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ENVIRONMENTAL DATA SERVICE
Thomas S. Austin, Director

Solar-Geophysical Data

(Prompt Reports)

NUMBER 325-PART I
DATA FOR
AUGUST 1971
JULY 1971

DATA COMPILED BY AERONOMY AND SPACE DATA CENTER
BOULDER, COLORADO

WASHINGTON, D.C.
SEPTEMBER 1971

S O L A R - G E O P H Y S I C A L D A T A

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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

AUGUST 1971

AUG. 1971	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
*				
01	0400			NINE QUIET; SOLNIL
02	0400			CAUTION S12W35, S26E40, TEN QUIET; SOLNIL
	0514	KAKIOKA MAGSTORM BEGINS 02/0053Z		
03	0400			CAUTION S26E27, NINE QUIET; SOLNIL
04	0400			S09E74 ERUPTIVE; SIX QUIET; SOLNIL
05	0400			S09E57 ERUPTIVE; FIVE QUIET; SOLNIL
06	0400			S11E52, S09E44 ERUPTIVE; SIX QUIET; SOLNIL
07	0400			S11E38 ERUPTIVE; FIVE QUIET; SOLNIL
08	0400			S11E24 ERUPTIVE; FOUR QUIET; SOLNIL
09	0400			FIVE QUIET; SOLNIL
10	0400			SIX QUIET; SOLNIL
11	0400			SIX QUIET; SOLNIL
12	0400			SEVEN QUIET; SOLNIL
13	0400			NINE QUIET; SOLNIL
14	0400			NINE QUIET; SOLNIL
15	0400			EIGHT QUIET; SOLNIL
16	0400			TEN QUIET; SOLNIL
17	0400			SEVEN QUIET; SOLNIL
18	0400			CAUTION S13E77, SEVEN QUIET; SOLNIL
19	0400			S15E66 ACTIVE; SIX QUIET; SOLNIL
	0900	KIEL COSMIC EVENT BEGINS 18/1100Z FORBUSH DECREASE 2.2 PERCENT		
20	0400		20278	SOLALERT; S14E52 ACTIVE; SEVEN QUIET
21	0400		21279	SOLALERT; S12E37 ACTIVE; SIX QUIET
	1037	BOULDER SOFLARE ONE-BRILLIANT S11E22 21/0934 DURATION APPROXIMATELY 18 MINUTES - NO UMBRAL. TENFLARE 325 FLUX UNITS ABOVE BACKGROUND 21/0934Z DURATION APPROXIMATELY 4 MINUTES		
22	0400		22280	SOLALERT; S12E22 ACTIVE; SIX QUIET
	0811	TOYOKAWA TENFLARE 270 UNITS 22/0749Z 5 MIN.		
23	0400		23281	SOLALERT; S11E09 ERUPTIVE; FIVE QUIET
24	0400		24282	SOLALERT; S11W04 ERUPTIVE; FIVE QUIET
25	0400		25283**	SOLALERT; S11W18 ERUPTIVE; FIVE QUIET
26	0400			S11W26, N13W44 ERUPTIVE; FOUR QUIET; SOLNIL
27	0400			N13W56, S11W39, S05W03 ERUPTIVE; ONE QUIET; SOLNIL
28	0400			S11W54, S05W17 ACTIVE; SOLNIL
29	0400			S12W72, S05W34 ERUPTIVE; TWO QUIET; SOLNIL
	0912	WENDELSTEIN SOFLARE CLASS 1F S13W72 DURATION 34 MINUTES		
30	0400			S12W86 ERUPTIVE; ONE QUIET; SOLNIL
31	0400			ONE QUIET; SOLNIL

* July 31 - Information not available in time for publication last issue.

31	0400			S12W08, N11E27, N08E34 ERUPTIVE; SEVEN QUIET; SOLNIL

** Incorrectly transmitted as 24283.

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

DAY	1970 SEPT.	OCT.	NOV.	DEC.	1971 PROVISIONAL JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.
1	98	63	86	91	58	77	76	59	41	49	95	70
2	104	57	82	78	62	78	90	56	46	61	97	57
3	110	43	80	78	62	68	82	58	52	60	102	58
4	115	55	78	76	69	80	70	56	59	55	95	43
5	120	75	67	88	52	65	53	65	65	43	84	48
6	133	53	89	90	52	73	47	58	64	25	79	40
7	136	72	86	91	56	75	47	59	72	24	76	48
8	125	76	69	100	66	60	46	61	70	40	70	55
9	116	78	77	96	74	37	35	43	67	27	58	59
10	103	79	78	110	70	37	34	52	73	24	42	64
11	82	75	97	120	68	62	43	46	61	26	48	60
12	76	80	89	110	75	50	63	86	62	28	58	58
13	73	84	105	90	70	63	76	100	76	22	54	58
14	76	87	117	85	67	60	65	113	73	34	61	58
15	75	87	125	84	61	69	68	126	75	17	82	53
16	68	94	133	68	65	66	76	104	81	40	93	49
17	65	84	135	63	68	62	76	98	62	44	87	52
18	75	76	135	79	86	68	79	104	43	42	75	60
19	98	83	132	95	98	87	63	110	40	23	104	62
20	114	70	128	104	104	91	50	103	40	38	91	82
21	129	69	119	101	106	91	51	98	38	35	97	107
22	109	73	105	97	105	100	55	82	30	31	116	98
23	104	89	96	85	96	87	55	55	15	49	83	106
24	129	100	77	66	99	98	51	50	16	32	119	93
25	114	111	62	75	82	93	48	44	25	64	119	91
26	107	117	65	64	88	69	49	53	35	88	90	82
27	87	142	74	53	111	66	55	50	49	106	80	49
28	85	131	89	50	99	71	49	49	65	99	74	37
29	81	139	78	59	95		44	48	56	95	64	29
30	77	126	103	74	74		56	36	58	91	72	17
31		117		68	76		52		60		69	15
MEAN	99.5	86.6	95.2	83.5	77.9	71.5	58.2	70.7	53.8	47.1	81.7	59.9

1970 yearly mean = 104.5

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

DAY	1970 SEPT.	OCT.	NOV.	DEC.	1971 JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.
1	154.1	128.7	163.3	146.4	130.5	165.6	129.2	100.5	95.3	110.1	145.1	109.7
2	156.7	125.4	159.1	148.4*	134.8	160.5	125.8	107.6	99.6	108.3	139.4	109.2
3	163.2*	126.0	153.2*	148.1	134.7	154.7	121.7	109.0	106.2	107.8	130.5	106.4
4	163.4*	137.3	148.3	154.0	140.2	148.6*	116.0*	107.7	112.6	107.3	134.7	106.4
5	162.3*	134.5	147.5	161.9*	146.1	144.7	113.7	108.3	117.9	106.2	134.6	106.9
6	161.5	128.0*	149.8	167.5	146.9	143.7	109.1	107.3*	125.6	105.0	127.0	105.0
7	164.4	133.3	150.6	166.5*	150.2	133.4	105.2	113.2	131.1	101.5	122.5	102.6
8	156.9	142.0	141.1	167.3	149.1	123.2	104.0	110.1	132.7	101.8	116.7*	108.6*
9	157.2	144.9*	141.9	171.5	152.8*	110.4	104.5	108.9	138.3	100.9	107.7	112.1
10	143.9	147.6	147.8	170.9	152.1	109.5	107.0	109.8	135.8*	97.5	108.5	109.7
11	134.4	142.8	155.6	172.6*	149.0	109.7	109.5	124.1	135.3*	96.0	108.7*	104.7
12	126.1	135.4	165.1*	178.4*	150.5	110.5	115.3	129.7	130.2	93.3	109.6	102.1
13	120.1	131.8*	179.1	164.3	148.1	113.2	112.5	139.6*	125.0	93.7	111.2	101.9
14	121.9	134.9*	186.4*	154.6	153.9	114.8	111.7	141.0	122.3	94.0	113.9	100.7
15	118.0	140.2*	200.0	154.1	153.7	117.1*	110.3	140.0*	118.0	91.3	125.6	97.3
16	118.4	134.0	193.5	146.7	156.4*	129.8	114.5	139.6	116.1	90.8	125.3	98.8
17	116.9	131.5	184.1*	146.8	155.3	132.6	116.1	139.9	112.8	93.1	121.5	103.6
18	120.7	138.5	193.1*	151.6*	160.3	130.4	114.2	137.2*	111.2	95.4	121.0	110.5
19	134.7*	139.0	185.5*	152.4*	165.8	138.5*	109.1	138.4*	109.8*	94.6	126.9*	126.2
20	146.9	137.2	173.7	155.6	169.2*	136.2*	106.3*	136.8	106.0	94.2	118.8	141.1
21	149.4	136.5	163.3*	146.3*	178.7	136.1	112.6	128.9	102.0	95.2	113.6	150.3
22	155.2	135.0	154.2	136.8*	180.6	143.6	112.4	120.5	93.4	98.4	115.7	151.2
23	161.6	149.0	142.4	132.1	182.9	143.2	108.2	117.5*	89.7	94.9	121.3	148.6
24	156.0*	161.2*	133.9	124.4	177.0	147.5	107.8	109.1*	88.9	105.3	134.5	157.6
25	155.8	168.6*	127.9	124.0	168.6*	146.4	108.3	106.0	92.3	110.1	121.4	143.5
26	155.9	187.1	129.3	122.3	164.9	143.2	107.8	104.8	93.7	115.9	122.3	138.8
27	145.0	191.8	135.1	119.8	166.7	140.0	108.5	101.7	103.9	122.5	119.0	135.3*
28	144.5*	190.3	148.9	117.3	166.2	136.6	106.2	97.5	107.0	131.1*	116.7	123.6
29	138.7	189.0	148.4	123.4	160.7		103.4	95.8	108.5	141.1	114.3	112.0
30	134.7	175.2	152.5	129.0*	163.0		100.9	94.8	110.3	148.8	116.3	103.3
31		168.6		133.3	170.1		102.9		111.6		113.2	96.3
MEAN	144.6	147.3	158.5	148.0	157.4	134.4	110.8	117.5	112.4	104.9	121.2	116.9

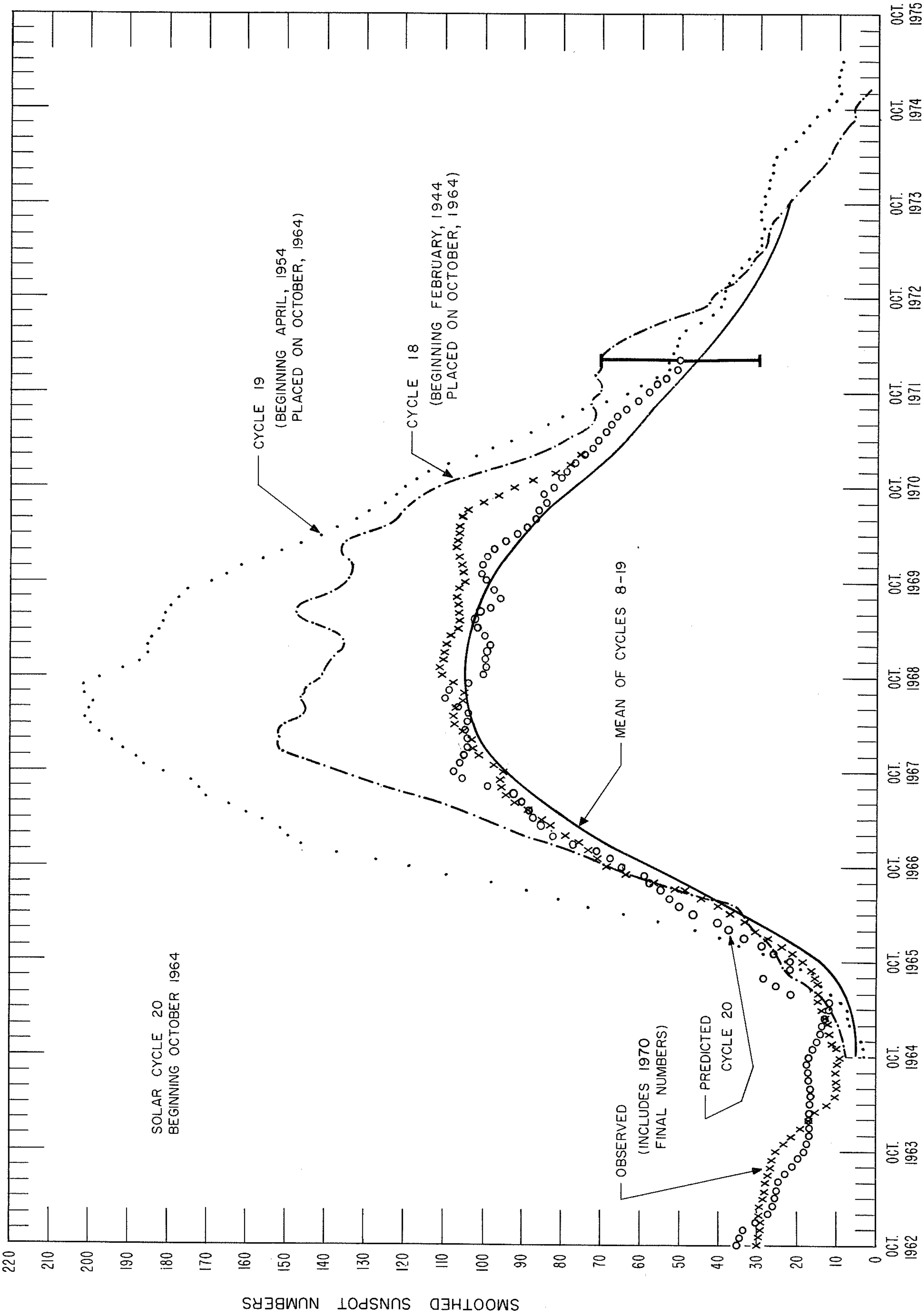
* adjusted for burst

DAILY SOLAR INDICES

AUGUST 1971

AUG. 1971	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.							
			R_Z	$R_{A'}$		AFCRL 15400	AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 245
01	213	22	70	68	106.5	514	230	173	109.7	103.5	69.8	51.4	13.2
02	214	23	57	57	106.0	517	230	170	109.2	102.0	65.0	49.2	13.0
03	215	24	58	49	103.3	508	229	166	106.4	99.3	68.6	50.3	13.4
04	216	25	43	39	103.4	517	227	164	106.4	98.3	66.0	52.2	13.4
05	217	26	48	31	103.9	517	230	167	106.9	99.5	68.0	49.4	14.0
06	218	27	40	27	102.0	517	227	166	105.0	99.9	61.9	47.2	14.3
07	219	1	48	42	99.8	526	230	164	102.6	97.1	60.4	48.8	13.4
08	220	2	55	63	105.6*	517	232	179	108.6*	106.1	64.7	48.3	19.8
09	221	3	59	66	109.0	521	236	175	112.1	104.8	66.3	52.2	40.9
10	222	4	64	64	106.8	515	229	169	109.7	102.0	64.4	48.8	14.2
11	223	5	60	64	101.9	513	230	165	104.7	99.4	66.3	49.8	13.8
12	224	6	58	67	99.4	517	227	161	102.1	96.3	64.3	50.4	11.6
13	225	7	58	62	99.3	520	229	162	101.9	96.3	64.9	49.8	11.6
14	226	8	58	49	98.1	517	227	161	100.7	94.1	64.6	49.7	12.3
15	227	9	53	47	94.8	520	225	161	97.3	93.0	63.8	47.7	11.8
16	228	10	49	52	96.4	511	228	161	98.8	93.2	61.9	46.6	12.2
17	229	11	52	59	101.1	518	229	165	103.6	97.9	63.5	48.0	12.4
18	230	12	60	69	107.8	520	241	182	110.5	106.1	66.9	51.2	15.0
19	231	13	62	74	123.2	524	255	205	126.2	118.9	71.7	54.9	21.9
20	232	14	82	89	137.8	521	260	223	141.1	133.8	80.4	68.4	73.3
21	233	15	107	97	146.9	523	263	234	150.3	140.7	82.7	71.1	9.8
22	234	16	98	105	147.8	526	248	223	151.2	141.3	83.4	63.2	44.2
23	235	17	106	96	145.4	527	253	226	148.6	140.5	83.8	59.3	81.7
24	236	18	93	98	154.2	525	259	237	157.6	150.6	85.7	66.4	82.5
25	237	19	91	99	140.4	520	245	209	143.5	134.3	81.6	57.0	40.8
26	238	20	82	71	135.9	516	243	200	138.8	128.0	76.4	55.0	16.7
27	239	21	49	60	132.5*	520	237	199	135.3*	129.3	80.7	55.9	23.5
28	240	22	37	46	121.2	518	230	189	123.6	118.7	73.7	53.2	12.8
29	241	23	29	29	109.8	523	232	176	112.0	105.5	66.2	50.9	14.3
30	242	24	17	14	101.4	524	227	163	103.3	96.9	63.9	48.4	11.8
31	243	25	15	12	94.5	514	223	160	96.3	90.3	58.8	47.2	11.7
MEAN			59.9	60.2	114.1	519	236	182	116.9	110.2	69.7	53.0	32.8

* 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	91.9	87.2	81.6
1971	77.8	75.2	72.7 (3)	69.8 (5)	66.5 (7)	64.1 (8)	62.6 (10)	60.8 (12)	58.5 (14)	56.2 (16)	54.6 (17)	52.9 (18)
1972	51.3 (19)	50.1 (20)	48.9 (19)	47.8 (19)	46.6 (19)	45.2 (20)	43.0 (20)	40.5 (21)	38.7 (23)	37.7 (25)	36.8 (25)	35.6 (26)
1973	34.5 (26)	33.4 (26)	32.3 (25)	30.9 (25)	29.7 (25)	28.6 (24)	27.7 (23)	27.2 (23)	26.5 (23)	25.4 (22)	24.3 (21)	23.2 (20)
1974	22.2 (19)	20.9 (20)	19.9 (20)	19.1 (20)	18.7 (20)	17.9 (20)	16.9 (20)	15.7 (19)	14.5 (18)	13.4 (18)	12.3 (17)	11.5 (17)
1975	11.3 (16)	11.0 (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.

SOLAR FLARES

PARTIAL LISTING

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

AUGUST 1971

OBSERVATORY	DATE 1971 AUG	OBSERVED UT START	OBSERVED UT END	OBSERVED UT MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION CENTRAL DISTANCE	LOCATION MCMATH PLAGE REGION	LOCATION 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
WEND	01	0826E	0846		S11	W25	.500	11444	30.5	20D	1N		P		3.09				
ATHN	01	0835	0846	0839	S13	W25	.517		30.5	11	SN	2	C		.50				D
ARCE	01	0835E	0846		S13	W27	.541		30.3	11D	SF		C	0840	.58	.70			
MONT	01	0838	0843	0839	S12	W25	.508		30.5	5	SN		C	0839	.52				
TEHR	01	0838	0845	0840	S13	W27	.541		30.3	7	SN		C		.19				D
TEHR	03	0443	0543	0502	N19	W28	.504	11451	1.1	60	1B	3	C		2.19				FS
ATHN	03	0449	0524	0452	N18	W30	.525		1.0	35	SN	2	C		.66				
ATHN	03			0503							SB				1.49				FU
MANI	03	0452	0517	0505	N18	W28	.498		1.1	25	SB	2		0505	1.65	1.90			
TEHR	03	1039	1110	1049	S08	E79	.985		9.4	31	SB		C		.38				F
WEND	03	1040E	1132		S05	E74	.964	11457	9.0	52D	2N		P		8.25				
RAMY	03	1042	1110D	1047	S07	E80	.987		9.4	28D	1B	2	C		1.13				F
MONT	03	1044	1056	1046	S08	E80	.988		9.4	12	SN		C	1046	1.13				
ATHN	03	1044E	1110	1045	S10	E85	.998		9.8	26D	SB	3	C		.83				
ATHN	03			1049							1B				.99				D
BOUL	03	1350	1456	1359	S 9	E77	.979		9.4	66	1N	2	C	1359	.75	-0.00			
RAMY	03	1354	1440	1400	S07	E78	.981		9.4	46	1N	2	C		1.44				F
ATHN	03	1356E	1418	1358	S10	E78	.983		9.4	22D	1N	3	C		.99				D
TEHR	03	1357	1415	1401	S08	E78	.982		9.4	18	SB	2	C		.17				F
MONT	03	1358	1412	1359	S08	E78	.982	11457	9.4	14	1N		C	1359	2.58				
RAMY	03	1635	1711	1637	S08	E75	.971		9.3	36	SN	1	C		.26				D
BOUL	03	1635	1707	1641	S10	E75	.972		9.3	32	SN	2	C	1641	.43	-0.00			
ATHN	03	1638	1705	1641	S10	E78	.983		9.5	27	SN	1	C		.50				D
LOCK	03	1640	1710	1655	S 8	E75	.971		9.3	30	1N		C						V
PALE	04	0149	0220	0156	S07	E70	.946	11457	9.3	31	1B	3	C		2.17				HD
ATHN	05	0842	0902	0844	S13	E63	.909		10.1	20	SN	2	C		.50				D
TEHR	05	0842	0910	0846	S11	E63	.906		10.1	28	SN	3	C		.36				FD
MONT	05	0844E	0918	0844	S11	E64	.913	11457	10.2	34D	1N		C	0844	3.40				
ONDR	05	0845E	0852		S14	E58	.874		9.7	7D	SB		V	0846			2.60		CDJR
ARCE	05	0848E	1000D		S10	E61	.890	11457	9.9	72D	1F		C	0925	1.09	2.30			K
MONT	05	0946	1000	0949	S11	E64	.913		10.2	14	SN		C	0949	1.55				
ONDR	05	0953	1009		S12	E60	.886	11457	9.9	16	1N		V	0953			2.30		CJ
TEHR	05	0955	1015	1000	S11	E63	.906		10.1	20	SN	3	C		.36				D
MONT	05	1114	1152	1138	S11	E63	.906		10.2	38	SN		C	1138	2.27				
ATHN	05	1132	1153	1135	S12	E63	.908		10.2	21	SF	2	C		.99				D
ONDR	05	1141E	1222		S12	E58	.870	11457	9.8	41D	1N		V	1205			2.30		EJK
MONT	05	1202	1228	1206	S11	E63	.906		10.2	26	SN		C	1206	1.86				
ATHN	05	1202	1225	1209	S12	E64	.915		10.3	23	SN	2	C		.66				D
RAMY	05	1205	1241	1208	S13	E61	.895		10.1	36	SN	2	C		.57				D
CAPF	05	1210	1220		S12	E61	.893	11457	10.1	10	1N		P	1215	2.06				H
ATHN	06	0745	0822	0748	S26	W18	.596		5.0	37	SN	2	C		.50				D
MONT	06	0747	0755	0750	S28	W18	.620		5.0	8	SN		C	0750	2.27				
ARCE	06	0800E	0849D		S25	W17	.577		5.1	49D	SF		C	0805	.68	.80			
TEHR	06	0810E	1000	0813	S27	W17	.601		5.1	110D	SN		C		.67				UF
WEND	06	0812E	0835		S26	W18	.596	11452	5.0	23D	1N		P		4.13				
ONDR	06	0813E	0837		S12	E48	.778	11457	9.9	24D	2F		V	0829			1.90		CHJK
TEHR	06	1105	1223	1118	S07	E05	.242		6.8	78	1N		C		3.19				HF
ATHN	06	1107	1146	1113	S07	E07	.256		7.0	39	1N	2	C		3.30				F
WEND	06	1108	1212	1122	S06	E03	.216	11455	6.7	64	3N		P		2.06				
CAPF	06	1108	1125		S07	E05	.242	11455	6.8	17	2N		P	1112	5.16	5.25			G
MONT	06	1109	1138	1123	S07	E05	.242	11455	6.8	29	1N		C	1123	3.40				
TEHR	09	1237	1312	1240	S07	W38	.645		6.7	35	SN		C		.55				F
TEHR	09			1251							SN				1.00				
ATHN	09	1239	1310	1250	S07	W36	.620		6.8	31	SN	2	C		.99				D
MONT	09	1239	1308	1252	S07	W37	.633	11455	6.8	29	1N		C	1252	2.58				
BOUL	09	1240	1309	1252	S08	W36	.624		6.8	29	SN	2	V						
RAMY	09	1240	1320	1251	S07	W36	.620		6.8	40	SF	3	C		1.13				D
LOCK	09	1817	1855	1828	S13	E 4	.337		10.1	38	SF		C						
PALE	09	1819	1901	1824	S14	E05	.357	11457	10.1	42	1N	2	C		2.17				FZ
BOUL	09	1821	1855	1825	S12	E04	.321		10.1	34	SN	2	V						
ONDR	11	0517	0546D	0519	S14	W15	.427	11457	10.1	29D	1N		V	0519			2.70		CJ
ATHN	11	0521E	0552	0521	S16	W13	.436		10.2	31D	SF	2	C		.50				D
ONDR	11	1428	1529D		S10	W24	.485	11457	9.8	61D	2N		V	1443			2.60		CFJ
RAMY	11	1429	1525	1442	S12	W21	.467		10.0	56	1B	3	C		2.42				F
TEHR	11	1429	1452D	1432	S12	W23	.490		9.9	23D	SN	3	C		2.01				FD
MONT	11	1430	1446D	1442	S11	W21	.457	11457	10.0	16D	1B		C	1442	4.54				
ATHN	11	1434E	1449D	1434	S12	W17	.423		10.3	15D	SB	2	C		.99				
ATHN	11			1444							1B				2.15				FU
LOCK	11	1525E	1555	1525E	S12	W25	.514		9.8	30D	SN		C						
TEHR	13	0632	0740	0648	S08	W50	.787		9.5	68	1B		C		1.80				UF
ONDR	13	0633E	0651		S08	W51	.797	11457	9.4	18D	2F		V	0634			2.20		CH
TEHR	13	0635	0743	0642	S07	W43	.707		10.0	68	SN		C		.68				UF
WEND	13	0636	0710		S06	W50	.782	11457	9.5	34	1N		P		5.16				

SOLAR FLARES

AUGUST 1971

OBSERVATORY	DATE 1971 AUG	OBSERVED UT START	OBSERVED UT END	OBSERVED UT MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. 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
ATHN	13	0658	0722	0701	S13	W39	.687		10.4	24	SF	3	C		.50				D
MONT	13	0700E	0736	0704	S06	W46	.738	11457	9.8	36D	1N		C	0704	5.16				
ATHN	13	0702E	0735	0705	S09	W55	.838		9.2	33D	SN	3	C		.99				F
MANI	13	0703E	0736	0709	S09	W50	.790	11457	9.5	33D	1N	2		0709	1.65	2.66			
MANI	14	0534	0546	0536	N11	E32	.529		16.6	12	SN	2		0536	.21	.24			
ATHN	14	0535E	0604	0538	N08	E34	.556		16.8	29D	SF	2	C		.33				D
ONDR	14	0536E	0614		N08	E30	.497	11473	16.5	38D	1F		V	0538			1.80		CGJL
ARCE	17	0800E	1000D		S12	E90	1.000	11482	24.1	120D	1N		C	0823	1.13				IT
KODA	18	0428E	0445	0430	S16	E78	.986	11482	24.0	17D	1N		V	0428	3.25	3.20	1.64		CDK.
MONT	18	1233	1256	1236	S11	E75	.973	11482	24.1	23	1N		C	1236	2.58				
ONDR	18	1346E	1359		S14	E70	.954	11482	23.8	13D	1N		V	1347			2.20		CH
MONT	18	1417	1444	1428	S11	E74	.969	11482	24.1	27	1N		C	1428	2.27				
ATHN	18	1426	1435	1428	S13	E73	.967		24.1	9	SF	2	C		.33				D
KODA	19	0303E	0326	0303	S12	E63	.909	11482	23.9	23D	1N		P	0312	3.30	3.30	3.28		EHK
BUCA	19	0748	0817	0758	S12	E61	.895		23.9	29	SN		C	0758	.24	.50			
TEHR	19	0753	0807	0758	S14	E62	.906		24.0	14	SN		C		.09				D
MANI	19	0755E	0805	0759	S12	E60	.887		23.8	10D	SN	2		0759	.41	.79			
ATHN	19	0758E	0808	0800	S12	E63	.909		24.1	10D	SN	2	C		.83				D
ARCE	19	0759E	0759D		S13	E66	.930		24.3		SN		P	0759	.25				D
ARCE	19	0759E	0854		S11	E60	.885	11482	23.8	55D	1F		C	0825	1.29	2.80			F
BUCA	19	0812	0859	0825	S10	E61	.891		23.9	47	SN		C	0825	.65	1.50			
ONDR	19	0818	0850	0822	S12	E57	.864	11482	23.6	32	1N		V	0822			3.23		CHJ
ATHN	19	0820E	0840	0822	S12	E63	.909		24.1	20D	SN	2	C		.83				D
TEHR	19	0820	0844	0826	S11	E59	.878		23.8	24	SB		C		.55				F
MONT	19	0821	0845	0833	S10	E60	.884		23.8	24	SN		C	0833	1.13				
MANI	19	0823E	0842	0826	S12	E59	.880		23.8	19D	SB	2		0826	.83	1.58			
ONDR	19	1413	1428	1423	S15	E59	.886	11482	24.0	15	1F		V	1423			2.30		CJ
ONDR	19	1505	1512	1508	S12	E53	.829	11482	23.6	7	1F		V	1508			2.40		CJ
LOCK	19	1604	1613	1607	S11	E55	.844		23.8	9	SN		C						
RAMY	19	1604	1620	1606	S11	E57	.861		23.9	16	SN	3	C		.72				D
ATHN	19	1605E	1610	1605	S13	E55	.849		23.8	5D	SN	2	C		.50				D
MONT	19	1606	1610	1607	S10	E54	.832		23.7	4	SN		C	1607	2.06				
ONDR	19	1613E	1637D		S12	E52	.819	11482	23.6	24D	1N		V	1632			3.00		BFHJK
ARCE	20	0801E	1000D		S06	E87	.999		26.9	119D	SN		C	0825	.98				FK
ONDR	20	0824	0904		S05	E83	.994	11484	26.6	40	1N		V	0825			2.80		ACJK
CAPF	20	1200	1220		S06	E83	.994	11484	26.7	20	1F		P	1214	1.75				
MONT	20	1201	1216	1206	S06	E83	.994		26.7	15	SN		C	1206	1.13				
ATHN	21	0859	0913	0904	S11	E26	.522		23.3	14	SN	3	C		.66				DH
MANI	21	0900	0914	0904	S11	E23	.486		23.1	14	SN	2		0904	.72	.83			
BUCA	21	0900	0913		S11	E25	.510		23.3	13	SB		C	0904	.32	.30			
ONDR	21	0900	0915		S11	E24	.498	11482	23.2	15	1N		V	0903			3.40		CFHJK
BUCA	21	0902	0920		S11	E34	.619		23.9	18	SN		C	0902	.40	.50			
TEHR	21	0903	0915	0907	S10	E22	.464		23.0	12	SB		C						HF
MONT	21	0906E	0912	0909	S10	E26	.514		23.3	6D	SN		C	0909	1.13				
TEHR	21	0928	0950	0934	S09	E21	.443		23.0	22	SB		C						D
BUCA	21	0930	0947	0936	S08	E27	.512	11482	23.4	17	1B		C	0936	4.26	4.90			E
ONDR	21	0931	0949	0935	S09	E26	.506	11482	23.3	18	2B		V	0935			10.20		CFHJR
ATHN	21	0932	0951	0936	S10	E25	.501		23.3	19	SB	3	C		1.98				FH
MANI	21	0934	0943	0937	S08	E25	.485	11482	23.3	9	1B	2		0937	2.58	2.92			
TEHR	21	0935	0951	0937	S08	E22	.446		23.0	16	1B		C		2.83				HF
ATHN	21	1006	1022	1010	S10	E25	.501		23.3	16	SB	3	C		.66				FH
BUCA	21	1010	1025	1013	S09	E28	.532	11482	23.5	15	1N		C	1013	4.26	4.80			E
MONT	21	1011	1023	1013	S08	E26	.498		23.4	12	1N		C	1013	3.40				H
TEHR	21	1011	1020	1014	S08	E22	.446		23.1	9	SB		C						HF
ONDR	21	1013E	1021		S09	E26	.506	11482	23.4	8D	2B		V	1015			6.80		CHJR
TEHR	22	0301	0319	0305	S08	E14	.349		23.2	18	SB		C		.83				FH
MANI	22	0302E	0318	0306	S09	E15	.372	11482	23.3	16D	1B	2		0306	2.06	2.20			
PALE	22	0317E	0336D	0318	S08	E15	.361		23.3	19D	SN	2	C		1.18				D
PALE	22			0328							SB				1.44				
TEHR	22	0327	0405	0344	S12	E14	.399		23.2	38	1B		C		2.19				FH
MANI	22	0337	0400	0342	S08	E15	.361	11482	23.3	23	1B	2		0342	3.09	3.27			
TEHR	22	0713	0819	0727	S09	E12	.341		23.2	66	SN		C		.09				
TEHR	22			0738							SB				.64				
TEHR	22			0752							1B				3.17				FH
ATHN	22	0726	0817	0732	S09	E12	.341		23.2	51	SN	2	C		.99				
ATHN	22			0752							1B				2.48				FU
MANI	22	0732E	0814	0752	S09	E12	.341	11482	23.2	42D	1B	2		0752	2.58	2.72			
ONDR	22	0736E	0815D		S09	E11	.331		23.1	39D	3B		V	0751			7.20		CHJKRV
WEND	22	0746E	0814	0753	S09	E08	.306	11482	22.9	28D	3N		P		7.22				
BUCA	22	0747	0820		S10	E09	.328		23.0	33	SN		C	0751	1.31	1.40			
ARCE	22	0750E	0816		S10	E10	.336	11482	23.1	26D	2F		C	0751	5.84	6.20			FH
TEHR	23	0717	0739	0727	S09	E13	.351		24.3	22	SN	4	C		.77				UH

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OBSERVATORY	DATE 1971 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
ATHN	23	0720E	0743	0724	S10	E14	.374		24.4	23D	SN	3	C		.99				D
MONT	23	0721	0741	0728	S10	E13	.364		24.3	20	SN		C	0728	1.13				
ATHN	23	0729	0737	0731	S10	E05	.304		23.7	8	SF	3	C		.17				D
CAPF	23	0730	0744		S11	E11	.359	11482	24.1	14	1N		P	0732	2.48	2.64			
BOUL	23	2018	2050D	2019	S 7	W 8	.277		23.2	32D	SN	2	C	2019	.65	.66			
LOCK	23	2023	2100	2032	S 8	W 9	.300	11482	23.2	37	1N		C						
RAMY	23	2023	2056	2031	S08	W08	.292		23.2	33	SB	2	C		1.50				D
PALE	23	2025E	2057	2029	S08	W07	.284		23.3	32D	SN	2	C		1.27				DS
TEHR	25	0600	0629	0603	S13	W30	.586		23.0	29	SN		C		.28				F
TEHR	25			0612							SN				.45				
ATHN	25	0600	0628	0607	S12	W30	.579		23.0	28	SN	3	C		.50				DH
ONDR	25	0613E	0620		S13	W30	.586	11482	23.0	7D	1F		V	0615			1.40		J
RAMY	25	1238	1254	1240	S16	W30	.610		23.3	16	SF	3	C		.72				D
ATHN	25	1239	1252	1242	S17	W31	.629		23.2	13	SN	3	C		.33				D
MONT	25	1240	1247	1241	S15	W30	.602		23.3	7	SN		C	1241	1.13				H
TEHR	25	1240	1253	1244	S16	W30	.610		23.3	13	SN		C		.83				F
ONDR	25	1241	1251		S17	W31	.629	11482	23.2	10	1F		V	1245			1.90		CHJ
TEHR	27	0306	0321	0309	S14	W38	.685		24.3	15	SB		C		.92				DH
MANI	27	0308	0327	0309	S14	W39	.696	11484	24.2	19	1B	2		0309	1.96	2.67			
KODA	27	0312E	0317	0312	S13	W37	.668		24.4	5D	SN		P	0314	.87	.90	3.68		D
PALE	27	0312E	0323	0312	S15	W37	.680		24.4	11D	SB	3	C		.91				F
TEHR	27	1146	1214	1158	S04	W15	.319		26.4	28	SN		C		.55				F
MONT	27	1152	1212	1157	S05	W15	.329	11484	26.4	20	1B		C	1157	2.58				H
ATHN	27	1152	1245	1156	S05	W15	.329		26.4	53	SN	3	C		.66				
ATHN	27			1224							SB				1.32				FH
RAMY	27	1154	1210	1156	S03	W15	.310		26.4	16	SN	3	C		.84				D
ONDR	27	1201E	1206D		S05	W14	.317		26.5	5D	SF		V	1203			2.10		E
TEHR	27	1219	1248	1223	S06	W17	.365		26.2	29	SB		C		1.09				F
MONT	27	1220	1242	1223	S05	W15	.329		26.4	22	1B		C	1223	4.54				
RAMY	27	1221	1241	1224	S05	W16	.342		26.3	20	1N	3	C		2.48				F
RAMY	27	1614	1640	1617	S05	W17	.356		26.4	26	SN	2	C		1.03				D
ATHN	27	1615	1631D	1620	S05	W19	.382		26.3	16D	SN	2	C		1.32				F
LOCK	27	1615	1646	1618	S 5	W20	.396		26.2	31	1N		C						H
MONT	27	1617	1635D	1619	S15	W19	.485		26.3	18D	1B		C	1619	2.58				
BOUL	27	1617	1645	1619	S18	W05	.431		27.3	28	SN	2	V						
PALE	27	1628E	1636D	1629	S05	W20	.396		26.2	8D	SN	3	C		.45				F
MANI	28	0041	0159	0058	S11	W61	.894	11482	23.5	78	1B	2		0058	1.55	3.10			
MANI	28	0258E	0315	0302	S05	W23	.438		26.4	17D	SN	2		0302	.62	.68			
KODA	28	0305	0322	0307	S05	W22	.424	11484	26.5	17	1N		V	0305	2.83	2.80	1.36		CHI
TEHR	28	0306E	0308D	U	S04	W21	.402		26.6	2D	SN	1	C						D
TEHR	28	0934E	0936D	U	S16	W67	.941		23.4	2D	SF	2	C						D
ARCE	28	0935E	1023D		S17	W68	.948		23.3	48D	SN		C	1002	.86				
ATHN	28	0950	1014	1000	S16	W68	.946		23.3	24	1N	3	C		1.32				DH
MONT	28	0954	1008	0959	S18	W70	.959		23.2	14	SN		C	0959	2.06				
ONDR	28	0958E	1009D		S16	W70	.956	11482	23.2	11D	1F		V	1005			2.40		CHJ
RAMY	28	1046	1108	1049	S06	W28	.513		26.3	22	SN	2	C		.56				D
ATHN	28	1047	1113	1049	S05	W30	.534		26.2	26	SN	3	C		.99				D
MONT	28	1047	1106	1050	S05	W29	.521	11484	26.3	19	1B		C	1050	2.58				
TEHR	28	1051E	1117	U	S05	W28	.507		26.4	26D	SB		C		.55				F
TEHR	28	1126	1208	1135	S16	W66	.935		23.5	42	SN	3	C		.28				D
ATHN	28	1132	1144	1135	S16	W68	.946		23.4	12	1N	3	C		1.32				F
RAMY	28	1132	1151	1136	S16	W69	.951		23.3	19	SN	3	C		1.21				D
MONT	28	1132	1145	1136	S18	W71	.963		23.2	13	SN		C	1136	2.06				
WEND	28	1133E	1146		S13	W67	.937	11482	23.5	13D	1N		V		4.13				
WEND	29	0912	0950		S11	W81	.992	11482	23.3	38	1F		V		3.09				
TEHR	29	0919E	0923	0920	S13	W84	.997		23.1	4D	SF	2	C		.19				D
ARCE	29	0919	0922	0919	S14	W86	.999		22.9	3	SN		C	0916	.15				
ATHN	29	0936	0949	0940	S11	W83	.995		23.2	13	SN	2	C		.66				D
WEND	29	0945	1019		S13	W72	.963	11482	24.0	34	1F		V		3.09				
TEHR	29	0951E	1025	0954	S15	W76	.980		23.7	34D	SN	3	C		.19				D
WEND	29	0953	1005		S13	W72	.963		24.0	12	SN								
ATHN	29	1528	1548	1534	S06	W46	.740		26.2	20	SN	2	C		.50				DH
WEND	29	1529	1547		S05	W43	.702	11484	26.4	18	1N		P		3.09				
LOCK	29	1530	1545	1532	S 6	W45	.729		26.3	15	SN		C						
BOUL	29	1537	1548	1537	S06	W46	.740		26.2	11	SF	2	V						
ARCE	30	0818E	0950D		S12	W90	1.000	11482	23.6	92D	2N		C	0824	4.76				H
LOCK	30	2029	2115	2035	S 8	W81	.991		24.8	46	2N		C						
PALE	30	2029	2053	2035	S11	W90	1.000		24.1	24	SN	3	C						F

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

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01 0106 N19 E03	01 0520 S13 W25	01 0520 S13 W24	01 0610 S07 E72	01 0733E S13 W23	01 0733 S12 W24
01 0800 N24 W90	01 0848 S17 W23	01 0848 S17 W23	01 0850 S17 W23	01 0905E S18 W21	01 0934 S14 W73
01 0935 S13 W78	01 1152 S12 W26	01 1152 S07 W23	01 1153 S12 W27	01 1245 S14 W27	01 1246 S11 W24
01 1328 S13 W29	01 1329 S12 W29	01 1329E S12 W28	01 1525 S13 W29	01 1525 S13 W30	01 1541 N09 W76
01 1545 S12 W77	01 1546 S12 W76	01 1549E S12 W79	02 0002E S27 E38	02 0045 S12 W36	02 0114 N08 E03
02 0546 S02 E62	02 0749E S10 W90	02 0758 N07 E03	02 0901 N07 E03	02 0911 S11 W90	02 1058 N10 W05
02 1100 N09 W07	02 1100 S11 W07	02 1101 N10 W05	02 1313 S26 E32	02 1611 S10 W90	02 1841E S09 E54
02 2215 S25 E26	02 2256E S26 E27	02 2300E S28 E25	03 0122 S05 E49	03 0154 S26 E27	03 0258 S07 E87
03 0301 S08 E88	03 0438 N14 W08	03 0440 N13 W08	03 0547 S12 W49	03 0547 S07 E86	03 0551 S12 W50
03 0556 S07 E90	03 0725 S09 E84	03 0732E S09 E90	03 0858 S12 W49	03 0900 S11 W49	03 0930E S06 E80
03 0935E S05 E48	03 0935 S04 E47	03 0939 S06 E49	03 1000E N02 E80	03 1022 S08 E46	03 1154 S09 E79
03 1205 S08 E47	03 1227 S07 E78	03 1230E S10 E79	03 1355 S06 E47	03 1356 S08 E48	03 1521 S10 E78
03 1611E N19 W32	03 1615 S17 W54	03 1616 S18 W55	03 1617 S18 W55	03 1839 S09 E77	03 1848 S10 E75
03 1850 S08 E75	03 2031 S26 E10	03 2305 S26 E09	03 2310E S27 E12	04 0008 S09 E71	04 0018 S07 E71
04 0018 S07 E71	04 0107E S27 E15	04 0109 S07 E72	04 0123E S26 E12	04 0320 S08 E68	04 0326 S09 E69
04 0329E S09 E69	04 0409 S26 E13	04 0426 S26 E10	04 0427 S27 E07	04 0428 S26 E12	04 0428 S27 E09
04 0447 S27 E11	04 0546 N21 W23	04 0619 S12 E82	04 0621 S12 E80	04 0621E S10 E74	04 0638 S12 E65
04 0704 S07 E68	04 0800E S06 E69	04 0818 N11 W24	04 0835E S08 E65	04 0840 S10 E68	04 0844 S08 E67
04 1037 S12 E74	04 1118 S12 E67	04 1120 S10 E68	04 1121 S12 E69	04 1123E S10 E66	04 1147 S07 E65
04 1347 S10 E68	04 1347 S13 E68	04 1357E S08 E64	04 1652 S04 E27	04 1658 S08 E31	04 1659 S10 E30
04 1751 N11 W35	04 1751 N11 W35	04 1751 N10 W38	04 1812 N10 W37	04 1904 S07 E70	04 1921E S08 E71
04 2130 S25 E 1	05 0242 S07 E56	05 0242 S07 E56	05 0410E S11 E55	05 0420 S11 E66	05 0420 S10 E60
05 0421E S09 E67	05 0446 S04 E19	05 0446 S04 E21	05 0459 S28 E01	05 0508 S13 E65	05 0511 S12 E64
05 0600 S27 W01	05 0603 S28 W01	05 0746 S11 E65	05 1023 S13 E63	05 1038 S12 E80	05 1237 S12 W78
05 1516 S12 E80	05 1545 N08 W48	05 1545 N08 W48	05 1550E N09 W47	05 1620 S12 E80	05 1622 S12 E77
05 1623 S11 E71	05 1625E S10 E59	05 1625E S08 E59	05 1625E S09 E70	05 1627 S12 E62	05 1717 S08 E47
05 1720 S07 E48	05 1720 S08 E46	05 1733 N04 W45	05 1825 S09 E59	05 2209 S10 E72	06 0259 N10 W54
06 0355E S07 E11	06 0403 N09 W55	06 0404 N08 W55	06 0404 N08 W55	06 0412 S11 E51	06 0415 S08 E08
06 0419 N09 W55	06 0447 S27 W15	06 0450 S27 W17	06 0515 S07 E09	06 0603 S11 E40	06 0604 S11 E39
06 0707 S12 E67	06 0717 N05 W52	06 0822 N07 W51	06 0842 S27 W17	06 0855E S26 W18	06 1112 S15 W50
06 1115 S16 W50	06 1443 S12 E49	06 1445 S16 W51	06 1552 N06 W58	07 0709 N08 W70	07 0807 N10 W70
07 0831 S06 E26	07 0850 N10 W34	07 0920 S07 E25	07 0921 S07 E23	07 1452 S08 E23	07 1453 S08 E22
07 1726 S08 E21	07 1727 S07 E20	07 1727 S 6 E20	07 1728 S08 E19	07 2014 S12 E31	07 2015 S13 E32
07 2122 S10 E25	07 2122 S10 E22	07 2123 S10 E29	08 0030 S07 E22	08 0200 N10 W33	08 0308 S12 E27
08 0436 S13 E27	08 0437 S12 E27	08 0455 N12 W06	08 0511 N12 W05	08 0607 N12 W06	08 0749 N11 W38
08 0817 N12 W07	08 1009 S14 E22	08 1041 S14 E17	08 1041 S14 E21	08 1041 S12 E20	08 1250 N18 E73
08 1555 S07 W25	08 1555 S07 W25	08 1555 N14 W12	08 1558 N13 W12	08 1610 S 5 W27	08 1610 S 5 W25
08 1611 S06 W25	08 1649 S25 W50	08 1655 N11 W42	08 1902 N12 W13	09 0650 S15 W90	09 0650 S15 W90
09 0655 N11 W21	09 1203 N05 E68	09 1203 N05 E68	09 1342 N12 W25	09 1527 N12 W27	09 1539 N13 W25
09 1645 S 6 W40	09 1651E S05 W37	09 1654 S08 W37	09 1805 S13 E05	10 0307 S13 W01	10 0636 S10 W09
10 0637 S12 W11	10 0800E N09 E86	10 0846 S07 W48	10 1114E N19 E45	10 1340 N12 E90	11 0311 N21 E36
11 0355 N11 W47	11 0513 S13 W23	11 0602 N12 W48	11 0617E N27 E06	11 0635 N10 W83	11 0715 N26 E06
11 0835 N10 W87	11 1157 N19 E32	11 1206E N19 E32	11 1314 N12 W52	11 1352 N12 E77	11 1355E N10 E80
11 1703 S07 W30	11 1858 N08 E35	11 1900 N06 E35	12 0911 N07 E25	12 0919E N12 E25	12 0931 N08 E66
12 0933E N08 E68	12 0934E N10 E70	12 1346E S07 W41	12 1402 N08 E22	12 1402 N08 E35	12 1402 N09 E25
12 1404 S09 W40	12 1406 S08 W40	12 1407 S07 W41	12 1409 S08 W34	12 2122 N12 E50	12 2125 N09 E41
12 2314 N 8 E52	12 2315 N11 E50	13 0428E S07 W50	13 0429 N05 E17	13 0545E N20 E05	13 0551 N14 E13
13 0552 N15 E13	13 0553 N22 E07	13 0555E N13 E12	13 0614 S07 W51	13 0614 S07 W51	13 0941 N19 E06
13 0948 N20 E06	13 1023 N20 E05	13 1025 N10 W78	13 1030 N11 W78	13 1035E N13 W80	13 1036E N10 W75
13 1109 S07 W54	13 1110 S07 W54	13 1110 S09 W53	13 1225 N18 E06	13 1244 S07 E75	13 1245E S10 E75
13 1245 S07 E76	13 1656 N10 E38	13 1736 N13 W84	13 1736 N11 W82	13 1736 N13 W81	13 1754 N10 E38
14 0111 N21 W28	14 0407 N04 E01	14 0458 N11 E32	14 0558 N11 E31	14 0644 N11 E31	14 0651E N10 E31
14 0656E N08 E33	14 0830E N12 W90	14 1045 S14 E18	14 1047 S15 E17	14 1129E S16 E17	14 1139 S13 W60
14 1144 S13 W57	14 1458 N10 E75	14 1542 N11 E26	14 1545 N10 E26	14 1603 N10 E26	15 0625 N21 W18
15 0815E N18 E81	15 0829 N17 E88	15 0831E N15 E85	15 1425 N23 W23	15 1429E N22 W22	15 2043E N14 W21
15 2303 S13 W79	16 0058 N20 W29	16 0107E N19 W30	16 0236 S14 W06	16 0236 S14 W06	16 0507E S06 W90
16 0540 S06 W90	16 0705E S06 W90	16 0708 S03 W24	16 0811E S07 W90	16 0818E N18 E80	16 0818 N19 E80
16 0819E N16 E80	16 0858 S15 W10	16 1020E S06 W90	16 1636 N14 E48	16 2020 N08 W04	16 2049 N12 E13
17 0139E N13 E07	17 0355 N09 E00	17 0510E N13 E08	17 0649 N14 E06	17 0650E N13 E07	17 1333E N13 E03
17 1333E N12 E04	17 1730 S15 W28	17 2025 N17 W 5	17 2027E N17 W05	17 2227 S14 W29	17 2228 S14 W31
17 2241 S05 E14	18 0218E S13 E76	18 0257E S12 E80	18 0529 S13 E77	18 0630 S12 E75	18 0658E N11 W09
18 0800E S15 E80	18 0846 S11 E77	18 0924 S17 W36	18 0931E S17 W33	18 1010 S13 E77	18 1018E S13 E75
18 1211E N13 W65	18 1212E N14 W63	18 1213 N14 W63	18 1228 N18 E55	18 1436 S07 E05	18 1522E S13 E70
18 1533 S13 E73	18 1534 S11 E76	18 1550 S12 E70	18 2333E S10 E70	18 2344 S11 E65	18 2347 S11 E62
19 0344E S13 E60	19 0347 S11 E63	19 0540E S11 E68	19 0556 N14 W21	19 0602E N12 W25	19 0618 S11 E62
19 0649 S13 E61	19 0649E S12 E64	19 0657E S11 E65	19 0725 S13 E61	19 0945 S11 E60	19 0945 S10 E61
19 0958 S13 W53	19 1000 S13 W53	19 1005 S14 E52	19 1005E S13 W46	19 1016E S13 E62	19 1032 S10 E55
19 1108 S10 E54	19 1118 N21 E31	19 1135 S10 E54	19 1135E S12 E55	19 1147 S14 E65	19 1159 S10 E53
19 1200 S09 E57	19 1202 S12 E55	19 1358 N17 W21	19 1408E N15 W20	19 1630 S 9 E50	19 1630 S08 E48
19 1731E S13 E56	19 1743 S15 W53	19 1748E S12 W48	19 1834 S 9 E53	19 1836E S13 E55	19 1917 S 9 E53

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19 2204 S 9 E51	19 2300 S 9 E51	19 2303 S14 E51	19 2303E S13 E53	19 2337 S 9 E51	19 2354 S 9 E51
20 0010E S11 E45	20 0024 S09 E50	20 0119E S09 E50	20 0122 S 8 E49	20 0205 S09 E49	20 0206 S11 E49
20 0233 S10 E49	20 0258 S09 E48	20 0314 S10 E48	20 0316 S10 E50	20 0319E S09 E49	20 0324 S04 E89
20 0350 S10 E42	20 0350 S10 E42	20 0356E S11 E48	20 0457 S10 E41	20 0457 S10 E41	20 0517E S12 E42
20 0644 S10 E47	20 0645 S10 E46	20 0647 S10 E46	20 0648 S10 E88	20 0737 S10 E46	20 0819 S13 E46
20 0820 S10 E45	20 0820 S09 E45	20 0831 S17 W62	20 0832 S16 W63	20 0833 S16 W61	20 0841 S13 E53
20 0859 S10 E40	20 0943 N17 E20	20 0943 N17 E20	20 0944E N14 E21	20 1021 S16 W64	20 1044E S08 E80
20 1110 S11 E47	20 1117 S14 E48	20 1118 S11 E42	20 1120 S11 E44	20 1325 S08 E41	20 1325 S08 E40
20 1326 S12 E42	20 1448 S07 E84	20 1630 S10 E35	20 1655 S12 E34	20 1719 S 9 E34	20 1807 S 6 E43
20 1808E S10 E40	20 1808E S10 E40	20 1813 S 9 E34	20 1831 S11 E33	20 1833 S 9 E34	20 1851 S12 E34
20 1921 S09 E33	20 1937 S10 E32	20 1937 S 9 E34	20 1941E S11 E33	20 1952 S 9 E33	20 1953 S10 E32
20 2013 S 9 E33	20 2023E S09 E31	20 2030 S 9 E32	20 2031 S10 E32	20 2049 S10 E32	20 2056 S11 E40
20 2059 S11 E38	20 2105 S13 E31	20 2105 S14 E32	20 2106 S13 E33	20 2128E S10 E38	20 2149 S 9 E32
20 2151 S09 E31	20 2154E S09 E29	20 2230 S 9 E32	20 2232 S09 E30	20 2237E S10 E32	20 2325 S 9 E32
20 2350 S 9 E32	20 2355E S10 E29	21 0106E S10 E32	21 0107E S09 E28	21 0200 S09 E36	21 0202 S12 E37
21 0332 S11 E33	21 0332E S08 E35	21 0333 S10 E35	21 0340 S09 E28	21 0354 S11 E42	21 0356 S12 E41
21 0544 N19 E09	21 0603E N17 E19	21 0636 S11 E41	21 0707 S11 E26	21 0708 S10 E27	21 0708 S11 E24
21 0718 S09 E25	21 0718 S09 E30	21 0731 S11 E26	21 0735E S10 E24	21 0809 S11 E23	21 0843 S10 E26
21 0954 S09 E26	21 1110 S09 E24	21 1114E S11 E22	21 1114 S09 E20	21 1115 S12 E24	21 1126 S09 E28
21 1133 S09 E24	21 1134 S09 E22	21 1145 S16 E34	21 1145 S12 E41	21 1146 S12 E38	21 1148 S13 E37
21 1236 S11 E40	21 1310 S16 E35	21 1310 S10 E38	21 1328 S10 E22	21 1358 S10 E22	21 1359 S10 E20
21 1406 S10 E38	21 1407 S16 E34	21 1418 S10 E38	21 1421 S16 E30	21 1524 S12 E22	21 1533 S06 E65
21 1534 S04 E68	21 1557E S03 E68	21 1614 S10 E19	21 1617 S11 E20	21 1623 S13 E22	21 1624 S13 E22
21 1628E S13 E21	21 1629 S12 E37	21 1638 S 8 E23	21 1640 S12 E24	21 1642E S09 E22	21 1706 S11 E19
21 1710 N19 E03	21 1744 S10 E27	21 1818 S12 E19	21 1821E S11 E19	21 1840 S03 E68	21 1840 S 2 E66
21 1843 S03 E69	21 1849 S10 E19	21 1850 S10 E20	21 1850 S10 E20	21 1850 S11 E18	21 1923 S 7 E20
21 1925 S08 E21	21 1933 S10 E18	21 1934 S10 E18	21 1950 S10 E18	21 1954 S 9 E25	21 1957 S10 E22
21 1957 S10 E22	21 2030 S11 E34	21 2034 S11 E35	21 2109E S18 E33	21 2120 S17 E19	21 2213 N11 W21
21 2217 N10 W21	21 2336 S 7 E17	21 2337E S08 E18	21 2339 S07 E18	21 2339 S07 E18	22 0120 S13 E18
22 0121 S11 E32	22 0138E S08 E18	22 0214 S08 E17	22 0220 S08 E17	22 0238E S09 E15	22 0242 S09 E13
22 0421E S07 E10	22 0445 S08 E13	22 0445 S08 E13	22 0446 S08 E12	22 0446 S08 E12	22 0450E S07 E15
22 0613 S09 E12	22 0615 S06 E15	22 0828 S11 E28	22 0828 S12 E29	22 0829 S10 E12	22 0829 S10 E30
22 0830 S09 E13	22 0830 S12 E11	22 0835 S08 E11	22 0902 S09 E12	22 0908 S03 E56	22 0941 S09 E12
22 0942 S16 E25	22 0943 S08 E12	22 0943 S08 E12	22 1041 S09 E09	22 1106 S11 E18	22 1107 S20 E14
22 1113 S08 E09	22 1115 N20 W03	22 1115 N01 E18	22 1116 N18 W02	22 1135 S08 E09	22 1142 S08 E09
22 1142 S08 E09	22 1201 S16 E26	22 1214 N07 E90	22 1224 S08 E06	22 1238 S09 E17	22 1239 S10 E17
22 1242 S09 E16	22 1242 S07 E17	22 1247 S09 E07	22 1250 S08 E10	22 1255 S08 E07	22 1258 S17 E24
22 1259 S16 E33	22 1301 S07 E07	22 1355E S10 E05	22 1416 S07 E12	22 1446 S09 E07	22 1645 S 8 E 5
22 1713 S 8 E 5	22 1713E S08 E06	22 1714 S08 E06	22 1729 S08 E06	22 1827 S12 E22	22 1828 S10 E24
22 1953 S11 E 3	22 1957 S08 E04	22 2005 S14 E22	22 2020 S 8 E 3	22 2023E S08 E04	22 2040 S10 E04
22 2129E S11 E15	22 2148 S11 E13	22 2148 S11 E13	22 2150 S11 E15	22 2157 S11 E12	22 2233 S09 E04
22 2300 S 8 E10	22 2311E S09 E12	22 2326 S10 E03	23 0247 S15 E19	23 0315 S11 E00	23 0323 S10 W01
23 0325E S09 E11	23 0328E S10 W01	23 0342 S11 W02	23 0402 S09 W01	23 0402 S10 E01	23 0411 S10 E10
23 0438 S12 E09	23 0439 S13 E11	23 0439 S11 E09	23 0445 S09 W01	23 0518 S14 E01	23 0519 S14 E02
23 0608 S18 E18	23 0623 S09 E13	23 0628E S12 E15	23 0630 S11 E08	23 0633 S09 E01	23 0635 S10 E08
23 0638E S12 E08	23 0807 S10 E06	23 0836 S09 W01	23 0850 S09 E07	23 0856 S10 E03	23 0910 S09 E07
23 0913 S09 E05	23 0916 S10 E06	23 0918 S10 E05	23 0933E S08 W02	23 0933 S08 W02	23 0941 S08 W01
23 0942 S08 E00	23 0942 S10 E06	23 1044 S13 W05	23 1047 S13 W05	23 1048 S15 W05	23 1049 S12 W05
23 1231 S13 E05	23 1346 S10 E09	23 1347 S10 E 8	23 1349 S10 E10	23 1350 S09 E09	23 1352 S 6 W 4
23 1354E S10 E10	23 1356 S05 W02	23 1359E S08 W04	23 1412 S10 E08	23 1430E S05 E05	23 1451E S08 W03
23 1457 S14 E12	23 1500 S16 E12	23 1504E S17 E15	23 1510 S08 W00	23 1510 S10 W 0	23 1511 S08 W04
23 1512 S13 E 2	23 1512 S08 W03	23 1513 S 7 W 5	23 1820 S15 E11	23 1820 S16 E10	23 1821 S17 E11
23 1828 S08 W09	23 1830 S 9 W 9	23 1832E S10 W08	23 1845 S 7 W 5	23 1847 S08 W06	23 1847 S07 W07
23 1908 S 7 W 5	23 1915 S10 W 0	23 1919 S10 W00	23 2000 S 7 W 5	23 2116 S 8 W 9	23 2119 S09 W09
23 2152 S15 E02	23 2228 S15 W 9	23 2229 S12 W07	23 2230E S10 W09	23 2237E S16 W08	23 2243 S16 W 3
23 2248E S11 W02	24 0108 S10 E03	24 0110 S 8 E 3	24 0112E S09 E02	24 0117 S13 W00	24 0158 S15 W11
24 0200E S15 W10	24 0421 N14 W51	24 0442E S17 W12	24 0534E S17 W12	24 0542 S10 W17	24 0546E S12 W17
24 0548 S09 W01	24 0548 S09 W01	24 0600 S12 W01	24 0741 S09 W01	24 0747 S10 W01	24 0752E S12 W01
24 0838E S16 W01	24 0840 S17 W02	24 0958 N13 W28	24 1007 S15 W15	24 1008 S16 W16	24 1106 S15 W15
24 1122 N13 W29	24 1123 N13 W28	24 1304E S15 W21	24 1428 S10 W05	24 1430 S10 W04	24 1430 S10 W04
24 1431 S10 W05	24 1431 S10 W04	24 1441 S16 W15	24 1441 S16 W15	24 1540 S09 W04	24 1747 S 9 W18
24 1748 S18 W18	24 1758 S20 W08	24 1804 S16 W17	24 1857 N12 W32	24 1921 S19 E56	24 1947 S12 E59
24 1957 S11 W08	24 2009 S07 W16	24 2039 S12 W11	24 2051 N12 W34	24 2054E N12 W32	24 2108 S13 W24
24 2110 S12 W25	24 2111 S11 W11	24 2115E S17 W21	24 2306 S17 W23	24 2315 N13 W36	24 2315 S12 W26
24 2319E N11 W33	24 2323E N12 W32	24 2333 S16 W21	24 2333 S16 W20	24 2335 S17 W21	25 0025 S15 W13
25 0030E S14 W10	25 0223E S08 W25	25 0224E S09 W26	25 0229E N12 W37	25 0229E S08 W27	25 0254E N11 W35
25 0443 S15 W22	25 0446 N11 W38	25 0746 S17 W30	25 0826 S16 W26	25 0835E S18 W30	25 0902 N11 W40
25 1117 N12 W41	25 1205 S10 W25	25 1206 S08 W25	25 1627 S14 W18	25 1628 S16 W17	25 1749 S15 W32
25 1754E S18 W32	25 1845 S12 W38	25 1846 S13 W36	25 1919 S16 W18	25 1920 S15 W20	25 1932 S02 E08
25 2200E S12 W45	25 2301 S13 W37	26 0011 S11 W23	26 0608 S11 W42	26 0613E S12 W48	26 0614E S12 W44

SOLAR FLARES

AUGUST 1971

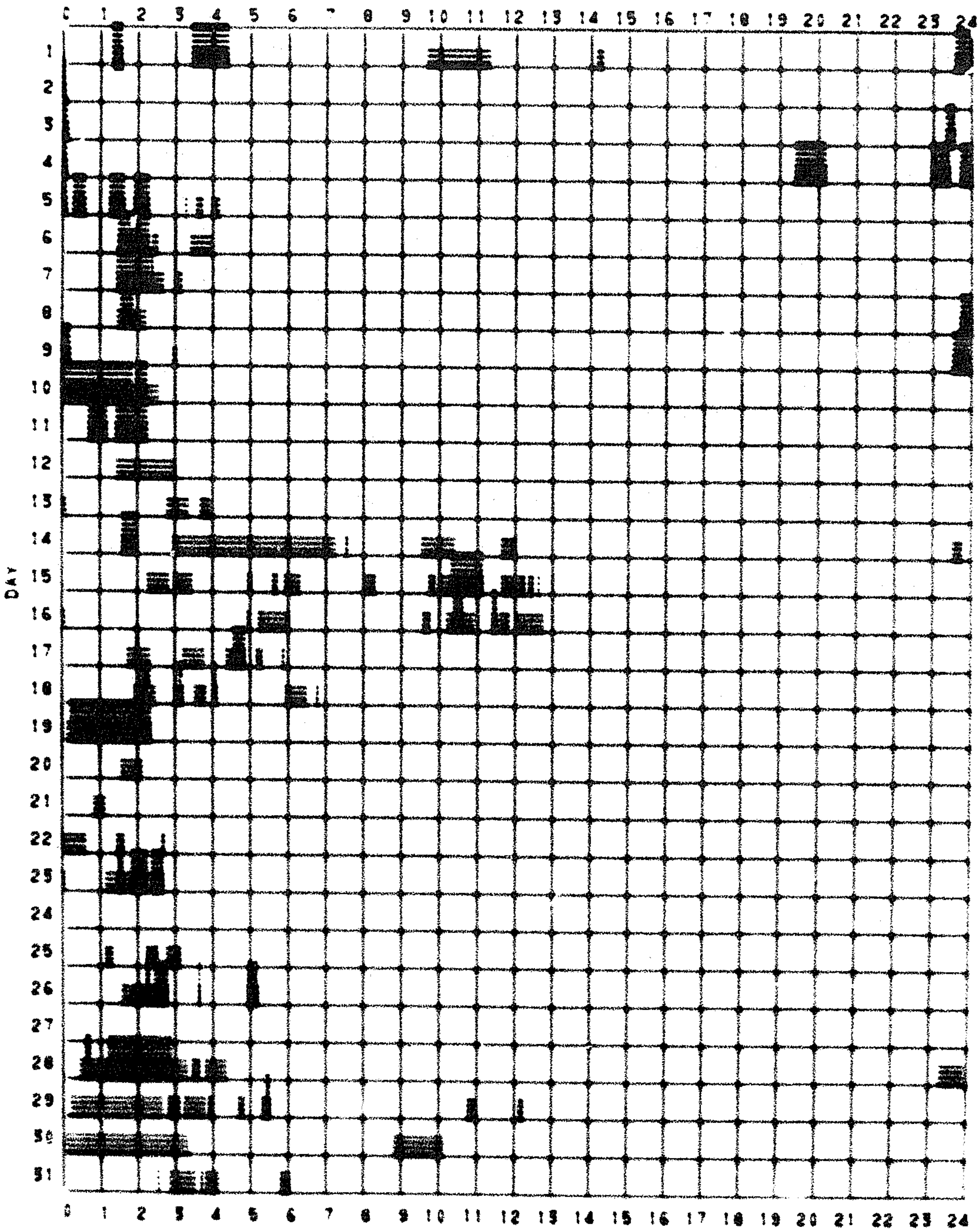
26 0646 S09 W35	26 0710 S11 W27	26 0733 S16 W25	26 0737E S16 W26	26 0808E S18 W28	26 0822 S06 E03
26 0908 S16 W42	26 0921 S16 W26	26 0924E S16 W27	26 0927 S13 W32	26 0931 S11 W31	26 0955 S06 E03
26 0959 S10 W37	26 1003E S09 W38	26 1008E S15 W43	26 1036 S15 W45	26 1050 N17 W61	26 1128E S10 W35
26 1128 S11 W35	26 1129 S09 W40	26 1212 S09 W46	26 1213 S11 W46	26 1230 S14 W44	26 1244 S10 W47
26 1245E S10 W48	26 1402 S13 W45	26 1405 S15 W45	26 1406E S14 W43	26 1423 S05 W03	26 1437E S04 W03
26 1518 S11 W44	26 1635 S14 W31	26 1638 S06 W06	26 1638 S05 W05	26 1638 S 4 W 6	26 1639 S05 W04
26 1655 N13 W59	26 1733 N14 W60	26 1746 N13 W59	26 1747 N13 W59	26 1756 S14 W32	26 1836 N13 W60
26 1838 N13 W60	26 1838 N14 W60	26 2012 S12 W50	26 2016 S09 W52	26 2055 S06 W07	26 2055 S 5 W 8
26 2116E S05 W05	26 2155 S05 W07	26 2208 S12 W52	26 2242 N12 W58	26 2254 S06 W03	26 2255E S06 W04
26 2324 S 5 W 8	26 2324 S07 W08	26 2325 S07 W08	27 0055 S12 W52	27 0056 S12 W54	27 0103 S04 W09
27 0117 S08 W10	27 0122 S07 W10	27 0133 S12 W54	27 0214 S14 W37	27 0314 S10 W52	27 0316 S05 W11
27 0323 S03 W06	27 0324 S07 W10	27 0334 S15 W39	27 0334 S14 W36	27 0347 S03 W10	27 0353 S04 W02
27 0355 S05 W10	27 0400 S08 W07	27 0406 S14 W35	27 0407 S10 W52	27 0510 S16 W53	27 0513 S06 W12
27 0521 S15 W39	27 0521 S15 W39	27 0524 S02 W12	27 0524 S02 W12	27 0531 S06 W11	27 0540 S16 W51
27 0540 S16 W51	27 0540 S14 W37	27 0540 S14 W37	27 0540 S10 W58	27 0554 S10 W53	27 0606 S16 W52
27 0612 S05 W12	27 0612 S05 W12	27 0617 S03 W12	27 0624 S16 W52	27 0626 S14 W37	27 0626 S14 W37
27 0630 S05 W12	27 0630 S05 W12	27 0645 S16 W39	27 0710 S13 W40	27 0844 S05 W13	27 0844E S04 W13
27 0852 S05 W13	27 0852 S04 W13	27 0852 S05 W13	27 0855 S05 W13	27 0905E S05 W14	27 0935 S11 W35
27 0935 S15 W40	27 0937 S14 W40	27 1008 S08 W48	27 1010 S09 W46	27 1010 S08 W46	27 1034 S10 W59
27 1048 S05 W15	27 1049 S06 W15	27 1052 S15 W55	27 1058 S03 W13	27 1113 S15 W55	27 1128 S16 W53
27 1133E S15 W55	27 1200 S10 W60	27 1246 S08 W48	27 1248 S09 W47	27 1320 S09 W50	27 1355 S10 W61
27 1357 S09 W63	27 1417 S10 W61	27 1457 S11 W62	27 1457E S16 W42	27 1457 S15 W43	27 1459 S15 W42
27 1504 S 4 W17	27 1506 S03 W17	27 1507 S13 W17	27 1814 S12 W59	27 1844 S 8 W55	27 2032 S 5 W15
27 2035 S04 W14	27 2140 S 3 W21	27 2141E S04 W19	27 2334 S 3 W22	28 0201 S07 W23	28 0325E S05 W19
28 0520 S17 W66	28 0555 S16 W58	28 0556 S15 W53	28 0744 S07 W68	28 0907E S16 W67	28 1017 S07 W01
28 1113 S04 W27	28 1115 S03 W29	28 1546 S03 W29	28 1737 S03 W30	28 1902 S16 W73	28 1925 S 6 W34
28 1926 S07 W33	28 2352 S11 W72	29 0016 S16 W36	29 0032 S07 W80	29 0422 S08 W79	29 0505 S15 W71
29 0506 N15 W71	29 0539 S14 W78	29 0539 S08 W33	29 0543 S19 W33	29 0545E S13 W81	29 0545E S09 W34
29 0551 S08 W81	29 0604 S07 W82	29 0621 S06 W83	29 0725 S13 W83	29 1344 S15 W81	29 1348 S13 W82
29 1357 S05 W90	29 2210 S14 W80	29 2308 S07 E74	30 0412 S15 W80	30 0444E S13 W88	30 0731 S06 E67
30 0752 S06 W56	30 1208 S06 E85	30 1320 S07 E85	30 1326 S08 E65	30 1843 S07 E60	30 1912 S10 W80
30 1915 S07 E60	30 1915 S07 E60	30 1931 S09 E65	31 0143 S08 E57	31 0243 S11 W63	31 0325E N13 W19
31 1221 S08 W90	31 1400 S11 E66	31 1632 S01 W59			

