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Solar - Geophysical Data

Part I (Prompt Reports)

NO. 505 SEPTEMBER 1986

DATA FOR
AUGUST 1986
JULY 1986

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

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NUMBER 505

(Issued in Two Parts)

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C O N T E N T S

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

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C O N T E N T S

Prompt Reports DATA FOR AUGUST 1986 Number 505 Part I

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages AUGUST 1986

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
213	01	31	017	071	013	N09 E24	0	0	0	01	N09 E24	Q	Solquiet, Magquiet.
214	02	01	016	071	010	N09 E09	3	0	0	02	N09 E09	Q	Solquiet, Magquiet.
215	03	02	012	070	006	N09 W04	0	0	0	03	N09 W04	Q	Solquiet, Magquiet.
216	04	03	016	071	015	N09 W18	2	0	0	04	N09 W18	Q	Solquiet, Magalert 04.
217	05	04	015	070	025	N09 W31	2	0	0	05	N09 W31	Q	Solquiet, Magnil.
218	06	05	014	070	010	N09 W44	0	0	0	06	N09 W44	Q	Solquiet, Magquiet.
219	07	06	011	070	007	N08 W59	0	0	0	07	N08 W59	Q	Solquiet, Magquiet.
220	08	07	011	070	005	N08 W73	0	0	0	08	N08 W73	Q	Soqluiet, Magquiet.
221	09	08	011	069	007	N08 W86	0	0	0	09	N08 W86	Q	Solquiet, Magquiet.
222	10	09	011	069	006	N09 W99	0	0	0	10	N09 W99	Q	Solquiet, Magquiet.
223	11	10	000	069	007	Spotnil				11	Spotnil		Solquiet, Magquiet.
224	12	11	000	067	010	Spotnil				12	Spotnil		Solquiet, Magquiet.
225	13	12	000	067	010	Spotnil				13	Spotnil		Solquiet, Magquiet.
226	14	13	000	066	017	Spotnil				14	Spotnil		Solquiet, Magquiet.
227	15	14	000	067	005	Spotnil				15	Spotnil		Solquiet, Magquiet.
228	16	15	000	068	008	Spotnil				16	Spotnil		Solquiet, Magquiet.
229	17	16	011	068	005	N01 E02	0	0	0	17	N01 E02	Q	Solquiet, Magquiet.
230	18	17	000	067	007	Spotnil				18	Spotnil		Solquiet, Magquiet.
231	19	18	000	067	006	Spotnil				19	Spotnil		Solquiet, Magalert Minor 20/22, Disappearing filament.
232	20	19	000	068	010	Spotnil				20	Spotnil		Solquiet, Magalert Minor 20/22, Recurrence and Disappearing filament.
233	21	20	013	069	020	S11 E28	0	0	0	21	S11 E28	Q	Solquiet, Magalert 21/22, Recurrence.
234	22	21	019	069	025	S10 E14	0	0	0	22	S10 E14	Q	Solquiet, Magalert 22/23, Recurrence.
		Presto:[2]	Kakioka	Magstorm	begins	20/1351	UT.						
235	23	22	016	069	025	S11 E00	0	0	0	23	S11 E00	Q	Solquiet, Magalert Minor 23/23, Recurrence.

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages AUGUST 1986

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
236	24	23	023	068	025	S11 W14 N05 E72	0 0	0 0	0 0	24	S11 W14 N05 E72	Q Q	Solquiet, Magalert 24/24.
237	25	24	011	068	014	N05 E60	0	0	0	25	N05 E60	Q	Solquiet, Magnil.
238	26	25	011	069	019	N05 E46	0	0	0	26	N05 E46	Q	Solquiet, Magquiet.
239	27	26	011	069	013	N05 E33	0	0	0	27	N05 E33	Q	Solquiet, Magquiet.
240	28	27	011	068	015	N05 E20	0	0	0	28	N05 E20	Q	Solquiet, Magquiet.
241	29	28	011	068	007	N05 E07	0	0	0	29	N05 E07	Q	Solquiet, Magquiet.
242	30	29	011	068	014	N06 W07	0	0	0	30	N06 W07	Q	Solquiet, Magquiet.
243	31	30	011	068	016	N05 W20	0	0	0	31	N05 W20	Q	Solquiet, Magquiet.
244	01	31	011	068	015	N05 W33	0	0	0	01	N05 W33	Q	Solquiet, Magquiet.

[1]Q = quiet, E = eruptive, A = active, P = proton.
[2]Presto message is a rapid report of a major event.

INTERNATIONAL (R_I) RELATIVE SUNSPOT NUMBERS

Day	1985 Final Sep	Oct	Nov	Dec	1986 Final Jan	Feb	Mar	Prov Apr	May	Jun	Jul	Aug
01	7	0	0	0	0	18	16	9	15	7	0	12
02	0	0	0	16	0	33	33	10	23	0	0	11
03	0	0	0	13	0	52	34	12	12	0	10	11
04	0	0	0	0	0	55	32	0	9	0	14	11
05	0	0	16	18	0	53	33	0	10	0	18	11
06	0	0	19	26	0	47	33	0	0	0	29	10
07	0	0	19	15	0	52	38	9	0	0	29	8
08	0	0	18	12	0	54	29	11	0	0	29	9
09	0	0	25	16	0	47	22	0	0	0	17	8
10	0	0	15	15	0	35	20	9	0	8	33	0
11	7	0	17	18	0	37	18	13	0	0	35	0
12	0	0	19	19	0	25	13	15	0	0	36	0
13	9	11	30	18	13	22	8	14	0	0	25	0
14	9	13	44	30	16	16	0	26	0	0	16	0
15	9	15	48	47	13	11	10	25	9	0	28	0
16	9	25	39	66	10	0	0	26	11	0	23	9
17	8	19	43	63	0	0	0	14	13	0	33	7
18	10	20	37	52	0	0	0	15	22	0	14	0
19	10	31	30	40	0	0	0	13	27	0	12	0
20	9	44	28	24	0	10	12	18	23	0	18	11
21	8	50	18	17	0	10	13	25	30	0	21	12
22	7	72	12	11	0	10	10	20	27	0	26	12
23	0	67	10	0	0	10	15	54	20	0	14	14
24	0	63	0	0	0	8	14	64	24	0	0	9
25	0	55	0	0	0	11	10	48	22	8	0	9
26	0	40	0	0	7	9	10	43	25	0	0	9
27	0	27	0	0	0	15	11	33	18	0	10	9
28	0	14	0	0	0	10	13	23	18	0	12	9
29	7	11	0	0	0		11	31	17	0	16	9
30	7	0	0	0	10		11	33	13	0	18	9
31		0		0	10		0		10		17	9
Mean	4	19	16	17	2	23	15	20	13	1	18	7

The yearly mean sunspot number equaled 17.9 in 1985.

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

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Sep 85	Oct	Nov	Dec	Jan 86	Feb	Mar	Apr	May	Jun	Jul	Aug
01	73.0	68.3	69.0	67.8	67.0	81.8	84.1	71.8	72.5	71.1	68.9	72.8
02	72.8	67.5	68.8	68.4	67.6	86.4*	89.2	70.6	74.3	69.8	68.7	72.3
03	73.1	68.7	68.0	68.5	68.4	96.0	91.1*	70.9	73.8	69.9	68.9	72.9
04	73.5	68.3	67.6	68.3	69.5	97.8*	91.4	71.7	71.6	69.3	69.3	71.6
05	72.2	67.0	68.5	69.7	70.7	99.8	90.5	71.9	70.8	69.3	71.1	71.7
06	72.5	66.0	70.0	71.1	72.2	99.0	89.7*	71.9	69.8	69.8	73.9	72.1
07	70.8	65.9	71.8	71.9	71.6	96.7	87.6	71.9	69.9	70.0	72.1	71.9
08	70.3	65.8	73.7	73.0	71.2	94.3*	85.1	71.8	69.5	70.2	71.6	71.3
09	70.6	66.0	72.9	75.2	72.7	92.5	84.3	72.0	69.8	71.1	72.5	71.3
10	70.3	66.7	72.5	75.6	72.2	93.4*	81.6	72.5	70.9	70.3	75.0	70.5
11	69.2	67.7	74.7	76.6	71.9	95.1	79.3	72.4	71.4	70.1	74.7	68.6
12	68.5	66.9	74.7	77.3	71.2	88.4	76.9	73.1	70.9	70.5	73.5	68.4
13	70.7	66.7	74.3	75.6	74.3	86.4	74.3	74.2	71.7	70.4	74.2	67.9
14	70.4	69.8	76.9	76.4	76.4	86.2*	71.9	76.0	71.6	72.1	74.6	68.2
15	71.1	71.7	82.2*	80.2	75.1	79.6	69.7	76.0	72.7	71.3	74.0	69.5
16	70.3	73.2	78.8	83.7	75.5*	71.2	68.9	75.8	74.3	70.7	74.4	69.4
17	70.0	75.5	77.4	80.2	74.4	68.3	68.9	75.3	75.3	69.8	74.9	68.9
18	70.4	75.5	77.3	78.4	73.1	68.7	68.9	74.4	78.7	69.9	74.6	69.1
19	70.7	77.7	75.6	77.5	70.2	68.1	68.8	74.9	78.7	69.6	73.3	69.3
20	69.8	79.4	75.7	75.4*	69.2	68.1	68.4	75.0	79.6	69.6	73.2	70.7
21	69.6	84.7	73.7	75.1	67.9	66.0	68.5	74.2	79.2	69.2	72.5	70.5
22	69.8	94.3	73.1	73.5	67.3	67.7	69.1	75.1	79.2	69.7	73.2	70.1
23	69.2	93.2*	72.8	71.2	67.0	67.7	69.8	82.1	78.8	69.6	71.6	69.6
24	69.0	92.5	71.9	69.9	66.9	68.6	69.5	87.4	79.5	68.4	71.2	69.1
25	68.7	88.5*	70.3	67.3	68.0	70.1	69.6	85.7	81.1	68.5	70.9	69.3
26	68.4	83.0	69.5	66.3	67.7	72.0	70.8	84.2*	77.1	68.2	71.1	69.9
27	67.7	78.5*	69.8	66.2	67.2	75.2	70.2	83.4	74.7	68.6	71.6	69.1
28	67.8	76.7	69.0	66.2	70.0	77.0	70.4	80.1	74.3	68.3	72.5	68.8
29	68.3	73.6	69.1	66.0	71.2		71.5	77.0	74.3	68.3	74.0	68.8
30	68.3	70.5	68.8	66.3	73.7		71.5	74.7	72.5	68.3	73.6	69.3
31		69.5		66.6	76.6		71.5		73.2		72.6	69.6
Mean	70.2	74.2	72.6	72.4	70.9	81.5	76.2	75.6	74.2	69.7	72.5	70.1

A = interpolated value; --- = no observation.
*Adjusted for burst in progress at time of measurement; †corrected for antenna drift.
The yearly mean 2800 MHz flux adjusted to 1 astronomical unit equaled 74.7 in 1985.

DAILY SOLAR INDICES

August 1986

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers Int	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 (610)	SGMR (410)	SGMR (245)
01	213	20	12	14	70.7	553	288	100	72.8	68	57	37	19	14
02	214	21	11	12	70.2	558	272	102	72.3	68	57	40	19	10
03	215	22	11	15	70.8	546	288	102	72.9	68	56	39	17	12
04	216	23	11	12	69.6	554	276	100	71.6	67	56	41	13	10
05	217	24	11	11	69.7	561	281	103	71.7	68	57	36	15	18
06	218	25	10	10	70.1	521	223	110	72.1	70	56	39	18	12
07	219	26	8	10	69.9	509	238	111	71.9	68	55	35	16	11
08	220	27	9	10	69.4	479	218	110	71.3	66	54	38	19	8
09	221	1	8	0	69.4	524	234	113	71.3	70	56	38	19	9
10	222	2	0	0	68.6	---	---	---	70.5	--	--	--	--	--
11	223	3	0	0	66.8	504	222	109	68.6	68	54	15	9	9
12	224	4	0	0	66.6	527	238	109	68.4	66	54	11	9	13
13	225	5	0	0										
14	226	6	0	0	66.5	513	243	110	68.2	65	53	--	--	--
15	227	7	0	0	67.7	515	237	109	69.5	64	53	38	21	10
16	228	8	9	9	67.7	497	230	110	69.4	67	55	39	23	13
17	229	9	7	0	67.2	498	230	112	68.9	69	53	39	23	6
18	230	10	0	0	67.4	480	230	107	69.1	65	54	37	24	9
19	231	11	0	0	67.7	510	237	109	69.3	66	54	40	23	6
20	232	12	11	10	69.0	512	241	109	70.7	65	54	33	20	6
21	233	13	12	13	68.9	515	242	109	70.5	66	54	34	19	8
22	234	14	12	12	68.5	519	244	111	70.1	67	54	34	22	8
23	235	15	14	19	68.1	517	252	111	69.6	67	54	34	20	7
24	236	16	9	9	67.6	510	246	109	69.1	65	53	33	20	8
25	237	17	9	10	67.8	517	237	109	69.3	65	53	34	23	7
26	238	18	9	10	68.5	518	226	111	69.9	65	53	31	19	6
27	239	19	9	10	67.7	500	235	109	69.1	63	54	34	20	8
28	240	20	9	10	67.5	509	249	110	68.8	68	53	34	20	8
29	241	21	9	10	67.5	526	245	109	68.8	69	53	36	23	10
30	242	22	9	10	68.0	526	239	111	69.3	68	54	36	21	8
31	243	23	9	10	68.3	517	243	110	69.6	68	54	33	21	7
Mean			7	8	68.4	518	243	108	70.1	66	54	34	19	9

*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 1986

Date	RELATIVE SUNSPOT NUMBERS: International (Ri) Monthly Mean	International (Ri) Smoothed	American (Ra) Monthly Mean	American (Ra) Smoothed	Derived (Rs) Monthly Mean	Derived (Rs) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (Sa) Monthly Mean	2800 MHz RADIO FLUX Adjusted to 1 AU (Sa) Smoothed
Nov 82	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	54	86.2	58	137.2	101
Mar	83.5	53	83.0	51	68.5	55	120.8	108
Apr	69.7	50	66.5	48	78.1	52	129.7	105
May	76.4	48	72.1	45	79.6	49	131.1	103
Jun	46.1	46	45.2	44	49.8	48	103.5	102
Jul	37.4	44	36.2	42	37.6	39	92.2	99
Aug	25.5	40	24.5	38	30.7	41	85.8	95
Sep	15.7	34	13.6	32*	23.2	35	78.9	90
Oct	12.0	29	9.8	27*	16.9	31	73.1	86
Nov	22.8	25	19.4	23*	18.6	26	74.6	72
Dec	18.7	22	17.0	20*	17.4	23	73.5	79
Jan 85	16.5	20	14.5	19*	15.9	21	72.1	77
Feb	15.9	20	16.3	18*	15.7	20	71.9	76
Mar	17.2	19	11.8*	16*	16.3	19	72.5	75
Apr	16.2	18	17.1*	17*	19.8	19	75.7	75
May	27.5	18	24.0*	17*	26.6	19	82.0	75
Jun	24.2	18	22.2*	16*	22.8	19	78.5	75
Jul	30.7	17	30.8*	16*	25.8	19	81.3	75
Aug	11.1	17	10.7*	15*	17.2	19	73.3	75
Sep	3.9	17	3.4*	16*	13.8	20	70.2	76
Oct	18.6	17*	16.5*	16*	18.1	20	74.2	76
Nov	16.2	17*	16.4*	15*	16.4	19	72.6	75
Dec	17.3	15*	10.1*	14*	16.2	19	72.4	75
Jan 86	2.5	14*	2.3*	12*	14.6	18	70.9	74
Feb	23.2	13*	23.8*	11*	26.0	17	81.5	74
Mar	15.1	12(2)*	12.5*	10	20.3	16	76.2	--
Apr	20.4†	12(3)*	13.8*	10	19.6	15	75.6	--
May	13.1†	11(4)*	11.6*	9	18.1	14	74.2	--
Jun	0.8†	10(5)*	0.8*	8	13.3	13	69.7	--
Jul	17.8†	9(5)*	17.7*	8	16.3	12	72.5	--
Aug	7.4†	9(6)*	7.6*	7	13.7	12	70.1	--
Sep	----	9(6)*	----	7	----	11	----	--
Oct	----	9(6)*	----	7	----	11	----	--
Nov	----	9(6)*	----	7	----	11	----	--
Dec	----	9(7)*	----	8	----	11	----	--
Jan 87	----	9(7)*	----	8	----	10	----	--
Feb	----	9(8)*	----	8	----	11	----	--

*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. 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.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

AUGUST 1986

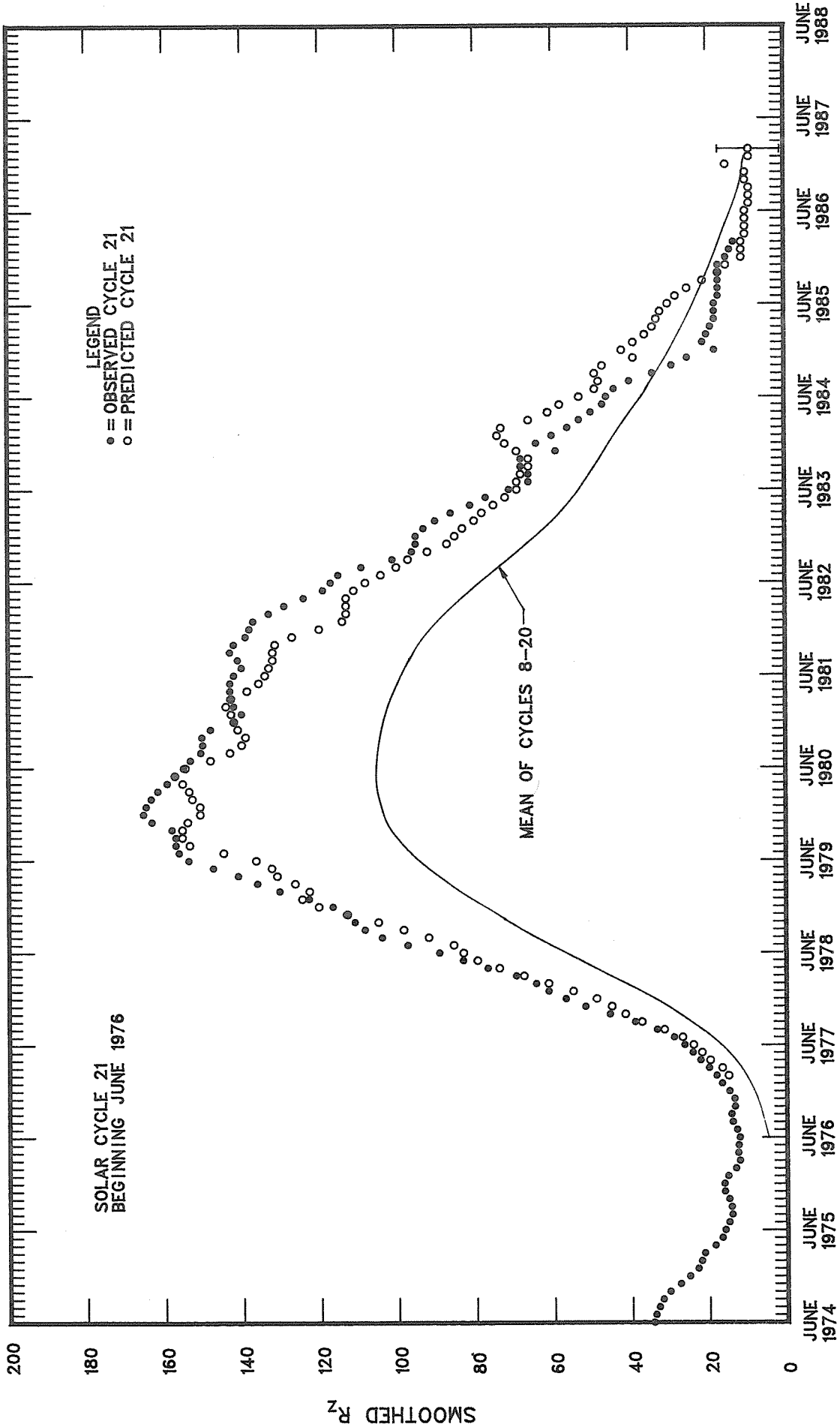
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12*	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	120	117	115	109	101	96	95	95
1983	93	90	86	82	71	71	66	66	68	68	67	64
1984	60	56	53	50	48	47	44	40	34	29	25	22
1985	21	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	12 (2)	12 (3)	11 (4)	10 (5)	9 (5)	9 (6)	9 (6)	9 (6)	9 (6)	9 (7)
1987	9 (7)	9 (8)	10 (10)	10 (11)	11 (13)	12 (14)	12 (15)	13 (16)	14 (19)	15 (21)	16 (24)	18 (27)

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

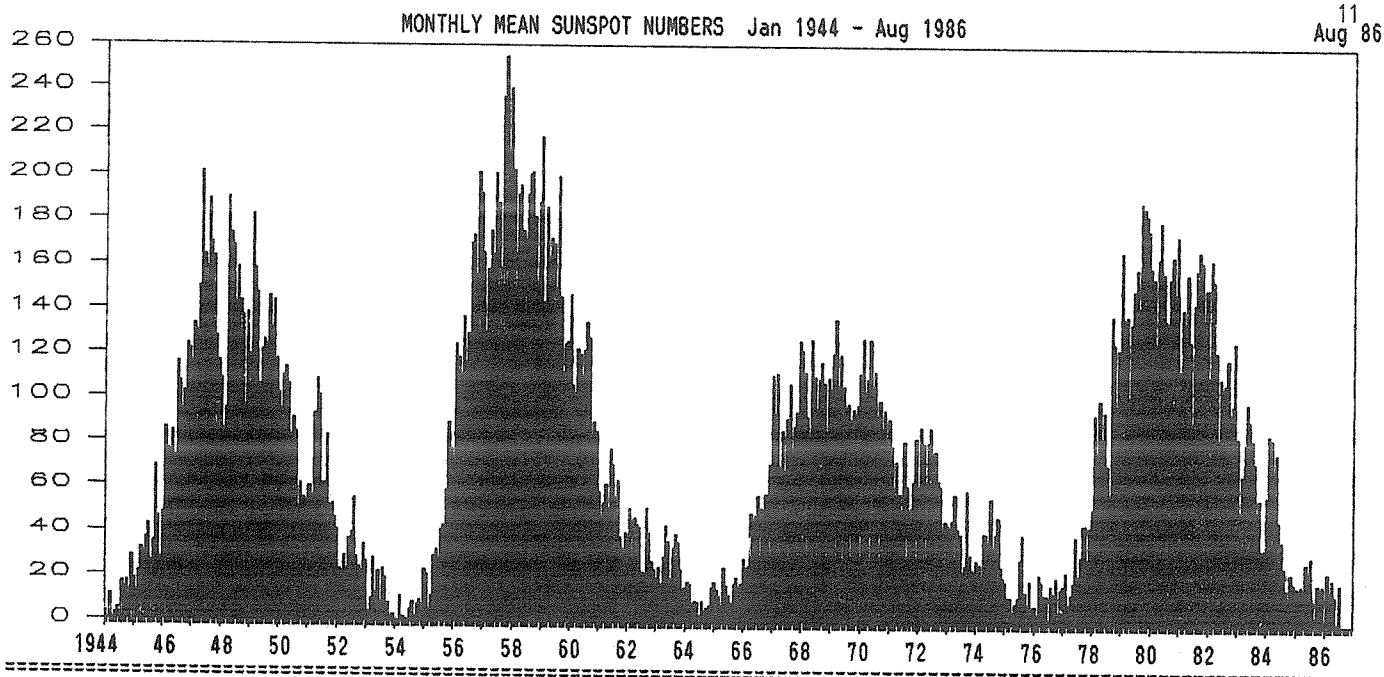
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through March 1986, and on provisional international numbers thereafter.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the March 1986 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 1986 prediction tabulated above. There exists a 90% chance that in February 1986 the actual smoothed sunspot number will fall somewhere between 1 and 17.

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
SMOOTHED R_Z
LEGEND
• = OBSERVED CYCLE 21
○ = PREDICTED CYCLE 21
SOLAR CYCLE 21
BEGINNING JUNE 1976
MEAN OF CYCLES 8–20
200
180
160
140
120
100
80
60
40
20
0
JUNE 1974
JUNE 1975
JUNE 1976
JUNE 1977
JUNE 1978
JUNE 1979
JUNE 1980
JUNE 1981
JUNE 1982
JUNE 1983
JUNE 1984
JUNE 1985
JUNE 1986
JUNE 1987
JUNE 1988

MONTHLY MEAN SUNSPOT NUMBERS Jan 1944 - Aug 1986



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
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	9.6	m
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	33.2	
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	92.6	
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	151.6	M
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	136.3	
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	134.7	
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	83.9	
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	69.4	
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	31.5	
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	13.9	
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	4.4	m
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	38	
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	141.7	
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	190.2	M
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	184.8	
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	159	
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	112.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
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	37.6	
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	27.9	
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	10.2	m
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	15.1	
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	47	
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	93.8	
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	105.9	M
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	105.5	
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	104.5	
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	66.6	
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	68.9	
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	38	
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	34.5	
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	15.5	
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	12.6	m
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	27.5	
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	92.5	
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	155.4	M
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	154.6	
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	140.4	
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	115.9	
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	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	20.4*	13.1*	0.8*	17.8*	7.4*					12.5*	

*Preliminary

For the yearly means, each "M" marks a sunspot cycle maximum and each "m" a minimum.

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

AUGUST 1986

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	01	1356	1356	1404	N09	E18	4741	08	02.9	8	SF		3	C		28		
RAMY	01	1700	1714	1759D	N10	E17	4741	08	03.0	59D	SF		3	C		84		F
HOLL	01	1715	1716	1730	N10	E16	4741	08	02.9	15	SF		3	C		63		F
PALE	01	1737	1739	1741	N09	E15	4741	08	02.8	4	SF		3	C		23		F
HOLL	01	1737	1739	1748	N09	E15	4741	08	02.8	11	SF		3	C		37		F
HOLL	03	1305	1307	1315	N07	W11	4741	08	02.7	10	SN		3	C		40		F
HOLL	03	2131	2137	2158	N08	W15	4741	08	02.8	27	SN		4	C		98		F
RAMY	03	2135E	2137	2155D	N07	W16	4741	08	02.7	20D	SF		3	C		92		
PALE	03	2142E	2144U	2147	N07	W14	4741	08	02.8	5D	SF		3	C		25		F
HOLL	04	1522	1532	1534	N09	W25	4741	08	02.8	12	SF		3	C		84		F
HOLL	04	2209	2211	2238	N11	W25	4741	08	03.0	29	SF		3	C		94		F
PALE	04	2209	2217	2226	N11	W27	4741	08	02.9	17	SF		3	C		49		F

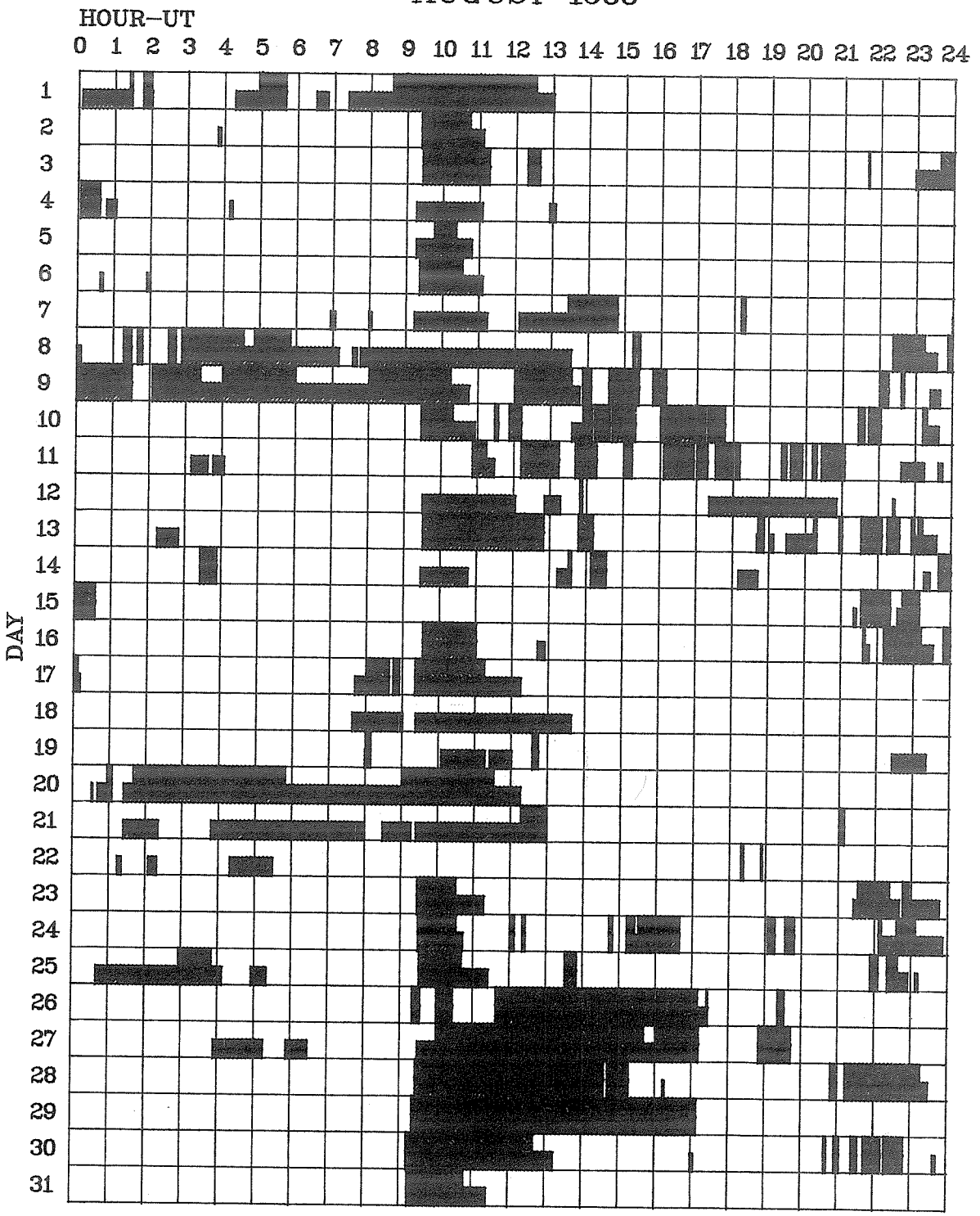
"Remarks":

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

AUGUST 1986



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

Athens	Holloman	Learmonth	Peking	Wendelstein
Bucharest	Hurbanovo	Palehua	Ramey	Yunnan

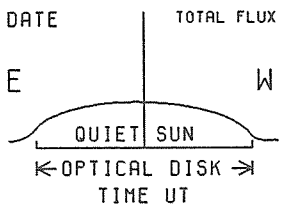
14
Aug 86

EAST-WEST SOLAR SCANS

AUGUST 1986

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



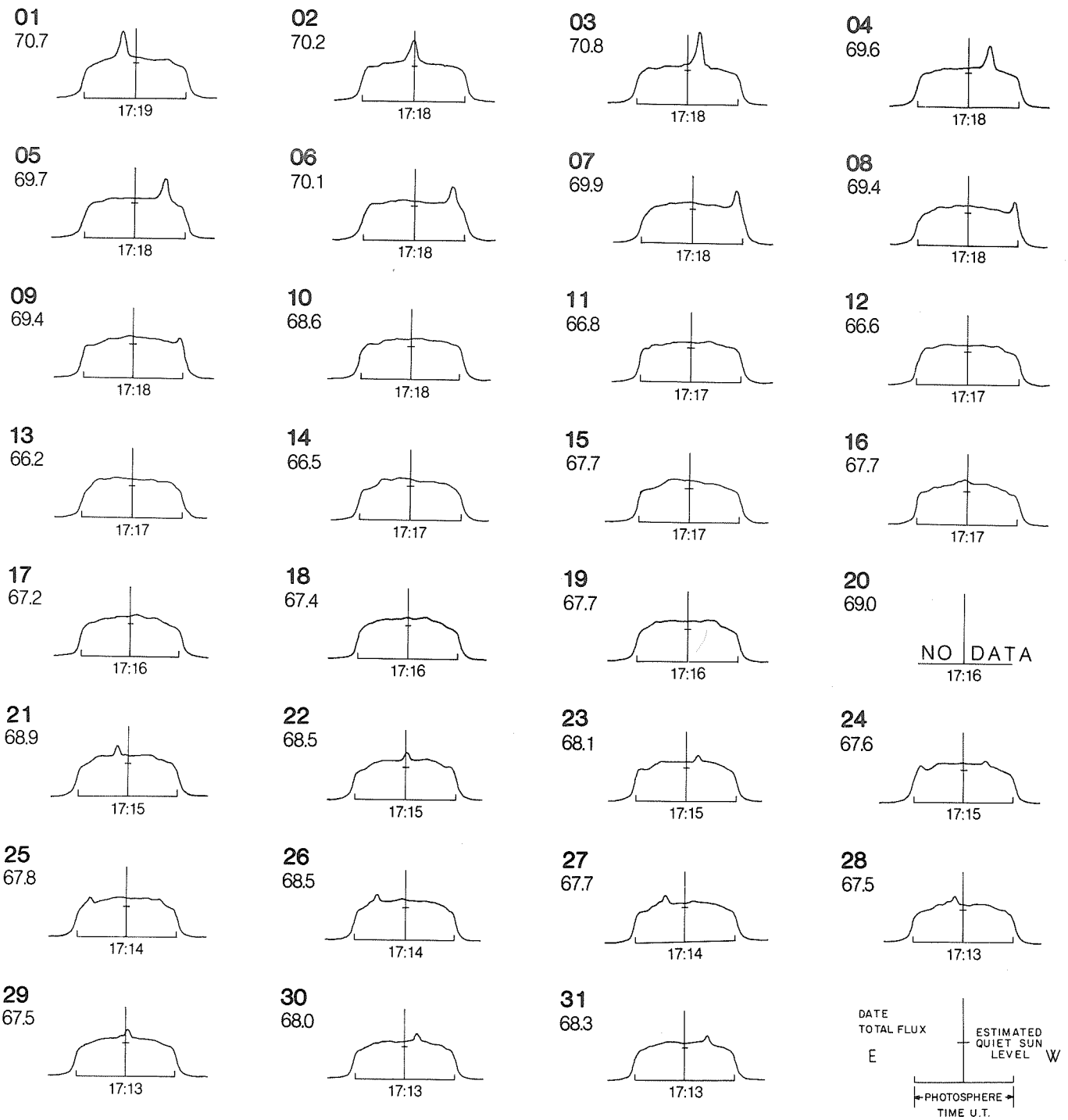
1 246 0257 UT	2 246 0257 UT	3 246 0257 UT	
4 245 0257 UT	5 247 0257 UT	6 248 0256 UT	7 248 0256 UT
8 248 0256 UT	9 248 0256 UT	10 247 0256 UT	11 246 0256 UT
12 245 0256 UT	13 246 0255 UT	14 246 0255 UT	15 245 0255 UT
16 247 0255 UT	17 246 0255 UT	18 246 0254 UT	19 247 0254 UT
20 247 0254 UT	21 247 0254 UT	22 246 0254 UT	23 250 0253 UT
24 248 0253 UT	25 248 0253 UT	26 247 0252 UT	27 247 0252 UT
28 248 0252 UT	29 248 0252 UT	30 247 0251 UT	31 249 0251 UT

EAST-WEST SOLAR SCANS

AUGUST 1986

ALGONQUIN RADIO OBSERVATORY
CANADA

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



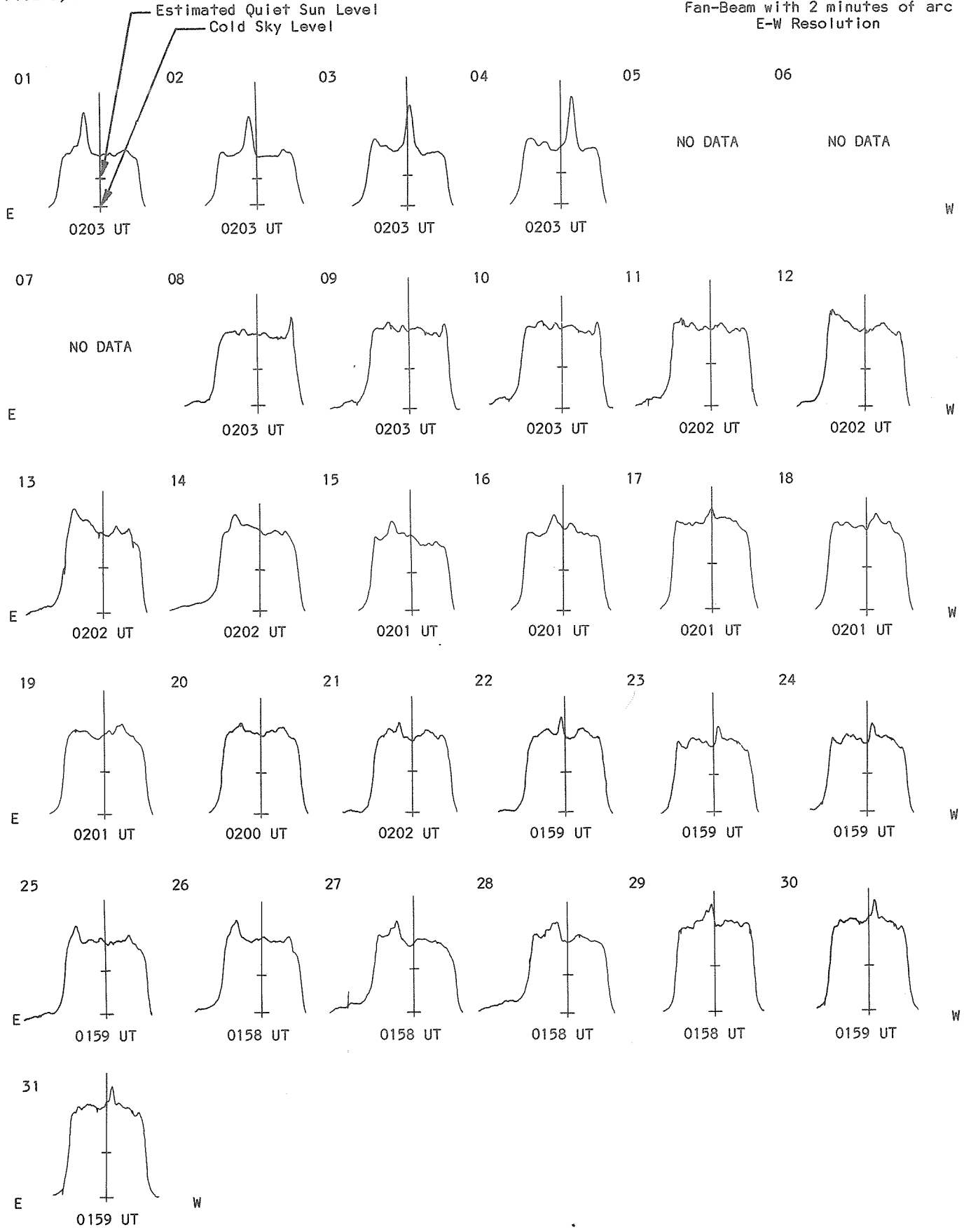
16
Aug 86

EAST-WEST SOLAR SCANS

Fleurs, Australia

AUGUST 1986

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

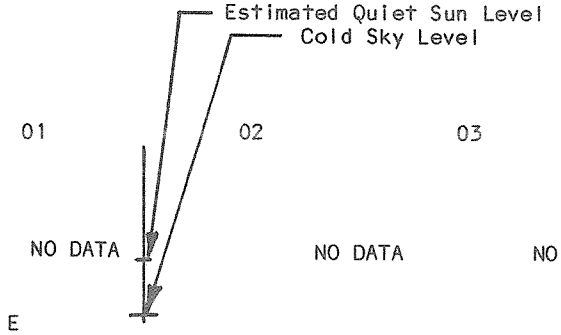


E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

AUGUST 1986

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



01 NO DATA

02 NO DATA

03 NO DATA

04 0203 UT

05 NO DATA

06 NO DATA

07 NO DATA

08 0203 UT

09 0202 UT

10 0203 UT

11 NO DATA

12 0202 UT

13 0202 UT

14 0202 UT

15 0201 UT

16 NO DATA

17 NO DATA

18 0201 UT

19 0234 UT

20 NO DATA

21 0202 UT

22 0208 UT

23 NO DATA

24 NO DATA

25 0207 UT

26 0158 UT

27 0206 UT

28 0158 UT

29 0200 UT

30 NO DATA

31 NO DATA

E W

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

AUGUST 1986

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
01	245	LEAR	44	NS	0033.0E	0101.0	552.0D	2.0			QL=1 ST=2 TYP=1
03	2800	OTTA	8	S	1146.0	1146.5	.8	3.9	2.0		
	2800	OTTA	20	GRF	2132.5	2135.5	30.0	2.7	1.6		
04	2800	OTTA	20	GRF	2205.0	2210.0	55.0	1.9	1.1		
10	410	LEAR	8	S	0933.0E	0934.0	1.0D	47.0			QL=5 ST=3 TYP=3
	245	LEAR	47	GB	0941.0E	0941.0	1.0D	100.0			QL=5 ST=2 TYP=5
	410	LEAR	47	GB	0941.0E	0941.0	1.0D	110.0			QL=5 ST=2 TYP=5
11	15400	LEAR	47	GB	0441.0E	0441.0	1.0D	16.0			QL=5 ST=2 TYP=5
	15400	LEAR	8	S	0448.0E	0448.0	1.0D	15.0			QL=5 ST=2 TYP=3
12	410	LEAR	8	S	0643.0E	0644.0	1.0D	12.0			QL=5 ST=2 TYP=3
	245	LEAR	47	GB	0643.0E	0644.0	1.0D	55.0			QL=5 ST=2 TYP=5
23	245	SGMR	47	GB	1608.0E	1608.0	1.0D	90.0			QL=1 ST=2 TYP=5
	410	SGMR	47	GB	1608.0E	1608.0	1.0D	83.0			QL=1 ST=2 TYP=5

Observatories

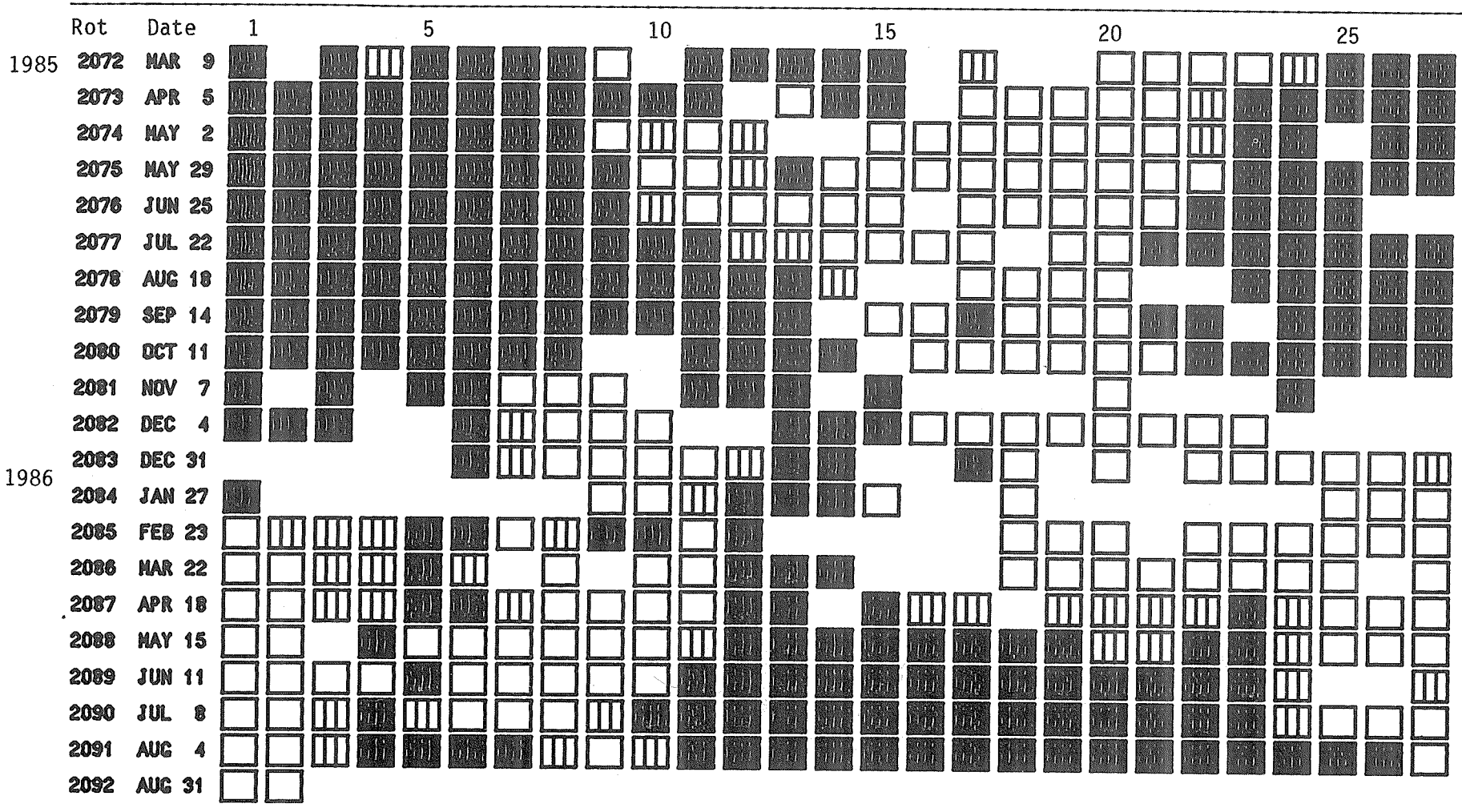
ATHN = Athens
BERN = Berne
LEAR = Learmonth
MANI = Manila
OTTA = Ottawa
PALE = Palehua
PENT = Penticton
SGMR = Sagamore Hill

Explanation of Type Code:

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

Remarks:
QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP= Type (1=noise storm;2=rise in base level;3=minor;4=group;5=major;6=major plus;7=Castelli U-type burst)

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	1985 Sep	Oct	Nov	Dec	1986 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1	.	13	-7	.	.	.	3	10	.	-6	-6	3
2	.	15	-10	.	.	.	0	-3	-7	-2	-5	7
3	7	6	-8	.	.	.	-7	-14	0	1	-7	4
4	3	-6	-15	-16	.	5	-7	-16	2	-1	2	10
5	5	-13	-16	-20	-3	15	3	.	.	-4	.	10
6	3	.	-25	-25	1	2	-11	.	2	-4	.	0
7	.	-20	-26	.	14	-8	.	.	2	0	-1	-2
8	.	-23	.	.	3	-27	.	6	0	6	10	-5
9	-26	-26	-17	-14	11	-14	.	5	1	4	4	-4
10	-24	-27	.	1	12	4	.	5	-5	11	1	-2
11	-24	-21	-6	13	0	.	.	3	2	5	-5	1
12	-22	-23	-5	8	-19	.	5	5	8	11	0	3
13	-25	-16	5	3	-14	9	11	3	13	4	3	-1
14	-24	-26	11	.	.	.	8	8	13	3	5	-12
15	-21	-20	6	.	.	.	.	7	8	-3	5	-17
16	-21	-27	.	-18	-12	.	14	.	10	6	2	-21
17	-25	-21	-3	-20	21	.	11	8	.	6	-2	-23
18	-29	-25	-2	-21	.	.	12	5	-2	6	-2	-21
19	-28	.	-11	3	24	.	12	6	3	6	-7	-18
20	-22	.	.	11	.	9	12	2	9	6	-23	-13
21	-21	-17	-5	15	16	18	10	-1	7	-4	-21	-14
22	-23	-17	.	22	11	10	8	-5	6	-19	-26	-13
23	-16	-12	.	28	12	9	5	-4	9	-23	-16	-15
24	-10	-8	.	15	15	1	2	1	10	-16	-12	-8
25	-6	.	.	21	10	1	-1	7	0	-11	-8	-16
26	-5	4	15	8	2	0	-3	13	-22	-8	-7	-9
27	.	19	.	.	-3	-4	0	13	-31	-2	-4	-9
28	11	17	.	.	.	-4	.	10	-25	-4	-5	-8
29	12	14	.	.	.		14	-3	-14	-3	-3	-3
30	-6	16	-8	.	.		.	-14	-8	-3	-22	5
31		5		.	.		15		-4		2	12

Dot symbol indicates no data available for the day.

