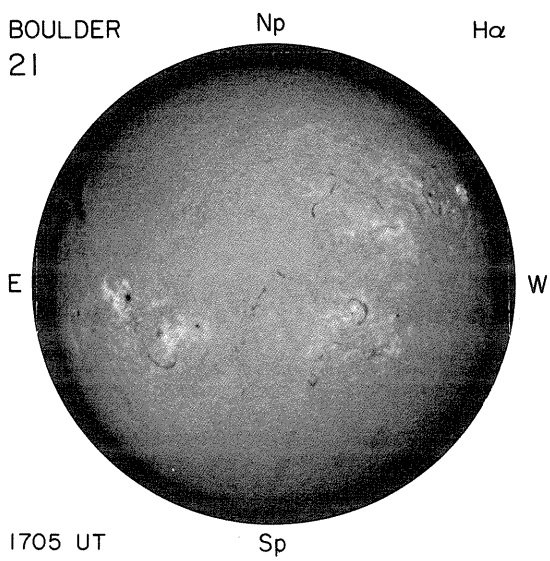
FEBRUARY, 1971

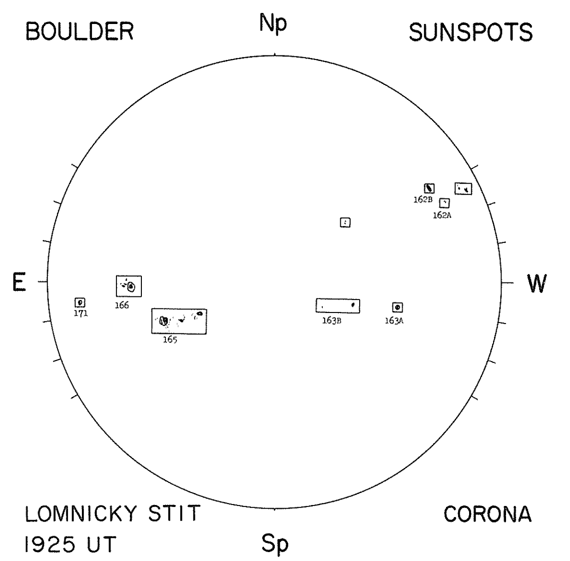




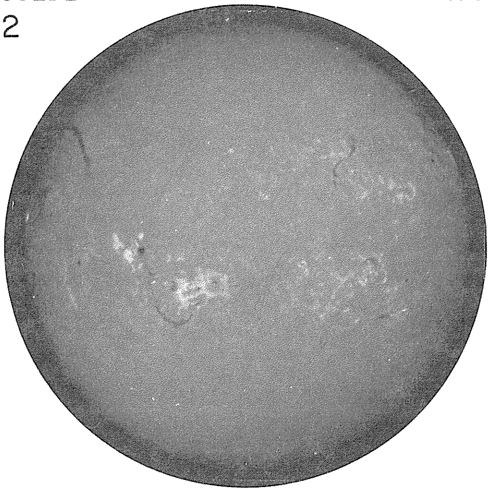


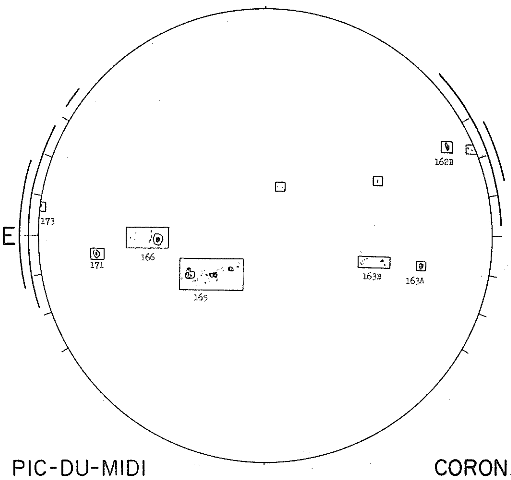




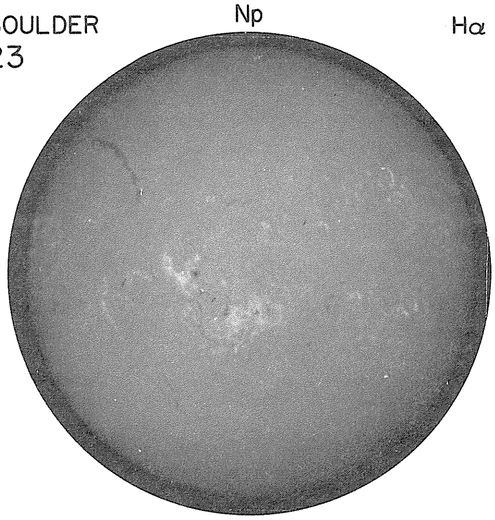


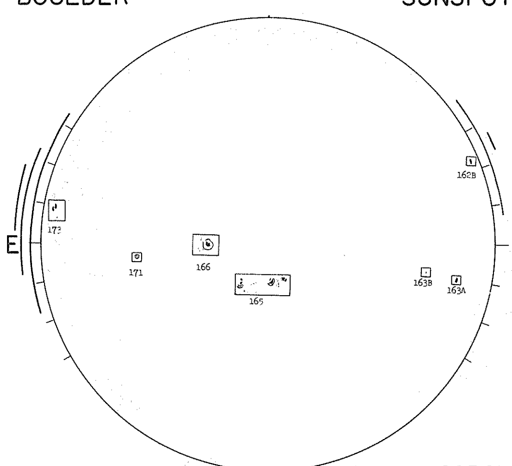
FEBRUARY, 1971

BOULDER
22
Np
Hα
E
W

1643 UT
Sp

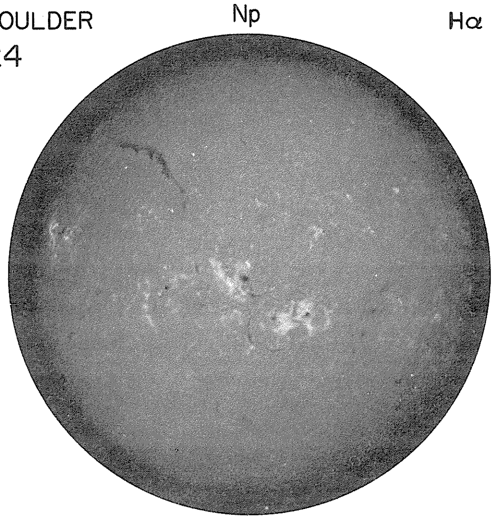
BOULDER
Np
SUNSPOTS
E
W


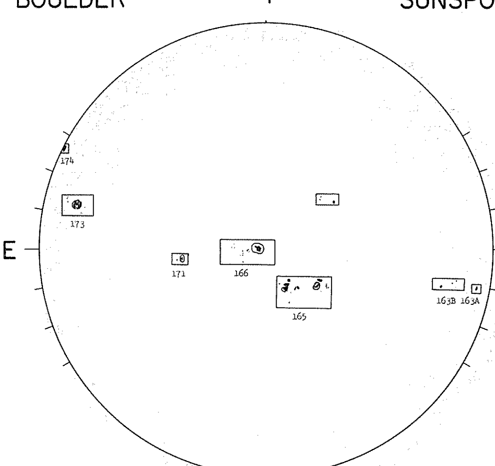
PIC-DU-MIDI
1530 UT
Sp
CORONA

BOULDER
23
Np
Hα
E
W

1736 UT
Sp

BOULDER
Np
SUNSPOTS
E
W


PIC-DU-MIDI
1600 UT
Sp
CORONA

BOULDER
24
Np
Hα
E
W

1559 UT
Sp

BOULDER
Np
SUNSPOTS
E
W


1650 UT
Sp
CORONA
NO DATA

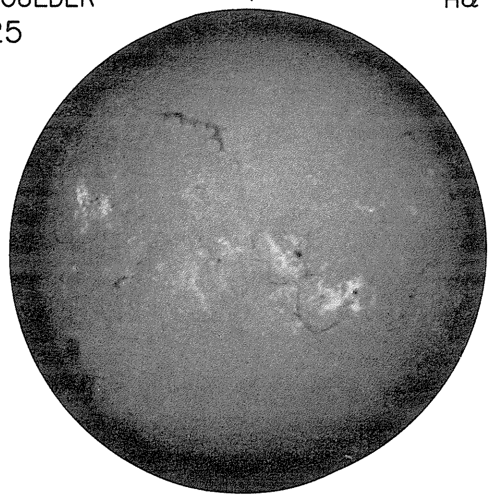
FEBRUARY, 1971

BOULDER
25

Np

Hα

E



W

1845 UT

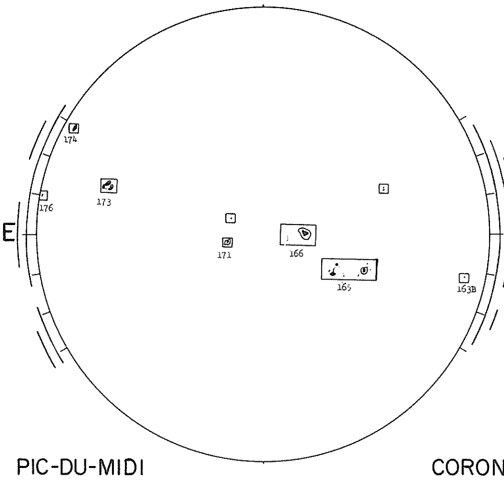
Sp

BOULDER

Np

SUNSPOTS

E



W

PIC-DU-MIDI
1700 UT

Sp

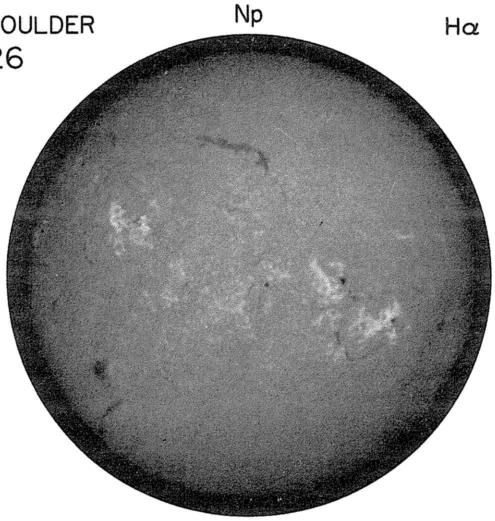
CORONA

BOULDER
26

Np

Hα

E



W

1546 UT

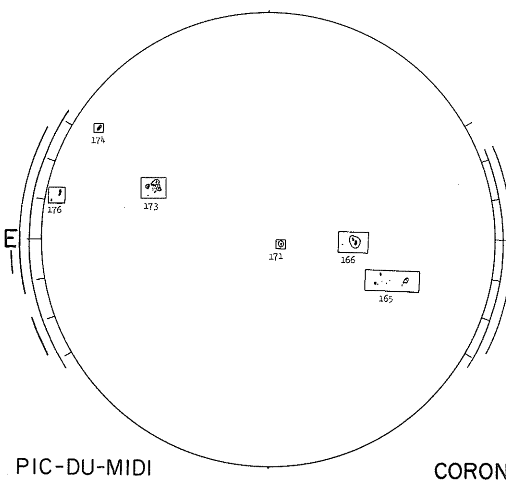
Sp

BOULDER

Np

SUNSPOTS

E



W

PIC-DU-MIDI
1500 UT

Sp

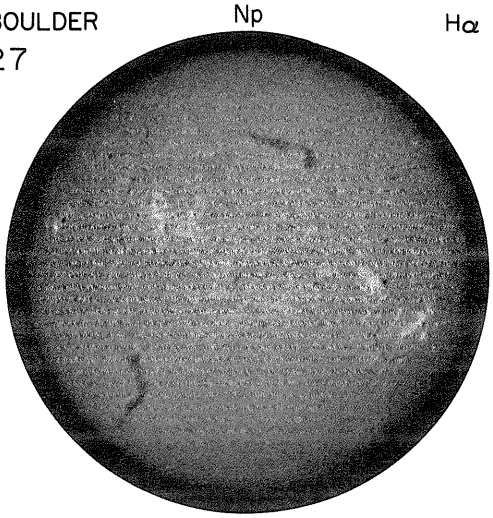
CORONA

BOULDER
27

Np

Hα

E



W

1532 UT

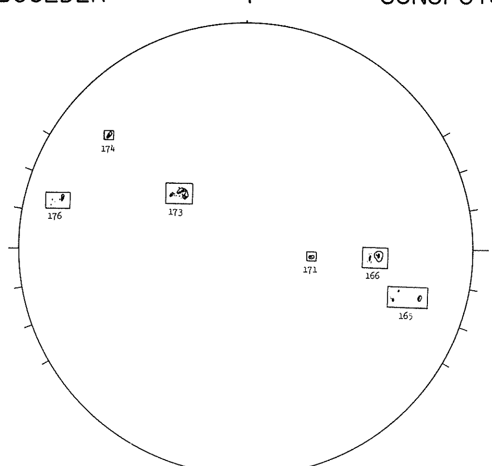
Sp

BOULDER

Np

SUNSPOTS

E



W

1615 UT

Sp

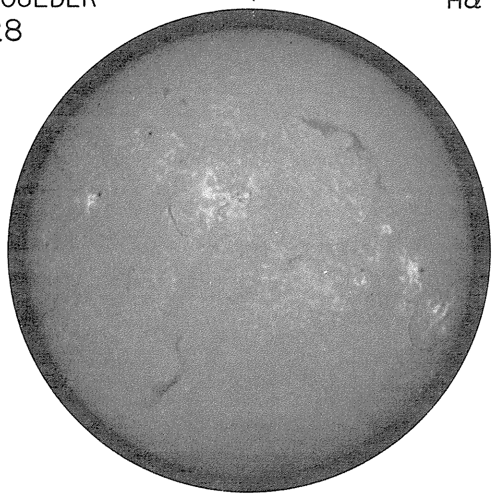
CORONA
NO DATA

FEBRUARY, 1971

BOULDER
28

Np

Hα



E

W

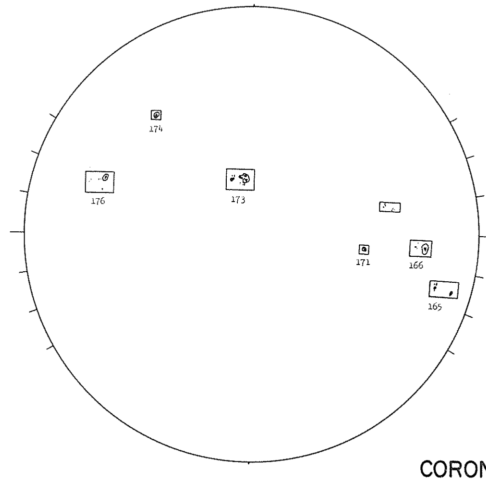
1523 UT

Sp

BOULDER

Np

SUNSPOTS



E

W

1830 UT

Sp

CORONA
NO DATA

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1971

MCMATH REGION 11144 CMP DATE 1.9 RETURN OF REGION 11106 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	27	11144	S06 E70	67	300	1.0
71	1	28	11144	S07 E56	69	400	1.0
71	1	30	11144	S07 E30	69	400	1.0
71	1	31	11144	S07 E15	70	500	2.0
71	2	1	11144	S07 E03	68	500	2.0
71	2	2	11144	S07 W10	68	500	1.5
71	2	6	11144	S07 W63	69	400	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX

MCMATH REGION 11137 CMP DATE 3.0 RETURN OF REGION 11108* ROTATION 1,4&5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	26					
71	1	27	11137	N10 E77	60	3700	3.5
71	1	28	11137	N13 E68	57	4200	3.0
71	1						
71	1	29					
71	1						
71	1	30	11137	N12 E43	56	4500	3.0
71	1	31	11137	N13 E30	55	4800	3.5
71	2	1	11137	N13 E20	51	4700	3.5
71	2	2	11137	N13 E05	53	5100	3.5
71	2						
71	2	3					
71	2	4					
71	2	5					
71	2	6	11137	N13 W48	54	5000	3.5
71	2	7	11137	N13 W61	54	4500	3.5
71	2	8					

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18304	N07 E81	68	(AP)	3	50	1	H		
18304	N06 E67	67	BP	0	400	7	E	19	10
18304	N06 E56	65	(BP)	5	440	36	F	22	11
18310	N23 E80	41	A	0					
18304	N07 E46	65	(BP)	5				25	13
18310	N23 E70	41	(AP)	2					
18304	N07 E29	66	(BP)	6	540	21	F	24	12
	N07 E15				670	42	F	38	19
18304	N07 E05	66	(BP)	5	750	50	F	45	22
18304	N07 W10	67	(BP)	5	610	80	F	49	24
	N12 E07				0	1	A		
18304	N07 W24	67	(BY)	5				27	13
18304	N07 W36	68	(BY)	5	570	57	F	30	14
18304	N07 W53	68	(BY)	4				25	12
18304	N08 W62	67	(BY)	5	850	9	F	29	13
18304	N07 W79	68	(BP)	4	490	9	F		
18304	N09 W88	67		0					

MCMATH REGION 11142 CMP DATE 3.0 RETURN OF REGION 11124 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	2	7	11142	S14 W60	53	200	2.0
71	2	8					

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18321	S15 W76	55	(AF)	1					

MCMATH REGION 11153 CMP DATE 3.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	2	3					
71	2	4					
71	2	5					
71	2	6	11153	N25 W42	48	1500	3.0
71	2	7	11153	N25 W65	58	2000	3.0
71	2	8					
71	2	9	11153	N25 W80	47	1800	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18315	N24 W09	52	(AP)	1					
18315	N25 W18	50	(B)	2	10	4	B		
18315	N26 W36	51	(BP)	3					
18315	N25 W46	51	(BP)	4	80	6	D	12	6
18315	N26 W62	51	(BP)	3	110	13	D	20	10
18315	N26 W76	55	(BP)	3					
								7	3

MCMATH REGION 11142 CMP DATE 5.7 RETURN OF REGION 11124 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
71	1	29					
71	1	30	11142	S20 E76	23	1100	3.0
71	1	31	11142	S21 E64	21	2000	3.0
71	2	1	11142	S20 E50	21	1800	3.5
71	2	2	11142	S20 E39	19	2000	3.5
71	2						
71	2	3					
71	2	4					
71	2						
71	2	5					
71	2	6	11142	S22 W12	18	2100	2.5
71	2	7	11142	S22 W25		2200	2.5
71	2	9	11142	S23 W52	19	2100	2.5
71	2	10	11142	S23 W65	18	1800	2.5
71	2	11	11142	S24 W74	14	1500	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
18312	S20 E86	25	(BP	1				24	12
18312	S20 E70	25	(BP)	2				24	12
	S21 E57				20	9	C	4	2
18312	S20 E45	26	(BP)	2	10	3	H		
18312	S21 E32	25	(B)	2	10	2	A		
18314	S17 E33	24		0					
18312	S20 E19	24	(B)	2					
18312	S20 E08	24	(AP)	1	0	1	A		
18316	S26 E15	17	(AP)	1					
								8	4
18322	S22 W48	11	(AF)	2	10	2	B		
18322	S22 W57	11	(B)	3	20	3	D		

* An asterisk beside the "Return of Region" number indicates that the new region is only part of the area of the old region.