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

AUGUST 1971

HOUR–UT



Observatories included in total patrol:

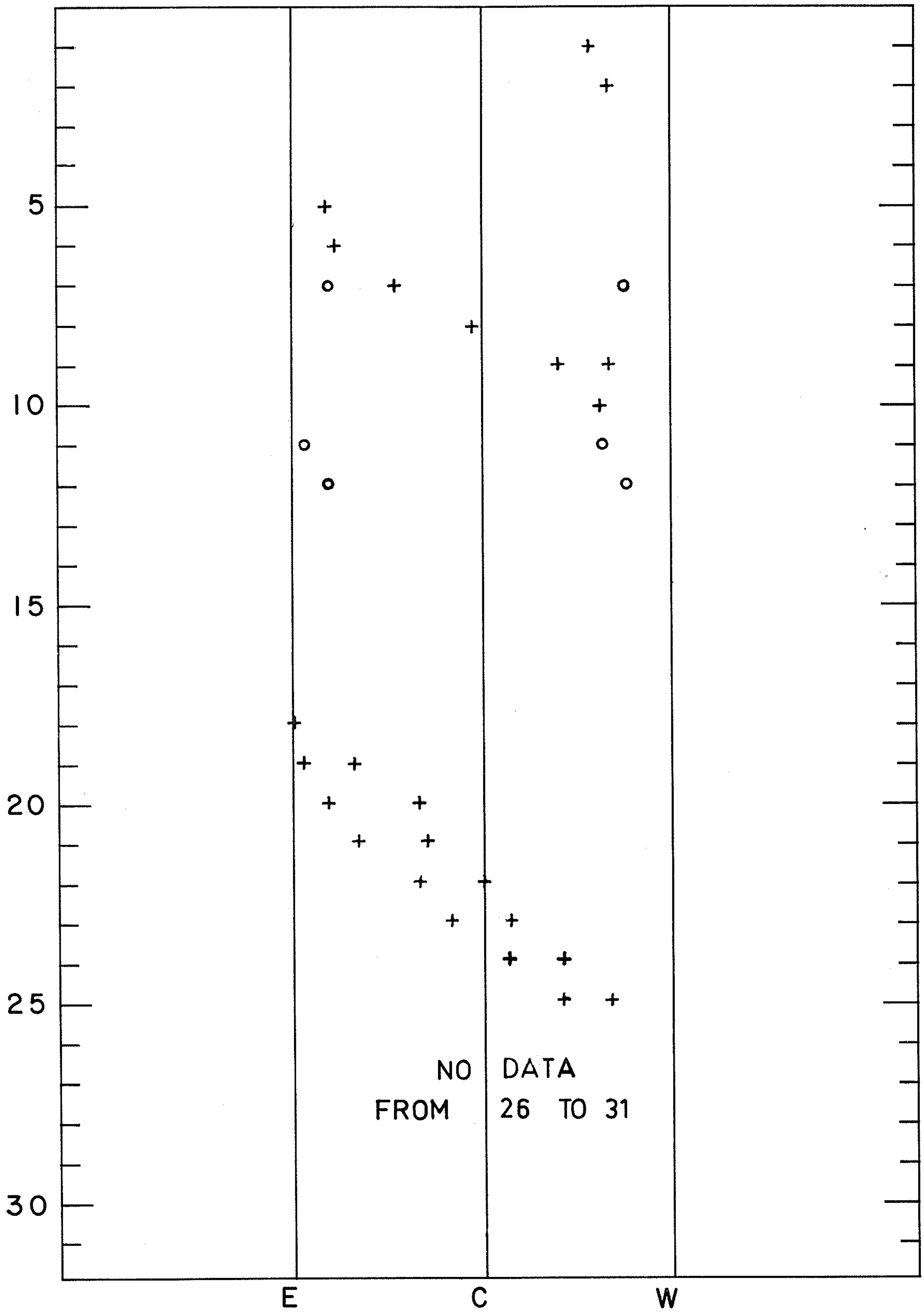
Arcetri	Bucharest	Istanboul	Manila	Palehua
Athens	Capri-F (German)	Kodaikanal	Monte Mario	Ramey
Boulder	Herstmonceux	Lockheed	Ondrejov	Tehran
				Wendelstein

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

AUGUST 1971

Nançay 408 MHz

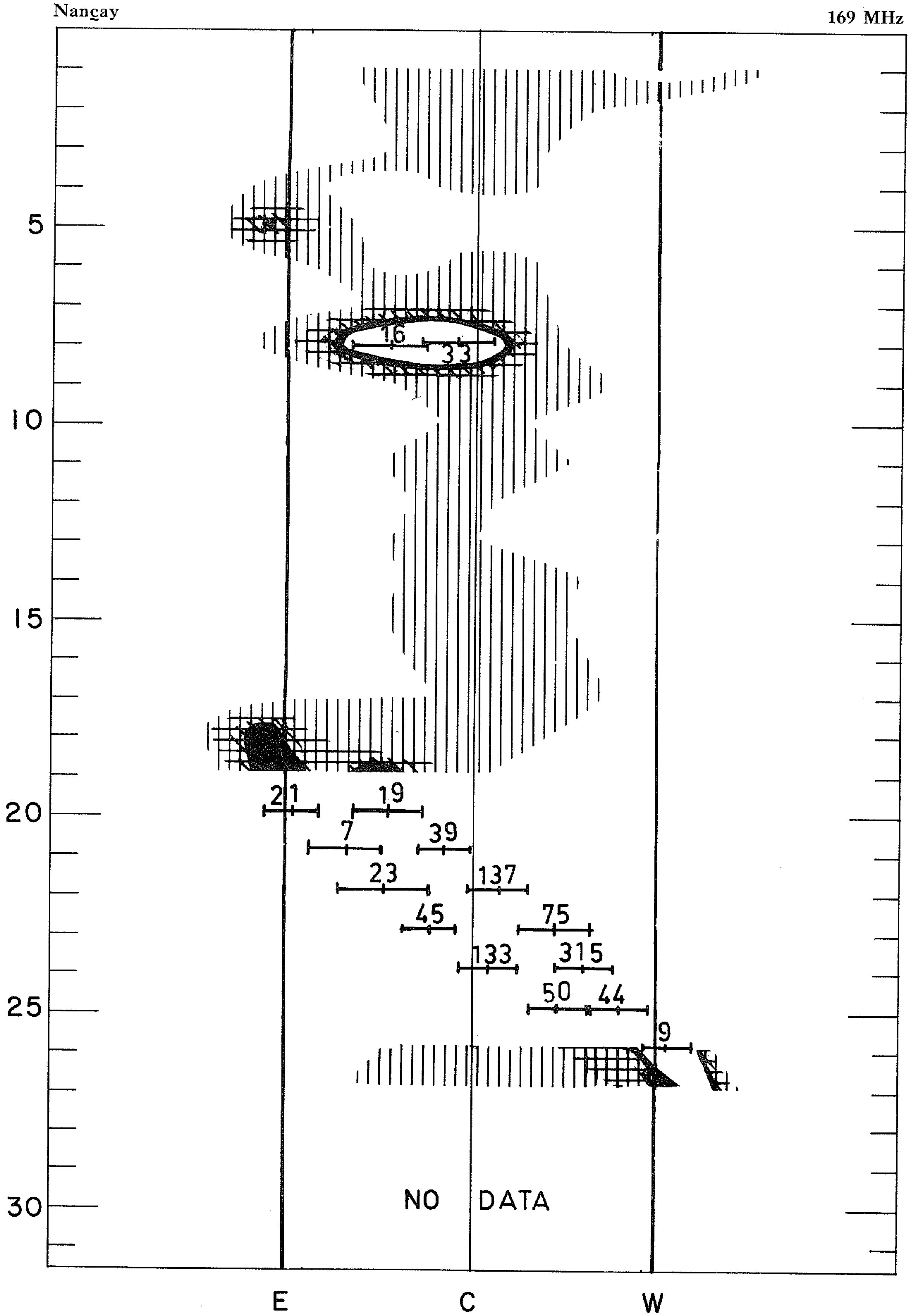


Because of the distance between the main lobes there is sometimes an ambiguity about the position East or West of the Center of Activity. The two possible positions are indicated by circles on the chart.

18
Aug 71

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

AUGUST 1971

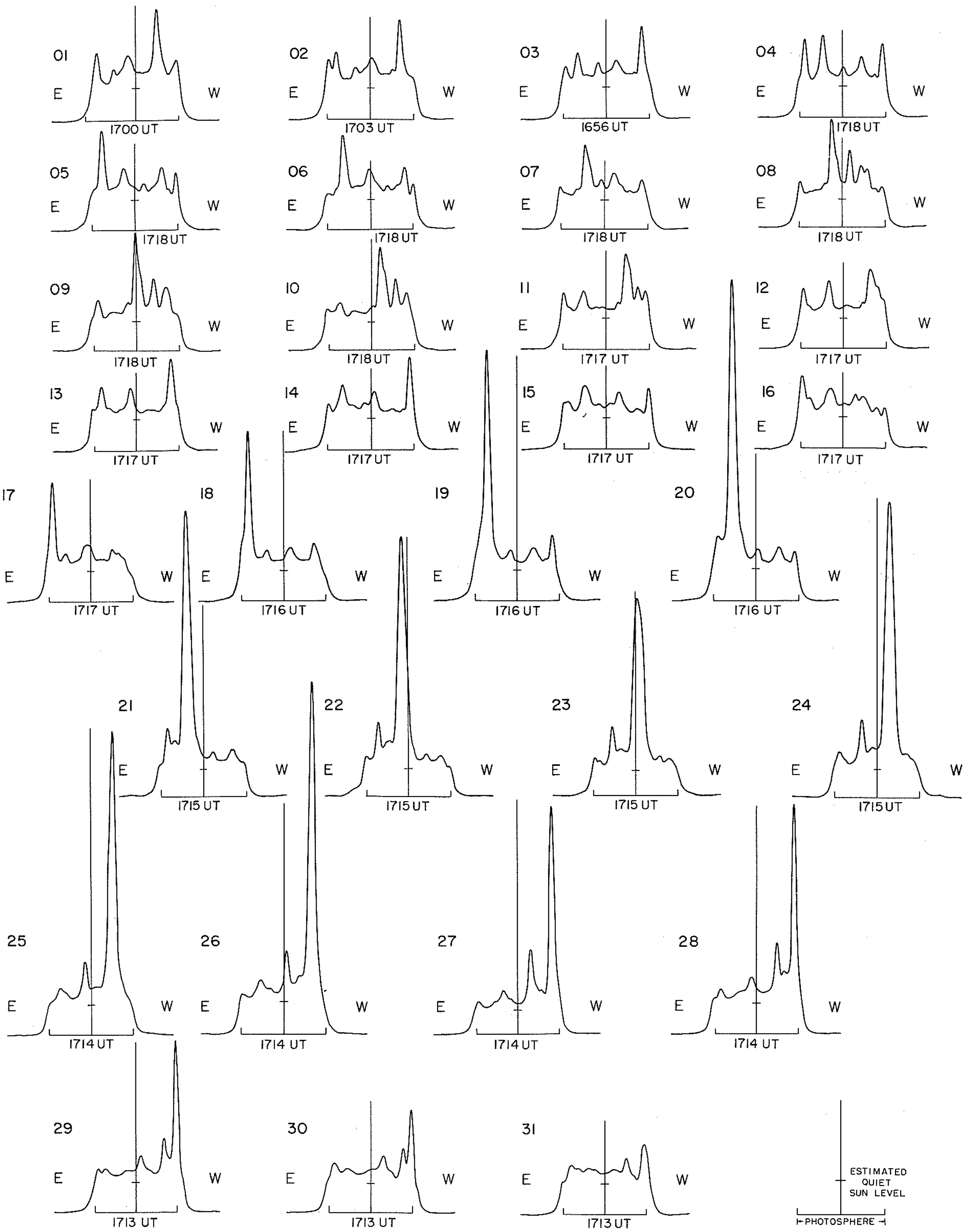


EAST-WEST SOLAR SCANS

August 1971

ALGONQUIN RADIO OBSERVATORY
CANADA

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

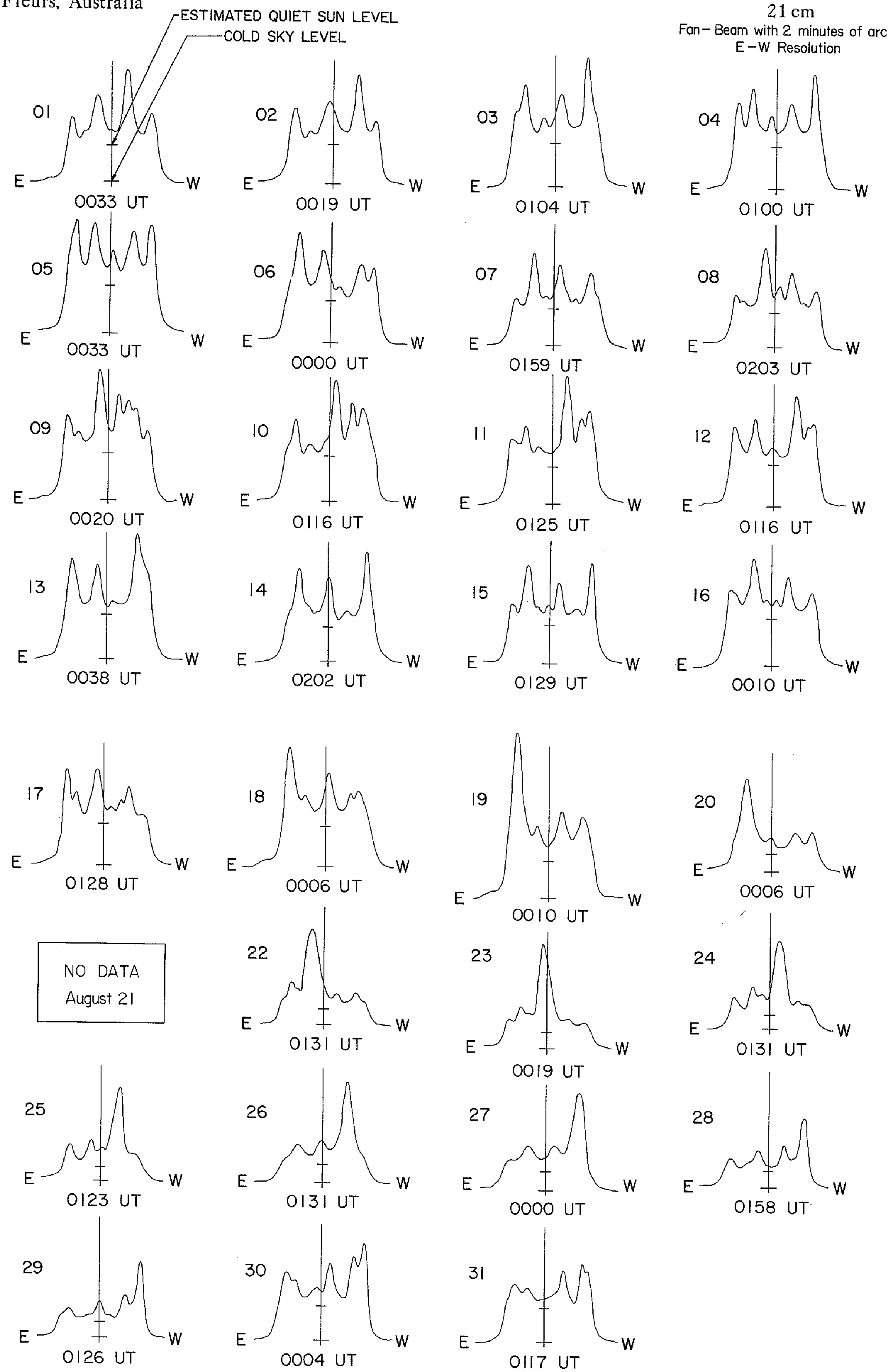


EAST-WEST SOLAR SCANS

AUGUST 1971

Fleurs, Australia

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

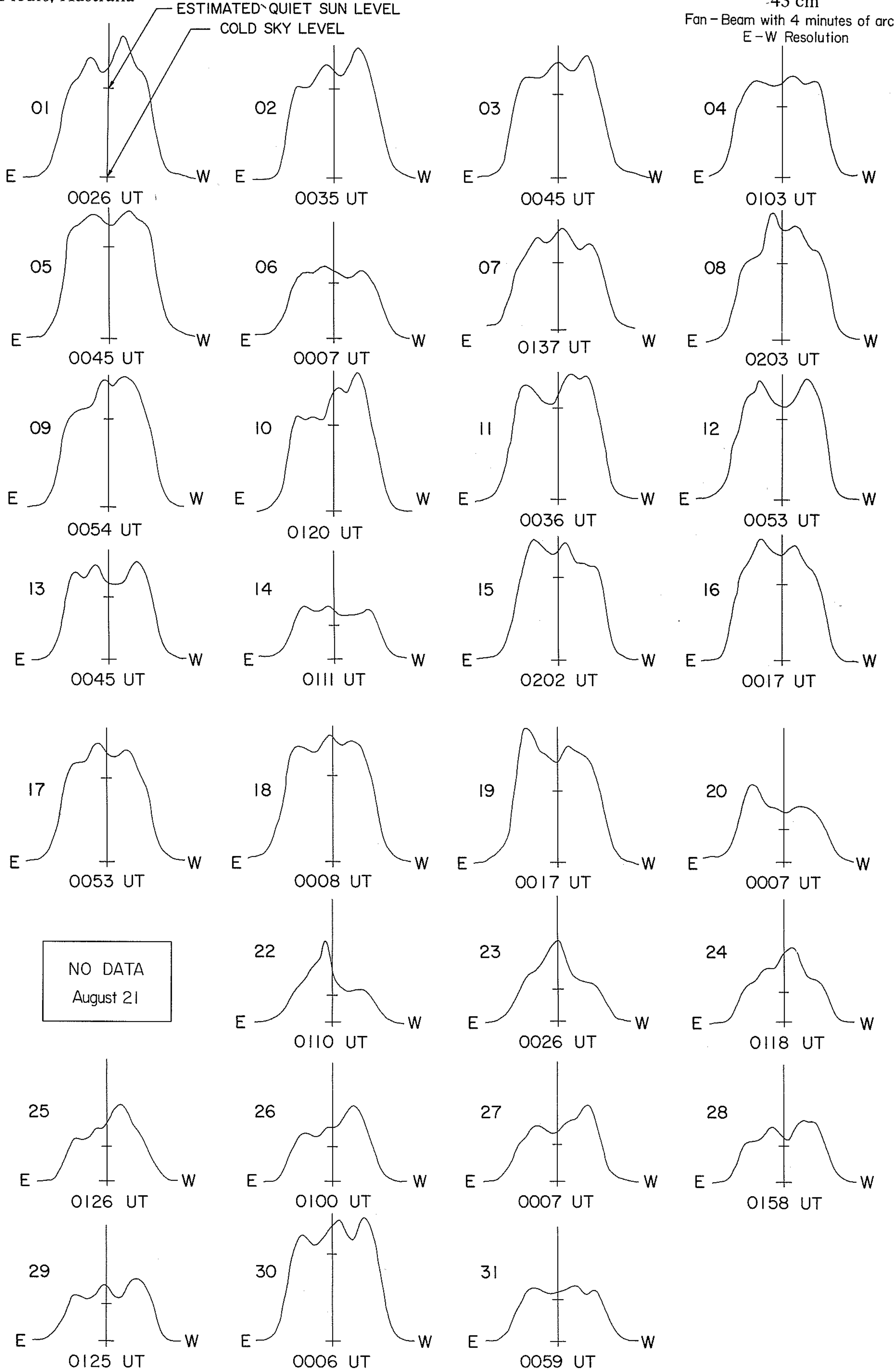


EAST-WEST SOLAR SCANS

AUGUST 1971

Fleurs, Australia

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



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS
AUGUST 1971

AUG. 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
2	2695 BOUL	40	2211.5	2212	5	106.0			
3	2695 SGMR	1	1229.9	1230.1	3.7	6.9	1.5		
	2800 OTTA	1	1617	1618	2	1.6	0.8		
	2800 OTTA	32	1645	1705	45	-3.2	-1.6		
4	2800 OTTA	24	1658		10	2.2			
	2800 OTTA	20	1810	1950	190	2.4	1.2		
	2695 BOUL	41	2156	2156.5	2.5	103.0			
	2695 BOUL	40	2324.5	2325.5	2	86.0			
5	2800 OTTA	24	1100		10	2.2			
	2800 OTTA	22	1715	1725	35	2.2	1.0		
	2695 SGMR	20	1721.6	1725.3	13.3	2.4	1.0		
	2695 BOUL	41	2234.5	2237	9	124.0			
	2695 BOUL	40	2257	2259	4	130.0			
6	2800 OTTA	20	1105	1135	150	5.8	3.2		
8	2800 OTTA	24	1230		20	1.8			
	2800 OTTA	25	1515		20	1.8			
	2800 OTTA	20	1535	1630	260	4.4	3.0		
9	2800 OTTA	21	1800	1835	200	5.6	2.8		
	8800 SGMR	20	1822	1849.9	46	4.7	2.0		
	2695 SGMR	20	1821.8	1825.3	37.4	5.3	2.0		
	2800 OTTA	1	1824	1825.2	4	4.6	2.0		
10	2800 OTTA	20	2145	2155	30	1.8	0.9		
11	8800 SGMR	3	1301.1	1301.4	3.6	11.3	3.0		
	2800 OTTA	22	1425	1440	145	9.6	4.8		
	2695 SGMR	20	1429	1453	61 U	13.5	5.1		
	8800 SGMR	20	1435.2	1448.2	21	6.9	2.6		
18	8800 MANI	3	2345.9	2346.6	1.5	19.0			
19	2800 OTTA	20	1415 E	1420	85 D	3.0			
	2800 OTTA	20	1730	1815	90	3.2	1.8		
	2800 OTTA	24	1900		40	3.0			
	2695 BOUL	40	1947.5	1949	4.5	78.0			
	2695 PENT	20	2350	2530	125 D	8.6			
20	2695 SGMR	22	1550	1602.2	45	7.2	3.6		
	2695 SGMR	2	1718.8	1720.5	4.1	7.2	3.6		
	2800 OTTA	2	1719	1720.7	7	8.2	2.0		
	2800 OTTA	8	1915	1915		8.8			
	2695 SGMR	1	1915	1915.1	.4	4.8	2.4		
	2800 OTTA	24	2150		35	2.8			
	2695 PENT	20	2315	2405	90	2.0	1.0		
21	8800 MANI	4	0933.8	0934.4	38.2D	146.0			
	2695 MANI	4	0933.7	0934.6	38.3D	225.0			
	2695 CANR	3	0934.5	0935.5	3	365.0			
	2695 CRON	3	0934.5	0935	5.5	330.0			
	8800 SGMR	3	1146.2	1146.6	3.3	17.2	4.3		
	2695 SGMR	1	1146.3	1146.9	2.2	7.2	1.8		
	8800 SGMR	1	1310.4	1310.6	1	9.2	3.1		
	8800 SGMR	1	1422.1	1423.2	3.4	6.7	1.5		
	2695 SGMR	1	1422.2	1423.3	4.5	6.7	1.5		
	2800 OTTA	1	1423	1423.1	1	7.0	3.5		
	8800 SGMR	1	1444.1	1444.3	.5	4.6	1.1		
	2695 SGMR	1	1444.1	1444.3	.5	2.2	.5		
	8800 SGMR	4	1519.7	1520.4	1.3	10.5	3.0		
	8800 SGMR	1	1744.8	1745.1	2.6	6.7	1.5		
	2800 OTTA	8	1902.2	1902.2		8.4			
	2800 OTTA	21	2115	2125	30	2.0	1.0		
	2800 OTTA	1	2118	2119	3	2.2	1.0		
22	8800 MANI	3	0303.2	0303.8	7	58.0			
	2695 MANI	4	0303.3	0305.3	6.9	13.0			
	2695 CRON	45	0303.5	0306	3.5	88.0			
	8800 MANI	22	0338	0339.8	10	16.0			
	2695 MANI	4	0338.6	0341.4	21.1	187.0			
	2695 CRON	8	0340.5	0341.5	2.5	162.0			
	8800 MANI	47	0749.6	0750.3	16.4	670.0			
	2695 MANI	4	0748.2	0751.4	14.1	159.0			
	2695 CRON	3	0749.5	0752	6.5	269.0			
	2695 CANR	3	0750	0752.5	7	242.0			
	2800 OTTA	22	1945	2003	55	8.8	4.0		
	8800 SGMR	20	1957.7	2003.2	25.6	8.6	3.5		
	2695 SGMR	20	1957.3	2002.7	23.7	5.5	2.0		
	2800 OTTA	20	2157	2230	80	2.8	1.2		
23	2695 CANR	3	0942	0943	10	154.0			
	8800 MANI	4	0942.5	0942.8	3.2	52.0			
	2695 MANI	4	0942.5	0943.1	1.3	54.0			
	2695 CRON	3	0942.5	0943.5	12 D	138.0			
	2800 OTTA	21	1310	1525	210	3.2	1.6		
	8800 SGMR	22	1512.5	1513.6	23.7	17.2	3.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

AUGUST 1971

AUG. 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
	2695 SGMR	21	1512.5	1513.5	12.2	8.2	2.0		
	2800 OTTA	2	1512	1513.5	3	8.4	3.0		
	2695 CANR	8	1512.5	1512.5	1.5	92.0			
	2695 SGMR	8	1513	1513.1	.2	35.3	6.0		
	2695 BOUL	3	1513.5	1514	1.5	78.0			
	8800 SGMR	2	1538.2	1538.7	1.4	4.3	1.5		
	2695 SGMR	1	1538.5	1538.7	.3	1.4	.7		
	2800 OTTA	8	1707	1707		3.0			
	2800 OTTA	21	1710	1755	105	3.2	1.8		
	2800 OTTA	2	1820.3	1820.8	1	4.2	2.1		
	2695 SGMR	2	1820.4	1820.8	1.2	5.3	2.0		
	2800 OTTA	22	2015	2030	45	7.8	2.6		
	2695 SGMR	4	2300.6	2300.9	.4	11.3	2.0		
24	2695 MANI	2	0131	0133.3	3.5	6.0			
	8800 MANI	3	0622.6	0623.3	8.9	20.0			
	2695 MANI	1	0622.6	0622.2	2.2	4.0			
	2800 OTTA	23	1420	1455	95	5.4	2.7		
	8800 SGMR	1	1442	1442.6	1.6	7.4	4.1		
	2695 SGMR	1	1441.9	1442.4	1.1	4.6	2.5		
	2800 OTTA	2	1442	1442.2	1	4.2	2.1		
	2800 OTTA	20	1600	1620	50	4.0	2.0		
	2800 OTTA	20	1955	2020	65	3.6	1.8		
	2800 OTTA	20	2200	2210	35	3.6	1.8		
	8800 MANI	4	2333.8	2334.8	5	26.0			
	2695 MANI	1	2333.8	2334.7	2.2	4.0			
	2695 PENT	2	2334	2334.5	2.5	4.4	1.6		
25	2800 OTTA	21	1125	1225	120	4.2	2.4		
	2800 OTTA	1	1240	1240.5	1	8.4	2.8		
	2695 SGMR	1	1240.3	1240.5	.7	8.7	4.2		
	2800 OTTA	20	1345		95	2.8	2.0		
	8800 SGMR	3	1628.2	1628.4	1.2	19.3	4.1		
	2695 SGMR	1	1628.1	1628.3	.9	4.1	.9		
	2800 OTTA	8	1628.2	1628.2		2.8			
	2800 OTTA	24	1830		3	2.8			
	2800 OTTA	20	2150	2200	75	2.0	1.0		
26	8800 SGMR	45	1405.7	1407.5	8.7	17.2	6.5		
	2800 OTTA	2	2216.5	2216.8	2	3.4	1.7		
27	8800 MANI	4	0308.1	0309.3	3.4	45.0			
	2695 MANI	4	0308.1	0309.7	6.4	78.0			
	2695 CRON	45	0308.5	0310	3	135.0			
	2800 OTTA	22	1150	1230	70	5.6	2.8		
	8800 SGMR	22	1219.5	1225.3	23.4	13.3	5.0		
	2695 SGMR	22	1219.4	1223.7	22.6	8.5	3.5		
	8800 SGMR	3	1458.3	1459.3	4.6	20.6	4.3		
	2695 SGMR	3	1458.3	1459.2	4.1	24.8	5.0		
	2800 OTTA	21	1458	1510	30	2.8	1.4		
	2800 OTTA	3	1459	1459.2	2	23.0	6.0		
	2800 OTTA	21	1615	1625	35	5.6	2.8		
	8800 SGMR	4	1616.1	1617.6	2.1	10.8	3.5		
	2695 SGMR	4	1616	1617.6	3.3	12.5	4.5		
	2800 OTTA	2	1616	1617.5	3	7.6	3.8		
	2800 OTTA	20	1735	1750	85	2.8	1.6		
	2695 BOUL	45	1917	1917.5	3	85.0			
28	2695 PENT	22	0020	0100	90 D	21.0			
	8800 MANI	3	0026.6	0036.6	15.7	16.0			
	2695 MANI	3	0027.4	0031.4	15.3	15.0			
	8800 MANI	20	0047.3	0058.4	57.9	28.0			
	2695 MANI	20	0052.2	0053.7	19.5	5.0			
	8800 MANI	4	0746.6	0747.1	.7	48.0			
	2695 CANR	1	1459	1459.5	1	80.0			
29	2695 PENT	20	0020	0105	80	7.0	3.5		
	2800 OTTA	21	1350	1410	150	6.0	3.0		
	2800 OTTA	32	1540	1545	40	-7.4	-3.5		
30	8800 MANI	4	0409	0412.4	21.8	38.0			
	2695 MANI	4	0408.7	0415.5	22.1	23.0			
	2800 OTTA	20	1345	1350	15	4.6	2.0		
	2800 OTTA	21	1450	1505	90	15.6	5.4		
	8800 SGMR	40	1452.3	1454.2	18.7	13.2	5.8		
	2695 SGMR	20	1454.7	1458.6	69.5	15.8	6.0		
	2800 OTTA	4	1455	1458.7	6	12.4	6.2		
	2695 CANR	3	1455	1459	26.5	77.0			
	2800 OTTA	20	2100	2115	100	13.2	6.6		
31	2695 SGMR	1	1215.8	1216.8	3.7	5.9	1.1		
	2800 OTTA	1	1216	1216.9	2	8.4	2.8		
	8800 SGMR	1	1217.9	1218.6	4.1	1.7	.4		

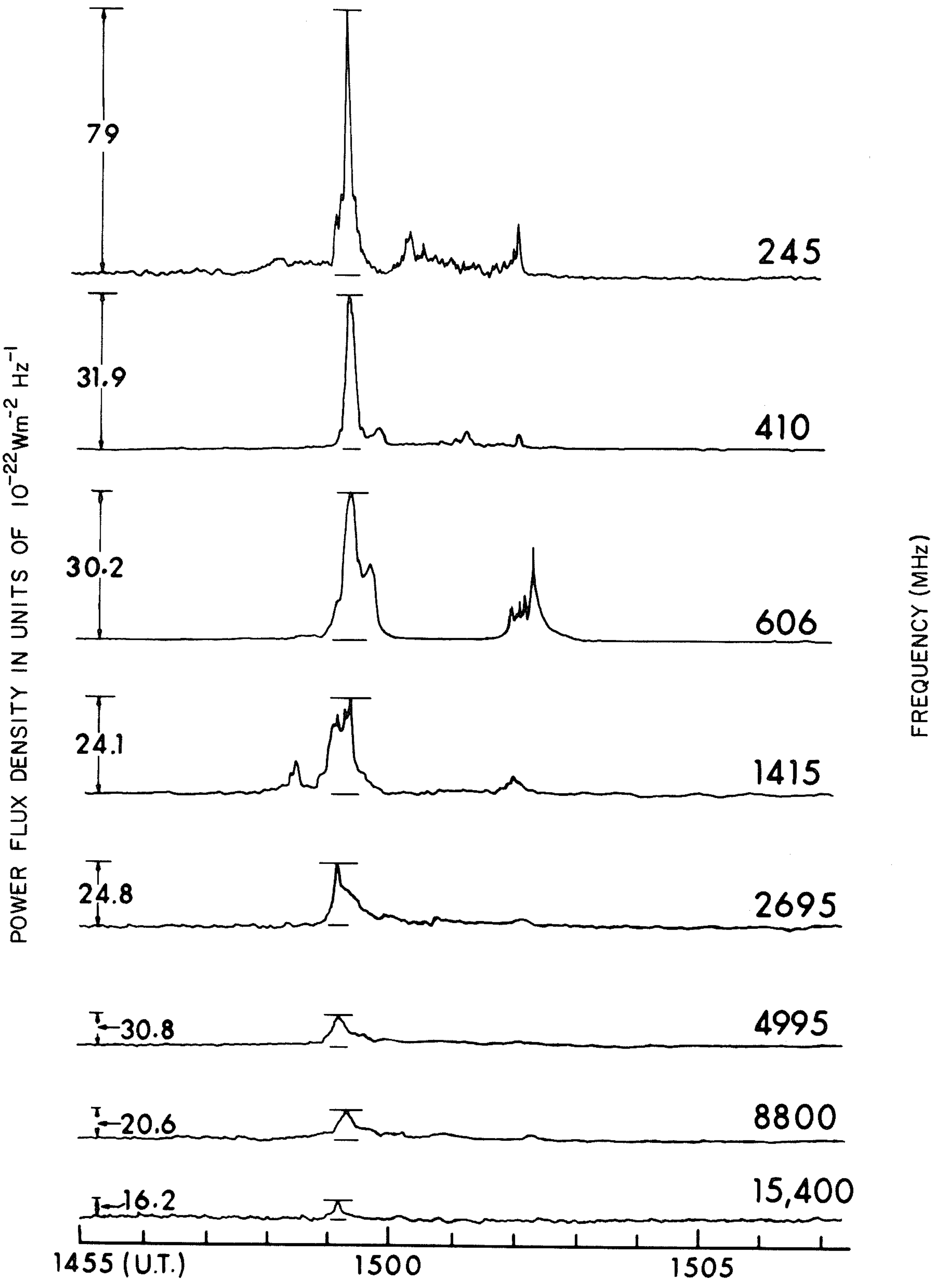
Observatories:

BOUL = Boulder (1-27)
CANR - Canary Islands
CRON = Carnarvon (1-29, 31)
OTTA = Ottawa ARO
MANI = Manila
PENT = Penticton
SGMR = Sagamore Hill

24
Aug 71

SELECTED SOLAR NOISE BURST

27 August 1971



MINOR, COMPLEX, & SIMPLE 2 RADIO BURST OBSERVED ON 27 AUGUST 1971 AT SAGAMORE HILL RADIO OBSERVATORY HAMILTON, MASS.

SOLAR WIND VELOCITY
and
CO-ROTATION DELAY TIMES

AUGUST 1971

NASA Ames Research Center

DATE August 1971	PIONEER VI				PIONEER VII			
	Time (Z)	Pass	$U_H{}^+$	TAU	Time (Z)	Pass	$U_H{}^+$	TAU
1	2232	2055	506	.75				
2	1158	2056	383	.95				
3								
4								
5	0805	2059	339	.95				
6	0901	2060	339	.92				
7	0951	2061	383	.79	2345	1817	388	12.5
8								
9	0814	2063	448	.72				
10	1215	2064	448	.76				
11	1215	2065	506	.70				
12	0802	2066	506	.70				
13	1158	2067	506	.72				
14								
15								
16								
17	0811	2071	448	.95				
18								
19								
20								
21								
22	0800	2075	302	1.2				
23								
24								
25	0446	2079	383	1.1				
26								
27								
28								
29								
30								
31	0348	2085	506	.99				

SOLAR WIND
VELA 3 & 5

AUGUST 1971

DATE	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm^{-3})
08	2300	VELA-5A	331	3.5
09	1200	5B	315	--
	1900	5B	315	--
10	0400	5A	424	3.9
	0700	5A	446	4.4
	0800	5A	446	--
15	2300	5B	384	--
16	0900	5B	384	--
18	0100	5A	384	6.4
19	1200	5B	404	--
	1300	5B	384	--
	1500	5B	384	--
	1700	5B	384	1.2
20	1500	5B	348	--
22	1600	5A	315	--
	1700	5A	234	--
	1800	5A	315	--
	1900	5A	315	--
	2000	5A	315	--
	2100	5A	331	42.9
	2200	5A	348	--
	2300	5A	315	--
23	0000	5A	348	--
	0100	5A	348	--
	0200	5A	348	--
	0300	5A	348	17.8
	2000	5B	424	--
24	0700	5B	348	--
	0800	5B	384	--
28	0900	5B	286	--
	1000	5B	259	--
	1100	5B	348	--
	1200	5B	348	--
	1300	5B	348	70.3
	1400	5B	348	5.8
	1500	5B	348	--
	1600	5B	348	3.2
	1700	5B	348	--
	1800	5B	348	--
29	0000	5B	404	2.8
30	0000	5B	315	--
	0300	5B	384	--
	0500	5B	331	--

COSMIC RAY PROTONS

AUGUST 1971

Counting Rates (particles/sec)

University of Chicago

	Pioneer VI				Pioneer VII			
Date Aug.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	2300	.137	Q	Q				
2	1800	.136	Q	Q				
5	1300	.105	Q	Q				
6	1400	.122	Q	Q				
7	1800	.149	Q	Q	2300	.336	Q	Q
9	1300	.142	Q	Q				
10	1300	.208	Q	Q				
11	1100	.218	Q	Q				
12	1300	.446	Q	Q				
13	1700	3.40	Q	Q				
14	1700	6.10	Q	Q				
17	1500	.547	Q	Q				
20	1000	1.67	Q	Q				
21	1000	3.05	Q	Q				
24	1000	14.6	Q	Q				
25	1000	4.50	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}, 1.7×10^{-4} m^2ster 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

AUGUST 1971

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII				Pioneer IX			
Date Aug.	Time (UT)	>13.9 Mev	>64 Mev	Date Aug.	Time (UT)	>13.9 Mev	>40 Mev
2	0350	5.80	1.1				
3				3	2330	5.0	-
4	0200	5.63	1.13				
5	0200	5.81	1.09	5	0030	4.51	1.02
7	0200	4.89	.95	7	0000	4.57	.95
8	0342	5.74	1.01	8	2330	4.73	.94
9	0330	5.80	.98	9	2230	4.71	1.05
10	0200	5.73	1.02				
11				11	2230	4.68	.82
12	0300	5.34	.99	12	2215	4.67	.97
13	0230	5.64	1.05				
14				14	2226	7.0	-
15	0043	5.94	1.05	15	2330	4.0	-
16	0330	5.87	1.14	16	2230	4.0	-
17	0300	5.87	.95				

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

AUGUST 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	0.63	0.42	0.47	0.40	0.40	0.40	0.40	0.14	0.40	0.14	0.73	0.10	0.68	0.31	0.47	0.73	0.52	0.52	0.42	0.31	0.79	0.47	0.31	0.73
02	0.63	0.58	0.15	0.36	0.31	0.26	0.21	0.54	--	0.21	0.58	0.26	0.73	1.16	0.40	0.31	0.58	0.63	0.42	0.47	0.68	0.67	0.68	0.42
03	0.58	0.73	0.42	0.47	0.54	0.40	0.47	0.68	0.40	0.40	0.36	0.52	0.58	0.40	0.40	0.68	0.68	0.52	0.79	0.63	0.47	0.36	0.63	0.40
04	0.27	--	--	--	--	--	--	0.40	0.27	0.40	0.27	0.54	0.54	0.40	0.68	0.54	0.68	0.40	0.27	0.54	0.95	0.68	0.54	0.40
05	0.40	0.40	0.14	0.27	0.40	0.40	0.14	0.27	0.27	0.40	0.54	0.40	0.54	0.40	0.27	0.81	0.54	0.27	0.54	0.40	0.40	0.54	0.81	0.40
06	0.54	0.54	0.54	0.54	0.54	0.14	0.54	0.40	0.54	0.54	0.40	0.54	0.40	0.81	0.40	0.27	0.27	--	--	--	--	--	--	--
07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
08	--	0.14	0.15	0.21	0.21	0.26	0.15	0.21	0.15	0.42	0.21	0.15	0.0	0.31	0.27	0.84	0.84	0.21	0.58	0.15	0.84	0.47	1.05	0.47
09	0.84	0.47	1.05	0.89	--	--	--	--	--	--	--	--	--	--	--	--	0.73	2.00	0.84	0.68	0.79	0.84	0.47	0.73
10	0.36	0.40	0.27	0.27	0.31	0.31	0.14	0.27	0.14	0.31	0.21	0.63	0.31	0.15	0.54	0.68	0.81	0.79	0.63	0.68	--	--	--	--
11	--	--	--	--	--	--	--	0.68	0.52	0.26	0.26	0.26	0.42	0.27	0.27	0.21	0.52	--	--	--	--	--	--	--
12	--	--	1.37	0.58	0.58	0.10	0.26	0.47	0.40	0.47	0.26	0.27	0.31	0.27	0.27	0.81	0.31	--	--	--	--	--	--	--
13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	--	--	--	0.58	0.68	0.42	0.31	0.44	0.52	0.48	0.42	0.26	0.31	0.62	0.31	0.36	0.05	0.42	0.95	0.58	0.21	0.21	0.68	0.26
15	0.21	0.26	0.42	0.51	0.68	0.42	0.60	0.61	0.48	0.36	0.54	0.31	0.26	0.51	0.15	0.42	0.36	0.40	0.54	0.14	0.27	0.27	0.40	0.54
16	--	0.40	0.14	0.14	0.14	0.27	0.14	0.27	0.14	0.14	0.27	0.40	0.54	0.27	0.40	0.27	0.54	0.14	0.14	0.54	0.14	--	--	--
17	--	--	--	--	--	--	--	--	0.40	0.40	0.40	--	--	--	--	0.14	0.54	0.14	0.27	0.27	0.27	--	--	--
18	--	--	0.15	0.31	0.63	0.10	0.31	0.27	0.26	0.15	0.15	0.14	0.21	0.27	0.36	0.58	0.15	0.47	0.31	0.26	0.31	--	--	--
19	--	--	--	0.42	0.31	0.26	0.26	0.27	0.15	0.15	0.26	0.27	0.31	0.40	0.31	0.15	0.27	0.40	0.40	--	--	--	--	--
20	--	--	0.73	0.42	0.52	0.31	0.26	0.31	0.58	0.58	0.05	0.40	0.14	0.47	0.42	0.52	0.47	0.47	0.40	--	--	--	--	--
21	--	--	0.42	0.52	0.79	0.47	0.42	0.42	0.79	1.37	1.31	1.05	1.53	0.81	1.16	1.79	1.37	1.31	0.95	1.37	1.68	--	--	--
22	--	--	--	1.21	1.16	0.89	0.81	0.81	0.79	0.84	1.05	0.68	0.68	0.73	0.73	0.81	0.40	0.63	0.84	0.73	0.40	--	--	--
23	--	--	--	--	0.26	0.15	0.14	0.14	0.21	0.21	0.26	--	--	--	--	--	--	0.31	0.42	0.31	0.42	--	--	--
24	--	--	0.40	0.40	0.52	0.47	0.40	0.36	0.63	0.52	--	0.68	0.52	--	--	--	0.42	0.89	0.31	0.40	0.15	--	--	--
25	--	--	0.79	0.42	0.36	0.47	0.52	0.42	0.42	0.73	2.37	0.52	0.42	--	--	0.31	0.21	0.47	0.31	0.58	0.63	--	--	--
26	--	--	--	0.63	0.73	0.36	0.40	0.54	--	--	--	0.27	0.26	0.27	0.47	0.31	0.21	0.21	0.47	0.21	0.52	--	--	--
27	--	0.58	0.73	0.58	0.54	--	--	--	--	--	--	--	--	--	0.79	0.68	0.58	0.47	0.52	0.31	0.54	--	--	--
28	--	--	0.79	0.84	--	--	--	--	--	--	--	--	--	--	--	0.42	0.26	0.36	0.26	0.47	0.36	0.15	0.10	0.26
29	0.05	0.26	0.47	0.47	0.36	0.31	0.27	0.26	0.10	0.54	0.95	0.54	0.54	0.27	0.10	0.26	0.36	0.26	0.42	0.21	0.26	0.15	0.21	0.21
30	0.26	0.58	0.36	0.42	0.26	0.47	0.14	0.27	--	--	--	--	--	0.68	0.42	0.47	0.26	0.40	0.42	0.42	0.47	--	--	--
31	--	--	0.14	0.14	0.14	--	--	0.27	0.14	0.27	--	0.14	--	0.14	0.27	0.14	0.10	0.42	0.54	--	--	--	--	--

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

AUGUST 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	0.53	0.59	0.52	0.45	0.47	0.37	0.40	0.41	0.44	0.51	0.56	0.62	0.47	0.62	0.51	0.53	0.56	0.61	0.48	0.54	0.51	0.57	0.61	0.57
02	0.52	0.57	0.60	0.55	0.57	0.43	0.48	0.47	—	0.55	0.50	0.41	0.47	0.53	0.58	0.58	0.57	0.57	0.50	0.53	0.59	0.47	0.53	0.55
03	0.57	0.51	0.53	0.65	0.54	0.50	0.50	0.48	0.33	0.52	0.50	0.58	0.52	0.50	0.47	0.62	0.38	0.59	0.59	0.58	0.58	0.67	0.57	0.43
04	0.43	—	—	—	—	—	—	0.45	0.51	0.45	0.47	0.43	0.40	0.50	0.41	0.44	0.48	0.54	0.44	0.51	0.50	0.45	0.37	0.52
05	0.50	0.51	0.47	0.41	0.40	0.45	0.47	0.55	0.47	0.45	0.47	0.45	0.58	0.47	0.44	0.47	0.48	0.50	0.37	0.51	0.43	0.52	0.57	0.44
06	0.47	0.44	0.38	0.45	0.47	0.44	0.55	0.47	0.47	0.43	0.47	0.47	0.41	0.41	0.60	0.50	0.52	—	—	—	—	—	—	—
07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
08	—	0.41	0.60	0.52	0.54	0.50	0.55	0.69	0.53	0.55	0.53	0.51	0.55	0.52	0.40	0.58	0.50	0.57	0.60	0.47	0.53	0.51	0.53	0.51
09	0.57	0.61	0.55	0.66	—	—	—	—	—	—	—	—	—	—	—	—	0.45	0.55	0.63	0.48	0.51	0.53	0.47	0.62
10	0.63	0.51	0.57	0.65	0.65	0.55	0.43	0.45	0.65	0.43	0.61	0.52	0.49	0.55	0.64	0.51	0.50	0.65	0.56	0.64	—	—	—	—
11	—	—	—	—	—	—	—	0.46	0.54	0.49	0.51	0.45	0.50	0.54	0.45	0.52	0.48	—	—	—	—	—	—	—
12	—	—	0.58	0.52	0.63	0.56	0.52	0.51	0.45	0.61	0.49	0.51	0.41	0.47	0.55	0.62	0.50	—	—	—	—	—	—	—
13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	0.50	0.42	0.60	0.51	0.60	0.54	0.54	0.68	0.57	0.51	0.49	0.54	0.53	0.58	0.45	0.58	0.57	0.50	0.47	0.51	0.50	0.52
15	0.60	0.65	0.54	0.27	0.51	0.59	0.14	0.40	0.27	0.57	0.60	0.50	0.50	0.27	0.60	0.45	0.56	0.60	0.43	0.60	0.54	0.55	0.51	0.48
16	0.44	0.64	0.40	0.52	0.60	0.40	0.54	0.51	0.57	0.65	0.40	0.52	0.60	0.54	0.54	0.47	0.52	0.67	0.45	0.55	0.58	—	—	—
17	—	—	—	—	—	—	—	—	0.48	0.55	0.51	—	—	—	—	0.62	0.47	0.48	0.67	0.47	0.50	—	—	—
18	—	—	0.52	0.55	0.47	0.55	0.58	0.41	0.60	0.56	0.51	0.43	0.56	0.51	0.51	0.68	0.61	0.54	0.46	0.68	0.51	—	—	—
19	—	—	—	0.54	0.63	0.55	0.50	0.55	0.53	0.48	0.57	0.50	0.52	0.57	0.61	0.53	0.62	0.55	0.57	—	—	—	—	—
20	—	—	0.48	0.42	0.58	0.53	0.48	0.61	0.50	0.67	0.63	0.54	0.57	0.49	0.64	0.54	0.56	0.51	0.45	—	—	—	—	—
21	—	—	0.46	0.53	0.63	0.46	0.55	0.63	0.60	0.72	0.58	0.57	0.62	0.51	0.46	0.53	0.53	0.49	0.62	0.55	0.57	—	—	—
22	—	—	—	0.53	0.48	0.58	0.51	0.50	0.58	0.62	0.53	0.55	0.48	0.60	0.48	0.45	0.48	0.55	0.62	0.46	0.51	—	—	—
23	—	—	—	—	0.56	0.61	0.50	0.48	0.58	0.60	0.60	—	—	—	—	—	—	0.53	0.55	0.56	0.51	—	—	—
24	—	—	0.51	0.55	0.52	0.60	0.67	0.57	0.47	0.55	0.53	0.52	0.55	—	—	—	0.53	0.55	0.59	0.67	0.60	—	—	—
25	—	—	0.55	0.55	0.64	0.56	0.68	0.65	0.50	0.63	0.60	3.39	0.48	—	—	0.63	0.63	0.57	0.62	0.55	0.62	—	—	—
26	—	—	—	0.48	0.55	0.56	0.45	0.64	0.59	0.52	0.56	0.55	0.55	0.48	0.51	0.48	0.53	0.65	0.55	0.54	0.53	—	—	—
27	—	0.59	0.46	0.47	0.48	—	—	—	—	—	—	—	—	—	0.61	0.67	0.50	0.55	0.60	0.59	0.51	—	—	—
28	—	—	0.58	0.56	0.65	—	—	—	—	—	—	—	—	—	—	0.54	0.56	0.51	0.55	0.46	0.56	0.59	0.60	0.56
29	0.51	0.49	0.63	0.63	0.63	0.68	0.52	0.49	0.55	0.62	0.58	0.44	0.60	0.45	0.62	0.66	0.67	0.62	0.51	0.50	0.52	0.59	0.55	0.45
30	0.52	0.55	0.56	0.55	0.65	0.45	0.58	0.44	0.64	0.60	0.60	—	—	0.61	0.53	0.56	0.61	0.48	0.56	0.55	0.48	—	—	—
31	—	—	0.57	0.52	0.52	—	—	0.62	0.47	0.57	—	—	0.57	—	0.48	0.54	0.44	0.54	0.57	—	—	—	—	—

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for July 1971 Data

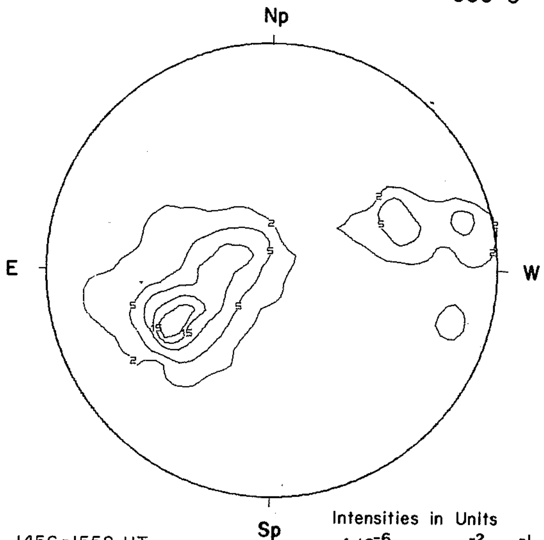
Note: See page 81

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

JULY 1, 1971 (P=-2.99, B_o = 2.85, L_o = 260.87)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

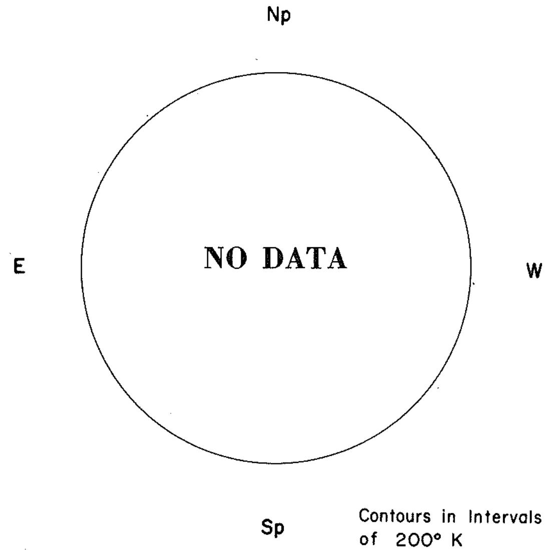


1456-1558 UT

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

PROSPECT HILL
AFCRL

8.6 mm

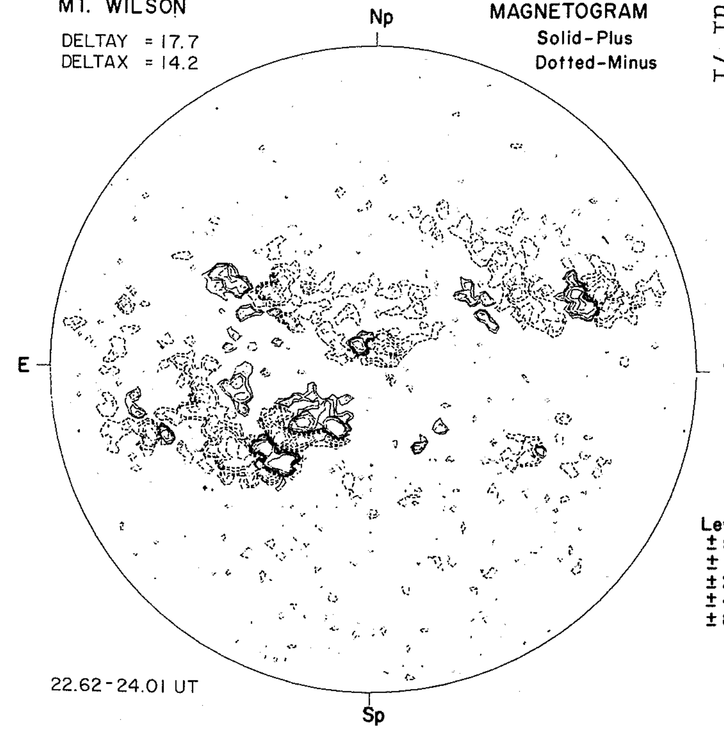


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

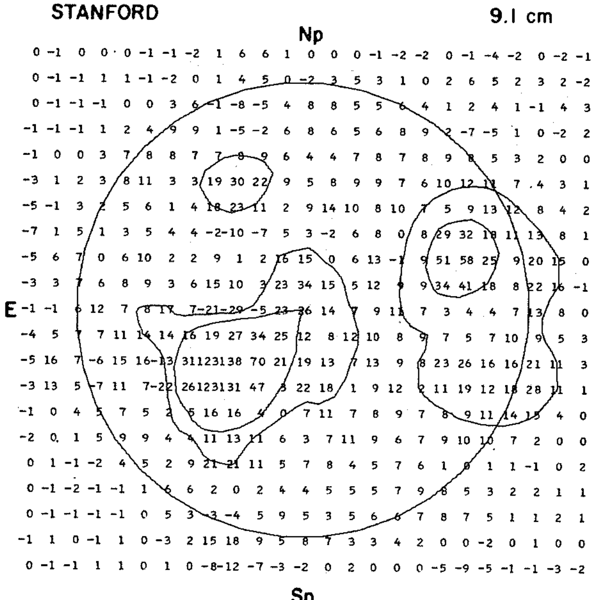


Levels
±5
±10
±20
±40
±80

22.62-24.01 UT

STANFORD

9.1 cm

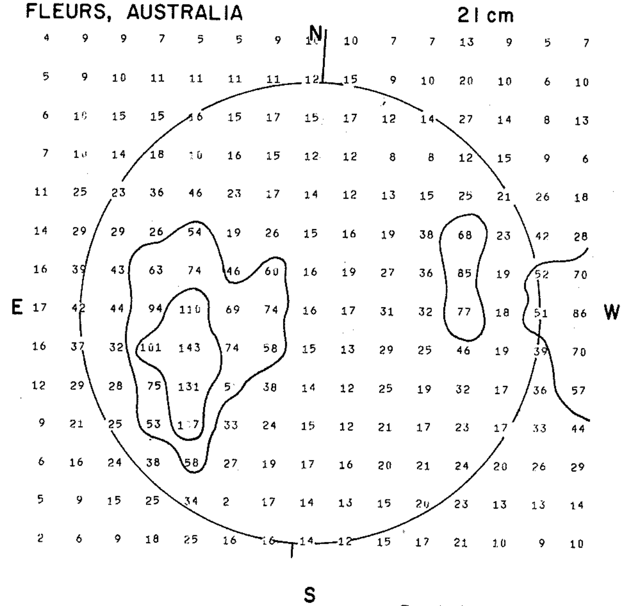


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

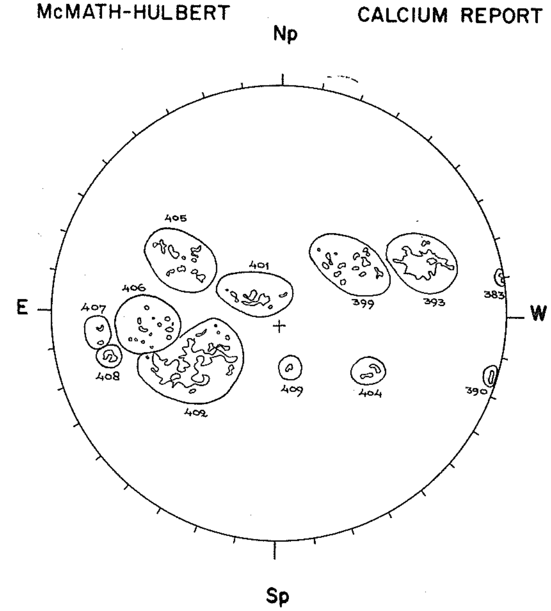


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



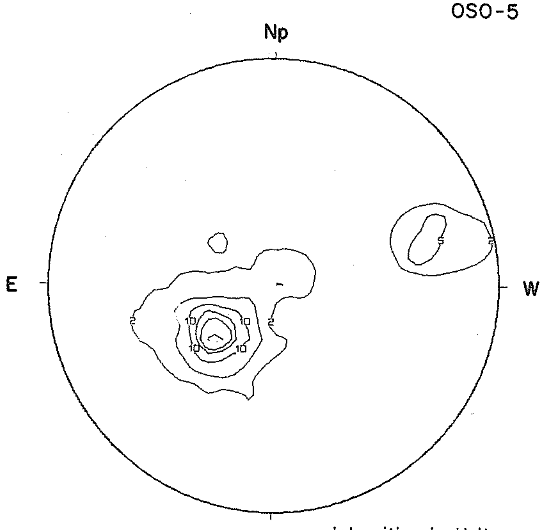
POOR | M
93-24-3.5
01-08-3.0
02-47-4.0

1300 UT

JULY 2, 1971 (P=-2.53, B_o=2.96, L_o=247.63)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

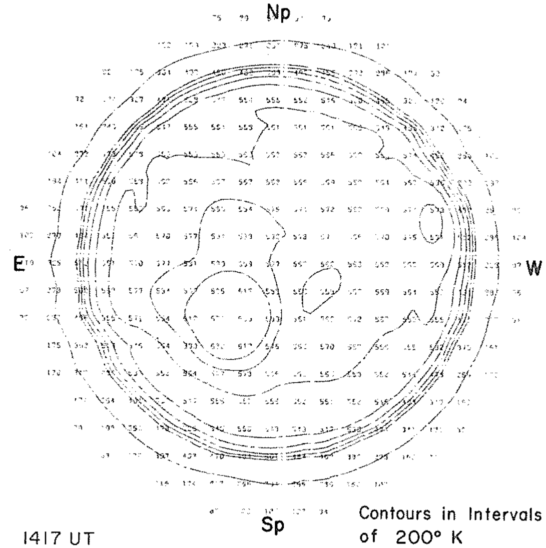


0949-1045 UT

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

PROSPECT HILL
AFCRL

8.6 mm



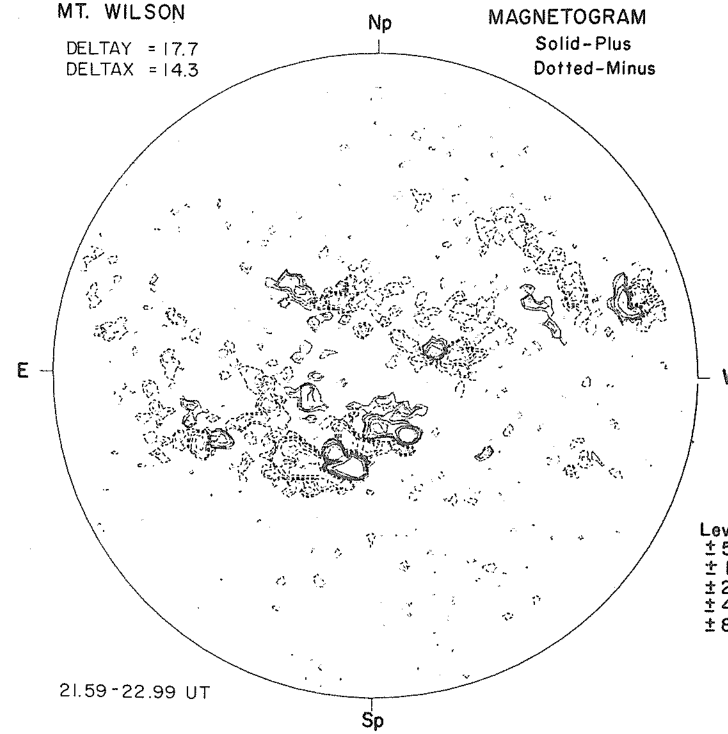
1417 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus

