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NUMBER 314-PART I

DATA FOR SEPTEMBER 1970

AUGUST 1970

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BOULDER, COLORADO

WASHINGTON, D.C.

OCTOBER 1970

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

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* Solar Wind for December 1965 - December 1966 published in SGD-306
and for January 1967 - October 1967 in SGD-305.

** Frequency range extended to 10-1000 MHz on March 1, 1970 and to 10-2000 MHz on May 1, 1970.

*** Frequency range extended to 8-4000 MHz on March 1, 1970.

**** Frequency range changed to 24-48 MHz on July 12, 1970.

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For explanations of the data contained herein see "Descriptive Text"
published in February 1970.

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

SEPTEMBER 1970

SEP. 1970	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400			N17E57 ERUPTIVE; TWELVE QUIET; SOLNIL
02	0400			N17E44, N22E84 ERUPTIVE; TWELVE QUIET; SOLNIL
03	0400			N17E28, N21W01 ERUPTIVE; ELEVEN QUIET; SOLNIL
04	0400		04149	SOLALERT; N17E13 ERUPTIVE; FOURTEEN QUIET
05	0400		05150	SOLALERT; N17E03, N19W15 ERUPTIVE; NINE QUIET
06	0400		06151	SOLALERT; N18W09 ERUPTIVE; ELEVEN QUIET
07	0400		07152	SOLALERT; N17W23 ERUPTIVE; TWELVE QUIET
08	0400			N17W35 ERUPTIVE; ELEVEN QUIET; SOLNIL
09	0400			N17W52 ERUPTIVE; FOURTEEN QUIET; SOLNIL
10	0400			N17W64 ERUPTIVE; NINE QUIET; SOLNIL
11	0400			N16W77 ERUPTIVE; ELEVEN QUIET; SOLNIL
12	0400			NINE QUIET; SOLNIL
13	0400			NINE QUIET; SOLNIL
14	0400			TEN QUIET; SOLNIL
15	0400			SEVEN QUIET; SOLNIL
16	0400			ELEVEN QUIET; SOLNIL
17	0400			EIGHT QUIET; SOLNIL
18	0400			TWELVE QUIET; SOLNIL
19	0400			SEVEN QUIET; SOLNIL
20	0400			EIGHT QUIET; SOLNIL
21	0400			NINE QUIET; SOLNIL
22	0400			TEN QUIET; SOLNIL
23	0400			EIGHT QUIET; SOLNIL
24	0400			N20W51 ERUPTIVE; SIX QUIET; SOLNIL
25	0400			N23E17, N22E24 ERUPTIVE; THIRTEEN QUIET; SOLNIL
26	0400			N22E09, N23E04 ERUPTIVE; TEN QUIET; SOLNIL
27	0400			ELEVEN QUIET; SOLNIL
28	0400			TEN QUIET; SOLNIL
29	0400			EIGHT QUIET; SOLNIL
30	0400			TEN QUIET; SOLNIL

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

1969 FINAL				1970 PROVISIONAL								
DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	99	82	91	117	154	134.	112	128	102	137	77	98
2	101	68	107	84	120	126	94	120	92	153	68	104
3	99	83	102	79	79	113	121	124	64	155	64	110
4	99	86	103	70	68	101	116	121	63	159	59	111
5	109	88	95	77	77	107	120	115	59	165	65	114
6	120	98	70	58	100	100	115	117	57	161	68	133
7	123	97	53	31	107	108	123	100	58	125	72	136
8	109	89	43	38	97	116	147	88	61	115	82	125
9	93	94	44	60	123	119	172	91	60	104	76	116
10	85	85	39	85	133	123	188	113	92	90	71	103
11	72	81	28	108	175	100	183	137	127	81	75	73
12	60	76	51	154	153	84	163	148	148	74	73	76
13	57	67	74	147	145	104	141	151	160	79	92	73
14	63	67	94	174	124	84	124	148	182	68	94	76
15	54	68	97	157	115	65	106	162	185	61	108	75
16	47	67	97	147	139	46	92	164	149	61	100	68
17	42	75	99	162	142	29	82	172	143	59	99	65
18	45	86	93	170	143	41	68	176	123	56	108	75
19	50	94	88	167	120	48	67	179	98	92	113	98
20	87	123	96	135	125	93	65	149	95	92	117	114
21	102	127	116	120	128	115	64	159	90	120	117	129
22	113	132	135	106	125	122	57	127	105	122	108	109
23	127	129	122	80	164	131	67	108	77	106	101	104
24	137	119	129	74	166	140	90	124	102	110	116	129
25	141	118	137	99	173	142	93	112	126	122	106	114
26	145	113	131	125	143	122	81	127	127	138	114	107
27	145	109	136	132	150	115	88	128	114	153	91	87
28	131	102	139	158	146	110	106	108	113	146	101	85
29	120	92	152	156		103	112	120	122	153	114	81
30	104	90	152	154		111	116	118	111	122	120	77
31	87		122	154		101		129		108	111	
MEAN	95.7	93.5	97.9	115.4	129.8	101.7	109.1	131.1	106.8	112.5	92.9	98.8

1969 yearly mean = 105.5

DAILY SOLAR FLUX AT 2800 MHz

OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

1969				1970								
DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	133.9	139.4	130.2	150.9	134.6	175.7*	160.8*	159.5	145.6	179.9	134.0*	154.1
2	143.2	138.9	131.5	144.5	133.1	173.0	167.1	160.7*	141.8	189.0*	128.5	156.7
3	132.5	126.7	131.7	137.1	123.7	167.3	163.5	163.5	133.4	194.6*	127.9	163.2*
4	132.2	129.6	138.9	131.5	119.4*	165.3	170.4	162.3	131.7	195.0	127.4	163.4*
5	140.9*	130.0	133.3*	126.5	121.0	169.8	179.4*	167.9	132.9*	191.0	128.4	162.3*
6	143.2	131.9	123.4*	117.6	131.9	167.8	192.9	163.3	130.0	186.4	128.0	161.5
7	145.0	135.8	120.7	113.0	139.4	168.4*	193.4*	162.4	134.5*	166.3	128.2	164.4
8	150.1	130.4	112.1	113.3	152.6	172.8*	203.1*	156.7	134.2	160.4	131.8	156.9
9	141.7	127.7	116.1	119.6	154.1	164.4	218.5	154.9*	138.2	148.4	138.3	157.2
10	136.7*	122.8	114.8	134.5*	170.3*	158.3	224.7*	162.8	145.9	143.8	137.3	143.9
11	130.1	122.0	117.9*	160.1	184.3*	156.3*	206.4	176.2	169.5	137.7	127.2	134.4
12	128.0	122.3	122.3	171.6	201.0	164.4	198.5*	180.3	171.7	135.4	136.9*	126.1
13	124.3	126.6*	129.6	172.9	197.6	152.4*	185.3	193.1	200.3*	130.7	149.7	120.1
14	119.1	134.1*	132.7	171.8*	196.2	147.3	173.8*	196.8	207.4*	126.3	167.0*	121.9
15	117.7	137.9	135.9	180.0*	201.6	144.9	163.6	206.3	209.2	121.9	169.1	118.0
16	115.4	145.5	136.9	174.3*	193.3	139.0	152.2	206.0	198.6	121.4	162.5	118.4
17	122.3	160.1	144.1	180.6	193.9	133.7	148.0	197.0	190.6	125.9	151.6*	116.9
18	128.8	177.2*	144.1	179.4*	197.7	133.5	141.9	194.6	181.8	131.0	149.0	120.7
19	145.8	185.2	147.2	175.3	198.5	130.2	135.7	197.4	175.1*	135.8	145.4	134.7*
20	161.9	188.9*	154.2	168.4*	196.5	141.1	131.2	183.9	163.3	136.4	148.6	146.9
21	177.0	198.2	160.3	177.0	191.1*	149.7	126.3	174.9	160.6	150.6*	142.8	149.4
22	186.2	205.3*	163.0	160.5	183.0*	150.9*	128.6	170.3	150.1*	163.8	141.7	155.2
23	193.1	209.5	156.3	153.4	183.9	164.9*	130.1	163.7	143.7	158.7*	146.2	161.6
24	204.5	200.7	152.9	143.6	185.9	169.8*	130.1	162.6*	142.3	164.0	140.2	156.0*
25	204.0*	185.7	153.6	149.5	179.6*	167.2	134.8	160.6	149.3	169.0	136.5	155.8
26	204.6	175.3	151.0	156.4	178.3*	166.4*	135.3	162.8	151.4	176.3	135.7	155.9
27	200.8*	172.8	146.9	163.0	176.9	159.2	138.0	155.2	160.0	185.9	137.2*	145.0
28	189.6	156.8	149.0	162.0*	174.1	153.8	148.6	153.8	160.5	182.1	141.6	144.5*
29	172.5	141.5	153.4	163.3*		153.1	156.1	158.5	168.0*	161.0	148.7	138.7
30	161.7	136.5	157.9	154.8*		149.4	153.3	163.7	174.8	156.1	149.0	134.7
31	153.9		151.3*	143.4*		149.3		165.2		141.5	154.5	
MEAN	152.9	153.2	139.1	153.2	171.2	156.8	163.1	172.2	159.9	157.0	141.6	144.6

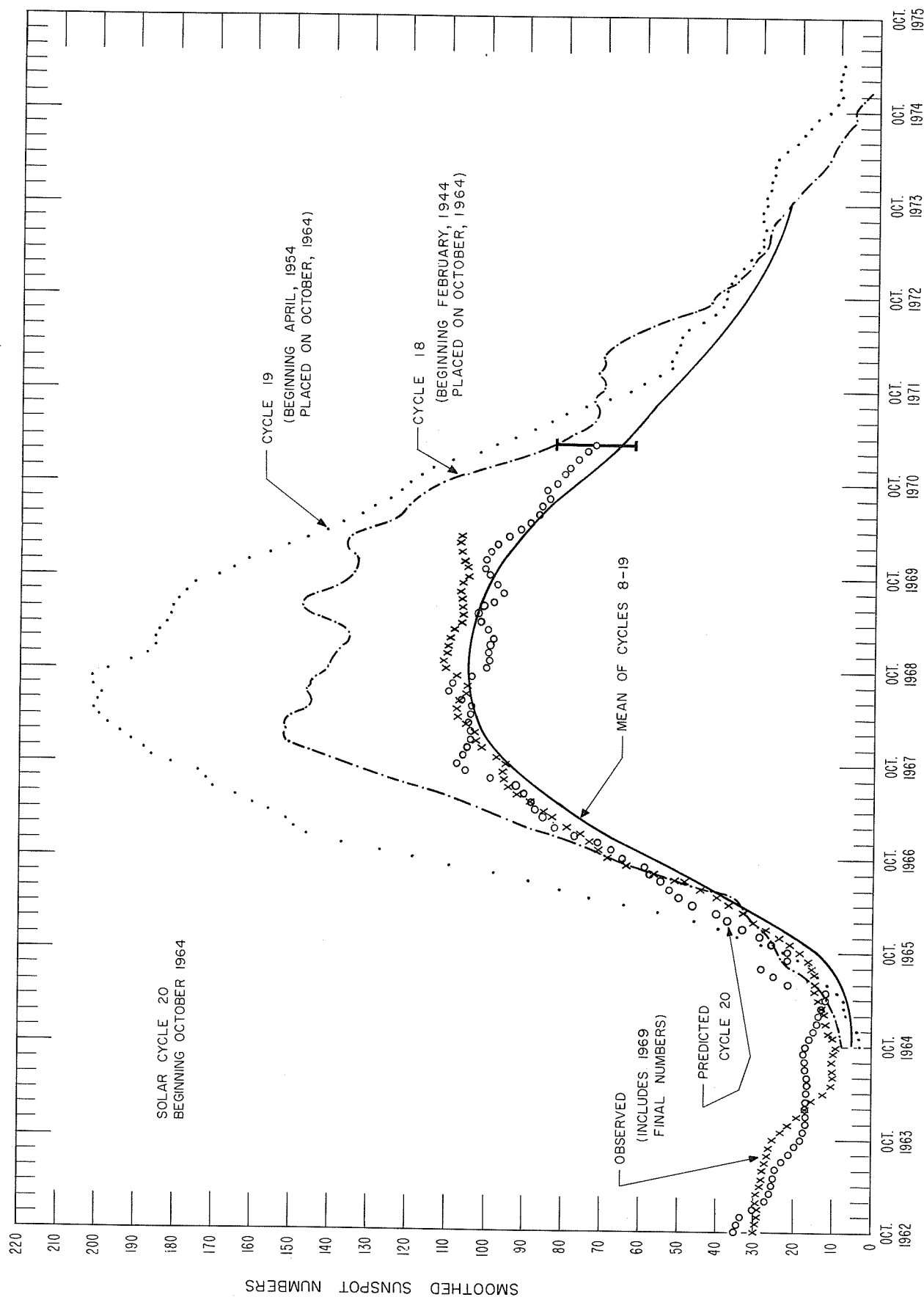
* adjusted for burst

DAILY SOLAR INDICES

SEPTEMBER 1970

SEP. 1970	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 2895	AFCRL 1415	AFCRL 606	AFCRL 245
01	244	12	98	101	151.4	545	294	227	154.1	140.7	109.4	60.1	11.4
02	245	13	104	108	153.9	540	293	227	156.7	143.0	103.3	69.8	17.6
03	246	14	110	115	160.5*	538	295	232	163.2*	148.5	109.0	67.1	18.6
04	247	15	111	123	160.7*	547	307	249	163.4*	156.4	116.5	64.0	---
05	248	16	114	137	159.8*	548	307	255	162.3*	160.3	118.8	63.7	---
06	249	17	133	153	159.0	538	293	233	161.5	145.4	115.4	62.9	29.4
07	250	18	136	147	162.0	535	291	244	164.4	150.1	108.8	52.7	28.8
08	251	19	125	145	154.6	541	283	232	156.9	142.6	110.9	60.3	14.8
09	252	20	116	121	155.0	539	287	225	157.2	144.4	112.2	65.6	11.7
10	253	21	103	103	141.9	535	278	208	143.9	131.3	100.3	65.8	10.9
11	254	22	73	93	132.7	533	273	196	134.4	124.4	98.5	64.6	12.3
12	255	23	76	75	124.5	530	267	186	126.1	114.5	91.9	60.8	11.2
13	256	24	73	80	118.6	530	263	181	120.1	110.5	83.1	56.2	11.2
14	257	25	76	79	120.3	530	236	184	121.9	109.6	91.2	59.1	11.9
15	258	26	75	78	116.7	529	242	179	118.0	107.5	88.9	59.9	10.5
16	259	27	68	70	117.1	524	255	182	118.4	107.5	88.3	56.8	11.9
17	260	1	65	77	115.7	531	261	178	116.9	105.9	82.9	56.1	11.9
18	261	2	75	86	119.6	525	262	182	120.7	109.4	86.9	60.3	12.9
19	262	3	98	107	133.5*	535	274	200	134.7*	123.0	94.1	59.9	13.2
20	263	4	114	128	145.7	537	277	208	146.9	132.4	104.3	63.7	14.9
21	264	5	129	131	148.2	543	274	205	149.4	135.9	105.0	63.0	15.1
22	265	6	109	118	154.1	540	279	207	155.2	141.6	105.9	64.4	14.5
23	266	7	104	117	160.5	540	281	214	161.6	149.1	111.2	68.2	33.3
24	267	8	129	137	155.1*	543	286	218	156.0*	145.0	112.0	71.8	18.0
25	268	9	114	117	155.0	542	280	210	155.8	141.4	111.8	69.4	22.1
26	269	10	107	114	155.1	541	284	214	155.9	142.2	109.8	67.0	16.0
27	270	11	87	93	149.4	541	278	204	145.0	135.2	108.3	67.3	12.9
28	271	12	85	89	143.9*	540	284	207	144.5*	134.2	107.2	64.7	12.5
29	272	13	81	89	138.3	532	273	197	138.7	126.2	102.6	61.3	11.6
30	273	14	77	68	134.3	534	268	193	134.7	122.0	99.6	61.4	10.8
MEAN			98.8	106.6	143.2	539	278	209	144.6	132.7	102.9	62.9	15.4

* 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	106.0	106.9	105.8	104.5	105.1	105.6
1970	106.2	106.7	106.8	104.1 (4)	101.1 (7)	98.1 (8)	95.4 (8)	93.2 (7)	90.9 (8)	88.4 (10)	85.2 (11)	81.9 (10)
1971	78.5 (9)	75.3 (9)	72.7 (10)	69.8 (10)	66.6 (10)	64.2 (10)	62.8 (11)	61.1 (12)	58.9 (13)	56.7 (15)	55.2 (15)	53.6 (16)
1972	51.9 (17)	50.7 (18)	49.5 (18)	48.4 (17)	47.2 (18)	45.7 (19)	43.4 (20)	40.8 (21)	38.9 (23)	37.9 (25)	36.9 (25)	35.7 (26)
1973	34.6 (26)	33.6 (26)	32.5 (25)	31.1 (25)	30.0 (24)	28.9 (24)	28.0 (23)	27.6 (23)	26.8 (23)	25.7 (22)	24.6 (21)	23.5 (20)
1974	22.5 (19)	21.2 (19)	20.1 (20)	19.3 (20)	19.1 (20)	18.4 (20)	17.4 (19)	16.2 (19)	15.0 (18)	13.9 (17)	12.9 (17)	12.1 (16)
1975	11.8 (15)	11.5 (14)										

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 1969.

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

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SOLAR FLARES

PARTIAL LISTING

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

SEPTEMBER 1970

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IMPORTANCE	OBS. COND. TYPE	MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MC MATH PLAGE REGION	CMP DAY			TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
1970 SEP																	
PALE	02	0353	0410	0353	N22	E90	.999	10922	8.9	17	1B		2.30				
TEHR	02	0353	0430	0400	N22	E90	.999		8.9	37	SN	0400	.45				
HTPR	02	0837	0850	0842	N19	E90	.999	10922	9.1	13	1N						
TEHR	02	0838	0856	0841	N21	E90	.999		9.1	18	SN		.70				
TEHR	02	1043	1112	1053	N21	E90	.999		9.2	29	SN	1053	.64				
HTPR	02	1050	1110		N19	E90	.999		9.2	20	SF						
RAMY	02	1102E	1121		N23	E90	.999	10922	9.2	19D	1N						
TEHR	02	1319	1436		N18	E15	.312		3.7	77	SF		1.28	1.26			
TEHR	02			1420	N18	E15	.312		3.7	77	SN	1352	1.09	1.08			
TEHR	02			1358	N18	E15	.312		3.7	77	SN	1420	1.55	1.53			
BOUL	02	1327	1406	1353	N19	E14	.309		3.6	39	SB	2	1.61	1.61			
HTPR	02	1330	1600	1420	N18	E18	.352	10913	3.9	150	1N	C	2.37	2.40			
CAPS	02	1332E	15400		N18	E15	.312	10913	3.7	128D	1F	3	4.00	4.00		164	E
RAMY	02	1335	1347D	1340	S09	W64	.912		28.8	12D	SF	C	.90				
BOUL	02	1336	1343	1339	S10	W63	.907	10905	28.8	7	1N	2	1.29	2.00			
TEHR	02	1337	1346	1340	S10	W64	.914		28.8	9	SF		.55	.92			
MCMA	02	1338	1345	1340	S10	W65	.920	10905	28.7	7	SN	C	.31	.80			E
MCMA	02	1350E	15200		N19	E16	.334	10913	3.8	90D	SN	C	1.55	1.60			EF
CAPF	02	1354E	1449D		N19	E15	.322	10913	3.7	55D	1F	P	4.13	4.40			
ONDR	02	1356	1422D	1358	N19	E16	.334	10913	3.8	26D	1N	V			2.80		CEJR
RAMY	02	1409E	1435	1409E	N21	E14	.331		3.6	26D	SN	C	1.86				
BOUL	02	1409	1518D	1415	N19	E14	.309		3.6	69D	SB	2	1.08	1.08			
PALE	02	1819	1834D	1823	N21	E85	.992	10922	9.1	15D	1N	C	2.18				
BOUL	02	1820	1835	1823	N21	E84	.990	10922	9.1	15	1N	2	.86	2.84			
MCMA	02	1821	1826	1823	N21	E89	.998	10922	9.4	5	SN	C					
HTPR	03	0832	0845	0836	N20	E78	.972		9.2	13	SN	C	.93				
MEUD	03	0833	0850	0837	N19	E78	.972	10922	9.2	17	2B	C	2.58				
CAPS	03	0838E	0859D		N20	E75	.959	10922	9.0	21D	1B	3	.70			204	C
CAPF	03	0845E	0900D		N16	E87	.990		9.9	15D	SN	P	.41				A
CAPS	03	0847E	0859D		N22	E75	.958		9.0	12D	SN	3					CU
RAMY	04	1612	1810	1622	N21	W19	.390	10913	3.2	118	1B	C	2.78				FU
RAMY	04			1711	N21	W19	.390	10913	3.2	118	1N	C	2.06				
MCMA	04	1619E	1820	1626	N21	W20	.403	10913	3.2	121D	1B	C	3.61	4.00			FK
CAPF	04	1630E	1700D		N21	W17	.360	10913	3.4	30D	2N	P	7.84	7.98			
PALE	04	1642E	1900	1700D	N21	W19	.390	10913	3.3	138D	2B	C	5.16				F
PALE	05	0154E	0215	0156	N26	E41	.685	10922	8.2	21D	1F	C	2.99				F
HTPR	05	0758	0930	0826	N18	W22	.406		3.7	92	SN	C	1.55	1.50			
CAPS	05	0803	0913D		N18	W20	.379	10913	3.8	70D	1N	3	4.00	4.40			
TEHR	05	0803	1005	0825	N20	W23	.433		3.6	122	SN		.83	.83			
TEHR	05			0836	N20	W23	.433		3.6	122	SN		1.19	1.20			
CAPF	05	0805E	0932	0815	N21	W22	.428	10913	3.7	87D	1N	P	2.89	3.22			
HTPR	05	0810	0845	0815	N13	E03	.113		5.6	35	SF	C	1.24	1.20			
TEHR	05	0811	0910	0815	N13	E05	.132		5.7	59	SN		.45	.45			
CAPS	05	0813	0825D		N14	E06	.156		5.8	12D	SF	3	.80	.80		152	
CAPS	05	0813	0820		N10	E03	.071		5.6	7	SF	3	1.00	1.00		140	
CAPF	05	0815E	0829		N16	E05	.174	10918	5.7	14D	1N	P	2.48	2.52			H
HTPR	05	1529	1615	1539	N22	E40	.659	10922	8.6	46	2B	C	4.43	5.60			
RAMY	05	1532	1630	1538	N23	E40	.663	10922	8.6	58	1B	C	3.20				UDE
BOUL	05	1532	1603	1535	N23	E40	.663	10922	8.6	31	1B	2	1.72	2.31			
MCMA	05	1534	1600	1537	N23	E38	.639	10922	8.5	26	1B	C	2.32	3.10			FH
RAMY	06	1417	1432	1421	N17	W16	.316		5.4	15	SB	C	1.03				F
TEHR	06	1417	1429	1420	N17	W17	.330		5.3	12	SB		1.19	1.17			
HTPR	06	1419	1435	1420	N16	W16	.308	10918	5.4	16	1N	C	2.06	2.10			
CAPS	06	1419E	1432D		N20	W13	.308		5.6	13D	SN	3	.60	.70		170	
CAPS	06	1419E	1432D		N19	W15	.321		5.5	13D	SN	3	.60	.70		170	
RAMY	07	1105	1134	1109	S08	W58	.864		3.1	29	SB	C	.83				
BUCA	07	1105	1220		S09	W58	.866		3.1	75	SN	C	.81	1.60			E
HTPR	07	1106	1130	1111	S08	W58	.864		3.1	24	SN	C	.83	1.60			
MEUD	07	1107	1125	1110	S08	W58	.864	10915	3.1	18	1N	C	1.13	2.20			E
TEHR	07	1108	1131	1109	S09	W58	.866		3.1	23	SN		.28	.41			
CAPS	07	1108E	1146D		S08	W56	.847	10915	3.3	38D	1N	3	2.00	4.00		182	C
WEND	07	1109E	1132D		S07	W58	.862	10915	3.1	23D	1N	V	4.13				B
HERS	07	1110E	1125	1112	S09	W59	.875		3.0	15D	SN	P	.74	1.50			E
TEHR	08	0313	0355	0317	N18	W37	.610		5.4	42	SN		.36	.40			
MANI	08	0331E	0331D		N23	W37	.628	10918	5.4		1F	1	2.06	2.70			
CAPS	08	0705E	0709D		N20	W70	.932	10913	3.0	4D	1F	3	.97				
BUCA	08	1225	1258		N13	W46	.714	10918	5.1	33	1B	C	2.95	4.00			
RAMY	08	1226	1257	1231	N13	W48	.738		4.9	31	SB	C	1.96				
TEHR	08	1229	1254	1231	N13	W47	.726	10918	5.0	25	1B		1.92	2.28			
CAPS	08	1230E	1257D		N12	W45	.702	10918	5.1	27D	1B	3	2.50	3.50			
ONDR	08	1232E	1256		N12	W47	.726	10918	5.0	24D	2N	V	1.86	2.52		4.00	204
CAPF	08	1240E	1250D		N14	W46	.715	10918	5.1	10D	1N	P	.54	.77			C
BOUL	08	1250E	1256	1250E	N12	W45	.702		5.2	6D	SN	2					CU
BOUL	08	1844	1944	1857	N19	W73	.949	10913	3.3	60	1F	1	1.61	4.07			

SOLAR FLARES

SEPTEMBER 1970

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX.		CENTRAL DISTANCE	MCMATH FLARE REGION	CMP DAY			COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hc	MAX. INT. %	
					LAT.	MER. DIST.													
	1970 SEP																		
BOUL	08	1958	2035	2002	S09	W77	.980	10915	3.1	37	1N	2	C	2002	.86	2.61			
[SANM	09	1827	18510		S18	E33	.659	10929	12.2	240	1N	1	P	1848	1.94	2.61			E
[PALE	09	1841	1913	1842U	S17	E34	.662		12.3	32	SN		C		.91				F
[BOUL	09	1845	1900	1848	S17	E33	.651		12.3	15	SN	2	C	1848	.97	1.30			E
[MCMA	09	1848E	19150		S19	E34	.676	10929	12.3	270	SN		C	1848	.62	.80			Dc
[PALE	09	2020	2045	2027	S11	E68	.940		14.9	25	SN		C		.36				
[BOUL	09	2023	2037	2027	S12	E72	.962	10936	15.2	14	1N	2	C	2027	1.08	2.92			
[BOUL	09			2033	S12	E72	.962	10936	15.2	14	1N		C	2033	.86	2.32			
[MCMA	09	2026E	2037	2027	S12	E72	.962	10936	15.3	110	SN		C	2027	.21	.80			D
[RAMY	10	1255	1316	1300	N15	W69	.927	10918	5.4	21	1N		C		1.03				F
[TEHR	10	1255	1315	1258	N17	W70	.932		5.3	20	SN			1258	1.00	1.89			
[WEND	10	1256	1312		N17	W69	.926	10918	5.4	16	1N		V		3.09				
[ONDR	10	1257E	1310		N16	W71	.939	10918	5.2	130	1N		V	1258			3.20		CUKL
[CAPS	10	1258E	13150		N15	W70	.933		5.3	170	SF	3	V	1300	.48		2.69	142	C
[HURB	10	1301	1313	1301	N15	W70	.933	10918	5.3	12	1N								
[BOUL	10	1305E	1316	1305E	N16	W68	.920		5.4	110	SN	1	C	1306	.54	1.20			
[CAPF	11	0717E	07400		S08	W83	.995	10915	5.1	230	1N		P	0720	.62				A
[BOUL	11	1503	1527	1515	N13	W83	.989	10918	5.4	24	1N	2	C	1516	1.08	3.59			
[RAMY	11	1510	1529	1516	N13	W90	1.000		4.9	19	SN		C						
[MCMA	11	1512	1523	1515	N12	W90	1.000	10918	4.9	11	SF		C	1515					
PALE	14	1919	2011	1930	S09	W73	.964	10925	9.3	52	1N		C		1.18				DL
[MANI	15	0418	0437	0423	S18	E78	.988		21.0	19	SN	2		0423	.31	.76			
[MITK	15	0419	0438	0424	S19	E80	.993	10943	21.2	19	1F		C	0424	1.03				D
[MANI	15	0442	0538	0453	N06	W40	.639	10933	12.2	56	1N	2		0453	2.68	3.51			
[MITK	15	0444	05170	0456	N03	W40	.643	10933	12.2	330	1F		C	0456	2.58	3.40			Eu
[TEHR	15	0445	0541	0448	N04	W40	.642		12.2	56	SN			0448	.73	.81			
[TEHR	15			0458	N04	W40	.642	10933	12.2	56	1N			0458	2.09	2.32			
[TEHR	15	0623	0632	0624	S12	W72	.962		9.9	9	SN			0624	.28	.58			
[MANI	15	0625E	0635		S11	W79	.987		9.3	100	SN	1		0625	.21	.52			
[HURB	15	0625	0632	0625	S11	W70	.951	10925	10.0	7	1F						1.75		
[TEHR	15	0833	0911	0839	N12	E07	.146		15.9	38	S8			0839	.45	.45			
[HTPR	15	0833	0915	0839	N13	E05	.132		15.7	42	S8		C	0839	1.34	1.30			EU
[ONDR	15	0834	0859	0839	N13	E02	.107	10935	15.5	25	1N		V	0839			2.40		Ck
[HURB	15	0836	0853	0837	N13	E03	.113	10935	15.6	17	1N						1.87		
[WEND	15	0837	0903	0842	N13	E04	.122	10935	15.7	26	1N		P		3.09				
[RAMY	15	1058	1135	1106	S21	E22	.581		17.1	37	SN		C		1.03				F
[TEHR	15	1101	1124	1104	S22	E23	.600		17.2	23	SN			1104	.73	.79			
[CAPS	15	1108E	11340		S20	E25	.597	10942	17.3	260	1N	2	V	1111	2.50	3.30		182	F
[RAMY	16	1145	1202	1148	S18	E53	.849		20.5	17	SN		C		1.13				
[TEHR	16	1147	1200	1149	S18	E54	.857		20.5	13	SN			1149	.45	.64			
[HTPR	16	1148	1210	1150	S18	E52	.840	10943	20.4	22	1N		C	1150	1.13	2.00			
[MEUD	17	1017	1025	1020	N18	E60	.860		21.9	8	SF		C	1020	.21	.40			U
[ONDR	17	1023E	1031		N18	E63	.884	10946	22.2	80	1F		V	1024			2.30		ChJ
[MEUD	18	0954	1025	1005	N19	E49	.755		22.1	31	SF		C	1005	.41	.60			
[HTPR	18	0955	1020	1006	N19	E52	.786		22.3	25	SF		C	1006	.52	.80			E
[ONDR	18	1004E	1030		N18	E48	.742	10946	22.0	260	1N		V	1005			2.20		ChJ
[HTPR	18	1437	1455	1440	N19	E49	.755		22.3	18	SF		C	1440	.31	.50			F
[RAMY	18	1439	1450	1441	N19	E47	.733		22.1	11	SN		C		.41				ChJR
[ONDR	18	1440	1451		N17	E48	.741	10946	22.2	11	2F		V	1448			2.30		
CAPF	19	0740E	08150	0757	S17	E19	.509	10943	20.7	350	1F		P	0757	3.51	4.08			
[ONDR	20	0949	1001	0952	S18	E85	.999	10955	26.8	12	1F		V	0952			1.50		Aug
[HURB	20	0959	1009	1001	S13	E90	1.000		27.2	10	SF						1.54		G
[TEHR	20	1219	1245	1229	N23	W24	.470		18.7	26	SN			1229	.36	.38			
[RAMY	20	1223	1252	1226	N22	W25	.474		18.6	29	SF		C		.62				
[ONDR	20	1225E	12460		N21	W24	.455	10956	18.7	210	1F		V	1234			1.80		CJ
[HTPR	21	1235	1255	1240	N00	E57	.841		25.8	20	SF		C	1240	.62	1.00			
[RAMY	21	1237	1252	1242	N02	E57	.839		25.8	15	SN		C		.93				
[MEUD	21	1240	1248	1244	N01	E56	.831		25.7	8	SF		C	1244	.31	.50			
[CAPS	21	1244E	12590		N00	E60	.868	10958	26.0	150	1F	3	V	1247	2.00	4.00		142	C
[HTPR	22	0830	0915	0853	N07	W29	.481		20.2	45	SF		C	0853	.72	.80			
[TEHR	22	0835	0848	0837	N08	W28	.466		20.3	13	SN			0837	.27	.28			
[CAPS	22	0839E	09220		N08	W26	.435	10960	20.4	430	1N	3	V	0841	1.90	2.10		176	Ch
[HTPR	22	1053	1150	1110	N07	W29	.481		20.3	57	SF		C	1110	1.44	1.70			T
[RAMY	22	1053E	1129	1057	N07	W28	.460		20.4	360	SN		C		1.03				
[TEHR	22	1055	1158	1106	N08	W29	.481		20.3	63	SN			1106	.73	.74			
[CAPS	22	1110E	11400		N08	W27	.451	10960	20.4	300	1B	3	V	1112	2.00	2.20		204	Ch
[HTPR	23	1125	1200	1133	N21	W63	.886		18.8	35	SF		C	1133	.52	1.20			

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SOLAR FLARES

SEPTEMBER 1970

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX.		CENTRAL DISTANCE	MCMAH PLAGE REGION	CMP DAY			COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H α	MAX. INT. %	
					LAT.	MER. DIST.													
1970 SEP																			
MEUD	23	1131	1140	1133	N21	W63	.886		18.8	9	SF	C	1133	.41	.80				
RAMY	23	1131	1144	1133	N20	W65	.900		18.6	13	SF	C		.31					
MEUD	23	1147	1157	1148	N21	W64	.893		18.7	10	SF	C	1148	.21	.40			D	
CAPS	23	1148E	1205D		N22	W65	.901	10956	18.6	17D	1N	3	V	1153	1.94		170		
BOUL	23	1505	1521	1511	N07	W41	.652		20.6	16	SN	2	C	1511	.75	1.00			
CAPS	23	1512E	1535D		N10	W39	.625	10960	20.7	23D	1N	2	V	1515	1.90	2.50	176	CJ	
BOUL	24	1638E	1810	1654D	N08	W10	.173	10960	23.9	92D	1F	1	C	1654	4.73	4.73			
MCMA	24	1712E	1718D		N10	W11	.196	10960	23.9	6D	1N		P	1713	2.06	2.10		E	
HTPR	26	1217E	1305	1237	S10	E46	.753		30.0	48D	SF	C	1237	.93	1.40			E	
TEHR	26	1230	1255	1236	S07	E48	.765		30.1	25	SF		C	1236	.37	.45			
CAPS	26	1240E	1309D		S08	E47	.757	10964	30.1	29D	1N	3	V	1242	1.80	2.80	170	F	
RAMY	27	1513	1556	1531	N22	W12	.326		26.7	43	SN	C		.62					
CAPS	27	1513	1547D		N20	W08	.263	10959	27.0	34D	1F	3	V	1534	2.50	2.60	152		
HTPR	27	1514	1534D		N20	W08	.263		27.0	20D	SN	C	1533	1.55	1.50				
BOUL	27	1528E	1550	1537	N20	W10	.281		26.9	22D	SN	2	C	1538	.75	.75			
RAMY	27	1653	1731	1711	N18	E43	.686	10963	30.9	38	1F	C		.93				U	
BOUL	27	1802	1815	1807	N17	E40	.647		30.8	13	SN	2	C	1807	.97	1.30			
RAMY	27	1803	1915	1810	N18	E41	.662	10963	30.8	72	1F	C						SU	
PALE	27	2127E	2156D	2135	N16	W18	.339	10959	26.5	29D	1N	C		3.07				F	
BOUL	27	2138E	2218	2138E	N14	W20	.357	10959	26.4	40D	2B	2	C	2138	4.94	5.24			
PALE	27	2207E	2226	2212	N14	W16	.297		26.7	19D	SF	C		.27				De	
PALE	28	0238	0315	0239	S08	E23	.459		29.8	37	SB	C		1.54				De	
MANI	28	0238	0313D	0244	S08	E21	.433	10964	29.7	35D	1F	1		4.64	5.00				
TEHR	28	0418	0510	0422	S09	E24	.480	10964	30.0	52	1N		0422	4.65	4.72				
MANI	28	0422E	0435D		S07	E23	.451		29.9	13D	2N	1		0424	8.25	9.36			
MITK	28	0432E	0514D		S09	E25	.493	10964	30.1	42D	2N	P	0432	5.20	6.50			F	
HTPR	28	1056	1112	1101	N15	E08	.196		29.1	16	SN	C	1101	.72	.70				
TEHR	28	1056	1113	1059	N18	E08	.235		29.1	17	SN		1059	.83	.80				
RAMY	28	1057E	1113	1057E	N17	E08	.222		29.1	16D	SN	C		1.24					
CAPS	28	1057E	1114D		N18	E09	.245		29.1	17D	SN	3	V	1058	1.00	1.00	176		
WEND	28	1057	1112		N17	E10	.243	10962	29.2	15	1N	V		3.09					
ONDR	28	1104E	1110		N17	E09	.232	10962	29.1	6D	1F	V	1106			2.00		CHJ	
CAPS	28	1405E	1425D		N22	W23	.452	10959	26.9	20D	1F	3	V	1409	2.50	2.70	158	CH	
TEHR	29	0532	0557	0536	N17	E45	.708		2.6	25	SN		0536	.55	.65				
ONDR	29	0539E	0602		N15	E42	.669	10965	2.4	23D	1F	V	0543			2.10		CFHR	
HTPR	29	0734	0745	0735	S07	E80	.988		5.3	11	SF	C	0735	.83					
ONDR	29	0737E	0747		S06	E78	.981	10969	5.2	10D	1F	V	0738			1.50		AGJ	
ONDR	29	1349E	1402		N23	W43	.699	10959	26.4	13D	1F	V	1350			2.00		C	
PALE	29	2050E	2105	2055D	N16	E11	.244		30.7	15D	1N	C		2.58					
TEHR	30	0912	0947	0920	S12	W14	.397		29.3	35	SN		0920	1.00	1.00				
HTPR	30	0912	1000	0920	S10	W17	.404		29.1	48	SN	C	0920	1.65	1.70				
ONDR	30	0919E	0944		S11	W15	.394	10964	29.3	25D	1F	V	0922			1.80		C	
WEND	30	0921E	0946		S10	W17	.404	10964	29.1	25D	1N	P		5.16					
RAMY	30	1152	1228	1159	N19	E29	.511	10965	2.7	36	1F	C							
MCMA	30	1154	1220	1158	N15	E25	.436	10965	2.4	26	SB	C	1158	.72	.80			E	
HTPR	30	1154	1217	1158	N15	E25	.436		2.4	23	SB	C	1158	1.24	1.30				
TEHR	30	1155	1220	1159	N15	E27	.465		2.5	25	SN		1159	1.45	1.48				
WEND	30	1155	1206		N15	E30	.508		2.7	11	SN								
CAPS	30	1155E	1219D		N15	E28	.480	10965	2.6	24D	1N	3	V	1158	2.00	2.20	190	C	

SOLAR FLARES

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

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01 0912E N10 W60	01 0010 N16 E50	01 0302E S08 E31	01 0355E N18 E52	01 0910 N13 W65	01 0910 N15 W63
01 1321 S05 E28	01 1146E N22 E90	01 1146E N12 W60	01 1215 N22 E90	01 1221 N25 E90	01 1222 N27 E90
01 2134 N20 E19	01 1337E S07 E29	01 1354 S07 E28	01 1443 S05 E27	01 1644 N21 E32	01 1648 N22 E30
02 0128E N25 E90	01 2140 N20 E19	01 2154 N19 E13	01 2213 N20 E90	01 2213 N20 E90	1 2251 N22 E17
	02 0316 S09 W57	02 0321 S10 E90	02 0435 S06 E18	02 0447 N25 E80	2 0503 N19 E14
02 0556 N17 E41	02 0616 N21 E90	02 0724 N20 E12	02 0959 N16 E38	02 1023 N20 E12	02 1024 N19 E10
02 1029 N09 W70	02 1257 N21 E85	02 1257 N21 E87	02 1257 N23 E84	02 1329 N22 E90	02 1330 N17 E90
02 1332 N21 E84	02 1603 N14 W83	02 1620E N22 E12	02 1626 N19 E33	02 1631 N11 W38	02 1730 N15 E31
02 1749 N20 E31	02 1751 N19 E30	02 1754 N18 E27	02 1754 N18 E27	02 1756 N17 E27	02 1833E N17 E26
02 1833E N17 E26	02 1835 N18 E16	02 1835 N19 E16	02 1841E N18 E15	02 1907 N17 E26	02 2219 N18 E70
03 0043 N18 E12	03 0121 N24 E86	03 0121E N11 W41	03 0326 N18 E11	03 0329E N19 E11	03 0329 N18 E10
03 0330 N14 E31	03 0341 N26 E80	03 0343 N25 E80	03 0353 N18 E06	03 0546 N18 E08	03 0712 N18 E08
03 0716E N18 E08	03 0823 N13 W48	03 0833 N21 W80	03 0942 N19 E07	03 0942E N18 E08	03 0944 N18 E07
03 1024 S08 W02	03 1025 S06 E05	03 1125E S08 W02	03 1206 N13 E30	03 1208E N13 E32	03 1209 N24 E78
03 1210 N25 E73	03 1213E N22 E78	03 1315 N18 E05	03 1315 N18 E07	03 1316 N18 E05	03 1331 N18 E23
03 1332 N17 E21	03 1435 N09 W89	03 1440 N21 E16	03 1443 N21 E14	03 1505 N17 E15	03 1539 N09 W83
03 1540 N09 W89	03 1605 N19 E23	03 1618 N19 E02	03 1636 N08 W89	03 1636 N18 E03	03 1647E N19 W01
03 1656 N18 W02	03 1725E N18 W00	03 1731E N19 W00	03 1800 N24 E75	03 1801 N23 E78	03 1811 N24 E68
03 1850 N18 E19	03 2025 N19 W01	03 2028E N19 W01	03 2055 N16 E14	03 2102 N24 E57	03 2143 N20 E58
03 2154 N24 E57	03 2208 N13 E15	03 2215 N16 E14	03 2304 N18 E17	03 2305E N20 E14	03 2345E N22 E54
03 2346E N20 E13	04 0003 N20 E19	04 0005E N18 E19	04 0208 N17 E05	04 0301 N20 E11	04 0313E N18 W08
04 0405 N19 E18	04 0513 N17 E17	04 0612 N17 E15	04 0613 N18 E10	04 0644 N11 E11	04 0910 N14 W61
04 0917 N19 E12	04 0920 N20 E12	04 1017E N12 W90	04 1017 N12 W90	04 1020 N13 W61	04 1056E N21 E06
04 1056E N20 E06	04 1057 N22 E08	04 1306 N19 E12	04 1320 N25 W08	04 1330 N23 E49	04 1345 N20 W08
04 1345 N19 W08	04 1351 N17 E03	04 1400 N14 W63	04 1548 N19 W10	04 1551 N18 W09	04 1635 S08 E59
04 1640E N17 W12	04 1722 S08 W18	04 1745 N19 E05	04 1824 S08 E59	04 1842 N14 W65	04 1845 N19 E10
04 2006 N20 E05	04 2006 N20 E05	04 2012 N21 E03	04 2015 N19 E05	04 2203 N19 E05	04 2257 N20 W13
04 2342U N16 E04	04 2346 N14 E05	05 0104 N20 W00	05 0143 N25 E47	05 0226E N18 W03	05 0610 N18 E05
05 0706 N19 W13	05 0709 N18 W15	05 0723 N21 E53	05 0730E N23 E51	05 0756 S23 E90	05 1032 N03 W35
05 1035E S00 W31	05 1110E N20 W22	05 1320E N16 W26	05 1400 S14 E73	05 1407 N18 W25	05 1408E N17 W25
05 1418 N19 W06	05 1420 N20 W07	05 1421 N18 W08	05 1444 N15 E05	05 1447 N14 W01	05 1448 N13 E02
05 1448E N14 E01	05 1448E N18 W24	05 1448E N10 E00	05 1448E N14 E03	05 1453E N16 W26	0 1523 N13 W08
05 1523 N13 W08	05 1549 N14 W02	05 1642E N14 W01	05 1642E N25 E44	05 1649 N14 E00	05 1725 N13 W02
05 1746 N25 E35	05 1749 N15 W08	05 1751 N14 W01	05 1818 N13 W03	05 1914 N15 W27	05 2000E N15 W30
05 2045 N14 W09	05 2053 N13 W11	05 2320 N23 E27	06 0011 N18 W28	06 0203 N25 E29	06 0203 N25 E29
06 0216 N24 E27	06 0252E S28 W18	06 0310 N16 W36	06 0408 N18 W30	06 0413 N13 W15	06 0413 N13 W15
06 0414 N14 W14	06 0444 N19 W16	06 0554 S28 W21	06 0639E S25 W20	06 0647 N22 E27	06 0648E N25 E25
06 0648 N24 E22	06 0650 N21 W09	06 0651 N17 W14	06 0653 N18 W14	06 0654E N20 W13	06 0655 N13 W17
06 0655E N21 W17	06 0752 N16 W09	06 0839 S28 W22	06 0845 N17 W13	06 1114 N18 W34	06 1117 N20 W17
06 1123 N19 W14	06 1123 N18 W14	06 1124 N20 W18	06 1253 S27 W25	06 1304 S28 W22	06 1307 N17 W12
06 1307 N17 W16	06 1405 N23 E20	06 1508 N19 W41	06 1647 N17 W40	06 1726 S26 W26	06 1800 N21 W40
06 1820E N21 W39	06 1832 N18 W19	06 1834E N17 W18	06 1859E N21 W39	06 1900 S17 E78	06 1905 N23 E17
06 1906 N23 E19	06 1908 N21 W20	06 1925 N17 W33	06 2135E S08 W50	06 2158 N18 W20	06 2346E N19 W46
07 0025 N18 W43	07 0038 N19 W28	07 0218E N19 W30	07 0227E N18 W30	07 0229 N19 W37	07 0348 N19 W20
07 0350 S08 E24	07 0510 S07 W58	07 0511 N20 W32	07 0608 S08 E22	07 0609 S12 E34	07 0610 S10 E23
07 0622E S10 W57	07 0622E N20 W32	07 0622 N18 W21	07 0622 N18 W34	07 0623E N17 W28	07 0652E S09 W56
07 0829 N18 W35	07 0923 S09 W59	07 0953 N12 W30	07 1014 N14 W33	07 1031 N18 W46	07 1031E N18 W49
07 1035 N18 W52	07 1101 N18 W47	07 1143 N25 E19	07 1200 N17 W35	07 1221 N12 W35	07 1222 N14 W35
07 1403 N13 W36	07 1432 N18 W30	07 1450 N13 W36	07 1451 N12 W36	07 1452 N14 W36	07 1452 N13 W35
07 1510 N18 W37	07 1511 N19 W37	07 1514 N18 W38	07 1516 N24 E05	07 1529 N03 W63	07 1529 N12 W33
07 1533 N17 W52	07 1535 N17 W51	07 1535 N18 W52	07 1702 N17 W57	07 1702 N16 W58	07 1703 N16 W55
07 1703 N18 W57	07 1712E N18 W56	07 1739 N12 W36	07 1810 N19 E03	07 1817 N18 W56	07 1820 N18 W59
07 1840 N19 W32	07 1842 N19 W34	07 1843 N20 W29	07 1844 N20 W32	07 1847 N25 W36	07 1905 N18 W38
07 1913 N16 W60	07 1956 N12 W40	07 2034 S08 E15	07 2037 S06 E16	07 2048 N16 W61	07 2102 N20 W34
07 2210 N16 W60	07 2225 N15 W38	07 2226 N13 W39	07 2245 S08 W64	07 2251 N16 W61	07 2300 S11 E90
08 0051 S07 W68	08 0121 S18 E62	08 0122E N23 E18	08 0156 N26 W39	08 0157 S20 E60	08 0159 S18 E62
08 0206 N19 W64	08 0410 N17 W40	08 0610 N22 W41	08 0618E N21 W42	08 0704 S07 W72	08 1045 N13 W41
08 1049 N18 W07	08 1050 N19 W02	08 1054E N20 W02	08 1058E N19 W50	08 1250E S10 W72	08 1323 S08 W77
08 1332 N06 E52	08 1507 N12 W48	08 1508 N12 W49	08 1513E N15 W48	08 1537 N14 W43	08 1619 S12 E90
08 1622 S08 E81	08 1830 N05 E48	08 1841 N06 E48	08 1916 N05 E48	08 1945 N18 W66	08 1948 N19 W65
08 2027 N05 E47	08 2030 N05 E48	08 2042 S08 W77	08 2140 N17 W68	08 2141 N18 W67	08 2151 S06 E03
08 2157 N04 E45	08 2208 N20 W13	08 2228 S11 E80	08 2235 N16 W48	08 2320 N18 W55	09 0014 N16 W70
09 0235E S11 W03	09 0307 S08 W84	09 0335 S11 W03	09 0335 S10 W02	09 0336E S08 W84	09 0417 N22 W13
09 0538 N17 W52	09 0645 S15 E36	09 0652 S12 E38	09 0713 N18 W70	09 0713 N18 W70	09 0828 N16 W41
09 0830 N16 W32	09 0952 S10 E78	09 1059 S23 W58	09 1115 N13 W56	09 1117 N14 W55	09 1118 N15 W55
09 1119 N13 W54	09 1123 S11 E02	09 1124 N18 W50	09 1124 N19 W48	09 1129E N13 W58	09 1145 S12 E36
09 1146 S12 E35	09 1343 N17 W77	09 1400 N15 W57	09 1404 N14 W57	09 1439 N18 W75	09 1441 N15 W57
09 1442 N13 W56	09 1539 N19 W62	09 1539 N19 W62	09 1622 N18 W78	09 1622 N18 W72	09 1622 N19 W80
09 1730E N13 W65	09 1745 N12 W63	09 1746 N14 W54	09 1848E N12 W62	09 1849 N13 W66	09 1851E N13 W64
09 2026 N15 W84	09 2027 N16 W84	09 2116 N14 W67	09 2117 N12 W64	09 2118 N15 E67	09 2118 N13 W68

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09 2122 S10 E39	09 2123 S08 E40	09 2123 S08 E40	09 2124E S11 E40	10 0000E N16 W84	10 0244E N14 W67
10 0400 N12 W71	10 0530 N17 W90	10 0820 N18 W90	10 0827 N16 W90	10 0857 N12 W71	10 1054E S10 W14
10 1245 N17 W90	10 1345 N17 W90	10 1417 N12 W71	10 1522 N18 W70	10 1651 N12 W73	10 1717 S09 E60
10 1717 S10 E56	10 1718 S09 E57	10 1754 S09 E63	10 1756U S08 E63	10 2053 N11 W75	10 2056 N19 W73
10 2115 N12 W73	10 2159 N16 W80	10 2159 N14 W78	11 0127 N17 W78	11 0321 N13 W90	11 0331 S11 W32
11 0448 S09 E57	11 0646 S11 W18	11 1400 S10 E53	11 1400 S10 E51	11 1401 S10 E52	11 1404E S08 E48
11 1409 N13 W90	11 1508 S09 E49	11 1510 S10 E53	11 1511 S10 E52	11 1725 N12 W88	11 1747 N13 W90
11 1750 N13 W90	11 1752 N12 W90	11 1851 S13 W35	11 1913 N13 W83	11 2116 S09 W25	11 2119 N14 W83
11 2225 S13 W38	11 2247 S13 W38	11 2305 S13 W38	11 2356 N13 E51	12 0208 N21 E12	12 0218E N22 E12
12 0251 S10 E46	12 0650 N22 W90	12 1012 S12 W45	12 1203 N25 W48	12 1206 N25 W47	12 1206 N15 W55
12 1214 N13 W53	12 1310E S13 W47	12 1310 S12 W48	12 1336E N25 W48	12 1343 S12 W50	12 1345 S13 W47
12 1346 S14 W48	12 1552 S12 W49	12 1718 S13 W50	12 1720E S13 W50	12 1720 S12 W49	13 0013 S22 E55
13 0023E S23 E56	13 0241 S20 E57	13 0352E N19 W88	13 0522 S17 W15	13 0805 N10 E32	13 1145 S20 W16
13 1148 S20 W15	13 1209 S22 E51	13 1239 S21 E50	13 1627 S22 E49	13 2119E S17 E90	14 0045E N14 W70
14 0236 S12 W69	14 0418 S13 W70	14 0455 N22 W71	14 0835 S17 E90	14 0844E S18 E90	14 0920 S17 E90
14 0926 S10 E78	14 1045 S17 E90	14 1225 S11 W61	14 1226 S12 W60	14 1228E S13 W60	14 1545E S17 E85
14 1742 N16 W88	14 1938 S12 W66	14 1939E S08 W78	14 1949 S17 E81	14 2207E S17 E79	15 0225 S23 E26
15 0229E S23 E27	15 0320 S23 E25	15 0416 S24 E28	15 0418 S23 E27	15 0550 N06 W41	15 0607 S23 E26
15 0608 S22 E24	15 0610E S21 W45	15 0611E S24 E28	15 1129 S16 E77	15 1209 S22 E22	15 1720 S14 W45
15 1752 S11 W77	15 1854E N12 W01	15 2149 S12 W80	15 2214 N14 W05	15 2320E N20 E80	16 0323E S21 E12
16 0410E S16 E56	16 0444 N04 E69	16 0818 N13 W11	16 0818 N13 W10	16 0823E N12 W10	16 0900 N18 W90
16 1425 N17 W90	16 1522 S17 E52	16 1523E S17 E54	16 1523 S16 E51	16 1523 N18 E52	16 1916 N13 W14
16 1917 N13 W16	16 2229 S18 E48	17 0116E N20 E67	17 1345 S16 E42	17 1757 N20 E59	17 1808E S17 E40
17 1952 N20 E56	17 1954 S18 E37	17 2054 N18 E57	17 2054 N18 E57	17 2233 N22 E56	17 2259 N18 E56
17 2300 N23 E55	17 2320 N13 W33	17 2325 N14 W32	18 0036E N12 W31	18 0607 N19 E53	18 0925 N19 E52
18 0926 N16 E51	18 0926 N19 E49	18 0926 N19 E49	18 0928 N13 E47	18 1351 S17 E32	18 1410 N20 E47
18 1515 N13 W42	18 1612 N20 E43	18 1640 S16 E29	18 1640 S17 E28	18 1755 N12 W43	18 1807 N15 W38
18 1812 N14 W38	18 1813E N13 W39	18 1823 N20 E45	18 1825 N20 E42	18 1845 N13 W42	18 1953 N21 E30
18 1953 S19 E31	18 1955E N18 E33	18 1958 N20 E44	18 2122E N19 E45	18 2201 N20 E43	18 2203 N15 E44
19 0140 S09 E63	19 0145 N19 E41	19 0426 N14 W50	19 0736E N12 W49	19 0736 N11 W48	19 0737 N14 W49
19 0738E N10 W48	19 0740 N12 W50	19 0855 S23 E90	19 1209 N13 W52	19 1256E N13 W53	19 1257E N12 W50
19 1427 S15 W43	19 1429 S15 W45	19 1430 S16 W43	19 1434 S15 W45	19 1508 N13 W55	19 1607 N11 W55
19 1635 N04 E58	19 1705 S14 E90	19 1708 N08 E53	19 1808E N04 E57	19 1900E S17 W49	19 2006 S15 W47
19 2011 S17 W50	19 2230 N12 E83	19 2244 S15 W49	19 2245 S15 W49	20 0158 N03 E47	20 0243 N04 E50
20 0344 N11 W62	20 0546 N15 E77	20 0615 N10 E68	20 1057 N19 E23	20 1138 N21 W27	20 1138 N23 W26
20 1139 N22 W25	20 1244 S23 E05	20 1410 S23 E05	20 1500E N22 W26	20 1541 N09 W77	20 1640 S16 W61
20 1640 S14 W59	20 1645 N22 W29	20 1718 N21 W28	20 1735 S15 W62	20 1740 N23 W28	20 1740 N23 W28
20 1816 S12 W90	20 1818 S11 W85	20 1819 S11 W80	20 1854E N21 W29	20 1854E S12 W68	20 1914 N19 E17
20 1920E N17 E17	20 1929E N20 E16	21 0211 N21 W33	21 0220 S16 W69	21 0238 N08 E72	21 0322 S23 E56
21 0411 N21 E12	21 0411 N19 E10	21 0416 N12 E72	21 0416E N10 E72	21 0454 N11 E71	21 0508 N19 E09
21 0518 N20 E08	21 0616E N22 W35	21 0616E N18 E12	21 0619 N21 W34	21 0717 S13 W70	21 0855 N22 W38
21 0857 N21 W35	21 0858 N22 W37	21 1012 N22 W37	21 1013 N22 W37	21 1203 N02 E57	21 1205 N01 E56
21 1324 N02 E57	21 1326 N03 E53	21 1427 N12 E65	21 1500E N08 W18	21 1621 N21 W39	21 1646 S24 E51
21 1655 S25 W09	21 1718 N18 E05	21 1807 N05 E52	21 1807 N03 E54	21 1845 N08 W20	21 1918 N09 W21
21 1920E N08 W20	21 1920 N07 W22	21 1941 N07 W22	21 2003E N08 W20	21 2132 N08 W21	21 2144 S15 W15
21 2309 N19 E02	21 2350 S14 W79	22 0110 N08 W25	22 0159 N09 W23	22 0230 S14 W80	22 0446 N08 W25
22 0447 N08 W25	22 0458E N08 W25	22 0514 N26 W45	22 0523 N26 W45	22 0552 N08 W26	22 0552 N08 W26
22 0614E N08 W25	22 0614E N07 E21	22 0704 N08 W26	22 0704 N07 W27	22 0728E S14 W82	22 0728E N07 W26
22 0826 N27 W47	22 0848 N12 E55	22 0849 N12 E56	22 0917 N23 W48	22 0940E N10 E55	22 1057 N10 W06
22 1204 N07 W30	22 1521 N07 W30	22 1702 S17 W26	22 1825 N12 E46	22 2132 N11 E47	23 0100 N09 E14
23 0115E N08 W36	23 0436E N08 W38	23 0449 N07 W36	23 0511 N07 W37	23 0534E N08 W35	23 0655 N08 W36
23 0722 N07 W37	23 0835 N09 W38	23 0940 N20 W20	23 1048 N19 W18	23 1239 N11 E40	23 1435 N21 W66
23 1507 N20 W65	23 1531 N15 E83	23 1601 N20 W24	23 1639 N07 W44	23 1720 N15 E83	23 1817 N13 E36
23 1826 N13 E37	23 1828 N18 W33	23 1831 N19 W35	23 1920 N23 W35	23 1953 N22 W32	23 1954E N21 W33
23 2234 N09 W46	23 2245 N13 E38	23 2325 N13 E32	23 2335 N09 W46	23 2342 N06 W52	23 2358 N07 W46
24 0105 N21 W36	24 0200 N08 W51	24 0700E N20 W75	24 0854 N09 W52	24 0857 N09 W51	24 0904 N20 W32
24 0905 N09 W51	24 0907 N20 W30	24 0938 N20 W30	24 1041 N22 W76	24 1041E N20 W75	24 1323 N22 E25
24 1538 N23 E24	24 1539 N22 E23	24 1542 N22 E25	24 1712 N10 W56	24 1717 N22 W48	24 1827 N17 E61
24 1844 N23 E21	24 1956E N22 W45	24 2037 N18 W42	24 2040E N23 E18	24 2043 N08 W46	24 2123 N22 E20
25 0046 N23 E27	25 0219E N21 E17	25 0248 N22 W48	25 0507 N11 E12	25 0600 S18 E19	25 0725 N09 W65
25 0749 N21 E16	25 1002 N10 W66	25 1214 N15 E50	25 1236 N10 W19	25 1702 N10 E05	25 1705E N10 E04
25 1751 N22 E08	25 1834 N23 E09	25 1903 N11 E06	25 1916 N23 E06	25 1918 N22 E08	25 2020 N07 W74
25 2047E N22 E57	25 2056 N22 E53	25 2058 N18 W52	25 2200 N14 E08	25 2254 N14 W03	25 2259 N21 W64
26 0126E N21 E06	26 0240E N21 E05	26 0313 N23 E05	26 0314E N22 E05	26 0327E S09 E40	26 0327E S09 E40
26 0332 S10 E40	26 0344E S12 E40	26 0415 N23 E03	26 0418 N12 E09	26 0453 N23 E03	26 0458 N12 E05
26 0600E N22 E02	26 0603 N23 E03	26 0615E N21 E03	26 0708E N21 E03	26 0739E N22 E02	26 0742 N23 E02
26 0742 N23 E02	26 0742E N21 E03	26 0751 N20 E01	26 0854 N22 E01	26 0856 N23 E03	26 1005 N22 W01
26 1007 N23 W01	26 1012E N21 E03	26 1155 S09 E45	26 1200 S10 E46	26 1331 N22 W02	26 1332 N23 W02
26 1332 N21 W04	26 1333E N21 W00	26 1345 S09 E43	26 1349E N22 W02	26 1518 N08 W03	26 1521 S08 E43
26 1526 N09 W04	26 1526 S08 E44	26 1527E S08 E45	26 1527E N10 W02	26 1527E N10 W02	26 1530E N09 W04

SOLAR FLARES

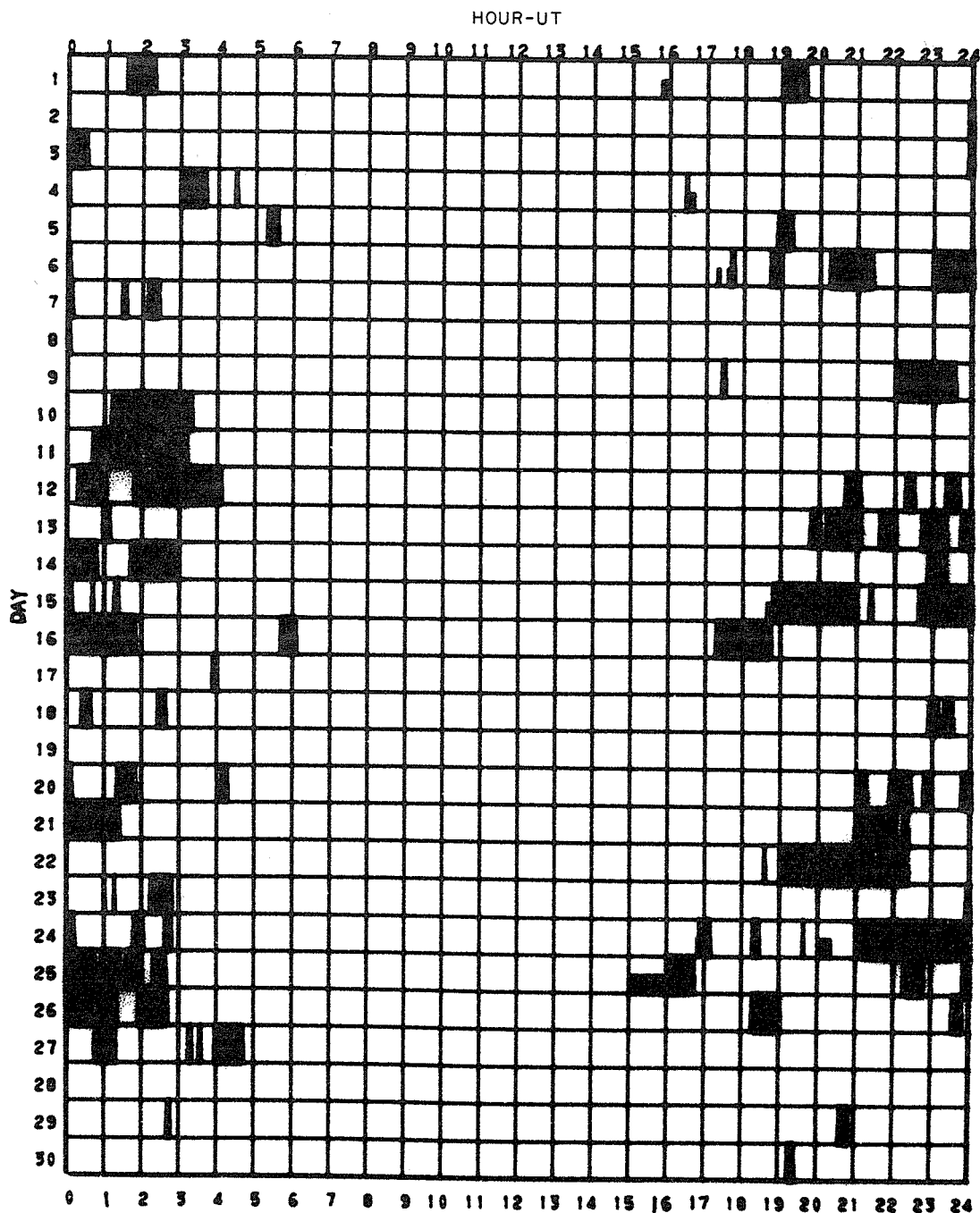
SEPTEMBER 1970

26 1530E S07 E41	26 1547E S09 E42	26 1550E S08 E43	26 1730 N07 W37	26 1802 N13 W04	26 1802 N10 W05
26 1902 S09 E45	26 1905 S09 E42	26 1906 N22 W00	26 1910 N21 W02	26 2004 N21 W71	26 2124 N23 W03
26 2134 N22 W65	26 2135 N21 W66	26 2324 S10 E38	27 0855 N16 W11	27 0925 S06 E28	27 0928 S06 E29
27 1051 N01 W85	27 1342 N14 E65	27 1410 N17 E21	27 1502 S04 E44	27 1514 N11 W11	27 1614 N01 W28
27 1726 N23 W78	27 1743 N19 E65	27 1830 N21 W80	28 0317E S08 E22	28 0210 N17 E11	28 0211 N17 E12
28 0355E S09 E21	28 0432 N13 W23	28 0433E N14 E24	28 0447 N08 E11	28 0517 N24 E57	28 0527E N22 E56
28 0728 N18 E09	28 0733 N16 E09	28 0928 N15 E09	28 0930 N18 E08	28 0930E N18 E09	28 0933E N17 E08
28 1223 N06 W61	28 1306 N15 E32	28 1307 N17 E31	28 1403 N22 W23	28 1403 N21 W25	28 1404 N21 W24
28 1442 S04 E24	28 1450 N18 E05	28 1452 N17 E05	28 1452 N18 E05	28 1453 N16 E07	28 1453E N18 E05
28 1633 S08 E13	28 1638 S09 E15	28 1641E S08 E13	28 1815 N17 E03	28 2040U N16 E47	28 2040 N15 E76
28 2312 S29 E54	28 2332 S08 E09	29 0307 N14 W35	29 0628 S20 W36	29 1040 S07 E80	29 1125 N13 W41
29 1125 N13 W41	29 1125E N12 W42	29 1136 S18 W38	29 1543E N19 E90	29 1711 N23 W46	29 1839 N12 E36
29 1841 N14 E36	29 2005 N17 E10	29 2013 N17 E08	29 2228 N18 W13	30 0111 S18 W46	30 0254E N18 W16
30 0503 N20 W46	30 1144 N20 E83	30 1202E N20 E35	30 1533 S09 W13	30 1637 N22 W54	30 1708 S11 W18
30 1709 S12 W19	30 1710 S12 W18	30 1727 S06 E68	30 1728 S05 E66	30 1826 N19 E22	30 1830 N22 W48
30 1844 N15 E22	30 1847 N14 E21	30 2011 N21 W49	30 2050 N21 W49	30 2133 N22 W48	30 2135 N22 W51

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

SEPTEMBER 1970



Observatories included in total patrol:

Boulder	Haute Provence	Istanboul	Mitaka	Ramey
Bucharest	Herstmonceaux	Manila	Ondrejov	San Miguel
Capri-F (German)	Hurbanovo	Meudon	Palehua	Tehran
				Wendelstein

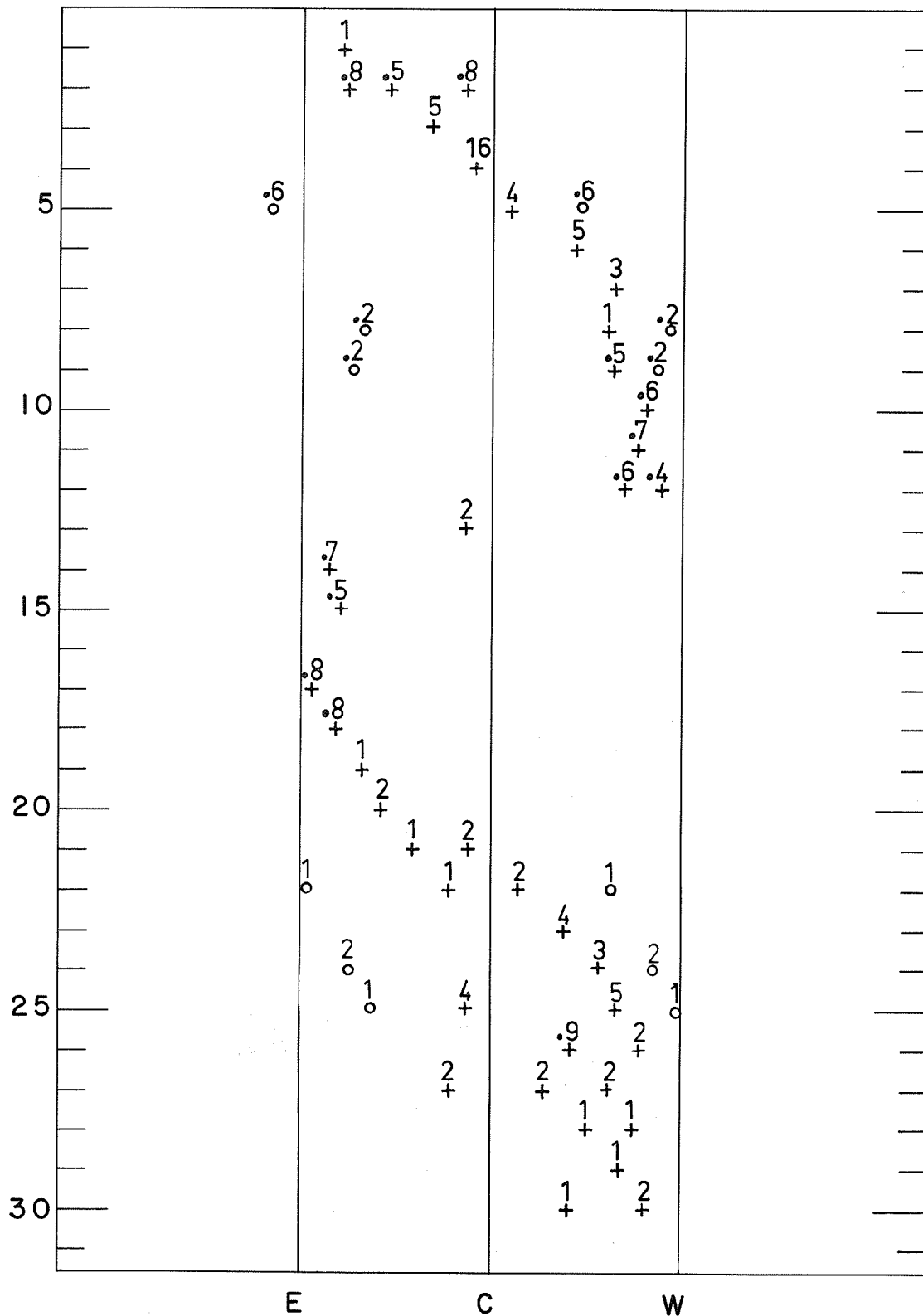
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

SEPTEMBER 1970

Nangay

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.