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MCMATH REGION 11146 CMP DATE 6.0 RETURN OF REGION 11112 ROTATION 4

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	1	31	11146	N20 E70	15	1000	1.0										
71	2	1	11146	N20 E55	16	1500	2.0										
71	2	2	11146	N21 E44	14	1600	2.0										
71	2	6	11146	N21 W08	14	1900	2.0										
71	2	7	11146	N21 W20	13	2100	2.0										
71	2	9	11146	N20 W45	12	1700	2.0										
71	2	10	11146	N19 W59	12	1700	1.5									5	2
71	2	11	11146	N20 W69	9	1200	1.5									4	2

MCMATH REGION 11145 CMP DATE 6.3 RETURN OF REGION 11111 ROTATION 2

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	1	30						18313	S04 E84	11	(AP)	4	40	1	H	9	5
71	1	31	11145	S04 E76	9	2200	3.5		S06 E70				180	1	H	9	5
71	2	1	11145	S04 E66	5	2300	3.5	18313	S06 E59	12	(BP)	5	290	4	C	15	7
71	2	2	11145	S04 E52	6	2500	3.0	18313	S06 E45	12	(AP)	5	200	4	C	16	8
71	2	3						18313	S06 E31	12	(AP)	6				10	5
71	2	4						18313	S05 E19	13	(BY)	5	210	7	C	10	4
71	2	5						18313	S06 E01	14	(AP)	5				3	1
71	2	6	11145	S05 W05	11	2700	3.0	18313	S06 W09	14	(AP)	6	110	1	H	11	5
71	2	7	11145	S05 W18	11	2700	3.0	18313	S06 W24	13	(AP)	5	190	1	H	9	4
71	2	8						18313	S07 W35	14	(AP)	5					
71	2	9	11145	S06 W44	11	3000	2.5	18313	S06 W53	16	(AP)	5	200	1	H	6	3
71	2	10	11145	S06 W60	13	2700	2.5	18313	S06 W62	16	(AP)	4	110	1	H	6	3
71	2	11	11145	S06 W72	12	2300	2.5	18313	S05 W78	16	(AP)	3	200	1	H	7	3
71	2							18313	S05 W78	16	(AP)	3	200	1	H		

MCMATH REGION 11154 CMP DATE 8.0

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	9	11154	S23 W22	349	100	1.5	18323	S23 W27	350	(B)	2					
71	2	10	11154	S23 W35	348	200	2.0										
71	2	11	11154	S23 W48	348	300	1.5		S21 W51				0	2	B		
71	2	13	11154	S23 W74	348	400	2.0										

MCMATH REGION 11158 CMP DATE 8.0

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	10	11158	S14 W36	349	100	1.0										
71	2	11	11158	S15 W50	350	200	2.0		S14 W52				0	2	B		
71	2	12						18326	S15 W67								
71	2	13	11158	S15 W80	354	400	2.5	18326	S14 W79	353		0				5	2

MCMATH REGION 11148 CMP DATE 8.3

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	6	11148	N09 E20	347	200	2.0	18318	N09 E19	347	(B)	2					
71	2	7	11148	N09 E09	345	300	1.5										
71	2	9	11148	N09 W23	350	400	1.5										
71	2	10	11148	N10 W35	348	200	1.0										

MCMATH REGION 11152 CMP DATE 9.3

			CALCIUM	PLAGE	DATA					SUNSPOT	DATA					9.1	CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	7	11152	N16 E23	331	300	2.0	18320	N16 E17	333	(BP)	2	0	1	A		
71	2	8						18320	N14 E07	332	(BF)	3					
71	2	9	11152	N15 W04	331	1000	3.5	18320	N15 W10	333	(B)	3	30	19	C	3	2
71	2	10	11152	N15 W20	333	1000	3.0	18320	N15 W19	333	(BF)	3	20	6	C	3	1
71	2	11	11152	N14 W32	332	1000	3.0	18320	N16 W34	332	(BP)	3	20	13	B	4	2
71	2							18320	N16 W34	332	(BP)	6	20	13	B		
71	2	12						18320	N16 W47	333		0					
71	2	13	11152	N14 W58	332	1000	4.0	18320	N16 W57	331	(BF)	2	90	12	D	8	4
71	2	14	11152	N14 W75	337	1200	4.0	18320	N15 W73	334	(BF)	2	110	16	D	9	4

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MCMATH REGION 11147 CMP DATE 9.4

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	2	11147	S36 E80	339	600	1.5										
71	2	6	11147	S40 E33	334	600	2.5	18319	S37 E28	338	(AP)	2	0	1	A		
71	2	7	11147	S40 E23	331	600	2.5										
71	2	9	11147	S40 W03	330	400	2.5										
71	2	10	11147	S40 W16	329	400	2.0										
71	2	11	11147	S40 W26	326	400	2.0										
71	2	13	11147	S40 W50	324	400	1.5										
71	2	14	11147	S40 W62	324	500	1.0										

MCMATH REGION 11159 CMP DATE 10.6

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	11	11159	S20 W13	313	200	2.0										
71	2	13	11159	S20 W39	313	100	1.0										

MCMATH REGION 11150 CMP DATE 11.0

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	7	11150	N11 E45	309	300	2.0										

MCMATH REGION 11160 CMP DATE 11.4

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	10	11160	S10 E10	303	100	1.0	18324	S10 E11	303	(AP)	2					
71	2	11	11160	S10 W03	303	300	2.0	18324	S10 W06	304	(AP)	3	10	2	B		
71	2							18324	S10 W06	304	(AP)	3	10	2	B		
71	2	12						18324	S10 W17	303		0					
71	2	13	11160	S10 W29	303	300	2.0										
71	2	14	11160	S10 W42	304	300	2.0										
71	2	16	11160	S10 W70	304	400	1.5										

MCMATH REGION 11151 CMP DATE 11.7

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	6	11151	S09 E68	299	200	1.5									3	1
71	2	7	11151	S10 E54	300	300	1.0										

MCMATH REGION 11161 CMP DATE 12.3

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	11	11161	S06 E09	291	100	1.0										

MCMATH REGION 11150 CMP DATE 12.4 RETURN OF REGION 11119 ROTATION 3

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	5						18317	N20 E80	296		0					
71	2	6	11150	N18 E80	287	900	1.0	18317	N20 E70	296	(AP)	3	10	1	H		
71	2	7	11150	N20 E65		1100	2.0	18317	N20 E54	296	(AP)	3	20	2	H		
71	2	8						18317	N19 E43	296	(AF)	3					
71	2	9	11150	N20 E35	292	1500	2.0	18317	N19 E26	297	(AF)	4	10	1	H		
71	2	10	11150	N20 E22	291	1500	2.0	18317	N19 E18	296	(AF)	3	10	1	H		
71	2	11	11150	N19 E10	290	1800	2.0	18317	N19 E03	295	(AF)	3	10	1	A		
71	2							18317	N19 E03	295	(AF)	3	10	1	A		
71	2	12						18317	N19 W10	296		0					
71	2	13	11150	N19 W16	290	1800	1.5	18317	N19 W23	297	(AF)	2	0	1	H		
71	2	14	11150	N19 W31	293	1800	2.0	18317	N18 W37	298	(AF)	1	0	1	A		
71	2	16	11150	N21 W56	290	1400	1.5										
71	2	17	11150	N21 W71	290	700	1.0										

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MCMATH REGION 11155 CMP DATE 13.9 RETURN OF REGION 11119* ROTATION 3

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	9	11155	N23 E57	270	200	1.0										
71	2	10	11155	N23 E43	270	200	1.0										
71	2	11	11155	N23 E30	270	200	1.0										

MCMATH REGION 11156 CMP DATE 14.0 RETURN OF REGION 11123 ROTATION 4 & 1

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	9	11156	N13 E57	270	600	2.0									2	1
71	2	10	11156	N13 E43	270	800	2.0										
71	2	11	11156	N12 E31	269	800	2.0										
71	2	13	11156	N12 E04	270	900	3.0	18329	N15 E08	266	(BF)	3	90	25	D	4	2
71	2	14	11156	N12 W10	272	1200	3.0	18330	N06 W17	278		0	0	1	A	11	5
71	2							18329	N14 W06	267	(B)	2	30	30	C		
71	2	15							N14 W21				110	27	D	10	4
71	2	16	11156	N12 W35	269	1800	3.0		N14 W33				120	16	D	11	5
71	2	17	11156	N13 W50	269	1700	4.0		N14 W46				210	10	C	12	5
71	2	18	11156	N13 W62	271	2000	3.0	18329	N15 W65	273	(BP)	5					
71	2	19						18329	N15 W80	275	(AP)	4	200	1	H	8	3

MCMATH REGION 11157 CMP DATE 16.6 RETURN OF REGION 11127 ROTATION 3

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	10	11157	S07 E75	238	700	1.5									5	2
71	2	11	11157	S08 E62	238	700	1.5									4	2
71	2	13	11157	S10 E44	230	900	2.0										
71	2	14	11157	S10 E30	232	1100	2.0										
71	2	16	11157	S10 W01	235	1000	2.0		S08 W06				0	2	A		
71	2	17	11157	S11 W17	236	800	2.0										
71	2	18	11157	S11 W30	239	500	2.0										
71	2	20														5	2

MCMATH REGION 11162 CMP DATE 18.0 RETURN OF REGION 11128 ROTATION 2

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	11	11162	N19 E80	220	2500	2.5	18325	N15 E82	216		0	120	2	D	12	6
71	2	12						18325	N16 E68	218		0					
71	2							18327	N19 E72	214		0					
71	2	13	11162	N19 E54	220	3200	2.5	18325	N15 E54	220	(AP)	4	120	2	D	9	4
71	2							18327	N20 E60	214	(AP)	4					
71	2	14	11162	N19 E42	220	3300	2.5	18325	N15 E40	221	(AP)	3	180	3	D	13	6
71	2							18327	N20 E47	214	(AP)	5					
71	2	15							N17 E26				60	1	H	10	4
71	2								N19 E31				120	1	H		
71	2	16	11162	N20 E15	219	3400	3.0		N15 E14				70	13	C	13	6
71	2								N19 E19				130	2	C		
71	2	17	11162	N21 E02	217	3600	2.5		N16 E02				40	1	H	10	4
71	2								N20 E07				90	1	H		
71	2								N14 E01				20	6	B		
71	2	18	11162	N20 W10	219	3100	3.5	18325	N17 W12	220	(AP)	4					
71	2							18327	N20 W07	215	(AP)	5					
71	2	19						18334	N21 W38	233	(BP)	4	20	5	D	6	3
71	2							18325	N17 W25	220	(AP)	4	30	1	H		
71	2							18327	N20 W20	215	(AP)	5	160	1	H		
71	2	20						18334	N21 W51	233	(BP)	3				9	4
71	2							18325	N18 W39	221	(AP)	3					
71	2							18327	N20 W34	216	(AP)	3					
71	2	21						18334	N21 W65	233	(BP)	3	80	8	D	7	3
71	2							18325	N18 W52	220	(AP)	3	10	2	H		
71	2							18327	N20 W48	216	(AP)	3	100	1	H		
71	2	22						18334	N21 W79	234	(B)	3	20	2	D	9	4
71	2							18327	N20 W60	215	(AP)	5	110	1	H		
71	2	23							N20 W71				70	1	H	6	3
71	2	24	11162	N22 W85	213	900	1.0									11	4

MCMATH REGION 11167 CMP DATE 19.0

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	24	11167	S04 W75	203	400	2.0										
71	2	25	11167	S05 W85	202	400	2.5									6	3

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MCMATH REGION 11164 CMP DATE 19.7 RETURN OF REGION 11129 ROTATION 3

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
			CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM	
71	2	13	11164	N10 E80	194	1600	2.5		N11 E71				0	1	A		
71	2	14	11164	N10 E67	195	2000	2.5									9	4
71	2	15														5	2
71	2	16	11164	N10 E45	189	3400	2.5									5	2
71	2	17	11164	N11 E28	191	3300	2.5									5	2
71	2	18	11164	N12 E14	195	2600	2.5										
71	2	19							N10 W03				0	6	B		
71	2	21						18336	N08 W18	186	(B)	1	0	3	A		
71	2	22							N08 W30				0	2	A		
71	2	24	11164	N13 W60	188	2000	2.0										
71	2	25	11164	N14 W70	187	1500	2.0										
71	2	26	11164	N14 W83	186	900	1.5										

MCMATH REGION 11163 CMP DATE 20.0 RETURN OF REGION 11130 ROTATION 3

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
			CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM	
71	2	12						18328	S14 E88								
71	2	13	11163	S16 E75	199	1500	2.0	18328	S13 E76	198	(AP)	2	20	1	H	8	4
71	2	14	11163	S16 E62	200	3400	2.5	18328	S13 E60	201	(AP)	4	50	1	H	12	5
71	2							18331	S14 E74	187		0	20	5	H		
71	2	15							S13 E45				50	1	H	8	3
71	2								S13 E60				30	3	H		
71	2	16	11163	S16 E45	189	3200	2.5		S13 E33				100	1	H	12	5
71	2								S13 E50				40	4	C		
71	2	17	11163	S17 E30	189	3200	2.5		S12 E20				60	1	H	12	5
71	2								S12 E35				40	7	C		
71	2	18	11163	S17 E18	191	2800	2.5	18328	S14 E08	200	(AP)	5					
71	2							18331	S14 E22	186	(BP)	4					
71	2	19						18328	S13 W07	202	(AP)	5	80	1	H	7	3
71	2							18331	S14 E10	185	(BP)	4	70	13	C		
71	2								S21 E15				0	3	A		
71	2	20						18328	S13 W20	202	(AP)	3				6	2
71	2							18331	S13 W06	188	(AP)	3					
71	2	21						18328	S13 W33	201	(AP)	4	50	1	H	4	2
71	2							18331	S12 W20	188	(AP)	3	30	3	C		
71	2	22						18328	S13 W46	201	(AP)	4	70	1	H	5	2
71	2							18331	S13 W32	187	(B)	3	20	15	C		
71	2							18337	S11 W14	169	(B)	1					
71	2	23							S12 W59				60	1	H	9	2
71	2								S12 W46				10	1	A		
71	2	24	11163	S17 W60	188	2400	2.5	18328	S13 W73	202	(AP)	3	30	1	H	7	3
71	2							18331	S13 W58	187	(B)	3	10	3	C		
71	2	25	11163	S17 W70	187	1900	2.5	18331	S14 W68	184	(AF)	2	0	1	A		
71	2	26	11163	S17 W80	183	1700	2.0									5	2

MCMATH REGION 11168 CMP DATE 22.2

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
			CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM	
71	2	22							N06 W04				0	2	B		
71	2	24	11168	N07 W33	161	200	2.0										
71	2	25	11168	N06 W44	161	300	2.5	18341	N06 W43	159	(AP)	1					
71	2	26	11168	N06 W57	160	200	2.0										

MCMATH REGION 11175 CMP DATE 22.6

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
			CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM	
71	2	25	11175	S08 W39	156	200	2.0										
71	2	26	11175	S08 W54	157	100	1.0										

MCMATH REGION 11169 CMP DATE 23.5

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
			CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM	
71	2	24	11169	N05 W16	144	400	2.5	18339	N06 W16	145	(B)	3	20	4	C		
71	2	25	11169	N05 W28	145	400	2.5	18339	N05 W33	149	(AP)	3	10	2	A		
71	2	26	11169	N05 W42	145	300	2.0										
71	3	1	11169	N05 W85	150	300	1.0										

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MCMATH REGION 11165 CMP DATE 23.8

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	16	11165	S16 E89	145	800	2.0									23	10
71	2	17	11165	S16 E78	141	1800	3.5		S16 E82				160	10	F	27	12
71	2	18	11165	S16 E65	144	2400	3.5	18332	S18 E68	140	(D)	5					
71	2	19						18332	S18 E53	142	(D)	4	440	30	F	31	13
71	2	20						18332	S17 E40	142	(BF)	4				31	13
71	2	21						18332	S17 E28	140	(BF)	5	340	35	E	20	9
71	2	22						18332	S18 E14	141	(BY)	5	370	70	F	38	16
71	2	23							S17 E01				170	36	E	26	11
71	2	24	11165	S16 W12	140	3000	3.5	18332	S18 W11	140	(B)	4	360	41	E	32	13
71	2	25	11165	S16 W24	141	3300	3.5	18332	S18 W23	139	(BP)	5	190	15	E	19	8
71	2	26	11165	S16 W37	140	3400	3.5	18332	S18 W36	138	(D)	5	110	9	E	17	7
71	2	27						18332	S18 W50	139	(BP)	5	120	5	E	21	9
71	2	28						18332	S18 W64	140	(BP)	3	110	7	E		
71	3	1	11165	S16 W77	142	2800	3.0	18332	S18 W75	138	(BF)	2	120	5	E		
71	3	2	11165	S16 W85	133	2000	2.5									13	5

MCMATH REGION 11170 CMP DATE 24.6

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	24	11170	N12 W02	130	200	2.0										
71	2	25	11170	N12 W14	131	200	1.5										