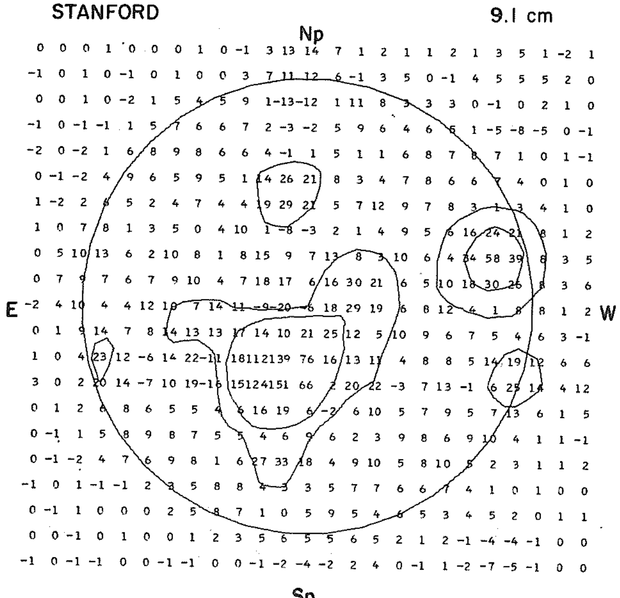


Levels
±5
±10
±20
±40
±80

21.59-22.99 UT

STANFORD

9.1 cm

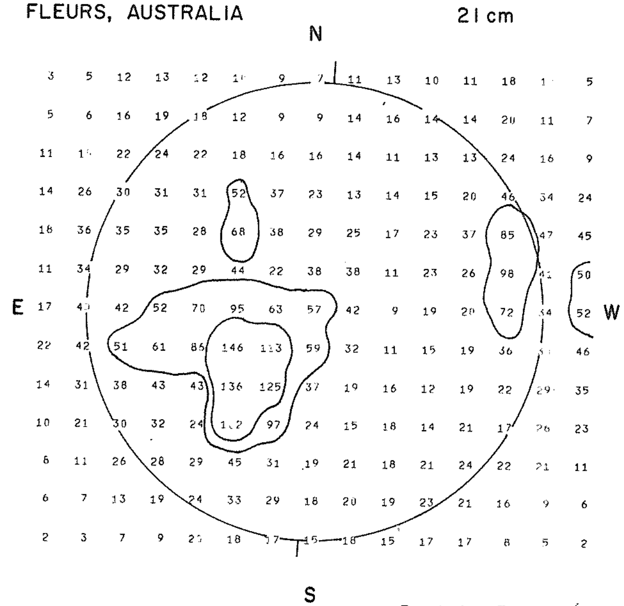


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

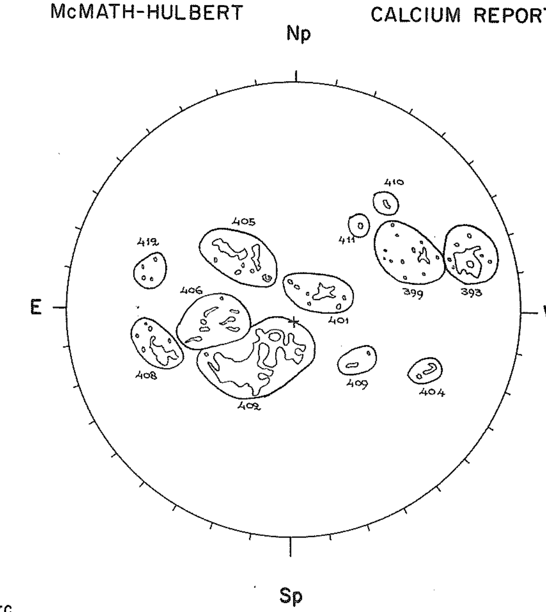


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



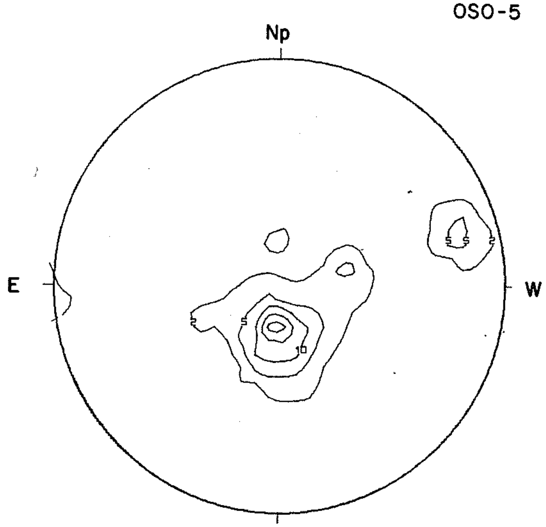
GOOD	M
93-28-3.5	
01-08-3.0	
02-50-4.0	
05-20-2.5	
08-15-2.5	

1417 UT

JULY 3, 1971 (P = -2.08, B_o = 3.07, L_o = 234.39)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

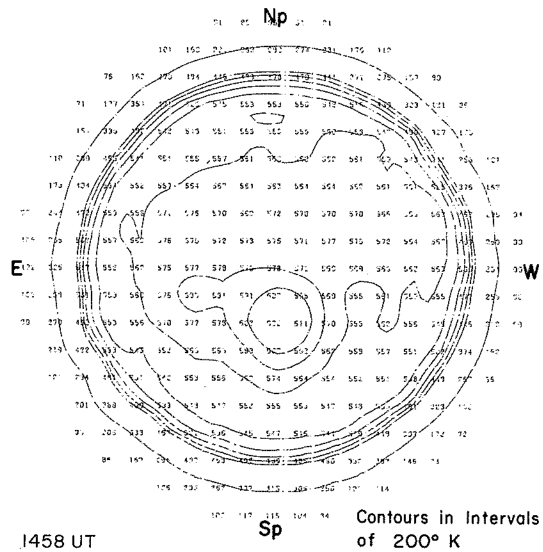


1436-1516 UT

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

PROSPECT HILL
AFCRL

8.6 mm



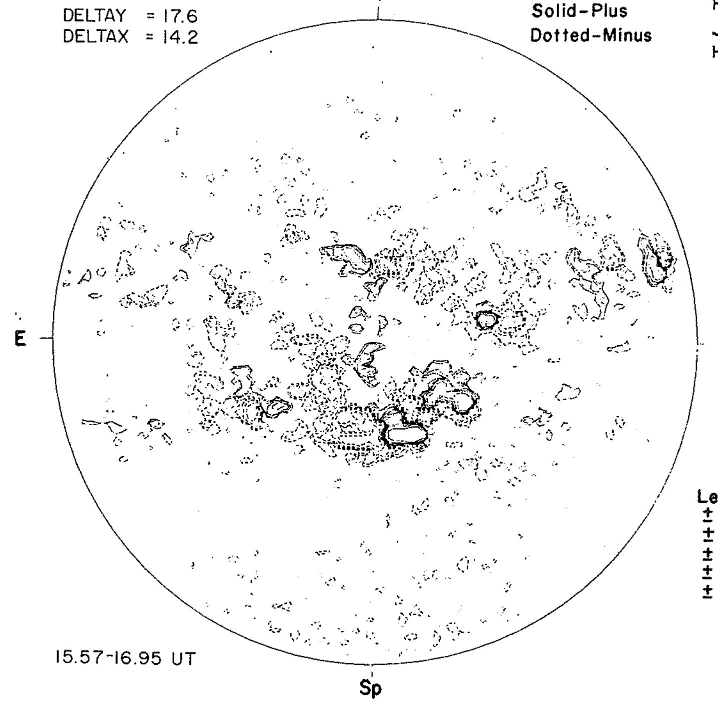
1458 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

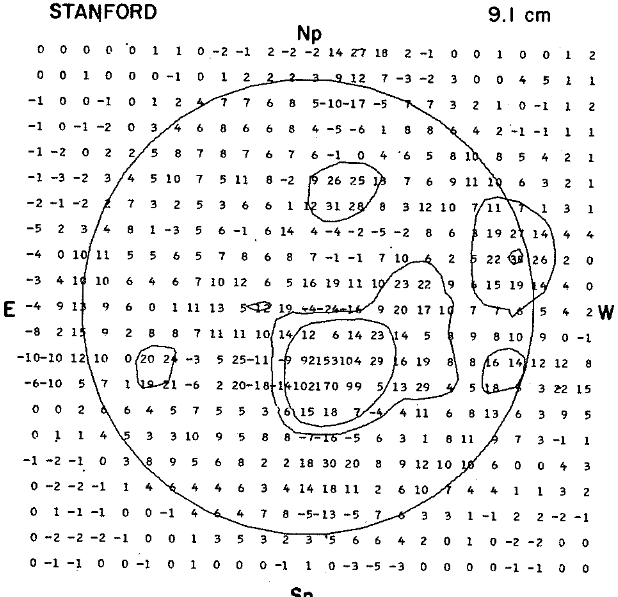


Levels
±5
±10
±20
±40
±80

15.57-16.95 UT

STANFORD

9.1 cm

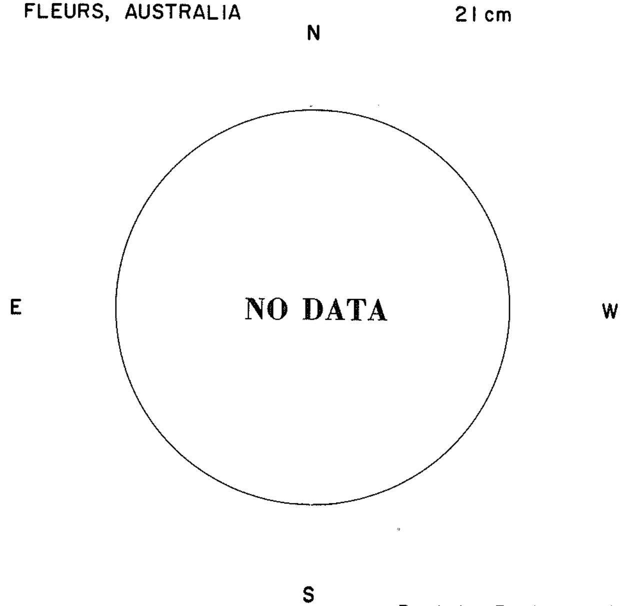


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

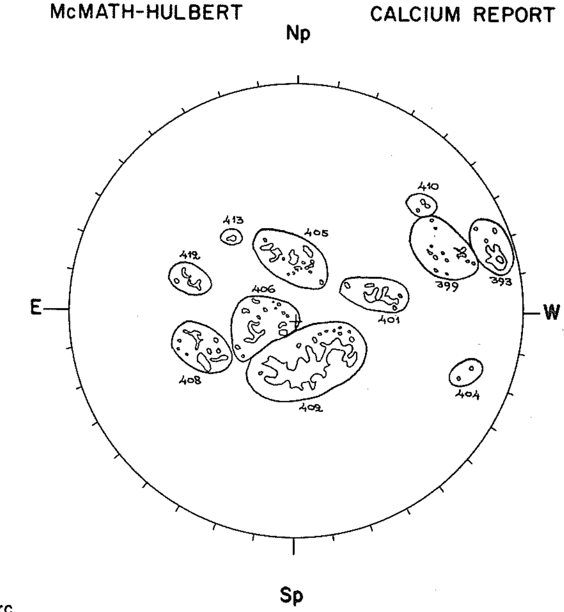


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



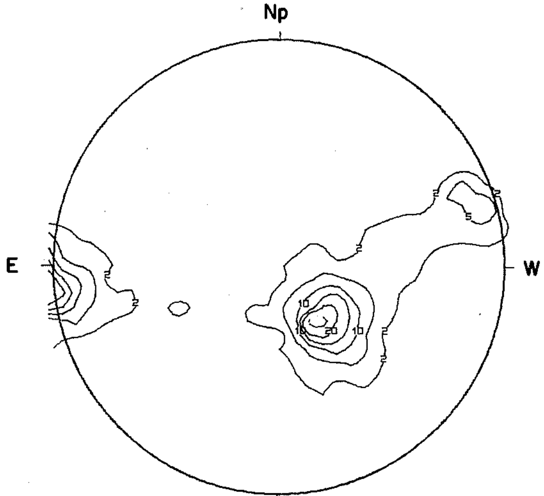
FAIR	S
93-26	-3.0
01-09	-3.0
02-50	-3.5
05-18	-2.5
08-15	-2.5
13-02	-2.5

1200 UT

JULY 4, 1971 (P = -1.63, B_o = 3.17, L_o = 221.16)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

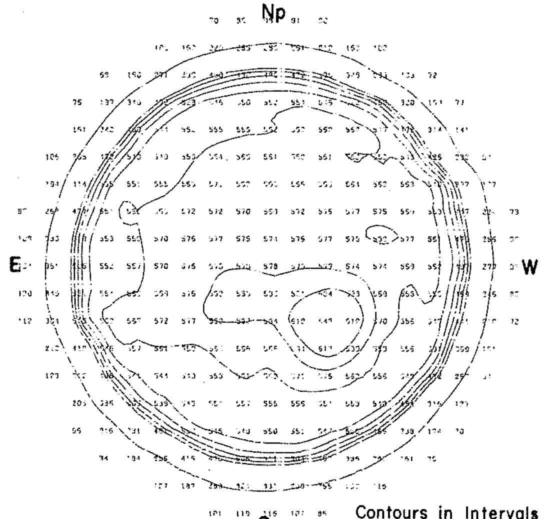


1609-1753 UT

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

PROSPECT HILL
AFCRL

8.6 mm



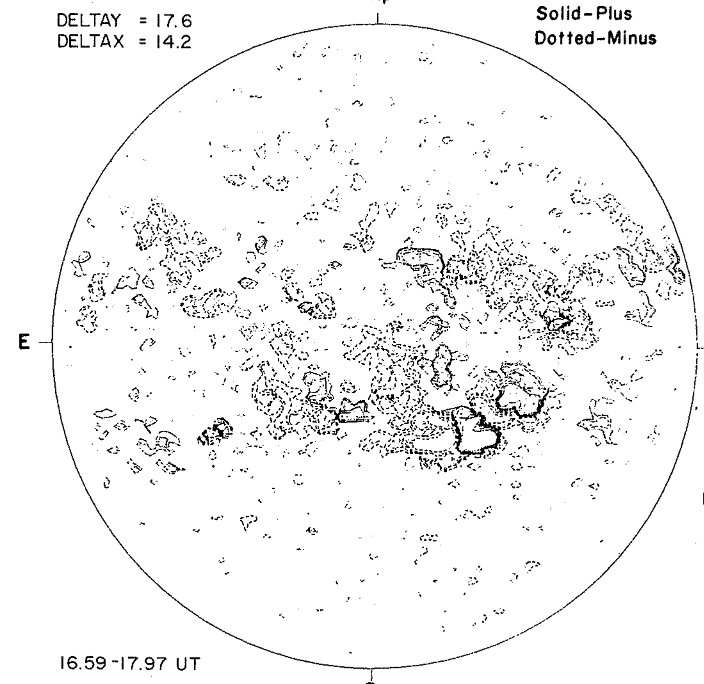
1510 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

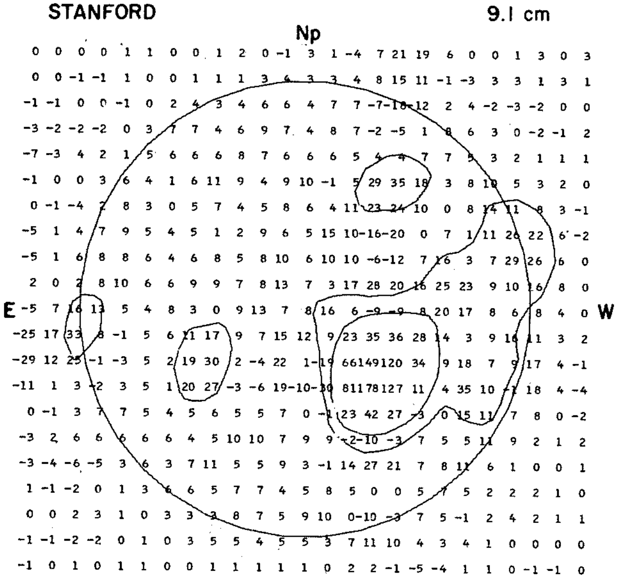


Levels
±5
±10
±20
±40
±80

16.59-17.97 UT

STANFORD

9.1 cm

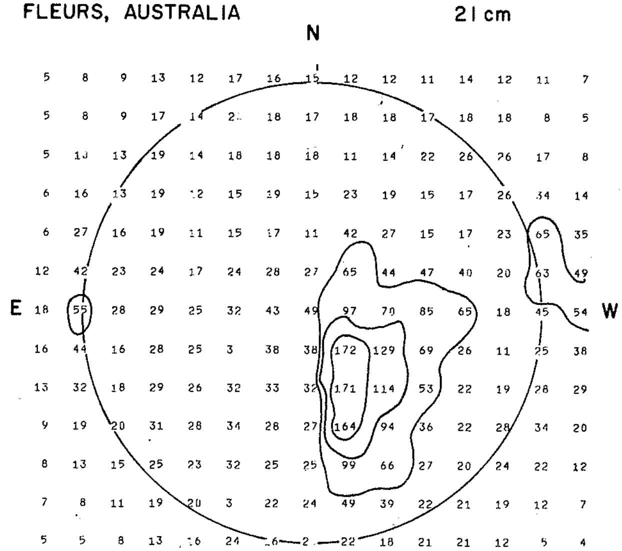


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

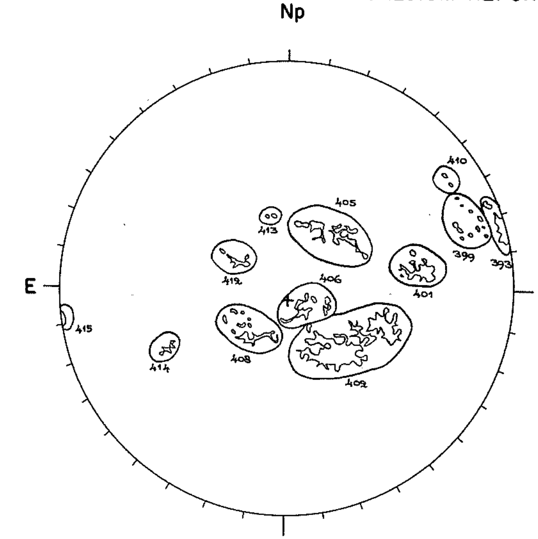


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



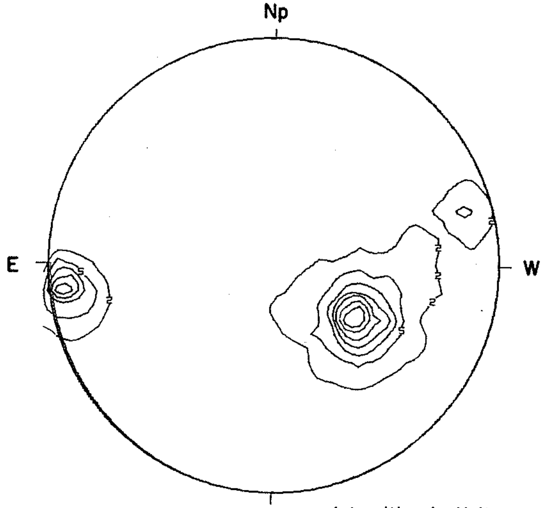
FAIR	M
93-26-2.5	
01-10-3.0	
02-51-3.5	
05-18-2.5	
06-08-2.5	
08-09-2.5	
14-03-3.0	

1255 UT

JULY 5, 1971 (P = -1.17, B_o = 3.28, L_o = 207.92)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

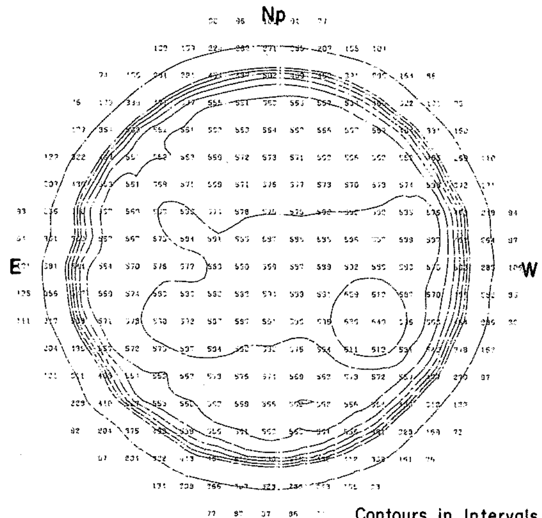


1237-1250 UT

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

PROSPECT HILL
AFCRL

8.6 mm



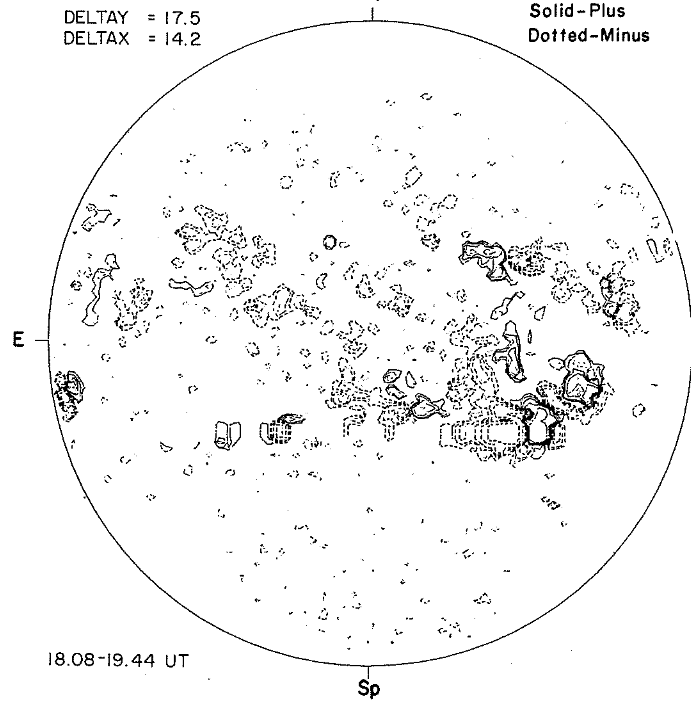
1434 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

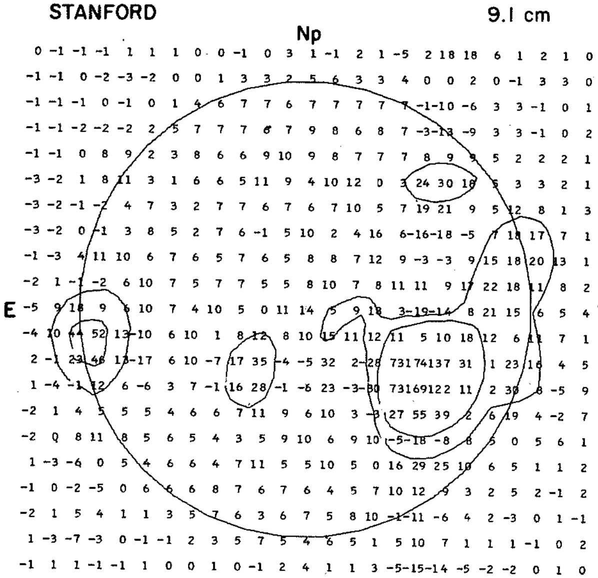


Levels
±5
±10
±20
±40
±80

18.08-19.44 UT

STANFORD

9.1 cm

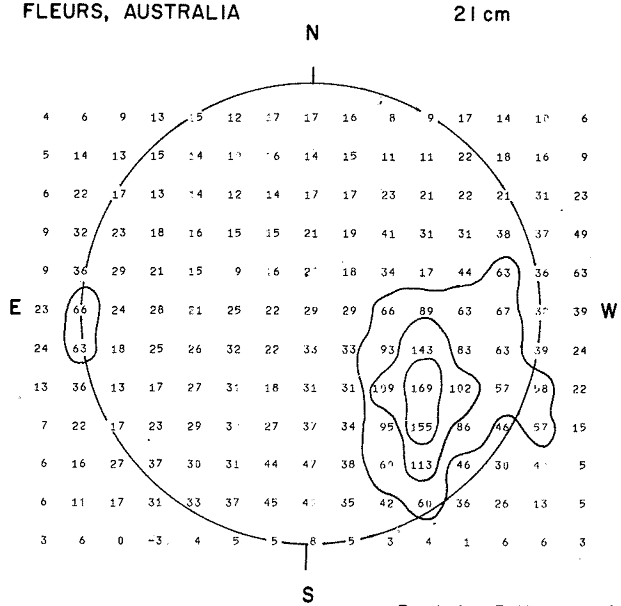


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

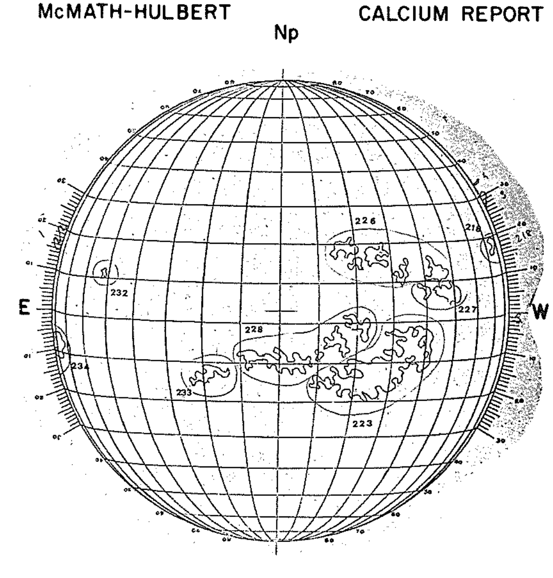


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



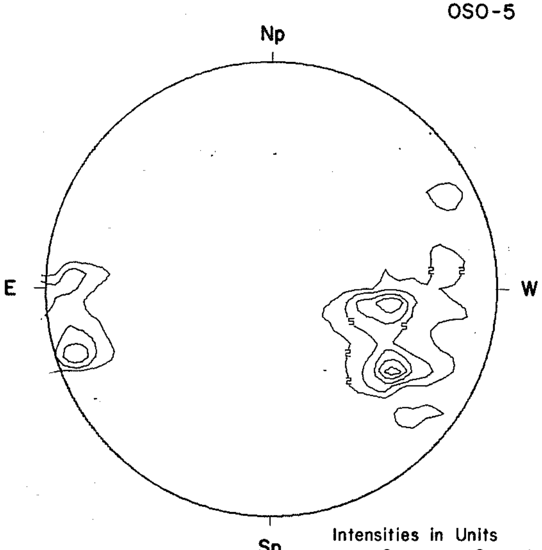
27 - 16 - - -
26 - 35 - - -
23 - 105 - - -
28 - 42 - - -
34 - 26 - - -

0855 UT

JULY 6, 1971 (P = -0.72, B_o = 3.39, L_o = 194.69)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

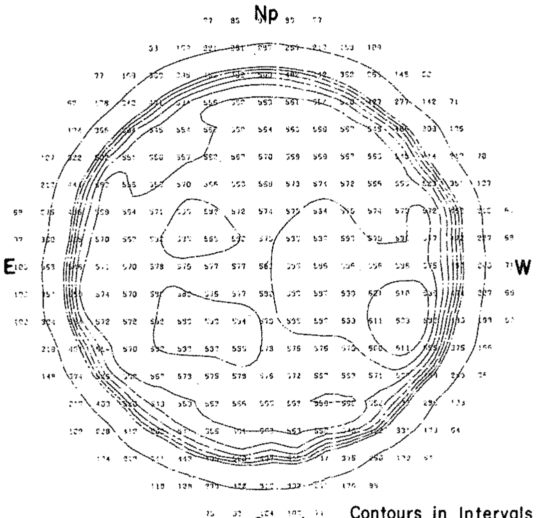


1415-1454 UT

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

PROSPECT HILL
AFCRL

8.6 mm



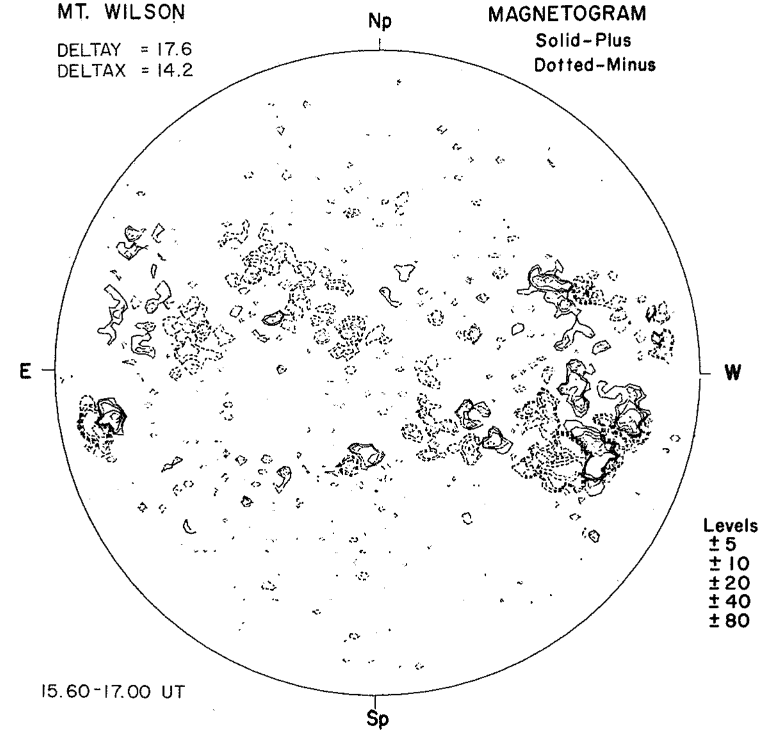
1404 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

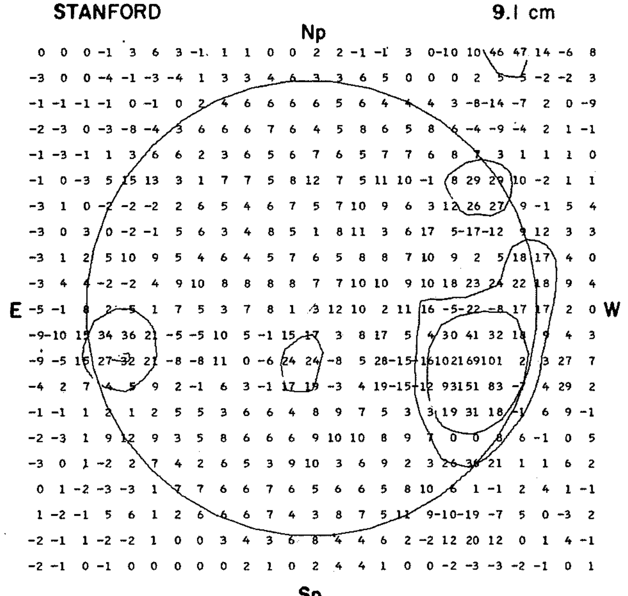
MAGNETOGRAM
Solid-Plus
Dotted-Minus



15.60-17.00 UT

STANFORD

9.1 cm

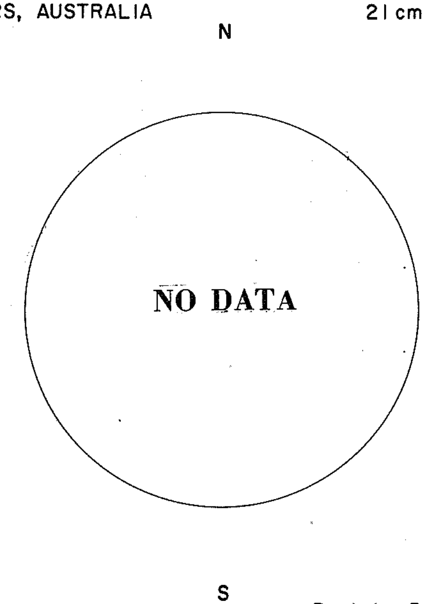


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

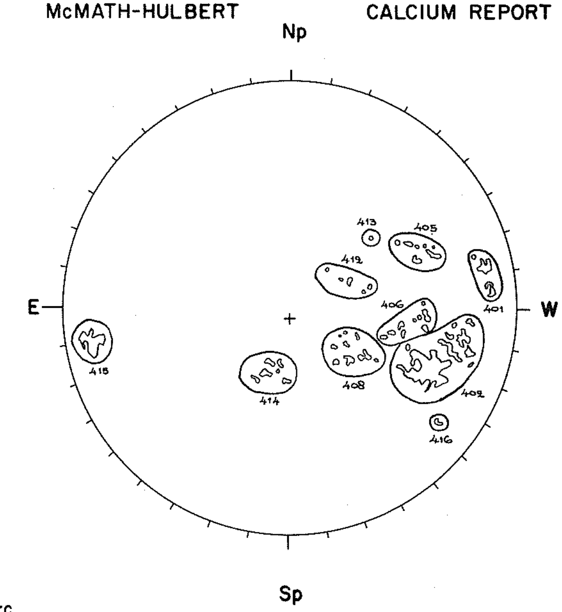


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



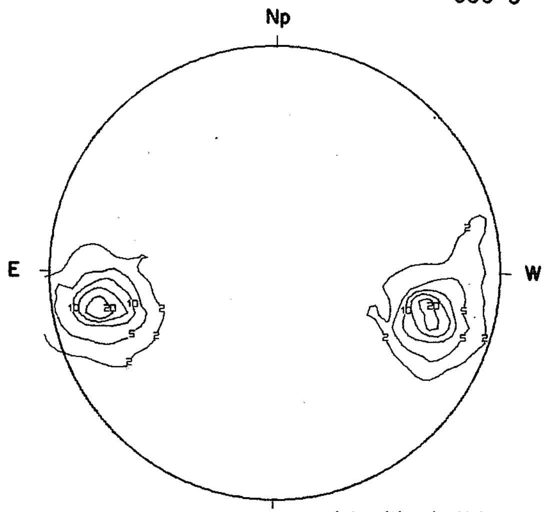
FAIR | M
02-52-3.5
08-09-2.5
15-20-3.5

1230 UT

JULY 7, 1971 (P=-0.26, B_o=3.49, L_o=181.45)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

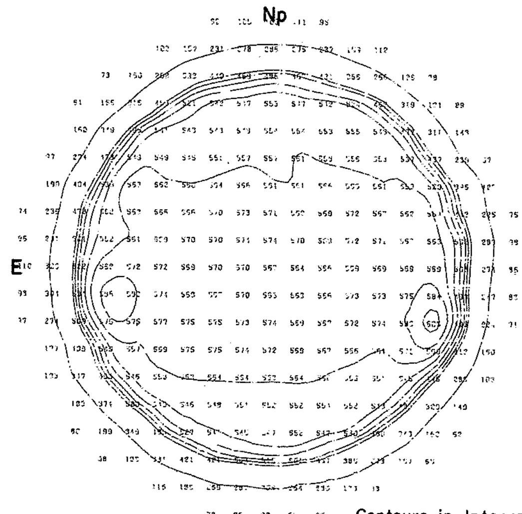


1218-1309 UT

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

PROSPECT HILL
AFCRL

8.6 mm



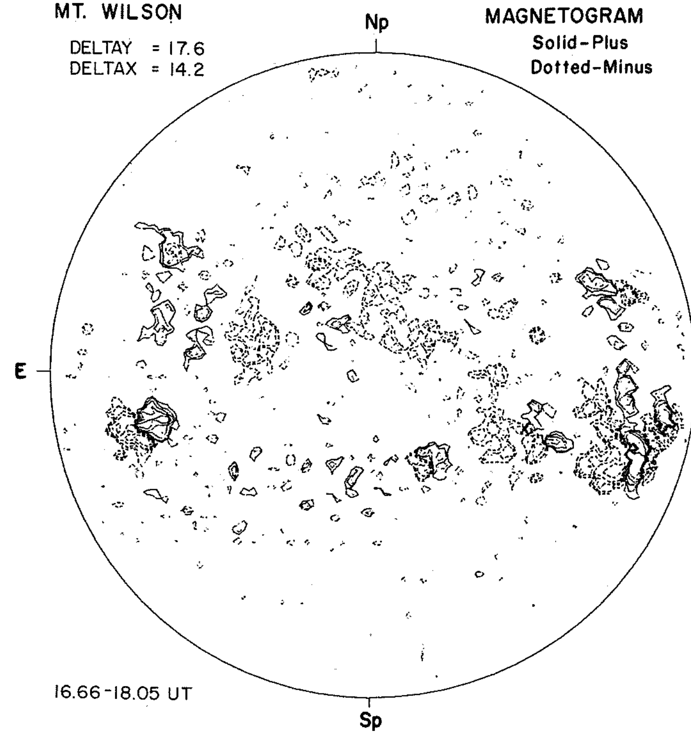
1446 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

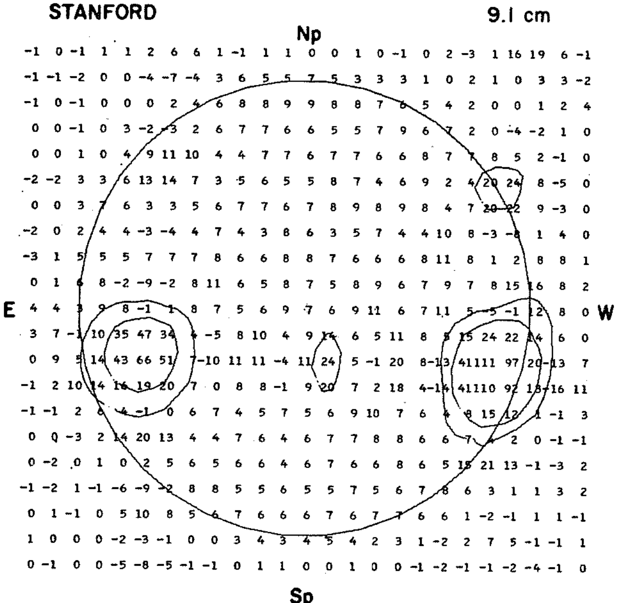


Levels
±5
±10
±20
±40
±80

16.66-18.05 UT

STANFORD

9.1 cm

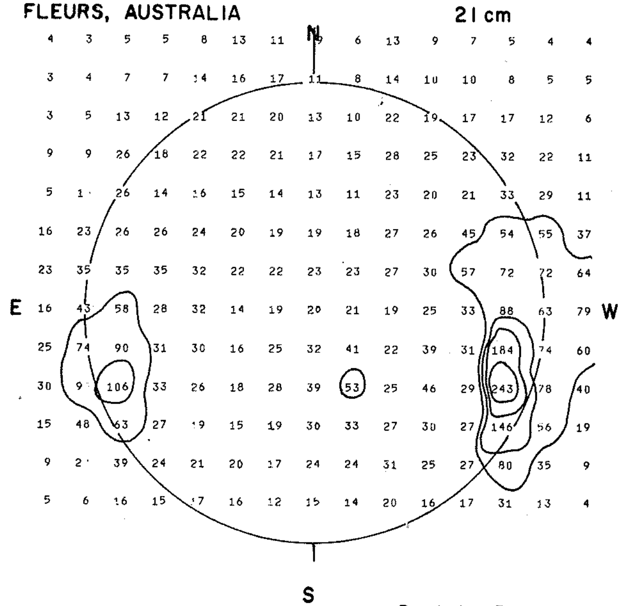


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

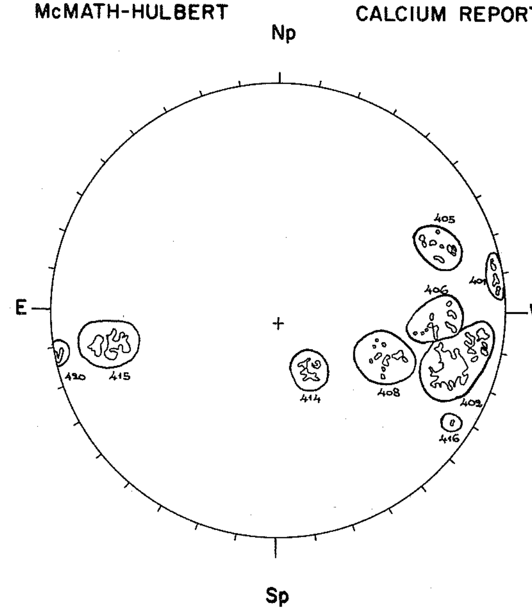


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



POOR | M

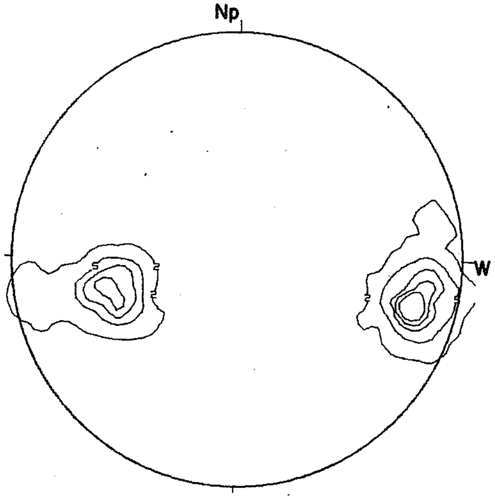
02-51-3.5
08-09-2.5
15-24-3.5

1220 UT

JULY 8, 1971 (P = 0.19, B_o = 3.60, L_o = 168.22)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

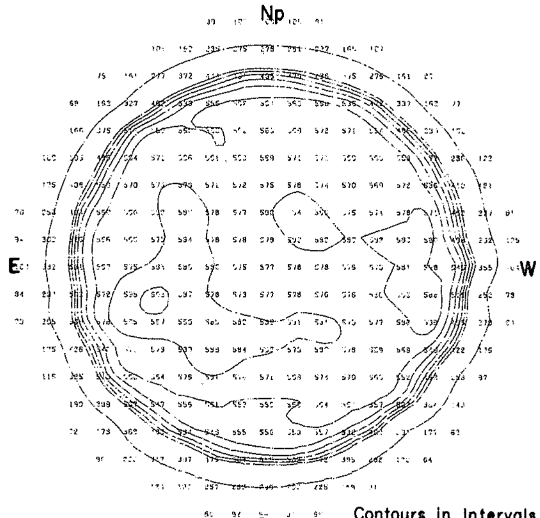


1349-1532 UT

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

PROSPECT HILL
AFCRL

8.6 mm



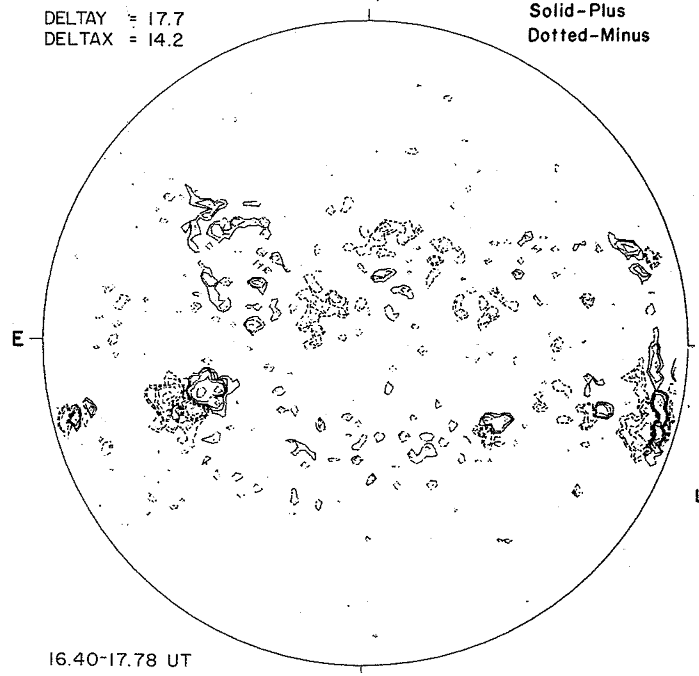
1355 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

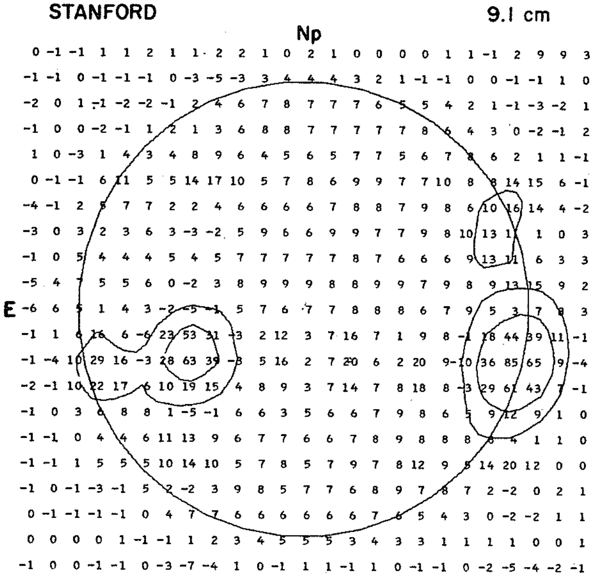


Levels
±5
±10
±20
±40
±80

16.40-17.78 UT

STANFORD

9.1 cm

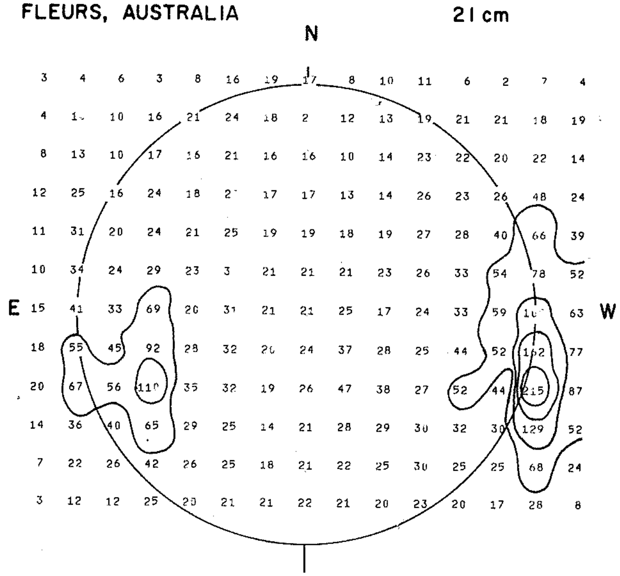


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

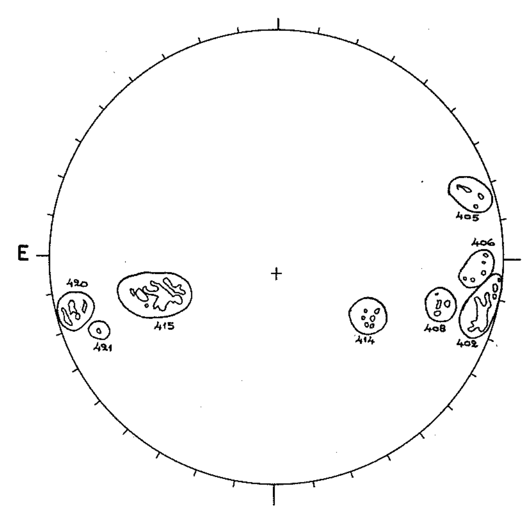


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



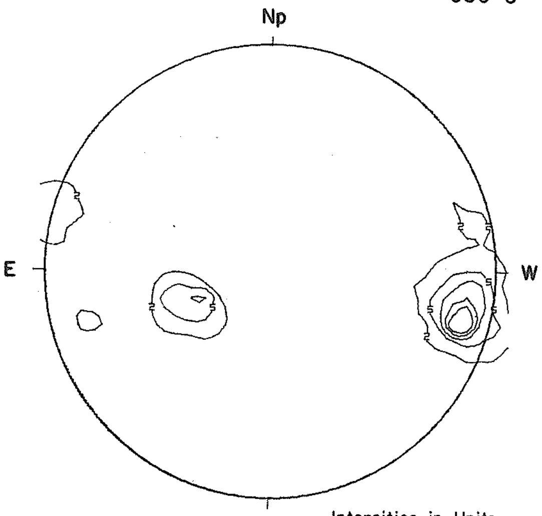
FAIR	S
02-42	-3.5
08-05	-3.0
14-06	-2.5
15-30	-3.5
20-15	-3.0

1800 UT

JULY 9, 1971 (P = 0.64, B_o = 3.70, L_o = 154.98)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

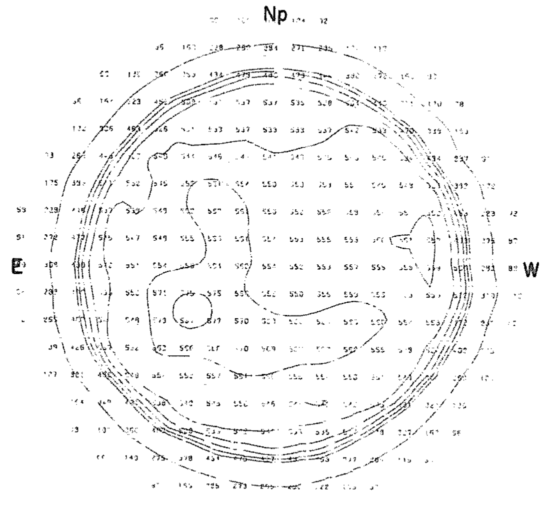


1159-1251 UT

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

PROSPECT HILL
AFCRL

8.6 mm



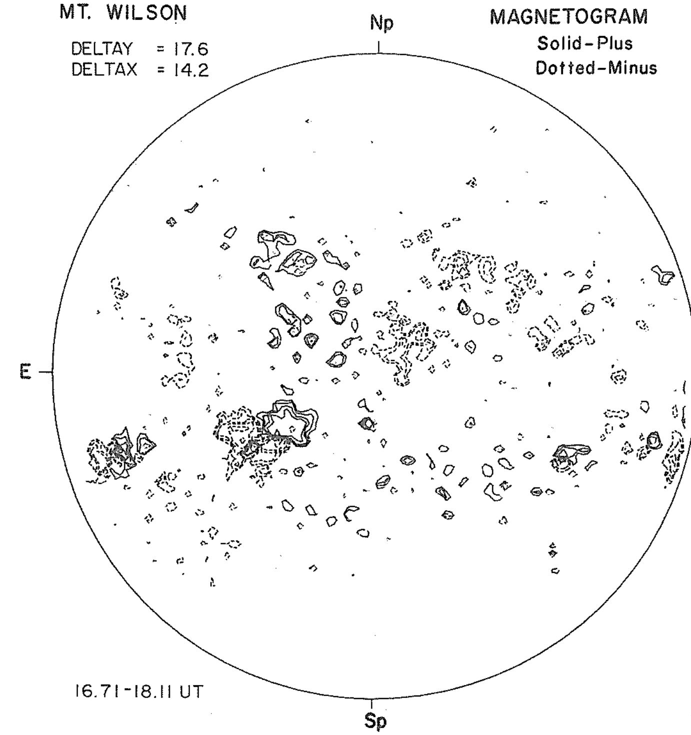
1350 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

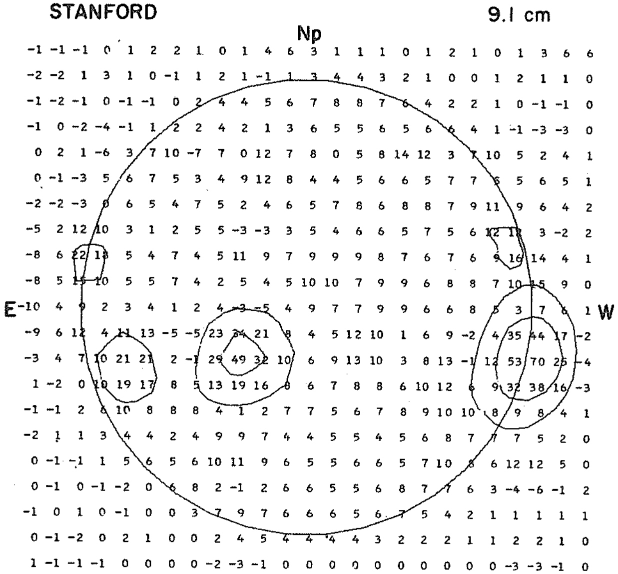


Levels
± 5
± 10
± 20
± 40
± 80

16.71-18.11 UT

STANFORD

9.1 cm

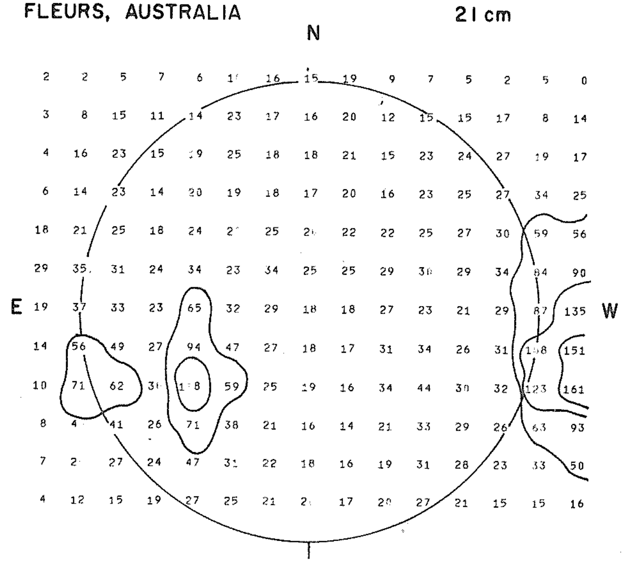


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

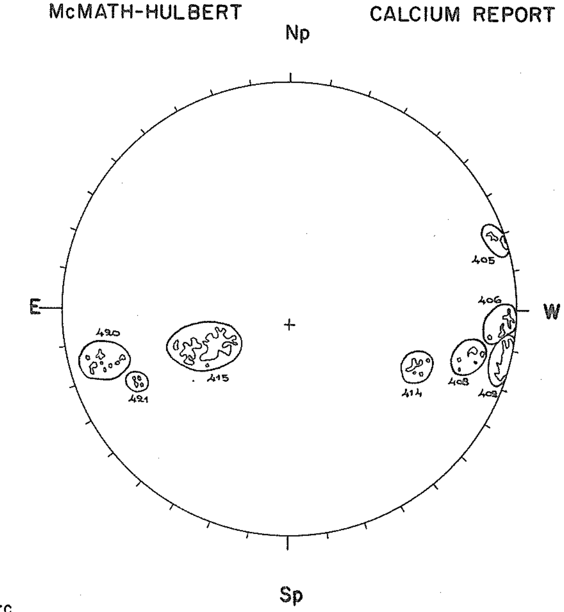


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



POOR	S
02-37-3.0	
08-04-2.5	
14-05-2.5	
15-28-3.5	
20-13-3.0	

1300 UT

JULY 10, 1971 (P = 1.10, B_o = 3.81, L_o = 141.75)

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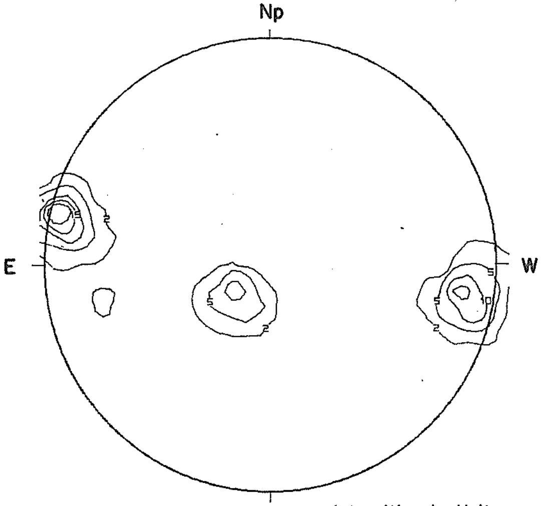
X-RAY
OSO-5

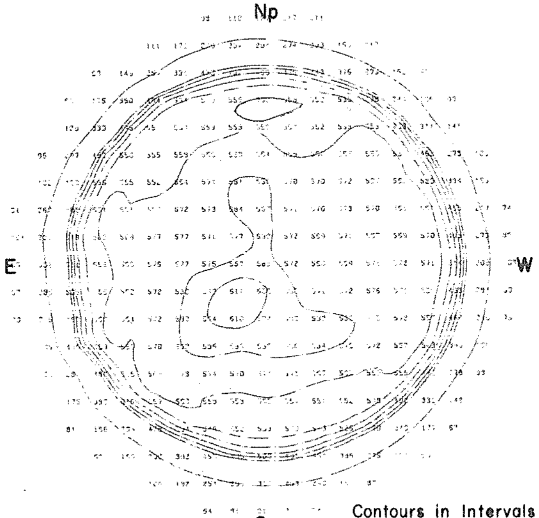


1148-1331 UT

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

PROSPECT HILL
AFCRL

8.6 mm



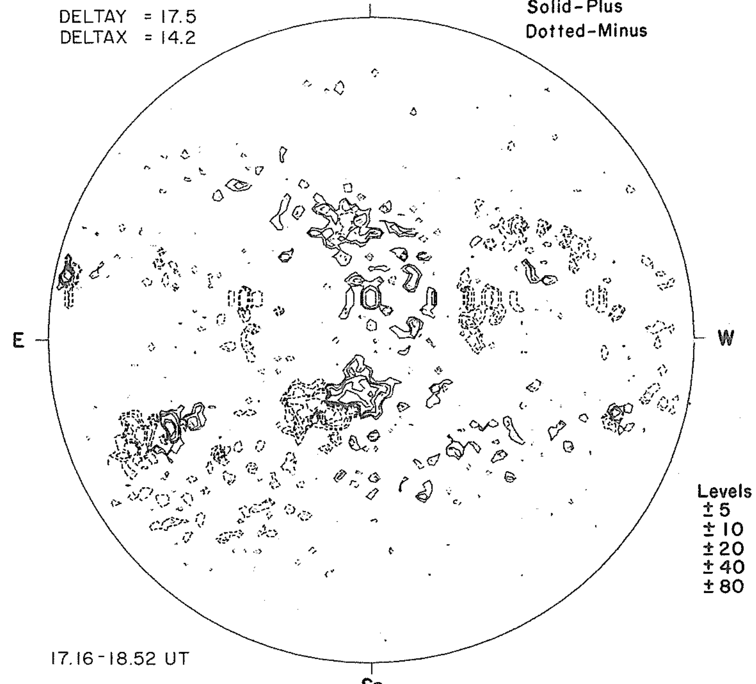
1418 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

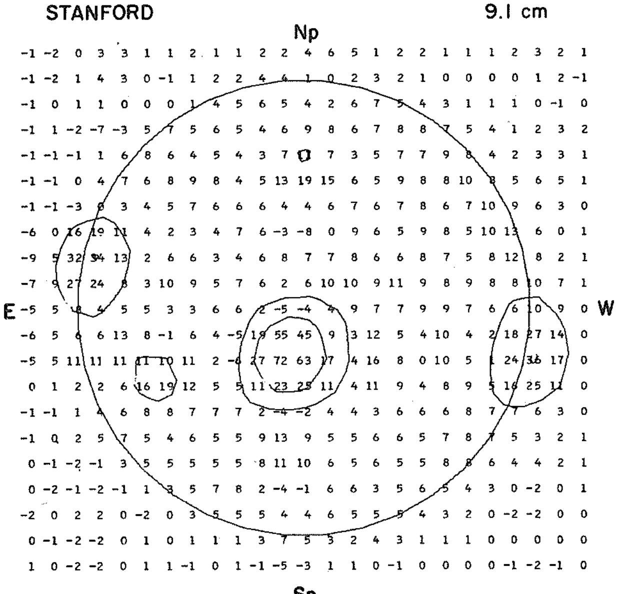
MAGNETOGRAM
Solid-Plus
Dotted-Minus



17.16-18.52 UT

STANFORD

9.1 cm

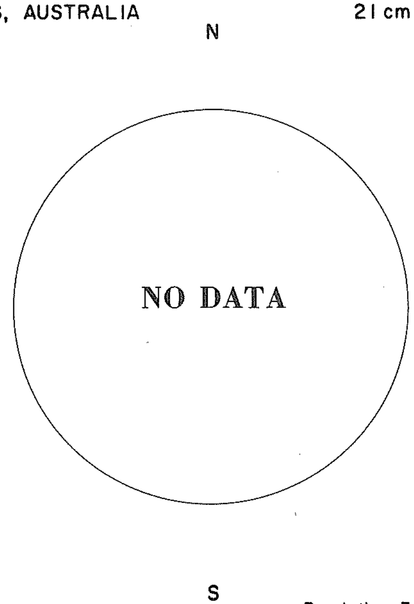


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

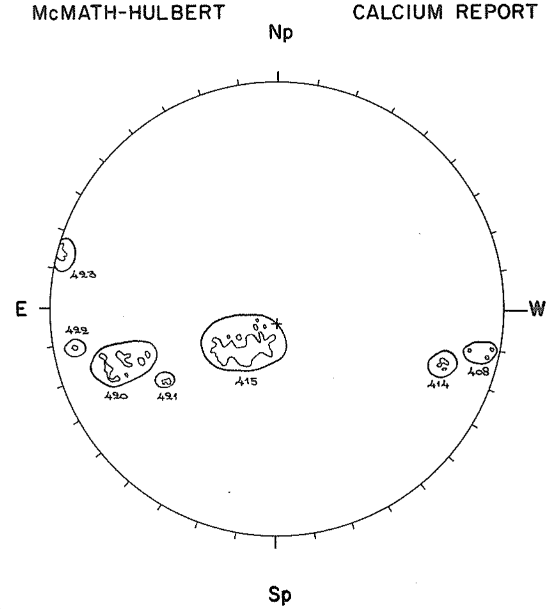


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR | S
14-04-2.5
15-30-3.5
20-13-3.0
23-08-4.0

1210 UT

JULY 11, 1971 (P = 1.55, B_o = 3.91, L_o = 128.51)

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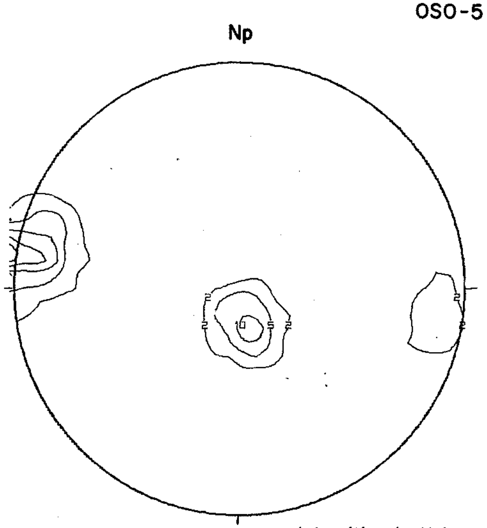
X-RAY
OSO-5

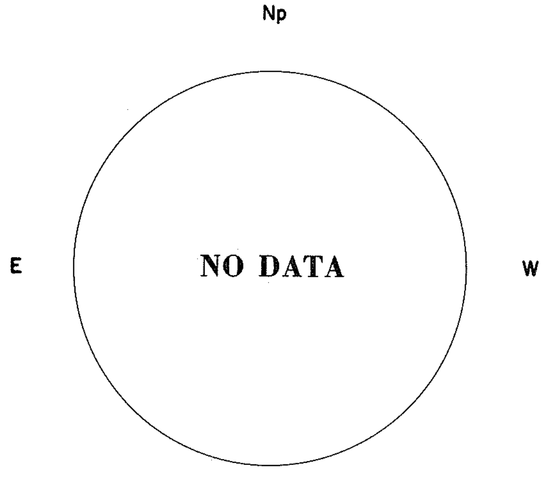


1003-1111 UT

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

PROSPECT HILL
AFCRL

8.6 mm

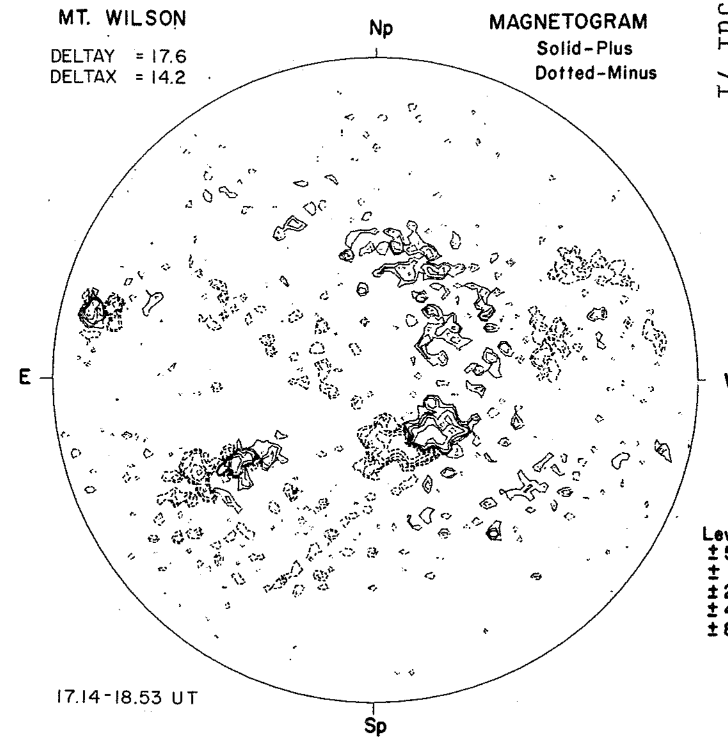


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

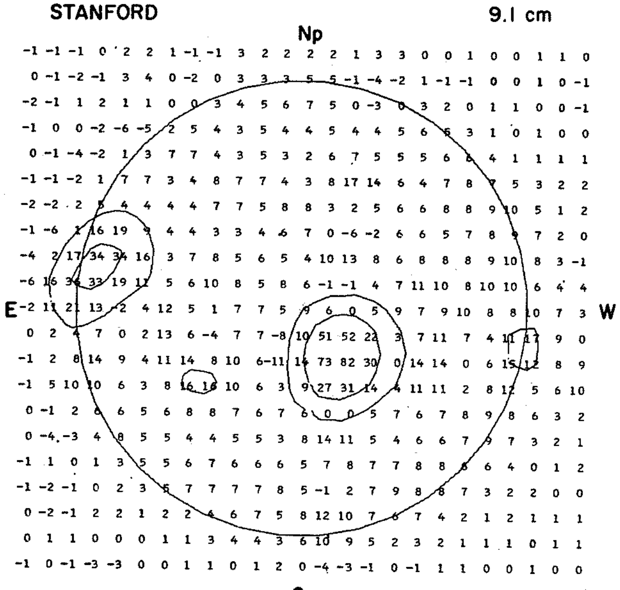


Levels
±5
±10
±20
±40
±80

17.14-18.53 UT

STANFORD

9.1 cm

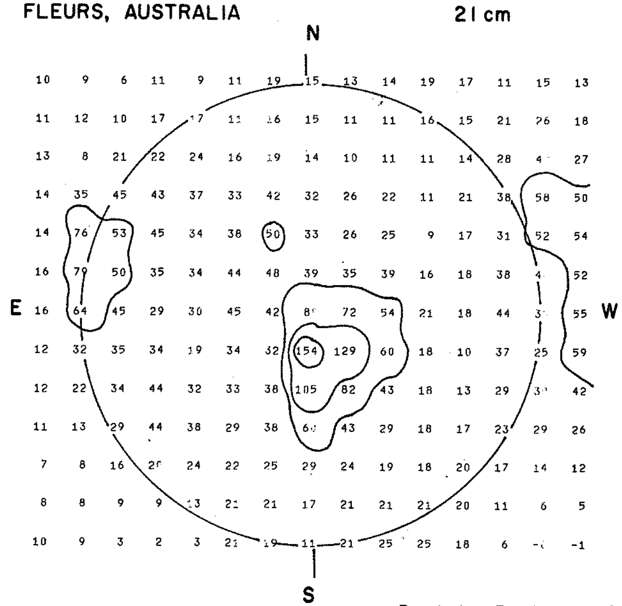


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

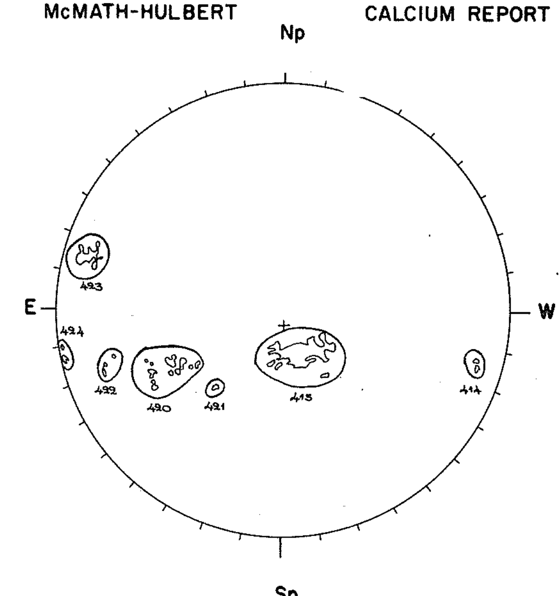


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	D

15-28-3.0
20-13-2.5
23-16-3.5

1245 UT

JULY 12, 1971 (P = 2.00, B_o = 4.01, L_o = 115.28)

