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Part I (Prompt Reports)

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JULY 1984
JUNE 1984

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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NUMBER 480

(Issued in Two Parts)

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*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in SOLAR-GEOPHYSICAL DATA, No. 461, Part II, pages 103-235.

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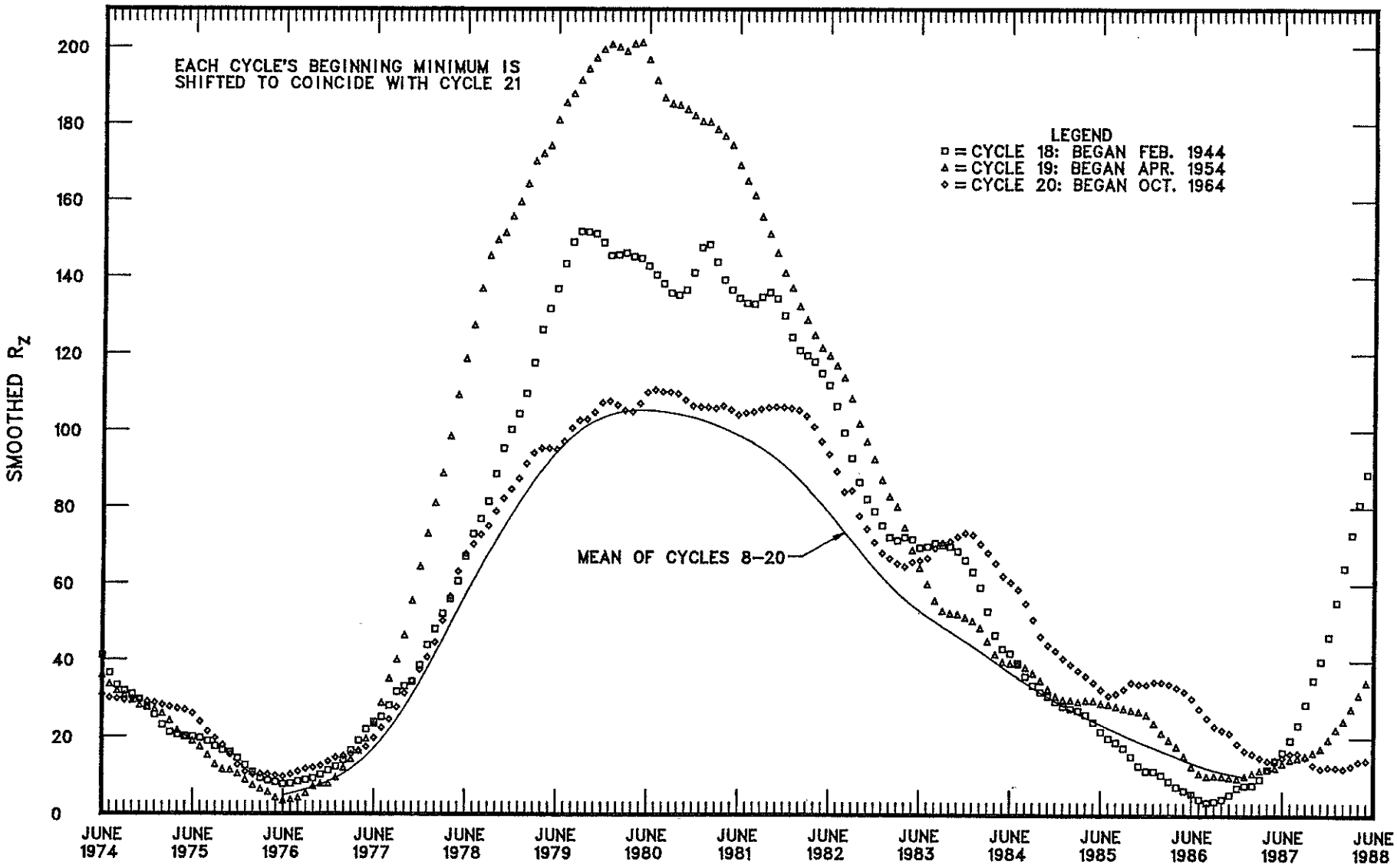


ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES JULY 1984

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
183	01	30	060	098	012	N03W87	0	0	0		01	N03W87	Q	SOLQUIET
						S13W33	0	0	0			S13W33	Q	MAGQUIET
						N05E14	0	0	0			N05E14	Q	
						N13E52	0	0	0			N13E52	Q	
184	02	01	053	098	019	S12W45	0	0	0		02	S12W45	Q	SOLQUIET
						N05W21	0	0	0			N05W21	Q	MAGQUIET
						N05E01	0	0	0			N05E01	Q	
						N13E39	0	0	0			N13E39	Q	
185	03	02	088	100	012	N14W66	0	0	0		03	N14W66	Q	SOLQUIET
						S12W58	0	0	0			S12W58	Q	MAGQUIET
						N05W12	0	0	0			N05W12	Q	
						N12E25	2	0	0			N12E25	E	
						N04E34	0	0	0			N04E34	Q	
						N07E65	0	0	0			N07E65	Q	
						N19E68	0	0	0			N19E68	Q	
186	04	03	106	101	014	N04W76	0	0	0		04	N04W76	Q	SOLQUIET
						S13W71	0	0	0			S13W71	Q	MAGQUIET
						N05W25	0	0	0			N05W25	Q	
						N13E11	0	0	0			N13E11	Q	
						N05E19	0	0	0			N05E19	Q	
						N08E54	0	0	0			N08E54	Q	
						N02E69	1	0	0			N02E69	Q	
						S10E71	1	0	0			S10E71	Q	
187	05	04	121	102	015	S12W83	0	0	0		05	S12W83	Q	SOLQUIET
						S03W68	0	0	0			S03W68	Q	MAGQUIET
						N05W40	0	0	0			N05W40	Q	
						N14W00	2	0	0			N14W00	Q	
						N07E06	0	0	0			N07E06	Q	
						N09E41	0	0	0			N09E41	Q	
						N02E59	0	0	0			N02E59	Q	
						S08E59	1	1	0			S08E59	Q	
188	06	05	087	104	017	N05W52	0	0	0	PRESTO TENFLARE 110 FLUX UNITS	06	N05W52	Q	SOLQUIET
						N12W15	0	0	0	04/0242 UT DURATION 13 MINUTES		N12W15	Q	MAGQUIET
						N06W07	0	0	0			N06W07	Q	
						N10E28	0	0	0			N10E28	Q	
						S08E43	0	0	0			S08E43	Q	
						N02E47	1	0	0			N02E47	Q	
						S12E47	0	0	0			S12E47	Q	
189	07	06	087	097	011	N04W67	0	0	0		07	N04W67	Q	SOLQUIET
						N12W30	1	0	0			N12W30	Q	MAGQUIET
						N08W18	0	0	0			N08W18	Q	
						N09E14	1	0	0			N09E14	Q	
						S07E28	0	0	0			S07E28	Q	
						N01E30	0	0	0			N01E30	Q	
						S13E32	0	0	0			S13E32	Q	
190	08	07	110	097	013	N04W79	0	0	0		08	N04W79	Q	SOLQUIET
						N13W41	3	0	0			N13W41	Q	MAGQUIET
						N09W33	0	0	0			N09W33	Q	
						N10E03	0	0	0			N10E03	Q	
						S06E17	1	0	0			S06E17	Q	
						S11E20	0	0	0			S11E20	Q	
						N02E21	0	0	0			N02E21	Q	
191	09	08	104	098	011	N04W61	0	0	0		09	N04W61	Q	SOLQUIET
						N13W55	2	0	0			N13W55	Q	MAGQUIET
						N09W11	0	0	0			N09W11	Q	
						N03E02	0	0	0			N03E02	Q	
						S07E02	3	0	0			S07E02	Q	
						S11E07	0	0	0			S11E07	Q	
						S09E52	4	0	0			S09E52	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES JULY 1984

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
192	10	09	090	101	014	N13W70	0	0	0		10	N13W70	Q	SOLQUIET
						N09W24	2	0	0			N09W24	Q	MAGQUIET
						S07W11	2	0	0			S07W11	Q	
						S11W06	0	0	0			S11W06	Q	
						S09E38	0	0	0			S09E38	Q	
						S07E75	0	0	0			S07E75	Q	
193	11	10	113	098	015	N13W82	0	0	0		11	N13W82	Q	SOLQUIET
						N09W38	0	0	0			N09W38	Q	MAGQUIET
						S03W27	0	0	0			S03W27	Q	
						S09W22	0	0	0			S09W22	Q	
						S10W19	0	0	0			S10W19	Q	
						S00W17	0	0	0			S00W17	Q	
						S09E24	0	0	0			S09E24	Q	
						S07E60	0	0	0			S07E60	Q	
194	12	11	077	094	010	S04W41	0	0	0		12	S04W41	Q	SOLQUIET
						S08W36	1	0	0			S08W36	Q	MAGALERT
						S10W32	0	0	0			S10W32	Q	MINOR 12/13
						S09E11	0	0	0			S09E11	Q	RECURRENCE
						S06E47	1	0	0			S06E47	Q	
						S16E71	1	0	0			S16E71	Q	
195	13	12	090	092	015	S04W54	0	0	0		13	S04W54	Q	SOLQUIET
						S07W48	0	0	0			S07W48	Q	MAGALERT
						S10W46	0	0	0			S10W46	Q	MINOR 13/15
						S02W42	0	0	0			S02W42	Q	RECURRENCE
						S08W03	1	0	0			S08W03	Q	
						S06E32	0	0	0			S06E32	Q	
						S15E57	1	0	0			S15E57	Q	
196	14	13	062	090	045	S04W70	0	0	0	PRESTO MAGSTORM 13/06XX UT	14	S04W70	Q	SOLQUIET
						S08W17	0	0	0			S08W17	Q	MAGALERT
						S07E18	2	0	0			S07E18	Q	MINOR 14/16
						S16E45	0	0	0			S16E45	Q	RECURRENCE
197	15	14	042	091	043	S09W31	0	0	0		15	S09W31	Q	SOLQUIET
						S06E06	2	0	0			S06E06	Q	MAGALERT
						S16E33	0	0	0			S16E33	Q	RECURRENCE 15/16
198	16	15	052	089	024	S08W47	1	0	0		16	S08W47	Q	SOLQUIET
						S15W09	0	0	0			S15W09	Q	MAGALERT
						S07W07	0	0	0			S07W07	Q	MINOR 16/17
						S16E22	0	0	0			S16E22	Q	RECURRENCE
199	17	16	040	087	020	S09W60	5	0	0		17	S09W60	Q	SOLQUIET
						S16E07	0	0	0			S16E07	Q	MAGALERT
						S11E22	0	0	0			S11E22	Q	MINOR 17/XX RECURRENCE
200	18	17	037	085	032	S09W73	3	0	0		18	S09W73	Q	SOLQUIET
						N11W44	0	0	0			N11W44	Q	MAGALERT
						S18W01	1	0	0			S18W01	Q	MINOR 18/XX RECURRENCE
201	19	18	080	083	018	S08W88	0	0	0		19	S08W88	Q	SOLQUIET
						S14W44	0	0	0			S14W44	Q	MAGALERT
						S17W13	0	0	0			S17W13	Q	MINOR 19/XX
						S12W01	0	0	0			S12W01	Q	
						S07E32	0	0	0			S07E32	Q	
						S15E33	0	0	0			S15E33	Q	
202	20	19	061	077	017	N10W73	0	0	0		20	N10W73	Q	SOLQUIET
						S13W59	4	0	0			S13W59	Q	MAGNIL
						N20W38	0	0	0			N20W38	Q	
						S07E19	0	0	0			S07E19	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES JULY 1984

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S13E21	0	0	0			S13E21	Q	
203	21	20	067	074	013	N11W87	3	0	0		21	N11W87	Q	SOLQUIET
						S06W74	0	0	0			S06W74	Q	MAGQUIET
						S15W10	0	0	0			S15W10	Q	
						S08E02	3	0	0			S08E02	Q	
						S16E07	0	0	0			S16E07		
204	22	21	033	084	010	S16W17	0	0	0		22	S16W17	Q	SOLQUIET
						S06W12	2	0	0			S06W12	Q	MAGQUIET
205	23	22	030	084	010	S07W26	1	0	0		23	S07W26	Q	SOLQUIET
						S18E72	0	0	0			S18E72	Q	MAGQUIET
206	24	23	039	085	011	S07W40	0	0	0		24	S07W40	Q	SOLQUIET
						S18E57	1	0	0			S18E57	Q	MAGQUIET
						N01E65	0	0	0			N01E65	Q	
207	25	24	059	084	013	S07W53	0	0	0		25	S07W53	Q	SOLQUIET
						S12W49	0	0	0			S12W49	Q	MAGQUIET
						S06W43	0	0	0			S06W43	Q	
						S17E44	0	0	0			S17E44	Q	
						N01E51	0	0	0			N01E51	Q	
208	26	25	046	083	009	S08W68	0	0	0		26	S08W68	Q	SOLQUIET
						S07W59	0	0	0			S07W59	Q	MAGQUIET
						S18E32	0	0	0			S18E32	Q	
						N02E37	0	0	0			N02E37	Q	
209	27	26	023	081	011	S07W83	0	0	0		27	S07W83	Q	SOLQUIET
						S18E19	0	0	0			S18E19	Q	MAGQUIET
210	28	27	011	081	015	S17E05	0	0	0		28	S17E05	Q	SOLQUIET
														MAGQUIET
211	29	28	011	080	021	S17W09	0	0	0		29	S17W09	Q	SOLQUIET
														MAGQUIET
212	30	29	015	080	013	S19W20	0	0	0		30	S19W20	Q	SOLQUIET
														MAGQUIET
213	31	30	025	080	010	S17W34	2	0	0		31	S17W34	Q	SOLQUIET
						S17E70	0	0	0			S17E70	Q	MAGQUIET
214	01	31	014	081	015	S16E55	0	0	0		01	S16E55	Q	SOLQUIET
														MAGQUIET

NO=MESSAGE SERIAL NUMBER, DI=DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF=WOLF NUMBER, 10CM=10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LATITUDE AND LONGITUDE, TO=TOTAL NUMBER OF FLARES, M=NUMBER OF M FLARES, X= NUMBER OF X FLARES, DA=DATE OF FORECAST, DE=DESCRIPTION, Q=QUIET, E=ERUPTIVE, A=ACTIVE, P=PROTON.

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

PRESTO TOYOKAWA 04/0345 UT TENFLARE 110 FLUX UNITS 04/0242 UT DURATION 13 MINUTES
PRESTO KAKIOKA 14/0100 UT MAGSTORM 13/06XX UT.

INTERNATIONAL* (R_I) RELATIVE SUNSPOT NUMBERS

Day	1983 Final Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	1984 Prov Apr	May	Jun	Jul
01	131	46	29	17	26	10	110	74	103	97	48	33
02	128	56	51	22	23	16	82	78	94	89	44	35
03	105	59	63	37	15	17	67	66	85	68	45	61
04	103	69	74	51	14	18	61	54	81	49	34	80
05	79	84	65	66	17	21	66	65	61	38	28	72
06	49	78	75	74	39	29	76	49	70	24	23	58
07	60	72	87	84	41	37	79	51	50	35	34	64
08	70	68	99	90	48	38	94	64	36	54	31	74
09	69	74	106	70	71	50	115	60	25	72	26	63
10	63	70	121	68	82	44	123	46	12	85	31	70
11	88	65	136	56	76	48	118	65	21	94	37	51
12	103	41	122	43	66	51	108	72	26	100	39	54
13	104	36	100	36	66	48	82	79	24	118	41	44
14	97	36	80	29	52	46	77	88	32	97	50	32
15	93	42	72	28	50	44	80	112	59	85	80	30
16	80	33	61	38	35	46	53	117	60	97	83	25
17	72	35	60	31	46	51	51	105	56	83	73	21
18	71	45	63	36	36	49	50	95	73	70	62	26
19	54	40	46	26	31	51	54	90	82	78	55	28
20	40	32	26	12	25	69	54	103	69	70	53	18
21	52	36	18	18	21	76	76	98	68	65	46	12
22	50	38	22	0	15	64	100	87	55	77	48	22
23	51	42	22	0	20	70	121	89	56	83	54	25
24	35	46	20	0	22	70	117	80	80	86	58	38
25	52	42	18	0	21	99	117	97	99	70	41	30
26	53	50	20	7	23	105	101	97	124	87	49	25
27	51	51	12	10	12	99	78	96	121	86	40	9
28	55	48	15	12	10	106	78	98	114	63	41	9
29	63	43	16	19	11	110	88	94	114	74	50	12
30	59	33	15	21	13	102		107	107	70	42	16
31	45		16		9	82		113		63		10
Mean	72	50	56	33	33	57	85	84	69	75	46	37

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 66.6 in 1983.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Aug 83	Sep	Oct	Nov	Dec	Jan 84	Feb	Mar	Apr	May	Jun	Jul
01	151.1	110.5*	117.5	98.3	90.5	84.3	154.6	143.6	135.7	153.7	116.1	101.7
02	145.4*	110.9	120.4	97.6	88.9	87.4	142.0*	138.2	134.6*	139.3*	111.3	103.6
03	139.4*	106.4	123.1	96.9	88.5	89.5	131.4	122.5	128.8*	123.1	109.6	104.8
04	136.5	110.5	125.1	103.1	91.9	91.0	126.0	114.4*	129.5	113.5*	106.8	105.7
05	136.5	117.6	126.6*	105.1	92.0	88.2	114.2	109.3	118.7	114.9	104.6	104.4*
06	142.0	120.7	132.7	---	97.1*	85.6	111.8	109.5	112.1*	108.1	98.9	100.3
07	141.9	118.6	133.9	108.5	98.6	86.5	113.6	105.0	107.8	118.3	97.3	100.1
08	141.0	118.4	131.1*	103.5	98.3	92.3	127.2	103.8	100.7	121.9	94.6	101.1
09	142.9	115.3	130.4	99.2	108.2	94.4	139.9	102.4	94.9	138.3	93.6	104.5
10	151.6	109.7	133.6*	100.8	108.0	95.2	136.7*	98.8	93.9	150.9	92.3	101.3
11	151.3	110.5	138.3	96.7	101.7*	96.8	141.1*	98.6	97.3	147.9	93.2	96.8
12	156.7*	104.9*	133.7	89.6	101.1	101.1	135.8*	102.3*	107.2	148.2*	93.0	94.7
13	147.3	104.4	133.5*	91.9	100.8	102.1	128.4	114.7	113.7	151.4	98.6	92.6
14	141.6*	105.2	131.5*	91.0	96.5	99.2	120.3*	121.1	118.8	146.9	110.2	92.2*
15	135.8*	106.3*	127.0	90.9	92.2	97.8	113.4	134.4	119.7	139.6	116.5*	92.2
16	132.1	106.3*	117.2A	90.6	93.5*	96.6*	114.5*	124.0	117.2	137.3	110.3	90.1
17	126.8	105.1	110.9*	85.6	92.0	95.2	116.5	129.1	122.9*	130.1	109.5*	87.3
18	122.2	102.5	103.6	84.4	90.1	95.0	122.2*	125.8*	119.9	131.9	108.9	85.5
19	117.7	101.2	105.2	82.3	86.2	93.4	128.4*	126.5	112.5*	137.6	107.8	84.7
20	118.7	100.4	99.1	80.3	83.6	102.2	134.6	126.3	124.1*	138.0	106.6	84.8
21	114.2	103.0	89.3	79.3	82.3	103.3	143.8	122.4	127.7	145.3*	103.4*	86.7
22	110.8	106.0	87.2	80.1	82.9	110.5	158.0	122.7	130.8	130.1	104.6	86.3
23	110.8	112.6	87.8	78.2	83.0	113.3	166.1	115.1	136.6*	130.0	105.3	87.3
24	108.7	111.8	88.6	78.8	83.1	126.4*	172.9*	113.0	142.9	126.9	103.6	86.8
25	104.2	110.5*	89.2	79.2	82.4*	146.8	169.4*	111.6	152.4	125.7*	104.6	85.9
26	105.8	114.6*	89.1	80.4	82.9	164.8*	164.2	120.2	174.0	121.0	100.1	83.4
27	103.7	119.8	88.9	84.4	83.5	172.3	154.3	129.1*	183.7*	120.3	101.5	83.0
28	102.8	114.8	90.4	86.6	80.7	168.9	148.8	135.9	182.6*	118.5	99.5	82.5
29	105.7	114.5	90.7	89.4	81.1	174.6	148.1	138.1*	178.2*	121.0	100.3	82.3
30	104.0	113.0	92.6	90.0	81.3	161.5		143.8	170.8	119.7A	101.1	82.2
31	104.2		95.5*		83.8	169.3		143.7		115.9		83.0
Mean	127.5	110.2	111.7	90.4	90.5	112.4	137.2	120.8	129.7	131.1	103.5	92.2

A = interpolated value; --- = no observation.
*Adjusted for burst in progress at time of measurement.
The yearly mean 2800 MHz flux adjusted to 1 astronomical unit equaled 119.8 in 1983.

DAILY SOLAR INDICES

JULY 1984

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (606)	SGMR (410)	SGMR (245)
01	183	15	33	35	98.4	575	266	124	101.7	104	87	75	29	15
02	184	16	35	39	100.2	574	273	123	103.6	109	87	71	29	13
03	185	17	61	64	101.4	580	279	128	104.8	112	92	67	26	13
04	186	18	80	82	102.2	579	286	128	105.7	112	92	75	30	14
05	187	19	72	74	101.0*	577	271	132	104.4*	112	98	65	28	13
06	188	20	58	56	97.0	571	269	125	100.3	104	94	60	26	12
07	189	21	64	66	96.8	---	---	---	100.1	---	--	--	--	--
08	190	22	74	72	97.8	582	271	126	101.1	107	91	61	27	13
09	191	23	63	67	101.1	585	281	129	104.5	107	92	81	31	17
10	192	24	70	70	98.0	579	267	126	101.3	105	88	73	29	17
11	193	25	51	59	93.6	567	268	125	96.8	102	85	58	29	12
12	194	26	54	50	91.7	578	261	122	94.7	100	83	70	27	13
13	195	27	44	42	89.6	577	271	119	92.6	95	81	68	28	12
14	196	1	32	37	89.3*	576	269	120	92.2*	97	83	71	28	13
15	197	2	30	33	89.3	571	269	118	92.2	97	81	66	27	14
16	198	3	25	24	87.2	541	254	116	90.1	91	80	72	27	13
17	199	4	21	16	84.5	582	266	114	87.3	92	77	69	27	13
18	200	5	26	16	82.8	374	199	86	85.5	65	72	65	27	14
19	201	6	28	20	82.0	574	268	113	84.7	88	74	65	25	11
20	202	7	18	13	82.1	571	254	111	84.8	87	70	61	24	12
21	203	8	12	15	84.0	558	260	114	86.7	89	74	69	26	13
22	204	9	22	22	83.6	570	261	116	86.3	92	73	58	25	13
23	205	10	25	28	84.6	563	275	116	87.3	92	72	64	25	13
24	206	11	38	33	84.1	563	267	116	86.8	89	75	63	25	12
25	207	12	30	28	83.2	576	275	116	85.9	89	74	48	24	13
26	208	13	25	21	80.8	570	278	115	83.4	85	71	59	25	12
27	209	14	9	11	80.5	480	219	98	83.0	83	68	47	23	12
28	210	15	9	10	80.0	574	260	114	82.5	87	71	57	23	11
29	211	16	12	14	79.8	565	274	114	82.3	85	71	56	24	12
30	212	17	16	4	79.7	564	269	111	82.2	83	72	52	23	11
31	213	18	10	10	80.6	576	273	115	83.0	87	75	54	27	13
Mean			37	36	89.3	562	265	117	92.2	95	80	64	26	13

*Adjusted for burst in progress at time of measurement.

The observed and the adjusted Ottawa fluxes tabulated above are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. The letter "A" following an entry designates an interpolated flux. Numbers in parentheses in the column headings denote frequencies in MHz.

Equipment problems produced the gaps shown here in the Air Weather Service's Sagamore Hill (SGMR) observations.

The International and American sunspot numbers shown above are preliminary values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

JULY 1984

	RELATIVE SUNSPOT NUMBERS						2800 MHz RADIO FLUX	
	Zurich or Internat (Ri)		American (Ra)		Derived (Rs)		Adjusted to 1 AU (Sa)	
Date	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Aug 80	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.1	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124	121.9	124	113.9	134	162.9	182
May	82.2	120	82.6	120	97.7	129	147.9	177
Jun	110.4	117	113.5	118	129.6	127	177.4	175
Jul	106.1	115	113.3	117	116.0	125	164.8	174
Aug	107.6	109	110.5	111	123.9	120	172.1	168
Sep	118.8	101	117.8	103	118.5	112	167.1	161
Oct	94.7	96	90.1	97	111.8	106	160.9	155
Nov	98.1	95	93.2	95	114.8	103	163.7	153
Dec	127.0	95	145.0	95	146.7	101	193.2	151
Jan 83	84.3	93	82.8	93	86.7	98	137.7	148
Feb	51.0	90	53.4	90	67.2	94	119.6	145
Mar	66.5	86	60.5	85	64.7	90	117.3	141
Apr	80.7	82	74.5	81	67.5	85	119.9	136
May	99.2	71	97.7	77	86.1	80	137.1	131
Jun	91.1	70	93.1	69	92.4	72	143.0	124
Jul	82.2	66	82.2	63	77.4	66	129.1	118
Aug	71.8	66	69.2	63	75.7	66	127.5	118
Sep	50.3	68	47.4	66	57.0	67	110.2	119
Oct	55.8	68*	52.3	66	58.6	67	111.7	120
Nov	33.3	59*	30.2	65	35.6	67	90.4	120
Dec	33.4	64*	32.3	62	35.7	65	90.5	118
Jan 84	57.0	60*	54.4	61	59.4	61	112.4	115
Feb	85.4	58(2)*	81.5	59	86.2	59	137.2	---
Mar	83.5	56(6)*	83.0	57	68.5	57	120.8	---
Apr	68.6†	53(9)*	66.5	54	78.1	54	129.7	---
May	75.1†	51(11)*	72.1	52	79.6	52	131.1	---
Jun	46.2†	51(12)*	45.2	51	49.8	51	103.5	---
Jul	37.0†	49(14)*	---	50	37.6	50	92.2	---
Aug	---	48(15)*	---	48	---	48	---	---
Sep	---	46(16)*	---	46	---	46	---	---
Oct	---	44(17)*	---	44	---	44	---	---
Nov	---	42(17)*		42		43		
Dec	---	40(17)*	---	41	---	41	---	---
Jan 85	---	39(17)*	---	39	---	39	---	---

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Underlined entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. All tabulated entries of the American sunspot number are final values. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

†International numbers replaced the Zurich values in January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

JULY 1984

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12*	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	101	96	95	95
1983	93	90	86	82	71	71	66	66	68	68	59	64
1984	60	58 (2)	56 (6)	53 (9)	51 (11)	51 (12)	49 (14)	48 (15)	46 (16)	44 (17)	42 (17)	40 (17)
1985	39 (17)	37 (17)	36 (16)	35 (17)	34 (18)	32 (18)	31 (17)	29 (16)	29 (15)	28 (16)	27 (16)	27 (17)
1986	26 (17)	26 (17)	25 (17)	23 (16)	22 (15)	20 (15)	19 (15)	17 (15)	16 (14)	16 (13)	15 (12)	15 (11)

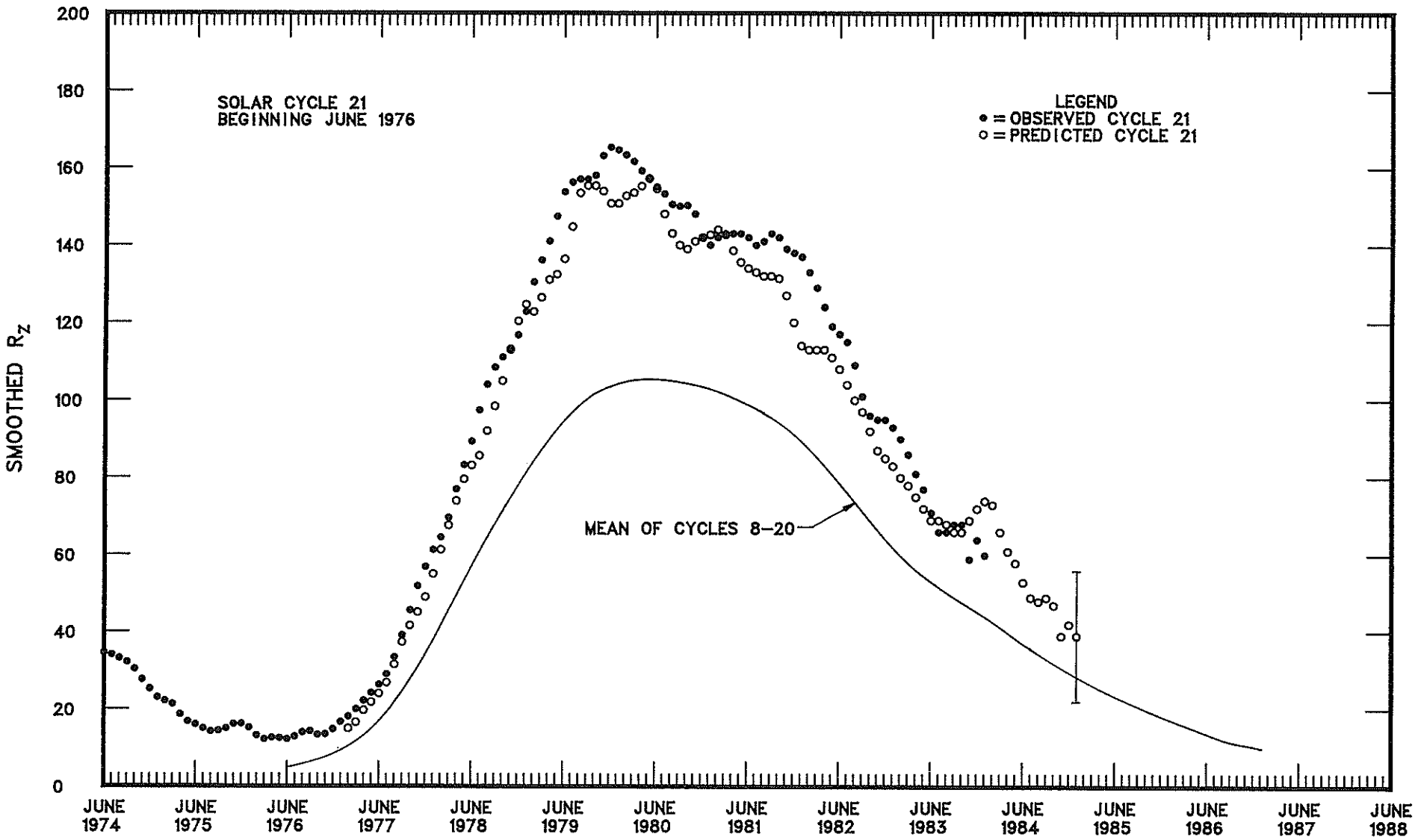
An asterisk marks the minimum and the maximum of Sunspot Cycle 21.

For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through March 1984, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1984.

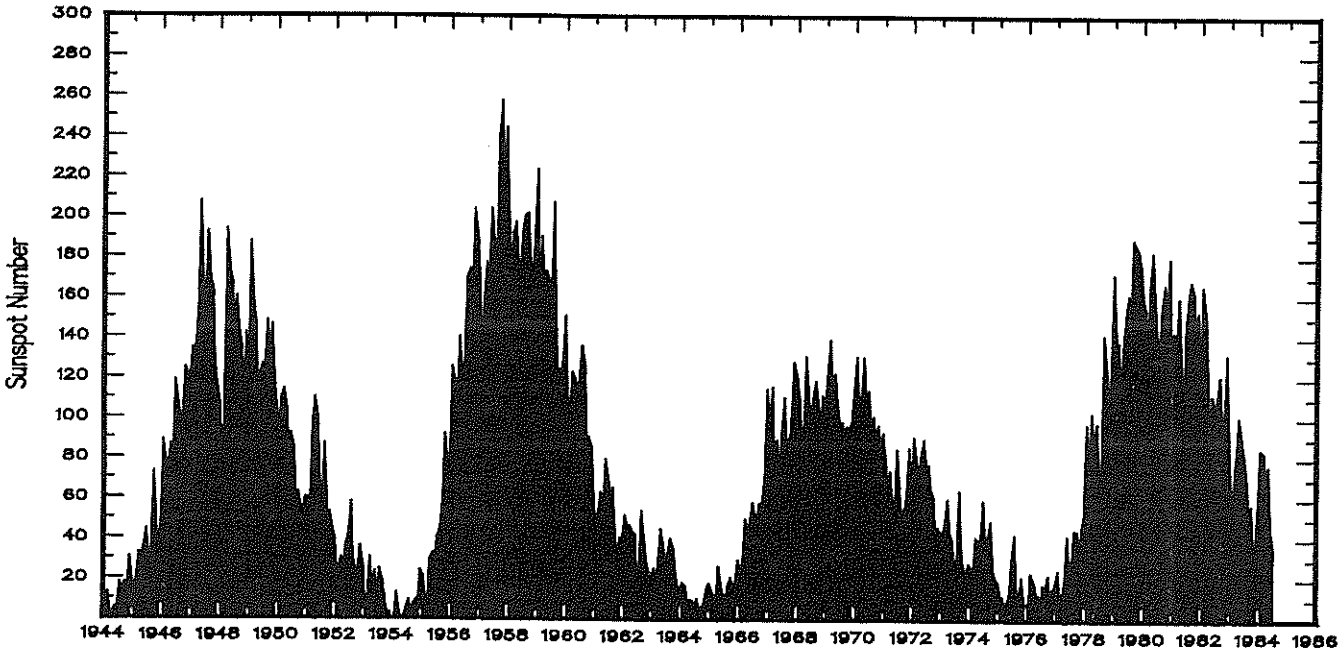
The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1984 edition of the "Solar-Geophysical Data" supplement.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number in parentheses from the predicted value generates the lower limit. Consider, for example, the January 1985 prediction tabulated above. There exists a 90% chance that in January 1985 the actual smoothed sunspot number will fall somewhere between 22 and 56.

THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – July 1984



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4
1984	57.0	85.4	83.5	68.6*	75.1*	46.2*	37.0*					

*Provisional

H - ALPHA S O L A R F L A R E S

JULY 1984

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
PALE	02	1755	1755	1804	N11	E30	4525	07	5.0	9	SF		3	C		102		
RAMY	02	1827	1828	1849	N12	E33	4525	07	5.3	22	SF	C 1.6	3	C		29		
HOLL	03	1512	1513	1516	N03	E75		07	9.2	4	SF		3	C		21		
HOLL	03	1754	1754	1759	S06	E77	4532	07	9.5	5	SF		3	C		10		
PALE	04	0051	0212	0246D	S08	E68	4532	07	9.1	115D	SF		3	C		54		K
PALE	04	0051	0246U	0246D	S08	E68	4532	07	9.1	115D	2B	M 1.4	3	C		379		K
YUNN	04	0244	0250	0306	S10	E79		07	10.0	22	2B			C		189		
HOLL	04	1705	1706	1711	N11	E06	4525	07	5.2	6	SF		3	C		31		
HOLL	04	2357	0004	0007	N16	E03	4525	07	5.2	10	SF		3	C		25		F
GOES	05	1504	1518	1528						24		C 3.1						
PALE	05	1748	1749	1813	N02	E52	4533	07	9.6	25	SB		3	C		81		FE
HOLL	05	1749E	1750	1812D	N03	E50	4533	07	9.5	23D	SB		3	C		90		FH
RAMY	06	1905	1906	1928	N09	E17	4528	07	8.1	23	SN		3	C		58		
HOLL	06	1905	1912	1935	N09	E17	4528	07	8.1	30	SN		3	C		89		F
HOLL	06	1936	1938	1952	N17	W21	4525	07	5.2	16	SF		3	C		78		F
RAMY	07	1336	1339	1358	S07	E25	4532	07	9.4	22	SF		3	C		50		F
HOLL	07	1336	1338	1402	S07	E25	4532	07	9.4	26	SF		3	C		44		F
RAMY	07	1450	1456	1520	N10	W33	4525	07	5.1	30	SF		3	C		72		F
HOLL	07	1452	1453	1459	N13	W34	4525	07	5.1	7	SF		3	C		33		
HOLL	07	1501	1502	1522	N12	W35	4525	07	5.0	21	SF		3	C		58		
RAMY	07	1822	1825	1831	S00	E27	4533	07	9.8	9	SF		3	C		27		F
HOLL	07	1822	1824	1831	S01	E27	4533	07	9.8	9	SF		3	C		29		F
RAMY	07	1834	1839	1850	N11	W34	4525	07	5.2	16	SF		3	C		47		F
HOLL	07	2116	2118	2128	N03	E21	4533	07	9.5	12	SN		3	C		98		
HOLL	07	2356	0001	0032	N12	W37	4525	07	5.2	36	SF		3	C		104		F
WEND	08	0658	0701	0718	S10	E11		07	9.1	20	SF			C	0701	81	.9	
ATHN	08	0700	0702	0706D	S11	E10		07	9.0	6D	SN		3	V	0702	64	.7	
HOLL	08	1354	1354	1407	S10	E57		07	12.9	13	SF		3	C		15		
RAMY	08	1411	1412	1424	N13	W46	4525	07	5.1	13	SF		3	C		25		
HOLL	08	1503	1504	1509	N13	W44	4525	07	5.3	6	SF		3	C		32		
HOLL	08	1541	1544	1600	S08	E11	4532	07	9.5	19	SF		3	C		30		F
RAMY	08	1544	1545	1555	S07	E11	4532	07	9.5	11	SF		3	C		30		
RAMY	08	1819	1829	1851	S08	E09	4532	07	9.4	32	SF		3	C		78		F
HOLL	08	1822	1827	1848	S09	E09	4532	07	9.4	26	SF		3	C		56		F
HOLL	08	1909	1914	1959	S10	E56		07	13.0	50	SN		3	C		44		
PALE	08	1912	1914	1922	S09	E54		07	12.9	10	SF		3	C		71		
RAMY	08	1912	1915	1924	S09	E55		07	12.9	12	SN		3	C		27		
RAMY	08	1940	1944	2001	S09	E55		07	12.9	21	SF		3	C		19		
PALE	08	2125	2126	2158	S08	E53		07	12.9	33	SN		3	C		23		F
PALE	08	2200	2208	2219	S09	E55		07	13.0	19	SF		3	C		25		F
RAMY	09	1556	1557	1605	S10	E03	4532	07	9.9	9	SF		3	C		26		
HOLL	09	1802	1803	1810	N10	W21	4528	07	8.2	8	SF		3	C		38		F
HOLL	09	2004	2005	2008	N10	W23	4528	07	8.1	4	SF		3	C		33		
HOLL	09	2013	2013	2018	S09	W03	4532	07	9.6	5	SF		3	C		25		
GOES	09	2240	2325	2348						68		C 1.2						
HOLL	10	0051	0053	0057	S13	W08	4536	07	9.4	6	SF		3	C		34		
YUNN	10	0054E	0054U	0055D	S12	W08		07	9.4	1D	SN			P	0054	16	.2	
BUCA	10	0630	0638	0700	S14	W05		07	9.9	30	SF			C	0638	129	1.3	E
YUNN	10	0636	0640	0700	S06	W06		07	9.8	24	SN			C		94	1.0	
HOLL	10	1621	1621U	1635	S13	W15	4536	07	9.5	14	SF		3	C		26		
RAMY	10	1622	1622	1636	S13	W15	4536	07	9.6	14	SF		3	C		45		
GOES	10	2057	2103	2107						10		C 1.2						
BUCA	11	0742	0749	0804	S10	W14		07	10.3	22	SF			P	0749	107	1.2	E
YUNN	11	0854	0914U	0918D	S07	W28		07	9.3	24D	SN			P	0914	31	.4	U
ATHN	11	0901	0903	0915	S17	E71		07	16.8	14	SN		3	V	0903	48	.2.5	
RAMY	11	1200	1201	1220	S05	E52	4539	07	15.4	20	SF		3	C		23		
RAMY	11	1309	1310	1321	S10	W25	4532	07	9.7	12	SF		3	C		28		F
RAMY	12	1302	1307	1353	S10	E04	4537	07	12.8	51	SF		3	C		62		F
HOLL	12	1310	1312	1331	S10	E03	4537	07	12.8	21	SF		3	C		72		F
HOLL	12	1339	1348	1357	S12	E00	4537	07	12.6	18	SF		3	C		24		
PALE	12	1918	1919	1924	S14	E61	4541	07	17.4	6	SF		3	C		17		

H - ALPHA S O L A R F L A R E S

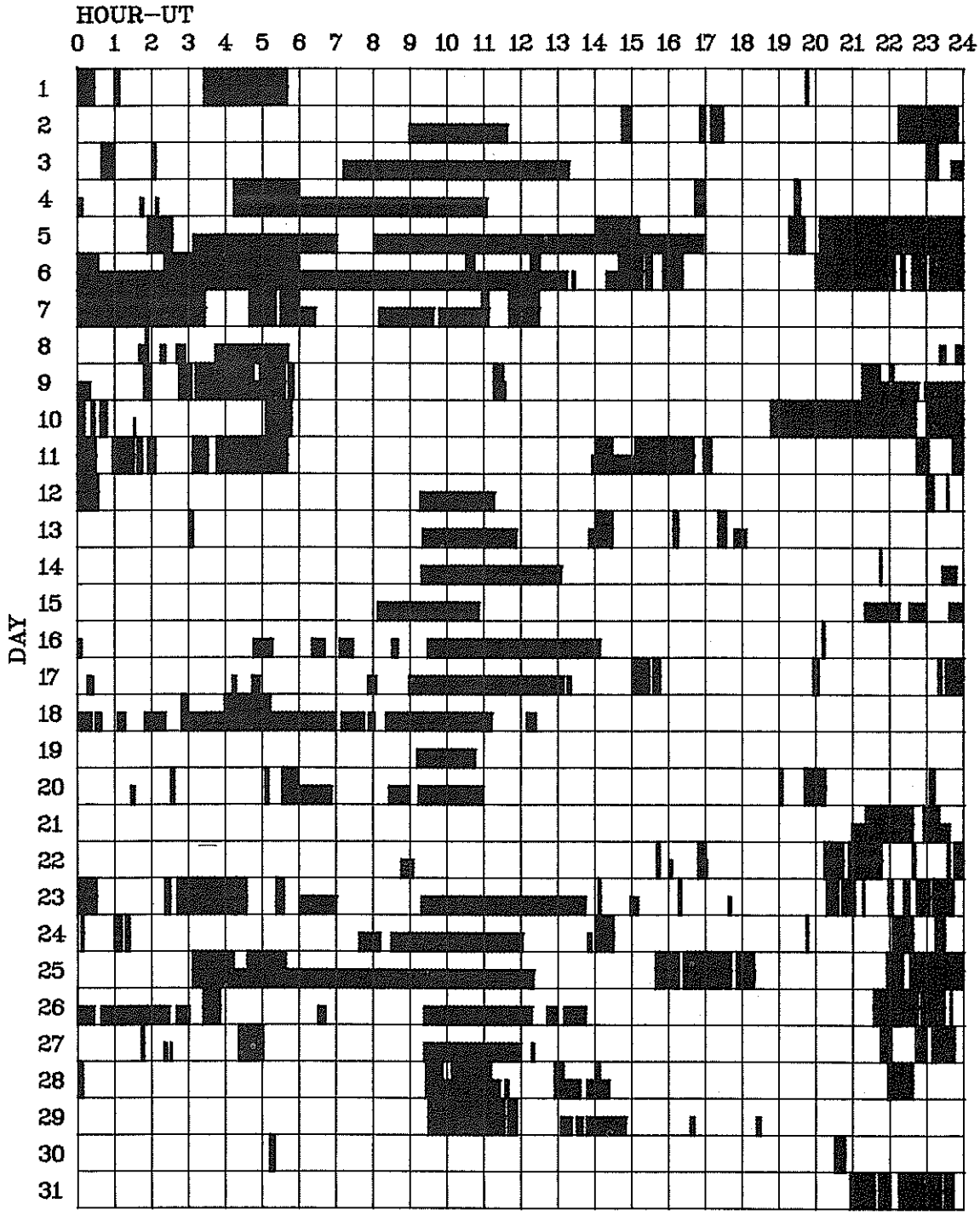
JULY 1984

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	13	1824	1825	1850	S06	E23	4539	07	15.5	26	SF		3	C		25		
HOLL	14	0108	0113	0119	S08	E18	4539	07	15.4	11	SF		3	C		20		
PEKG	14	0630	0636	0650	S06	E13		07	15.2	20	SN			C	0636	109	1.2	E
LEAR	14	0635	0642	0646	S06	E14	4539	07	15.3	11	SF		3	C		25		FH
PALE	14	2014E	2017U	2024	S01	W64	4532	07	10.1	10D	SF		3	C		38		
RAMY	14	2015	2017	2025	S03	W64	4532	07	10.1	10	SN		3	C		30		
HOLL	14	2015	2018	2026	N01	W63	4533	07	10.1	11	SN		3	C		40		
BUCA	15	0725	0731	0735	S10	W35		07	12.7	10	SF			C	0731	43	.6	D
PEKG	15	0726	0730	0735	S09	W36		07	12.6	9	SN			C	0730	34	.4	E
PEKG	15	0830	0832	0844	S12	W26		07	13.4	14	SN			P	0832	25	.3	E
PEKG	15	0832E	0832	0837	S07	W38		07	12.5	5D	SF			P	0832	21	.3	D
RAMY	15	1201	1202	1216	S08	W40	4537	07	12.5	15	SF		3	C		23		
LEAR	16	0539	0547	0556	S09	W51	4537	07	12.4	17	SF		3	C		26		
RAMY	16	1930	1931	1945	S08	W59	4537	07	12.4	15	SF		3	C		19		F
RAMY	16	2027	2027	2046	S08	W59	4537	07	12.4	19	SF		3	C		16		F
HOLL	16	2121	2124	2130	S07	W59	4537	07	12.5	9	SF		3	C		27		
HOLL	16	2215	2215	2222	S06	W60	4537	07	12.4	7	SF		3	C		17		
PALE	17	0025	0025	0033	S09	W58	4537	07	12.7	8	SF		3	C		23		
LEAR	17	0027	0035	0041	S07	W60	4537	07	12.5	14	SF		3	C		40		
YUNN	17	0047E	0058	0110D	S09	W66		07	12.1	23D	1B			P		189		
LEAR	17	0100	0101	0137	S09	W60	4537	07	12.5	37	SB	C 5.6	3	C		107		FE
PEKG	17	0105E	0105E	0140	S10	W62		07	12.4	35D	1N	C 5.6		P	0105	189	4.2	E
HOLL	17	0111E	0116	0133	S07	W63	4537	07	12.3	22D	SF		2	C		71		F
PURP	17	0114E	0130	0115	S11	W63		07	12.3	1D	1B			C	0115	99		
LEAR	17	0505	0505	0520	S08	W64	4537	07	12.4	15	SF		3	C		17		
LEAR	17	0826	0827	0831	S08	W64	4537	07	12.6	5	SF		3	C		16		
PEKG	17	0844	0845	0849	S14	E03		07	17.6	5	SN			C	0845	92	1.0	E
RAMY	17	1941	1947	1955D	S14	W03	4541	07	17.6	14D	SN		3	C		71		F
RAMY	19	1448	1459	1502	N08	W70	4544	07	14.4	14	SF		3	C		14		
HOLL	19	1452	1453	1504	N10	W69	4544	07	14.4	12	SF		3	C		19		
RAMY	19	1512	1516	1525	N08	W70	4544	07	14.4	13	SF		3	C		24		
HOLL	19	1613	1621	1729	N11	W70	4544	07	14.4	76	SF		3	C		28		F
HOLL	19	2126	2129	2133	N10	W75	4544	07	14.3	7	SF		3	C		16		
LEAR	20	0320	0328	0333	N11	W73	4544	07	14.6	13	SF		3	C		31		
RAMY	20	1332	1333	1336	N10	W83	4544	07	14.3	4	SF		3	C		24		
RAMY	20	1612	1620	1646	N10	W84	4544	07	14.4	34	SF		3	C		10		
HOLL	20	1840	1841	2018D	S07	E03	4545	07	21.0	98D	SF		3	C		34		F
HOLL	20	2104	2105	2110	S07	E02	4545	07	21.0	6	SB		3	C		44		
HOLL	20	2256	2301	2316D	S10	E05	4545	07	21.3	20D	SF		3	C		58		F
HOLL	21	1859	1908	1918	S06	W07	4545	07	21.3	19	SF		3	C		33		F
HOLL	21	2000	2003	2011	S07	W11	4545	07	21.0	11	SN		3	C		43		F
BUCA	22	0805	0811	0811D	S06	W17		07	21.1	6D	SF			P	0811	54	.6	D
PALE	22	1723	1727	1751	S08	W23	4545	07	21.0	28	SF		3	C		53		F
HOLL	22	1723	1726	1739	S07	W22	4545	07	21.1	16	SF		2	C		29		F
PALE	23	1824	1824	1834	S17	E63	4549	07	28.6	10	SF		3	C		25		
HOLL	23	1824	1825U	1825D	S19	E64	4549	07	28.7	1D	SF		3	C		25		F
YUNN	28	0053	0058	0110	S06	W89		07	21.4	17	SB			C		16		G
WEND	30	0843	0845	0851	S16	W27		07	28.3	8	SF			C	0845	25	.3	
WEND	30	1550	1601	1627	S18	W29		07	28.5	37	SN			C	1601	100	1.2	
HOLL	30	1550	1551	1615	S17	W28	4549	07	28.5	25	SF		3	C		80		F
HOLL	30	1730	1731	1805	S16	W29	4549	07	28.5	35	SN		3	C		30		K
HOLL	30	1730	1743	1805	S16	W29	4549	07	28.5	35	1N		3	C		203		FHK
PALE	30	1731	1732	1736	S17	W30	4549	07	28.5	5	SF		3	C		29		
WEND	30	1733		1750D	S19	W30		07	28.4	17D	SN			C	1742	94	1.2	

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JULY 1984



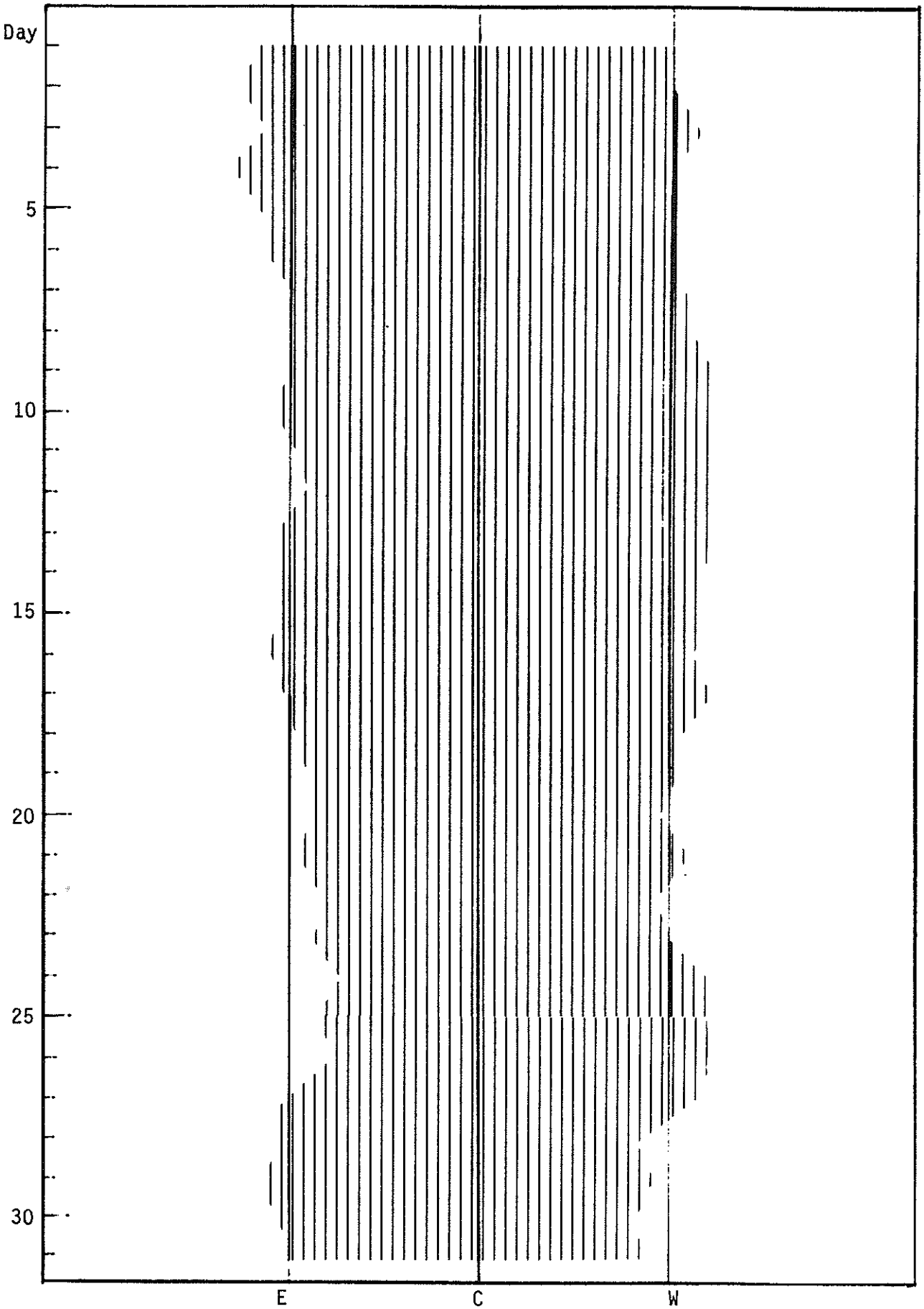
Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Athens	Haute Provence	Istanbul	Palehua	Ramey
Bucharest	Holloman	Learmonth	Peking	Wendelstein
			Purple Mt.	Yunnan

