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ENVIRONMENTAL DATA SERVICE
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Solar - Geophysical Data

NO. 350 OCTOBER 1973

Part I (Prompt Reports)

DATA FOR
SEPTEMBER 1973
AUGUST 1973

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR - GEOPHYSICAL DATA

No. 350

Issued in two parts

Hope I. Leighton, Editor

J. Virginia Lincoln, Director
Solar - Terrestrial Data Services Division

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For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

SEPTEMBER 1973

	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400		01602	MAGSTORM ENDS 29/13XX SOLNIL N14E68 ERUPTIVE SIX QUIET
02	0400			SOLNIL N13E58 N06W32 ERUPTIVE NINE QUIET
03	0400		03603	SOLALERT S17E44 S08W10 ERUPTIVE EIGHT QUIET
04	0400			SOLNIL N14E28 N22W09 ERUPTIVE SEVEN QUIET
05	0400		05604	SOLALERT N14E17 S14W13 ERUPTIVE SIX QUIET
06	0400		06605	SOLALERT N14E03 S15W25 ERUPTIVE FIVE QUIET
			06606	MAGALERT 06/08
07	0400		07607	SOLALERT S15W39 N14W10 S12E18 ERUPTIVE FOUR QUIET
			07608	MAGALERT 07/08
	1155	NERA TENFLARE IN PROGRESS START 07/1154Z		
	1230	DARMSTADT SOFLARE 3B FLARE AT S16W46		
	1500	BOULDER PROTON EVENT 07/1233Z MAGNITUDE UNCERTAIN DUE TO LACK OF ATS-1 DATA. APPARENTLY 2-3 TIMES BACKGROUND AT GREATER THAN 25 MEV		
08	0400		08609	MAGALERT 08/12 MINOR
			08610	SOLALERT S14W52 S12E05 ERUPTIVE THREE QUIET
09	0400		09611	MAGALERT 10/12 MINOR S12W09 ERUPTIVE FOUR QUIET
	1025	BOULDER MAGSTORM BEGINS SUDDEN COMMENCEMENT AT 09/0907Z K-5 AT 09/1025Z		
10	0400		10612	MAGALERT 11/13 S13W23 S10W39 ERUPTIVE FOUR QUIET
11	0400		11613	MAGALERT 12/13 S09W52 ERUPTIVE TWO QUIET
12	0400		12614	MAGNIL S10W48 S09W67 ERUPTIVE ONE QUIET
13	0400			SOLNIL TWO QUIET
14	0400			SOLNIL TWO QUIET
15	0400			SOLNIL ONE QUIET
16	0400			SOLNIL TWO QUIET
17	0400		17615	MAGALERT 18/25 MINOR RECURRENCE THREE QUIET
18	0400		18616	MAGALERT 19/25 TWO QUIET
19	0400		19617	MAGALERT 20/25 ONE QUIET
20	0400		20618	MAGALERT 20/25 TWO QUIET
21	0400		21619	MAGALERT 21/25 FOUR QUIET
22	0400		22620	MAGALERT 23/25 MINOR RECURRENCE FOUR QUIET
23	0400		23621	MAGALERT 24/25 FOUR QUIET
	1105	BOULDER RECURRENT MINOR MAGSTORM IN PROGRESS 23/1105Z DISTURBANCE EXPECTED TO CONTINUE 48-72 HOURS MINOR		
24	0400		24622	MINOR MAGSTORM BEGINS GRADUALLY AT ABOUT 23/0100Z N05E28 ERUPTIVE THREE QUIET
25	0400		25623	MAGSTORM MINOR N14E21 N21E76 ERUPTIVE SIX QUIET
26	0400			SOLNIL N14E09 ERUPTIVE EIGHT QUIET
27	0400			SOLNIL N15W04 S14E78 ERUPTIVE NINE QUIET
28	0400		28624	MAGSTORM MINOR ENDS 26/1700Z SOLNIL N14W18 ERUPTIVE SEVEN QUIET
29	0400			SOLNIL SEVEN QUIET
30	0400			SOLNIL N15W45 ERUPTIVE SIX QUIET

RELATIVE SUNSPOT NUMBERS

ZURICH, R_z

	1972 FINAL			1973 PROVISIONAL								
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	75	40	45	7	40	65	24	8	26	36	89
2	65	67	31	53	17	38	79	46	8	25	28	129
3	73	49	28	55	22	35	93	64	16	29	21	135
4	73	30	24	60	21	32	93	77	14	24	28	127
5	67	23	21	72	41	22	75	92	7	32	34	108
6	57	19	18	83	32	32	75	68	16	44	40	84
7	54	8	24	66	34	38	76	82	37	46	42	77
8	52	7	29	60	53	50	71	52	34	44	40	72
9	34	14	42	70	60	53	68	30	28	34	38	75
10	30	12	53	55	61	67	65	25	35	30	27	62
11	34	30	61	52	59	69	62	26	60	23	23	42
12	23	33	64	32	80	92	46	18	58	14	0	27
13	15	30	67	35	83	79	41	7	52	15	0	0
14	8	27	69	15	85	78	37	7	51	9	0	0
15	14	21	71	10	74	73	35	25	46	16	0	8
16	34	25	66	11	54	64	29	33	41	9	0	33
17	30	32	71	27	36	52	16	34	34	22	0	20
18	28	28	58	42	28	44	15	41	18	36	7	16
19	44	42	49	47	18	34	32	42	38	23	7	8
20	60	58	54	60	30	23	42	32	46	8	7	30
21	69	65	67	62	31	20	45	52	75	8	15	39
22	78	69	59	62	25	30	67	53	61	14	10	48
23	85	79	57	60	33	37	72	47	48	0	17	58
24	94	77	48	50	38	29	73	57	48	9	22	63
25	105	65	43	39	48	27	67	64	47	14	28	82
26	111	57	39	27	37	23	67	46	43	8	38	82
27	110	55	34	8	36	32	67	51	38	9	37	83
28	104	61	26	14	36	43	60	32	39	10	47	80
29	89	47	25	7		46	54	23	51	17	56	75
30	98	43	29	16		50	42	21	33	11	64	71
31	93		37	13		56		17		22	82	
MEAN	61.3	41.6	45.3	42.2	42.1	45.4	57.6	41.5	37.6	20.4	25.6	60.8

1972 yearly mean = 68.9

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1972			1973								
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114.7*	129.9	91.1	93.9	88.6	99.5	115.0	111.9*	85.2	90.9	78.2	103.4
2	108.4*	121.8*	89.4	98.2	88.6	101.6*	118.1*	115.0*	83.1	93.1	78.1	116.3*
3	107.3	113.9	85.2	105.1*	93.1	97.8*	129.4	117.3	81.5	93.5	76.5	122.9
4	103.3	115.8	82.3	109.3*	94.1*	96.6	122.3	115.9*	81.0	94.9	77.6	121.5*
5	100.6	102.6	80.4	113.3	94.3	94.8	117.7	115.0*	82.5	97.9	76.6	121.6*
6	98.4	93.2	77.8	115.0	95.3*	98.9	112.7*	109.7	85.1	99.4	79.9	117.8
7	96.1	85.7	87.1	112.3	98.5	92.2	110.3	103.4	85.3	99.9	81.7	109.5*
8	97.2	82.5	91.6*	103.2	100.5	98.9*	121.0	100.0	87.4	97.6*	78.8	104.1
9	100.5	82.3	94.7*	103.7	100.9	104.7*	120.5	95.1	88.9	98.6*	78.4	101.8*
10	94.7	84.7	97.2*	103.8	102.1*	105.6*	115.5	90.9*	91.0	100.5	75.1	96.0*
11	93.5*	88.3	105.1*	102.8	101.2	113.4	110.3*	87.0	92.9	94.0	71.0	87.1
12	94.7	88.7	108.9	103.5	104.6*	114.5	130.4*	86.8	93.6	85.4	68.7	80.6
13	94.5	86.7	111.2*	100.9*	104.7*	118.9	99.4*	85.2	96.3	80.3	67.2	76.1
14	97.0	85.1	114.8*	96.2	105.6	114.0*	92.7*	89.3	97.7*	79.5	66.7	74.6
15	102.1*	86.5	116.1*	94.6	104.7	107.1*	89.5	90.1	98.2	78.7	65.3	74.3
16	106.2	89.6	110.2	93.8	98.7	106.9	85.0	89.5	95.2	79.5	66.7	75.5
17	112.1*	91.5	111.9	94.2	94.2	101.5	82.1	91.4	89.8	79.1	67.5	73.6
18	111.0	94.6	112.4	95.3	90.7	94.9	80.9	95.4	91.4	83.6	67.8	76.1
19	117.1*	99.7	113.2	94.8	88.9	96.7*	82.8	99.4	99.2	81.6	67.9	77.9
20	122.2	109.4	111.4	98.3	89.4	91.0	86.4	104.7*	105.4	79.5	69.1	82.8
21	132.8*	109.3*	113.4*	97.9	89.9	87.4	95.2	102.2	108.8	79.4	72.4*	85.4
22	141.7	110.9*	107.9*	98.5	89.7	90.3	105.0	103.1	109.4	77.6	72.4	89.6
23	151.2*	115.3*	106.2	97.2	91.4	87.1	109.2	99.6	108.8	78.6	73.6	93.5
24	156.5	115.4*	101.1	96.9	93.6*	89.4	109.0*	104.5	106.1	81.6	76.8	95.6
25	171.8	112.7	103.3*	95.6	97.2	90.0	109.2*	104.7	101.3	83.8	80.0	101.4
26	170.0*	108.6	97.7	95.3	95.6	88.6	110.0*	101.1	100.3	85.0	82.1	104.0
27	167.6*	102.3	97.6	93.4	98.2	92.0	111.6*	99.9	94.8	85.5	85.6	104.3
28	159.1*	97.5	91.9	91.7	100.9*	94.2	112.6	94.1	95.2	84.2	87.8	106.3
29	B.I.P.	92.7	92.8*	91.4		99.0	109.5*	93.3	95.1	89.5*	90.7	104.9
30	144.6*	95.1	92.0*	89.7		102.7	106.2*	90.8	94.1*	86.1	91.2	104.9*
31	140.1*		94.3	87.7		110.3		87.2		86.6	98.6	
MEAN	120.2	99.7	99.7	99.0	96.3	99.4	105.8	99.1	94.2	87.2	76.5	96.1

B.I.P. = burst in progress
* adjusted for burst

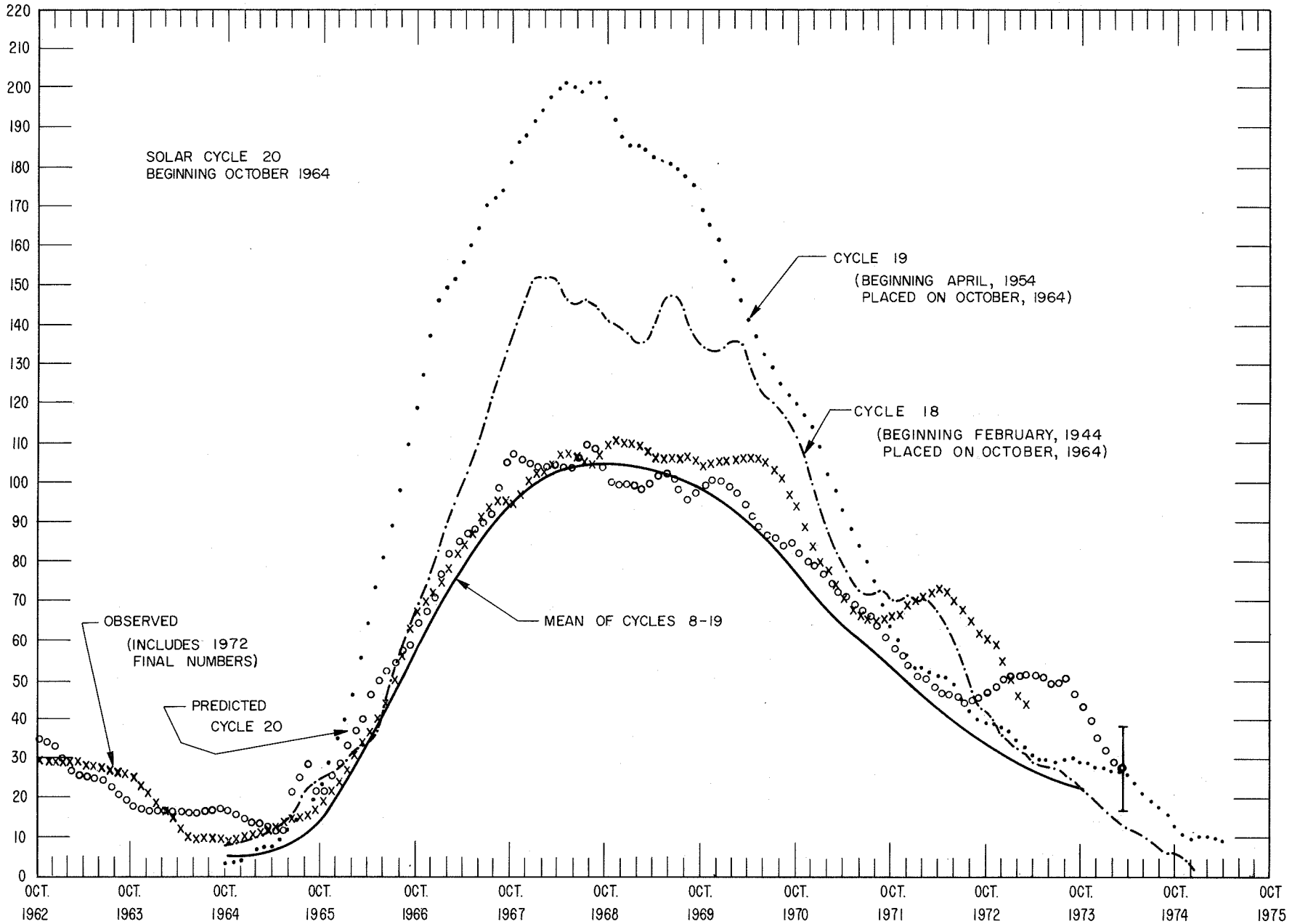
DAILY SOLAR INDICES

SEPTEMBER 1973

AUG. 1973	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_Z	$R_{A'}$		AFCRL 15400	AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 410	AFCRL 245
1	244	1	89	96	112.9	524	299	159	103.4	110.2	71.2	48.9	28.2	19.4
2	245	2	129	134	126.9*	540	312	175	116.3*	124.3	76.5	50.7	31.3	25.7
3	246	3	135	144	134.2	533	306	174	122.9	129.2	78.6	50.4	29.7	25.9
4	247	4	127	129	132.7*	533	313	175	121.5*	133.4	79.7	53.0	29.3	26.6
5	248	5	108	111	133.0*	533	304	171	121.6*	134.1	86.0	51.9	27.5	21.9
6	249	6	84	88	128.8	534	297	166	117.8	127.5	84.7	53.8	29.6	24.1
7	250	7	77	83	119.9*	535	290	160	109.5*	121.5	79.9	48.9	25.6	14.5
8	251	8	72	74	114.0	525	284	147	104.1	113.1	69.1	45.6	23.8	10.5
9	252	9	75	82	111.5*	528	280	148	101.8*	111.0	68.3	43.4	22.6	11.2
10	253	10	62	54	105.2*	532	281	150	96.0*	106.7	64.6	43.8	19.7	10.5
11	254	11	42	35	95.6	523	270	135	87.1	93.6	58.6	42.0	23.2	10.3
12	255	12	27	16	88.4	519	271	124	80.6	88.0	55.2	40.9	20.8	8.5
13	256	13	0	0	83.5	523	275	123	76.1	82.7	53.6	40.9	21.1	9.0
14	257	14	0	6	81.8	526	274	121	74.6	81.9	52.7	39.0	21.9	9.0
15	258	15	8	14	81.7	529	272	122	74.3	80.8	52.8	40.5	22.1	8.4
16	259	16	33	18	83.0	526	271	124	75.5	80.7	53.3	41.5	21.2	9.2
17	260	17	20	14	81.0	519	278	121	73.6	79.6	54.0	41.9	21.7	9.0
18	261	18	16	13	83.8	521	278	122	76.1	79.8	58.4	42.6	21.9	9.0
19	262	19	8	13	85.8	522	278	124	77.9	84.3	56.9	43.6	22.5	7.6
20	263	20	30	31	91.3	517	278	130	82.8	87.6	62.1	46.9	22.8	7.5
21	264	21	39	39	94.1	526	286	132	85.4	93.5	62.4	45.4	23.4	6.4
22	265	22	48	44	98.8	532	286	141	89.6	95.9	68.5	47.8	22.8	8.4
23	266	23	58	59	103.2	533	286	143	93.5	101.4	68.5	46.6	22.1	8.4
24	267	24	63	65	105.6	534	288	144	95.6	108.2	71.9	49.2	24.9	8.9
25	268	25	82	76	112.1	537	293	148	101.4	110.1	74.8	49.9	25.5	9.8
26	269	26	82	80	114.9	532	294	151	104.0	112.5	74.1	49.5	24.5	9.0
27	270	27	83	77	115.4	534	298	151	104.3	113.1	76.5	49.3	24.9	8.9
28	271	1	80	83	117.6	531	298	153	106.3	114.9	76.8	49.8	24.8	9.0
29	272	2	75	85	116.2	531	297	150	104.9	114.2	78.4	49.8	24.3	8.7
30	273	3	71	75	116.2*	536	298	146	104.9*	113.9	76.6	49.9	24.5	9.6
MEAN			60.8	61.3	105.6	529	288	144	96.1	104.2	68.2	46.6	24.3	12.2

* Corrected for burst.

Note: The values given for 2800 MHz adjusted to 1 A.U. contain a multiplier of .90 as recommended by Commission V of URSI.



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 20

MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1964										9.6	10.2	11.0
1965	11.7	12.0	12.5	13.6	14.6	15.0	15.5	16.4	17.4	19.7	22.3	24.5
1966	27.7	31.3	34.5	37.4	40.7	44.6	50.3	56.6	63.1	67.6	70.2	72.7
1967	75.0	78.8	82.2	84.6	87.4	91.3	94.1	95.3	95.3	95.0	97.1	100.6
1968	102.6	102.9	104.7	107.2	107.6	106.6	105.2	104.8	107.0	109.9	110.6	110.1
1969	110.0	109.6	108.0	106.4	106.2	106.1	105.8	106.4	105.4	104.1	104.6	104.9
1970	105.6	106.0	106.2	106.1	105.8	105.3	103.8	101.0	97.2	93.9	89.4	84.1
1971	80.4	77.8	74.4	70.9	68.1	66.7	65.4	64.6	65.8	66.2	66.8	69.4
1972	70.8	71.2	72.4	73.4	72.9	70.5	68.1	65.4	62.0	60.3	58.5	54.8
1973	50.3	45.8	43.6	42.0 (3)	40.7 (4)	39.0 (6)	37.7 (7)	36.9 (8)	35.9 (10)	34.3 (10)	32.6 (10)	31.0 (10)
1974	29.7 (10)	28.4 (11)	27.4 (11)	26.7 (12)	26.2 (12)	25.3 (12)	24.1 (12)	22.7 (12)	21.1 (11)	19.7 (11)	18.4 (12)	17.3 (12)
1975	16.5 (11)	15.5 (11)										

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 1972.

The predicted sunspot numbers are derived from a regression analysis based on cycles 8 through 19. Tests indicate that earlier cycles are from a different statistical population. From July 1968 - February 1970 a regression analysis based on cycles 1 through 19 was used because it had not then been proven that two populations exist.

SOLAR FLARES

PARTIAL LISTING

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

SEPTEMBER 1973

OBSERVATORY	OBSERVED UT DATE SEP	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
ATHN	01	0843E	0901	0845	N13	W05	.132		1.0	18D	SF	3	V		.66				F
ISTA	01	0844	0910D		N15	W04	.152	12504	1.1	26D	1N								
CRON	02	0359E	0505	0424	S18	E56	.872	12512	6.4	66D	1N		V		2.89				
MANI	02	0614	0632	0618	S17	E53	.845	12512	6.2	18	1N	2		0618	1.75	3.14			F
TEHR	02	0624E	0634	0624U	S18	E56	.872		6.5	10D	SN	4	V		.52				F
WEND	03	1608E	1644		N22	W04	.263	12515	3.4	36D	1N		P		5.16				
MCMA	03	1613	1644	1616	N24	W04	.296	12515	3.4	31	SN		C	1616	1.29	1.40			EL
MEUD	03	1614	1632	1616	N22	W03	.260		3.5	18	SB		C	1616	1.55	1.60			E
CANR	03	1615E	1625	1618	N22	W03	.260	12515	3.5	10D	1N		V	1618	2.27	2.20			
RAMY	03	1618E	1638	1618U	N23	W04	.280		3.4	20D	SN	2	V		1.65				F
TEHR	04	1127E	1133	1129	S14	E60	.893		9.0	6D	SN	4	V		.25				DE
CANR	04	1128	1157	1138	S13	E55	.850		8.6	29	SN		V		1.03				
CATA	04	1130	1140	1130	S12	E55	.848		8.6	10	SB	3		1130	.87	1.63		(219)	
UPIC	04	1132	1145		S11	E56	.854		8.7	13	SN		V	1134	1.05				
MEUD	04	1132	1143	1135	S15	E51	.821		8.3	11	SN		C	1135	.93	1.50			
CATA	04	1140	1210	1140	S14	E51	.818	12513	8.3	30	1B	3		1140	1.16	2.01		(257)	Z
WEND	04	1458E	1518		N12	E21	.362	12510	6.2	20D	1N		V		4.13				
MEUD	04	1459	1515	1504	N12	E18	.315		6.0	16	SN		C	1504	1.13	1.20			E
UPIC	04	1459	1514	1507	N11	E18	.312		6.0	15	SF		P	1507	1.26				
CANR	04	1459	1520	1503	N13	E17	.304		5.9	21	SB		V		1.96				
MCMA	04	1459	1503D		N10	E19	.325	12510	6.0	4D	SB		P	1502	.83	.90			EH
CATA	04	1500	1520	1505	N12	E13	.236		5.6	20	SB	3		1505	1.73	1.78		(257)	
CANR	05	0918	0951	0925	S17	W17	.492	12507	4.1	33	1N		V	0925	3.30	3.30			
CRON	05	0920E	0946		S17	W18	.501		4.0	26D	SN		V		1.34				
CATA	05	0920	0950	0925	S18	W19	.522	12507	4.0	30	1N	3		0925	1.73	2.03		(162)	
WEND	05	0924E	0940		S18	W23	.558	12507	3.7	16D	1N		V		5.16				
MEUD	06	0912	0930	0915	N05	W90	1.000	12511	30.6	18	1B		C	0915	.93				E
UPIC	06	0914E	0927	0916	N07	W90	1.000	12511	30.6	13D	1B		P	0916	.42				
CANR	06	1203	1302	1218	S15	W34	.648		4.0	59	SN		V	1218	1.55	1.80			
MEUD	06	1205	1240		S17	W34	.662		4.0	35	SN		C	1210	1.34	1.70			F
MCMA	06	1205	1300D	1215	S18	W34	.669	12507	4.0	55D	1N		C	1215	1.55	2.10			EJ
RAMY	06	1205	1250	1224	S16	W32	.633		4.1	45	SN	3	C		1.11				F
CATA	06	1210	1350	1220	S16	W39	.708	12507	3.6	100	1N	3		1220	2.90	4.10		(195)	
UPIC	06	1214E	1250U	1223	S16	W34	.655	12507	4.0	36U	1N		P	1223	2.31				
CANR	07	1130	1142D	1142	S18	W46	.787	12507	4.0	12D	1B		V	1142	2.78	3.80			
TEHR	07	1138	1340D	1202	S17	W46	.783	12507	4.0	122D	2B	4	C		7.94				H S
RAMY	07	1139	1336	1151	S18	W45	.778		4.1	117	SN	4	C		1.49				U H
RAMY	07			1159							2B				4.92				
ATHN	07	1140E	1250D	1143	S18	W46	.787		4.0	70D	SN	3	V		1.32				U Z
ATHN	07			1202							2B				5.61				U Z
MCMA	07	1140	1430	1208	S17	W47	.792	12507	4.0	170	2B		C	1208	4.13	7.00			FL
CATA	07	1140	1310	1200	S17	W46	.783	12507	4.0	90	2B	3		1200	4.92	7.91		(316)	
MEUD	07	1140	1215D		S18	W47	.797		4.0	35D	2N		C	1203	4.13	6.50			U
UPIC	07	1144E	1400	1211U	S17	W46	.783	12507	4.0	136D	2B		P	1211	6.52				U
WEND	07	1206E	1337		S16	W46	.779	12507	4.1	91D	3B		P		18.56				
HERS	07	1210E	1330	1210E	S18	W45	.778	12557	4.1	80D	2B		P	1211	7.28	11.20		84	EH
MANI	08	0235	0255	0240	S15	W52	.830	12507	4.2	20	1B	2		0240	1.96	3.38			H
CRON	08	0238	0240	0240	S14	W52	.827		4.2	2	SN		V	0240	.93				
TEHR	08	0238E	0248	0241	S16	W50	.816		4.4	10D	SB	2	V		.83				DE H
PALE	08	0242E	0250	0242	S13	W52	.824		4.2	8D	SB	3	C		.45				F
MEUD	08	0904	0908	0904	S17	W56	.870		4.2	4	SF		C	0904	.31	.60			D
UPIC	08	0905E	0909		S19	W59	.897	12507	4.0	4D	1F		P	0905	.63				
WEND	08	1215	1256		S11	W03	.317	12513	8.3	41	2N		P		6.19				
TEHR	08	1215E	1252	1217	S11	W04	.320		8.2	37D	SN	3	V		1.65				F
CATA	08	1215	1305	1220	S10	W05	.308		8.1	50	SB	3		1220	1.44	1.52		(204)	
CANR	08	1217	1220D	1220	S10	E01	.297	12513	8.6	3D	1N		V		2.17				
RAMY	08	1235E	1250D	1237U	S12	W03	.333		8.3	15D	SN	4	V		.72				DE
MCMA	08	1237E	1300D		S10	W05	.308	12513	8.2	23D	SF		P	1237	1.03	1.10			E
MEUD	08	1239E	1241D		S11	W02	.315	12513	8.4	2D	1F		C	1240	2.06	2.10			
RAMY	09	1843	1924	1848	S19	W83	.997	12507	3.6	41	1N	3	C						DE
PALE	09	1843E	1850	1845U	S19	W77	.985		4.0	7D	SF	1	C		.45				
PALE	10	0255	0315D	0259U	S10	W42	.710		7.0	20D	SB	2	C		1.34				F
MANI	10	0256	0323D	0301	S11	W42	.715	12520	7.0	27D	1N	2		0301	2.27	3.19			F
TEHR	10	0300E	0310D	0300U	S18	W43	.759		6.9	10D	SN	2	V		.21				F
TEHR	10	0300E	0310D	0300U	S09	W39	.671		7.2	10D	SN	2	V		.52				F
ATHN	11	0654	0729	0659	S12	W56	.856		7.1	35	SN	3	C		1.49				F
CRON	11	0654E	0734		S10	W54	.834		7.2	40D	SN		V		1.03				
CATA	11	0655	0735	0705	S12	W55	.848	12520	7.2	40	1B	1		0705	2.60	4.91		(219)	
TEHR	11	0655	0740	0704	S11	W53	.827		7.3	45	SB	3	V		.99				Z U

SOLAR FLARES

PARTIAL LISTING

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

SEPTEMBER 1973

OBSERVATORY	DATE SEP	OBSERVED UT START	OBSERVED UT END	OBSERVED UT MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION CENTRAL DISTANCE	LOCATION MCMATH PLAGE REGION	LOCATION CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	REMARKS
ISTA	11	0700E	0743D		S10	W55	.843		7.2	43D	SN								
CANR	11	0720	0747		S11	W55	.845		7.2	27	SN		V	0721	.83	1.36			
ATHN	11	0724	0738	0729	S12	W40	.697		8.3	14	SF	3	C		.33				DE
ISTA	11	0727	0824	0804	S11	W39	.681		8.4	57	SN								
ATHN	11	0753	0819	0800	S11	W41	.703		8.3	26	SN	3	C		.99				F
TEHR	11	0756	0824	0759	S11	W39	.681		8.4	28	SN	3	V		.66				DE
MEUD	11	0758	0820	0802	S12	W41	.708		8.3	22	SN		C	0802	1.24	1.70			E
CRON	11	0800	0821		S10	W41	.699		8.3	21	SF		V		.88				
CATA	11	0800	0835	0805	S12	W41	.708	12513	8.3	35	1B	3		0805	1.44	2.05		(204)	
MANI	14	0225	0258	0228	S13	W84	.997		7.8	33	SN	2		0228	.72	2.02			F
PALE	14	0226E	0244	0233U	S16	W85	.999	12513	7.7	18D	1N	2	V		1.03				F
CRON	14	0228	0335D	0335	S10	W78	.983		8.3	67D	SN		V	0335	.83				
CRON	14			0307										0307	.83				
TEHR	14	0304	0315D	0307	S13	W82	.994		8.0	11D	SB	3	C		.55				F
MANI	14	0305	0315	0307	S12	W85	.998	12513	7.8	10	1B	2		0307	1.55	4.42			F
PALE	24	0242	0256	0246	N22	E90	.999	12537	30.9	14	1N	2	C		.63				
PALE	25	0034	0132D	0053U	N29	E73	.950	12541	30.5	58D	1N	2	V		2.06				

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

Note: Catania and Capri-S express Maximum Intensities in percent of the local undisturbed chromosphere instead of percent of the local continuum. Parentheses are used to indicate this difference.

SOLAR FLARES

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

SEPTEMBER 1973

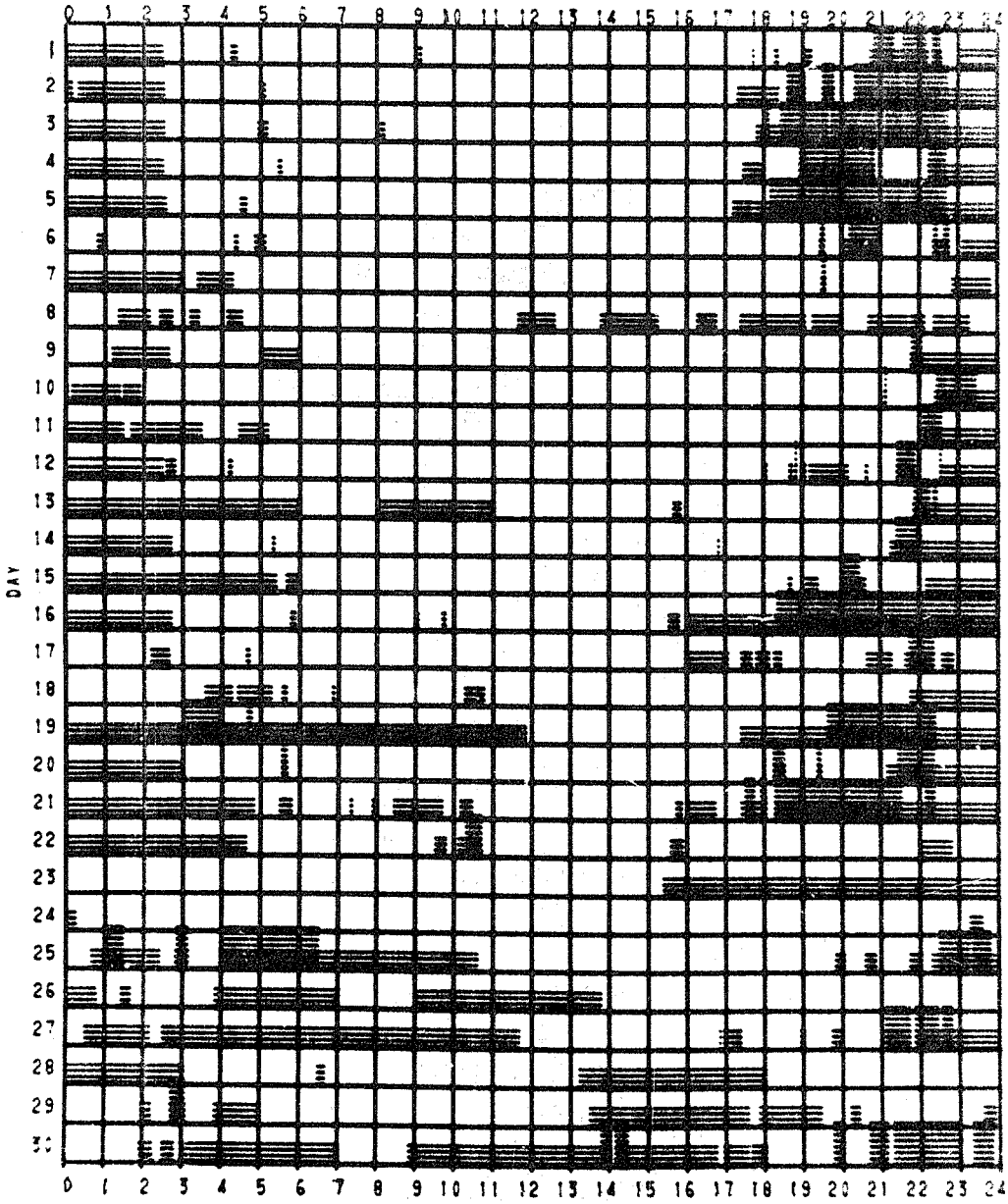
01 0035E N04 W20	01 0041E N14 E70	01 0041E N13 E73	01 0048E N14 E71	01 0125E N04 W21	01 0125E N04 W21
01 0205 N14 E72	01 0207E N14 E78	01 0537 N04 W25	01 0548 N15 E76	01 0549 N16 E70	01 0630E N05 W27
01 0639 S13 E71	01 0728E N05 W26	01 0744 N16 E66	01 0748E N15 E67	01 0749 N13 E66	01 0750 N14 E65
01 0750E N16 W71	01 0755 N13 E67	01 1046 N15 E10	01 1048E N13 W06	01 1048 N15 W02	01 1050 N15 W03
01 1313E S14 E64	01 1314 S16 E66	01 1347E N14 E65	01 1354 N13 E62	01 1430 S17 E30	01 1825 S18 E28
01 1828E S16 E25	01 2122E S17 E65	02 0044 S16 E62	02 0157E S17 E24	02 0223E S18 E57	02 0522 S18 E56
02 0522 S18 E56	02 0540E S18 E56	02 0712E S18 E54	02 0748E S18 E56	02 0749 S18 E56	02 0750E S17 E58
02 0750 S18 E55	02 0750E S18 E55	02 0751E S15 E53	02 0752 S08 E04	02 0753 S08 E01	02 0753 S09
02 0754 S08 E01	02 0754E S10 W00	02 0804E S10 W00	02 0811 S18 E58	02 0815 S18 E55	02 0818 S10 E00
02 0821 S10 W00	02 0826 S08 E01	02 0827 S09 W01	02 0947E S18 E53	02 0952E S18 E54	02 1018E S18 E54
02 1036E S12 E80	02 1036E S09 W01	02 1050 S15 E53	02 1121 S17 E52	02 1126E S18 E54	02 1233E S18 E54
02 1238 S18 E51	02 1343E S18 E50	02 1344 S17 E51	02 1345E S17 E50	02 1601 S16 E48	02 1620E N06 E90
02 1625 S17 E49	02 1626 S16 E50	02 1626 S16 E50	02 1904E S18 E47	02 1950E S16 E15	03 0028 S17 E44
03 0202E S18 E43	03 0300 S12 W43	03 0612 S18 E06	03 0751 S14 E10	03 0805 S15 E08	03 0818 S17 E41
03 0826E S17 E42	03 0830 S17 E40	03 1041E S17 E42	03 1042 S17 E38	03 1043 S17 E39	03 1045 S17 E37
03 1323 N22 W02	03 1500 S14 E64	03 2018E S13 E62	03 2124E N13 E28	03 2357E S17 E30	04 0022 N22 W09
04 0022 N15 E26	04 0036 S17 E32	04 0052E N13 E27	04 0140 S17 E30	04 0324E N13 E23	04 0943E N13 E18
04 0944 N13 E19	04 0945 N15 E19	04 0520 N13 E19	04 0524E N13 E22	04 0553 N13 E22	04 0600E N12 E22
04 0618E S18 E27	04 0705 N14 E20	04 0757 N14 E20	04 0804 N13 E20	04 0804 N14 E22	04 0805 N14 E20
04 0806 N16 E20	04 0806 N14 E20	04 0946 N13 E19	04 0950 N14 E19	04 0952E N14 E20	04 1123 S12 E55
04 1123 S10 E57	04 1125E S12 E57	04 1216 N12 E21	04 1455 S18 W13	04 1455 S17 W12	04 1455 S18 W14
04 1459 S18 W10	04 1506 S12 E53	04 1507 S12 E56	04 1543 S10 W12	04 1545 S12 W10	04 1627 N13 E14
04 1627 N15 E16	04 1628 N13 E16	04 1642 N13 E16	04 1708 S13 E51	05 0215 S16 W16	05 0231 S17 W18
05 0335 N17 E19	05 0336 N18 E18	05 0337 N19 E19	05 0436E S17 W19	05 0441E S19 W20	05 0448 N11 E11
05 0522E N13 E16	05 0630E S11 W73	05 0635 S18 W21	05 0912 N14 E13	05 0917 N11 E08	05 0920E N11 E08
05 0920 N12 E08	05 0924 N11 E05	05 1110 S19 W24	05 1111 S15 W18	05 1114 S17 W23	05 1115 S18 W23
05 1255 S19 W22	05 1256 S18 W22	05 1308 N15 E11	05 1313 S19 W22	05 1316E S15 W18	05 1438 N14 E10
05 1655 S19 W24	05 1655 S15 W24	05 2357E N15 W80	06 0106 N12 W01	06 0107E N11 W01	06 0107E N11 W01
06 0151E N14 W02	06 0152 N14 W03	06 0336 S17 W30	06 0337 S15 W28	06 0538 N13 W04	06 0625E N07 W90
06 0750 N12 W04	06 0750 N12 W04	06 0751E N12 W04	06 0751 N11 W04	06 0751 N13 W10	06 0755 N11 W04
06 1020E N06 W90	06 1046E N05 W90	06 1210E S13 W90	06 1245 S17 E28	06 1300 S15 E20	06 1351E N08 W90
06 1611 S20 W38	06 1618 S17 W36	06 1630E S16 W36	06 1634 S14 W36	06 1703E S13 E23	06 1816 S19 W08
06 1820E S17 E09	06 1833E S19 W08	06 2102E S18 E20	07 0001 S19 W09	07 0003 S17 W09	07 0207 S18 N43
07 0212 S20 W42	07 0426 N23 W50	07 0426 N22 W49	07 0428 N26 W49	07 0854E S15 W40	07 1411 N13 W17
07 1412E N15 W17	07 1602 S11 E09	07 1712E S17 E07	07 1715 S14 E07	07 1904E S11 W78	07 1916 N23 W57
07 1935E N26 W56	07 2045 S12 W49	07 2106 S13 E08	07 2226E S10 W80	07 2250E S18 W50	07 2250E N24 W58
07 2251E S15 W51	07 2356 S16 W50	08 0210 N14 W66	08 0245 N15 W66	08 0411 N22 W63	08 0745 S16 W56
08 0849 S17 W56	08 1818E N25 W73	08 1830 N17 W37	08 1944E S11 W07	08 2029 N27 W75	08 2202E N16 W74
08 2230 S11 W10	08 2324 S11 W11	09 0122 S10 W11	09 0141 S10 W11	09 0451E S18 W38	09 0500E S11 W14
09 0507E S12 W15	09 0510E S11 W15	09 0635 S18 W68	09 0636 S20 W71	09 0638 S16 W70	09 0644 S15 W78
09 0817 S11 W17	09 0818 S10 W18	09 0819 S10 W15	09 0820E S10 W17	09 0820E S09 W17	09 0850 S11 W31
09 0852 N11 W43	09 1015 S10 W18	09 1020 S10 W20	09 1126 S09 W31	09 1525E S08 W37	09 1526 S09 W34
09 1558 N23 W85	09 2051E S19 W85	09 2053E S17 W79	09 2058E S19 W83	09 2103 S09 W40	09 2118 N23 W82
09 2204E S11 W37	09 2205E S11 W39	09 2215E N21 W88	10 0022 S19 W42	10 0026 S11 W38	10 0129 S11 W40
10 0223 S11 W41	10 0223 S10 W41	10 0229 S17 W45	10 0229 S17 W45	10 0239 S19 W43	10 0821 S10 W43
10 0826E S12 W41	10 1136 S09 W47	10 1140 S11 W44	10 1143 S12 W45	10 1150 N23 W90	10 1209 S10 W31
10 1212 S10 W32	10 1450 S10 W49	10 1610E S18 W90	10 1843 S11 W32	10 1844E S10 W32	10 2014 S11 W49
10 2014 S10 W49	10 2023 S10 W33	10 2024 S10 W34	11 1126E S12 W42	11 1245E S12 W39	11 1246 S13 W42
11 1445 S10 W45	11 1552 S12 W44	11 1557 S13 W45	11 1650 S11 W45	11 2110 S10 W49	11 2110 S10 W50
12 0420 S12 W64	12 1049 S13 W59	12 1616 S15 W57	12 1819E S10 W78	12 2341E S12 W74	13 0457 S13 W66
13 0646E S12 W66	13 0745E S11 W83	13 0932E S13 W66	13 0935 S12 W67	13 1041 S13 W68	13 1042 S11 W73
13 1231 S12 W71	13 1908 S08 W78	14 1322 S12 W90	14 1416 S12 W90	15 2244E S09 E53	16 0435 S13 E51
16 0717 N16 E65	16 1228 N13 W22	17 0143 S09 E36	17 0150 S10 E37	17 0151E S10 E37	18 0438E N22 E86
18 1956E N17 E35	19 0616E N13 E28	19 1046 N12 E90	21 1034 N12 E69	21 1035 N12 E65	21 1035 N13 E63
21 1041E N12 E71	21 1342 N13 E68	22 0307 N15 E61	22 0353 S16 W17	22 0654E N15 W14	22 0920E N16 W16
22 1318 N16 E52	22 2109 N16 E50	23 0935 N04 E37	23 0940 N04 E35	23 1220E N05 E33	23 1252 N05 E35
23 1503 N05 E33	23 1514 N04 E33	23 1747 S15 E35	23 1748 S14 E30	23 1759E S12 E32	23 1828 N12 E40
23 1910E N04 E37	24 0245 N19 W35	24 0447 N12 E33	24 0448E N10 E35	24 0547E N13 E38	24 0624 N15 E32
24 0630 N15 E90	24 0639 N13 E39	24 0655E N13 E37	24 0655E N14 E36	24 0655 N14 E33	24 0715E N13 E31
24 1139E N13 E34	24 1240 N14 E29	24 1754 N03 W06	24 1758E N05 W04	25 0653 S12 E06	25 1716E N04 W16
25 1716 N05 W15	25 1717 N13 E10	25 1812E S14 E80	25 1905E N13 E12	25 2025E N06 W16	26 0141E N03 W21
26 0353 N05 E04	26 0640E N04 W23	26 0907 N07 W29	26 1905E N13 E12	26 2000 S16 E78	26 2025E N06 W16
26 2044 N07 W36	26 2108 N16 E03	27 0012 N17 E01	27 0022E N16 E01	27 0303 N17 W08	27 0851 N12 W12
27 0851 N14 W14	27 0855E N12 W12	27 1107 S13 E48	27 1108 S16 E48	27 1110 S15 E47	27 1155 S15 E72
27 1157 S12 E69	27 1339 S11 E90	28 0746 S14 E38	28 1723 N07 W58	28 1910 S16 E30	28 1940 N17 W29
29 0448E S15 E57	29 1511E N15 W40	29 1555 N13 W37	29 1555 N13 W42	29 1705E N16 E51	29 1852E N13 W42
29 1852E N02 W50	29 1942 S16 E40	29 2108 N15 W45	29 2357E N16 E47	30 0015 N15 W42	30 0038 N14 W43
30 0336E N16 E47	30 0536 N08 W50	30 0606 N14 W45	30 0659 N13 W50	30 0726E S14 E13	30 0948 N11 W54
30 1123 N11 W55	30 1145 N17 E39	30 1421E S13 E33	30 1431E S12 E30	30 1517 S14 E07	30 1521E S12 E10
30 1804E S16 E03	30 2317 S15 E01				

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

SEPTEMBER 1973

HOUR–UT



Observatories included in total patrol:

Athenes	Catania	Istanboul	Meudon	Tehran
Bucharest	Gran Canaria	Manila	Palehua	Upice
Carnarvon	Herstmonceux	McMath-Hulbert	Ramey	Wendelstein

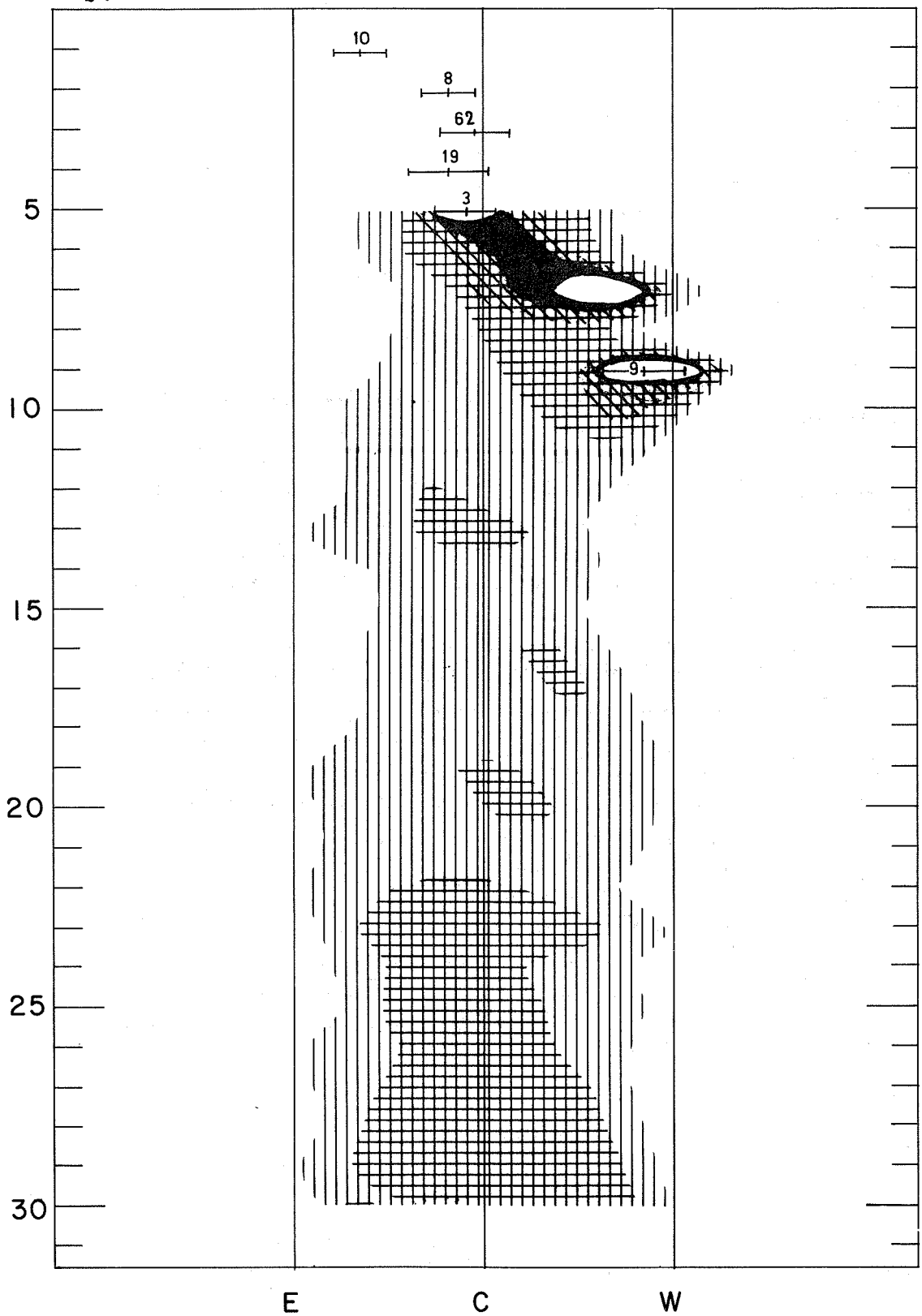
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

14
Sep 73

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

SEPTEMBER 1973

Nançay 169 MHz

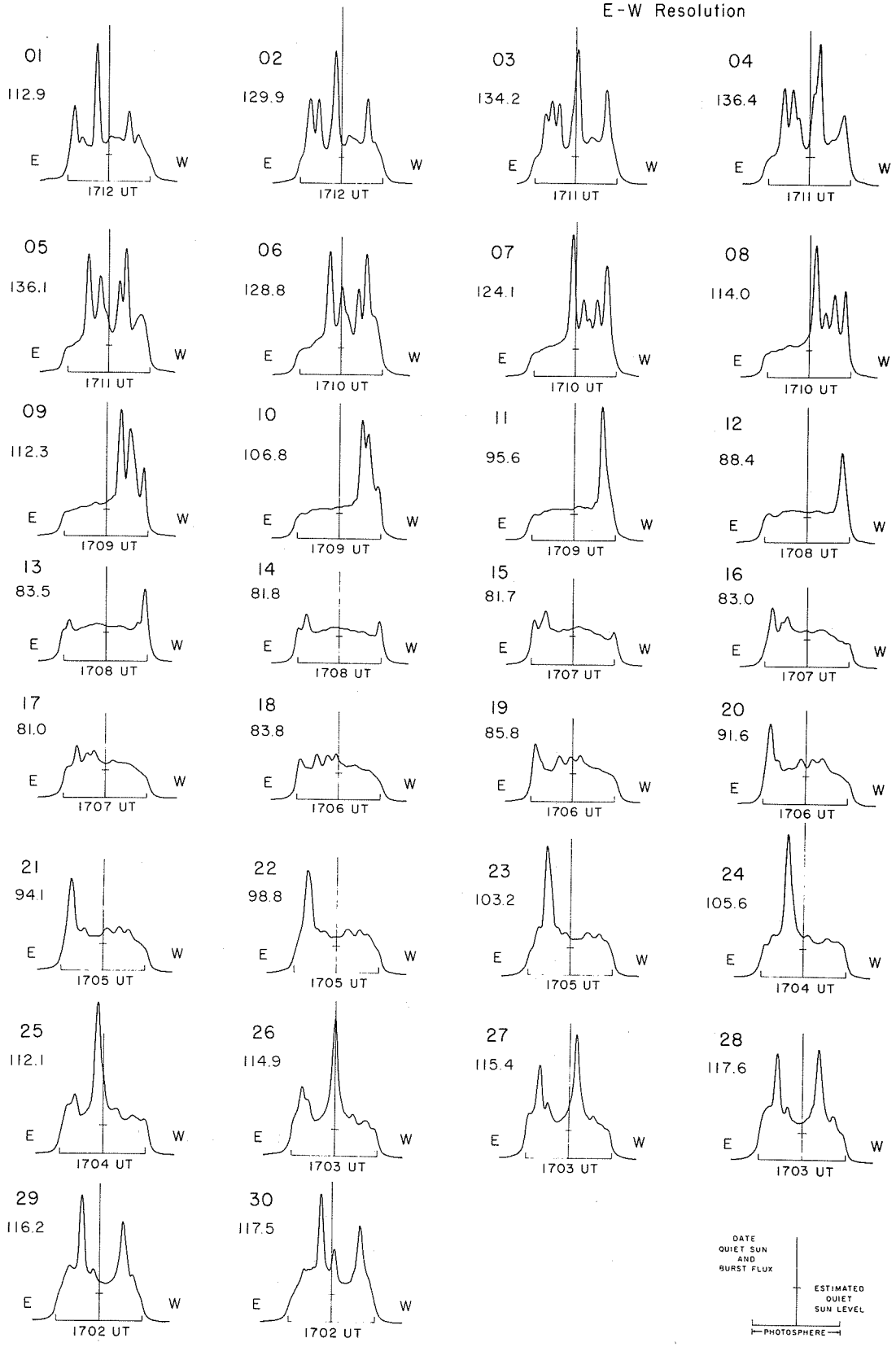


EAST-WEST SOLAR SCANS

September 1973

ALGONQUIN RADIO OBSERVATORY

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



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1973

SEP. 1973	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$ PEAK	MEAN	INT	REMARKS
1	2800 OTTA	24	1300		7	2.0			
	2800 OTTA	24	1307		128	2.0			
	8800 SGMR	1	1428.8	1429.2	1	9.0	3.0		
	2800 OTTA	24	1515		15	1.0			
	2800 OTTA	24	1530		117	1.0			
	2800 OTTA	24	1712		48	2.0			
	2800 OTTA	24	1800		165	2.0			
	8800 SGMR	22	1823	1823.9	10.6	10.4	2.6		
	2800 OTTA	24	2045		45	2.2			
	2800 OTTA	24	2130		260 D	2.2			
	2695 PENT	20	2255	2325	50	1.2	0.6		
2	2800 OTTA	24	1112		18	3.8			
	2800 OTTA	24	1140		110	3.8			
	2800 OTTA	27	1143		52	2.0			
	2800 OTTA	24	1330		25	2.0			
	2800 OTTA	24	1355		70	2.0			
	2800 OTTA	25	1505		85	1.0			
	2800 OTTA	27	1505		85	3.0			
	2800 OTTA	25	1630		270	1.0			
	8800 SGMR	3	1600.6	1601	4.7	10.3	4.0		
	2800 OTTA	23	1635	1910	235	5.8	3.0		
	8800 SGMR	1	1807.5	1808	3.3	8.2	3.8		
	2695 SGMR	1	1807.4	1808	2.7	3.1	1.5		
	2800 OTTA	1	1807.5	1808	1.5	3.0	1.5		
	2800 OTTA	45	1935	1938	7	8.0	2.6		
	2695 BOUL	3	1937.5	1938	1	5.0	2.0		
	2800 OTTA	20	2105	2210	145	3.8	1.9		
3	2695 CANR	3	1043	1043.5	1	5.0	2.0		
	8800 SGMR	20	1458.4	1505.9	23.3	14.2	7.0		
	8800 SGMR	22	1610.6	1615.7	35.1	31.1	15.2		
	2695 SGMR	22	1610.5	1614.1	34.1	11.7	5.0		
	2800 OTTA	21	1612.8	1615	77	7.6	2.0		
	4995 CANR	3	1613	1615.5	7.5	14.0	5.0		
	2800 OTTA	1	1613.5	1614	1	4.6	2.4		
	2695 BOUL	3	1614.5	1615.5	11.5	9.0	3.0		
	2695 CANR	45	1614	1617	15.5	8.0	2.0		
	2800 OTTA	1	2122.5	2123.5	3	7.2	2.0		
	2695 BOUL	3	2124	2125	2	8.0	2.0		
	2695 PENT	2	2334.5	2335	1.5	4.0	2.0		
4	2695 PENT	26	0035		20	2.3			
	2695 CRON	45	0051.5	0054	4	13.0	4.0		
	2695 PENT	46	0051	0053	6	14.4	8.2		
	2695 MANI	4	0052.2	0054.4	6.5	17.6	6.4		
	8800 MANI	4	0053.2	0054.1	3.1	10.4	1.7		
	2695 CANR	45	0946	0948.5	10.5	61.0	18.0		
	4995 CANR	4	0946.5	0948	4	42.0	14.0		
	2695 CRON	4	0947	0949	2.5	29.0	8.0		
	4995 CANR	45	1457.5	1501.5	11	12.0	3.0		
	2695 SGMR	22	1458.3	1501.1	23.7	18.6	7.5		
	2800 OTTA	21	1458	1504	32	6.0	2.6		
	2800 OTTA	1	1458.5	1459	1	2.0	0.8		
	2695 CANR	45	1459	1504.5	10	22.0	5.0		
	2800 OTTA	46	1500.3	1501.3	3	17.8	7.4		
	2695 BOUL	45	1501	1502.5	7	17.0	5.0		
	2800 OTTA	4	1504	1504.2	.8	14.0	7.0		
	2800 OTTA	29	1504.8		1.5	3.8			
	8800 SGMR	20	1538.8	1549.9	44.8	8.6	4.3		
	2800 OTTA	21	1538	1549	170	9.0	4.0		
	2695 SGMR	20	1539.5	1549.7	47.9	10.8	5.4		
	2695 BOUL	21	1545.5	1550.5	18	8.0	2.0		
	2695 CANR	21	1546.5	1548.5	21.5	6.0	1.0		
	2695 SGMR	1	1627.4	1627.7	.9	2.2	.7		
	2695 SGMR	20	1628.3	1635.1	31.7	7.6	2.9		
	2695 CANR	3	1632.5	1635.5	6	6.0	2.0		
	4995 CANR	21	1633	1636.5	10.5	9.0	3.0		
	2800 OTTA	2	1633	1634.2	8	3.8	1.3		
	2695 BOUL	3	1634	1636	7	5.0	2.0		
	2695 BOUL	21	1711.5	1713	7	5.0	1.0		
	2800 OTTA	1	1711.3	1711.5	.7	3.8	1.9		
	2800 OTTA	20	1912	1923	23	2.4	1.2		
	2800 OTTA	20	1940	2010	65	2.4	1.2		
	2800 OTTA	20	2110	2120	50	2.4	1.2		
	2695 PENT	20	2220	2400	125	2.6	1.3		
5	2695 BOUL	3	0015	0016	2.5	4.0	1.0		
	2695 CANR	3	0914	0922.5	15	8.0	2.0		
	2695 CRON	3	0916	0922.5	16	7.0	2.0		
	4995 CANR	3	0918	0922	10	16.0	5.0		
	2695 CANR	21	1028.5	1033	11	5.0	1.0		
	4995 CANR	3	1028.5	1031	4	5.0	1.0		
	2800 OTTA	21	1240	1258	225	4.4	2.2		
	8800 SGMR	20	1247	1315	47.6	7.3	3.6		
	2695 SGMR	20	1254.4	1308.8	42.2	3.1	1.5		
	4995 CANR	45	1313.5	1317.5	12.5	11.0	3.0		
	2800 OTTA	20	1313	1320	25	2.4	1.4		
	2695 CANR	3	1314.5	1315.5	1.5	2.0	1.0		
	2800 OTTA	20	1525	1530	23	1.4	0.7		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1973

SEP. 1973	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	MEAN	INT	REMARKS
	2800 OTTA	20	1640	1725	105	3.6	2.0		
	4995 CANR	45	1655	1657	11.5	8.0	2.0		
	2695 SGMR	4	1827.9	1830.2	9.5	38.0	15.0		
	4995 CANR	3	1827.5	1830	5.5	36.0	10.0		
	8800 SGMR	4	1828.3	1830.3	12.5	31.4	13.0		
	2800 OTTA	4	1828	1830.3	5	43.0	19.0		
	2695 CANR	45	1830	1833	7	42.0	11.0		
	2800 OTTA	29	1833		8	3.2	1.6		
	2800 OTTA	31	1840	1855	60	-2.4	-1.2		
	2800 OTTA	21	2000	2010	80	8.8	2.9		
	2695 PENT	1	2003.5	2005.5	4	4.4	2.0		
	2695 BOUL	45	2004	2009.5	13	6.0	2.0		
	2800 OTTA	26	2125		20	2.4			
	2695 PENT	20	2305	2350	100	3.2	1.7		
6	2695 CRON	45	0751	0752.5	8.5	7.0	2.0		
	2695 CANR	3	0752.5	0753.5	2.5	5.0	2.0		
	2695 CRON	3	0911.5	0912.5	2	6.0	2.0		
	2695 CANR	3	0912.5	0914	2.5	6.0	2.0		
	4995 CANR	3	0912.5	0913.5	2.5	12.0	4.0		
	2695 CRON	8	0917.5	0918	1.5	16.0	6.0		
	2695 CANR	45	0920	0921.5	5.5	18.0	6.0		
	2800 OTTA	27	1150		260	4.8			
	2800 OTTA	20	1241	1243.5	14	2.4	1.2		
	2695 CANR	45	1242	1244	6.5	4.0	1.0		
	2800 OTTA	20	1300	1304	10	2.0	1.0		
	2695 CANR	3	1302	1304	3.5	2.0	1.0		
	2800 OTTA	21	1622	1640	30	2.2	1.1		
	2695 BOUL	3	1624.5	1626.5	3	4.0	1.0		
	2800 OTTA	1	1625.5	1626	1.5	2.0	1.0		
	2800 OTTA	20	1700	1715	70	2.0	1.0		
	2800 OTTA	22	1815	1845	128	4.4	2.8		
	2800 OTTA	20	2030	2110	60	2.0	1.0		
	2695 PENT	20	2300	2307	25	3.0	1.5		
7	2695 PENT	27	0000		70	2.4			
	2695 CRON	3	0208.5	0214.5	13	5.0	2.0		
	4995 CANR	45	1129	1201.5	96	167.0	68.0		
	2800 OTTA	46	1138	1143.5	7	18.2	9.1		
	8800 SGMR	23	1139.3	1153.6	90.2	32.2	16.1		
	2695 SGMR	23	1139	1143.8	94	27.3	13.7		
	2695 CANR	45	1140	1201.5	90	232.0	70.0		
	2800 OTTA	30	1145		555	9.8	4.9		
	2800 OTTA	28	1148.5	1153.5	6.2	23.0	11.5		
	8800 SGMR	46	1155	1156.3	51.3	219.8	53.1		
	8800 SGMR	46		1200.1		268.3			
	2695 SGMR	46	1154.6	1156.4	24.1	283.8	78.5		
	2695 SGMR	46		1200.1		296.2			
	2800 OTTA	46	1154.7	1200	27.3	325.0	116.0		
	2800 OTTA	29	1222		190	11.4	6.2		
	2800 OTTA	21	1600	1610	60	2.2	1.2		
	2695 BOUL	3	1604	1605.5	3.5	5.0	2.0		
	2800 OTTA	1	1604	1605	3	2.2	1.1		
	2695 CANR	3	1605.5	1606	1.5	3.0	1.0		
	2800 OTTA	22	1705	1720	45	2.6	1.3		
	2800 OTTA	21	1835	1925	80	2.6	1.3		
	2800 OTTA	1	1914.8	1916	4	1.2	0.6		
	2800 OTTA	23	2158	2235	145	3.0	1.7		
	2695 BOUL	21	2249.5	2250	7.5	6.0	2.0		
	2695 PENT	20	2250	2253	10	3.0	2.5		
8	2800 OTTA	21	1205	1238	165	7.4	2.5		
	2800 OTTA	1	1215.5	1218	3.5	5.4	3.0		
	2695 CANR	3	1218	1219	2	5.0	2.0		
	2800 OTTA	29	1219		14	2.8	1.4		
	2800 OTTA	26	1900		25	2.2			
	2695 PENT	27	2135		170	1.8			
9	2800 OTTA	22	1657	1706	45	2.0	1.0		
	2800 OTTA	27	1800		140	2.0			
	2800 OTTA	20	2116	2118	14	3.0	1.5		
	2695 BOUL	3	2117.5	2118.5	7	4.0	1.0		
	2800 OTTA	21	2144	2146.5	22	4.0	1.4		
	2695 BOUL	3	2145	2148	8	16.0	6.0		
	2800 OTTA	3	2147	2147.2	2	13.2	6.6		
10	8800 MANI	4	0228 E	0230.3	13.5D	84.0U	27.9D		
	2695 MANI	4	0228 E	0230.4	10.7D	61.0U	22.1D		
	2695 MANI	2	0253.4U	0257.2U	7.4U	9.2U	1.8U		
	8800 MANI	4	0254.4	0256	6.4	18.6	5.6		
	2800 OTTA	27	1130		205	5.0			
	2800 OTTA	32	1500	1540	60	-3.4	-1.7		
	2800 OTTA	20	1625	1640	75	2.0	1.1		
	2800 OTTA	27	1800		70	1.0			
	2695 SGMR	1	1843.8	1844.6	3.4	6.8	2.1		
	2800 OTTA	1	1844	1844.5	2	3.2	1.6		
	2695 BOUL	3	1944.5	1945.5	5	5.0	2.0		
	2800 OTTA	23	1955	2015	75	2.0	1.0		
	2800 OTTA	20	2022	2024.5	20	3.0	1.5		
	2800 OTTA	27	2125		125	1.8			

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1973

SEP. 1973	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$ PEAK	MEAN	INT	REMARKS
11	2695 MANI	40	0648.2	0703.7	18.5	17.9	5.1		
	2695 CRON	45	0649.5	0602	14.5	14.0	4.0		
	8800 MANI	4	0651.6	0657.9	14.1	19.2	8.0		
	2800 OTTA	27	1420		120	2.0			
	2695 SGMR	1	1653.2	1653.5	2	5.9	1.8		
	2800 OTTA	1	1653.2	1653.3	1	3.6	1.2		
	2800 OTTA	21	1830	2030	275	5.0	2.5		
	2800 OTTA	21	2110.7	2112	35	2.0	1.0		
	2800 OTTA	1	2110.7	2111.2	.8	1.8	0.9		
	2695 PENT	1	2252	2252.1	1	1.4	0.7		
12	2800 OTTA	26	1528		60	1.7			
	2695 PENT	22	2305	2350	135	3.8	1.6		
13	2800 OTTA	20	1310	1322	45	1.4	0.7		
	2695 BOUL	45	1505.5	1512	10	6.0	2.0		
	2800 OTTA	21	1505	1507	60	2.0	1.0		
	2695 CANR	45	1506	1511.5	14	6.0	2.0		
	2800 OTTA	1	1509	1511.5	5	2.8	1.4		
14	2695 MANI	3	0228.2	0228.8	3	10.0	2.7		
	2695 CRON	3	0228	0229	7.5	8.0	3.0		
	2800 OTTA	27	1250		150	1.4			
16	2695 BOUL	3	0026.5	0028	2.5	4.0	1.0		
18	2695 PENT	20	2240	2345	85	1.2	0.6		
21	2695 CANR	3	0729.5	0733.5	8.5	4.0	1.0		
	4995 CANR	3	0730	0733.5	6	9.0	3.0		
22	2695 PENT	2	0012	0014	3	2.0	1.2		
23	2800 OTTA	22	1555	1625	60	1.8	0.9		
	2800 OTTA	22	1715	1805	75	2.2	1.1		
24	2800 OTTA	27	1245		125	1.8	1.2		
	2800 OTTA	24	1540		35	2.0			
	2800 OTTA	24	1615		240	2.0			
	2800 OTTA	22	1732	1810	83	2.0	0.9		
	2695 CANR	3	1820	1822	3.5	14.0	5.0		
	4995 CANR	3	1820	1821.5	4	14.0	5.0		
	2800 OTTA	24	2015		140	1.8			
	2800 OTTA	24	2235		150 D	1.8			
25	2695 CRON	3	0158.5	0159.5	3.5	5.0	2.0		
	2800 OTTA	27	1520		360	1.0			
	2695 SGMR	2	1604.6	1604.9	.7	3.0	.9		
	2800 OTTA	20	1806	1811	24	2.2	1.1		
26	2800 OTTA	22	1705	1720	45	1.2	0.7		
	2800 OTTA	24	2105		10	1.4			
	2800 OTTA	24	2115		240 D	1.4			
27	2695 PENT	20	2223	2245	40	1.8	0.9		
29	2800 OTTA	20	1405	1420	75	2.4	1.2		
	2800 OTTA	22	1540	1605	65	2.0	1.0		
	2695 BOUL	3	1758	1759.5	5.5	4.0	1.0		
30	2800 OTTA	21	1420	1445	90	3.4	2.0		
	2800 OTTA	21	1517	1522	15	1.6	0.8		
	2800 OTTA	1	1517	1518	2	.8	0.4		
	2800 OTTA	20	1602	1710	120	2.0	1.0		
	2800 OTTA	20	1855	1945	125	2.0	1.0		
	2695 PENT	1	2318	2319	2	1.8	0.9		

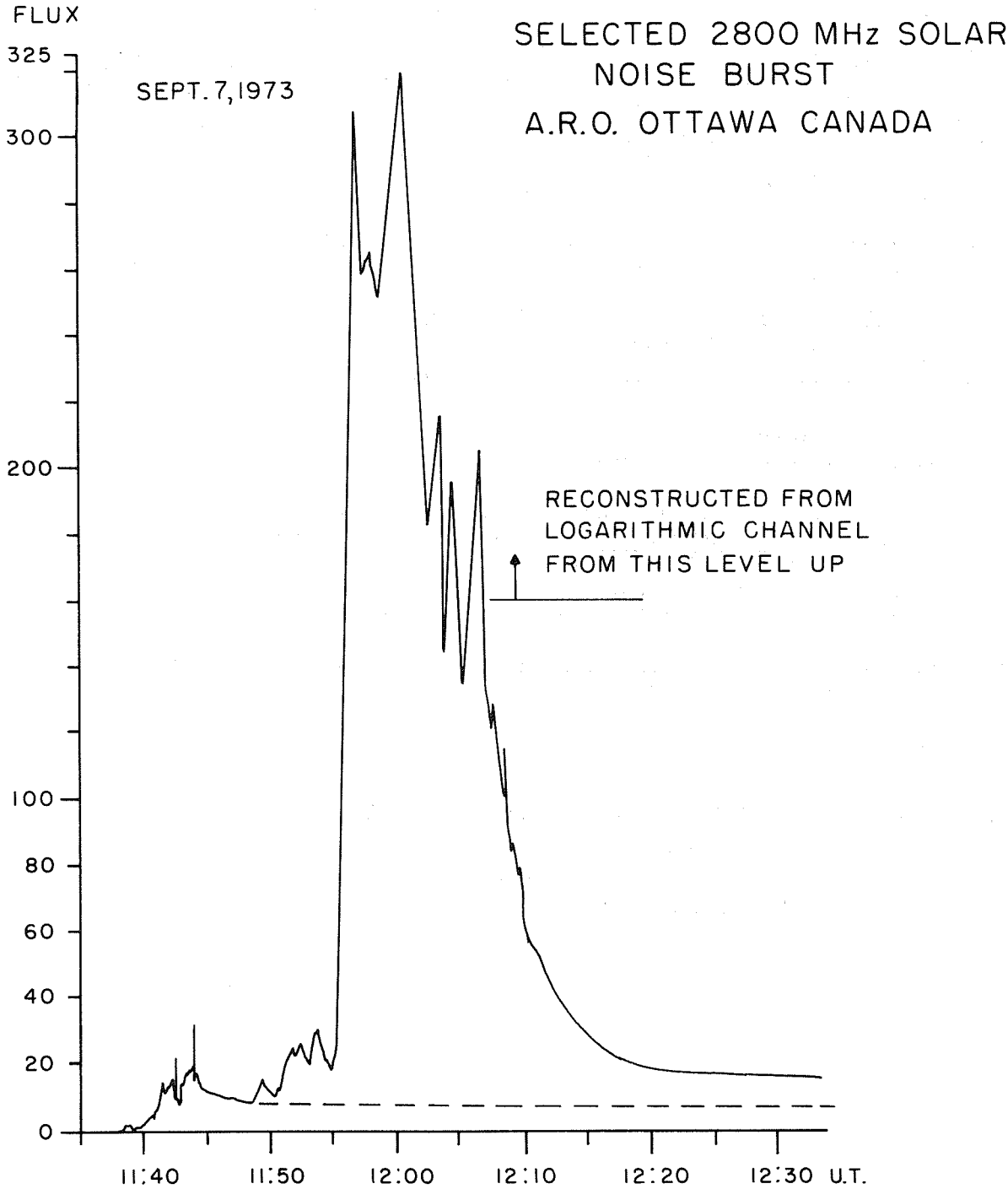
Observatories:

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

Explanation of Type Code:

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

SELECTED SOLAR NOISE BURST



PIONEER VI

SEPTEMBER 1973

Date Sep. 1973	Time (UT)	ESP (°)	Solar Wind[1]		Cosmic Ray Protons[2] (particles/sec)		
			U_H^+ (km/sec)	TAU (Days)	0.6-13 Mev*	13-175 Mev**	>175 Mev
1	0100	-119.3	416	-8.83	.45	.247	.85
7	2000 2400	-119.3	506 448	-8.84	13.6 22.5	.24 .343	.938 .914
19	1000 1400	-119.4	448 448	-8.82			

[1] Wolfe - NASA/ARC
[2] Simpson - University of Chicago

* 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/nucleons.
Q used to indicate that a rate is at its quiescent level.

Note: The notes published with the March 1972 data continue to apply to the current data.

ESP = Earth-Sun Probe Angle.

Note: Pioneer 6/7 Radial Alignment Occurred at 0600 UT 20 Sept. 1973 with

$R_6 = 1.445 \times 10^8$ km

$R_7 = 1.683 \times 10^8$ km

$ESP_{6/7} = -119.4°$

PIONEER VIII

SEPTEMBER 1973

DATE Sep. 1973	TIME (UT)	ESP (°)	SOLAR WIND[1] U_{H^+} (km/sec)	N_{H^+} (H^+/cc)	T_{H^+} (x10⁶°K)	TAU (Days)	IP E-FIELD[2] 400 Hz (mv)	IP MAGNETIC FIELD[3] /B/ (Gamma)	φ (°)	Condition	COSMIC RAY PROTONS[4] (particles/sec) >13.9 Mev	>64 Mev
4	0200	115.9	416.0	---	0.083	8.38	0.367	5.0	206	very quiet	7.1	1.36
	0600		407.0	---	---		0.406				7.17	1.2
19	0200	117.8	542.0	---	0.147	8.58	0.356	7.7	143	very quiet	7.27	1.29
	1500		602.0	---	0.277		0.413	6.3	136	quiet (1)	7.13	1.14
	1900		559.0	---	0.299		0.351				6.85	1.33

[1] Wolfe - NASA/ARC
[2] Scarfe - TRW, Inc.
[3] Ness - NASA/Goddard & Mariani - Univ. of Roma
[4] Webber - Univ. of N.H.

ESP = Earth-Sun Probe Angle.

Note: (1) With one Field Direction Reversal at 1815 UT

PIONEER IX

SEPTEMBER 1973

DATE Sep. 1973	TIME (UT)	ESP (°)	SOLAR WIND[1] U_{H^+} (km/sec)	N_{H^+} (H^+/cc)	T_{H^+} (x10⁶°K)	TAU (Days)	IP E-FIELD[2] 400 Hz (mv)	IP MAGNETIC FIELD[3] /B/ (Gamma)	φ (°)	Condition	COSMIC RAY PROTONS[4] (particles/sec) >13.9 Mev	>40 Mev
5	0300	-041.2	397	---	---	-2.95	0.121	5.2	322	disturbed (1)	6.39	1.31
	0700		370	---	---		0.129				6.44	1.08
7	0600	-041.2	320	---	---	-2.94	0.198	4.2	300	quiet	6.50	1.21
	1000		316	---	0.033		0.140				6.43	1.40
8	0600	-041.2	310	---	0.029	-2.94	0.186	2.1	085	sl. disturbed (2)	4.87	1.42
	1000		297	---	---		0.217				18.6	1.54
9	0600	-041.1	286	---	---	-2.94	.14(3)	36.6(5)	099	quiet (6)	31.8	1.63
	1000		593 (4)	---	0.807		0.252				16.2	--
12	0400	-041.1	437	---	---	-2.99	0.252	6.3	324	quiet	5.7	1.16
19	0200	-040.8	409	---	0.151	-2.99	0.204	14.4	338	quiet	7.9	1.29
	0600		539	---	0.207		0.188				6.95	1.23
26	0200	-040.5	402	---	0.084	-2.98	0.178	4.7	163	very quiet	6.39	--
	0600		393	---	0.057		0.163				6.26	1.21

[1] Wolfe - NASA/ARC
[2] Scarfe - TRW, Inc.
[3] Sonett and Colburn - NASA/ARC
[4] Webber - Univ. of N.H.

ESP = Earth-Sun Probe Angle.

