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Solar - Geophysical Data

Part I (Prompt Reports)

NO. 481 SEPTEMBER 1984

DATA FOR
AUGUST 1984
JULY 1984

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

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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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INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES AUGUST 1984

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
214	01	31	014	081	015	S16E55	0	0	0		01	S16E55	Q	SOLQUIET MAGQUIET
215	02	01	017	082	041	S17E42	0	0	0		02	S17E42	Q	SOLQUIET MAGALERT MINOR 02/02 FILAMENT
216	03	02	019	084	029	S17E27	0	0	0		03	S17E27	Q	SOLQUIET MAGNIL
217	04	03	044	086	003	S17E15	0	0	0		04	S17E15	Q	SOLQUIET
						S07E60	0	0	0			S07E60	Q	MAGQUIET
						N09E75	0	0	0			N09E75	Q	
218	05	04	039	083	014	S17E01	2	0	0		05	S17E01	Q	SOLQUIET
						S09E46	0	0	0			S09E46	Q	MAGQUIET
						N09E63	0	0	0			N09E63	Q	
219	06	05	027	083	012	S16W10	0	0	0		06	S16W10	Q	SOLQUIET
						N08E45	3	0	0			N08E45	Q	MAGQUIET
220	07	06	042	087	008	N08E33	0	0	0		07	N08E33	Q	SOLQUIET
						N02E35	0	0	0			N02E35	Q	MAGQUIET
						N07E41	2	0	0			N07E41	Q	
221	08	07	054	090	006	N09W42	0	0	0		08	N09W42	Q	SOLQUIET
						N08E28	2	0	0			N08E28	Q	MAGALERT
						N13E32	0	0	0			N13E32	Q	MINOR 08/XX RECURRENCE
222	09	08	065	091	017	N09W55	0	0	0		09	N09W55	Q	SOLQUIET
						N08E15	0	0	0			N08E15	Q	MAGALERT
						N14E18	0	0	0			N14E18	Q	MINOR 09/XX RECURRENCE
223	10	09	068	092	013	N08W70	0	0	0		10	N08W70	Q	SOLQUIET
						S08W20	0	0	0			S08W20	Q	MAGALERT
						N08E01	0	0	0			N08E01	Q	MINOR 10/11 RECURRENCE
224	11	10	069	093	010	N09W86	1	0	0		11	N09W86	Q	SOLQUIET
						N08W13	0	0	0			N08W13	Q	MAGALERT
						N13W06	0	0	0			N13W06	Q	MINOR 11/12 RECURRENCE
225	12	11	041	088	011	N08W25	0	0	0		12	N08W25	Q	SOLQUIET
						N15W21	0	0	0			N15W21	Q	MAGALERT MINOR 12 RECURRENCE
226	13	12	049	086	018	N08W38	0	0	0		13	N08W38	Q	SOLQUIET
						N10W32	0	0	0			N10W32	Q	MAGNIL
						N03W02	0	0	0			N03W02	Q	
227	14	13	048	084	013	N08W51	0	0	0		14	N08W51	Q	SOLQUIET
						N02W16	0	0	0			N02W16	Q	MAGALERT
						N06E14	0	0	0			N06E14	Q	MINOR 14/XX
228	15	14	044	082	016	N07W64	4	0	0		15	N07W64	Q	SOLQUIET
						N03W30	0	0	0			N03W30	Q	MAGALERT
						N13E09	0	0	0			N13E09	Q	MINOR 15/XX
229	16	15	037	081	025	N08W75	4	0	0		16	N08W75	Q	SOLQUIET
						N03W42	0	0	0			N03W42	Q	MAGALERT
						N12W04	0	0	0			N12W04	Q	MINOR 16/XX

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES AUGUST 1984

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
230	17	16	045	081	017	N08W90	0	0	0		17	N08W90	Q	SOLQUIET
						N04W69	0	0	0			N04W69	Q	MAGNIL
						N03W56	0	0	0			N03W56	Q	
						S09E73	0	0	0			S09E73	Q	
231	18	17	022	079	012	N04W80	6	0	0		18	N04W80	Q	SOLQUIET
						S09E61	0	0	0			S09E61	Q	MAGQUIET
232	19	18	011	071	007	S10E48	0	0	0		19	S10E48	Q	SOLQUIET
														MAGQUIET
233	20	19	024	074	011	S09E34	0	0	0		20	S09E34	Q	SOLQUIET
						S11E60	0	0	0			S11E60	Q	MAGQUIET
234	21	20	022	074	012	S09E21	0	0	0		21	S09E21	Q	SOLQUIET
						S12E43						S12E43	Q	MAGQUIET
235	22	21	023	076	005	S09E08	0	0	0		22	S09E08	Q	SOLQUIET
						S12E30						S12E30	Q	MAGQUIET
236	23	22	022	074	004	S08W07	0	0	0		23	S08W07	Q	SOLQUIET
						S12E20	0	0	0			S12E20	Q	MAGQUIET
237	24	23	024	074	010	S08W20	0	0	0		24	S08W20	Q	SOLQUIET
						S11E04	0	0	0			S11E04	Q	MAGQUIET
238	25	24	042	080	017	S14W60	0	0	0		25	S14W60	Q	SOLQUIET
						S09W34	0	0	0			S09W34	Q	MAGQUIET
						S13W10	11	0	0			S13W10	Q	
239	26	25	066	081	016	S14W73	3	0	0		26	S14W73	Q	SOLQUIET
						S09W47	0	0	0			S09W47	Q	MAGQUIET
						S13W22	3	0	0			S13W22	Q	
						S05E65	5	0	0			S05E65	Q	
240	27	26	078	086	014	S14W85	0	0	0		27	S14W85	Q	SOLQUIET
						S09W59	0	0	0			S09W59	Q	MAGQUIET
						S13W35	3	0	0			S13W35	Q	
						S05E53	19	0	0			S05E53	E	
241	28	27	077	089	024	S09W72	0	0	0		28	S09W72	Q	SOLQUIET
						S13W50	4	0	0			S13W50	Q	MAGALERT
						N17E30	0	0	0			N17E30	Q	MINOR 28/29
						S06E38	7	0	0			S06E38	Q	RECURRENCE
242	29	28	048	087	029	S13W63	4	0	0		29	S13W63	Q	SOLQUIET
						S06E25	7	0	0			S06E25	Q	MAGALERT
														MINOR 29/29
														RECURRENCE
243	30	29	042	089	020	S15W79	0	0	0		30	S15W79	Q	SOLQUIET
						S06E11	2	0	0			S06E11	Q	MAGQUIET
244	31	30	032	090	020	S06W01	1	0	0		31	S06W01	Q	SOLQUIET
														MAGQUIET
245	01	31	056	091	013	S06W14	3	0	0		01	S06W14	Q	SOLQUIET
						N08E54	0	0	0			N08E54	Q	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 LAT-LONG, TOT=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) THE MONTH OF AUGUST 1984.

NO PRESTO MESSAGES SENT THIS MONTH

INTERNATIONAL* (R_I) RELATIVE SUNSPOT NUMBERS

Day	1983 Final Sep	Oct	Nov	Dec	1984 Final Jan	Feb	Mar	Apr	May	Jun	1984 Prov Jul	Aug
01	46	29	17	26	10	110	74	103	109	48	33	14
02	56	51	22	23	16	82	78	94	89	44	35	15
03	59	63	37	15	17	67	66	88	69	45	61	14
04	69	74	51	14	18	61	54	81	52	34	80	25
05	84	65	66	17	21	66	65	61	38	30	72	18
06	78	75	74	39	29	76	49	70	27	23	58	24
07	72	87	84	41	37	79	51	50	35	34	64	27
08	68	99	90	48	38	94	64	33	54	31	74	32
09	74	106	70	71	50	115	60	36	72	26	63	32
10	70	121	68	82	44	123	46	12	85	31	70	34
11	65	136	56	76	48	118	65	21	94	37	51	29
12	41	122	43	66	51	108	72	28	100	39	54	30
13	36	100	36	66	48	82	79	24	118	41	44	28
14	36	80	29	52	46	77	88	32	111	50	32	27
15	42	72	28	50	44	80	112	59	85	80	30	23
16	33	61	38	35	46	53	117	60	97	83	25	23
17	35	60	31	46	51	51	105	56	83	73	21	18
18	45	63	36	36	49	50	95	73	70	62	26	17
19	40	46	26	31	51	54	90	82	74	51	28	9
20	32	26	12	25	69	54	103	69	70	53	18	16
21	36	18	18	21	76	76	98	68	65	43	12	12
22	38	22	0	15	64	100	87	55	77	48	22	10
23	42	22	0	20	70	121	89	59	83	54	25	19
24	46	20	0	22	70	117	80	80	86	58	38	24
25	42	18	0	21	99	117	97	99	75	44	30	36
26	50	20	7	23	105	101	97	124	87	49	25	49
27	51	12	10	12	99	78	96	121	86	40	9	41
28	48	15	12	10	106	78	98	125	69	41	9	33
29	43	16	19	11	110	88	94	120	74	50	12	34
30	33	15	21	13	102		107	107	70	42	16	21
31		16		9	82		113		63		10	36
Mean	50	56	33	33	57	85	84	70	76	46	37	25

*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	Sep 83	Oct	Nov	Dec	Jan 84	Feb	Mar	Apr	May	Jun	Jul	Aug
01	110.5*	117.5	98.3	90.5	84.3	154.6	143.6	135.7	153.7	116.1	101.7	84.0
02	110.9	120.4	97.6	88.9	87.4	142.0*	138.2	134.6*	139.3*	111.3	103.6	86.3
03	106.4	123.1	96.9	88.5	89.5	131.4	122.5	128.8*	123.1	109.6	104.8	88.4
04	110.5	125.1	103.1	91.9	91.0	126.0	114.4*	129.5	113.5*	106.8	105.7	85.7
05	117.6	126.6*	105.1	92.0	88.2	114.2	109.3	118.7	114.9	104.6	104.4*	85.7
06	120.7	132.7	---	97.1*	85.6	111.8	109.5	112.1*	108.1	98.9	100.3	89.9
07	118.6	133.9	108.5	98.6	86.5	113.6	105.0	107.8	118.3	97.3	100.1	92.4
08	118.4	131.1*	103.5	98.3	92.3	127.2	103.8	100.7	121.9	94.6	101.1	94.0
09	115.3	130.4	99.2	108.2	94.4	139.9	102.4	94.9	138.3	93.6	104.5	94.4
10	109.7	133.6*	100.8	108.0	95.2	136.7*	98.8	93.9	150.9	92.3	101.3	95.4
11	110.5	138.3	96.7	101.7*	96.8	141.1*	98.6	97.3	147.9	93.2	96.8	90.8
12	104.9*	133.7	89.6	101.1	101.1	135.8*	102.3*	107.2	148.2*	93.0	94.7	88.0
13	104.4	133.5*	91.9	100.8	102.1	128.4	114.7	113.7	151.4	98.6	92.6	86.5
14	105.2	131.5*	91.0	96.5	99.2	120.3*	121.1	118.8	146.9	110.2	92.2*	84.0
15	106.3*	127.0	90.9	92.2	97.8	113.4	134.4	119.7	139.6	116.5*	92.2	82.6
16	106.3*	117.2A	90.6	93.5*	96.6*	114.5*	124.0	117.2	137.3	110.3	90.1	83.1
17	105.1	110.9*	85.6	92.0	95.2	116.5	129.1	122.9*	130.1	109.5*	87.3	81.0
18	102.5	103.6	84.4	90.1	95.0	122.2*	125.8*	119.9	131.9	108.9	85.5	79.1
19	101.2	105.2	82.3	86.2	93.4	128.4*	126.5	112.5*	137.6	107.8	84.7	76.2
20	100.4	99.1	80.3	83.6	102.2	134.6	126.3	124.1*	138.0	106.6	84.8	75.6
21	103.0	89.3	79.3	82.3	103.3	143.8	122.4	127.7	145.3*	103.4*	86.7	77.2
22	106.0	87.2	80.1	82.9	110.5	158.0	122.7	130.8	130.1	104.6	86.3	75.7
23	112.6	87.8	78.2	83.0	113.3	166.1	115.1	136.6*	130.0	105.3	87.3	76.0
24	111.8	88.6	78.8	83.1	126.4*	172.9*	113.0	142.9	126.9	103.6	86.8	81.6
25	110.5*	89.2	79.2	82.4*	146.8	169.4*	111.6	152.4	125.7*	104.6	85.9	83.0
26	114.6*	89.1	80.4	82.9	164.8*	164.2	120.2	174.0	121.0	100.1	83.4	87.7
27	119.8	88.9	84.4	83.5	172.3	154.3	129.1*	183.7*	120.3	101.5	83.0	90.4
28	114.8	90.4	86.6	80.7	168.9	148.8	135.9	182.6*	118.5	99.5	82.5	88.6
29	114.5	90.7	89.4	81.1	174.6	148.1	138.1*	178.2*	121.0	100.3	82.3	90.3
30	113.0	92.6	90.0	81.3	161.5		143.8	170.8	119.7A	101.1	82.2	91.8
31		95.5*		83.8	169.3		143.7		115.9		83.0	93.1*
Mean	110.2	111.7	90.4	90.5	112.4	137.2	120.8	129.7	131.1	103.5	92.2	85.8

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

AUGUST 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	214	19	14	15	81.6	565	262	115	84.0	88	75	58	25	12
02	215	20	15	15	83.8	569	273	119	86.3	91	74	64	26	13
03	216	21	14	17	85.8	576	259	116	88.4	91	77	65	26	13
04	217	22	25	22	83.3	565	271	114	85.7	88	76	56	23	11
05	218	23	18	12	83.3	561	270	114	85.7	91	77	62	23	12
06	219	24	24	23	87.4	576	262	119	89.9	92	80	59	25	13
07	220	25	27	26	89.9	564	274	121	92.4	94	82	64	27	13
08	221	26	32	28	91.4	571	268	124	94.0	97	81	63	27	12
09	222	27	32	30	91.8	570	274	124	94.4	97	81	62	27	13
10	223	1	34	34	92.9	572	267	124	95.4	100	81	62	27	14
11	224	2	29	28	88.4	567	269	119	90.8	93	79	63	27	13
12	225	3	30	29	85.7	553	270	116	88.0	91	77	60	23	12
13	226	4	28	28	84.3	548	259	113	86.5	87	75	59	23	11
14	227	5	27	23	81.9	554	265	115	84.0	89	75	59	27	12
15	228	6	23	19	80.5	553	254	113	82.6	90	71	59	26	11
16	229	7	23	16	81.1	553	253	115	83.1	90	70	58	23	12
17	230	8	18	17	79.0	567	259	114	81.0	85	69	56	24	14
18	231	9	17	12	77.2	569	257	111	79.1	82	65	54	23	12
19	232	10	9	13	74.4	561	254	108	76.2	81	64	52	24	11
20	233	11	16	16	73.8	562	253	108	75.6	80	62	50	23	12
21	234	12	12	11	75.5	570	255	109	77.2	79	63	53	22	10
22	235	13	10	12	74.0	568	260	108	75.7	80	65	53	25	12
23	236	14	19	16	74.4	557	262	108	76.0	80	62	49	22	11
24	237	15	24	28	79.8	506	251	112	81.6	84	66	54	23	12
25	239	16	36	42	81.2	569	267	112	83.0	89	65	54	23	12
26	240	17	49	53	85.9	568	270	117	87.7	94	72	57	23	12
27	241	18	41	44	88.5	572	273	121	90.4	94	72	54	24	13
28	242	19	33	39	86.9	563	267	116	88.6	107	69	54	25	12
29	243	20	34	34	88.5	555	265	117	90.3	95	71	57	24	13
30	244	21	21	28	90.1	558	267	121	91.8	96	74	57	26	14
31	245	22	36	36	91.4*	553	269	129	93.1*	99	74	57	25	12
Mean			25	25	83.7	562	264	115	85.8	90	72	58	24	12

*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

AUGUST 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
Sep 80	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	77	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	58	59.4	61	112.4	115
Feb	85.4	56*	81.5	56	86.2	58	137.2	101
Mar	83.5	54(4)*	83.0	54	68.5	56	120.8	---
Apr	69.7	52(7)*	66.5	51	78.1	53	129.7	---
May	76.4	50(9)*	72.1	50	79.6	51	131.1	---
Jun	46.1	49(10)*	45.2	49	49.8	51	103.5	---
Jul	37.0†	48(12)*	36.2	48	37.6	49	92.2	---
Aug	24.8†	46(14)*	---	46	30.7	48	85.8	---
Sep	---	44(15)*	---	44	---	46	---	---
Oct	---	42(15)*	---	42	---	44	---	---
Nov	---	41(15)*		40		42		
Dec	---	39(15)*	---	39	---	40	---	---
Jan 85	---	38(16)*	---	37	---	39	---	---
Feb	---	36(16)*	---	36	---	37	---	---

*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

AUGUST 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	56	54 (4)	52 (7)	50 (9)	49 (10)	48 (12)	46 (14)	44 (15)	42 (15)	41 (15)	39 (15)
1985	38 (16)	36 (16)	35 (16)	34 (16)	33 (17)	31 (17)	30 (16)	29 (15)	28 (15)	27 (15)	26 (16)	26 (16)
1986	25 (16)	25 (16)	24 (16)	23 (15)	21 (15)	20 (15)	18 (15)	17 (15)	16 (14)	15 (13)	15 (12)	14 (11)

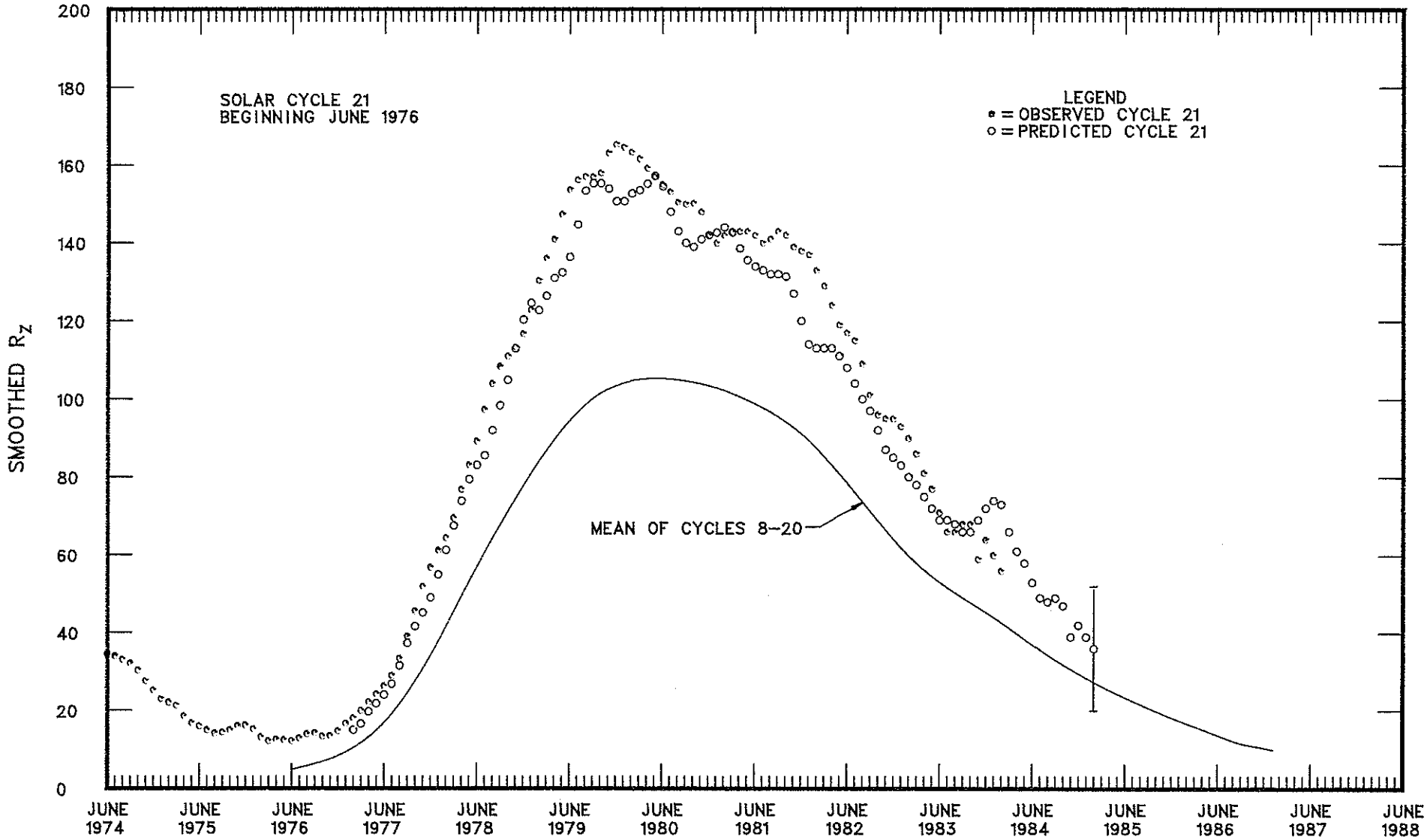
An asterisk marks the minimum and the maximum of Sunspot Cycle 21.

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 June 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.

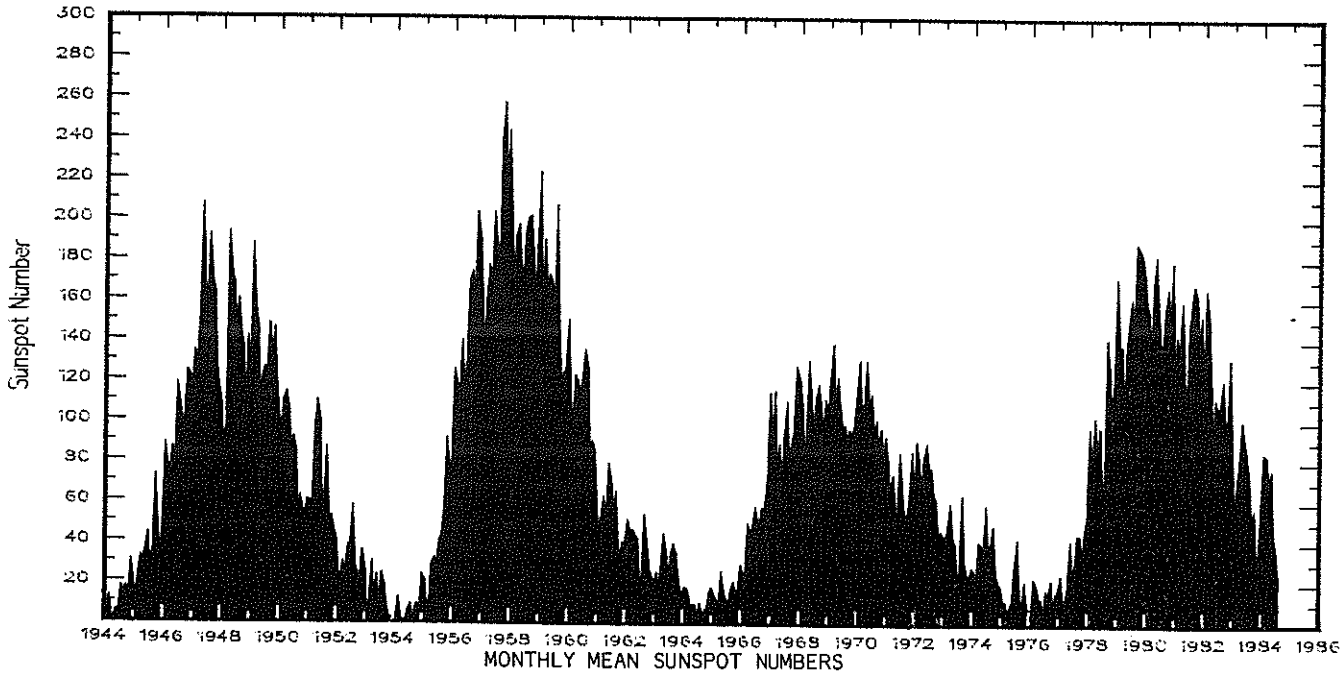
The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1984 edition of the "Solar-Geophysical Data" supplement.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number in parentheses from the predicted value generates the lower limit. Consider, for example, the February 1985 prediction tabulated above. There exists a 90% chance that in February 1985 the actual smoothed sunspot number will fall somewhere between 20 and 52.

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 – August 1984



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	69.7	76.4	46.1	37.0*	24.8*				

*Provisional

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

AUGUST 1984

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
YUNN	04	0327	0329	0335	S17	E14		08	5.2	8	SN			C		141	1.6	
LEAR	04	0327	0328	0335	S17	E14	4552	08	5.2	8	SF		3	C		45		
PALE	04	2011	2012	2018	S17	E05	4552	08	5.2	7	SF		3	C		76		F
LEAR	05	0800	0801	0817	N06	E61	4554	08	9.9	17	SF		3	C		19		F
RAMY	05	1401	1401	1410	N07	E60	4554	08	10.1	9	SF		3	C		19		F
PALE	05	2024	2035U	2052	N08	E57	4554	08	10.1	28	SF		2	C		41		F
HOLL	05	2027	2037	2154	N07	E55	4554	08	10.0	87	SN		3	C		23		K
HOLL	05	2027	2119	2154	N07	E55	4554	08	10.0	87	SN		3	C		24		K
LEAR	06	0047	0047	0058	N07	E55	4554	08	10.2	11	SN		3	C		76		
PALE	06	0048	0048	0056	N07	E55	4554	08	10.2	8	SN		3	C		77		
LEAR	06	0430	0430	0434	N07	E53	4554	08	10.2	4	SF		3	C		39		
PEKG	06	0643	0652	0702D	S09	E31		08	8.6	19D	SF			P	0652	17	.2	D
RAMY	06	1859	1900	1905	N11	W74		08	1.2	6	SF		3	C		29		
HOLL	06	1859	1901	1908	N13	W70		08	1.5	9	SF		3	C		46		
PALE	06	2140	2141	2145	S16	W22	4552	08	5.2	5	SF		3	C		20		S
LEAR	07	0003	0006	0017	N08	E43	4554	08	10.2	14	SF		3	C		20		
RAMY	07	1827	1827	1840	N08	E32	4554	08	10.2	13	SF		3	C		28		F
ISTA	08	0822E		0827	S16	E90		08	15.2	5D	SN							DA
ISTA	08	0830E		0942D	S19	E90		08	15.2	72D	SN							DA
LEAR	10	0718	0718	0726	N11	W75	4558	08	4.7	8	SF		3	C		13		
LEAR	14	0651	0653	0736	N09	W55	4554	08	10.2	45	SF	C 1.0	3	C		84		F
RAMY	14	1225	1229	1255D	N08	W58	4554	08	10.2	30D	SF		3	C		69		
HOLL	14	1815	1822	1851	N08	W60	4554	08	10.3	36	SF		3	C		82		F
PEKG	14	2355E	2359	2406	N08	W64		08	10.2	11D	1N			C	2359	181	4.2	E
MITK	14	2356	2358	2413	N08	W65		08	10.1	17	1N			C	2358	130		
LEAR	14	2356	2359	0012	N10	W66	4554	08	10.0	16	1N		3	C		133		F
HOLL	15	0004E	0004	0016	N08	W65	4554	08	10.1	12D	1N		2	C		127		F
PALE	15	0038	0038	0042	N07	W64	4554	08	10.2	4	SF		3	C		36		
YUNN	15	0111	0116	0120D	N08	W66		08	10.1	9D	SF			P		47	1.0	
LEAR	15	0112	0116	0131	N09	W64	4554	08	10.2	19	SF		3	C		38		FE
PALE	15	0112	0117	0135	N07	W64	4554	08	10.3	23	SF		3	C		68		F
PEKG	15	0113	0118	0130	N08	W64		08	10.3	17	1N			C	0118	101	2.4	E
RAMY	15	1601	1602	1612	N07	W73	4554	08	10.2	11	SF		3	C		12		F
WEND	17	0733	0742	0802	N04	W67		08	12.3	29	SF			C	0742	63		
RAMY	17	1057E	1059	1114	N02	W71	4563	08	12.2	17D	SF		3	C		18		
RAMY	17	1319	1326	1329	N03	W75	4563	08	12.0	10	SF		3	C		22		
RAMY	17	1428	1437	1457D	N02	W74	4563	08	12.1	29D	SF		3	C		19		
HOLL	17	1610	1705	1726	N03	W76	4563	08	12.0	76	SF		3	C		19		
HOLL	17	2119	2122	2155	N04	W81	4563	08	11.8	36	SF		2	C		11		K
HOLL	17	2119	2139U	2155	N04	W81	4563	08	11.8	36	SF		2	C		18		K
HOLL	17	2226	2240U	2314	N04	W78	4563	08	12.1	48	SF		3	C		21		
YUNN	18	0053	0056	0200	N02	W90		08	11.3	67	1N			C		63		T
GOES	18	0543	0559	0608						25		C 1.0						
GOES	18	2239	2305	2327						48		M 1.1						
GOES	19	0200	0222	0234			4563			34		C 2.1						
MITK	19	0203	0207	0219	N05	W90		08	12.4	16	1N			C	0207	100		
GOES	19	0339	0347	0406						27		C 1.7						
YUNN	22	0805E	0806	0811	N09	E89		08	29.0	6D	SF			P		16		G
RAMY	24	1159	1208	1218	S14	W00	4565	08	24.5	19	SN		3	C		28		FS
RAMY	24	1257	1300	1311	S14	W01	4565	08	24.5	14	SF		3	C		26		F
RAMY	24	1356	1356	1404	S13	W02	4565	08	24.4	8	SF		3	C		29		F
RAMY	24	1445	1452	1510	S13	W02	4565	08	24.5	25	SB		3	C		37		F
HOLL	24	1456	1456	1512	S13	W03	4565	08	24.4	16	SN		3	C		42		F
RAMY	24	1626	1627	1714	S13	W04	4565	08	24.4	48	SF		3	C		37		F
HOLL	24	1657	1657	1735	S14	W05	4565	08	24.3	38	SF		3	C		38		F
PALE	24	1739	1739	1752	S13	W05	4565	08	24.4	13	SN		3	C		83		F
RAMY	24	1739	1739	1750	S13	W05	4565	08	24.4	11	SN		3	C		34		FS
HOLL	24	1739	1739	1744	S13	W05	4565	08	24.4	5	SN		3	C		42		F
PALE	24	1850	1851	1855	S14	W06	4565	08	24.3	5	SF		3	C		24		

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

AUGUST 1984

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	24	1850	1850	1904	S14	W06	4565	08	24.3	14	SF		3	C		32		F
PALE	24	1906	1915	1922	S14	W05	4565	08	24.4	16	SF		3	C		52		
RAMY	24	1912	1914	1927	S14	W06	4565	08	24.3	15	SF		3	C		41		F
RAMY	24	2054	2105	2120	S14	W07	4565	08	24.3	26	SB	C 1.1	3	C		75		F
HOLL	24	2054	2105	2117	S13	W07	4565	08	24.3	23	SB	C 1.1	3	C		81		FE
PALE	24	2056	2103	2117	S13	W06	4565	08	24.4	21	SN	C 1.1	3	C		128		F
HOLL	24	2219	2226	2243	S13	W08	4565	08	24.3	24	SF		3	C		63		F
LEAR	25	0058	0102	0123	S13	W10	4565	08	24.3	25	SF		3	C		55		F
PEKG	25	0205	0220	0250	S14	W10		08	24.3	45	SN			C	0220	147	1.7	E
MITK	25	0207	0209	0242	S14	W10		08	24.3	35	SN			C	0209			E
LEAR	25	0207	0207	0241	S13	W10	4565	08	24.3	34	SF		3	C		55		F
PALE	25	0207	0227	0257	S14	W09	4565	08	24.4	50	SF		3	C		44		
LEAR	25	0412	0416	0438	S13	W11	4565	08	24.3	26	SF		3	C		47		F
LEAR	25	0429	0433	0445	S06	E75		08	30.8	16	SF		3	C		26		F
RAMY	25	1311	1313	1322	S06	E72		08	30.9	11	SN		3	C		16		
RAMY	25	1551	1553	1601	S06	E71	4567	08	31.0	10	SF		3	C		18		
HOLL	25	1551E	1553U	1601	S08	E72	4567	08	31.1	10D	SN		2	C		34		
HOLL	25	2127	2135	2146	S14	W70	4566	08	20.6	19	SF		3	C		13		
LEAR	25	2318	2318	2327	S13	W72	4566	08	20.5	9	SF		3	C		13		
LEAR	25	2338	2339	2353	S14	W73	4566	08	20.5	15	SF		3	C		13		
LEAR	25	2339	2345	2353	S06	E65	4567	08	30.9	14	SF		3	C		16		F
LEAR	25	2358	0013	0017	S05	E64	4567	08	30.8	19	SF		3	C		25		
LEAR	26	0115	0115	0133	S05	E64	4567	08	30.8	18	SN		3	C		17		F
LEAR	26	0136	0139	0146	S05	E64	4567	08	30.9	10	SF		3	C		16		F
LEAR	26	0205	0208	0241	S06	E63	4567	08	30.8	36	SN		3	C		29		K
LEAR	26	0205	0216	0241	S06	E63	4567	08	30.8	36	SB	C 3.5	3	C		52		K
PALE	26	0213E	0215	0219D	S05	E65	4567	08	31.0	6D	SB	C 3.5	3	C		84		
LEAR	26	0329	0336	0348	S06	E64	4567	08	30.9	19	SN		3	C		20		HK
LEAR	26	0329	0342	0348	S06	E64	4567	08	30.9	19	SN		3	C		19		K
PEKG	26	0335E	0335	0340	S06	E66		08	31.1	5D	SF			P	0335	63	1.5	D
LEAR	26	0351	0401	0425	S06	E64	4567	08	31.0	34	SN		3	C		21		K
LEAR	26	0351	0406	0425	S06	E64	4567	08	31.0	34	SN		3	C		23		HK
LEAR	26	0409	0409	0411	N12	E68		08	31.3	2	1F		3	C		138		
LEAR	26	0450	0450	0458	S06	E64	4567	08	31.0	8	SN		3	C		21		
LEAR	26	0511	0512	0520	S05	E63	4567	08	30.9	9	SF		3	C		18		
PEKG	26	0520	0530	0530D	S08	E64		08	31.0	10D	2N	C 2.0		P	0530	273	6.4	D
LEAR	26	0524	0527	0543	S06	E62	4567	08	30.9	19	SN	C 2.0	3	C		52		F
LEAR	26	0611	0620	0628	S07	E63	4567	08	31.0	17	SF		3	C		16		F
LEAR	26	0638	0641	0644	S06	E64	4567	08	31.1	6	SN		3	C		18		FE
LEAR	26	0658	0700	0751	S05	E62	4567	08	30.9	53	SN		3	C		19		K
LEAR	26	0658	0720	0751	S05	E62	4567	08	30.9	53	SN		3	C		33		FEK
LEAR	26	0756	0803	0826	S06	E60	4567	08	30.8	30	SB		3	C		32		FK
LEAR	26	0756	0818	0826	S06	E60	4567	08	30.8	30	SB		3	C		17		K
LEAR	26	0840	0846	0915	S05	E64	4567	08	31.1	35	SB		3	C		80		K
LEAR	26	0840	0850	0915	S05	E64	4567	08	31.1	35	SB	C 2.0	3	C		43		FK
LEAR	26	0928	0932	0937	S06	E57	4567	08	30.7	9	SN		3	C		25		
RAMY	26	1058E	1159	1208	S05	E58	4567	08	30.8	70D	SN		3	C		35		
RAMY	26	1217	1225	1339	S05	E58	4567	08	30.9	82	SF		3	C		35		
RAMY	26	1337	1342	1429	S15	W31	4565	08	24.2	52	SF		3	C		31		
HOLL	26	1524	1534	1549D	S06	E57	4567	08	30.9	25D	SF		3	C		41		F
HOLL	26	1537	1544	1549D	S13	W33	4565	08	24.2	12D	SN		3	C		36		
RAMY	26	1544	1548	1554	S13	W33	4565	08	24.2	10	SF		3	C		21		
HOLL	26	1719	1720	1724	S06	E57	4567	08	31.0	5	SF		3	C		45		
HOLL	26	2014	2016	2020	S08	E55	4567	08	31.0	6	SF		3	C		33		
HOLL	26	2032	2033	2037	S12	W36	4565	08	24.1	5	SF		3	C		25		
HOLL	27	0026	0027	0035	S08	E52	4567	08	30.9	9	SF		3	C		18		
LEAR	27	0143	0144	0151	S07	E51	4567	08	30.9	8	SF		3	C		63		
LEAR	27	0303	0314	0329	S12	W40	4565	08	24.1	26	SF		3	C		34		F
RAMY	27	1214	1215	1221	S13	W43	4565	08	24.3	7	SF		3	C		29		
HOLL	27	1349	1359	1417	S12	W46	4565	08	24.1	28	SF		3	C		44		F
RAMY	27	1428	1429	1435	S06	E44	4567	08	30.9	7	SF		3	C		26		
RAMY	27	1523	1523	1530	S13	W44	4565	08	24.3	7	SF		3	C		24		
HOLL	27	1523	1524	1532	S13	W46	4565	08	24.2	9	SF		3	C		17		
HOLL	27	1909	1913	1934	S07	E42	4567	08	30.9	25	SN		3	C		26		K
HOLL	27	1909	1921	1934	S07	E42	4567	08	30.9	25	SN		3	C		51		FK
PALE	27	1918	1921	1932	S06	E41	4567	08	30.9	14	SF		3	C		36		
HOLL	27	2001	2004	2010	S07	E41	4567	08	30.9	9	SF		3	C		29		
HOLL	27	2020	2031	2054	S07	E40	4567	08	30.8	34	SF		3	C		37		

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

AUGUST 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
GOES	27	2116	2129	2133						17		C 1.0						
HOLL	27	2204	2204	2211	S06	E39	4567	08	30.9	7	SN		3	C		20		
LEAR	28	0047	0049	0058	S06	E38	4567	08	30.9	11	SF		3	C		24		
LEAR	28	0645	0656	0708	S04	E32	4567	08	30.7	23	SF		3	C		55		F
LEAR	28	0742	0742	0746	S13	W55	4565	08	24.2	4	SF		3	C		20		F
HOLL	28	1350	1351	1355	S07	E31	4567	08	30.9	5	SF		3	C		33		
HOLL	28	1949	2002	2036	S14	W63	4565	08	24.1	47	SN		3	C		60		FH
HOLL	28	1952	1957	2009	S07	E27	4567	08	30.9	17	SF		3	C		21		
HOLL	28	2039	2040	2043	S14	W63	4565	08	24.1	4	SF		3	C		16		
HOLL	28	2105	2106	2119	S06	E28	4567	08	31.0	14	SF		3	C		24		F
HOLL	28	2120	2121	2131	S07	E27	4567	08	30.9	11	SF		3	C		24		F
HOLL	28	2145	2153	2213	S14	W62	4565	08	24.2	28	SF		3	C		39		F
HOLL	28	2358	0001	0017	S07	E25	4567	08	30.9	19	SF		3	C		24		F
PALE	29	0040E	0044U	0053	S06	E24	4567	08	30.8	13D	SF		3	C		34		F
BUCA	29	0820	0835	0855	S05	E20		08	30.8	35	SN			C	0835	64	.7	E
RAMY	29	1304	1304	1312	S07	E19	4567	08	31.0	8	SF		3	C		28		
HOLL	30	1751	1755	1800	S06	E02	4567	08	30.9	9	SF		3	C		22		
LEAR	31	0137	0137	0150	S08	W03	4567	08	30.8	13	SF		3	C		46		UF
MITK	31	0223	0224	0232	S07	W19		08	29.7	9	SN			C	0225			H
LEAR	31	0224	0228	0232	S05	W08	4567	08	30.5	8	SF		3	C		39		H
HOLL	31	1931	1940	1950	S07	W13	4567	08	30.8	19	SF		3	C		43		

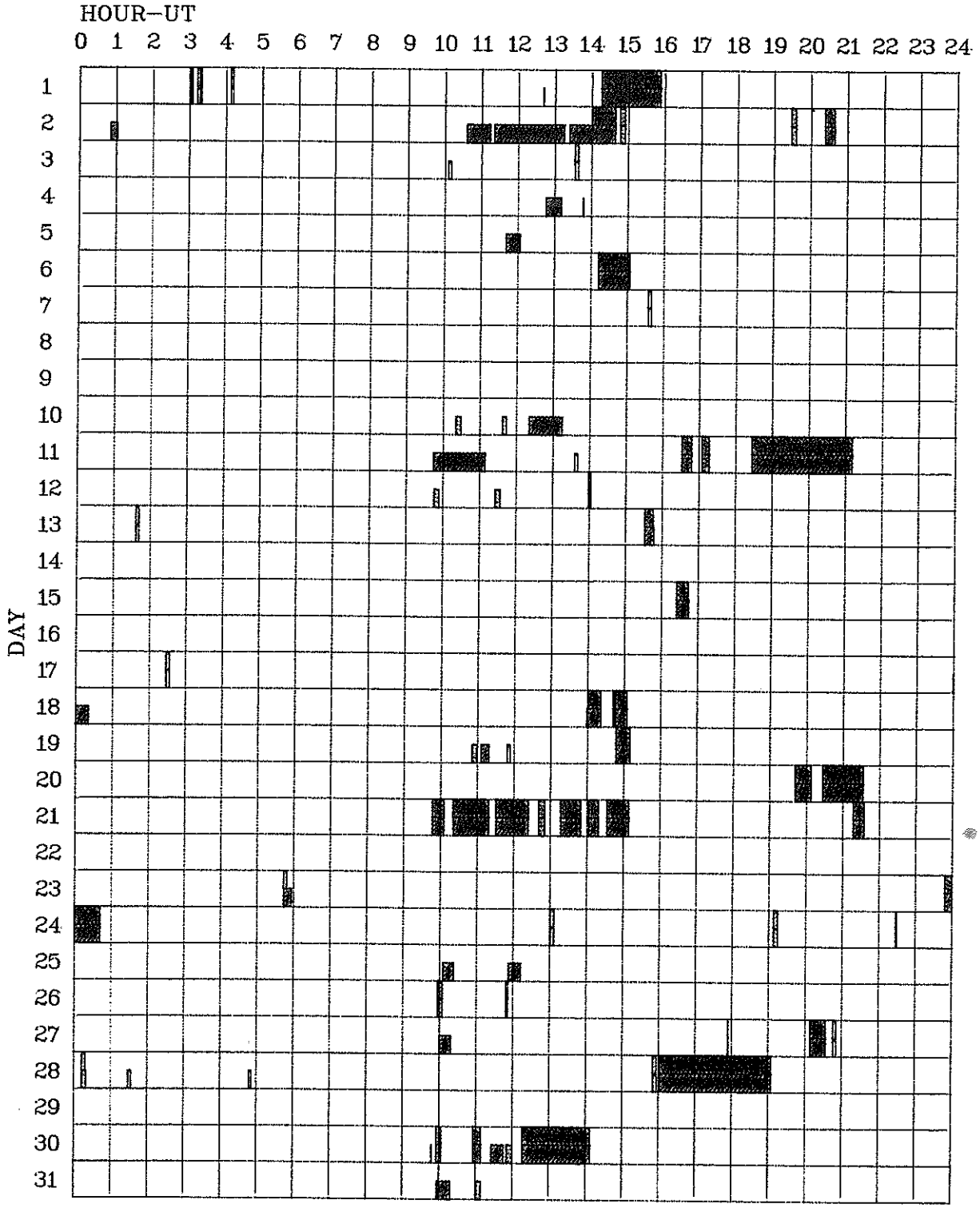
"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of Ca II.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

OCTOBER 1981



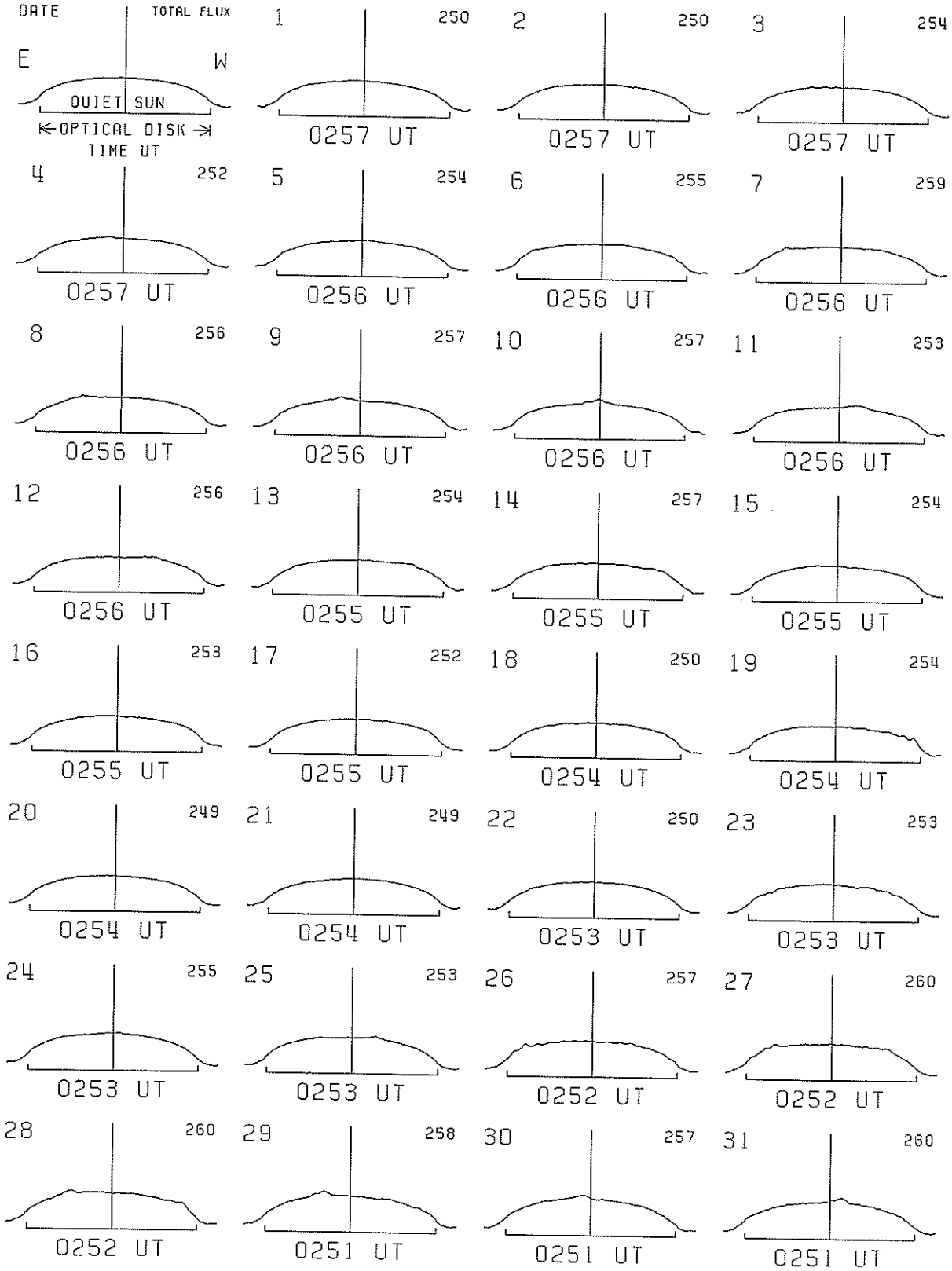
Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times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

Bucharest	Istanbul	Mitaka	Peking	Wendelstein
Holloman	Learmonth	Palehau	Ramey	Yunnan

EAST-WEST SOLAR SCANS
AUGUST 1984

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



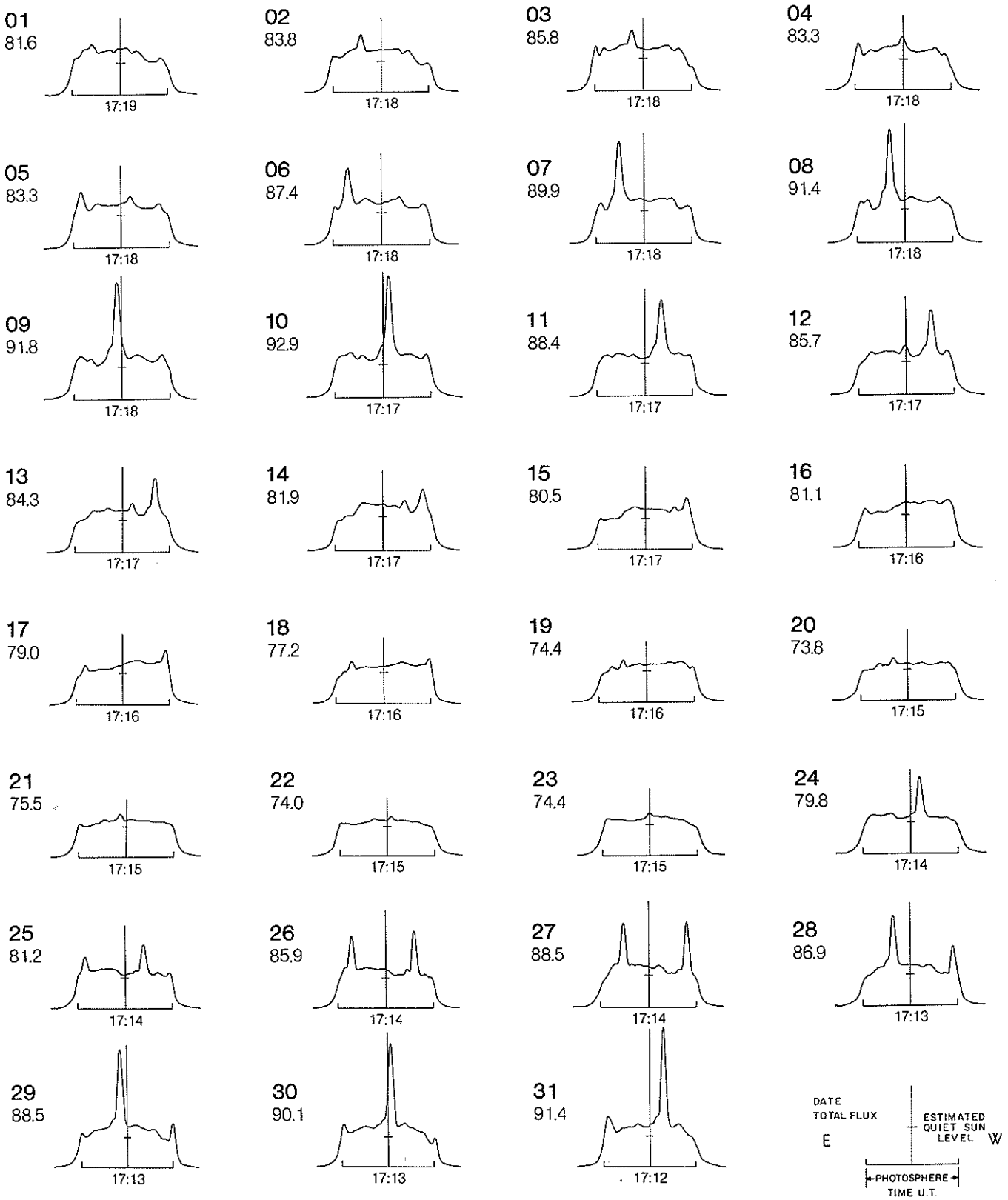
18
Aug 84

EAST-WEST SOLAR SCANS

AUGUST 1984

ALGONQUIN RADIO OBSERVATORY
CANADA

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



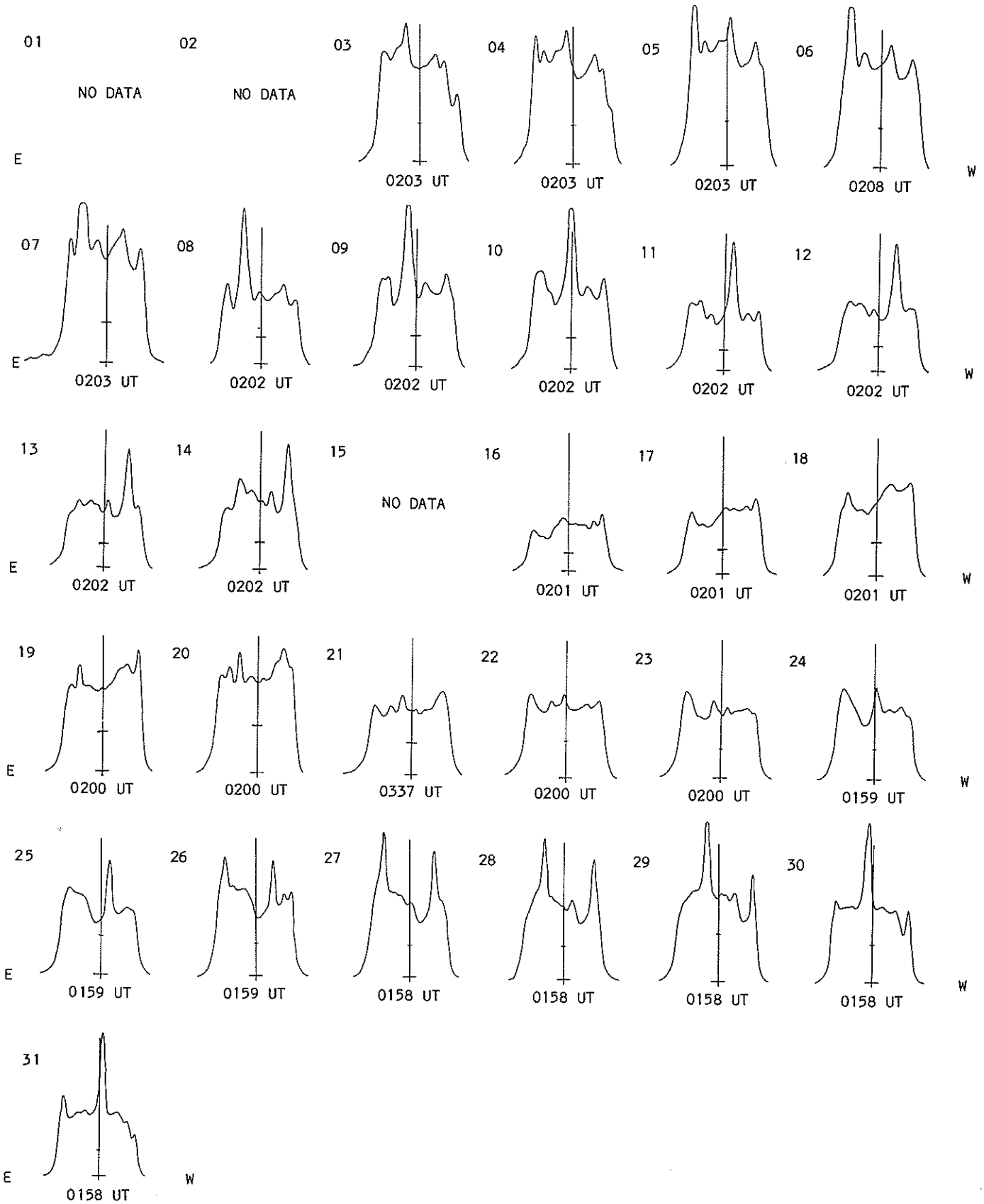
E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

AUGUST 1984

Estimated Quiet Sun Level
Cold Sky Level

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



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

Fleurs, Australia — AUGUST 1984 — 43 cm

Estimated Quiet Sun Level
Cold Sky Level

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

01	02	03	04	05	06
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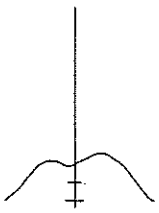
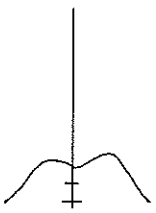
NO DATA	NO DATA	NO DATA	NO DATA	 0202 UT	 0202 UT
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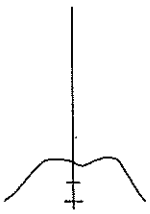 0202 UT	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
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25	26	27	28	29	30
NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
31					
NO DATA					

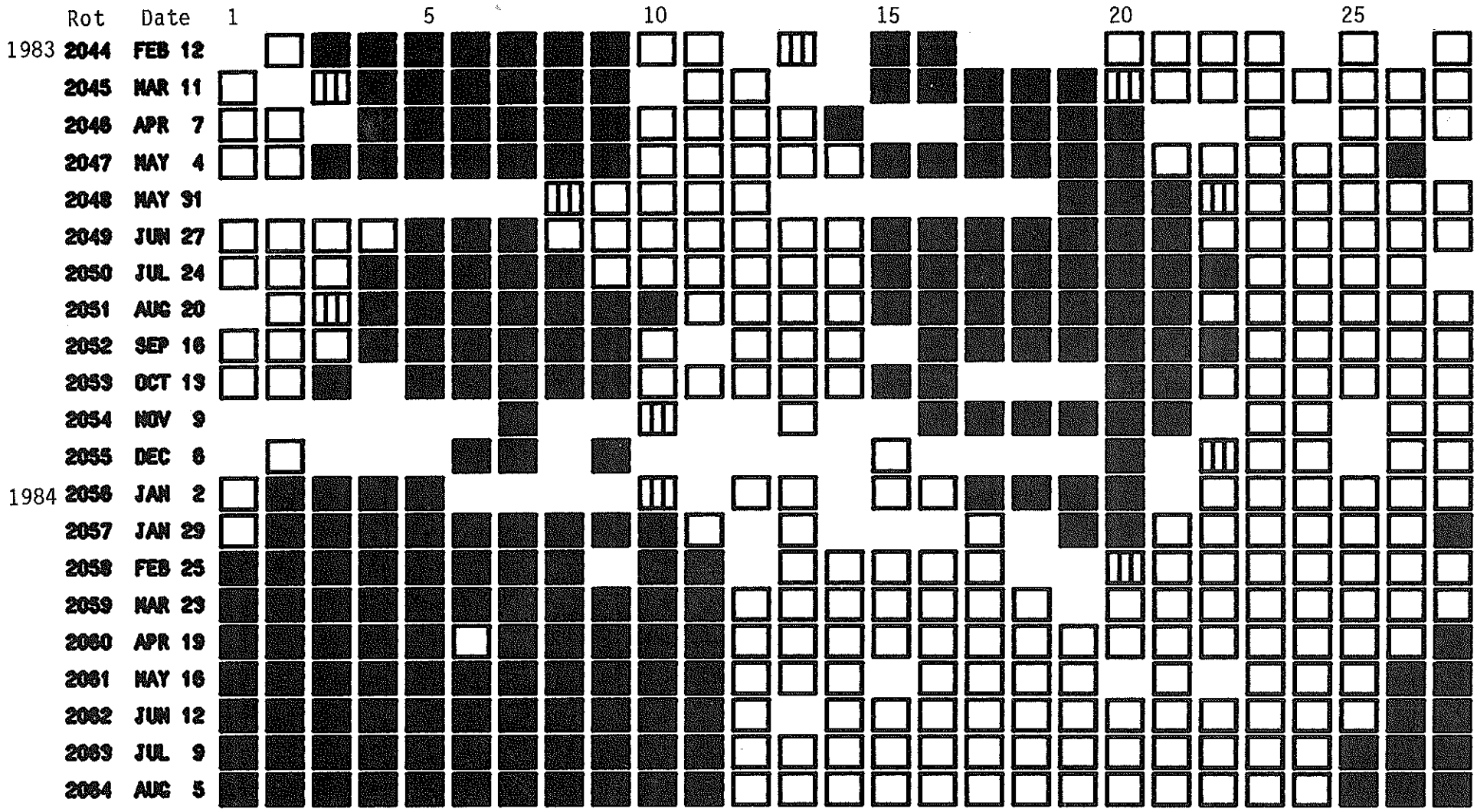
E ... W

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

AUGUST 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
03	2800	OTTA	1	S	2210.0	2211.0	2.0	1.6	.8		
	2800	OTTA	21	GRF	2210.0	2215.0	60.0	1.2	.6		
04	8800	SGMR	47	GB	2306.6	2308.8	5.4	54.0			QL=1 ST=3 TYP=5
06	2695	PENT	1	S	0046.5	0047.7	1.5	1.6	1.2		
07	2800	OTTA	240	R	2135.0	2215.0	40.0	1.8	.9		
08	2800	OTTA	32	ABS	1455.0	1520.0	55.0	-1.8	-.9		
09	2800	OTTA	1	S	1955.0	1957.0	8.0	1.2	.6		
13	2800	OTTA	240	R	2035.0	2110.0	35.0	2.2	1.1		
14	2800	OTTA	21	GRF	1815.0	1835.0	75.0	1.6	.8		
	2800	OTTA	4	S/F	1818.0	1818.5	1.0	11.2	3.0		
	2695	PENT	240	AR	2355.0	2358.0	3.0	1.4	.7		
	2695	PENT	1	S	2355.5	2356.0	1.5	1.6	.6		
18	2695	PENT	21	GRF	2240.0	2320.0	190.0D	5.6			
	2695	PENT	1	S	2300.0	2300.5	2.0	8.4			
22	2800	OTTA	240	R	2125.0	2200.0	35.0	1.4	.7		
24	2800	OTTA	21	GRF	1435.0	1450.0	45.0	2.0	1.0		
	2800	OTTA	1	S	1443.0	1444.5	6.0	4.6	2.0		
	2800	OTTA	4	S/F	1451.0	1452.0	3.0	10.6	4.8		
	2695	SGMR	8	S	1451.5	1452.1	1.6	13.0			QL=6 ST=3 TYP=3
	2695	ATHN	8	S	1451.5	1452.1	1.5	6.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1620.0	1655.0	35.0	1.6	.8		
	2800	OTTA	4	S/F	1738.5	1739.1	1.0	11.2	3.8		
	2800	OTTA	29	PBI	1739.5	1739.5	25.0	1.8	1.0		
	2800	OTTA	21	GRF	2050.0	2105.0	50.0	4.6	2.0		
	2800	OTTA	2	S/F	2100.0	2102.0	4.0	3.6	1.8		
26	8800	LEAR	20	GRF	0211.8	0216.5	13.5	4.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	2205.0	2230.0	115.0	2.2	1.1		
27	2800	OTTA	20	GRF	1905.0	1925.0	105.0	1.8	1.0		
28	2800	OTTA	1	S	1521.0	1523.0	7.0	1.0	.5		
	2800	OTTA	1	S	1957.0	1959.0	8.0	.8			
	2800	OTTA	20	GRF	2140.0	2200.0	50.0	1.6	1.0		
29	2800	OTTA	20	GRF	1135.0	1235.0	145.0	2.0	1.0		
	2695	PENT	240	R	2230.0	2305.0	35.0	1.6	.8		
30	2800	OTTA	20	GRF	1505.0	1510.0	15.0	1.6	.8		
	2800	OTTA	20	GRF	1535.0	1545.0	25.0	1.0	.5		
	2800	OTTA	20	GRF	1740.0	1750.0	20.0	1.0	.5		
	2695	PENT	20	GRF	1935.0	2000.0	85.0	1.6	.8		
	2695	PENT	21	GRF	2320.0	2330.0	30.0	1.6	.8		
	2695	PENT	1	S	2324.0	2325.0	2.0	1.6	.8		
31	2695	LEAR	8	S	0224.1	0224.5	.5	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1340.0	1520.0	145.0	1.8			
	2800	OTTA	20	GRF	1655.0	1700.0	35.0	1.4	.7		

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.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	Sep 83	Oct	Nov	Dec	Jan 84	Feb	Mar	Apr	May	Jun	Jul	Aug
1	41	-51	-63	54	41	-41	-79	-34	56	24	38	17
2	35	-104	-27	79	11	-63	-66	-23	53	27	44	-2
3	-3	-117	32	.	-2	-62	-55	9	40	42	33	-35
4	-59	-100	75	56	-16	-43	.	29	36	.	62	-40
5	-99	-68	70	24	-29	-19	-31	34	24	66	41	-44
6	109	-37	57	.	-50	-8	-2	31	15	.	5	-37
7	109	-9	35	3	.	-4	.	38	15	65	-28	-50
8	-89	38	23	.	.	16	62	41	30	53	-41	-82
9	-42	55	.	.	.	.	58	25	7	24	-62	-83
10	10	46	.	.	.	61	45	.	19	-18	-56	-73
11	33	25	.	-59	-1	.	47	17	47	-37	-66	-84
12	52	19	.	-50	.	.	35	31	42	-47	-70	-91
13	60	10	.	.	47	.	.	46	32	-57	-96	-71
14	58	4	.	-9	56	15	.	56	20	-63	-91	-67
15	42	-7	-53	.	.	.	-1	56	-5	-61	-102	-13
16	29	.	.	.	37	-14	19	52	-39	-75	-93	6
17	20	-47	.	.	20	-23	55	28	-62	-73	-59	11
18	5	-68	0	.	-3	3	76	21	-57	-89	-39	21
19	-18	-62	.	.	-14	29	82	-40	-58	-59	-11	18
20	-37	-54	.	29	-28	39	87	-53	-62	-66	14	19
21	-63	-20	66	.	-34	31	57	-52	-59	-52	9	21
22	-66	10	.	.	.	36	4	-18	-66	-31	31	26
23	-54	25	.	.	24	19	-33	-14	-68	11	7	39
24	-17	57	-52	.	43	-33	-47	9	-79	.	30	47
25	12	72	-78	-6	33	-59	-59	-17	-76	37	22	52
26	.	48	-94	.	25	-74	-57	-34	-42	33	26	31
27	52	-9	-82	1	23	-72	-51	-49	13	16	53	25
28	71	-58	-59	40	21	-74	-49	-40	57	26	43	11
29	54	.	-20	60	10	-78	-20	-15	66	15	54	-4
30	.	.	.	.	-13		-35	28	.	32	36	-13
31		.		47	-22		-21		38		31	-36

Dot symbol indicates no data available for the day.