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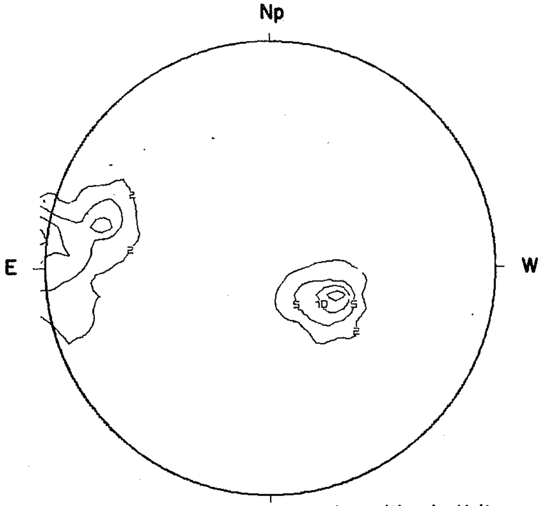
X-RAY
OSO-5

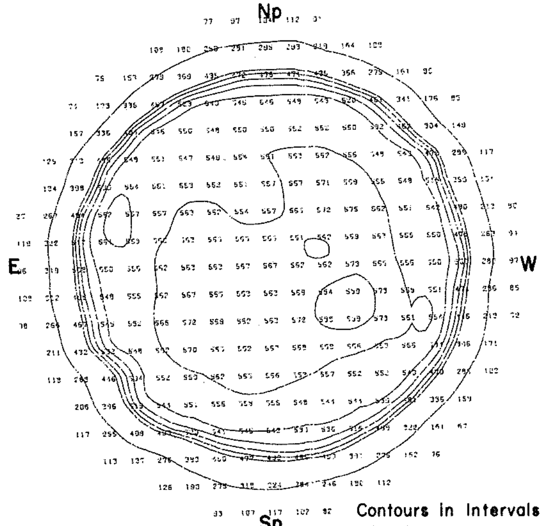


1129-1225 UT

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

PROSPECT HILL
AFCRL

8.6 mm



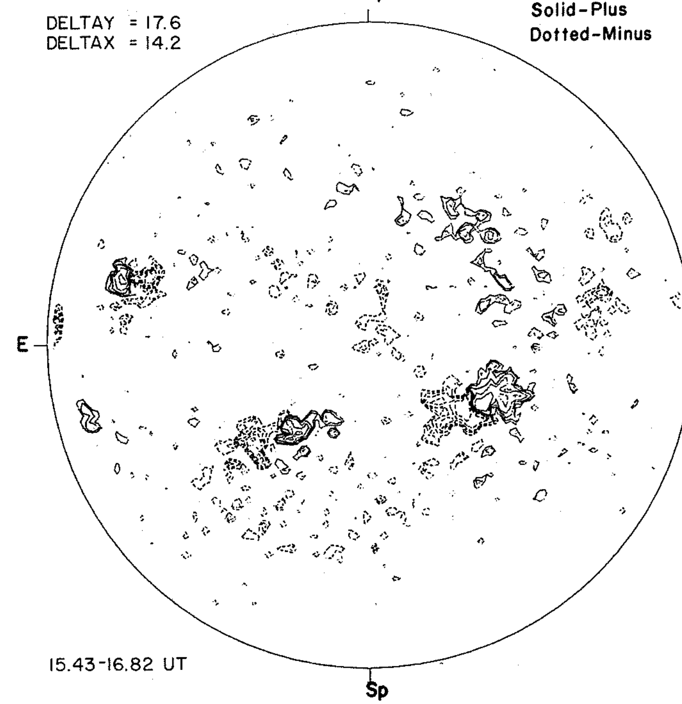
1427 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

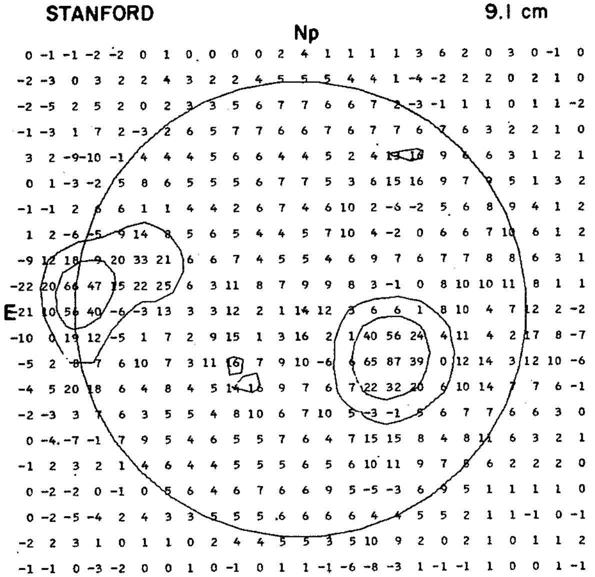


Levels
±5
±10
±20
±40
±80

15.43-16.82 UT

STANFORD

9.1 cm

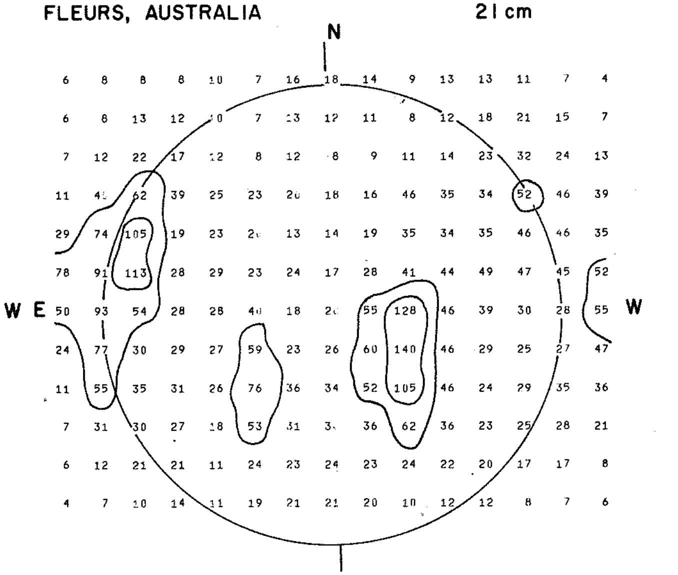


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

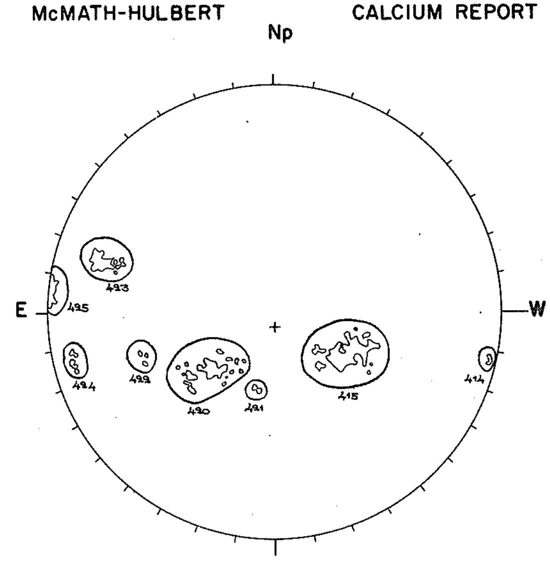


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	D
15-28-3.0	
20-16-2.5	
23-19-3.5	
25-20-3.5	

1245 UT

JULY 13, 1971 (P=2.45, B_o=4.11, L_o=102.04)

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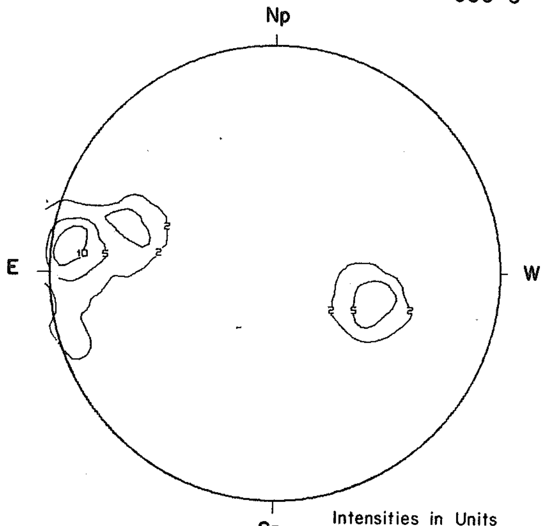
X-RAY
OSO-5

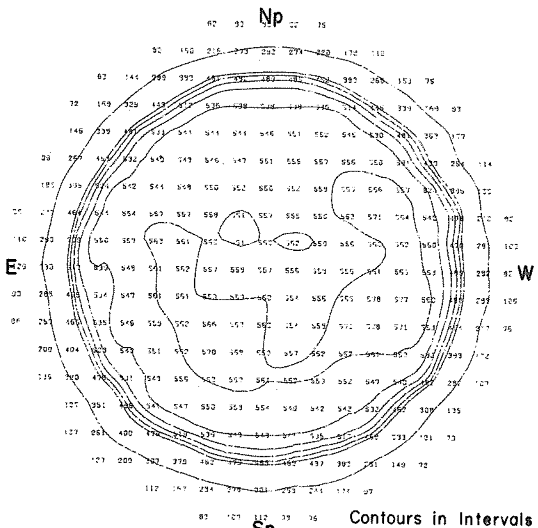


0942-1119 UT

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

PROSPECT HILL
AFCRL

8.6 mm



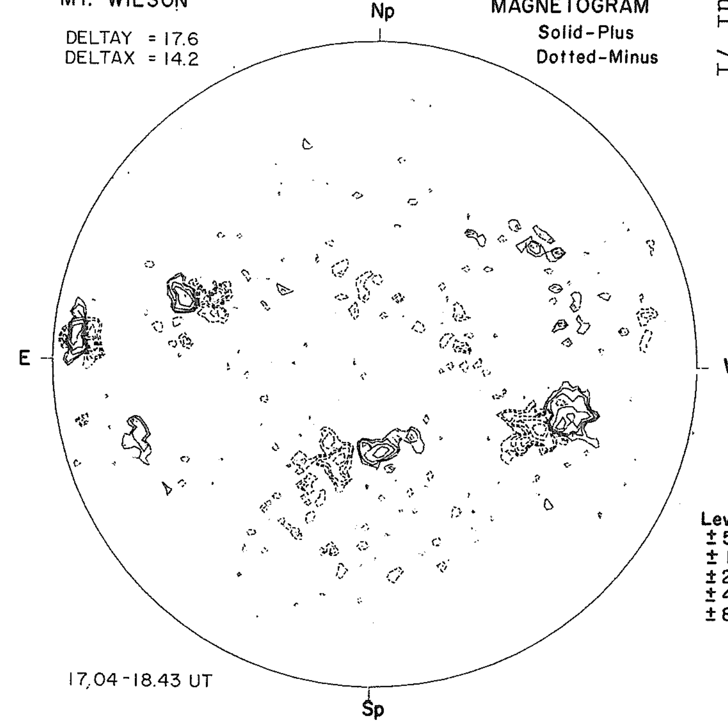
1401 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

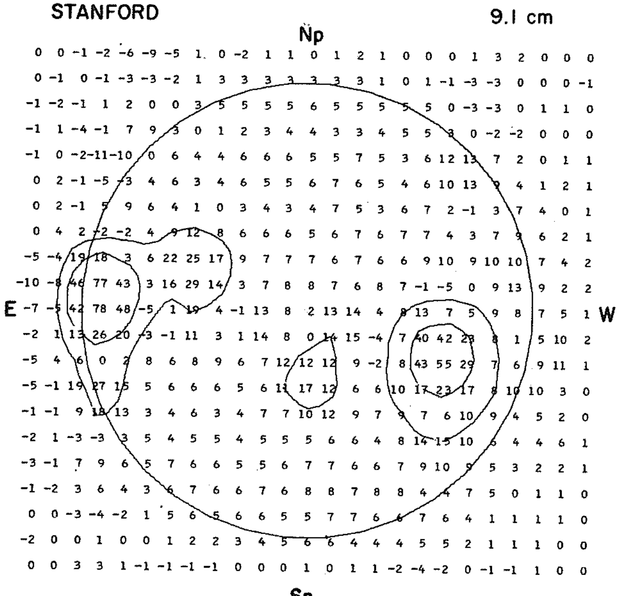


Levels
±5
±10
±20
±40
±80

17.04-18.43 UT

STANFORD

9.1 cm



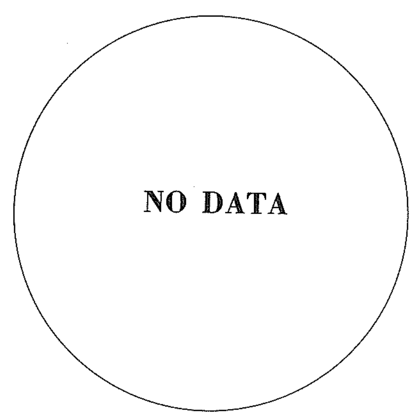
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N



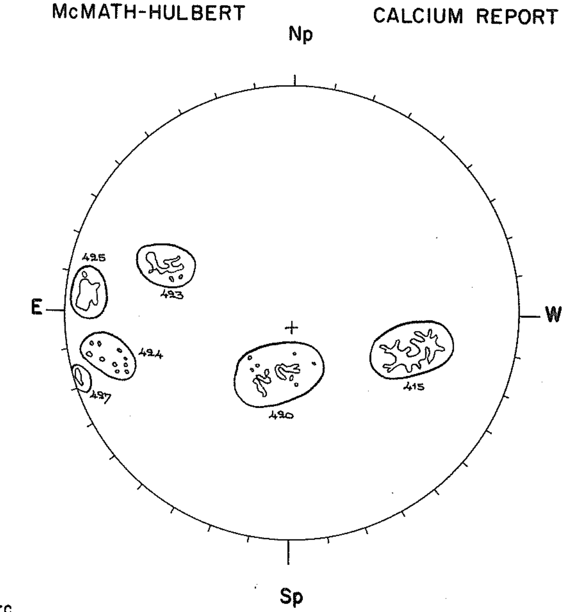
S

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



GOOD	S
15-32-3.5	
20-16-2.5	
23-15-3.0	
25-23-3.5	
27-12-2.5	

1400 UT

JULY 14, 1971 (P = 2.89, B_o = 4.21, L_o = 88.81)

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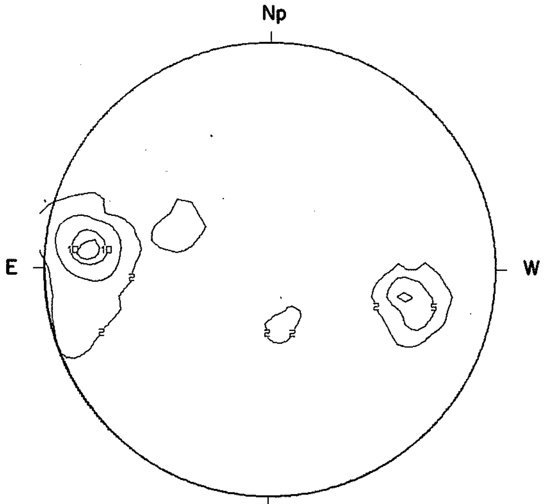
X-RAY
OSO-5

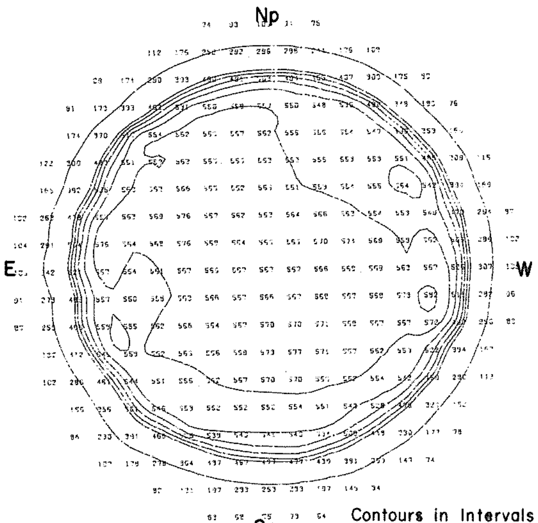


1110-1252 UT

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

PROSPECT HILL
AFCRL

8.6 mm



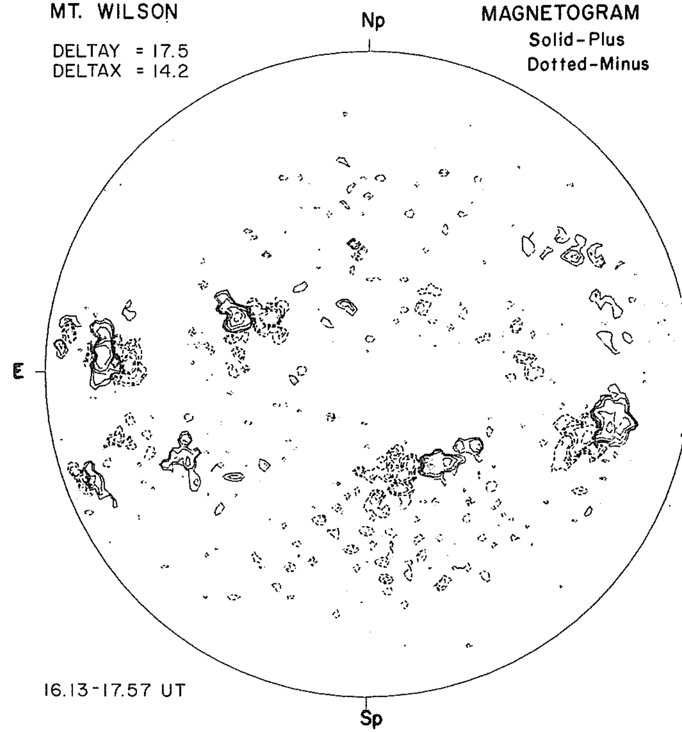
1928 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

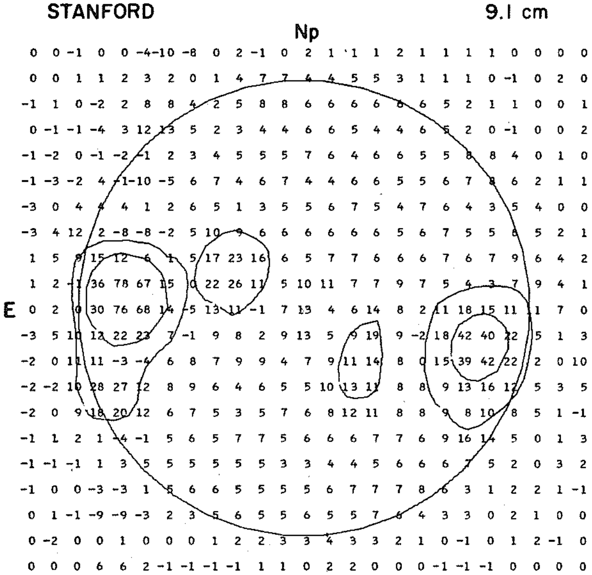


Levels
±5
±10
±20
±40
±80

16.13-17.57 UT

STANFORD

9.1 cm

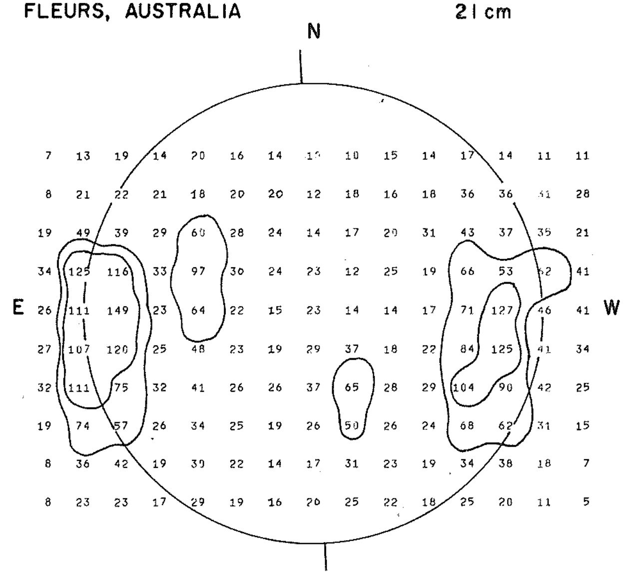


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

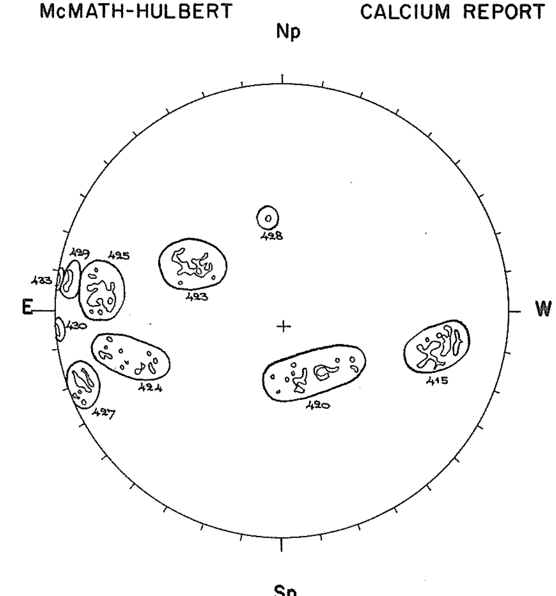


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



GOOD	S
15-29-3.5	
20-16-2.5	
23-15-3.0	
25-25-3.5	
27-17-3.0	
29-07-2.5	

1220 UT

JULY 15, 1971 (P = 3.34, B_o = 4.31, L_o = 75.58)

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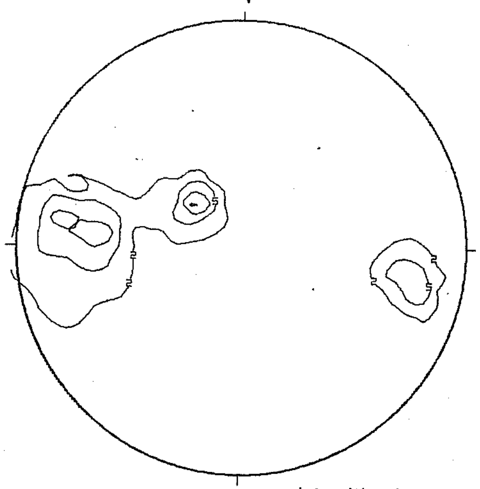
X-RAY
OSO-5

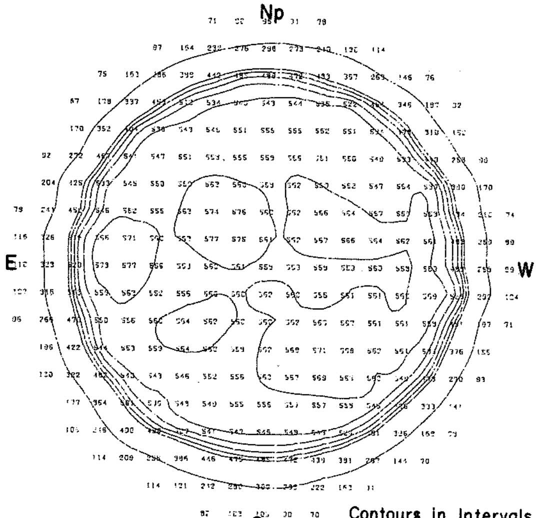


0925-1023 UT

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

PROSPECT HILL
AFCRL

8.6 mm



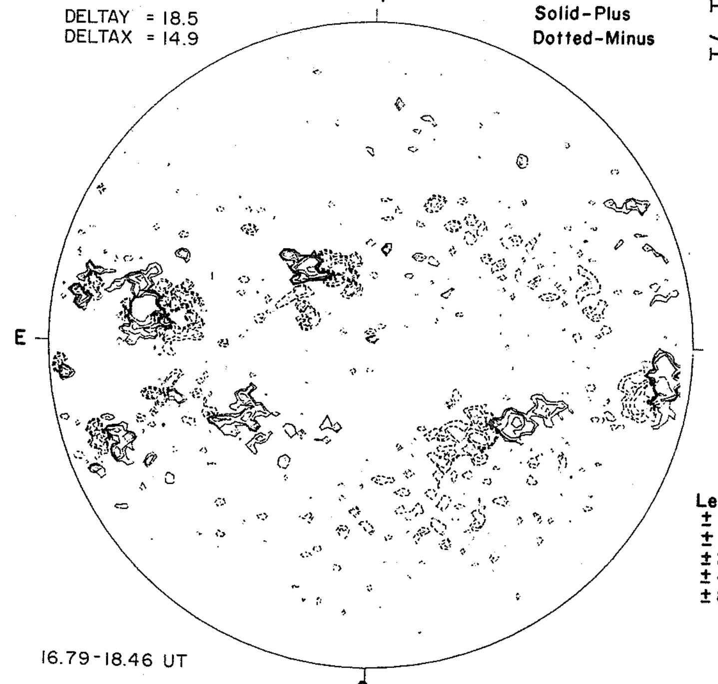
1411 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 18.5
DELTAX = 14.9

MAGNETOGRAM
Solid-Plus
Dotted-Minus

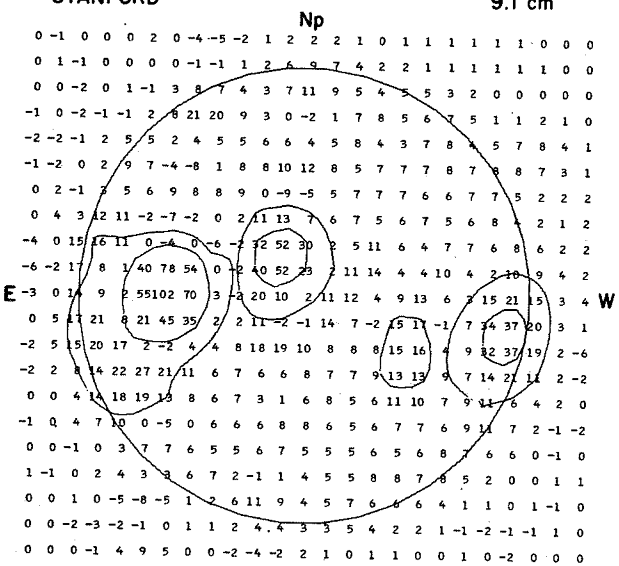


Levels
±5
±10
±20
±40
±80

16.79-18.46 UT

STANFORD

9.1 cm

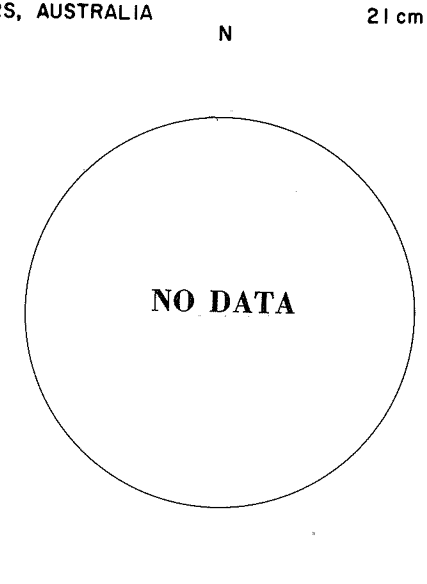


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

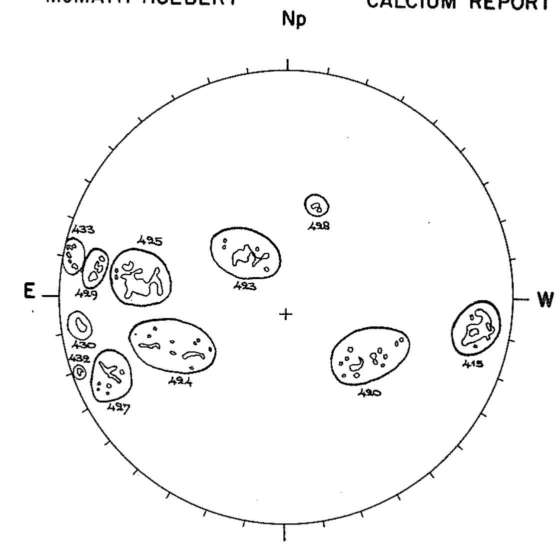


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



GOOD	S
15-25-3.0	
20-13-2.5	
23-12-3.5	
25-25-3.5	
27-13-2.5	
28-02-2.5	
29-08-2.5	
30-10-3.5	

1300 UT

JULY 16, 1971 (P = 3.79, B_o = 4.40, L_o = 62.34)

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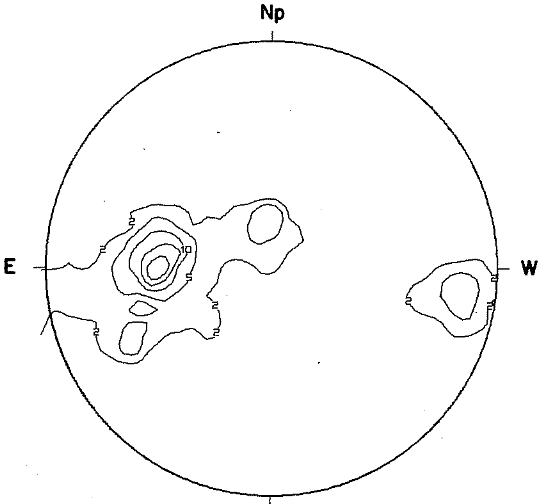
LEICESTER UNIV.

X-RAY
OSO-5

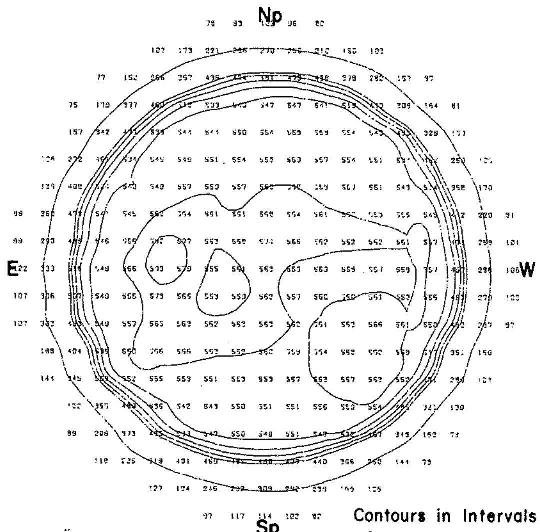


0948-1015 UT

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

PROSPECT HILL
AFCRL

8.6 mm



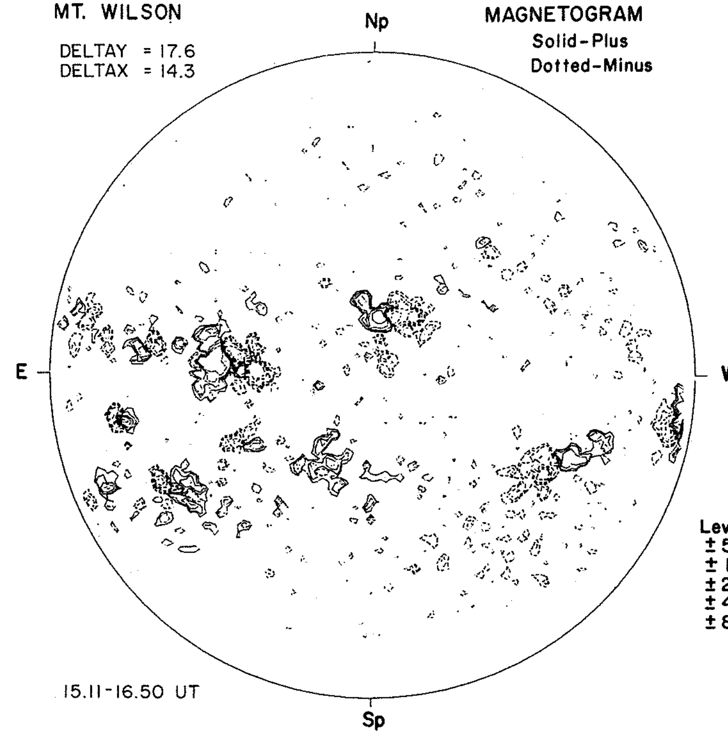
1330 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus

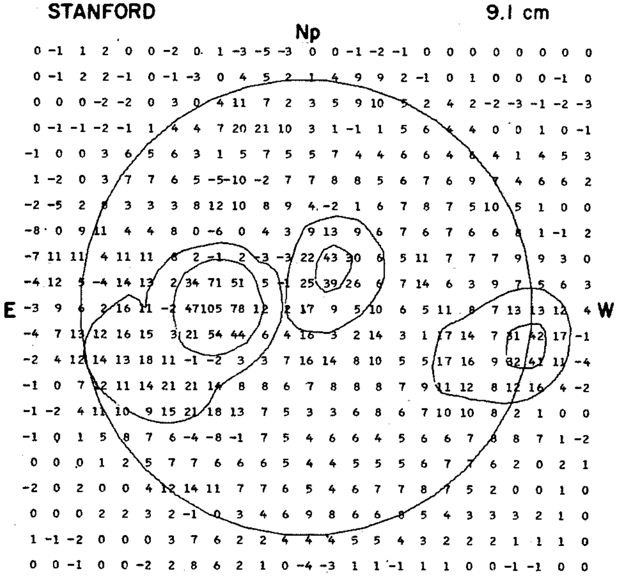


Levels
±5
±10
±20
±40
±80

15.11-16.50 UT

STANFORD

9.1 cm

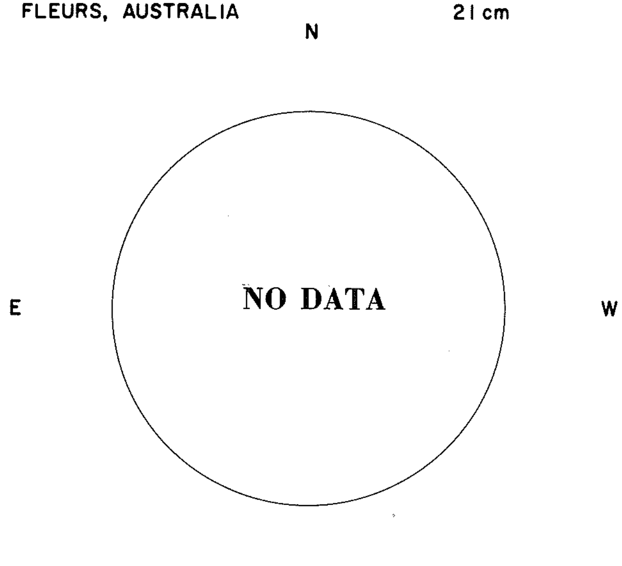


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

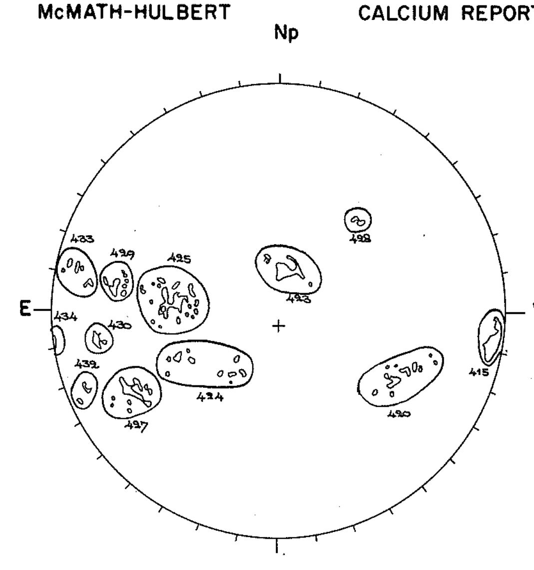


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



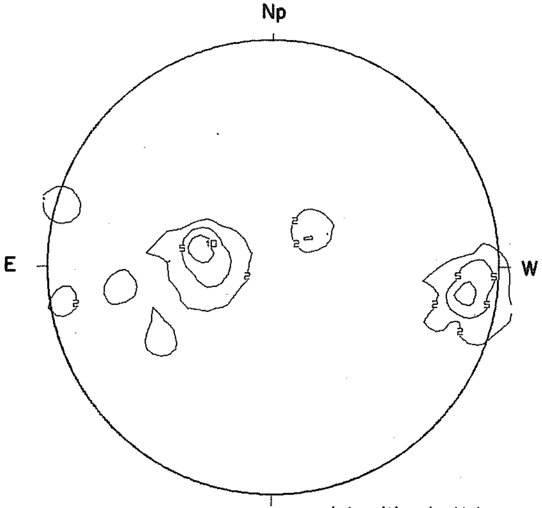
GOOD	S
15-25	-3.5
20-11	-2.5
23-10	-3.0
25-25	-4.0
27-15	-3.0
28-03	-2.5
29-09	-3.0
30-08	-3.5

1215 UT

JULY 17, 1971 (P = 4.23, B_o = 4.50, L_o = 49.11)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

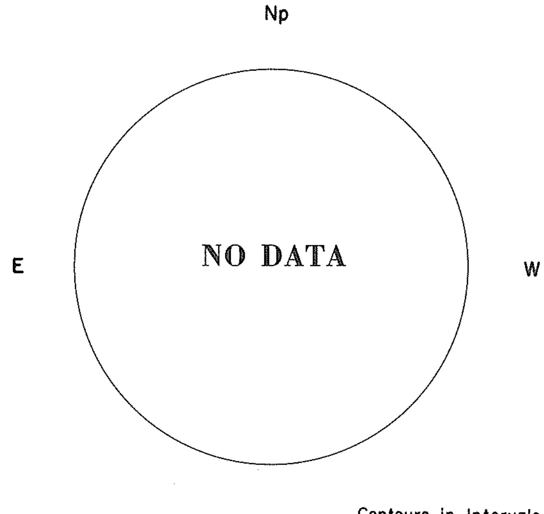


0718-0832 UT

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

PROSPECT HILL
AFCRL

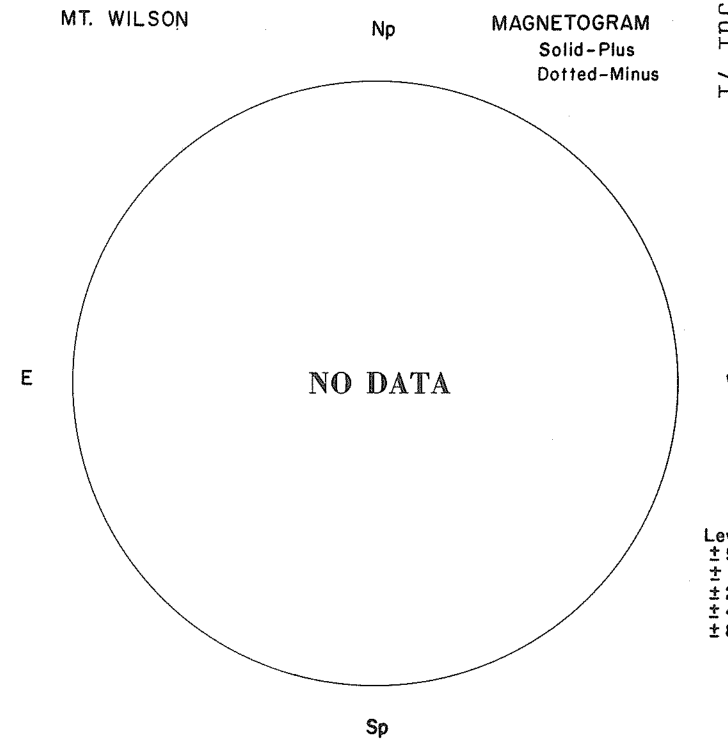
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

	0	-1	0	1	1	-1	1	0	-2	1	2	-2	-3	-3	-1	0	-1	-2	-1	0	0	0	0	0	0	
	0	-1	0	-1	1	3	1	0	0	1	4	5	3	3	2	3	6	4	2	-1	1	1	0	1	0	
	0	0	-1	-1	0	2	1	4	7	4	5	13	15	9	6	5	7	8	5	2	1	1	0	-2	-1	
	0	0	-1	-1	0	1	5	6	6	4	4	16	23	14	5	3	3	3	6	6	3	1	2	4	3	
	0	-1	-2	0	5	6	6	5	4	5	2	-4	0	6	6	5	5	4	6	8	4	2	3	5	4	
	-5	-3	0	2	7	5	4	5	6	6	3	-5	-3	5	7	4	6	5	5	7	5	6	6	3	2	
	-7	0	5	1	4	8	2	4	7	7	10	13	11	9	5	-2	-1	5	8	6	7	5	2	0	0	
	-4	3	10	8	7	10	4	1	9	3	-9	-6	0	1	10	17	12	8	8	6	7	6	3	1	1	
	1	2	8	18	14	6	8	6	6	4	-4	-5	-4	-2	18	42	35	7	4	9	9	8	4	1	3	
	0	1	6	17	10	0	10	11	-2	18	58	57	19	-2	20	39	27	5	6	14	8	3	5	1	-2	
E	-2	0	8	13	5	2	12	12	-4	23	85	93	34	-3	13	17	2	5	11	8	4	11	19	10	-2	W
	-1	-1	11	18	9	6	15	13	0	10	38	44	12	1	13	11	2	8	10	-1	9	32	34	18	8	
	-1	-1	9	19	14	7	14	16	9	1	-5	-4	2	9	12	12	11	8	6	4	15	31	25	12	8	
	-1	1	4	12	15	10	8	14	17	18	15	10	8	8	6	5	9	9	7	10	14	11	7	3	1	
	0	0	2	5	10	10	6	10	17	17	16	14	9	6	7	6	8	9	7	7	9	5	2	3	0	
	-1	-2	1	5	7	9	7	6	6	2	-2	2	7	7	7	9	6	4	6	8	9	9	5	3	2	
	0	-1	-1	1	3	5	6	4	6	7	6	6	8	4	0	1	5	6	7	7	4	3	0	1	0	
	1	-1	-3	0	3	2	4	6	8	9	9	8	5	4	4	3	5	7	6	5	1	-1	-1	1	0	
	0	0	0	1	1	2	4	7	5	2	2	3	4	6	11	12	8	6	5	2	2	1	0	0	0	
	-1	-1	1	0	-1	-1	0	0	2	4	3	2	2	3	4	4	4	2	2	1	1	2	0	0	0	
	0	0	0	0	0	-1	-1	-3	2	10	11	5	0	0	-3	-3	0	1	-1	0	-2	-2	-1	0	0	

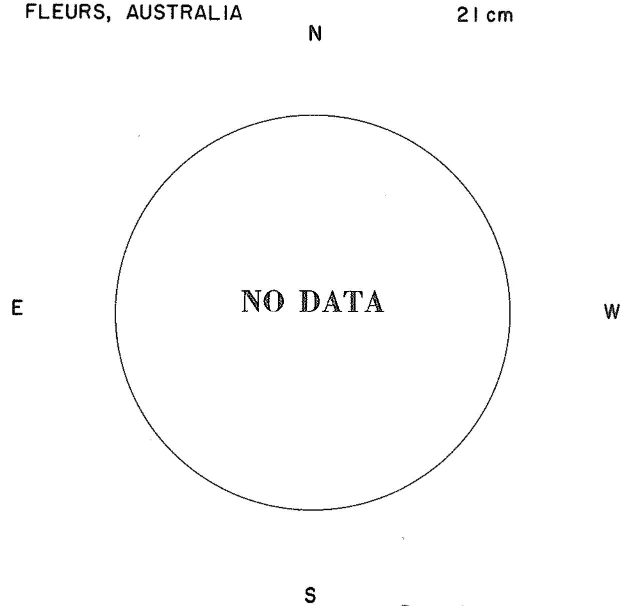
Sp

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

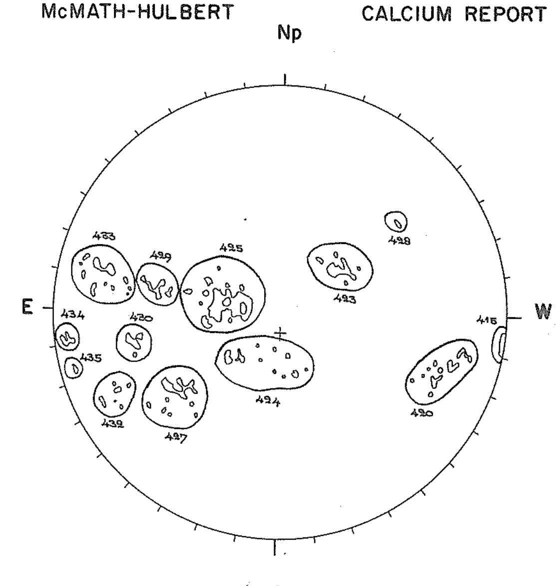


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



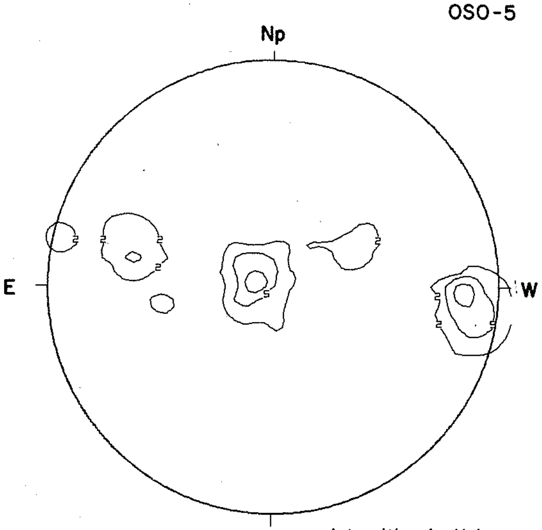
FAIR	S
20-17-2.5	
23-12-3.0	
25-25-3.5	
27-15-2.5	
29-09-2.5	
30-07-3.5	
34-10-3.0	
35-03-2.5	

1200 UT

JULY 18, 1971 (P = 4.67, B_o = 4.59, L_o = 35.88)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

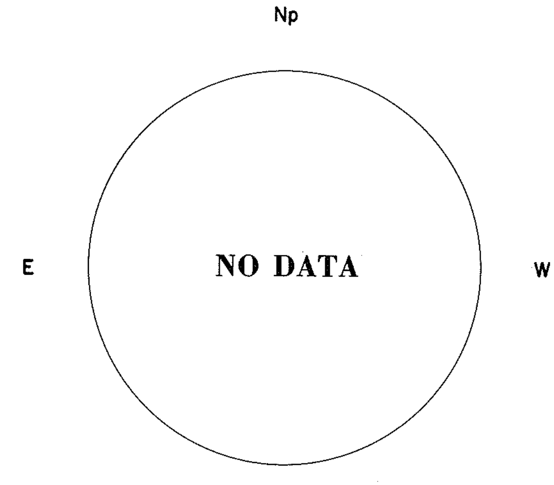


0929-0958 UT

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

PROSPECT HILL
AFCRL

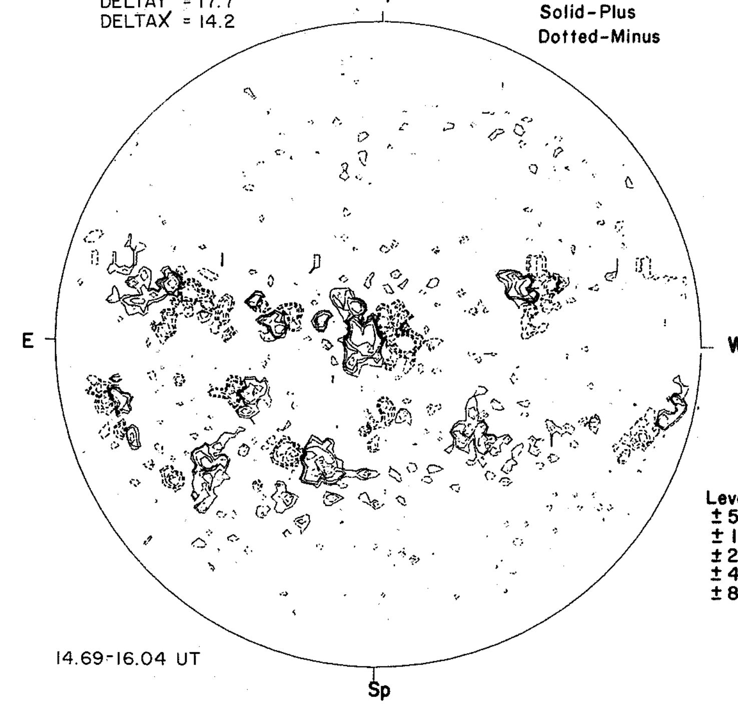
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

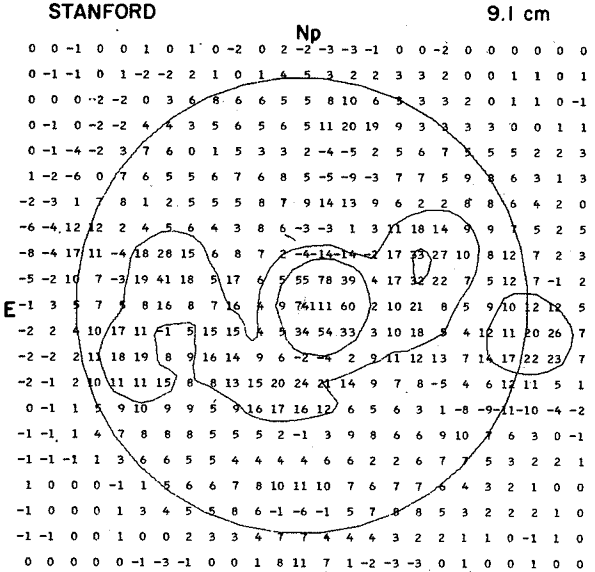


Levels
±5
±10
±20
±40
±80

14.69-16.04 UT

STANFORD

9.1 cm

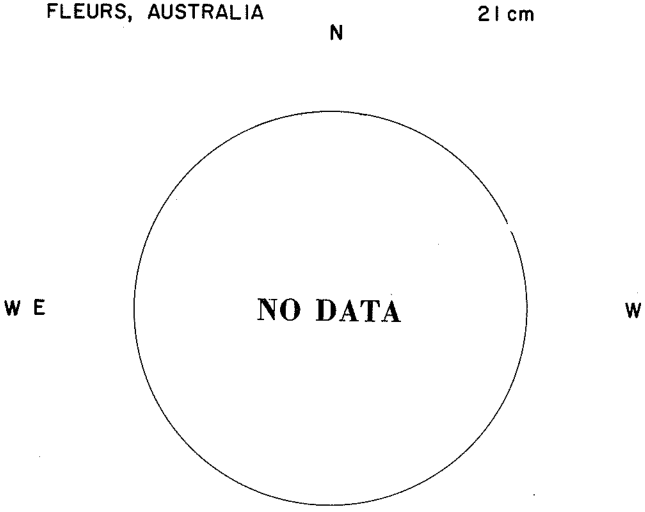


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

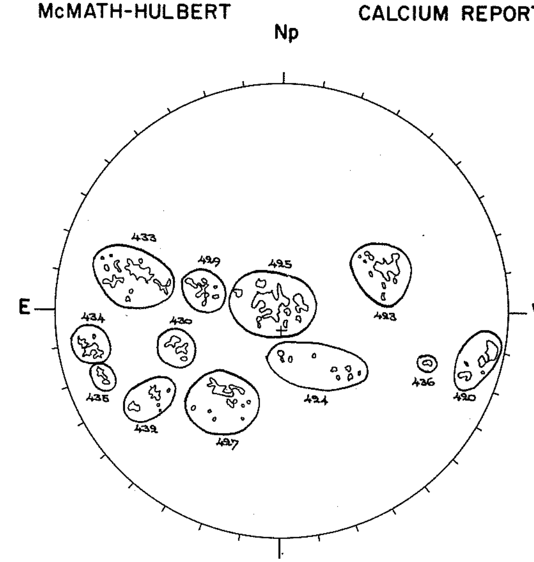


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



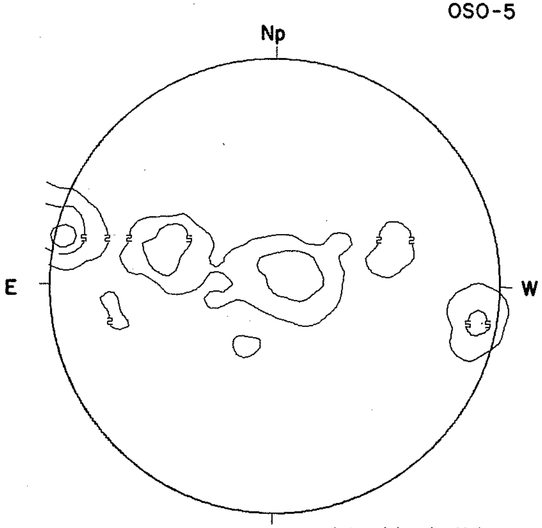
GOOD	D
20-17-2.5	
23-13-3.0	
25-24-3.0	
27-15-2.5	
30-07-2.5	
32-09-2.5	
33-15-3.5	
34-13-3.0	

1215 UT

JULY 19, 1971 (P = 5.11, B_o = 4.68, L_o = 22.65)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

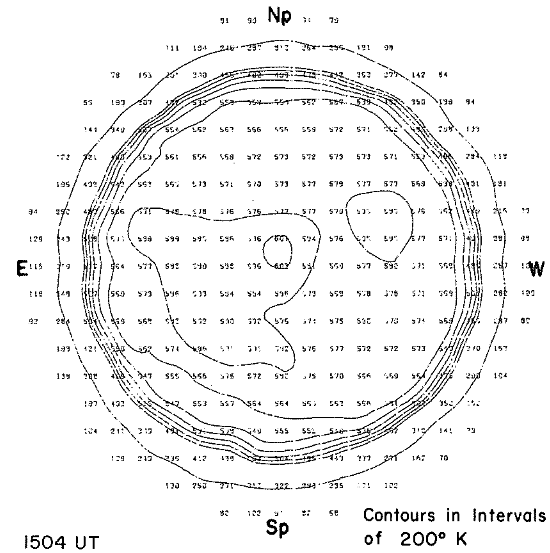


0639-0816 UT

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

PROSPECT HILL
AFCRL

8.6 mm

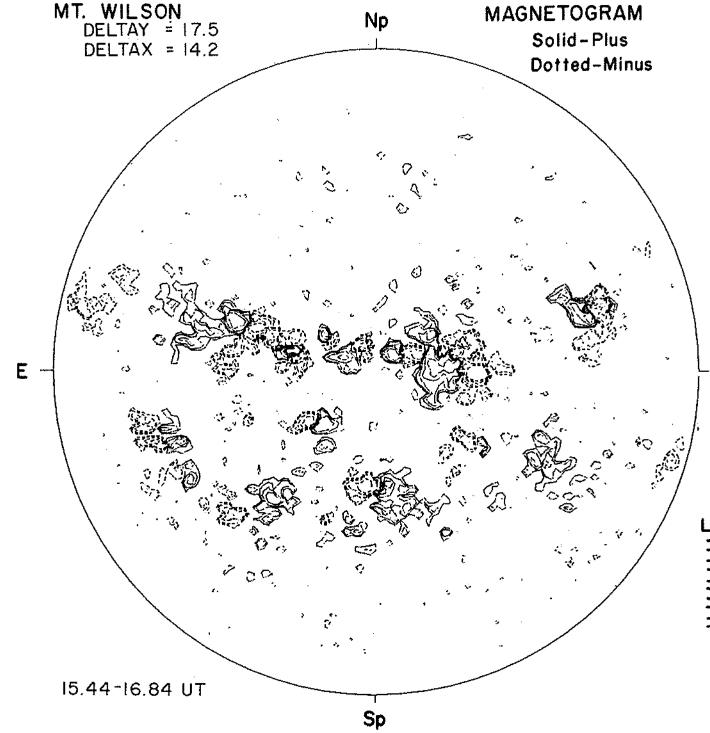


1504 UT

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.5
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

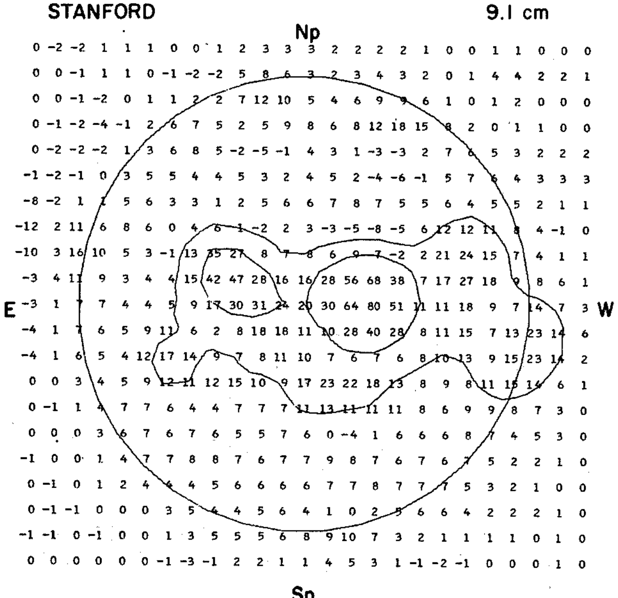


Levels
±5
±10
±20
±40
±80

15.44-16.84 UT

STANFORD

9.1 cm

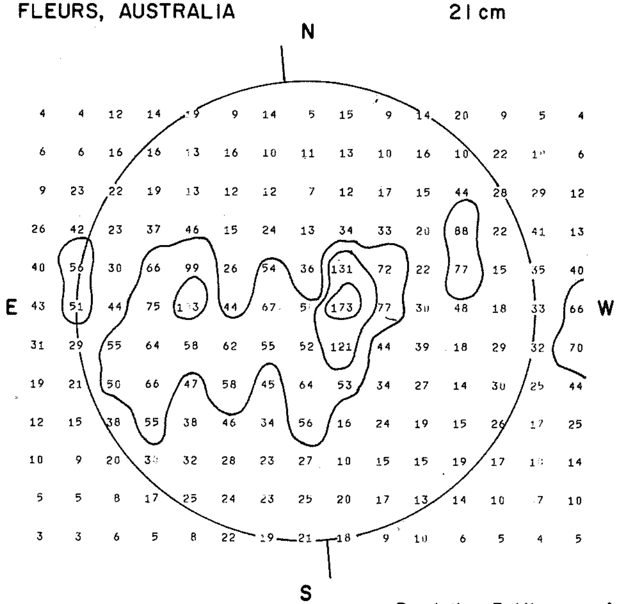


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

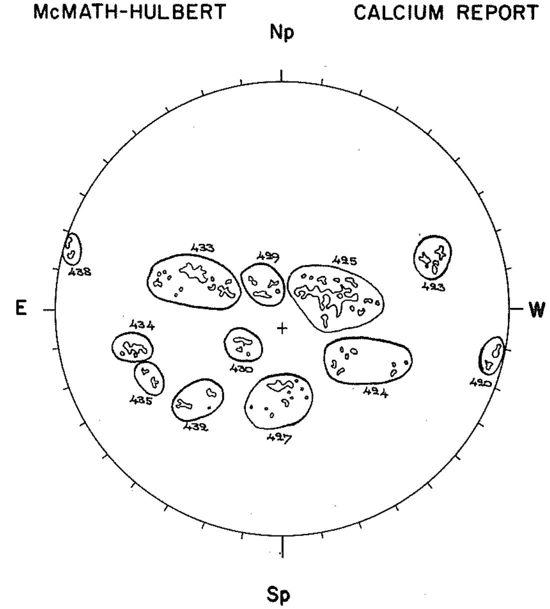


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



BAD	D
23-12	-3.0
25-25	-3.0
27-12	-2.5
29-07	-2.5
30-05	-2.5
33-17	-3.0
34-12	-2.5

1745 UT

JULY 20, 1971 (P = 5.55, B_o = 4.78, L_o = 9.42)

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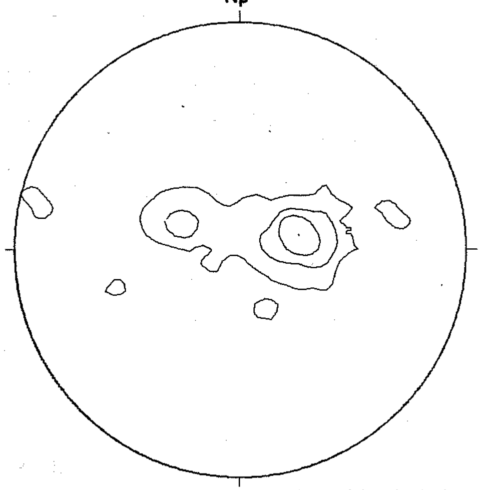
LEICESTER UNIV.