Notes:
(1) With three Field Direction Reversals at 0530, 0600 and 0700 UT
(2) With two Field Direction Reversals at 0900 and 1200 UT
(3) No jump in 400 Hz magnitude noted
(4) Jump in U_{H+} occurred between 0718 UT (U_{H+}=303) and 0743 UT (U_{H+}=585). Quick Look data not available this period due to data gap resulting from spacecraft bit rate of 64 B/sec.
(5) Jump in /B/ occurred between 0718 UT (/B/=6.5) and 0743 UT (/B/=26.5)
(6) With one Field Direction Reversal at 1100 UT

INFERRED IP MAGNETIC FIELD

ROTATION NO.		DAY IN SOLAR ROTATION 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	D 20	T	A	A	A	A	A	A	A	T	T	T	T	-	T	T	T	T	T	T	T	T	T	T	-	T	T	T
1972	J 26	T	A	A	A	A	T	T*	T	T	T	T	T	T	T	T	T	T	A	A	A	T	T	T	T	T	TA	A
1895	F 12	A	T	A	A	A	A	T	T	T	TA	A	-	A	T	T	T	T	TA	A	T	T	T	T	T	TA	A	A
	M 10	A	A	A	A	A	A	A	A	A	A	A	T	A	T	T	T	T	A	A	T	T	T	T	T	T	A	A
	A 6	A	T	T	A	T	T	T	T	T	T	T	T	T	A	T	T	A	A	A	A	A	-	A	A	T	TA	A
	M 3	A	A	A	-	A	T	T	T	T	T	T	T	T	A	A	T	A	A	A	A	A	T	A	T	T	A	T
	M 30	A	A	*	A	A*	T	T	A	T	T	T	A	-	-	-	-	-	T	-	A	A	T	T	T	T	TA	A
1900	J 26	A	A	A	A	A	A	A	AT	T	T	T	TA	A	T	T	A	A	A*	A*	A	T*	T	T	T	T	T	TA
	J 23	A*	A*	A*	A	A	A	A	A*	T	T	A	A	A	-	A	T	T	T	T	T	A	T	T	T	T	A	-
	A 19	-	-	A	A	A	A	A	T	A	A	A	A	T	A	A	A	T	T	T	T	A	A	T	A	A	A	-
	S 15	A	T*	A	A	A	A	A	T	A	A	A	-	-	-	-	-	T	T	T	T	T	-	T	A	A	A	T
	O 12	T	-	-	A*	T	T	T	A	A	T	A	A	A	A	A	AT	T	AT	T*	T	-	A*	AT	T	T	*	A
1905	N 8	A	A	A	AT	AT	AT	T	T*	A	A	A*	AT	A	A	AT	T	T	TA	T	T	T	A	A	A	A	AT	T
	D 5	T	T	AT	-	-	T	T	AT	-	T	T	A	-	-	T	TA	A	T	T	T	A*	T	T	T	T	AT	T
1973	J 1	T	T	T	T	T	T	T	-	AT	T	-	-	TA	A	A	A	A	A	T	-	-	T	-	T	-	T	T
	J 28	T	A	T	T	T	T	T	T	A	TA	A	A	AT	TA	AT	TA	AT	-	A	A	T	T	T	T	T	T	T
	F 24	T	T	TA	T	T	-	TA	A	A	T	A	A	A	AT	A	A	A	TA	A	A	TA	A	A	T	T	T	T
1910	M 23	T	T	T	A	T	T	T	TA	A	TA	A	A	-	A	A	TA	A	A	AT	T-	-	T	T	T	T	T*	T*
	A 19	T	AT	T-	T	T	T	A	T	T	TA	A	A	A*	A	AT	TA	A*	T	A	TA	T*	AT	A	T	A	T	A*
	M 16	T	T	T	T	T	T	TA	T	A	AT	T	A	A	A	A	A	A*	A	A	A	A	T*	-A	A	-	T	T
	J 12	T*	T	-	T	T*	A	T	T*	T*	T	T	AT	A	A	T	-	T	A	A	A	A*	AT	-	T	A	A	T
	J 9	T	T	A	T	T	A	T*	T*	A	AT	-	A	T	TA	T	T	T	A	A*	A	A*	TA	A	TA	T*	T*	T
1915	A 5	T	A	A	AT	A	T	T*	T	*	AT	T	AT	T	A	TA	T	T	A	A	AT	A*	AT	A	A	TA	A*	A
	S 1	TA*T		T	AT	A	TA*A		*	T	T	T	A	A	A	T	T	T	A	T	A	A*	A	T*	A	A	A*	A
	S 28	A*	A	AT	T	A	A	A	A	A*	T*	AT	T	T	T*	T	T*	T*	T	A	T	A*						

Inferred IP Magnetic Field

The table shows daily inferences of the polarity of the interplanetary magnetic field made from magnetograms produced by a tri-axis magnetometer located at the Thule Geopole Station of the Air Weather Service. The inference relies on the discoveries of Mansurov (Geomagn. Aeron., 9, 622-623, 1969) and Svalgaard (Geophys. Pap. R-6, 11 pp., Dan. Meterol. Inst., Copenhagen, 1968) relating the variation of the polar cap magnetic field to the polarity of the interplanetary field. It was originally believed that the radial component (BXM in Geocentric Solar Magnetospheric coordinate system) of the IP field determined the effect observed in the polar cap field, but recent evidence (Friis-Christensen, et al., J. Geophys. Res., 77, 371, 1972) indicate the responsible component may be BYM, the component in the ecliptic plane perpendicular to BXM. As long as the IP field remains in a normal Archimedes spiral, the variation in sign of BYM maps one-to-one with the variation of sign of BXM.

The notation adapted for the table is that BXM>0 (BYM<0) is represented by the symbol A (away from the sun) and BXM<0 (BYM>0) is represented by the symbol T (toward the sun). A day with two polarities indicates that an inferred change of sign occurred during the interval approximately 1200 UT to 2000 UT, when the effect is observable at Thule. An asterisk along with an A or T indicates days when the effect was somewhat doubtful, but one polarity seemed predominant. An asterisk alone indicates days when no clear polarity effect could be discerned. A dash indicates days when missing data prevented inference of the polarity.

SOLAR PROTON EVENT
(PROVISIONAL)

SEPTEMBER 1973

DATE	TIME	DETECTOR	ACTIVITY
SEPT	U.T.		
07	1230Z	Thule 40 MHz Riometer	No absorption
	1245Z	Thule 40 MHz	0.1db
	1315Z	Thule 40 MHz	0.3db
	1415Z	Thule 40 MHz	0.5db
	1420Z	NOAA-2 Satellite:	
		>60 mev	9 protons $cm^{-2}sec^{-1}ster^{-1}$ (approximate maximum)
		>30 mev	11 protons $cm^{-2}sec^{-1}ster^{-1}$
		>10 mev	20 protons $cm^{-2}sec^{-1}ster^{-1}$
	1520Z	NOAA-2:	
		>60	7
		>30	14 (approximate maximum)
		>10	20
	1530Z	Thule 40 MHz	0.7db
	1620Z	NOAA-2:	
		>60	7
		>30	14
		>10	26 (approximate maximum)
	1630Z	Thule 40 MHz	0.9db (approx. maximum)
	2000Z	Thule 40 MHz	0.5db
	2345Z	Thule 40 MHz	0.3db

AUGUST 1973 DATA

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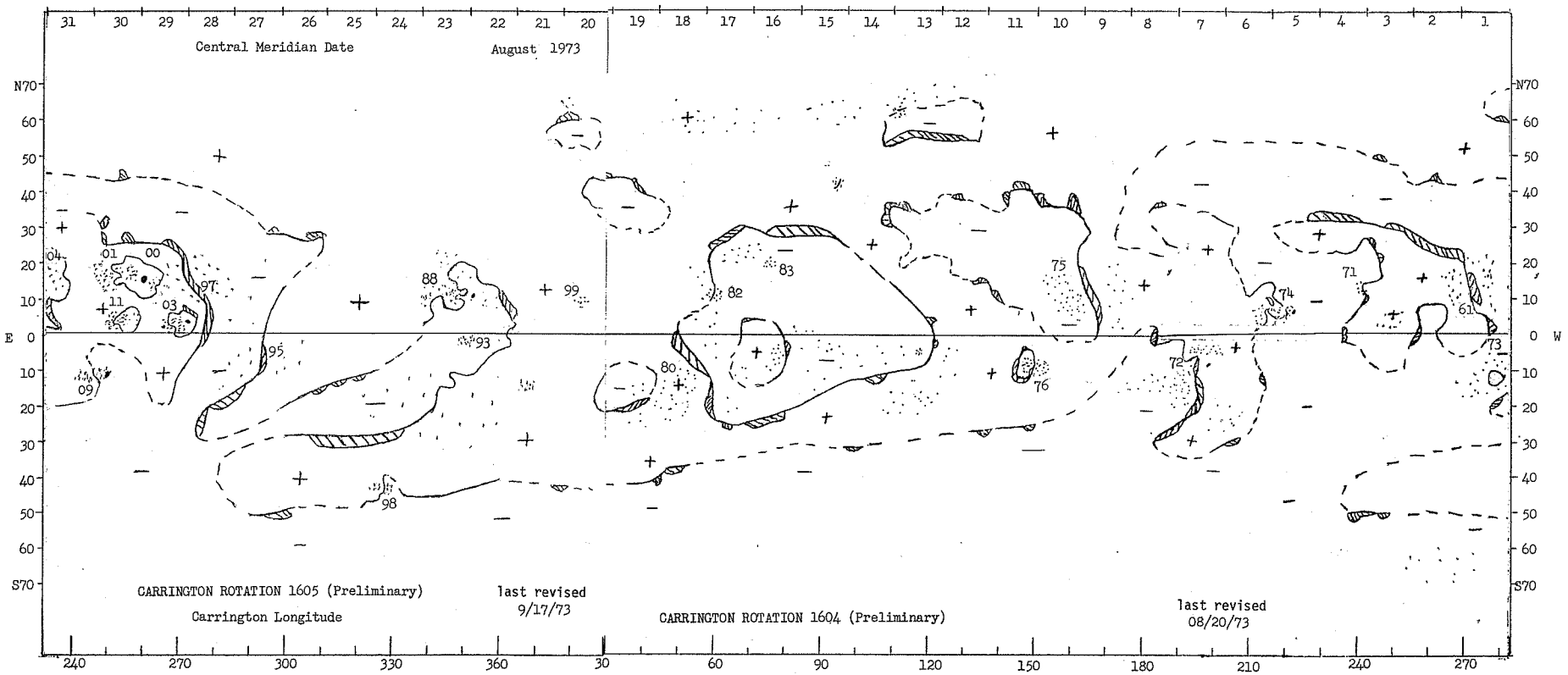
For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

Hα SYNOPTIC CHARTS

AUGUST 1973



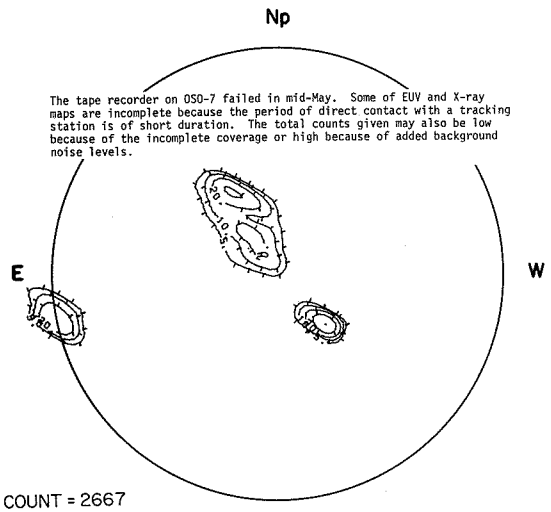
27
Aug 73

AUGUST 1, 1973 (P = 10.78, B_o = 5.80, L_o = 282.34)

28 Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



The tape recorder on OSO-7 failed in mid-May. Some of EUV and X-ray maps are incomplete because the period of direct contact with a tracking station is of short duration. The total counts given may also be low because of the incomplete coverage or high because of added background noise levels.

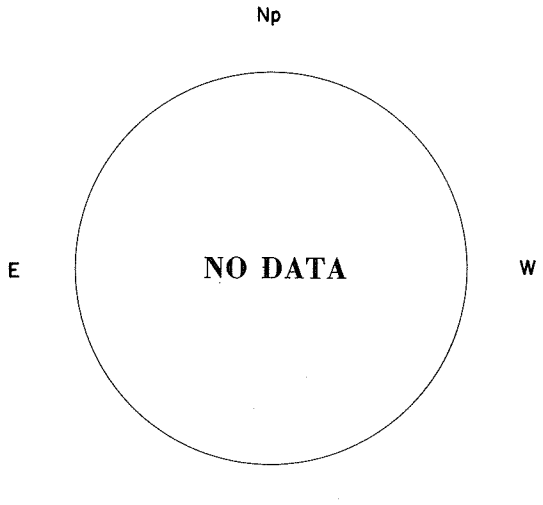
COUNT = 2667
ROLL = 33.2°
P-TH = -4.33

0600 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

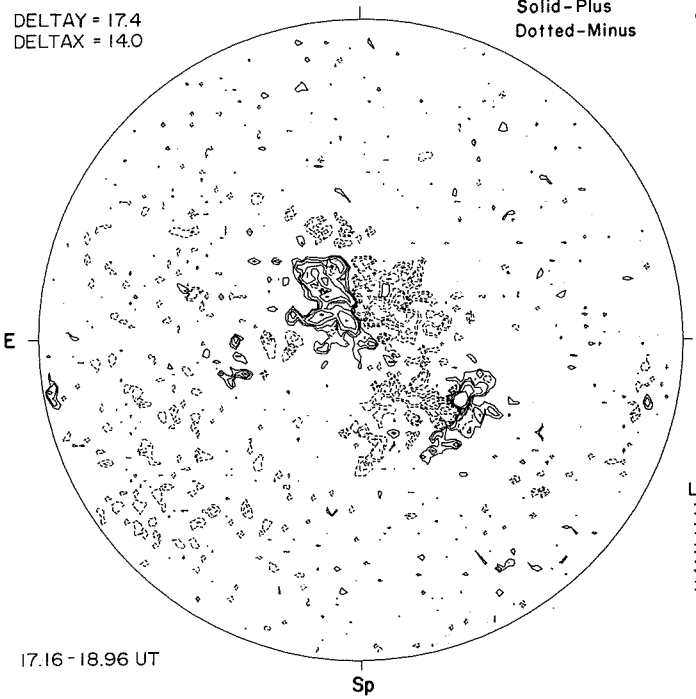


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

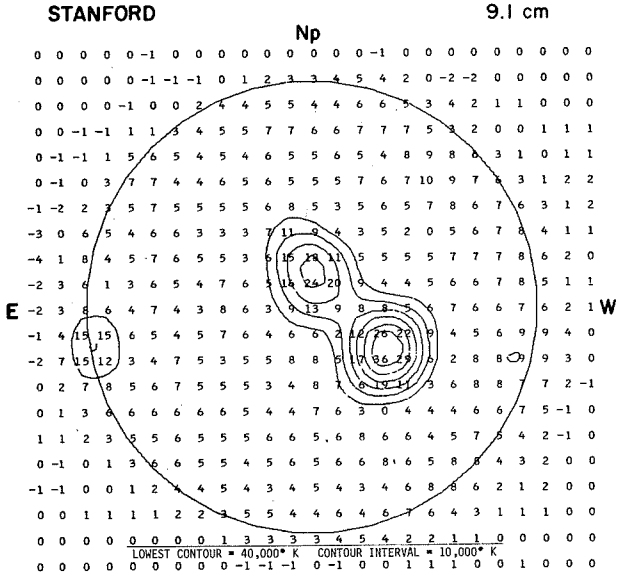


Levels
±5
±10
±20
±40
±80

17.16 - 18.96 UT

STANFORD

9.1 cm

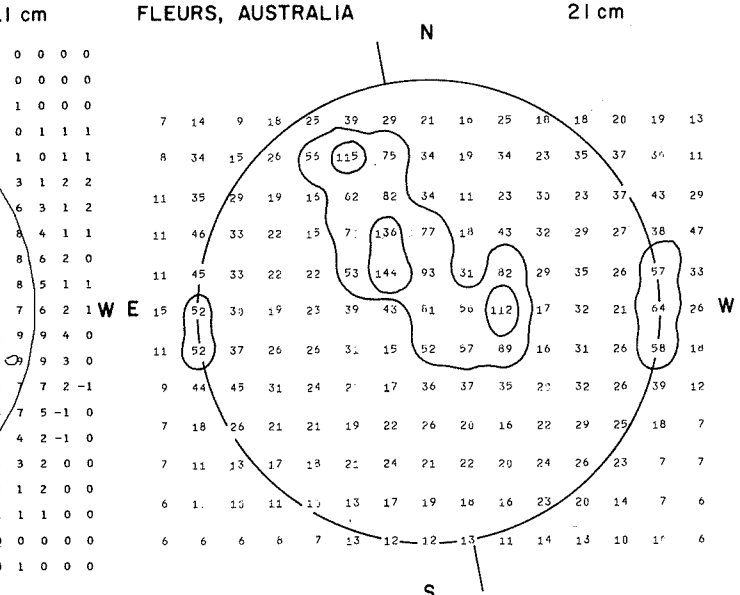


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

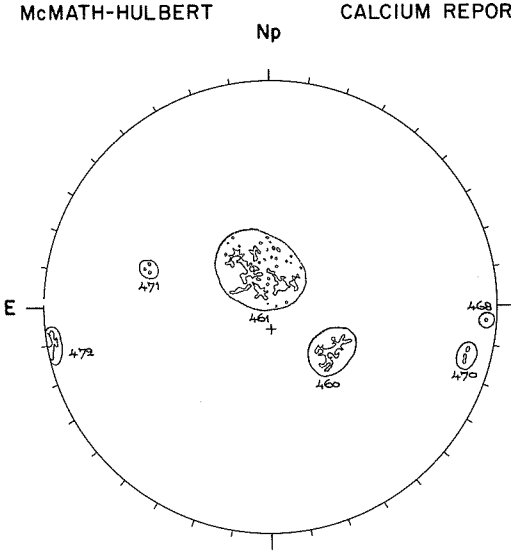


02-03 UT

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

McMATH-HULBERT

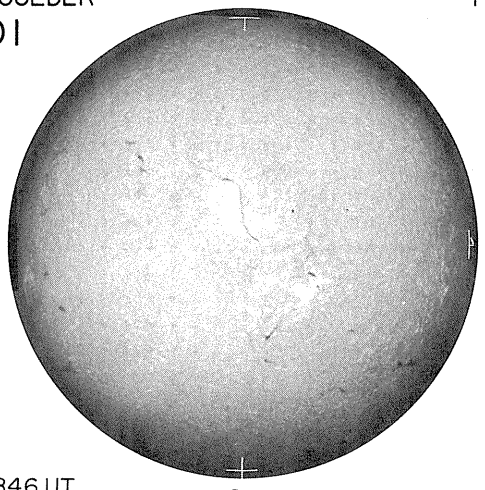
CALCIUM REPORT



POOR	M
60 - 1100	-3.0
61 - 2000	-2.5
72 - 1300	-2.5

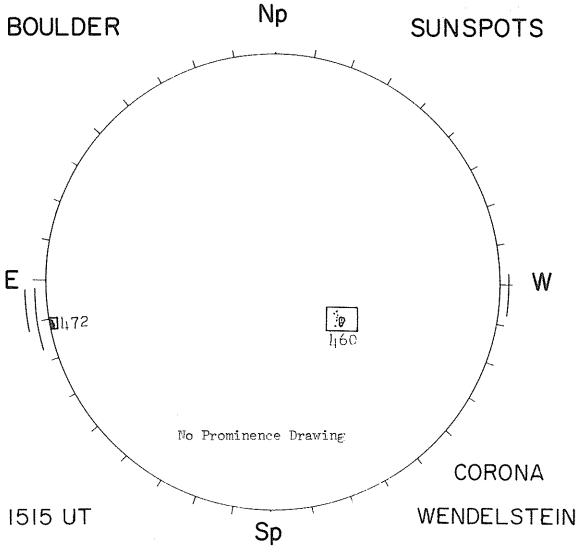
1720 UT

BOULDER
OI



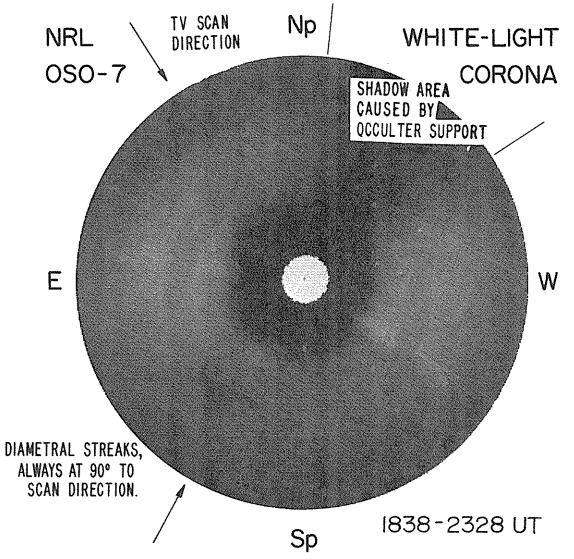
1846 UT

BOULDER



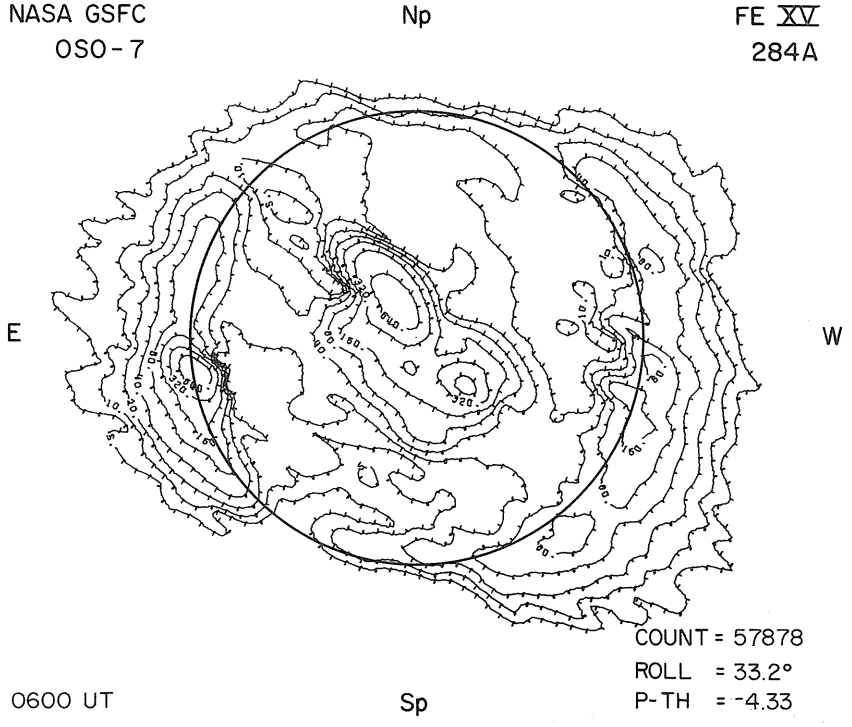
1515 UT

NRL
OSO-7



1838-2328 UT

NASA GSFC
OSO-7

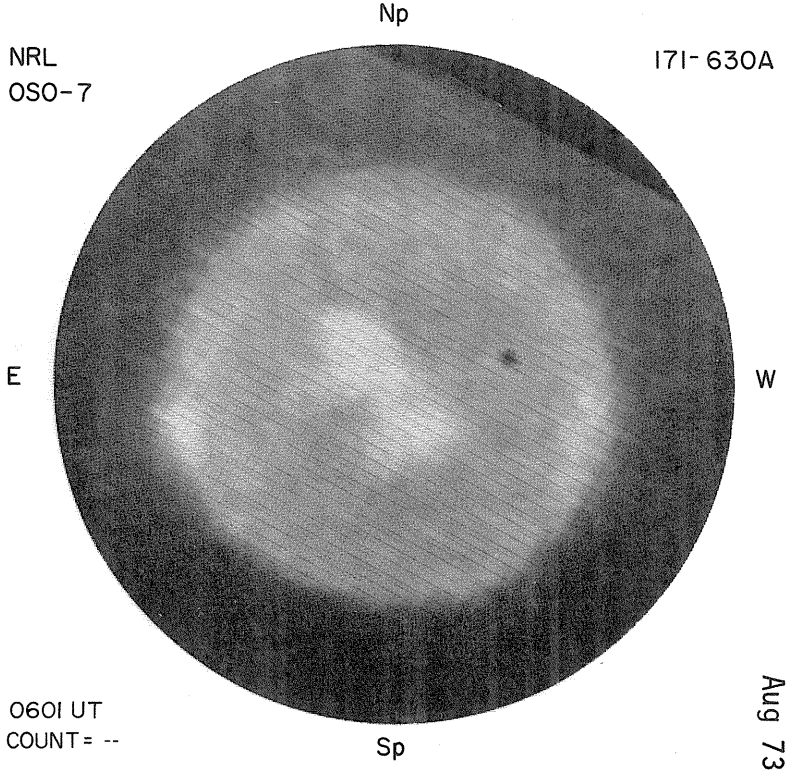


FE XV
284A

COUNT = 57878
ROLL = 33.2°
P-TH = -4.33

0600 UT

NRL
OSO-7



0601 UT
COUNT = --

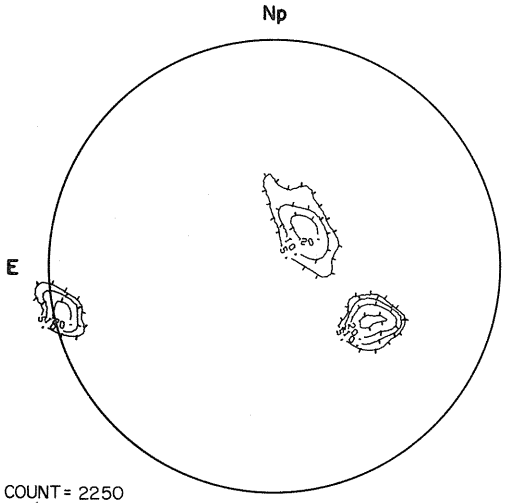
29
Aug 73

AUGUST 2, 1973 (P = 11.18, B_o = 5.87, L_o = 269.12)

30 Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



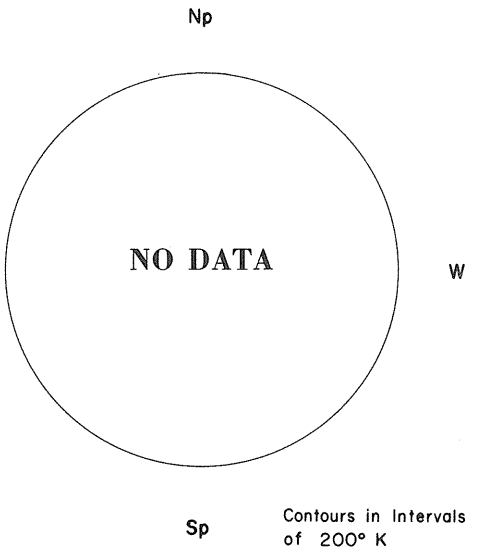
COUNT = 2250
ROLL = 32.9°
P-TH = -4.24

0458 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

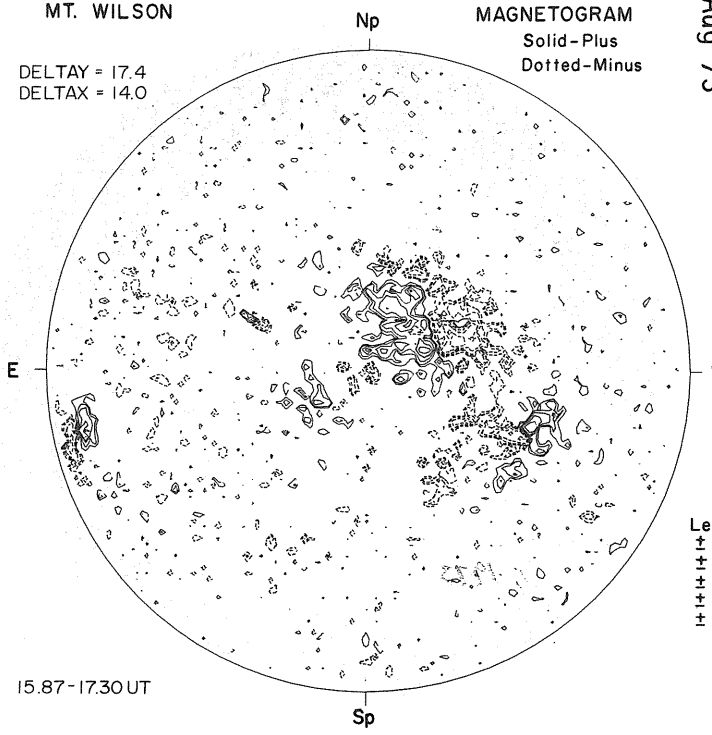


Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.0

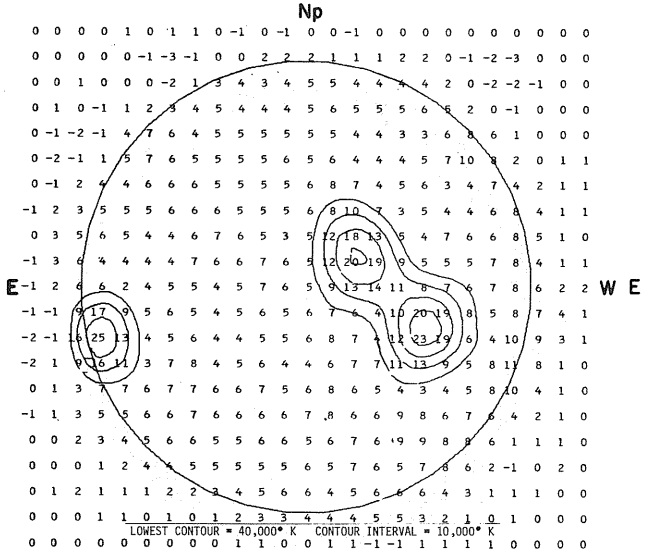


Levels
± 5
± 10
± 20
± 40
± 80

15.87-17.30 UT

STANFORD

9.1 cm

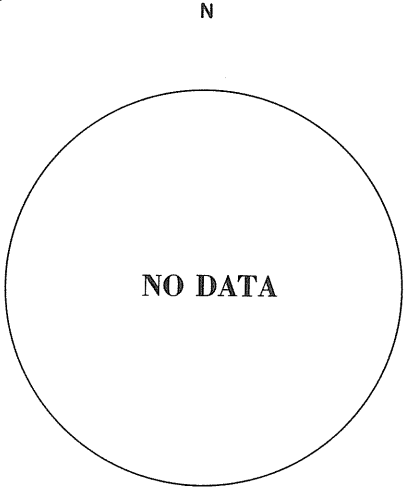


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

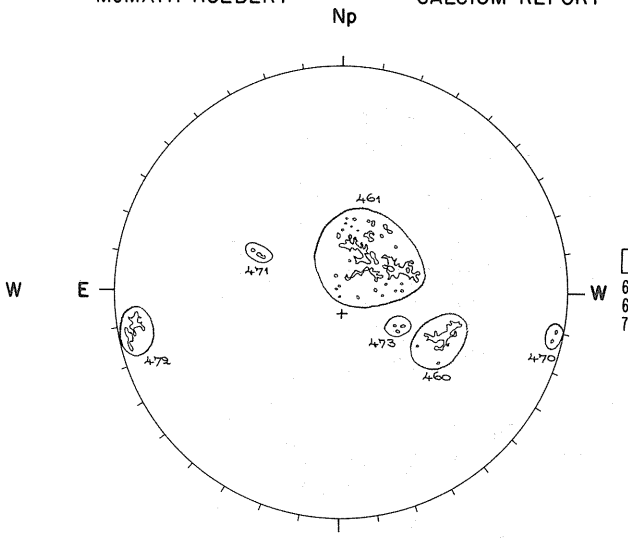


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

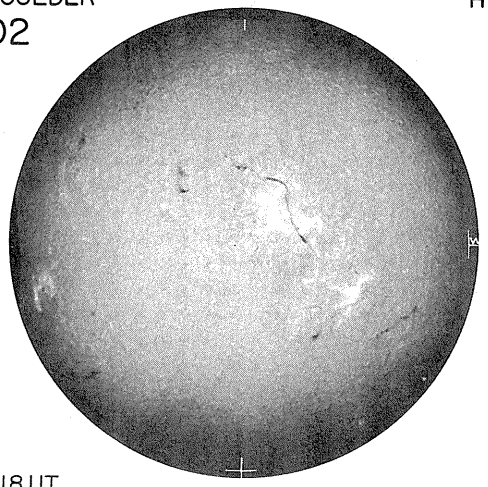
CALCIUM REPORT



FAIR	M
60 - 1200 - 3.0	
61 - 2200 - 2.5	
72 - 1600 - 3.0	

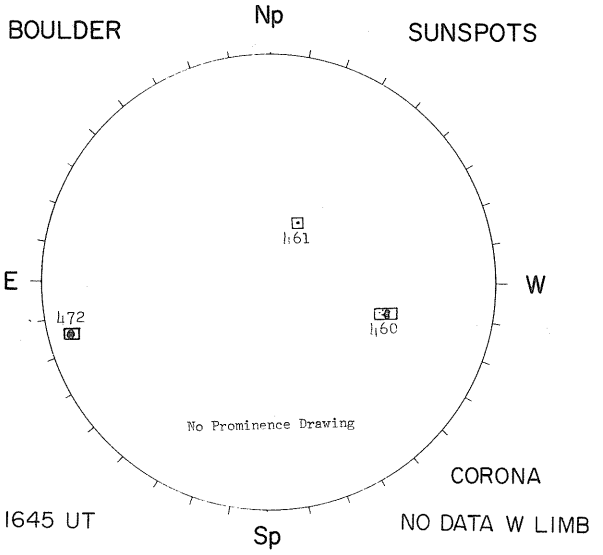
1430 UT

BOULDER
02



1818 UT

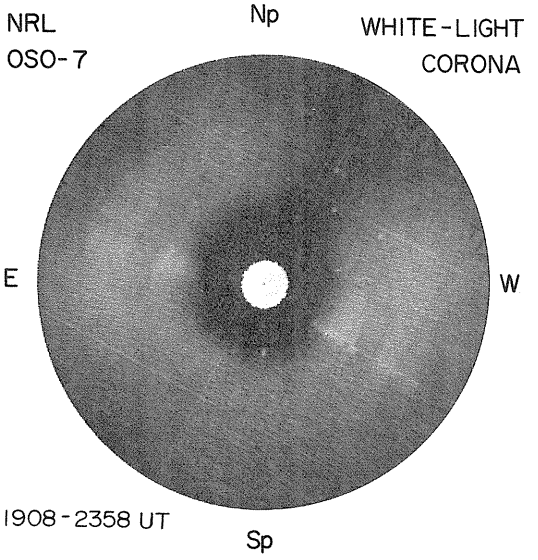
BOULDER



CORONA
NO DATA W LIMB

1645 UT

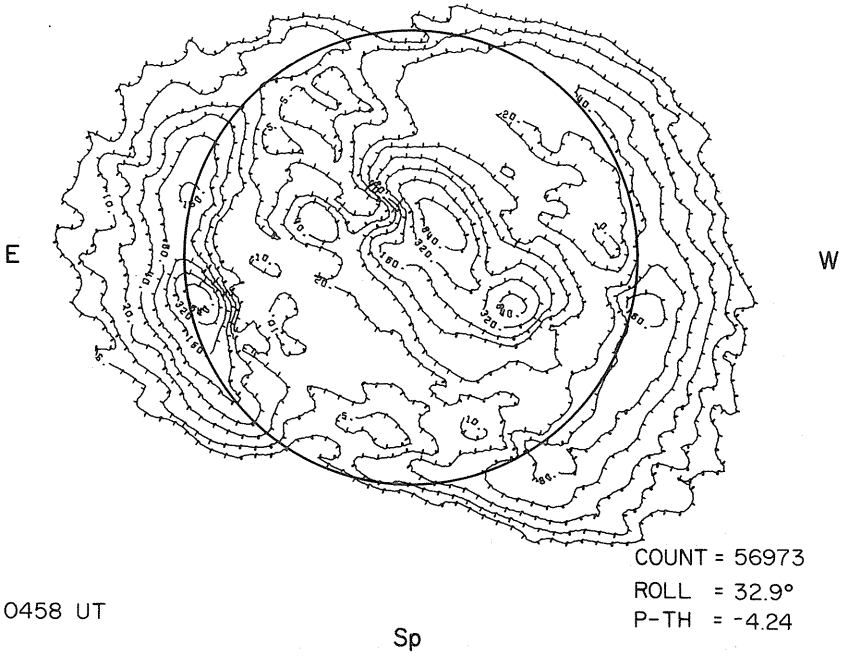
NRL
OSO-7



1908-2358 UT

NASA GSFC
OSO-7

FE XV
284A

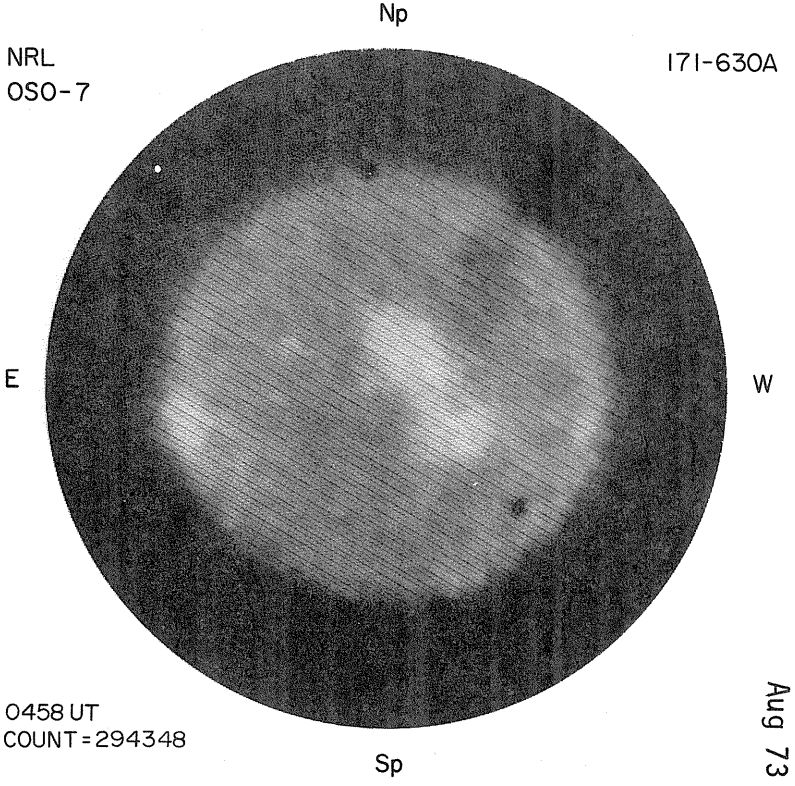


COUNT = 56973
ROLL = 32.9°
P-TH = -4.24

0458 UT

NRL
OSO-7

171-630A



0458 UT
COUNT = 294348

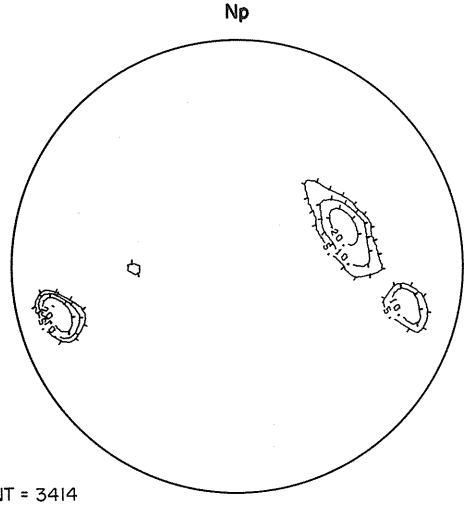
31
Aug 73

AUGUST 3, 1973 (P = 11.57, B_o = 5.94, L_o = 255.89)

32
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



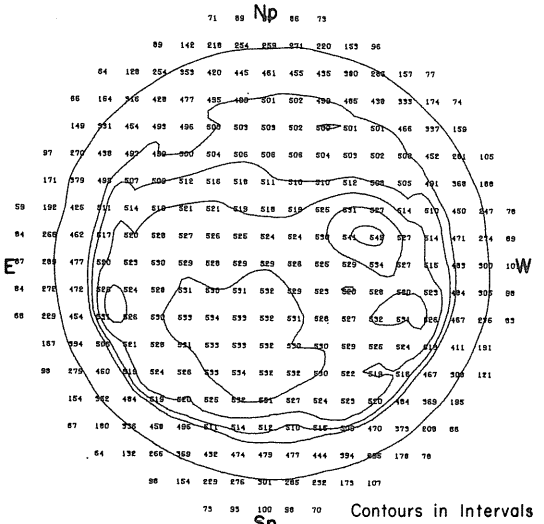
COUNT = 3414
ROLL = 32.3°
P-TH = -4.08

1803 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



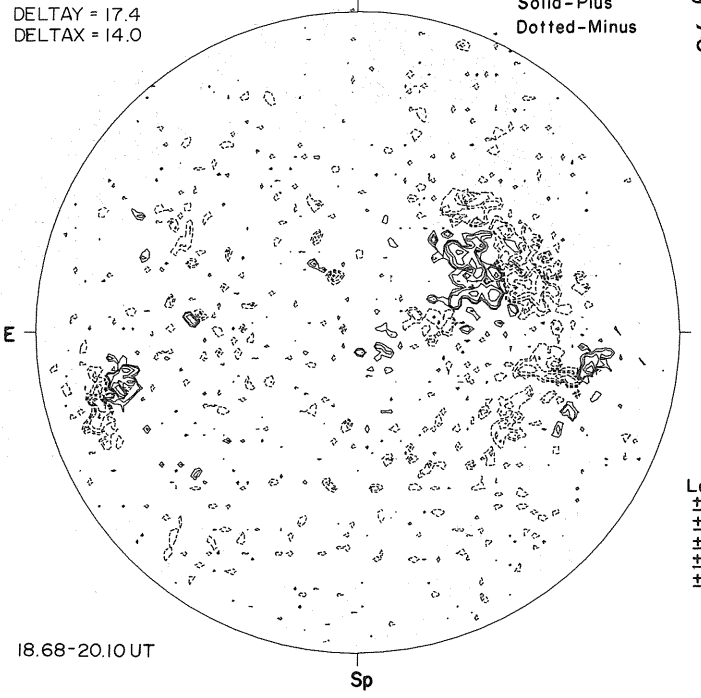
1640 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

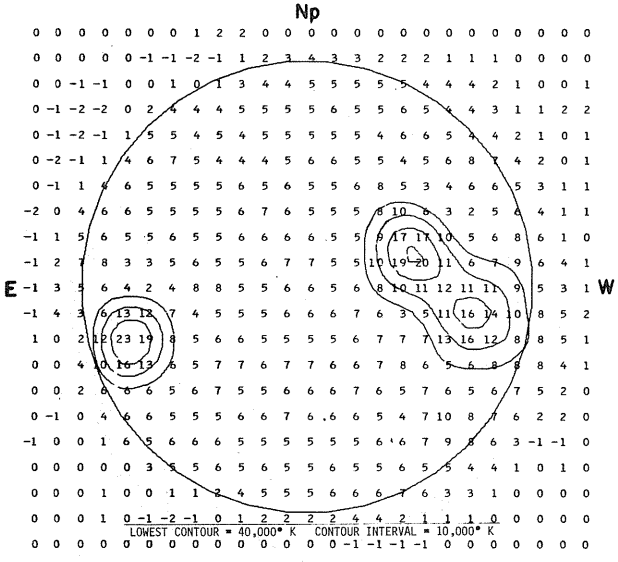


Levels
± 5
± 10
± 20
± 40
± 80

18.68-20.10 UT

STANFORD

9.1 cm

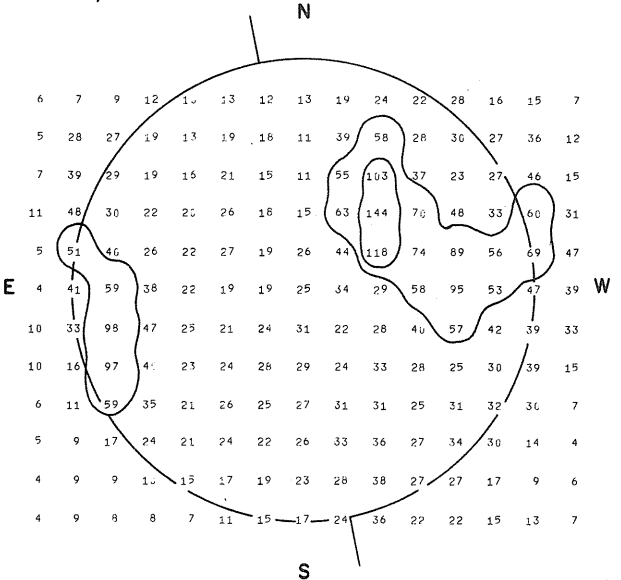


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

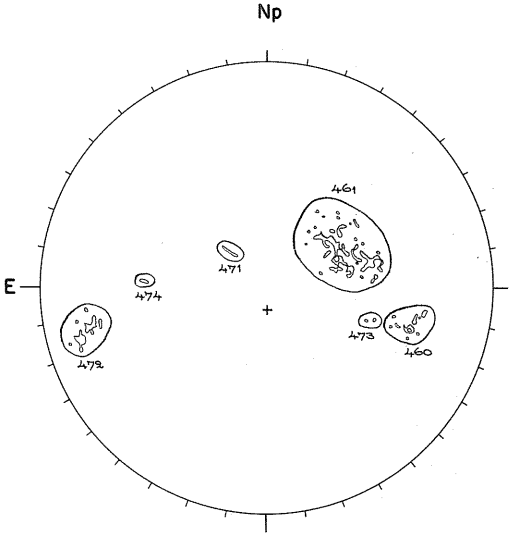


02-03 UT

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

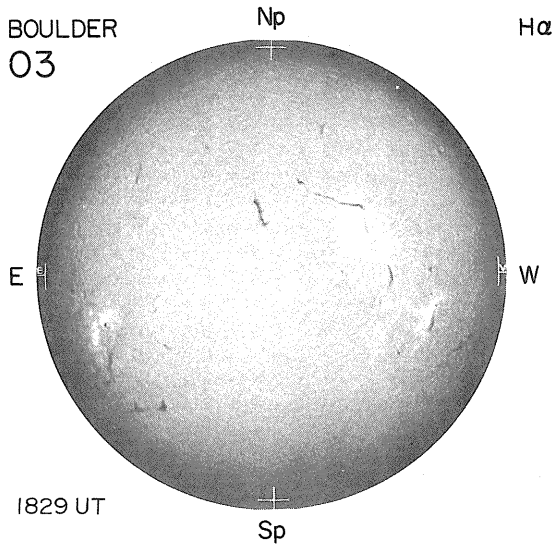
McMATH-HULBERT

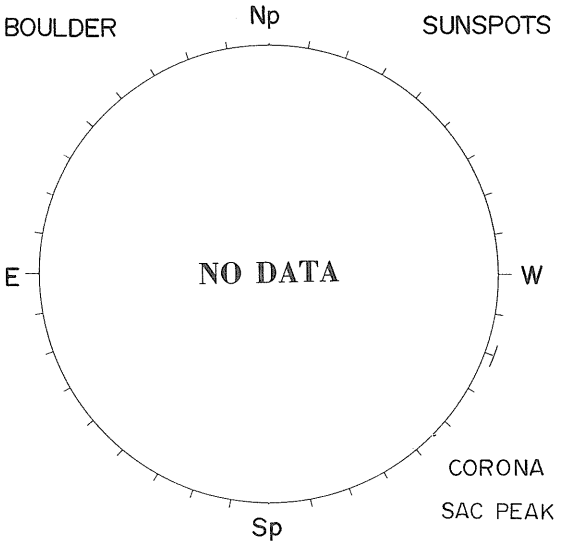
CALCIUM REPORT

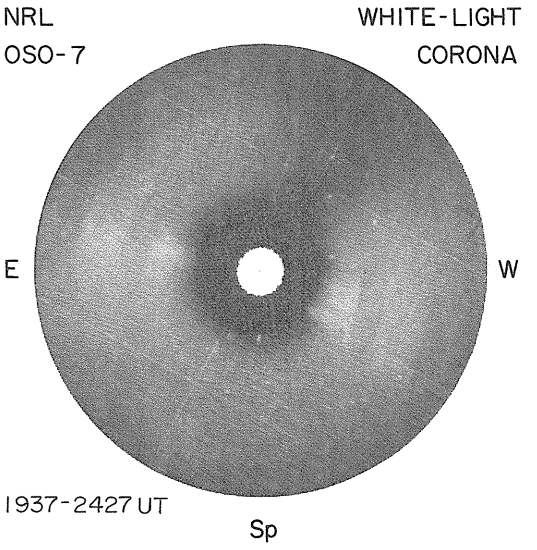


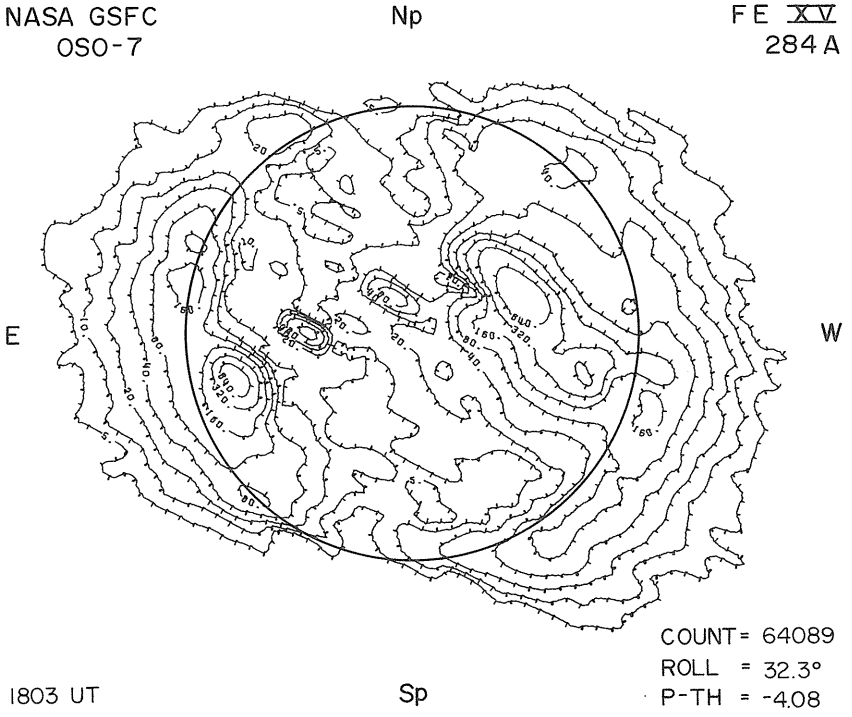
FAIR	B
60 - 1000 - 3.0	
61 - 2600 - 2.5	
72 - 1500 - 3.0	

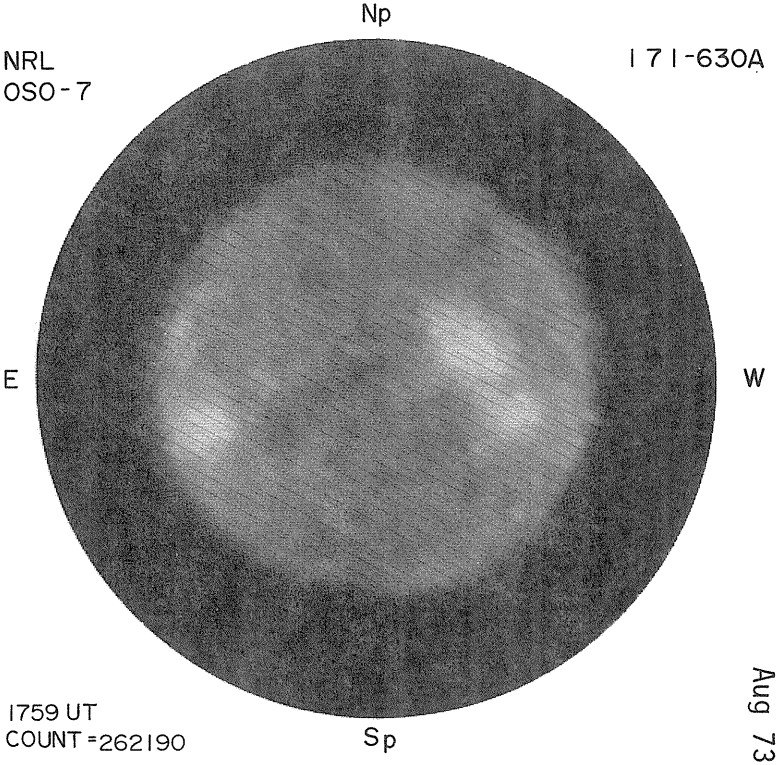
1230 UT


BOULDER
03
Np
Hα
E
W
1829 UT
Sp


BOULDER
Np
SUNSPOTS
E
NO DATA
W
CORONA
SAC PEAK
Sp


NRL
OSO-7
WHITE-LIGHT
CORONA
E
W
1937-2427 UT
Sp

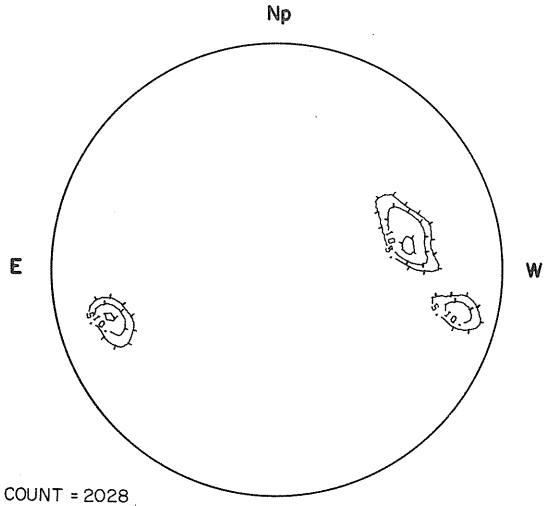

NASA GSFC
OSO-7
Np
FE XV
284 A
E
W
COUNT= 64089
ROLL = 32.3°
P-TH = -4.08
1803 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1759 UT
COUNT=262190
Sp

AUGUST 4, 1973 (P = 11.96, B_o = 6.01, L_o = 242.67)

NASA GSFC
OSO-7

X-RAY
8-16A



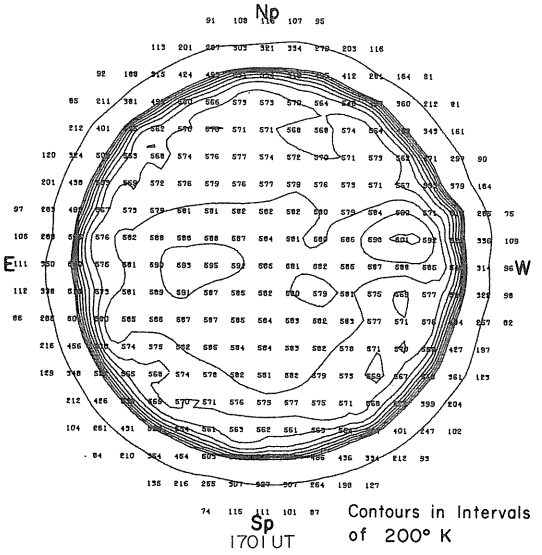
COUNT = 2028
ROLL = 32.1°
P-TH = -4.04

0419 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



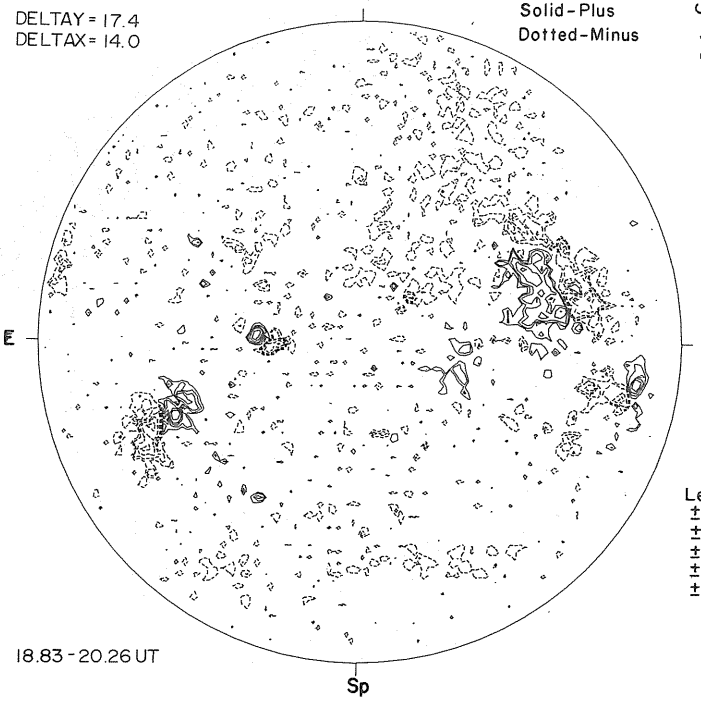
1701 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid - Plus
Dotted - Minus

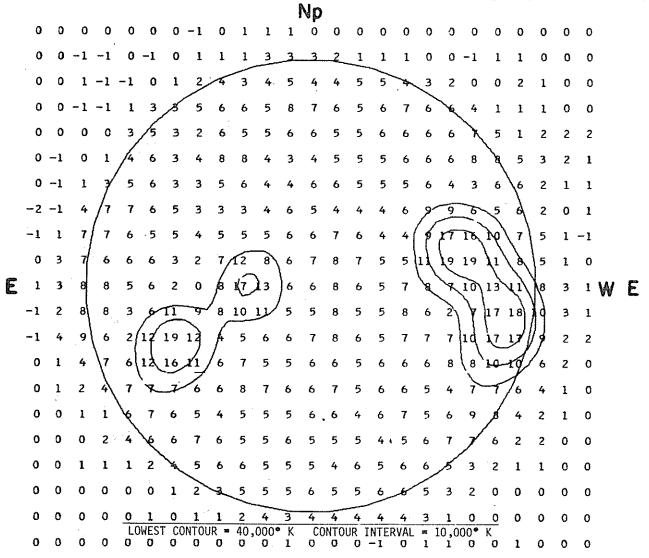


Levels
± 5
± 10
± 20
± 40
± 80

18.83 - 20.26 UT

STANFORD

9.1 cm

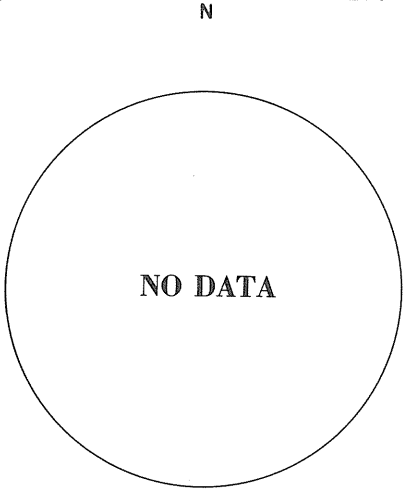


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

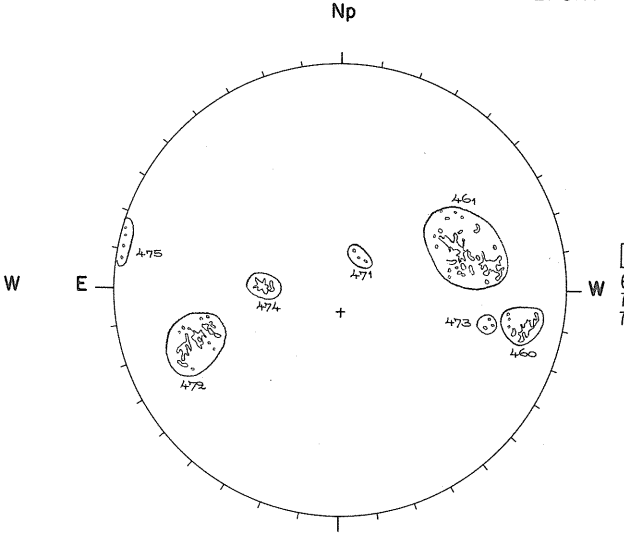


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
60 - 1000	-3.0
72 - 1500	-3.0
74 - 0500	-3.5

1405 UT

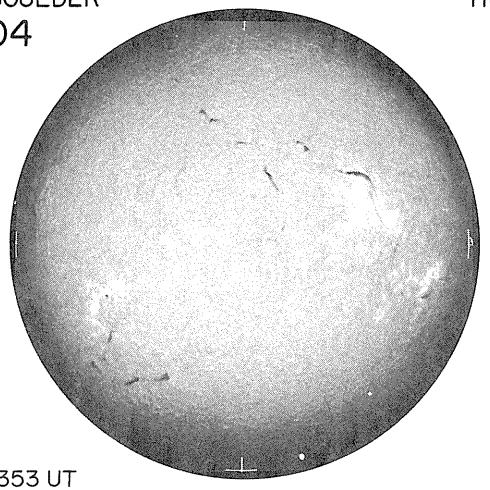
BOULDER
04

Np

Hα

E

W



1353 UT

Sp

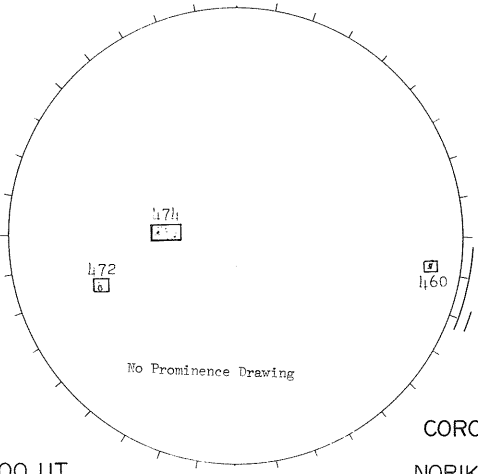
BOULDER

Np

SUNSPOTS

E

W



CORONA

1600 UT

NORIKURA

Sp

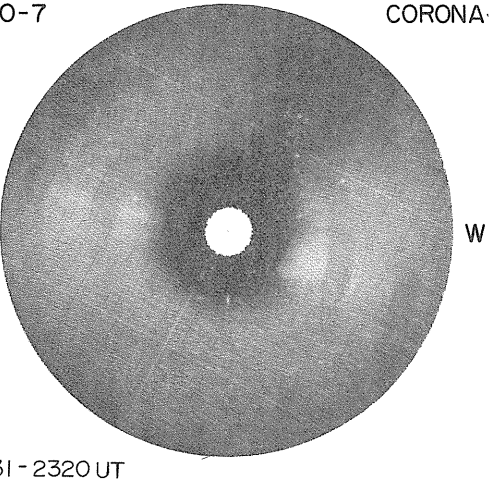
NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E

W



1831 - 2320 UT

Sp

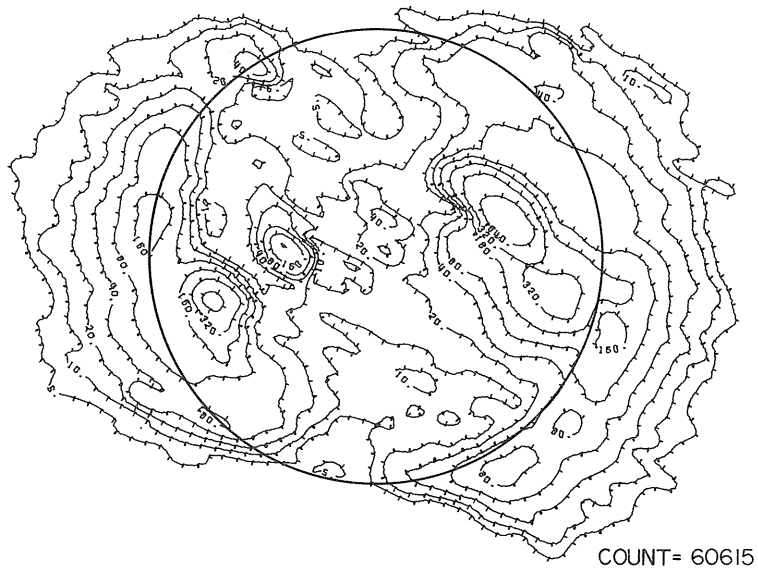
NASA GSFC
OSO - 7

Np

FE XV
284A

E

W



COUNT= 60615
ROLL = 32.1°
P-TH = -4.04

0419 UT

Sp

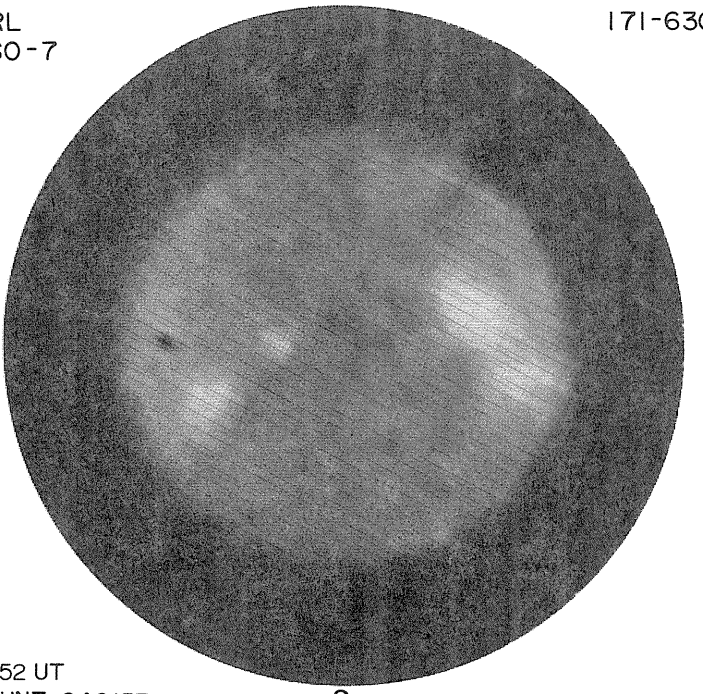
NRL
OSO-7

Np

171-630A

E

W



1652 UT
COUNT=246157

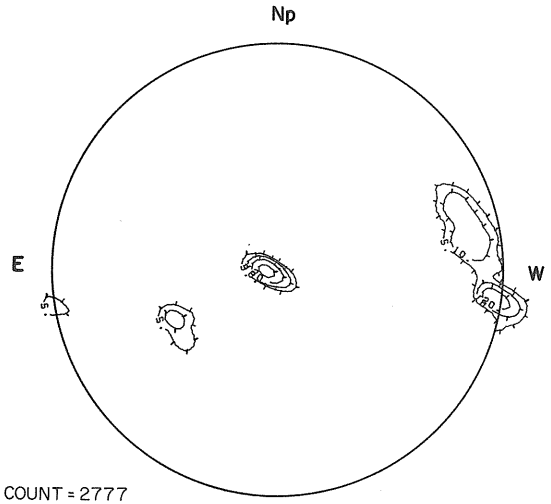
Sp

35
Aug 73

AUGUST 5, 1973 (P = 12.35, B_o = 6.08, L_o = 229.45)

NASA GSFC
OSO-7

X-RAY
8-16A



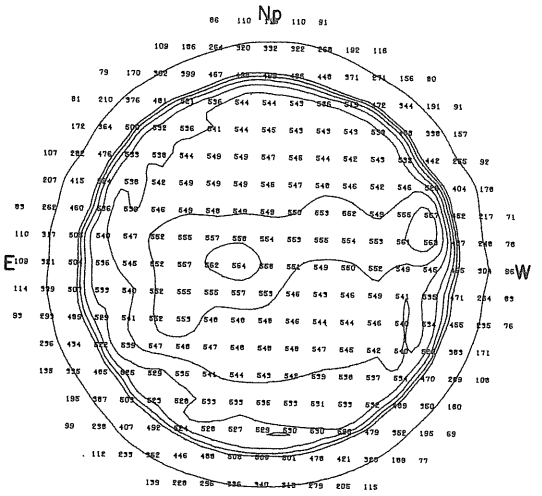
COUNT = 2777
ROLL = 31.6°
P-TH = -3.89

1544 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



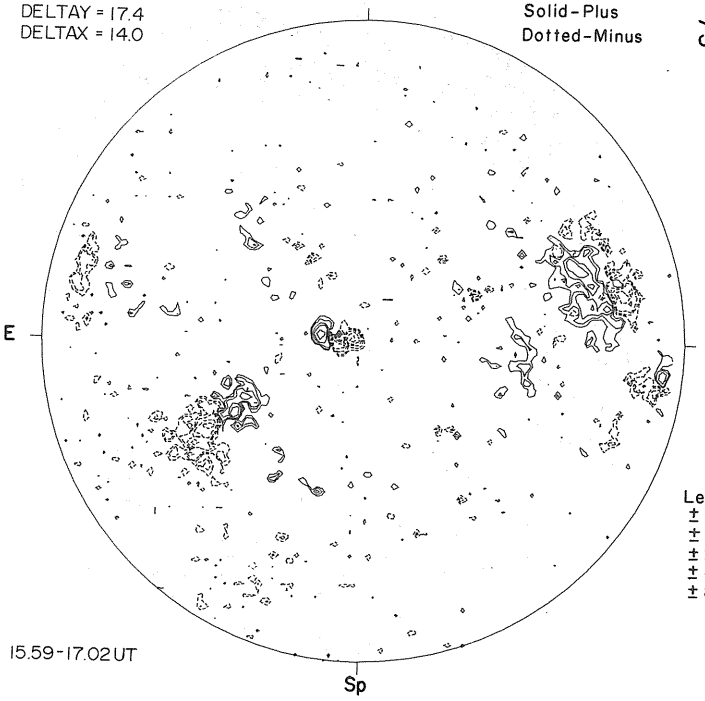
1525 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

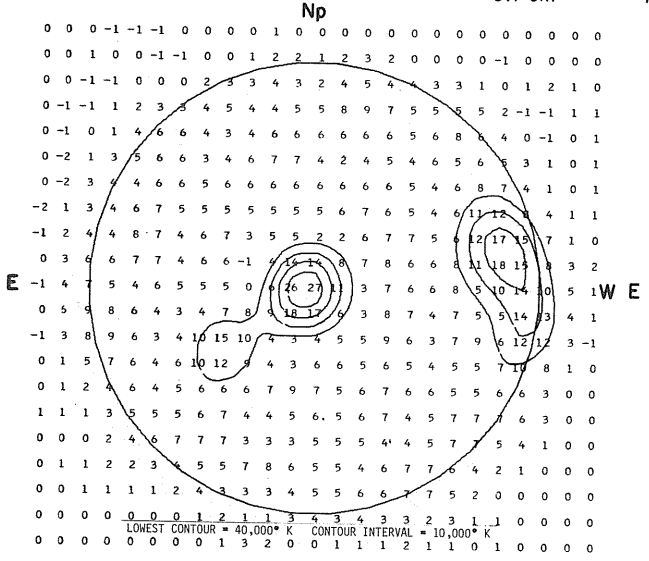


Levels
± 5
± 10
± 20
± 40
± 80

15.59-17.02 UT

STANFORD

9.1 cm



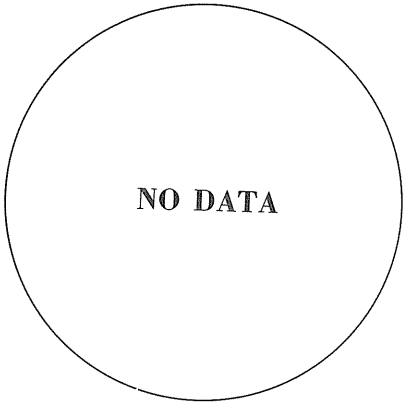
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

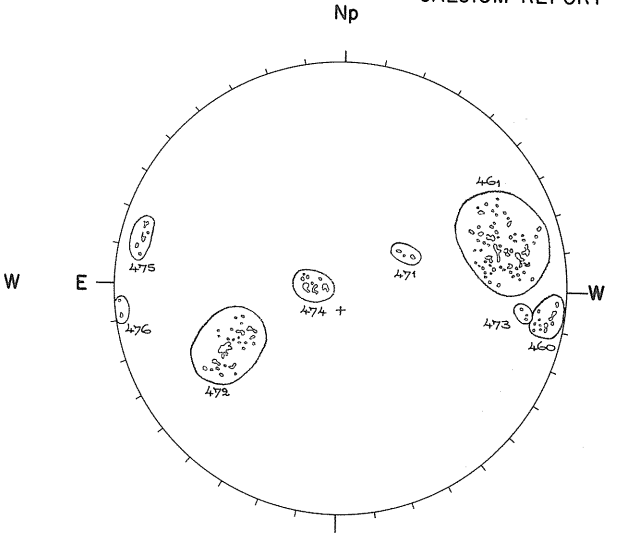


02-03 UT

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

McMATH-HULBERT

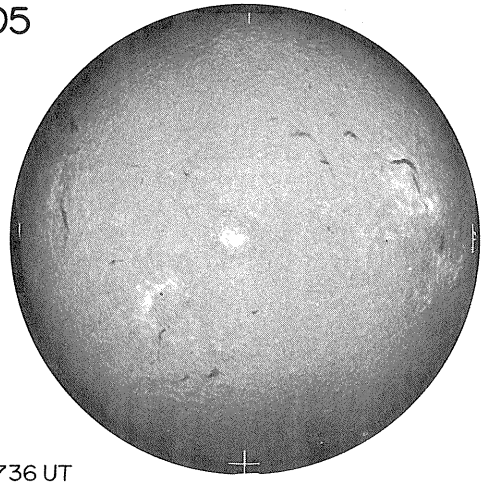
CALCIUM REPORT



FAIR	D
60 - 0900 - 2.5	
61 - 2000 - 3.0	
72 - 1200 - 3.0	
74 - 0600 - 3.5	

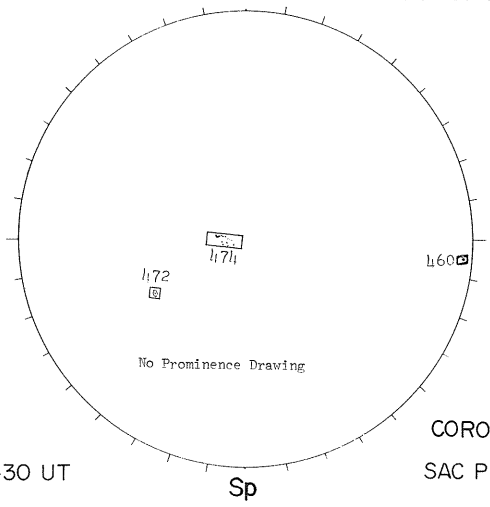
1215 UT

BOULDER
05



1736 UT

BOULDER

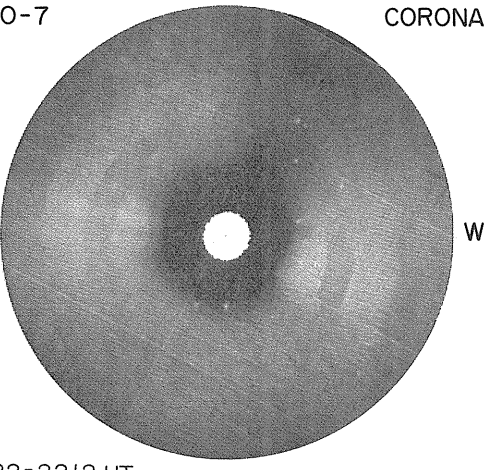


1430 UT

CORONA
SAC PEAK

NRL
OSO-7

WHITE-LIGHT
CORONA

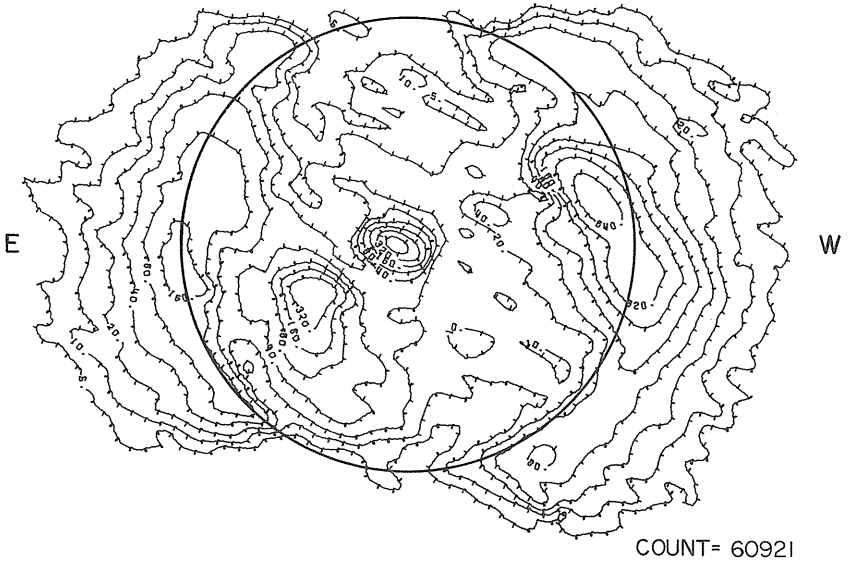


1722-2212 UT

NASA GSFC
OSO-7

Np

FE XV
284A



COUNT= 60921
ROLL = 31.6°
P-TH = -3.89

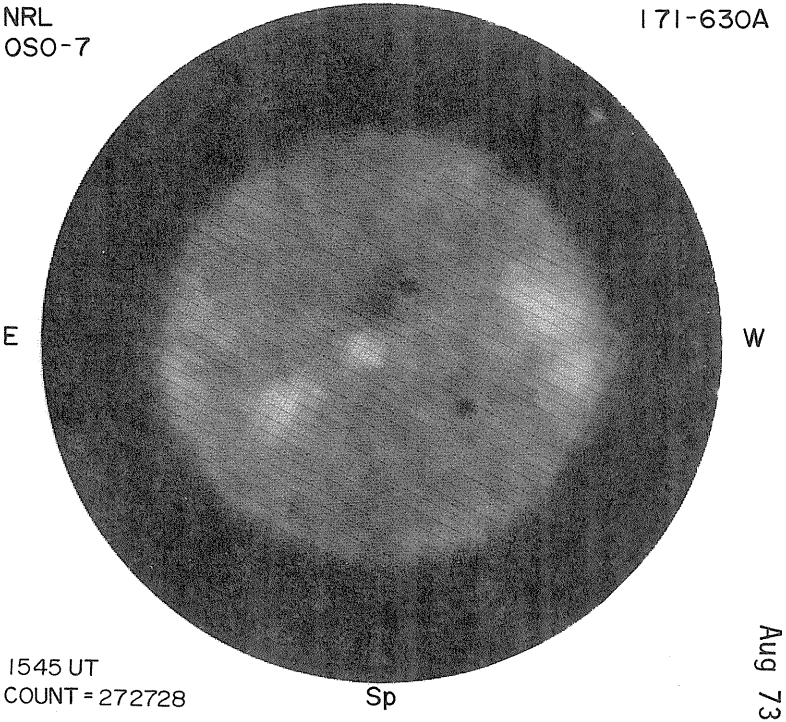
1544 UT

Sp

NRL
OSO-7

Np

171-630A



1545 UT
COUNT = 272728

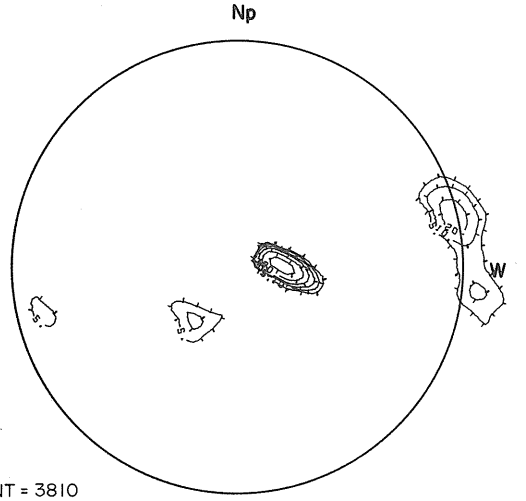
Sp

37
Aug 73

AUGUST 6, 1973 (P = 12.73, B_o = 6.14, L_o = 216.22)

