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### NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

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## Solar - Geophysical Data

NO. 506 OCTOBER 1986

## Part I (Prompt Reports)

DATA FOR  
SEPTEMBER 1986

AUGUST 1986

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

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

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(Issued in Two Parts)

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ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages SEPTEMBER 86

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
244	01	31	011	068	015	N05	W33	0	0	0	01	N05	W33	Q	Solquiet, Magquiet.
245	02	01	011	069	007	N05	W47	0	0	0	02	N05	W47	Q	Solquiet, Magquiet.
246	03	02	011	068	018	N05	W59	0	0	0	03	N05	W59	Q	Solquiet, Magquiet.
247	04	03	011	068	006	N05	W73	0	0	0	04	N05	W73	Q	Solquiet, Magquiet.
248	05	04	011	068	007	N05	W86	0	0	0	05	N05	W86	Q	Solquiet, Magquiet.
249	06	05	011	069	009	Spotnil				06	Spotnil			Solquiet, Magquiet.	
250	07	06	013	068	010	N28	E38	3	0	0	07	N28	E38	Q	Solquiet, Magquiet.
251	08	07	019	069	005	N28	E25	2	0	0	08	N28	E25	Q	Solquiet, Magquiet.
252	09	08	014	068	007	N28	E12	2	0	0	09	N28	E12	Q	Solquiet, Magquiet.
253	10	09	011	068	007	N27	W05	0	0	0	10	N27	W05	Q	Solquiet, Magquiet.
254	11	10	011	068	007	N27	W18	0	0	0	11	N27	W18	Q	Solquiet, Magquiet.
255	12	11	000	068	007	Spotnil				12	Spotnil			Solquiet, Magalert 12/14 Coronal hole.	
256	13	12	000	068	045	Spotnil				13	Spotnil			Solquiet, Magalert 13/14.	
			Presto: Boulder Strong Magstorm in progress 12/0750 UT.												
257	14	13	000	068	018	Spotnil				14	Spotnil			Solquiet, Magalert 14/14.	
258	15	14	000	069	011	Spotnil				15	Spotnil			Solquiet, Magnil.	
259	16	15	000	071	013	Spotnil				16	Spotnil			Solquiet, Magalert 16/XX.	
260	17	16	000	070	012	Spotnil				17	Spotnil			Solquiet, Magalert 17/XX Recurrence.	
261	18	17	000	069	011	Spotnil				18	Spotnil			Solquiet, Magalert Minor 18/19 Recurrence.	
262	19	18	000	068	023	Spotnil				19	Spotnil			Solquiet, Magalert Minor 19/21 Recurrence.	
263	20	19	000	068	020	Spotnil				20	Spotnil			Solquiet, Magalert 20/21 Recurrence.	
264	21	20	000	068	018	Spotnil				21	Spotnil			Solquiet, Magalert 21/21 Recurrence.	
265	22	21	000	068	018	Spotnil				22	Spotnil			Solquiet, Magnil.	
266	23	22	000	068	010	Spotnil				23	Spotnil			Solquiet, Magquiet.	

ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

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SEPT 86

Summary of the Gealert Messages SEPTEMBER 1986

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast <sup>1</sup>	Gealerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
267	24	23	000	068	018	Spotnil					24	Spotnil		Solquiet, Magalert 24/27.	
268	25	24	000	068	019	Spotnil					25	Spotnil		Solquiet, Magalert 25/27 Recurrence.	
269	26	25	000	069	011	Spotnil					26	Spotnil		Solquiet, Magalert 26/27 Recurrence.	
270	27	26	000	068	027	Spotnil					27	Spotnil		Solquiet, Magalert 27 Recurrence.	
271	28	27	000	069	019	Spotnil					28	Spotnil		Solquiet, Magnil.	
272	29	28	000	070	011	Spotnil					29	Spotnil		Solquiet, Magquiet.	
273	30	29	011	071	011	N06	E74	0	0	0	30	N06	E74	Q	Solquiet, Magquiet.
274	01	30	011	071	007	N07	E61	0	0	0	01	N07	E61	Q	Solquiet, Magquiet.

<sup>1</sup>Q = quiet, E = eruptive, A = active, P = proton.

<sup>2</sup>Presto message is a rapid report of a major event.