X-RAY
OSO-5

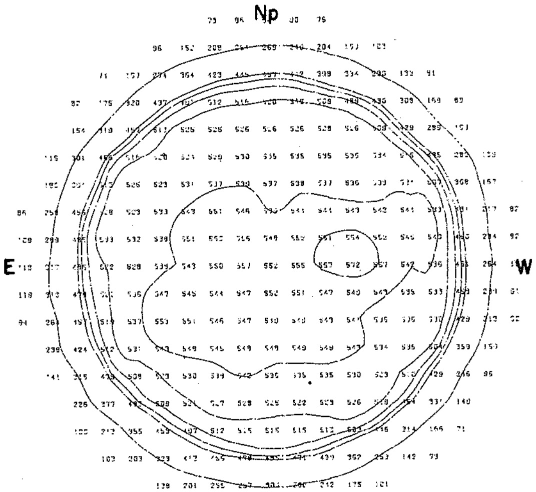


0830-0945 UT

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

PROSPECT HILL
AFCRL

8.6 mm

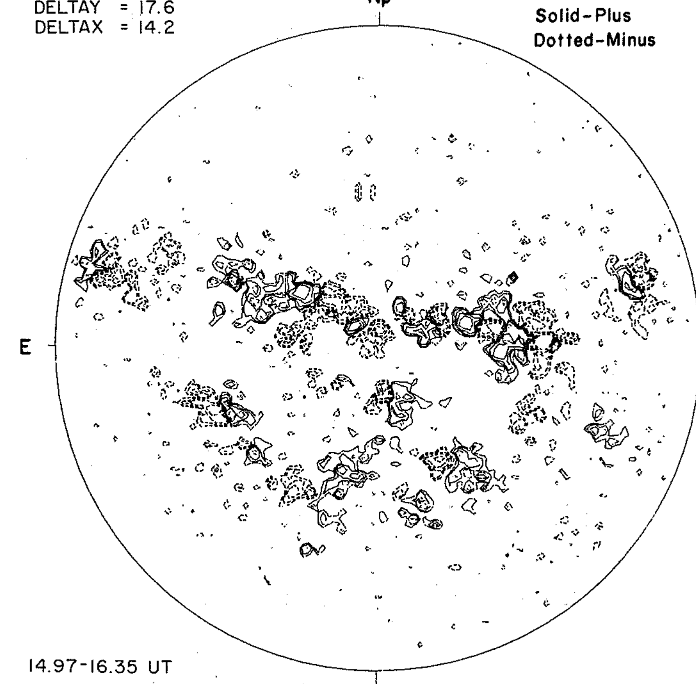


1314 UT

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

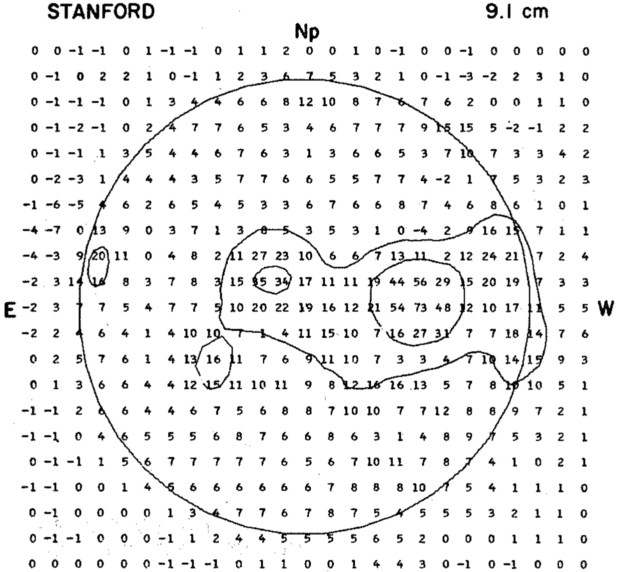


Levels
±5
±10
±20
±40
±80

14.97-16.35 UT

STANFORD

9.1 cm

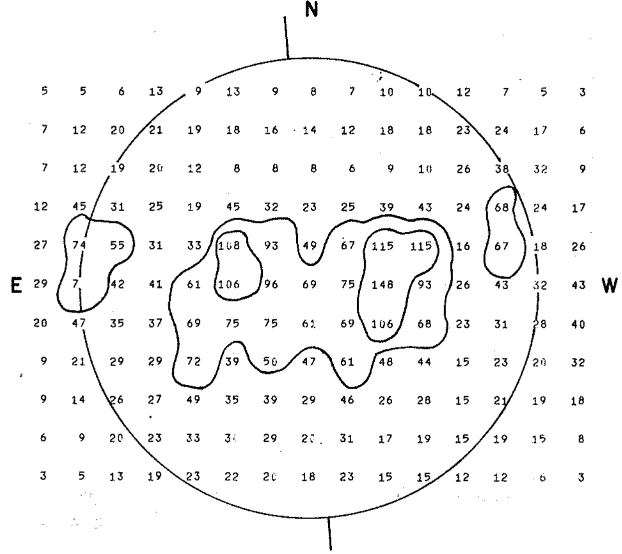


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

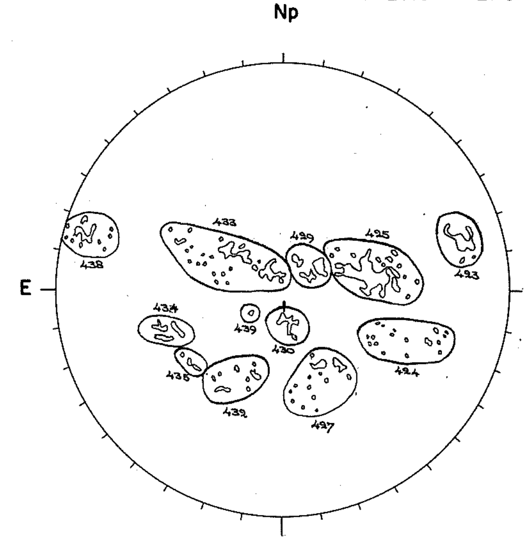


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



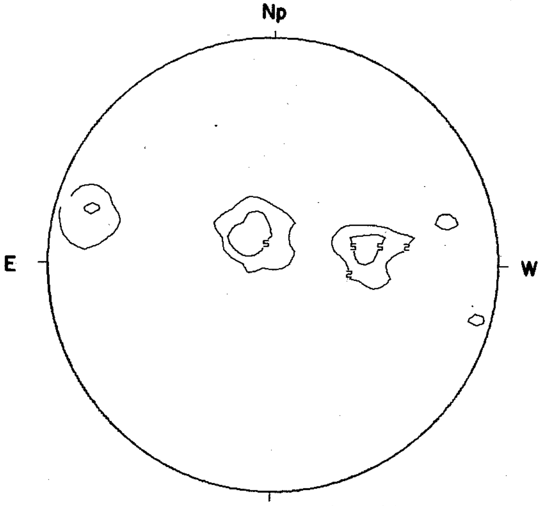
GOOD	S
23-12-3.0	
25-28-3.0	
27-12-2.5	
29-08-2.5	
30-06-2.5	
33-22-3.0	
34-09-3.0	
38-20-2.5	

1215 UT

JULY 21, 1971 (P = 5.98, B_o = 4.87, L_o = 356.19)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

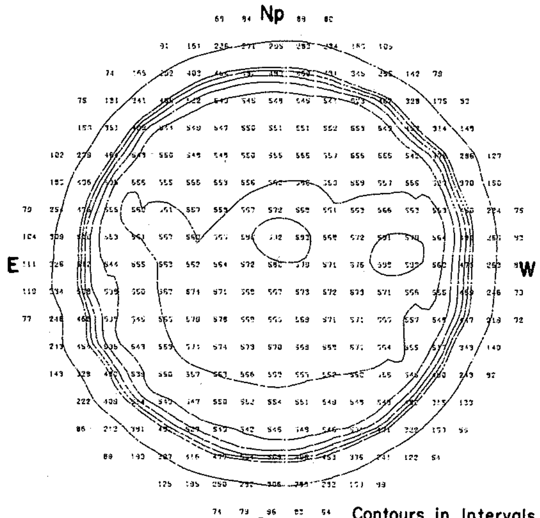


0518-0625 UT

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

PROSPECT HILL
AFCRL

8.6 mm

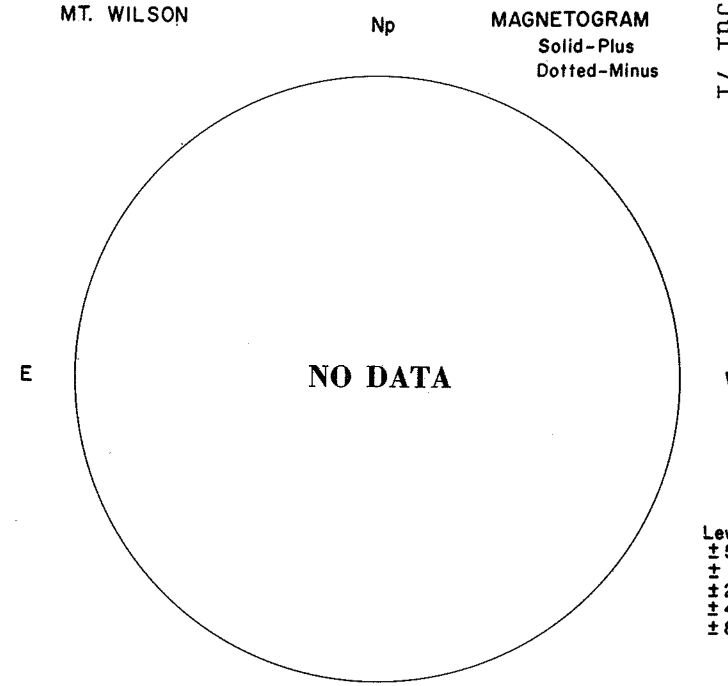


1338 UT

Contours in Intervals of 200° K

MT. WILSON

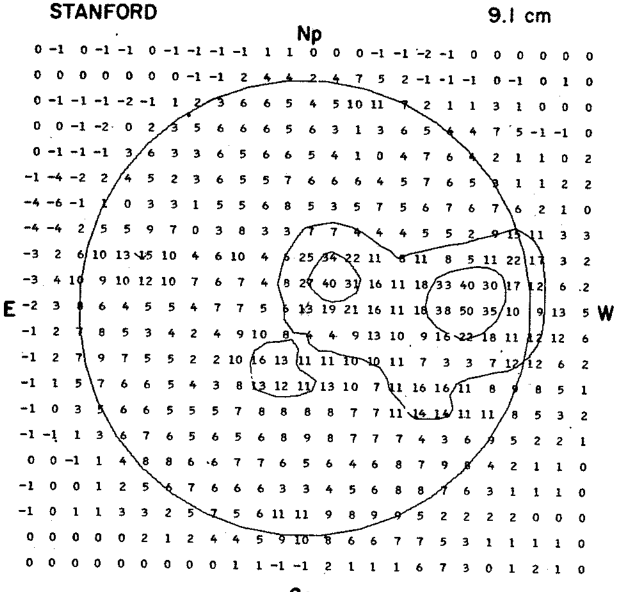
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

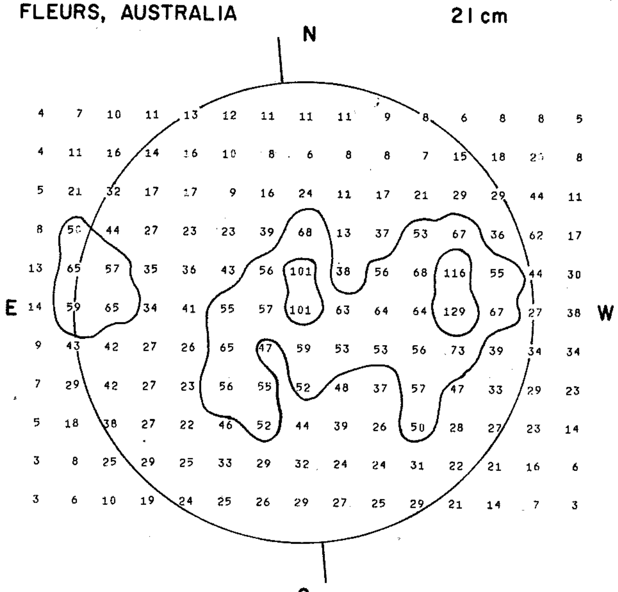


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

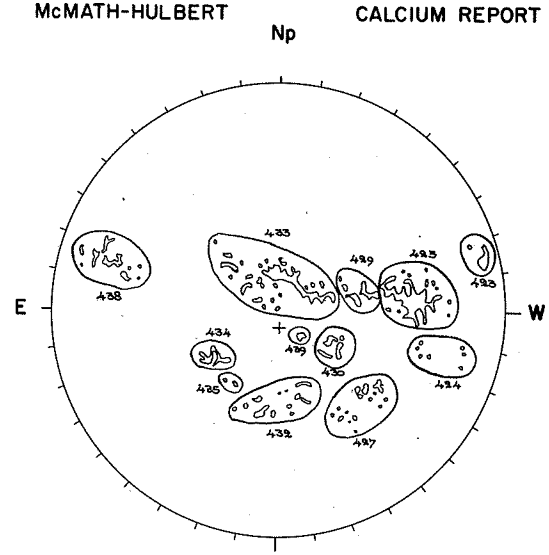


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



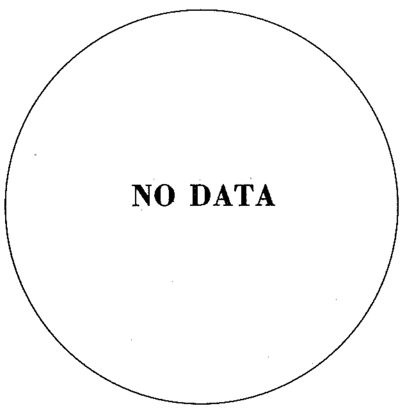
1210 UT

GOOD	S
23 - 09	-3.0
25 - 28	-3.5
27 - 12	-2.5
33 - 30	-3.5
34 - 10	-3.0
38 - 20	-2.5

JULY 22, 1971 (P = 6.41, B_o = 4.96, L_o = 342.95)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

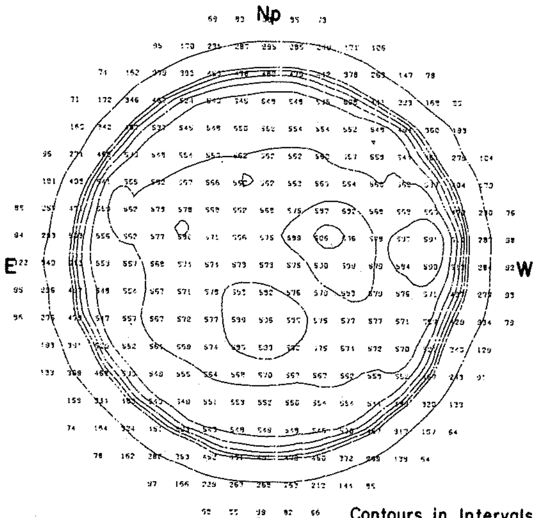
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

8.6 mm

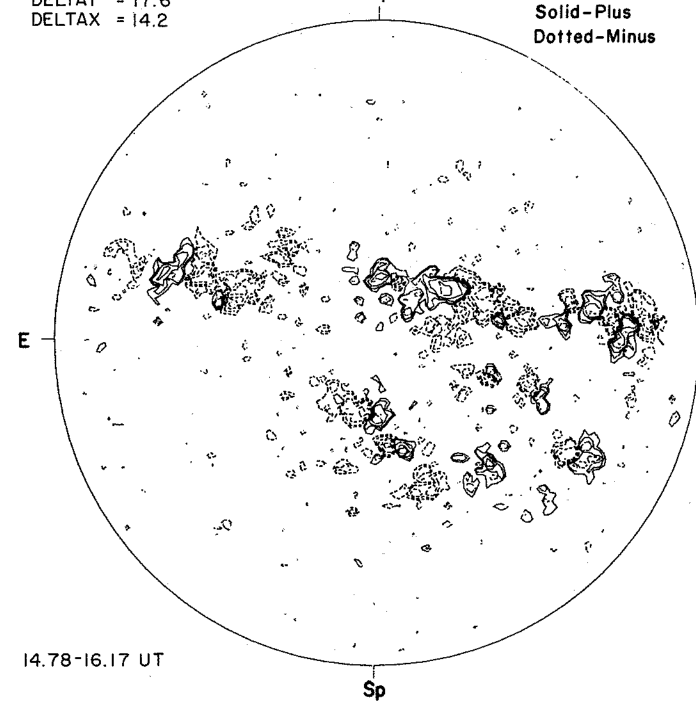


1407 UT

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

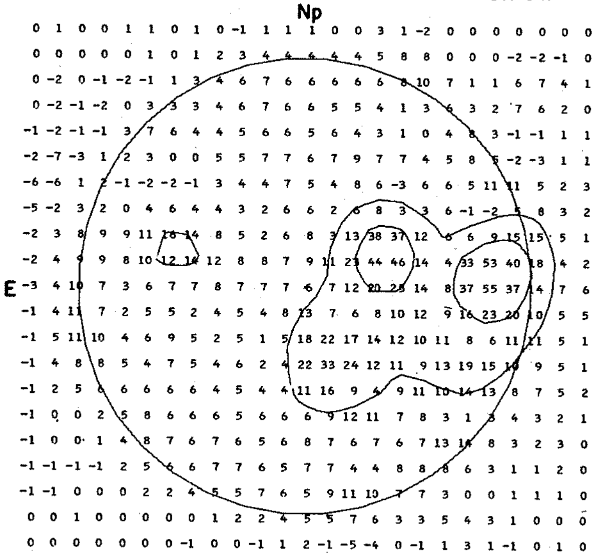
MAGNETOGRAM
Solid-Plus
Dotted-Minus



14.78-16.17 UT

STANFORD

9.1 cm

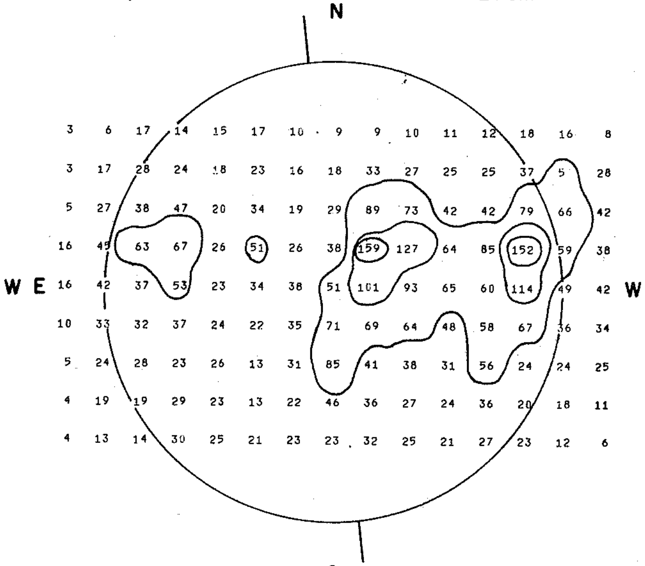


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

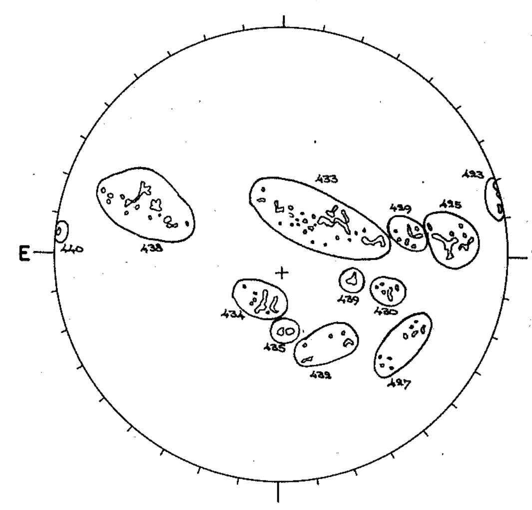


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



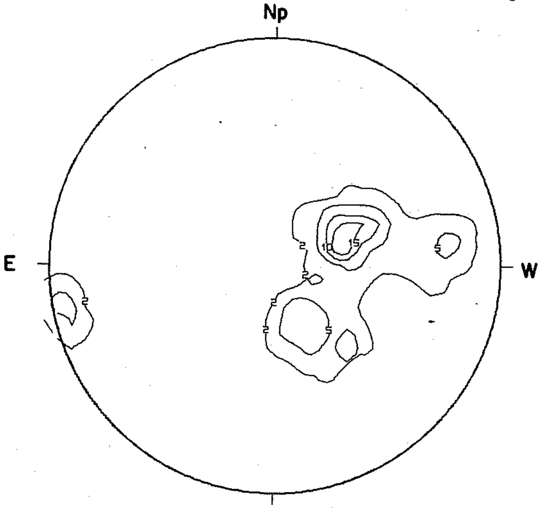
POOR	D
25-23-3.5	
27-09-2.5	
33-30-3.5	
34-08-2.5	
35-04-3.0	
38-15-2.5	

1150 UT

JULY 23, 1971 (P = 6.84, B_o = 5.04, L_o = 329.73)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

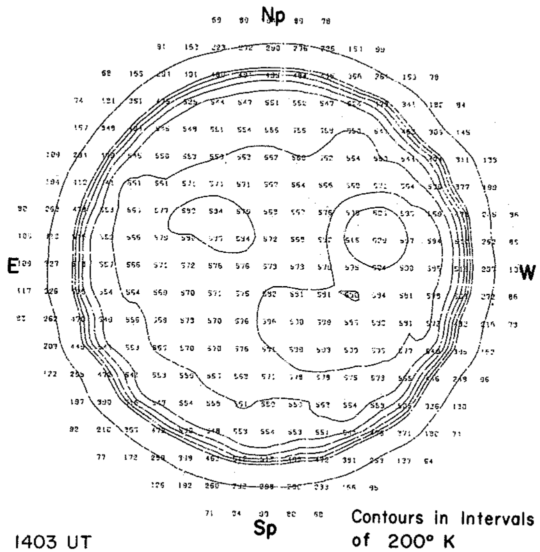


0254-0327 UT

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

PROSPECT HILL
AFCRL

8.6 mm

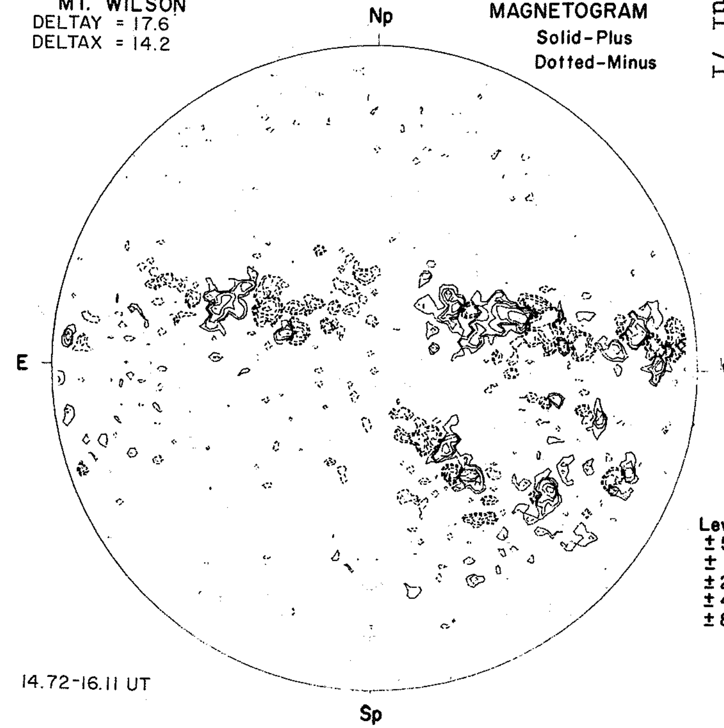


1403 UT

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

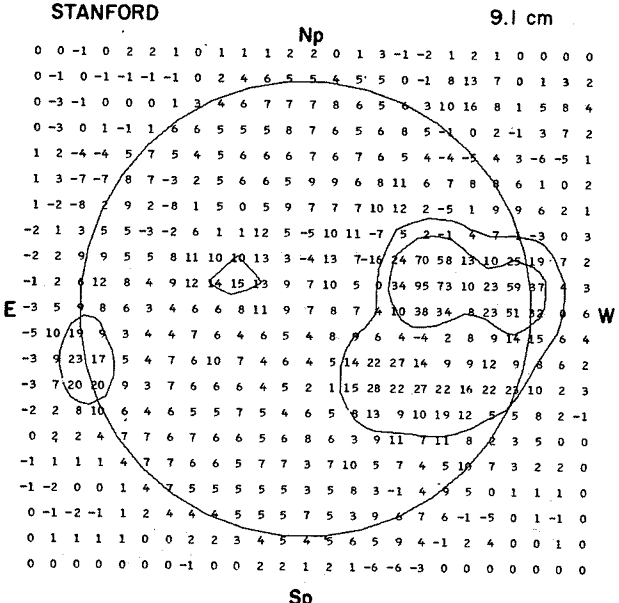


Levels
±5
±10
±20
±40
±80

14.72-16.11 UT

STANFORD

9.1 cm

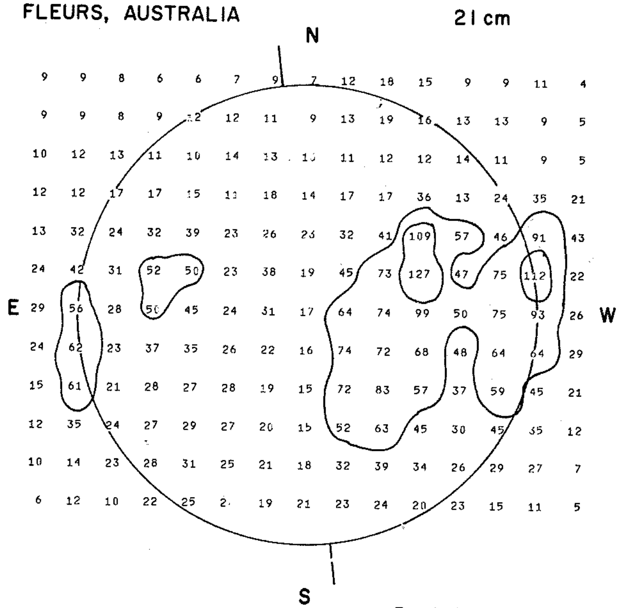


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

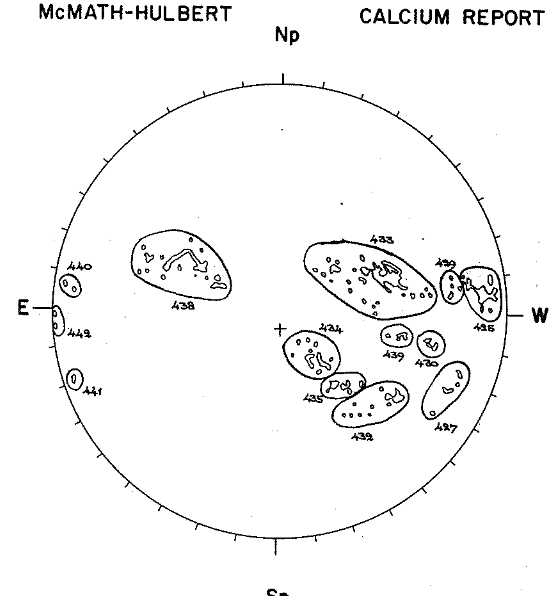


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



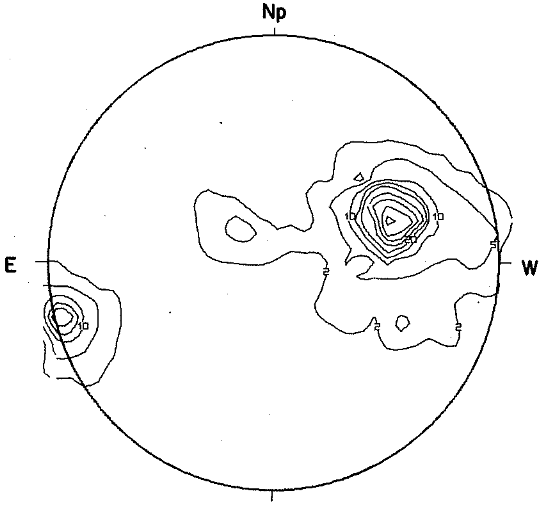
FAIR	S
25 -21	-2.5
27 -08	-2.5
32 -08	-3.0
33 -30	-4.0
34 -09	-2.5
35 -05	-3.0
38 -18	-2.5

1310 UT

JULY 24, 1971 (P = 7.27, B_o = 5.13, L_o = 316.50)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

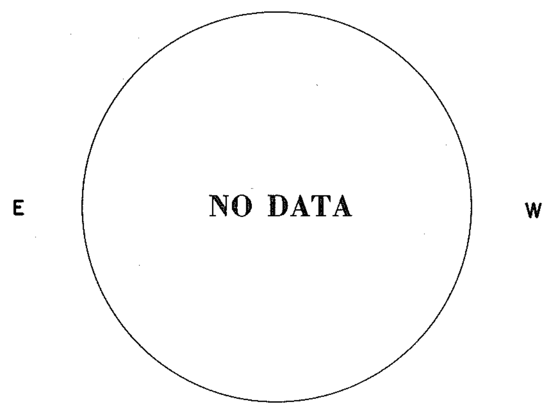


0505-0600 UT

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

PROSPECT HILL
AFCRL

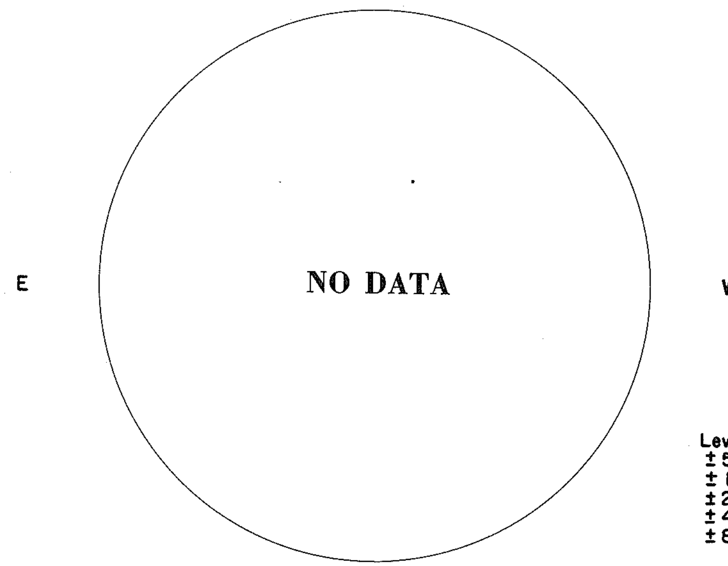
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

0	-1	0	0	0	2	2	0	1	1	-1	0	1	1	-1	-3	-2	0	-1	0	0	0	0	0	0
0	-1	0	0	-2	-3	0	0	1	3	4	5	5	6	3	1	2	1	-3	0	6	6	4	3	-1
0	-1	-1	-2	-2	-2	0	3	5	6	7	5	6	10	15	9	2	2	0	2	10	11	4	3	3
0	-6	1	0	-1	2	5	7	7	4	5	6	5	4	5	8	6	5	8	-2	-8	-6	-3	0	3
-1	-6	5	3	-1	4	6	5	6	4	5	6	2	-2	-1	4	6	6	7	6	-1	-3	-1	-2	0
-1	-4	5	4	0	5	4	-2	2	8	6	5	6	9	10	7	6	8	8	10	10	5	1	1	1
-5	-3	4	9	11	11	3	-4	3	6	3	3	5	4	5	8	8	9	7	-1	1	6	4	0	1
-7	-1	8	5	5	10	2	-2	5	4	9	18	5	11	4	15	-2	1	7	10	8	10	5	-4	-2
-4	3	9	5	6	12	6	0	9	8	12	32	32	9	10	15	-8	0	49	71	50	27	18	7	1
0	5	6	8	12	12	7	5	13	11	7	33	60	45	13	9	6	6	60	84	56	33	36	19	-1
E 1	5	6	7	9	8	6	5	8	6	3	15	32	26	5	5	14	9	14	28	24	21	30	19	-1 W
-2	4	18	16	6	2	4	4	5	6	8	5	0	3	7	6	8	8	-2	1	5	8	14	12	1
-4	1	37	48	21	1	6	9	4	7	8	8	8	6	4	3	8	19	26	20	13	13	15	7	0
-10	11	48	47	15	4	12	11	3	4	5	7	12	11	2	3	10	17	21	20	22	20	12	2	0
-2	2	14	19	10	5	9	7	2	7	1	-6	2	9	3	5	9	5	8	14	14	9	5	2	0
1	0	0	4	7	7	7	8	7	9	8	6	8	9	6	7	10	5	6	10	4	-2	4	2	0
0	3	5	6	6	7	8	8	7	4	7	10	9	5	5	8	9	7	6	8	3	0	5	3	0
0	1	4	4	3	6	9	8	7	7	5	3	4	6	6	6	6	6	6	6	2	-2	1	1	0
0	-5	-7	-2	4	3	3	6	6	7	8	6	6	8	7	5	7	12	10	4	0	0	0	-1	0
0	3	3	2	1	1	1	2	3	2	6	11	8	4	5	6	5	7	5	2	2	4	2	-1	0
0	0	0	0	0	0	0	0	-1	0	0	1	1	1	1	1	-1	-7	-6	-3	0	0	-1	0	0

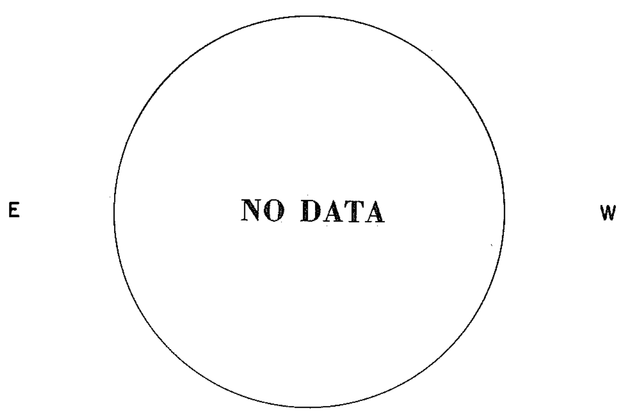
Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm



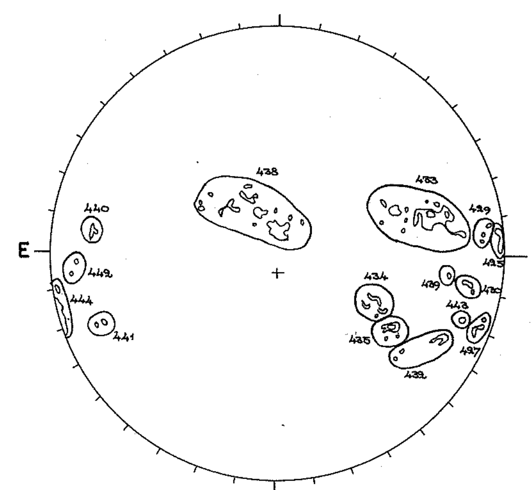
02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

Sp



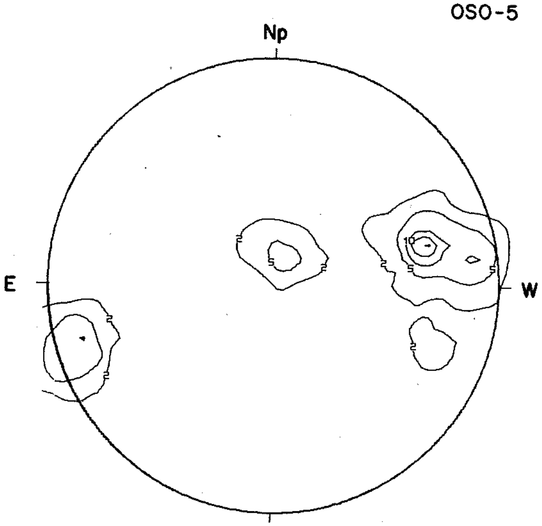
1650 UT

FAIR	S
25-15	-2.5
32-07	-3.0
33-30	-4.0
35-05	-2.5
38-22	-3.5
40-03	-3.0
41-02	-2.5

JULY 25, 1971 (P = 7.69, B_o = 5.21, L_o = 303.27)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

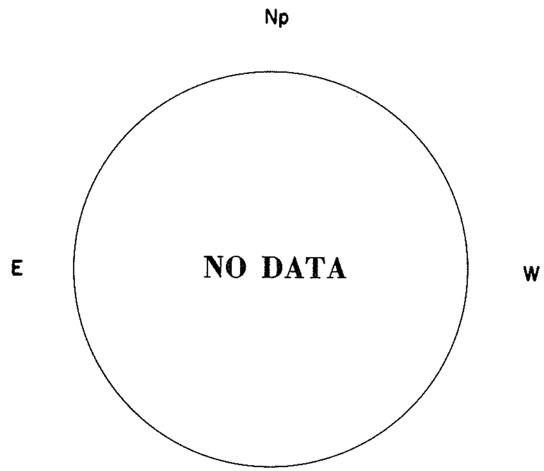


0448-0552 UT

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

PROSPECT HILL
AFCRL

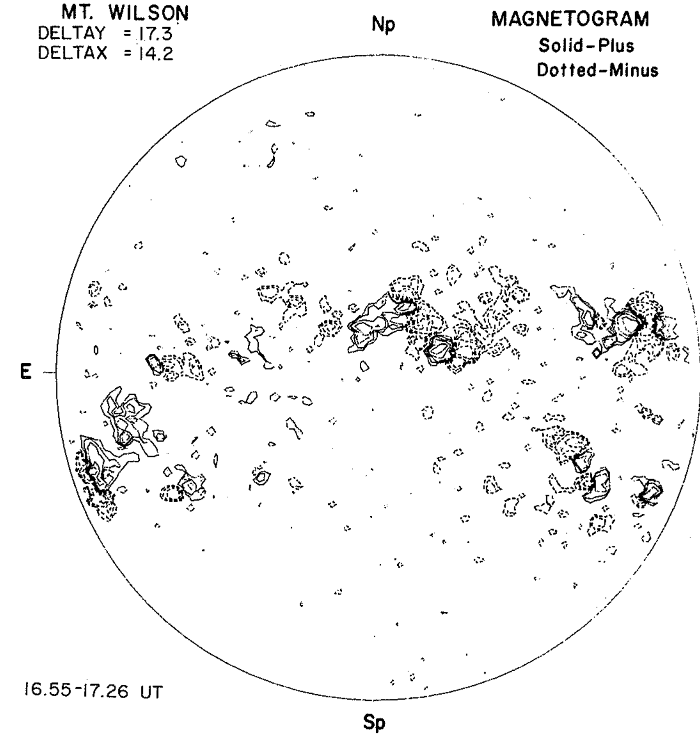
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.3
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

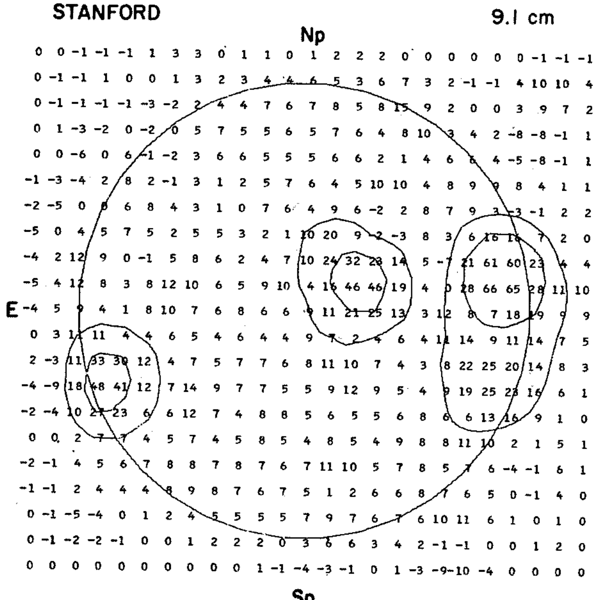


Levels
±5
±10
±20
±40
±80

16.55-17.26 UT

STANFORD

9.1 cm

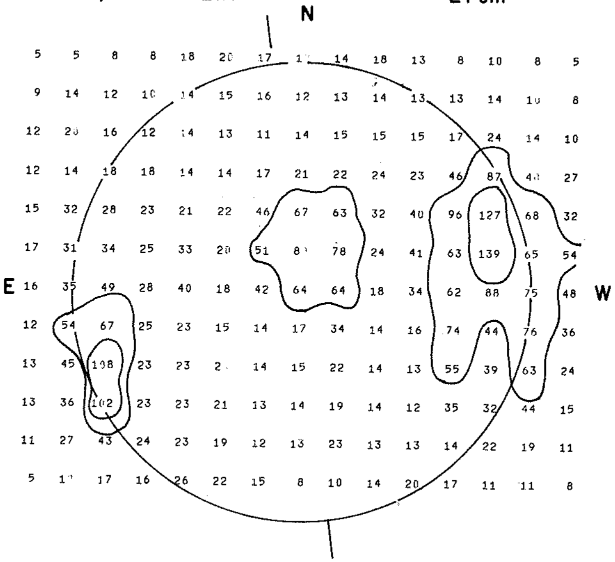


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

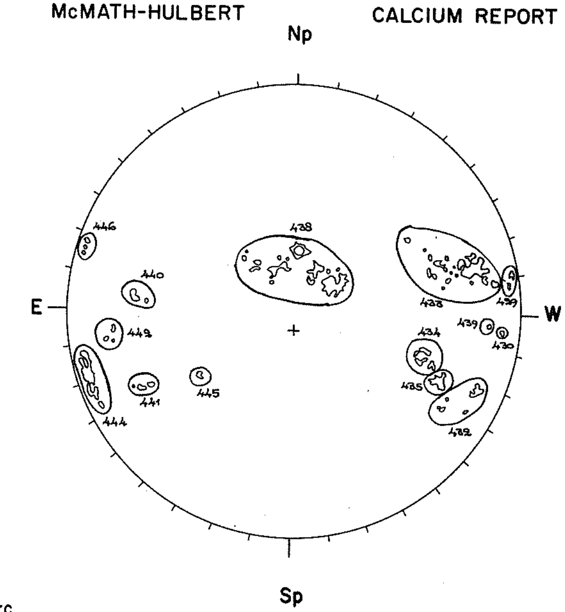


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	D
32 -07	-3.5
33 -27	-3.5
35 -08	-2.5
38 -25	-3.5
40 -04	-3.0
44 -33	-3.0

1300 UT

JULY 26, 1971 (P = 8.12, B_o = 5.30, L_o = 290.04)

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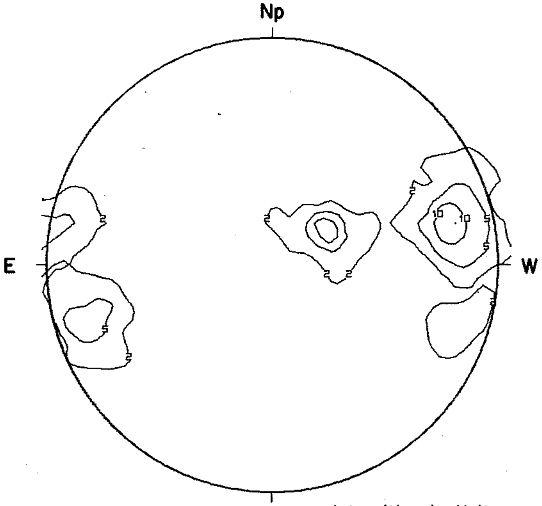
LEICESTER UNIV.

X-RAY
OSO-5

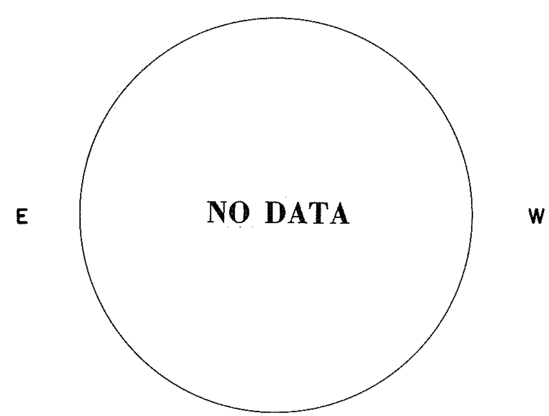


0334-0409 UT

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

PROSPECT HILL
AFCRL

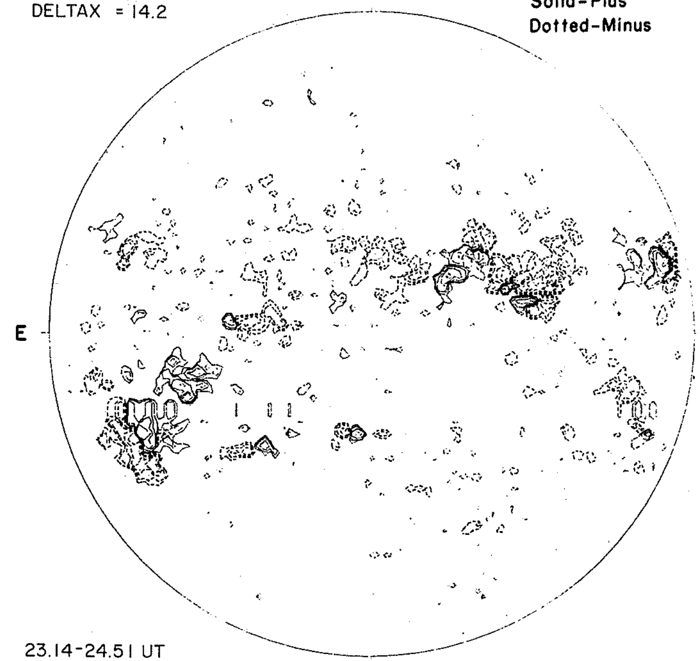
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

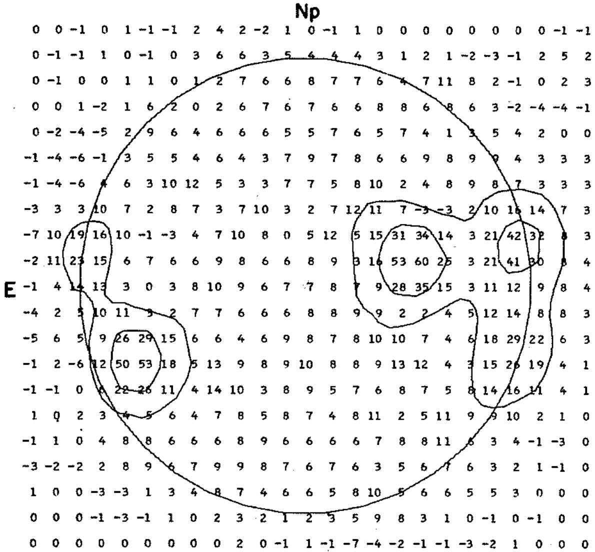


Levels
±5
±10
±20
±40
±80

23.14-24.51 UT

STANFORD

9.1 cm

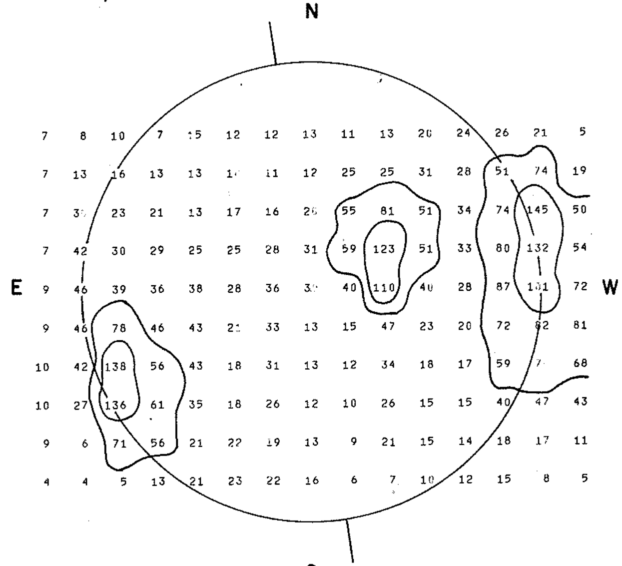


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

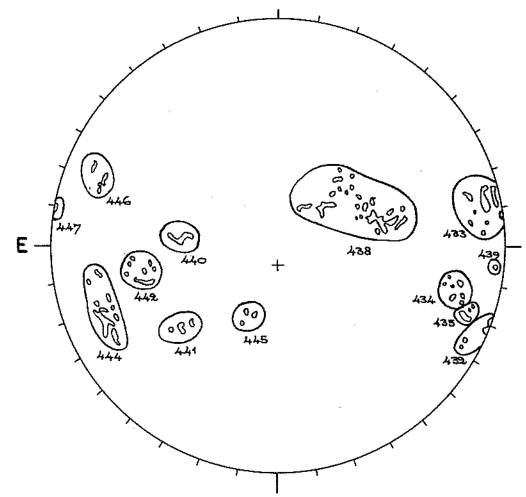


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



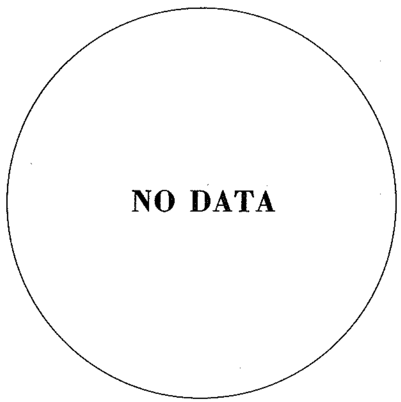
GOOD	S
32-12-3.0	
33-30-2.5	
35-06-2.5	
38-30-3.0	
41-04-2.5	
44-30-3.5	

1750 UT

JULY 27, 1971 (P=8.54, B_o=5.38, L_o=276.81)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

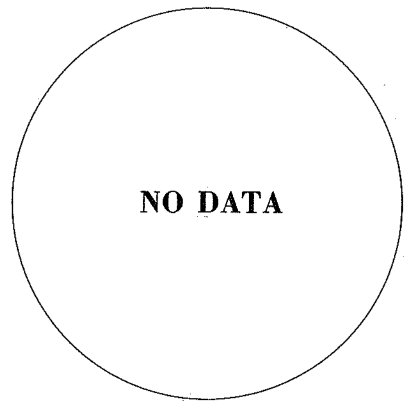
X-RAY
OSO-5



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

PROSPECT HILL
AFCRL

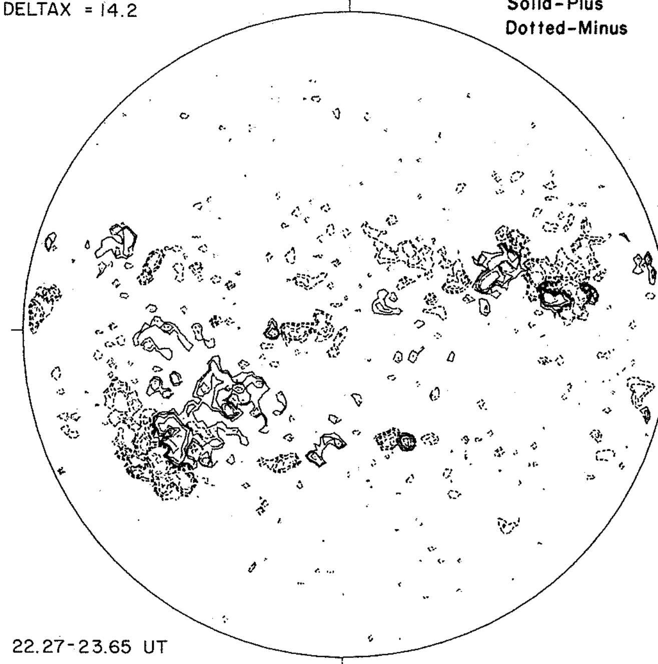
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

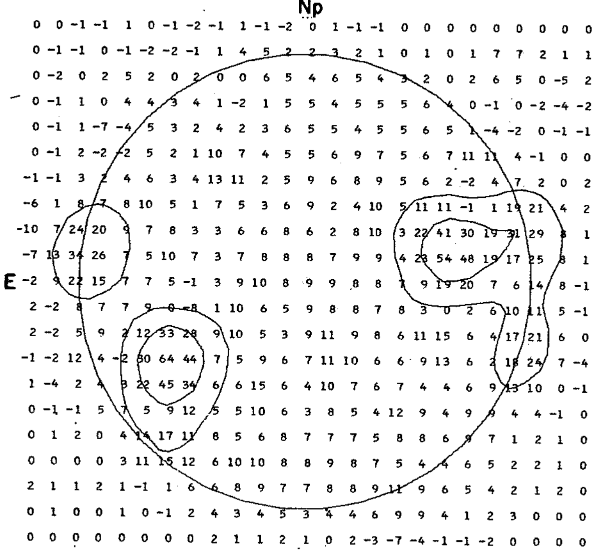


Levels
±5
±10
±20
±40
±80

22.27-23.65 UT

STANFORD

9.1 cm

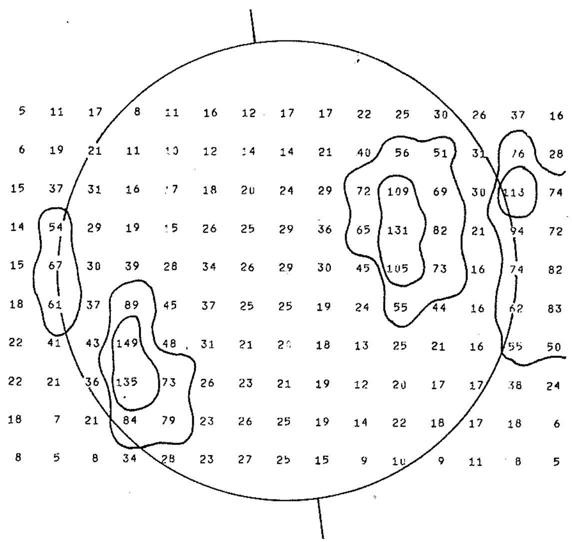


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

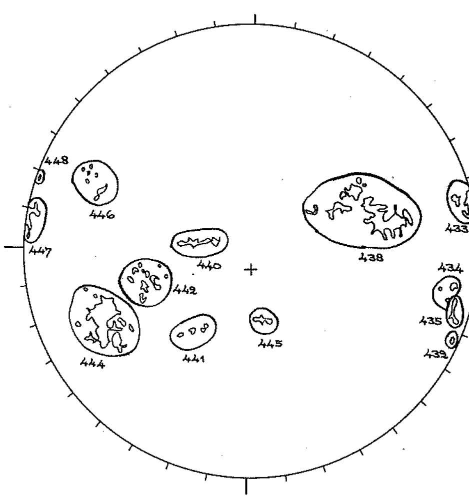


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



GOOD 7 M
33 -33 -2.5
38 -33 -3.0
44 -31 -3.5
47 -13 -3.0

1215 UT

JULY 28, 1971 (P=8.95, B_o=5.46, L_o=263.58)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E

W

Sp

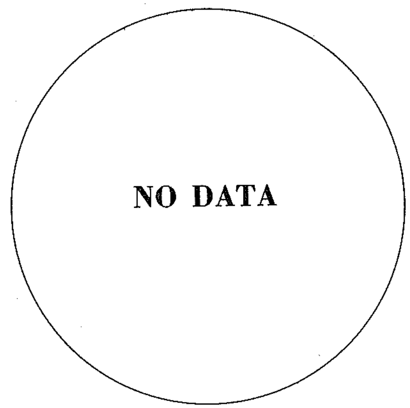
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Np

E



W

Sp

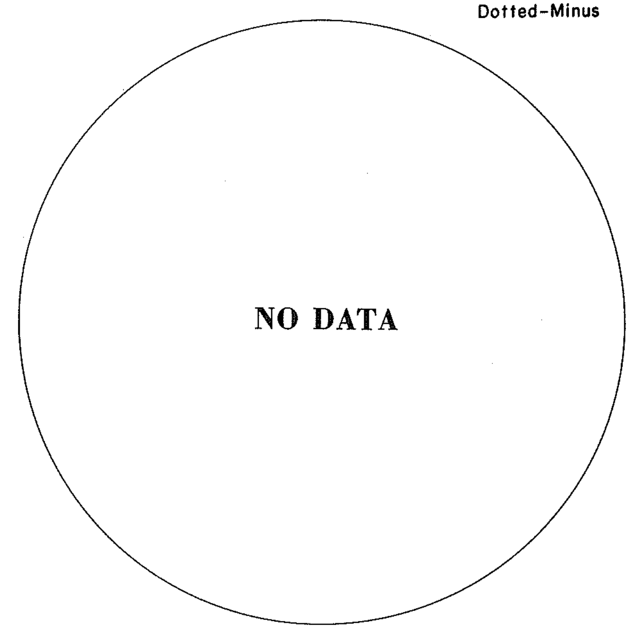
Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E



W

Sp

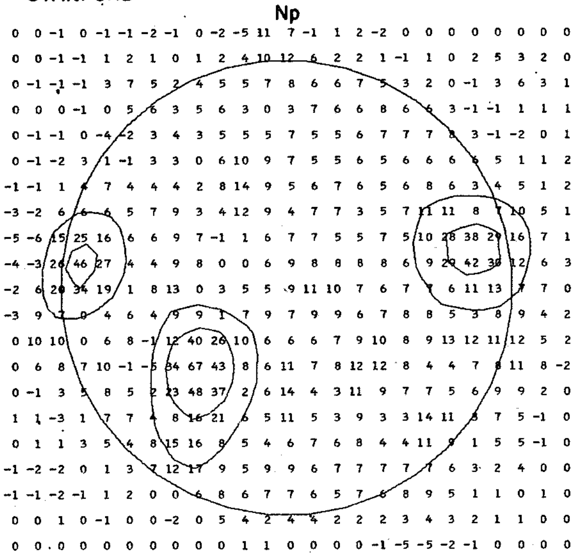
Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

Np

E



W

Sp

20-21 UT

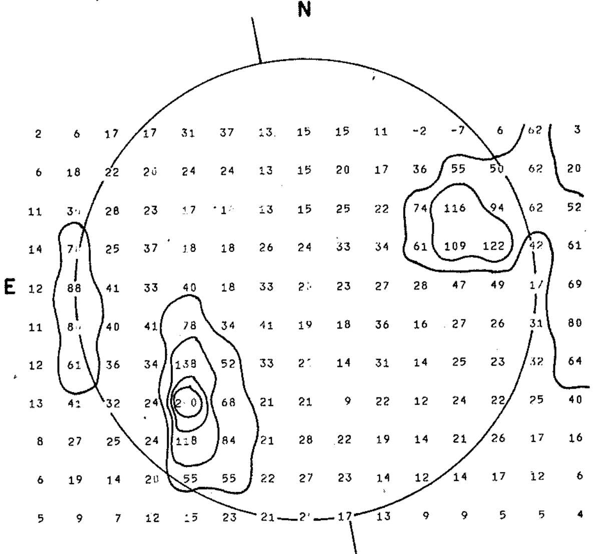
Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E



W

S

02-03 UT

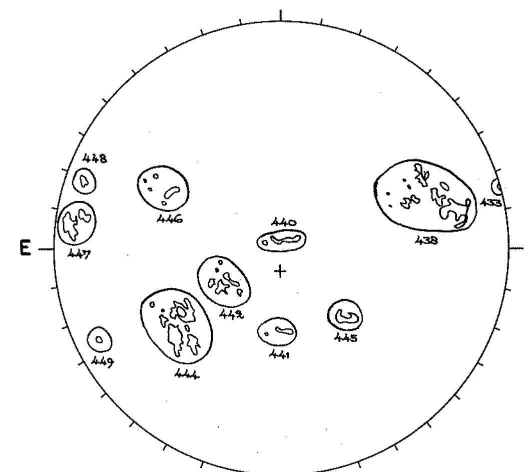
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E



W

POOR	M
38 -32 -3.0	
44 -28 -3.5	
45 -03 -2.5	
47 -21 -3.5	

Sp

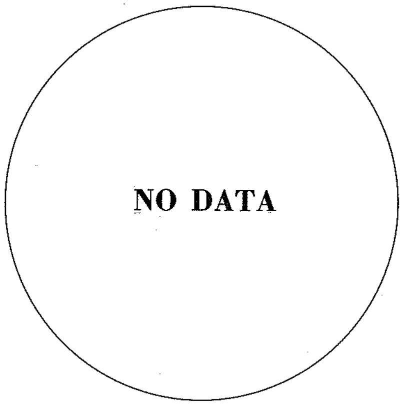
1230 UT

JULY 29, 1971 (P = 9.36, B_o = 5.54, L_o = 250.35)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E  W

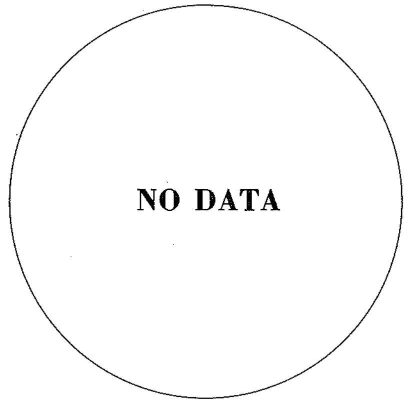
Sp

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

PROSPECT HILL
AFCRL

8.6 mm

Np

E  W

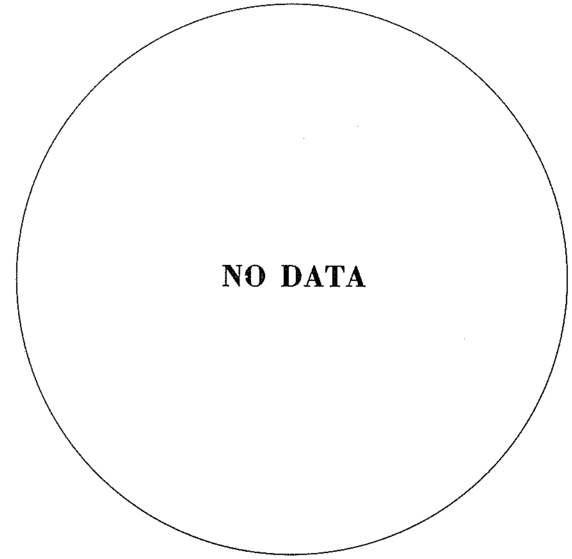
Sp

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E  W

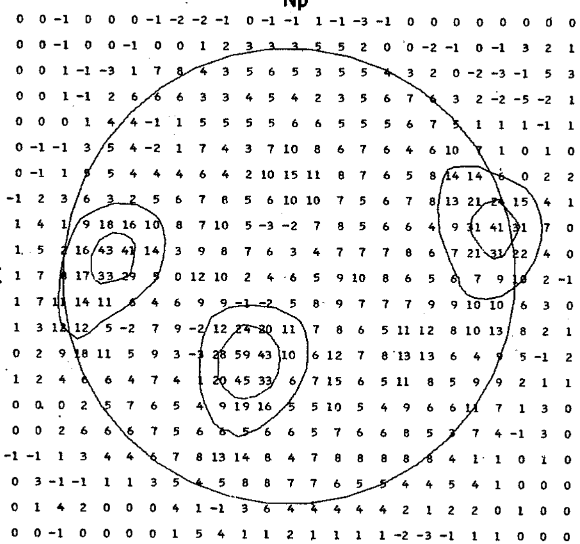
Levels
±5
±10
±20
±40
±80

Sp

STANFORD

9.1 cm

Np

E  W

Sp

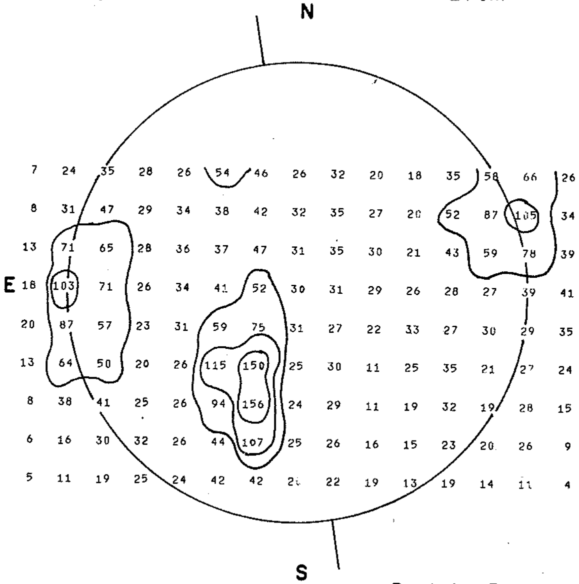
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N

E  W

S

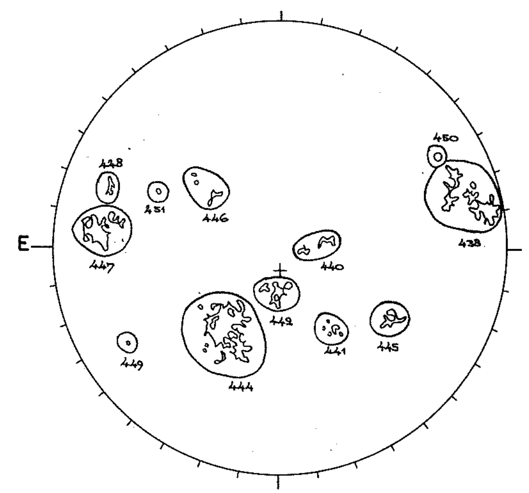
02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT

Np

E  W

GOOD	M
38-35-3.0	
44-33-3.5	
47-22-3.5	
50-03-3.0	

Sp

1230 UT

JULY 30, 1971 (P = 9.77, B_o = 5.62, L_o = 237.13)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E NO DATA 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

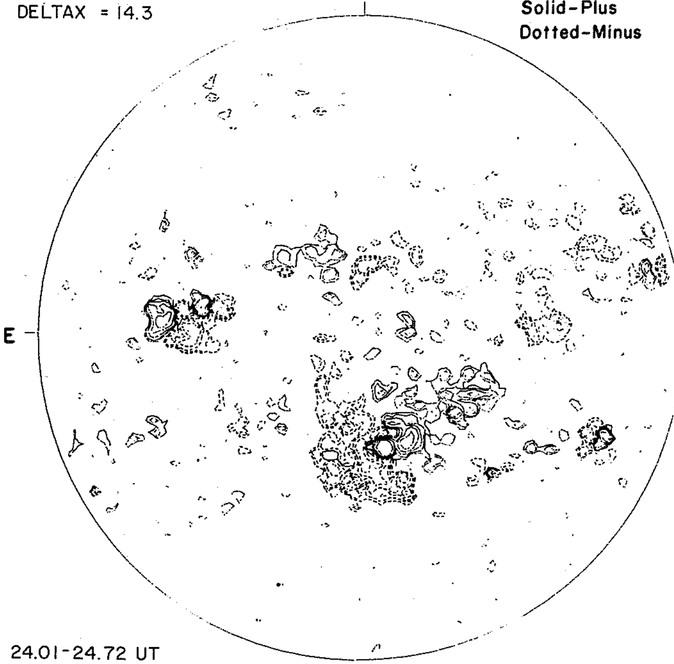
Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E



W

Sp

Levels
±5
±10
±20
±40
±80

24.01-24.72 UT

STANFORD

9.1 cm

Np

E W

0	0	0	-1	-1	-1	-1	-1	-2	-2	-1	0	1	1	-1	2	4	1	0	0	0	0	0	0	0
0	0	-1	-1	0	-1	-2	-1	2	3	3	4	3	3	3	3	5	5	1	0	1	0	0	1	1
0	-1	0	-1	-2	-3	-1	5	9	9	6	5	5	6	6	5	4	5	3	1	2	0	-2	1	3
0	-1	0	-1	2	4	4	8	11	8	5	4	5	6	4	1	3	7	8	5	3	1	0	-3	-2
0	-1	-1	1	5	7	3	1	4	4	4	7	7	7	6	4	3	7	8	6	3	1	2	0	0
0	-1	-1	1	6	7	3	2	5	4	6	7	5	6	10	8	7	8	7	9	11	7	3	2	1
0	-1	0	2	4	7	5	3	5	5	5	6	4	6	15	16	7	6	6	7	15	17	6	1	1
-2	-2	3	6	8	7	4	1	2	5	5	6	6	4	7	11	6	5	8	6	10	25	18	5	1
-2	-3	7	7	2	7	14	14	8	6	8	11	9	2	1	7	4	7	7	4	6	24	32	15	2
-3	0	8	4	-2	17	42	37	12	5	7	7	7	8	5	5	8	7	9	9	9	16	22	8	3
-2	7	18	8	1	20	38	28	9	3	10	10	6	4	5	5	6	9	9	7	8	8	9	4	3
-2	8	22	15	2	8	11	2	1	6	9	9	4	-1	-1	8	9	9	8	9	11	10	7	2	1
0	10	15	6	3	12	10	-1	1	10	0	3	32	40	20	11	11	4	9	19	19	12	8	3	0
0	3	7	6	10	17	11	3	8	4	-12	14	60	57	18	8	10	7	10	20	19	18	6	4	-1
0	0	3	8	9	7	7	6	7	6	-3	12	43	40	12	5	16	10	4	10	10	5	6	3	0
0	0	1	5	6	3	2	7	6	6	5	5	11	15	8	7	12	7	5	9	7	3	6	6	1
-1	-1	-1	0	5	9	7	6	6	5	5	6	5	6	7	6	4	7	10	8	2	2	6	4	0
0	0	1	0	0	2	5	6	6	6	6	11	14	11	7	6	6	8	8	6	2	0	2	1	0
0	0	1	-1	-4	-3	2	4	5	8	5	1	3	9	8	9	7	4	3	3	4	0	0	1	0
0	0	0	0	2	1	0	2	2	3	3	2	3	4	3	2	3	4	0	-2	0	1	1	0	0
0	0	0	0	0	0	0	0	1	0	1	3	2	-1	-1	-1	0	1	0	-1	-1	0	0	0	0

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E NO DATA W

S

02-03 UT

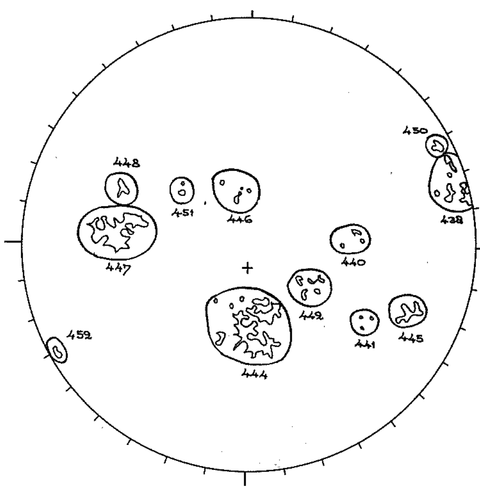
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E



W

Sp

1730 UT

FAIR	M
38-31-2.5	
44-31-3.0	
45-07-2.5	
47-28-3.5	
50-07-2.5	

JULY 31, 1971 (P=10.18, B_o=5.69, L_o=223.90)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

Np

E NO DATA 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

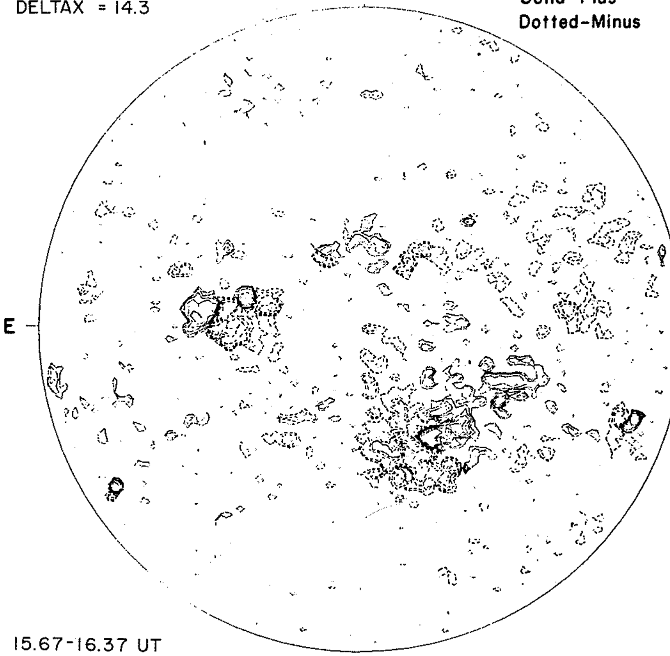
Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

E



W

Sp

Levels
±5
±10
±20
±40
±80

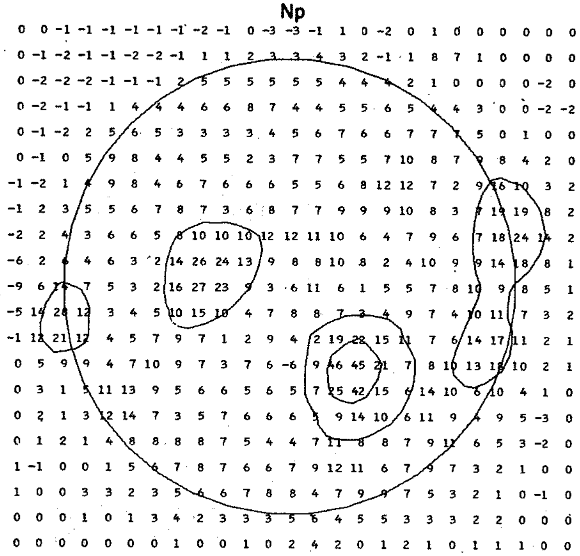
15.67-16.37 UT

STANFORD

9.1 cm

Np

E



W

Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

N

E NO DATA W

S

02-03 UT

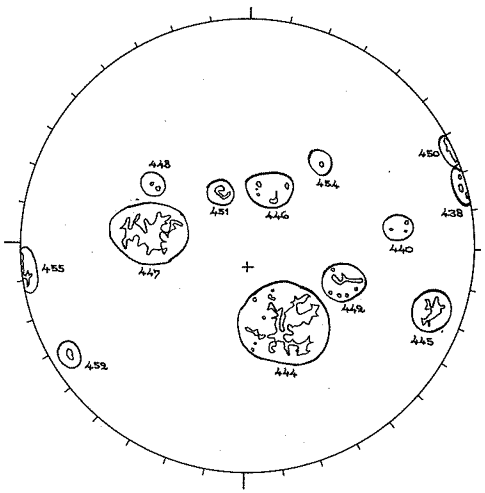
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Np