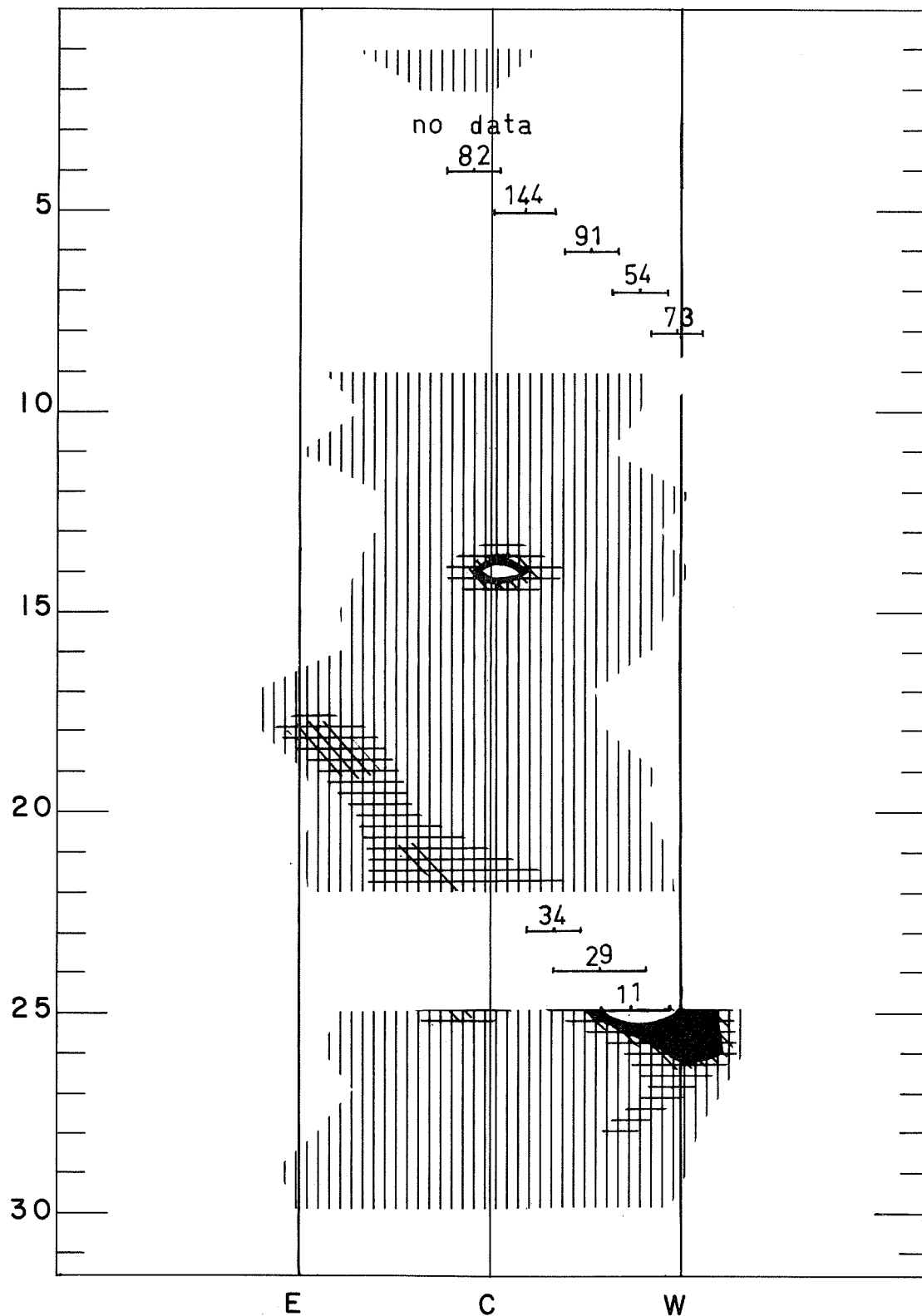
18
Sep 70

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

SEPTEMBER 1970

Nançay

169 MHz

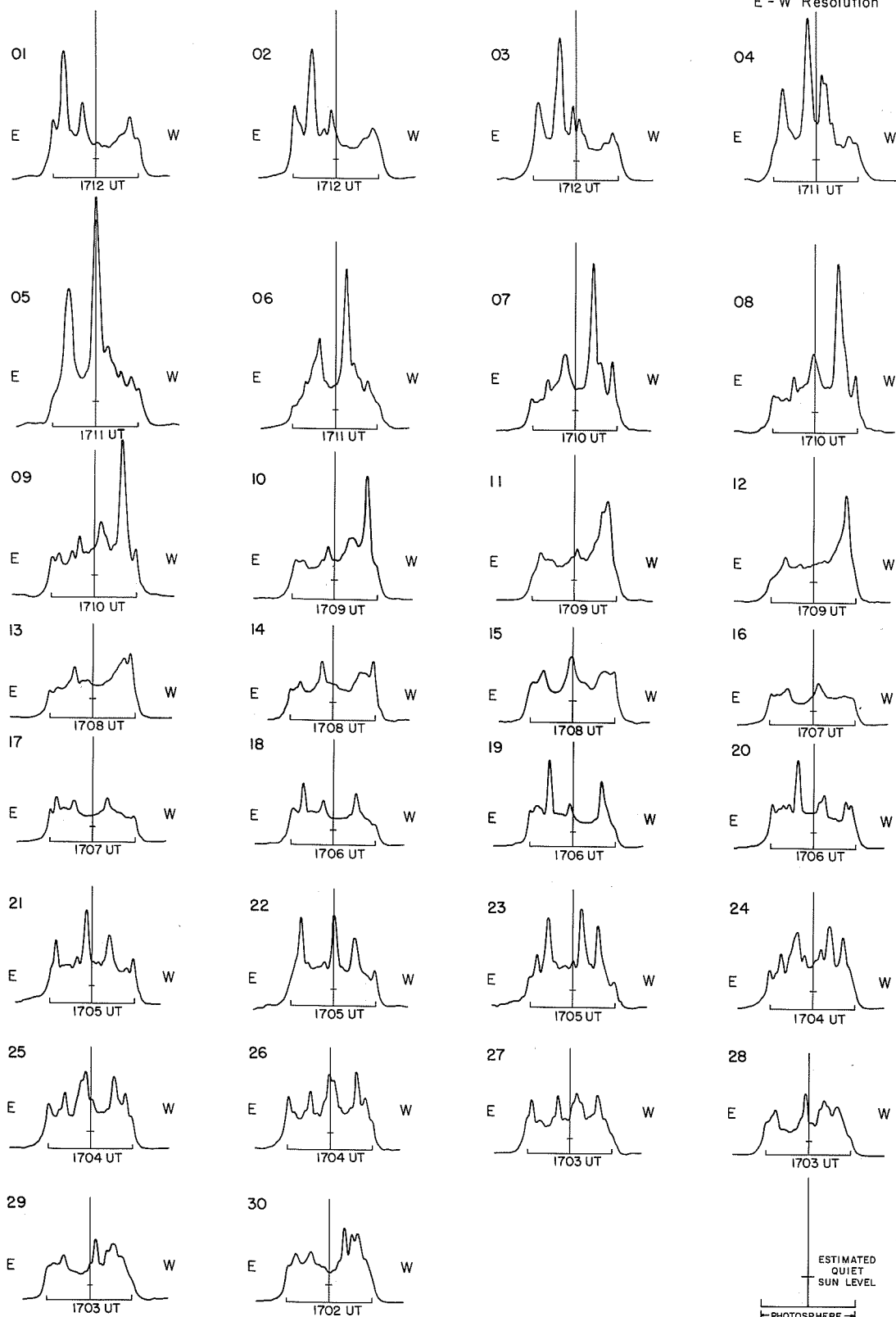


EAST - WEST SOLAR SCANS

September 1970

ALGONQUIN RADIO OBSERVATORY
CANADA

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

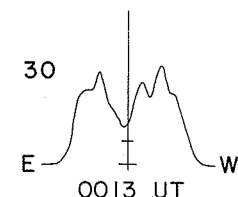
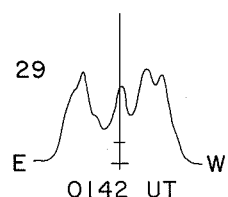
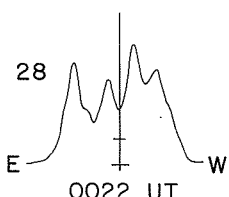
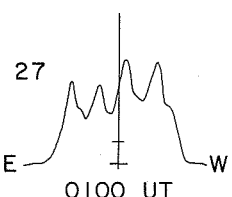
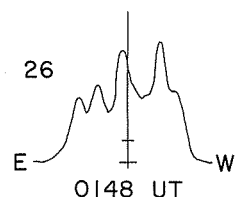
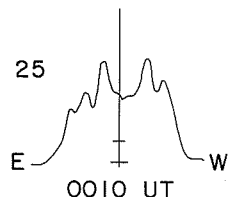
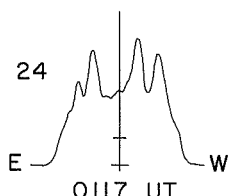
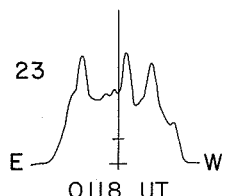
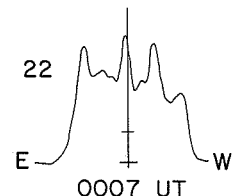
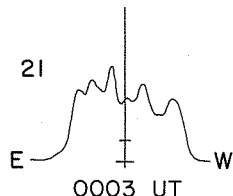
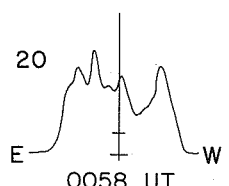
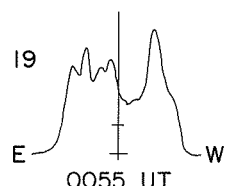
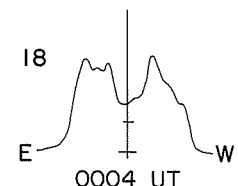
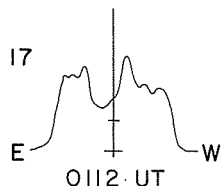
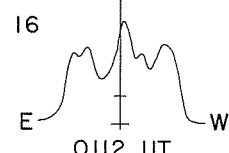
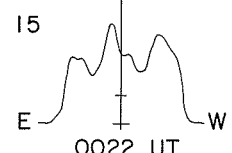
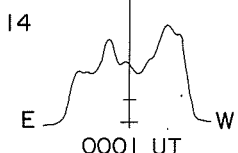
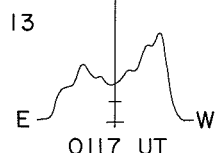
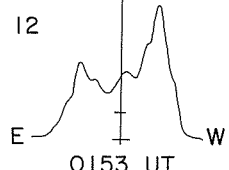
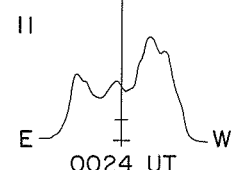
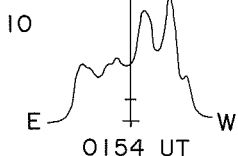
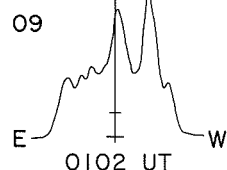
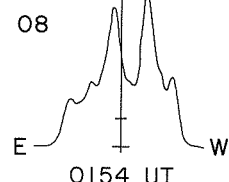
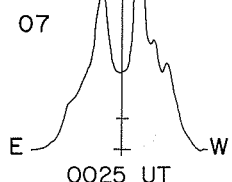
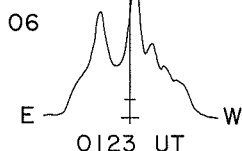
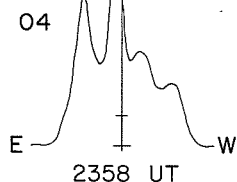
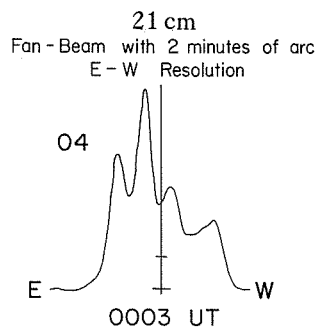
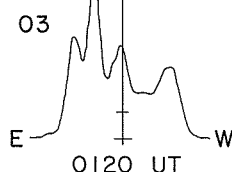
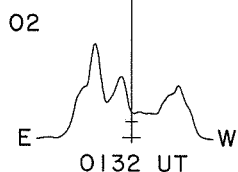
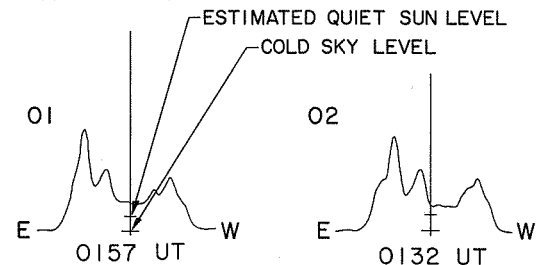


20
Sep 70

EAST-WEST SOLAR SCANS

SEPTEMBER 1970

Fleurs, Australia



EAST-WEST SOLAR SCANS

SEPTEMBER 1970

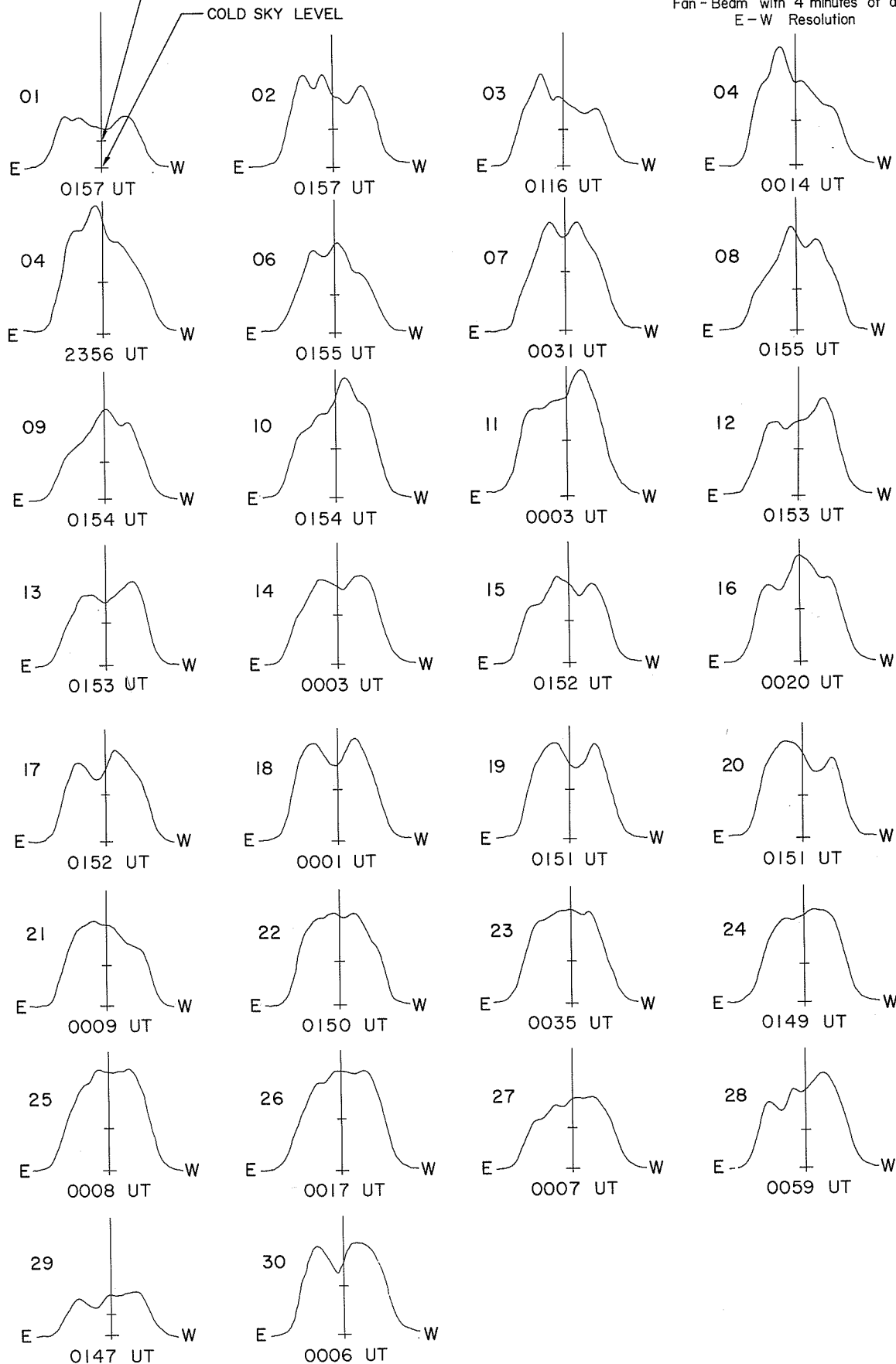
Flours, Australia

ESTIMATED QUIET SUN LEVEL

COLD SKY LEVEL

43 cm

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



22
Sep 70

SOLAR WIND VELOCITY
and
CO-ROTATION DELAY TIMES

SEPTEMBER 1970

NASA Ames Research Center

DATE September 1970	PIONEER VI				PIONEER VII			
	Time (Z)	Pass	U_H^+	TAU	Time (Z)	Pass	U_H^+	TAU
1	2333	1721	448	5.5	1900	1477	388	10.5
2	2342	1722	506	5.3	1902	1478	341	10.5
3	2320	1723	448	5.4				
4	1701	1724	448	5.4				
5	2343	1725	383	5.4	1846	1481	383	10.6
6					1855	1482	500	10.6
7	0024	1726	339	5.5	1740	1483	654	10.7
	2352	1727	448	5.3				
8	2342	1728	566	5.1				
9	1150	1729	647	5.0				
10	2338	1730	448	5.2	1629	1486	440	10.6
11	2339	1731	506	5.0				
12	1234	1732	506	5.0	2111	1488	388	10.6
13	2328	1733	383	5.2				
14	2048	1734	448	5.0				
15	1147	1735	448	5.0				
16	1937	1736	448	5.0	2353	1492	339	10.6
17	1148	1737	448	5.0				
18	2356	1738	339	5.2				
19	2230	1739	339	5.0	2307	1495	440	10.7
20	2017	1740	320	5.0	2300	1496	440	10.7
21	2344	1741	265	5.2				
22	2039	1742	448	4.7	2342	1498	448	10.7
23	0809	1743	383	4.9				
24	2347	1744	383	4.9	2238	1500	500	10.8
25	1940	1745	448	4.7				
26	1112	1746	448	4.7				
27	2135	1747	448	4.5				
28	2033	1748	383	4.6	2053	1504	341	10.7
29	2018	1749	756	4.3	2109	1505	341	10.7
30	1932	1750	566	4.4				

SOLAR WIND
VELA 3 & 5

SEPTEMBER 1970

DATE	UT	Spacecraft	Velocity V_{H+} (km/sec)	Density N_{H+} (cm ⁻³)
01	0500	VELA-5B	348	--
	0300	5B	365	--
02	1300	5B	470	1.4
	1200	5B	470	--
	1100	5B	520	--
	1000	5B	520	--
	0900	5B	520	--
	0800	5B	520	--
	0700	5B	520	--
	1500	5B	520	--
	1600	5B	520	--
03	1000	5A	424	--
	0900	5A	424	--
	0600	5A	424	--
	1500	5A	470	--
	1400	5A	470	--
	1300	5A	424	--
	1100	5A	470	--
	2305	5B	446	3.2
	0100	5B	424	--
04	0100	5B	470	--
	0300	5B	446	--
	0400	5B	446	1.1
06	0600	5B	348	--
	0100	5B	404	--
	0200	5B	404	--
	0300	5B	365	2.3
	0400	5B	384	--
	0800	5B	384	--
	1800	5A	315	--
	1900	5A	348	--
	2000	5A	424	--
	2100	5A	424	--
	2200	5A	424	--
	2300	5A	411	2.2
08	0000	5A	424	--
	0100	5A	384	--
	0200	5A	384	--
	0300	5A	446	2.6
	0400	5A	404	--
	0500	5B	365	--
09	0600	5A	470	--
	0300	5A	470	--
	1700	5B	424	--
	1400	5B	424	--
11	2300	5B	348	--
12	1817	5A	365	2.1
	2300	5B	331	--
	2100	5A	348	--
	1900	5A	348	--
13	0100	5B	348	--
	0800	5B	365	70.0
	0500	5B	348	--
14	1400	5B	384	--
	0300	5B	520	--
	0200	5B	576	1.4

24
Sep 70

SOLAR WIND
VELA 3 & 5

SEPTEMBER 1970

Date	UT	Spacecraft	Velocity V_{H^+} (km/sec)	Density N_{H^+} (cm ⁻³)
15	0600	5B	520	.7
	1200	5B	425	--
	1000	5B	470	--
16	1000	5B	404	1.3
	0800	5B	424	--
	0600	5B	384	--
17	1300	5B	424	--
	1400	5B	348	--
	1000	5A	384	--
	0700	5A	384	--
	1100	5A	384	--
	1200	5A	424	--
	1300	5A	424	--
	1400	5A	424	--
	1500	5A	384	--
	1700	5B	384	--
19	1800	5B	384	--
	2200	5B	348	--
	0148	5B	424	--
	0200	5B	520	--
	0800	5B	424	--
	0500	5A	446	--
	0300	5A	470	--
	0100	5A	470	--
	1100	5B	348	--
	1000	5B	384	1.7
23	1100	5B	348	--
	1000	5B	384	1.7
	1700	5B	384	--
	1600	5B	384	1.6
	1400	5B	348	--
	2300	5B	315	--
	2100	5B	331	2.4
24	1800	5B	331	1.8
	0100	5B	315	--
	0100	5B	315	--
25	1800	5B	315	3.2
	1630	5A	348	3.6
	0300	5A	348	--
26	0100	5A	348	5.9
	0600	5B	348	5.2
	2000	5A	470	--
28	0500	5A	446	--
	0400	5A	495	.9
	0500	5A	446	--
	0400	5A	495	.9
	0600	5A	446	--
29	0800	5B	348	--
	1700	5B	348	--
	1700	5B	404	--
30	1500	5B	424	--
	1300	5B	424	--
	1700	5B	404	--
	1500	5B	424	--
	1300	5B	424	--
	1844	5B	424	--

COSMIC RAY PROTONS

SEPTEMBER 1970

Counting Rates (particles/sec)

Univ. of Chicago

PIONEER VI									
Date Sept.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Sept.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	0600	7.05	Q	Q	15	0000	0.420	Q	Q
2	0000	5.57	Q	Q	15	0800	0.402	Q	Q
2	0600	5.13	Q	Q	15	1430	0.441	Q	Q
2	1200	5.57	Q	Q					
3	0000	4.80	Q	Q	16	0400	0.590	Q	Q
3	0800	5.13	Q	Q	16	1430	2.00	Q	Q
3	1600	5.79	Q	Q	16	2100	1.52	Q	Q
4	0000	4.80	Q	Q	17	0800	0.903	Q	Q
4	0800	5.47	Q	Q	18	0800	2.29	Q	Q
4	1600	4.72	Q	Q	18	1700	1.87	Q	Q
5	0000	6.73	Q	Q	19	1100	0.975	Q	Q
5	0800	12.5	Q	Q	19	1830	0.773	Q	Q
5	1600	82.3	Q	Q	20	0730	0.457	Q	Q
					20	1130	0.475	Q	Q
					20	1900	0.373	Q	Q
6	0000	24.7	Q	Q					
6	0800	15.4	Q	Q	21	0800	0.477	Q	Q
7	0000	28.9	Q	Q	21	1900	0.327	Q	Q
7	0800	18.0	Q	Q	22	0000	0.203	Q	Q
7	1400	10.1	Q	Q	22	0800	0.231	Q	Q
8	0000	25.1	Q	Q	22	1930	0.231	Q	Q
8	0800	6.10	Q	Q	23	0800	0.156	Q	Q
8	1400	4.12	Q	Q	23	1900	0.117	Q	Q
9	0000	2.20	Q	Q	23	0800	0.159	Q	Q
9	0800	1.31	Q	Q	24	1100	0.182	Q	Q
9	1300	1.05	Q	Q	24	2000	0.200	Q	Q
10	0800	0.653	Q	Q	25	0000	0.300	Q	Q
10	1400	0.542	Q	Q	25	0800	0.677	Q	Q
					25	1200	0.631	Q	Q
11	0000	0.519	Q	Q	25	2000	0.450	Q	Q
11	0800	0.472	Q	Q					
11	1600	0.580	Q	Q	26	0000	0.510	Q	Q
12	0000	0.642	Q	Q	26	1100	0.300	Q	Q
12	0800	0.770	Q	Q	28	0000	0.244	Q	Q
12	1600	0.703	Q	Q	28	0800	0.160	Q	Q
13	0030	0.703	Q	Q	28	2030	0.290	Q	Q
13	0800	0.962	Q	Q	29	0800	0.126	Q	Q
13	1400	1.02	Q	Q	29	2000	0.140	Q	Q
13	2330	0.484	Q	Q	30	1930	0.160	Q	Q
14	0800	0.714	Q	Q					
14	1400	0.571	Q	Q					

PIONEER VII									
Date Sept.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev	Date Sept.	Time (UT)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	1745	10.3	Q	Q	13	1800	0.406	Q	Q
2	1800	7.60	Q	Q					
5	1800	9.14	Q	Q	16	2300	41.8	Q	Q
					19	2300	1.44	Q	Q
6	1800	2.06	Q	Q					
7	1800	0.770	Q	Q	22	2300	0.193	Q	Q
10	1700	4.40	Q	Q	24	2230	0.620	Q	Q
12	1930	0.677	Q	Q	28	2100	15.4	Q	Q
					29	2100	162.	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} m²ster 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, 1552-1582 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).

26
Sep 70

COSMIC RAY PROTONS

SEPTEMBER 1970

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII							
Date Sept.	Time (UT)	>13.9 Mev	>64 Mev	Date Sept.	Time (UT)	>13.9 Mev	>64 Mev
1	0412	3.83	.72	13	0200	3.63	.58
	0801	3.53	.66		1600	3.66	.61
	1630	3.62	.64	14	0000	3.67	.71
2	0402	3.71	.58		0449	3.80	.69
	0756	3.70	.66		0753	3.66	.67
	1900	3.71	.76		1600	3.75	.63
3					2100	3.70	.64
	0013	3.65	.68	15	0000	3.80	.66
	0040	3.62	.71		0415	3.77	.67
	1205	3.61	.64		0805	3.72	.78
	1600	3.56	.72		1600	3.69	.78
4	0400	3.55	.62		2100	3.77	.77
	1155	3.56	.71	16	2355	3.44	.70
	1630	3.61	.70		0417	3.68	.71
5	0005	3.62	.62		0807	3.70	.72
	1200	3.54	.65	17	1623	3.75	.74
	1600	3.70	.68		0351	3.85	.76
6	0430	3.66	.82		1622	3.75	.70
	1930	3.70	.78	18	2000	3.81	.69
7	0045	3.58	.64		0400	3.89	.67
	0737	3.66	.72		1145	3.85	.69
	1606	3.61	.62	19	1706	3.87	.70
8	0004	3.60	.66		0015	3.77	.68
	0751	3.63	.71		0415	3.80	.70
	1600	3.89	.75		1145	3.86	.75
9					1630	3.92	.82
	0000	3.68	.70		2300	3.87	.66
	0353	3.66	.68	20	0500	3.93	.68
	0822	3.72	.71		1623	3.85	.74
	1600	3.67	.74		2030	3.87	.74
	2000	3.57	.73	21	0000	3.94	.78
	2356	3.63	.53		0426	3.82	.68
10	0400	3.65	.68		2016	3.98	.72
	1700	3.61	.73		2353	3.91	.72
	2400	3.59	.71	22	0425	3.86	.65
11	0400	3.65	.76		2100	3.97	.65
	1210	3.57	.72	23	0012	3.92	.73
	1622	3.64	.72		0408	3.83	.75
12	0000	3.61	.60	24	0000	3.89	.66
	0400	3.63	.72		0421	3.85	.66
	1237	3.62	.60		1700	3.90	.77
	2200	3.58	.78		2000	3.77	.66

COSMIC RAY PROTONS

SEPTEMBER 1970

Counting Rates (particles/sec)

University of New Hampshire

Pioneer VIII							
Date Sept.	Time (UT)	>13.9 Mev	>64 Mev	Date Sept.	Time (UT)	>13.9 Mev	>64 Mev
25	0000	3.85	.72	28	0434	3.98	.65
	0419	3.91	.67				
	2000	3.85	.73	29	0020	3.98	.77
26	1700	3.92	.70		0422	3.98	.66
	2100	3.93	.75	30	0422	3.76	.70
27	0000	3.88	.72				

Pioneer IX							
Date Sept.	Time (UT)	>13.9 Mev	>40 Mev	Date Sept.	Time (UT)	>13.9 Mev	>40 Mev
1	1210	8.0	-	13	1225	3.10	.55
	1640	2.9	.74		1600	3.27	.52
2	1209	4.0	-	16	1229	3.14	.66
3	1210	2.0	-		1600	3.13	.56
5	1615	2.9	.58	17	1600	3.02	.64
	1204	3.04	.53		2030	3.11	.67
6	1610	3.01	.58	19	1613	3.19	.60
7	1212	3.05	.64	20	1640	-	-
	1604	3.12	.64				
9	1219	3.17	.72	22	1700	3.11	.60
	1600	3.15	.67				
10	1225	3.09	.65	23	1600	3.29	.65
12	1230	3.34	.66	26	1730	3.33	.67
				27	1630	3.35	.58
				28	1630	3.30	.61

[illegible]

DATE	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	0.40	0.32	0.29	0.29	--	0.35	0.37	0.30	0.35	--	--	--	--	--	0.25	0.34	0.31	0.34	0.31	0.37	0.28	--	--	--
02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.34	0.40	0.37	0.30	0.35
03	0.46	0.36	--	0.38	0.36	0.32	0.30	--	--	--	--	--	--	--	0.37	0.28	0.30	0.32	0.28	0.30	--	--	--	0.37
04	0.34	0.25	0.40	0.28	1.76	0.33	0.35	1.78	0.27	--	--	--	0.37	0.33	0.37	0.47	0.30	0.40	--	--	--	--	--	--
05	0.31	0.35	0.31	0.31	0.35	0.32	0.34	0.33	--	--	--	0.35	0.34	0.37	0.31	0.30	0.31	0.33	0.33	0.41	0.33	0.28	0.32	--
06	--	--	--	--	--	0.36	0.40	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.29	0.37	--	--	--	--	--	--	1.75
09	0.37	0.35	0.27	0.38	0.30	0.29	0.33	0.25	0.29	--	--	--	--	--	--	0.36	0.35	0.41	0.37	0.40	--	--	--	--
10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	0.32	0.43	0.37	0.37	0.30	--	0.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.41	0.34	0.32
13	0.31	0.35	0.29	0.45	0.34	0.38	0.33	0.26	--	--	0.33	0.32	0.45	0.26	0.35	0.28	0.34	0.38	0.36	0.27	0.38	0.32	0.25	0.35
14	0.32	0.32	0.33	0.32	0.23	0.32	0.33	0.35	--	--	--	--	--	--	--	0.31	--	0.33	0.32	0.33	0.33	0.35	0.29	0.33
15	0.32	0.32	0.32	0.30	0.40	0.31	0.36	0.24	--	--	0.35	0.32	0.28	0.30	0.38	0.38	0.26	0.32	0.35	--	--	--	--	0.33
16	0.30	0.35	--	--	--	--	--	--	--	--	--	--	1.47	0.28	--	--	--	--	--	0.23	0.31	--	--	0.33
17	0.44	0.34	--	--	--	--	--	0.45	--	--	--	--	0.51	0.31	--	--	--	--	--	--	0.30	--	--	--
18	--	--	--	--	--	--	--	--	--	--	--	--	--	0.31	--	--	--	--	--	--	--	--	0.37	0.32
19	0.31	0.33	0.40	0.27	--	--	0.25	--	--	--	0.35	0.34	0.32	0.27	0.31	0.27	0.30	0.34	0.37	0.35	0.37	0.28	0.41	0.33
20	0.33	0.51	0.39	0.30	0.25	0.41	--	--	--	--	--	--	--	--	0.30	0.27	0.35	0.31	0.35	0.32	0.36	0.33	0.33	0.33
21	0.37	0.33	0.41	0.35	0.27	0.56	0.30	--	--	--	--	--	--	--	--	0.27	0.35	0.31	0.35	0.37	0.32	0.33	0.35	0.40
22	0.38	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.31	0.36	--	--	--	0.30	0.37	0.33
23	0.34	0.37	0.34	0.38	--	0.37	0.39	--	--	--	--	--	--	--	1.75	--	0.42	0.36	0.38	0.38	0.31	--	--	0.43
24	0.33	0.32	0.32	0.35	--	0.33	0.32	--	--	--	--	--	0.33	0.39	0.33	0.33	0.34	--	--	0.36	0.31	--	--	0.43
25	--	--	--	0.35	--	0.41	0.29	0.45	0.38	--	--	--	--	--	--	0.33	0.34	--	--	--	0.36	--	--	0.43
26	0.32	0.03	--	--	--	--	--	--	--	--	0.29	0.37	--	--	--	--	0.37	0.35	0.36	--	0.38	0.41	--	0.40
27	0.36	--	0.37	--	--	0.33	--	0.35	--	--	0.35	--	--	0.36	0.29	--	0.28	--	--	0.28	0.33	--	--	0.38
28	--	--	0.39	--	0.36	0.40	--	--	--	--	--	0.32	0.32	0.28	0.36	0.36	0.40	0.31	0.34	0.42	0.38	0.37	0.32	0.36
29	0.36	0.36	0.37	--	0.31	0.28	0.39	0.34	--	--	--	--	0.13	0.31	0.33	0.33	0.32	0.33	0.38	0.41	0.39	0.36	0.30	0.36
30	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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For explanations of the data contained herein see "Descriptive Text"
published in February 1970.

32
Aug 70

AUGUST 1, 1970 (P=10.68, B₀ = 5.78, L₀ = 348.22)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

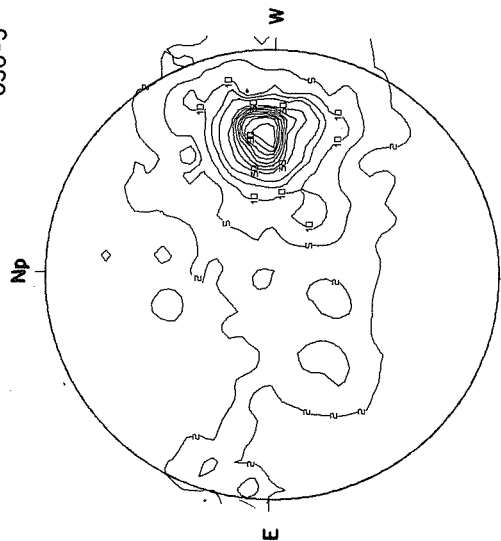
PROSPECT HILL
AFCRL

8.6 mm

MT. WILSON

DELTA TAY = 17.7
DELTA TAX = 17.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Intensities in Units
of 10⁶ ergs cm⁻² sec⁻¹

1030-1212 UT

Contours in Intervals
of 200° K

22.22-23.35 UT

STANFORD

FLEURS, AUSTRALIA

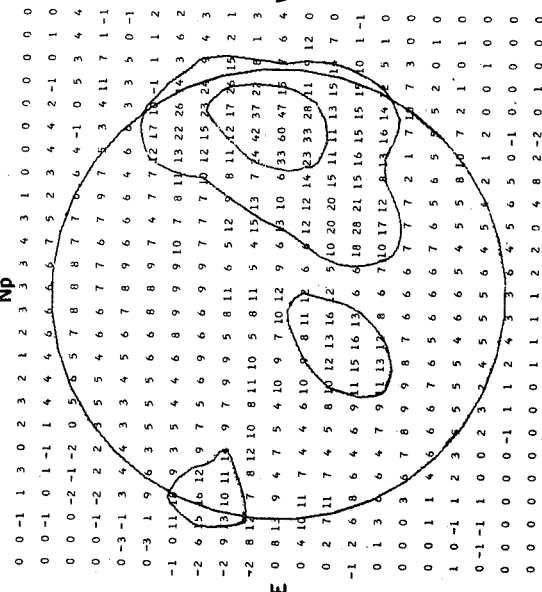
21 cm

CALCIUM REPORT

McMATH-HULBERT

Sp

Np



Brightness Unit 5,000°K

20-21 UT

S
02-03 UT

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

Sp
1300 UT

Levels
±5
±10
±20
±40
±80

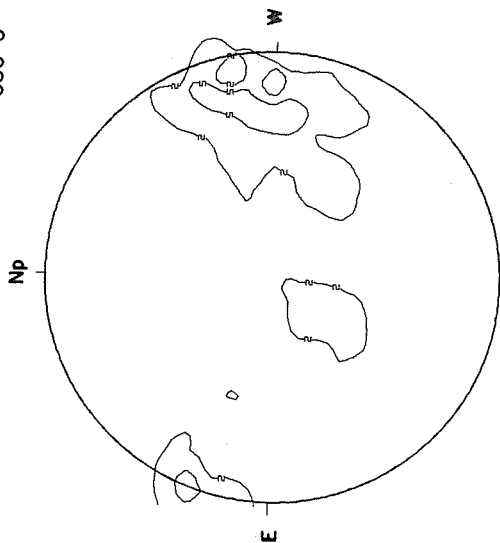
FAIR	O
46-48-30	
47-24-25	
50-22-30	
51-25-30	
52-21-30	
53-32-25	
60-10-30	
61-14-25	

AUGUST 2, 1970

(P=11.08, $B_0 = 5.86$, $L_0 = 335.00$)

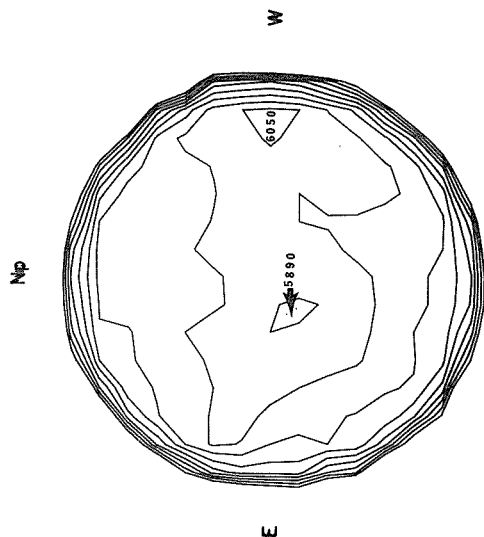
UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5



PROSPECT HILL
AFCRL

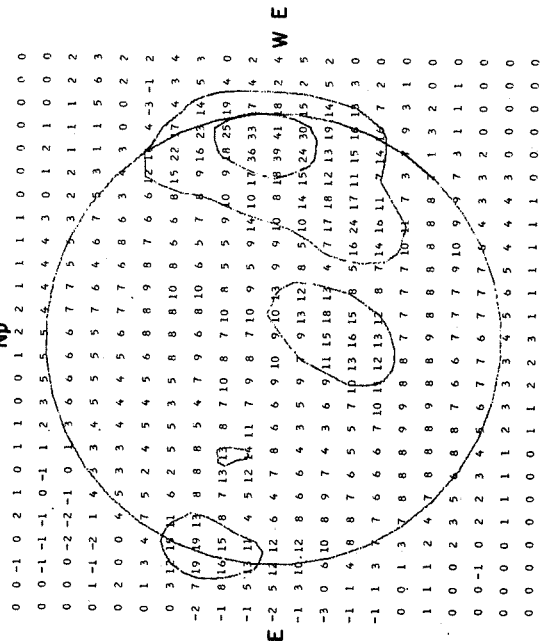
8.6 mm



0703-1023 UT
Sp
Intensities in Units
of 10^{-6} ergs $\text{cm}^{-2} \text{sec}^{-1}$

STANFORD

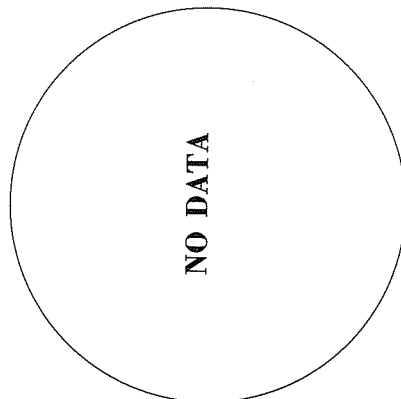
Np
9.1 cm



Sp
20-21 UT
Brightness Unit $5,000^\circ \text{K}$

1429 UT
Sp
Contours in Intervals
of 200°K

FLEURS, AUSTRALIA
N
21 cm



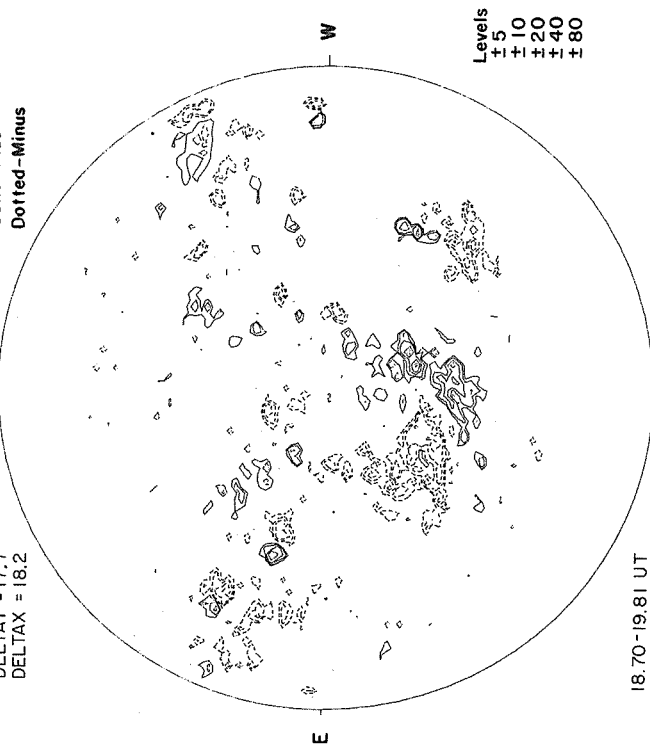
S
02-03 UT
Resolution 3 Minutes of Arc
Brightness Unit $1,700^\circ \text{K}$

MT. WILSON

DELTA Y = 17.7
DELTA X = 18.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Np

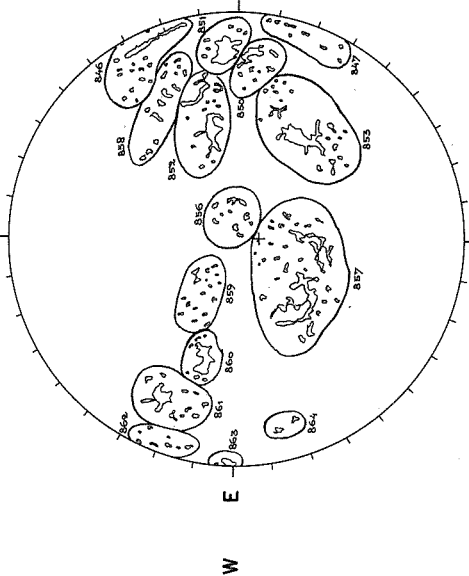


Levels
 ± 5
 ± 10
 ± 20
 ± 40
 ± 80

18.70-19.81 UT

McMATH-HULBERT

Sp
CALCIUM REPORT



FAIR O
46-35-30
47-18-25
50-18-30
51-27-30
52-18-30
53-31-30
57-28-25
60-12-30
61-15-25
63-07-25

Sp
1250 UT

34
Aug 70

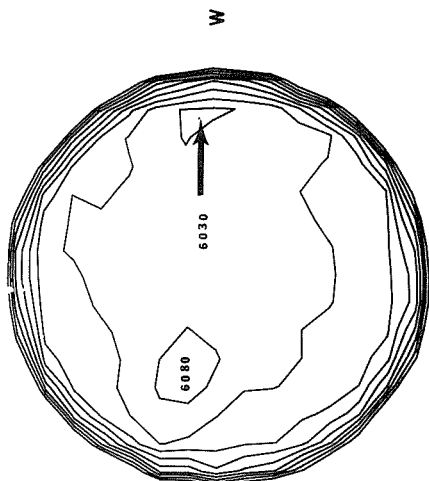
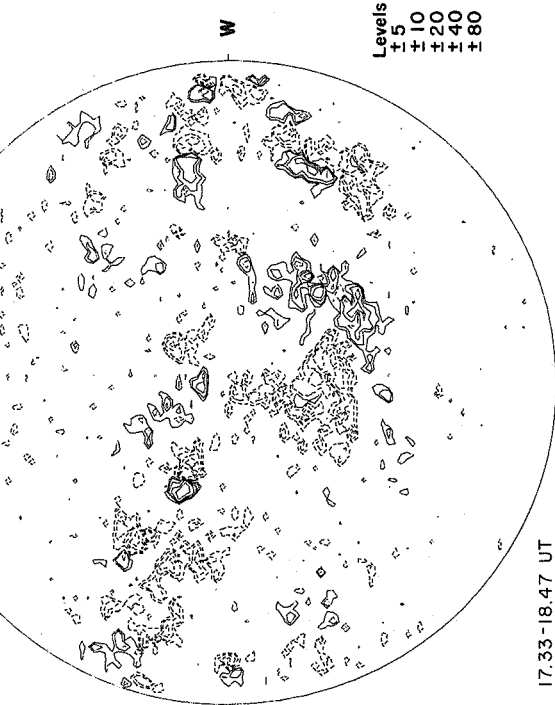
AUGUST 3, 1970 (P=11.47, $B_0 = 5.93$, $L_0 = 321.77$)

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LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

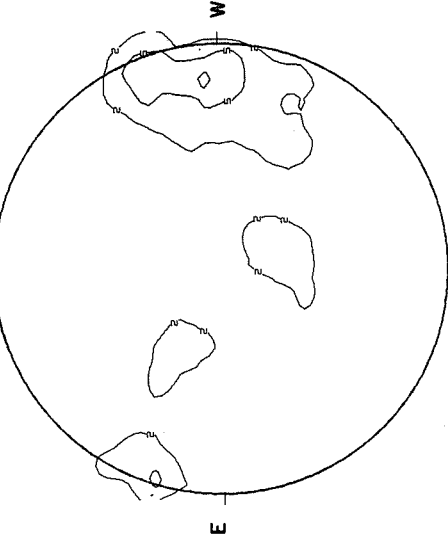
8.6 mm



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

Sp

10/3-11/56 UT



CALCIUM REPORT

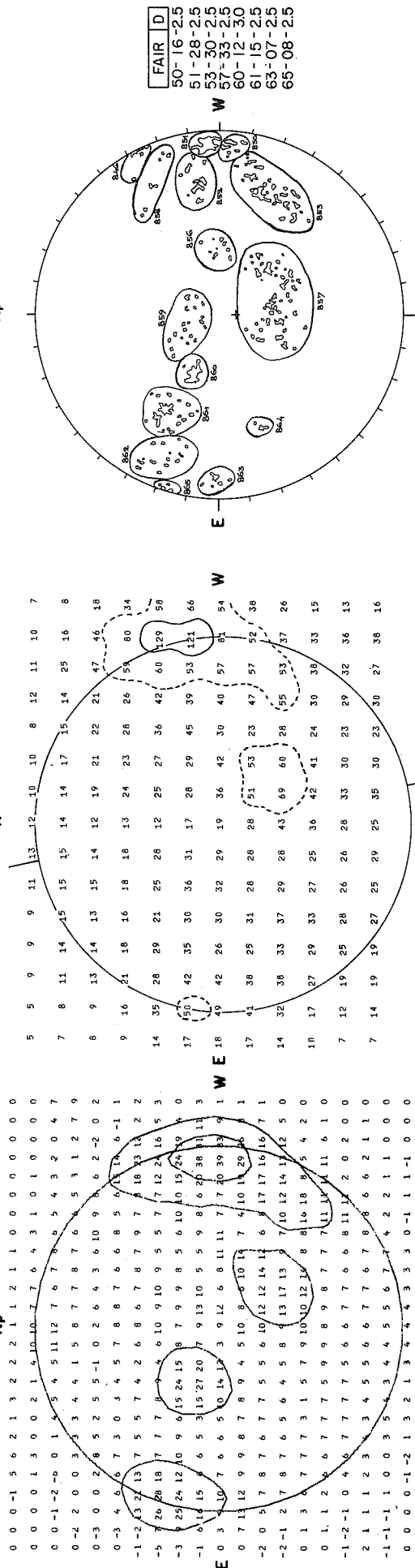
McMATH-HULBERT

21 cm

FLEURS, AUSTRALIA

9.1 cm

STANFORD



AUGUST 4, 1970

(P=11.86, B₀ = 6.00, L₀ = 308.55)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

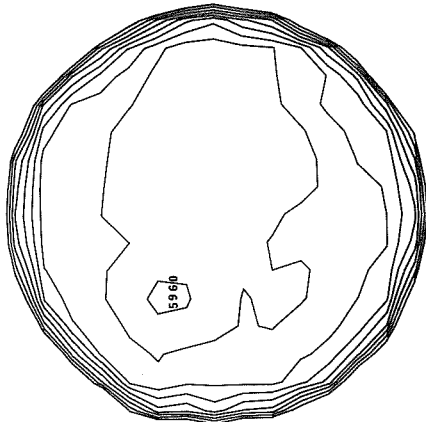
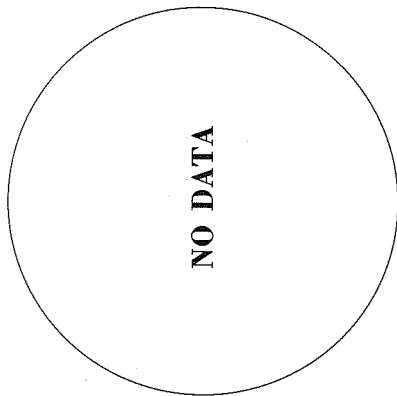
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

Np

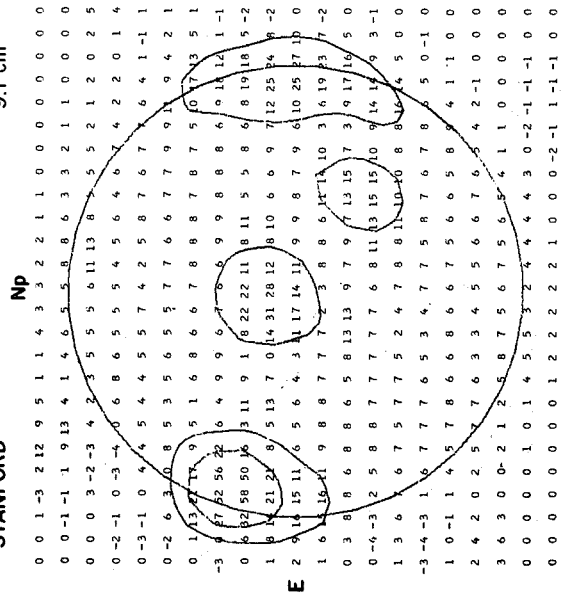
Np



Sp Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

Sp Contours in Intervals
of 200° K

STANFORD



Sp Brightness Unit 5,000° K
20-21 UT

FLEURS, AUSTRALIA

21 cm

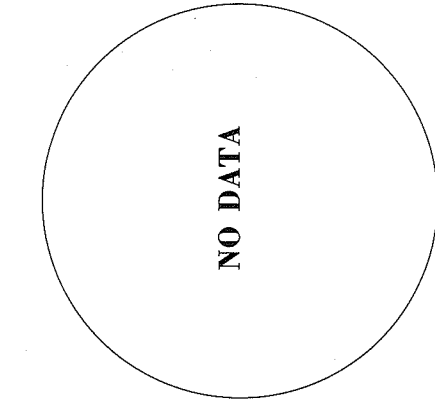
N

McMATH-HULBERT

Sp

CALCIUM REPORT

Np



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

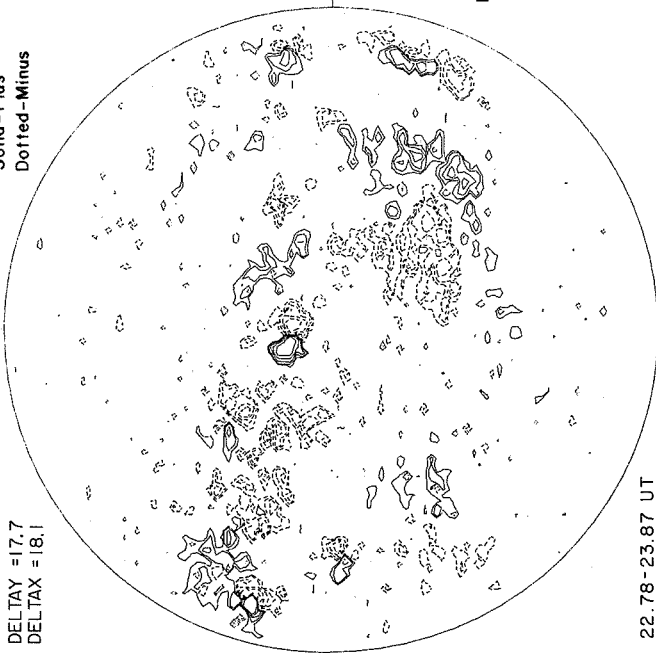
MT. WILSON

DELTA Y = 17.7
DELTA X = 18.1

MAGNETOGRAM

Solid - Plus
Dotted - Minus

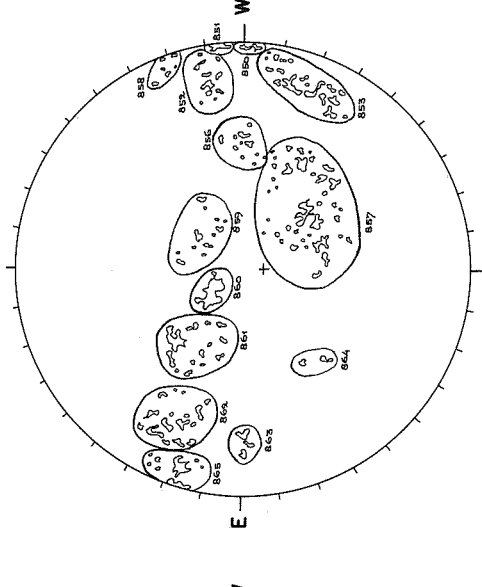
Np



22.78-23.87 UT

Levels
±5
±10
±20
±40
±80

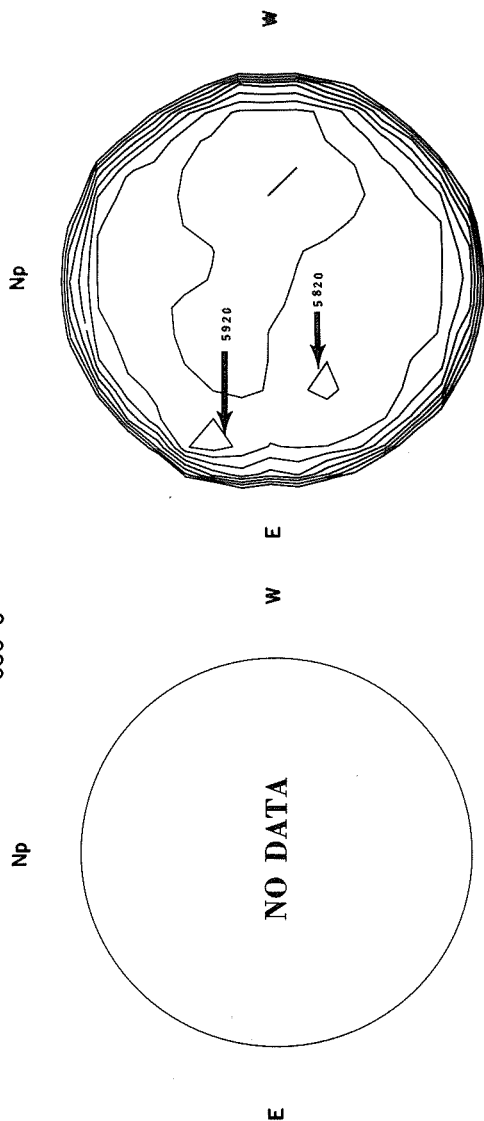
FAIR M
51-18-25
52-15-25
53-28-25
57-36-25
60-12-30
63-07-25
65-20-35