C O N T E N T S

Prompt Reports DATA FOR JULY 1986 Number 505 Part I

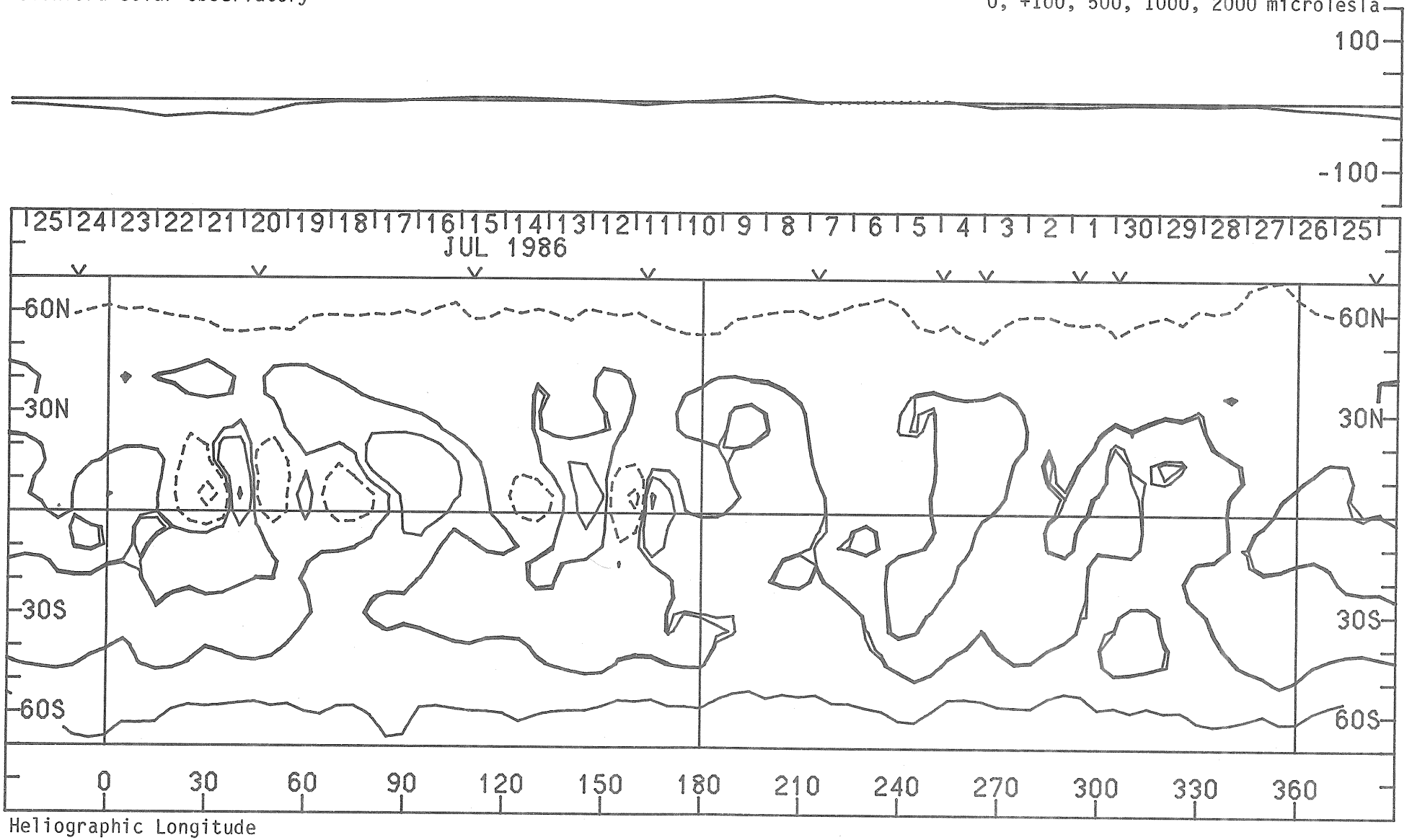
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1777

(June 26 to July 24, 1986)

Stanford Solar Observatory

0, +100, 500, 1000, 2000 microTesla



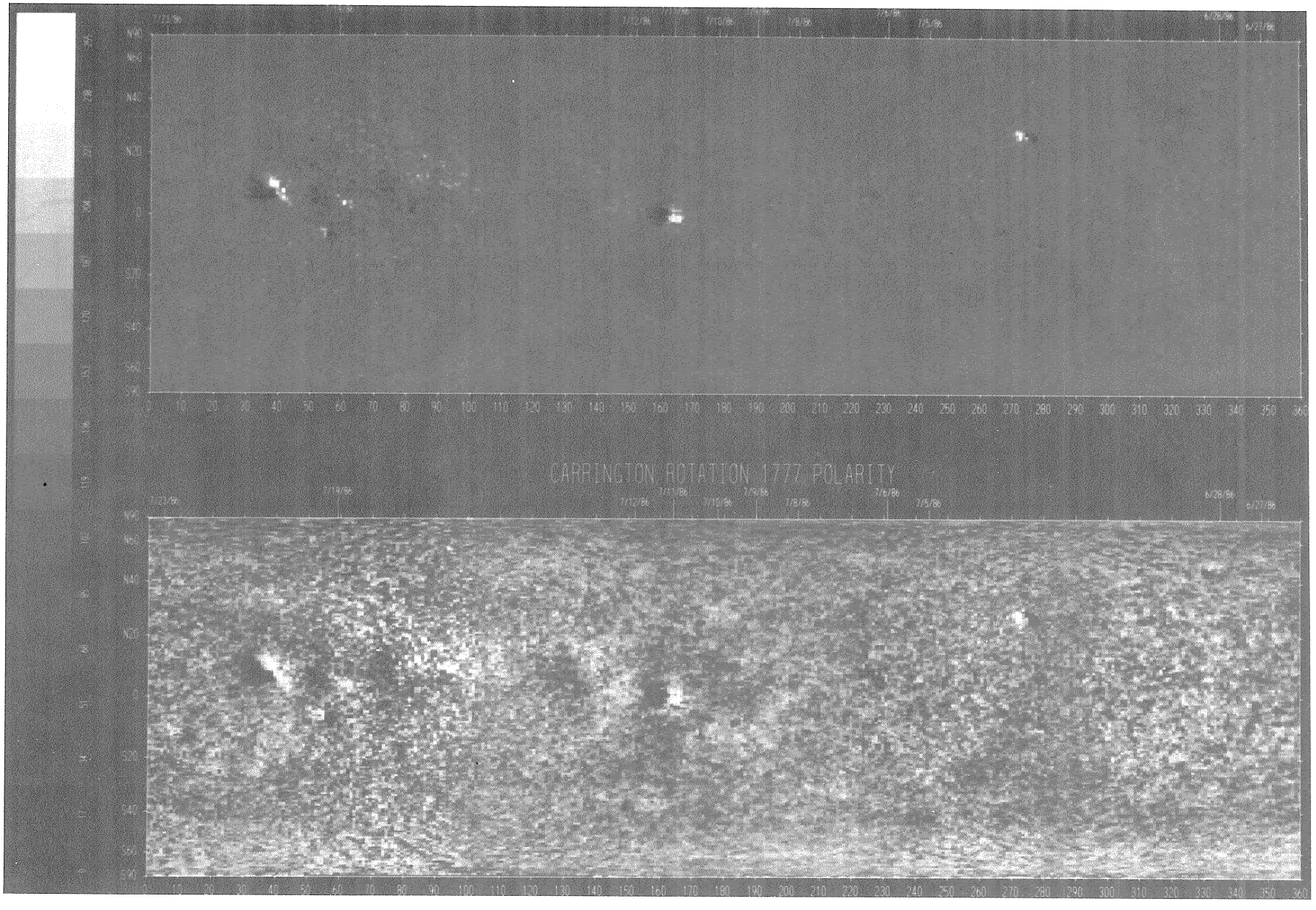
23 Jul 86

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1777
(June 26 to July 24, 1986)

Kitt Peak National Observatory

Dates of Observations

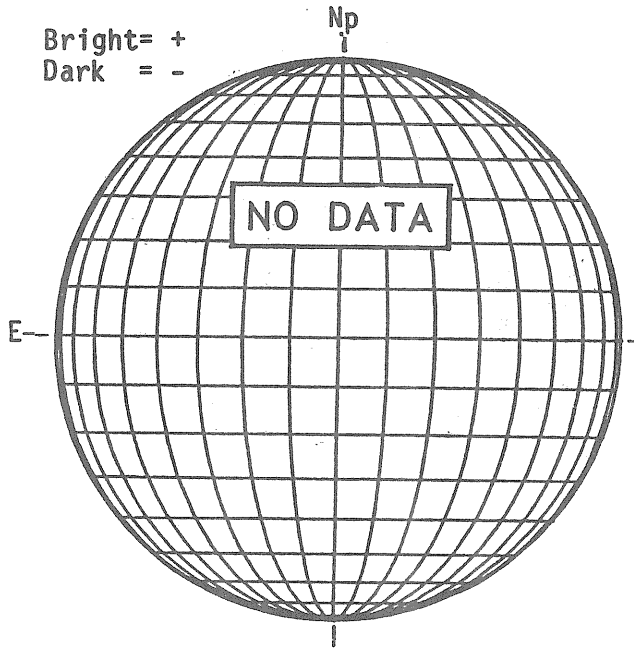


24 Jul 86

J U L Y 01, 1 9 8 6 (P=- 2.75, B_0= 2.78, L_0= 304.84)

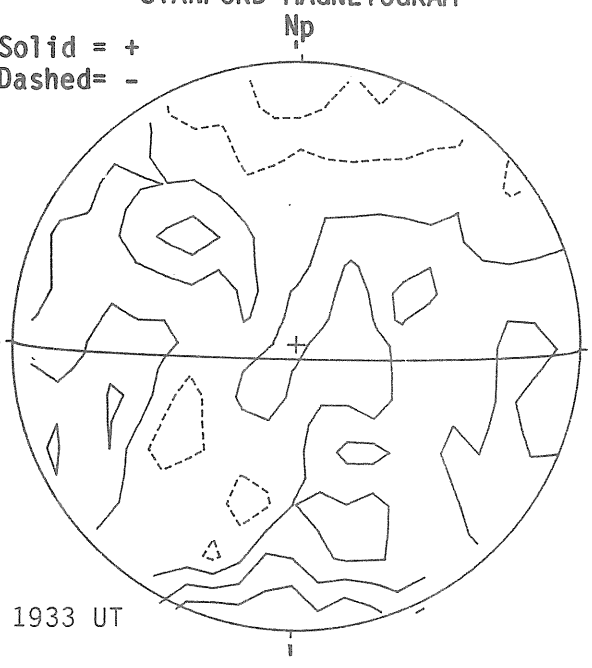
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

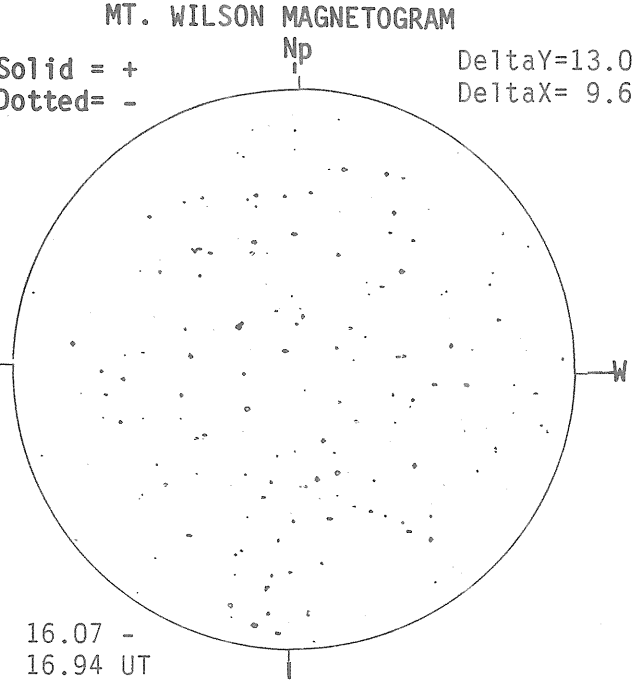
Solid = +
Dashed= -



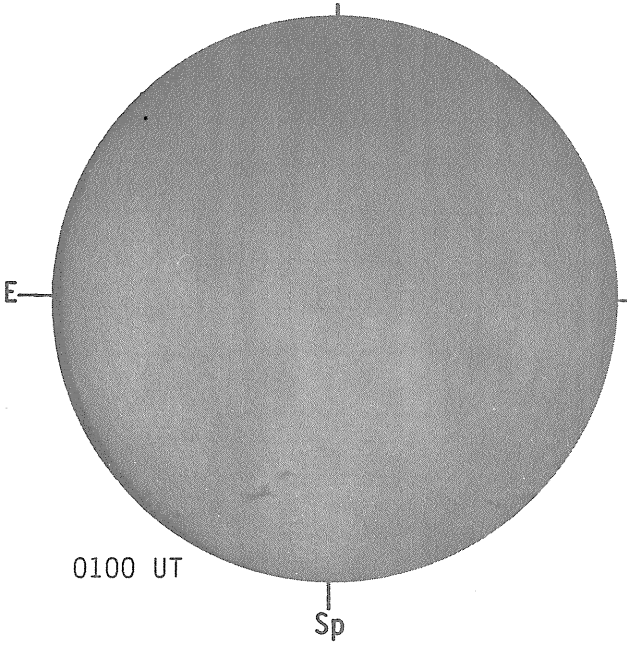
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

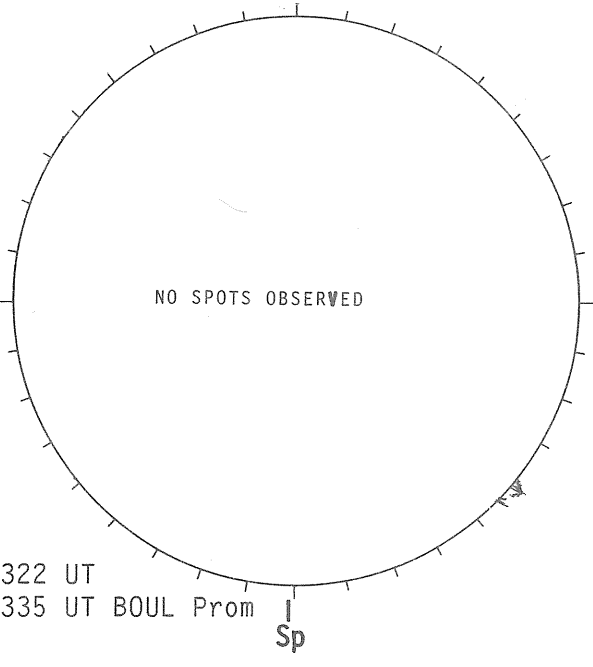
DeltaY=13.0
DeltaX= 9.6



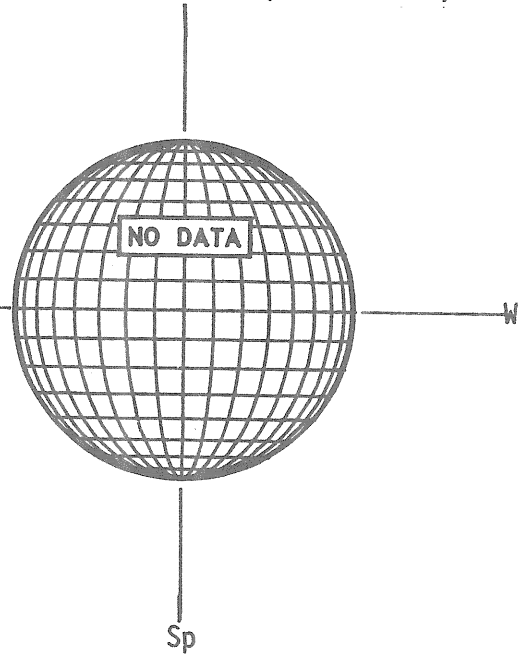
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



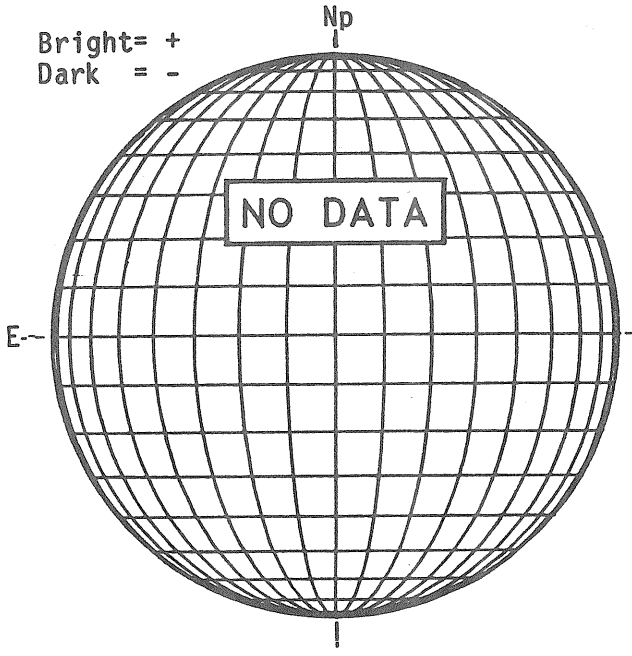
25 Jul 86

J U L Y 02, 1 9 8 6 (P=- 2.30, B_o= 2.89, L_o= 291.60)

Jul 86 26

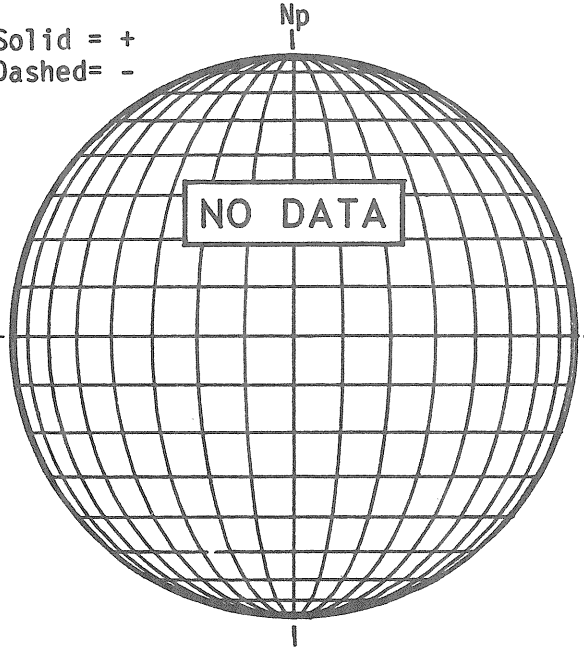
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

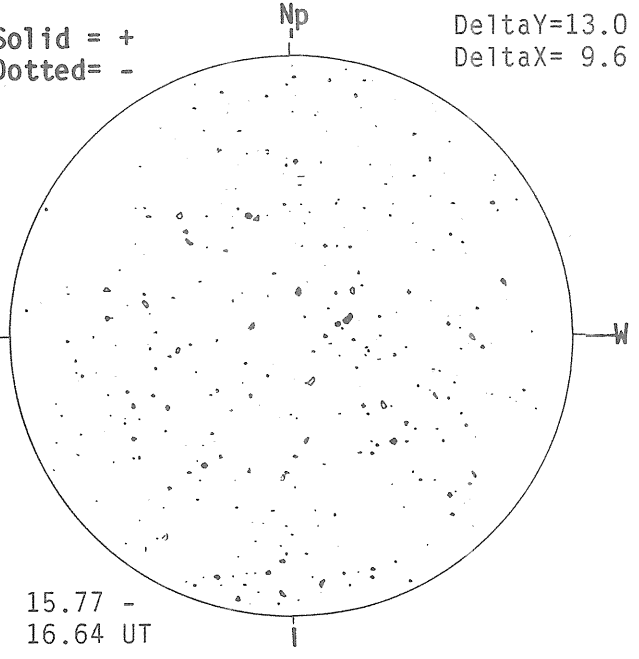
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

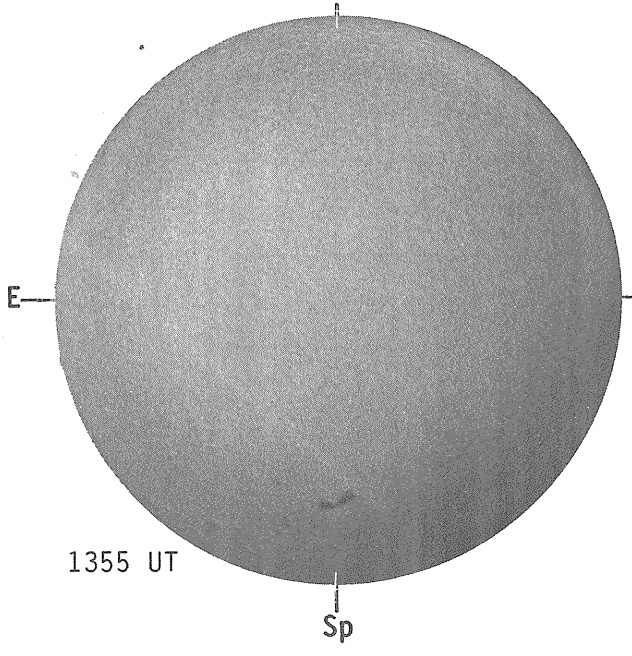
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



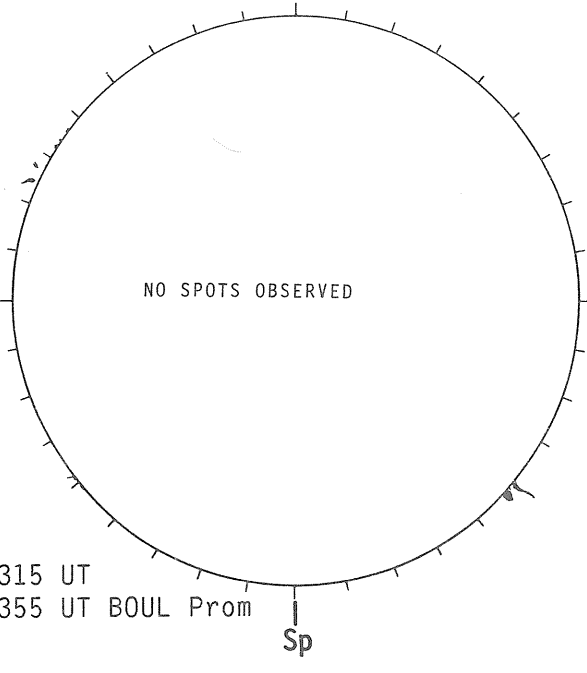
15.77 -
16.64 UT

BOULDER H-ALPHA



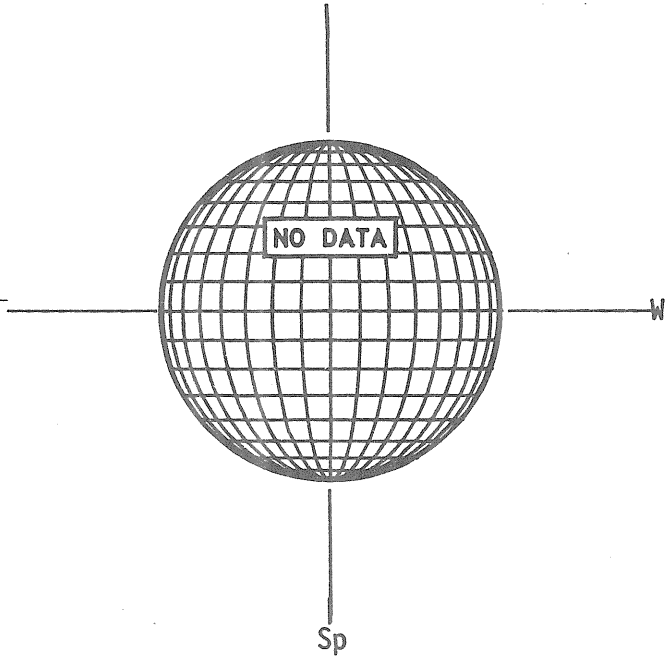
1355 UT

BOULDER SUNSPOTS



1315 UT
1355 UT BOUL Prom

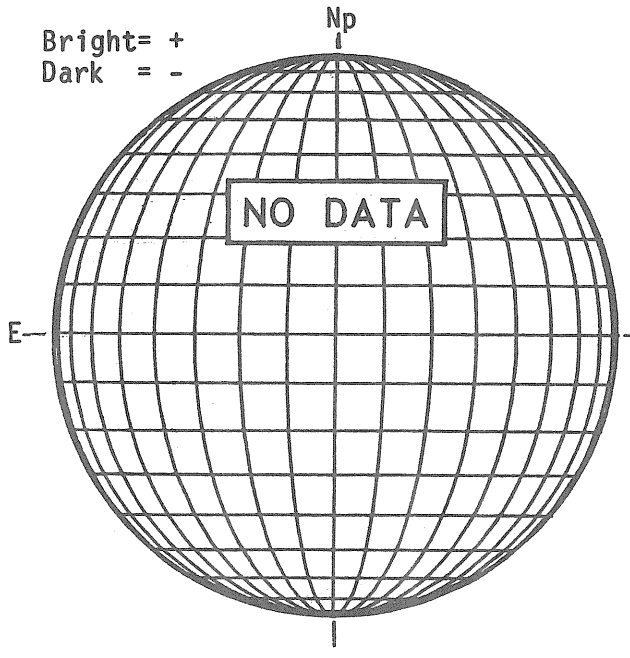
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 03, 1 9 8 6 (P=- 1.85, B_o = 3.00, L_o = 278.36)

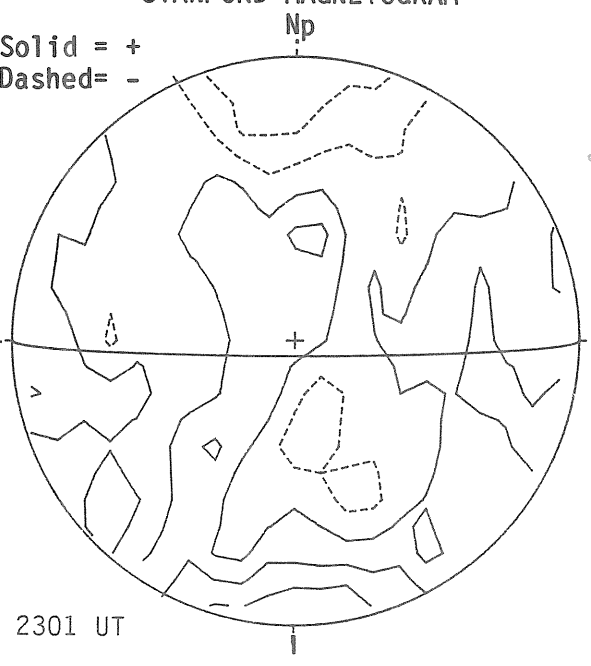
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

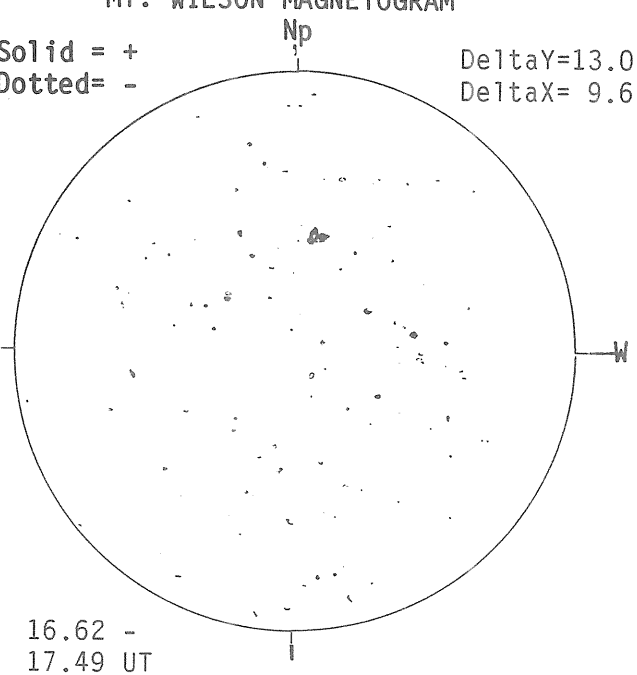
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

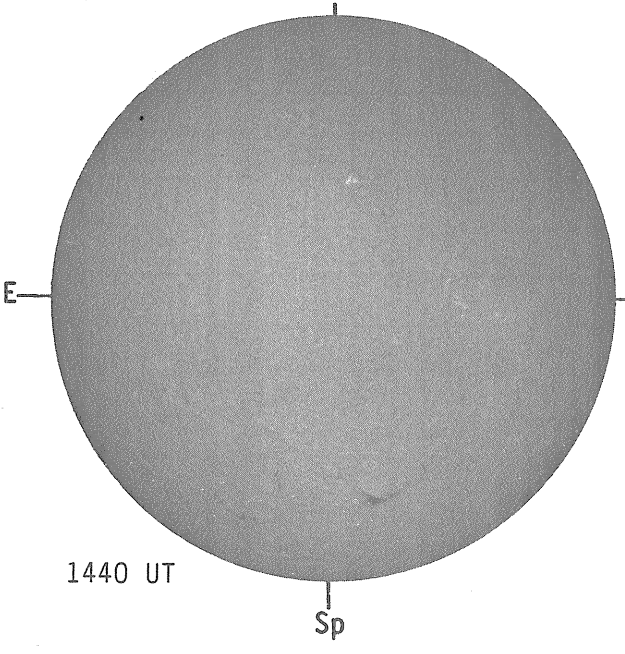
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



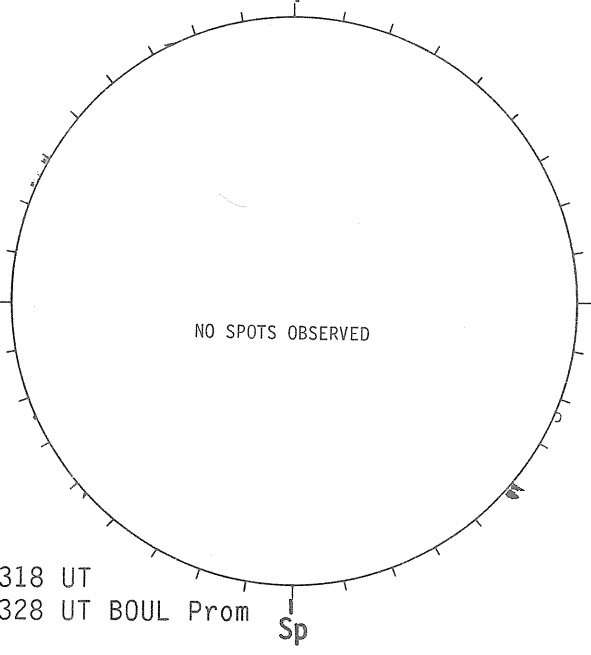
16.62 -
17.49 UT

SACRAMENTO PEAK H-ALPHA



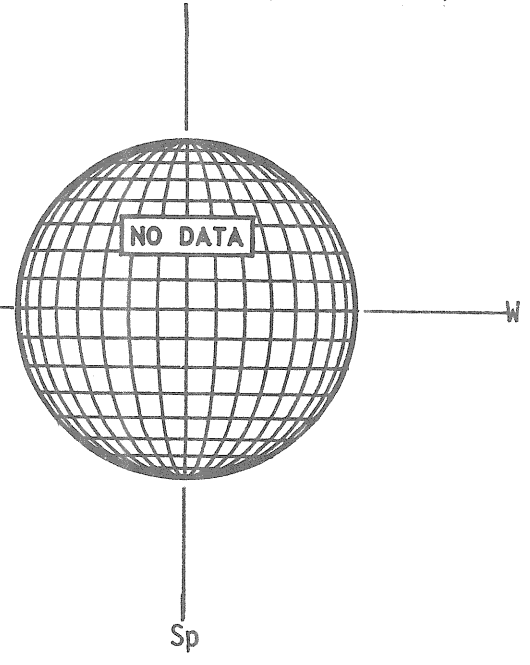
1440 UT

BOULDER SUNSPOTS



1318 UT
1328 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



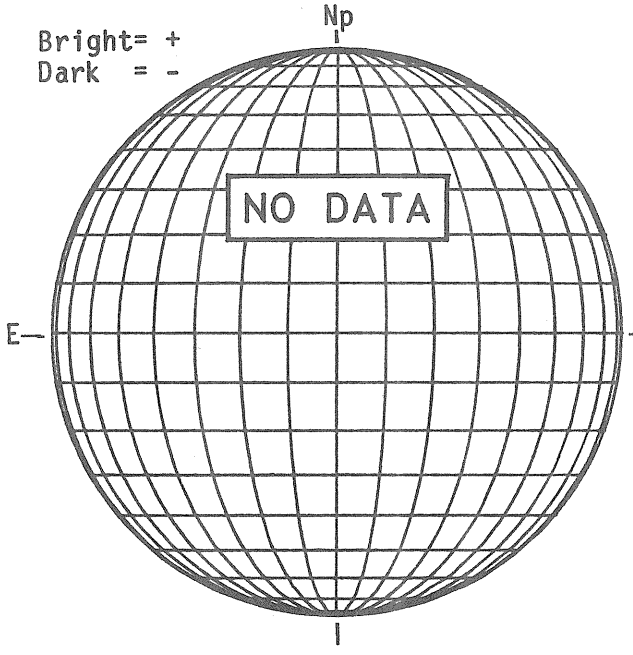
27 Jul 86

J U L Y 04, 1 9 8 6 (P=- 1.39, B_0= 3.11, L_0= 265.13)

28 Jul 86

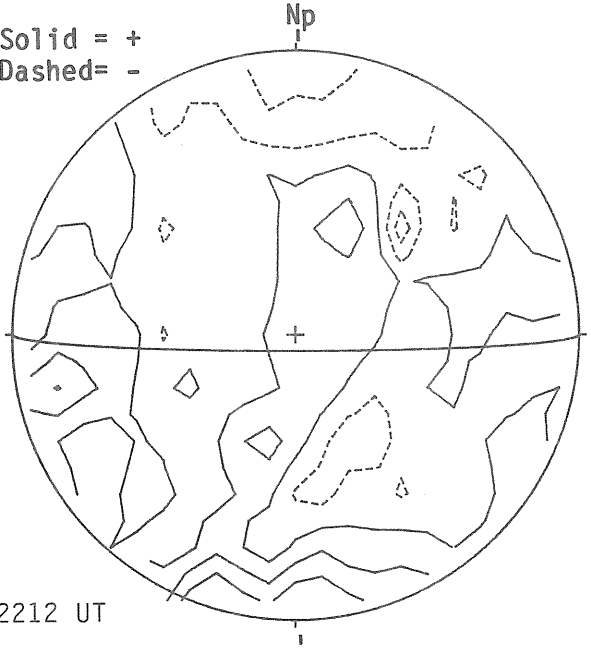
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



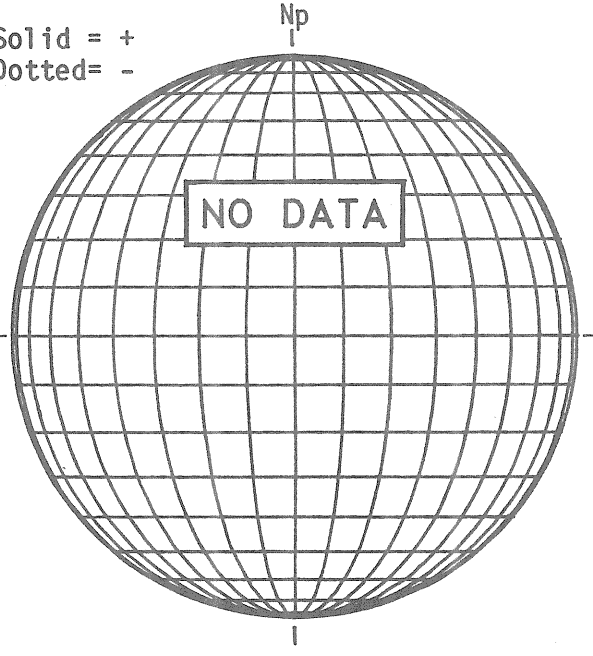
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

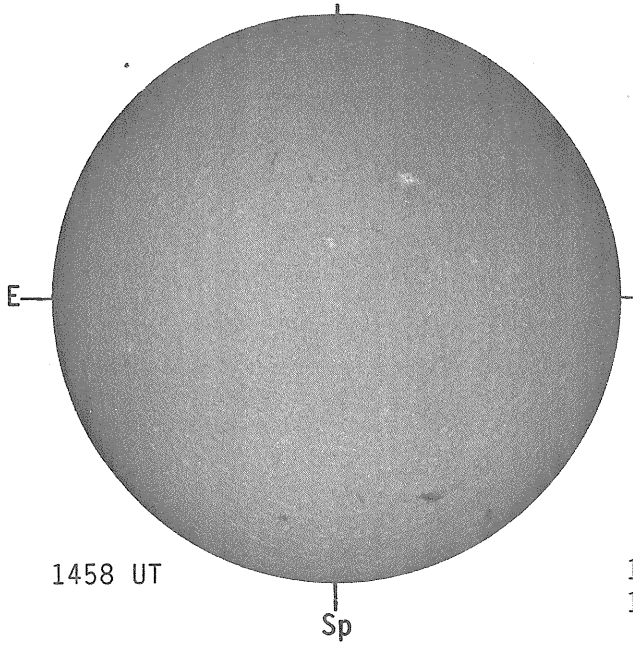


MT. WILSON MAGNETOGRAM

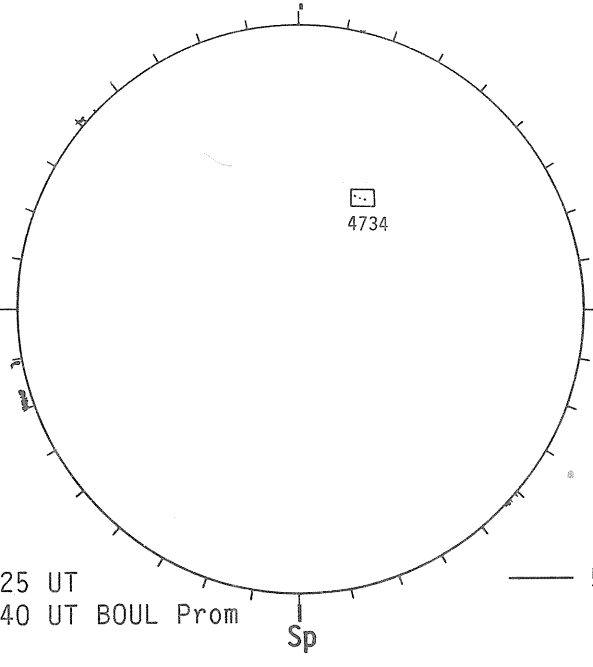
Solid = +
Dotted= -



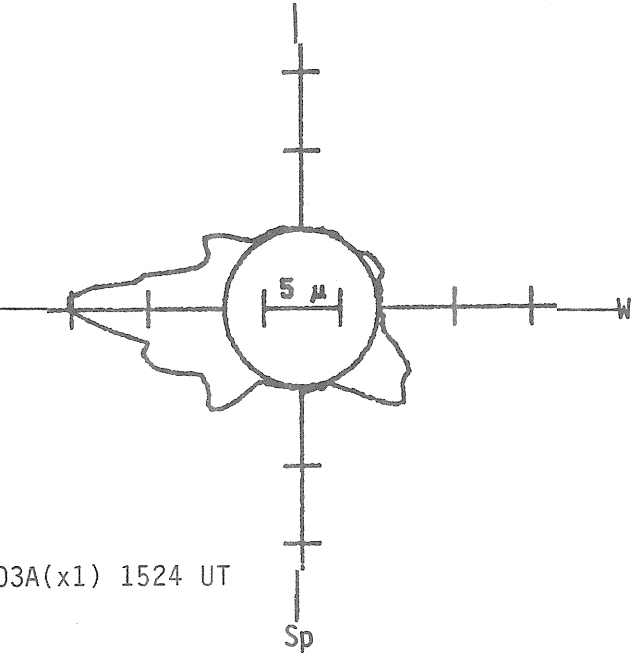
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

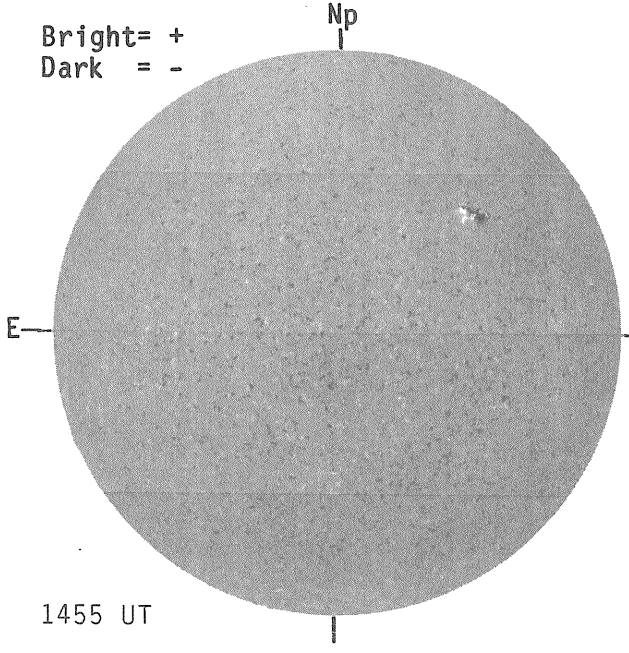


—— 5303A(x1) 1524 UT

J U L Y 05, 1 9 8 6 (P=- 0.94, B_0= 3.21, L_0= 251.89)

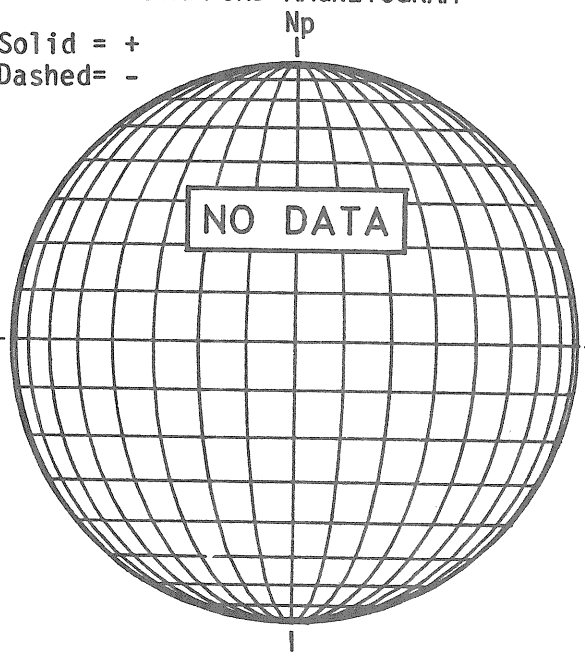
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

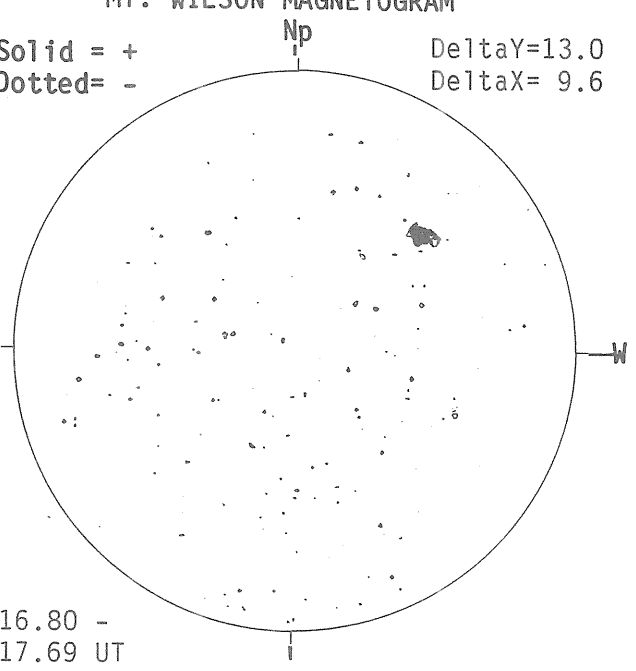
Solid = +
Dashed= -



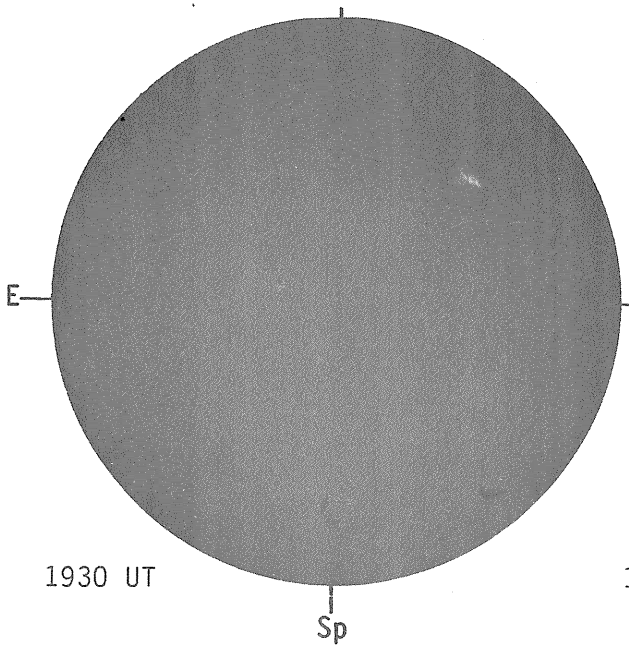
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

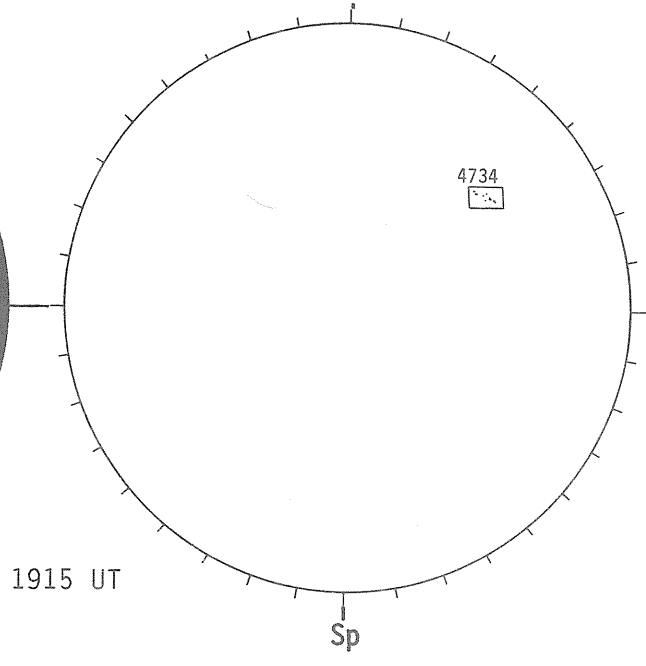
DeltaY=13.0
DeltaX= 9.6



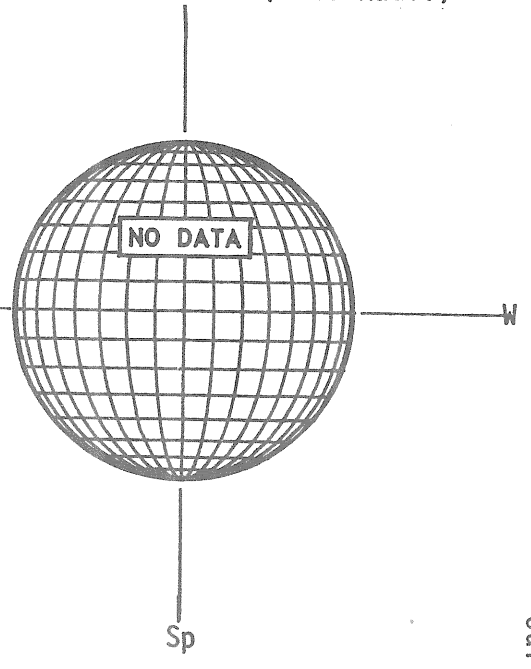
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



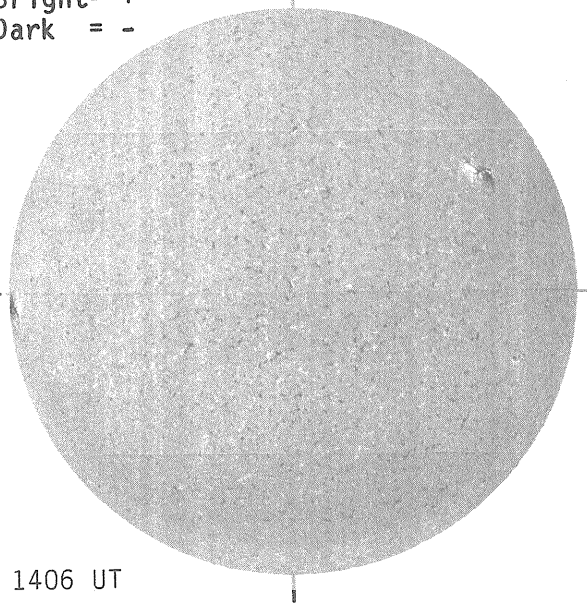
29 Jul 86

J U L Y 06, 1 9 8 6 (P=- 0.49, B_o= 3.32, L_o= 238.66)

Jul 86 30

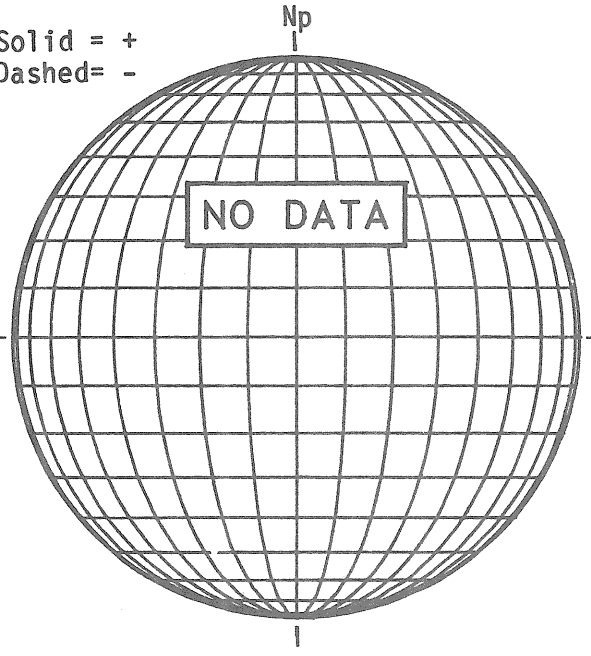
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

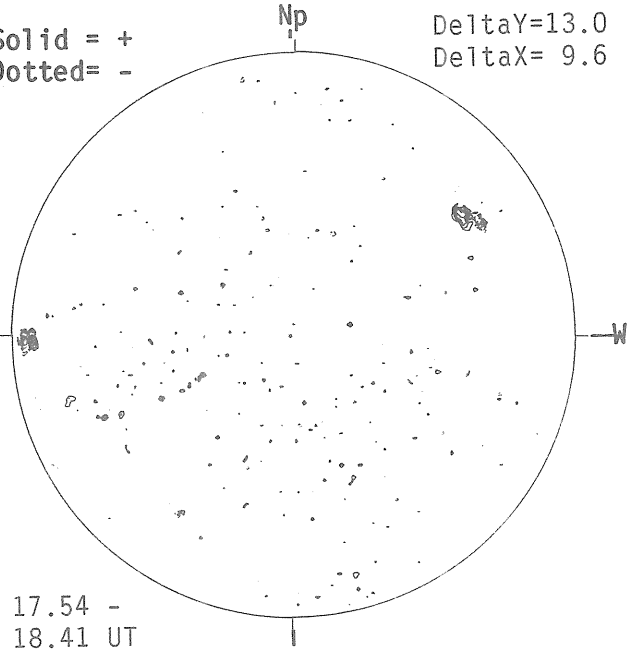
Solid = +
Dashed= -



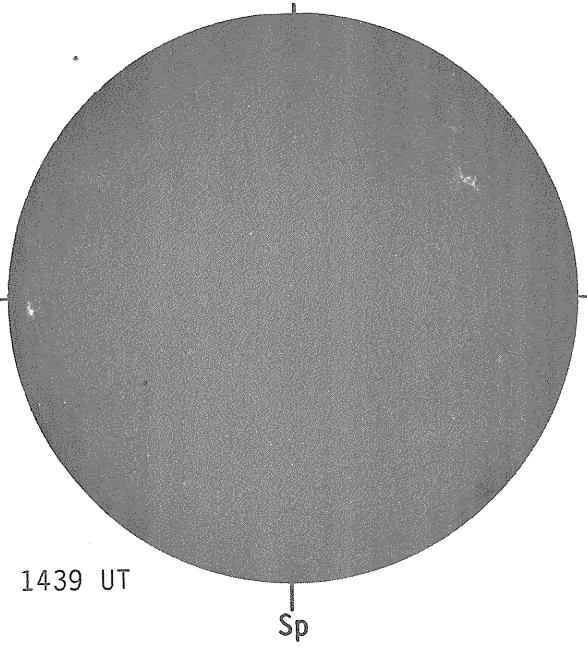
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