NASA GSFC
OSO-7

X-RAY
8-16A



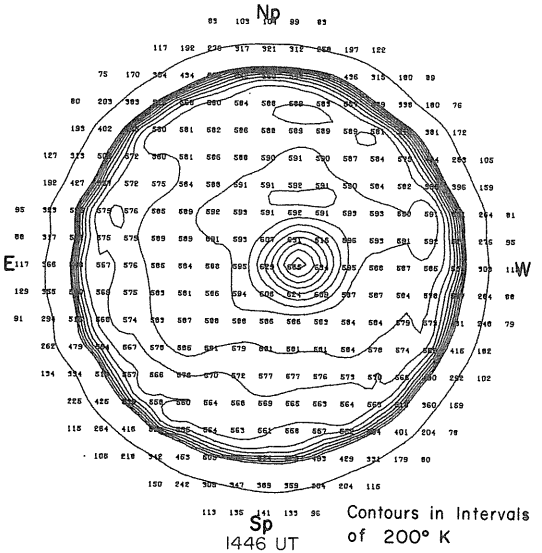
COUNT = 3810
ROLL = 31.3°
P-TH = -3.78

1616 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



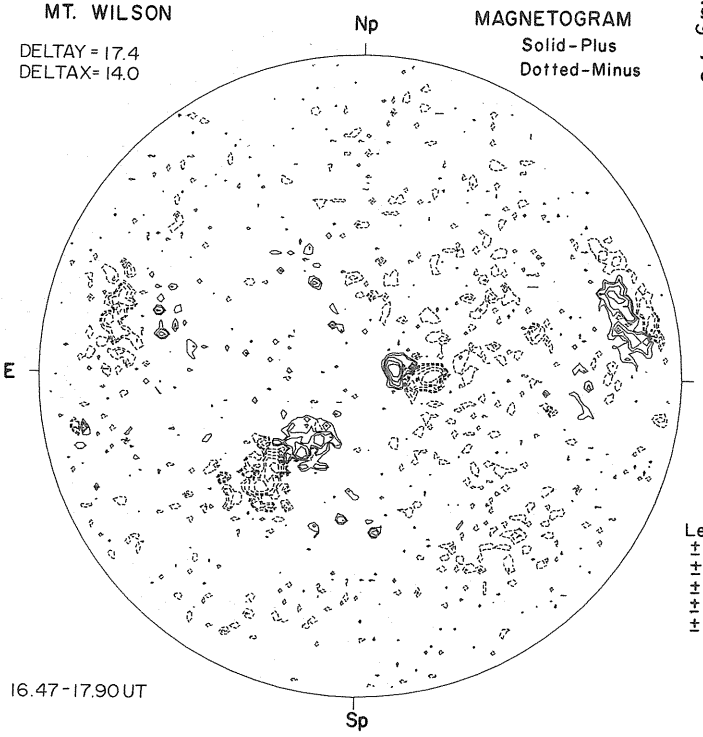
1446 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

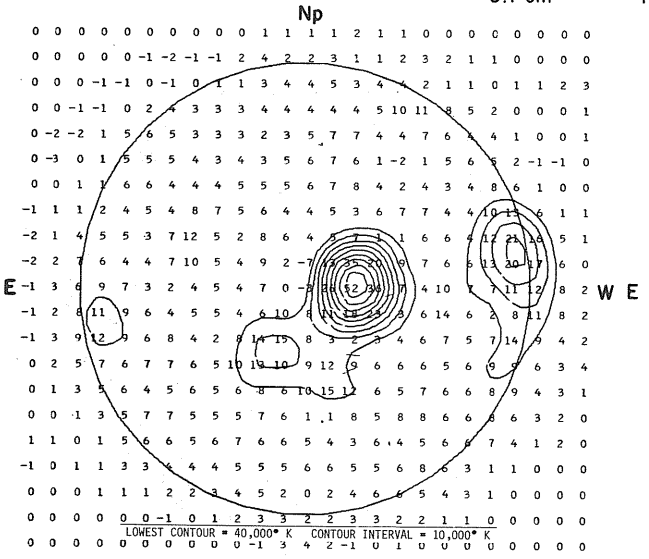


Levels
± 5
± 10
± 20
± 40
± 80

16.47-17.90 UT

STANFORD

9.1 cm

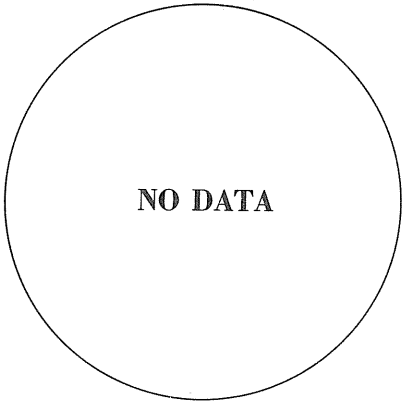


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

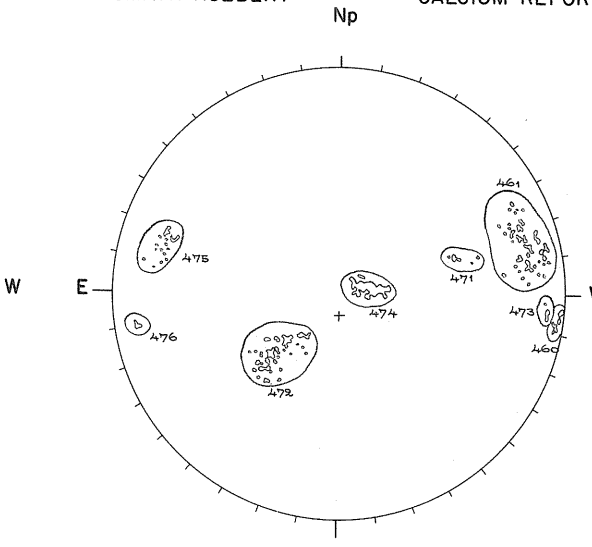


02-03 UT

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

McMATH-HULBERT

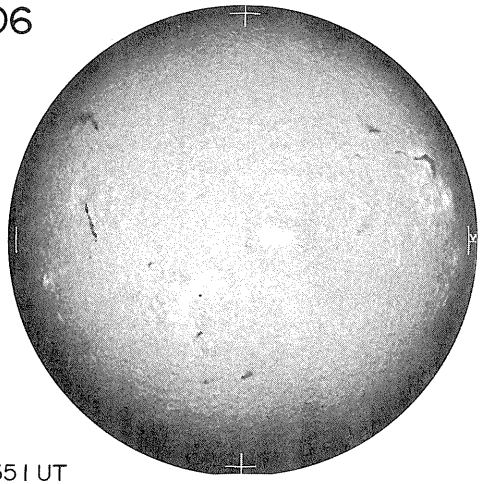
CALCIUM REPORT



POOR	B
61 - 1800 - 2.5	
72 - 1500 - 3.0	
74 - 1200 - 4.5	
76 - 0300 - 3.0	

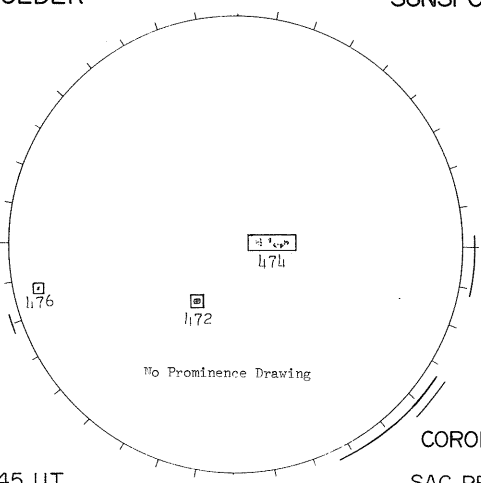
1350 UT

BOULDER
06



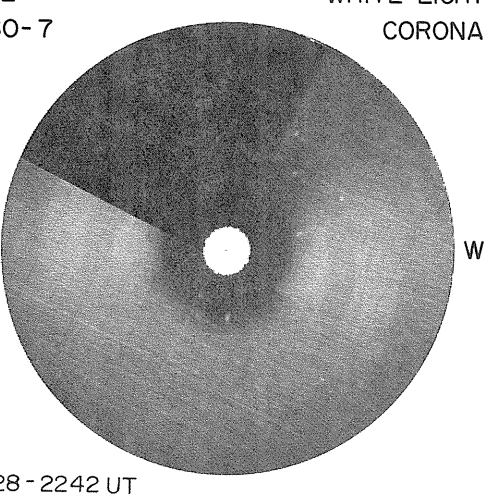
1351 UT

BOULDER



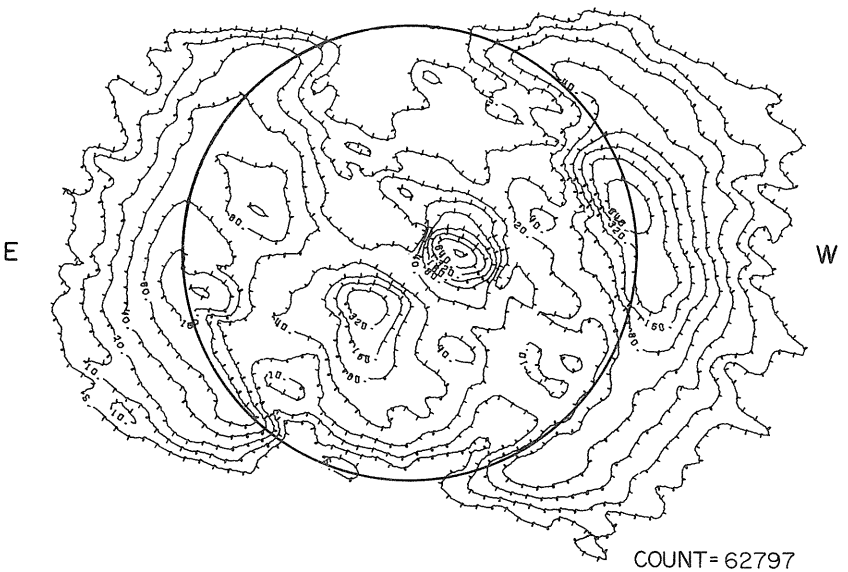
1545 UT

NRL
OSO-7



1928-2242 UT

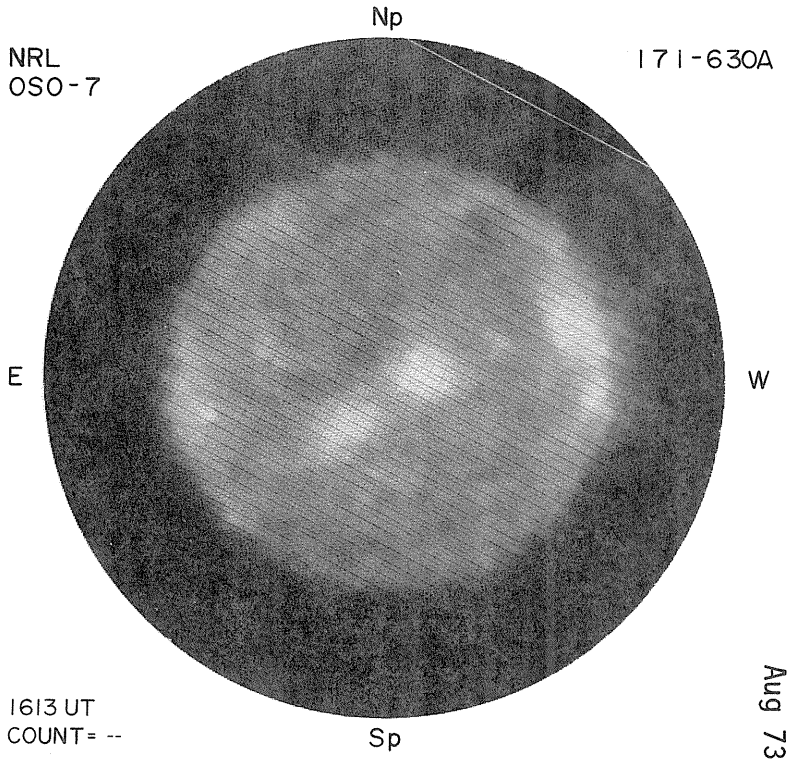
NASA GSFC
OSO-7



COUNT = 62797
ROLL = 31.3°
P-TH = -3.78

1616 UT

NRL
OSO-7



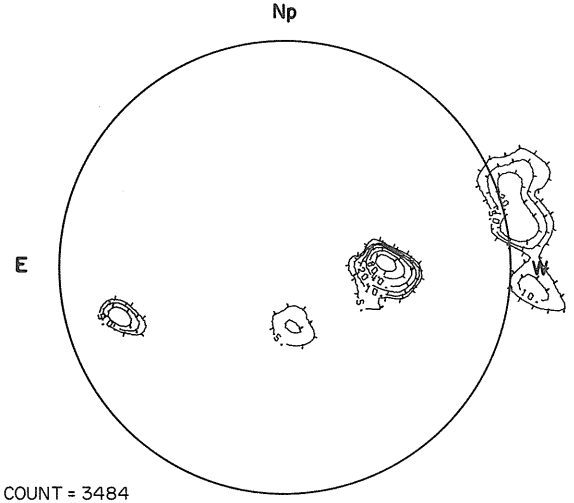
1613 UT
COUNT = --

39
Aug 73

AUGUST 7, 1973 (P=13.11, B_o=6.21, L_o=203.00)

NASA GSFC
OSO-7

X-RAY
8-16A



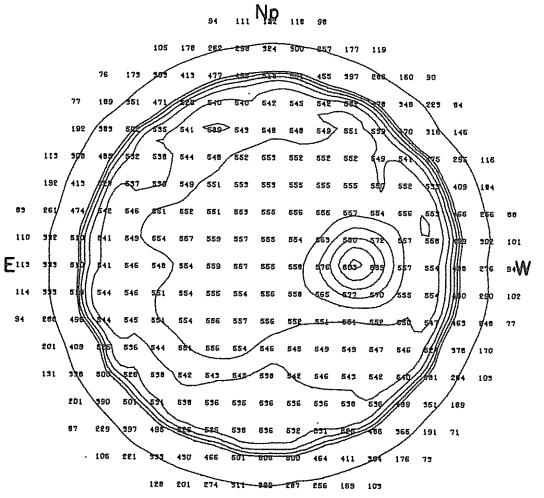
COUNT = 3484
ROLL = 31.0°
P-TH = -3.68

1506 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



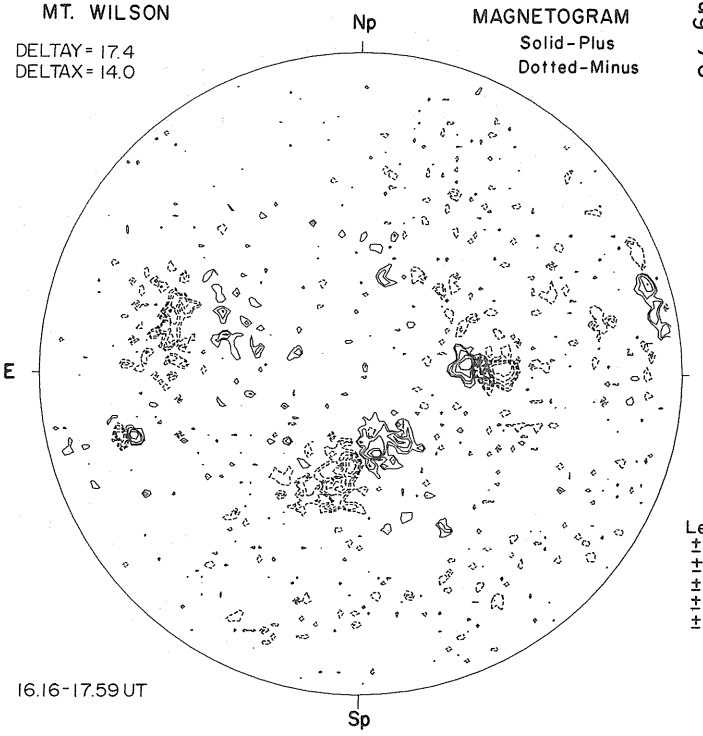
1452 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

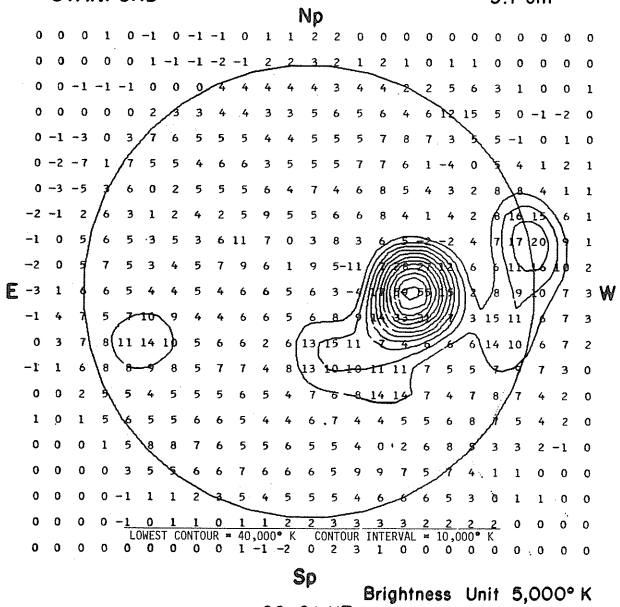


Levels
±5
±10
±20
±40
±80

16.16-17.59 UT

STANFORD

9.1 cm



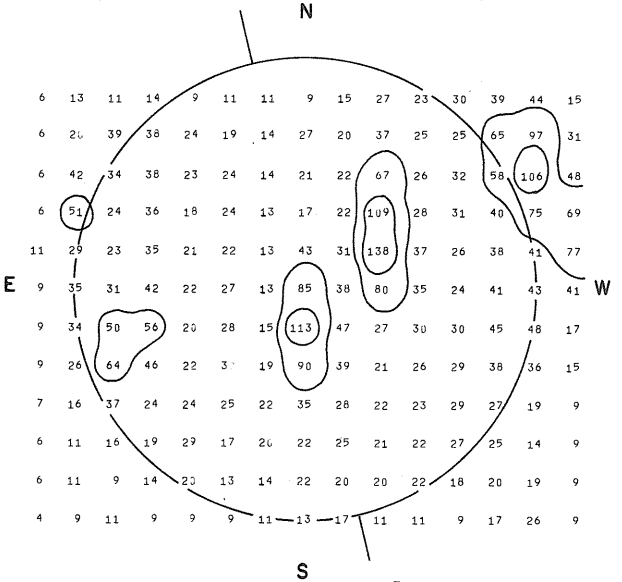
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

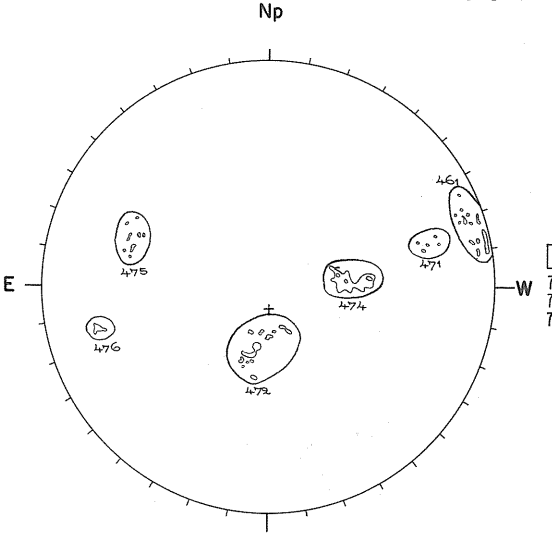


02-03 UT

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

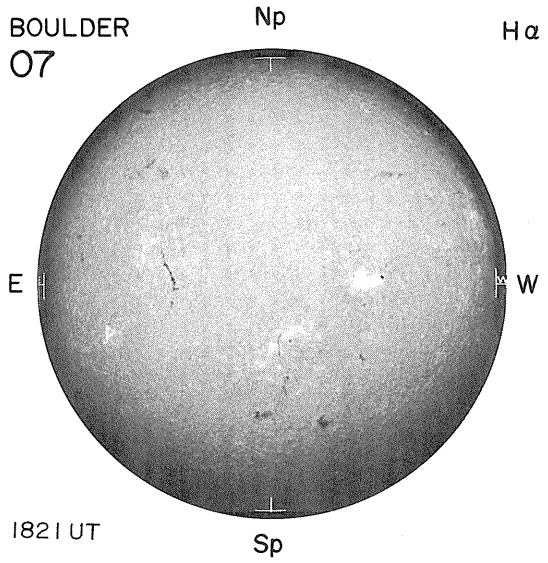
McMATH-HULBERT

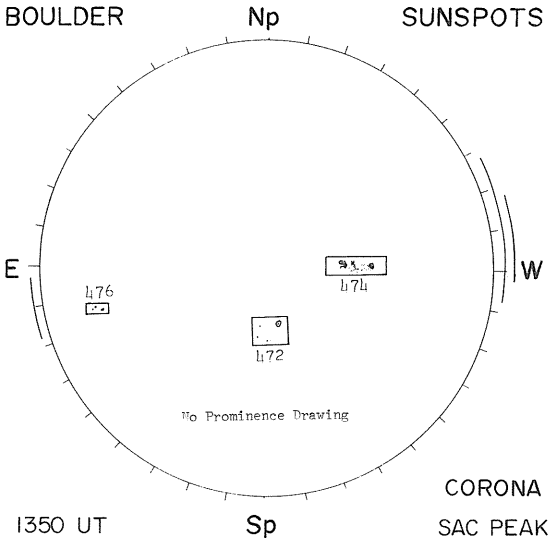
CALCIUM REPORT

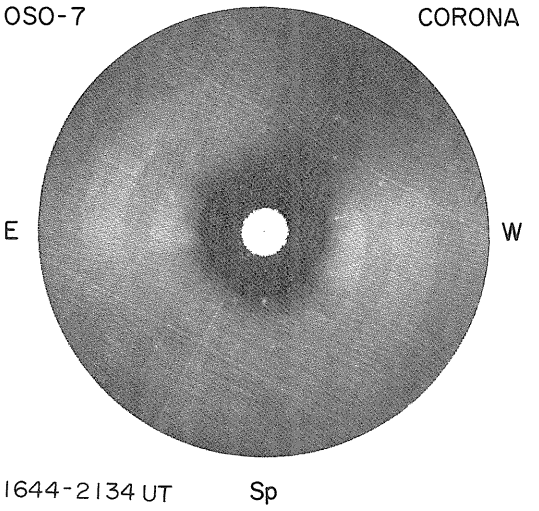


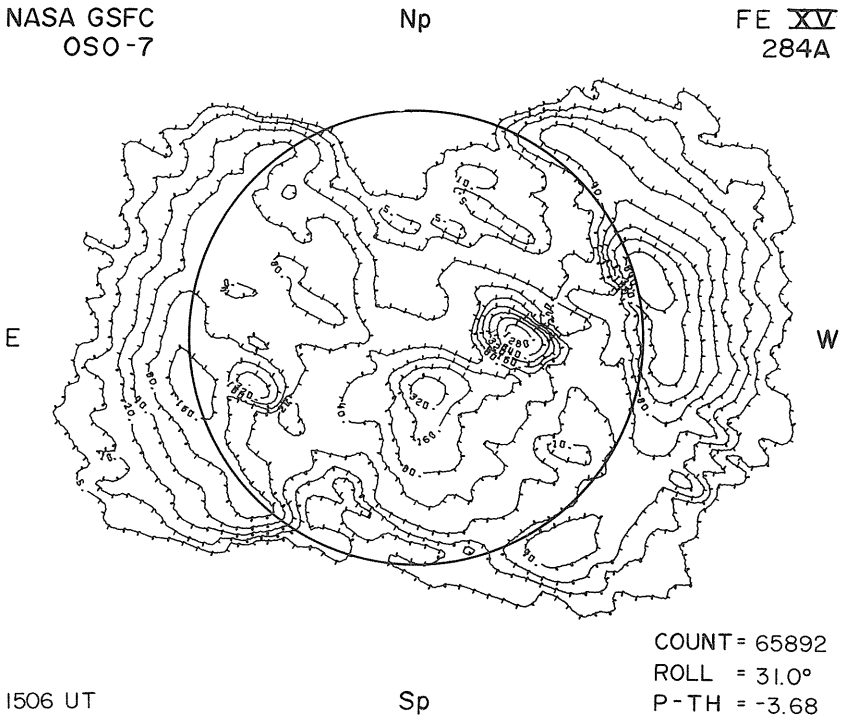
FAIR	M
72 - 1300 - 2.5	
74 - 1700 - 4.5	
76 - 0400 - 3.0	

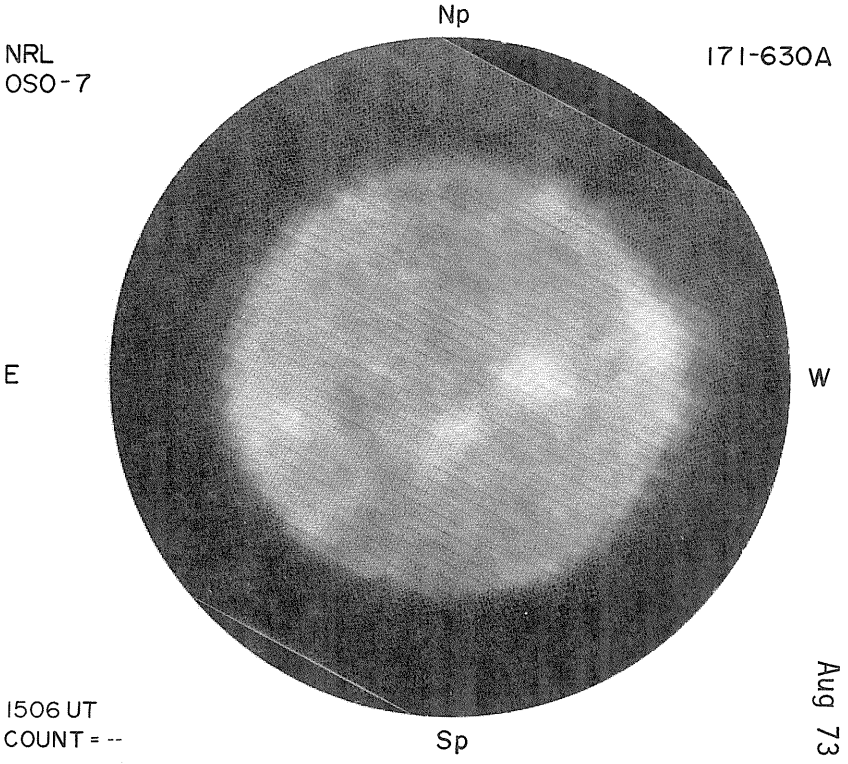
1550 UT


BOULDER
07
Np
Hα
E
W
1821 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
476
474
472
No Prominence Drawing
CORONA
1350 UT
Sp
SAC PEAK


NRL
OSO-7
WHITE-LIGHT
CORONA
E
W
1644-2134 UT
Sp


NASA GSFC
OSO-7
Np
FE XV
284A
E
W
COUNT = 65892
ROLL = 31.0°
P-TH = -3.68
1506 UT
Sp

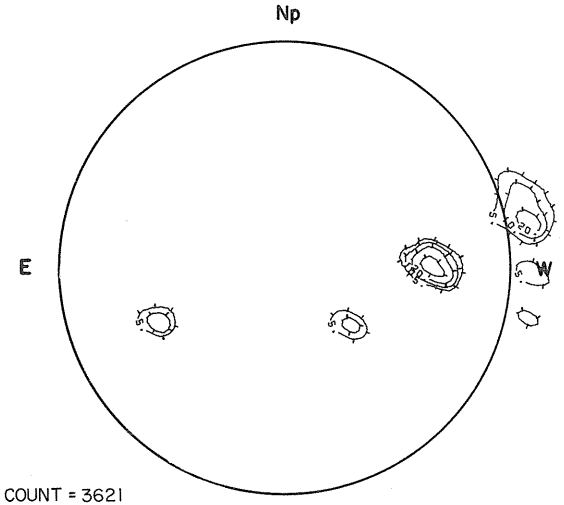

Np
NRL
OSO-7
171-630A
E
W
1506 UT
COUNT = --
Sp

AUGUST 8, 1973 (P = 13.48, B_o = 6.27, L_o = 189.78)

42
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



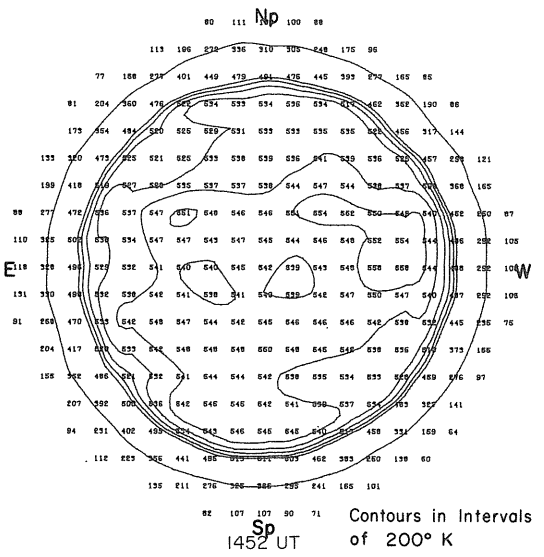
COUNT = 3621
ROLL = 30.7°
P-TH = -3.58

1357 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



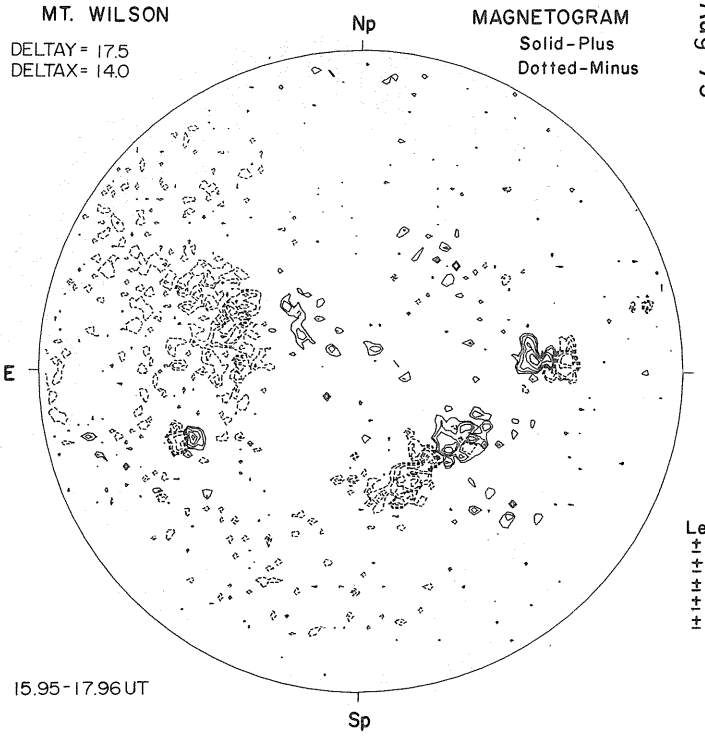
1452 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

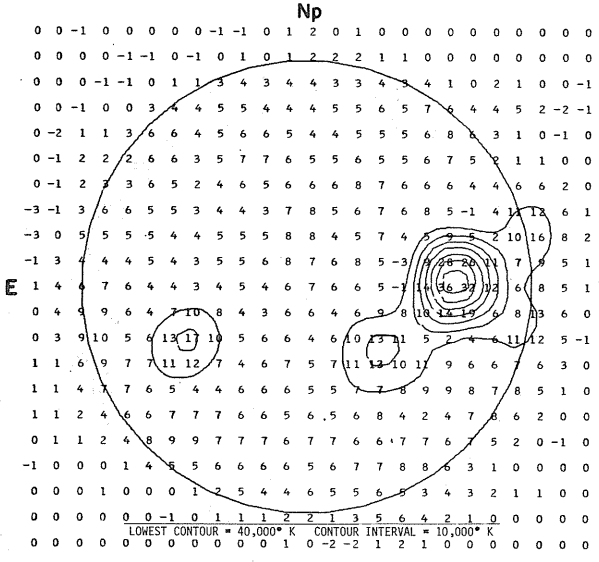


Levels
± 5
± 10
± 20
± 40
± 80

15.95-17.96 UT

STANFORD

9.1 cm

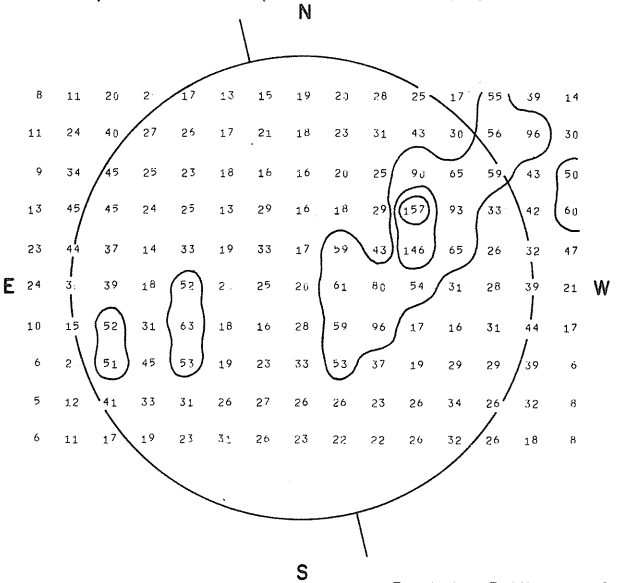


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

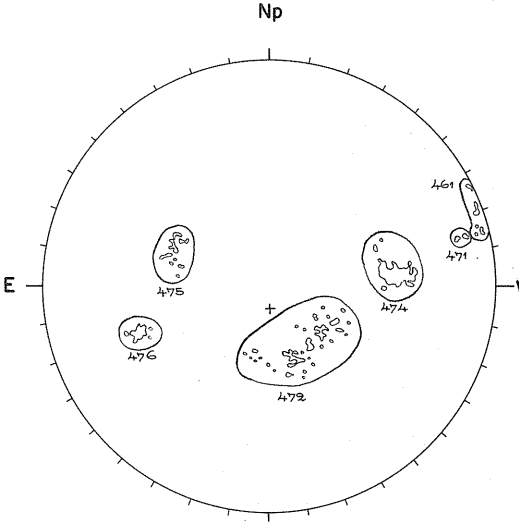


02-03 UT

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

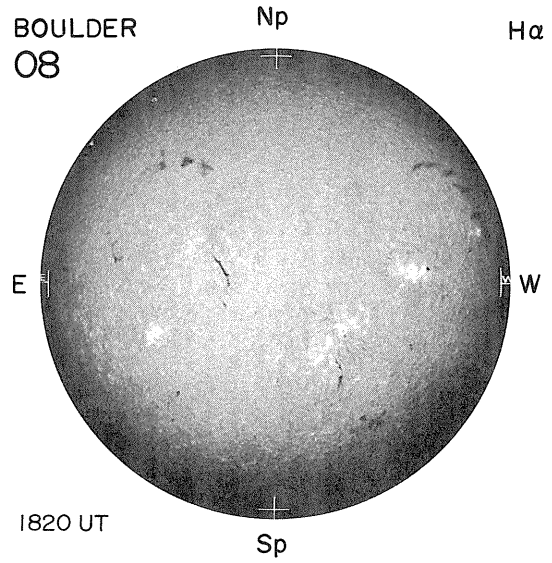
McMATH-HULBERT

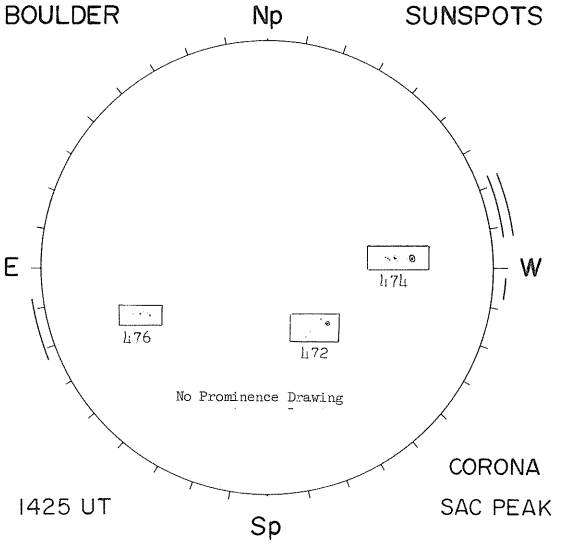
CALCIUM REPORT

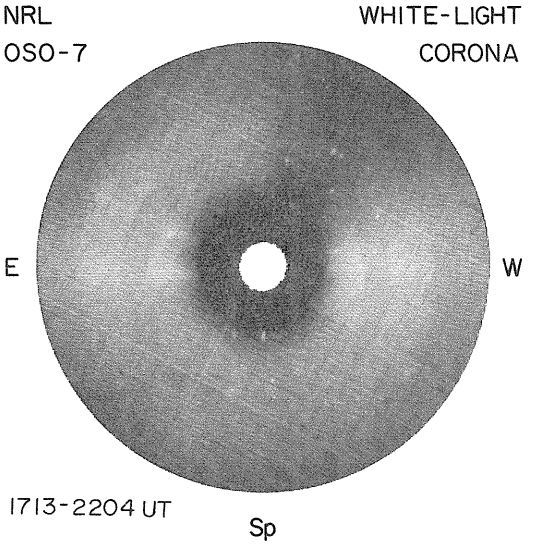


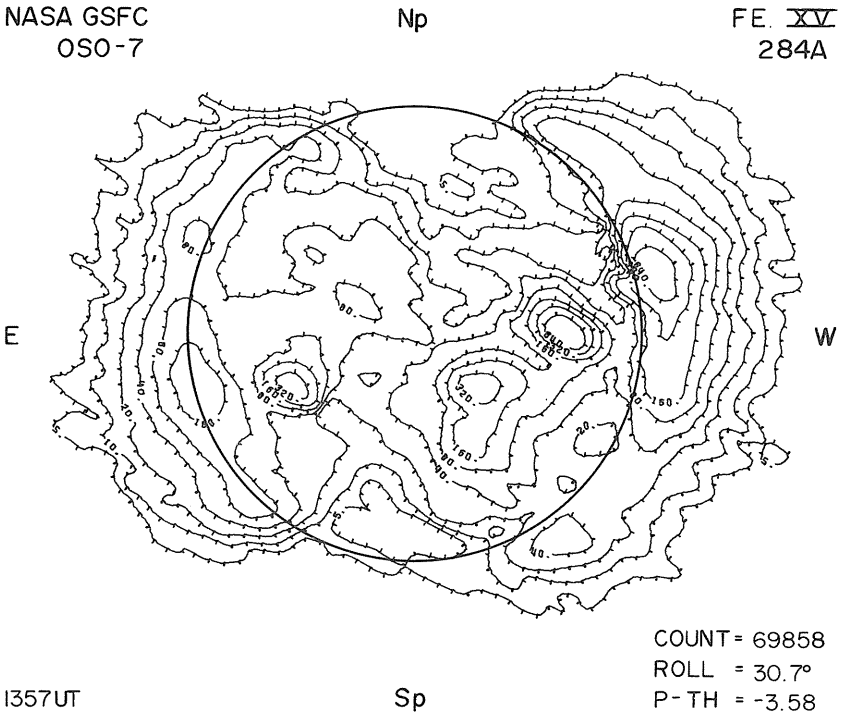
POOR	B
71 - 0300	- 2.5
72 - 1500	- 3.0
74 - 1900	- 4.0
76 - 0700	- 3.0

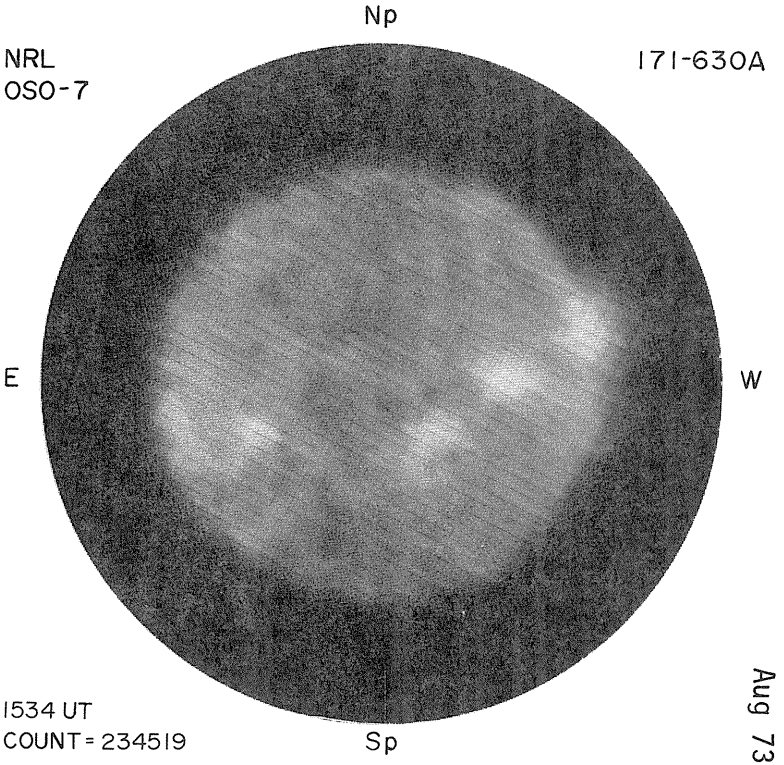
1330 UT


BOULDER
08
Np
Hα
E
W
1820 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
474
476
472
No Prominence Drawing
CORONA
SAC PEAK
1425 UT
Sp


NRL
OSO-7
WHITE-LIGHT
CORONA
E
W
1713-2204 UT
Sp

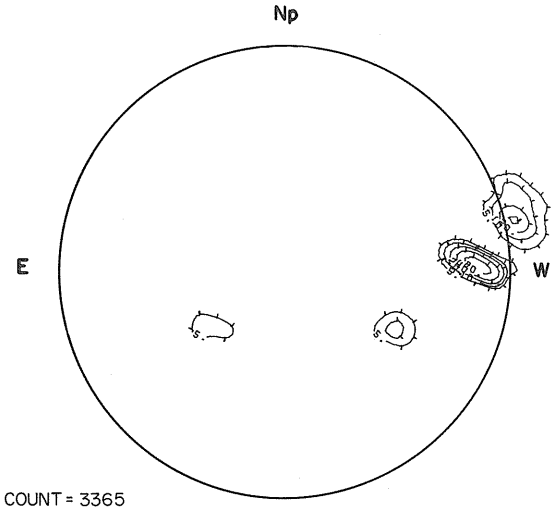

NASA GSFC
OSO-7
Np
FE. XV
284A
E
W
COUNT = 69858
ROLL = 30.7°
P-TH = -3.58
1357UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1534 UT
COUNT = 234519
Sp

AUGUST 9, 1973 (P = 13.85, B_o = 6.33, L_o = 176.56)

NASA GSFC
OSO-7

X-RAY
8-16A



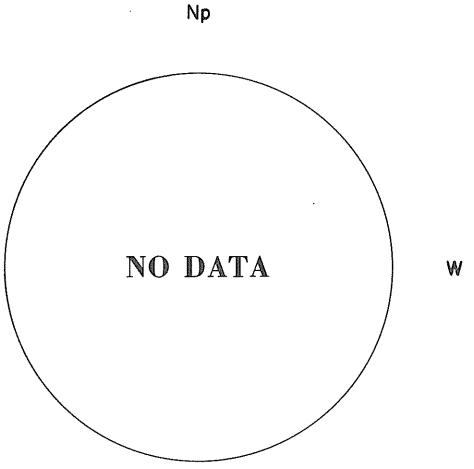
COUNT = 3365
ROLL = 30.0°
P-TH = -3.47

1427 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

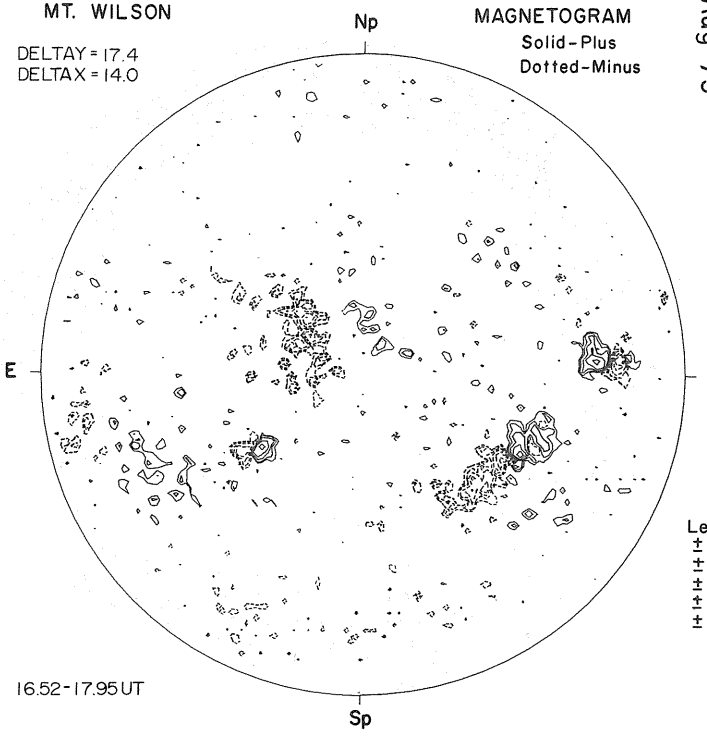


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

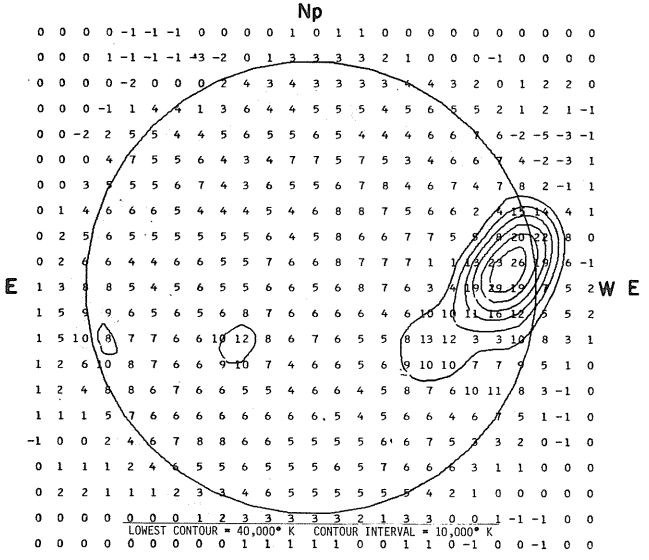


Levels
± 5
± 10
± 20
± 40
± 80

16.52-17.95 UT

STANFORD

9.1 cm

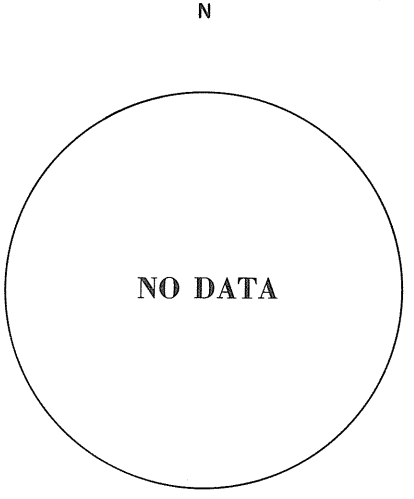


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

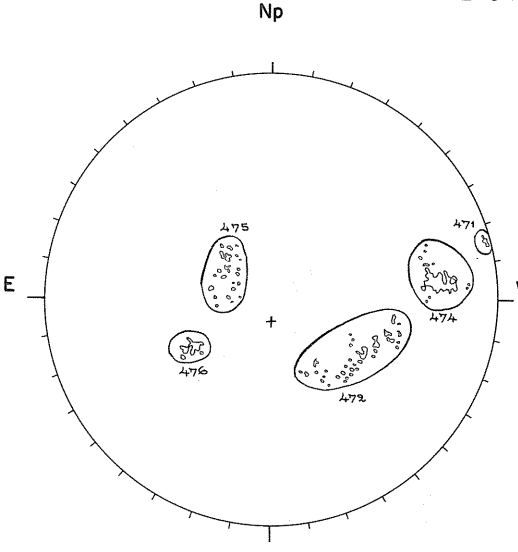


02-03 UT

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

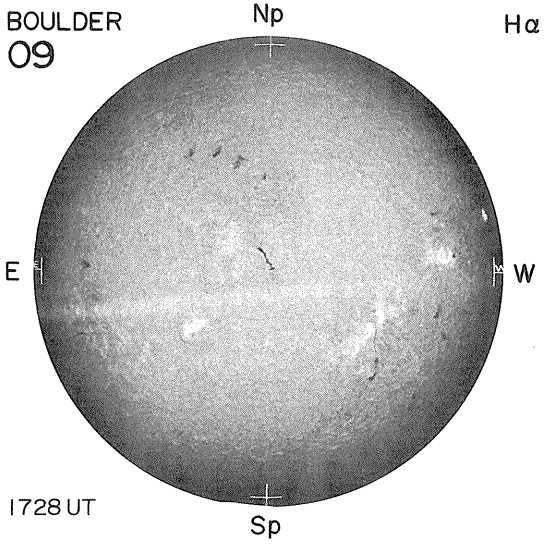
McMATH-HULBERT

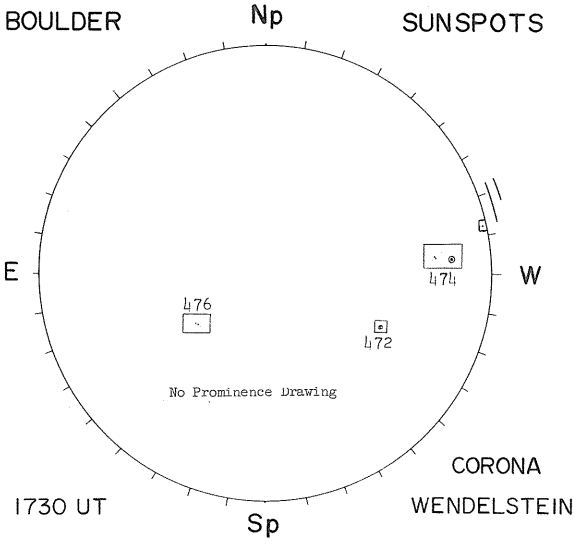
CALCIUM REPORT

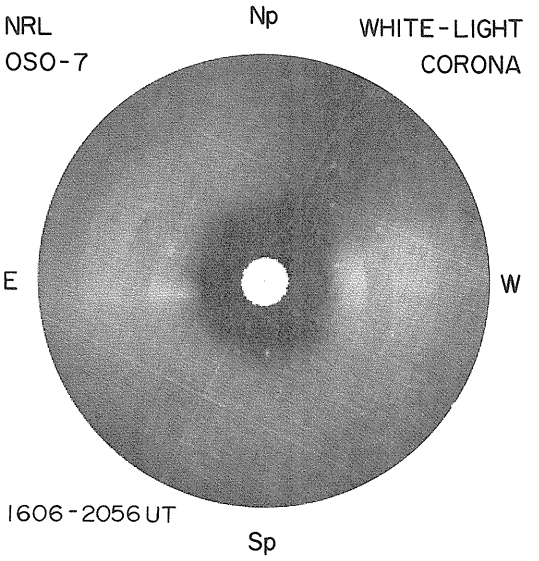


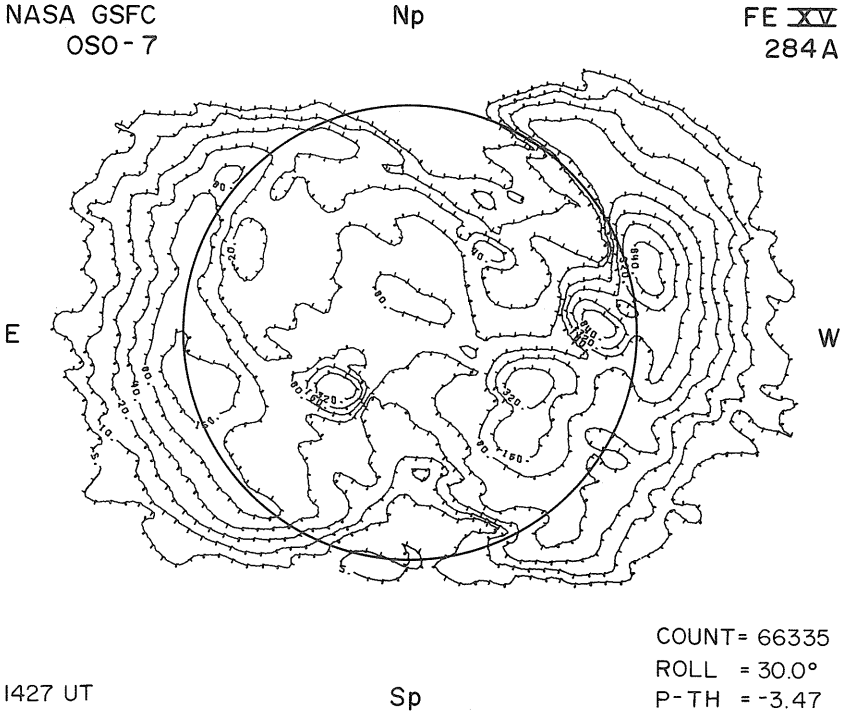
BAD	D
71 - 0500	- 3.5
72 - 1500	- 3.0
74 - 1800	- 3.5
76 - 0800	- 3.0

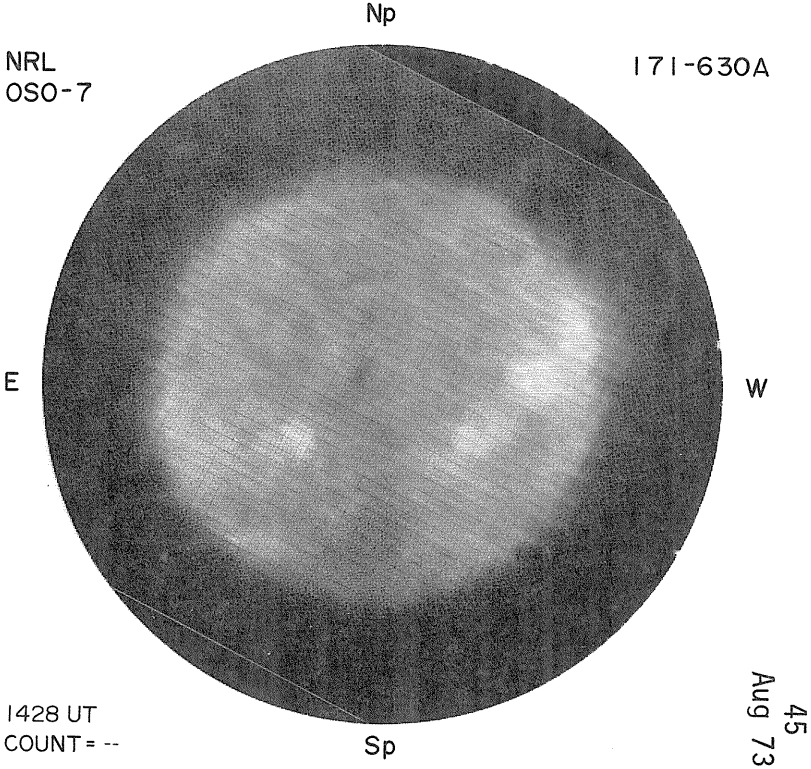
1330 UT


BOULDER
09
Np
Hα
E
W
1728 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
476
474
472
No Prominence Drawing
CORONA
WENDELSTEIN
1730 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1606-2056 UT
Sp

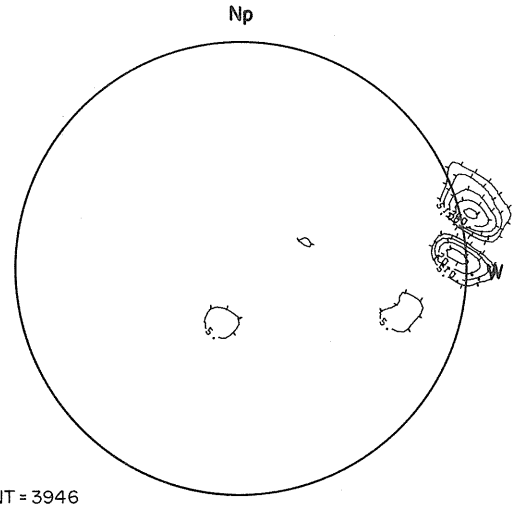

NASA GSFC
OSO-7
Np
FE XV
284A
E
W
COUNT= 66335
ROLL = 30.0°
P-TH = -3.47
1427 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1428 UT
COUNT= --
Sp

AUGUST 10, 1973 (P = 14.22, B_o = 6.39, L_o = 163.33)

NASA GSFC
OSO-7

X-RAY
8-16A



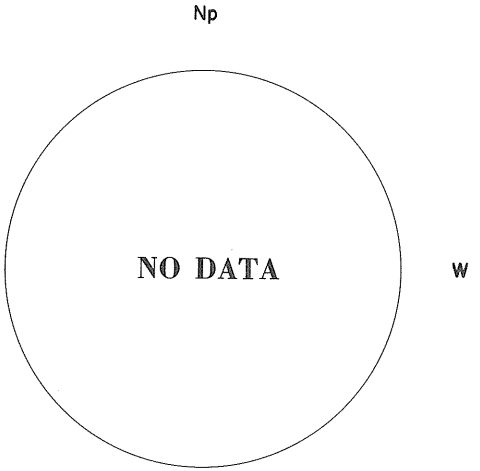
COUNT = 3946
ROLL = 29.4°
P-TH = -3.36

1459 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

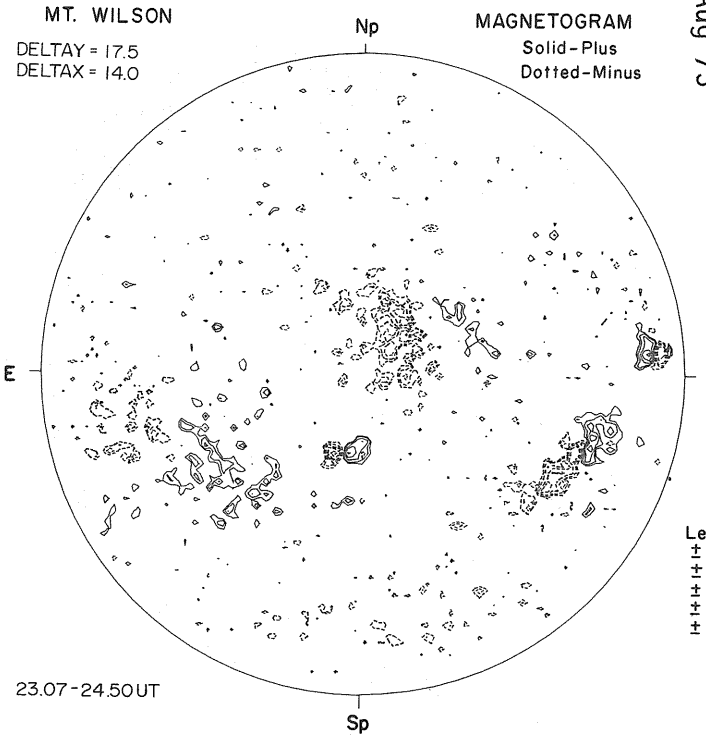


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

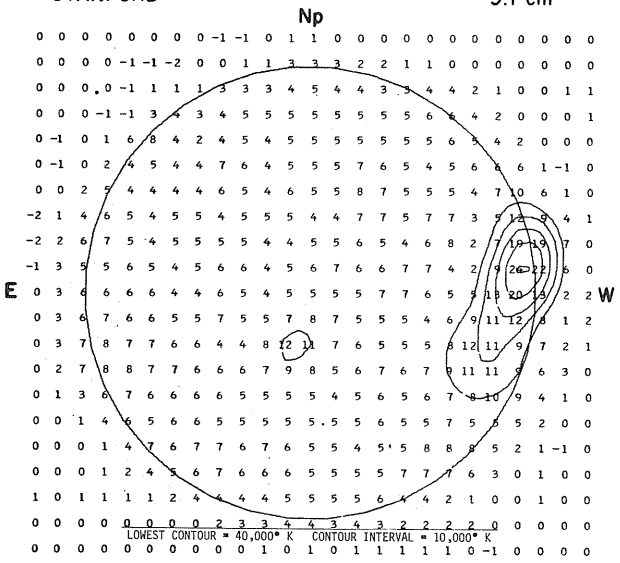


Levels
±5
±10
±20
±40
±80

23.07-24.50UT

STANFORD

9.1 cm



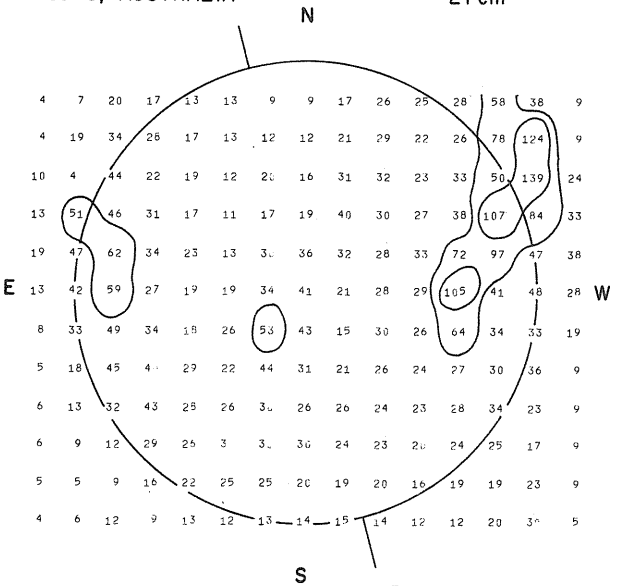
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

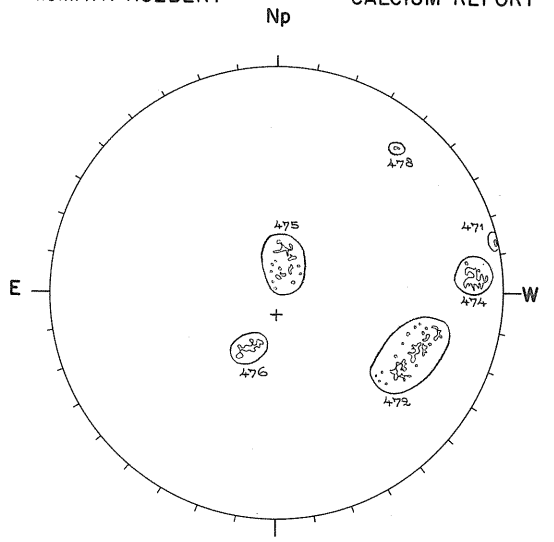


02-03 UT

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

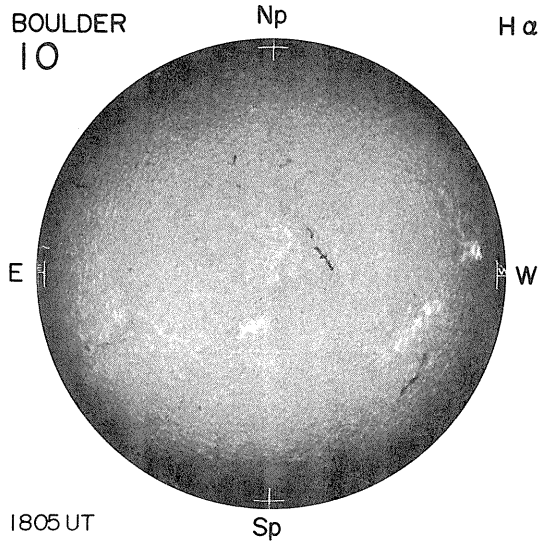
McMATH-HULBERT

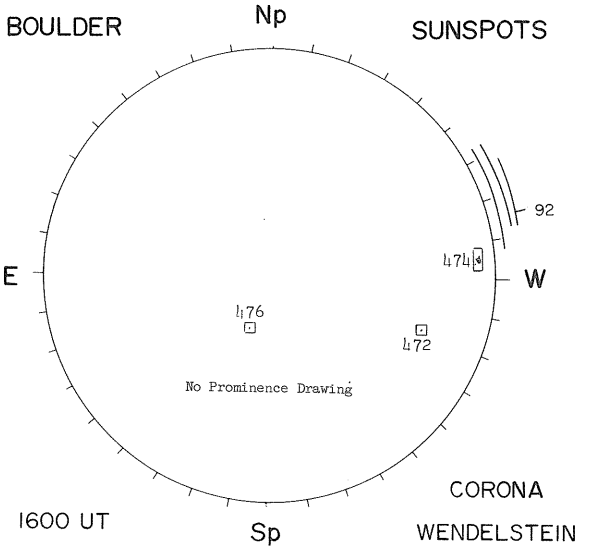
CALCIUM REPORT

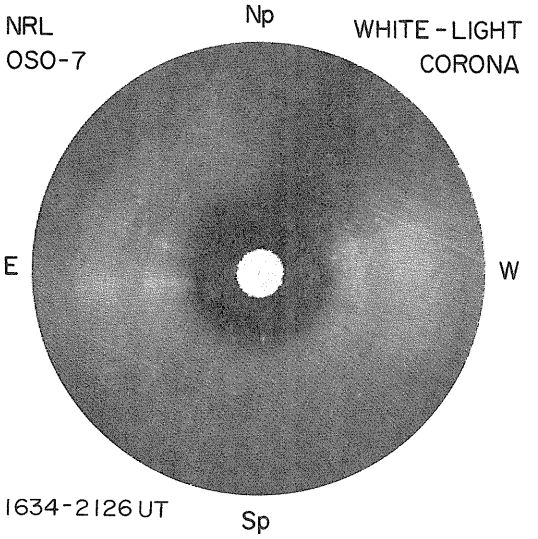


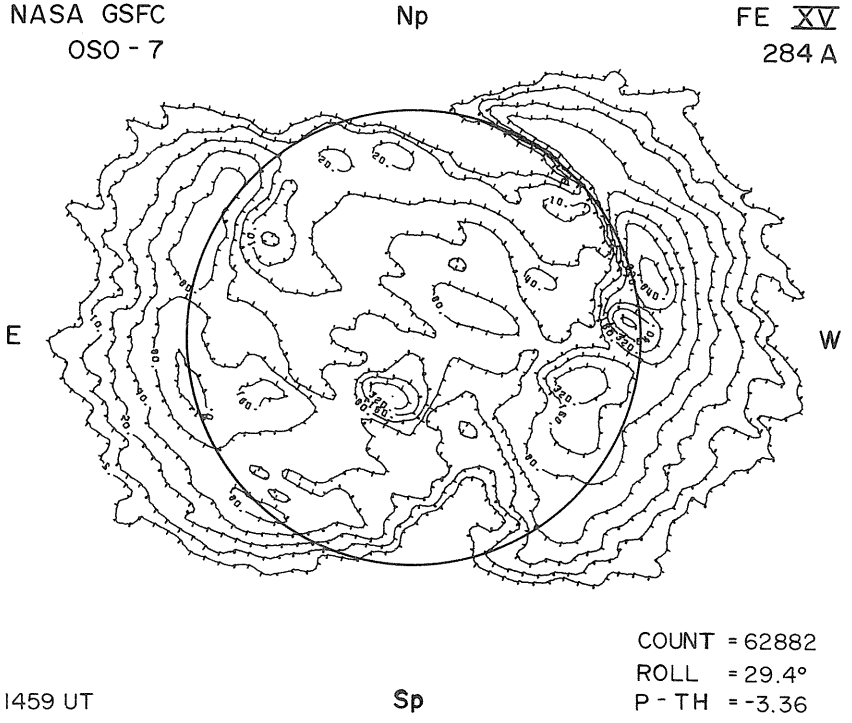
FAIR	M
72 - 1300	- 2.5
74 - 1400	- 3.5
76 - 0600	- 3.0

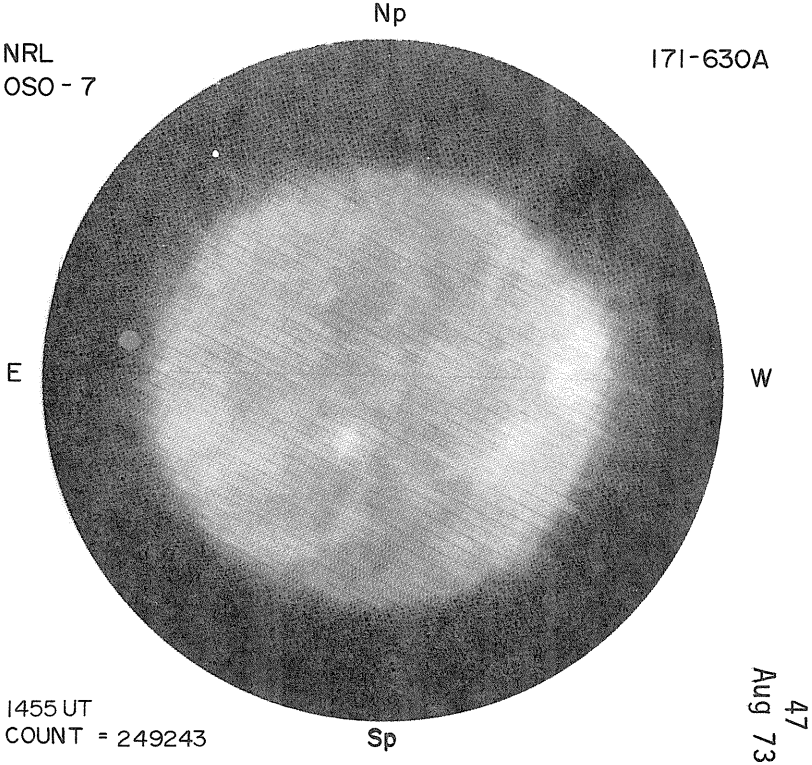
1550 UT


BOULDER
10
Np
Hα
E
W
1805 UT
Sp


BOULDER
Np
SUNSPOTS
92
474
476
472
E
W
No Prominence Drawing
1600 UT
Sp
CORONA
WENDELSTEIN


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1634-2126 UT
Sp

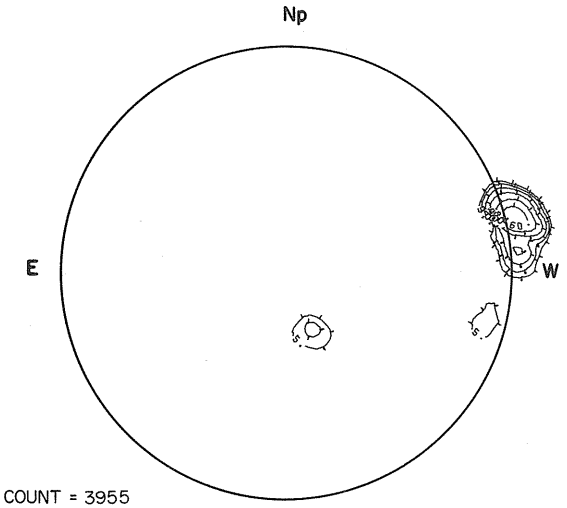

NASA GSFC
OSO - 7
Np
FE XV
284 A
E
W
COUNT = 62882
ROLL = 29.4°
P - TH = -3.36
1459 UT
Sp


Np
NRL
OSO - 7
171-630A
E
W
1455 UT
COUNT = 249243
Sp

AUGUST 11, 1973 (P = 14.58, B_o = 6.44, L_o = 150.11)

NASA GSFC
OSO-7

X-RAY
8-16A



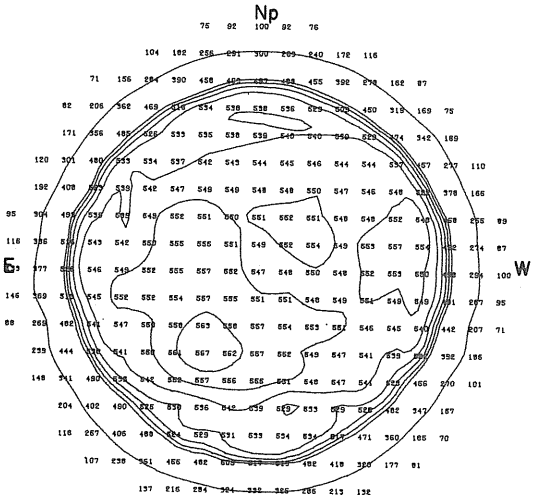
COUNT = 3955
ROLL = 28.7°
P-TH = -3.26

1351 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



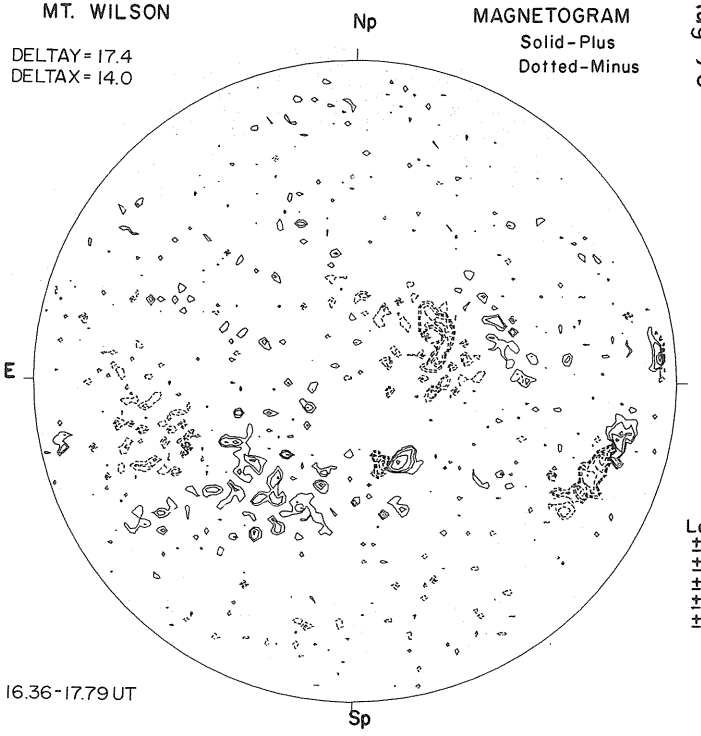
1459 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