SOLAR INTERFEROMETRIC OBSERVATIONS

17
Jul 84

Nancay JULY 1984 169 MHz



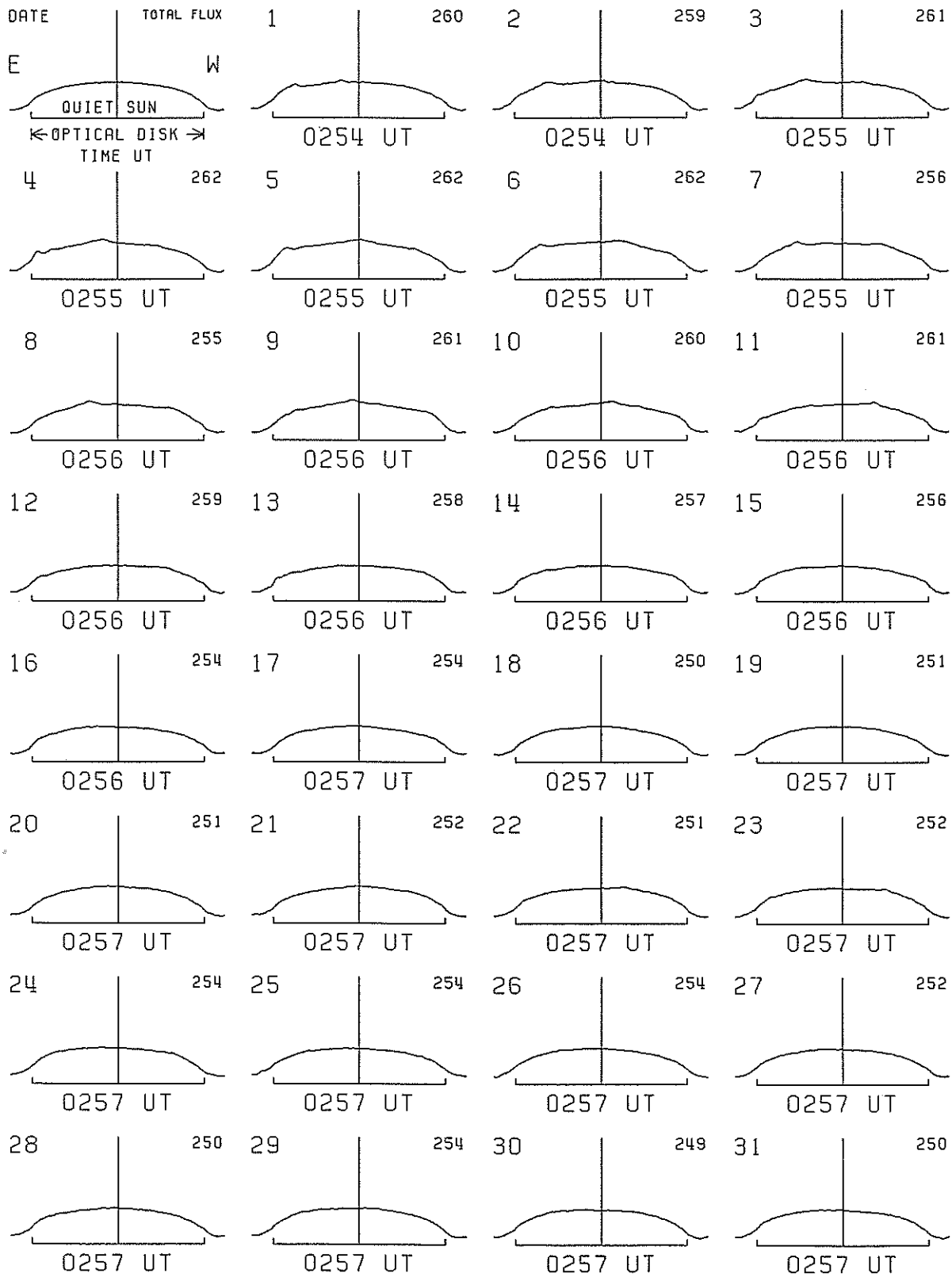
18
Jul 84

EAST-WEST SOLAR SCANS

JULY 1984

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

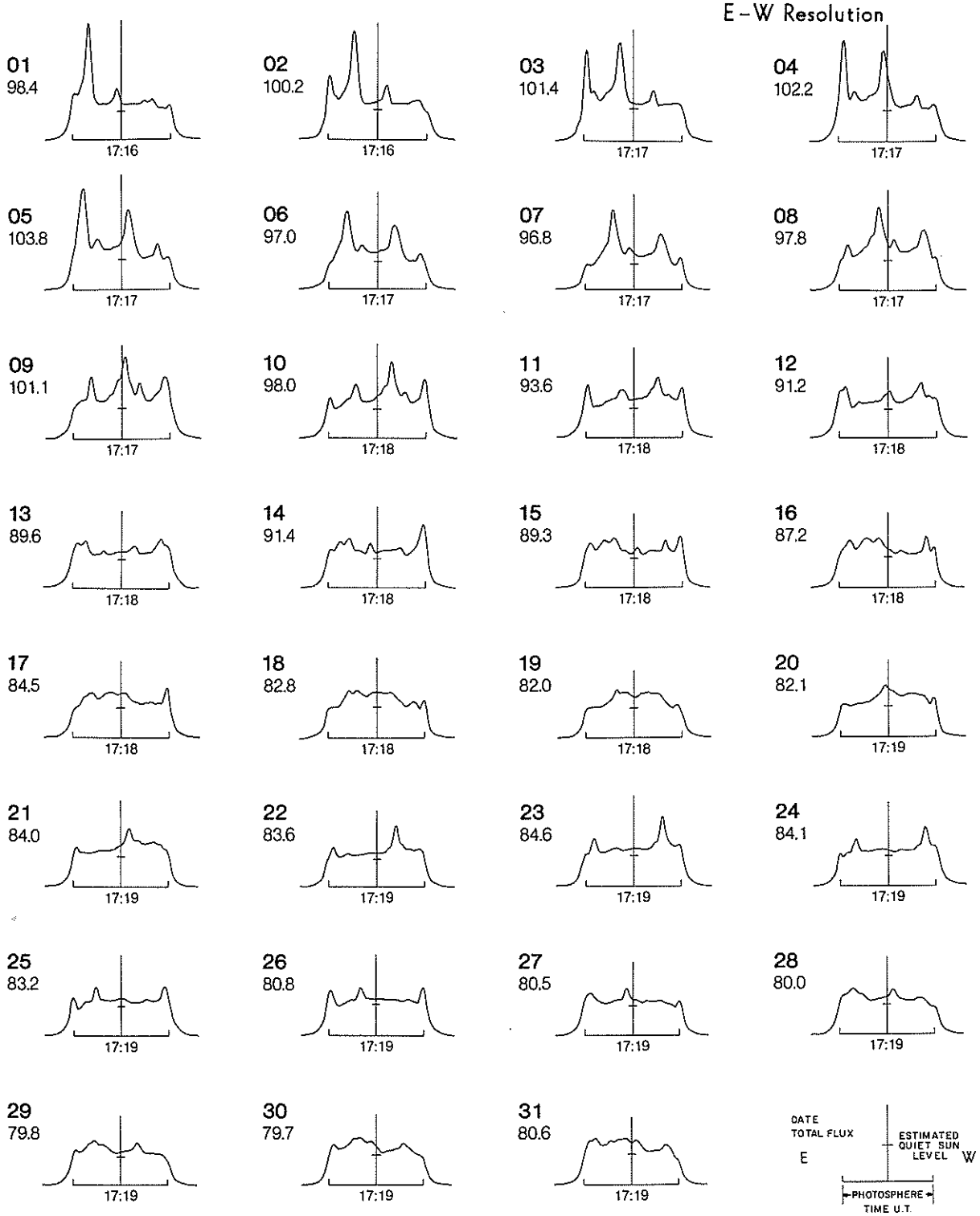


EAST-WEST SOLAR SCANS

JULY 1984

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

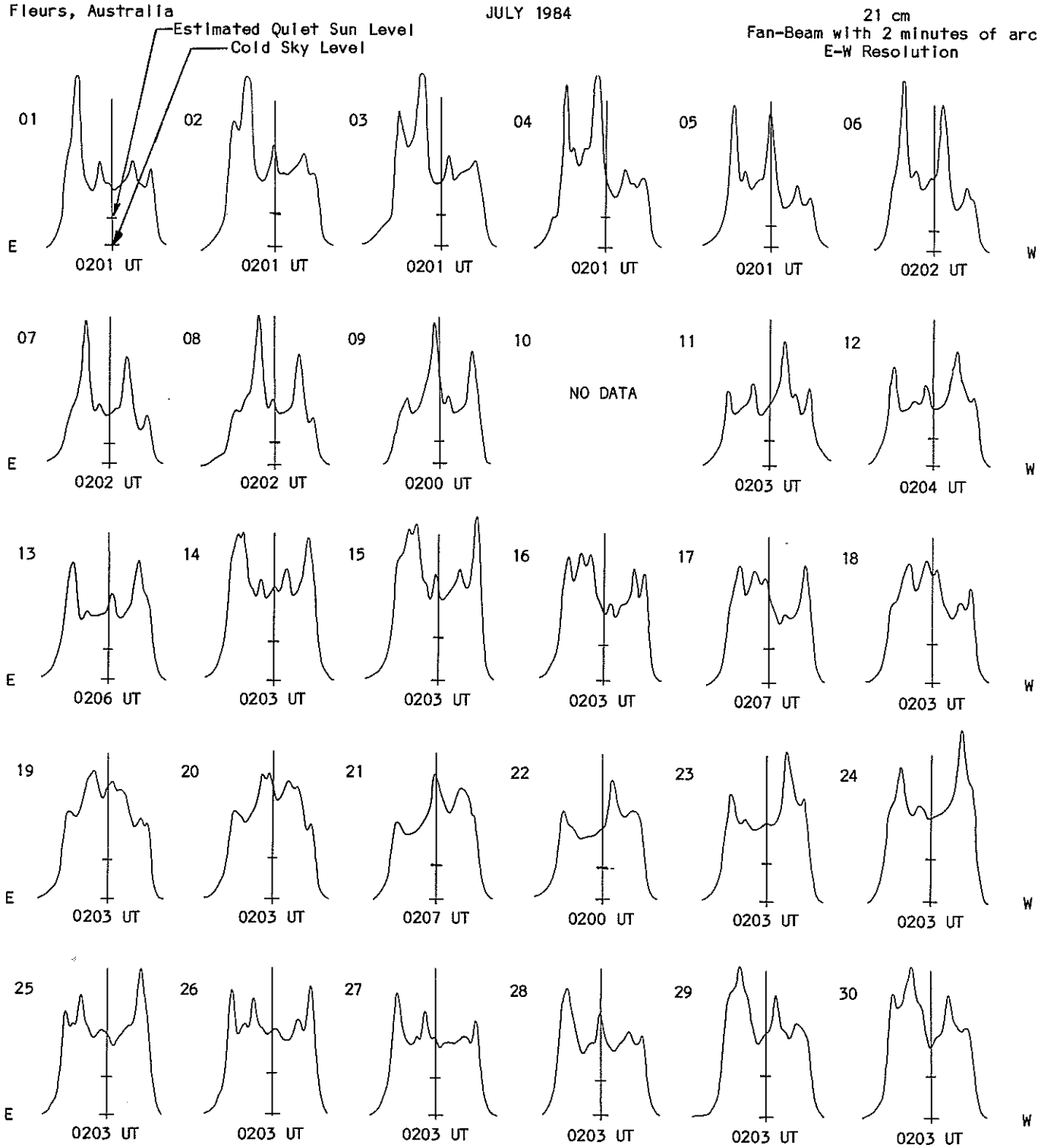


EAST-WEST SOLAR SCANS

Fleurs, Australia

JULY 1984

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



31

NO DATA

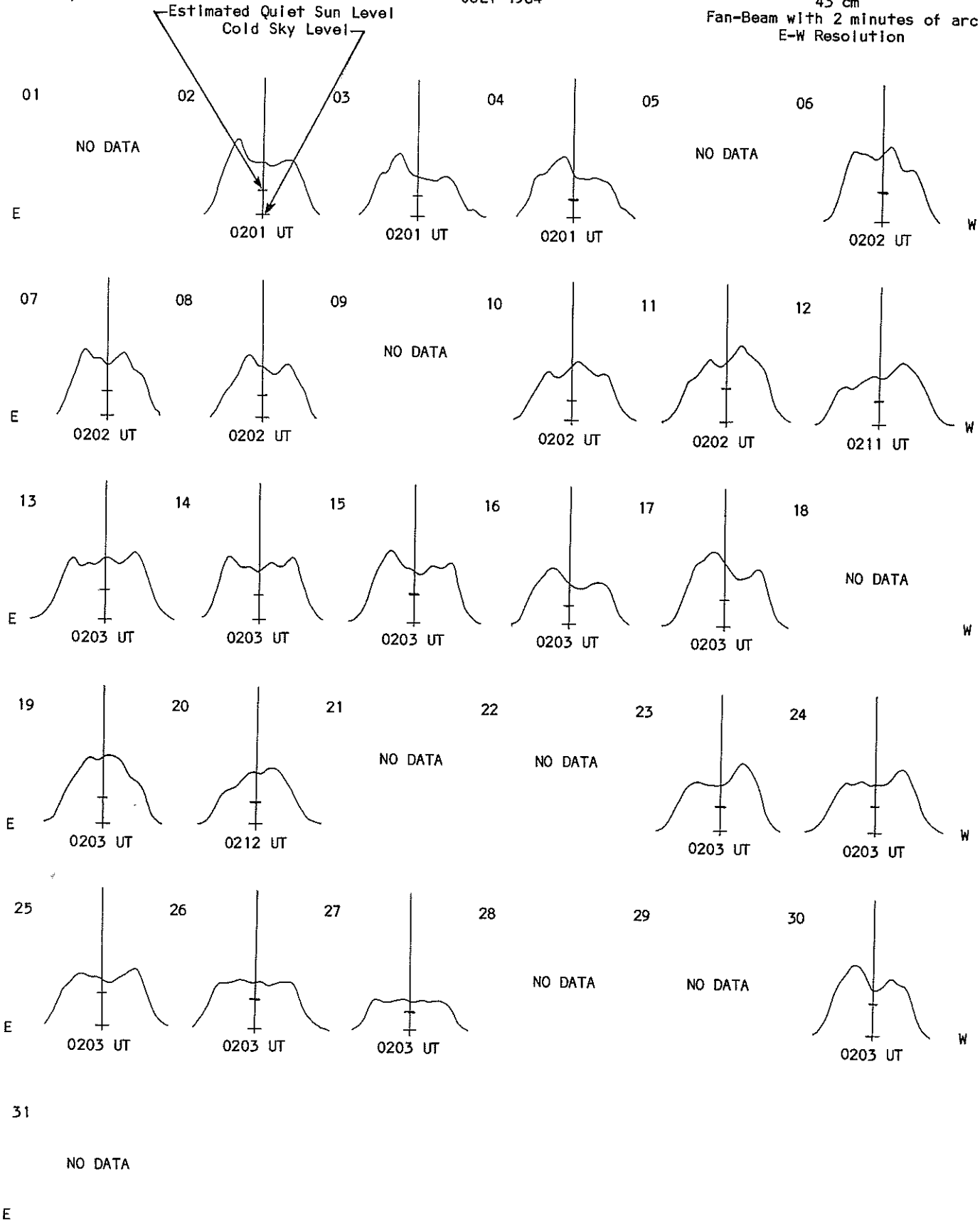
E

E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

JULY 1984

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

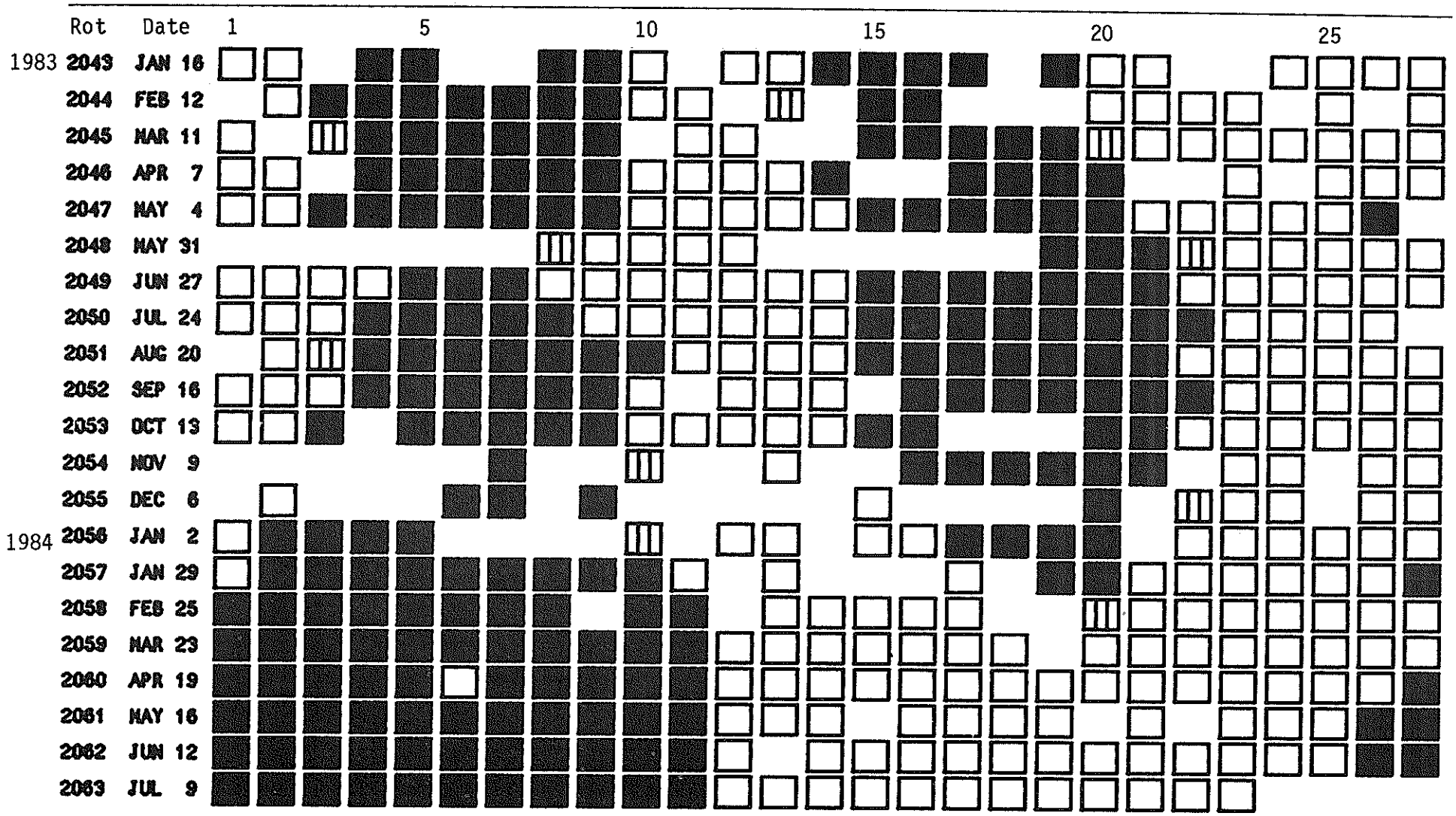


SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1984

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
02	2800	OTTA	22	GRF	1800.0	1905.0	100.0	2.2	0.9		
03	2695	SGMR	8	S	1901.6	1901.6	.2	23.0			QL=3 ST=3 TYP=3
04	2695	PALE	47	GB	0242.5	0243.8	10.1	48.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0242.8	0244.3	11.8	35.0			QL=5 ST=3 TYP=5
	8800	LEAR	4	S/F	0245.3	0245.3	16.7	11.0			QL=3 ST=3 TYP=3
	8800	PALE	47	GB	0247.1	0250.1	9.0	66.0			QL=6 ST=2 TYP=5
05	2800	OTTA	21	GRF	1505.0	1520.0	235.0	4.8	2.2		
	2695	ATHN	4	S/F	1506.5	1507.1	2.6	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1506.5	1507.2	3.5	9.8	3.6		
	8800	SGMR	4	S/F	1506.8	1507.6	3.3	8.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1507.1	1507.3	3.7	16.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	1537.1	1537.3	.5	38.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1923.3	1925.5	5.3	66.0			QL=6 ST=3 TYP=5
	2800	OTTA	20	GRF	1930.0	2030.0	170.0	1.8	1.2		
	8800	SGMR	4	S/F	2235.1	2236.6	5.0	43.0			QL=6 ST=2 TYP=3
06	8800	SGMR	47	GB	1506.1	1507.8	3.9	54.0			QL=6 ST=2 TYP=5
	2800	OTTA	22	GRF	1900.0	1935.0	100.0	3.2	1.2		
	8800	SGMR	47	GB	2145.0	2146.1	2.3	54.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2151.5	2154.6	4.3	72.0			QL=6 ST=2 TYP=5
07	2800	OTTA	20	GRF	1325.0	1350.0	80.0	1.6	0.8		
	2800	OTTA	20	GRF	1450.0	1520.0	70.0	1.6	0.8		
	2695	PENT	20	GRF	2355.0	0015.0	120.0D	2.8			
08	2695	LEAR	4	S/F	0701.1	0702.3	2.4	9.0			QL=6 ST=2 TYP=3
09	8800	SGMR	47	GB	1234.3	1235.8	8.7	52.0			QL=1 ST=2 TYP=5
	2800	OTTA	20	GRF	1550.0	1600.0	20.0	1.6	1.0		
	2695	PENT	20	GRF	2240.0	2330.0	195.0D	4.8			
10	2800	OTTA	20	GRF	2100.0	2105.0	25.0	1.8	0.9		
11	2800	OTTA	27	RF	1240.0		200.0	2.0	1.5		
	2800	OTTA	24	R	1240.0	1305.0	25.0	2.0	1.0		
	2800	OTTA	24P	R	1305.0		95.0	2.0			
	2800	OTTA	26	FAL	1440.0	1600.0	80.0	-2.0	-1.0		
13	2695	SGMR	8	S	1750.8	1751.1	.3	11.0			QL=6 ST=3 TYP=3
14	2800	OTTA	20	GRF	1505.0	1605.0	195.0	4.2	2.0		
	8800	LEAR	8	S	2358.3	2359.1	1.5	13.0			QL=5 ST=2 TYP=3
	2695	LEAR	8	S	2358.3	2359.1	1.3	4.0			QL=5 ST=2 TYP=3
16	2695	SGMR	8	S	2326.1	2326.6	.7	34.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	2328.8	2330.8	2.0	27.0			QL=1 ST=2 TYP=3
17	2695	PENT	46F	C	0055.0	0058.7	16.0	36.0	17.5		
	2695	PALE	47	GB	0056.8	0058.6	9.2	41.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0056.8	0058.6	8.5	34.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0057.1	0059.3	9.5	62.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0057.1	0059.3	8.9	53.0			QL=6 ST=2 TYP=5
	2695	PENT	29	PBI	0111.0	0111.0	40.0D	3.4			
	2800	OTTA	20	GRF	1940.0	1950.0	75.0	1.8	1.0		
	8800	SGMR	8	S	2111.6	2111.8	.9	8.0			QL=6 ST=2 TYP=3
18	2800	OTTA	20	GRF	1150.0	1235.0	250.0	2.2	1.1		
19	8800	SGMR	47	GB	2253.6	2253.6	1.2	230.0			QL=1 ST=2 TYP=5
20	8800	SGMR	47	GB	2333.1	2335.5	3.4	440.0			QL=4 ST=3 TYP=5
21	8800	LEAR	4	S/F	0844.6	0845.3	2.2	9.0			QL=6 ST=2 TYP=3
30	2800	OTTA	20	GRF	1730.0	1750.0	35.0	1.8	0.9		

STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity: □ = field > 2 microT; ▥ = -2 microT ≤ field ≤ 2 microT

■ = field <-2 microT; No box = no data available

Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

23 Jul 84

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	Aug 83	Sep	Oct	Nov	Dec	Jan 84	Feb	Mar	Apr	May	Jun	Jul
1	9	41	-51	-63	54	41	-41	-79	-34	56	24	38
2	16	35	-104	-27	79	11	-63	-66	-23	53	27	44
3	3	-3	-117	32	·	-2	-62	-55	9	40	42	33
4	13	-59	-100	75	56	-16	-43	·	29	36	·	62
5	20	-99	-68	70	24	-29	-19	-31	34	24	66	41
6	22	-109	-37	57	·	-50	-8	-2	31	15	·	5
7	-12	-109	-9	35	3	·	-4	·	38	15	65	-28
8	-49	-89	38	23	·	·	16	62	41	30	53	-41
9	-81	-42	55	·	·	·	·	58	25	7	24	-62
10	-91	10	46	·	·	·	61	45	·	19	-18	-56
11	-83	33	25	·	-59	-1	·	47	17	47	-37	-66
12	-73	52	19	·	-50	·	·	35	31	42	-47	-70
13	-60	60	10	·	·	47	·	·	46	32	-57	-96
14	-10	58	4	·	-9	56	15	·	56	20	-63	-91
15	-19	42	-7	-53	·	·	·	-1	56	-5	-61	-102
16	56	29	·	·	·	37	-14	19	52	-39	-75	-93
17	14	20	-47	·	·	20	-23	55	28	-62	-73	-59
18	78	5	-68	0	·	-3	3	76	21	-57	-89	-39
19	·	-18	-62	·	·	-14	29	82	-40	-58	-59	-11
20	·	-37	-54	·	29	-28	39	87	-53	-62	-66	14
21	8	-63	-20	66	·	-34	31	57	-52	-59	-52	9
22	1	-66	10	·	·	·	36	4	-18	-66	-31	31
23	-17	-54	25	·	·	24	19	-33	-14	-68	11	7
24	-34	-17	57	-52	·	43	-33	-47	9	-79	·	30
25	-76	12	72	-78	-6	33	-59	-59	-17	-76	37	22
26	-78	·	48	-94	·	25	-74	-57	-34	-42	33	26
27	-36	52	-9	-82	1	23	-72	-51	-49	13	16	53
28	-28	71	-58	-59	40	21	-74	-49	-40	57	26	43
29	-12	54	·	-20	60	10	-78	-20	-15	66	15	54
30	7	·	·	·	·	-13		-35	28	·	32	36
31	28		·		47	-22		-21		38		31

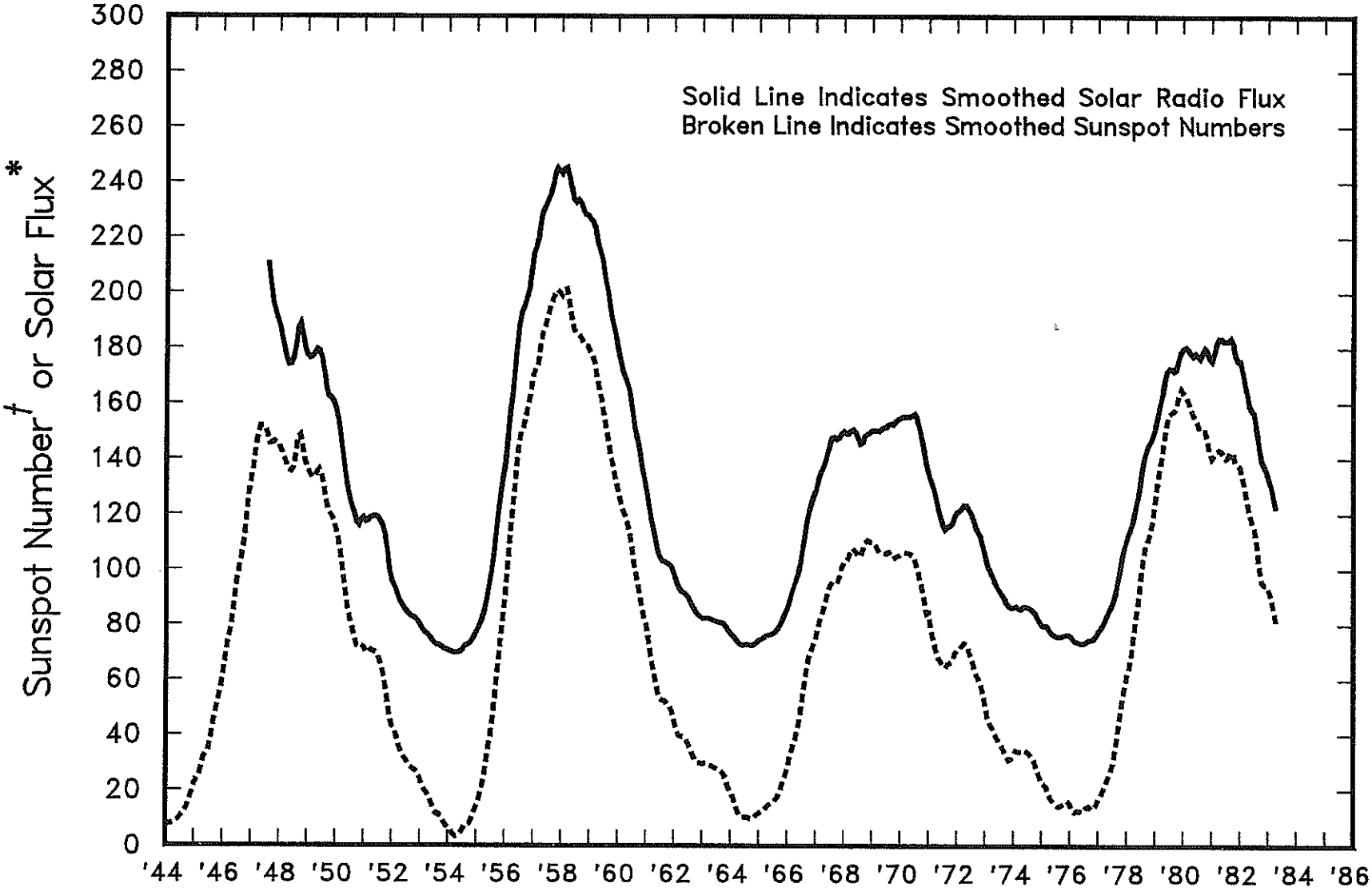
Dot symbol indicates no data available for the day.

BOULDER GEOMAGNETIC SUBSTORM LOG

JULY 1984

DATE	ONSET	DIR	COMMENTS
07/01			Field intermittently unsettled.
	0435	East	
	0915	West	
	1650	West	
07/02			Field unsettled all day.
	0110	East	Weak substorm.
07/03			Field intermittently unsettled.
	0940	West	
	1300		Slow onset, several injections with recovery near 1800 UT.
07/04			Field unsettled after 0600 UT.
	0635	Center	
07/05			Field unsettled through 1300 UT.
	0745	West	
07/06			Field intermittently unsettled.
	0500	East	Weak substorm.
	1245	West	
07/07			Field intermittently unsettled.
	1325		Weak substorm, slow onset.
07/08			Field intermittently unsettled.
	0250	East	Weak substorm.
	0545	East	
	0720	Center	Weak substorm.
	0845	West	Weak substorm.
	1200	West	
07/09			Field intermittently unsettled.
	0340	East	
	1055	West	Initial onset at College.
07/10			Field intermittently unsettled.
	0845	West	
	1225		Weak substorm.
	1340	West	Moderate substorm.
07/11			Field unsettled after 1200 UT.
	1235	West	
	1550	West	
	2305		Positive impulse H-component all mid/low latitude stations.
07/12			Field unsettled through 1200 UT.
	0120	East	
	0625	Center	
07/13			Magstorm conditions 0600-1800 UT. Field unsettled balance of day.
07/14			Magstorm conditions 0100-1700 UT. Field unsettled balance of day.
07/15			Field intermittently active.
	0145	East	
	0425	Center	
	0810	West	
	0945		Localized substorm vicinity College.
	1115		Localized substorm vicinity College.
	1330	West	
07/16			Field unsettled all day.
	0250	East	
	0445	East	
	0815		Moderate substorm, initial onset at Lynn Lake, several injections with recovery near 1200 UT.
07/17			Magstorm conditions 0430-1700 UT. Field unsettled balance of day.
	0050	East	
	0210	East	
07/17	2135		Boulder in partial ring current sector.
07/18			Field unsettled all day.
	0220	East	
	0350	East	Initial onset at Lynn Lake, several minor injections with recovery near 0600 UT.
	1210	West	Moderate substorm.
	1615	West	
07/19			Field intermittently unsettled.
	0210	East	
	0300		Localized substorm vicinity NAQ.
	0505	Center	
	0820	West	
07/20			Field intermittently unsettled.
	0240	East	Weak substorm.
	0600	Center	Initial onset at Lynn Lake, several injections with recovery near 0800 UT.
07/21			Field intermittently unsettled.
	0650	West	
07/22			Field intermittently unsettled.
	0335	East	
	1120	West	Weak substorm.
07/23			Field intermittently unsettled.
	1200		Weak substorm College to Ft. Yukon.
07/24			Field intermittently unsettled.
	0925	West	Initial onset at College, several injections with recovery near 1300 UT.
	1650		Weak Polar Cap substorm.
07/25			Field unsettled all day.
	1850		Localized substorm Sachs Harbour to Cape Parry.
07/26			Field unsettled through 1200 UT with no significant substorm activity.
07/27			Field intermittently unsettled.
	1320	West	
	1910		Weak substorm Sachs Harbour to Cape Parry.
	2020		Weak substorm localized at Sachs Harbour.
07/28			Field unsettled through 2000 UT.
	0225	East	
	0445	East	
	0910		Localized substorm College to Anchorage.
	1340	West	Initial onset at College.
07/29			Field intermittently unsettled.
	0725	West	Weak substorm.
	1020		Weak substorm localized at Inuvik.
	1530		Weak substorm localized at College.
07/30			Field intermittently unsettled.
	0655	West	Weak substorm.
	1010	West	Weak substorm.
	1345	West	Weak substorm.
	1435	West	Weak substorm.
07/31			Field intermittently unsettled.
	0725	West	Weak substorm.
	1325	West	
			Polar cap stations became very turbulent, moderate ring current established at mid/low latitude stations after 2120 UT.

SUNSPOT NUMBERS AND 10.7 cm SOLAR RADIO FLUX
January 1944 – April 1983



* Solar Flux Units (10^{-22} W/m^2 Hz) Adjusted to 1 A.U., Ottawa Series D.
† Reduced Zürich Sunspot Numbers.

National Geophysical Data Center
D.G. Wilkinson

C O N T E N T S

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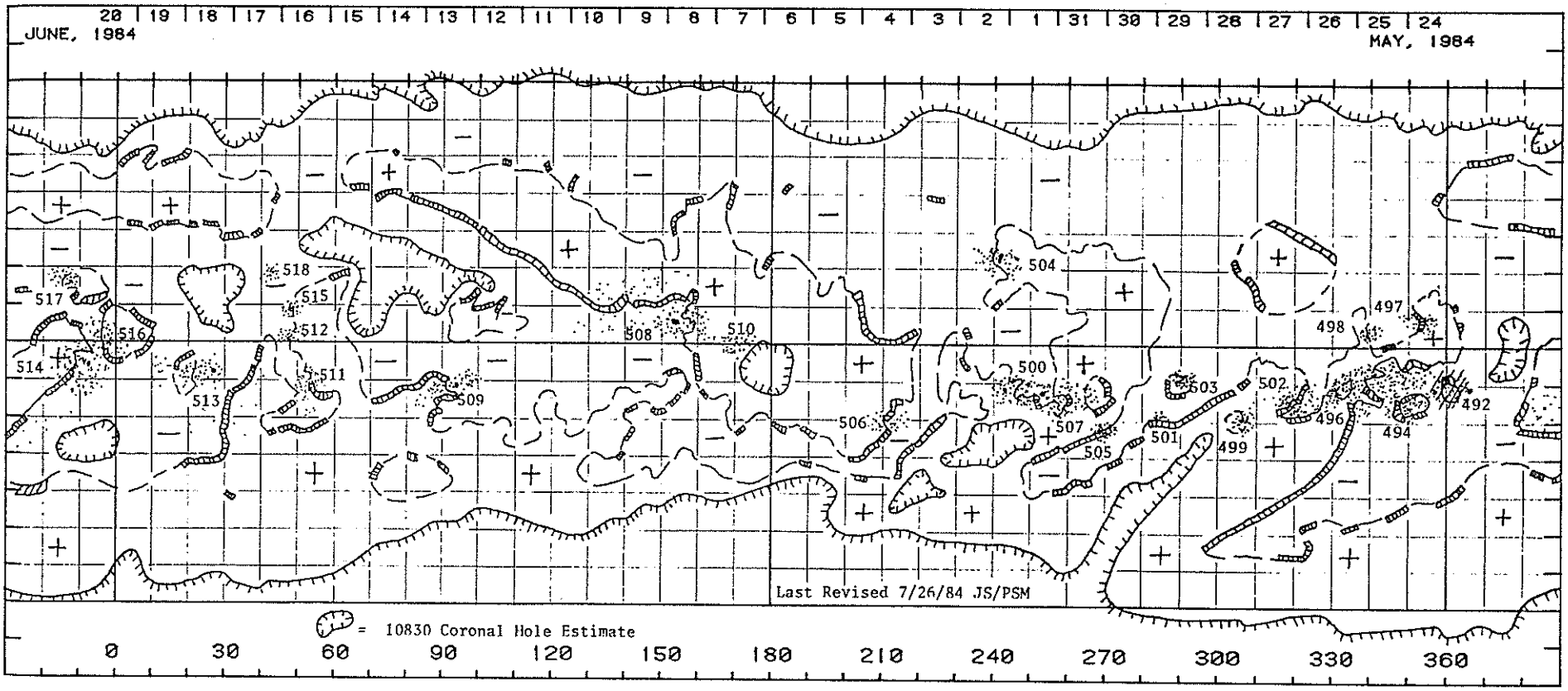
PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1749
(May 24 to June 20, 1984)

Dates of Observations Below Days of Year: 157 152 147



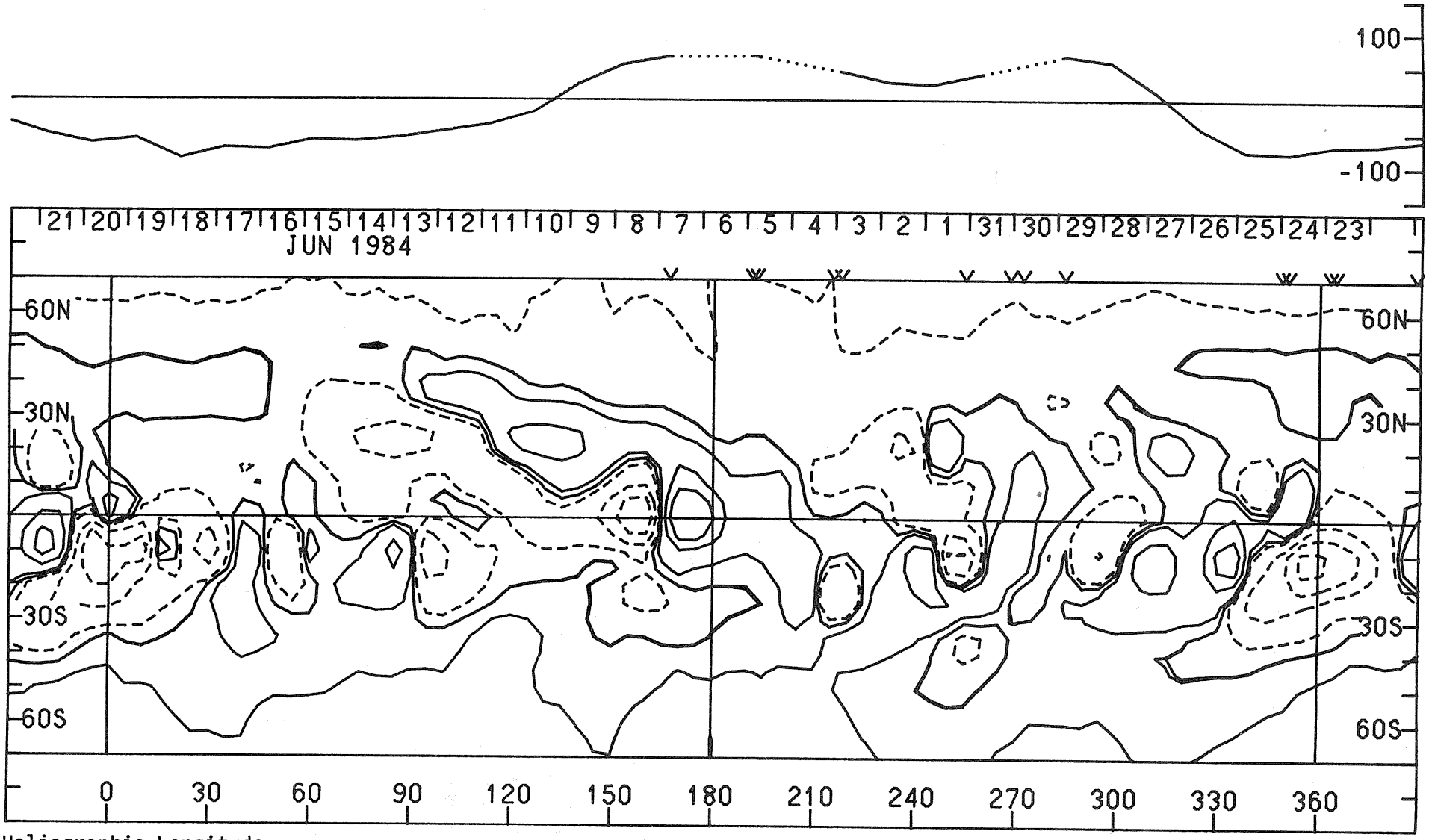
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1749
(May 24 to June 20, 1984)

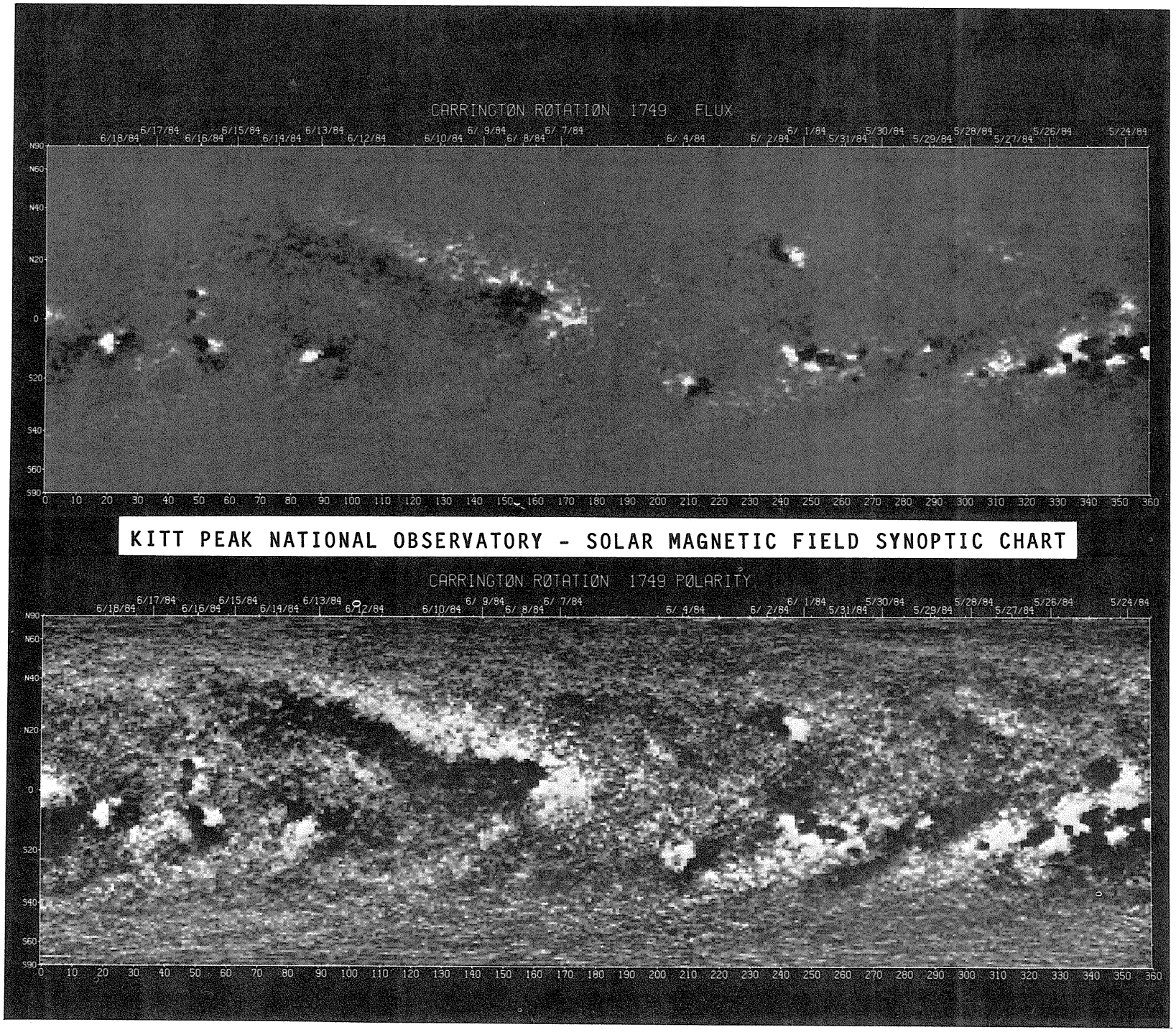
Stanford Solar Observatory

0, ±100, 500, 1000, 2000 microTesla



Heliographic Longitude

29
Jun 84

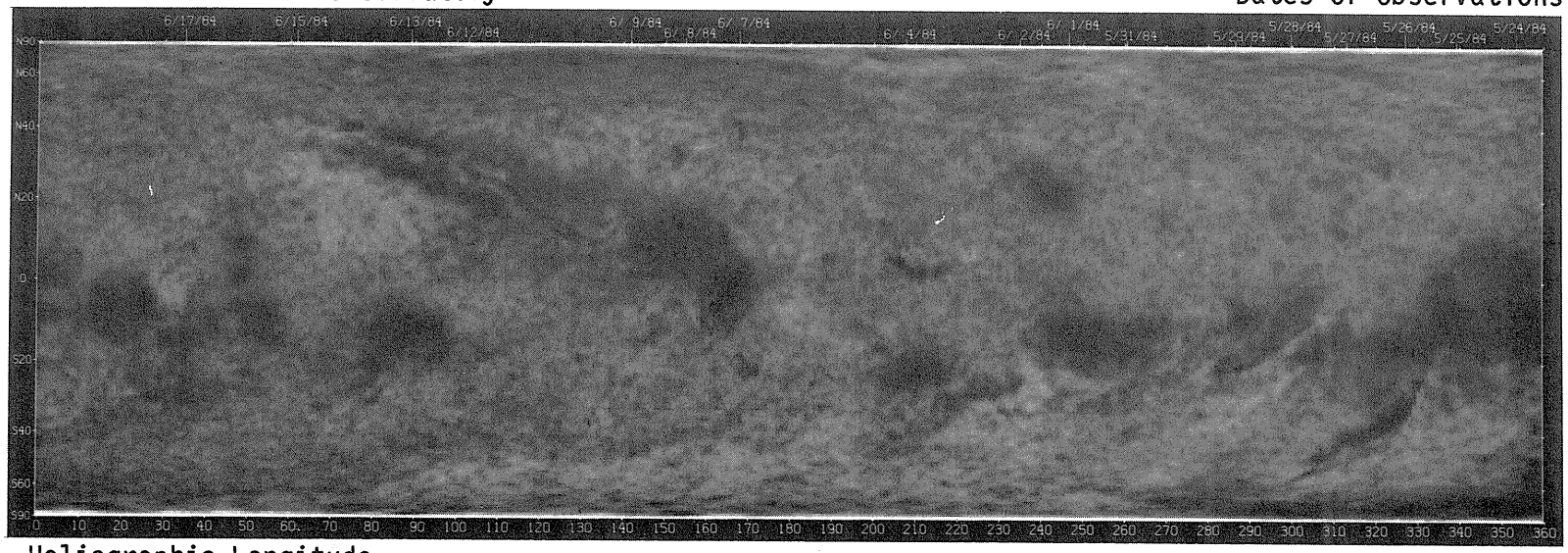

CARRINGTØN RØTATIØN 1749 FLUX
6/18/84 6/17/84 6/16/84 6/15/84 6/14/84 6/13/84 6/12/84 6/10/84 6/ 9/84 6/ 8/84 6/ 7/84 6/ 4/84 6/ 2/84 6/ 1/84 5/31/84 5/30/84 5/29/84 5/28/84 5/27/84 5/26/84 5/24/84
N90 N60 N40 N20 0 S20 S40 S60 S90
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360
KITT PEAK NATIONAL OBSERVATORY - SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTØN RØTATIØN 1749 PØLARITY
6/18/84 6/17/84 6/16/84 6/15/84 6/14/84 6/13/84 6/12/84 6/10/84 6/ 9/84 6/ 8/84 6/ 7/84 6/ 4/84 6/ 2/84 6/ 1/84 5/31/84 5/30/84 5/29/84 5/28/84 5/27/84 5/26/84 5/24/84
N90 N60 N40 N20 0 S20 S40 S60 S90
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360

HELIUM 10830 ANGSTROM SYNOPTIC MAP OF THE SOLAR CORONA

CARRINGTON ROTATION NUMBER 1749
(May 24 to June 20, 1984)

Kitt Peak National Observatory

Dates of Observations



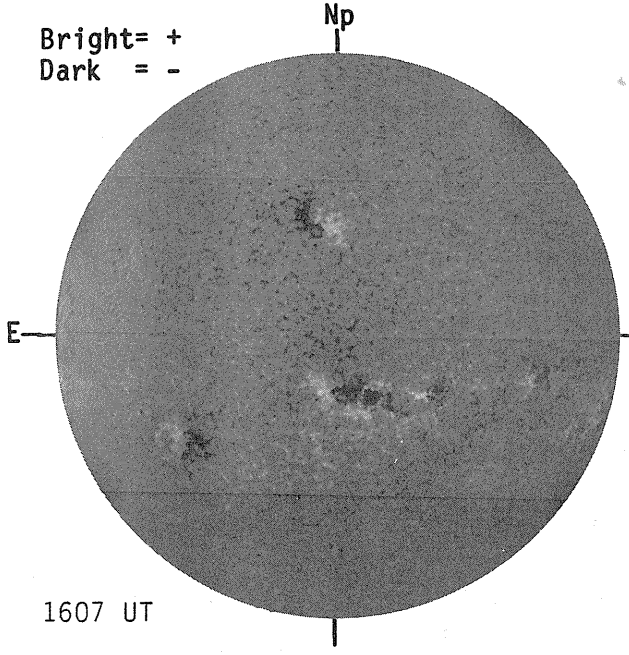
Heliographic Longitude

Regions for which no observations were available are black.
Irregularly shaped light areas mark either coronal holes or filament cavities.
Gray-scale display represents the strength of the helium 10830A absorption line.

J U N E 01, 1 9 8 4 (P=-15.37, B_0=-0.61, L_0= 256.89)

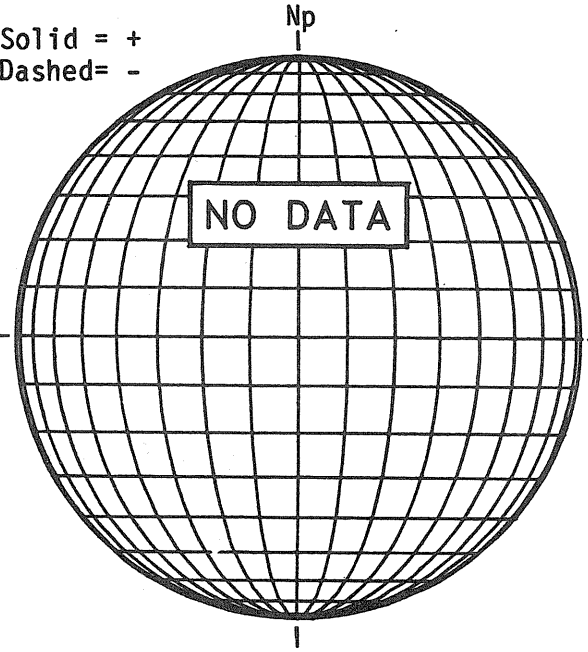
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

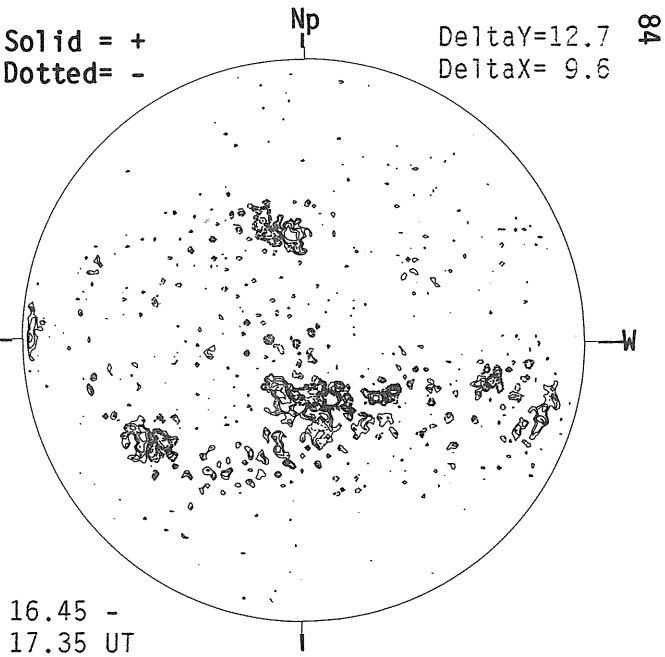
Solid = +
Dashed= -



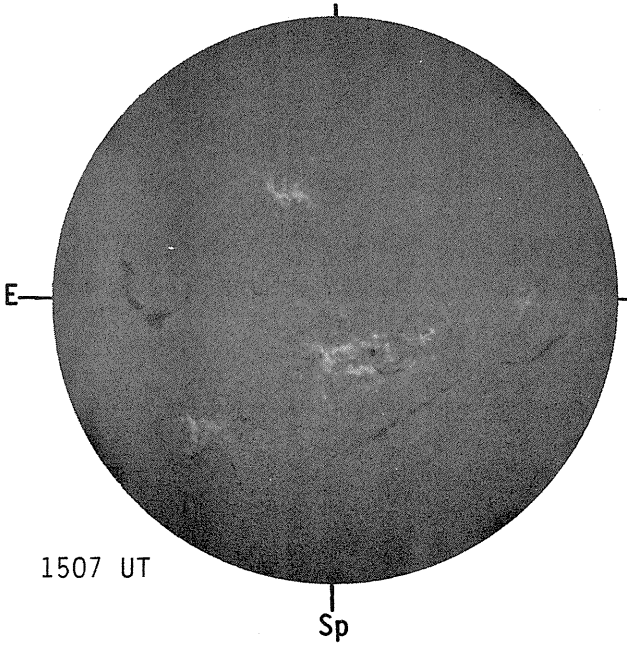
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

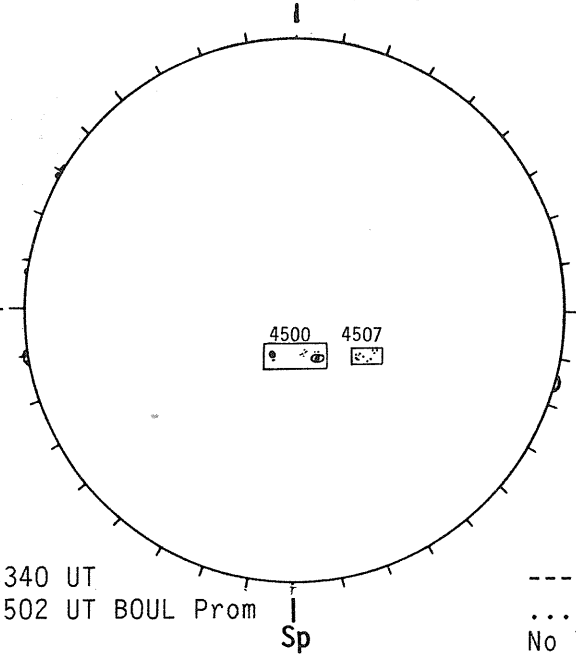
DeltaY=12.7
DeltaX= 9.6



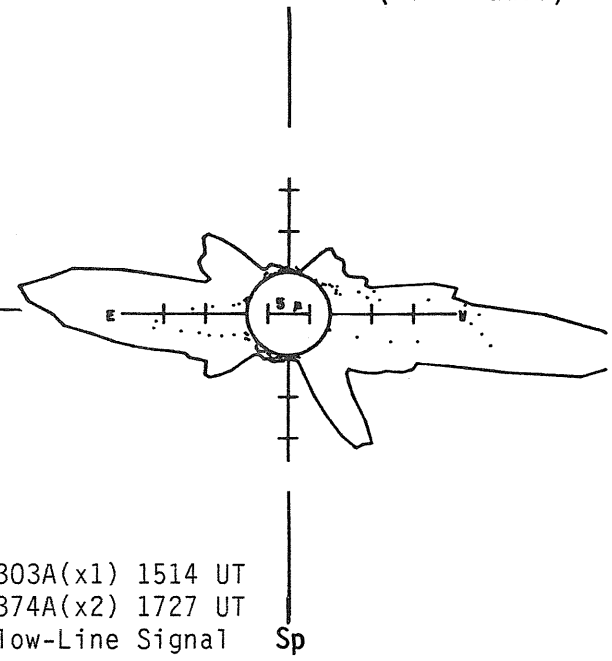
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

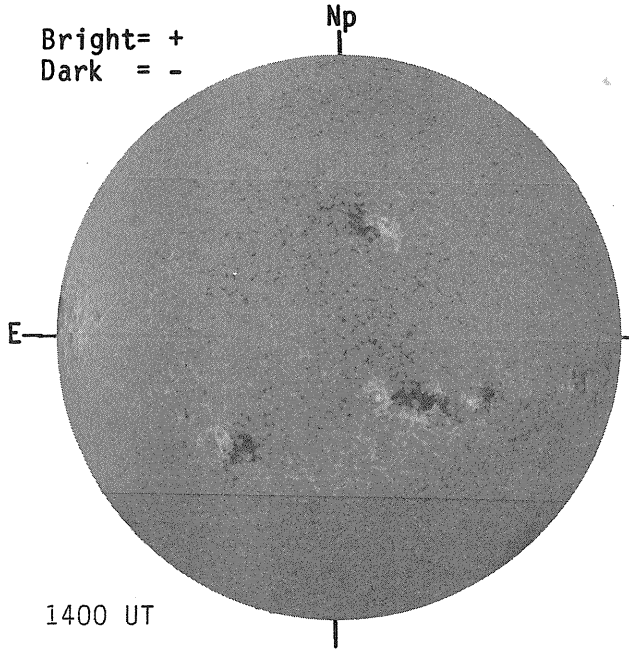


---- 5303A(x1) 1514 UT
.... 6374A(x2) 1727 UT
No Yellow-Line Signal

J U N E 02, 1 9 8 4 (P=-15.00, B_0=-0.49, L_0= 243.66)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

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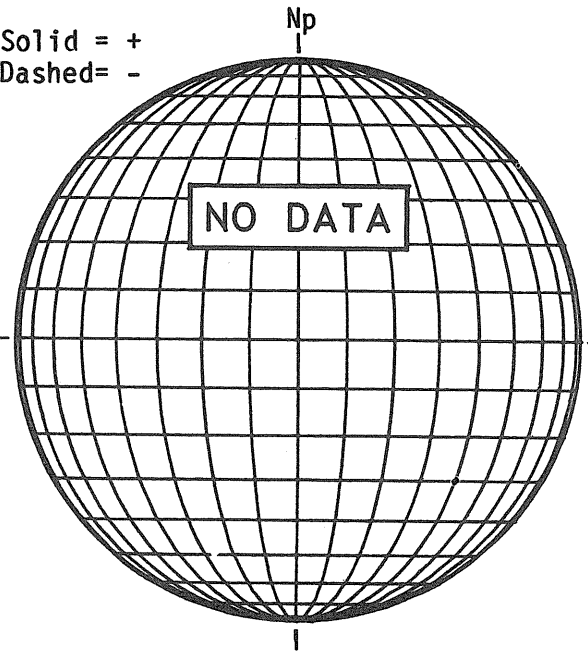
Dashed= -



MT. WILSON MAGNETOGRAM

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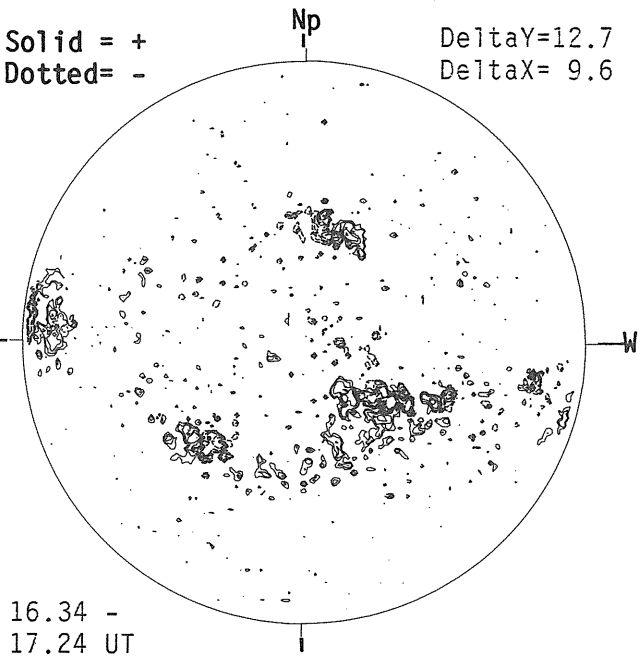
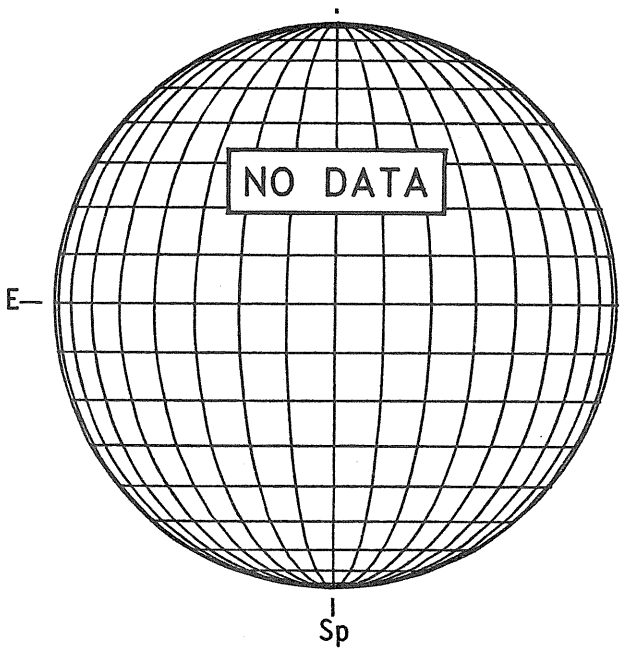
Dotted= -

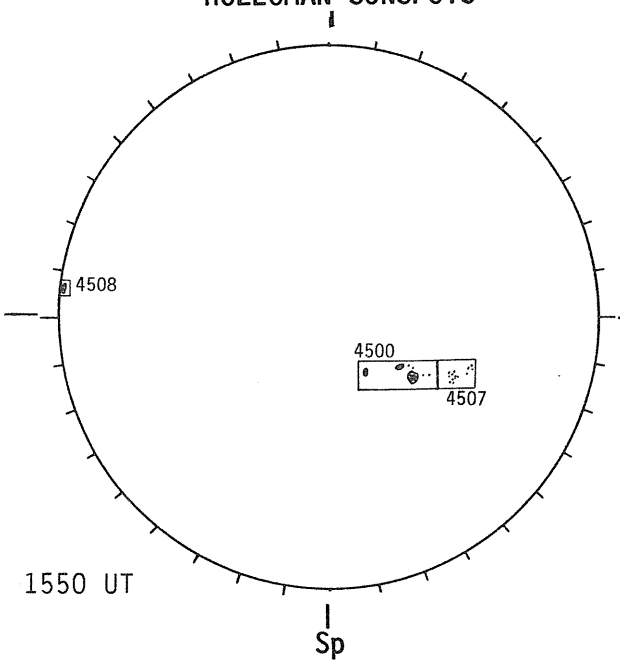
DeltaY=12.7
DeltaX= 9.6



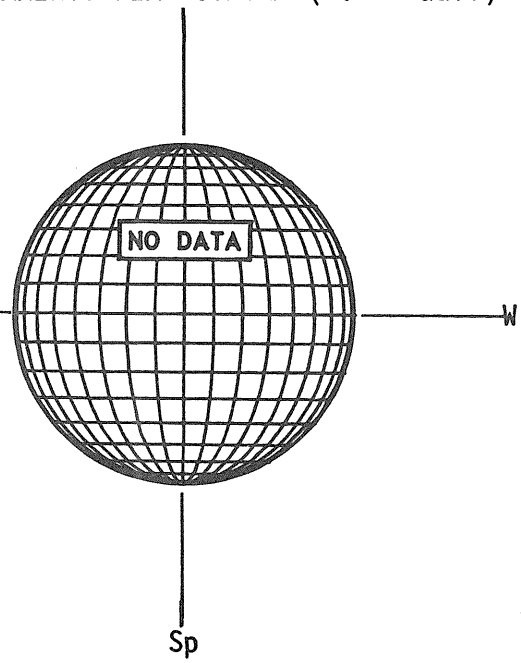
SACRAMENTO PEAK H-ALPHA



HOLLOMAN SUNSPOTS



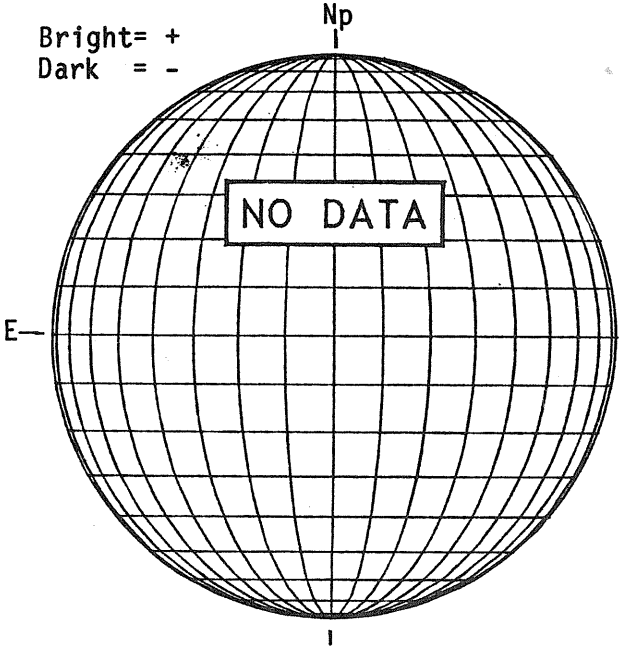
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 03, 1 9 8 4 (P=-14.61, B_0=-0.37, L_0= 230.43)

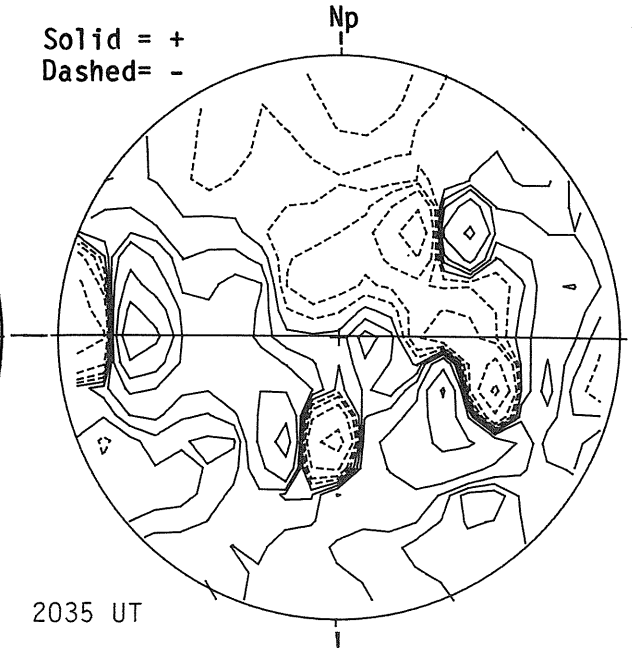
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

Solid = +
Dashed= -

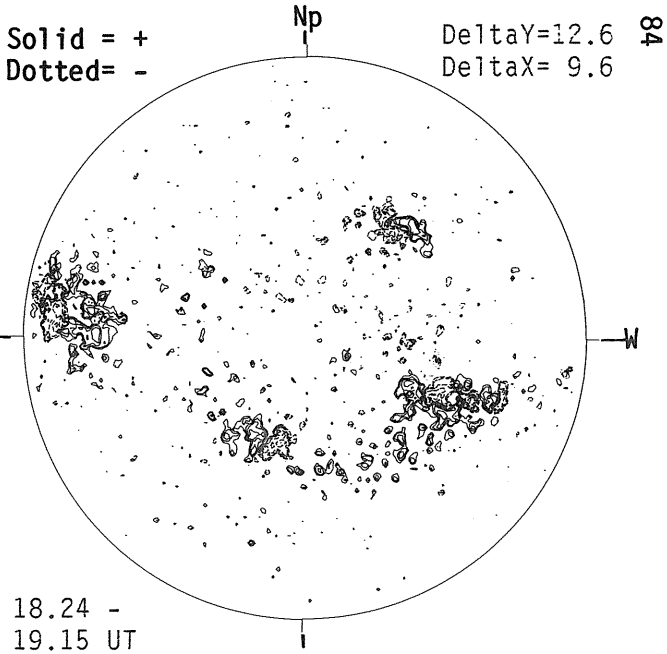


2035 UT

MT. WILSON MAGNETOGRAM

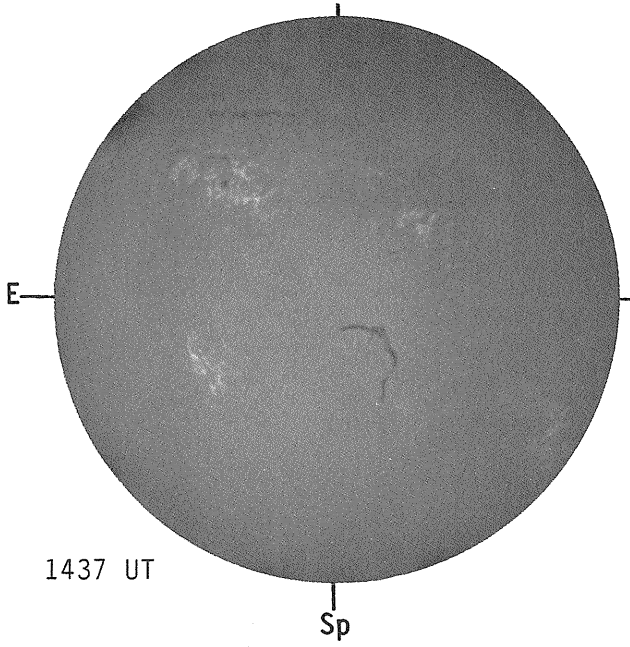
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



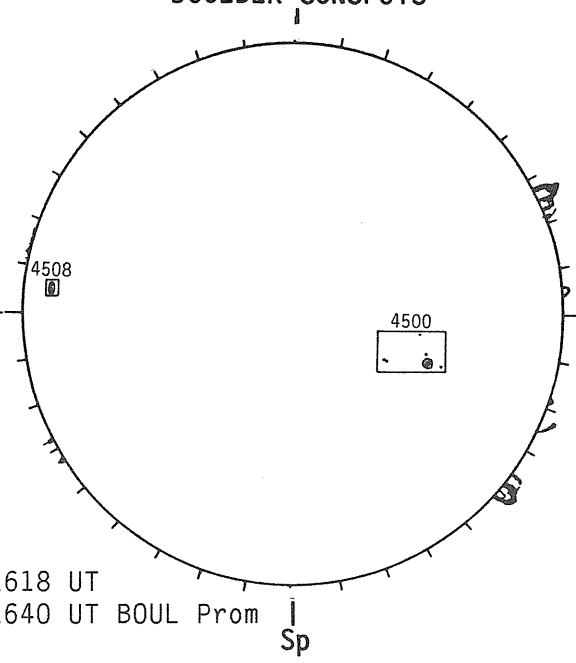
18.24 -
19.15 UT

SACRAMENTO PEAK H-ALPHA



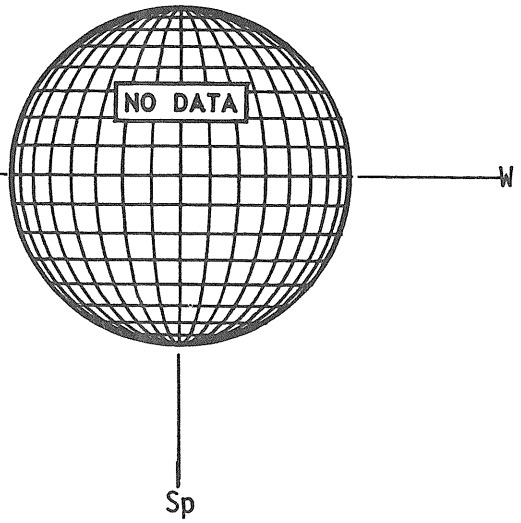
1437 UT

BOULDER SUNSPOTS



1618 UT
1640 UT BOUL Prom

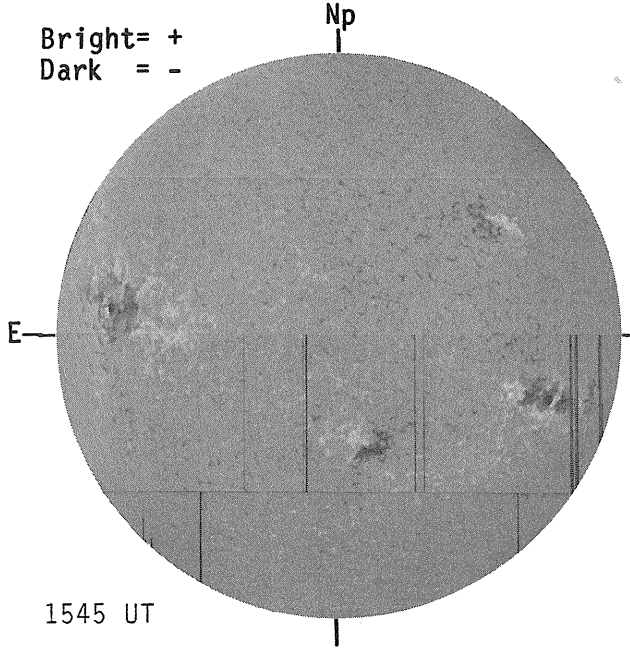
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 04, 1 9 8 4 (P=-14.23, B_0=-0.25, L_0= 217.19)

KITT PEAK MAGNETOGRAM

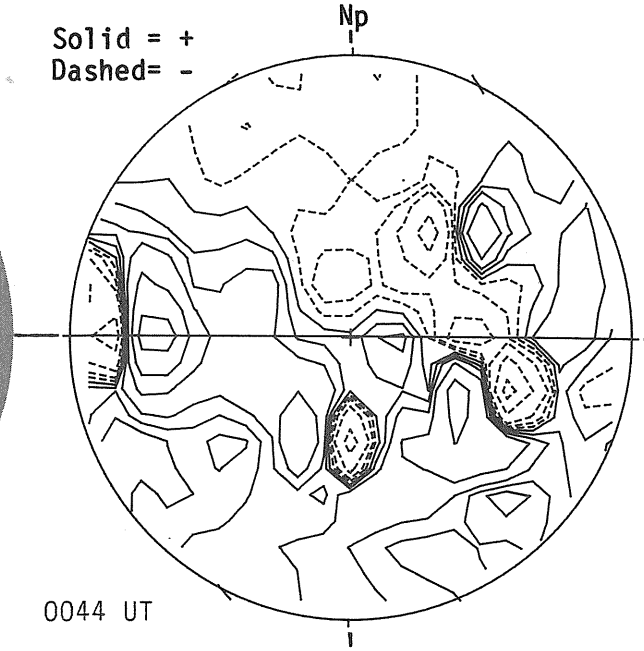
Bright= +
Dark = -



1545 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

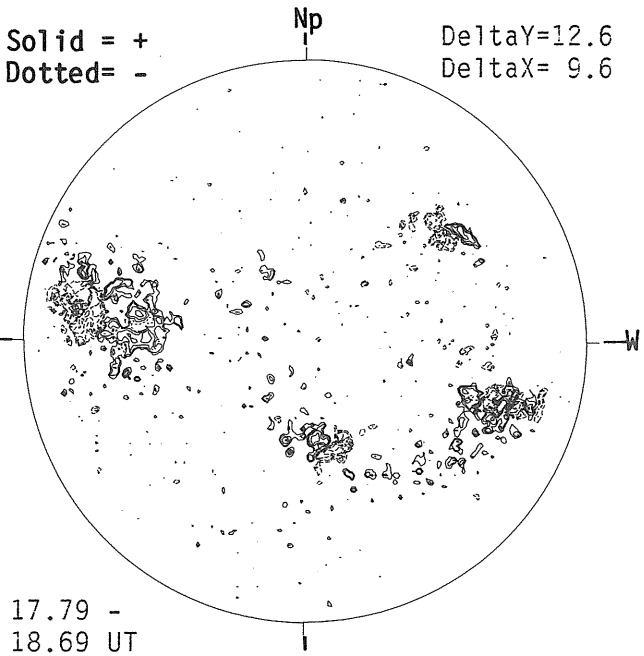


0044 UT

MT. WILSON MAGNETOGRAM

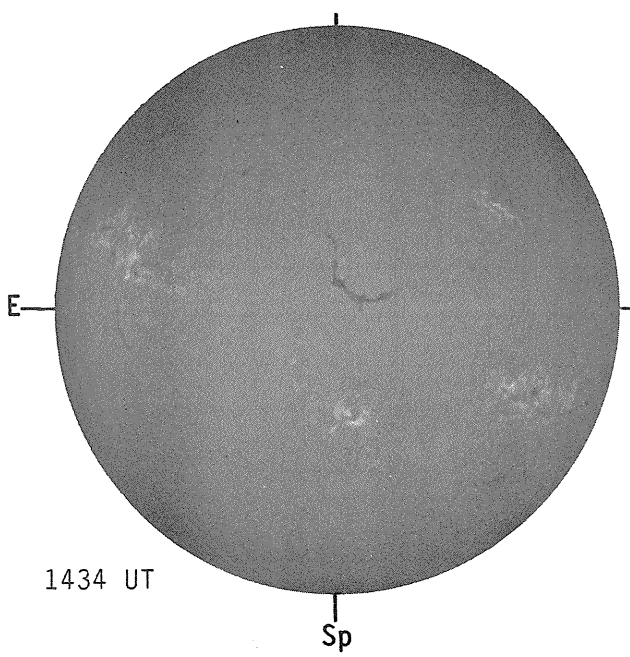
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