MCMATH REGION 11166 CMP DATE 25.1

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	18	11166	S05 E85	124	2000	2.5	18333	S07 E85	123	(AP)	4					
71	2	19						18333	S06 E73	122		0	320	10	C		
71	2	20						18333	S07 E55	127	(AP)	5				27	12
71	2	21						18333	S06 E45	123	(BP)	5	260	7	H	17	7
71	2	22						18333	S07 E32	123	(BP)	5	320	13	C	19	8
71	2	23							S07 E15				320	9	H	16	7
71	2	24	11166	S06 E05	123	2300	3.5	18333	S09 E05	124	(BP)	6	340	16	C	22	9
71	2	25	11166	S06 W07	124	2000	3.5	18333	S09 W11	127	(AP)	6	310	4	C	17	7
71	2	26	11166	S07 W20	123	2100	3.0	18333	S08 W24	126	(AP)	5	380	3	H	16	7
71	2	27						18333	S09 W37	126	(BP)	5	290	9	C		
71	2	28						18333	S09 W50	126	(BP)	4	280	5	H		
71	3	1	11166	S07 W60	125	2200	3.0	18333	S08 W65	128	(AP)	4	210	3	H		
71	3	2	11166	S07 W75	123	2100	3.0	18333	S09 W78	128	(AP)	3	210	3	H		
71	3		11166						S12 W67				10	8	B		

MCMATH REGION 11172 CMP DATE 26.8 RETURN OF REGION 11140 ROTATION 3

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	24	11172	N07 E30	98	400	1.0										
71	2	25	11172	N08 E17	100	500	1.5										
71	2	26	11172	N08 E02	101	400	2.0										

MCMATH REGION 11177 CMP DATE 25.8

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	28						18345	N01 W38	114	(B)	4	10	6	B		
71	3	1	11177	N03 W50	115	500	2.0	18345	N01 W55	118	(AP)	2	10	2	A		
71	3	2	11177	N03 W65	113	800	3.5										
71	3	3	11177	N03 W78	113	800	3.0									11	4

MCMATH REGION 11171 CMP DATE 26.9 RETURN OF REGION 11134 ROTATION 2

CALCIUM PLAGE DATA — SUNSPOT DATA — 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	2	20						18335	S09 E78	104	(AP)	2					
71	2	21						18335	S09 E64	104	(AP)	2	60	1	H		
71	2	22						18335	S09 E50	105	(AP)	4	130	1	H		
71	2	23							S09 E36				50	1	H		
71	2	24	11171	S13 E30	98	1700	2.5	18335	S10 E24	105	(AP)	5	120	2	H		

(Cont'd)

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(Cont'd)

71	2	25	11171	S12 E17	100	2000	2.5	18342	S04 E09	107	(AF)	2	0	1	A		
71	2							18335	S10 E10	106	(AP)	5	110	1	H		
71	2	26	11171	S12 E04	99	2000	2.5	18335	S10 W04	106	(AP)	5	70	1	H		
71	2	27						18335	S10 W19	108	(AP)	5	80	1	H		
71	2							18344	S13 W07	96	(AP)	1					
71	2	28						18335	S10 W31	107	(AP)	3	70	1	H		
71	3	1	11171	S12 W32	97	1700	2.0	18335	S10 W45	108	(AP)	3	30	1	H		
71	3	2	11171	S12 W47	95	1700	2.0	18335	S10 W58	108	(AP)	3	30	1	H		
71	3	3	11171	S13 W60	95	1600	2.0	18335	S10 W70	107	(AP)	3	10	1	A		
71	3	4	11171	S12 W73	98	900	2.0									6	2

Note: The leading part of 11137, at lower latitude, is new plage that has developed in region 11108 since the previous rotation.
Region 11153 has developed in the following part of region 11137.
Region 11156 experiences a resurgence on the disk when near the central meridian.
Because of very poor weather during the month of February, no calcium spectroheliograms were secured at the McMath-Hulbert Observatory on February 3-5, 8, 12, 15, 19-23, 27 and 28.
No observations were made at Mt. Wilson Observatory on February 15-17 and 23.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
71	2	1	43.2	71	2	11	13.5	71	2	21	*
71	2	2	44.2	71	2	12	*	71	2	22	*
71	2	3	*	71	2	13	15.0	71	2	23	*
71	2	4	*	71	2	14	21.0	71	2	24	34.9
71	2	5	*	71	2	15	*	71	2	25	36.4
71	2	6	32.2	71	2	16	27.9	71	2	26	34.5
71	2	7	28.8	71	2	17	29.0	71	2	27	*
71	2	8	*	71	2	18	29.4	71	2	28	*
71	2	9	18.6	71	2	19	*				
71	2	10	14.1	71	2	20	*				

* NO OBSERVATIONS

Errata: The following tables replace those given for December 1970 and January 1971 on page 80 of "Solar-Geophysical Data" Number 319 - Part I.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
70	12	1	39.9	70	12	11	*	70	12	21	*
70	12	2	39.1	70	12	12	*	70	12	22	*
70	12	3	*	70	12	13	*	70	12	23	*
70	12	4	44.1	70	12	14	54.8	70	12	24	*
70	12	5	40.5	70	12	15	47.9	70	12	25	*
70	12	6	41.3	70	12	16	*	70	12	26	21.7
70	12	7	46.4	70	12	17	*	70	12	27	28.7
70	12	8	41.9	70	12	18	*	70	12	28	26.5
70	12	9	44.1	70	12	19	*	70	12	29	27.1
70	12	10	54.0	70	12	20	*	70	12	30	30.1
								70	12	31	27.2

* NO OBSERVATIONS

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
71	1	1	31.1	71	1	11	35.1	71	1	21	*
71	1	2	30.5	71	1	12	31.9	71	1	22	51.6
71	1	3	*	71	1	13	*	71	1	23	49.0
71	1	4	25.6	71	1	14	31.1	71	1	24	40.3
71	1	5	33.2	71	1	15	28.2	71	1	25	41.3
71	1	6	36.5	71	1	16	*	71	1	26	*
71	1	7	35.6	71	1	17	32.9	71	1	27	31.5
71	1	8	36.4	71	1	18	33.1	71	1	28	30.3
71	1	9	37.5	71	1	19	41.3	71	1	29	*
71	1	10	*	71	1	20	47.4	71	1	30	29.8
								71	1	31	38.9

* NO OBSERVATIONS

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 9-EXPLORER 37

FEBRUARY 1971

NAVAL RESEARCH LABORATORY 1=8A HOURLY AVERAGES (10^{-3} ergs/cm^2/sec.)

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.52	0.92	1.13	0.62	0.61	0.51	0.44	0.45	0.46	0.39	0.49	0.69	0.79	0.53	0.58	0.48	0.48	0.48	0.47	0.59	0.57	0.43	0.50	0.73
2	0.75	0.94	0.54	0.48	0.48	1.55	0.56	0.63	0.51	0.75	0.46	0.47	0.50	0.88	0.54	0.42	0.52	0.68	0.67	0.84	0.53	0.46	1.62	0.44
3	0.47	0.45	0.51	0.40	0.35	0.44	0.44	0.39	0.36	0.40	0.38	0.48	0.55	0.48	0.40	3.44	0.92	0.45	0.48	0.53	0.40	0.45	0.45	0.54
4	1.10	0.44	0.49	0.63	0.71	0.45	0.76	1.13	0.86	0.76	1.05	0.40	0.46	2.29	0.84	0.54	0.47	0.42	0.62	2.18	0.48	1.48	0.45	0.68
5	0.41	0.41	0.37	0.58	0.62	0.76	0.53	0.67	0.63	0.49	0.91	0.60	0.50	0.39	1.07	1.23	0.63	0.47	0.46	0.45	0.46	0.44	3.55	0.74
6	0.56	0.48	0.51	0.59	0.81	0.92	0.82	0.74	0.78	0.67	0.68	0.52	0.57	0.54	0.55	0.47	0.50	0.83	0.62	0.51	0.41	0.46	0.47	0.48
7	0.45	0.51	0.43	0.41	0.45	0.50	0.55	0.44	0.66	0.50	0.57	0.43	0.43	0.56	0.47	0.52	0.46	0.62	0.62	0.53	0.51	0.49	0.58	0.60
8	0.76	1.01	0.42	0.49	0.57	0.67	0.66	0.63	0.52	0.59	0.59	1.89	1.31	0.93	0.67	0.42	0.54	0.58	0.32	0.46	0.42	0.47	0.64	0.49
9	0.44	0.47	0.47	1.23	0.62	0.51	0.45	0.49	0.36	0.37	0.32	0.35	0.27	0.44	0.28	0.30	0.27	0.25	0.29	0.30	0.22	0.24	0.24	0.28
10	0.34	0.29	0.26	0.27	0.26	0.30	0.27	0.31	0.29	0.22	0.24	0.22	0.28	0.32	0.23	0.25	0.22	0.32	0.23	0.25	0.28	0.24	0.33	0.27
11	0.22	0.34	0.21	0.23	0.47	0.94	0.73	0.41	0.44	0.48	0.67	0.68	0.63	0.48	0.41	0.31	0.30	0.36	0.40	0.29	0.99	1.31	1.21	0.44
12	0.42	0.34	0.30	0.32	0.29	0.28	0.39	0.22	0.27	0.23	0.26	0.27	0.24	0.25	0.30	0.35	0.36	0.40	0.34	0.37	0.26	0.32	0.26	0.33
13	0.28	0.27	0.32	0.35	0.37	0.32	0.35	0.39	0.39	0.62	0.30	0.35	0.32	0.34	0.42	0.37	0.45	0.37	0.42	0.38	0.33	0.30	0.38	0.43
14	0.39	0.45	1.07	0.77	0.46	0.43	0.45	0.38	0.30	0.32	0.24	0.30	0.42	0.31	0.34	0.33	0.48	0.33	0.33	0.38	0.46	0.46	0.36	2.31
15	0.99	0.40	0.41	0.34	0.35	0.37	0.39	0.54	0.67	0.62	0.61	0.34	0.37	0.43	0.57	1.07	2.56	3.60	0.88	0.80	0.89	1.17	2.53	1.74
16	1.37	1.29	1.86	2.13	2.45	2.20	2.91	4.34	7.19	2.83	3.12	1.31	1.23	1.87	1.64	2.03	1.54	1.52	1.97	2.27	1.83	1.50	3.71	1.50
17	2.54	3.45	4.28	4.92	20.4	2.32	2.34	2.30	2.50	2.62	0.88	1.07	1.15	1.34	2.79	2.91	20.0	2.67	1.02	0.87	1.20	1.65	0.75	0.82
18	1.29	2.97	1.71	6.17	0.89	0.74	0.83	0.88	0.73	0.95	0.67	1.05	2.83	3.31	1.85	1.07	0.38	0.38	0.35	0.43	0.46	0.36	0.37	0.36
19	1.26	0.57	0.51	0.46	0.72	0.65	0.47	0.78	0.45	0.45	0.46	0.43	0.85	1.86	0.96	1.77	3.45	3.01	1.12		1.76	0.63	1.10	1.31
20	1.01	1.94	1.80	0.99	1.28	0.64	0.56	0.46	5.17	0.75	0.60	0.53	0.43	1.35	0.69	0.35	0.36	0.50	0.38	0.42	0.54	0.75	0.44	0.40
21	0.61	0.39	0.39	1.34	0.59	0.70	0.86	0.66	0.53	0.50	0.93	0.48	0.49	0.36	0.37	0.49	0.69	0.47	0.38	0.77	0.48	1.17	0.58	0.49
22	0.93	0.87	0.55	0.50	0.47	1.20	1.10	1.97	12.3	7.49	3.95	0.60	0.49	0.44	0.51	0.77	0.76	0.50	0.38	0.47	0.46	0.59	0.54	0.69
23	0.48	0.42	0.55	0.68	0.68	0.52	0.65	0.50	0.63	0.49	0.57	0.46	0.77	0.77	0.57	0.44	0.53	0.71	1.23	0.83	0.44	0.55	0.44	0.69
24	1.34	1.04	0.69	0.44	0.57	0.55	0.74	0.57	0.50	0.48	0.51	0.53	0.49	0.43	0.39	0.43	0.56	0.65	0.67	0.55	0.44	0.54	0.36	0.40
25	0.38	0.42	0.49	0.55	0.44	0.43	0.39	0.47	0.50	0.76	0.55	0.65	0.78	0.55	0.57	0.56	0.65	0.62	0.50	0.57	0.58	0.45	0.45	0.42
26	0.83	0.73	0.59	0.70	0.44	0.39	0.54	0.58	0.61	0.39	0.56	0.45	0.43	0.41	0.34	0.37	0.30	0.42	0.37	0.32	0.24	0.37	0.41	0.59
27	0.42	0.42	0.47	0.45	0.51	0.68	0.70	0.47	0.55	0.50	0.40	0.37	0.35	0.41	0.74	0.54	0.38	0.37	0.52	0.43	0.54	0.37	0.58	0.67
28	0.68	0.48	0.34	0.37	0.41	0.56	0.49	0.40	0.40	0.50	0.65	0.39	1.72	0.56	0.38	0.39	0.37	0.79	1.29	0.98	0.47	0.42	0.37	0.31

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 9 - EXPLORER 37

FEBRUARY 1971

NAVAL RESEARCH LABORATORY 8=20A HOURLY AVERAGES (10^{-2} ergs/cm^2/sec.)

HOUR

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1.11	1.37	1.51	1.20	1.09	1.07	1.02	0.98	0.97	0.90	0.96	1.17	1.27	1.06	1.10	1.05	1.01	0.97	0.99	1.08	1.17	1.00	1.03	1.18
2	1.33	1.37	1.13	1.02	1.00	1.59	1.01	1.10	1.01	1.05	0.95	0.90	0.97	1.13	1.00	0.92	0.98	1.12	1.14	1.21	1.02	0.97	1.41	0.98
3	0.91	0.90	0.95	0.85	0.85	0.84	0.90	0.80	0.81	0.83	0.90	0.92	1.02	0.98	0.87	2.14	1.26	0.92	0.89	0.95	0.87	0.86	0.84	0.89
4	1.34	0.89	0.90	0.99	1.05	0.91	0.98	1.29	1.32	1.14	1.23	0.92	0.86	1.62	1.25	1.03	0.94	0.84	0.99	1.55	0.94	1.50	0.91	1.05
5	0.87	0.81	0.82	0.95	0.98	1.07	0.98	0.97	0.93	0.93	1.30	1.02	0.93	0.86	1.19	1.55	1.10	0.94	0.91	0.85	0.85	0.89	2.34	1.15
6	0.99	0.94	0.96	1.07	1.25	1.35	1.32	1.20	1.21	1.25	1.19	1.07	1.09	1.08	1.12	1.02	1.01	1.26	1.08	0.97	0.90	0.92	0.98	0.94
7	0.94	0.93	0.92	0.89	0.88	0.96	0.93	0.93	0.95	0.91	0.98	0.96	0.94	1.02	0.99	0.97	0.95	0.99	1.03	1.05	0.96	0.94	0.93	1.00
8	1.18	1.32	0.94	0.95	1.07	1.11	1.08	1.16	1.13	1.07	1.06	1.62	1.58	1.39	1.16	0.94	0.97	0.96	0.86	0.87	0.85	0.87	1.02	0.99
9	0.95	0.95	0.92	1.39	1.07	0.97	0.87	0.68	0.73	0.74	0.69	0.76	0.70	0.75	0.71	0.67	0.63	0.61	0.61	0.59	0.58	0.59	0.57	0.59
10	0.62	0.60	0.57	0.61	0.57	0.56	0.63	0.61	0.59	0.52	0.54	0.59	0.58	0.65	0.57	0.57	0.54	0.50	0.56	0.54	0.56	0.58	0.59	0.55
11	0.51	0.55	0.53	0.49	0.65	1.22	1.06	0.73	0.66	0.76	0.89	0.89	0.92	0.79	0.73	0.67	0.64	0.66	0.78	0.64	1.07	1.32	1.42	0.90
12	0.82	0.76	0.66	0.65	0.59	0.64	0.62	0.59	0.59	0.60	0.58	0.62	0.63	0.57	0.63	0.66	0.67	0.78	0.74	0.73	0.63	0.70	0.72	0.68
13	0.65	0.60	0.65	0.75	0.73	0.68	0.69	0.71	0.71	0.86	0.71	0.73	0.71	0.73	0.77	0.72	0.87	0.78	0.78	0.80	0.73	0.74	0.78	0.86
14	0.84	0.87	1.25	1.09	0.90	0.84	0.83	0.77	0.71	0.70	0.64	0.67	0.79	0.67	0.72	0.79	0.79	0.74	0.75	0.79	0.90	0.80	0.75	1.86
15	1.23	0.77	0.79	0.74	0.74	0.78	0.74	0.88	1.03	1.14	1.06	0.84	0.80	0.83	0.96	1.24	1.73	2.39	1.41	1.20	1.31	1.50	2.29	1.96
16	1.63	1.51	1.87	2.20	2.35	2.36	2.57	2.80	4.17	2.83	2.50	1.75	1.57	1.88	1.86	2.20	2.07	1.94	2.04	2.14	2.22	1.81	2.53	1.96
17	2.12	2.79	2.89	3.41	8.90	2.72	2.13	2.44	2.37	2.54	1.47	1.57	1.71	1.65	2.24	2.06	7.33	2.51	1.51	1.34	1.40	1.68	1.19	1.28
18	1.50	2.09	1.76	3.22	1.37	1.18	1.22	1.28	1.14	1.31	1.17	1.40	1.71	2.16	1.56	1.31	0.92	0.82	0.83	0.86	0.85	0.82	0.75	0.78
19	1.40	0.93	0.96	0.94	0.99	1.06	0.92	1.20	0.99	0.97	0.93	0.90	1.15	1.79	1.48	1.70	2.58	2.62	1.53		1.87	1.23	1.46	1.67
20	1.46	1.99	2.39	1.58	1.46	1.10	1.09	1.07	2.40	1.26	1.05	1.03	0.90	1.14	1.04	0.87	0.87	0.94	0.85	0.87	1.01	1.10	0.89	0.83
21	1.00	0.85	0.84	1.37	1.04	1.12	1.24	1.10	0.98	0.99	1.23	0.95	0.91	0.86	0.83	0.91	1.12	0.97	0.89	1.10	0.93	1.29	1.07	0.97
22	1.22	1.26	1.07	0.95	0.99	1.34	1.43	1.74	5.64	4.59	3.06	1.26	1.06	0.97	1.00	1.25	1.22	1.07	0.98	1.03	0.98	1.07	1.08	1.14
23	1.00	0.94	1.03	1.11	1.15	1.06	1.13	0.96	1.04	1.02	0.94	0.91	1.18	1.15	1.02	0.95	0.93	1.12	1.32	1.23	0.93	1.03	0.95	1.03
24	1.49	1.32	1.16	0.95	1.06	1.04	1.18	1.05	1.00	0.95	0.97	0.92	0.96	0.91	0.88	0.88	0.94	1.06	1.06	1.02	0.91	0.98	0.86	0.87
25	0.93	0.88	0.95	0.93	0.92	0.91	0.87	0.95	0.88	1.11	1.01	1.01	1.14	1.06	1.02	1.05	1.12	1.07	1.03	1.04	1.00	0.99	0.91	0.94
26	1.23	1.18	1.05	1.08	0.91	0.88	0.96	0.99	1.06	0.87	1.00	0.92	0.94	0.87	0.86	0.80	0.81	0.86	0.82	0.76	0.70	0.73	0.81	0.82
27	0.86	0.83	0.87	0.86	0.87	1.02	1.08	0.96	1.08	0.98	0.86	0.83	0.82	0.89	1.04	1.01	0.92	0.88	0.99	0.88	0.93	0.88	1.00	1.11
28	1.03	0.92	0.79	0.79	0.79	0.88	0.84	0.80	0.76	0.88	1.07	0.88	1.56	0.95	0.87	0.85	0.84	1.03	1.56	1.30	1.02	0.91	0.83	0.77