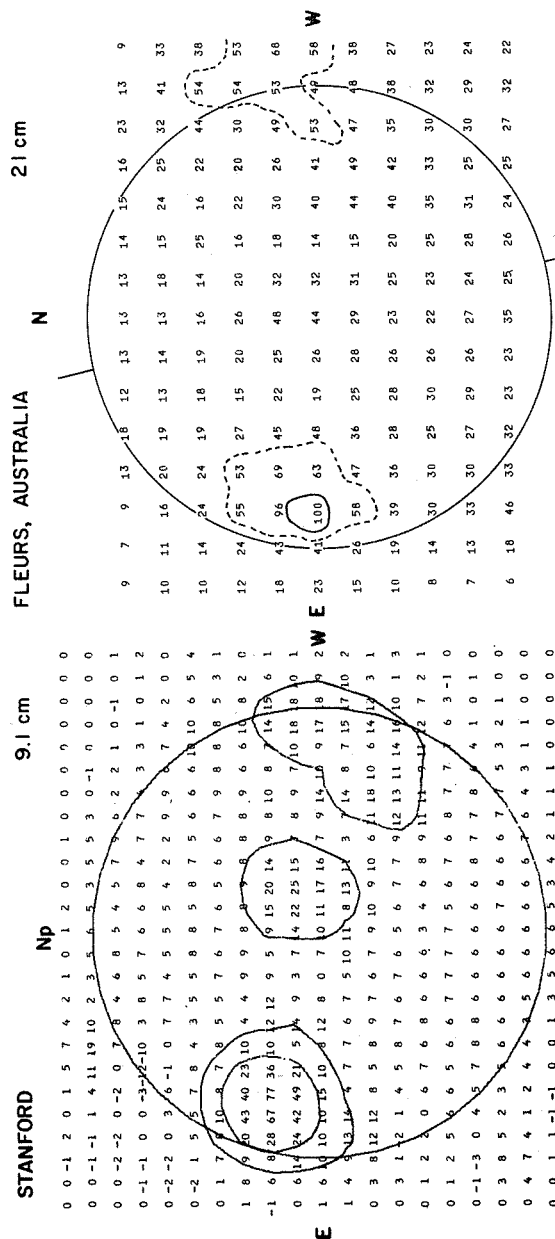
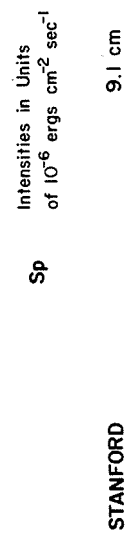
Sp
1305 UT

35
Aug 70

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Sp
Contours in Intervals
of 200° K



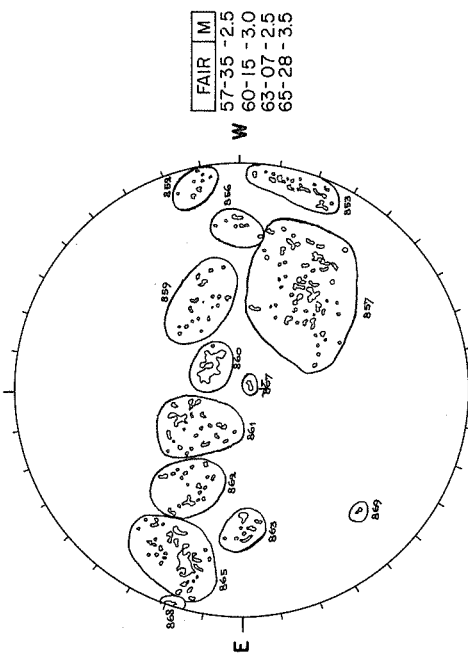
Sp Brightness Unit 5,000° K
20-21 UT

S
02-03 UT

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

23.74-24.90 UT

McMATH-HULBERT
Np
CALCIUM REPORT



Sp
1235 UT

FAIR	M
57-35	- 2.5
60-15	- 3.0
63-07	- 2.5
65-28	- 3.5

AUGUST 6, 1970 (P=12.63, B₀=6.13, L₀=282.10)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

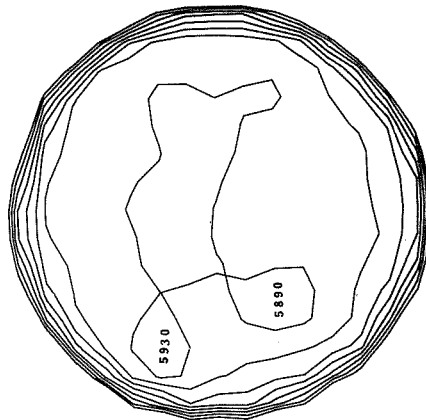
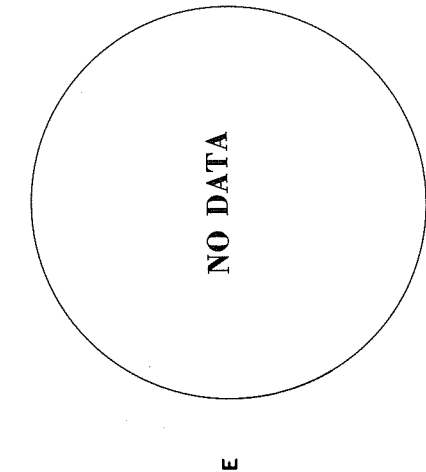
X-RAY
OSO-5

PROSPECT HILL
AFRL

8.6 mm

Np

Np



Sp Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹ 1312 UT

Sp Contours in Intervals
of 200° K

STANFORD

Np

9.1 cm

FLEURS, AUSTRALIA

21 cm

N

W

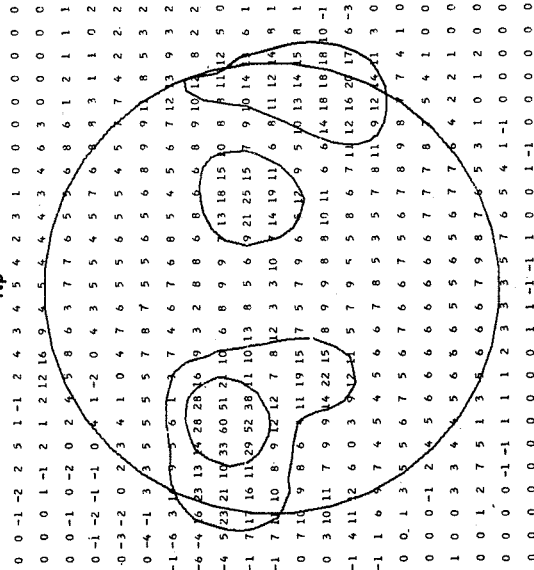
Np

McMATH-HULBERT

CALCIUM REPORT

Sp

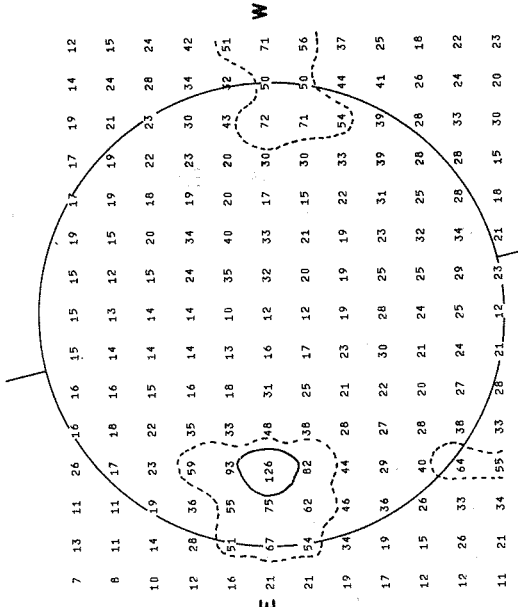
17.74-18.84 UT



Sp Brightness Unit 5,000° K
20-21 UT

S 02-03 UT

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



Sp 1255 UT

37
Aug 70

MT. WILSON
DELTA Y = 17.7
DELTA X = 18.4

PROSPECT HILL
AFRL

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFRL

8.6 mm

Np

17.74-18.84 UT

CALCIUM REPORT

37
Aug 70

38
Aug 70

AUGUST 7, 1970 (P=13.01, B₀=6.19, L₀=268.88)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

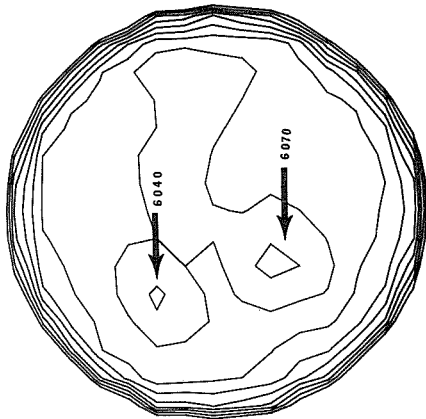
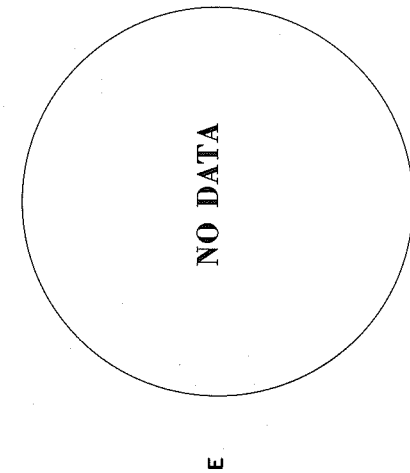
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

Np

Np



Sp Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

1315 UT

Sp

Contours in Intervals
of 200° K

18.11-19.26 UT

Sp

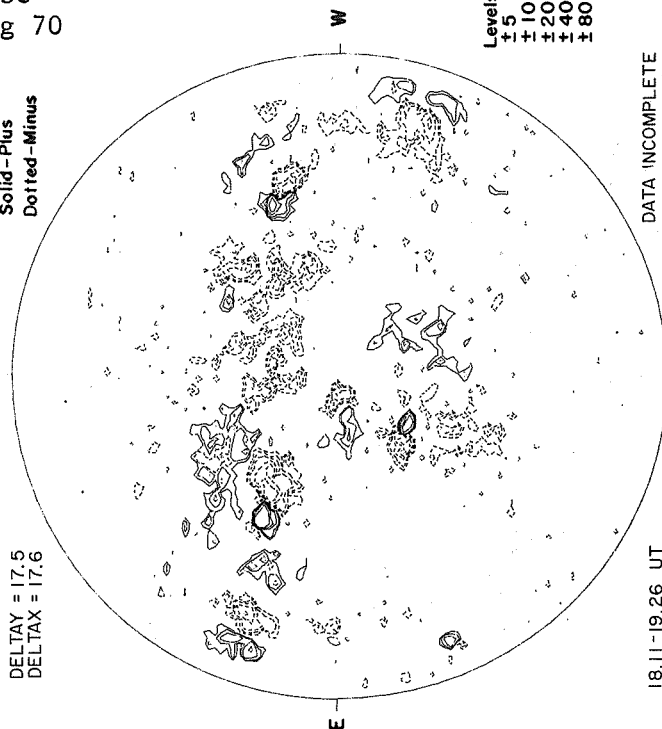
DATA INCOMPLETE

MT. WILSON

DELTA_T = 17.5
DELTA_X = 17.6

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus



STANFORD

9.1 cm

FLEURS, AUSTRALIA

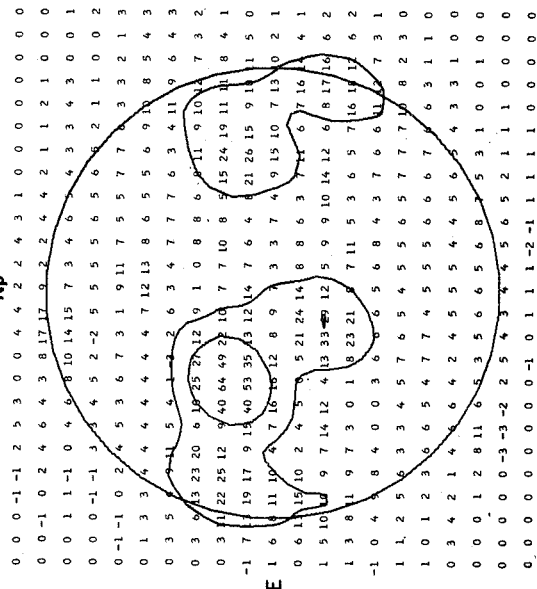
21 cm

McMATH-HULBERT

CALCIUM REPORT

Np

DATA INCOMPLETE



Sp Brightness Unit 5,000° K

20-21 UT

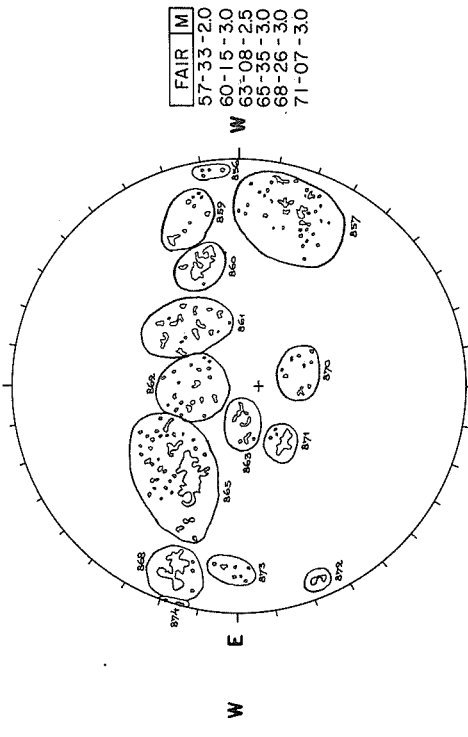
S

02-03 UT

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

Sp

1250 UT



AUGUST 8, 1970

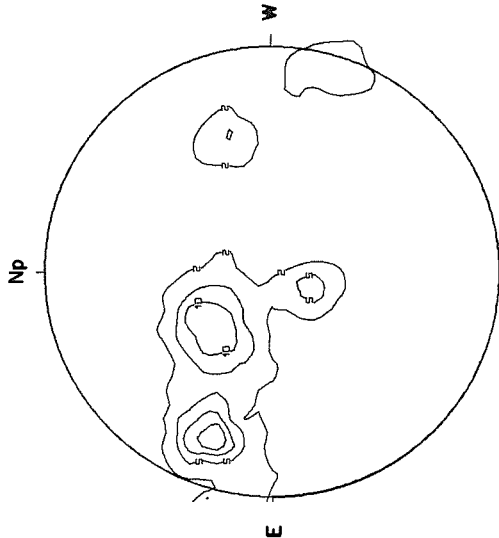
(P=13.39, B₀=6.25, L₀=255.66)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm



Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

0446-0730 UT

STANFORD

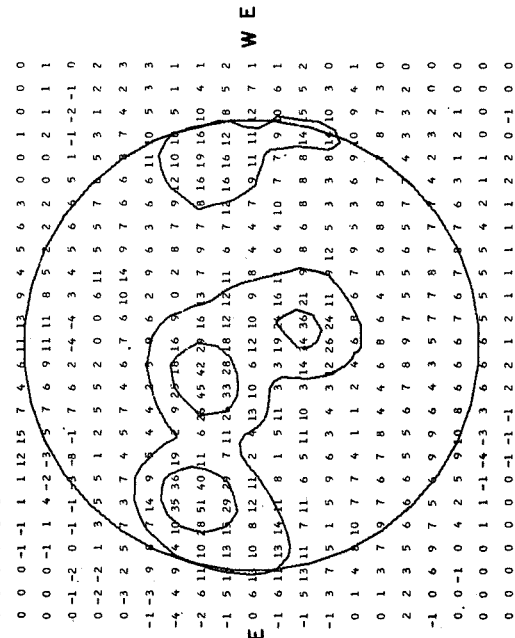
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

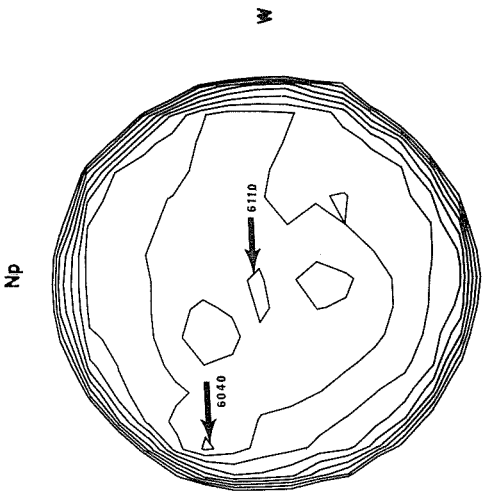
CALCIUM REPORT



Sp
Brightness Unit 5,000° K
20-21 UT

S
02-03 UT

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

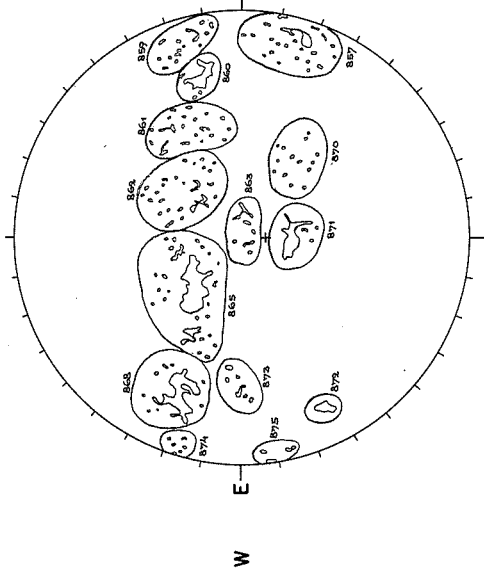


Contours in Intervals
of 200° K

18.56-19.66 UT

McMATH-HULBERT

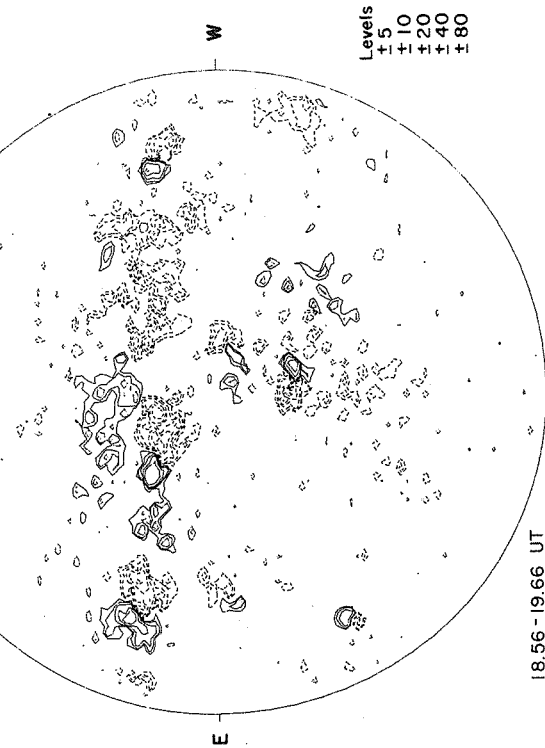
CALCIUM REPORT



Sp
1250 UT

MT. WILSON
DELTA Y = 17.7
DELTA X = 18.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

FAIR O
57-30 -2.0
59-09 -2.5
60-16 -3.0
61-13 -2.5
63-08 -2.5
65-38 -3.0
68-27 -3.5
71-13 -3.0
75-08 -2.5

39
Aug 70

40
Aug 70

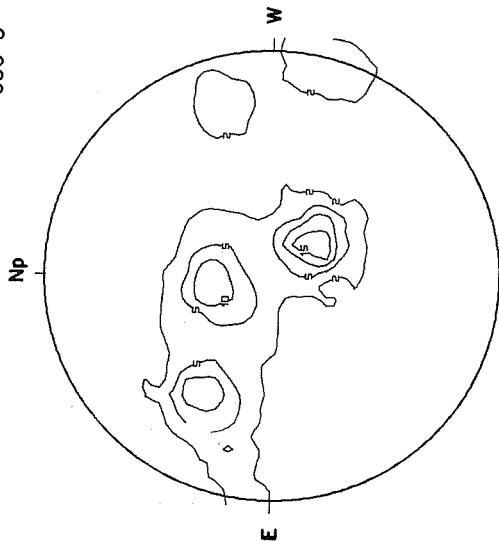
AUGUST 9, 1970 (P=13.76, $B_0 = 6.32$, $L_0 = 242.43$)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCLRL

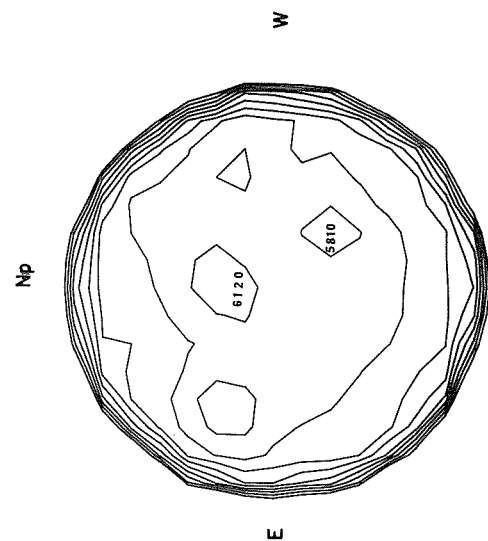
8.6 mm



0718-0859 UT

Sp

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



Contours in Intervals
of 200°K

STANFORD

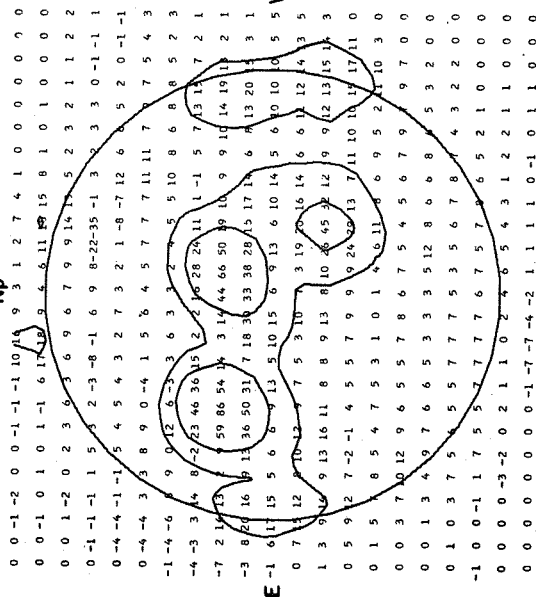
FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

Sp

CALCIUM REPORT



20-21 UT

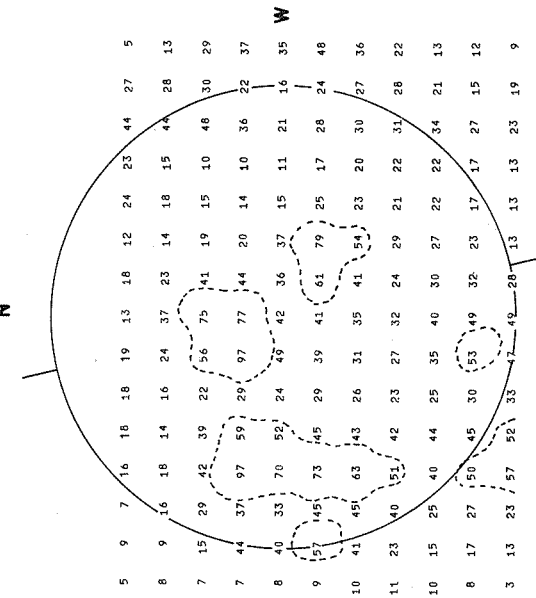
Sp

Brightness Unit $5,000^\circ \text{K}$

02-03 UT

S

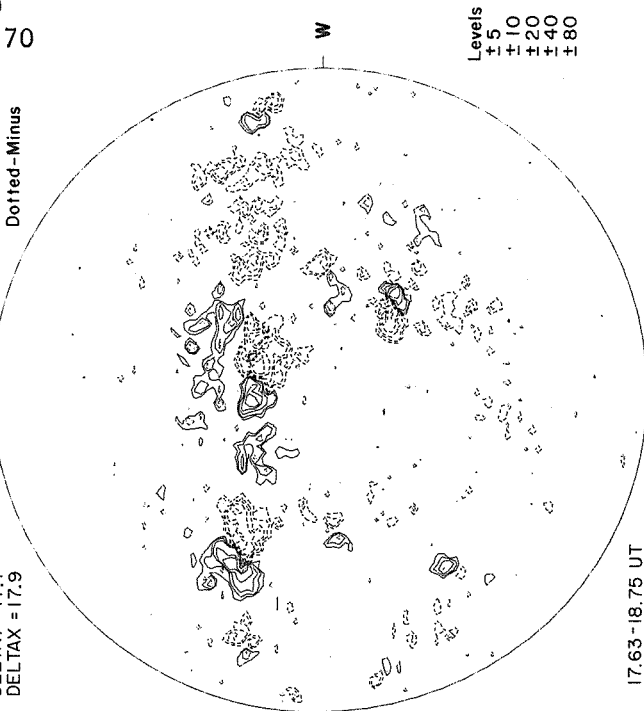
Resolution 3 Minutes of Arc
Brightness Unit $1,700^\circ \text{K}$



MT. WILSON
DELTA Y = 17.7
DELTA X = 17.9

MAGNETOGRAM
Solid-Plus
Dotted-Minus

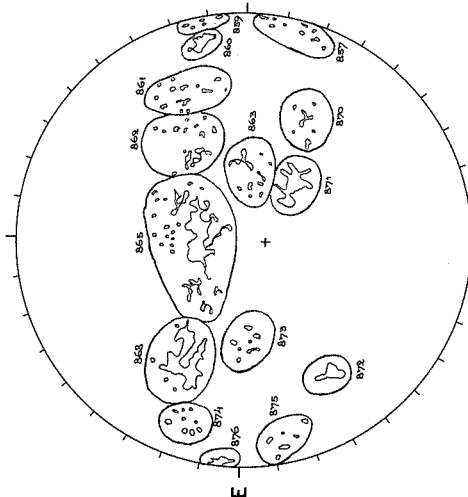
Np



Levels
 ± 5
 ± 10
 ± 20
 ± 40
 ± 80

17.63-18.75 UT

FAIR O
60-16-35
63-08-25
65-40-35
68-29-35
71-16-35
72-08-25
76-11-30



Sp

1430 UT

AUGUST 10, 1970

(P=14.13, B₀=6.37, L₀=229.21)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

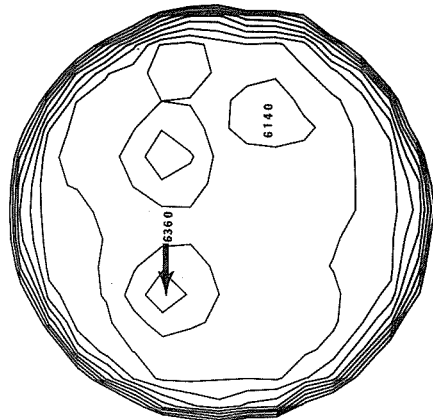
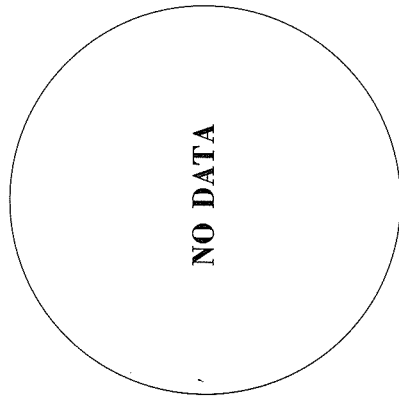
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

Np

Np



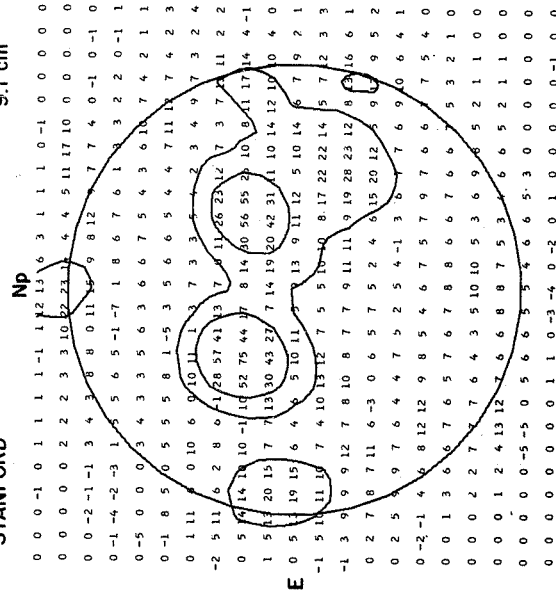
Sp Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

Contours in Intervals
of 200° K

1334 UT

18.48-19.56 UT

STANFORD



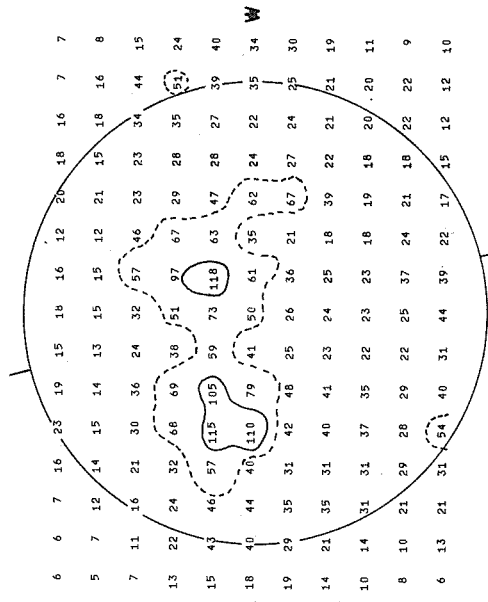
Sp

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm



S

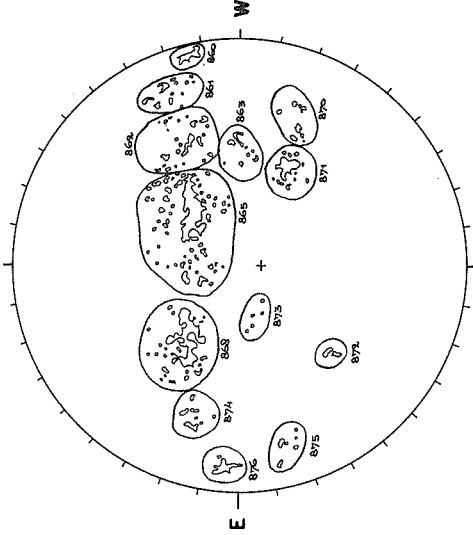
02-03 UT Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

Sp

Np



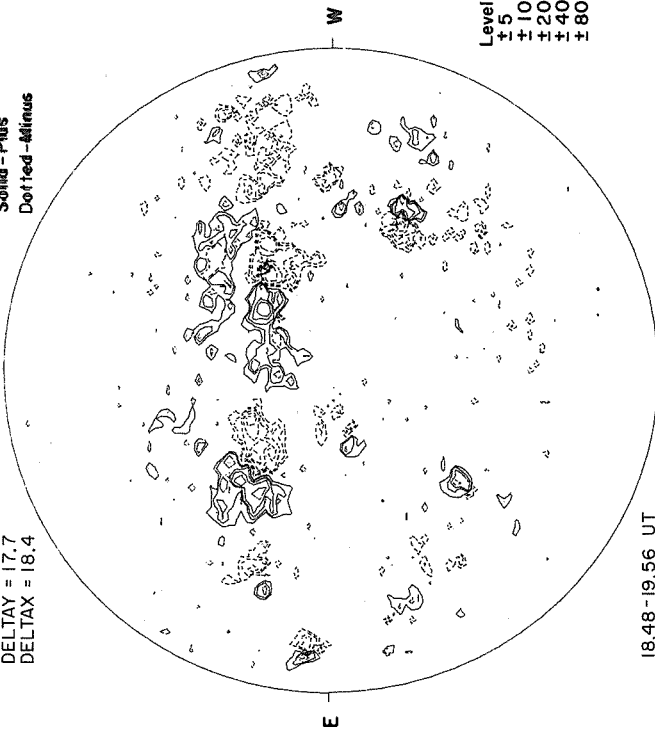
Sp

1330 UT

MT. WILSON

DELTA Y = 17.7
DELTA X = 18.4

MAGNETOGRAM
Solid - Plus
Dotted - Minus



Levels
±5
±10
±20
±40
±80

FAIR M
60-13-25
65-40-30
68-50-30
71-16-30
76-12-35

41
Aug 70

42
Aug 70

(P=14.49, B₀=6.43, L₀=215.99)

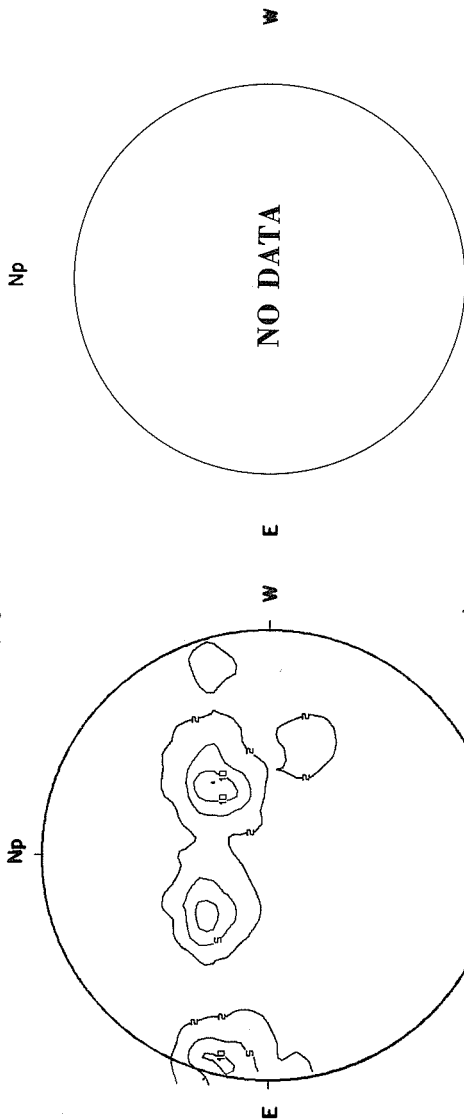
AUGUST 11, 1970

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm



0038-0218 UT Intensities in Units of 10⁻⁶ ergs cm⁻² sec⁻¹

Sp

Contours in Intervals of 200° K

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

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NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

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NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

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FLEURS, AUSTRALIA

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FLEURS, AUSTRALIA

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FLEURS, AUSTRALIA

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FLEURS, AUSTRALIA

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Sp

21 cm

FLEURS, AUSTRALIA

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NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

FLEURS, AUSTRALIA

N

NO DATA

Sp

21 cm

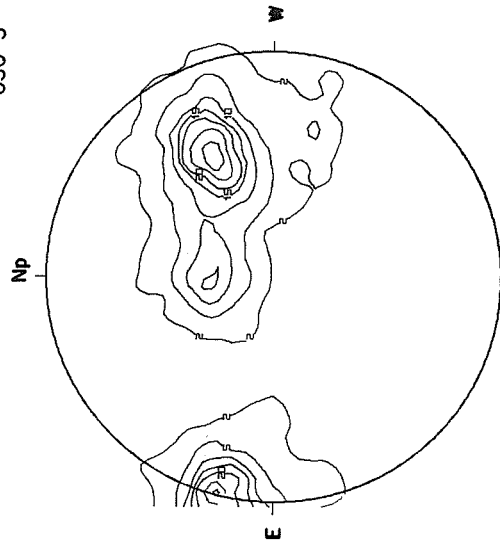
(P=14.85, B_o=6.49, L_o=202.77)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

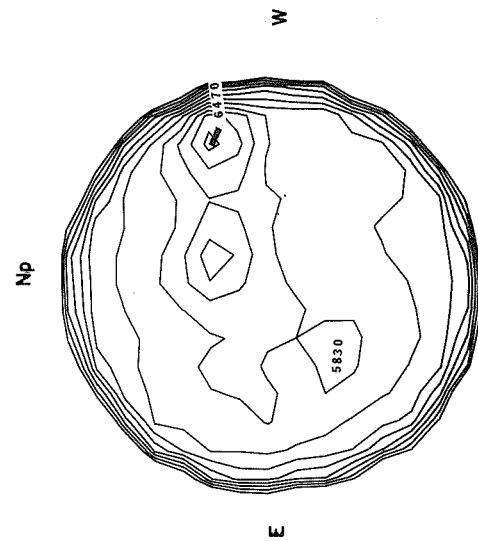
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm



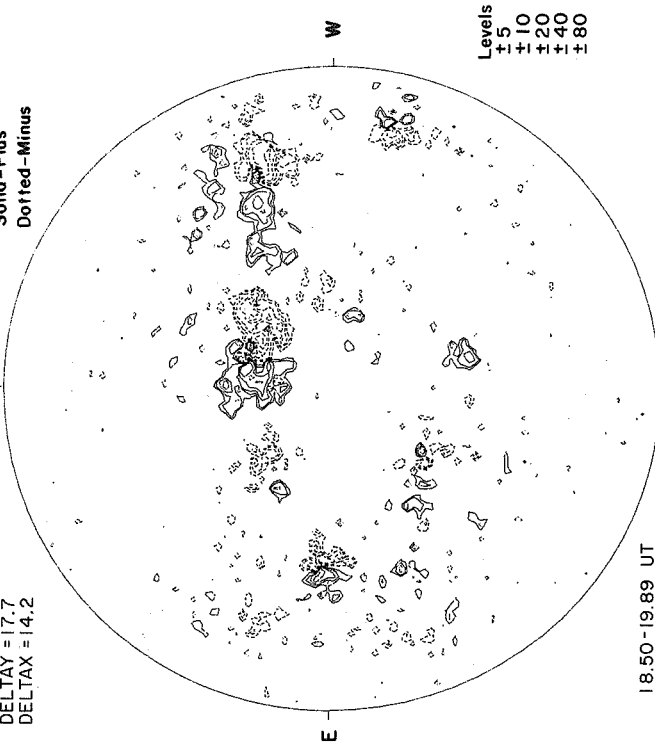
0210-0350 UT
Sp
Intensities in Units
of 10^{-6} ergs $\text{cm}^{-2} \text{sec}^{-1}$



Sp 1343 UT
Contours in Intervals
of 200° K

MT. WILSON
DELTAY = 17.7
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus



18.50-19.89 UT

STANFORD

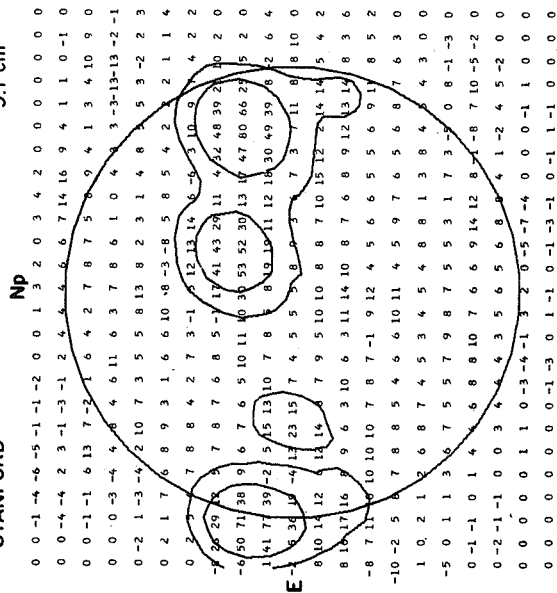
9.1 cm

FLEURS, AUSTRALIA

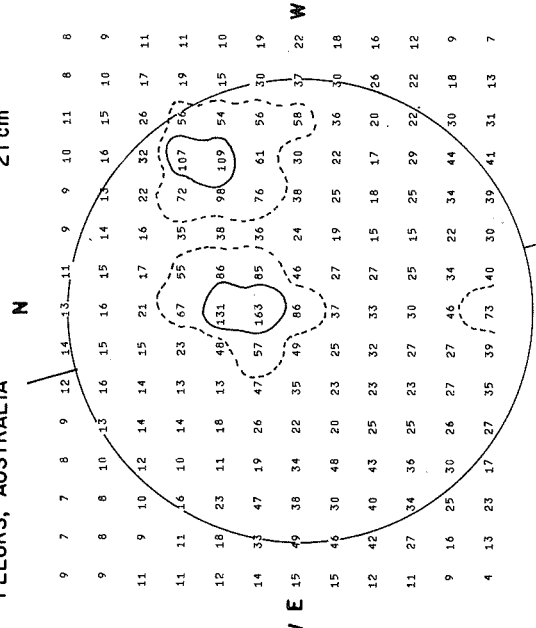
21 cm

McMATH-HULBERT

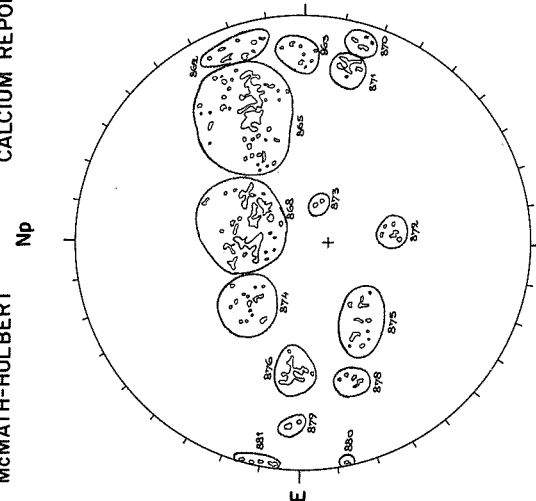
CALCIUM REPORT



Sp
20-21 UT
Brightness Unit 5,000° K



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



Sp
1315 UT

GOOD	M
65	36-4.0
68	33-3.5
71	11-3.0
76	15-3.5

AUGUST 13, 1970

(P=15.20, B₀=6.54, L₀=189.55)

MT. WILSON

Np

Aug 70

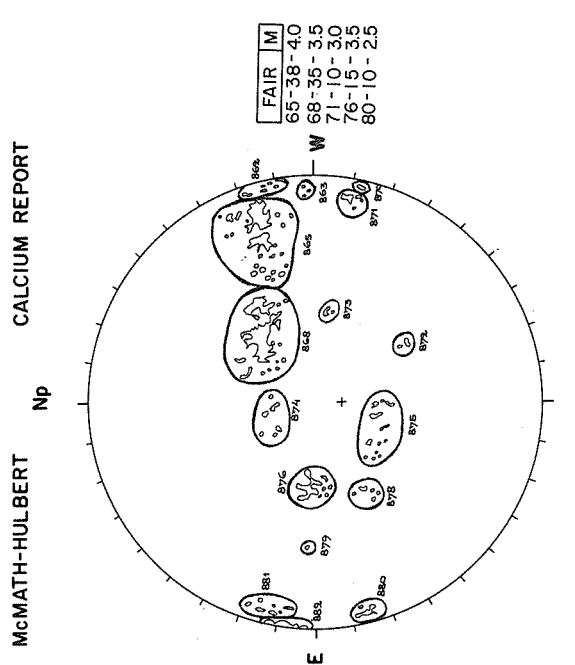
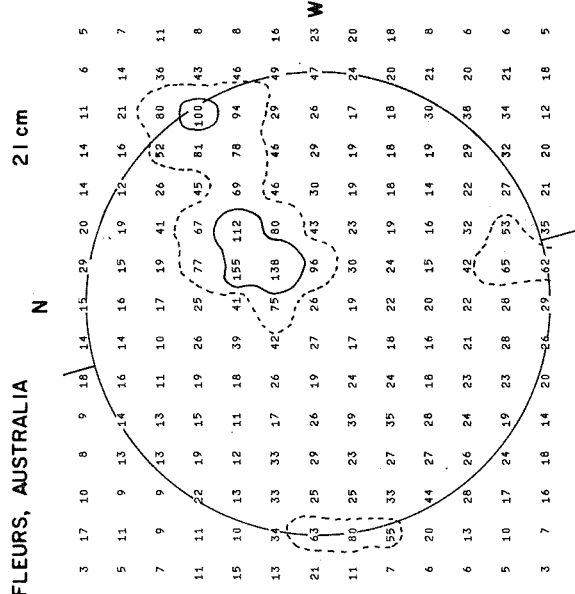
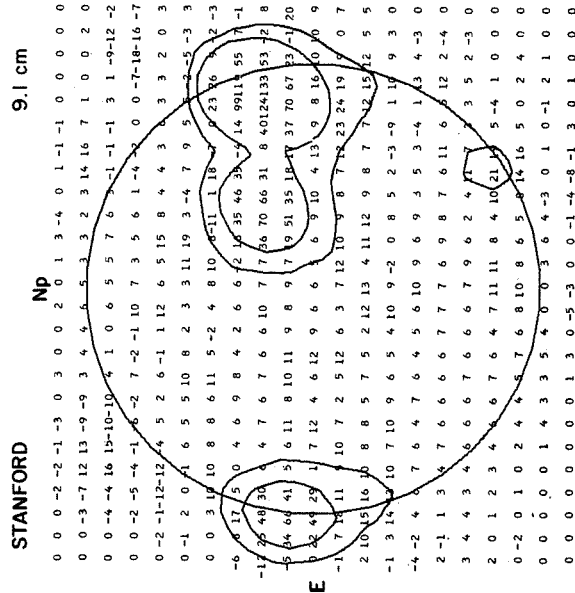
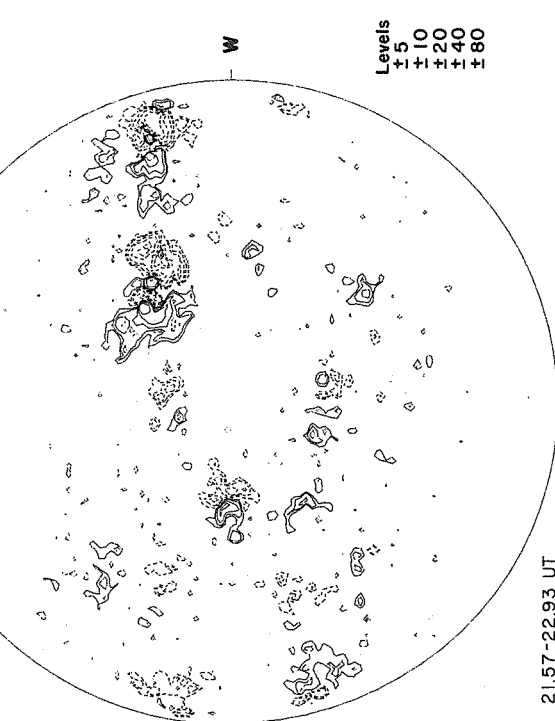
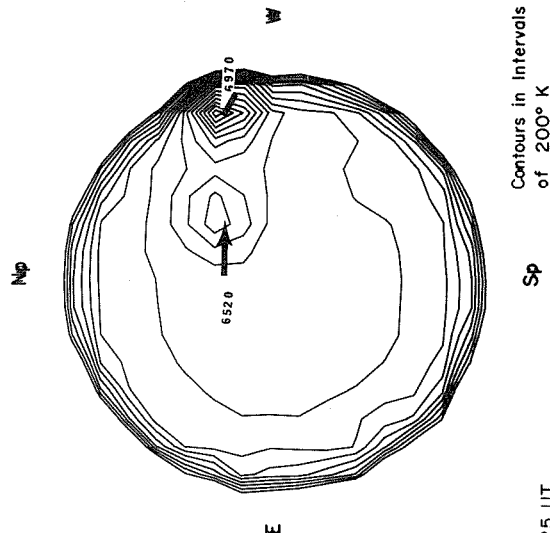
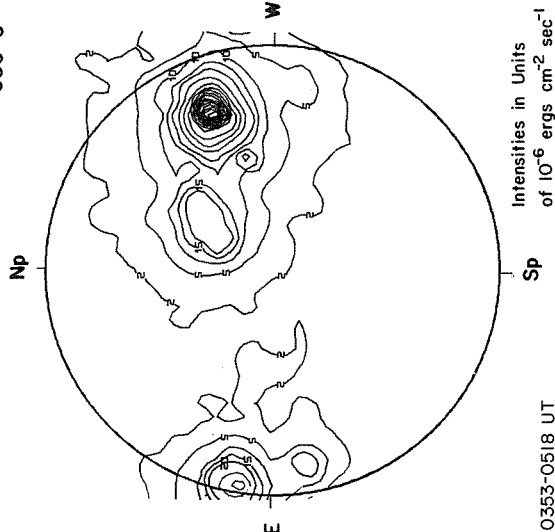
44

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm



STANFORD
Np
Sp
20-21 UT

FLEURS, AUSTRALIA
N
Sp
02-03 UT

McMATH-HULBERT
Np
Sp
1340 UT

CALCIUM REPORT
Np
Sp
1340 UT

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

AUGUST 14, 1970

(P=15.55, B₀=6.59, L₀=176.33)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

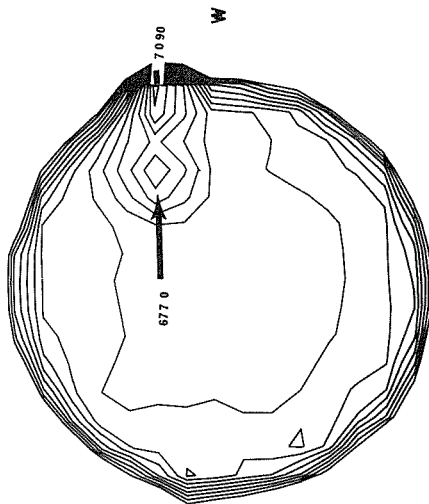
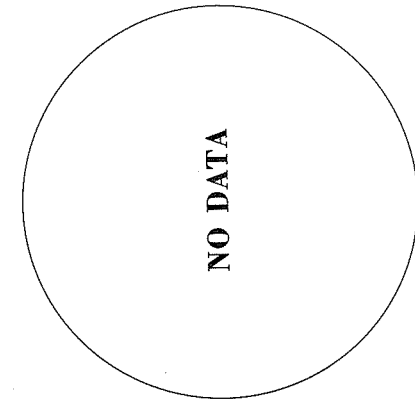
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

Np

Np



Sp
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

Sp
Contours in Intervals
of 200° K

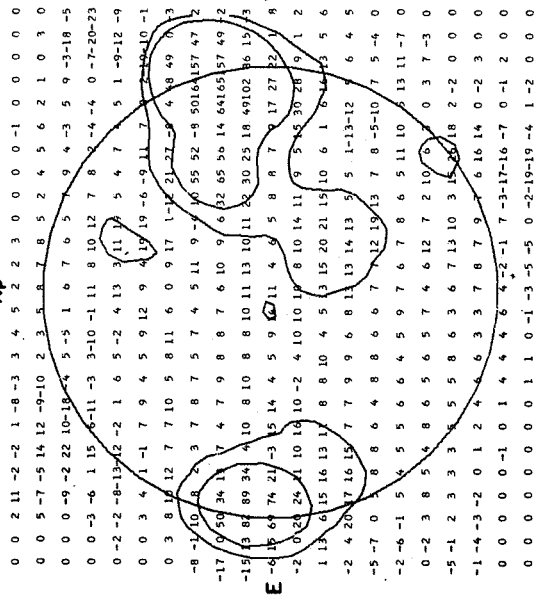
1415 UT

21.74-23.05 UT

STANFORD

Np

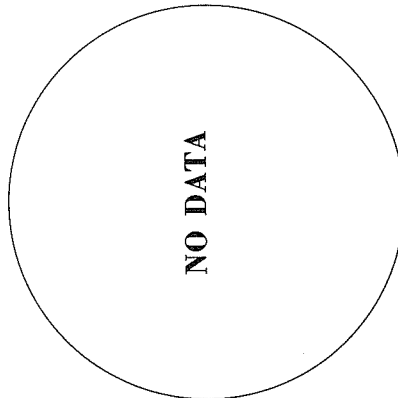
9.1 cm



FLEURS, AUSTRALIA

N

21 cm



Sp
Brightness Unit 5,000° K
20-21 UT

S
02-03 UT

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

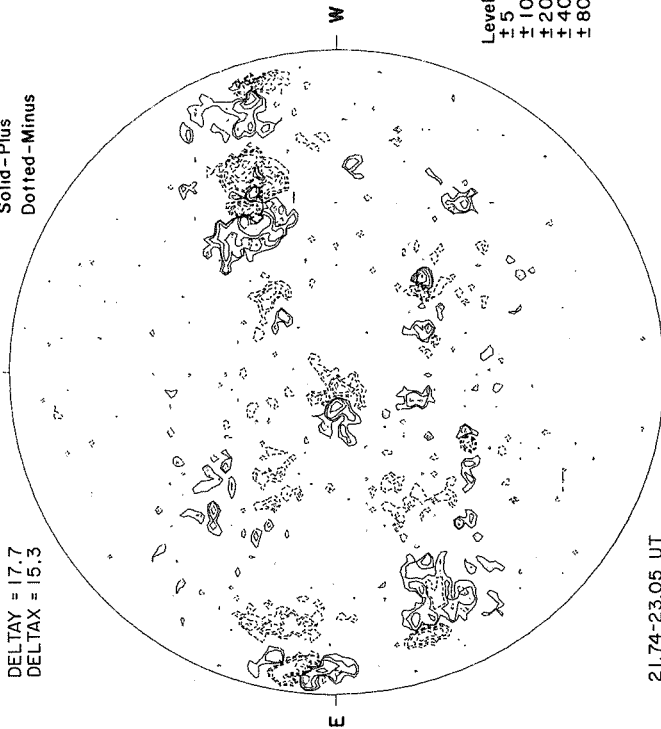
MT. WILSON

DELTA Y = 17.7
DELTA X = 15.3

Np

MAGNETOGRAM

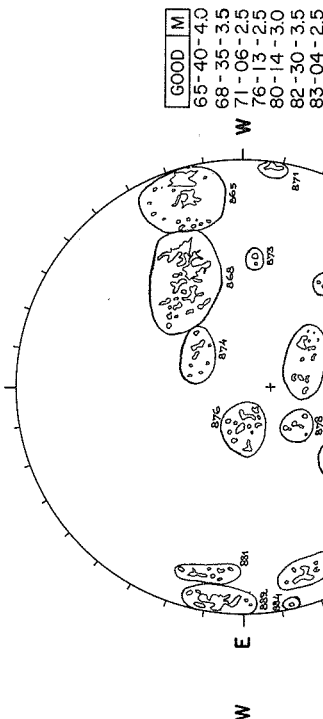
Solid-Plus
Dotted-Minus



McMATH-HULBERT

Np

CALCIUM REPORT



Sp
1350 UT

45
Aug 70

46
Aug 70

(P=15.90, B₀=6.64, L₀=163.11)

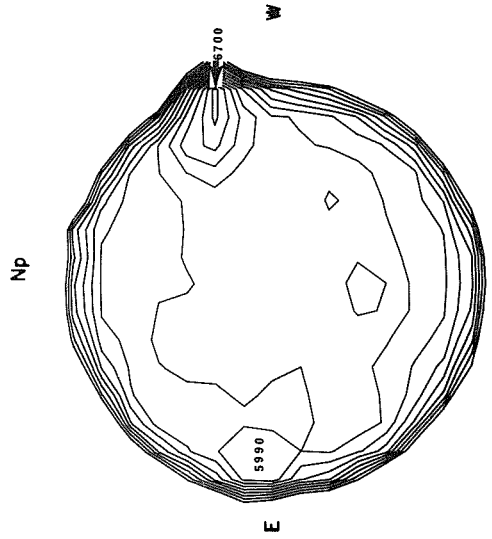
AUGUST 15, 1970

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCLRL

8.6 mm

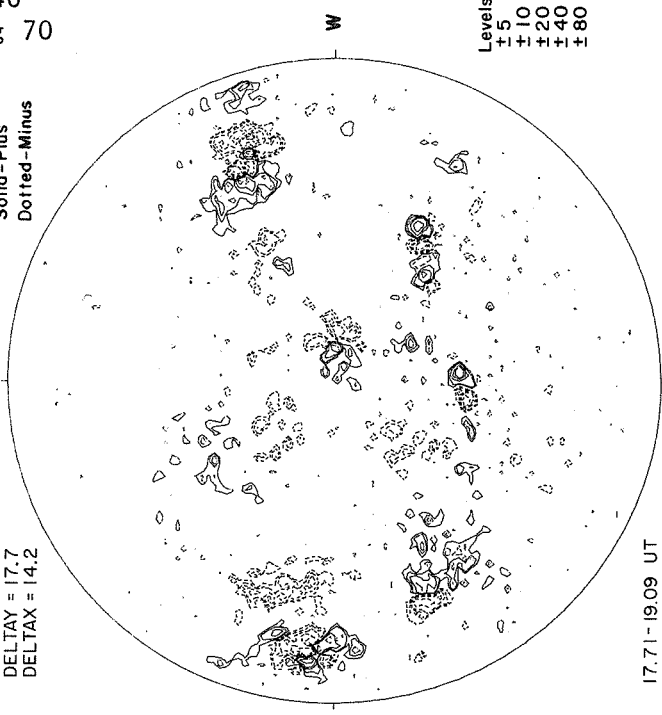


Intensities in Units
of 10^{-6} ergs $\text{cm}^{-2} \text{sec}^{-1}$ 1550 UT

MT. WILSON

DELTA Y = 17.7
DELTA X = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus



17.71-19.09 UT

Levels
±5
±10
±20
±40
±80

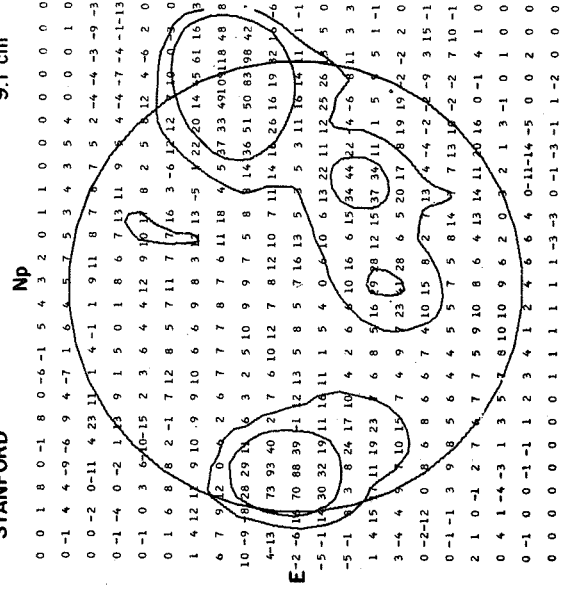
STANFORD

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT

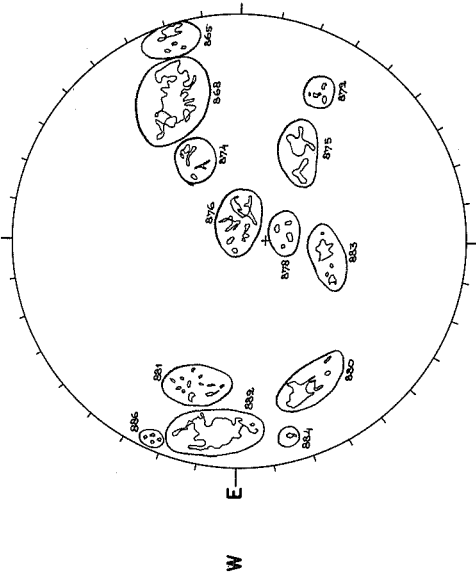


Sp
Brightness Unit 5,000° K
20-21 UT

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

Sp
1505 UT

POOR 10
65-30-40
68-36-35
75-12-30
80-16-30
81-11-25
82-32-35
83-07-30

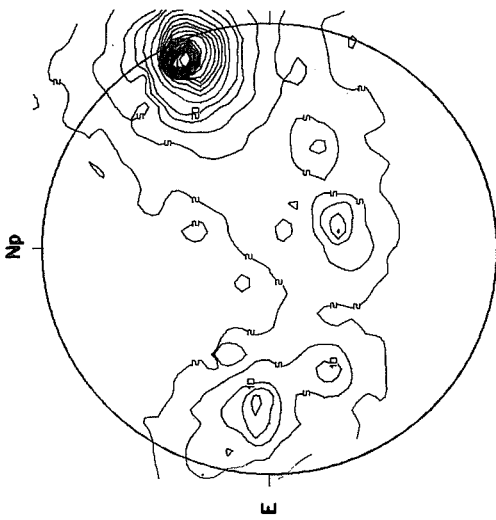


AUGUST 16, 1970

(P=16.24, B₀=6.69, L₀=149.89)

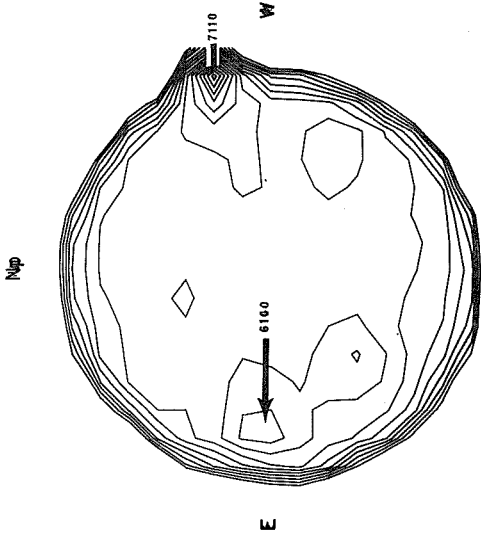
UNIV COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5



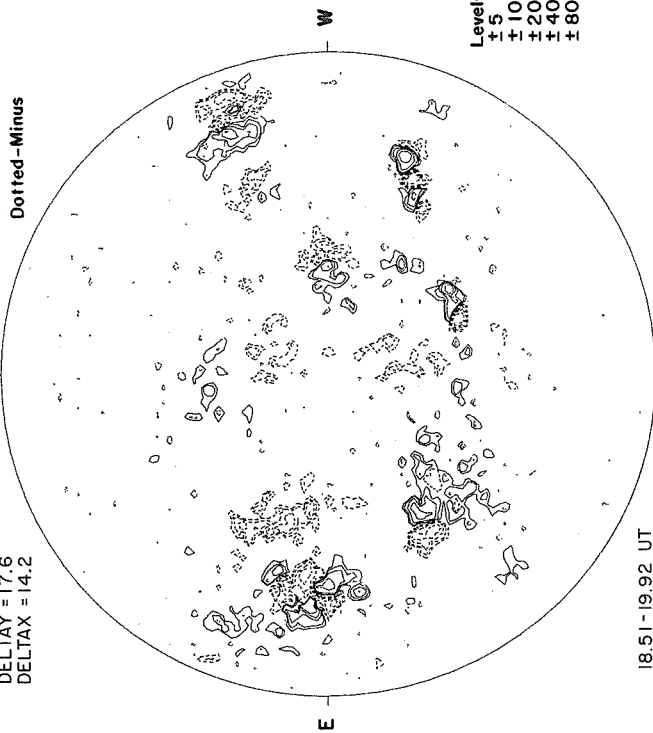
PROSPECT HILL
AFGL

8.6 mm



MT. WILSON
DELTA_Y = 17.6
DELTA_X = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

0317-0453 UT

Contours in Intervals
of 200° K

18.51-19.92 UT

STANFORD

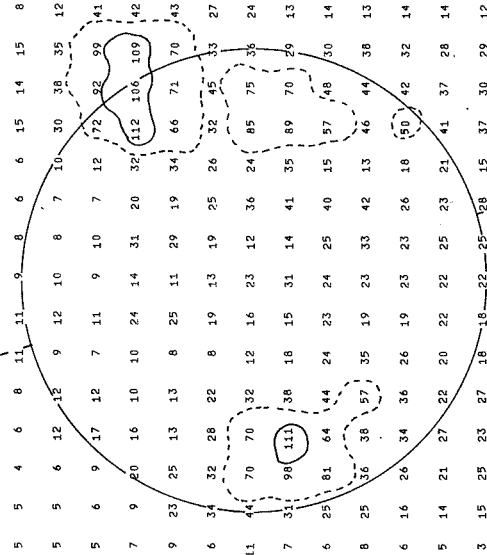
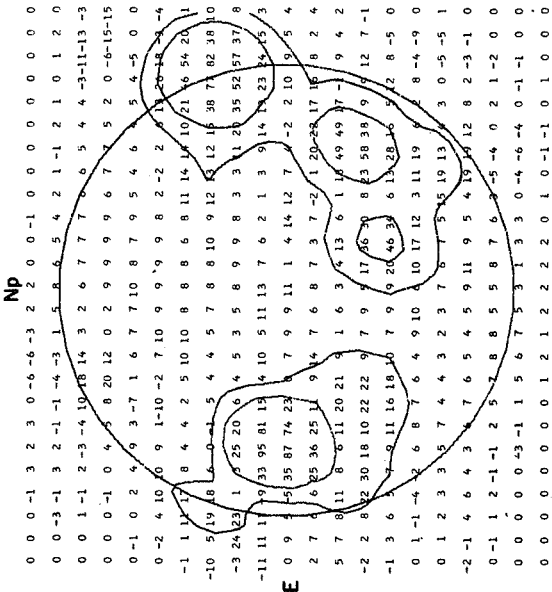
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT



FAIR O
65-10-25
68-37-35
75-19-30
76-13-25
80-17-30
81-12-25
82-34-35
83-11-30

Sp Brightness Unit 5,000° K

S

02-03 UT

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

Sp 1345 UT

47
Aug 70

AUGUST 17, 1970

(P=16.57, B₀=6.74, L₀=136.68)

48
Aug 70

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LEICESTER UNIV.