BOULDER GEOMAGNETIC SUBSTORM LOG

AUGUST 1984

DATE	ONSET	DIR	COMMENTS
08/01			Magstorm conditions through 2030 UT.
08/02			Field intermittently active.
	0245	East	
	0510	Center	
	0845	West	
	1120		Localized substorm College to Anchorage.
	1225	West	
	1405	West	
08/03			Field unsettled all day.
	0550	West	
	0940	West	
	1215		Localized substorm at College.
	1250		Localized substorm at College.
	1635		Localized substorm Arctic Village to Inuvik.
08/04			Field intermittently unsettled.
	0545	West	Weak substorm.
	0725	West	
	1025	West	Moderate substorm, several injections with recovery near 1500 UT.
08/05			Field intermittently unsettled.
	0445	East	
	0815	West	Weak substorm.
08/06			Field slightly unsettled.
	1040	West	
	1525		Localized, slow onset substorm Norman Wells to Antarctic Village to Inuvik. Field slightly unsettled.
08/07			
	0940	West	Weak substorm.
08/08			Field unsettled all day.
	0910	West	Weak substorm.
	1120	West	
08/09			Field unsettled all day.
	0825	West	
	1125	West	
	1255	West	Initial onset at College, several injections with recovery near 1530 UT.
08/10			Field intermittently unsettled.
	0910		Substorm confined to oval stations Lynn Lake to Norman Wells.
	2000		Localized substorm Cape Parry to Sachs Harbour.
08/11			Field intermittently unsettled.
08/11	0635		Initial onset at Lynn Lake, numerous minor injections with recovery near 1000 UT.
	1015		Localized substorm College to Talkeetna to Anchorage with recovery near 1230 UT.
08/12			Field intermittently unsettled.
	0125	East	Boulder in partial ring current sector.
	0835	West	
	1205		Localized substorm vicinity College.
08/13			Field slightly unsettled.
	0325	East	
08/14			Field unsettled after 1100 UT with numerous minor injections.
08/15			Field unsettled all day.
	0215	East	
	0505	West	
	1050	West	
	1215		Localized substorm vicinity College.
	1330	West	
	1505	West	
08/16			Field unsettled all day.
	0415	East	
	0920	West	Weak substorm.
	1125	West	Initial onset at College, several injections with recovery near 1315 UT.
08/17			Field intermittently unsettled.
	0705	West	Weak substorm.
	0755	West	Weak substorm.
08/18			Field slightly unsettled.
	1100	West	Weak substorm.
08/19			Field unsettled after 0900 UT.
	1100		Localized substorm Inuvik to Norman Wells.
	1300	West	Weak substorm.
	1505		Localized weak substorm vicinity College.
	1615		Localized weak substorm vicinity College.
	1650	West	Initial onset at Inuvik.
08/20			Field intermittently unsettled.
	0605	West	Weak substorm. Initial onset at College.
08/21			Quiet day.
08/22			Field slightly unsettled.
	1140		Weak substorm.

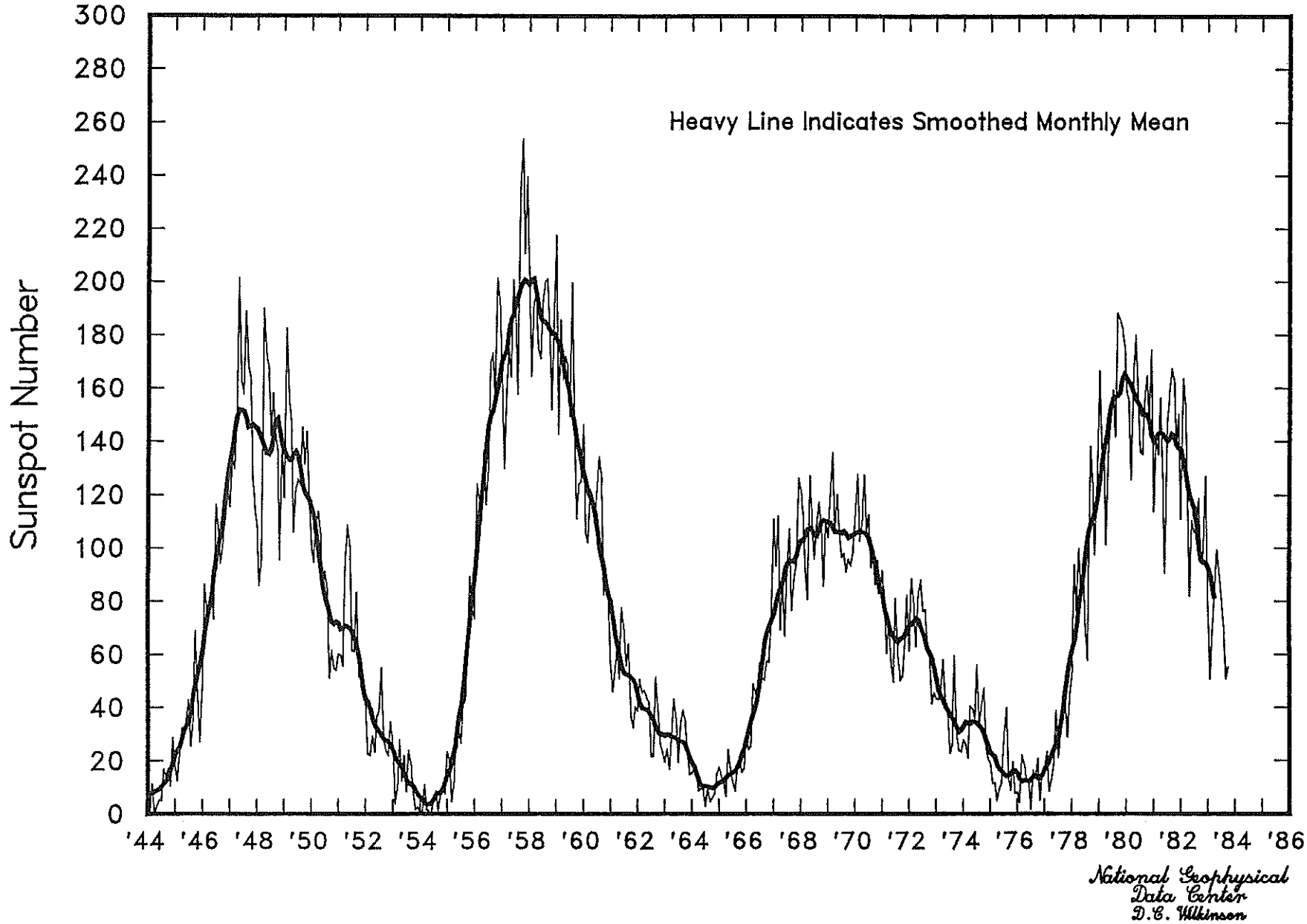
B O U L D E R G E O M A G N E T I C S U B S T O R M L O G

AUGUST 1984

DATE	ONSET	DIR	COMMENTS
08/23			Field unsettled after 1200 UT.
	1240	West	
08/24			Field intermittently active.
	0735	West	Initial onset at College, several injections with recovery near 1045 UT.
	1225	West	Initial onset at College, numerous injections with recovery near 1715 UT.
08/25			Field intermittently unsettled.
	0505	Center	
	0905	West	Moderate substorm, initial onset at College.
	1210		Weak substorm, College to Anchorage.
08/26			Field intermittently unsettled.
	0500	Center	Moderate substorm, slow onset with several injections and recovery near 0700 UT.
08/27			Field active after 1100 UT.
	0550	West	Weak substorm.
	1110	West	
	1135	West	Injection into existing substorm.
	1525	West	Weak substorm.
08/27	1610	West	
	2140		Weak positive impulse H-component all mid/low latitude stations.
08/28			Field unsettled all day.
	0640	Center	Moderate substorm.
	0805	West	Moderate to strong substorm.
	1345		Weak substorm localized College to Anchorage.
08/29			Field intermittently active.
	0320	East	Weak substorm.
	0625	East	Weak substorm.
	0925	West	Moderate substorm.
	1240	West	Moderate substorm.
08/30			Field active 0330-1800 UT.
	0345	East	Weak substorm.
	0445	West	Weak substorm.
	0720	West	
	0930	West	
	1135	West	Several injections with recovery near 1430 UT.
	1615	West	
08/31			Field intermittently unsettled.
	0120	East	Weak substorm, slow onset.
	0655	Center	Weak substorm, several minor injections with recovery near 0830 UT.
	1355	West	Weak substorm, slow onset.

NOTE: For the forseeable future, the substorm log will no longer be included in this publication.

MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – October 1983



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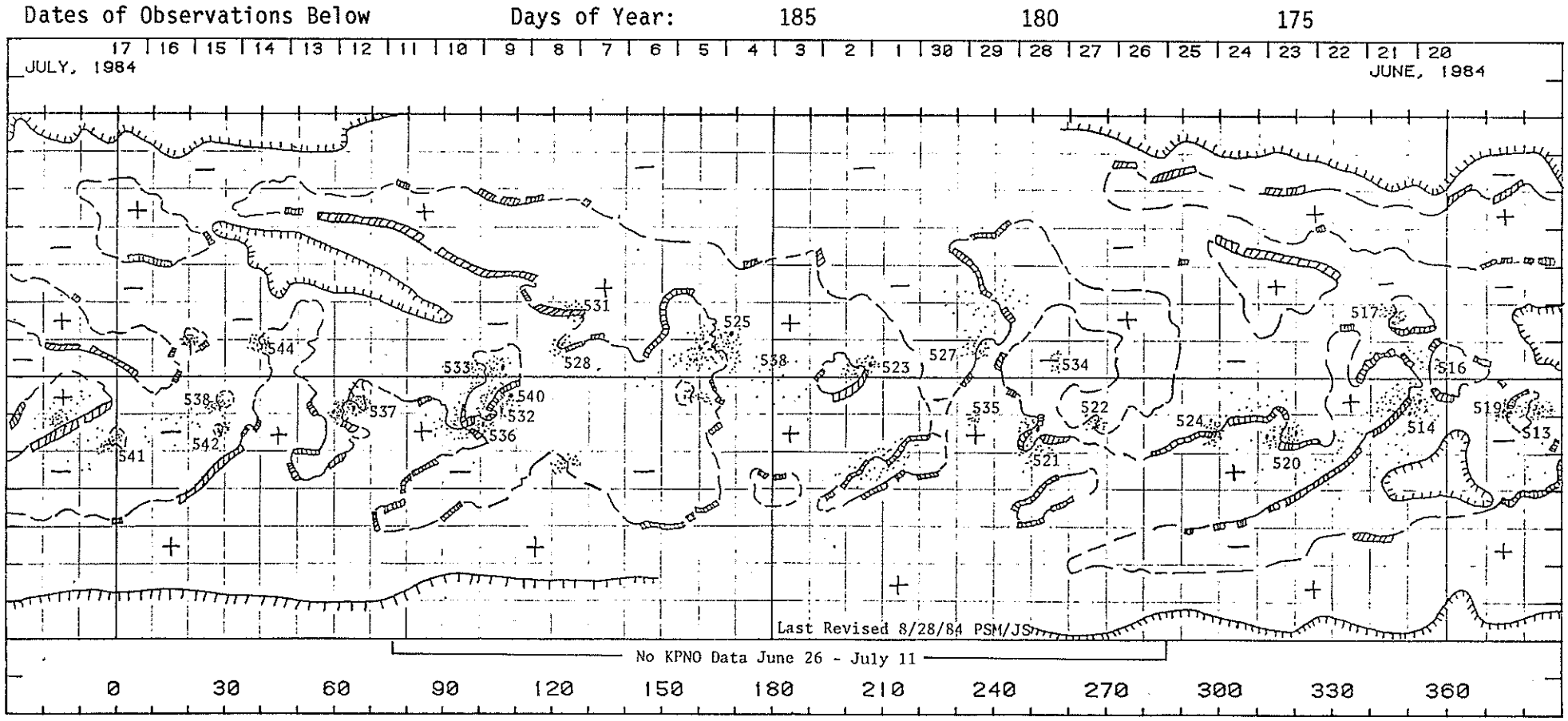
PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1750
(June 20 to July 17, 1984)

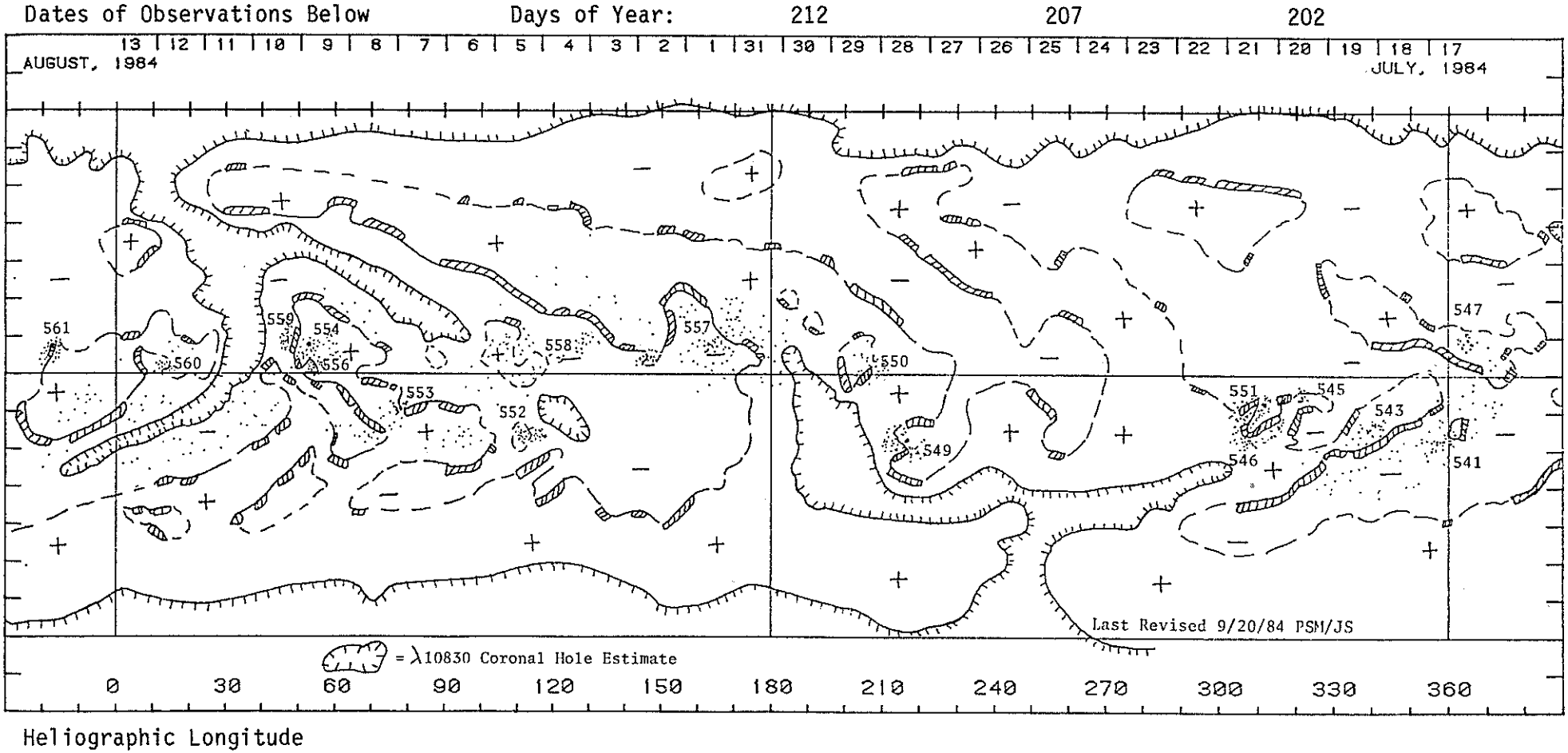


Heliographic Longitude

PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1751

(July 17 to August 13, 1984)



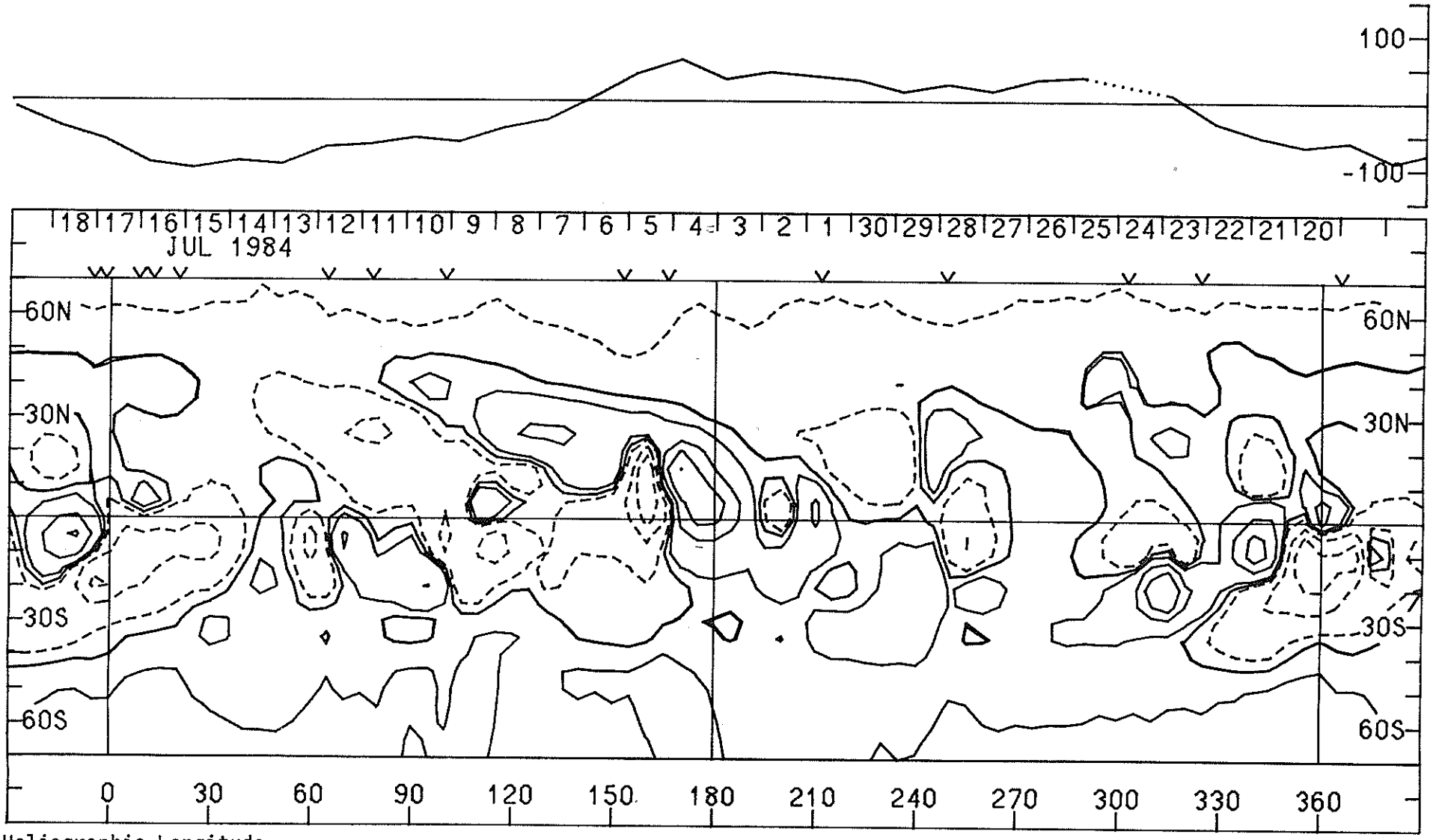
29 Jul 84

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1750
(June 20 to July 17, 1984)

Stanford Solar Observatory

0, ±100, 500, 1000, 2000 microTesla



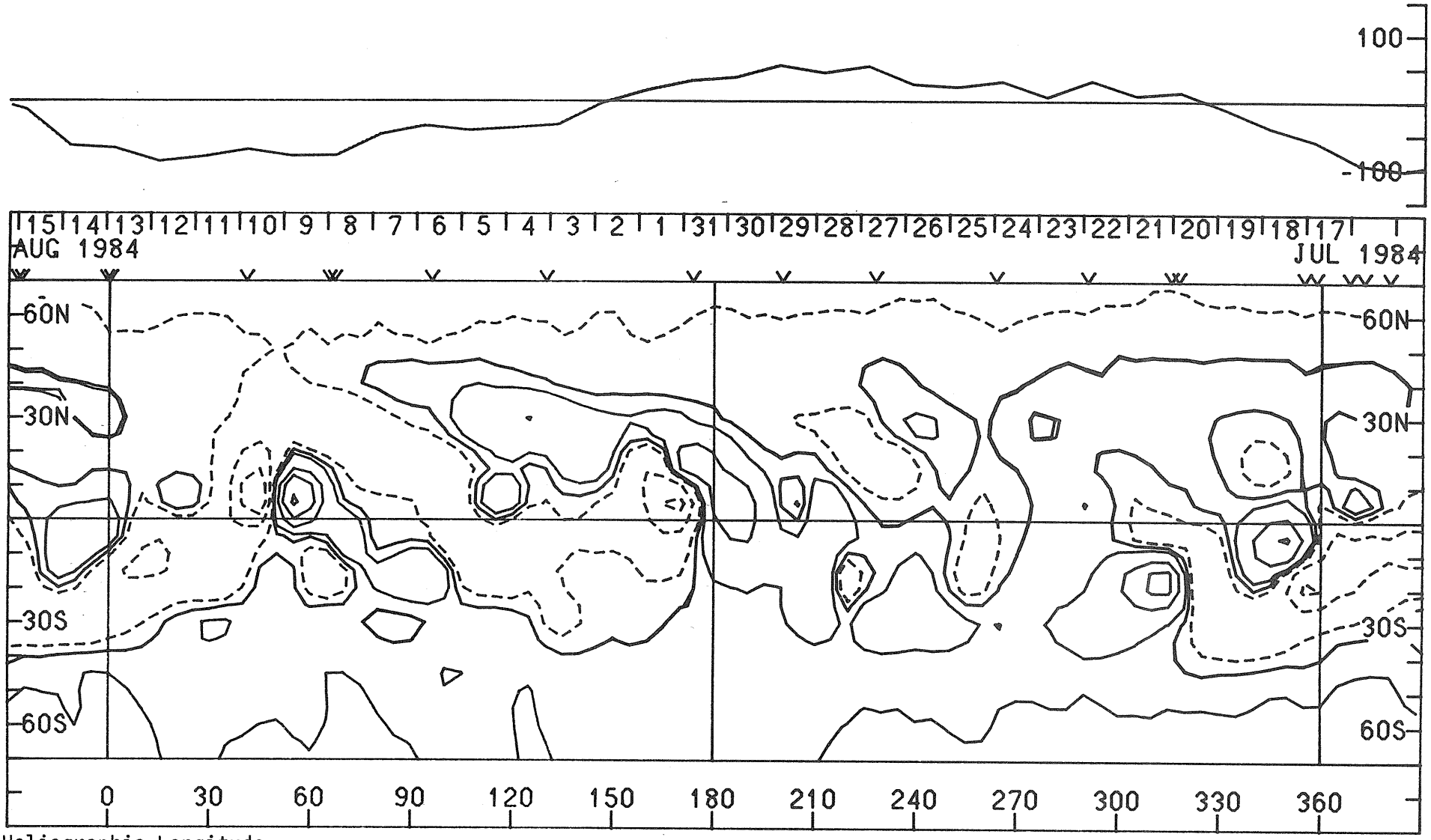
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1751
(July 17 to August 13, 1984)

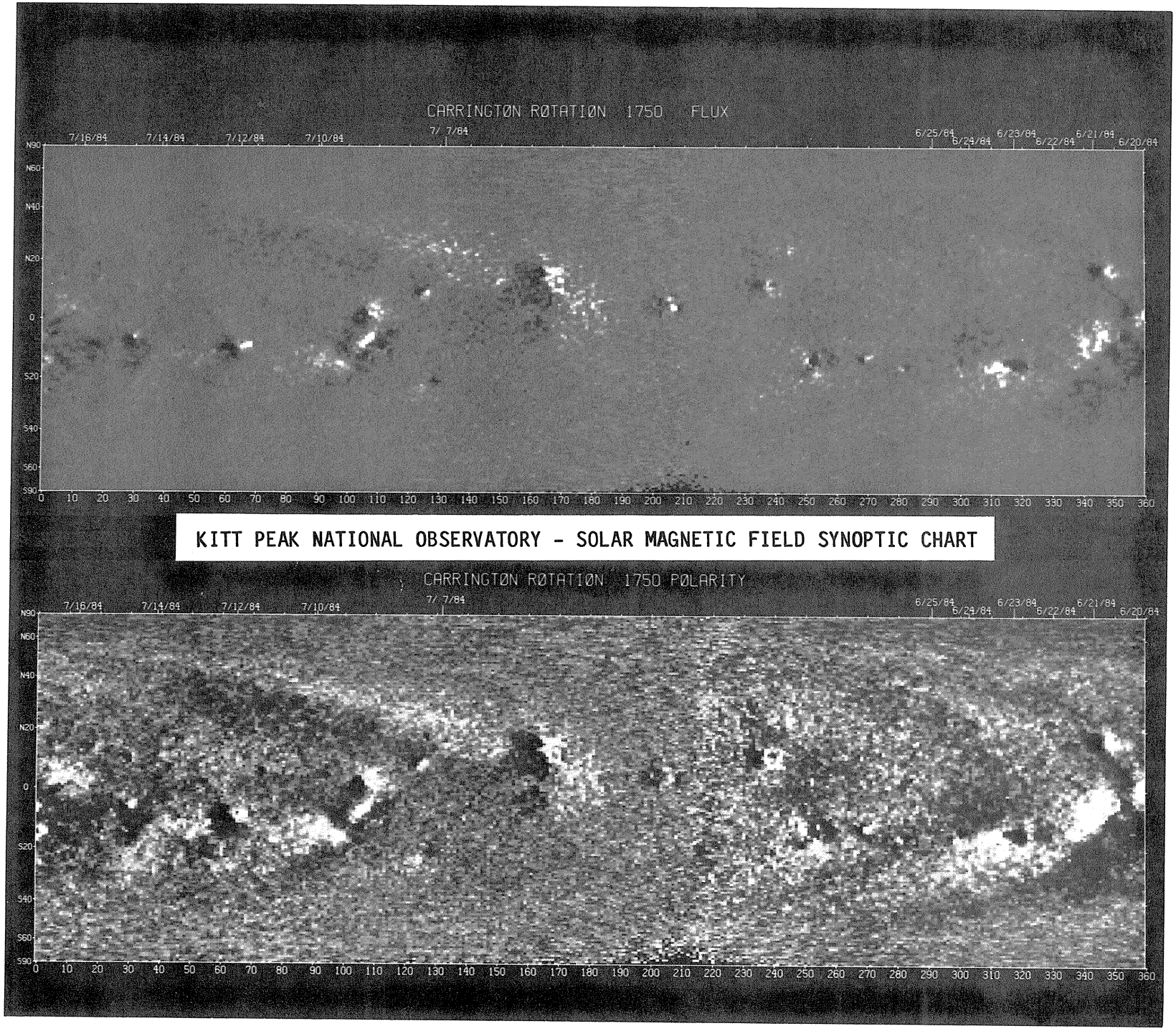
Stanford Solar Observatory

0, ±100, 500, 1000, 2000 microTesla



Heliographic Longitude

31
Jul 84


CARRINGTØN RØTATIØN 1750 FLUX
7/16/84 7/14/84 7/12/84 7/10/84 7/ 7/84 6/25/84 6/24/84 6/23/84 6/22/84 6/21/84 6/20/84
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 1750 PØLARITY
7/16/84 7/14/84 7/12/84 7/10/84 7/ 7/84 6/25/84 6/24/84 6/23/84 6/22/84 6/21/84 6/20/84
N90 N60 N40 N20 0 S20 S40 S60 S90
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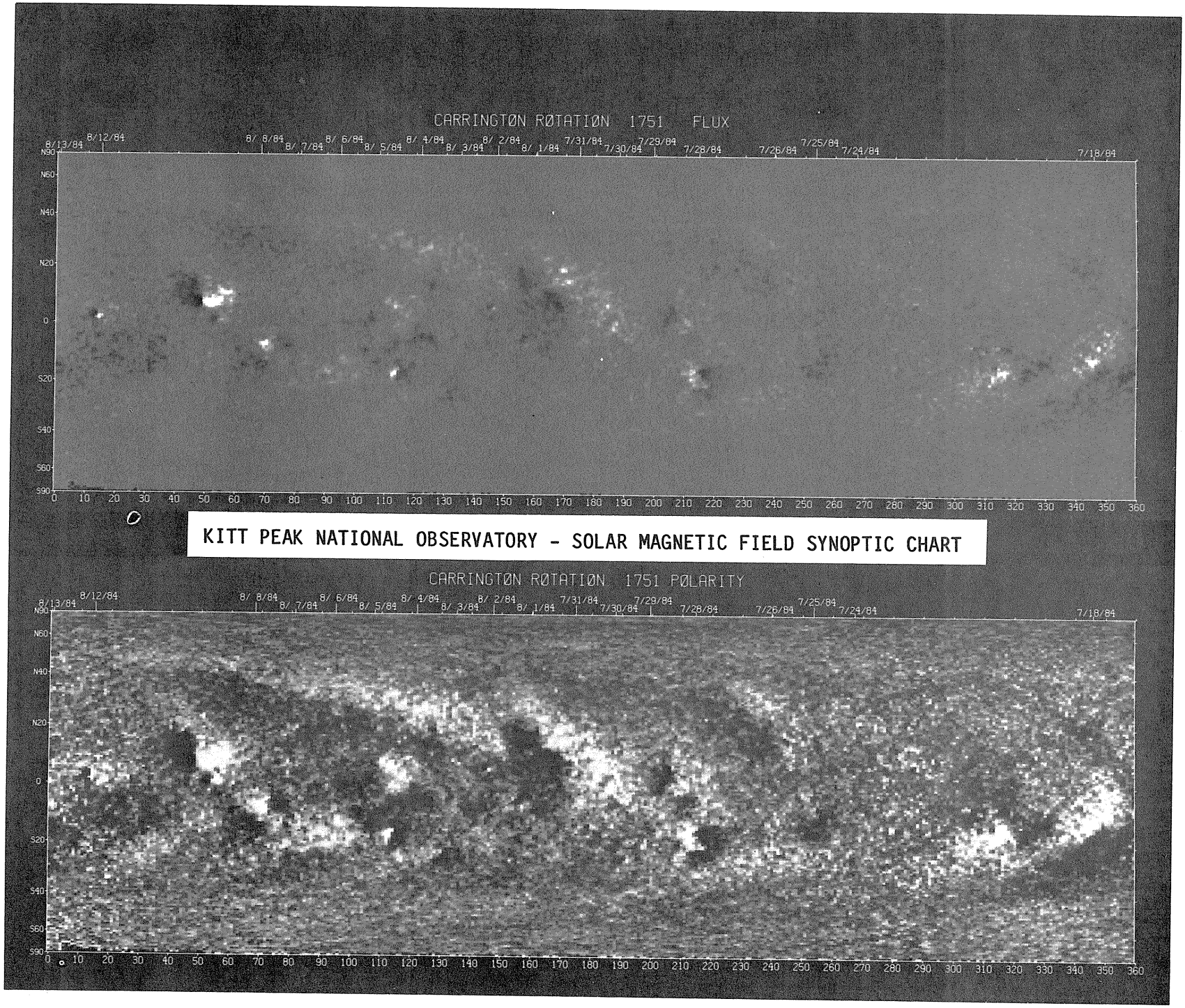

CARRINGTØN RØTATIØN 1751 FLUX
8/13/84 8/12/84 8/ 8/84 8/ 7/84 8/ 6/84 8/ 5/84 8/ 4/84 8/ 3/84 8/ 2/84 8/ 1/84 7/31/84 7/30/84 7/29/84 7/28/84 7/26/84 7/25/84 7/24/84 7/18/84
N90 N60 N40 N20 0 S20 S40 S60 S90
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360
KITT PEAK NATIONAL OBSERVATORY - SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTØN RØTATIØN 1751 PØLARITY
8/13/84 8/12/84 8/ 8/84 8/ 7/84 8/ 6/84 8/ 5/84 8/ 4/84 8/ 3/84 8/ 2/84 8/ 1/84 7/31/84 7/30/84 7/29/84 7/28/84 7/26/84 7/25/84 7/24/84 7/18/84
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

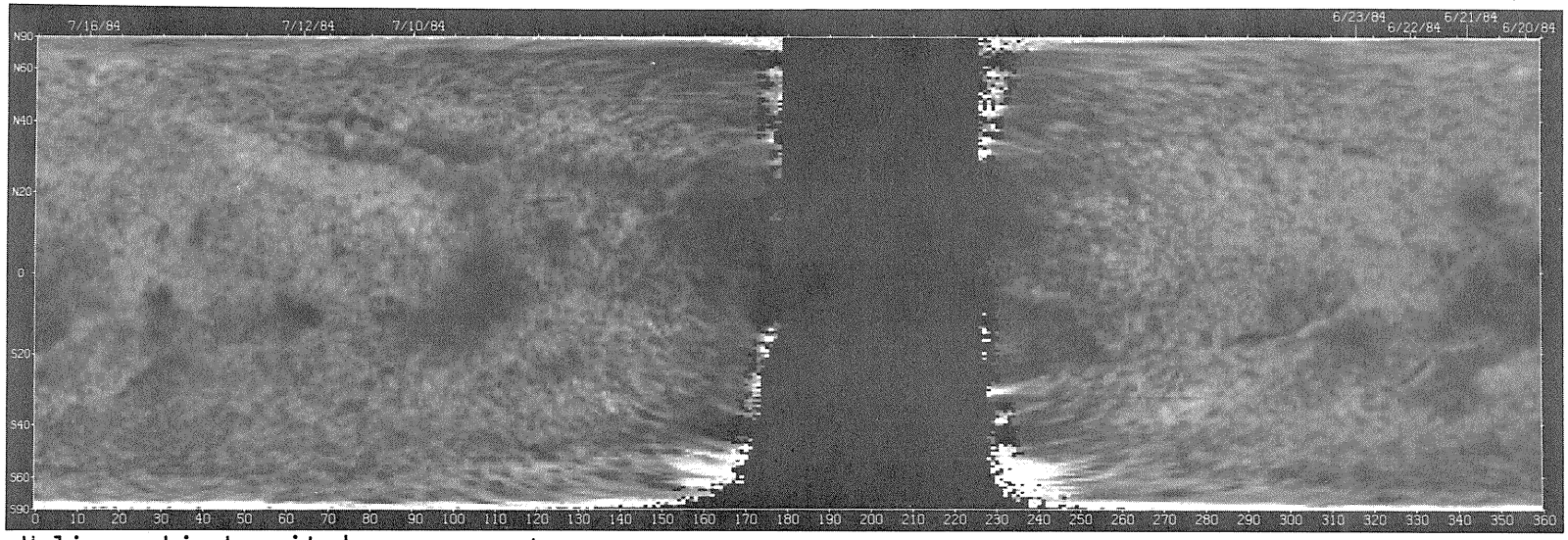
33
Jul 84

HELIUM 10830 ANGSTROM SYNOPTIC MAP OF THE SOLAR CORONA

CARRINGTON ROTATION NUMBER 1750
(June 20 to July 17, 1984)

Kitt Peak National Observatory

Dates of Observations



Heliographic Longitude

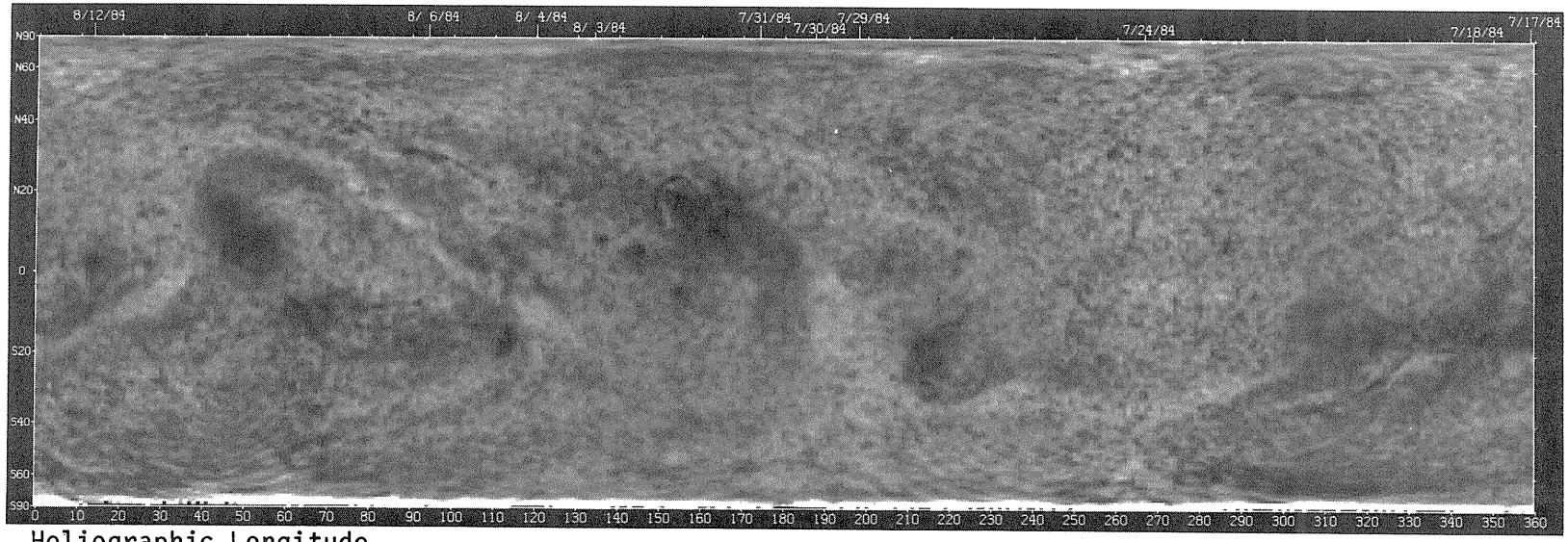
Regions for which no observations were available are black.
Irregularly shaped light areas mark either coronal holes or filament cavities.
Gray-scale display represents the strength of the helium 10830A absorption line.

HELIUM 10830 ANGSTROM SYNOPTIC MAP OF THE SOLAR CORONA

CARRINGTON ROTATION NUMBER 1751
(July 17 to August 13, 1984)

Kitt Peak National Observatory

Dates of Observations

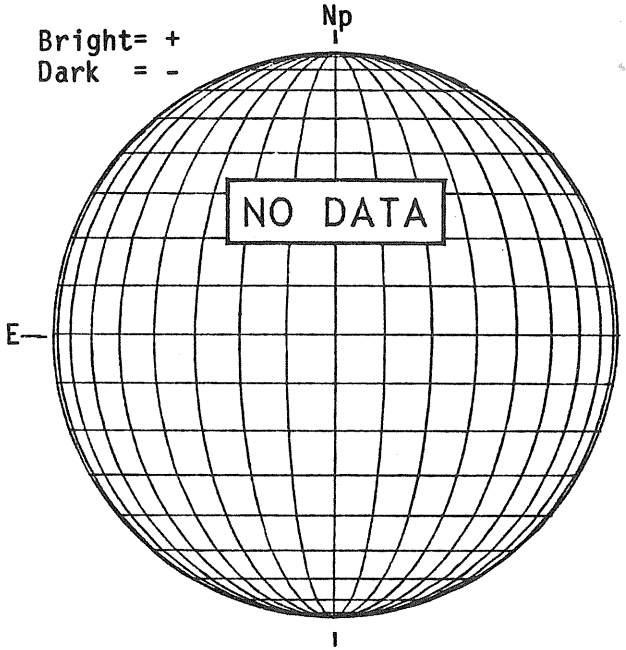


Heliographic Longitude

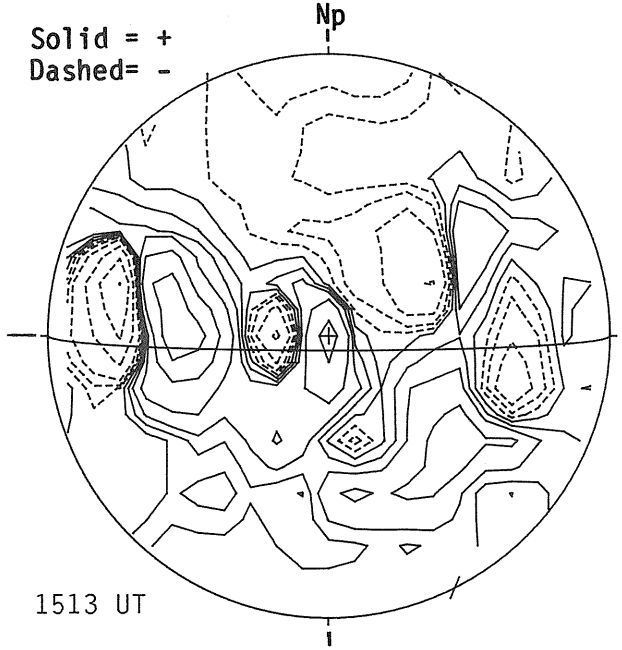
Regions for which no observations were available are black.
Irregularly shaped light areas mark either coronal holes or filament cavities.
Gray-scale display represents the strength of the helium 10830A absorption line.

J U L Y 01, 1 9 8 4 (P= -2.60, B_0= 2.91, L_0= 219.81)

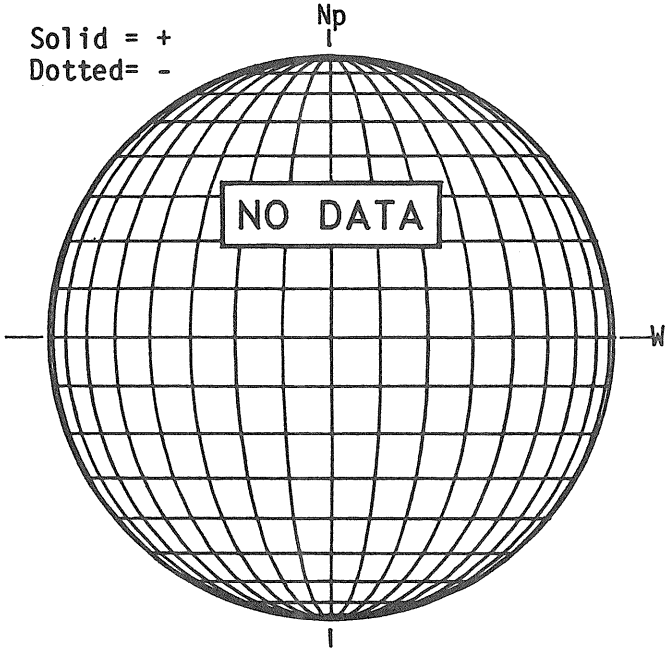
KITT PEAK MAGNETOGRAM



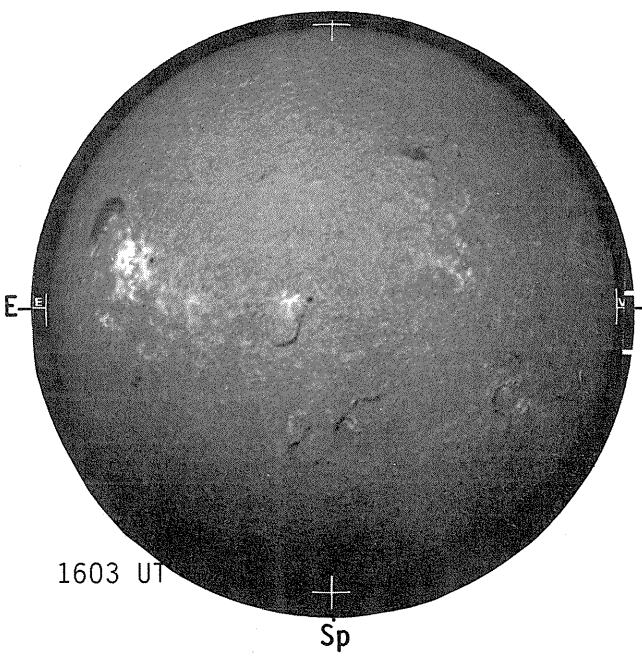
STANFORD MAGNETOGRAM



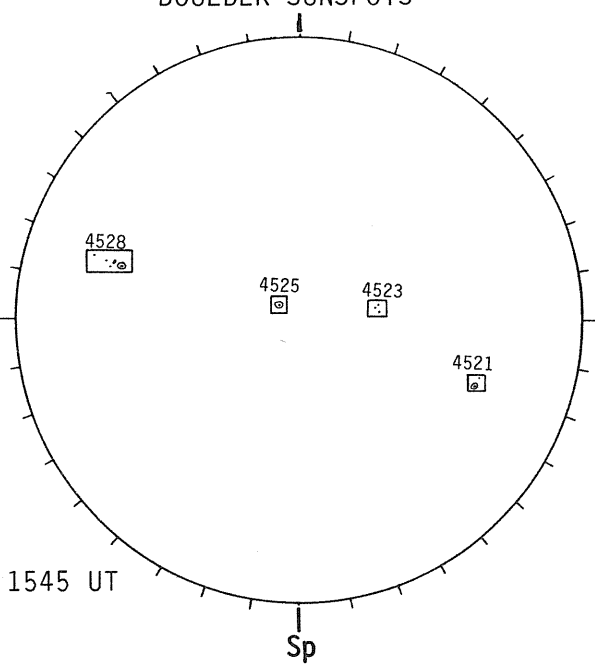
MT. WILSON MAGNETOGRAM



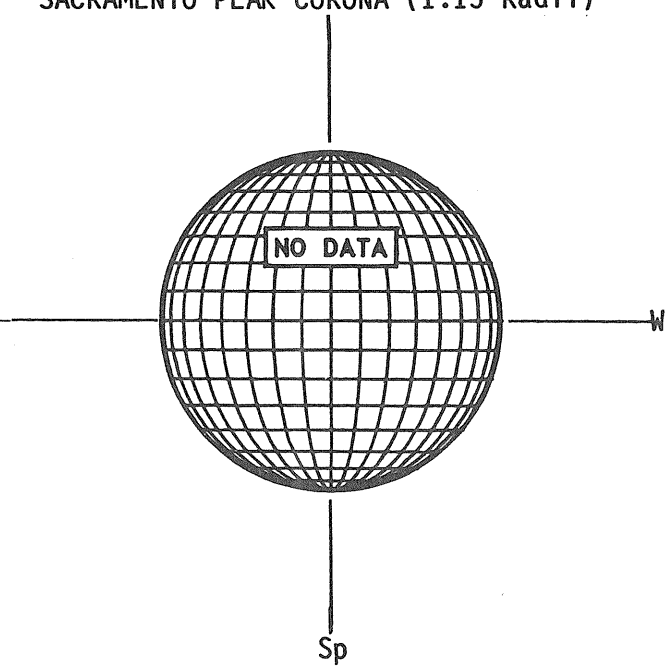
BOULDER H-ALPHA



BOULDER SUNSPOTS



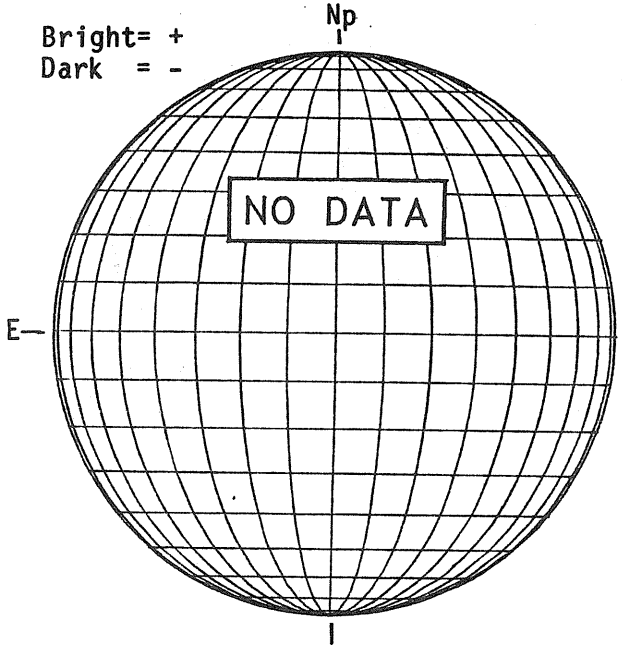
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 02, 1 9 8 4 (P= -2.15, B_0= 3.02, L_0= 206.57)

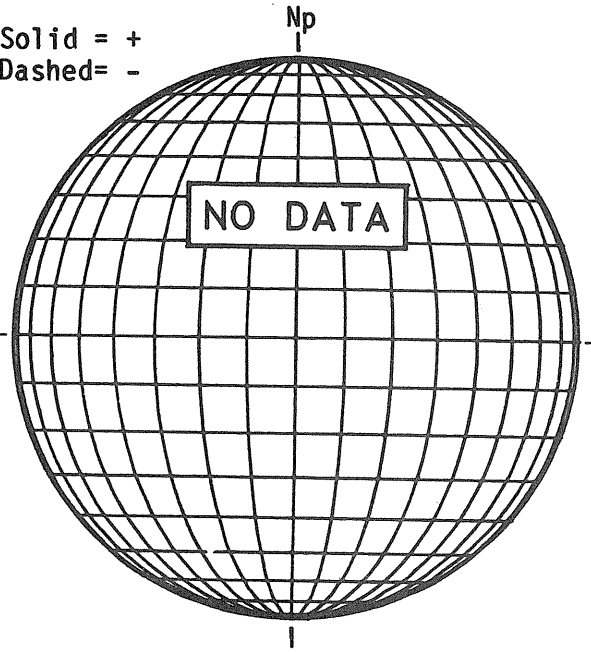
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



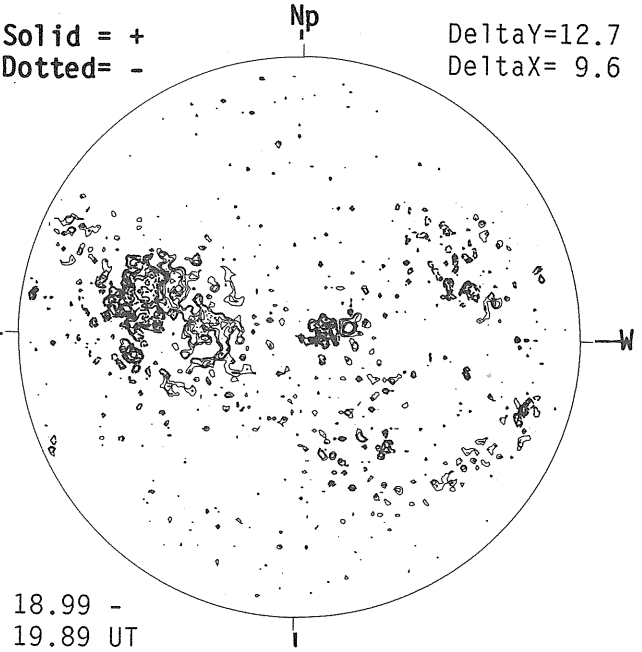
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

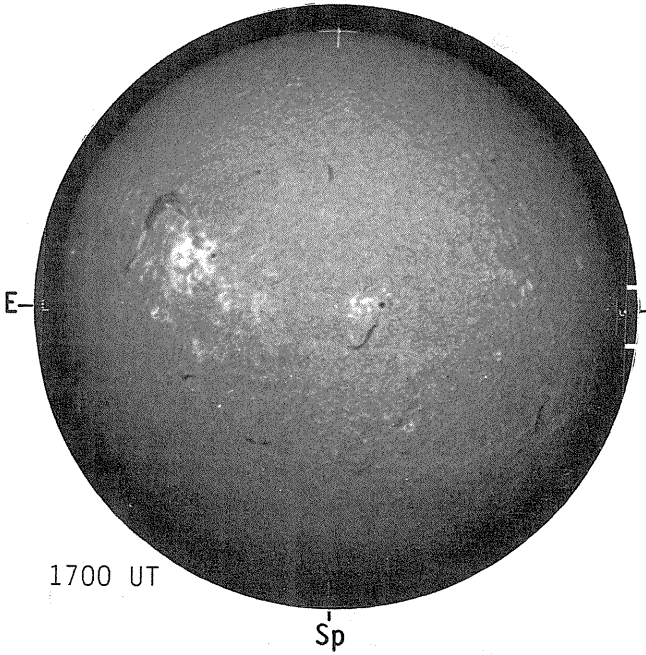


MT. WILSON MAGNETOGRAM

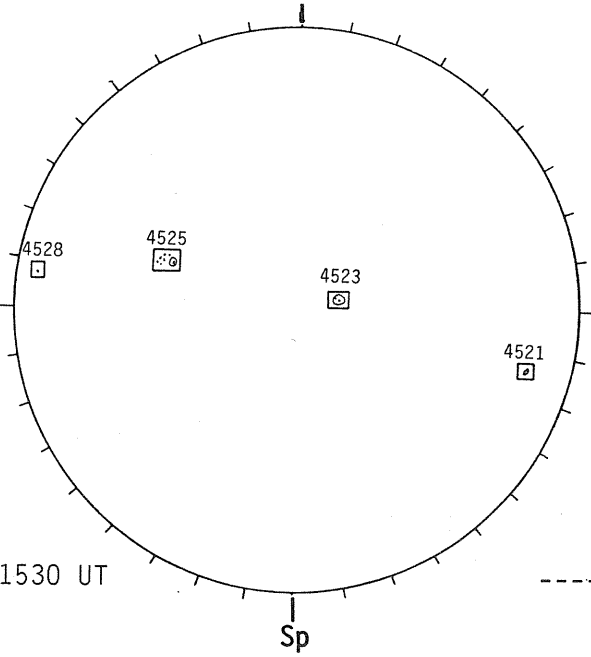
Solid = +
Dotted= -



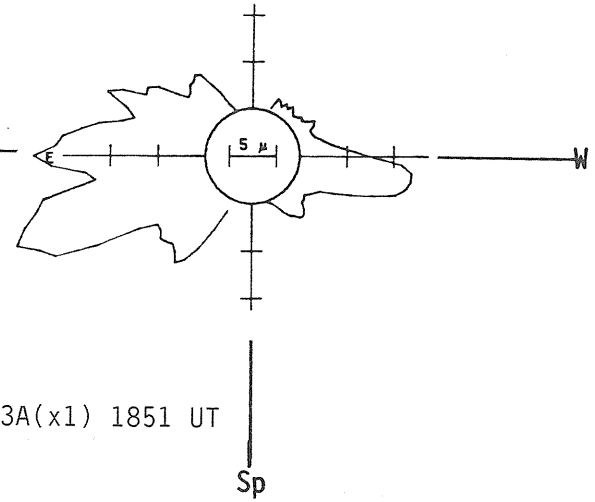
BOULDER H-ALPHA



BOULDER SUNSPOTS

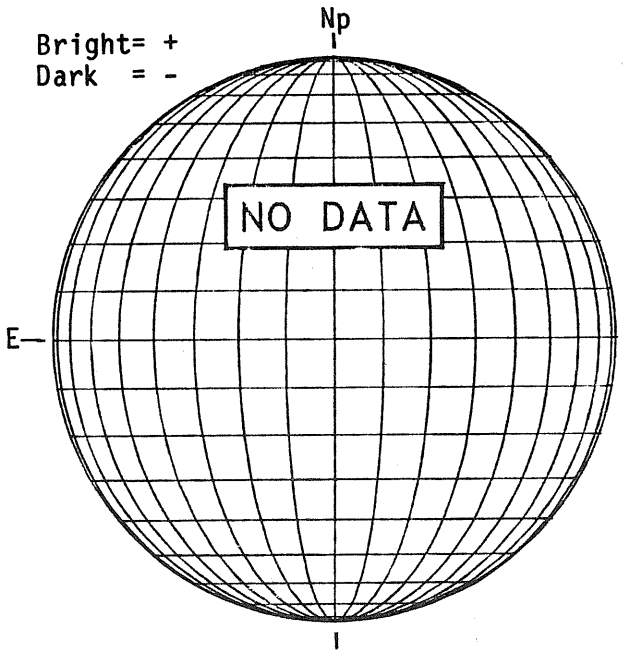


SACRAMENTO PEAK CORONA (1.15 Radii)