SOLAR X-RAYS BY SATELLITE

EXPLORER 37

FEBRUARY 1971

NAVAL RESEARCH LABORATORY

OUTSTANDING EVENTS

DAY	START TIME	0.5-3A FLUX XE-5	PEAK TIME	1-8A FLUX XE-4	PEAK TIME	8-20A FLUX XE-3	PEAK TIME	END TIME	COMMENTS
2	0518E	6.70	0519	42.00	0519	28.00	0519	0523	
2	2233	14.00	2237	53.00	2237	27.00	2238	2243	
3	1543E	16.00D	1543E	92.00D	1543E	40.00D	1544E	1555	
4	1316	13.00	1321	43.00	1324	21.00	1333	1335	
4	1935E	45.00D	1936E	130.00	1936	40.00	1937	1940	
5	2223	20.00	2229	91.00	2229	53.00	2232	2243	
8	1112	10.00	1114	44.00	1115	24.00	1116	1117	
14	2343E	4.50D	2346E	43.00D	2345E	28.00D	2345E	2351	
15	1646	19.00	1659	85.00	1701	40.00	1706	1707D	
16	0601	4.50	0609	41.00	0612	40.00	0610	0613D	
16	0710	18.00	0726	76.00	0729	40.00	0742	0749	
16	0829E	33.00	0831	130.00	0835	53.00	0841	0905	
16	1007E	22.00D	1007E	56.00D	1009E	28.00	1010	1027	
16	2159	14.00	2159	44.00	2200	27.00	2201	2204	
16	2226	31.00	2231	91.00	2231	40.00	2234	2235D	
17	0055	13.00	0108	56.00	0057	40.00	0113	0139	
17	0244	14.00	0257	79.00	0258	40.00	0300	0330D	
17	0408E	120.00	0413	600.00	0413	160.00	0416	0459	
17	0626	42.00	0628	130.00	0628	40.00	0630	0631	
17	0815	7.80	0816	42.00	0816	29.00	0824	0825D	
17	0902E	18.00	0916	86.00	0904	67.00	0904	0919	TWO FLARES
17	1409	27.00	1417	88.00	1417	40.00	1422	1426	
17	1558	120.00D	1606E	730.00	1601	150.00	1601	1634	
17	1736	7.80	1744	42.00	1741	29.00	1743	1748	
18	0144	26.00	0149	85.00	0149	40.00	0152	0155	
18	0321	110.00	0331	300.00	0332	80.00	0337	0348	
18	1254	50.00	1300	130.00	1300	40.00	1302	1312	
19	1348			47.00	1351	27.00	1353	1354	
19	1643E	13.00	1719	55.00	1719	40.00	1720	1727	
19	2018	11.00	2018	41.00	2018	25.00	2019	2025	
20	0141	4.50	0142	32.00	0143	27.00	0144	0146	
20	0816	48.00D	0827E	170.00D	0828D	53.00D	0828D	0828D	
22	0744	10.00	0748	48.00D	0757D	29.00D	0754D	0757D	
22	0835E	29.00D	0836E	170.00D	0837E	67.00	0847	0936D	
22	1013E	32.00D	1013E	170.00D	1015E	80.00D	1016E	1026	
28	1204	12.00	1206	46.00	1207	25.00	1213	1215	

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1971

	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	MCMATH REGION
DAY	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
01	0119E	0119		1-	1							1	0117	11134
02	0506	0546	0515	1	3	1			2				0500	11137
02	1234	1335	1326	1	3				3		3		1322	11134
02	1545	1601	1647	1	3	1			1				1547E	11145
02	1735	1750	1741	1	1					1	1		1734	11137
02	2232	2306	2238	1-	3				2	1			2232	11134
03	0525	0622	0532	1+	3	2	1		2				0526	11134
03	1249	1306	1257	1-	1	1							1245E	11142
03	1529	1655	1540	1	5	1		2	2		4		1526	11145
03	1654	1709	1657	1	3	1				2	2		1656	11137
04	1311	1430	1328	1-	3				1	1	3		1312	11137
04	1643	1646	1643	1	3					2	2		1635	11137
04	1933	2030	1940	1	5			4	5	1	3		1926	11137
04	2046	2117	2113	1	3				3	1	1		2056	11145
05	1037	1053	1039	1-	1	1							1034E	11145
05	2224	2353	2231	1-	3	1			3	1		1	2220	11145
06	0754	0945	0810	1-	1					1	1		0801	11137
06	1801	1909	1817	1	3					2	2		1757E	11148
06	2205	2215	2206	1-	1					1	1		2157	11145
08	0847	0854	0850	1-	1						1		0846	11137
08	1432	1455	1441	1-	1	1							1433	11137
09	0951	1011	1000	1-	1	1							0959	11152
11	1821	1829	1827	1-	1	1							1818	11162
14	0022	0057	0038	1-	1	1							0027	11152
14	2318	0008	2328	1-	1				1				2318	11163
15	1643	1815	1651	1	3	1		2	5		3		1640	X-RAY
16	0143	0526	0148	1	1	1		1					0142	11165
16	0829	0845	0835	1	3	1			2		1		0828	11156
16	1003	1020	1008	1	3	2		1	1		2		NF	
16	1918	2035	1924	1-	3	1		1	5	1	3		NF	
16	2226	2336	2235	1-	3				3	1		1	2226	11165
17	0405	0451	0413	2	3	3	1	1	2				0405	11165
17	0834	0943	0839	2+	5	4	2	3	4		3		0835	11165
17	1203	1215	1206	1-	1				1				1206	11164
17	1406	1511	1420	1-	3	3	1	1	4		2		1407	11165
17	1558	1815	1606	2+	5	5	1	5	6	2	5		1557	11165
17	1737	1815	1744	1-	3			1			2		1736	11165
18	0141	0227	0152	1+	3	1			4	2	2		NF	
18	0328	0401	0335	1	3	3	1		2				0327	11165
18	0405	0448	0413	1-	3	3			2				0404	11165
18	0929	0940	0931	1-	1				1				0929	11156
18	1253	1322	1300	2-	5	3	1	1	5	2			1255	11165
18	1348	1400	1350	1-	3	1			2		1		1344	11165
19	1347	1400	1351	1-	3			1	1		1		1346	11165
19	1722	1735	1723	1-	1	1							1719	11165
19	1908	2008	1920	1-	3				2		1		1906	11165
19	2012	2102	2022	1-	3				5	1			2009E	11165
19	2214	2248	2219	1-	1				1				2219E	11162
20	0155	0235	0207	1-	1				1				0155	11165
20	0814	0855	0830	1	3	1		1	3		1		0815	11162
20	1302	1316	1304	1-	3	1	1		3		2		1256	11162
20	1820	1900	1825	1	5	1		1	4	2	5		1817	11162
21	0335	0415	0343	1-	1				1				0333E	11162
22	1005	1035	1013	2	5	4	1	2	3		2		1004	11173
22	1024	1052	1032	1-	1	1							1022E	11165
23	1630	1645	1635	1-	3					2	2		1630	11165
23	1954	2100	1957	1-	1				1				2005E	11163
24	1247	1311	1257	1-	1	1							1246	11163
24	2310	2330		1-	1				1				2307E	11173
26	0048	0055	0050	1-	1	1							0054E	11173
26	0805		0820	1	1					1	1		0805	11173
27	0616	0620	0618	1-	1	1							0621	11163
27	0751	0758	0754	1-	1	1							0755E	11173
27	0803		0815	1	1					1	1		0800E	11165

SUDDEN IONOSPHERIC DISTURBANCES

FEBRUARY 1971

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
27	1228	1315	1240	1-	3	1				1	1		1220	11173
27	1255	1315	1307	1-	3					2	2		1258	11173
27	1947	2045		1-	1					1	1		1940	11166
27	2355	0515		1-	1					1	1		2354	11173
28	0857	0933	0910	1-	1	1							0900	11173
28	0949	1004	0952	1-	1	1							0945	11173

STATIONS REPORTING FOR FEBRUARY 1971

AAVSO (A1, A4, A8, A19, A22, A27) (SEA)
(A1, A19, A28) (SES)
ANCHORAGE (AN) (SWF, SCNA)
ATHENS (AT) (SWF)
ATTU (LORAN-C) (TT) (LF-SPA, SES)
BOULDER (BO) (SCNA, SEA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
ENKOPING (SW) (SWF)
FORESTPORT (FP) (SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
HAWAII (HA) (SPA, SFD)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HOKKAIDO (LORAN-C) (HO) (LF-SPA, SES)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JUPITER (LORAN-C) (JP) (LP-SPA, SES)
KUHLUNGSBORN (KU) (SEA, SPA)
KURE (LORAN-C) (KR) (LF-SPA, SES)
MANILA (MA) (SWF, SCNA, SPA)
MARCUS (LORAN-C) (MR) (LF-SPA, SES)
MCMATH (MC) (SWF, SCNA)
NANTUCKET (LORAN-C) (NT) (LF-SPA, SES)
NEUSTRELITZ (NU) (SWF, SCNA)
OKINAWA (OK) (SWF)
PANSKA VES (PU) (SWF, SEA, SES)
POITIERS (PO) (SEA)
PORT CLARENCE (LORAN-C) (PC) (LF-SPA, SES)
PRESTON (LO) (SEA)
PYRAMID ROCK (PR) (SPA)
ROME (RO) (SCNA, SEA)
SAN DIEGO (SD) (SPA)
SANDUR (LORAN-C) (SA) (LF-SPA, SES)
SAO PAULO (UM) (SPA, SES)
SITKINAK (LORAN-C) (SK) (LF-SPA, SES)
SLOUGH (SL) (SPA)
SOFIA (SF) (SES)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
WHITE SANDS (WS) (SWF)
YAP (LORAN-C) (YP) (LF-SPA, SES)

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01-15	0000-0400 A8
01-03	0000-2400 RO, 1838-1843 TM
02	1000-1400 SL
03-10	2100-0800 YP
03	0334-0338 TM, 0342-0345 TM, 0507-0508 TM, 0803-1605 TM, 0905-0925 SL, 1255-1325 SL, 1835-2008 TM
04	1700-2355 UM
05	0416-0434 UM, 1257-1303 SL, 1400-1655 UM
07	0855-1421 TM, 1656-1714 TM, 1816-1818 TM, 1905-1906 TM
08	0000-2400 RO, 1257-1310 SL, 2100-2251 TM, 2346-2354 TM
09-28	1045-2400 A28
09	1000-1345 SL
11	1202-1422 TM, 1550-2400 SL
12	0000-1512 SL, 1355-1745 UM, 1602-1608 TM
13	2235-2400 UM
16	0314-0318 TM, 1000-1335 SL
18	1700-2400 UM
19-20	0030-0500 A8
19-23	0000-2400 RO
19-27	2230-2130 A29
19	0000-0205 UM, 1343-1406 SL, 1355-1655 UM, 1700-2400 UM
20	0000-0205 UM
22	1330-1355 UM
23	0947-1342 SL
25	1332-1345 SL, 2352-2400 TM
26	0000-1408 TM
27	0443-1520 TM, 1828-1845 TM, 2034-2050 TM, 2214-2226 TM

SID's BY McMATH REGION

FEBRUARY 1971

DAY	34	37	42	45	48	52	56	62	63	64	65	66	73	X-RAY	UN-KNOWN	NO FP
01	1															
02	2	2		1												
03	1	1	1	1												
04		3		1												
05				2												
06		1		1	1											
07																
08		2														
09						1										
10																
11								1								
12																
13																
14						1			1							
15														1		
16							1				2				2	
17										1	5					
18							1				4				1	
19								1			4					
20								3			1					
21								1								
22											1		1			
23										1	1					
24									1				1			
25																
26													2			
27									1		1	1	4			
28													2			

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1971

FEB. 1971	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	CENTIMETRIC BAND START UT	CENTIMETRIC BAND END UT	CENTIMETRIC BAND INT.	DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT.	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT.	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT.	SPECTRAL TYPE
01	0000	0004	HARV							0000	0004	1				I
	0000	0730	CULG							0023	0657	1				IIIN,W
			CULG							0059	0100.5	2				IIIG
			CULG							0120	0730	1				I
			CULG							0537	0539.5	2				IIIG,V
	0735	1320	WEIS													
	1114	2152	SGMR													
	1318	0017	BOUL													
	1325	1551	WEIS													
	1401	2400	HARV				1540	1558	1	1408	1633	1				I
			BOUL							1607	1821	1				CONT
			HARV							1633	1720	2				I
			HARV				2009	2118	1	1720	2118	1				I
	2010	2052	CULG							2019	2052	1				IW
			HARV							2118	2359	1				IN
	2157	2400	CULG							2207	2400	1				IW
			CULG							2208.5	2346.5	1				IIIN
			BOUL							2210.6	2221.0	1				IIIG
			BOUL							2242.2	2242.3	1				III
02	0000	0005	HARV													
	0000	0730	CULG							0011	0637	1				IN,W
			CULG							0018	0635.5	1				IIIN,W
			CULG							0232.5	0233	2	0232.5	0233	1	IIIG
			CULG							0337		1				IIIB,U
			CULG							0512		2				IIIB
	1048	1540	WEIS							1207.2	1207.4	2				IIIB
			WEIS							1314.3	1314.5	1				IIIB
	1318	0100	BOUL													
	1401	2400	HARV							1406	1500	1				IN
			BOUL							1612	1619.5	1				I
			HARV				1724	1725	1	1500	2400	1				I
			HARV				1737	1738	2	1737	1738	2	1737	1738	2	IIIGG
			BOUL							1737	1737.8	2				IIIG
	1134	2157	SGMR										1737.0	1738.0		III
			BOUL							1829.3	1923.8	1				CONT
			HARV				1839	1840	1	1840	1843	2	1841	1842	2	IIIGG
			SGMR										1841.7	1842.2		III
			HARV							1849	1850	1				IIIG
	1946	2113	CULG							2035	2113	1				IN,W
			CULG							2057.5	2100	1				IIIG
			CULG							2058.5	2059	2				IIIG
			HARV							2059	2103	2	2100	2103	2	IIIGG
			SGMR										2059.8	2103.0		IIIG
			BOUL							2100.1	2103.3	2				IIIG
			CULG							2101	2102	2				IIIG
			CULG							2110.5		1				IIIB,W
			CULG							2112		1				IIIB
	2125	2400	CULG							2125	2400	1				IN,W
			CULG							2200.5	2201.5	2				IIIG,V
			HARV							2201		2				IIIG
			BOUL							2201.1	2201.9	2				III
			CULG							2202		1				IIIB
			BOUL							2203.6	2205.1	2				III
			CULG							2204.5	2205.5	1				IIIG,V
			CULG							2238.5		1				DP
			CULG							2246.5	2248	1				IIIG,DP
			CULG							2316.5		1				IIIB
			CULG							2327		1				DP
			CULG							2333	2334.5	1				IIIG,W
			CULG							2350	2400	1				IIIN,W
03			CULG							0000	0549.5	1				IIIN,W
	0000	0006	HARV							0000	0006	1				I
	0000	0718	CULG							0003	0718	1				IN,W
			CULG							0016.5	0018	1				IIIG
			CULG							0226.5	0228	1				IIIG
			CULG							0233.5	0234.5	1				IIIG
			CULG							0526.5	0528.5	2				IIIG,V
	1318	0017	BOUL													
	1401	2400	HARV							1404	1434	1				I
			HARV							1434	2400	1				IN
			BOUL							1510.4	1510.9	1				III
	1135	2156	SGMR										1510.5	1511.1		III
	1319	1550	WEIS							1520.3	1521.0	1				IIIG
			HARV				1526	1536	2	1527	1534	2	1528	1533	2	IIIGG
			SGMR										1527.8	1534.2		IV
			HARV				1528	1529.5	2							UNCLF
			WEIS							1528.0	1535.5	2				IIIGG
			BOUL							1528.0	1608.8	2				CONT
			WEIS							1538.8	1539.4	2				IIIG
			HARV							1539		2				IIIG
			HARV				1541	1600	1							IIIN
			WEIS							1542.1	1542.3	1				UNCLF
			HARV				1605	1609	2	1607		1				IIIGG
			BOUL							1658.2	1708.0	1				IIIGG
			BOUL							1721.8	1729.9	1				IIIG
			BOUL							1736.2	1738.2	2				IIIG
			BOUL							1842.6	1848.2	2				IIIG
			SGMR										1842.9	1843.3		III