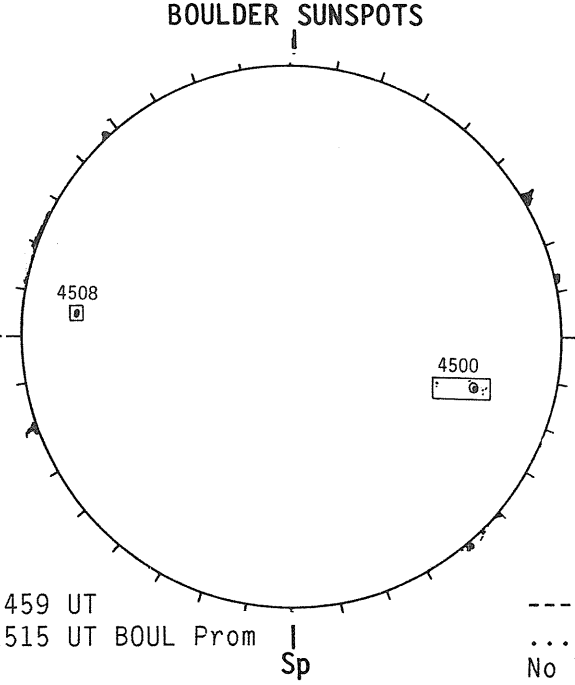
17.79 -
18.69 UT

SACRAMENTO PEAK H-ALPHA



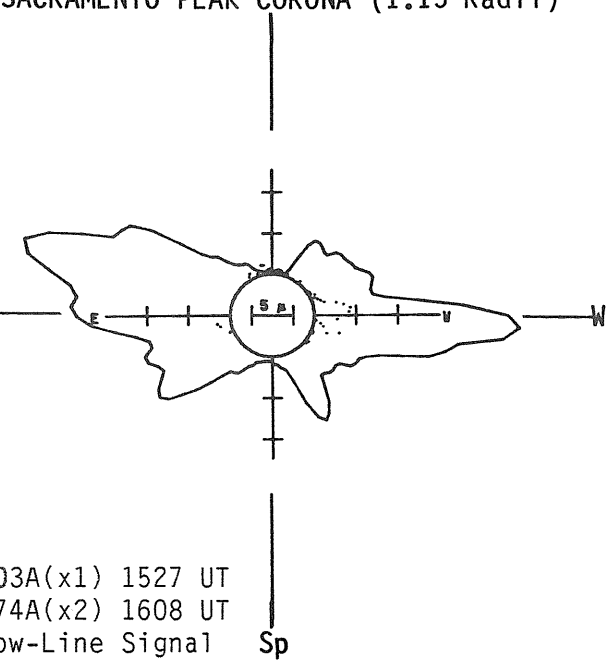
1434 UT

BOULDER SUNSPOTS



1459 UT
1515 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

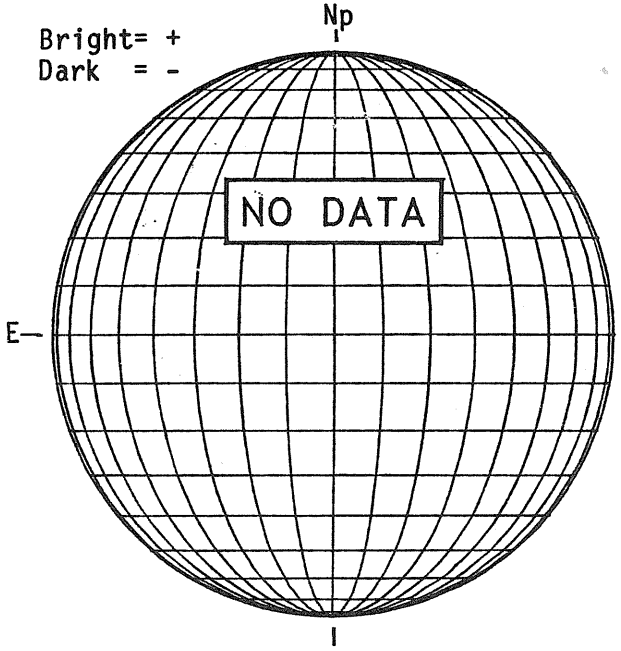


---- 5303A(x1) 1527 UT
.... 6374A(x2) 1608 UT
No Yellow-Line Signal

J U N E 05, 1 9 8 4 (P=-13.84, B_0=-0.13, L_0= 203.96)

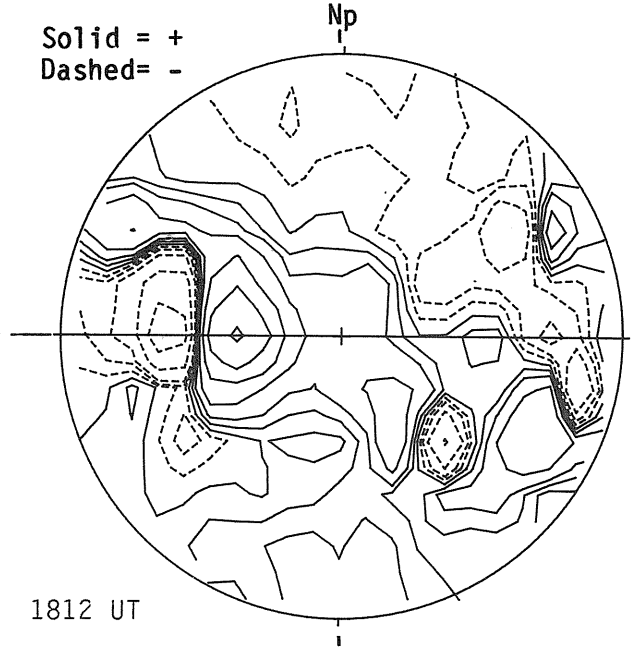
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

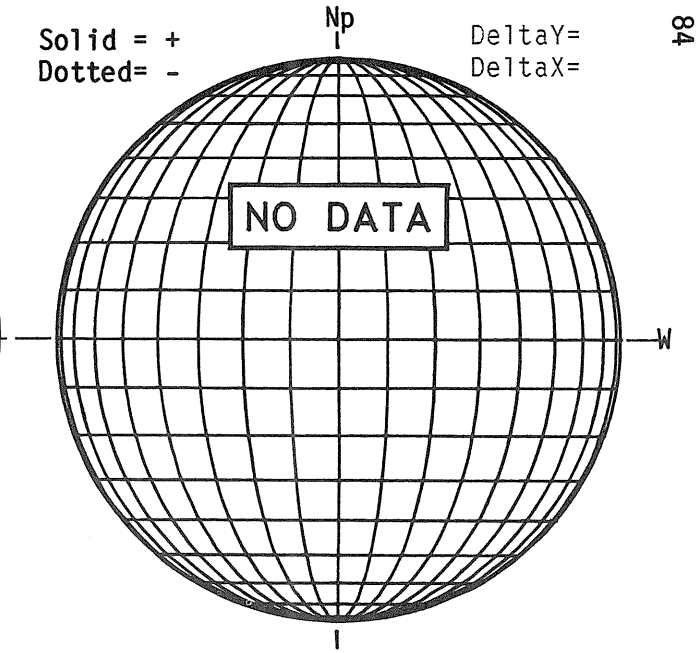
Solid = +
Dashed= -



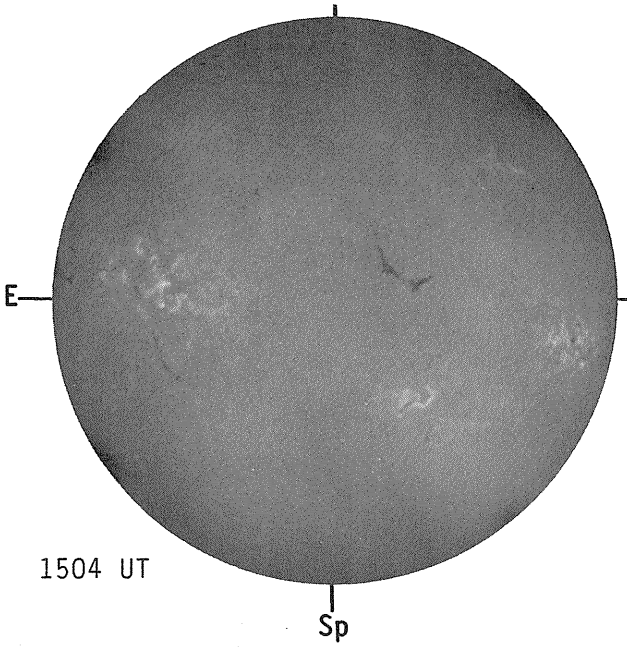
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

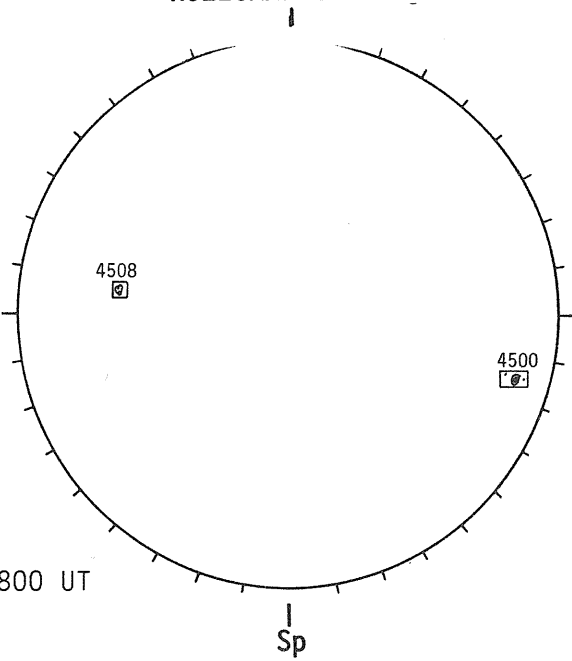
DeltaY=
DeltaX=



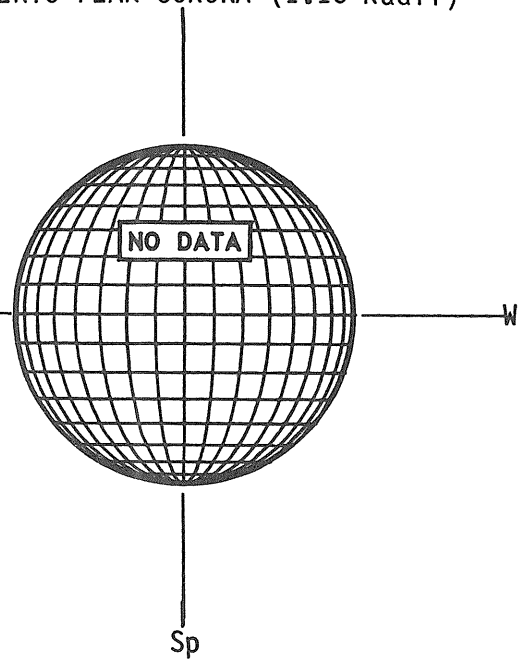
SACRAMENTO PEAK H-ALPHA



HOLLOMAN SUNSPOTS



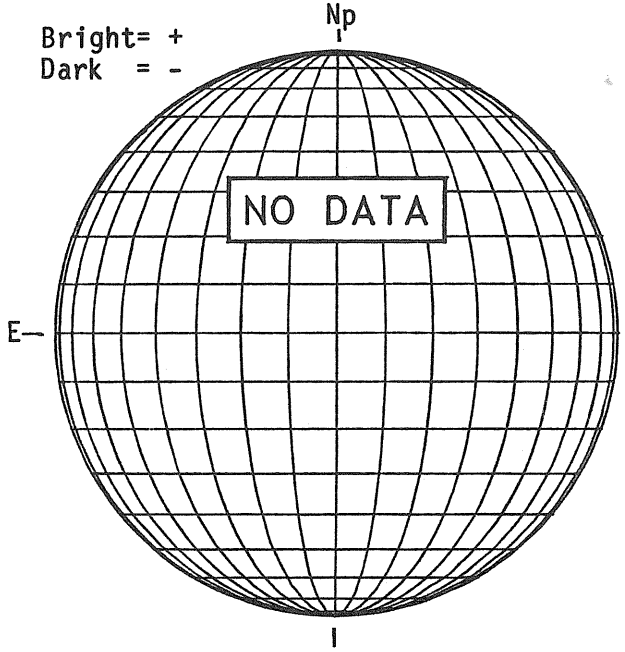
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 06, 1 9 8 4 (P=-13.44, B_0=-0.01, L_0= 190.72)

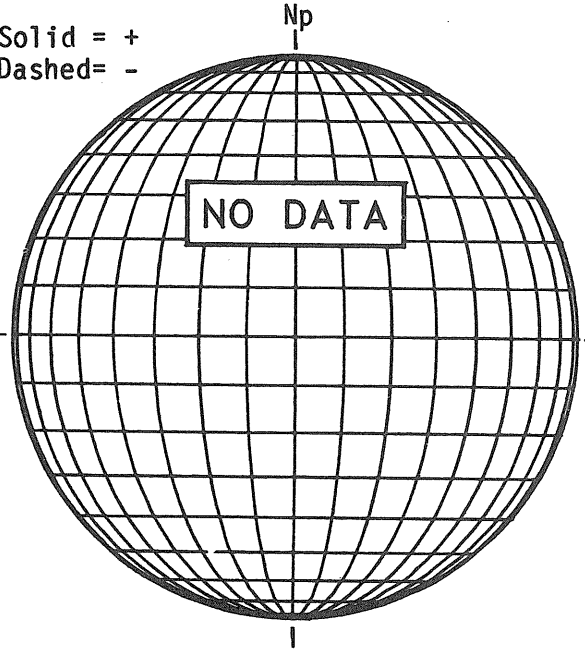
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

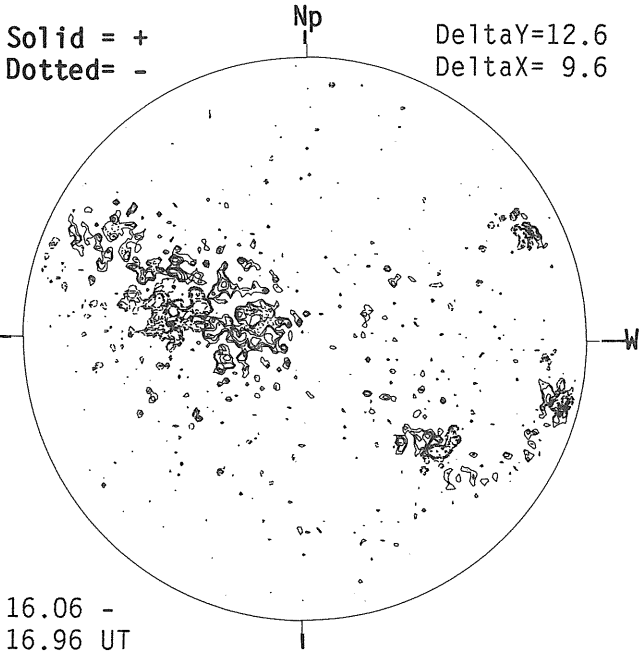
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

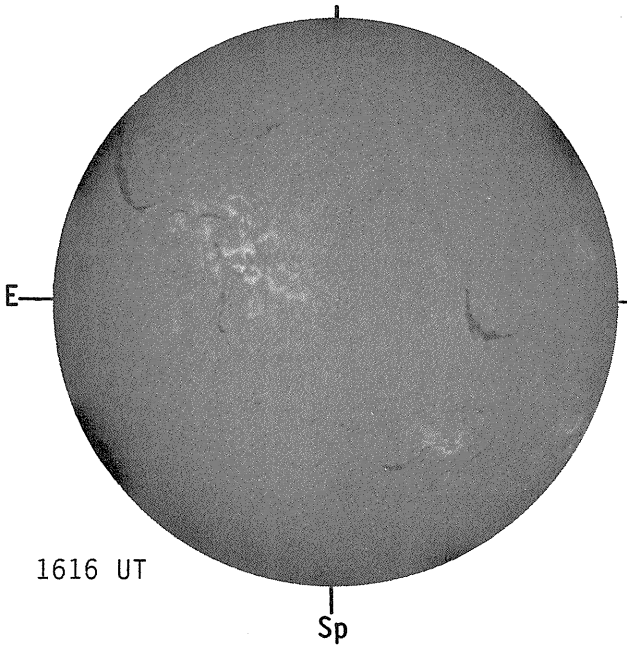
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



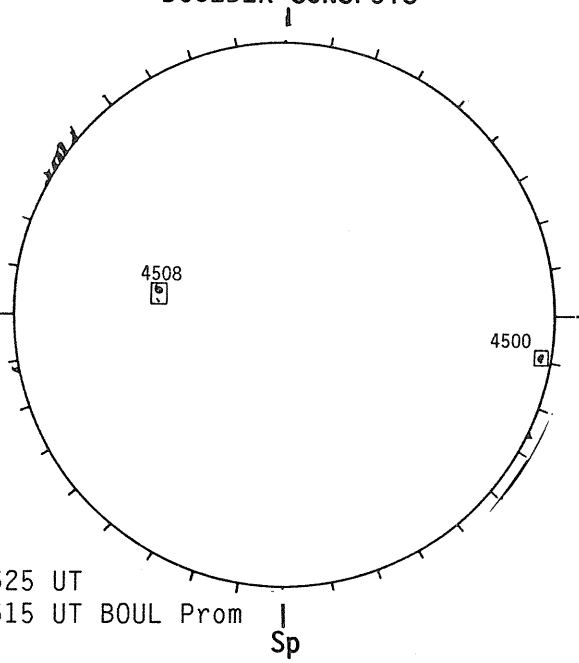
16.06 -
16.96 UT

SACRAMENTO PEAK H-ALPHA



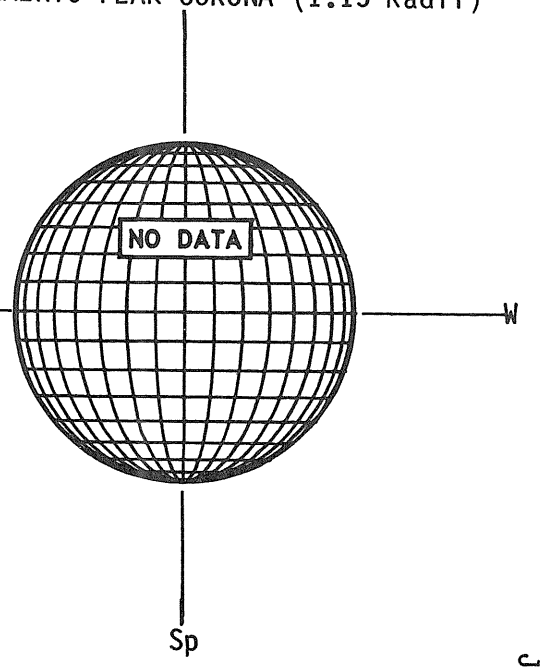
1616 UT

BOULDER SUNSPOTS



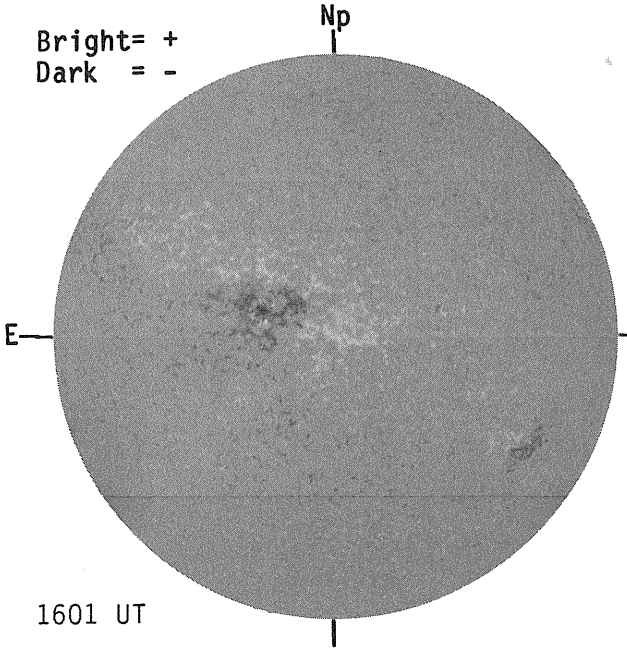
1625 UT
1615 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

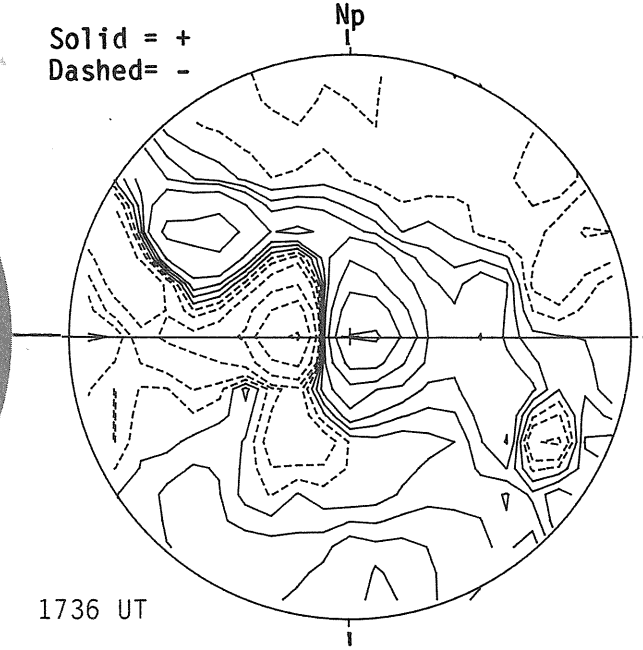


J U N E 07, 1 9 8 4 (P=-13.04, B_0= 0.11 L_0= 177.49)

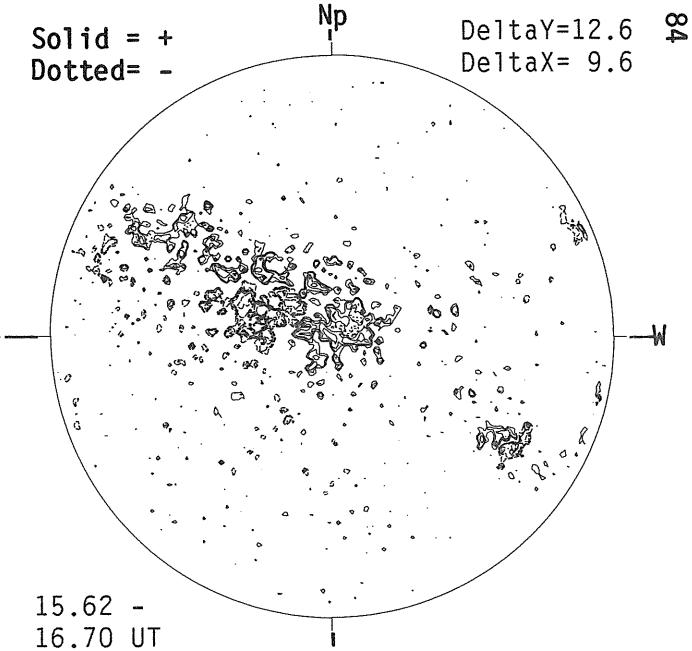
KITT PEAK MAGNETOGRAM



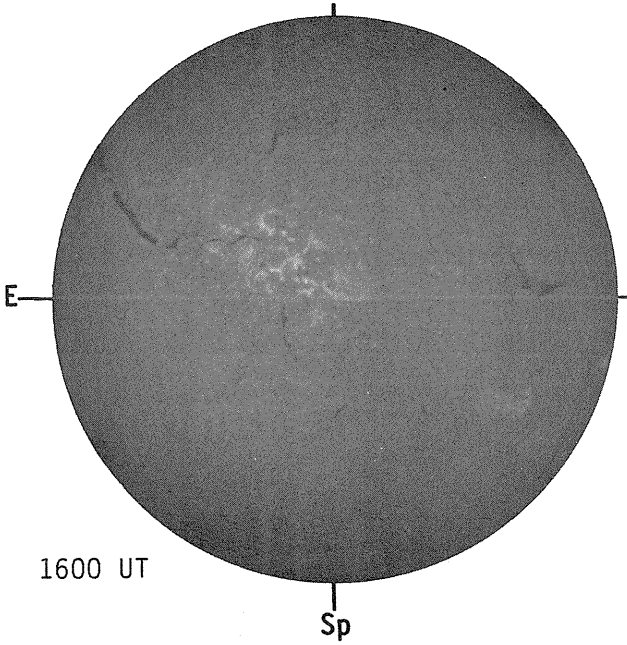
STANFORD MAGNETOGRAM



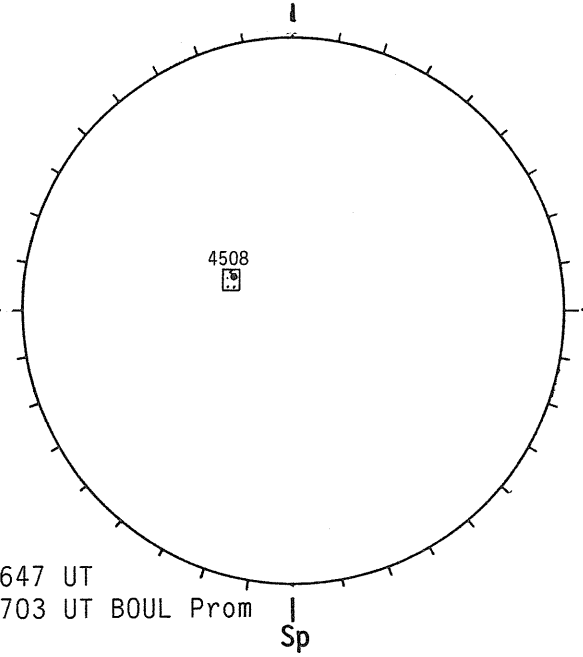
MT. WILSON MAGNETOGRAM



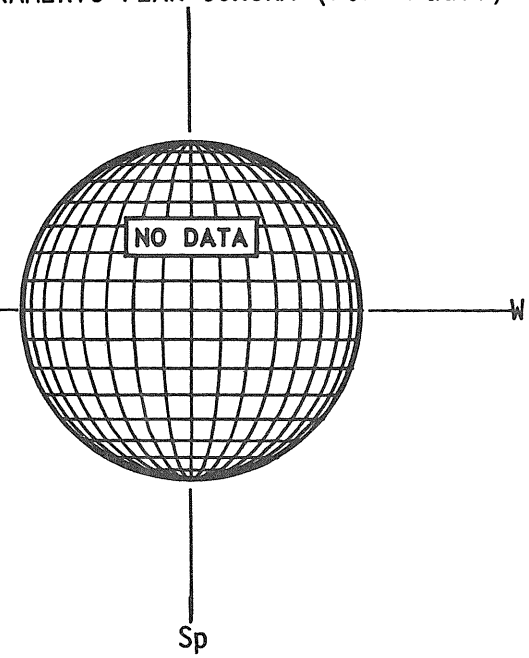
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



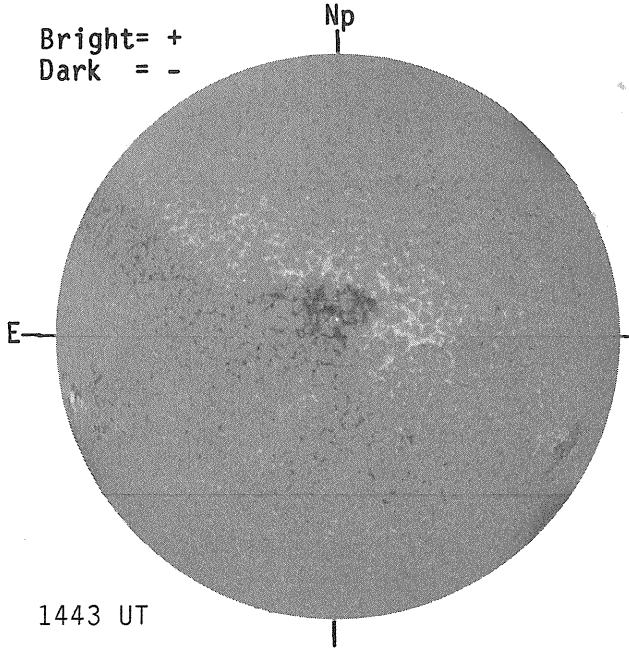
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 08, 1 9 8 4 (P=-12.64, B_0= 0.23, L_0= 164.25)

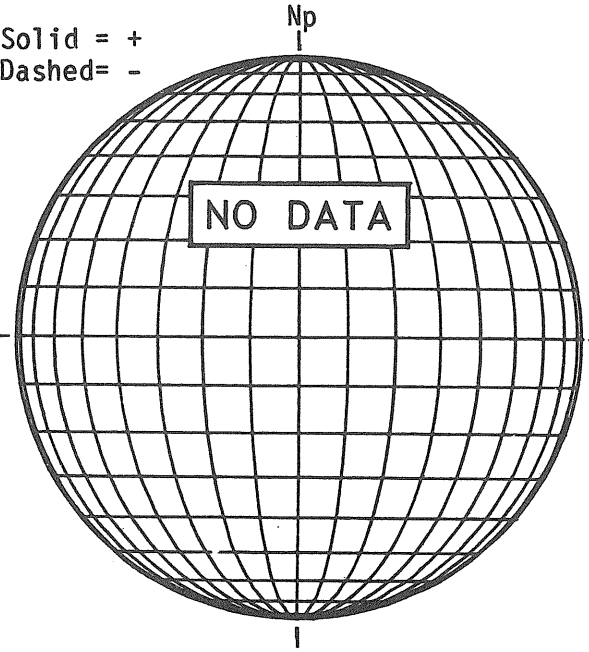
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

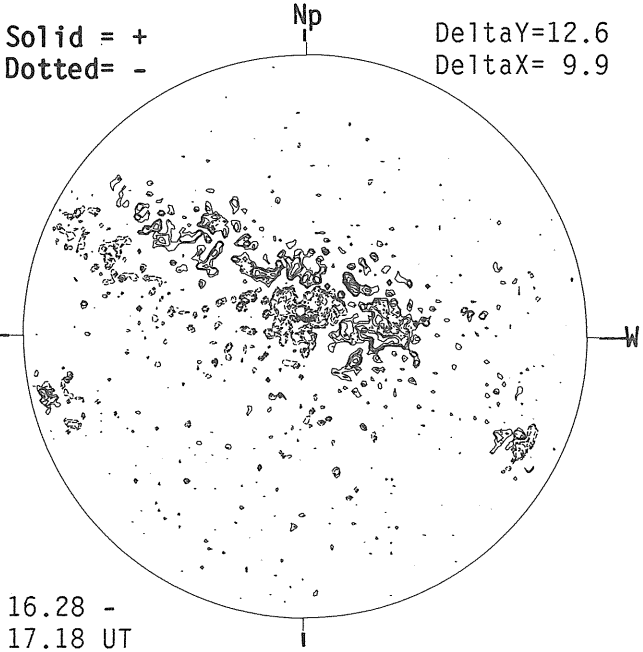
Solid = +
Dashed= -



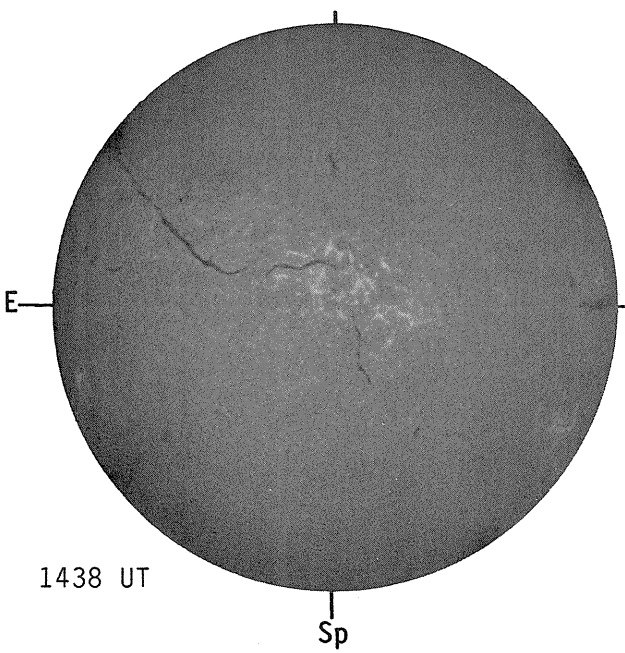
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

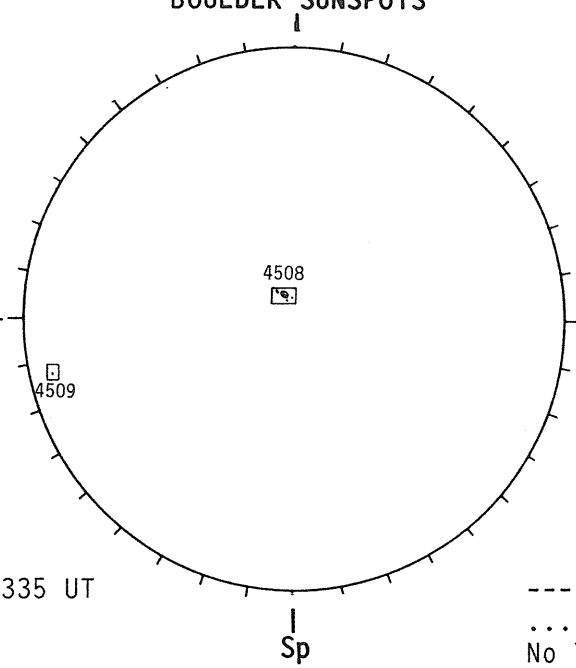
DeltaY=12.6
DeltaX= 9.9



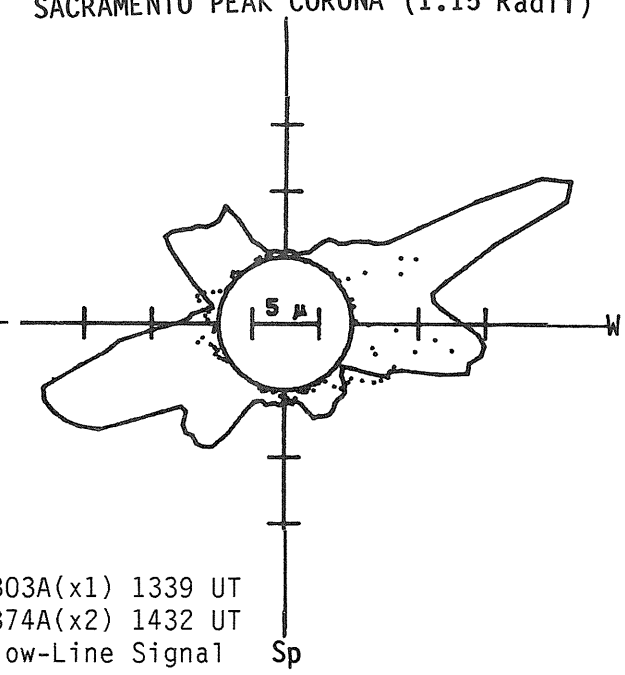
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

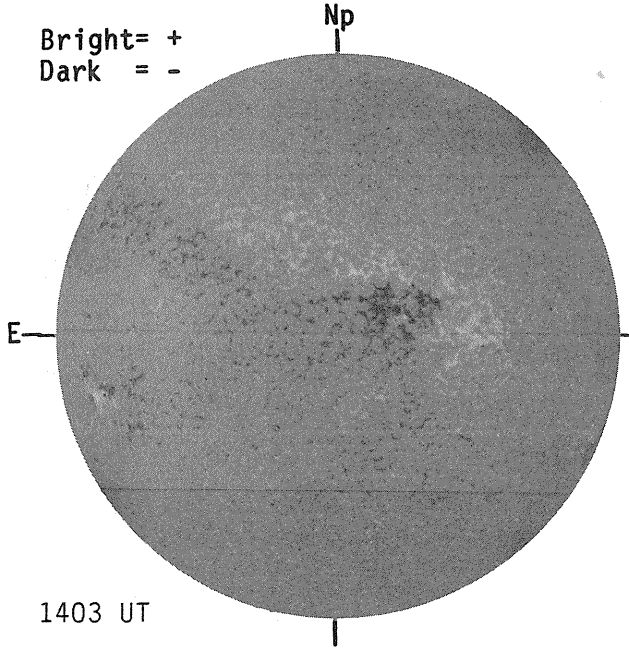


---- 5303A(x1) 1339 UT
.... 6374A(x2) 1432 UT
No Yellow-Line Signal

J U N E 09, 1 9 8 4 (P=-12.23, B_0= 0.35, L_0= 151.02)

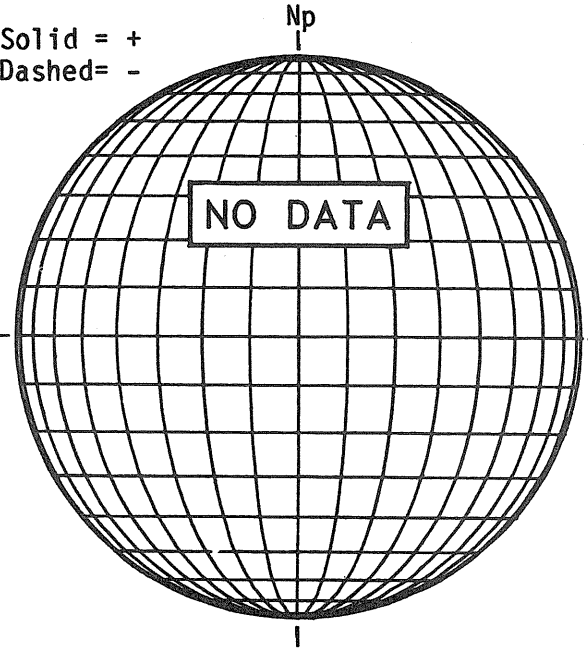
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

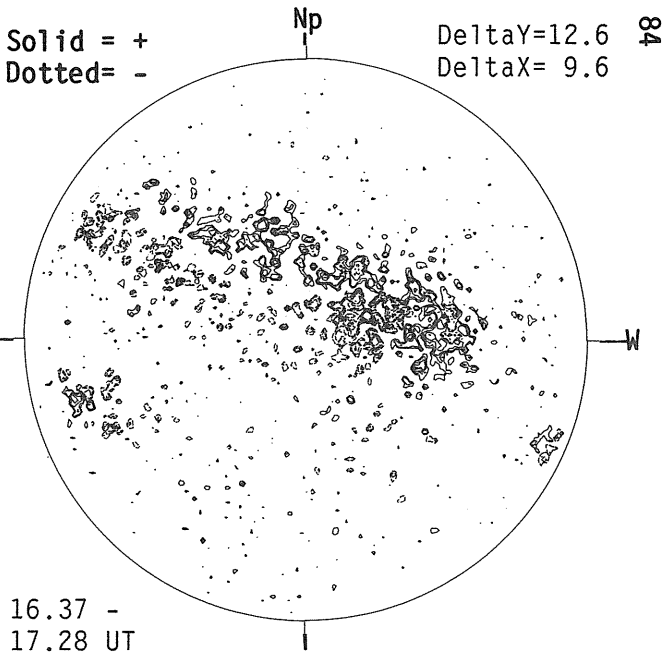
Solid = +
Dashed= -



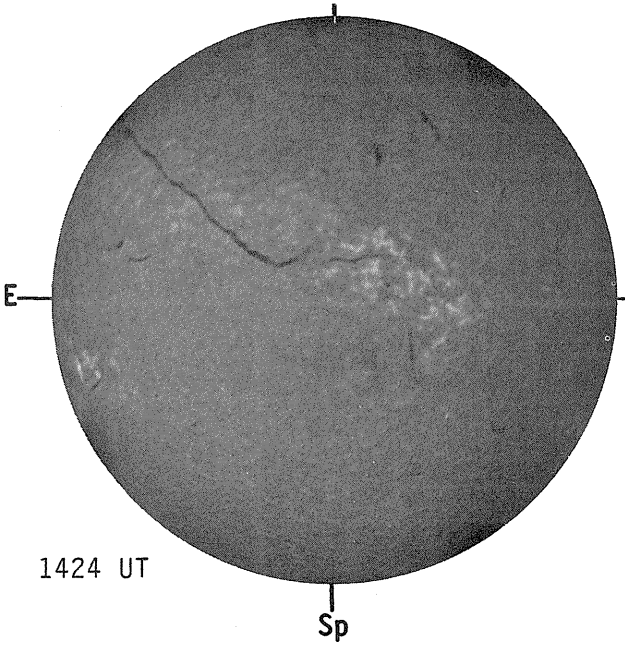
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

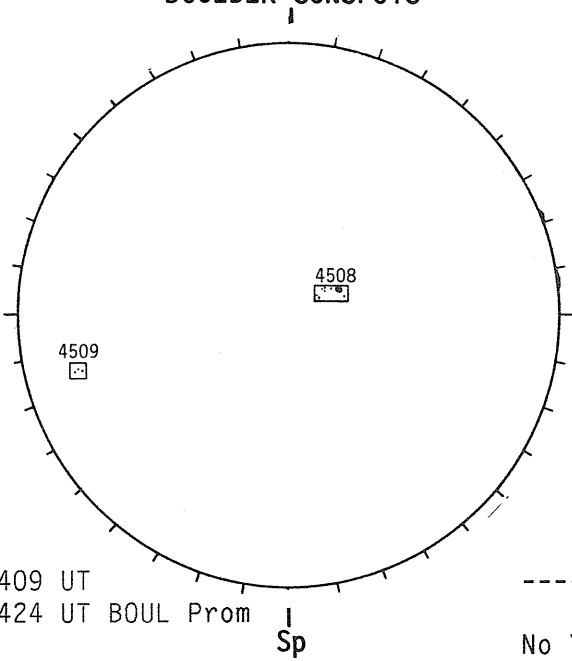
DeltaY=12.6
DeltaX= 9.6



BOULDER H-ALPHA

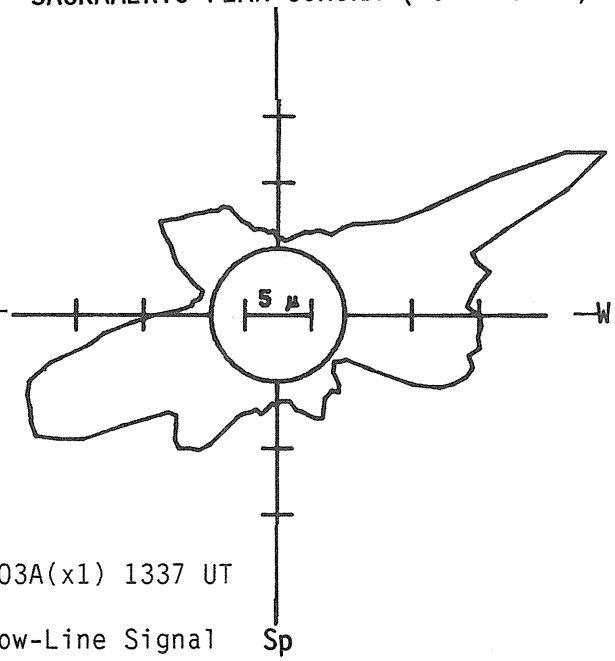


BOULDER SUNSPOTS



1409 UT
1424 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



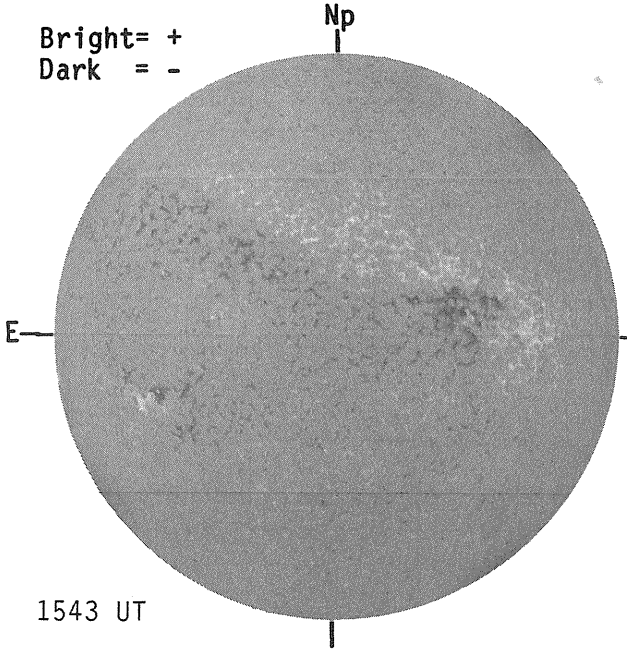
---- 5303A(x1) 1337 UT

No Yellow-Line Signal

J U N E 10, 1 9 8 4 (P=-11.82, B_0= 0.47, L_0= 137.78)

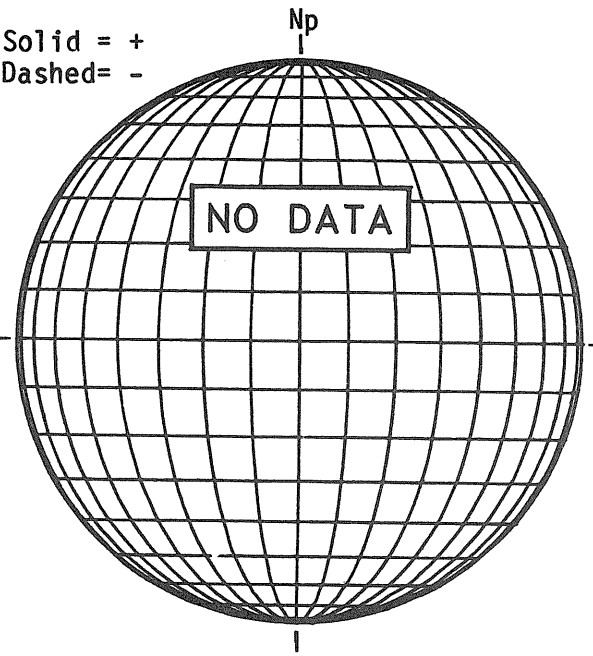
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

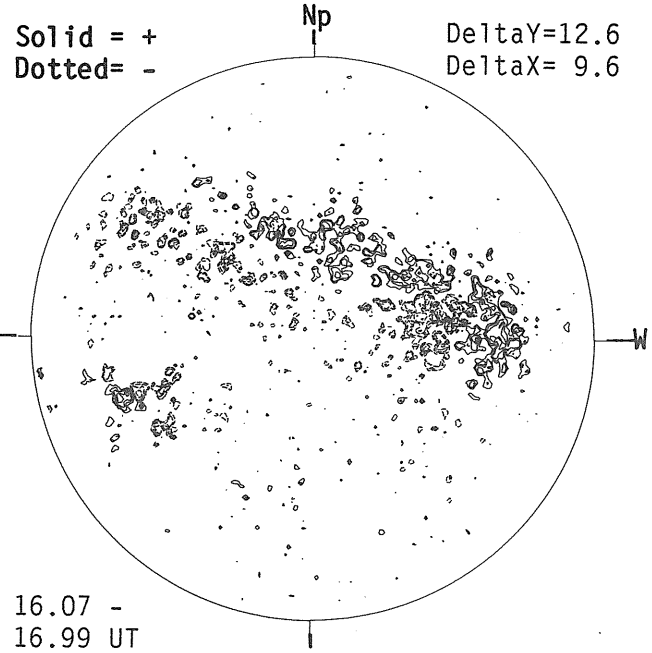
Solid = +
Dashed= -



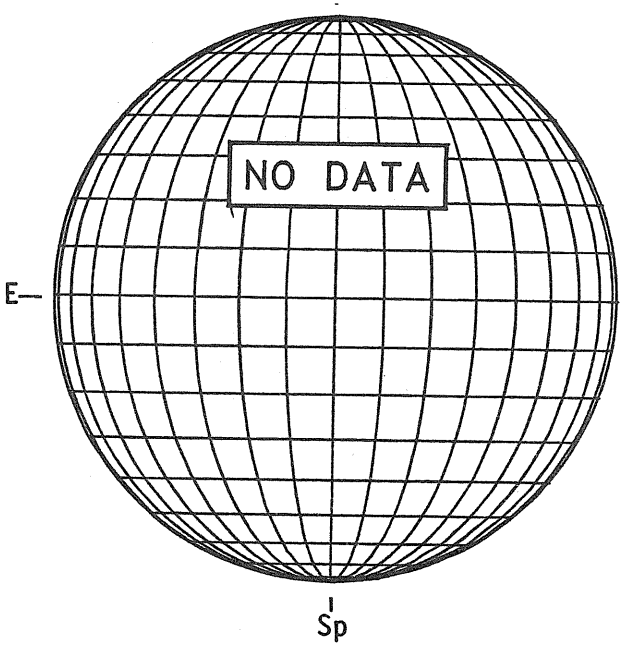
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

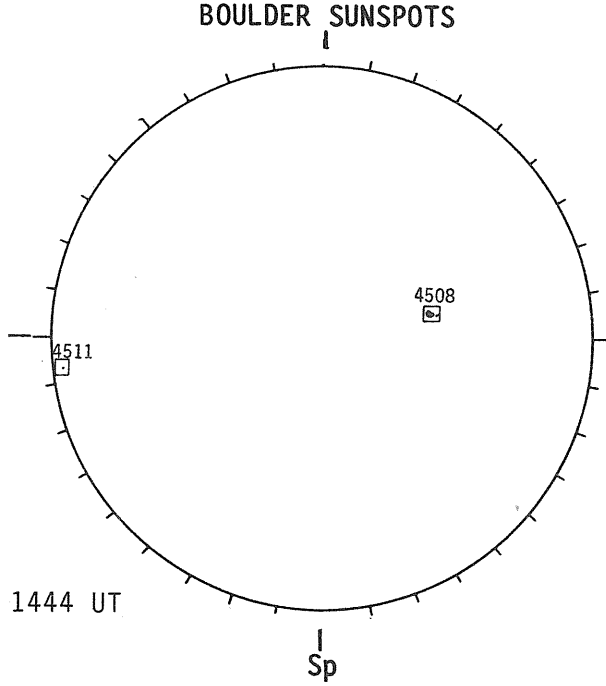
DeltaY=12.6
DeltaX= 9.6



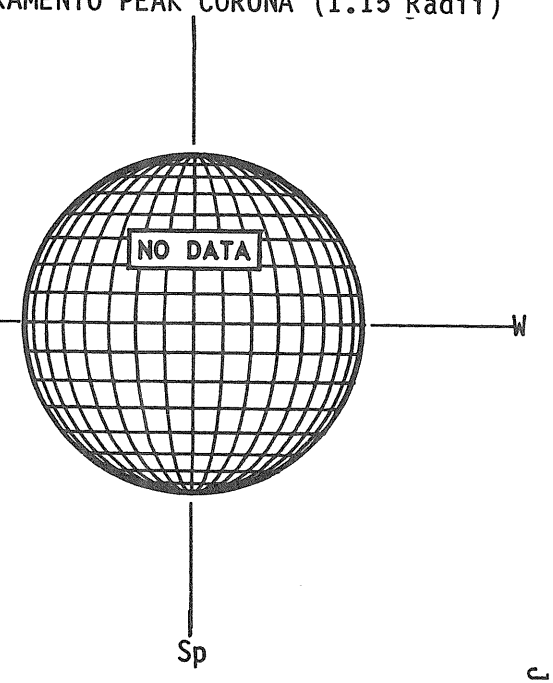
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

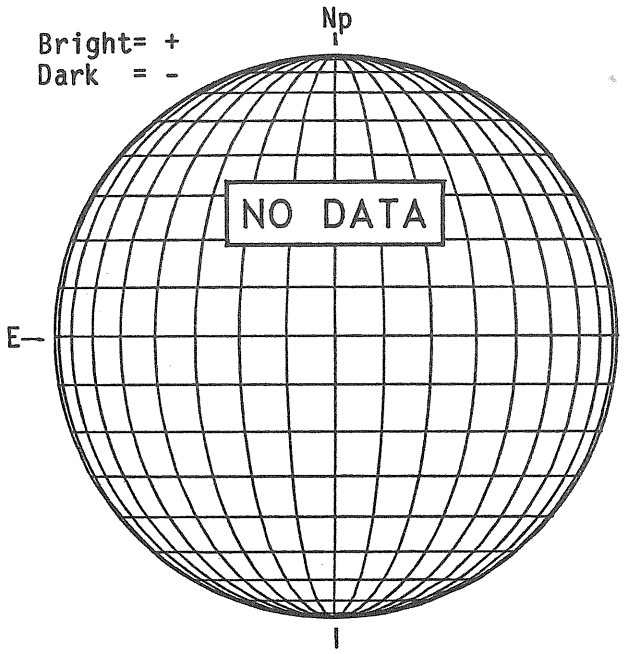


SACRAMENTO PEAK CORONA (1.15 Radii)

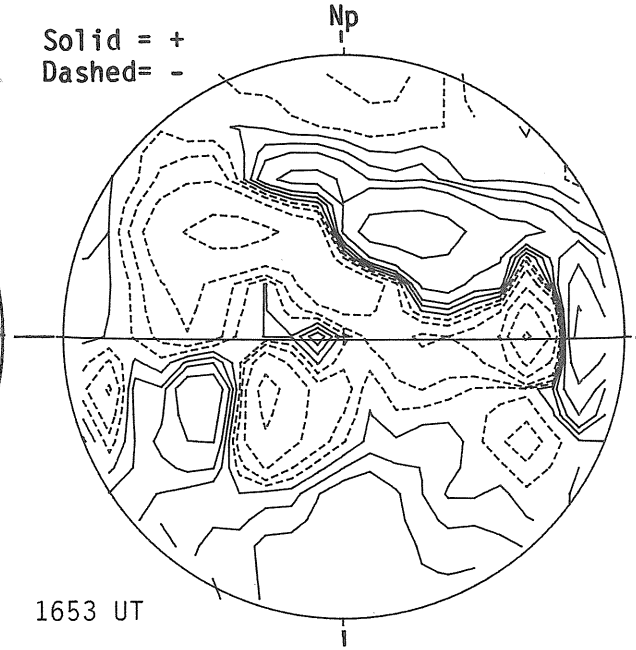


J U N E 11, 1 9 8 4 (P=-11.41, B_0= 0.59, L_0= 124.54)

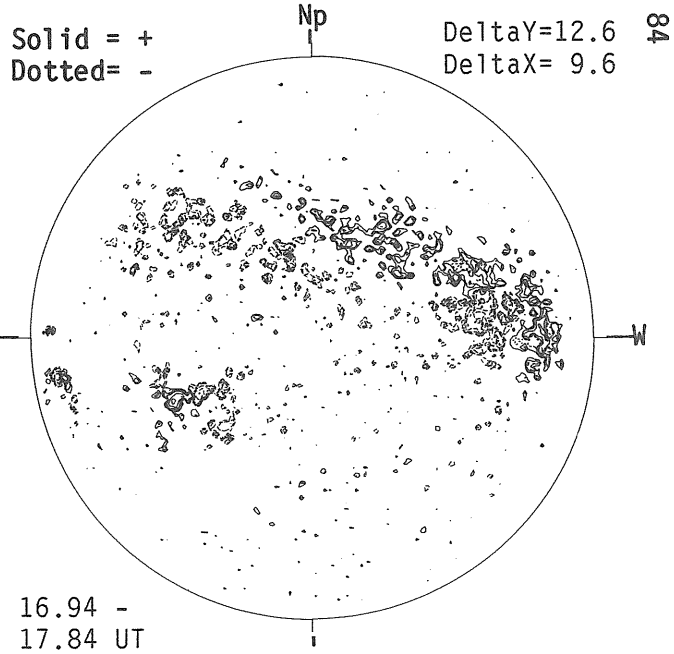
KITT PEAK MAGNETOGRAM



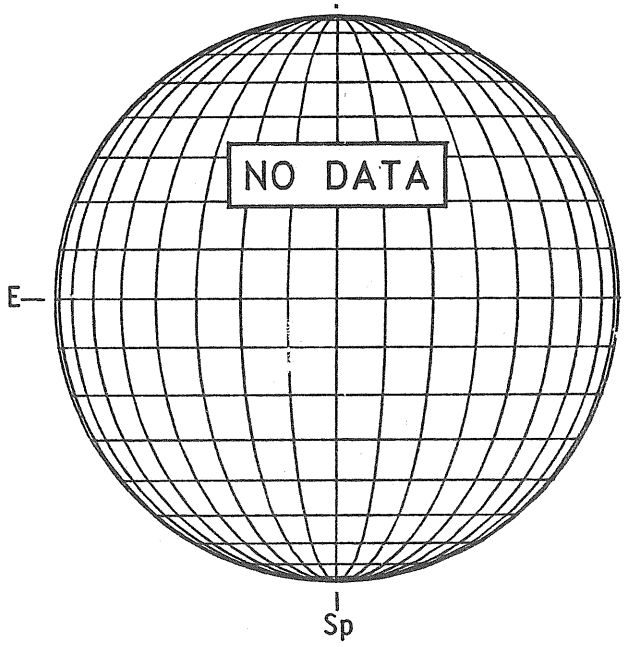
STANFORD MAGNETOGRAM



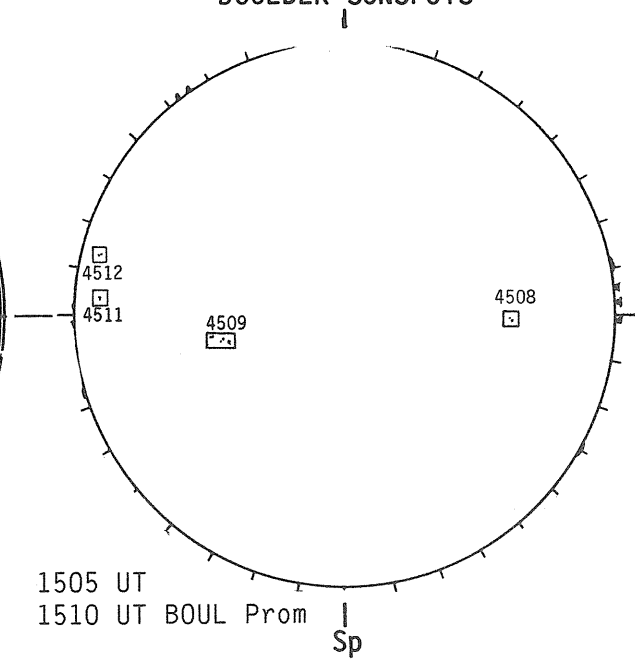
MT. WILSON MAGNETOGRAM



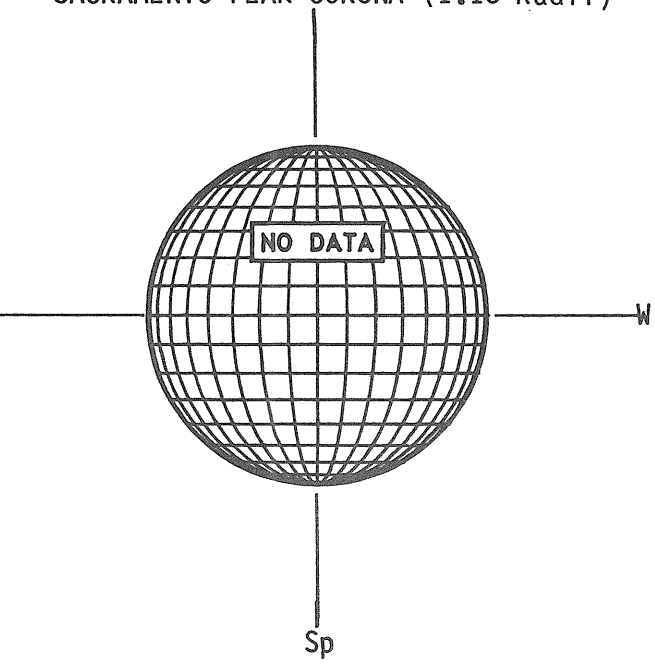
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



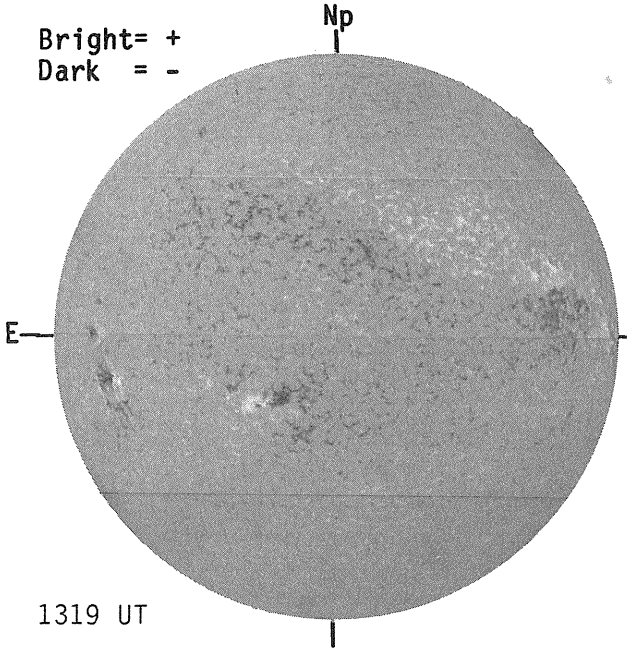
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 12, 1 9 8 4 (P=-10.99, B_0= 0.71, L_0= 111.31)

KITT PEAK MAGNETOGRAM

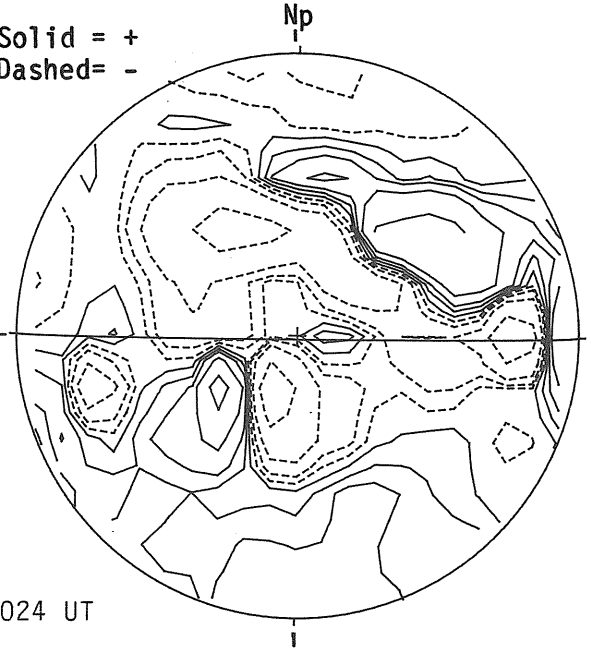
Bright= +
Dark = -



1319 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

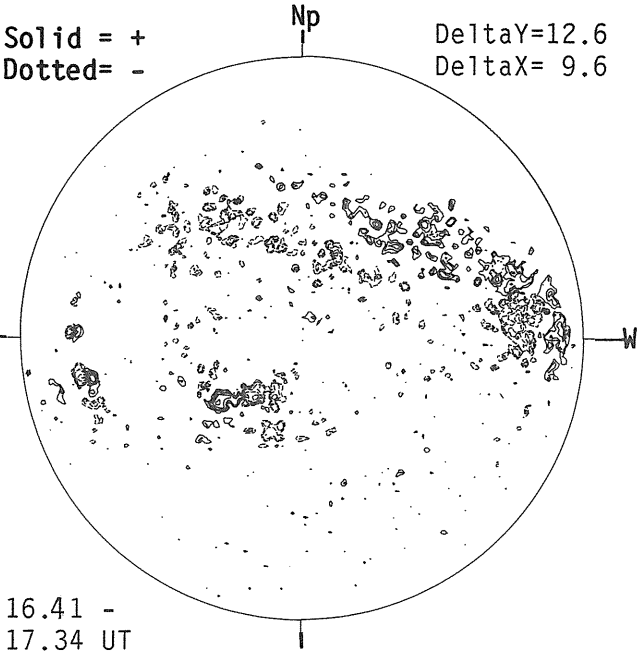


2024 UT

MT. WILSON MAGNETOGRAM

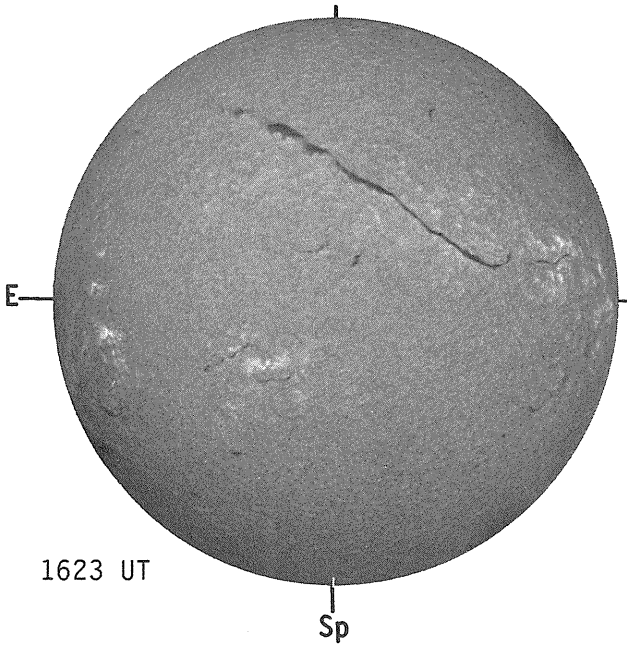
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



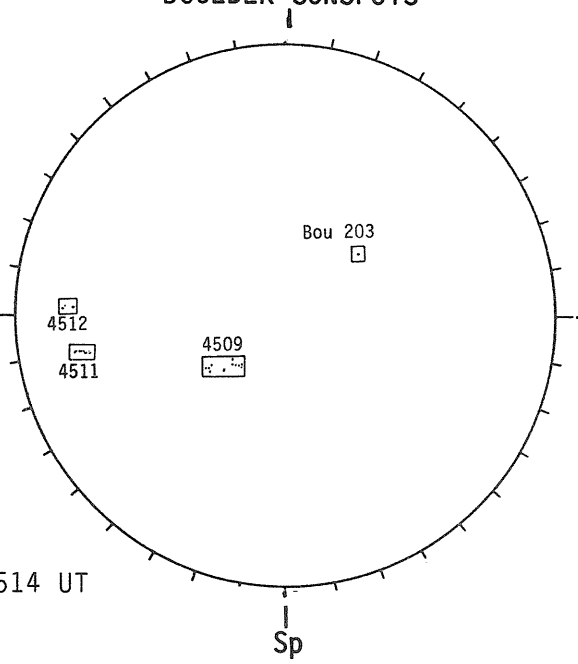
16.41 -
17.34 UT

BOULDER H-ALPHA



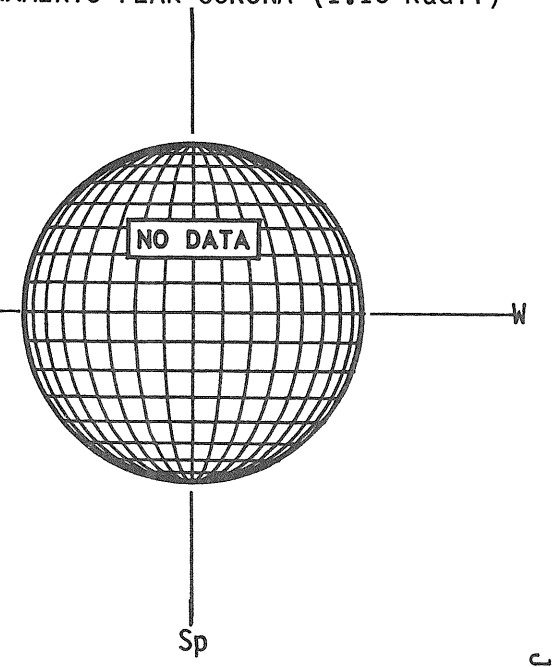
1623 UT

BOULDER SUNSPOTS



1514 UT

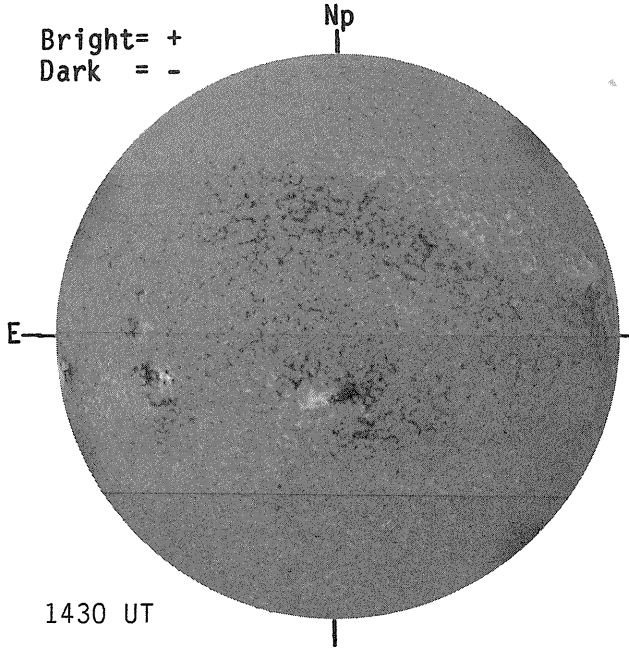
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 13, 1 9 8 4 (P=-10.57, B_0= 0.83, L_0= 98.07)