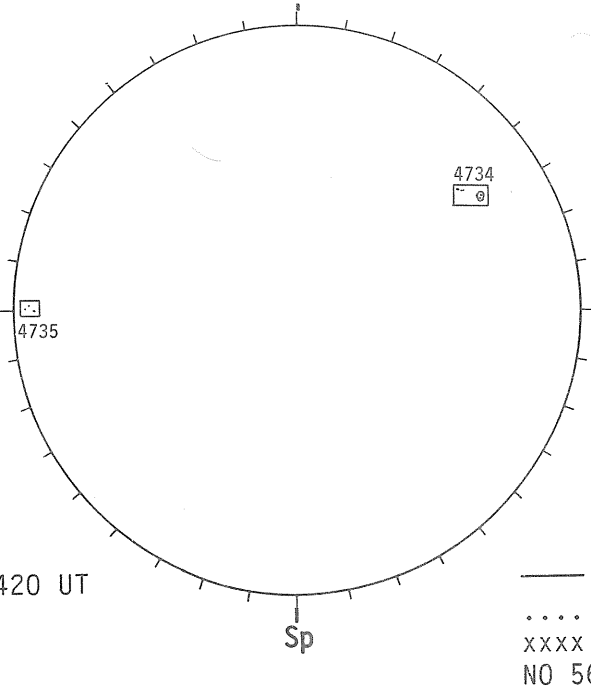
DeltaY=13.0
DeltaX= 9.6



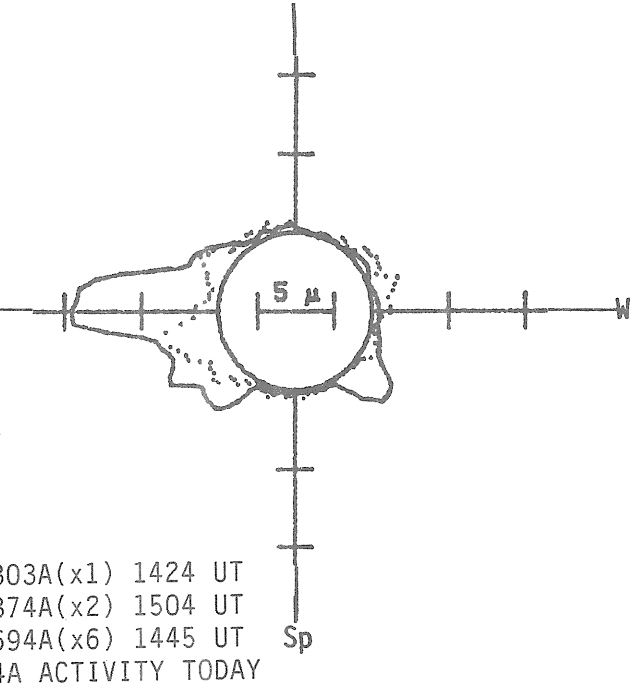
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

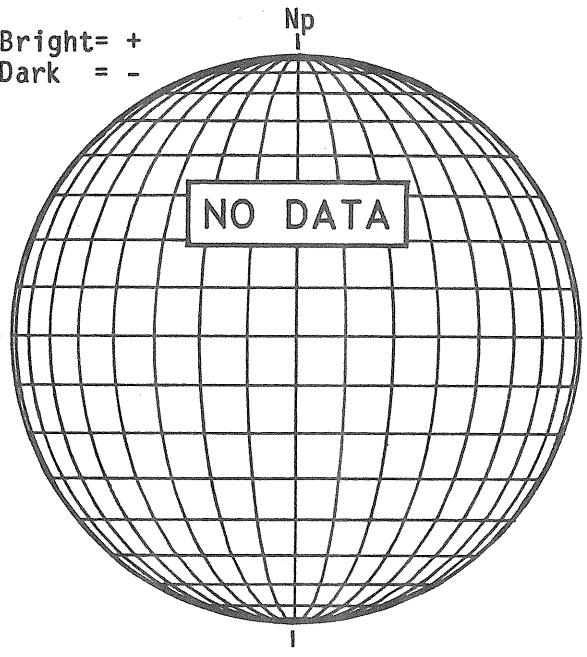


—— 5303A(x1) 1424 UT
.... 6374A(x2) 1504 UT
xxxx 5694A(x6) 1445 UT
NO 5694A ACTIVITY TODAY

J U L Y 07, 1 9 8 6 (P=- 0.04, B_0= 3.42, L_0= 225.42)

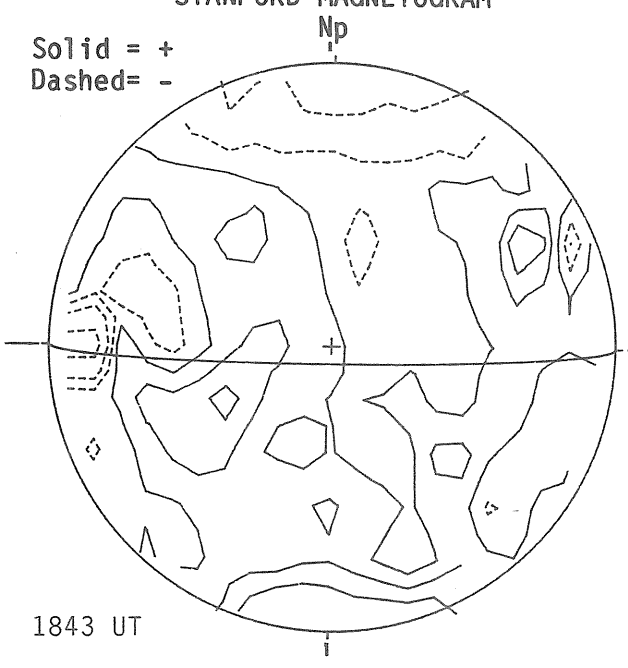
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

Solid = +
Dashed= -

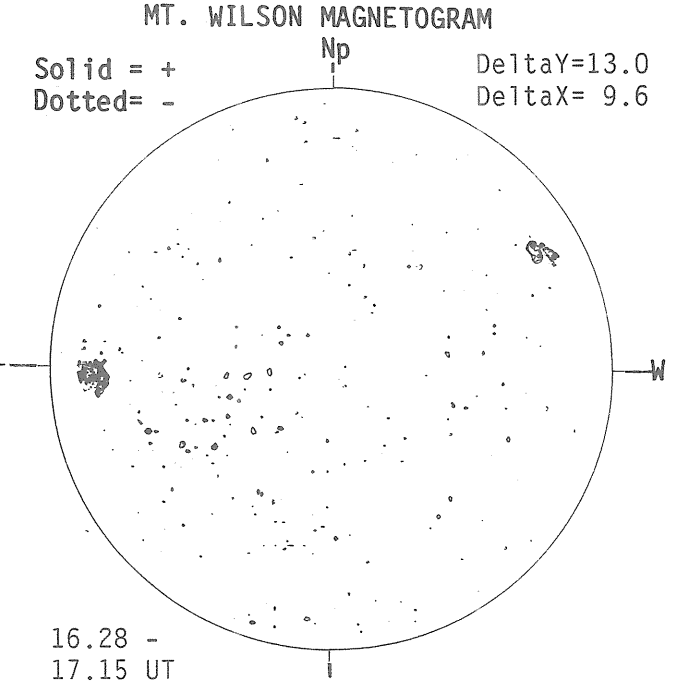


1843 UT

MT. WILSON MAGNETOGRAM

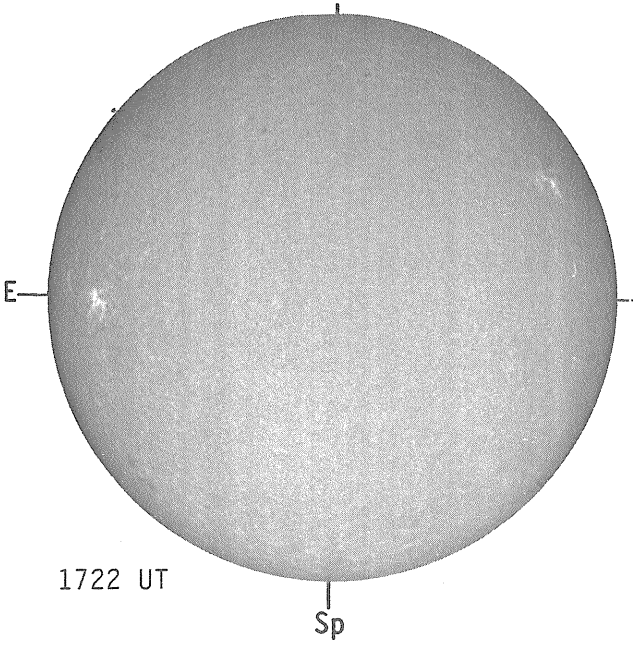
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



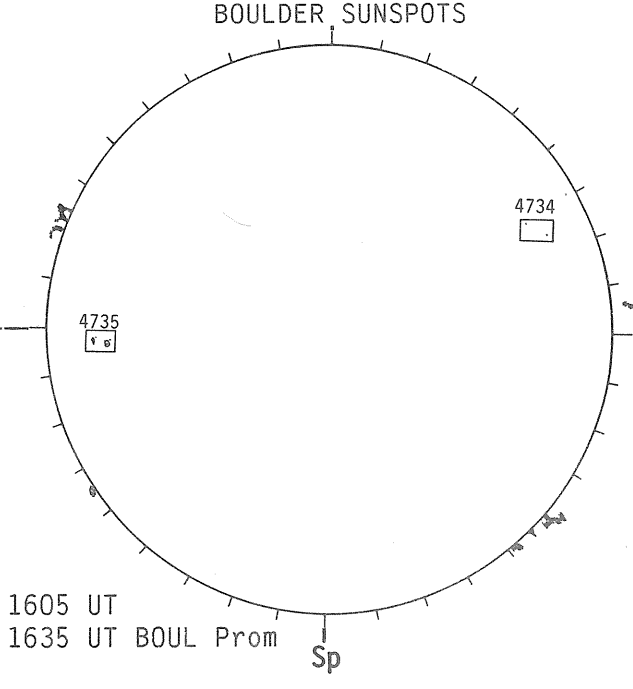
16.28 -
17.15 UT

SACRAMENTO PEAK H-ALPHA



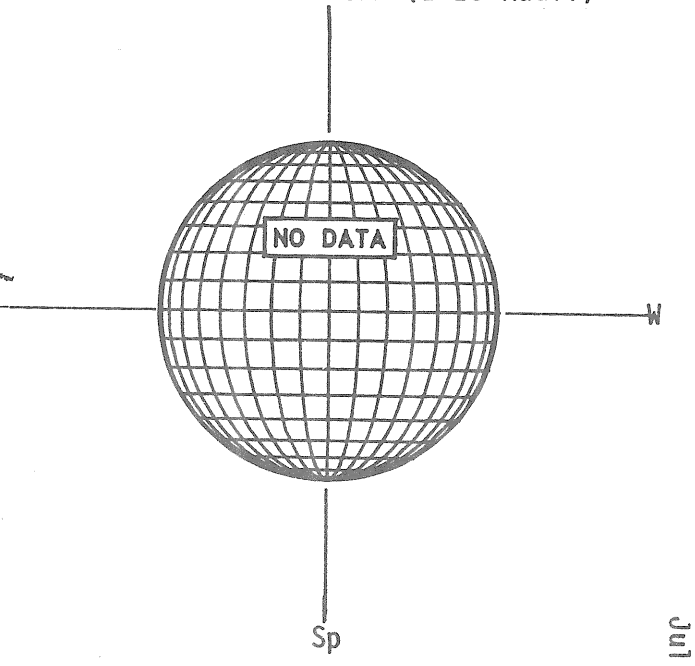
1722 UT

BOULDER SUNSPOTS



1605 UT
1635 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

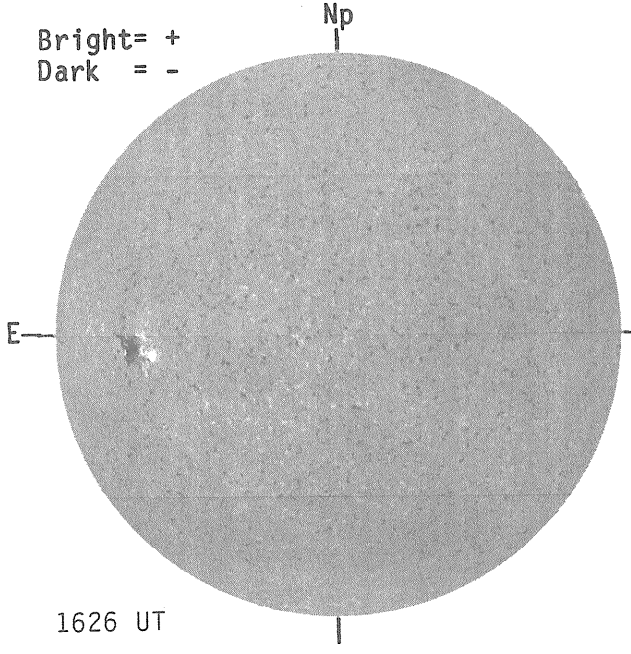


31 Jul 86

J U L Y 08, 1 9 8 6 (P= 0.42, B_0= 3.53, L_0= 212.19)

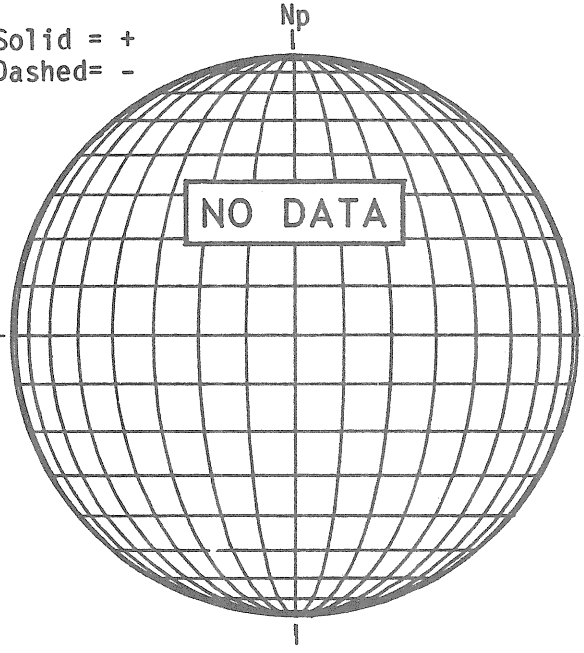
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



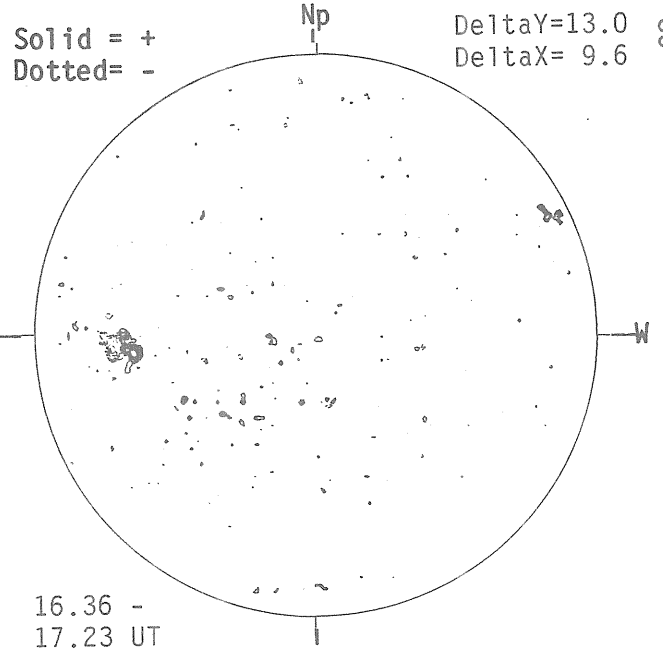
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

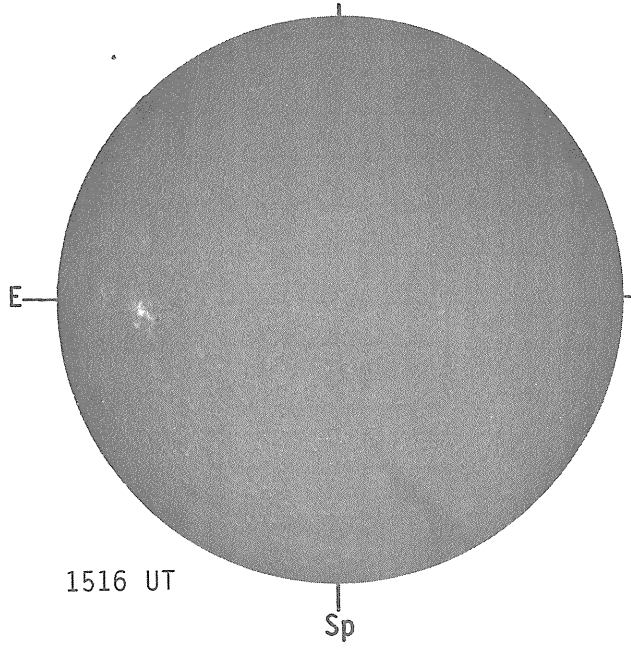


MT. WILSON MAGNETOGRAM

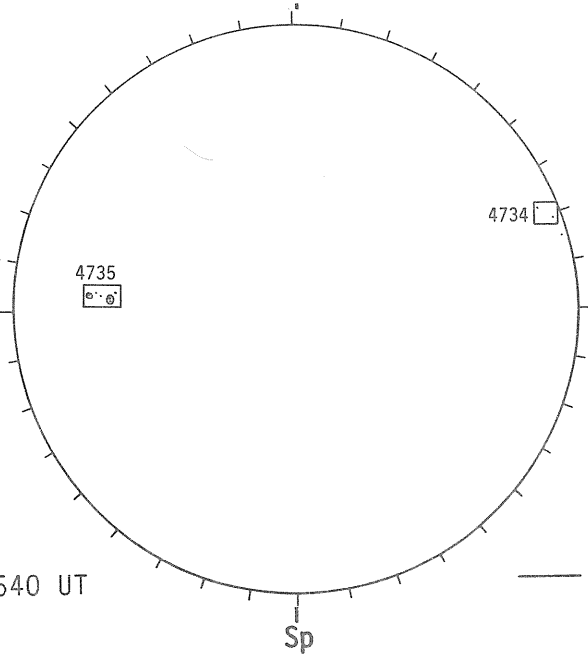
Solid = +
Dotted= -



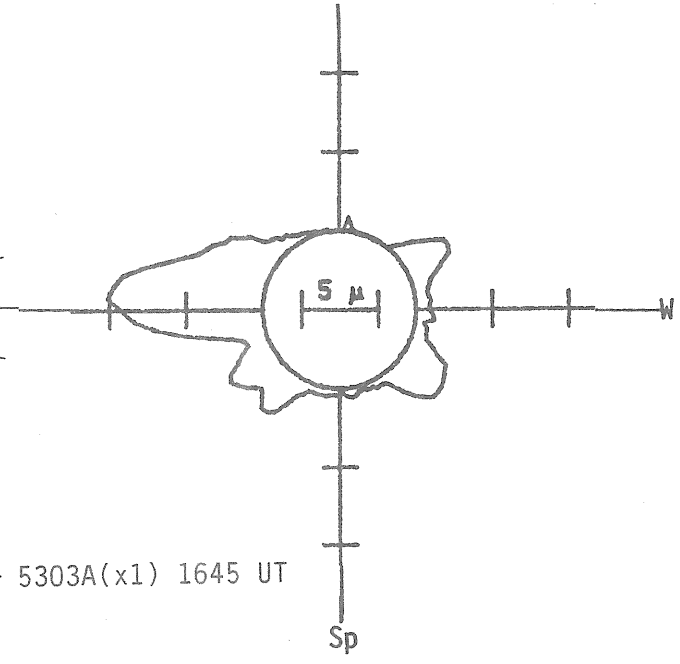
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

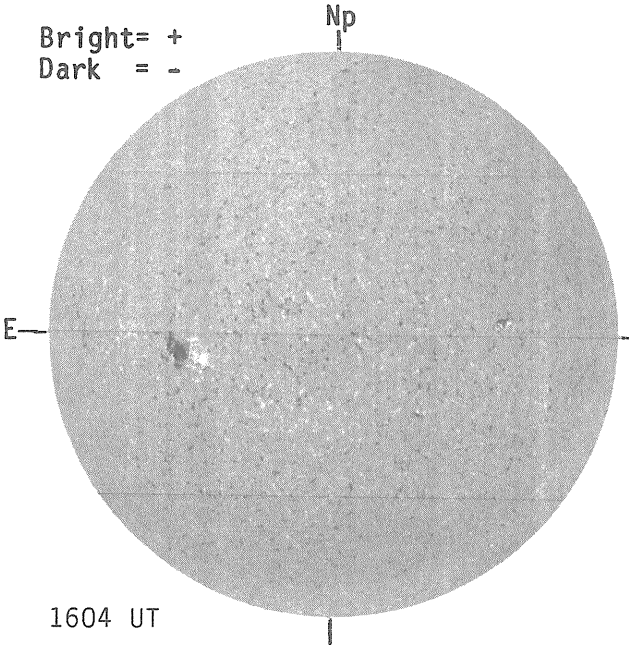


5303A(x1) 1645 UT

J U L Y 09, 1 9 8 6 (P= 0.87, B_0= 3.63, L_0= 198.95)

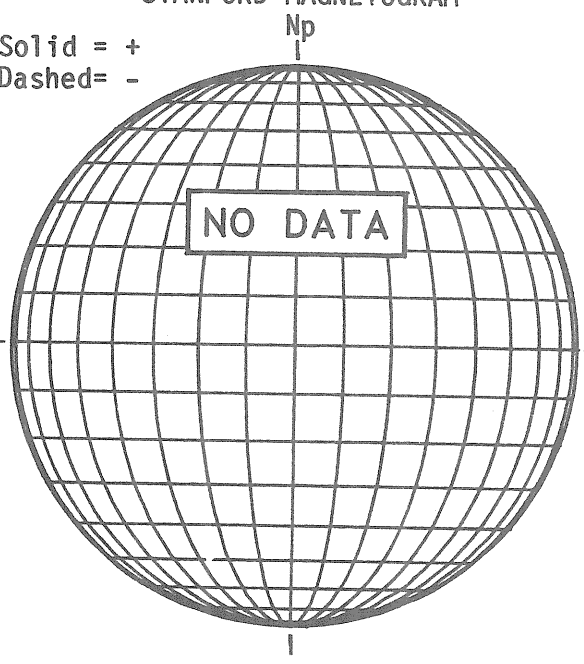
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

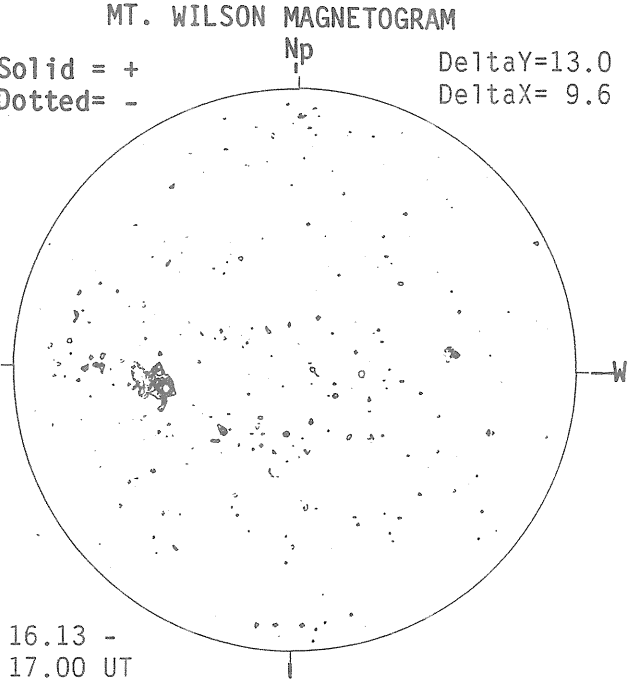
Solid = +
Dashed= -



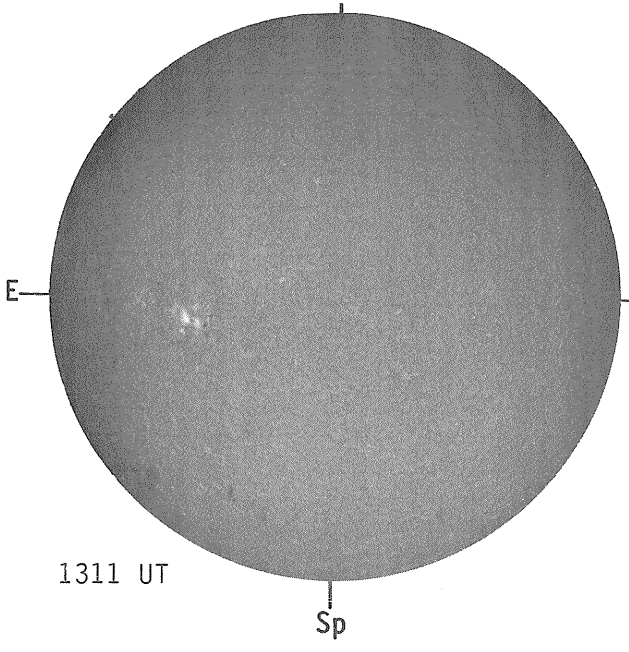
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

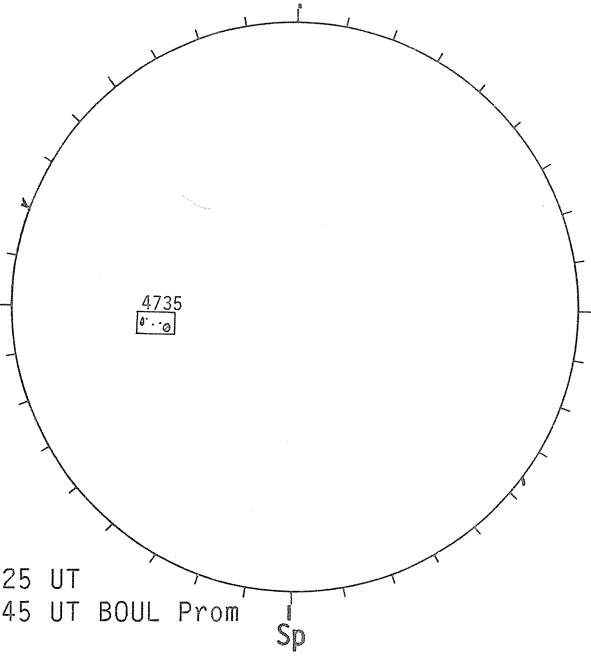
DeltaY=13.0
DeltaX= 9.6



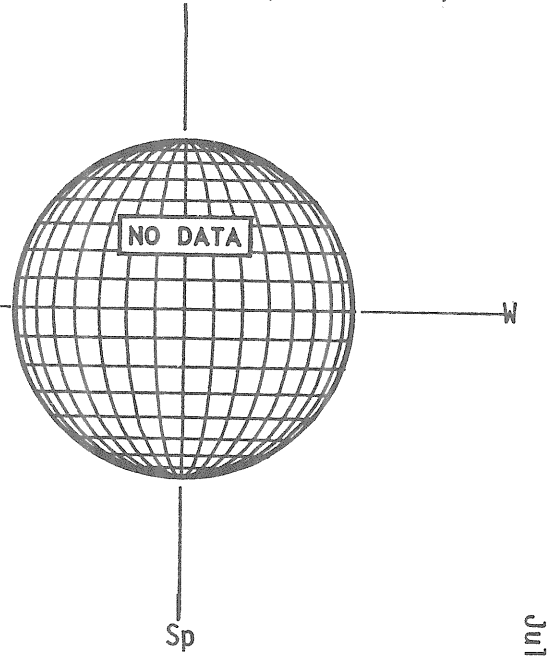
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

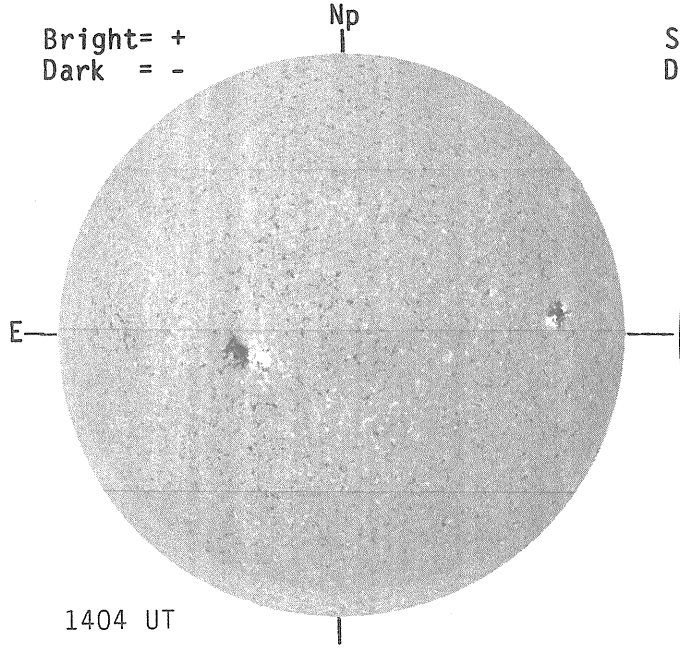


J U L Y 10, 1 9 8 6 (P= 1.32, B_0= 3.73, L_0= 185.72)

34
Jul 86

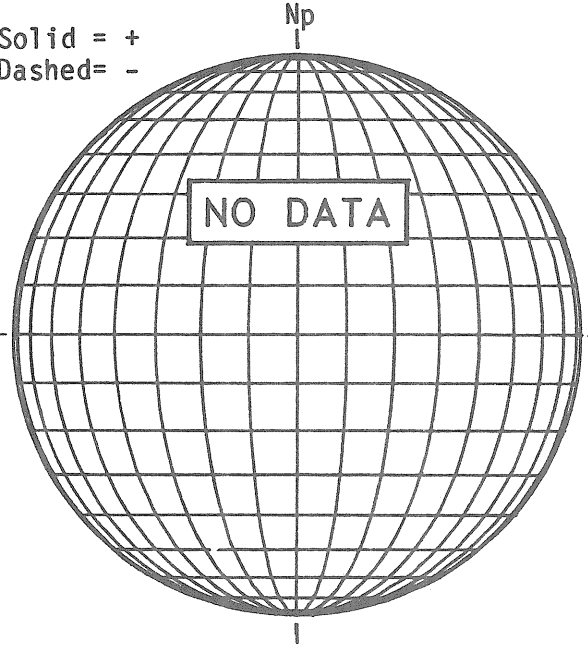
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

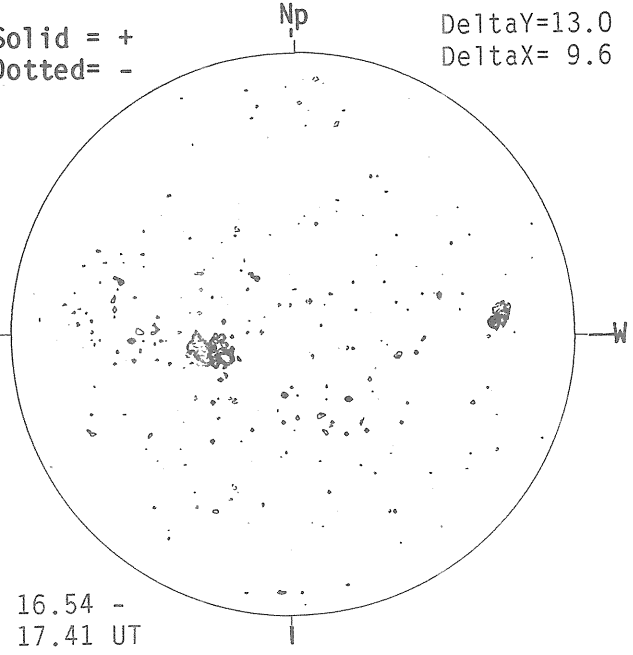
Solid = +
Dashed= -



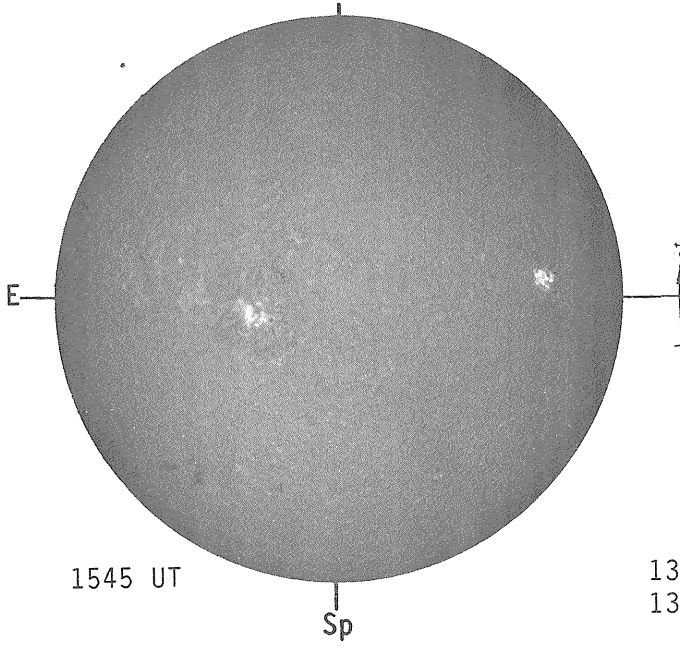
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

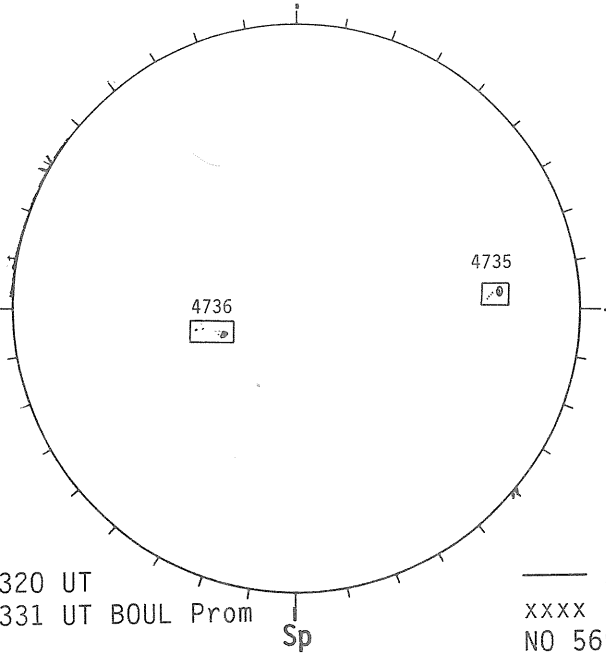
DeltaY=13.0
DeltaX= 9.6



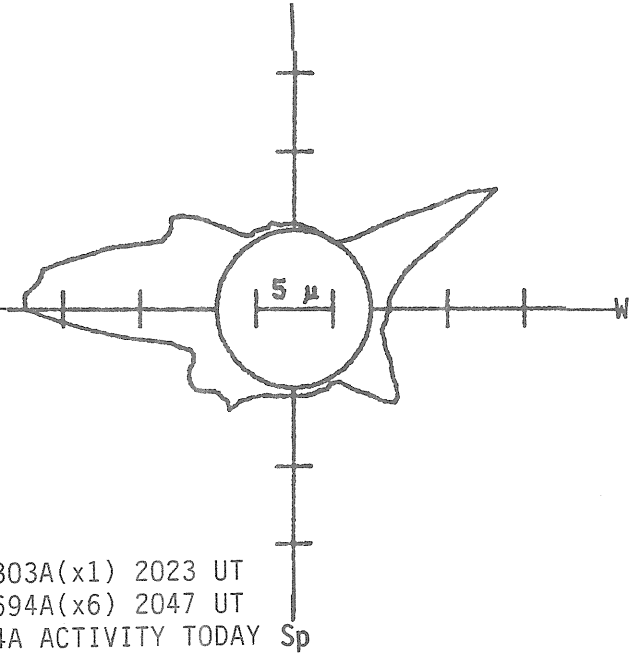
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



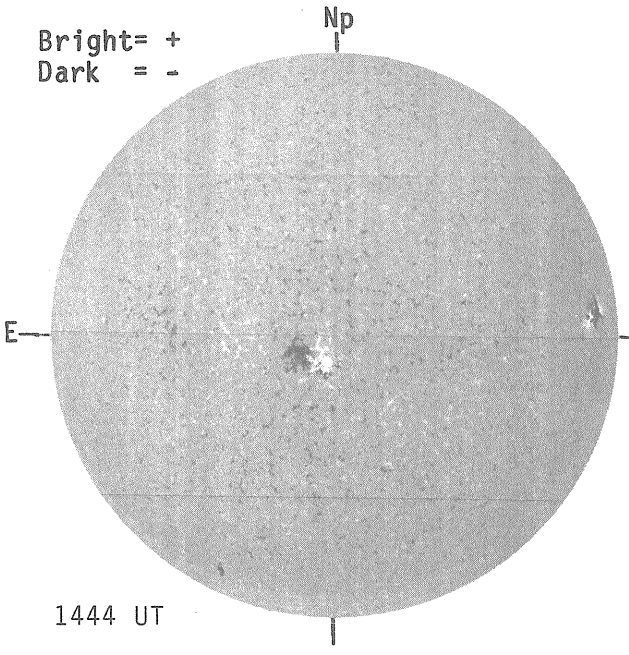
SACRAMENTO PEAK CORONA (1.15 Radii)



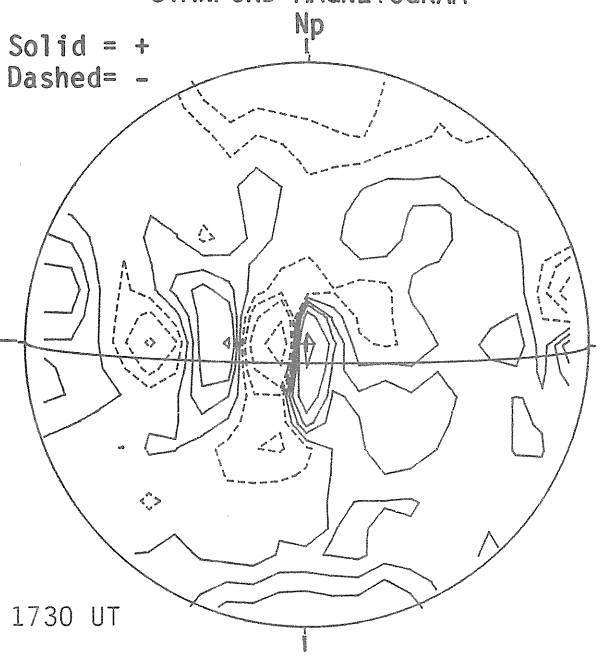
—— 5303A(x1) 2023 UT
xxxx 5694A(x6) 2047 UT
NO 5694A ACTIVITY TODAY

J U L Y 11, 1 9 8 6 (P= 1.77, B_0= 3.83, L_0= 172.49)

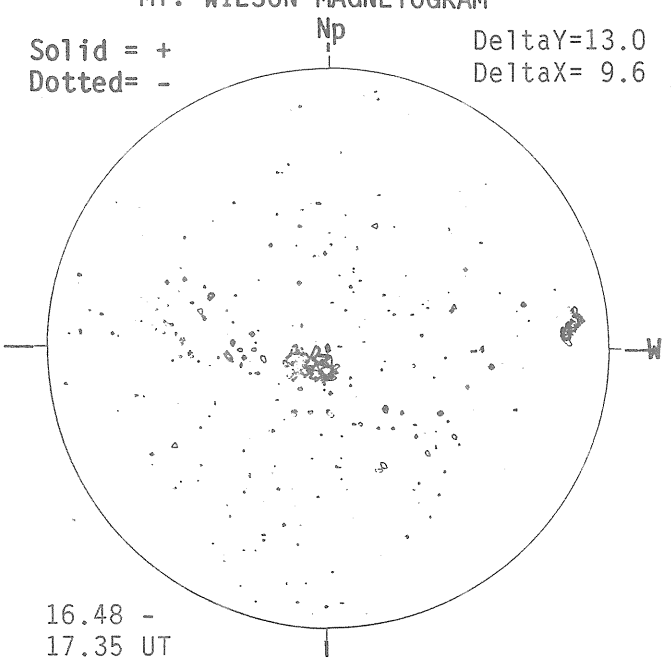
KITT PEAK MAGNETOGRAM



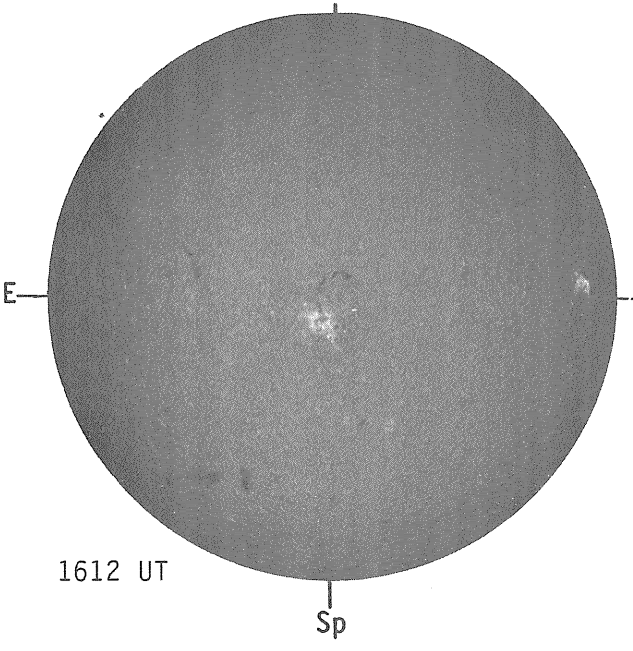
STANFORD MAGNETOGRAM



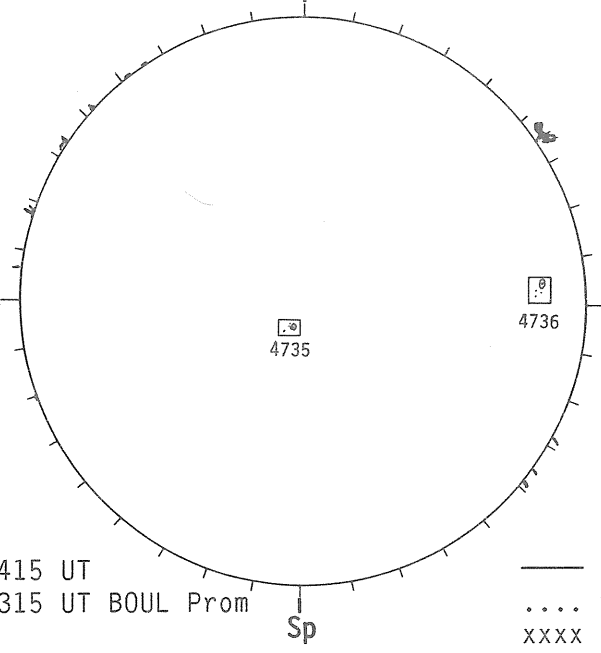
MT. WILSON MAGNETOGRAM



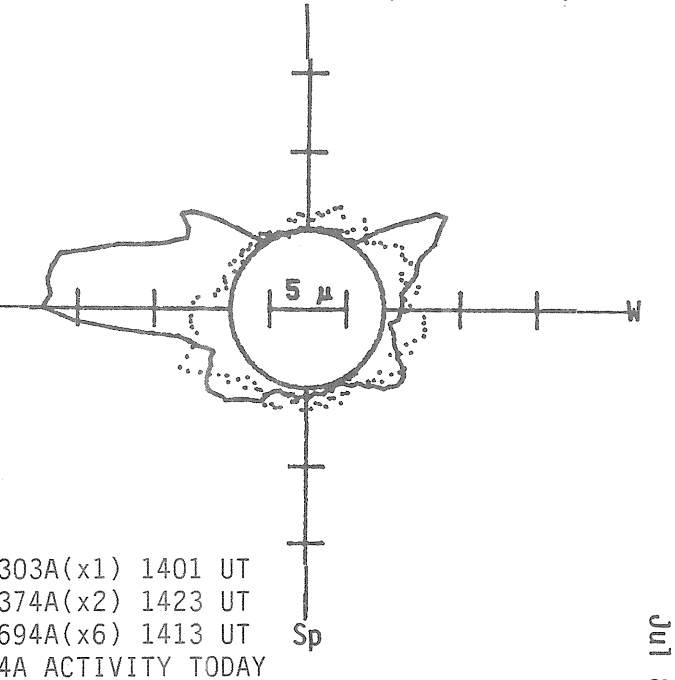
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

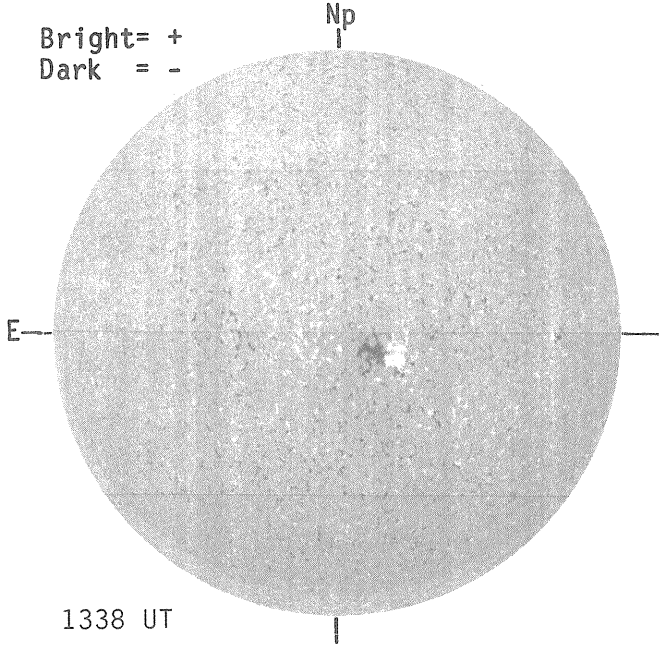


—— 5303A(x1) 1401 UT
.... 6374A(x2) 1423 UT
xxxx 5694A(x6) 1413 UT
NO 5694A ACTIVITY TODAY

J U L Y 12, 1 9 8 6 (P= 2.22, B_0= 3.93, L_0= 159.25)

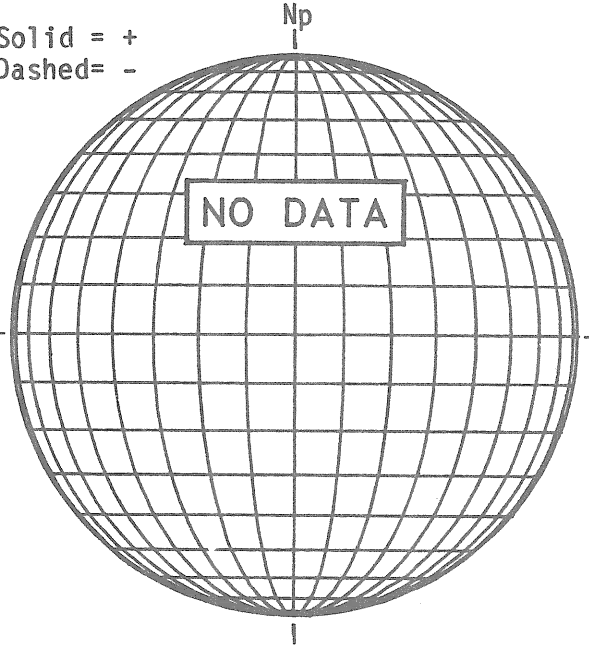
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

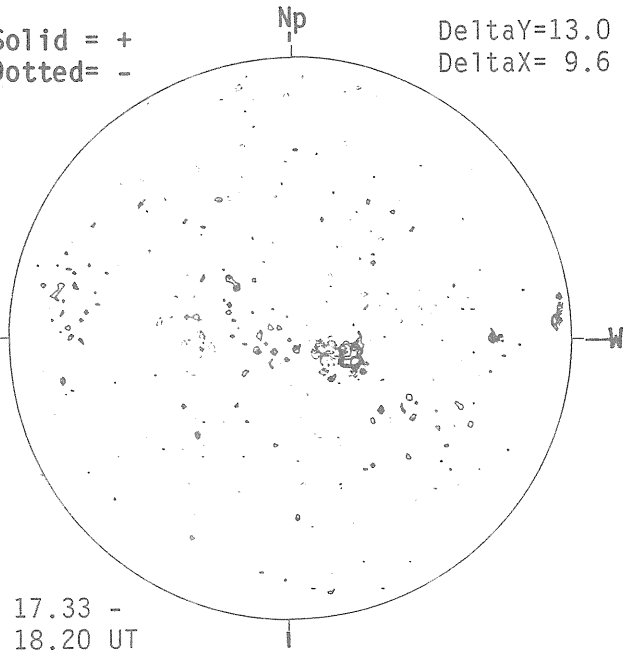
Solid = +
Dashed= -



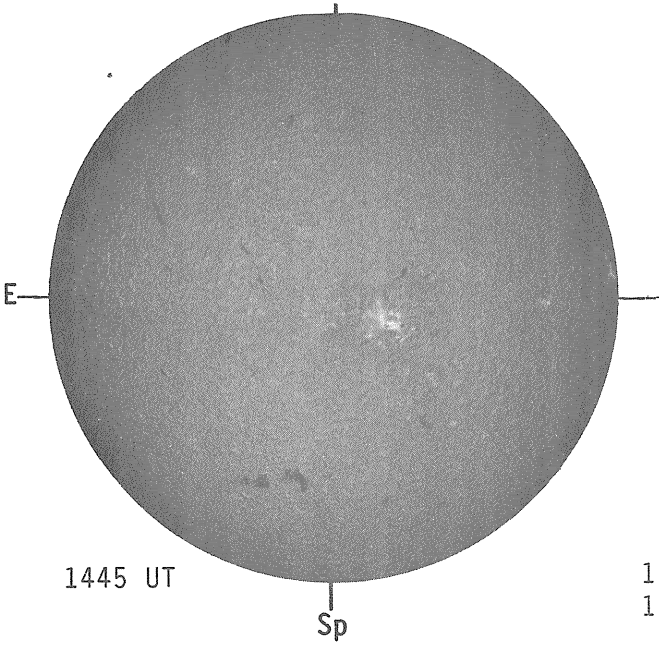
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