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FEB. 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
03			HARV							1843		3	1843		3	IIIB
			HARV							1848		2				IIIG,U
			SGMR										1846.0	1848.6		III
	1944	2400	CULG							2056	2400	1				IW
			CULG							2159.5		1				IIIB,W
			CULG							2241		1				IIIB
			CULG							2324		1				IIIB,W
			CULG							2343		1				IIIB
			CULG							2356.5	2357	1				IIIG
04	0000	0732	CULG							0000	0117	1				IW
	0000	0006	HARV													
			CULG							0210.5		1				IIIB,W
	0735	1500	WEIS													
	1340	0120	BOUL													
	1401	2400	HARV							1406	2357	1				IN
			BOUL							1531.6	1533.6	1				IIIG
			BOUL							1652.4	1652.7	1				IIIG
			BOUL							1744.8	1744.9	1				III
			BOUL							1828.2	1829.6	1				IIIG
	1129	2155	SGMR										1928.3	1931.8		IIIG
			BOUL							1929.4	1933.3	2				IIIGG
			HARV				1930	1931	1	1930	1932	2	1930	1932	1	IIIG
			BOUL							1941.7	1943.0	2				IIIG
			HARV							1942	1943	1				IIIG
			SGMR										1942.5	1942.9		III
	1944	2019	CULG													
			HARV				1952	1953	2							IIIG
			BOUL							1952.7	1956.8	1				IIIG
			BOUL							2020.3	2022.4	1				IIIG
	2043	2206	CULG							2052.5	2054.5	1				IIIG
			BOUL							2052.9	2059.1	1				IIIGG
			CULG							2056.5	2059	1				IIIG
			CULG							2056.5	2057	2				IIIG
			HARV				2109	2115	1							IIIG
			CULG							2127.5	2137	1				IW
	2209	2400	CULG							2210.5	2211.5	1				IIIG
			HARV				2259		1	2259	2300	2				IIIG,U
			BOUL							2259.1	2300.1	2				IIIG
			CULG							2259.5	2301	2				IIIG,V,U
			CULG							2331	2331.5	1				IIIG
			BOUL							2331.0	2331.1	1				III
05	0000	0006	HARV													
	0000	0042	CULG							0004	0005	1				IIIG,W
	0050	0110	CULG													
	0120	0125	CULG													
	0128	0149	CULG													
	0150	0218	CULG													
	0219	0400	CULG							0225.5		1				IIIB
			CULG							0316.5	0318.5	2				IIIB,U
	0403	0419	CULG													
	0424	0431	CULG													
	0438	0725	CULG							0519.5	0522.5	1				IIIG
			CULG							0526.5	0527.5	2				II
			CULG							0527		1				IIIB
			CULG							0528		1				IIIB,W
			CULG							0650	0656.5	2				IIIG
			CULG							0713		1				IIIB,W
	0952	1548	WEIS							1032.2	1033.0	1				IIIG
	1338	0110	BOUL													
			BOUL							1454.4	1551.9	1				IV
	1138	2158	SGMR										1544.5	1548.5		IIIG
			WEIS							1545.3	1546.7	2				IIIGG
			WEIS							1545.6	1547.4	2				V
	1401	2400	HARV				1546		1	1544	1550	3	1546	1548	3	IIIGG,V
			BOUL							1642.6	1642.7	1				III
			BOUL							1707.5	1709.0	2				IIIG
			BOUL							2000.8	2001.4	1				IIIG
	2009	2400	CULG							2102		1				IIIB,W
			CULG							2107		1				IIIB,W
			CULG							2121	2133	1				I
			CULG							2142		1				IIIB,W
			BOUL							2149.2	2150.3	1				III
			CULG							2150	2150.5	1				IIIG,U
			CULG							2158	2159.5	2				IIIG
			CULG							2158	2159.5	2				I
			HARV							2158	2159	2				IIIG
			BOUL							2158.1	2202	2				IIIG
			HARV				2211	2212	2	2211	2212	2				IIIGG,U
			CULG							2211	2213	2				IIIG,V,U
			BOUL							2211.1	2212.7	3				III
			HARV							2220	2340	1				I
			HARV				2221	2229	3	2221	2229	3	2221	2225	3	IIIGG,V
			CULG							2221	2226	2	2222	2225	1	IIIGG,V
			BOUL							2221.3	2228.9	3				IIIGG
			CULG				2222	2225	2	2225	2400	1				IV
			BOUL							2225	2313	1				IV
			CULG							2226	2230	1				IIIGG,V
			HARV							2229	2232	2				UNCLF

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	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
05			CULG							2230	2233	1				II
			HARV				2231	2234	2							IIIGG,RD
			CULG							2237.5		1				IIIB,W
			CULG							2344		1				IIIB,W
06	0000	0006	HARV													
	0000	0728	CULG							0011.5	0446	1				IW
			CULG							0038		1				IIIB,W
			CULG							0049		1				IIIB,W
			CULG							0102	0103	1				IIIG
			CULG							0110	0114	1				IIIG
			CULG							0133	0136	1				IIIG
			CULG							0155	0156	1				IIIG,W
			CULG							0230.5		1				IIIB
			CULG							0237	0239.5	1				IIIG
			CULG							0247.5	0248	1				IIIG
			CULG							0324.5		1				IIIB
			CULG							0408		1				IIIB
			CULG							0410.5		2				IIIB
			CULG							0422	0424	1				IIIG
			CULG							0440.5		1				IIIB
			CULG							0443.5		1				IIIB
			CULG							0453	0454.5	2				IIIG
			CULG							0457	0459	1				IIIG
			CULG							0502.5		1				IIIB
			CULG							0531.5		1				IIIB
			CULG							0551.5	0556.5	1				IIIGG
			CULG							0554	0556.5	2				IIIG,V
			CULG							0624		1				IIIB
			CULG							0658.5	0700	2				IIIG,V
	0735	1552	WEIS													
	1344	2315	BOUL													
	1401	2400	HARV							1522	1526	1				IIIGG
			BOUL							1715.6	1716.7	1				IIIG
			HARV							1738	1754	1				I
			HARV							1742	1743	1				IIIG
			HARV							1818	1819	2				IIIG,U
			BOUL							1818.7	1819.2	1				III
			BOUL							1918.8	1923.0	2				IIIG
			HARV				1920	1921	1	1919	1923	2	1921		2	IIIGG
	1134	2158	SGMR										1920.7	1922.1		IIIG
	2000	2400	CULG							2014	2018.5	1				IIIG
			HARV							2016	2019	1				IIIGG
			BOUL							2016.9	2018.6	2				IIIG
			CULG							2030		1				IIIB,W
			CULG							2135		1				IIIB,W
			CULG							2157		1				IIIB,W
			CULG							2249	2252	1				I,CHAIN
			CULG							2251	2252	1				IIIG
			BOUL							2251.3	2252.3	2				IIIG
			CULG							2340.5		1				RS,DP
			CULG							2355.5		1				IIIB
			CULG							2358.5	2359.5	1				IIIG
07	0000	0007	HARV													
	0000	0648	CULG							0001.5	0002.5	1				IIIG
			CULG							0010.5		1				IIIB
			CULG							0015.5	0017	1				IIIG
			CULG							0212		1				IIIB
			CULG							0241	0241.5	1				DP
			CULG							0244		1				DP
			CULG							0249.5		1				IIIB,U
			CULG							0257	0646.5	1				IIIN,W
			CULG							0314.5	0323	2	0316	0319	1	IIIGG
			CULG							0418.5		1				IIIB
			CULG							0454		1				IIIB
			CULG							0458	0458.5	1				IIIG
	0735	1552	WEIS													
	1146	2200	SGMR													
	1316	2334	BOUL													
	1401	2400	HARV							1401	1417	1				I
			HARV							1417	1800	1				IN
			HARV							1800	2020	1				I
			HARV				1852	1853	2							IIIG
			HARV							2020	2400	1				IN
	2102	2127	CULG							2102	2127	1				I
	2143	2400	CULG							2202	2400	1				I
08	0000	0535	CULG							0000	0535	1				I
	0000	0008	HARV							0000	0005	1				I
			CULG							0151	0151.5	1				IIIG
			CULG							0155	0156	2				IIIG,V,U
			CULG							0220.5	0221.5	1				IIIG,W
			CULG							0225		1				IIIB
			CULG							0231	0516.5	1				IIIN,W
			CULG							0257		1				IIIB
			CULG							0333.5	0345	2				IIIG
			CULG							0520.5		1				IIIB,U
			CULG							0528		1				IIIB,U
	0729	0845	WEIS							0853	1133	1				IN

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08	0851	1554	WEIS							1312.0	1316.0	1				IIIG
	1129	2202	SGMR										1312.7	1313.2		III
	1316	2300	BOUL													
	1402	2400	HARV							1402	2350	1				IN
			BOUL							1751.9	1752.6	1				IIIG
			BOUL							1841.1	1841.2	1				III
	2019	2400	CULG							2244		1				IIIB,W
			CULG							2255	2348.5	1				IW
			CULG							2324	2334.5	1				IIIN,W
09	0000	0009	HARV													
	0000	0732	CULG							0119		1				IIIB,W
			CULG							0123.5		1				IIIB,W
			CULG							0141		1				RS,DP
			CULG							0214		1				IIIB,W
			CULG							0327.5		1				IIIB,W
			CULG							0519	0526	1				IIIG,W
			CULG							0604.5		1				IIIB,W
	0728	1555	WEIS							0747.5	1400	1				IN
			WEIS							0959.0	1000.0	2				III
	1119	2202	SGMR													
	1317	2148	BOUL													
	1401	2400	HARV													
			BOUL							1837.5	1846.2	1				IIIG
	2001	2400	CULG													
10	0000	0115	CULG													
	0000	0010	HARV													
	0226	0521	CULG													
	0724	1310	WEIS							0813.0	0813.3	1				IIIG
	1350	1559	WEIS													
	1634	2300	BOUL													
	1132	2205	SGMR										1833.7	1834.5		III
			BOUL							1833.8	1834.3	1				III
	1401	2400	HARV							2027		3	2027		2	IIIG
	2013	2332	CULG							2027	2027.5	3				IIIG,U
			BOUL							2027.1	2027.5	1				III
			SGMR										2027.3	2027.6		III
			CULG							2033		1				IIIB,W
			CULG							2150	2155.5	1				IIIG
			BOUL							2152.8	2154.5	1				IIIG
			CULG							2153.5		2				IIIB
			CULG							2223.5		1				IIIB,W
			HARV							2255	2256	2				IIIG
	2349	2400	CULG							2255.5	2256.5	2				IIIG,U
			BOUL							2256.0	2256.3	1				III
11	0000	0027	CULG													
	0000	0010	HARV													
	0151	0724	CULG							0347		1				IIIB,W
			CULG							0634	0635.5	1				IIIG,W
	0651	1609	WEIS							1259.4	1300.0	1				IIIG
	1131	2205	SGMR										1259.5	1300.1		III
	1401	2400	HARV													
	1705	0130	BOUL													
	2025	2400	CULG							2106.5	2109	1				IW
			CULG							2130.5	2132	1				IIIG,W,U
12	0000	0010	HARV													
	0000	0724	CULG							0515.5	0516.5	2				IIIG,U
	0651	1609	WEIS													
	1129	2200	SGMR													
	1400	2400	HARV													
	1641	0100	BOUL													
			BOUL							1940.0	1940.4	1				III
13	0000	0010	HARV													
	0431	0730	CULG							0551	0551.5	1				IIIG,W
	0713	1607	WEIS													
	1122	1719	SGMR													
	1305	0100	BOUL													
	1401	2400	HARV													
			BOUL							1706.3	1707.1	1				IIIG
			BOUL							1747.6	1747.9	1				III
	1917	2259	SGMR													
	2021	2346	CULG													
	2352	2400	CULG													
14	0000	0011	HARV													
	0000	0632	CULG							0210	0211.5	1				II
	0716	0915	WEIS													
	1109	1607	WEIS													
	1130	2208	SGMR													
	1800	2400	BOUL													
	2025	2400	CULG							2028.5		1				IIIB,W,U
			CULG							2030	2030.5	1				IIIG,U
			CULG							2148	2148.5	1				IIIG,W
			CULG							2223.5		1				IIIB,U
			CULG							2234	2235.5	1				IIIG,W,U
			CULG							2321	2321.5	1				IIIG,W

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FEB. 1971	TIMES OF OBSERVATION START UT	END UT	STATION	CENTIMETRIC BAND START UT	END UT	INT.	DECIMETRIC BAND START UT	END UT	INT.	METRIC BAND START UT	END UT	INT.	DEKAMETRIC BAND START UT	END UT	INT.	SPECTRAL TYPE
14			CULG							2322	2323	1				II
	1401	2400	HARV							2326	2333	1				II
			CULG							2327	2342.5	1				II
15	0000	0659	CULG													
	0000	0012	HARV													
	0716	1607	WEIS													
	1110	2210	SGMR													
	1303	2310	BOUL													
	1401	2400	HARV				2004	2321	1	2005		1				IN
	2023	2400	CULG				2217.5	2218	1							RS
			HARV				2218	2219	2							IIIG
16	0000	0012	HARV													
	0000	0551	CULG				0214		1							RS
	0607	0722	CULG													
	0716	1610	WEIS							0853.7	0856.0	1				IIIGG,DP
	1127	2212	SGMR													
			WEIS				1238.7	1239.5	1							IIIG
	1302	0110	BOUL													
			WEIS				1307.4	1307.5	1							IIIB
			WEIS							1313.1	1313.5	1				IIIG
			WEIS				1337.9	1345.0	2							IIIGG,DPRS
			WEIS				1422.2	1422.3	1							IIIB
	1401	2400	HARV				1845	1851	2	1845	1846	1				IIIGG
	2028	2400	CULG				2127	2129.5	1							
			HARV				2129	2133	2							IIIGG
			HARV				2224	2228	3	2226	2227	2				IIIGG
			HARV				2231	2234	3							IIIGG
			CULG				2231	2234	1							
			CULG							2240		1				IIIB,U
			BOUL							2240.0	2240.4	1				III
17	0000	0018	CULG													
	0000	0012	HARV													
	0042	0628	CULG													
	0642	0700	CULG													
	0704	0718	CULG													
	0714	1330	WEIS							0724.2	0724.3	1				IIIG,RS
			WEIS							0850	1236	1				IS
			WEIS				0914.3	0916.3	2							IIIGG
	1129	2215	SGMR													
	1302	0110	BOUL													
	1358	1612	WEIS							1400	1515	1				IS
	1400	2400	HARV							1400	1700	1				IN
			HARV							1700	1848	1				I
			HARV							1848	1932	1				IN
			HARV				2044	2049	2							IIIGG
	2019	2400	CULG				2045.5	2046.5	1							
			CULG				2051.5	2053	1							
			HARV				2052	2053	2							IIIGG
			HARV				2208	2209	2							IIIG
			CULG				2208	2209	1							
			CULG				2222.5	2223.5	1							
			HARV				2223	2224	2							IIIGG
			HARV				2315	2317	2							IIIGG
			CULG				2315	2316.5	1							
			CULG				2319.5	2321.5	1							
			HARV				2320	2322	2							IIIGG
18	0000	0013	HARV													
	0000	0551	CULG													
	0553	0558	CULG													
	0604	0609	CULG													
	0637	0718	CULG							0703	0703.5	1				IIIG,W
	0710	1615	WEIS							0715	0915	1				IS
			WEIS				0826.5	0828.5	2							IIIG,RS
	1130	2203	SGMR										1527.9	1528.2		III
	1401	2400	HARV							2004	2005	1				IIIG
	1302	2320	BOUL							2005.1	2003.3	1	2003.3	2005.1	1	IIIG
			HARV							2022	2024	1				IIIGG
	2029	2400	CULG							2029.5	2030.5	1				IIIG,W
			CULG							2213.5	2214	1				IIIG,W
			CULG							2346	2347	1				IIIG,W,U
			HARV							2346	2347	1				IIIG
			CULG							2348.5		1				IIIB,W
19	0000	0014	HARV													
	0000	0718	CULG				0205		1	0201	0208.5	2				IIIGG,U
			CULG							0254	0255	1				IIIG,V,U
			CULG							0259.5	0301	1				IIIG,U
			CULG							0302	0302.5	1				IIIG,W
			CULG							0319	0718	1				IW
			CULG							0417.5	0418	1				IIIG,U
			CULG							0420	0420.5	1				IIIG
			CULG							0506.5		1				IIIB,W
			CULG							0518.5	0523	2				IIIGG,V,U
			CULG							0526		1				IIIB,W
	0709	1618	WEIS							0715	1415	1				IN
			WEIS							1247.5	1249.0	2				IIIGG,DP

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FEB. 1971	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
19	1120	2219	SGMR										1247.9	1249.6		III
	1401	2400	HARV				1500	1506	1	1501	1503	2				IIIGG
	1302	2147	BOUL							1500.7	1504.4	3	1500.7	1504.4	3	IIIG
			WEIS							1500.8	1503.5	2				IIIG
			SGMR										1501.3	1504.3		II
			WEIS							1508.7	1510.4	2				IIIG
			HARV				1509	1510	2	1509	1510	2				IIIGG
			BOUL							1509.6.	1509.7	1	1509.6	1509.7	1	III
			BOUL							1840.2	1840.5	2	1840.2	1840.5	2	III
	2029	2400	CULG							2030		1				IIIB,W
			CULG							2036	2036.5	1				IIIB,W
			CULG							2153		1				IIIB,W
			CULG							2228		1				IIIB,W,U
			CULG							2345.5	2346	1				IIIG,W
			CULG							2346	2358	1				IW
20	0000	0015	HARV													
	0000	0718	CULG							0055		1				IIIB,W,U
			CULG							0101	0101.5	1				IIIG,W,U
			CULG							0115	0116.5	1				IW
			CULG							0248		1				IIIB,W
			CULG							0420	0420.5	1				IIIG,W
			CULG							0547.5		1				IIIB,W
			CULG							0706		1				IIIB,W
			CULG							0708	0709	1				IIIG,V
			CULG							0715		1				IIIB
	0706	0853	WEIS							0812.5	0813.0	2				IIIG
			WEIS							0820.3	0835.0	2				II
	0856	1618	WEIS							0939.9	0941.0	2				IIIG
			WEIS							1007.4	1007.7	1				IIIB
			WEIS							1045.4	1046.5	1				IIIG
			WEIS							1056.0	1056.3	3				IIIB
			WEIS							1120	1136	1				UNCLF,G
			WEIS							1154.6	1155.4	2				IIIG
			WEIS							1300.7	1306.0	1				IIIGG
	1114	2217	SGMR										1300.7	1302.5		IIIG
			WEIS				1329.3	1331.3	1							IIIG
	1345	2400	HARV							1402	1404	1				IIIG
			WEIS							1402.3	1402.8	1				IIIG
			SGMR										1402.4	1403.1		III
	1312	2300	BOUL							1402.5	1403.1	2	1402.5	1403.1	2	III
			WEIS							1409.3	1430.2	2				IIIGG
			BOUL							1409.4	1409.6	1			1	III
			HARV							1412	1413	2				IIIGG
			BOUL							1412.5	1413.2	2	1412.5	1413.2	2	III
			SGMR										1412.5	1413.3		III
			BOUL							1416.3	1416.8	1	1416.3	1416.8	1	III
			SGMR										1416.4	1417.2		III
			BOUL							1423.3	1423.9	2	1423.3	1423.9	2	III
			SGMR										1423.6	1424.0		III
			BOUL							1430	1430.4	1	1430	1430.4	1	III
			SGMR										1430.0	1430.5		III
			WEIS				1446.8	1447.8	1							IIIG
			HARV				1447	1606	1							IN
			BOUL							1517.7	1524.1	1	1517.7	1524.1	1	IIIG
			WEIS							1528.5	1534.7	1				IIIGG
			BOUL							1544.5	1552.2	1	1544.5	1552.2	1	IIIG
			HARV							1557	1559	2				IIIGG
			BOUL							1557.0	1559.0	2	1557.0	1559.0	2	IIIG
			BOUL							1644.7	1653.9	1	1644.7	1653.9	1	IIIG
			SGMR										1816.4	1821.5		IIIG
			BOUL							1818.2	1822.2	2	1818.2	1822.2	2	IIIGG
			HARV				1819	1822	1	1818	1822	2	1818	1821	2	IIIGG
			BOUL							1922.2	1922.4	1	2033.5	2033.8	1	III
	2019	2400	CULG							2029.5	2030.5	1				IIIG
			CULG							2031		1				IIIB,W
			CULG							2033.5		1				IIIB,W
			CULG							2037.5	2038	1				IIIG,W
			CULG							2049		1				IIIB
			BOUL							2049.2	2049.4	1	2049.2	2049.4	1	III
			CULG				2142	2142.5	1							IIIG,W
			CULG				2147		1							IIIB,W,RS
			CULG							2156.5	2201	2				IIIGG,V
			HARV							2157	2200	2	2157	2158	2	IIIGG
			BOUL							2157.1	2161.3	2	2157.1	2161.3	2	IIIG
			CULG							2201	2201.5	1				IW
			CULG							2203		1				IIIB,W
			CULG				2217	2217.5	1							IIIG
			CULG				2219.5		1							IIIB,W
			CULG							2318	2320	1				IIIG
			BOUL							2318.3	2319.8	1	2318.3	2319.8	1	IIIG
			CULG							2331		1				IIIB,W,U
21	0000	0015	HARV													
	0000	0718	CULG							0021.5	0024	1				IIIG
			CULG							0022		2				IIIB
	0000		BOUL							0022.0	0022.3	1	0022.0	0022.3	1	III
			CULG							0150		1				IIIB,W
			CULG							0158		1				IIIB,U
			CULG							0227		1				IIIB,W