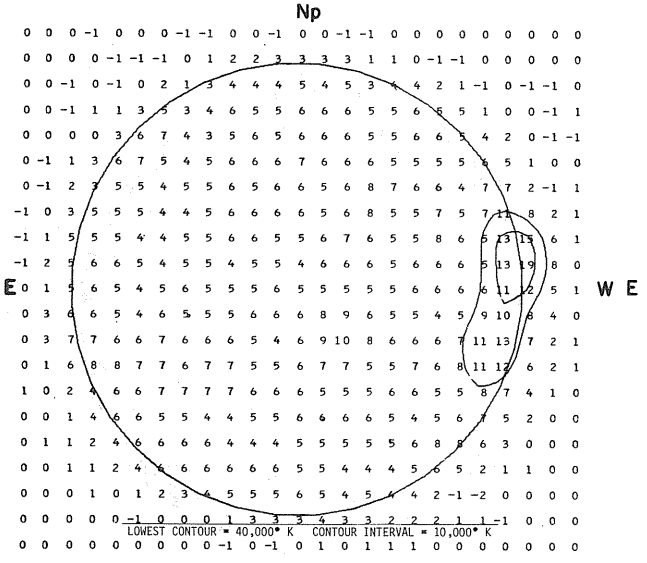


Levels
± 5
± 10
± 20
± 40
± 80

16.36-17.79 UT

STANFORD

9.1 cm

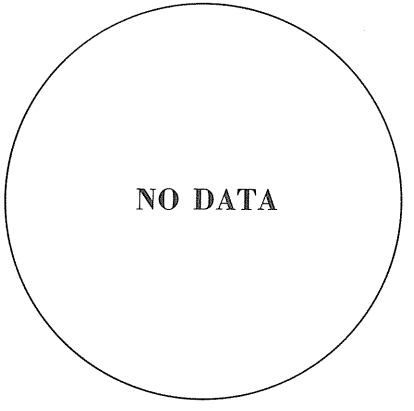


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

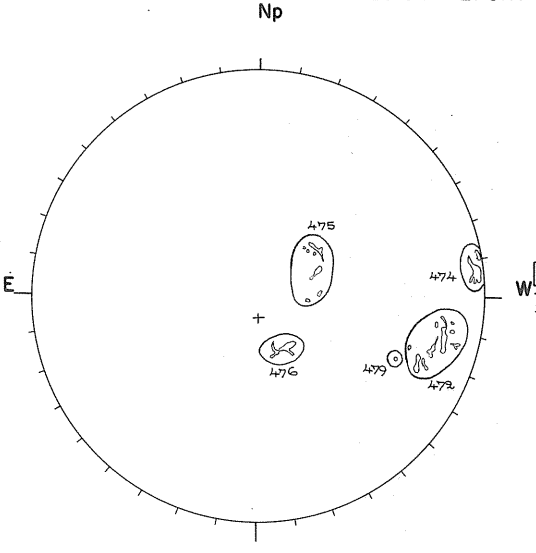


02-03 UT

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

McMATH-HULBERT

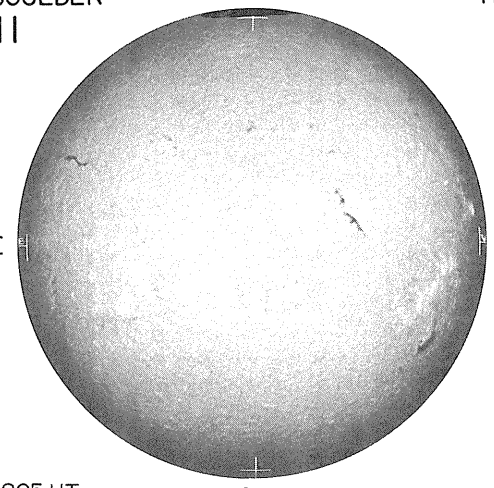
CALCIUM REPORT



FAIR	S
74 - 1600	-3.5
76 - 0600	-3.0

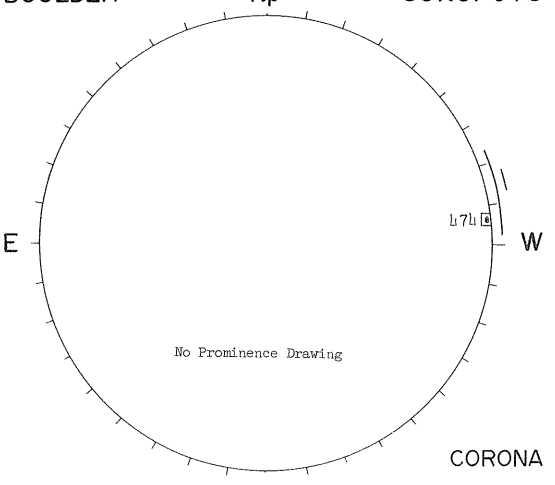
1440 UT

BOULDER
II



1805 UT

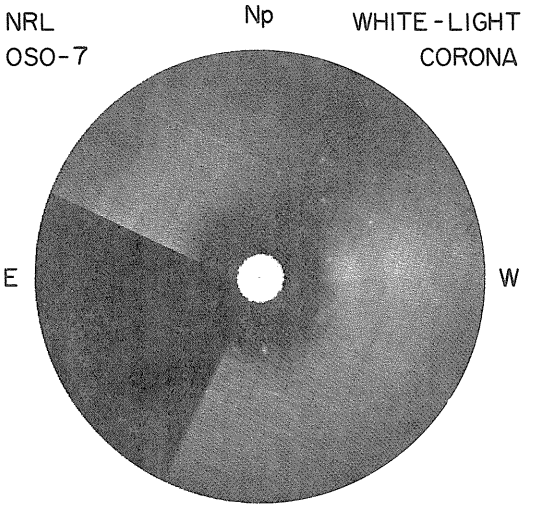
BOULDER



1645 UT

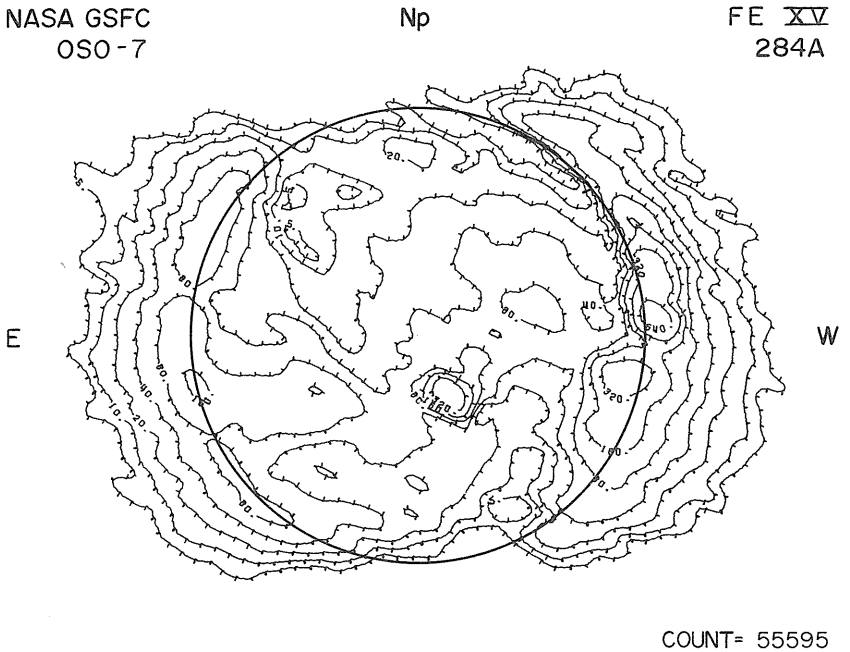
CORONA
SAC PEAK

NRL
OSO-7



1526-2017 UT

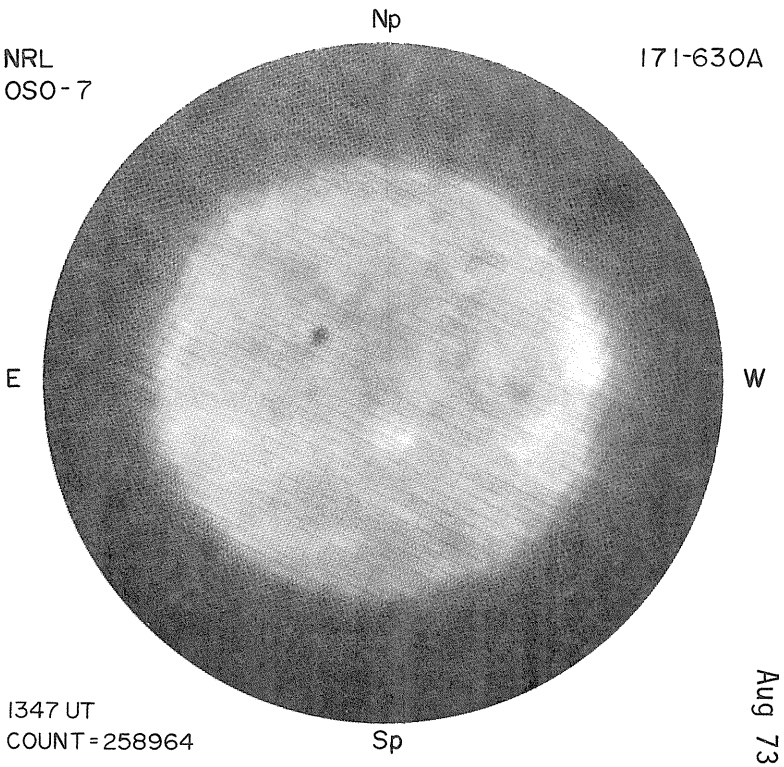
NASA GSFC
OSO-7



1351 UT

COUNT= 55595
ROLL = 28.7°
P-TH = -3.26

NRL
OSO-7



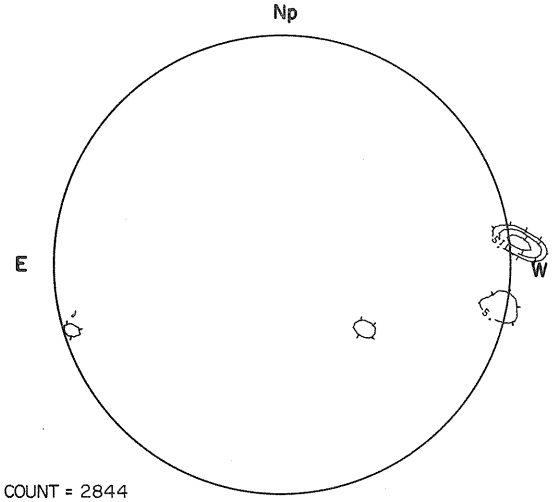
1347 UT
COUNT=258964

AUGUST 12, 1973 (P = 14.94, B_o = 6.50, L_o = 136.89)

50
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



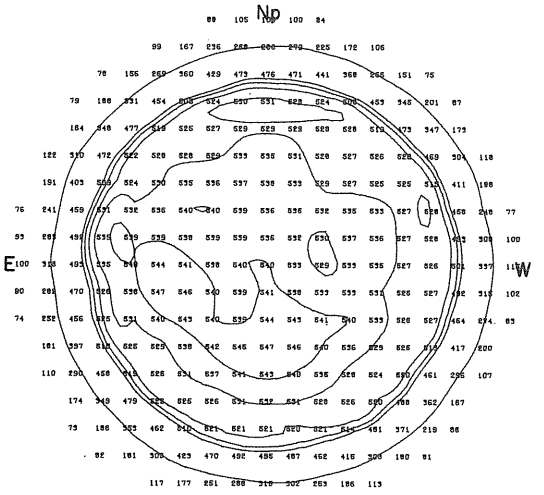
COUNT = 2844
ROLL = 28.1°
P-TH = -3.16

1243 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



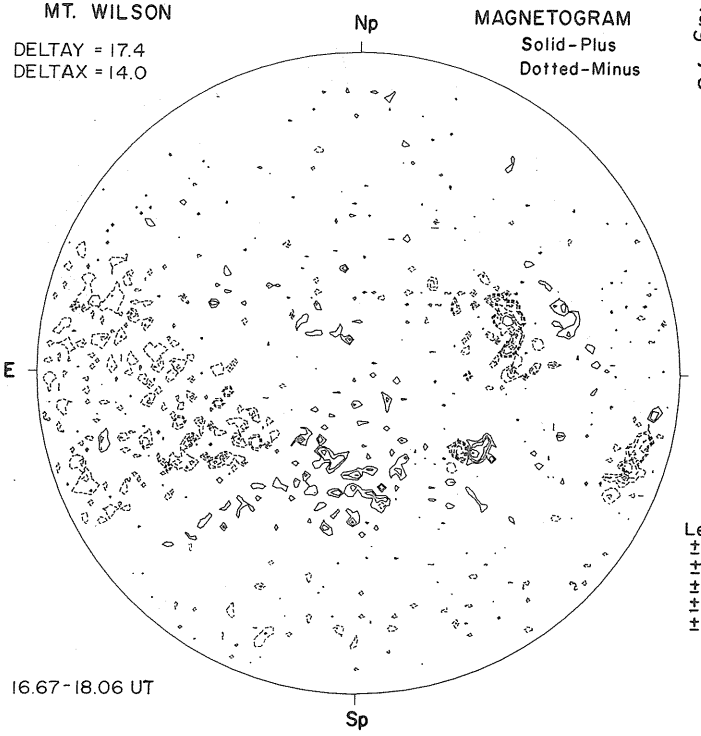
1737 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

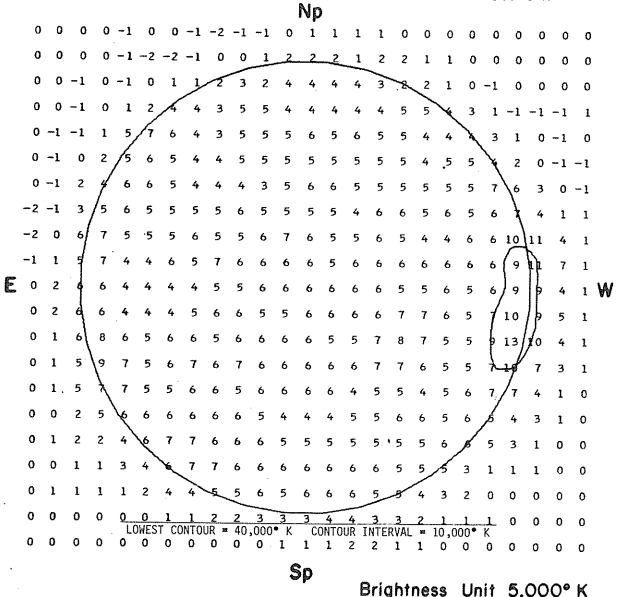


Levels
±5
±10
±20
±40
±80

16.67-18.06 UT

STANFORD

9.1 cm



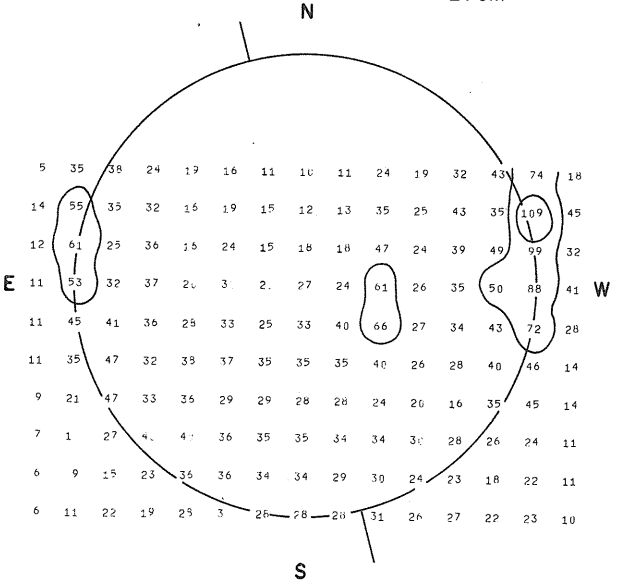
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

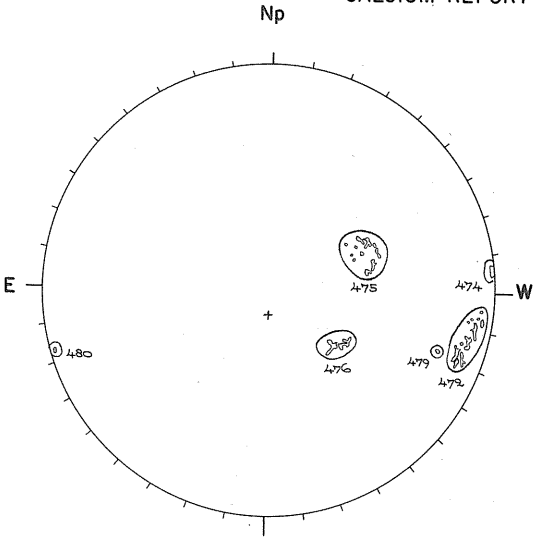


02-03 UT

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

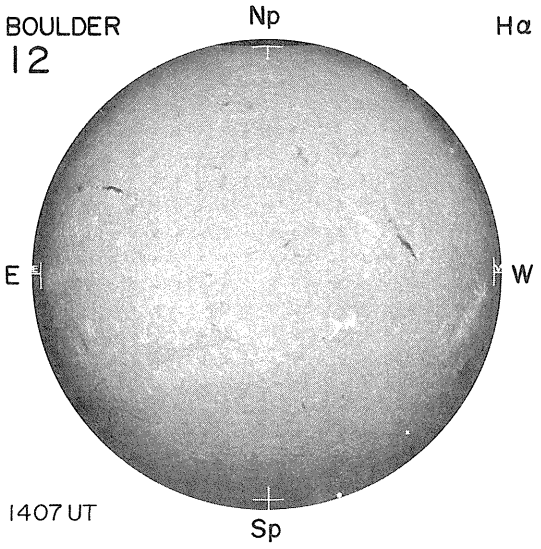
McMATH-HULBERT

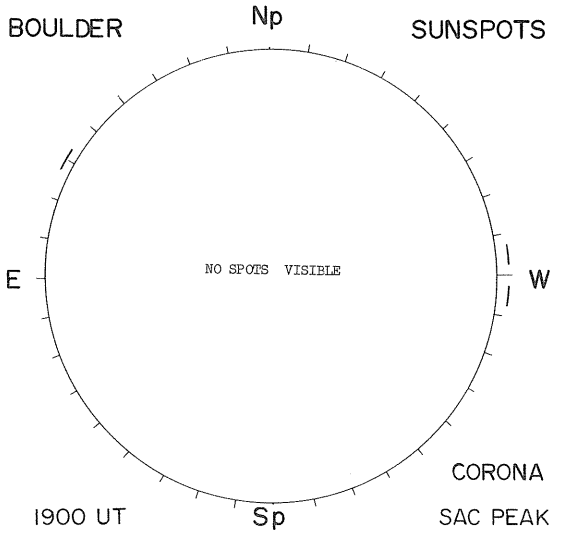
CALCIUM REPORT

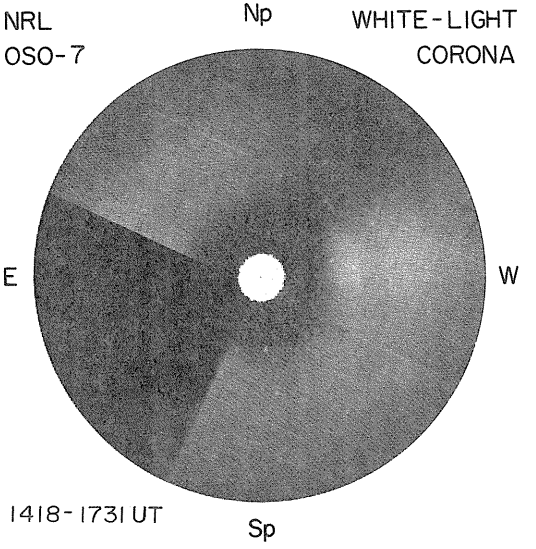


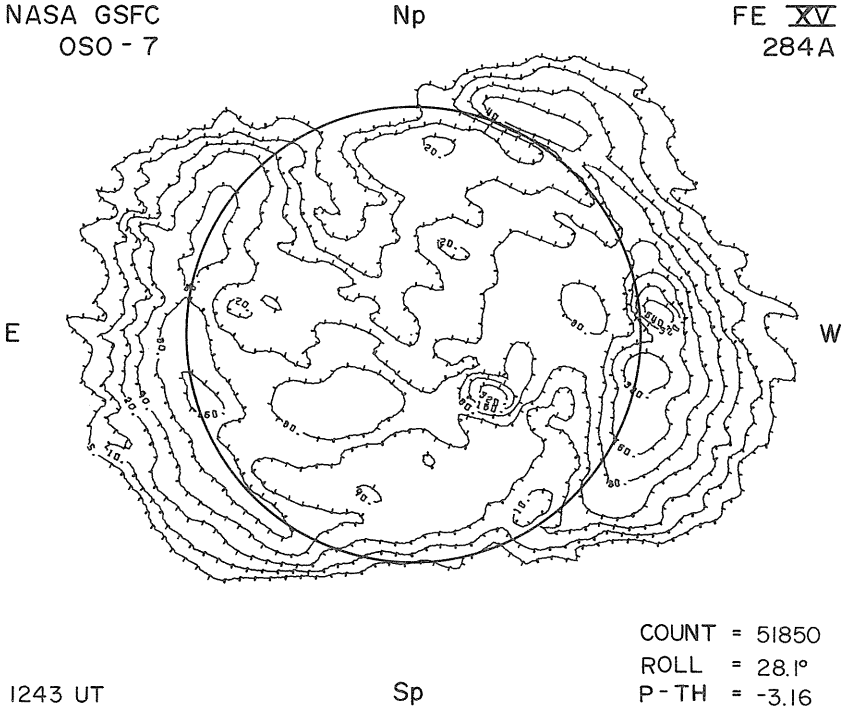
FAIR M
76-0600-2.5

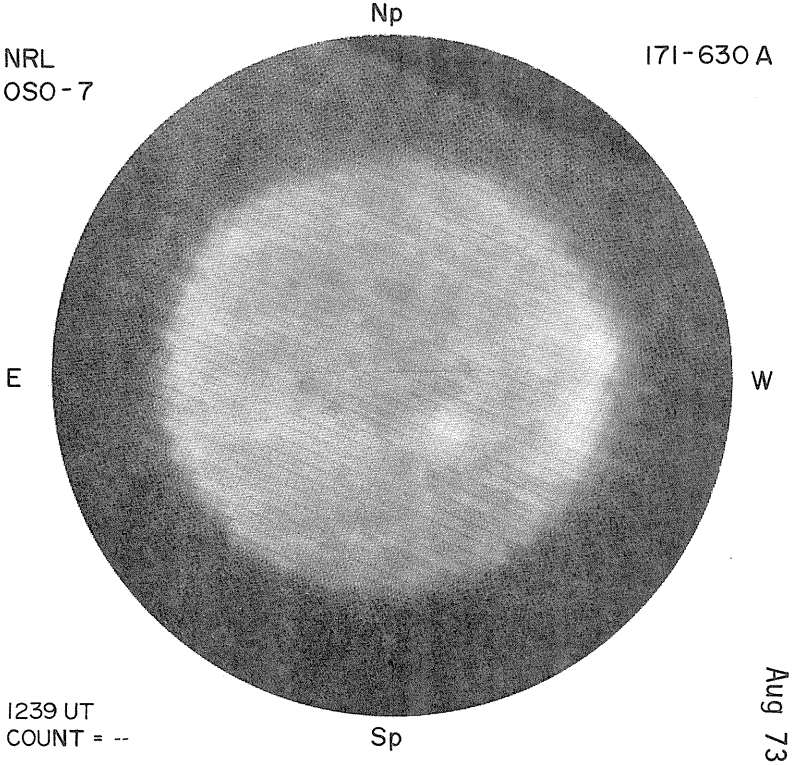
1405 UT


BOULDER
12
Np
Hα
E
W
1407 UT
Sp


BOULDER
Np
SUNSPOTS
NO SPOTS VISIBLE
E
W
CORONA
1900 UT
Sp
SAC PEAK


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1418-1731 UT
Sp

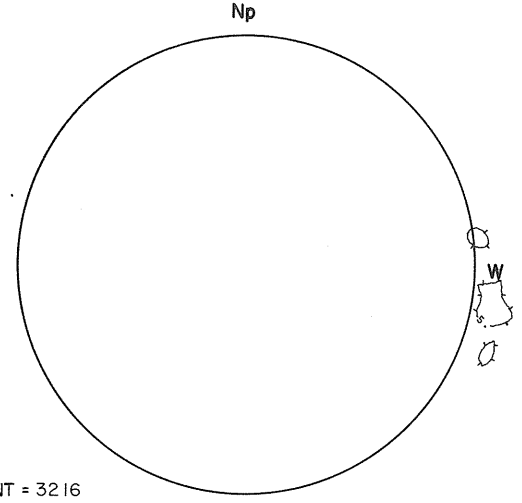

NASA GSFC
OSO - 7
Np
FE XV
284 A
E
W
COUNT = 51850
ROLL = 28.1°
P-TH = -3.16
1243 UT
Sp


Np
NRL
OSO-7
171-630 A
E
W
1239 UT
COUNT = --
Sp

AUGUST 13, 1973 (P = 15.29, B_o = 6.55, L_o = 123.67)

NASA GSFC
OSO-7

X-RAY
8-16A



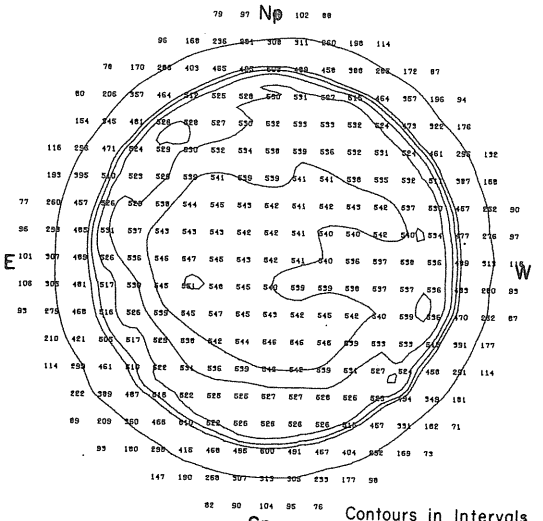
COUNT = 3216
ROLL = 27.2°
P-TH = -3.02

1803 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



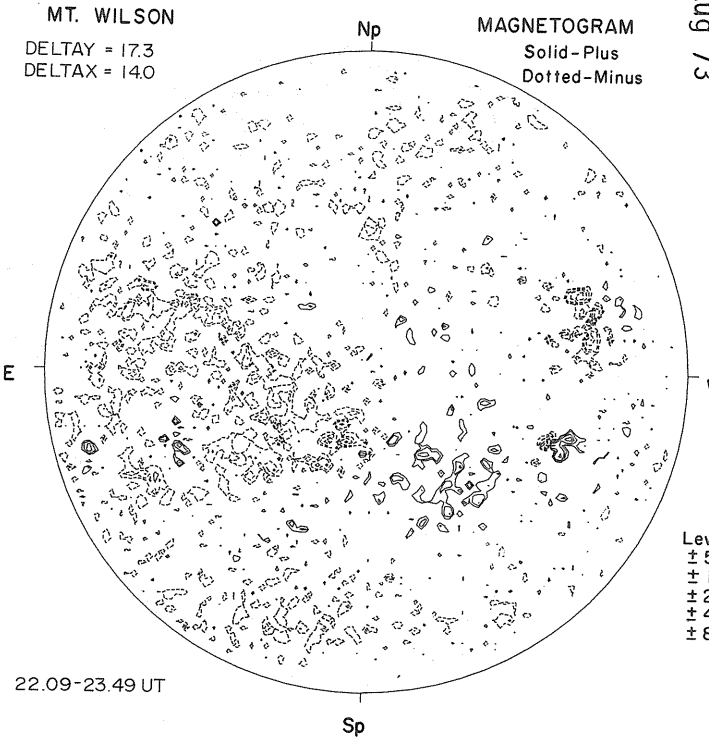
1334 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.3
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

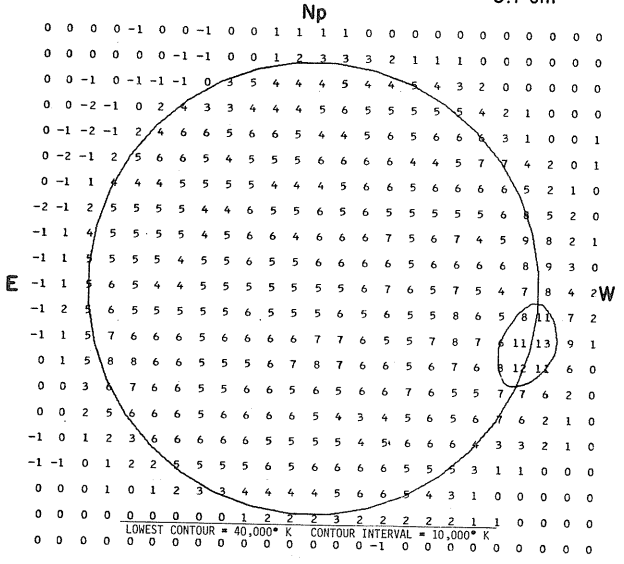


Levels
± 5
± 10
± 20
± 40
± 80

22.09-23.49 UT

STANFORD

9.1 cm

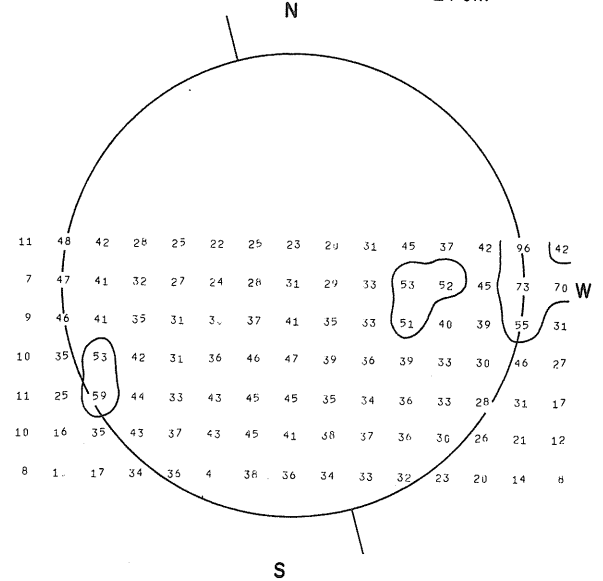


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

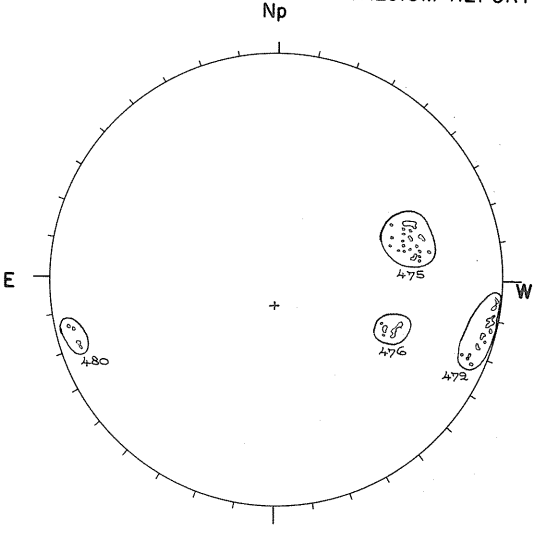


02-03 UT

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

McMATH-HULBERT

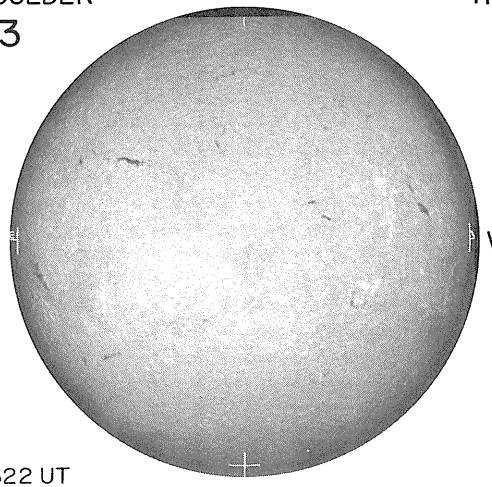
CALCIUM REPORT



FAIR	D
76-0500-2.5	

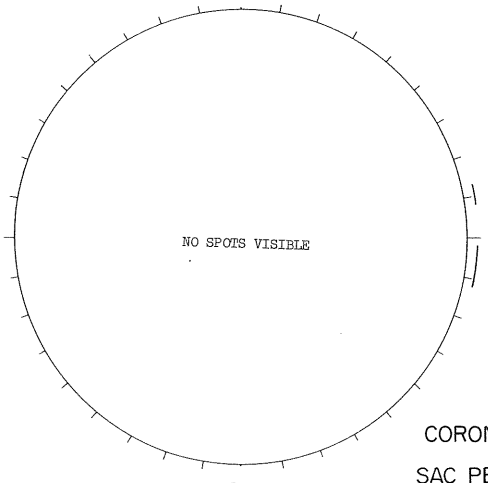
1210 UT

BOULDER
13



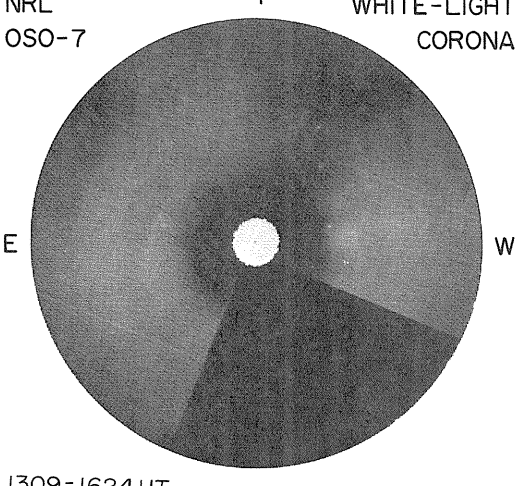
1622 UT

BOULDER



CORONA
SAC PEAK

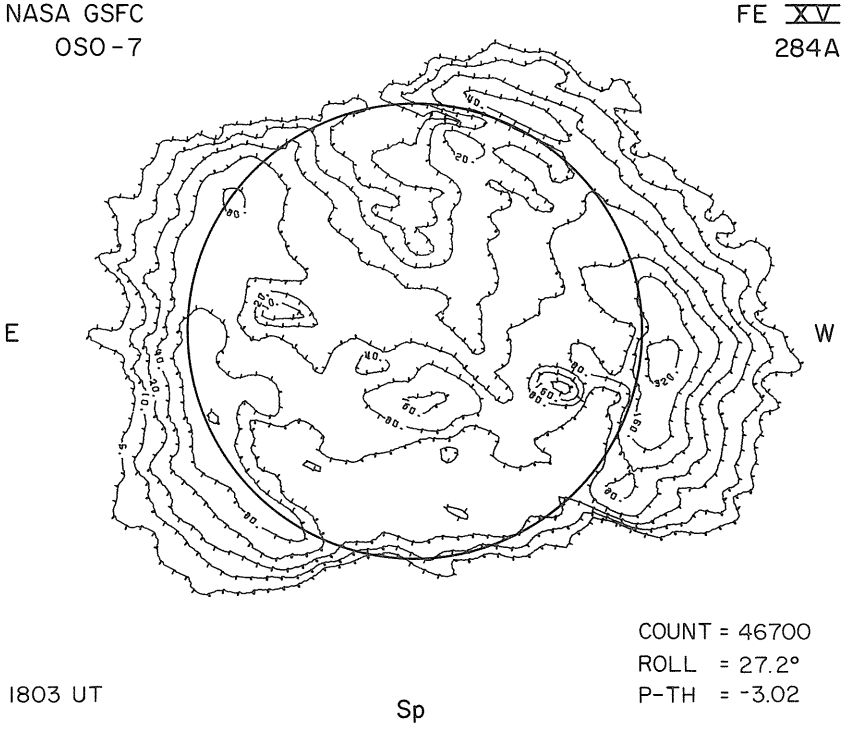
NRL
OSO-7



1309-1624 UT

NASA GSFC
OSO-7

FE XV
284A

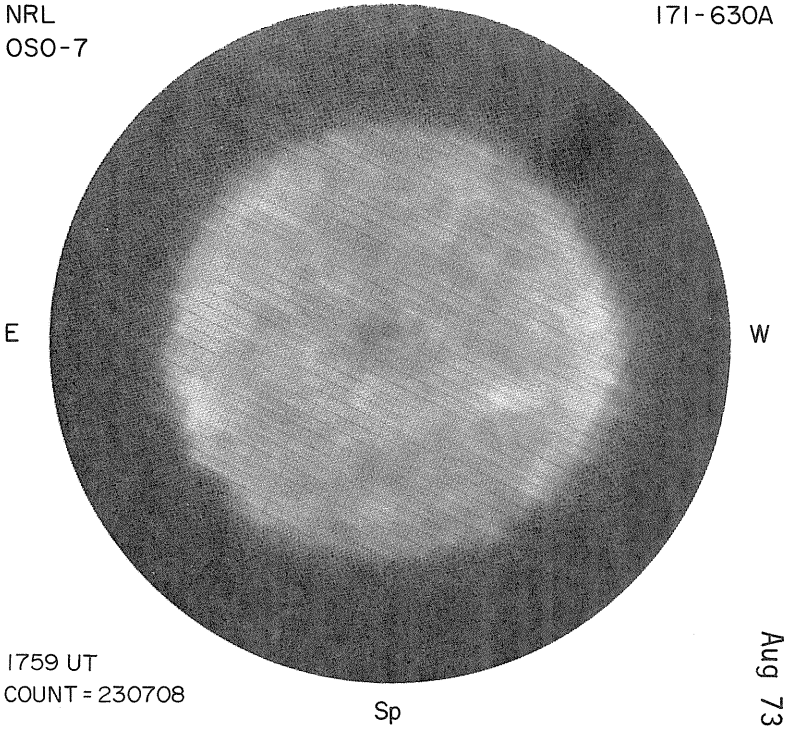


COUNT = 46700
ROLL = 27.2°
P-TH = -3.02

1803 UT

NRL
OSO-7

171-630A

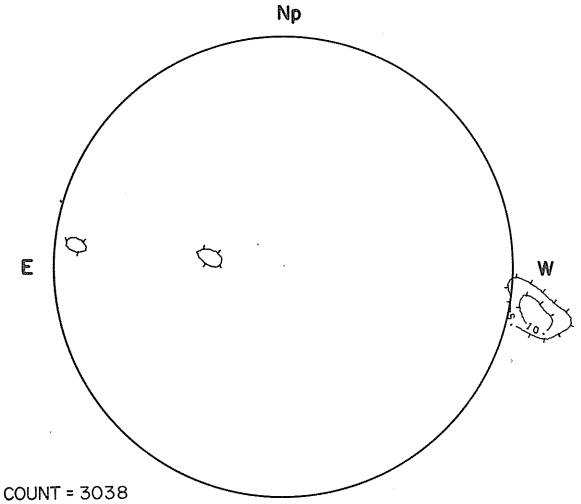


1759 UT
COUNT = 230708

AUGUST 14, 1973 (P = 15.64, B_o = 6.60, L_o = 110.45)

NASA GSFC
OSO-7

X-RAY
8-16A



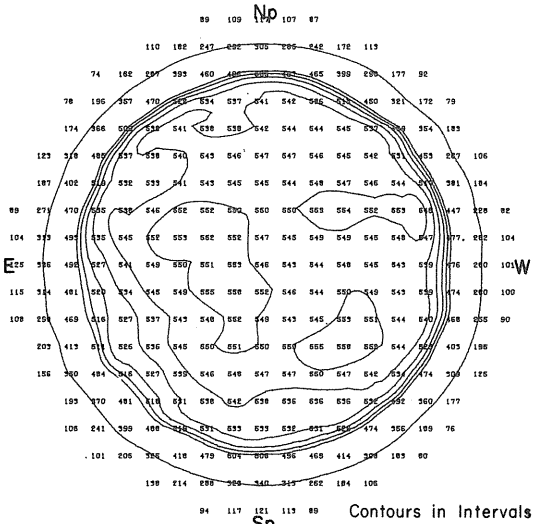
COUNT = 3038
ROLL = 26.4°
P-TH = -2.94

1204 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



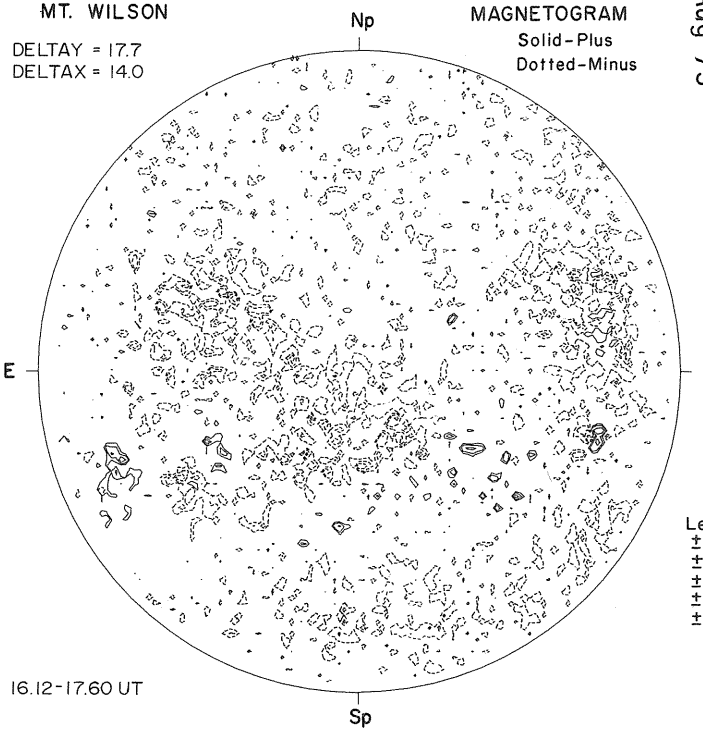
1341 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.7
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

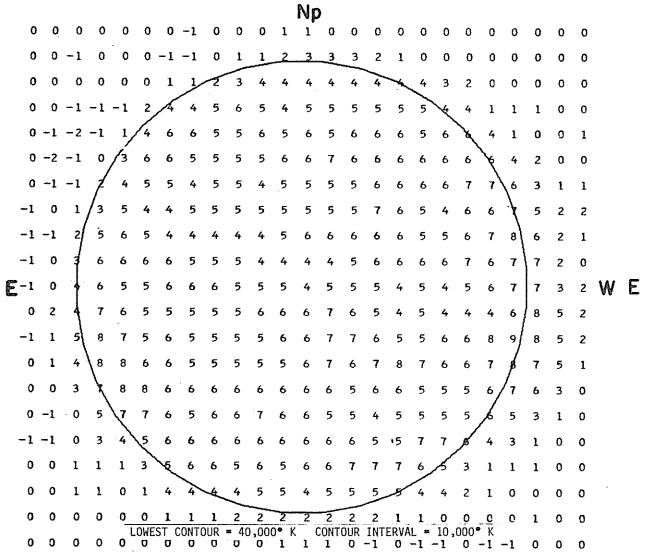


Levels
± 5
± 10
± 20
± 40
± 80

16.12-17.60 UT

STANFORD

9.1 cm

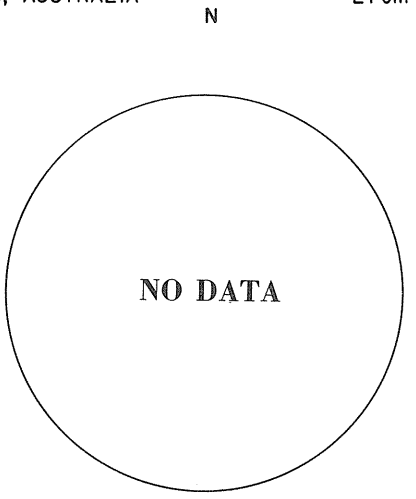


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

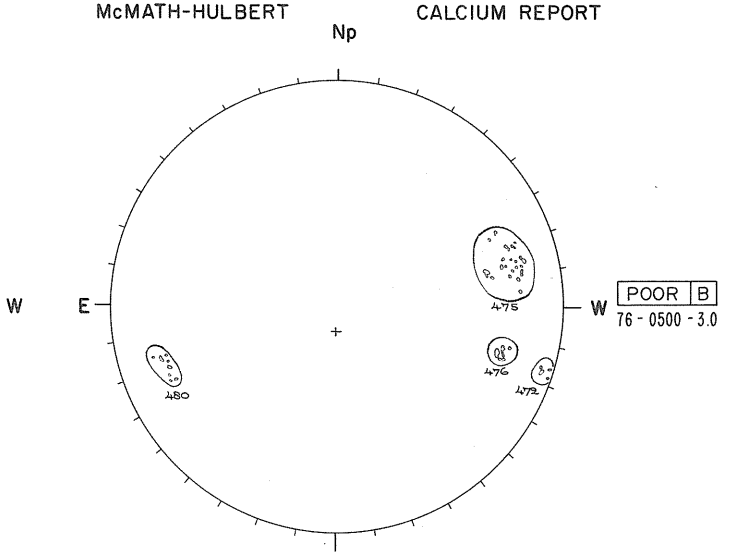


02-03 UT

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

McMATH-HULBERT

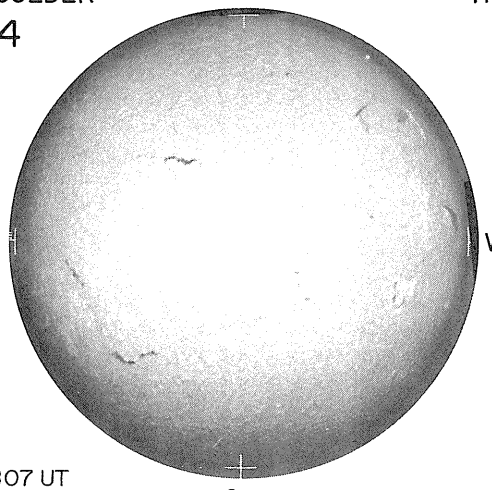
CALCIUM REPORT



POOR | B
76 - 0500 - 3.0

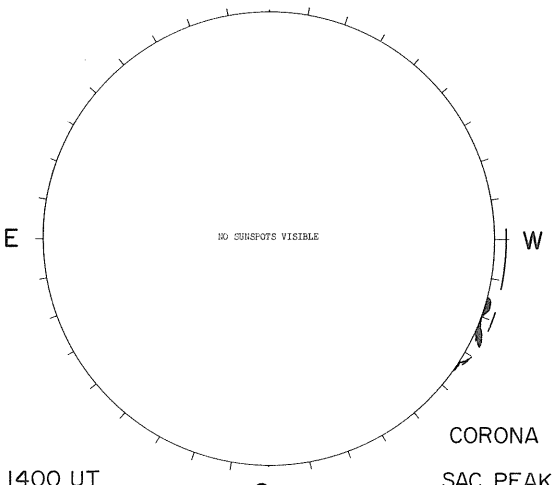
1550 UT

BOULDER
14



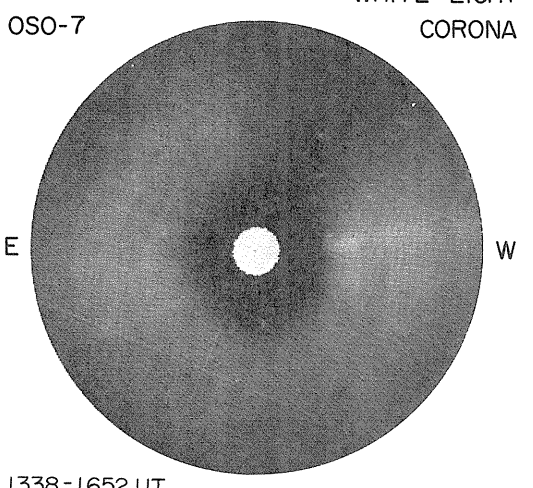
1807 UT

BOULDER



CORONA
SAC PEAK
1400 UT

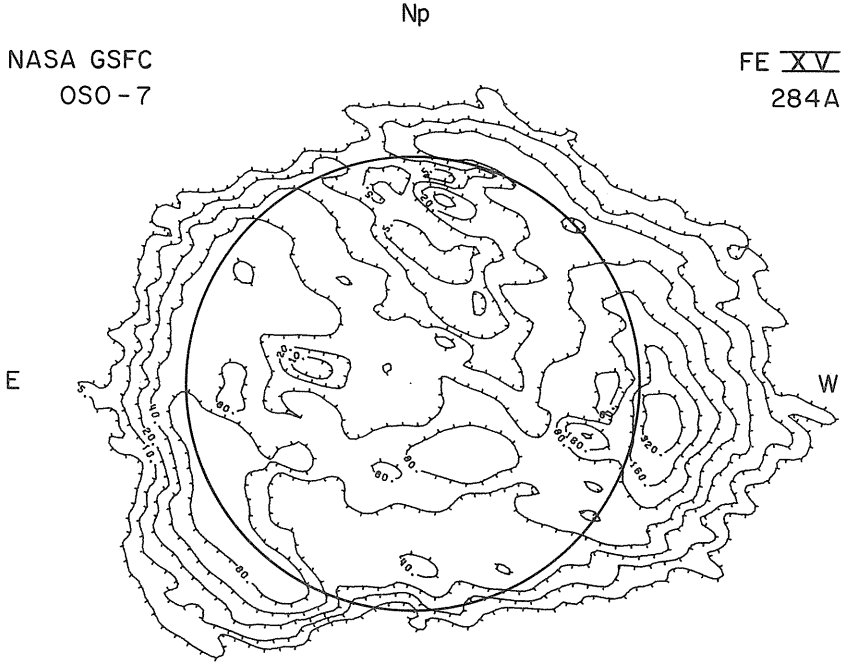
NRL
OSO-7



1338-1652 UT

NASA GSFC
OSO-7

FE XV
284A

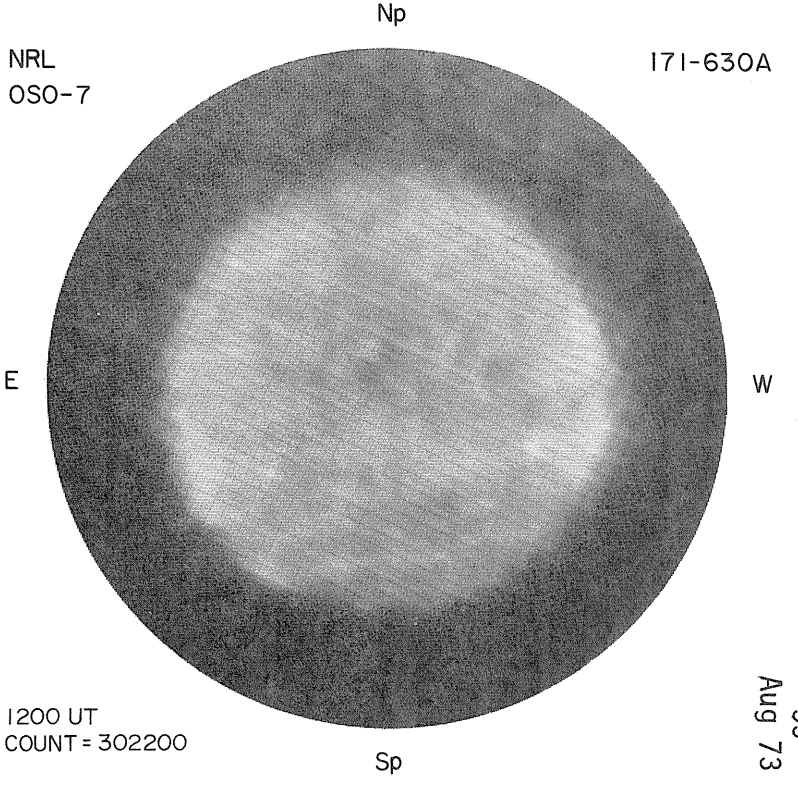


COUNT = 46901
ROLL = 26.4°
P-TH = -2.94

1204 UT

NRL
OSO-7

171-630A

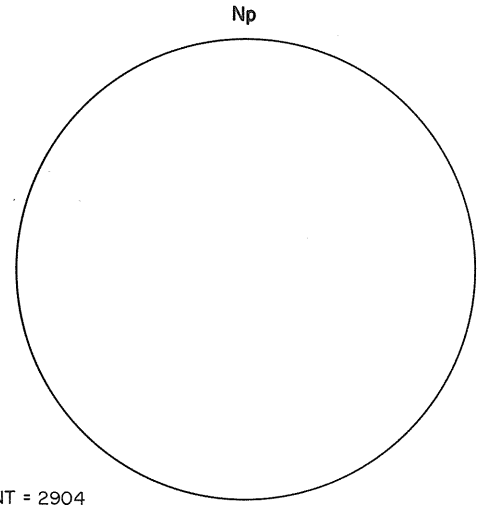


1200 UT
COUNT = 302200

AUGUST 15, 1973 (P = 15.98, B_o = 6.65, L_o = 97.23)

NASA GSFC
OSO-7

X-RAY
8-16A



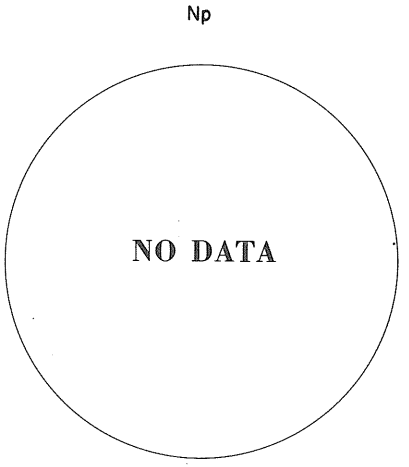
COUNT = 2904
ROLL = 25.6°
P-TH = -2.80

1724 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

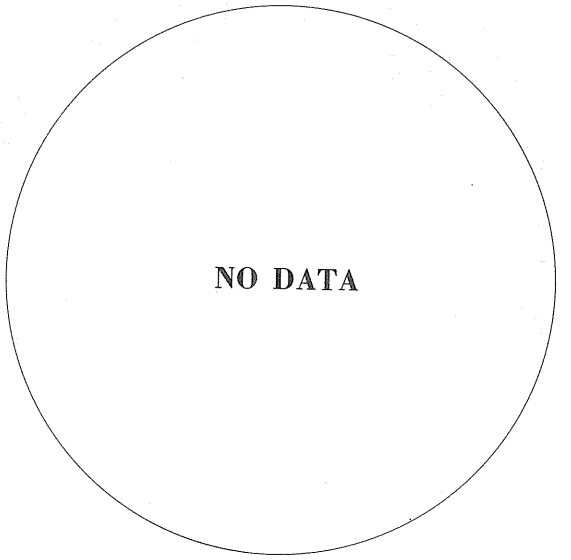
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

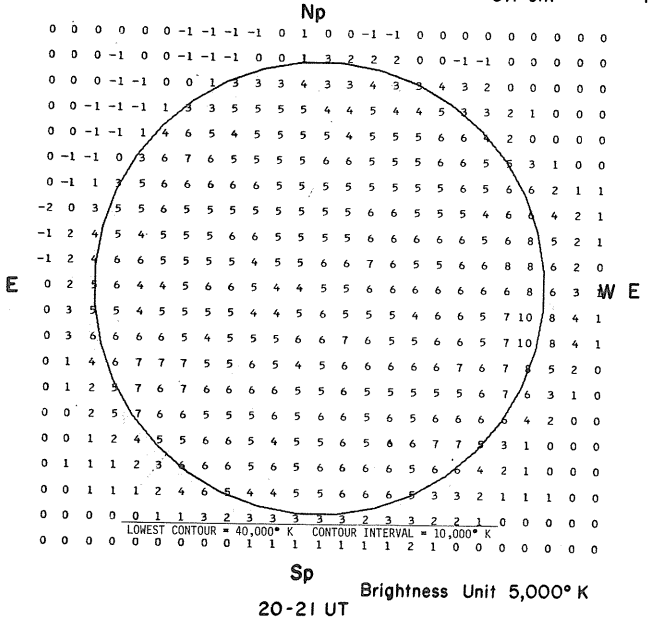
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
± 5
± 10
± 20
± 40
± 80

STANFORD

9.1 cm

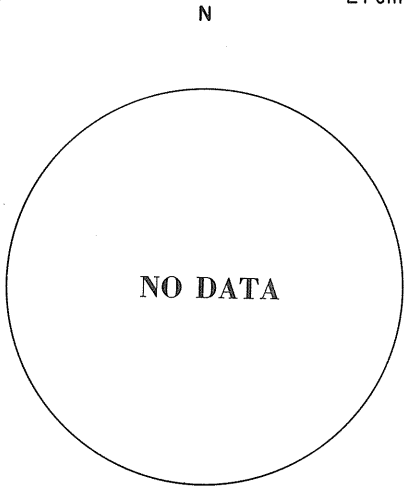


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

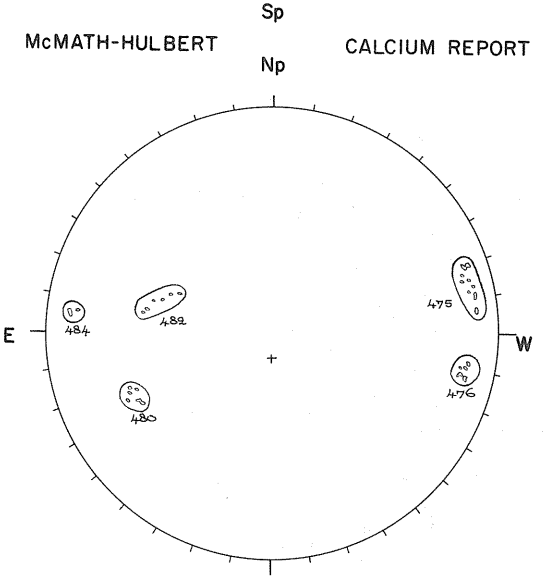


02-03 UT

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

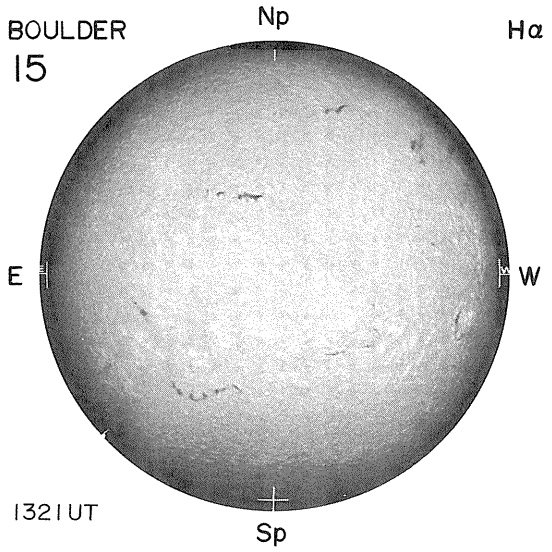
McMATH-HULBERT

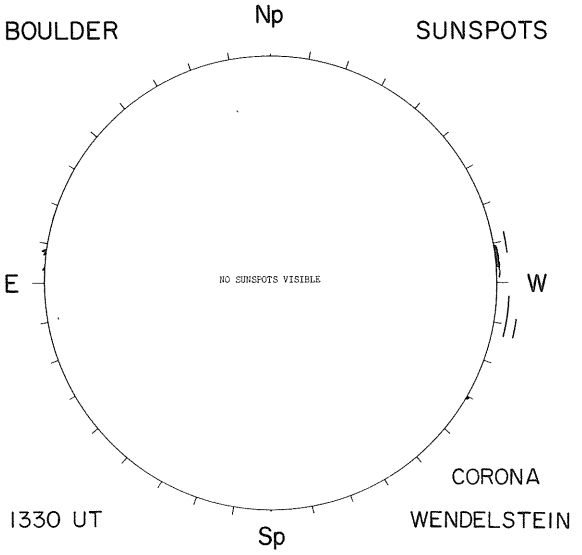
CALCIUM REPORT

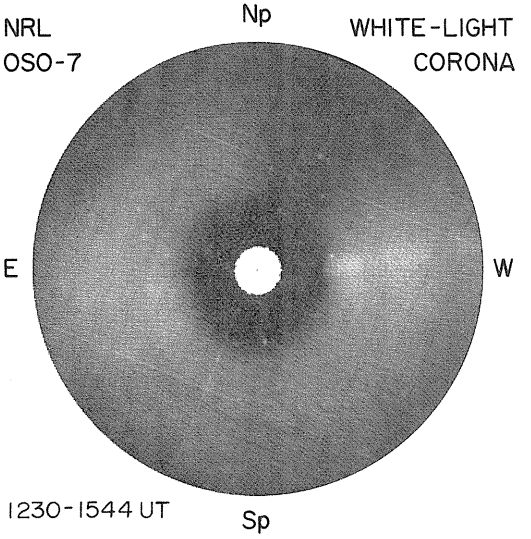


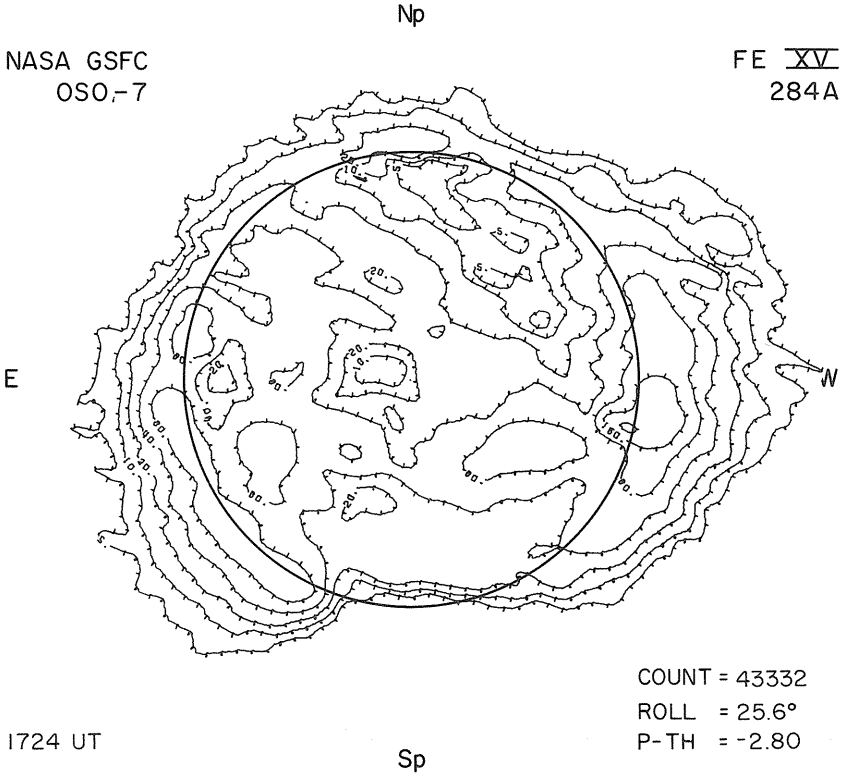
GOOD | D
76-0500-2.5

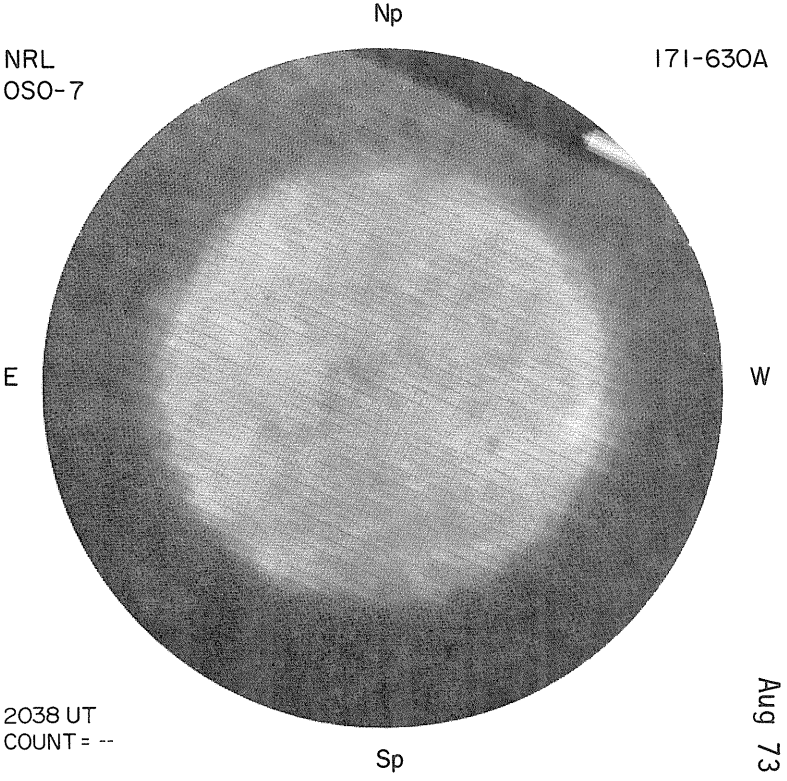
Sp
1330 UT


BOULDER
15
Np
Hα
E
W
1321 UT
Sp


BOULDER
Np
SUNSPOTS
E
NO SUNSPOTS VISIBLE
W
CORONA
1330 UT
Sp
WENDELSTEIN


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1230-1544 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 43332
ROLL = 25.6°
P-TH = -2.80
1724 UT
Sp

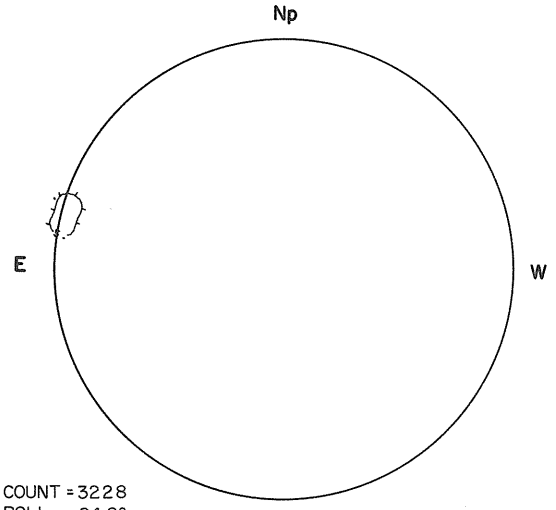

Np
NRL
OSO-7
171-630A
E
W
2038 UT
COUNT = --
Sp

57
Aug 73

AUGUST 16, 1973 (P = 16.32, B_o = 6.70, L_o = 84.02)

NASA GSFC
OSO-7

X-RAY
8-16A



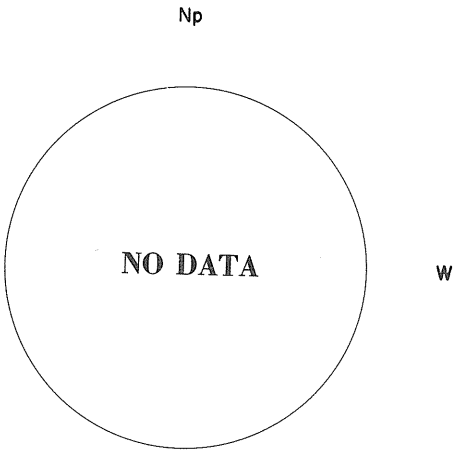
COUNT = 3228
ROLL = 24.8°
P-TH = -2.72

1125 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

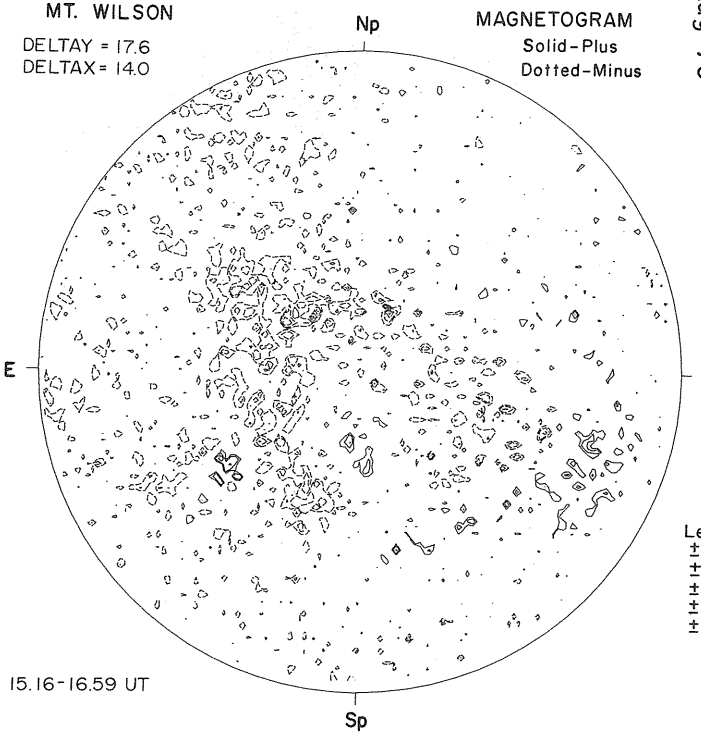


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

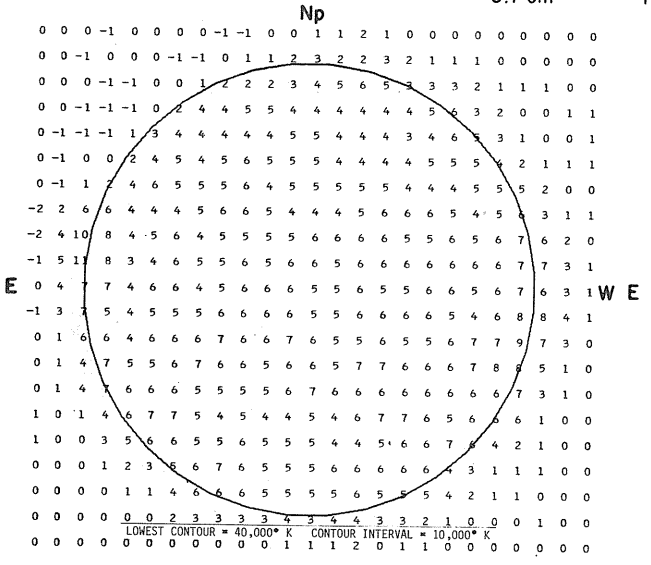


Levels
±5
±10
±20
±40
±80

15.16-16.59 UT

STANFORD

9.1 cm



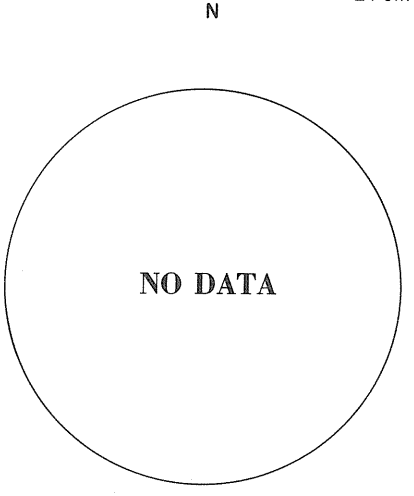
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

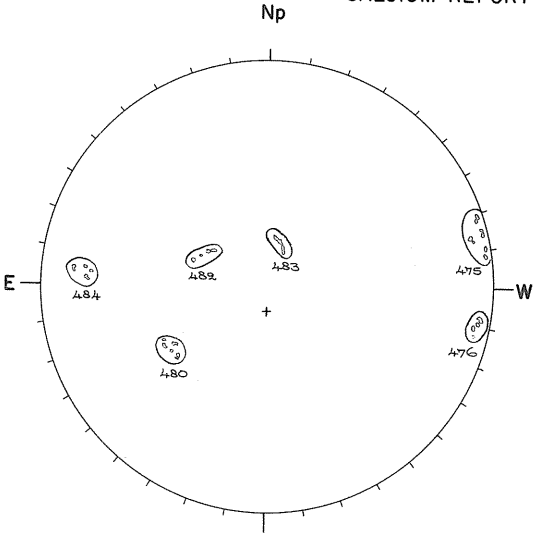


02-03 UT

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

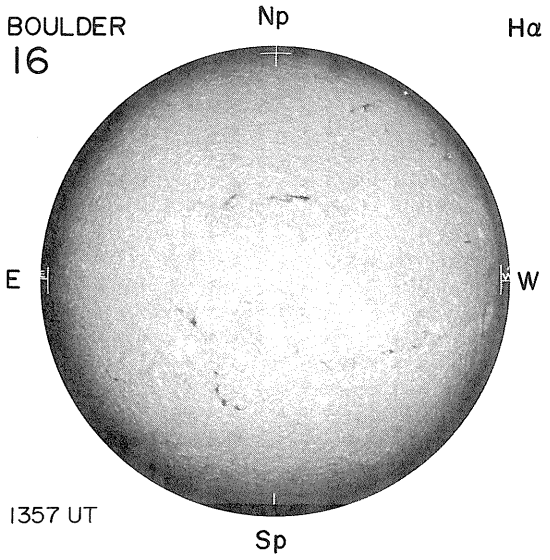
McMATH-HULBERT

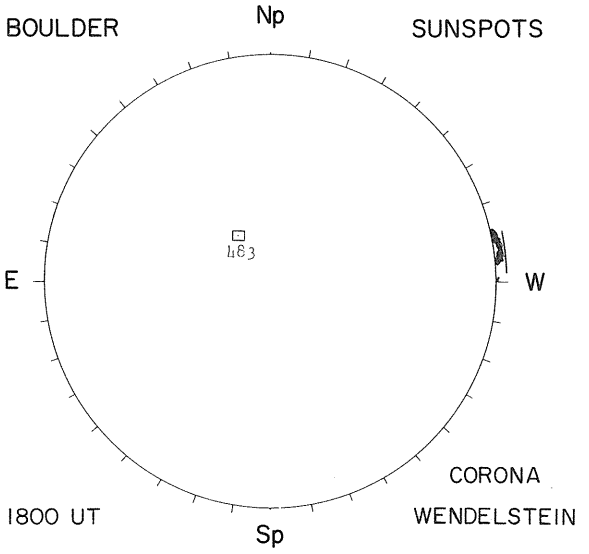
CALCIUM REPORT

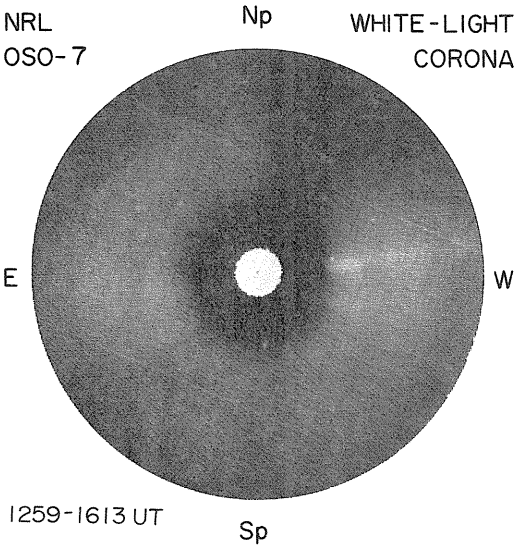


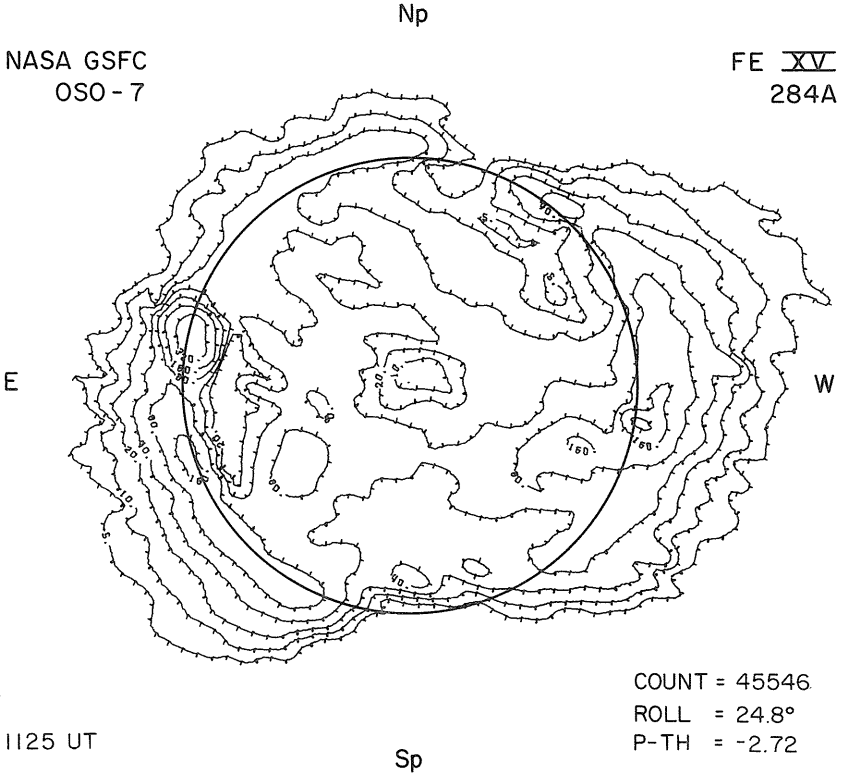
FAIR | D
83-0300 -2.5

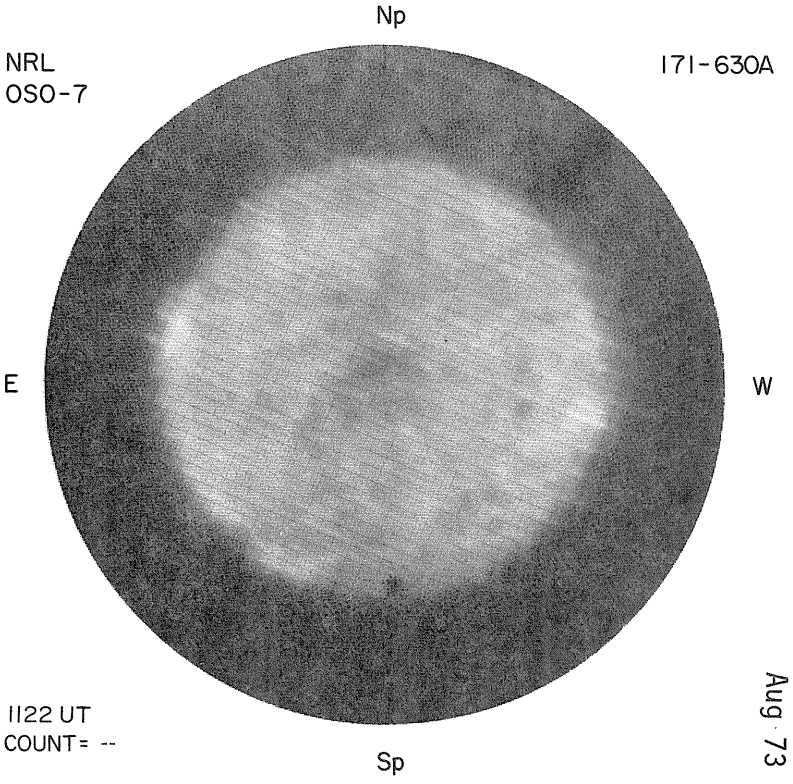
1215 UT


BOULDER
16
Np
Hα
E
W
1357 UT
Sp


BOULDER
Np
SUNSPOTS
1183
E
W
CORONA
WENDELSTEIN
1800 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1259-1613 UT
Sp

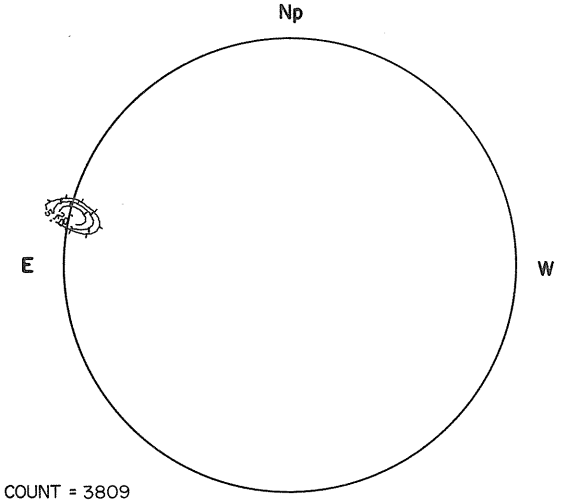

Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 45546
ROLL = 24.8°
P-TH = -2.72
1125 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1122 UT
COUNT= --
Sp

AUGUST 17, 1973 (P = 16.66, B_o = 6.75, L_o = 70.80)