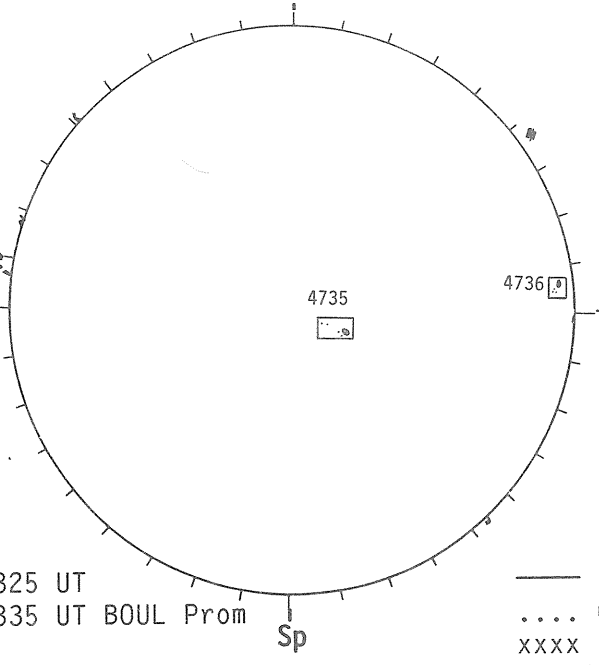
DeltaY=13.0
DeltaX= 9.6



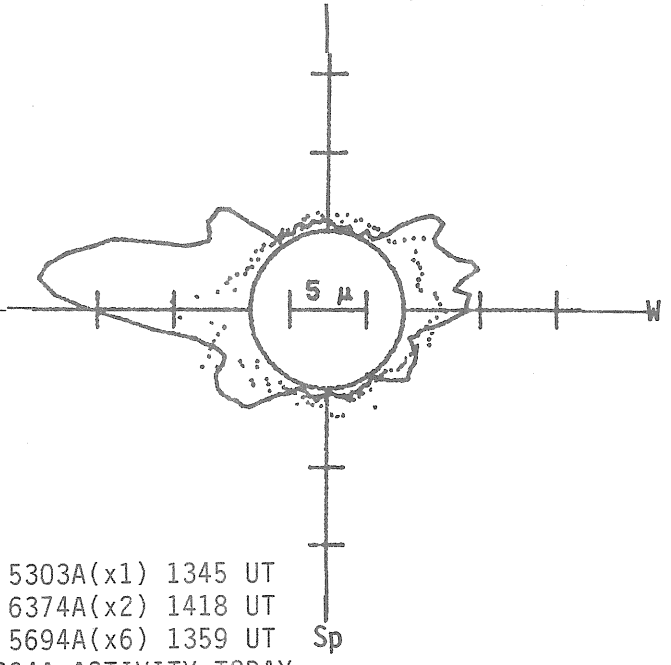
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

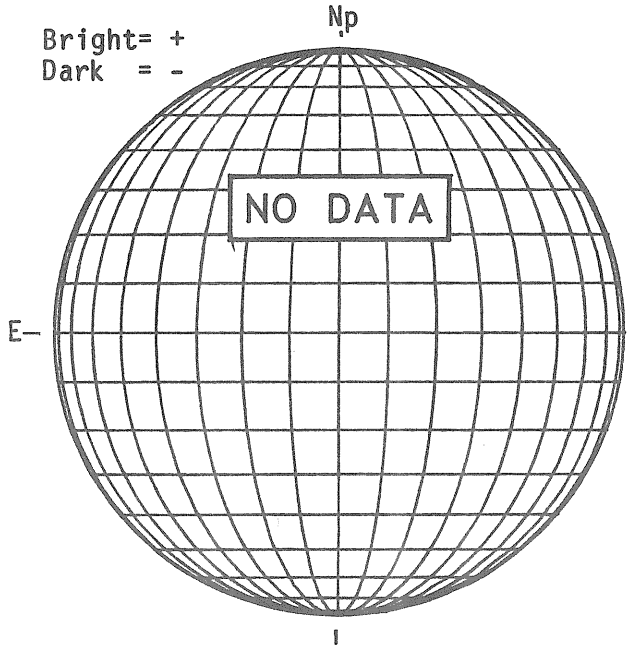


—— 5303A(x1) 1345 UT
.... 6374A(x2) 1418 UT
xxxx 5694A(x6) 1359 UT
NO 5694A ACTIVITY TODAY

J U L Y 13, 1 9 8 6 (P= 2.66, B_0= 4.03, L_0= 146.02)

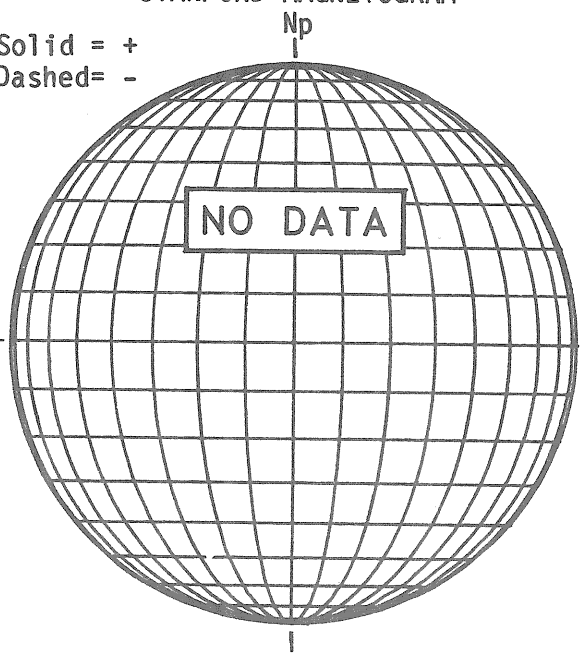
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

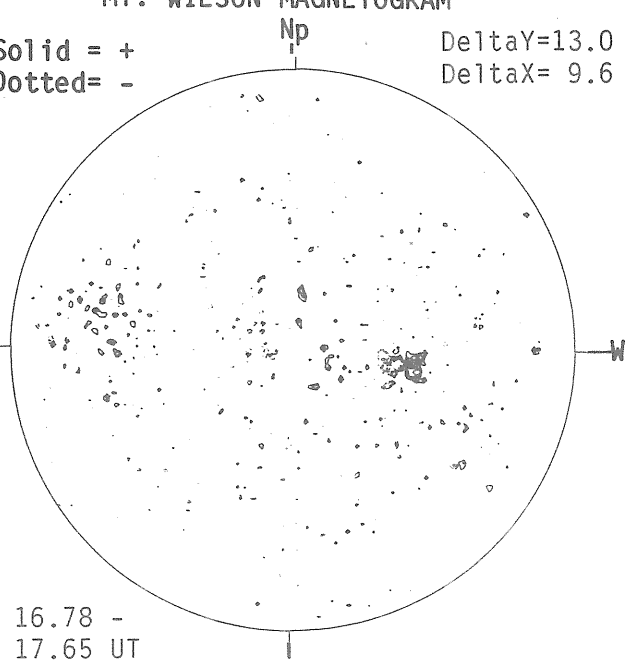
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

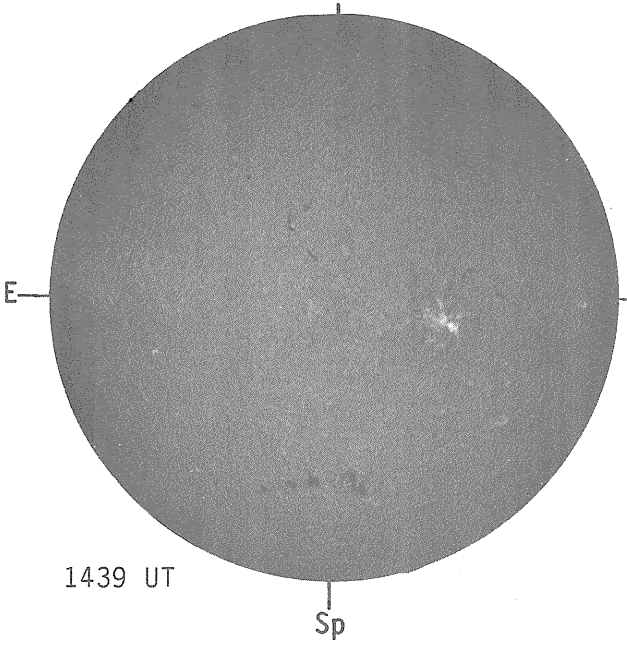
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



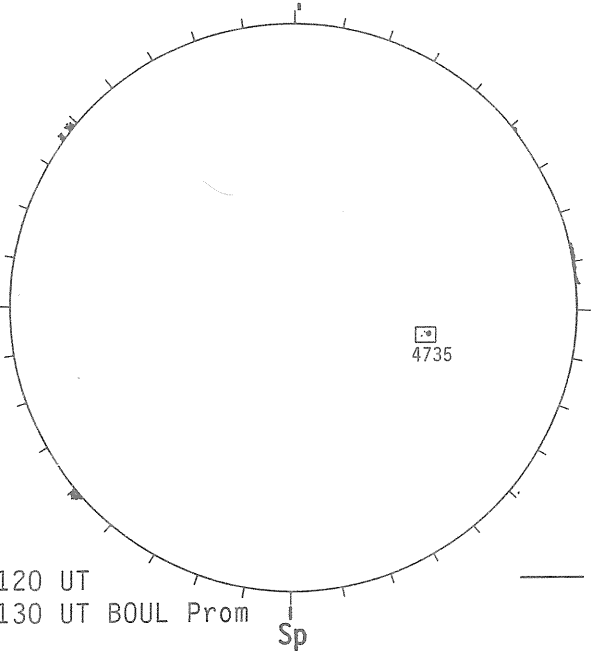
16.78 -
17.65 UT

SACRAMENTO PEAK H-ALPHA



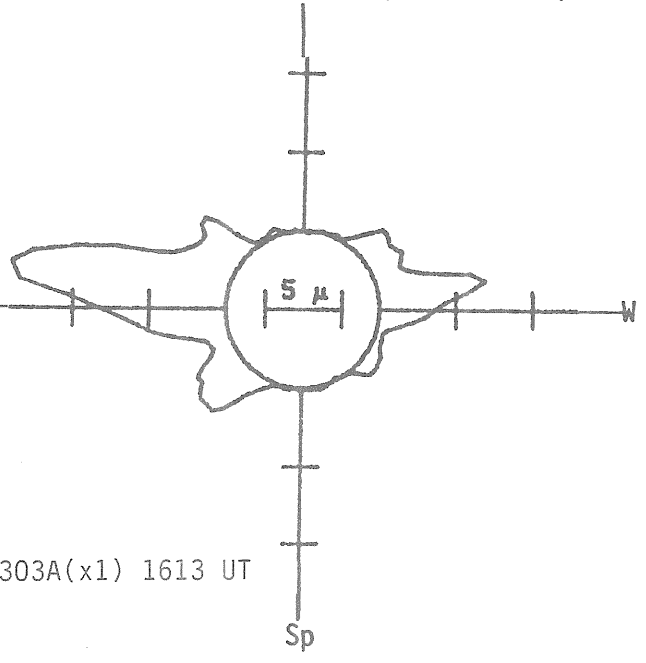
1439 UT

BOULDER SUNSPOTS



2120 UT
2130 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



5303A(x1) 1613 UT

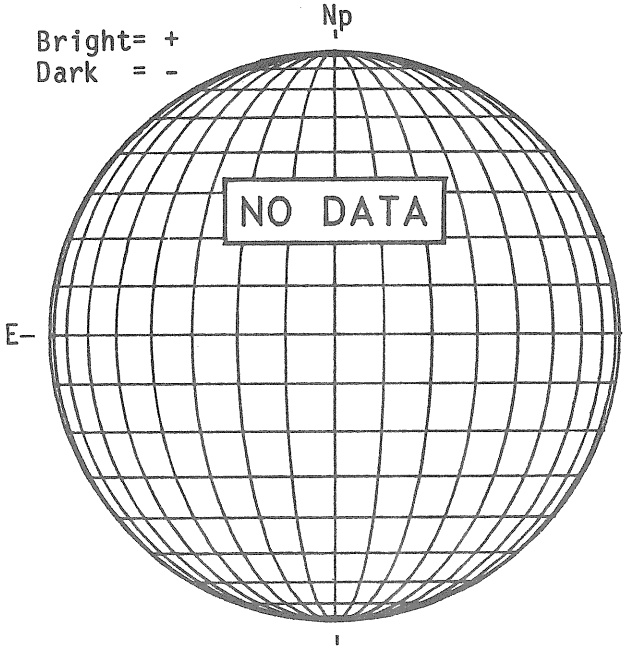
37
Jul 86

J U L Y 14, 1 9 8 6 (P= 3.11, B_0= 4.13, L_0= 132.79)

Jul 86 38

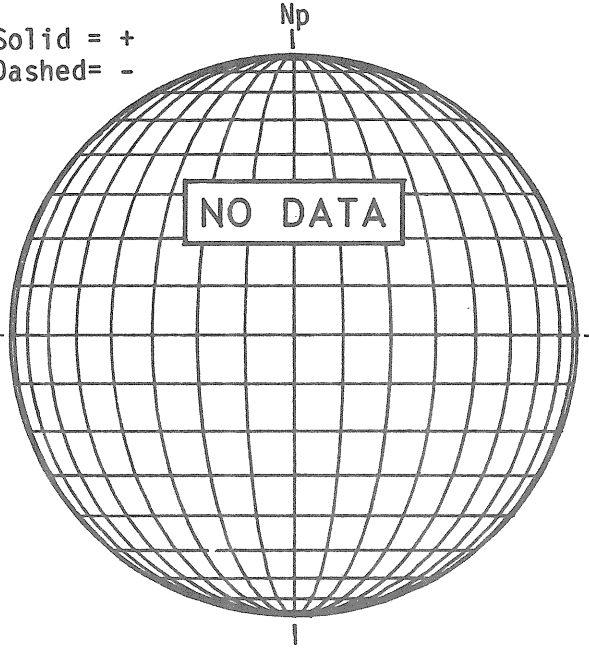
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

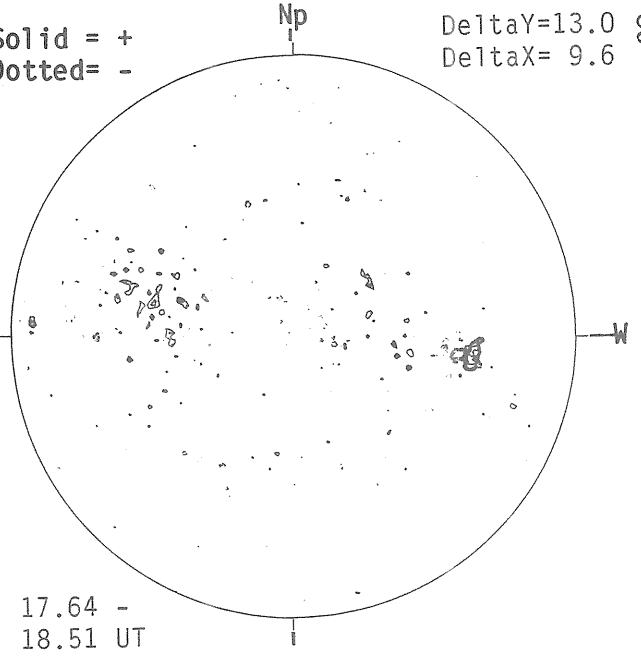
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

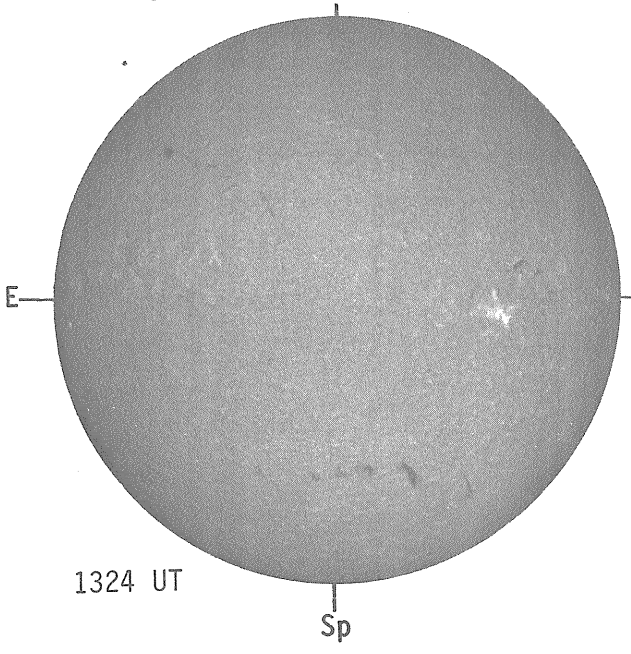
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



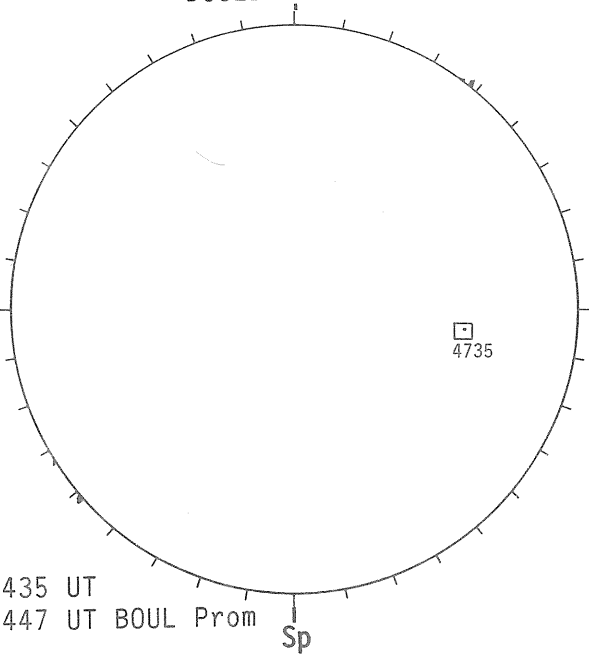
17.64 -
18.51 UT

SACRAMENTO PEAK H-ALPHA



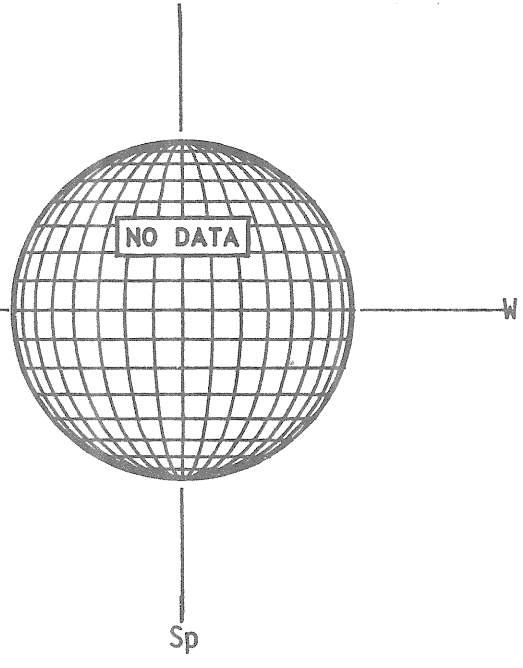
1324 UT

BOULDER SUNSPOTS



1435 UT
1447 UT BOUL Prom

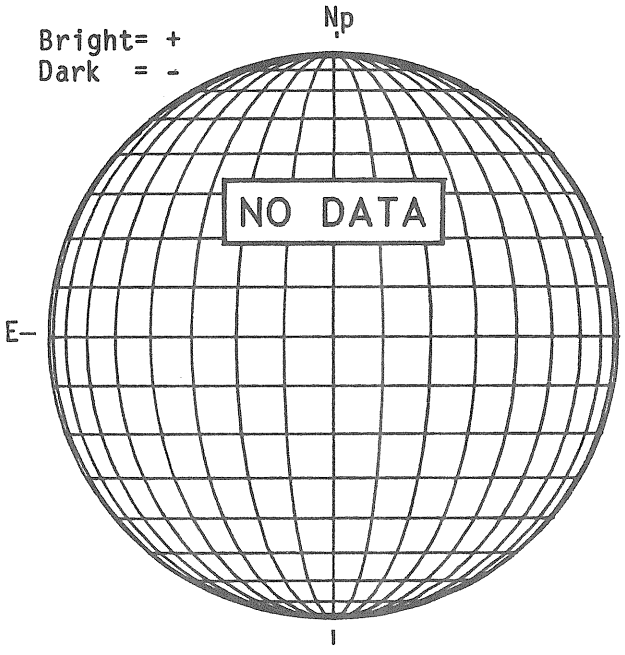
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 15, 1 9 8 6 (P= 3.55, B_o= 4.23, L_o= 119.55)

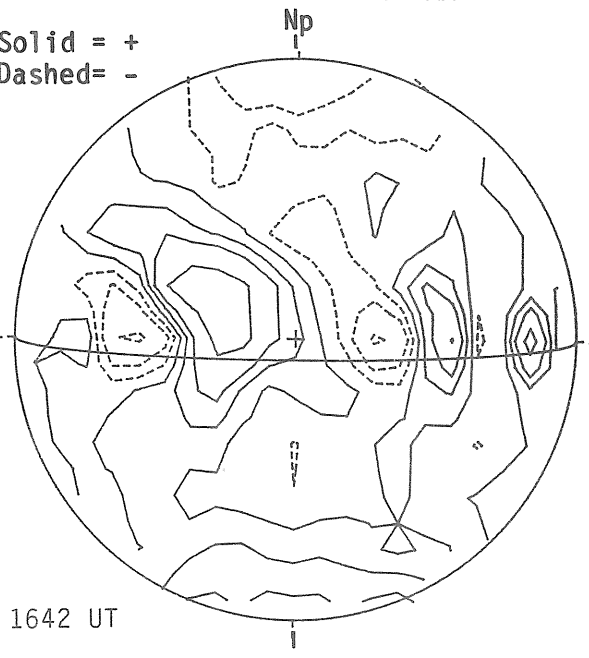
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

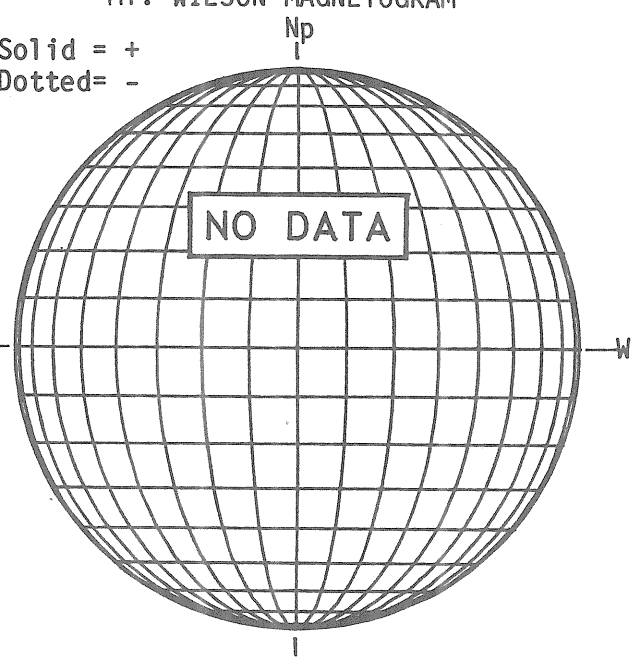
Solid = +
Dashed= -



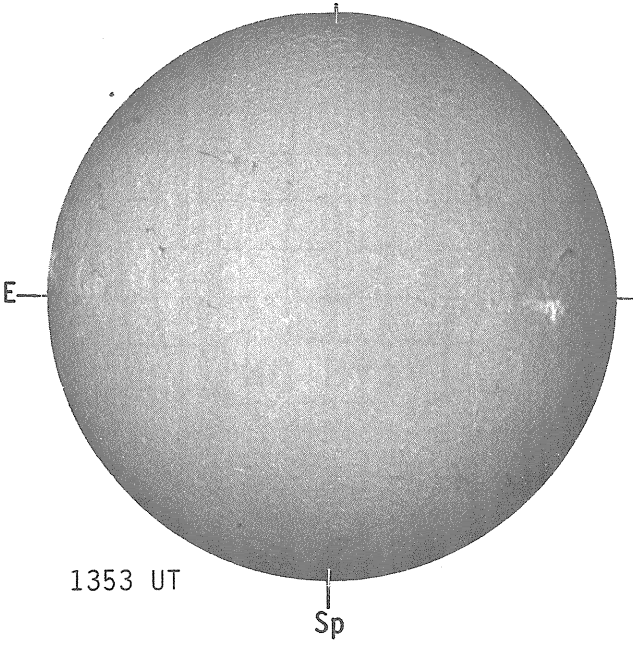
1642 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

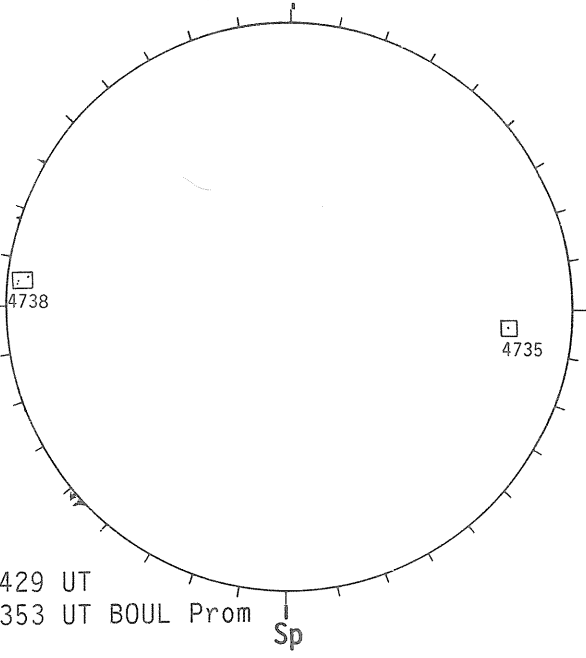


BOULDER H-ALPHA



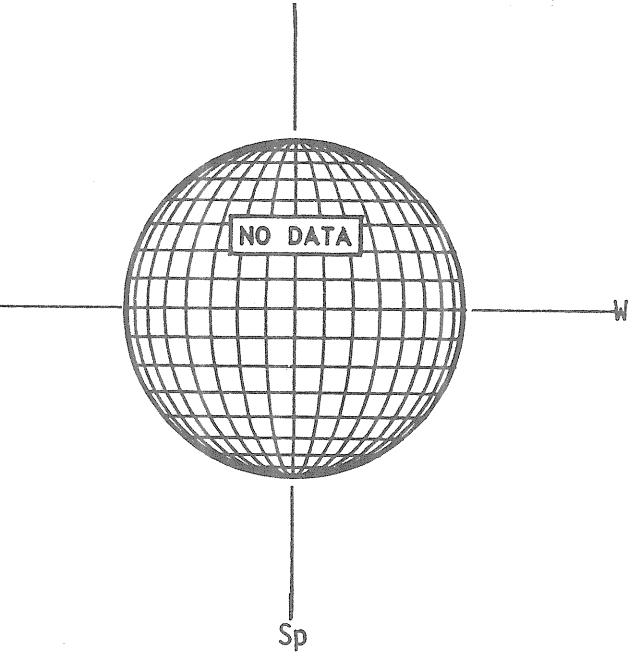
1353 UT

BOULDER SUNSPOTS



1429 UT
1353 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

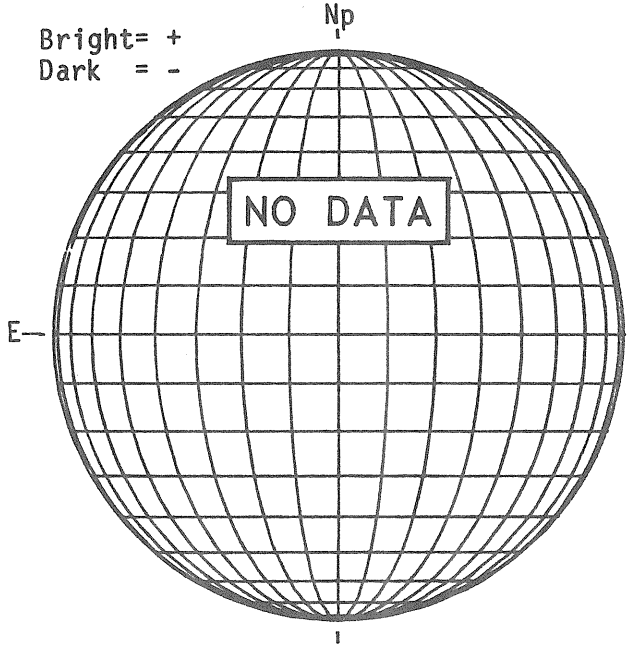


J U L Y 16, 1 9 8 6 (P= 3.99, B_0= 4.32, L_0= 106.32)

Jul 86 40

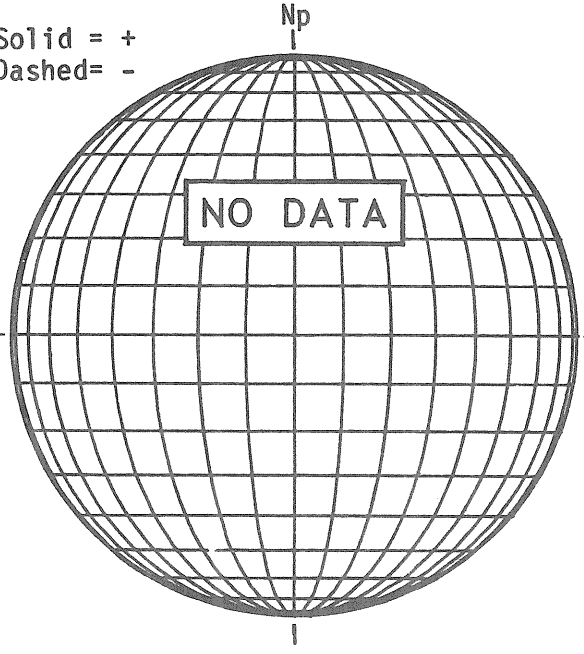
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

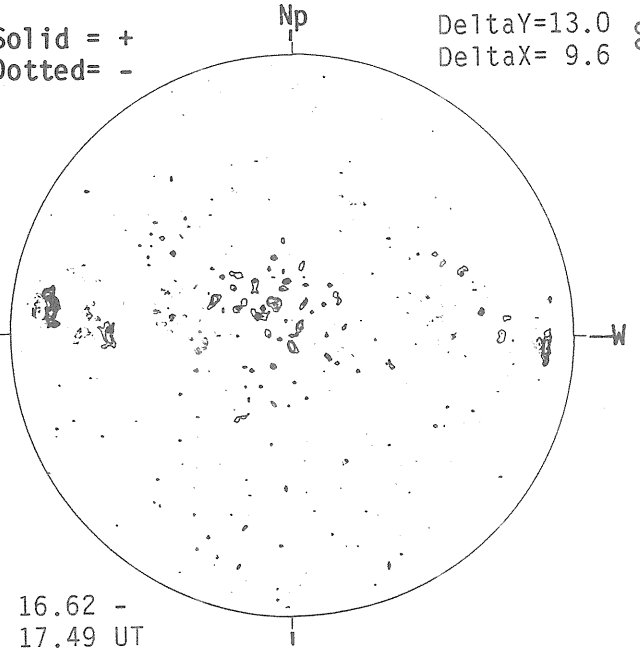
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

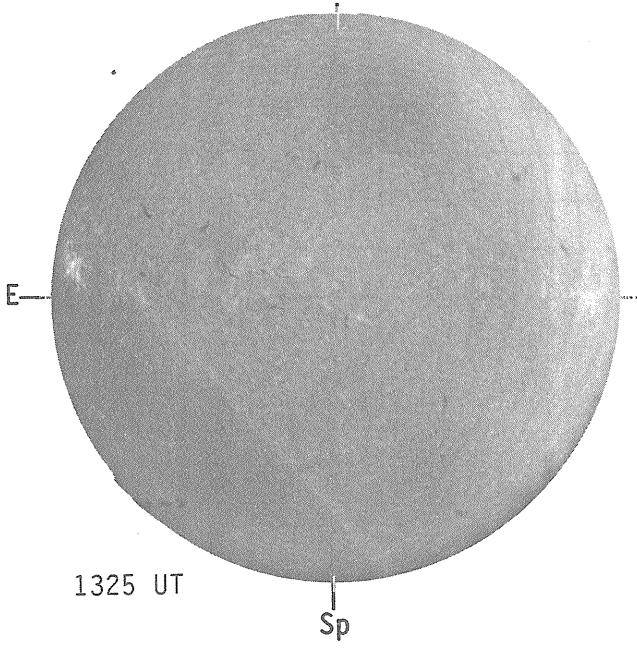
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



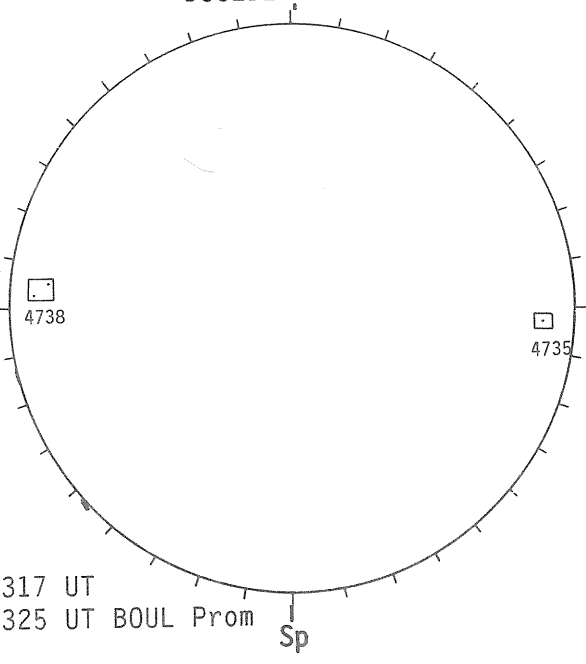
16.62 -
17.49 UT

BOULDER H-ALPHA



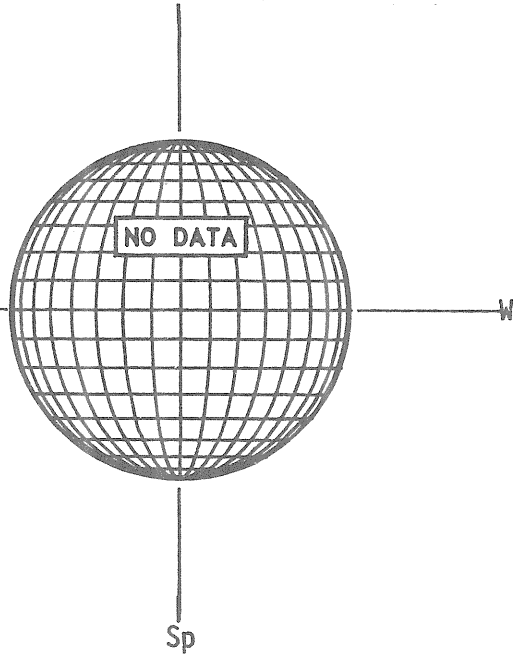
1325 UT

BOULDER SUNSPOTS



1317 UT
1325 UT BOUL Prom

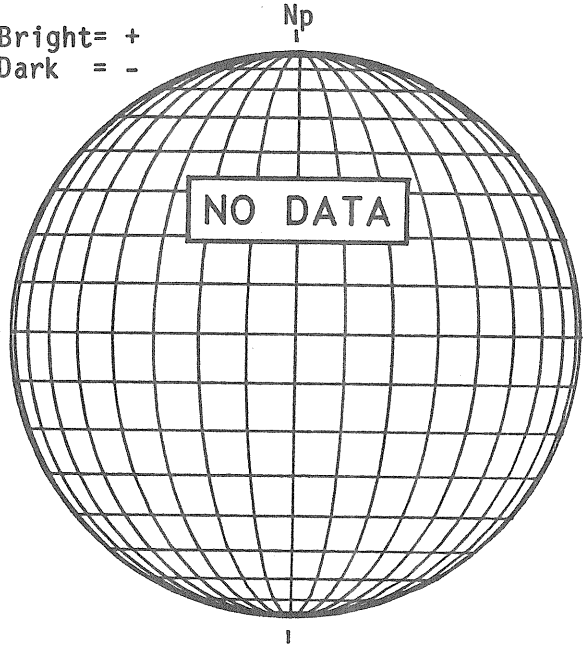
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 17, 1 9 8 6 (P= 4.43, B_0= 4.42, L_0= 93.09)

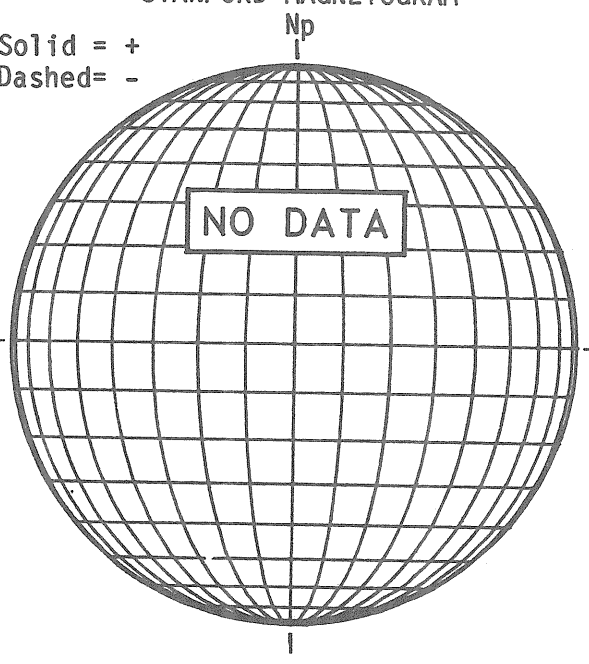
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



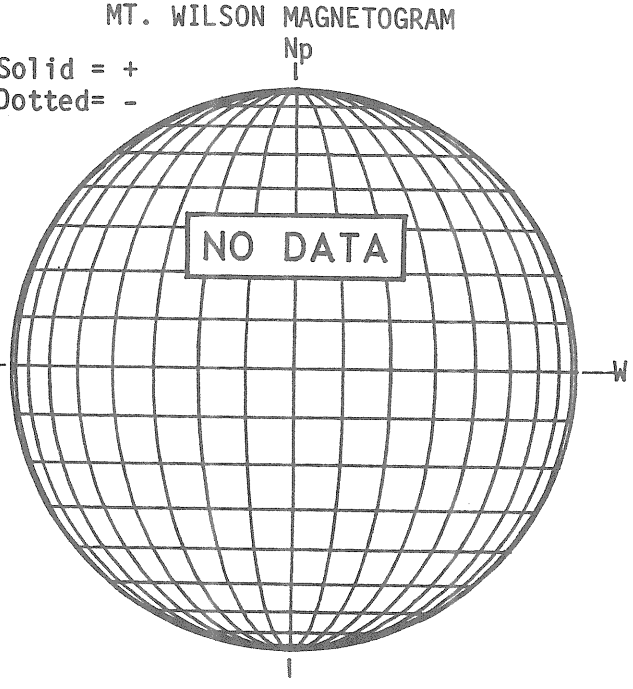
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

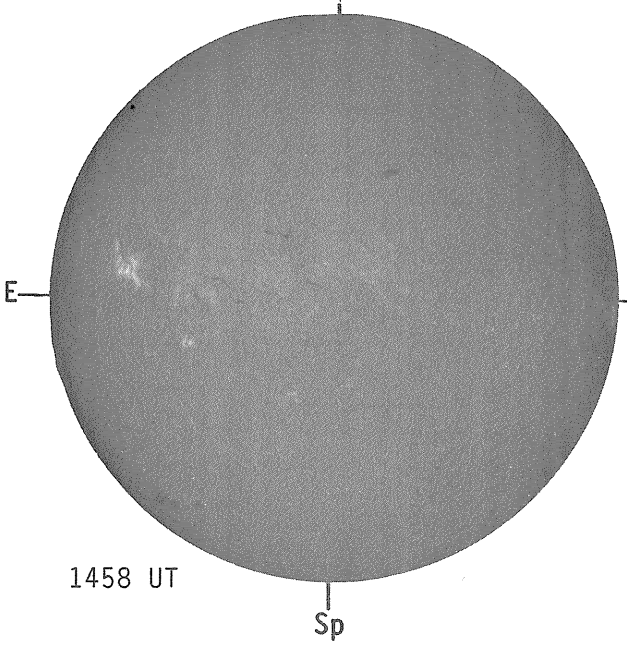


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

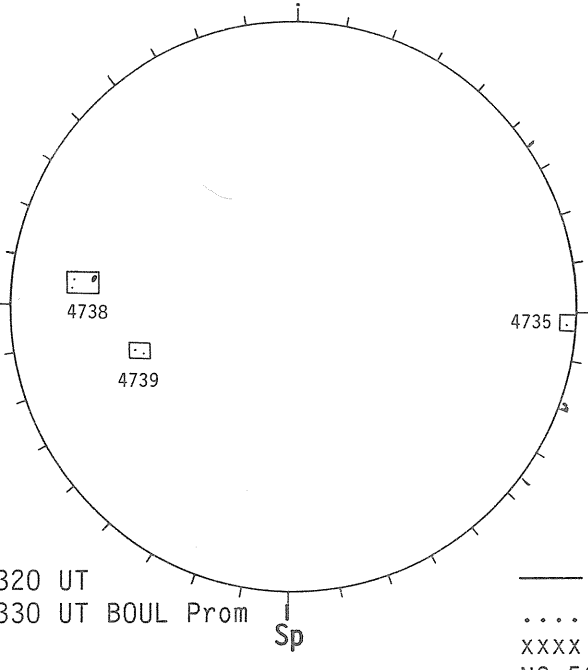


SACRAMENTO PEAK H-ALPHA



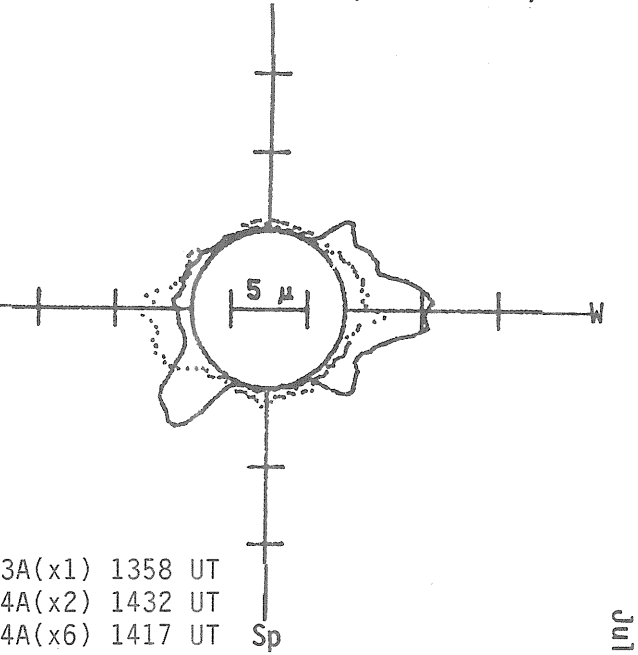
1458 UT

BOULDER SUNSPOTS



1320 UT
1330 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A(x1) 1358 UT
.... 6374A(x2) 1432 UT
xxxx 5694A(x6) 1417 UT
NO 5694A ACTIVITY TODAY

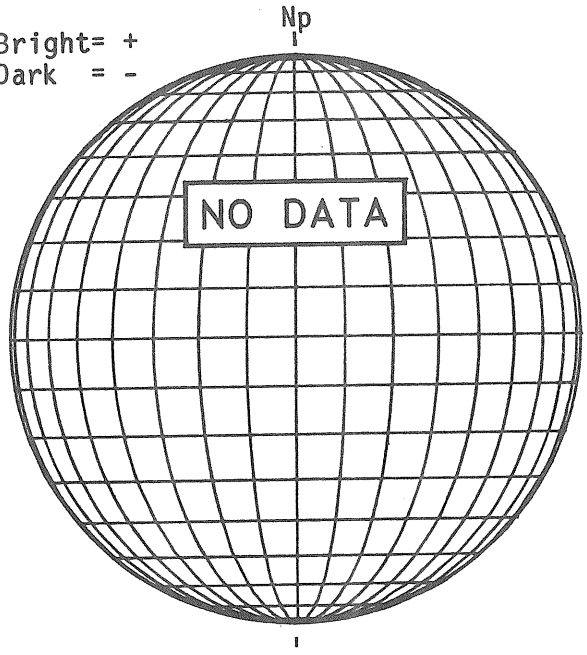
41
Jul 86

JULY 18, 1986 (P= 4.87, B_0= 4.51, L_0= 79.86)

42 Jul 86

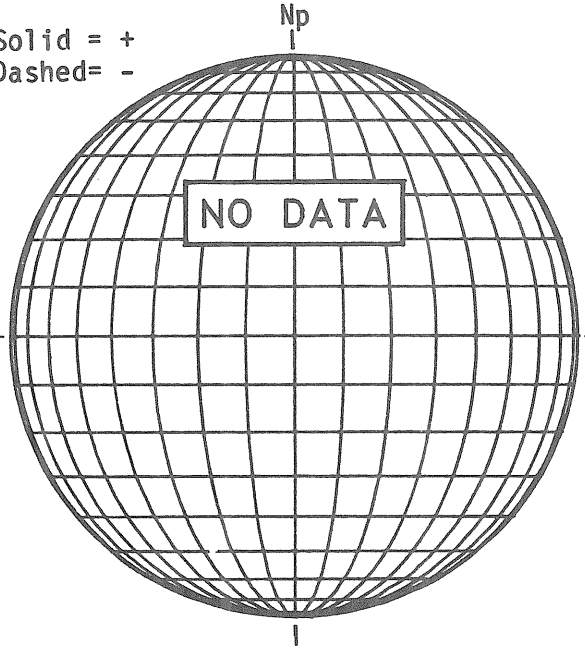
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

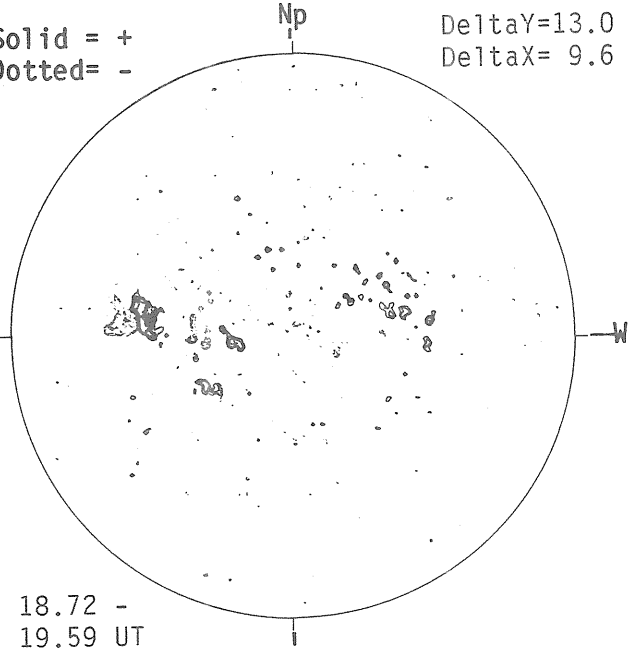
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

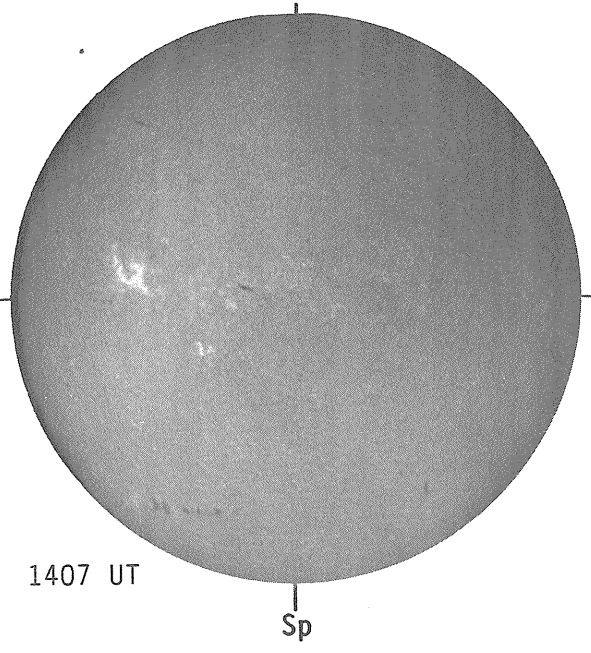
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