E



W

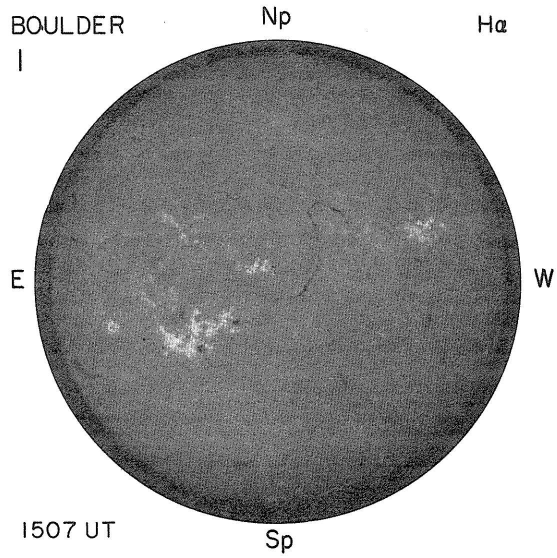
Sp

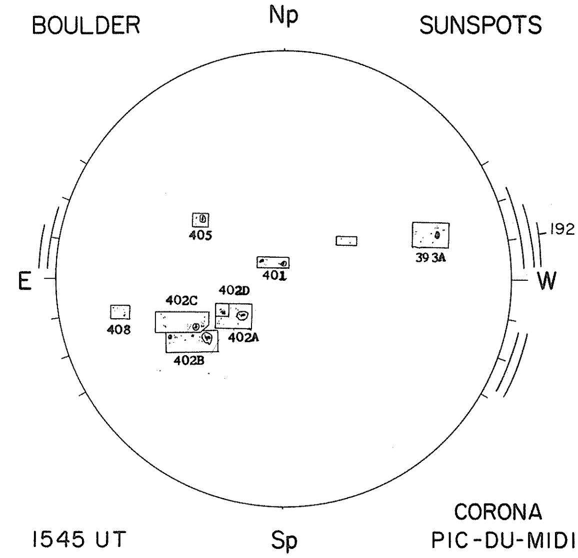
1250 UT

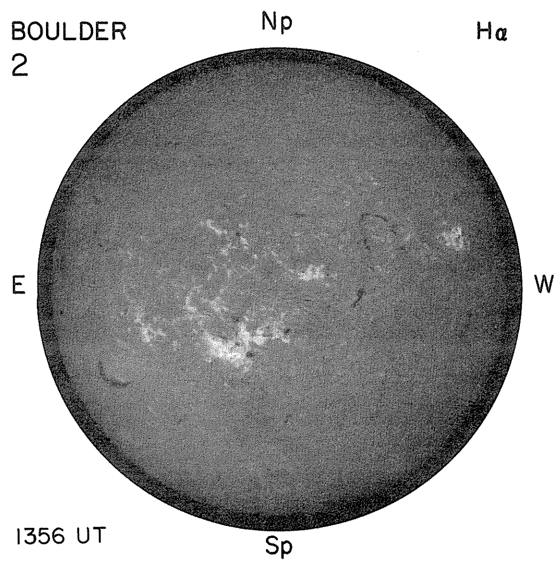
GOOD	M
44 -30	-3.5
45 -11	-3.0
47 -30	-3.5
50 -08	-2.5
52 -05	-3.0

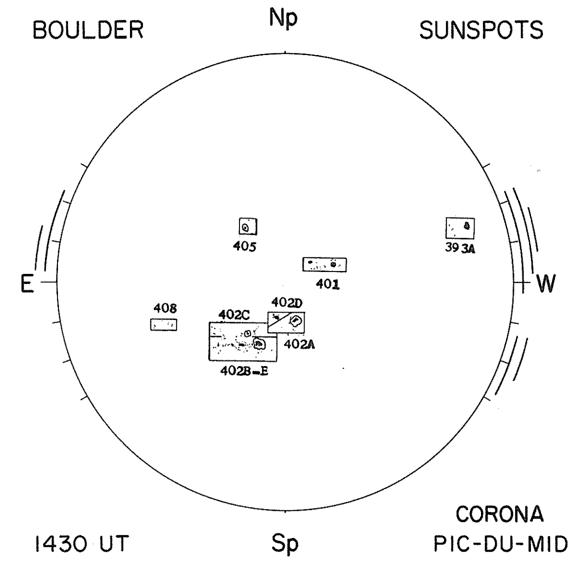
Hα SPECTROHELIOGRAMS   SUNSPOTS AND CORONA

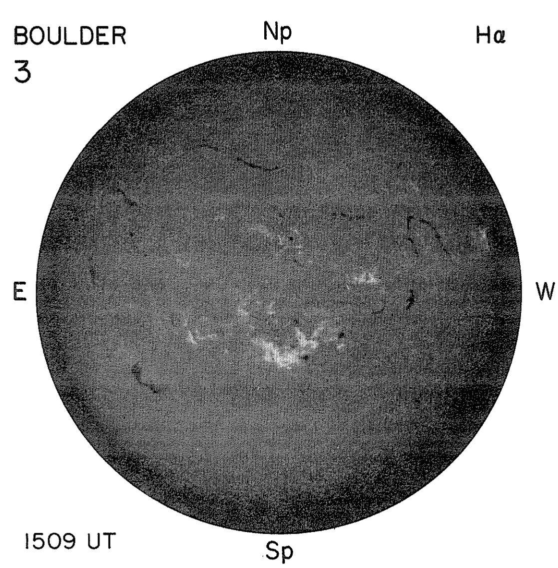
JULY, 1971

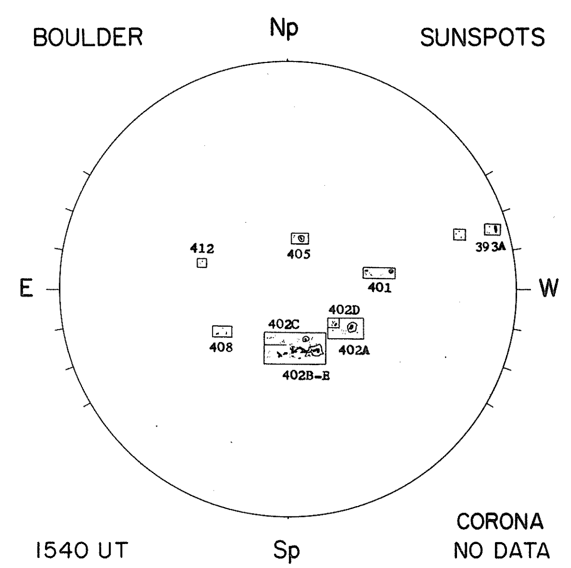






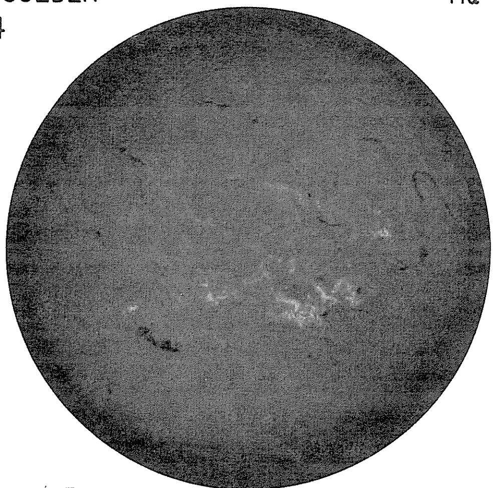






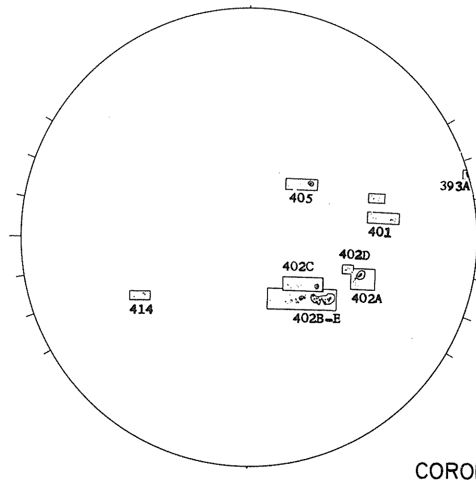
JULY, 1971

BOULDER Np Hα
4
E W



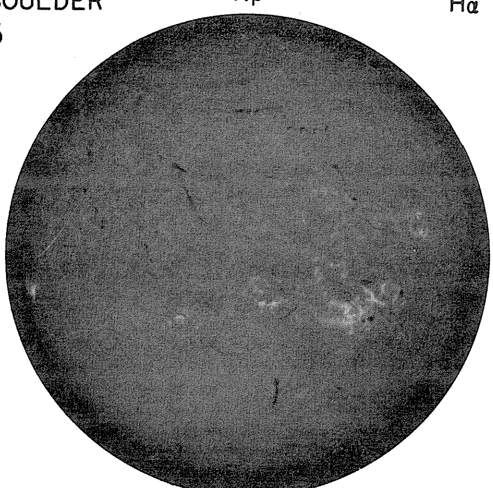
1436 UT Sp

BOULDER Np SUNSPOTS
E W



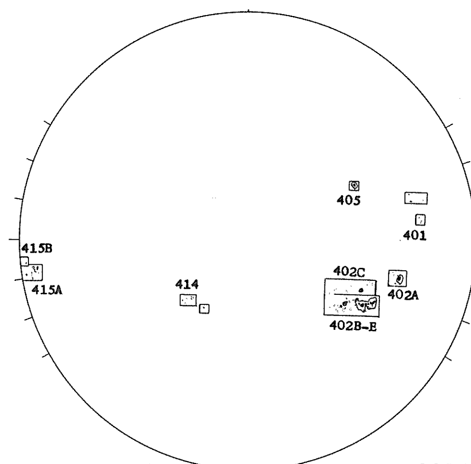
1545 UT Sp CORONA NO DATA

BOULDER Np Hα
5
E W



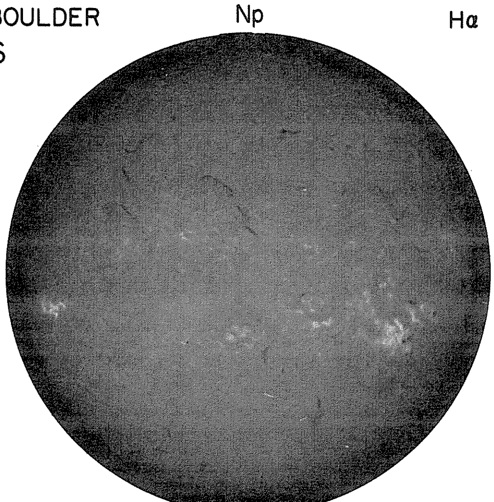
1447 UT Sp

BOULDER Np SUNSPOTS
E W



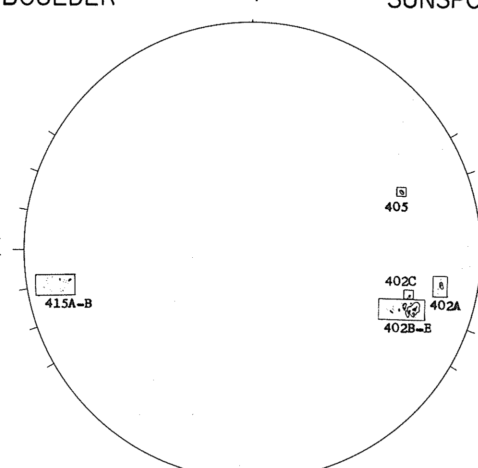
1600 UT Sp CORONA NO DATA

BOULDER Np Hα
6
E W



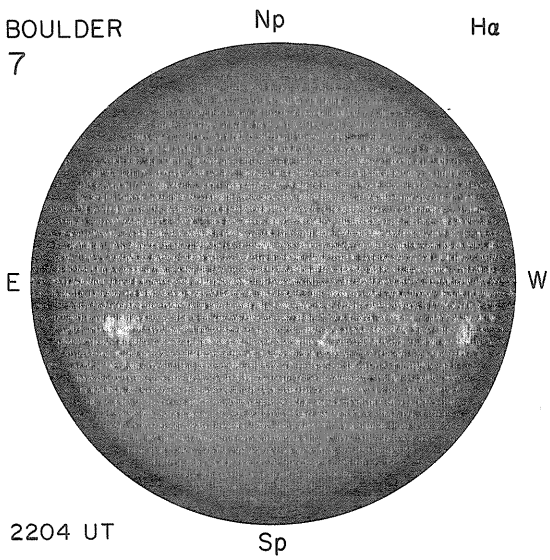
1545 UT Sp

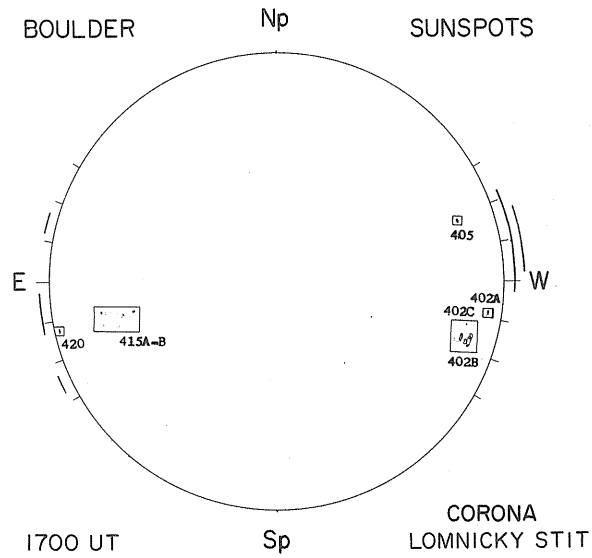
BOULDER Np SUNSPOTS
E W

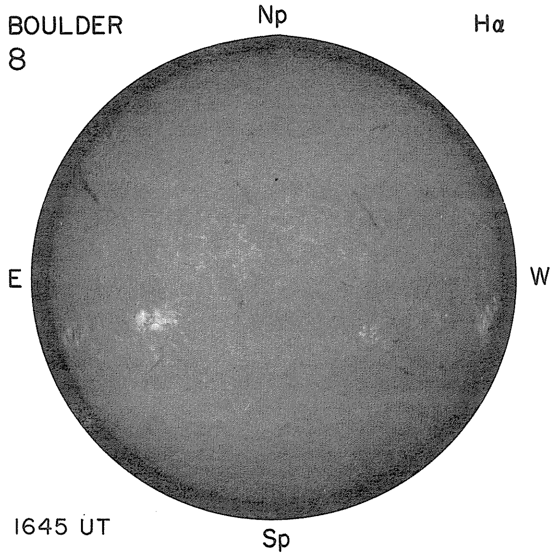


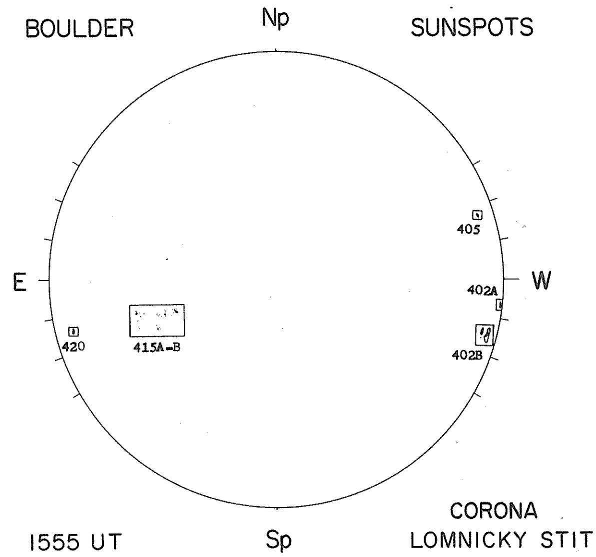
1620 UT Sp CORONA NO DATA

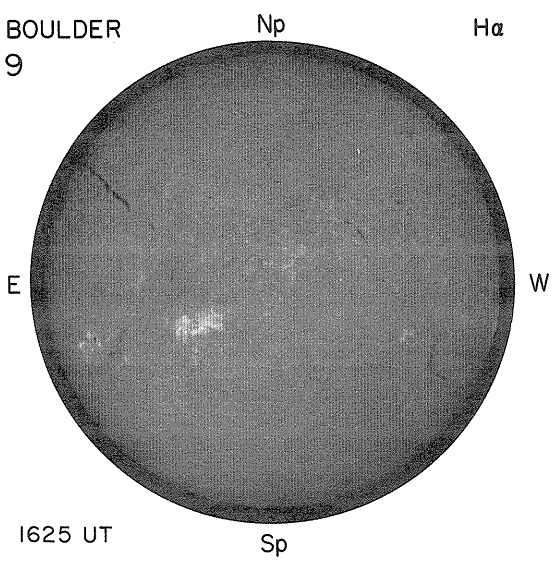
JULY, 1971

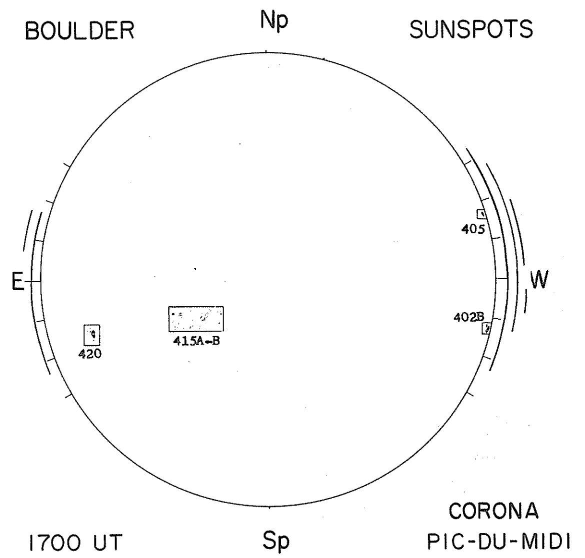

BOULDER
7
Np
Hα
E
W
2204 UT
Sp

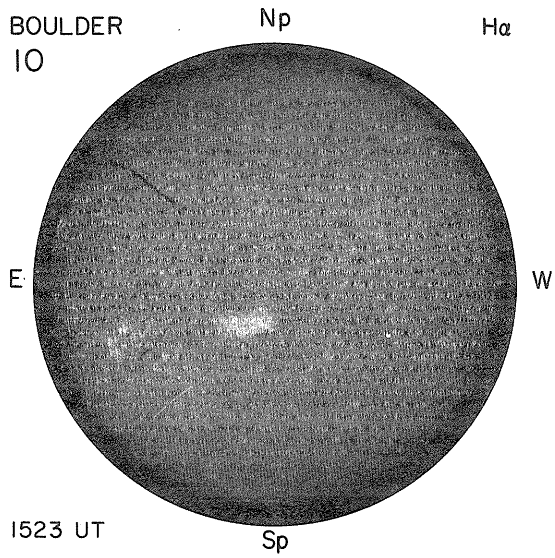

BOULDER
Np
SUNSPOTS
E
W
405
402A
402C
420
415A-B
402B
1700 UT
Sp
CORONA
LOMNICKY STIT

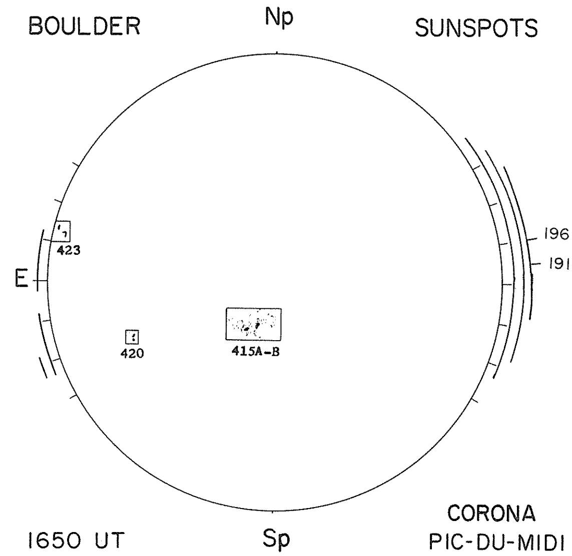

BOULDER
8
Np
Hα
E
W
1645 UT
Sp

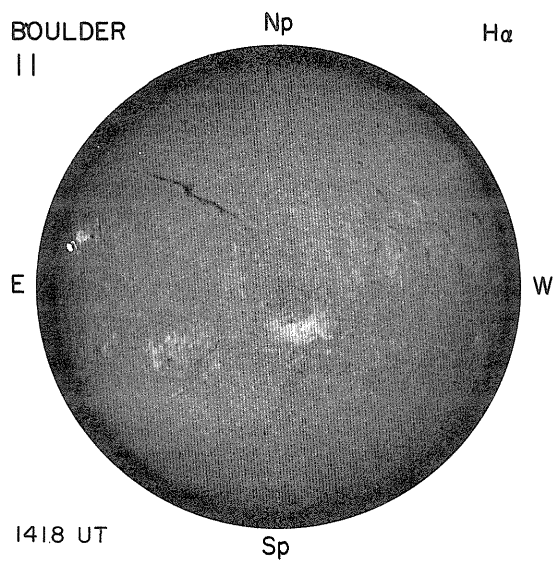

BOULDER
Np
SUNSPOTS
E
W
405
402A
420
415A-B
402B
1555 UT
Sp
CORONA
LOMNICKY STIT

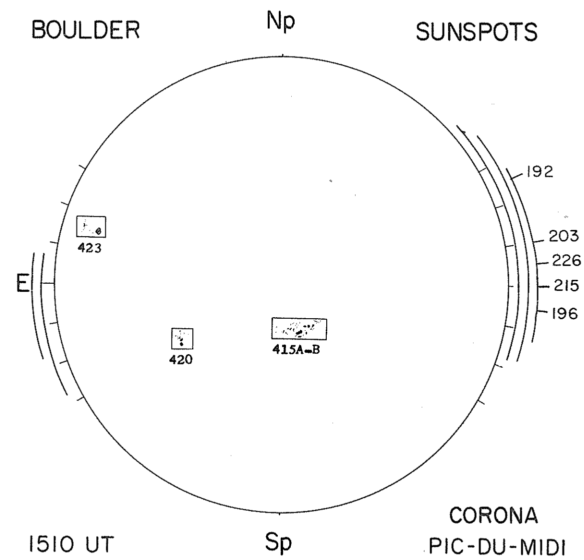

BOULDER
9
Np
Hα
E
W
1625 UT
Sp

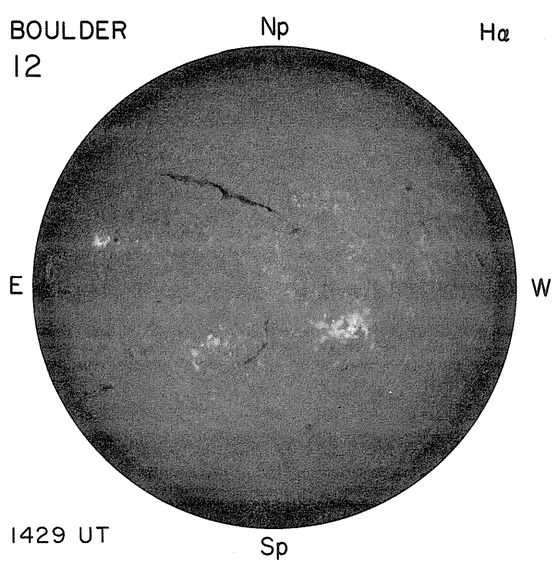

BOULDER
Np
SUNSPOTS
E
W
405
402B
420
415A-B
1700 UT
Sp
CORONA
PIC-DU-MIDI

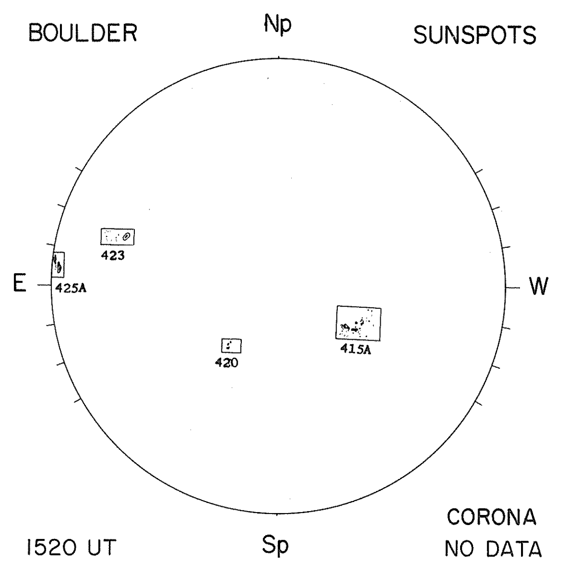

BOULDER
10
Np
Hα
E
W
1523 UT
Sp


BOULDER
Np
SUNSPOTS
423
E
196
191
420
415A-B
1650 UT
Sp
CORONA
PIC-DU-MIDI

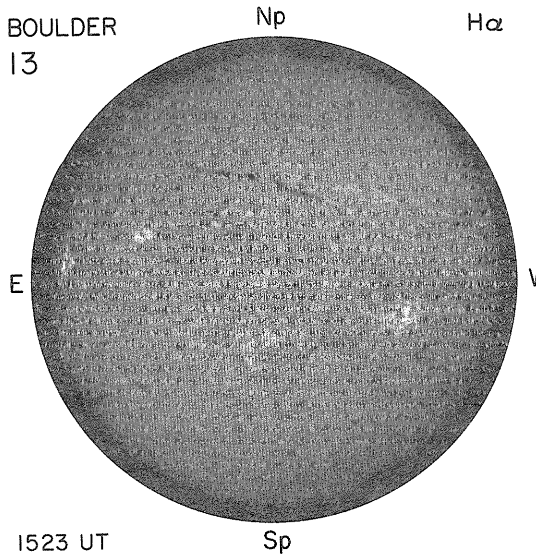

BOULDER
11
Np
Hα
E
W
1418 UT
Sp

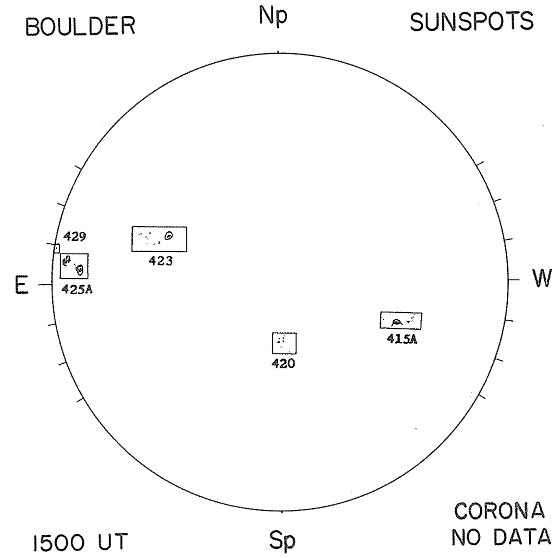

BOULDER
Np
SUNSPOTS
192
423
203
226
215
196
E
420
415A-B
1510 UT
Sp
CORONA
PIC-DU-MIDI

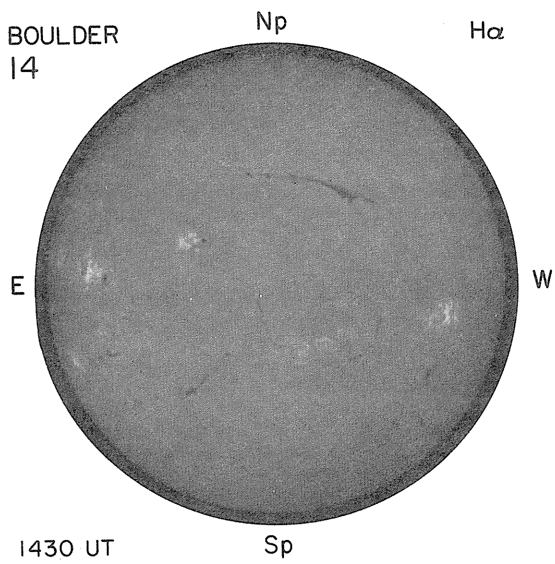

BOULDER
12
Np
Hα
E
W
1429 UT
Sp

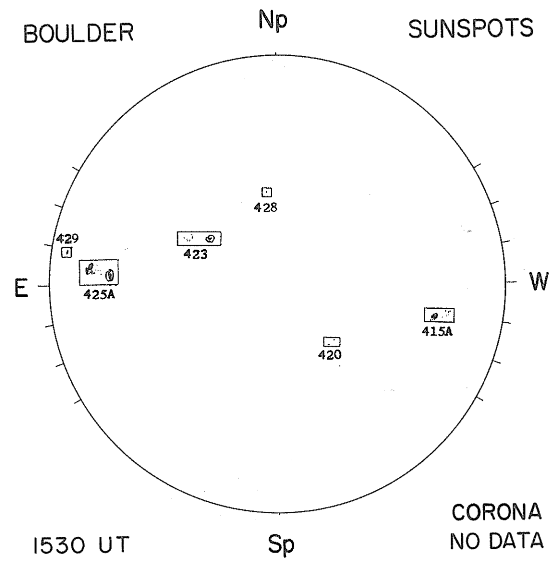

BOULDER
Np
SUNSPOTS
423
E
425A
W
420
415A
1520 UT
Sp
CORONA
NO DATA

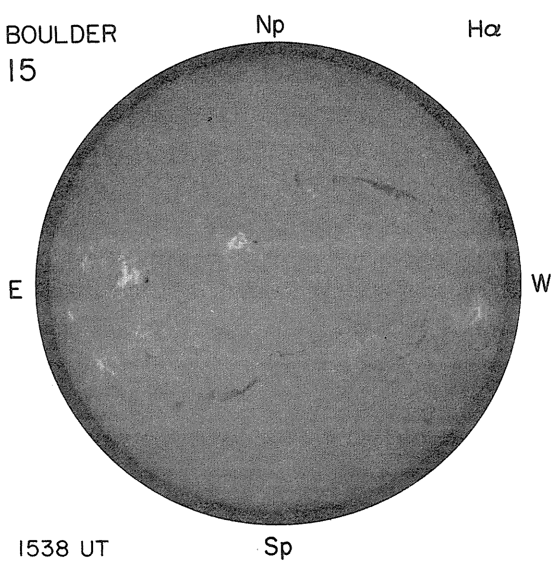
JULY, 1971

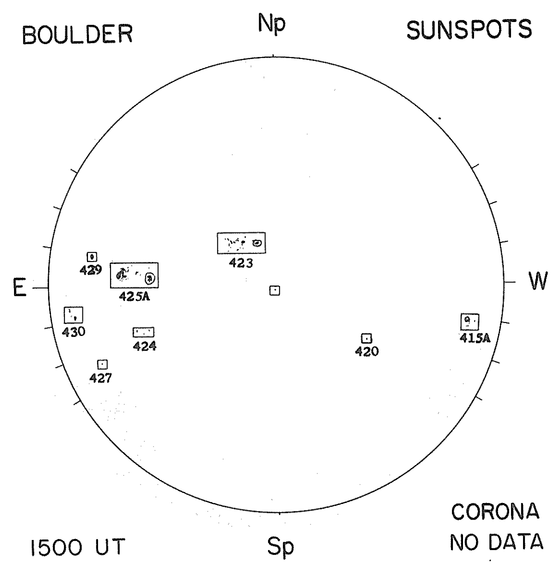

BOULDER
13
Np
Hα
E
W
1523 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
429
423
425A
420
415A
1500 UT
Sp
CORONA
NO DATA


BOULDER
14
Np
Hα
E
W
1430 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
428
429
423
425A
420
415A
1530 UT
Sp
CORONA
NO DATA

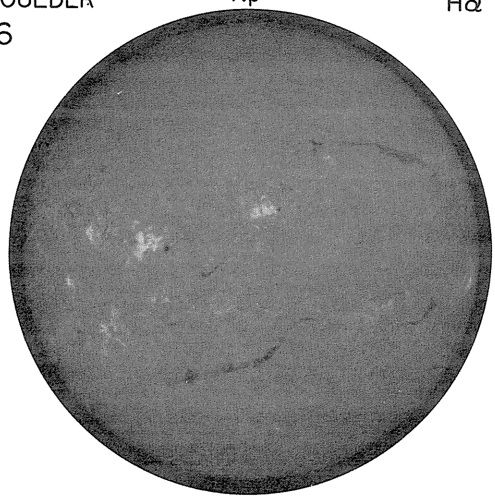

BOULDER
15
Np
Hα
E
W
1538 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
423
429
425A
430
424
427
420
415A
1500 UT
Sp
CORONA
NO DATA

JULY, 1971

BOULDER Np Hα
16

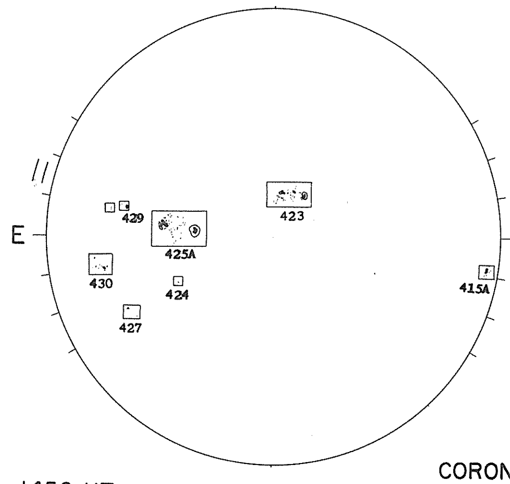
E W



1407 UT Sp

BOULDER Np SUNSPOTS

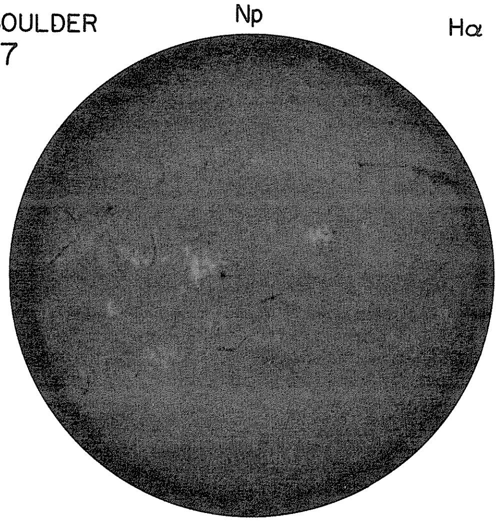
E W



1450 UT Sp CORONA
LOMNICKY STIT

BOULDER Np Hα
17

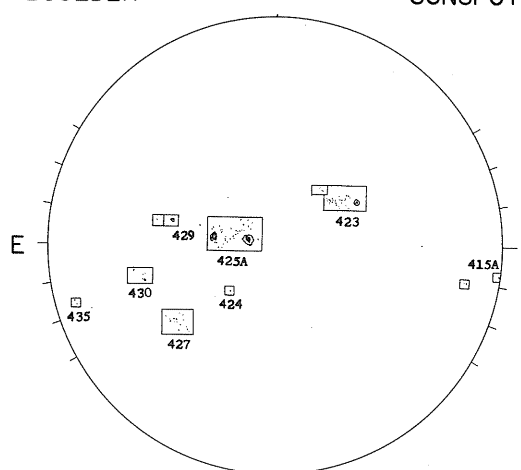
E W



1430 UT Sp

BOULDER Np SUNSPOTS

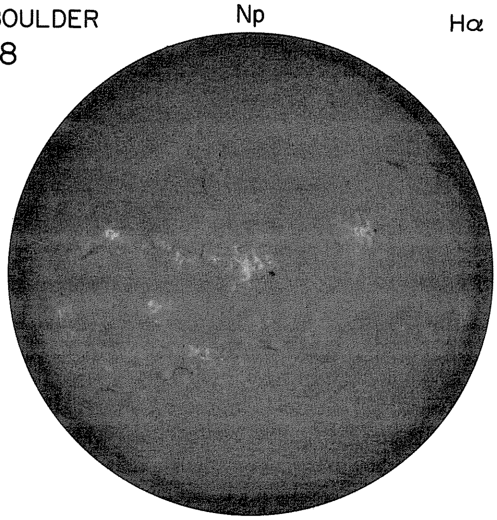
E W



1515 UT Sp CORONA
NO DATA

BOULDER Np Hα
18

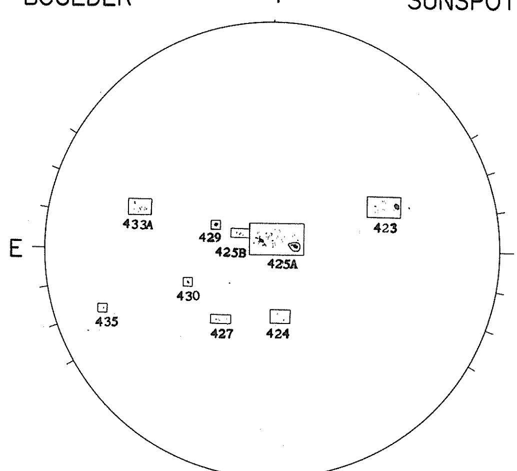
E W



1452 UT Sp

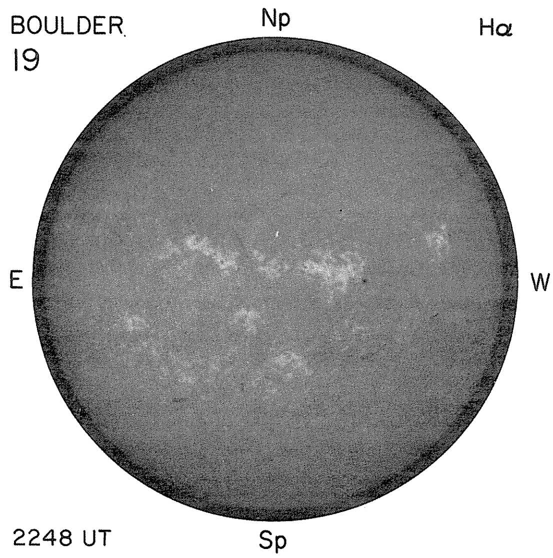
BOULDER Np SUNSPOTS

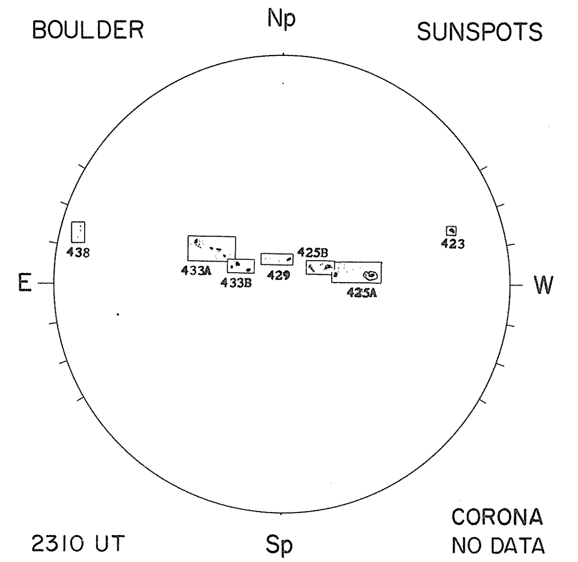
E W

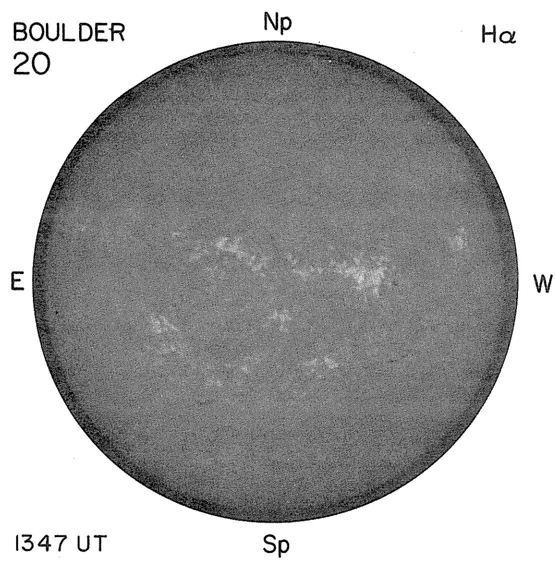


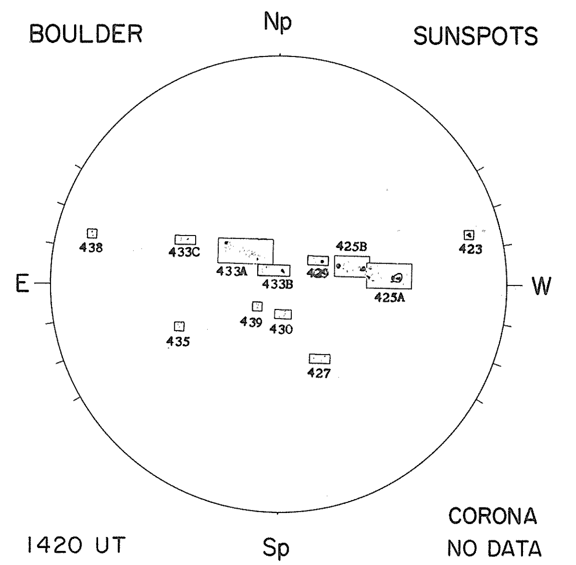
1530 UT Sp CORONA
NO DATA

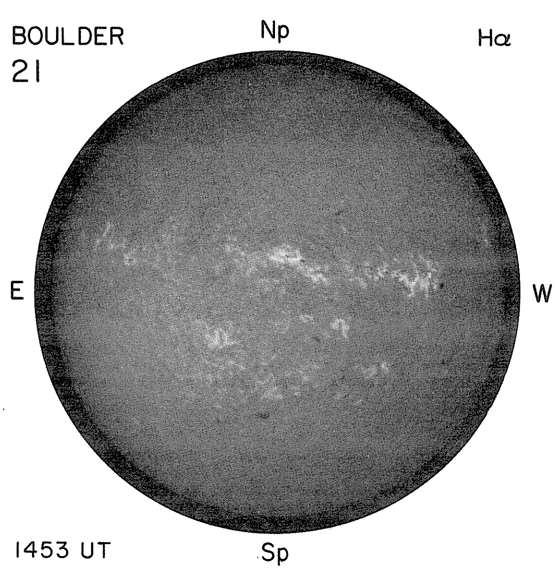
JULY, 1971

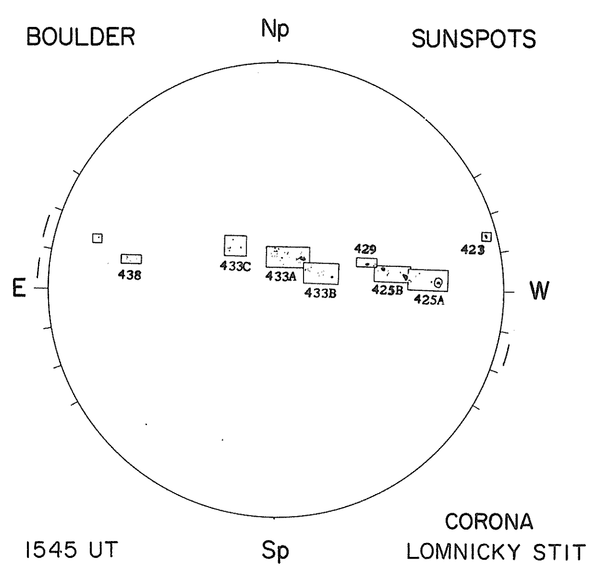

BOULDER
19
Np
Hα
E
W
2248 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
438
433A
433B
429
425B
425A
423
2310 UT
Sp
CORONA
NO DATA

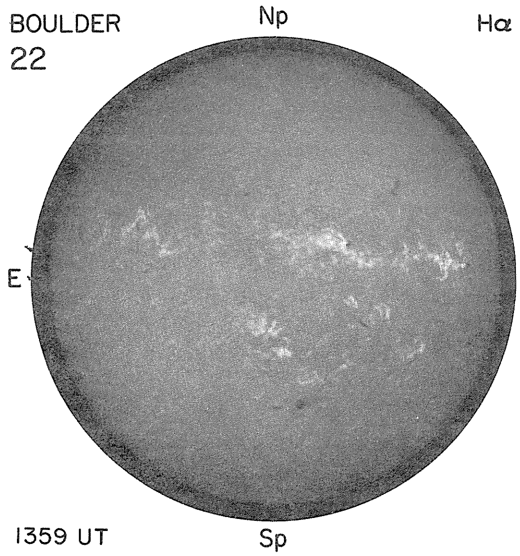

BOULDER
20
Np
Hα
E
W
1347 UT
Sp

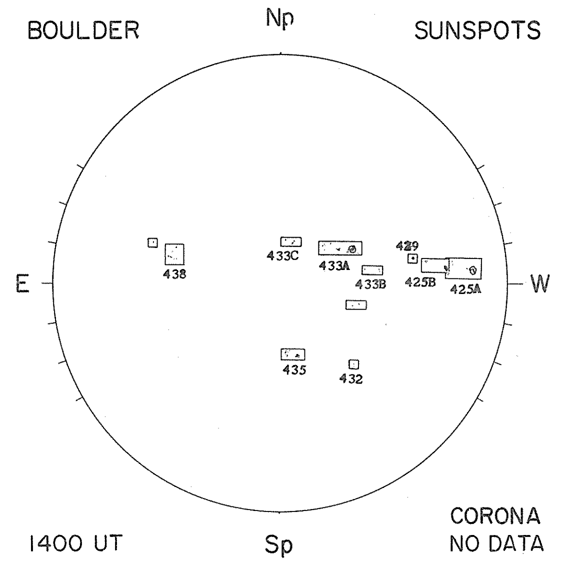

BOULDER
Np
SUNSPOTS
E
W
438
433C
433A
433B
429
425B
425A
423
439
430
435
427
1420 UT
Sp
CORONA
NO DATA

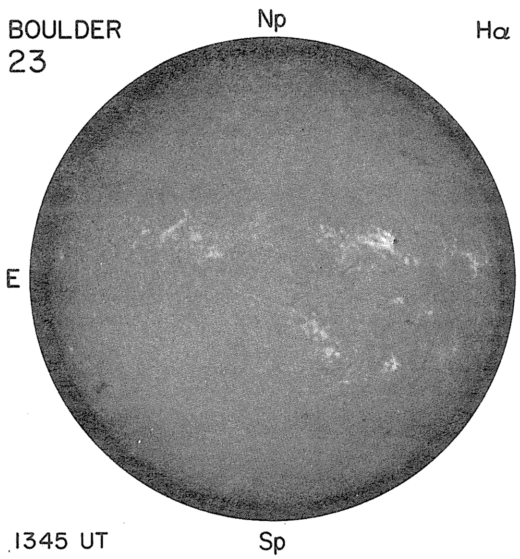

BOULDER
21
Np
Hα
E
W
1453 UT
Sp

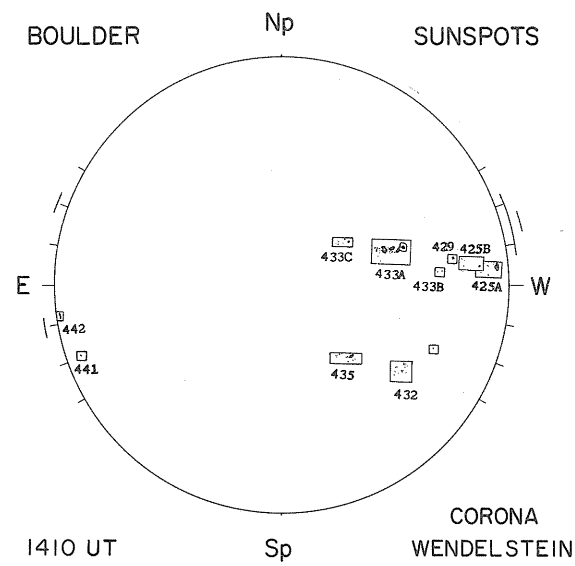

BOULDER
Np
SUNSPOTS
E
W
438
433C
433A
433B
429
425B
425A
423
1545 UT
Sp
CORONA
LOMNICKY STIT

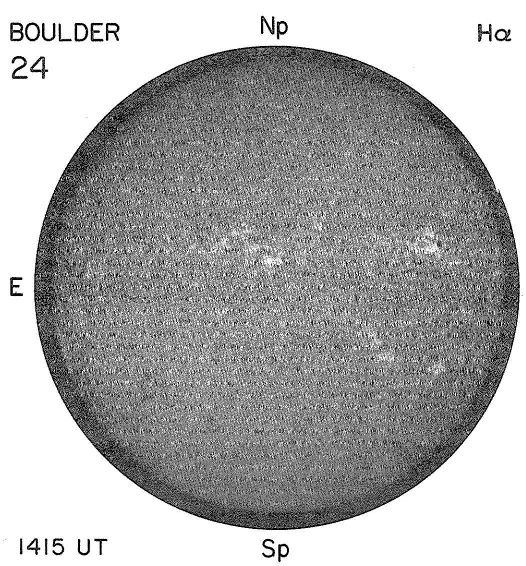
JULY, 1971

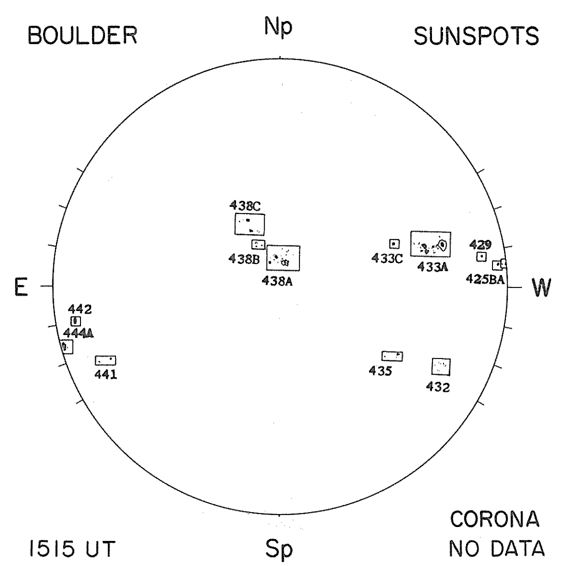

BOULDER
22
Np
Hα
E
W
1359 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
438
433C
433A
433B
429
425B
425A
435
432
1400 UT
Sp
CORONA
NO DATA

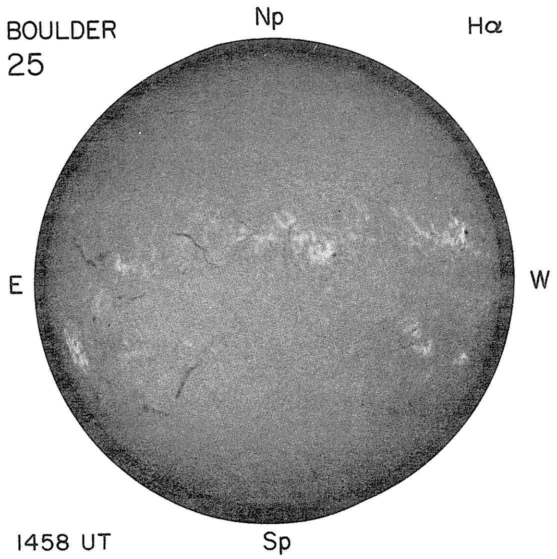

BOULDER
23
Np
Hα
E
W
1345 UT
Sp

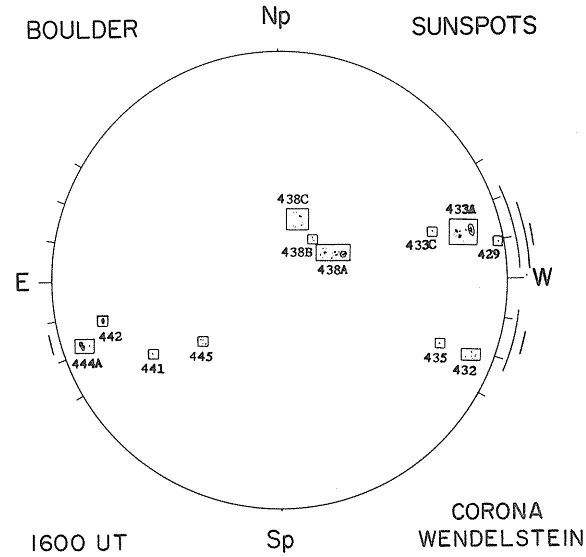

BOULDER
Np
SUNSPOTS
E
W
433C
433A
429
425B
433B
425A
442
441
435
432
1410 UT
Sp
CORONA
WENDELSTEIN


BOULDER
24
Np
Hα
E
W
1415 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
438C
438B
438A
433C
433A
429
425BA
442
444A
441
435
432
1515 UT
Sp
CORONA
NO DATA

JULY, 1971


BOULDER
25
Np
Hα
E
W
1458 UT
Sp


BOULDER
Np
SUNSPOTS
438C
433A
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429
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438A
E
W
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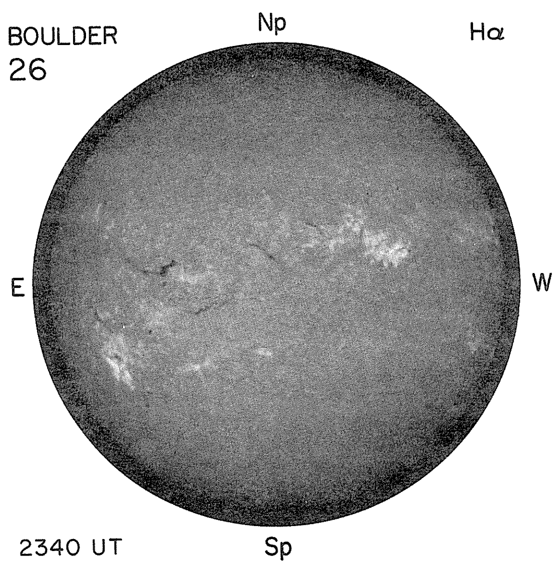
432
1600 UT
Sp
CORONA
WENDELSTEIN


BOULDER
26
Np
Hα
E
W
2340 UT
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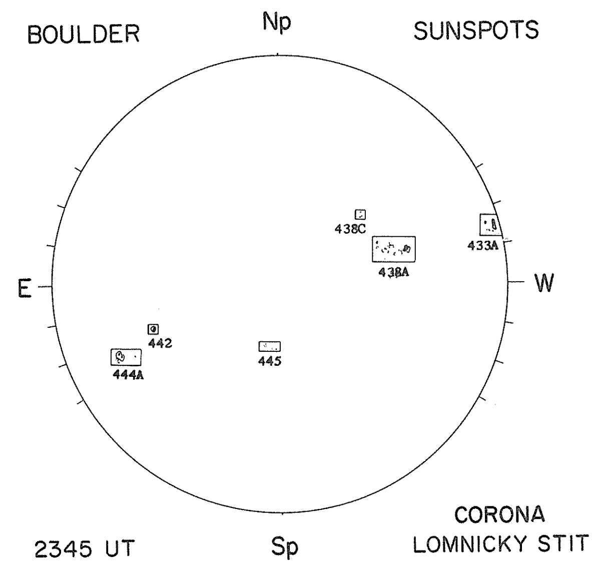
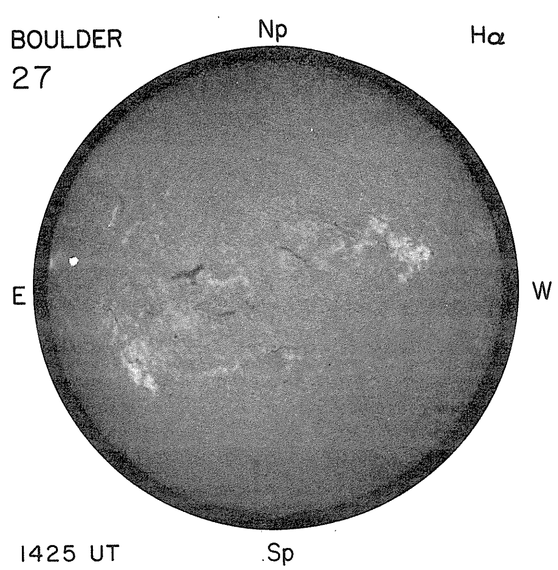
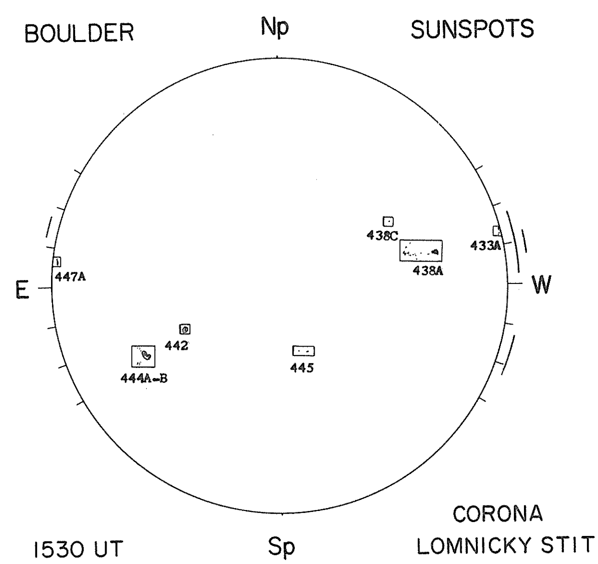

BOULDER
Np
SUNSPOTS
438C
433A
438A
E
W
442
445
444A
2345 UT
Sp
CORONA
LOMNICKY STIT


BOULDER
27
Np
Hα
E
W
1425 UT
Sp


BOULDER
Np
SUNSPOTS
438C
433A
438A
447A
E
W
442
444A-B
445
1530 UT
Sp
CORONA
LOMNICKY STIT

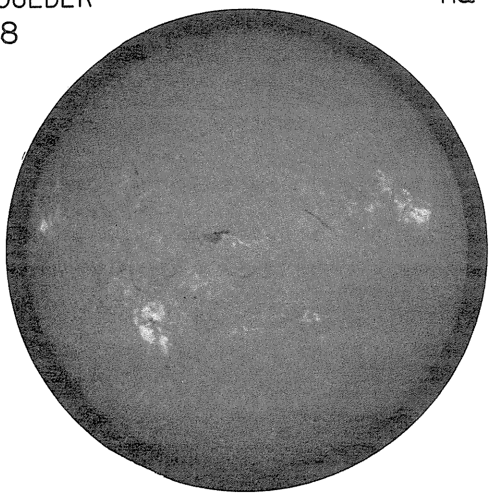
JULY, 1971

BOULDER
28

Np

Hα

E



W

1410 UT

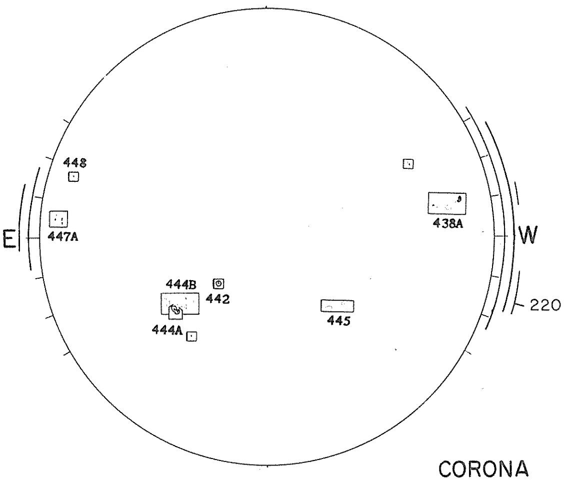
Sp

BOULDER

Np

SUNSPOTS

E



W

1445 UT

Sp

CORONA
PIC-DU-MIDI

BOULDER
29

Np

Hα

E

NO DATA

W

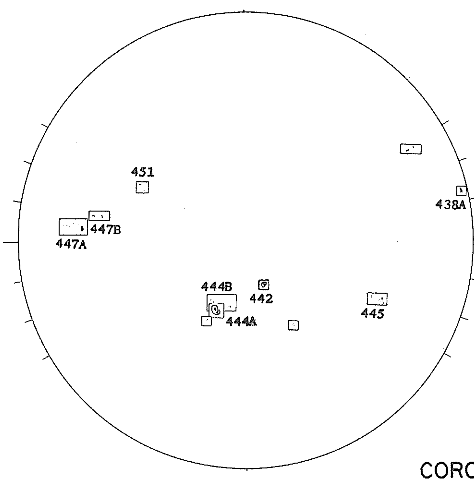
Sp

BOULDER

Np

SUNSPOTS

E



W

2200 UT

Sp

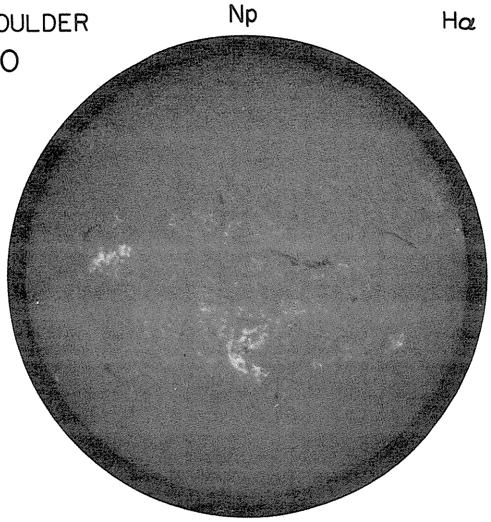
CORONA
NO DATA

BOULDER
30

Np

Hα

E



W

1415 UT

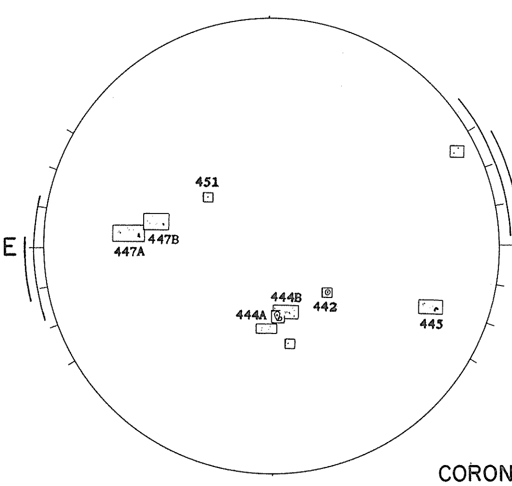
Sp

BOULDER

Np

SUNSPOTS

E



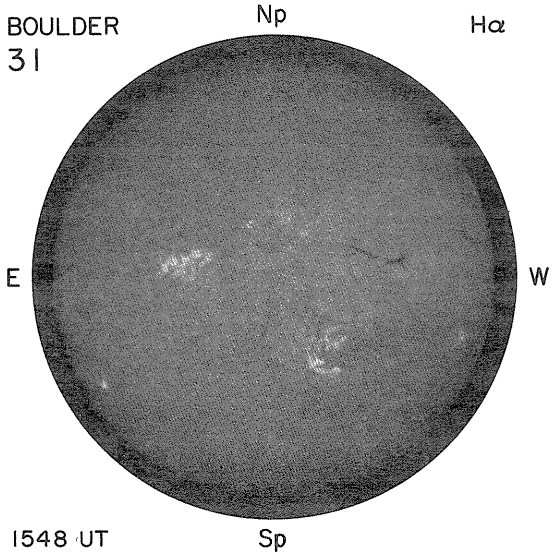
W

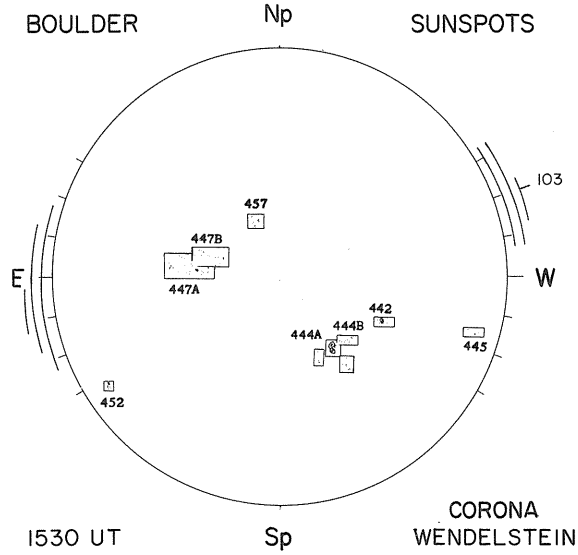
1530 UT

Sp

CORONA
WENDELSTEIN

JULY, 1971


BOULDER
31
Np
Hα
E
W
1548 UT
Sp


BOULDER
Np
SUNSPOTS
103
457
447B
447A
E
W
442
444A
444B
445
452
1530 UT
Sp
CORONA
WENDELSTEIN

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MCMATH REGION 11411 CMP DATE 1.2

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	7	2	11411	N25 W19	258	100	1.5										

MCMATH REGION 11409 CMP DATE 1.4

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	7	1	11409	S11 W02	255	100	1.0										
71	7	2	11409	S11 W15	254	200	1.0										

MCMATH REGION 11401 CMP DATE 2.1 RETURN OF REGION 11351 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	7	1	11401	N08 E07	246	800	3.0	18478	N07 E05	248	(BP)	5	70	12	D	13	4
71	7	2	11401	N08 W07	246	800	3.0	18478	N07 W08	247	(BP)	4	80	16	D	12	4
71	7	3	11401	N08 W21	248	900	3.0	18478	N07 W26	249	(BP)	3					
71	7	4	11401	N08 W35	248	1000	3.0	18478	N12 W36	246	(BP	1					
71	7	5						18478	N12 W49	247	(BF)	2	10	4	C	7	2
71	7								N08 W50				0	4	A		
71	7	6	11401	N10 W62	250	1200	2.0	18478	N13 W60	247	(AF)	2					
71	7	7	11401	N10 W76	250	1000	1.5										
																5	1

MCMATH REGION 11416 CMP DATE 2.8

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	7	6	11416	S27 W49	237	200	1.5										
71	7	7	11416	S27 W61	235	200	1.0										

MCMATH REGION 11402 CMP DATE 3.3

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	7	1	11402	S09 E23	230	4700	4.0	18472	S08 E15	238	(BP)	6	280	27	C	44	13
71	7							18473	S08 E21	232	(BP)	5					
71	7							18476	S14 E25	228	(BY)	6	330	48	E		
71	7								S10 E25				120	40	C		
71	7							18479	S11 E29	224	(BP)	5					
71	7	2	11402	S10 E10	229	5000	4.0	18472	S08 W01	240	(AP)	6	360	16	C	69	21
71	7							18473	S09 E05	234	(BP)	4					
71	7							18476	S14 E12	227	(BP)	6	620	76	E		
71	7							18479	S11 E15	224	(BP)	5					
71	7	3	11402	S11 W03	230	5000	3.5	18472	S08 W18	241	(AP)	5					
71	7							18473	S08 W14	237	(BP)	2					
71	7							18476	S13 W05	228	(BP)	5					
71	7							18479	S11 W02	225	(BP)	4					
71	7	4	11402	S11 W17	230	5100	3.5	18472	S08 W31	241	(BP)	5					
71	7							18473	S08 W25	235	(BF)	1					
71	7							18476	S13 W18	228	(BP)	5					
71	7							18479	S10 W17	227	(BP	4					
71	7	5						18472	S08 W43	241	(AP)	5	210	5	H	76	22
71	7							18473	S09 W33	231	(AF)	2					
71	7							18476	S14 W30	228	(BP)	4	830	64	F		
71	7							18479	S10 W28	226	(BP)	4					
71	7	6	11402	S10 W42	230	5200	3.5	18472	S07 W55	242	(AP)	4	200	5	H	75	22
71	7							18479	S10 W42	229	(BP)	4					
71	7							18476	S13 W42	229	(BP)	5	820	16	E		
71	7	7	11402	S10 W56	230	5100	3.5	18472	S07 W70	240	(AP)	4	70	2	H	53	16
71	7							18479	S09 W60	230	(AP)	2					
71	7							18476	S13 W59	229	(BP)	5	680	14	C		
71	7	8	11402	S12 W68	226	4200	3.5	18472	S07 W80	239	(AP)	3	90	1	H	36	11
71	7							18476	S13 W70	229	(AP)	5	690	6	H		
71	7	9	11402	S12 W78	225	3700	3.0	18476	S13 W87	233	(AP)	4	210	2	H		

MCMATH REGION 11405 CMP DATE 3.7 RETURN OF REGION 11369 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	7	1	11405	N17 E27	226	1600	2.0	18474	N17 E24	229	(AP)	5	110	6	C		
71	7	2	11405	N17 E14	225	2000	2.5	18474	N16 E11	228	(AP)	5	120	2	H		
71	7	3	11405	N16 E02	225	1800	2.5	18474	N16 W05	228	(BP)	5					

(cont'd)

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(cont'd)

71	7	4	11405	N17 W11	224	1800	2.5	18474	N16 W17	227	(AP)	4					
71	7	5						18474	N16 W30	228	(AP)	5	110	1	H		
71	7	6	11405	N17 W36	224	800	2.0	18474	N18 W42	229	(AP)	5	100	1	H.		
71	7	7	11405	N17 W48	222	800	2.0	18474	N18 W59	229	(AP)	4	50	1	H		
71	7	8	11405	N18 W66	224	500	1.5	18474	N17 W70	229	(AP)	3	60	1	H		
71	7	9	11405	N18 W76	223	700	1.5	18474	N17 W82	228	(AP)	3	50	1	H		