NASA GSFC
OSO-7

X-RAY
8-16A



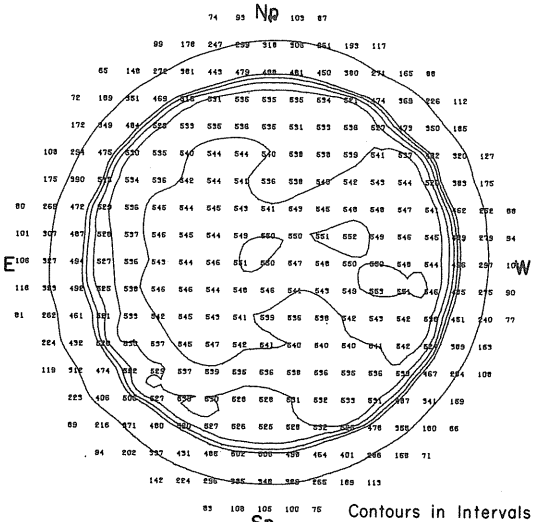
COUNT = 3809
ROLL = 24.1°
P-TH = -2.60

1153 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



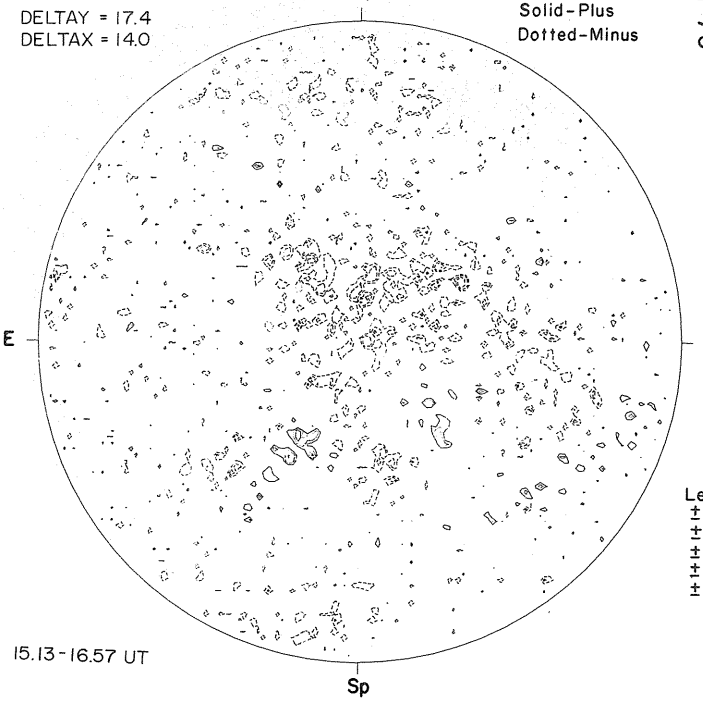
1340 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

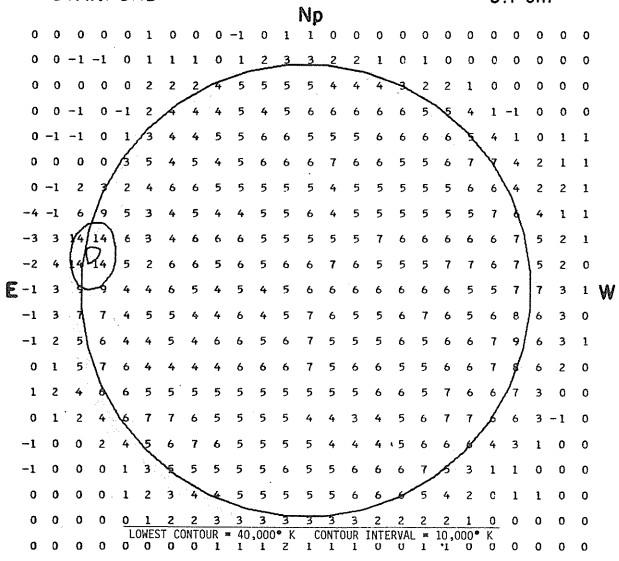


Levels
±5
±10
±20
±40
±80

15.13-16.57 UT

STANFORD

9.1 cm

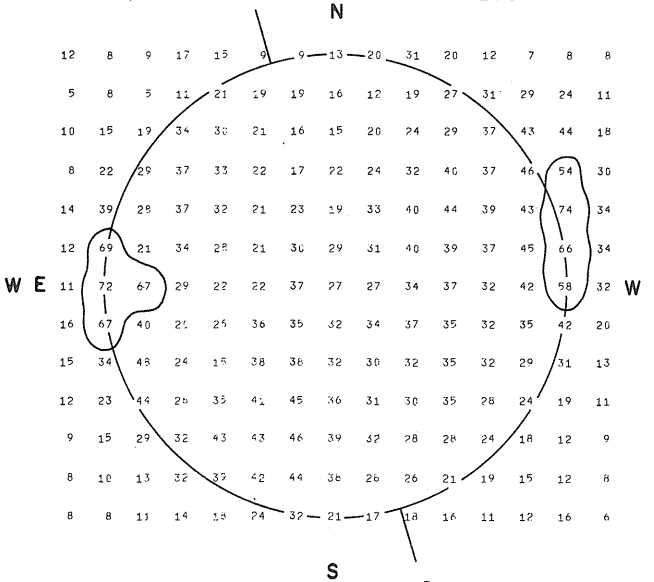


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

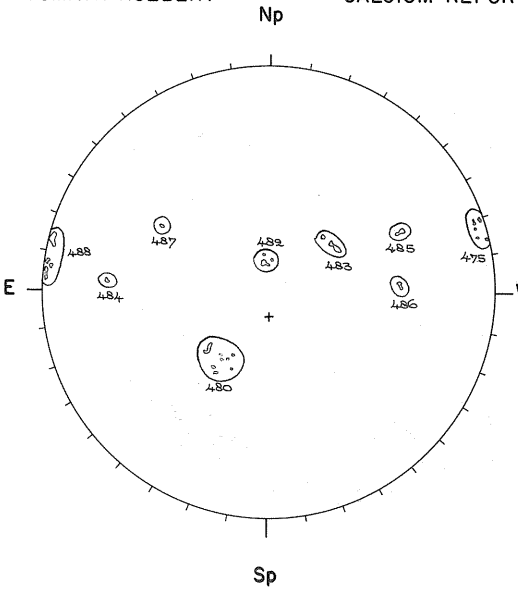


02-03 UT

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

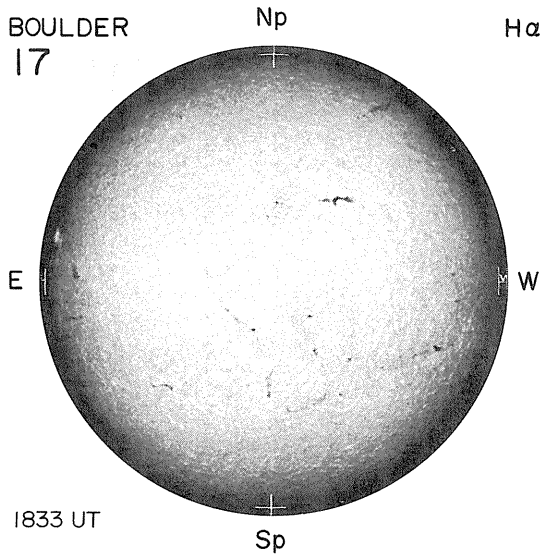
McMATH-HULBERT

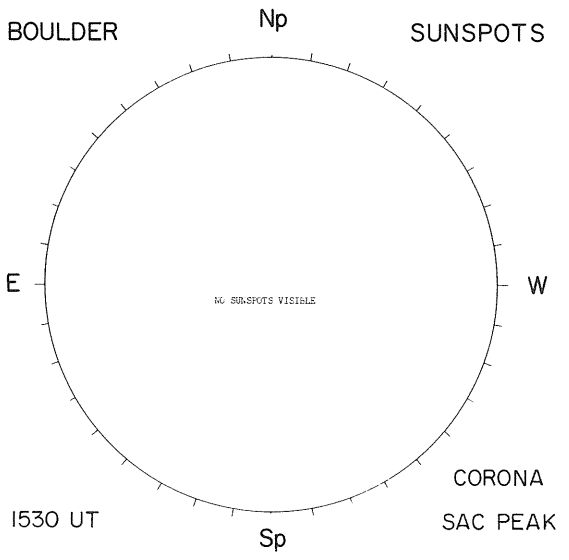
CALCIUM REPORT

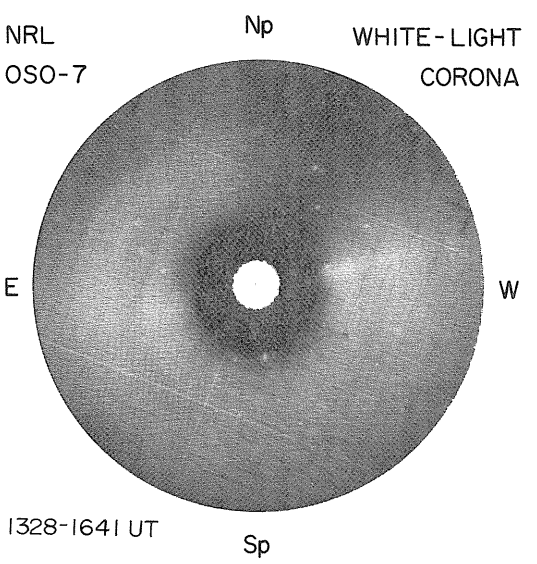


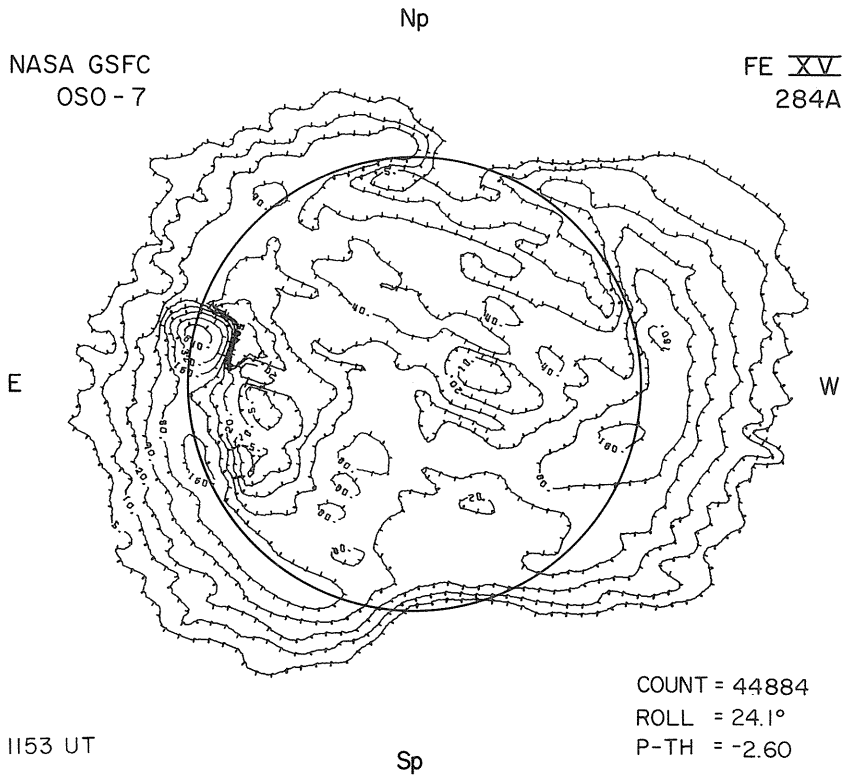
FAIR	D
88 - 1000	-3.0

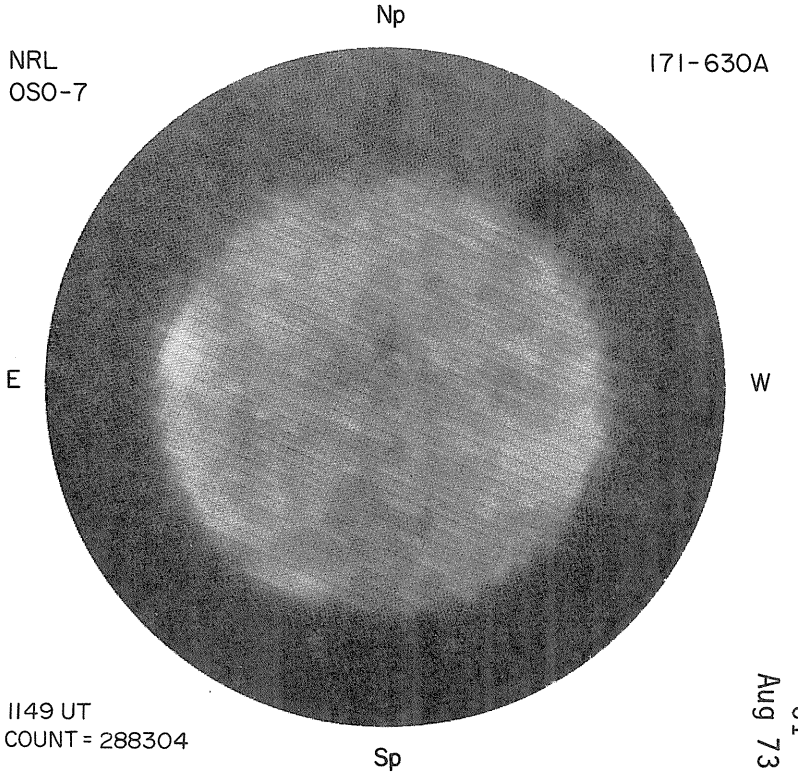
1400 UT


BOULDER
17
Np
Hα
E
W
1833 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
NO SUNSPOTS VISIBLE
CORONA
SAC PEAK
1530 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1328-1641 UT
Sp

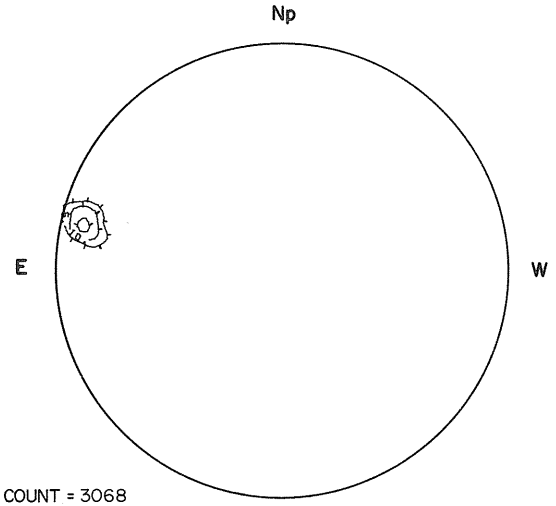

Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 44884
ROLL = 24.1°
P-TH = -2.60
1153 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1149 UT
COUNT = 288304
Sp

AUGUST 18, 1973 (P = 16.99, B_o = 6.79, L_o = 57.58)

NASA GSFC
OSO-7

X-RAY
8-16A



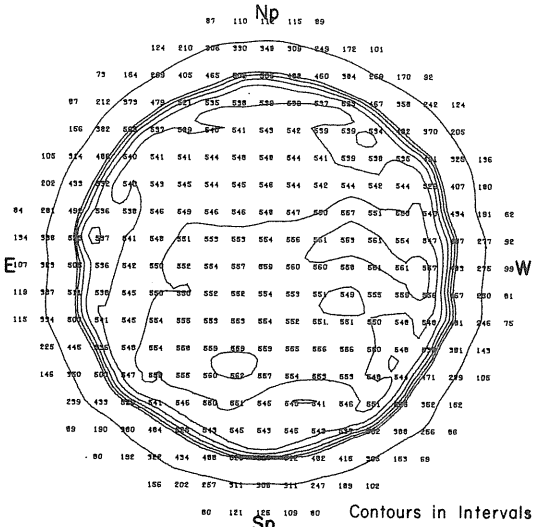
COUNT = 3068
ROLL = 24.0°
P-TH = -2.47

1536 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



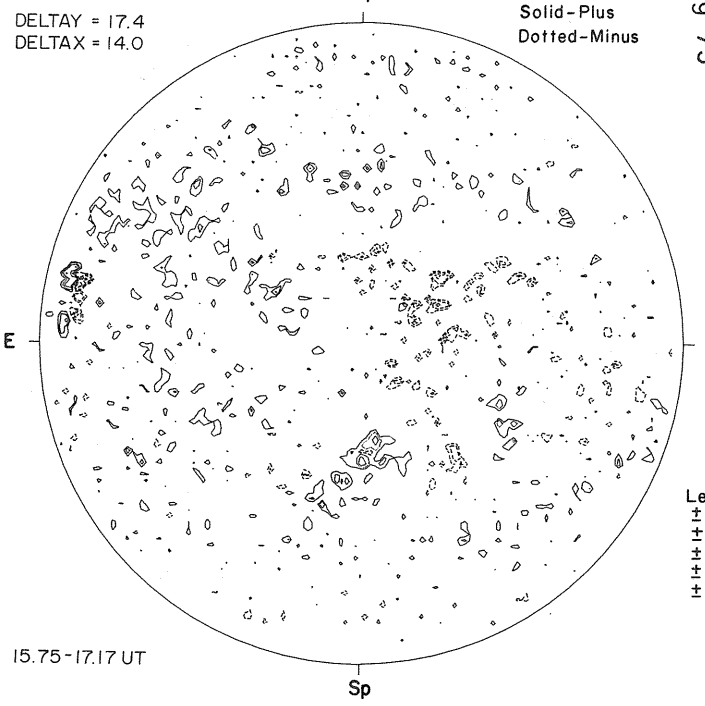
1455 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

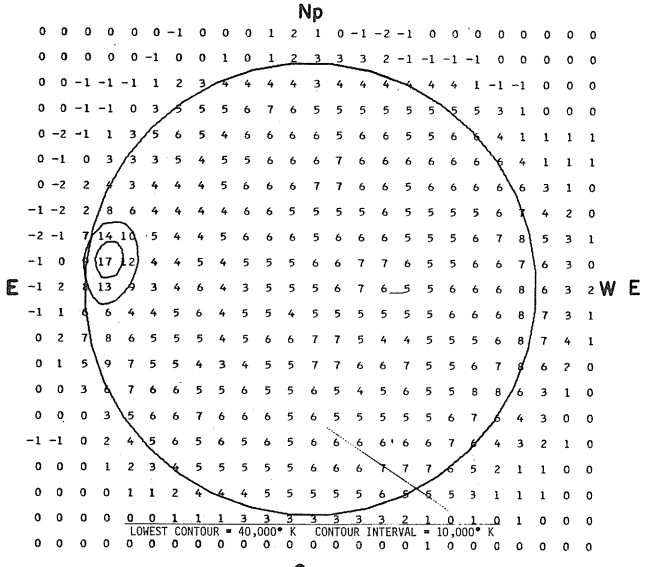


Levels
± 5
± 10
± 20
± 40
± 80

15.75-17.17 UT

STANFORD

9.1 cm



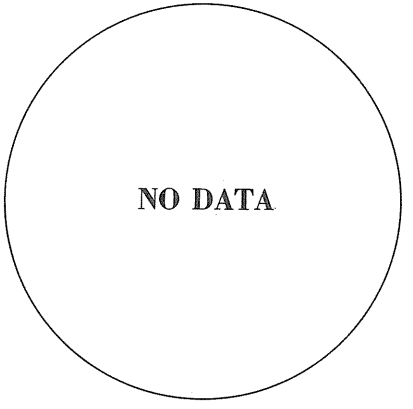
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

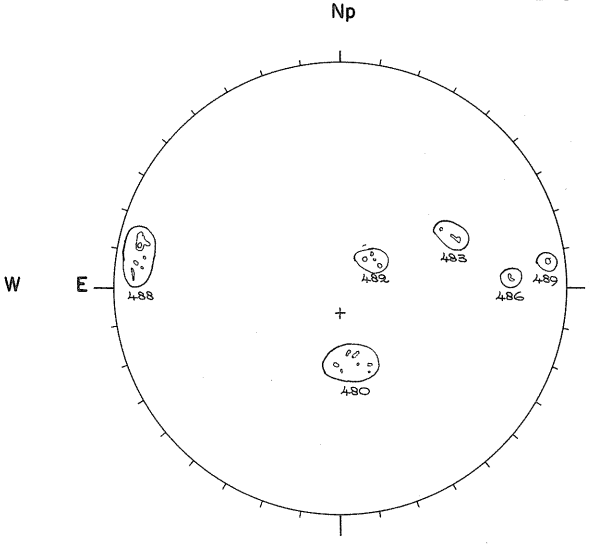


02-03 UT

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

McMATH-HULBERT

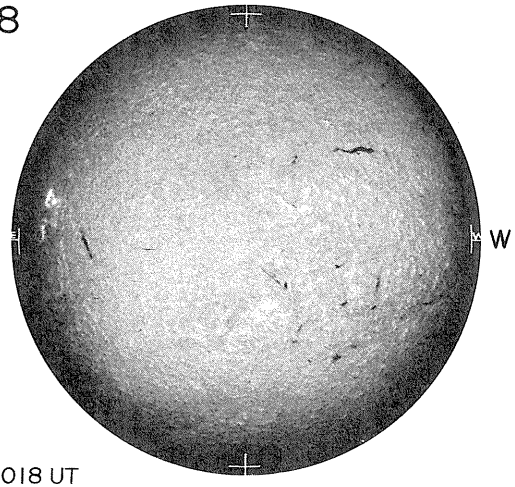
CALCIUM REPORT



FAIR	S
88 - 1000 - 3.0	

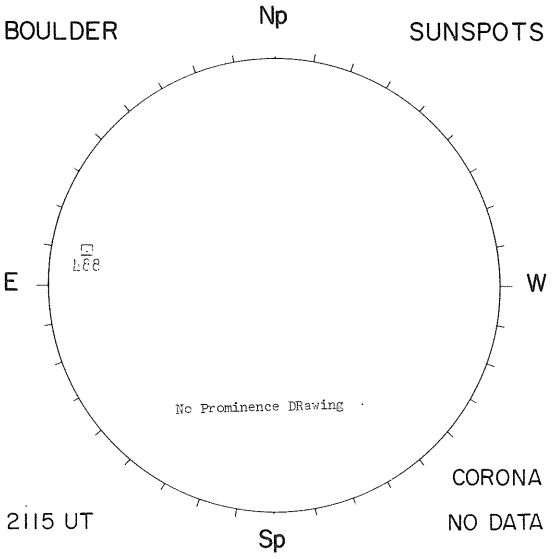
1500 UT

BOULDER
18



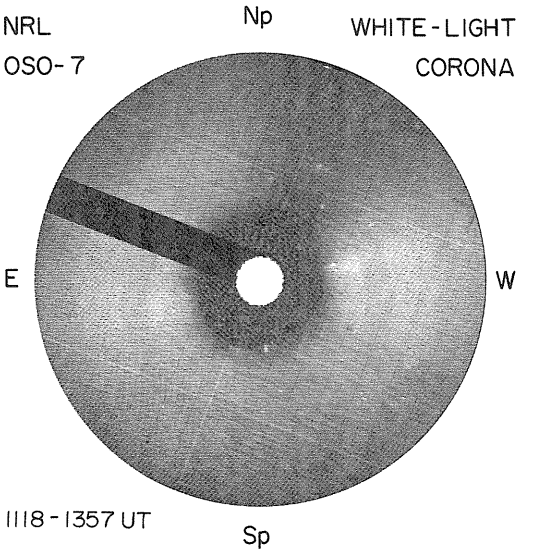
2018 UT

BOULDER



2115 UT

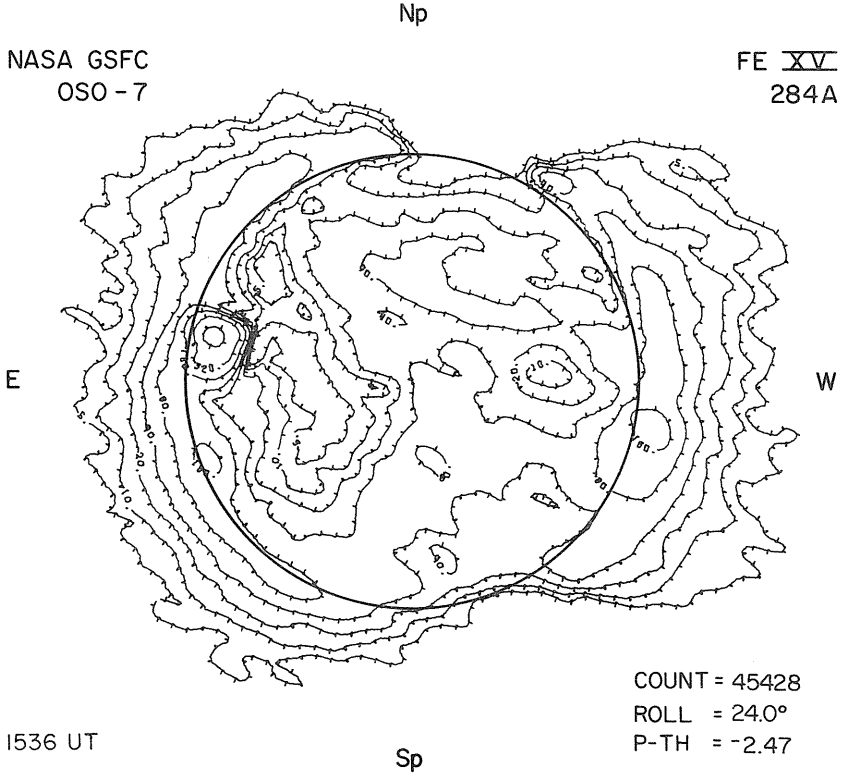
NRL
OSO-7



1118-1357 UT

NASA GSFC
OSO-7

FE XV
284A

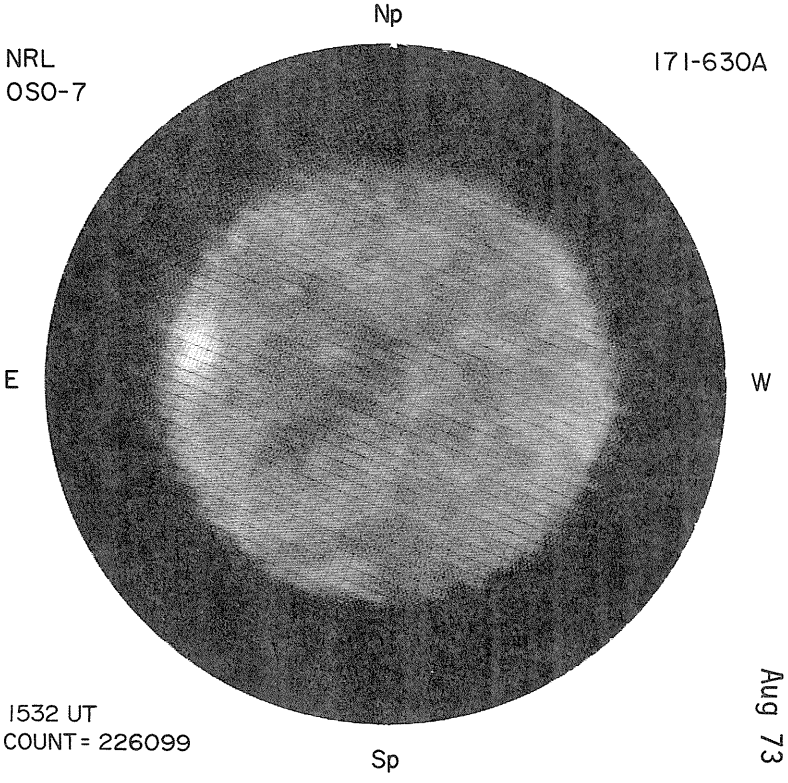


COUNT = 45428
ROLL = 24.0°
P-TH = -2.47

1536 UT

NRL
OSO-7

171-630A

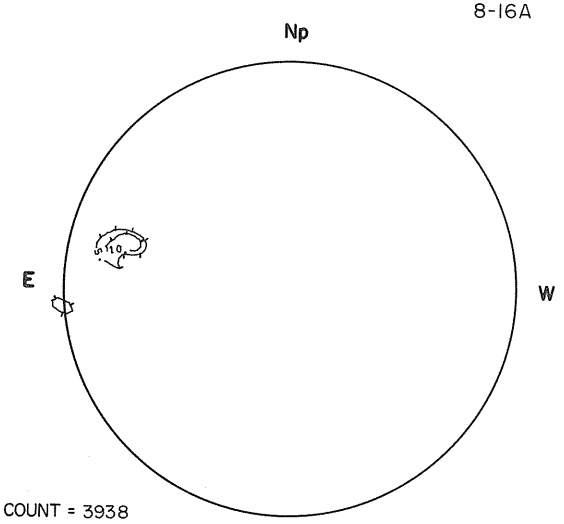


1532 UT
COUNT = 226099

AUGUST 19, 1973 (P=17.31, B_o=6.83, L_o=44.36)

NASA GSFC
OSO-7

X-RAY
8-16A



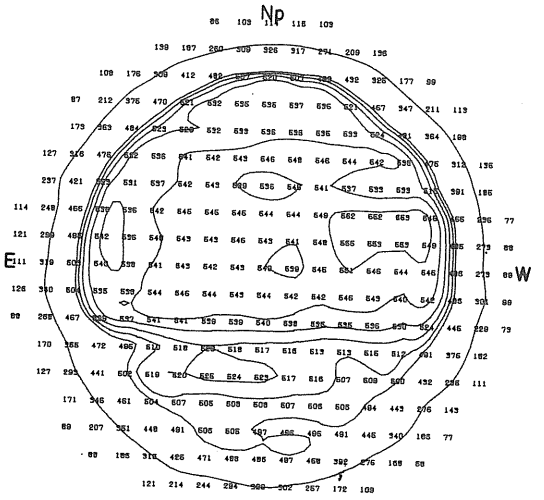
COUNT = 3938
ROLL = 24.3°
P-TH = -2.37

1113 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



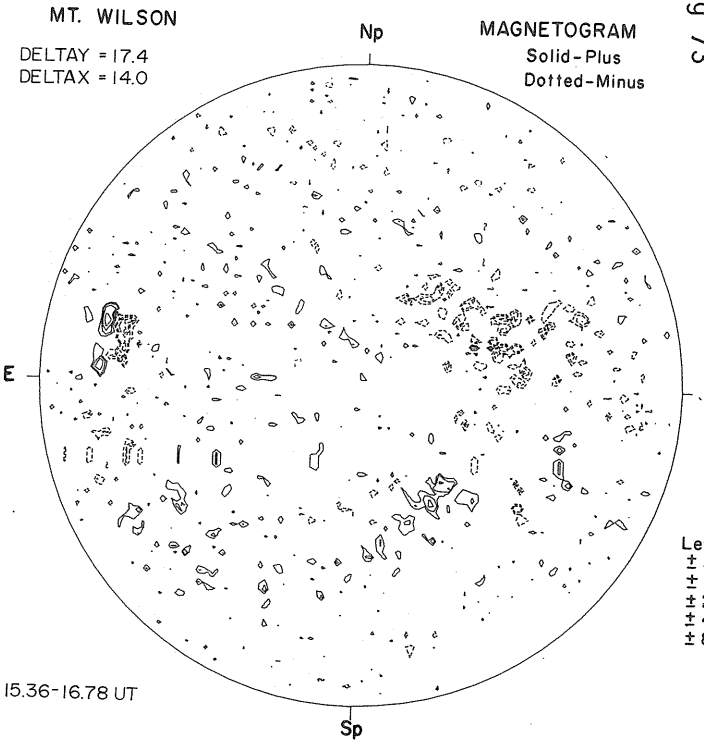
1433 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

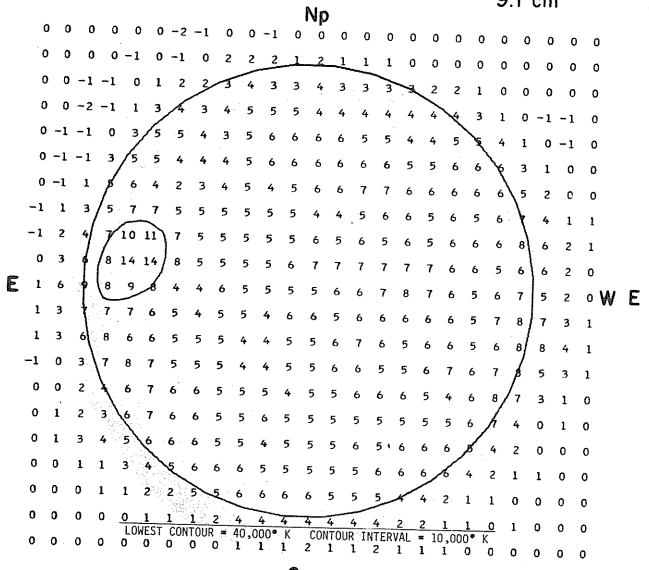


Levels
±5
±10
±20
±40
±80

15.36-16.78 UT

STANFORD

9.1 cm



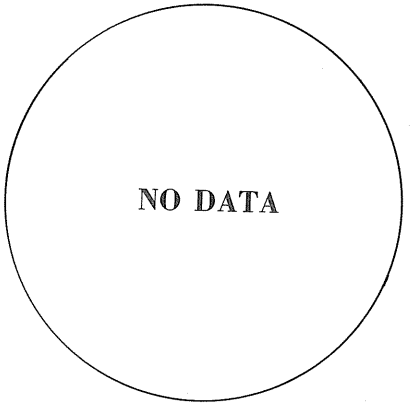
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

N



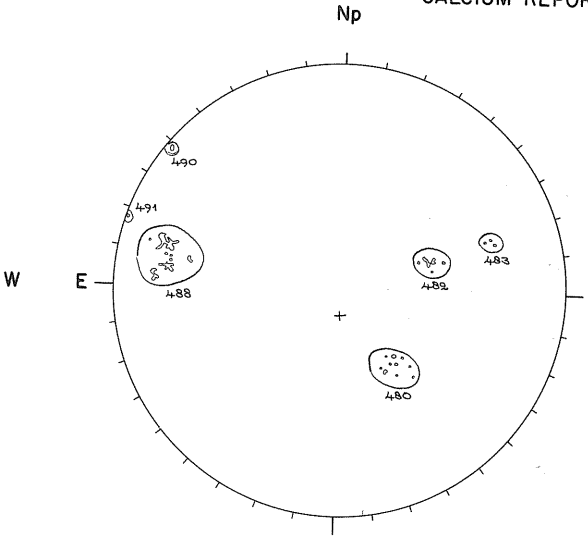
S

02-03 UT

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

McMATH-HULBERT

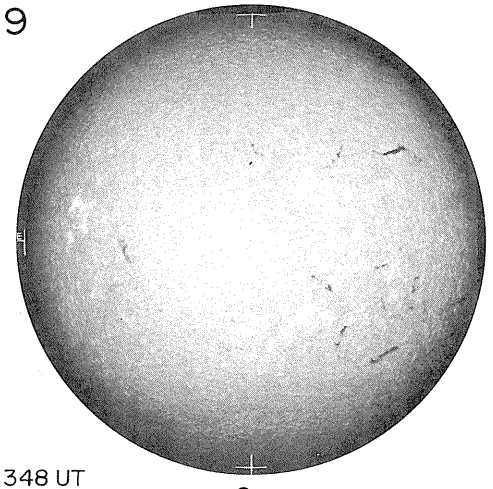
CALCIUM REPORT



FAIR | M
88-1300 - 2.5

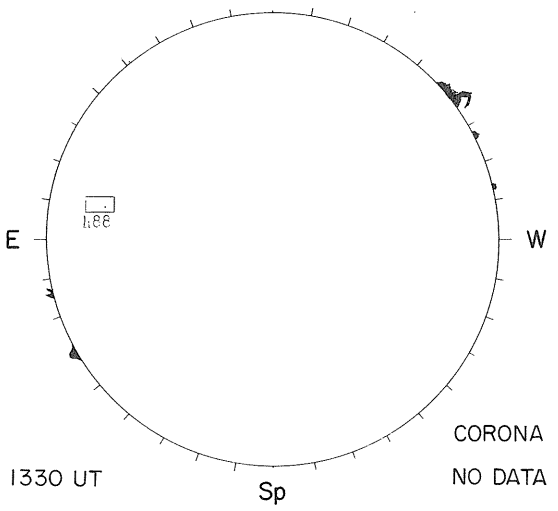
1450 UT

BOULDER
19



1348 UT

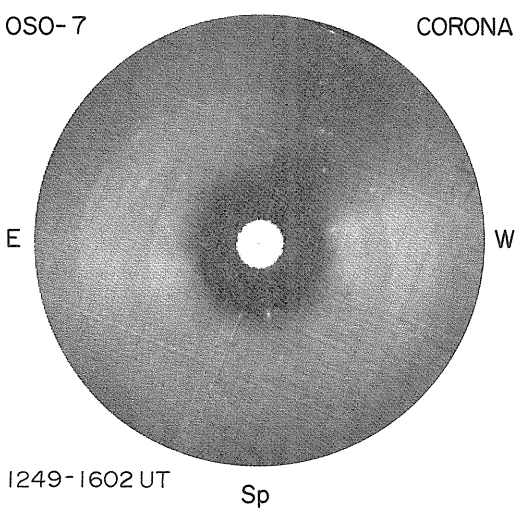
BOULDER



CORONA
NO DATA

1330 UT

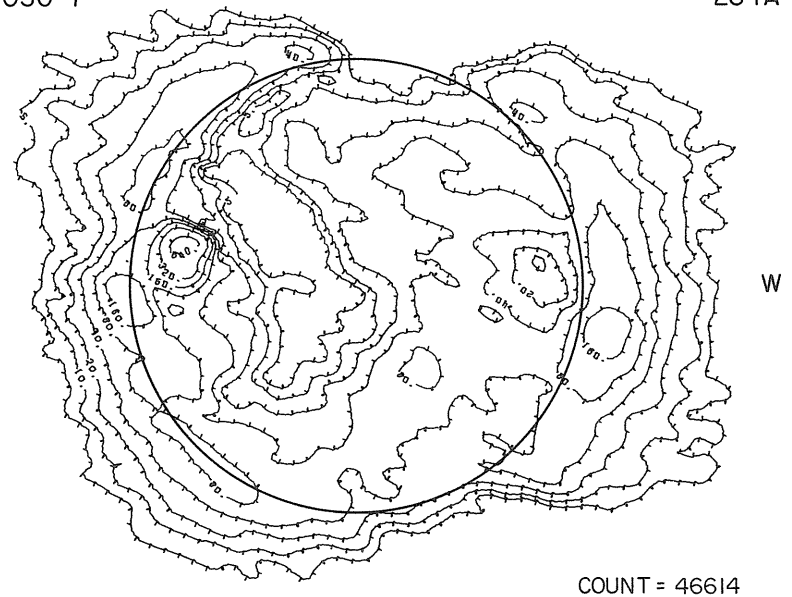
NRL
OSO-7



1249-1602 UT

Np

NASA GSFC
OSO-7



COUNT = 46614
ROLL = 24.3°
P-TH = -2.37

1113 UT

Sp

FE XV
284A

Np

NRL
OSO-7

171-630A

E

NO DATA

W

During the early part of June the NRL instrument began to suffer a gradual disintegration of the XUV filter which previously limited the wavelength to the band 170 - 630 Å. The band extends now to nearly 1600 Å, and the XUV image is diluted mainly with chromospheric Lyman-α radiation. The contrast is therefore lower and the intensity counts higher. No count is given when a maximum has been reached resulting in computer overflow.

COUNT =

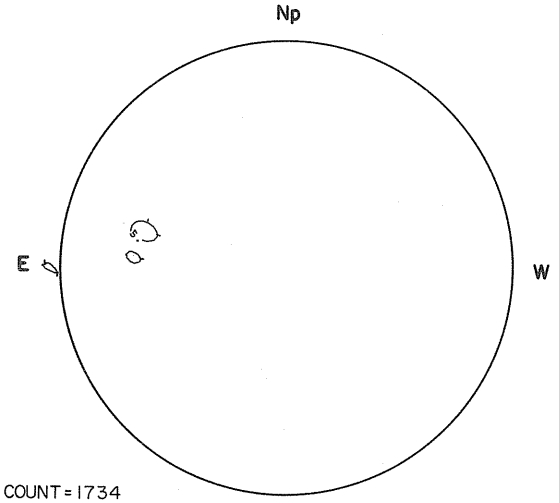
Sp

AUGUST 20, 1973 (P = 17.63, B_o = 6.87, L_o = 31.15)

66
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



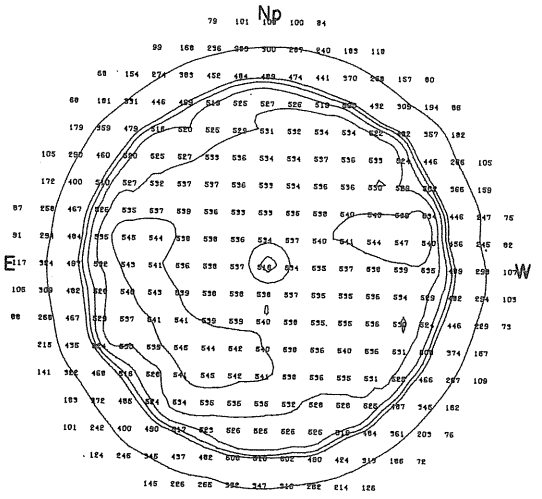
COUNT = 1734
ROLL = 24.2°
P-TH = -2.26

Sp
1039 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

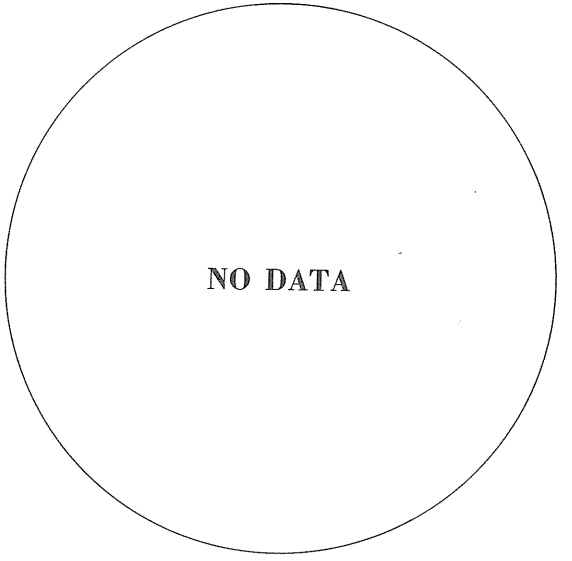


Sp
1456 UT

Contours in Intervals of 200° K

MT. WILSON

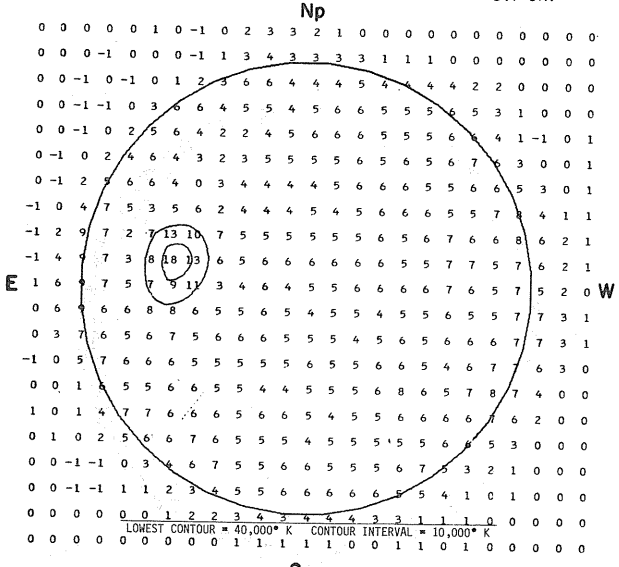
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
± 5
± 10
± 20
± 40
± 80

STANFORD

9.1 cm

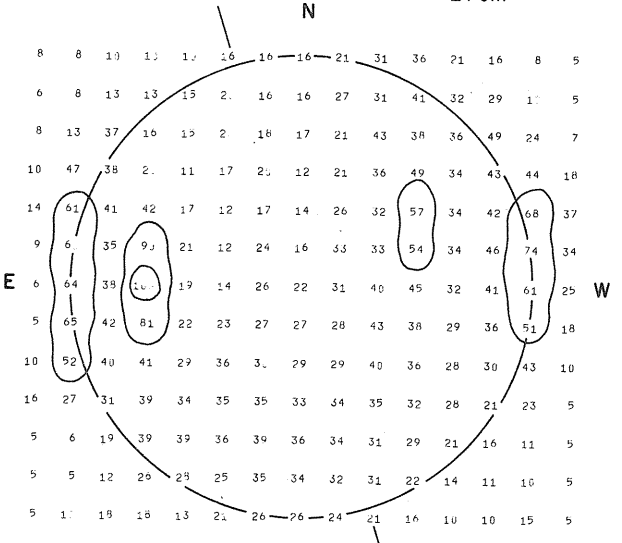


Sp
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

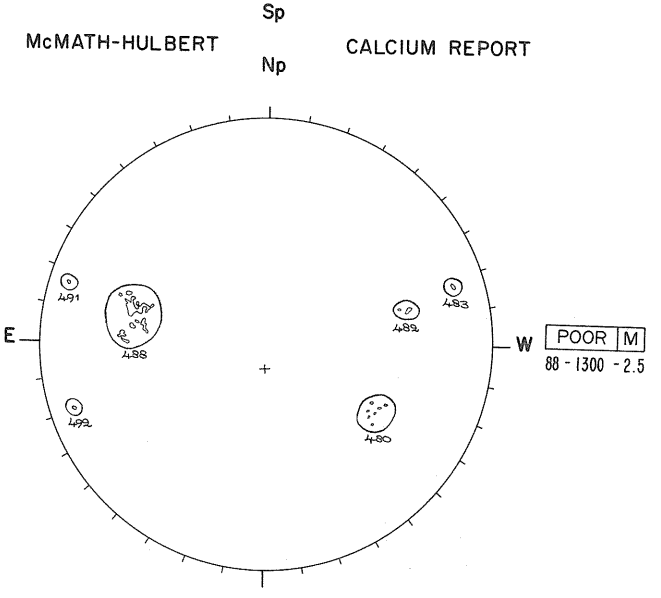


02-03 UT

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

McMATH-HULBERT

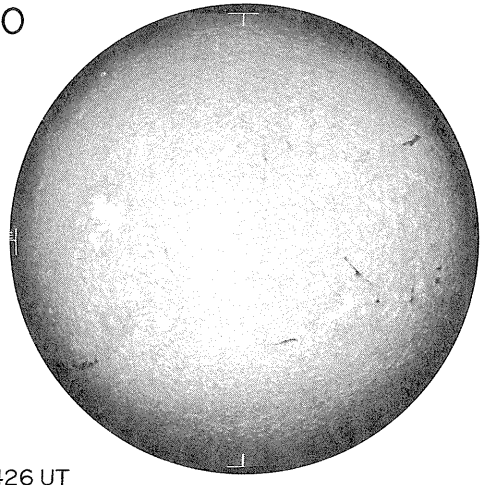
CALCIUM REPORT



POOR	M
88 - 1300 - 2.5	

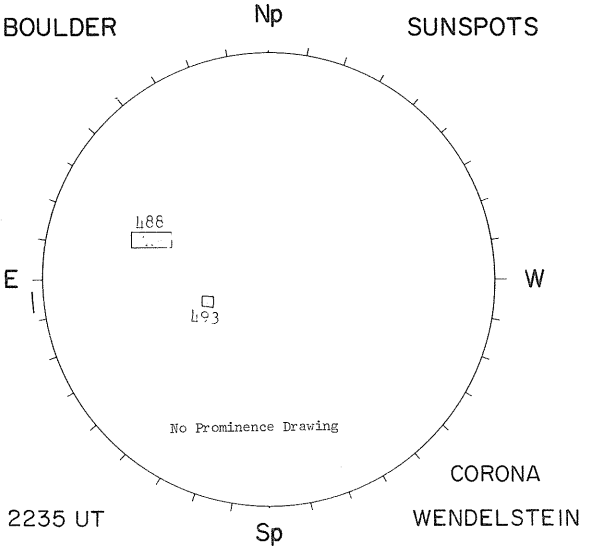
Sp
1800 UT

BOULDER
20



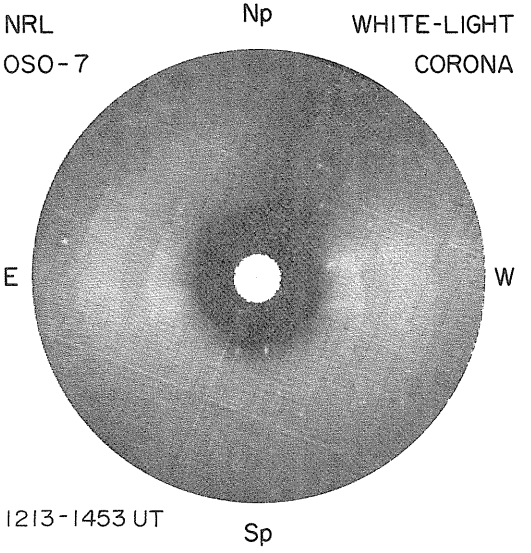
1426 UT

BOULDER



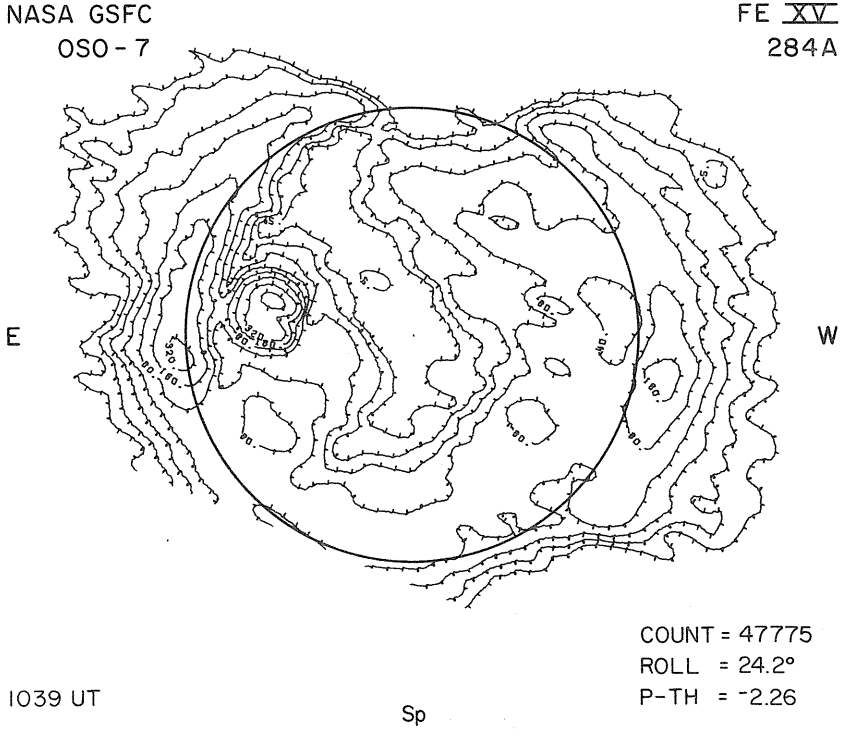
2235 UT

NRL
OSO-7



1213-1453 UT

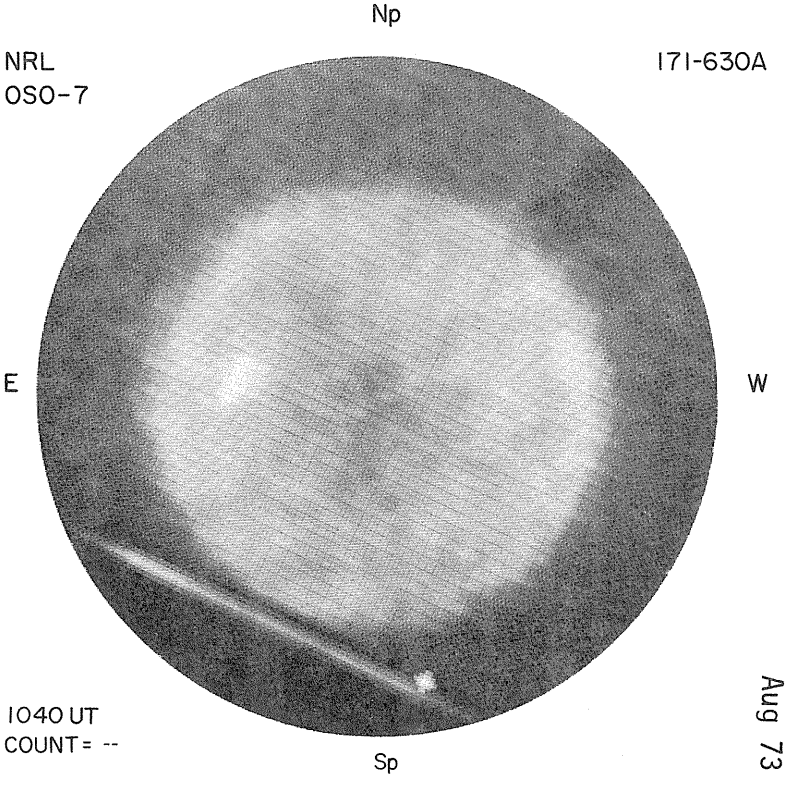
NASA GSFC
OSO-7



COUNT = 47775
ROLL = 24.2°
P-TH = -2.26

1039 UT

NRL
OSO-7



1040 UT
COUNT = --

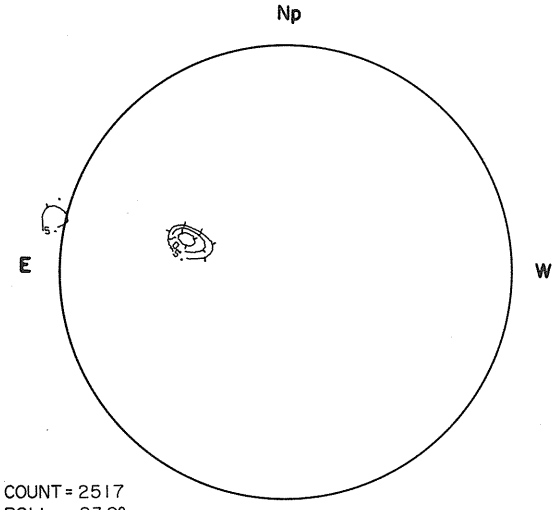
67
Aug 73

AUGUST 21, 1973 (P = 17.95, B_o = 6.91, L_o = 17.93)

68
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



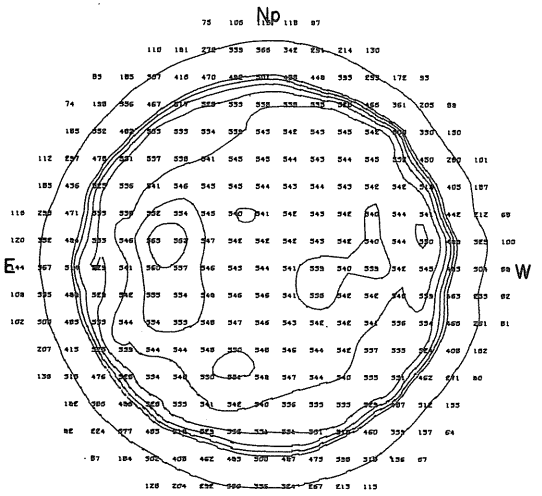
COUNT = 2517
ROLL = 23.9°
P-TH = -2.14

1110 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



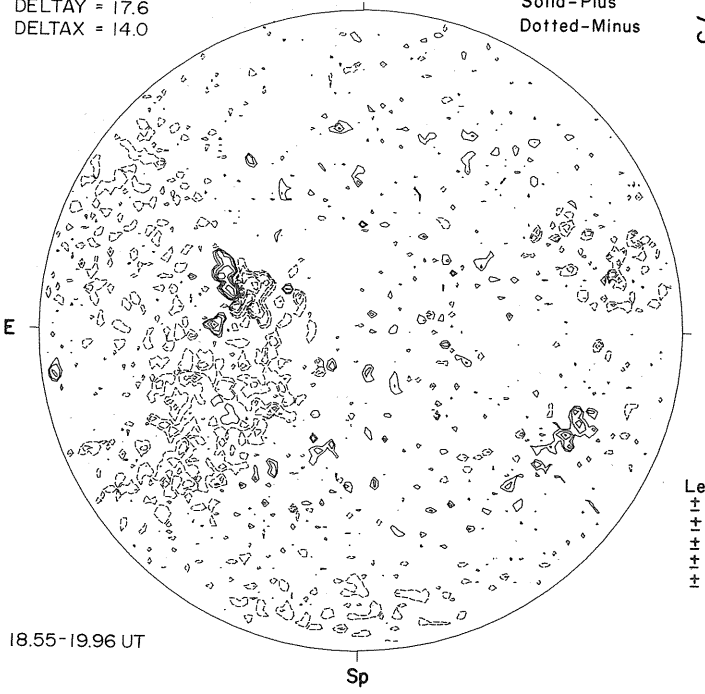
1452 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.6
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

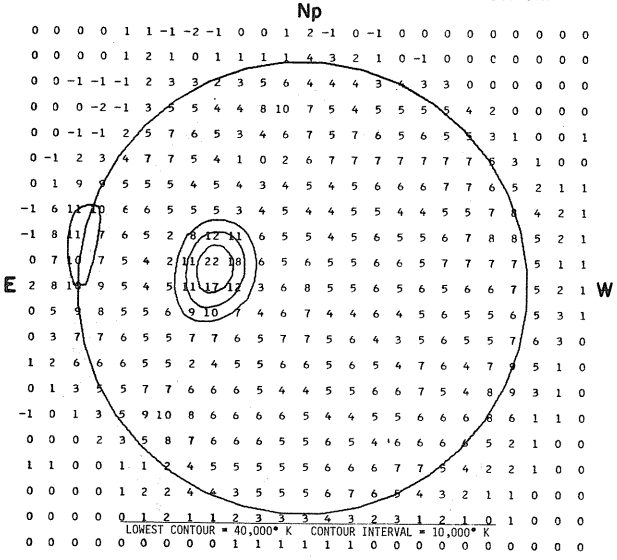


Levels
± 5
± 10
± 20
± 40
± 80

18.55-19.96 UT

STANFORD

9.1 cm

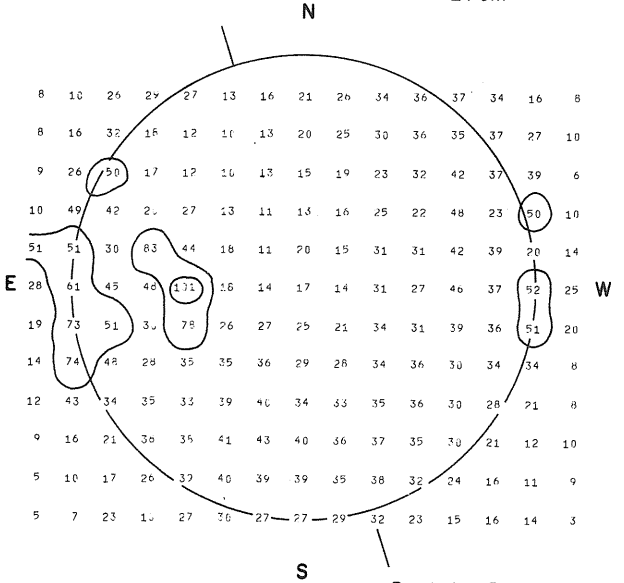


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

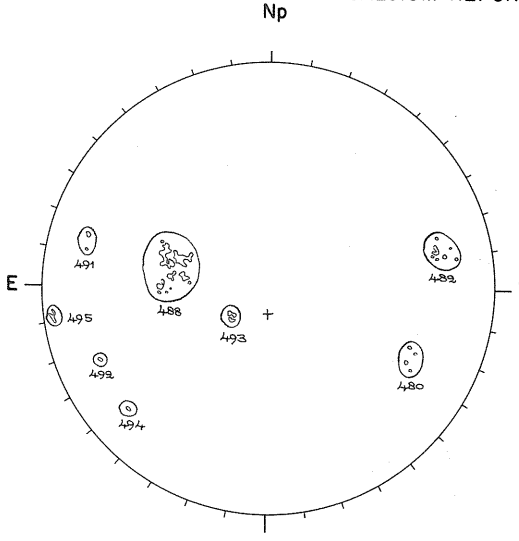


02-03 UT

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

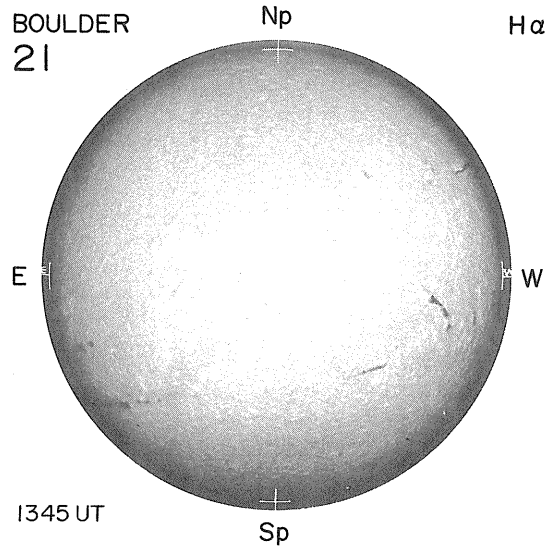
McMATH-HULBERT

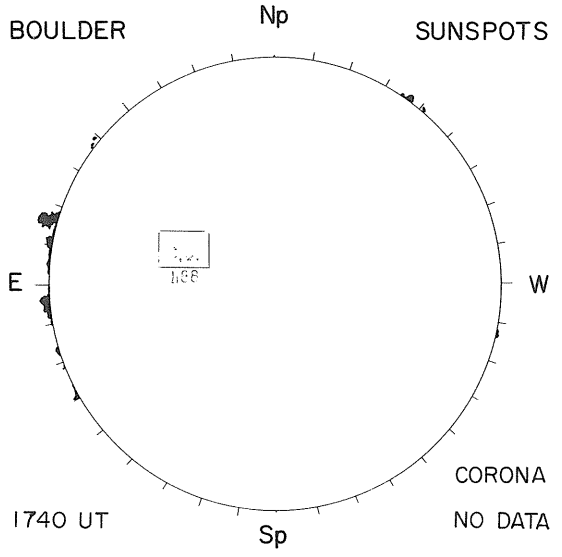
CALCIUM REPORT

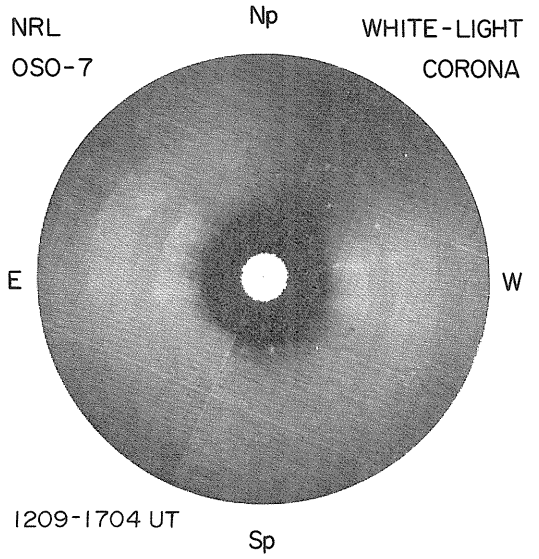


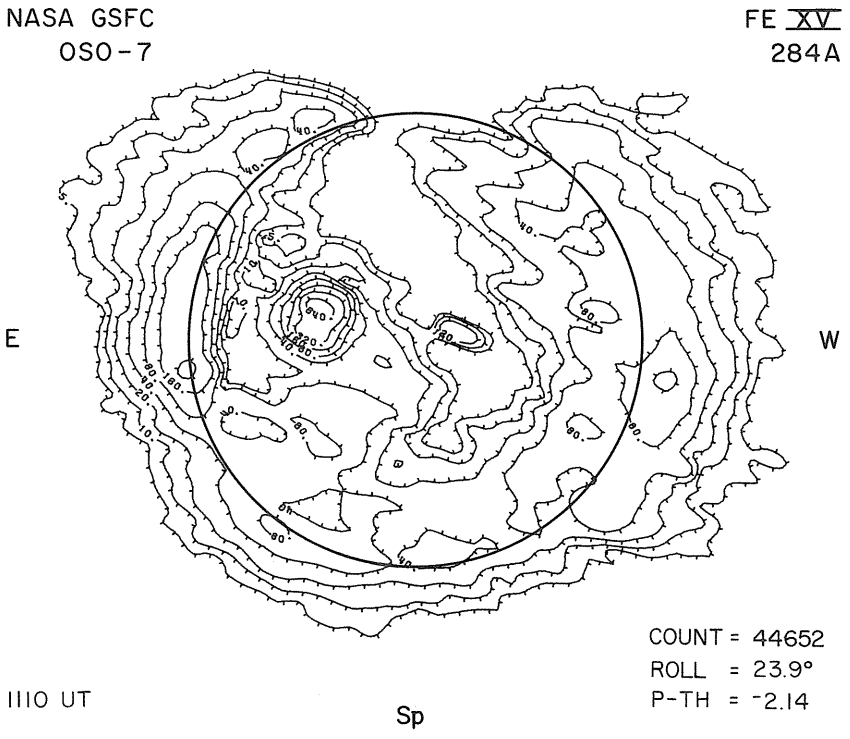
FAIR	M
88-1500	-3.0

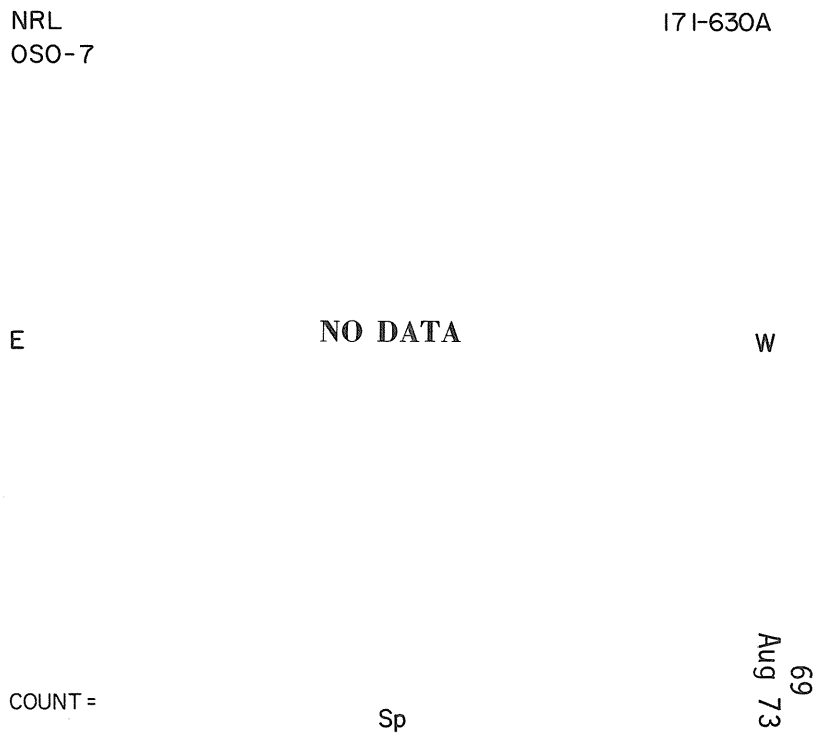
1430 UT


BOULDER
21
Np
Hα
E
W
1345 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
CORONA
NO DATA
1740 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1209-1704 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 44652
ROLL = 23.9°
P-TH = -2.14
1110 UT
Sp

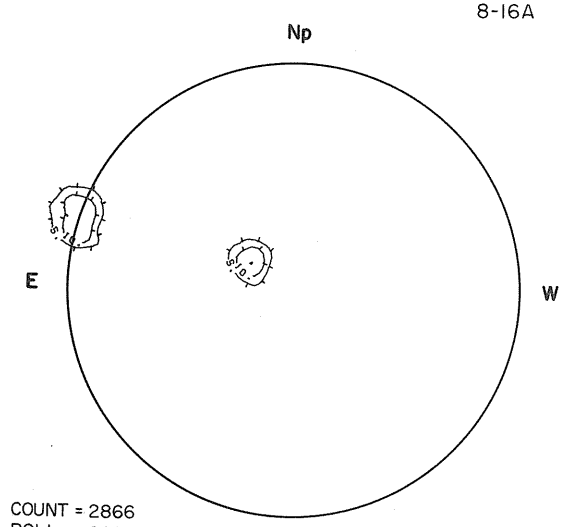

Np
NRL
OSO-7
171-630A
E
NO DATA
W
COUNT =
Sp

AUGUST 22, 1973 (P = 18.26, B_o = 6.94, L_o = 4.72)

70
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



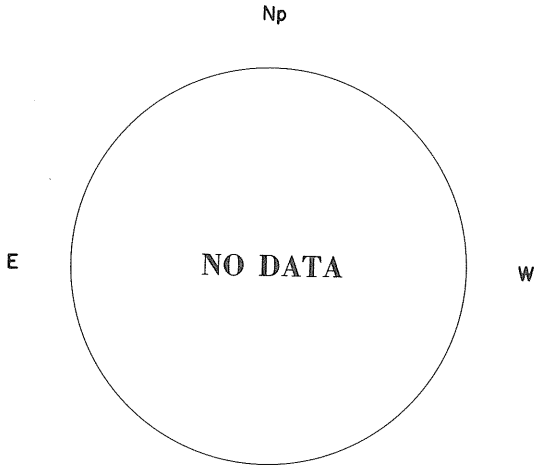
COUNT = 2866
ROLL = 24.3°
P-TH = -2.01

1416 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

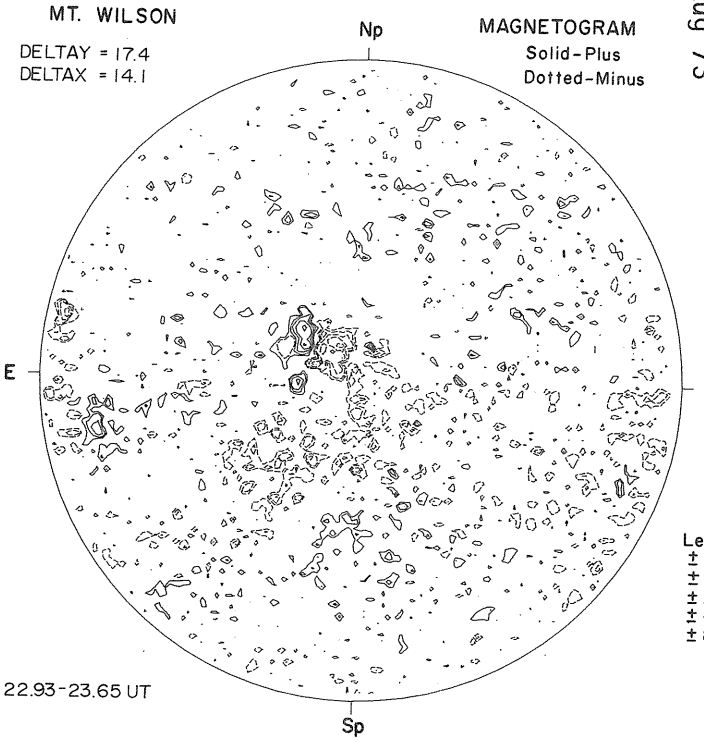


Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

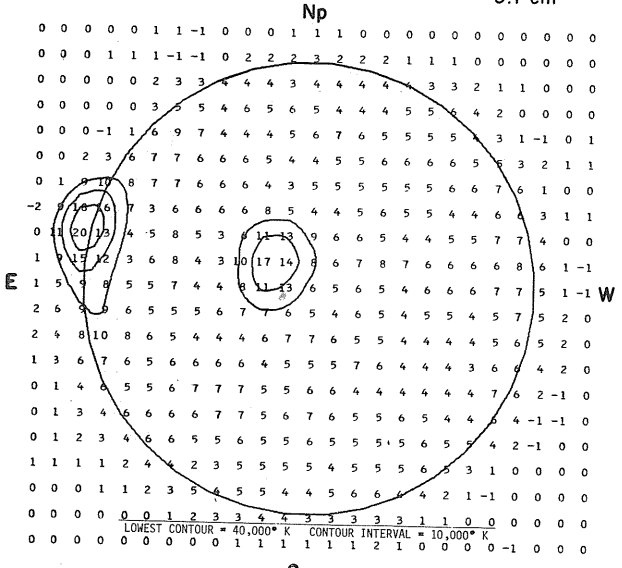


Levels
± 5
± 10
± 20
± 40
± 80

22.93-23.65 UT

STANFORD

9.1 cm

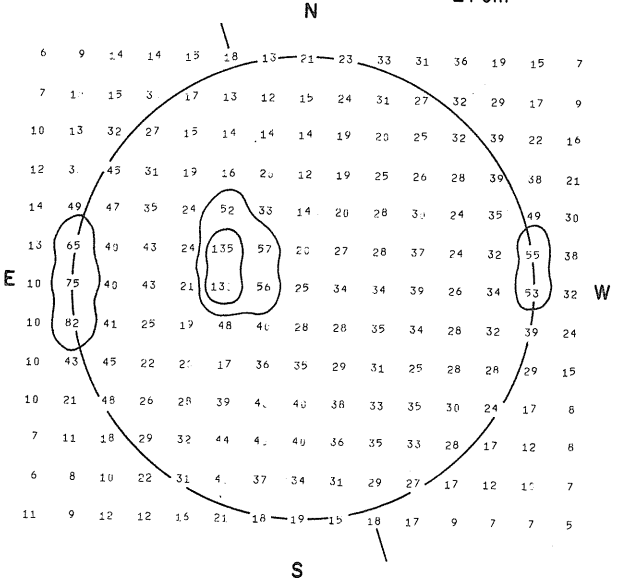


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

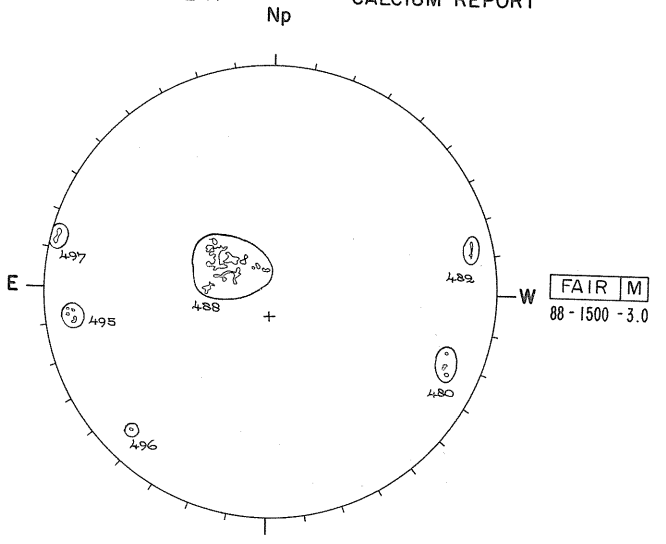


02-03 UT

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

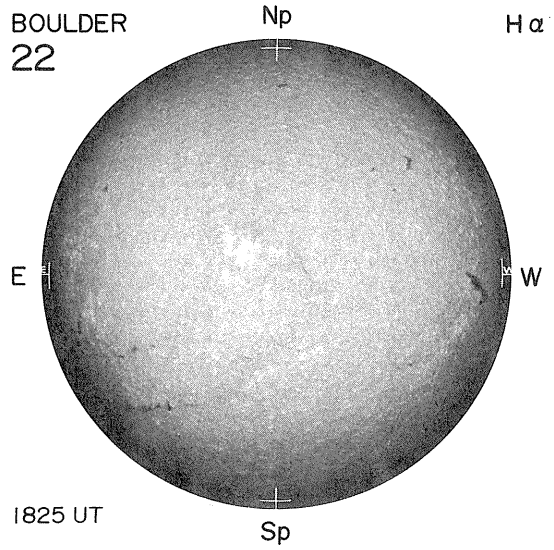
McMATH-HULBERT

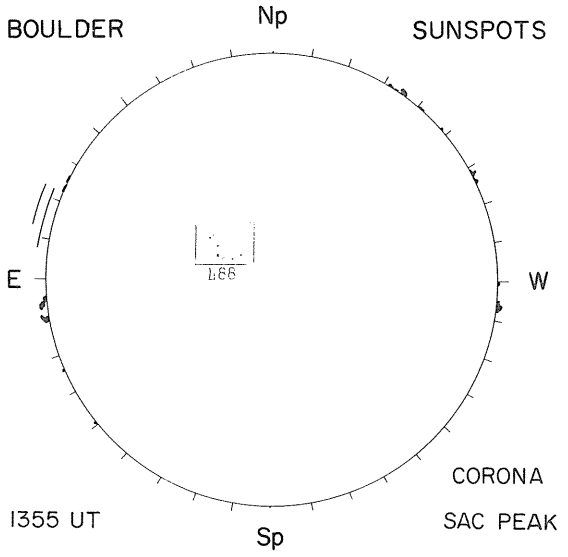
CALCIUM REPORT

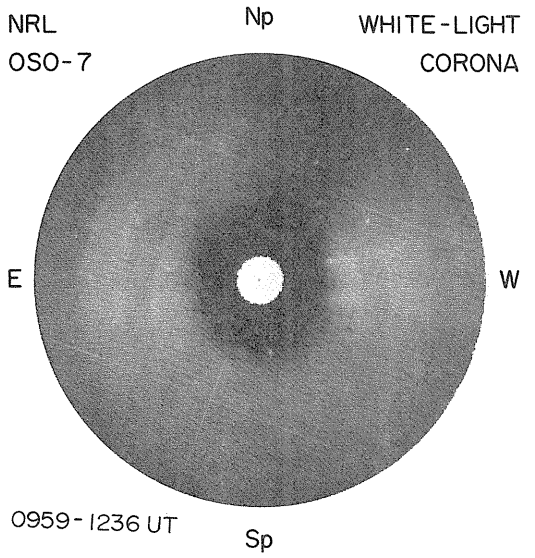


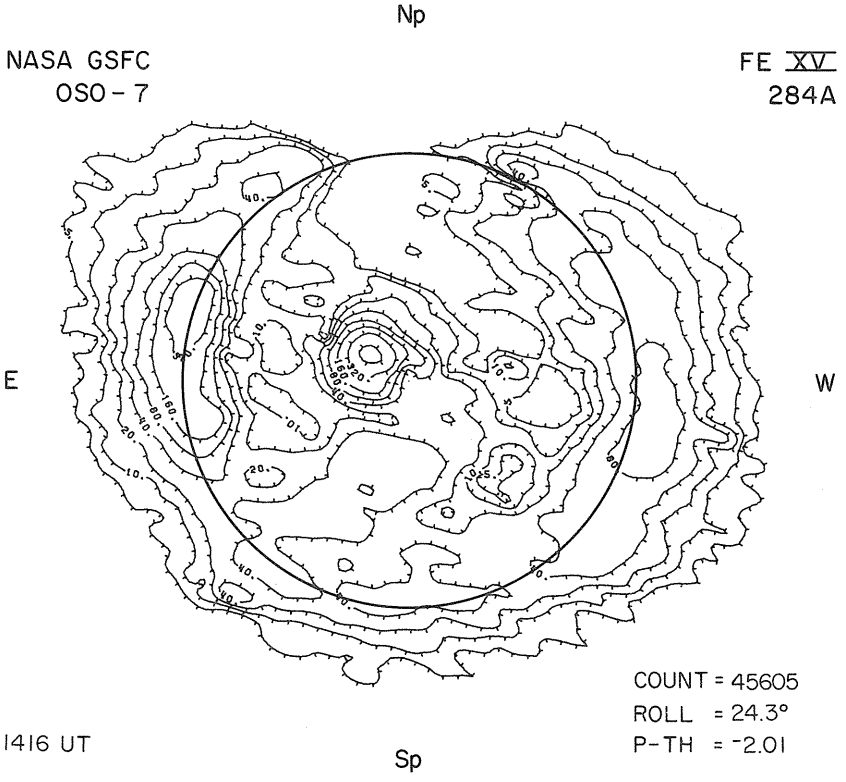
FAIR	M
88 - 1500	-3.0

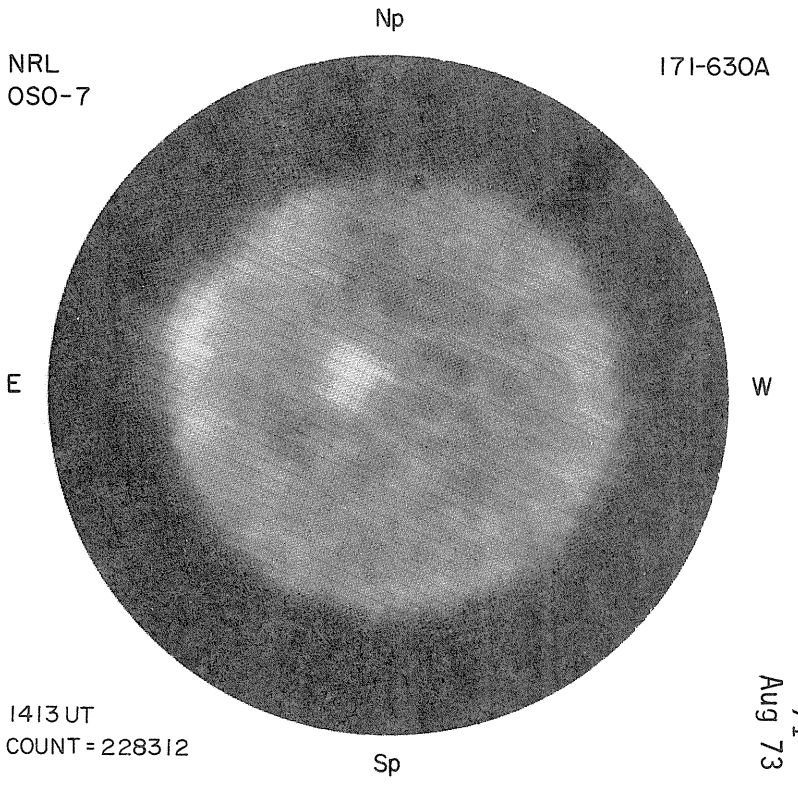
1320 UT


BOULDER
22
Np
Hα
E
W
1825 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
CORONA
SAC PEAK
1355 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
0959-1236 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 45605
ROLL = 24.3°
P-TH = -2.01
1416 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
1413 UT
COUNT = 228312
Sp