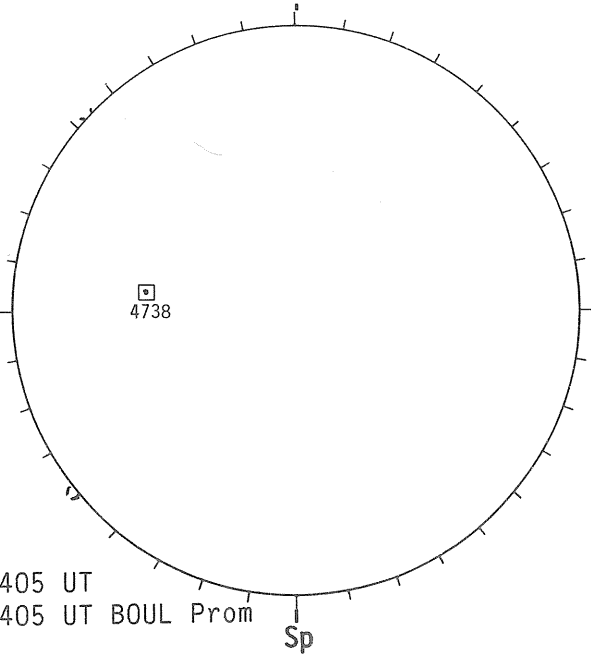
18.72 -
19.59 UT

SACRAMENTO PEAK H-ALPHA



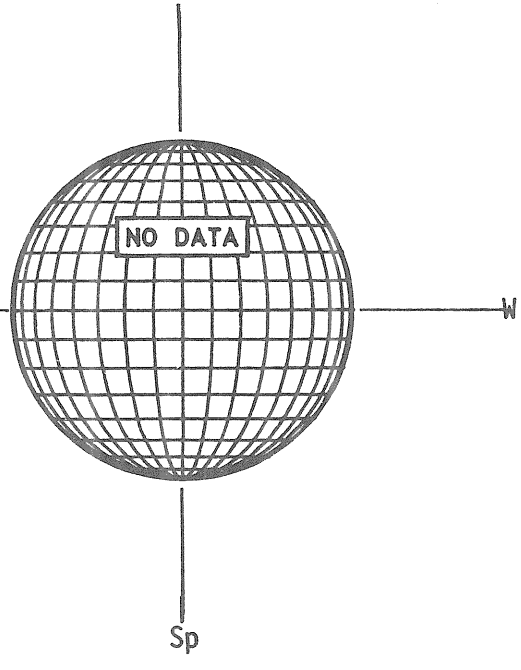
1407 UT

BOULDER SUNSPOTS



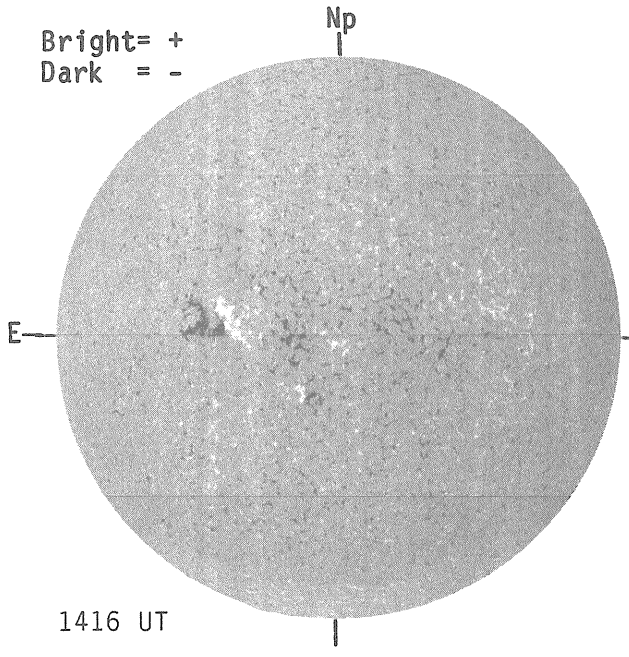
1405 UT
1405 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

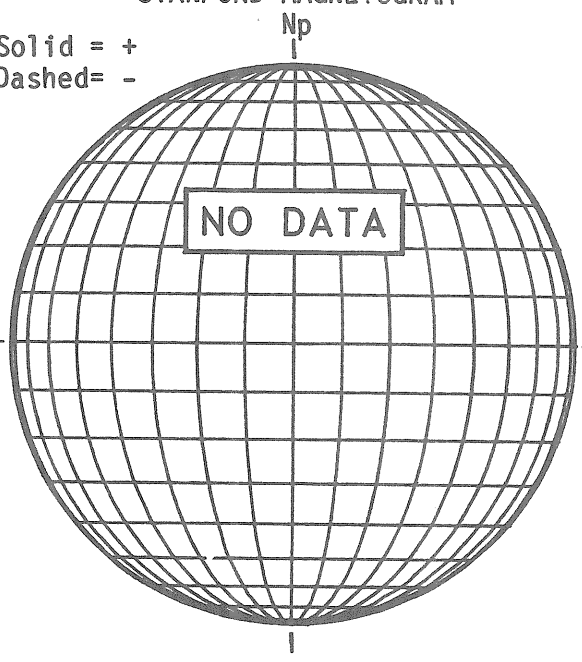


J U L Y 19, 1 9 8 6 (P= 5.31, B_0= 4.60, L_0= 66.62)

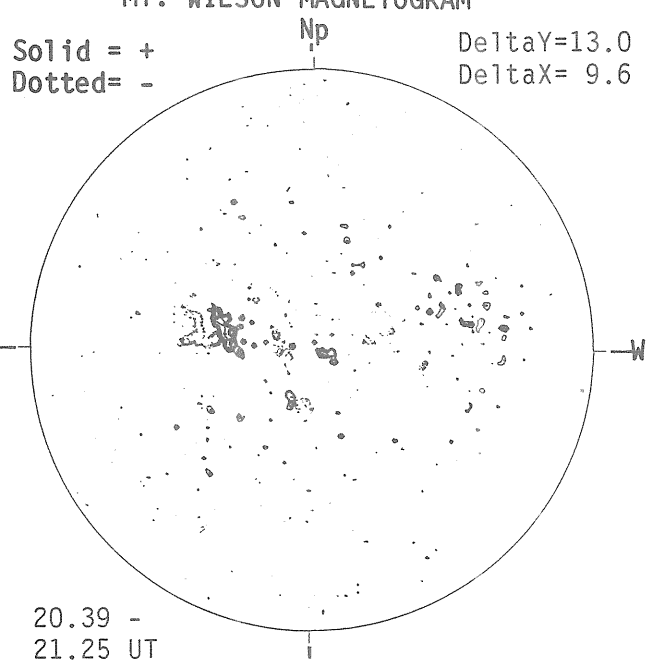
KITT PEAK MAGNETOGRAM



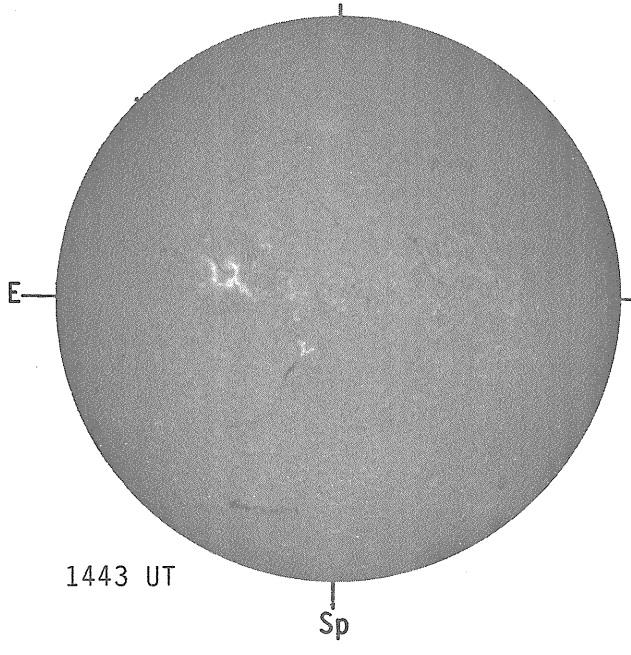
STANFORD MAGNETOGRAM



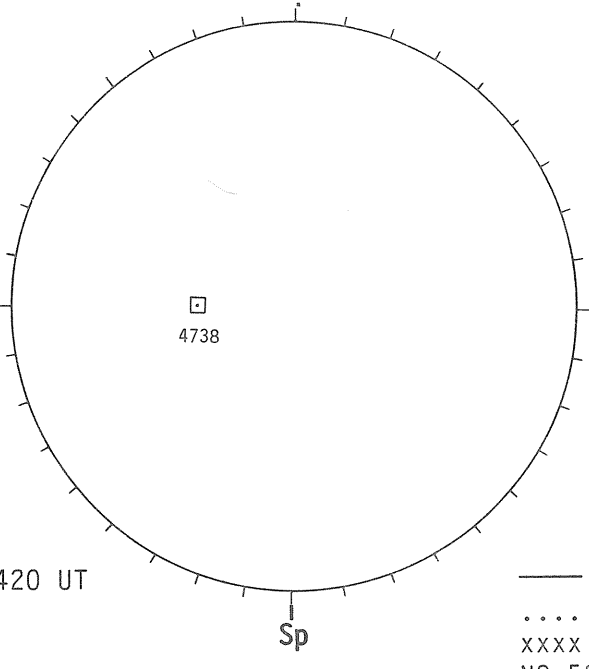
MT. WILSON MAGNETOGRAM



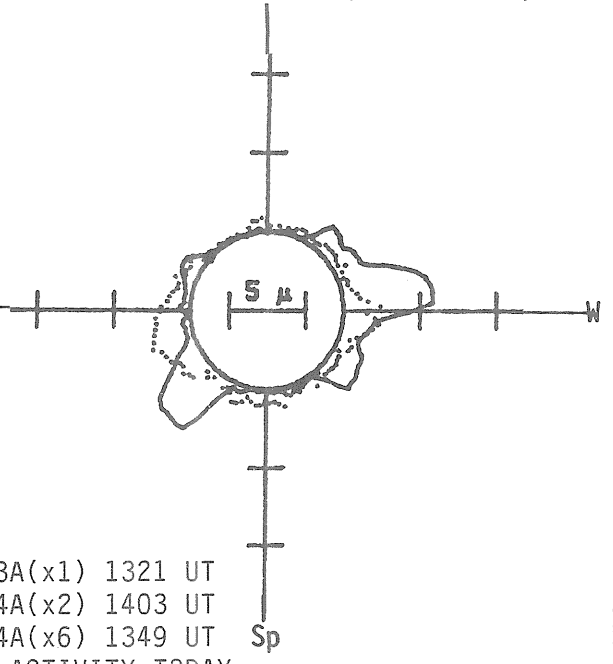
SACRAMENTO PEAK H-ALHPA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



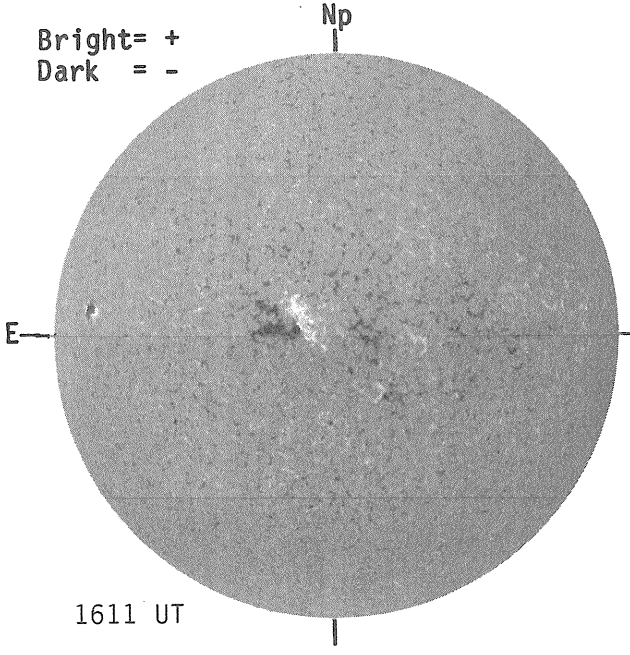
—— 5303A(x1) 1321 UT
.... 6374A(x2) 1403 UT
xxxx 5694A(x6) 1349 UT
NO 5694A ACTIVITY TODAY

43
Jul 86

J U L Y 20, 1 9 8 6 (P= 5.74, B_0= 4.69, L_0= 53.39)

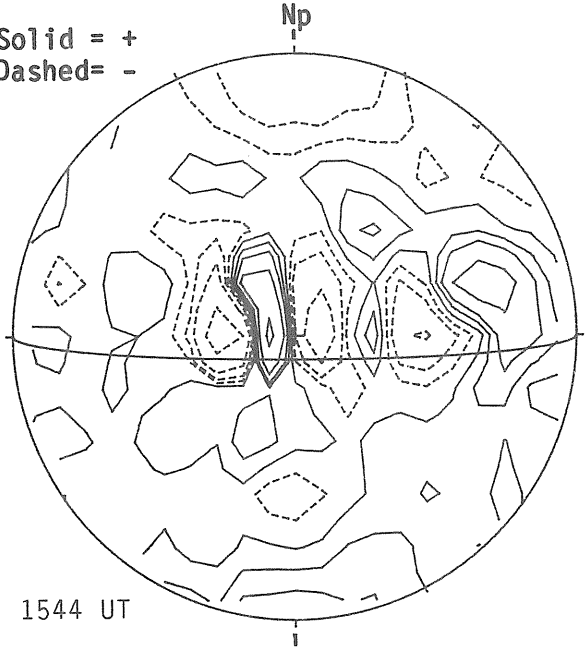
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

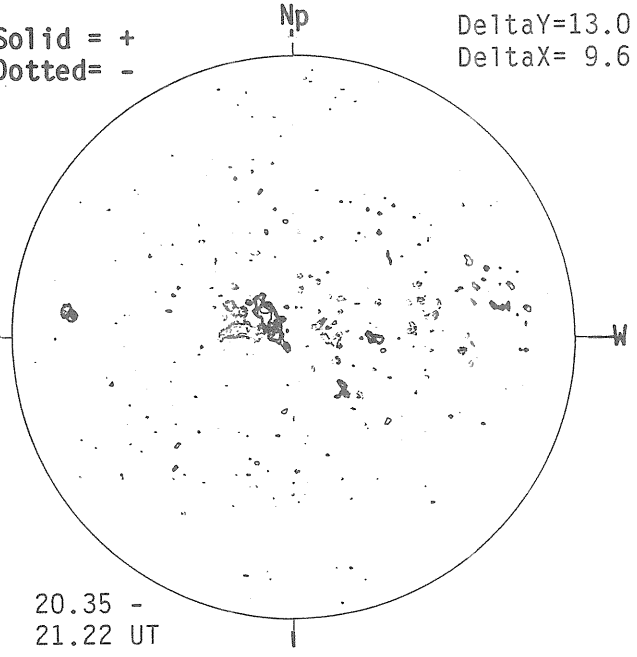
Solid = +
Dashed= -



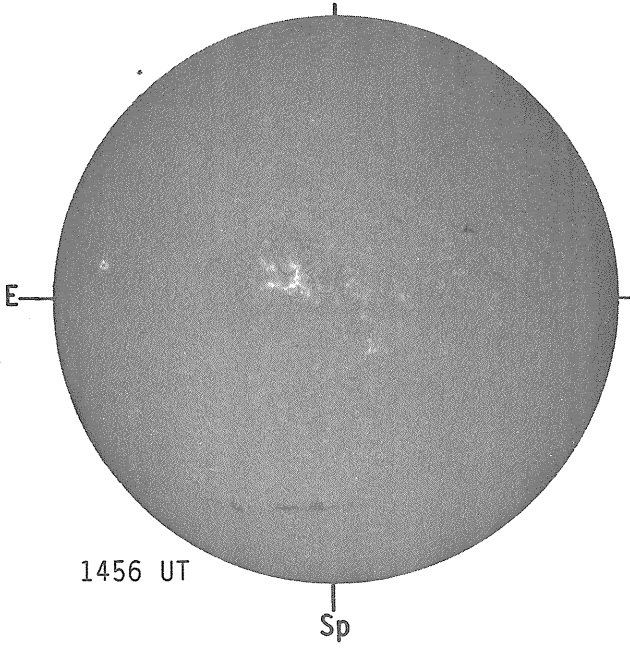
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

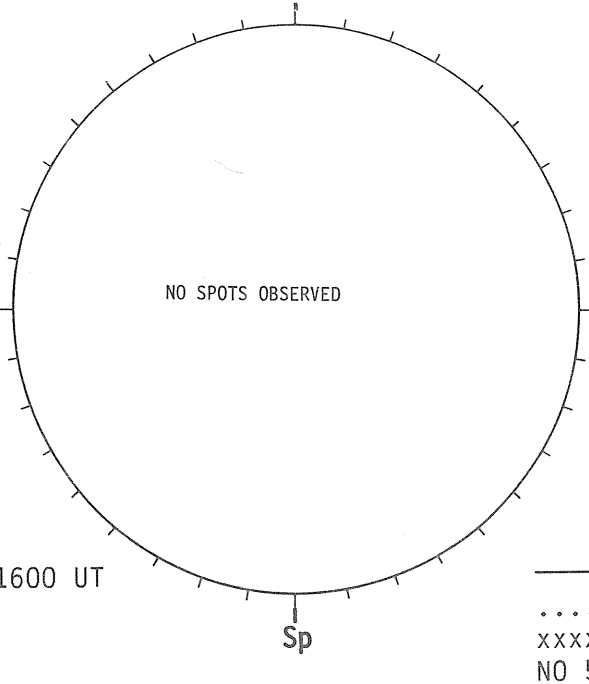
DeltaY=13.0
DeltaX= 9.6



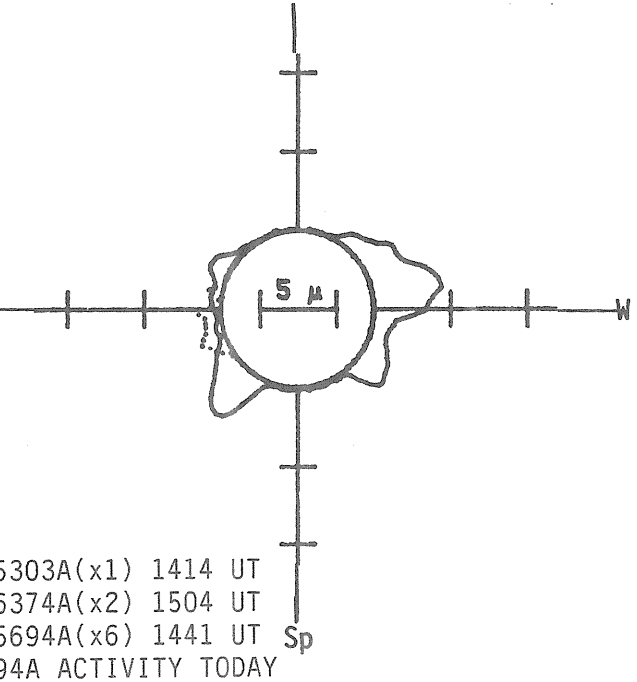
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

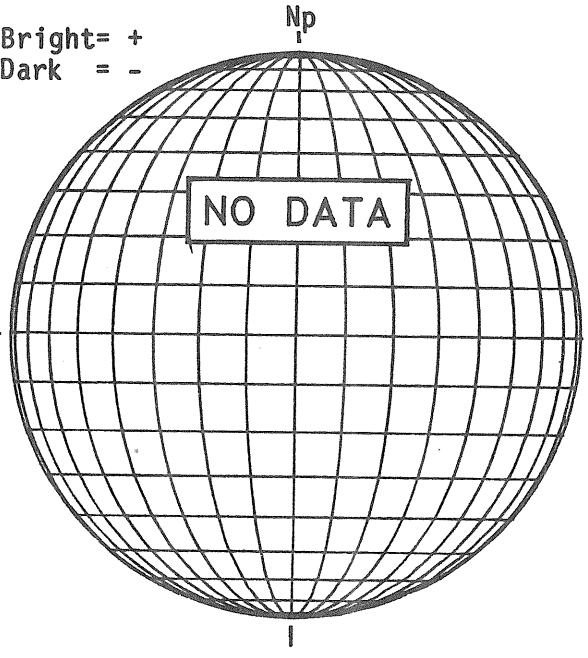


—— 5303A(x1) 1414 UT
.... 6374A(x2) 1504 UT
xxxx 5694A(x6) 1441 UT
NO 5694A ACTIVITY TODAY

J U L Y 21, 1 9 8 6 (P= 6.17, B_0= 4.78, L_0= 40.16)

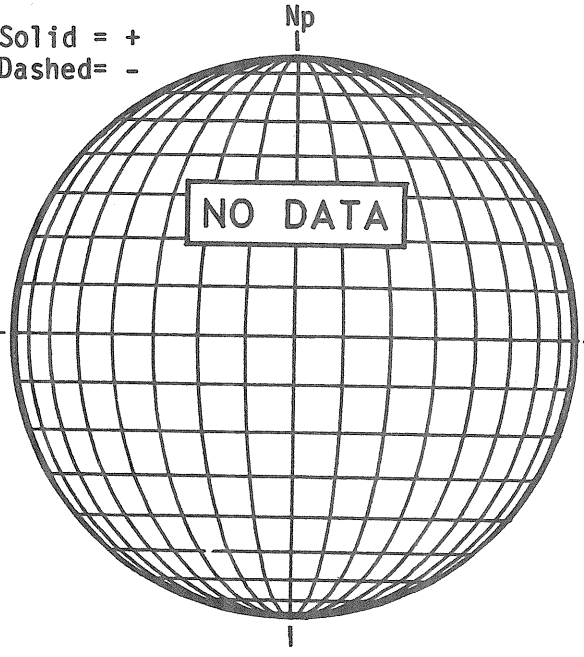
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

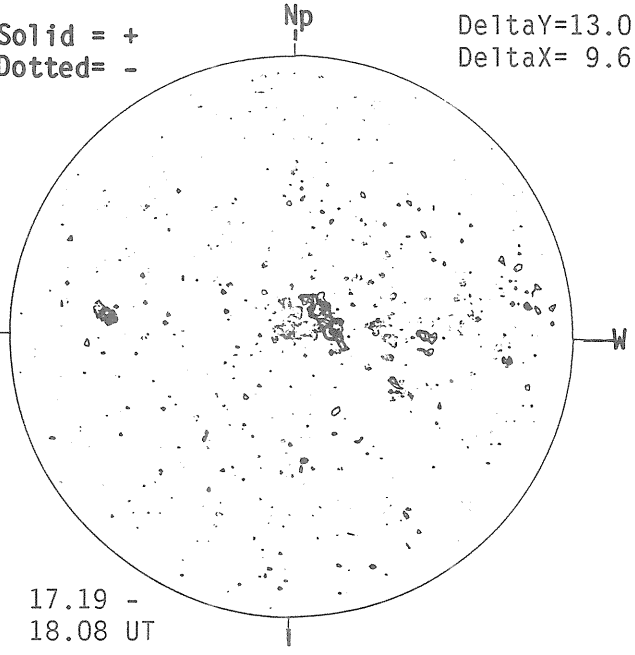
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

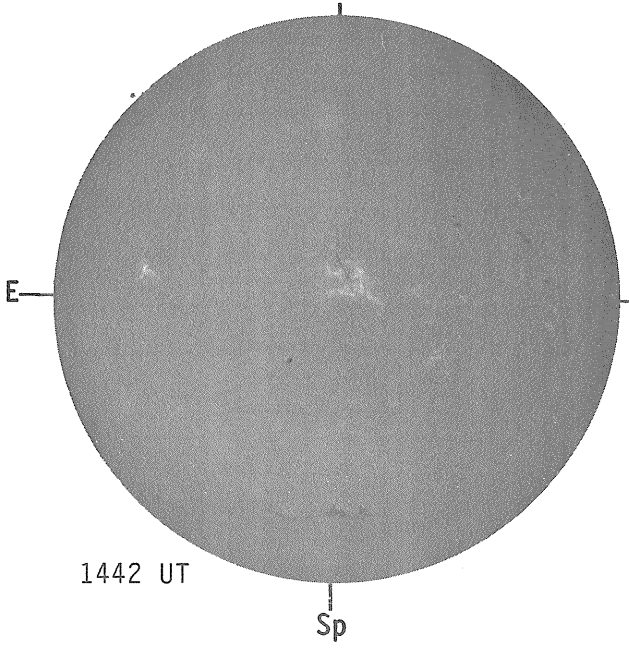
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



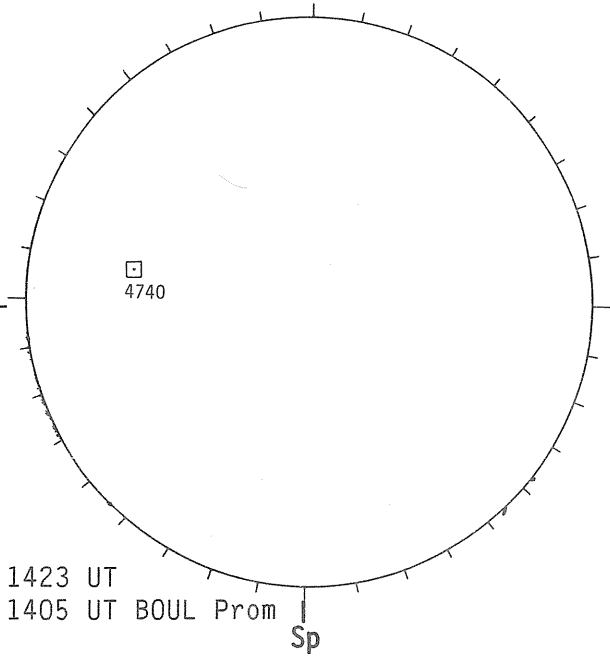
17.19 -
18.08 UT

SACRAMENTO PEAK H-ALPHA



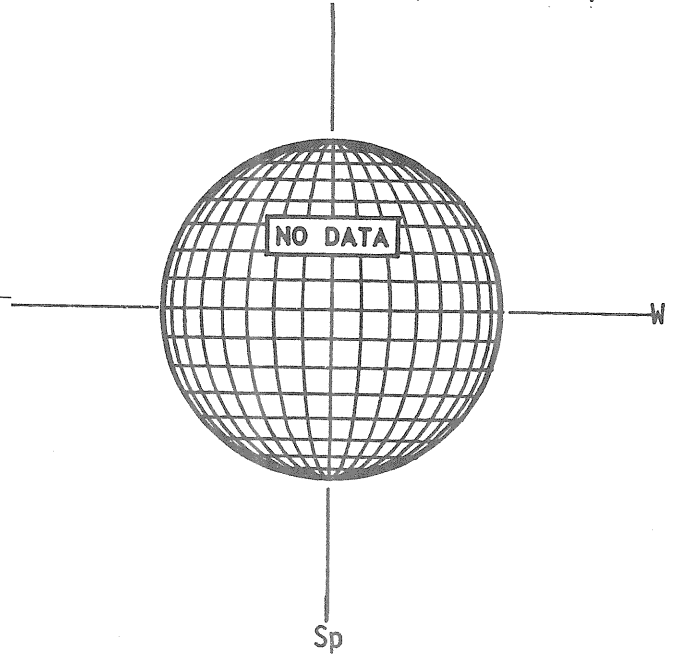
1442 UT

BOULDER SUNSPOTS



1423 UT
1405 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

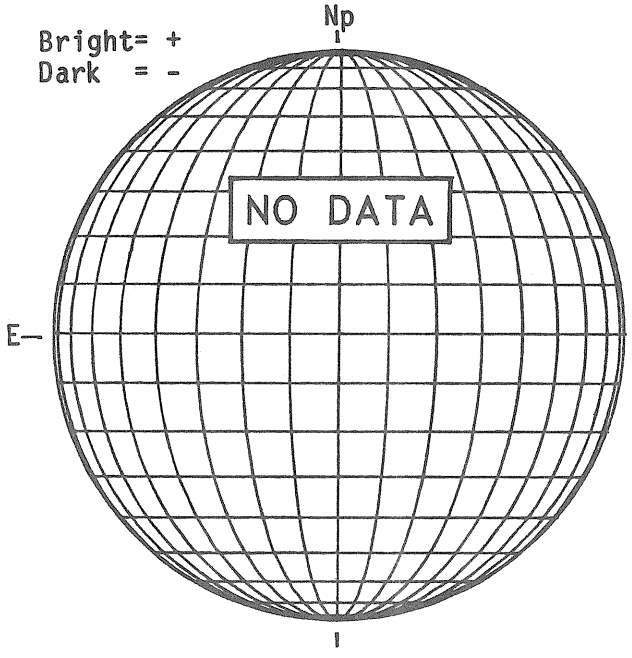


45
Jul 86

J U L Y 22, 1 9 8 6 (P= 6.60, B_0= 4.87, L_0= 26.93)

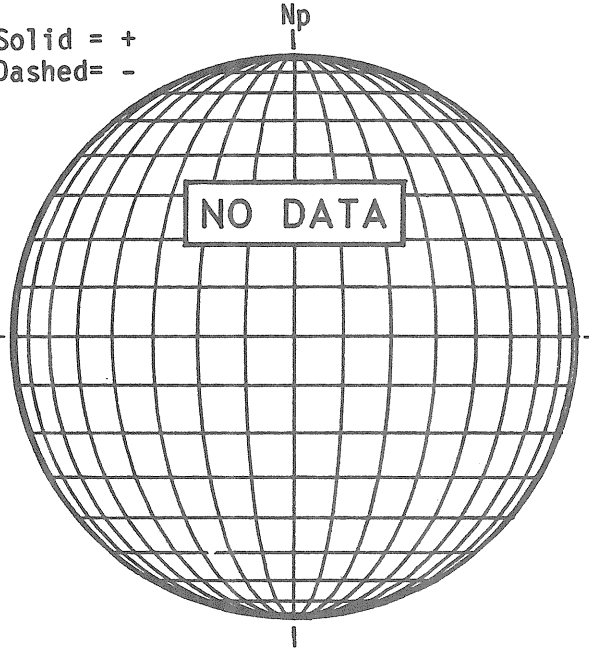
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

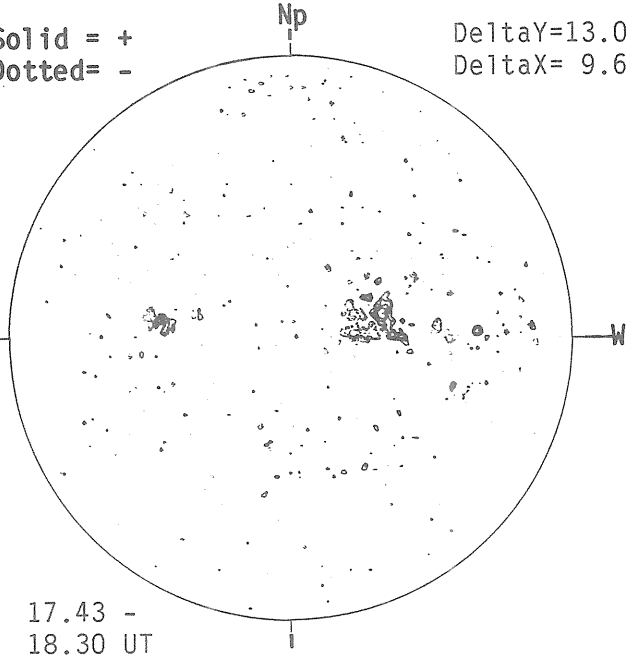
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

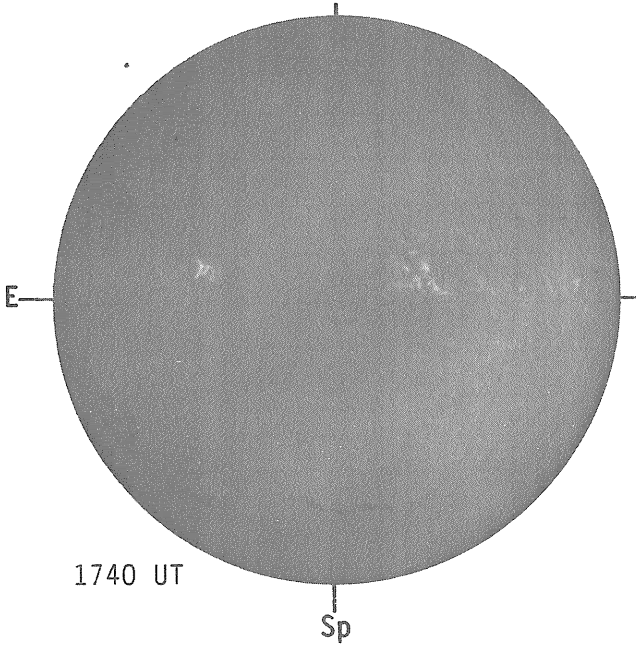
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



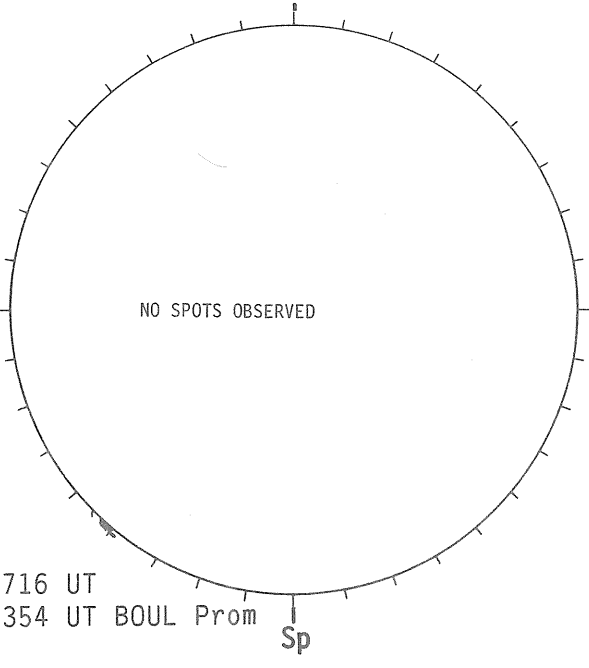
17.43 -
18.30 UT

SACRAMENTO PEAK H-ALPHA



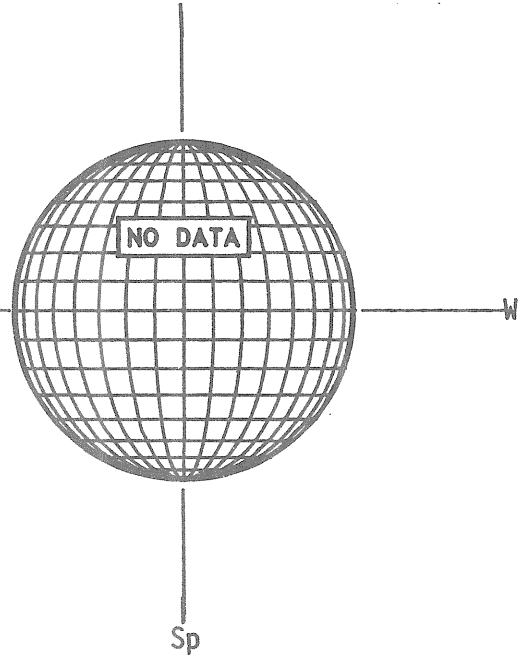
1740 UT

BOULDER SUNSPOTS



1716 UT
1354 UT BOUL Prom

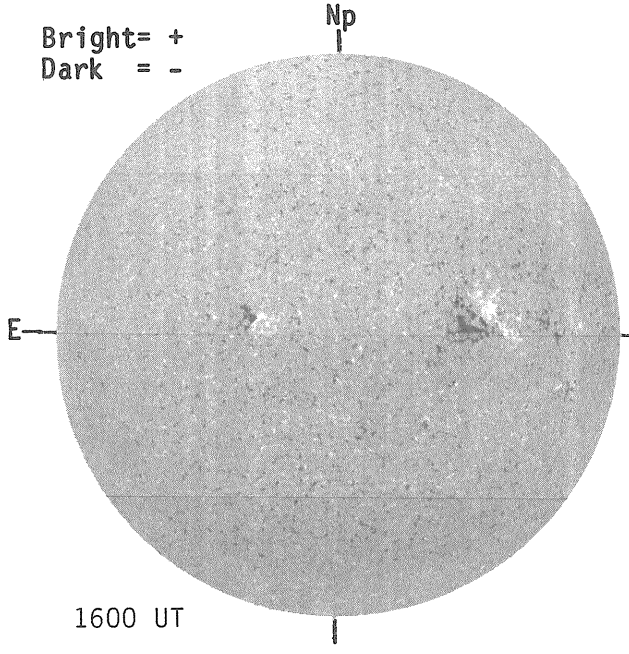
SACRAMENTO PEAK CORONA (1.15 Radii)



J U L Y 23, 1 9 8 6 (P= 7.03, B_o= 4.95, L_o= 13.70)

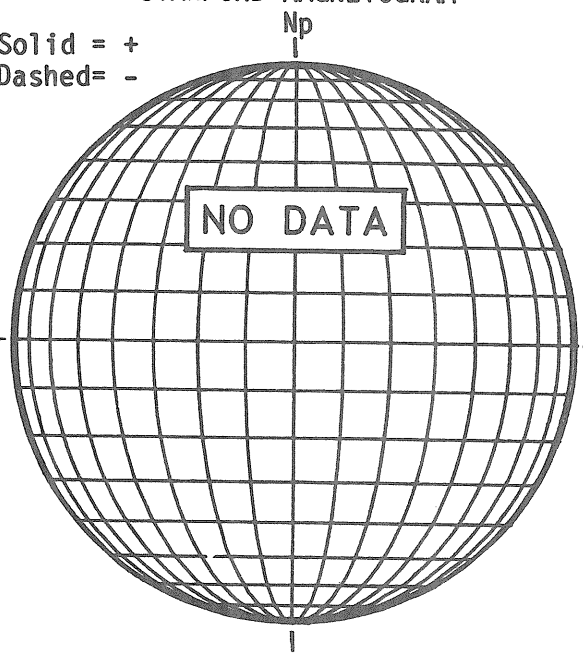
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



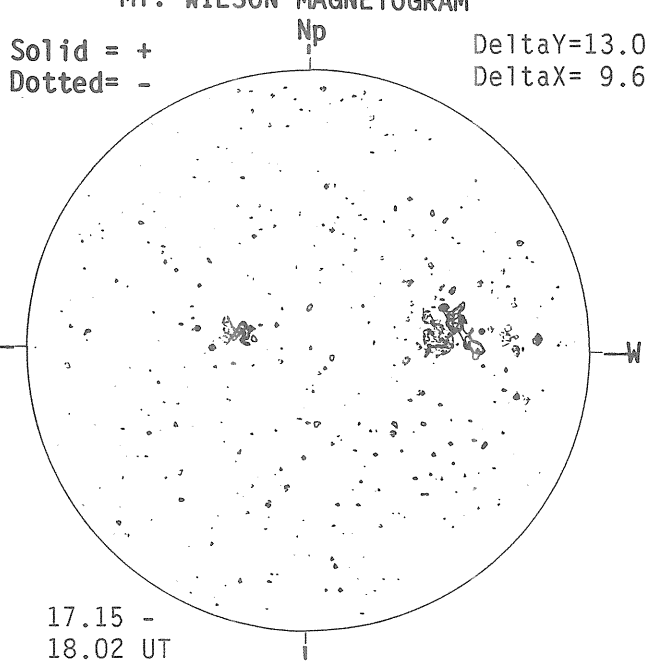
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

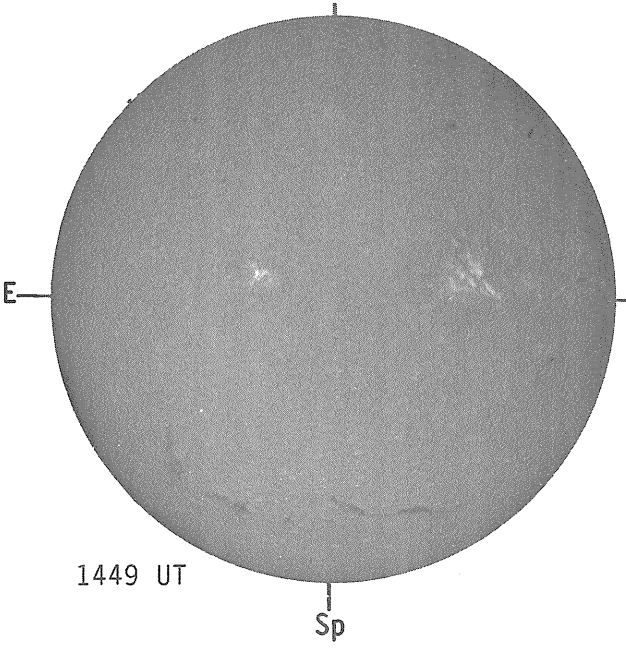


MT. WILSON MAGNETOGRAM

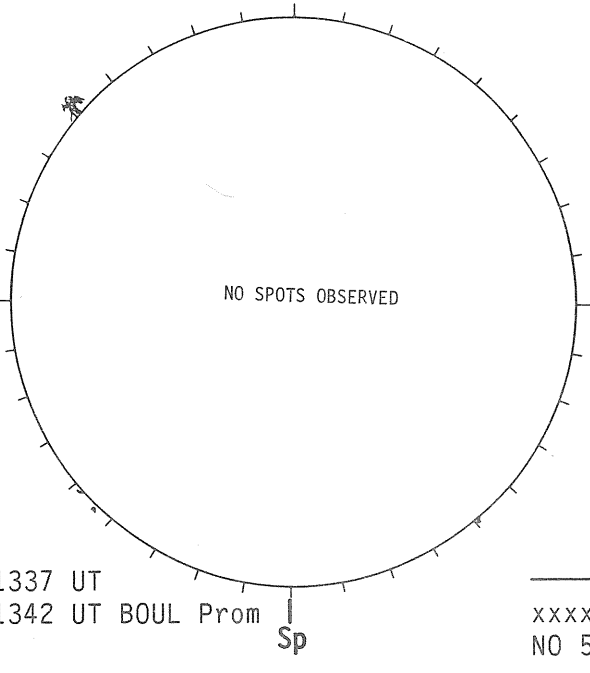
Solid = +
Dotted= -



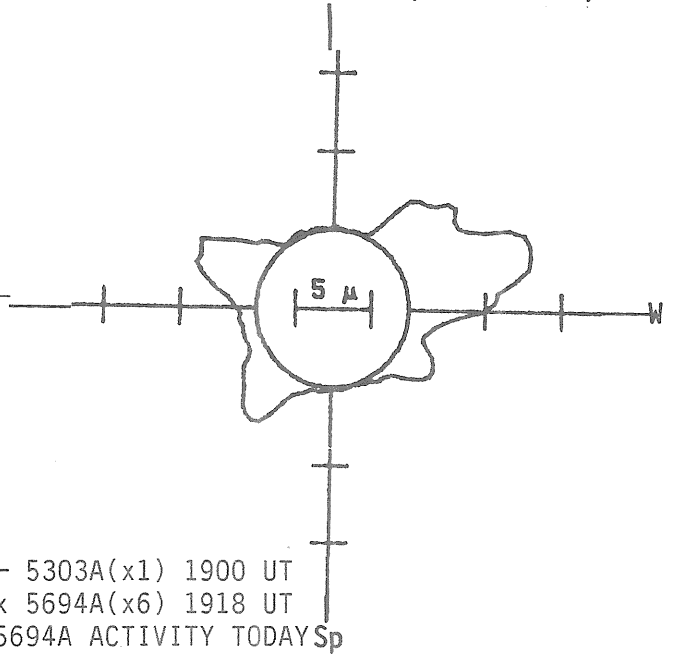
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A(x1) 1900 UT
xxxx 5694A(x6) 1918 UT
NO 5694A ACTIVITY TODAY

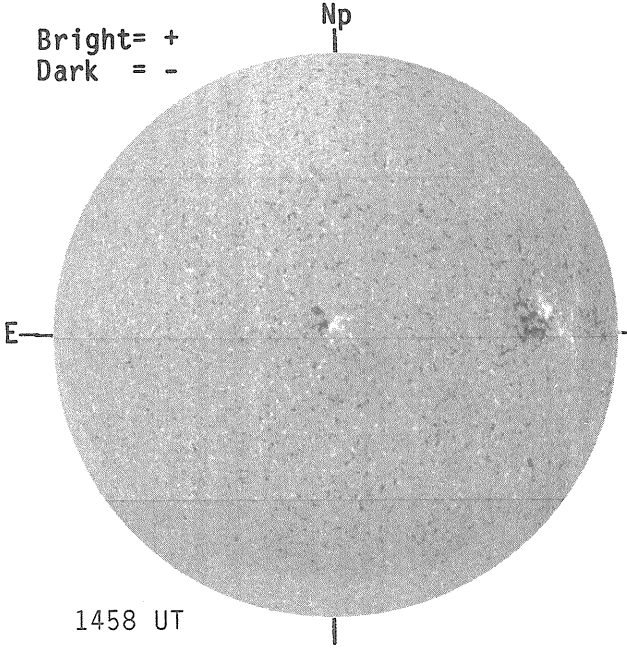
47
Jul 86

J U L Y 24, 1 9 8 6 (P= 7.45, B_o= 5.04, L_o= 0.47)

Jul 86 48

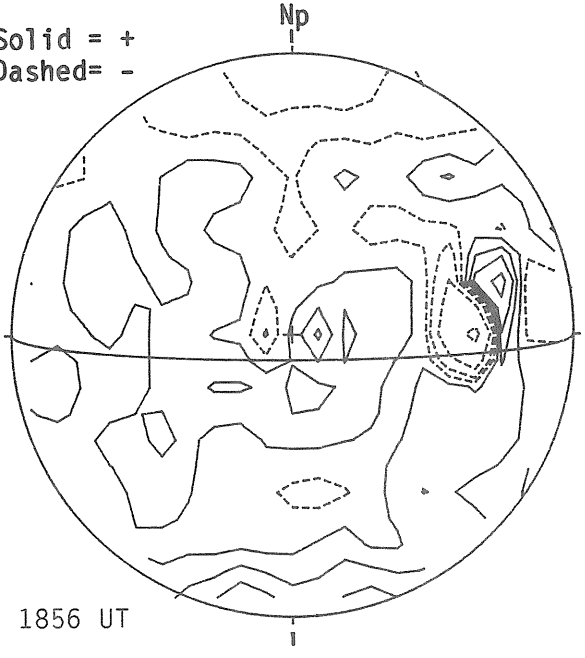
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



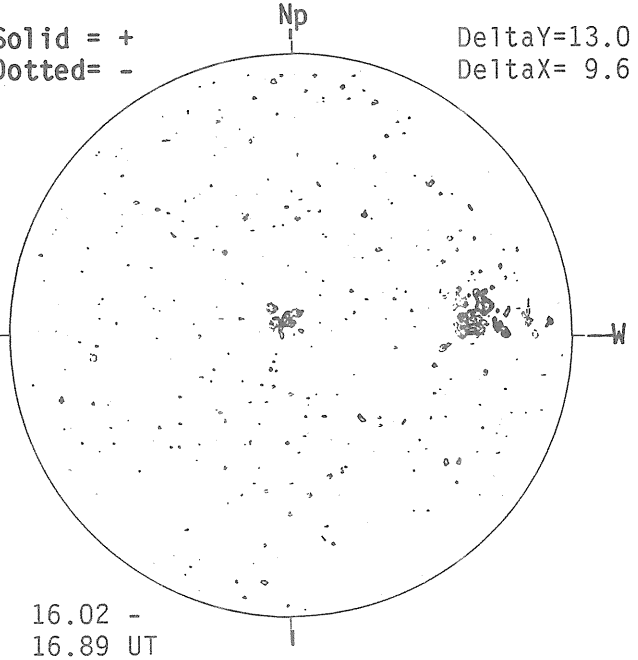
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

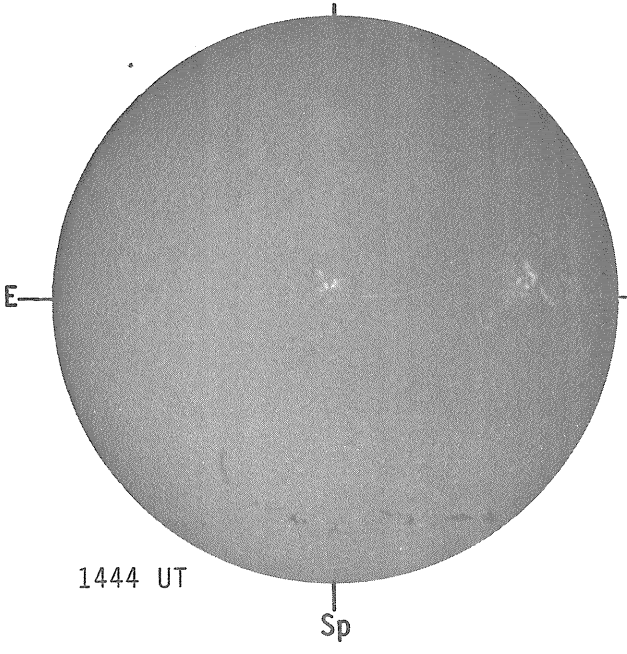


MT. WILSON MAGNETOGRAM

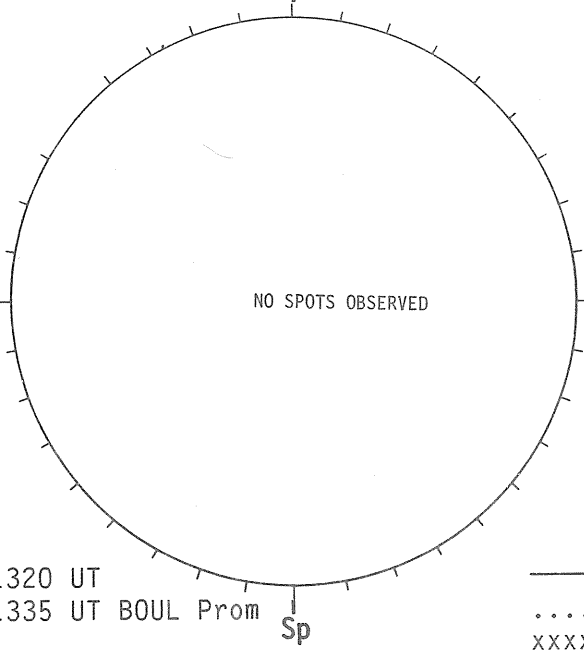
Solid = +
Dotted= -
DeltaY=13.0
DeltaX= 9.6



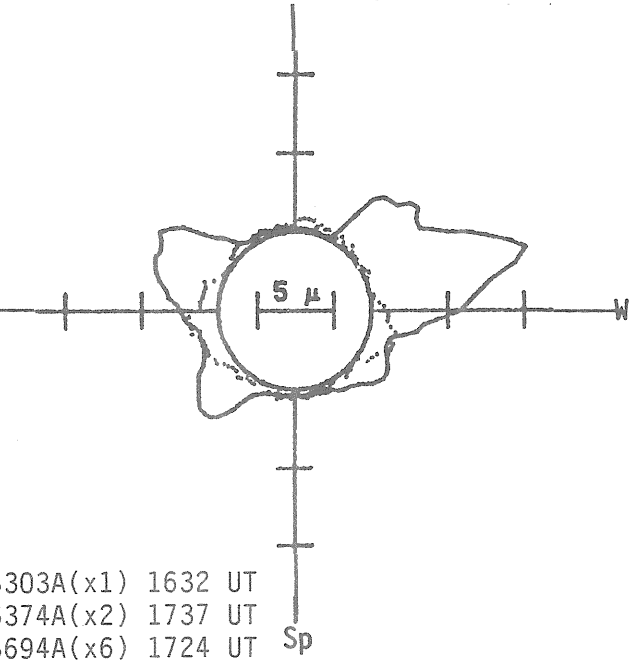
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