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21			CULG							0633	0634.5	1				IIIG,W
	0706	0757	WEIS							0736.2	0736.5	1				IIIB
	1123	2210	SGMR													
	1345	2400	HARV													
	1334	0130	BOUL							1441.3	1441.4	1	1441.3	1441.4	1	III
			BOUL							1613.0	1613.4	1	1613.0	1613.4	1	III
			BOUL							1619.6	1619.8	1	1619.6	1619.8	1	III
			BOUL							1705	1705.2	2	1705	1708.2	2	IIIG
			BOUL							1752.5	1752.7	1	1752.5	1752.7	1	III
			BOUL							1810.5	1810.9	1				III
	2019	2400	CULG							2350.5		1				IIIB,W
			CULG							2357.5	2358	1				IIIG,U
22	0000	0016	HARV													
	0000	0718	CULG							0034.5	0641	1				IIIN,W
			CULG							0157	0157.5	1				IIIG
			CULG							0215		1				IIIB,W,U
			CULG							0258.5	0302	1				IIIG,W
			CULG							0323.5	0325	2				IIIG,V
			CULG							0340.5	0342	2				IIIG,V,U
			CULG							0409.5	0412	2	0410	0410.5	1	IIIG,V,U
	1345	2400	HARV							1426.7	1429	2				II
	1120	2220	SGMR										1426.9	1428.0		III
			SGMR										1632.0	1641.0		IIIG
			HARV				1636	1644	1	1632	1642	2	1639	1640	1	IIIGG
	1735	2400	BOUL							1742.0	1742.6	1	1742.0	1742.6	1	III
			HARV				1755	1756	1	1755	1757	3	1756		2	IIIG
			BOUL							1755.7	1756.6	2	1755.7	1756.6	2	III
			SGMR										1755.8	1757.0		IIIG
			BOUL							1817.8	1818.2	2	1817.8	1818.2	2	III
			BOUL							1819.7	1822.8	1	1819.7	1822.8	1	IIIG
			BOUL							1933.3	1940.0	2	1933.3	1940.0	2	IIIGG
			HARV				1939	1940	1	1937	1940	1				IIIG
	2019	2400	CULG							2032	2351	1				IIIN,W
			CULG							2047	2047.5	1				IIIG,U
			CULG							2104.5	2105	2				IIIG,U
			CULG							2130		2				IIIB,U
			CULG							2159	2201	1				IIIG,V,U
			HARV							2159	2200	1				IIIG
			BOUL							2159.7	2200.3	1	2159.7	2200.3	1	III
			CULG							2313.5	2315	2				IIIG,V,U
			BOUL							2313.7	2314.9	2	2313.7	2314.9	2	III
23	0000	0718	CULG							0006	0006.5	2				IIIG,U
	0000	0017	HARV							0006	0007	2				U
	0000	0135	BOUL							0006.4	0006.7	1	0006.4	0006.7	1	III
			CULG							0010	0700.5	1				IIIN,W
			CULG							0127.5	0130	1				IIIG
			CULG							0151	0151.5	2				IIIG,U
			CULG							0359	0400	1				IIIG,U
			CULG							0508	0511	1				IIIG,U
			CULG							0543.5	0544.5	2				IIIG,U
			CULG							0706	0708	2				IIIG
	1116	2221	SGMR										1311.0	1312.3		III
	1302	0137	BOUL							1706.1	1709.3	1	1706.1	1709.3	1	IIIG
			BOUL							1717.3	1717.4	1				III
			BOUL							1725.7	1726.9	1	1725.7	1726.9	1	III
	1345	2400	HARV							1726	1730	1				IIIG
			BOUL							1847.7	1848.1	1	1847.7	1848.1	1	III
	2019	2400	CULG							2020		2				IIIB
			CULG							2038		1				IIIB,W
			CULG							2059	2100	2				IIIG,V,U
			HARV							2059	2100	2				U
			BOUL							2059.8	2101.0	1	2059.8	2101.0	1	IIIG
			CULG							2110.5		1				IIIB,W
			CULG							2111.5	2112	2				IIIG,U
			BOUL							2112.5	2112.7	1	2112.5	2112.7	1	III
			CULG							2140.5		1				IIIB
			CULG							2149	2155	1				IIIG,U
			BOUL							2151.1	2153.1	1	2151.1	2153.1	1	IIIGG
			HARV							2152	2153	1				IIIG
			BOUL							2155.8	2157.6	1	2155.8	2157.6	1	IIIG
			HARV				2202	2203	1	2202	2203	3				IIIGG
			CULG				2202	2203	1	2202	2203	2				IIIG,V,U
			BOUL							2202.6	2203.2	2	2202.6	2203.2	2	III
			CULG							2223	2224	2				IIIG,V,U
			HARV							2223	2224	2				IIIG
			BOUL							2223.5	2224.0	1	2223.5	2224.0	1	III
			CULG							2225		1				IIIB,W
			CULG							2234	2326	1				IW
			CULG							2311.5	2342.5	1				IIIN,W,U
			CULG							2314		2				IIIB,U
			CULG							2330	2332.5	1				IIIG,U
			HARV							2331	2333	1				IIIGG
24	0000	0018	HARV				0000	0006	1							IN
	0000	0717	CULG							0013.5		2				IIIB,U
			CULG							0025	0026.5	2				IIIG,U
			CULG							0100	0142	1				IIIN,W
			CULG							0140	0140.5	1				IIIG,U

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24			CULG							0308	0315	1				I
			CULG							0354.5	0355	1				IIIG
			CULG							0359.5	0703	1				IIIN,W
			CULG							0525	0526	1				IIIG
			CULG				0708.5		1	0708.5		1				IIIB
			CULG							0709.5	0711.5	1				IIIG
	0725	1625	WEIS							0844	1532	1				IN
			WEIS							0907.5	0911.4	1				IIIGG,DP
			WEIS							1011.1	1011.4	1				IIIB
	1345	2400	HARV							1358	1920	1				IN
			HARV				1530	1531	2	1530	1531	1				IIIG
			WEIS							1530.5	1531.0	1				IIIG,DP
			HARV				1541	1543	1	1538	1542	1				IIIGG
			WEIS							1600.5	1600.8	1				IIIG
			HARV							1808	1810	2				IIIGG
	1302	0130	BOUL							1808.9	1810.9	2	1808.9	1810.9	2	IIIG
			HARV							1924	1925	1				IIIGG
			HARV				2038	2039	1	2038	2039	3	2038	2039	3	IIIG,V
	2022	2400	CULG				2038.5	2040	1	2038.5	2040	3				IIIG,V
	1111	2220	SGMR										2038.9	2039.9		III
			BOUL							2039.0	2040.2	3	2039.0	2040.2	3	III
			CULG							2045		1				IIIB,U
			CULG							2053.5		1				IIIB,W
			CULG				2100	2101	1	2100	2101	1				IIIG,U
			CULG							2249.5	2250	2				IIIG,U
			CULG							2254		1				IIIB,W
			CULG							2347	2348	2				IIIG,U
			HARV							2347	2348	1				IIIG
25	0000	0019	HARV													
	0000	0718	CULG							0002.5	0005.5	1				IIIG
			CULG							0023	0023.5	2				IIIG,V
			CULG							0030.5	0031.5	2				IIIG,U
			CULG							0034	0034.5	1				IIIG,W
			CULG							0049	0105	1				I
			CULG							0057	0058	1				IIIG,W
			CULG							0123.5		1				IIIB,W
			CULG							0133.5		1				IIIB,W
			CULG							0149	0153	2				IIIGG,V,U
			CULG							0205	0206.5	1				IIIG,W
			CULG							0248		1				IIIB,W
			CULG							0312	0313	1				IIIG,W
			CULG							0451.5	0457	1				II
			CULG							0457		1				IIIB,W
			CULG							0531	0531.5	2				IIIG,V,U
			CULG							0547.5	0548.5	1				IIIG,W,U
			CULG							0657	0717	1				IIIN,W
	0702	0950	WEIS							0712.3	0713.3	1				IIIGG
			WEIS							0719.3	0720.3	3				IIIGG,DP
			WEIS							0719.7	0720.7	2				V
			WEIS							0723.0	0724.8	2				IIIG
			WEIS							0848.0	0848.2	1				IIIG
	0954	1300	WEIS							1215.7	1216.8	2				UNCLF,G
	1154	2221	SGMR										1215.8	1217.0		III
			WEIS							1248.9	1249.1	2				IIIG
	1345	2400	HARV							1416	1417	1				IIIG
	1420	1626	WEIS													
	1302	2400	BOUL							1909.0	1909.3	1				III
			HARV							2016	2017	1				IIIG
			BOUL							2016.0	2017.5	1	2016.0	2017.5	1	IIIG
	2020	2400	CULG							2102	2103.5	2				IIIG,U
			HARV							2103		1				U
			CULG							2114.5	2356	1				IIIN,W
			CULG							2143	2145	1				IIIGG
			HARV							2143	2144	1				IIIGG
			CULG							2234	2336	2				IIIGG,U
			HARV							2235		1				IIIG
			CULG							2334.5	2335.5	2				IIIG,U
			CULG							2338.5	2340	2				IIIG,U
26	0000	0020	HARV													
	0000	0718	CULG							0032	0044	1				IIIGG,U
			CULG							0036	0038	2				IIIGG,V,U
	0000	0130	BOUL							0037.1	0038	1	0037.1	0038	1	III
			CULG							0051.5	0106.5	1				IIIG,W
			CULG							0111.5		1				IIIB,W
			CULG							0324	0324.5	1				IIIG,W
			CULG							0337.5	0340.5	1				IIIG,U
			CULG							0339	0339.5	2				IIIG,U
			CULG							0342	0343	1				IIIG,W
			CULG							0346.5		1				IIIB
			CULG							0521.5	0522.5	2				IIIG,U
			CULG							0607	0611.5	1				IIIGG
			CULG							0607	0608.5	3				IIIG,V,U
			CULG							0615		1				IIIB,U
			CULG							0619	0620	2				IIIG,U
			CULG							0646.5	0647	1				IIIG,U
	0656	0850	WEIS													
	1130	2224	SGMR													
	0926	1627	WEIS							1223.9	1224.7	2				IIIG

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SPECTRAL OBSERVATIONS

FEBRUARY 1971

FEB. 1971	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	CENTIMETRIC BAND START UT	CENTIMETRIC BAND END UT	CENTIMETRIC BAND INT.	DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT.	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT.	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT.	SPECTRAL TYPE
26			WEIS							1402.6	1403.1	1				IIIG
	1303	0133	BOUL							1847.5	1847.7	1	1847.5	1847.7	1	III
	2023	2400	CULG							2054	2055	1				IIIG,U
			CULG							2059	2100	2				IIIG,U
			CULG							2316.5	2317	1				IIIG
			CULG							2337.5	2343.5	1				IIIGG,U
			BOUL							2339.9	2342.3	2	2339.9	2342.3	2	IIIG
	1345	2400	HARV							2340	2342	1				IIIG
			CULG							2342		2				IIIB,U
27	0000	0021	HARV													
	0000	0718	CULG							0002		1				IIIB,U
			CULG							0057	0100	1				IIIG
			CULG							0108.5	0110	1				IIIG,U
			CULG							0112	0113	2				IIIG,U
			CULG							0118	0118.5	1				IIIG,W
			CULG							0130.5	0132	1				IIIG
			CULG							0143		1				IIIB,W
			CULG							0154		1				IIIB
			CULG							0159.5	0201	1				IIIG,V,U
			CULG							0212.5	0213	1				IIIG,W
			CULG							0236		1				IIIB,W
			CULG							0246		1				IIIB
			CULG							0330	0332	2				IIIG,V,U
			CULG							0336.5		1				IIIB
			CULG							0401		1				IIIB
			CULG							0405.5	0406	1				IIIG,U
			CULG							0433.5	0434.5	1				IIIG,U
			CULG							0457	0500	1				IIIG,V,U
			CULG							0502	0503.5	1				II
			CULG							0536.5		1				IIIB
			CULG							0550.5	0551.5	1				IIIG,U
			CULG							0637.5		1				IIIB
			CULG							0640	0641.5	1				IIIG,U
	0656	1627	WEIS							0753.1	0754.6	2				IIIG
			WEIS							0840.2	0841.3	2				IIIG
			WEIS							0925.4	0925.6	1				IIIB
			WEIS							0936.4	0937.5	1				IIIG
			WEIS							1149.8	1149.9	1				IIIB
			WEIS							1258.6	1259.0	2				IIIG
	1345	2400	HARV				1450	1453	2	1450	1453	3				IIIGG,V,U
	1302	2400	BOUL							1450.4	1453.7	3	1450.4	1453.7	3	IIIG
			WEIS							1450.6	1452.9	3				IIIGG
	1128	2226	SGMR										1450.7	1454.0		IIIG
			WEIS							1452.0	1453.4	2				V
			WEIS							1547.1	1547.4	1				IIIB
			BOUL							1644.6	1649.3	2	1644.6	1649.3	2	III
			BOUL							1654.0	1655.4	1				IIIG
			BOUL							1812.1	1818.9	2	1812.1	1818.9	2	III
			SGMR										1812.6	1813.5		III
	2019	2400	CULG							2121.5	2122	2				IIIG,U
			CULG							2142.5	2144	2				IIIG
			BOUL							2142.5	2143.9	1	2142.5	2143.9	1	IIIG
			CULG							2239		2				IIIB
			BOUL							2239.0	2239.3	1	2239.0	2239.3	1	III
			CULG							2255		1				IIIB
28	0000	0023	HARV													
	0000	0718	CULG							0017.5		1				IIIB
	0000	0130	BOUL							0017.7	0017.8	1	0017.7	0017.8	1	III
			CULG							0149.5	0151	2				IIIG,J
			CULG							0155	0158	1				IIIG,W
			CULG							0215	0215.5	1				IIIG,J
			CULG							0221.5	0222.5	2				IIIG,U
			CULG							0230	0230.5	2				IIIG,U
			CULG							0420	0420.5	1				IIIG,W
			CULG							0604	0609	2				IIIG
	0657	1454	WEIS							0930.8	0930.9	1				IIIB
			WEIS							1058.3	1058.5	1				IIIB
	1127	2226	SGMR													
			WEIS							1235.7	1235.9	2				IIIB
	1345	2400	HARV							1755	1756	3	1755	1756	2	IIIG
	1323	0130	BOUL							1755.1	1755.7	2	1755.1	1755.7	2	IIIG
			BOUL							1831.7	1831.9	1	1831.7	1831.9	1	III
			BOUL										1902.3	1902.5	1	III
			BOUL							2012.2	2012.3	1	2012.2	2012.3	1	III
	2019	2322	CULG							2303	2305	2				IIIGG,U
			BOUL							2303.6	2304.9	2	2303.6	2304.9	2	IIIG
			HARV							2304	2305	2				IIIG,U
			CULG							2317		1				IIIB,W

The symbols used in connection with the spectral type in describing the important bursts are as follows:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period

U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
CONT = Continuum
UNCLF = Unclassified activity

COSMIC RAY INDICES
(Neutron Monitors)
FEBRUARY 1971

Feb. 1971	CHURCHILL DAILY AVERAGE COUNTS PER HOUR	DEEP RIVER DAILY AVERAGE COUNTS PER HOUR	CALGARY DAILY AVERAGE COUNTS PER HOUR	SULPHUR MT. DAILY AVERAGE COUNTS PER HOUR	CLIMAX DAILY AVERAGE COUNTS PER HOUR	DALLAS DAILY AVERAGE COUNTS PER HOUR
1	6100.0	6623.7	10903.5	8131.0	3959.5*	6058.7
2	6100.8	6638.9	10980.6	8162.0	3967.1	6069.8
3	6127.8	6640.2	11033.0	8196.0	3998.8*	6067.1
4	6119.4	6641.9	11045.4	8215.9	3990.1	6077.7
5	6119.4	6650.7	11087.3	8199.1	3992.3	6091.6
6	6102.7(22)	6646.7	11077.1	8179.7	3989.4	6090.6
7	6160.2	6711.2	11164.8	8277.4	4036.1	6151.9
8	6115.1	6669.0	11106.2	8241.0	4003.7	6132.7
9	6077.4	6612.6	10965.6	8158.9	3920.8	6063.7
10	6108.8	6633.1	10962.5	8178.7	3949.2	6059.5
11	6142.3	6656.9	11086.7	8236.7	3980.6	6097.3
12	6121.6	6623.2	11045.0	8216.7	3960.7	6096.9
13	6117.2	6648.6	11074.1	8242.8	3970.2	6113.8
14	6127.3	6671.8	11059.8	8255.2	3976.7	6103.0
15	6124.6	6653.3	11020.4	8240.1	3983.3	6104.2
16	6099.2	6627.7	11022.6	8237.6	3977.0	6078.9
17	6083.1	6624.5	11067.4	8252.6	3990.1	6069.8
18	6105.5	6643.0	11113.2	8292.2	4001.1	6089.7
19	6110.2	6665.0	11130.2	8314.5	4008.6	6104.7
20	6135.4	6638.3	11167.0	8324.9	4018.0	6104.5
21	6150.2	6648.8	11132.5	8281.1	4008.9	6097.9
22	6142.7	6656.5	11104.3	8280.3	3998.8*	6095.5
23	6107.7	6631.9	11046.1	8244.4	3988.0*	6072.2
24	6067.8	6576.8	10932.2	8184.6	3947.0	6033.0
25	6041.0	6576.7	10902.2	8148.2	3970.2	6037.8
26	6006.5	6512.4	10863.0	8054.3	3920.6	5983.4
27	6020.7	6536.9	10915.3	8074.3	3921.3	6001.1
28	6050.9	6568.3	10946.3	8104.5	3946.6*	6003.0

( ) Number of hours for which data are available if less than 24.
* Sum of both sections less than 40 hours.