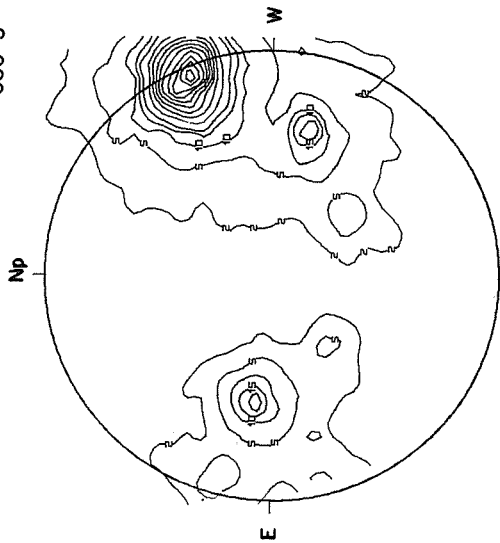
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

MT. WILSON
DELTA T = 17.6
DELTA X = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Np

W

E

NO DATA

W

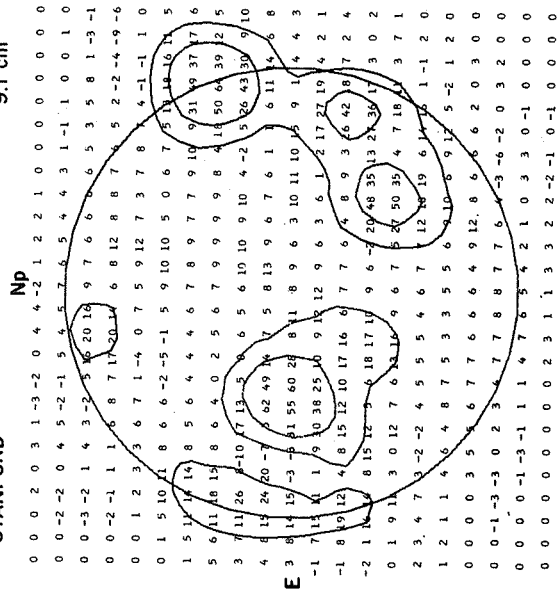
E

Levels
±5
±10
±20
±40
±80

0131-0311 UT
Sp
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

STANFORD

9.1 cm



FLEURS, AUSTRALIA

N

21 cm

Contours in Intervals
of 200° K

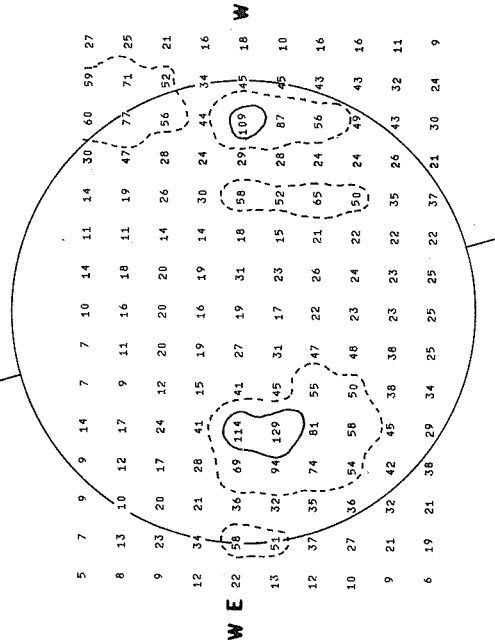
18.38-19.82 UT

McMATH-HULBERT

CALCIUM REPORT

Sp

Np



FAIR M
68-35-3.5
75-16-3.0
80-20-3.0
81-12-2.5
82-35-3.5
83-12-3.0
88-15-3.0

Sp
20-21 UT
Brightness Unit 5,000° K

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

Sp
1245 UT

AUGUST 18, 1970

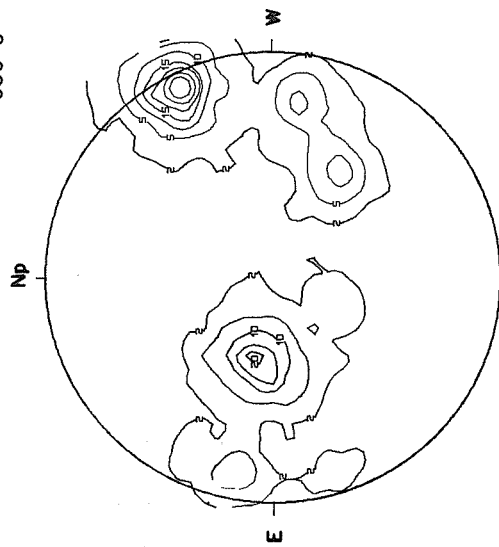
(P=16.90, B₀=6.78, L₀=123.46)

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LEICESTER UNIV.

X-RAY
OSO-5

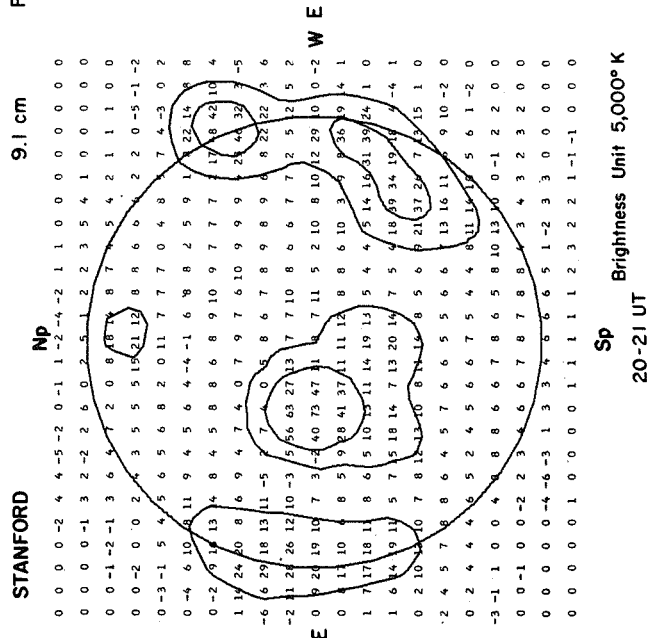
PROSPECT HILL
AFCRL

8.6 mm

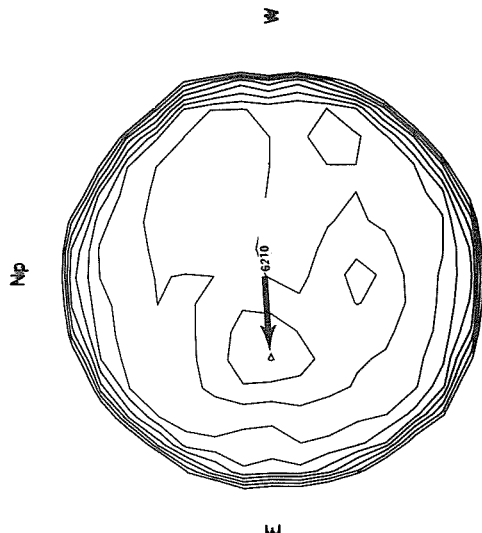


0300-0437 UT
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

STANFORD



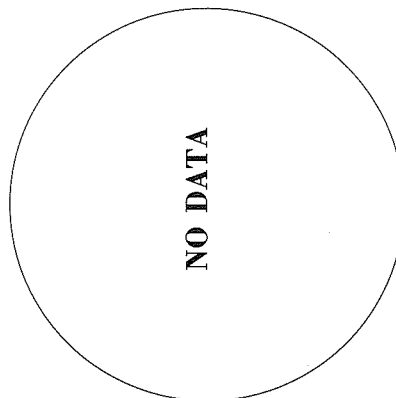
Sp
Brightness Unit 5,000° K
20-21 UT



1354 UT
Contours in Intervals
of 200° K

FLEURS, AUSTRALIA

21 cm

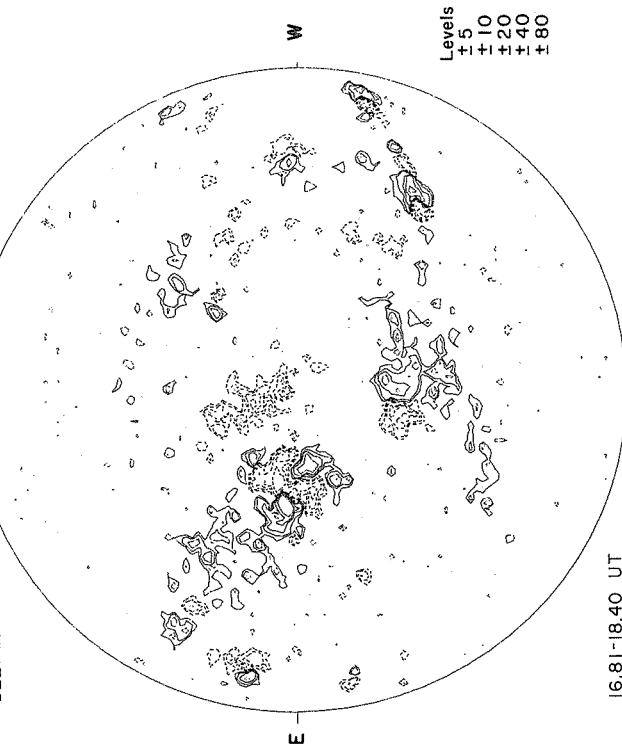


S

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

MT. WILSON
DELTAY = 17.6
DELTAX = 14.3

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

16.81-18.40 UT

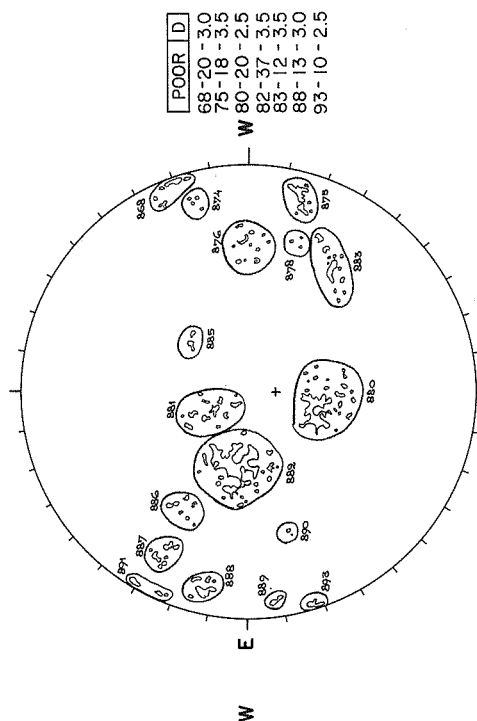
McMATH-HULBERT

CALCIUM REPORT

Np

Sp

1210 UT



POOR ID
68-20-30
75-18-35
80-20-25
82-37-35
83-12-35
88-13-30
93-10-25

Aug 70

50
Aug 70

(P=17.23, B₀=6.82, L₀=110.24)

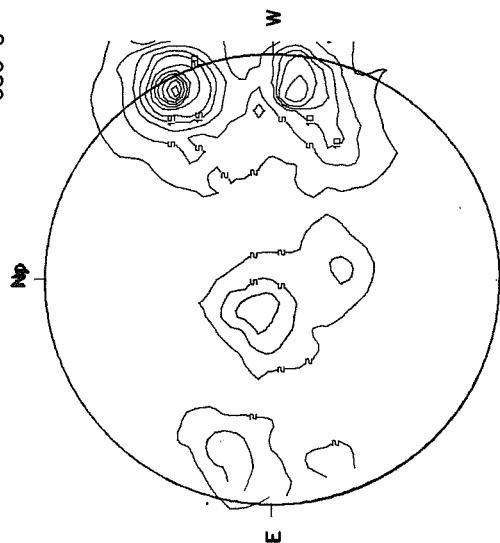
AUGUST 19, 1970

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X-RAY
OSO-5

PROSPECT HILL
AFCRL

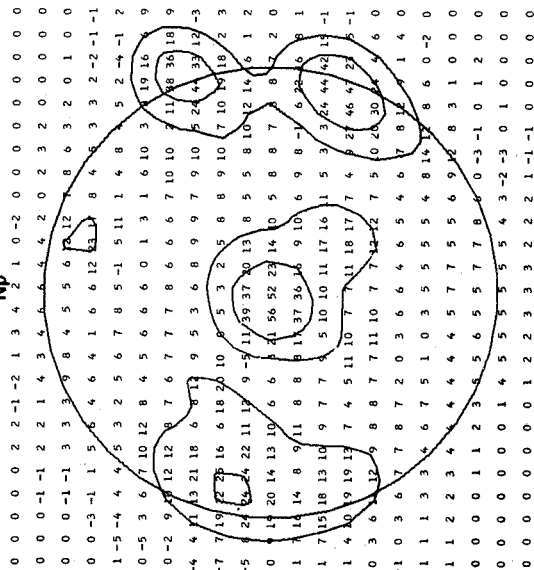
8.6 mm



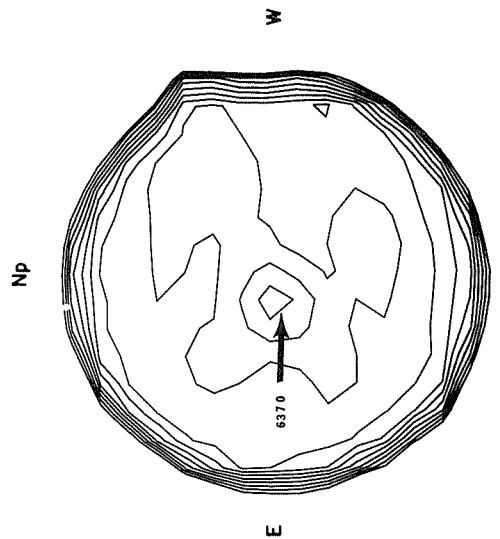
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

STANFORD

9.1 cm



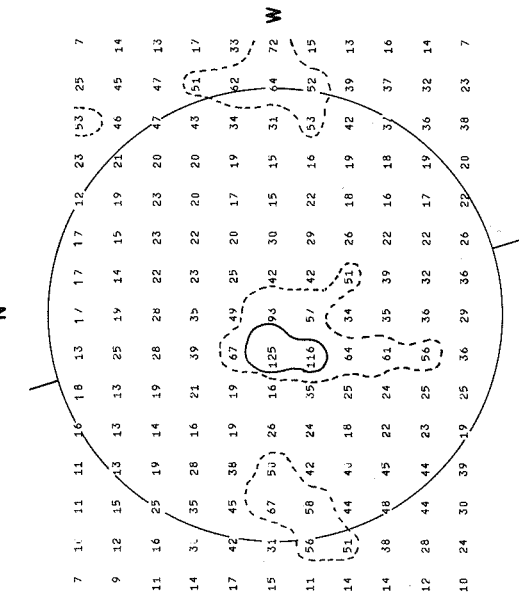
Sp
20-21 UT
Brightness Unit 5,000° K



Contours in Intervals
of 200° K

FLEURS, AUSTRALIA

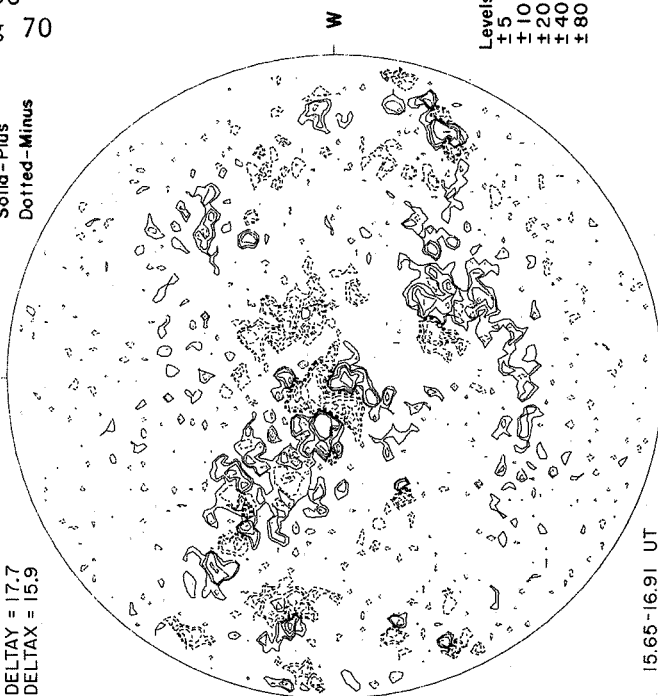
21 cm



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

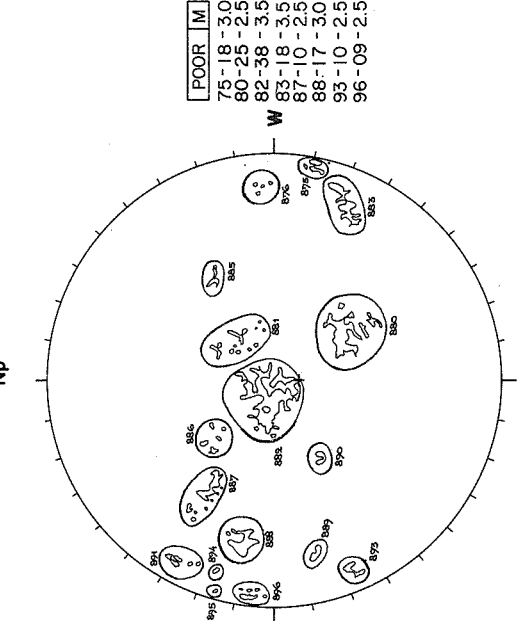
MT. WILSON
DELTA_{TAY} = 17.7
DELTA_X = 15.9

MAGNETOGRAM
Solid - Plus
Dotted - Minus



McMATH-HULBERT

CALCIUM REPORT



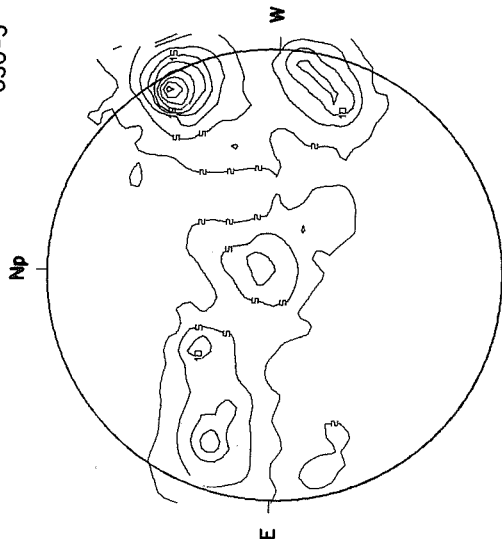
Sp
1817 UT

AUGUST 20, 1970

(P = 17.55, B₀ = 6.86, L₀ = 97.02)

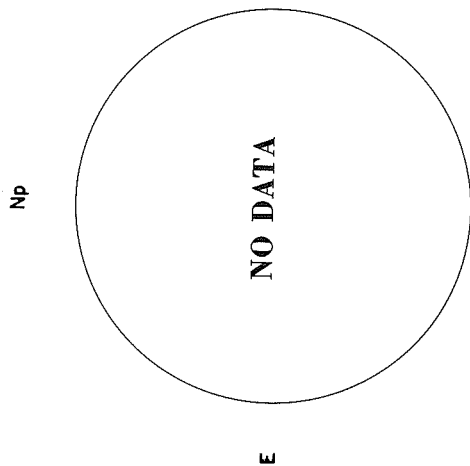
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X-RAY
OSO-5



PROSPECT HILL
AFCLRL

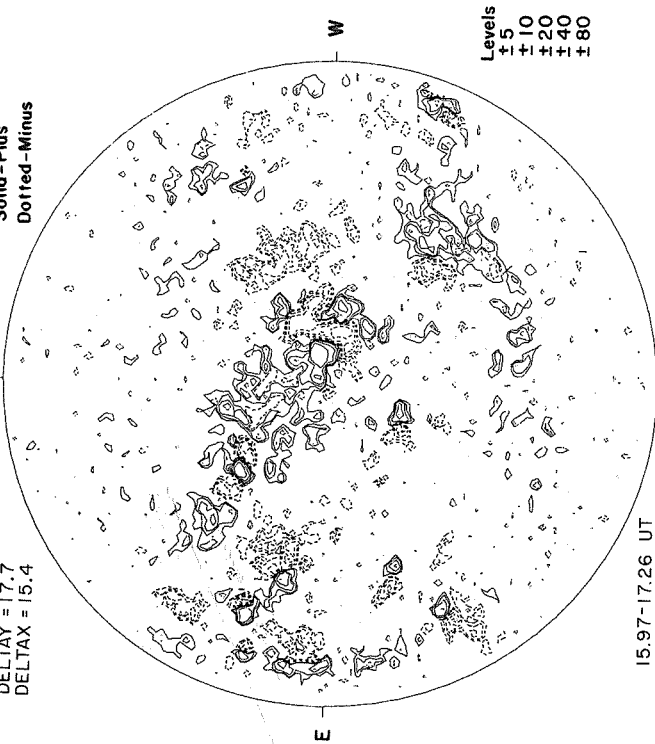
8.6 mm



MT. WILSON

DELTA Y = 17.7
DELTA X = 15.4

MAGNETOGRAM
Solid-Plus
Dotted-Minus

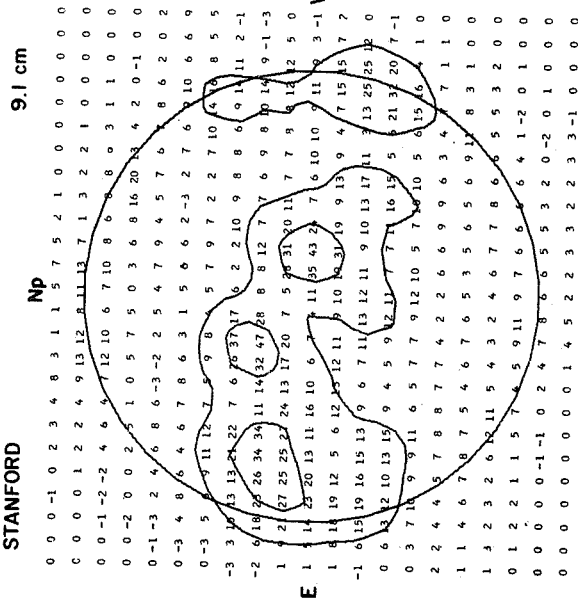


Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

0105-0246 UT

Contours in Intervals
of 200° K

STANFORD



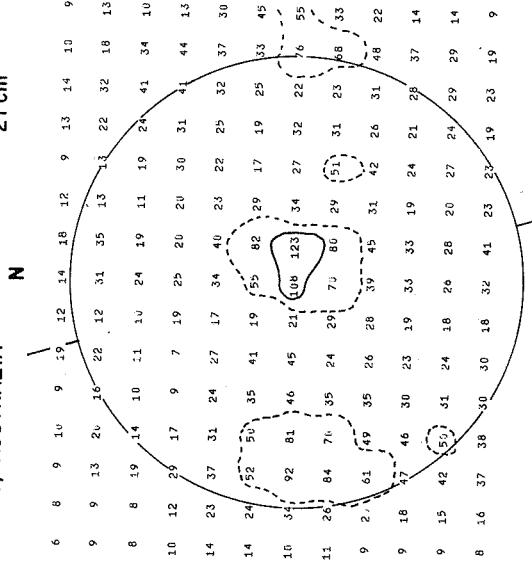
Brightness Unit 5,000° K

Sp

20-21 UT

FLEURS, AUSTRALIA

21 cm



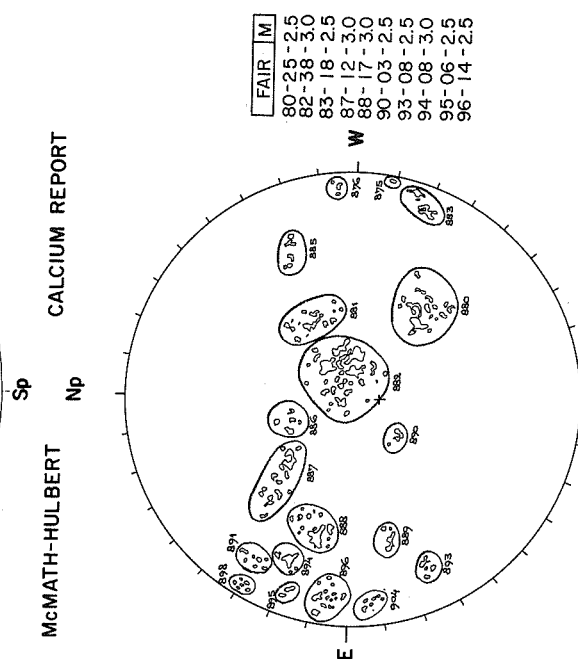
S

02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



Sp

1315 UT

51
Aug 70

AUGUST 21, 1970

(P=17.87, B₀=6.90, L₀=83.81)

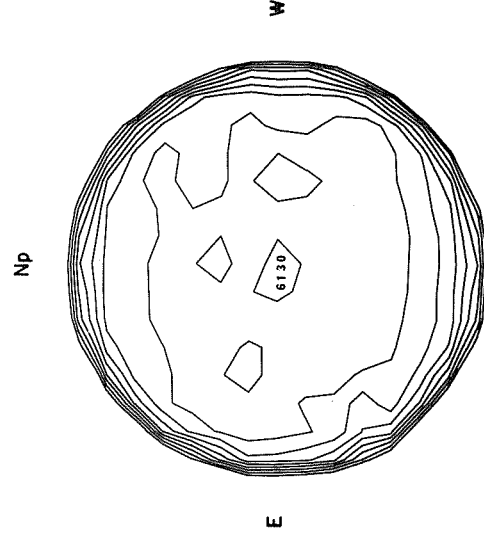
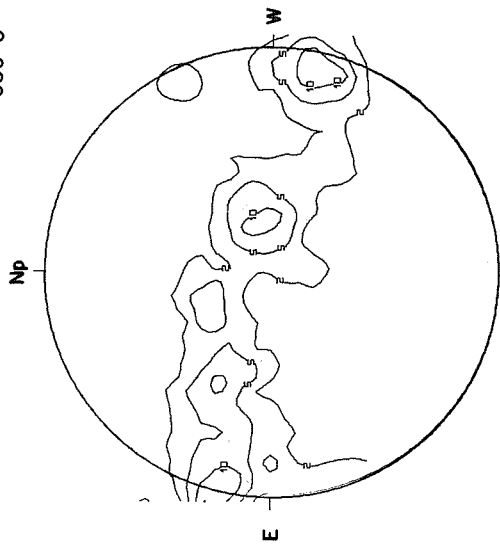
52
Aug 70

UNIV. COLLEGE LONDON
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X-RAY
OSO-5

PROSPECT HILL
AFCRL

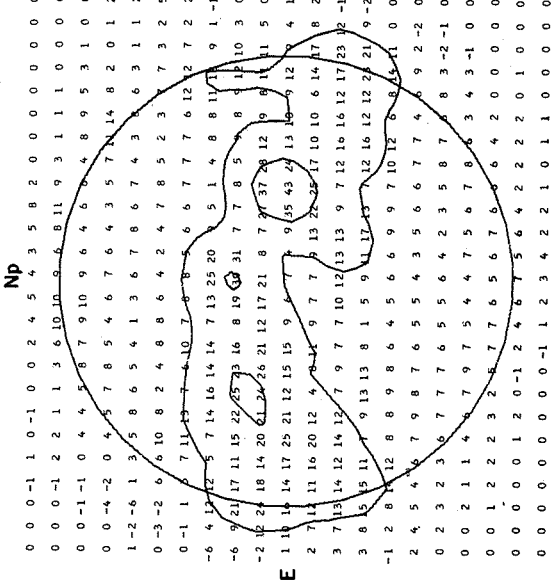
8.6 mm



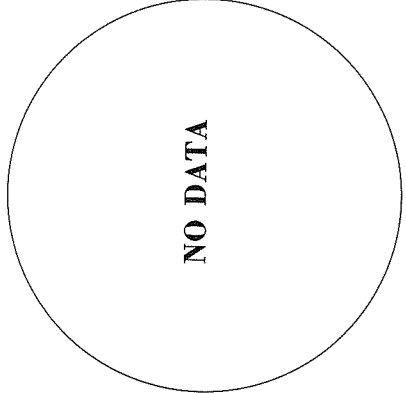
0159-0413 UT
Sp
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

1721 UT
Sp
Contours in Intervals
of 200° K

STANFORD
Np
9.1 cm



FLEURS, AUSTRALIA
N
21 cm



McMATH-HULBERT
Np
15.71-17.00 UT

CALCIUM REPORT

Levels
±5
±10
±20
±40
±80

POOR M
80-23-25
82-35-30
83-12-25
87-15-25
88-17-30
90-05-30
93-12-25
94-08-30
96-14-25

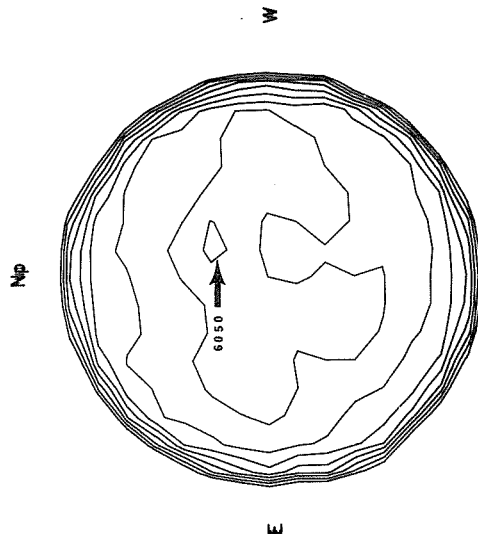
Sp
Brightness Unit 5,000° K
20-21 UT

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

Sp
1255 UT

MT. WILSON
DELTA Y = 17.5
DELTA X = 17.3

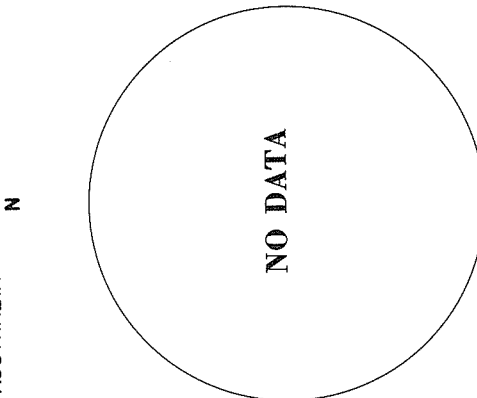
X-RAY
OSO-5



Sp 323 UT
Contours in Intervals
of 200° K

FLEURS, AUSTRALIA

21 cm



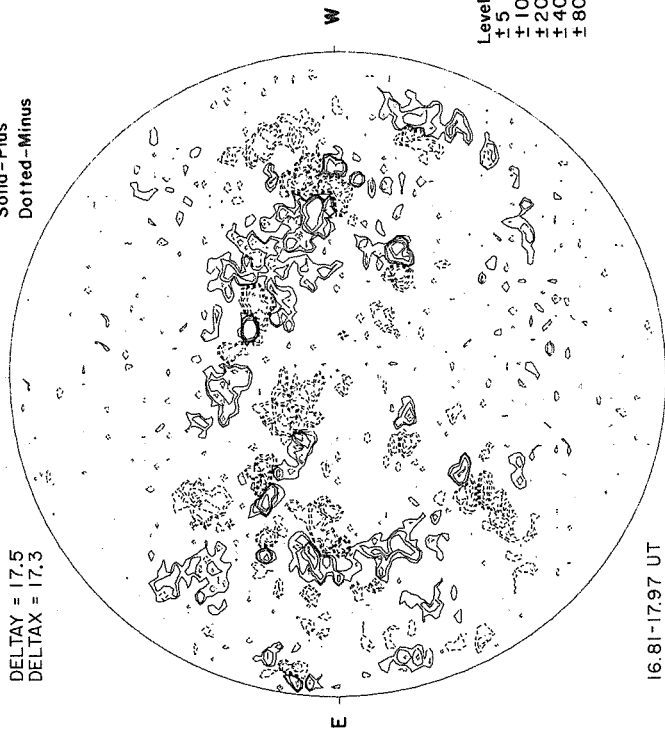
S
02-03 UT
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

Sp
1405 UT

53
Aug 70

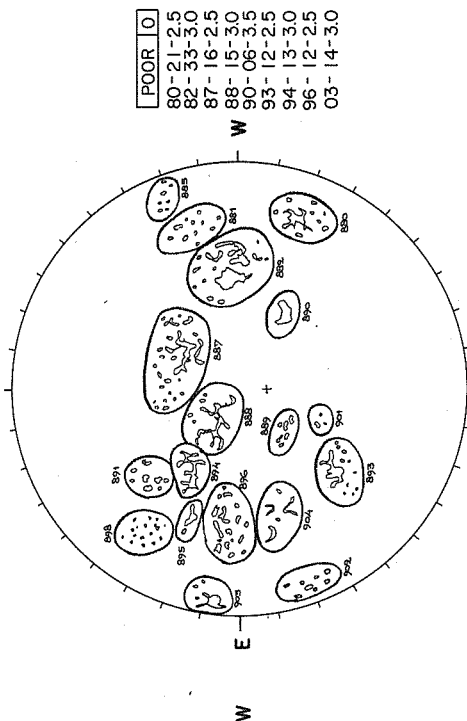
53

MAGNETOGRAM
Solid - Plus
Dotted - Minus



CALCIUM REPORT

McMATH-HULBERT



POOR	O
80-	21-2.5
82-	33-3.0
87-	16-2.5
88-	15-3.0
90-	06-3.5
93-	12-2.5
94-	13-3.0
96-	12-2.5
03-	14-3.0

54
Aug 70

(P=18.48, B₀=6.97, L₀=57.38)

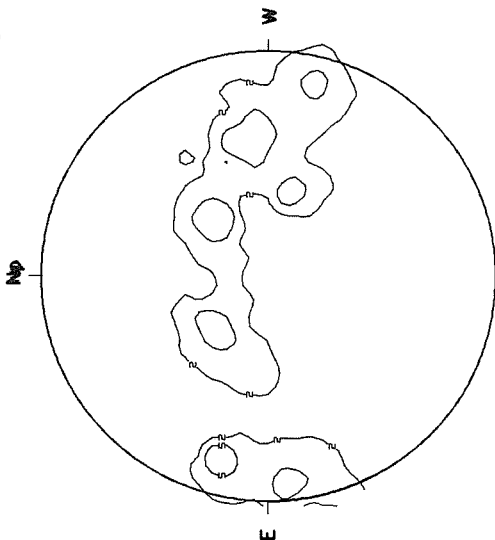
AUGUST 23, 1970

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LEICESTER UNIV.

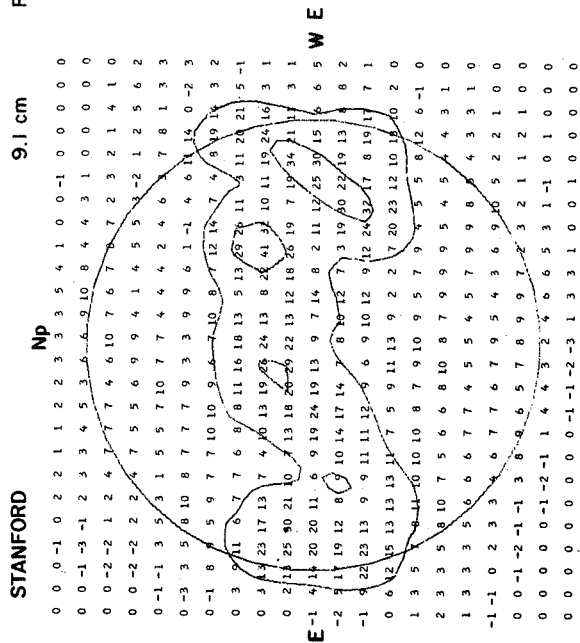
X-RAY
OSO-5

PROSPECT HILL
AFCRL

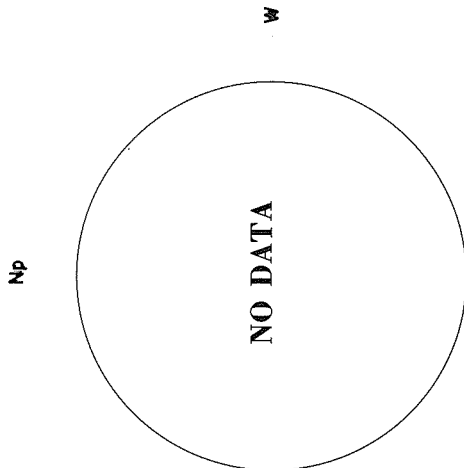
8.6 mm



0037-0220 UT
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

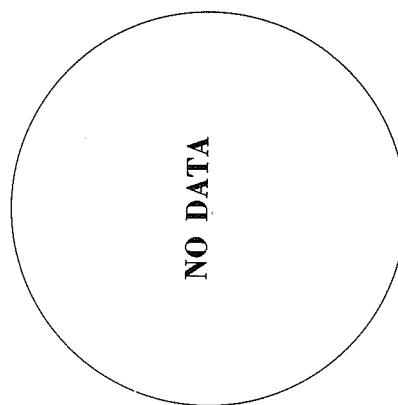


20-21 UT
Sp
Brightness Unit 5,000° K



Contours in Intervals
of 200° K

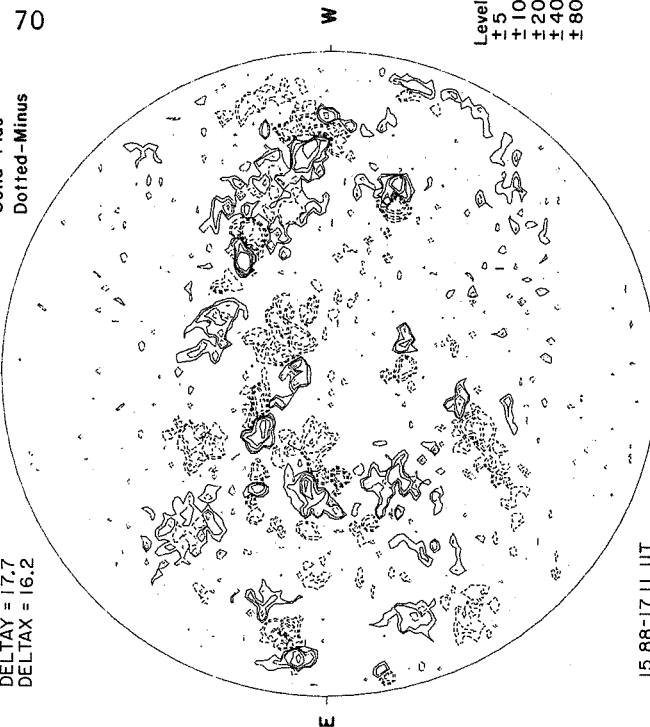
21 cm
FLEURS, AUSTRALIA



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

MT. WILSON
DELTA TAY = 17.7
DELTA TAX = 16.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus

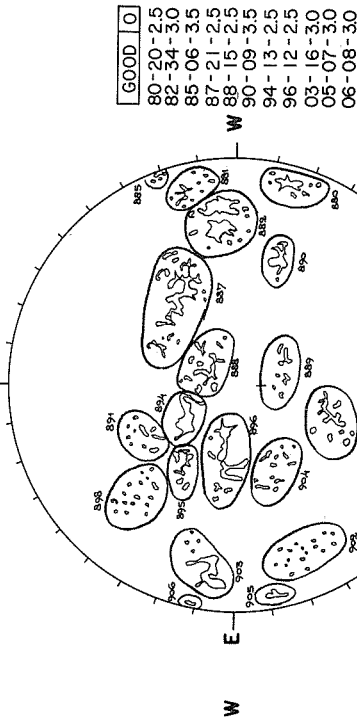


15.88-17.11 UT

Levels
±5
±10
±20
±40
±80

McMATH-HULBERT

CALCIUM REPORT



1645 UT
Sp

GOOD O
80-20-2.5
82-34-3.0
85-06-3.5
87-21-2.5
88-15-2.5
90-09-3.5
94-13-2.5
96-12-2.5
03-16-3.0
05-07-3.0
06-08-3.0

AUGUST 24, 1970

(P=18.79, B₀=7.00, L₀=44.17)

UNIV. COLLEGE LONDON
LEICESTER UNIV.

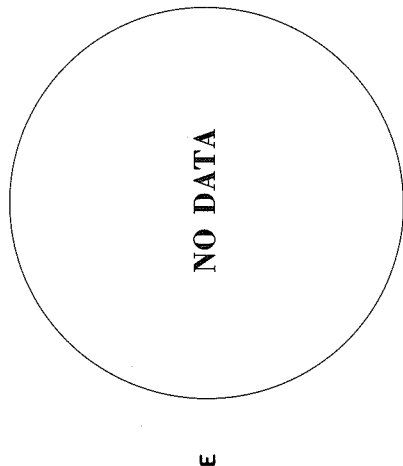
X-RAY
OSO-5

PROSPECT HILL
AFCRL

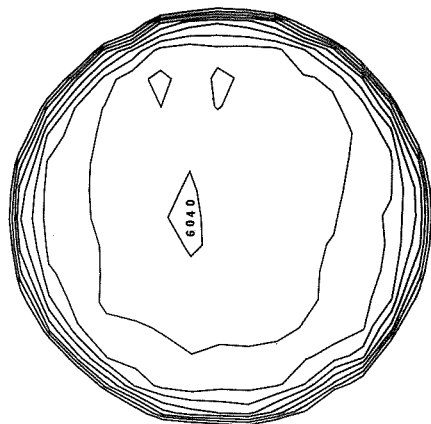
8.6 mm

Np

Np



NO DATA



Sp Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

Contours in Intervals
of 200° K

1331 UT

15.87-17.08 UT

STANFORD

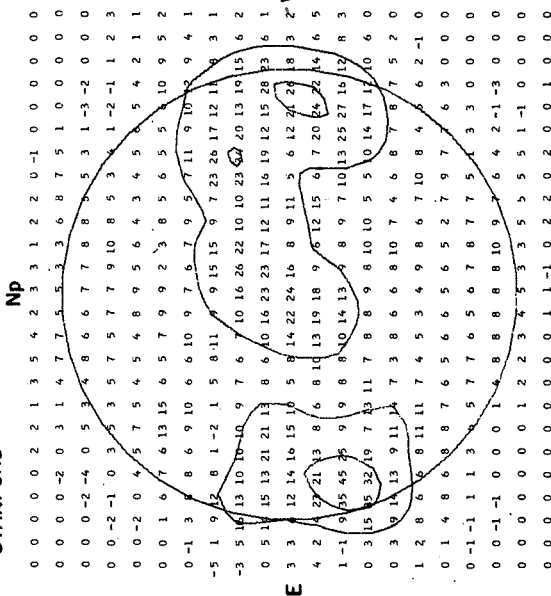
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT



Sp Brightness Unit 5,000° K
20-21 UT

S 02-03 UT

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

MT. WILSON

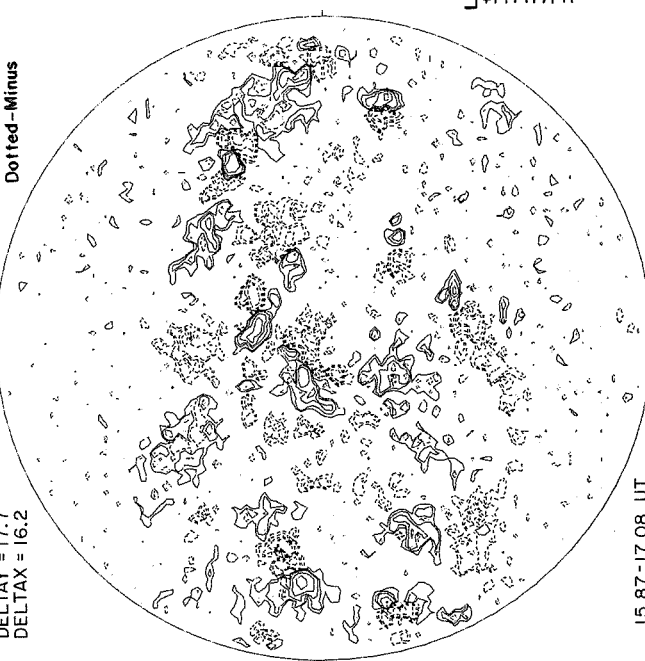
DELTA TAY = 17.7
DELTA X = 16.2

MAGNETOGRAM

Solid-Plus
Dotted-Minus

Np

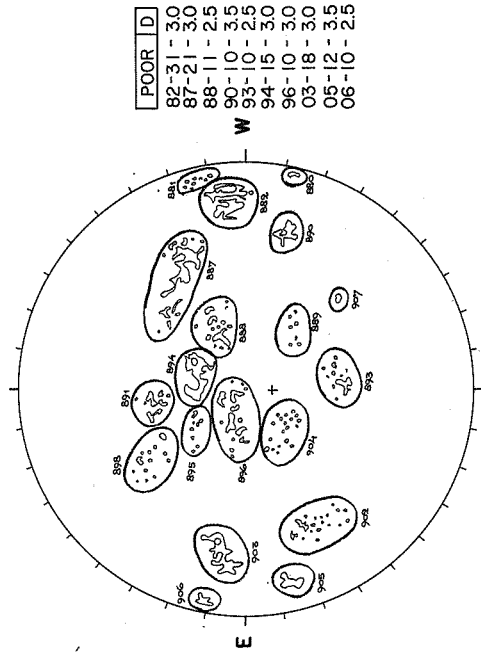
Np



Levels
±5
±10
±20
±40
±80

Np

Np



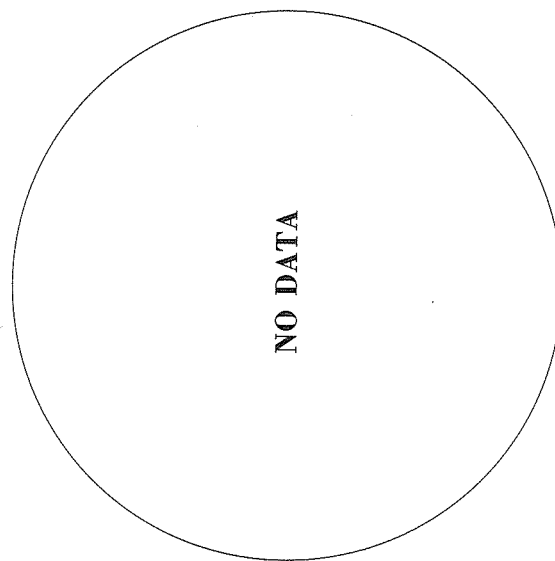
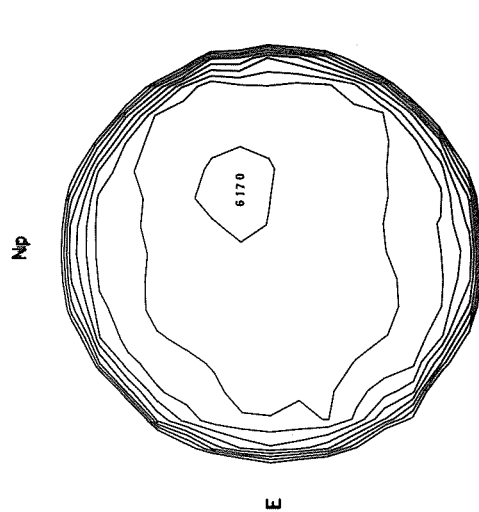
POOR ID
82-31-30
87-21-30
88-11-25
90-10-35
93-10-25
94-15-30
96-10-30
03-18-30
05-12-35
06-10-25

Sp 1315 UT

55
Aug 70

56
Aug 70

X-RAY
OSO-5



Levels	±5	±10	±20	±40	±80
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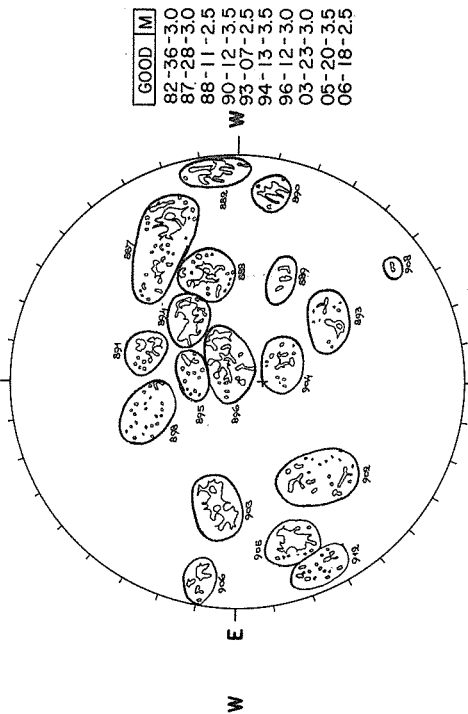
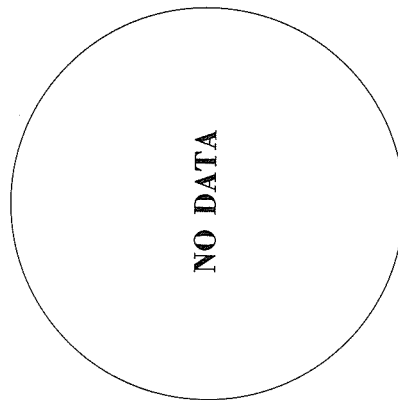
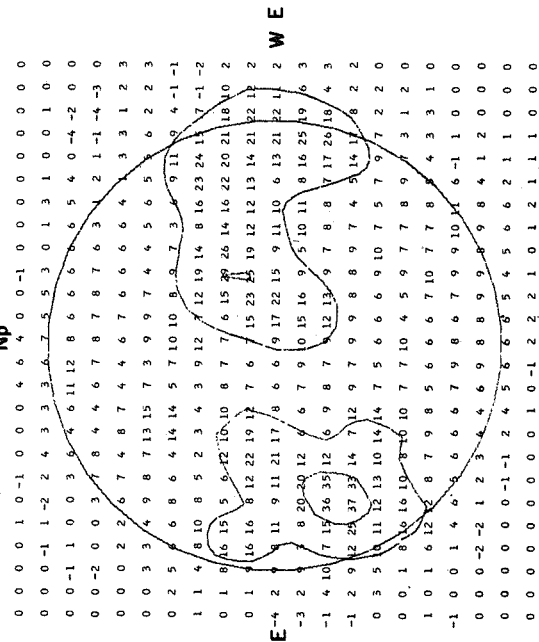
1333 UT
Sp
Contours in Intervals
of 200° K

21 cm

Sp
Np

McMATH-HULBERT

Sp
Np



Sp Brightness Unit 5,000° K
20-21 UT

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

AUGUST 26, 1970

(P=19.37, B₀ = 7.06, L₀ = 17.74)

MT. WILSON

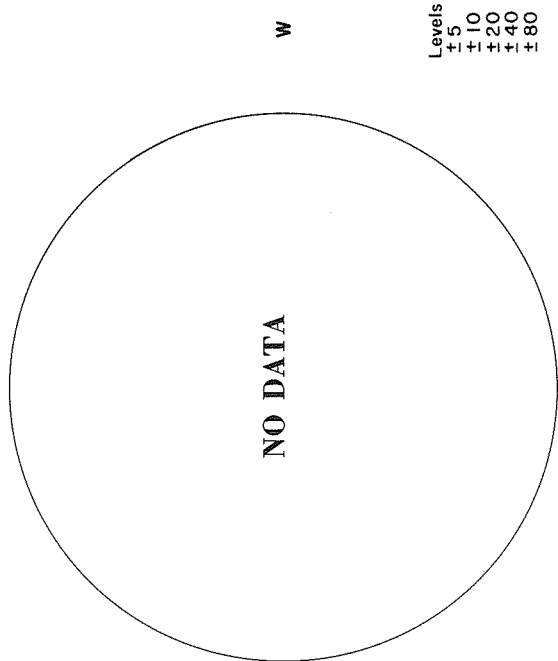
Np
MAGNETOGRAM
Solid - Plus
Dotted - Minus

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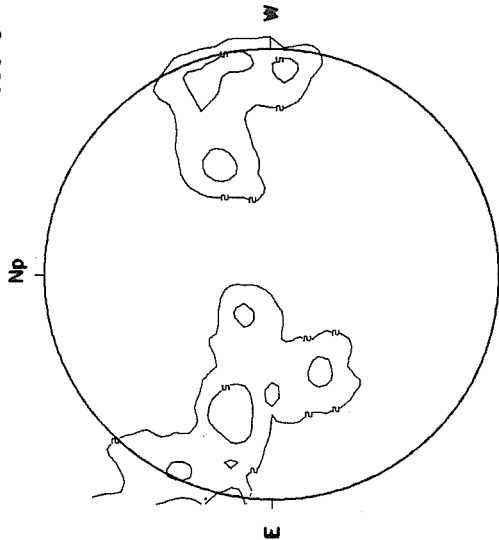
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm



Levels
± 5
± 10
± 20
± 40
± 80



2235-0004 UT
Sp
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

STANFORD

9.1 cm

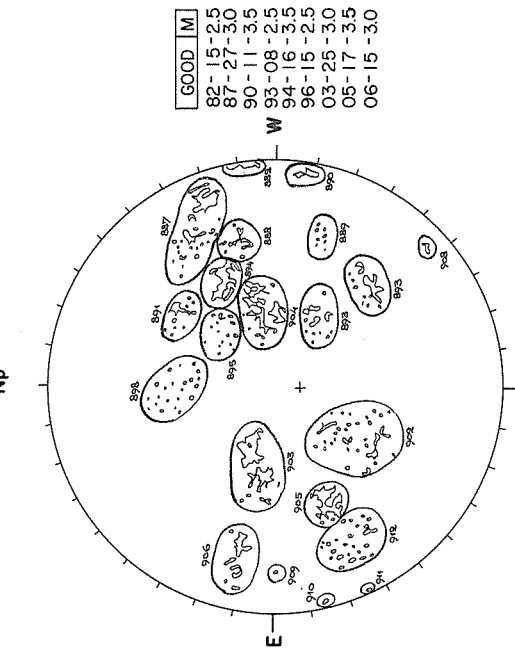
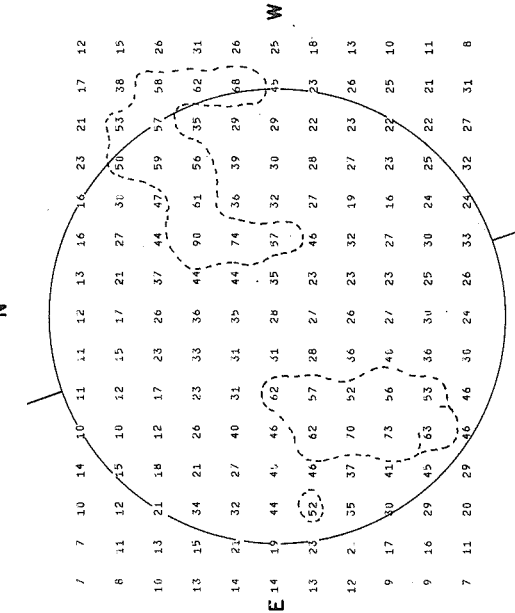
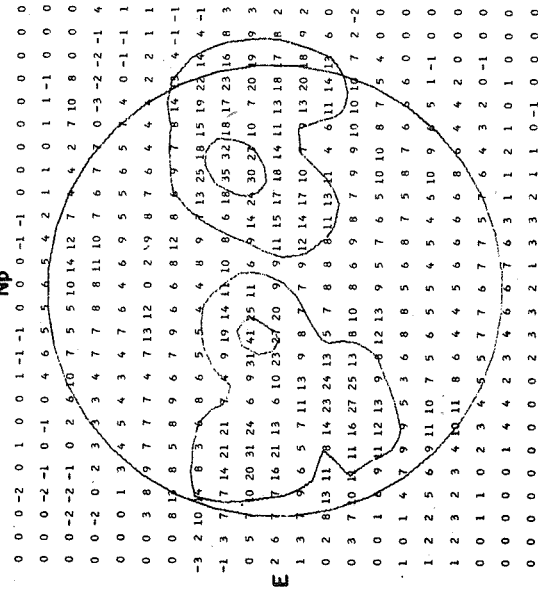
FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

Sp
CALCIUM REPORT

Np



Sp
20-21 UT
Brightness Unit 5,000° K

S
02-03 UT
Brightness Unit 1,700° K

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

Sp
1310 UT

57
Aug 70

AUGUST 27, 1970

(P=19.66, B₀=7.09, L₀=4.53)

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

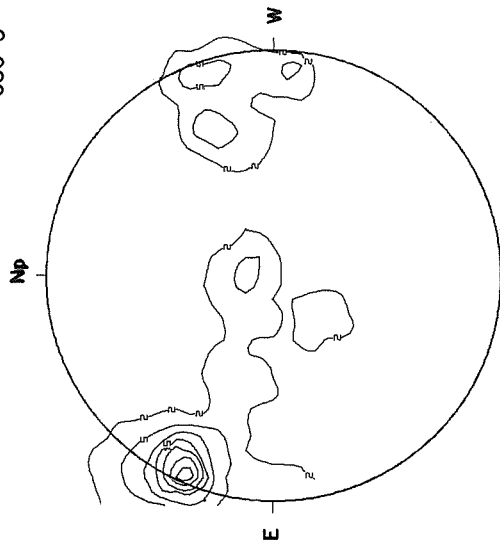
58
Aug 70

UNIV. COLLEGE LONDON
LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

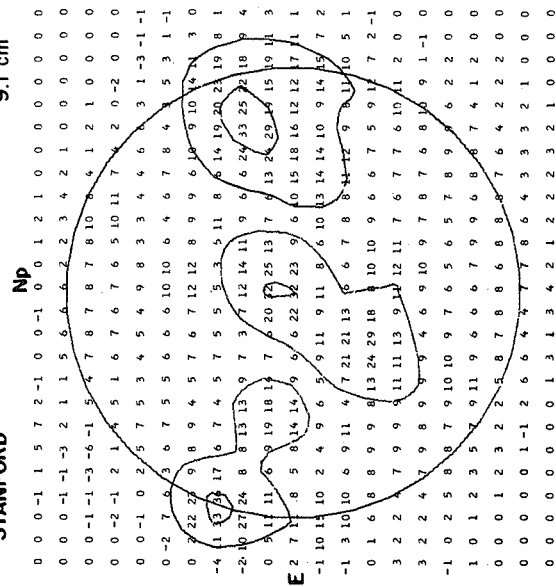
8.6 mm



2221-2356 UT
Sp
Intensities in Units
of 10⁻⁶ ergs cm⁻² sec⁻¹

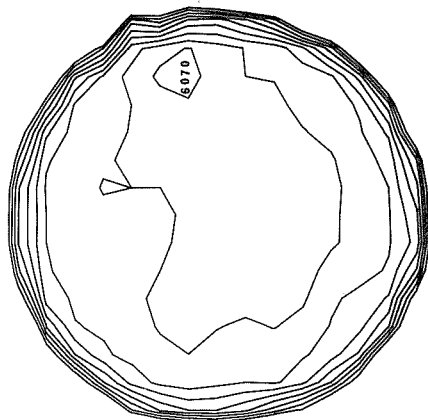
STANFORD

9.1 cm



20-21 UT
Sp
Brightness Unit 5,000° K

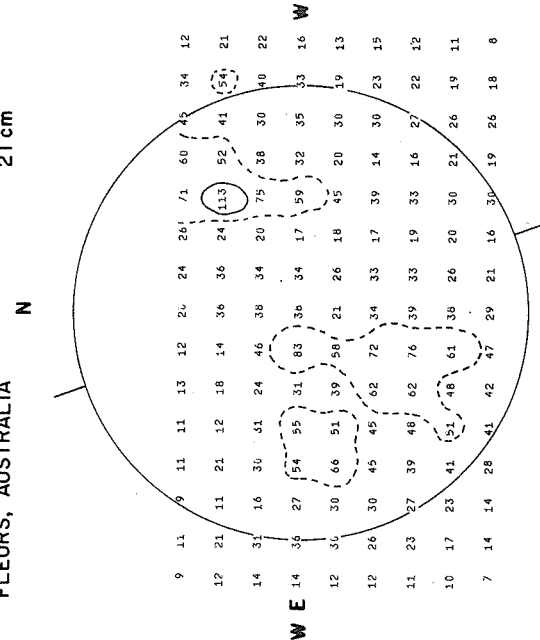
Np



1403 UT
Sp
Contours in Intervals
of 200° K

FLEURS, AUSTRALIA

21 cm



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

NO DATA

W

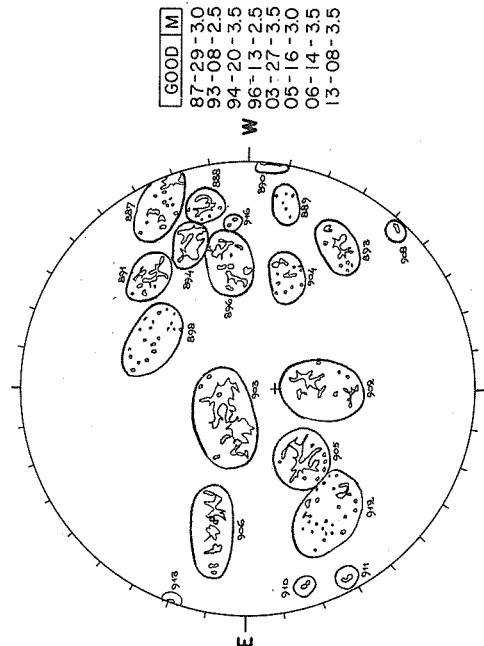
Levels
+5
+10
+20
+40
+80

Sp

McMATH-HULBERT

CALCIUM REPORT

Np

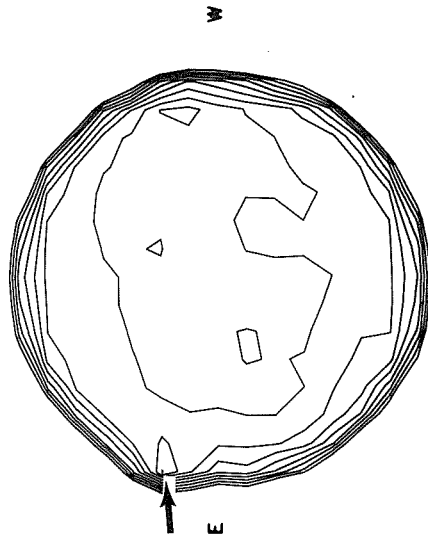
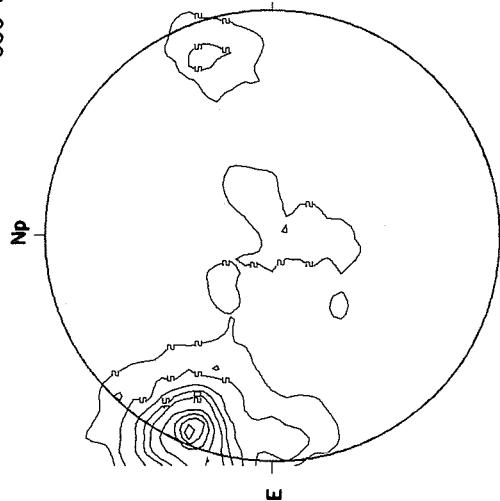


1320 UT
Sp

MAGNETOGRAM
Solid-Plus
Dotted-Minus

8.6 mm

2



NO DATA

A

Levels	+5	+10	+20	+40	+80
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Contours in Intervals
of 200° K

1418 UT

5

Intervals

2212-2347 UT

STANFORD

FLEURS, AUSTRALIA

21 cm

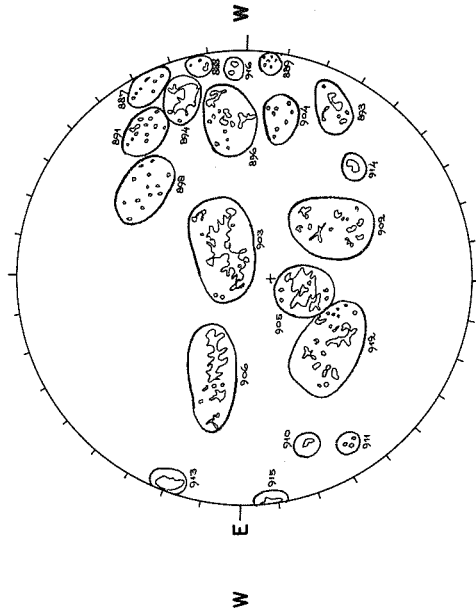
Sp

McMATH-HULBERT

CALCIUM REPORT

[illegible]

NO DATA



FAIR	M
94-21	3.5
96-13	2.5
03-30	3.0
05-20	3.0
06-17	3.0
13-17	3.5
14-06	2.5
15-13	3.5

Sp Brightness Unit 5,000° K
20-21 UT

S
02-03 UT

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

Sp
1425 UT

59
Aug 70

60
Aug 70

(P=20.22, $B_0 = 7.14$, $L_0 = 338.10$)

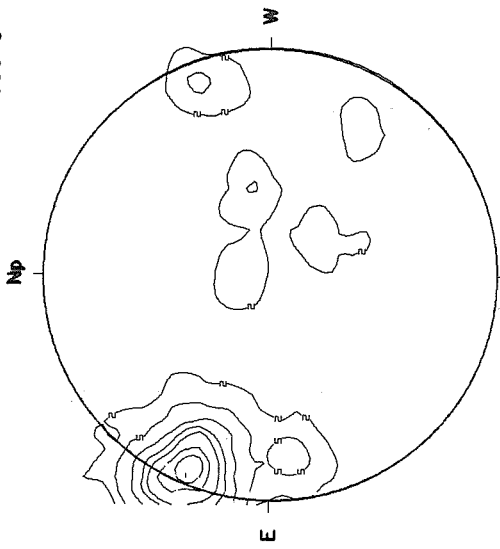
AUGUST 29, 1970

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LEICESTER UNIV.