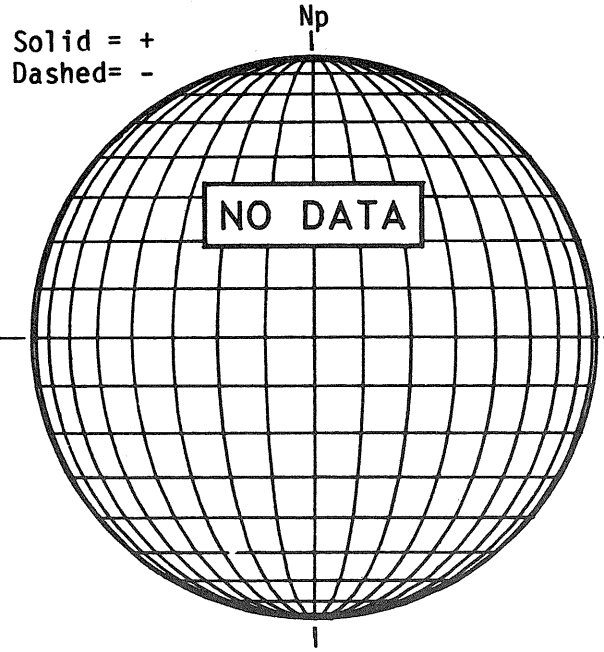


J U L Y 03, 1 9 8 4 (P= -1.69, B_0= 3.13, L_0= 193.34)

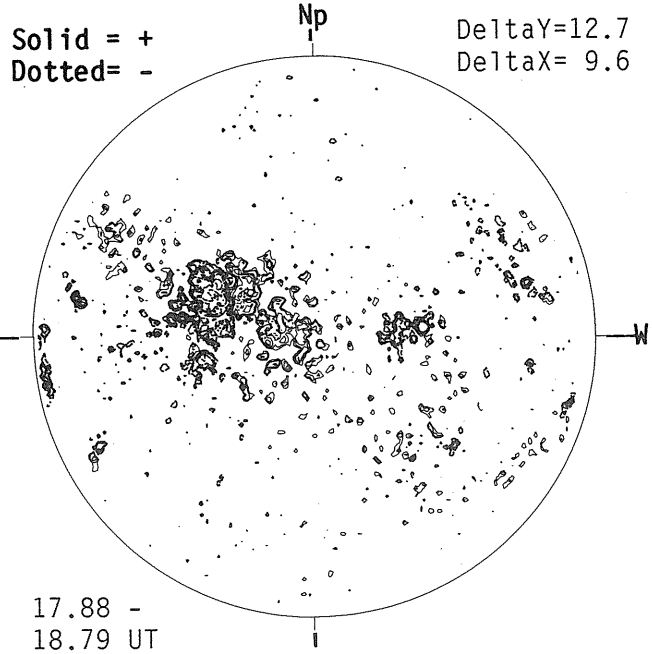
KITT PEAK MAGNETOGRAM



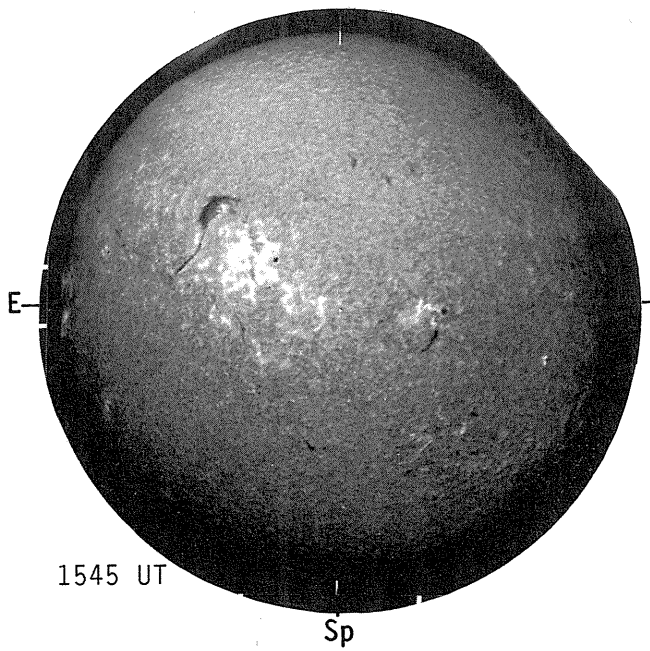
STANFORD MAGNETOGRAM



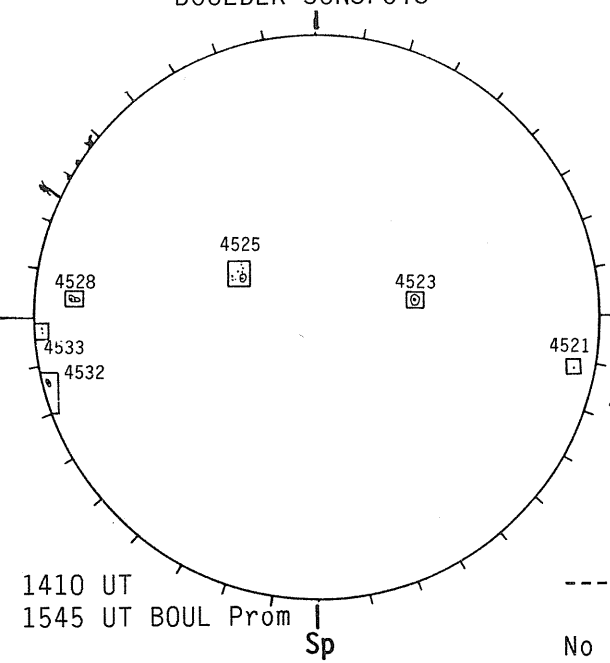
MT. WILSON MAGNETOGRAM



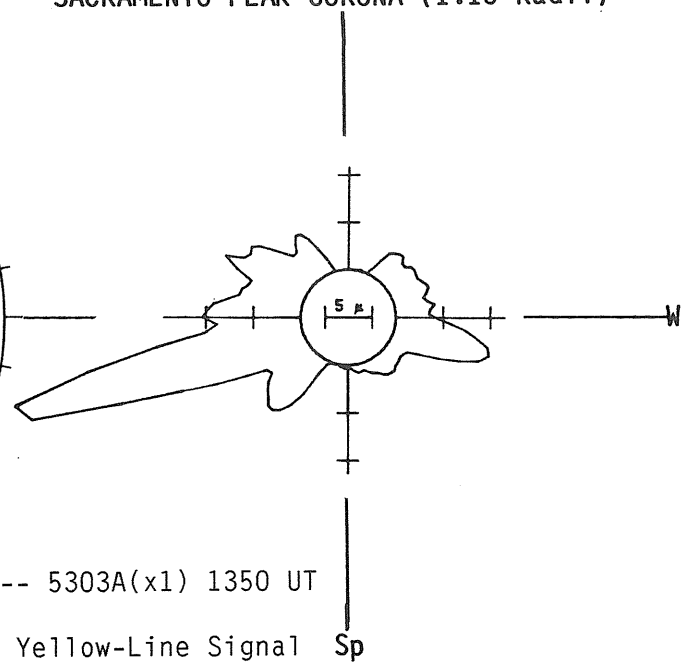
BOULDER H-ALPHA



BOULDER SUNSPOTS



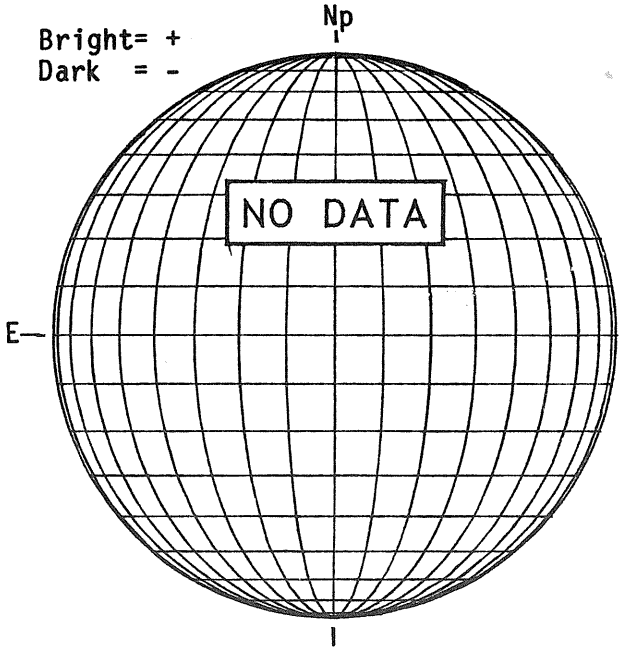
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 04, 1 9 8 4 (P= -1.24, B_0= 3.24, L_0= 180.10)

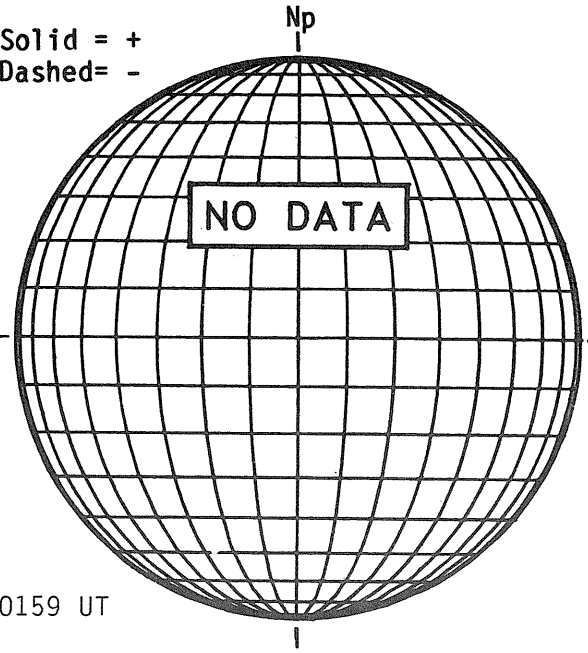
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

Solid = +
Dashed= -

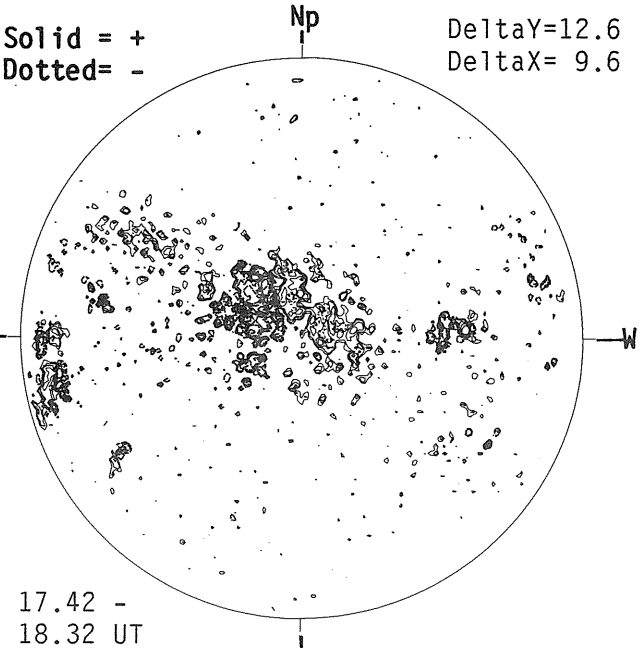


0159 UT

MT. WILSON MAGNETOGRAM

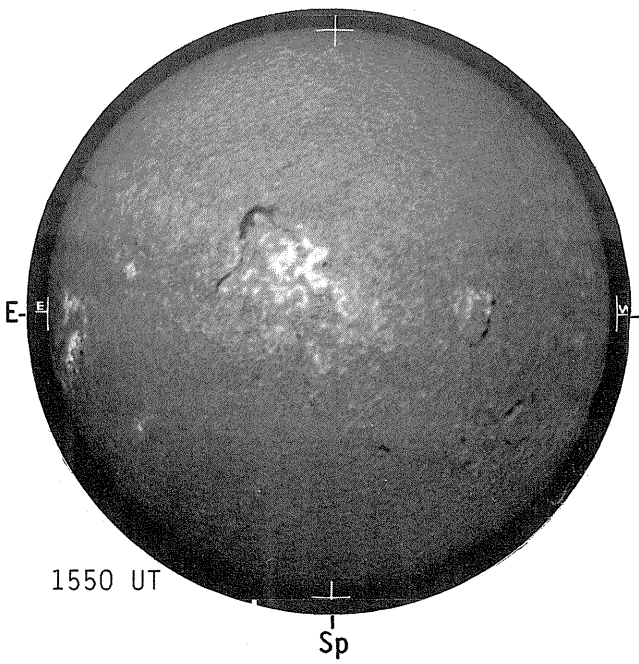
Solid = +
Dotted= -

DeltaY=12.6
DeltaX= 9.6



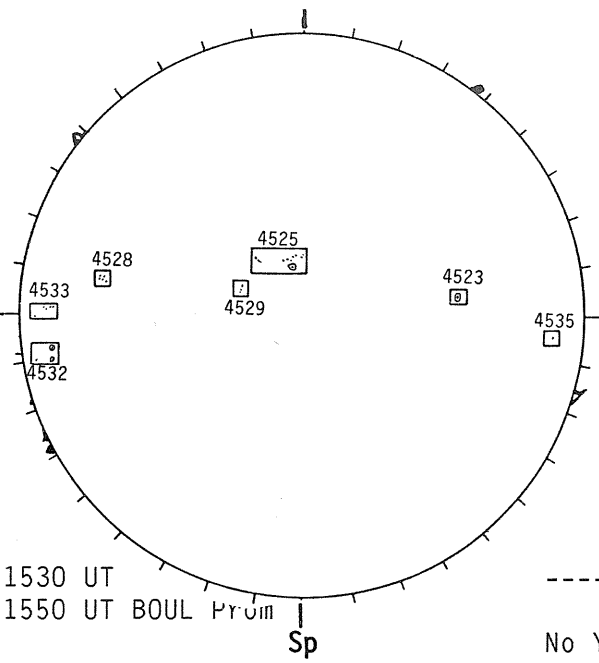
17.42 -
18.32 UT

BOULDER H-ALPHA



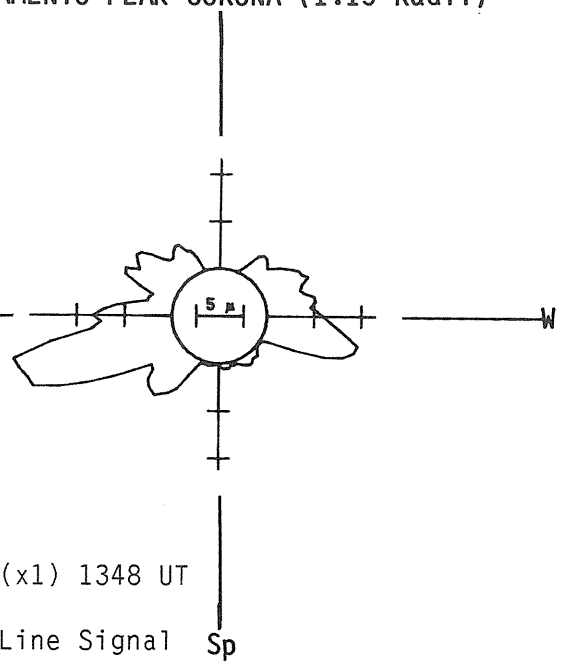
1550 UT

BOULDER SUNSPOTS



1530 UT
1550 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

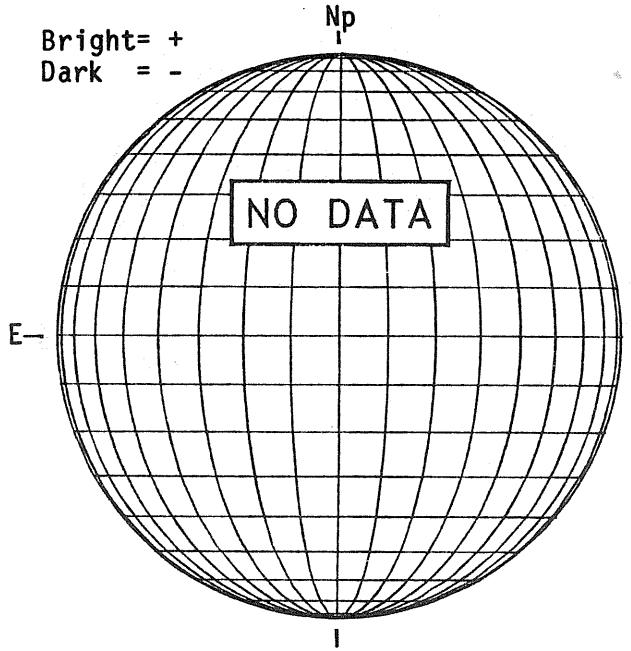


---- 5303A(x1) 1348 UT

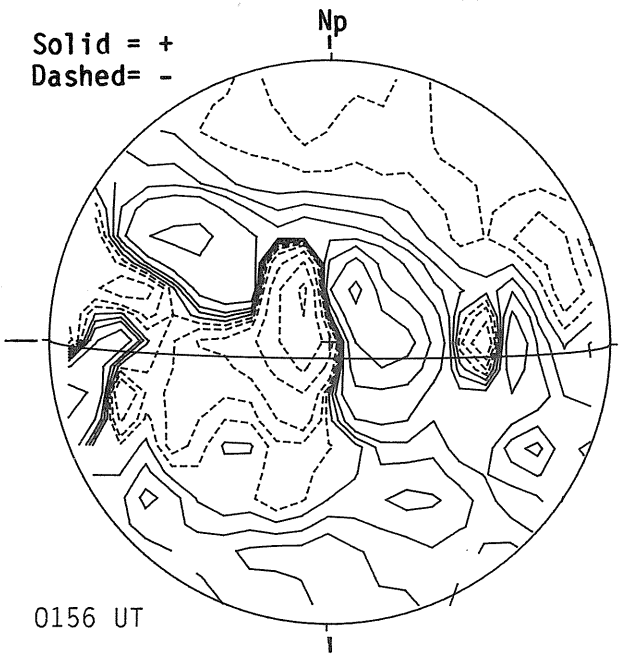
No Yellow-Line Signal

J U L Y 05, 1 9 8 4 (P= -0.78, B_o= 3.34, L_o= 166.87)

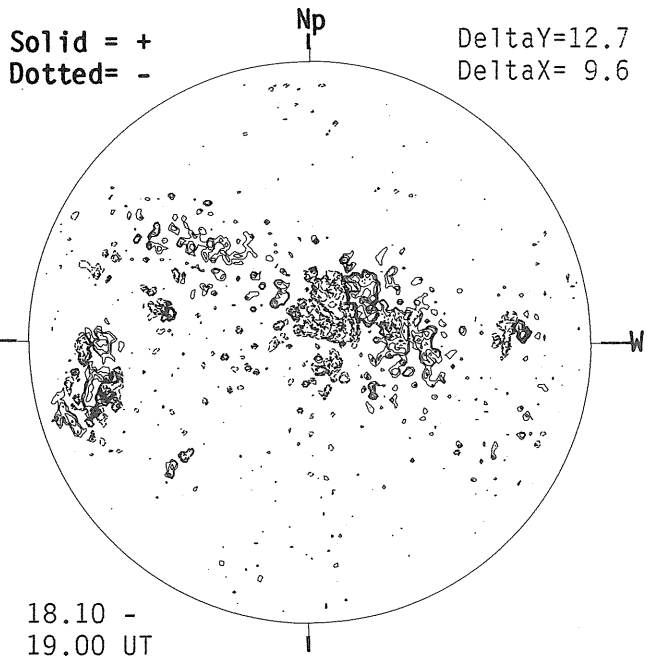
KITT PEAK MAGNETOGRAM



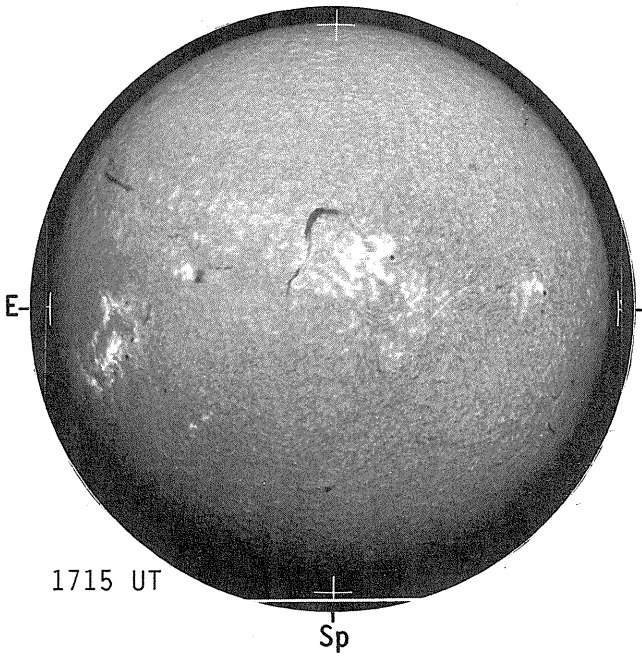
STANFORD MAGNETOGRAM



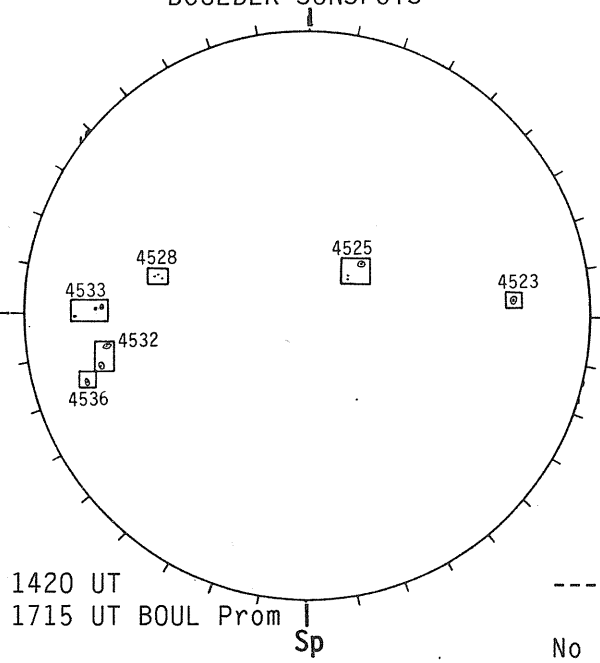
MT. WILSON MAGNETOGRAM



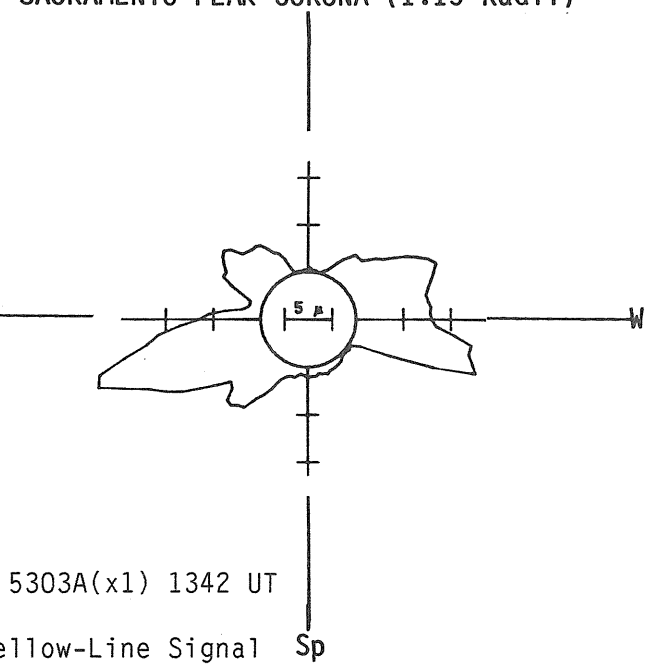
BOULDER H-ALPHA



BOULDER SUNSPOTS



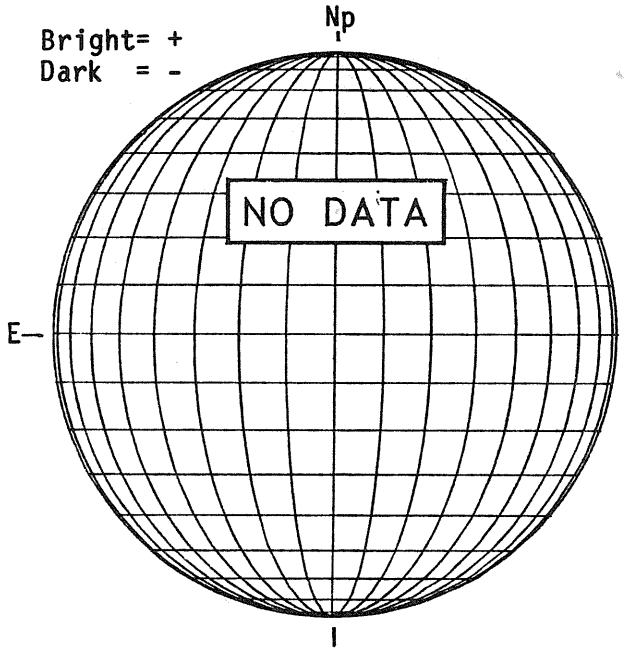
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 06, 1 9 8 4 (P= -0.33, B_0= 3.45, L_0= 153.63)

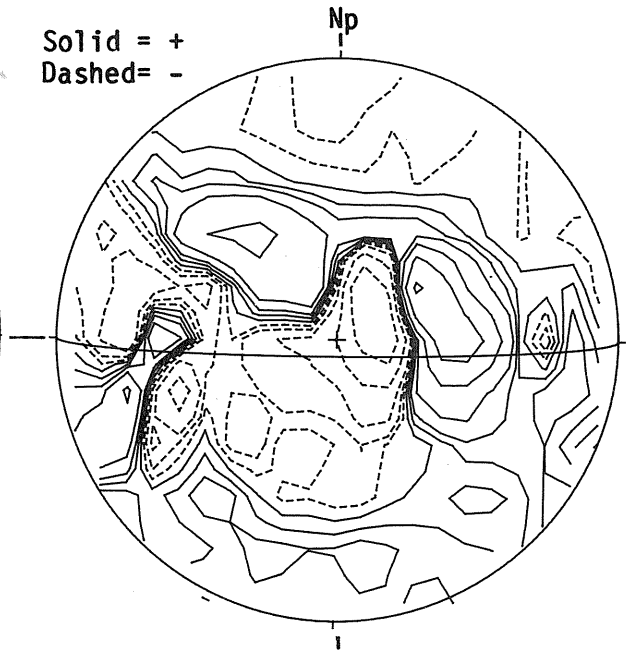
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

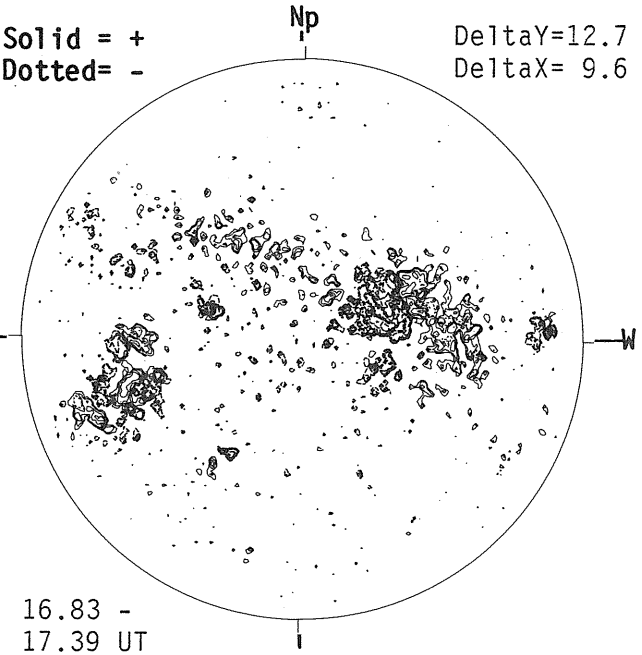
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

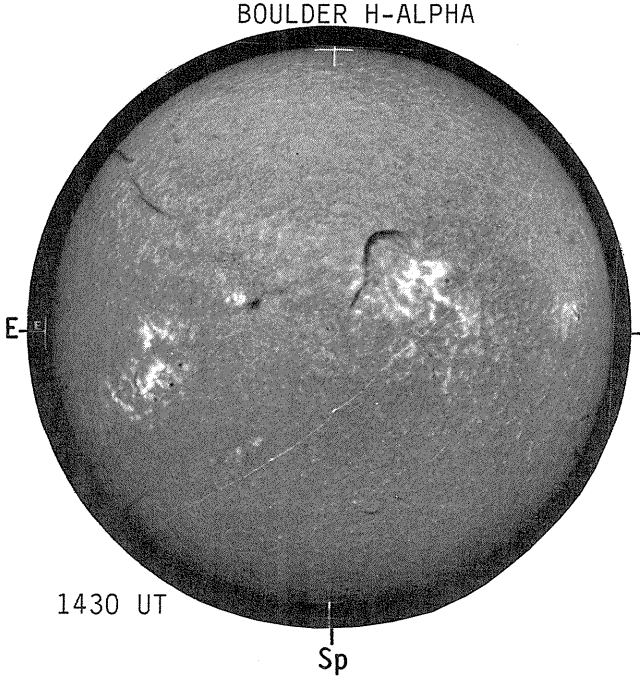
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6



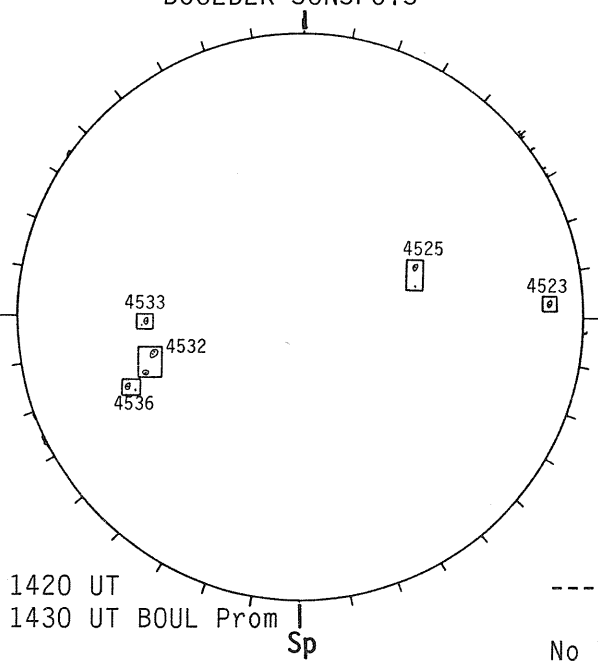
16.83 -
17.39 UT

BOULDER H-ALPHA



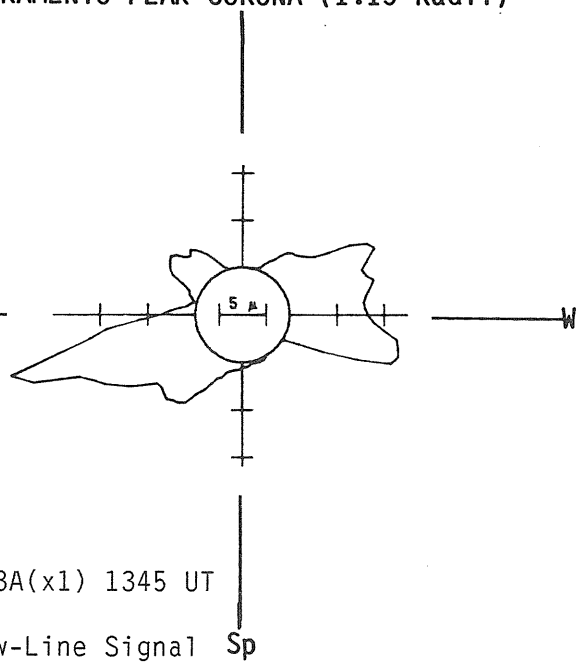
1430 UT

BOULDER SUNSPOTS



1420 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



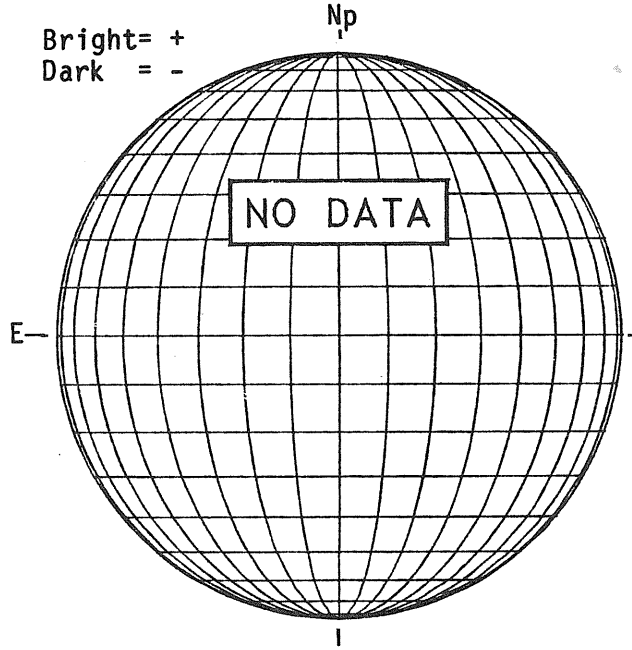
---- 5303A(x1) 1345 UT

No Yellow-Line Signal

J U L Y 07, 1 9 8 4 (P= 0.12, B_0= 3.56, L_0= 140.40)

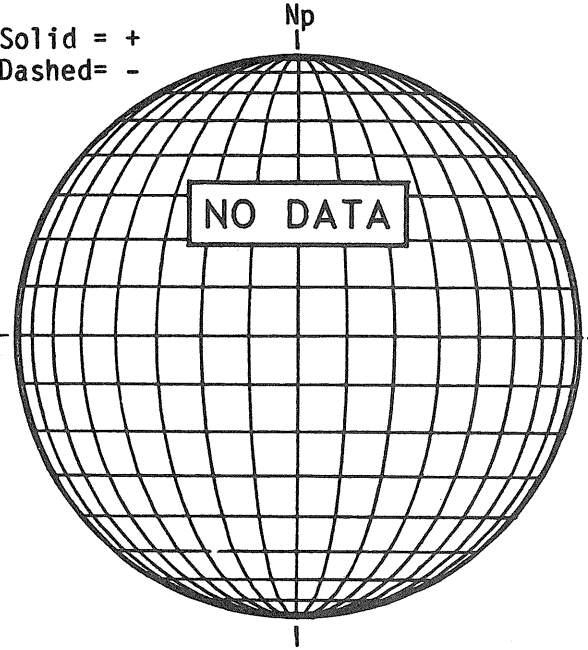
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

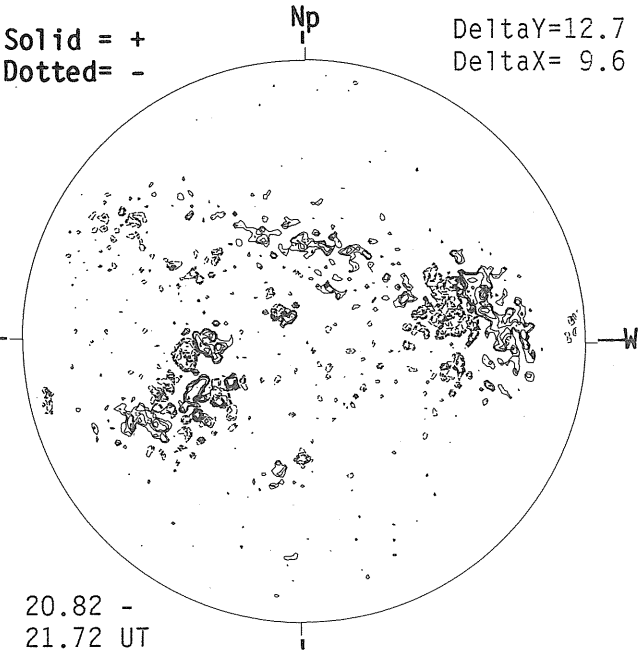
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

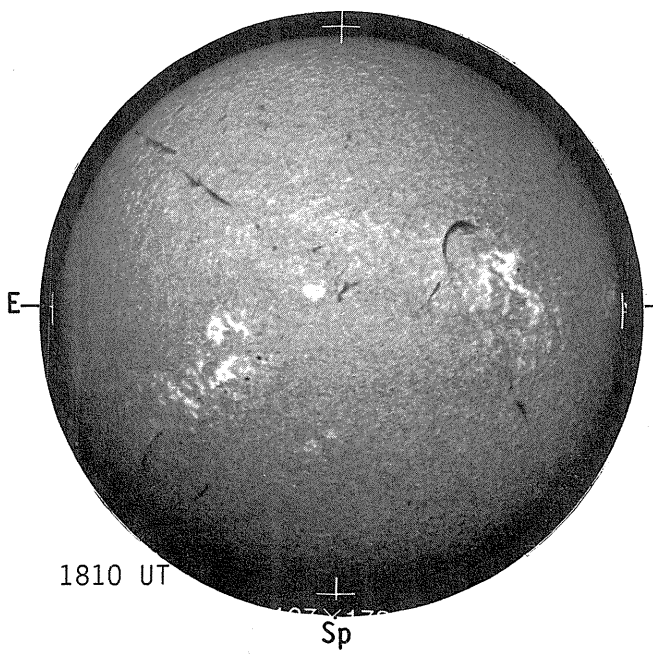
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6



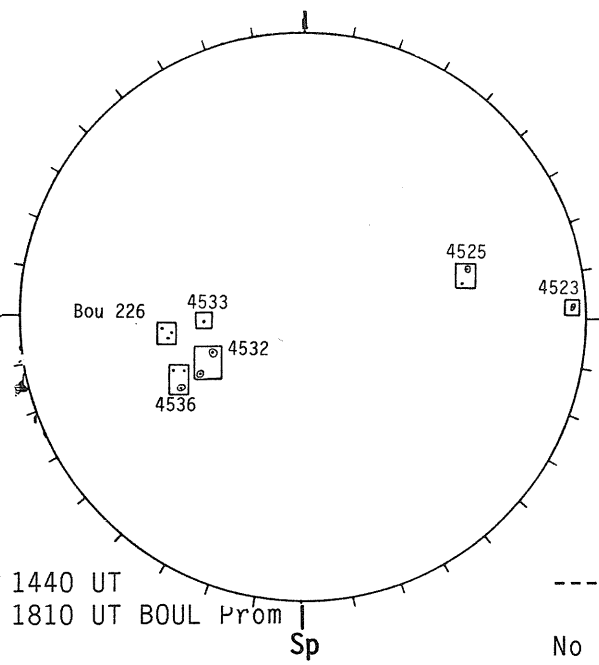
20.82 -
21.72 UT

BOULDER H-ALPHA



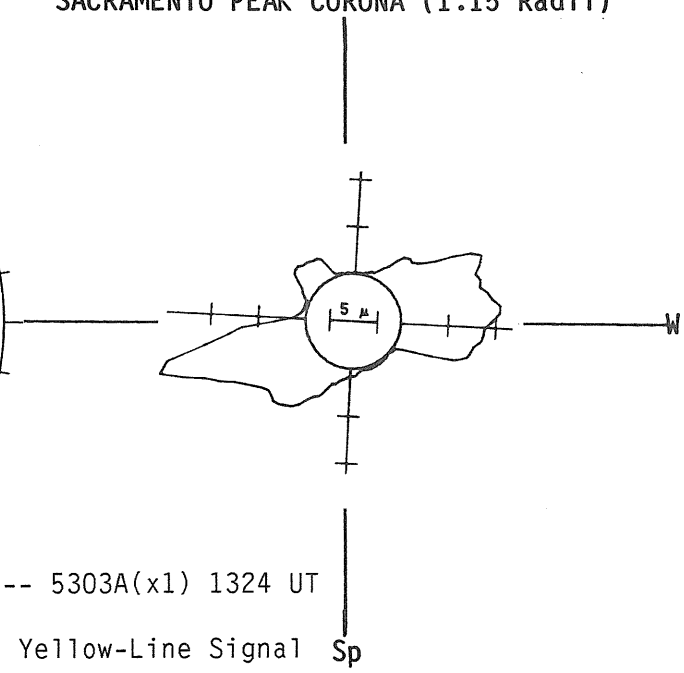
1810 UT

BOULDER SUNSPOTS



1440 UT
1810 UT BOUL Prom

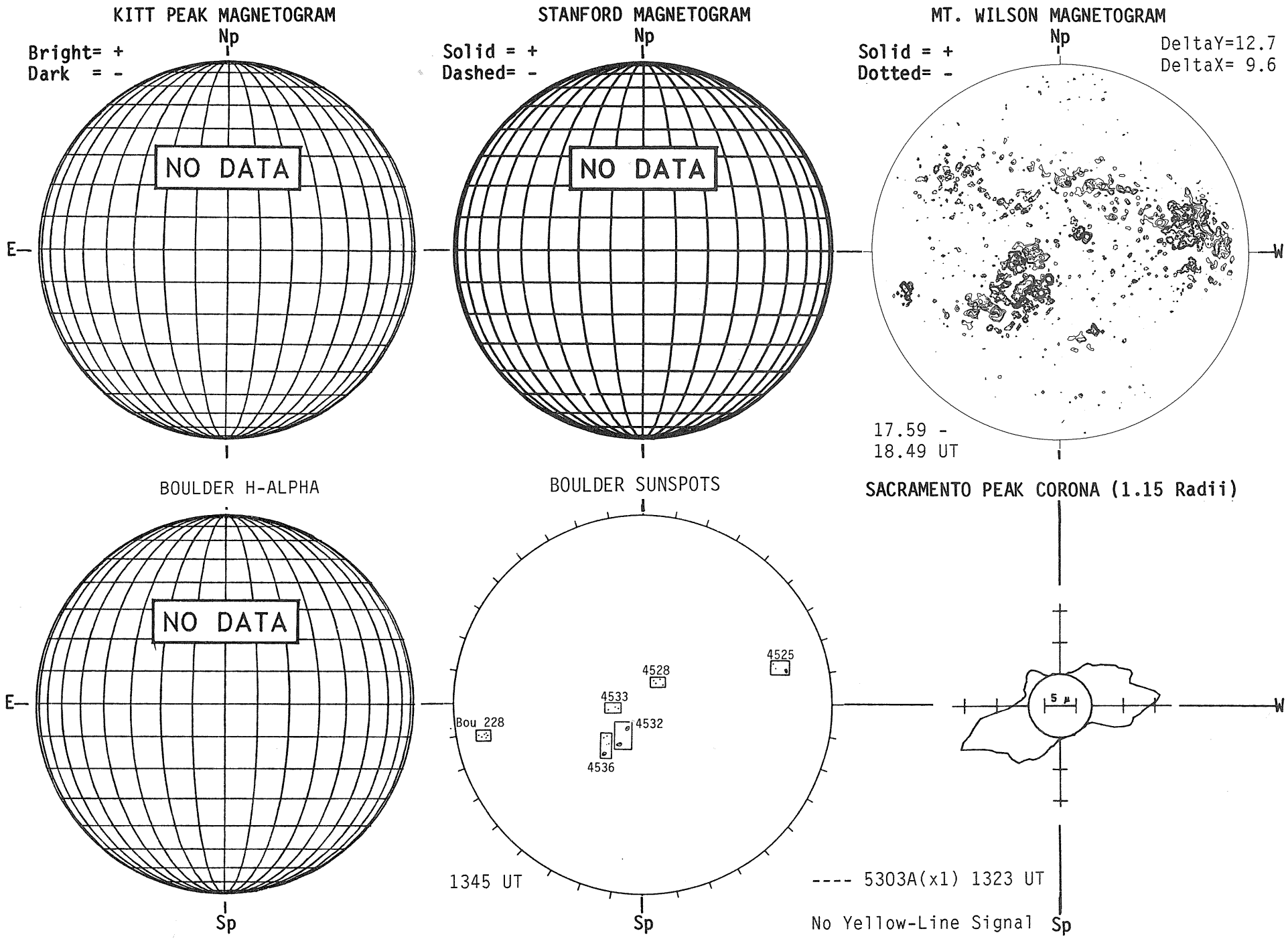
SACRAMENTO PEAK CORONA (1.15 Radii)



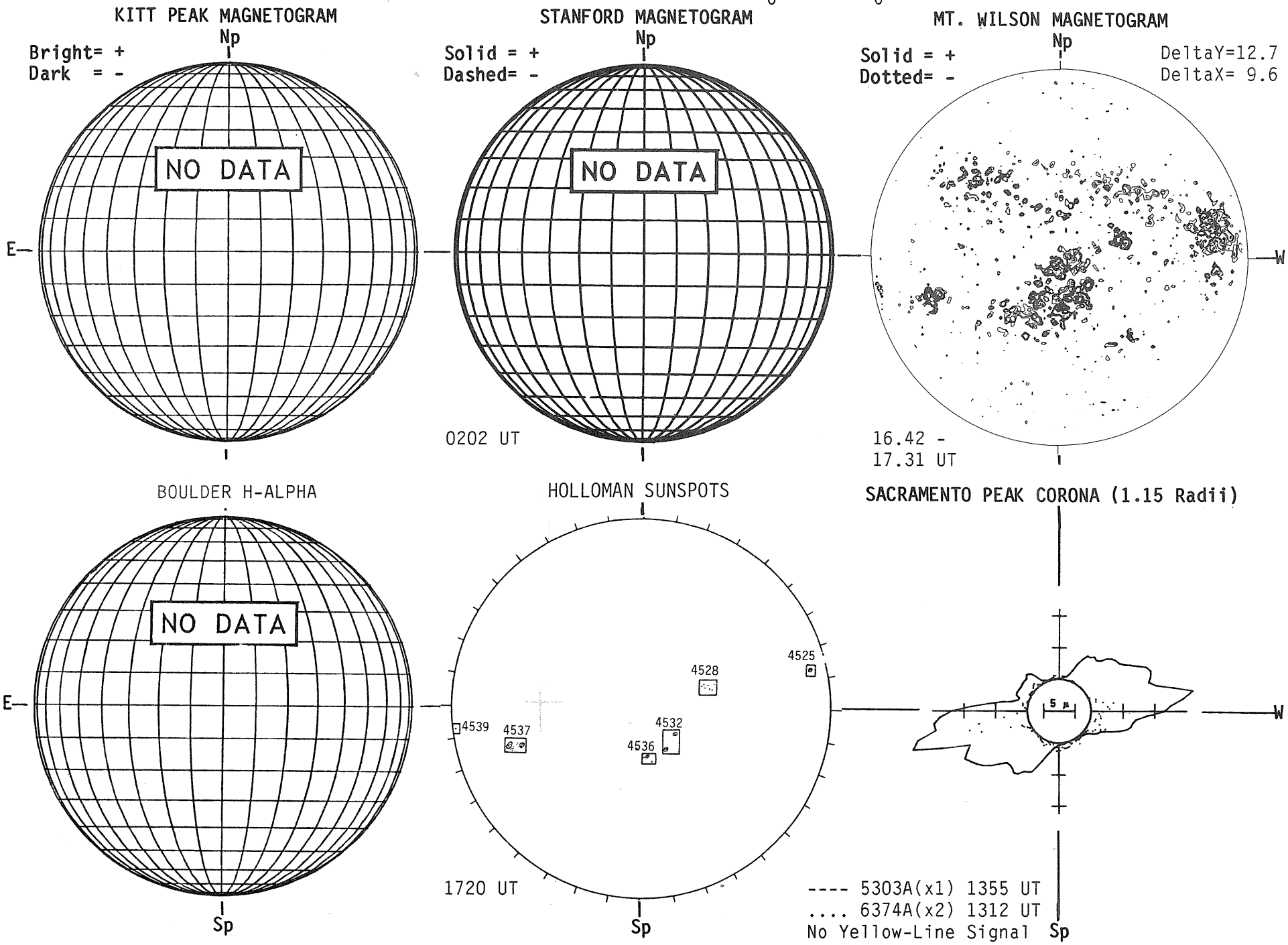
---- 5303A(x1) 1324 UT

No Yellow-Line Signal

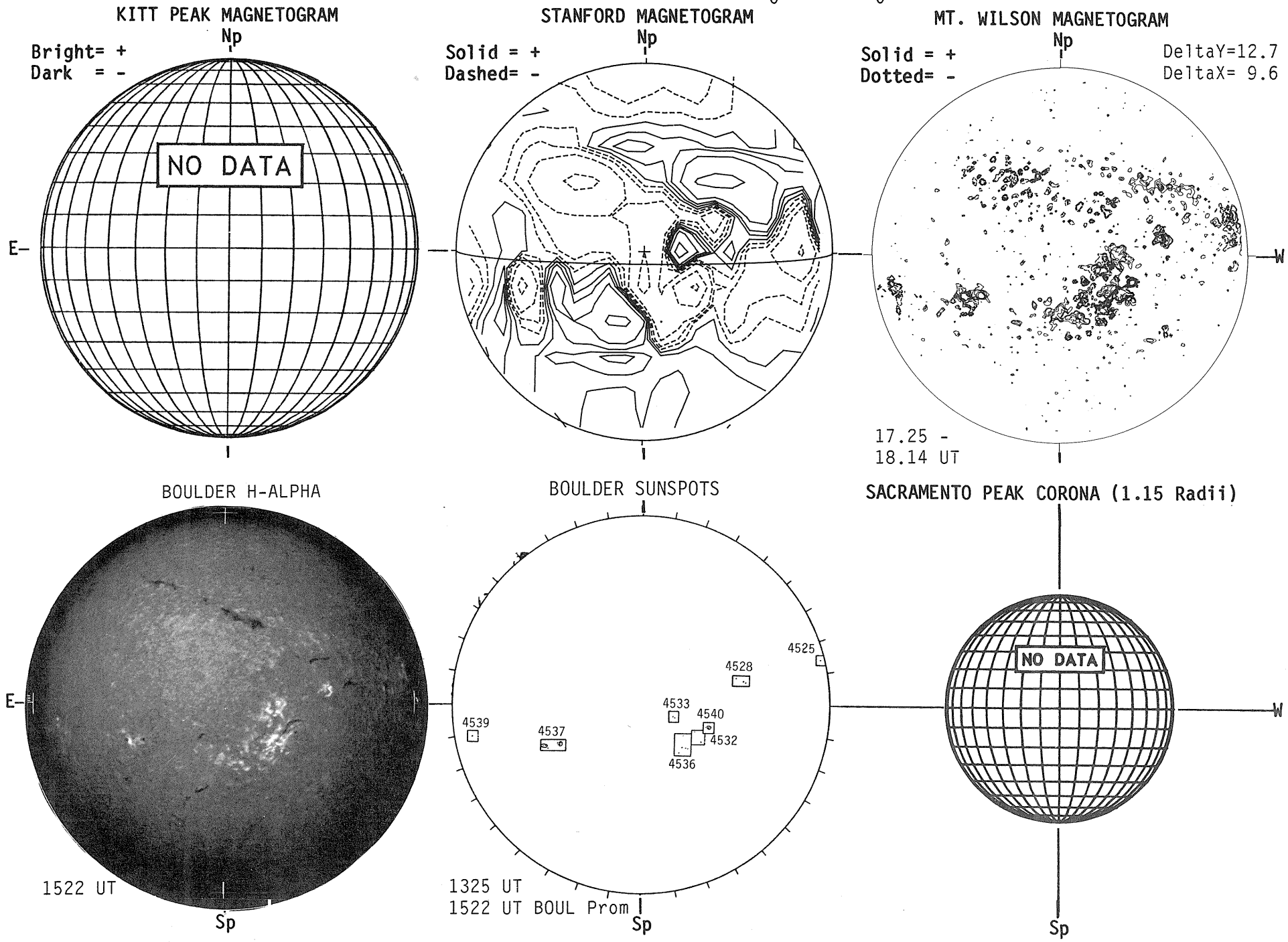
J U L Y 08, 1 9 8 4 (P= 0.58, B_0= 3.66, L_0= 127.16)



J U L Y 09, 1 9 8 4 (P= 1.03, B_0= 3.76, L_0= 113.93)



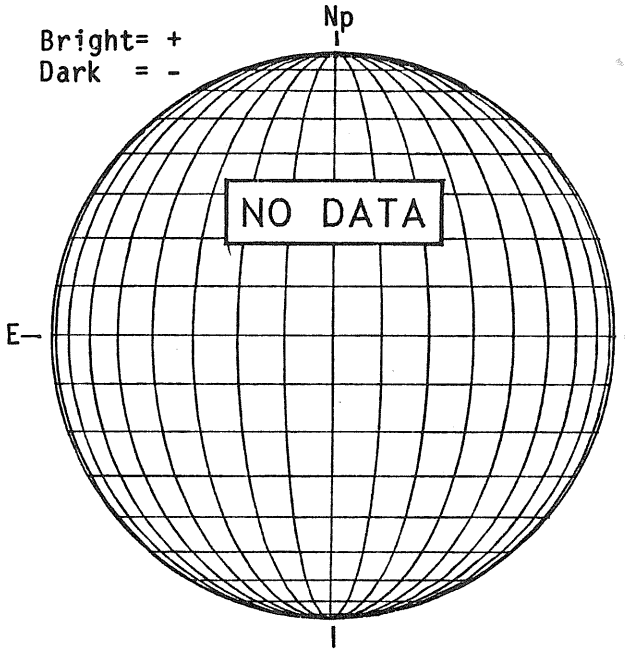
J U L Y 10, 1 9 8 4 (P= 1.48, B_0= 3.87, L_0= 100.69)



J U L Y 11, 1 9 8 4 (P= 1.93, B_0= 3.97, L_0= 87.46)

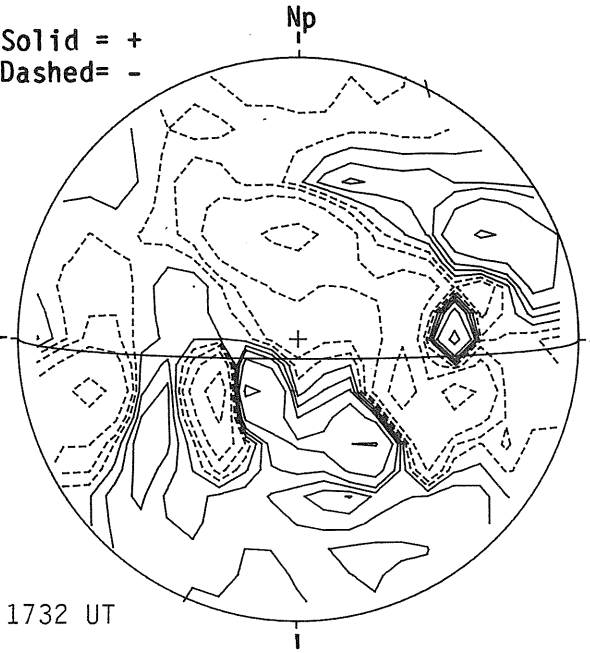
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

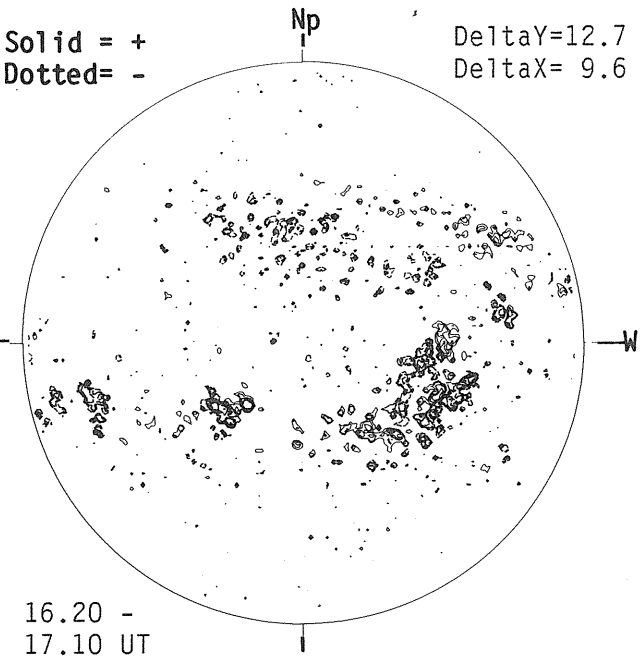
Solid = +
Dashed= -



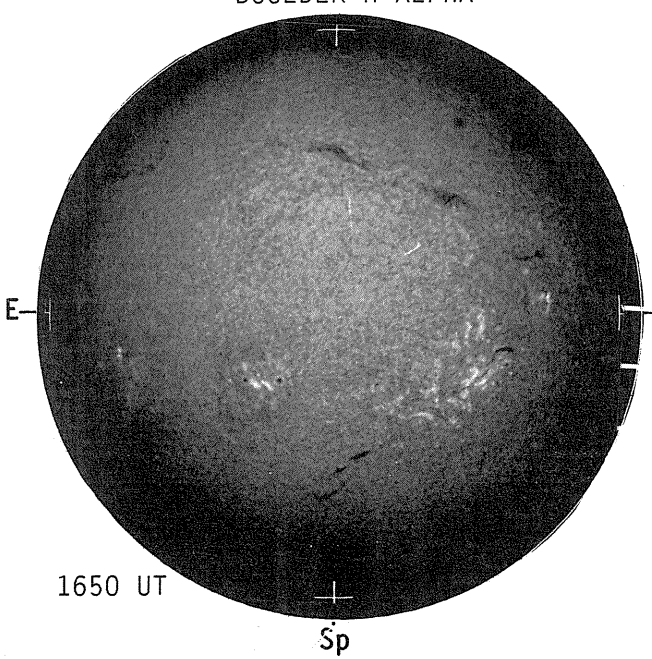
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