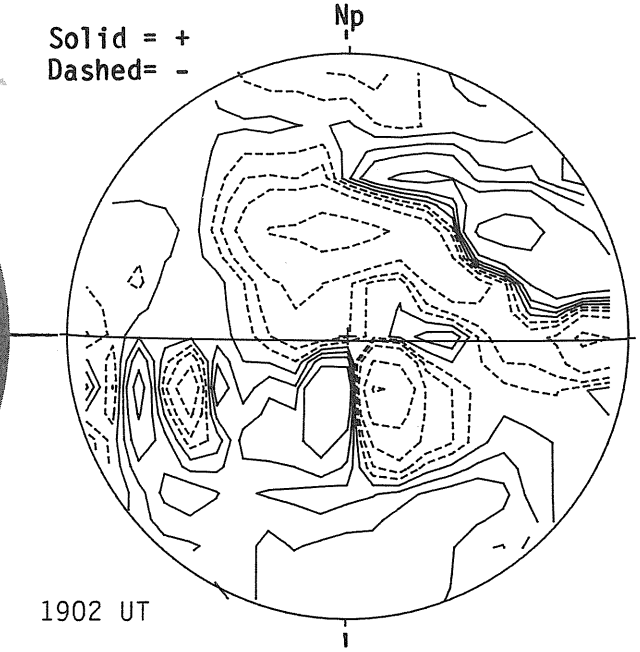
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

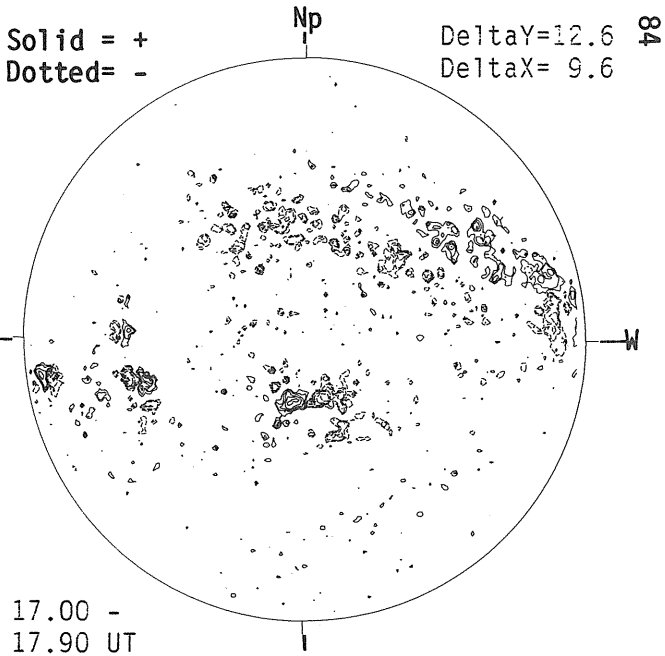
Solid = +
Dashed= -



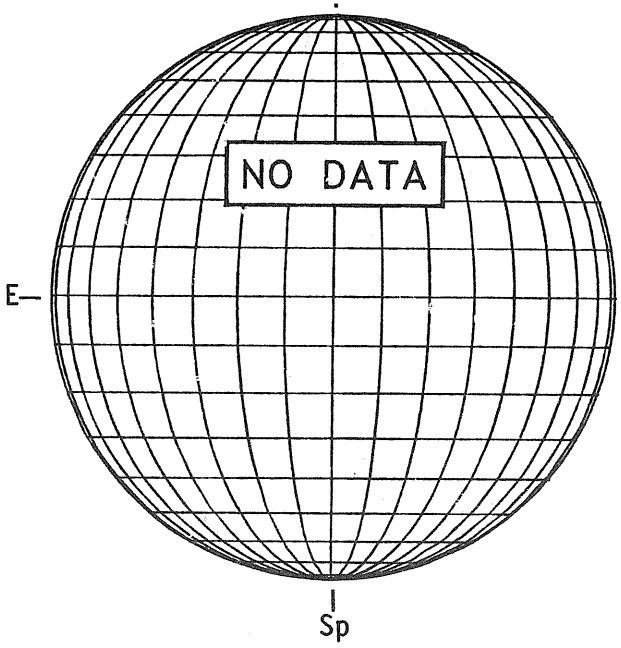
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

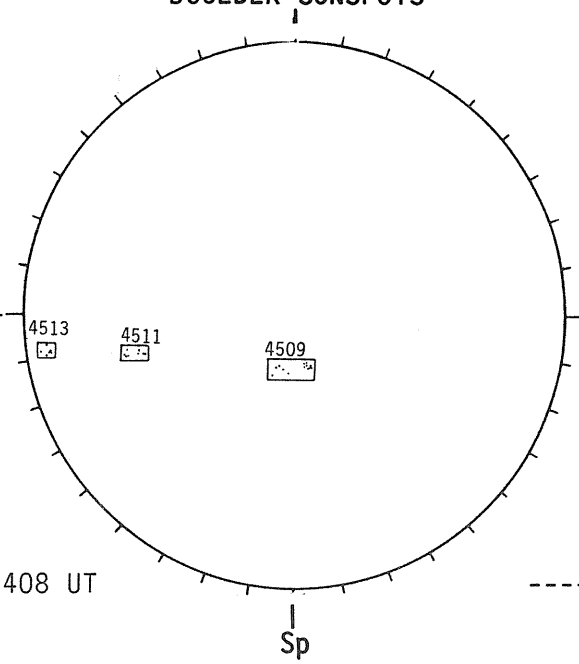
DeltaY=12.6
DeltaX= 9.6



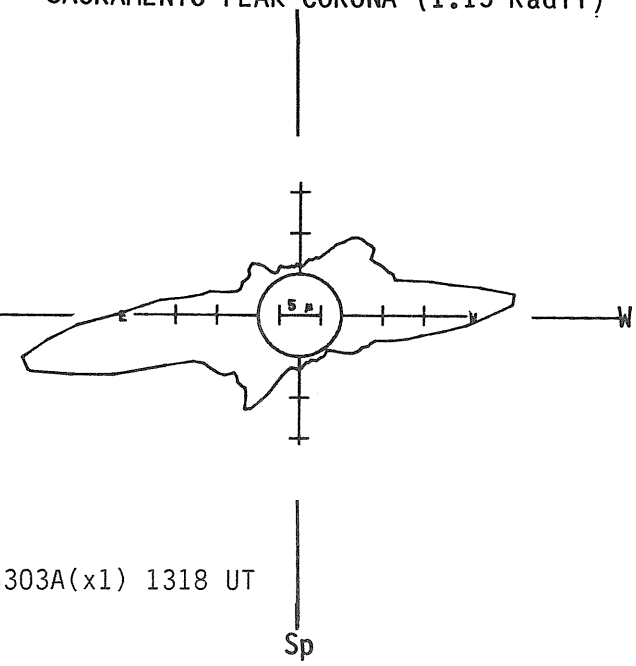
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

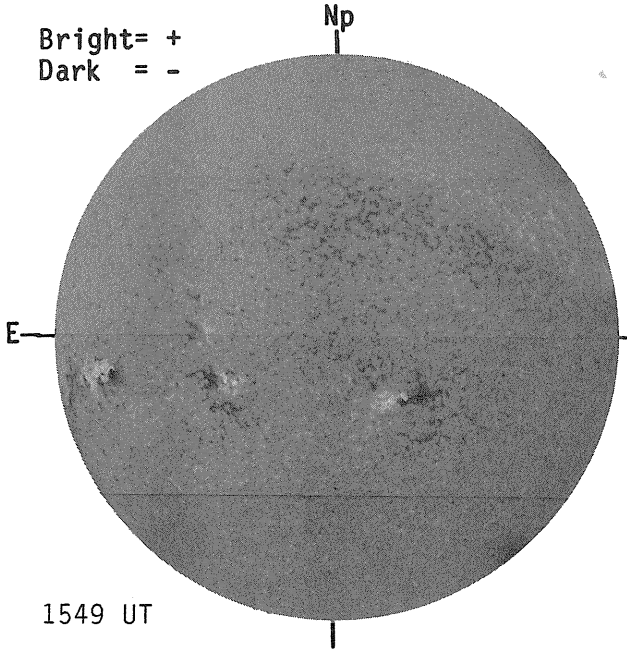


---- 5303A(x1) 1318 UT

J U N E 14, 1 9 8 4 (P=-10.15, B_0= 0.95, L_0= 84.83)

KITT PEAK MAGNETOGRAM

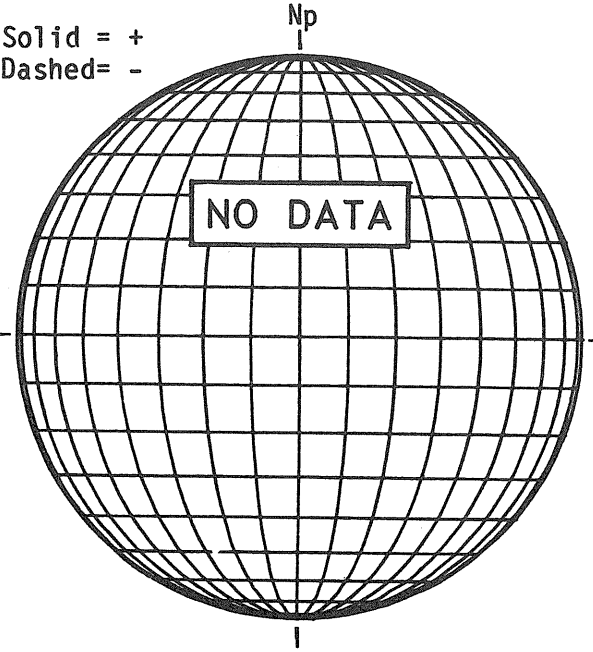
Bright= +
Dark = -



1549 UT

STANFORD MAGNETOGRAM

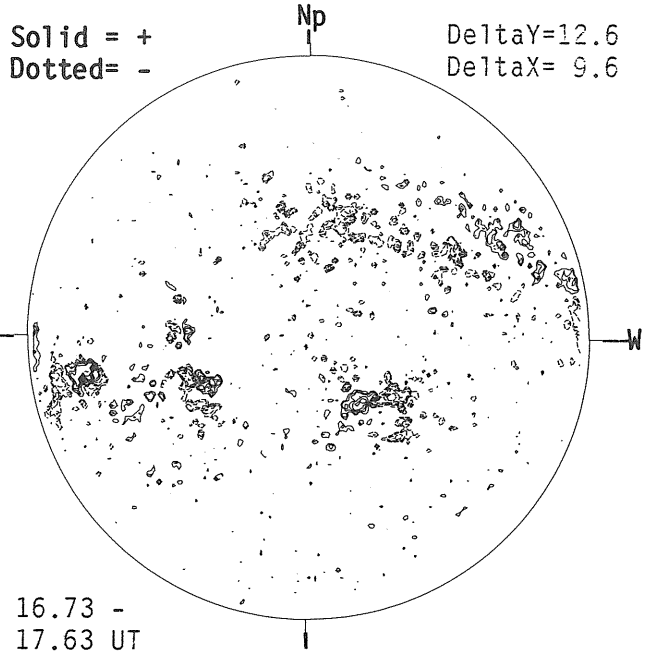
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

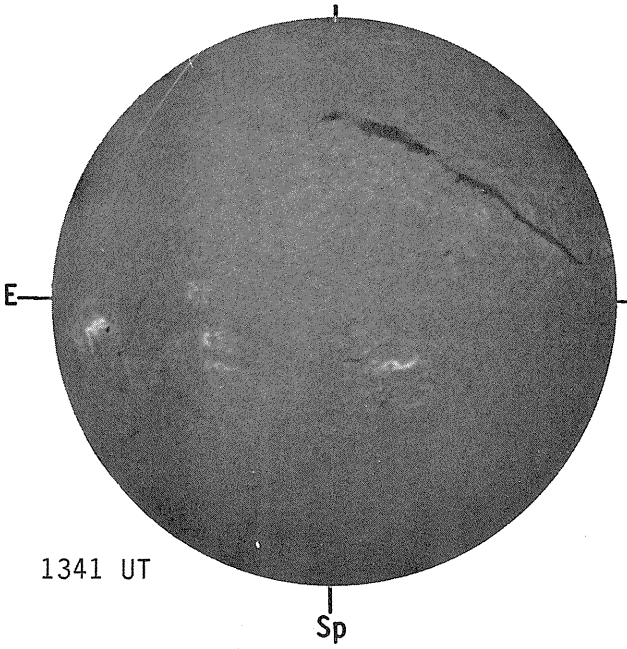
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



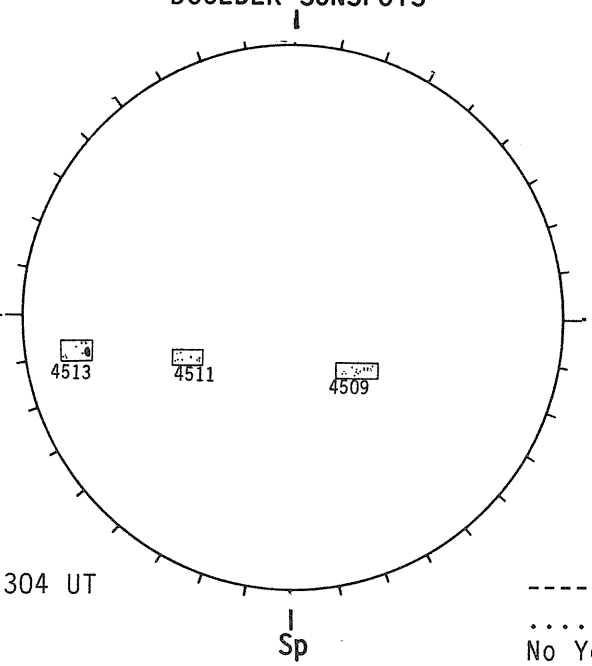
16.73 -
17.63 UT

BOULDER H-ALPHA



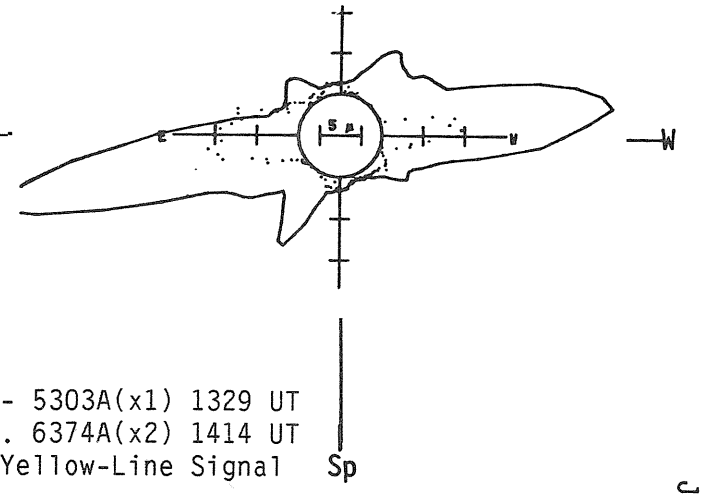
1341 UT

BOULDER SUNSPOTS



1304 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

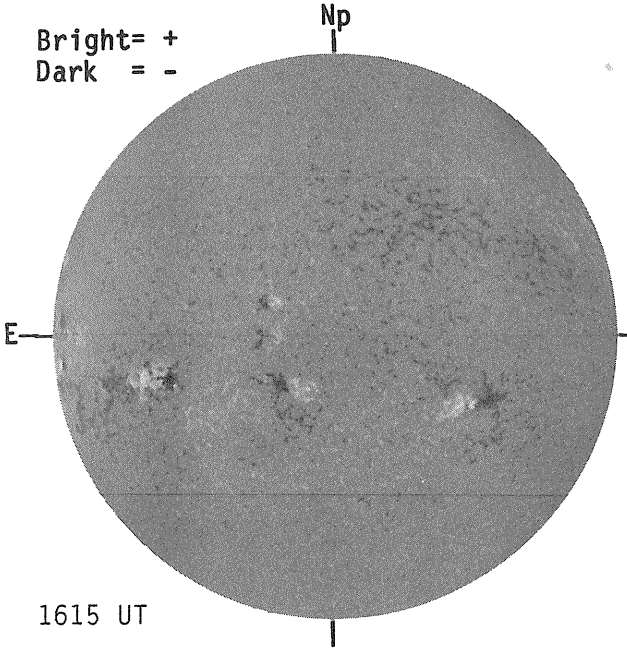


---- 5303A(x1) 1329 UT
.... 6374A(x2) 1414 UT
No Yellow-Line Signal

J U N E 15, 1 9 8 4 (P=- 9.72, B_0= 1.07, L_0= 71.60)

KITT PEAK MAGNETOGRAM

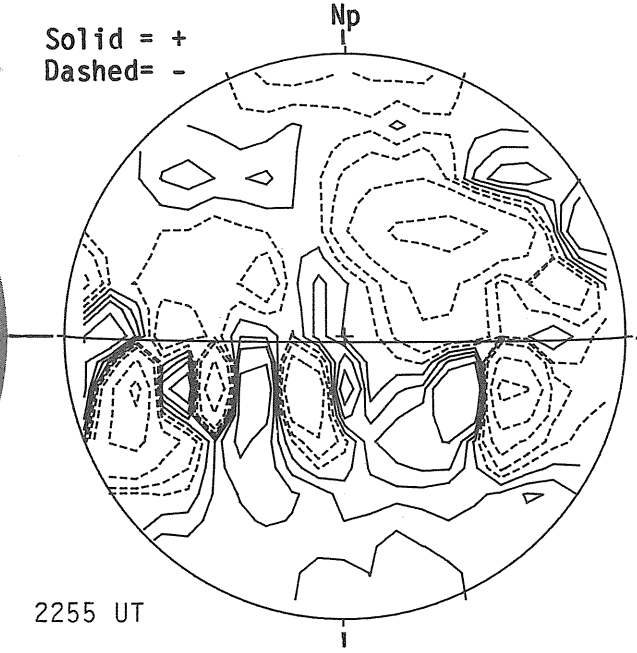
Bright= +
Dark = -



1615 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

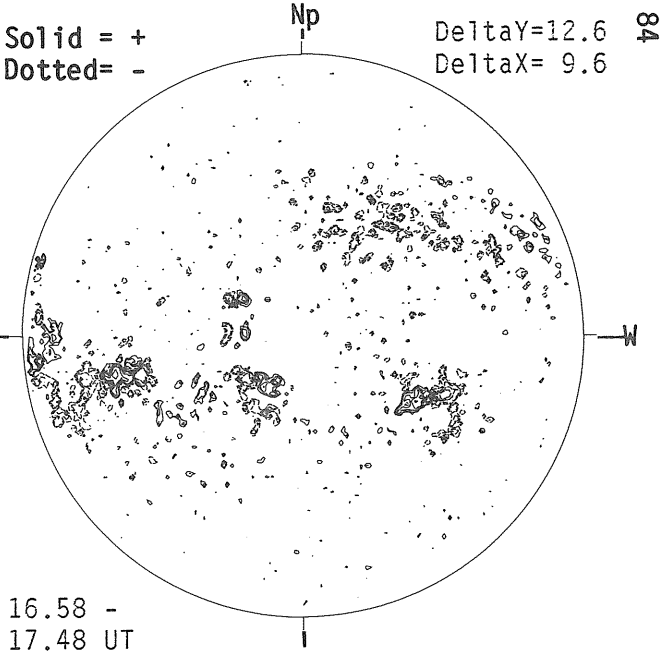


2255 UT

MT. WILSON MAGNETOGRAM

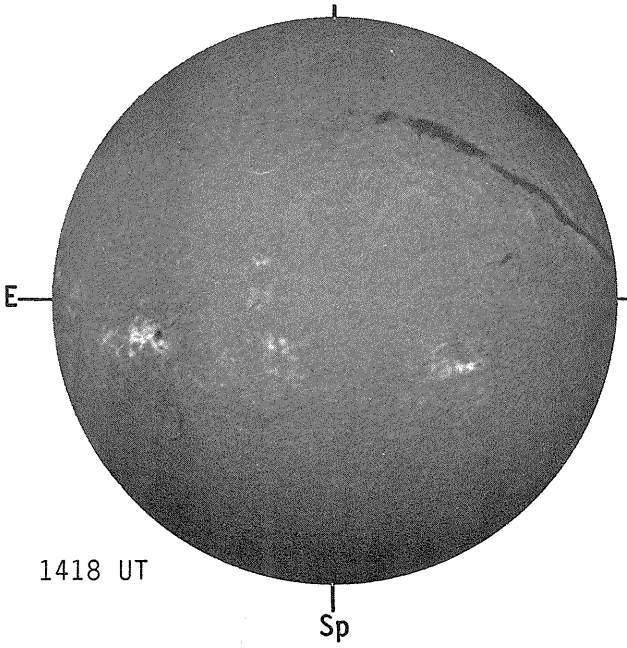
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



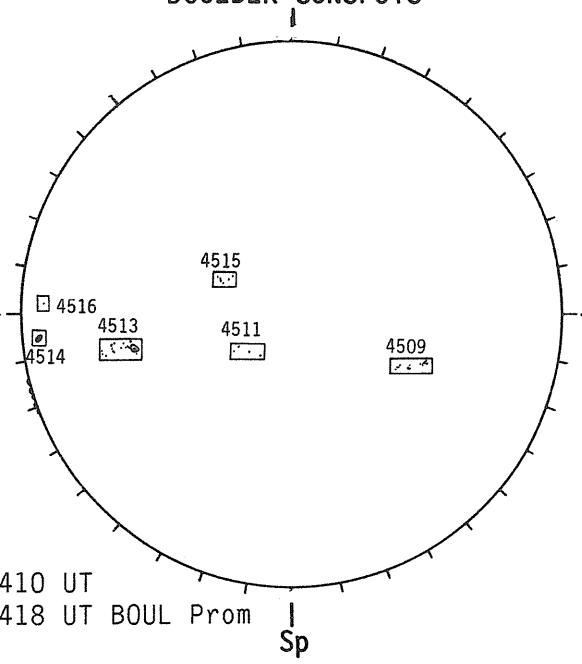
16.58 -
17.48 UT

BOULDER H-ALPHA



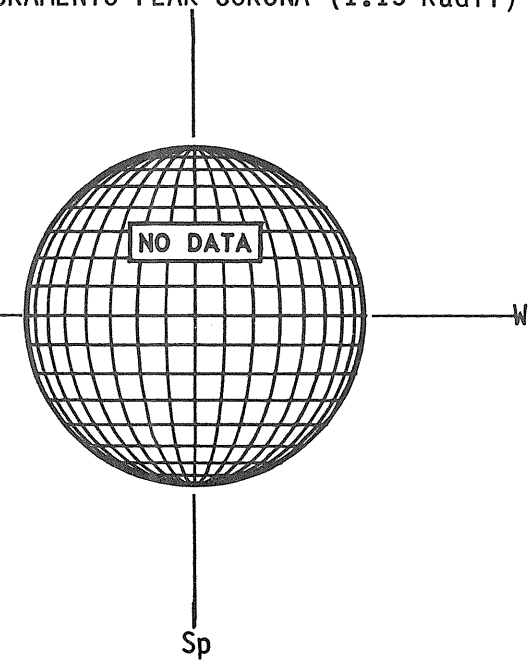
1418 UT

BOULDER SUNSPOTS



1410 UT
1418 UT BOUL Prom

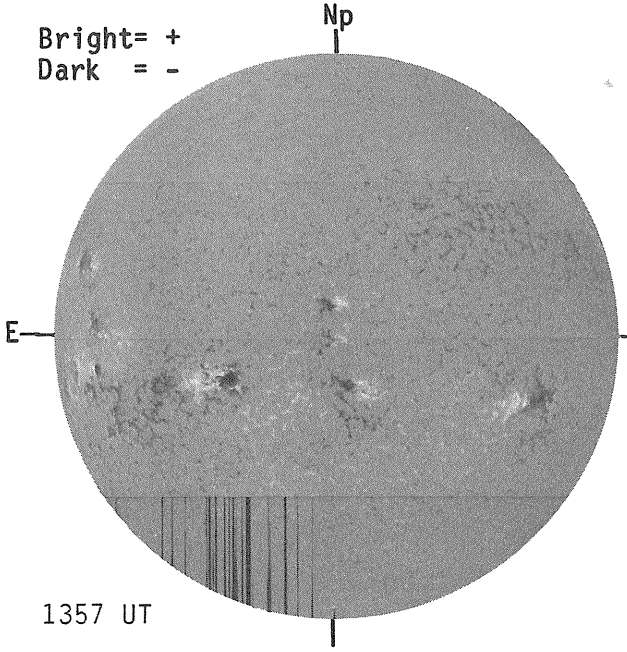
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 16, 1 9 8 4 (P=- 9.29, B_o= 1.19 L_o= 58.36)

KITT PEAK MAGNETOGRAM

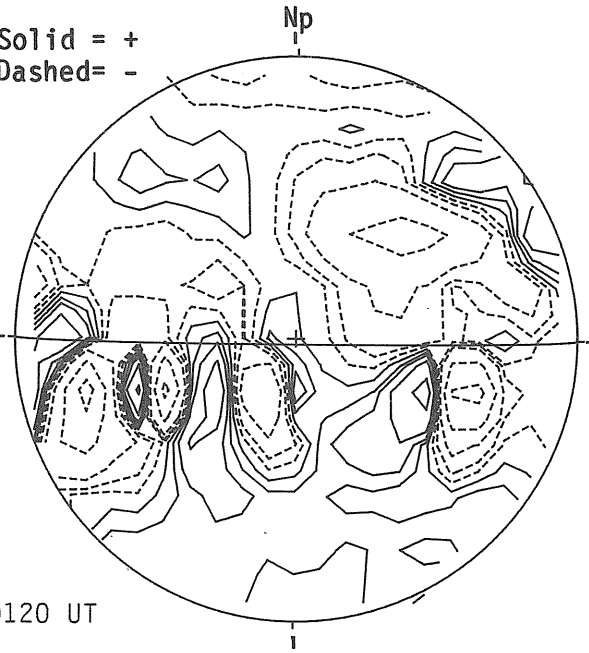
Bright= +
Dark = -



1357 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

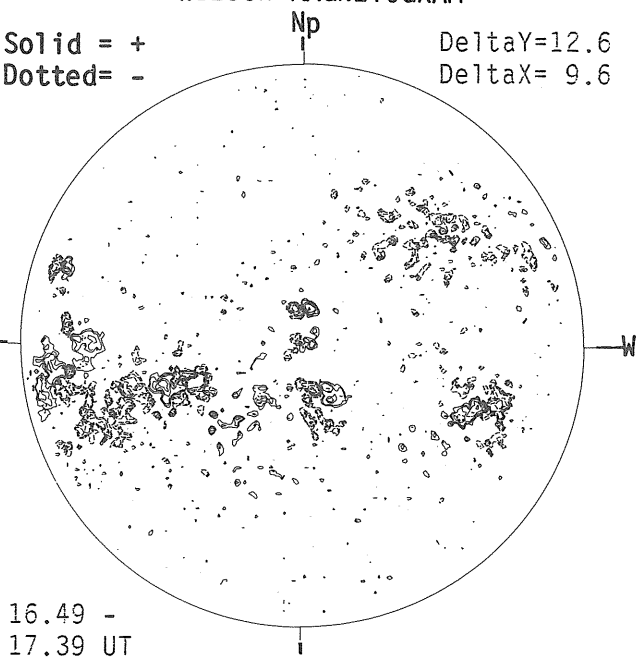


0120 UT

MT. WILSON MAGNETOGRAM

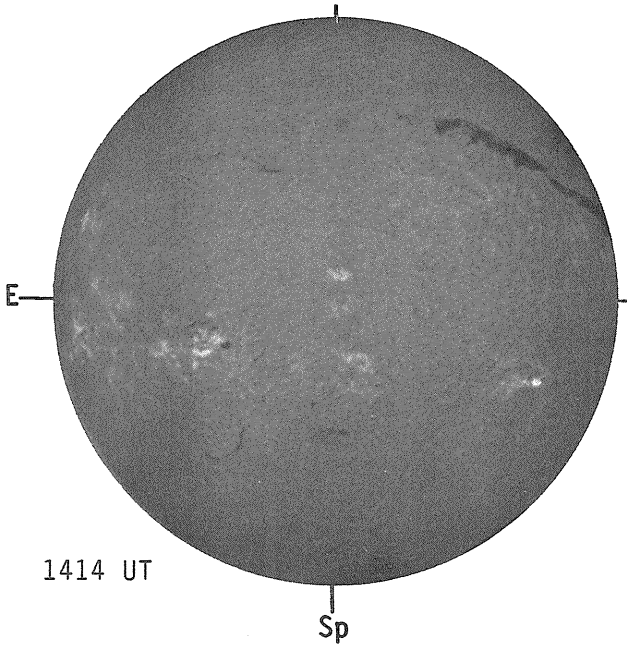
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



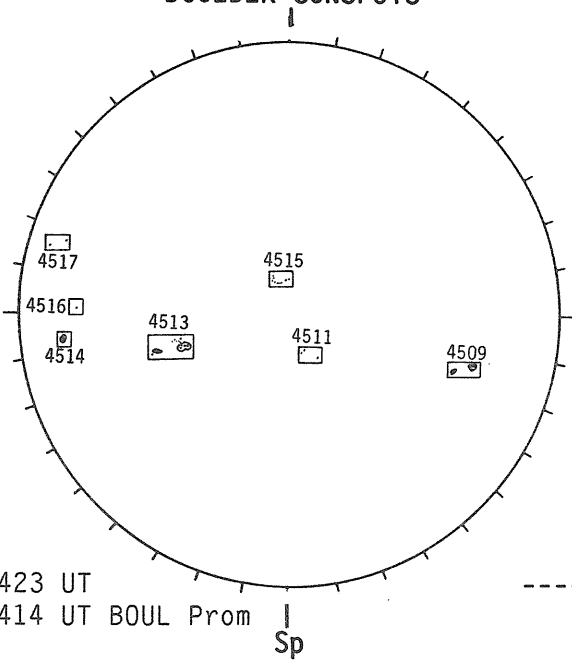
16.49 -
17.39 UT

BOULDER H-ALPHA



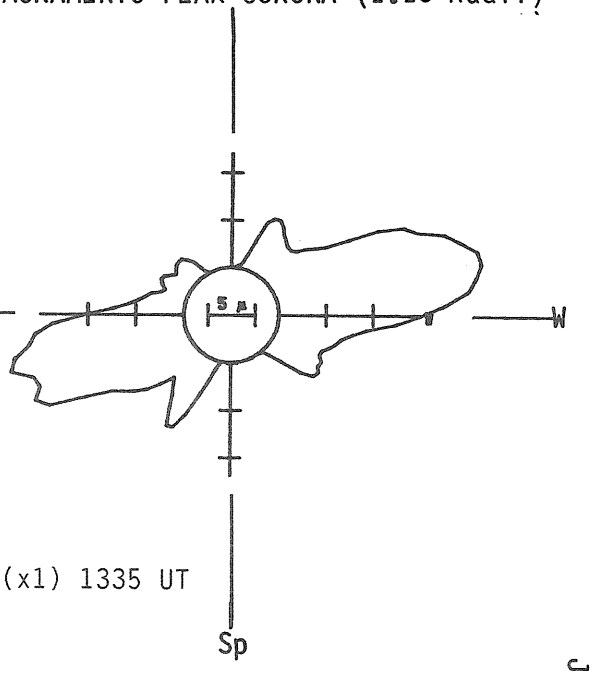
1414 UT

BOULDER SUNSPOTS



1423 UT
1414 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

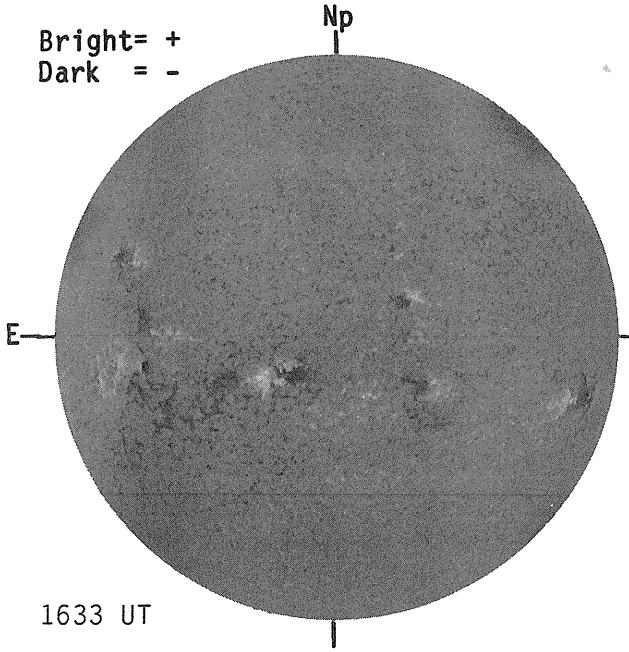


---- 5303A(x1) 1335 UT

J U N E 17, 1 9 8 4 (P=- 8.86, B_0= 1.31, L_0= 45.12)

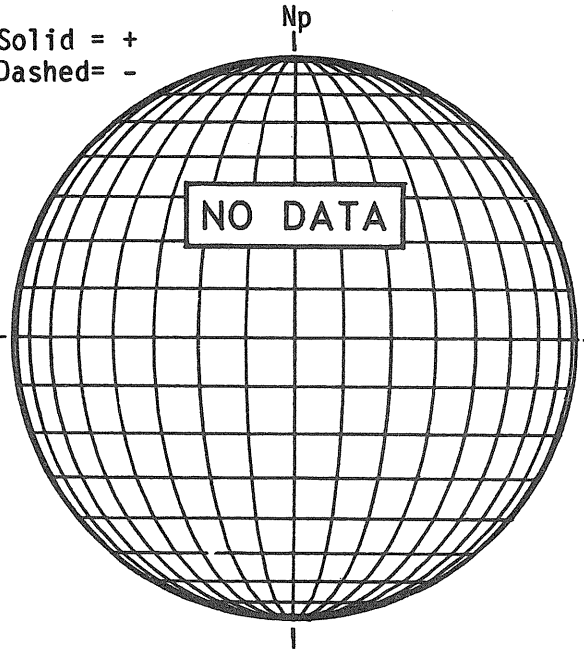
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

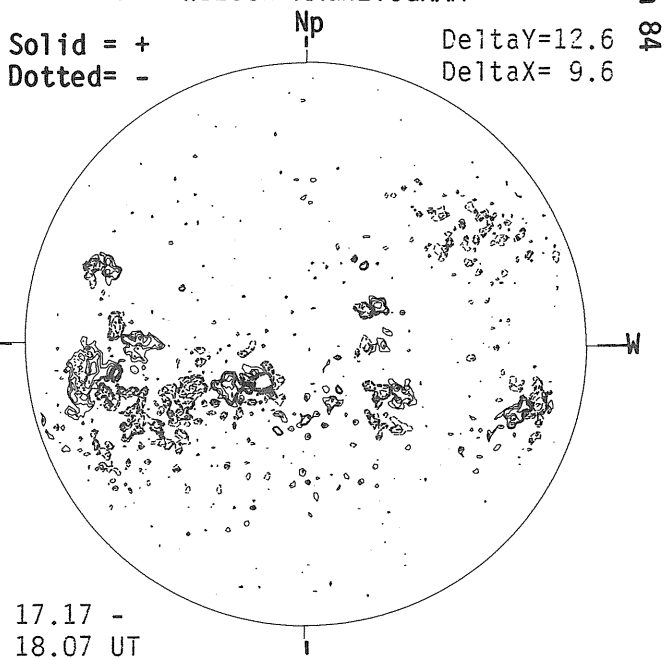
Solid = +
Dashed= -



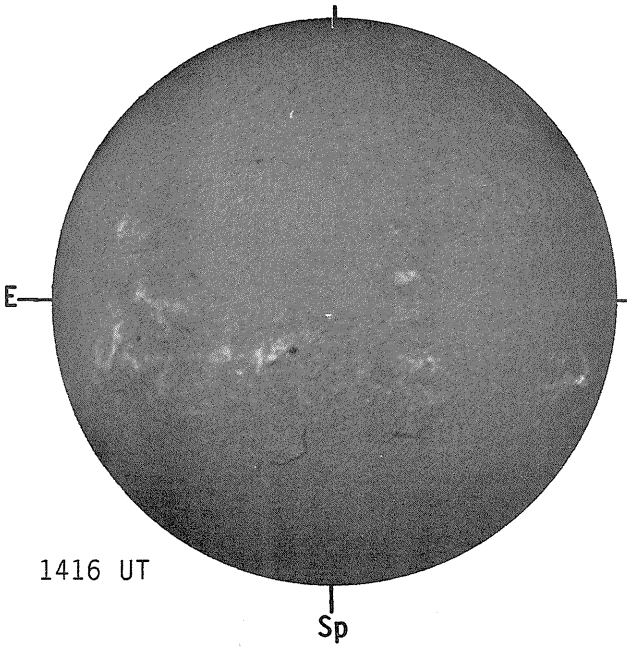
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

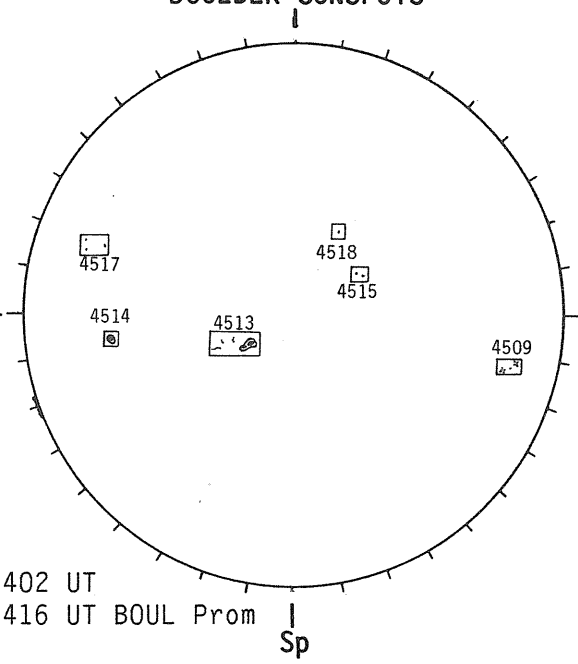
DeltaY=12.6
DeltaX= 9.6



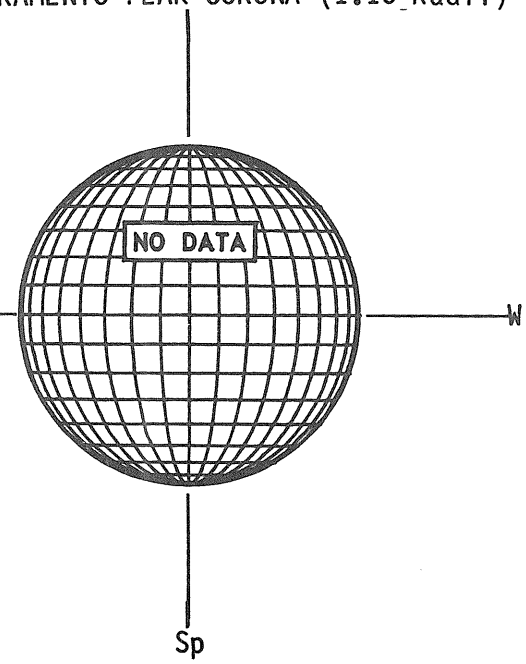
BOULDER H-ALPHA



BOULDER SUNSPOTS



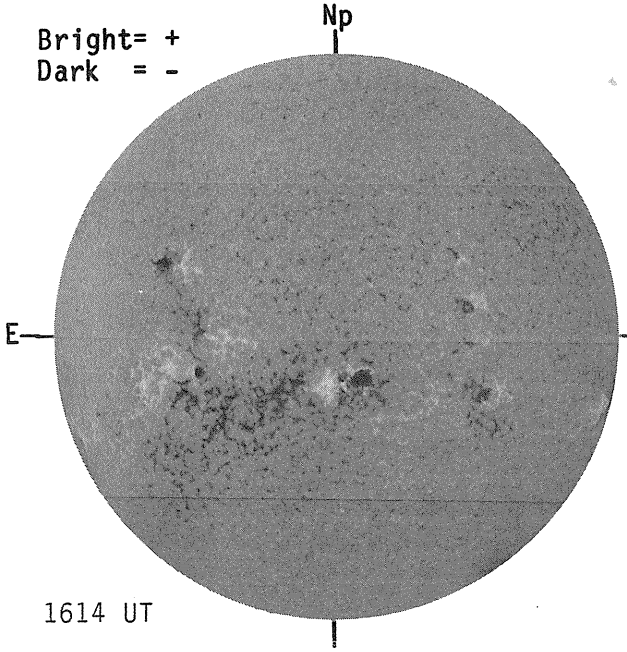
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 18, 1 9 8 4 (P=- 8.42, B_0= 1.42, L_0= 31.89)

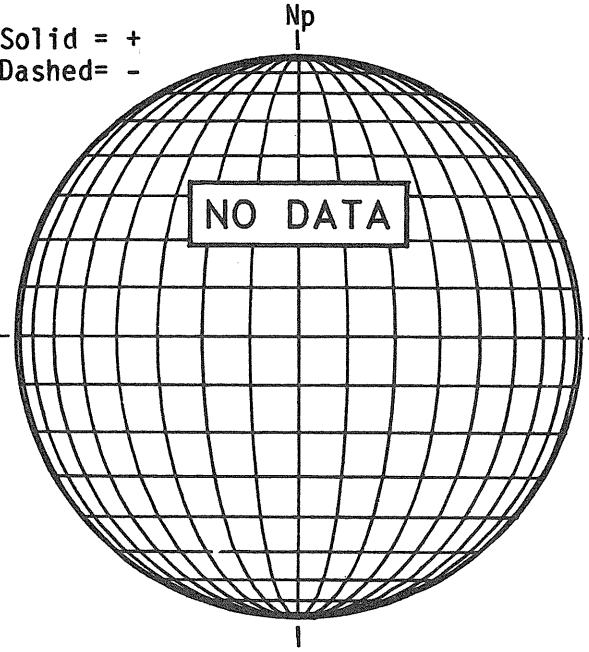
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

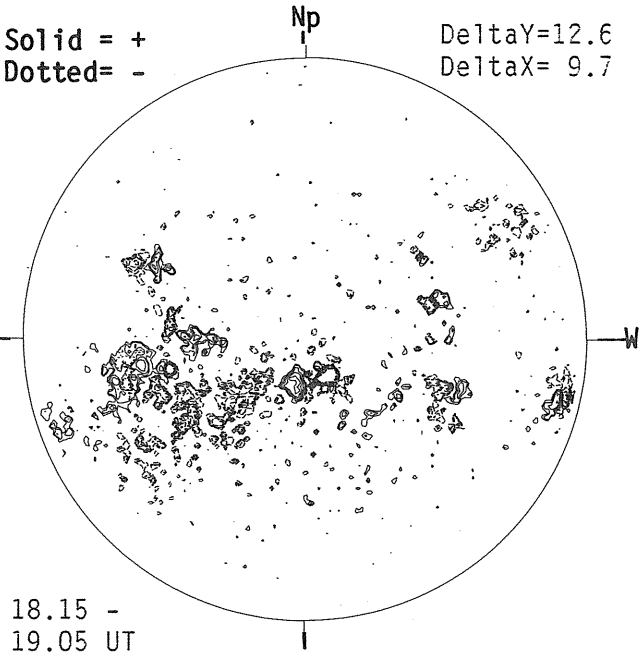
Solid = +
Dashed= -



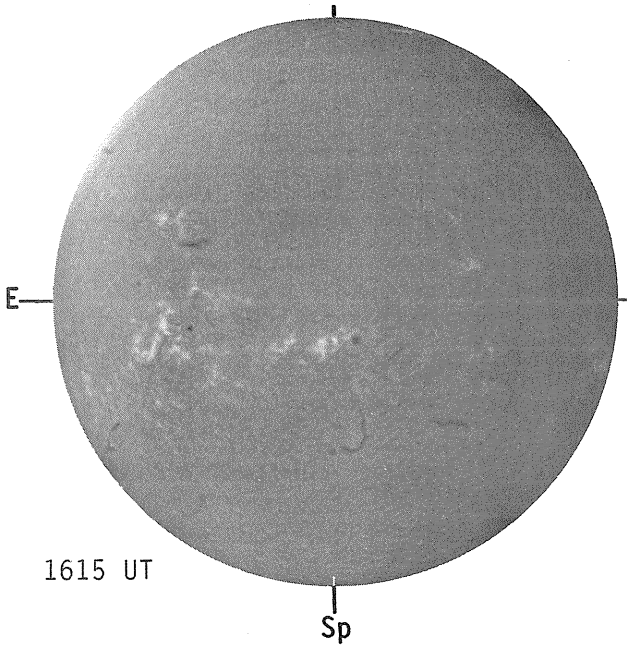
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

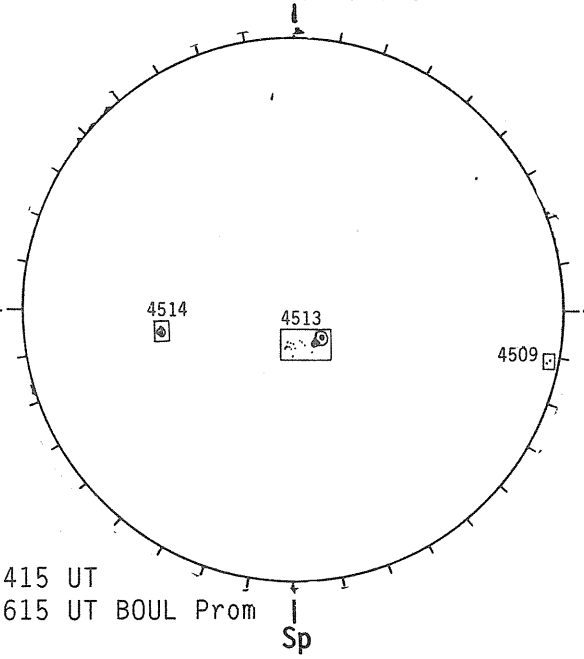
DeltaY=12.6
DeltaX= 9.7



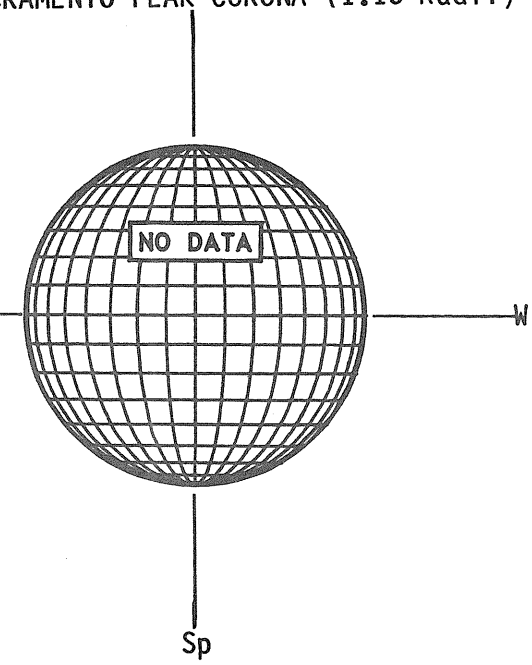
BOULDER H-ALPHA



BOULDER SUNSPOTS

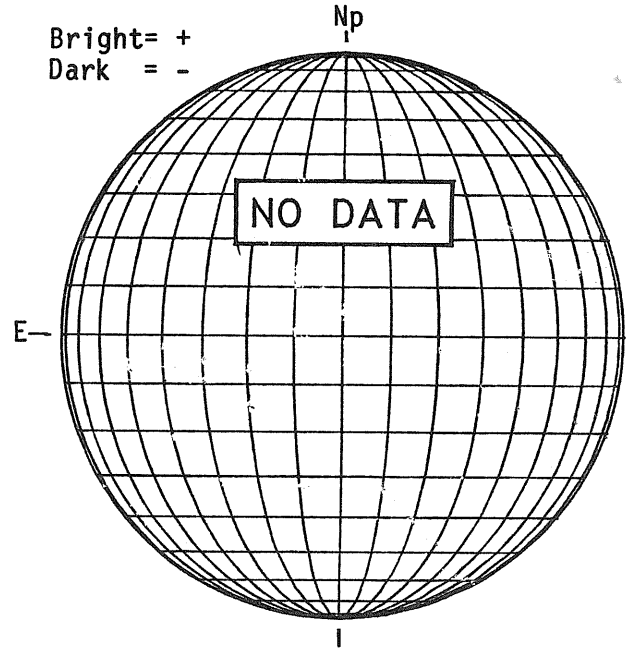


SACRAMENTO PEAK CORONA (1.15 Radii)

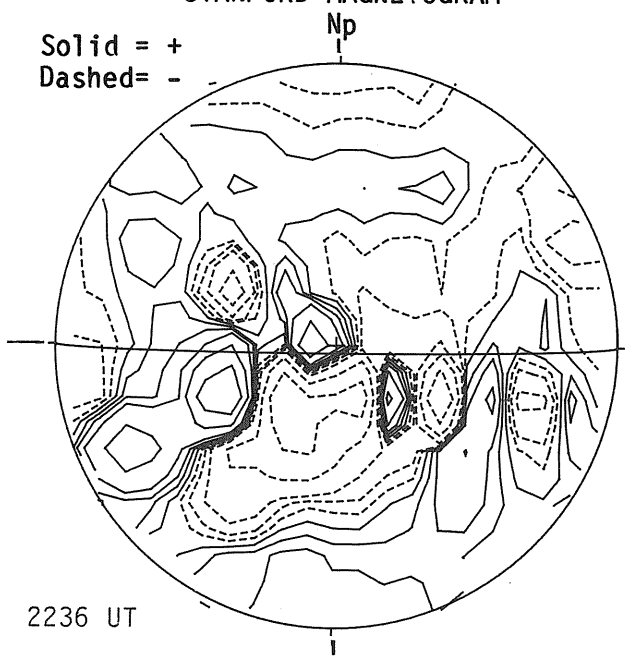


J U N E 19, 1 9 8 4 (P=- 7.98, B_0= 1.54, L_0= 18.65)

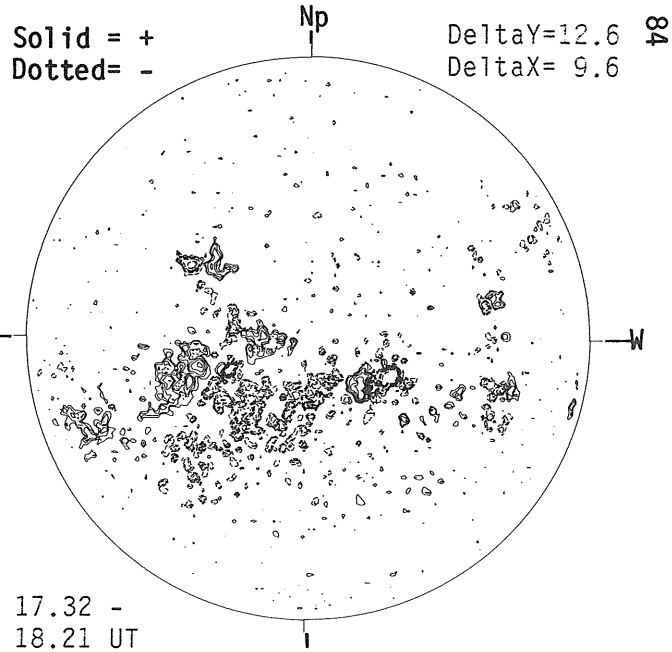
KITT PEAK MAGNETOGRAM



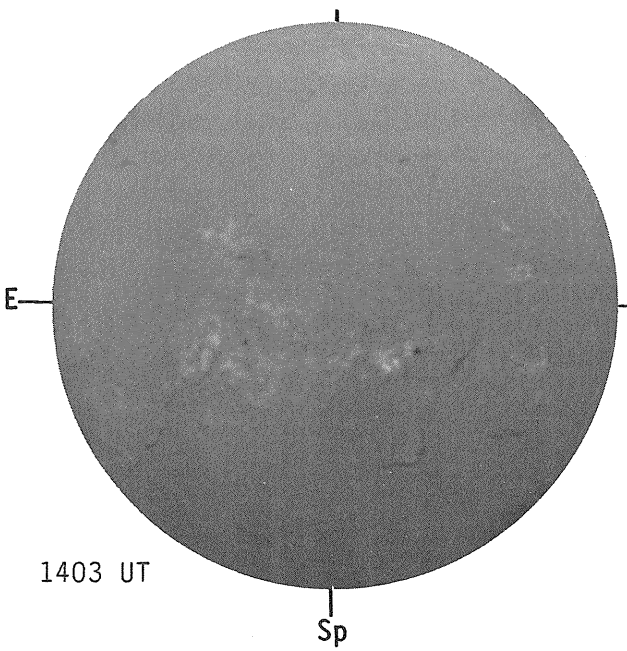
STANFORD MAGNETOGRAM



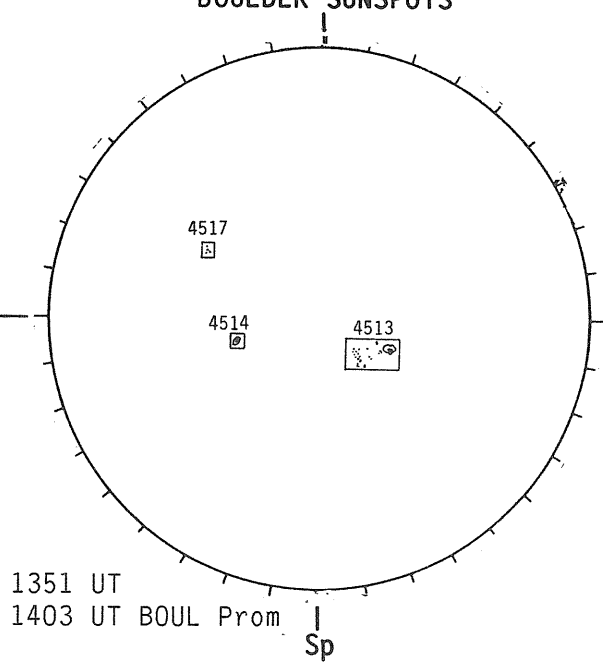
MT. WILSON MAGNETOGRAM



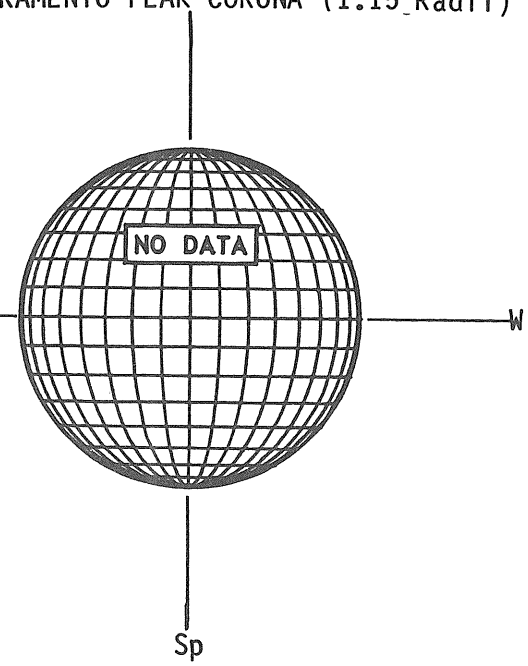
BOULDER H-ALPHA



BOULDER SUNSPOTS



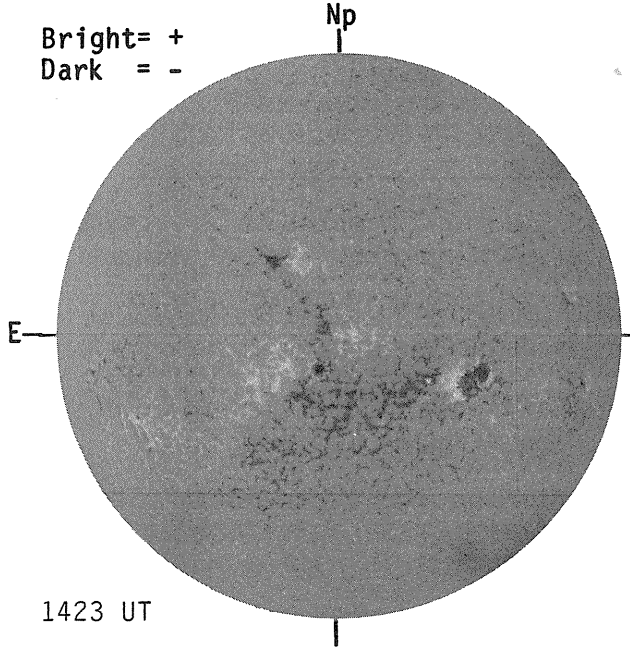
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 20, 1 9 8 4 (P=- 7.54, B_0= 1.66, L_0= 5.41)

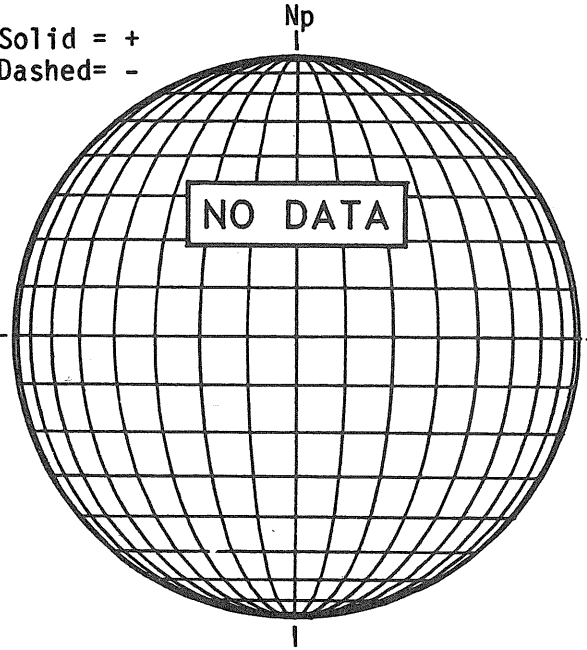
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



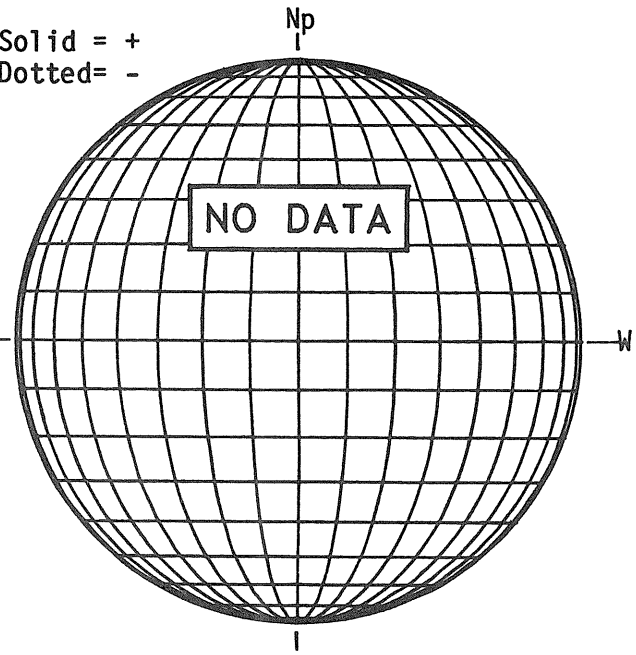
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

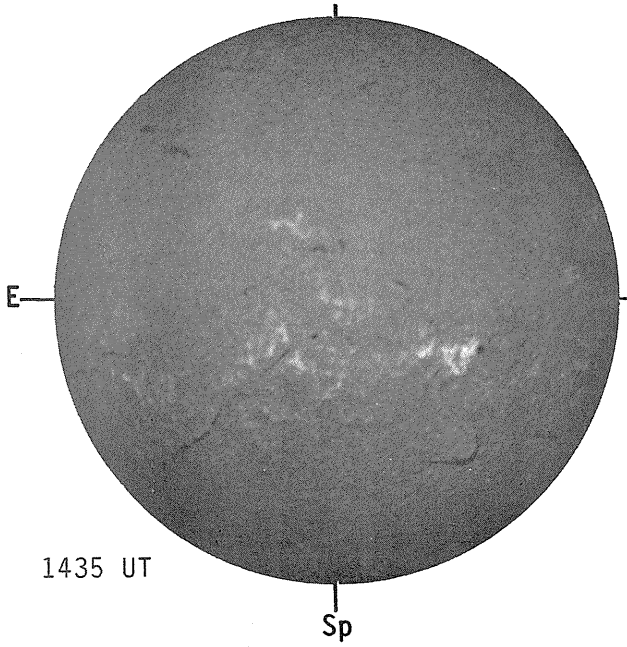


MT. WILSON MAGNETOGRAM

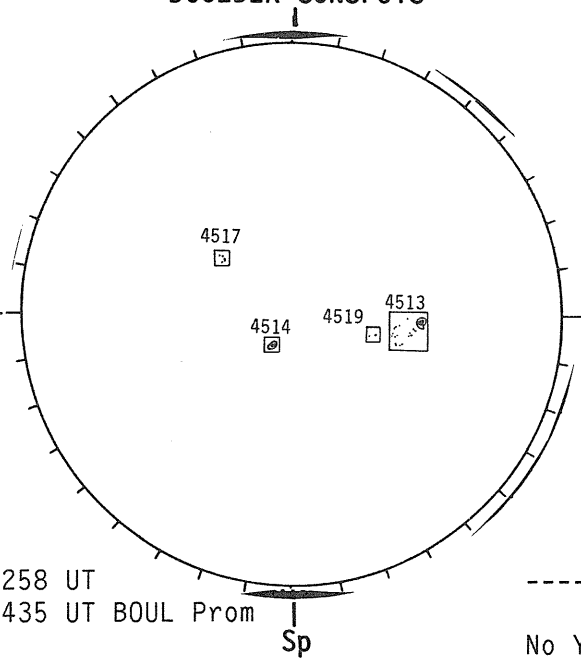
Solid = +
Dotted= -



BOULDER H-ALPHA

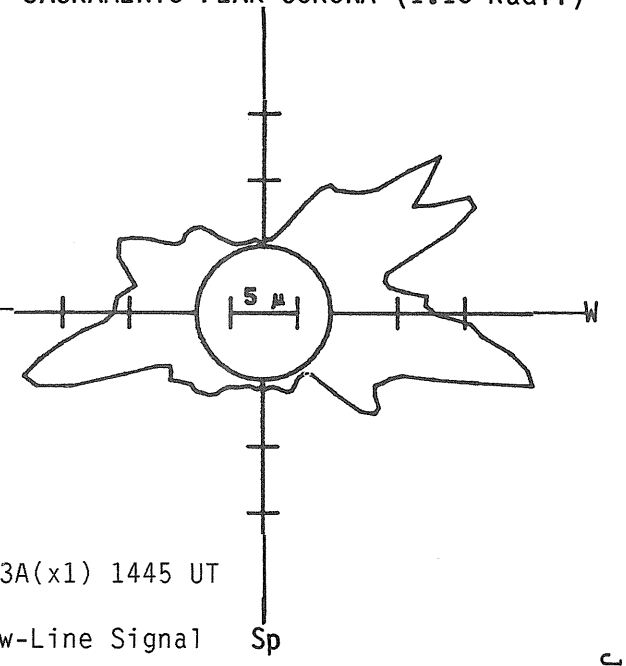


BOULDER SUNSPOTS



1258 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



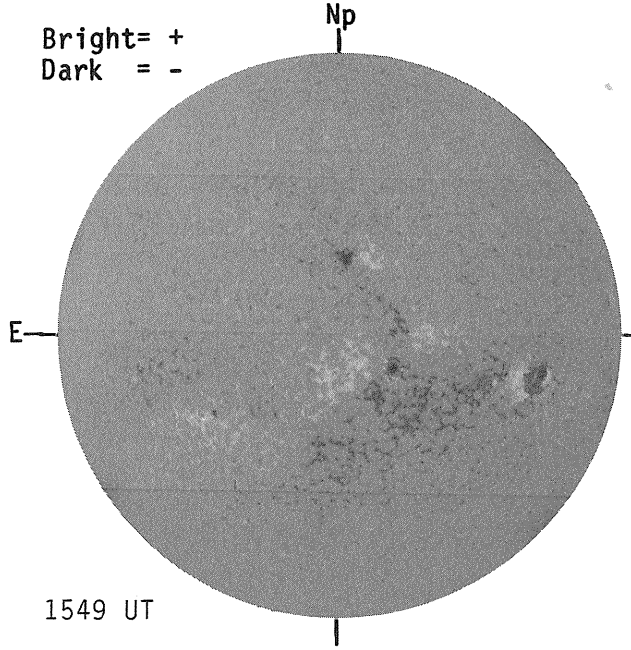
---- 5303A(x1) 1445 UT

No Yellow-Line Signal

J U N E 21, 1 9 8 4 (P=- 7.10, B_o= 1.78, L_o= 352.17)