X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

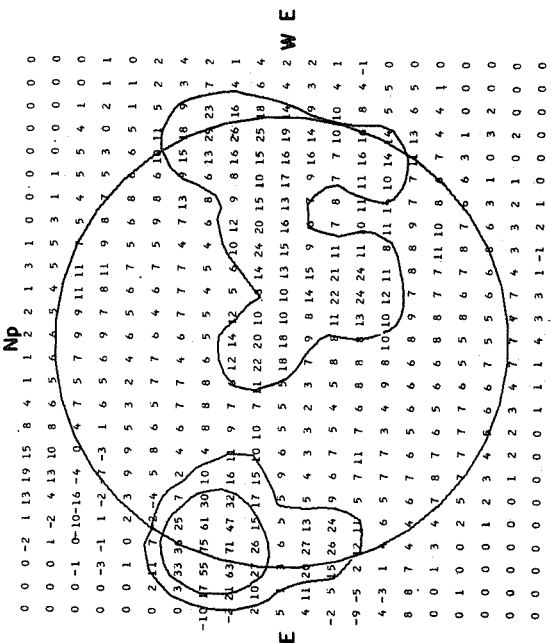


Intensities in Units
of 10^{-6} ergs $\text{cm}^{-2} \text{sec}^{-1}$

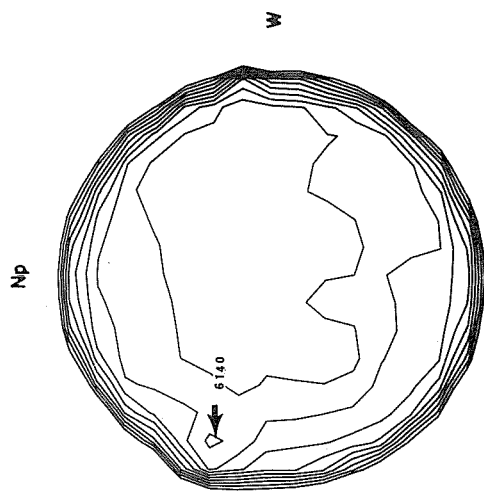
2019-2200 UT

STANFORD

9.1 cm



Sp
20-21 UT
Brightness Unit 5,000° K

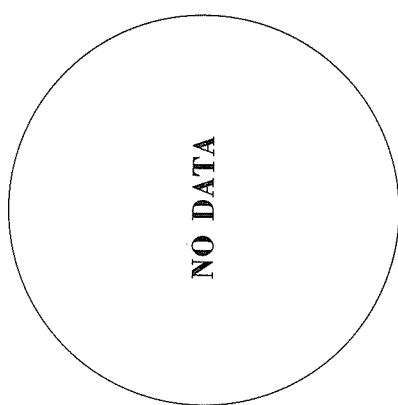


Contours in Intervals
of 200° K

1309 UT

FLEURS, AUSTRALIA

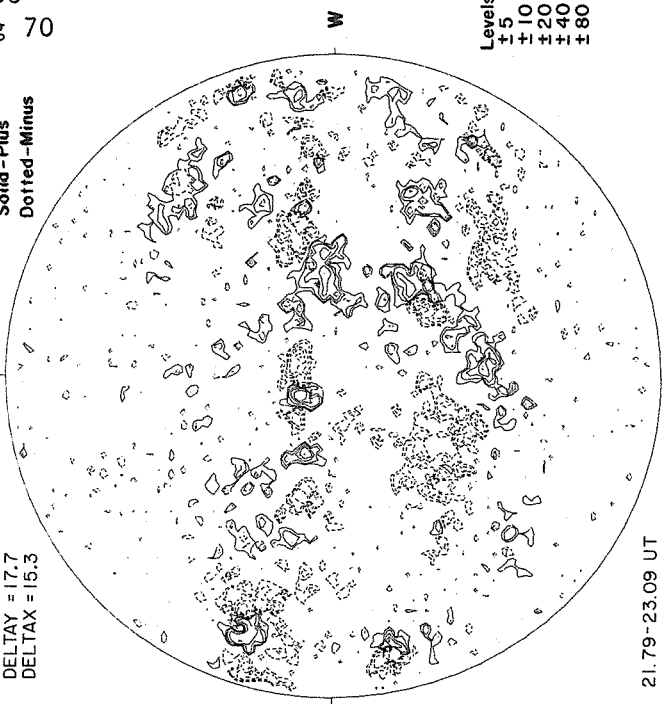
21 cm



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

MAGNETOGRAM
Solid-Plus
Dotted-Minus

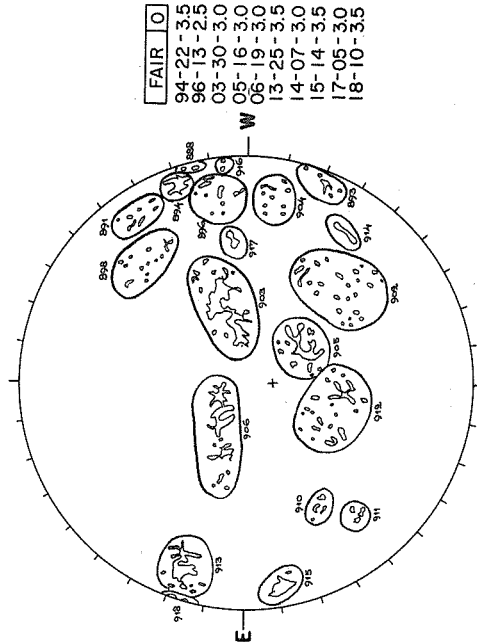
MT. WILSON
DELTA = 17.7
DELTA X = 15.3



21.79-23.09 UT

McMATH-HULBERT

CALCIUM REPORT



Sp
1355 UT

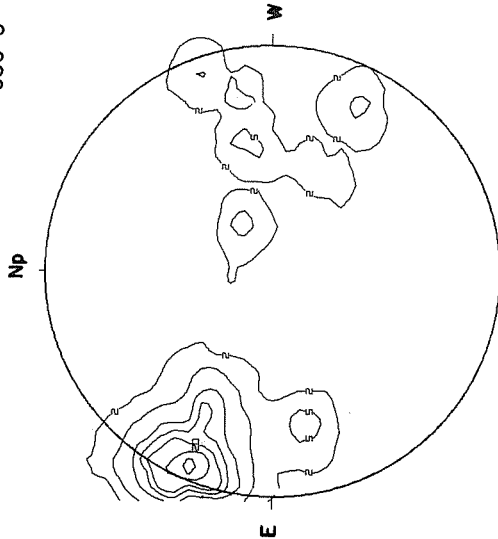
FAIR O
94-22-3.5
96-13-2.5
03-30-3.0
05-16-3.0
06-19-3.0
13-25-3.5
14-07-3.0
15-14-3.5
17-05-3.0
18-10-3.5

AUGUST 30, 1970

(P=20.49, $B_0 = 7.16$, $L_0 = 324.89$)

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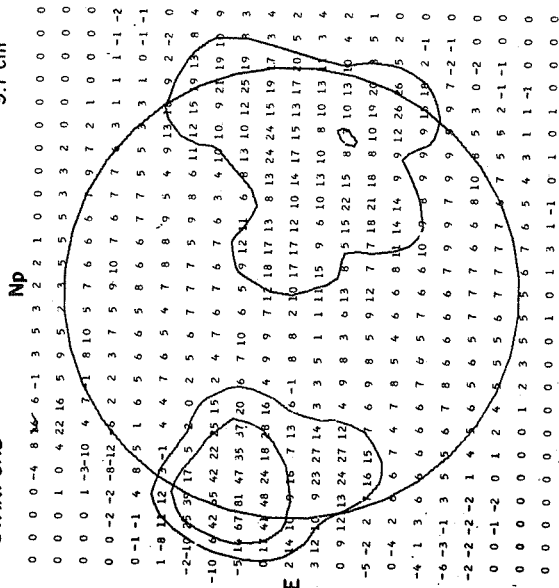
X-RAY
OSO-5



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

2207-2332 UT

STANFORD



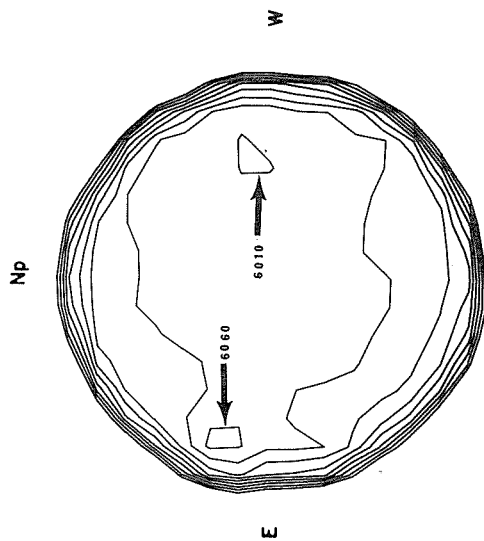
Brightness Unit 5,000° K

Sp

20-21 UT

PROSPECT HILL
AFCLRL

8.6 mm

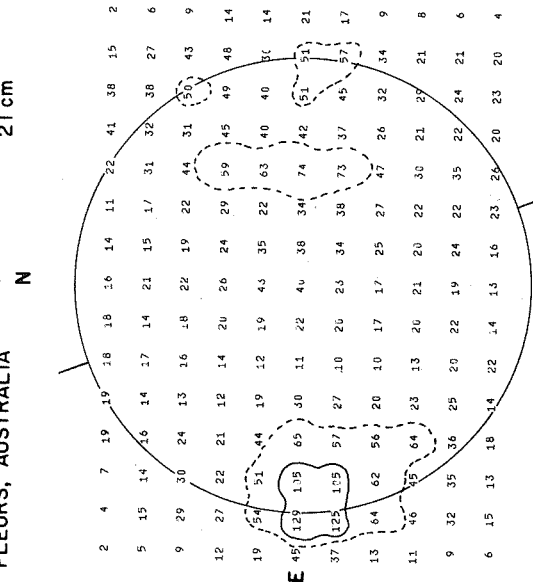


Contours in Intervals
of 200° K

1522 UT

FLEURS, AUSTRALIA

21 cm



S

02-03 UT

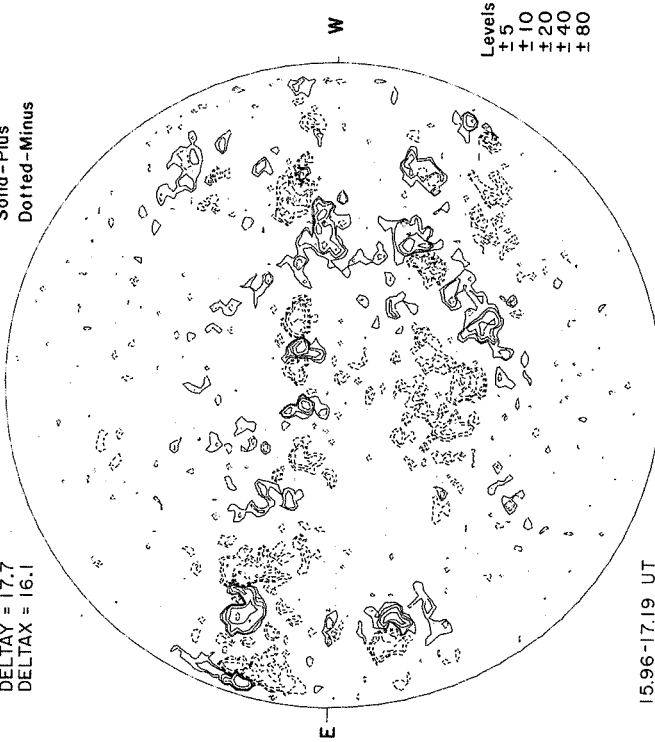
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

MT. WILSON

DELTA T = 17.7
DELTA X = 16.1

MAGNETOGRAM

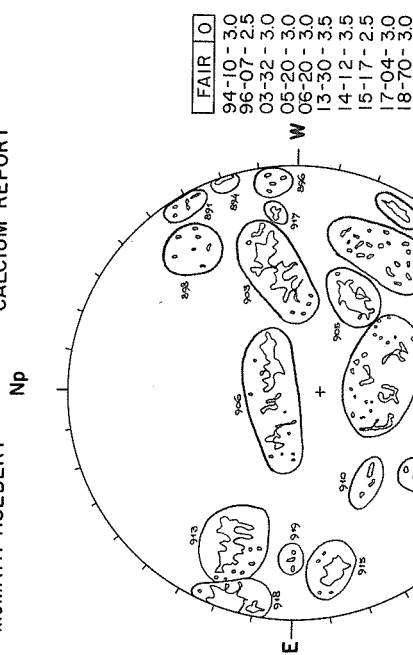
Solid-Plus
Dotted-Minus



15.96-17.19 UT

McMATH-HULBERT

CALCIUM REPORT



Sp
1430 UT

AUGUST 31, 1970

(P=20.75, $B_0 = 7.18$, $L_0 = 311.68$)

62
Aug 70

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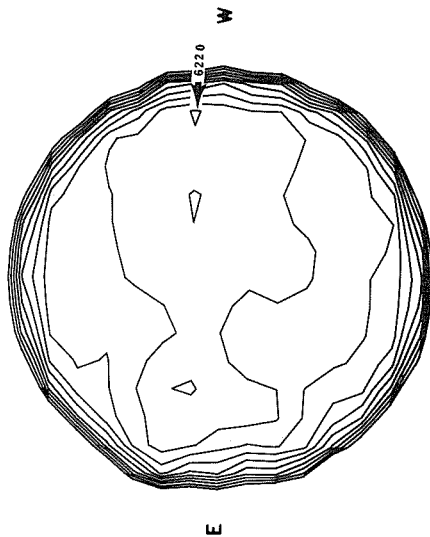
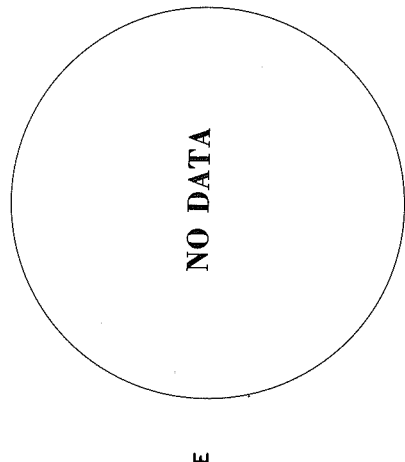
X-RAY
OSO-5

PROSPECT HILL
AFCRL

8.6 mm

Np

Np



Sp
Intensities in Units
of 10^{-6} ergs $\text{cm}^{-2} \text{sec}^{-1}$

1307 UT
Sp
Contours in Intervals
of 200°K

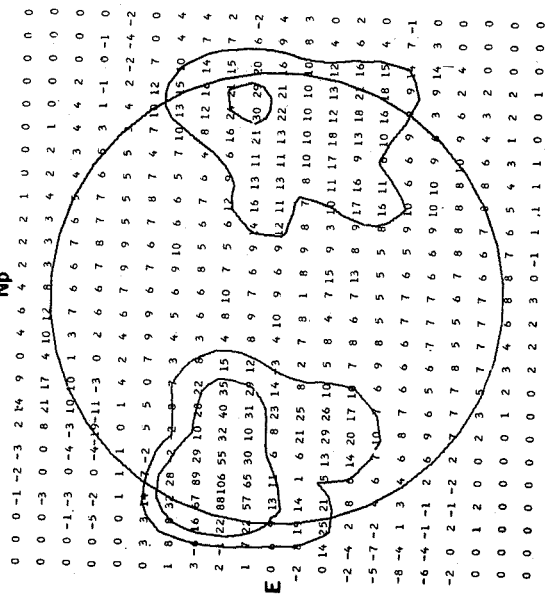
STANFORD

FLEURS, AUSTRALIA

21 cm

N

McMATH-HULBERT
Sp
CALCIUM REPORT



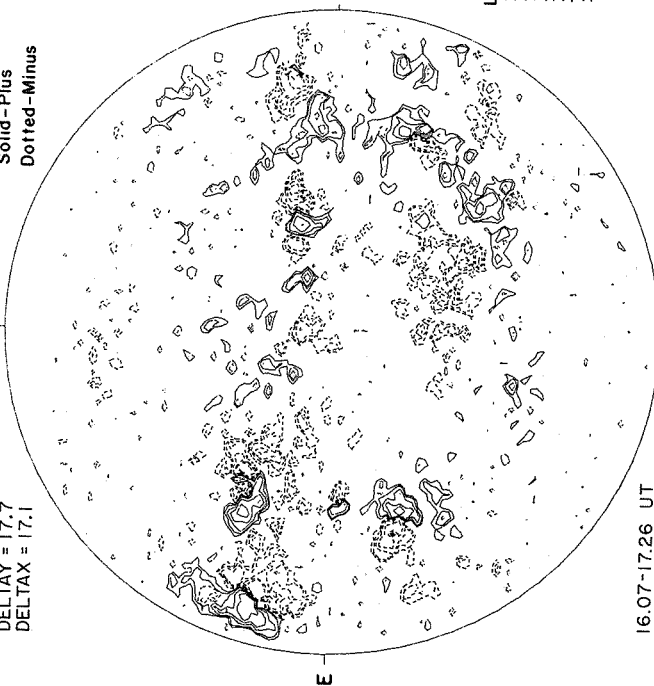
Sp
Brightness Unit $5,000^\circ \text{K}$
20-21 UT

S
Resolution 3 Minutes of Arc
Brightness Unit $1,700^\circ \text{K}$
02-03 UT

MT. WILSON

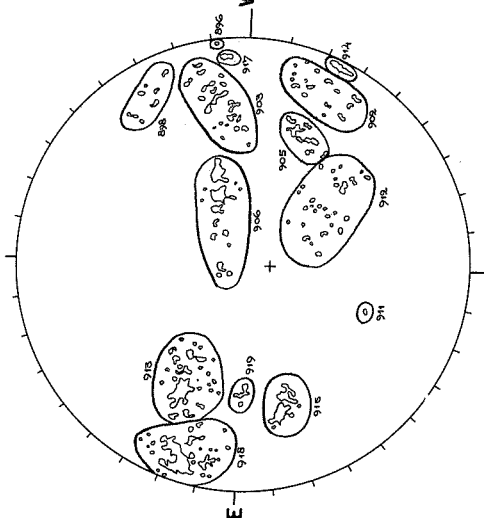
DELTA TAY = 17.7
DELTA X = 17.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
 ± 5
 ± 10
 ± 20
 ± 40
 ± 80

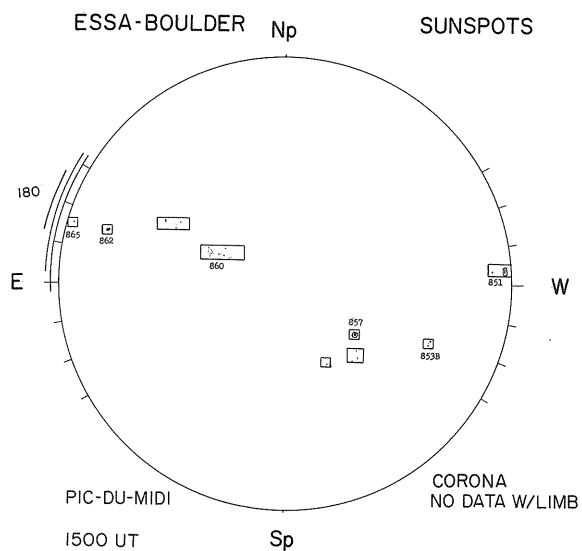
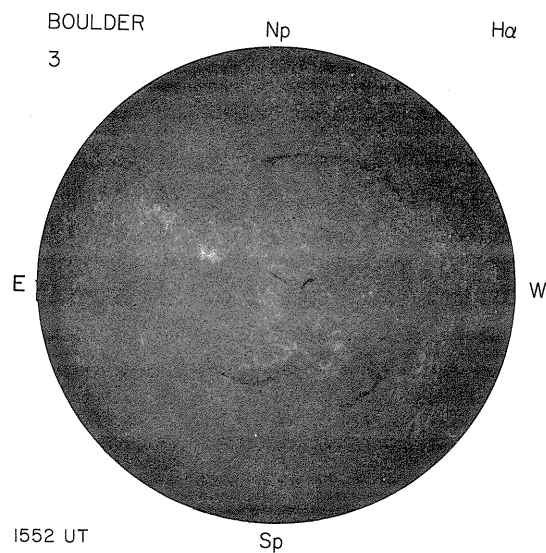
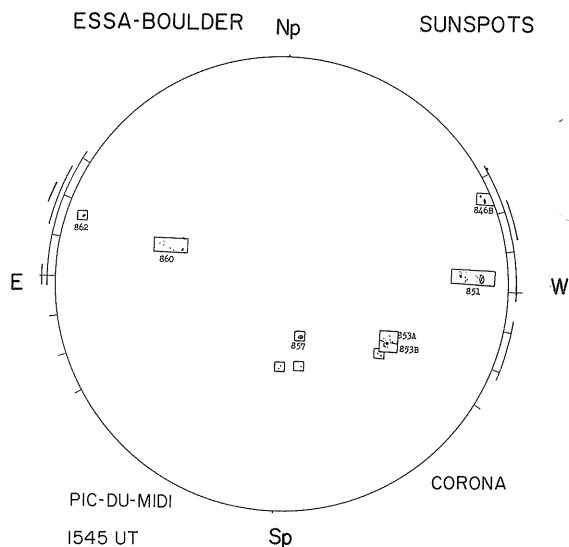
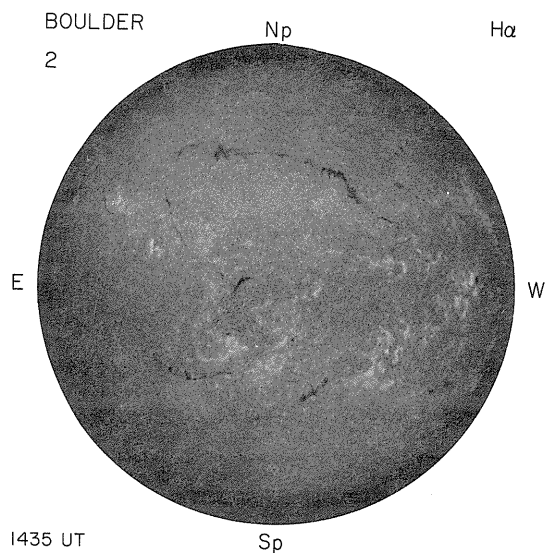
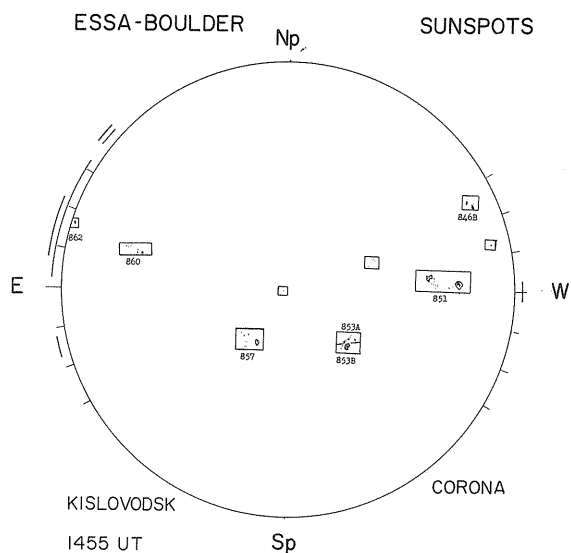
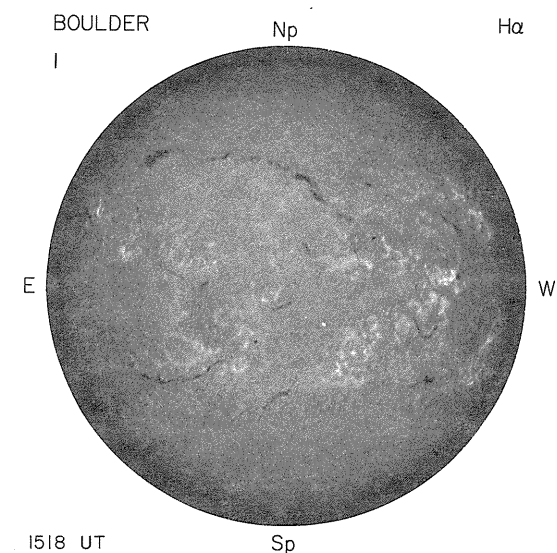
POOR M
03-30-30
05-15-30
06-20-30
13-28-35
14-12-25
15-17-30
17-06-30
18-65-35
19-05-25

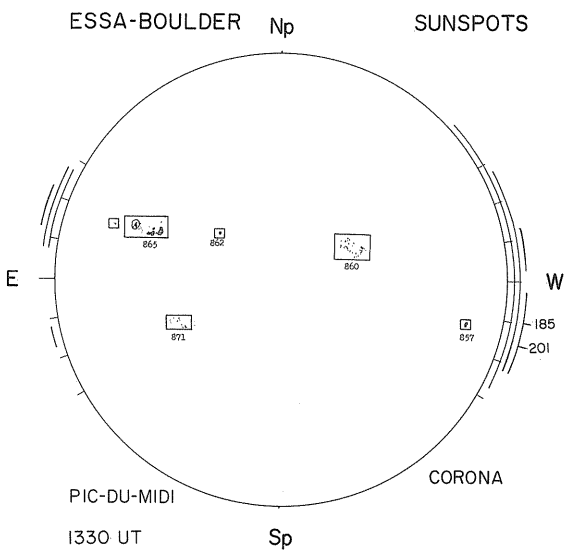
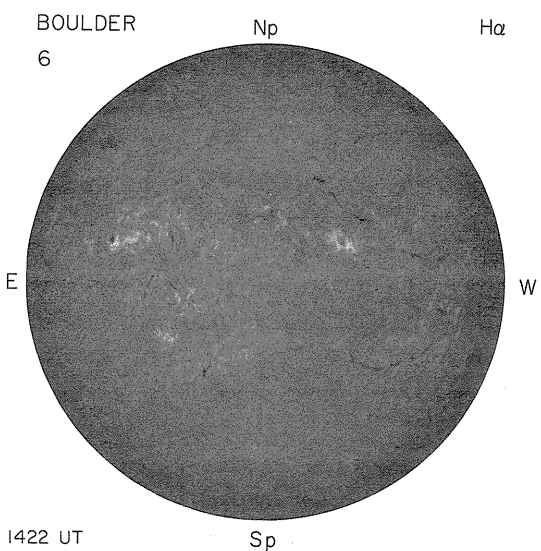
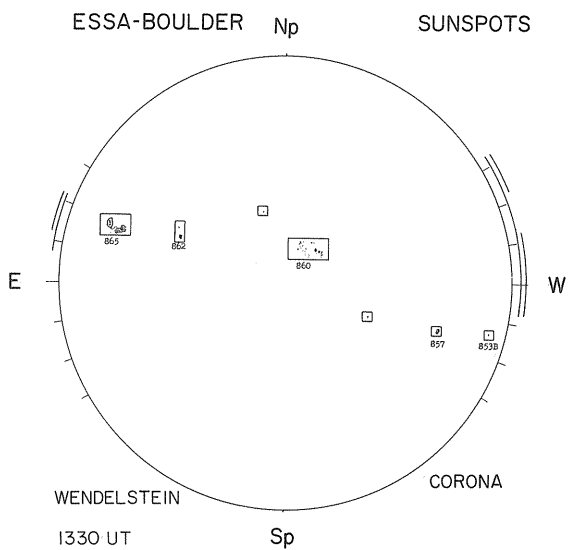
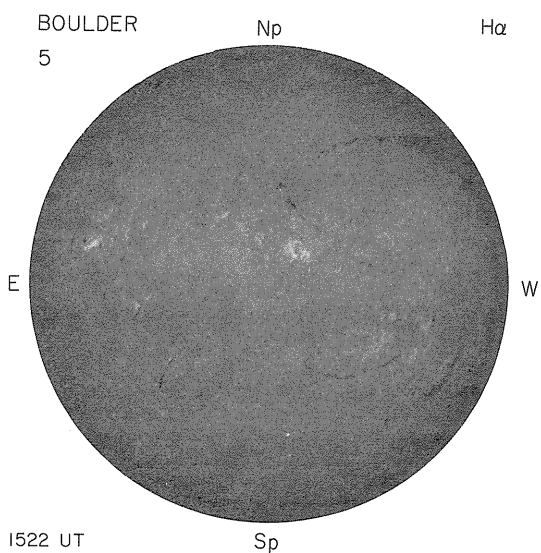
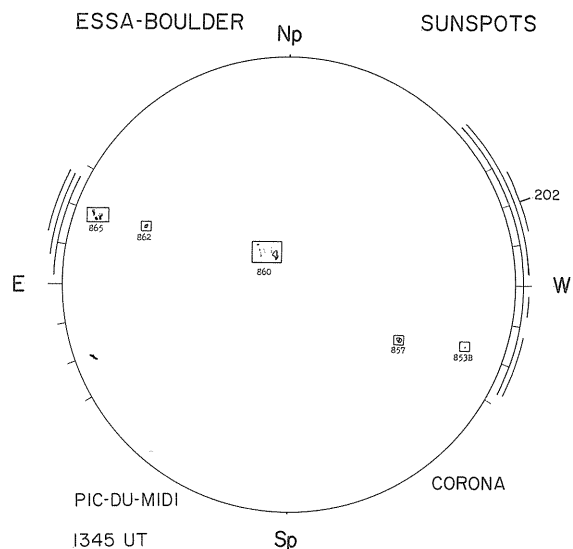
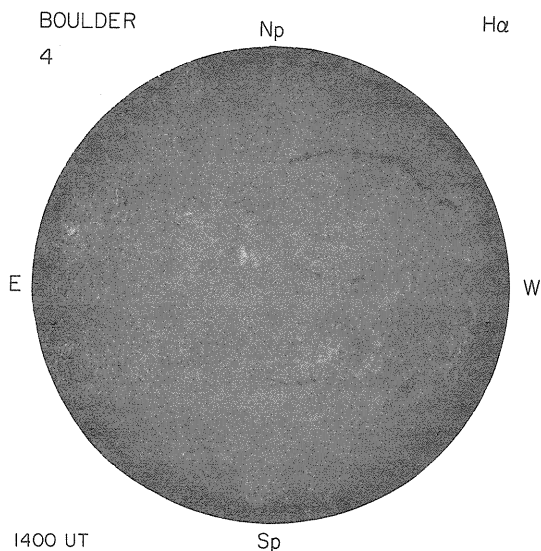


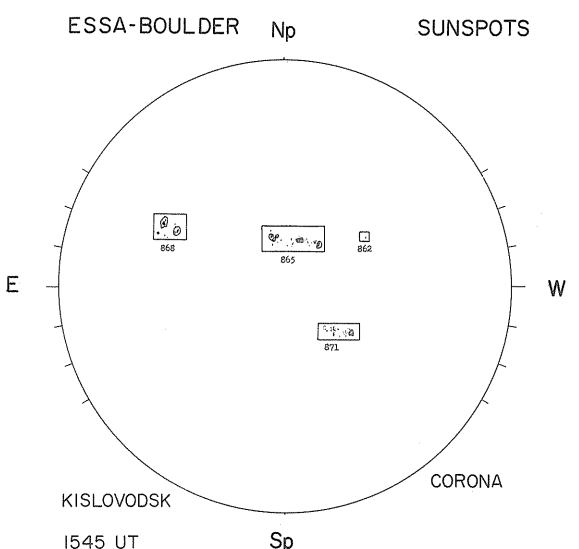
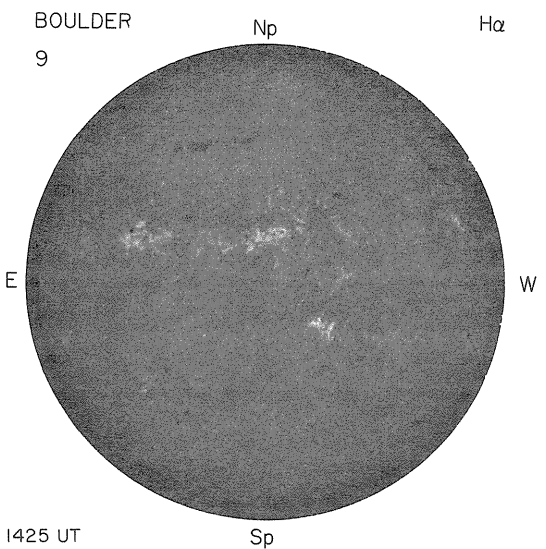
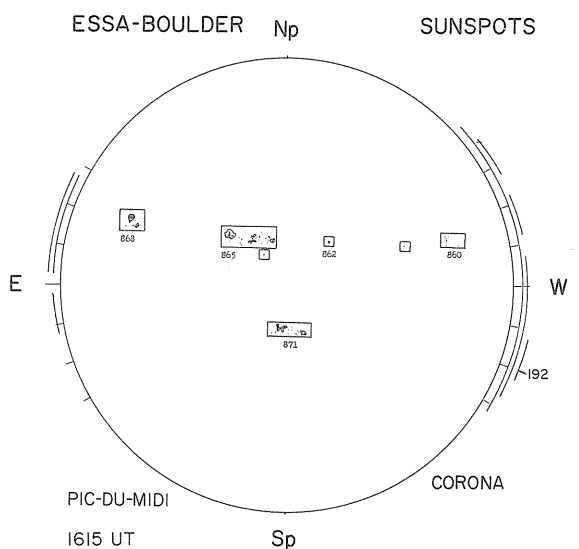
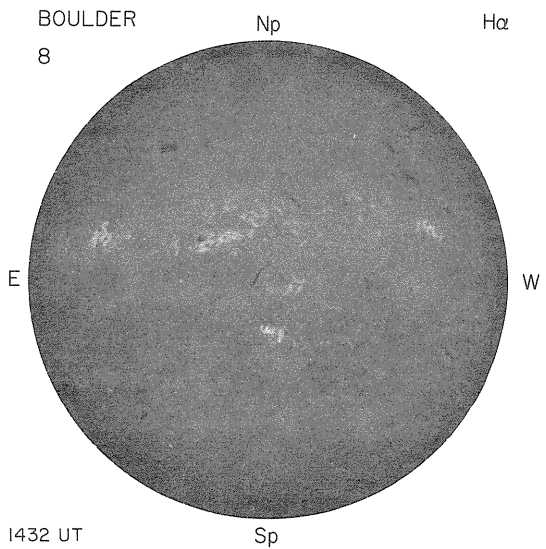
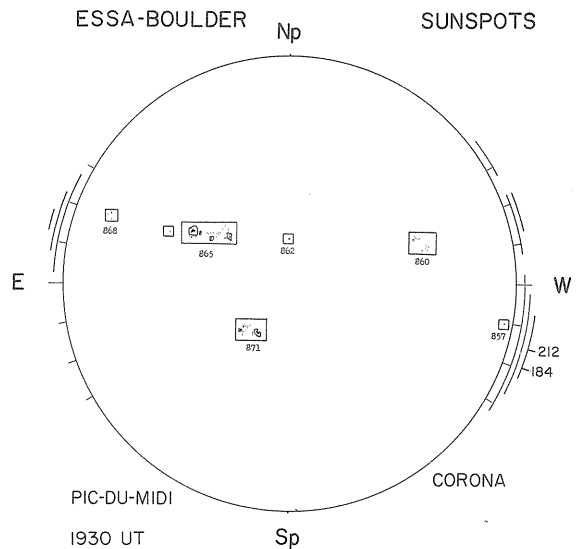
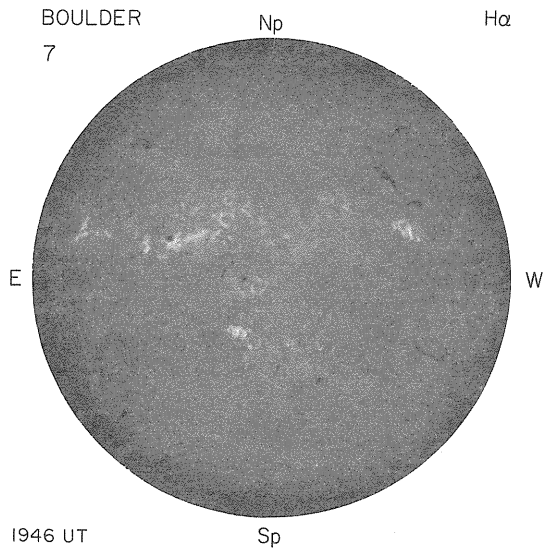
H α SPECTROHELIOGRAMS

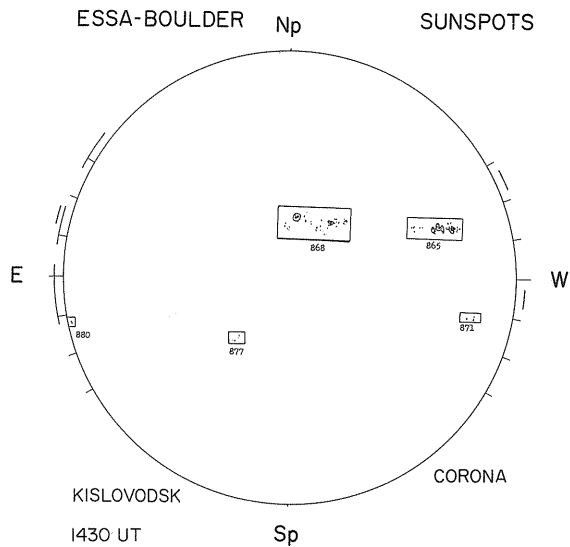
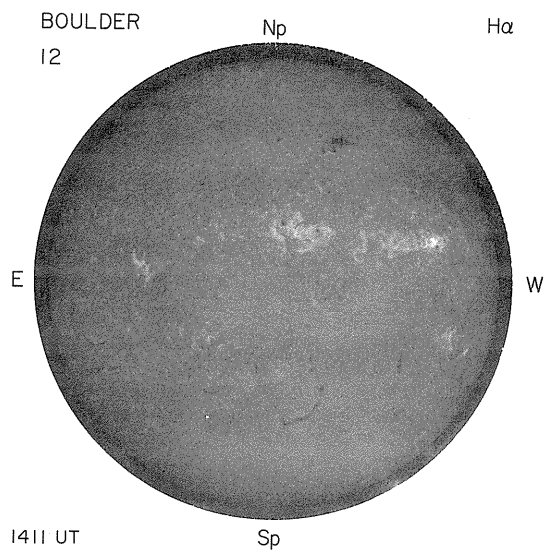
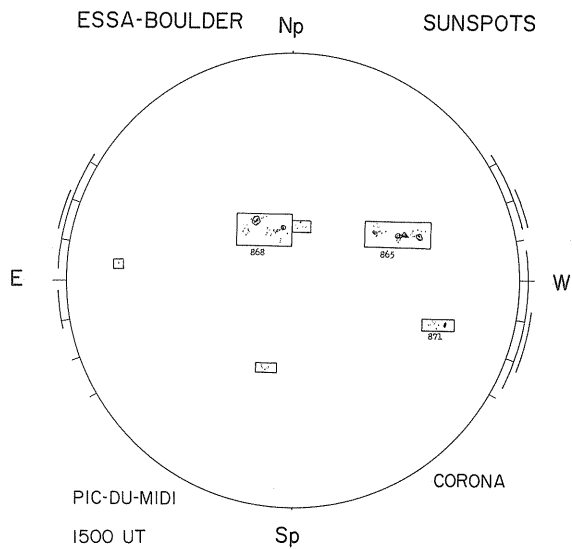
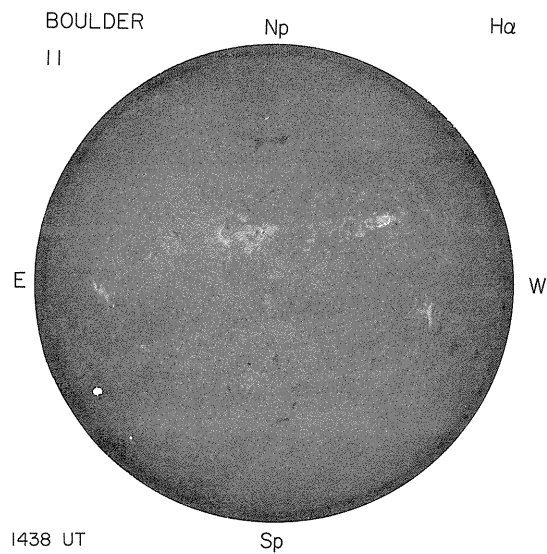
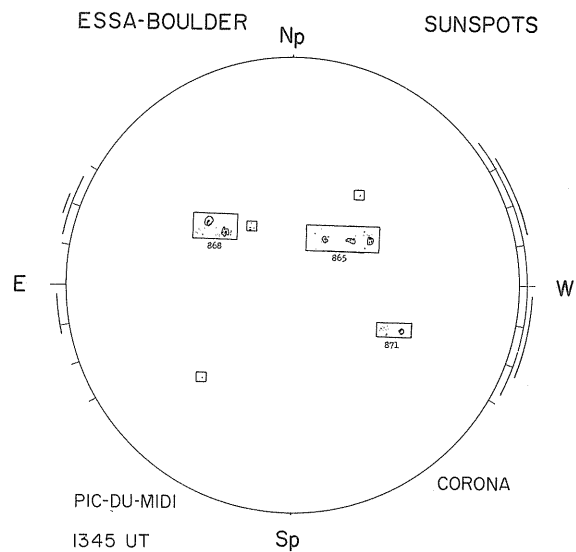
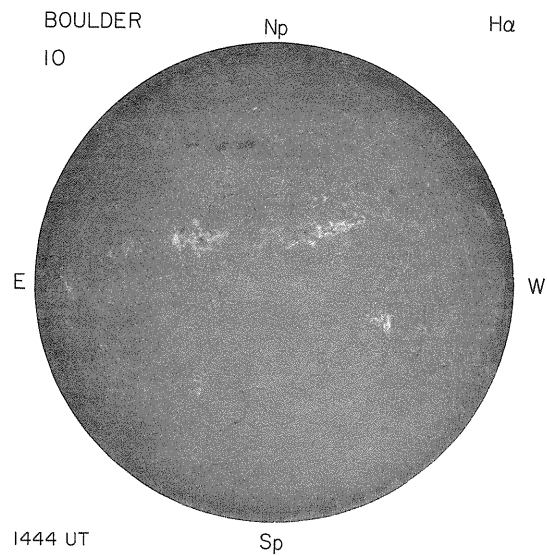
SUNSPOTS AND CORONA

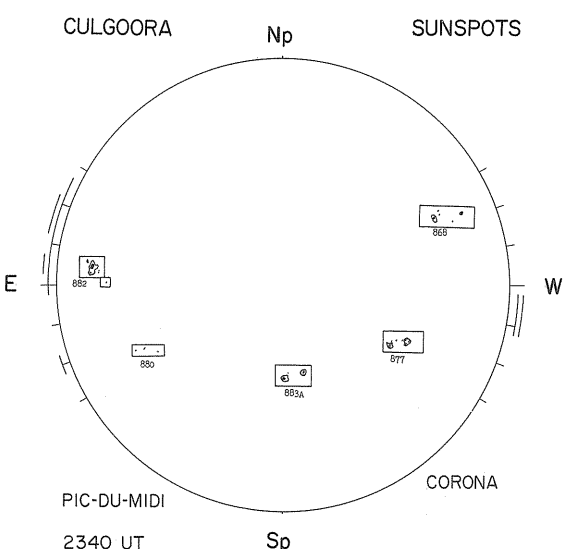
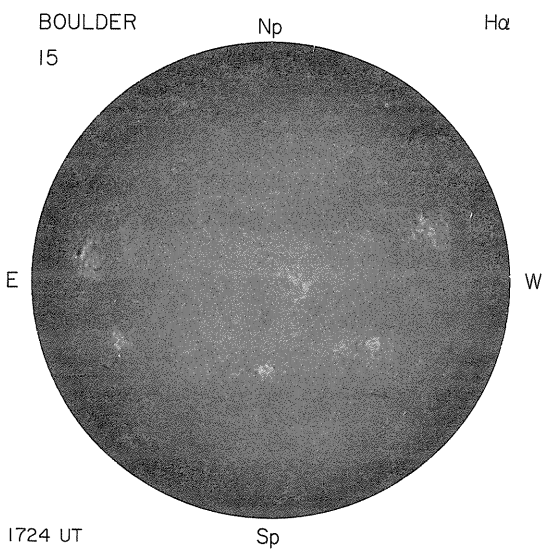
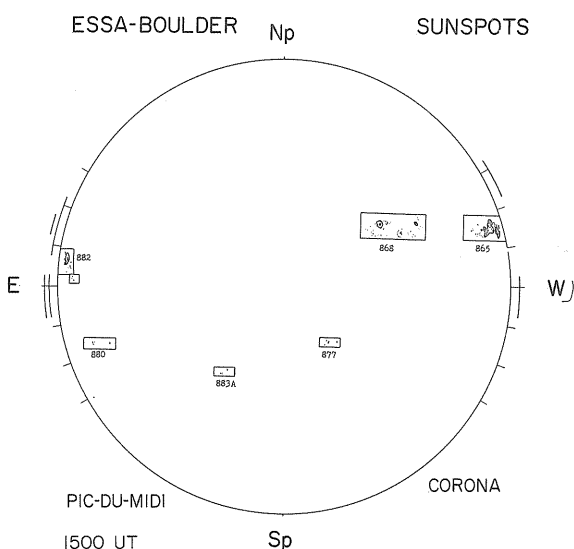
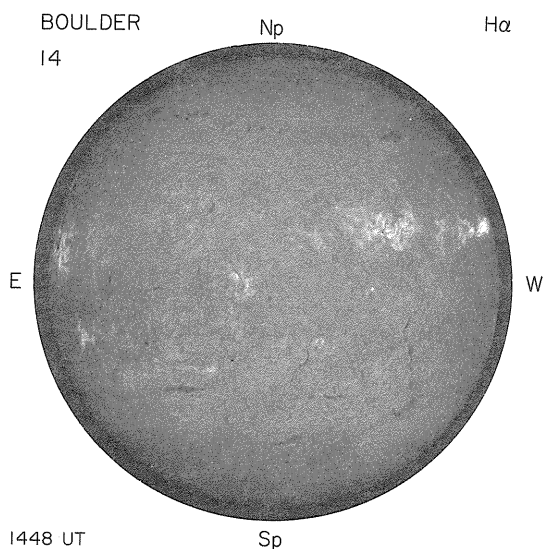
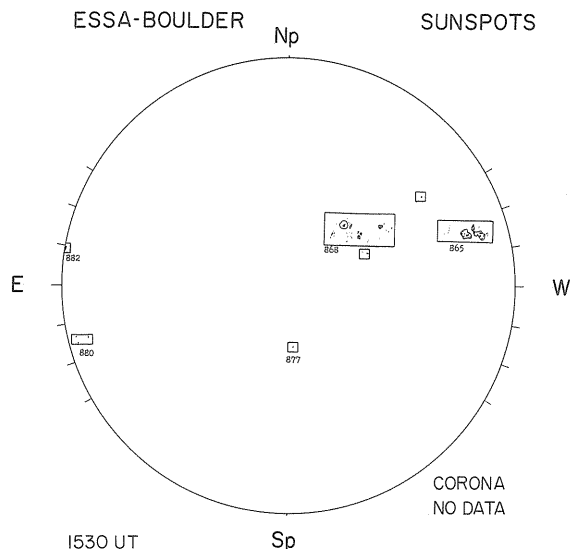
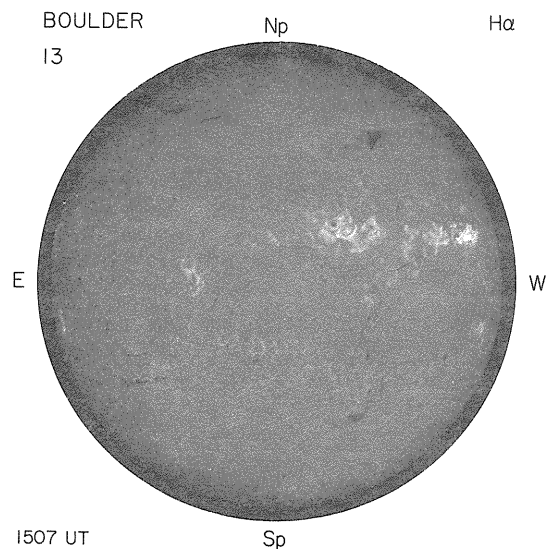
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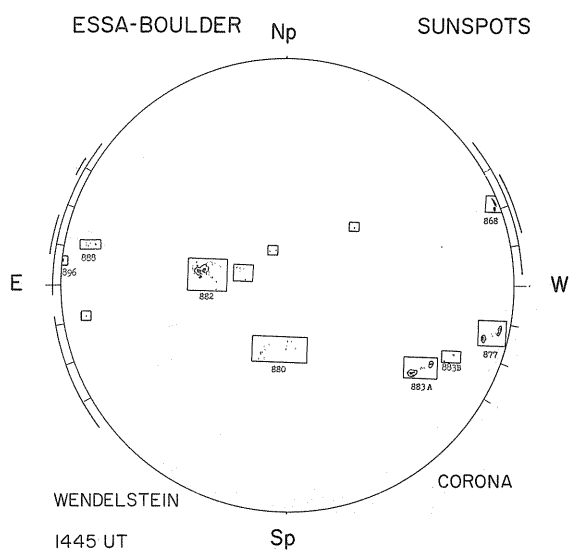
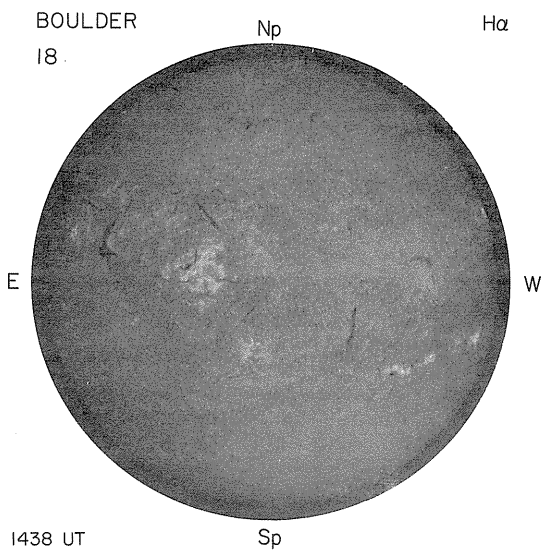
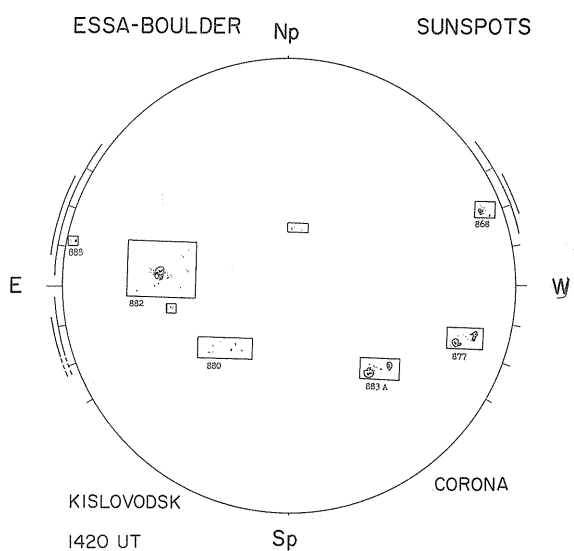
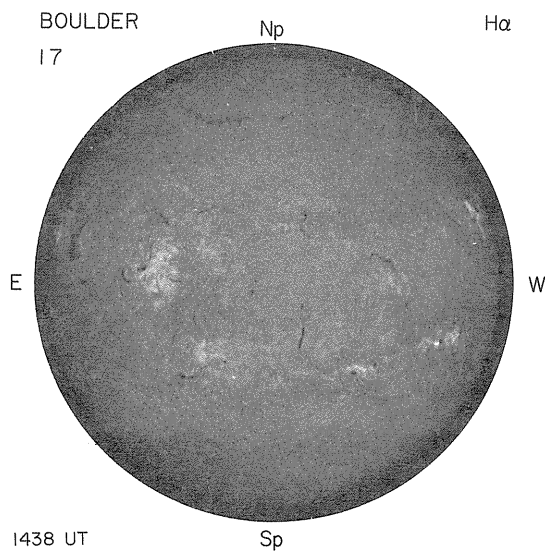
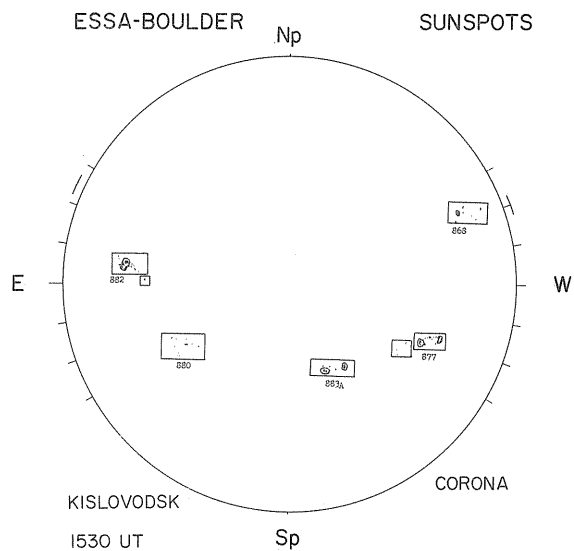
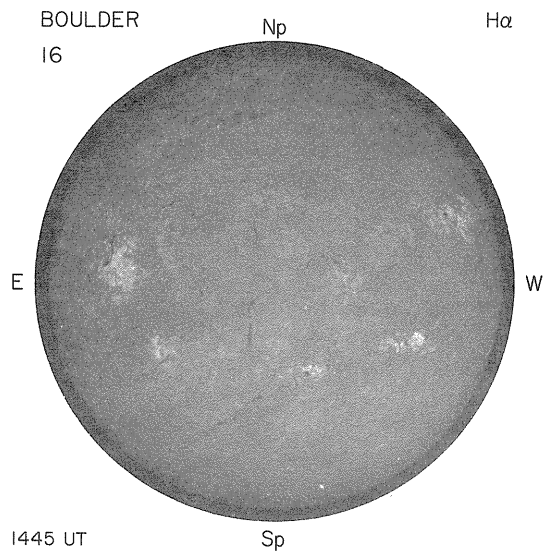