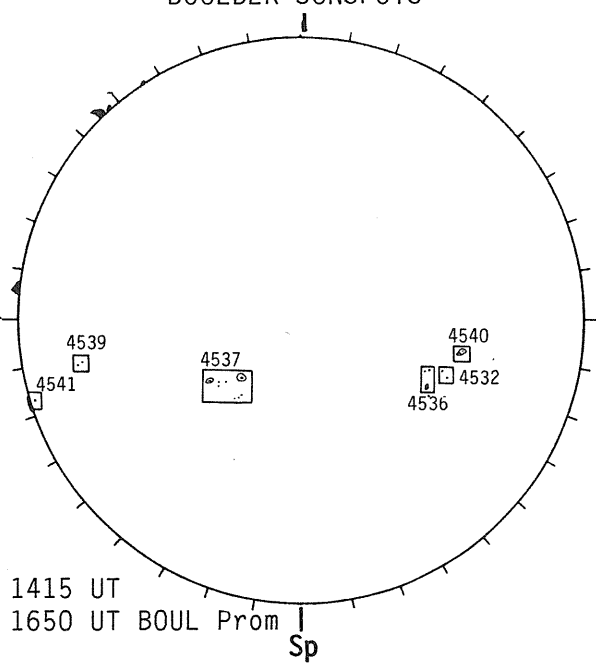
DeltaY=12.7
DeltaX= 9.6



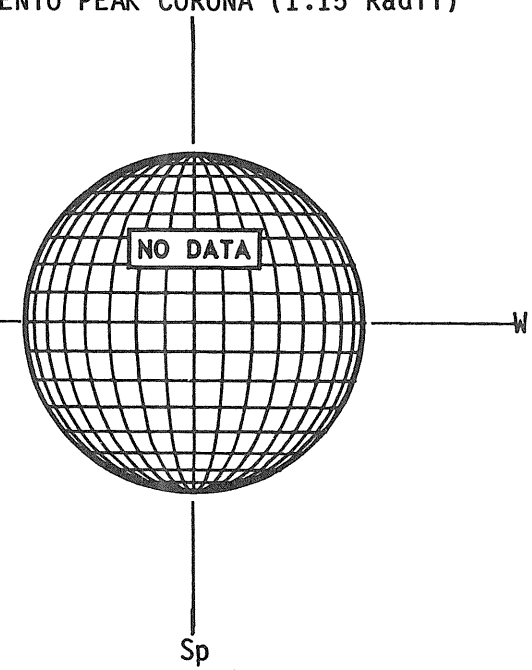
BOULDER H-ALPHA



BOULDER SUNSPOTS

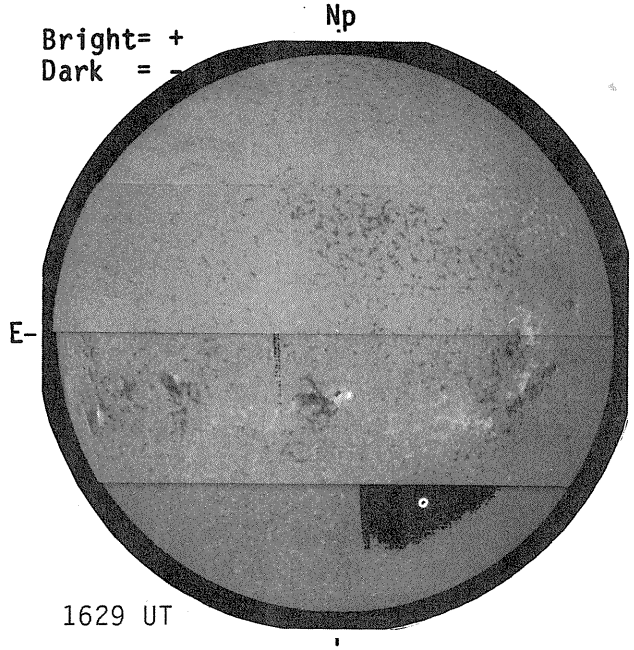


SACRAMENTO PEAK CORONA (1.15 Radii)

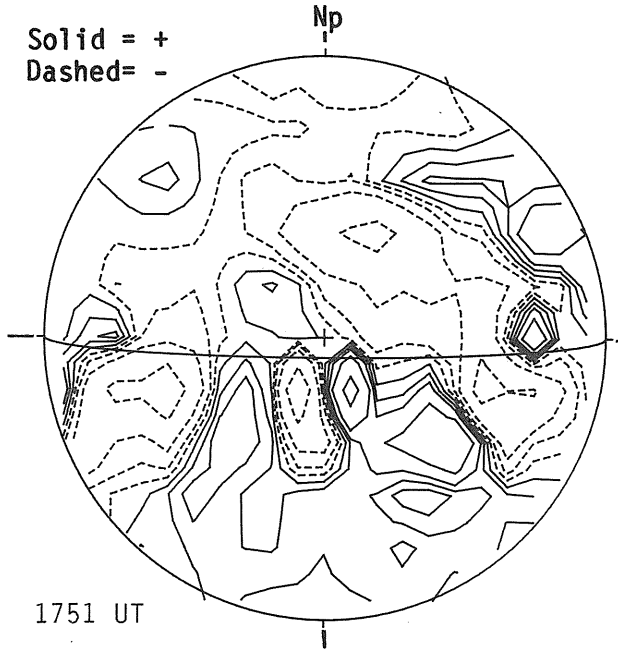


J U L Y 12, 1 9 8 4 (P= 2.38, B_0= 4.07, L_0= 74.22)

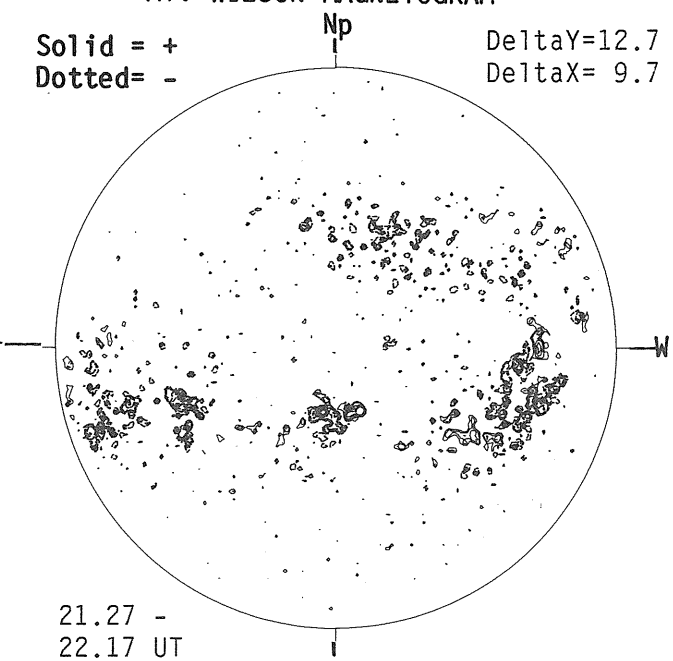
KITT PEAK MAGNETOGRAM



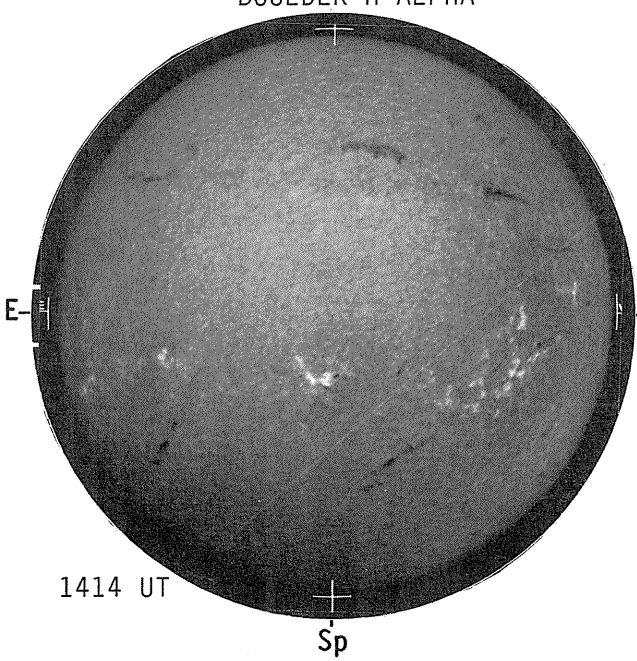
STANFORD MAGNETOGRAM



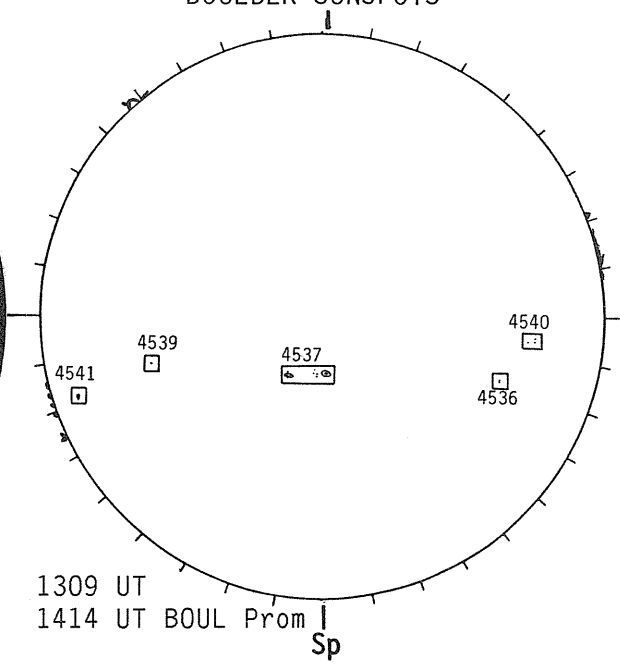
MT. WILSON MAGNETOGRAM



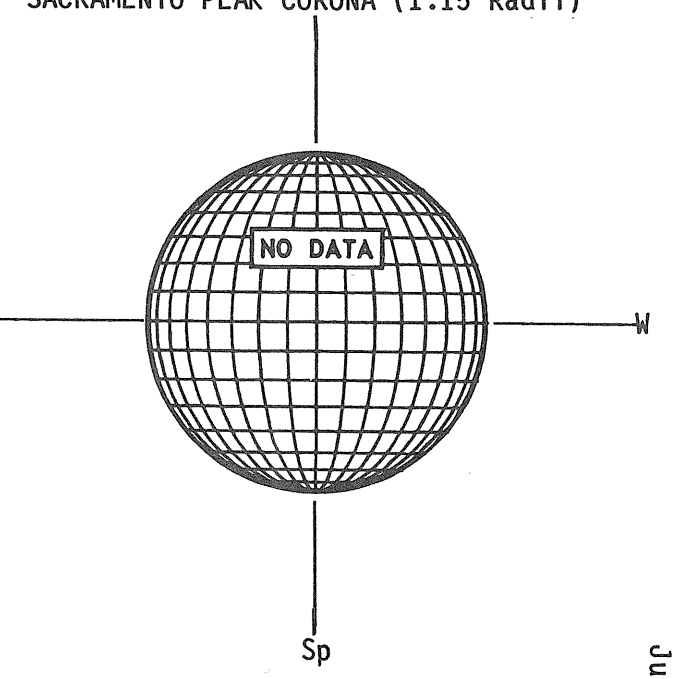
BOULDER H-ALPHA



BOULDER SUNSPOTS



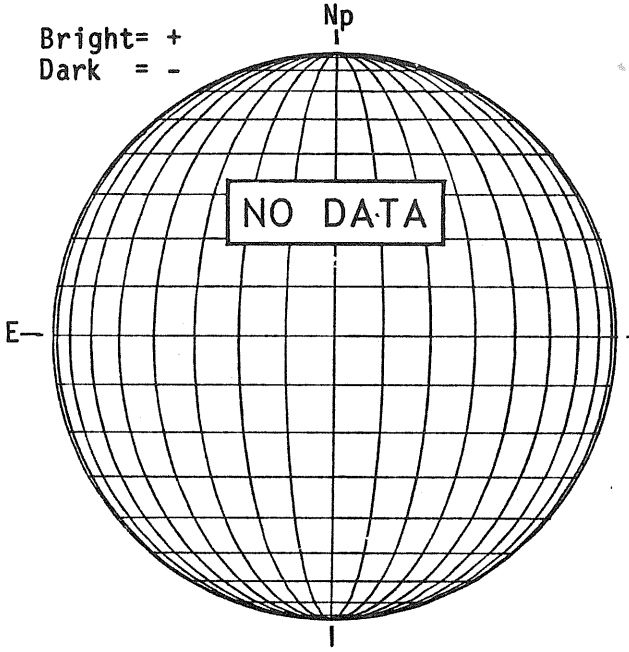
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 13, 1 9 8 4 (P= 2.82, B_0= 4.17, L_0= 60.99)

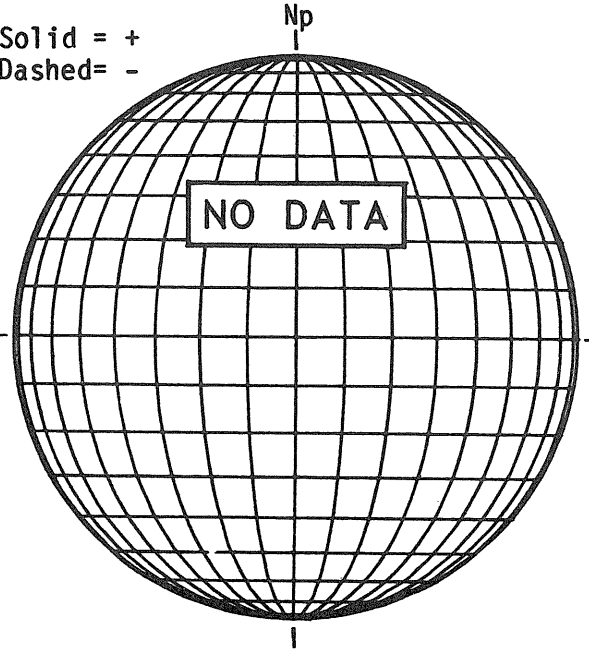
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

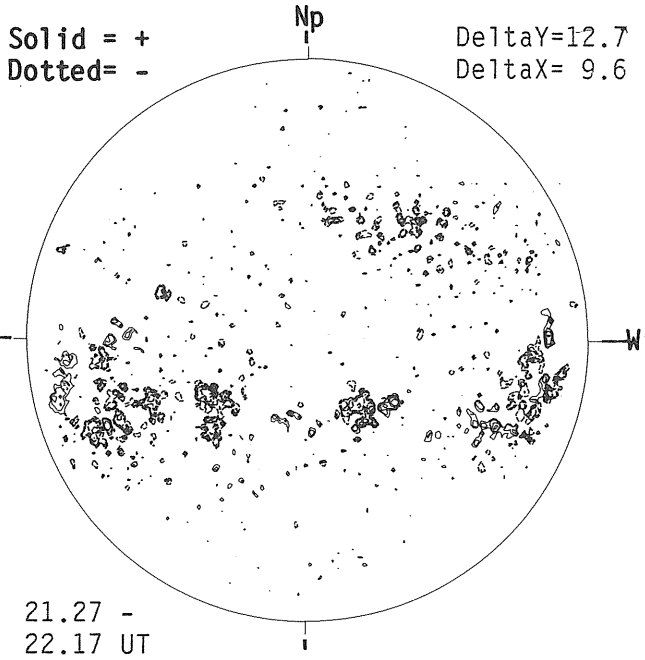
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

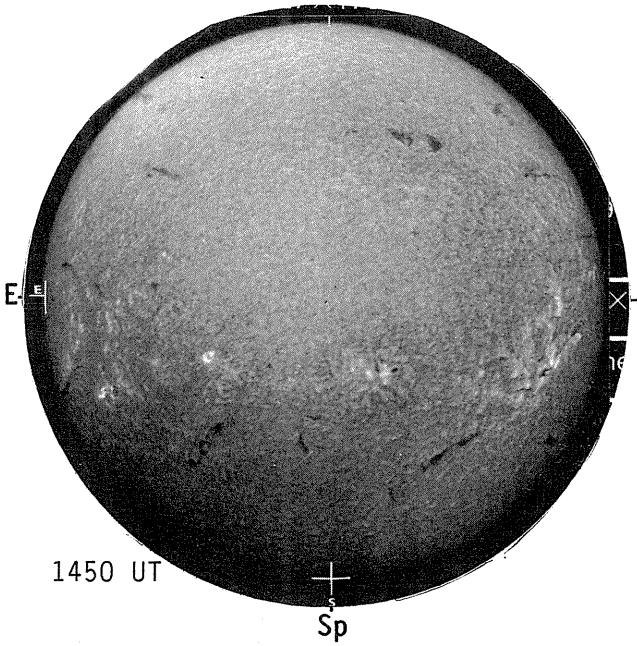
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6



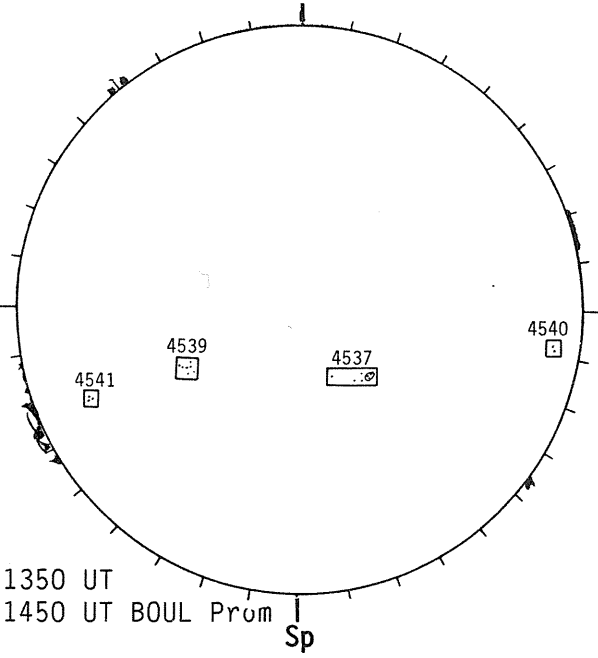
21.27 -
22.17 UT

BOULDER H-ALPHA



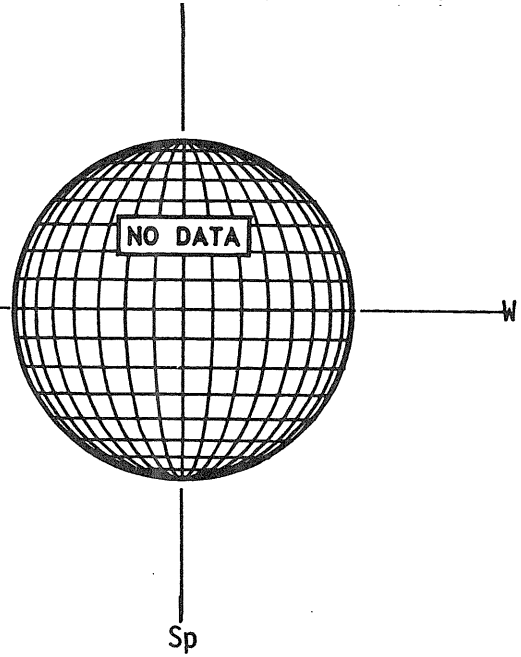
1450 UT

BOULDER SUNSPOTS



1350 UT
1450 UT BOUL Prom

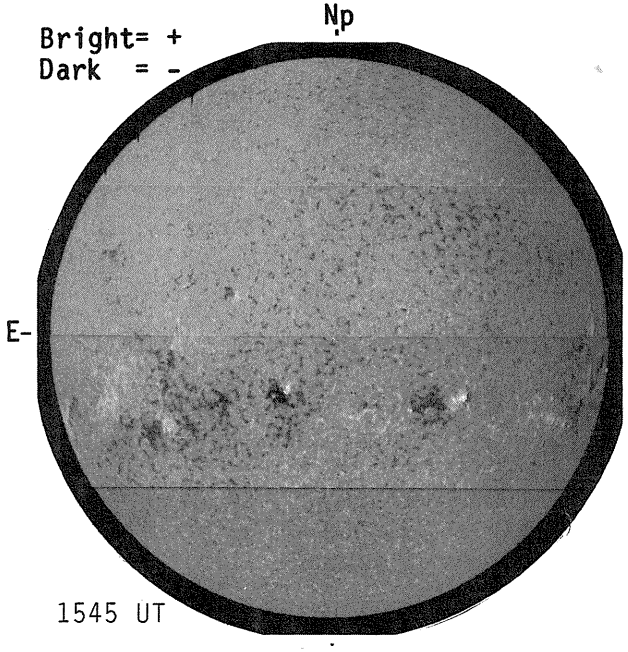
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 14, 1 9 8 4 (P= 3.27, B_0= 4.26, L_0= 47.76)

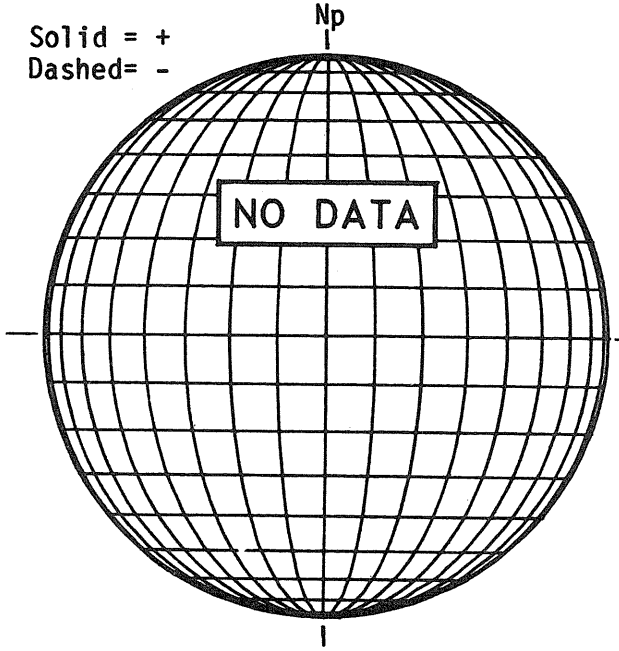
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



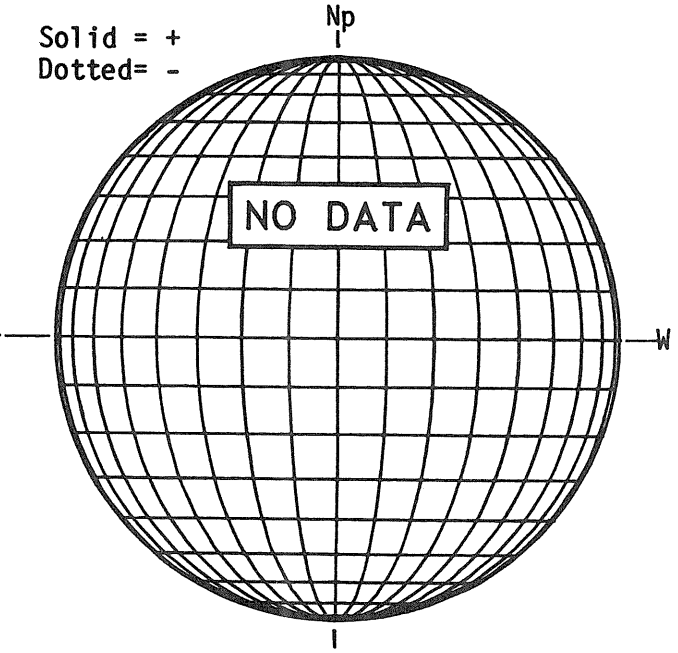
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

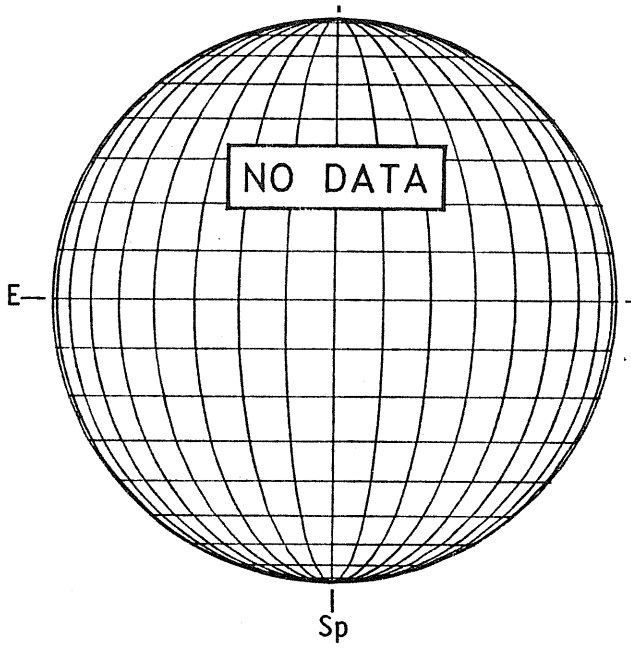


MT. WILSON MAGNETOGRAM

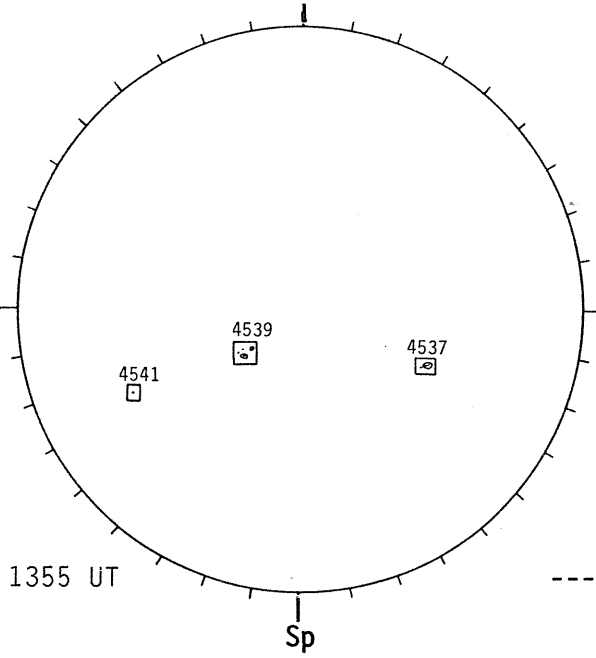
Solid = +
Dotted= -



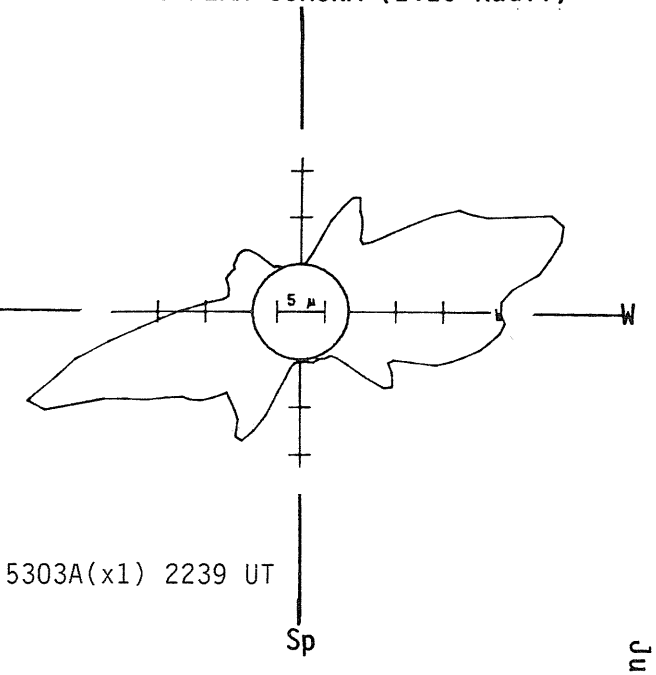
BOULDER H-ALPHA



BOULDER SUNSPOTS

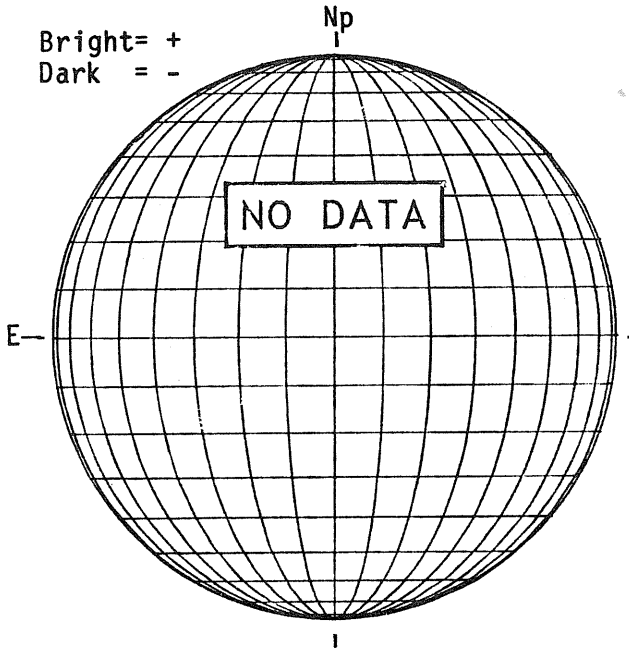


SACRAMENTO PEAK CORONA (1.15 Radii)

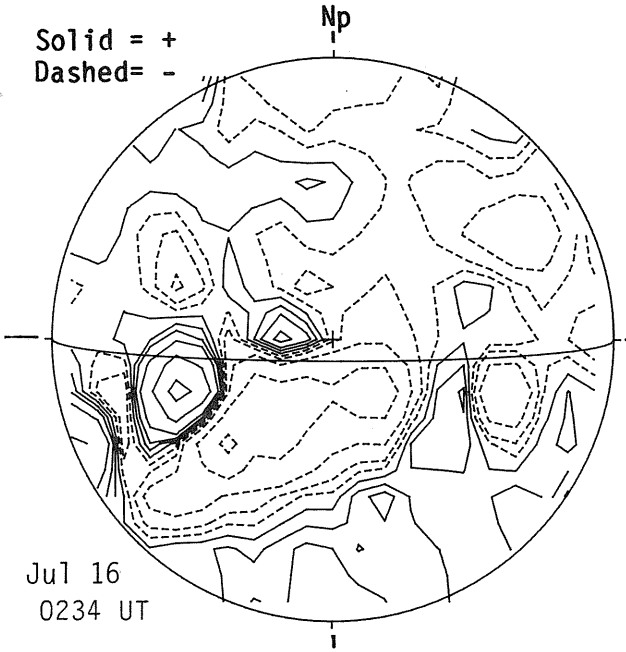


J U L Y 15, 1 9 8 4 (P= 3.71, B_0= 4.36, L_0= 34.52)

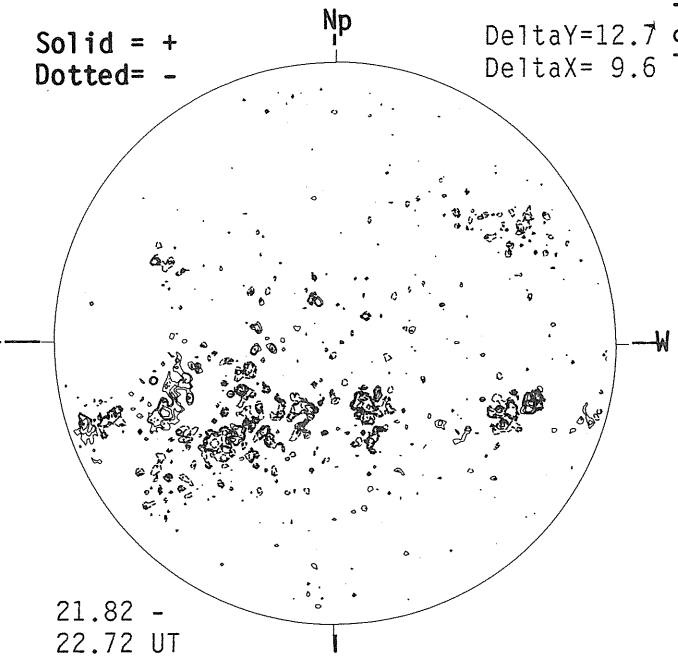
KITT PEAK MAGNETOGRAM



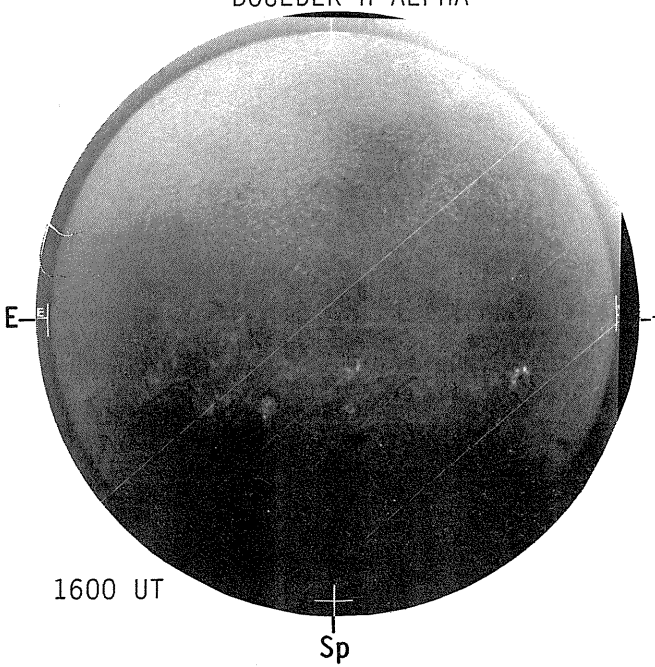
STANFORD MAGNETOGRAM



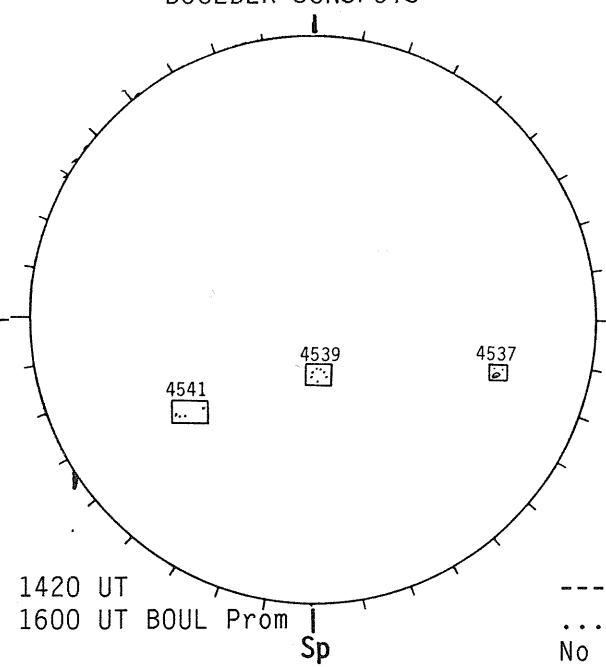
MT. WILSON MAGNETOGRAM



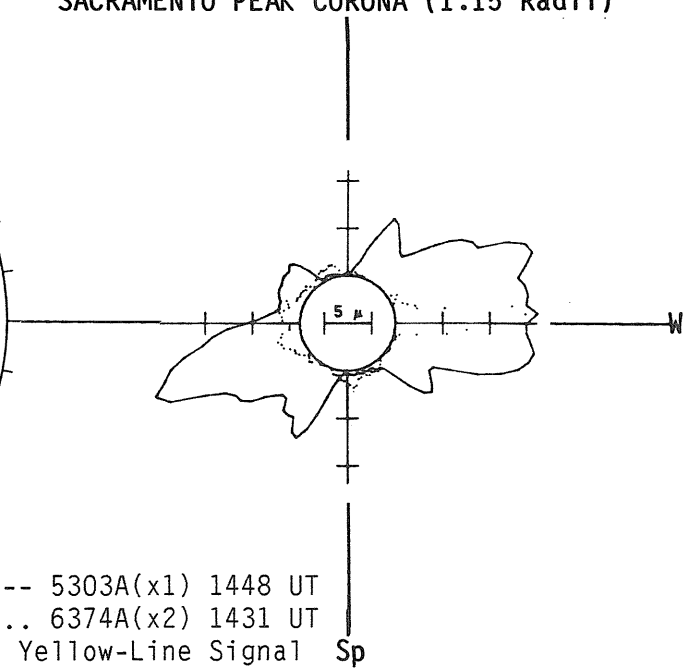
BOULDER H-ALPHA



BOULDER SUNSPOTS



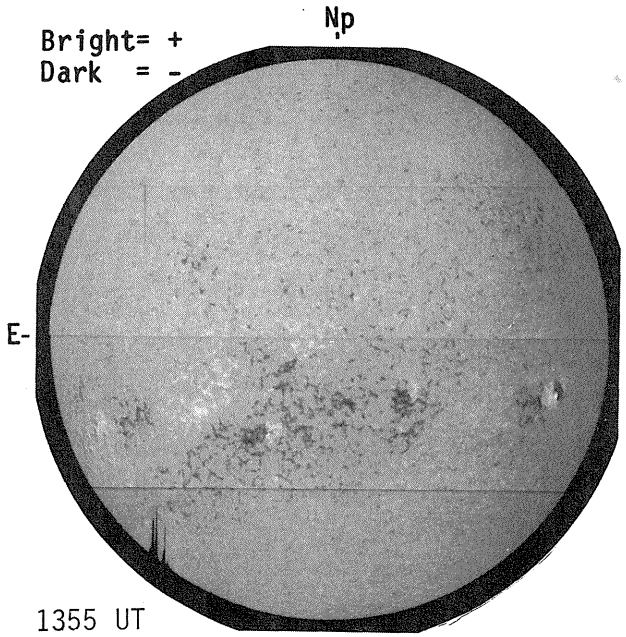
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 16, 1 9 8 4 (P= 4.16, B_0= 4.46, L_0= 21.29)

KITT PEAK MAGNETOGRAM

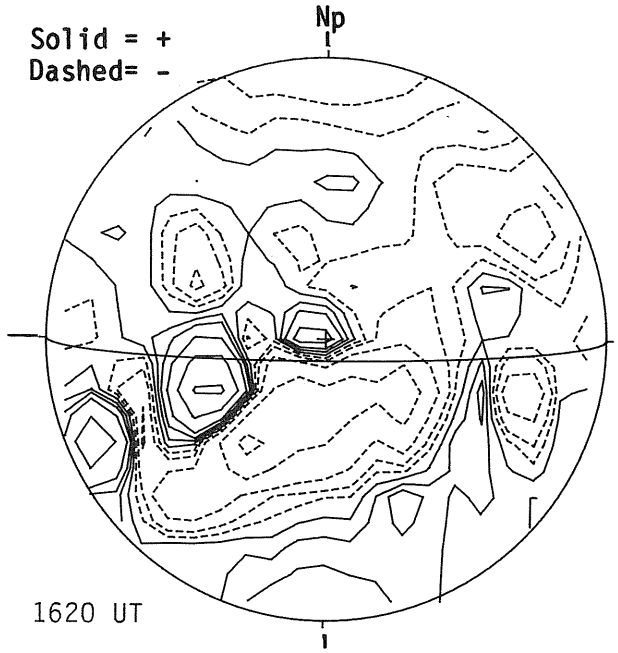
Bright= +
Dark = -



1355 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

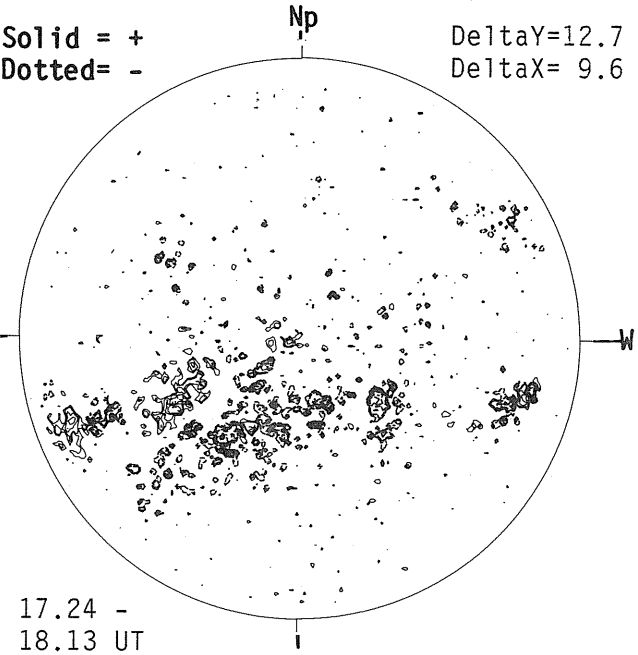


1620 UT

MT. WILSON MAGNETOGRAM

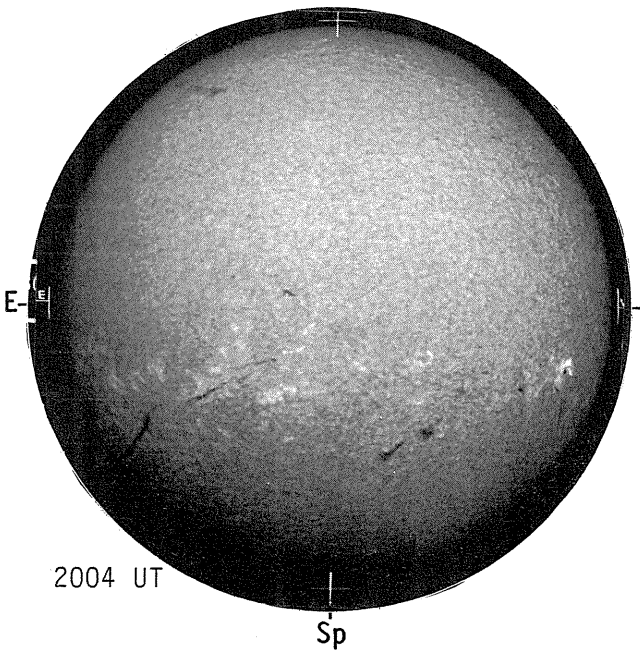
Solid = +
Dotted= -

DeltaY=12.7
DeltaX= 9.6



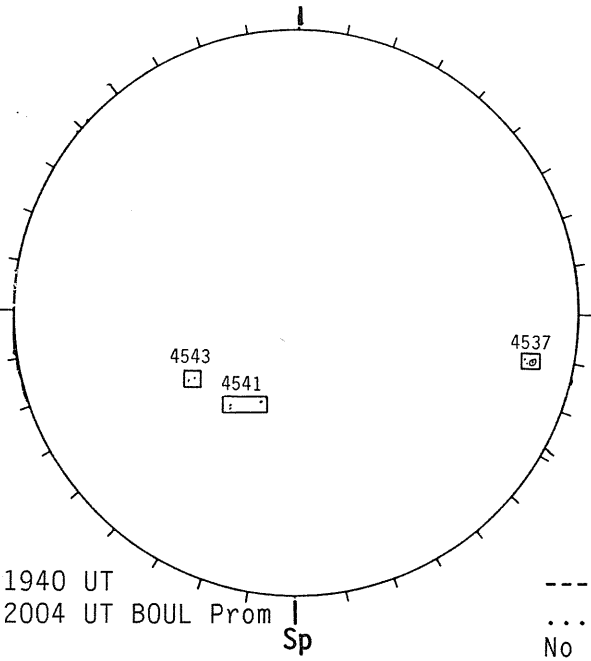
17.24 -
18.13 UT

BOULDER H-ALPHA



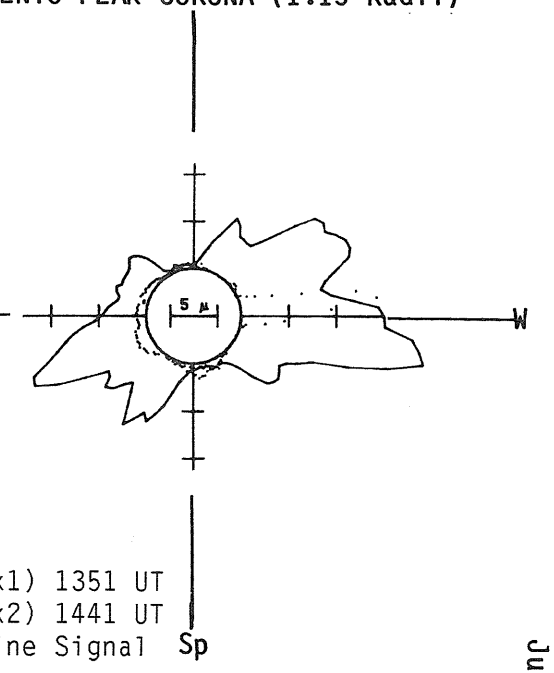
2004 UT

BOULDER SUNSPOTS



1940 UT
2004 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

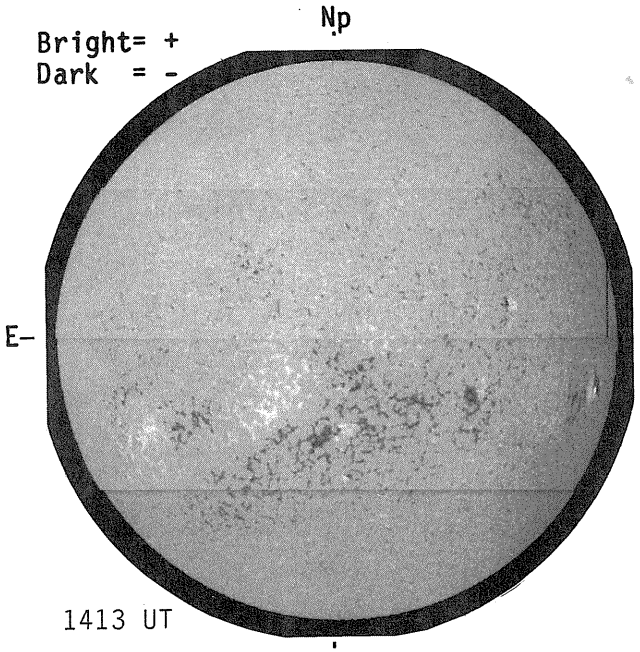


---- 5303A(x1) 1351 UT
.... 6374A(x2) 1441 UT
No Yellow-Line Signal

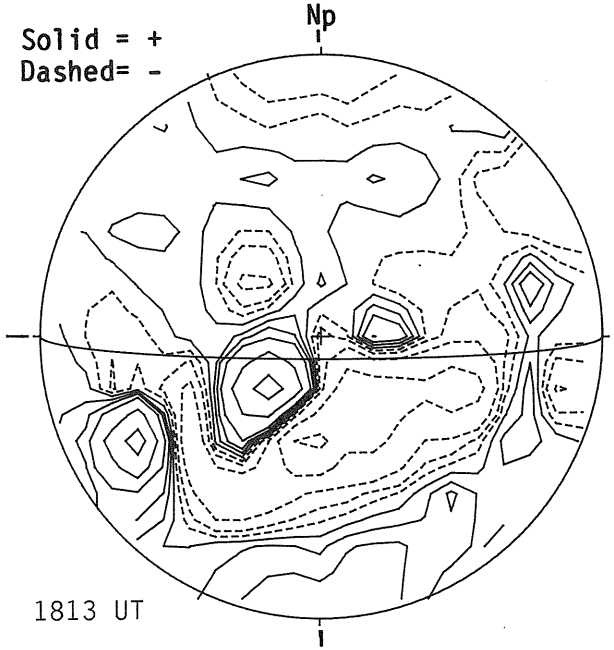
51
Jul 84

J U L Y 17, 1 9 8 4 (P= 4.60, B_0= 4.55, L_0= 8.06)

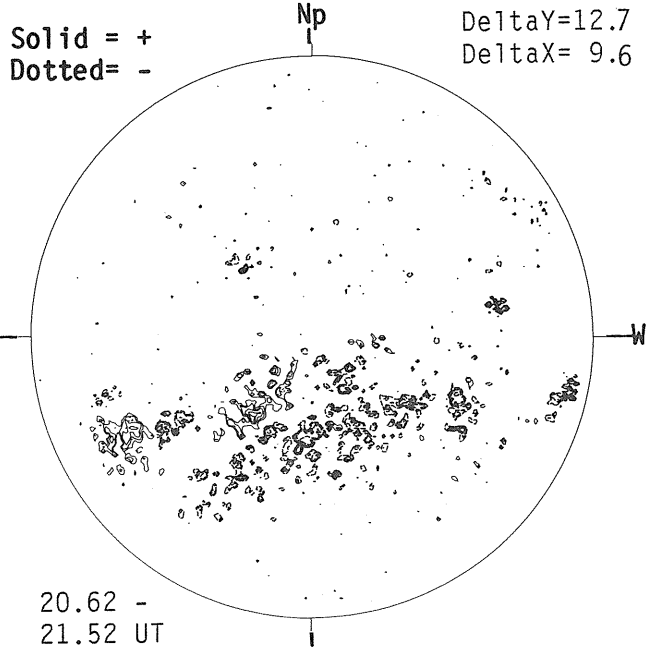
KITT PEAK MAGNETOGRAM



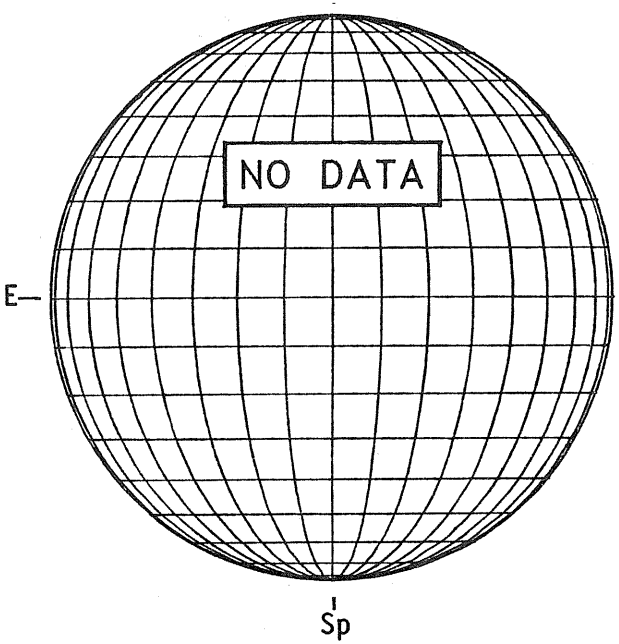
STANFORD MAGNETOGRAM



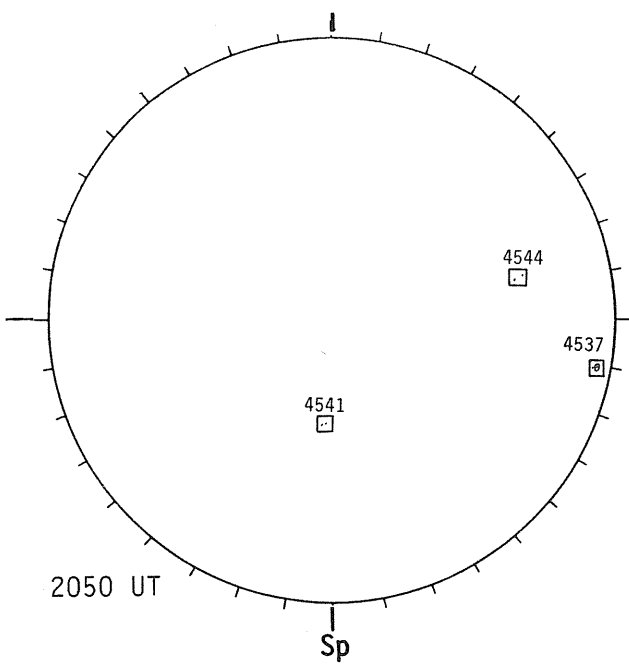
MT. WILSON MAGNETOGRAM



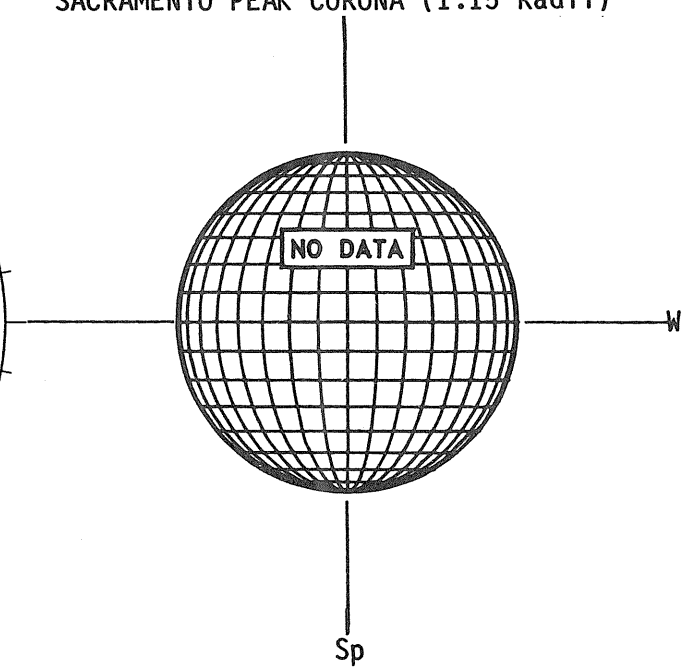
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS

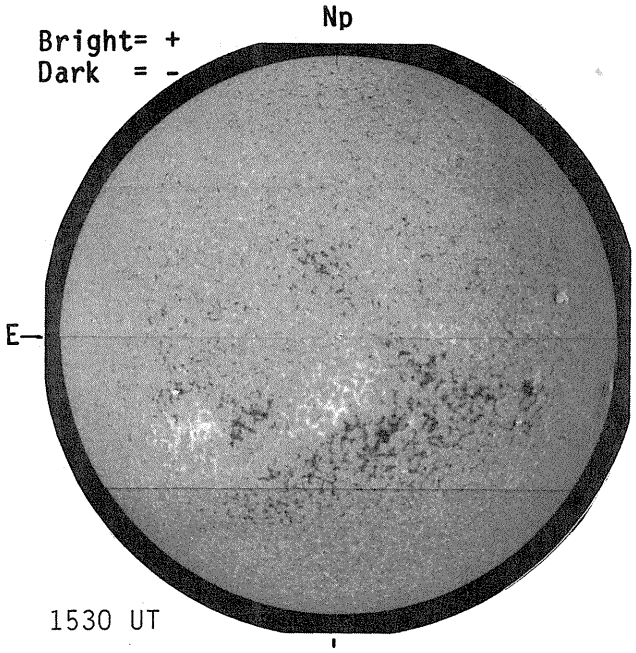


SACRAMENTO PEAK CORONA (1.15 Radii)

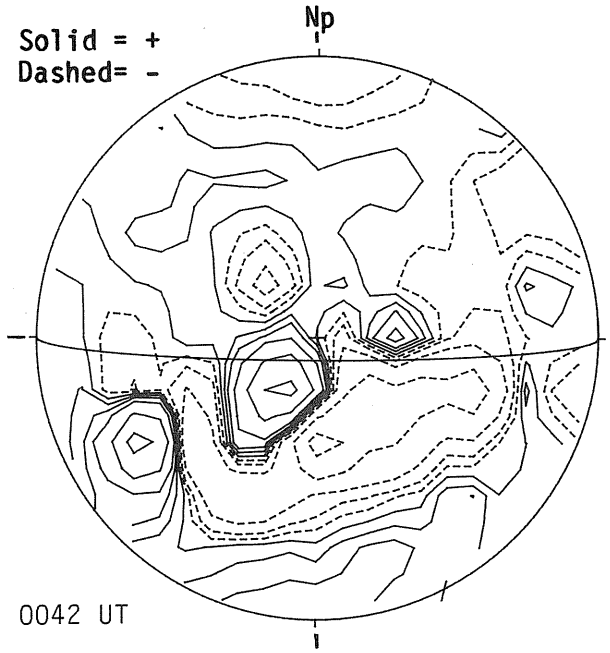


J U L Y 18, 1 9 8 4 (P= 5.04, B_0= 4.64, L_0= 354.83)

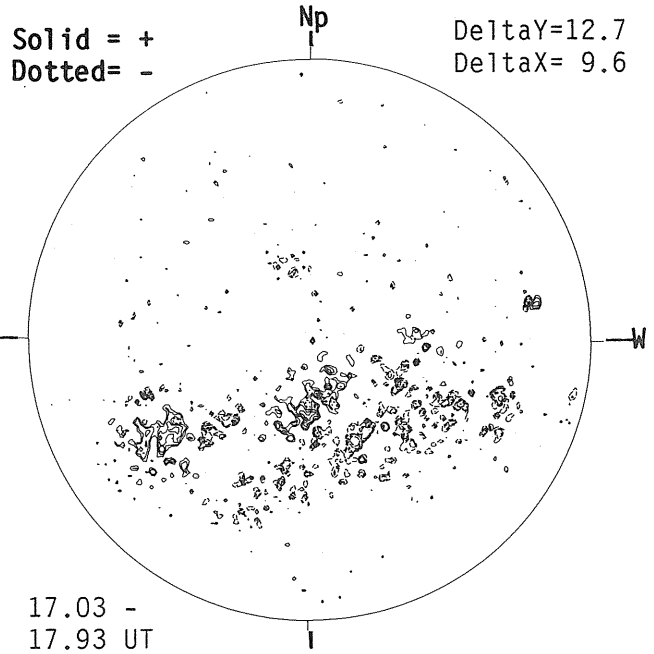
KITT PEAK MAGNETOGRAM



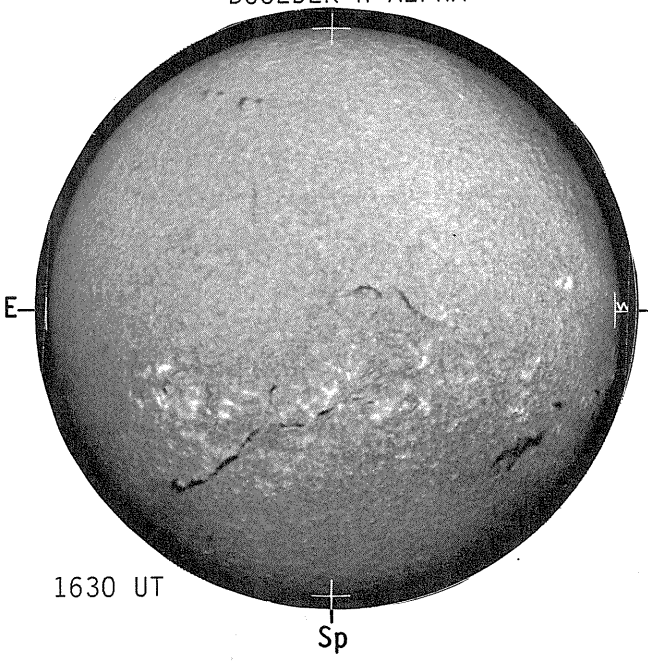
STANFORD MAGNETOGRAM



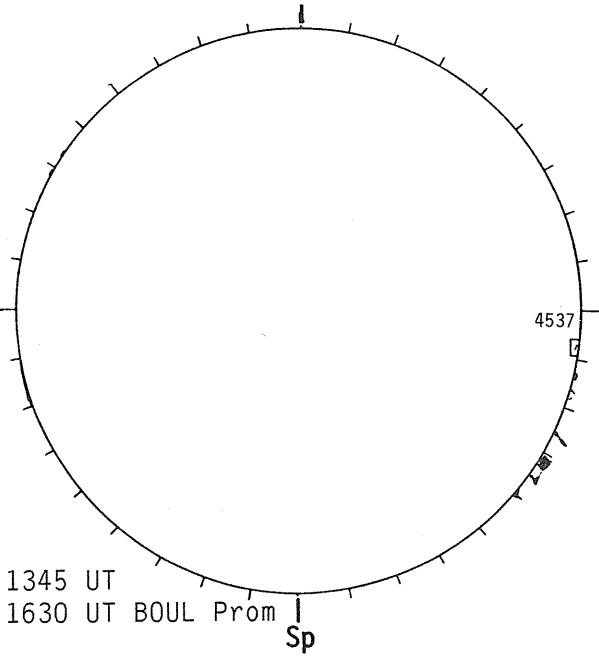
MT. WILSON MAGNETOGRAM



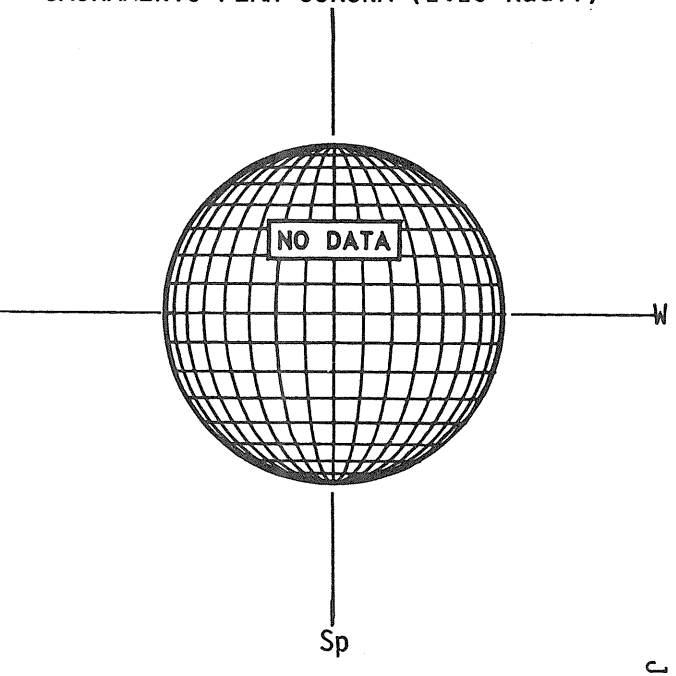
BOULDER H-ALPHA



BOULDER SUNSPOTS



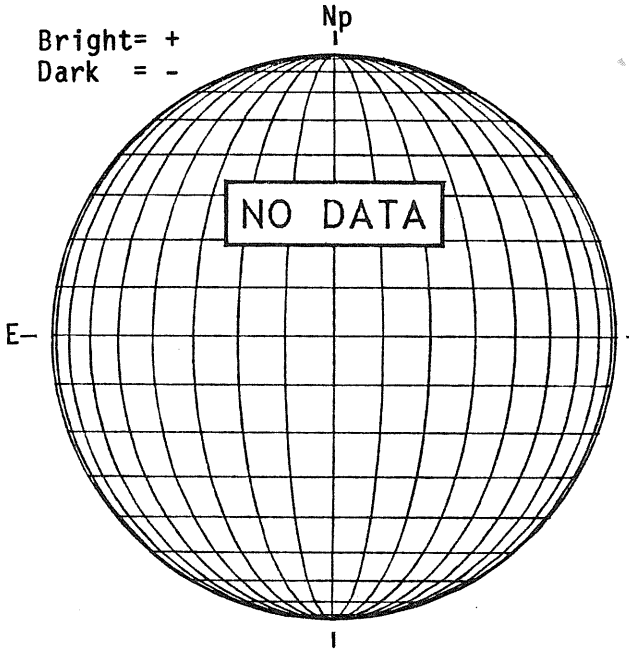
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 19, 1 9 8 4 (P= 5.47, B_0= 4.73, L_0= 341.59)