KITT PEAK MAGNETOGRAM

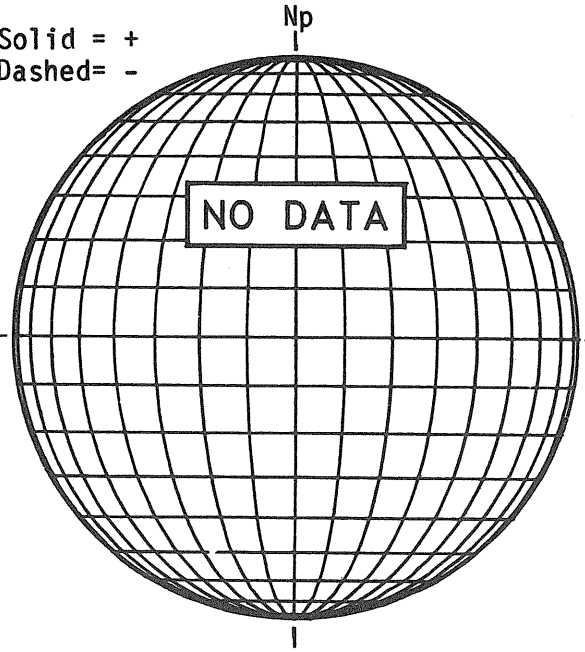
Bright= +
Dark = -



1549 UT

STANFORD MAGNETOGRAM

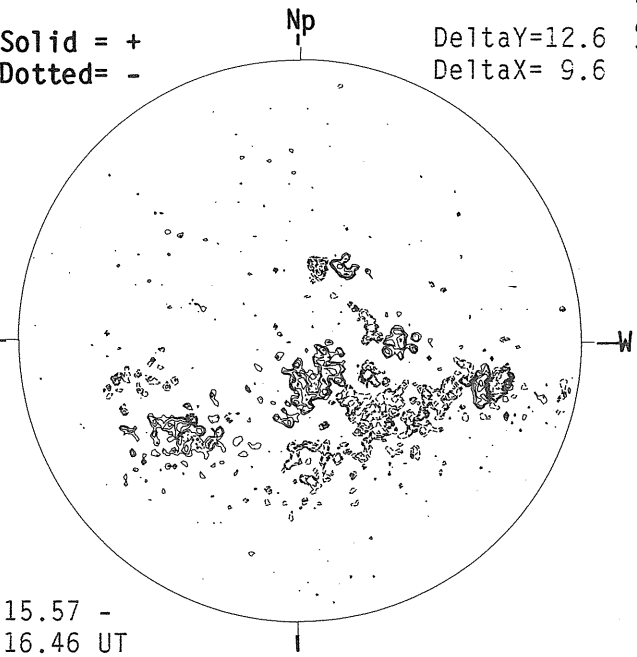
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

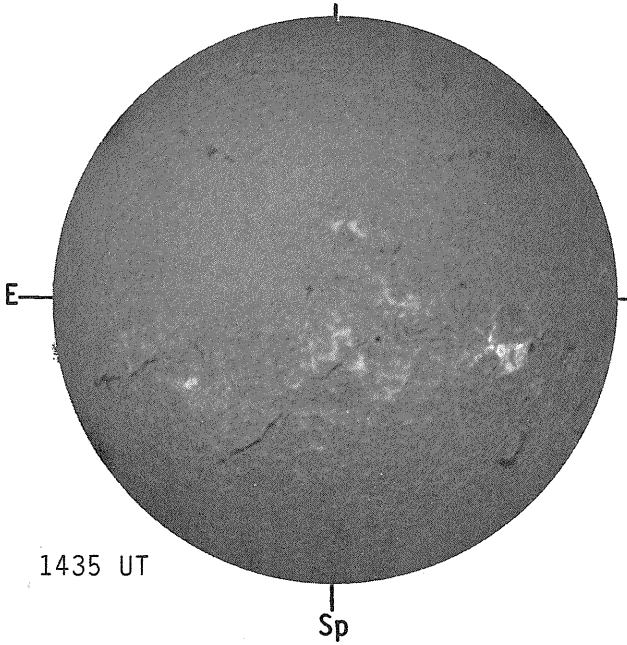
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



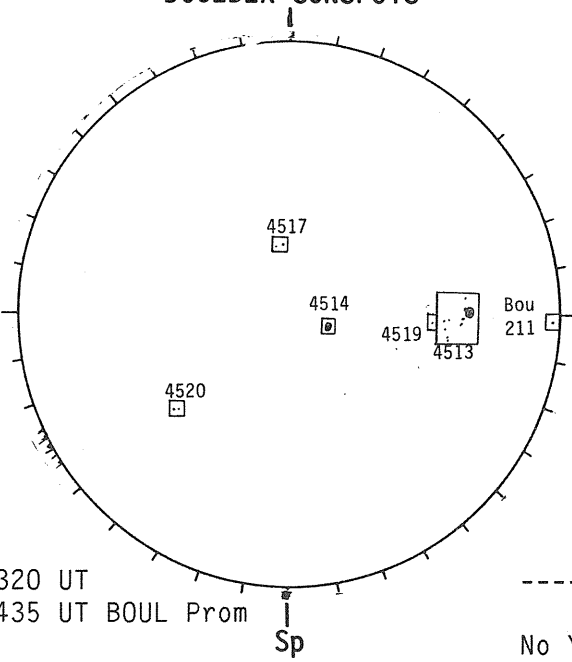
15.57 -
16.46 UT

BOULDER H-ALPHA



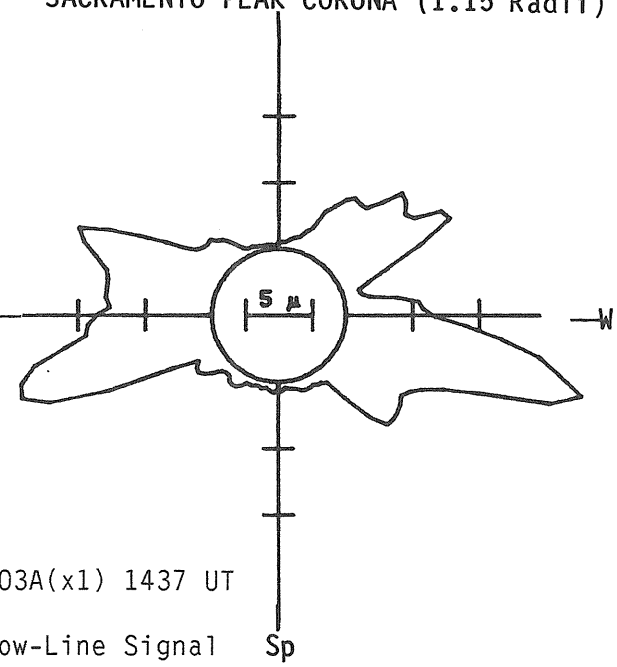
1435 UT

BOULDER SUNSPOTS



1320 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



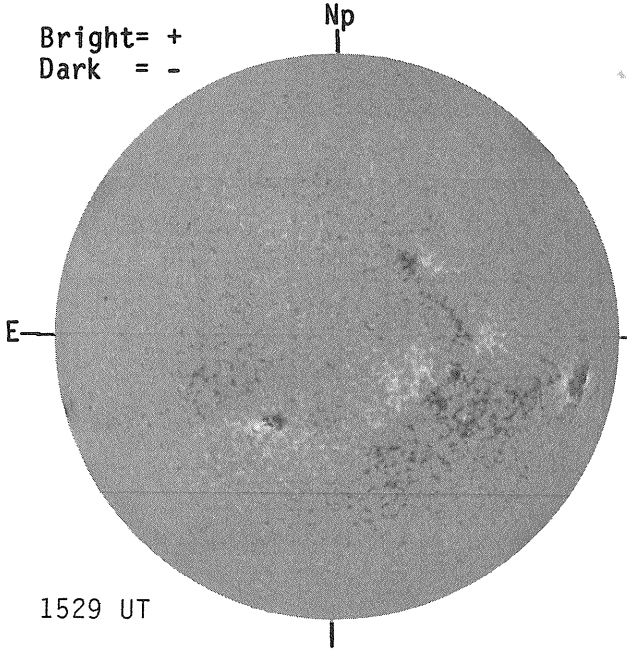
---- 5303A(x1) 1437 UT

No Yellow-Line Signal

J U N E 22, 1 9 8 4 (P=- 6.66, B_0= 1.89, L_0= 338.94)

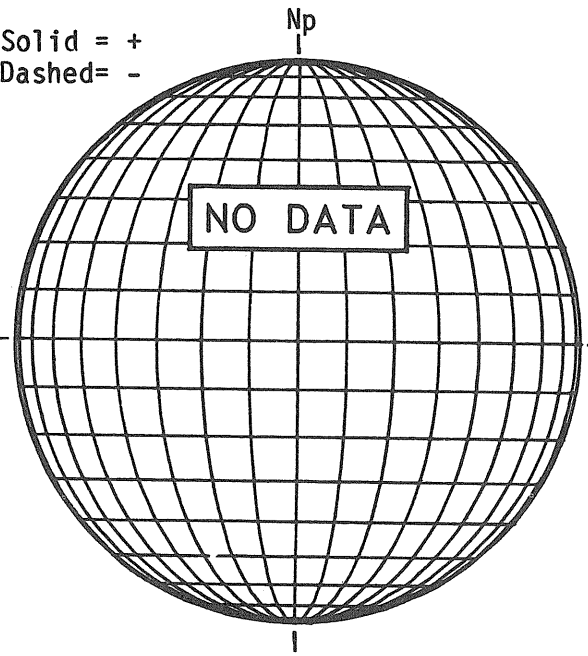
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



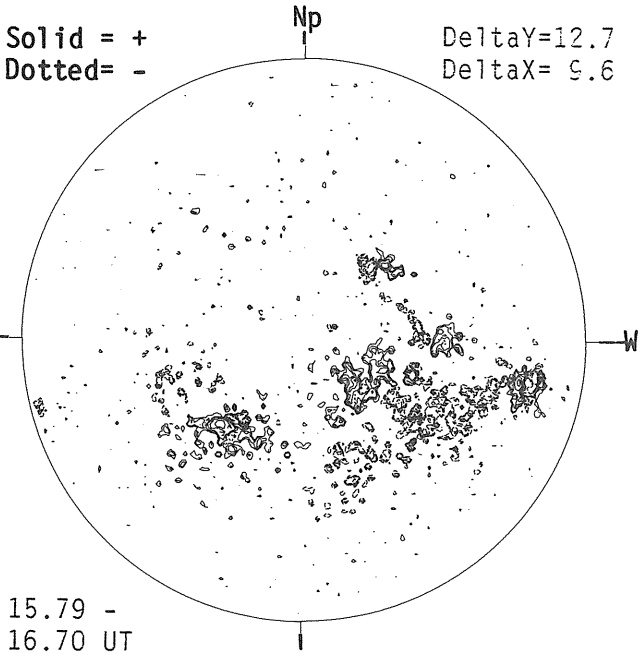
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

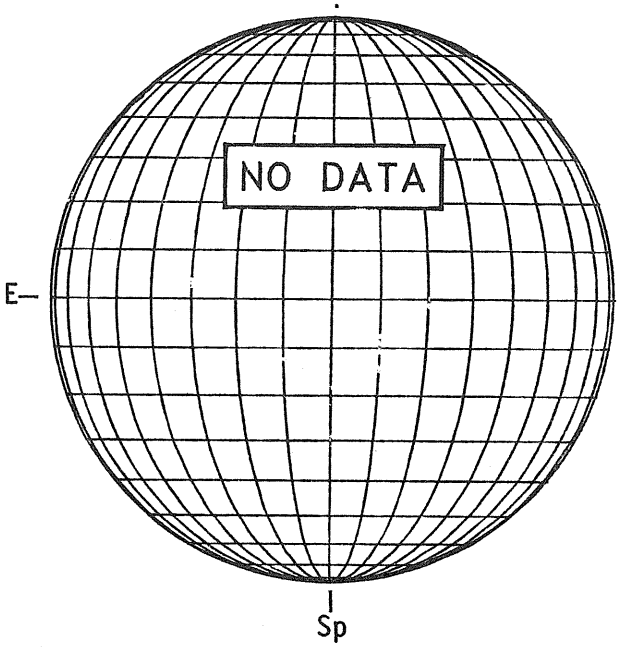


MT. WILSON MAGNETOGRAM

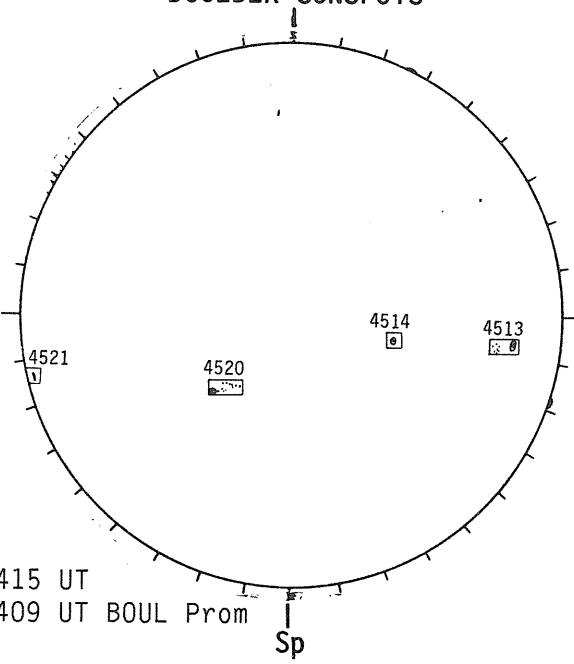
Solid = +
Dotted= -



SACRAMENTO PEAK H-ALPHA

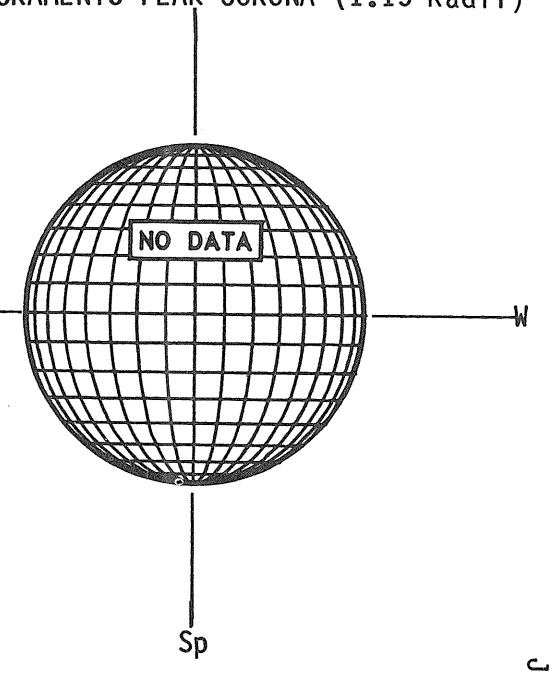


BOULDER SUNSPOTS



1415 UT
1409 UT BOUL Prom

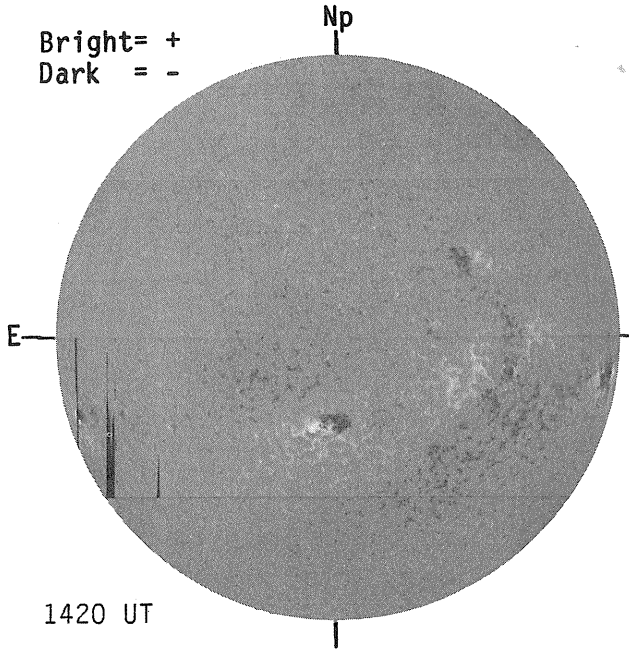
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 23, 1 9 8 4 (P=- 6.21, B_0= 2.01, L_0= 325.70)

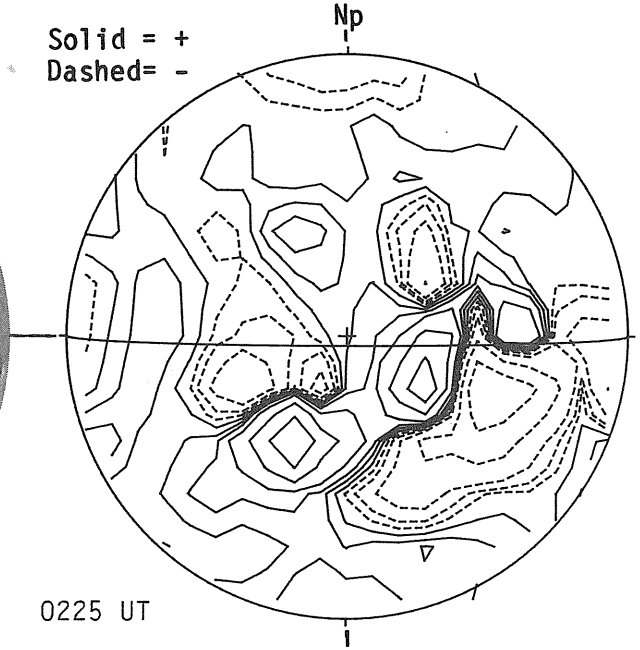
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

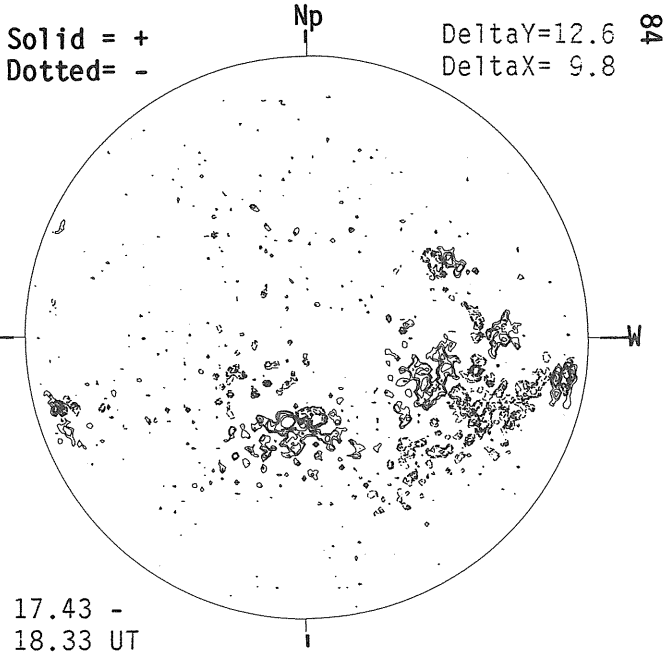
Solid = +
Dashed= -



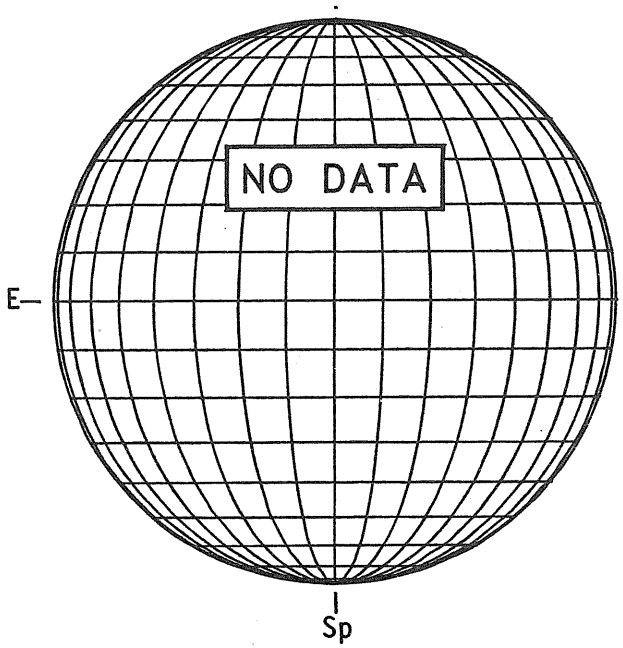
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

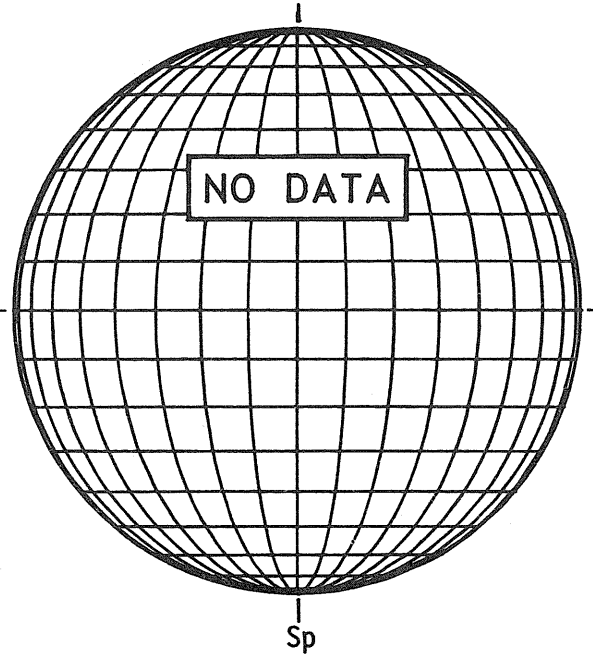
DeltaY=12.6
DeltaX= 9.8



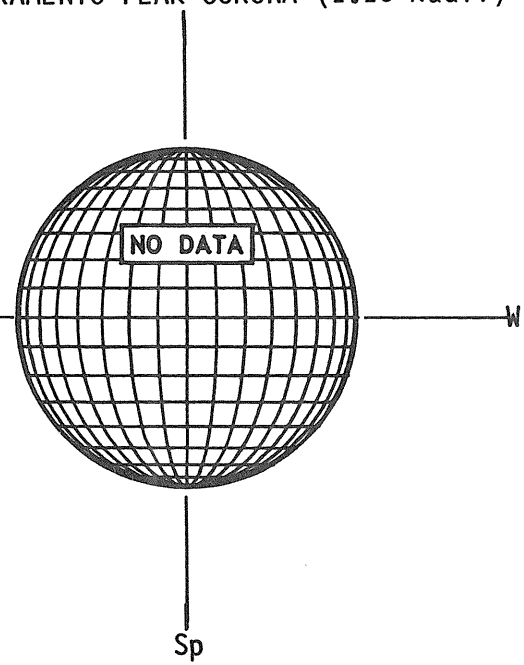
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



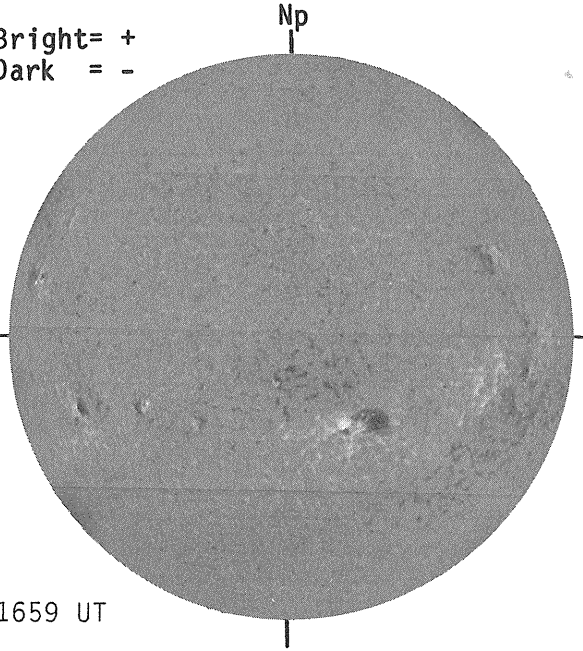
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 24, 1 9 8 4 (P=- 5.76, B_0= 2.12, L_0= 312.46)

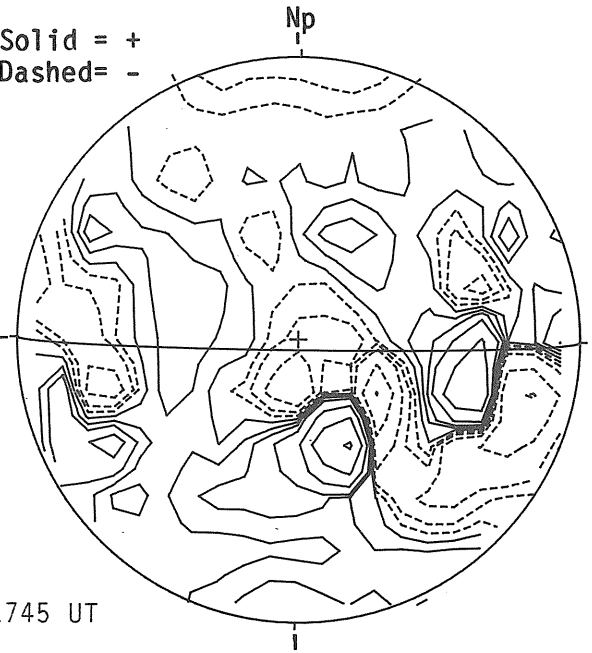
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



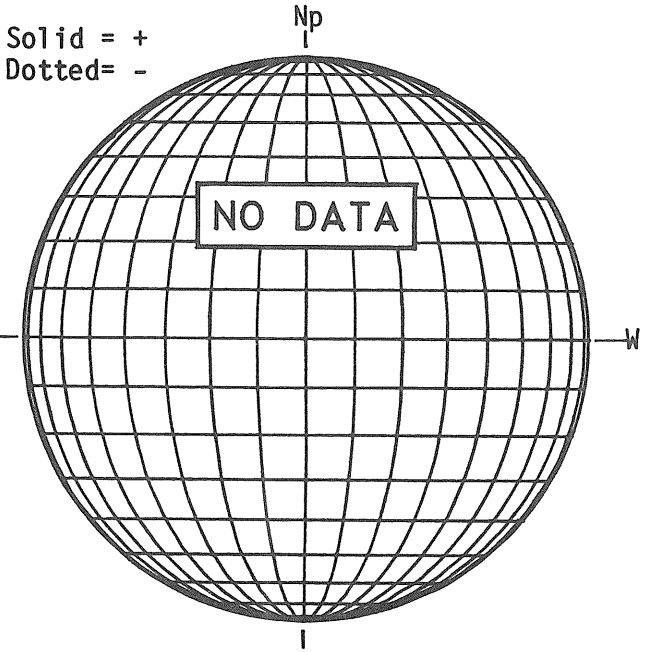
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

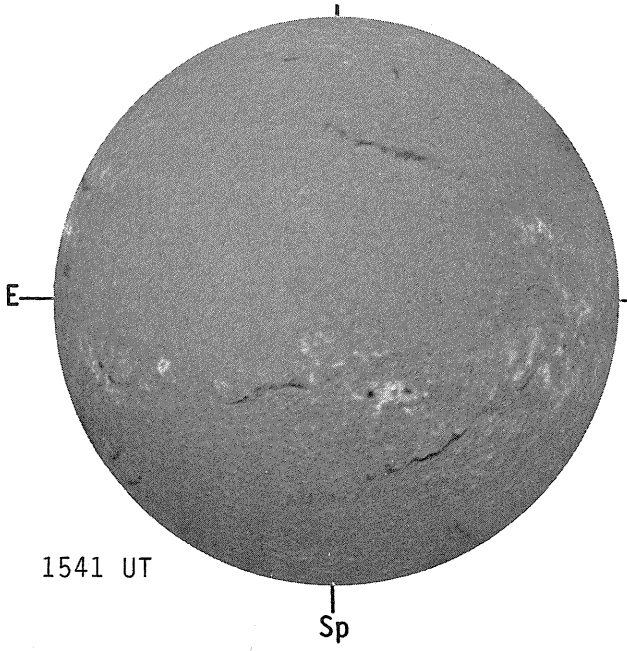


MT. WILSON MAGNETOGRAM

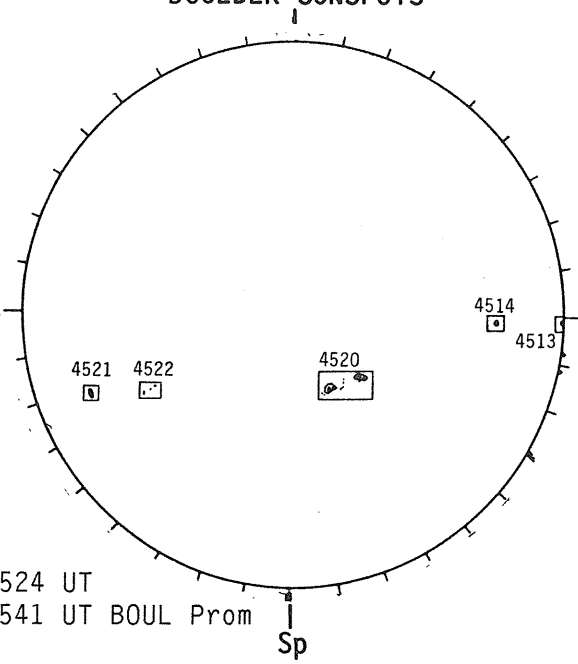
Solid = +
Dotted= -



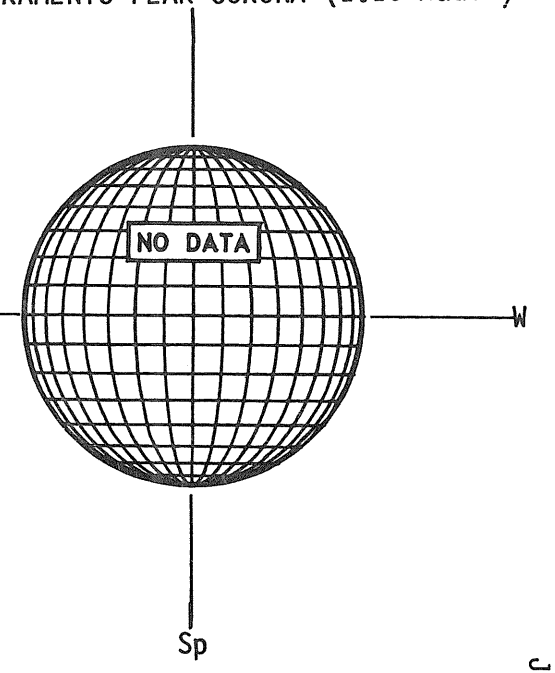
BOULDER H-ALPHA



BOULDER SUNSPOTS



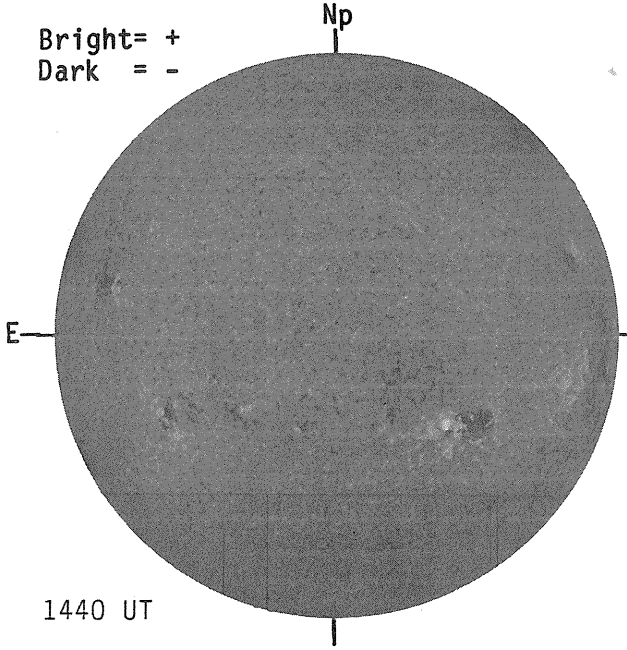
SACRAMENTO PEAK CORONA (1.15 Radii)



J U N E 25, 1 9 8 4 (P=- 5.32, B_0= 2.24, L_0= 299.23)

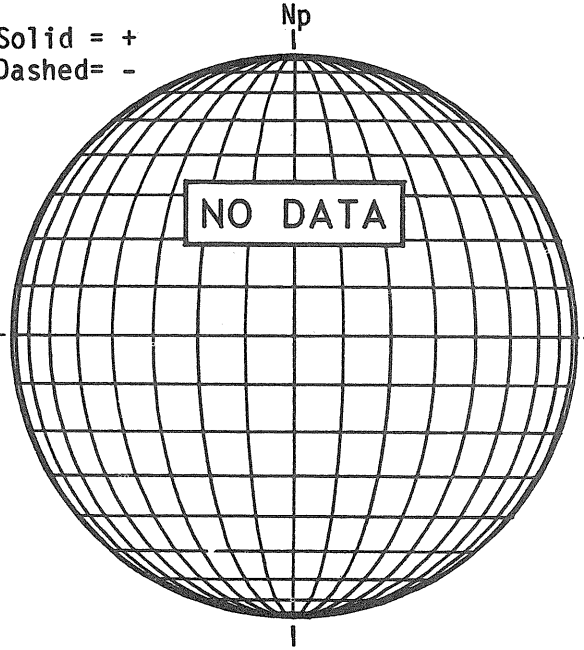
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



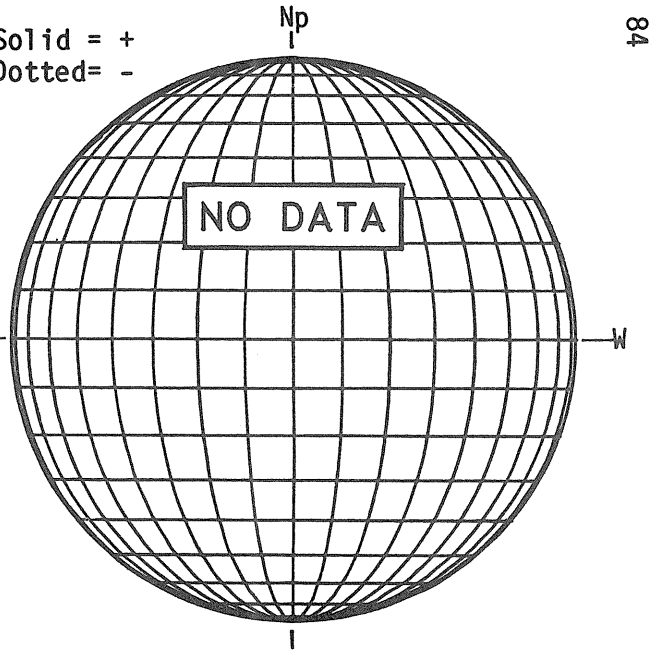
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

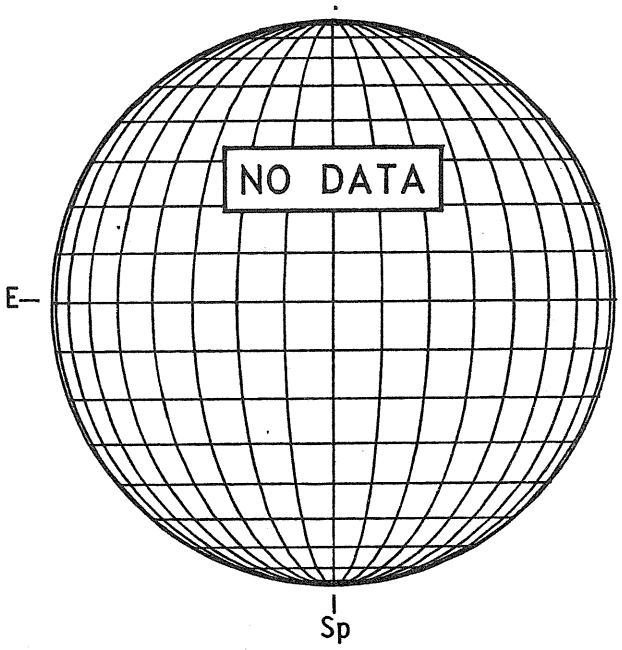


MT. WILSON MAGNETOGRAM

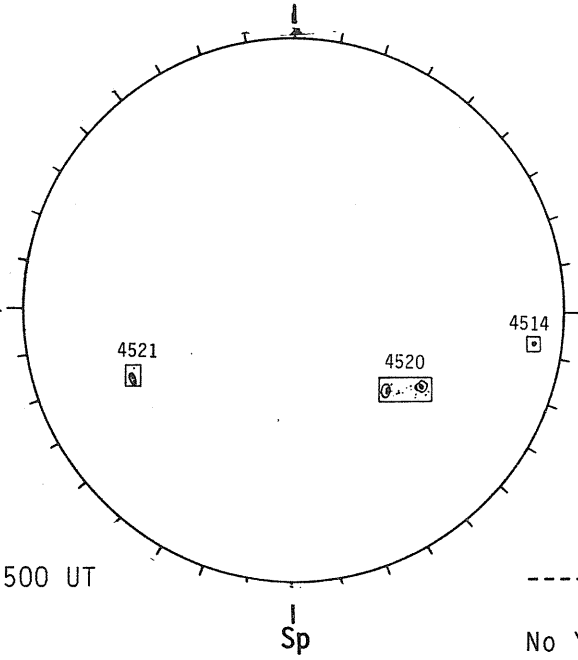
Solid = +
Dotted= -



SACRAMENTO PEAK H-ALPHA

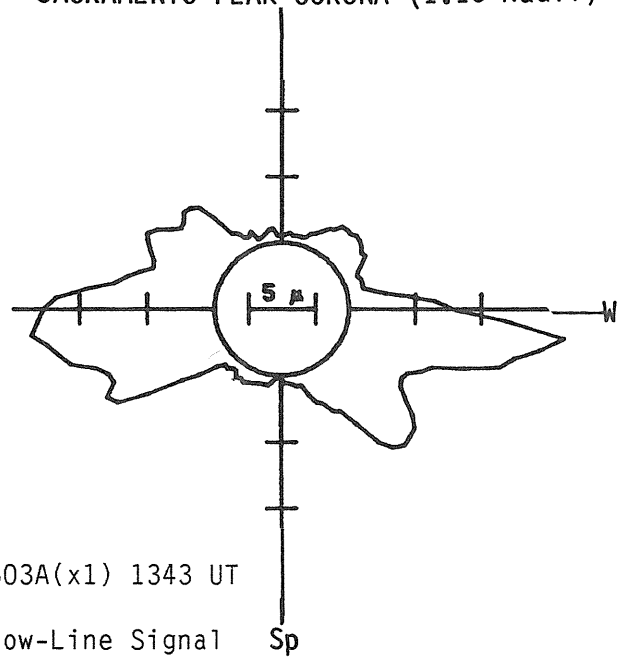


HOLLOMAN SUNSPOTS



1500 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



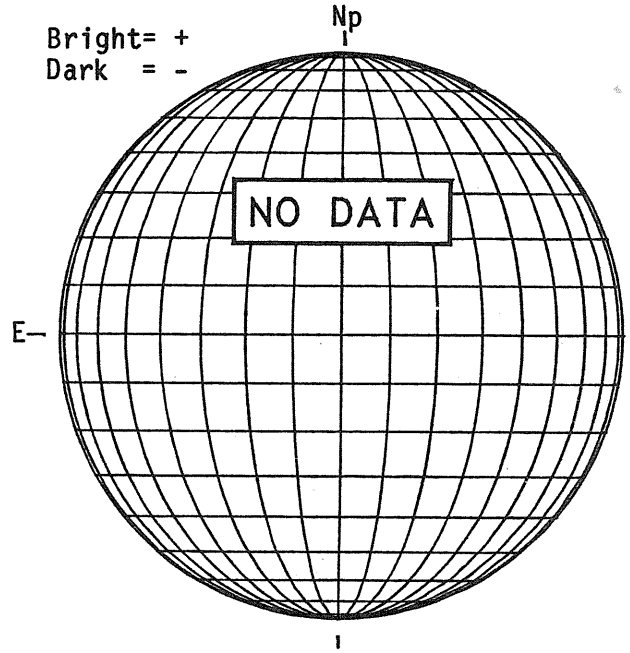
---- 5303A(x1) 1343 UT

No Yellow-Line Signal

J U N E 26, 1 9 8 4 (P=- 4.87, B_0= 2.35, L_0= 285.99)

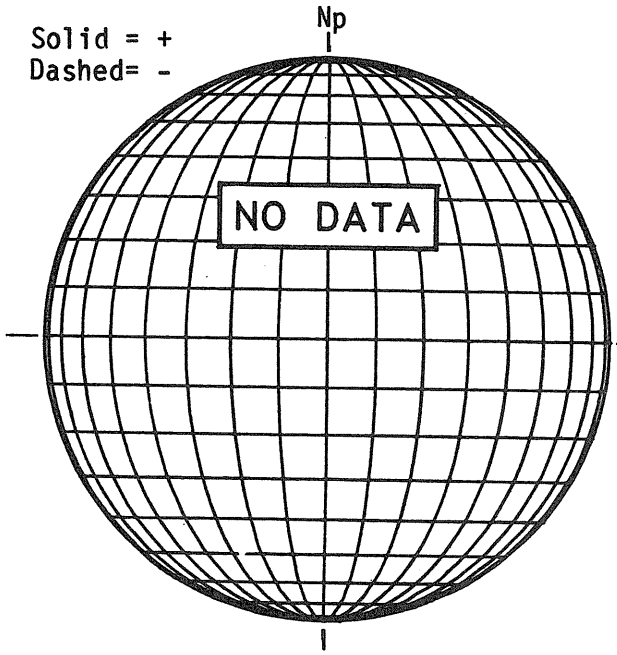
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

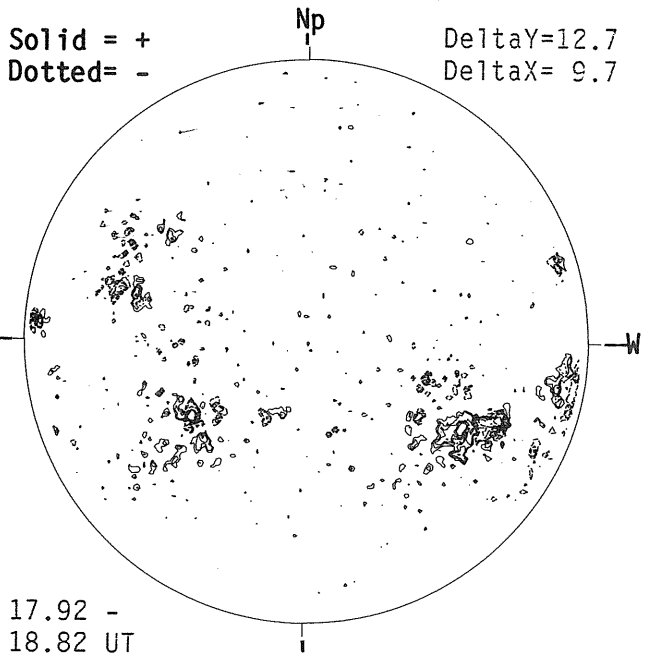
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

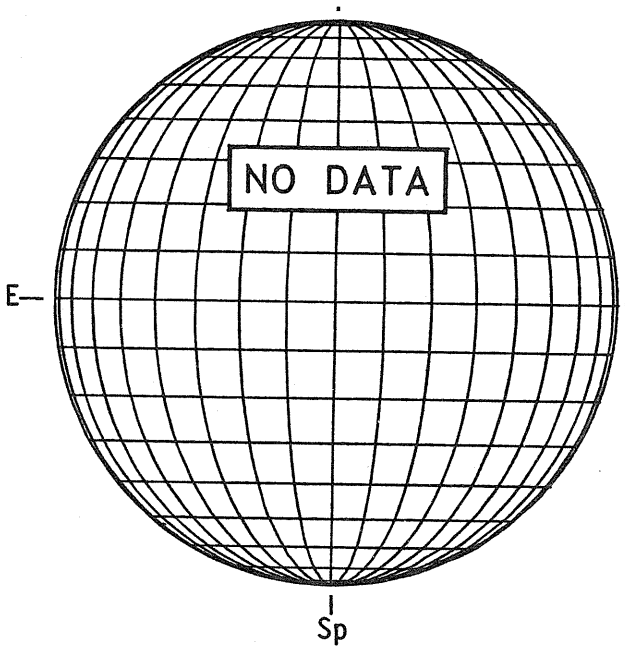
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.7

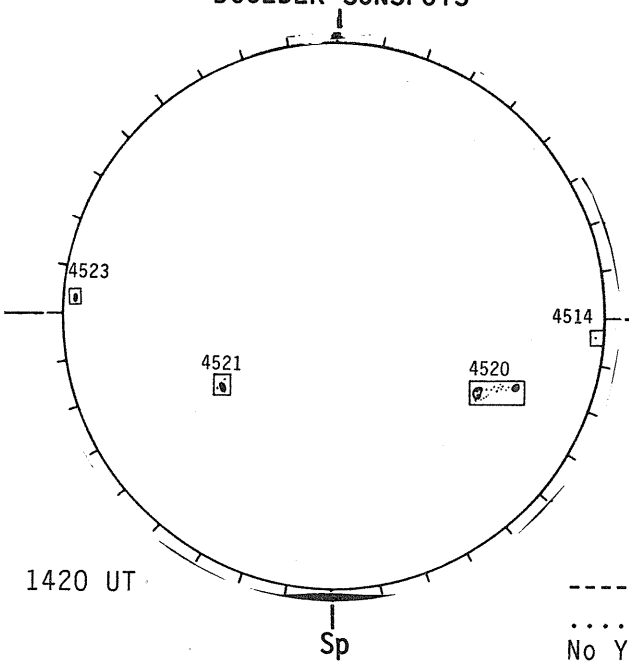


17.92 -
18.82 UT

SACRAMENTO PEAK H-ALPHA

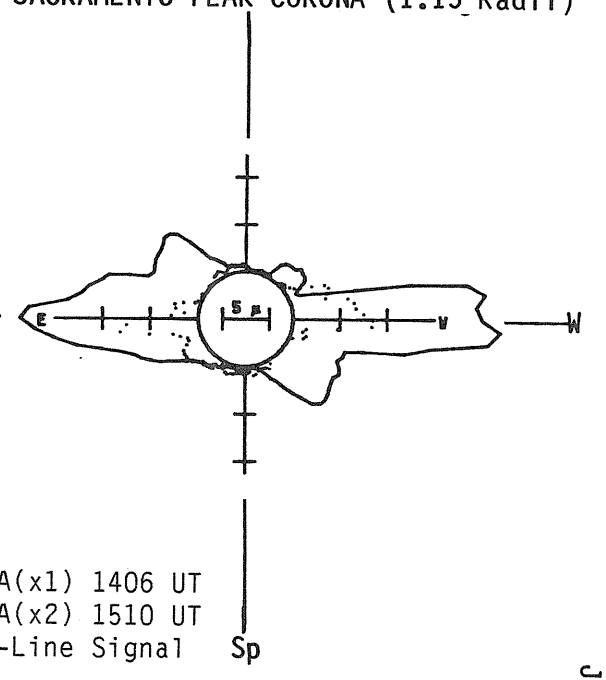


BOULDER SUNSPOTS



1420 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

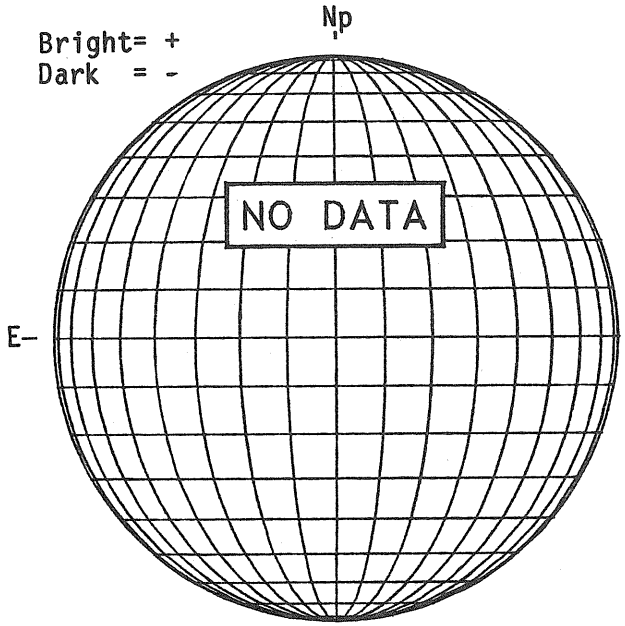


---- 5303A(x1) 1406 UT
.... 6374A(x2) 1510 UT
No Yellow-Line Signal

J U N E 27, 1 9 8 4 (P=- 4.41, B_0= 2.47, L_0= 272.75)

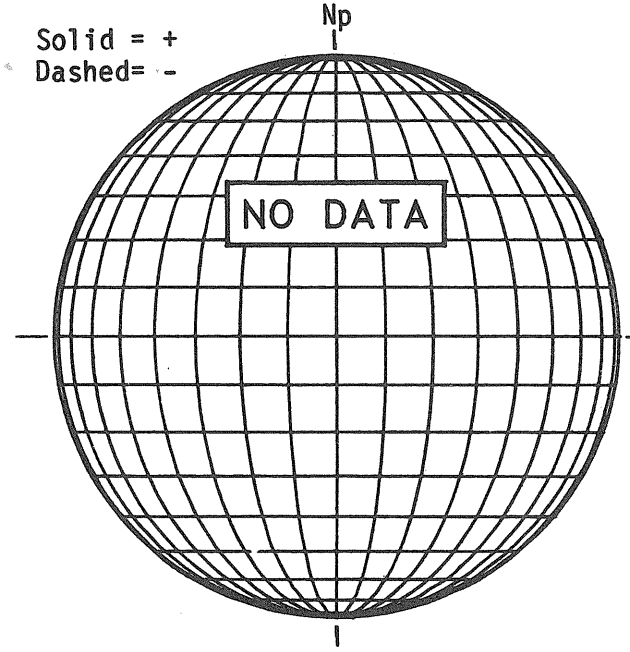
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

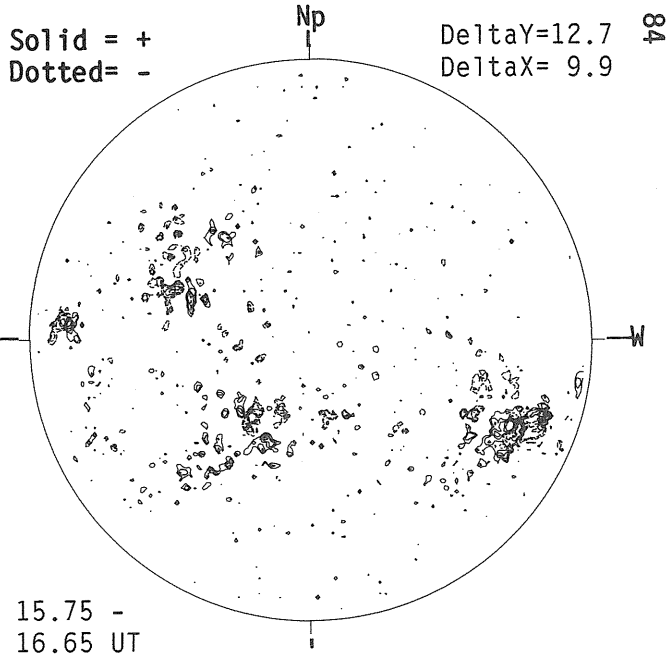
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

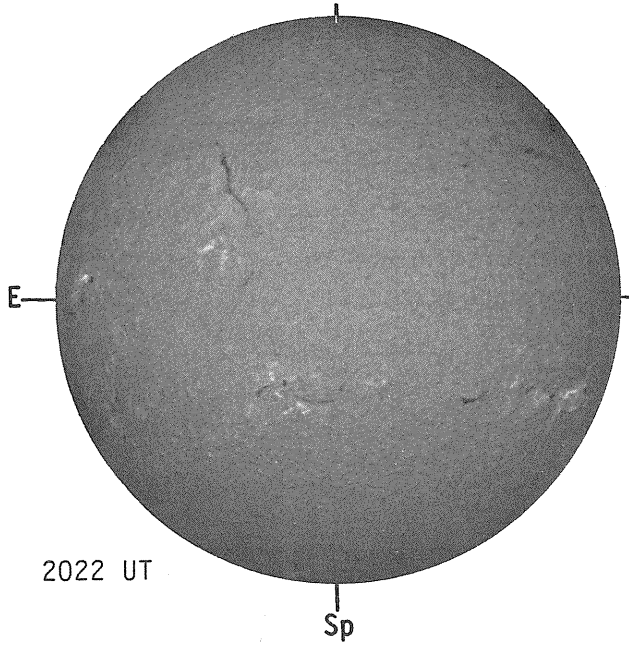
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.9



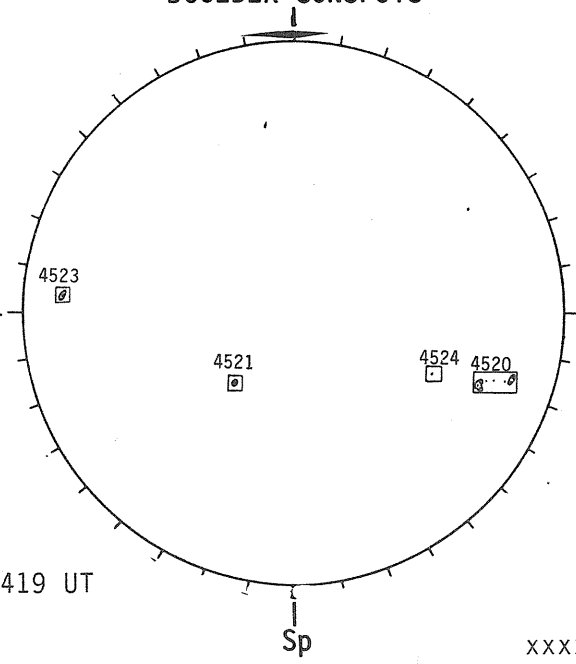
15.75 -
16.65 UT

BOULDER H-ALPHA



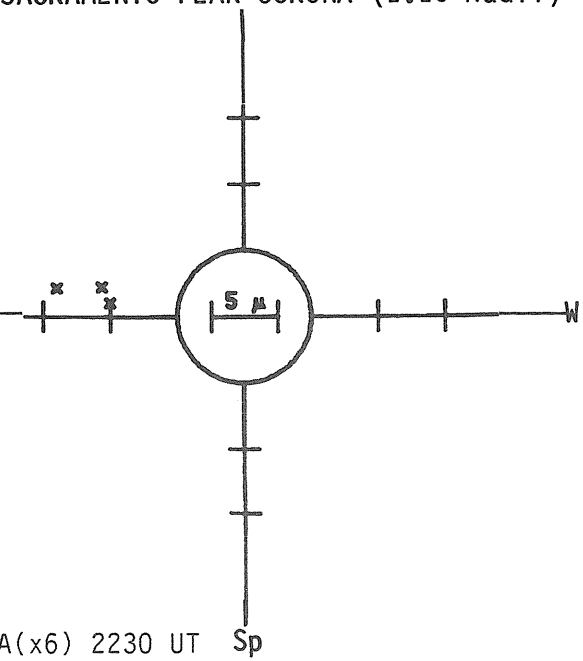
2022 UT

BOULDER SUNSPOTS



1419 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

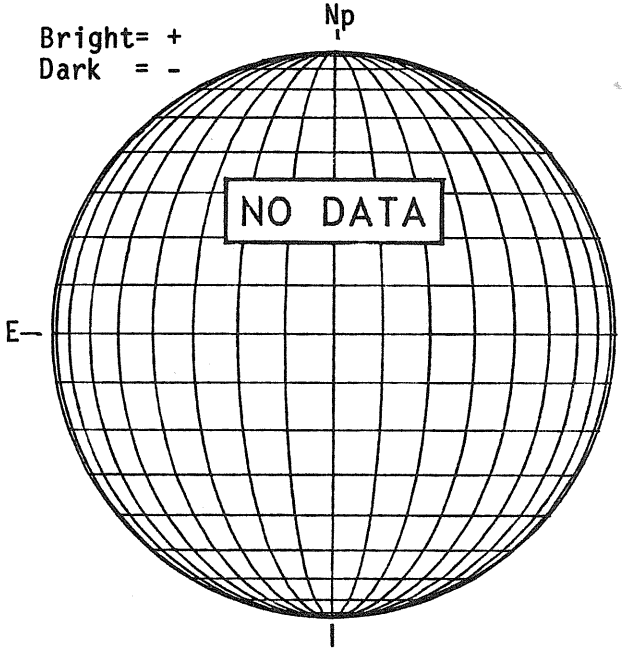


xxxx 5694A(x6) 2230 UT

J U N E 28, 1 9 8 4 (P=- 3.96, B_0= 2.58, L_0= 259.52)

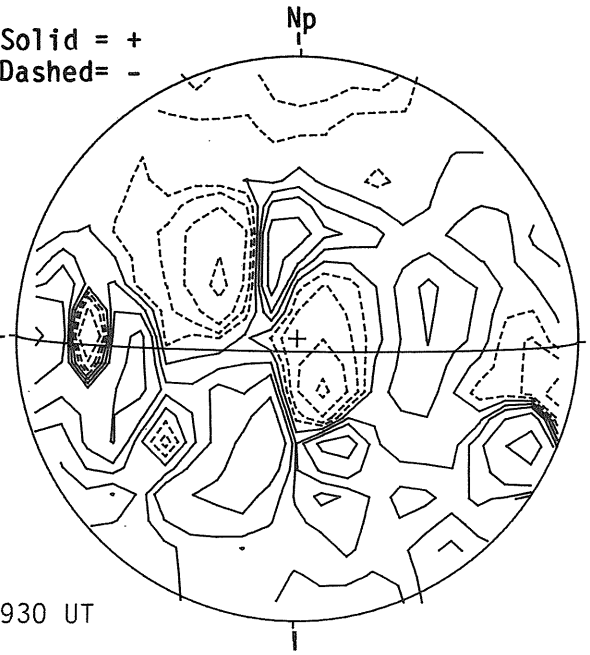
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

Solid = +
Dashed= -

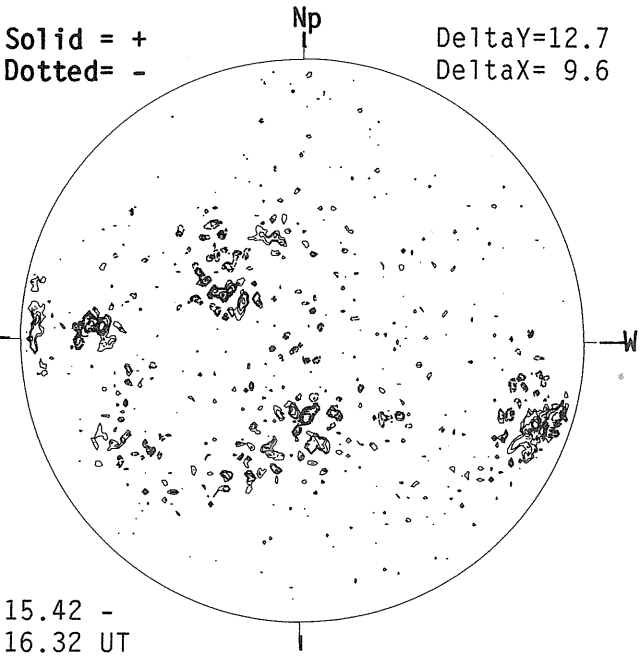


1930 UT

MT. WILSON MAGNETOGRAM

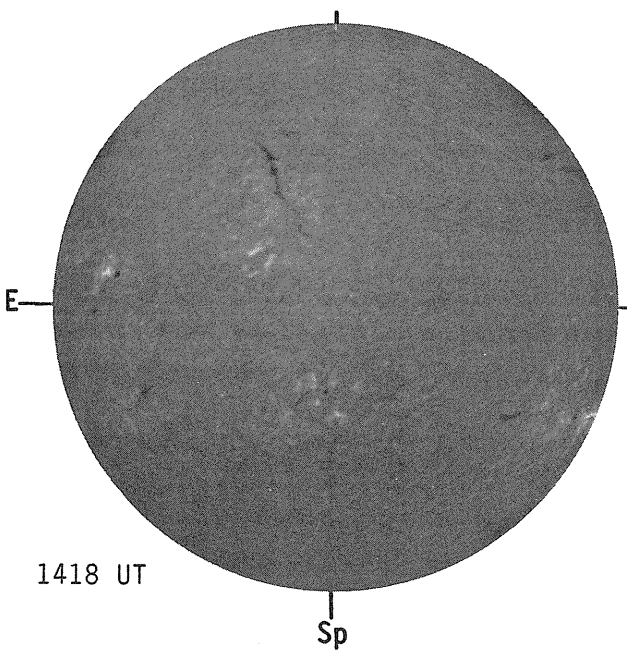
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6



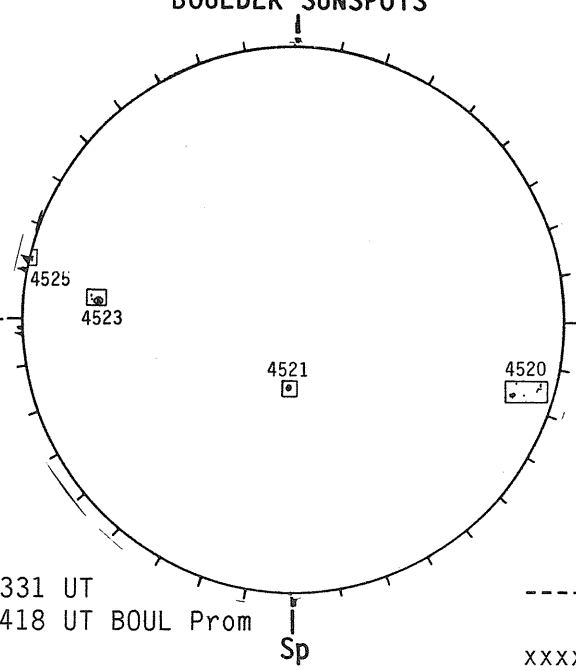
15.42 -
16.32 UT

BOULDER H-ALPHA



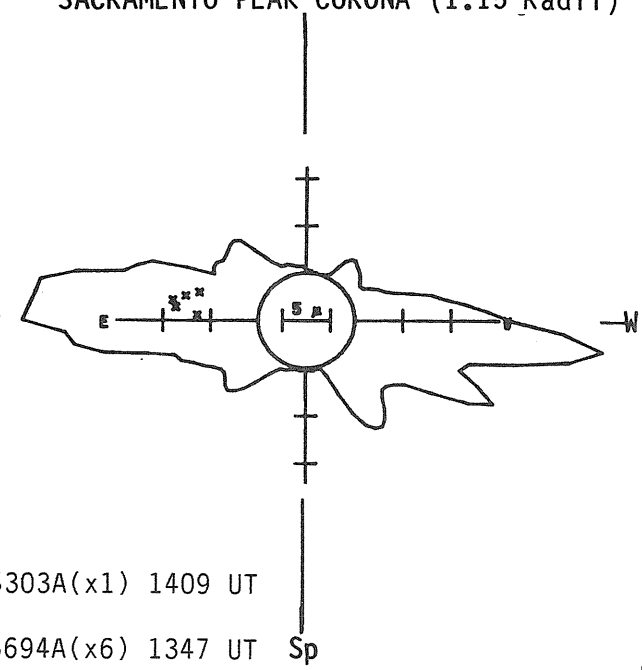
1418 UT

BOULDER SUNSPOTS



1331 UT
1418 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



---- 5303A(x1) 1409 UT

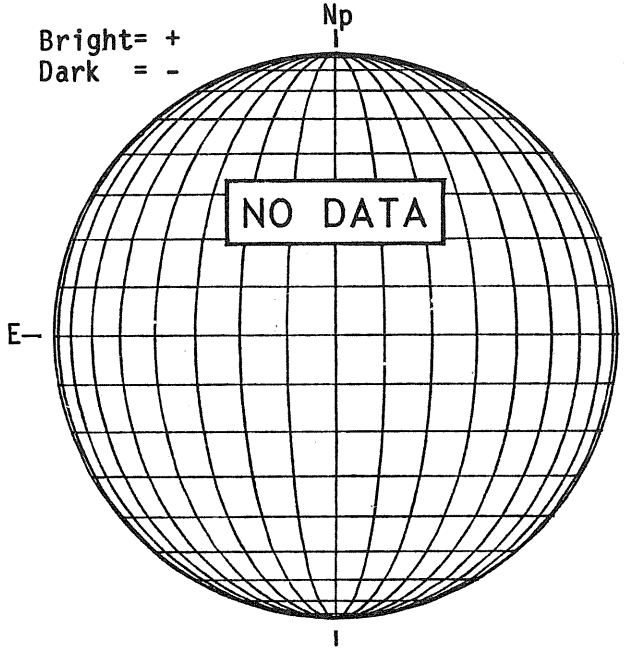
xxxx 5694A(x6) 1347 UT

59
Jun 84

J U N E 29, 1 9 8 4 (P=- 3.51, B_0= 2.69, L_0= 246.28)

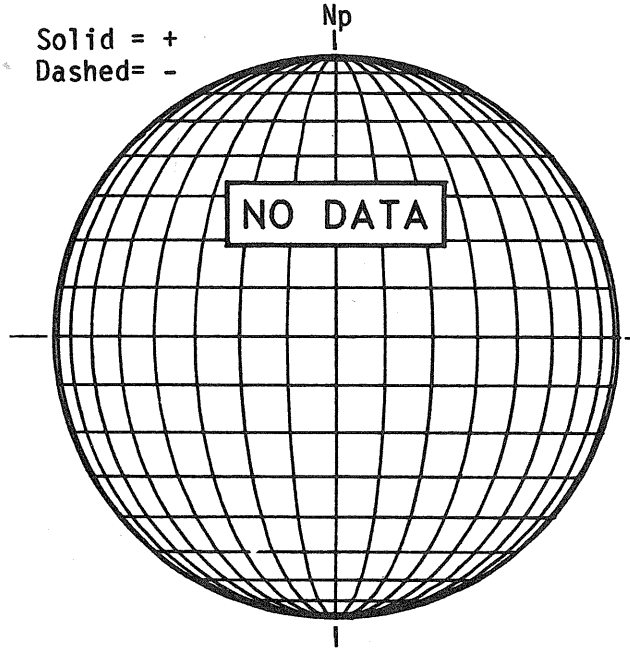
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