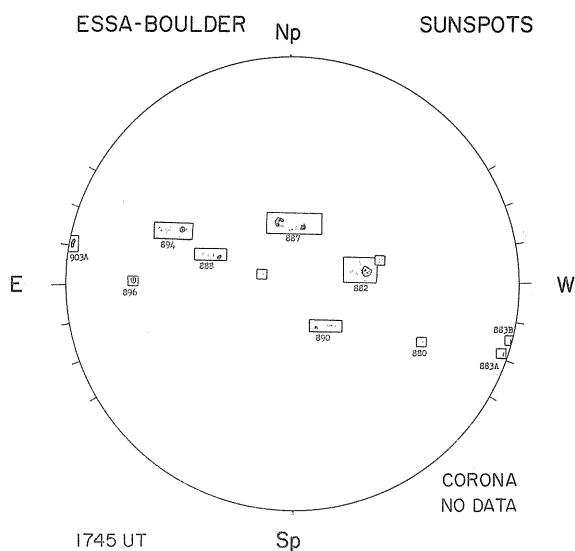
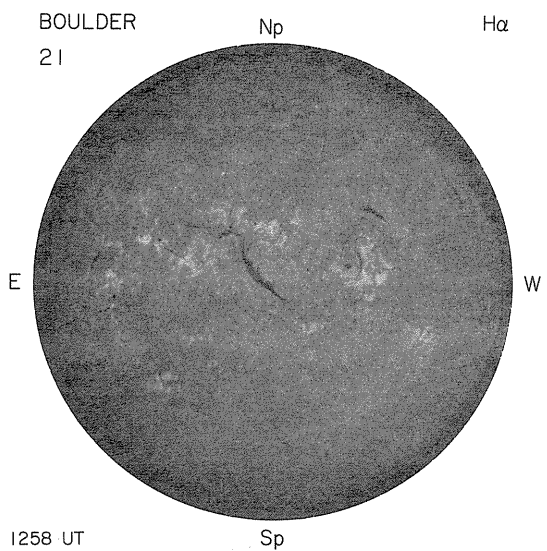
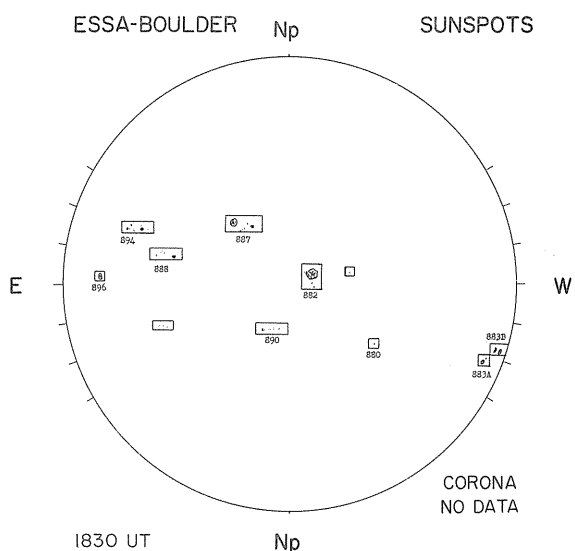
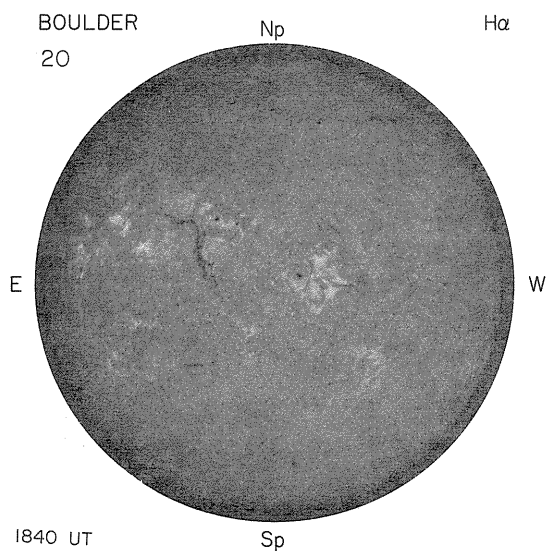
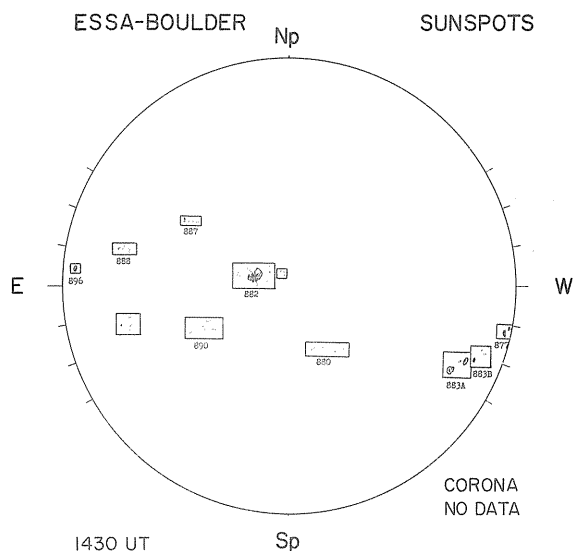
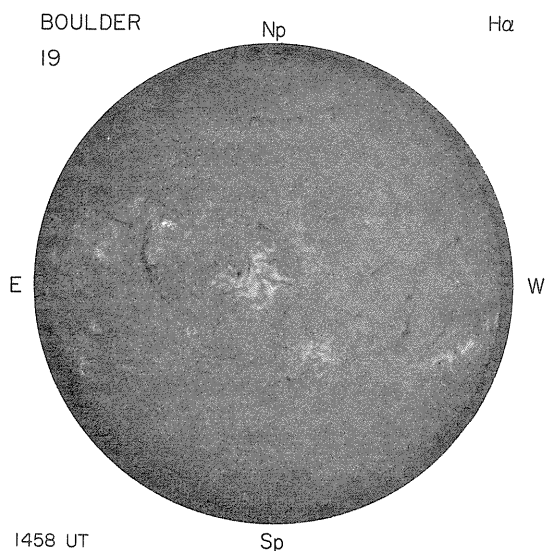




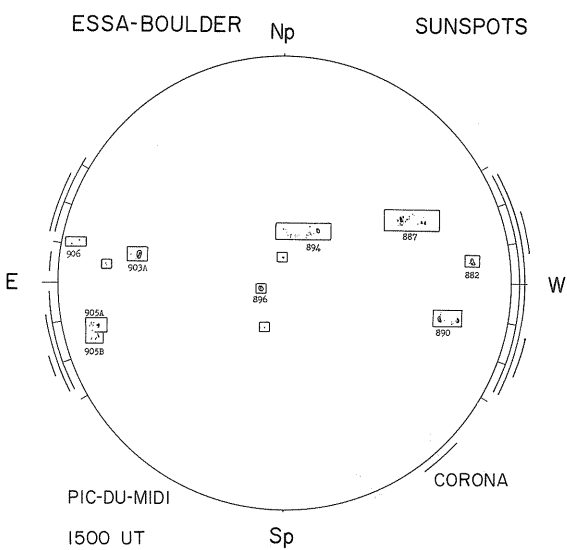
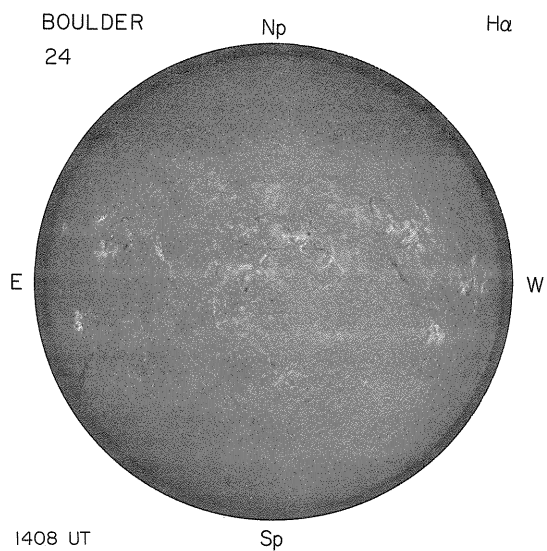
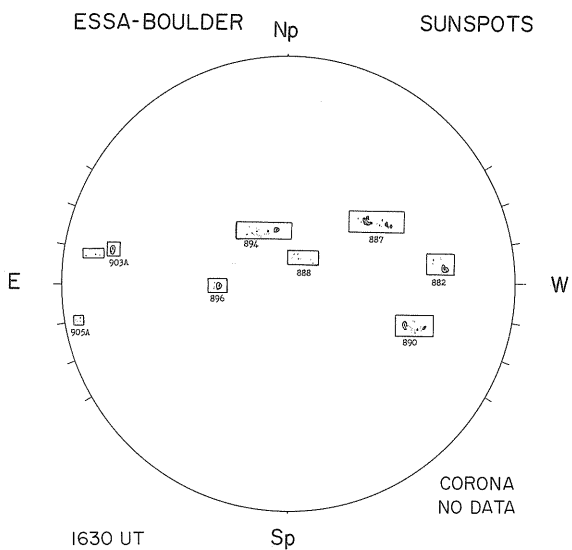
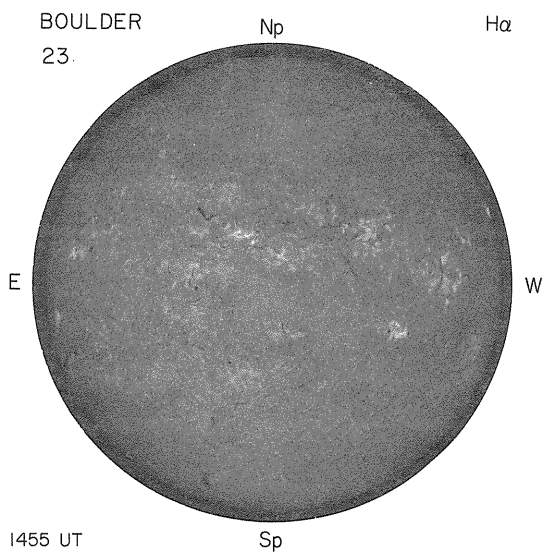
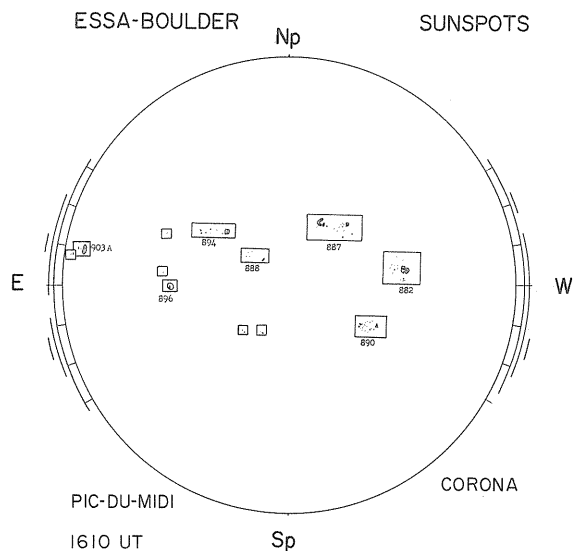
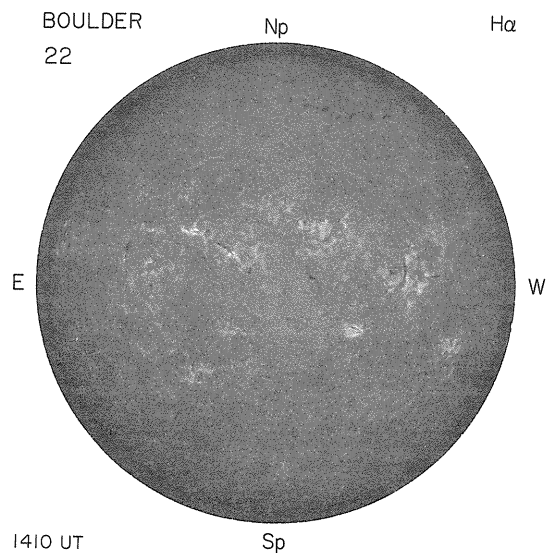


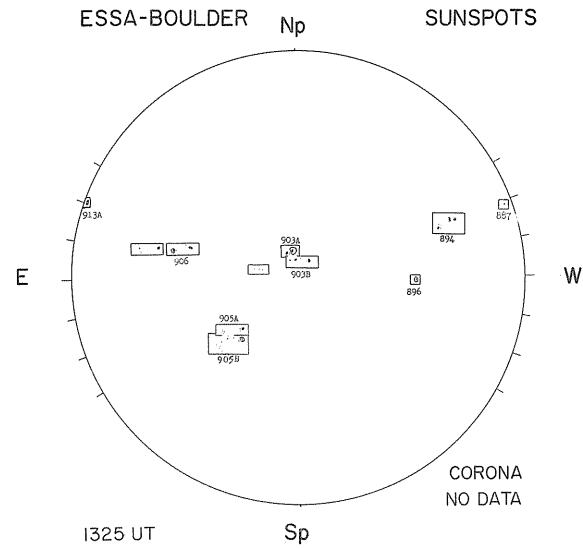
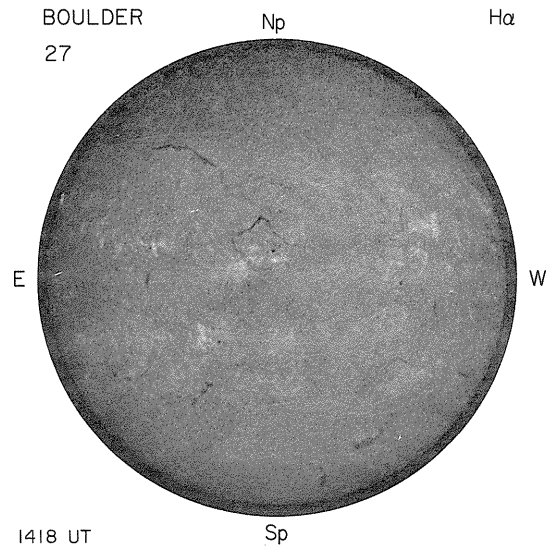
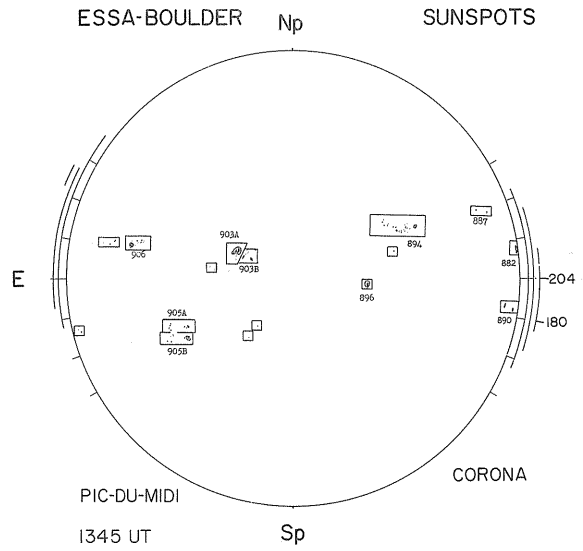
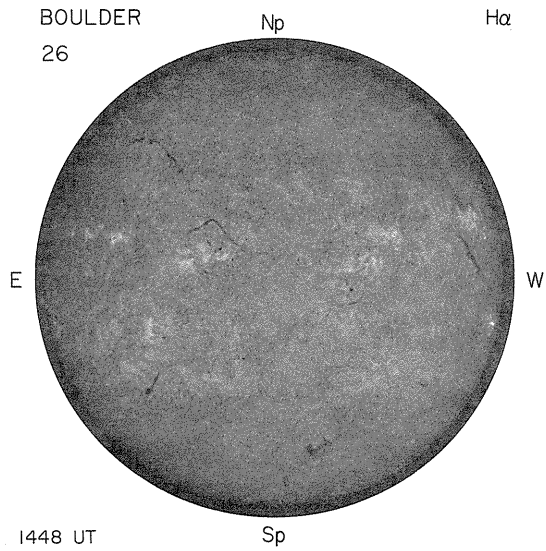
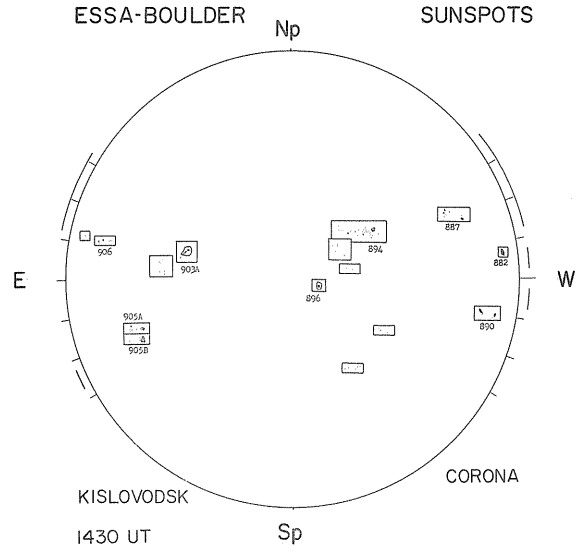
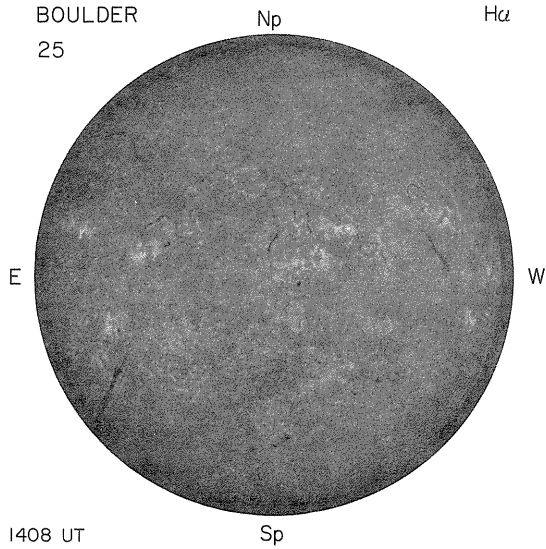


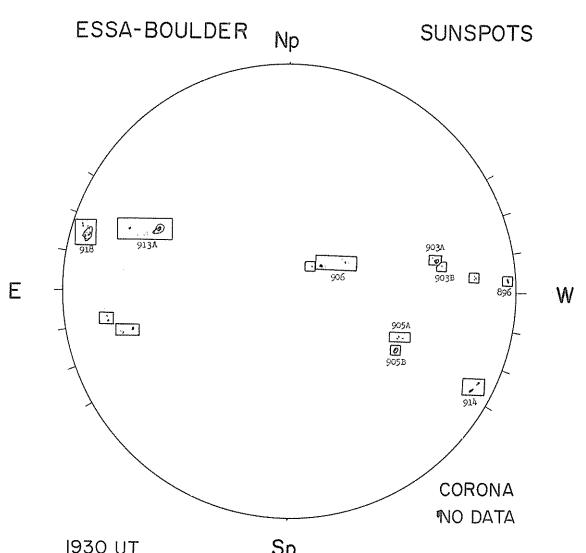
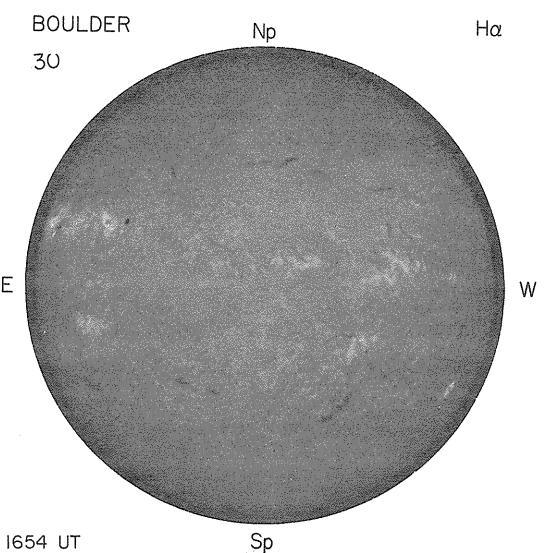
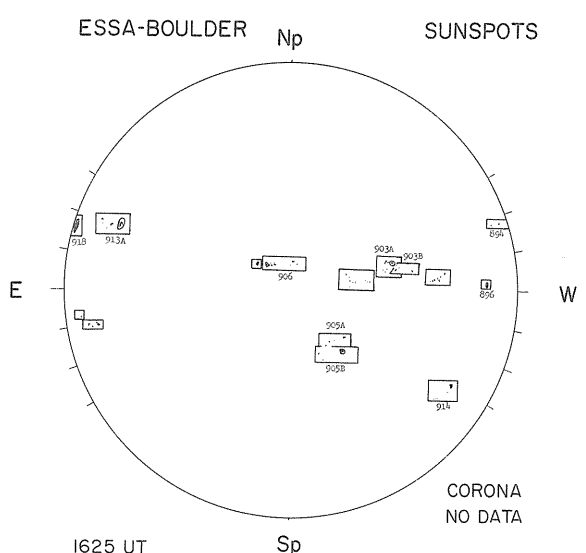
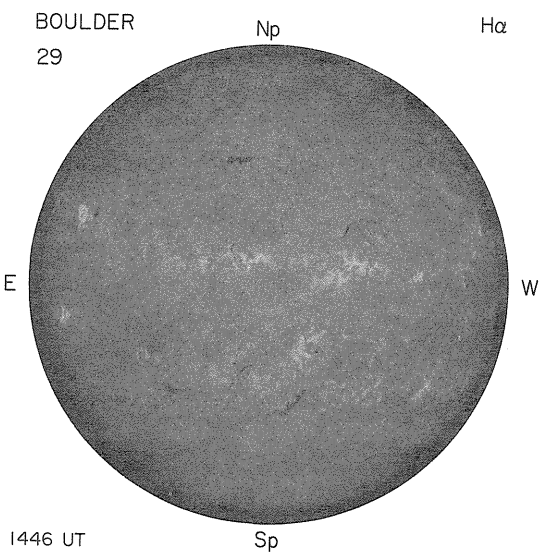
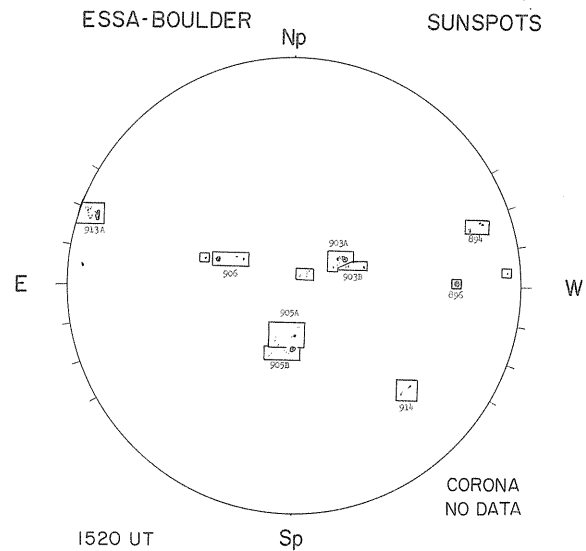
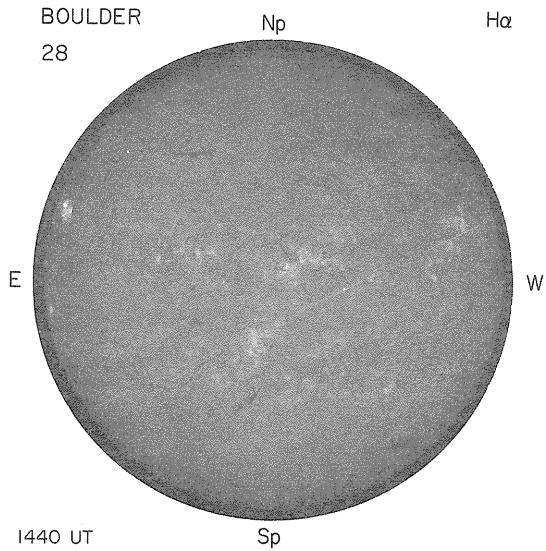


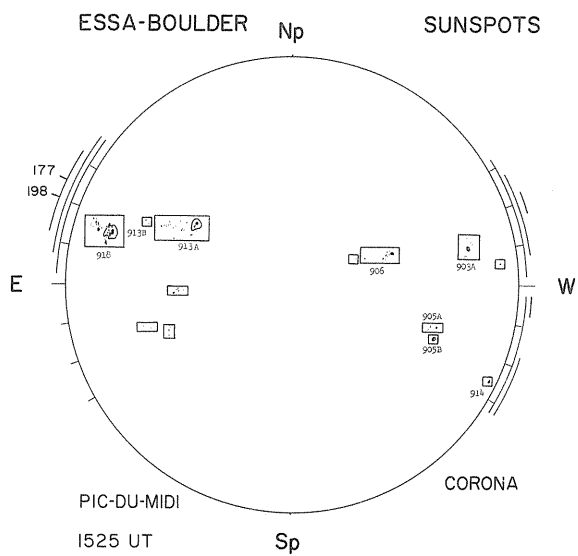
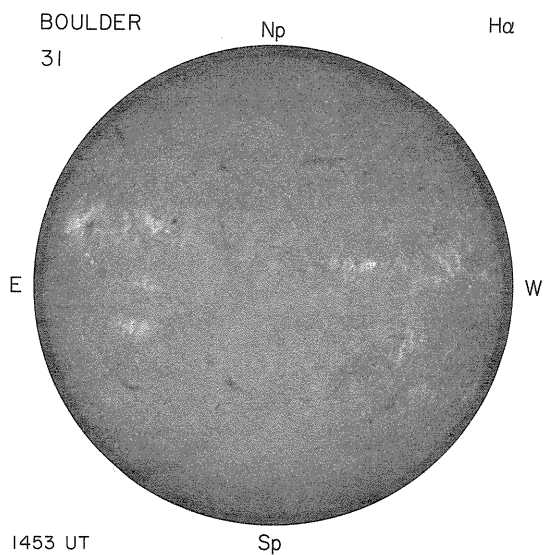


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MCMATH REGION 10864

CMP DATE 6.2

				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		
70	8	1	10864	S10 E65		200	1.5										
70	8	2	10864	S10 E53		300	1.0										
70	8	3	10864	S09 E38	275	300	1.5										
70	8	4	10864	S13 E25	275	400	1.5										

MCMATH REGION 10861

CMP DATE 6.4

				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		
70	7	30	10861	N22 E86	279	700	1.5										
70	7	31	10861	N22 E75	279	900	2.0										
70	8	1	10861	N22 E62	278	1300	2.5										
70	8	2	10861	N23 E50	277	1500	2.5								5 2		
70	8	3	10861	N22 E35	278	1500	3.0										
70	8	4	10861	N21 E23	277	1500	2.0										
70	8	5	10861	N20 E10		1500	2.0										
70	8	6	10861	N21 W02	277	1200	2.0										
70	8	7	10861	N21 W15	276	1200	2.0										
70	8	8	10861	N21 W28	276	1200	2.5										
70	8	9	10861	N21 W42	276	1100	2.0										
70	8	10	10861	N21 W55	276	1100	2.0										
70	8	11	10861	N21 W68	276	800	1.5										

MCMATH REGION 10870

CMP DATE 7.4

RETURN OF REGION 10824

ROTATION 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		
70	8	6	10870	S12 E11	264	500	1.5										
70	8	7	10870	S10 W02	263	500	1.5										
70	8	8	10870	S10 W16	264	500	1.5	18057	S11 W03	259	(AP)	1					
70	8	9	10870	S10 W30	264	600	1.5										
70	8	10	10870	S10 W41	262	600	1.5										
70	8	11	10870	S10 W53	261	600	1.5										
70	8	12	10870	S10 W63	257	400	1.5										
70	8	13	10870	S10 W76	257	400	1.0	18061	S10 W68	257	BP	0			7 2 6 1 4 1		

MCMATH REGION 10862

CMP DATE 7.8

RETURN OF REGION 10821*

ROTATION 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		
70	8	1	10862					18051	N16 E78	257	(AP)	2	20	1	H		
70	8	2	10862	N20 E80	247	900	2.0	18051	N16 E67	257	(AP)	3	20	1	H		
70	8	3	10862	N20 E60	253	1000	2.0	18051	N16 E51	257	(AP)	2					
70	8	4	10862	N20 E47	253	1700	2.0	18051	N16 E39	258	(AP)	4	50	1	H		
70	8	5	10862	N20 E32	256	1600	2.0	18051	N15 E23	258	(AP)	3	20	3	C		
70	8	6	10862	N20 E17	258	1300	1.5	18051	N15 E15	257	(AP)	2	10	3	H		
70	8	7	10862	N20 E03	258	1200	1.5	18051	N16 W01	257	(AP)	2	10	2	A		
70	8	8	10862	N20 W10	258	1200	2.0	18051	N16 W12	257	(AP)	2	10	1	H		
70	8	9	10862	N20 W27		1300	2.0						0	1	A		
70	8	10	10862	N20 W36	257	1500	1.5										
70	8	11	10862	N20 W50	258	1300	1.5										
70	8	12	10862	N20 W64	258	1000	1.5										
70	8	13	10862	N18 W76	257	300	1.0										

MCMATH REGION 10869

CMP DATE 8.3

				CALCIUM PLAGE DATA				SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA CNT	C	INT FLUX		
70	8	5	10869	S27 E37	251	200	1.5										

MCMATH REGION 10863

CMP DATE 8.4

RETURN OF REGION 10843

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		
70	8	2	10863	N02 E85	242	700	2.5										
70	8	3	10863	N03 E67	246	700	2.5										
70	8	4	10863	N03 E53	247	700	2.5										
70	8	5	10863	N03 E40	248	700	2.5										
70	8	6	10863	N03 E26	249	900	2.5										
70	8	7	10863	N03 E12	249	800	2.5										
70	8	8	10863	N03 W02	250	800	2.5										
70	8	9	10863	N03 W15	249	1000	2.5										

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(cont'd)

70	8	10	10863	N04 W30	251	800	2.0
70	8	11	10863	N04 W45	253	600	1.5
70	8	12	10863	N04 W57	251	500	1.0
70	8	13	10863	N04 W69	250	200	1.0

MCMATH REGION 10871 CMP DATE 8.6

				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
70	8	6	10871	S07 E28	247	500	2.5	18055	S08 E25	247	(BP) 3	20	18	B	7 2
70	8	7	10871	S07 E14	247	700	3.0	18055	S08 E09	247	(BY) 4	100	34	D	15 5
70	8	8	10871	S07 E01	247	1300	3.0	18055	S08 W03	248	(BY) 4	150	34	D	16 5
70	8	9	10871	S07 W13	247	1600	3.5	18055	S08 W16	247	(BY) 4	100	47	D	15 5
70	8	10	10871	S07 W26	247	1600	3.0	18055	S08 W28	247	(BP) 4	60	27	C	8 2
70	8	11	10871	S07 W40	248	1300	3.0	18055	S07 W42	247	(BP) 4	60	9	C	
70	8	12	10871	S07 W53	247	1100	3.0	18055	S07 W60	249	(BP) 2	20	3	B	
70	8	13	10871	S07 W65	246	800	3.0	18055	S07 W71	249	(AP) 1				
70	8	14	10871	S07 W80	248	600	2.0								

MCMATH REGION 10865 CMP DATE 9.5

RETURN OF REGION 10827

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
70	8	3	10865	N17 E85	228	800	2.5	18053	N16 E73	235	(BP) 3				
70	8	4	10865	N17 E71	229	2000	3.5	18053	N16 E61	236	(B) 4	110	13	D	4 1
70	8	5	10865	N18 E56	232	2800	3.5	18053	N15 E45	236	(BF) 5	390	25	D	5 1
70	8	6	10865	N18 E40	235	3000	3.0	18054	N14 E58	223	(BP) 2				
70	8	7	10865	N18 E26	235	3500	3.0	18053	N16 E35	237	(BF) 5	390	38	E	25 7
70	8	8	10865	N18 E13	235	3800	3.0	18054	N16 E48	224	(AP) 1	10	2	A	
70	8	9	10865	N18 W02	236	4100	3.5	18053	N16 E20	236	(BF) 5	360	42	E	32 10
70	8	10	10865	N18 W12	233	4000	3.0	18054	N17 E36	220		0	1	A	
70	8	11	10865	N18 W23	231	3800	3.5	18053	N16 E09	236	(BF) 5	380	54	E	20 6
70	8	12	10865	N18 W36	230	3600	4.0					0	1	A	
70	8	13	10865	N18 W49	230	3800	4.0	18053	N17 W06	237	(B) 4	400	70	E	24 7
70	8	14	10865	N18 W62	230	4200	4.0	18053	N16 W17	236	(D) 5	390	59	E	22 7
70	8	15	10865	N19 W75	229	3000	4.0					0	1	A	
70	8	16	10865	N20 W88	230	800	3.5	18053	N18 W32	237	(D) 5	360	71	E	28 8
								18053	N18 W49	238	(D) 4	270	46	F	38 11
								18053	N18 W61	239	(D) 4	510	39	F	64 19
												0	1	A	
								18053	N17 W74	239	(D) 5	720	55	F	79 25
								18053	N18 W88	240	D 0				46 14
															35 11

MCMATH REGION 10873 CMP DATE 11.7

RETURN OF REGION 10831

ROTATION 1

				CALCIUM PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG. H	AREA	CNT	C	INT FLUX
70	8	7	10873	N04 E56	205	500	1.5								
70	8	8	10873	N04 E42	206	500	1.5								
70	8	9	10873	N04 E28	206	500	1.0								
70	8	10	10873	N03 E14	207	300	1.0								
70	8	11	10873	N03 E01	207	200	1.5								
70	8	12	10873	N03 W11	205	200	1.5								
70	8	13	10873	N05 W23	204	200	1.5								
70	8	14	10873	N04 W35	203	200	1.5								
70	8	15	10873	N04 W48	202	300	1.5								

MCMATH REGION 10868 CMP DATE 12.3

RETURN OF REGION 10830

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
70	8	5	10868	N17 E87	201	800	2.0								
70	8	6	10868	N17 E75	200	1600	2.5								
70	8	7	10868	N17 E62	199	2600	3.0	18058	N19 E52	204	(BF) 3	10	3	B	9 3
70	8	8	10868	N17 E49	199	2700	3.5	18058	N18 E45	200	(BF) 5	180	11	D	23 7
70	8	9	10868	N19 E36	198	2900	3.5	18058	N18 E31	200	(BF) 5	420	21	D	33 10
70	8	10	10868	N20 E22	199	3000	3.0	18059	N19 E10	209	(AP) 2	10	7	B	26 8
70	8	11	10868	N20 E09	199	3300	3.0	18058	N18 E19	200	(B) 5	300	23	D	
70	8	12	10868	N20 W04	198	3300	3.5	18059	N20 W04	209	(AP) 3	10	8	B	23 7
70	8	13	10868	N20 W16	197	3500	3.5	18058	N20 E04	201	(BF) 5	290	66	D	
70	8	14	10868	N20 W29	197	3500	3.5	18059	N20 W20	209	(AP) 2	20	7	A	24 7
70	8	15	10868	N20 W42	196	3600	3.5	18058	N21 W11	200	(BY) 5	230	45	E	
70	8	16	10868	N20 W55	197	3700	3.5	18059	N20 W30	208	(AP) 2				32 10
70	8	17	10868	N20 W67	196	3500	3.5	18058	N20 W22	200	(BY) 5	250	50	F	
70	8	18	10868	N20 W79	195	2000	3.0					0	3	A	
								18059	N19 W42	207	(AP) 3				24 7
								18058	N21 W35	200	(BY) 4	200	60	F	
								18059	N19 W55	207	(AP) 2				18 6
								18058	N21 W50	202	(BY) 5	20	6	C	
								18058	N22 W60	200	(BY) 5	100	12	E	
								18058	N22 W75	199	(B) 4	90	14	D	26 8
								18058	N22 W85	199	(B) 4	150	9	E	24 8

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MCMATH REGION 10883

CMP DATE 16.1

				CALCIUM PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG. H	AREA	CNT	C	INT FLUX
70	8	14	10883	S17 E20	148	400	2.5	18067	S17 E13	152	(BP) 2				
70	8	15	10883	S17 E06	148	700	3.0	18067	S17 W01	153	(B) 4				12 4
70	8	16	10883	S17 W07	149	1100	3.0	18067	S17 W14	154	(BF) 5	230	17	D	19 6
70	8	17	10883	S17 W20	149	1200	3.0	18067	S17 W29	153	(B) 5	320	25	D	22 7
70	8	18	10883	S17 W32	148	1200	3.5	18071	S15 W49	163	(BP) 3	10	3	B	17 5
70	8							18067	S17 W40	154	(BF) 6	320	9	D	
70	8	19	10883	S16 W55	155	2100	3.5	18071	S14 W61	163	(BF) 3	70	6	C	
70	8							18067	S16 W54	156	(BF) 5	310	5	D	
70	8	20	10883	S16 W67	156	1800	2.5	18071	S14 W75	164	(BF) 3				
70	8							18067	S16 W65	154	(BF) 5				
70	8	21	10883	S16 W78	155	1200	2.0	18067	S15 W77	153	(BF) 3	50	1	H	8 2
70	8											20	1	H	

MCMATH REGION 10879

CMP DATE 16.8

				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
70	8	12	10879	N06 E55	139	300	2.0								
70	8	13	10879	N07 E42	139	100	1.0								

MCMATH REGION 10885

CMP DATE 17.6

				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
70	8	17	10885	N21 E01	128	300	2.0	18068	N21 W07	131	(B) 2	0	4	B	
70	8	18	10885	N21 W15	131	300	2.0	18068	N20 W18	132	(AP) 1	0	1	A	
70	8	19	10885	N21 W30	130	400	2.0								
70	8	20	10885	N21 W43	132	400	1.5								
70	8	21	10885	N20 W57	134	400	1.5								
70	8	22	10885	N20 W70	132	500	1.0								
70	8	23	10885	N21 W85	132	600	4.0								

MCMATH REGION 10880

CMP DATE 18.9

RETURN OF REGION 10844

ROTATION 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
70	8	12	10880	S11 E86	108	300	1.5	18063	S10 E79	110	AP 0	10	1	A	6 2
70	8	13	10880	S11 E74	107	1000	2.5	18063	S11 E66	112	(BF) 1	10	3	B	5 2
70	8	14	10880	S11 E60	108	1400	3.0	18063	S11 E54	111	(BF) 2	50	5	B	4 1
70	8	15	10880	S12 E47	107	1600	3.0	18063	S11 E40	112	(BP) 2				7 2
70	8	16	10880	S14 E34	108	1700	3.0	18063	S11 E26	114	(BP) 3	30	17	C	7 2
70	8	17	10880	S14 E19	110	2000	3.0	18063	S11 E11	113	(BP) 3	10	12	C	6 2
70	8	18	10880	S14 E05	111	2000	2.5	18063	S10 E01	113	(BP) 3	20	21	B	7 2
70	8	19	10880	S14 W12	112	2500	2.5	18063	S10 W11	113	(B) 1	10	5	B	6 2
70	8	20	10880	S14 W25	114	2500	2.5	18063	S10 W22	111	AF 0				5 2
70	8	21	10880	S14 W38		2300	2.5								
70	8	22	10880	S14 W51	113	2100	2.5								
70	8	23	10880	S14 W65	112	2100	2.5								
70	8	24	10880	S14 W75	111	1000	1.5								

MCMATH REGION 10881

CMP DATE 19.0

RETURN OF REGION 10841

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
70	8	12	10881	N07 E85	109	400	1.0								
70	8	13	10881	N14 E72	109	1100	1.5								40 12
70	8	14	10881	N14 E59	109	1000	2.0								
70	8	15	10881	N14 E46	108	1100	2.5								
70	8	16	10881	N14 E33	109	1200	2.5								
70	8	17	10881	N15 E19	110	1200	2.5								
70	8	18	10881	N15 E06		1200	2.0					10	3	B	
70	8											10	9	B	
70	8	19	10881	N15 W10	110	800	2.0								
70	8	20	10881	N15 W22	111	1000	2.0								
70	8	21	10881	N15 W35		1000	2.0								
70	8	22	10881	N15 W48	110	900	2.0					0	1	A	
70	8	23	10881	N15 W64	111	1000	2.0								
70	8	24	10881	N15 W75	111	900	1.0								

MCMATH REGION 10882

CMP DATE 20.1

RETURN OF REGION 10845*

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
70	8	13	10882	N08 E85	96	1200	2.0	18064	N09 E89	89	A 0	50	1	H	29 10

(cont'd)

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(cont'd)

70	8	14	10882	N08 E74	94	3000	3.5	18064	N08 E71	94	(D)	4	280	15	C	35	11
70	8												10	4	A		
70	8	15	10882	N09 E61	93	3200	3.5	18064	N08 E57	95	(D)	5	750	21	D	34	10
70	8	16	10882	N09 E48	94	3400	3.5	18064	N08 E45	95	(D)	5	330	38	D	43	13
70	8												10	2	H		
70	8	17	10882	N09 E35	94	3500	3.5	18064	N08 E29	95	(Y)	5	390	62	C	27	8
70	8												0	3	A		
70	8	18	10882	N09 E22	94	3700	3.5	18064	N08 E19	95	(BY)	5	380	67	C	16	5
70	8	19	10882	N09 E05	95	3800	3.5	18064	N09 E09	93	(BY)	6	270	36	C	23	7
70	8												0	3	A		
70	8	20	10882	N09 W07	96	3800	3.0	18064	N08 W04	93	(Y)	6	450	17	H	17	5
70	8	21	10882	N09 W20	97	3500	3.0	18064	N08 W17	93	(A)	5	210	27	H	14	4
70	8												0	4	A		
70	8	22	10882	N09 W33	95	3300	3.0	18064	N09 W30	91	(Y)	6	200	29	H	12	4
70	8	23	10882	N09 W47	94	3400	3.5	18064	N09 W42	91	(A)	5					
70	8	24	10882	N09 W60	96	3100	3.0	18064	N09 W58	94	(A)	4	130	7	H	10	3
70	8	25	10882	N09 W74	97	3600	3.0	18064	N09 W70	93	(A)	4	100	3	H		
70	8	26	10882	N09 W86	96	1500	2.5	18064	N09 W88	97	(A)	3	100	2	H	6	2

MCMATH REGION 10884

CMP DATE 21.1

CALCIUM				PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA CNT	C	INT FLUX
70	8	14	10884	S11 E86	82	200	1.0								
70	8	15	10884	S11 E73	81	300	1.0								
70	8	16	10884	S11 E60	82	300	1.0								

MCMATH REGION 10886

CMP DATE 21.1

RETURN OF REGION 10845*

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
70	8	15	10886	N24 E77		400	1.0								
70	8	16	10886	N24 E63		400	1.0								
70	8	17	10886	N25 E47	82	400	1.0								
70	8	18	10886	N25 E35	81	400	1.5								
70	8	19	10886	N24 E16	84	300	2.0								
70	8	20	10886	N24 E07	82	400	2.0								
70	8	21	10886	N24 W07		400	2.0								

MCMATH REGION 10900

CMP DATE 21.1

CALCIUM				PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA CNT	C	INT FLUX
70	8	21	10900	S11 W06	83	200	2.0								
70	8	22	10900	S11 W19	81	300	1.0								

MCMATH REGION 10890

CMP DATE 21.2

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
70	8	18	10890	S04 E39	77	200	1.5	18072	S06 E33	81	A	0			
70	8	19	10890	S05 E20	80	300	2.0	18072	S06 E21	81	(BP)	2	10	11	B
70	8	20	10890	S05 E09	80	300	2.5	18072	S06 E07	82	(BF)	3	10	7	B
70	8	21	10890	S05 W05	82	500	2.5	18072	S06 W06	82	(BF)	4	20	14	B
70	8	22	10890	S05 W19	81	500	3.0	18072	S05 W22	83	(BP)	5	60	36	D
70	8	23	10890	S05 W33	80	900	3.5	18072	S05 W34	83	(BF)	5	180	28	D
70	8	24	10890	S05 W45	81	1000	3.5	18072	S06 W48	84	(BF)	0	110	16	D
70	8	25	10890	S05 W59	82	1200	3.5	18072	S05 W60	83	(BF)	4	80	5	D
70	8	26	10890	S05 W73	83	1100	3.5	18072	S05 W80	89	(B)	2	40	5	D
70	8	27	10890	S05 W86	82	700	1.5								

MCMATH REGION 10887

CMP DATE 22.3

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
70	8	16	10887	N25 E80		500	1.0								
70	8	17	10887	N25 E67	62	500	1.5								
70	8	18	10887	N25 E54	62	800	2.0								
70	8	19	10887	N25 E35	65	1000	2.5	18074	N21 E29	73	(BF)	3	10	10	B
70	8	20	10887	N25 E24	65	1200	3.0	18074	N21 E15	74	(BF)	5	60	20	B
70	8	21	10887	N25 E10	67	1500	2.5	18074	N21 E03	73	(B)	6	130	22	D
70	8	22	10887	N25 W03	65	1600	2.5	18074	N21 W11	72	(BF)	5	150	37	E
70	8	23	10887	N24 W18	65	2100	2.5	18074	N21 W25	74	(B)	5	190	26	D
70	8	24	10887	N24 W30	66	2100	3.0	18074	N21 W38	74	(B)	5	80	37	D
70	8	25	10887	N24 W44	67	2800	3.0	18074	N21 W50	73	(B)	4	30	17	D
70	8	26	10887	N24 W57	67	2700	3.0	18074	N20 W67	76	(BP)	2	10	2	C
70	8	27	10887	N24 W70	66	2900	3.0	18074	N21 W88	83	(AP)	2	0	1	A
70	8	28	10887	N24 W85	69	700	1.5								

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MC MATH REGION 10908

CMP DATE 22.6

				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		
70	8	25	10908	S37 W41		200	2.0										
70	8	26	10908	S37 W52	62	300	2.0										
70	8	27	10908	S37 W64	60	300	1.5										

MC MATH REGION 10907

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		
70	8	24	10907	S18 W25	61	200	2.0										

MC MATH REGION 10916

CMP DATE 23.2

				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		
70	8	27	10916	N08 W48		200	1.5										
70	8	28	10916	N07 W66	50	200	2.0	18091	N06 W69	53	(AP)	1	0	1	A		
70	8	29	10916	N07 W80	51	200	2.0										

MC MATH REGION 10888

CMP DATE 23.3

RETURN OF REGION 10846*

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		
70	8	17	10888	N14 E78	51	1500	3.0	18069	N13 E72	52	(BP)	3	10	3	C 9 3		
70	8	18	10888	N14 E65	51	1300	3.0	18069	N14 E60	54	(B)	3	20	9	B		
70	8	19	10888	N14 E48	52	1700	3.0	18069	N12 E49	53	(BP)	3	10	9	B		
70	8	20	10888	N15 E36	53	1700	3.0	18069	N13 E35	54	(BP)	3					
70	8	21	10888	N15 E23	54	1700	3.0	18069	N13 E23	53	(BP)	4	30	10	C 8 3		
70	8	22	10888	N15 E10	52	1500	3.0	18069	N12 E09	52	(BP)	3	20	8	C .11 3		
70	8	23	10888	N15 W05	52	1500	2.5	18069	N12 W05	54	(AP)	2					
70	8	24	10888	N15 W18	54	1100	2.5										
70	8	25	10888	N15 W30	53	1100	2.5										
70	8	26	10888	N15 W43	53	900	2.0										
70	8	27	10888	N15 W56	52	700	2.0								14 4		
70	8	28	10888	N15 W70	54	300	1.5								12 4		
70	8	29	10888	N15 W83	54	300	1.5										

MC MATH REGION 10901

CMP DATE 23.3

				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		
70	8	21	10901	S12 E21	56	200	2.0										
70	8	22	10901	S12 E09	53	200	1.5										
70	8	23	10901	S12 W04	51	300	1.5										

MC MATH REGION 10889

CMP DATE 23.6

				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		
70	8	17	10889	S06 E85	44	400	1.0	18070	S08 E79	45	(AP)	1			5 2		
70	8	18	10889	S05 E71	45	500	2.0	18070	S05 E62	52	(AP)	2	10	1	A		
70	8	19	10889	S05 E50	50	400	2.0	18070	S07 E48	54	(AP)	1	10	6	B		
70	8	20	10889	S05 E38	51	500	2.0	18070	S07 E36	53	(BP)	1					
70	8	21	10889	S05 E26	51	500	2.0	18070	S07 E21	55	(AP)	2					
70	8	22	10889	S05 E13	49	500	2.0	18070	S07 E08	53	(AP)	2					
70	8	23	10889	S05 W03	50	500	2.0										
70	8	24	10889	S05 W15	51	300	2.0										
70	8	25	10889	S06 W28		300	2.0						0	3	B		
70	8	26	10889	S05 W43	53	300	1.5										
70	8	27	10889	S05 W57	53	300	1.5										
70	8	28	10889	S05 W70	54	200	1.0										

MC MATH REGION 10893

CMP DATE 24.5

RETURN OF REGION 10847

ROTATION 1

				CALCIUM PLAGE DATA				SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA CNT	C	INT FLUX		
70	8	18	10893	S16 E80	36	1000	2.5								7 2		
70	8	19	10893	S17 E66	34	1000	2.5	18076	S18 E65	37	(AP)	1			6 2		
70	8	20	10893	S17 E52	37	800	2.5										
70	8	22	10893	S17 E25	37	1200	2.5										
70	8	23	10893	S17 E10	37	1200	2.0										
70	8	24	10893	S17 W03	39	1000	2.5										

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MCMATH REGION 10895

CMP DATE 25.5

				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	
70	8	19	10895	N17 E78	22	200	2.0								
70	8	20	10895	N19 E66	23	600	2.5	18077	N18 E60	29	(E) 1				
70	8	21	10895	N18 E51	26	600	2.0	18077	N18 E46	30	AP 0				
70	8											0	1	A	
70	8	23	10895	N19 E25	22	800	2.5								
70	8	24	10895	N19 E12	24	500	2.0								
70	8	25	10895	N18 W01	24	500	2.0								
70	8	26	10895	N19 W14	24	400	1.5								

MCMATH REGION 10914

CMP DATE 26.1

				CALCIUM PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG. H	AREA CNT	C	INT FLUX	
70	8	28	10914	S23 W33	17	600	2.5	18092	S22 W32	16	(BP) 4	10	4	C	
70	8	29	10914	S23 W46	17	700	3.0	18092	S22 W45	16	(BP) 4	30	7	C	
70	8	30	10914	S23 W60		1200	3.5	18092	S22 W59	17	(BF) 4	30	5	D	9 3
70	8	31	10914	S23 W71	16	1200	2.5	18092	S23 W70	14	(AP) 4	20	1	H	7 2
70	9	1	10914	S23 W88	18	600	1.0								

MCMATH REGION 10898

CMP DATE 26.2

RETURN OF REGION 10846*

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	
70	8	20	10898	N30 E72	17	200	1.0								
70	8	21	10898	N30 E57	20	400	1.0								
70	8	22	10898	N30 E45	17	700	1.0								
70	8	23	10898	N30 E32	15	800	1.0								
70	8	24	10898	N30 E20	16	500	1.0								
70	8	25	10898	N30 E09	14	700	1.5								
70	8	26	10898	N31 W02	12	600	1.0								
70	8	27	10898	N31 W15	11	700	1.5								
70	8	28	10898	N31 W28	12	500	1.5								
70	8	29	10898	N31 W40	11	600	1.5								
70	8	30	10898	N31 W50		700	2.0								
70	8	31	10898	N31 W60	5	700	1.5								

MCMATH REGION 10917

CMP DATE 26.5

				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	
70	8	29	10917	N08 W40	11	500	3.0								
70	8	30	10917	N09 W54		400	3.0								
70	8	31	10917	N08 W68		600	3.0								
70	9	1	10917	N09 W82	12	500	3.5							9	3

MCMATH REGION 10902

CMP DATE 27.5

RETURN OF REGION 10853*

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	
70	8	21	10902	S14 E80	358	1000	1.0								
70	8	22	10902	S14 E67	356	1000	1.0								
70	8	23	10902	S14 E54	354	1000	1.5								
70	8	24	10902	S14 E40	357	700	1.5								
70	8	25	10902	S14 E25	359	1000	1.5								
70	8	26	10902	S14 E13	358	1000	1.5	18086	S08 E07	2	(AP) 3	0	1	A	
70	8											0	1	A	
70	8	27	10902	S14 W01	358	1100	2.0	18088	S11 E09	0	(AP) 2				
70	8	28	10902	S14 W14	358	1000	2.0								
70	8	29	10902	S14 W28	359	1100	2.0								
70	8	30	10902	S14 W42		1100	1.5								
70	8	31	10902	S14 W55	0	800	1.5								
70	9	1	10902	S14 W65	355	800	1.0							6	2

MCMATH REGION 10903

CMP DATE 28.2

RETURN OF REGION 10852

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	
70	8	21	10903	N12 E80	358	1000	1.5	18079	N10 E85	352	AP 0	200	2	H	4 2
70	8	22	10903	N11 E67	356	1400	3.0	18079	N11 E68	354	(AP) 5	260	6	C	
70	8											0	4	B	
70	8							18080	N08 E81	341	(AF) 2				

(cont'd)

REGIONS OF SOLAR ACTIVITY

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(cont'd)

70	8	23	10903	N12 E53	355	1600	2.5	18079	N11 E56	354	(AP)	4							
70	8							18080	N08 E65	345	(BP)	2							
70	8	24	10903	N12 E49	348	1800	3.0	18079	N11 E42	355	(BP)	6	200	5	C	7	2		
70	8							18080	N09 E54	343	(AP)	1	0	2	A				
70	8	25	10903	N12 E34	350	2300	3.0	18079	N12 E29	355	(AP)	6	230	7	H				
70	8							18080	N08 E34	350	(AP)	2	0	7	B				
70	8	26	10903	N12 E21	350	2500	3.0	18087	N12 E09	0	(B)	3				14	4		
70	8							18079	N12 E12	358	(AP)	5	200	9	C				
70	8												20	8	C				
70	8							18080	N08 E18	352	(AP)	1	0	3	A				
70	8	27	10903	N12 E08	349	2700	3.5	18087	N11 W03	359	(BF)	5	20	9	D	13	4		
70	8							18079	N13 E01	355	(AP)	5	130	5	H				
70	8							18080	N08 E07	349	(BF)	2	0	3	A				
70	8	28	10903	N12 W07	351	3000	3.0	18087	N11 W15	359	(BP)	5	20	4	H	10	3		
70	8							18079	N13 W11	355	(AP)	5	90	15	C				
70	8							18080	N09 W02	346	(BF)	3	0	9	B				
70	8	29	10903	N12 W23	354	3000	3.0	18087	N11 W28	359	(E)	4							
70	8							18079	N13 W25	356	(AP)	5	70	11	D				
70	8							18080	N09 W18	349	(BF)	3							
70	8	30	10903	N12 W35		3200	3.0	18087	N11 W44	2	(BF)	2							
70	8							18079	N13 W38	356	(AP)	5							
70	8	31	10903	N12 W48	353	3000	3.0	18079	N14 W54	358	(BP)	5	40	7	C	10	3		
70	9	1	10903	N12 W62	352	2200	3.5	18079	N14 W66	356	(BP)	4	10	2	C				
70	9	2	10903	N12 W72	348	2000	3.0	18079	N13 W79	350	AP	0	0	1	A	9	3		
70	9		10903					18102	N09 W73	344	(AF)	2							
70	9	3	10903	N12 W85	348	1500	2.5									10	3		

MCMATH REGION 10905

CMP DATE 29.2

				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
70	8	23	10905	S10 E70	338	700	3.0	18081	S10 E75	335	(BF)	2			
70	8	24	10905	S08 E60	337	1100	3.5	18081	S09 E59	338	(BP)	4	50	7	C
70	8											30	13	C	17 5
70	8	25	10905	S12 E48	336	2200	3.5	18084	S11 E59	338	(BY)	3			
70	8							18081	S09 E44	340	(BP)	4	90	13	C
70	8											30	18	C	
70	8	26	10905	S12 E36	335	2300	3.5	18084	S12 E44	340	(BY)	4			
70	8							18081	S09 E27	343	(BP)	4	50	10	C
70	8											20	14	C	9 3
70	8	27	10905	S12 E20	337	2100	3.0	18084	S12 E28	342	(BP)	5			
70	8							18081	S08 E15	341	(BP)	4	20	9	C
70	8							18084	S11 E16	340	(BP)	6	60	13	C
70	8	28	10905	S12 E08	336	2500	3.0	18081	S08 E03	341	(B)	4	70	6	C
70	8											20	11	C	8 3
70	8	29	10905	S12 W07	338	2600	3.0	18084	S11 E04	340	(BP)	6			
70	8							18081	S07 W12	343	(AP)	2	60	7	C
70	8											10	6	C	8 3
70	8	30	10905	S08 W25		2000	3.0	18084	S10 W13	344	(AP)	4			
70	8							18081	S07 W28	346	(AP)	4	60	1	H
70	8							18084	S10 W27	345	(AP)	5			
70	8	31	10905	S13 W32	337	2200	3.0	18097	S26 W16	334	(B)	2			
70	8							18081	S06 W39	343	(AP)	4	10	4	C
70	8							18084	S10 W40	344	(AP)	6	40	2	H
70	9	1	10905	S13 W45	335	2000	3.5	18081	S07 W53	343	(AP)	1	0	2	A
70	9		10905					18084	S09 W53	343	(AP)	5	40	1	H
70	9	2	10905	S13 W57	333	2000	3.5	18084	S10 W70	341	(AP)	2	10	1	H
70	9	3	10905	S13 W70	333	1700	3.0								6 2
															8 3

MCMATH REGION 10923

CMP DATE 30.1

				CALCIUM PLAGE DATA				SUNSPOT DATA				9.1 CM			
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG. H	AREA	CNT	C	INT FLUX
70	9	2	10923	N06 W45	321	400	2.0								

MCMATH REGION 10912

CMP DATE 30.4

RETURN OF REGION 10857

ROTATION 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
70	8	25	10912	S16 E62		1000	1.5								
70	8	26	10912	S15 E47		1300	1.5								
70	8	27	10912	S16 E36	321	1200	1.5								
70	8	28	10912	S16 E20	324	1400	1.5								
70	8	29	10912	S16 E06	325	1200	2.0								
70	8	30	10912	S16 W07		1400	2.0								
70	8	31	10912	S16 W10	323	1600	1.5								
70	9	1	10912	S12 W26	316	1300	2.0								
70	9	2	10912	S13 W38	314	1300	2.0								
70	9	3	10912	S13 W50	313	1000	2.5	18104	S12 W58	319	(B)	1			
70	9	4	10912	S13 W64	314	1300	2.5	18104	S12 W71	318	(AF)	1			6 2
70	9	5	10912	S12 W80		600	2.5								4 1

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Aug 70

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MCMATH REGION 10906

CMP DATE 30.5

				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				
70	8	23	10906	N10 E85	323	600	3.0	18082	N12 E84	326	BP	0									
70	8	24	10906	N12 E75	322	1000	2.5	18082	N12 E71	326	(BP)	2	10	2	B	5	1				
70	8	25	10906	N12 E63	321	1600	2.5	18082	N13 E59	325	(BF)	2	10	7	B						
70	8							18085	N13 E70	314	(AP)	3	0	1	A						
70	8	26	10906	N12 E52	319	1500	3.0	18082	N12 E41	329	(BF)	5	40	15	C	10	3				
70	8							18085	N12 E49	321	(BP)	2	20	4	C						
70	8	27	10906	N12 E40	317	1400	3.5	18082	N13 E30	326	(B)	4	60	6	D	7	2				
70	8							18085	N11 E40	316	(BP)	4	20	6	C						
70	8	28	10906	N13 E28	316	1700	3.0	18082	N13 E18	326	(BF)	5	60	8	D	6	2				
70	8							18085	N13 E25	319	(AP)	3	10	1	H						
70	8	29	10906	N13 E15	316	1900	3.0	18082	N13 E04	327	(BF)	5									
70	8							18085	N13 E10	321	(AP)	4									
70	8	30	10906	N13 E00		2000	3.0	18082	N13 W09	327	(BF)	5									
70	8							18085	N14 W04	322	(AP)	3									
70	8	31	10906	N13 W13	318	2000	3.0	18082	N13 W22	326	(BP)	4	20	13	C						
70	8							18085	N13 W17	321	(BP)	2	0	1	A						
70	9	1	10906	N13 W26	316	2000	3.0	18082	N12 W40	330	(AP)	2	0	1	A						
70	9	2	10906	N13 W40	316	2000	3.0	18085	N11 W39	310	(AP)	2	0	2	B						
70	9	3	10906	N13 W53	316	1500	2.5	18085	N12 W50	311	(BF)	2	10	4	B						
70	9	4	10906	N13 W67	317	1500	2.5	18085	N12 W64	311	(BF)	2	0	4	A	7	2				
70	9	5	10906	N13 W80		1100	2.5	18085	N12 W79	315	B	0				3	1				

MCMATH REGION 10909

CMP DATE 30.8

				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		
70	8	26	10909	N03 E56	315	100	1.5												

Notes: Region 10860 is new plage that has formed in the trailing or following part of region 10814 of the previous rotation.
 Region 10870 contains the weak remnants of old plage 10824.
 Region 10871 has developed near the following edge of old region 10824 of the previous rotation.
 Region 10875 experiences a resurgence of activity on the disk, after central meridian passage.
 Region 10885 forms on the disk, near the location of old region 10838.
 Region 10895 has formed near the location of old region 10858.
 Region 10906 is mostly new plage, but also contains remnants of 10859 and 10860.
 A calcium spectroheliogram was obtained at the McMath-Hulbert Observatory on every day during the month of August 1970.
 There were also observations at Mt. Wilson on all days in August 1970.

Errata: On page 68 of SGD-309-Part I in the regions of solar activity data for March 1970 sunspot number 17765 was improperly associated with region 10602 and should have been associated with region 10604. Also, spot 17802 with region 10639 on page 74 should be with 10641; and spot 17800 with region 10641 on page 75 should be with region 10647.

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

AUGUST 1970

(10⁻³ ergs/cm²/sec.)