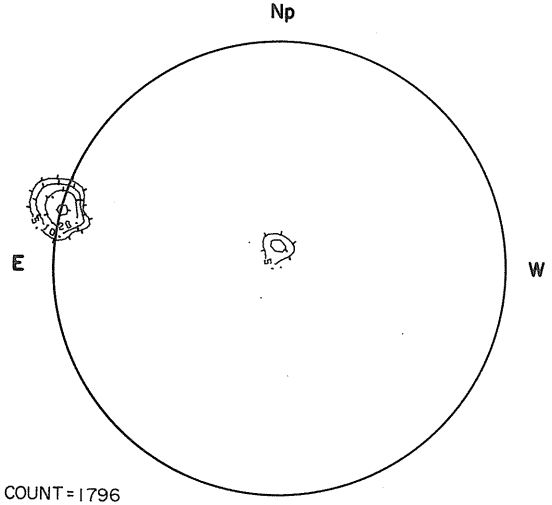
71
Aug 73

AUGUST 23, 1973 (P = 18.56, B_o = 6.98, L_o = 351.50)

72
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



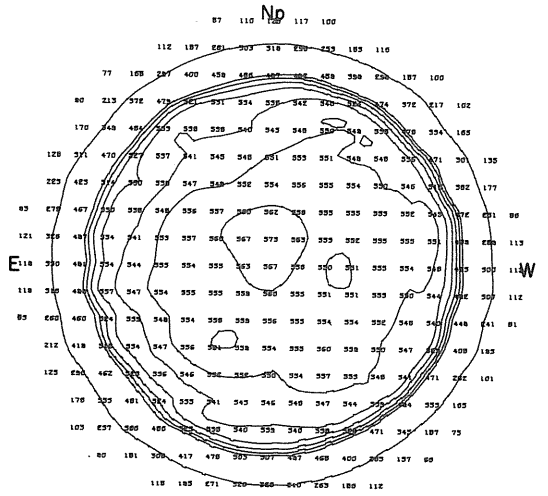
COUNT = 1796
ROLL = 25.0°
P-TH = -1.92

0850 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



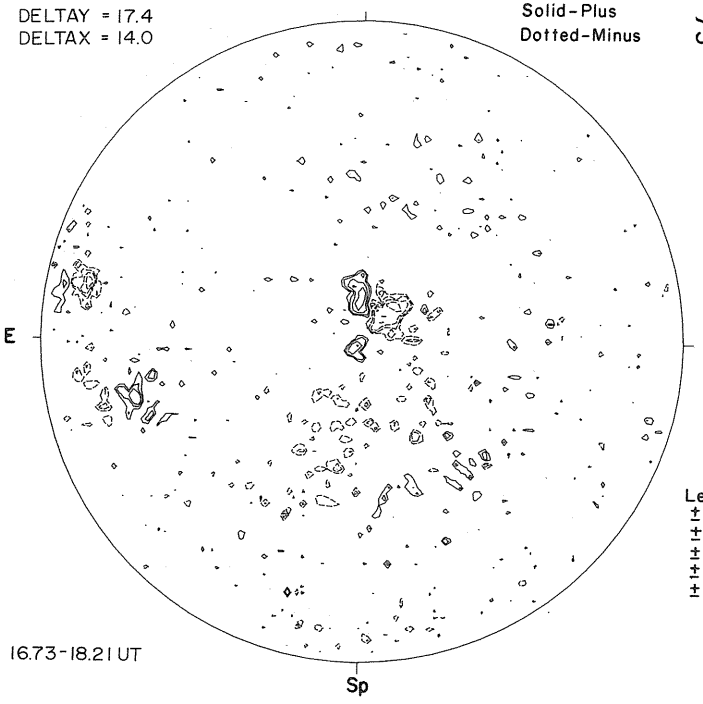
1412 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

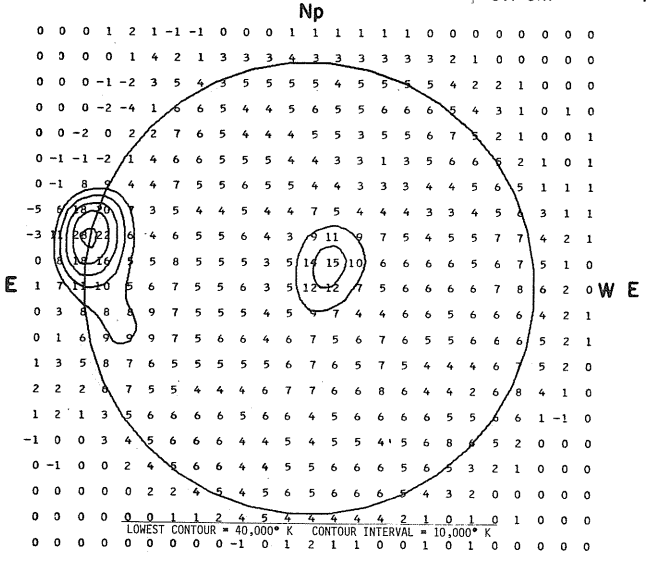


Levels
± 5
± 10
± 20
± 40
± 80

16.73-18.21 UT

STANFORD

9.1 cm

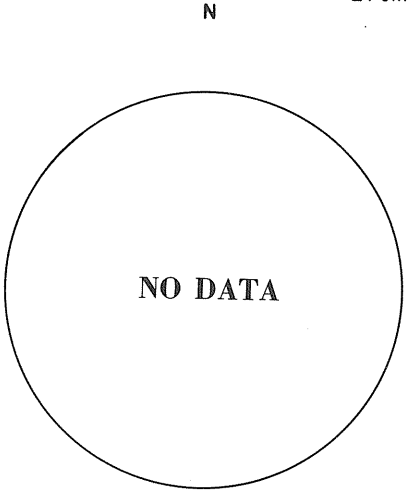


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

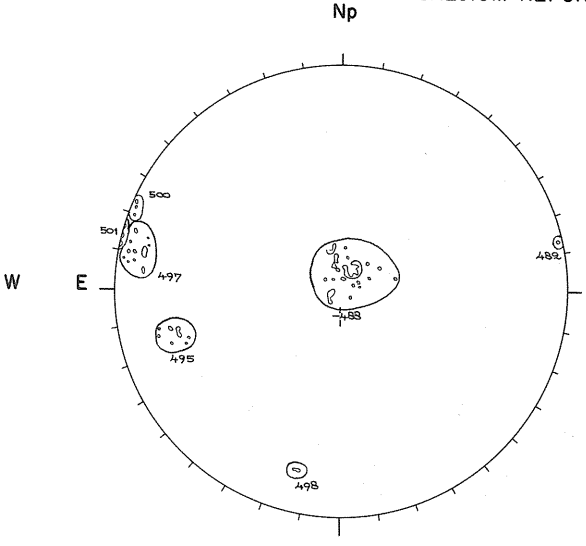


02-03 UT

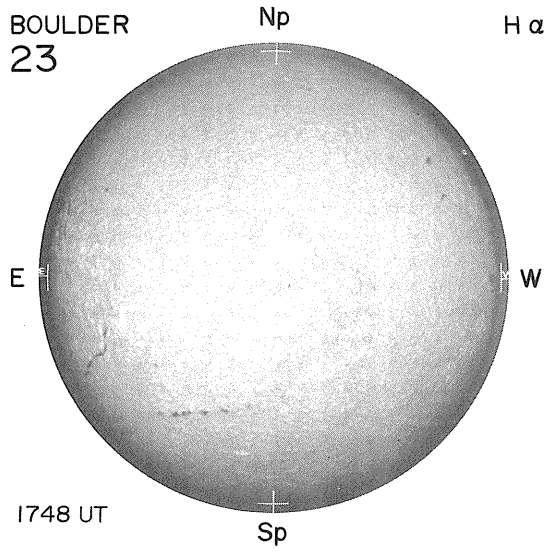
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

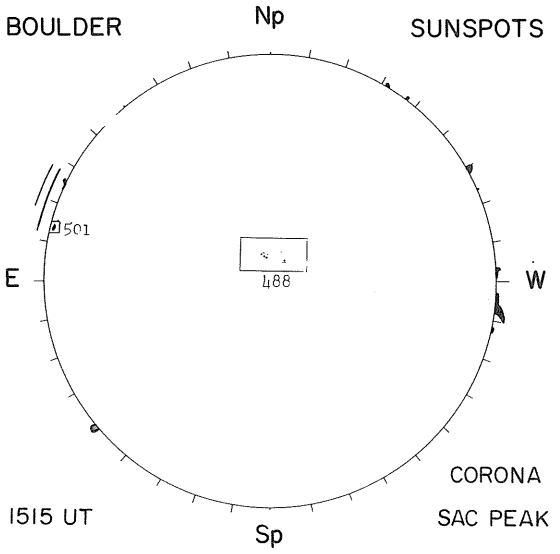
McMATH-HULBERT

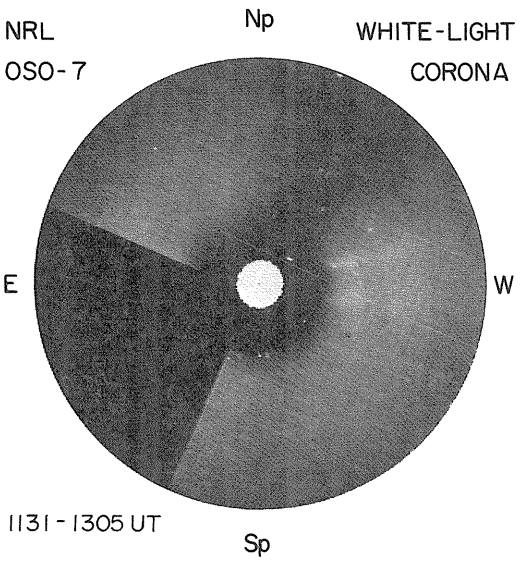
CALCIUM REPORT

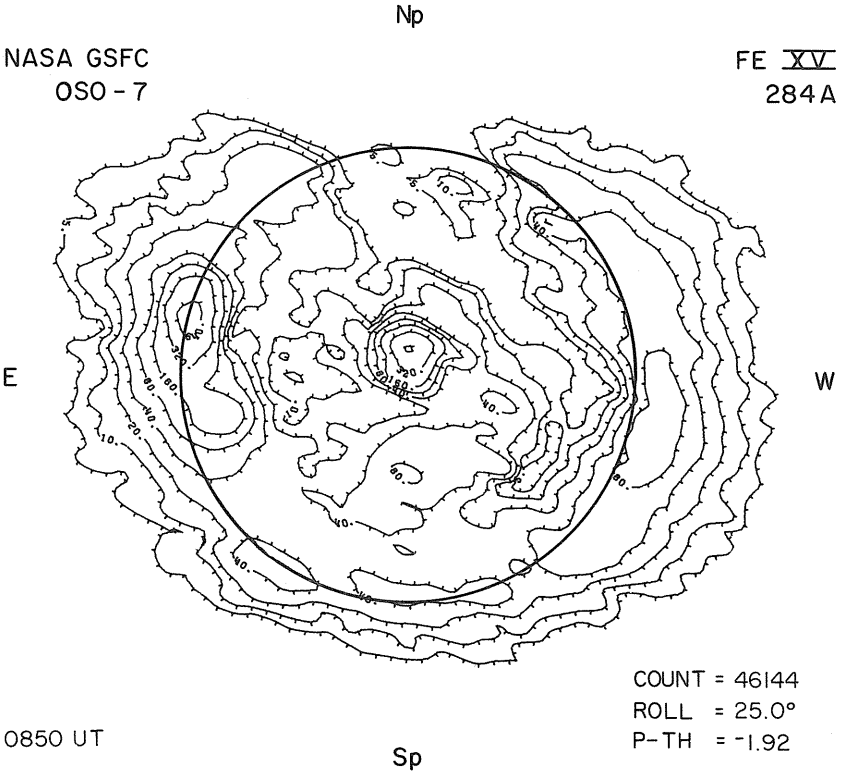


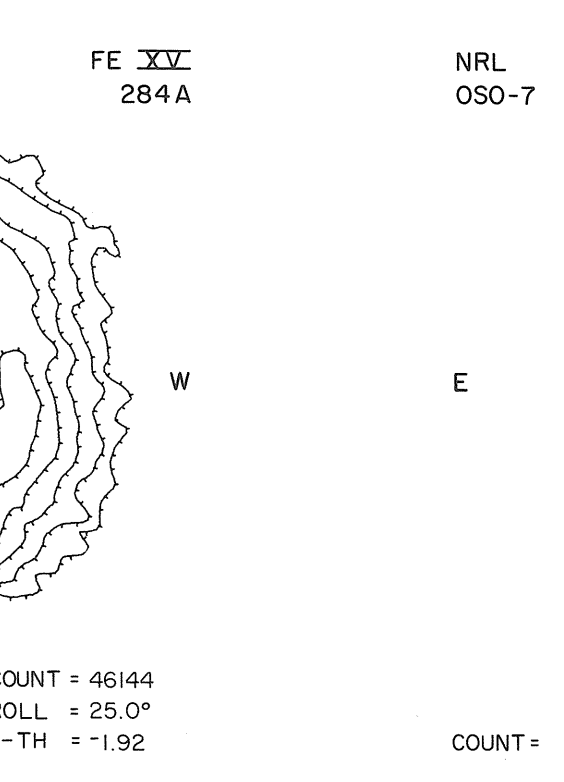
1245 UT

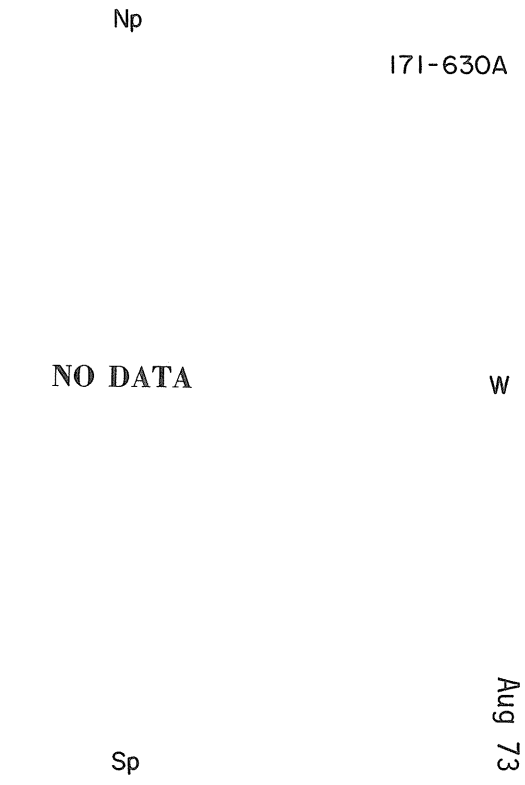

BOULDER
23
Np
H α
E
W
1748 UT
Sp


BOULDER
Np
SUNSPOTS
501
488
E
W
CORONA
SAC PEAK
1515 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1131-1305 UT
Sp


Np
NASA GSFC
OSO-7
E
W
COUNT = 46144
ROLL = 25.0°
P-TH = -1.92
0850 UT
Sp


FE XV
284A
NRL
OSO-7
E
COUNT =

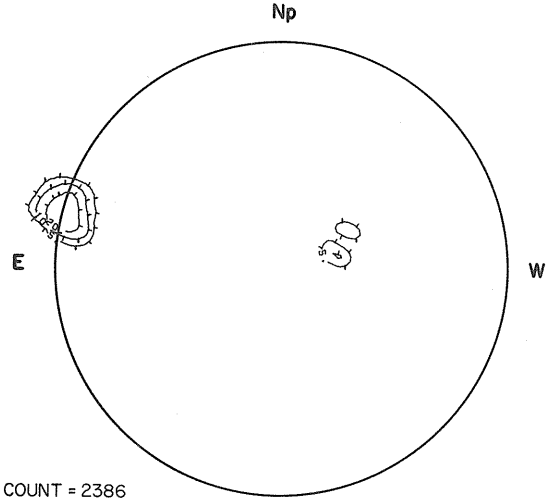

Np
171-630A
NO DATA
W
Sp

73
Aug 73

AUGUST 24, 1973 (P = 18.86, B_o = 7.01, L_o = 338.29)

NASA GSFC
OSO-7

X-RAY
8-16A



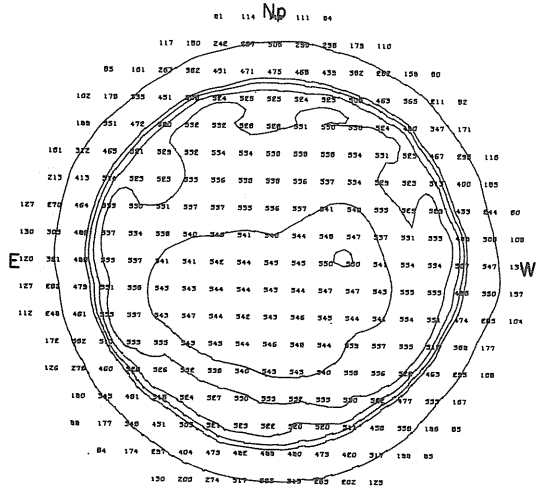
COUNT = 2386
ROLL = 26.0°
P-TH = -1.80

0918 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



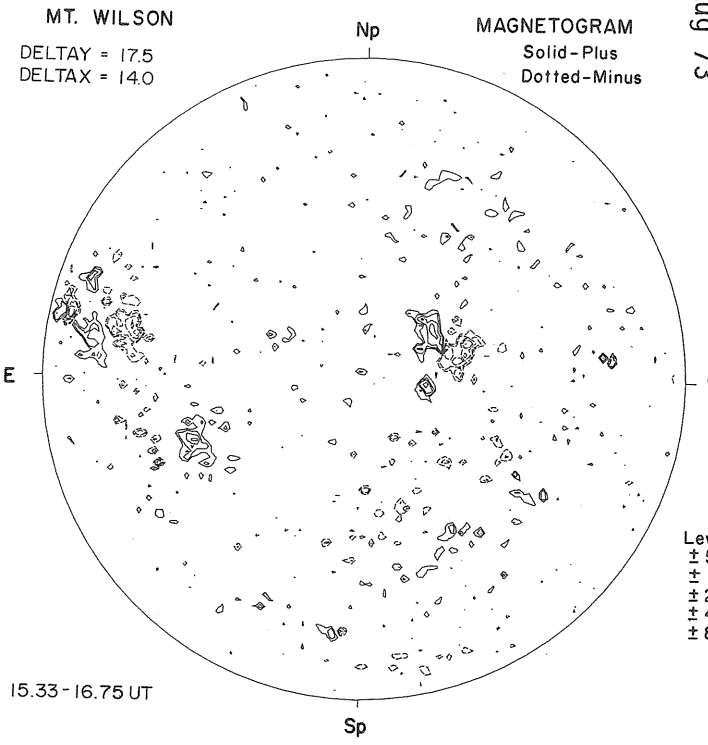
1858 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.5
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

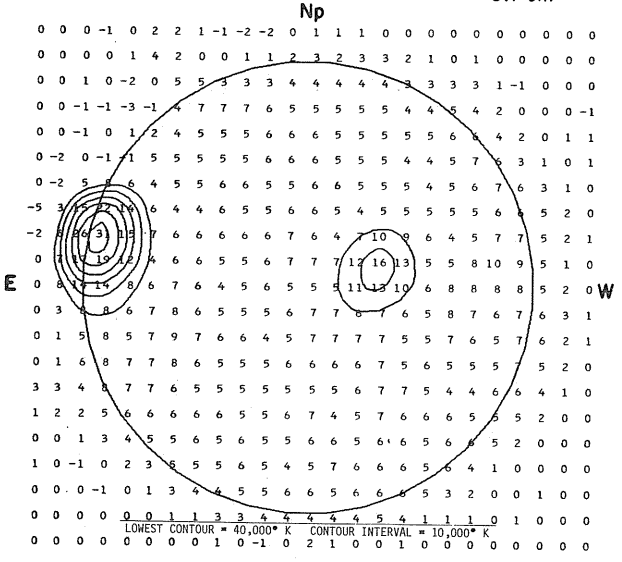


Levels
±5
±10
±20
±40
±80

15.33-16.75 UT

STANFORD

9.1 cm

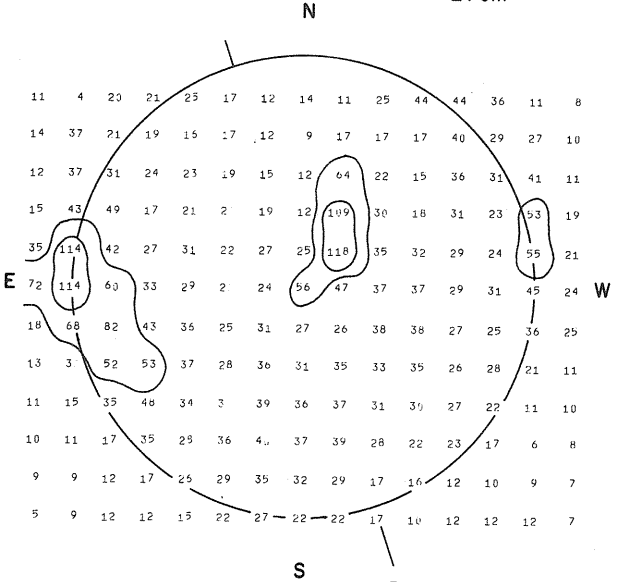


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

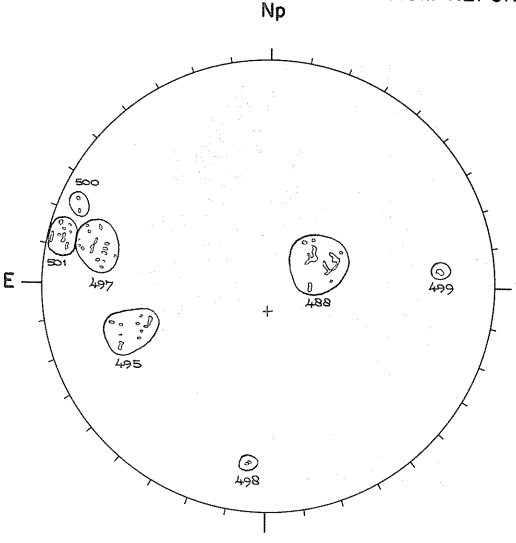


02-03 UT

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

McMATH-HULBERT

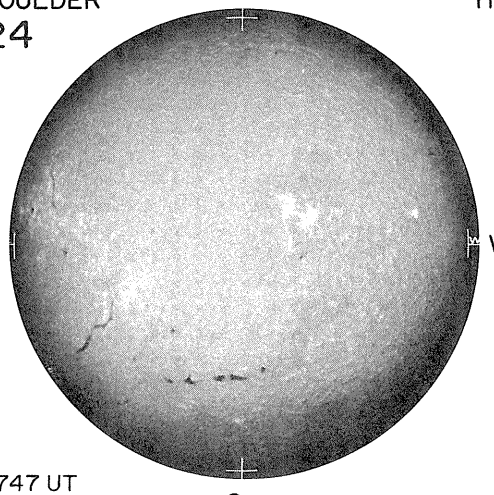
CALCIUM REPORT



FAIR	B
88-1200	-2.5
99-0200	-3.0
00-0300	-2.5
01-1200	-3.0

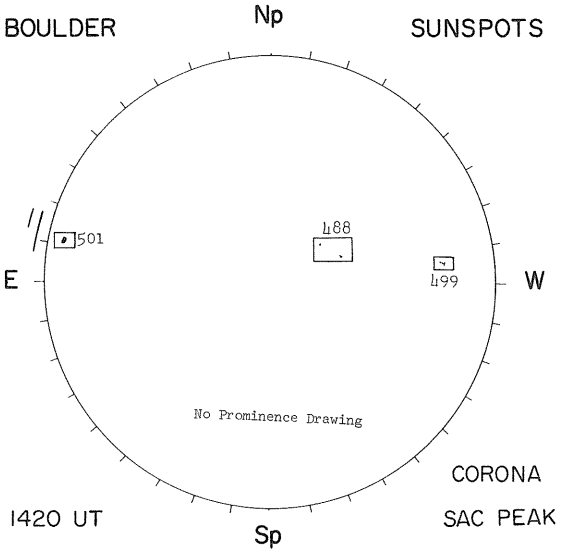
1510 UT

BOULDER
24



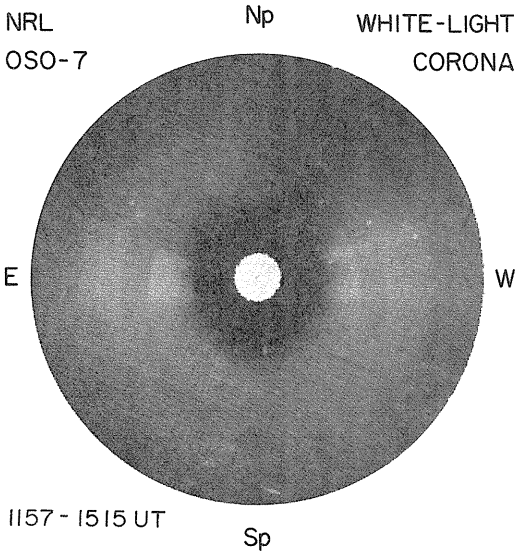
1747 UT

BOULDER



1420 UT

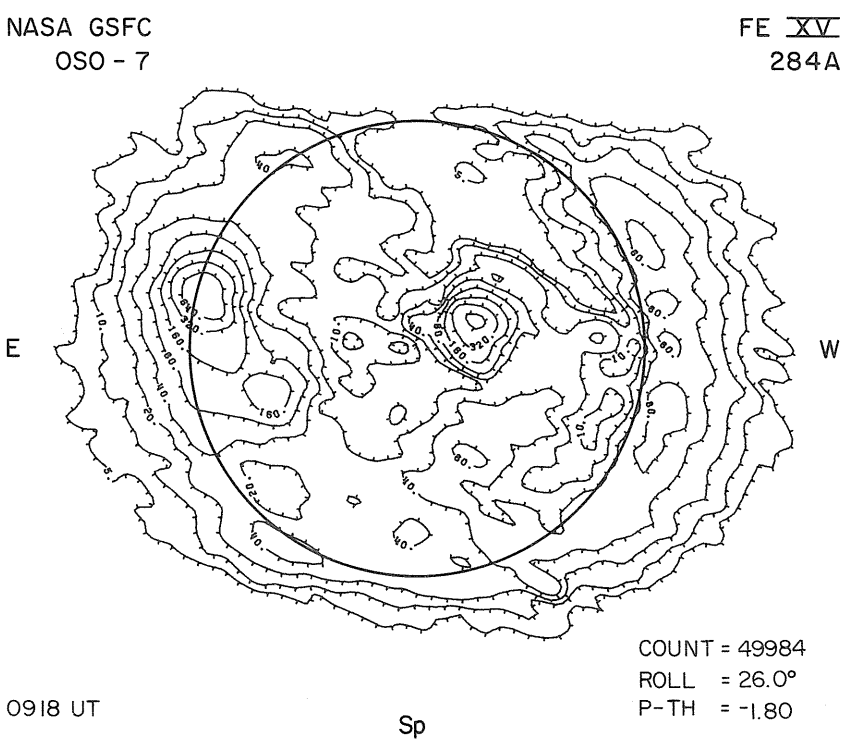
NRL
OSO-7



1157 - 1515 UT

NASA GSFC
OSO - 7

FE XV
284A

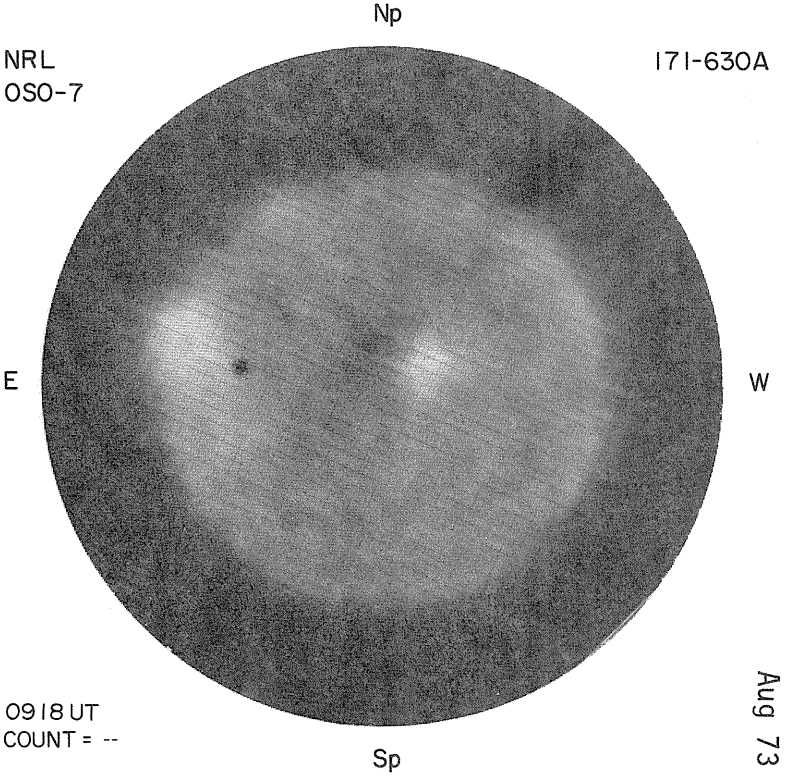


COUNT = 49984
ROLL = 26.0°
P-TH = -1.80

0918 UT

NRL
OSO-7

171-630A



0918 UT
COUNT = --

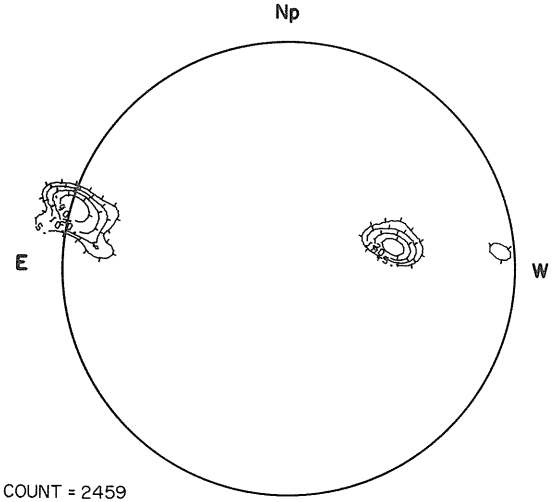
75
Aug 73

AUGUST 25, 1973 (P = 19.16, B_o = 7.04, L_o = 325.08)

76
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



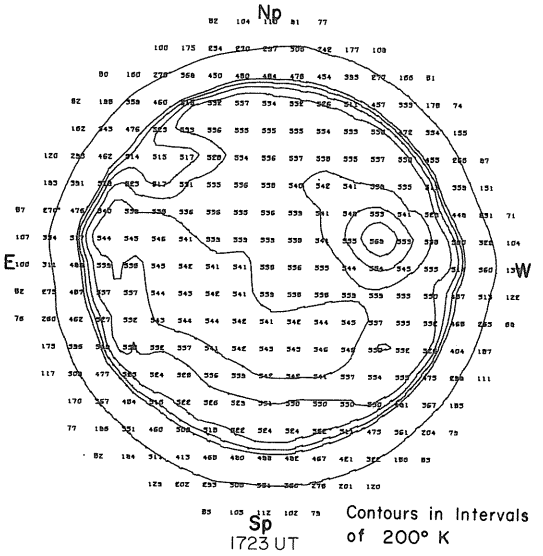
COUNT = 2459
ROLL = 26.4°
P-TH = -1.68

0809 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



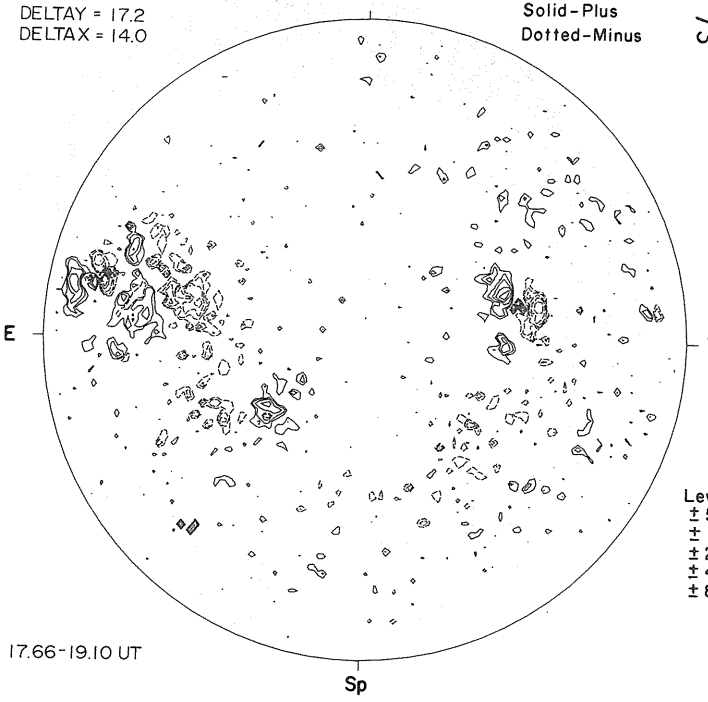
1723 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.2
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

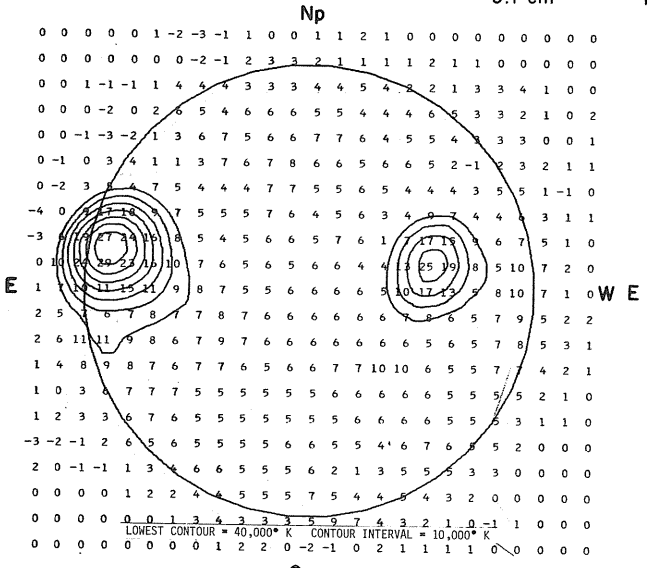


Levels
±5
±10
±20
±40
±80

17.66-19.10 UT

STANFORD

9.1 cm

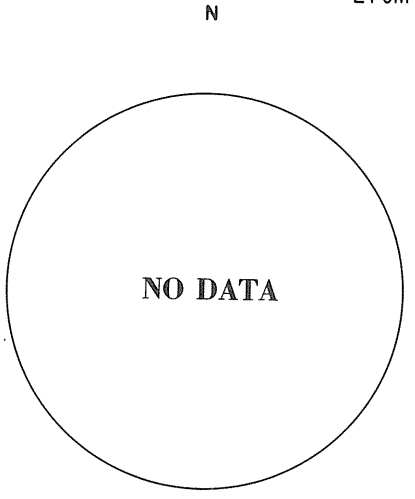


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

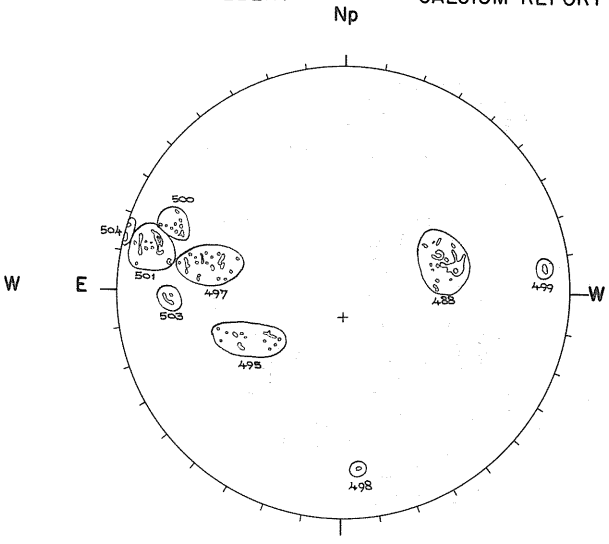


02-03 UT

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

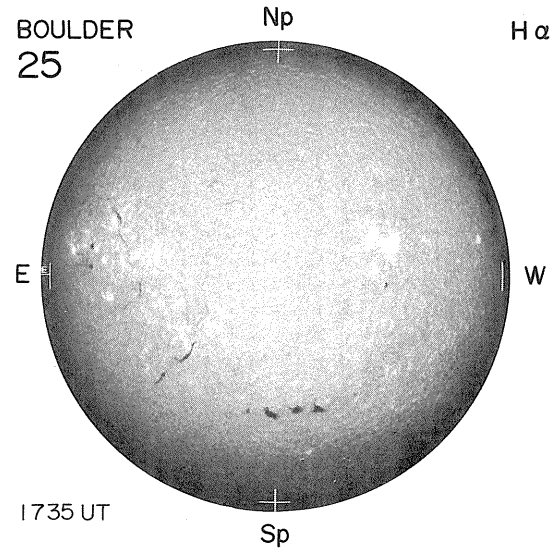
McMATH-HULBERT

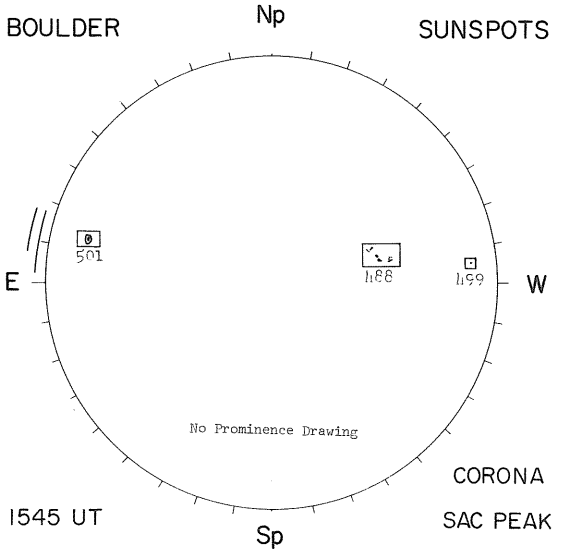
CALCIUM REPORT

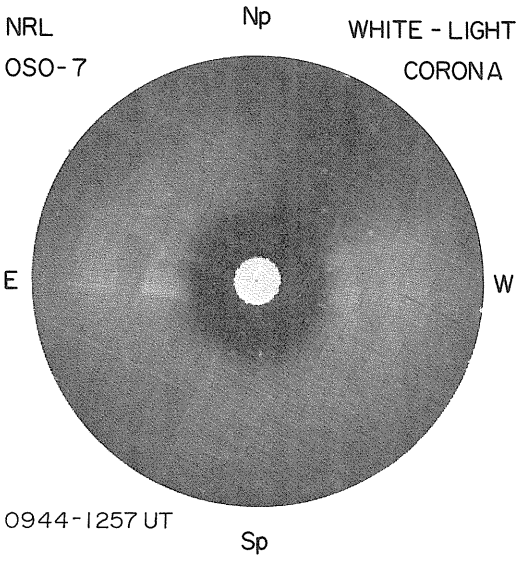


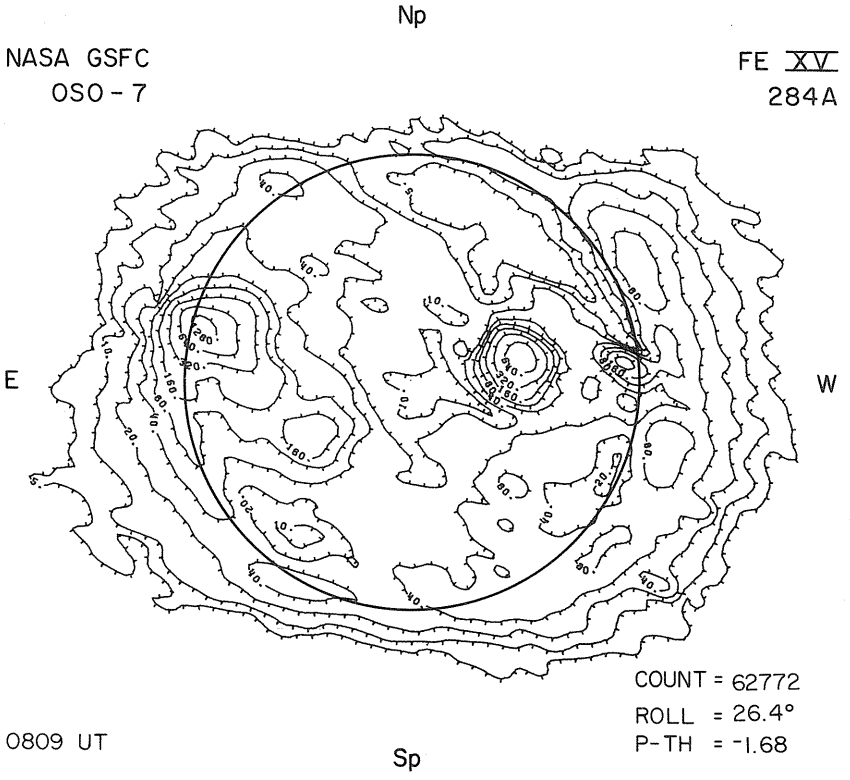
GOOD	S
88 - 1600 - 3.5	
99 - 0200 - 3.0	
01 - 1500 - 3.5	
04 - 0400 - 2.5	

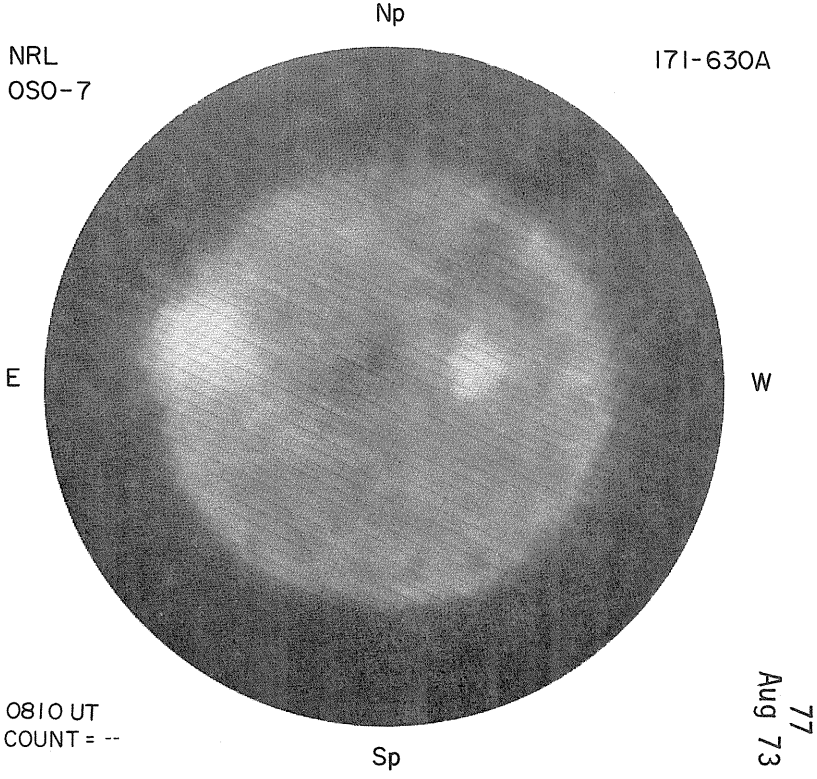
1525 UT


BOULDER
25
Np
Hα
E
W
1735 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
501
488
499
No Prominence Drawing
CORONA
SAC PEAK
1545 UT
Sp


NRL
OSO-7
Np
WHITE - LIGHT
CORONA
E
W
0944-1257 UT
Sp


Np
NASA GSFC
OSO - 7
FE XV
284A
E
W
COUNT = 62772
ROLL = 26.4°
P-TH = -1.68
0809 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
0810 UT
COUNT = --
Sp

77
Aug 73

AUGUST 26, 1973 (P = 19.45, B_o = 7.07, L_o = 311.86)

78
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A

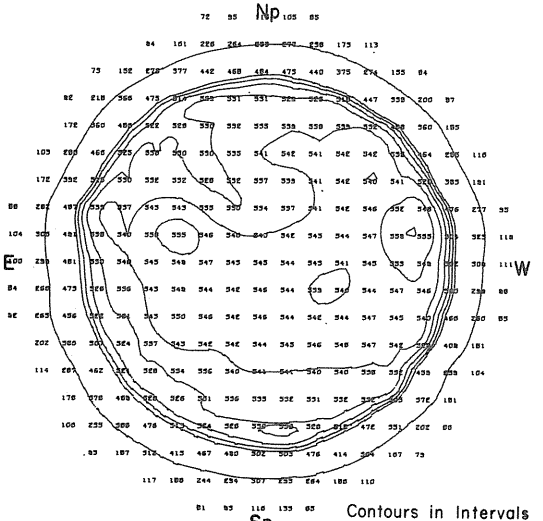
COUNT = 2659
ROLL = 26.5°
P-TH = -1.56

Sp
0837 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

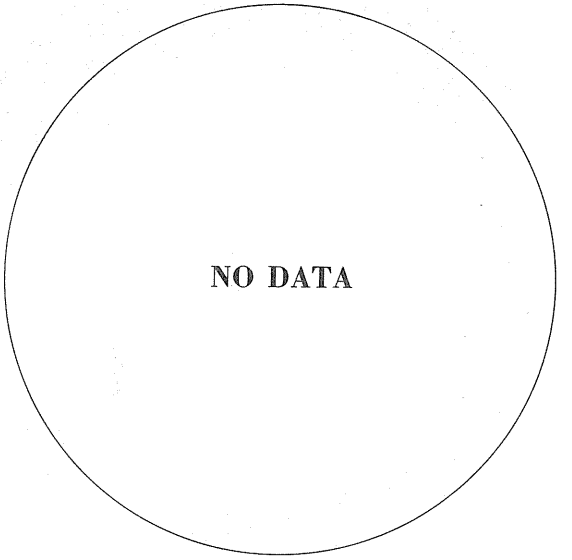


Sp
1433 UT

Contours in Intervals of 200° K

MT. WILSON

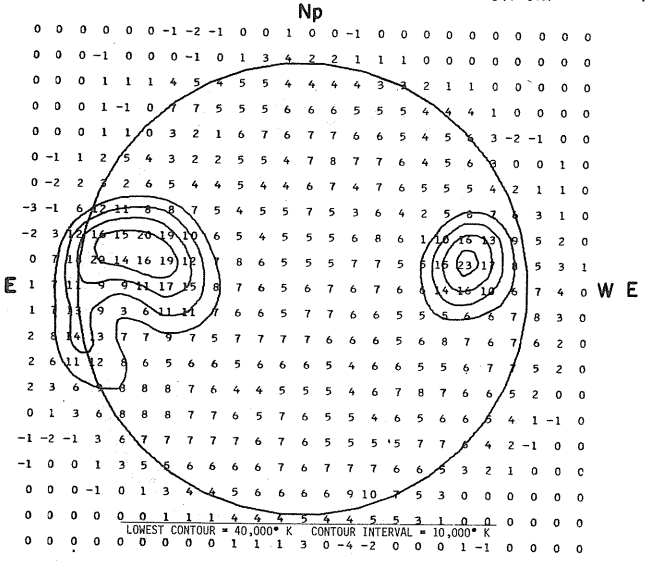
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
± 5
± 10
± 20
± 40
± 80

STANFORD

9.1 cm

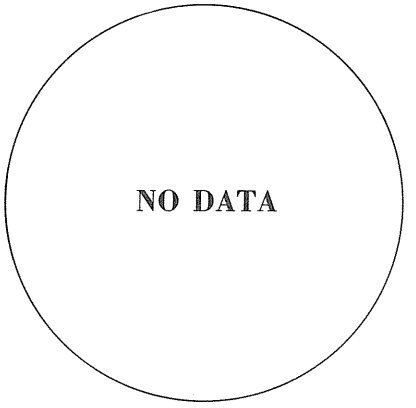


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

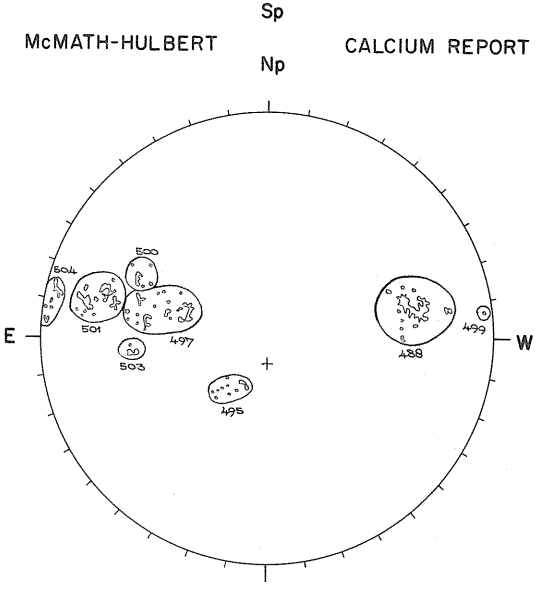


02-03 UT

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

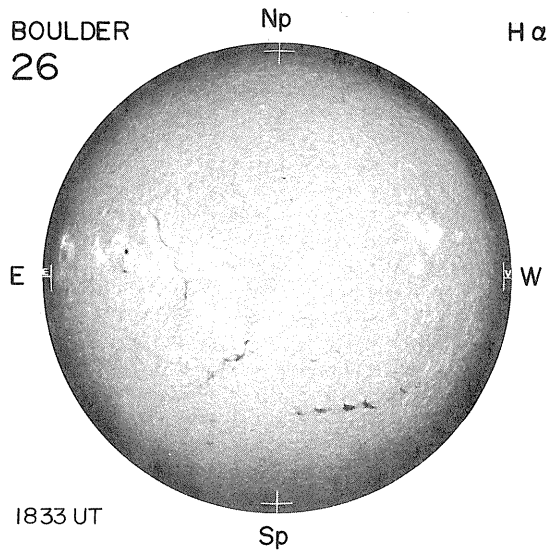
McMATH-HULBERT

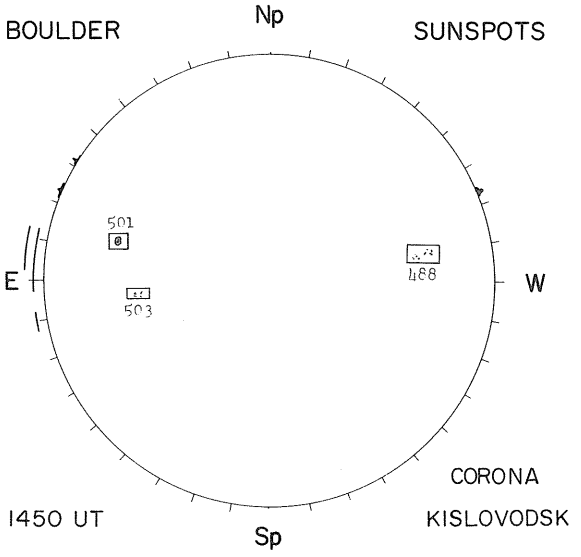
CALCIUM REPORT

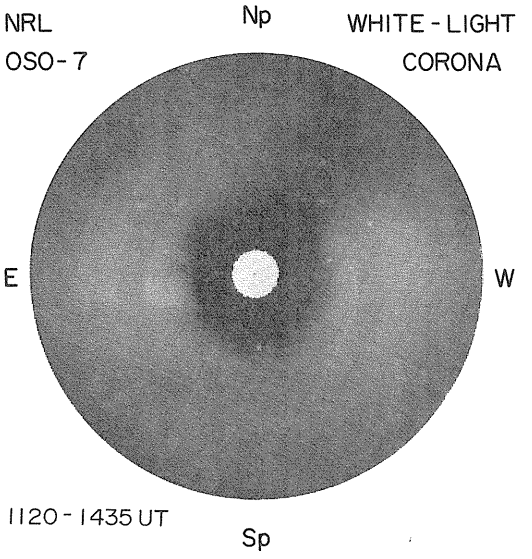


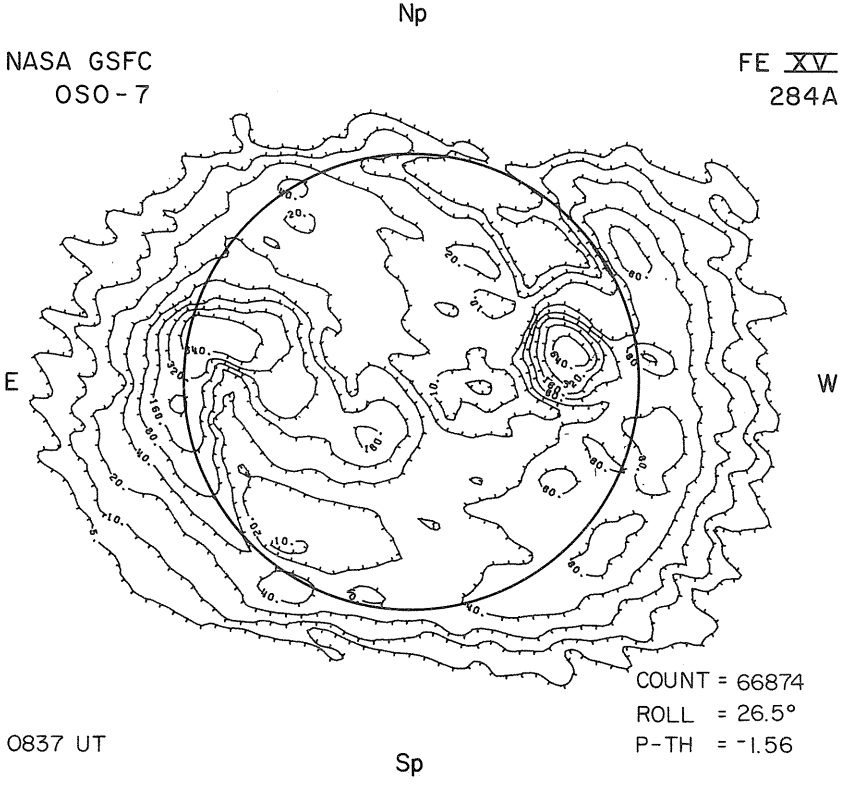
FAIR	M
88 - 1600 - 3.5	
01 - 1500 - 2.5	
03 - 0400 - 3.0	
04 - 0700 - 2.5	

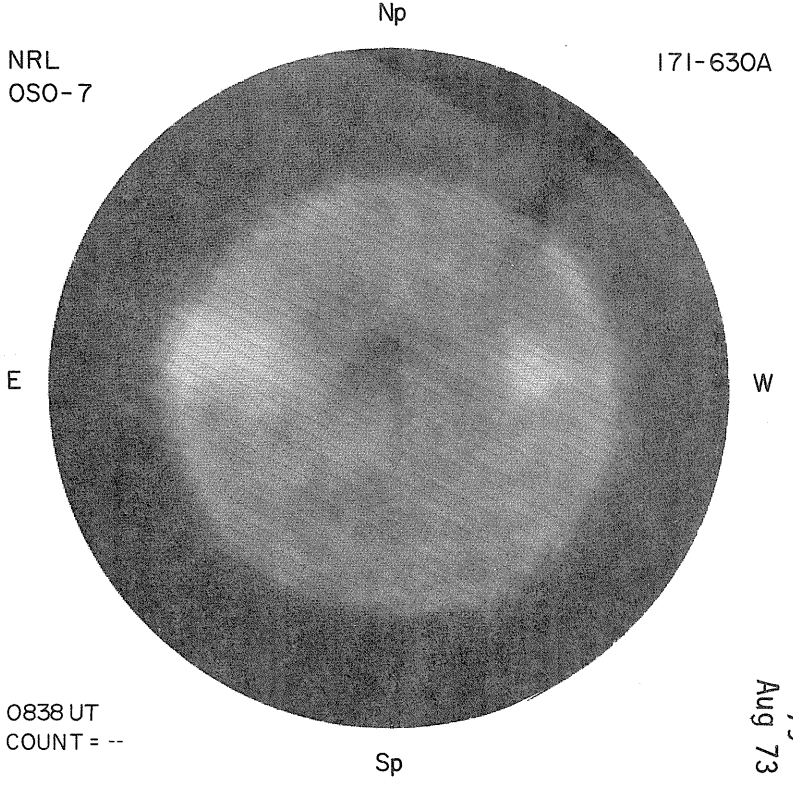
Sp
1535 UT


BOULDER
26
Np
Hα
E
W
1833 UT
Sp


BOULDER
Np
SUNSPOTS
501
488
503
E
W
CORONA
KISLOVODSK
1450 UT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1120-1435 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 66874
ROLL = 26.5°
P-TH = -1.56
0837 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
0838 UT
COUNT = --
Sp

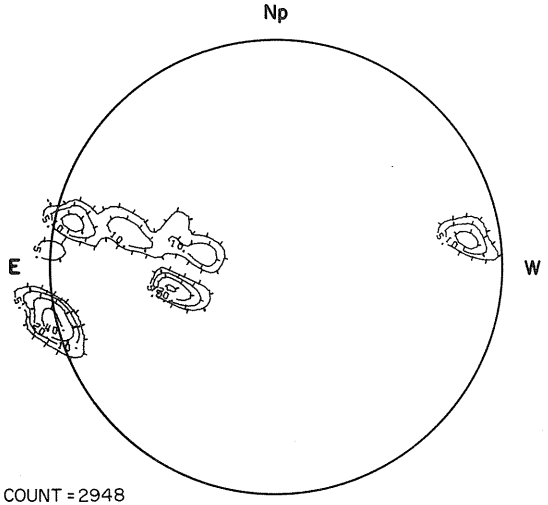
79
Aug 73

AUGUST 27, 1973 (P = 19.73, B_o = 7.10, L_o = 298.65)

80
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



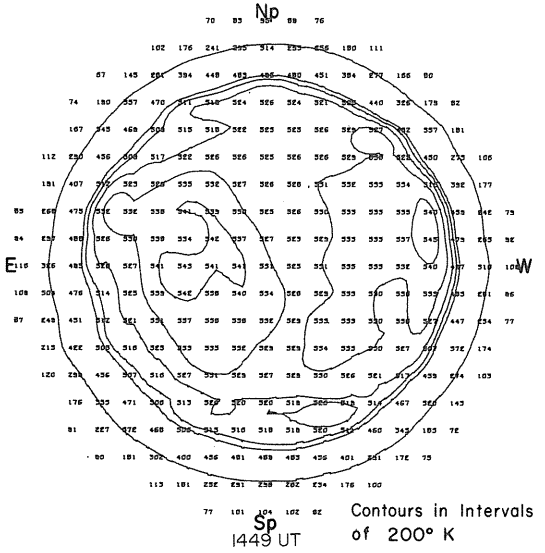
COUNT = 2948
ROLL = 27.1°
P-TH = -1.45

0732 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



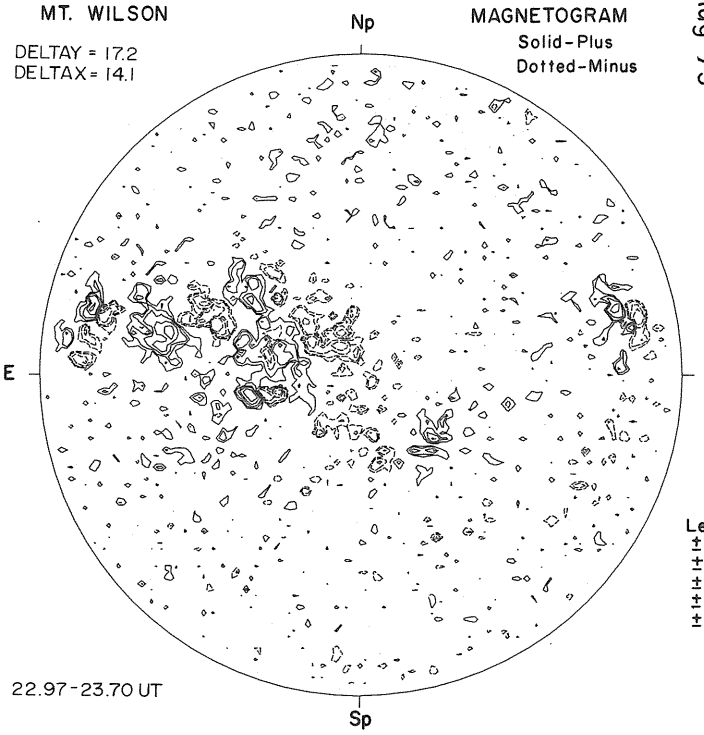
1449 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.2
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

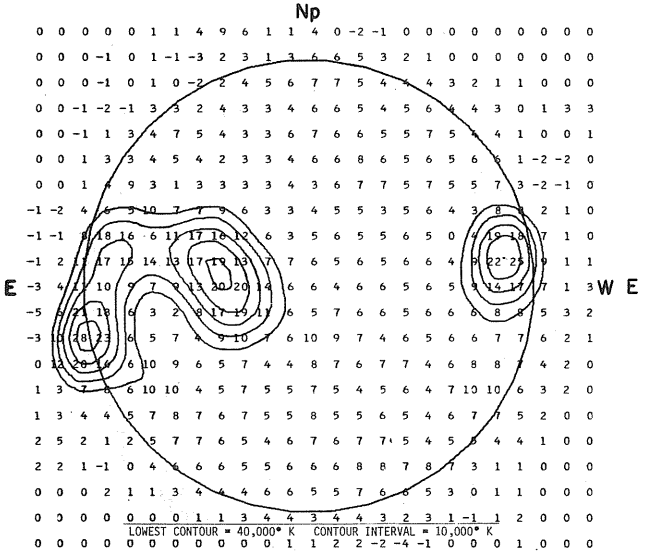


Levels
± 5
± 10
± 20
± 40
± 80

22.97-23.70 UT

STANFORD

9.1 cm

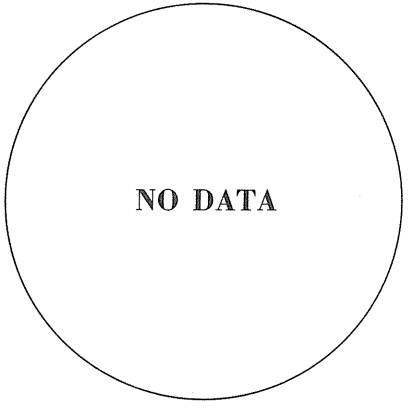


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

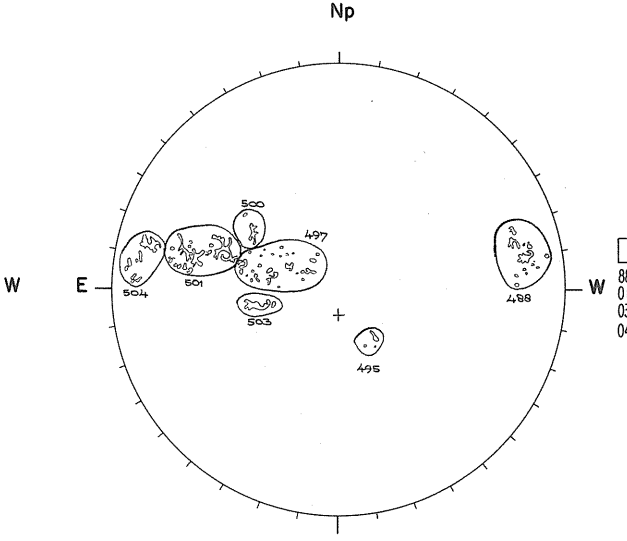


02-03 UT

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

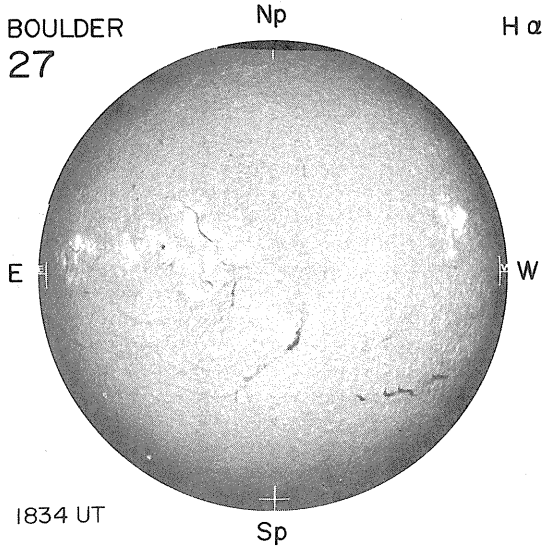
McMATH-HULBERT

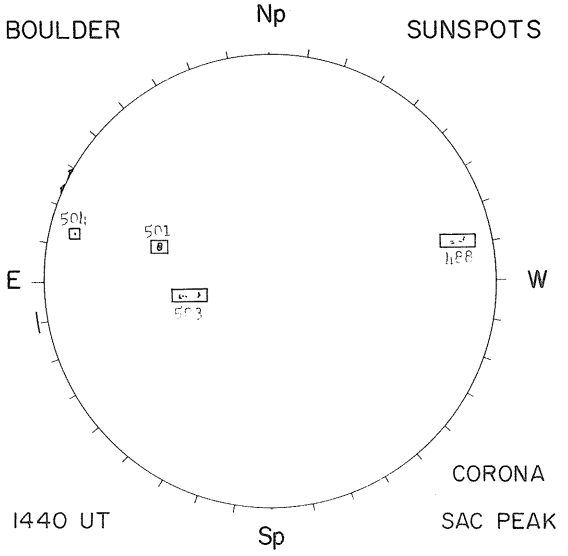
CALCIUM REPORT

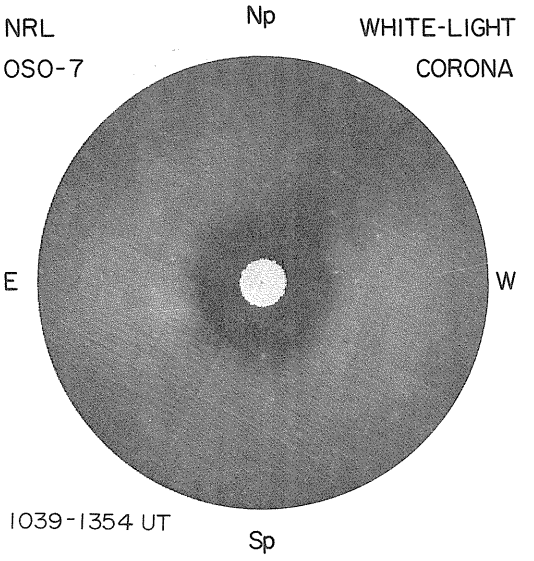


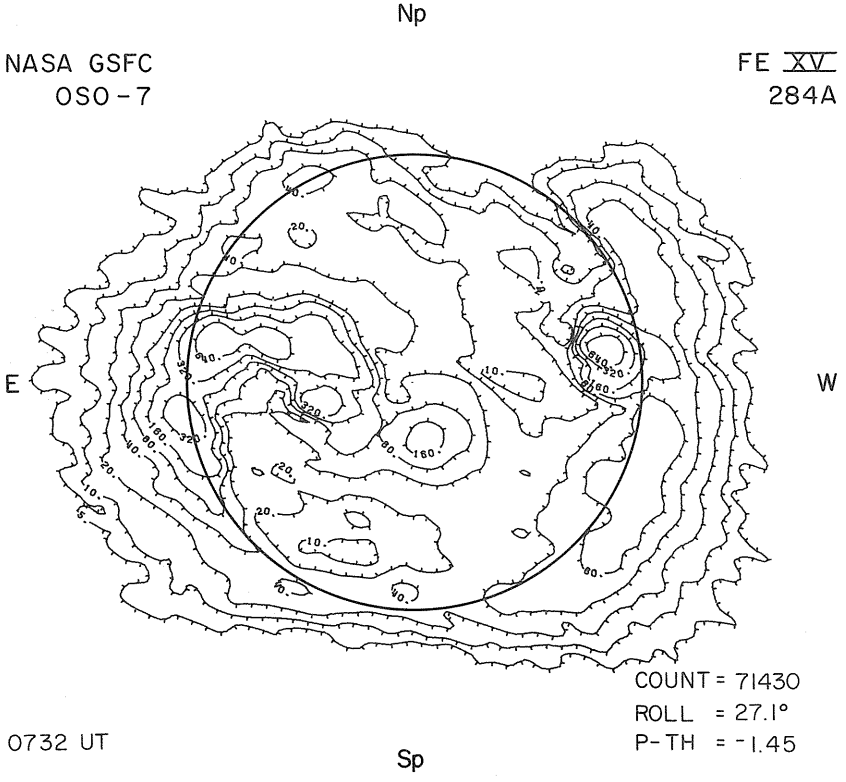
FAIR	M
88 - 1600	- 3.5
01 - 1400	- 2.5
03 - 0600	- 3.5
04 - 1200	- 2.5

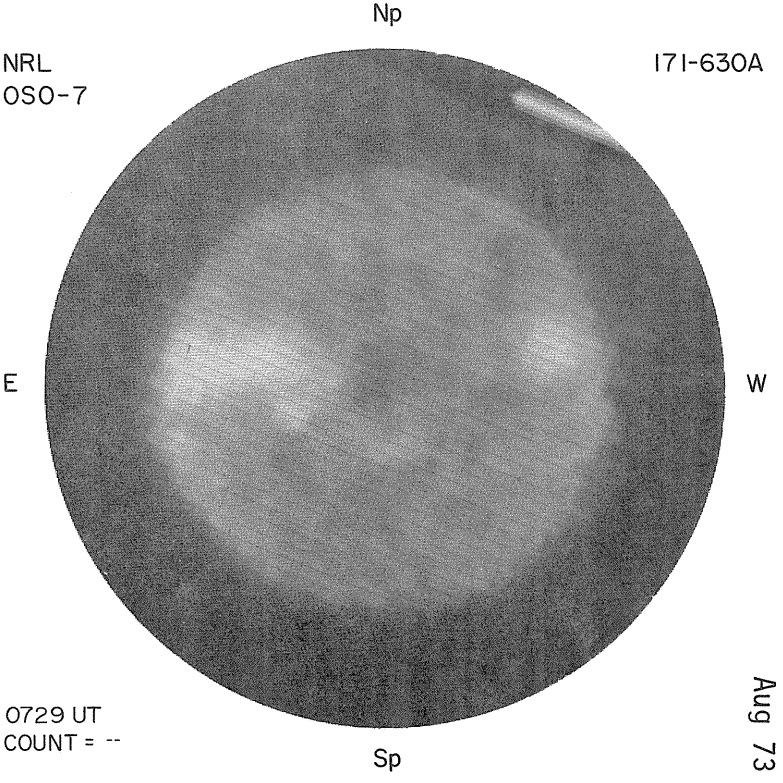
1835 UT


BOULDER
27
Np
H α
E
W
1834 UT
Sp


BOULDER
Np
SUNSPOTS
E
W
CORONA
1440 UT
Sp
SAC PEAK


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1039-1354 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 71430
ROLL = 27.1°
P-TH = -1.45
0732 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
0729 UT
COUNT = --
Sp

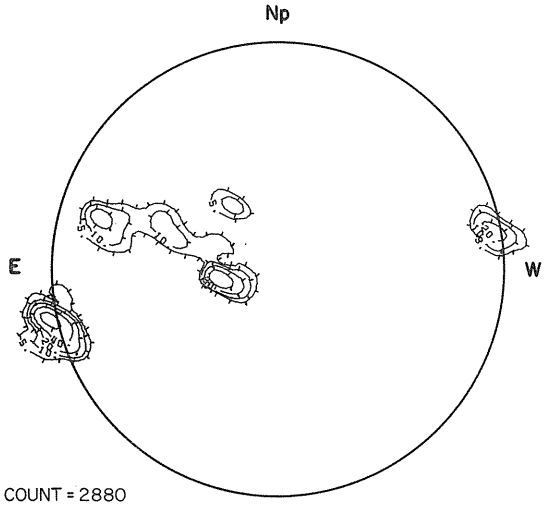
81
Aug 73

AUGUST 28, 1973 (P = 20.01, B_o = 7.12, L_o = 285.44)

82
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



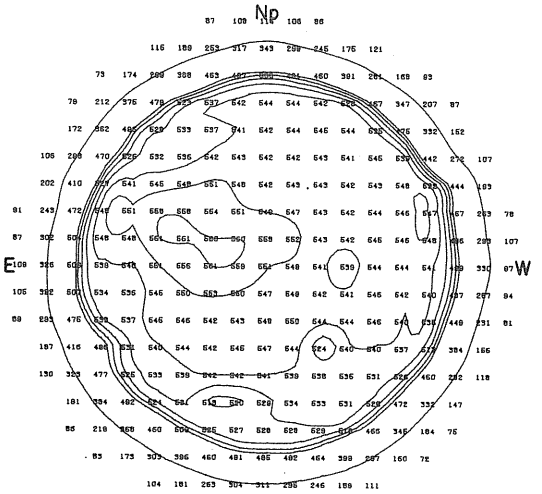
COUNT = 2880
ROLL = 28.4°
P-TH = -1.33

0624 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



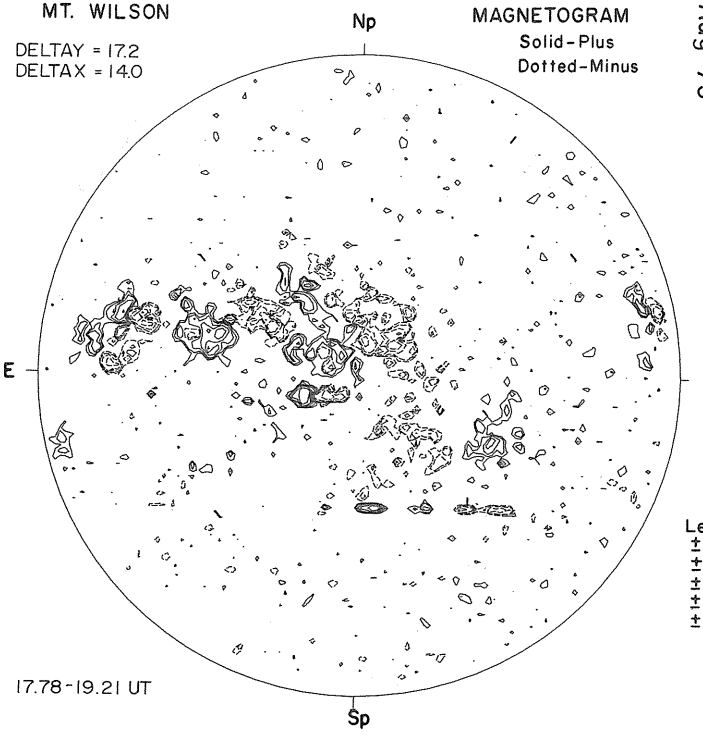
1525 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.2
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