MCMATH REGION 11406 CMP DATE 4.2 RETURN OF REGION 11352 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	7	1	11406	S02 E35	218	900	1.5										
71	7	2	11406	S01 E21	218	900	1.5										
71	7	3	11406	S01 E09	218	1000	2.0										
71	7	4	11406	S02 W05	218	800	2.5										
71	7	6	11406	S02 W31	219	800	2.0										
71	7	7	11406	S01 W44	218	700	2.0										
71	7	8	11406	S02 W62	220	400	2.0										
71	7	9	11406	S02 W72	219	700	1.5										

MCMATH REGION 11413 CMP DATE 4.9

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	7	3	11413	N22 E19	208	200	2.5										
71	7	4	11413	N21 E05	208	200	1.5										
71	7	6	11413	N21 W22	210	100	1.0										

MCMATH REGION 11408 CMP DATE 5.3

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	7	1	11408	S08 E48	205	500	2.0	18480	S09 E48	205	(BP)	3	10	11	B		
71	7	2	11408	S08 E34	205	1500	2.5	18480	S10 E35	204	(B)	2	0	8	B	9	3
71	7	3	11408	S08 E23	204	1500	2.5										
71	7	4	11408	S08 E10	203	900	2.5										
71	7	6	11408	S07 W16	204	900	2.5										
71	7	7	11408	S08 W28	202	900	2.5										
71	7	8	11408	S08 W48	206	500	3.0										
71	7	9	11408	S09 W58	205	400	2.5										
71	7	10	11408	S09 W70	205	300	1.0										

MCMATH REGION 11407 CMP DATE 5.5

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	7	1	11407	S05 E52	201	200	1.0										

MCMATH REGION 11412 CMP DATE 5.5

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	7	2	11412	N12 E41	198	300	1.5									3	1
71	7	3	11412	N10 E29	198	600	2.0										
71	7	4	11412	N10 E14	199	300	2.0										
71	7	6	11412	N10 W13	201	300	1.5										

MCMATH REGION 11414 CMP DATE 6.9

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	7	4	11414	S12 E33	180	300	3.0	18481	S13 E27	183	(BP	2					
71	7	5						18484	S15 E11	187	(AP)	1	0	1	A	13	4
71	7							18481	S13 E16	182	(BP)	2	20	6	C		
71	7	6	11414	S13 E05	183	600	2.0										
71	7	7	11414	S12 W08	182	600	2.0										
71	7	8	11414	S12 W24	182	600	2.5										
71	7	9	11414	S12 W35	182	500	2.5										
71	7	10	11414	S11 W49	184	400	2.5										
71	7	11	11414	S11 W61	183	400	1.5										
71	7	12	11414	S11 W74	182	300	1.0										

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MCMATH REGION 11415 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	7	4	11415	S08 E84	129	600	2.0	18482	S09 E88	122	AP	0					
71	7	5						18482	S08 E72	126	(BP)	3	60	16	E	22	6
71	7								S05 E79				10	1	H		
71	7	6	11415	S07 E61	127	2000	3.5	18482	S07 E62	125	(BP)	3	80	18	E	14	4
71	7	7	11415	S07 E48	126	2400	3.5	18482	S08 E45	125	(BP)	3	70	17	E	30	9
71	7	8	11415	S06 E33	125	3000	3.5	18482	S08 E36	123	(B)	3	40	42	E	26	8
71	7	9	11415	S06 E22	125	2800	3.5	18482	S08 E21	125	(BY)	3	20	46	C		
71	7	10	11415	S07 E07	128	3000	3.5	18482	S07 E03	127	(D)	4					
71	7	11	11415	S07 W05	127	2800	3.0	18482	S08 W07	127	(BP)	3					
71	7	12	11415	S07 W18	126	2800	3.0	18482	S08 W21	126	(B)	4	110	52	D		
71	7	13	11415	S07 W32	126	3200	3.5	18482	S07 W34	127	(BF)	4				24	7
71	7	14	11415	S07 W45	127	2900	3.5	18482	S07 W46	126	(BF)	3	90	16	C		
71	7	15	11415	S07 W58	126	2500	3.0	18482	S08 W57	124	(BF)	5	60	9	C		
71	7	16	11415	S07 W73	129	2500	3.5	18482	S07 W69	124	(AF)	5	60	6	C	22	7
71	7	17	11415	S07 W85	127	1200	1.5		S08 W85				0	1	A		

MCMATH REGION 11421 CMP DATE 12.8

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	7	8	11421	S16 E54	104	100	2.0										
71	7	9	11421	S16 E43	104	300	1.5										
71	7	10	11421	S16 E30	105	200	1.0										
71	7	11	11421	S16 E17	105	100	1.5										
71	7	12	11421	S16 E04	104	100	1.0										

MCMATH REGION 11420 CMP DATE 13.7 RETURN OF REGION 11377 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	7	7	11420	S12 E79	95	900	1.5	18485	S10 E72	98	B	0					
71	7							18486	S12 E78	92	(AP)	3	60	1	H		
71	7	8	11420	S12 E66	92	1500	3.0	18486	S12 E66	93	(AP)	4	90	2	H		
71	7	9	11420	S12 E56	91	1300	3.0	18486	S12 E52	94	(AP)	4	110	6	C	7	2
71	7	10	11420	S12 E43	92	1300	3.0	18486	S12 E36	94	(AP)	4					
71	7	11	11420	S12 E29	93	1300	2.5	18486	S12 E26	94	(AP)	4					
71	7	12	11420	S12 E16	92	1600	2.5	18486	S12 E12	93	(AP)	3	30	4	H		
71	7	13	11420	S12 E02	92	1600	2.5	18486	S11 W01	94	(AP)	2	10	9	B	6	2
71	7	14	11420	S12 W10	92	1600	2.5	18486	S12 W13	93	(AP)	2	10	3	B		
71	7	15	11420	S12 W22	90	1300	2.5		S10 W24				0	1	A		
71	7	16	11420	S13 W34	90	1100	2.5									7	2
71	7	17	11420	S11 W49	91	1700	2.5	18493	S06 W61	97	AP	0					
71	7	18	11420	S11 W62	91	1700	2.5										
71	7	19	11420	S11 W75	88	1300	1.0									10	3

MCMATH REGION 11428 CMP DATE 14.8

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	7	14	11428	N28 E04	78	100	2.0		N27 E03				0	1	A		
71	7	15	11428	N27 W08	76	200	2.5										
71	7	16	11428	N27 W22	78	300	2.5										
71	7	17	11428	N27 W35	77	200	2.0										

MCMATH REGION 11422 CMP DATE 15.3

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	7	10	11422	S09 E64	71	100	1.5										
71	7	11	11422	S11 E51	71	200	1.0										
71	7	12	11422	S10 E37	71	200	1.0										

MCMATH REGION 11436 CMP DATE 15.4

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	7	18	11436	S09 W41	70	200	1.5										

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MCMATH REGION 11423 CMP DATE 16.3 RETURN OF REGION 11396 ROTATION 0

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	7	9						18487	N13 E84	62	AP	0					
71	7	10	11423	N14 E80	55	800	4.0	18487	N14 E71	59	(BP)	4					
71	7	11	11423	N15 E65	57	1600	3.5	18487	N14 E60	60	(BP)	5					
71	7	12	11423	N15 E50	58	1900	3.5	18487	N14 E46	59	(BP)	5	140	12	C		
71	7	13	11423	N16 E36	58	1500	3.0	18487	N14 E34	59	(BP)	5	130	14	C	12	3
71	7	14	11423	N16 E23	59	1500	3.0	18487	N14 E22	58	(BP)	5	120	9	C		
71	7	15	11423	N15 E10	58	1200	3.5	18487	N15 E08	59	(BP)	5	110	4	H		
71	7								N15 E09				30	24	D		
71	7								N03 E01				0	1	A		
71	7	16	11423	N15 W03	59	1000	3.0	18487	N16 W04	59	(BP)	6	170	42	D	21	6
71	7	17	11423	N16 W16	58	1200	3.0	18487	N16 W23	59	(BP)	5	120	40	C	19	6
71	7								N19 W12				0	3	A		
71	7	18	11423	N15 W27	56	1300	3.0	18487	N16 W31	59	(BP)	4					
71	7	19	11423	N15 W42	55	1200	3.0	18487	N15 W44	59	(BP)	5	70	1	A	12	4
71	7	20	11423	N15 W55	58	1200	3.0	18487	N16 W60	62	(AP)	4	50	2	H	9	3
71	7	21	11423	N15 W70	60	900	3.0	18487	N16 W75	63	(AP)	3	50	1	H	9	3
71	7	22	11423	N15 W83	60	700	1.5										

MCMATH REGION 11424 CMP DATE 18.0 RETURN OF REGION 11375 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	7	11	11424	S12 E80	42	400	1.0										
71	7	12	11424	S11 E65	43	500	1.5										
71	7	13	11424	S10 E55	39	900	1.0										
71	7	14	11424	S10 E43	39	1000	1.5										
71	7	15	11424	S10 E33	35	1000	2.0	18490	S09 E37	30	(BF)	4	10	3	B		
71	7	16	11424	S10 E19	37	1100	2.0	18490	S08 E26	29	(AP)	3	0	3	A		
71	7	17	11424	S09 E06	36	1000	2.0	18490	S08 E13	23	AP	0	0	1	A		
71	7	18	11424	S09 W08	37	700	1.5										
71	7	19	11424	S09 W22	35	600	1.0										
71	7	20	11424	S09 W34	37	700	1.0										
71	7	21	11424	S09 W47	37	700	1.0										

MCMATH REGION 11425 CMP DATE 18.5

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	7	12	11425	N06 E82	26	2000	3.5	18488	N04 E79	26	(BP)	4	460	11	E		
71	7	13	11425	N05 E65	29	2300	3.5	18488	N05 E66	27	(BP)	5	500	19	E	41	12
71	7	14	11425	N07 E53	29	2500	3.5	18488	N04 E52	28	(BP)	6	500	28	E		
71	7	15	11425	N06 E42	26	2500	3.5	18488	N04 E38	29	(BP)	6	510	47	E		
71	7	16	11425	N06 E28	28	2500	4.0	18488	N06 E25	30	(BP)	5	570	55	E	54	16
71	7	17	11425	N06 E13	29	2500	3.5	18488	N06 E07	29	(BP)	6	400	57	E	43	13
71	7	18	11425	N06 E02	27	2400	3.0	18495	N09 E09	19	(AF)	3					
71	7	18						18488	N07 W01	29	(BP)	6					
71	7	19	11425	N06 W13	26	2500	3.0	18488	N07 W15	30	(BP)	6	530	18	E	39	11
71	7							18495	N08 W06	21	(BP)	5	110	2	C		
71	7	20	11425	N07 W24	27	2800	3.0	18488	N06 W27	29	(BP)	6	300	23	E	32	9
71	7							18495	N09 W19	21	(BP)	5	120	20	D		
71	7	21	11425	N06 W37	27	2800	3.5	18488	N06 W41	29	(BP)	6	220	11	C	24	7
71	7							18495	N08 W33	21	(BP)	5	90	13	D		
71	7	22	11425	N06 W50	27	2300	3.5	18488	N06 W53	29	(BP)	5	220	9	C	26	8
71	7							18495	N08 W45	21	(BP)	5	50	6	C		
71	7	23	11425	N07 W65	28	2100	2.5	18488	N07 W65	28	(BP)	5	150	7	C	27	8
71	7								N08 W58				10	4	C		
71	7							18495	N09 W57	20	(BP)	4					
71	7	24	11425	N06 W80	28	1500	2.5	18488	N07 W89	39	AP	0	10	2	B		
71	7							18495	N08 W77	27	(AP)	3	10	1	H		

MCMATH REGION 11427 CMP DATE 19.8

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	7	13	11427	S16 E78	16	1200	2.5										
71	7	14	11427	S16 E66	16	1700	3.0										
71	7	15	11427	S17 E54	14	1300	2.5		S17 E54				0	1	A		
71	7	16	11427	S17 E41	15	1500	3.0	18492	S17 E41	14	(BF)	3	10	3	C	11	3
71	7	17	11427	S17 E29	13	1500	2.5	18492	S15 E23	13	BF)	3	10	23	B		
71	7	18	11427	S18 E16	13	1500	2.5	18492	S15 E15	13	(AP)	2					
71	7	19	11427	S18 E01	12	1200	2.5										
71	7	20	11427	S18 W11	14	1200	2.5	18492	S15 W13	15	(B)	1	0	4	B		
71	7	21	11427	S18 W24	14	1200	2.5										
71	7	22	11427	S18 W36	13	900	2.5									6	2
71	7	23	11427	S16 W52	15	800	2.5									9	3
71	7	24	11427	S17 W58	16	600	1.5										

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MCMATH REGION 11429 CMP DATE 20.2

				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	7	13							18489	N09	E85	8	(AP)	2	10	1	A		
71	7	14	11429	N09	E72	10	700	2.5	18489	N09	E69	11	(AP)	4	40	1	H		
71	7	15	11429	N09	E58	10	800	2.5	18489	N09	E54	13	(AP)	3	50	1	H		
71	7	16	11429	N09	E45	11	900	3.0	18489	N10	E41	14	(AP)	5	40	2	H		
71	7									N10	E46				0	2	A		
71	7	17	11429	N09	E34	8	900	2.5	18489	N10	E24	12	(AP)	4	30	1	H		
71	7									N10	E32				0	1	A		
71	7	18	11429	N09	E21	8	800	2.0	18489	N10	E16	12	(AP)	5					
71	7	19	11429	N10	E06	7	700	2.5	18489	N10	E02	13	(AP)	6	50	7	C		
71	7	20	11429	N10	W08	11	800	2.5	18489	N11	W11	13	(AP)	6	30	4	H		
71	7	21	11429	N09	W21	11	900	2.0	18489	N11	W26	14	(AP)	5	20	3	H		
71	7	22	11429	N09	W34	11	600	2.0	18489	N09	W38	14	(AP)	5	10	1	H		
71	7	23	11429	N10	W50	13	500	1.5	18489	N10	W50	13	(AP)	4	10	1	H		
71	7									N07	W45				0	2	A		
71	7	24	11429	N09	W67	15	400	1.0	18489	N11	W66	16	(AP)	2	0	1	H		
71	7	25	11429	N10	W76	13	300	1.0	18489	N12	W79	15	(AP)	2					

MCMATH REGION 11443 CMP DATE 20.4

				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	7	24	11443	S13	W57	5	200	2.0											

MCMATH REGION 11430 CMP DATE 20.6

				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	7	14	11430	S05	E85	358	700	2.0											
71	7	15	11430	S06	E65	3	1000	3.5	18491	S06	E64	3	(BP)	3	20	5	C		
71	7	16	11430	S06	E52	4	800	3.5	18491	S05	E50	5	(Y)	4	40	10	D	7	2
71	7	17	11430	S05	E40	2	700	3.5	18491	S05	E30	6	(AP)	4	20	9	C		
71	7	18	11430	S05	E27	2	700	2.5	18491	S05	E24	4	(BP)	4					
71	7	19	11430	S05	E12	1	500	2.5											
71	7	20	11430	S04	W02	5	600	2.5		S03	W02				0	5	B		
71	7	21	11430	S04	W13	3	700	2.0											
71	7	22	11430	S04	W28	5	500	1.5											
71	7	23	11430	S04	W42	5	400	1.5	18505	S13	W42	5	(AP)	1	0	1	A		
71	7	24	11430	S05	W57	5	400	1.0											
71	7	25	11430	S03	W67	4	200	1.0											

MCMATH REGION 11439 CMP DATE 21.0

				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	7	20	11439	S02	E07	357	100	1.0		S01	E06				0	3	A		
71	7	21	11439	S02	W07	357	200	1.5											
71	7	22	11439	S02	W19	356	300	2.0	18503	S02	W20	356	(BF)	3	10	2	B		
71	7	23	11439	S02	W32	355	300	2.0											
71	7	24	11439	S03	W49	357	200	1.5											
71	7	25	11439	S01	W59	356	200	1.0											
71	7	26	11439	S03	W75	356	300	1.5											

MCMATH REGION 11432 CMP DATE 21.4 RETURN OF REGION 11382 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	7	15	11432	S19	E78	351	300	1.0											
71	7	16	11432	S19	E65	352	400	2.0											
71	7	17	11432	S19	E50	353	600	2.0											
71	7	18	11432	S19	E37	353	900	2.5											
71	7	19	11432	S19	E23	351	600	2.0											
71	7	20	11432	S19	E12	352	700	2.0											
71	7	21	11432	S18	E00	350	1000	2.0											
71	7	22	11432	S19	W13	350	800	2.0		S16	W19				0	1	A		
71	7	23	11432	S18	W27	350	800	3.0	18506	S18	W34	357	(BP)	3	10	14	B		
71	7	24	11432	S19	W45	353	700	3.0	18506	S18	W48	358	(BP)	4	10	10	B		
71	7	25	11432	S19	W54	351	700	3.5	18506	S16	W62	358	(BP)	2					
71	7	26	11432	S20	W72	353	1200	3.0	18506	S19	W72	354	(AF)	2					
71	7	27	11432	S20	W80	351	500	1.0											

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MCMATH REGION 11433 CMP DATE 21.5 RETURN OF REGION 11383 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	7	14	11433	N11 E90	353	500	1.0										
71	7	15	11433	N11 E80	349	600	1.5										
71	7	16	11433	N12 E69	348	800	2.0										
71	7	17	11433	N12 E55	348	1200	2.0	18494	N14 E48	349	(AF)	2				7	2
71	7	18	11433	N12 E43	347	1500	3.5	18494	N13 E38	351	(BP)	3					
71	7	19	11433	N12 E27	347	1700	3.0	18494	N12 E22	354	(BP)	5	210	23	D	2	6
71	7							18497	N08 E14	1	(BP)	6	10	6	D		
71	7	20	11433	N12 E14	350	2200	3.0	18494	N14 E11	352	(BP)	5	50	43	E	15	4
71	7							18499	N16 E26	337	(BP)	4	10	5	B		
71	7							18497	N09 E02	0	(BP)	5	50	7	D		
71	7	21	11433	N12 E00	350	3000	3.5	18494	N13 W04	352	(BP)	5	60	53	C	18	5
71	7							18499	N16 E11	337	(BP)	4	10	6	B		
71	7							18497	N08 W13	1	(BP)	5	20	17	C		
71	7	22	11433	N12 W13	350	3000	3.5	18494	N14 W15	351	(BP)	6	120	30	C	51	6
71	7							18499	N16 W03	339	(BP)	4	10	4	B		
71	7							18497	N08 W28	4	(AP)	2	10	3	B		
71	7	23	11433	N14 W26	349	3000	4.0	18494	N14 W30	353	(D)	6	440	32	D	49	15
71	7							18499	N16 W15	338	(BP)	4	20	7	C		
71	7	24	11433	N14 W43	351	3000	4.0	18494	N13 W44	354	(BP)	6	440	32	E		
71	7							18499	N16 W31	341	(BP)	3	10	2	H		
71	7	25	11433	N15 W52	349	2700	3.5	18494	N16 W58	354	(BP)	6					
71	7							18499	N16 W46	342	(AP)	3					
71	7	26	11433	N14 W70	351	3000	2.5	18494	N14 W70	352	(BP)	5				19	6
71	7	27	11433	N14 W80	351	3300	2.5	18494	N13 W87	357	(BP)	4	20	3	H	14	4
71	7	28	11433	N15 W90	348	500	1.0									4	1

MCMATH REGION 11435 CMP DATE 22.4

				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	7	17	11435	S13 E68	335	300	2.5		S13 E65				0	2	A	7	2
71	7	18	11435	S14 E55	335	600	2.0	18496	S13 E49	340	(AP)	2					
71	7	19	11435	S14 E38	336	500	1.5									6	2
71	7	20	11435	S14 E24	340	400	1.5									5	2
71	7	21	11435	S14 E12	338	300	2.0									5	2
71	7	22	11435	S14 W02	339	400	3.0	18504	S14 W03	339	(BP)	5	20	23	B	13	4
71	7	23	11435	S14 W16	339	500	3.0	18504	S13 W16	339	(BP)	4	50	12	C	14	4
71	7	24	11435	S14 W31	339	500	2.5	18504	S14 W31	341	(BP)	4	20	3	C		
71	7	25	11435	S14 W42	339	800	2.5	18504	S12 W46	342	(AP)	2					
71	7	26	11435	S14 W60	341	600	2.5										
71	7	27	11435	S13 W69	340	600	2.0									10	3

MCMATH REGION 11434 CMP DATE 22.7

				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	7	16	11434	S08 E85	332	800	2.0										
71	7	17	11434	S07 E72	331	1000	3.0										
71	7	18	11434	S07 E58	332	1300	3.0										
71	7	19	11434	S07 E43	331	1200	2.5										
71	7	20	11434	S07 E31	333	900	3.0	18500	S07 E27	336	(AP)	2	0	2	A		
71	7	21	11434	S07 E17	333	1000	3.0										
71	7	22	11434	S07 E03	334	800	2.5										
71	7	23	11434	S07 W10	333	900	2.5										
71	7	24	11434	S08 W27	335	700	2.0										
71	7	25	11434	S07 W36	333	700	2.0										
71	7	26	11434	S08 W53	334	600	1.5										
71	7	27	11434	S08 W60	331	300	1.0										

MCMATH REGION 11438 CMP DATE 25.4 RETURN OF REGION 11393 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	7	19	11438	N16 E79	295	1000	2.0	18498	N15 E71	305	(B)	2	0	3	B		
71	7	20	11438	N16 E67	297	2000	2.5	18498	N16 E59	304	(AP)	3	0	2	A	7	2
71	7	21	11438	N16 E52	298	2000	2.5	18501	N12 E41	307	(BF)	2	10	6	B	5	1
71	7							18502	N16 E55	293	(AP)	1	0	1	A		
71	7	22	11438	N16 E40	297	1500	2.5	18501	N11 E28	308	(B)	1	10	8	B	6	2
71	7							18502	N16 E35	301	(BP)	2	0	1	A		
71	7	23	11438	N16 E26	297	1800	2.5									5	1
71	7	24	11438	N16 E09	299	2200	3.5	18501	N11 E01	309	(BP)	5	160	30	D		
71	7							18502	N15 E06	304	(BP)	1	0	8	A		
71	7							18509	N20 E08	302	(BF)	4	40	9	D		
71	7							18510	N14 E16	294	(AP)	1					
71	7	25	11438	N16 E00	297	2500	3.5	18501	N11 W14	310	(BP)	5					
71	7							18502	N16 W08	304	(BP)	2					
71	7							18509	N20 W05	301	(B)	2					
71	7							18510	N14 E03	293	AP	0					

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YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	7	26	11438	N15 W21	302	3000	3.0	18501	N11 W27	309	(BY)	5				25	8
71	7							18502	N15 W22	304	(AP)	1					
71	7							18509	N20 W19	301	(AF)	2					
71	7	27	11438	N15 W32	303	3300	3.0	18501	N12 W40	310	(BP)	4	90	33	D	27	8
71	7								N20 W21				0	1	A		
71	7	28	11438	N15 W45	303	3200	3.0	18501	N12 W58	310	(BP)	4	80	13	C	18	5
71	7							18509	N23 W43	295	(A)	2	10	2	A		
71	7	29	11438	N16 W61	306	3500	3.0	18501	N12 W73	315	(AP)	4	70	2	H	19	6
71	7	30	11438	N17 W76	305	3100	2.5										
71	7	31	11438	N17 W85	302	700	2.0									10	3

MCMATH REGION 11450 CMP DATE 25.6

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	7	29	11450	N28 W52	297	300	3.0	18518	N26 W53	295	(B)	3	20	4	D		
71	7	30	11450	N28 W70	299	700	2.5	18518	N26 W70	298	(AP)	3	10	2	C		
71	7	31	11450	N28 W81	298	800	2.5										

MCMATH REGION 11445 CMP DATE 27.3

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	7	25	11445	S12 E25	272	200	1.5	18512	S12 E21	275	(BP)	2					
71	7	26	11445	S13 E08	273	200	2.0	18512	S12 E06	276	(BP)	2					
71	7	27	11445	S13 W04	275	200	2.0	18512	S12 W06	276	(BP)	3	10	3	B		
71	7	28	11445	S12 W17	275	300	2.5	18512	S13 W23	275	(BF)	2	10	8	B		
71	7	29	11445	S12 W30	275	400	2.0	18512	S11 W33	275	(BP)	1	20	7	C	5	2
71	7	30	11445	S13 W46	275	700	2.5	18512	S13 W47	275	(BP)	4	50	10	C		
71	7	31	11445	S13 W58	275	1100	3.0	18512	S13 W68	280	(BF)	3	0	4	B	8	2

MCMATH REGION 11440 CMP DATE 28.5 RETURN OF REGION 11401 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	7	22	11440	N08 E80	257	200	1.0										
71	7	23	11440	N07 E70	253	200	2.0										
71	7	24	11440	N07 E56	252	300	3.0										
71	7	25	11440	N07 E44	253	400	3.0										
71	7	26	11440	N07 E26	255	500	2.0										
71	7	27	11440	N07 E14	257	500	2.0										
71	7	28	11440	N08 E00	258	500	2.0										
71	7	29	11440	N08 W11	256	400	1.5										
71	7	30	11440	N08 W28	257	200	1.5										
71	7	31	11440	N08 W42	259	200	1.0										
71	8	1	11440	N08 W53	257	300	1.0		N09 W54				0	2	A	5	1

MCMATH REGION 11441 CMP DATE 28.6

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	7	23	11441	S17 E70	253	200	2.0	18507	S16 E70	253	(AP)	3	0	1	A		
71	7	24	11441	S16 E55	253	200	2.5	18507	S16 E54	256	(BP)	2	0	2	C		
71	7	25	11441	S16 E43	254	300	1.5	18507	S17 E38	258	(BP)	1					
71	7	26	11441	S16 E27	254	400	2.5										
71	7	27	11441	S16 E15	256	400	2.0										
71	7	28	11441	S16 E01	257	200	1.0										
71	7	29	11441	S15 W14	259	200	1.0		S18 W13				0	2	A		
71	7	30	11441	S15 W32	261	200	1.0										

MCMATH REGION 11442 CMP DATE 29.7 RETURN OF REGION 11402* 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	7	23	11442	S03 E82	241	400	1.0	18508	S06 E80	243	(AP)	3	60	1	H		
71	7	24	11442	S03 E66	242	200	1.0	18508	S06 E66	244	(AP)	4	80	1	H		
71	7	25	11442	S03 E54	243	200	1.0	18508	S08 E51	245	(AP)	4					
71	7	26	11442	S03 E37	244	600	1.0	18508	S07 E38	244	(AP)	4					
71	7	27	11442	S04 E27	244	600	1.5	18508	S08 E26	244	(AP)	5	80	1	H		
71	7	28	11442	S04 E15	243	600	1.5	18508	S08 E08	244	(AP)	5	80	1	H		
71	7	29	11442	S03 E02	243	500	1.5	18508	S08 W01	243	(AP)	4	80	1	H		
71	7	30	11442	S03 W16	245	600	1.5	18508	S08 W16	244	(AP)	4	80	1	H		
71	7	31	11442	S03 W26	243	500	1.5	18508	S08 W31	243	(AP)	4	60	4	H		

(cont'd)

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

REGIONS OF SOLAR ACTIVITY

JULY 1971

(cont'd)

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
71	8	1	11442	S04 W38	242	500	1.5	18508	S08 W40	242	(AP)	4	50	1	H	21	6
71	8	2	11442	S05 W54	244	500	2.0	18508	S09 W52	240	(AP)	3	30	1	H		
71	8	3	11442	S06 W65	241	400	1.0	18508	S08 W67	242	(AP)	2	10	2	A		
71	8	4	11442	S06 W72	235	500	1.0									14	4
71	8	5	11442	S06 W83	234	400	1.0									9	3

MCMATH REGION 11454 CMP DATE 29.9

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	7	31	11454	N28 W21	238	100	2.0										

MCMATH REGION 11444 CMP DATE 30.7 RETURN OF REGION 11402* 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	7	24	11444	S15 E85	223	2500	3.0	18511	S13 E78	232	(AP)	4	140	3	H	8	3
71	7	25	11444	S16 E70	227	3300	3.0	18511	S15 E62	234	(AP)	4					
71	7	26	11444	S15 E51	230	3000	3.5	18511	S14 E48	234	(BP)	5				11	3
71	7	27	11444	S15 E43	228	3100	3.5	18511	S14 E39	231	(AP)	5	140	12	C	30	9
71	7	28	11444	S15 E29	229	2800	3.5	18517	S13 E19	233	(BP)	2	20	20	C	32	10
71	7							18511	S14 E20	232	(BP)	6	120	2	H		
71	7		11444					18516	S20 E16	236	(BF)	2	10	1	A		
71	7	29	11444	S15 E15	230	3300	3.5	18517	S12 E10	232	(BP)	2	10	4	C	29	9
71	7							18511	S14 E11	231	(BP)	5	120	2	H		
71	7								S17 E10				0	1	A		
71	7	30	11444	S15 W01	230	3100	3.0	18517	S13 W06	234	(AP)	2	10	10	B		
71	7							18511	S14 W03	231	(AP)	5	120	2	H		
71	7								S17 E01				0	4	B		
71	7								S20 W04				0	2	A		
71	7	31	11444	S15 W10	227	3000	3.5	18511	S13 W18	230	(AP)	5	160	7	C	25	8
71	7								S11 W17				0	12	B		
71	7								S17 W17				0	6	B		
71	8	1	11444	S15 W22	226	2700	3.5	18517	S13 W32	234	(BP)	2	0	5	B	5	1
71	8		11444					18511	S14 W27	229	(AP)	5	140	15	C		
71	8	2	11444	S15 W37	227	2600	3.0	18511	S14 W39	227	(AP)	5	140	10	C		
71	8		11444						S12 W43				0	5	A		
71	8		11444						S16 W34				0	2	A		
71	8	3	11444	S16 W53	229	2800	3.0	18511	S13 W53	228	(AP)	5	100	3	H		
71	8	4	11444	S16 W66	229	2700	2.5	18511	S14 W69	228	(AP)	5				13	4
71	8	5	11444	S15 W76	227	2200	2.5	18511	S14 W88	234	(AP)	3	80	2	H	11	3

MCMATH REGION 11446 CMP DATE 31.1 RETURN OF REGION 11405 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	7	25	11446	N17 E75	222	300	1.0	18513	N15 E67	229	(AP)	2					
71	7	26	11446	N18 E58	223	600	1.5	18513	N16 E55	227	(AP)	1					
71	7	27	11446	N19 E48	223	500	2.0										
71	7	28	11446	N20 E34	224	500	1.5										
71	7	29	11446	N20 E20	225	300	1.5										
71	7	30	11446	N19 E05	224	300	1.5										
71	7	31	11446	N20 W06	223	300	1.5										
71	8	1	11446	N20 W18	222	400	1.5										
71	8	2	11446	N20 W32	222	500	1.5										
71	8	3	11446	N20 W45	221	500	1.0										

Note: Region 11415 is new plage that has developed near the location of old region 11374 of the previous rotation, but is closer to the equator.
No calcium spectroheliogram was obtained at the McMath-Hulbert Observatory on July 5, 1971.

<u>NOTE</u>: The sunspot group classifications reported in column "C" in the "Regions of Solar Activity" are not Zürich (Brunner) classifications as stated in the "Solar-Geophysical Data, Descriptive Text", February 1971, Number 318 (Supplement). Currently they are the modified Zürich class developed by P. S. McIntosh, and reported by the Boulder solar observatory operated by NOAA. Definitions for this modified class are given in the USSPS code, IUWDS "Synoptic Codes for Solar and Geophysical Data, Second Revised Edition 1969", p. 41. A full explanation of this modified classification has not as yet been published.

The data published for 1969 were primarily Zürich classifications determined by the Sacramento Peak Observatory, but Boulder modified classes were used on days when Sacramento Peak did not report. Since 1969, the data have been even less homogeneous. Recently it has been found that there were systematic errors in the use of the modified classification combined with intermittent use of Zürich classifications. Therefore, users of these data are warned to expect poor correlations with data from other sources. Definitive classification of sunspot data in both the Zürich and modified Zürich systems for the years 1969-1971 may be published by 1974 by P. S. McIntosh, NOAA Environmental Research Laboratories.

DAILY CALCIUM PLAGE INDEX

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
71	7	1	32.6	71	7	11	13.8	71	7	21	33.3
71	7	2	38.5	71	7	12	17.0	71	7	22	26.4
71	7	3	35.1	71	7	13	20.9	71	7	23	24.8
71	7	4	30.8	71	7	14	23.5	71	7	24	22.1
71	7	5	*	71	7	15	23.5	71	7	25	22.5
71	7	6	23.9	71	7	16	26.4	71	7	26	21.9
71	7	7	20.6	71	7	17	26.7	71	7	27	21.5
71	7	8	18.4	71	7	18	28.0	71	7	28	21.1
71	7	9	15.3	71	7	19	24.8	71	7	29	23.4
71	7	10	14.5	71	7	20	28.5	71	7	30	22.5
								71	7	31	24.0

* NO OBSERVATIONS

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

JULY 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	1.11	17.7	0.60	0.58	0.75	0.60	0.36	0.45	0.60	0.45	0.44	0.53	1.36	2.27	0.65	0.52	0.70	0.80	0.77	0.51	0.47	0.67	0.45	0.45
2	0.40	0.46	0.38	0.41	0.36	0.37	0.50	0.53	0.43	0.42	0.51	0.35	0.52	0.90	2.21	1.00	0.85	1.00	4.78	2.38	0.57	0.82	1.18	0.61
3	0.43	0.42	0.50	0.68	0.45	0.54	0.44	0.62	0.72	0.60	0.67	0.34	0.37											
4				0.69	0.98	0.45	1.25	0.87	0.87	0.56	0.51	0.64	0.46	0.51	0.48	0.52	0.63	1.01	0.70	0.49	0.44	0.47	0.58	0.40
5	0.45	0.40											1.35	0.49	0.39	0.45	3.47	3.04	1.26	0.93	0.62	0.84	0.62	0.36
6	0.68	1.29	0.76	0.38	0.51	0.37	0.46	0.32	0.38	0.38	0.38	0.44	0.36	0.34	0.33	0.30	0.81	0.52	0.38	0.56	0.36	1.14	0.36	0.43
7	0.41	0.81	0.43	0.38	0.52	4.31	3.51	1.31	1.11	0.69	0.75	0.70	0.46	0.45	0.41	2.59	1.43	0.31	0.38	1.99	1.49	0.55	0.46	0.34
8	0.41	0.39	0.42	0.48	0.58	0.35	0.36	0.34	0.30	0.37	0.33	0.44	0.39	0.37	1.13	0.63	1.85	0.68	0.64	0.56	0.34	0.24	0.30	0.23
9	0.35	0.33	0.40	0.28	0.38	0.32	0.30	0.28	0.40	0.35	0.30	0.26	0.24	0.25	0.42	0.32	0.35	0.34	0.40	0.36	0.38	0.37	0.44	0.44
10	0.51	0.53	0.84	0.86	4.50	0.68	0.60	0.50	0.69	0.92	0.46	0.38	0.56	0.41	0.48	3.48	1.67	0.69	0.43	0.40	0.48	0.60	0.81	0.49
11	1.00	10.1	1.49	0.49	0.48	0.60	0.62	0.50	0.38	0.47	0.40	0.44	0.44	0.63	0.71	1.14	0.96	0.40	0.35	0.50	0.40	0.36	0.41	0.52
12	0.63	0.71	0.43	0.29	0.34	0.46	0.50	0.46	0.50	0.40	0.29	0.37	0.29	0.25	0.31	0.26	0.21	0.21	0.31	0.27	0.34	0.30	0.26	0.25
13	0.23	0.25	0.26	0.25	0.23	0.28	0.19	0.35	0.25	0.22	0.22	0.24	0.44	0.37	0.27	0.26	0.43	0.31	0.23	0.20	0.22	0.30	0.25	0.24
14	0.20	0.21	0.24	0.23	0.26	0.21	0.28	0.26	0.18	0.35	0.28	0.24	0.28	0.25	0.28	0.24	0.20	0.29	0.24	0.28	0.25	0.20	0.20	0.19
15	0.19	0.22	0.19	0.21	0.28	0.22	0.36	0.33	0.29	0.45	0.85	0.88	1.03	0.93	0.66	0.53	0.67	0.70	0.49	0.37	0.36	0.34	0.33	0.39
16	0.30	0.27	0.27	0.38	0.28	0.37	0.48	0.28	0.66	0.47	0.52	0.85	0.90	0.36	0.29	0.31	0.41	1.11	0.32	0.35	0.42	0.29	0.27	0.24
17	0.22	0.25	0.31	0.37	0.32	0.32	0.45	0.28	0.24	8.25	0.21	0.26	0.57	0.27	0.27	0.52	0.32	0.23	0.25	0.30	0.27	0.26	0.24	0.23
18	0.31	0.29	0.33	0.28	0.27	0.29	0.31	0.20	0.22	0.31	0.27	0.41	0.35	0.37	0.32	0.29	0.54	0.58	0.40	0.34	0.24	0.81	0.58	0.31
19	0.34	0.59	0.46	0.32	0.35	0.39	0.26	0.40	0.85	0.60	0.36	0.46	0.42	0.38	0.48	0.46	0.39	0.49	0.61	0.57	0.38	0.46	0.45	0.34
20	0.25	0.29	0.30	0.90	0.31	0.36	0.29	0.32	0.29	0.32	0.19	0.21	0.41	0.26	0.22	0.54	0.16	0.24	0.27	0.15	0.15	0.16	0.16	0.18
21	0.23	0.19	0.30	0.25	0.28	0.20	0.29	0.22	0.19	0.27	0.29	0.28	0.18	0.21	0.23	0.39	0.23	0.28	0.20	0.18	0.14	0.24	0.23	0.23
22	0.22	0.26	0.19	0.22	0.22	0.31	0.22	0.22	0.29	0.20	0.27	0.20	0.30	0.28	0.25	0.25	0.19	0.19	0.19	0.24	0.23	0.21	0.28	0.23
23	0.16	0.20	0.21	0.22	0.30	0.28	0.27	0.43	0.55	0.46	0.40	0.49	0.42	0.46	0.45	1.44	1.25	0.95	1.02	0.68	0.59	0.75	0.83	1.04
24	2.34	0.82	0.85	0.77	0.99	2.37	2.15	1.01	0.68	0.78	14.1	4.96	1.79	1.00	1.14	1.49	0.72	1.53	6.17	0.69	0.44	0.73	0.78	0.93
25	1.18	7.76	0.48	0.41	0.51	0.40	0.30	0.35	0.61	0.56	0.47	0.31	0.52	0.43	0.35	0.34	0.33	0.24	0.30	0.32	0.27	0.45	0.32	0.60
26	0.62	0.62	0.36	0.41	0.54	0.48	0.42	0.44	0.56	0.46	0.29	0.36	0.32	0.36	0.45	0.43	0.39	1.39	0.82	0.30	0.28	0.27	0.32	0.27
27	0.30	0.38	0.46	0.24	0.30	0.27	0.30	0.35	0.30	0.45	0.51	0.62	0.22	0.47	1.14	1.23	0.55	0.47	0.38	0.32	0.31	0.35	0.38	0.54
28	0.51	0.97	0.55	0.58	0.45	0.71	0.37	0.35	0.44	0.34	0.77	0.37	0.34	0.29	0.25	0.64	0.26	0.25	0.22	0.43	0.23	0.62	0.38	0.25
29	0.25	0.27	0.32	0.28	0.65	0.32	1.04	0.55	0.48	0.36	0.24	0.23	0.17	0.25	0.29	0.26	0.21	0.37	0.18	0.20	0.29	0.30	0.20	0.22
30	0.22	0.21	0.22	0.32	0.28	0.34	0.40	0.29	0.26	0.27	0.24	0.30	0.37	0.19	0.31	0.93	0.38	0.29	0.25	0.26	0.23	0.27	0.22	0.19
31	0.26	0.27	0.24	0.29	0.24	0.25	0.18	0.25	0.40	0.19	0.24	0.24	0.21	0.20	0.19	1.68	0.58	1.26	0.32	0.20	0.25	0.29	0.33	0.41

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

JULY 1971

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

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	1.27	4.79	1.02	1.00	1.06	1.03	0.80	0.81	0.96	0.85	0.82	0.83	1.23	1.49	1.12	1.04	1.14	1.07	1.14	0.94	0.85	1.03	0.85	0.81
2	0.80	0.83	0.79	0.77	0.77	0.76	0.85	0.88	0.79	0.79	0.69	0.70	0.87	1.07	1.41	1.23	0.94	1.14	2.31	1.73	0.86	0.84	1.15	0.85
3	0.71	0.73	0.75	0.86	0.75	0.76	0.73	0.84	0.90	0.85	0.83	0.68	0.67											
4				0.89	1.17	0.84	1.33	1.16	1.26	0.97	0.87	0.92	0.82	0.87	0.83	0.84	0.96	1.19	1.03	0.85	0.82	0.85	0.84	0.76
5	0.78	0.76											1.11	0.81	0.67	0.75	1.62	2.13	1.49	1.32	1.11	1.02	0.90	0.76
6	0.94	1.36	1.10	0.82	0.83	0.73	0.71	0.66	0.67	0.68	0.73	0.76	0.76	0.69	0.63	0.65	0.94	0.87	0.72	0.79	0.71	1.13	0.74	0.79
7	0.76	0.93	0.82	0.75	0.83	2.02	2.44	1.45	1.40	1.13	1.17	1.06	0.87	0.77	0.74	1.43	1.13	0.63	0.61	1.42	1.26	0.90	0.84	0.70
8	0.71	0.70	0.77	0.80	0.86	0.70	0.71	0.66	0.63	0.68	0.66	0.71	0.67	0.66	1.00	0.84	1.57	0.97	0.92	0.73	0.64	0.56	0.59	0.55
9	0.62	0.62	0.66	0.61	0.63	0.64	0.56	0.57	0.61	0.57	0.60	0.56	0.57	0.59	0.62	0.59	0.65	0.67	0.69	0.67	0.59	0.70	0.74	0.73
10	0.75	0.77	0.95	1.07	2.00	0.95	0.88	0.82	0.91	1.08	0.71	0.67	0.77	0.70	0.76	1.42	1.45	0.88	0.74	0.72	0.75	0.85	0.96	0.73
11	1.02	3.76	1.55	0.83	0.76	0.86	0.85	0.70	0.70	0.71	0.63	0.73	0.75	0.91	0.97	1.09	1.03	0.70	0.68	0.68	0.68	0.65	0.74	0.82
12	0.94	0.94	0.77	0.68	0.62	0.74	0.79	0.77	0.70	0.67	0.60	0.66	0.59	0.56	0.57	0.58	0.54	0.51	0.49	0.53	0.60	0.59	0.54	0.54
13	0.53	0.55	0.56	0.54	0.54	0.51	0.47	0.54	0.50	0.49	0.51	0.50	0.68	0.64	0.58	0.56	0.67	0.62	0.48	0.49	0.53	0.59	0.56	0.53
14	0.51	0.51	0.52	0.49	0.48	0.47	0.53	0.45	0.47	0.46	0.48	0.53	0.49	0.52	0.57	0.51	0.49	0.54	0.51	0.61	0.54	0.51	0.50	0.46
15	0.47	0.48	0.45	0.49	0.47	0.49	0.56	0.52	0.56	0.64	0.88	0.93	1.12	1.11	0.87	0.86	0.85	0.95	0.79	0.73	0.73	0.74	0.72	0.77
16	0.66	0.68	0.65	0.62	0.64	0.63	0.60	0.63	0.72	0.79	0.83	0.95	1.07	0.69	0.65	0.70	0.76	0.93	0.72	0.71	0.74	0.63	0.59	0.62
17	0.63	0.62	0.64	0.73	0.66	0.57	0.74	0.59	0.59	2.83	0.54	0.58	0.76	0.67	0.70	0.79	0.64	0.60	0.58	0.64	0.60	0.60	0.58	0.56
18	0.67	0.63	0.67	0.61	0.57	0.62	0.61	0.56	0.49	0.56	0.59	0.64	0.67	0.70	0.62	0.60	0.72	0.76	0.73	0.62	0.57	0.82	0.90	0.66
19	0.67	0.85	0.78	0.58	0.67	0.66	0.62	0.73	0.73	0.84	0.68	0.76	0.72	0.73	0.78	0.82	0.72	0.83	0.90	0.81	0.72	0.75	0.74	0.71
20	0.62	0.66	0.63	0.98	0.61	0.63	0.62	0.69	0.57	0.55	0.45	0.48	0.54	0.45	0.46	0.55	0.44	0.43	0.54	0.41	0.43	0.43	0.41	0.40
21	0.46	0.46	0.54	0.52	0.43	0.47	0.54	0.45	0.37	0.38	0.45	0.40	0.41	0.44	0.42	0.46	0.39	0.50	0.46	0.41	0.37	0.45	0.46	0.45
22	0.52	0.54	0.49	0.49	0.49	0.51	0.50	0.47	0.49	0.50	0.48	0.52	0.47	0.53	0.51	0.52	0.48	0.45	0.49	0.52	0.50	0.49	0.54	0.53
23	0.49	0.52	0.51	0.53	0.66	0.52	0.58	0.54	0.70	0.76	0.73	0.76	0.73	0.78	0.83	1.24	1.42	1.10	1.20	1.00	0.87	0.95	1.02	1.15
24	1.81	1.28	1.14	1.03	1.20	1.70	1.90	1.46	1.03	0.93	3.45	3.44	1.96	1.29	1.09	1.45	1.11	1.48	3.47	1.02	0.91	0.95	1.08	1.27
25	1.23	3.74	0.95	0.83	0.91	0.78	0.77	0.72	0.81	1.03	0.82	0.75	0.77	0.86	0.79	0.79	0.70	0.68	0.71	0.75	0.68	0.73	0.68	0.83
26	0.92	1.03	0.77	0.76	0.81	0.93	0.81	0.65	0.81	0.73	0.70	0.76	0.82	0.77	0.74	0.79	0.84	1.23	1.15	0.73	0.69	0.66	0.70	0.68
27	0.68	0.73	0.70	0.60	0.61	0.55	0.53	0.62	0.57	0.53	0.77	0.81	0.65	0.84	1.02	1.33	0.98	0.84	0.74	0.74	0.74	0.72	0.75	0.89
28	0.85	1.01	0.95	0.95	0.89	0.89	0.85	0.68	0.76	0.71	0.84	0.79	0.71	0.67	0.61	0.71	0.63	0.60	0.55	0.60	0.60	0.88	0.73	0.59
29	0.59	0.59	0.58	0.60	0.86	0.61	0.88	0.86	0.85	0.54	0.58	0.54	0.46	0.58	0.58	0.54	0.52	0.60	0.58	0.53	0.59	0.62	0.58	0.53
30	0.53	0.53	0.51	0.58	0.56	0.69	0.48	0.64	0.53	0.57	0.54	0.56	0.65	0.51	0.65	1.05	0.73	0.67	0.63	0.62	0.61	0.58	0.51	0.54
31	0.56	0.58	0.61	0.57	0.60	0.52	0.53	0.51	0.41	0.53	0.51	0.56	0.49	0.59	0.56	1.34	0.87	1.33	0.67	0.56	0.59	0.60	0.68	0.73

SOLAR X-RAYS BY SATELLITE
EXPLORER 37

JULY 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
1	0130	120.00D	0136E	1900.00	0132	320.00	0133	0142	
2	1414	29.00	1415	65.00	1416	27.00	1418	1421	
2	1843	80.00	1845	220.00	1845	53.00	1851	1901	
2	1909	14.00	1911	59.00	1911	27.00	1912	1916	
5	1636	31.00	1641	93.00	1654	40.00	1700	1718	
7	0539	65.00	0546	180.00	0550	53.00	0602	0626	
7	1505	24.00	1507	63.00	1507	25.00	1508	1510	
7	1549	51.00	1552	89.00	1603	40.00	1602	1608	TWO FLARES
7	1944	13.00	1946	53.00	1947	26.00	1954	1959	
8	1450	14.00	1451	50.00	1453	23.00	1453	1455	
8	1603	3.30D	1603E	38.00	1605	19.00	1607	1608	
10	0430	85.00	0436	180.00	0438	53.00	0441	0456	
10	1540	66.00	1546	130.00	1547	40.00	1548	1608	
11	0106	77.00	0123	220.00	0131	67.00	0136	0208	
17	0908	120.00	0915	310.00	0915	67.00	0923	0933	
24	0025	6.70	0030E	42.00	0029	23.00	0039	0039	
24	0539	4.50	0542	33.00	0543	21.00D	0549D	0549D	
24	1026	120.00D	1040D	710.00	1045	130.00	1045	1153	
24	1754E	62.00	1812	130.00	1816	67.00	1818	1841	
25	0057	26.00	0107	97.00	0106	40.00D	0106D	0129D	
29	0652	22.00	0654	70.00	0655	27.00	0656	0657D	
31	1526	19.00	1528	61.00	1529	26.00	1531	1533	

SUDDEN IONOSPHERIC DISTURBANCES

JULY 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
01	0050	0110	0055	1-	3				2				0048	11402
01	0128	0243	0134	2+	3	3	1		2				0130	11402
01	1352	1500	1357	1	5	2		1	2		3		1347	11402
01	1607	1623	1312	1-	1	1							1605E	11393
02	1412	1515	1417	1	3	3		2	3		3		1412	11402
02	1841	1950	1850	1+	5	3	1		2	1	1		1839	11402
03	0732	0743	0734	1-	1						1		0734	11402
04	0351	0430	0358	1-	1				1				0350	11402
05	1634	1800	1656	1+	5	5			2		1		1634	11415
05	2204	2221	2207	1-	1				2				2204E	11402
07	0150	0222	0157	1-	3				2				0144	11415
07	0538	0723	0551	1+	5	6	1	2	3		3		0537	11415
07	1500	1525	1510	1-	5	4		1	4		2		1500	11402
07	1546	1700	1603	1	5	6	2	3	2		2		1546	11402
07	1935	1953	1947	1-	3	2							1935E	11415
08	0100	0125	0112	1-	1					1	1		0101	11405
08	0448	0522	0454	1-	1				1				0445	11402
08	1330	1501	1423	1	1	1							1336	11402
08	1410U	1445	1432	1-	1	1							1417	11415
08	1444	1545	1451	1-	5	4		1	2		1		1447	11415
08	1600	1705	1605	1-	1				1				1556	11402
08	1807	1818	1809	1-	1	1							1805	11402
08	1944	2035	1954	1-	1				1				1943E	11415
09	1815	1825	1818	1+	1					1	1		1815	11423
10	0243	0310	0252	1-	1				1				0240E	11423
10	0430	0553	0440	1	5	4	1		2	1	1		0432E	11402
10	1517	1533	1522	1-	1				1		1		1517	X-RAY
10	1540	1558	1552	2	5	7	1	2	3	2	4		1541	11402
10	1743	1915	1752	1-	1				1		1		1743	11415
11	0105	0240	0130	2+	3	3			4	3	3		0057E	11415
11	0136	0148	0148	1	3					4	4		0141	X-RAY
11	1504	1530	1512	1-	1				1		1		1502	11415
13	1036	1047	1039	1	1		1						1039	11420
14	1413	1428	1428	1+	3					3	3		1407	11429
14	1455	1515	1500	1+	1					1	1		1455	11423
15	0900	1045	0920	1-	1					1	1		0902	11429
15	1254	1313	1309	1	1					1	1		1254	11415
16	1203	1250	1221	1	1		1						1201	11430
16	1634	1653	1635	1	1	1							1639	11425
16	1720	1815	1727	1-	1				1		1		1718	11429
16	1945	2005	2005	1	1					1	1		1947	11429
16	2040	2049	2043	1-	1	1							2037	11425
17	0627	0651	0631	1	1					1	1		0620	11425
17	0908	1053	0918	2-	5	4	2	4	3		2		0903	11425
17	1233	1316	1241	1+	1		1						1235E	11425
17	1655	1707	1707	1+	1					1	1		1657	11429
17	2227	2259	2238	1+	1					1	1		2238E	11429
18	2143	2210	2150	1-	1				1				2141	11425
19	2016	2043	2033	1	1	1							2015	11433
20	0318	0334	0323	1+	1					1	1		0313E	11429
20	0418	0428	0423	1+	3					3	3		0415	11438
20	1519	1520	1519	1-	1					1	1		1515E	11438
20	1922	1951	1951	1+	1					2	2		1919	11438
21	2347	0015	2350	1	1	1							2351E	11425
23	1745	1802	1759	1-	1					1	1		1739	11433
24	0018	0113	0033	1-	1				1				0011	11433
24	0300	0325	0304	1-	1				1				0259	11433
24	1024	1200	1049	2-	5	5	1	2	2	2	5		1025	11433
24	1803	1905	1817	1	5	2			4	1	1		1758	11425
25	0057	0235	0120	1-	3				4				0105E	11438
26	1935	2015	1940	1	1					1	1		1936	11430
27	1532	1610	1550	1	1	1							1530	11438

SUDDEN IONOSPHERIC DISTURBANCES

JULY 1971

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	McMATH REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
28	0120	0203	0133	1-	1				1				0120	11444
28	1514	1550	1518	1-	1				1		1		1514	11444
28	1842	1850	1845	1-	1	1							1838E	11444
28	2109	2200	2115	1-	5	4			5	1	1		2112E	11444
29	0652	0715	0659	1-	5	1			3			1	0650	11444
29	2155	2209	2157	1-	1	1							2153	11438
31	1137	1200	1143	1-	3	2		1	1		2		1130	11452

STATIONS REPORTING FOR JULY 1971
(SEA) (A1, A19, A21, A28, A30, A31) (SES)
AAVSO (A1, A6, A17, A22, A23, A26, A27, A29)
ANCHORAGE (AN) (SWF, SPA)
ATHENS (AT) (SWF)
ATTU (LORAN-C) (TT) (LF-SPA, SES)
BOULDER (BO) (SCNA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
FORESTPORT (FP) (SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
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)
NEW DELHI (ND) (SWF, SCNA, SEA, SES)
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)
SOFIA (SF) (SES)
SOMERTON (SO) (SWF)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
TORINO (TN) (SPA)
TRINIDAD (TR) (SWF, SPA)
UPOLO POINT (LORAN-C) (UP) (LF-SPA, SES)
WHITE SANDS (WS) (SWF)
YAP (LORAN-C) (YP) (LF-SPA, SES)

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION	DATE	TIME (UT) and STATION
01-24	0000-0400 A28	15-31	1908-2400 A22
01-07	0000-1800 RO	15	0000-0155 UM, 1702-2400 UM
01	1707-2400 UM	16	1400-1800 UM
02	0000-0310 UM, 1400-1740 UM, 2330-2353 UM	17	1608-1835 PO
03	0555-0320 UM	18	0000-2400 BO, 1805-1816 TM
05	1558-1643 TM	19-31	1400-2400 RO
07	0505-0521 UM, 1715-1750 TR	19	0000-2400 BO, 1424-1434 TM, 2050-2145 TM
09	1355-1743 UM, 2100-2400 BO	20-31	0000-2400 A29
10	0000-2200 BO	23	1600-1640 PO
11	1345-1530 PO	25-31	1830-2400 A23
12	1515-1845 PO	25	0955-1123 UM, 1924-1937 TM
14-17	1000-1215 RO	27-31	1215-2400 A28
14-22	0000-1130 A26	27	0226-0353 TM
14	1550-1609 TM	29-31	0000-2400 AT, 0500-2400 A19

SID's BY McMATH REGION

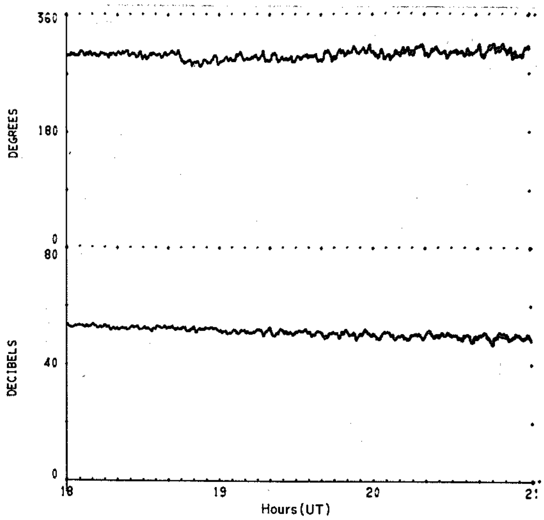
JULY 1971

DAY	93	02	05	15	20	23	25	29	30	33	38	44	52	X-RAY	UN-KNOWN	NO FP
01	1	3														
02		2														
03		1														
04		1														
05		1		1												
06																
07		2		3												
08		4	1	3												
09						1										
10		2		1		1								1		
11				2										1		
12																
13					1											
14						1		1								
15				1				1								
16							2	2	1							
17							3	2								
18							1									
19										1						
20								1			3					
21							1									
22																
23										1						
24							1			3						
25											1					
26									1							
27											1					
28												4				
29											1	1				
30																
31													1			

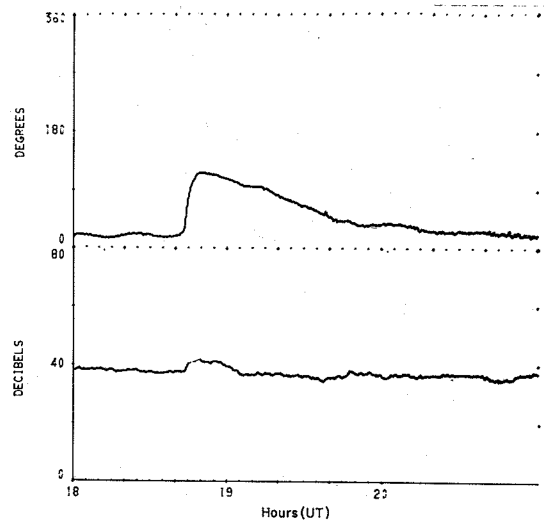
SELECTED SID EVENTS

2 JULY 1971

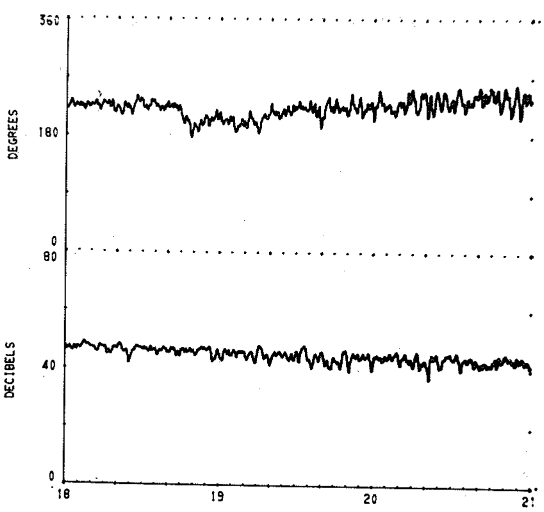
SDL Table Mountain Geophysical Monitoring Station



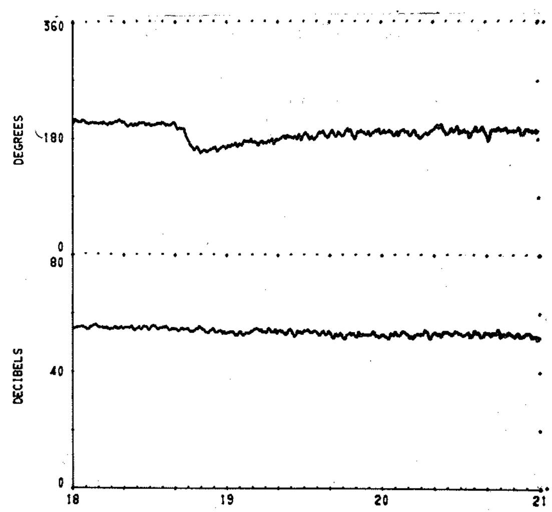
13.6 kHz Omega, NEW YORK



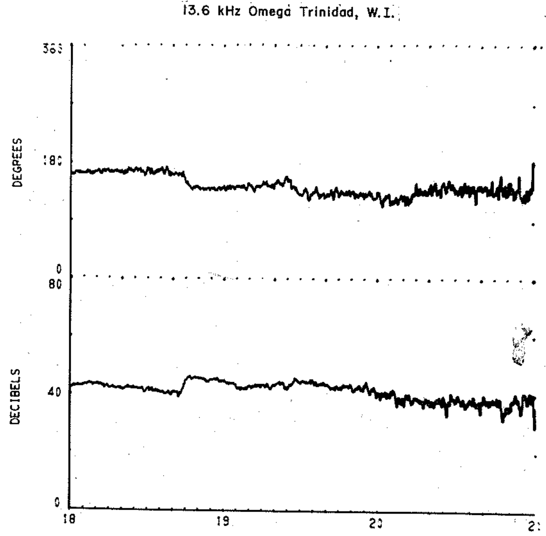
100 kHz Loran-C Dana, IND.



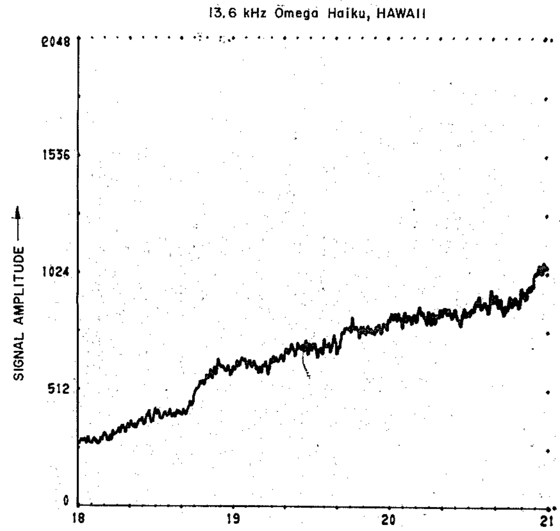
13.6 kHz Omega Trinidad, W.I.



13.6 kHz Omega Haiku, HAWAII



100 kHz Loran-C Nantucket, MASS.