Churchill Super Neutron Monitor, Scaling Factor 120.

Deep River Super Neutron Monitor, Scaling Factor 300.

Calgary and Sulphur Mountain Super Neutron Monitors, Scaling Factors 100.

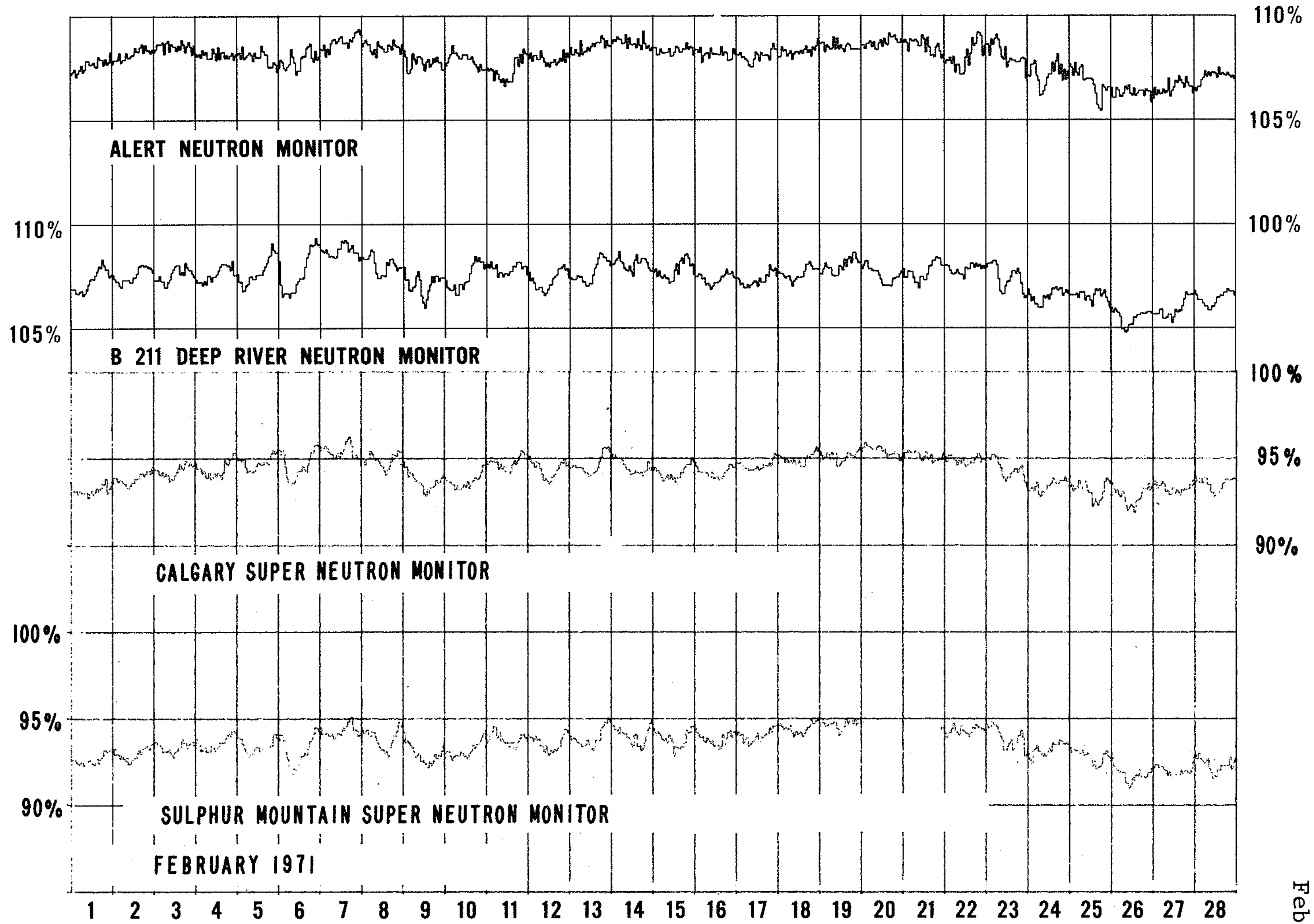
Climax IGC Station B305, Scaling Factor 100. One section normalized by multiplicative factor.

Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

FEBRUARY 1971



GEOMAGNETIC ACTIVITY INDICES

FEBRUARY 1971

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1		3	3-	4	3+	3	4	2-	1+	23	0.9	0.9	16
2		3	2	1-	2-	2-	2	3	3-	17-	0.4	0.5	9
3	QQ	2+	2-	1+	1-	1-	1-	1-	0+	8+	0.0	0.1	4
4	QQ	0+	0+	0+	1	1	2	1+	2-	8	0.1	0.1	4
5	QQ	1+	1+	1-	2-	1-	0+	1-	1	8-	0.0	0.1	4
6	Q	2+	1	2+	2-	2-	2-	1+	1+	13+	0.2	0.3	6
7	Q	1+	2+	2	1+	1	2-	1+	2+	13+	0.3	0.3	6
8		3-	3-	1+	2+	2-	2+	3	3	19	0.7	0.6	10
9		2	3	3	2+	3	3	0+	2-	18+	0.6	0.6	10
10		2	0+	1+	1+	2+	3+	3+	3-	17-	0.7	0.5	10
11	Q	1+	0	0+	2	0+	2+	2-	3-	11-	0.3	0.2	5
12	Q	1+	1+	2	1	2+	2+	2	2-	14	0.2	0.3	6
13	QQ	3-	1	1-	1-	0	0+	0+	0+	6	0.1	0.1	4
14	D	0+	1	2+	3+	4+	4	4	3-	22	1.1	0.9	16
15	D	3+	3	4-	3+	3+	5	5-	5+	32-	1.4	1.3	29
16	D	6	4+	3+	3+	3-	4-	4-	4-	31-	1.3	1.2	28
17		4-	3-	3	3-	3-	2+	2	3+	22+	0.7	0.8	13
18		2+	3	3-	2	3-	3-	2+	4-	21+	1.0	0.7	12
19		3-	4-	3-	2	1	1+	1-	2-	16-	0.3	0.5	9
20		3-	3	1+	2	1+	1+	3-	2	16+	0.6	0.5	8
21		2-	2	3-	2-	2+	2	1-	1	14	0.2	0.3	7
22	QQ	2-	1-	2+	2-	0	0	0+	0	7-	0.0	0.1	3
23		1	2	2	1	2-	3+	4+	4	19+	0.9	0.8	13
24		2	1-	1+	2-	2+	2+	2+	5+	18	0.8	0.7	13
25	D	5	3	3+	4-	6-	5+	6	5-	37-	1.5	1.5	43
26	D	5+	6+	4-	4	3	3+	2+	2+	30+	1.3	1.3	31
27		3+	2+	1	1	3-	2+	2+	3+	18+	0.7	0.6	10
28	Q	2	3+	2-	1	1	1-	1-	0+	11-	0.2	0.3	6
										MEAN	0.59	0.57	12

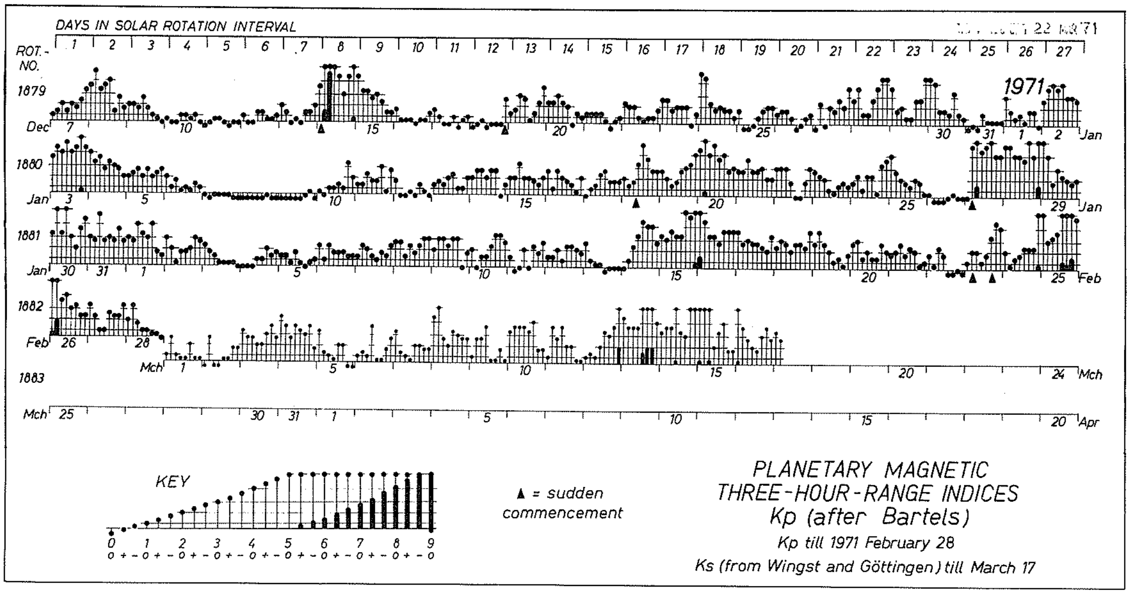
Errata: The Ci-figures for January 1971 given on page 100 of Number 319, Part I, were based on fewer reports than customary. The following values should replace those given (Underlined):

January 1971

Date	Ci	Date	Ci	Date	Ci	Date	Ci	Date	Ci	Date	Ci
1	0.3	6	0.2	11	0.4	16	0.4	21	0.7	27	1.4
2	1.1	7	0.0	12	0.1	17	0.3	22	0.5	28	1.5
3	1.5	8	0.0	13	0.4	18	1.1	23	0.2	29	1.0
4	0.8	9	0.0	14	0.3	19	0.9	24	0.7	30	1.3
5	0.6	10	0.4	15	0.4	20	1.3	25	0.4	31	0.9
								26	0.1		Mean 0.62

January 13 should also replace January 23 as one of 10 most quiet days.

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1970 MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1971 JAN.	FEB.
1	22	6	11	28	10	4	23	10	2	1	6	16
2	16	6	9	9	11	6	18	9	4	4	19	9
3	15	11	10	11	24	4	15	14	8	4	33	4
4	16	10	6	8	26	4	11	25	7	5	16	4
5	12	9	12	6	16	3	8	9	9	8	9	4
6	25	23	6	3	15	8	5	6	12	8	4	6
7	42	10	6	9	5	12	6	4	58	8	1	6
8	149	12	4	13	10	26	8	2	8	19	0	10
9	47	18	4	5	87	19	5	2	8	6	1	10
10	7	3	2	6	34	7	6	7	17	3	6	10
11	3	8	3	4	10	9	1	15	20	2	8	5
12	6	6	15	5	14	9	5	16	10	4	3	6
13	8	4	6	10	10	6	24	9	9	4	6	4
14	3	3	13	8	9	4	19	8	7	65	9	16
15	7	5	10	13	5	7	11	4	4	14	8	29
16	3	14	6	9	6	21	8	37	5	4	7	28
17	5	29	10	13	8	115	8	34	6	3	6	13
18	6	18	5	27	5	36	10	39	18	3	15	12
19	5	21	6	8	5	14	18	11	18	10	13	9
20	4	21	13	18	6	4	15	7	3	8	29	8
21	3	90	8	17	30	5	23	1	30	4	12	7
22	2	41	6	4	12	6	12	18	18	6	10	3
23	5	14	7	4	9	7	6	29	21	7	6	13
24	2	16	6	6	26	4	6	14	12	14	10	13
25	3	17	7	6	92	8	8	6	13	4	9	43
26	5	13	2	13	21	17	6	4	8	4	2	31
27	16	10	15	35	14	12	19	5	10	8	37	10
28	21	5	45	7	4	12	7	15	8	18	39	6
29	17	7	13	6	45	10	5	13	2	12	16	
30	16	18	11	5	7	5	9	9	1	13	26	
31	51		6		14	12		4		2	17	
MEAN	17	16	9	10	19	13	11	12	12	9	12	12

PRINCIPAL MAGNETIC STORMS

FEBRUARY 1971

DATE 1971 MO DA.	STORM TIME UT START	UT END MO. DA. HR.	OBS.	GEO-MAG. LAT.	SUDDEN COMMENCEMENT TYPE	AMPLITUDES D(')	H(γ)	Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO. DA.	3-HOUR PERIOD	K INDEX	RANGES D (')	H (γ)	Z (γ)	STORM NUMBERS
02 08	2037	02 09 16	KGLN	57.3S	SC	--	--	--	MS	02 08	8	3	--	--	--	5
										02 09	1,3,5					5
02 14	08--	02 17 17	COLL	64.6N	••	••	••	••	MS	02 15	6	6	131	1250	520	6
										02 16	6	6				6
	09--	02 16 22	WITT	54.1N	••	••	••	••	M	02 14	7					6
										02 15	6,7,8					6
										02 16	1,7,8	5	30	200	100	6
	09--	02 17 03	TUCS	40.4N	••	••	••	••	M	02 14	6,8	5	12	120	10	6
										02 15	1	5				6
	04--	02 16 12	PMOR	18.6S	••	••	••	••	M	02 14	5,6	5	9	110	60	6
	06--	02 17 12	HRMN	33.3S	••	••	••	••	M	02 14	5	5				6
										02 15	6	5	33	117	114	6
										02 16	1	5				6
02 15	13--	02 17 03	FRED	49.6N	••	••	••	••	M	02 15	8	5	28	97	49	6
										02 16	1					6
	08--	02 16 22	IRKU	40.8N	••	••	••	••	M	02 15	6,7	5	26	92	22	6
										02 16	1	5				6
	10--	02 16 09	HONO	21.1N	••	••	••	••	M	02 16	1	5	5	90	15	6
	06--	02 16 08	GNAN	43.2S	••	••	••	••	M	02 15	6,7,8	5	20	100	100	6
										02 16	1	5				6
	1000	02 17 03	KGLN	57.3S	••	••	••	••	MS	02 15	7	6	--	--	--	6
02 23	0514	02 27 06	COLL	64.6N	SC *	+ 2	+16	--	S	02 25	5	8	270	1980	1030	7
	0514	02 25 03	MBOR	21.3N	SC	1	+ 5	--	M	02 25	5	6	4	110	20	7
	0514	02 23 24	GUAM	4.0N	SC *	--	03	01	M	02 23	8	5	0	50	10	7
02 24	21--	02 26 19	WITT	54.1N	••	••	••	••	MS	02 24	8					8
										02 25	5,7	6	40	150	130	8
	21--	02 26 15	FRED	49.6N	••	••	••	••	MS	02 26	2	7	45	123	58	8
	21--	02 26 19	IRKU	40.8N	••	••	••	••	M	02 25	5,7	6	27	123	44	8
	21--	02 26 14	TUCS	40.4N	••	••	••	••	MS	02 26	1,2	6	23	120	10	8
	21--	02 26 12	HONO	21.1N	••	••	••	••	M	02 26	1	5	5	110	40	8
	21--	02 27 02	HRMN	33.3S	••	••	••	••	MS	02 25	5	6	29	122	128	8
	08--	02 26 18	GNAN	43.2S	••	••	••	••	MS	02 25	5	6	18	130	160	8
	2125	02 26 18	KGLN	57.3S	••	••	••	••	MS	02 25	7	7	--	--	--	8
02 25	00--	02 26 18	NEWP	55.1N	••	••	••	••	MS	02 25	5	6	68	159	210	8
										02 26	2					8
	01--	02 26 18	BOUL	49.0N	••	••	••	••	MS	02 26	2	7	50	110	75	8
	1030	02 26 18	ALIB	9.5N	••	••	••	••	MS	02 25	5	7	4	163	38	8
	1030	02 26 18	ANNA	1.5N	••	••	••	••	MS	-- --	-	-	4	122	57	8
	1030	02 26 18	TVAN	1.1S	••	••	••	••	MS	-- --	-	-	3	173	141	8

The following observatories reported that no principal magnetic storms occurred in February 1971: Apia, San Juan, Sitka and Toolangi.