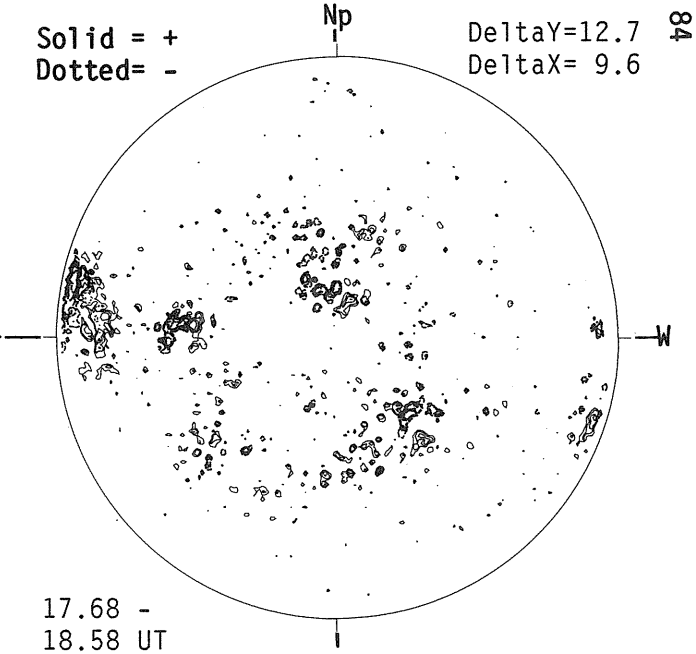
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

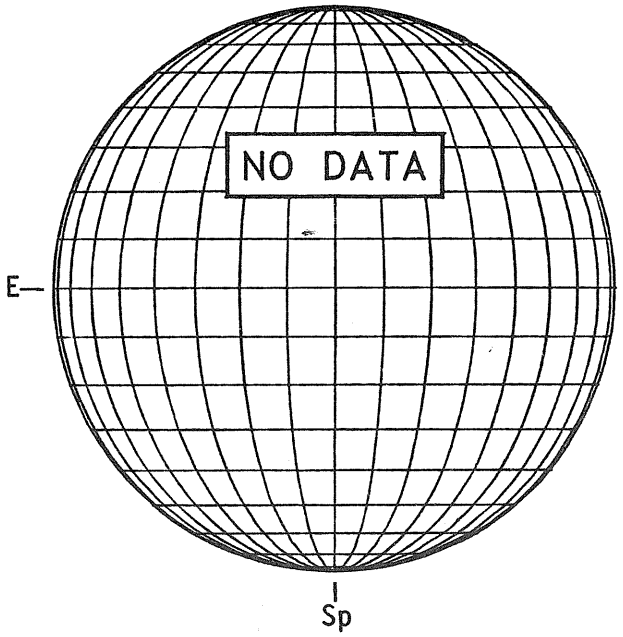
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6

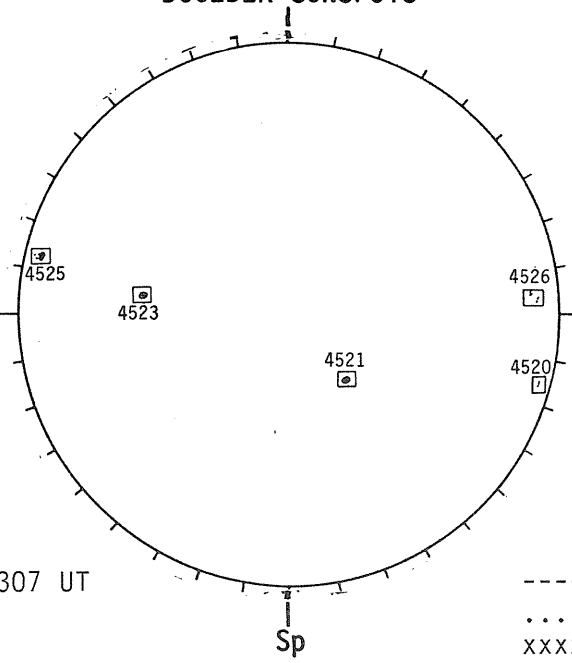


17.68 -
18.58 UT

SACRAMENTO PEAK H-ALPHA

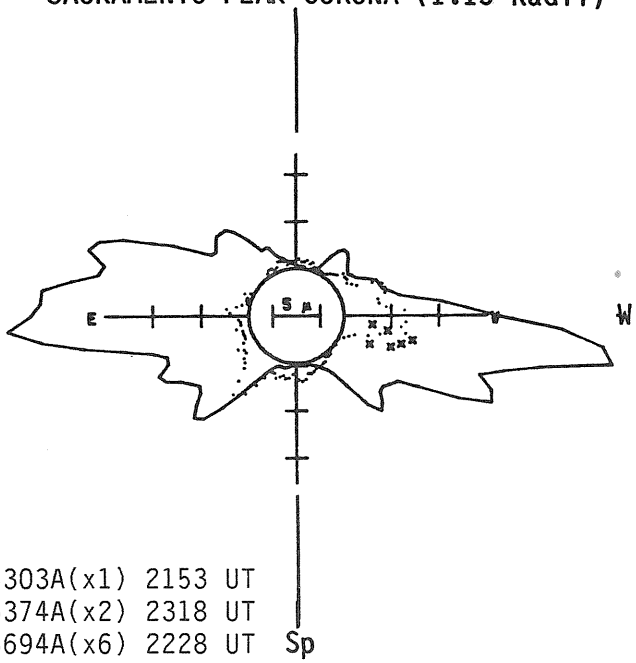


BOULDER SUNSPOTS



1307 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

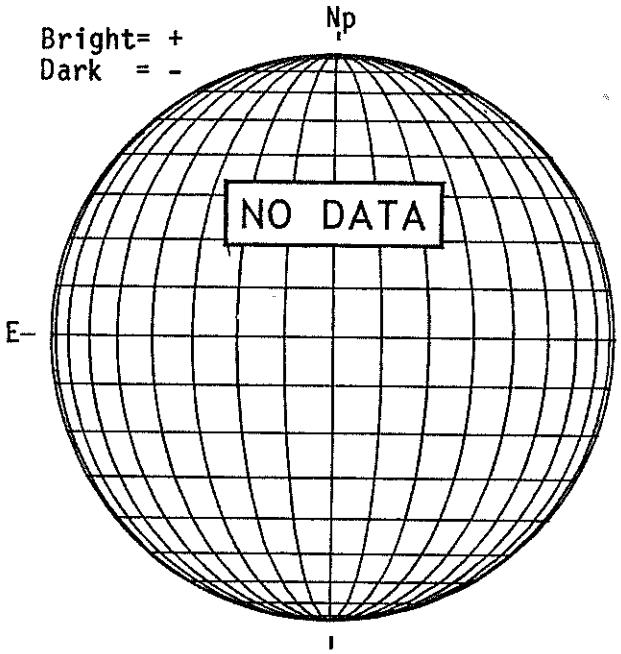


---- 5303A(x1) 2153 UT
.... 6374A(x2) 2318 UT
xxxx 5694A(x6) 2228 UT

J U N E 30, 1 9 8 4 (P=- 3.06, B_0= 2.80, L_0= 233.05)

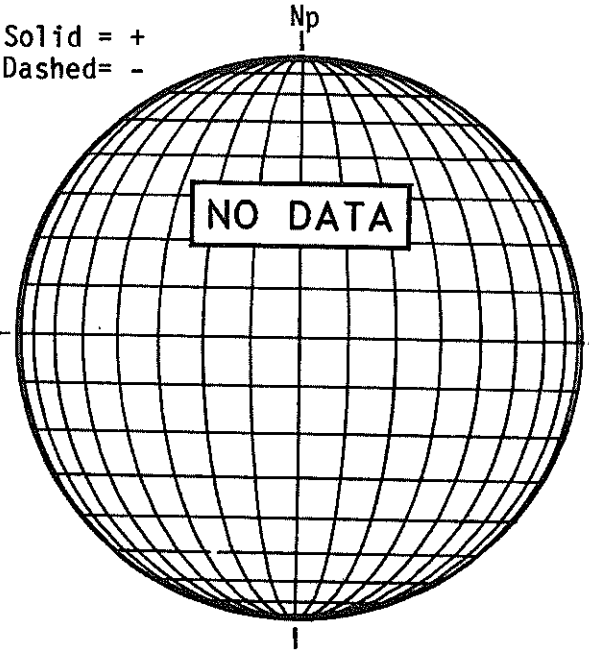
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



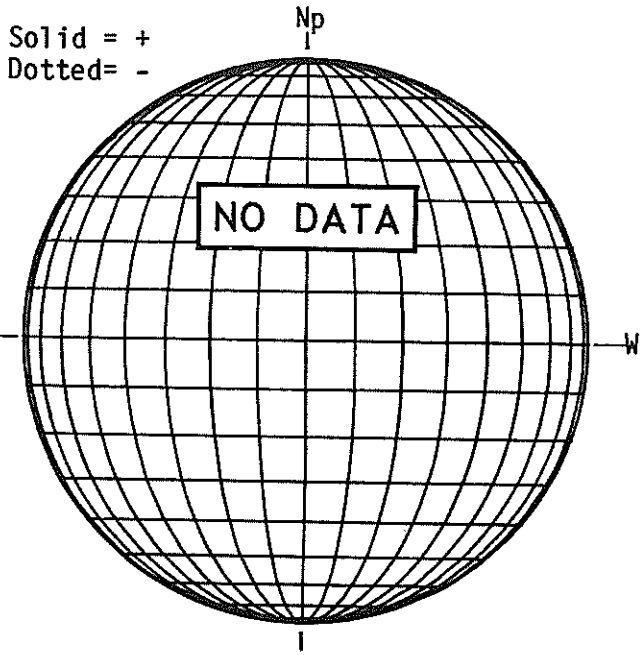
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

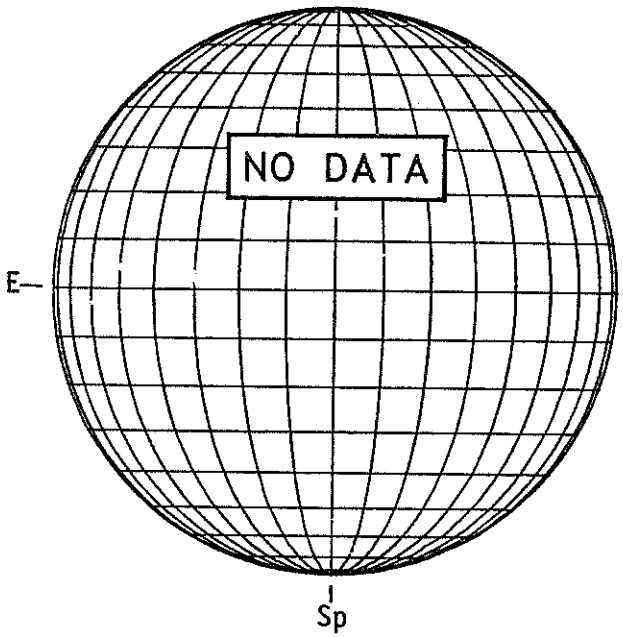


MT. WILSON MAGNETOGRAM

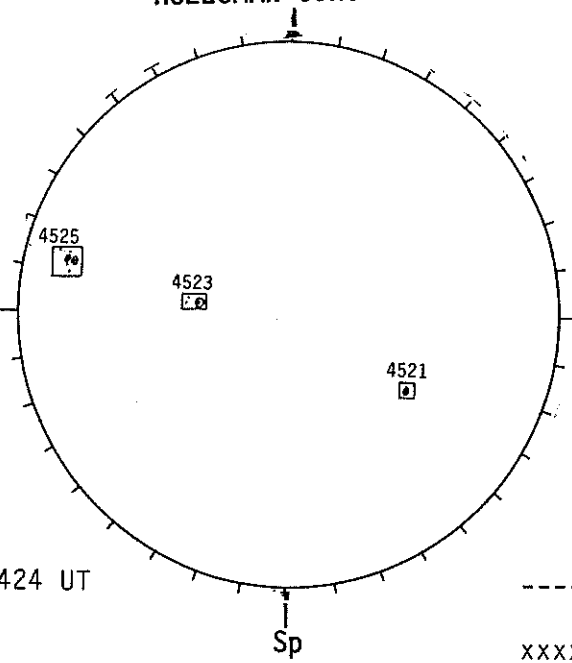
Solid = +
Dotted= -



SACRAMENTO PEAK H-ALPHA

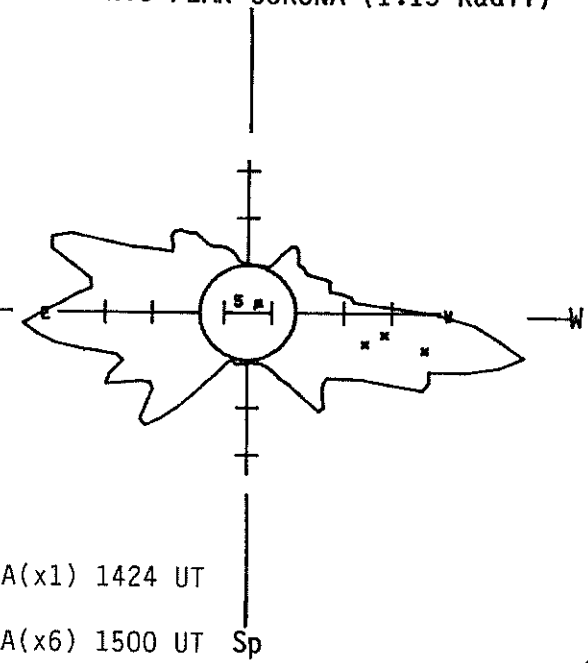


HOLLOMAN SUNSPOTS



1424 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



---- 5303A(x1) 1424 UT

xxxx 5694A(x6) 1500 UT

R E G I O N S O F S U N S P O T A C T I V I T Y
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1984

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4500		MANI	05	25	2350	S12	E80	06	1.0			HHX	100	1	2	3
4500		LEAR	05	26	0050	S12	E81	06	1.1		A	HHX	40	1	2	2
4500		ATHN	05	26	0630	S15	E85	06	1.7			DKO	180	2	10	2
4500		RAMY	05	26	1230	S13	E76	06	1.3		B	CSO	220	5	8	4
4500		HOLL	05	26	1418	S13	E76	06	1.3		B	DSO	240	5	10	3
4500	24066	MWIL	05	26	1445	S11	E75	06	1.3	6	(BP)					
4500		PALE	05	26	1740	S13	E75	06	1.4		B	ESO	210	6	11	3
4500		BOUL	05	26	1810	S12	E70	06	1.0		B	CSO	290	2	4	2
4500		MANI	05	26	2325	S12	E72	06	1.4			DSO	310	6	8	3
4500		ATHN	05	27	0615	S11	E69	06	1.5		B	EHO	340	6	12	2
4500		RAMY	05	27	1230	S14	E66	06	1.5		B	EKO	500	8	12	3
4500		HOLL	05	27	1421	S13	E65	06	1.5		B	EHO	300	6	13	4
4500	24066	MWIL	05	27	1615	S11	E62	06	1.3	5	(BY)					
4500		BOUL	05	27	1640	S13	E60	06	1.2		B	DHO	340	4	10	2
4500		PALE	05	27	1722	S13	E63	06	1.5		B	ESO	260	6	13	3
4500		LEAR	05	28	0245	S12	E58	06	1.5		B	FHO	240	10	16	1
4500		ATHN	05	28	0635	S13	E52	06	1.2			EHO	300	5	15	1
4500		RAMY	05	28	1503	S13	E52	06	1.6		B	EKO	380	20	15	3
4500	24066	MWIL	05	28	1530	S11	E51	06	1.5	6	(BY)					
4500		HOLL	05	28	1547	S12	E52	06	1.6		B	EHO	340	11	13	3
4500		BOUL	05	28	1736	S13	E50	06	1.5		B	EHO	270	9	12	2
4500		PALE	05	28	1829	S12	E51	06	1.6		B	EHO	290	10	12	3
4500		MANI	05	29	0004	S12	E48	06	1.6			EHO	450	28	14	3
4500		LEAR	05	29	0105	S11	E48	06	1.7		B	EHO	380	21	15	3
4500		ATHN	05	29	0615	S13	E42	06	1.4		B	EHO	390	14	14	3
4500		RAMY	05	29	1330	S12	E40	06	1.6		B	EHO	520	25	13	4
4500	24066	MWIL	05	29	1445	S12	E40	06	1.6	5	(BY)					
4500		BOUL	05	29	1450	S11	E36	06	1.3		BG	EAI	720	27	12	4
4500		HOLL	05	29	1556	S12	E39	06	1.6		B	EHI	510	17	11	3
4500		PALE	05	29	1840	S12	E38	06	1.6		B	EHI	460	16	12	3
4500		LEAR	05	30	0135	S12	E34	06	1.6		B	EHO	380	29	14	3
4500		ATHN	05	30	0630	S12	E29	05	1.5			EHO	390	9	12	2
4500		BOUL	05	30	1410	S10	E27	06	1.6		BG	EHI	300	22	13	3
4500		HOLL	05	30	1730	S13	E26	06	1.7		BG	EHI	470	18	14	3
4500		PALE	05	30	1800	S12	E25	06	1.6		B	EHI	470	30	15	3
4500	24066	MWIL	05	30	2300	S12	E23	06	1.7	5	(BY)					
4500		MANI	05	31	0115	S12	E20	06	1.6			EHI	500	24	13	3
4500		LEAR	05	31	0127	S12	E20	06	1.6		B	EHI	350	28	14	3
4500		ATHN	05	31	0630	S13	E16	06	1.5			EKI	420	18	13	1
4500		BOUL	05	31	1240	S09	E13	06	1.5		BG	EAI	360	13	12	2
4500		RAMY	05	31	1258	S12	E15	06	1.7		B	EKO	520	36	14	3
4500	24066	MWIL	05	31	1445	S12	E13	06	1.6	6	(D)					
4500		HOLL	05	31	1457	S12	E14	06	1.7		BD	EKI	420	29	14	3
4500		LEAR	06	01	0050	S13	E08	06	1.6		B	EKI	380	25	12	3
4500		MANI	06	01	0157	S12	E08	06	1.7			EKI	450	28	13	3
4500		BOUL	06	01	1340	S12	W01	06	1.5		BG	DAO	230	11	10	3
4500	24066	MWIL	06	01	1445	S12	E00	06	1.6	6	(BY)					
4500		HOLL	06	01	1520	S13	W01	06	1.6		BG	EHI	360	10	13	4
4500		PALE	06	01	1819	S13	W02	06	1.6		B	EHO	290	19	11	3
4500		MANI	06	01	2231	S12	W05	06	1.6			EHO	330	21	12	3
4500		LEAR	06	02	0114	S12	W07	06	1.5		BG	EHO	340	12	13	2
4500		ATHN	06	02	0640	S13	W10	06	1.5			FHI	350	10	5	3
4500		HOLL	06	02	1550	S12	W14	06	1.6		B	EHO	300	9	14	3
4500	24066	MWIL	06	02	1615	S12	W14	06	1.6	6	(BY)					
4500		MANI	06	02	2251	S12	W19	06	1.5			EHO	340	14	14	3
4500		ATHN	06	03	0615	S10	W22	06	1.6		BG	EHO	280	9	13	3
4500		RAMY	06	03	1325	S12	W27	06	1.5		BG	EKO	300	17	15	3
4500	24066	MWIL	06	03	1545	S13	W28	06	1.5	6	(BY)					
4500		BOUL	06	03	1618	S08	W32	06	1.3		BG	EHO	180	6	13	2
4500		PALE	06	03	1730	S11	W30	06	1.5		B	EHO	270	12	14	3
4500		LEAR	06	04	0025	S12	W33	06	1.5		B	EHO	180	10	14	3
4500		ATHN	06	04	0800	S11	W35	06	1.7			EHO	200	5	13	1
4500		RAMY	06	04	1205	S12	W39	06	1.6		BG	EKO	320	20	15	3
4500		BOUL	06	04	1459	S12	W41	06	1.5		BG	EHO	220	6	14	3
4500		HOLL	06	04	1508	S12	W42	06	1.5		B	CHO	260	14	15	3
4500	24066	MWIL	06	04	1545	S13	W42	06	1.5	5	(BY)					
4500		PALE	06	04	1752	S13	W44	06	1.4		B	ESO	200	11	15	3
4500		MANI	06	04	2309	S12	W47	06	1.4			EHO	350	13	16	3
4500		ATHN	06	05	0630	S13	W48	06	1.6			EHO	330	7	14	3
4500		HOLL	06	05	1800	S13	W58	06	1.4		B	CHO	260	5	9	2
4500		PALE	06	05	2244	S12	W61	06	1.4		B	CSO	220	6	12	2

R E G I O N S O F S U N S P O T A C T I V I T Y
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1984

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4500	24066	MWIL	06	05	2245	S13	W62	06	1.3	5	(BY)					
4500		MANI	06	06	0025	S12	W66	06	1.0			CHO	260	3	8	2
4500		LEAR	06	06	0026	S12	W55	06	1.9		B	CHO	150	2	8	1
4500		ATHN	06	06	0630	S12	W66	06	1.3		B	HSO	170	2	6	3
4500	24066	MWIL	06	06	1430	S13	W71	06	1.2	5	(BP)					
4500		BOUL	06	06	1625	S09	W75	06	1.1		B	CSO	180	2	4	2
4500		HOLL	06	06	1659	S13	W74	06	1.1		B	CHO	230	3	8	3
4500		PALE	06	06	1730	S12	W74	06	1.2		B	CHO	190	5	9	3
4500		MANI	06	07	0047	S12	W76	06	1.3			BHO	260	11	4	2
4500		LEAR	06	07	0048	S13	W76	06	1.3		A	HHX	80	1	3	3
4500		ATHN	06	07	0630	S13	W75	06	1.6			HXO	80	1	1	3
4500	24066	MWIL	06	07	1430	S12	W84	06	1.3	2	BP					
4500		HOLL	06	07	1543	S13	W86	06	1.2		B	CSO	210	2	10	3
0001		RAMY	05	27	1230	N21	E67	06	1.7		A	AXX	30	1	1	3
0001		RAMY	05	28	1503	N21	E55	06	1.8		A	AXX	20	2	2	3
0001	24069	MWIL	05	28	1530	N23	E60	06	2.3	3	(AP)					
0001	24074	MWIL	06	01	1445	N22	E06	06	2.1	3	(B)					
0001	24077	MWIL	06	04	1545	N24	W37	06	1.8	3	(AP)					
4506		RAMY	05	29	1330	S22	E71	06	4.0		A	AXX	10	1	1	4
4506	24072	MWIL	05	29	1445	S23	E71	06	4.1	3	(AP)					
4506		HOLL	05	29	1556	S24	E73	06	4.3		A	AXX		1	1	3
4506		PALE	05	29	1840	S23	E70	06	4.2		A	AXX		1	1	3
4506		LEAR	05	30	0135	S23	E67	06	4.2		A	AXX	10	1	1	3
4506		BOUL	05	30	1410	S22	E57	06	4.0		A	AXX	10	1	1	3
4506	24072	MWIL	05	30	2300	S21	E55	06	4.2	3	(AP)					
4506		MANI	05	31	0115	S23	E52	06	4.1			AXX	10	1	1	3
4506		LEAR	05	31	0127	S22	E52	06	4.1		B	BXO	10	2	2	3
4506		BOUL	05	31	1240	S24	E44	06	3.9		A	AXX	10	1	1	2
4506		RAMY	05	31	1258	S22	E47	06	4.2		B	BXO	30	3	3	3
4506	24072	MWIL	05	31	1445	S21	E46	06	4.1	3	(AP)					
4506		HOLL	05	31	1457	S22	E47	06	4.2		B	BXO	10	2	3	3
4506		MANI	06	01	0157	S23	E42	06	4.3			BXO	10	4	3	3
4506	24072	MWIL	06	01	1445	S21	E35	06	4.3	4	(AP)					
4506		HOLL	06	01	1520	S22	E34	06	4.3		A	AXX	10	2	2	4
4506		PALE	06	01	1819	S22	E33	06	4.3		A	AXX	10	3	1	3
4506	24078	MWIL	06	05	2245	S23	W22	06	4.3	2	(AP)					
	24076	MWIL	06	03	1545	S21	E23	06	5.4	3	(AP)					
		HOLL	06	07	1543	N05	W22	06	6.0		A	AXX		1		3
	24081	MWIL	06	07	1430	N05	W14	06	6.6	3	(AP)					
4510	24079	MWIL	06	05	2245	N01	E23	06	7.7	3	(AP)					
4510	24082	MWIL	06	08	1430	N00	W13	06	7.6	3	(AP)					
4510		PALE	06	08	1828	N02	W14	06	7.7		B	BXO	10	4	3	4
4510		HOLL	06	09	1436	S02	W28	06	7.5		A	AXX		1		3
4510		HOLL	06	09	1436	S02	W28	06	7.5		A	AXX		1	1	3
4510	24082	MWIL	06	09	1500	N00	W24	06	7.8	3	(AP)					
		LEAR	06	08	0104	N00	E07	06	8.6		B	BXO	10	2	3	3
0002	24080	MWIL	06	05	2245	N12	E45	06	9.3	2	(AP)					
0002		MANI	06	06	0025	N14	E42	06	9.2			AXX	10	2	1	2
0002	24080	MWIL	06	06	1430	N13	E36	06	9.3	3	(AP)					
0002		ATHN	06	07	0630	N13	E19	06	8.7			AXX	10	1		3
0002	24080	MWIL	06	07	1430	N13	E16	06	8.8	1	AP					
0002	24080	MWIL	06	08	1430	N12	E03	06	8.8	3	(AP)					
4508		HOLL	06	02	1550	N07	E81	06	8.7		A	HHX	140	2	3	3
4508	24075	MWIL	06	02	1615	N07	E84	06	9.0	2	(AF)					
4508		MANI	06	02	2251	N06	E78	06	8.8			HSX	150	1	2	3
4508		ATHN	06	03	0615	N04	E74	06	8.8		A	HHX	170	1	3	3
4508		RAMY	06	03	1325	N05	E69	06	8.7		A	HAX	190	2	2	3
4508	24075	MWIL	06	03	1545	N06	E69	06	8.8	5	(AP)					
4508		BOUL	06	03	1618	N04	E64	06	8.5		A	HSX	90	3	2	2
4508		PALE	06	03	1730	N06	E68	06	8.8		A	HHX	210	2	3	3
4508		MANI	06	03	2253	N06	E64	06	8.7			HHX	110	4	4	3
4508		LEAR	06	04	0025	N06	E63	06	8.7		A	HSX	60	1	2	3

R E G I O N S O F S U N S P O T A C T I V I T Y
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1984

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4508		ATHN	06	04	0800	N05	E61	06	8.9		A	HKX	150	1	3	1
4508		RAMY	06	04	1205	N06	E57	06	8.8		B	CAO	150	4	4	3
4508		BOUL	06	04	1459	N04	E52	06	8.5		A	HSX	70	3	2	3
4508		HOLL	06	04	1508	N06	E55	06	8.7		A	HSX	230	4	2	3
4508	24075	MWIL	06	04	1545	N06	E55	06	8.8	5	(BP)					
4508		PALE	06	04	1752	N07	E56	06	8.9		B	CSO	120	4	4	3
4508		MANI	06	04	2309	N06	E51	06	8.8			CHO	100	5	4	3
4508		MANI	06	04	2309	N06	E51	06	8.8			CHO	100	5	4	3
4508		ATHN	06	05	0630	N05	E46	06	8.7			CHI	170	3	4	3
4508		HOLL	06	05	1800	N06	E37	06	8.5		A	HSX	110	2	2	2
4508		HOLL	06	05	1800	N06	E37	06	8.5		A	HSX	110	2	2	2
4508		PALE	06	05	2244	N06	E38	06	8.8		A	HSX	110	2	2	2
4508	24075	MWIL	06	05	2245	N06	E38	06	8.8	5	(AF)					
4508		MANI	06	06	0025	N07	E37	06	8.8			CHO	170	5	4	2
4508		LEAR	06	06	0026	N09	E40	06	9.0		B	CHO	140	2	10	1
4508		ATHN	06	06	0630	N04	E31	06	8.6		B	CAO	100	4	4	3
4508	24075	MWIL	06	06	1430	N05	E29	06	8.8	4	(BP)					
4508		BOUL	06	06	1625	N04	E27	06	8.7		B	CAO	100	6	3	2
4508		HOLL	06	06	1659	N04	E27	06	8.7		B	CHO	180	4	4	3
4508		PALE	06	06	1730	N05	E26	06	8.7		B	CAO	120	5	4	3
4508		MANI	06	07	0047	N05	E23	06	8.8			CHO	120	6	5	2
4508		LEAR	06	07	0048	N05	E23	06	8.8		B	DSO	110	6	4	3
4508		ATHN	06	07	0630	N04	E19	06	8.7			CKO	140	5	3	3
4508	24075	MWIL	06	07	1430	N05	E15	06	8.7	5	(BP)					
4508		HOLL	06	07	1543	N04	E14	06	8.7		B	CHO	140	10	4	3
4508		BOUL	06	07	1647	N06	E14	06	8.7		B	CAO	50	7	3	2
4508		LEAR	06	08	0104	N05	E08	06	8.6		B	CAO	70	6	4	3
4508		MANI	06	08	0242	N05	E08	06	8.7			CSO	90	9	5	2
4508		ATHN	06	08	0615	N05	E06	06	8.7		B	CSO	80	4	4	3
4508	24075	MWIL	06	08	1430	N05	E02	06	8.8	5	(BP)					
4508		HOLL	06	08	1448	N06	E02	06	8.8		BG	CSO	90	4	4	3
4508		PALE	06	08	1828	N07	W00	06	8.8		B	CSO	100	8	5	4
4508		LEAR	06	09	0202	N06	W05	06	8.7		B	CSO	80	3	4	3
4508		ATHN	06	09	0750	N06	W07	06	8.8		B	CSO	80	4	4	2
4508		BOUL	06	09	1409	N05	W09	06	8.9		B	CSO	80	8	7	3
4508		HOLL	06	09	1436	N05	W10	06	8.9		A	CSO	100	11	8	3
4508		HOLL	06	09	1436	N05	W10	06	8.9		A	HSX	100	11	8	3
4508	24075	MWIL	06	09	1500	N04	W12	06	8.7	5	(BY)					
4508		RAMY	06	09	1525	N05	W12	06	8.7		B	CAO	60	11	6	2
4508		PALE	06	09	1903	N06	W13	06	8.8		B	CSO	80	9	5	3
4508		MANI	06	09	2240	N05	W18	06	8.6			CSO	70	4	5	2
4508		LEAR	06	10	0022	N06	W17	06	8.7		B	CSO	70	7	6	3
4508		ATHN	06	10	0630	N05	W20	06	8.8			CSO	60	6	5	2
4508		RAMY	06	10	1320	N04	W24	06	8.8		B	CAO	40	10	8	3
4508		HOLL	06	10	1436	N04	W25	06	8.7		B	CRO	120	9	7	3
4508		BOUL	06	10	1444	N06	W25	06	8.7		B	CSO	50	5	3	3
4508	24075	MWIL	06	10	1500	N05	W25	06	8.8	4	(BY)					
4508		PALE	06	10	1804	N06	W26	06	8.8		B	CSO	70	7	6	3
4508		LEAR	06	11	0047	N05	W30	06	8.8		B	CRO	40	7	4	3
4508		ATHN	06	11	0615	N06	W32	06	8.9		A	HSX	20	1	2	3
4508		RAMY	06	11	1240	N04	W38	06	8.7		B	CAO	30	5	4	3
4508		HOLL	06	11	1423	N06	W38	06	8.8		A	HRX	20	2	1	3
4508	24075	MWIL	06	11	1430	N05	W37	06	8.8	3	(AF)					
4508		BOUL	06	11	1505	N06	W39	06	8.7		B	BXO	20	2		2
4508		PALE	06	11	1852	N07	W40	06	8.8		B	BXO	20	4	3	3
		BOUL	06	12	1514	N15	W15	06	11.5		A	AXX	10	2	1	3
4509		LEAR	06	08	0104	S12	E76	06	13.8		A	AXX	10	1	1	3
4509		MANI	06	08	0242	S12	E75	06	13.8			AXX	20	1	1	2
4509	24083	MWIL	06	08	1430	S12	E68	06	13.7	3	(BP)					
4509		HOLL	06	08	1448	S12	E67	06	13.7		B	BXO	10	2	3	3
4509		PALE	06	08	1828	S12	E66	06	13.7		B	BXO	10	3	3	4
4509		LEAR	06	09	0202	S11	E61	06	13.7		B	BXO	30	3	4	3
4509		BOUL	06	09	1409	S13	E52	06	13.5		B	BXO	30	3	3	3
4509		HOLL	06	09	1436	S12	E55	06	13.8		B	BXO	10	3	4	3
4509	24083	MWIL	06	09	1500	S11	E54	06	13.7	4	(AP)					
4509		RAMY	06	09	1525	S12	E52	06	13.6		B	DAO	70	4	4	2
4509		PALE	06	09	1903	S11	E52	06	13.7		B	BXO	10	3	3	3
4509		MANI	06	09	2240	S12	E49	06	13.6			BXO	20	3	3	2
4509		LEAR	06	10	0022	S12	E49	06	13.7		B	BXO	30	4	3	3

R E G I O N S O F S U N S P O T A C T I V I T Y
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JUNE 1984

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4509		ATHN	06	10	0630	S12	E42	06	13.4			BXO	30	5	3	2
4509		RAMY	06	10	1320	S12	E40	06	13.6		B	CRO	10	6	3	3
4509		HOLL	06	10	1436	S12	E40	06	13.6		B	BXO	10	4	3	3
4509	24083	MWIL	06	10	1500	S11	E39	06	13.6	4	(AP)					
4509		PALE	06	10	1804	S10	E38	06	13.6		B	BXO	20	5	4	3
4509		LEAR	06	11	0047	S12	E35	06	13.7		B	BXO	30	6	6	3
4509		ATHN	06	11	0615	S11	E31	06	13.6		B	BXO	30	6	6	3
4509		RAMY	06	11	1240	S11	E28	06	13.6		B	CRO	30	10	7	3
4509		HOLL	06	11	1423	S11	E28	06	13.7		B	BXO	30	10	8	3
4509	24083	MWIL	06	11	1430	S11	E27	06	13.6	4	(B)					
4509		BOUL	06	11	1505	S10	E28	06	13.7		B	BXO	40	6	6	2
4509		PALE	06	11	1852	S10	E25	06	13.7		B	CRO	30	8	7	3
4509		LEAR	06	12	0120	S12	E22	06	13.7		B	BXI	30	13	7	3
4509		ATHN	06	12	0635	S11	E17	06	13.6			CAO	50	13	9	3
4509		RAMY	06	12	1230	S11	E16	06	13.7		B	CAO	90	16	8	4
4509		HOLL	06	12	1421	S11	E15	06	13.7		B	BXO	40	14	10	2
4509	24083	MWIL	06	12	1500	S11	E14	06	13.7	3	(B)					
4509		BOUL	06	12	1514	S10	E14	06	13.7		B	BXO	50	13	8	3
4509		PALE	06	12	1737	S12	E12	06	13.6		B	BXO	40	11	8	3
4509		LEAR	06	13	0200	S11	E07	06	13.6		B	BXI	70	14	9	2
4509		ATHN	06	13	0645	S11	E06	06	13.7			BXO	70	10	8	3
4509		RAMY	06	13	1257	S12	E02	06	13.7		B	CAO	90	20	10	3
4509		BOUL	06	13	1408	S11	E01	06	13.7		B	BXO	20	15	10	2
4509		HOLL	06	13	1435	S11	E02	06	13.8		B	BXO	50	10	9	3
4509	24083	MWIL	06	13	1515	S12	W02	06	13.5	4	(B)					
4509		PALE	06	13	2108	S11	W04	06	13.6		B	CRO	30	7	7	2
4509		ATHN	06	14	0630	S10	W07	06	13.7		B	BXO	80	9	7	2
4509		BOUL	06	14	1304	S11	W14	06	13.5		B	BXO	50	18	8	3
4509		RAMY	06	14	1320	S12	W13	06	13.6		B	DAO	70	21	8	4
4509		HOLL	06	14	1530	S11	W13	06	13.7		B	BXO	80	17	9	3
4509	24083	MWIL	06	14	1530	S12	W14	06	13.6	3	(B)					
4509		PALE	06	14	2337	S11	W18	06	13.6		B	CRO	80	16	8	3
4509		LEAR	06	15	0230	S12	W20	06	13.6		B	DRO	50	16	9	2
4509		ATHN	06	15	0630	S11	W23	06	13.5			CSO	70	6	5	1
4509		RAMY	06	15	1245	S12	W26	06	13.6		B	DAO	70	19	8	3
4509		BOUL	06	15	1410	S10	W28	06	13.5		B	BXO	50	15	8	3
4509	24083	MWIL	06	15	1530	S12	W28	06	13.5	4	(B)					
4509		PALE	06	15	1750	S11	W32	06	13.3		B	DSO	60	10	6	2
4509		HOLL	06	15	1843	S11	W31	06	13.4		B	DAO	80	17	9	3
4509		LEAR	06	16	0417	S12	W37	06	13.4		B	DAO	90	7	6	2
4509		ATHN	06	16	0615	S10	W35	06	13.6		B	DAO	160	5	7	3
4509		RAMY	06	16	1310	S13	W42	06	13.4		B	DAO	140	14	8	4
4509		HOLL	06	16	1410	S13	W43	06	13.3		B	DAO	180	14	8	3
4509		BOUL	06	16	1423	S10	W41	06	13.5		B	DSO	140	9	6	3
4509	24083	MWIL	06	16	1515	S12	W42	06	13.5	5	(B)					
4509		PALE	06	16	2145	S12	W47	06	13.4		B	DSO	50	3	7	2
4509		ATHN	06	17	0600	S12	W47	06	13.7			DAO	60	3	6	3
4509		LEAR	06	17	0903	S11	W49	06	13.7		B	CSO	60	3	6	2
4509		RAMY	06	17	1305	S12	W55	06	13.4		B	DAO	80	11	8	3
4509		BOUL	06	17	1402	S11	W55	06	13.4		B	CRO	20	11	8	3
4509	24083	MWIL	06	17	1530	S12	W56	06	13.4	4	(B)					
4509		HOLL	06	17	1553	S12	W57	06	13.4		B	CAO	140	13	9	3
4509		PALE	06	17	1858	S11	W59	06	13.4		B	DSO	60	3	8	3
4509		LEAR	06	18	0106	S11	W62	06	13.4		B	CSO	40	5	7	2
4509		RAMY	06	18	1350	S11	W70	06	13.3		B	CAO	40	2	3	3
4509		BOUL	06	18	1415	S11	W74	06	13.0		B	BXO	60	2	5	3
4509	24083	MWIL	06	18	1600	S12	W70	06	13.4	4	(BP)					
4509		PALE	06	18	1730	S11	W75	06	13.1		B	BXO	40	2	5	3
4509		HOLL	06	18	2212	S12	W76	06	13.2		A	HRX	30	1	1	2
4509		ATHN	06	19	0630	S11	W79	06	13.3			AXX	10	1	2	3
4509		RAMY	06	19	1243	S11	W79	06	13.6		B	CAO	50	3	4	4
4509	24083	MWIL	06	19	1600	S12	W88	06	13.0	1	AP					
		BOUL	06	21	1320	S02	W76	06	15.9		A	AXX		1		3
4511		RAMY	06	10	1320	S08	E80	06	16.6		A	AXX	10	1	1	3
4511		HOLL	06	10	1436	S07	E78	06	16.5		B	BXO	20	2	5	3
4511		BOUL	06	10	1444	S07	E75	06	16.2		A	AXX	30	1	3	3
4511	24084	MWIL	06	10	1500	S07	E79	06	16.5	2	(B)					
4511		PALE	06	10	1804	S07	E76	06	16.4		B	BXO	20	2	5	3
4511		LEAR	06	11	0047	S08	E72	06	16.4		B	BXO	10	2	1	3

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4511		ATHN	06	11	0615	S09	E70	06	16.5		A	AXX	20	1	1	3
4511		RAMY	06	11	1240	S07	E67	06	16.5		B	CAO	40	4	7	3
4511		HOLL	06	11	1423	S07	E65	06	16.5		B	BXO	10	3	4	3
4511	24084	MWIL	06	11	1430	S07	E64	06	16.4	4	(B)					
4511		BOUL	06	11	1505	S06	E65	06	16.5		B	BXO	20	2		2
4511		PALE	06	11	1852	S07	E62	06	16.4		B	DRO	60	4	5	3
4511		LEAR	06	12	0120	S07	E57	06	16.3		B	CRI	70	7	5	3
4511		ATHN	06	12	0635	S08	E53	06	16.2			CAO	60	3	6	3
4511		RAMY	06	12	1230	S07	E51	06	16.3		B	CAO	80	12	6	4
4511		HOLL	06	12	1421	S07	E52	06	16.5		B	CAO	50	6	6	2
4511	24084	MWIL	06	12	1500	S08	E50	06	16.4	4	(B)					
4511		BOUL	06	12	1514	S07	E48	06	16.2		B	BXO	60	13	7	3
4511		PALE	06	12	1737	S07	E49	06	16.4		B	CRO	40	8	5	3
4511		LEAR	06	13	0200	S07	E44	06	16.4		B	DRO	80	6	5	2
4511		ATHN	06	13	0645	S08	E42	06	16.4			DRO	80	5	6	3
4511		RAMY	06	13	1257	S08	E38	06	16.4		B	DAO	80	10	7	3
4511		BOUL	06	13	1408	S08	E37	06	16.4		B	BXO	40	8	6	2
4511		HOLL	06	13	1435	S07	E35	06	16.2		B	CAO	90	12	12	3
4511	24084	MWIL	06	13	1515	S08	E37	06	16.4	4	(B)					
4511		PALE	06	13	2108	S07	E34	06	16.4		B	DRO	40	6	5	2
4511		ATHN	06	14	0630	S08	E29	06	16.4		B	CRO	60	3	5	2
4511		BOUL	06	14	1304	S08	E23	06	16.3		B	BXO	30	9	6	3
4511		RAMY	06	14	1320	S08	E25	06	16.4		B	DAO	70	9	7	4
4511		HOLL	06	14	1530	S07	E24	06	16.4		B	BXO	40	7	6	3
4511	24084	MWIL	06	14	1530	S08	E22	06	16.3	4	(B)					
4511		PALE	06	14	2337	S09	E18	06	16.3		B	BXO	40	5	7	3
4511		LEAR	06	15	0230	S07	E16	06	16.3		B	DRO	30	6	5	2
4511		ATHN	06	15	0630	S09	E13	06	16.2			DSO	30	4	4	1
4511		RAMY	06	15	1245	S08	E11	06	16.4		B	DAO	40	5	6	3
4511		BOUL	06	15	1410	S07	E09	06	16.3		B	BXO	10	4	6	3
4511	24084	MWIL	06	15	1530	S08	E08	06	16.2	4	(BP)					
4511		PALE	06	15	1750	S08	E07	06	16.3		B	BXO	10	2	4	2
4511		HOLL	06	15	1843	S08	E06	06	16.2		B	BXO		3	3	3
4511		LEAR	06	16	0417	S08	E02	06	16.3		B	BXO	10	4	6	2
4511		ATHN	06	16	0615	S08	W02	06	16.1		A	AXX	10	1	1	3
4511		RAMY	06	16	1310	S08	W05	06	16.2		B	CAO	20	5	3	4
4511		HOLL	06	16	1410	S11	W05	06	16.2		B	BXO	20	4	4	3
4511		BOUL	06	16	1423	S07	W06	06	16.1		B	BXO	10	4	4	3
4511	24084	MWIL	06	16	1515	S09	W05	06	16.3	3	(BP)					
4511		PALE	06	16	2145	S09	W09	06	16.2		B	BXO	10	2	6	2
4511		ATHN	06	17	0600	S09	W08	06	16.6			BXO	10	2	2	3
4511		LEAR	06	17	0903	S09	W09	06	16.7		B	BXO	20	4	8	2
4511		RAMY	06	17	1305	S08	W14	06	16.5		B	BXO	10	4	3	3
4511	24084	MWIL	06	17	1530	S09	W15	06	16.5	3	(AP)					
4511		HOLL	06	17	1553	S09	W17	06	16.4		B	BXO	20	5	4	3
4511		PALE	06	17	1858	S09	W19	06	16.4		B	BXO	20	3	5	3
4511		HOLL	06	18	2212	S05	W34	06	16.4		A	AXX		1		2
4515		PALE	06	14	2337	N09	E22	06	16.6		B	BXO	20	4	3	3
4515		LEAR	06	15	0230	N08	E22	06	16.8		B	BXO	10	4	3	2
4515		ATHN	06	15	0630	N07	E17	06	16.5		B	BXO	20	3	3	1
4515		RAMY	06	15	1245	N08	E15	06	16.7		B	DAO	20	9	4	3
4515		BOUL	06	15	1410	N08	E14	06	16.6		B	BXO	20	6	4	3
4515	24088	MWIL	06	15	1530	N08	E14	06	16.7	4	(BF)					
4515		PALE	06	15	1750	N09	E13	06	16.7		B	BXO	20	5	5	2
4515		HOLL	06	15	1843	N08	E12	06	16.7		B	BXO	10	5	5	3
4515		LEAR	06	16	0417	N08	E07	06	16.7		B	CSO	30	6	4	2
4515		ATHN	06	16	0615	N08	E06	06	16.7		B	BXO	40	6	4	3
4515		RAMY	06	16	1310	N08	E02	06	16.7		B	DAO	40	10	4	4
4515		HOLL	06	16	1410	N07	E02	06	16.7		B	BXO	30	9	4	3
4515		BOUL	06	16	1423	N08	E02	06	16.7		B	BXO	10	8	3	3
4515	24088	MWIL	06	16	1515	N08	E00	06	16.6	4	(B)					
4515		PALE	06	16	2145	N09	W03	06	16.7		B	BXO	10	3	3	2
4515		ATHN	06	17	0600	N07	W06	06	16.8			BXO	20	2	3	3
4515		LEAR	06	17	0903	N09	W05	06	17.0		B	CSO	20	5	5	2
4515		RAMY	06	17	1305	N09	W12	06	16.6		B	CAO	20	3	3	3
4515		BOUL	06	17	1402	N09	W14	06	16.5		A	AXX	10	2	2	3
4515	24088	MWIL	06	17	1530	N08	W13	06	16.7	4	(B)					
4515		HOLL	06	17	1553	N08	W14	06	16.6		B	BXO	20	4	3	3
4515		PALE	06	17	1858	N09	W15	06	16.7		B	BXO	30	3	3	3
4515		LEAR	06	18	0106	N09	W18	06	16.7		B	BXO	10	2	2	2

R E G I O N S O F S U N S P O T A C T I V I T Y
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JUNE 1984

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4512		RAMY	06	11	1240	N02	E71	06	16.8		A	AXX	20	2	1	3
4512		HOLL	06	11	1423	N02	E70	06	16.8		A	AXX	10	1	1	3
4512	24085	MWIL	06	11	1430	N02	E70	06	16.8	3	(B)					
4512		BOUL	06	11	1505	N03	E68	06	16.7		B	BXO	20	2		2
4512		PALE	06	11	1852	N02	E67	06	16.8		B	BXO	20	2	4	3
4512		LEAR	06	12	0120	N03	E63	06	16.8		A	BXO	20	5	4	3
4512		ATHN	06	12	0635	N02	E58	06	16.6			BXO	10	3	4	3
4512		RAMY	06	12	1230	N03	E55	06	16.6		B	BXO	30	4	4	4
4512		HOLL	06	12	1421	N02	E54	06	16.6		A	AXX	10	1	1	2
4512	24085	MWIL	06	12	1500	N02	E55	06	16.7	3	(B)					
4512		BOUL	06	12	1514	N03	E54	06	16.7		B	BXO	20	3	5	3
4512		PALE	06	12	1737	N02	E53	06	16.7		B	BXO	10	2	4	3
4518		RAMY	06	17	1305	N19	W09	06	16.9		A	HAX	20	1	1	3
4518		BOUL	06	17	1402	N19	W11	06	16.7		A	HRX	10	1	1	3
4518	24091	MWIL	06	17	1530	N19	W10	06	16.9	4	(AF)					
4518		HOLL	06	17	1553	N18	W11	06	16.8		A	AXX		1		3
4518	24091	MWIL	06	18	1600	N20	W25	06	16.8	1	AF					
4518		HOLL	06	18	2212	N18	W29	06	16.7		A	AXX		1		2
4513	24086	MWIL	06	12	1500	S07	E80	06	18.6	3	(AP)					
4513		PALE	06	12	1737	S06	E77	06	18.5		B	BXO	10	2	3	3
4513		LEAR	06	13	0200	S06	E75	06	18.7		B	BXO	20	5	6	2
4513		ATHN	06	13	0645	S08	E72	06	18.7			BXO	20	3	6	3
4513		RAMY	06	13	1257	S07	E68	06	18.6		B	BXO	80	7	8	3
4513		BOUL	06	13	1408	S08	E67	06	18.6		B	BXO	30	6	7	2
4513		HOLL	06	13	1435	S06	E67	06	18.6		B	BXO	20	6	8	3
4513	24086	MWIL	06	13	1515	S07	E68	06	18.7	3	(BP)					
4513		PALE	06	13	2108	S07	E64	06	18.7		B	CSO	50	5	8	2
4513		ATHN	06	14	0630	S08	E60	06	18.8		B	CRO	120	3	9	2
4513		RAMY	06	14	1320	S07	E55	06	18.7		B	DAO	240	15	9	4
4513		HOLL	06	14	1530	S06	E54	06	18.7		B	CSO	220	11	10	3
4513	24086	MWIL	06	14	1530	S07	E54	06	18.7	5	(D)					
4513		PALE	06	14	2337	S08	E50	06	18.7		B	EAO	290	16	12	3
4513		LEAR	06	15	0230	S07	E47	06	18.6		B	DAO	210	20	9	2
4513		ATHN	06	15	0630	S08	E45	06	18.6			EKO	300	11	11	1
4513		RAMY	06	15	1245	S07	E42	06	18.7		B	EKO	360	35	12	3
4513		BOUL	06	15	1410	S06	E40	06	18.6		B	CSI	140	18	10	3
4513	24086	MWIL	06	15	1530	S07	E38	06	18.5	5	(D)					
4513		PALE	06	15	1750	S07	E38	06	18.6		B	EAI	360	26	12	2
4513		HOLL	06	15	1843	S07	E38	06	18.6		B	DKO	330	27	10	3
4513		LEAR	06	16	0417	S07	E33	06	18.7		B	EKO	270	18	12	2
4513		ATHN	06	16	0615	S06	E30	06	18.5		B	EKO	300	19	12	3
4513		RAMY	06	16	1310	S06	E26	06	18.5		B	EKO	430	21	11	4
4513		HOLL	06	16	1410	S08	E27	06	18.6		B	EKO	410	21	12	3
4513		BOUL	06	16	1423	S06	E26	06	18.5		B	DKI	240	19	10	3
4513	24086	MWIL	06	16	1515	S07	E25	06	18.5	5	(D)					
4513		PALE	06	16	2145	S07	E23	06	18.6		B	EKO	410	12	12	2
4513		ATHN	06	17	0600	S08	E19	06	18.7			EKO	320	11	10	3
4513		LEAR	06	17	0903	S07	E22	06	19.0		B	EKO	400	12	11	2
4513		RAMY	06	17	1305	S06	E14	06	18.6		B	DKO	390	12	10	3
4513		BOUL	06	17	1402	S07	E12	06	18.5		BD	CKO	290	13	11	3
4513	24086	MWIL	06	17	1530	S07	E13	06	18.6	5	(D)					
4513		HOLL	06	17	1553	S07	E12	06	18.6		B	CKO	370	22	11	3
4513		PALE	06	17	1858	S08	E11	06	18.6		B	EKO	420	15	12	3
4513		LEAR	06	18	0106	S08	E08	06	18.6		B	DKO	420	12	10	2
4513		ATHN	06	18	0630	S08	E03	06	18.5			DHI	260	5	10	1
4513		RAMY	06	18	1350	S07	E02	06	18.7		B	DKO	400	25	10	3
4513		BOUL	06	18	1415	S06	W03	06	18.4		BD	DKO	420	17	10	3
4513	24086	MWIL	06	18	1600	S07	W02	06	18.5	5	(BY)					
4513		PALE	06	18	1730	S07	W02	06	18.6		BG	EKO	370	25	11	3
4513		HOLL	06	18	2212	S07	W04	06	18.6		B	CKO	370	24	10	2
4513		ATHN	06	19	0630	S06	W08	06	18.7			DHO	230	13	9	3
4513		RAMY	06	19	1243	S06	W12	06	18.6		B	DKO	420	39	10	4
4513		BOUL	06	19	1351	S07	W12	06	18.7		BG	ESO	290	38	11	3
4513	24086	MWIL	06	19	1600	S07	W14	06	18.6	6	(B)					
4513		PALE	06	19	1945	S07	W16	06	18.6		B	DSO	300	16	9	2
4513		HOLL	06	19	2013	S07	W16	06	18.6		B	DHO	340	42	9	4
4513		LEAR	06	20	0110	S07	W19	06	18.6		B	DHO	300	42	10	4
4513		RAMY	06	20	1325	S07	W24	06	18.8		B	EHO	340	33	13	4
4513		HOLL	06	20	1422	S07	W26	06	18.7		B	DHI	300	38	9	4

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4513		LEAR	06	21	0030	S07	W32	06	18.6		B	DHO	210	21	9	2
4513		ATHN	06	21	0600	S06	W35	06	18.6		B	EHO	270	15	12	2
4513		RAMY	06	21	1205	S07	W37	06	18.7		B	EKO	360	8	11	3
4513		BOUL	06	21	1320	S01	W38	06	18.7		BG	DSO	220	11	8	3
4513		HOLL	06	21	1520	S07	W40	06	18.6		B	CHO	330	18	9	3
4513	24086	MWIL	06	21	1600	S07	W44	06	18.4	6	(B)					
4513		LEAR	06	22	0017	S07	W45	06	18.6		B	DHO	200	10	11	2
4513		ATHN	06	22	0700	S06	W47	06	18.8			DHO	260	4	10	2
4513		RAMY	06	22	1320	S06	W54	06	18.5		B	CAO	260	8	8	4
4513		BOUL	06	22	1415	S05	W52	06	18.7		B	CSO	170	7	8	3
4513	24086	MWIL	06	22	1445	S07	W56	06	18.4	6	(BP)					
4513		PALE	06	22	2030	S07	W58	06	18.5		B	CSO	220	4	7	2
4513		LEAR	06	23	0015	S07	W62	06	18.4		A	HHX	70	1	3	2
4513		ATHN	06	23	0630	S07	W63	06	18.6		A	HHO	180	1	3	3
4513		RAMY	06	23	1220	S06	W68	06	18.4		A	HAX	160	1	2	3
4513		PALE	06	23	1740	S06	W71	06	18.4		A	HAX	180	1	2	3
4513		LEAR	06	24	0219	S06	W76	06	18.4		A	HHX	70	1	3	3
4513		ATHN	06	24	0745	S05	W79	06	18.4			HSX	90	1	2	2
4513		BOUL	06	24	1524	S02	W85	06	18.3		A	HSX	30	1	3	3
4513		HOLL	06	24	2112	S06	W88	06	18.3		A	HSX	70	1	2	2
4519	24093	MWIL	06	19	1600	S06	W04	06	19.4	3	(AP)					
4519		LEAR	06	20	0110	S07	W08	06	19.4		B	BXO	10	4	3	4
4519		HOLL	06	20	1422	S06	W18	06	19.3		B	BXO	10	4	3	4
4519		LEAR	06	21	0030	S07	W24	06	19.2		B	BXO	10	4	3	2
4519		RAMY	06	21	1205	S06	W32	06	19.1		A	HAX	20	1	1	3
4519		BOUL	06	21	1320	S02	W32	06	19.2		A	AXX	10	1		3
4519		HOLL	06	21	1520	S06	W34	06	19.1		A	HRX	10	3	1	3
4519	24093	MWIL	06	21	1600	S07	W33	06	19.2	5	(AP)					
4519		RAMY	06	22	1320	S06	W48	06	19.0		B	BXO	10	2	2	4
4519	24093	MWIL	06	22	1445	S06	W50	06	18.9	3	(AP)					
4519	24093	MWIL	06	23	1445	S07	W69	06	18.4	5	(AP)					
	24092	MWIL	06	18	1600	S02	E18	06	20.0	2	(AP)					
4516		LEAR	06	15	0230	N03	E76	06	20.8		B	BXO	10	3	4	2
4516		BOUL	06	15	1410	N03	E68	06	20.7		A	AXX	20	1	1	3
4516	24090	MWIL	06	15	1530	N03	E68	06	20.7	3	(B)					
4516		PALE	06	15	1750	N02	E66	06	20.7		A	AXX	10	1	1	2
4516		HOLL	06	15	1843	N01	E66	06	20.7		A	AXX		1		3
4516		LEAR	06	16	0417	N02	E59	06	20.6		A	AXX		1	1	2
4516		ATHN	06	16	0615	N02	E59	06	20.7		A	AXX	10	1	1	3
4516		RAMY	06	16	1310	N03	E54	06	20.6		A	HAX	40	1	1	4
4516		HOLL	06	16	1410	N02	E55	06	20.7		A	AXX		1		3
4516		BOUL	06	16	1423	N03	E51	06	20.4		A	AXX		1	1	3
4516	24090	MWIL	06	16	1515	N04	E53	06	20.6	4	(BP)					
4516		PALE	06	16	2145	N02	E49	06	20.6		A	AXX		1	1	2
4516		HOLL	06	17	1553	N02	E40	06	20.6		A	AXX		1		3
4516		LEAR	06	18	0106	N04	E37	06	20.8		B	BXO	10	2	4	2
4516		RAMY	06	18	1350	N02	E26	06	20.5		B	BXO	40	2	3	3
4516	24090	MWIL	06	18	1600	N03	E23	06	20.4	2	(BP)					
4516		RAMY	06	19	1243	N03	E17	06	20.8		B	BXO	20	4	3	4
4516	24090	MWIL	06	19	1600	N04	E16	06	20.9	3	(AF)					
4516		PALE	06	19	1945	N04	E13	06	20.8		A	AXX		1		2
4516		RAMY	06	20	1325	N03	W02	06	20.4		A	AXX	10	4	2	4
4516		HOLL	06	20	1422	N02	W03	06	20.4		A	AXX	10	3	2	4
	24095	MWIL	06	22	1445	S14	W25	06	20.7	4	(B)					
4514	24087	MWIL	06	14	1530	S04	E85	06	21.0	3	AP					
4514		HOLL	06	14	1530	S06	E85	06	21.0		A	HSX	100	1	2	3
4514		PALE	06	14	2337	S04	E79	06	20.9		A	HSX	90	1	2	3
4514		LEAR	06	15	0230	S05	E76	06	20.8		A	HSX	30	1	2	2
4514		ATHN	06	15	0630	S07	E75	06	20.9		A	HSX	90	1	2	1
4514		RAMY	06	15	1245	S05	E72	06	20.9		A	HAX	130	1	2	3
4514		BOUL	06	15	1410	S05	E70	06	20.8		A	HSX	170	1	4	3
4514	24087	MWIL	06	15	1530	S05	E70	06	20.9	5	(AP)					
4514		PALE	06	15	1750	S04	E69	06	20.9		A	HSX	90	1	2	2
4514		HOLL	06	15	1843	S06	E69	06	20.9		A	HSX	130	1	2	3
4514		LEAR	06	16	0417	S05	E64	06	21.0		A	HSX	60	1	2	2
4514		ATHN	06	16	0615	S05	E60	06	20.7		A	HHX	80	1	3	3

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4514		RAMY	06	16	1310	S04 E58	06 20.9		A	HAX	110	1	2	4
4514		HOLL	06	16	1410	S06 E58	06 20.9		A	HSX	100	1	2	3
4514		BOUL	06	16	1423	S05 E56	06 20.8		A	HSX	110	1	2	3
4514	24087	MWIL	06	16	1515	S04 E57	06 20.9	5	(AP)					
4514		PALE	06	16	2145	S06 E53	06 20.9		A	HSX	100	1	2	2
4514		ATHN	06	17	0600	S06 E49	06 20.9			HAX	60	1	1	3
4514		LEAR	06	17	0903	S05 E52	06 21.3		A	HHX	50	1	2	2
4514		RAMY	06	17	1305	S05 E45	06 20.9		A	HAX	170	1	2	3
4514		BOUL	06	17	1402	S05 E42	06 20.7		A	HSX	140	1	2	3
4514	24087	MWIL	06	17	1530	S05 E44	06 20.9	5	(AP)					
4514		HOLL	06	17	1553	S06 E43	06 20.9		A	HSX	120	1	2	3
4514		PALE	06	17	1858	S06 E41	06 20.9		A	HSX	80	1	2	3
4514		LEAR	06	18	0106	S06 E38	06 20.9		A	HHX	140	1	3	2
4514		ATHN	06	18	0630	S06 E33	06 20.7		A	HSO	50	1	2	1
4514		RAMY	06	18	1350	S07 E33	06 21.0		B	CSO	170	7	5	3
4514		BOUL	06	18	1415	S04 E29	06 20.8		A	HSX	110	1	2	3
4514	24087	MWIL	06	18	1600	S04 E31	06 21.0	5	(BP)					
4514		PALE	06	18	1730	S05 E28	06 20.8		A	HSX	110	1	2	3
4514		HOLL	06	18	2212	S05 E27	06 20.9		A	HSX	110	1	2	2
4514		ATHN	06	19	0630	S04 E22	06 20.9		A	HSO	70	1	4	3
4514		RAMY	06	19	1243	S04 E18	06 20.9		B	CAO	130	3	3	4
4514		BOUL	06	19	1351	S04 E08	06 20.2		A	HSX	90	1	2	3
4514	24087	MWIL	06	19	1600	S04 E17	06 20.9	5	(BP)					
4514		PALE	06	19	1945	S04 E14	06 20.9		A	HSX	100	1	2	2
4514		HOLL	06	19	2013	S04 E14	06 20.9		A	HSX	150	2	2	4
4514		LEAR	06	20	0110	S04 E15	06 21.2		B	CSO	80	4	8	4
4514		RAMY	06	20	1325	S05 E06	06 21.0		A	HSX	120	1	2	4
4514		HOLL	06	20	1422	S04 E04	06 20.9		A	HSX	150	1	2	4
4514		LEAR	06	21	0030	S04 W01	06 20.9		B	CSO	80	2	8	2
4514		ATHN	06	21	0600	S04 W04	06 21.0		A	HHX	80	1	3	2
4514		RAMY	06	21	1205	S05 W08	06 20.9		A	HAX	120	1	2	3
4514		BOUL	06	21	1320	S02 W09	06 20.9		A	HSX	90	1	2	3
4514		HOLL	06	21	1520	S07 W09	06 21.0		B	CSO	110	4	6	3
4514	24087	MWIL	06	21	1600	S05 W10	06 20.9	5	(AP)					
4514		LEAR	06	22	0017	S05 W15	06 20.9		A	HSX	80	1	2	2
4514		ATHN	06	22	0700	S05 W18	06 20.9			HAX	50	1	2	2
4514		RAMY	06	22	1320	S05 W23	06 20.8		A	HSX	110	1	2	4
4514		BOUL	06	22	1415	S03 W22	06 20.9		A	HSX	80	1	1	3
4514	24087	MWIL	06	22	1445	S06 W23	06 20.9	5	(AP)					
4514		PALE	06	22	2030	S06 W27	06 20.8		A	HSX	90	1	2	2
4514		LEAR	06	23	0015	S05 W29	06 20.8		A	HSX	70	1	2	2
4514		ATHN	06	23	0630	S05 W30	06 21.0		A	HSO	50	1	2	3
4514		RAMY	06	23	1220	S05 W35	06 20.9		A	HAX	50	1	1	3
4514	24087	MWIL	06	23	1445	S05 W37	06 20.8	6	(AP)					
4514		PALE	06	23	1740	S05 W38	06 20.9		A	HSX	80	1	1	3
4514		LEAR	06	24	0219	S05 W43	06 20.9		A	HSX	70	1	2	3
4514		ATHN	06	24	0745	S04 W40	06 21.3		A	HSX	50	1	2	2
4514		BOUL	06	24	1524	S01 W49	06 21.0		A	HSX	30	1	2	3
4514		HOLL	06	24	2112	S05 W55	06 20.8		A	HSX	30	1	1	2
4514		LEAR	06	25	0600	S05 W58	06 20.9		A	HSX	10	1	1	2
4514		ATHN	06	25	0615	S05 W55	06 21.1		A	HSX	30	1	2	3
4514		RAMY	06	25	1327	S05 W61	06 21.0		A	HSX	30	1	1	3
4514		HOLL	06	25	1500	S05 W65	06 20.8		A	HSX	20	1	2	3
4514	24087	MWIL	06	25	1530	S06 W65	06 20.8	4	(AP)					
4514		LEAR	06	26	0110	S05 W70	06 20.8		A	HRX	10	1	1	2
4514		ATHN	06	26	0730	S04 W70	06 21.0			AXX	10	1	1	1
4514		RAMY	06	26	1237	S05 W76	06 20.8		A	HAX	60	1	1	3
4514		BOUL	06	26	1420	S04 W78	06 20.8		A	AXX	10	1	1	3
4514		HOLL	06	26	1443	S06 W76	06 20.9		B	CSO	10	2	3	3
4514	24087	MWIL	06	26	1500	S06 W78	06 20.8	4	(AF)					
	24096	MWIL	06	22	1445	S12 W19	06 21.2	3	(AP)					
4517	24089	MWIL	06	15	1530	N15 E75	06 21.3	3	(AP)					
4517		LEAR	06	16	0417	N16 E61	06 20.8		B	BXO	10	2	7	2
4517		RAMY	06	16	1310	N16 E64	06 21.4		B	CAO	50	6	8	4
4517		HOLL	06	16	1410	N15 E65	06 21.5		B	BXO	20	5	8	3
4517		BOUL	06	16	1423	N17 E64	06 21.5		B	BXO	10	2	9	3
4517	24089	MWIL	06	16	1515	N17 E63	06 21.4	4	(B)					
4517		PALE	06	16	2145	N17 E59	06 21.4		B	BXO	10	3	6	2
4517		LEAR	06	17	0903	N16 E58	06 21.8		B	BXO	10	2	8	2