26 kHz Sferics Amplitude

Note: Above data scaled with a twenty second time constant.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1971

JUL. 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.	
01	0000	0735	CULG							0000	0246	1				I
			CULG							0008		1				IIIB
			CULG							0023	0141					IIIN,W
	0000	0146	HARV				0033	0127	1	0033	0144	1				IN
			CULG				0033.5		1	0033.5		1				IIIB
			CULG				0053.5		1	0053.5		1				IIIB
			CULG				0107	0230	1							I
			CULG							0155	0156	1				IIIG,U
			CULG							0216	0219	1				IIIG
			CULG							0227		1				IIIB,W
			CULG							0249	0250	1				IIIG
			CULG							0256.5						IIIB,W
			CULG							0259.5	0300	1				IIIG
			CULG							0321	0322	1				IIIG,U
			CULG				0323	0355	1							I
			CULG				0338.5	0339.5	1	0338.5	0339.5	1				IIIG
			CULG							0342.5	0343	2				IIIG,U
			CULG							0347						IIIB,W
			CULG				0403.5		1							IIIB
			CULG							0405	0408.5	1				IIIGG
	0703	1903	WEIS							0405.4	0405.6	1				IIIG
			CULG							0405.5		2				IIIB,U
			WEIS							0420.0	1540.0	1				IN
			CULG				0421.5		1							IIIB,U
			CULG							0430.5		1				IIIB
			CULG				0448.5	0450.5	1							IIIG
			CULG							0500.5	0501.5	1				IIIG,U
			CULG				0521	0522.5	1	0521	0523	1				IIIG,U
			WEIS							0521.0	0530.0	2				IIIG,DP
			CULG				0529	0529.5	1	0529	0529.5	1				IIIG,U
			CULG							0541	0542.5	1				IIIG
			CULG							0551	0551.5	1				IIIG,U
			CULG							0621		1				IIIB
			CULG							0648	0651	1				IIIG
			CULG							0659		1				IIIB,U
			WEIS							0833.7	0839.2	2				IIIGG,DP,U
			WEIS							0849.1	1009.0	1				IIIG
			WEIS							0948.7	1014.0	2				IIIGG,DP
			WEIS							1035.5	1042.1	1				IIIGG
			WEIS							1107.8	1110.0	1				IIIG,DP
			WEIS							1120.0	1138.2	2				IIIGG,DP
			WEIS							1158.0	1200.0	1				IIIG,DP
	1216	2400	HARV				1222	1224	1	1222	1224	1				IIIG
			WEIS							1222.3	1229.0	2				IIIGG,DP
			HARV				1228	1229	1	1228	1229	1				IIIG
			HARV							1244	2120	1				IN
			HARV							1256	1257	2	1256	1257	1	IIIG
			WEIS							1256.7	1257.2	1				IIIG
	0849	2420	SGMR										1256.8	1257.3		III
			HARV				1303	1304	1	1303	1304	2				IIIGG
			WEIS							1303.3	1307.6	2				IIIG,DP
			HARV				1313	1356	1							IN
			SGMR										1321.9	1322.6		III
			HARV				1330	1331	1	1330	1331	1				IIIG
			WEIS							1330.4	1351.0	2				IIIGG,DP
			HARV							1338	1339	2				IIIG
			HARV							1342	1343	1				IIIG,U
			HARV				1350	1354	3	1349	1354	3	1352	1354	2	IIIGG,V
			WEIS							1350.0	1354.5	2				V
			WEIS							1351.9	1353.5	3				IIIG,DP,RS
			SGMR										1352.1	1359.0		V
	1345	2400	BOUL							1353 E	1400	3	1353 E	1400	3	III
			BOUL							1405.0	1420.6	2	1405	1420.6	2	II
			SGMR										1405.8	1413.5		II
			BOUL							1415.1	1415.2	2	1415.1	1415.2	2	III
			BOUL							1423.6	1423.8	1	1423.6	1423.8	1	III
			BOUL							1426.0	1426.3	1	1426.0	1426.3	1	III
			BOUL							1440.7	1442.5	2	1440.7	1442.5	2	IIIG
			SGMR										1442.0	1442.8		III
			BOUL							1510.0	1511.1	1	1510.0	1511.1	1	IIIG
			WEIS							1511.3	1525.5	1				IIIG
			BOUL							1513.1	1513.2	1				III
			BOUL							1521.0	1521.5	1				IIIG
			HARV							1524	1526	1	1524	1525	1	IIIG
			BOUL							1524.2	1525.9	3	1524.2	1525.9	3	IIIG
			SGMR										1524.8	1526.0		III
			BOUL							1527.5	1527.7	1	1527.5	1527.7	1	III
			BOUL							1550.6	1550.8	2	1550.6	1550.8	2	III
			BOUL							1600.1	1604.5	3	1600.1	1604.5	3	III
			HARV				1602	1603	1	1602	1604	3	1602	1604	3	IIIGG
			WEIS							1602.5	1604.0	2				IIIG
			SGMR										1602.8	1603.7		III
			BOUL							1613.1	1613.2	1				III
			HARV				1615	2400	1							IN
			BOUL							1616.5	1616.7	3	1616.5	1616.7	3	III
			BOUL							1847.2	1847.3	1				III
			HARV							2120	2400	1				I
	2036	2400	CULG				2120	2137	1	2112.5	2400	2				IS
			CULG							2127.5	2300					IIIS,W
			CULG							2136.5						IIIB,W

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JUL. 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.		
01			BOUL										2140.8	2140.9	1	III	
			BOUL							2146.0	2146.2	2	2146.0	2146.2	2	III	
			CULG							2146.5		1				IIIB	
			CULG							2153.5	2158	1				IIIG	
			BOUL							2155.8	2155.9	1	2155.8	2155.9	1	III	
			CULG							2219.5	2220	1				IIIG,U	
			BOUL							2219.6	2219.8	2				III	
			BOUL							2223.5	2223.8	2	2223.5	2223.8	2	III	
			CULG				2223.5	2224.5	3	2223.5	2224.5	3				IIIG,U	
			BOUL										2257.0	2257.2	1	III	
			CULG							2306	2400	1				IIIN	
			CULG							2333		2				IIIB	
			BOUL										2350.8	2351.0	1	III	
02	0000	0053	BOUL														
			CULG							0000	0107	1				IIIN	
	0000	0735	CULG							0000	0138	2				IS	
			CULG							0004.5		2				IIIB,U	
			CULG							0006.5	0007	2				IIIG	
			CULG							0051.5	0053	2				IIIGG,U	
	0000	0146	HARV				0106	0118	1	0000	0144	1				I	
			CULG							0110	0115	1				IIIGG	
			CULG							0127	0206.5	1				IIIN	
			CULG							0211	0215	2				IIIGG,U,V	
			CULG				0211	0213	1							IIIG	
			CULG							0219	0344.5	1				IIIN	
			CULG							0304		1				IIIB	
			CULG							0346	0348	2				IIIGG,V	
			CULG				0347		1							IIIB	
			CULG							0351	0352	1				IIIG	
			CULG							0412.5	0415	2				IIIGG,V	
			CULG							0502	0502.5	1				IIIG	
			CULG							0526.5						IIIB,W	
			CULG							0551	0700.5					IIIN,W	
			CULG				0636	0710	1	0648	0709	1				I	
	0403	0748	WEIS							0636.0	0748.0	2				IS	
	0800	1901	WEIS							0800.0	1807.0	2				IN	
	0850	2407	SGMR														
	1351	2400	BOUL							1351 E	1744.0	1	1351 E	1744.0	1	CONT	
	1217	2400	HARV				1540	1600	1	1220	1600	1				I	
			HARV				1600	1944	2	1600	1944	2				I	
			BOUL										1947.3	1947.5	1	III	
			BOUL							2037.3	2037.5	1	2037.3	2037.5	1	III	
	2036	2400	CULG							2108.5						IIIB,W	
			CULG							2116	2354	1				IIIN,U	
			CULG							2126		1				IIIB,U	
			HARV				2136	2400	1	1944	2400	1				IN	
			CULG				2137	2400	1	2204	2400	1				I	
			CULG							2153	2158	1				IIIG,U	
03			CULG							0009	0052	1				IIIN	
	0000	0251	BOUL										0009.0	0009.1	1	III	
	0000	0146	HARV				0013	0141	1	0000	0146	1				I	
			CULG							0018		1				IIIB,U	
			BOUL										0018.0	0018.6	2	III	
	0000	0735	CULG				0022	0336	1	0000	0203	1				I	
			BOUL										0116.4	0116.6	1	III	
			CULG							0117	0150					IIIN,W	
			CULG							0151	0153.5	1				IIIG,U	
			CULG							0205.5	0322					IIIN,W	
			CULG							0241	0313					IW	
	0403	1105	WEIS														
			CULG							0530.5	0701					IIIN,W	
			CULG							0621		1				IIIB	
	1216	2400	HARV				1259	1305	1							I	
	1133	1903	WEIS				1300.0	1302.0	2							IIIG	
	1401	2400	BOUL							1510.6	1510.7	1				III	
			HARV				1513	1514	1	1513	1515	2	1514	1515	3	IIIG,V	
			BOUL							1513.2	1514.4	3	1513.2	1514.4	3	III	
			WEIS							1513.5	1514.5	2				UNCL	
	0848	2405	SGMR										1513.6	1514.8		III	
			HARV							1520	1738	1				IN	
			BOUL							1827.7	1827.9	1				III	
	2036	2400	CULG														
			BOUL							2233.8	2234.0	1				III	
			BOUL										2332.9	2333.0	1	III	
04	0000	0146	HARV														
	0403	1838	WEIS														
	0000	0736	CULG							0403	0403.5	1				IIIG	
			CULG							0621						IIIB,W	
	0846	2422	SGMR														
	1216	2400	HARV				1222	1235	1							IN	
			HARV				1509	1520	1	1509	1516	1				I	
			HARV				2057	2058	2	2057	2058	2				IIIGG	
	2036	2400	CULG							2218	2253.5					IIIN,W	
05	0000	0735	CULG							0003.5	0007					IIIG,W	
	0000	0147	HARV				0103	0136	1							IN	
			CULG							0324	0325	2				IIIB,U	

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JUL. 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.	
05			CULG							0549	0549.5	1				IIIG
			CULG							0719						IIIB,W
	0835	1903	WEIS													
	0849	2419	SGMR													
	1401	2400	BOUL										1542.9	1543.1	1	III
	1233	2400	HARV				1637	1639	2							IIIGG,V
			BOUL										2026.7	2026.9	1	III
			HARV							2111	2112	1				IIIG,U
			BOUL										2209.2	2209.4	1	III
			BOUL							2252.8	2253.0	1	2252.8	2253.0	1	III
	2259	2400	CULG							2317.5	2318					IIIG,W
			BOUL							2326.2	2336.2	2	2326.2	2336.2	2	IIIG
			CULG							2326.5	2336.5	1				IIIGG,U
			CULG							2328	2329	2				IIIG,U
			CULG							2343	2343.5					IIIG,W
			BOUL										2345.7	2345.8	1	III
			CULG							2346						IIIB,W
06	0000	0100	BOUL										0030.7	0031.0	1	III
			BOUL										0035.7	0035.8	1	III
	0000	0736	CULG							0036						IIIB,W
	0000	0147	HARV				0102	0134	1							I
			HARV				0115	0116	1	0112	0119	1				IIIGG
			CULG				0115.5	0118.5	1	0112	0116.5	1				IIIGG
			CULG							0119.5		1				IIIB,U
			CULG				0121	0122.5	1	0121	0122.5	2				IIIG,U
			HARV							0121	0144	1				I
			CULG							0127.5	0129					IIIW
			CULG							0130	0144	1				I
			CULG							0130.5	0131	1				IIIG,U
			CULG				0211		1	0209	0214	2				IIIGG,U
	0402	1130	WEIS													
			CULG							0625	0626	1				IIIG
			CULG							0632						IIIB,W
			CULG							0643.5	0645.5	1				IIIG
	0853	2418	SGMR													
	1144	1902	WEIS							1146.5	1147.0	1				IIIG
	1232	2400	HARV				1346	1347	1	1346	1347	1				I
			HARV				2110	2113	1							I
	2037	2400	CULG							2205.5	2206.5	1				IIIG,U
			HARV				2206	2238	1							IN
			CULG							2220.5	2221.5	1				IIIG
			CULG							2243	2244					IIIG,W
07	0000	0147	HARV													
	0000	0736	CULG							0140						IIIB,W
	0848	2416	SGMR													
	0402	1800	WEIS							0934.9	0935.4	2				IIIG,DP
	1439	2400	HARV				1716	2400	1							IN
			HARV							1804	1805	1				IIIGG
	2037	2400	CULG							2155						IIIB,W
			CULG							2311.5						IIIB,W
			CULG							2328						IIIB,W
08	0000	0147	HARV				0000	0143	1							IN
	0000	0736	CULG							0153						IIIB,W
			CULG							0649.5	0651	1				IIIG,U
	0835	1900	WEIS													
	0854	2417	SGMR													
	1232	2400	HARV				1543	1640	1							IN
	2037	2400	CULG							2126	2127	2				IIIG,U
			CULG							2157	2158	1				IIIG,U
			CULG							2202	2205	1				IIIG,U
09	0000	0147	HARV													
	0000	0736	CULG							0002.5						IIIB,W
			CULG							0117.5	0118	1				IIIG,U
	0402	1125	WEIS													
			CULG							0502	0503	1				IIIG,U
			CULG							0521	0522					IIIG,W
			CULG							0525		2				IIIB,U
			CULG							0604	0606.5	2				IIIG,V,U
	0853	2418	SGMR													
	1232	1903	WEIS													
	1232	2400	HARV							2234	2237	2				IIIG
	2037	2400	CULG							2234.5	2236.5	2				IIIGG,U
			CULG							2239.5	2241	1				IIIG
			CULG							2336						IIIB,W
			CULG							2347	2348.5	1				IIIG,U
			CULG							2351						IIIB,W
10	0000	0147	HARV													
	0000	0720	CULG							0014	0018	1				IIIG
			CULG							0121	0128	1				I
			CULG							0237.5	0238.5	1				IIIG
	0404	1608	WEIS													
	0904	2417	SGMR													
	1232	2400	HARV				1659	1701	1							I
	1900	2400	BOUL													
	2037	2400	CULG													

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JUL. 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.		
11	0000	0147	HARV														
	0000	0737	CULG							0453	0454						IIIG,W
			CULG							0617.5	0623	2					IIIGG
	0430	1903	WEIS							0620.7	0621.0	1					IIIB
			CULG							0643	0705						IW
			WEIS							1132.0	1132.9	1					IIIG
	1132	2200	BOUL							1347.4	1347.5	2	1347.4	1347.9	2		III
	0848	2416	SGMR										1348.0	1349.0			III
	1232	2400	HARV							1359	1402	2					IIIG
	2038	2400	CULG							2111.5	2357						IW
			CULG							2248							IIIB,W,U
			BOUL							2334.3	2334.9	2	2334.3	2334.9	2		III
			CULG				2334.5	2335	1	2334	2335	1					IIIG,V,U
12	0000	0147	HARV							0000	0147	1					IN
	0000	0737	CULG							0010	0126						IW
	0000	0100	BOUL										0048.5	0048.7	1		III
			CULG							0049		1					IIIB
			CULG							0320.5		1					IIIB
			CULG							0348.5	0349.5	3					IIIG,V,U
			CULG							0351.5	0352.5	1					IIIG,U
	0404	0955	WEIS														
			CULG							0545.5	0657						IW
	1232	2400	HARV				1532	1533	1	1532	1534	2	1532	1534	2		IIIG
	1145	1859	WEIS							1532.5	1535.8	1					IIIG
	1230	2400	BOUL							1532.5	1534.2	3	1532.5	1534.2	3		III
	0903	2418	SGMR										1532.5	1533.0			II
			HARV							1535	1538	1					UNCL
			BOUL										1630.9	1631.0	1		III
			HARV							1713	2400	1					IN
			CULG							2205.5		1					IIIB
	2127	2400	CULG				2326	2356		2127	2333						IW
13	0000	0147	HARV				0012	0115	1	0000	0144	1					IN
	0000	0737	CULG							0534	0703.5						IW
	0840	2415	SGMR														
	1232	2400	HARV							1232	2400	1					I
	0730	1900	WEIS							1519.2	1520.0	1					IIIG
			WEIS							1551.9	1553.8	2					IIIGG,DP
			HARV							1552	1554	1					IIIGG
	2038	2400	CULG							2105	2342.5	1					I
			CULG							2336	2342.5	2					IIIGG
	1400	2400	BOUL										2338.4	2342.0	1		III
14	0000	0147	HARV							0000	0147	1					IN
	0000	0200	BOUL										0004.4	0004.7	1		III
	0000	0357	CULG							0004.5	0008	1					IIIG
			BOUL										0007.2	0008.0	1		III
			CULG							0024.5	0025.5						IIIG,W
			BOUL							0107.2	0107.4	1	0107.2	0107.4	1		III
			CULG							0107.5							IIIB,W
			CULG							0147.5	0150	1					IIIG
			CULG							0204	0206.5	1					IIIG
			CULG							0243.5	0245	1					IIIG
	0434	0737	CULG							0434	0659						IW
			CULG							0443							IIIB,W
			CULG							0524		1					IIIB
			CULG							0534	0534.5	1					IIIG
			CULG							0550		1					IIIB
			CULG							0651.5		1					IIIB
			CULG							0707	0709	1					IIIG
	0900	2414	SGMR														
	0700	1900	WEIS							1200.0	1550.0	1					IS
	1232	2400	HARV							1232	2400	1					I
			WEIS							1240.0	1243.0	2					IIIGG,DP,U
			HARV				1241	1242	1	1240	1243	2					IIIGG,U
	1230	2400	BOUL										1909.2	1909.3	1		III
			BOUL										1929.1	1929.3	1		III
	2038	2400	CULG							2114	2330						IW
			CULG							2124.5	2400	1					IIIN
			BOUL										2129.6	2129.9	1		III
			BOUL										2228.7	2228.8	1		III
			BOUL										2253.1	0130.0	1		CONT
15	0000	0200	BOUL														
	0000	0732	CULG							0000	0127.5	1					IIIN
	0000	0146	HARV							0000	0146	1					I
			CULG							0139	0506						IW
			CULG							0157		1					IIIB
			CULG							0211.5							IIIB,W
			CULG							0217							IIIB,W
			CULG							0349							IIIB,W
			CULG							0358							IIIB,W
			CULG							0409.5							IIIB,W
			CULG							0412.5	0423.5	1					IIIG
			CULG							0425.5	0427	1					IIIG,U
	0413	1355	WEIS							0426.0	1355.0	1					IN
			CULG							0442		1					IIIB
			CULG							0519		1					IIIB
			CULG							0619		1					IIIB

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JUL. 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.	
15			WEIS							1102.1	1103.7	1				IIIG
			WEIS							1225.1	1225.3	1				IIIB
	0900	2400	SGMR										1230.0	1800.0		CONT
	1232	2400	HARV				1236	2134	1	1232	1420	2				I
	1400	2400	BOUL							1400 E	1700.0	2	1400 E	1700.0	2	CONT
	1412	1859	WEIS							1412.0	1700.0	1				IS
			BOUL							1700.0	2015.0	1	1700.0	2015.0	1	CONT
			HARV							1911		3	1911		3	IIIB
			BOUL							1911.0	1911.3	2	1911.0	1911.3	2	III
			BOUL										2031.3	2031.5	1	III
			BOUL							2050.3	2050.4	2	2050.3	2050.4	2	III
			BOUL							2102.2	2102.3	1	2102.2	2102.3	1	III
			BOUL										2125.1	2125.2	1	III
			HARV				2134	2400	2	1420	2400	1				I
			BOUL							2154.0	0200 D	1	2154.0	0200 D	1	CONT
16	0000	0200	BOUL													
	0000	0146	HARV				0000	0144	1	0000	0144	1				I
	0412	1750	WEIS							0414.0	1750.0	2				IS
			WEIS							0754.0	0845.0	2				IIIGG,DP
	0902	2414	SGMR													
	1232	2400	HARV				1235	1900	2	1232	2400	2				IC
	1359	2400	BOUL										1359 E	1845.0	2	CONT
			WEIS							1403.4	1403.6	1				IIIB
	1806	1855	WEIS													
			HARV				1900	2400	1							I
			BOUL							2000.0	0210 D	2	2000.0	0210 D	2	CONT
17	0000	0230	BOUL													
	0000	0148	HARV				0000	0116	1	0000	0148	2				I
	0409	1854	WEIS							0410.0	1714.0	2				IDC
			WEIS							0516.6	0519.0	2				IIIG,DP
			WEIS							1225.2	1228.0	2				IIIGG,DP
	0903	2413	SGMR										1430.0	1620.0		CONT
	1511	2400	BOUL							1511 E	0215 D	2	1511	0215 D	2	CONT
	1232	2400	HARV				2128	2400	1	1234	2400	1				I
18	0000	0146	HARV				0108	0145	1	0000	0145	1				I
	0409	1005	WEIS							0437.0	1005.0	1				IS
	1049	1854	WEIS							1019.0	1730.0	1				IN
	0902	2412	SGMR										1120.0	1708.0		CONT
			SGMR										1135.7	1136.0		III
			WEIS							1135.7	1135.9	1				IIIB
	1200	2400	BOUL										1215 E	1330	1	CONT
	1232	2400	HARV							1235	1800	1				I
			HARV				1248	2320	1	1800	2400	1				IN
			SGMR										1416.8	1417.1		III
			HARV							1417	2041	1	1417	2041	1	IIIN
			BOUL							1439.0	1440.0	1	1439.0	1440.0	1	IIIG
			SGMR										1439.7	1440.3		III
			BOUL							1624.0	0029	2	1624.0	0029.0	2	CONT
			HARV				2036	2038	2							IIIGG,V
19	0000	0146	HARV							0000	0143	1				IN
	0000	0200	BOUL							0125	0200 D	1	0125	0200 D	1	CONT
	0408	1414	WEIS							0515.0	1414.0	1				IN
			WEIS							0810.2	0810.4	2				IIIB
	1100	2400	BOUL										1137.0	1138.2	2	IIIG
	0906	2411	SGMR										1137.1	1139.0		IIIG
			WEIS							1137.1	1144.7	3				IIIGG,DPRS
			WEIS							1157.2	1157.4	1				IIIG
	1232	2400	HARV				1249	2400	1	1235	2400	1				I
			BOUL										1315.0	1315.1	1	III
			BOUL							1425.0	1425.1	1	1425.0	1425.1	1	III
			BOUL							1455.1	1508.0	1	1455.1	1508.0	1	IIIG
			BOUL							1545.0	1720.0	1	1545.0	1720.0	1	IIIN
			BOUL							1628.1	1629.2	3	1628.1	1629.2	3	III
			SGMR										1628.8	1630.0		III
			HARV				1629		1	1628	1630	2	1629	1630	3	IIIG,V
			BOUL							1702.9	1703.8	2				IIIG
			HARV							1703	2122	1	1703	2122	1	IIIN
			BOUL										1720.0	1817.2	1	CONT
			BOUL										1845.0	1845.1	1	III
			BOUL							1901.2	1901.3	1	1901.2	1901.3	1	III
			BOUL										1908.0	1908.3	1	III
			BOUL										1915.0	1915.2	1	III
			BOUL										1930.3	1930.5	2	III
			BOUL										1933.7	2045	1	IIIN
			BOUL										2046.0	2053.0	2	IIIG
			BOUL										2103.8	2110	3	III
			SGMR										2104.6	2118.4		IIIG
			HARV				2105	2110	1	2104	2111	2	2104	2111	2	IIIGG
			BOUL							2110	2253	2	2110	2253	2	CONT
			HARV							2237	2240	1	2237		1	IIIG
			BOUL							2253	0142 D	1	2253	0142 D	1	CONT
20	0000	0200	BOUL													
	0000	0145	HARV				0000	0145	1	0000	0145	1				I
	1232	2400	HARV							1237	2357	1				IN
	1230	2400	BOUL										1447.0	1447.1	1	III

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				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.	
20			HARV				1503		2	1503		2				IIIG
	0907	2410	SGMR										1503.0	1505.1		V
			HARV				1839	1840	1	1839	1840	1	1840		1	IIIG
			BOUL										1839.6	1839.9	2	III
			BOUL							1945.9	1946.0	1	1945.9	1946.0	1	III
			BOUL							2030.2	2030.5	2	2030.2	2030.5	2	III
			BOUL										2230.7	2230.8	1	III
	2040	2400	CULG							2231.5		1				IIIB
			BOUL										2313.4	2313.6	1	III
			HARV				2353	2354	2	2353	2354	2	2354		2	IIIGG
			BOUL							2353.2	2354.5	3	2353.2	2354.5	3	III
			CULG				2353.5	2354.5	2	2353	2355	3				IIIG,V,U
			SGMR										2353.9	2354.4		III
21	0000	0145	HARV													
	0000	0200	BOUL										0026.0	0026.1	1	III
			BOUL										0040.6	0040.7	1	III
	0000	0737	CULG							0041						IIIB,W
			BOUL										0049.5	0049.7	1	III
			BOUL										0107.6	0107.7	1	III
			CULG							0129.5						IIIB,W
			CULG				0201.5	0202	1	0202		1				IIIG
			CULG							0203.5						IIIB,W
			CULG				0205			0205						IIIB,W
			CULG				0208.5	0209.5	1	0208.5	0209.5	1				IIIG,U
			CULG							0609		1				IIIB
	1056	1848	WEIS													
	1232	2400	HARV				1248	1700	1							IN
	1230	2400	BOUL										1330.8	1331.0	1	III
			HARV							1359	1401	1				IIIG
			BOUL										1400.6	1400.9	2	III
	0905	2409	SGMR										1400.9	1401.3		III
			HARV							1404	1708	1				IN
			BOUL										1428.2	1428.4	1	III
			BOUL										1449.0	1449.3	1	III
			BOUL										1802.0	1802.3	1	III
			BOUL										1927.5	1927.6	1	III
			BOUL										2025.3	2025.5	1	III
	2039	2400	CULG													
			HARV				2118	2400	1	2114	2400	1				IN
22	0000	0145	HARV				0000	0108	1	0000	0057	1				I
	0000	0738	CULG							0400	0403					IIIG,W,U
			CULG							0621	0621.5	2				IIIG,U
	0910	2409	SGMR													
	0645	1847	WEIS							0919.0	1313.0	1				IN
	1232	2400	HARV				1243	2014	1	1239	1845	1				IN
	1230	2400	BOUL							2037.1	2038.4	2	2037.1	2038.4	2	IIIG
	2049	2400	CULG							2107	2107.5	1				IIIG
			BOUL							2107.3	2107.4	1	2107.3	2107.4	1	III
			HARV				2223	2224	1	2223	2225	2	2224		1	IIIG
			BOUL							2223.2	2224.2	2	2223.2	2224.2	2	III
			CULG				2223.5	2225	1	2223.5	2225	2				IIIG,U
23	0000	0738	CULG													
	0000	0145	HARV													
	0642	1846	WEIS													
	0917	2408	SGMR													
	1230	2400	BOUL													
	1232	2400	HARV				1817	2400	1	1808	2003	1				IN
	2040	2400	CULG													
24	0000	0737	CULG													
	0000	0145	HARV				0000	0141	1	0128	0144	1				IN
	0419	1118	WEIS							0646.0	1115.0	1				IN
			WEIS							1047.1	1049.9	3				IIIG,RS
	0919	2408	SGMR										1146.0	1919.0		CONT
			SGMR										1240.0	1241.2		III
	1232	2400	HARV				1331	2400	1	1238	1600	1				I
			SGMR										1351.9	1352.2		III
			HARV				1352	1359	2	1352	1359	2	1353	1359	2	IIIGG
			SGMR										1352.6	1406.8		V
			SGMR										1408.3	1412.2		V
			SGMR										1415.3	1415.9		III
			SGMR										1452.9	1459.0		V
			HARV				1453	1456	1	1453	1457	2	1453	1457	2	IIIGG
			HARV							1514	1515	1	1514	1515	1	IIIG
			SGMR										1514.0	1516.2		V
			SGMR										1529.7	1542.2		IIIG
			HARV				1530	1532	1	1530	1532	1	1530	1532	1	IIIGG
			HARV				1540	1541	2	1540	1541	1	1540	1541	1	IIIG
			HARV							1600	2006	2	1613	1817	1	IC
			SGMR										1612.8	1613.1		III
	1230	2400	BOUL							1634 E	1920	3	1634 E	1920	3	CONT
			HARV							1716	1741	2	1716	1741	2	IIIS
			HARV							1744	1826	1	1744	1825	1	IIIN
			HARV							1809.1	1817	2				II
	1815	1845	WEIS													
			HARV				1851		1	1851	1852	2	1851	1852	2	IIIG
			BOUL							1920	2105	2	1920	2105	2	CONT

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				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.	
24			HARV							2006	2300	1				I
	2043	2400	CULG				2059	2400	1	2101	2400	1				IS
			BOUL							2105	2220	1	2105	2220	1	CONT
			CULG							2127.5						IIIB,W
			CULG							2131						IIIB,W
			CULG							2140	2151	1				IIIG
			HARV							2143	2147	1				IIIGG
			HARV				2149	2152	3	2149	2153	1				IIIGG,RD
			CULG				2149	2153	2							IIIG,RS
			CULG							2151.5	2220					IIIN,W
			BOUL							2220	0126.8	3	2220	0126.8	3	CONT
			CULG							2220.5	2400	2				IIIS
			HARV							2224	2225	1	2224	2225	1	IIIGG
			SGMR										2224.7	2225.5		III
			HARV							2241	2251	1	2241	2242	1	IIIGG
			HARV							2300	2400	2				IC
			CULG							2310	2335	2				UNCLF
			CULG							2340	2400	1				IIIG,U
25	0000	0631	CULG				0000	0631	1	0000	0130	1				IS
			CULG							0000	0158	1				IIIN
	0000	0144	HARV				0000	0143	1	0000	0143	2				IC
			CULG							0130	0232	1				IS
	0000	0200	BOUL							0153.5	0157.5	1	0153.5	0157.5	1	IIIG
			CULG							0225		1				IIIB
			CULG							0232	0344	2				IS
			CULG							0344	0631	1				IS
			CULG							0351	0554	1				IIIN
	0419	1845	WEIS							0421.0	1750.0	2				IDC,S
			CULG							0555	0631	1				IIIS
	1200	2400	BOUL							1223.0	1439.0	1	1223.0	1439.0	1	CONT
	1232	2400	HARV				1242	1440	1	1239	1440	1				I
			HARV				1440	2323	1	1440	2400	1				IN
			BOUL										1531.8	1531.9	1	III
			BOUL							1702.3	1702.5	1	1702.3	1702.5	1	III
			BOUL										1730.8	1731.0	1	III
			BOUL							1911.3	1911.5	1	1911.3	1911.5	1	III
			HARV							1928	1929	1	1928	1929	2	IIIG
			BOUL							1928.0	1929.2	2	1928.0	1929.2	2	IIIG
	0917	2400	SGMR										1928.8	1929.2		III
			BOUL							1931.2	1931.3	1	1931.2	1931.3	1	III
			BOUL							1932.3	1932.5	1				III
			BOUL							1935.0	1935.1	1	1935.0	1935.1	1	III
			BOUL							1936.6	1937.3	2	1936.6	1937.3	2	IIIG
			SGMR										1937.0	1937.2		III
			BOUL							1940.3	1944.0	3	1940.3	1944.0	3	III
			SGMR										1940.8	1942.1		III
			HARV							1941	1943	2	1941	1942	3	IIIGG
	2040	2400	CULG							2115.5	2359.5	1				IIIN,U
			BOUL							2120.4	0154.2	1	2120.4	0154.2	1	IIIN
			CULG							2251.5		2				IIIG,U
			CULG							2317		2				IIIB,U
26	0000	0738	CULG							0000	0506	1				IIIN
	0000	0200	BOUL													
	0000	0144	HARV				0010	0135	1	0005	0142	1				IN
			CULG				0036.5		1	0037.5	0130.5	1				I
			CULG							0113		1				RS,DP
			CULG							0130	0130.5	1				IIIG
			CULG							0328	0331	1				IIIG
			CULG							0410	0718					IW
	0411	1130	WEIS							0420.0	1119.0	1				IS
			CULG							0551	0552	2				IIIG,U
			CULG							0602		1				IIIB
			CULG							0610	0710	1				IIIN
			WEIS							0905.0	0905.7	1				IIIG
	1137	1840	WEIS							1139.0	1352.0	1				IS
	1230	2400	BOUL										1235.1	1235.4	1	III
	1232	2400	HARV				1246	1614	1	1244	1720	1				IN
			BOUL							1338.4	1341.8	2	1338.4	1341.8	2	IIIG
			WEIS							1338.9	1341.0	1				IIIG
	0859	2358	SGMR										1340.6	1341.2		III
			BOUL										1515.3	1515.5	1	III
			BOUL							1649.0	1649.2	2	1649.0	1649.4	2	III
			BOUL										1722.0	1722.1	1	III
			BOUL							1821.6	1821.8	2	1821.6	1821.8	2	III
			BOUL							1829.0	1829.3	2	1829.0	1829.3	2	III
			BOUL							1830.6	1831.1	1				IIIG
			BOUL							1831.9	1832.4	3	1831.9	1832.4	3	III
			SGMR										1831.9	1833.1		III
			BOUL							1851.3	1851.4	3	1851.3	1851.8	3	III
			SGMR										1851.8	1852.3		III
			BOUL							1853.4	1855.6	1	1853.4	1855.6	1	IIIG
			BOUL							1922.2	1922.3	1	1922.2	1922.3	1	III
			BOUL										1930.6	1930.9	1	III
			BOUL							2025.0	2025.1	1	2025.0	2025.1	1	III
			HARV				2026	2400	1	1946	2400	1				I
			BOUL							2046.0	2049.4	1	2046.0	2049.4	1	IIIG
	2039	2400	CULG				2139	2400	1	2104	2400	1				I
			CULG							2151						IIIB,W

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				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.	
26			CULG							2212	2231					IIIN,W
			CULG							2346	2354	2				IIIGG,U
			BOUL							2346.2	2353.3	3	2346.2	2353.3	3	IIIG
			CULG							2351	2352	2				IIIG,V
27	0000	0738	CULG				0000	0411.5	1	0000	0545	1				I
	0000	0144	HARV				0000	0139	1	0000	0141	1				I
			CULG							0005.5		1				IIIB
			CULG							0013.5		2				IIIB
			CULG							0017.5	0647					IIIN,W
			CULG							0034.5		2				IIIB
	0000	0200	BOUL							0054.7	0055.0	1	0054.7	0055.0	1	III
	0648	1800	WEIS													
	0849	2356	SGMR													
	1232	2157	HARV							1245	1500	1				IN
	1230	2400	BOUL							1250.3	2120.7	1	1250.3	2120.7	1	IIIN
			HARV							1500	2157	1				I
			BOUL							1755.8	1756.9	2	1755.8	1756.9	2	IIIG
			HARV							1802	1804	2	1804		2	IIIG
			BOUL							1802.6	1804.8	2	1802.6	1804.8	2	IIIG
			BOUL							1909.5	1909.7	2	1909.5	1910.1	2	III
			BOUL							2033.8	2034.2	2	2033.8	2034.2	2	III
	2039	2400	CULG							2056	2237	2				IS
			CULG							2121	2228	2				IIIS,U
			BOUL							2147.6	2229.0	2	2147.6	2229.0	2	CONT
	2254	2400	HARV													
			BOUL							2333.8	2335.1	2	2333.8	2335.1	2	IIIG
			CULG							2334	2336	2				IIIG,U
			BOUL							2342.6	2348.3	1	2342.6	2348.3	1	IIIG
			CULG							2343	2351	1				IIIG
28	0000	0144	HARV													
	0000	0738	CULG							0004.5	0105.5	1				IIIN,U
			CULG							0334	0354					IIIN,W
			CULG							0501.5	0707					IIIN,W
			CULG							0513.5	0514.5	1				IIIG
			CULG							0555	0654.5	1				I
			WEIS							0737.5	1718.0	1				IN
	0707	1839	WEIS							0752.6	0752.8	1				IIIG,DP,RS
			WEIS							0836.2	0839.5	1				IIIG
			WEIS							0854.2	0854.5	1				IIIG
	0915	2400	SGMR													
			WEIS							1037.3	1037.5	1				IIIB
	1232	2400	HARV							1251	2312	1				IN
	1230	2400	BOUL							1859.8	1900.3	1	1859.8	1900.3	1	IIIG
			HARV				2111	2114	2	2114		1				IIIGG
			CULG							2135	2225	1				I
	2039	2400	CULG							2135	2135.5	1				IIIG
29	0000	0144	HARV													
	0000	0738	CULG							0516	0518.5	2				IIIG
			CULG							0606	0606.5	1				IIIG,U
	0425	1520	WEIS							0616.0	0616.3	1				IIIG
			CULG							0635		2				IIIB
			CULG							0642	0643	2				IIIG
			WEIS							0642.2	0642.9	2				IIIG
			CULG							0649	0650	1				IIIG,U
			CULG							0653		1				IIIB
			CULG							0655.5		1				IIIB
			CULG							0713	0713.5	1				IIIG,U
			WEIS							0755.4	0755.7	1				IIIG
	0904	2403	SGMR													
	1232	2400	HARV													
	1230	2400	BOUL										1533.5	1534.4	1	IIIG
			BOUL							2013.0	2013.2	1	2013.0	2013.2	1	III
	2039	2400	CULG													
			BOUL							2039.0	2047.4	1	2039.0	2047.4	1	IIIG
30	0000	0012	HARV													
	0000	0100	BOUL							0023.6	0023.9	2				IIIG
	0000	0737	CULG							0024	0025	2				IIIG,U
			CULG							0030.5	0040					IIIG,W
			CULG							0431	0431.5	1				IIIG
			CULG							0450.5	0451.5	1				IIIG
			CULG							0551	0556	1				IIIG,U
			CULG							0601	0601.5	1				I
	0805	1837	WEIS							1215.5	1216.7	2				IIIGG
	0920	2402	SGMR										1215.5	1217.1		IIIG
			WEIS							1220.7	1221.0	1				IIIB
			SGMR										1220.8	1221.1		III
	1230	2400	BOUL													
	1249	2138	HARV													
	2040	2400	CULG							2217.5						IIIB,W
	2257	2400	HARV													
31	0000	0019	HARV													
	0123	0142	HARV													
	0428	1135	WEIS													
	0000	0735	CULG							0613	0615	1				IIIG,V
	0914	2400	SGMR													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1971

JUL. 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.	
31	1252	2400	HARV				1744	1745	2							IIIGG
	2039	2400	CULG							2154	2155	1				IIIG,U
			CULG							2217.5						IIIB,W,U
			CULG							2300.5						IIIB,W,U
			CULG							2324	2325	2				IIIG,RS
			HARV							2324	2325	2				IIIG

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

Note: The band 2000 - 8000 MHz at Culgoora was not operating during July.

COSMIC RAY INDICES
(Neutron Monitors)

JULY 1971

July 1971	CHURCHILL	DEEP RIVER	CALGARY	SULPHUR MT.	CLIMAX	DALLAS
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	6286.8	6809.8	11443.5	8598.2	4101.5	6161.1
2	6246.4	6803.1	11332.6	8512.3	4058.2	6129.5
3	6232.0	6789.5	11344.2	8509.4	4048.2	6131.3
4	6255.1	6804.2	11380.3	8540.4	4066.0	6163.8
5	6286.7	6826.8	11442.0	8601.7	4090.2	6190.9
6	6259.5	6805.5	11399.4	8563.1	4078.1	6161.7
7	6266.7	6826.7	11367.4	8567.2	4097.0	6168.7
8	6312.5	6854.7	11466.0	8624.7	4113.9*	6203.3
9	6313.0	6864.7	11512.0	8648.6	4123.7	6205.9
10	6314.5	6892.0	11478.3	8670.2	4125.3	6218.1
11	6344.3	6927.0	11545.2	8709.8	4138.3	6234.5
12	6363.9	6935.5	11596.0	8723.1	4150.9	6239.7
13	6316.1	6869.9	11484.7	8632.9	4116.4	6217.6
14	6329.9	6890.8	11515.2	8649.0	4127.3	6217.2
15	6345.8	6901.7	11536.3	8677.2	4140.6	6237.6
16	6340.9	6922.3	11558.1	8712.0	4157.4	6239.8
17	6345.3	6916.3	11579.7	8722.7	4156.8	6253.0
18	6324.1	6904.5	11560.0	8698.0	4146.5	6229.7
19	6267.8	6838.5	11421.1	8592.4	4101.2	6186.0
20	6259.7	6827.0	11396.2	8587.6	4086.4	6161.5
21	6277.5	6804.7	11357.7	8571.7	4086.4	6165.0
22	6289.0	6808.3	11396.0	8592.1	4102.5	6169.8
23	6342.8	6863.2	11498.7	8667.8	4122.6	6195.1
24	6352.0	6885.1	11510.1	8694.9	4136.5	6184.5
25	6381.9	6934.4	11639.4	8760.5	4155.3	6233.2
26	6424.6	6976.0	11709.6	8818.2	4197.4	6307.4
27	6408.5	6960.5	11643.7	8794.1	4178.1	6301.0
28	6387.3	6937.5	11551.2	8765.6	4169.5	6283.6
29	6363.6	6917.1	11580.4	8741.9	4159.7	6278.8
30	6390.1	6934.7	11608.8	8748.2	4173.9	6298.3
31	6363.5	6909.2	11556.7	8720.6	4151.4	6292.3

( ) 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.

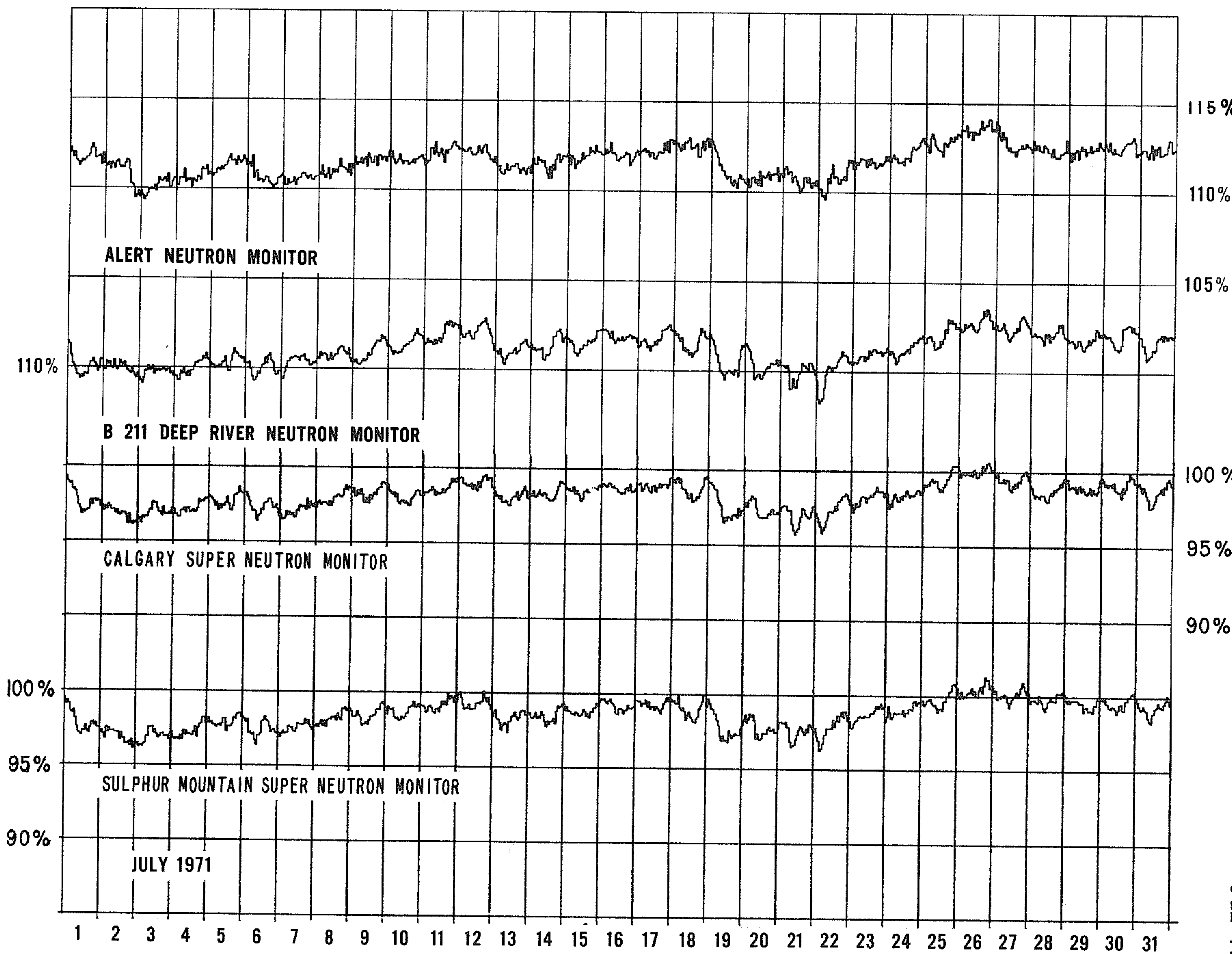
Climax IGC Station B305, Scaling Factor 100. One section normalized by multiplicative factor.

Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

JULY 1971

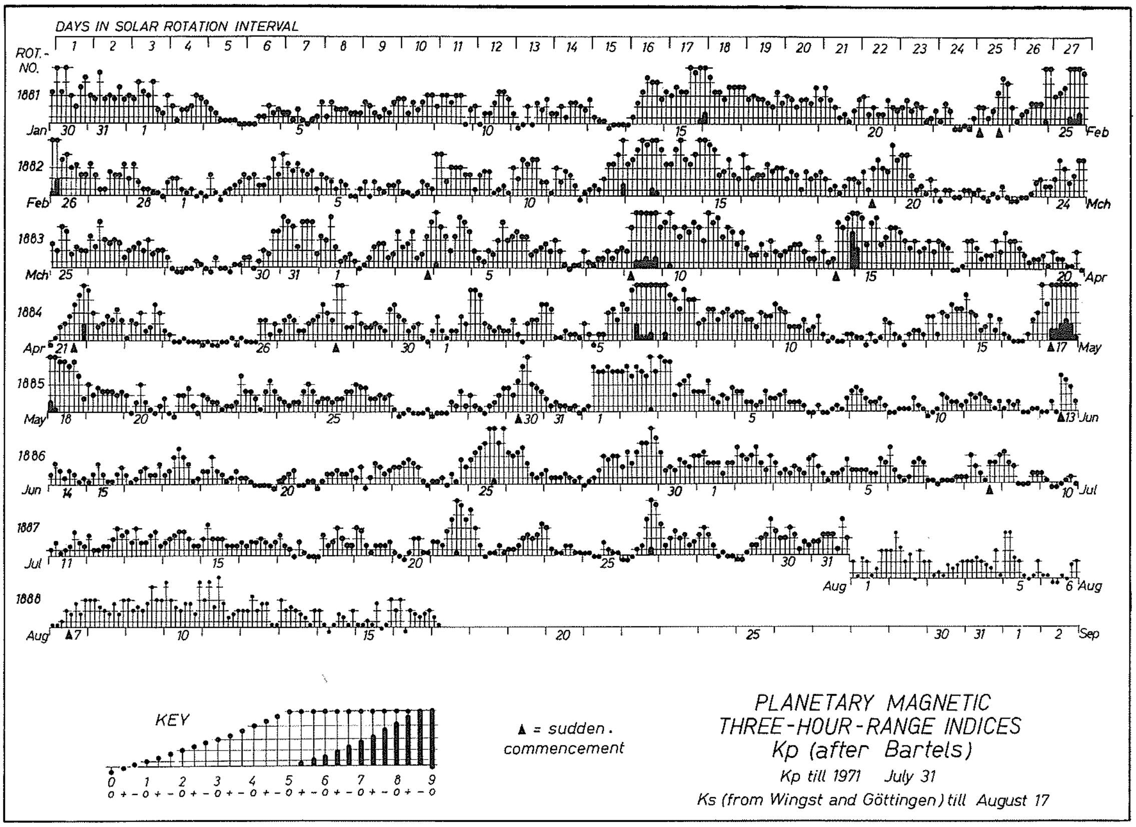


GEOMAGNETIC ACTIVITY INDICES

JULY 1971

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1	D	3	3+	2+	2+	2+	1+	2+	2+	19+	0.7	0.6	10
2	D	4-	3	3-	3	4-	2+	2-	3	23	1.0	0.8	14
3		2+	1+	2-	1+	2	2-	1+	3-	14+	0.4	0.3	7
4		3	2	1+	1-	1+	1+	2-	3-	14	0.5	0.4	7
5		2-	2-	2-	2-	1+	1+	3-	2+	14+	0.4	0.3	7
6		4-	2-	1	1-	1	2+	3-	2+	15+	0.6	0.5	9
7	QQ	1-	1-	0+	1-	1-	1-	1	1	6-	0.2	0.1	3
8		1	3	2	1+	1-	2+	2+	3	16-	0.5	0.5	8
9	Q	3+	2+	2	0+	0+	0+	1+	1+	11+	0.4	0.3	6
10	QQ	1+	1-	0	0	0+	1-	1	0+	4+	0.1	0.0	2
11	Q	1	2-	1-	1	1+	3-	2-	1+	11+	0.4	0.3	6
12		2+	1	1	1+	1+	2	3	2+	14+	0.5	0.4	7
13		3-	2-	3	2-	2-	2+	3-	1+	17	0.7	0.5	9
14		2-	2	2+	3-	3-	2	1+	1+	16	0.5	0.4	8
15		2	3+	2	2	2	1+	1+	1+	15+	0.4	0.4	8
16	Q	2-	1+	2-	2-	2	2-	1+	2-	13	0.3	0.3	6
17	QQ	2+	1+	1	0+	2-	1-	0+	0+	8	0.2	0.1	4
18		0+	2+	1+	2-	3	2	1+	1+	13+	0.5	0.3	7
19		3	3-	1+	1-	1+	1+	1+	2-	13+	0.5	0.4	7
20	QQ	1-	0+	0	1-	2	2	1-	1-	7	0.2	0.1	4
21	D	2-	2-	1+	3-	4-	5+	5-	4-	25-	1.3	1.1	21
22		4+	3	1+	0+	1-	1-	1+	1-	12+	0.5	0.5	8
23		1	1	1+	2	2+	2	2+	3+	15+	0.6	0.4	8
24	Q	3	1	1-	1-	1+	1+	1-	1-	9+	0.4	0.2	5
25	QQ	1-	1-	0+	0+	2-	1	1-	1-	6	0.2	0.1	3
26	D	0	0	0+	1	1+	4-	6-	5-	17-	1.1	0.9	17
27		3+	1+	2	3-	2	2+	1+	2-	17-	0.6	0.5	9
28	Q	2+	3	2+	1+	0+	1-	0+	0+	11-	0.2	0.3	6
29		0	0	1-	1+	1+	2	2+	4-	11+	0.5	0.3	6
30		3-	2	2	3	2+	1	2-	1+	16	0.6	0.4	8
31	D	2-	2-	2+	2+	2+	1	4-	2	17	0.6	0.5	9
										MEAN	0.50	0.39	8

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

	1970					1971						
DAY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY
1	4	23	10	2	1	6	16	4	12	7	22	10
2	6	18	9	4	4	19	9	4	7	17	31	14
3	4	15	14	8	4	33	4	9	16	8	25	7
4	4	11	25	7	5	16	4	14	27	8	9	7
5	3	8	9	9	8	9	4	5	11	8	6	7
6	8	5	6	12	8	4	6	4	14	50	5	9
7	12	6	4	58	8	1	6	4	6	36	3	3
8	26	8	2	8	19	0	10	15	6	13	7	8
9	19	5	2	8	6	1	10	6	53	12	3	6
10	7	6	7	17	3	6	10	15	30	11	4	2
11	9	1	15	20	2	8	5	7	27	4	6	6
12	9	5	16	10	4	3	6	20	10	4	3	7
13	6	24	9	9	4	6	4	39	8	4	8	9
14	4	19	8	7	65	9	16	29	39	14	5	8
15	7	11	4	4	14	8	29	22	36	12	5	8
16	21	8	37	5	4	7	28	14	15	5	6	6
17	115	8	34	6	3	6	13	9	8	73	10	4
18	36	10	39	18	3	15	12	6	11	39	6	7
19	14	18	11	18	10	13	9	16	8	10	2	7
20	4	15	7	3	8	29	8	13	4	5	4	4
21	5	23	1	30	4	12	7	3	22	5	4	21
22	6	12	18	18	6	10	3	3	14	5	5	8
23	7	6	29	21	7	6	13	3	10	11	7	8
24	4	6	14	12	14	10	13	14	3	7	5	5
25	8	8	6	13	4	9	43	12	1	6	32	3
26	17	6	4	8	4	2	31	15	5	9	12	17
27	12	19	5	10	8	37	10	9	8	2	4	9
28	12	7	15	8	18	39	6	2	21	4	9	6
29	10	5	13	2	12	16		2	9	6	23	6
30	5	9	9	1	13	26		9	8	19	10	8
31	12		4		2	17		26		4		9
MEAN	13	11	12	12	9	12	12	11	15	13	9	8

PRINCIPAL MAGNETIC STORMS

JULY 1971

DATE MO DA	STORM TIME UT START	STORM TIME UT END MO DA HR	OBS	GEO-MAG LAT.	SUDDEN COMMENCEMENT TYPE	SUDDEN COMMENCEMENT AMPLITUDES D(')	SUDDEN COMMENCEMENT AMPLITUDES H(γ)	SUDDEN COMMENCEMENT AMPLITUDES Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO DA	MAXIMAL ACTIVITY 3-HOUR PERIOD	MAXIMAL ACTIVITY K INDEX	RANGES D (')	RANGES H (γ)	RANGES Z (γ)	STORM NUMBERS
07 08	1728	07 09 09	MBOR	21.3N	SC	− 0.7	+ 9	--	-	-- --	-	-	--	--	--	28
07 11	2305	07 13 16	HONO	21.1N	..	..	..	..	-	07 13	3	4	--	--	--	29
07 21	0522	-- -- --	COLL	64.6N	SC	− 7	+77	−24	-	-- --	-	-	--	--	--	30
	1004	08 22 07	COLL	64.6N	SC *	−11	+42	−28	MS	08 21	5,6	6	200	1420	1650	30
	10--	07 22 03	WITT	54.1N	..	..	..	..	M	07 21	6	5	25	125	80	30
	0522	07 22 07	MBOR	21.3N	SC	--	--				-	-	--	--	--	30
	0522	07 21 22	ALIB	9.5N	SC	− 0.5	+21	− 7	MS	07 21	5	6	5	155	41	30
	0522	07 22 07	HYDE	7.6N	SC	− 0.6	+25	− 3	M	07 21	5,6	5	7	160	21	30
	0522	07 21 22	ANNA	1.5N	SC	− 1.1	+39	+10	MS	-- --	-	-	3	179	24	30
	0522	07 21 22	TVAN	1.1S	SC	0.0	+42	+44	MS	-- --	-	-	2	205	132	30
	0422	07 22 08	HRMN	33.3S	SC	+ 1	+ 3	+ 3	M	07 21	5,6	5	24	131	107	30
										07 22	1	5				30
	1200	07 22 07	KGLN	57.3S	..	..	..	..	M	07 21	6,8	5	--	--	--	30
										07 22	1					30
07 26	15--	07 27 03	NEWP	55.1N	..	..	..	..	M	07 26	8	5	23	113	51	31
	15--	07 27 02	WITT	54.1N	..	..	..	..	MS	07 26	7	6	25	135	45	31
	15--	07 27 04	FRED	49.6N	..	..	..	..	M	07 26	3	5	14	99	48	31
	14--	07 27 03	HRMN	33.3S	..	..	..	..	M	07 26	7	5	16	45	46	31

Reports for July 1971 received from:

College
Sitka
Newport
Witteveen
Fredericksburg
Boulder
Tucson
San Juan
M'Bour
Honolulu
Alibag
Hyderabad
Guam
Annalmalainagar
Trivandrum
Port Moresby
Hermanus
Gnangara
Toolangi
Amberly
Port-aux-Francais

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

July 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 1728 A: FU? PE? SF; B: ES WN LG IK QU; C: LE WI NI MA EB TL MB (si: B: BE SZ; C: LM)

21 0522 A: VI KS QU TE; B: LG IK SZ HR AM DU; C: EB PE SS (si: A: LM)

Sudden impulses found in the magnetograms (si)

06 1833 A: LG EB TL TE; B: LE ES WN WI NI BE LM; C: MA PE QU (ssc: A: SF - cr: A: MB; sfe: LG? SZ)

18 2358 B: BE MA FU LG; C: LM (ssc: A: SF; B: VI IK; C: NI; bs: A: SO; bp: B: HR. bps: B: PE)

23 0007 A: SF; B: BE FU IK AM; C: EB TL? MB (ssc: B: MA; C: NI)

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

01	0130 - 0148	SS	
01	1352 - 1405	WN (si: C: LM)	
05	1914 - 1921	SZ	
20	1059 - 1115	NI KS	
21	1402 - 1415	SZ	
22	1241 - 1250	MA (si: B: FU)	
23	0907 - 0930	NI	

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1971

North Atlantic

JUL. 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+	5o	6+	6o	6	7	7	7	3	2	11
02	6o	7	6-	6+	6+	6o	7	7	7	7	(4)	3	18
03	6o	7	6o	6-	6o	6o	7	6	6	7	2	2	8
04	6+	7	7-	6o	7o	6+	7	7	7	7	2	2	9
05	7-	7	7+	6o	7o	6+	7	7	7	7	2	2	8
06	7-	7	7o	6o	7-	7-	7	7	7	7	2	2	9
07	6+	7	7o	6+	6+	6-	7	7	7	7	1	1	3
08	6o	7	6+	6-	7o	6-	7	7	7	7	2	2	10
09	6+	7	7-	6-	6+	6+	6	6	6	7	3	1	8
10	6+	7	7o	6+	7o	6-	6	6	6	7	1	1	2
11	7-	7	7o	6+	6+	6+	6	7	7	7	2	2	6
12	6o	7	7-	5+	6+	6o	7	7	7	7	2	2	9
13	6-	7	6o	6o	6-	6-	6	6	7	7	3	2	10
14	7-	7	7o	7-	7o	6+	6	6	7	7	2	2	9
15	6+	7	6o	6o	6+	7o	7	7	6	7	2	1	7
16	7-	7	7o	6+	6+	7o	7	7	7	7	2	2	7
17	6+	7	7o	6+	6o	6+	7	7	7	7	1	1	3
18	6+	7	6+	6o	6+	6+	7	7	7	7	2	2	9
19	6o	7	6+	6+	6-	6o	7	7	7	7	3	2	9
20	7-	7	6+	7-	7o	7-	7	7	7	7	1	1	2
21	6+	7	7o	6+	6+	6-	7	7	7	6	2	4	16
22	6+	7	6-	6o	6+	7o	5	6	6	6	3	1	8
23	6+	7	7-	5+	6+	7o	6	7	7	7	2	2	8
24	6+	7	7-	6o	6+	7-	6	7	7	7	2	2	7
25	7-	7	7o	6o	7o	6+	7	7	7	7	0	1	2
26	6+	5	7o	6o	6o	6+	7	7	7	6	1	3	11
27	6+	5	6o	6-	6+	7o	6	6	7	7	2	2	7
28	7-	5	7-	6o	7o	7o	6	7	7	7	2	0	5
29	6+	6	7o	6o	6+	5+	7	7	7	7	0	2	5
30	6-	6	6+	5o	6o	6o	7	7	7	7	3	2	9
31	6+	7	7-	7-	6+	6-	7	7	7	7	2	2	7

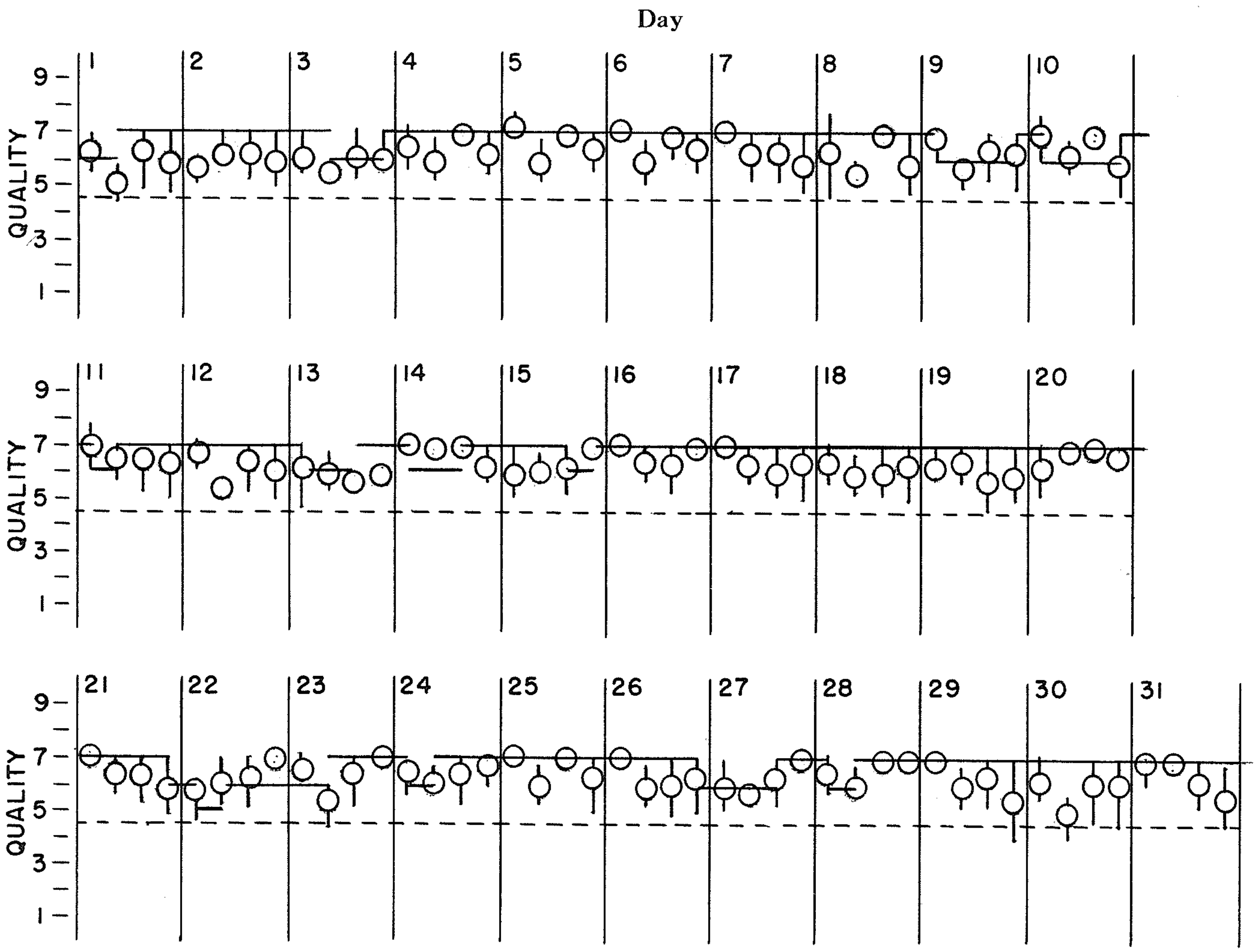
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JULY 1971

North Atlantic

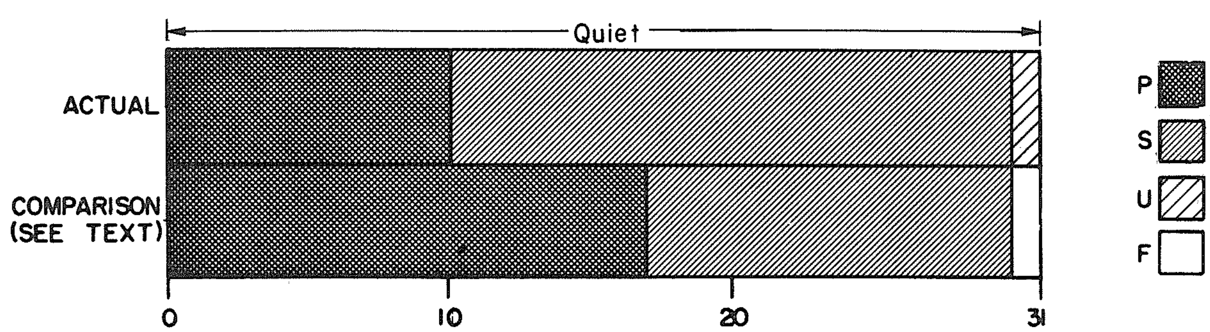
– Short term forecast
o Quality figure

1 range of reports



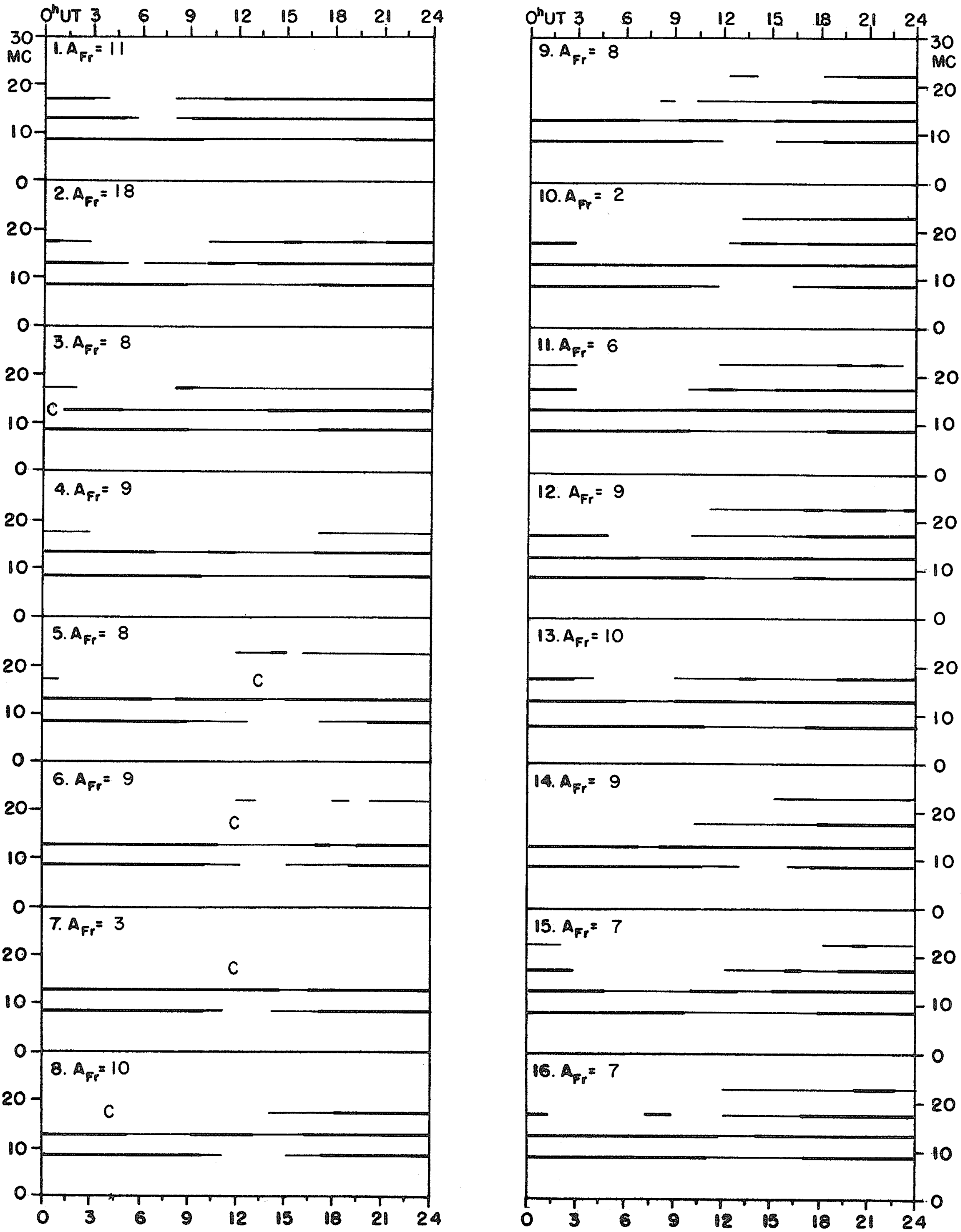
Outcome of advance forecasts of High Latitude radio propagation conditions
(scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

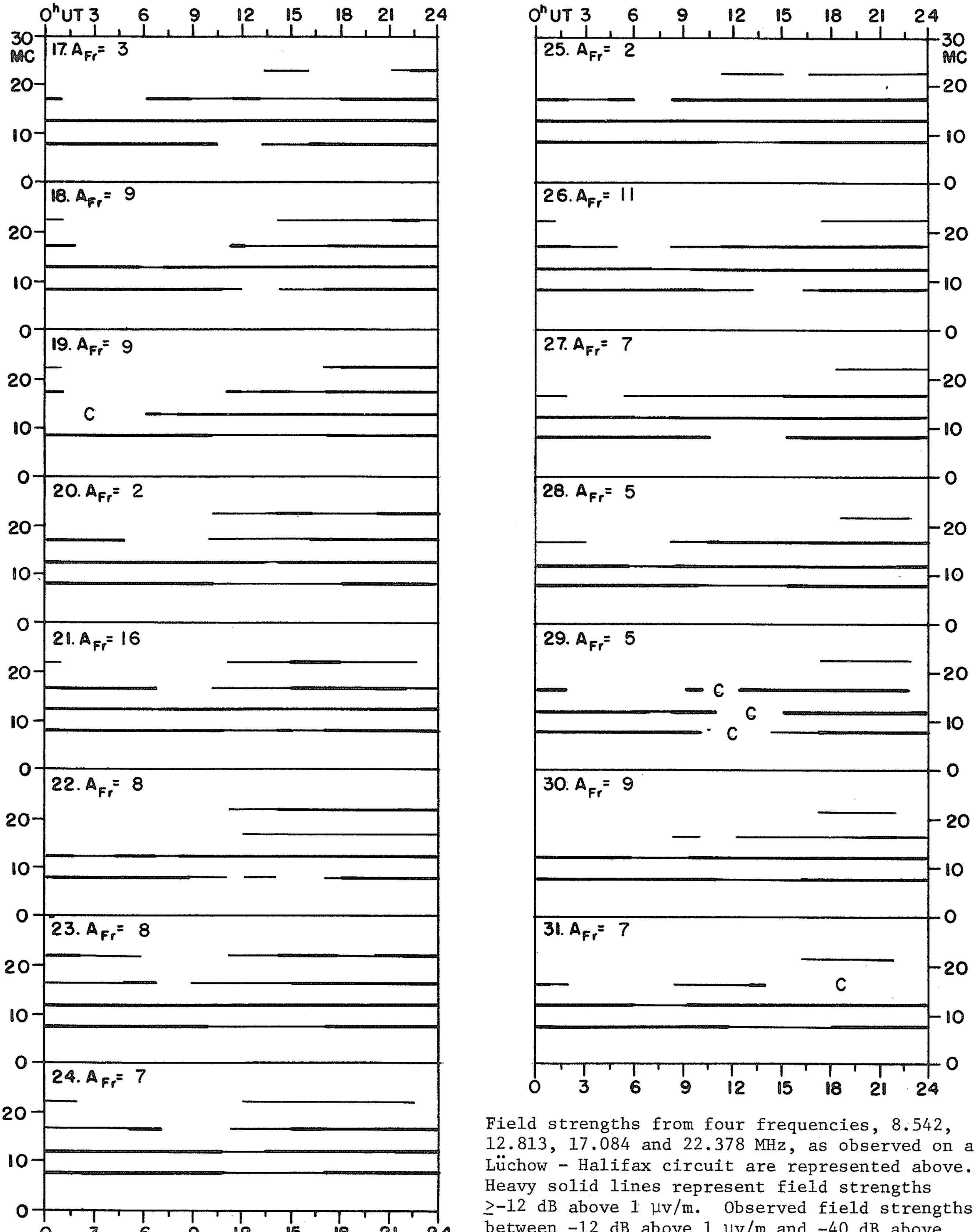
JULY 1971



C = technical failure.

TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1971



Field strengths from four frequencies, 8.542, 12.813, 17.084 and 22.378 MHz, as observed on a Lüchow - Halifax circuit are represented above. Heavy solid lines represent field strengths ≥-12 dB above 1 µv/m. Observed field strengths between -12 dB above 1 µv/m and -40 dB above 1 µv/m are represented by the fine line.

Adapted from Observations by Deutsche Bundespost

RADIO PROPAGATION QUALITY INDICES

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Calculated from the records of four frequencies
on the circuit Lüchow - Halifax (Germany - Canada)

Date	Day	Night
1	5.4	5.4
2	5.4	5.4
3	5.4	6.0
4	5.4	6.0
5	6.0	6.0
6	6.6	6.6
7	6.0	6.0
8	6.0	6.6
9	6.6	6.6
10	6.6	7.2
11	6.6	6.6
12	7.2	5.4
13	4.2	5.4
14	6.6	4.8
15	6.0	6.0
16	6.6	6.0
17	6.6	5.4
18	6.6	5.4
19	6.6	6.6
20	7.2	6.6
21	6.0	4.2
22	6.6	6.6
23	6.6	6.0
24	6.6	6.6
25	6.6	6.0
26	6.6	5.4
27	6.0	5.4
28	6.0	6.0
29	5.4	6.0
30	5.4	4.8
31	5.4	4.8

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