INTERNATIONAL (R<sub>1</sub>) RELATIVE SUNSPOT NUMBERS

Day	1985 Final			1986 Final			Prov					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0	0	0	0	18	16	9	15	7	0	12	8
02	0	0	16	0	33	33	10	26	0	0	11	8
03	0	0	13	0	52	34	10	15	0	10	11	8
04	0	0	0	0	55	32	0	12	0	14	11	8
05	0	16	18	0	53	33	0	10	0	18	11	8
06	0	19	26	0	47	33	0	0	0	29	10	10
07	0	19	15	0	52	38	0	0	0	29	8	13
08	0	18	12	0	54	29	9	0	9	29	9	11
09	0	25	16	0	47	22	0	0	0	17	8	9
10	0	15	15	0	35	20	9	0	8	33	0	8
11	0	17	18	0	37	18	13	0	0	35	0	8
12	0	19	19	0	25	13	14	0	0	36	0	0
13	11	30	18	13	22	8	13	0	0	25	0	0
14	13	44	30	16	16	0	26	0	0	16	0	0
15	15	48	47	13	11	10	25	10	0	28	0	0
16	25	39	66	10	0	0	21	12	0	23	9	0
17	19	43	63	0	0	0	13	13	0	33	7	0
18	20	37	52	0	0	0	15	22	0	14	0	0
19	31	30	40	0	0	0	13	27	0	12	0	0
20	44	28	24	0	10	12	16	27	0	18	11	0
21	50	18	17	0	10	13	22	30	0	21	12	0
22	72	12	11	0	10	10	20	27	0	26	12	0
23	67	10	0	0	10	15	42	24	0	14	14	0
24	63	0	0	0	8	14	58	24	0	0	9	0
25	55	0	0	0	11	10	43	22	8	0	9	0
26	40	0	0	7	9	10	43	28	0	0	9	0
27	27	0	0	0	15	11	33	19	0	10	9	0
28	14	0	0	0	10	13	23	18	0	12	9	0
29	11	0	0	0	0	11	28	19	0	16	9	8
30	0	0	0	10	0	11	27	13	0	18	9	9
31	0	0	0	10	0	0	0	12	0	17	9	0
Mean	19	16	17	2	23	15	18	14	1	18	7	4

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

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

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Sep 86

September 1986

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	----- Solar Flux Adjusted to 1 Astronomical Unit -----								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	244	24	8	9	68.6	509	237	111	69.8	68	55	34	44	9
02	245	25	8	9	68.0	505	244	110	69.2	71	54	34	22	8
03	246	26	8	9	68.1	507	239	109	69.3	67	53	34	22	7
04	247	27	8	8	68.2	519	244	111	69.4	68	53	36	22	7
05	248	1	8	0	68.5	522	245	110	69.6	69	55	35	22	8
06	249	2	10	11	68.4	523	234	110	69.5	68	54	35	22	9
07	250	3	13	13	68.9	519	243	110	69.9	68	54	35	21	7
08	251	4	11	11	68.4	523	249	110	69.4	69	54	34	22	8
09	252	5	9	9	68.4	524	241	109	69.4	72	55	36	23	7
10	253	6	8	7	68.3	519	236	113	69.3	71	55	35	23	7
11	254	7	8	0	67.9	512	227	109	68.8	68	53	32	19	7
12	255	8	0	0	67.9	455	230	104	68.8	67	48	28	19	9
13	256	9	0	0	68.1	471	225	103	69.0	68	49	27	17	7
14	257	10	0	0	69.1	486	242	110	70.0	71	51	32	20	8
15	258	11	0	0	70.7	484	234	112	71.5	71	51	32	19	8
16	259	12	0	0	69.7	479	238	107	70.5	66	50	32	21	9
17	260	13	0	0	68.5	487	231	107	69.2	63	49	31	19	8
18	261	14	0	0	68.2	481	232	107	68.8	72	49	31	19	9
19	262	15	0	0	68.1	473	233	105	68.7	69	48	32	17	9
20	263	16	0	0	68.1	474	229	106	68.6	66	49	31	18	8
21	264	17	0	0	68.3	455	232	105	68.8	63	48	28	20	9
22	265	18	0	0	67.8	474	236	105	68.3	69	51	30	18	8
23	266	19	0	0	68.2	448	230	106	68.7	66	48	27	19	9
24	267	20	0	0	68.4	451	231	105	68.8	65	48	28	18	8
25	268	21	0	0	69.1	480	226	107	69.4	67	49	31	19	8
26	269	22	0	0	68.2	472	238	106	68.5	66	49	31	19	8
27	270	23	0	0	68.6	490	235	106	68.9	66	49	33	21	8
28	271	24	0	0	70.0	480	228	106	70.3	68	50	32	18	9
29	272	25	8	8	71.3	472	232	108	71.5	71	51	31	18	4
30	273	26	9	10	71.4	462	225	107	71.6	66	51	31	19	8
Mean			4	4	68.7	488	234	107	69.4	67	51	31	20	7