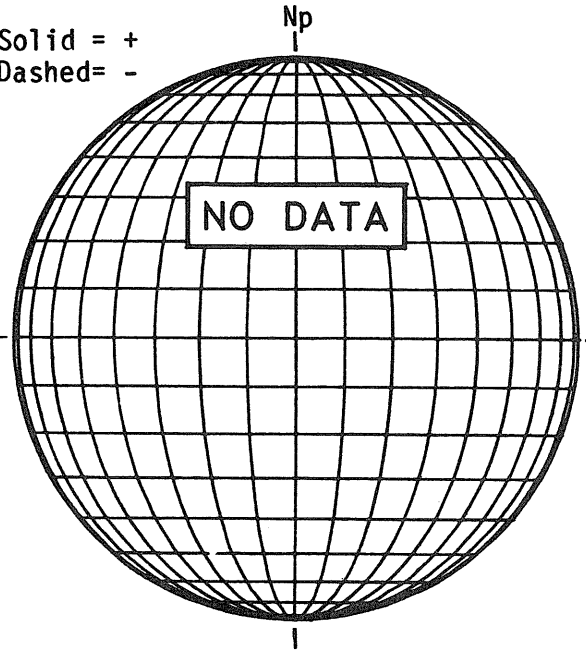
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



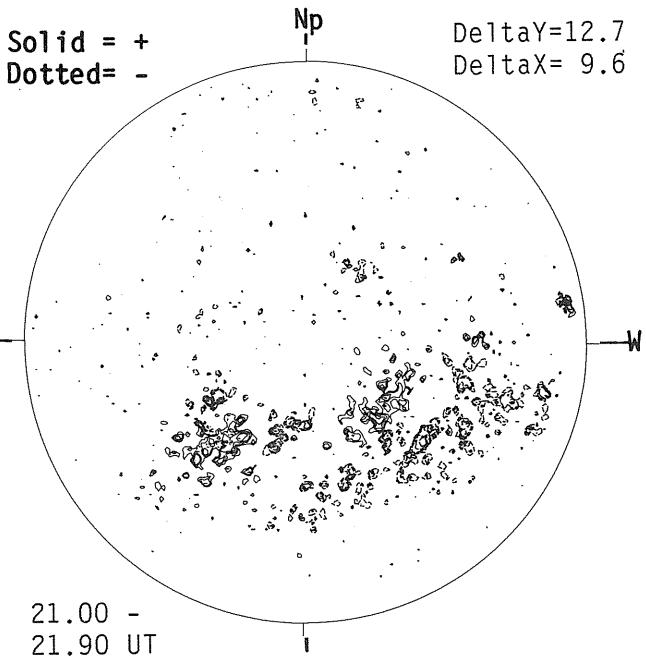
STANFORD MAGNETOGRAM

Solid = +
Dashed= -



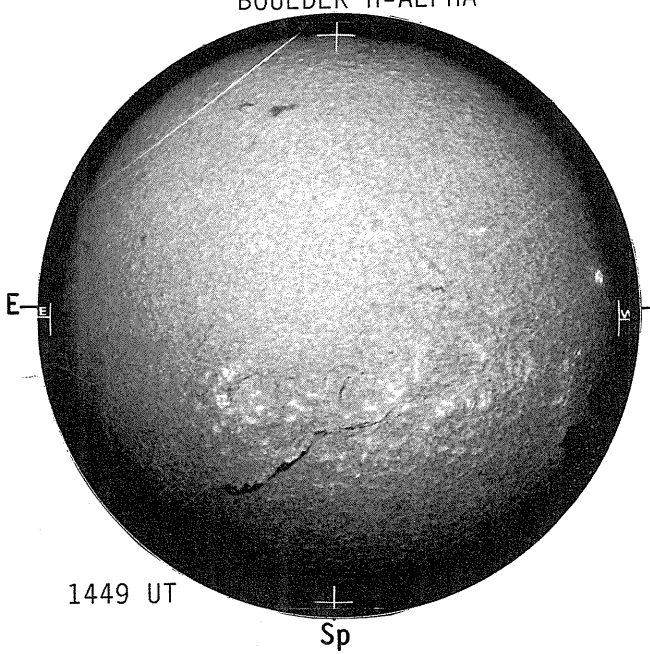
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -



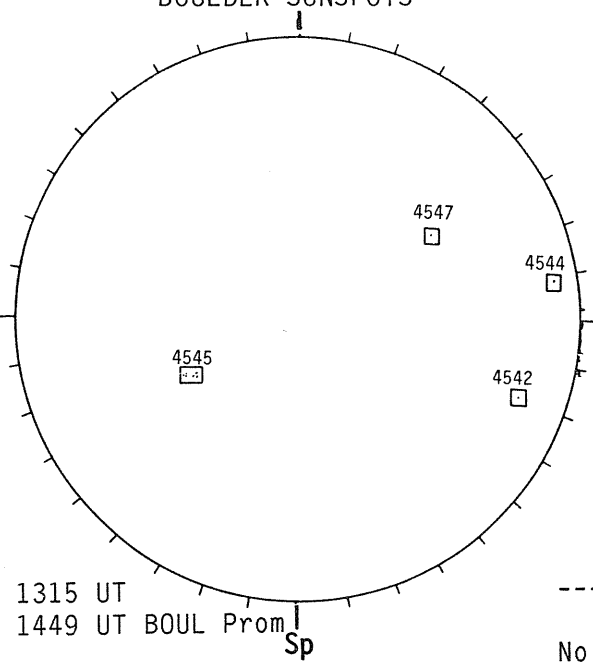
21.00 -
21.90 UT

BOULDER H-ALPHA



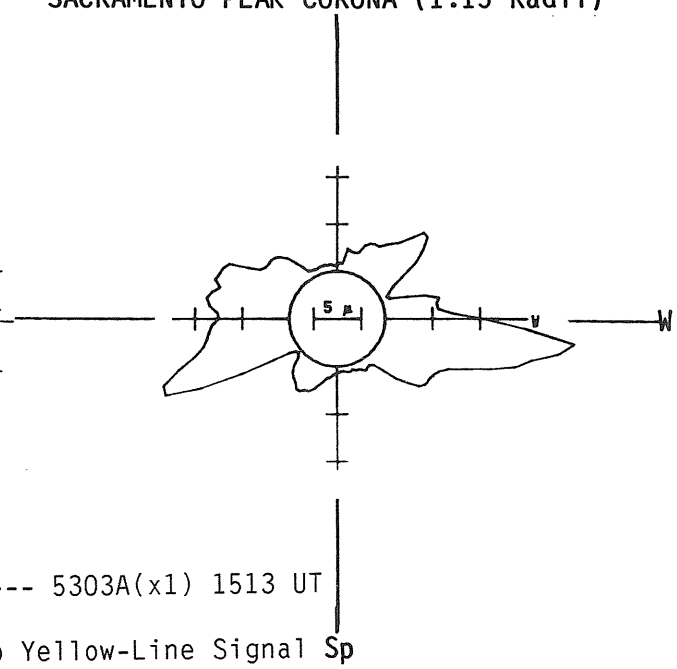
1449 UT

BOULDER SUNSPOTS



1315 UT
1449 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



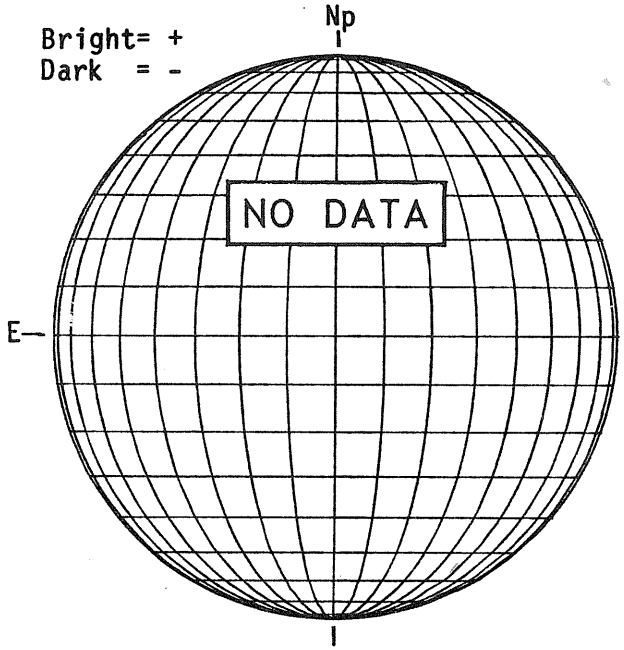
---- 5303A(x1) 1513 UT

No Yellow-Line Signal

J U L Y 20, 1 9 8 4 (P= 5.91, B_0= 4.83, L_0= 328.36)

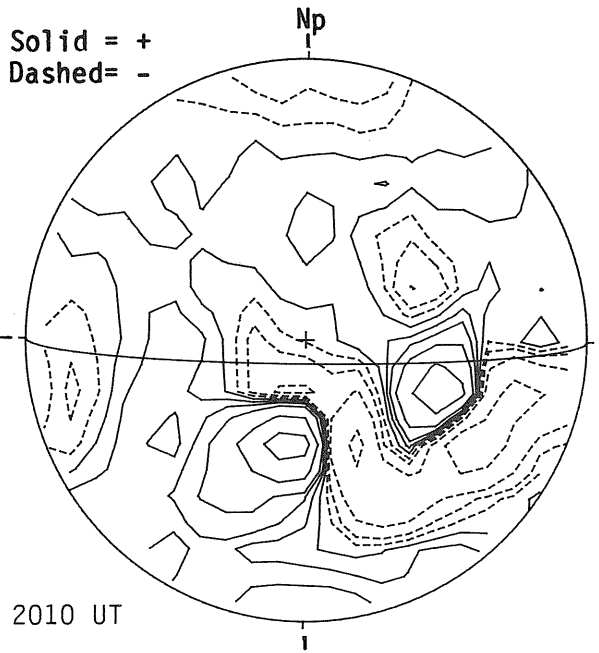
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

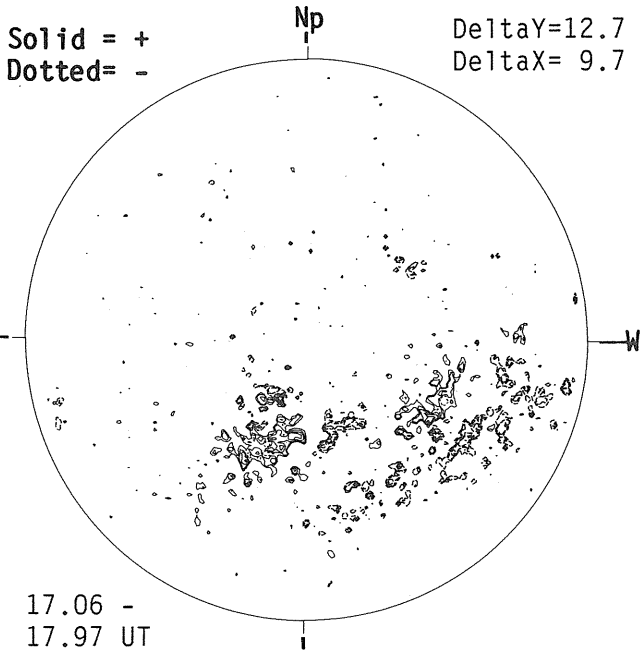
Solid = +
Dashed= -



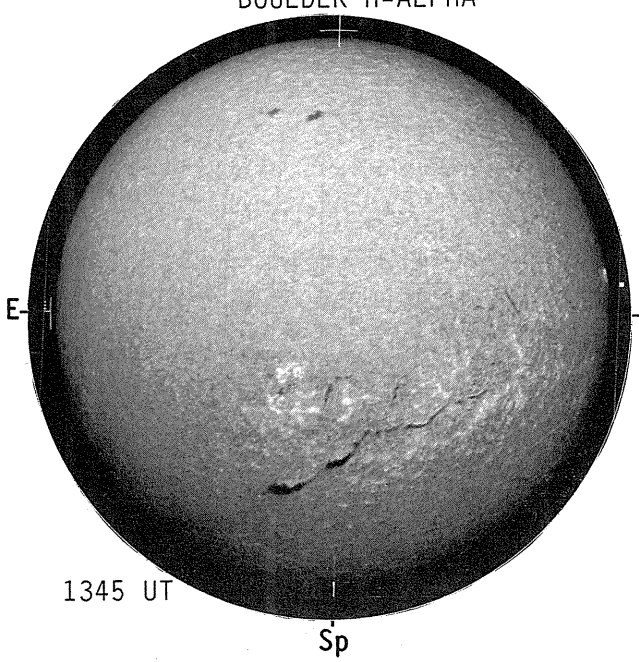
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

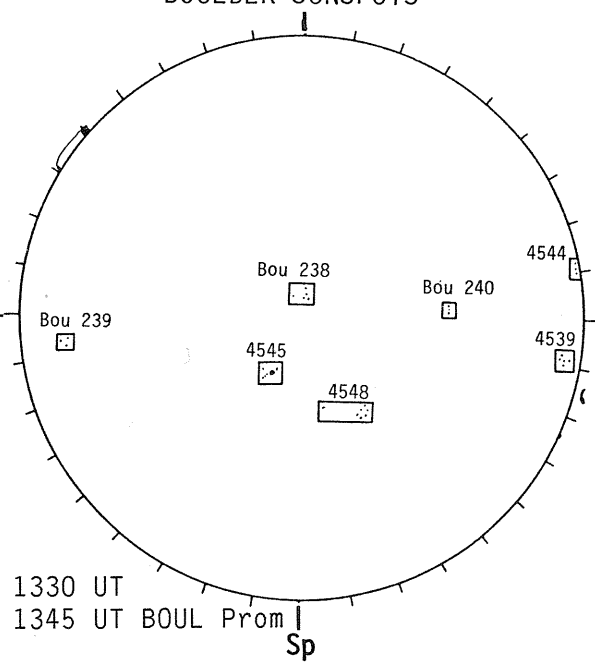
DeltaY=12.7
DeltaX= 9.7



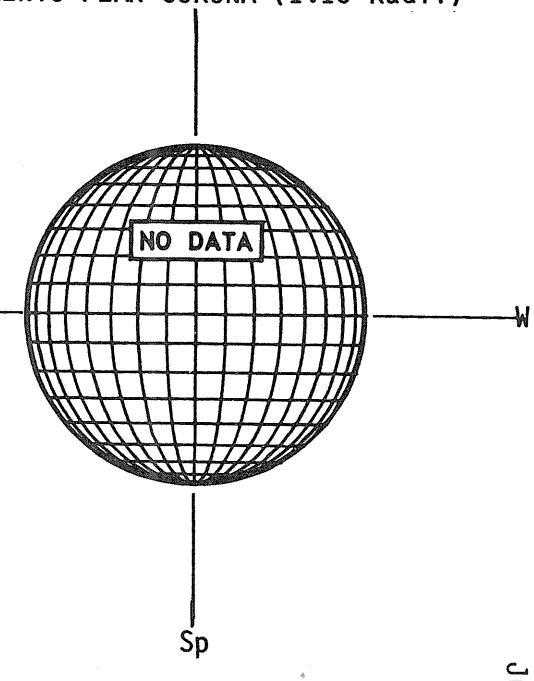
BOULDER H-ALPHA



BOULDER SUNSPOTS



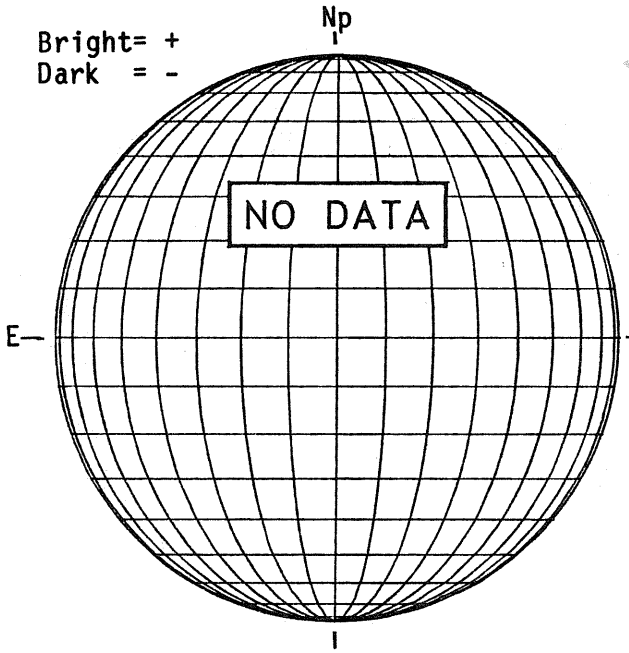
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 21, 1 9 8 4 (P= 6.34, B_0= 4.91, L_0= 315.13)

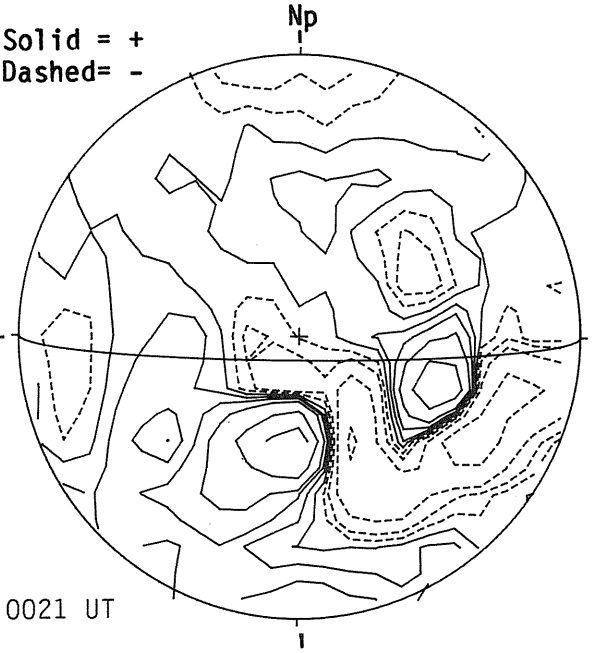
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

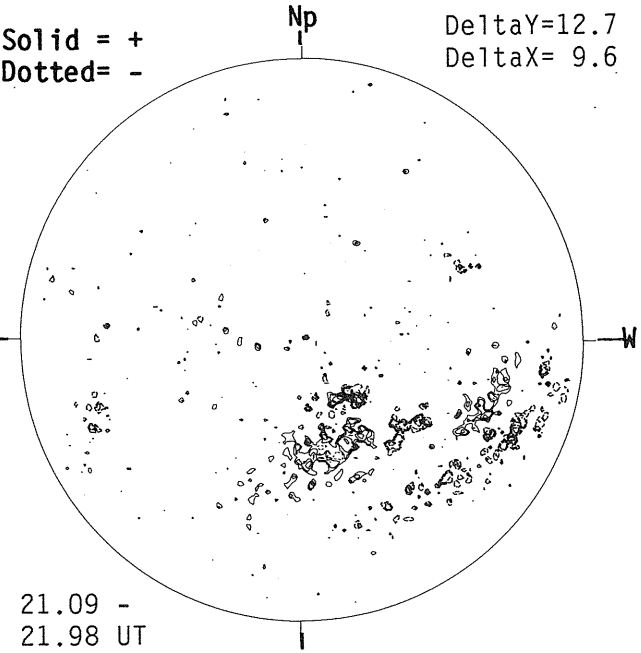
Solid = +
Dashed= -



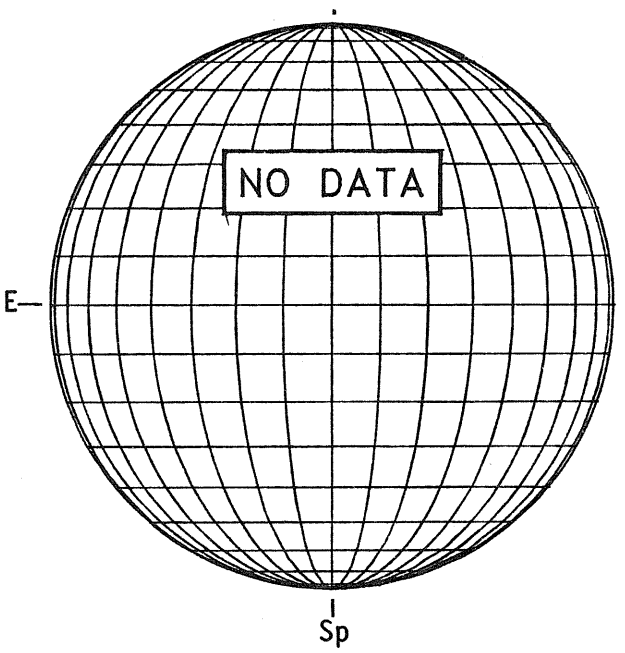
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

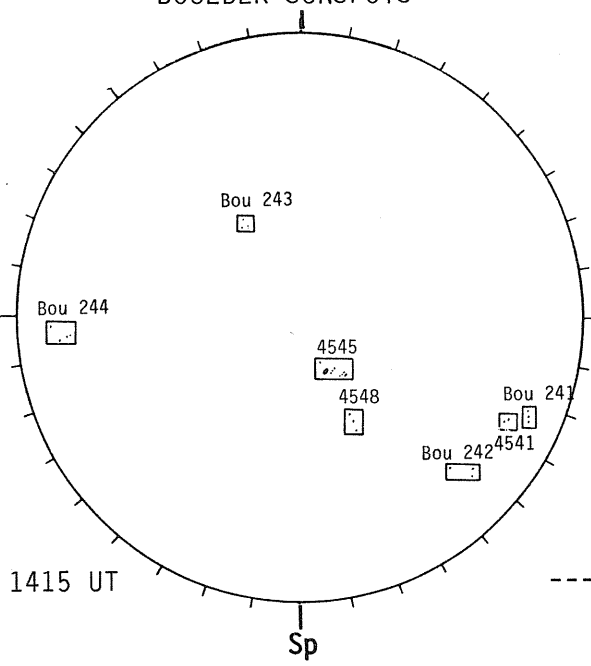
DeltaY=12.7
DeltaX= 9.6



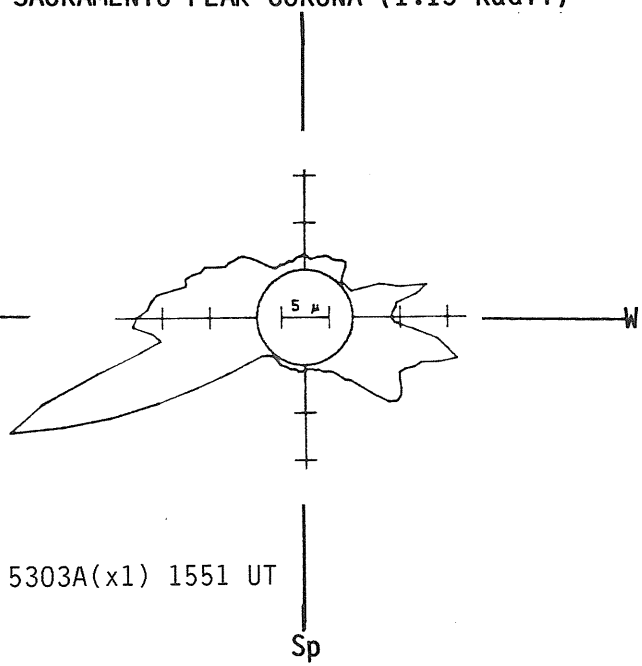
BOULDER H-ALPHA



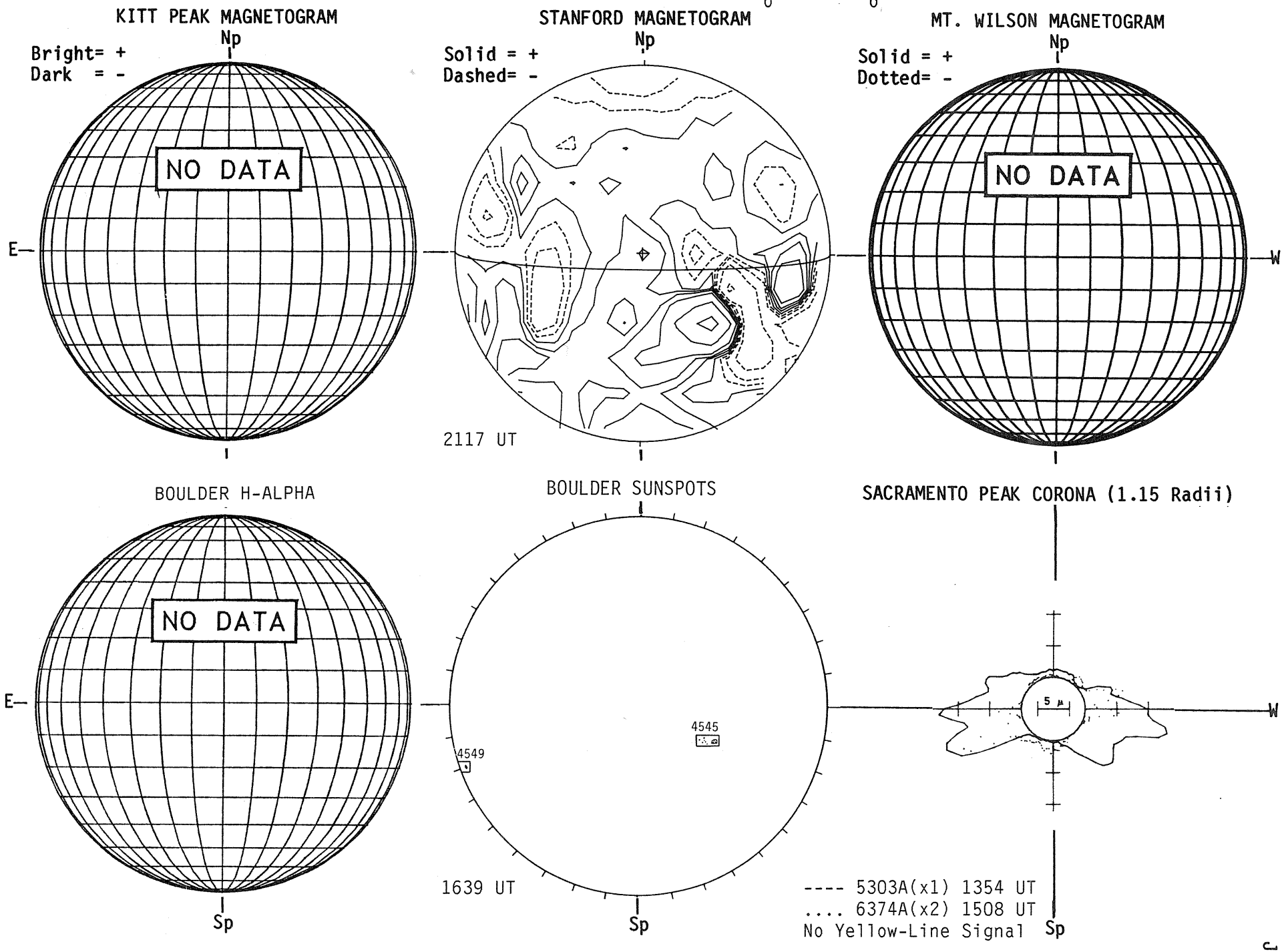
BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



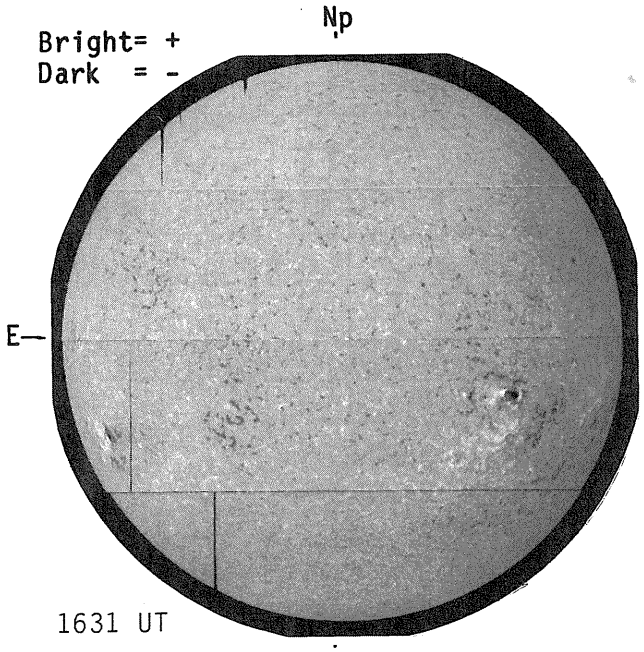
J U L Y 22, 1 9 8 4 (P= 6.77, B_0= 5.00, L_0= 301.90)



J U L Y 23, 1 9 8 4 (P= 7.20, B_0= 5.09, L_0= 288.67)

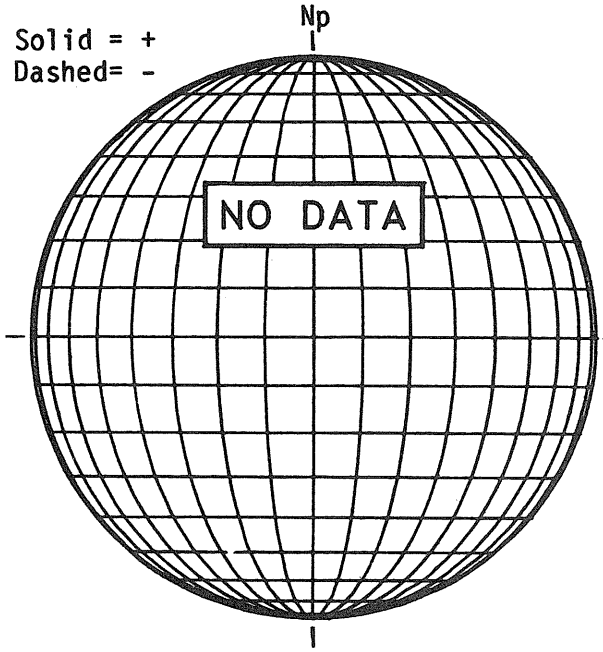
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



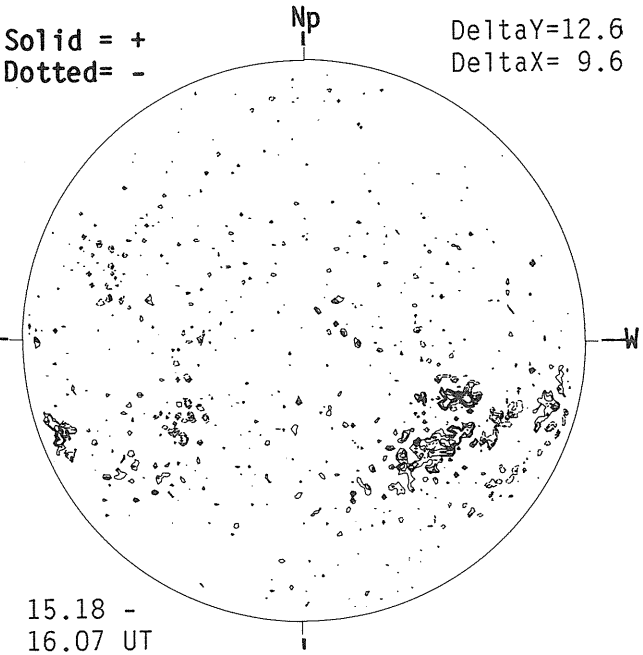
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

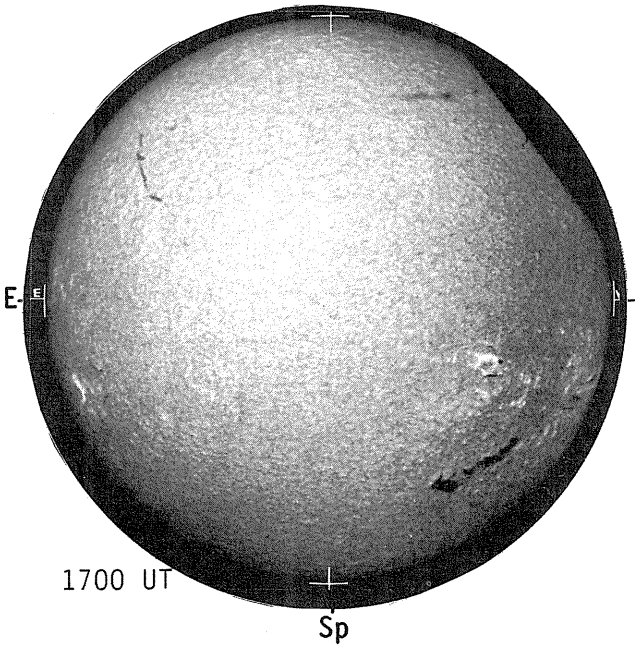


MT. WILSON MAGNETOGRAM

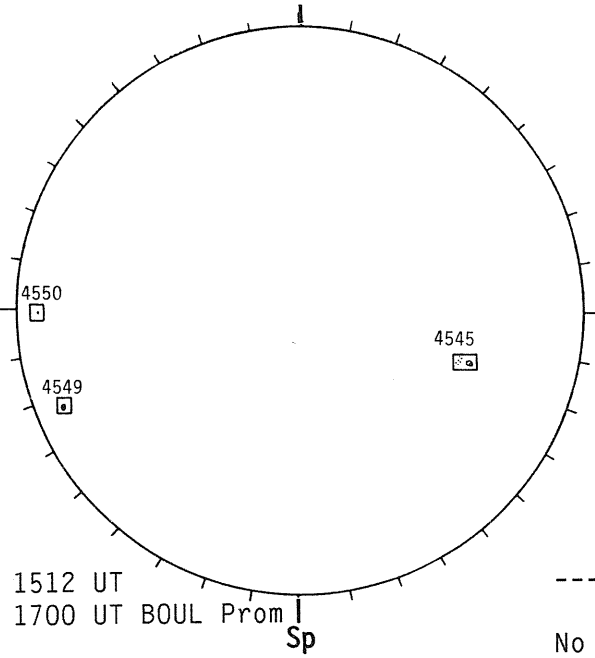
Solid = +
Dotted= -



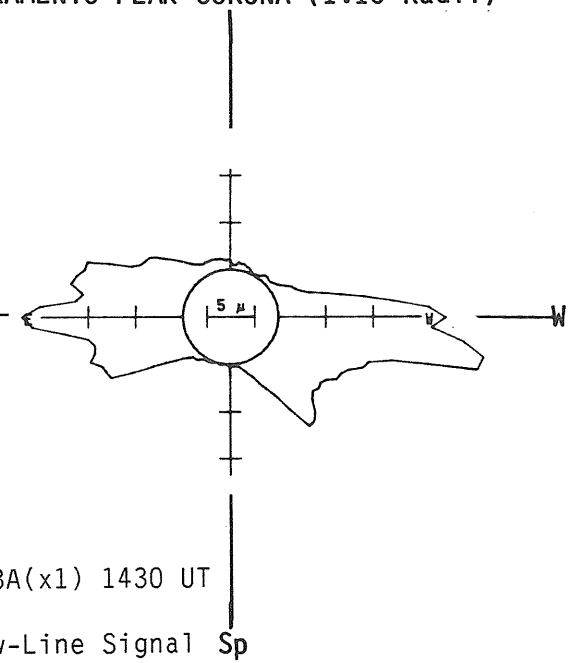
BOULDER H-ALPHA



BOULDER SUNSPOTS



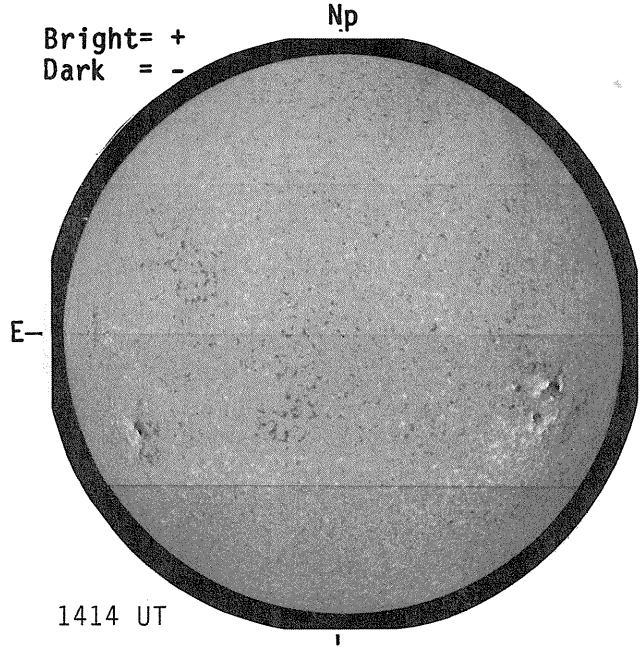
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 24, 1 9 8 4 (P= 7.62, B_o= 5.17, L_o= 275.44)

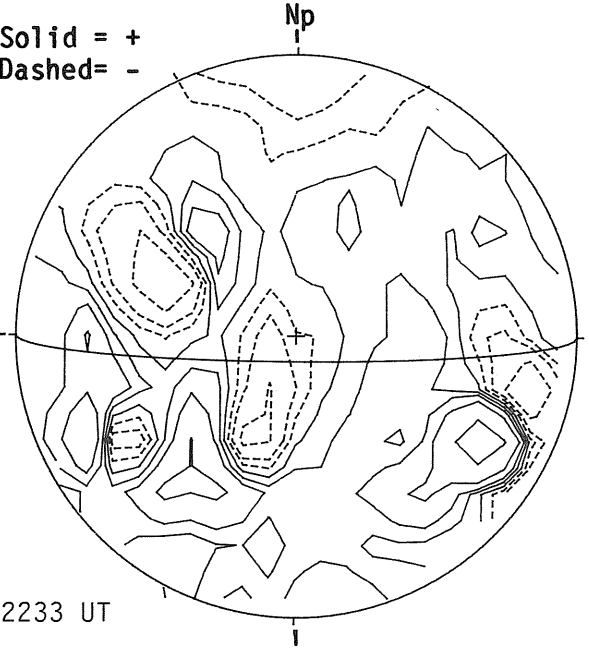
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

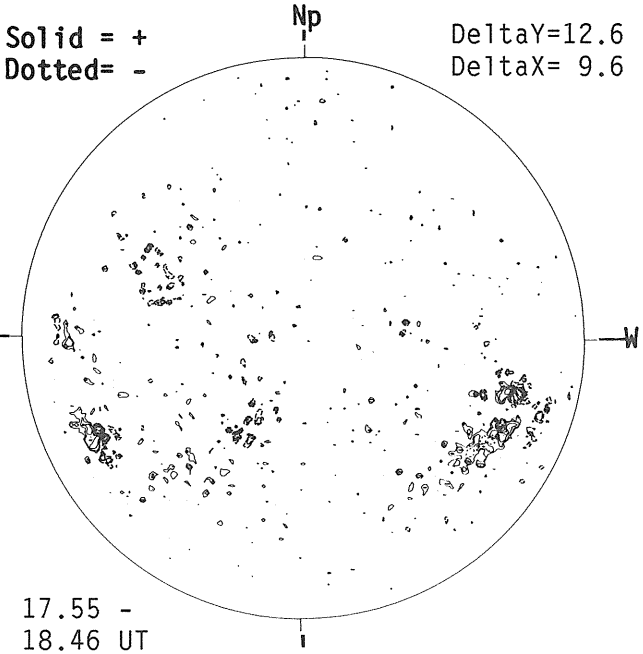
Solid = +
Dashed= -



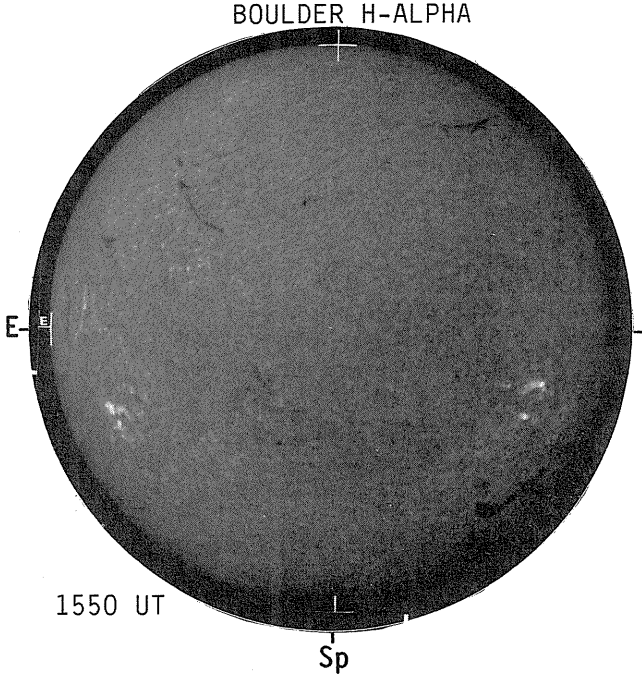
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

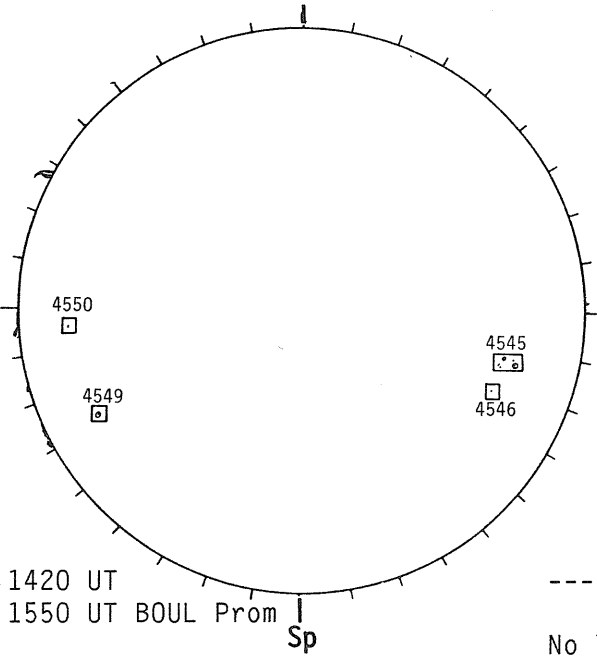
DeltaY=12.6
DeltaX= 9.6



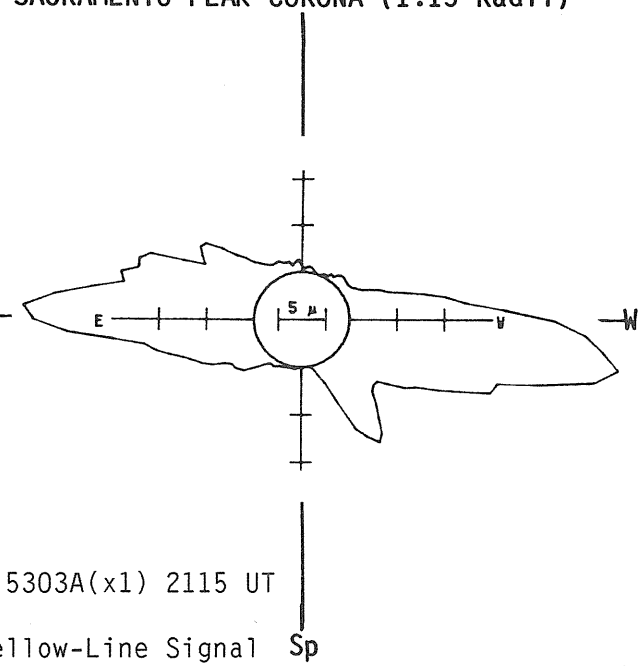
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

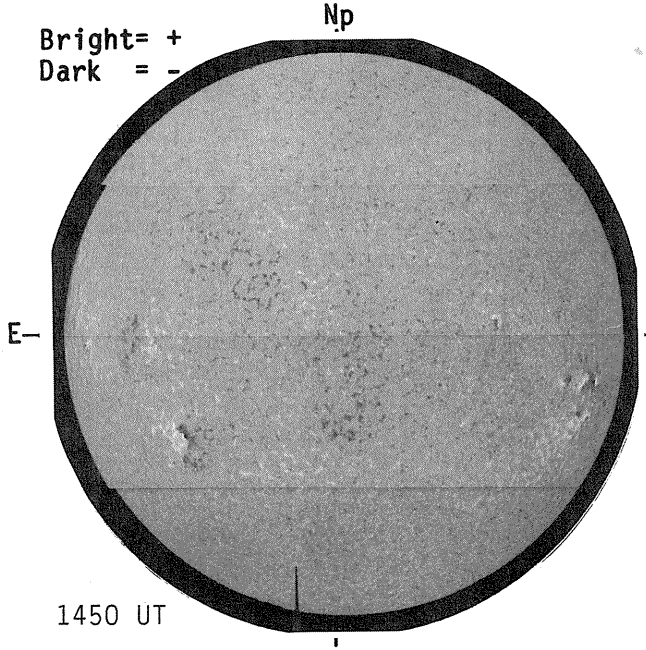


J U L Y 25, 1 9 8 4 (P= 8.04, B_0= 5.26, L_0= 262.21)

60
Jul 84

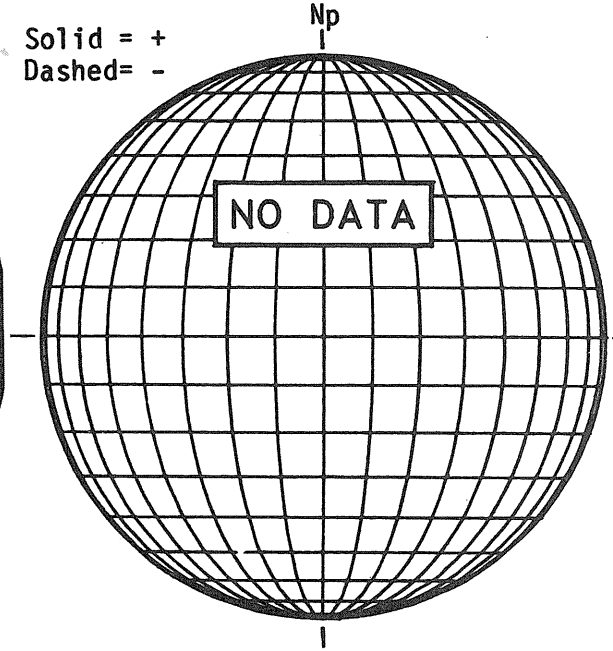
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



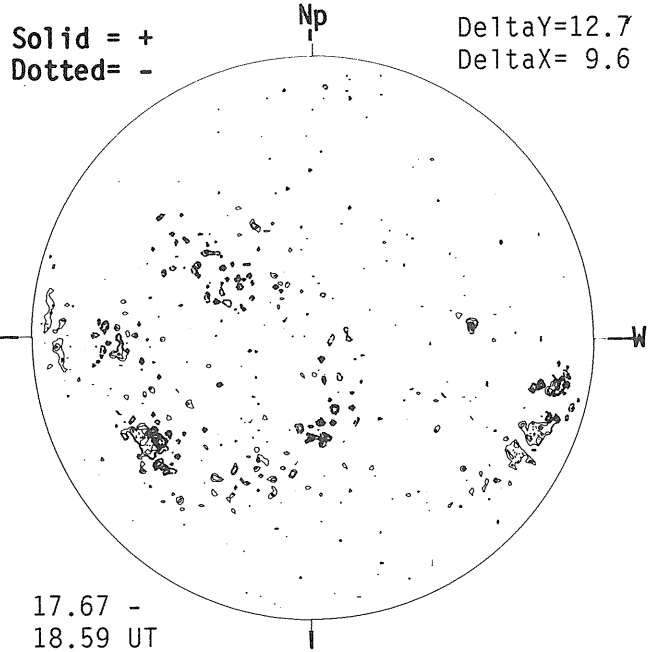
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

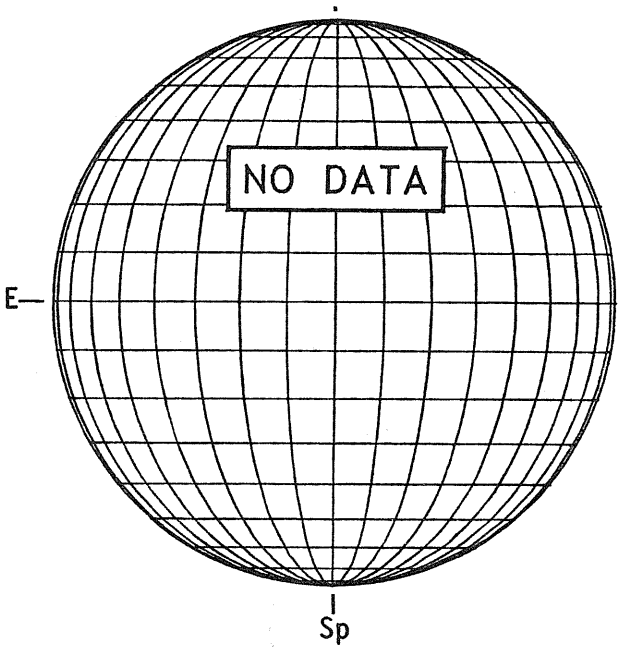


MT. WILSON MAGNETOGRAM

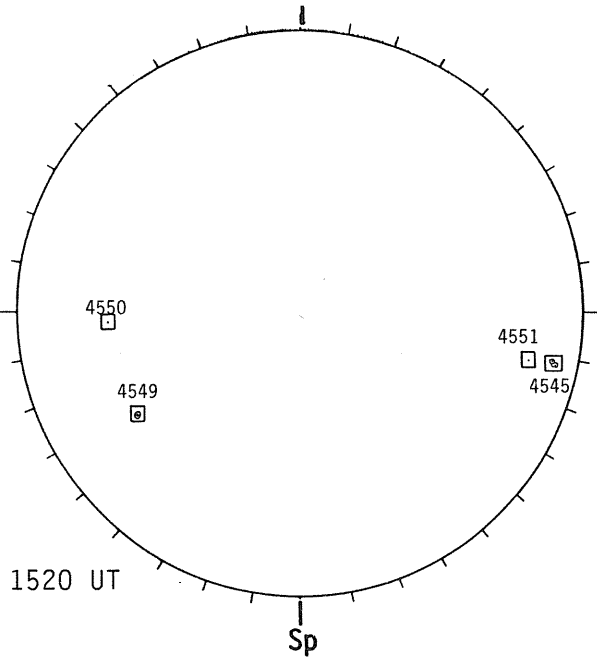
Solid = +
Dotted= -



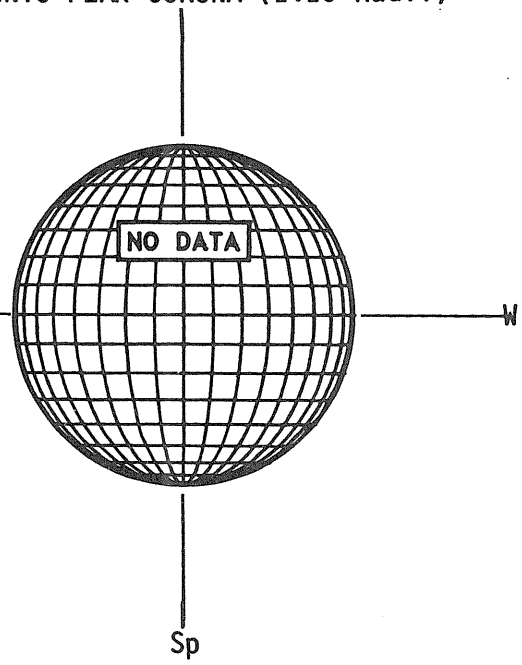
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS



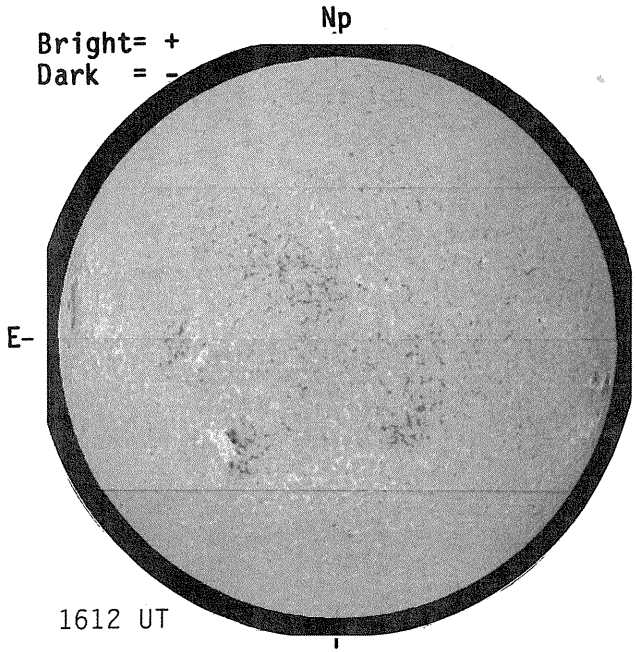
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 26, 1 9 8 4 (P= 8.46, B_0= 5.34, L_0= 248.99)

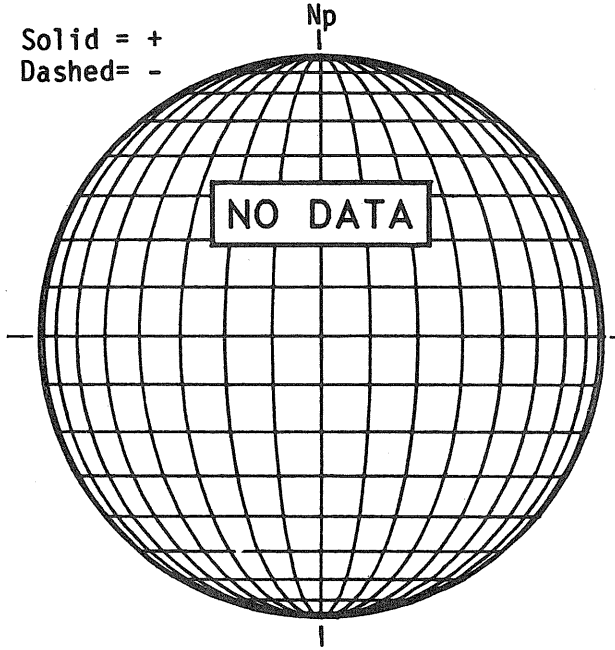
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



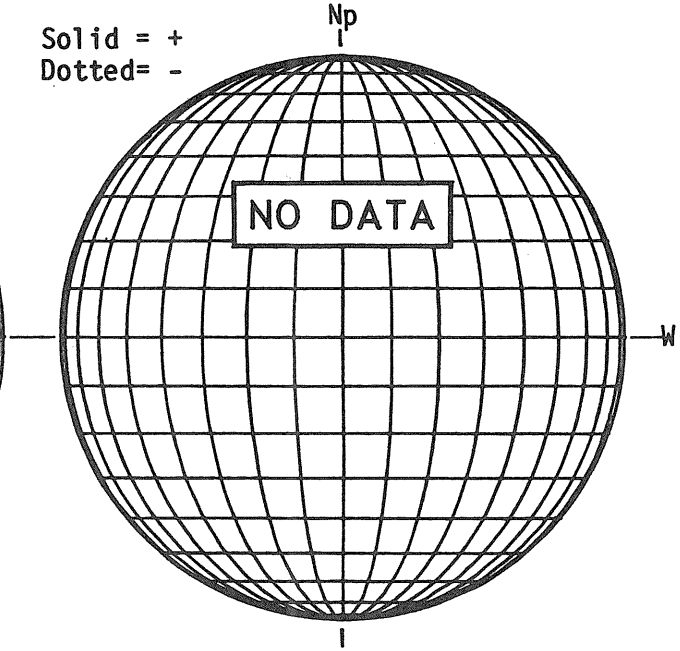
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

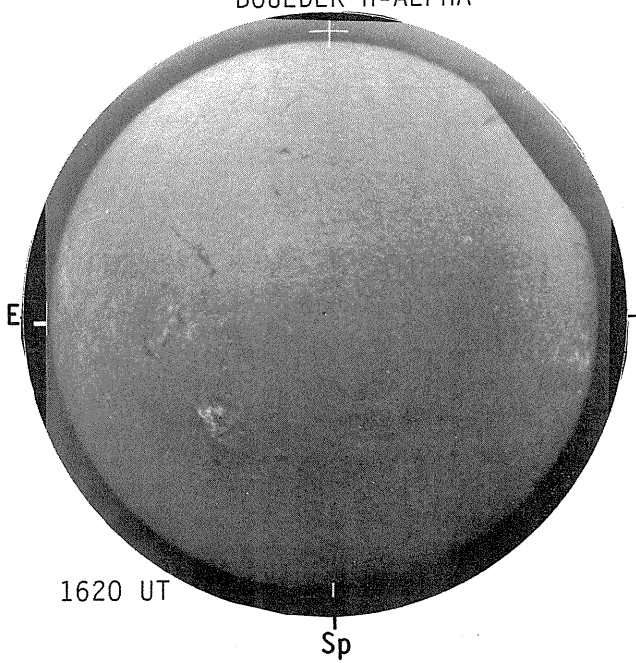


MT. WILSON MAGNETOGRAM

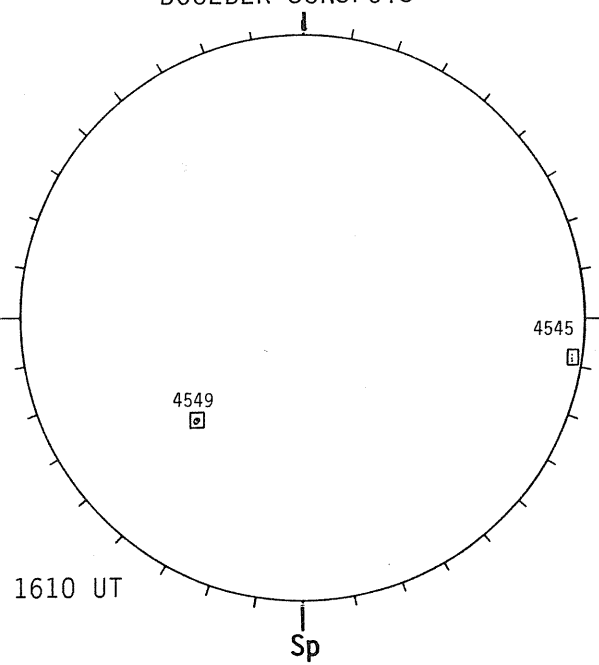
Solid = +
Dotted= -



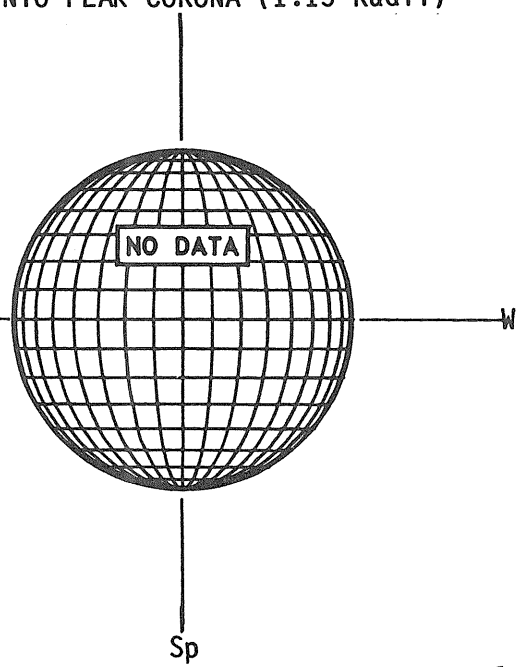
BOULDER H-ALPHA



BOULDER SUNSPOTS



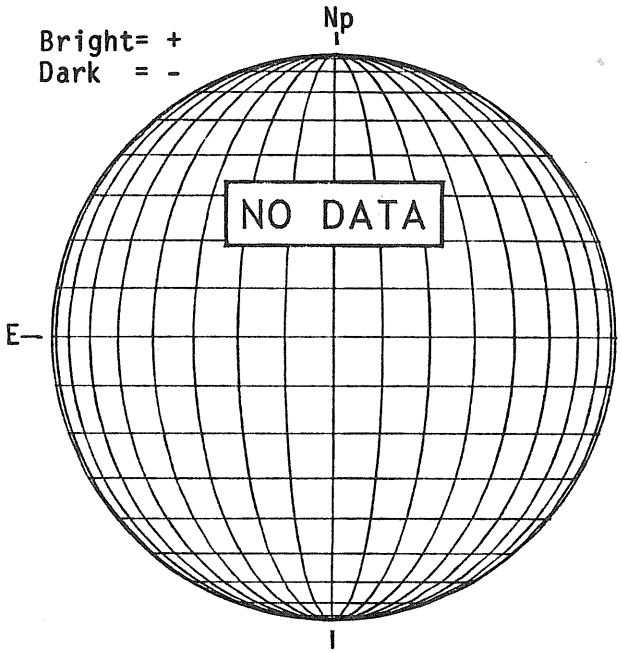
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 27, 1 9 8 4 (P= 8.88, B_0= 5.42, L_0= 235.76)