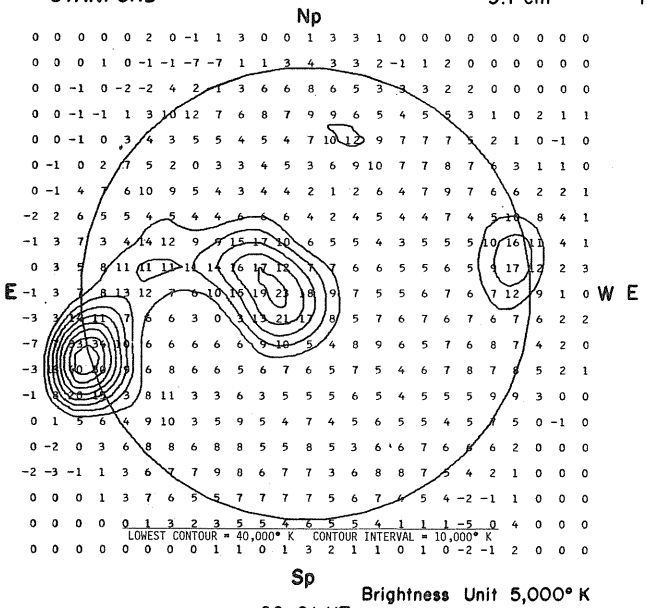


Levels
± 5
± 10
± 20
± 40
± 80

17.78-19.21 UT

STANFORD

9.1 cm

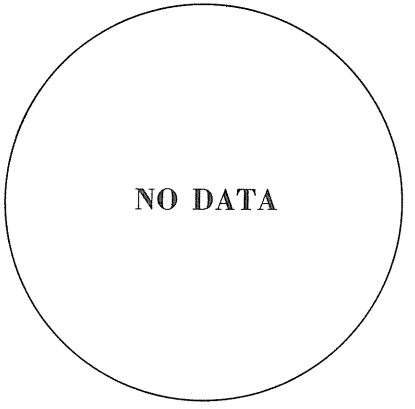


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

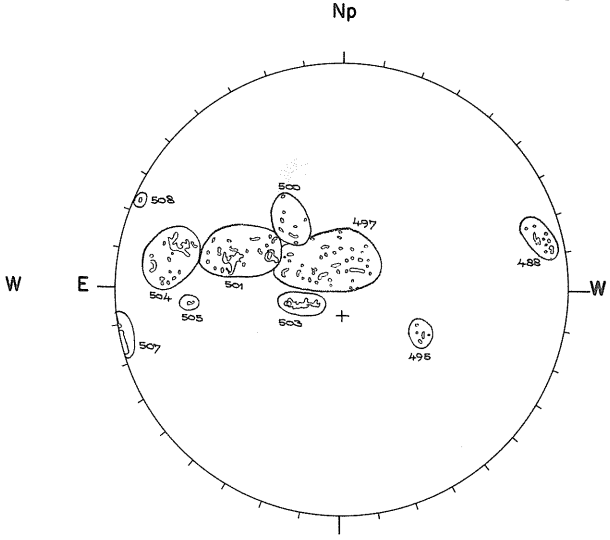


02-03 UT

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

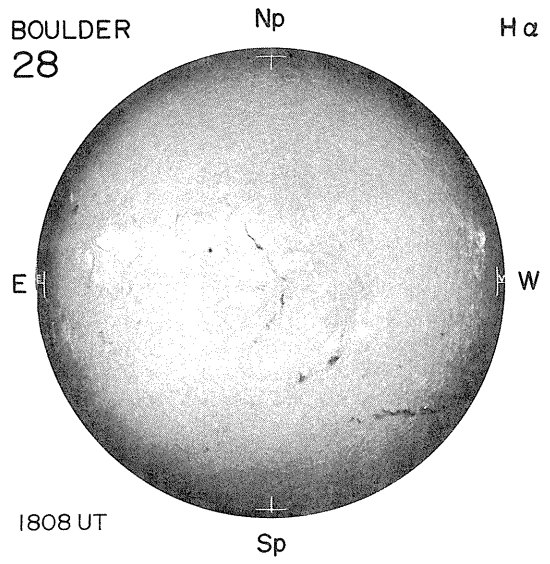
McMATH-HULBERT

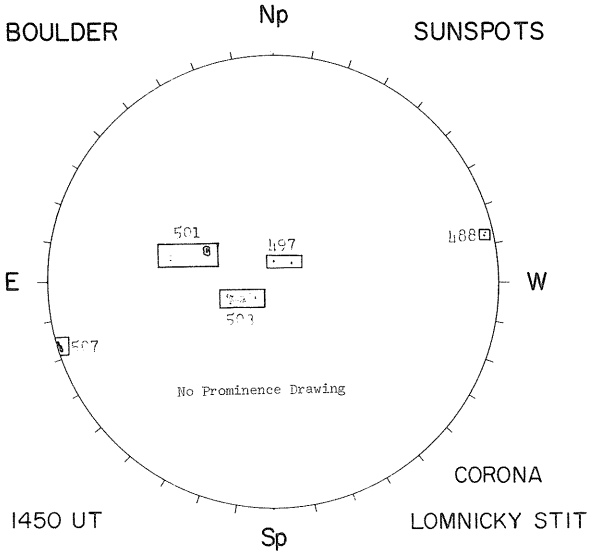
CALCIUM REPORT

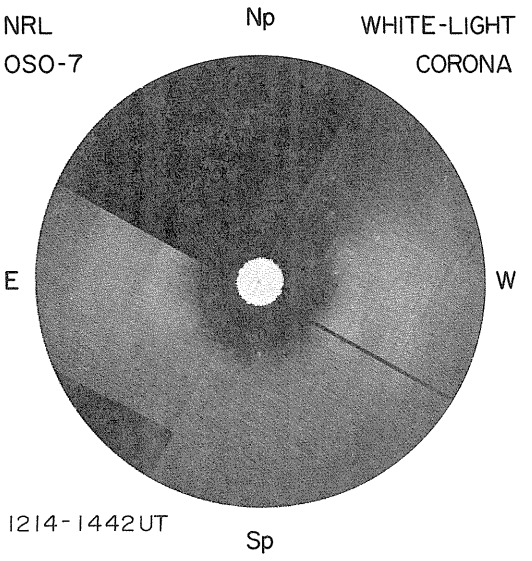


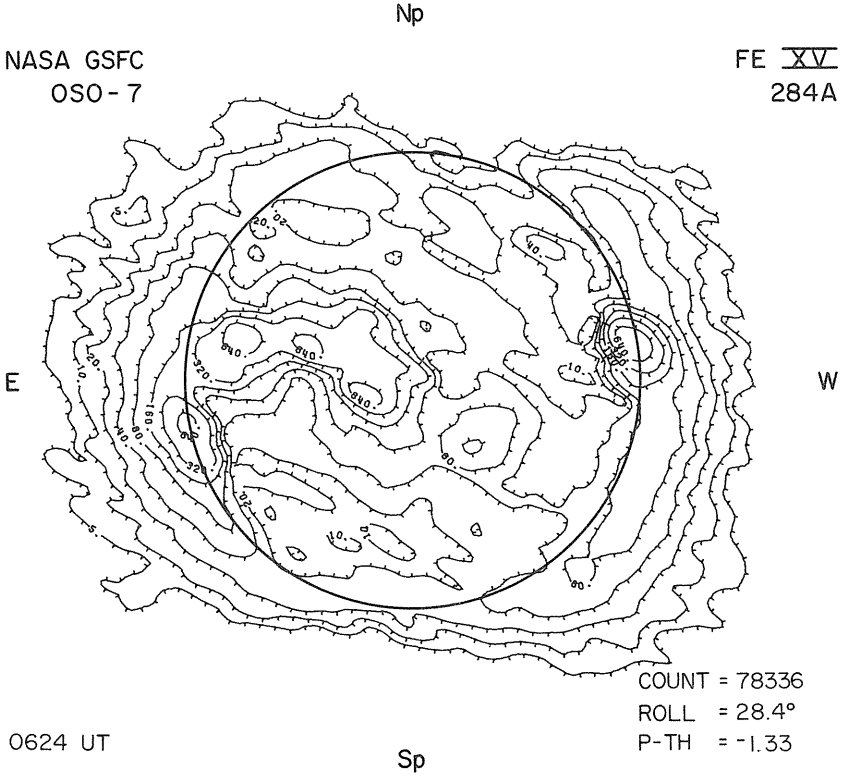
POOR	S
88 - 1400 - 3.0	
01 - 1600 - 3.0	
03 - 0600 - 3.5	
04 - 1600 - 3.0	
07 - 1100 - 2.5	

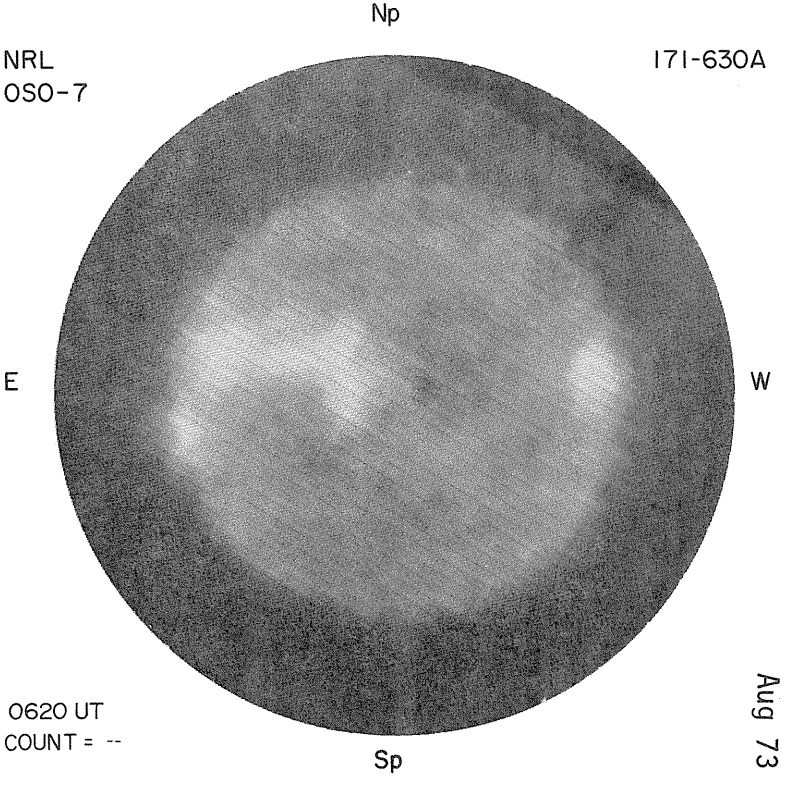
1230 UT


BOULDER
28
Np
Hα
E
W
1808 UT
Sp


BOULDER
Np
SUNSPOTS
501
497
488
E
W
No Prominence Drawing
CORONA
1450 UT
LOMNICKY STIT
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1214-1442UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 78336
ROLL = 28.4°
P-TH = -1.33
0624 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
0620 UT
COUNT = --
Sp

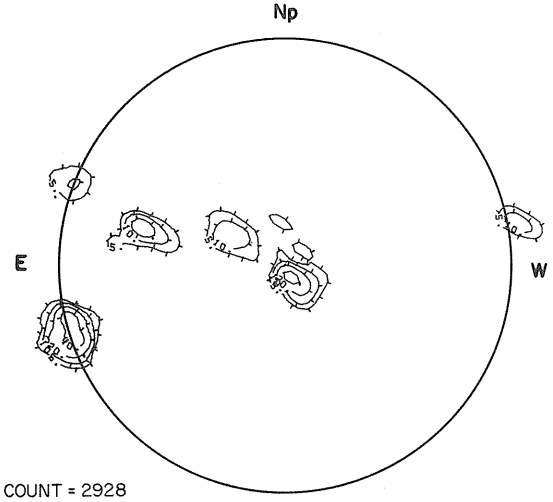
83
Aug 73

AUGUST 29, 1973 (P = 20.29, B_o = 7.14, L_o = 272.23)

84
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



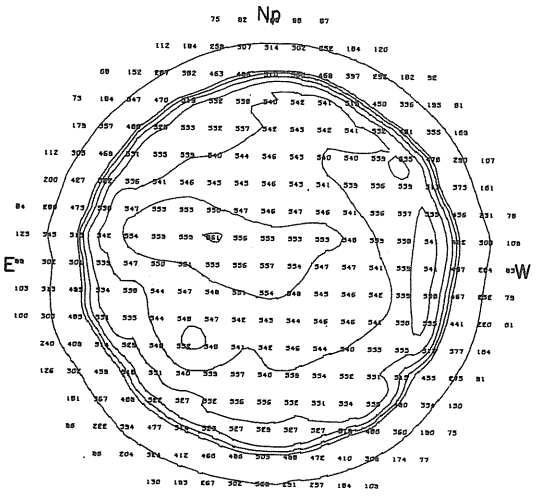
COUNT = 2928
ROLL = 29.5°
P-TH = -1.21

Sp
0652 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm

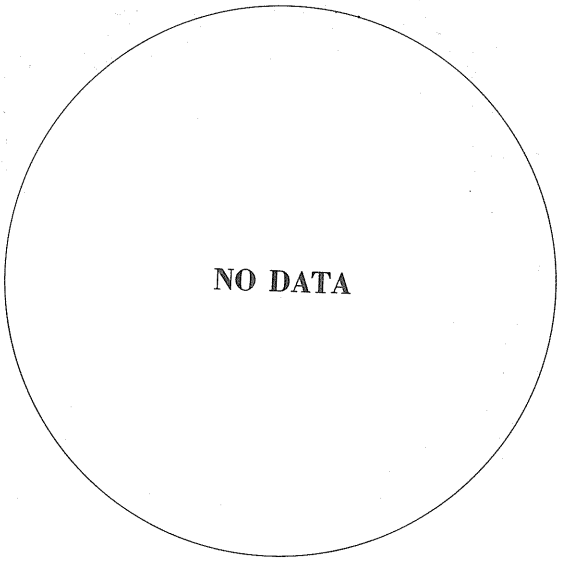


Sp
1521 UT

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

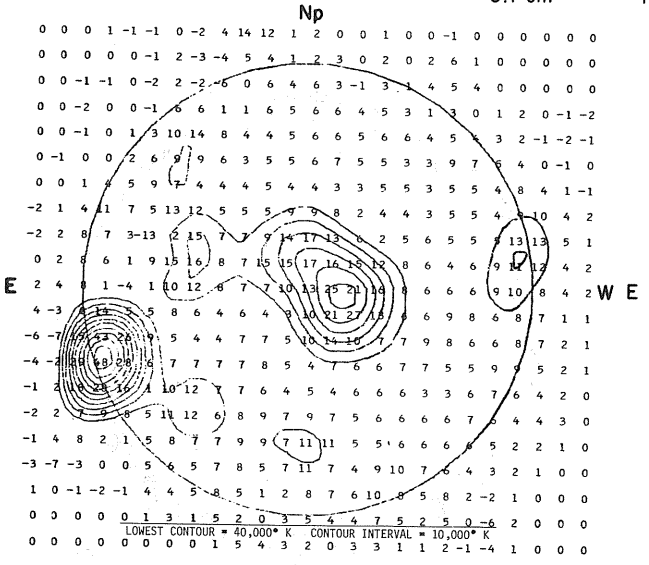


Levels
± 5
± 10
± 20
± 40
± 80

Sp

STANFORD

9.1 cm

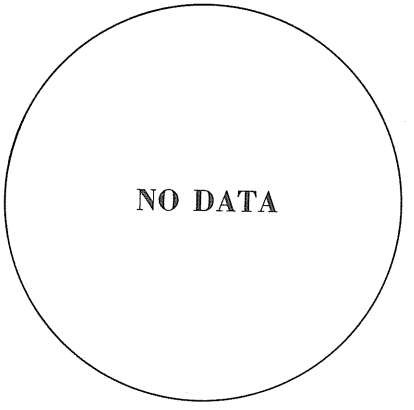


Sp
20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

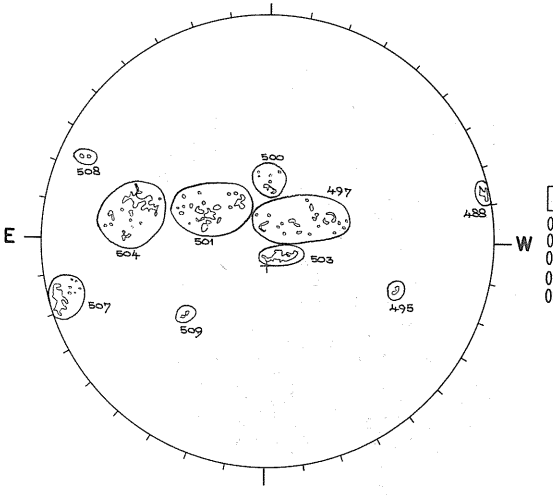


02-03 UT

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

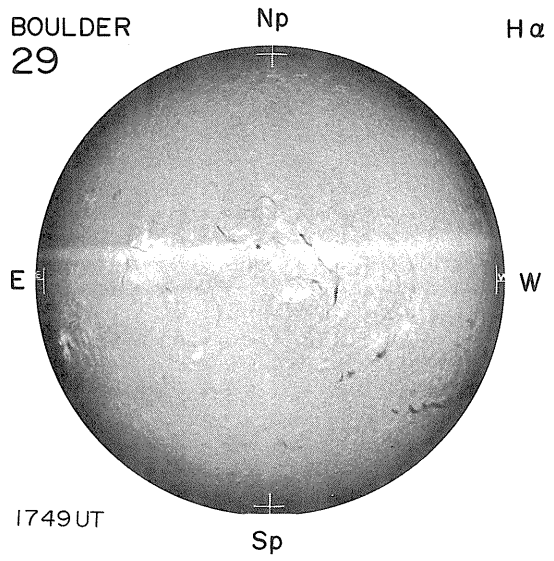
McMATH-HULBERT

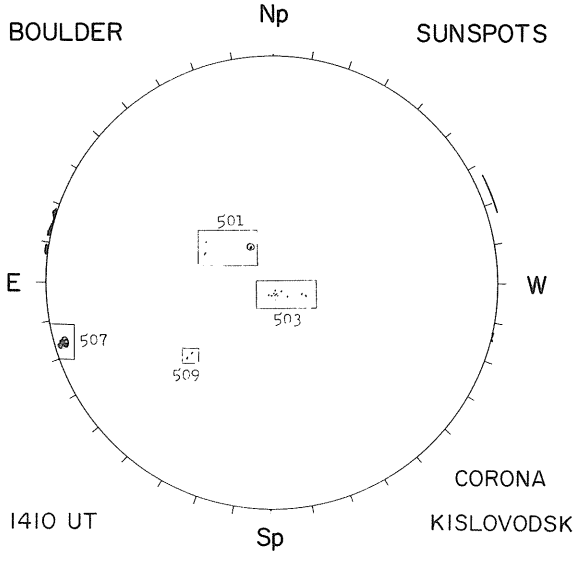
CALCIUM REPORT

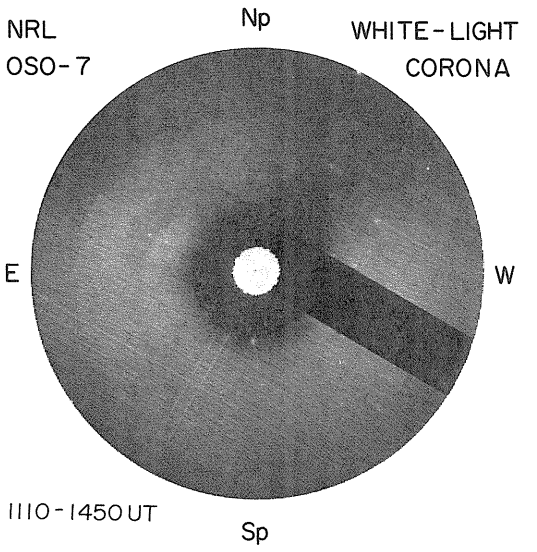


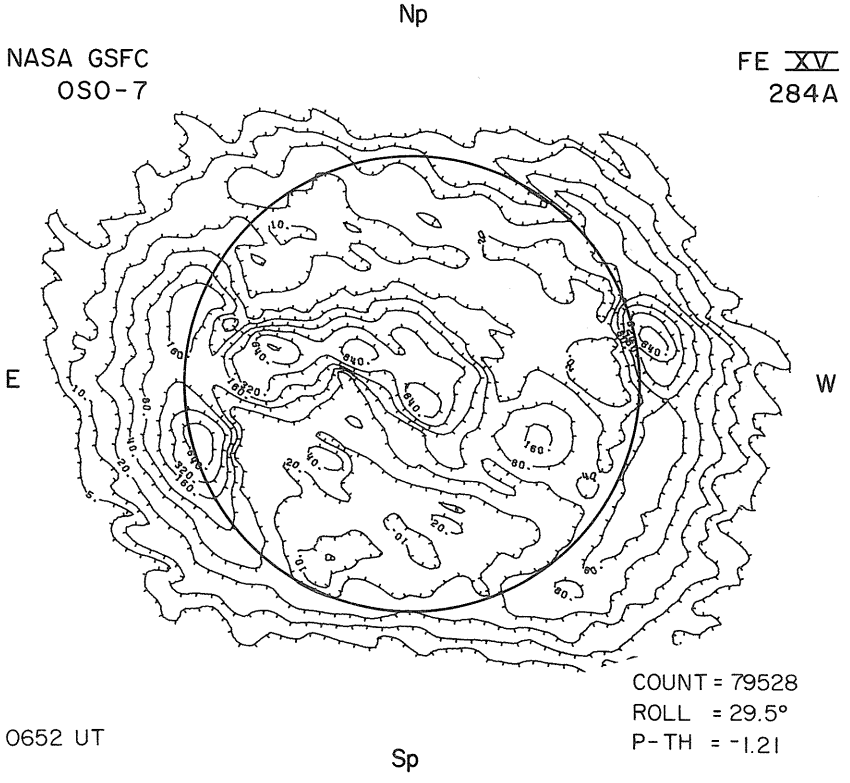
POOR	M
01 - 1400	- 3.0
03 - 0700	- 3.5
04 - 1300	- 3.0
07 - 3800	- 3.0
09 - 0200	- 2.5

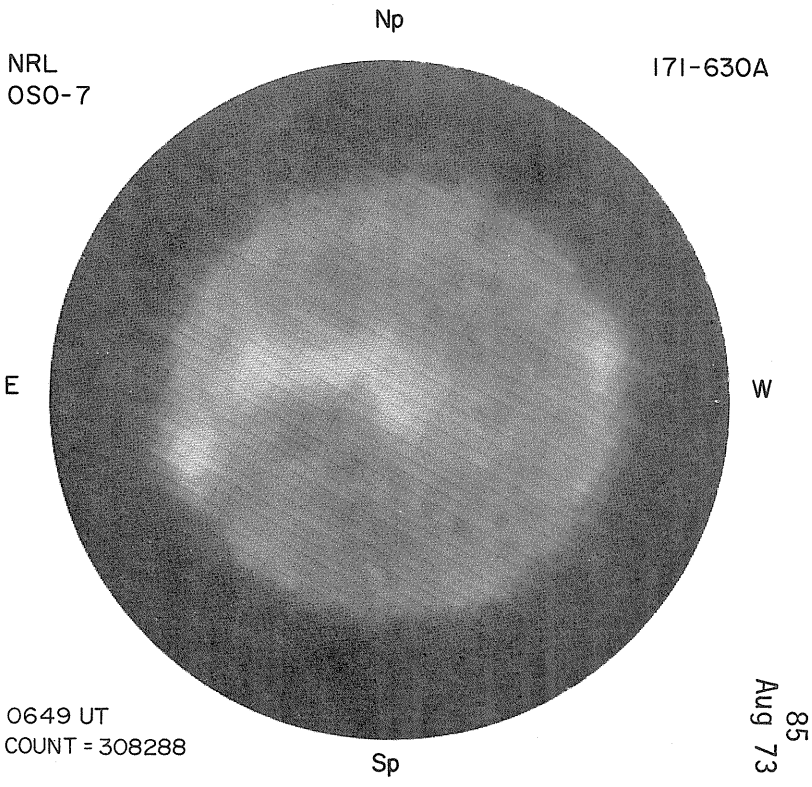
Sp
1400 UT


BOULDER
29
Np
Hα
E
W
1749 UT
Sp


BOULDER
Np
SUNSPOTS
501
503
507
509
E
W
CORONA
1410 UT
KISLOVODSK
Sp


NRL
OSO-7
Np
WHITE-LIGHT
CORONA
E
W
1110-1450 UT
Sp


Np
NASA GSFC
OSO-7
FE XV
284A
E
W
COUNT = 79528
ROLL = 29.5°
P-TH = -1.21
0652 UT
Sp


Np
NRL
OSO-7
171-630A
E
W
0649 UT
COUNT = 308288
Sp

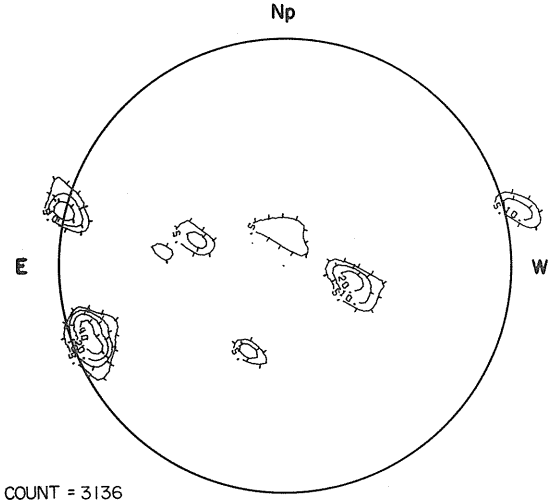
85
Aug 73

AUGUST 30, 1973 (P = 20.55, B_o = 7.16, L_o = 259.02)

86
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



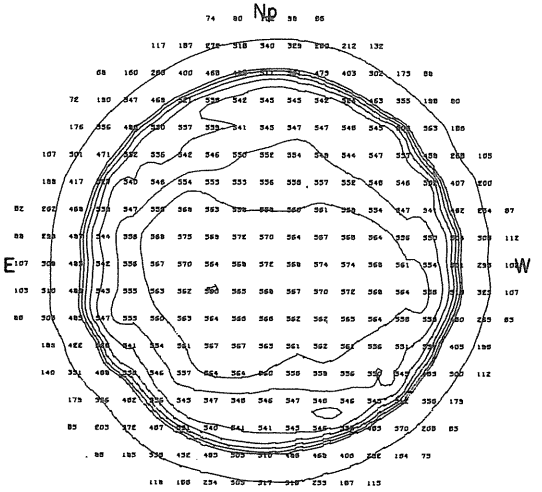
COUNT = 3136
ROLL = 31.0°
P-TH = -1.09

0717 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



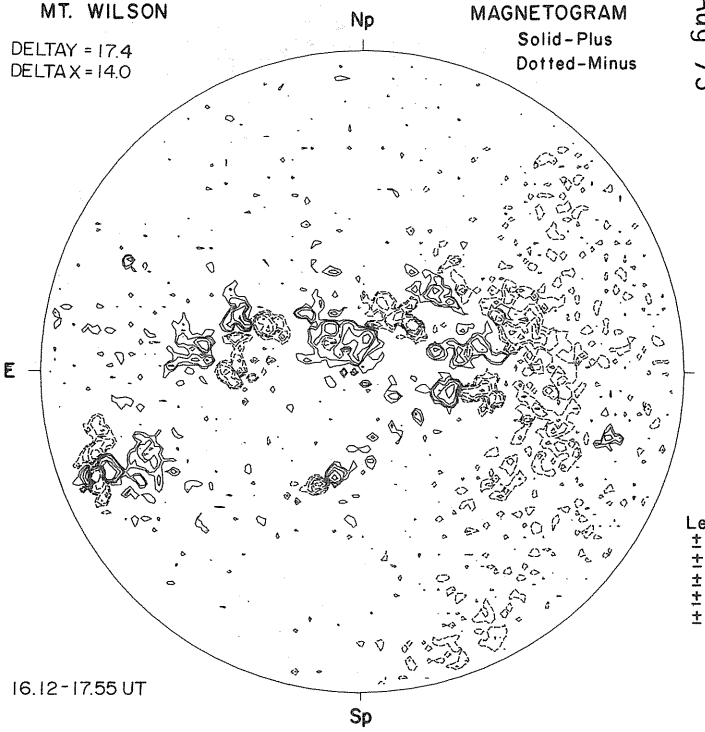
1352 UT

Contours in Intervals of 200° K

MT. WILSON

DELTAY = 17.4
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

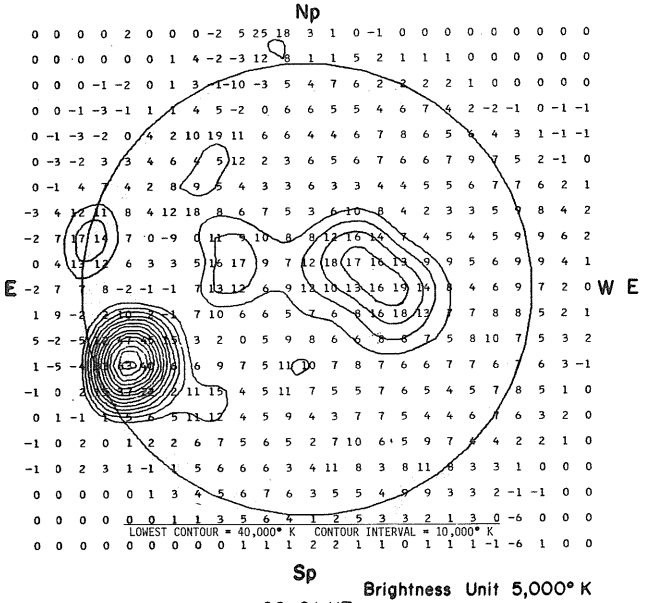


Levels
± 5
± 10
± 20
± 40
± 80

16.12-17.55 UT

STANFORD

9.1 cm



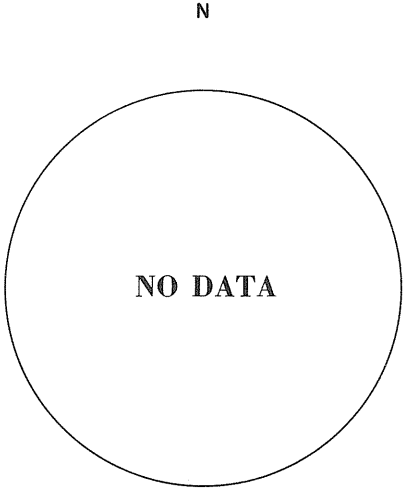
LOWEST CONTOUR = 40,000° K CONTOUR INTERVAL = 10,000° K

Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

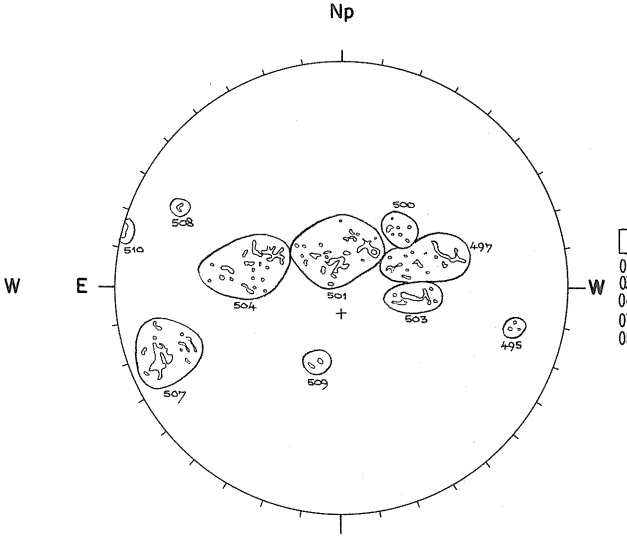


02-03 UT

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

McMATH-HULBERT

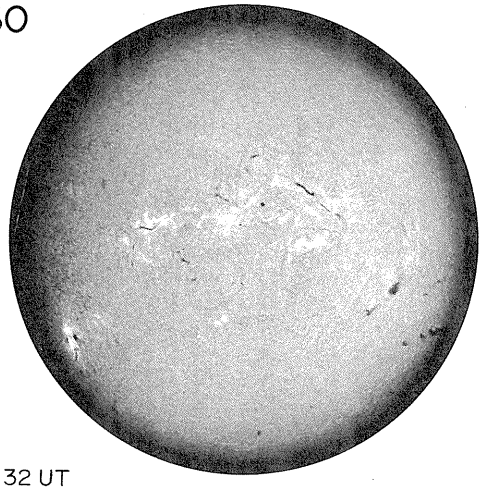
CALCIUM REPORT



POOR	M
01 - 1600	- 2.5
03 - 0800	- 2.5
04 - 1600	- 2.5
07 - 3500	- 4.0
09 - 0200	- 2.5

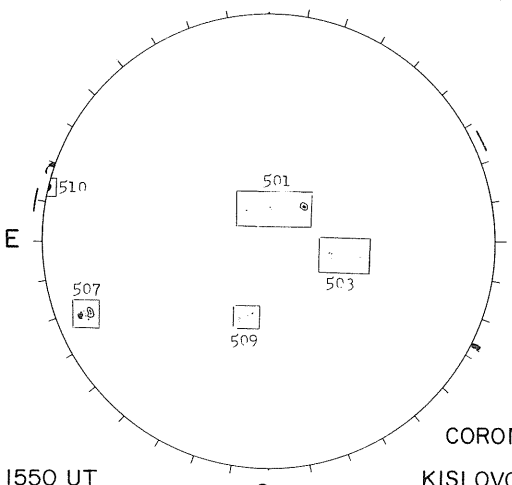
1610 UT

RAMEY AFB
30



1132 UT

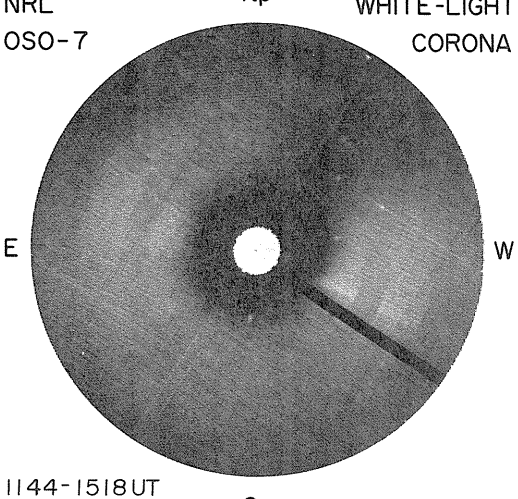
BOULDER



1550 UT

CORONA
KISLOVODSK

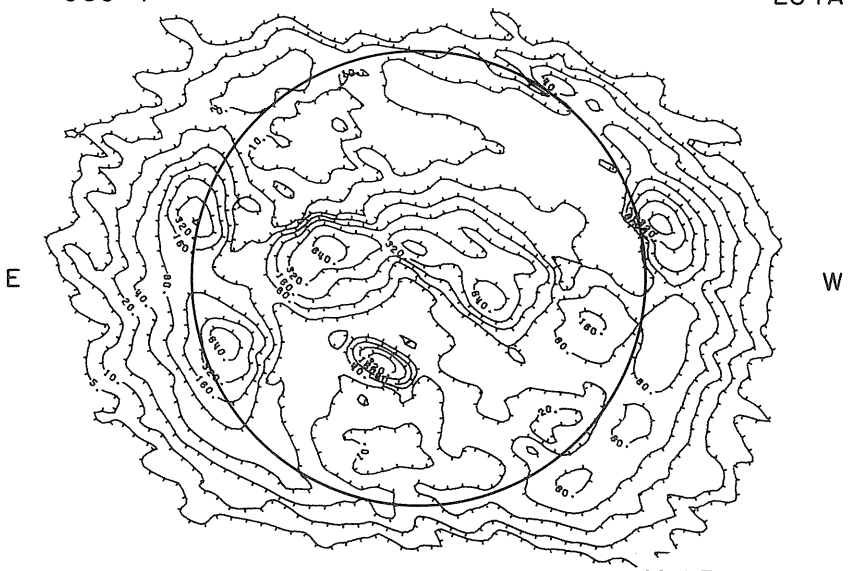
NRL
OSO-7



1144-1518 UT

NASA GSFC
OSO-7

FE XV
284A

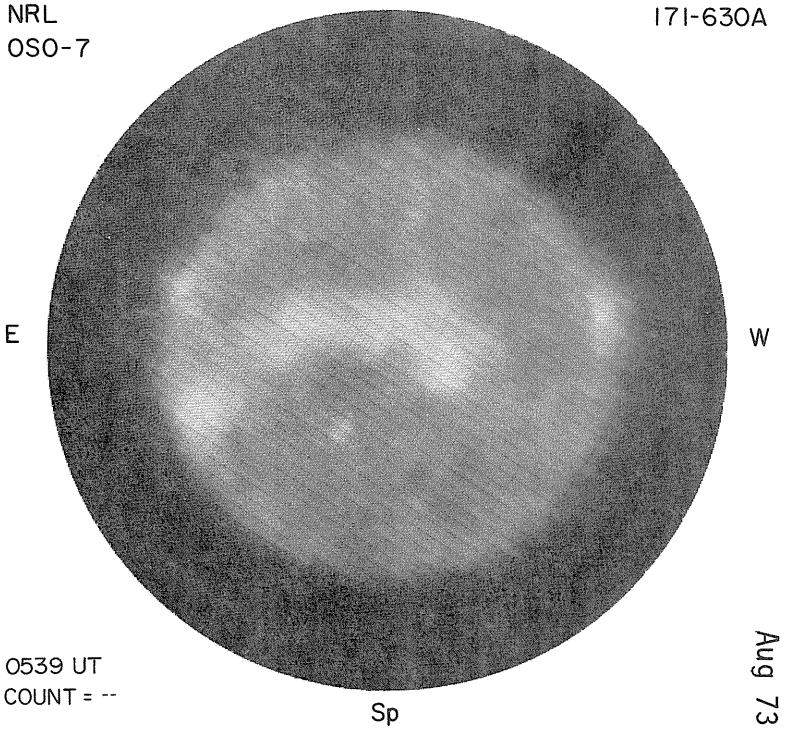


COUNT = 82415
ROLL = 31.0°
P-TH = -1.09

0717 UT

NRL
OSO-7

171-630A



0539 UT
COUNT = --

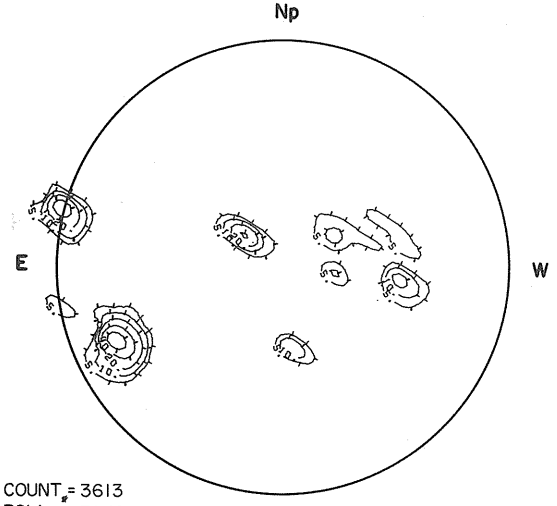
87
Aug 73

AUGUST 31, 1973 (P = 20.82, B_o = 7.18, L_o = 245.81)

88
Aug 73

NASA GSFC
OSO-7

X-RAY
8-16A



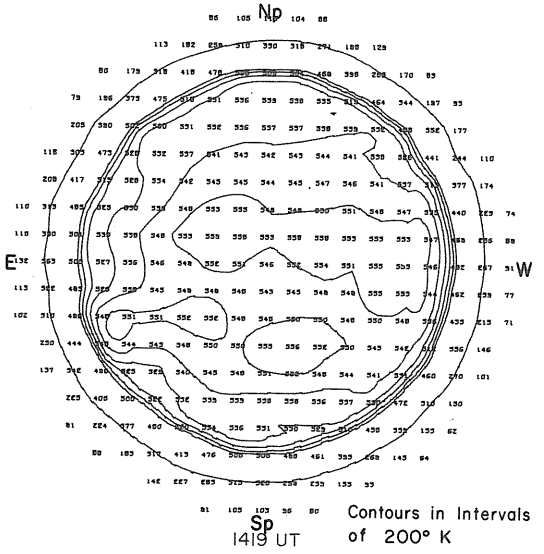
COUNT = 3613
ROLL = 31.6°
P-TH = -0.96

0744 UT

Counts per 0.125 sec.

PROSPECT HILL
AFCRL

8.6 mm



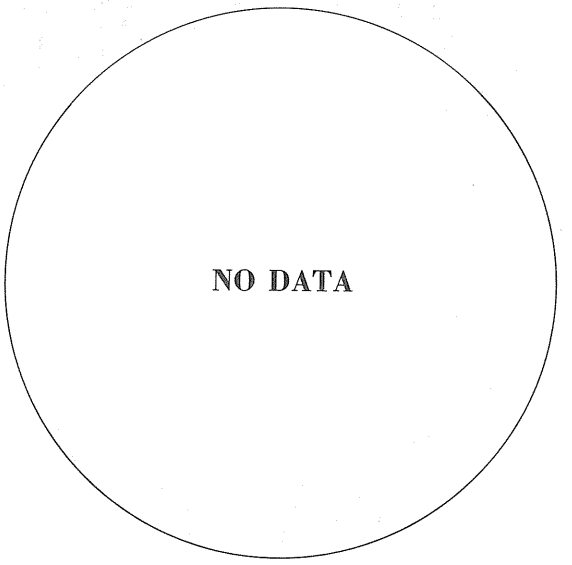
1419 UT

Contours in Intervals of 200° K

MT. WILSON

Np

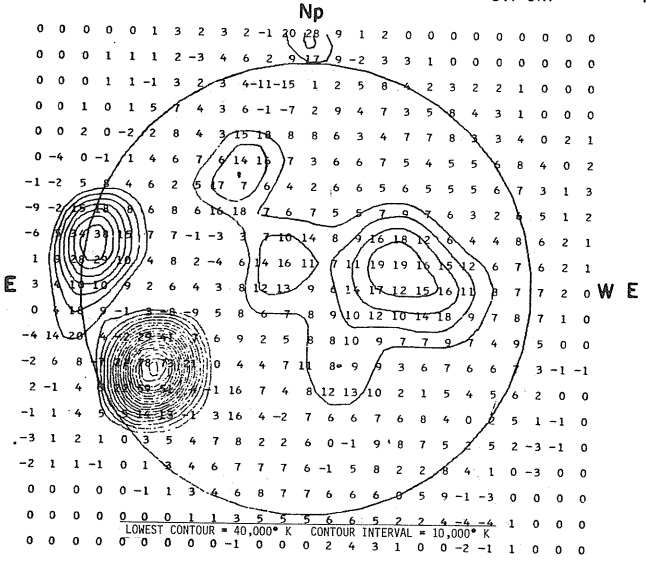
MAGNETOGRAM
Solid - Plus
Dotted - Minus



Levels
± 5
± 10
± 20
± 40
± 80

STANFORD

9.1 cm

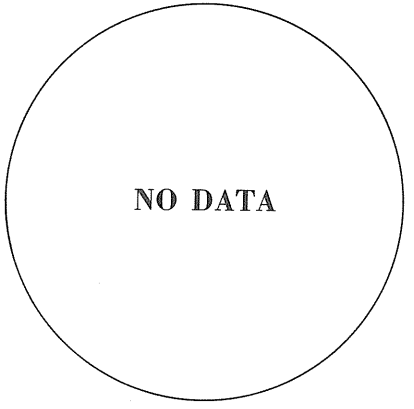


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

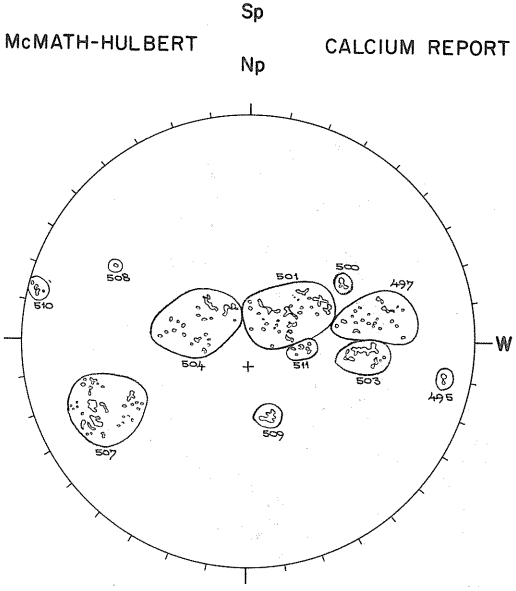


02-03 UT

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

McMATH-HULBERT

CALCIUM REPORT



BAD	B
01 - 1800	- 2.5
03 - 0900	- 3.0
04 - 1400	- 2.5
07 - 3000	- 4.0
09 - 0400	- 3.0
10 - 0600	- 3.5

1400 UT

BOULDER
31

Np

H α

E

NO DATA

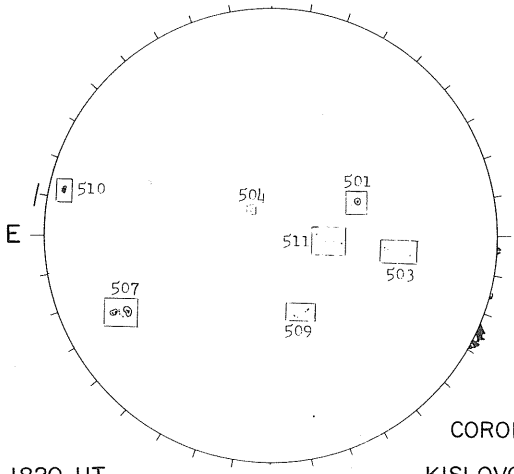
W

Sp

BOULDER

Np

SUNSPOTS



E

W

CORONA

1820 UT

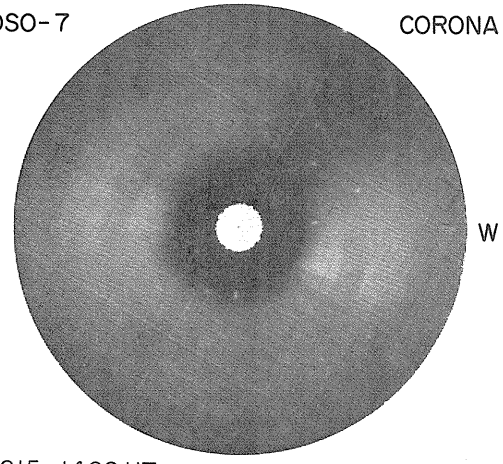
KISLOVODSK

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

W

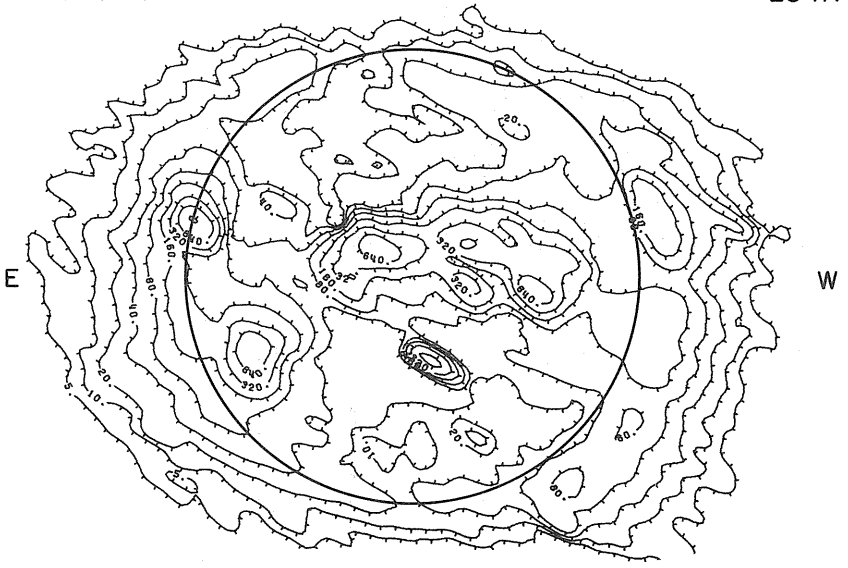
1015-1409 UT

Sp

Np

NASA GSFC
OSO-7

FE XV
284A



E

W

COUNT = 85249
ROLL = 31.6°
P-TH = -0.96

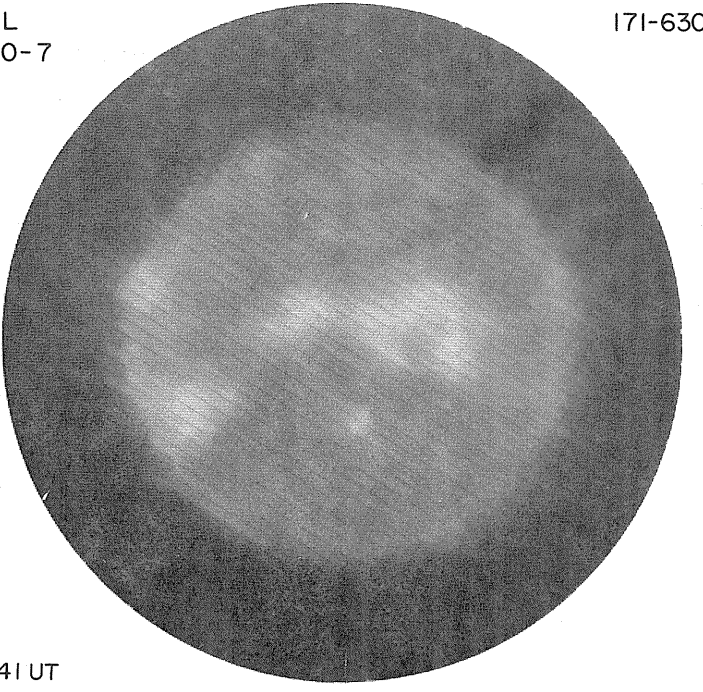
0744 UT

Sp

Np

NRL
OSO-7

171-630A



E

W

0741 UT
COUNT = --

Sp

89
Aug 73

REGIONS OF SOLAR ACTIVITY

AUGUST 1973

MCMATH REGION 12473 CMP DATE 1.4

CALCIUM PLAGE DATA / SUNSPOT DATA 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	2	12473	S03 W16	276	200	1.5											
73	8	3	12473	S03 W29	277	100	1.0											
73	8	4	12473	S03 W42	276	100	1.0											
73	8	5	12473	S03 W55	277	200	1.0											
73	8	6	12473	S03 W68	276	200	1.0											

MCMATH REGION 12461 CMP DATE 1.9 RETURN OF REGION 12417 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	STA	AREA	CNT	CLASS	INT	FLUX
73	7	26	12461	N12 E80	273	1900	3.0										8	3
73	7	27	12461	N13 E70	272	1800	2.5	19231	N12 E63	279	B						6	2
73	7	28	12461	N12 E54	275	1800	2.5										5	2
73	7	29	12461	N12 E42	275	2000	2.5	19231	N11 E35	280	AP						16	5
73	7	30	12461	N12 E28	273	2000	3.0	19231	N12 E26	276	(AP)	1					10	3
73	7	31						19231	N11 E11	273	(B)	2						
73	8	1	12461	N13 E02	270	2000	2.5	19231	N10 W05	278	(A)	2					10	3
73	8							19233	N18 E06	267	(A)	2						
73	8	2	12461	N13 W11	271	2200	2.5	19231	N11 W22	277	(	1					7	2
73	8							19233	N18 W09	264			B	0	1	AXX		
73	8	3	12461	N13 W23	271	2600	2.5	19231	N11 W27	273	(BP)	1					8	2
73	8							19233	N17 W18	264	(AF)	1						
73	8	4	12461	N13 W38	272	2500	2.0	19233	N17 W33	264							7	2
73	8	5	12461	N13 W50	272	2000	3.0										8	2
73	8	6	12461	N13 W62	270	1800	2.5										7	2
73	8	7	12461	N14 W76	269	1200	2.0										8	2
73	8	8	12461	N20 W83	264	1000	2.0										5	2

MCMATH REGION 12471 CMP DATE 4.3

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	1	12471	N14 E34	238	200	1.0											
73	8	2	12471	N15 E23	237	200	1.5											
73	8	3	12471	N15 E10	238	200	1.5											
73	8	4	12471	N15 W05	239	200	1.5											
73	8	5	12471	N15 W17	239	200	1.5											
73	8	6	12471	N15 W31	239	200	2.0											
73	8	7	12471	N15 W47	240	200	1.0											
73	8	8	12471	N15 W61	242	300	2.5	19237	N14 W66	246	(AP)	1						
73	8	9	12471	N16 W76	244	500	3.5	19237	N14 W81	248	(BF)	3	B	10	1	AXX		
73	8	10	12471	N15 W90	244	300	1.0											

MCMATH REGION 12474 CMP DATE 6.0

CALCIUM PLAGE DATA / SUNSPOT DATA 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	3	12474	N07 E32	216	100	1.5											
73	8	4	12474	N07 E20	214	500	3.5	19235	N06 E15	216	BF		B	30	11	BXI	6	2
73	8	5	12474	N07 E07	215	600	3.5	19235	N06 E02	216	(BF)	3	B	20	22	BXO	12	4
73	8	6	12474	N07 W07	215	1200	4.5	19235	N06 W10	217	(BP)	4	B	30	47	BXI	22	7
73	8	7	12474	N07 W21	214	1700	4.5	19235	N06 W24	217	(D)	5	G	250	38	DAI	28	9
73	8	8	12474	N07 W34	215	1900	4.0	19235	N07 W38	218	(D)	5	B	110	26	DSI	15	5
73	8	9	12474	N07 W48	216	1800	3.5	19235	N07 W52	219	(BP)	5	B	100	6	CSO	12	4
73	8	10	12474	N07 W62	216	1400	3.5	19235	N07 W72	221	(BP	4	B	60	7	CSO	10	3
73	8	11	12474	N08 W76	217	1600	3.5	19235	N07 W85	226	(AP)	4	B	50	1	HSX	35	10
73	8	12	12474	N08 W89	217	400	1.5		N11 W87				G	80	1	HSX	14	4

MCMATH REGION 12478 CMP DATE 6.9

CALCIUM PLAGE DATA / SUNSPOT DATA 9.1 CM

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	10	12478	N45 W49	203	200	1.5											

The new column marked STA is inserted to indicate the source of data for sunspot area, count and classification.
B = Boulder C = Carnarvon G = Gran Canaria (Canary Islands) M = Manila

REGIONS OF SOLAR ACTIVITY

AUGUST 1973

MCMATH REGION 12472 CMP DATE 7.7 RETURN OF REGION 12439 & 12441 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	1	12472	S08	E78	194	1300	2.5	19234	S10	E79	194	(AP)	3	B	60	1	HSX	7	2
73	8	2	12472	S09	E67	193	1600	3.0	19234	S09	E49	206	(AP)	4	B	60	1	HSX	9	3
73	8	3	12472	S09	E54	194	1500	3.0	19234	S09	E50	196	(BP)	5	G	60	1	HSX	9	3
73	8	4	12472	S10	E40	194	1500	3.0	19234	S09	E35	196	AP		B	60	4	HSX	7	2
73	8	5	12472	S10	E28	194	1200	3.0	19234	S09	E22	196	(BP	4	B	60	1	HSX	5	2
73	8	6	12472	S10	E15	193	1500	3.0	19234	S09	E10	197	(AP)	4	B	60	1	HSX	5	1
73	8	7	12472	S10	E01	192	1300	2.5	19234	S11	W01	194	(BP)	5	G	70	1	HSX	5	1
73	8	8	12472	S10	W12	193	1500	3.0	19234	S10	W15	195	(BP	4	B	50	6	CSO	4	1
73	8	9	12472	S10	W25	193	1500	3.0	19234	S09	W30	197	(AP)	4	B	20	1	HRX	4	1
73	8	10	12472	S11	W39	193	1300	2.5	19234	S09	W48	197	(AP)	1	B	20	1	HRX		
73	8	11	12472	S10	W52	193	1500	2.0											4	1
73	8	12	12472	S10	W65	193	1300	2.0											4	1
73	8	13	12472	S10	W76	192	1000	1.5											4	1
73	8	14	12472	S13	W80	181	400	1.0												

MCMATH REGION 12479 CMP DATE 8.7

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	11	12479	S11	W38	179	100	1.0												
73	8	12	12479	S11	W51	179	100	1.0												

MCMATH REGION 12475 CMP DATE 10.5 RETURN OF REGION 12431 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	4	12475	N12	E80	154	300	1.0												
73	8	5	12475	N15	E66	156	500	1.5												
73	8	6	12475	N15	E54	154	700	2.0												
73	8	7	12475	N15	E40	153	600	2.0												
73	8	8	12475	N15	E26	155	600	2.0												
73	8	9	12475	N15	E13	155	600	2.0												
73	8	10	12475	N15	W03	157	600	2.0												
73	8	11	12475	N14	W16	157	600	2.0											5	2
73	8	12	12475	N15	W28	156	600	2.0												
73	8	13	12475	N15	W40	156	800	2.0		*N12	E18				C	0	2	BXO		
73	8	14	12475	N15	W55	156	800	2.0		*N16	E05				G	10	1	AXX	3	1
73	8									*N14	E01				G	10	2	BXO		
73	8	15	12475	N15	W67	156	800	2.0												
73	8	16	12475	N15	W78	155	600	1.5												
73	8	17	12475	N17	W85	147	300	1.0												

MCMATH REGION 12476 CMP DATE 11.1

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	5	12476	S05	E80	142	200	1.0												
73	8	6	12476	S05	E64	144	300	3.0	19236	S07	E60	147	(BP)	2	B	10	1	AXX		
73	8	7	12476	S07	E50	143	400	3.0	19236	S08	E47	146	(BP)	2	G	20	2	CRO	4	1
73	8	8	12476	S07	E36	145	700	3.0	19236	S08	E34	146	(BP)	2	B	10	9	BXI	5	2
73	8	9	12476	S07	E22	146	800	3.0	19236	S08	E19	148	(BP)	3	B	20	13	BXI	3	1
73	8	10	12476	S07	E06	148	600	3.0	19236	S08	E01	148	(BP	1	B	10	5	BXO	3	1
73	8	11	12476	S07	W07	148	600	3.0											3	1
73	8	12	12476	S07	W18	146	600	2.5		S12	W15				G	0	1	AXX		
73	8	13	12476	S07	W31	147	500	2.5	*19238	S09	W02	111	(B)	1					3	1
73	8	14	12476	S07	W46	147	500	3.0		S12	W36				G	20	4	CRO		
73	8	15	12476	S07	W58	147	500	2.5		S11	W52				B	0	1	AXX	3	1
73	8									*S06	W32				B	10	5	BXO		
73	8	16	12476	S07	W71	148	300	1.5												

MCMATH REGION 12489 CMP DATE 13.3

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	18	12489	N08	W70	118	100	1.5												

MCMATH REGION 12485 CMP DATE 14.7

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	17	12485	N22	W38	100	100	1.5												

* No plage observed at McMath-Hulbert for these spots.

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MCMATH REGION 12486 CMP DATE 14.8

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	17	12486	N07 W37	99	100	1.5											
73	8	18	12486	N07 W50	98	200	1.0											

MCMATH REGION 12483 CMP DATE 16.2

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	16	12483	N17 W04	81	300	2.5	19239	N17 W05	81	(AP)	1	B	0	1	AXX		
73	8	17	12483	N17 W17	79	300	2.0											
73	8	18	12483	N18 W31	79	200	1.0											
73	8	19	12483	N18 W45	80	100	1.0											
73	8	20	12483	N18 W61	82	100	1.0											

MCMATH REGION 12482 CMP DATE 17.8

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	15	12482	N14 E30	59	300	1.5											
73	8	16	12482	N14 E18	59	200	1.5											
73	8	17	12482	N14 E03	59	200	1.0											
73	8	18	12482	N14 W09	57	300	1.5											
73	8	19	12482	N14 W23	58	300	1.5											
73	8	20	12482	N14 W39	60	300	1.5											
73	8	21	12482	N14 W52	62	500	1.5											
73	8	22	12482	N14 W66	62	200	1.5											
73	8	23	12482	N14 W80	65	100	1.0											

MCMATH REGION 12480 CMP DATE 18.6 RETURN OF REGION 12442 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	12	12480	S15 E80	48	100	1.5										3	1
73	8	13	12480	S13 E67	49	300	1.5										4	1
73	8	14	12480	S13 E52	49	300	1.5										3	1
73	8	15	12480	S12 E39	50	400	1.5										3	1
73	8	16	12480	S11 E26	51	400	1.5											
73	8	17	12480	S11 E13	49	400	1.5											
73	8	18	12480	S12 W02	50	400	1.0											
73	8	19	12480	S12 W15	50	400	1.0											
73	8	20	12480	S12 W30	51	300	1.0											
73	8	21	12480	S12 W42	52	200	1.5											
73	8	22	12480	S14 W54	50	200	1.5											

MCMATH REGION 12487 CMP DATE 20.0

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	17	12487	N23 E32	30	100	1.5											

MCMATH REGION 12499 CMP DATE 20.8

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	24	12499	N09 W50	20	200	3.0	19242	N10 W53	21	(BF)	4	B	10	6	AXX		
73	8	25	12499	N09 W66	23	200	3.0	19242	N09 W64	21	(AF)	3	B	10	1	AXX		
73	8	26	12499	N08 W79	22	100	1.0											

MCMATH REGION 12484 CMP DATE 21.0 RETURN OF REGION 12451 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	15	12484	N07 E69	20	200	1.0										4	1
73	8	16	12484	N07 E56	21	200	1.5										3	1
73	8	17	12484	N07 E45	17	100	1.5											

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MCMATH REGION 12493 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	21	12493	S01 E09	1	200	1.0											

MCMATH REGION 12488 CMP DATE 23.5

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	17	12488	N10 E82	341	1000	3.0	19240	N14 E76	347	B						5	2
73	8	18	12488	N12 E67	342	1000	3.0	19240	N14 E63	347	(BP	2	B	0	1	AXX	6	2
73	8	19	12488	N13 E54	342	1300	2.5	19240	N14 E50	347	(BP	2	B	10	6	BXO	4	1
73	8	20	12488	N13 E37	345	1300	2.5		N13 E37				B	0	7	BXO	6	2
73	8	21	12488	N13 E25	346	1500	3.0	19240	N13 E24	345	(B)	4	B	10	17	BXO	9	3
73	8	22	12488	N13 E13	344	1500	3.0	19240	N13 E12	344	(BF)	3	G	20	3	CSO	6	2
73	8	23	12488	N13 W01	346	1400	2.5	19240	N12 W01	344	(B)	4	B	10	10	BXO	5	2
73	8	24	12488	N13 W14	344	1200	2.5	19240	N14 W18	346	B		B	0	2	BXO	5	2
73	8	25	12488	N13 W30	347	1600	3.5	19240	N13 W31	348	(B)	4	B	30	28	BXO	9	3
73	8	26	12488	N13 W43	346	1600	3.5	19240	N13 W50	348	BP		B	20	18	BXO	9	3
73	8	27	12488	N13 W58	346	1600	3.5	19240	N13 W61	349	(BP)	3	B	10	9	BXO	10	3
73	8	28	12488	N14 W69	348	1400	3.0	19240	N13 W78	353	(AP)	2	G	20	3	BXO	6	2
73	8	29	12488	N14 W82	347	900	2.0										4	1

MCMATH REGION 12494 CMP DATE 24.9

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	21	12494	S27 E44	327	100	1.5											

MCMATH REGION 12498 CMP DATE 25.1

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	23	12498	S45 E16	329	200	1.5											
73	8	24	12498	S45 E06	324	200	1.5											
73	8	25	12498	S45 W07	324	100	1.0											

MCMATH REGION 12492 CMP DATE 25.3

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	20	12492	S15 E60	322	100	1.0											
73	8	21	12492	S15 E49	322	100	1.5											

MCMATH REGION 12490 CMP DATE 25.8

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	19	12490	N38 E82	314	100	1.5											

MCMATH REGION 12491 CMP DATE 25.9

CALCIUM PLAGE DATA								SUNSPOT DATA										9.1 CM
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS	INT	FLUX
73	8	19	12491	N18 E87	309	100	1.0											
73	8	20	12491	N18 E69	313	100	1.5											
73	8	21	12491	N16 E57	314	100	1.0											

MCMATH REGION 12496 CMP DATE 26.2

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	22	12496	S34 E48	309	100	2.0											

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MCMATH REGION 12495 CMP DATE 27.3 RETURN OF REGION 12460 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	21	12495	S06	E77	294	300	1.5												
73	8	22	12495	S05	E63	294	300	1.5												
73	8	23	12495	S05	E48	297	300	1.5												
73	8	24	12495	S06	E35	295	500	1.5												
73	8	25	12495	S06	E22	295	500	1.5												
73	8	26	12495	S06	E09	294	300	2.0												
73	8	27	12495	S05	W08	296	300	2.0												
73	8	28	12495	S06	W21	300	300	2.0												
73	8	29	12495	S06	W35	300	200	2.0												
73	8	30	12495	S06	W50	301	200	1.5												
73	8	31	12495	S06	W62	300	200	1.0												

MCMATH REGION 12497 CMP DATE 26.8 RETURN OF REGION 12461 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	22	12497	N14	E84	273	400	2.0											7	2
73	8	23	12497	N14	E70	275	900	2.0												
73	8	24	12497	N14	E53	277	900	2.0												
73	8	25	12497	N13	E39	278	800	2.0												
73	8	26	12497	N14	E28	275	1000	2.0												
73	8	27	12497	N14	E13	275	900	2.0												
73	8	28	12497	N14	E03	276	900	2.0												
73	8	29	12497	N13	W10	275	800	2.0												
73	8	30	12497	N13	W24	275	1200	2.0												
73	8	31	12497	N13	W36	274	1200	1.5												
73	9	1	12497	N13	W50	273	1300	2.0												
73	9	2	12497	N13	W62	272	1100	2.0												
73	9	3	12497	N13	W75	272	900	1.5												
73	9	4	12497	N13	W87	271	600	1.0												

MCMATH REGION 12503 CMP DATE 29.4

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	25	12503	N03	E50	267	300	2.0												
73	8	26	12503	N03	E36	267	400	3.0	19243	N02	E30	268	BF		B	10	7	BXO		
73	8	27	12503	N03	E21	267	600	3.5	19243	N02	E19	269	(BF)	4	B	20	17	BXO	8	3
73	8	28	12503	N03	E11	268	600	3.5	19243	N02	E05	270	(BF)	4	G	100	30	DAI	8	3
73	8	29	12503	N03	W04	269	700	3.5	19243	N02	W06	270	(B)	3	B	30	30	BXI	13	4
73	8	30	12503	N03	W17	268	800	2.5	19243	N02	W21	271	(BP)	3	B	20	20	BXO	7	2
73	8	31	12503	N03	W31	269	900	3.0	19243	N02	W34	271	(B)	3	G	60	6	DRO		
73	9	1	12503	N03	W46	269	1200	3.5	19243	N03	W49	271	(BP)	2	B	10	12	BXO		
73	9	2	12503	N03	W58	268	1000	2.5												
73	9	3	12503	N03	W72	269	1000	2.0												
73	9	4	12503	N03	W86	270	500	1.0												

MCMATH REGION 12500 CMP DATE 29.6

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	23	12500	N23	E83	262	300	1.5												
73	8	24	12500	N24	E68	262	300	2.5												
73	8	25	12500	N22	E53	264	500	1.5												
73	8	26	12500	N22	E39	264	500	1.5												
73	8	27	12500	N22	E24	264	400	1.5												
73	8	28	12500	N22	E14	265	500	2.0												
73	8	29	12500	N22	E00	265	300	2.0												
73	8	30	12500	N22	W13	264	300	1.5												
73	8	31	12500	N22	W26	264	300	1.5												
73	9	1	12500	N22	W41	264	400	1.5												
73	9	2	12500	N22	W54	264	300	1.5												
73	9	3	12500	N22	W67	264	300	1.5												
73	9	4	12500	N22	W80	264	300	1.0												

REGIONS OF SOLAR ACTIVITY

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MCMATH REGION 12501 CMP DATE 30.5 RETURN OF REGION 12471 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	23	12501	N15	E89	256	700	1.5	19241	N14	E85	258	AP		B	140	1	HSX	12	4
73	8	24	12501	N15	E75	255	1200	3.0	19241	N14	E68	260	(AP)	5	B	120	1	HSX	13	4
73	8	25	12501	N15	E61	256	1500	3.5	19241	N14	E57	260	(AP)	4	B	110	2	HSX	11	4
73	8	26	12501	N15	E50	253	1500	2.5	19241	N14	E50	248	AP		B	120	1	HSX	8	2
73	8	27	12501	N15	E37	251	1400	2.5	19241	N14	E29	259	(AP)	5	B	110	1	HRX	8	2
73	8	28	12501	N14	E25	254	1600	3.0	19241	N14	E18	257	(BP)	5	G	140	1	HSX	6	2
73	8									N15	E29				G	10	2	BXO		
73	8	29	12501	N14	E12	253	1400	3.0	19241	N14	E08	256	(BP)	5	B	90	3	CSO	6	2
73	8								19247	N17	E23	241	(B)	1						
73	8	30	12501	N14	W01	252	1600	2.5	19241	N14	W07	257	(BP)	5	B	120	7	CSO	6	2
73	8								19247	N14	E05	245	(A)	2						
73	8	31	12501	N14	W13	251	1800	2.5	19241	N14	W19	256	(BP)	5	G	100	1	HSX		
73	8								19247	N15	W06	243	(A)	1	G	0	2	AXX		
73	9	1	12501	N15	W28	251	1800	2.5	19247	N15	W19	241	(BF)	2	B	10	7	BXO		
73	9	1	12501						19241	N16	W38	260	(AP)	4	B	120	1	HSX		
73	9	2	12501	N15	W40	250	1800	2.5	19247	N15	W32	242	A							
73	9	2	12501						19241	N15	W44	254	(BP)	5	B	120	1	HSX		
73	9	3	12501	N15	W54	251	1500	2.0	19241	N15	W65	260	(AP)	4	B	110	1	HSX		
73	9	4	12501	N15	W66	250	1500	1.5	19241	N15	W80	261	(AP)	4	G	60	1	HSX		
73	9	5	12501	N15	W80	251	1400	2.0												
73	9	6	12501	N14	W88	248	300	1.0												

MCMATH REGION 12511 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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	31	12511	N04	W14	252	300	2.0	19250	N05	W16	253	(BP)	3	G	30	4	DRO		
73	8									N07	W07				G	0	1	AXX		
73	9	1	12511	N04	W29	252	800	2.5	19250	N05	W30	252	(B)	2	B	10	11	BXO		
73	9	2	12511	N05	W42	252	800	2.5	19250	N04	W43	253	(B)	3	B	10	9	BXO		
73	9	3	12511	N05	W56	253	900	3.5	19250	N06	W57	252	(BF)	3	B	10	7	BXO		
73	9	4	12511	N06	W68	252	1000	3.0	19250	N06	W72	253	BF)	2	G	30	6	BXO		
73	9	5	12511	N06	W83	254	1100	3.5												

MCMATH REGION 12509 CMP DATE 31.2

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	29	12509	S13	E22	243	200	2.5	19248	S13	E20	244	(B)	2	B	10	2	BXO		
73	8	30	12509	S13	E07	244	200	2.5	19248	S13	E05	245	(B)	2	B	10	11	BXI		
73	8	31	12509	S13	W06	244	400	3.0	19248	S13	W07	244	(BF)	3	G	20	5	DRO		
73	9	1	12509	S12	W21	244	800	2.5	19248	S13	W23	245	(BF)	3	B	10	13	BXO		
73	9	2	12509	S12	W33	243	800	3.5	19248	S13	W36	246	(B)	4	B	40	19	DRO		
73	9	3	12509	S12	W47	244	900	3.0	19248	S23	W51	246	(BP)	4	B	60	12	CSO		
73	9	4	12509	S12	W59	243	1100	2.5	19248	S13	W66	247	(BP)	4	G	100	4	DAO		
73	9	5	12509	S12	W73	244	1000	2.5	19248	S12	W80	251	(AP)	3	B	40	2	HRX		
73	9	6	12509	S12	W83	243	400	1.0												

MCMATH REGION 12505 CMP DATE 31.7

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	STA	AREA	CNT	CLASS	INT	FLUX
73	8	28	12505	N02	E42	237	100	2.0												

Note: Region 12471 shows marked growth starting August 8.
Calcium spectroheliograms were obtained at the McMath-Hulbert Observatory on all days in August 1973.
No sunspot observations were made at Mt. Wilson Observatory on August 20, 1973.