\*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

SEPTEMBER 1986

Date	RELATIVE SUNSPOT NUMBERS						2800 MHz RADIO FLUX Adjusted to 1 AU	
	International (Ri)		American (Ra)		Derived (Rs)		2800 MHz RADIO FLUX Adjusted to 1 AU (Sa)	
	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Dec 82	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	13*	12.5*	11*	20.3	17	76.2	73
Apr	18.5	12( 1)*	13.8*	10	19.6	16	75.6	--
May	13.7	11( 2)*	11.6*	10	18.1	15	74.2	--
Jun	1.1	11( 3)*	0.8*	9	13.3	14	69.7	--
Jul	17.8†	10( 4)*	17.7*	8	16.3	13	72.5	--
Aug	7.4†	9( 5)*	7.6*	8	13.7	12	70.1	--
Sep	3.9†	9( 5)*	3.5*	8	13.0	12	69.4	--
Oct	----	9( 5)*	----	8	----	11	----	--
Nov	----	9( 6)*	----	8	----	11	----	--
Dec	----	9( 6)*	----	8	----	11	----	--
Jan 87	----	9( 7)*	----	8	----	11	----	--
Feb	----	9( 8)*	----	9	----	11	----	--
Mar	----	10( 9)*	----	9	----	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

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Sep 86

## SEPTEMBER 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	13	12 ( 1)	11 ( 2)	11 ( 3)	10 ( 4)	9 ( 5)	9 ( 5)	9 ( 5)	9 ( 6)	9 ( 6)
1987	9 ( 7)	9 ( 8)	10 ( 9)	11 (11)	11 (13)	12 (14)	12 (15)	13 (16)	14 (18)	15 (21)	16 (24)	18 (27)

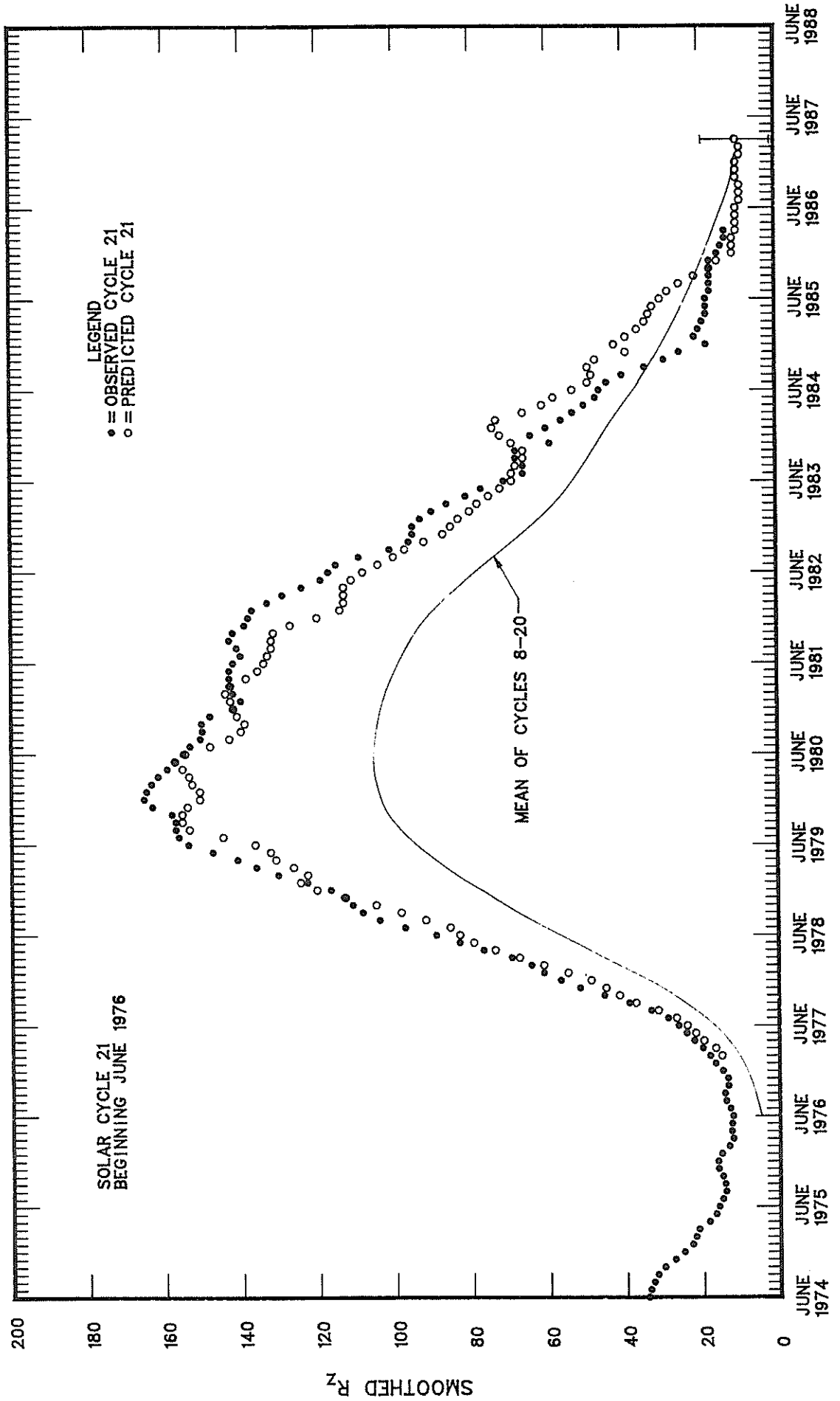
An asterisk marks the minimum and the maximum of Sunspot Cycle 21.