R E G I O N S O F S U N S P O T A C T I V I T Y
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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4517		RAMY	06	17	1305	N16	E51	06	21.4		B	BXO	30	3	7	3
4517		BOUL	06	17	1402	N16	E48	06	21.2		B	BXO	10	3	8	3
4517	24089	MWIL	06	17	1530	N17	E50	06	21.4	3	(B)					
4517		HOLL	06	17	1553	N16	E50	06	21.5		B	BXO	30	6	9	3
4517		PALE	06	17	1858	N14	E48	06	21.4		B	BXO	10	2	7	3
4517		LEAR	06	18	0106	N16	E45	06	21.5		B	BXO	10	5	7	2
4517		RAMY	06	18	1350	N16	E37	06	21.4		B	BXO	10	7	8	3
4517	24089	MWIL	06	18	1600	N17	E37	06	21.5	3	(B)					
4517		HOLL	06	18	2212	N16	E36	06	21.7		B	BXO	10	3	4	2
4517		ATHN	06	19	0630	N16	E31	06	21.6			BXO	20	2	2	3
4517		RAMY	06	19	1243	N17	E27	06	21.6		A	AXX	10	2	2	4
4517		BOUL	06	19	1351	N15	E26	06	21.5		B	BXO	10	4	3	3
4517	24089	MWIL	06	19	1600	N16	E26	06	21.6	3	(AF)					
4517		PALE	06	19	1945	N17	E23	06	21.6		A	AXX	10	3	2	2
4517		HOLL	06	19	2013	N17	E23	06	21.6		B	BXO	10	4	3	4
4517		LEAR	06	20	0110	N16	E22	06	21.7		B	BXO	20	7	3	4
4517		RAMY	06	20	1325	N18	E15	06	21.7		B	BXO	10	7	3	4
4517		HOLL	06	20	1422	N17	E14	06	21.7		B	BXO	10	7	4	4
4517		LEAR	06	21	0030	N17	E07	06	21.6		B	BXO	10	3	3	2
4517		RAMY	06	21	1205	N15	E01	06	21.6		B	CAO	20	5	3	3
4517		BOUL	06	21	1320	N16	E02	06	21.7		A	AXX	10	2	2	3
4517		HOLL	06	21	1520	N17	W01	06	21.6		A	AXX		1		3
4517	24089	MWIL	06	21	1600	N16	W02	06	21.5	3	(AF)					
4517		RAMY	06	22	1320	N18	W13	06	21.6		B	BXO	10	3	3	4
		ATHN	06	19	0630	S11	E47	06	22.8			AXX	10	1	1	3
4520		LEAR	06	20	0110	S14	E54	06	24.1		A	AXX		1	1	4
4520		RAMY	06	21	1205	S15	E31	06	23.9		B	CAO	20	2	2	3
4520		BOUL	06	21	1320	S18	E26	06	23.5		B	BXO	10	2	2	3
4520		HOLL	06	21	1520	S15	E29	06	23.8		B	BXO	10	6	4	3
4520	24094	MWIL	06	21	1600	S15	E28	06	23.8	3	(B)					
4520		LEAR	06	22	0017	S15	E24	06	23.8		B	CRO	40	6	5	2
4520		ATHN	06	22	0700	S16	E19	06	23.7			CRO	90	10	5	2
4520		RAMY	06	22	1320	S16	E17	06	23.8		B	DAO	130	17	7	4
4520		BOUL	06	22	1415	S13	E15	06	23.7		BG	DSO	70	14	7	3
4520	24094	MWIL	06	22	1445	S16	E17	06	23.9	6	(B)					
4520		PALE	06	22	2030	S14	E11	06	23.7		B	CSO	140	17	8	2
4520		LEAR	06	23	0015	S16	E13	06	24.0		BG	CSI	170	19	7	2
4520		ATHN	06	23	0630	S17	E06	06	23.7		B	DSO	180	11	8	3
4520		RAMY	06	23	1220	S15	E04	06	23.8		B	DAO	190	29	8	3
4520	24094	MWIL	06	23	1445	S16	E04	06	23.9	5	(B)					
4520		PALE	06	23	1740	S15	E00	06	23.7		B	DSO	260	24	9	3
4520		LEAR	06	24	0219	S15	W04	06	23.8		B	DKI	320	40	10	3
4520		ATHN	06	24	0745	S15	W05	06	23.9		B	DHO	160	5	8	2
4520		BOUL	06	24	1524	S13	W13	06	23.7		B	DSO	290	18	9	3
4520		HOLL	06	24	2112	S15	W15	06	23.7		B	EKO	430	17	11	2
4520		LEAR	06	25	0600	S15	W20	06	23.7		B	EAO	380	19	11	2
4520		ATHN	06	25	0615	S14	W20	06	23.7			EKO	300	11	11	3
4520		RAMY	06	25	1327	S14	W25	06	23.7		B	HKO	540	44	16	3
4520		HOLL	06	25	1500	S15	W25	06	23.7		B	EKO	550	20	12	3
4520	24094	MWIL	06	25	1530	S15	W25	06	23.8	5	(B)					
4520		LEAR	06	26	0110	S15	W31	06	23.7		B	EKO	300	15	11	2
4520		ATHN	06	26	0730	S13	W32	06	23.9			EAO	240	13	12	1
4520		RAMY	06	26	1237	S15	W37	06	23.7		B	EKO	350	23	12	3
4520		BOUL	06	26	1420	S14	W38	06	23.7		B	EAO	290	13	12	3
4520		HOLL	06	26	1443	S15	W39	06	23.7		B	EHO	390	24	12	3
4520	24094	MWIL	06	26	1500	S16	W38	06	23.7	5	(B)					
4520		ATHN	06	27	0630	S14	W44	06	23.9			EAO	260	8	12	1
4520		RAMY	06	27	1223	S15	W51	06	23.7		B	EAO	350	18	14	4
4520		BOUL	06	27	1419	S14	W51	06	23.7		B	EAO	340	8	11	3
4520	24094	MWIL	06	27	1445	S15	W53	06	23.6	5	(B)					
4520		HOLL	06	27	1631	S15	W53	06	23.7		B	EAO	720	9	13	2
4520		PALE	06	27	1840	S14	W56	06	23.5		B	EAO	300	11	14	3
4520		LEAR	06	28	0129	S13	W57	06	23.8		B	EAO	270	11	14	2
4520		ATHN	06	28	0630	S14	W61	06	23.7			EAO	200	5	13	2
4520		BOUL	06	28	1331	S14	W62	06	23.9		B	CSI	80	11	13	2
4520		RAMY	06	28	1335	S14	W65	06	23.7		B	DAO	270	11	14	3
4520	24094	MWIL	06	28	1445	S15	W64	06	23.8	5	(B)					
4520		HOLL	06	28	1516	S13	W66	06	23.7		B	EKO	330	10	15	2
4520		LEAR	06	29	0001	S13	W68	06	23.9		B	EHO	200	6	14	2

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4520		BOUL	06	29	1307	S14	W74	06	24.0		A	HSX	60	3	3	3
4520	24094	MWIL	06	29	1415	S15	W72	06	24.1	4	(B)					
4520		HOLL	06	29	1505	S16	W76	06	23.9		B	CSO	60	4	7	3
4520		PALE	06	29	1815	S16	W78	06	23.8		A	HAX	60	1	5	3
4520		MANI	06	30	0042	S15	W81	06	23.9			HSX	90	1	2	2
4520		LEAR	06	30	0150	S14	W80	06	24.0		B	BXO	10	2	1	3
4526		LEAR	06	29	0001	N04	W60	06	24.5		A	AXX	10	1	1	2
4526		BOUL	06	29	1307	N05	W68	06	24.5		B	BXO	50	5	5	3
4526	24101	MWIL	06	29	1415	N03	W67	06	24.6	4	(B)					
4526		HOLL	06	29	1505	N02	W70	06	24.4		B	CSO	60	3	5	3
4526		PALE	06	29	1815	N03	W71	06	24.5		B	BXO	30	3	8	3
4526		MANI	06	30	0042	N03	W74	06	24.5			CRO	30	3	5	2
4526		LEAR	06	30	0150	N03	W75	06	24.5		B	BXO	10	3	5	3
0004		HOLL	06	24	2112	S07	E02	06	25.0		A	AXX		3	1	2
0004		RAMY	06	27	1223	S13	W35	06	24.9		B	BXO	10	3	3	4
0004		BOUL	06	27	1419	S12	W32	06	25.2		A	AXX	10	1	1	3
0004	24099	MWIL	06	27	1445	S14	W34	06	25.0	4	(AF)					
4522		BOUL	06	24	1524	S15	E33	06	27.1		B	BXO	30	4	4	3
4522		HOLL	06	24	2112	S13	E31	06	27.2		B	BXO	10	5	4	2
4522		LEAR	06	25	0600	S13	E26	06	27.2		B	BXO	10	2	3	2
4522		ATHN	06	25	0615	S13	E24	06	27.1		B	BXO	10	2	3	3
4522		RAMY	06	25	1327	S12	E22	06	27.2		B	BXO	20	3	4	3
0005		RAMY	07	02	1220	N14	W59	06	28.1		A	AXX	10	1	1	3
0005		HOLL	07	02	1758	N14	W63	06	28.0		A	AXX		1		3
0005		PALE	07	02	1810	N14	W63	06	28.0		A	AXX	10	1		3
		LEAR	07	03	0124	N06	W61	06	28.5		B	BXO	30	2	2	3
4521		RAMY	06	22	1320	S13	E79	06	28.5		A	HAX	180	1	2	4
4521		BOUL	06	22	1415	S12	E76	06	28.3		A	HSX	120	1	2	3
4521	24097	MWIL	06	22	1445	S13	E79	06	28.6	2	AP					
4521		PALE	06	22	2030	S13	E75	06	28.5		A	HSX	80	1	2	2
4521		LEAR	06	23	0015	S14	E73	06	28.5		A	HHX	50	1	3	2
4521		ATHN	06	23	0630	S16	E70	06	28.6		A	HHO	160	1	4	3
4521		RAMY	06	23	1220	S14	E66	06	28.5		A	HAX	160	2	2	3
4521	24097	MWIL	06	23	1445	S13	E66	06	28.6	5	(AP)					
4521		PALE	06	23	1740	S13	E63	06	28.5		A	HSX	170	2	2	3
4521		LEAR	06	24	0219	S13	E57	06	28.4		A	DHX	60	2	4	3
4521		ATHN	06	24	0745	S15	E56	06	28.6		A	HAX	110	2	2	2
4521		BOUL	06	24	1524	S16	E49	06	28.4		A	HSX	100	2	2	3
4521		HOLL	06	24	2112	S14	E48	06	28.5		A	HHX	110	2	3	2
4521		LEAR	06	25	0600	S14	E43	06	28.5		A	HAX	80	3	2	2
4521		ATHN	06	25	0615	S16	E42	06	28.4		A	HKX	100	3	3	3
4521		RAMY	06	25	1327	S12	E38	06	28.4		B	CAO	120	4	3	3
4521		HOLL	06	25	1500	S13	E37	06	28.4		A	HAX	130	4	3	3
4521	24097	MWIL	06	25	1530	S14	E38	06	28.5	5	(AP)					
4521		LEAR	06	26	0110	S14	E33	06	28.5		A	HAX	90	3	2	2
4521		ATHN	06	26	0730	S12	E28	06	28.4			HSX	90	1	2	1
4521		RAMY	06	26	1237	S14	E26	06	28.5		B	CAO	110	6	3	3
4521		BOUL	06	26	1420	S13	E23	06	28.3		A	HSX	80	5	3	3
4521		HOLL	06	26	1443	S13	E26	06	28.6		B	CSO	120	4	8	3
4521	24097	MWIL	06	26	1500	S14	E26	06	28.6	5	(AP)					
4521		ATHN	06	27	0630	S13	E17	06	28.6			HSX	80	1	2	1
4521		RAMY	06	27	1223	S13	E14	06	28.6		A	HAX	130	2	2	4
4521		BOUL	06	27	1419	S13	E13	06	28.6		A	HSX	40	3	2	3
4521	24097	MWIL	06	27	1445	S14	E13	06	28.6	5	(AP)					
4521		HOLL	06	27	1631	S13	E12	06	28.6		A	HSX	100	2	2	2
4521		PALE	06	27	1840	S12	E10	06	28.5		A	HSX	100	2	2	3
4521		LEAR	06	28	0129	S12	E08	06	28.7		A	HSX	90	1	2	2
4521		ATHN	06	28	0630	S13	E04	06	28.6		A	HSO	70	1	2	2
4521		BOUL	06	28	1331	S12	E01	06	28.6		A	HSX	20	3	1	2
4521		RAMY	06	28	1335	S12	W00	06	28.6		A	HAX	80	2	2	3
4521	24097	MWIL	06	28	1445	S13	E00	06	28.6	5	(AP)					
4521		HOLL	06	28	1516	S18	W01	06	28.6		A	HSX	120	2	2	2
4521		LEAR	06	29	0001	S13	W06	06	28.5		A	HSX	90	2	2	2
4521		ATHN	06	29	0930	S12	W08	06	28.8		A	HSX	80	1	2	1
4521		BOUL	06	29	1307	S12	W14	06	28.5		A	HSX	70	3	2	3

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4521	24097	MWIL	06	29	1415	S14	W14	06	28.5	5	(AP)					
4521		HOLL	06	29	1505	S13	W14	06	28.6		A	HHX	110	2	3	3
4521		HOLL	06	29	1505	S18	W14	06	28.6		A	HHX	110	2	3	3
4521		PALE	06	29	1815	S13	W16	06	28.6		A	HSX	50	1	2	3
4521		MANI	06	30	0042	S13	W20	06	28.5			HSX	60	2	2	2
4521		LEAR	06	30	0150	S12	W20	06	28.6		A	HSX	60	1	2	3
4521		ATHN	06	30	0630	S13	W23	06	28.5		A	HAX	40	2	2	2
4521		RAMY	06	30	1126	S13	W26	06	28.5		B	CAO	80	6	3	4
4521		HOLL	06	30	1424	S13	W27	06	28.6		A	HAX	60	1	2	3
4521	24097	MWIL	06	30	1500	S14	W27	06	28.6	5	(AP)					
4521		PALE	06	30	2010	S13	W31	06	28.5		A	HSX	50	1	1	3
4521		LEAR	07	01	0220	S13	W34	06	28.5		A	HSX	40	2	2	3
4521		ATHN	07	01	0615	S11	W35	06	28.6			HSX	50	1	2	3
4521		RAMY	07	01	1249	S12	W39	06	28.6		A	HAX	40	2	1	3
4521		HOLL	07	01	1425	S13	W40	06	28.6		A	HSX	40	1	2	2
4521		BOUL	07	01	1545	S11	W39	06	28.7		A	HSX	50	1	2	3
4521	24097	MWIL	07	01	1600	S13	W41	06	28.6	5	(AP)					
4521		PALE	07	01	1750	S12	W42	06	28.6		A	HSX	40	1	1	3
4521		LEAR	07	02	0042	S13	W46	06	28.6		B	CAO	60	6	3	3
4521		ATHN	07	02	0630	S12	W46	06	28.8			HAX	30	1	2	3
4521		RAMY	07	02	1220	S13	W53	06	28.5		A	HAX	40	1	1	3
4521	24097	MWIL	07	02	1445	S12	W54	06	28.5	5	(AP)					
4521		BOUL	07	02	1530	S10	W60	06	28.1		A	HSX	10	2	1	3
4521		HOLL	07	02	1758	S13	W55	06	28.6		A	HAX	20	2	1	3
4521		PALE	07	02	1810	S12	W55	06	28.6		B	CSO	20	2	1	3
4521		LEAR	07	03	0124	S13	W59	06	28.6		A	HSX	20	1	1	3
4521		ATHN	07	03	0700	S12	W60	06	28.8		A	HSX	30	1	1	2
4521		BOUL	07	03	1410	S09	W66	06	28.6		A	AXX	20	1	1	3
4521		HOLL	07	03	1428	S13	W66	06	28.6		A	HSX	20	1	1	3
4521		RAMY	07	03	1435	S13	W68	06	28.5		A	HAX	50	1	1	2
4521	24097	MWIL	07	03	1630	S13	W67	06	28.6	4	(AP)					
4521		PALE	07	03	1845	S13	W68	06	28.7		A	AXX	20	1	1	3
4521		RAMY	07	04	1222	S12	W77	06	28.7		A	HAX	20	1	1	3
4521	24097	MWIL	07	04	1600	S12	W80	06	28.6	3	AP					
0006		HOLL	06	24	2112	N11	E61	06	29.5		A	AXX		1		2
0006		RAMY	06	28	1335	N11	E12	06	29.5		A	AXX	10	1	1	3
4535		RAMY	07	04	1222	S03	W61	06	30.0		A	HAX	20	1	1	3
4535		HOLL	07	04	1510	S03	W63	06	29.9		A	AXX	10	1	1	3
4535		BOUL	07	04	1530	S04	W63	06	29.9		A	AXX	20	3	1	3
4535	24107	MWIL	07	04	1600	S05	W64	06	29.9	3	(AF)					
4535		PALE	07	04	1735	S03	W65	06	29.9		A	AXX	10	1	1	4
		BOUL	07	01	1545	N05	W16	06	30.5		B	BXO	10	3	2	3

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

JUNE 1984

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
01	1017	1045	1107	2	1					1	1015E	No data
01	1638	1641	1656	1	1		1			1	*	
02	0925	0929U	0955	1	1		1				NF	
02	1015	1020U	1050	1	1		1				NF	
02	1250	1303	1317	1	3					2	1248	X-ray
02	1408	1410	1445	1	3		2				*	
02	1623	1630	1655	1	1		1				NF	
03	0147	0200	0245	1-	3	1		1	1		0146	4500
03	0818	0822	0848	1-	1			1			0822	4500
03	1410	1412	1434	1	1		2				NF	
03	1452	1459	1541	1	1		1				1453	4504
05	0204	0220	0250	1-	3			1	1		0159	No data
05	1544	1555	1605	1	3		2				*	
06	1152	1205	1225	1	1		1				NF	
06	1250	1254	1316	1	1		1				NF	
06	1704	1720	1746	1	1		1				NF	
07	1324	1334	1402	1	1		1				NF	
07	1449	1452	1533	1+	3					8	1439E	4500
08	2309	2317	2337	1-	3	1		1		3	2310	4508
09	0726	0803U	0819	1	1		1				0725E	No data
09	1443	1448U	1617	1	1		1				NF	
11	1015	1041U	1125	1	3		2				NF	
11	1722	1732U	1800	1	1		1				NF	
14	1455	1458	1520	1-	3					4	1454	4509
14	1622	1626	1632	1-	3					2	1619	X-ray
14	1715	1730	1749	2	1					1	1657	X-ray
14	1823	1825	1842	1-	3					3	1818	X-ray
14	1845	1849	1903	1-	1					1	*	
14	2014	2015	2020	1-	3			1		3	2011	X-ray
14	2120	2152	2251	1-	1			1			2121	X-ray
14	2146	2147	2201	1-	1					1	*	
15	0416	0423	0443	1-	1				1		0413	X-ray
15	2039	2047	2114	1-	3			1		1	2039	X-ray
16	0325	0330	0430	1	3	1	1	1	1		0323	X-ray
18	0748	0752	0800	1	1		1				NF	
18	0934	0938	0957	1-	1			1			NF	
20	0647	0649	0700	1-	1					1	NF	
20	2246	2252	2315	1-	1			1			2242	4513
21	1012	1016	1027U	1-	1				1		NF	
21	1345	1400	1428	2	1					1	1344	4519
22	0716	0820	0840	1	1		1				NF	
23	0350	0348	0357	1-	1			1			0349	4513
23	0525	0533	0608	1-	1			1			0528	4520
23	0634	0640	0646	1-	3			1	1		0630	No data
24	0138	0150	0203U	1-	1				1		NF	
25	1012	1028	1048	1	1		1				NF	
25	1600	1620	1648	1	3		2				NF	

SUDDEN IONOSPHERIC DISTURBANCES

June 1984

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
26	0755	0805U	0924	1	1		1				0751	No data
27	1237	1240U	1314	1	1		1				NF	
27	1806	1810	1840	2	3					6	1804	X-ray
27	2220	2229	2244	1-	1			1			2220	X-ray
28	0232	0235	0242	1-	1				1		NF	
28	0920	0935	0955	1	1		2				NF	
29	0947	0954U	1049	1	1		1				*	
29	1056	1059	1131	1	1		1				*	
30	0004	0018	0040	1-	1			1			0002	X-ray

SIDs by NOAA/SESC REGION

June 1984

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	25	26	27	28	29	30	31
Region Number																															
4500			2				1																								
4504			1																												
4508								1																							
4509														1																	
4513																				1			1								
4519																					1										
4520																							1								
X-Ray		1												5	2	1											2			1	
No Flare		3	1			3	1		1		2							2		1	1	1		1	2		1	2			
No Flare Patrol	1	1			1									2															2		
No Data	1				1				1														1			1					
Event Totals	2	5	4		2	3	2	1	2		2			8	2	1		2		2	2	1	3	1	2	1	3	2	2	1	

OBSERVATORIES REPORTING FOR JUNE 1984*

Ayrshire, Scotland (AY)	SES	Llanherne, Australia (LL)	SPA
Cleveland, Ohio, USA (A28)	SES	Louisville, Kentucky, USA (A26)	SES
Durban, South Africa (A58)	SES	Maui, Hawaii, USA (MI)	SWF
Durham, North Carolina, USA (A54)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF, SES
Edenvale, South Africa (A52)	SES	Paterson, New Jersey, USA (A46)	SES
Farsta, Sweden (FA)	SES	San Antonio, Texas, USA (SA)	SES
Glenorchy, Tasmania, Australia (GN)	SES	Sofia, Bulgaria (SF)	SES
Hiraiso, Japan (HI)	SWF	St. Cloud, Minnesota, USA (SC)	SES
Hobart, Tasmania, Australia (TA)	SEA	Tournai, Belgium (TB)	SES
Houston, Texas, USA (A50)	SES	Tucson, Arizona, USA (A9)	SES
Inubo, Japan (IN)	SPA	Upice, Czechoslovakia (UI)	SEA
Lake Hiawatha, New Jersey, USA (A32)	SES	Valley Cottage, New York, USA (A01)	SES
Latrobe, Pennsylvania, USA (A19)	SES	Vsetin, Czechoslovakia (VS)	SEA
Lintong, China (LT)	SPA		

*Observations are not necessarily continuous for each reporting station.

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JUNE 1984

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0000	0729	CULG				0035.5		2				IIIB
			CULG				0247.0	0247.5	1				IIIG
			CULG				0324.5		1				IIIB
			CULG	0402.5	0403.0	1	0403.0	0403.5	2				IIIG
			LEAR				0402.8	0403.1	1				III
	0409	1830	WEIS				0527.7	0528.5	3				IIIGG
			LEAR				0527.8	0530.8	2				V
			CULG	0528.0	0528.5	1	0528.0	0529.0	3				IIIG,V
			CULG	0604.0	0655.0	1							IS
			WEIS				1205.6	1206.8	3				IIIGG,RS
			SGMR				1205.8	1206.3	1				V
			WEIS				1334.2	1339.3	1				I
			WEIS				1338.8	1342.0	2				IIIG
			WEIS				1340.3	1343.8	2				DCIM
			WEIS				1502.0	1511.0	2				I
			WEIS				1517.7	1518.2	2				DCIM
			WEIS				1530.1	1530.2	1				IIIB
	2029	2400	CULG	2108.0	2200.0	1	2101.5	2210.0	1				IS
			PALE				2120.5	2121.3	1				III
			CULG				2137.5						IIIB
			CULG				2214.5	2215.5	2				IIIG
			CULG				2303.0	2307.0	1				IIIN
			CULG				2306.0	2306.5	2				IIIG
02	0000	0729	CULG				0123.0	0123.5	1				IIIG
			CULG				0221.5	0227.0	1				IIIG,N
			CULG				0224.0		2				IIIB,U
			CULG				0323.0	0326.0	3				IIIGG,V
			LEAR				0323.3	0324.8	1				V
			PALE				0323.5	0324.6	2				III
	0400	1020	WEIS										
			CULG	0647.0		1	0647.0		1				IIIB
	1026	1228	WEIS										
	2029	2400	CULG	2125.0	2148.5								IS,W
03	0000	0729	CULG				0212.0	0325.0	1				IS,C
			CULG				0325.0	0350.0					IS,W,C
			CULG				0350.0	0420.0					IS,W
			CULG				0402.5		1				IIIB
	2210	2400	CULG										
04	0606	1834	WEIS										
	0000	0729	CULG	0606.0	0637.5	1							IS
	2029	2125	CULG										
05	0012	0729	CULG				0012.0	0013.0	1				IS
			CULG				0204.5	0230.0	3			II	H
			CULG				0230.0	0252.0	1			IV	
			LEAR				0232.0	0339.0	1			IV	
	0408	0724	WEIS										
	0739	1834	WEIS										
	2304	2400	CULG										
06	0000	0730	CULG										
	0406	1338	WEIS										
	1344	1621	WEIS										
	1631	1834	WEIS										
	2030	2400	CULG										
07	0000	0729	CULG										
	0519	1125	WEIS										
	1308	1835	WEIS										
08	0148	0730	CULG										
	0227	1836	WEIS										
	0407	0623	WEIS										
			SGMR				2247.3	2247.6	1				III
	2230	2400	CULG				2310.0	2311.0	2				IIIG
09	0000	0730	CULG										
	0407	1238	WEIS				1141.2	1141.3	1				IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
09	1353	1837	WEIS										
	2030	2400	CULG										
10	0000	0730	CULG										
	0406	1837	WEIS										
	2030	2400	CULG										
11	0000	0555	CULG										
	0802	1838	WEIS				1733.0	1733.6	2				IIIG
			SGMR				1733.1	1733.5	1				V
			PALE				1822.6	1824.8	2				V
			PALE				2121.6	2128.1	2				V
			PALE				2131.1	2133.3	3				V
			SGMR				2238.5	2238.8	1				V
			SGMR				2254.5	2254.8	1				V
			SGMR				2327.8	2328.1	1				V
12	0406	1358	WEIS										
	1404	1838	WEIS										
			PALE				1948.8	1957.3	2				III
	2330	2400	CULG										
13	0000	0732	CULG										
	0406	1839	WEIS				1140.3	1140.7	1				IIIG
			WEIS				1621.8	1622.0	2				IIIB
			WEIS				1652.7	1653.9	2				IIIG
			SGMR				1859.3	1859.5	1				III
			PALE				1859.6	1859.8	1				III
	2032	2400	CULG				2115.5	2344.5	1				IIIN
			CULG				2202.0	2202.5	2				IIIB
			CULG				2303.0	2344.0	3				IIIG,N
			CULG				2349.5	2350.0	2				IIIB
14	0000	0732	CULG				0036.5	0414.0	1				IIIN
			LEAR				0120.1	0133.0	1				GG
			CULG				0121.0	0133.0	2				IIIN
			CULG				0129.5		3				IIIB
			PALE				0129.8	0130.5	2				III
			CULG				0243.0		3				IIIB
	0406	0527	WEIS										
			LEAR				0515.0	0524.1	1				III
			CULG				0517.5	0524.5	1				IIIGG
			LEAR				0611.8	0612.6	1				III
			CULG				0612.0	0612.5	3				IIIG
	0559	1839	WEIS				0612.0	0612.6	2				IIIG
			WEIS				0625.4	0625.5	2				IIIB
			CULG				0625.5		2				IIIB
			CULG				0626.0	0703.5	1				IIIS
			LEAR				0631.0	0929.0	1				CONT
			WEIS				0659.0	0659.2	1				IIIG
			WEIS				0721.2	0721.4	1				IIIB
			WEIS				0729.6	0730.0	1				IIIB
			LEAR				0732.1	0735.0	2				III
			WEIS				0732.2	0734.9	3				IIIGG
			WEIS				0749.1	0749.4	3				IIIG
			WEIS				0826.8	0828.3	3				IIIG
			WEIS				0835.1	0835.9	3				IIIG
			WEIS				0838.9	0843.3	3				IIIG
			LEAR				0841.8	0843.1	2				III
			WEIS				0848.7	0849.0	3				IIIG
			WEIS				0857.3	0859.6	2				IIIG
			WEIS				0902.7	0905.8	3				IIIGG
			WEIS				0909.8	0914.2	3				IIIG
			WEIS				0915.2	0915.8	1				IIIG
			WEIS				0919.8	0920.1	2				IIIB
			WEIS				0921.3	0922.6	1				IIIG
			WEIS				0927.5	0928.6	3				IIIG
			WEIS				0931.0	0931.5	2				IIIG
			WEIS				0934.8	0935.1	1				IIIB
			WEIS				0937.3	0942.2	3				IIIG
			SGMR				0938.8	0939.3	2				V

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
14			WEIS				0944.7	0945.3	3				IIIG
			WEIS				0949.4	0952.5	2				IIIGG
			WEIS				0955.4	1000.6	1				IIIG
			WEIS				1004.8	1005.2	2				IIIG
			WEIS				1010.6	1010.9	3				IIIG
			WEIS				1012.8	1013.0	1				IIIG
			WEIS				1017.5	1019.3	2				IIIG
			WEIS				1021.8	1023.2	2				IIIG
			SGMR				1024.6	1024.8	1				V
			WEIS				1024.7	1027.2	3				IIIG
			WEIS				1031.8	1032.9	3				IIIG
			WEIS				1034.8	1034.9	1				IIIB
			WEIS				1040.2	1040.3	1				IIIB
			WEIS				1042.6	1044.6	3				IIIG
			WEIS				1048.6	1049.6	1				IIIG
			WEIS				1059.2	1100.1	3				IIIG
			SGMR				1059.5	1135.5	1				GG
			WEIS				1106.8	1110.9	3				IIIG
			WEIS				1111.9	1115.0	3				IIIG
			WEIS				1117.0	1128.2	3				IIIGG
			SGMR				1121.3	1122.1	1				V
			WEIS				1133.7	1135.8	3				IIIG
			WEIS				1149.4	1149.5	1				IIIB
			WEIS				1210.8	1211.7	2				IIIG
			SGMR				1211.3	1211.6	1				V
			WEIS				1215.1	1215.3	2				IIIB
			WEIS				1222.4	1222.7	2				IIIG
			SGMR				1222.5	1229.5	1				V
			WEIS				1229.2	1229.5	3				IIIG
			WEIS				1242.2	1242.6	3				IIIG
			SGMR				1242.3	1242.6	1				V
			WEIS				1244.7	1245.3	1				IIIG
			SGMR				1252.6	1253.0	1				V
			WEIS				1252.7	1257.3	3				IIIG
			SGMR				1255.5	1255.6	2				V
			WEIS				1305.0	1343.0	2				IIIN
			WEIS				1319.7	1320.0	2				IIIB
			WEIS				1322.2	1322.6	3				IIIG
			SGMR				1322.8	1323.6	1				V
			SGMR				1415.6	1420.1	1				V
			WEIS				1415.7	1417.9	2				IIIG
			WEIS				1419.5	1419.7	2				IIIG
			WEIS				1443.7	1443.8	1				IIIB
			WEIS				1445.3	1445.7	2				IIIG
			WEIS				1446.9	1447.5	1				IIIG
			WEIS				1453.5	1454.6	1				IIIG
			WEIS				1456.8	1457.3	2				IIIG
			WEIS				1502.0	1631.7	3				IIIGG
			SGMR				1505.8	1556.3	1				CONT
			CULG				2100.0	2316.5	2				IIIS
	2032	2400	CULG				2100.0	2316.0	1				IS,C
			SGMR				2101.0	2254.1	1				CONT
			PALE				2137.6	0420.0	1				CONT
			CULG				2139.0	2258.0	3				IIIN
			CULG				2323.0	2357.5	1				IIIN
15	0000	0733	CULG				0000.0	0146.0	1				IN
			CULG				0126.0	0221.5	1				IIIS
			LEAR				0134.8	0149.1	1				G
			CULG				0135.0		2				IIIB
			CULG				0221.5	0700.0					IIIS,W
			CULG				0237.0	0647.5	1				IIIN
	0406	1145	WEIS				0420.0	1741.0	1				IIIN
			CULG				0431.5		2				IIIB
			LEAR				0448.3	0448.6	1				III
			CULG				0448.5	0449.0	2				IIIB
			WEIS	0630.3	0630.4	2							DCIM,RS
			WEIS				0940.4	0940.5	2				DCIM
			WEIS				1017.3	1722.6	2				IIIGG
			WEIS				1047.8	1049.2	3				IIIGG
	1236	1840	WEIS				1435.6	1435.7	2				IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
15			WEIS				1436.8	1436.9	1				IIIB
			SGMR				1538.6	1539.1	1				V
	2032	2400	CULG				2105.0	2400.0					IS,W,C
			CULG				2126.0	2400.0	1				IIIS
			LEAR				2319.0	0600.0	1				CONT
16			CULG				0000.0	0417.0	1				IIIS
	0000	0732	CULG				0000.0	0701.0	1				IS
			CULG				0151.5	0157.0	2				IIIGG
			CULG				0424.0	0651.5	1				IIIN
	0405	1804	WEIS				0449.9	0450.0	1				IIIB
			LEAR				0600.0	0929.0	1				CONT
			WEIS				0659.0	1753.0	2				IIIN,DPRS
	2032	2400	CULG				2101.5	2400.0	1				IS,C
			CULG				2117.0	2400.0	1				IIIS
			SGMR				2202.8	2203.0	1				III
			LEAR				2343.0	0929.0	1				CONT
17			CULG				0000.0	0435.5	1				IIIS
	0000	0732	CULG				0000.0	0430.0	1				IS
			WEIS				0406.0	0731.0	3				IDC
			CULG				0430.0	0658.0	2				IS
			CULG				0435.5	0625.0	2				IIIS
	0405	1841	WEIS				0438.0	1800.0	2				IIIS
			LEAR				0439.1	0439.3	1				III
			CULG				0442.0	0611.0	3				IIIN
			WEIS				0444.4	0445.0	3				IIIG
			LEAR				0451.0	0508.8	1				G
			WEIS				0451.1	0451.4	3				IIIG
			WEIS				0454.7	0455.0	2				U
			WEIS				0456.3	0456.6	3				IIIG
			WEIS				0458.2	0502.3	3				IIIGG
			WEIS				0505.1	0505.3	2				IIIG
			WEIS				0508.3	0508.6	2				IIIB
			CULG	0531.5	0600.0	1							IS
			WEIS				0532.6	0534.9	2				IIIG
			WEIS				0540.8	0548.3	2				IIIGG
			WEIS				0554.7	0558.3	2				IIIGG
			WEIS				0602.4	0621.8	3				IIIGG
			SGMR				1304.8	1305.0	1				III
			SGMR				1339.3	1339.6	1				III
			SGMR				1410.5	1818.3	1				CONT
			WEIS				1423.0	1830.0	1				I
			SGMR				1943.0	1944.3	1				V
			SGMR				2003.6	2004.0	1				III
			PALE				2004.1	2004.3	1				III
	2032	2400	CULG				2101.5	2240.0	1				IIIS
			CULG				2141.5	2240.0	2				IN
			CULG				2331.0	2400.0	1				IIIS
			CULG				2331.0	2400.0	1				IS
			CULG				2332.5	2359.0	2				IIIN
18			CULG				0000.0	0451.5	1				RSDP,N
			CULG				0000.0	0629.0	1				IS,C
	0000	0733	CULG				0000.0	0354.0	2				IIIS
			LEAR				0000.0	0930.0	1				CONT
			PALE				0005.1	0005.5	1				III
			CULG				0316.0	0326.5	3				IIIS
			CULG				0354.0	0655.0	1				IIIS
	0407	0951	WEIS				0407.0	1840.0	3				IS
			CULG				0418.0	0602.5	2				IIIN
	0956	1840	WEIS				0708.0	1831.0	3				IIIS,DP
			SGMR				1117.8	1126.6	1				V
			SGMR				1138.6	2100.0	1				CONT
	2033	2238	CULG				2101.0	2238.5	2				IS,C,DC
			CULG				2101.5	2155.5	1				IIIS
			CULG				2155.5	2238.5	2				IIIS
19			LEAR				0043.1	0043.3	1				III
			LEAR				0046.0	0930.0	1				CONT
	0406	1551	WEIS				0406.0	1400.0	3				IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
19			WEIS				0457.2	0457.4	1				III G
			WEIS				0615.7	0615.8	2				RS
			WEIS				0657.7	0657.8	1				III B
			WEIS				0709.6	0709.7	1				III B
			WEIS				0833.8	0834.1	3				III G
			WEIS				0901.9	0929.0	1				I
			WEIS				1039.6	1039.8	2				III G
			WEIS				1045.7	1055.8	1				III B
			WEIS				1129.4	1129.6	1				III B
			WEIS				1207.3	1207.5	1				III B
			WEIS				1218.8	1219.0	2				III B
			WEIS				1305.2	1308.6	3				III G
			SGMR				1305.5	1307.5	1				III
			WEIS				1312.4	1312.5	2				III G
			WEIS				1354.9	1355.0	1				III B
			WEIS				1409.5	1409.6	1				III B
			WEIS				1428.7	1428.8	2				III B
			SGMR				1429.3	1437.5	1				V
			WEIS				1430.4	1430.7	3				III G
			WEIS				1431.7	1432.1	1				III G
			WEIS				1437.7	1438.5	3				III G
			SGMR				1453.6	1454.3	1				V
			WEIS				1454.7	1455.2	3				III G
			WEIS				1502.2	1502.3	1				III B
			SGMR				1525.5	1526.1	1				V
			WEIS				1525.7	1526.8	3				III G
			WEIS				1530.7	1530.8	1				III B
			SGMR				1647.0	1652.1	1				V
			PALE				1735.5	1737.8	3				III
			SGMR				2313.0	2313.1	1				III
			SGMR				2343.0	2343.1	1				III
20			LEAR				0134.3	0258.0	1				CONT
	0405	1842	WEIS				0535.3	0535.4	2				III B
			WEIS				0548.7	0548.9	1				III B
			LEAR				0601.0	0930.0	1				CONT
			WEIS				0654.4	0654.6	1				III B
			WEIS				0724.2	0724.3	2				III B
			WEIS				0739.2	0730.4	2				DPRS
			WEIS				0809.8	0809.9	1				III B
			WEIS				0817.3	0817.4	2				III G
			WEIS				1002.2	1002.3	1				III G
			WEIS				1014.8	1014.9	3				III B
			WEIS				1022.0	1022.1	1				III B
			WEIS				1029.7	1030.1	2				III G
			WEIS				1238.3	1238.4	1				III B
			WEIS				1248.3	1248.5	2				III B
			WEIS				1331.8	1342.3	3				III G
			WEIS				1338.0	1338.8	1				III G
			WEIS				1338.6	1338.8	1				III G
			WEIS				1351.6	1351.7	2				III B
			SGMR				1450.6	1451.1	1				V
			WEIS				1451.6	1451.9	2				III B
			SGMR				1834.8	1846.6	1				GG
			WEIS				1835.9	1836.4	3				III G
			SGMR				1842.6	1843.0	2				V
			PALE				1843.0	1843.1	2				V
			SGMR				2030.1	2033.5	2				V
			PALE				2030.8	2033.1	3				V
21			LEAR				0155.6	0156.6	1				III
			LEAR				0445.3	0445.6	1				III
			LEAR				0712.8	0713.1	1				III
	1028	1607	WEIS				1301.8	1303.3	3				III G
			SGMR				1302.8	1303.1	1				III
			WEIS				1329.6	1329.8	1				U
			WEIS				1344.1	1353.4	3				III GG
			SGMR				1344.6	1352.0	1				GG
			WEIS				1401.0	1559.0	3				IDC
			WEIS				1403.0	1521.0	2				III
			SGMR				1408.0	1605.0	1				IV

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
21			WEIS				1411.0	1448.0	2				CONT
	1610	1842	WEIS				1624.7	1624.8	1				IIIB
			SGMR				1909.8	1910.1	1				V
22	0234	0701	CULG										
	0406	1842	WEIS										
	2034	2400	CULG										
23	0000	0646	CULG				0232.0		1				IIIB,U
	0406	0722	WEIS										
	0755	1842	WEIS				1511.4	1511.5	1				IIIB
	2034	2400	CULG				2105.0	2400.0	1				IN
			CULG				2150.5	2351.0	1				IIIN
			CULG				2307.5	2400.0					IIIS,W
24	0000	0620	CULG				0000.0	0045.0					IIIS,W
			CULG				0007.0	0228.5	1				IN
			CULG				0137.5		2				IIIB
			CULG				0153.5		1				IIIB
			CULG				0317.0	0611.0					IIIS,W
	0407	0800	WEIS				0409.0	0800.0	1				IN
	1404	1843	WEIS				1546.0	1605.0	2				I
	2034	2400	CULG										
			CULG				2304.0	2305.5	1				IIIGG
25	0000	0710	CULG				0021.0	0554.0	1				IS
			CULG				0114.0		1				IIIB
	0407	1843	WEIS				0417.0	0741.0	1				IN
			CULG				0421.0		2				IIIG
			WEIS				0422.1	0422.3	1				IIIG
			CULG				0554.0	0706.0	2				IS,C,DC
	2034	2400	CULG				2118.0	2126.0					IIIS,W
			CULG				2129.5	2312.0	1				IS,C
			CULG				2139.0		1				IIIB,U
			CULG				2312.0	2400.0	2				IS,C
			CULG				2319.5		2				IIIB,U
26	0000	0734	CULG				0000.0	0228.5	1				IS,C,DC
			CULG	0047.5		1							IIIB
			CULG				0228.5	0307.0	1				IN
			CULG				0253.0		1				IIIB
			CULG				0421.5	0422.0	2				IIIG
			CULG				0514.0		1				IIIB
			WEIS				0515.2	0515.3	1				IIIB
			CULG				0540.5		1				IIIB
			CULG				0544.0		2				IIIG
			LEAR				0545.0	0545.3	1				III
	0408	0522	WEIS				0545.0	0545.3	2				IIIG,U
			CULG				0547.5	0651.5					IIIS,W
			WEIS				0602.0	1553.0	1				IN
	0531	1838	WEIS				0737.2	0738.4	1				IIIG
			WEIS				0753.6	0753.9	2				IIIG
			LEAR				0757.5	0758.0	1				III
			WEIS				1028.6	1028.8	3				IIIG
			WEIS				1241.3	1241.4	2				IIIB
	2035	2400	CULG				2119.0	2400.0					IIIS,W
27	0000	0735	CULG				0000.0	0445.0	1				IIIS,W
	0407	1104	WEIS										
	1131	1843	WEIS										
			SGMR				1836.0	1836.3	1				V
	2035	2400	CULG				2215.5	2216.0	2				IIIB,U
			CULG				2218.5	2221.0	3				IIIG,U,V
			SGMR				2219.8	2220.8	1				V
28	0000	0735	CULG				0206.5		2				IIIB,U
	0408	1708	WEIS										
			SGMR				1617.8	1618.5	1				V
	1756	1842	WEIS										
	2035	2400	CULG										
29	0000	0735	CULG										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1984

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
29	0408	0935	WEIS										
	1032	1843	WEIS										
			PALE				1918.5	1920.1	2				III
	2035	2400	CULG										
			PALE				2326.0	2326.6	2				III
30	0000	0653	CULG				0326.5		1				IIIB
	0409	0911	WEIS										
	0917	1843	WEIS										
	2038	2400	CULG										

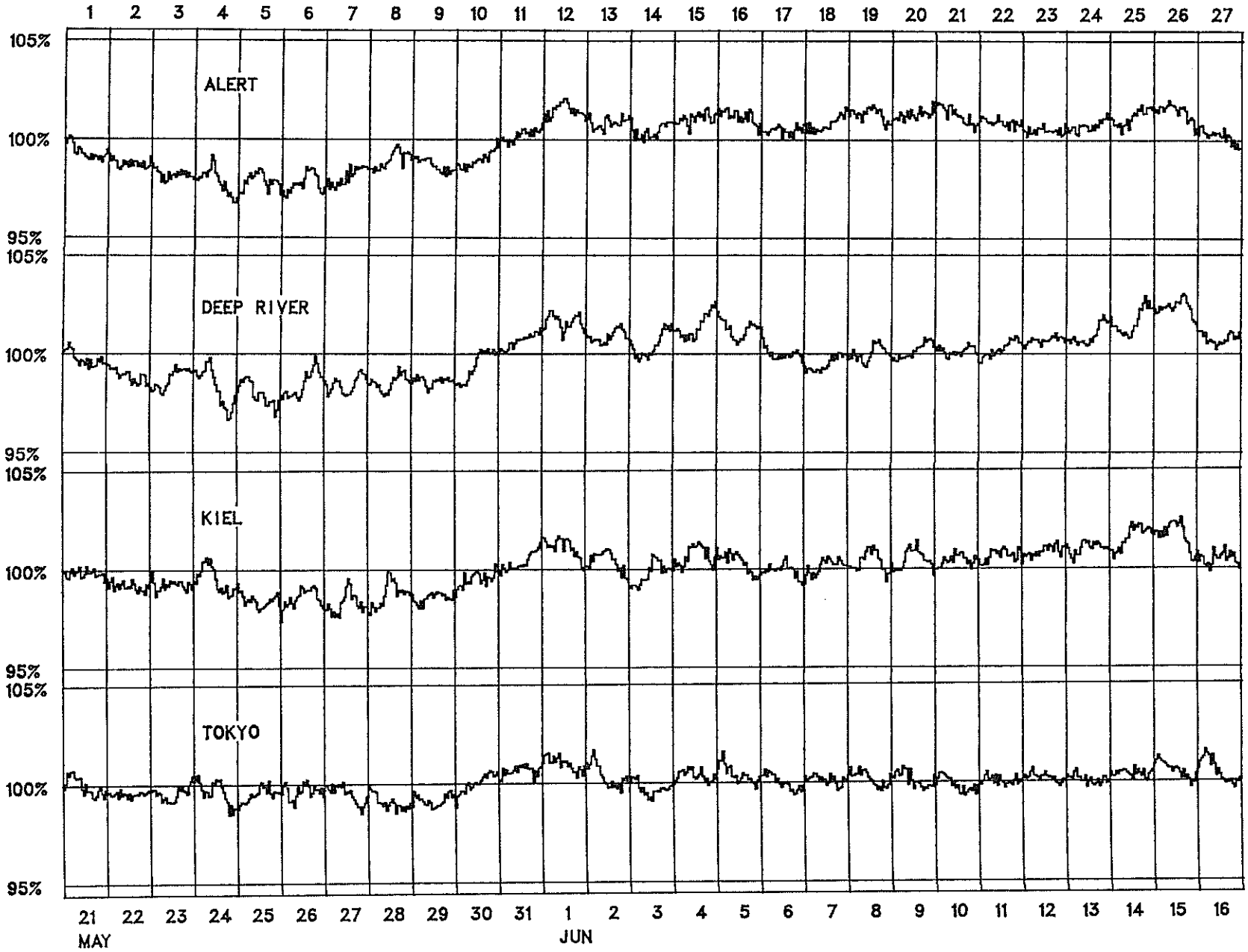
The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
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
DCIM = Fast drift

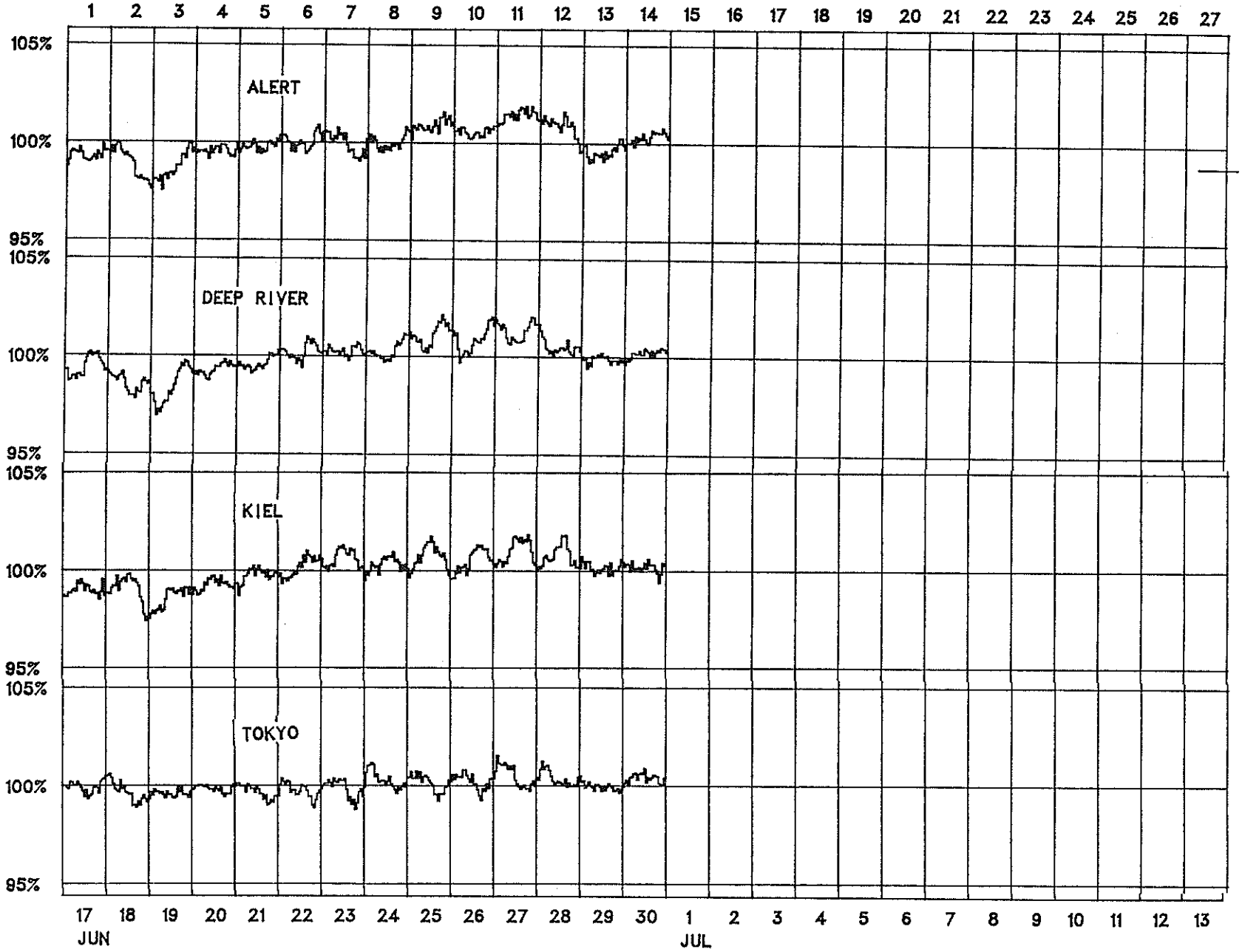
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2061 (May 1984–June 1984)



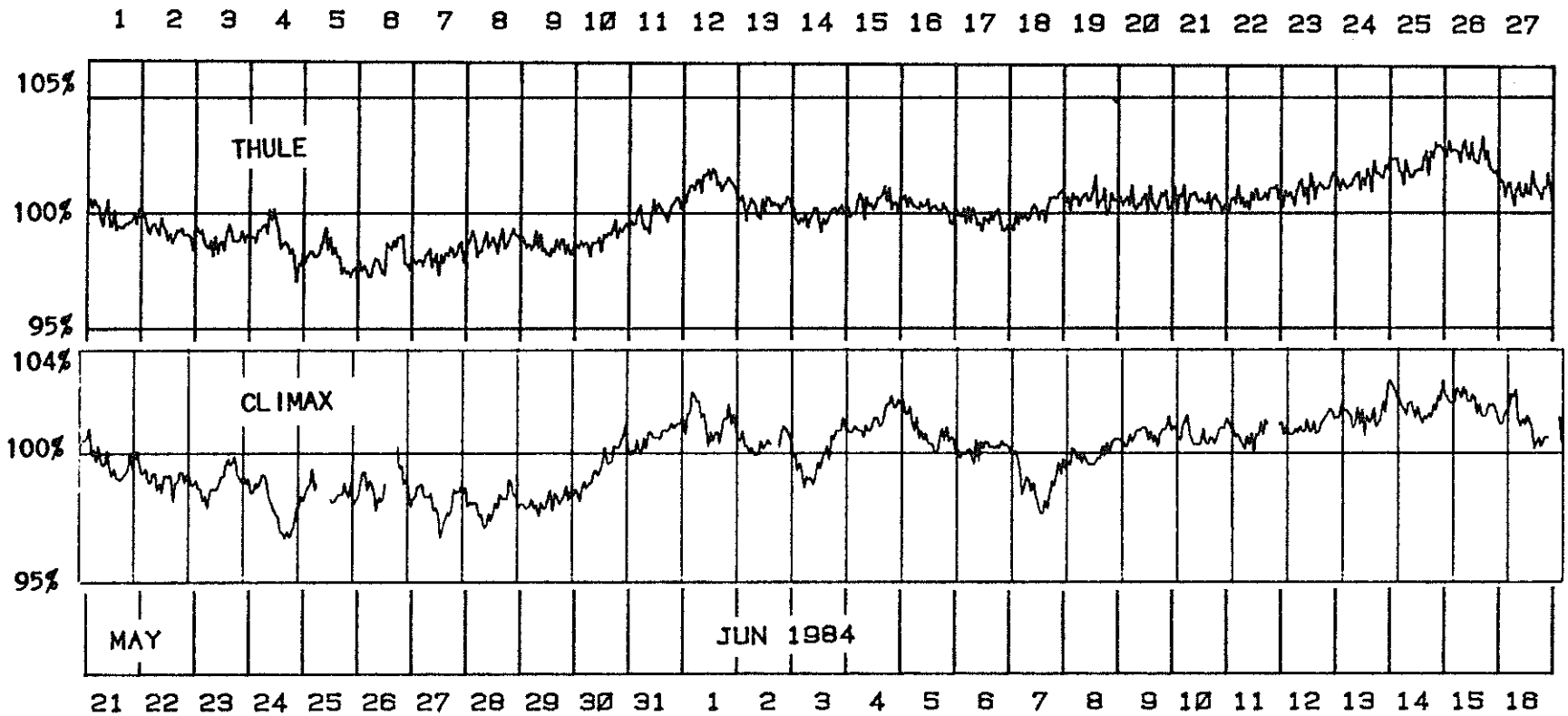
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2062 (June 1984–July 1984)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2061 (May 1984–June 1984)



COSMIC RAY INDICES
(Neutron Monitor)

June 1984

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4121	6722.8	6351.0	5718.1	3719.8	1129	3544.5	
2	4084	6681.7	6305.8	5678.4	3688.0	1124	3522.4	
3	4064	6655.6	6278.6	5641.7	3668.0	1115	3499.7	
4	4086	6696.9	6338.1	5690.7	3719.7	1127	3521.7	
5	4080	6702.1	6329.4	5674.1	3701.6	1124	3524.4	
6	4059	6656.4	6253.1	5648.9	3678.6	1121	3509.4	
7	4074	6679.2	6218.6	5659.7	3630.9	1120	3513.2	
8	4094	6709.7	6251.0	5673.2	3671.8	1127	3515.3	
9	4090	6710.0	6258.7	5679.8	3700.2	1136	3513.4	
10	4091	6708.5	6259.6	5676.7	3700.0	1137	3504.0	
11	4097	6685.1	6265.5	5690.5	3699.8	1137	3510.8	
12	4112	6657.2	6292.5	5701.4	3713.8	1132	3515.8	
13	4131	6673.7	6308.8	5711.3	3732.2	1134	3511.9	
14	4158	6702.1	6353.1	5741.1	3738.2	1137	3522.8	
15	4169	6719.8	6397.0	5748.0	3739.9	1138	3528.2	
16	4110	6637.4	6299.1	5680.0	3713.0	1131	3526.3	
17	4110	6608.7	6292.6(23)	5667.0	3710.7	1128	3512.5	
18	4094	6578.5	6238.7	5670.7	3685.5	1131	3504.3	
19	4080	6568.7	6227.7	5641.7	3678.4	1126	3501.1	
20	4110	6624.8	6284.1	5682.2	3710.4	1129	3509.6	
21	4123	6641.1	6303.6	5710.2	3716.7	1132	3504.2	
22	4133	6657.8	6342.1	5734.4	3737.4	1137	3506.3	
23	4117	6649.3	6344.5	5761.0	3739.6	1137	3509.8	
24	4128	6654.9	6346.2	5743.4	3746.5	1142	3525.5	
25	4165	6713.9	6398.0	5766.0	3775.1	1144	3520.6	
26	4144	6692.1	6381.5	5754.8	3762.0	1144	3523.4	
27	4178	6749.3	6411.0	5782.9	3792.9	1147	3533.0	
28	4155	6710.0	6360.9	5768.6	3780.7	1144	3528.7	
29	4127	6625.9	6321.5	5734.7	3736.5	1135	3514.3	
30	4141	6676.2	6341.5	5736.2	3744.8	1133	3529.5	
Mean	4114	6671.7	6311.8	5705.6	3717.9	1133	3516.9	

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

June 1984

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1	Q6A	2-	1	1	2+	2+	2+	2	2-	14+	7	0.3	2-	1+	1+	2	2+	2	2-	1-	12	20	8	9	19	
2		3-	3+	2+	2+	3-	3+	2	3-	21+	12	0.7	2	3	3-	2+	3-	3-	2	2+	21	31	16	21	27	
3	D3	2+	1+	3	4-	6+	6-	4	3+	30-	32	1.3	2+	2-	3+	3	5-	4	4-	3-	38	43	41	21	63	
4	D5	4-	5-	3+	4+	4	3+	4	4-	31	26	1.2	3+	4-	3+	4	3+	3-	3-	3+	38	38	36	41	33	
5		4	4	3+	4-	4	2	2-	3	26-	19	1.0	4-	4-	3	3+	3+	2	2-	3-	30	36	23	34	25	
6		3	3+	3-	3-	3-	2	3	2+	22-	12	0.7	3-	3	3	2+	2+	2-	3-	2+	22	24	17	22	20	
7	Q10A	3	2+	3-	3+	3-	1	2	1	18	10	0.6	3-	2+	3	3+	2+	1	2-	1+	19	24	20	31	14	
8	Q8A	1	0+	0+	1	3-	3	4	3	15+	10	0.6	1	0	0+	1-	3-	2+	3	3	14	21	10	5	25	
9		3-	3-	5-	3+	3+	4-	4	3	27+	20	1.0	2+	3-	4	3	3	3	3+	3	32	40	26	32	34	
10		3	3-	3-	2	4-	4-	3	3+	24	15	0.9	3	3	3-	2+	3	3	2+	3	26	32	19	18	34	
11		3-	3-	3	2+	3	3-	2-	2	20	11	0.6	2+	3-	3-	2+	3-	2	2-	2	18	26	13	21	18	
12	Q5A	3-	3-	2	2+	2-	1-	0+	1-	13	7	0.3	3-	3	2+	2+	2	0+	1-	1-	14	15	10	17	8	CK
13	Q3	0	2	2	1-	2-	2-	3-	1-	11+	6	0.2	0	1+	2	0+	1	1	2	1-	7	15	6	7	15	CC
14	Q1	1	1+	1-	1+	1-	1	1	1+	8+	4	0.1	1+	1	1	1+	1-	1-	1	1	7	8	5	8	5	CC
15		2	3-	2+	3+	3+	5-	5	5-	28	24	1.1	2-	3-	3-	3	3	4-	4	4	35	41	24	17	48	
16	D1	7-	6-	5	5-	4	3-	2+	4-	35-	42	1.5	5+	5	5	4+	4-	2+	2+	3	59	50	46	70	27	
17		2+	2-	4-	3+	2+	2+	3-	1	19+	11	0.6	2+	2-	4-	3	2	2-	2-	1	19	25	17	25	17	
18	D4	3-	2+	3+	4-	6-	5-	4	4-	30	27	1.2	2+	3-	4-	4	5-	4	3+	3+	44	45	32	28	50	
19	D2	4	3+	4-	4	5-	4+	4+	4+	33-	29	1.3	4	3+	3+	4-	4-	4-	4-	4	44	48	34	39	43	
20		5-	4+	3	3	2	2	2	1	22	16	0.9	4	4-	3	3	2	2-	1+	1-	26	28	18	35	12	
21	Q2	1-	0+	0	0+	0+	1	2	2	7-	3	0.1	2-	0+	0	0	0	0+	2	2-	6	8	2	3	7	CC
22	Q4	2+	2-	1	1-	2+	2-	1	2-	12+	6	0.3	2+	2	1+	1-	2	1+	1-	1+	11	17	6	8	16	CC
23		1	1	2+	1-	1	1+	4-	5-	16-	11	0.6	1	1+	3-	1	1+	1+	3-	4	19	20	12	9	24	
24		6-	5+	1+	2+	2+	2+	2	3-	24	22	1.1	5-	5-	1+	3-	2	2+	2-	3-	31	39	22	41	21	
25		3	3	2+	2	2+	2	3-	2+	20-	10	0.6	3	3	3-	3-	2+	2-	2+	2	20	26	18	24	21	
26	Q7A	2+	2	2+	2	1+	2	3-	3-	17+	8	0.5	3-	2+	3-	2	1	1	3-	3-	17	22	12	14	20	
27	Q9A	4	4-	3-	2	2-	0+	1	1	16+	10	0.6	3+	4-	3	3-	2-	0+	1-	1	20	16	11	20	7	K
28		3	3+	3+	2+	4-	4	4	4+	28	21	1.1	3-	3-	3+	3	3+	4-	3+	4-	35	40	27	23	45	
29		4-	2	2-	3	1+	3	3-	3+	21-	12	0.7	3+	2-	2-	3-	1+	2+	2+	3	19	28	13	20	22	
30		3	3-	2	2	3-	3+	3+	2	21	12	0.7	3	3-	2	2+	3	3	3-	2	23	23	20	19	25	
Mean											15	0.75									24.2	28.4	18.9	23.7	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	S_a	Prov R_I	R_a	R_s	IMF	
1	2	1+	2-	3-	3-	3-	2	1+	16	1+	1	1	1	2-	1+	1+	0+	8	116.1	48	43	63	-	-
2	2+	3	3-	3-	3-	3	2+	3-	24	2-	3	3-	2	2+	2+	2-	2+	18	111.3	44	46	58	-	-
3	3-	2-	3+	3+	5	4+	4-	3+	44	2-	1+	3	3-	5-	4	3+	2	33	109.6	45	45	56	-	-
4	3+	4	4-	4+	4-	3	3+	3+	43	3	3+	3	4	3	3-	2	3+	33	106.8	34	35	53	-	-
5	4-	4-	3	3+	3+	2	2-	3	32	4-	3+	3	3+	3	2-	1+	2	27	104.6	28	30	51	-	-
6	3	3	3+	3-	3-	2	3-	2+	25	3-	3-	3	2	2+	1+	2+	2	20	98.9	23	24	45	-	-
7	3-	2+	3	3+	3-	1+	2	1+	21	2+	2+	3-	3+	2	1-	2-	1+	17	97.3	34	25	43	-	-
8	1+	0+	0+	1+	3	3	3+	3+	20	0+	0	0	0+	2	1+	2+	2+	8	94.6	31	20	40	-	-
9	3-	3-	5-	3+	3	3+	3+	3	37	2-	2+	4-	3	3-	2+	3+	3-	26	93.6	26	25	39	-	-
10	3	3	3-	3-	3+	3	3-	3	28	3	3	2+	2+	2+	3-	2+	3	24	92.3	31	28	38	-	-
11	3-	3-	3-	3-	3	2+	2+	3-	22	2	2+	2+	2+	2	1+	1+	2-	15	93.2	37	44	39	-	-
12	3-	3-	2	3-	2+	1-	1	1+	16	3-	3	2+	2	2-	0	0+	0	13	93.0	39	38	38	-	-
13	0+	2-	2-	0+	1+	1+	2+	1	9	0	1+	2+	0	1	0+	2-	0+	6	98.6	41	44	44	-	-
14	1	1-	1+	2-	1	1+	1+	1+	8	1+	1	1	1+	1-	0	0+	0	5	110.2	50	55	57	-	-
15	2	3	3	3+	3+	4+	4+	4+	42	1+	3-	2-	2+	3-	3	4	4-	28	116.5*	80	83	64	-	-
16	5+	5	5-	4+	4-	3-	2+	3	59	5+	5-	5	4+	4-	2+	2+	3+	58	110.3	83	83	57	-	-
17	2+	2-	3+	3	2+	2	2	2-	20	2+	2-	4-	3	1+	1+	1+	0+	18	109.5*	73	73	56	-	-
18	2+	3-	4+	4	5-	4	4-	3+	48	2+	2+	3-	4	4+	4+	3	4-	40	108.9	62	52	56	-	-
19	4	4-	3	4-	4	4-	4-	4-	45	4	3	4-	4-	3+	3+	3+	4	42	107.8	55	44	54	-	-
20	4	4-	3-	3+	2	2	2-	1	26	4+	4-	3+	3	2-	1+	1-	0+	25	106.6	53	45	53	-	-
21	1+	0+	0+	0+	0+	1	2+	2	7	2	0	0	0	0	0	2-	2-	5	103.4*	46	41	50	-	-
22	2	2-	1	1-	2+	2-	1	2	11	2+	2+	2	1-	2	1	1-	1	11	104.6	48	52	51	-	-
23	1-	1+	3	1+	2	2	3	4-	20	1	1+	2+	1	1-	1-	3-	5-	18	105.3	54	55	52	-	-
24	4+	4	1+	2+	2+	2+	2	3-	28	5	5-	2-	3-	1+	2	1+	3-	34	103.6	58	56	50	-	-
25	3-	3	2+	3-	2+	2+	3-	3-	22	3	3	3-	3-	2+	1+	2-	1+	19	104.6	41	48	51	-	-
26	3-	3-	3-	2	1+	2-	3-	3-	19	3-	2+	2+	2	1-	0	3	3-	16	100.1	49	52	46	-	-
27	3+	4-	3-	3-	2-	0+	1+	1+	20	3+	4-	3	3-	2-	0+	0	0+	19	101.5	40	40	48	-	-
28	3-	3-	3	3-	3+	4-	3+	4-	33	3-	3	4-	3	3	4-	3+	4-	37	99.5	41	41	45	-	-
29	3+	2	2-	3-	1+	3	3-	3	21	3	2-	2-	3-	1+	1+	2+	3-	18	100.3	50	51	46	-	-
30	3-	3	2+	2+	3-	3	3-	3-	24	3+	2	2	3-	3	3-	3-	1+	21	101.1	42	39	47	-	-
Mean									26.3									22.1	103.5	46.2	45.2	49.8		

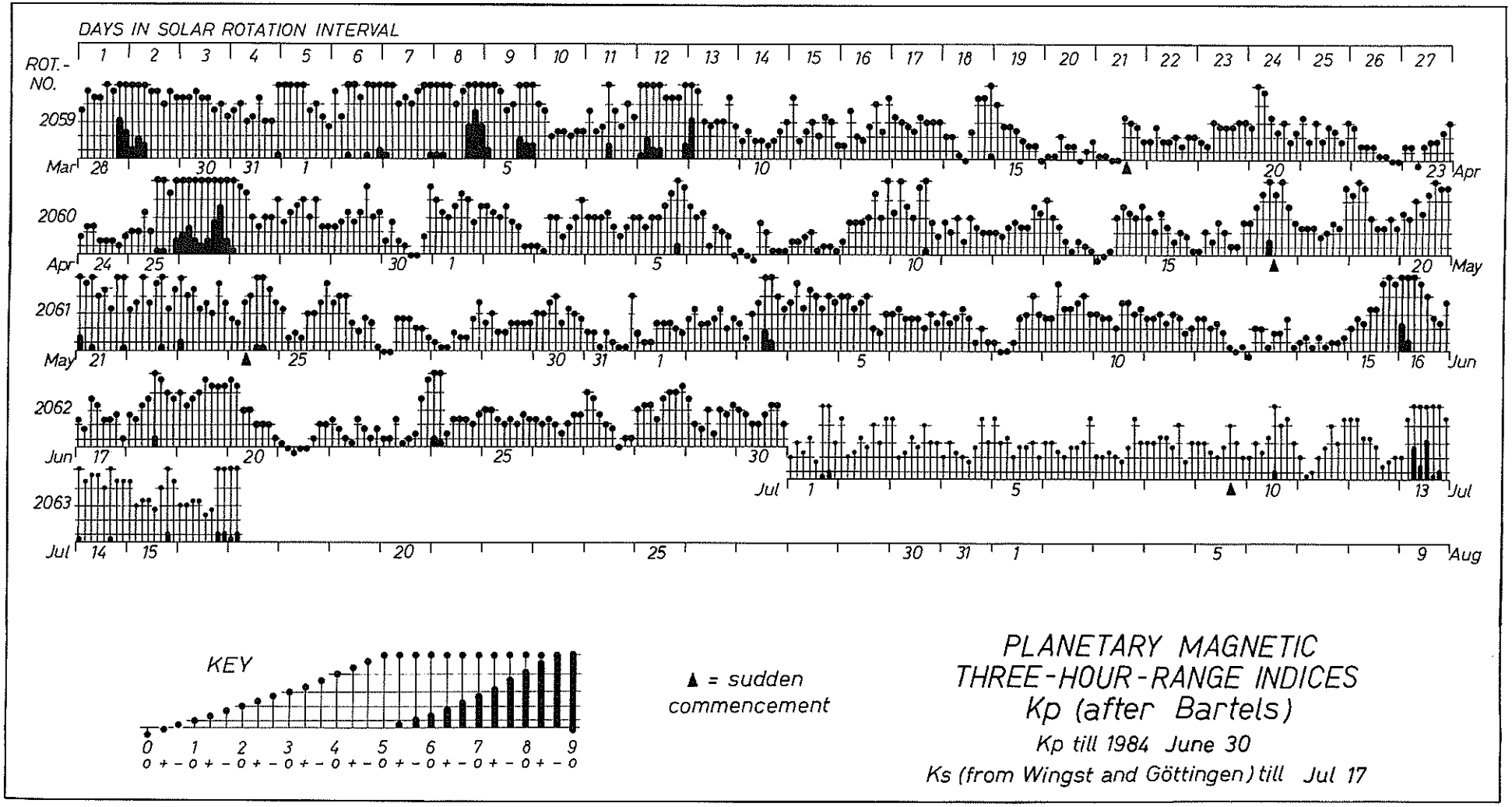
DAILY AVERAGE INDICES Ap

DAY	1983 JUL	AUG	SEP	OCT	NOV	DEC	1984 JAN	FEB	MAR	APR	MAY	JUN
1	6	5	17	11	19	13	28	16	32	34	22	7
2	9	33	6	23	35	8	20	20	38	46	13	12
3	8	17	6	18	20	4	20	19	35	42	12	32
4	8	5	3	43	7	4	30	54	9	84	13	26
5	6	2	3	8	3	16	26	14	4	57	27	19
6	14	6	5	22	3	28	14	8	31	12	10	12
7	14	18	22	11	12	27	5	9	26	25	4	10
8	10	62	15	16	27	11	3	7	29	58	5	10
9	12	11	16	5	43	3	4	9	13	37	19	20
10	5	5	12	7	29	22	14	21	17	8	27	15
11	4	6	12	6	40	33	10	21	9	13	10	11
12	16	26	13	4	44	23	5	12	11	15	12	7
13	19	25	7	30	24	24	9	36	19	15	9	6
14	6	9	6	22	28	24	6	43	6	18	12	4
15	5	10	21	19	23	17	6	19	9	10	9	24
16	21	4	26	13	30	6	6	7	16	4	7	42
17	26	6	25	48	38	6	7	9	22	8	32	11
18	20	2	11	51	27	7	6	17	18	7	12	27
19	9	9	54	8	18	9	19	7	12	12	22	29
20	7	11	22	6	26	5	9	13	4	20	30	16
21	6	25	11	16	9	4	12	14	7	11	44	3
22	10	15	13	19	6	12	12	8	21	5	32	6
23	23	32	4	21	2	11	6	15	18	6	30	11
24	40	23	9	22	12	15	5	10	10	6	30	22
25	12	36	33	6	16	11	10	7	34	33	16	10
26	7	26	28	3	22	16	16	16	16	103	14	8
27	10	5	13	2	7	15	8	34	23	26	7	10
28	11	8	10	10	15	13	22	8	60	17	8	21
29	15	17	8	34	23	9	21	10	52	18	9	12
30	18	18	3	19	22	33	32		29	9	17	12
31	7	29		10		27	23		25		7	
MEAN	12	16	14	17	21	15	13	17	21	25	17	15

PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through June 31, 1984



P R I N C I P A L M A G N E T I C S T O R M S

JUNE 1984

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
HYB	07.6N	02	0300	..	..	..	..	03(5)	6	6	176	38	05	14
COL	64.6N	03	06--	..	..	..	..	03(5)	7	141	1320	460	05	14
BJI	28.5N	03	09--	..	..	..	..	03(5)	6	10	108	29	05	19
JAI	17.3N	03	0900	..	..	..	..			5	135	28	03	24
SHL	14.7N	03	0900	..	..	..	..			5	103	16	03	24
UJJ	13.5N	03	0900	..	..	..	..			4	131	27	03	24
ABG	09.5N	03	0900	..	..	..	..	03(5)	6	3	148	20	03	24
GUA	04.0N	03	0706	..	..	..	..	03(5)	5	--	80	20	03	21
ANN	01.5N	03	0900	..	..	..	..			4	156	43	03	24
TRD	01.2S	03	0900	..	..	..	..			3	130	80	03	24
CNB	43.9S	03	06--	..	..	..	..	03(5,6) 04(4)	5	18	102	48	04	18
GUA	04.0N	04	0720	..	..	..	..	04(4)	5	--	80	10	04	20
HYB	07.6N	08	1300	..	..	..	..	09(3)	4	5	69	26	11	16
COL	64.6N	15	08--	..	..	..	..	15(6) 16(3,4)	6	156	1470	710	16	20
SIT	60.0N	15	14--	..	..	..	..	16(3)	7	--	780	540	16	15
FRD	49.6N	15	0359	SC	- 1	3	1	16(1)	6	21	152	60	20	06
BJI	28.5N	15	07--	..	..	..	..	16(1)	6	13	146	42	16	20
JAI	17.3N	15	1400	..	..	..	..			12	94	47	16	19
SHL	14.7N	15	1400	..	..	..	..			10	81	28	16	19
UJJ	13.5N	15	1400	..	..	..	..			10	88	33	16	19
ABG	09.5N	15	1400	..	..	..	..	16(1)	6	9	94	45	16	19
HYB	07.6N	15	0000	..	..	..	..	16(1)	6	8	187	27	17	15
GUA	04.0N	15	0433	..	..	..	..	16(1)	7	10	140	20	16	20
TRD	01.2S	15	1400	..	..	..	..			7	189	123	16	19
PMG	18.6S	15	04--	..	..	..	..	16(1,4)	5	5	140	60	17	00
HER	33.7S	15	13--	..	..	..	..	16(1,2)	5	26	84	86	16	14
CNB	43.9S	15	15--	..	..	..	..	16(4)	5	15	156	43	16	15
COL	64.6N	18	01--	..	..	..	..	18(5) 19(4) 20(4)	6	190	1180	600	20	11
JAI	17.3N	18	0430	..	..	..	..			6	153	47	18	24
SHL	14.7N	18	0430	..	..	..	..			5	140	28	18	24
UJJ	13.5N	18	0430	..	..	..	..			6	157	35	18	24
ABG	09.5N	18	0430	..	..	..	..	18(3,4)	5	6	163	45	18	24
HYB	07.6N	18	0000	..	..	..	..	18(4)	5	9	196	24	20	10
GUA	04.0N	18	0038	..	..	..	..	18(4)	5	--	140	20	18	20
TRD	01.2S	18	0430	..	..	..	..			5	222	97	18	24
KGL	56.5S	19	1402	SC	2	- 16	- 5	20(1)	5	27	225	170	20	12
GUA	04.0N	23	2048	..	..	..	..	23(8)	5	10	50	30	24	08
HER	33.7S	23	20--	..	..	..	..	24(1,2)	5	25	33	71	24	07
KGL	56.5S	23	1635	SC	- 2	- 10	4	23(8) 24(1)	5	24	205	170	24	09
HYB	07.6N	28	0000	..	..	..	..	28(7)	5	6	108	26	30	16

ABG = ALIBAG
ANN = ANNAMALAINAGAR
BJI = BEIJING
CNB = CANBERRA
COL = COLLEGE
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HUA = HUANCAYO
HYB = HYDERABAD
IRK = IRKUTSK
JAI = JAIPUR
KGL = KERGUELEN
PMG = PORT MORESBY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN
WIT = WITTEVEEN

MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS
(PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

JUNE 1984

Storm Sudden Commencements (ssc)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
15	0433 UT	B: HRB C: AQU KNY LNP MPO	08	0236-0247 UT	NGK CLF
			12	1230-1236 UT	MPO
23	2056 UT	B: WNG DOU HRB C: AMS (bps: CLF MPO)†	Underlines indicate confirming geophysical effects.		