DAILY CALCIUM PLAGE INDEX

AUGUST 1973

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
73	8	1	9.0	73	8	11	5.9	73	8	21	5.1
73	8	2	10.7	73	8	12	3.5	73	8	22	4.9
73	8	3	11.0	73	8	13	2.7	73	8	23	4.5
73	8	4	10.7	73	8	14	2.2	73	8	24	6.1
73	8	5	10.3	73	8	15	2.1	73	8	25	10.0
73	8	6	13.2	73	8	16	2.0	73	8	26	10.3
73	8	7	12.5	73	8	17	2.1	73	8	27	11.4
73	8	8	13.7	73	8	18	2.2	73	8	28	14.0
73	8	9	11.8	73	8	19	2.7	73	8	29	16.0
73	8	10	7.7	73	8	20	3.2	73	8	30	20.4
								73	8	31	22.7

* NO OBSERVATIONS

SOLAR X-RAYS MEASURED BY SATELLITE

SOLRAD 9 – EXPLORER 37

AUGUST 1973

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

DAY	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.15	0.18	0.25	0.23	0.30	0.23	0.30	0.17	0.17	0.17	0.13	0.32	0.17	0.16	0.16	0.15	0.11	0.21	0.20	0.22	0.17	0.12	0.12	0.12
2	0.15	0.13	0.16	0.14	0.39	0.14	0.17	0.14	0.15	0.14	0.16	0.13	0.14	0.16	0.15	0.11	0.13	0.15	0.29	0.19	0.14	0.14	0.14	0.14
3	0.15	0.14	0.14	0.16	0.13	0.14	0.27	0.16	0.19	0.16	0.13	0.16	0.21	0.16	0.14	0.29	0.17	0.21	0.16	0.16	0.14	0.14	0.68	0.52
4	0.19	0.14	0.13	0.12	0.13	0.14	0.20	0.18	0.14	0.14	0.16	0.13	0.17	0.15	0.15	0.12	0.14	0.16	0.13	0.20	0.18	0.17	0.17	0.16
5	0.13	0.14	0.14	0.13	0.15	0.14	0.15	0.14	0.14	0.13	0.14	0.13	0.13	0.13	0.18	0.12	0.33	0.13	0.22	0.21	0.17	0.17	0.13	1.44
6	0.43	0.80	0.96	0.17	0.82	0.25	3.74	0.61	1.85	1.15	0.78	0.47	0.45	0.56	2.05	0.34	0.56	0.37	0.25	0.39	0.23	0.28	0.51	0.73
7	0.84	0.39	0.24	0.48	0.35	0.20	0.13	0.23	0.18	0.19	0.19	0.35	0.26	0.91	0.73	0.41	0.22	0.30	0.42	0.24	0.36	0.24	0.14	0.20
8	0.21	0.18	0.17	0.14	0.16	0.15	0.12	0.15	0.14	0.17	0.22	0.16	0.18	0.17	0.18	0.15	0.22	0.26	0.17	0.16	0.21	0.20	0.14	0.66
9	0.26	0.13	0.11	0.16	0.21	0.14	0.18	0.11	0.17	0.14	0.14	0.27	0.15	0.16	0.37	3.28	0.25	0.19	0.26	0.17	0.21	0.29	0.22	0.25
10	0.91	0.21	0.19	0.25	0.22	0.16	0.15	0.16	0.18	0.16	0.20	0.20	0.16	0.26	0.21	0.21	0.14	0.27	0.23	0.15	0.16	0.17	0.21	0.23
11	0.19	0.25	0.18	0.18	0.27	0.29	0.21	0.23	0.18	0.17	0.22	0.18	0.26	0.49	0.30	0.14	0.13	0.13	0.13	0.24	0.13	0.11	0.10	0.13
12	0.11	0.11	0.13	0.15	0.10	0.14	0.12	0.12	0.16	0.12	0.13	0.12	0.17	0.11	0.19	0.11	0.28	0.13	0.30	0.15	0.13	0.31	0.15	0.12
13	0.18	0.14	0.14	0.12	0.13	0.13	0.16	0.14	0.14	0.12	0.11	0.10	0.13	0.15	0.11	0.14	0.21	0.32	0.22	0.16	0.22	0.18	0.18	0.17
14	0.15	0.16	0.13	0.13	0.13	0.13	0.10	0.12	0.15	0.13	0.12	0.15	0.11	0.12	0.20	0.15	0.16	0.23	0.11	0.31	0.18	0.11	0.11	0.13
15	0.12	0.12	0.12	0.15	0.13	0.15	0.13	0.15	0.15	0.12	0.11	0.11	0.13	0.13	0.16	0.13	0.13	0.20	0.20	0.17	0.13	0.14	0.13	0.17
16	0.12	0.13	0.12	0.11	0.13	0.15	0.14	0.11	0.13	0.11	0.14	0.12	0.13	0.13	0.16	0.13	0.15	0.17	0.18	0.13	0.24	0.15	0.12	0.14
17	0.12	0.13	0.13	0.11	0.12	0.11	0.12	0.15	0.13	0.15	0.11	0.15	0.13	0.16	0.12	0.15	0.12	0.24	0.20	0.21	0.18	0.13	0.14	0.12
18	0.14	0.13	0.15	0.14	0.12	0.12	0.16	0.13	0.15	0.12	0.12	0.13	0.13	0.10	0.11	0.15	0.14	0.12	0.23	0.11	0.11	0.16	0.13	0.11
19	0.12	0.11	0.10	0.13	0.10	0.11	0.14	0.13	0.13	0.14	0.12	0.14	0.11	0.17	0.17	0.09	0.26	0.17	0.20	0.13	0.31	0.11	0.11	0.13
20	0.11	0.12	0.13	0.11	0.18	0.11	0.15	0.11	0.11	0.14	0.13	0.11	0.14	0.14	0.13	0.24	0.15	0.17	0.12	0.23	0.15	0.17	0.11	0.15
21	0.15	0.13	0.12	0.21	0.28	0.15	0.12	0.12	0.13	0.15	0.13	0.20	0.18	0.14	0.56	0.46	0.27	0.21	0.18	0.20	0.12	0.18	0.12	0.12
22	0.14	0.15	0.14	0.17	0.13	0.15	0.14	0.17	0.14	0.14	0.12	0.15	0.15	0.25	0.17	0.13	0.18	0.14	0.15	0.13	0.19	0.13	0.12	0.11
23	0.13	0.12	0.12	0.12	0.22	0.13	0.13	0.15	0.13	0.13	0.12	0.14	0.17	0.20	0.12	0.18	0.14	0.23	0.12	0.16	0.16	0.14	0.16	0.13
24	0.11	0.20	0.12	0.09	0.17	0.12	0.23	0.15	0.17	0.15	0.14	0.18	0.15	0.17	0.24	0.16	0.18	0.16	0.15	0.12	0.14	0.19	0.22	0.14
25	0.14	0.14	0.17	0.15	0.18	0.15	0.16	0.18	0.15	0.20	0.18	0.21	0.18	0.44	0.20	0.13	0.15	0.35	0.35	0.14	0.15	0.13	0.13	0.15
26	0.15	0.14	0.16	0.15	0.16	0.13	0.14	0.15	0.18	0.15	0.20	0.15	0.19	0.14	0.23	0.19	0.16	0.18	0.19	0.16	0.23	0.14	0.14	0.16
27	0.14	0.16	0.15	0.19	0.19	0.29	0.17	0.19	0.21	0.23	0.19	0.27	0.26	0.25	0.21	0.17	0.32	0.68	0.29	0.33	0.19	0.20	0.20	0.22
28	0.21	0.29	0.23	0.29	0.23	0.27	0.25	0.20	0.17	0.23	0.25	0.19	0.20	0.20	0.19	0.18	0.17	0.16	0.22	0.15	0.18	0.20	0.18	0.19
29	0.20	0.18	0.20	0.21	0.25	0.25	0.19	0.20	0.19	0.25	0.22	0.19	0.18	0.19	0.17	0.23	0.20	0.36	0.32	0.20	0.18	0.59	0.37	0.23
30	0.21	0.23	0.23	0.16	0.20	0.19	0.16	0.16	0.18	0.20	0.16	0.23	0.23	0.20	0.24	0.23	0.16	0.17	0.16	0.22	0.17	0.18	0.22	0.23
31	0.27	0.20	0.17	0.20	0.22	0.19	0.26	0.34	0.22	0.20	0.21	0.21	0.33	0.29	0.55	0.34	0.37	0.43	0.31	0.64	0.29	0.30	0.45	0.30

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

AUGUST 1973

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	0.27	0.30	0.39	0.38	0.42	0.39	0.45	0.32	0.31	0.30	0.29	0.38	0.29	0.27	0.26	0.25	0.24	0.25	0.28	0.27	0.24	0.22	0.22	0.22
2	0.22	0.22	0.23	0.21	0.40	0.22	0.22	0.22	0.21	0.22	0.22	0.22	0.21	0.22	0.22	0.20	0.21	0.19	0.26	0.28	0.21	0.21	0.21	0.20
3	0.22	0.20	0.19	0.20	0.22	0.21	0.29	0.21	0.20	0.24	0.21	0.21	0.23	0.22	0.21	0.21	0.24	0.22	0.24	0.23	0.23	0.23	0.59	0.58
4	0.30	0.21	0.19	0.19	0.18	0.20	0.28	0.25	0.22	0.21	0.21	0.19	0.20	0.21	0.18	0.20	0.20	0.19	0.22	0.19	0.21	0.25	0.25	0.20
5	0.20	0.19	0.19	0.20	0.21	0.19	0.19	0.19	0.18	0.20	0.19	0.19	0.18	0.17	0.19	0.21	0.20	0.20	0.21	0.22	0.24	0.25	0.23	0.78
6	0.54	0.54	0.75	0.28	0.81	0.47	1.80	0.69	0.73	1.14	0.76	0.55	0.54	0.58	1.33	0.44	0.49	0.46	0.39	0.45	0.40	0.43	0.60	0.66
7	0.69	0.48	0.38	0.52	0.45	0.34	0.31	0.31	0.29	0.28	0.33	0.46	0.42	0.83	0.70	0.61	0.42	0.45	0.49	0.53	0.49	0.42	0.33	0.32
8	0.37	0.34	0.31	0.28	0.29	0.26	0.25	0.29	0.25	0.26	0.32	0.29	0.28	0.26	0.24	0.27	0.23	0.39	0.21	0.38	0.23	0.22	0.22	0.49
9	0.31	0.25	0.21	0.23	0.23	0.22	0.22	0.23	0.24	0.25	0.23	0.27	0.28	0.27	0.38	1.50	0.38	0.32	0.29	0.26	0.27	0.29	0.36	0.37
10	0.74	0.26	0.27	0.34	0.30	0.25	0.25	0.26	0.27	0.26	0.29	0.30	0.30	0.38	0.33	0.32	0.33	0.55	0.26	0.26	0.24	0.28	0.34	0.32
11	0.33	0.34	0.27	0.28	0.37	0.44	0.33	0.30	0.27	0.27	0.31	0.27	0.33	0.55	0.43	0.24	0.16	0.15	0.14	0.15	0.13	0.14	0.13	0.17
12	0.15	0.12	0.15	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.11	0.10	0.11	0.11
13	0.12	0.12	0.11	0.13	0.10	0.11	0.11	0.11	0.10	0.09	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.09	0.11	0.18	0.21	0.24	0.22	0.21
14	0.18	0.16	0.14	0.14	0.14	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.10	0.09	0.08	0.08	0.09	0.08	0.08	0.15	0.08	0.08	0.08	0.09
15	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.07	0.09	0.07	0.07	0.07	0.06	0.06	0.06	0.06
16	0.07	0.08	0.09	0.07	0.07	0.09	0.07	0.07	0.08	0.09	0.09	0.08	0.08	0.08	0.09	0.08	0.08	0.23	0.08	0.08	0.08	0.08	0.07	0.08
17	0.08	0.09	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.08	0.09	0.09	0.09	0.13	0.12	0.08	0.08	0.09	0.08	0.08	0.08	0.08	0.08	0.08
18	0.09	0.08	0.08	0.08	0.10	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.08	0.08	0.08	0.09	0.24	0.08	0.08	0.08	0.08	0.10	0.07	0.08
19	0.08	0.08	0.07	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.08	0.07	0.09	0.08	0.09	0.07	0.07	0.08	0.08	0.08	0.07	0.08	0.09
20	0.09	0.08	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.08	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.12	0.10	0.10	0.11	0.10	0.10	0.10
21	0.09	0.10	0.10	0.11	0.10	0.09	0.10	0.10	0.10	0.10	0.11	0.10	0.11	0.13	0.42	0.49	0.38	0.24	0.18	0.18	0.15	0.15	0.15	0.16
22	0.16	0.17	0.16	0.15	0.14	0.13	0.14	0.14	0.13	0.14	0.14	0.15	0.14	0.15	0.13	0.13	0.13	0.14	0.15	0.13	0.13	0.13	0.13	0.13
23	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.14	0.13	0.15	0.15	0.16	0.18	0.17	0.16	0.16	0.17	0.16	0.15	0.16	0.17	0.17	0.15
24	0.15	0.17	0.16	0.15	0.16	0.17	0.16	0.16	0.16	0.17	0.18	0.15	0.18	0.16	0.17	0.19	0.20	0.18	0.18	0.19	0.21	0.20	0.26	0.20
25	0.21	0.23	0.20	0.23	0.22	0.21	0.25	0.28	0.27	0.25	0.24	0.26	0.26	0.43	0.33	0.23	0.22	0.35	0.35	0.24	0.22	0.22	0.24	0.23
26	0.23	0.22	0.24	0.24	0.21	0.22	0.22	0.23	0.25	0.21	0.22	0.22	0.21	0.25	0.29	0.30	0.26	0.30	0.25	0.26	0.28	0.23	0.23	0.27
27	0.28	0.28	0.30	0.30	0.32	0.45	0.33	0.35	0.36	0.39	0.36	0.35	0.40	0.38	0.39	0.36	0.38	0.69	0.49	0.47	0.37	0.34	0.36	0.35
28	0.36	0.48	0.43	0.49	0.44	0.46	0.44	0.39	0.39	0.37	0.34	0.36	0.31	0.33	0.35	0.33	0.34	0.36	0.31	0.32	0.32	0.33	0.34	0.33
29	0.37	0.38	0.40	0.41	0.46	0.46	0.39	0.39	0.38	0.40	0.38	0.39	0.36	0.34	0.34	0.35	0.38	0.40	0.49	0.41	0.37	0.73	0.56	0.45
30	0.37	0.41	0.41	0.36	0.40	0.33	0.32	0.33	0.33	0.36	0.34	0.38	0.38	0.38	0.36	0.41	0.37	0.37	0.38	0.41	0.41	0.35	0.38	0.46
31	0.42	0.38	0.36	0.38	0.43	0.42	0.42	0.48	0.43	0.41	0.41	0.43	0.52	0.54	0.73	0.58	0.63	0.69	0.55	0.69	0.55	0.54	0.68	0.52

SOLAR X-RAYS BY SATELLITE
EXPLORER 37
AUGUST 1973

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
6	0625	75.00	0627	180.00	0627	53.00	0628	0645	
6	1415E	13.00D	1415E	70.00	1416	28.00	1417	1422	
9	1551	87.00	1553	220.00	1553	53.00	1553	1556	

Note: Data from SOLRAD 10 are not available after 2200 UT on June 11 due to a malfunction of the data storage system. Hourly flux values and X-ray flares will be reported from SOLRAD 9 until SOLRAD 10 resumes normal operation.

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1973

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
05	2336	0020	2341	1-	1				1				2336	12474
06	0146	0233	0200	1-	1				1				0146	12474
06	0404	0456	0415	1-	1				1				0400E	12474
06	0625	0645	0630	1+	5	3		1	3				0625	12474
06	0842	0955	0850	2	5	3	1	3	3		1		0843E	12474
06	0945	1130	0950	1-	1				1				0945E	12474
06	1405	1515	1418	1	5	2			1		6	1	1405	12474
06	1720	1800	1732	1-	5	3			1		8	1	1719E	12474
07	0037	0135	0043	1-	1				1				0034	12474
07	1845	1856	1846	1-	1							1	1845	12474
08	2338	0030	2342	1-	1				1				2340E	12474
09	1152	1230	1157	1-	1				1		1		1152	12474
09	1415	1515	1422	1	1				1		1		1415	12474
09	1551	1745	1556	1+	5	5	2	7	2	1	9	1	1550	12474
09	2140	2209	2145	1-	3				1			1	2141E	12474
10	0012	0105	0020	1-	1				1				0014	12474
31	1929	1940U	1931	1-	1							1	1928	12510

STATIONS REPORTING FOR AUGUST 1973

AAVSO (A1, A17, A19, A32, A39.,SEA. (A18 A19, A21, A28, A30, A31, A33, A36, A37, A38)(SES)(A31)(SWF)
BOULDER (BO) (SEA)
DARMSTADT (DA) (SWF)
HAWAII (HA) (SFD)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
KUHLUNGSBORN (KU) (SEA, SPA)
MANILA (MA) (SCNA, SEA, SPA)
MCMATH (MC) (SWF, SCNA)
NEUSTRELITZ (NU) (SWF, SCNA)
PANSKA VES (PU) (SWF, SEA, SES)
POITIERS (PO) (SEA)
PRESTON (LO) (SEA)
SACRAMENTO PEAK (SP) (SFD)
SAO PAULO (UM) (SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
TORINO (TN) (SPA)
TRINIDAD (TR) (SWF, SPA)
WHITE SANDS (WS) (SWF)

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01-14	0000-2400 A28
01	0755-1000 UM (16 kHz), 1500-2100 UM (13 kHz), 1349-1600 TR, 1735-1815 TR
02	0000-1243 UM (13 kHz), 1412-1820 TR
03	0800-0900 UM (16 kHz), 1340-1723 TR, 1756-1810 TM
06	0840-0944 TR
07	0000-2130 TM, 0740-1100 UM (17 kHz), 0850-1330 UM (16 kHz)
08	1455-1502 WS, 1547-1548 WS, 1555-1600 WS
09	0000-2400 A38, 1529-1600 TR
10	1520-1557 TR
11	0800-1120 UM (16 kHz), 1620-1627 TR
12	1358-1415 TR, 1528-1911 TR
13	1458-1508 MC, 1612-1748 TR
14	0221-0259 A31, 1015-1340 UM (16 kHz), 1334-1617 TR
17	1400-1811 UM (17 kHz)
20	0521-1337 WS
21	1010-1340 UM (16 kHz), 1307-2108 UM (13 kHz)
26	0340-1328 TM
28-31	0000-2400 A33
30	1807-1810 MC

SID's BY McMATH REGION

AUGUST 1973

		DAY 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION	74					1	7	2	1	4	1																					
	10																															1

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
01	0000	0141	HARV													
	0000	0230	BOUL													
	0000	0738	CULG							0029						IIIB,W
			CULG							0526.5	0527	1				IIIG
			CULG				0537		1	0537		1				IIIB
	0422	1840	WEIS							1300.8	1300.9	1				IIIB
	1245	2400	HARV							1327	1329	2	1327	1328	1	IIIGG
	1200	2400	BOUL							1327.1	1328.1	2	1327.1	1328.1	2	III
			WEIS							1327.1	1329.3	2				IIIGG
	0935	2359	SGMR										1327.1	1328.1	3	III
			SGMR										1911.7	1913.2	1	IIIG
			BOUL							1914.7	1917.9	1	1914.7	1917.9	1	IIIG
	2038	2400	CULG							2051	2126	1				IS
			CULG							2106		1				IIIB
			CULG							2119	2123.5	1				IIIG
			CULG							2144	2144.5	1				IIIG
02	0000	0230	BOUL													
	0000	0140	HARV													
	0000	0738	CULG							0020	0658					IIIN,W
			CULG							0056	0056.5	1				IIIG
			CULG							0106.5		1				IIIB
			CULG							0132.5	0133	1				IIIG
			CULG							0224.5	0226	1				IIIG,V
			CULG							0227	0228	1				IIIG
			CULG							0236	0236.5	1				IIIG,U
			CULG							0237	0239	1				IIIG,U
			CULG							0247.5	0248	1				IIIG
			CULG				0401	0402	1							IIIG
			CULG				0403	0406	1							IIIGG
			CULG				0407	0407.5	1	0407	0409	1				IIIG,V
			CULG							0410	0722	1				IS
			CULG				0413	0413.5	1	0413	0414	2				IIIG
			CULG				0447	0448	1	0447.5	0449.5	2				IIIG,V
	0425	0702	WEIS							0447.6	0448.5	1				IIIG
			CULG							0705.5		1				IIIB
	0710	1841	WEIS													
	0941	2358	SGMR													
	1200	2400	BOUL													
	1246	2400	HARV													
	2038	2400	CULG							2058.5	2210					IS,W
			CULG							2146.5		1				IIIB
03	0000	0738	CULG													
	0000	0139	HARV													
	0000	0230	BOUL													
	0427	1240	WEIS													
	0942	2357	SGMR													
	1200	2400	BOUL													
	1243	1843	WEIS													
	1245	2400	HARV													
	2038	2400	CULG							2126.5	2127.5					IIIG,W
			CULG							2355	2355.5					IIIG,W
04	0000	0138	HARV													
	0000	0230	BOUL													
	0000	0738	CULG							0053						IIIB,W
			CULG							0319						IIIB,W
			CULG							0527.5	0530	1				IIIG,U
			WEIS							0527.8	0527.9	1				IIIB
	0427	1836	WEIS							0531.9	0532.0	2				IIIB
			CULG				0532	0532.5	1	0532	0532.5	1				IIIG
			CULG							0635	0635.5	1				IIIG
			CULG							0637						IIIB,W
			CULG							0639.5	0640					IIIG,W
			CULG				0653		1	0653		1				IIIB
	0943	2355	SGMR										1219.9	1220.4	1	III
			SGMR										1227.1	1227.5	2	III
	1200	2400	BOUL							1227.1	1227.4	1	1227.1	1227.4	1	III
			WEIS							1227.2	1227.4	1				IIIB
	1246	2400	HARV													
			BOUL										1344.5	1344.7	1	III
			BOUL										1347.1	1347.6	1	III
			SGMR										1347.2	1347.6	1	III
			BOUL										1449.3	1450.0	1	IIIG
			BOUL										1453.0	1453.9	1	IIIG
			BOUL										1635.6	1636.2	1	III
			BOUL										1817.9	1818.2	1	III
	2039	2400	CULG							2140.5		1				IIIB
			CULG							2255.5		1				IIIB
			CULG							2318.5		1				IIIG,U
			CULG							2352.5	2353.5	1				IIIG
05	0000	0230	BOUL													
	0000	0137	HARV													
	0000	0738	CULG							0016						IIIB,W
			CULG				0056	0056.5	1	0056	0056.5	1				IIIG
			CULG							0200		1				IIIB
			CULG				0349.5	0350	1	0349.5	0350.5	1				IIIG
			CULG							0351	0352	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
05	0441	0503	WEIS														
	0944	2354	SGMR														
	1003	1837	WEIS														
	1200	2400	BOUL														
	1246	2400	HARV														
	2038	2400	CULG				2105	2105.5	1	2105	2105.5	1					IIIG
			CULG							2111.5		1					IIIB
06	0000	0137	HARV														
	0000	0230	BOUL														
	0000	0737	CULG							0116.5		1					IIIB
			CULG							0139	0140	1					IIIG
			CULG				0325.5	0328	1	0325.5	0328	2					IIIGG
			CULG							0458							IIIB,W
			CULG				0557	0558	1	0557	0558	2					IIIG
	0440	1509	WEIS							0557.3	0557.6	2					IIIG
			CULG				0559.5	0601	1	0600	0601	1					IIIGG
			WEIS							0600.4	0600.5	2					IIIB
			CULG				0602	0602.5	1	0602	0603	2					IIIG 3
			WEIS							0602.4	0602.5	3					IIIB
			WEIS							0730.4	0730.5	2					IIIG
			WEIS							0732.3	0732.4	2					IIIB
	0945	2353	SGMR														
	1245	2400	HARV														
	1200	2400	BOUL							1302.6	1303.8	1	1302.6	1303.8	1		IIIG
	1625	1839	WEIS														
	2038	2400	CULG							2156	2400						IW
07	0000	0737	CULG							0000	0144.5	1					IS
	0000	0230	BOUL														
	0000	0137	HARV														
	0441	1834	WEIS														
	0946	2352	SGMR														
	1200	2400	BOUL														
	1246	2400	HARV				1840	1841	2								IIIG
			HARV				1845	1848	3	1845	1846	2					IIIGG
	2038	2400	CULG														
08	0000	0136	HARV														
	0000	0200	BOUL														
	0000	0737	CULG							0049	0049.5	1					IIIG
			CULG							0053.5		1					IIIB
			CULG				0118	0130.5	1	0109.5	0435	1					IS
			CULG							0440	0442.5	2					IIIG,V,U
	0448	0915	WEIS														
	0932	1822	WEIS														
	0947	2350	SGMR														
	1200	2400	BOUL														
	1245	2400	HARV				1912	1914	3								IIIGG
	2038	2400	CULG							2135	2135.5	1					IIIG
			CULG							2240.5	2241	1					IIIG
			CULG							2308	2309	1					IIIG
			CULG				2335.5	2336	1	2335	2336	1					IIIG,U
09	0000	0135	HARV														
	0000	0200	BOUL														
	0000	0735	CULG							0046		1					IIIB
			CULG							0054.5	0055	1					IIIG
			CULG							0109							IIIB,W
			CULG							0123	0124	1					IIIG
			CULG							0139							IIIB,W
			CULG				0222.5	0223	1	0221.5	0225.5	2					IIIGG
			CULG							0304	0305.5	1					IIIG
			CULG							0308	0308.5						IIIG,W
			CULG							0313.5							IIIB,W
			CULG							0356.5	0357	1					IIIG
			CULG							0359	0400						IIIG,W
			CULG							0406							IIIB,W
			CULG							0410	0410.5	1					IIIG
			CULG				0413	0413.5	1	0412.5	0413.5	1					IIIG
	0436	1245	WEIS														
			CULG				0541.5	0652									IW
			CULG							0611	0611.5	1					IIIG
	1246	2400	HARV				1415	1416	1								IIIGG
	1426	1501	WEIS														
			HARV				1550	1553	3	1550	1553	3					IIIGG
	1555	1823	WEIS														
	1200	2400	BOUL										1708.0	1708.3	1		III
	0948	2349	SGMR										2002.3	2003.1	1		III
	2037	2400	CULG							2055.5	2303.5						IIIN,W
			CULG							2055.5	2257	1					IS
			HARV				2122	2123	1								IIIG
10	0000	0200	BOUL														
	0000	0134	HARV				0014	0015	3								IIIGG
	0000	0738	CULG							0120							IIIB,W
			CULG							0330	0624	1					IS
			CULG							0340							IIIB,W
			CULG				0423	0424.5	1	0423	0424.5	1					IIIG
	0437	1825	WEIS														

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
10			CULG							0654.5							IIIB,W
			CULG							0659.5		1					IIIB
			CULG							0720.5							IIIB,W
	1246	2400	HARV														
	1200	2400	BOUL										1507.5	1508.0	2		III
	0949	2348	SGMR										1507.7	1508.1	2		III
	2037	2400	CULG							2046	2400	1					IS
11	0000	0737	CULG							0000	0122	1					IS
	0000	0200	BOUL														
	0000	0132	HARV														
	0438	0751	WEIS														
	0805	1822	WEIS														
	0950	2346	SGMR														
	1200	2400	BOUL														
	1245	2400	HARV														
	2249	2400	CULG														
12	0000	0130	HARV														
	0000	0737	CULG							0039		1					IIIB
	0000	0200	BOUL										0039.2	0039.4	1		III
			CULG				0131.5	0132	1	0131.5	0133	1					IIIG
			BOUL							0131.6	0131.8	1	0131.6	0131.8	1		III
			CULG				0134	0134.5	1	0134	0134.5	1					IIIG
			BOUL							0134.0	0134.9	1	0134.0	0134.9	1		III
			CULG							0200.5	0201	1					IIIG
			CULG							0207	0645						IIIN,W
			CULG							0322.5	0324	1					IIIG,V
			CULG							0338	0339	1					IIIG,V
			CULG							0345.5	0346.5	1					IIIG
			CULG				0523		1	0523	0524	1					IIIG,V
			CULG				0528		1	0528		1					IIIB
			CULG							0544	0545	1					IIIG
			CULG							0546	0547	1					IIIG
			CULG				0556	0558									IIIG,W
			CULG							0556.5	0559	1					IIIG,V
			CULG							0606.5	0608	1					IIIG,V
			CULG							0628	0629	1					IIIG
			CULG							0643	0644	1					IIIG,V
	0443	1331	WEIS							0758.6	0759.1	2					IIIB
			WEIS							0817.7	0817.8	1					IIIB
			WEIS							0929.0	0929.1	1					IIIB
	0951	2345	SGMR										1158.9	1209.1	1		IIIG
	1246	2400	HARV														
	1200	2400	BOUL							1516.5	1516.9	1	1516.5	1516.9	1		III
			SGMR										1516.8	1517.1	2		III
	2037	2400	CULG							2045	2314	1					IS
13	0000	0200	BOUL														
	0000	0129	HARV														
	0000	0737	CULG				0614.5	0616	1	0613.5	0616.5	1					IIIG,V
			CULG							0616	0631	1				II	HB
			CULG				0620	0621	1	0618	0628	1					IIIGG,V
	0715	1825	WEIS														
	0952	2343	SGMR														
	1200	2400	BOUL														
	1245	2400	HARV														
	2037	2400	CULG														
14	0000	0128	HARV														
	0000	0200	BOUL														
	0000	0737	CULG							0111							IIIB,W
			CULG							0112							IIIB,W
			CULG							0208	0209						IIIG,V,W
	0446	1355	WEIS														
	1246	2400	HARV														
	1420	1443	WEIS														
	1550	1826	WEIS														
	1200	2400	BOUL										1951.8	1952.8	1		III
	0953	2342	SGMR										1952.0	1952.8	2		III
			BOUL										1953.7	1954.0	1		III
	2037	2400	CULG														
15	0000	0737	CULG														
	0000	0200	BOUL														
	0000	0127	HARV														
	0447	1827	WEIS														
	1200	2400	BOUL														
	1246	2400	HARV														
	0954	2341	SGMR										1845.0	1846.0	1		III
	2037	2400	CULG														
16	0000	0737	CULG														
	0000	0125	HARV														
	0000	0200	BOUL														
	0449	0719	WEIS														
	0728	1825	WEIS														
	0955	2339	SGMR														
	1200	2400	BOUL														
	1245	2400	HARV														

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
16	2036	2400	CULG													
17	0000	0736	CULG													
	0000	0123	HARV													
	0000	0200	BOUL													
	0450	0457	WEIS													
	0459	1130	WEIS													
	0956	2338	SGMR													
	1200	2400	BOUL													
	1246	2400	HARV													
	1429	1500	WEIS													
	1736	1740	WEIS													
	1803	1811	WEIS													
	2035	2400	CULG													
18	0000	0122	HARV													
	0000	0200	BOUL													
	0000	0736	CULG							0658		1				IIIB
	0700	0909	WEIS													
			CULG							0732.5						IIIB,W
	0929	1806	WEIS													
	0957	2336	SGMR													
	1200	2400	BOUL													
	1245	2400	HARV													
	2036	2400	CULG													
19	0000	0728	CULG													
	0000	0121	HARV													
	0000	0200	BOUL													
	0452	0808	WEIS													
	0958	2335	SGMR													
	1200	2400	BOUL													
	1238	1805	WEIS													
	1246	2400	HARV													
	2035	2400	CULG													
20	0000	0735	CULG													
	0000	0120	HARV													
	0000	0200	BOUL													
	0959	2333	SGMR													
	1200	2400	BOUL													
	1246	2400	HARV													
	2035	2400	CULG													
21	0000	0735	CULG													
	0000	0118	HARV													
	0000	0200	BOUL													
	1300	2400	HARV													
	1000	2332	SGMR										1440.0	1650.0	2	CONT
	1200	2400	BOUL							1441.5	1734.0	3	1441.5	1734.0	3	IV
			BOUL							1825.0	1919	1	1825.0	1919	1	IV
	2035	2400	CULG													
22	0000	0200	BOUL													
	0000	0116	HARV													
	0000	0735	CULG							0443		1				IIIB
	1001	2330	SGMR													
	1200	2400	BOUL													
	1301	2400	HARV													
	2035	2400	CULG													
23	0000	0735	CULG													
	0000	0115	HARV													
	0000	0200	BOUL													
	1003	2328	SGMR													
	1200	2400	BOUL													
	1300	2400	HARV													
	2035	2135	CULG													
	2136	2400	CULG													
24	0000	0735	CULG													
	0000	0114	HARV													
	0000	0200	BOUL													
	1004	2327	SGMR													
	1230	2400	BOUL													
	1301	2400	HARV													
	2035	2400	CULG							2214						IIIB,W
25	0000	0113	HARV													
	0000	0200	BOUL													
	0000	0734	CULG							0155						IIIB,W
			CULG							0327.5						IIIB,W
			CULG							0643.5						IIIB,W
	1005	2327	SGMR													
	1230	2400	BOUL													
	1300	2400	HARV													
	2034	2400	CULG													
26	0000	0734	CULG													
	0000	0112	HARV													

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
26	0000	0200	BOUL													
	1006	2324	SGMR													
	1230	2400	BOUL													
	1300	1520	HARV													
	1620	1630	HARV													
	1633	2400	HARV													
	2034	2400	CULG							2254						IIIB,W
27	0000	0110	HARV													
	0000	0200	BOUL													
	0000	0734	CULG				0247	0250								FAST DR,W
			CULG							0324	0734					IS,W
	1007	2322	SGMR													
	1230	2400	BOUL													
	1301	2400	HARV													
	2034	2400	CULG							2052.5		1				IIIB
			CULG							2129.5						IIIB,W
			CULG							2351		1				IIIB
28	0000	0109	HARV													
	0000	0200	BOUL													
	0000	0734	CULG							0233.5	0234.5	1				IIIG
			CULG							0445	0545	2				IS
			CULG							0450	0734					IIIN,W
	0506	0908	WEIS													
			CULG							0545	0734	1				IS
	1008	2320	SGMR													
	1113	1746	WEIS													
	1230	2400	BOUL													
	1300	2400	HARV													
	2033	2400	CULG				2041	2042								FAST DR,W
			CULG							2105	2106.5					FAST DR,W
			CULG							2234		1				IIIB
29	0000	0108	HARV													
	0000	0200	BOUL													
	0000	0733	CULG							0022	0145					IS,W
			CULG							0214	0724					IIIN,W
			CULG							0252	0253	1				IIIG
			CULG							0317	0318	1				IIIG,U
	0509	1015	WEIS													
			WEIS							1309.5	1310.0	2				IIIB
	1009	2319	SGMR										1309.7	1310.1	2	III
	1230	2400	BOUL										1310.0	1310.8	1	III
			SGMR										1357.1	1357.3	1	III
			BOUL										1357.8	1358.2	1	III
			SGMR										1445.8	1455.0	1	IIIG
			BOUL							1446.4	1447.0	2	1446.4	1447.0	2	III
			WEIS							1454.6	1455.3	1				IIIG
			BOUL							1455.0	1456.5	2	1455.0	1456.5	2	III
			BOUL										1457.6	1457.7	1	III
			SGMR										1539.9	1540.2	1	III
			BOUL							1540.7	1541.7	2	1540.7	1541.7	2	III
	1301	2400	HARV							1630	1631	2	1630	1631	2	IIIGG
			WEIS							1630.3	1634.6	3				IIIG
			SGMR										1630.6	1630.8	1	III
			BOUL							1631.1	1631.7	2	1631.1	1631.9	2	III
			HARV							1657	1702	2	1657	1702	3	IIIGG,V,U
			SGMR										1657.4	1702.0	3	IIIG
	1018	1746	WEIS							1657.6	1758.6	1				IIIG
			BOUL							1658.1	1700.2	2	1658.1	1700.2	2	III
			BOUL										1701.6	1702.2	2	III
			SGMR										1754.4	1754.6	1	III
			HARV							1824	1825	3	1824	1825	3	IIIB
			BOUL										1825.0	1825.2	1	III
			BOUL										1827.8	1828.1	1	III
			HARV				1832	1837	3							IIIGG
			SGMR										1842.2	1844.2	2	IIIG
			BOUL							1842.9	1845.0	2	1842.9	1845.0	2	IIIG
			HARV				1843	1844	1	1842	1844	3	1842	1844	3	IIIGG,V
			BOUL										1846.5	1846.6	1	III
			BOUL										2018.1	2018.3	1	III
			BOUL										2028.6	2029.3	1	IIIG
	2033	2400	CULG							2033	2400	1				IIIN
			CULG							2159	2200	1				IIIG
			BOUL										2159.1	2200.1	1	III
			CULG				2217.5	2400								IS,W
30			CULG							0000	0738					IIIN,W
	0000	0738	CULG				0000	0738		0000	0738					IS,W
	0000	0200	BOUL													
	0000	0107	HARV													
	0510	1744	WEIS													
			CULG							0708		1				IIIB
			CULG							0716.5		1				IIIB
	1010	2317	SGMR													
	1230	2400	BOUL													
	1300	2400	HARV							1306	1952	1				IN
			CULG							2033	2400					IIIN,W
	2033	2400	CULG				2033	2400		2033	2400					IS,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1973

AUG. 1973	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
31			CULG				0000	0732								
	0000	0732	CULG													IN,W
	0000	0105	HARV							0000	0732					IIIN,W
	0000	0130	BOUL													
			CULG							0600.5	0601.5	1				
			CULG							0640		1				IIIG,V
	0657	1742	WEIS							0918.1	0918.5	1				IIIB
			WEIS							1127.0	1622.0	2				IIIG
	1300	2400	HARV							1300	1340	1				IN
	1200	2400	BOUL													IN
			HARV										1330	1657.0	1	CONT
			HARV							1340	1500	1				I
			HARV							1500	1622	1				IN
			HARV							1615	1747	1	1615	1722	1	IIIN
			CULG				1930	1932	2	1930	1931	1				IIIGG
	2032	2400	CULG				2032	2400	1	2032	2400	1				IS
			BOUL							2032	2400	1				IIIS
	1011	2316	SGMR							2036.0	2400.0	1	2036.0	2400.0	1	CONT
			CULG										2129.0	2316.0	1	CONT
			HARV							2220	2223	2				IIIGG,V
			BOUL							2220	2223	2	2220	2223	2	IIIGG
			HARV							2221.4	2224.2	2	2221.4	2224.2	2	IIIG
										2234	2358	1				IN

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
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity

Note: Beginning in May the frequency coverage at the Harvard Radio Astronomy Station, Fort Davis, Texas, has been extended from 10-2000 MHz to 10-4000 MHz.

SELECTED SOLAR EVENTS

AUGUST 1973

Culgoora

UT Date 197.3 AUGUST	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions		Polar-ization	Inten-sity (1-3)		
				Central Dist. ($R_\odot$)	Position Angle (Deg.)				
2	0447	0451	(80 (160	1.3 1.3	130) 130)	0	2	IIIG,V	
5	0349	0352	(80 (160	1.0 1.0	120) 150)	0	2	IIIG	
8	0440	0442	(80 (160	1.1 0.8	270) 250)	0	1	IIIG,V,U	Complex source structure
9	0222	0226	(80 (160	1.0 1.0	320) 270)	0	1	IIIGG	*

Days without Heliograph observations: .....

* Other type III observed at same position during day

COSMIC RAY INDICES
(Neutron Monitors)
AUGUST 1973

Aug. 1973	THULE DAILY AVERAGE COUNTS PER HOUR	DEEP RIVER DAILY AVERAGE COUNTS PER HOUR	CALGARY DAILY AVERAGE COUNTS PER HOUR	SULPHUR MT. DAILY AVERAGE COUNTS PER HOUR	CLIMAX DAILY AVERAGE COUNTS PER HOUR	DALLAS DAILY AVERAGE COUNTS PER HOUR
1	4406.4	6722.9	11422.9	8490.4	not available at time of publication	6170.0
2	4442.2	6780.6	11506.8	8578.4		6209.5
3	4450.9	6779.7	11516.4	8586.0		6193.7
4	4449.3	6799.5	11524.5	8611.0		6214.9
5	4470.0	6838.8	11556.3	8671.6		6242.3
6	4514.5	6880.8	11642.6	8765.0		6275.1
7	4519.1	6893.7	11630.8	8763.5		6287.3
8	4509.9	6889.3	11630.6	8759.8		6278.2
9	4509.6	6882.3	11685.3	8755.9		6278.4
10	4535.4	6913.1	11757.1	8798.2		6280.6
11	4561.0	6941.6	11795.2	8826.8		6293.8
12	4573.1	6967.0	11842.0	8862.8		6308.4
13	4562.8	6947.4	11828.4	8855.7		6297.6
14	4565.4	6956.5	11847.7	8868.2		6307.5
15	4566.3	6963.0	11836.1	8866.6		6316.3
16	4568.3	6990.2	11854.2	8905.3		6334.2
17	4572.6	6979.5	11865.9	8892.8		6337.3
18	4597.5	7012.0	11940.8	8937.8		6363.7
19	4607.5	7049.0	12015.4	8990.5		6392.9
20	4633.2	7076.9	12042.2	9017.0		6427.5
21	4636.8	7075.8	12049.1	9028.0		6434.7
22	4629.9	7086.5	12051.5	9034.3		6428.4
23	4627.2	7069.1	12034.6	9020.4		6431.3
24	4605.3	7056.8	11981.0	9018.6		6444.2
25	4625.8	7056.9	11920.8	8975.2		6436.7
26	4621.1	7034.6	11983.6	8981.2		6435.5
27	4611.4	7024.4	11992.4	8971.1		6427.8
28	4607.3	7012.3	11974.1	8936.6		6402.6
29	4609.9	7010.9(9)	12021.5	8982.3		6393.0
30	4623.4	7064.9(6)	12009.3	9007.7(14)		6412.1
31	4627.9	7060.5	12009.1	-- (0)		6423.8

( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

Churchill and Dallas Super Neutron Monitors, Scaling Factors 120.

Deep River Super Neutron Monitor, Scaling Factor 300.

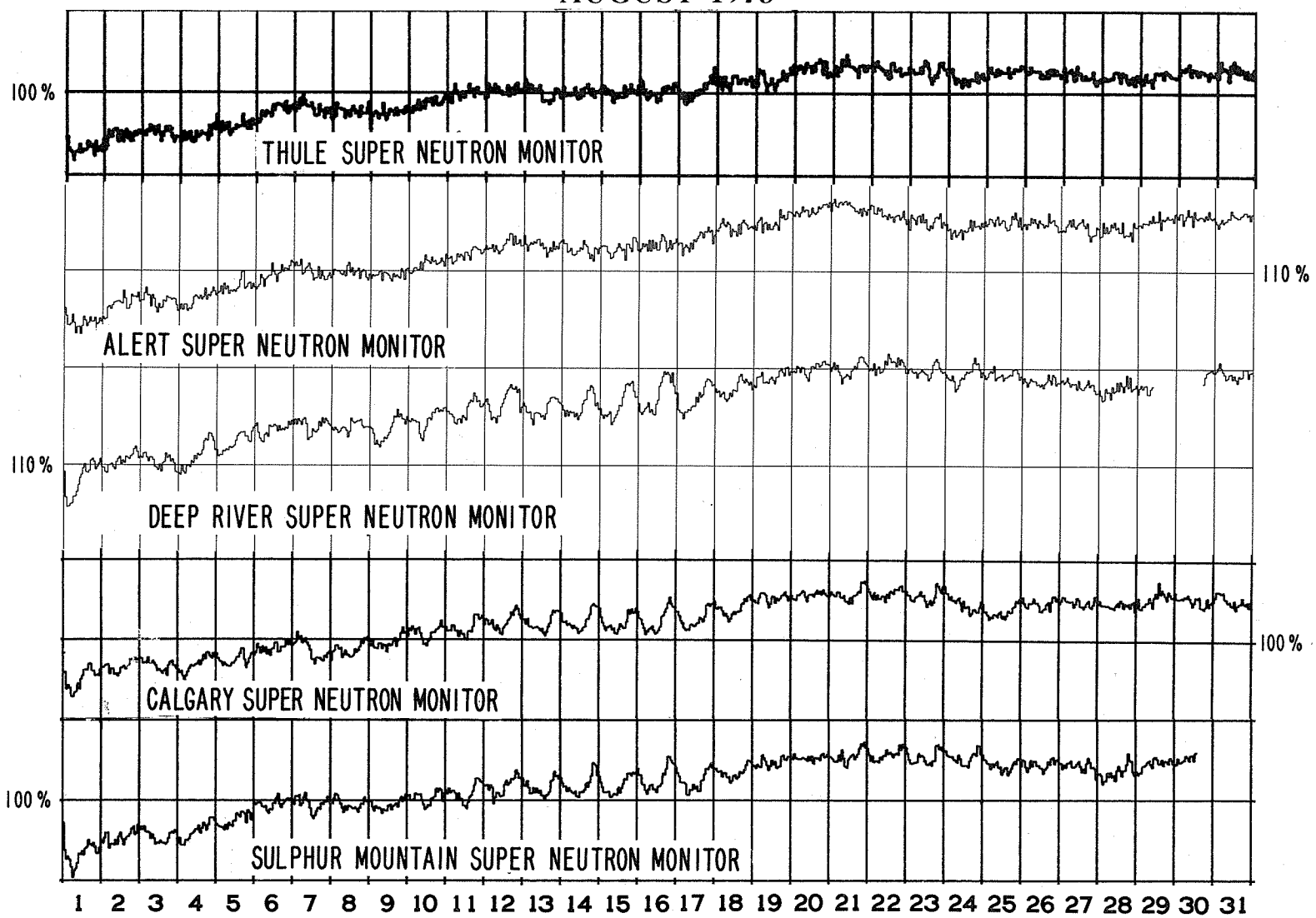
Thule, Calgary and Sulphur Mountain Super Neutron Monitors, Scaling Factors 100.

Climax IGC Station B305, Scaling Factor 100.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

AUGUST 1973

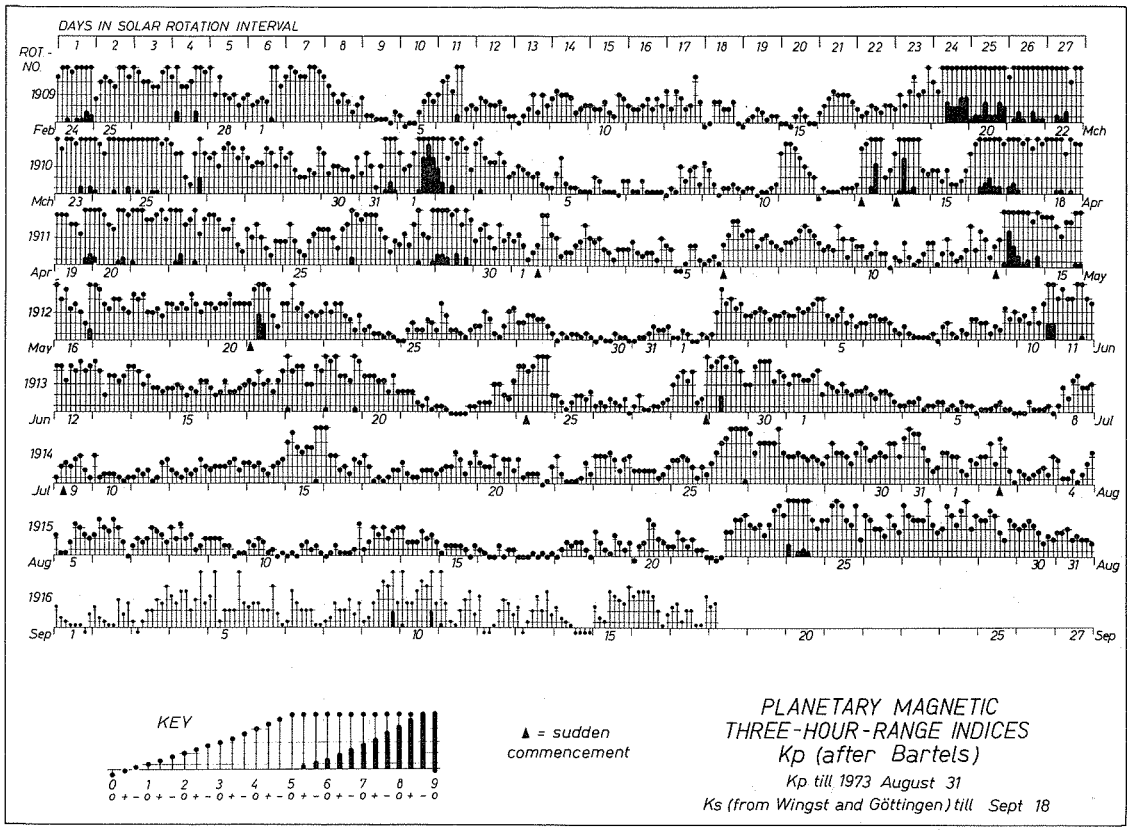


GEOMAGNETIC ACTIVITY INDICES

AUGUST 1973

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1		3+	3+	3	3	2-	1+	3-	2+	21-	0.7	0.7	12
2		3	3	4	2+	4+	4-	2-	1-	23-	1.1	0.9	16
3		2-	1+	1	1+	2-	2	1+	3	13+	0.4	0.3	7
4		3-	1	1	2-	1-	1+	2+	3+	14	0.4	0.4	8
5		2+	1-	1-	2-	3+	3	2+	2	16	0.6	0.5	9
6		2+	4-	3	3-	4-	3	2-	0+	20+	0.6	0.7	13
7		1+	2	2-	2	3	3-	2+	2-	17-	0.5	0.5	8
8		3	2	3+	2	2+	1	1+	2	17	0.5	0.5	9
9	Q	2	2	2	1+	1+	0+	1-	1-	10+	0.2	0.2	5
10	Q	2-	1+	2	2-	1-	1	0+	1-	9+	0.2	0.2	4
11	QQ	0+	1-	0+	1+	2-	1	1+	1-	7+	0.1	0.1	4
12	Q	0+	1-	1+	1-	1-	1-	1	3+	9-	0.3	0.2	5
13		1	2-	3	2+	3	2	3-	3	19-	0.6	0.6	10
14		3	2-	2-	2-	3-	2	2+	2-	17-	0.5	0.5	8
15	QQ	1-	1+	1+	1+	1+	1	0+	1+	9-	0.1	0.1	4
16	QQ	1	1-	0+	0+	1+	0+	1	1	6	0.1	0.1	3
17	QQ	0+	0+	0+	1-	0+	1-	0+	1-	4-	0.0	0.0	2
18	QQ	0+	1	2-	1+	2-	2-	1	0+	9	0.2	0.2	4
19	Q	3-	2-	1	1-	2+	2-	1	2-	13-	0.2	0.3	6
20		0	1+	2-	4-	3+	2	2-	1+	15	0.5	0.5	9
21	Q	1+	3-	2	1+	2	1	1	0+	12-	0.3	0.3	6
22		0+	0	0+	3-	3-	4-	4-	4	17+	0.7	0.7	12
23	D	3+	3	3+	2+	3+	4+	5-	4	28+	1.2	1.1	22
24	D	6	5	5+	6-	5+	4-	3	4-	38-	1.4	1.5	46
25	D	4-	5-	5	5-	4-	3+	5-	2	32-	1.3	1.3	29
26		4	4-	3	3	2+	4	3+	3-	26	0.9	1.0	18
27	D	5-	4	4-	4-	4-	5	3+	3-	31-	1.2	1.2	26
28	D	3	5-	4	3+	4+	5	3	4	31+	1.3	1.2	28
29		4-	4-	4+	4	3-	2	4-	3+	27+	1.1	1.0	20
30		3	3+	4-	3+	3-	2-	2+	2	22	0.7	0.8	13
31		3-	3-	3	2	2+	2	2	2-	18+	0.5	0.5	9
										MEAN	0.59	0.58	12

GEOMAGNETIC ACTIVITY INDICES



DAILY AVERAGE INDICES Ap

	1972				1973							
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	5	7	98	6	11	17	22	91	17	3	19	12
2	6	5	42	5	2	14	40	54	12	20	11	16
3	5	4	13	6	2	16	14	26	9	14	7	7
4	6	7	6	4	11	7	4	9	8	19	4	8
5	5	2	3	2	21	9	6	7	5	10	4	9
6	10	2	7	3	20	15	28	4	13	8	3	13
7	5	8	7	10	8	14	8	4	16	4	3	8
8	9	4	7	6	15	25	7	8	17	6	13	9
9	8	4	7	4	16	21	11	7	12	9	8	5
10	15	6	4	2	28	11	8	4	7	33	6	4
11	11	19	7	3	24	8	8	24	6	34	6	4
12	5	21	6	8	25	9	14	3	7	30	6	5
13	53	21	4	30	16	4	5	46	20	24	8	10
14	54	26	4	9	8	7	4	57	80	18	8	8
15	24	8	17	29	9	8	3	9	37	13	32	4
16	19	12	31	33	8	10	12	60	32	11	15	3
17	26	2	12	13	5	16	6	51	27	18	6	2
18	14	11	9	8	3	11	20	46	22	30	6	4
19	6	34	11	7	10	10	82	42	21	38	10	6
20	4	14	27	4	29	9	80	46	23	18	9	9
21	2	16	9	2	22	49	58	42	46	6	5	6
22	4	13	13	14	5	46	53	44	20	3	6	12
23	13	18	11	30	13	48	50	25	15	10	14	22
24	16	11	5	13	22	54	49	14	4	34	6	46
25	6	6	8	4	20	31	50	14	6	6	9	29
26	7	8	14	5	20	34	32	28	8	4	36	18
27	8	7	11	2	33	44	28	26	10	4	29	26
28	8	11	12	4	33	20	22	26	8	21	14	28
29	25	21	9	15	22		16	59	3	41	18	20
30	8	20	4	19	15		15	18	3	29	19	13
31		29		13	6		33		4		26	9
MEAN	13	12	14	10	16	20	25	30	17	17	12	12

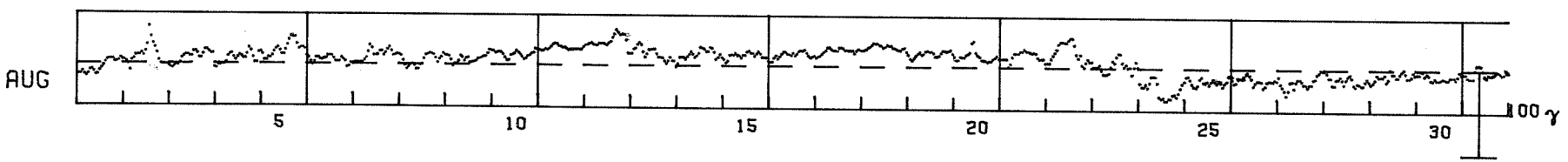
HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

AUGUST 1973

NASA/GODDARD SPACE FLIGHT CENTER

(Time-UT)

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	-12	-12	-10	-13	-15	-13	-8	-7	-10	-14	-13	-9	-5	-3	1	4	5	5	5	2	2	3	6	4
2	3	2	-1	-8	3	5	9	10	9	12	9	14	22	43	31	23	18	12	3	-1	-2	-2	-1	-3
3	-5	-5	-4	-2	-3	0	6	8	10	10	8	8	14	14	12	5	5	11	15	16	14	12	12	-5
4	-6	-2	-2	-1	-1	1	8	11	12	7	4	7	10	8	6	6	11	18	15	7	1	1	13	14
5	11	6	4	7	7	9	14	17	19	15	11	11	15	22	28	32	31	31	23	17	19	19	17	9
6	7	2	-1	2	7	7	5	4	6	6	9	10	9	5	3	2	3	7	5	3	-4	-3	1	1
7	2	2	2	2	2	4	7	14	22	19	10	10	11	15	15	10	13	17	20	15	10	11	12	11
8	10	4	-2	-6	-4	-1	0	-2	-6	-6	-1	0	5	11	12	13	12	11	7	2	6	8	13	11
9	10	9	5	-2	0	1	4	10	8	4	7	8	2	3	3	4	6	7	8	9	10	13	17	16
10	16	14	14	15	14	12	8	5	5	11	12	13	15	14	12	9	6	7	10	11	13	14	19	17
11	17	16	16	18	17	19	21	24	25	24	22	21	20	20	19	17	18	18	18	18	18	18	18	21
12	23	24	25	26	24	23	23	25	25	25	24	23	25	27	32	35	41	38	35	36	35	29	14	13
13	14	19	20	24	26	24	15	9	13	18	18	19	19	13	9	9	8	5	2	5	9	5	5	-2
14	2	9	10	9	7	10	13	16	13	9	11	14	21	20	19	15	15	21	20	15	7	9	13	9
15	7	3	5	12	13	12	14	12	12	9	12	12	16	17	15	14	11	14	16	14	10	9	9	5
16	4	5	9	12	8	11	14	16	16	14	13	12	15	12	14	17	18	17	19	15	12	10	11	12
17	10	11	12	14	16	13	22	22	20	18	18	18	22	22	21	19	19	18	18	18	15	18	20	19
18	18	19	20	22	23	25	27	26	27	25	24	22	23	25	24	24	22	21	20	19	19	21	22	17
19	14	9	7	10	13	15	17	14	15	18	19	17	18	16	12	12	13	16	19	18	17	19	20	15
20	12	8	8	12	11	11	14	15	17	28	30	17	14	12	8	7	8	6	7	7	9	11	13	10
21	9	9	9	9	0	4	12	16	16	16	18	18	21	19	18	17	15	17	16	11	9	10	10	5
22	5	5	10	14	17	21	27	30	30	29	29	32	34	34	26	15	11	15	3	0	5	10	7	7
23	1	1	0	3	-3	-7	-8	-7	-6	1	8	6	13	17	16	6	1	4	0	1	-8	1	7	1
24	-18	-22	-22	-19	-23	-17	-10	-10	-10	-17	-33	-35	-34	-38	-38	-35	-35	-31	-30	-33	-29	-23	-18	-15
25	-10	-9	-13	-18	-21	-22	-20	-12	-10	-16	-17	-15	-19	-15	-12	-15	-17	-14	-16	-21	-17	-15	-9	-8
26	-13	-17	-15	-11	-11	-12	-9	-6	-4	-7	-11	-20	-16	-14	-14	-15	-22	-20	-15	-14	-14	-15	-13	-14
27	-9	-17	-21	-25	-31	-25	-15	-14	-22	-15	-12	-12	-14	-18	-18	-21	-18	-18	-12	-11	-6	-4	-1	-2
28	-2	-4	-10	-10	-18	-19	-12	-11	-9	-12	-18	-12	-8	-5	-10	-18	-20	-16	-17	-19	-19	-14	-11	-14
29	-17	-15	-12	-6	-8	-3	-9	-6	-14	-11	0	-5	-5	-9	-8	-5	-3	0	-4	-10	-10	-8	-3	-6
30	-5	-5	-1	-2	-7	-4	-6	-12	-13	-10	-12	-12	-11	-10	-11	-12	-11	-9	-9	-8	-11	-7	-2	-5
31	-4	-5	-8	-10	-10	-10	0	6	6	5	0	-6	-8	-5	-6	-5	-4	-2	-1	-3	-5	-4	1	-2



PRINCIPAL MAGNETIC STORMS

AUGUST 1973

DATE 1973 MO. DA.	STORM TIME UT START	STORM TIME UT END MO. DA. HR	OBS.	GEO-MAG. LAT.	SUDDEN COMMENCEMENT TYPE	AMPLITUDES D(')	AMPLITUDES H(γ)	AMPLITUDES Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO. DA.	3-HOUR PERIOD	K INDEX	RANGES D (')	RANGES H (γ)	RANGES Z (γ)	STORM NUMBERS
708 02	1251	08 02 20	IRKU	40.8N	SC	- 1.6	36	7	M	08 02	5	5	6	77	13	42
	1248	08 03 03	MBOR	21.3N	SC *	- 0.2	+25	--	M	08 22	5	5	2	58	--	42
	1248	-- -- --	HYDE	7.6N	SC	- 0.4	+23	- 2	-	-- --	-	-	--	--	--	42
	1250	08 02 19	KGLN	57.3S	SC	--	--	--	M	08 02	5,6,7	3	--	--	--	42
708 22	10--	08 29 12	COLL	64.6N	..	..	..	..	MS	08 24	4	7	200	1800	1390	43
										08 25	4	7				43
										08 28	5	7				43
										08 29	4	7				43
	10--	08 30 14	SITK	60.0N	..	..	..	..	S	08 24	5	9	130	1290	860	43
	15--	08 29 02	WITT	54.1N	..	..	..	..	MS	08 24	1	6	35	255	80	43
										08 25	7	6				43
										08 27	6	6				43
										08 28	6	6				43
	1210	08 25 12	MBOR	21.3N	..	..	..	..		08 23	7,8	4	--	--	--	43
										08 24	1,2	4				43
	1212	08 24 20	HYDE	7.6N	SC	- 0.1	+ 6	- 1	M	08 23	7	5	6	135	21	43
										08 24	3,5					43
	09--	08 30 15	PMOR	18.6S	..	..	..	..	M	08 24	4,5	5	5	100	40	43
										08 29	4	5				43
	11--	08 30 21	GNAN	43.2S	..	..	..	..	M	08 23	6,7	5	16	110	100	43
										08 24	4,5					43
										08 25	4					43
										08 27	6					43
										08 28	5,6					43
										08 29	1					43
708 23	1240	08 26 21	NEWP	55.1N	SC	1	9	--	MS	08 24	1,4	6	48	212	306	43
	12--	08 29 13	FRED	49.6N	..	..	..	..	MS	08 24	2	6	34	135	70	43
	12--	08 29 17	BOUL	49.0N	..	..	..	..	M	08 24	1	5	33	120	80	43
	13--	08 24 19	IRKU	40.8N	..	..	..	..	M	08 23	6,7	5	22	131	52	43
										08 24	1,3,5	5				43
	12--	08 30 16	TUCS	40.4N	..	..	..	..	M	08 23	6	5	16	110	15	43
										08 24	1,2,3	5				43
										08 24	4,5					43
										08 25	2,3,4	5				43
										08 27	2	5				43
										08 28	2,3	5				43
										08 29	4	5				43
	2330	08 24 30	ALIB	9.5N	..	..	..	..	M	08 24	3,5	5	6	121	42	43
	2330	08 24 30	ANNA	1.5N	..	..	..	..	M	-- --	-	-	5	157	44	43
	2330	08 24 30	TVAN	1.1S	..	..	..	..	M	-- --	-	-	4	179	90	43
	09--	08 26 12	APIA	16.1S	..	..	..	..	M	08 24	4	5	5	102	28	43
	12--	08 25 21	HRMN	33.3S	..	..	..	..	M	08 24	3	5	17	89	64	43
										08 25	7	5				43
	1400	08 25 15	TOOL	46.7S	..	..	..	..	M	08 23	7	5	23	110	40	43
										08 24	3,4	5				43
										08 25	4	5				43
	12--	08 26 05	KGLN	57.3S	..	..	..	..	MS	08 24	5	6	--	--	--	43
708 24	22--	08 25 22	IRKU	40.8N	..	..	..	..	M	08 25	4,7	5	20	112	36	43
708 27	00--	08 30 14	NEWP	55.1N	..	..	..	..	M	08 27	1,2,3	5	39	121	147	43
										08 28	2,3					43
										08 29	2,3,4					43
	01--	08 27 19	IRKU	40.8N	..	..	..	..	MS	08 27	6	6	15	110	26	43
708 28	03--	08 29 14	IRKU	40.8N	..	..	..	..	M	08 28	5,6	5	19	108	35	43
										08 29	3,4	5				43

Reports were received from the following observatories:

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

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

AUGUST 1973

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

The meaning of the station symbols is given in the IAGA-Bulletins nr. 12 and 32. Times of ssc, si and bay-commencements are mean values. If given by ten or more stations they are underlined.

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

02 1249 A: NU MA TL PE KS MB LM AC TW; B: DO WN WI DB VI IK EB HU PP GN KG; C: NI PM (si: A: FU; B: KA SS - bp: B: DU)
22 1212 B: IK HU; C: VI CI MB? PP? TN (si: A: FU; B: WN; C: KA)

Sudden impulses found in the magnetograms (si)

12 2147 A: SI FU LG IK FR; B: WN WI NI EB PE LM PP; C: TL? SS HU TN (ssc: A: MA)

Rapid variations in form of bays (b, bs, bp, bps)

06 0310 b: A: HU; B: WN - bp: B: EB CI MB - bps: A: AC; B: TW

08 2247 bp: A: PE; B: IK EB; C: TL - bps: A: SO MA; B: DO LM; C: PP

25 1926 b: A: WN - bp: A: EB; B: WI NI LM KG - bps: A: MA DB IK TL (si: A: LG)

27 1730 b: A: WN - bs: A: NU - bp: A: WI TL; B: NI EB LM KG - bps: A: IK; B: DB (si: A: LG)
28 1645 b: B: WN - bp: A: MA; B: NI EB KG - bps: A: SO; B: DB IK TL (si: A: LG)

Giant pulsations (pg)

02	1441 - 1500	FUA	
05	1349 - 1749	MA	
05	1440 - 1515	FUA	
19	1345 - 1400	FUA	
27	0900 - 1010	KS	
	1200 - 1240	KS	
	1610 - 1720	KS	
28	2120 - 2330	KS	
29	0335 - 1530	KS	

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

02	1102 - 1114	NI	
08	1309 - 1345	DB	
14	1400 - 1411	SO NI (si: B: FU)	
18	0859 - 0910	LG	

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

AUGUST 1973

North Atlantic

AUG. 1973	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF 02	08	14	20	GEOMAGNETIC INDICES K_{FR} HALF DAY (1)	(2)	A_{FR} OBSERVED
01	5+	7	6o	5o	5−	6o	5	5	6	6	3	1	9
02	6o	6	6−	6−	6+	6o	6	6	6	5	(4)	3	20
03	6+	6	6o	6+	6o	6+	6	6	6	6	2	3	9
04	7−	6	7−	7−	7−	6o	6	6	6	6	2	2	10
05	6+	7	7−	6o	6+	7−	6	6	6	6	2	3	9
06	6+	7	7−	6+	7−	6o	6	5	5	6	3	2	13
07	6+	7	6o	6+	6+	6+	6	6	6	6	2	2	8
08	6+	7	6+	6o	7−	7−	6	6	5	6	3	2	11
09	6+	7	6o	6o	7−	6+	6	6	6	6	2	1	6
10	6+	7	7−	6o	7o	6+	6	6	6	6	2	1	4
11	7−	6	7−	6o	7o	7o	6	6	6	6	1	1	3
12	7−	6	7−	6+	7−	7o	6	6	6	6	1	2	5
13	6+	6	7−	6o	7−	6+	6	6	6	6	2	3	13
14	6+	7	6+	6+	6+	7o	6	6	6	6	2	2	8
15	7−	7	6o	6+	7o	7o	6	5	6	6	2	1	5
16	7−	7	7−	7−	7−	7−	6	6	6	6	1	1	3
17	6+	7	6+	6+	6+	7−	6	6	6	6	1	0	1
18	6+	7	7−	7−	6o	6+	6	6	6	6	1	1	4
19	6+	7	7−	6−	6o	7−	6	6	6	6	2	2	6
20	7−	7	7−	6o	6+	7o	6	6	6	6	2	2	8
21	7−	6	7−	6o	7−	7o	5	6	6	7	2	1	6
22	7−	5	7−	6o	7o	7o	6	6	6	7	1	3	10
23	6+	7	6+	6−	6+	7o	6	5	6	6	3	(4)	17
24	5o	6	5+	5+	4+	6−	6	4	5	5	(6)	(4)	44
25	5−	6	4o	4+	5o	6−	4	4	5	4	(5)	3	29
26	6−	6	5−	6o	6+	6+	4	4	5	5	(4)	3	16
27	5+	6	6−	4+	6−	6o	5	4	5	6	(4)	3	19
28	5+	7	6−	4o	6o	6o	5	5	6	7	(4)	3	23
29	6−	7	6−	5+	6o	6o	5	5	5	6	(4)	3	21
30	5+	5	5−	5−	6+	6o	6	5	6	6	3	2	14
31	6−	5	6o	5o	6+	6o	5	6	6	6	3	2	11

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

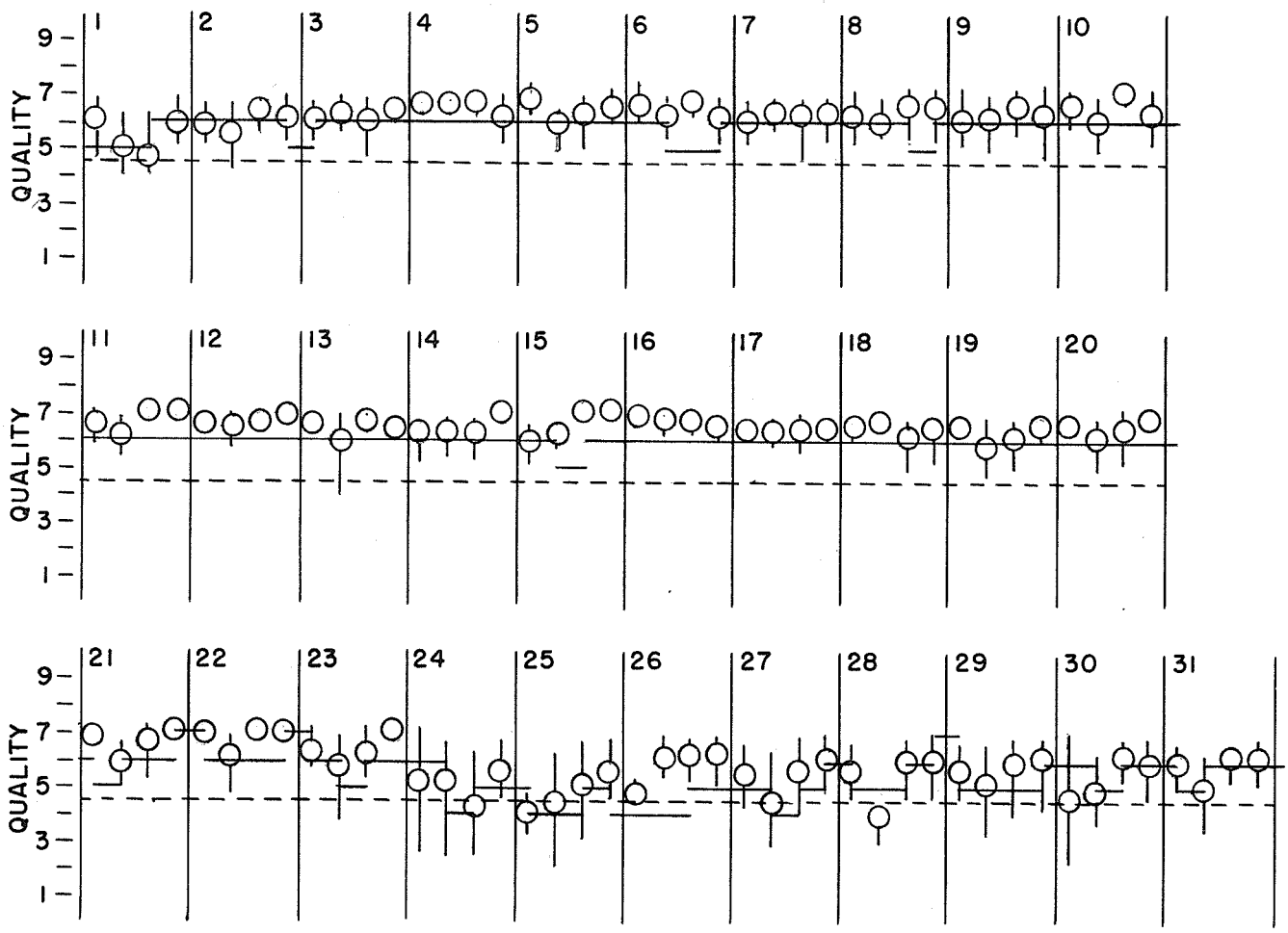
AUGUST 1973

North Atlantic

– Short term forecast
o Quality figure

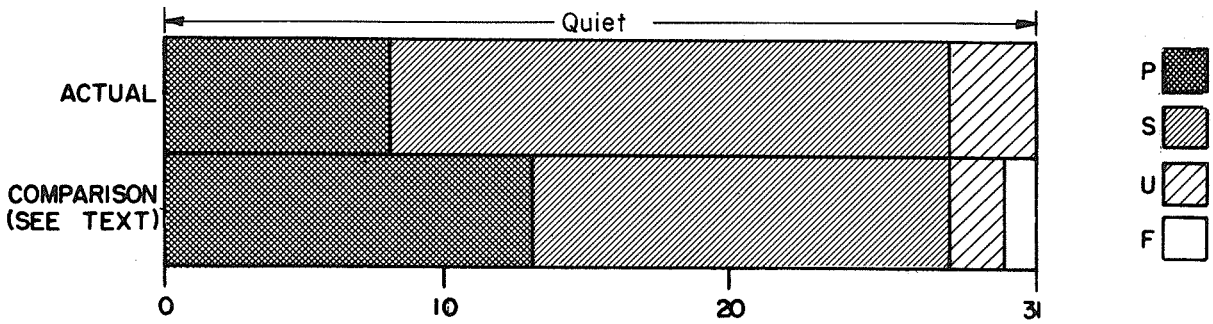
| range of reports

Day



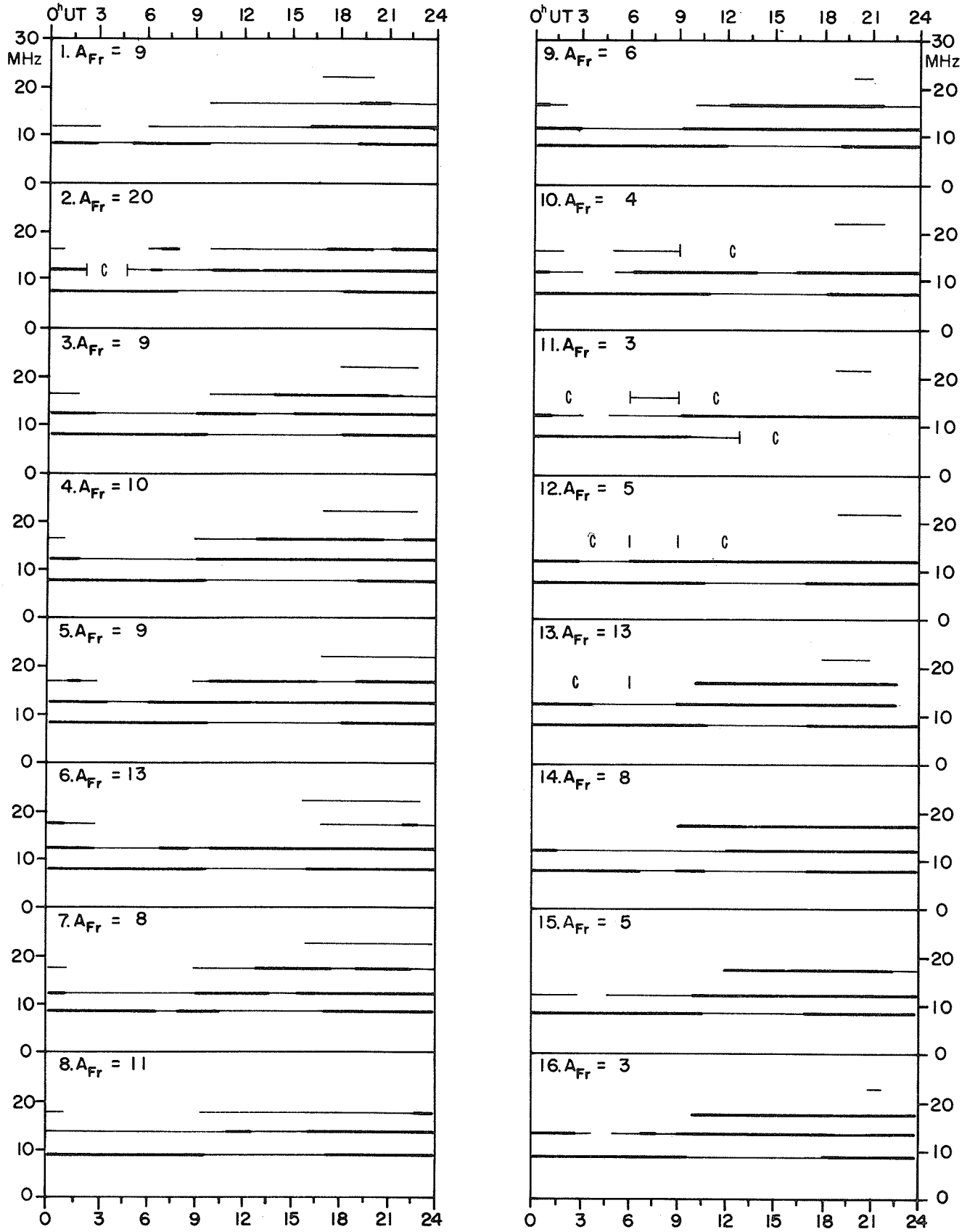
Outcome of advance forecasts of High Latitude radio propagation conditions
(scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



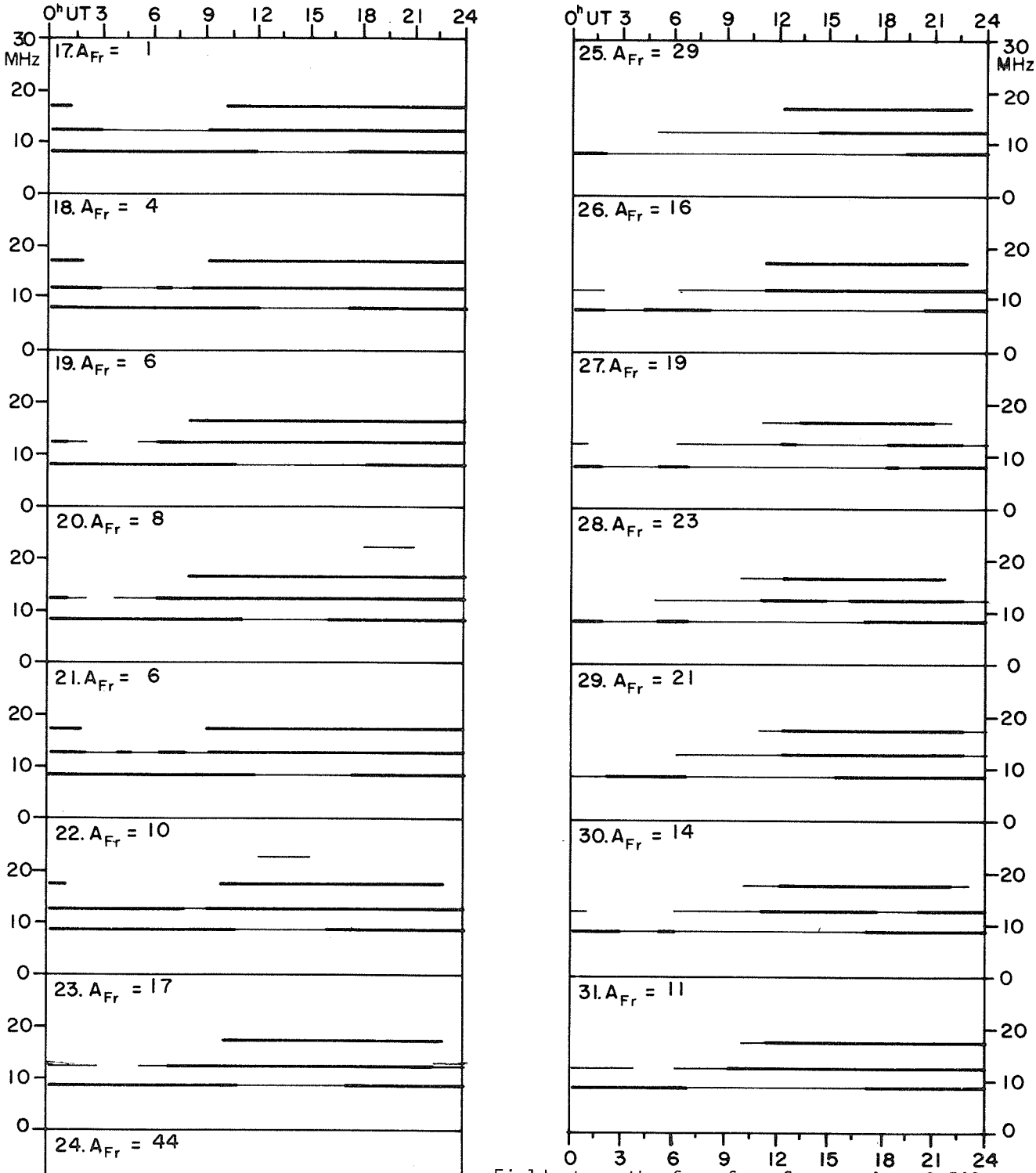
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1973



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1973



Field strengths from four frequencies, 8.542, 12.813, 17.084 and 22.378 MHz, as observed on a Lüchow.- Halifax circuit are represented above. Heavy solid lines represent field strengths ≥-12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line. Adapted from Observations by Deutsche Bundespost

RADIO PROPAGATION QUALITY INDICES

AUGUST 1973

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

Date	Day	Night	D+N
1	4.5	4.7	4.2
2	4.6	4.6	4.4
3	5.7	5.3	5.2
4	6.4	6.5	6.1
5	7.2	6.6	6.4
6	4.7	4.6	4.3
7	6.6	4.0	5.3
8	5.4	6.1	5.2
9	6.3	6.2	5.8
10	6.4	5.5	5.6
11	6.6	6.5	6.1
12	6.9	6.5	6.3
13	6.1	4.1	5.1
14	6.3	4.6	5.3
15	6.1	5.9	5.7
16	6.8	6.5	6.1
17	7.7	6.8	6.8
18	7.2	6.1	6.3
19	6.3	5.3	5.5
20	7.5	6.7	6.6
21	7.3	6.6	6.5
22	6.6	4.9	5.8
23	5.5	2.1	4.2
24	3.0	1.9	2.6
25	4.6	2.9	3.7
26	4.9	2.5	3.8
27	3.5	2.3	3.0
28	4.1	2.2	3.4
29	4.5	2.4	3.5
30	4.5	3.6	4.0
31	6.0	4.9	4.9

USCOMM-NOAA-ASHEVILLE,NC-10-31-73-1125

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."