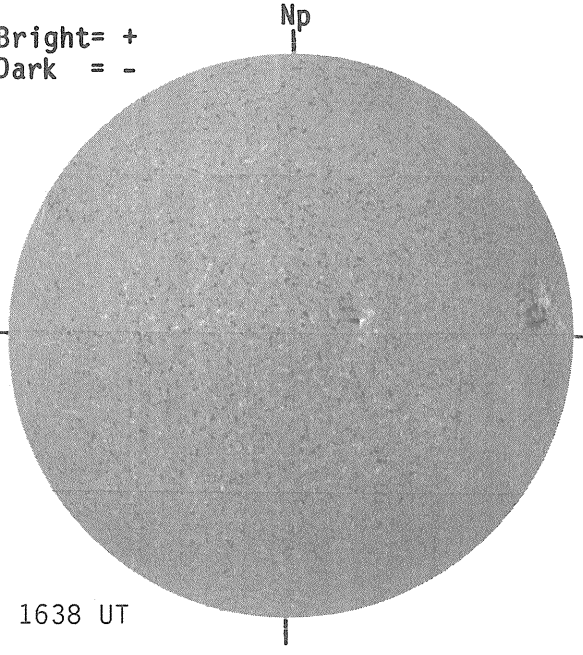


—— 5303A(x1) 1632 UT
.... 6374A(x2) 1737 UT
xxxx 5694A(x6) 1724 UT
NO 5694A ACTIVITY TODAY

J U L Y 25, 1 9 8 6 (P= 7.87, B_o= 5.12, L_o= 347.24)

KITT PEAK MAGNETOGRAM

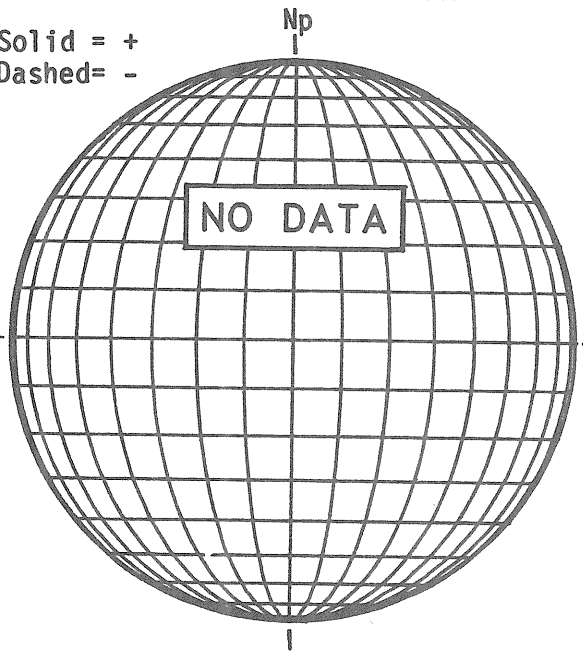
Bright= +
Dark = -



1638 UT

STANFORD MAGNETOGRAM

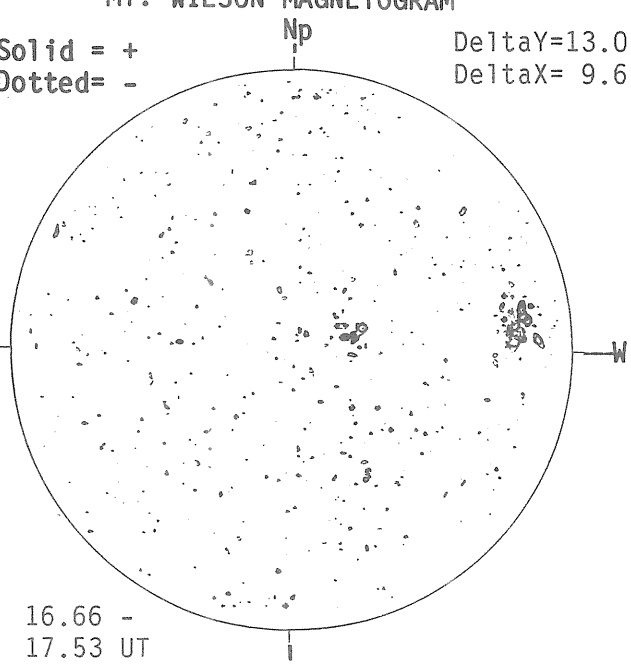
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

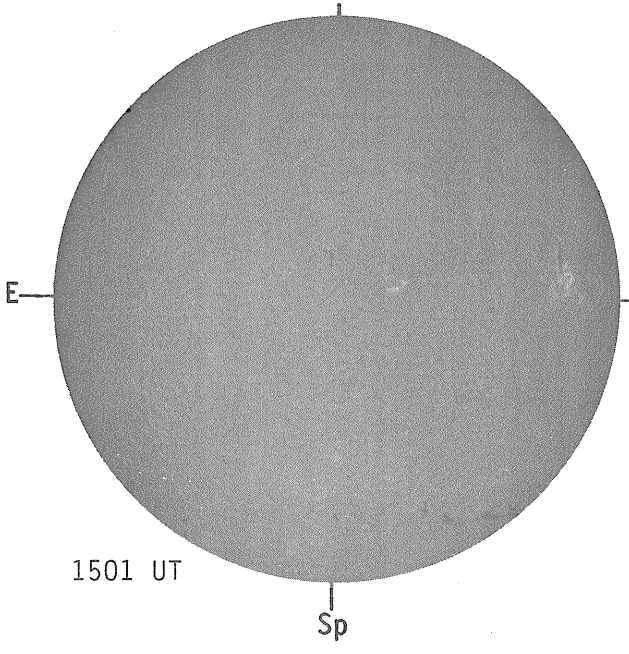
Solid = +
Dotted= -

DeltaY=13.0
DeltaX= 9.6



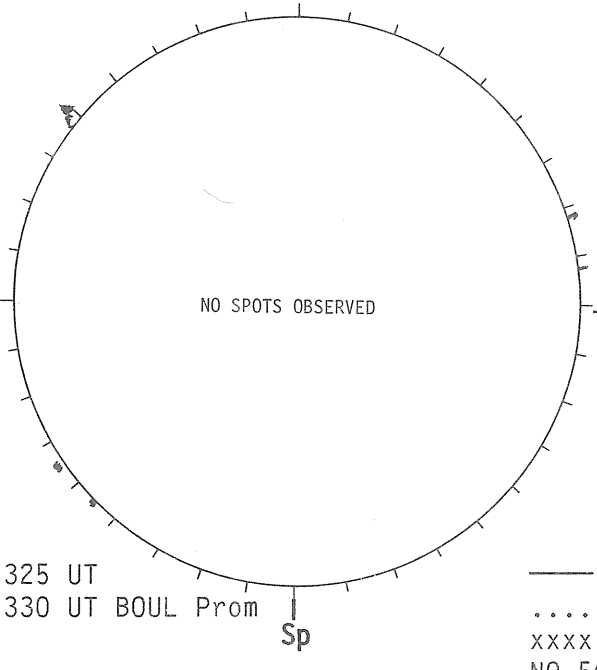
16.66 -
17.53 UT

SACRAMENTO PEAK H-ALPHA



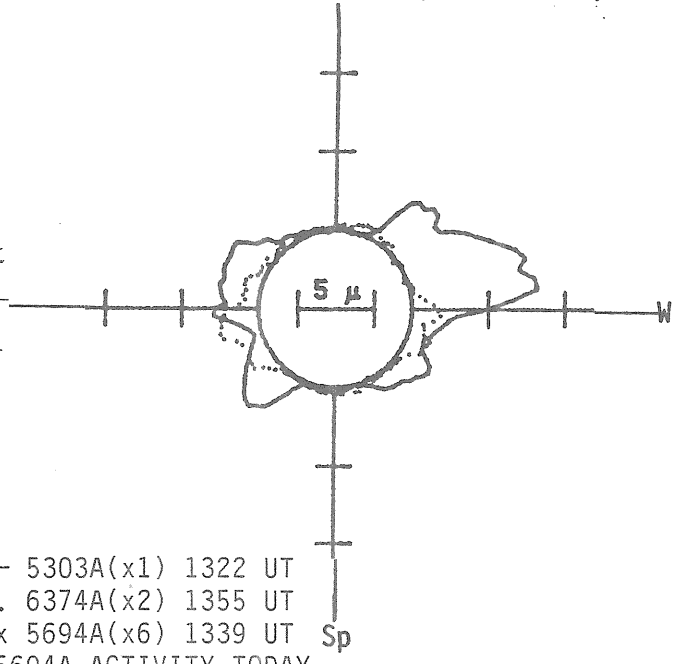
1501 UT

BOULDER SUNSPOTS



1325 UT
1330 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



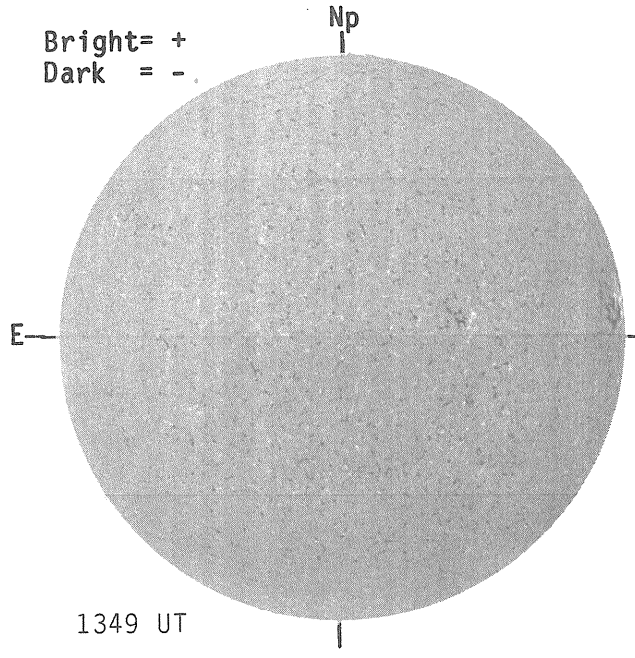
—— 5303A(x1) 1322 UT
.... 6374A(x2) 1355 UT
xxxx 5694A(x6) 1339 UT
NO 5694A ACTIVITY TODAY

49
Jul 86

J U L Y 26, 1 9 8 6 (P= 8.29, B_0= 5.20, L_0= 334.01)

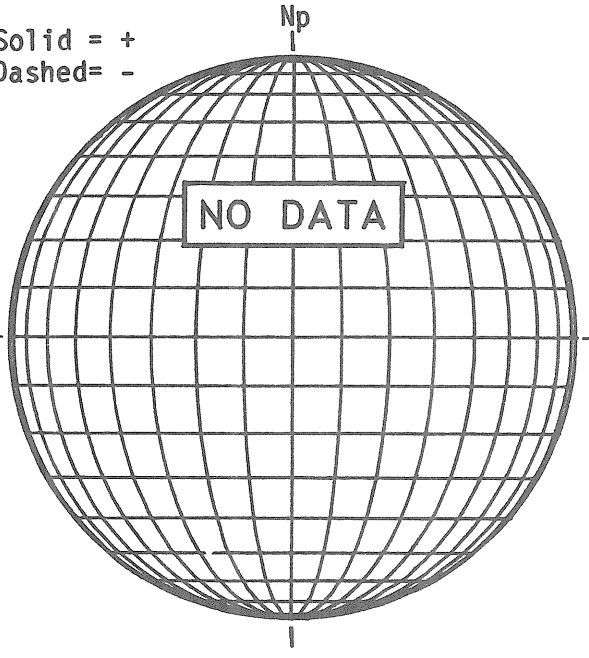
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

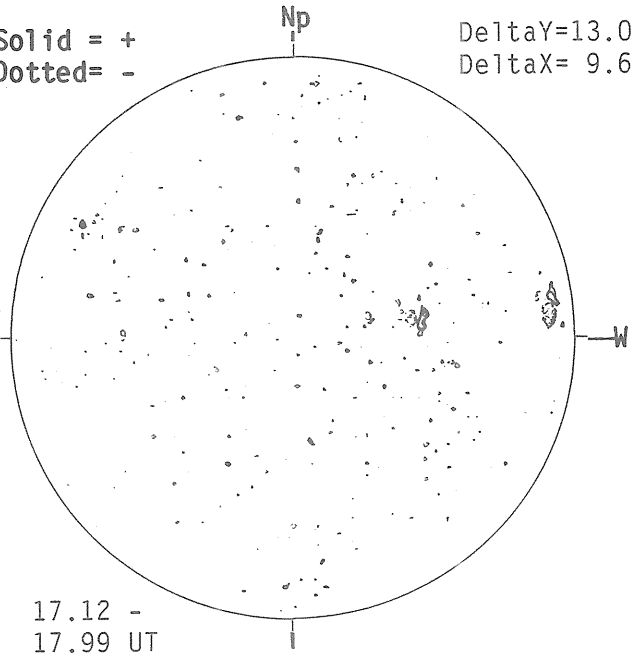
Solid = +
Dashed= -



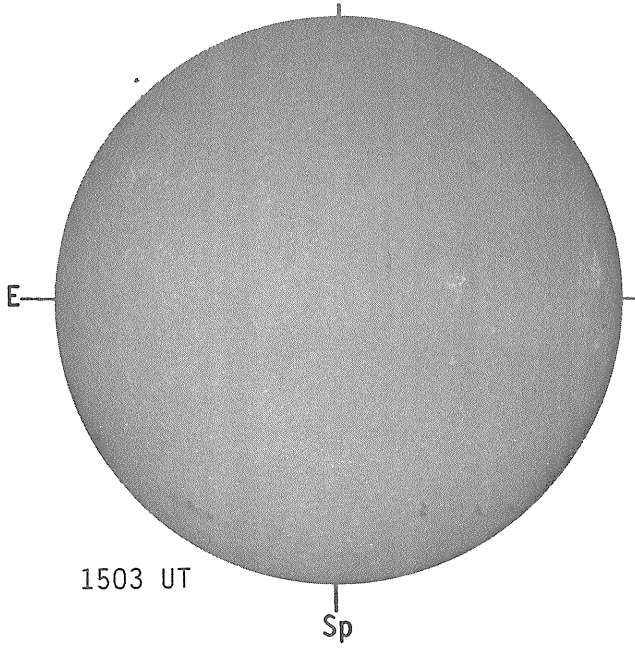
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

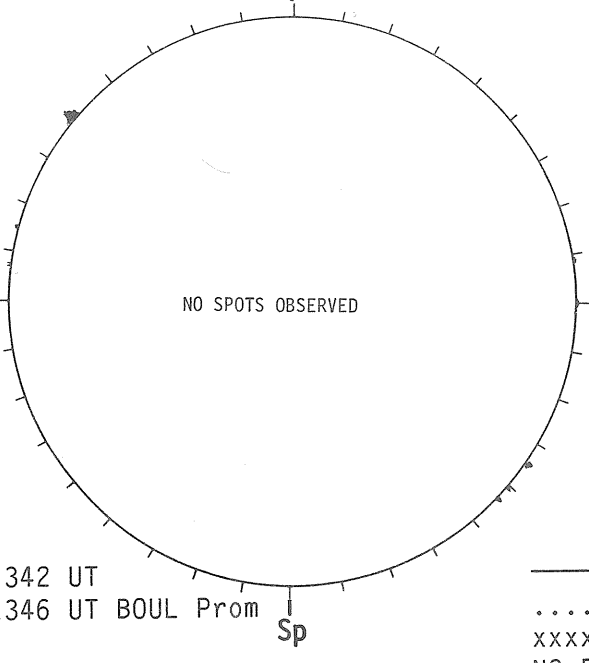
DeltaY=13.0
DeltaX= 9.6



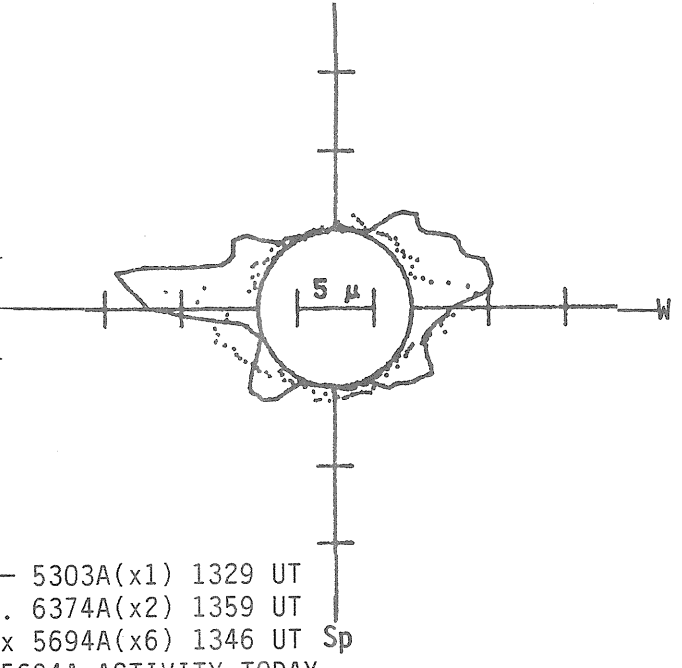
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

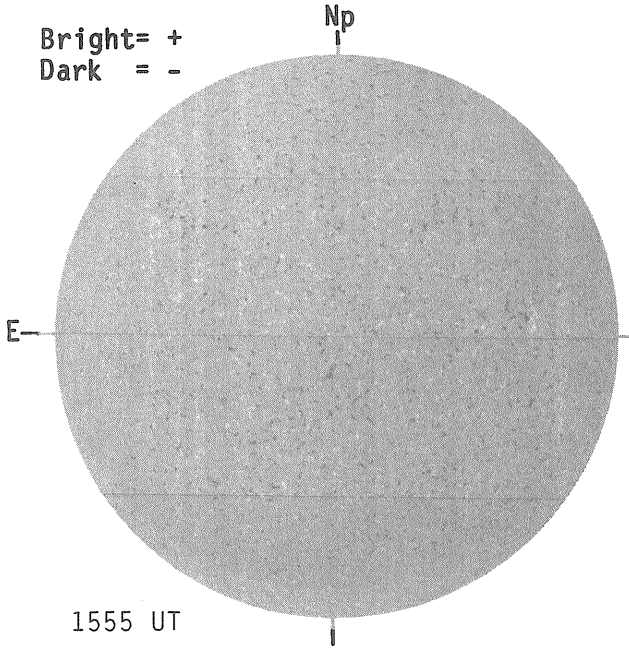


—— 5303A(x1) 1329 UT
.... 6374A(x2) 1359 UT
xxxx 5694A(x6) 1346 UT
NO 5694A ACTIVITY TODAY

J U L Y 27, 1 9 8 6 (P= 8.71, B_o= 5.29, L_o= 320.78)

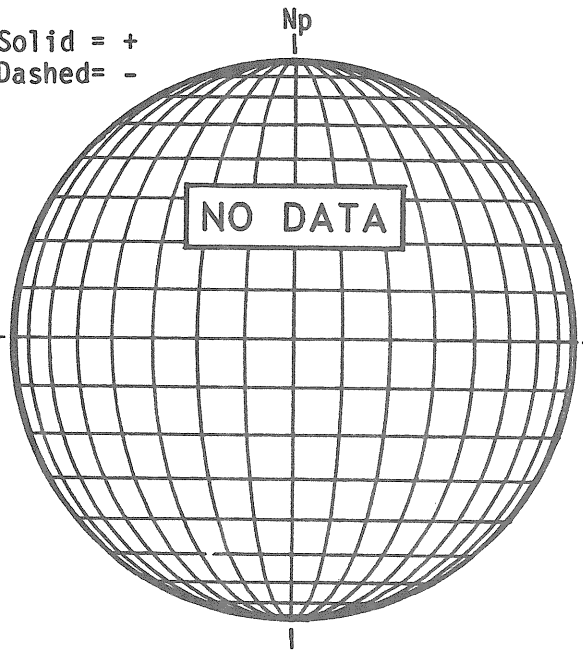
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

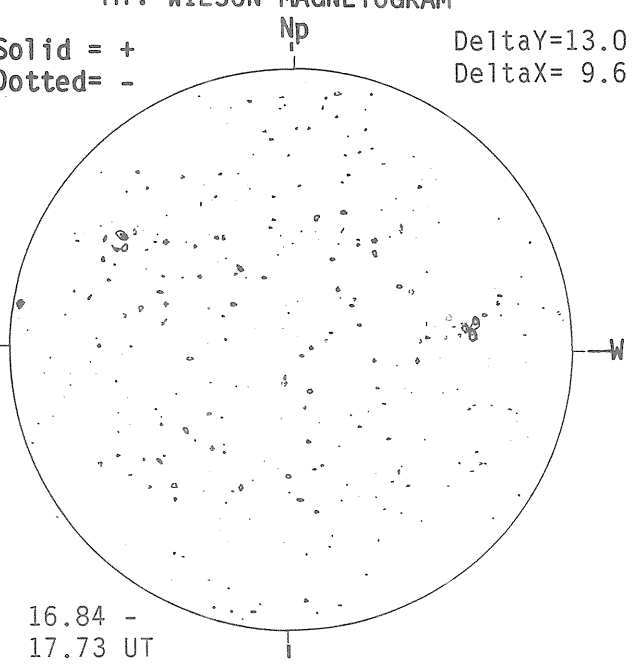
Solid = +
Dashed= -



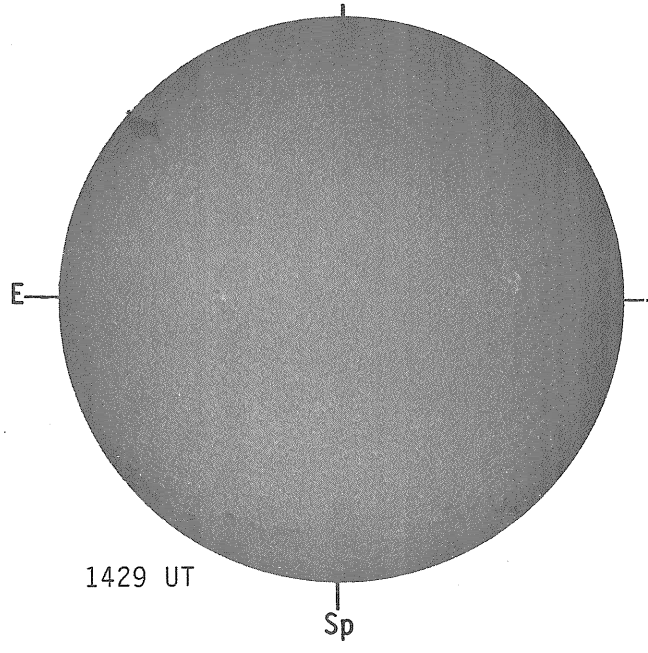
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

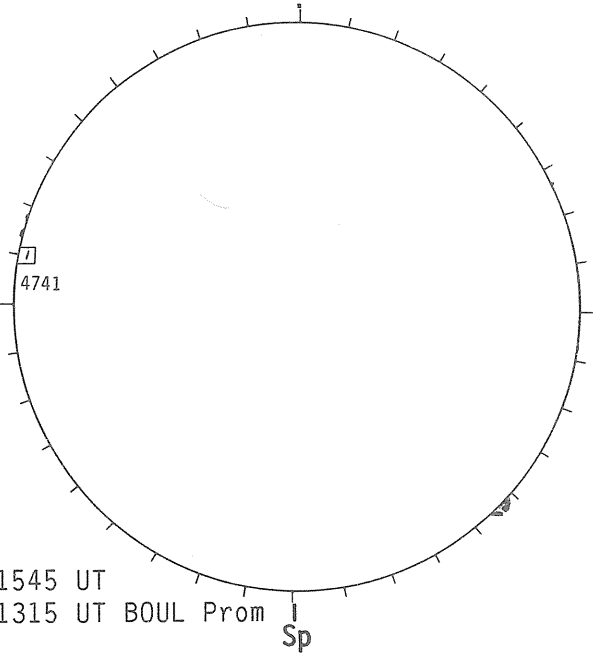
DeltaY=13.0
DeltaX= 9.6



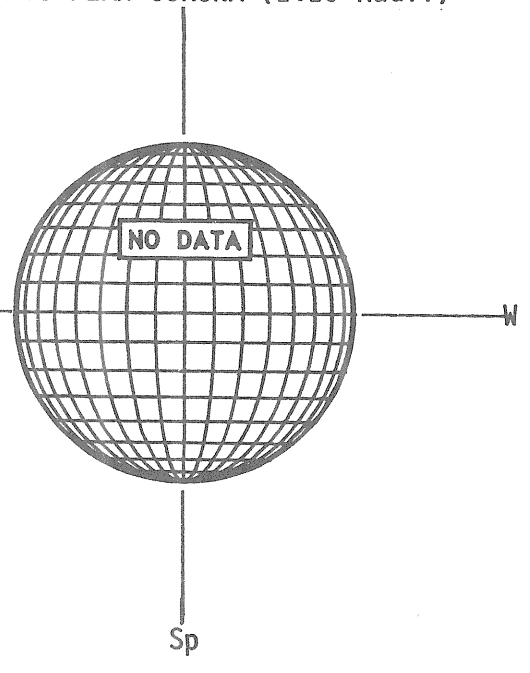
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

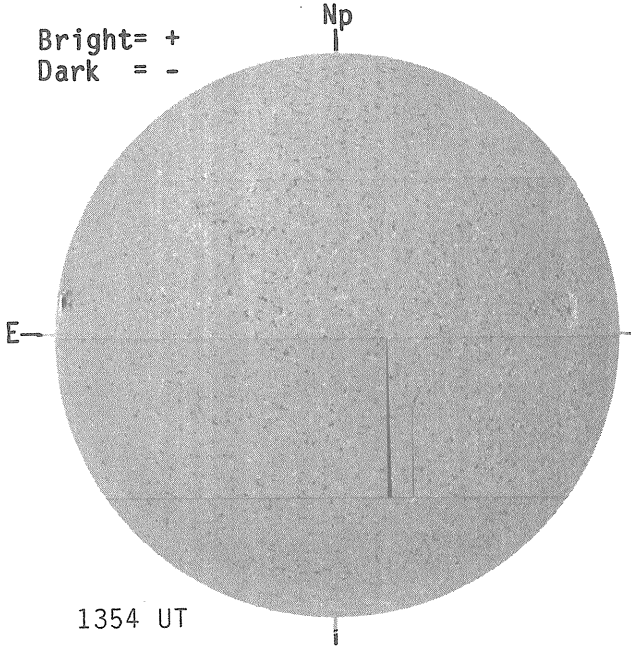


SACRAMENTO PEAK CORONA (1.15 Radii)

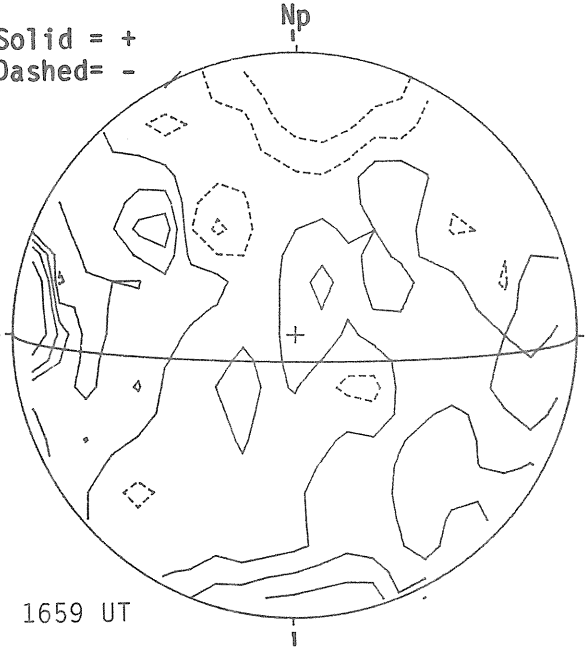


J U L Y 28, 1 9 8 6 (P= 9.12, B_0= 5.36, L_0= 307.55)

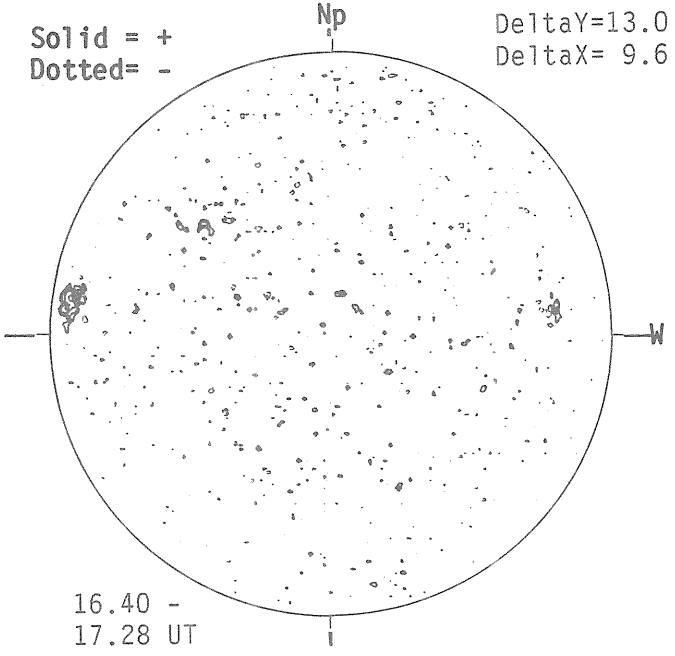
KITT PEAK MAGNETOGRAM



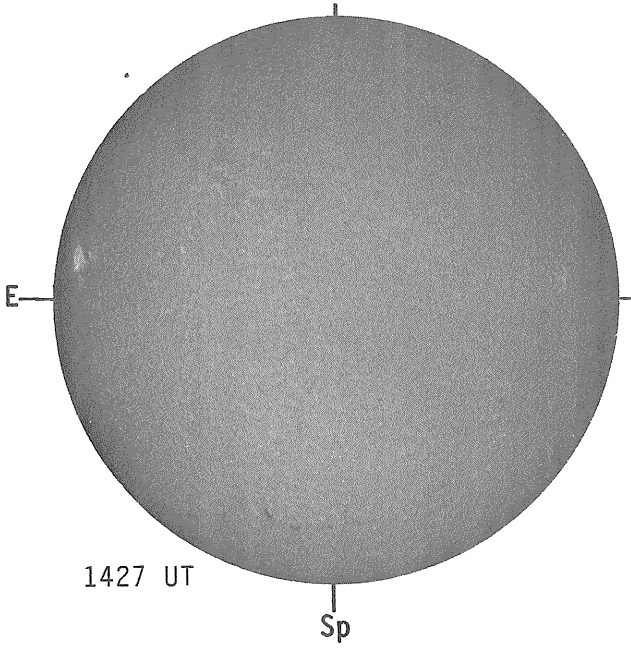
STANFORD MAGNETOGRAM



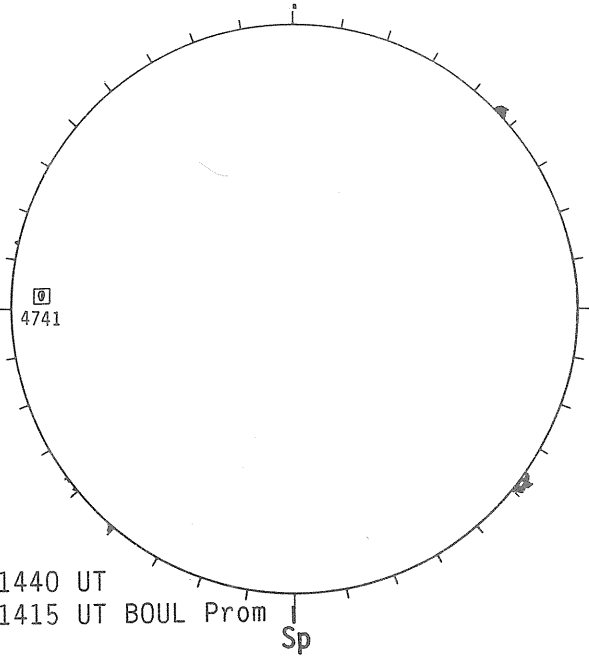
MT. WILSON MAGNETOGRAM



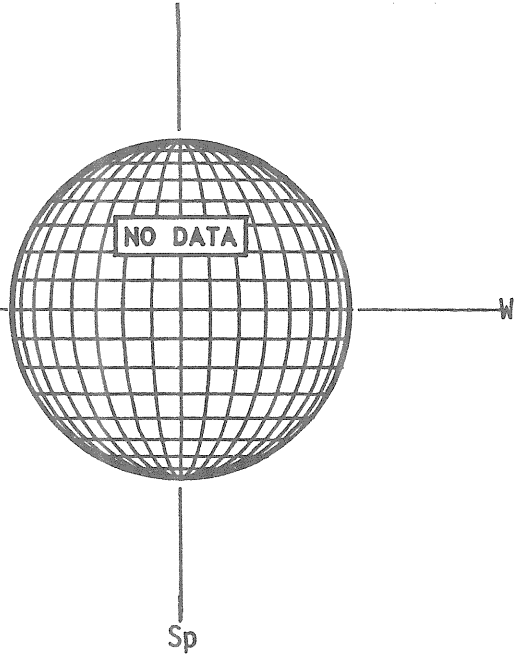
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

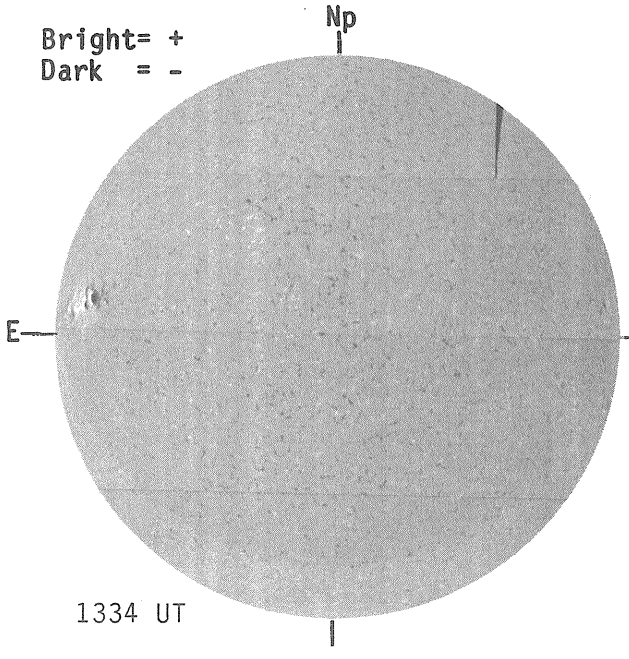


SACRAMENTO PEAK CORONA (1.15 Radii)

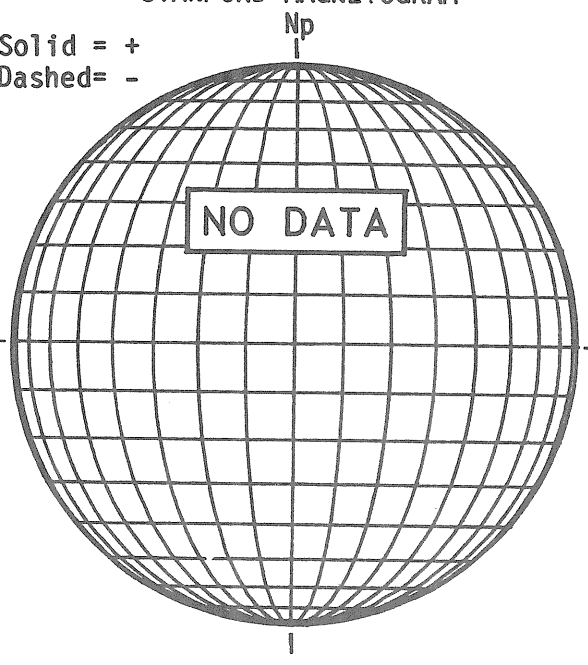


JULY 29, 1986 (P= 9.53, B_o= 5.44, L_o= 294.33)

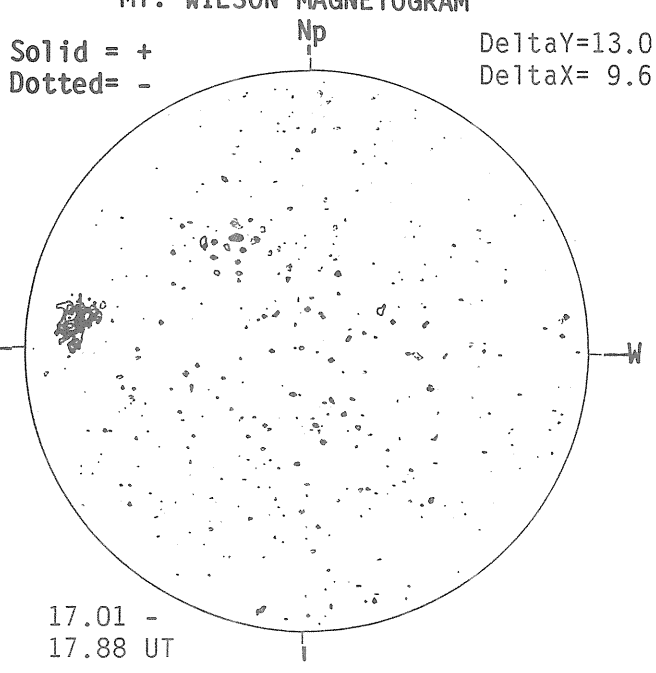
KITT PEAK MAGNETOGRAM



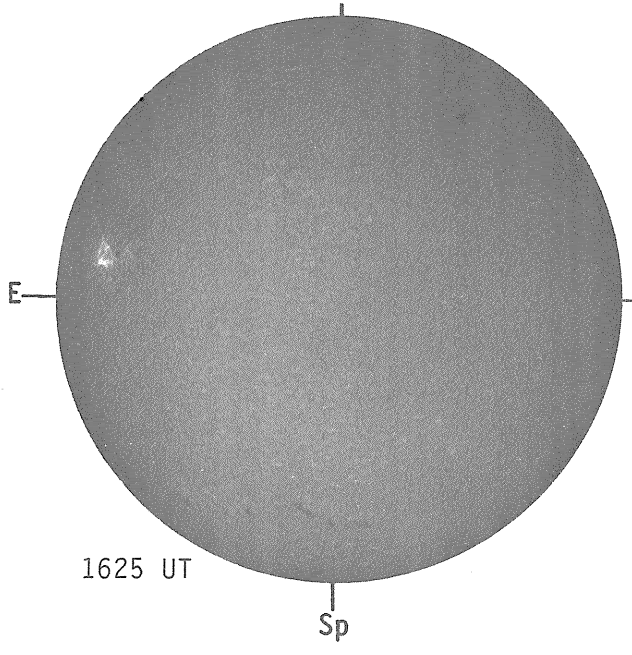
STANFORD MAGNETOGRAM



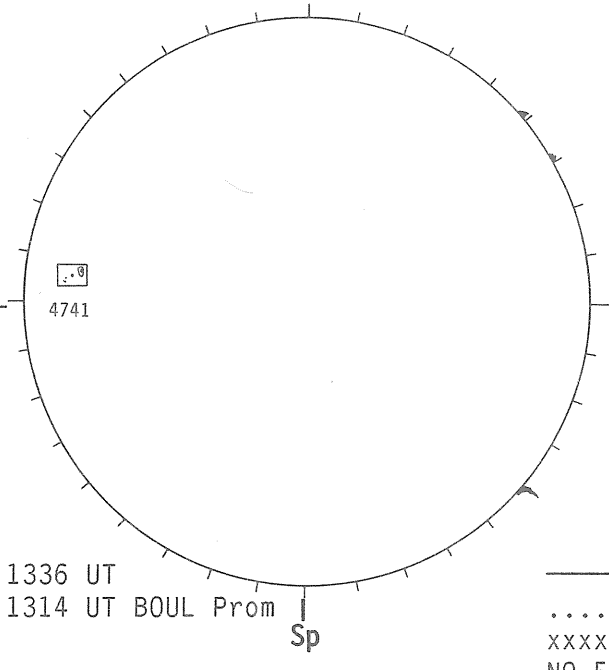
MT. WILSON MAGNETOGRAM



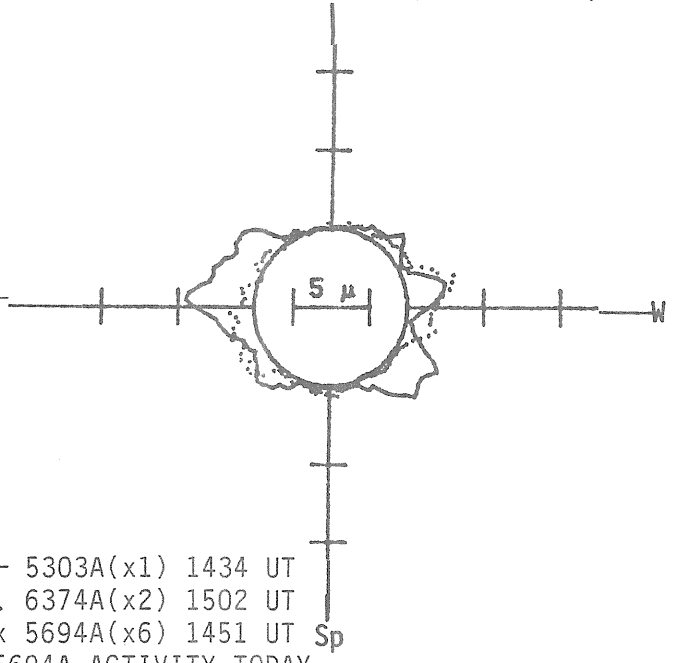
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



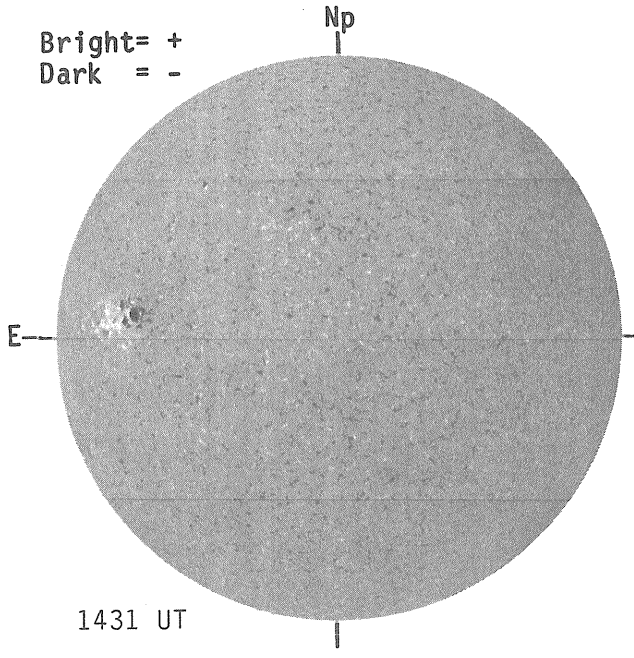
SACRAMENTO PEAK CORONA (1.15 Radii)



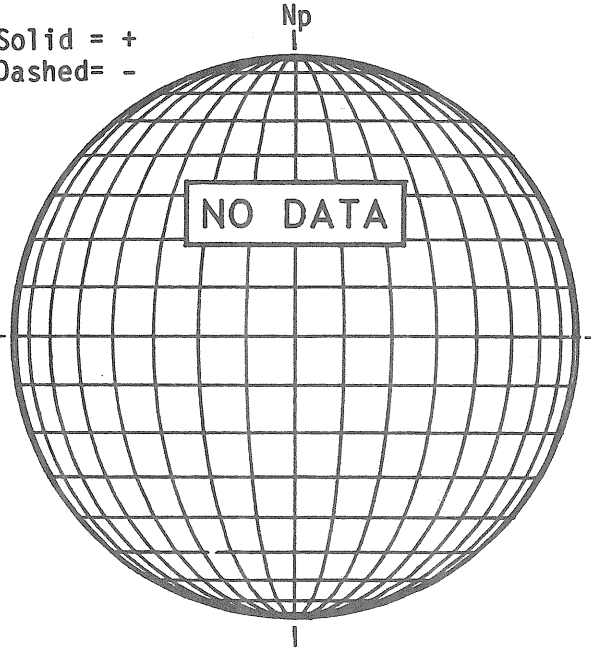
J U L Y 30, 1 9 8 6 (P= 9.94, B_0= 5.52, L_0= 281.10)

54 Jul 86

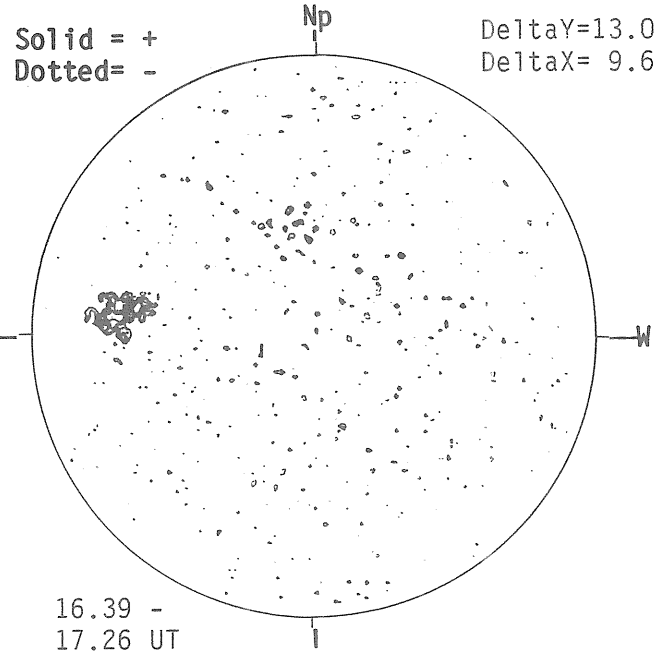
KITT PEAK MAGNETOGRAM



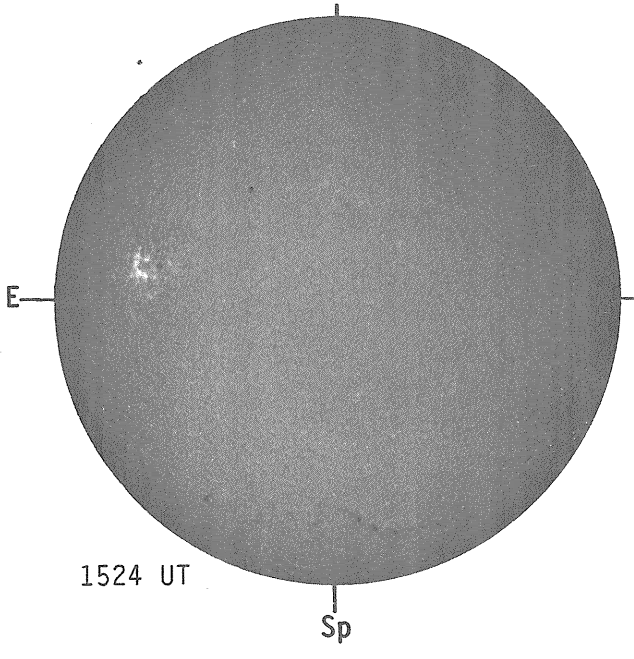
STANFORD MAGNETOGRAM



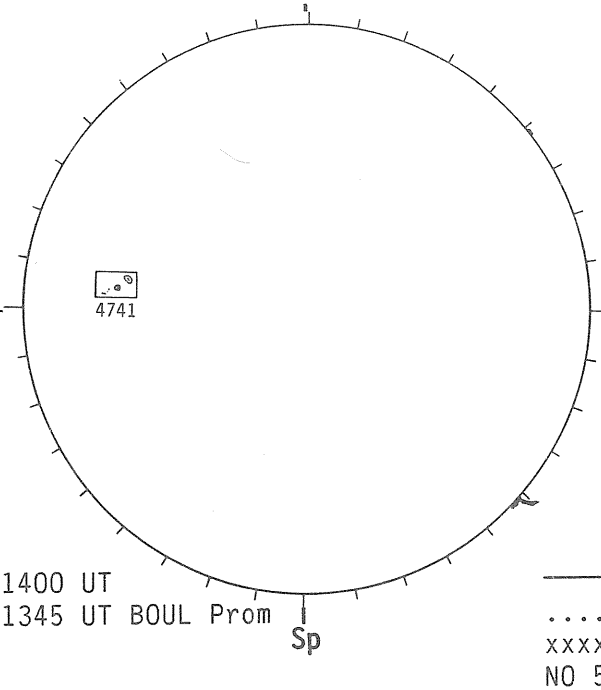
MT. WILSON MAGNETOGRAM



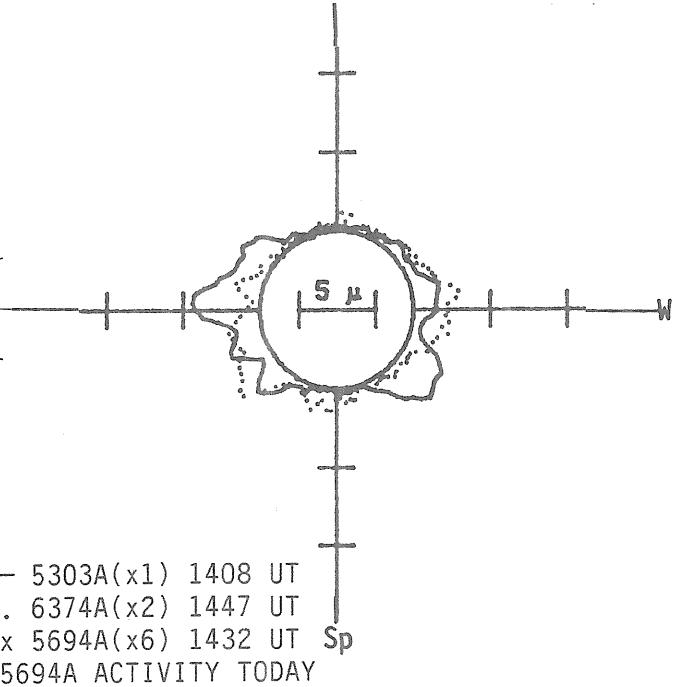
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

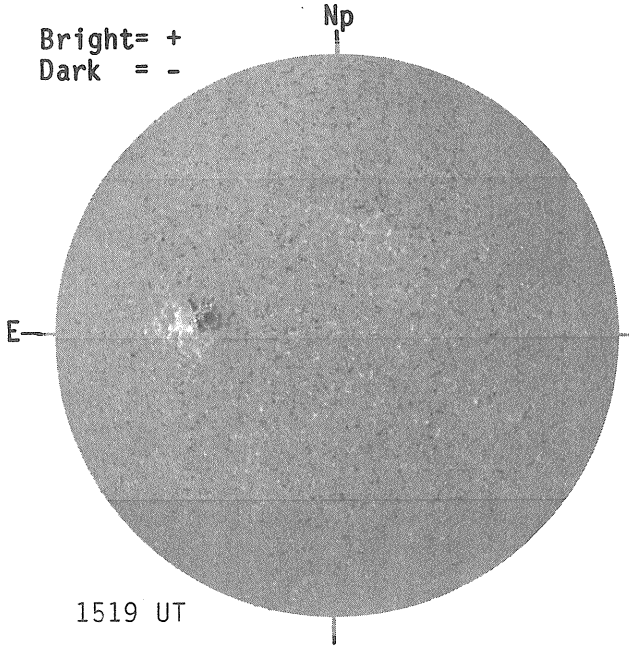


—— 5303A(x1) 1408 UT
.... 6374A(x2) 1447 UT
xxxx 5694A(x6) 1432 UT
NO 5694A ACTIVITY TODAY