1=8A HOURLY AVERAGES

NAVAL RESEARCH LABORATORY

DAY

11 12 13 14 15 16 17 18 19 20 21 22 23 24

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.26	0.30	0.35	0.30	0.28	0.29	0.30	0.49	0.46	0.47	4.72	20.6	1.97	0.46	0.58	0.30	0.59	0.57	0.27	0.22	0.34	0.38	0.58	0.43
2	0.40	0.28	0.23	0.29	0.34	0.40	0.26	0.23	0.31	0.25	0.26	0.20	0.26	0.29	0.18	0.19	0.20	0.33	0.22	0.20	0.27	0.22	0.24	0.26
3	0.31	7.63	2.86	0.43	0.32	0.29	0.40	0.38	0.22	0.24	0.28	0.24	0.20	0.29	0.26	0.47	1.55	0.75	0.29	0.28	0.28	0.28	0.26	0.29
4	0.30	0.26	0.34	0.34	0.23	0.27	0.25	0.32	0.29	0.36	0.38	0.54	0.29	0.35	0.36	0.37	0.20	0.44	0.52	0.45	0.52	0.54	0.48	0.41
5	0.36	0.38	0.40	0.48	0.65	0.42	0.47	0.74	1.23	0.50	1.16	0.33	0.38	0.24	0.32	0.43	0.50	0.43	0.33	0.52	0.36	0.33	0.33	0.35
6	0.33	0.59	0.80	0.65	0.44	0.31	0.30	0.38	0.37	0.34	0.34	0.28	0.25	0.28	0.36	0.36	0.47	0.18	0.27	0.33	0.29	0.26	0.29	0.21
7	0.15	0.24	3.10	0.23	0.32	2.54	3.11	0.57	0.45	0.36	0.30	0.34	0.29	0.28	0.42	0.58	0.46	0.46	0.48	1.07	0.56	0.48	0.46	0.31
8	0.42	0.35	0.31	0.38	0.53	0.28	0.37	0.53	0.37	0.39	0.35	0.36	0.75	0.37	0.79	0.30	0.67	0.33	0.46	0.58	0.50	0.48	0.56	0.85
9	0.46	1.73	1.22	0.42	0.43	0.49	0.58	0.48	0.88	0.69	0.48	0.42	0.44	0.39	1.33	0.39	0.49	0.27	0.40	0.48	0.51	0.99	0.51	0.68
10	0.65	0.67	0.67	0.66	0.79	0.34	0.37	0.48	0.48	0.78	0.47	0.44	0.44	0.49	0.97	0.69	0.40	0.46	0.52	0.58	0.42	0.43	0.45	0.95
11	0.63	0.60	0.60	0.69	0.57	0.59	0.55	0.65	0.75	0.39	0.49	0.48	1.16	0.68	0.42	0.56	0.66	0.47	0.66	0.73	1.27	2.48	2.02	10.9
12	31.5	13.3	2.55	1.77	1.59	1.63	1.30	1.37	1.80	1.73	2.47	1.82	1.79	1.61	1.28	1.55	2.37	2.68	3.74	4.95	255.	18.1	7.55	7.30
13	6.77	5.42	5.41	3.98	3.18	4.02	4.07	14.8	40.0	6.75	5.00	3.85	4.72	8.22	15.7									
14																								
15	11.2	7.01	5.45	6.00	10.7	6.35	5.63	7.55	11.0	9.53	8.82	12.9	11.0	5.73	8.34	9.76	4.52	5.59	5.59	5.82	22.9	16.7	16.8	29.7
16	31.0	25.5	6.16	4.81	6.05	8.90	26.8	13.1	5.82	6.02	4.82	13.1	12.6	12.3	5.91	6.84	264.	74.5	47.7	27.1	22.9	16.7	16.8	29.7
17	3.67	4.01	4.42	12.0	4.68	1.96	1.56	1.40	1.29	1.05	1.13	1.27	1.27	0.98	0.71	0.74	1.07	0.93	0.88	0.65	1.08	0.81	1.19	1.08
18	1.21	1.33	1.00	0.90	0.75	0.81	0.62	1.10	0.55	0.66	0.46	0.98	1.03	0.86	0.63	0.82	0.95	1.93	10.1	4.22	1.39	1.63	7.73	1.52
19	3.40	1.12	1.40	5.87	1.37	2.13	0.94	0.86	0.74	6.25	11.2	83.3	8.19	8.68	2.20	1.02	6.05	1.82	1.44	2.61	2.63	6.83	11.0	5.49
20	19.9	4.12	1.36	2.75	32.4	7.60	0.88	1.07	1.54	0.50	0.77	0.72	0.65	0.65	0.69	0.62	1.09	0.74	0.52	0.69	0.92	0.72	0.57	
21	0.76	0.49	0.49	0.46	0.68	0.73	0.41	0.36	0.40	0.24	0.41	0.32	0.40	0.34	0.36	0.58	0.49	0.44	0.32	0.37	0.32	0.48	0.89	
22	1.92	2.64	2.05	1.14	0.73	0.54	0.43	0.47	0.43	0.43	0.50	0.39	0.70	0.62	0.43	0.35	0.43	0.32	0.37	0.44	0.64	0.30	0.48	0.41
23	0.40	0.34	0.29	0.38	0.32	0.57	0.47	0.37	0.40	0.45	0.44	0.58	0.53	0.54	0.43	0.53	0.70	0.51	1.22	0.47	0.40	0.36	0.50	0.44
24	0.38	0.48	0.40	0.39	0.43	0.37	0.40	0.62	0.44	0.21	0.26	0.28	0.29	0.28	0.31	0.28	0.31	0.30	0.21	0.35	0.47	0.48	0.34	0.39
25	0.52	0.40	0.36	0.31	0.31	0.31	0.23	0.28	0.22	0.29	0.21	0.33	0.24	0.25	0.27	0.25	0.39	0.24	0.28	0.49	0.28	0.25	0.26	0.25
26	0.57	0.42	0.42	0.31	0.38	0.38	0.35	0.21	0.25	0.18	0.38	0.32	0.23	0.28	0.65	0.30	0.31	0.28	0.27	0.42	0.31	0.45	0.31	0.25
27	0.27	0.28	0.27	0.34	0.50	0.34	0.43	0.40	0.43	0.32	0.85	0.31	0.64	2.62	13.6	3.72	1.75	0.95	0.76	1.08	0.65	0.65	0.57	0.61
28	0.91	0.56	0.50	0.66	1.01	0.86	2.42	1.74	1.95	2.03	1.22	1.42	1.31	2.91	2.08	1.42	1.18	1.22	0.90	0.92	1.01	0.92	2.37	0.77
29	1.11	1.56	1.29	2.01	1.06	0.85	1.99	0.71	0.97	0.59	0.59	0.65	1.54	0.65	0.63	0.62	0.93	1.13	6.86	5.95	0.88	0.66	1.01	1.83
30	0.86	0.74	0.70	0.56	0.57	1.48	0.41	0.59	0.65	0.66	4.68	0.64	0.81	1.34	0.68	0.88	0.85	0.64	0.90	1.13	0.72	0.76	0.79	0.79
31	0.99	0.92	0.91	1.10	1.12	0.76	0.69	1.40	0.34	0.66	0.53	0.76	0.58	0.54	0.60	0.51	0.72	0.67	1.20	0.68	0.52	0.52	0.61	0.67

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

AUGUST 1970

NAVAL RESEARCH LABORATORY		8=20A HOURLY AVERAGES										(10 ⁻² 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	0.75	0.73	0.82	0.71	0.75	0.73	0.75	0.91	0.90	0.93	2.66	8.24	2.23	1.02	1.01	0.80	1.07	1.01	0.79	0.74	0.80	0.79	0.96	0.96	0.86
2	2	0.84	0.73	0.69	0.68	0.72	0.67	0.68	0.68	0.73	0.67	0.62	0.64	0.68	0.71	0.63	0.65	0.61	0.72	0.66	0.60	0.53	0.64	0.66	0.65	0.65
3	3	0.71	3.90	2.45	0.58	0.77	0.72	0.78	0.66	0.63	0.65	0.64	0.62	0.62	0.68	0.70	0.87	1.35	1.15	0.75	0.74	0.62	0.70	0.69	0.71	0.71
4	4	0.71	0.70	0.75	0.71	0.70	0.65	0.67	0.73	0.72	0.76	0.79	0.89	0.71	0.74	0.79	0.80	0.73	0.78	0.92	0.87	0.89	0.92	0.86	0.82	0.82
5	5	0.77	0.80	0.93	0.88	0.96	0.88	0.83	1.05	1.36	0.97	1.13	0.77	0.79	0.72	0.75	0.94	0.80	0.73	0.79	0.86	0.80	0.73	0.71	0.69	0.69
6	6	0.67	0.83	1.08	0.95	0.85	0.68	0.69	0.74	0.76	0.70	0.71	0.65	0.65	0.69	0.65	0.72	0.80	0.63	0.68	0.52	0.60	0.63	0.62	0.57	0.57
7	7	0.52	0.55	1.01	0.66	0.65	1.25	1.63	0.86	0.74	0.66	0.61	0.62	0.65	0.64	0.70	0.86	0.81	0.79	0.89	1.16	0.94	0.90	0.88	0.75	0.75
8	8	0.80	0.73	0.70	0.72	0.80	0.70	0.77	0.84	0.76	0.80	0.76	0.75	0.94	0.79	1.08	0.92	1.00	0.85	0.80	0.92	0.76	0.86	0.90	1.03	1.03
9	9	0.83	1.40	1.40	0.80	0.82	0.85	0.92	0.86	1.12	1.00	0.83	0.75	0.94	0.79	1.19	0.95	0.92	0.82	0.81	0.77	0.84	1.18	0.91	0.97	0.97
10	10	0.91	1.00	0.96	1.01	1.02	0.80	0.73	0.83	0.82	1.02	0.85	0.82	0.89	0.86	1.01	1.02	0.97	0.89	0.81	0.91	0.89	0.78	0.83	1.11	1.11
11	11	0.93	0.79	0.77	0.92	0.87	0.89	0.96	0.98	1.05	0.81	0.84	0.85	1.16	0.96	0.79	0.95	1.03	0.86	1.01	1.06	1.37	2.12	2.14	2.52	2.52
12	12	11.2	6.35	2.32	1.82	1.85	1.82	1.73	1.71	1.88	1.85	2.20	1.94	2.14	1.84	1.83	1.99	2.24	2.54	3.26	3.75	67.4	9.91	4.64	4.41	4.41
13	13	4.40	4.06	4.31	3.62	2.80	3.29	3.39	6.91	14.5	5.16	4.23	3.45	3.48	4.32	6.81										
14	14					3.44	3.45	4.77	9.03	4.17	4.23	3.94	7.97	6.84	7.77	4.92	4.96	51.1	24.2	19.4	14.2	12.6	11.0	9.78	13.1	13.1
15	15	7.96	6.32	5.04	4.95	6.41	5.30	4.72	4.99	5.22	5.69	6.37	6.78	7.00	4.69	5.56	5.63	4.00	3.86	4.35	4.11	4.03	4.29	4.97	16.7	16.7
16	16	13.3	8.62	4.21	3.65	4.42	4.94	4.78	6.94	5.75	4.12	5.23	5.26	10.1	10.2	4.46	9.58	9.94	4.80	4.30	4.13	4.33	3.71	3.67	3.40	3.40
17	17	2.97	2.65	2.66	3.74	3.43	2.21	1.96	1.79	1.78	1.65	1.71	1.71	1.57	1.51	1.36	1.33	1.45	1.59	1.35	1.31	1.27	1.25	1.33	1.45	1.45
18	18	1.51	1.67	1.33	1.37	1.29	1.22	1.14	1.42	1.10	1.23	0.98	1.27	1.47	1.28	1.31	1.21	1.51	1.88	3.80	2.94	1.74	1.73	3.17	1.64	1.64
19	19	2.26	1.49	1.72	3.10	1.78	1.77	1.51	1.47	1.45	2.76	4.33	15.0	4.55	4.93	2.79	2.26	3.37	2.31	1.91	2.14	2.29	3.56	4.69	3.67	3.67
20	20	6.49	3.20	1.75	1.72	6.04	5.44	1.40	1.49	1.86	1.17	1.35	1.19	1.38	1.29	1.20	1.27	1.16	1.43	1.24	1.17	1.25	1.35	1.35	1.08	1.08
21	21	1.29	1.16	1.01	1.02	1.18	1.16	1.00	0.89	0.89	0.84	1.02	0.82	0.99	1.07	0.84	1.08	0.92	0.87	0.89	0.77	0.85	0.76	0.84	0.90	0.90
22	22	1.86	2.38	1.99	1.50	1.12	1.08	1.00	0.93	0.90	0.84	1.02	0.82	0.99	1.03	1.02	1.01	1.05	1.01	1.29	1.00	0.88	0.82	0.87	0.88	0.88
23	23	0.84	0.76	0.76	0.78	0.83	0.94	0.85	0.92	0.78	0.86	0.95	1.01	0.92	1.03	1.02	1.01	0.69	0.69	0.73	0.74	0.74	0.86	0.87	0.77	0.77
24	24	0.78	0.84	0.84	0.83	0.92	0.83	0.89	1.06	0.74	0.71	0.68	0.72	0.69	0.72	0.71	0.69	0.72	0.67	0.75	0.84	0.74	0.71	0.71	0.72	0.72
25	25	0.81	0.94	0.86	0.85	0.73	0.72	0.70	0.66	0.68	0.65	0.69	0.75	0.71	0.74	0.65	0.66	0.72	0.66	0.75	0.86	0.72	0.70	0.75	0.70	0.70
26	26	0.91	0.82	0.79	0.70	0.82	0.82	0.78	0.73	0.63	0.66	0.62	0.69	0.74	0.68	0.85	0.72	0.66	0.68	0.65	0.66	0.64	0.72	0.75	0.75	0.75
27	27	0.71	0.73	0.67	0.78	0.88	0.74	0.86	0.77	0.81	0.86	1.03	0.94	0.98	1.60	5.95	2.68	2.06	1.32	1.25	1.46	1.20	1.20	0.98	0.98	0.98
28	28	1.21	0.98	1.03	1.09	1.24	1.36	1.98	1.83	1.75	1.61	1.91	1.63	1.31	1.72	2.26	1.91	1.81	1.56	1.65	1.37	1.54	1.41	1.75	1.42	1.42
29	29	1.48	1.92	1.76	2.03	1.65	1.43	1.63	1.39	1.39	1.44	1.43	1.34	1.72	1.25	1.26	1.20	1.48	1.58	2.70	3.60	1.34	1.34	1.45	1.63	1.63
30	30	1.39	1.38	1.27	1.22	1.20	1.66	1.17	1.18	1.31	1.21	2.36	1.44	1.38	1.56	1.25	1.42	1.46	1.24	1.47	1.63	1.43	1.38	1.45	1.33	1.33
31	31	1.44	1.44	1.52	1.63	1.65	1.52	1.35	1.72	1.25	1.25	1.34	1.33	1.30	1.19	1.17	1.23	1.28	1.30	1.58	1.53	1.27	1.16	1.22	1.11	1.11

SOLAR X-RAYS BY SATELLITE

EXPLORER 37

AUGUST 1970

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	1041	100.00	1115	390.00	1116	130.00	1119	1209	
3	0139E	18.00D	0140E	130.00	0140	53.00	0157	0215	
7	0236	120.00	0237	170.00	0238	67.00	0238	0247	
7	0555	99.00	0600	170.00	0603	53.00	0603	0609	
11	2133	6.70	2138	44.00	2138	29.00	2141	2153	
11	2328	130.00	2344	470.00D	2345D	53.00D	2345D	0207	
12	1019	6.70	1021	53.00	1021	40.00	1021	1029	
12	1735	3.30	1738	37.00	1737	40.00	1740	1740D	
12	1823E	5.60	1829	55.00	1830	40.00	1853	1854	
12	1904	42.00D	1925D	130.00D	1925D	67.00D	1923D	1925D	
12	2005	120.00	2054	4900.00	2038	1500.00	2028	2230D	
12	2140E	71.00	2232	170.00	2232	67.00	2236	2242D	
12	2318E	32.00	2319	130.00	2321	53.00	2339	0020D	HIGH BACKGROUND
13	0001E	19.00D	0020D	130.00	0016	53.00D	0020D	0020D	
13	0057E	16.00	0118	89.00	0117	53.00	0158	0159D	WITH MANY
13	0235E	20.00	0300	94.00	0259	53.00	0302	0317	
13	0329	2.20D	0337D	34.00D	0337D	40.00	0336	0337D	SMALL EVENTS
13	0436	10.00D	0436E	46.00	0437	29.00	0442	0442	
13	0448	6.70D	0515D	59.00D	0515D	40.00	0515	0515	
13	0553E	5.60	0648	52.00	0645	40.00	0653	0654D	
13	0730E	130.00D	0830E	600.00	0827	200.00	0829	0900D	TWO EVENTS
13	0908E	22.00	0922	130.00	0923	67.00	0926	1011D	
13	1047E	5.60	1051	52.00	1050	40.00	1102	1103	
13	1119	21.00	1120	79.00	1121	40.00	1148	1149D	
13	1225E	48.00	1310	130.00D	1327D	53.00D	1327D	1327D	COMPLEX EVENT
13	1403E	41.00	1407	210.00	1413	80.00	1416	1416	
14	0532	37.00	0544	170.00	0548	67.00	0550	0551D	
14	0627E	130.00D	0703E	430.00	0700	110.00	0711	0729D	
14	0805E	26.00	0905	130.00D	0908D	67.00	0907	0908D	MANY SMALL
14	0943E	13.00	1023	65.00	1012	53.00	1016	1046D	EVENTS
14	1122E	60.00	1133	210.00	1135	93.00	1140	1225D	COMPLEX EVENT
14	1300E	62.00D	1301E	300.00D	1302E	130.00D	1302E	1403D	
14	1438E	19.00	1508	130.00D	1541D	67.00D	1541D	1541D	HIGH BACKGROUND
14	1617E	120.00D	1720E	4400.00	1627	680.00	1633	2100D	
14	2111E	79.00	2212	260.00	2214	130.00	2116	2215D	HIGH BACKGROUND
14	2250E	130.00D	2319	430.00	2331	160.00	2333	2353D	
15	0028E	22.00	0044	170.00	0045	93.00	0046	0310D	HIGH BACKGROUND
15	0345E	36.00	0403	170.00	0408	67.00	0446	0448D	WITH MANY
15	0523E	17.00	0611	84.00	0537	67.00	0525	0627D	SMALL EVENTS
15	0702	71.00	0749	210.00	0749	80.00	0749	0805D	
15	0840E	130.00D	0859E	430.00	0858	93.00	0905	0943D	
15	1018E	23.00	1112	130.00	1121	80.00	1103	1122D	HIGH BACKGROUND
15	1156E	79.00D	1156E	340.00	1159	130.00	1159	1300D	
15	1335E	40.00	1417	300.00	1414	93.00	1414	1439D	
15	1513E	38.00	1523	170.00	1525	67.00	1551	1617D	
15	1651E	23.00	1754	130.00	1754	53.00	1753	1755D	HIGH BACKGROUND
15	1830E	14.00	1910	86.00	1910	53.00	1919	1934D	WITH MANY
15	2008E	10.00	2105	86.00D	2112D	53.00	2110	2112D	MINOR EVENTS
15	2146E	49.00	2247	170.00D	2250D	67.00D	2250D	2250D	
15	2325E	130.00D	2356E	990.00	2335	200.00	2356	0029D	
16	0103E	130.00D	0127E	470.00	0126	110.00	0135	0207D	
16	0242	68.00D	0524D	170.00D	0524D	93.00	0516	0524D	HIGH BACKGROUND
16	0558E	91.00	0647	340.00	0600	120.00	0603	0702D	
16	0736E	27.00	0828	170.00	0742	80.00	0744	0841D	
16	0915E	82.00	0957	170.00	1009	67.00	1012	1019D	
16	1053E	120.00D	1158E	860.00	1145	120.00	1156	1158D	
16	1231E	130.00D	1257E	470.00	1302	130.00	1314	1336D	
16	1410E	120.00	1500	510.00	1458	120.00	1511	1514D	
16	1548E	130.00D	1559E	430.00	1559	140.00	1626	1653D	
16	1726E	28.00	1959	130.00D	2009D	64.00	2003	2009D	
16	2043E	38.00	2141	130.00D	2148D	64.00	2123	2148D	HIGH BACKGROUND
16	2221E	39.00	2255	170.00	2256	64.00	2229	2326	WITH MANY
17	0001E	4.50D	0001E	47.00	0052	64.00	0038	0104	MINOR EVENTS
17	0138E	14.00	0228	74.00	0228	39.00	0242	0243D	
17	0317E	89.00	0323	170.00	0331	64.00	0352	0421D	
18	1752	0.00D	1802D	39.00	1755	26.00	1802	1802	
18	1836E	52.00	1846	170.00	1851	64.00	1900	1929	
18	2206	120.00	2210	1100.00	2208	150.00	2209	2232	

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SOLAR X-RAYS BY SATELLITE

EXPLORER 37

AUGUST 1970

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
19	0002	11.00	0007	56.00	0009	28.00	0010	0020	COMPLEX EVENT
19	0258	95.00	0305	210.00	0307	53.00	0316	0327	
19	0528	38.00	0530	87.00	0531	28.00	0531	0534D	
19	0950	83.00	0953	260.00	0957	67.00	1002	1029D	
19	1105	120.00D	1128E	4900.00D	1119E	810.00D	1119E	1208D	
19	1238E	16.00	1322	210.00	1314	80.00	1316	1346D	
19	1416E	0.00D	1422E	32.00D	1422E	40.00	1421	1422	
19	1559	78.00	1610	170.00	1613	53.00	1614	1659	
19	1939	14.00	1941	50.00	1942	26.00	1947	1956	
19	2049E	45.00	2059	130.00	2157	53.00	2154	2158D	
19	2228E	24.00	2232	130.00	2251	67.00	2231	2336	
20	0006E	130.00D	0020E	470.00	0018	110.00	0023	0115D	
20	0355	130.00D	0426E	600.00D	0432D	120.00	0504	0533	
20	0818	3.30D	0818E	45.00D	0818E	28.00	0821	0824	
20	1725	0.00D	1730D	61.00	1726	40.00	1726	1730	
22	0040	18.00	0047	48.00	0050	40.00	0050	0128	
22	0254E	11.00	0255	72.00	0255	40.00	0300	0302	
27	1333	120.00	1412	510.00	1410	130.00	1410	1532	
28	0614	48.00	0617	130.00	0617	40.00	0617	0620D	
28	0848	34.00	0852	130.00	0852	40.00	0852	0856	
28	1304	24.00	1305	77.00	1307	40.00	1310	1320	
28	1442E	70.00D	1442E	86.00D	1442E	28.00D	1446E	1449	
28	2212	47.00	2213	130.00	2213	27.00	2218	2220	
29	0317	13.00	0319	55.00	0321	40.00	0322	0327	
29	0648	47.00	0649	130.00	0652	40.00	0654	0656D	
29	1241	11.00D	1241E	62.00	1245	40.00	1248	1249	
29	1850	130.00D	1858E	430.00	1856	120.00	1858	1923	
29	2313	12.00	2315	57.00	2315	29.00	2316	2318	
30	1019	51.00	1024	170.00	1028	53.00	1031	1038	
31	0740	12.00	0743	40.00	0745	24.00	0748	0748	

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1970

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			
01	1041	1108D	1059	2	3	3	1	2	2				1027	10851	
01	1108	1215	1115	2	5	1	1	1	4		1		1105E	10851	
03	0112	0237	0140	1-	3		1		2				*		
05	1006	1028	1014	1-	1				1				1007	10865	
07	0236	0324	0246	1	5	1			4	1	1		0237E	10871	
07	0554	0623	0603	1	5	4			3		1		0553	10871	
07	1402	1458	1430	1-	1	1							1406	10871	
07	1638	1659	1640	1	1	1							1638	10871	
08	1407	1435	1416	1-	3				2	1	1		1400	10871	
08	1622	1651	1625	1-	1				1				1617	10871	
08	1822	1836	1827	1-	1				1				1821	10871	
09	0149	0235	0200	1-	1				1				0150E	10871	
09	1414	1435	1422	1-	3	1			3				1409E	10871	
09	2103	2143	2110	1-	3				3			1	2100	10865	
10	0253	0255	0254	1-	1							1	0251	10865	
10	0425	0504	0432	1-	1				1				0419	10868	
10	1450	1503	1454U	1-	1				1				1450	10871	
10	2332	0002	2335	1-	3				2			1	2328	10865	
11	2135	2200	2141	1-	3				1			1	2131	10865	
11	2325	0140	2352	2+	5	2		4	8	3	3		2325E	10868	
12	1514U	1530U	1517	1-	1				1				1513	10868	
12	1555	1616	1604U	1-	3				3				1548	10865	
12	1750	1859	1756	1-	5	3			4	1			1743	10868	
12	1923	2003	1931	1-	3	1		1	4	2	3		1926	10868	
12	2010	2126	2022	3-	5	5		5	6	5	6		2007	X-RAY	
12	2017	2227	2035	2	3	3	1		2	1	1		2015	10881	
12	2232	2257	2236	1-	5	2			6				NF		
12	2325	0225	2345	1	3				1	1	1	1	2323	10865	
13	0012	0104	0026	1-	1				1				0009	10868	
13	0023	0049	0028	1-	1				1				0021	10868	
13	0117	0144	0120	1-	1				1				0116	10865	
13	0437	0504	0442	1-	1				1				0437	10868	
13	0737	0807D	0755	2	5	6		2	5		2		0733	10865	
13	0812	0855	0828	2+	3	3	1	2	2		1		0810E	10868	
13	0950	1013	0955	1-	1				1				0948	10865	
13	1118	1150	1125	1+	3	3		1	2				1118	10865	
13	1155	1207D	1202	1-	1				1				1154E	10865	
13	1220	1250U	1229	1-	3	2			1				1217	10865	
13	1307	1340	1314	2-	5	5		1	4		1		1305	10865	
13	1324	1339	1329	1	1				1				1320	10882	
13	1405	1445	1414	2-	5	4	1	1	4		1		1406	10882	
13	1419	1445D	1420	1+	1				1				1418	10865	
13	1445	1535U	1455	2-	3	3	1	1	2				1446	10865	
13	1646	1737	1658	2-	5	1		1	6	1	3		1645	10865	
13	1745	1806	1750	1-	3				2				1742	10865	
13	1837	1846	1844	2	5	2		1	4	2	3	1	1834	10868	
13	1852	1950	1906	1+	5		1		4	1			1855	10865	
13	2003	2056	2012	1	5	1	1		6	4	3		2000	10865	
13	2255	0023	2328	1	5	2			6			1	2300	10868	
14	0026	0130	0045	1-	3	1			2			1	0027	10865	
14	0355	0520	0407	2-	5	3	2		3	4	5		0359	10865	
14	0533	0600D	0555	1	3				2				0532	10865	
14	0602	0614	0605	1	3				2				0558	10868	
14	0655	0735	0705	2	5	5	2	2	4		2		0653	10865	
14	0850	0940	0908	1+	3	2			2				0901E	10865	
14	1010	1041	1016	1-	3	1			1				1006	10865	
14	1111	1124D	1118	1+	3	3			2		1		1056E	10865	
14	1131	1200	1136	2+	3	1	1		3				1130	10865	
14	1200	1225D	1210U	2-	3	2			1				1155	10865	
14	1223	1230D	1230	1+	5	3	1	1	4		1		1224	10865	
14	1243	1335	1250	2	5	1	2	1	2		3		1244	10865	
14	1431	1445	1439	1	3	1			2				1426	10865	
14	1540	1555	1549	2	5	6	2	1	2	1	1		1538	10865	
14	1606	1718	1628	3-	5	9	3	3	8	3	3		1600	10882	
14	2053	2130	2105	1-	3	1			1				2057	10865	
14	2210	2238	2222	1-	3	1			4				NF		
14	2304	0053	2331	2-	5	2		1	4	1	3		2305	10865	
15	0034	0057	0046	1-	1				1				0034	10865	
15	0207	0230	0212	1-	1				1				0210	10865	
15	0401	0517	0420	1	3	1			2				0400	10865	
15	0727	0748D	0734	1	5	4		1	4		1		0725	10865	
15	0748	0830	0754	1	3	4		1	2				0740	10868	
15	0855	0935	0902	2-	5	5	3	4	3				0849	10868	
15	0946	1005	0954	1	3	3		1	2				0945	10868	
15	1010	1045	1015	1+	3	3		2	2		1		1010	10865	
15	1021	1054	1031U	1	1				1				1020	10868	
15	1141	1245	1148	2+	5	3	3	7	6	1	5		1140	10865	

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Aug 70

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1970

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			
15	1253	1308	1300U	1-	1				1				1255	10868	
15	1312	1330	1319	1-	3	1		1	2				1316	10865	
15	1411	1435	1417	1	5	4		4	4	1	4		1410	10868	
15	1516	1605U	1525	1	3	3			3				1520	10865	
15	1640	1700	1644	1-	1				1				1640	10865	
15	1758	1810	1804	1-	3	1			1				1800	10865	
15	2120	2220	2130	1	3	1			1				2115	10865	
15	2123	2209	2135	1-	3				3				2123	10865	
15	2322	0031	2339	1+	3	2			2				2321	10865	
16	0104	0221	0125	1	3	1			2	2	2		0055	10865	
16	0347	0415	0353	1-	1				1				0345	10883	
16	0426	0444	0430	1-	1				1				0426	10882	
16	0457	0812	0543	1+	1	1							0437	10868	
16	0521	0613	0544	1+	5	1		1	2	1	2		0514	10882	
16	0540	0625	0544	2-	5	3			3				0540	10865	
16	0610	0633D	0625U	2	3	1			1				0610	10865	
16	0756	0825D	0809	1	1				1				0754	10868	
16	0949	1100	1003	2	5	3		1	3		1		NF		
16	1036	1105	1043U	1-	3				1	1	1		1028	10876	
16	1139	1230	1148	2+	5	5	2	5	6	1	4		1140	10865	
16	1244	1402	1257	2+	3		1	1	2				1248	10882	
16	1331	1340	1334	1-	1	1							1323	10865	
16	1431	1449D	1440	2	5	5		3	5		2		1435E	10865	
16	1448	1530	1501	2+	5	4	2	4	2		3		1442	10865	
16	1540	1700U	1555	1+	5	5	1	2	2				1542	10865	
16	2135	2234	2155	1	3	1			3				NF		
16	2255	2343	2311	1	3	1			4				NF		
17	0308	0442	0338	1+	5				5	3	3		NF		
17	1249	1306	1251	1	3	2			3				1247	10877	
17	1330	1353	1340	1+	3	1				1	1		1332	10882	
17	1835	1836	1835	1-	1							1	1835	10882	
17	1853	1906D	1858	1-	1				1				1856	10887	
17	2045	2128	2050	1	5	1			7	2	1		2040	X-RAY	
18	0539	0616	0544	1+	1				1				0535	10883	
18	1648	1714	1651	1	5	2			6	2	4		1643	10882	
18	1750	2110		1	3				2				1744	10882	
18	1838	1958	1855	1	5	3			6	1	1		1835	10882	
18	2008	2011	2009	1-	3					2	2		2010	10877	
18	2206	2327	2211	2	5	1	1	4	7	1	4	1	2204	10882	
18	2347	0110	0000	1+	1				1	1	1		2342	10877	
19	0258	0410	0310	1	3	1		1	3	1	1		0256		
19	0528	0610	0537	1-	3	1			2				0525	X-RAY	
19	0951	1055	1005	2	5	4		2	4		2		0950	X-RAY	
19	1111	1220	1118	3	5	7	3	5	7	2	6		1111	X-RAY	
19	1308	1403	1316	2	3	3		2	4	2			1306	10882	
19	1608	1645	1615	1	5	4		1	5	1	4		NF		
19	1741E	1858	1754U	2	1	1							1740	10888	
19	1815	2030		1-	1				1				1815	10882	
19	2231	2320	2237	1-	1				1				2230	10882	
20	0003	0100	0018	2-	5	2			6	4	4		0005	10882	
20	0155	0237	0210	1-	3	1		1	1			1	0203	10882	
20	0355	0555	0434	2	3	2		1	2	2	2		0353	X-RAY	
20	0749	0829D	0758	1+	5	5	1	2	4	2	4		NF		
20	0829	0852	0832	1	1				1				0831	10882	
20	1100	1114	1112	1-	1					1	1		1104	10887	
20	1725	1737	1728	1-	3				2				1723	10894	
21	0448	0458	0452	1	1	1							0447E	10887	
22	0245	0337	0253	1-	3	1			3		1		0241	10891	
23	1638	1730		1-	1				1				1639	10900	
25	1600	1619	1609	1-	1	1							1601	10894	
26	1315	1350	1320	1-	1				1				1316	X-RAY	
27	1407	1452	1413	1+	5	5	2	7	6	3	9		1408	10913	
28	0614	0731	0620	1	5	3			3				0615	10913	
28	0850	0902	0854	1	3	3	1	1		2			0841	10913	
28	0944	1040	0948	2-	3	4	1	1	2				0945	10913	
28	1120	1205	1128	2	5	3	1	1	4		2		1118	10913	
28	1305	1325	1310	1-	5	3		1	5		1		NF		
28	1441	1455	1445	1	5	2		1	5		2		1440	10913	
28	2212	2332	2220	1-	3				3	2	2		2217	10913	
29	0317	0410	0323	1-	1				1				0318E	10918	
29	0648	0716	0654	1	5	3	1	1	4	2	2		0648	10918	
29	1240	1302	1248	1-	5	3			5	1			NF		
29	1850	2024	1903	1+	5	4	2	7	7	4	7		1846	10918	
29	2230	2235	2230	1	1					1	1		2223	10914	
29	2314	0002	2323	1	1				1				2313	10918	

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1970

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Aug 70

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		
30	1018	1050	1028	2+	3	4		1	2	1			1017	10918
30	1315	1335	1320	1-	5	2		1	5				1313	10896
31	0742	0804	0748	1-	3				2				0737	10918
31	0920		0938	1	1					1	1		0915	10918

STATIONS REPORTING FOR AUGUST 1970

AAVSO (A1, A4, A6, A17, A19, A21, A22, A23, A27) (SEA) (A2, A19, A21) (SES)
ANCHORAGE (AN) (SWF, SPA)
ATHENS (AT) (SWF)
ATTU (LORAN-C) (TT) (LF-SPA, SES)
BAHRAIN (BH) (SWF)
BARBADOS (BA) (SWF)
BEARLEY (BY) (SWF)
BOULDER (BO) (SCNA, SEA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
ENKOPING (SW) (SWF)
FORESTPORT (FP) (SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
HAWAII (HA) (SPA, SFD)
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)
KUHLENGSBORN (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) (SCNA, SWF, 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)
SAN DIEGO (SD) (SPA)
SANDUR (LORAN-C) (SA) (LF-SPA, SES)
SAO PAULO (UM) (SPA, SES)
SITKINAK (LORAN-C) (SK) (LF-SPA, SES)
SLOUGH (SL) (SPA)
SOMERTON (SO) (SWF)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-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
01-23	0000-2400 BO, 0000-2400 A6	20	0800-1800 AT
01-03	0000-2400 A22, 0000-2400 AT, 1400-0750 A17	21	0745-0830 UM, 0800-1800 AT, 1832-2224 TM
03	1726-1728 TM	22	0000-1400 MC, 0800-1800 AT, 1250-1319 TM, 2130-2400 TM
04	1000-1400 SL		
07-11	0000-2400 MC	23	0000-2400 MC, 0000-0334 TM, 0745-0950 UM, 0800-1800 AT, 1210-1245 UM, 1210-1245 SL
08	1333-1429 TM		
11	1007-1324 SL	24	0000-0130 UM, 0800-1800 AT
13	2030-2050 TM	25	0800-1800 AT, 1000-1350 UM, 1000-1350 SL, 1700-1900 TM
14	1316-1326 SL, 1428-1532 TM, 1910-1922 TM, 2144-2236 TM	26	0750-0830 UM, 0800-1800 AT, 1726-1728 TM
17-31	1700-2400 A22	27	0745-0845 UM, 0800-1800 AT
17	0335-0500 SL, 0800-1800 AT, 2056-2057 TM, 2214-2216 TM	28	0620-0725 UM, 0800-1800 AT, 1615-1645 UM
18	0000-2400 AT, 0755-0845 UM, 1010-1345 SL, 1015-1330 UM	29	0515-1205 UM, 0800-1800 AT
19	0000-2400 AT, 0800-0840 UM, 0800-1800 AT	30	0000-1400 MC, 0745-0850 UM, 0800-1800 AT, 1030-1140 UM, 1410-1440 SL
		31	0000-0235 UM, 0800-1800 AT, 0840-1025 UM

Note: BOULDER (BO) station, relocated near Nederland, Colorado, N39°31' W105°39', is again operational.

SID's BY McMATH REGION

AUGUST 1970

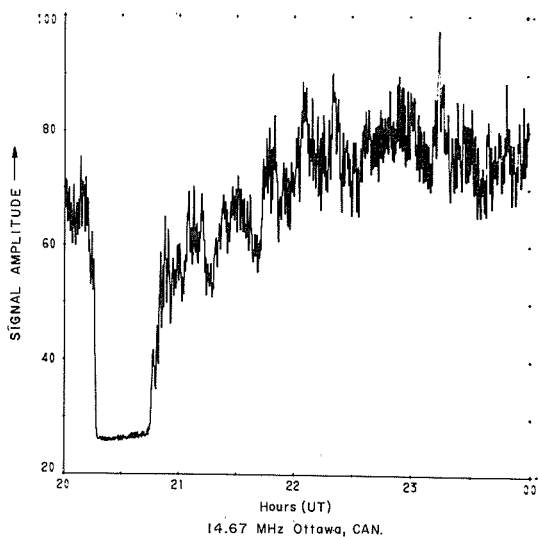
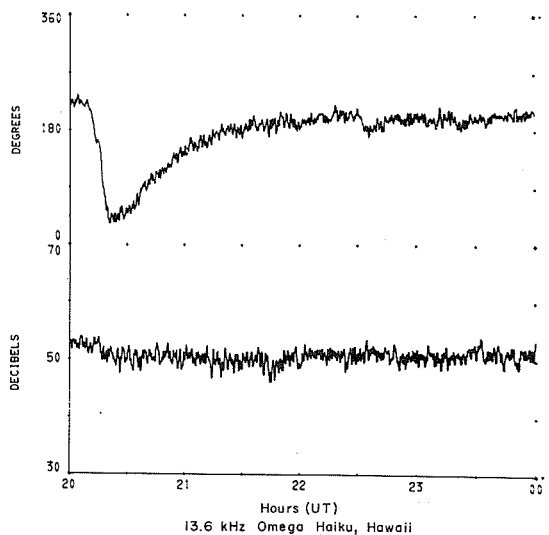
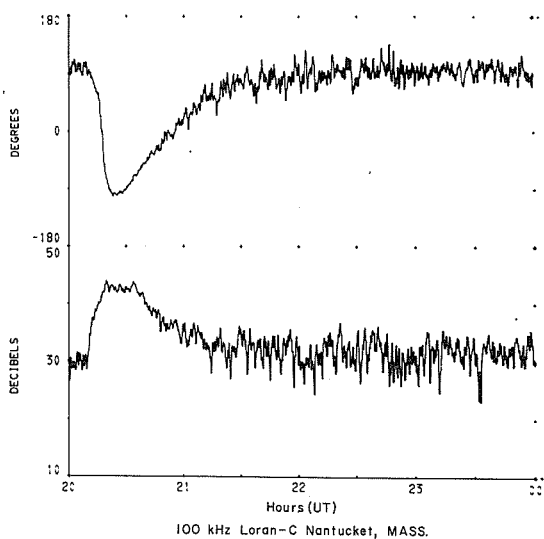
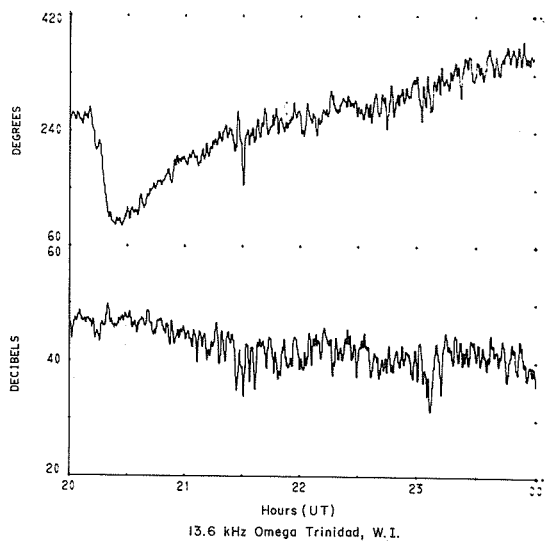
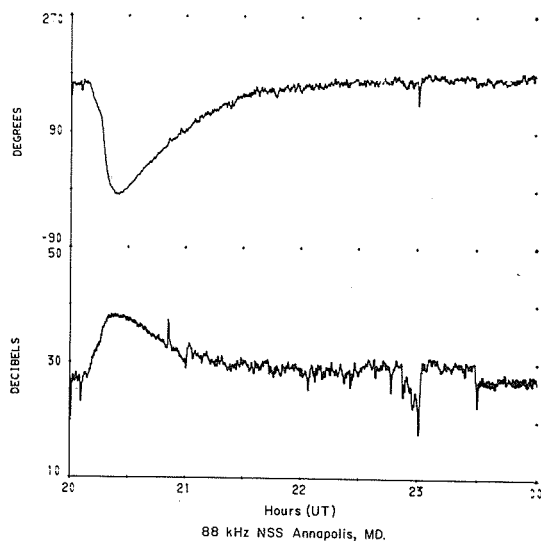
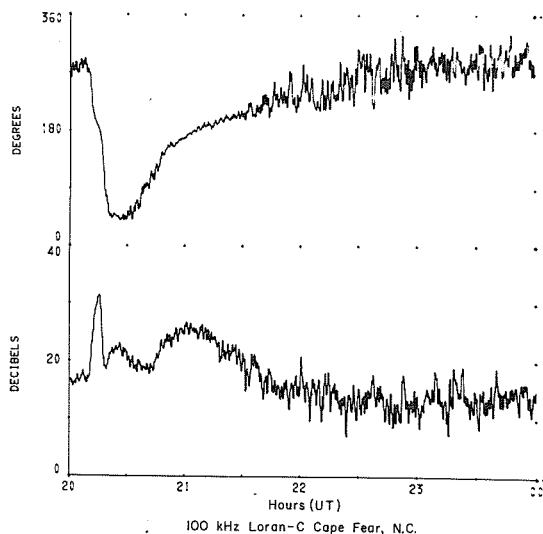
DAY	51	65	68	71	76	77	81	82	83	87	88	91	94	96	00	13	14	18	X- RAY	UN- KNOWN	NO FP
01	2																				
02																					
03																					1
04																					
05		1																			
06																					
07				4																	
08				3																	
09		1		2																	
10		2	1	1																	
11		1	1																		
12		2	3				1												1	1	
13		13	6					2													
14		15	1					1												1	
15		13	6																		
16		8	2		1			3	1											3	
17						1		2		1									1	1	
18						2		4	1												
19								3			1								4	1	
20								3					1						1	1	
21										1											
22												1									
23															1						
24																					
25														1							
26																					
27																					
28																1					
29																6					
30														1			1	4		1	
31																		1	2		

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Aug 70

SELECTED SID EVENTS

12 AUGUST 1970

SDL Table Mountain Geophysical Monitoring Station



13.6 kHz Omega Haiku, Hawaii & 14.67 MHz Ottawa, CAN. scaled with a ten second time constant.
Others scaled with a thirty second time constant.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1970

AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
01	0000	0143	HARV																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

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Aug 70

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1970

AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				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.
06	1605	1810	WEIS											III
	1545	2330	CLRO				1933.6	1933.8	1					IN
	1246	2400	HARV	2001	2359	1	2002	2351	1					I
	2050	2400	CULG	2058.5	2300	1								IIIB,W
			CULG				2107.5		1					IIIB,W
			CULG				2141		1					IIIB,W
			CULG				2143.5		1					IIIB,W
			CULG				2202		1					IIIB,W
			CULG				2211		2					IIIB,U
			CLRO				2211.3	2211.6	2	2211.3	2211.6	2		III
			CULG	2217.5		1								IIIB,W
			CULG				2236	2237.5	1					IIIG,W
			CULG				2323		1					IIIB,W
07	0000	0725	CULG	0000	0300	1	0124	0145	1					IW
	0000	0136	HARV	0001	0135	1	0001	0134	1					IN
			CULG				0104.5		1					IIIB,W
			CULG				0108	0109	1					IIIG
			CULG				0121.5	0122	1					IIIG
			CULG	0235	0245	1	0232	0245	1					IIIGG
			CULG	0236.5	0238.5	1	0236.5	0238.5	1					UNCLF
			CULG				0253	0256.5	1					IIIG,W
			CULG				0301.5	0304	1					IIIG
			CULG				0503	0504	1					IIIG
			CULG				0535	0538	1					IIIG,W
			CULG	0553.5	0600.5	2	0553.5	0602.5	2					IIIGG
			CULG				0605.5	0607	1					IIIG,W
			CULG				0611.5	0612.5	1					IIIG,W
			CULG	0617	0646	1								IW
			CULG				0623.5	0629	2					IIIGG
			WEIS				0646	1622	2					IN
			CULG				0705	0708.5	1					IIIG,W
			CULG				0718.5	0720	1					IIIG,W
			WEIS				0815.5	0824	1					IIIGG
			WEIS				0838.5	0841	2					IIIG,DP
			WEIS				0844	0844.6	1					IIIG
			WEIS				0856.8	0858.8	2					IIIG
			WEIS				0938.6	0940	1					IIIGG,DP
			WEIS				1024.7	1026	1					IIIG
			SGMR							1242.8	1244.9			IIIG
			WEIS				1244.2	1244.7	1					IIIB
			HARV				1253	1423	1					IN
			SGMR							1325.9	1326.4			IIIB
			HARV				1326			1326		1		IIIG
			WEIS				1328.7	1329.3	1					IIIG
			SGMR							1328.8	1329.7			IIIB
			HARV				1329	1330	1			1		IIIG
			HARV				1334	1335	1	1334	1335	1		IIIG
			WEIS				1334	1334.8	2					IIIB
			SGMR							1334.3	1335.1			IIIB
			HARV	1353	1358	1								IIIGG
			WEIS	1353.2	1357	1								IIIG
			HARV	1405	1410	3	1405	1410	3	1408	1409	3		IIIGG
			WEIS				1405.5	1405.8	1					IIIB
			SGMR							1407.3	1409.6			IIIG
			WEIS				1407.6	1410	3					IIIGG,DP
			WEIS				1434.7	1435.3	2					IIIG,DP,RS
			HARV	1435	1436	3								IIIGG
			SGMR							1445	1446.7			IIIG
			WEIS				1445.5	1446.7	1					IIIG,DP
			HARV	1446	1447	1	1445	1447	2	1446	1447	2		IIIG
			SGMR							1459.2	1459.8			IIIB
			HARV	1548	1549	2								IIIG
			SGMR							1555.2	1555.9			IIIB
			SGMR							1617.5	1622.5			IIIG
			WEIS				1619.2	1622	1					IIIG
			CLRO				1619.4	1622.2	2	1619.4	1622.2	2		IIIN
			HARV	1620	1622	1	1618	1622	2	1618	1622	2		IIIGG
			SGMR							1635.7	1639			IIIG
			CLRO				1636	1640	2	1636	1640	2		IIIN
			HARV				1638	1639	2	1638	1639	2		IIIG
			WEIS				1638.3	1638.6	1					IIIG
			SGMR							1701	1703.5			IIIG
			CLRO				1702	1704	2	1702	1704	2		IIIN
			CLRO				1726.2	1727	2	1726.2	1727	2		IIIN
			SGMR							1737.1	1741.6			IIIG
			CLRO				1737.3	1742	3	1737.3	1742	3		IIIN
			HARV	1741	1742	1	1737	1742	2	1737	1742	2		IIIGG
			WEIS				1741.3	1741.6	2					IIIG
			CLRO				1827.8	1828.1	3	1827.8	1828.1	3		III
			CULG				2050	2400	1					I
			CLRO				2107	2111	1					IIIN
			CULG				2144		1					IIIB,W
			CULG				2204	2205	1					IIIG,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE				
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND							
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.					
08	0000	0726	CULG	0010	0134	1	0000	0003	1				I				
		0135	HARV										IN				
			CULG				0045.5		1				IIIB.W				
			CULG				0259.5		1				IIIB.W				
			CULG				0304	0304.5	1				IIIG.W				
			CULG				0309		1				IIIB.W				
			CULG				0420		1				IIIB				
			CULG				0430	0502	1				IIIN				
			CULG				0430	0600	1				I				
			WEIS				0536.5	1700	2				IN				
			CULG				0710.5		1				IIIB.W				
			WEIS				0859.3	0859.8	1				IIIG				
	0437	0830	SGMR							1156.8	1157.5		IIIB				
			WEIS				1201.3	1203.5	2				IIIG				
			SGMR				1237.1	1238.8	2		1201.7	1203.9	IIIG				
			WEIS							1237.1	1238.8		IIIG				
	1247	2400	HARV				1250	1413	1				IIIG				
			HARV				1408	1411	1	1408	1411	1	IN				
			WEIS				1408.3	1410.7	1				IIIGG				
			SGMR							1408.5	1410.9		IIIG				
			SGMR							1452.3	1452.9		IIIG				
			WEIS				1452.3	1453	1				IIIB				
	1650	2325	CLRO				1741.3	1741.5	2	1741.3	1741.5	2	III				
			SGMR							1741.3	1741.8		III				
			HARV				1814	1815	1				IIIB				
			SGMR							1825.9	1826.4		IIIG				
			CLRO				1826	1854	3				IIIB				
			SGMR							1826	1854	3	IIIN				
			SGMR							1834.3	1835		IIIB				
			SGMR							1837.1	1837.6		IIIB				
			SGMR							1847.4	1849.2		IIIG				
			HARV				1848	1849	2				IIIG				
			CLRO				1913	1930	2	1848	1849	2	IIIG				
	2045	2400	CULG				2103	2148	1	1913	1930	2	IIIN				
			CULG				2106.5		1				IW				
			CULG				2114.5	2115	1				IIIB.W				
			CLRO				2114.8	2114.9	1				IIIG				
			HARV				2125	2127	1				III				
			CULG				2125	2127.5	2				IIIG				
			SGMR							2125	2127.4		IIIG.V				
			CLRO				2125.1	2127.2	3	2125.1	2127.2	3	IIIG				
			CULG				2210		1				IIIN				
			CULG				2224	2225	1				I				
			CULG				2351.5	2352.5	1				IIIG				
	09	0000	0134				HARV	1413	1415	2							IIIB.W
			0720				CULG				0036		1				IIIG.U
			CULG	0036.5	0037.5	2							IIIB.U				
			CULG	0110.5		1							I				
			CULG	0210	0210.5	1							IW				
			CULG	0332.5	0525	1							IIIB.W				
			CULG	0527		1							IIIB.W				
			CULG	0607.5		1							IW				
			CULG	0643	0716	1							IS,CONT				
0607		1726	WEIS	1214	1725	2							I				
1247		2400	HARV	1250	1900	2							IN				
			HARV				1809				1831	2	IIIN				
1545		2325	CLRO				1819.7				1820.4		IIIB				
0933		2348	SGMR	1829	1831	1							IIIG				
			HARV				1829.2				1830.5	1	IIIG				
			SGMR	1855	1903	3					1855	1903	3	IIIN			
			CLRO	1900	2017	1							IN				
			HARV	1903		3	1903						IIIB.V				
			SGMR				1903				1903.5		IIIB				
			CLRO	1914.5	1915.2	1	1914.5				1915.2	1	III				
			CLRO	1959	2249	3	1959				2249	3	IIIN				
			SGMR				1959.5				2000.2		IIIB				
			HARV	2012	2013	2	2012				2013	2	IIIG				
			SGMR				2012.2				2013		IIIB				
			SGMR				2031.4				2031.8		IIIB				
2048		2400	HARV	2048	2049	1	2048				2049	1	IIIG				
			CULG	2048	2051.5	1							IIIG.W				
			SGMR				2048.3				2049		IIIB				
			HARV	2052	2053	2							UNCLF				
			CULG	2100.5	2106.5	1	2100.5				2113.5	2	IIIG				
			HARV	2102	2103	2	2102				2104	2	IIIGG				
			SGMR										IIIG				
			SGMR										IIIB				
			HARV				2110				2112	2	IIIG				
			SGMR										IIIG				
			CULG				2117.5					1	IIIB.W				
			CULG				2117.5				2145	1	I				
			HARV				2122				2228	1	I				
			CULG				2143.5				2147	1	IIIG.W				
			CULG				2145				2334	1	IS				
			HARV				2147				2148	1	IIIG				
			CULG				2147.5				2148.5	1	IIIG				
			SGMR										IIIB				
											2147.9	2148.3					

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECI-METRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT			START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT		INT.
12	2045	2400	HARV	1745	1756	3	1748	1755	2					IIIGG
			WEIS				1747.7	1755	1					IIIG,DP
			SGMR							1809.5	1812			IIIG
			HARV	1810		2	1810	1811	2	1810	1811	2		IIIG
			HARV	1846	1849	1	1846	1849	1					IIIGG
			SGMR							1846.7	1847.5			IIIB
			HARV	1926	1927	2	1926	1927	2					IIIG
			HARV				2005	2006	2					IIIG
			HARV	2009	2015	2	2011	2016	2	2014	2015	2		IIIGG
			SGMR							2012	2047			
			HARV	2013	2020	2								IV
			CLRO				2013	2047	3	2013	2047	3		IV
			HARV				2015	2042	3	2019	2048	2	II	CONT
			HARV	2031	2037	3								IIIGG
			HARV	2055	2058	2								IIIGG
			HARV	2107	2108	3	2106	2108	2	2107	2108	2		IIIGG
			CLRO				2107	2110	3	2107	2110	3		CONT
			SGMR							2107	2108.5			IIIG
			CULG	2107.5	2108	2	2106.5	2108.5	2					IIIG,V
			HARV				2109	2255	1					IN
			CULG				2110	2112	2					
			CULG				2110.5	2113.5	1					II
			CULG				2115.5	2118	1					IIIG
			CULG	2125	2126	2	2125	2126	2					IIIG,W
			CULG				2130	2132.5	1					IIIG,U
			CULG	2135.5		1	2135.5		1					IIIG,W
			CULG				2144		1					IIIB,W
			CULG	2157	2103.5	1								IIIB
			HARV				2203	2205	2	2203	2205	1		IIIG
			CULG				2203.5	2204.5	1					IIIG
			CLRO				2205	2206	2	2205	2206	2	II	IIIG
			CULG				2220.5		1					IIIB,W
			CULG				2223.5	2228	1					IIIG
			HARV	2226	2228	1	2225	2228	1					IIIGG
			CULG				2232.5	2233.5	1					IIIG
			CLRO				2233	2234	2	2233	2234	2		IIIG
			HARV	2245	2246	2								IIIG
			CULG	2246		1								IIIB
			CULG				2254	2254.5	2					IIIG,U
			CLRO				2300	2315	2	2300	2315	2		CONT
			CULG	2304	2305	1	2259	2306	1					IIIGG
			HARV	2304	2305	1	2259	2305	2	2259	2303	1		IIIGG
			CULG				2313.5		1					IIIB
			CULG	2334.5	2338	1								IIIG
			HARV	2335	2337	1	2335	2338	2					IIIGG
13	0000	0130	CULG				0001	0002	1				IIIG	
			HARV	0009		3	0004	0009	2	0009		1	IIIGG	
			CULG	0009	0009.5	2	0004.5	0009.5	2				IIIG,U	
			CULG	0013	0013.5	1							I	
			HARV	0013	0014	1	0013	0014	1				IIIGG	
			CULG				0014	0015	1				IIIG,V	
			CULG				0018		1				IIIB,W	
			CULG	0115	0118.5	2	0115	0118.5	2				IIIGG,U	
			HARV	0116	0118	3	0116	0119	3				IIIGG	
			CULG				0120	0120.5	1				IIIG,W	
			CULG	0124	0125	1							IIIG	
			HARV	0124	0125	1	0124	0125	1				IIIG	
			CULG	0149.5	0150	1							UNCLF	
			CULG	0207		1							IIIB	
			CULG				0209	0209.5	1				IIIG	
			CULG				0219.5		1				IIIB,W	
			CULG				0229	0232	1				IIIG	
			CULG				0236	0252.5	1				IIIN,W	
			CULG	0239.5		1							IIIB,W	
			CULG				0256	0259	1				IIIG,V,U	
			CULG	0257	0258	1							UNCLF	
			CULG				0305	0306	1				IIIG	
			CULG				0316	0316.5	1				IIIG,W	
			CULG				0330	0331	1				IIIG,W	
			CULG				0335	0342	1				IIIG,W	
			CULG	0353.5	0355	1	0353.5	0355	1				IIIG	
			CULG	0420.5	0422	1	0420.5	0422	1				IIIG	
			CULG				0434.5	0438	1				IIIG	
			CULG				0456.5		1				IIIB	
			CULG				0502		1				IIIB	
			CULG				0522.5	0523.5	1				IIIG	
			WEIS				0524.3	0525	1				IIIG	
			CULG	0524.5	0525	1								IIIG
			CULG				0531.5		2					IIIB,U
			WEIS				0531.5	0533.8	1					IIIG
			CULG				0542		1					IIIB,W
			CULG				0549.5	0550	1					IIIG,W
			CULG	0602	0606.5	1								IIIGG,U
			WEIS				0602	0606.5	3					IIIG,DP
			CULG				0635.5	0636	1					IIIG
			CULG	0637.5	0640	1	0637.5	0640	1					IIIG
			WEIS				0637.5	0640	2					IIIGG,DP
			CULG				0653		1					IIIB

AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE				
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND							
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.					
13	0930	2344	WEIS				0701.2	0702.7	2							IIIGG,DP	
			CULG				0702.5	0703	1							IIIG,U	
			WEIS				0720.8	0722	1							IIIG	
			CULG				0721	0722	1							IIIG,U	
			WEIS				0728.2	0730.9	1							IIIG,DP	
			WEIS				0837	0837.8	1							IIIG	
			WEIS				1018.1	1019.4	3				1018.4	1018.9		IIIGG,DP	
			SGMR													IIIB	
			WEIS				1030	1515	1							IS	
			WEIS				1109.1	1109.3	1							IIIG,DP	
			WEIS				1159.7	1200	1							III	
			1247	2400	HARV				1247	1539	1						
	WEIS						1328.7	1328.9	1							IIIB	
	SGMR															CONT	
	HARV						1349	1353	2				1345	1600		IIIGG	
	SGMR															IIIB	
	WEIS						1350.6	1358	2				1350.1	1350.6		IIIGG,DP	
	HARV						1357	1359	1							IIIGG	
	SGMR															IIIB	
	SGMR															IIIB	
	CLRO															IIIB	
	WEIS															IIIB	
	1540	2315			SGMR				1639	1640	3						
			SGMR				1639.5	1640	1							IIIB	
			WEIS													IIIB	
			SGMR				1730.5	1731	2				1639.5	1640.5		IIIB	
			CLRO													IIIG	
			SGMR													IIIB	
			CLRO				1834	2014	3				1814.2	1814.8		IIIB	
			SGMR													IIIN,C	
			SGMR													V B	
			SGMR													IIIG	
			HARV				1931	1933	1								IIIG
			2044	2400	CLRO	2102	2103	2	2039	2147	3						
	HARV	2102.5			2103.5	1										IIIG	
	CULG						2102.5	2103.5	1							IIIG,U	
	CULG						2106	2107	1							IIIG	
	SGMR															IIIG	
	CULG						2108.5	2110	2				2106.2	2109.3		IIIG	
	CULG						2117	2									

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
14	1535	2330	WEIS				1429.2	1430.3	2					IIIG,DP
			SGMR											IIIB
			HARV	1440	1658	1	1441	1658	1	1437	1437.5			IN
			WEIS				1448.4	1449	1					IIIB
			WEIS				1600	1808	2					IV
			HARV	1608	1624	2	1612	1624	2					IV
			SGMR							1612	1727			CONT
			CLRO				1615	2015	3	1615	2015	3		CONT
			SGMR							1617.1	1618.6			IIIG
			SGMR							1621.6	1622.2			IIIB
			WEIS				1627.7	1629	2					V
			HARV	1628	1632	1	1628	1629	3	1628	1629	3		IIIGG,V
			SGMR							1628	1629			IIIB
			HARV	1642	1653	2	1631	1633	2	1631	1633	2		UNCLF
			HARV	1658	1806	3	1643	1647	1					IV
			HARV				1659	1711	2	1659	1715	2		IIIS
			HARV				1659	1830	2	1733	1838	2		IC
			SGMR							1724.1	1725			IIIB
			SGMR							1727	2015			IV
			HARV	1757	1801	2								IIIGG
			HARV	1806	1816	3								I
			HARV	1825	1837	2								IVN
			SGMR											IIIB
			SGMR											IIIB
	CLRO							2030	2136	2		IIIN		
	CULG							2044	2244	1		IIIN		
	CULG							2045	2230	1		IS		
	HARV	2127	2128	2								IIIGG		
	CULG							2131.5	2135.5	1		IIIG,U		
	SGMR										2132.6	2135.5	IIIG	
	CULG	2148		2	2148		2						IIIB	
	HARV	2255	2256	2									IIIGG	
	CULG													
15	0000	0727	CULG				0113	0115	1				I	
			CULG				0117	0121	1				IIIG	
	0000	0127	HARV				0118	0119	1				IIIG	
			CULG				0228	0229.5	1				IIIG,V,W,U	
			CULG				0323.5		1				IIIB	
			CULG				0501.5	0508	1				IIIG,W	
			CULG				0524.5		1				IIIB,W	
			CULG				0611	0727	1				I	
			CULG				0612.5	0613	1				IIIG	
			CULG				0613	0727	1				IIIN	
	0445	1806	WEIS				0726	0728	1				IIIG	
	0935	2340	WEIS				1059.3	1101.2	2				IIIGG,DP	
			SGMR							1100	1101.1		IIIB	
			SGMR							1150	1319		IV	
			WEIS				1233	1254	1				IIIG	
			WEIS				1310.8	1312.2	1				IIIG	
	1247	2400	HARV	1311	1312	2	1311	1312	1				IIIG	
			HARV	1411	1412	1	1411	1759	1				IN	
			WEIS				1411.2	1415	2				IIIGG,DP	
			HARV	1412	1414	3	1413	1415	2				IIIGG	
			SGMR							1413.8	1416		IIIG	
			SGMR							1431.9	1432.5		IIIB	
			HARV				1531	1533	1				IIIGG	
			WEIS				1531	1532	1				IIIG,DP	
			SGMR							1532	1532.6		IIIB	
	1545	2310	WEIS				1556	1557	1				IIIG	
			CLRO				1624	1720	2	1624	1720	2	CONT	
			SGMR							1629.2	1631		IIIG	
			SGMR							1655.1	1727.5		CONT	
			WEIS				1704.8	1705.5	1				IIIG	
			CLRO				1722.3	1722.6	1	1722.3	1722.6	1	III	
			CLRO				1817	1843	2	1817	1843	2	IIIN	
			SGMR							1817.6	1818.5		IIIB	
		CLRO				1952	2000	1	1952	2000	1	IIIN		
		CLRO				2008	2145	1	2008	2145	1	IIIN		
		CULG				2055	2359	1				IIIN,W		
		CULG				2105	2400	1				I		
		CULG				2141.5	2144	1				IIIGG		
		CULG				2302	2303.5	1				IIIG		
16	0000	0720	CULG				0000	0605	1				IW	
			CULG				0000	0627	1				IIIN,W	
	0000	0125	HARV				0108	0125	1				IN	
			CULG				0253.5	0254.5	1				IIIG	
			CULG				0256.5	0257	2				IIIG	
	0453	1200	WEIS				0522	1200	1				I	
			CULG				0604		1				IIIB	
			CULG				0605	0720	2				IS,CONT	
			WEIS				0728.8	0730.8	1				IIIG	
			WEIS	0757.5	0758.2	2							IIIG,DP	
			WEIS				0935	0935.4	1				IIIG	
	0950	2338	SGMR							1208.9	1209.8		IIIB	
1247	2400	HARV				1247	1400	1				I		
		HARV	1357	1417	1	1400	2400	1				IN		