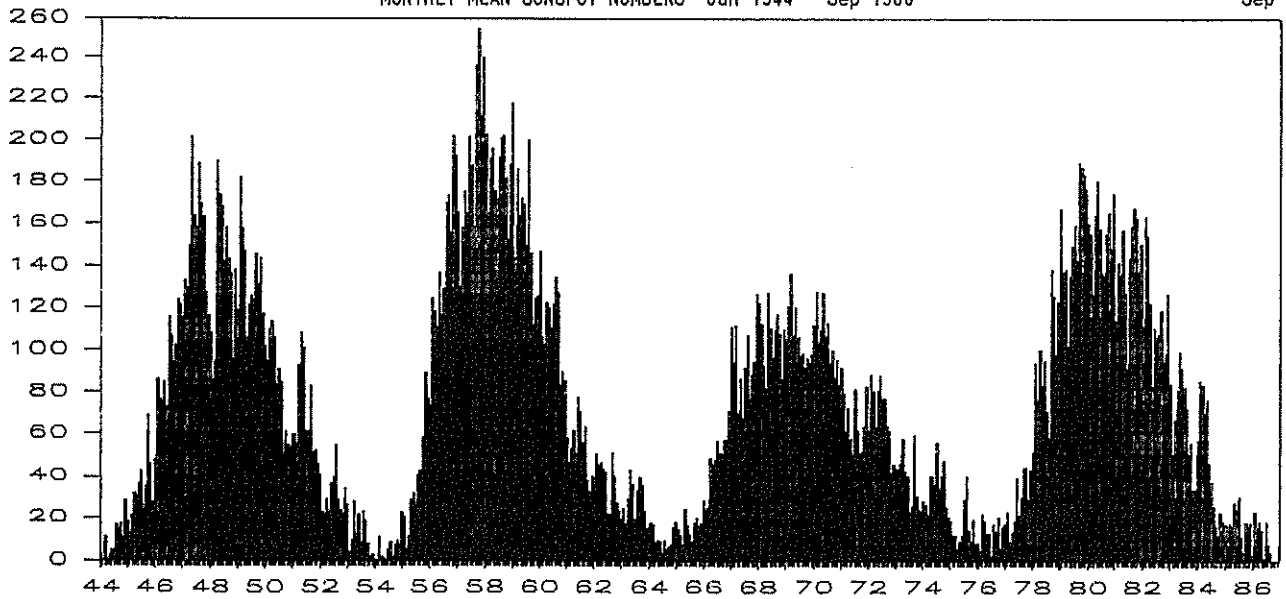
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through June 1986, and on provisional 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 March 1987 prediction tabulated above. There exists a 90% chance that in March 1987 the actual smoothed sunspot number will fall somewhere between 1 and 19.

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





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
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	125.3	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	18.5	13.7	1.1	17.8*	7.4*	3.9*				11.5*

\*Preliminary

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



H - ALPHA SOLAR FLARES

SEPTEMBER 1986

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
															Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)		
RAMY	06	1235	1236	1247	N27	E32	4745	09	09.0	12	SF		3	C		22			
HOLL	06	1339	1341	1350	N29	E44		09	10.0	11	SF		3	C		45			
HOLL	06	1451	1459	1513	N29	E44		09	10.1	22	SF		3	C		18			
HOLL	06	1637	1646	1651	N29	E43	4745	09	10.1	14	SN		3	C		20			
BUCA	07	0720	0728	0742	N28	E33		09	09.9	22	SN			C	0728	64	.8	E	
BUCA	08	0624	0628	0738	N28	E23		09	10.1	74	SF			C	0628	43	.5	D	
[	HOLL	08	1643	1644	1655	N30	E20	4745	09	10.3	12	SB	C 2.6	3	C		69		
	RAMY	08	1643	1645	1655	N30	E20	4745	09	10.3	12	SB	C 2.6	3	C		67		
[	RAMY	08	1806	1811	1818	N30	E20	4745	09	10.3	12	SF		3	C		49		
	HOLL	08	1810	1810	1816	N30	E20	4745	09	10.3	6	SF		3	C		57		

"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.