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

February 1971

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS (by Dr. A. Romaña)

The meaning of the station-symbols is given in the IAGA-Bulletins nr. 12.1 and 12.2. Times of ssc and si are mean values. If given by ten or more stations they are underlined.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)

08 2036 A: SF KS BA HU LM; B: MA FU LG IK TL PM TN HR KG; C: WN NI AE SS SZ (si: A: SI TA PP; B: OT MB; C: FR; bp: B: SO; C: EB)

23 0515 A: SO; B: MA CI HU; C: SI WI NI EB VI AE SS MB BA PP; (si: A: TE; B: FU TA PM; C: WN LG IK SZ LM KG)

23 1728 A: JO SF LM; B: WN MA TL SZ; C: WI NI SS KG (si: A: FU IK; B: SI LG EB TA MB PP HR; C: OT; bp: B: DU)

25 1059 A: SF; B: MA LM; C: WN TA (si: B: MB BA HR)

25 1326 A: SF; B: CI AE; C: SZ (si: B: MB)

Sudden impulses found in the magnetograms (si)

09 1059 B: OT FU HR; C: FR (ssc: B: SO; C: MA VI)
11 1011 A: SO SF; B: WN FU AE MB; C: HR (sfe: MA NI EB TL SZ; bp: B: DU)

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

01 1345 - 1349 SZ
03 1527 - 1542 EB
17 1416 - 1431 SZ (si: C: AE)
17 1606 - 1628 HU
20 1020 - 1027 SZ

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

FEBRUARY 1971

North Atlantic

FEB. 1971	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF 02	08	14	20	GEOMAGNETIC INDICES K_{FR} HALF DAY (1)	(2)	A_{FR} OBSERVED
01	6-	6	6-	5+	6o	6-	6	6	6	6	3	2	13
02	6o	6	6-	5+	7o	6o	6	5	6	6	1	2	6
03	6+	6	6o	7-	6o	6o	5	6	6	7	1	1	3
04	6+	6	7-	5+	6+	7o	6	6	6	7	1	1	3
05	6+	6	7-	5+	6+	7o	7	6	6	7	1	1	3
06	6+	6	7-	5+	7o	6+	7	6	6	6	2	2	7
07	6+	6	6+	6o	7-	6+	6	6	6	6	2	2	7
08	6+	6	7-	5+	7o	6+	6	6	6	6	2	3	11
09	7-	6	7-	6-	7o	7o	6	6	6	6	2	2	8
10	6o	6	7-	6+	6+	5+	6	6	6	7	1	3	9
11	6+	6	6-	6+	7o	6o	6	6	6	6	1	2	4
12	6+	6	6o	6+	6+	7o	6	6	6	6	1	2	6
13	6+	6	7-	6+	6+	6+	6	6	6	6	1	0	3
14	6o	6	6+	6o	6o	6o	6	6	6	6	2	3	13
15	6+	6	6+	6o	7-	6o	5	5	6	5	3	(4)	22
16	6+	6	7-	6+	6o	6+	5	5	5	5	3	3	18
17	6-	6	6+	6-	6o	6o	6	6	6	7	3	2	11
18	6o	6	6o	5+	7-	6-	6	6	6	6	2	2	7
19	6+	6	6+	6o	6+	6+	6	6	6	7	3	2	8
20	6o	7	6o	5+	7o	6+	6	6	6	6	3	2	10
21	6+	7	6-	6+	7-	6+	6	6	6	6	2	1	6
22	6+	7	6o	6o	6+	6o	6	6	6	7	2	0	3
23	7-	7	6+	7-	7o	7o	6	6	7	7	2	2	8
24	7-	7	6+	6+	6+	7o	6	6	6	6	2	3	10
25	6o	6	6+	6-	6o	6-	6	6	6	5	(4)	(4)	30
26	5+	6	6o	4-	6-	6o	5	5	5	5	(5)	2	36
27	6-	6	6-	5-	6o	6o	5	5	6	6	2	3	10
28	6o	6	6-	5+	7-	6+	6	6	6	6	2	0	4

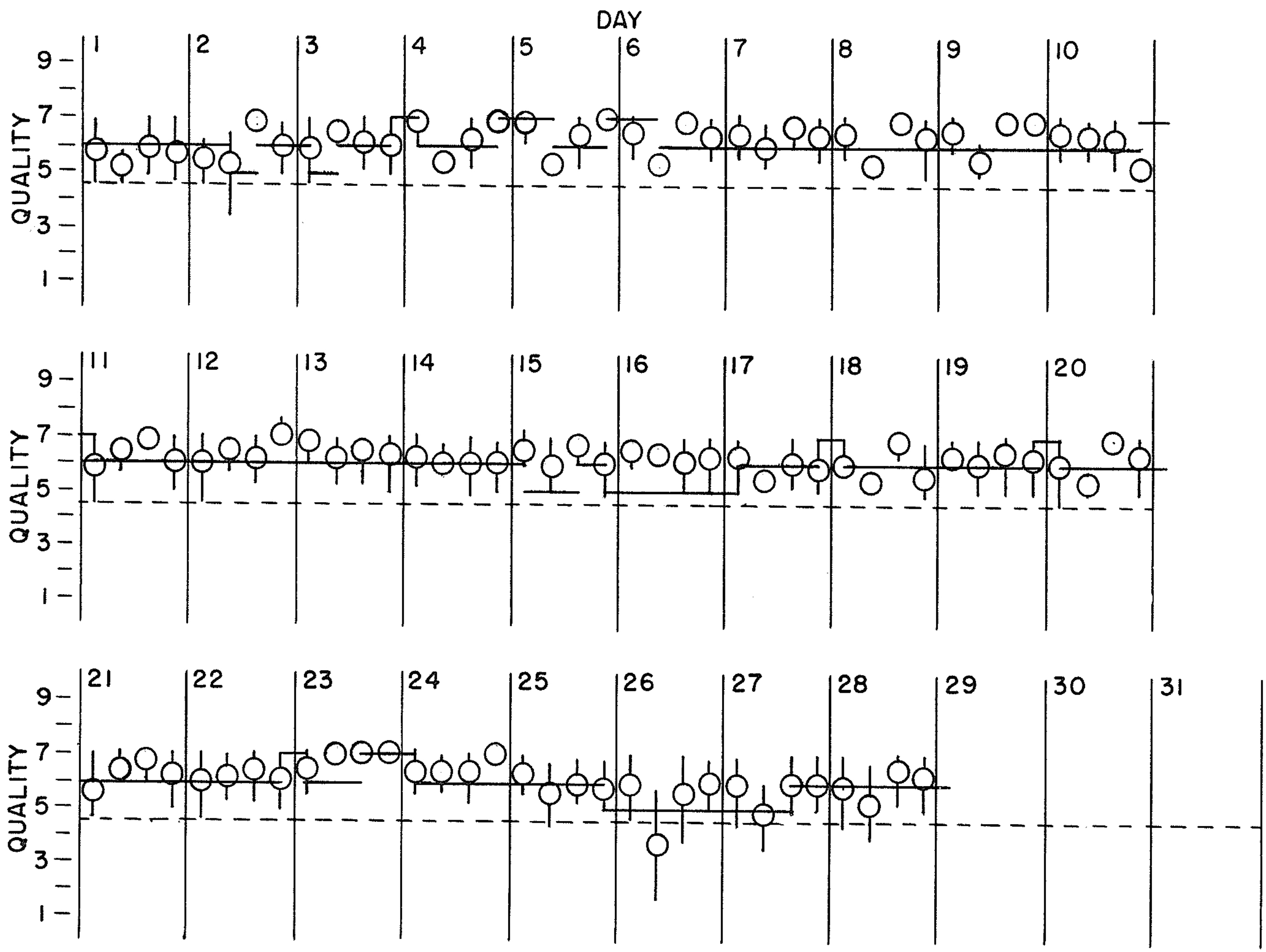
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

FEBRUARY 1971

North Atlantic

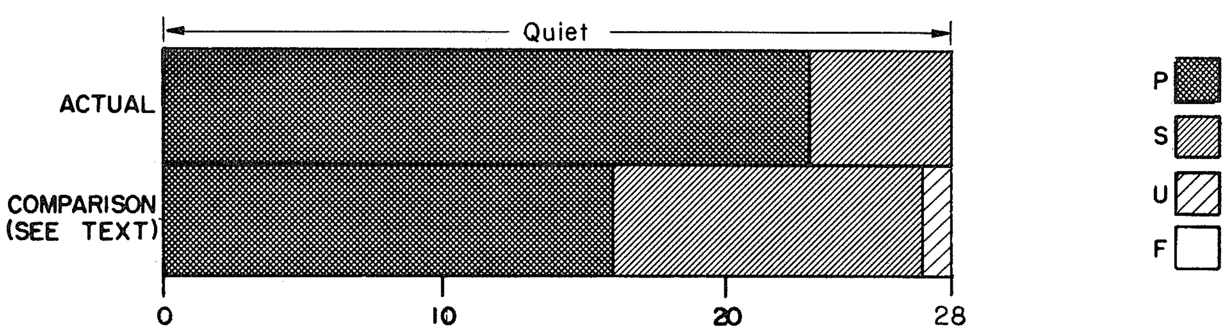
— Short term forecast
o Quality figure

I range of reports



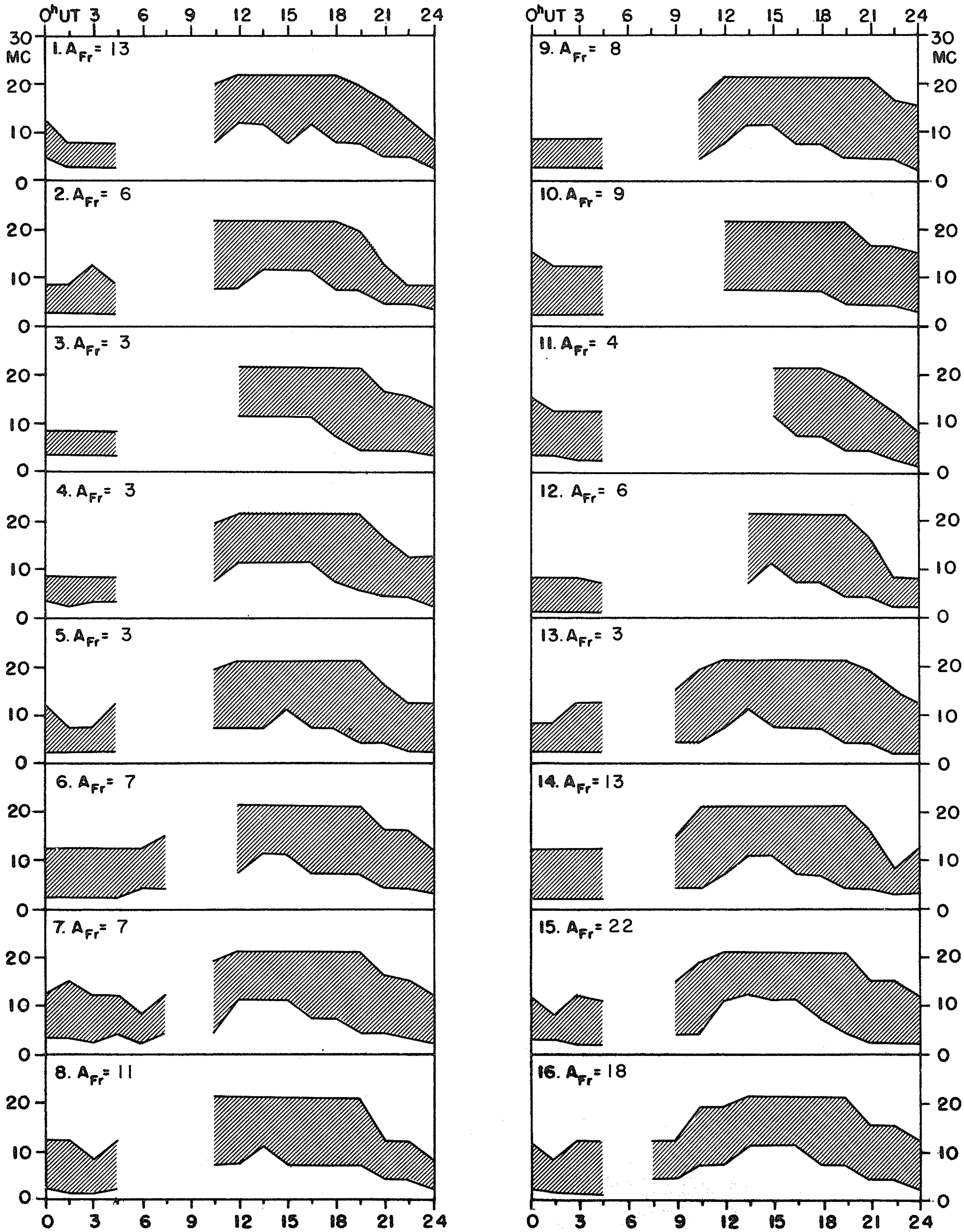
Outcome of advance forecasts of High Latitude radio propagation conditions
(Scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

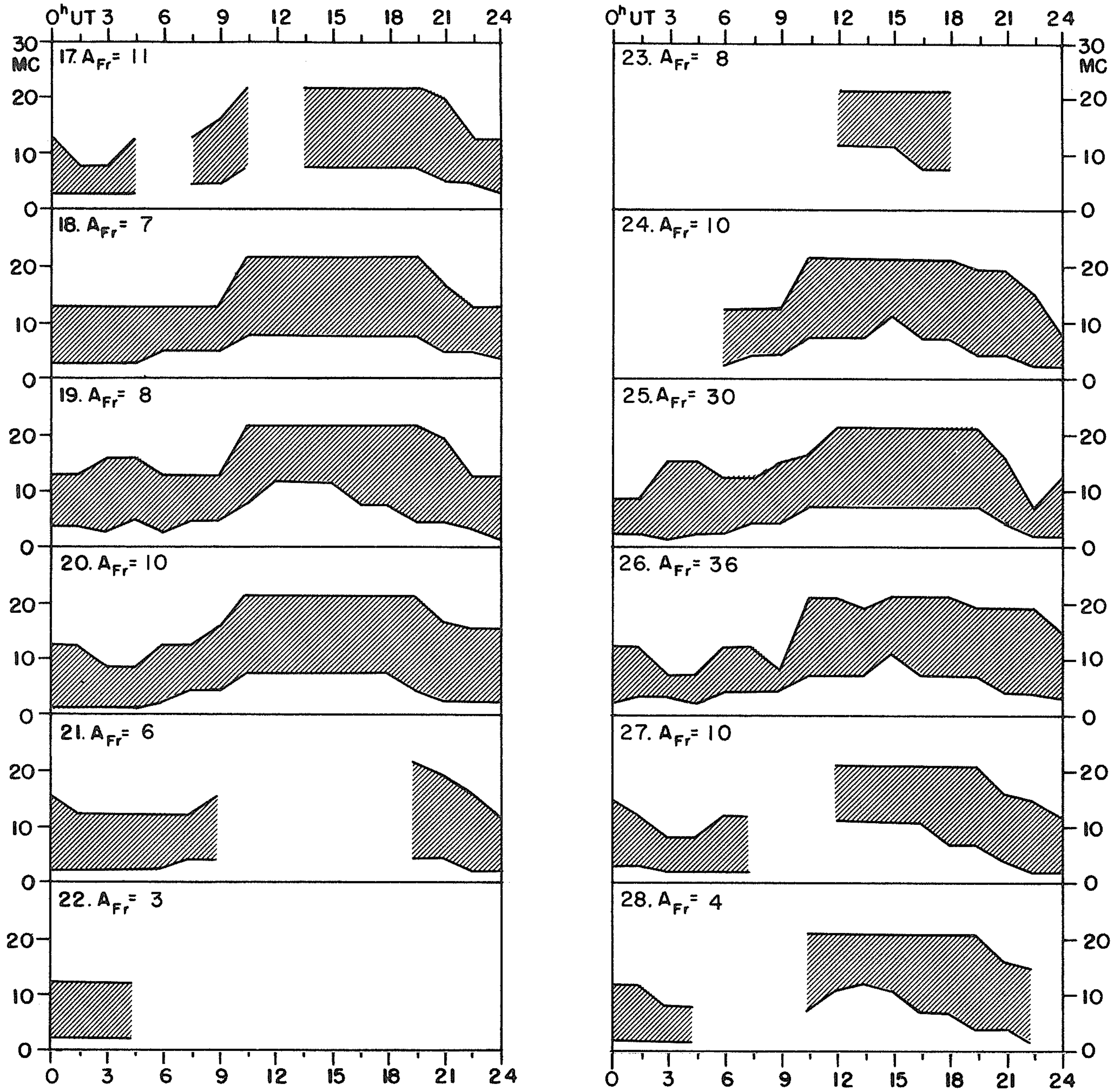
FEBRUARY 1971



Note: Observations have been curtailed at Luechow. The white spaces in the graphs are missing data rather than propagation outage.

TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

FEBRUARY 1971



Adapted from Observations by Deutsche Bundespost

RADIO PROPAGATION QUALITY INDICES

Derived from observations of the transmission frequency range

February 1971

Date	USA - Germany		South - Germany		East Asia - Germany	
	Day	Night	Day	Night	Day	Night
1	6.2	6.4	7.0	6.8	4.6	5.6
2	5.4	5.0	5.6	5.8	5.0	6.8
3	7.0	6.2	5.6	5.4	2.6	5.2
4	5.8	6.8	6.2	6.2	4.6	5.6
5	7.4	7.8	7.4	7.8	5.6	7.2
6	7.6	8.6	7.8	8.0	8.2	7.8
7	8.2	8.2	7.4	7.0	9.0	6.8
8	7.4	6.8	7.8	7.4	6.2	6.4
9	8.2	8.4	8.0	7.0	8.0	8.2
10	7.8	8.6	7.4	8.2	6.0	9.0
11	7.4	7.4	6.8	6.8	7.2	7.0
12	8.0	7.6	7.0	7.2	---	---
13	8.0	7.6	6.8	6.6	7.2	6.4
14	7.4	6.8	7.6	7.2	9.8	8.8
15	6.6	6.2	7.2	6.6	7.8	7.4
16	6.4	5.8	7.0	6.4	7.6	8.0
17	6.8	7.2	7.6	6.8	8.4	6.0
18	6.6	6.6	7.4	6.6	9.0	8.8
19	7.0	7.0	7.2	6.2	8.4	6.8
20	7.6	7.4	7.0	7.0	7.6	9.0
21	---	---	---	---	---	---
22	---	---	---	---	---	---
23	---	---	---	---	---	---
24	6.2	7.6	5.4	5.8	9.0	8.4
25	5.6	5.0	5.2	5.8	7.8	6.0
26	6.0	6.8	6.2	6.0	7.2	6.8
27	5.8	5.8	5.8	5.4	5.6	5.4
28	6.0	6.2	5.4	4.6	5.0	6.0

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