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		INT.	START UT	END UT	INT.	START UT	END UT	INT.				
16	1545	1945	CLRO	2123	2124	1	1612	1745	2	1612	1745	2	IV	CONT
			SGMR							1614	2117			IIIB
			SGMR				1845	1846	3	1728.8	1729.4			IIIB
			HARV							1845	1846	3		IIIG,V
			SGMR				1845.3	1846.3	3	1845.2	1846.6	3		III
	2041	2400	CLRO							1845.3	1846.3	3		IIIG
			SGMR				1912.6	1916	3	1912.5	1914			IIIG,V
			CLRO							1912.6	1916	3		IIIG
			SGMR							2028.6	2031.8			I
			CULG				2041	2400	2					IIIN
17	0000	0123	CULG	2045	2353	1				IIIG				
			CULG	2335.5		3				IIIB				
			HARV							I				
			CULG	0000	0025	1				I				
			CULG	0000	0120	1				IIIN				
	0453	1806	CULG	0006.5	0706	1				I,CONT				
			CULG	0025	0727	1				IIIG				
			CULG	0205.5	0215	1				IIIG,V,U				
			CULG	0259	0300	3				IIIG				
			CULG	0407	0409	1				IIIG,U				
CULG			0411.5	0413	1				IIIG,V,U					
CULG			0434	0435.5	2				IS					
WEIS			0456	1740	1				IIIG,V					
CULG			0505	0506	1				IIIG,V,U					
CULG			0510.5	0512	1				IIIB					
CULG			0530.5		2				IIIG,U					
CULG			0539	0541	1				IIIG,V,U					
CULG			0602	0603	2				IIIB					
WEIS			0602	0606	2				IIIG,U					
CULG			0604	0613	2				IIIG,V,U					
CULG			0630.5	0632	1				IIIG,DP					
CULG			0702	0704.5	2				IIIG					
WEIS			0702.2	0704.1	2				IIIG					
WEIS			0719	0723.2	2				IIIG,DP					
CULG			0721	0723	1				IIIG					
WEIS			0753.8	0754.3	1				IIIG,U					
WEIS			0844.2	0844.6	1				IIIB					
WEIS			0908	0909	1				IIIB					
WEIS			0918	0919.8	3				IIIG					
WEIS			0923.8	0925	1				IIIG,DP,V					
WEIS			0943	0943.3	1				IIIG					
WEIS			0951.5	0952.6	2				IIIB					
WEIS			1027.2	1028	1				IIIG,DP					
WEIS			1044.5	1049	2				IIIB					
0950	2335	SGMR				1044.6	1045.1		IIIB					
		SGMR				1123.5	1124.8		IIIB					
		WEIS	1123.6	1124.8	2				IIIG					
		WEIS	1137.2	1137.5	1				IIIB					
		SGMR				1152.8	1153.6		IIIB					
1247	2400	WEIS	1152.9	1153.4	1				IIIG					
		SGMR				1237	2200		CONT					
		HARV	1247	1740	1				I,DC					
		SGMR				1439.6	1441.8		IIIG					
		WEIS	1439.7	1447	1				IIIG					
1550	2127	HARV	1440	1441	1				IIIG					
		SGMR				1446.7	1447.3		IIIB					
		SGMR				1527.9	1528.5		IIIB					
		WEIS	1528	1528.3	2				IIIB					
		SGMR				1551.2	1551.8		IIIB					
2041	2400	WEIS	1551.2	1554.5	1				IIIG					
		SGMR				1554.2	1554.8		IIIB					
		CLRO	1600	2127	2				CONT					
		WEIS	1616.8	1617.3	2				IIIG					
		SGMR				1616.8	1617.4		IIIB					
2041	2400	HARV	1741	1743	2	1741	1743	3				3	IIIGG	
		WEIS				1741.3	1743	2					IIIG,DP	
		SGMR							1741.5	1743.4			IIIG	
		HARV				1743	2400	1					IN,DC	
		SGMR							1747.6	1749.3			IIIG	
		HARV				1748	1749	2					IIIG	
		SGMR							1850	1851.2			IIIG	
		CULG				2041	2400	2					I,CONT	
		CULG				2051	2052	1					IIIG	
		CULG				2051	2400	1					IIIN	
		SGMR							2055.8	2058.7			IIIG	
		HARV				2056	2058	1					IIIG	
		CULG				2056	2059	1					IIIG	
		SGMR							2104.5	2105			IIIB	
		SGMR							2143.1	2146.1			IIIG	
2248	2334	CULG	2143.5	2144	1				2	IIIG				
		CULG	2145	2145.5	3					IIIG				
		HARV								IIIG,V,U				
		HARV	2333	2336	2					IN				
		CULG	2333	2337	3					IIIGG				
2339		CULG	2339	1		2338.5	2339.5	2					IIIG	
		HARV				2339		2					IIIG	
										2339			IIIG	

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE					
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND								
	START UT	END UT		INT.	START UT	END UT	INT.	START UT	END UT	INT.								
18	0000 0000	0122 0724	HARV				0000	0723	1								IIIN	
			CULG			0000	0724	1									I,CONT	
	CULG				0014.5	0015	1									IIIG		
	CULG				0031	0033	2									IIIG		
	CULG				0053	0054	1									IIIG,V		
	CULG				0137.5	0139.5	2									IIIG,V,U		
	CULG				0150.5		1									IIIB,U		
	CULG				0200.5	0201	1									IIIG		
	CULG				0304.5		2									IIIB		
	CULG				0332.5		1									IIIB		
	0455	1535	CULG			0414	0434	1									IIIGG,U	
			WEIS			0500	1705	1									IN	
			CULG			0505	0511.5	1									IIIG,V	
			WEIS			0507	0507.3	1									IIIB	
			CULG			0533.5	0534	1									IIIG	
			CULG			0610.5	0617	2									IIIG,U	
			WEIS			0614	0616.5	2									IIIG	
			CULG			0648	0649.5	3									IIIG	
			WEIS			0648.2	0649.5	3									IIIGG,DP	
			CULG			0653.5	0654	2									IIIG	
			WEIS			0654	0654.5	1									IIIG	
			WEIS			0958.5	1010	1									IIIG	
	0930	2337	WEIS			1018	1018.8	1								IIIG		
			SGMR			1027	1036	2								IIIG		
			SGMR						1027.1	1027.7						IIIB		
			SGMR						1035.1	1035.9						IIIB		
	1247	2400	WEIS					1109	1114	3							IIIG	
			SGMR								1152	2330					IV	
			SGMR								1229.7	1230.4					IIIB	
			HARV	1255	1647	1	1247	2400	1	1309	1751	1				I		
			HARV				1343	1344	1	1343	1344					IIIG		
			WEIS	1407.5	1408	1										IIIG,DP		
			WEIS				1454	1502	1							IIIG		
			WEIS				1642.4	1642.8	1							IIIG		
			HARV	1645	1647	2	1642	1643	2	1642	1643	2				IIIGG		
			CLRO				1645	2330	2	1645	2330	2				CONT		
			WEIS				1659.5	1705	2							IIIG,DP		
			1645	2330	HARV			1700	1705	2	1700	1703	2					IIIGG
	WEIS						1708.6	1709	1							IIIB		
	WEIS						1712	1716.5	1							IIIG		
	HARV	1753			1755	1	1753	1800	3	1753	1800	3				IIIGG		
	SGMR								1753.6	1755.7						IIIG		
	CLRO						1754	2045	3	1754	2045	3				IIIN		
	WEIS						1754.2	1800	3							IIIG,DP		
	SGMR								1759.4	1800.6						IIIG		
	SGMR								1854.3	1858.6						IIIG		
	HARV	1856			1857	2	1855	1859	3	1855	1858	3				IIIGG,V		
	SGMR								1948.7	1949.6						IIIB		
	SGMR								2001.3	2001.9						IIIB		
	2055	2400	HARV			2037	2042	3	2037	2042	3					IIIGG,V		
			CULG			2055	2400	2								IS,CONT		
			CULG			2055	2400	1								IIIN		
			CULG			2211	2215.5	2								IIIG		
			SGMR						2211.7	2212.7						IIIB		
			SGMR						2242.4	2244.7						IIIG		
			HARV	2243	2245	1	2243	2245	2	2243	2245	2				IIIG		
			HARV	2243	2250	2										I		
			CULG	2243.5	2250.5	3	2241	2250.5	3							IIIG		
			HARV	2248	2249	3	2248	2249	2	2248	2249	2				IIIB		
			SGMR						2248.2	2249.1						IIIB		
			CULG						2328	2329	1							IIIG,U
	CULG				2332		3							IIIB,U				
	19	0000 0000	0121 0726	HARV				0000	0120	1								I
				CULG			0000	0724.5	1									IIIN
		CULG			0000	0726	1									IS,CONT		
		HARV	0002		1											IIIG		
		CULG				0034	0035	2								IIIG,U		
		CULG				0045		2								IIIB,U		
	CULG					0223.5	0225	1								IIIG		
	CULG					0245.5		1								IIIB		
	CULG					0253.5	0256	1								IIIG		
	CULG					0331.5	0332	2								IIIG		
	WEIS					0459	1730	2								IS		
	CULG					0517.5		1								IIIB		
	WEIS					0802	0803	2								IIIG		
	WEIS					0803.5	0804.5	1								IIIG		
	SGMR								1030	2300						IV		
	CLRO					1550	2038	2	1550	2038	2					CONT		
	HARV		1551	1710	1	1247	1946	2	1248	1910	1					IC		
	WEIS					1633.2	1633.5	2								IIIB		
	HARV					1747	1750	2	1747	1750	2					IIIG		
	WEIS					1747.2	1748	1								IIIG,DP		
	HARV					1758	1801	2										
	2041		2400	HARV			1946	2400	1								IIIG	
			CULG			2041	2400	2								IN		
																IS,CONT		

AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
19			CULG CULG HARV	2231	2232	1	2041 2045	2400 2400	1 2				IIIN S,RS,DP IIIG	
20	0000 0000	0120 0723	HARV CULG CULG CULG CULG CULG CULG WEIS CULG WEIS WEIS SGMR SGMR WEIS HARV HARV HARV CLRO HARV HARV CULG CULG CULG HARV CULG				0000 0000 0000 0000	0117 0718 0721 0723	1 2 1 2				IN S,RS,DP IIIN IS IIIG IIIB IIIG IS IIIG IIIGG,DP IIIG	
	0550	1245		0205 0229 0318	0206	1 1 1	0229 0318 0555		1 1 2					
				0622	0623	1	0627 0622.2 1102	0628 0628 1102.5	1 2 1					
	0930	2334								1126 1127.6	2300 1128.8		IV	
	1646 1301	1802 2400		1146.6	1146.8	1							IIIG IIIG,DP I,DC IIIG IIIGG,V	
	1540	2400		1428 1519	1430 1524	1 1	1301	2400	1	1610	1817	1	CONT IIIG IN IS,CONT IIIN S,RS,DP IIIG IIIG,U	
	2041	2400		1724 1725	1728 1949	1 1	1540	2400	2	1540	2400	2		
							2041 2048 2054 2314 2314.5	2400 2400 2400 2317 2317	2 1 2 1 1					
21	0000	0727	CULG CULG CULG HARV CULG CULG CULG WEIS CULG WEIS SGMR WEIS HARV HARV HARV CLRO HARV HARV SGMR SGMR HARV SGMR CLRO CULG CULG CULG CLRO CULG CULG				0000 0000 0000 0000	0600 0706.5 0725.5 0119	1 1 2 1					IS,CONT IIIS S,DP I,DC IIIG,U IIIG IIIB IN I IIIG,DP,RS
	0000	0119		0012	0020	1	0431.5 0521 0524.5	0432.5 0521.5 0524.5	1 1 1					
	0458	1755		0521 0524.5	0521.5	1 1	0557 0600 0606	1340 0727 0607	1 1 1					
	0945	2331					1241.5 1300	1241.7 1740	1 1	1219	2219		IV	
	1300	2400		1507		1	1662 1740 1815	2130 2320 1816	2 1 1	1662	2130	2		
	1525	2242					2014	2015	2	1815 1815.2 1817.5 2014 2014.2 2014.5	1816 1817.8 2015 2015.8 2015.5	2 2 2 3		
	2041	2400					2014.5 2041 2054 2107 2108 2142	2015.5 2400 2357.5 2242 2122 2143	3 1 1 2 1 1	2107	2242	2		
22	0000 0000	0117 0727	HARV CULG CULG CULG CULG CULG WEIS WEIS SGMR HARV SGMR SGMR HARV SGMR CLRO SGMR CLRO SGMR CULG CULG CULG CULG CULG CULG				0000 0001.5	0616 0710.5	1 1				I IIIN,W I IIIG,V IIIG IIIG IIIB IIIB IIIG IIIB IN IIIB IIIG 1500.6 1501.9 1629 1629.1 1629.5 1629.8 1712.6 1743 1924.1 1939.3	
	0502	1420		0033	0038	1	0524.5 0541 0556 0658 1146 1213	0525 0542 0556.5 1146.3 1215	1 1 1 1 1 1					
	0944 1301	2329 2400					1421	1443	1	1214.5	1215			
	1545	2345					1629	1630	3	1432.8 1500.6 1629 1629.1 1629.5 1629.8 1712.6 1743 1924.1 1939.3	1433.5 1501.9 1630 1630.2 1629.8 1713 1941 1924.5 1941.2	2 3 3 2		
	2041	2400					2125.5 2152 2209 2215 2230.5 2246 2333 2349.5 2359	2152.5 2211 2229 2248 2350	1 1 1 1 1 1 1 1 1				IIIB IIIG,U IIIG N,RS,DP IIIB,W N,RS,DP IIIB IIIG,W IIIB,W	

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE					
				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.				
23	0000 0000	0116 0711	HARV CULG	1503.9	1504	1	0030	0038	1	1240.7	1241.3	2	II II	IIIGG				
							0040.5	0050.5	1					IIIG				
	0103		1				IIIB,W											
	0118	0124	1				IIIGG											
	0125.5	0129	1				IIIG											
	0144	0144.5	1				IIIG											
	0307.5	0308	1				IIIG											
	0327.5	0328	1				IIIG,W											
	0411	0428.5	1				IIIGG											
	0415	0416.5	2				IIIG											
	0440	0510	1				I											
	0442		1				IIIB											
	0443	0446	1				IIIG,W											
	0513.5	0514	1				IIIG,W											
	0531.5		1				IIIB,W											
	0537		1				DP											
	0539.5	0540	2				IIIG											
	0548.5	0551	2				IIIG											
	0610	0703.5	1				IIIN											
	0946	2324					1417	1417.5						IIIB				
	1301	2400					1706.9	1707.4						IIIB				
	1011	1754					1710	1710.3	1					IIIB				
	1535	2325					1710.1	1711	2					IIIB				
24	0000 0000	0114 0727	HARV CULG	1503.9	1504	1	0133.5		1	1600.8	1601.8	2	II II	IIIB,W				
							0150	0200	1					I				
							0453.5		1					IIIB,W				
							0550.5	0551	1					IIIG,V,W				
							0820	1748									IIIG,DP	
							0502	0814									I	
							1301	2400						1555	1603	1	IIIG	
							0934	2328						1601	1615	2	CONT	
							1530	2355									IIIG	
							0507	1615										
							1634	1746										
0934	2330		1843	1903	2	1842.7	1848.3	2	II	IIIG								
1530	2230		1855	1859	2	1843	1903	2	II									
1300	2400		2044.8	2045	2	2044.8	2045	2	II	III								
2040	2237		2045		1					IIIB								
			2118		1					IIIB								
2333	2400		2131		1					IIIB,U								
26	0000 0000	0113 0723	HARV CULG	1447	1453	2	0054.5		1	1243.6	1244.1	2	II II	IIIB,W				
							0431.5	0432.5	1					IIIG				
	0519	0519.5	1				IIIB,W											
	0556.5		1				IIIB,W											
	0626		1				IIIB,W,U											
	0640.5	0641	1				IIIG,U											
	0808	0810	1				IIIG											
	0827.7	0828	1				IIIG											
	1441	1448	2				IIIB											
	1441.5	1443	1				IIIGG,U											
	1441.5	1452	2				V											
	1451	1453	2				IIIGG											
	1455.6	1503	2				IIIGG											
	1456	1505	1															
	1503	1508	2															
	0510	1744																
	0951	2230					1511.4	1515.7						1516.5	1518		II	UNCLF
	1300	2400					1522.2	1522.7						1522.2	1522.7		II	V B
1800	2015		1528.1	1543.3						IIIG								
2029	2400		1857.8	1858.2	2					IIIB								
			2214		1					III								
			2219	2220	2					IIIB,W								
			2219	2220	2					IIIG,V								
										IIIG								
										IIIB								

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AUG. 1970	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
				START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
29			CULG				2322.5	2323	1					IIIG,W
			CULG				2326.5		1					IIIB,W
			CULG				2345.5	2346	1					IIIG,W
			CULG				2349		1					IIIB
			CULG				2351	2400	1					IIIG
			HARV				2359	2400	1					IIIG
30	0000	0107	HARV				0000	0002	1					IIIG
	0000	0738	CULG				0000	0018.5	1					IIIG
			CULG				0021	0225	1					IIIN,W
			CULG				0100	0116.5	1					IIIGG,W
			CULG	0321	0321.5	2	0321	0321.5	2					IIIG,U
			CULG				0349.5		1					IIIB,W
			CULG				0418.5		1					IIIB,W
			CULG				0525.5		1					IIIB,W
			CULG				0605.5	0611.5	1					IIIG,W
			CULG				0643.5		1					IIIB,W
			CULG				0648	0650.5	1					IIIG,W
	0508	1742	WEIS				0659.5	0738	1					IIIGG,W
			WEIS				1043	1044.5	2					IIIG,DP
	0944	2317	SGMR				1124.3	1125.8	2					IIIG
			WEIS							1125.3	1125.9			IIIB
			WEIS				1312.8	1322	1					IIIG
			WEIS				1312.8	1322	1					UNCLF
	1301	2400	HARV	1313	1318	2	1314	1318	1					IIIGG,V
			HARV				1318.6	1322	1					
			WEIS				1336.6	1339	1					IIIG,DP
			SGMR							1336.7	1339.3			IIIG
			HARV	1337		1	1336	1339	2		1337	1338	1	IIIGG
			SGMR							1424.7	1425.4			IIIB
			SGMR							1428.5	1430			IIIG
			HARV	1505	1507	2								IIIGG
	1520	2240	HARV				1548	1549	2		1548	1549	2	IIIGG
			CLRO				1548	2240	2		1548	2240	2	IIIN
			WEIS				1548	1549	1					IIIG
			SGMR							1548	1549			IIIB
			SGMR							1607	1609.7			IIIG
			SGMR							1634.3	1636			IIIG
			WEIS				1651.8	1652.6	1					IIIG
			SGMR							1651.9	1653.6			IIIG
			HARV				1652	1653	2		1652	1653	2	IIIG
			SGMR							1753.4	1753.9			IIIB
	2030	2324	CULG				2042.5	2300	1					IIIN,W
			CULG				2116.5		2					IIIB
			HARV	2209	2212	1								IIIG
			HARV	2217	2218	1	2218		2					IIIG
			CULG				2217	2218.5	2					IIIG,V,U
			SGMR							2217.7	2218.3			IIIB
			CULG				2301.5	2322	2					IIIGG
			HARV				2305	2309	1					IIIGG
			CULG				2335.5	2400	1					IIIN,W
31	0000	0105	HARV											
	0000	0648	CULG				0021		1					IIIB,W
			CULG				0059.5	0101.5	1					IIIG,W
			CULG				0119	0648	1					IIIGG,N,W
			CULG				0530	0600	2					IIIGG
	0508	0730	WEIS				0551	0552	1					IIIG
	0653	0730	CULG				0620	0648	2					IIIGG
	1301	2211	HARV				0653	0721	1					IIIGG,N,W
	1545		WEIS				1450		2					IIIG,U
	0945	2316	SGMR								1609.1	1609.5		IIIB
			SGMR								1648.8	1649.3		IIIB
			SGMR								1656.3	1656.8		IIIB
	1550	2330	CLRO				1807	1918	2		1807	1918	2	IIIN
	0945	2316	SGMR								1807.4	1808.2		IIIB
			SGMR								1841	1841.5		IIIB
			CLRO				2029	2029.3	2		2029	2029.3	2	III
	2030	2400	CULG				2053	2118	1					IIIN,W
			CULG				2154		1					IIIB,W
			HARV											
			CULG				2215.5		1					IIIB,W
			CULG				2247	2249	1					IIIG,W
			CULG				2301.5	2302	1					IIIG
	2213	2400	CULG				2313		1					IIIB,W

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

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

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

Notes: The Boulder sweep frequency receiver shut off 2017 UT July 1 until further notice. Restoration of solar monitoring will be at Nederland Radio Astronomy Observatory.

Due to technical difficulties at Culgoora during the period June 2 - July 6, many of the times reported are approximate (U). On July 12 the frequency interval of the solar sweep frequency observations at Sagamore Hill was changed to 24-48 MHz. Before that time it was 19-41 MHz.

Addenda: The spectral report from Culgoora for June 1970 is included in the Miscellanea Section of this issue.

COSMIC RAY INDICES
(Neutron Monitors)

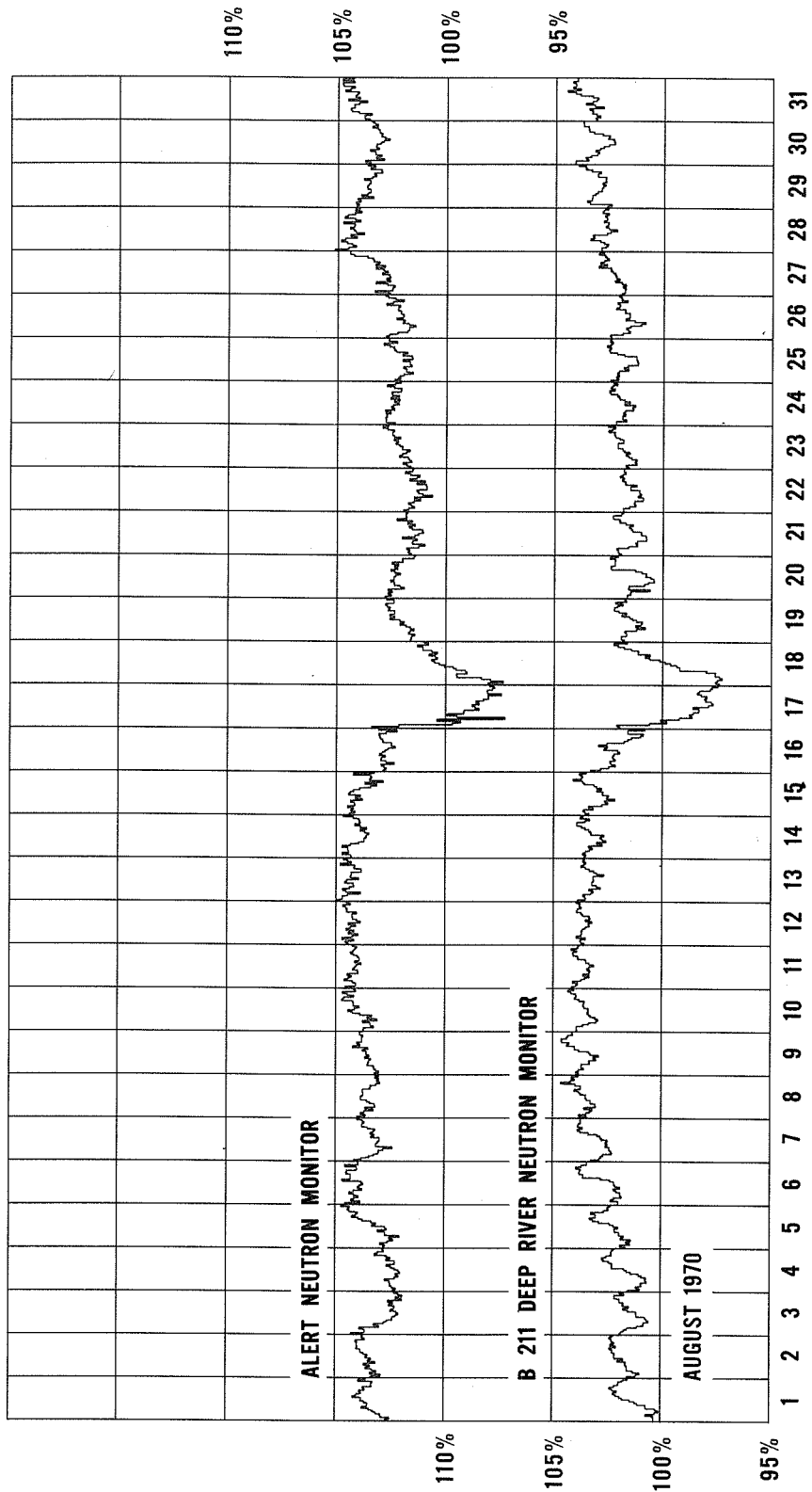
SEPTEMBER 1970

Sept. 1970	CHURCHILL	DEEP RIVER	CLIMAX	DALLAS
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	5784.9	6252.9	3710.7	5795.8
2	5813.0	6289.5	3722.0	5791.7(3)
3	5752.7	6262.5	3702.5	5836.7(7)
4	5758.0	6276.1	3700.3	5796.0
5	5801.3	6313.6	3721.8	5819.3
6	5835.8	6339.5	3739.6	5849.4
7	5826.8	6360.0	3761.4	5872.8
8	5855.9	6398.3	3815.8	5931.3
9	5868.3	6408.4	3831.5	5944.3
10	5879.1	6397.1	3816.0	5918.4
11	5883.5	6402.0	3813.1	5919.5
12	5887.7	6397.8	3809.8	5926.3(23)
13	5873.0	6378.4	3795.9	5912.8
14	5875.2	6379.6	--	5910.3(23)
15	5866.0	6368.1	--	5901.5
16	5829.4	6302.0	--	5847.8
17	5589.7	6096.9	--	5707.0
18	5630.9	6150.2	--	5723.3
19	5779.8	6275.5	3747.9	5823.0
20	5786.3	6262.7	3721.5	5824.7
21	5764.0	6270.0	3721.7	5810.8
22	5745.6	6265.5	3706.6	5789.2
23	5762.0	6290.0	3710.5	5800.1
24	5778.1	6294.6	3727.2	5814.8
25	5777.3	6295.9	3743.5	5834.6(23)
26	5777.7	6283.0	3748.6	5833.9
27	5811.6	6317.5	3742.1	5837.8
28	5844.1	6342.7	3766.2	5865.0
29	5860.7	6363.7	3773.3	5889.5
30	5862.3	6369.2	3789.5	5891.0
31	5900.3	6394.4	3794.5	5891.0

() Number of hours for which data are available if less than 24.
Churchill Super Neutron Monitor, Scaling Factor 120.
Deep River Neutron Monitor, Scaling Factor 300.
Climax IGC Station B305, Scaling Factor 100.
Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES
(Pressure Corrected Hourly Totals)

AUGUST 1970



GEOMAGNETIC ACTIVITY INDICES

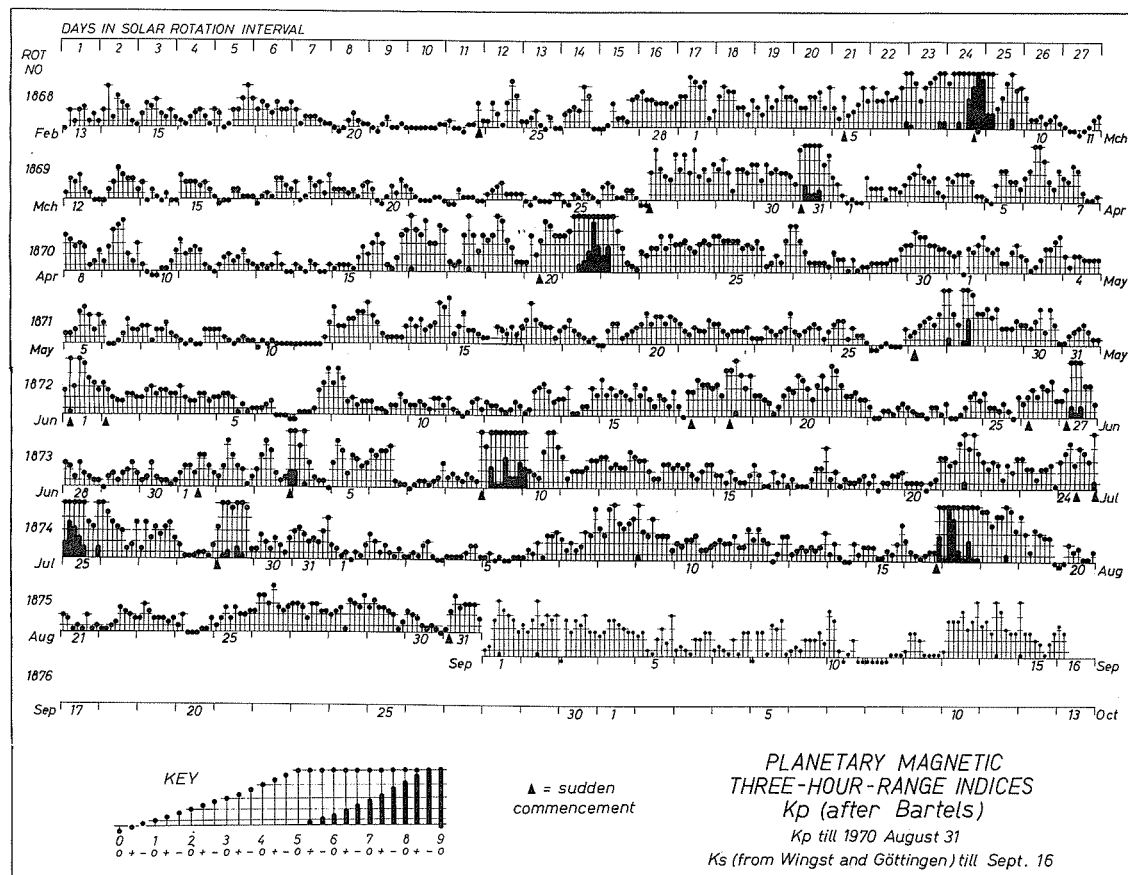
AUGUST 1970

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DAY		K _p THREE-HOUR RANGE INDICES								SUM	C _i	C _p	A _p
		1	2	3	4	5	6	7	8				
1	QQ	2-	1+	1-	1	0+	1	1-	2-	8+	0.1	0.1	4
2	Q	3-	2	1	2-	1	1-	1+	1-	11	0.2	0.2	6
3	QQ	1-	1	1-	2-	2	1-	0+	0+	7+	0.2	0.1	4
4	QQ	1-	1-	1-	1-	1	2-	2-	1-	8-	0.2	0.1	4
5	QQ	1-	1	0+	1-	0+	0+	1-	1-	5-	0.1	0.0	3
6		1-	1+	1	2	1-	3-	3-	3	14	0.3	0.4	8
7		2+	1+	2	1+	2-	3	3-	5-	19	0.8	0.7	12
8	D	3+	3-	5-	5	4-	3+	4-	4	30+	1.2	1.2	26
9	D	5+	3	3-	4	3-	3-	3-	1+	24+	1.0	1.0	19
10		2	2-	2+	2+	3-	1+	1+	2-	15+	0.4	0.4	7
11		2	2+	2	2	3-	2-	2-	3+	18-	0.4	0.5	9
12		2+	3+	2+	2	0+	1	3-	3-	17-	0.4	0.5	9
13		1	1+	2-	1+	2-	1+	2-	3	13	0.4	0.3	6
14	Q	1	2	1-	0+	0+	2	1	2-	9	0.2	0.2	4
15		2-	2-	1-	1-	1+	1	2	4-	13-	0.4	0.4	7
16		2+	1+	1	1-	1	1+	1+	7	16	1.0	1.1	21
17	D	5+	9-	8	6	5+	7-	5+	5+	51-	1.8	1.9	115
18	D	5-	5-	4-	4+	4+	6-	5-	3+	35+	1.3	1.4	36
19		4+	3	1+	3+	3	3-	3-	0+	21-	0.7	0.8	14
20	Q	0	0+	2	1+	2-	1-	1-	1+	8	0.1	0.1	4
21	Q	2	2-	1-	1	1-	2	1-	1	10-	0.1	0.2	5
22		1-	1-	1	1+	3-	2+	2	2-	12+	0.4	0.3	6
23		2-	3	2+	2-	2-	2-	1+	2-	15	0.3	0.4	7
24	QQ	1	2	0+	0+	0+	1-	1-	2-	7	0.0	0.1	4
25		1	2-	3-	2-	3-	2	2	2+	16	0.3	0.4	8
26	D	2+	4-	4-	3	4+	3-	2+	3-	25-	0.9	0.9	17
27		3	3	3-	2-	3	3	2+	2+	21	0.7	0.7	12
28		2	2+	3-	1-	3+	3	3-	4-	20+	0.7	0.7	12
29		3-	3+	3-	3-	2+	2	1-	1+	18-	0.4	0.5	10
30	Q	2+	2	2-	1	1-	1	1-	0+	10-	0.1	0.2	5
31		1-	2+	4-	3-	3	3	3	2-	20	0.8	0.7	12
MEAN											0.51	0.53	13

Note: Preliminary storm sudden commencements occurred in August at 16/2204 and 31/0334.

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

DAY	1969				1970							
	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.
1	3	20	3	5	8	9	22	6	11	28	10	4
2	2	31	11	4	30	20	16	6	9	9	11	6
3	4	18	16	4	9	7	15	11	10	11	24	4
4	4	10	6	7	3	12	16	10	6	8	26	4
5	18	6	6	18	6	10	12	9	12	6	16	3
6	20	16	3	19	5	4	25	23	6	3	15	8
7	13	6	12	5	5	2	42	10	6	9	5	12
8	19	3	14	5	6	2	149	12	4	13	10	26
9	10	9	40	12	10	3	47	18	4	5	87	19
10	8	21	37	8	6	5	7	3	2	6	34	7
11	8	10	11	11	4	3	3	8	3	4	10	9
12	4	9	7	5	8	3	6	6	15	5	14	9
13	2	5	5	3	4	5	8	4	6	10	10	6
14	11	3	2	4	6	11	3	3	13	8	9	4
15	19	3	2	5	7	8	7	5	10	13	5	7
16	7	5	2	11	17	5	3	14	6	9	6	21
17	12	6	3	4	11	10	5	29	10	13	8	115
18	19	7	4	3	6	9	6	18	5	27	5	36
19	9	10	7	4	5	4	5	21	6	8	5	14
20	8	5	4	3	7	3	4	21	13	18	6	4
21	5	8	2	3	6	2	3	90	8	17	30	5
22	3	7	10	7	5	2	2	41	6	4	12	6
23	7	4	5	11	5	4	5	14	7	4	9	7
24	6	14	6	9	7	11	2	16	6	6	26	4
25	10	7	6	9	2	4	3	17	7	6	92	8
26	4	4	11	10	2	10	5	13	2	13	21	17
27	6	8	22	9	6	8	16	10	15	35	14	12
28	47	6	9	4	5	14	21	5	45	7	4	12
29	71	4	14	4	6		17	7	13	6	45	10
30	90	1	18	2	12		16	18	11	5	7	5
31		5		3	8		51		6		14	12
MEAN	15	9	10	7	7	7	17	16	9	10	19	13

PRINCIPAL MAGNETIC STORMS

AUGUST 1970

DATE 1970 MO. DA.	STORM TIME		OBS.	GEO- MAG. LAT.	SUDDEN COMMENCEMENT				C FIGURE DEGREE OF AC- TIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9			RANGES			STORM NUMBERS
	UT START	UT END MO. DA. HR.			TYPE	AMPLITUDES				MO. DA.	3-HOUR PERIOD	K INDEX	D (^o)	H (γ)	Z (γ)	
						D(^o)	H(γ)	Z(γ)								
08 07	19--	08 09 18	NEWP	55.1N	..	..	..	..	MS	08 08	4	6	49	172	299	35
	19--	08 09 06	FRED	49.6N	..	..	..	..	M	08 07	8	5	22	130	88	35
										08 08	4	5				35
										08 09	1	5				35
	19--	08 09 18	BOUL	49.0N	..	..	..	..	MS	08 09	1	6	28	115	95	35
	19--	08 09 12	HONO	21.1N	..	..	..	..	M	08 09	1	5	2	50	10	35
	1400	08 09 20	HYDE	7.6N	..	..	..	..	M	08 08	4	6	8	137	28	35
	1924	08 09 09	APIA	16.1S	..	..	..	..	M	08 08	3	5	3	130	26	35
	19--	08 09 17	PMOR	18.6S	..	..	..	..	M	08 08	3	5	05	140	60	35
	20--	08 09 13	KGLN	57.3S	..	..	..	..	M	08 09	1	5	--	--	--	35
08 16	2204	08 19 19	COLL	64.6N	SC *	+41	-17	+80	MS	08 17	2,3	7	311	1520	1370	36
	2203	08 19 15	SITK	60.0N	SC	--	--	-- *	S	08 17	2	9	240	1530	870	36
	2205	08 19 12	NEWP	55.1N	SC *	15	82	13	S	08 17	2	9	100	1310	920	36
	2205	08 18 19	WITT	54.1N	SC *	- 6 *	+54 *	+ 8	MS	08 17	2	8	70	400	250	36
	2204	08 19 06	FRED	49.6N	SC *	- 4	+41	-14	MS	08 17	2,3	7	61	411	300	36
	2204	08 19 15	BOUL	49.0N	SC *	+ 3	+45	-15	S	08 17	3	8	65	345	155	36
	2206	08 18 19	IRKU	40.8N	SC *	-10.5	88	12	MS	08 17	2,3	7	38	383	92	36
	2204	08 19 03	TUCS	40.4N	SC *	+ 2	+45	+ 2	MS	08 17	2,3	7	30	290	20	36
	2205	08 18 03	SJUA	29.9N	SC	-01	+45	+13	MS	08 17	2	7	16	215	49	36
	2204	08 19 04	MBOR	21.3N	SC	- 1.5*	+92	- 6	MS	08 16	8	5	5	150	25	36
										08 17	2	6	12	150	50	36
	2204	08 19 06	HONO	21.1N	SC	- 1	+45	+20	MS	08 17	2	7	6	310	30	36
	2203	08 18 04	HYDE	7.6N	SC	- 0.6	+74	- 4	S	08 17	3	8	6	299	50	36
	2204	08 19 15	GUAM	4.0N	SC *	01	44	14	S	08 17	2	8	0	210	20	36
	2204	08 19 07	APIA	16.1S	SC	- 0	+42	-15	S	08 17	2	8	10	388	60	36
	2204	08 19 17	PMOR	18.6S	SC *	+ 0.4*	+45	+40	MS	08 17	2	7	08	360	140	36
	2205	08 19 04	HRMN	33.3S	SC *	+ 6	+57	+40	MS	08 17	3	7	63	196	138	36
	2205	08 18 18	GNAN	43.2S	SC *	+13 *	+40	+58 *	MS	08 17	2	7	24	310	160	36
	2204	08 19 20	TOOL	46.7S	SC *	+ 7	+45	+ 5	MS	08 17	3	7	29	320	180	36
	2205	08 18 21	AMBE	47.7S	SC *	+ 5.6	+84.4	+36.8	MS	08 17	2	7	34	325	237	36
	2205	08 19 04	KGLN	57.3S	SC *	--	--	--	S	08 17	2	8	--	--	--	36
08 25	06--	08 27 24	COLL	64.6N	..	..	..	..	MS	08 26	6	6	169	1060	620	37
										08 27	5	6				37
08 31	0334	08 31 22	COLL	64.6N	SC *	- 4	+30	-12	MS	08 31	4	6	107	910	380	38
	0332	08 31 22	HYDE	7.6N	SC	- 0.0	+20	- 3	M	08 31	6,7	4	5	135	26	38

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Aug 70

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

AUGUST 1970

North Atlantic

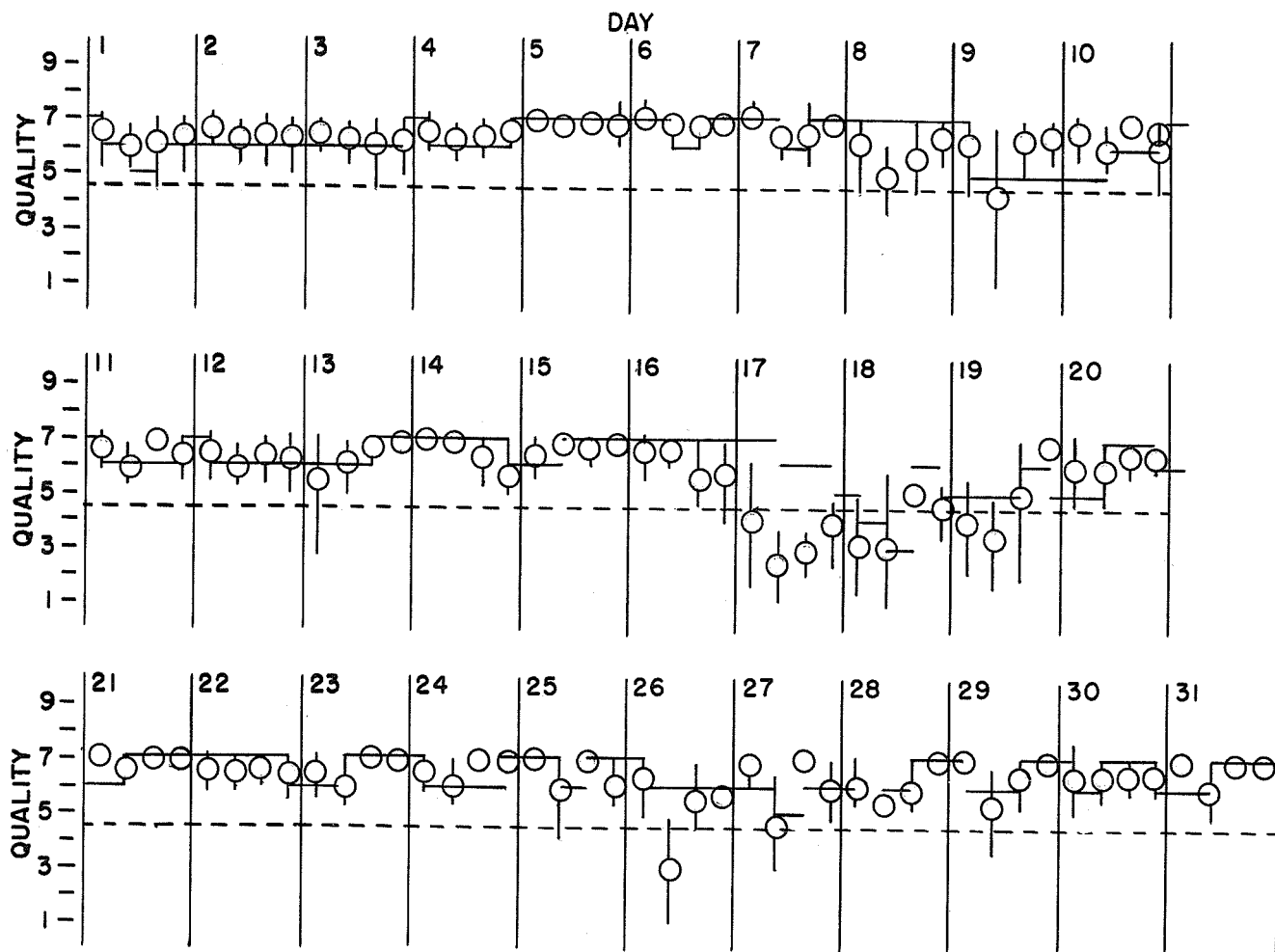
	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC- REPORTS) FOR WHOLE DAY	NORTH ATLANTIC								GEOMAGNETIC INDICES		
			6-HOURLY QUALITY FIGURES				SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				K _{FR}		A _{FR}
			00 TO 06	06 TO 12	12 TO 18	18 TO 24	02	08	14	20	HALF DAY (1) (2)		OBSERVED
01	6+	6	6+	6o	6o	6+	6	5	6	6	1	1	3
02	6+	7	7-	6+	6+	6+	6	6	6	6	2	1	5
03	6+	7	6+	6+	6o	6+	6	6	6	7	2	1	3
04	7-	7	7-	6+	6+	7-	6	6	6	7	1	1	4
05	7o	7	7o	7-	7o	7-	7	7	7	7	1	1	2
06	7o	7	7o	7-	7-	7o	7	6	7	7	1	3	7
07	7-	7	7o	6+	7-	7o	7	6	7	7	2	3	13
08	6-	7	6+	5o	6-	6+	7	7	7	7	(4)	3	21
09	6-	7	6+	4+	6+	6+	5	5	5	5	3	3	16
10	6+	7	7-	6o	7o	6o	5	6	6	7	2	2	6
11	6+	7	7-	6o	7o	6+	6	6	6	7	2	3	10
12	6+	7	7-	6o	6+	6+	6	6	6	6	2	2	9
13	6+	6	6-	6o	7-	7-	6	6	7	7	2	2	8
14	6+	6	7o	7-	6+	6-	7	7	7	6	1	1	3
15	7-	6	6+	7-	7-	7-	6	7	7	7	1	2	8
16	6o	7	7-	7-	6-	6-	7	7	7	7	2	2	14
17	3+	7	4o	2+	3-	4-	7	6	6	5	(6)	(4)	65
18	4o	7	3+	3o	5o	5-	4	3	6	5	(4)	(4)	32
19	5-	7	4o	3+	5o	7-	5	5	6	5	3	2	14
20	6+	6	6o	6o	7-	6+	5	7	7	6	1	1	3
21	7-	6	7o	7-	7o	7-	6	7	7	7	2	1	4
22	7-	6	7-	6+	7-	6+	7	7	7	6	2	2	6
23	7-	6	7-	6o	7o	7-	6	7	7	7	3	1	9
24	7-	7	7-	6o	7o	7-	6	6	6	7	1	1	2
25	7-	7	7o	6o	7o	6+	7	6	7	7	2	2	8
26	5+	7	6+	3o	6-	6-	6	6	6	6	(4)	3	17
27	6o	6	7-	5-	7o	6o	6	5	6	6	3	2	10
28	6o	6	6+	6-	6o	7o	5	6	7	7	2	3	11
29	6+	6	7o	5+	6+	7o	6	6	7	7	3	1	9
30	7-	6	6+	6+	7-	7-	6	7	7	6	2	0	4
31	7-	6	7o	6o	7o	7o	6	7	7	7	3	2	11

AUGUST 1970

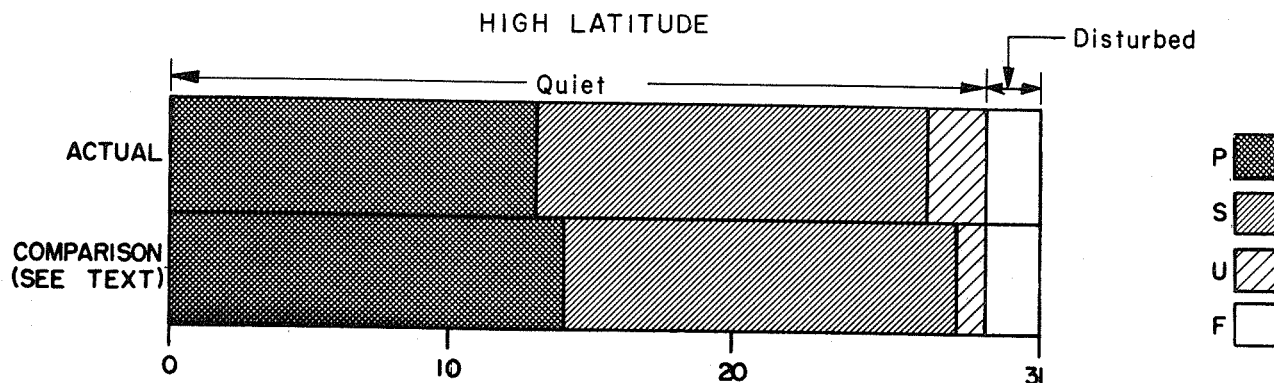
North Atlantic

— Short term forecast
o Quality figure

| range of reports

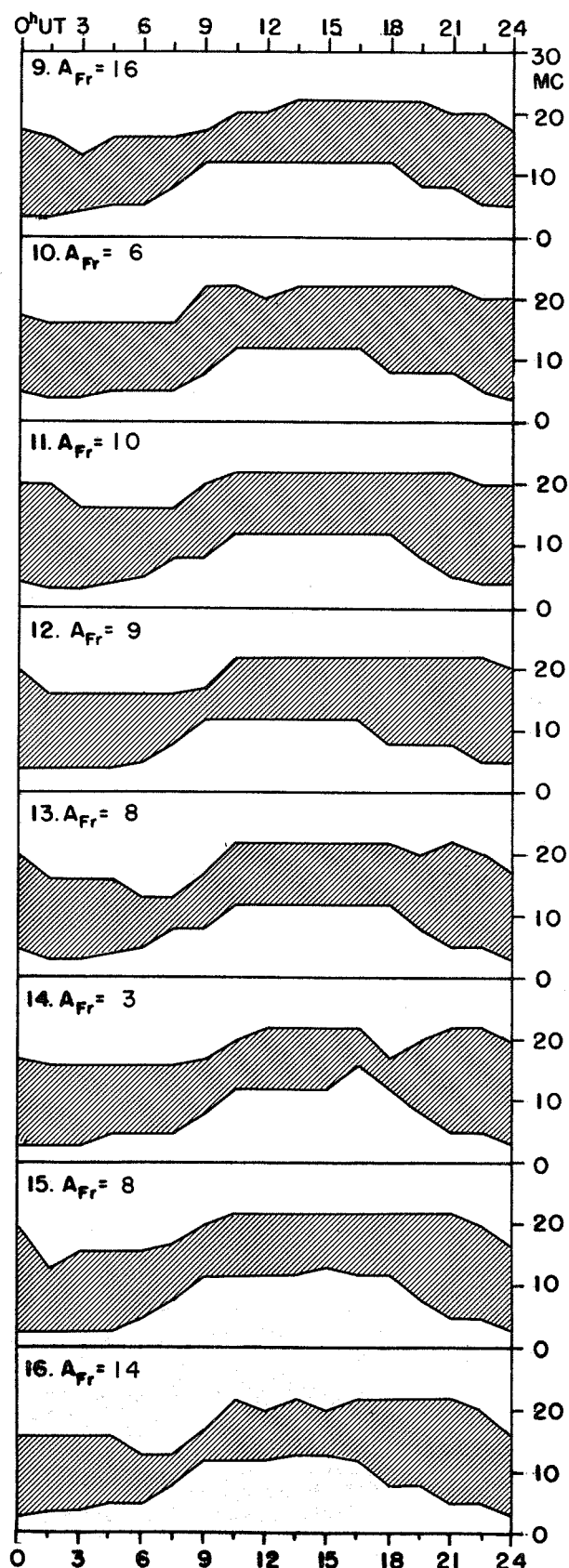
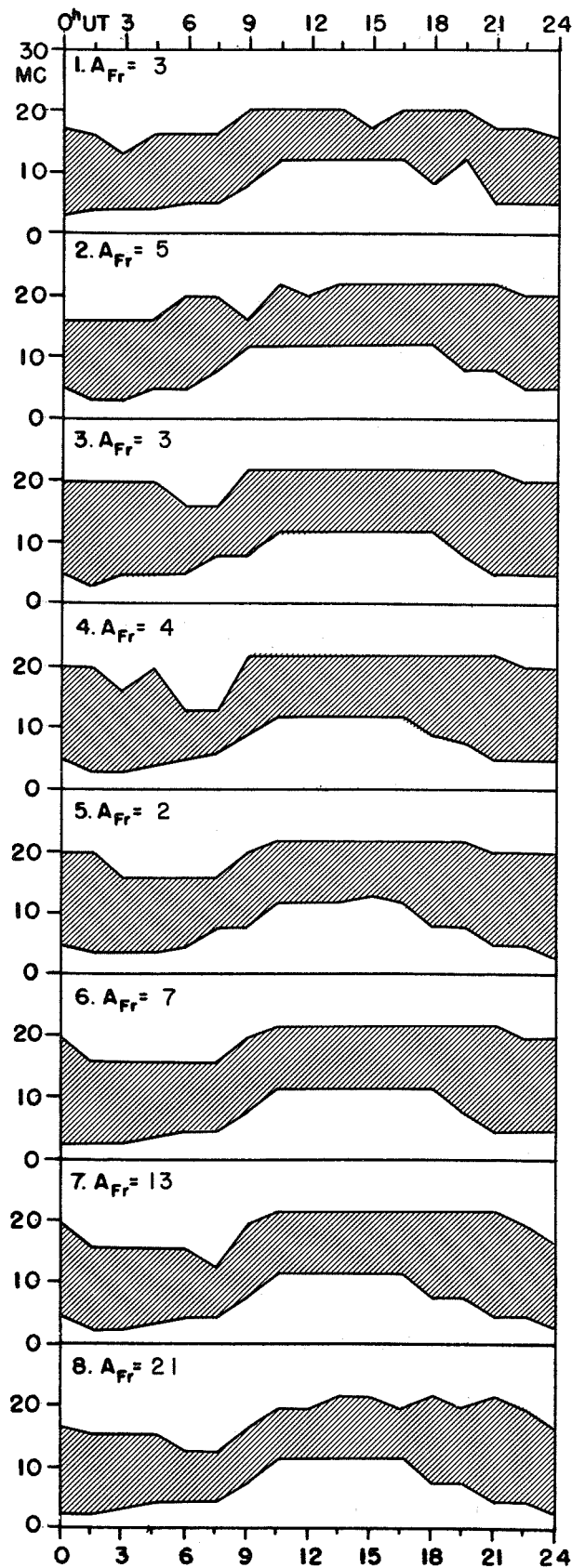


Outcome of advance forecasts of High Latitude radio propagation conditions
(Scored against observed North Atlantic radio propagation conditions)



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

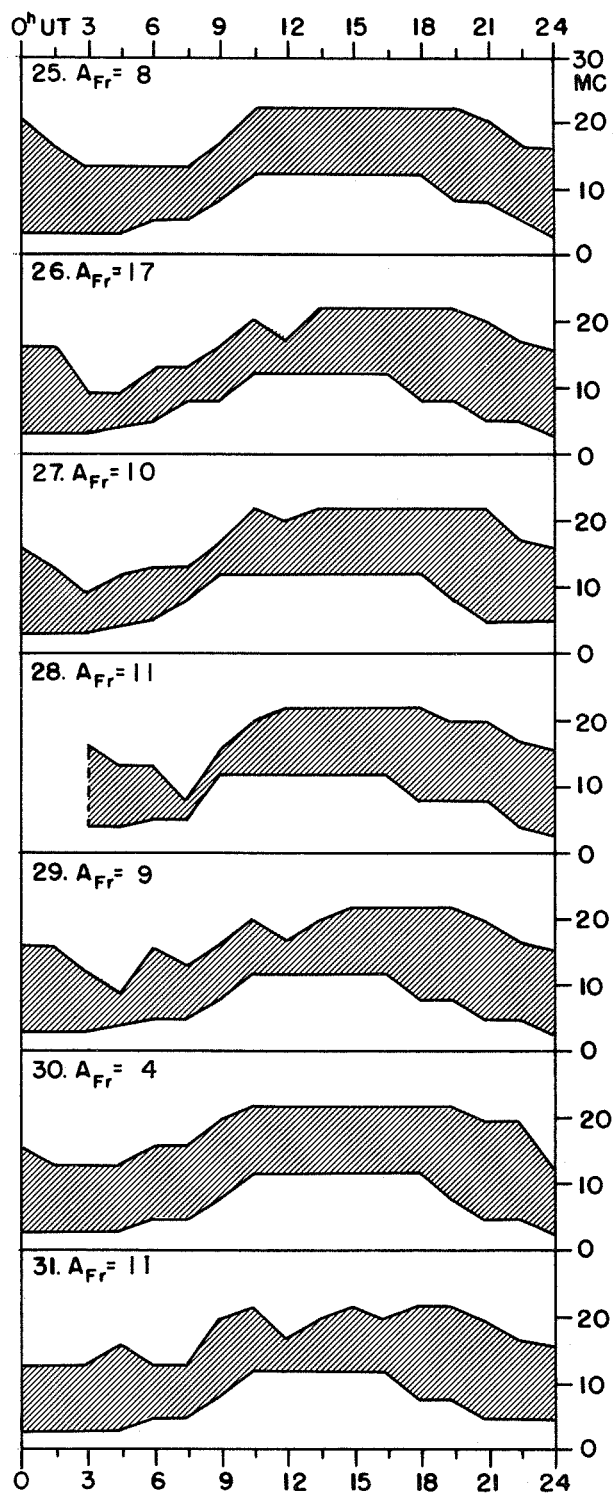
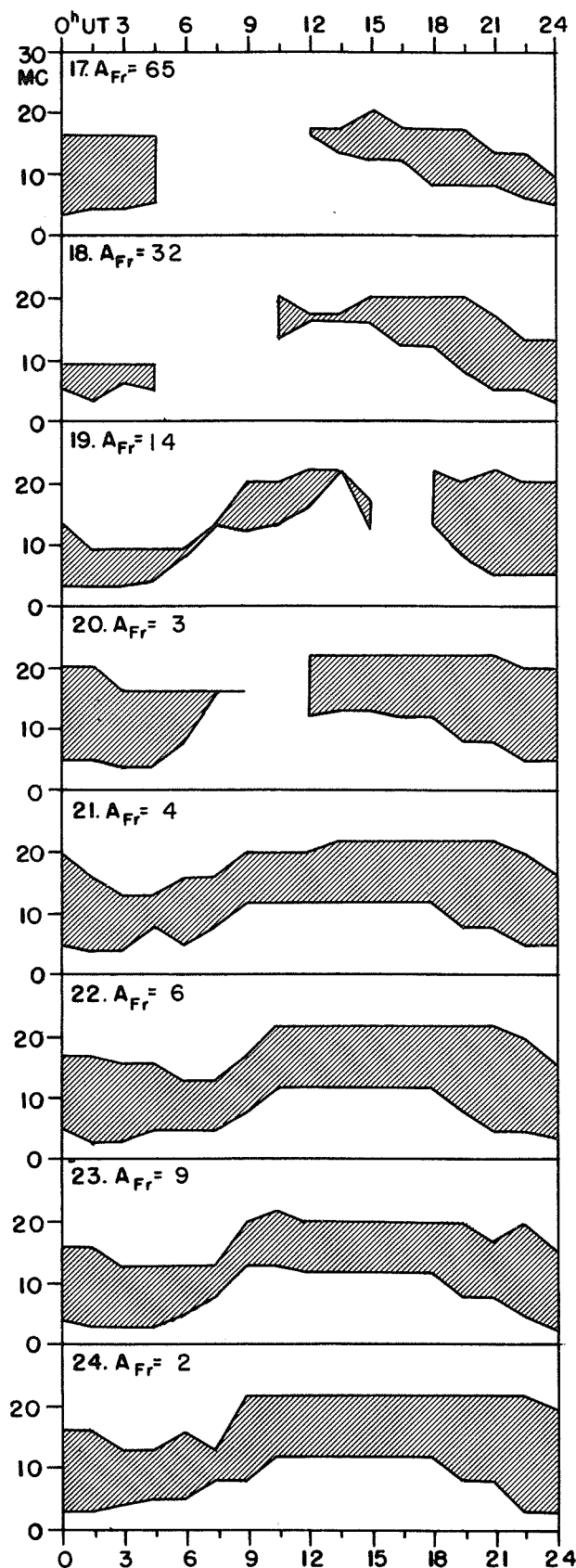
AUGUST 1970



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

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RADIO PROPAGATION QUALITY INDICES

Derived from observations of the transmission frequency range

August 1970

Date	USA - Germany		South America - Germany		East Asia - Germany	
	Day	Night	Day	Night	Day	Night
1	6.2	6.4	5.8	6.0	6.0	7.0
2	7.0	8.2	5.2	5.6	6.2	6.2
3	8.2	7.4	6.2	5.6	7.2	6.6
4	7.6	6.8	6.4	6.8	7.2	7.2
5	7.8	6.6	7.2	6.6	6.6	6.8
6	7.0	6.2	5.8	6.4	6.0	6.4
7	6.6	4.8	6.6	5.6	6.8	5.2
8	5.4	4.6	5.6	5.4	5.6	4.8
9	4.6	4.4	4.2	5.4	3.8	4.6
10	6.2	6.2	6.0	5.8	5.8	4.8
11	7.0	6.8	6.6	6.2	5.8	5.6
12	6.4	6.0	6.4	5.6	6.2	6.0
13	6.0	6.0	6.4	6.0	6.8	6.6
14	5.6	6.4	5.4	6.2	5.4	6.0
15	6.4	6.0	6.2	5.6	6.0	5.4
16	5.8	5.0	4.0	4.8	6.2	6.2
17	2.0	2.0	3.0	3.2	2.8	3.6
18	3.2	2.6	5.6	3.8	4.2	3.6
19	5.0	5.6	4.2	5.0	3.2	4.0
20	5.0	4.6	5.0	4.2	5.4	5.6
21	5.4	5.8	5.6	6.2	6.0	5.6
22	6.4	5.6	6.2	6.0	6.6	5.4
23	5.2	5.6	4.2	5.0	5.6	5.2
24	7.6	6.0	6.8	6.2	7.6	6.8
25	6.0	4.6	7.6	6.8	6.8	5.6
26	5.6	4.4	7.4	6.2	5.6	4.2
27	5.6	4.2	7.0	6.0	6.4	6.0
28	5.8	5.0	7.8	6.0	6.6	5.8
29	6.0	5.6	6.8	6.2	6.8	6.6
30	6.8	6.0	5.0	5.4	7.4	7.0
31	6.4	4.6	6.8	6.2	6.0	5.4