J U L Y 31, 1 9 8 6 (P= 10.34, B_0= 5.59, L_0= 267.87)

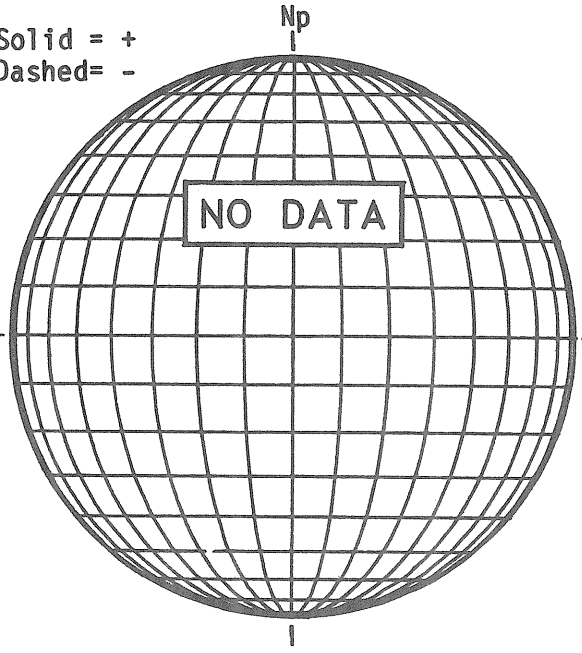
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

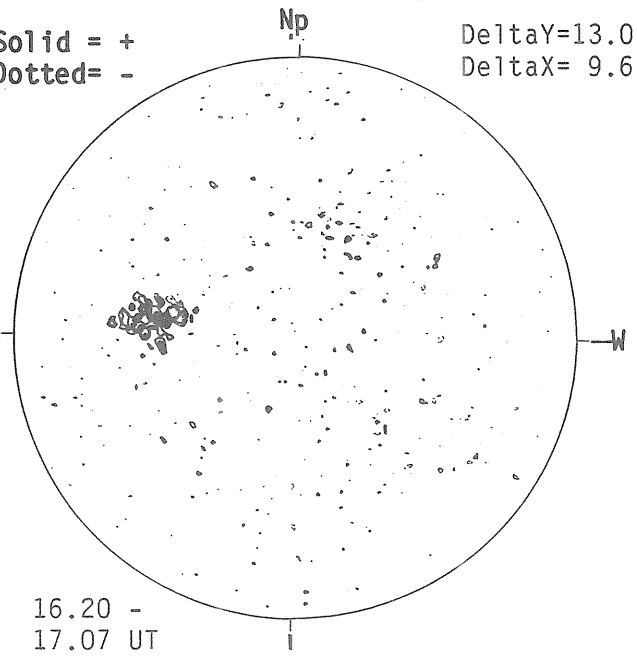
Solid = +
Dashed= -



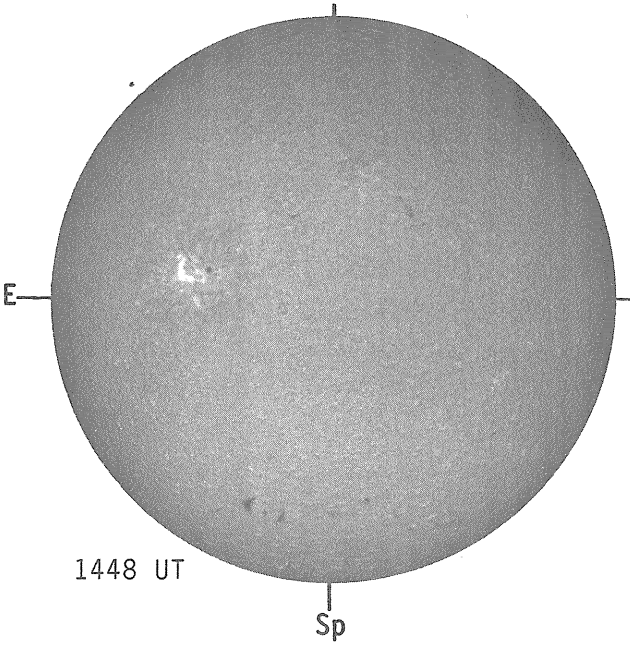
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

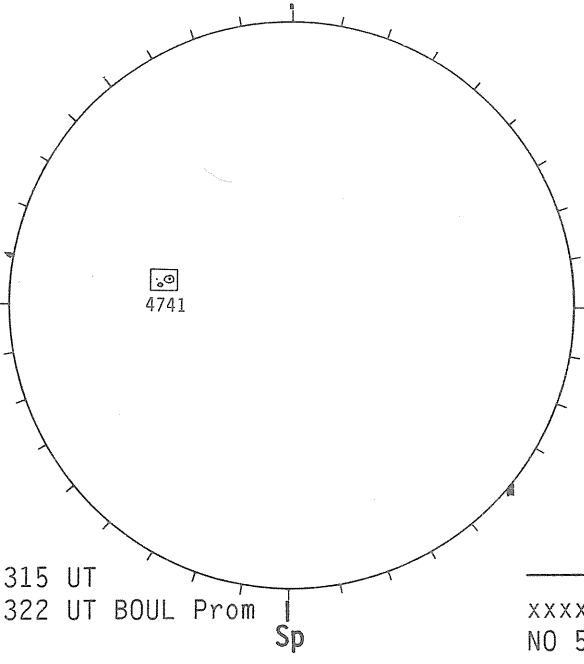
DeltaY=13.0
DeltaX= 9.6



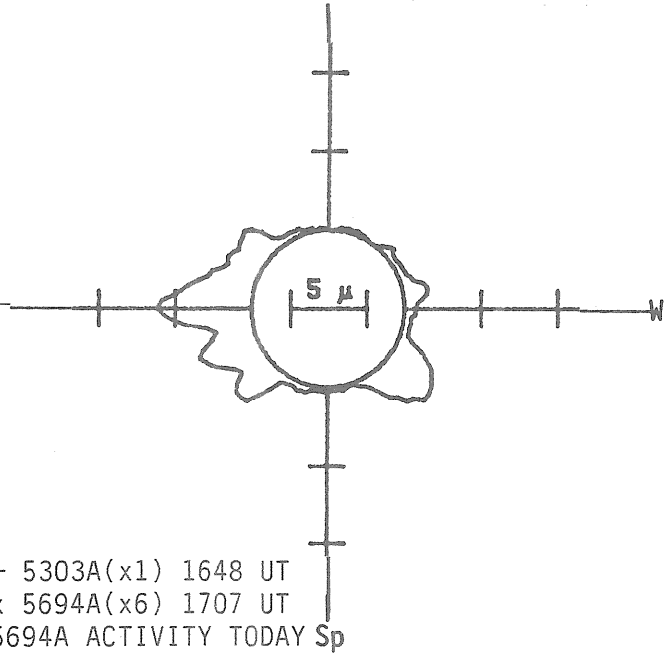
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A(x1) 1648 UT
xxxx 5694A(x6) 1707 UT
NO 5694A ACTIVITY TODAY

55
Jul 86

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JULY 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4734		RAMY	07	03	1211	N27	W03	07	3.3		B	BXO	10	3	2	4
4734		HOLL	07	03	1714	N26	W06	07	3.2		B	BXO	10	2	2	3
4734		PALE	07	03	1755	N27	W08	07	3.1		B	BXO	10	2	2	3
4734	24318	MWIL	07	03	2030	N27	W07	07	3.3	3	(B)					
4734		LEAR	07	04	0140	N28	W11	07	3.2		B	BXO	30	3	4	3
4734		ATHN	07	04	0435	N26	W11	07	3.3			BXO	20	2	3	3
4734		RAMY	07	04	1250	N27	W17	07	3.2		B	CAO	20	4	2	3
4734		BOUL	07	04	1325	N27	W13	07	3.5		B	BXO	20	3	2	3
4734		HOLL	07	04	1448	N28	W17	07	3.3		B	BXO	30	6	4	3
4734	24318	MWIL	07	04	1545	N27	W17	07	3.3	4	(B)					
4734		PALE	07	04	1748	N27	W19	07	3.3		B	CRO	20	5	4	3
4734		LEAR	07	05	0129	N28	W23	07	3.3		B	DRO	60	6	5	3
4734		CULG	07	05	0500	N27	W23	07	3.4		B	DRO	40	9	4	3
4734		ATHN	07	05	0505	N27	W25	07	3.3			DRO	40	7	5	3
4734		RAMY	07	05	1315	N28	W27	07	3.4		B	BXO	90	6	5	3
4734	24318	MWIL	07	05	1430	N26	W30	07	3.3	4	(BG)					
4734		HOLL	07	05	1545	N28	W32	07	3.1		B	CRI	50	13	7	3
4734		PALE	07	05	1730	N27	W32	07	3.2		B	DAO	50	11	6	3
4734		BOUL	07	05	1915	N26	W33	07	3.2		B	DRO	60	7	5	1
4734		LEAR	07	06	0100	N28	W35	07	3.3		B	DRO	50	12	7	3
4734		ATHN	07	06	0600	N26	W36	07	3.4			DRO	60	11	8	2
4734		CULG	07	06	0620	N27	W38	07	3.3			DRO	40	10	7	2
4734		RAMY	07	06	1420	N26	W43	07	3.2		B	CSO	90	6	8	3
4734	24318	MWIL	07	06	1445	N27	W43	07	3.3	5	(D)					
4734		HOLL	07	06	1450	N27	W44	07	3.2		B	DAO	100	7	6	3
4734		PALE	07	06	1825	N26	W46	07	3.2		B	CSO	40	7	10	2
4734		LEAR	07	07	0110	N28	W49	07	3.2		B	DSO	50	4	6	3
4734		ATHN	07	07	0430	N25	W48	07	3.5			DSO	50	4	6	2
4734	24318	MWIL	07	07	1400	N27	W56	07	3.2	4	(B)					
4734		BOUL	07	07	1605	N25	W57	07	3.2		B	BXO	30	2	7	2
4734		PALE	07	07	2001	N27	W60	07	3.1		B	CAO	30	2	8	2
4734		RAMY	07	07	2045	N26	W61	07	3.1		B	BXO	30	2	7	3
4734		LEAR	07	08	0009	N27	W63	07	3.1		B	BXO	30	2	9	2
4734		CULG	07	08	0440	N23	W62	07	3.4		B	BXO	40	2	6	3
4734		ATHN	07	08	0510	N27	W60	07	3.5			BXO	30	2	7	1
4734	24318	MWIL	07	08	1400	N27	W68	07	3.3	3	(B)					
4734		HOLL	07	08	1449	N27	W69	07	3.2		B	BXO	10	2	10	3
4734		RAMY	07	08	1540	N26	W70	07	3.2		B	BXO	180	2	12	3
4736		HOLL	07	09	1902	N07	W36	07	7.1		B	BXO	10	3	3	2
4736		PALE	07	09	2320	N06	W36	07	7.3		B	BXO	10	3	4	2
4736		LEAR	07	10	0135	N07	W39	07	7.1		B	CSO	40	4	4	3
4736		CULG	07	10	0500	N05	W42	07	7.1			CRO		2	5	2
4736		ATHN	07	10	0709	N07	W40	07	7.3			CSO	40	4	4	2
4736		BOUL	07	10	1320	N06	W43	07	7.3		B	CSO	100	5	4	2
4736		RAMY	07	10	1320	N08	W47	07	7.0		B	DAO	90	8	5	4
4736	24320	MWIL	07	10	1400	N06	W46	07	7.1	5	(B)					
4736		HOLL	07	10	1810	N07	W48	07	7.2		B	DAO	120	9	6	4
4736		PALE	07	10	1815	N04	W48	07	7.2		B	DAO	90	9	5	3
4736		LEAR	07	11	0048	N07	W53	07	7.1		B	DAO	90	5	6	2
4736		ATHN	07	11	0650	N06	W53	07	7.3			DSO	110	7	6	1
4736	24320	MWIL	07	11	1400	N07	W60	07	7.1	5	(B)					
4736		BOUL	07	11	1415	N06	W57	07	7.3		B	CSO	50	4	4	3
4736		RAMY	07	11	1430	N10	W61	07	7.0		B	CAO	110	11	6	4
4736		HOLL	07	11	1602	N07	W60	07	7.2		B	DAI	90	13	8	4
4736		PALE	07	11	2105	N06	W66	07	6.9		B	DHO	120	6	8	2
4736		LEAR	07	12	0227	N07	W67	07	7.1		B	DAO	80	7	5	3
4736		ATHN	07	12	0445	N06	W65	07	7.3			CAO	80	4	5	2
4736		BOUL	07	12	1325	N06	W70	07	7.3		B	CSO	80	4	5	1
4736		HOLL	07	12	1330	N06	W73	07	7.1		B	CAO	80	12	7	3
4736		RAMY	07	12	1357	N09	W75	07	6.9		B	DAO	70	8	6	4
4736	24320	MWIL	07	12	1445	N07	W74	07	7.1	4	(B)					
4736		PALE	07	12	2118	N05	W79	07	7.0		B	DHO	120	4	8	2
4736		CULG	07	13	0500	N08	W82	07	7.1		A	HS	70	1	2	2
4736		ATHN	07	13	0615	N07	W83	07	7.0			CAO	70	3	6	2
4736		LEAR	07	13	0832	N06	W86	07	6.9		A	ARO	10	1	1	1

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JULY 1986

NOAA/ USAF Group	Mt Wilson Group	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
4737		RAMY	07	12	1357	N04	W47	07	9.1		B	BXO	20	2	2	4
4737	24321	MWIL	07	12	1445	N03	W46	07	9.2	3	(B)					
4737		PALE	07	12	2118	N02	W49	07	9.2		A	AX	10	1		2
4735	24319	MWIL	07	05	1430	N02	E82	07	11.7	2	AP					
4735		HOLL	07	05	1545	N01	E86	07	12.1			AX		1	1	3
4735		PALE	07	05	1730	N01	E83	07	11.9		A	AX	10	1	1	3
4735		LEAR	07	06	0100	S02	E78	07	11.9		A	AX	30	2	1	3
4735		ATHN	07	06	0600	S02	E73	07	11.7			BXO	30	2	3	2
4735		RAMY	07	06	1420	N01	E71	07	11.9		B	CAO	50	3	6	3
4735	24319	MWIL	07	06	1445	N00	E69	07	11.8	4	(B)					
4735		HOLL	07	06	1450	N01	E72	07	12.0		B	CAO	70	5	9	3
4735		PALE	07	06	1825	N01	E69	07	11.9		B	CAO	70	10	9	2
4735		LEAR	07	07	0110	S01	E66	07	12.0		B	DAO	140	7	7	3
4735		ATHN	07	07	0430	S02	E61	07	11.7			DAO	150	5	6	2
4735	24319	MWIL	07	07	1400	N00	E57	07	11.8	4	(B)					
4735		HOLL	07	07	1555	N01	E58	07	12.0		B	DSO	90	11	8	3
4735		BOUL	07	07	1605	N00	E56	07	11.8		B	DSO	140	4	6	2
4735		PALE	07	07	2001	N00	E55	07	11.9		B	DAO	90	7	8	2
4735		RAMY	07	07	2045	N01	E54	07	11.9		B	DAO	90	7	8	3
4735		LEAR	07	08	0009	S01	E54	07	12.0		B	DSO	140	8	8	2
4735		CULG	07	08	0440	N00	E49	07	11.9		B	DAO	110	6	7	3
4735		ATHN	07	08	0510	S01	E47	07	11.7			DSO	100	5	6	1
4735	24319	MWIL	07	08	1400	N00	E44	07	11.9	5	(B)					
4735		HOLL	07	08	1449	N00	E45	07	12.0		B	DAO	160	8	10	3
4735		RAMY	07	08	1540	N00	E44	07	11.9		B	DAO	10	8	8	3
4735		PALE	07	08	2245	N00	E40	07	11.9		B	DSO	120	9	8	1
4735		CULG	07	09	0135	N00	E37	07	11.8			DAO	70	3	7	3
4735		LEAR	07	09	0138	S01	E38	07	11.9		B	DSO	130	9	8	3
4735		ATHN	07	09	0658	S01	E32	07	11.7			DSO	120	4	8	1
4735		BOUL	07	09	1325	S02	E29	07	11.7		B	DSO	70	7	7	2
4735	24319	MWIL	07	09	1400	S01	E31	07	11.9	5	(B)					
4735		RAMY	07	09	1428	N00	E32	07	12.0		B	DAO	110	8	7	3
4735		HOLL	07	09	1902	N00	E28	07	11.9		B	DSO	80	7	7	2
4735		PALE	07	09	2320	N01	E26	07	11.9		B	DSO	90	11	8	2
4735		LEAR	07	10	0135	N01	E25	07	11.9		B	DSO	80	8	8	3
4735		CULG	07	10	0500	N01	E25	07	12.1			DSO		4	7	2
4735		ATHN	07	10	0709	N01	E22	07	11.9			DSO	80	5	7	2
4735		BOUL	07	10	1320	S01	E17	07	11.8		B	CSO	90	7	7	2
4735		RAMY	07	10	1320	S02	E17	07	11.8		B	DAO	100	10	7	4
4735	24319	MWIL	07	10	1400	S01	E18	07	11.9	5	(B)					
4735		HOLL	07	10	1718	N00	E16	07	11.9		B	CSO	80	10	8	2
4735		PALE	07	10	1815	N01	E15	07	11.9		B	DSO	60	16	7	3
4735		LEAR	07	11	0048	S01	E12	07	11.9		B	ESO	100	14	8	2
4735		ATHN	07	11	0650	S01	E09	07	11.9			CSO	80	8	8	1
4735	24319	MWIL	07	11	1400	S01	E03	07	11.8	5	(B)					
4735		BOUL	07	11	1415	S01	E02	07	11.7		B	CSO	50	4	3	3
4735		RAMY	07	11	1430	S01	E04	07	11.9		B	DAI	60	9	7	4
4735		HOLL	07	11	1602	S01	E04	07	12.0		B	CAO	120	12	8	4
4735		PALE	07	11	2105	N00	E00	07	11.9		B	CSO	70	8	7	2
4735		LEAR	07	12	0227	S02	W03	07	11.9		B	CAO	110	8	5	3
4735		ATHN	07	12	0445	S02	W04	07	11.9			CAO	70	8	6	2
4735		BOUL	07	12	1325	N00	W09	07	11.9		B	CSO	50	5	6	1
4735		HOLL	07	12	1330	S01	W09	07	11.9		B	DSO	150	7	6	3
4735		RAMY	07	12	1357	N00	W09	07	11.9		B	CAO	80	10	7	4
4735	24319	MWIL	07	12	1445	S01	W10	07	11.9	5	(B)					
4735		PALE	07	12	2118	N00	W12	07	12.0		B	CSO	80	14	9	2
4735		ATHN	07	13	0615	S02	W18	07	11.9			CSO	80	6	6	2
4735		LEAR	07	13	0832	S02	W20	07	11.9		B	CSO	20	2	4	1
4735		RAMY	07	13	1345	N00	W24	07	11.8		B	CSO	50	8	6	4
4735	24319	MWIL	07	13	1430	S01	W24	07	11.8	4	(B)					
4735		HOLL	07	13	1715	S01	W26	07	11.8		B	CAO	60	3	3	3
4735		PALE	07	13	1831	N01	W26	07	11.8		B	CSO	30	5	6	4
4735		BOUL	07	13	2120	S01	W28	07	11.8		B	CSO	20	3	2	2
4735		LEAR	07	14	0050	S02	W29	07	11.9		B	CSO	30	5	5	3
4735		CULG	07	14	0500	S01	W31	07	11.9		B	CSO	50	9	6	3
4735		ATHN	07	14	0635	S02	W32	07	11.9			CSO	40	2	2	2
4735		BOUL	07	14	1435	S02	W38	07	11.8		A	AX	10	1	1	2

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JULY 1986

NOAA/ USAF Group	Mt Wilson Group	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
4735	24319	MWIL	07	14	1530	S01	W38	07	11.8	4	(BP)					
4735		RAMY	07	14	1551	N01	W38	07	11.8		B	CSO	40	3	2	3
4735		HOLL	07	14	1615	S01	W40	07	11.7		B	CSO	40	2	2	3
4735		LEAR	07	15	0056	S02	W43	07	11.8		B	CSO	20	2	3	2
4735		ATHN	07	15	0520	S02	W46	07	11.8			AX	30	1	1	1
4735		RAMY	07	15	1300	N01	W51	07	11.7		B	CSO	40	2	1	3
4735		BOUL	07	15	1429	S02	W51	07	11.8		A	AX	20	1	1	2
4735		HOLL	07	15	1612	S01	W53	07	11.7		A	AX	20	1	1	3
4735		PALE	07	15	1925	S01	W55	07	11.7		A	HR	10	1	1	3
4735		LEAR	07	16	0030	S02	W58	07	11.7		A	AX	20	1	1	2
4735		ATHN	07	16	0615	S02	W58	07	11.9			AX	20	1	1	2
4735		BOUL	07	16	1317	S02	W62	07	11.9		A	AX	10	1	1	3
4735	24319	MWIL	07	16	1400	S01	W65	07	11.7	4	(AF)					
4735		HOLL	07	16	1415	S01	W65	07	11.7		A	AX	10	1	1	4
4735		RAMY	07	16	1537	S02	W68	07	11.6		A	HA	10	1	1	3
4735		PALE	07	16	1945	S01	W69	07	11.7		A	AX	10	1		3
4735		CULG	07	17	0500	S01	W74	07	11.7			AX	10	1	1	2
4735		ATHN	07	17	0605	S02	W71	07	11.9			AX	10	1	1	2
4735		LEAR	07	17	0709	S01	W75	07	11.7		A	AX	20	1	1	3
4735		BOUL	07	17	1320	S02	W75	07	11.9		A	AX	10	1	1	3
4735		RAMY	07	17	1445	S02	W80	07	11.6		A	HA	10	1	1	3
4735	24319	MWIL	07	17	1545	S01	W79	07	11.8	2	AF					
4735		PALE	07	17	1758	S01	W79	07	11.8		A	AX	10	1		3
4735		LEAR	07	18	0016	S01	W83	07	11.8		A	AX	10	1	1	3
4735A		RAMY	07	15	1300	S01	E07	07	16.1		A	AX		1		3
4739		ATHN	07	17	0605	S07	E37	07	20.0			AX	10	1	1	2
4739		LEAR	07	17	0709	S05	E37	07	20.1		B	BXO	20	2	2	3
4739		BOUL	07	17	1320	S05	E33	07	20.0		B	BXO	10	2	2	3
4739	24323	MWIL	07	17	1545	S05	E32	07	20.0	3	(B)					
4739		PALE	07	17	1758	S06	E32	07	20.1		B	BXO	10	4	3	3
4739		LEAR	07	18	0016	S05	E27	07	20.0		B	BXO	10	3	4	3
4739		ATHN	07	18	0530	S06	E23	07	19.9			AX	10	1	1	2
4738		LEAR	07	15	0056	N08	E80	07	21.0		A	HS	10	1	1	2
4738		RAMY	07	15	1300	N04	E75	07	21.1		B	DAO	60	3	8	3
4738		BOUL	07	15	1429	N07	E74	07	21.1		B	BXO	30	3	7	2
4738		HOLL	07	15	1612	N07	E75	07	21.3		B	CAO	20	3	8	3
4738		PALE	07	15	1925	N07	E76	07	21.5		B	DSO	60	4	9	3
4738		LEAR	07	16	0030	N07	E70	07	21.3		B	DSO	60	5	9	2
4738		ATHN	07	16	0615	N05	E66	07	21.2			CSO	40	2	8	2
4738		BOUL	07	16	1317	N07	E60	07	21.0		B	BXO	30	2	6	3
4738	24322	MWIL	07	16	1400	N07	E63	07	21.3	4	(B)					
4738		HOLL	07	16	1415	N07	E63	07	21.3		B	CRO	10	2	8	4
4738		RAMY	07	16	1537	N03	E62	07	21.3		B	CAO	20	2	8	3
4738		PALE	07	16	1945	N08	E60	07	21.3		B	CAO	50	7	6	3
4738		CULG	07	17	0500	N06	E53	07	21.2			CSO		3	7	2
4738		ATHN	07	17	0605	N06	E53	07	21.2			CSO	30	3	7	2
4738		LEAR	07	17	0709	N07	E55	07	21.4		B	CSO	40	3	7	3
4738		BOUL	07	17	1320	N08	E49	07	21.2		B	CSO	20	3	7	3
4738		RAMY	07	17	1445	N07	E50	07	21.3		B	DAO	30	3	8	3
4738	24322	MWIL	07	17	1545	N07	E49	07	21.3	4	(B)					
4738		PALE	07	17	1758	N08	E48	07	21.3		B	CSO	20	4	8	3
4738		LEAR	07	18	0016	N07	E42	07	21.1		A	HA	20	1	1	3
4738		CULG	07	18	0500	N07	E42	07	21.3			AS		1	1	3
4738		ATHN	07	18	0530	N07	E38	07	21.1			CSO	20	2	4	2
4738		BOUL	07	18	1405	N08	E32	07	21.0		B	HS	10	1	1	2
4738		RAMY	07	18	1421	N08	E35	07	21.2		B	CAO	30	5	4	2
4738	24322	MWIL	07	18	1530	N08	E35	07	21.3	4	(B)					
4738		HOLL	07	18	1550	N08	E34	07	21.2		B	CRO	30	3	4	4
4738		PALE	07	18	1755	N07	E33	07	21.2		B	CRO	20	3	4	3
4738		LEAR	07	19	0015	N07	E30	07	21.2		B	CSO	20	3	4	3
4738		CULG	07	19	0300	N08	E26	07	21.1		A	HR	10	1	1	3
4738		ATHN	07	19	0655	N06	E24	07	21.1			HS	20	1	1	3
4738		RAMY	07	19	1238	N09	E20	07	21.0		A	AX	80	1	1	3
4738		BOUL	07	19	1420	N05	E20	07	21.1		A	AX	10	1	1	2
4738	24322	MWIL	07	19	1445	N08	E19	07	21.0	4	(AP)					

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JULY 1986

NOAA/ USAF Group	Mt Wilson Group	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
4738		HOLL	07 19 1545	N08 E19	07 21.1		A	HR	10	1	1	4
4738		PALE	07 19 1807	N08 E18	07 21.1		A	HR	10	1	1	4
4738		LEAR	07 20 0026	N08 E14	07 21.1		A	HR	10	1		3
4738		ATHN	07 20 0718	N08 E11	07 21.1			AX	10	1		2
4738		RAMY	07 20 1237	N07 E12	07 21.4		B	CRO	10	3	8	3
4738	24322	MWIL	07 20 1500	N08 E08	07 21.2	4	(B)					
4738		HOLL	07 20 1547	N09 E05	07 21.0		A	HR	10	1		3
4738		PALE	07 20 1710	N08 E05	07 21.1		A	AX		1		4
4738		LEAR	07 21 0033	N10 E03	07 21.2		B	BXO	10	2	4	3
4738		CULG	07 21 0410	N05 W01	07 21.1		A	AX	10	1	1	3
4738		ATHN	07 21 0720	N08 W03	07 21.1			AX	10	1		1
4738		RAMY	07 21 1420	N10 W06	07 21.1		A	AX	10	1	1	3
4738		PALE	07 21 1740	N07 W04	07 21.4		B	BXO	20	6	10	4
4738		HOLL	07 21 2233	N08 W11	07 21.1		B	BXO	10	3	2	3
4738		LEAR	07 22 0012	N08 W08	07 21.4		B	BXO	20	5	8	3
4738	24322	MWIL	07 22 1430	N06 W13	07 21.6	3	AP					
	24326	MWIL	07 22 1430	S02 E17	07 23.9	2						
4740		RAMY	07 20 1237	N05 E58	07 24.9		B	BXO		5	2	3
4740	24324	MWIL	07 20 1500	N08 E56	07 24.8	4	(B)					
4740		HOLL	07 20 1547	N09 E57	07 24.9		B	BXO	10	5	4	3
4740		PALE	07 20 1710	N08 E56	07 24.9		B	BXO	30	6	4	4
4740		LEAR	07 21 0033	N08 E53	07 25.0		B	BXO	20	2	4	3
4740		CULG	07 21 0410	N07 E48	07 24.8		B	BXO	10	2	3	3
4740		ATHN	07 21 0720	N09 E44	07 24.6			AX	10	1		1
4740		RAMY	07 21 1420	N05 E41	07 24.7		A	AX	10	1	1	3
4740		PALE	07 21 1740	N08 E41	07 24.8		B	BXO	20	6	5	4
4740		HOLL	07 21 2233	N08 E38	07 24.8		B	BXO	20	4	4	3
4740		LEAR	07 22 0012	N09 E38	07 24.9		B	BXO	20	5	4	3
4740		RAMY	07 22 1410	N08 E31	07 24.9		B	BXO	10	3	3	3
4740		HOLL	07 22 1655	N09 E28	07 24.8		B	BXO	10	2	3	4
4740		PALE	07 22 1753	N06 E28	07 24.8		B	BXO	10	4	2	2
4740		LEAR	07 23 0003	N09 E22	07 24.6		A	AX	10	1	1	3
	24327	MWIL	07 22 1430	N05 E41	07 25.7	3						

SUDDEN IONOSPHERIC DISTURBANCES

JULY 1986

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	1150	1153U	1218	1	3		2				No Flare		
03	0643	0649	0701	1	3		2				No Flare		
03	0704	0725	0820	1	3		2				No Flare		
04	1035	1040	1120	1	3		2				No Flare		
09	0610	0628U	0701	1	1		1				No Flare		
10	1345	1350	1405	1-	5			1		8	No Flare		
11	0453	0505	0650	1	3			1		1	0450 UT		4736
13	0200	0220	0300	1-	1			1			No Flare		
13	0358	0413	0443	1-	1			1			No Flare		
13	0831	0915	0944	1	1		1				No Flare		
16	1109	1208	1222	1	1		1				No Flare		
16	1503	1700	1704	1-	1	1					No Flare		
16	1718	1729	1755	1-	1	1					No Flare		
17	1734	1742	1756	1	1	1					No Flare		
17	1902	1911	1921	1	1	1					No Flare		
18	1606	1613	1700	1-	1	1					No Flare		
18	1743	1748	1808	1-	1	1					No Flare		
19	1512	1613	1705	2-	1	1					No Flare		
19	1816	1843	1858	1	1	1					No Flare		
22	1512	1519	1700	2-	1	1					No Flare		
22	1814	1905	1914	2-	1	1					No Flare		
23	1805	1812	1923	2	1	1					No Flare		
24	1216	1241U	1322	1	1	1					No Flare		
25	1503	1508	1517	1-	1	1					No Flare		
27	1619	1629	1725	1	1	1					No FLare		
29	1404	1428	1441	1-	1	1					No Flare		
30	0738	0748U	0814	1	3		2				No Flare		

Observatories Reporting for July 1986*

Amherst, New Hampshire, USA	SES	Maui, Hawaii, USA	SWF
Ayshire, Scotland	SES	Panska Ves, Czechoslovakia	SEA, SWF, SES
Edenvale, South Africa	SES	Paterson, New Jersey, USA	SES
Farsta, Sweden	SES	Sao Paulo, Brasil	SPA, SES
Hiraiso, Japan	SWF	Sofia, Bulgaria	SES
Houston, Texas, USA	SES	St. Cloud, Minnesota, USA	SES
Huancayo, Peru	SWF	Tucson, Arizona, USA	SES
Inubo, Japan	SPA	Upice, Czechoslovakia	SEA
Latrobe, Pennsylvania, USA	SES	Valley Cottage, New York, USA	SES
Louisville, Kentucky, USA	SES	Vsetin, Czechoslovakia	SEA

*Observations are not necessarily continuous.

S I D s by N O A A/S E S C R E G I O N S

JULY 1986

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
Events in Region #																															
4736											1																				
Events with X-ray																															
Events with No Flare Reported	1		2	1					1	1			3			3	2	2	2			2	1	1	1		1		1	1	
Events with No Flare Patrol																															
Events with No Region Numbers																															
Daily Event Totals	1		2	1					1	1	1		3			3	2	2	2			2	1	1	1		1		1	1	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1986

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	0414	1425	WEIS										
	1434	1858	WEIS										
02	0412	0843	WEIS										
	1038	1858	WEIS										
03	0413	0624	WEIS										
	0630	1857	WEIS										
04	0413	1158	WEIS										
	1212	1649	WEIS										
	1724	1857	WEIS										
05	0416	1857	WEIS										
06	0415	1857	WEIS										
07	0418	0520	WEIS										
	0546	1824	WEIS										
08	0415	1118	WEIS				0624.7	0624.8	1				III
	1235	1856	WEIS				0640.7	0641.0	1				IIIG
			WEIS				1043.5	1043.9	2				RS
			WEIS				1532.2	1532.8	2				IIIG
			WEIS				1533.6	1533.7	2				IIIB
			WEIS				1535.8	1538.3	3				IIIGG
09	0419	1713	WEIS										
	1748	1855	WEIS										
			LEAR				2340.0	2341.0	1				III
			PALE				2341.0	2342.0	1				V
10	0418	1853	WEIS										
			PALE				1909.0	1910.0	1				III
			LEAR				2340.0	2341.0	1				III
11			CULG				0442.0	0518.0	1				II
			LEAR				0449.0	0518.0	1				II
	0420	0851	WEIS				0450.3	0459.4	3				IIIG,RS
			CULG				0606.0	0608.0	2				III
			LEAR				0606.0	0607.0	1				III
	1027	1854	WEIS				0606.2	0607.1	3				IIIG
12			CULG				0343.0	0555.0	1				II
	0419	1852	WEIS				0429.0	0536.0	1				IN
			WEIS				0740.3	0740.4	3				G
			WEIS				1226.3	1227.3	3				GG
			WEIS				1443.4	1444.3	2				GG
13			LEAR				0213.0	0400.0	1				CONT
			LEAR				0403.0	0405.0	2				III
			SGMR				1654.0	1658.0	1				V
	0422	1801	WEIS				1654.7	1655.0	3				IIIG
			WEIS				1657.9	1658.2	2				111B
			PALE				2205.0	2206.0	1				III
14			PALE				0054.0	0440.0	1				CONT
			LEAR				0103.0	0310.0	1				CONT
	0420	1850	WEIS										
15	0424	1009	WEIS										
	1028	1447	WEIS										
	1507	1705	WEIS										
	1815	1851	WEIS										
			PALE				1951.0	1951.0	1				V
			SGMR				1951.0	1951.0	1				V
			CULG				2349.0	2349.0	1				III
			CULG				2352.0	2352.0	1				III
16	0423	0711	WEIS										
			LEAR				0612.0	0613.0	2				III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1986

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
16			CULG				0613.0	0614.0	2				III
	0733	1506	WEIS										
	1515	1742	WEIS										
17			CULG							0246.0	0247.0	1	III
			LEAR				0343.0	0344.0	1				III
			CULG							0344.0	0344.0	1	III
18	1025	1847	WEIS										
19	0427	0446	WEIS										
	0529	1847	WEIS										
20	0427	1803	WEIS										
21	0429	0507	WEIS										
	0618	1845	WEIS										
22	0429	1210	WEIS										
	1233	1845	WEIS										
23	0431	1843	WEIS										
24	0430	1842	WEIS				1546.7	1547.4	2				IIIG
			PALE				1951.0	1952.0	2				III
25			LEAR				0115.0	0115.0	1				III
	0434	1028	WEIS										
			LEAR				0648.0	0648.0	1				III
	1036	1143	WEIS										
	1225	1842	WEIS										
26	0433	1100	WEIS				1021.8	1021.9	2				IIIB
	1150	1614	WEIS										
			PALE				1802.0	1803.0	1				III
27	0515	1839	WEIS										
			PALE				1708.0	1713.0	2				III
			PALE				1747.0	1749.0	2				III
28	0435	0752	WEIS										
29	0438	0914	WEIS										
	1008	1022	WEIS										
	1040	1837	WEIS										
30	0437	0830	WEIS										
	1238	1733	WEIS										
31			PALE				0034.0	0034.0	1				III
	0558	1156	WEIS										
	1212	1834	WEIS										

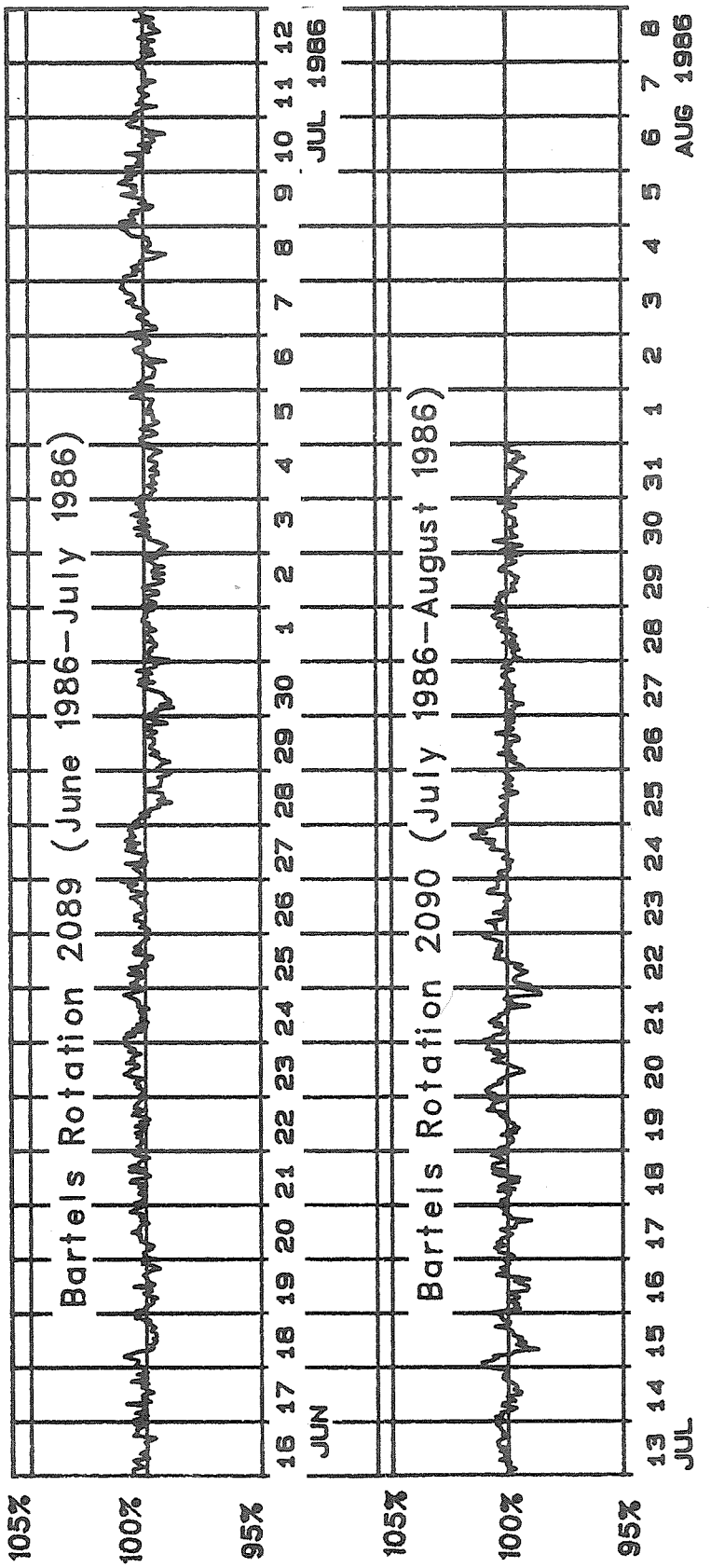
The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

Stations Reporting:

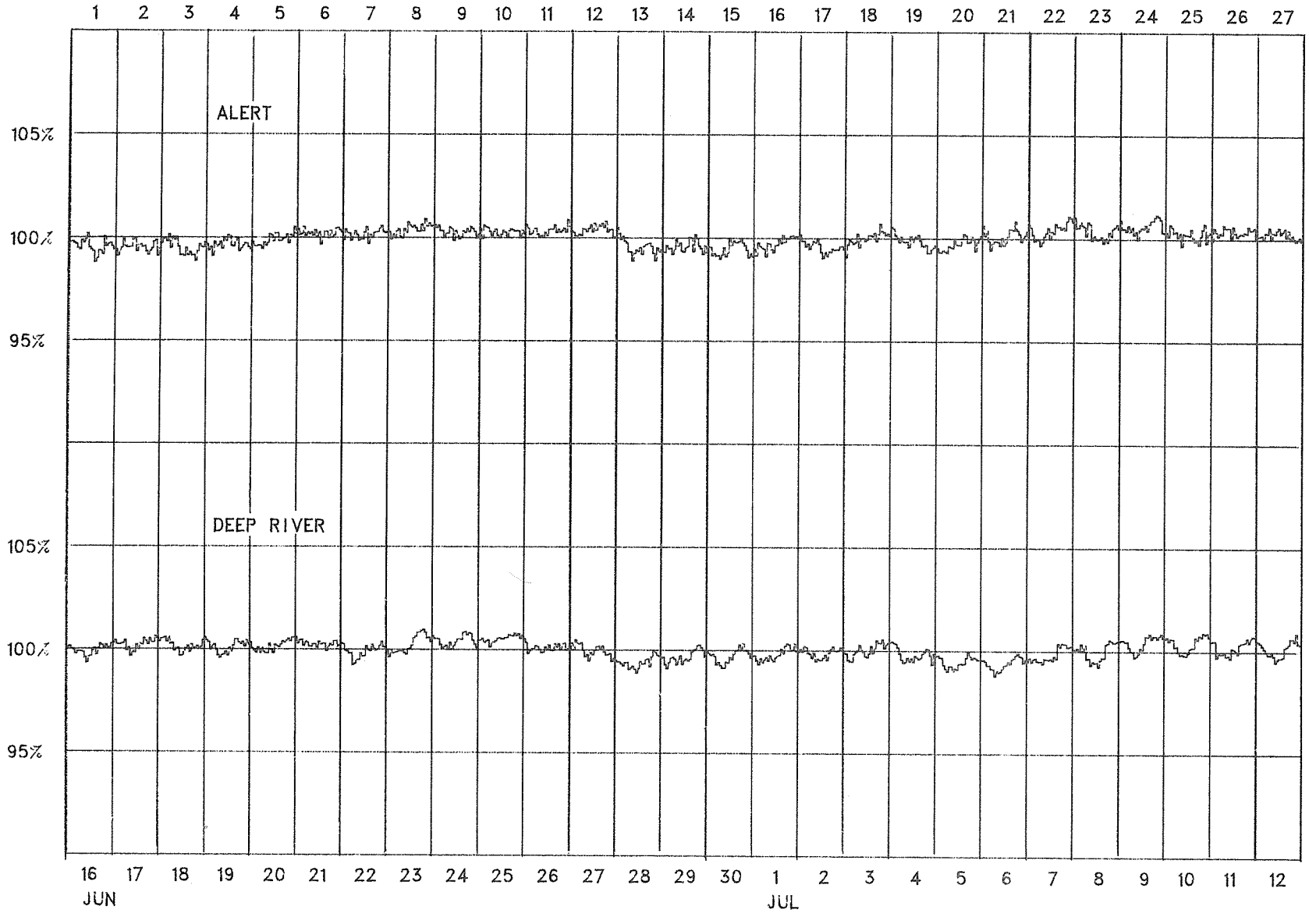
BLEN = Bleien LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill WEIS = Weissenau

THULE NEUTRON MONITOR



COSMIC RAY INDICES
(Neutron Monitor)

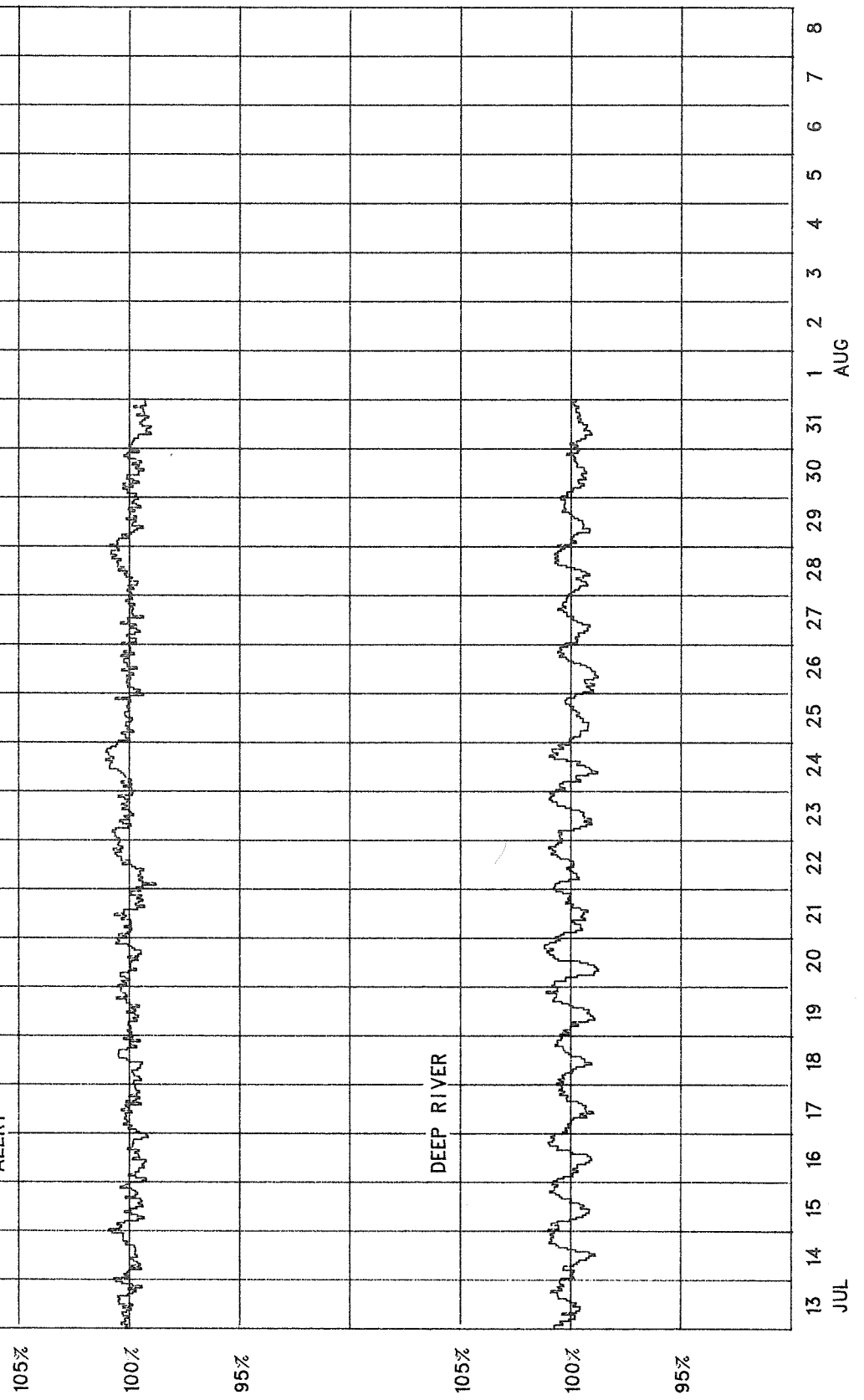
Bartels Rotation 2089 (June 1986–July 1986)



65
Jul 86

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2090 (July 1986–August 1986)



COSMIC RAY INDICES
(Neutron Monitor)

JULY 1986

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	4517	7400.8	7070.2				3663.3	
2	4509	7389.0	7076.0				3663.4	
3	4522	7421.5	7086.1				3665.6	
4	4510	7410.3	7073.2				3664.0	
5	4520	7400.6	7046.6				3657.4	
6	4522	7428.1	7041.7				3656.8	
7	4542	7450.1	7071.7				3660.2	
8	4534	7447.2	7083.3				3658.0	
9	4545	7465.2	7114.7				3663.5	
10	4531	7436.9	7112.8				3659.5	
11	4528	7446.2	7100.4				3655.9	
12	4519	7436.8	7096.1				3656.8	
13	4535	7430.6	7083.4				3662.0	
14	4527	7419.1	7073.4				3659.8	
15	4527	7414.7	7078.5				3652.0	
16	4516	7389.0	7072.8				3649.3	
17	4528	7413.0	7060.3				3656.0	
18	4534	7411.7	7072.9				3666.9	
19	4533	7420.3	7065.7				3668.2	
20	4542	7422.6	7080.2				3667.7	
21	4525	7414.2	7057.6				3648.7	
22	4528	7416.1	7088.7				3661.1	
23	4541	7436.9	7072.2				3659.8	
24	4547	7458.6	7069.5				3661.0	
25	4527	7425.3	7045.7				3664.7	
26	4518	7420.0	7035.2				3666.3	
27	4520	7411.7	7058.4				3667.7	
28	4526	7438.2	7064.9				3669.3	
29	4521	7415.9	7059.1				3670.7	
30	4519	7407.8	7046.6				3666.0	
31	4510	7380.5	7036.8				3667.7	
Mean	4527	7421.9	7070.8				3661.5	