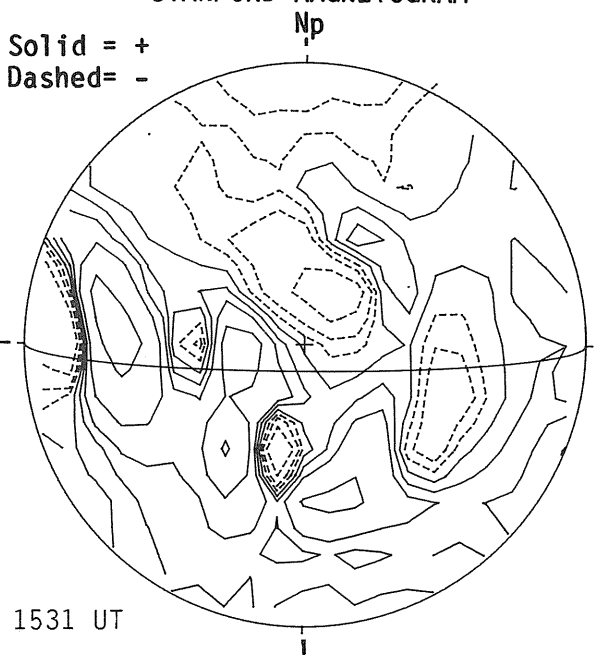
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



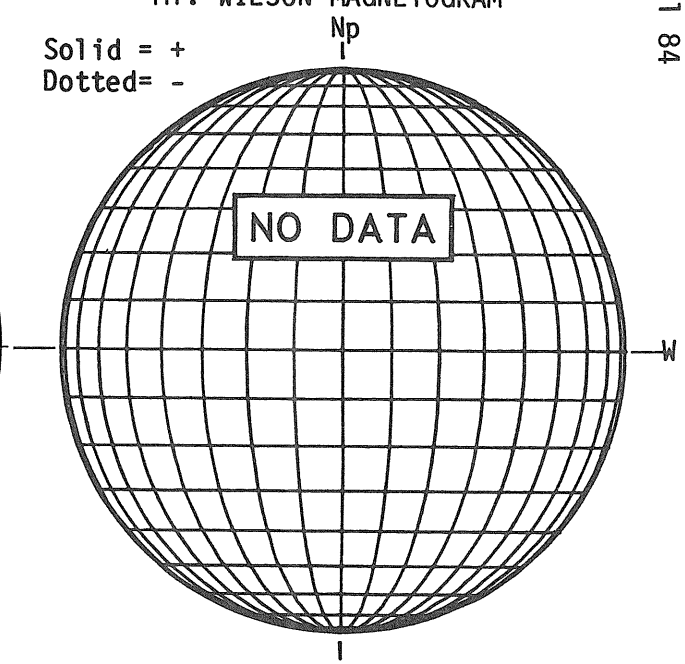
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

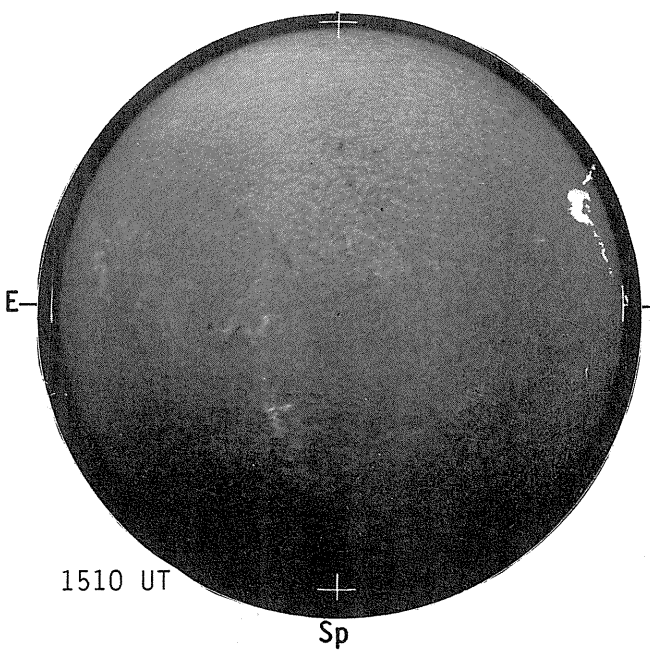


MT. WILSON MAGNETOGRAM

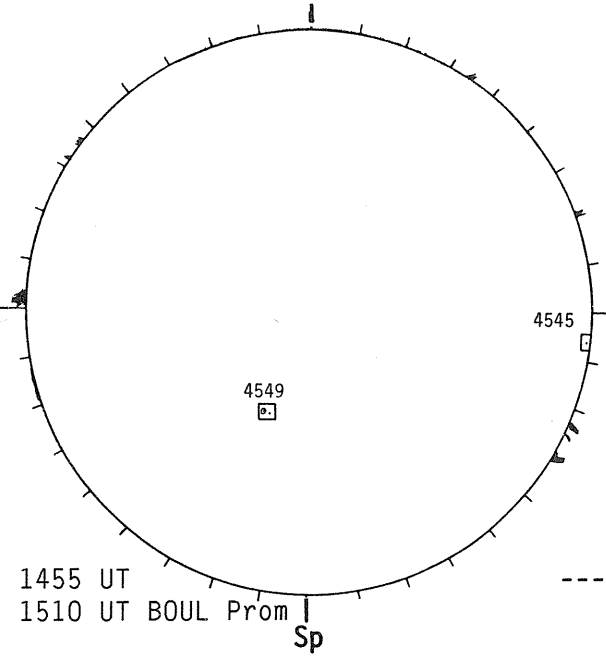
Solid = +
Dotted= -



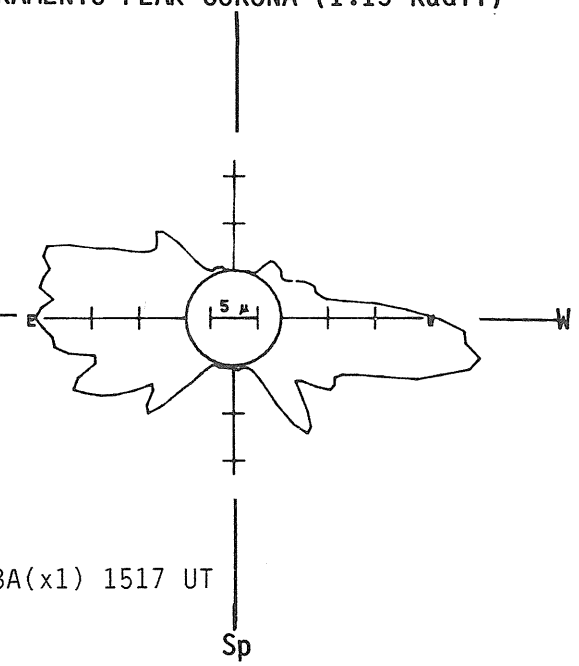
BOULDER H-ALPHA



BOULDER SUNSPOTS



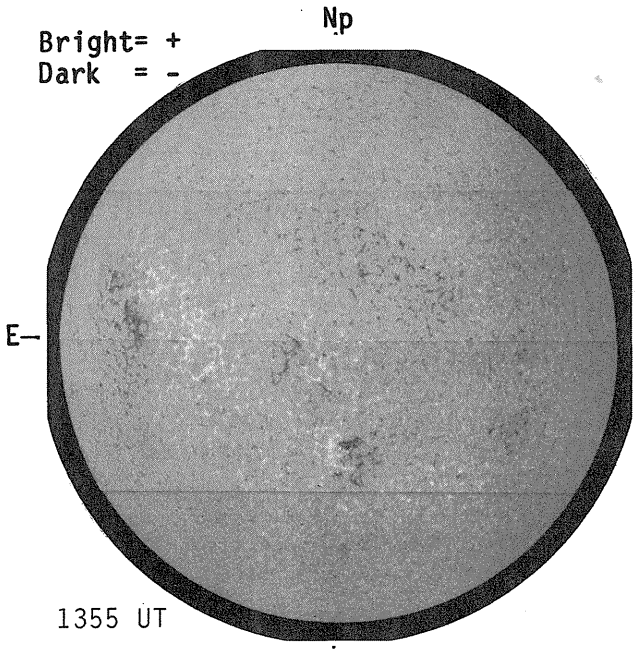
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 28, 1 9 8 4 (P= 9.29, B_0= 5.50, L_0= 222.53)

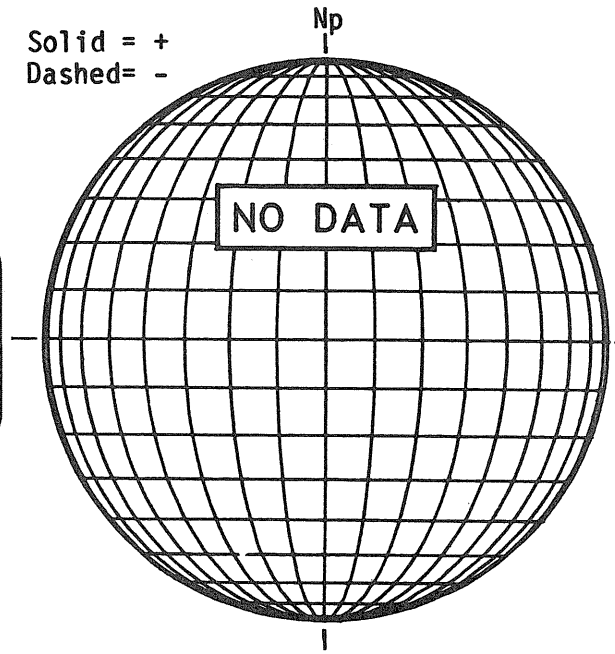
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

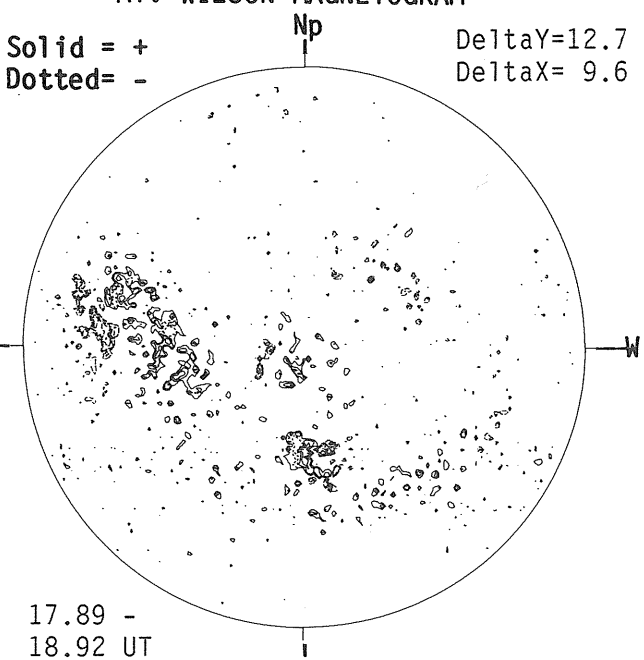
Solid = +
Dashed= -



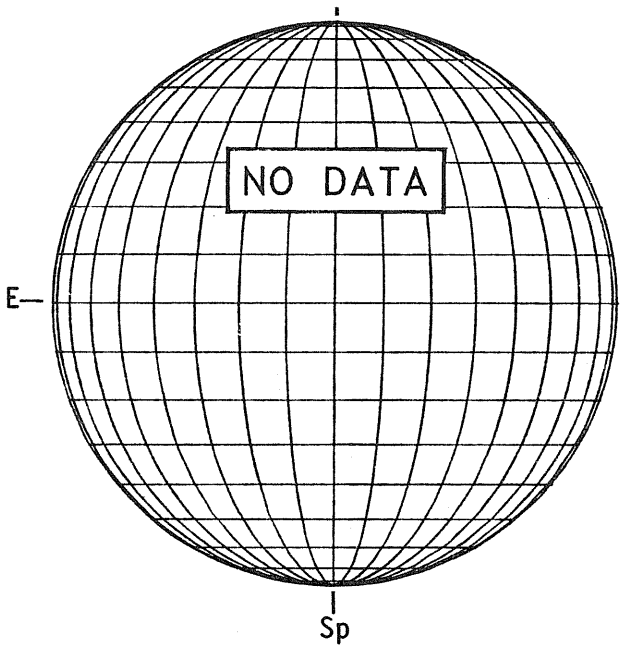
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

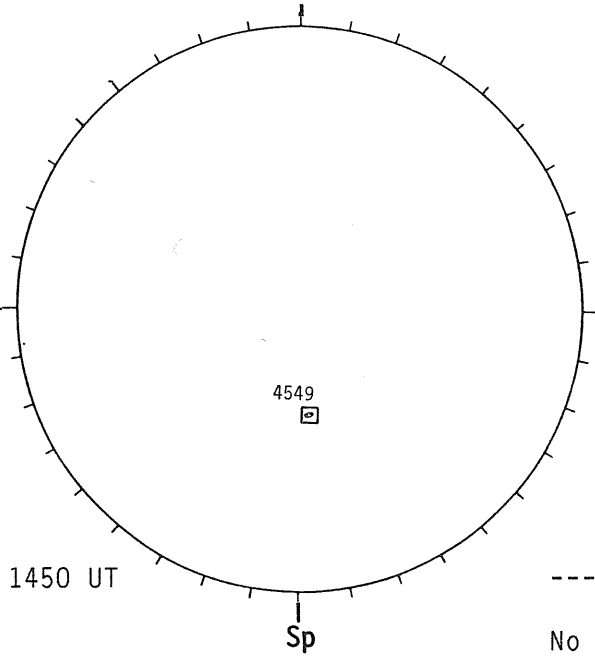
DeltaY=12.7
DeltaX= 9.6



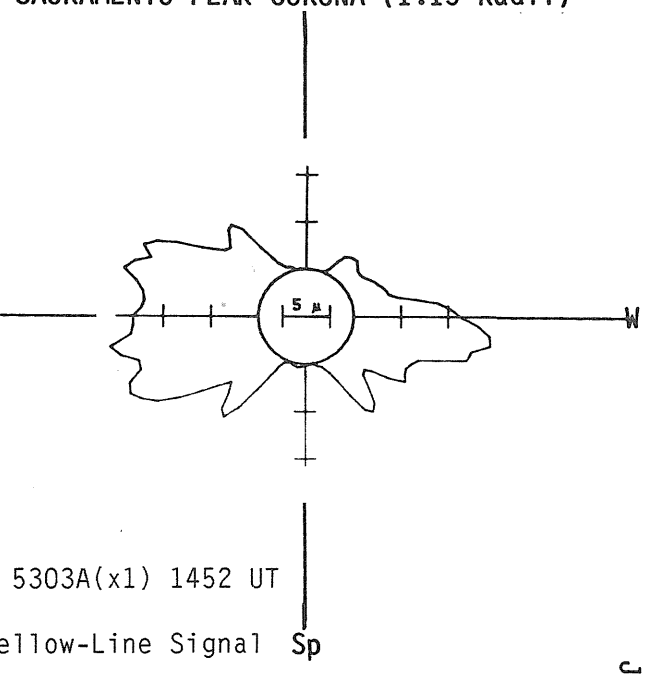
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



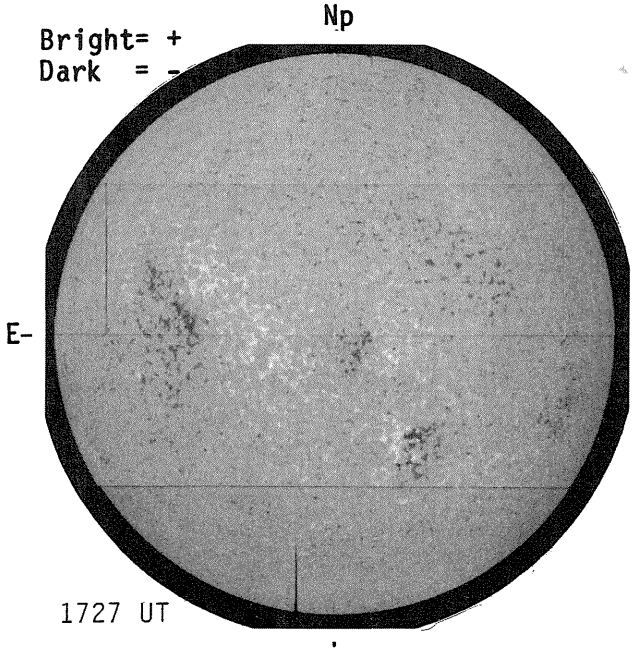
---- 5303A(x1) 1452 UT

No Yellow-Line Signal

J U L Y 29, 1 9 8 4 (P= 9.70, B_0= 5.58, L_0= 209.30)

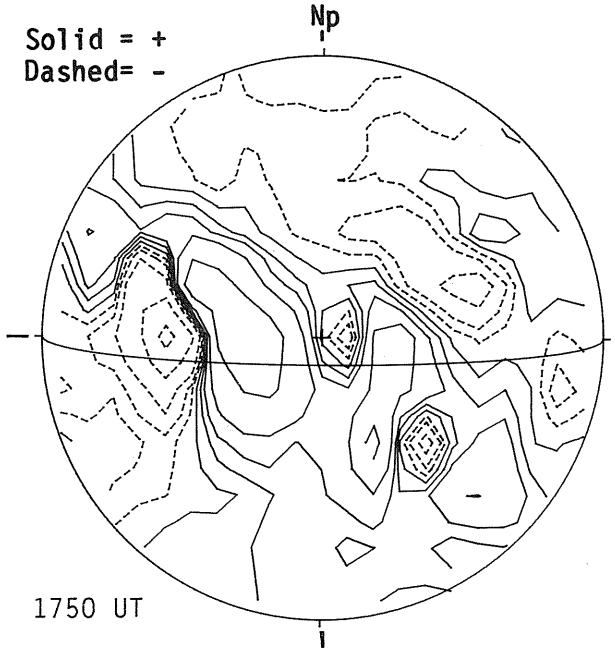
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

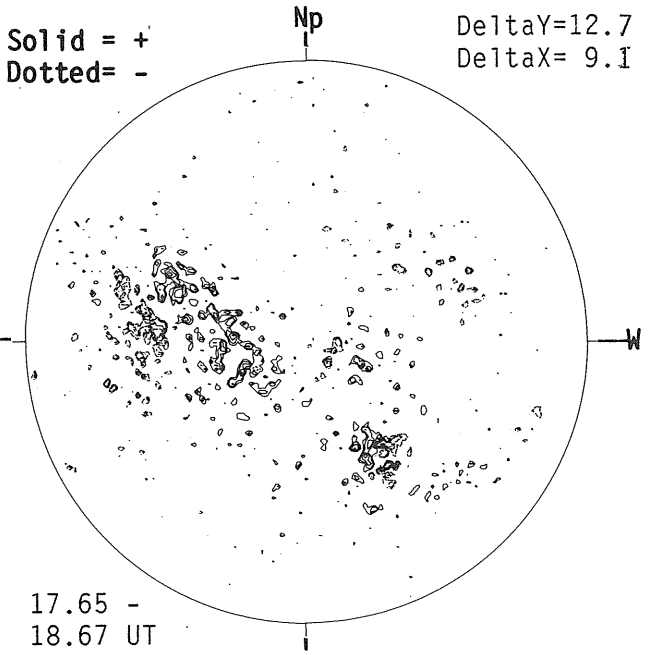
Solid = +
Dashed= -



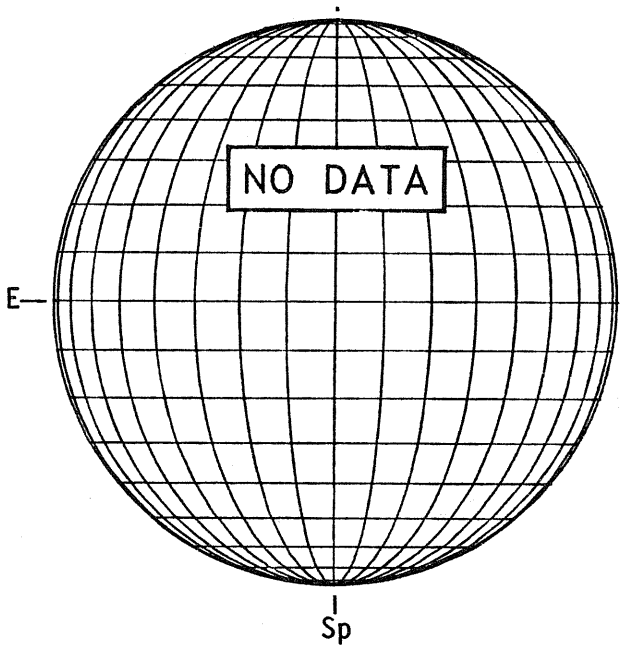
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

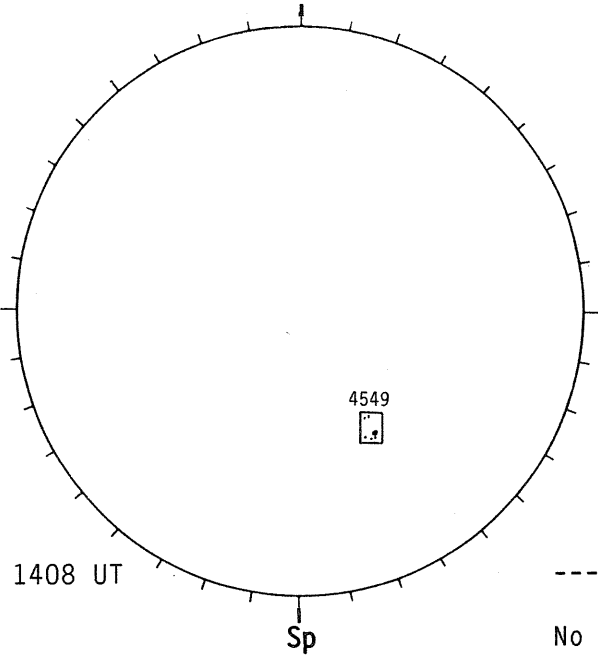
DeltaY=12.7
DeltaX= 9.1



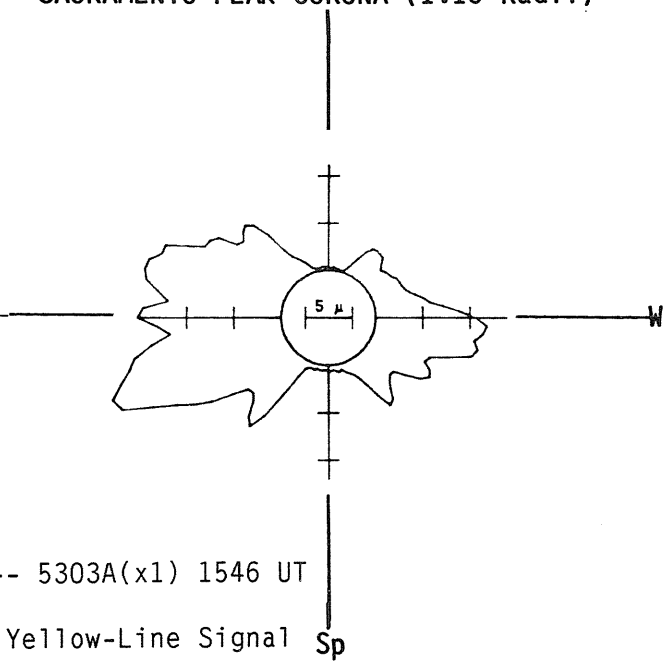
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



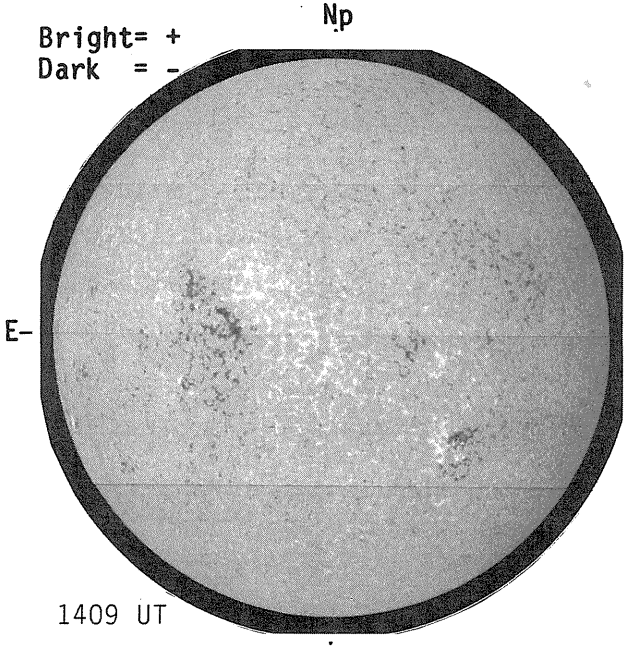
---- 5303A(x1) 1546 UT

No Yellow-Line Signal

J U L Y 30, 1 9 8 4 (P= 10.11, B_0= 5.65, L_0= 196.08)

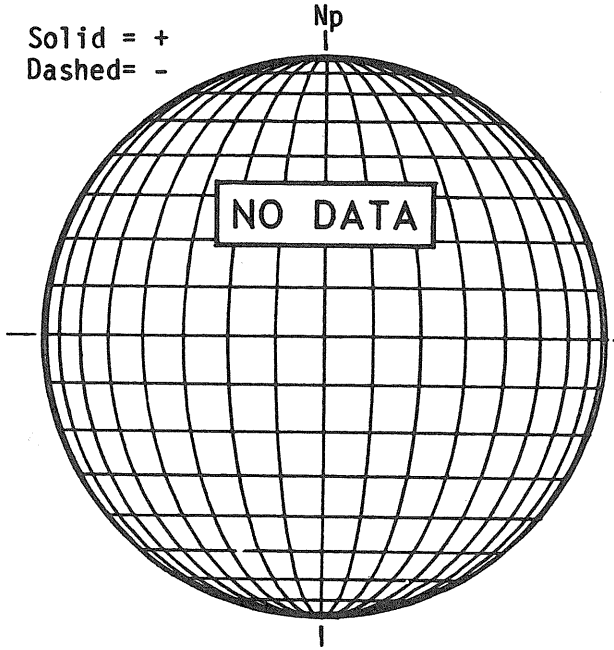
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

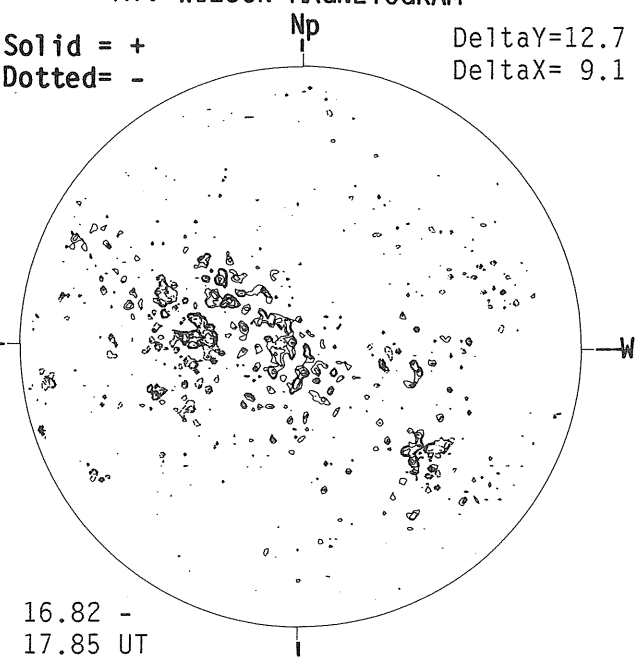
Solid = +
Dashed= -



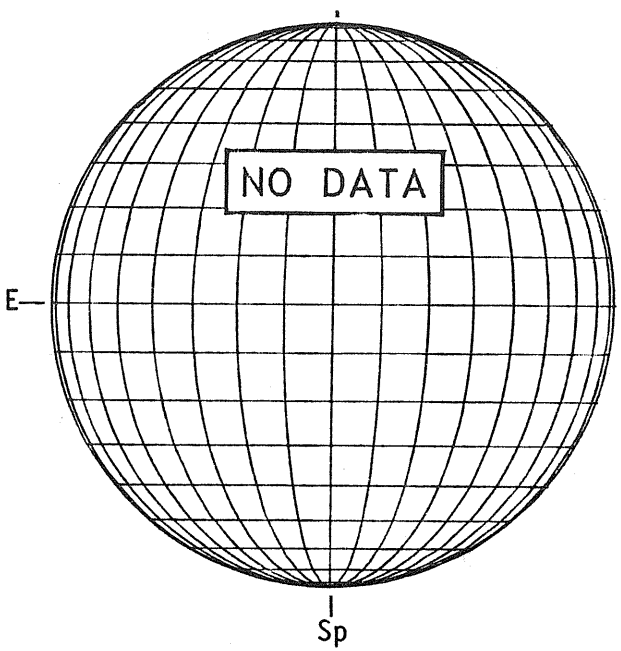
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

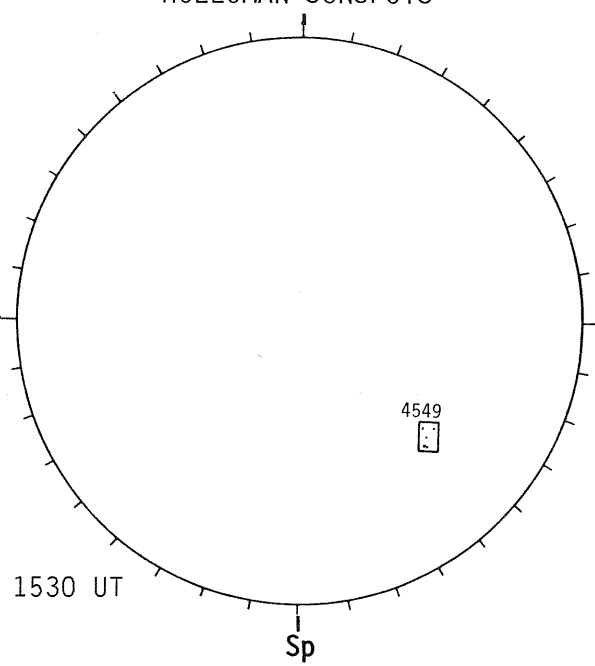
DeltaY=12.7
DeltaX= 9.1



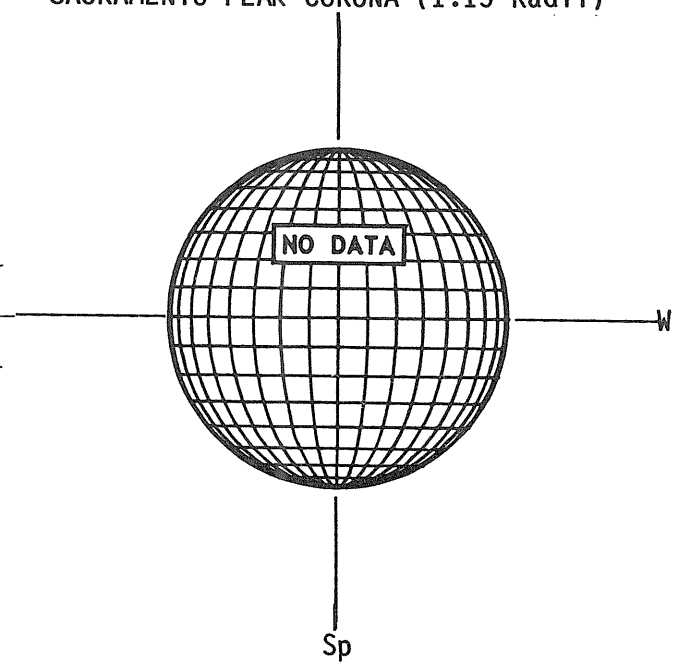
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS



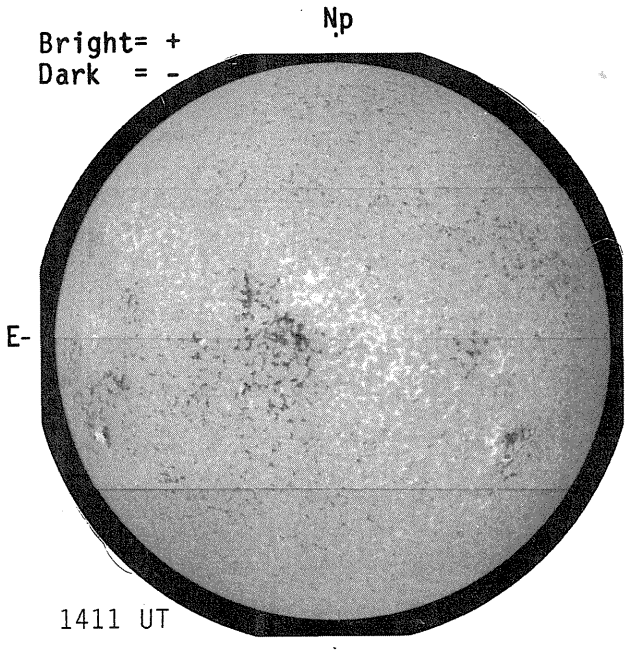
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 31, 1 9 8 4 (P= 10.51, B_0= 5.73, L_0= 182.85)

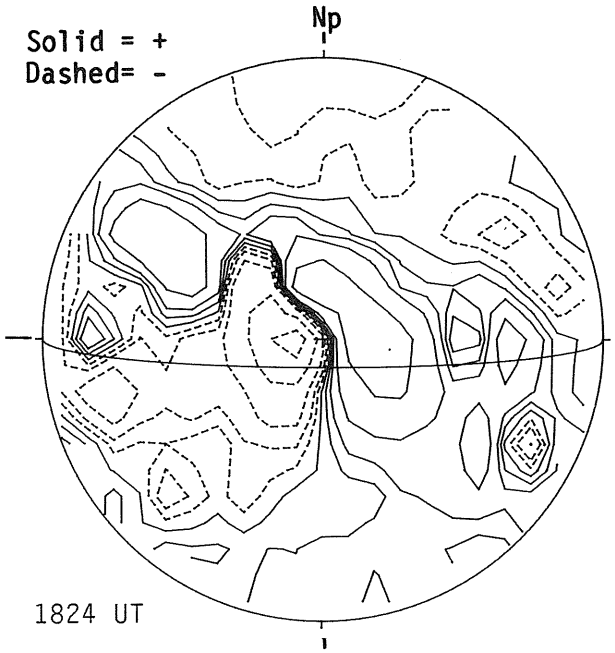
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



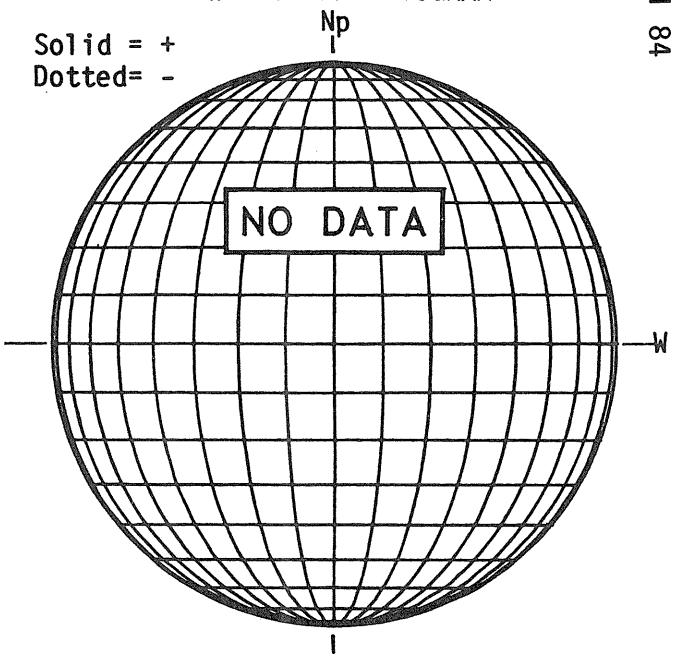
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

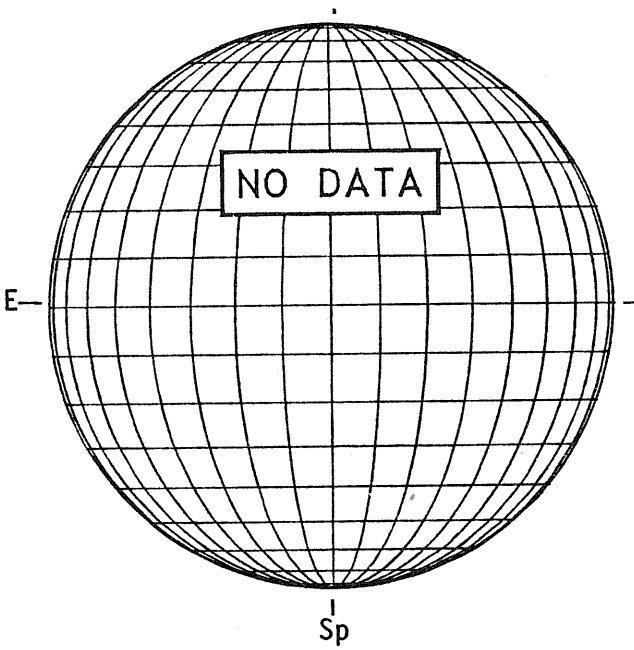


MT. WILSON MAGNETOGRAM

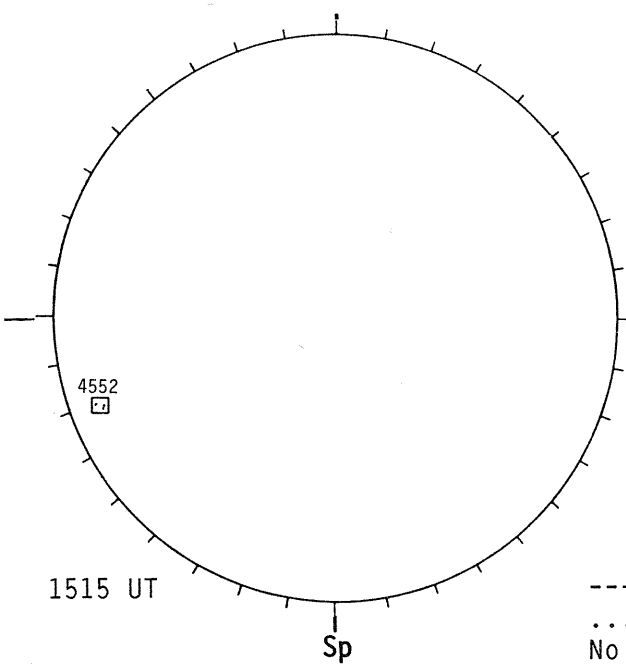
Solid = +
Dotted= -



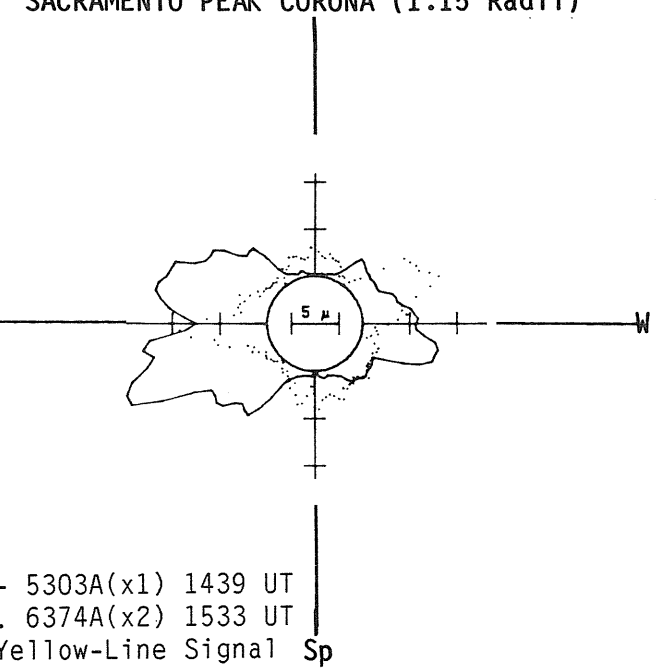
BOULDER H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



---- 5303A(x1) 1439 UT
.... 6374A(x2) 1533 UT
No Yellow-Line Signal

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)

JULY 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
4523		LEAR	06	26	0110	N05	E79	07	2.0		A	HSX	50	1	2	2
4523		ATHN	06	26	0730	N05	E75	07	1.9			HSX	60	1	2	1
4523		RAMY	06	26	1237	N05	E74	07	2.1		A	HAX	120	1	2	3
4523		BOUL	06	26	1420	N04	E72	07	2.0		A	HSX	120	1	2	3
4523		HOLL	06	26	1443	N05	E73	07	2.1		A	HSX	130	1	2	3
4523	24098	MWIL	06	26	1500	N05	E72	07	2.0	3	(AP)					
4523		ATHN	06	27	0630	N04	E61	07	1.8			HSX	40	1	1	1
4523		RAMY	06	27	1223	N04	E61	07	2.1		B	CAO	120	2	2	4
4523		BOUL	06	27	1419	N05	E58	07	1.9		A	HSX	150	1	3	3
4523	24098	MWIL	06	27	1445	N05	E59	07	2.0	5	(AP)					
4523		HOLL	06	27	1631	N05	E58	07	2.0		A	HSX	130	1	2	2
4523		PALE	06	27	1840	N05	E57	07	2.0		A	HSX	140	1	2	3
4523		LEAR	06	28	0129	N06	E53	07	2.0		A	HHX	60	1	3	2
4523		ATHN	06	28	0630	N05	E50	07	2.0		A	HSO	60	1	2	2
4523		BOUL	06	28	1331	N07	E47	07	2.1		B	CSO	100	3	4	2
4523		RAMY	06	28	1335	N05	E48	07	2.2		B	CSO	150	3	3	3
4523	24098	MWIL	06	28	1445	N06	E46	07	2.1	6	(BP)					
4523		HOLL	06	28	1516	N02	E46	07	2.1		B	CSO	120	3	4	2
4523		LEAR	06	29	0001	N04	E40	07	2.0		A	HSX	100	1	2	2
4523		ATHN	06	29	0930	N05	E36	07	2.1			HSX	100	1	2	1
4523		BOUL	06	29	1307	N06	E32	07	1.9		A	HSX	100	1	2	3
4523	24098	MWIL	06	29	1415	N06	E33	07	2.1	6	(BP)					
4523		HOLL	06	29	1505	N01	E33	07	2.1		A	HHX	140	1	3	3
4523		HOLL	06	29	1505	N06	E33	07	2.1		A	HHX	140	1	3	3
4523		PALE	06	29	1815	N04	E31	07	2.1		A	HHX	110	11	3	3
4523		MANI	06	30	0042	N05	E27	07	2.0			HHX	130	1	3	2
4523		LEAR	06	30	0150	N06	E26	07	2.0		A	HHX	100	1	3	3
4523		ATHN	06	30	0630	N04	E23	07	2.0		A	HHX	80	2	3	2
4523		RAMY	06	30	1126	N05	E22	07	2.1		B	CSO	150	4	5	4
4523		HOLL	06	30	1424	N05	E20	07	2.1		A	HSX	120	4	2	3
4523		HOLL	06	30	1424	N05	E20	07	2.1		B	CSO	120	4	2	3
4523	24098	MWIL	06	30	1500	N05	E18	07	2.0	6	(AP)					
4523		PALE	06	30	2010	N04	E17	07	2.1		B	CSO	120	3	4	3
4523		LEAR	07	01	0220	N06	E12	07	2.0		A	HHX	100	1	3	3
4523		ATHN	07	01	0615	N05	E11	07	2.1			HSO	100	2	3	3
4523		RAMY	07	01	1249	N05	E08	07	2.1		B	CSO	150	8	7	3
4523		HOLL	07	01	1425	N05	E07	07	2.1		B	CHO	150	3	7	2
4523		BOUL	07	01	1545	N06	E04	07	2.0		A	HSX	90	1	2	3
4523	24098	MWIL	07	01	1600	N05	E05	07	2.0	6	(AP)					
4523		PALE	07	01	1750	N05	E04	07	2.0		A	HSX	110	1	2	3
4523		LEAR	07	02	0042	N05	W01	07	2.0		B	CSO	140	5	6	3
4523		ATHN	07	02	0630	N02	W02	07	2.1			CSO	90	2	5	3
4523		RAMY	07	02	1220	N05	W06	07	2.1		B	CAO	140	2	5	3
4523	24098	MWIL	07	02	1445	N05	W08	07	2.0	6	(AP)					
4523		BOUL	07	02	1530	N05	W07	07	2.1		A	HSX	30	2	3	3
4523		HOLL	07	02	1758	N05	W08	07	2.2		B	CSO	150	2	4	3
4523		PALE	07	02	1810	N05	W10	07	2.0		A	HSX	70	1	2	3
4523		LEAR	07	03	0124	N05	W15	07	1.9		A	HSX	90	1	2	3
4523		ATHN	07	03	0700	N05	W15	07	2.2		A	HHX	100	1	3	2
4523		BOUL	07	03	1410	N06	W20	07	2.1		A	HSX	100	1	2	3
4523		HOLL	07	03	1428	N05	W17	07	2.3		B	CSO	140	4	7	3
4523		RAMY	07	03	1435	N06	W18	07	2.3		B	CAO	130	2	6	2
4523	24098	MWIL	07	03	1630	N05	W23	07	2.0	5	(BP)					
4523		PALE	07	03	1845	N05	W23	07	2.1		A	HSX	80	1	2	3
4523		RAMY	07	04	1222	N05	W34	07	2.0		A	HSX	90	1	2	3
4523		HOLL	07	04	1510	N05	W35	07	2.0		A	HHX	140	1	3	3
4523		BOUL	07	04	1530	N06	W34	07	2.1		A	HSX	70	1	2	3
4523	24098	MWIL	07	04	1600	N04	W36	07	2.0	5	(AP)					
4523		PALE	07	04	1735	N04	W37	07	2.0		A	HSX	100	1	2	4
4523		ATHN	07	05	0615	N04	W42	07	2.1		A	HSX	50	1	2	2
4523		BOUL	07	05	1420	N05	W46	07	2.2		A	HSX	80	1	2	3
4523		HOLL	07	05	1439	N05	W47	07	2.1		B	CHO	120	2	5	3
4523	24098	MWIL	07	05	1445	N03	W48	07	2.0	5	(BP)					
4523		PALE	07	05	1730	N05	W48	07	2.1		B	CSO	90	2	4	3
4523		ATHN	07	06	0630	N03	W58	07	1.9			HSX	100	1	2	2
4523		BOUL	07	06	1420	N05	W62	07	2.0		A	HSX	80	1	3	3
4523		HOLL	07	06	1435	N04	W62	07	2.0		A	HAX	120	1	2	3
4523	24098	MWIL	07	06	1500	N03	W62	07	2.0	5	(AP)					
4523		RAMY	07	06	1534	N04	W61	07	2.1		A	HSX	90	1	2	1
4523		PALE	07	06	1700	N04	W63	07	2.0		A	HSX	60	1	2	3
4523		ATHN	07	07	0615	N04	W68	07	2.2			HSX	40	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)

JULY 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
4523		RAMY	07	07	1255	N04	W73	07	2.1		A	HSX	70	1	2	4
4523		BOUL	07	07	1440	N04	W73	07	2.2		A	HSX	50	1	3	3
4523		HOLL	07	07	1440	N04	W75	07	2.0		A	HAX	100	1	4	3
4523		PALE	07	07	1730	N04	W77	07	2.0		A	HSX	60	1	5	4
4523	24098	MWIL	07	07	1915	N03	W78	07	2.0	3	(AP)					
4523		MANI	07	07	2336	N05	W80	07	2.0			HSX	100	1	2	3
0001		RAMY	07	08	1245	N04	W55	07	4.4		A	AXX	20	1	1	4
0001		HOLL	07	08	1430	N03	W56	07	4.4		A	AXX		1		3
4525		BOUL	06	28	1331	N13	E83	07	4.8		A	HSX	60	1	2	2
4525		RAMY	06	28	1335	N13	E80	07	4.6		A	HAX	130	1	2	3
4525	24100	MWIL	06	28	1445	N14	E82	07	4.8	2	AP					
4525		HOLL	06	28	1516	N13	E83	07	4.9		A	HHX	120	1	3	2
4525		LEAR	06	29	0001	N12	E74	07	4.6		A	HHX	90	3	5	2
4525		ATHN	06	29	0930	N11	E70	07	4.7			AXX	60	1	1	1
4525		BOUL	06	29	1307	N14	E70	07	4.8		B	CSO	130	6	5	3
4525	24100	MWIL	06	29	1415	N14	E69	07	4.8	5	(AP)					
4525		HOLL	06	29	1505	N13	E69	07	4.8		B	CHO	100	5	11	3
4525		PALE	06	29	1815	N12	E68	07	4.9		B	CAO	110	4	5	3
4525		MANI	06	30	0042	N12	E65	07	4.9			DSO	110	9	8	2
4525		LEAR	06	30	0150	N13	E65	07	5.0		B	DSO	90	8	8	3
4525		ATHN	06	30	0630	N11	E59	07	4.7		B	DAO	110	6	5	2
4525		RAMY	06	30	1126	N13	E58	07	4.9		B	DAO	240	13	7	4
4525		HOLL	06	30	1424	N13	E58	07	5.0		B	CAO	290	9	8	3
4525	24100	MWIL	06	30	1500	N13	E56	07	4.9	6	(BP)					
4525		PALE	06	30	2010	N12	E55	07	5.0		B	DSO	190	7	9	3
4525		LEAR	07	01	0220	N13	E52	07	5.0		B	DHO	140	7	8	3
4525		ATHN	07	01	0615	N11	E46	07	4.7			DSO	100	6	7	3
4525		RAMY	07	01	1249	N13	E45	07	4.9		B	CAO	180	16	9	3
4525		HOLL	07	01	1425	N13	E45	07	5.0		B	CAO	170	9	9	2
4525		BOUL	07	01	1545	N14	E43	07	4.9		B	DSI	120	5	8	3
4525	24100	MWIL	07	01	1600	N13	E42	07	4.8	6	(BP)					
4525		PALE	07	01	1750	N13	E44	07	5.1		B	DSO	90	5	9	3
4525		LEAR	07	02	0042	N13	E38	07	4.9		B	DSO	120	9	5	3
4525		ATHN	07	02	0630	N11	E33	07	4.8			CSO	60	4	4	3
4525		RAMY	07	02	1220	N12	E31	07	4.8		B	DAO	90	10	5	3
4525	24100	MWIL	07	02	1445	N13	E29	07	4.8	6	(BY)					
4525		BOUL	07	02	1530	N12	E29	07	4.8		B	CSI	100	7	5	3
4525		HOLL	07	02	1758	N13	E30	07	5.0		B	CSO	90	14	7	3
4525		PALE	07	02	1810	N13	E28	07	4.9		B	DSO	80	8	7	3
4525		LEAR	07	03	0124	N13	E24	07	4.9		B	DSO	110	24	6	3
4525		ATHN	07	03	0700	N12	E20	07	4.8		B	CSO	80	6	5	2
4525		BOUL	07	03	1410	N12	E16	07	4.8		B	DSO	90	8	3	3
4525		HOLL	07	03	1428	N13	E16	07	4.8		B	CSO	70	11	5	3
4525		RAMY	07	03	1435	N14	E15	07	4.7		B	DAO	80	10	4	2
4525	24100	MWIL	07	03	1630	N13	E15	07	4.8	5	(BP)					
4525		PALE	07	03	1845	N13	E13	07	4.8		B	CSO	80	8	4	3
4525		RAMY	07	04	1222	N15	E06	07	5.0		B	DAO	170	33	8	3
4525		HOLL	07	04	1510	N14	E05	07	5.0		B	CSO	120	11	8	3
4525		BOUL	07	04	1530	N14	E05	07	5.0		B	DSO	90	10	10	3
4525	24100	MWIL	07	04	1600	N13	E03	07	4.9	5	(BP)					
4525		PALE	07	04	1735	N12	E03	07	5.0		B	CSO	70	10	9	4
4525		ATHN	07	05	0615	N11	W06	07	4.8			CAO	50	5	3	2
4525		BOUL	07	05	1420	N12	W10	07	4.8		B	CSO	40	3	5	3
4525		HOLL	07	05	1439	N12	W10	07	4.9		B	CSO	100	5	5	3
4525	24100	MWIL	07	05	1445	N12	W11	07	4.8	5	(BP)					
4525		PALE	07	05	1730	N11	W12	07	4.8		B	CSO	50	3	6	3
4525		ATHN	07	06	0630	N12	W21	07	4.7			HSX	40	1	2	2
4525		BOUL	07	06	1420	N12	W25	07	4.7		B	CSO	40	2	3	3
4525		HOLL	07	06	1435	N12	W25	07	4.7		B	CSO	80	2	5	3
4525	24100	MWIL	07	06	1500	N13	W25	07	4.7	5	(AP)					
4525		RAMY	07	06	1534	N13	W25	07	4.8		A	HSX	20	1	2	1
4525		PALE	07	06	1700	N11	W27	07	4.7		B	CSO	40	2	2	3
4525		ATHN	07	07	0615	N13	W31	07	4.9			HSX	40	1	2	3
4525		RAMY	07	07	1255	N14	W32	07	5.1		B	CSO	90	9	13	4
4525		BOUL	07	07	1440	N13	W37	07	4.8		B	CSO	60	2	3	3
4525		HOLL	07	07	1440	N13	W38	07	4.7		B	CSO	100	3	5	3
4525		PALE	07	07	1730	N13	W39	07	4.8		B	CSO	40	2	5	4
4525	24100	MWIL	07	07	1915	N12	W40	07	4.8	4	(AP)					
4525		MANI	07	07	2336	N13	W43	07	4.7			HSX	70	2	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)

JULY 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
4525		ATHN	07	08	0700	N12	W44	07	5.0		A	HSX	30	1	2	3
4525		RAMY	07	08	1245	N14	W50	07	4.8		A	HAX	30	1	1	4
4525		BOUL	07	08	1345	N13	W47	07	5.0		B	CSO	40	3	5	3
4525		HOLL	07	08	1430	N13	W51	07	4.8		A	HSX	50	1	2	3
4525	24100	MWIL	07	08	1600	N12	W51	07	4.8	5	(AP)					
4525		PALE	07	08	1730	N13	W53	07	4.7		A	HSX	30	1	1	3
4525		ATHN	07	09	0710	N16	W57	07	5.0		A	HRX	30	1	1	1
4525		RAMY	07	09	1345	N13	W65	07	4.7		A	HAX	50	1	1	3
4525	24100	MWIL	07	09	1500	N12	W65	07	4.7	5	(AP)					
4525		HOLL	07	09	1720	N12	W65	07	4.8		A	HSX	30	1	2	3
4525		PALE	07	09	1835	N13	W67	07	4.7		A	HAX	60	1	1	3
4525		ATHN	07	10	0630	N13	W70	07	5.0		A	HSX	20	1	1	2
4525		RAMY	07	10	1240	N13	W75	07	4.9		A	AXX	30	1	1	3
4525		BOUL	07	10	1325	N15	W78	07	4.7		A	AXX	30	1	1	2
4525		HOLL	07	10	1455	N12	W78	07	4.7		A	HSX	20	1	1	3
4525	24100	MWIL	07	10	1530	N12	W78	07	4.8	3	(AP)					
4529		RAMY	07	02	1220	N04	E39	07	5.4		A	AXX	10	1	1	3
4529	24102	MWIL	07	02	1445	N03	E38	07	5.5	4	(AF)					
4529		PALE	07	02	1810	N04	E37	07	5.5		A	AXX	10	1		3
4529		PALE	07	02	1810	N04	E37	07	5.5		B	CRO	60	2	3	3
4529		LEAR	07	03	0124	N05	E31	07	5.4		B	BXO	10	2	2	3
4529		RAMY	07	04	1222	N07	E10	07	5.3		B	BXO	20	6	7	3
4529		HOLL	07	04	1510	N07	E12	07	5.5		B	BXO		2	1	3
4529		BOUL	07	04	1530	N08	E13	07	5.6		B	BXO	10	3	2	3
4529	24108	MWIL	07	04	1600	N07	E12	07	5.6	4	(AF)					
4529		PALE	07	04	1735	N08	E10	07	5.5		B	BXO	10	2	1	4
4529		HOLL	07	05	1439	N06	W02	07	5.5		A	AXX		1		3
4529	24108	MWIL	07	05	1445	N06	W02	07	5.5	3	(AF)					
4529		PALE	07	05	1730	N07	W04	07	5.4		A	AXX		1		3
4529	24108	MWIL	07	06	1500	N08	W14	07	5.6	3	(AF)					
4529		RAMY	07	06	1534	N08	W13	07	5.7		A	AXX		1		1
4529		RAMY	07	07	1255	N09	W27	07	5.5		A	AXX		1		4
4529		MANI	07	07	2336	N09	W32	07	5.6			BXO	10	5	3	3
		LEAR	07	03	0124	N06	E39	07	6.0		A	AXX		1	1	3
4531		LEAR	07	03	0124	N09	E65	07	7.9		B	DSO	30	4	3	3
4531		ATHN	07	03	0700	N09	E62	07	7.9		B	CSO	80	2	4	2
4528	24103	MWIL	07	02	1445	N08	E73	07	8.1	3	(AP)					
4528		BOUL	07	02	1530	N07	E68	07	7.7		A	AXX	20	1	1	3
4528		HOLL	07	02	1758	N10	E70	07	8.0		A	AXX		1		3
4528		BOUL	07	03	1410	N06	E59	07	8.0		A	HAX	70	2	2	3
4528		HOLL	07	03	1428	N09	E60	07	8.1		B	DAI	50	4	3	3
4528		RAMY	07	03	1435	N09	E59	07	8.0		B	DAO	70	5	3	2
4528	24103	MWIL	07	03	1630	N08	E58	07	8.0	5	(B)					
4528		PALE	07	03	1845	N09	E58	07	8.1		B	DSO	60	3	3	3
4528		RAMY	07	04	1222	N09	E47	07	8.0		B	DAO	40	3	3	3
4528		HOLL	07	04	1510	N09	E47	07	8.2		B	DAO	70	3	3	3
4528		BOUL	07	04	1530	N09	E46	07	8.1		B	BXO	30	5	3	3
4528	24103	MWIL	07	04	1600	N09	E45	07	8.0	4	(BF)					
4528		PALE	07	04	1735	N09	E44	07	8.0		B	BXO	20	3	3	4
4528		ATHN	07	05	0615	N08	E36	07	8.0			CSO	20	2	2	2
4528		BOUL	07	05	1420	N11	E33	07	8.1		A	AXX	10	3	2	3
4528		HOLL	07	05	1439	N09	E33	07	8.1		B	CAO	50	3	3	3
4528	24103	MWIL	07	05	1445	N09	E34	07	8.2	4	(BF)					
4528		PALE	07	05	1730	N09	E31	07	8.1		B	BXO	20	3	3	3
4528		ATHN	07	06	0630	N10	E22	07	7.9			CXO	20	2	1	2
4528		HOLL	07	06	1435	N08	E20	07	8.1		B	BXO	10	3	3	3
4528	24103	MWIL	07	06	1500	N10	E20	07	8.1	3	(AF)					
4528		RAMY	07	06	1534	N08	E20	07	8.1		B	BXO	20	3	2	1
4528		PALE	07	06	1700	N10	E19	07	8.1		B	BXO	20	2	2	3
4528		RAMY	07	07	1255	N10	E09	07	8.2		B	BXO	10	2	2	4
4528	24103	MWIL	07	07	1915	N09	E05	07	8.2	3	(AF)					
4528		MANI	07	07	2336	N09	E04	07	8.3			BXO	20	6	4	3
4528		ATHN	07	08	0700	N08	W02	07	8.1			BXO	20	5	3	3
4528		RAMY	07	08	1245	N09	W05	07	8.2		B	DAO	20	10	4	4
4528		BOUL	07	08	1345	N11	W05	07	8.2		B	BXO	10	4	3	3
4528		HOLL	07	08	1430	N10	W05	07	8.2		B	BXO	10	11	5	3
4528	24103	MWIL	07	08	1600	N09	W06	07	8.2	3	(B)					