Reporting Observatories:

SOD NUR WNG WIT NGK HAD DOU BDV CLF HRB GCK MMB AQU
EBR SPT FRD KAK KNY LNP MPO CAA GNA AMS CZT KGL DUM

*Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

†The symbol bps stands for bay-like pulsations.

RADIO PROPAGATION QUALITY INDICES

JUNE 1984

Day	Bracknell	Teheran	New York	Tokyo	Canberra
1	7.3	6.3	7.2	5.9	4.9
2	4.9	6.3	5.3	5.2	5.8
3	5.8	5.7	5.6	5.0	6.3
4	5.2	7.0	3.2	6.5	5.5
5	3.8	6.4	3.2	5.5	5.5
6	4.6	6.4	4.3	6.3	6.2
7	5.2	5.7	5.3	6.5	5.8
8	8.5	6.0	6.0	6.5	6.3
9	7.8	5.3	4.6	6.1	5.2
10	3.8	5.0	4.6	3.7	4.8
11	4.6	5.1	4.5	5.5	5.9
12	6.5	5.5	4.5	5.2	4.9
13	5.8	5.9	5.0	5.3	5.2
14	6.2	7.2	5.2	6.6	5.4
15	6.6	4.8	5.5	6.6	6.4
16	4.2	4.5	2.8	5.0	5.8
17	9.0	5.9	4.1	5.6	4.9
18	6.4	4.1	3.9	5.4	5.1
19	6.7	4.5	3.6	5.3	3.5
20	5.3	5.1	2.9	5.4	5.5
21	4.6	6.2	4.9	5.8	5.1
22	8.9	5.4	5.0	5.4	5.2
23	6.3	4.4	4.4	5.3	5.4
24	5.6	4.1	4.5	4.5	5.2
25	6.1	4.5	5.3	5.6	5.4
26	6.4	5.5	5.0	5.9	7.5
27	6.3	5.2	4.5	5.9	6.0
28	6.7	4.6	3.6	4.1	5.1
29	6.9	5.0	4.2	5.2	5.4
30	7.2	5.4	4.9	5.5	6.1
Mean	6.1	5.4	4.6	5.5	5.5

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

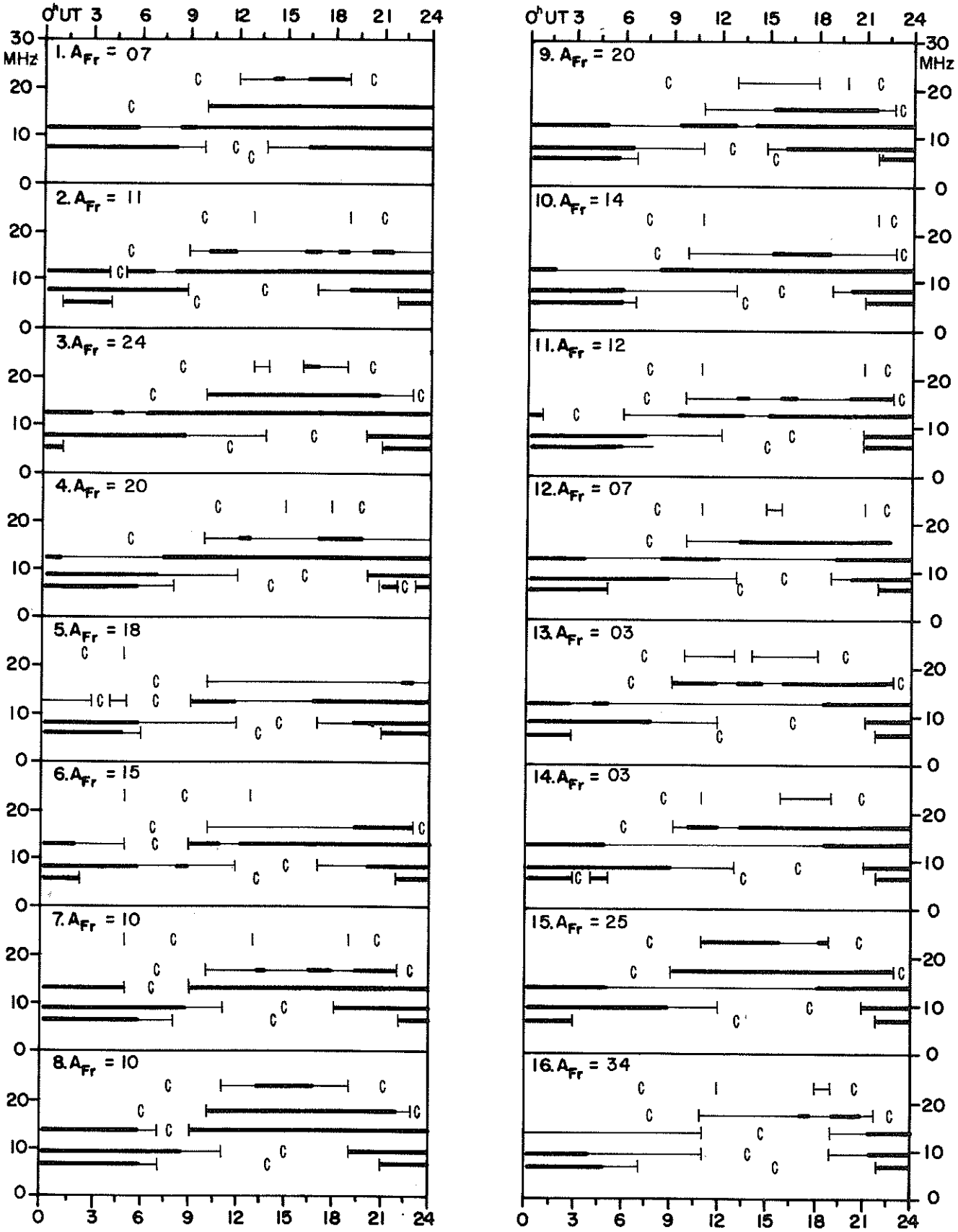
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

SCALE FOR QUALITY INDICES

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

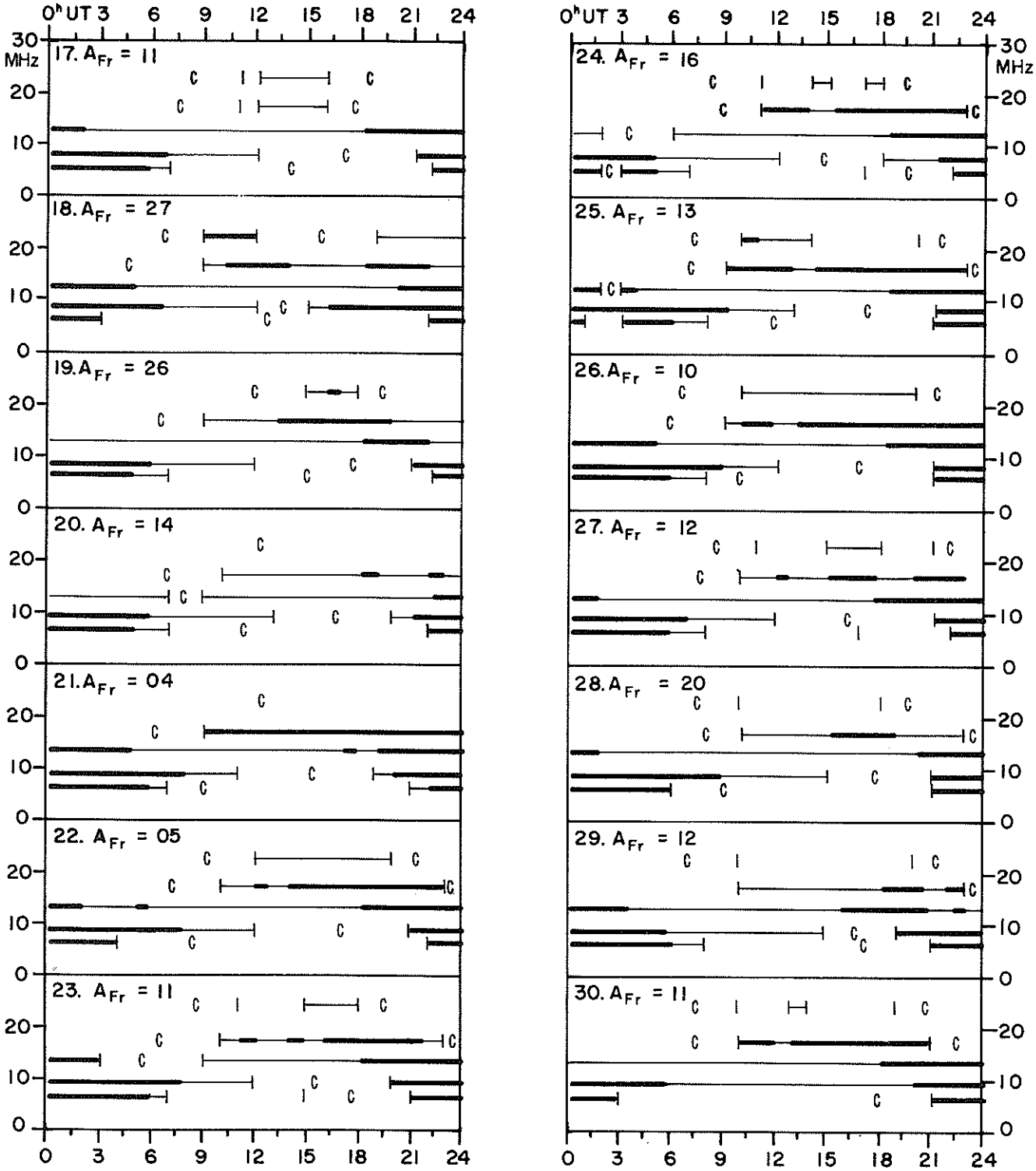
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1984



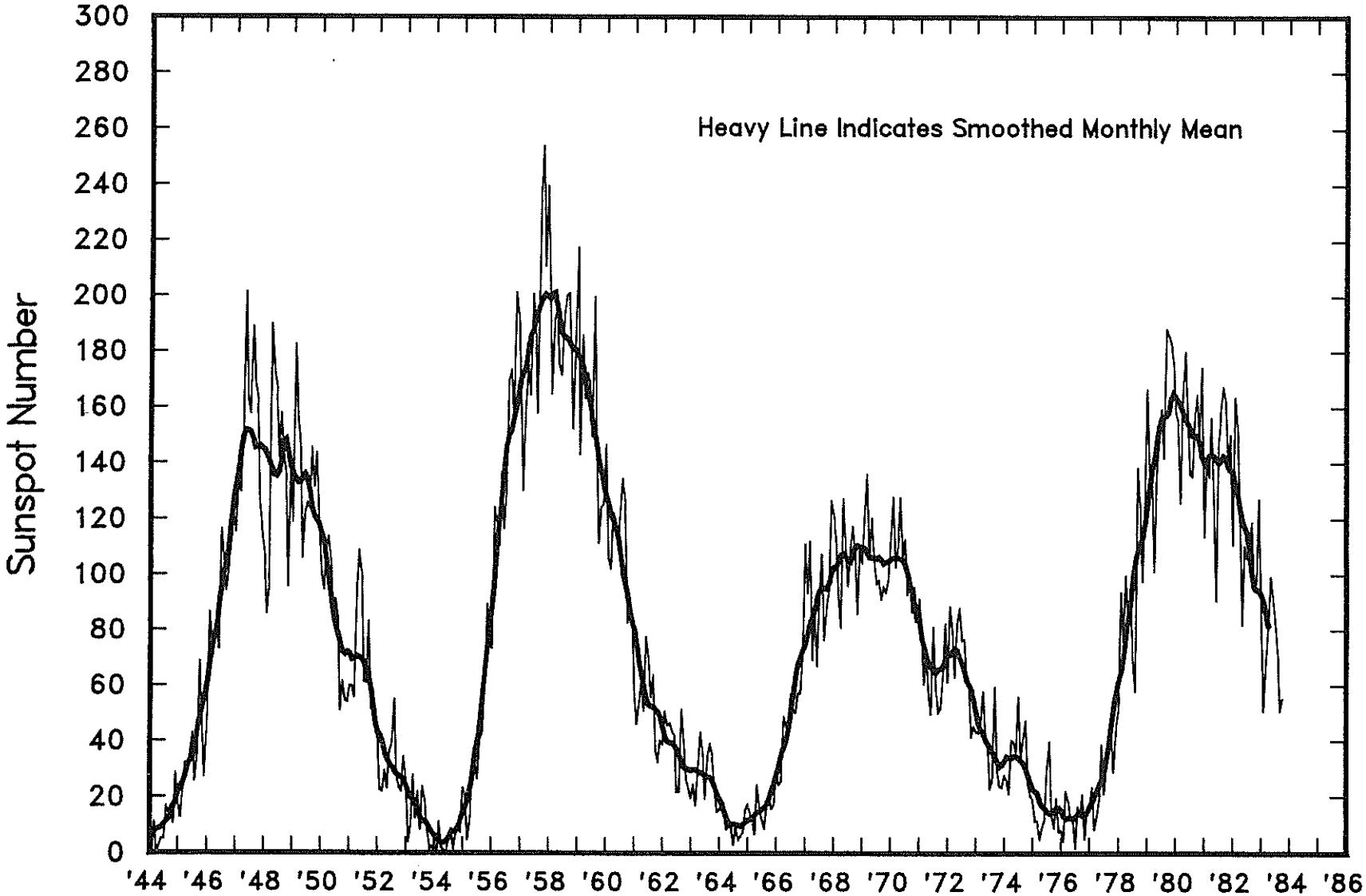
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1984



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -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.

MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – October 1983



C O N T E N T S

Prompt Reports LATE DATA Number 480 Part I

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MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS
(PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

MAY 1984

Storm Sudden Commencements (ssc)

Day	Time	Quality: Station Group*
17	1256 UT	A: WNG WIT DOU CLF COI B: NGK BDV GCK EBR SPT? CZT C: AMS KGL
24	0845 UT	A: WNG COI B: SOD NGK DOU AQU SPT GNA C: WIT BDV CLF GCK MMB EBR LNP AMS KGL

Solar Flare Effects (sfe)

Day	Begin-End		Station(s)
01	0233-0248	UT	HTY LNP
01	1358-1434	UT	NGK
02	0900-0919	UT	NGK
03	0136-0139	UT	LNP
05	1815-1835	UT	WNG
10	1720-1750	UT	WNG
12	1430-1450	UT	SOD
15	0447-0540	UT	MMB KAK HTY KNY
19	0900-0910	UT	DOU
19	2151-2230	UT	MMB KAK HTY KNY
20	0120-0202	UT	HTY
20	0251-0317	UT	HTY
20	0528-0554	UT	HTY
20	2232-2340	UT	MMB KAK KNY (ssc: LNP)
21	2018-2040	UT	HTY
31	1126-1235	UT	WNG

Underlines indicate confirming geophysical effects.

Reporting Observatories up to June 30, 1984:

SOD DOM NUR WNG WIT NGK DOU BDV CLF GCK MMB AQU EBR
COI SPT PEN ALM KAK HTY KNY LNP GNA AMS CZT KGL DUM

*Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

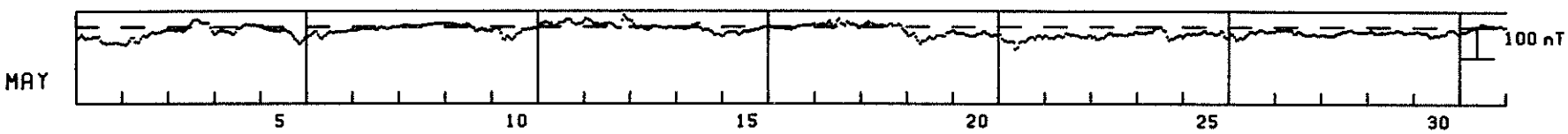
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

MAY 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-42	-34	-26	-34	-40	-37	-38	-39	-33	-34	-36	-32	-45	-52	-52	-56	-54	-53	-54	-52	-51	-52	-55	-57
2	-57	-59	-54	-45	-36	-36	-49	-50	-50	-39	-30	-30	-33	-26	-22	-17	-20	-20	-19	-19	-16	-12	-10	-9
3	-8	-11	-11	-12	-11	-8	-14	-15	-9	-2	5	12	20	23	23	21	13	13	12	13	12	-2	-16	-25
4	-23	-16	-12	-12	-14	-15	-17	-19	-23	-26	-18	-5	-4	-1	4	7	8	6	5	5	6	3	4	2
5	4	-3	-6	-8	-9	-7	-14	-13	-14	-15	-9	-7	-11	-16	-18	-23	-31	-40	-46	-56	-52	-45	-37	-31
6	-31	-29	-22	-16	-16	-27	-37	-39	-31	-27	-21	-17	-18	-20	-17	-16	-16	-15	-16	-15	-15	-13	-11	-11
7	-12	-12	-8	-6	-4	-4	-6	-6	-6	-3	-1	-8	-9	-2	0	-2	-4	-6	-4	-3	0	-1	0	0
8	2	5	7	5	4	3	3	2	3	4	1	5	5	6	7	8	9	10	12	9	10	12	12	10
9	12	10	10	11	7	8	5	2	5	7	9	10	3	-1	-4	-13	-12	-7	-5	-10	-8	-13	-12	-14
10	-7	-2	-4	-8	-21	-41	-42	-31	-34	-40	-42	-35	-25	-21	-19	-7	-10	-8	-6	-7	-5	-3	-2	-4
11	3	12	13	15	14	11	12	1	3	6	13	14	14	17	24	25	23	14	8	7	9	11	12	19
12	27	24	20	17	11	10	9	4	7	7	12	10	12	11	7	2	-2	-4	-2	22	38	29	22	23
13	18	7	-1	-5	0	2	-3	-6	-8	-8	-2	2	4	1	0	0	-2	-2	-5	-1	0	-1	-3	-3
14	-1	-2	-3	-6	-5	-3	-3	1	6	7	11	12	-3	-11	-8	-9	-9	-14	-18	-26	-26	-24	-29	-31
15	-28	-23	-17	-16	-15	-16	-15	-22	-27	-22	-16	-13	-15	-15	-12	-9	-10	-7	-7	-3	-1	0	1	1
16	2	0	-2	-2	-5	-4	-3	-4	-6	-7	-6	-8	-4	-2	1	2	4	5	6	5	3	3	8	9
17	4	6	8	7	10	5	13	19	8	-4	6	19	26	10	7	4	16	12	7	9	6	3	-3	0
18	3	6	11	15	9	10	7	5	3	4	7	5	1	1	8	9	4	3	4	8	4	-7	-14	-20
19	-30	-30	-25	-21	-34	-45	-56	-46	-46	-45	-39	-33	-38	-41	-36	-30	-28	-30	-31	-32	-20	-18	-17	-13
20	-13	-20	-23	-21	-23	-23	-29	-27	-31	-31	-31	-30	-25	-24	-23	-16	-14	-22	-25	-30	-31	-26	-28	-32
21	-26	-39	-45	-47	-50	-48	-47	-50	-73	-67	-50	-47	-47	-50	-43	-37	-34	-33	-41	-32	-29	-31	-37	-30
22	-30	-37	-37	-36	-38	-31	-28	-30	-34	-32	-22	-23	-25	-29	-25	-29	-28	-31	-34	-33	-34	-34	-28	-28
23	-36	-32	-40	-42	-39	-36	-37	-28	-25	-20	-23	-28	-25	-28	-25	-26	-27	-29	-29	-23	-24	-24	-18	-17
24	-20	-20	-21	-22	-22	-18	-17	-17	-9	-2	-2	1	-1	-11	-14	-33	-44	-38	-39	-36	-32	-28	-28	-36
25	-30	-24	-22	-25	-24	-23	-24	-24	-22	-19	-13	-14	-20	-20	-19	-23	-25	-24	-22	-12	-16	-31	-38	-39
26	-24	-24	-32	-43	-40	-34	-39	-36	-30	-24	-16	-15	-18	-20	-14	-10	-9	-12	-17	-18	-15	-15	-14	-15
27	-11	-10	-11	-10	-8	-8	-11	-12	-12	-23	-22	-16	-16	-20	-25	-27	-28	-26	-26	-23	-25	-28	-29	-26
28	-25	-27	-29	-30	-28	-28	-27	-23	-20	-19	-14	-14	-15	-11	-10	-10	-15	-15	-18	-17	-17	-18	-18	-16
29	-14	-12	-15	-22	-22	-21	-18	-18	-19	-18	-15	-14	-15	-15	-11	-10	-14	-14	-20	-19	-18	-17	-18	-18
30	-16	-13	-16	-19	-20	-19	-20	-28	-33	-31	-26	-29	-30	-26	-23	-25	-21	-12	-10	-9	-9	-15	-22	-20
31	-15	-15	-16	-13	-8	-5	-4	-1	2	3	9	11	8	5	3	3	4	3	1	2	3	3	-1	0



PIONEER XII (VENUS ORBITER)
ONE-HOUR MAGNETIC FIELD AVERAGES AT APOAPSIS

MARCH 1984

Day	Time (UT)	NanoTeslas in Spacecraft Coordinates (Bx)sc	(By)sc	(Bz)sc	Bt
1	1230	-1.43	-9.78	-7.79	13.79
2	1230	5.33	-13.38	0.35	14.55
3	1230	-13.40	4.20	5.89	17.88
4	1230	-3.71	12.10	1.62	13.20
5	1230	-7.59	8.43	4.40	12.61
6	1230	-10.40	0.42	1.66	11.08
7	1230	-10.48	3.79	2.01	11.51
8	1230	-2.72	4.55	-12.57	18.10
9	1230	16.44	-4.84	2.99	17.79
10	1230	10.99	-0.01	-6.84	20.37
11	1230	12.43	-1.90	-0.85	14.20
12	1220	10.53	-3.96	1.55	13.87
13	1220	4.00	-2.52	3.89	9.51
14	1220	3.49	-7.93	1.10	11.18
15	1220	8.12	-4.82	-3.03	12.56
16	1220	4.58	-4.98	-3.49	13.22
17	1220	9.57	-1.01	-0.75	11.21
18	1220	10.73	-4.19	-0.35	12.26
19	1220	4.65	-5.33	0.02	9.49
20	1220	11.91	0.01	-1.80	12.20
21	1220	-0.94	-4.47	1.87	9.26
22	1220	3.96	1.15	2.24	6.38
23	1220	---	---	---	---
24	1220	-11.50	1.42	0.43	12.22
25	1220	-10.71	0.49	-6.31	13.06
26	1220	-9.70	-7.33	-14.86	19.77
27	1220	-2.89	6.87	2.05	8.40
28	1220	3.30	-5.40	7.26	10.15
29	1220				
30	1220	-12.99	6.64	0.94	16.34
31	1220	-8.13	1.47	-0.96	11.85

PIONEER XII (VENUS ORBITER)
ONE-HOUR MAGNETIC FIELD AVERAGES AT APOAPSIS

APRIL 1984

Day	Time (UT)	NanoTeslas in Spacecraft Coordinates (Bx)sc	(By)sc	(Bz)sc	Bt	Region W-Wake
1	1220	-7.57	1.28	1.84	10.47	
2	1220	-10.19	-1.66	-1.54	11.58	
3	1220	-9.91	.06	-4.66	12.16	
4	1220	-4.36	7.89	4.93	12.20	
5	1220	11.70	-7.25	2.17	14.17	
6	1220	2.14	-11.77	5.79	15.19	
7	1220	2.79	-7.55	-1.66	12.67	
8	1220	7.07	-2.03	-2.92	10.56	
9	1220	8.62	-5.16	-4.20	11.31	
10	1220	6.75	-9.15	0.85	13.41	
11	1220	10.67	-9.46	1.70	15.23	
12	1220	10.95	-6.73	4.21	14.66	
13	1220	14.65	-11.11	-5.84	19.85	
14	1220	---	---	---	---	
15	1220	11.71	-11.30	-0.31	16.69	
16	1220	-5.23	-4.08	-9.84	20.38	W
17	1220	7.57	0.18	4.99	12.68	W
18	1220	13.56	0.03	3.01	14.62	W
19	1220	8.87	-3.54	4.11	11.81	W
20	1220	-10.22	5.82	-8.48	15.09	W
21	1220	-11.11	-3.60	2.37	13.37	W
22	1210	-11.34	8.66	-1.51	15.85	W
23	1210	-9.15	2.35	4.39	13.21	W
24	1210	11.80	7.05	-2.34	15.65	W
25	1210	-17.29	-0.94	-8.22	19.33	W
26	1210	-9.79	6.23	11.45	19.56	W
27	1210	-14.78	7.27	-5.25	17.75	W
28	1210	-6.42	11.98	-0.11	18.06	W
29	1210	0.32	20.05	35.84	47.02	W
30	1210	-4.36	-2.76	10.88	12.61	W

COSMIC RAY INDICES
(Neutron Monitor)

December 1983

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4156	6840.8	6506.8	5870.9	3867.0(2)	1144	3582.7	1738.0(38)
2	4160	6824.7	6512.7	5872.0	3849.1	1147	3574.5	1738.5
3	4169	6841.6	6525.0	5889.0	3868.4	1150	3590.2	1743.4
4	4180	6882.4	6560.6	5912.1	3907.2	1153	3608.0	1746.8
5	4155	6844.1	6498.4	5869.2	3866.1	1148	3595.6	1743.5
6	4130	6802.6	6447.8	5847.8	3837.3	1143	3584.1	1735.4
7	4118	6795.5	6453.1	5832.8	3814.4(32)	1143	3582.6	1732.6(22)
8	4156	6822.3	6486.2	5849.9	3827.1	1130	3584.3	1738.5
9	4137	6810.8	6472.5	5862.9	3816.1	1123	3585.5	1736.8
10	4107	6751.1	6404.5	5803.4	3797.1	1118	3568.4	1731.2
11	4103	6765.0	6410.0	5779.8	3776.1	1114	3573.9	1730.3(24)
12	4080	6736.7	6355.3	5766.3	3769.6	1112	3561.5	---
13	4081	6736.4	6374.3	5762.0	3783.7	1114	3558.6	---
14	4103	6769.3	6410.4	5790.0	3809.0	1124	3567.5	---
15	4126	6801.0	6412.0	5801.9	3797.8	1133	3572.2	1731.5(12)
16	4106	6757.0	6414.2	5807.1	3794.8(38)	1130	3570.1	1729.8
17	4125	6783.9	6442.4	5826.0	---	1135	3576.4	1733.9
18	4142	6815.8	6476.0	5844.2	---	1136	3594.8	1739.0
19	4130	6801.8	6464.5	5841.6	---	1134	3579.5	1732.0
20	4141	6807.9	6500.0	5840.8	---	1132	3592.2	1737.9
21	4150	6782.8	6508.5	5867.8	---	1136	3598.2	1745.1
22	4160	6868.5	6496.3	5885.0	---	1140	3592.9	1744.9(38)
23	4168	6852.5	6530.6	5894.3	---	1141	3597.2	1744.1
24	4170	6876.0	6567.3	5883.2	---	1139	3596.8	1746.0
25	4189	6913.0	6576.5	5875.9	---	1139	3606.2	1746.8
26	4206	6956.1	6561.5	5895.4	---	1149	3612.2	1746.0
27	4186	6918.2	6525.1	5869.6	---	1150	3610.6	1746.5
28	4193	6908.1	6522.0	5867.7	3889.0	1148	3602.7	1744.2
29	4216	6938.9	6559.0	5916.7	3842.3	1158	3609.3	1746.8(36)
30	4176	6873.0	6509.0	5872.1	3828.4	1153	3604.5	1741.5
31	4137	6800.0	6469.2	5830.1	3859.2	1149	3595.4	1737.8
Mean	4147	6828.4	6482.3	5849.3	3825.5	1138	3588.0	1740.0

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

January 1984

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4173	6854.6	6512.0	5867.0	3845.5	1155	3599.6	1748.8(38)
2	4176	6877.8	6508.5	5868.8	3834.7	1153	3594.4	1738.2
3	4147	6823.8	6478.3	5861.5	3801.5	1156	3579.0	1733.3
4	4117	6783.5	6443.0	5803.1	3747.3	1143	3551.9	1724.8
5	4086	6739.9	6380.0	5767.9	3766.2(36)	1132	3554.3	1718.0
6	4135	6805.8	6411.1	5808.0	---	1130	3570.4	1725.0
7	4172	6879.0	6483.1	5857.1	3820.0(8)	1134	3591.2	1731.0
8	4187	6908.5	6519.3	5890.2	3832.3	1145	3595.4	1738.0
9	4211	6931.1	6550.0	5921.2	3858.3	1158	3602.1	1743.3
10	4213	6942.9	6564.9	5921.9	3866.8	1162	3601.4	1744.0
11	4197	6912.7	6549.4	5891.4	3871.7	1154	3602.1	1739.5
12	4191	6918.5	6543.3	5923.3	3868.3	1155	3598.0	1738.2
13	4197	6929.0	6549.7	5930.3	3867.5	1145	3595.7	1739.0
14	4186	6915.0	6528.0	5920.8	3870.0	1137	3594.8	1739.6
15	4194	6912.5	6560.0	5931.1	3868.2	1142	3591.1	1740.7
16	4202	6932.1	6553.0	5893.4	3875.9	1139	3592.3	1740.3
17	4200	6940.0	6538.5	5925.0	3879.0	1131	3601.9	1746.4
18	4194	6914.4	6536.7	5908.7	3871.1	1126	3600.4	1744.4
19	4219	6968.9	6592.2	5949.5	3909.8	1133	3582.2	1750.4(38)
20	4250	7023.8	6639.0	5968.9	3918.0	1138	3604.7	1750.3
21	4238	7006.0	6630.6	5952.4	3912.1	1134	3594.7	1749.5
22	4230	6982.0	6584.3	5958.5	3909.9	1128	3588.2	1750.6
23	4242	6990.5	6578.1	5982.3	3908.7	1128	3597.5	1748.0
24	4222	6925.5	6555.1	5933.7	3883.1	1128	3603.5	1743.3
25	4217	6936.9	6548.1	5924.0	3867.1	1129	3596.7	1739.2
26	4242	6985.9	6592.4	5959.6	3915.0	1136	3618.0	1749.3(30)
27	4245	7016.4	6616.7	5972.2	3922.7	1153	3624.9	1752.2
28	4237	7005.5	6625.7	5964.4	3922.3	1152	3626.5	1751.3
29	4206	6948.2	6564.9	5927.4	3884.3	1138	3602.8	1745.1
30	4194	6911.6	6541.4	5913.7	3876.1	1139	3596.3	1740.7(34)
31	4208	6934.4	6566.3	5942.5	3885.0	1142	3551.1	1747.4(36)
Mean	4198	6921.2	6543.4	5911.0	3870.4	1141	3593.7	1741.4

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

February 1984

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4210	6931.2	6554.8	5919.6	3875.4	1139	3573.0	1741.5
2	4193	6900.9	6524.7	5911.9	3858.0	1138	3578.2	1739.5
3	4102	6751.1	6430.7	5828.7	3817.7(38)	1115	3565.9	1738.7(14)
4	4120	6796.5	6433.8	5820.1	3836.8	1117	3578.9	1730.6(34)
5	4152	6838.6	6447.8	5816.2	3824.6	1110	3570.0	1730.3
6	4159	6856.0	6487.1	5854.1	3840.0	1110	3576.0	1729.1
7	4198	6928.0	6543.8	5911.7	3878.3	1115	3595.4	1736.0
8	4212	6951.8	6581.4	5955.8	3896.8	1108	3601.2	1736.8
9	4224	6987.6	6579.3	5943.0	3897.4	1114	3596.5	1744.4
10	4233	7001.3	6555.1	5911.5	3889.0	1120	3596.9	1734.0
11	4213	6987.5	6549.4	5907.4	3908.0	1124	3600.9	1742.9
12	4172	6933.8	6511.2	5876.8	3868.9	1113	3570.5	1734.2
13	4130	6861.9	6424.1	5850.0	3820.0	1111	3570.9	1729.7
14	4153	6895.3	6470.2	5882.3	3868.1	1115	3607.5	1740.8
15	4136	6886.2	6469.9	5880.1	3844.0	1114	3606.0	1742.1
16	4197	6959.3	6621.3	5935.3	3886.1	1117	3601.2	1744.2
17	4168	6932.2	6541.8	5914.0	3886.1	1118	3562.0	1742.4
18	4164	6929.8	6542.2	5935.4	3895.4	1119	3579.9	1744.3
19	4160	6908.2	6529.7	5933.8	3873.1	1118	3588.8	1739.8
20	4154	6895.7	6537.2	5920.1	3854.5	1122	3587.5	1741.4
21	4139	6882.6	6508.9	5884.1	3833.0	1120	3586.6	1733.5
22	4125	6854.4	6497.0	5888.2	3846.5	1124	3583.9	1736.3
23	4143	6882.2	6508.8	5889.7	3860.3	1130	3582.2	1737.2
24	4112	6829.9	6477.7	5861.5	3824.0	1119	3583.0	1737.9
25	4115	6822.0	6488.8	5866.5	3828.7	1118	3579.7	1736.1
26	4100	6815.4	6481.1	5857.1	3826.4	1117	3535.7	1733.4
27	4057	6746.4	6398.3	5786.6	3771.0	1110	3572.5	1723.5
28	4056	6738.5	6393.8	5785.3	3756.6	1109	3564.1	1726.4
29	4059	6733.8	6423.9	5796.1	3774.4	1112	3571.3	1725.1
Mean	4150	6877.2	6500.5	5880.1	3849.6	1117.8	3581.6	1736.1

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

March 1984

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4031	6704.3	6367.8	5756.3	3729.8	1106	3560.2	1719.9
2	4033	6700.5	6346.0	5741.7	3724.6	1106	3553.9	1721.9
3	4029	6702.6	6338.2	5732.5	3727.9	1112	3552.8	1719.6
4	4049	6721.6	6392.7	5764.0	3767.5	1116	3574.6	1728.1
5	4080	6778.7	6417.1	5769.7	3788.8(36)	1116	3583.5	1729.9
6	4099	6794.5	6429.7	5801.9	3810.7	1122	3594.7	1735.9
7	4095	6802.9	6436.5	5804.3	3797.0	1120	3578.5	1726.5
8	4087	6808.6	6438.9	5803.4	3784.3	1108	3579.2	1730.8
9	4086	6803.1	6465.4	5812.7	3798.9	1104	3587.5	1738.5
10	4108	6823.1	6476.2	5841.0	3802.0	1117	3584.5	1736.3
11	4119	6835.9	6491.8	5854.0	3820.5	1122	3597.1	1738.5
12	4127	6872.0	6518.4	5866.5	3839.3	1123	3591.3	1741.3
13	4113	6857.7	6505.0	5858.4	3831.8	1124	3596.7	1742.2
14	4091	6824.6	6471.0	5837.7	3811.5	1119	3575.5	1734.8
15	4107	6829.9	6453.9	5839.0	3807.0	1120	3566.2	1728.0
16	4115	6850.8	6444.7	5854.8	3823.3	1128	3559.4	1733.4
17	4106	6824.7	6433.4	5836.5	3813.8	1129	3578.0	1733.5
18	4145	6862.0	6465.2	5874.0	3836.2	1137	3583.7	1739.4
19	4140	6848.0	6485.3	5881.1	3841.4	1141	3569.5	1735.5
20	4113	6838.6	6448.9	5862.9	3843.8(8)	1135	3571.7	1735.9
21	4081	6787.8	6442.3	5842.7	3807.0	1133	3573.2	1727.8
22	4037	6711.9	6386.8	5779.1	3772.7	1127	3560.2	1723.1
23	4025	6672.6	6335.3	5754.5	3739.3	1122	3559.0	1724.3
24	4027	6677.3	6335.4	5726.6	3717.3	1114	3533.1	1718.1
25	4069	6779.5	6418.6	5809.9	3802.5	1131	3568.4	1730.5
26	4062	6785.8	6437.8	5836.1	3814.6	1133	3577.7	1732.1
27	4048	6751.2	6374.7	5752.6	3771.0	1123	3567.1	1726.8
28	4014	6699.3	6313.1	5735.0	3716.6	1120	3556.7	1723.7
29	3980	6626.8	6284.9(22)	5683.3	3707.5	1115	3549.5	1718.0(38)
30	3993	6641.8	6324.4	5699.8	3734.8	1106	3559.2	1728.3
31	4039	6724.5	6382.2	5766.0	3767.2	1113	3574.7	1732.5
Mean	4073	6772.4	6414.9	5799.3	3784.0	1121	3571.5	1730.3

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

April 1984

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4038	6756.4	6378.2	5774.6	3781.5	1123	3562.6	1731.0
2	4040	6732.0	6361.5	5743.8	3774.0	1114	3560.3	1721.2
3	4017	6681.5	6325.8	5691.9	3743.1	1107	3544.5	1725.3
4	4036	6704.4	6354.3	5729.7	3765.3	1105	3562.7	1735.7
5	4043	6735.3	6362.5	5768.5	3784.5	1118	3570.3	1738.3
6	4044	6736.3	6389.7	5796.5	3796.9	1123	3585.7	1743.5
7	4011	6662.4	6351.0	5727.2	3778.0	1106	3571.5	1723.9
8	4024	6698.0	6366.5	5743.8	3776.1(38)	1110	3577.6	1730.3
9	4034	6704.5	6381.7	5760.6	3779.9	1106	3577.4	1733.8
10	4056	6724.3	6397.0	5782.6	3778.0	1109	3567.3	1735.1
11	4086	6794.8	6453.0	5807.6	3825.9	1124	3579.1	1736.8
12	4094	6809.6	6465.9	5817.5	3831.1	1128	3583.5	1733.2
13	4078	6784.3	6457.4	5805.7	3815.5	1122	3577.0	1733.8
14	4091	6807.4	6461.1	5821.2	3810.9	1127	3578.5	1728.8
15	4077	6775.0	6435.3	5787.4	3792.1	1130	3572.9	1728.2
16	4065	6750.8	6438.5	5794.2	3797.7	1132	3563.1	1729.5
17	4055	6731.6	6413.0	5766.5	3776.5	1119	3551.8	1726.3
18	4051	6734.2	6390.5	5742.7	3758.9	1109	3540.0	1720.6
19	4043	6729.4	6387.3	5762.0	3764.4	1111	3522.9	1712.2(28)
20	4050	6753.9	6405.0	5770.3	3806.9	1123	3536.7	1715.7
21	4078	6794.9	6440.3	5795.8	3820.3	1132	3552.9	1724.5
22	4085	6800.6	6460.0	5806.1	3823.5	1135	3562.7	1730.2
23	4087	6794.8	6456.0	5809.6	3822.0	1146	3567.7	1725.5
24	4097	6802.3	6477.5	5822.2	3840.4	1150	3577.1	1729.4
25	4091	6791.2(23)	6444.9	5819.2	3844.5	1151	3568.1	1727.2
26	4022	6679.0	6297.3	5761.1	3781.7	1141	3551.4	1718.0
27	3827	6356.8	6047.8	5472.9	3613.6	1081	3460.6	1671.5
28	3821	6341.7	6001.0	5453.2	3561.8	1075	3459.9	1669.8
29	3855	6396.7	6074.2	5511.5	3618.3	1086	3487.0	1684.8
30	3889	6442.6	6106.8	5563.6	3633.8	1093	3502.5	1696.1
Mean	4030	6700.2	6359.4	5740.3	3770.2	1118	3552.5	1722.0

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

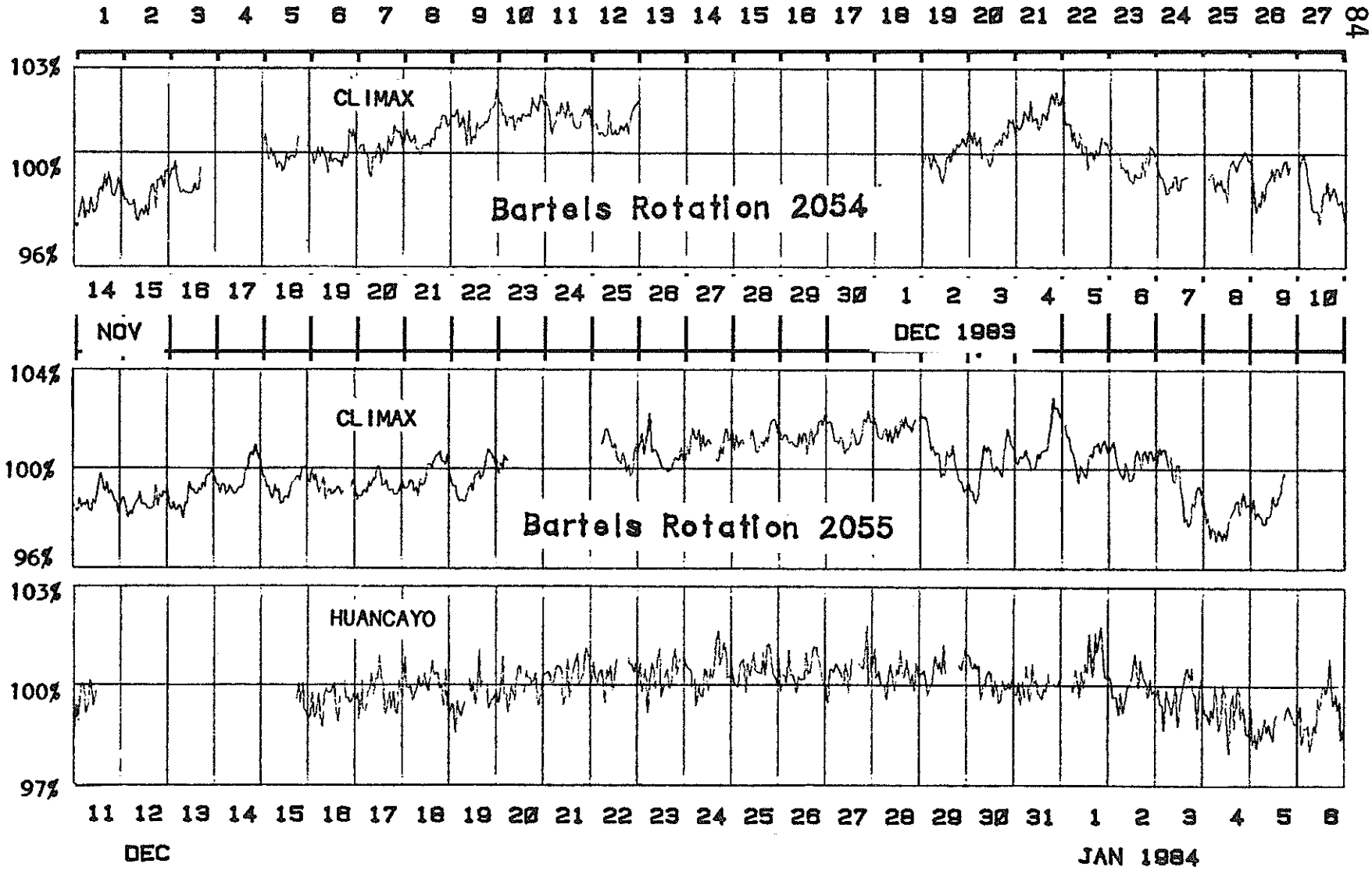
COSMIC RAY INDICES
(Neutron Monitor)

May 1984

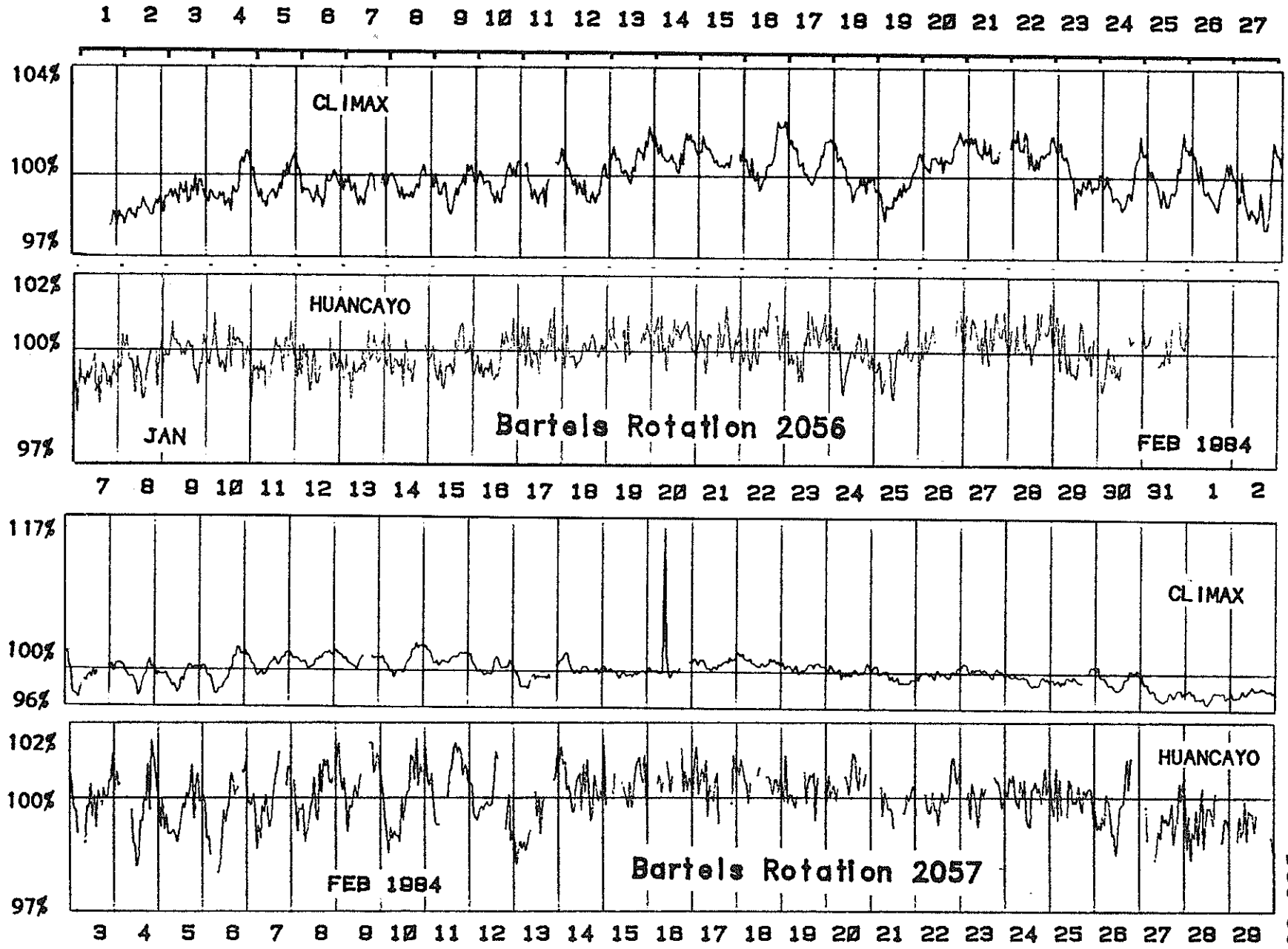
Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	PREDIGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	3970	6495.2	6172.5	5589.4	3602.5	1104	3508.0	1708.0
2	4007	6557.9	6238.4	5617.0	3642.5	1110	3527.1	1705.4(36)
3	3998	6546.9	6231.5	5611.1	3629.1	1107	3520.5	1708.0(6)
4	4012	6565.4	6263.0(23)	5637.6	3656.7	1113	3534.4	1712.5
5	4027	6635.4	6299.4	5657.3	3678.9	1125	3537.9	1716.3(32)
6	4057	6638.7	6305.7	5690.0	3689.9	1130	3546.7	1723.4(16)
7	4062	6623.7	6288.9	5692.5	3668.4	1123	3530.4	1715.2
8	4072	6630.8	6260.6	5666.7	3645.6	1113	3515.2	1706.6
9	4068	6626.8	6289.6	5676.9	3650.1	1116	3521.6	1707.9
10	4072	6641.2	6295.4	5685.1	3664.1	1123	3539.5	1711.7(30)
11	4009	6535.8	6170.4	5590.3	3568.2	1097	3490.5	1693.9(38)
12	4023	6552.6	6203.9	5597.9	3585.2	1100	3490.3	1696.6
13	3973	6485.2	6125.7	5579.2	3535.1	1097	3458.1	1688.8
14	4006	6487.2	6215.0	5584.3	3591.6	1096	3477.0	1692.0(24)
15	4036	6553.0	6236.8	5626.7	3613.9	1104	3488.6	1697.0
16	4066	6597.8	6271.5	5661.3	3636.0	1112	3491.9	1698.9
17	4025	6566.7	6204.9	5583.4	3581.5	1099	3498.0	1692.1(34)
18	4023	6540.5	6186.8	5580.0	3586.3	1099	3494.7	1692.5
19	4053	6587.6	6206.4	5636.8	3613.5	1114	3516.6	1704.2
20	4067	6608.9	6238.9	5660.3	3635.9	1116	3517.9	1700.5(36)
21	4063	6579.7	6235.1	5646.0	3656.5	1122	3509.7	1694.1
22	4037	6542.0	6182.1	5609.1	3632.8	1108	3495.1	1691.0
23	4023	6504.2	6171.4	5612.1	3626.4	1108	3495.9	1697.0
24	4023	6480.4	6146.2	5627.3	3594.2	1113	3497.4	1698.4(30)
25	3991	6482.5	6124.6	5567.5	3610.6(38)	1101	3492.5	---
26	3989	6476.0	6153.5	5573.7	3622.4	1106	3498.2	---
27	3993	6498.9	6153.6	5557.4	3604.0	1099	3492.5	---
28	4020	6554.8	6159.5	5581.9	3600.9	1101	3477.9	---
29	4011	6537.9	6164.7	5574.3	3603.1	1091	3480.9	---
30	4026	6557.5	6212.5	5626.1	3651.7	1106	3510.7	---
31	4069	6639.3	6290.6	5675.4	3695.3	1123	3532.3	---
Mean	4028	6559.0	6216.1	5621.8	3625.0	1109	3506.0	1701.3

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available.
For Climax and Huancayo, parenthese enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)



COSMIC RAY INDICES
(Neutron Monitor)



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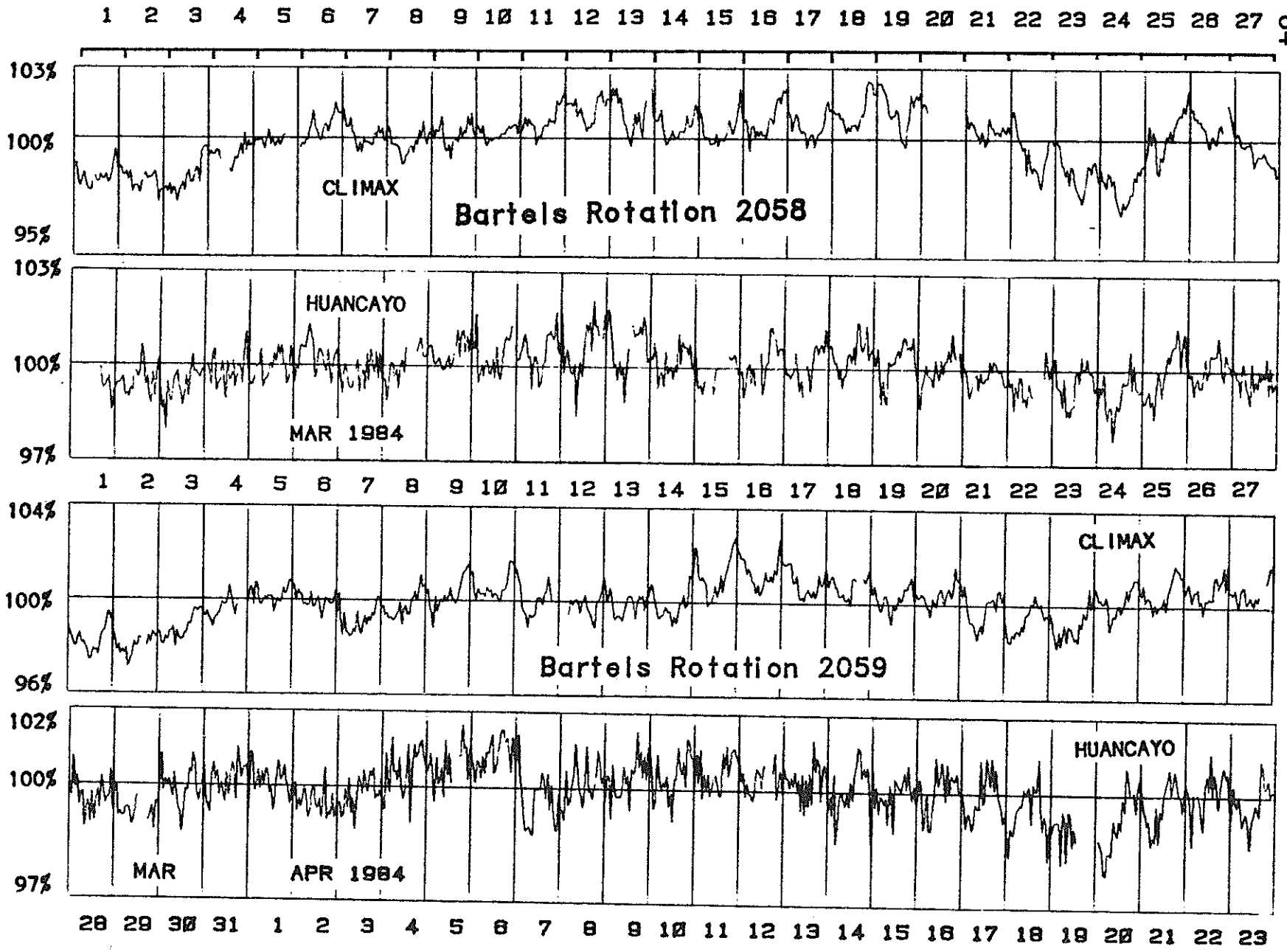
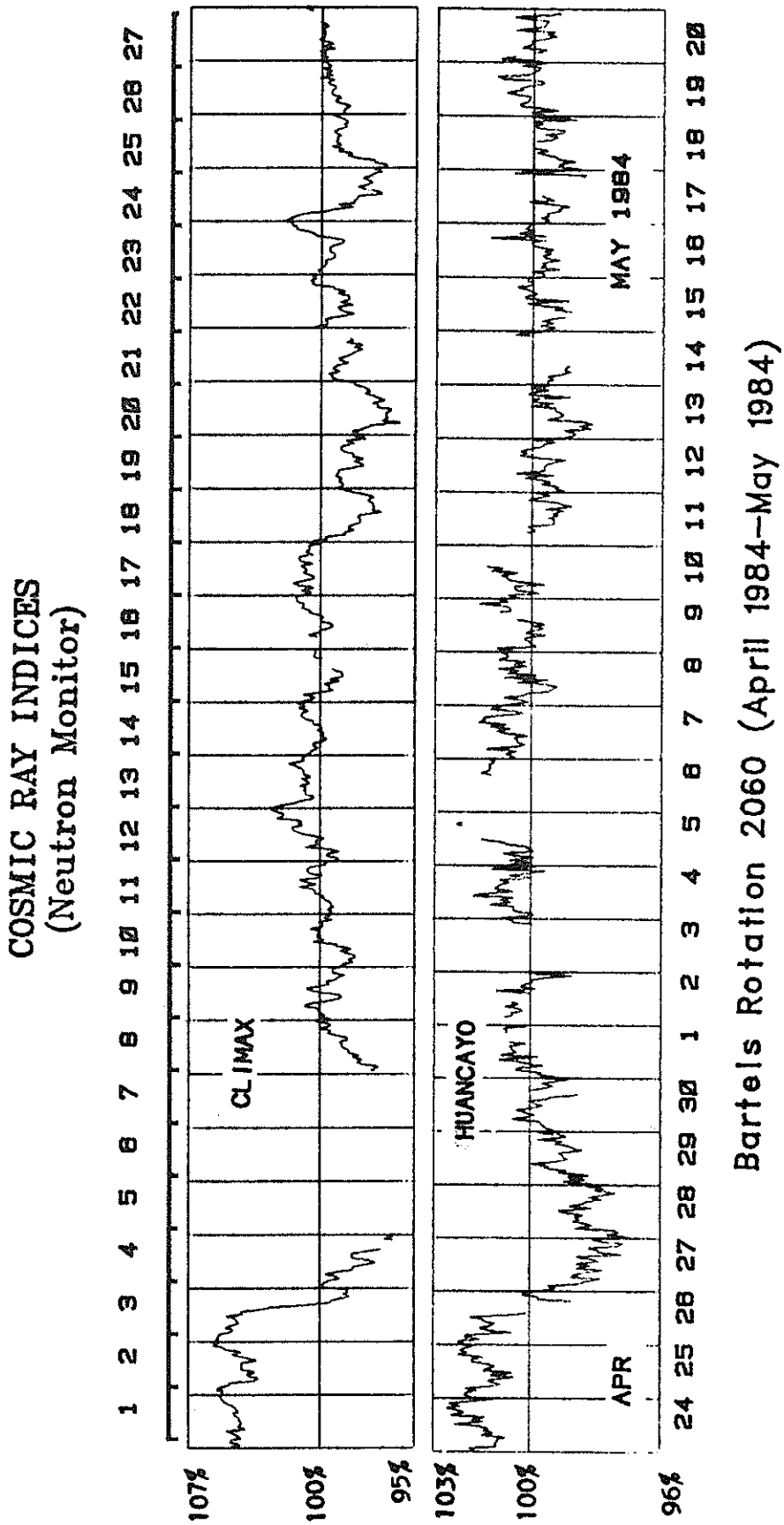
Late
Dec 83-May 84

COSMIC RAY INDICES
(Neutron Monitor)



109
Late
Dec 83-May 84



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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."