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

GEOMAGNETIC ACTIVITY INDICES

July 1986

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		4-	2+	1	1-	0+	2-	1+	2-	13-	7	0.4	3	3-	1+	1	0+	1+	2-	1+	13	21	7	17	12	
2	D5*	1+	2	3	4-	2+	2	4-	3+	21+	13	0.8	2-	3-	3+	3+	3-	2+	3	3	26	29	23	27	25	
3		2+	2+	3-	2+	1+	1	2-	2	16-	8	0.4	3-	2+	3-	2+	1+	1+	1+	2-	15	18	15	22	12	
4		3-	2-	2-	1+	1+	2-	2+	2+	15	7	0.4	3-	2+	2	2-	2-	2	2+	2	16	20	12	14	18	
5		3-	1+	2-	1+	2-	1	1+	3	14	7	0.4	2+	1+	1+	1+	1+	1-	1+	3-	12	18	8	13	14	K
6	Q8	2+	2-	1-	1+	1	1	2-	1-	10+	5	0.2	2+	2	1-	1	1	1+	1+	1-	9	15	5	11	10	CC
7	Q5	0+	1+	1+	1-	0+	1-	1	2-	7+	4	0.1	1-	1	1+	1-	0+	1-	1-	1+	6	9	4	5	8	CC
8		1-	1+	1+	1-	1	2+	2+	2	12-	6	0.3	1-	1+	2-	1-	1+	2	2	2	11	16	10	8	18	CC
9		2	2-	1+	2-	2+	2-	1+	1+	13+	6	0.3	2+	2-	2-	2-	3-	1+	1+	1+	13	16	13	12	17	
10		3	2-	1	2	1	1	2	1	13-	6	0.3	3-	2-	1+	2-	1	1	1+	1-	10	17	7	13	11	CK
11	Q1	0+	1+	1+	1-	1	1	1-	0+	7-	4	0.1	1-	2-	2-	1+	1	1+	1-	1-	7	11	8	10	10	CC
12		1	1	0+	1+	1	2	2+	2+	11+	6	0.2	1-	1	1-	1+	2-	2	2+	2-	10	19	7	8	19	KK
13		3-	2+	2	1-	3-	1	1	1	13+	7	0.3	2+	2+	2-	1	3-	1	1	1-	12	15	11	14	12	KK
14	Q4	1	1	1-	1	1+	1	1-	1	8-	4	0.1	1+	1+	1+	2-	1+	1+	1-	1	8	10	6	8	8	CC
15	Q3	1-	1	1-	1	1	1	1-	1+	7+	4	0.1	1	1	1-	1+	1	1	1-	1	6	9	4	7	6	CC
16	Q9	1	1-	1-	1+	2	2	1+	2+	11+	5	0.2	1	1	1-	1+	2	2-	1+	2	10	15	6	6	15	CK
17		3	3	2+	2-	2-	1	1-	2	15+	8	0.4	3-	3-	3-	2-	1+	1	1-	2-	15	22	10	20	12	
18	Q10	2	2-	1-	2	2-	1+	1	2-	12	6	0.2	2	2	1	2+	2+	2-	1	2-	13	14	12	13	13	KC
19	Q6	1+	1+	2-	0+	0+	1	1	1+	8+	4	0.1	2	1+	1+	1-	1-	1	1	1+	8	11	4	8	8	CC
20	Q2	1	1-	0	0+	1-	1	1	2-	6+	3	0.1	1+	1-	0+	1-	1	1+	1+	2-	7	9	3	3	9	CC
21		2-	2-	1	2	2-	2-	2-	2+	14-	6	0.3	2-	2-	2-	2	2-	1+	1+	2	12	19	8	14	13	CC
22		3	2+	1+	2-	2	1	1-	1	13	7	0.3	3-	2+	1+	2	2	1+	1-	1	13	14	11	16	9	CC
23	Q7	2	1	1	1+	1+	1+	1	1	10	5	0.2	1+	1	1+	1+	2-	1+	1-	1+	8	12	7	8	12	CC
24		0+	1+	1	1	0+	1+	3+	6	15-	15	0.8	0+	1	1	1	0+	2-	3	5	20	28	15	6	38	
25	D4*	3+	3-	2	2-	1+	2-	3+	6-	22-	17	0.9	3+	3-	2	2	1+	2-	3-	5	28	32	19	24	29	
26	D1	4+	4+	3+	3	4-	3+	3-	3	28-	20	1.0	4	4-	3	3	4-	3	2+	3	36	43	30	36	38	
27	D2*	3-	2	4-	5	2-	2+	2	3+	23-	16	0.9	3-	2+	4-	4+	2+	2	1+	3-	28	28	37	45	21	
28		3	2+	2+	2+	2+	2	2-	2	18	9	0.5	3-	2+	2+	3-	3	2+	2	3-	21	22	23	21	25	
29	D3*	3+	3	3-	3	4	3-	4-	3+	26-	17	0.9	3	3-	3-	3	3+	3	3+	3	31	36	37	32	41	
30		3+	2+	3+	2	2	2+	2	3-	20	11	0.6	3	2+	3	3-	2	2+	2	2+	21	27	20	29	19	
31		3	3-	2	4	2+	2	2	2+	20+	12	0.7	3-	3	2	4-	3-	2	2	2+	23	27	20	27	21	
Mean											8	0.40									15.1	19.5	13.0	16.3		

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	3	2+	1+	1+	1-	2	2	1+	14	3	3-	1+	1	0+	1	1+	1+	12	68.9	0	0	12	D	-
2	2	3-	3+	4	3-	3-	3	3	30	2-	3-	3+	3	2+	2	3-	3	23	68.7	0	0	12	A	-
3	2+	2+	3-	3-	2-	1+	2-	2	16	3-	2+	3-	2+	1	1	1+	1+	14	68.9	10	10	12	T	-
4	2+	2+	2+	2	2	2	2+	2	16	3-	2+	2	1+	1+	2	2	2	15	69.3	14	15	13	A	-
5	2	2-	2-	2-	2-	1+	1+	3-	13	2+	1+	1	1	1	0	1	3-	10	71.1	18	19	15		-
6	2	2	1	1+	2-	2-	2	1	11	2+	2	0+	1-	0+	1+	1-	0	7	73.9	29	29	18	N	-
7	1	1+	2-	1+	1-	1+	1	2-	8	0+	1-	1+	0	0	0+	0+	1	4	72.1	29	30	16	O	-
8	1	2-	2	2-	1+	3-	2+	2	13	1-	1-	1+	0	1	1+	2-	2	8	71.6	29	28	15	T	-
9	2+	2+	2	2-	3-	2-	2-	2-	15	2+	1+	2-	1+	3-	1-	1-	1	11	72.5	17	18	16		-
10	3-	2	1+	2+	1+	1+	2-	1	13	3	1+	1	1	1-	0+	0+	0+	8	75.0	33	30	19	C	-
11	1	2-	1+	1+	1+	2-	1+	1-	9	0+	1+	2-	1-	1-	0+	0+	1-	5	74.7	35	33	19	U R	-
12	1+	1+	1	2-	2	2+	3-	2	14	0+	1-	0+	0+	1	1+	2-	2-	6	73.5	36	37	17	R	-
13	3-	3-	2	1+	3-	1+	1+	1+	15	2	2+	2-	1-	2+	1-	0+	0	10	74.2	25	21	18	E	-
14	2-	1+	2-	2-	2-	1+	1+	2-	11	1	1	1	1+	1	1	0+	0+	6	74.6	16	19	19	N	-
15	1+	1+	1+	2	1+	1+	1+	2-	10	1-	1-	0+	1-	0+	0+	0+	0	3	74.0	28	28	18	T L	-
16	1+	1+	1+	2	2+	2+	2-	2+	13	1-	0+	0	1	1+	1+	1-	2-	6	74.4	23	27	18	Y	-
17	3	3	3	2-	2	1+	1	2+	18	3-	3-	2+	2-	1	0+	0+	1+	12	74.9	33	32	19		-
18	2	2	1+	2	2+	2	1+	2-	14	2+	2+	1-	2+	2	1+	0+	1+	11	74.6	14	15	19	A	-
19	3-	2-	2-	1	1	2-	1+	1+	11	1+	1+	1-	0	0	0+	0+	1-	4	73.3	12	10	17	V	-
20	1	1	1	1	1+	2-	2	2	10	1+	1-	0	0+	1-	0+	1-	1+	5	73.2	18	19	17	A I	-
21	2	2	2	2+	2	2	2-	2+	16	1+	1+	1	2-	1	1	1	2-	8	72.5	21	21	16	L	-
22	3-	3-	1+	2+	2	2-	1	1+	14	3-	2	1+	2	2-	1-	0+	0+	11	73.2	26	25	17	A	-
23	1+	1+	1+	1+	2	2-	1-	1+	10	1+	1-	1	1	1+	1-	1-	1	6	71.6	14	12	15	B	-
24	1-	1+	1+	1+	1	2	3+	5	23	0	1	1-	1-	0	1+	3-	5-	17	71.2	0	0	15	L	-
25	3+	3-	2+	2+	2	2	3	5	32	3+	2+	2	2-	1	1+	2+	5-	25	70.9	0	0	15	E	-
26	4-	4-	3	3+	4-	3+	3-	3-	35	4+	4	3	3-	3+	3	2	3	36	71.1	0	0	15		-
27	3-	2+	4-	4+	3-	2+	2-	3	29	3	2+	4	4+	2+	2-	1+	2+	28	71.6	10	11	15		-
28	3-	2+	2+	3-	3	2+	2-	3-	21	2+	2+	3-	3-	3-	2	2	3-	21	72.5	12	12	16		-
29	3	2+	3	3-	3+	3	3+	3-	29	3+	3-	3-	3	4-	3	4-	3+	33	74.0	16	15	18		-
30	3	3-	3	3-	2+	2+	2	2+	22	3	2+	3	3-	1+	2+	2-	2	20	73.6	18	17	17		-
31	3-	3-	2+	4-	3-	2+	2	2	23	3-	3	2-	4-	3-	1+	2	2+	22	72.6	17	17	16		-
Mean									17.0									13.1	72.5	17.8	17.7	16.3		

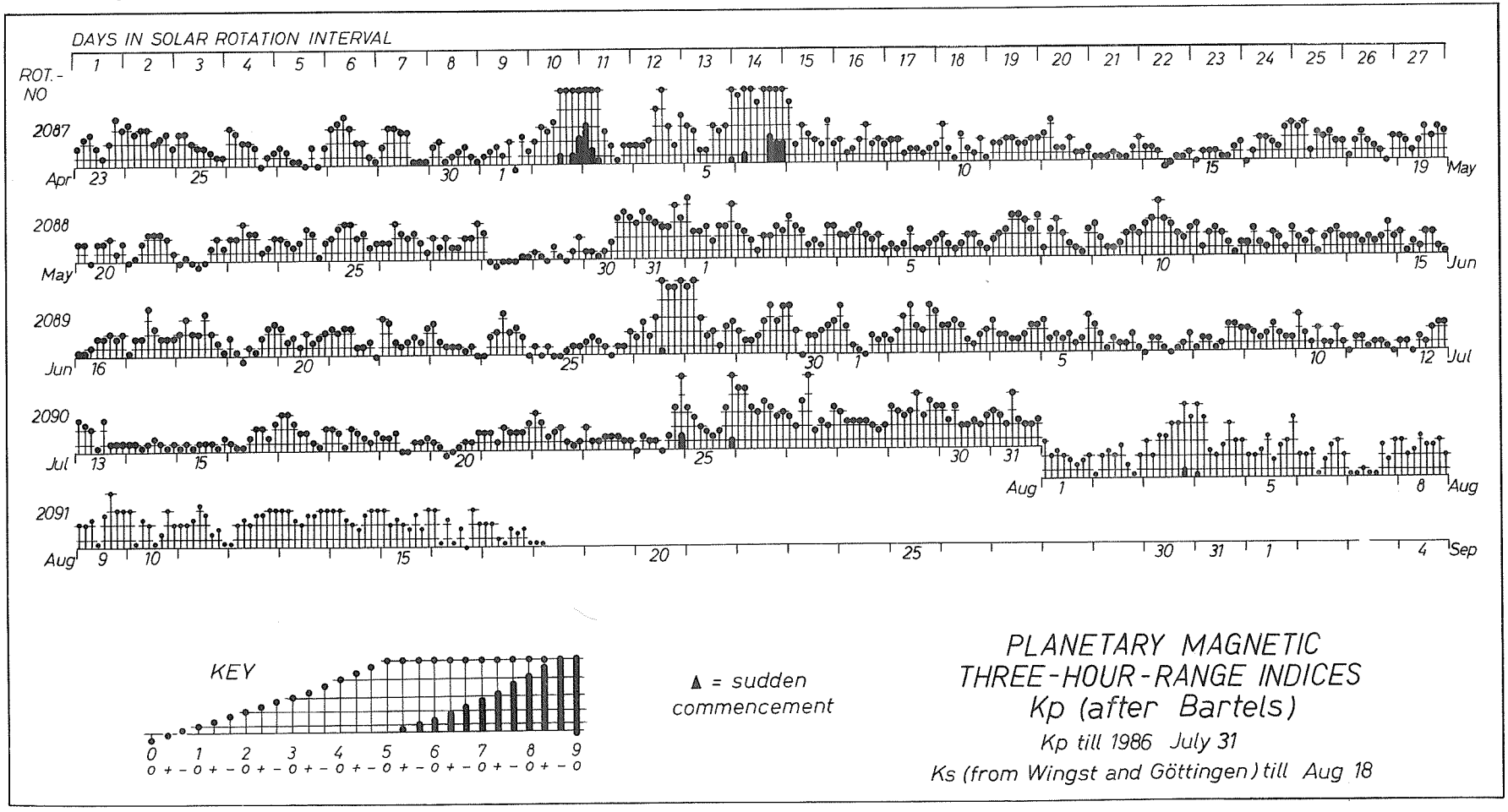
DAILY AVERAGE INDICES Ap

DAY	1985 AUG	SEP	OCT	NOV	DEC	1986 JAN	FEB	MAR	APR	MAY	JUN	JUL
1	18	6	3	15	15	25	5	18	8	5	15	7
2	11	4	5	32	14	18	6	12	5	43	8	13
3	6	4	11	28	9	10	6	12	14	40	10	8
4	6	2	12	16	12	5	5	8	4	17	7	7
5	4	3	66	10	8	4	7	8	9	17	5	7
6	3	9	41	13	7	20	11	32	4	67	6	5
7	4	9	27	7	5	32	82	33	5	12	12	4
8	6	10	16	6	3	11	202	23	5	7	7	6
9	5	12	6	14	5	14	100	5	13	5	7	6
10	7	12	6	19	17	11	10	2	19	6	13	6
11	5	9	16	10	11	4	20	2	6	6	6	4
12	27	5	12	4	7	5	18	7	10	7	6	6
13	41	5	20	24	30	3	15	21	5	4	6	7
14	11	29	8	17	11	4	19	8	4	3	6	4
15	12	18	18	16	10	5	5	8	7	4	5	4
16	9	33	17	10	6	3	5	6	8	7	5	5
17	9	13	15	14	8	6	9	6	6	8	8	8
18	12	5	22	15	12	7	14	8	7	5	9	6
19	12	35	14	14	41	4	9	9	11	8	5	4
20	12	29	6	3	11	15	17	3	5	5	6	3
21	10	23	16	5	5	27	26	17	7	6	6	6
22	28	13	17	8	6	11	30	22	11	3	8	7
23	17	9	13	4	4	17	35	11	10	8	5	5
24	7	17	8	4	10	12	19	21	12	7	7	15
25	18	18	9	6	6	26	18	27	7	10	3	17
26	14	19	4	6	8	12	26	12	7	8	5	20
27	15	17	4	20	12	37	20	18	4	7	28	16
28	13	6	4	8	35	30	25	14	11	3	18	9
29	17	4	11	37	7	19		8	9	4	11	17
30	10	5	3	52	46	14		5	5	10	9	11
31	32		6		22	8		7		17		12
MEAN	13	13	14	15	13	14	27	13	8	12	8	8

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

University of Gottingen

Kp through July 31, 1986



PRINCIPAL MAGNETIC STORMS

JULY 1986

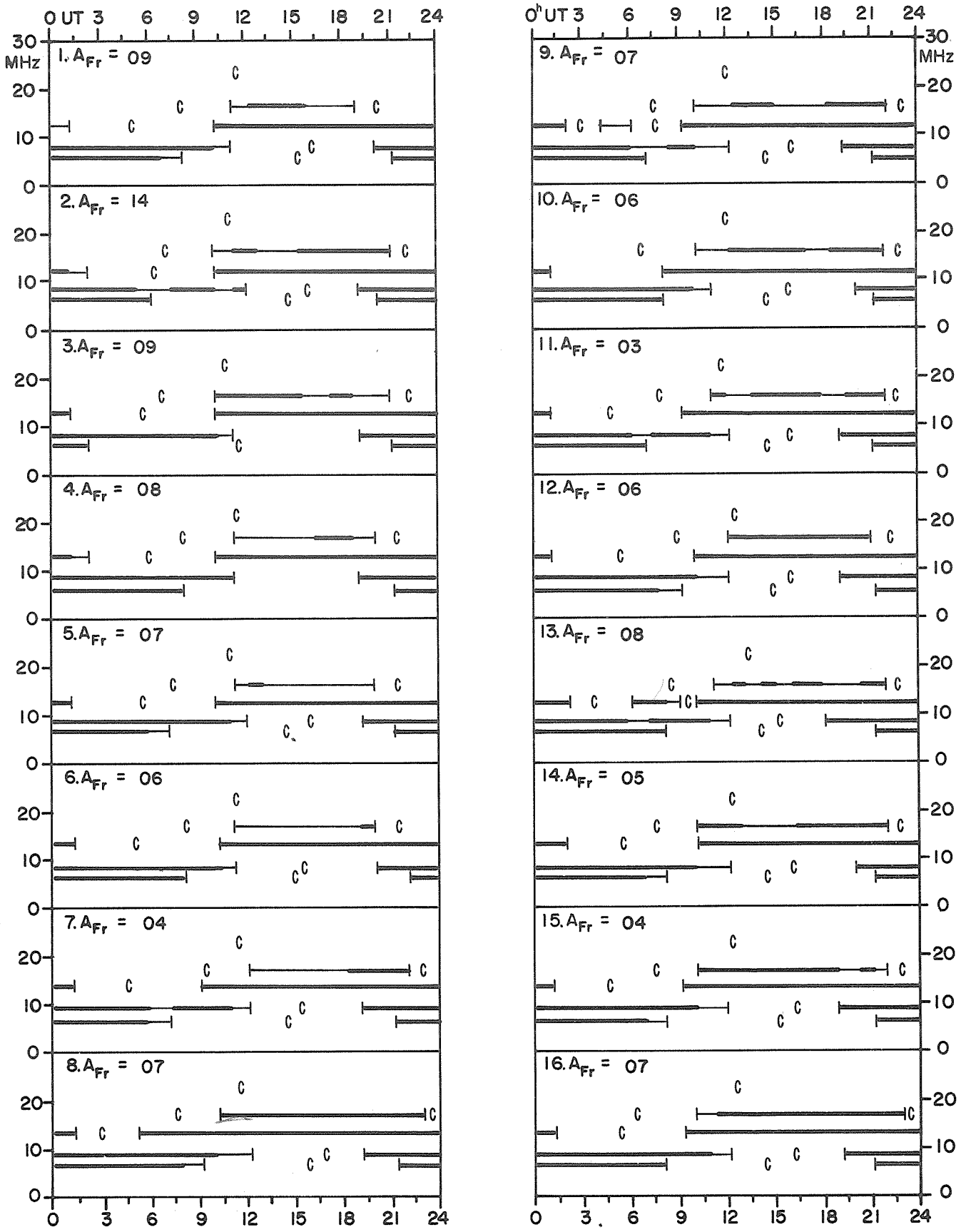
Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
HYB	07.6N	02	0400	..	..	..	..	02(3,4)	4	4	69	18	03	14
BYE	07.6N	15	1041	SC	- 0.3	7.2	- 1	16(5,8) 17(2)	3	5	70	23	17	14
COL	64.6N	24	2117	SC*	- 40	95	- 46	26(5) 27(4) 29(4,5)	6	207	1300	620	30	19
FRD	49.6N	24	17--	..	..	..	..	24(8)	6	21	136	64	27	--
BJI	28.5N	24	18--	..	..	..	..	24(8)	6	11	121	39	26	24
JAI	17.3N	24	1800	..	..	..	..		-	8	90	49	26	20
KRC	16.4N	24	1748	..	..	..	..	24(8) 27(4) 31(4)	5	5	125	38	01	02
SHL	14.7N	24	1800	..	..	..	..		-	6	88	34	26	20
UJJ	13.5N	24	1800	..	..	..	..		-	--	--	--	26	20
ABG	09.5N	24	1800	..	..	..	..	24(8)	5	7	84	58	26	20
HYB	07.6N	24	1500	..	..	..	..	24(8)	5	6	86	41	26	19
GUA	04.0N	24	1831	..	..	..	..	24(8)	5	10	60	20	25	06
ANN	01.5N	24	1800	..	..	..	..		-	5	91	56	26	20
TRD	01.1S	24	1800	..	..	..	..		-	4	125	59	26	20
KGL	56.5S	24	1805	SC	- 1	4	5	25(8)	6	20	312	134	27	13
GUA	04.0N	25	1618	..	..	..	..	25(8)	5	10	40	10	26	06
HYB	07.6N	27	0300	..	..	..	..	27(4)	4	4	81	20	28	19
JAI	17.3N	29	0700	..	..	..	..		-	1	79	14	29	22
SHL	14.7N	29	0700	..	..	..	..		-	3	73	12	29	22
UJJ	13.5N	29	0700	..	..	..	..		-	--	--	--	29	22
ABG	09.5N	29	0700	..	..	..	..	29(4,5,7)	4	2	88	19	29	22
HYB	07.6N	29	0400	..	..	..	..	29(5)	5	4	96	14	--	--
ANN	01.5N	29	0700	..	..	..	..		-	2	97	37	29	22
TRD	01.1S	29	0700	..	..	..	..		-	1	105	63	29	22

Reporting stations:

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

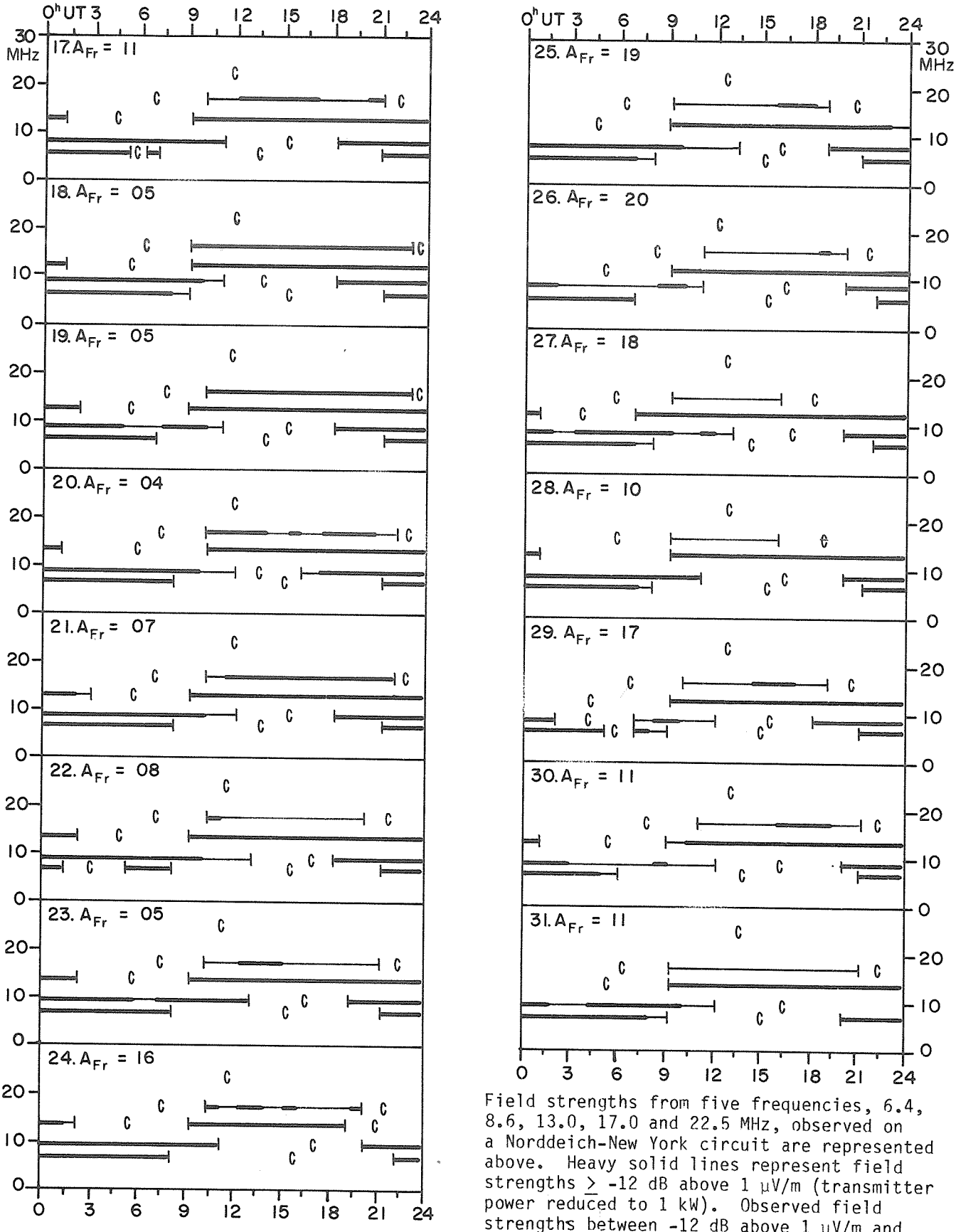
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1986



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1986



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μV/m and -40 dB above 1 μV/m are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

JULY 1986

Day	Bracknell	Teheran	New York	Tokyo	South Afr.	Canberra
1	6.0	5.4	5.0	5.4	5.6	5.5
2	7.4	4.6	5.5	5.7	4.2	6.3
3	4.5	4.2	4.9	4.7	4.6	3.9
4	2.6	4.9	5.8	5.0	3.7	4.7
5	2.7	4.5	5.1	5.5	4.8	5.0
6	3.5	5.4	5.1	7.1	3.3	4.9
7	3.1	4.4	6.0	7.0	2.5	6.6
8	5.2	5.0	7.4	5.9	3.3	5.9
9	5.1	3.8	5.1	5.1	3.3	5.2
10	5.0	5.5	6.4	4.9	4.6	7.0
11	3.8	4.3	5.9	7.0	3.1	6.7
12	4.9	4.4	6.3	7.2	4.4	7.0
13	4.1	4.5	5.4	5.6	5.0	6.0
14	4.1	5.1	5.9	7.7	2.7	5.4
15	3.0	5.1	6.5	7.2	4.3	5.9
16	4.0	6.4	6.5	7.0	3.0	5.5
17	3.9	5.7	5.3	6.9	5.0	7.2
18	5.7	5.3	6.8	7.1	3.1	7.0
19	4.3	5.1	5.9	7.6	4.1	6.4
20	3.0	5.6	6.3	8.4	2.7	4.9
21	4.1	4.3	6.7	7.2	1.9	6.6
22	3.3	4.6	5.0	6.9	3.1	6.4
23	4.2	5.1	4.4	5.8	4.6	5.8
24	3.6	4.5	4.9	5.7	3.6	5.5
25	2.9	3.8	4.2	2.9	4.0	5.2
26	2.7	4.6	2.6	1.5	3.5	5.7
27	3.5	5.0	3.7	2.7	5.2	5.9
28	3.0	4.6	4.3	1.9	4.0	5.3
29	2.3	3.6	4.3	0.4	4.3	1.9
30	3.1	3.1	3.2	2.7	5.3	3.2
31	3.9	5.5	4.5	3.8	3.8	4.3
Mean	4.0	4.8	5.3	5.5	3.9	5.6

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

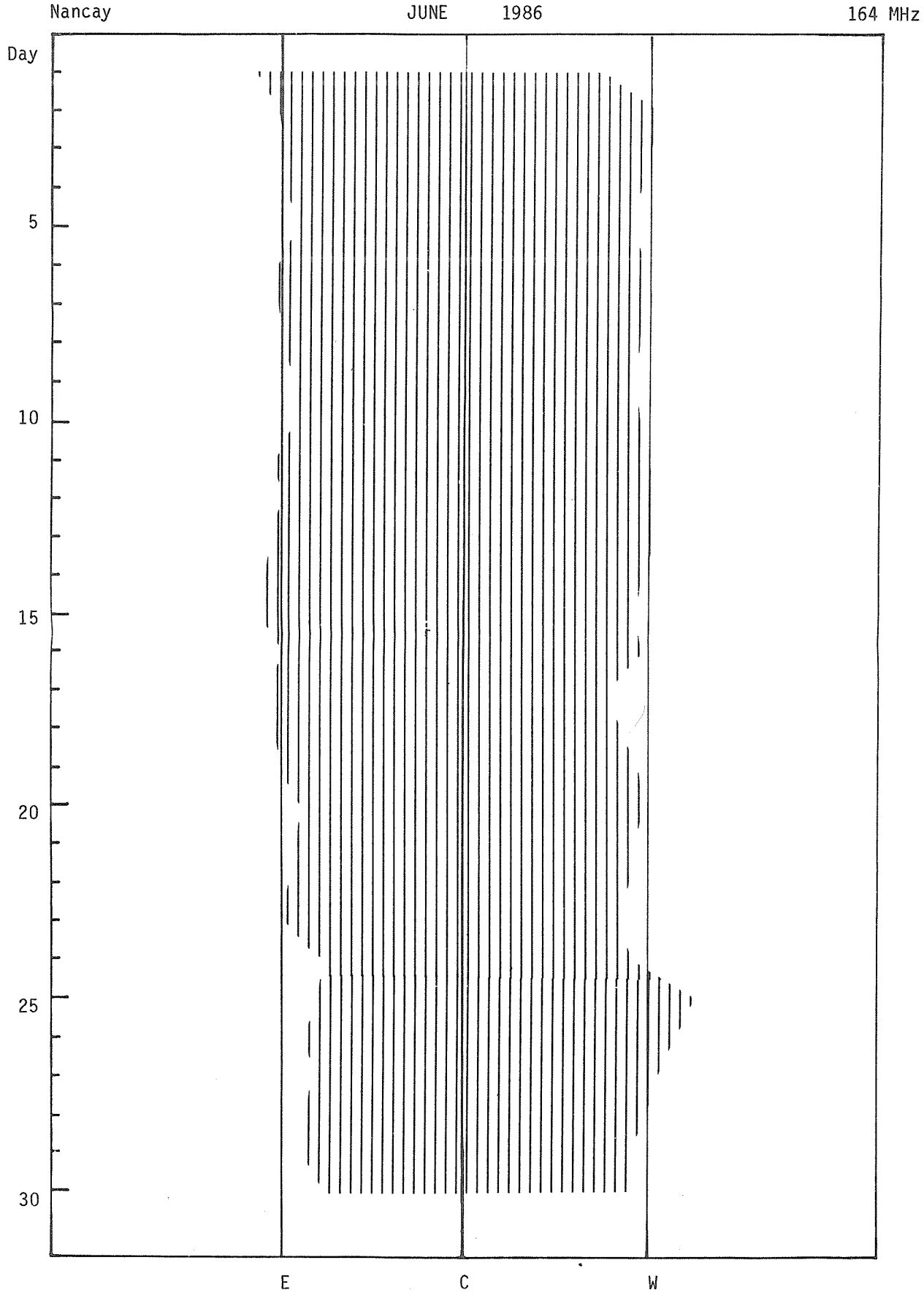
0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

C O N T E N T S

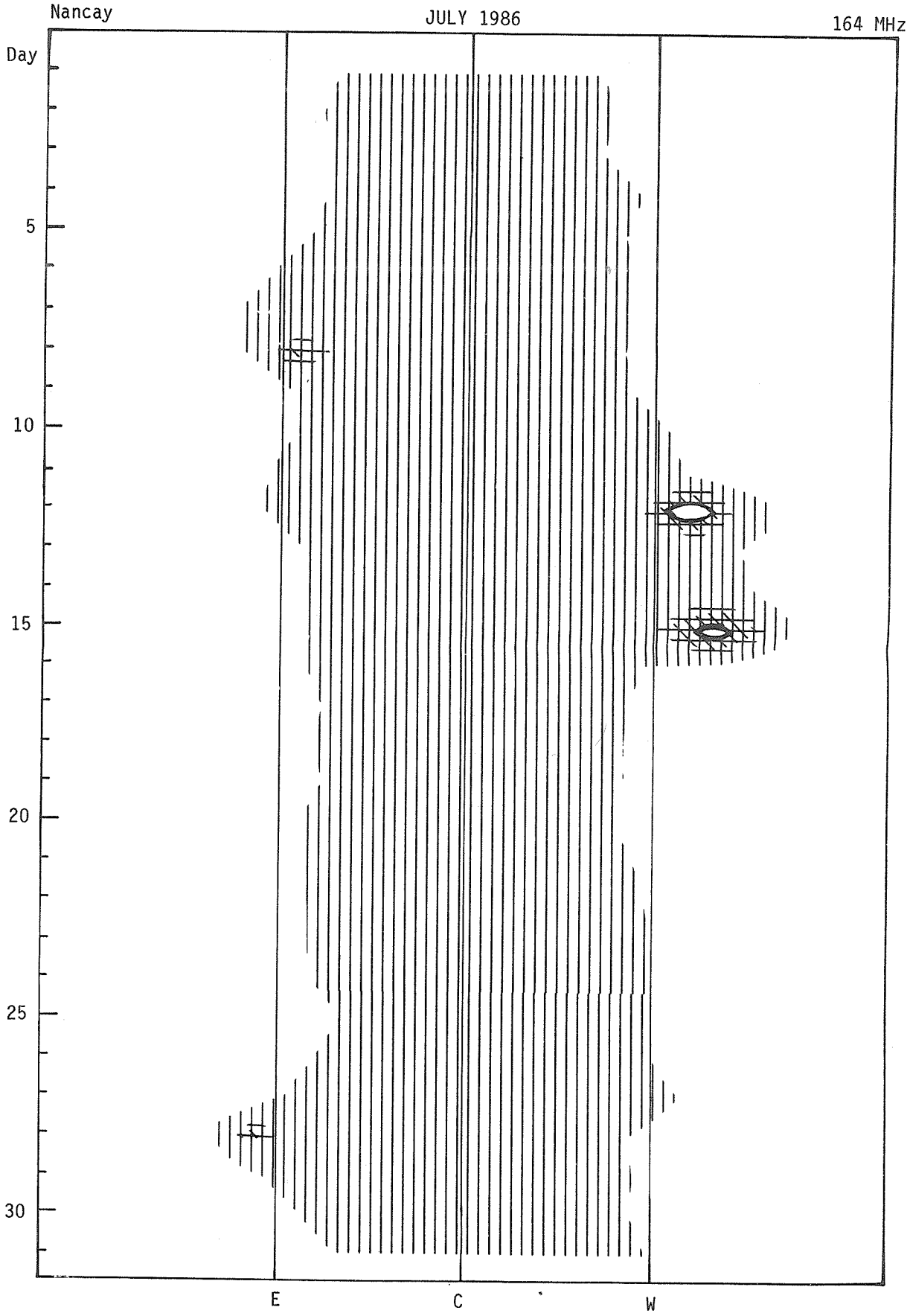
Prompt Reports LATE DATA Number 505 Part I

76
Late
Jun 86

SOLAR INTERFEROMETRIC OBSERVATIONS



SOLAR INTERFEROMETRIC OBSERVATIONS



COSMIC RAY INDICES
(Neutron Monitor)

APRIL 1986

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	4458	7330.8	6975.5	6257.9	4101.6		3691.9	
2	4465	7355.5	6990.9	6243.3	4128.2		3694.1	
3	4466	7358.3	6998.5	6254.7	4144.0		3677.1	
4	4474	7371.6	7006.0	6257.8	4132.0		3662.4	
5	4476	7384.6	7016.8	6264.0	4127.7		3692.4	
6	4465	7379.2	7012.0	6240.8	4116.3		3692.9	
7	4449	7355.5	7017.5	6227.7	4110.6		3710.0	
8	4458	7375.2	7047.6	6241.7	4115.5		3686.8	
9	4452	7366.1	7053.7	6264.7	4126.6		---	
10	4429	7353.4	7047.2	6270.0	4133.1		3672.2	
11	4422	7348.5	7042.1	6268.7	4126.5		3698.3	
12	4436	7336.6	7040.4	6295.9	4141.2(28)		3706.3	
13	4437	7350.2	7039.7	6301.2	4148.6(22)		3700.4	
14	4443	7350.0	7046.2	6316.0	4141.5(22)		3689.8	
15	4440	7343.6	7033.6	6291.0	4139.5		3663.6	
16	4443	7334.0	7038.9	6292.6	4125.0		3706.1	
17	4447	7338.5	7033.0	6286.7	4130.8		3676.4	
18	4446	7351.8	7029.7	6288.1	4141.0		3675.6	
19	4442	7347.3	7025.5	6285.3	4148.7		3676.0	
20	4450	7340.0	7022.3	6291.6	4142.3		3678.3	
21	4456	7368.1	7044.9	6287.6	4140.9		3674.5	
22	4459	7374.0	7058.2	6287.1	4148.6		3669.5	
23	4456	7378.2	7045.0	6276.9	4154.7		3691.0	
24	4466	7370.5	7035.1	6277.9	4163.3		3682.8	
25	4475	7385.1	7041.5	6281.2	4175.5(36)		3684.5	
26	4478	7381.0	7058.4	6300.4	---		3682.0	
27	4490	7402.0	7064.9	6320.0	4194.5(8)		3690.6	
28	4489	7393.5	7070.2	6317.5	4190.0(36)		3698.6	
29	4486	7386.0	7088.3	6306.1	4189.0		3697.0	
30	4506	7404.9	7092.3	6299.5	4201.8		3697.3	
Mean	4459	7363.8	7037.2	6279.8	4141.7		3686.8	

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

COSMIC RAY INDICES
(Neutron Monitor)

MAY 1986

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	4510	7414.1	7090.6	6316.4	4180.1		3671.5	
2	4476	7351.7	7065.5	6288.0	4179.1		3679.9	
3	4453	7299.4	7043.1	6290.7	4163.1		3683.7	
4	4476	7363.5	7056.9	6301.8	4183.5		3688.2	
5	4464	7348.7	7033.6	6328.6	4191.3		3683.3	
6	4458	7343.7	7025.4	6327.1	4232.1		3692.3	
7	4460	7314.8	6994.6	6299.4	4186.0		3696.4	
8	4467	7312.7	7015.6	6294.6	4183.3		3683.5	
9	4475	7339.2	7016.0	6297.7	4175.2		3689.0	
10	4488	7364.4	7042.0	6298.2	4182.1		3690.3	
11	4496	7377.6	7051.5	6310.7	4173.7(38)		3684.5	
12	4497	7385.0	7049.4	6302.5	4171.1		3691.6	
13	4501	7395.0	7065.4	6306.8	4167.8		3683.6	
14	4515	7404.3	7070.4	6307.1	4181.4		3672.7	
15	4522	7412.0	7046.5	6321.3	4178.3		3681.3	
16	4519	7379.3	7017.7	6302.9	4163.1		3675.5	
17	4523	7397.7	7054.2	6297.7	4196.4		3680.7	
18	4523	7408.9	7038.7	6293.9	4174.5		3672.0	
19	4526	7420.5	7045.8	6292.3	4175.4		3663.7	
20	4505	7381.9	7022.7	6301.5	4161.9		3663.4	
21	4503	7385.5	7052.8	6305.1	4178.1		3667.0	
22	4509	7390.9	7057.0	6300.4	4178.2		3677.6	
23	4509	7385.4	7046.3	6298.4	4173.4		3685.8	
24	4510	7393.5	7054.2	6311.4	4176.5		3675.8	
25	4503	7387.1	7045.7	6293.2	4177.8		3684.6	
26	4514	7391.2	7050.6	6302.0	4184.3		3687.6	
27	4509	7377.9	7053.8	6302.1	4178.3		3682.5	
28	4525	7413.0	7081.4	6338.6	4189.4		3683.0	
29	4526	7410.9	7082.7	6345.3	4195.8		3671.3	
30	4527	7410.2	7079.2	6340.2	4191.0		3677.6	
31	4526	7413.2	7057.4	6336.9	4186.7		3673.7	
Mean	4500	7379.8	7048.6	6308.2	4181.1		3680.4	

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

COSMIC RAY INDICES
(Neutron Monitor)

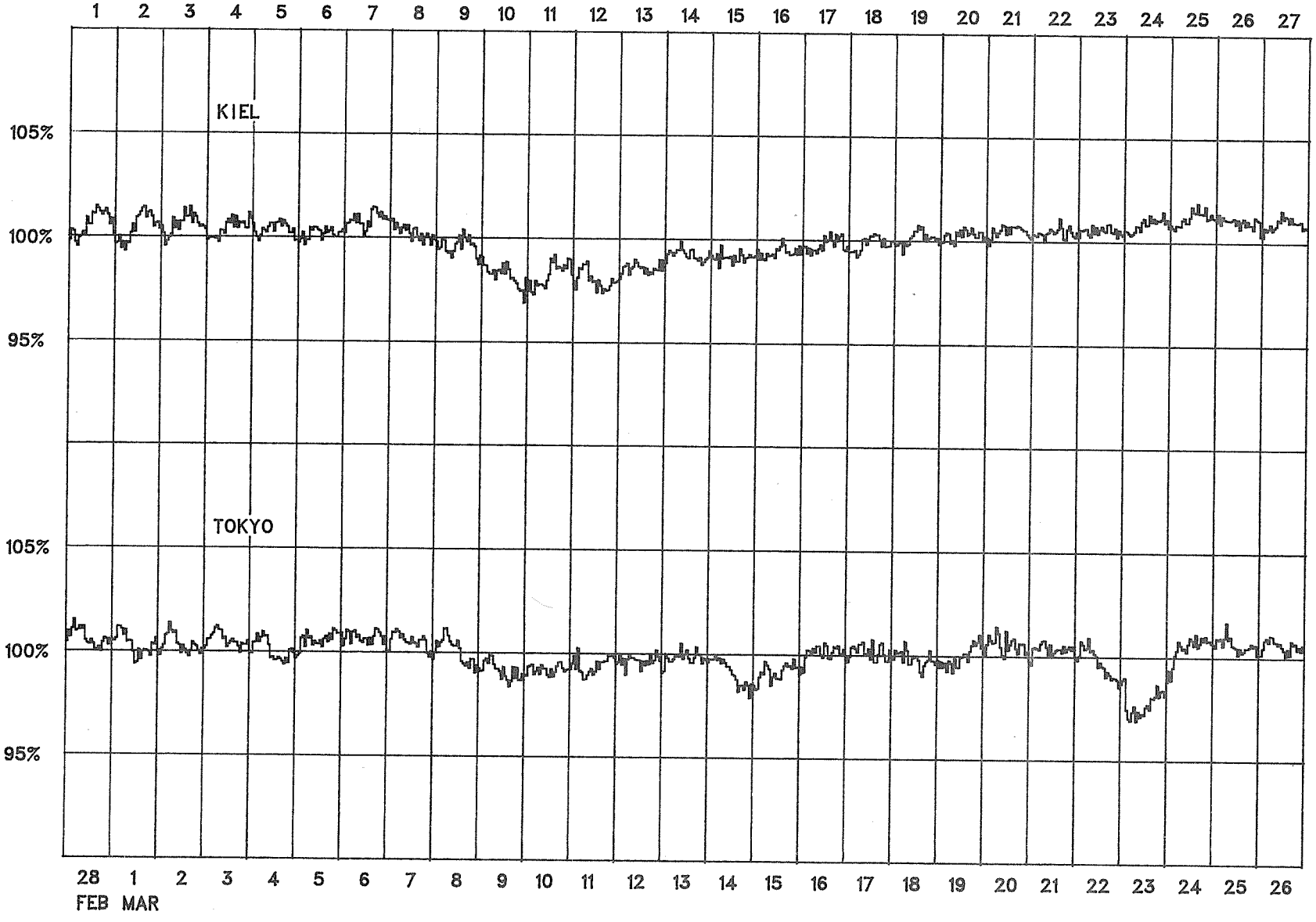
JUNE 1986

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	4502	7366.1	7036.4	6321.1	4180.0		3669.2	
2	4503	7381.3	7041.8	6312.0	4172.0		3667.7	
3	4509	7377.0	7049.5	6323.9	4181.7		3668.8	
4	4505	7384.5	7033.1	6350.4	4183.3		3678.2	
5	4508	7406.9	7053.5	6354.8	4186.1(38)		3680.0	
6	4506	7403.1	7061.5	6352.1	4173.7(8)		3669.2	
7	4507	7378.2	7059.8	6346.7	4190.7		3670.2	
8	4501	7355.3	7026.2	6305.4	4178.6		3669.2	
9	4508	7367.1	7047.6	6301.4	4185.5		3671.6	
10	4510	7373.0	7042.1	6308.4	4182.9		3680.2	
11	4508	7366.6	7052.4	6325.3	4186.0		3684.2	
12	4524	7366.0	7065.0	6316.8	4182.3		3682.2	
13	4516	7358.2	7058.7	6308.0	4189.7		3679.9	
14	4517	7360.4	7069.1	6312.3	4193.1		3683.1	
15	4530	7390.1	7084.8	6324.1	4208.1		3683.4	
16	4537	7388.0	7080.2	6329.6	4196.7		3671.0	
17	4534	7385.3	7101.2	6342.6	4189.3		3659.6	
18	4529	7385.9	7096.3	6344.5	4195.0		3666.8	
19	4523	7394.7	7093.0	6337.2	4195.0		3672.2	
20	4535	7413.0	7095.5	6340.6	4198.4		3672.5	
21	4538	7436.3	7104.1	6350.2	4207.7		3672.3	
22	4538	7433.1	7078.6	6357.9	4199.0		3668.4	
23	4550	7449.7	7102.4	6368.2	4212.5		3673.9	
24	4544	7440.9	7114.9	6366.0	4205.0		3671.5	
25	4537	7440.3	7123.2	6347.5	4205.9		3670.8	
26	4540	7446.2	7092.5	6349.1	4200.7		3678.3	
27	4545	7448.0	7082.7	6360.7	4207.9		3678.7	
28	4506	7387.5	7042.2	6332.0	4186.9		3665.3	
29	4508	7389.0	7061.9	6339.5	4182.2		3658.2	
30	4507	7380.5	7064.7	6346.6	4186.0		3656.5	
Mean	4521	7395.1	7070.5	6335.8	4192.0		3672.4	

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

COSMIC RAY INDICES
(Neutron Monitor)

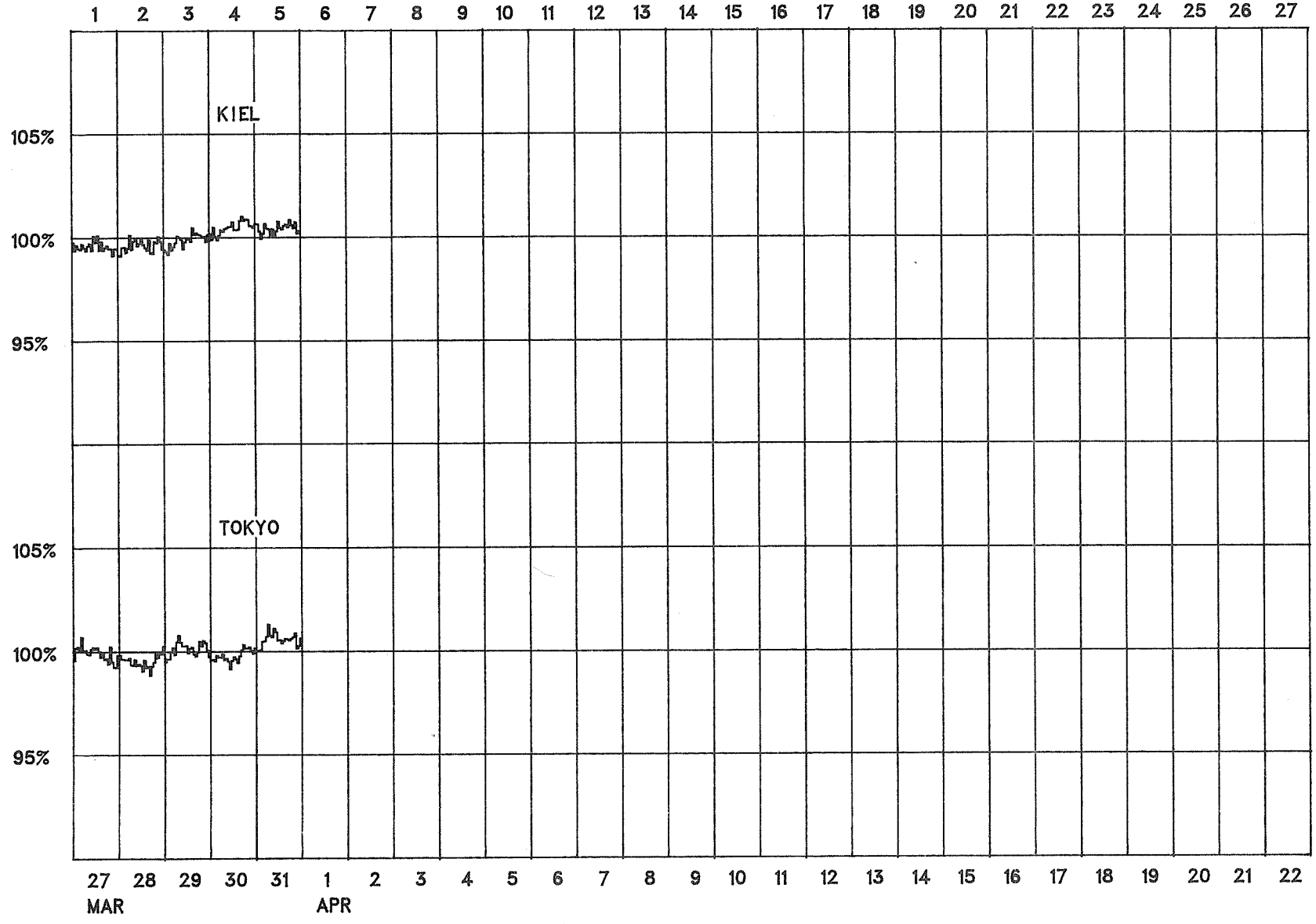
Bartels Rotation 2085 (February 1986–March 1986)



81
Late
Mar 86

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2086 (March 1986–April 1986)



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

June 1986

Storm Sudden Commencements (ssc)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
27	1201	B: HRB GCK COI MPO AMS CZT; C: SPT TEN	16	0955-0959	NAQ
			17	0412-0530	TEN (ssc: HRB QUE LNP)
			18	0727-0734	SOD BDV (si: MPO)
			24	1124-1135	ALM (ssc: NAQ)

Underlines indicate confirming geophysical effects.

Reporting Observatories:

SOD WNG WIT NGK VAL HAD BDV CLF HRB NAQ
GCK MMB EBR COI SPT FRD ALM KAK HTY KNY
QUE TEN LNP HVN MPO GNA CAO AMS CZT KGL
DUM

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

†The symbol si stands for a sudden magnetic change not classifiable as a storm sudden commencement.

†The symbol bps stands for bay-like pulsations.

*U.S. GOVERNMENT PRINTING OFFICE: 1986-0-773-026/40003

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."