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)

JULY 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
4528		PALE	07	08	1730	N09	W07	07	8.2		B	BXO	20	6	4	3
4528		ATHN	07	09	0710	N11	W13	07	8.3		B	BXO	20	2	3	1
4528		RAMY	07	09	1345	N09	W19	07	8.1		B	DAO	20	6	3	3
4528	24103	MWIL	07	09	1500	N09	W19	07	8.2	4	(B)					
4528		HOLL	07	09	1720	N08	W20	07	8.2		B	BXO	20	8	5	3
4528		PALE	07	09	1835	N10	W21	07	8.2		B	CAO	30	7	4	3
4528		RAMY	07	10	1240	N09	W31	07	8.2		B	BXO	10	5	3	3
4528		BOUL	07	10	1325	N12	W33	07	8.1		B	BXO	20	3	3	2
4528		HOLL	07	10	1455	N09	W33	07	8.1		B	BXO	20	7	5	3
4528	24103	MWIL	07	10	1530	N09	W33	07	8.2	3	(B)					
4528		MANI	07	10	2249	N09	W37	07	8.2			CRO	20	4	3	2
	24110	MWIL	07	09	1500	N25	W16	07	8.4	4	(AP)					
4540		BOUL	07	10	1325	S03	W21	07	9.0		A	HSX	40	2	2	2
4540		HOLL	07	10	1455	S04	W22	07	9.0		B	CSO	20	2	3	3
4540		RAMY	07	11	1230	S05	W34	07	9.0		B	CAO	60	3	3	4
4540		BOUL	07	11	1415	S03	W37	07	8.8		A	HAX	60	2	2	3
4540		HOLL	07	11	1635	S04	W35	07	9.1		A	HAX	70	1	3	3
4540		PALE	07	11	1730	S03	W38	07	8.9		A	HAO	50	2	1	3
4540		LEAR	07	12	0327	S04	W43	07	8.9		B	CRO	30	4	2	3
4540		ATHN	07	12	0630	S04	W45	07	8.9			CSO	30	2	3	3
4540		RAMY	07	12	1245	S04	W49	07	8.9		B	CRO	30	3	2	3
4540		BOUL	07	12	1309	S03	W47	07	9.0		B	BXO	10	3	3	3
4540		HOLL	07	12	1520	S01	W52	07	8.8		B	CSO	50	3	3	2
4540		PALE	07	12	1720	S04	W52	07	8.8		A	AXX	20	1	1	4
4540		LEAR	07	13	0036	N01	W58	07	8.7		A	HSX	20	1	1	2
4540		RAMY	07	13	1307	S04	W64	07	8.8		B	CAO	50	2	3	3
4540		BOUL	07	13	1350	S04	W63	07	8.9		A	AXX		1	1	3
4540		HOLL	07	13	1438	S04	W66	07	8.7		A	AXX		1	1	3
4540		MANI	07	13	2257	N01	W70	07	8.7			AXX	10	1	1	2
		LEAR	07	03	0124	N04	E81	07	9.1		A	HAX	20	1	1	3
4532		LEAR	07	03	0124	S07	E80	07	9.1		B	CAO	20	2	2	3
4532		BOUL	07	03	1410	S13	E73	07	9.1		B	CSO	90	5	5	3
4532		HOLL	07	03	1428	S10	E77	07	9.4		B	DSO	90	4	8	3
4532		RAMY	07	03	1435	S10	E78	07	9.5		B	DAO	130	2	7	2
4532	24105	MWIL	07	03	1630	S08	E75	07	9.3	3	(AP)					
4532		PALE	07	03	1845	S10	E76	07	9.5		B	DSO	90	3	7	3
4532		RAMY	07	04	1222	S07	E65	07	9.4		B	DAO	180	9	9	3
4532		HOLL	07	04	1510	S09	E64	07	9.4		B	DSO	180	9	9	3
4532		BOUL	07	04	1530	S07	E66	07	9.6		B	DSO	130	4	10	3
4532	24105	MWIL	07	04	1600	S07	E61	07	9.2	5	(BP)					
4532		PALE	07	04	1735	S09	E61	07	9.3		B	ESO	220	5	15	4
4532		ATHN	07	05	0615	S10	E51	07	9.1			DSO	180	3	7	2
4532		BOUL	07	05	1420	S07	E46	07	9.0		B	DSO	110	3	4	3
4532		HOLL	07	05	1439	S08	E50	07	9.4		B	DSO	200	6	12	3
4532	24105	MWIL	07	05	1445	S07	E48	07	9.2	5	(BP)					
4532		PALE	07	05	1730	S08	E48	07	9.3		B	DSO	200	7	9	3
4532		ATHN	07	06	0630	S08	E36	07	9.0			DSO	100	2	3	2
4532		BOUL	07	06	1420	S07	E32	07	9.0		B	DSO	120	3	4	3
4532		HOLL	07	06	1435	S07	E34	07	9.2		B	DHO	160	3	7	3
4532	24105	MWIL	07	06	1500	S07	E33	07	9.1	5	(AP)					
4532		PALE	07	06	1700	S08	E34	07	9.3		B	DSO	40	18	8	3
4532		ATHN	07	07	0615	S06	E24	07	9.1			DSO	100	3	4	3
4532		RAMY	07	07	1255	S06	E23	07	9.3		B	CAO	170	13	10	4
4532		BOUL	07	07	1440	S05	E19	07	9.0		B	DSO	150	2	4	3
4532		HOLL	07	07	1440	S07	E23	07	9.3		B	DSO	150	9	10	3
4532		PALE	07	07	1730	S09	E20	07	9.2		B	ESO	190	3	11	4
4532	24105	MWIL	07	07	1915	S07	E18	07	9.2	5	(BY)					
4532		MANI	07	07	2336	S06	E17	07	9.3			CSO	80	8	10	3
4532		ATHN	07	08	0700	S08	E10	07	9.0			DAO	120	7	9	3
4532		RAMY	07	08	1245	S07	E10	07	9.3		B	DAO	140	16	10	4
4532		BOUL	07	08	1345	S05	E05	07	8.9		B	DSO	90	3	5	3
4532		HOLL	07	08	1430	S06	E08	07	9.2		B	DSO	150	9	8	3
4532	24105	MWIL	07	08	1600	S07	E07	07	9.2	5	(BP)					
4532		PALE	07	08	1730	S08	E05	07	9.1		B	DSO	90	7	7	3
4532		ATHN	07	09	0710	S04	W02	07	9.1		B	DSO	90	2	3	1
4532		RAMY	07	09	1345	S06	W04	07	9.3		B	DAO	120	9	9	3
4532	24105	MWIL	07	09	1500	S07	W07	07	9.1	5	(BP)					

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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
4532		HOLL	07	09	1720	S07	W08	07	9.1		B	DSO	20	6	7	3
4532		PALE	07	09	1835	S07	W08	07	9.2		B	DSO	100	5	6	3
4532		ATHN	07	10	0630	S08	W15	07	9.1			DHI	70	5	6	2
4532		RAMY	07	10	1240	S08	W19	07	9.1		B	DAO	90	8	6	3
4532		BOUL	07	10	1325	S07	W17	07	9.3		B	DSO	70	2	6	2
4532		HOLL	07	10	1455	S09	W17	07	9.3		B	CSO	20	5	8	3
4532	24105	MWIL	07	10	1530	S07	W21	07	9.1	5	(AP)					
4532		MANI	07	10	2249	S07	W24	07	9.2			CSO	80	4	5	2
4532		ATHN	07	11	0615	S07	W27	07	9.2			DSO	70	3	5	3
4532		RAMY	07	11	1230	S09	W31	07	9.2		A	AXX	10	1	1	4
4532		RAMY	07	11	1230	S09	W31	07	9.2		A	AXX	10	2	1	4
4532		BOUL	07	11	1415	S07	W31	07	9.3		B	BXO	10	2	2	3
4532	24105	MWIL	07	11	1500	S07	W32	07	9.2	5	(BP)					
4532		HOLL	07	11	1635	S08	W31	07	9.4		B	BXO	10	3	5	3
4532		PALE	07	11	1730	S08	W32	07	9.3		B	BXO	10	3	7	3
4532		LEAR	07	12	0327	S07	W37	07	9.4		B	BXO	10	5	5	3
4532		ATHN	07	12	0630	S07	W36	07	9.6			AXX	10	1	1	3
4532		RAMY	07	12	1245	S07	W43	07	9.3		A	AXX	10	2	1	3
4532		HOLL	07	12	1520	S05	W43	07	9.4		B	BXO	10	2	4	2
4532	24105	MWIL	07	12	1600	S05	W50	07	8.9	3	(B)					
4532		PALE	07	12	1720	S02	W38	07	9.9		A	AXX	10	1	1	4
4532	24105	MWIL	07	13	1530	S05	W65	07	8.8	3	(AP)					
4533		BOUL	07	03	1410	S02	E75	07	9.2		A	AXX	60	2	2	3
4533		HOLL	07	03	1428	N03	E75	07	9.2		A	HSX	20	1	2	3
4533		RAMY	07	03	1435	N03	E74	07	9.1		A	HAX	60	1	2	2
4533	24104	MWIL	07	03	1630	N04	E75	07	9.3	3	(AP)					
4533		PALE	07	03	1845	N03	E72	07	9.2		A	HSX	40	1	2	3
4533		RAMY	07	04	1222	N02	E64	07	9.3		B	DAO	190	9	9	3
4533		HOLL	07	04	1510	N02	E65	07	9.5		B	CSO	70	10	9	3
4533		BOUL	07	04	1530	N03	E66	07	9.6		B	BXO	70	6	10	3
4533	24104	MWIL	07	04	1600	N03	E63	07	9.4	4	(BF)					
4533		PALE	07	04	1735	N01	E62	07	9.4		B	CSO	40	6	10	4
4533		ATHN	07	05	0615	N01	E55	07	9.4			CSO	30	3	8	2
4533		BOUL	07	05	1420	N03	E51	07	9.4		B	CSO	20	3	9	3
4533		HOLL	07	05	1439	N02	E53	07	9.6		B	CSO	50	4	10	3
4533	24104	MWIL	07	05	1445	N02	E50	07	9.3	5	(BP)					
4533		PALE	07	05	1730	N02	E49	07	9.4		B	CSO	50	5	10	3
4533		ATHN	07	06	0630	N02	E37	07	9.0			HSX	20	1	1	2
4533		BOUL	07	06	1420	N01	E34	07	9.1		B	CSO	30	3	2	3
4533		HOLL	07	06	1435	N01	E38	07	9.4		B	CAO	40	2	9	3
4533	24104	MWIL	07	06	1500	N03	E35	07	9.2	4	(BP)					
4533		RAMY	07	06	1534	N02	E35	07	9.3		A	HSX	20	1	1	1
4533		PALE	07	06	1700	S03	E32	07	9.1		A	HSX	40	1	2	3
4533		ATHN	07	07	0615	N02	E24	07	9.1			HSX	20	1	1	3
4533		RAMY	07	07	1255	N02	E27	07	9.6		BG	CAO	80	16	10	4
4533		HOLL	07	07	1440	N02	E26	07	9.6		B	BXO	50	8	10	3
4533		BOUL	07	07	1440	N03	E20	07	9.1		A	AXX	10	1	1	3
4533		PALE	07	07	1730	N01	E19	07	9.1		A	AXX	10	1	1	4
4533	24104	MWIL	07	07	1915	N03	E23	07	9.5	4	(B)					
4533		MANI	07	07	2336	N02	E16	07	9.2			AXX	10	2	1	3
4533		ATHN	07	08	0700	N02	E11	07	9.1			AXX	10	1		3
4533		RAMY	07	08	1245	N02	E09	07	9.2		B	CAO	20	7	5	4
4533		BOUL	07	08	1345	N03	E08	07	9.2		B	BXO	10	3	3	3
4533		HOLL	07	08	1430	N04	E08	07	9.2		B	BXO	10	5	5	3
4533	24104	MWIL	07	08	1600	N03	E08	07	9.3	3	(AP)					
4533		PALE	07	08	1730	N03	E06	07	9.2		B	BXO	10	3	4	3
4533	24104	MWIL	07	09	1500	N04	W01	07	9.6	3	(B)					
4533	24104	MWIL	07	10	1530	N01	W12	07	9.7	3	(AF)					
4533		PALE	07	12	1720	S02	W38	07	9.9		A	AXX	10	1	1	4
4536	24106	MWIL	07	03	1630	S12	E80	07	9.7	3	(AP)					
4536	24106	MWIL	07	04	1600	S12	E66	07	9.6	4	(AP)					
4536		BOUL	07	05	1420	S12	E52	07	9.5		A	HSX	60	1	2	3
4536	24106	MWIL	07	05	1445	S12	E53	07	9.6	5	(AP)					
4536		ATHN	07	06	0630	S12	E40	07	9.3			HSX	50	2	2	2
4536		BOUL	07	06	1420	S12	E37	07	9.4		B	CSO	70	1	3	3
4536		HOLL	07	06	1435	S14	E38	07	9.5		B	CAO	90	2	3	3
4536	24106	MWIL	07	06	1500	S12	E39	07	9.6	5	(AP)					
4536		RAMY	07	06	1534	S13	E38	07	9.5		B	CAO	60	3	3	1
4536		ATHN	07	07	0615	S10	E29	07	9.4			CSO	40	2	2	3

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4536		RAMY	07	07	1255	S12	E25	07	9.4		B	CSO	70	6	4	4
4536		BOUL	07	07	1440	S08	E25	07	9.5		B	CSO	50	3	4	3
4536		HOLL	07	07	1440	S12	E26	07	9.6		A	HSX	60	1	2	3
4536		PALE	07	07	1730	S09	E24	07	9.5		B	BXO	40	10	5	4
4536	24106	MWIL	07	07	1915	S12	E24	07	9.6	5	(AP)					
4536		MANI	07	07	2336	S11	E20	07	9.5			DSO	120	7	6	3
4536		ATHN	07	08	0700	S11	E16	07	9.5			CSO	50	3	4	3
4536		RAMY	07	08	1245	S12	E14	07	9.6		B	CAO	20	4	4	4
4536		BOUL	07	08	1345	S08	E11	07	9.4		B	CSI	40	5	3	3
4536		HOLL	07	08	1430	S11	E13	07	9.6		A	HSX	30	3	2	3
4536	24106	MWIL	07	08	1600	S12	E12	07	9.6	4	(AP)					
4536		PALE	07	08	1730	S12	E10	07	9.5		B	CSO	40	5	4	3
4536		ATHN	07	09	0710	S10	E03	07	9.5		A	HSX	50	1	2	1
4536		RAMY	07	09	1345	S11	E01	07	9.6		B	CAO	20	6	3	3
4536	24106	MWIL	07	09	1500	S11	W01	07	9.5	5	(AP)					
4536		HOLL	07	09	1720	S12	W02	07	9.6		A	CSO	20	3	3	3
4536		PALE	07	09	1835	S11	W03	07	9.5		B	CAO	30	4	3	3
4536		ATHN	07	10	0630	S12	W10	07	9.5			CAO	30	4	3	2
4536		RAMY	07	10	1240	S09	W13	07	9.6		B	CAO	30	7	4	3
4536		BOUL	07	10	1325	S08	W14	07	9.5		B	BXO	30	5	3	2
4536		HOLL	07	10	1455	S11	W13	07	9.6		B	CSO	20	4	4	3
4536	24106	MWIL	07	10	1530	S11	W14	07	9.6	5	(BP)					
4536		MANI	07	10	2249	S11	W20	07	9.4			CSO	40	5	3	2
4536		ATHN	07	11	0615	S11	W20	07	9.8			HSX	20	1	2	3
4536		RAMY	07	11	1230	S09	W26	07	9.6		B	CAO	20	6	5	4
4536		BOUL	07	11	1415	S08	W27	07	9.6		B	CSO	30	4	2	3
4536	24106	MWIL	07	11	1500	S11	W27	07	9.6	4	(AP)					
4536		HOLL	07	11	1635	S11	W27	07	9.7		B	CSO	40	3	2	3
4536		PALE	07	11	1730	S11	W30	07	9.5		A	AXX	10	1	1	3
4536		LEAR	07	12	0327	S11	W35	07	9.5		B	BXO	10	3	1	3
4536		ATHN	07	12	0630	S11	W35	07	9.6			AXX	10	1	1	3
4536		RAMY	07	12	1245	S08	W40	07	9.5		B	BXO	30	4	4	3
4536		BOUL	07	12	1309	S09	W39	07	9.6		A	AXX	10	2	1	3
4536	24106	MWIL	07	12	1600	S11	W42	07	9.5	3	(AP)					
0002		BOUL	07	07	1440	N01	E28	07	9.7		B	BXO	10	3	3	3
0002		PALE	07	07	1730	S01	E27	07	9.7		B	BXO	20	6	4	4
0002		MANI	07	07	2336	S02	E23	07	9.7			AXX		2	1	3
		HOLL	07	10	1455	S17	W06	07	10.2		A	AXX	20	2	2	3
4537		RAMY	07	08	1245	S11	E58	07	12.9		B	DAO	50	7	5	4
4537		BOUL	07	08	1345	S07	E57	07	12.8		B	BXO	30	6	5	3
4537		HOLL	07	08	1430	S08	E58	07	13.0		B	BXO	10	9	5	3
4537	24109	MWIL	07	08	1600	S08	E57	07	12.9	4	(B)					
4537		PALE	07	08	1730	S10	E55	07	12.9		B	CAO	40	5	5	3
4537		ATHN	07	09	0710	S09	E45	07	12.7		B	DSO	110	3	5	1
4537		RAMY	07	09	1345	S08	E43	07	12.8		B	DAO	140	13	6	3
4537	24109	MWIL	07	09	1500	S08	E42	07	12.8	5	(B)					
4537		HOLL	07	09	1720	S09	E42	07	12.9		B	DHI	30	14	8	3
4537		PALE	07	09	1835	S09	E41	07	12.9		B	DAO	160	10	7	3
4537		ATHN	07	10	0630	S10	E32	07	12.7			DAO	100	8	8	2
4537		RAMY	07	10	1240	S09	E31	07	12.9		B	DAO	220	16	8	3
4537		BOUL	07	10	1325	S09	E28	07	12.7		B	DSO	120	8	6	2
4537		HOLL	07	10	1455	S09	E29	07	12.8		B	DAO	170	13	8	3
4537	24109	MWIL	07	10	1530	S09	E29	07	12.8	5	(B)					
4537		MANI	07	10	2249	S09	E25	07	12.8			DAO	200	9	8	2
4537		ATHN	07	11	0615	S10	E21	07	12.8			DSO	130	6	6	3
4537		RAMY	07	11	1230	S09	E16	07	12.7		B	DAO	180	7	9	4
4537		BOUL	07	11	1415	S08	E16	07	12.8		B	DSO	170	9	8	3
4537	24109	MWIL	07	11	1500	S09	E16	07	12.8	5	(B)					
4537		HOLL	07	11	1635	S09	E15	07	12.8		A	DSO	190	8	8	3
4537		PALE	07	11	1730	S09	E14	07	12.8		B	DSO	150	6	10	3
4537		LEAR	07	12	0327	S09	E08	07	12.7		B	DSO	120	4	9	3
4537		ATHN	07	12	0630	S09	E08	07	12.9			DSO	80	3	10	3
4537		RAMY	07	12	1245	S08	E03	07	12.8		B	DAO	1090	18	9	3
4537		BOUL	07	12	1309	S07	E04	07	12.8		B	DSO	130	10	9	3
4537		HOLL	07	12	1520	S08	E02	07	12.8		B	DAO	150	10	9	2
4537	24109	MWIL	07	12	1600	S09	E02	07	12.8	5	(B)					
4537		PALE	07	12	1720	S09	E01	07	12.8		B	CSO	100	10	9	4
4537		LEAR	07	13	0036	S09	W05	07	12.6		B	DAO	70	15	10	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)

JULY 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
4537		ATHN	07 13 0700	S09 W08	07 12.7		B	DAO	100	6	10	3
4537		RAMY	07 13 1307	S09 W10	07 12.8		B	DAO	120	12	9	3
4537		BOUL	07 13 1350	S08 W09	07 12.9		B	DAO	100	7	8	3
4537		HOLL	07 13 1438	S07 W13	07 12.6		B	CAO	120	10	10	3
4537		HOLL	07 13 1438	S09 W13	07 12.6		B	CAO	120	10	10	3
4537	24109	MWIL	07 13 1530	S09 W13	07 12.7	5	(B)					
4537		PALE	07 13 1824	S08 W14	07 12.7		B	DAO	70	5	8	3
4537		MANI	07 13 2257	S09 W17	07 12.7			DAO	130	8	10	2
4537		LEAR	07 14 0142	S10 W17	07 12.8		B	DAO	60	9	10	3
4537		ATHN	07 14 0615	S07 W18	07 12.9		B	DSO	90	2	7	2
4537		BOUL	07 14 1355	S07 W26	07 12.6		B	CAO	60	3	3	2
4537		RAMY	07 14 1435	S09 W28	07 12.5		A	HAX	90	1	2	3
4537		HOLL	07 14 1510	S09 W29	07 12.5		A	HSX	80	3	3	3
4537	24109	MWIL	07 14 1530	S09 W28	07 12.5	5	(BP)					
4537		PALE	07 14 2139	S10 W33	07 12.4		A	HHX	120	1	3	2
4537		MANI	07 14 2320	S09 W31	07 12.6			CSO	90	5	7	2
4537		LEAR	07 15 0132	S08 W34	07 12.5		B	CSO	30	2	2	3
4537		ATHN	07 15 0630	S10 W36	07 12.6			CAO	40	2	2	1
4537		RAMY	07 15 1330	S08 W42	07 12.4		B	CAO	110	3	3	4
4537		BOUL	07 15 1420	S07 W31	07 13.3		B	CSO	60	4	3	4
4537		HOLL	07 15 1441	S08 W42	07 12.5		B	CSO	100	4	3	3
4537		PALE	07 15 1745	S10 W44	07 12.4		B	CSO	140	3	3	3
4537		LEAR	07 16 0144	S09 W48	07 12.5		B	CSO	100	7	4	3
4537		ATHN	07 16 0615	S11 W48	07 12.6			CSO	80	3	3	2
4537		MANI	07 16 0834	S09 W48	07 12.8			CSO	50	4	5	2
4537	24109	MWIL	07 16 1500	S09 W55	07 12.5	5	(BF)					
4537		RAMY	07 16 1525	S08 W56	07 12.4		B	CAO	90	5	5	3
4537		HOLL	07 16 1545	S09 W55	07 12.5		B	CSO	100	6	7	3
4537		PALE	07 16 1715	S09 W57	07 12.4		B	CSO	110	6	5	3
4537		BOUL	07 16 1940	S07 W58	07 12.5		B	CSO	130	3	3	2
4537		LEAR	07 17 0117	S09 W61	07 12.5		B	CSO	80	3	3	3
4537		MANI	07 17 0559	S09 W64	07 12.4			CSO	50	3	3	2
4537		ATHN	07 17 0635	S08 W64	07 12.5			CSO	90	3	4	3
4537		RAMY	07 17 1405	S09 W68	07 12.5		B	CAO	90	5	3	3
4537	24109	MWIL	07 17 1530	S09 W69	07 12.5	4	(AF)					
4537		PALE	07 17 1820	S09 W70	07 12.5		B	CSO	80	3	3	3
4537		HOLL	07 17 2050	S08 W69	07 12.7		B	CSO	50	2	4	2
4537		MANI	07 17 2315	S09 W74	07 12.4			CSO	60	2	3	3
4537		ATHN	07 18 0630	S09 W77	07 12.5		A	HRX	70	1	3	3
4537		RAMY	07 18 1233	S08 W81	07 12.4		A	HSX	50	1	2	4
4537		BOUL	07 18 1345	S07 W81	07 12.5		A	HSX	30	1	2	3
4537	24109	MWIL	07 18 1530	S08 W84	07 12.3	2	AF					
4537		HOLL	07 18 1805	S08 W85	07 12.4		A	HHX	20	1	6	3
4537		PALE	07 18 1820	S09 W86	07 12.3		A	HSX	60	1	2	3
4544		RAMY	07 17 1405	N11 W39	07 14.7		A	AXX	10	1	1	3
4544	24113	MWIL	07 17 1530	N11 W39	07 14.7	3	(B)					
4544		PALE	07 17 1820	N11 W40	07 14.8		A	AXX	10	1	1	3
4544		HOLL	07 17 2050	N12 W42	07 14.7		B	BXO	20	2	3	2
4544		RAMY	07 19 1122	N10 W65	07 14.6		A	AXX	20	2	1	4
4544		BOUL	07 19 1315	N11 W66	07 14.6		A	AXX	10	1		3
4544		HOLL	07 19 1418	N09 W69	07 14.4		B	BXO	10	2	5	3
4544		HOLL	07 19 1418	N09 W69	07 14.4		B	BXO	10	2	5	3
4544	24117	MWIL	07 19 2030	N11 W72	07 14.4	3	(B)					
4544		PALE	07 19 2100	N09 W72	07 14.5		B	BXO	20	3	5	3
4544		LEAR	07 20 0034	N10 W74	07 14.5		B	DSO	20	4	5	3
4544		MANI	07 20 0041	N09 W74	07 14.5			CSO	60	5	5	3
4544		ATHN	07 20 0630	N10 W77	07 14.5		B	DSO	30	2	4	1
4544		RAMY	07 20 1315	N10 W82	07 14.4		A	AXX	20	1	1	4
4544		BOUL	07 20 1330	N13 W80	07 14.5		A	AXX	30	3	2	4
4544	24117	MWIL	07 20 1530	N10 W80	07 14.6	2	AF					
4544		HOLL	07 20 1557	N10 W82	07 14.5		A	AXX		1	1	3
4544		HOLL	07 20 1557	N10 W82	07 14.5		A	AXX		1	1	3
4544		MANI	07 20 2256	N09 W87	07 14.4			AXX	40	1	1	3
0003		RAMY	07 15 1330	S15 W03	07 15.3		B	BXO	10	3	2	4
0003		HOLL	07 15 1441	S15 W03	07 15.4		B	BXO		2	3	3
0003		PALE	07 15 1745	S16 W06	07 15.3		B	BXO	40	2	3	3
4539		HOLL	07 09 1720	S07 E79	07 15.6		A	AXX		1	1	3
4539		PALE	07 09 1835	S07 E78	07 15.6		A	AXX		1		3

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JULY 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
4539		ATHN	07	10	0630	S08	E66	07	15.2		A	AXX	10	1	1	2
4539		RAMY	07	10	1240	S06	E68	07	15.6		A	AXX	30	2	1	3
4539		BOUL	07	10	1325	S08	E63	07	15.3		A	AXX	20	1	1	2
4539		HOLL	07	10	1455	S07	E66	07	15.6		A	AXX	10	1	1	3
4539	24111	MWIL	07	10	1530	S05	E65	07	15.5	3	(AP)					
4539		MANI	07	10	2249	S07	E62	07	15.6			AXX	10	1	1	2
4539		ATHN	07	11	0615	S08	E58	07	15.6			AXX	20	1	1	3
4539		RAMY	07	11	1230	S05	E53	07	15.5		B	CAO	30	2	2	4
4539		BOUL	07	11	1415	S06	E52	07	15.5		B	BXO	10	2	3	3
4539	24111	MWIL	07	11	1500	S05	E51	07	15.4	4	(BF)					
4539		HOLL	07	11	1635	S06	E52	07	15.6		B	BXO	20	2	2	3
4539		PALE	07	11	1730	S07	E51	07	15.5		B	BXO	20	2	2	3
4539		LEAR	07	12	0327	S06	E45	07	15.5		B	CRO	10	3	4	3
4539		ATHN	07	12	0630	S06	E42	07	15.4			AXX	10	1	1	3
4539		RAMY	07	12	1245	S05	E38	07	15.4		B	BXO	10	2	3	3
4539		BOUL	07	12	1309	S06	E37	07	15.3		A	AXX	10	1	1	3
4539		HOLL	07	12	1520	S08	E37	07	15.4		B	BXO	20	4	3	2
4539	24111	MWIL	07	12	1600	S06	E37	07	15.4	3	(B)					
4539		PALE	07	12	1720	S07	E36	07	15.4		B	BXO	20	5	4	4
4539		LEAR	07	13	0036	S11	E31	07	15.4		B	BXO	10	5	3	2
4539		RAMY	07	13	1307	S07	E25	07	15.4		B	CAO	20	12	4	3
4539		BOUL	07	13	1350	S07	E23	07	15.3		B	BXI	20	7	3	3
4539		HOLL	07	13	1438	S07	E23	07	15.3		B	BXO	40	9	4	3
4539	24111	MWIL	07	13	1530	S08	E26	07	15.6	4	(BF)					
4539		PALE	07	13	1824	S09	E21	07	15.3		B	BXO	40	6	3	3
4539		MANI	07	13	2257	S09	E18	07	15.3			CRO	20	8	4	2
4539		LEAR	07	14	0142	S07	E18	07	15.4		B	DSO	40	4	2	3
4539		ATHN	07	14	0615	S06	E15	07	15.4		B	BXO	20	2	2	2
4539		BOUL	07	14	1355	S05	E12	07	15.5		B	DSI	30	5	4	2
4539		RAMY	07	14	1435	S16	E12	07	15.5		B	DAO	40	9	4	3
4539		HOLL	07	14	1510	S07	E10	07	15.4		B	CRO	20	9	5	3
4539	24111	MWIL	07	14	1530	S07	E10	07	15.4	5	(BF)					
4539		PALE	07	14	2139	S08	E06	07	15.4		B	CRO	50	3	4	2
4539		MANI	07	14	2320	S07	E05	07	15.3			BXO	10	3	3	2
4539		LEAR	07	15	0132	S06	E05	07	15.4		B	CSO	10	2	3	3
4539		RAMY	07	15	1330	S08	W00	07	15.6		B	DAO	20	3	3	4
4539		BOUL	07	15	1420	S07	W02	07	15.4		B	BXI	20	7	3	4
4539		HOLL	07	15	1441	S07	W02	07	15.5		B	BXO	10	5	3	3
4539		PALE	07	15	1745	S09	W04	07	15.4		B	BXO	30	3	4	3
4539		BOUL	07	20	1330	S06	W68	07	15.5		B	BXO	20	5	4	4
4542		RAMY	07	18	1233	S14	W38	07	15.7		A	AXX	10	1	1	4
4542		RAMY	07	19	1122	S13	W52	07	15.6		A	AXX	10	1	1	4
4542		BOUL	07	19	1315	S13	W53	07	15.6		A	AXX	20	1	1	3
4542		HOLL	07	19	1418	S14	W55	07	15.4		A	AXX		1	1	3
4542	24118	MWIL	07	19	2030	S14	W56	07	15.6	2	(B)					
		LEAR	07	14	0142	N13	E30	07	16.3		B	BXX	10	2	2	3
		BOUL	07	20	1330	S03	W57	07	16.3		B	BXO	10	3	4	4
4547		BOUL	07	19	1315	N22	W30	07	17.2		A	AXX	10	1		3
4547		HOLL	07	19	1418	N22	W33	07	17.1		B	BXO	20	3	3	3
4541		ATHN	07	11	0615	S17	E71	07	16.7			BXO	20	2	1	3
4541		RAMY	07	11	1230	S14	E76	07	17.3		A	AXX	30	2	2	4
4541		BOUL	07	11	1415	S16	E75	07	17.3		A	HSX	60	1	1	3
4541	24112	MWIL	07	11	1500	S14	E77	07	17.4	3	(AF)					
4541		HOLL	07	11	1635	S15	E75	07	17.4		A	HSX	80	1	2	3
4541		PALE	07	11	1730	S16	E77	07	17.6		B	BXO	30	2	4	3
4541		LEAR	07	12	0327	S14	E68	07	17.3		A	HHX	30	1	2	3
4541		ATHN	07	12	0630	S16	E65	07	17.2			HSX	40	1	1	3
4541		RAMY	07	12	1245	S15	E64	07	17.4		A	HAX	50	2	2	3
4541		BOUL	07	12	1309	S14	E62	07	17.2		A	HSX	50	1	2	3
4541		HOLL	07	12	1520	S17	E64	07	17.5		B	CAO	60	2	7	2
4541	24112	MWIL	07	12	1600	S15	E63	07	17.4	4	(AF)					
4541		PALE	07	12	1720	S15	E62	07	17.4		A	HSX	30	1	1	4
4541		LEAR	07	13	0036	S10	E55	07	17.2		A	HSX	10	1	1	2
4541		ATHN	07	13	0700	S16	E53	07	17.3		A	AXX	10	1		3
4541		RAMY	07	13	1307	S15	E52	07	17.5		A	HAX	30	1	1	3
4541		BOUL	07	13	1350	S16	E50	07	17.4		A	HRX	30	3	2	3

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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
4541		HOLL	07	13	1438	S15	E50	07	17.4		A	HAX	20	3	1	3
4541	24112	MWIL	07	13	1530	S15	E50	07	17.4	4	(AF)					
4541		PALE	07	13	1824	S17	E48	07	17.4		A	HRX	20	2	2	3
4541		MANI	07	13	2257	S15	E42	07	17.1			AXX	10	3	1	2
4541		LEAR	07	14	0142	S15	E45	07	17.5		A	HSX	10	1	1	3
4541		ATHN	07	14	0615	S16	E42	07	17.4		A	AXX	10	1	1	2
4541		BOUL	07	14	1355	S13	E37	07	17.4		A	AXX	10	1	1	2
4541		RAMY	07	14	1435	S16	E38	07	17.5		A	HAX	30	1	1	3
4541		HOLL	07	14	1510	S16	E37	07	17.4		A	HRX	10	1	1	3
4541	24112	MWIL	07	14	1530	S15	E37	07	17.4	4	(AF)					
4541		PALE	07	14	2139	S16	E33	07	17.4		A	AXX	10	1	1	2
4541		MANI	07	14	2320	S15	E30	07	17.2			BXO	20	4	3	2
4541		LEAR	07	15	0132	S16	E35	07	17.7		B	CSO	10	2	6	3
4541		ATHN	07	15	0630	S17	E29	07	17.5			CSO	20	2	6	1
4541		RAMY	07	15	1330	S17	E27	07	17.6		B	CAO	20	3	6	4
4541		BOUL	07	15	1420	S16	E26	07	17.6		B	BXO	20	4	7	4
4541		HOLL	07	15	1441	S16	E27	07	17.7		B	BXO	10	3	6	3
4541		PALE	07	15	1745	S17	E26	07	17.7		B	BXO	30	3	7	3
4541		LEAR	07	16	0144	S16	E18	07	17.4		A	AXX	10	1	1	3
4541		ATHN	07	16	0615	S17	E14	07	17.3			AXX	10	1	1	2
4541		MANI	07	16	0834	S15	E13	07	17.3			AXX	10	1		2
4541	24112	MWIL	07	16	1500	S15	E14	07	17.7	4	(B)					
4541		RAMY	07	16	1525	S16	E14	07	17.7		B	CRO	10	3	7	3
4541		HOLL	07	16	1545	S16	E14	07	17.7		B	BXO	20	5	7	3
4541		PALE	07	16	1715	S16	E12	07	17.6		B	BXO	10	2	7	3
4541		BOUL	07	16	1940	S15	E09	07	17.5		B	BXO	20	3	7	2
4541		LEAR	07	17	0117	S18	E11	07	17.9		B	BXO	10	2	2	3
4541	24112	MWIL	07	17	1530	S17	E03	07	17.9	3	(AP)					
4541		PALE	07	17	1820	S18	E03	07	18.0		B	BXO	10	3	3	3
4541		HOLL	07	17	2050	S16	E02	07	18.0		B	BXO	10	2	2	2
4541		RAMY	07	18	1233	S17	W07	07	18.0		B	BXO	40	9	4	4
4541		BOUL	07	21	1415	S18	W49	07	17.9		B	BXO	10	3	3	3
		BOUL	07	20	1330	N07	W32	07	18.2		A	AXX	10	3	2	4
		BOUL	07	21	1415	S28	W40	07	18.5		B	BXO		3	6	3
4543		HOLL	07	16	1545	S11	E27	07	18.7		A	AXX		2		3
4543		BOUL	07	16	1940	S10	E22	07	18.5		A	AXX	10	2	2	2
4543	24114	MWIL	07	17	1530	S10	E13	07	18.6	3	(AF)					
4543		RAMY	07	18	1233	S12	E05	07	18.9		B	BXO	20	3	4	4
4548		LEAR	07	20	0034	S17	E04	07	20.3		A	AXX	10	1	1	3
4548		MANI	07	20	0041	S17	E06	07	20.5			BXO		3	3	3
4548		BOUL	07	20	1330	S13	W08	07	20.0		B	BXO	20	7	10	4
4548	24119	MWIL	07	20	1530	S15	W05	07	20.3	2						
4548		BOUL	07	21	1415	S16	W12	07	20.7		A	AXX	10	3	2	3
		BOUL	07	20	1330	N11	W01	07	20.5		B	BXO	10	5	4	4
4545		RAMY	07	18	1233	S07	E38	07	21.4		B	BXO	30	4	3	4
4545	24115	MWIL	07	18	1530	S08	E36	07	21.3	3	(B)					
4545		HOLL	07	18	1805	S07	E35	07	21.4		B	BXO	10	2	2	3
4545		PALE	07	18	1820	S07	E35	07	21.4		B	BXO	10	4	3	3
4545		MANI	07	18	2305	S09	E31	07	21.3			BXO	20	5	4	3
4545		LEAR	07	19	0117	S08	E31	07	21.4		B	BXO	20	4	4	3
4545		ATHN	07	19	0645	S08	E27	07	21.3		B	BXO	20	2	3	1
4545		RAMY	07	19	1122	S07	E24	07	21.3		B	CAO	30	6	3	4
4545		BOUL	07	19	1315	S07	E23	07	21.3		B	BXO	30	6	3	3
4545		HOLL	07	19	1418	S06	E23	07	21.3		B	BXO	30	6	5	3
4545	24115	MWIL	07	19	2030	S07	E18	07	21.2	4	(B)					
4545		PALE	07	19	2100	S07	E20	07	21.4		B	BXO	10	3	4	3
4545		LEAR	07	20	0034	S08	E15	07	21.1		B	CSO	20	3	4	3
4545		MANI	07	20	0041	S09	E18	07	21.4			BXO	10	3	4	3
4545		ATHN	07	20	0630	S10	E11	07	21.1		B	BXO	10	2	2	1
4545		RAMY	07	20	1315	S07	E07	07	21.1		A	HAX	10	1	1	4
4545		BOUL	07	20	1330	S07	E07	07	21.1		B	BXO	20	5	3	4
4545	24115	MWIL	07	20	1530	S07	E06	07	21.1	4	(AP)					
4545		HOLL	07	20	1557	S07	E06	07	21.1		A	AXX	10	4	2	3
4545		MANI	07	20	2256	S07	E03	07	21.2			CSO	40	4	4	3
4545		LEAR	07	21	0222	S07	E01	07	21.2		B	CRO	20	3	4	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)

JULY 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
4545		ATHN	07	21	0615	S08	W02	07	21.1			AXX	20	1	1	1
4545		HOLL	07	21	1402	S06	W06	07	21.1		B	DAO	40	7	6	3
4545		BOUL	07	21	1415	S05	W07	07	21.1		B	DSI	60	8	5	3
4545		RAMY	07	21	1501	S07	W07	07	21.1		B	DAO	60	13	6	2
4545	24115	MWIL	07	21	1530	S07	W07	07	21.1	5	(B)					
4545		MANI	07	21	2336	S07	W12	07	21.1			DSO	70	18	8	3
4545		LEAR	07	22	0048	S07	W13	07	21.1		B	DSO	210	13	8	3
4545		ATHN	07	22	0645	S08	W17	07	21.0			DAO	70	4	6	2
4545		HOLL	07	22	1440	S07	W22	07	21.0		B	DAO	110	10	7	3
4545		RAMY	07	22	1555	S07	W22	07	21.0		B	DAO	110	8	7	3
4545		BOUL	07	22	1639	S06	W22	07	21.0		B	CAO	120	11	6	3
4545		PALE	07	22	1945	S08	W24	07	21.0		B	CSO	90	5	5	3
4545		LEAR	07	23	0051	S07	W28	07	20.9		B	CAO	110	5	7	3
4545		MANI	07	23	0151	S08	W27	07	21.1			CSO	80	7	5	3
4545		ATHN	07	23	0630	S10	W30	07	21.0		B	CSO	60	3	4	1
4545		HOLL	07	23	1409	S07	W35	07	21.0		B	DSO	130	7	5	3
4545	24115	MWIL	07	23	1500	S08	W35	07	21.0	5	(BP)					
4545		BOUL	07	23	1512	S06	W36	07	20.9		B	CAO	90	8	4	3
4545		RAMY	07	23	1655	S08	W37	07	20.9		B	DAO	130	8	4	3
4545		PALE	07	23	1945	S07	W39	07	20.9		B	DAO	130	2	5	2
4545		MANI	07	24	0206	S07	W42	07	20.9			DSO	90	7	5	3
4545		LEAR	07	24	0410	S08	W43	07	20.9		B	DSO	100	5	4	3
4545		ATHN	07	24	0700	S08	W43	07	21.1		B	DSO	130	3	4	2
4545		RAMY	07	24	1230	S07	W48	07	20.9		B	DAO	80	5	5	4
4545		BOUL	07	24	1420	S07	W48	07	21.0		B	DSO	70	6	6	3
4545		HOLL	07	24	1440	S06	W48	07	21.0		B	DSO	110	6	6	3
4545	24115	MWIL	07	24	1600	S08	W49	07	21.0	5	(BP)					
4545		PALE	07	24	1835	S06	W52	07	20.9		B	DAO	60	3	6	3
4545		LEAR	07	25	0613	S08	W58	07	20.9		B	ESO	100	5	12	1
4545		ATHN	07	25	0630	S09	W56	07	21.1			DAO	50	5	5	2
4545		RAMY	07	25	1255	S07	W62	07	20.9		B	CAO	70	3	6	3
4545	24115	MWIL	07	25	1500	S08	W64	07	20.8	4	(AP)					
4545		HOLL	07	25	1520	S08	W63	07	20.9		B	DAO	30	2	4	3
4545		MANI	07	26	0048	S07	W70	07	20.8			HSX	70	2	2	2
4545		LEAR	07	26	0055	S08	W70	07	20.8		B	DSO	30	2	2	3
4545		ATHN	07	26	0630	S08	W74	07	20.7		A	HAX	40	1	2	2
4545		RAMY	07	26	1235	S07	W77	07	20.8		A	HAX	30	1	1	3
4545	24115	MWIL	07	26	1500	S08	W78	07	20.8	2	AP					
4545		BOUL	07	26	1610	S06	W72	07	21.3		A	AXX	30	3	2	3
4545		PALE	07	26	1838	S05	W79	07	20.9		A	AXX	30	2	2	3
4545		HOLL	07	26	1916	S06	W78	07	21.0		A	AXX		1	1	2
4546	24116	MWIL	07	18	1530	S14	E37	07	21.4	3	(B)					
4546		PALE	07	18	1820	S14	E37	07	21.6		B	BXO	10	2	3	3
4546	24116	MWIL	07	19	2030	S13	E23	07	21.6	2	(AF)					
4546		PALE	07	19	2100	S13	E23	07	21.6		A	AXX		1		3
4546		LEAR	07	20	0034	S14	E20	07	21.5		A	AXX	10	1	1	3
4546		MANI	07	20	0041	S17	E20	07	21.5			AXX		1		3
4546		LEAR	07	21	0222	S13	E04	07	21.4		B	BXO		2	2	3
4546	24116	MWIL	07	21	1530	S16	W08	07	21.0	2	(AF)					
4546		LEAR	07	24	0410	S13	W38	07	21.3		A	AXX	10	1	1	3
4546		RAMY	07	24	1230	S13	W42	07	21.4		A	AXX	10	1	1	4
4546		HOLL	07	24	1440	S12	W45	07	21.2		B	BXO	10	2	3	3
4546	24116	MWIL	07	24	1600	S15	W44	07	21.3	3	(BF)					
4551		HOLL	07	24	1440	S06	W38	07	21.8		B	BXO	10	2	2	3
4551	24122	MWIL	07	24	1600	S07	W39	07	21.7	3	(AP)					
4551		PALE	07	24	1835	S06	W42	07	21.6		A	AXX	10	1	1	3
4551		ATHN	07	25	0630	S07	W48	07	21.7		A	AXX	10	1	1	2
4551		RAMY	07	25	1255	S07	W53	07	21.6		A	AXX	10	1	1	3
4551	24122	MWIL	07	25	1500	S07	W54	07	21.6	3	(AP)					
4551		HOLL	07	25	1520	S06	W54	07	21.6		A	AXX		1		3
		BOUL	07	21	1415	N24	E13	07	22.6		A	AXX		3	2	3
		LEAR	07	27	0011	N21	W38	07	24.1		B	BXO	30	2	2	2
		BOUL	07	21	1415	S01	E56	07	25.8		B	BXO		4	4	3
0004	24123	MWIL	07	29	1630	S21	W16	07	28.5	3	(B)					
0004	24123	MWIL	07	30	1445	S21	W28	07	28.5	3	(AF)					

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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JULY 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
4549		HOLL	07	22	1440	S17	E76	07	28.4		A	HSX	20	1	2	3
4549		RAMY	07	22	1555	S17	E76	07	28.4		A	HAX	50	1	2	3
4549		BOUL	07	22	1639	S18	E75	07	28.4		A	HSX	60	1	2	3
4549		PALE	07	22	1945	S18	E74	07	28.5		A	HSX	30	1	2	3
4549		LEAR	07	23	0051	S18	E70	07	28.4		A	HSX	30	1	2	3
4549		MANI	07	23	0151	S17	E71	07	28.5			HSX	40	1	3	3
4549		ATHN	07	23	0630	S19	E68	07	28.5		A	AXX	30	1	1	1
4549		HOLL	07	23	1409	S18	E63	07	28.4		A	HSX	50	2	2	3
4549	24120	MWIL	07	23	1500	S17	E63	07	28.4	4	(AP)					
4549		BOUL	07	23	1512	S18	E61	07	28.3		A	HSX	40	1	2	3
4549		RAMY	07	23	1655	S18	E60	07	28.3		A	HAX	50	1	2	3
4549		PALE	07	23	1945	S17	E60	07	28.4		A	HAX	60	1	2	2
4549		MANI	07	24	0206	S18	E56	07	28.4			HSX	60	1	2	3
4549		LEAR	07	24	0410	S17	E56	07	28.4		A	HSX	40	1	2	3
4549		ATHN	07	24	0700	S18	E55	07	28.5		A	HSX	40	1	1	2
4549		RAMY	07	24	1230	S17	E50	07	28.3		A	HAX	30	1	2	4
4549		BOUL	07	24	1420	S17	E49	07	28.3		A	HSX	30	1	2	3
4549		HOLL	07	24	1440	S17	E52	07	28.5		B	CAO	40	2	6	3
4549	24120	MWIL	07	24	1600	S17	E49	07	28.4	4	(AP)					
4549		PALE	07	24	1835	S19	E48	07	28.4		A	HSX	50	1	1	3
4549		LEAR	07	25	0613	S16	E41	07	28.4		A	HSX	20	1	1	1
4549		ATHN	07	25	0630	S19	E41	07	28.4		A	HSX	30	1	2	2
4549		RAMY	07	25	1255	S17	E38	07	28.4		A	HAX	40	1	2	3
4549	24120	MWIL	07	25	1500	S17	E37	07	28.4	5	(AP)					
4549		HOLL	07	25	1520	S18	E38	07	28.5		A	HSX	50	1	2	3
4549		MANI	07	26	0048	S18	E32	07	28.5			HSX	40	1	2	2
4549		LEAR	07	26	0055	S18	E32	07	28.5		A	HSX	40	1	2	3
4549		ATHN	07	26	0630	S18	E28	07	28.4		A	HAX	40	1	2	2
4549		RAMY	07	26	1235	S17	E25	07	28.4		B	CAO	20	4	2	3
4549	24120	MWIL	07	26	1500	S17	E24	07	28.4	5	(AP)					
4549		BOUL	07	26	1610	S17	E23	07	28.4		A	HRX	30	1	2	3
4549		PALE	07	26	1838	S18	E21	07	28.4		A	HSX	30	1	2	3
4549		HOLL	07	26	1916	S17	E23	07	28.6		B	CSO	40	3	5	2
4549		LEAR	07	27	0011	S18	E18	07	28.4		A	HSX	10	1	2	2
4549		MANI	07	27	0100	S18	E19	07	28.5			HSX	30	2	2	2
4549		RAMY	07	27	1255	S17	E12	07	28.5		A	HAX	20	1	1	3
4549		HOLL	07	27	1440	S18	E08	07	28.2		A	HSX	50	1	2	3
4549		PALE	07	27	1730	S17	E10	07	28.5		A	HAX	20	1	1	3
4549		MANI	07	27	2258	S17	E05	07	28.3			HSX	30	1	1	3
4549		LEAR	07	28	0028	S17	E05	07	28.4		A	HAX	20	1	1	2
4549		ATHN	07	28	0900	S17	E01	07	28.5		A	HSX	30	1	1	2
4549		HOLL	07	28	1450	S16	W03	07	28.4		A	HSX	40	2	2	3
4549		RAMY	07	28	1515	S16	W03	07	28.4		A	HAX	20	1	1	3
4549	24120	MWIL	07	28	1700	S16	W03	07	28.5	3	(AP)					
4549		PALE	07	28	1750	S17	W10	07	28.0		A	AXX	10	1	1	3
4549		LEAR	07	29	0126	S18	W08	07	28.5		B	BXO	20	2	5	3
4549		RAMY	07	29	1250	S19	W14	07	28.5		B	CAO	20	7	6	4
4549		HOLL	07	29	1408	S19	W16	07	28.4		B	CSO	20	6	6	4
4549	24120	MWIL	07	29	1630	S16	W16	07	28.5	3	(AP)					
4549		LEAR	07	30	0435	S18	W23	07	28.4		B	BXO	10	5	3	3
4549		RAMY	07	30	1349	S17	W27	07	28.5		B	BXO	30	2	5	3
4549	24120	MWIL	07	30	1445	S17	W28	07	28.5	2	(AP)					
4549		HOLL	07	30	1530	S17	W28	07	28.5		B	BXO	20	4	5	3
4549		PALE	07	30	1851	S18	W31	07	28.4		B	BXO	10	2	2	3
4550		HOLL	07	23	1409	N02	E72	07	29.0		A	AXX		1		3
4550	24121	MWIL	07	23	1500	N02	E70	07	28.9	2	(AP)					
4550		BOUL	07	23	1512	N01	E68	07	28.7		A	AXX	30	1	1	3
4550		RAMY	07	23	1655	N01	E68	07	28.8		A	AXX	10	1	1	3
4550		PALE	07	23	1945	N03	E67	07	28.8		A	AXX	10	1	1	2
4550		MANI	07	24	0206	N01	E63	07	28.8			AXX	10	1	1	3
4550		LEAR	07	24	0410	N02	E62	07	28.8		A	AXX	10	1	1	3
4550		ATHN	07	24	0700	N01	E59	07	28.7		A	AXX	10	1		2
4550		RAMY	07	24	1230	N02	E58	07	28.9		A	AXX	10	1	1	4
4550		BOUL	07	24	1420	N00	E55	07	28.7		A	AXX	10	1	1	3
4550		HOLL	07	24	1440	N02	E56	07	28.8		A	AXX		1		3
4550	24121	MWIL	07	24	1600	N02	E55	07	28.8	3	(AP)					
4550		PALE	07	24	1835	S01	E54	07	28.8		A	AXX	10	1		3
4550		LEAR	07	25	0613	N03	E47	07	28.8		A	AXX	10	1	1	1
4550	24121	MWIL	07	25	1500	N02	E42	07	28.8	3	(AP)					
4550		HOLL	07	25	1520	N01	E42	07	28.8		A	AXX	10	1		3

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4550		MANI	07 26	0048	N01 E38	07 28.9			AXX	10	1		2
4550		LEAR	07 26	0055	N03 E38	07 28.9		A	AXX		1	1	3
4550	24121	MWIL	07 26	1500	N02 E28	07 28.7	2	(AP)					
4550		MANI	07 27	0100	N01 E25	07 28.9			AXX		1		2
		BOUL	08 01	1430	S03 W19	07 31.2		A	AXX	10	1	1	3

SUDDEN IONOSPHERIC DISTURBANCES

JULY 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	X-ray Class	NOAA/SESC Region
01	1331	1339	1352	1	1		1				No flare		
01	1658	1704	1708	1-	1	1					No flare		
02	0059	0203	0212	1-	1				1		No flare		
02	0132	0138	0146	1-	1				1		No flare		
02	0220	0227	0235U	1-	1				1		No flare		
03	0200	0206	0215U	1-	1				1		No flare		
04	0112	0114	0125U	1-	1				1		No flare		
04	0242	0300	0439	2	3	1	1	1	1		0243 UT		No data
04	1803	1808	1813	1-	3	1	1				No flare		
05	1636	1706	1730	1	3		2				No flare		
07	1652	1655	1714	1	1		1				No flare		
07	1733	1743U	1752	1	1		1				No flare		
09	1534	1544	1556	1	3		2				No flare		
10	0640	0650	0716	1-	1			1			0636 UT		No data
10	1514	1521	1542	1	3		2				No flare		
10	1833	1834	1847	1	1	1					No flare		
11	0230	0238	0256	1-	1				1		No flare		
11	0335	0340	0350U	1-	1				1		No flare		
14	0838U	0853	0911U	1	1		1				No flare		
15	1406	1413	1549	1	1		1				No flare		
17	0057	0112	0235	1+	3	1		1			0100 UT	C5.6	4537
19	0240		0310	1-	1		1				No flare		
20	0130	0134	0140U	1-	1				1		No flare		
20	0317	0320	0326	1-	1				1		0320 UT		4544
20	1501	1507	1521	1-	3		2						
20	1617	1622	1625	1	1	1					1612 UT		4544
22	0004	0010	0016	1-	1				1		No flare		
25	0123	0126	0131	1-	1				1		No flare		
25	0214	0218	0222	1-	1				1		No flare		
26	1857	1900	1910	1	1	1					No flare		
26	2047	2055	2057	1	1	1					No flare		
26	2105	2111	2114	1	1	1					No flare		
27	1605	1613	1617	1	1	1					No flare		
28	2049	2053	2059	1-	1	1					No flare		
30	1606	1607	1630	1	1		1				1550 UT		4549
31	1142	1158	1232	1	3		2				No flare		
31	1638	1650	1706	1	3		2				No flare		

* = No Flare Patrol.

SUDDEN IONOSPHERIC DISTURBANCES

SIDs by NOAA/SESC REGION

July 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																															
4537																	1														
4544																				2											
4549																														1	
X-Ray																															
No Flare																															
No Flare Patrol	2	3	1	2	1		2		1	2	2			1	1				1	2		1			2	3	1				2
No Data				1						1																					
Event Totals	2	3	1	3	1		2		1	3	2		1		1		1		1	4		1			2	3	1			1	2

OBSERVATORIES REPORTING FOR JULY 1984*

Darmstadt, GFR (DA)	SWF	Maui, Hawaii, USA (MI)	SWF
Hiraiso, Japan (HI)	SWF	Panska Ves, Czechoslovakia (PU)	SEA, SWF, SES
Hobart, Tasmania, Australia (TA)	SEA	Sofia, Bulgaria (SF)	SES
Huancayo, Peru (HU)	SWF	Upice, Czechoslovakia (UI)	SEA
Inubo, Japan (IN)	SPA	Vsetin, Czechoslovakia (VS)	SEA
Lintong, China (LT)	SPA		

*Observations are not necessarily continuous for each reporting station.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 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	0736	CULG										
			CULG				0020.5	0021.0	1				III G
			CULG				0403.5	0404.5	2				III G,U
	0409	1501	WEIS				0545.7	0546.4	1				III G
			CULG				0546.5	0547.5	2				III G,V
			SGMR				1742.6	1743.6	1				V
	2035	2400	CULG										
02	0000	0736	CULG										
	0522	1841	WEIS				1543.1	1543.4	2				III B
			SGMR				1543.3	1543.5	1				V
			WEIS				1545.3	1545.4	1				III B
	2153	2400	CULG										
03	0410	1119	WEIS										
	0000	0736	CULG				0652.5		1				III B
	1129	1841	WEIS										
	2036	2400	CULG										
04	0000	0736	CULG				0241.0	0305.0	3				II
			LEAR				0253.8	0307.5	1				II
			PALE				0254.0	0303.6	1				II
	0411	1719	WEIS										
			LEAR				0644.6	0645.1	1				III
	2310	2400	CULG										
05	0000	0736	CULG				0045.0	0128.0	2				III GG
			LEAR				0126.8	0128.3	1				III
			PALE				0126.8	0128.5	1				III
			CULG				0334.0		1				III B
			CULG				0342.5	0343.5	2				III G
			LEAR				0344.6	0345.0	1				III
			CULG				0355.5	0356.0	2				III G
			LEAR				0357.8	0358.3	1				III
			CULG				0409.0	0411.0	3				III G
			CULG				0409.5	0411.0	1				IS
			LEAR				0411.6	0412.6	1				III
			CULG				0413.0		1				III B
			CULG				0512.0	0512.5	1				III G
	0522	1843	WEIS				1613.4	1614.2	1				III G
			WEIS				1616.7	1616.9	1				III G
	2036	2400	CULG										
06	0000	0649	CULG										
	0409	1114	WEIS										
	1121	1843	WEIS										
			SGMR				1141.8	1142.1	2				V
	0050	2400	CULG				2344.0	2345.0	2				III G
07	0000	0736	CULG				0453.5		1				III B
	0410	1718	WEIS				0455.4	0455.8	2				III G
			CULG				0638.0	0638.5	2				III G
			LEAR				0640.3	0640.8	1				III
			WEIS				0640.4	0640.7	2				III G
			WEIS				0941.3	0941.5	1				III B
			SGMR				1826.3	1829.0	1				V
			SGMR				1955.8	1957.1	1				V
	2037	2400	CULG				2112.0	2113.0	1				III G
			CULG				2138.5	2259.0	1				III N
			CULG				2140.0	2143.0	3				III G,V
			SGMR				2142.8	2144.6	2				V
			PALE				2143.0	2145.1	3				V
			CULG				2154.5	2156.5	3				III G,U
			SGMR				2156.8	2158.6	2				V
			CULG				2304.0	2304.5	2				III G
08	0000	0737	CULG				0026.0	0026.5	2				III G
			CULG				0032.0	0035.0	1				III N
			CULG				0537.0	0539.0	3				III G,U
			LEAR				0537.6	0539.1	1				III
			CULG				0659.0	0700.0	3				III G,U

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 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
08			LEAR				0659.8	0704.5	2				V
			CULG				0700.0	0704.5	3				IIIGG,V
	0847	1842	WEIS				1029.3	1030.9	3				IIIG
			WEIS				1034.7	1036.5	2				IIIG
			SGMR				1224.6	1225.1	1				V
			SGMR				1415.8	1418.1	1				V
	2037	2400	CULG										
09	0000	0735	CULG				0249.5	0250.0	1				IIIG
	0412	1244	WEIS				1441.7	1442.1	1				IIIG
	1437	1842	WEIS				1444.6	1444.7	1				IIIG
	2040	2400	CULG				2127.0	2128.0	2				IIIG
			CULG				2223.0	2245.0					IIIS,W
			CULG				2245.0	2259.0	1				IIIS
			CULG				2259.0	2400.0	2				IIIS
			CULG				2313.5	2400.0	2				IS,C,DC
			LEAR				2339.8	0212.8	1				CONT
10	0000	0737	CULG				0000.0	0019.0	2				IS,C,DC
			CULG				0019.0	0141.0	1				IS,C,DC
			CULG				0035.5		2				IIIB
			PALE				0054.8	0055.3	1				III
			CULG				0055.0		2				IIIG
			CULG				0141.0	0702.0					IS,W
	0411	1841	WEIS				0518.8	0519.2	2				IIIG,U
			CULG				0519.0		2				IIIB,U
			CULG				0611.0		2				IIIB
			LEAR				0611.0	0611.1	1				III
			CULG				0614.0		2				IIIG
			WEIS				0622.3	0622.4	1				IIIB
			WEIS				0623.7	0624.6	3				IIIG
			CULG				0624.0	0624.5	2				IIIG
			LEAR				0624.1	0624.6	1				III
			WEIS				0810.2	0811.3	2				IIIG
			WEIS				0817.8	0820.2	3				DCIM
			WEIS				1144.3	1144.6	3				IIIG
			PALE				1750.8	1752.8	1				III
			PALE				1909.5	1913.1	3				III
			SGMR				1910.5	1914.1	1				V
	2140	2400	CULG				2143.5		1				IIIG
			CULG				2333.5	2345.0	2				IIIG,N
11			LEAR				0109.1	0114.1	1				V
	0000	0737	CULG				0109.5	0113.5	2				IIIGG
	0411	0601	WEIS				0950.6	0950.9	2				IIIG,RS
			SGMR				1446.3	1447.0	1				V
	0615	1842	WEIS				1446.3	1446.7	3				IIIG
			SGMR				1522.6	1522.8	1				III
			WEIS				1522.6	1522.8	2				IIIG
			WEIS				1607.9	1608.1	1				IIIG
			PALE				1818.3	1818.6	1				V
			SGMR				1818.3	1818.6	1				V
			WEIS				1818.3	1818.6	2				IIIG
	2037	2400	CULG				2133.5		1				IIIB
12	0000	0737	CULG										
	0525	1326	WEIS				0903.0	0903.3	3				IIIG
	1330	1832	WEIS				0909.2	0909.5	2				IIIG,U
			WEIS				1007.8	1008.6	3				IIIG
			SGMR				1748.6	1749.0	1				V
	2037	2400	CULG										
13	0000	0645	CULG				0033.5	0035.5					IIIS,W
			CULG				0324.5	0325.0	1				IIIB
			LEAR				0324.5	0324.6	1				III
			LEAR				0923.3	0929.1	1				V
	0424	1833	WEIS				1054.3	1055.7	3				IIIGG
			WEIS				1154.8	1155.0	2				IIIB
			WEIS				1231.9	1232.1	1				IIIB
			WEIS				1238.2	1240.1	3				IIIG
			SGMR				1239.1	1239.6	1				III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 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
13			WEIS				1806.4	1807.6	2				III G
			SGMR				1806.6	1807.6	1				V
			PALE				1822.3	1826.6	1				III
			SGMR				2049.8	2156.5	1				V
			PALE				2150.5	2157.5	2				V
	2378	2400	CULG										
14			LEAR				0101.5	0105.1	1				III
	0000	0737	CULG				0102.0	0151.5	1				III S
			CULG				0111.0	0200.0	1				IS
			LEAR				0556.8	0559.6	1				III
			CULG				0557.0	0559.0	1				III G
			CULG				0606.5	0608.0	1				III G
			CULG				0630.0	0636.0	2				III S
			LEAR				0630.3	0638.0	2				V
	0425	0516	WEIS				0630.4	0638.7	3				III GG
			CULG				0636.0	0649.0	1				III S
			CULG				0636.0	0713.0	1				IS,C
			LEAR				0819.6	0823.1	1				III
	0630	1830	WEIS				0820.1	0822.2	3				III G
			LEAR				0923.3	0929.1	1				V
			WEIS				0923.3	0931.1	3				III GG
			SGMR				1728.8	1729.0	1				V
			SGMR				1900.3	1900.8	1				V
			SGMR				1930.8	1931.8	1				V
			PALE				1944.5	1945.0	2				III
			PALE				2014.0	2037.5	2				III
			SGMR				2021.1	2021.3	1				V
			SGMR				2037.3	2037.8	1				V
			PALE				2105.3	2108.5	2				V
			SGMR				2105.3	2108.5	1				V
	2037	2400	CULG				2105.5	2108.5	2				III GG,U
			CULG				2138.5	2140.0	1				III G
			CULG				2154.0		1				III G
			SGMR				2210.3	2211.3	1				V
			CULG				2210.5	2213.5	3				III G,U
			PALE				2210.5	2211.1	3				III
			CULG				2234.5	2237.0	1				III GG
15	0000	0738	CULG				0037.0		1				III B
			LEAR				0130.1	0130.6	1				III
			CULG				0130.5	0131.5	1				III G
			LEAR				0333.6	0334.0	1				III
			CULG				0334.0	0432.0	1				III G,N
			LEAR				0417.8	0418.1	1				III
			CULG				0418.5		2				III B
	0427	1249	WEIS										
			LEAR				0637.6	0638.1	1				III
			CULG				0638.0		1				III B
			CULG				0640.5	0641.0	1				III G
	2037	2400	CULG										
16	0000	0738	CULG										
			LEAR				0230.8	0236.1	1				III
			CULG				0231.0	0237.5	2				III GG
	0530	1829	WEIS										
	2038	2400	CULG				2110.0	2400.0					IS,W
			CULG				2147.5	2148.0	2				III B
			SGMR				2147.5	2149.0	1				V
			PALE				2147.6	2149.8	2				V
			LEAR				2359.1	0112.1	1				II
17			CULG	0058.0	0100.0	1							CONT
	0000	0738	CULG				0058.0	0101.5	2				III G,V
			CULG	0101.0	0103.0	1	0100.0	0349.0	1				IN
			CULG				0102.0	0111.0	2				II
			LEAR				0108.1	0112.1	1				II
			CULG				0120.5	0122.0	3				III G,U
			LEAR				0120.8	0122.1	2				III
			PALE				0121.0	0122.1	2				V
			CULG				0125.0	0135.5	2				III N

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 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
17	0428	0747	WEIS										
	0815	1158	WEIS										
	1206	1828	WEIS										
			PALE				2001.5	2002.8	2				III
	2038	2400	CULG				2143.5		1				IIIB
18	0000	0738	CULG										
	0430	1827	WEIS				1056.7	1057.3	2				IIIG
			WEIS				1341.6	1341.8	2				IIIG
19	0000	0652	CULG										
	1010	1834	WEIS										
	0643	0925	WEIS				1313.4	1314.4	1				IIIG
	2038	2400	CULG										
	2210	2400	CULG										
20	0000	0738	CULG										
	0425	1227	WEIS										
	1235	1833	WEIS										
	2038	2400	CULG										
21	0000	0738	CULG										
	0426	1832	WEIS										
	2038	2400	CULG										
22	0000	0738	CULG				0459.5	0500.0	2				IIIB
	0426	0505	WEIS				0459.7	0459.9	3				IIIB
	0754	1830	WEIS										
	2038	2400	CULG										
23	0000	0738	CULG										
	0428	0513	WEIS										
	0822	1554	WEIS										
	1557	1829	WEIS										
	2038	2400	CULG										
24	0000	0738	CULG										
	0430	1828	WEIS										
	2038	2400	CULG										
25	0000	0738	CULG										
	0430	0833	WEIS										
	0840	1827	WEIS										
	2038	2400	CULG										
26	0000	0738	CULG										
	0830	1826	WEIS										
	2038	2400	CULG										
27	0000	0738	CULG										
	0432	0504	WEIS										
	0552	0905	WEIS										
	1012	1826	WEIS										
	2038	2400	CULG										
28	0000	0738	CULG										
	0433	1239	WEIS										
	1250	1825	WEIS										
	2128	2400	CULG										
29	0000	0655	CULG										
	0434	1824	WEIS										
	2128	2400	CULG										
30	0000	0738	CULG										
	0435	0531	WEIS										
	0600	1823	WEIS										
	2038	2400	CULG										
31	0000	0738	CULG										
			CULG				0605.0	0605.5	2				IIIG
	1301	1821	WEIS										
	0435	1252	WEIS				1533.1	1533.4	1				IIIG
	2038	2400	CULG				2156.0	2156.5	2				IIIG
			SGMR				2156.1	2156.3	1				V

COSMIC RAY INDICES
(Neutron Monitor)

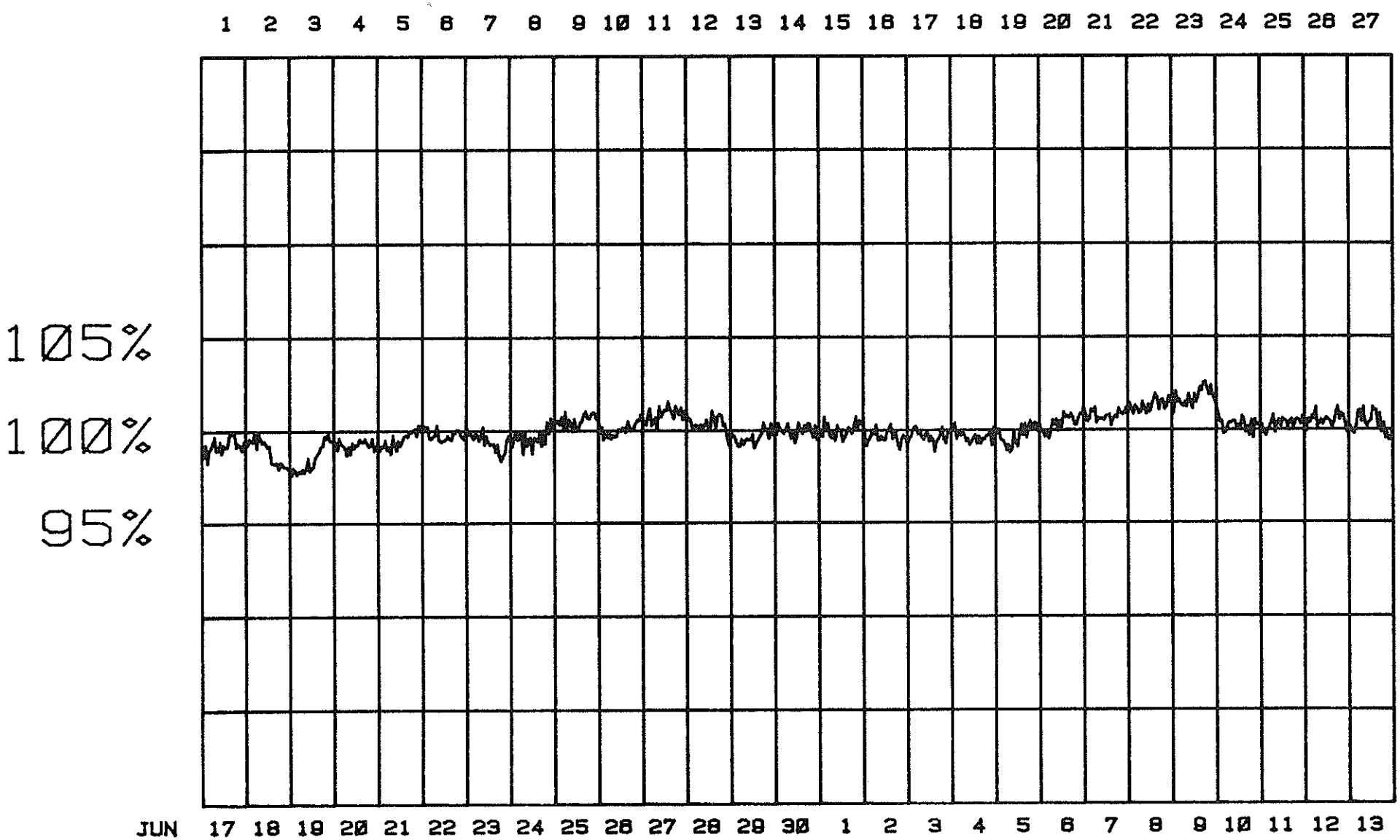
July 1984

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	4142			5725.8		1134	3530.8	
2	4126			5726.8		1133	3530.6	
3	4129			5713.8		1133	3520.2	
4	4127			5718.7		1136	3525.9	
5	4131			5717.4		1136	3526.4	
6	4158			5733.8		1140	3529.9	
7	4174			5748.1		1150	3533.0	
8	4197			5786.8		1156	3536.9	
9	4214			5808.1		1154	3548.1	
10	4152			5737.5		1141	3534.7	
11	4155			5755.3		1148	3539.3	
12	4162			5769.1		1147	3537.2	
13	4155			5760.7		1148	3537.9	
14	4146			5777.4		1145	3535.7	
15	4157			5804.1		1140(7)	3533.2	
16	4156			5798.4		---	3534.7	
17	4154			5769.6		---	3539.2	
18	4141			5752.2		1140(13)	3531.4	
19	4140			5741.5		1141	3520.7	
20	4143			5787.1		1149	3533.6	
21	4171			5807.1		1153	3541.2	
22	4176			5812.2		1157	3546.7	
23	4189			5806.3		1157	3545.1	
24	4118			5744.7		1144	3522.7	
25	4096			5683.2		1128	3500.3	
26	4077			5696.1		1131	3501.7	
27	4104			5703.7		1132	3502.5	
28	4136			5722.1		1137	3506.0	
29	4139			5735.7		1136	3522.6	
30	4146			5749.8		1142	3528.2	
31	4131			5735.3		1142	3520.9	
Mean	4147			5752.5		1142	3529.0	

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.

THULE NEUTRON MONITOR

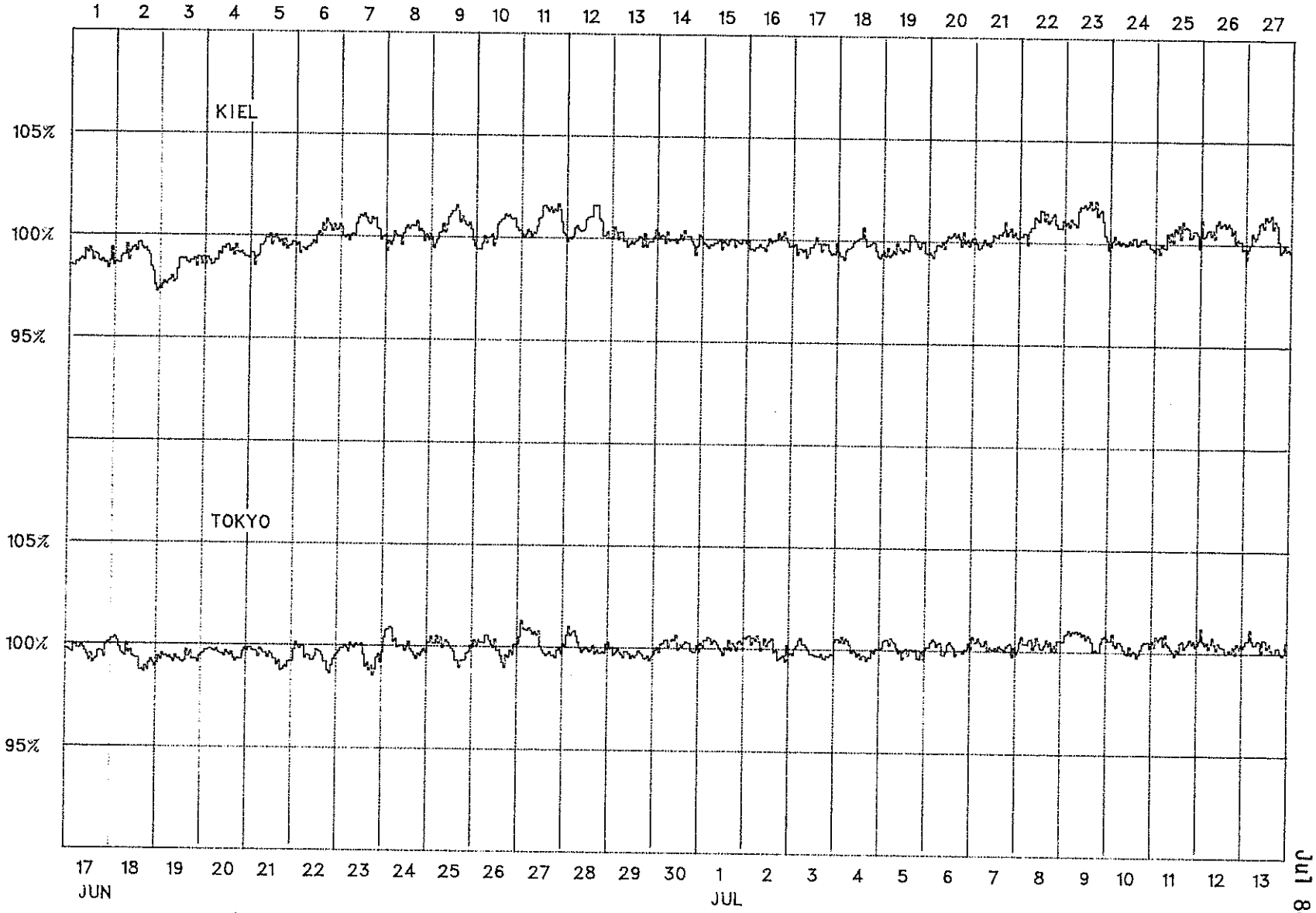
86
Jul 84



BARTELS ROTATION 2062

COSMIC RAY INDICES
(Neutron Monitor)

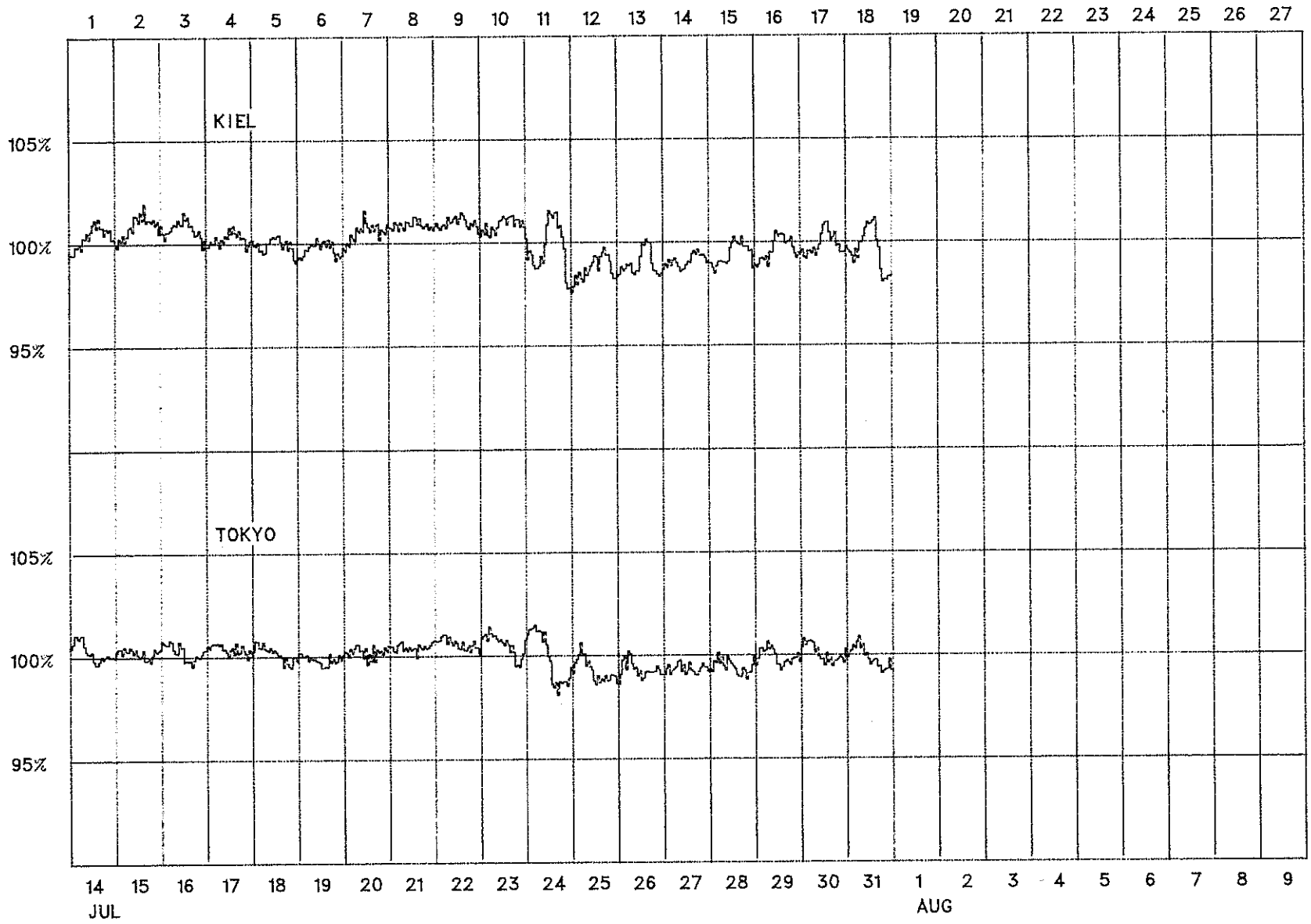
Bartels Rotation 2062 (June 1984–July 1984)



87
Jul 84

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2063 (July 1984–August 1984)



GEOMAGNETIC ACTIVITY INDICES

July 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		1+	3-	2	2+	1+	4-	5-	3	21	14	0.8	2-	3	2	2+	1+	3	4	3	25	33	19	13	39
2		4-	2-	2	2	2	3+	3-	3+	21-	12	0.7	3+	2-	2+	2+	2-	3-	2+	3-	21	26	12	16	23
3		4	2	2	3-	3-	3	2+	2	21-	12	0.7	4-	2	2	3-	3-	3-	2+	2+	22	27	14	21	21
4		2-	2+	3	1+	2	2	4-	4-	20-	12	0.7	2-	2+	3	2	2	2	3	3+	21	26	13	16	24
5		4-	3	3+	2	2-	2+	2+	2	20+	12	0.7	4-	3	3+	2+	1+	2-	2-	2-	21	29	18	31	17
6	Q9A	2+	3	2-	1+	2+	2-	3-	3+	18+	10	0.6	2	3-	2	2-	3-	2-	2	3-	18	23	11	15	19
7	Q2A	2-	2-	2-	1+	1+	2-	3	2+	15-	7	0.4	2	1+	2-	2-	2-	2-	2-	2+	13	19	8	8	19
8	Q10A	2-	3-	3	2	2+	3	2-	2+	19-	10	0.6	2	2+	3	2	2+	2	2-	2+	18	26	8	14	20
9	Q7A	3-	3	2	2-	2+	3-	2	1+	18-	9	0.5	2+	3-	2	2+	2	2+	1+	1	16	20	13	18	15
10		2-	3-	2	3-	4+	3+	3+	2+	22+	14	0.8	1+	2	2+	3-	4-	3-	3-	2	21	32	15	17	32
11		2-	0+	0+	1-	2	3+	2+	5-	15+	11	0.6	2-	1-	0+	0+	2-	3	2+	4-	16	24	12	5	32
12		4+	4-	3+	2	2	1	2-	2	20	13	0.7	5-	4	3	2	2	1-	2-	2	27	25	31	42	14
13	D1	3-	5-	7	5+	7	5+	5-	4+	41	62	1.7	3	5-	6	5	6	4+	4	4-	84	90	71	81	81
14	D3	6	5+	4+	5-	4	5-	4	3+	36+	40	1.4	5+	5+	4+	4+	4-	4	4-	3	65	48	46	55	41
15	D4	4-	4	4	3+	3-	4-	4+	5-	30+	25	1.2	4	4-	4	4-	3-	3+	4-	4	45	42	34	34	42
16	D5	4-	4-	4-	4+	2+	3	5-	5-	30	25	1.2	3+	4-	3+	4+	2+	3-	4	4	42	38	45	46	38
17	D2	4+	6	5	5	4	5	4+	4	38-	43	1.5	4	5	5	5-	4-	4	3+	4-	66	74	63	75	62
18		3	4	2	3-	4-	4	4	3	26+	19	1.0	3-	3+	2+	3-	4-	4-	4-	3-	33	38	25	22	42
19		4-	4-	3+	3-	2+	2+	3-	3-	23+	14	0.8	4-	3+	3	3-	2	2	2+	2+	26	28	23	34	17
20		3-	2+	3	2-	2	2+	1+	4+	20-	12	0.7	3	3-	3	2+	2-	2	1+	3+	21	25	20	25	20
21	Q3A	2+	2-	3-	2	1+	1	1+	3	15+	8	0.4	2+	2-	3-	2-	1+	1	1	2+	13	18	7	13	13 C
22	Q8A	2	4-	2-	2-	2-	2+	2+	2-	17	9	0.5	2-	4-	1+	2	1+	2	2-	2	17	21	12	17	16
23	Q5A	3-	1+	1+	1+	2	2+	2+	3-	16	8	0.4	2+	2+	1+	1+	2-	2+	2+	2+	15	20	11	11	20
24		3+	3+	3-	4-	1+	2+	2-	2	20+	12	0.7	3	4-	3-	4-	2-	2-	1+	2-	24	26	19	30	15
25	Q6A	2+	2+	2	2-	2+	1+	3-	2+	17	8	0.4	2+	2+	2+	2	3-	1	3	2	17	22	13	16	19
26	Q1K	3	2	1	1+	1-	0+	1	1	10+	6	0.2	4-	2	2-	2	1-	0	1	1	13	14	5	12	7 C
27		4-	2+	2	1+	4-	3	3+	3-	22	14	0.8	3+	3-	2+	2-	3-	2+	3	2+	23	35	14	18	31
28		4+	4+	4-	2+	3	3-	3+	1	25-	18	1.0	4-	4	4	3-	3+	3	3-	1	35	37	25	32	29
29		1	2	2-	2-	2+	5-	3+	2	19-	12	0.7	1	2	2	2-	3-	4-	3	2	21	29	15	10	35
30	Q4A	3-	2-	1+	2-	3	2+	1+	2-	16-	8	0.4	3-	1+	2-	2	3-	2+	2-	1+	16	23	16	14	25
31		2-	1+	1+	2-	4-	3+	3	5+	21+	17	0.9	1+	1+	2-	2	3+	3	2+	5-	26	33	18	9	42
Mean											16	0.76									27.1	31.3	21.3	26.4	

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	3+	2	3-	2	3+	4-	3-	26	1	3	2	2+	1-	2+	4+	3+	23	101.7	33	34	48	-	-
2	3+	2-	2+	3-	2	3+	2+	3	24	3+	2-	2+	2	1+	2	2+	2+	18	103.6	35	38	50	-	-
3	3+	2	2+	3-	3-	3-	2+	3-	23	4	2	2-	2+	3-	2+	2	2	21	104.8	61	61	51	-	-
4	2-	3-	3-	2	2+	2+	3+	4-	24	2-	2	3	2	1+	1+	3	3-	18	105.7	80	79	52	-	-
5	4-	3-	3+	2+	2-	2	2+	2	23	4-	3	3	2	1	1+	1+	1	19	104.4*	72	73	51	-	-
6	2	3-	2+	2	3-	2	2+	3	20	2	3-	2-	2-	3-	1+	2-	2	15	100.3	58	55	46	-	-
7	2+	2-	2	2-	2-	2-	3-	3-	16	2-	1+	1+	2-	1+	1+	1+	2	11	100.1	64	66	46	-	-
8	2	3-	3+	2+	2+	2+	2	2+	20	2	2	3-	1+	2	1+	1+	2+	15	101.1	74	72	47	-	-
9	2+	3-	2	2+	2	3-	2	1+	17	2	2+	2	2+	2	2-	1	1-	14	104.5	63	66	51	-	-
10	2-	3-	3-	3-	4-	3	3	2+	27	1	1+	2	2	3+	2	2	1+	16	101.3	70	67	47	-	-
11	1+	1-	0+	1-	2	3	3-	4	18	2	0+	0	0	1+	3	2	3	13	96.8	51	58	43	-	-
12	4+	3+	3	2+	3-	1+	2-	2	26	5-	4+	3	2	1	0	2-	2	28	94.7	54	50	40	-	-
13	3-	5-	6	5-	6-	4	4	4	78	3+	5-	6	5	6+	4+	4	4-	91	92.6	44	43	38	-	-
14	5+	5	4+	4+	4-	4	3+	3	65	6-	5+	4+	4	4-	4-	4-	3	66	92.2*	32	35	38	-	-
15	4-	4-	4	3+	3	3+	4-	4-	43	4+	4-	4	4-	3-	3	3+	4+	47	92.2	30	31	38	-	-
16	3	3+	3+	5-	2+	3-	4-	4	41	4-	4+	3+	4+	2+	2+	4	4-	44	90.1	25	23	35	-	-
17	4	5	5	5-	4-	4+	3+	4-	63	4	5+	5	5-	4	4-	4-	4	69	87.3	21	15	32	-	-
18	3-	3+	2	3-	4-	4-	4-	3-	32	3-	3+	2+	3-	3+	4	4	3-	34	85.5	26	17	30	-	-
19	3+	3	3	2+	2+	2+	3-	3-	24	4	4-	3+	3	2	1+	2+	2	28	84.7	28	19	29	-	-
20	3-	2+	3	2	2	2+	2-	3+	21	3	3-	3	2+	2-	2-	1+	3+	22	84.8	18	16	30	-	-
21	2+	2	3-	2	2-	1+	1+	3-	16	2+	1+	3-	2-	1	0+	0+	2	11	86.7	12	16	32	-	-
22	2	4	2-	2	2-	2	2	2-	19	2-	3+	1+	2	1	2-	1	2+	15	86.3	22	22	31	-	-
23	2+	2+	2-	2	2	2+	2+	2+	17	2+	2	1	0+	1+	2+	2	2+	13	87.3	25	27	32	-	-
24	3	3+	3	4-	2-	2+	2-	2-	25	3	4	2+	4-	1+	1+	1-	1+	22	86.8	38	34	32	-	-
25	2	2+	2+	2	3-	1+	3-	2+	18	2+	2+	2+	2	2+	1-	3	2-	17	85.9	30	28	31	-	-
26	3+	2	2-	2	0+	0+	1	1	12	4	2+	2-	2	1	0	1	1	15	83.4	25	22	28	-	-
27	3+	3-	2+	2	3	3-	3	2+	24	4-	3-	2	2-	3-	2-	3-	2	21	83.0	9	12	28	-	-
28	4-	4	4-	3	3+	3+	3	1+	36	4-	4+	4	3-	3	3	3-	1	35	82.5	9	10	27	-	-
29	1	2+	2+	2-	3	4	3	2+	24	1	1+	2-	2-	3-	3+	3	2-	18	82.3	12	14	27	-	-
30	3-	1+	2	2+	3-	3-	2-	1+	17	3	1+	1+	2-	3-	2	2-	1	15	82.2	16	9	27	-	-
31	2-	1+	2	2+	4-	4-	3	5-	31	1+	1	1+	2	3-	3-	2-	5-	22	83.0	10	11	28	-	-
Mean									28.1									26.3	92.2	37.0	36.2	37.6		

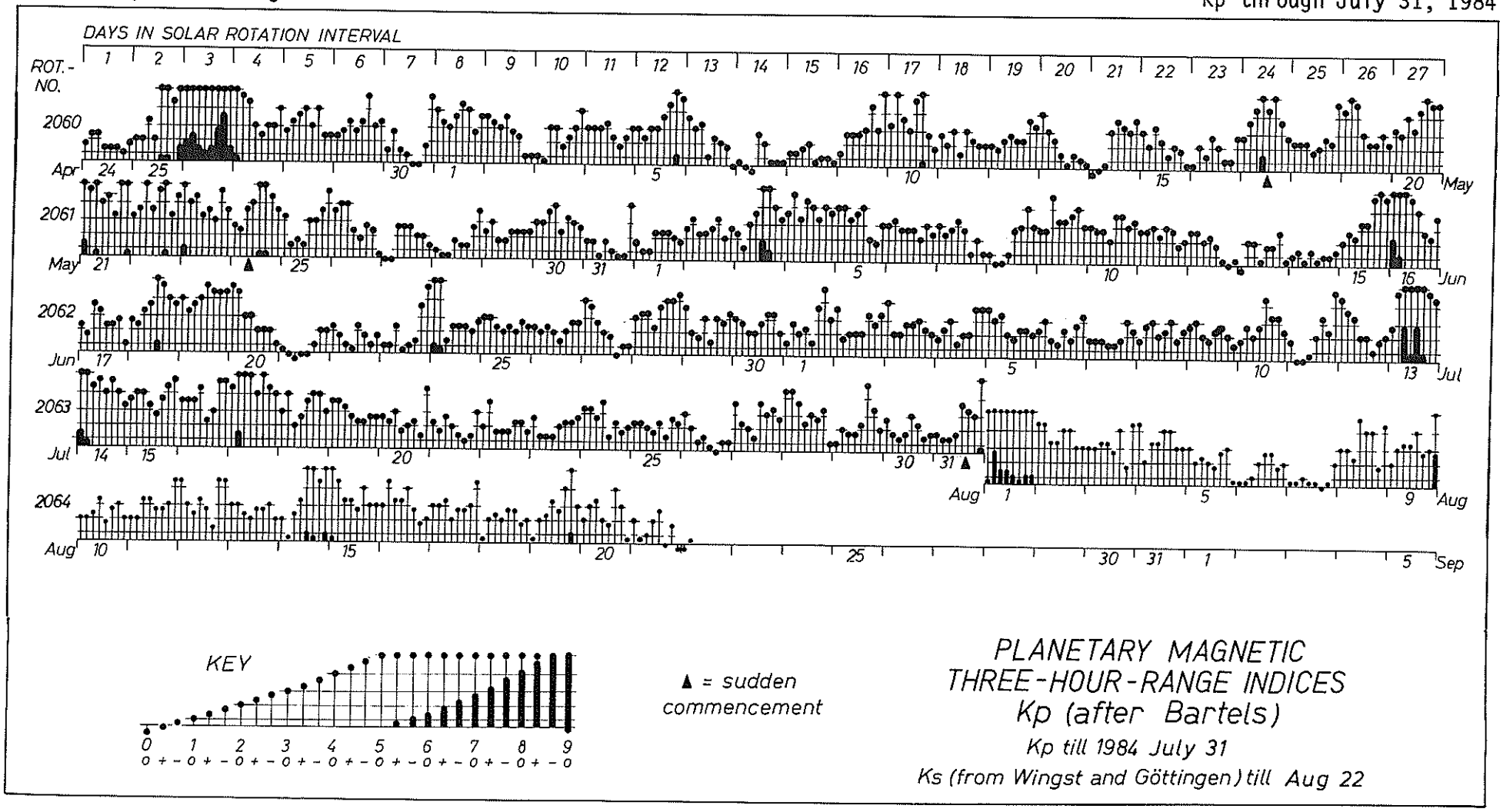
D A I L Y A V E R A G E I N D I C E S Ap

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

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

University of Gottingen

Kp through July 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

JULY 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	1700	..	..	..	..	02(7,8) 03(1,5,7)	3	6	98	22	04	13
FRD	49.6N	04	1813	SC	-1	-5	--	04(8) 05(3)	5	14	101	32	07	--
HYB	07.6N	09	1638	SC	- 0.1	14	-1	10(5)	4	5	90	15	10	21
FRD	49.6N	11	20--	..	..	..	..	13(3,5) 14(1,2)	6	33	227	86	19	08
HYB	07.6N	11	1300	..	..	..	..	11(8) 12(1,2)	4	6	73	27	12	14
GUA	04.0N	11	2305	..	..	..	..	12(1)	5	--	60	30	12	08
HYB	07.6N	12	2100	..	..	..	..	13(5)	7	7	259	34	15	12
COL	64.6N	13	01--	..	..	..	..	13(5) 17(4)	7	346	1930	1190	19	15
SIT	60.0N	13	03--	..	..	..	..	13(3)	8	--	--	--	14	20
WIT	54.2N	13	0300	..	..	..	..	13(3,5)	6	29	194	127	14	22
BJI	28.5N	13	0601	SC	0.3	19	--	13(5)	7	15	164	44	14	22
HON	21.1N	13	0601	SC	--	5	3	13(3)	6	7	83	16	13	20
JAI	17.3N	13	0500	..	..	..	..		-	9	215	43	14	20
SHL	14.7N	13	0500	..	..	..	..		-	9	203	36	14	20
UJJ	13.5N	13	0500	..	..	..	..		-	9	223	39	14	20
ABG	09.5N	13	0500	..	..	..	..	13(3,5)	6	7	235	55	14	20
GUA	04.0N	13	0222	..	..	..	..		-	--	--	--	--	--
GUA	04.0N	13	0601	SC	--	8	-3	13(3)	6	10	200	30	13	20
GUA	04.0N	13	2203	..	..	..	..	14(1)	5	10	80	10	14	19
ANN	01.5N	13	0500	..	..	..	..		-	7	282	88	14	20
TRD	01.2S	13	0500	..	..	..	..		-	5	300	174	14	20
PMG	18.6S	13	02--	..	..	..	..	13(3,5)	6	9	190	80	14	21
HER	33.7S	13	03--	..	..	..	..	13(3) 14(1)	6	46	165	128	16	14
GNA	43.3S	13	02--	..	..	..	..	13(3,5)	6	28	170	160	14	22
CNB	43.9S	13	06--	..	..	..	..	13(3,5)	6	30	178	73	17	18
KGL	56.5S	13	0601	SC	4	- 32	- 10	13(5)	7	102	720	425	15	12
HYB	07.6N	15	1900	..	..	..	..	17(2)	5	6	87	33	17	23
GUA	04.0N	16	0700	..	..	..	..	16(4)	5	--	60	10	16	18
GUA	04.0N	16	2200	..	..	..	..	17(3)	5	10	90	30	17	19
PMG	18.6S	17	04--	..	..	..	..	17(2,3,4)	5	8	140	70	17	18
GNA	43.3S	17	00--	..	..	..	..	17(2,3,4)	5	15	130	80	17	23
COL	64.6N	31	19--	..	..	..	..	01(3,4)	7	274	1980	980	04	15
WIT	54.2N	31	1451	SC	4	-52	0	31(8)	6	40	246	138	02	05
FRD	49.6N	31	1451	SC	-4	-11	4	01(2)	6	32	158	127	05	--
HON	21.1N	31	1454	SC	--	14	3	01(2)	6	7	630	46	02	16
HYB	07.6N	31	1300	..	..	..	..	01(2)	6	5	145	34	02	22
GNA	43.3S	31	14--	..	..	..	..	01(2,3,4,5) 02(5)	5	23	170	100	02	21
CNB	43.9S	31	21--	..	..	..	..	01(1,3,4)	5	22	180	83	02	16
KGL	56.5S	31	1452	SC	2	- 15	-8	01(2,8)	6	44	400	225	02	12

RADIO PROPAGATION QUALITY INDICES

JULY 1984

Day	Bracknell	Teheran	New York	Tokyo	Canberra
1	4.5	5.4	5.1	6.5	5.5
2	4.5	6.1	5.0	6.1	5.3
3	4.4	6.2	5.7	6.1	6.8
4	4.8	5.2	5.3	5.9	6.4
5	5.4	5.9	5.1	6.5	6.8
6	6.2	6.2	5.9	6.5	6.7
7	5.3	5.9	6.6	6.9	7.3
8	4.5	5.5	6.3	6.8	6.5
9	4.1	6.2	5.9	5.2	6.5
10	3.3	5.9	5.2	6.8	6.2
11	4.2	5.5	5.5	5.7	4.8
12	3.4	4.6	4.2	4.7	4.8
13	4.1	5.0	1.7	4.4	2.8
14	4.8	4.0	2.6	2.4	2.2
15	4.6	5.1	3.0	3.4	3.3
16	3.0	4.7	3.1	3.4	2.0
17	3.1	4.4	3.2	3.1	2.7
18	4.6	4.1	2.7	3.7	2.9
19	5.6	3.9	2.5	4.5	2.9
20	4.8	5.3	3.7	5.5	3.0
21	6.4	6.3	5.8	5.9	4.4
22	6.8	6.2	5.8	6.2	4.4
23	3.5	5.5	5.5	5.8	4.0
24	5.9	5.2	5.8	6.2	6.2
25	3.7	4.6	5.6	5.2	4.5
26	7.8	4.2	4.9	6.2	4.6
27	5.4	5.3	5.1	5.7	4.3
28	5.9	6.3	3.8	5.8	4.5
29	4.9	5.6	6.1	6.2	4.5
30	4.6	6.0	5.6	6.5	4.8
31	6.3	6.7	7.0	7.5	5.2
Mean	4.9	5.4	4.8	5.5	4.7

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).

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

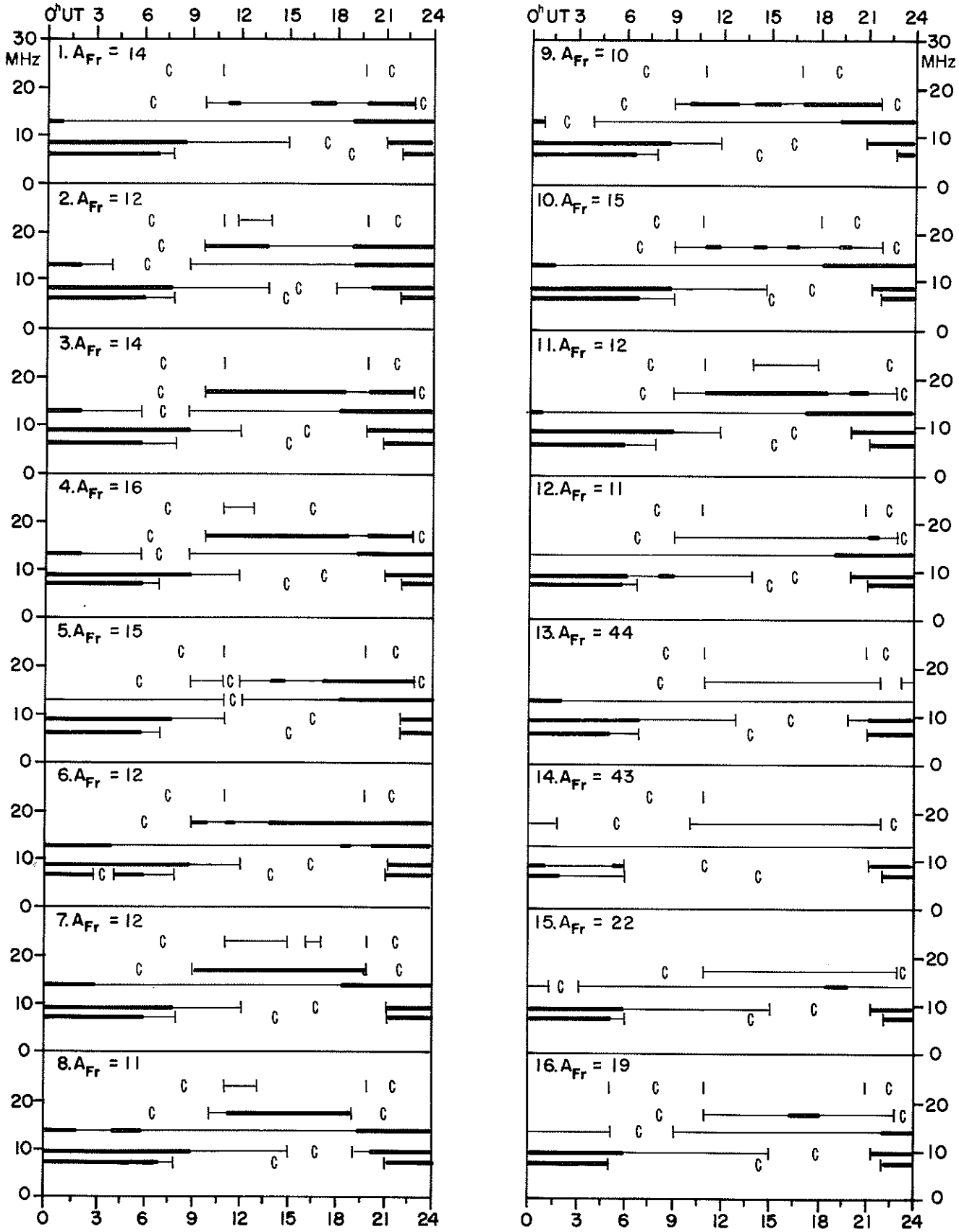
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

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

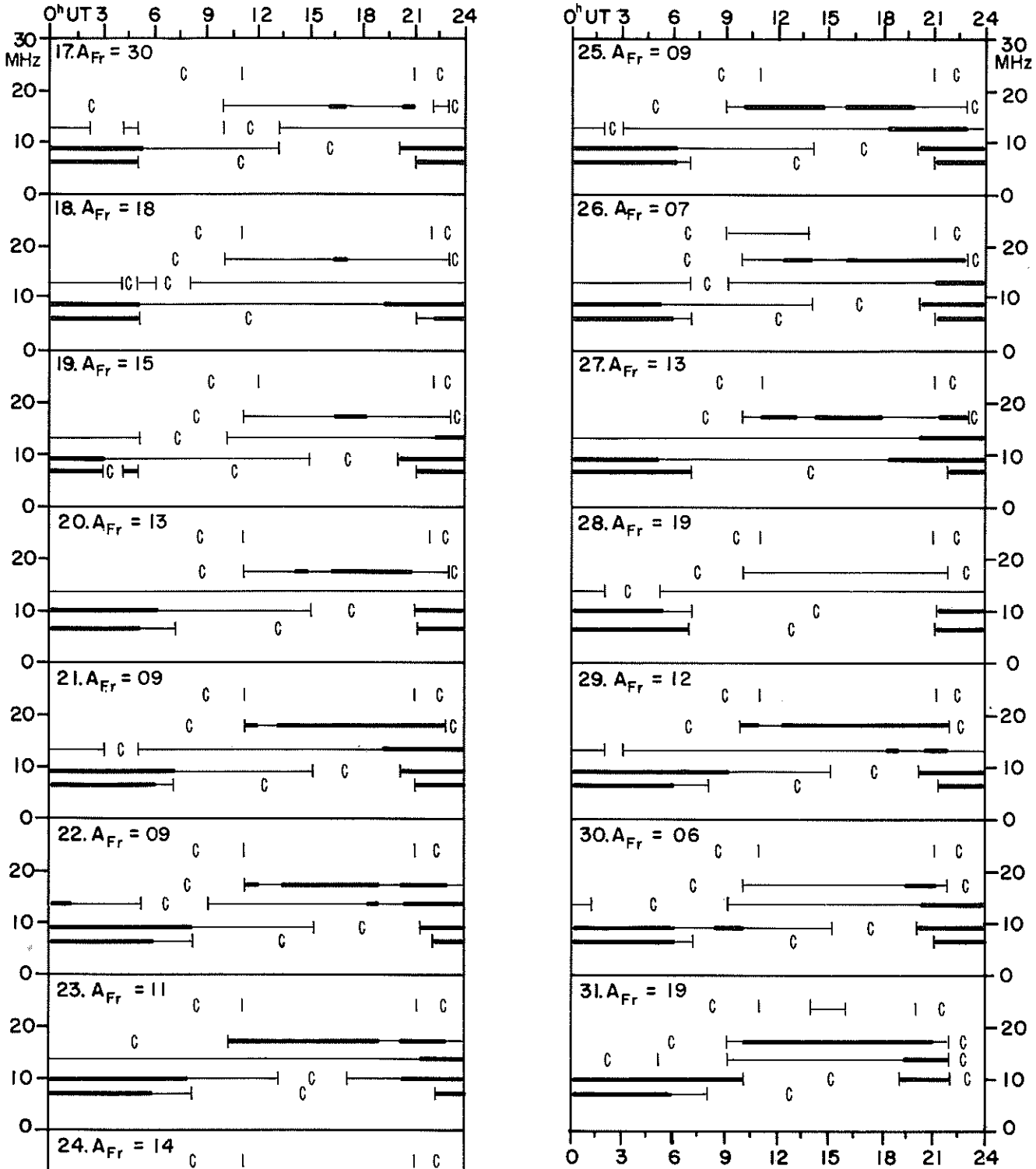
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1984



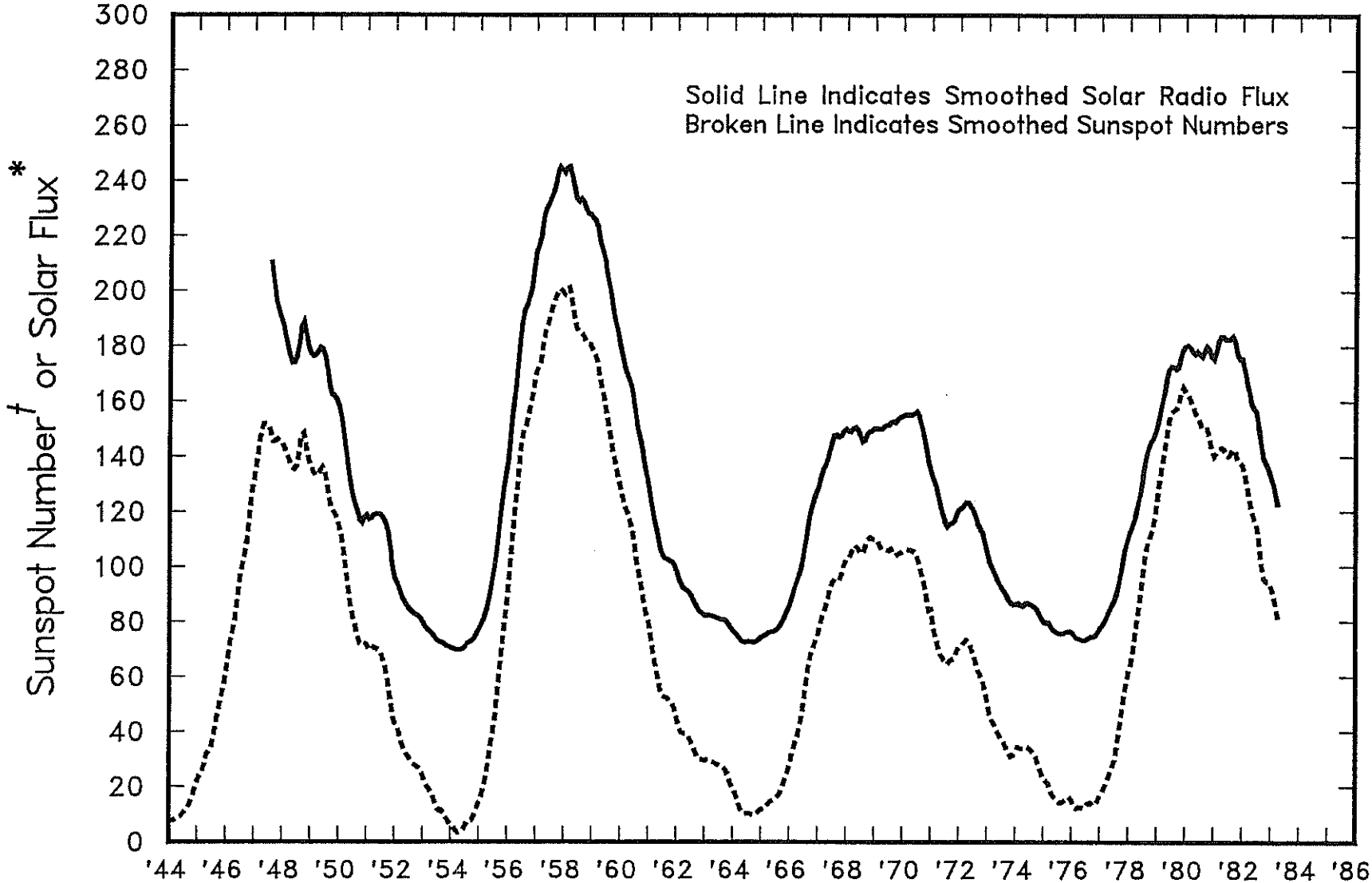
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1984



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths ≥ -12 dB above 1μv/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.

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.C. Wilkinson

C O N T E N T S

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GEOMAGNETIC INDICES June 1984
Provisional Values of Hourly Equatorial Dst. 98

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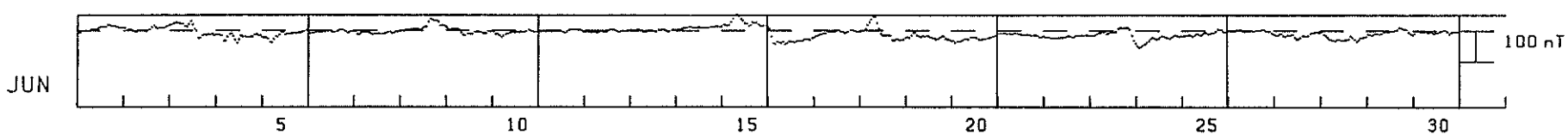
NASA/GODDARD SPACE FLIGHT CENTER

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JUNE 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	-7	-6	-2	0	0	-1	2	6	4	5	8	12	13	12	13	19	20	16	16	14	12	10	9	10
2	8	2	3	4	-1	-5	-4	1	4	1	0	-4	2	5	12	18	11	7	11	11	8	13	15	19
3	21	24	27	26	24	23	23	14	13	22	31	20	6	-1	-25	-23	-15	-12	-14	-12	-13	-11	-15	-13
4	-12	-14	-17	-34	-32	-19	-12	-10	-18	-30	-41	-29	-15	-20	-19	-21	-20	-19	-19	-13	-11	-15	-16	-21
5	-23	-23	-26	-37	-38	-27	-18	-20	-13	-6	-6	-13	-11	-11	-9	-9	-7	-10	-6	-7	-4	-2	1	-4
6	-9	-8	-8	-6	-4	-5	-6	-4	-4	-1	1	-2	-5	-6	-2	0	3	3	0	-4	-8	-3	-2	-2
7	-4	-12	-12	-7	-4	-7	-5	-8	-9	-13	-9	-9	-9	-11	-11	-10	-8	-5	-4	-8	-7	-3	-4	-1
8	0	-1	2	3	3	5	7	7	5	5	4	9	12	14	30	37	34	32	32	28	17	18	17	12
9	5	3	6	5	7	7	4	-7	-14	-15	-10	-10	-12	-11	-5	-4	-3	-6	-10	-10	-9	-2	-4	0
10	-5	-12	-12	-17	-21	-17	-12	-9	-8	-6	-5	-7	-5	-6	-2	-6	-4	-1	3	0	-2	-5	-3	-3
11	-4	-4	-2	-3	-2	-3	-3	-1	-2	-2	0	-1	-5	-7	-2	2	3	5	3	3	2	2	0	-5
12	-5	-3	-4	-6	-4	-6	-6	-5	-1	-4	-3	-2	1	5	3	2	-1	-3	-2	0	-1	0	0	2
13	1	-1	2	3	3	1	-3	-4	-2	1	1	0	-2	-3	2	2	3	4	0	-4	-1	2	4	3
14	4	5	7	9	9	10	13	13	10	10	11	12	11	10	10	10	10	12	13	13	15	14	13	14
15	20	20	17	20	29	39	48	53	47	37	32	25	23	15	19	28	25	27	22	16	17	17	18	12
16	6	-19	-42	-44	-36	-38	-40	-36	-44	-41	-34	-35	-36	-38	-35	-32	-33	-32	-28	-27	-28	-30	-24	-22
17	-18	-15	-13	-11	-10	-8	-4	-5	-5	-4	-4	1	2	-3	-5	-8	-6	-3	1	2	-1	-3	-5	-2
18	-1	0	6	19	27	36	44	43	24	6	-11	-16	-17	-16	-15	-17	-31	-32	-27	-29	-31	-31	-29	-23
19	-21	-24	-16	-7	-7	-16	-19	-21	-17	-19	-17	-18	-21	-24	-25	-29	-26	-22	-18	-18	-26	-28	-30	-33
20	-32	-39	-35	-35	-35	-30	-26	-27	-28	-22	-20	-22	-23	-27	-28	-29	-26	-26	-24	-21	-21	-18	-15	-15
21	-10	-8	-8	-8	-10	-10	-9	-9	-8	-8	-10	-12	-13	-13	-13	-13	-14	-15	-14	-14	-16	-21	-20	-17
22	-20	-21	-22	-24	-24	-24	-24	-23	-22	-21	-21	-19	-17	-18	-21	-20	-16	-17	-15	-14	-15	-14	-14	-15
23	-16	-16	-14	-10	-7	-6	-4	-4	-11	-8	-6	-3	-3	-2	7	11	10	10	10	9	3	-16	-31	-42
24	-50	-55	-51	-47	-43	-38	-32	-25	-22	-24	-28	-25	-19	-17	-19	-22	-24	-25	-20	-16	-14	-17	-19	-17
25	-17	-15	-14	-13	-16	-19	-14	-9	-12	-16	-12	-7	-7	-11	-10	-7	-7	-2	5	3	2	-4	-5	-4
26	0	-1	-2	-1	2	2	3	-1	-3	-2	-1	1	-1	-2	1	1	1	5	3	-2	-1	-2	-8	-11
27	-14	-16	-9	-9	-17	-19	-14	-15	-13	-12	-21	-27	-26	-21	-16	-17	-18	-15	-10	-7	-6	-5	-6	-6
28	-5	-12	-16	-21	-27	-28	-31	-33	-27	-28	-30	-31	-28	-28	-26	-17	-23	-28	-36	-30	-23	-22	-20	-18
29	-11	-13	-15	-11	-10	-11	-11	-9	-4	-2	-3	-2	-1	0	2	3	11	10	6	5	3	-6	-11	-13
30	-8	-2	0	-3	-4	-4	-2	-7	-5	-7	-9	-6	-7	-2	-1	2	1	-3	-11	-6	-3	-3	-2	3



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

MAY-JUNE 1984

Day	Time (UT)	NanoTeslas in Spacecraft Coordinates (Bx)sc	(By)sc	(Bz)sc	Bt	Region W-Wake
MAY 1	1210	-7.09	-0.88	5.91	10.71	W
MAY 2	1210	1.13	-5.88	5.44	10.50	W
MAY 3	1210	-0.61	-6.20	5.83	12.27	W
MAY 4	1210	-0.50	-0.50	-6.91	10.65	W
MAY 5	1210	-1.30	-12.00	3.83	22.68	W
MAY 6	1210	1.82	-5.61	-3.66	14.36	W
MAY 7	1210	---	---	---	---	
MAY 8	1210	---	---	---	---	
MAY 9	1210	7.42	-3.78	6.32	10.68	W
MAY 10	1210	---	---	---	---	
MAY 11	1210	---	---	---	---	
MAY 12	1210	16.13	-8.74	0.94	18.73	W
MAY 13	1210	14.90	-4.54	1.33	15.86	W
MAY 14	1210	-6.35	-16.36	-23.42	51.38	W
MAY 15	1210	12.15	3.38	0.80	13.77	W
MAY 16	1210	-9.81	2.74	0.61	12.90	W
MAY 17	1210	-15.23	9.66	-0.50	20.46	W
MAY 18	1210	17.90	-2.59	1.22	18.29	W
MAY 19	1210	-7.70	2.61	-0.19	12.19	W
MAY 20	1210	-13.98	5.53	-3.04	18.86	W
MAY 21	1210	-9.34	2.73	-1.55	11.22	W
MAY 22	1210	-9.88	3.52	-2.03	11.06	W
MAY 23	1210	1.54	-1.59	12.78	13.10	W
MAY 24	1210	-15.11	6.40	0.52	16.88	W
MAY 25	1210	-3.97	-0.23	-1.13	14.40	W
MAY 26	1210	-6.95	6.20	-1.30	12.72	W
MAY 27	1210	-10.64	6.81	-2.78	13.65	W
MAY 28	1210	13.48	-15.55	-63.27	67.36	W
MAY 29	1210	1.40	7.89	8.09	20.49	W
MAY 30	1210	-11.34	2.29	-2.53	12.09	W
MAY 31	1210	-8.02	-1.87	0.54	10.37	W
JUN 1	1210	7.30	4.72	-16.94	21.59	W
JUN 2	1210	13.41	-13.38	-15.09	28.45	W
JUN 3	1210	1.46	-6.37	8.44	14.44	W

No data are available from June 4 to June 30 due to superior conjunction (Venus was behind the sun).

*U.S. GOVERNMENT PRINTING OFFICE: 1984-0-776-019/10,003

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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

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