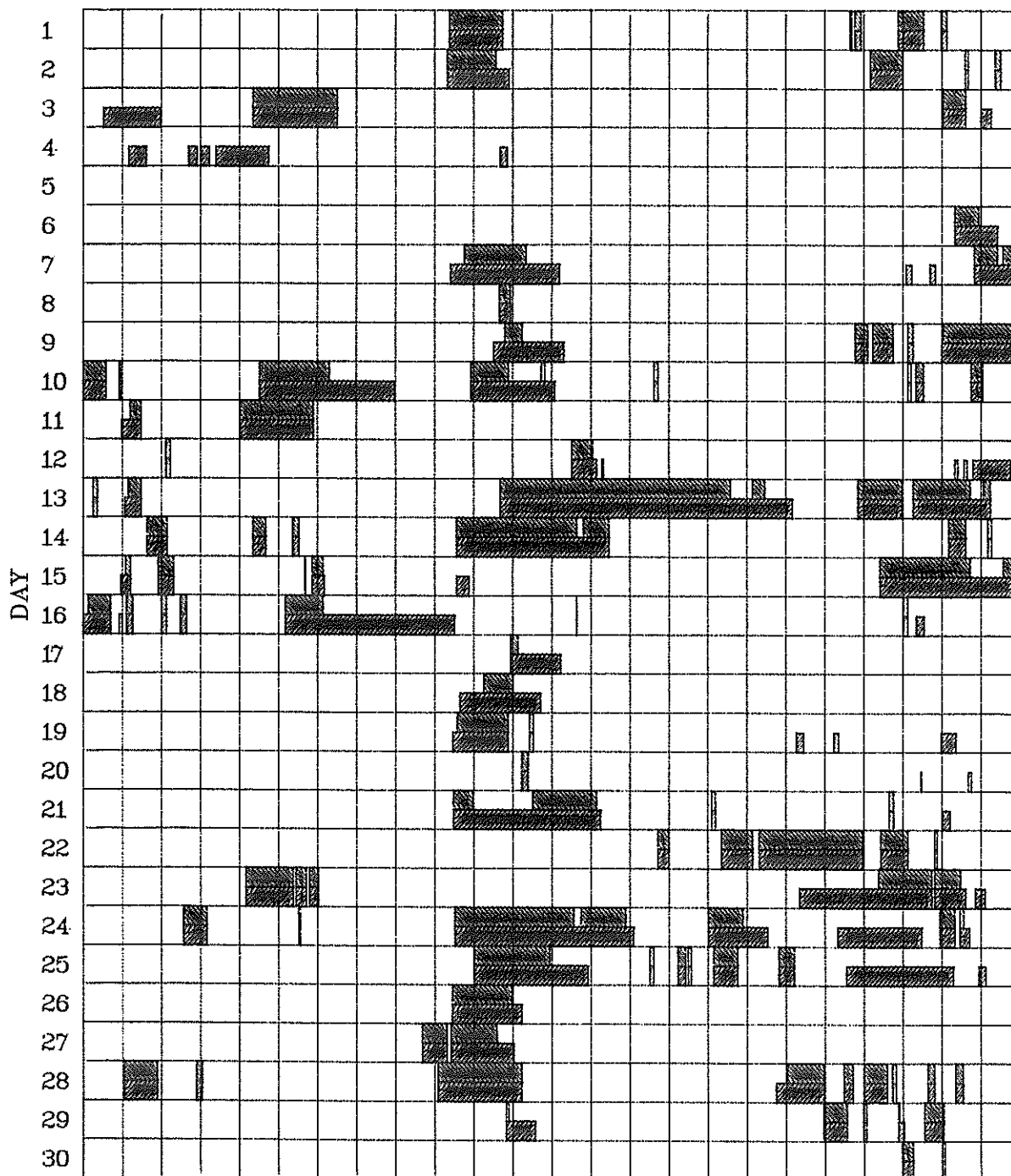
# INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

13  
Sep 86

## SEPTEMBER 1986

HOUR-UT

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



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

Bucharest  
Holloman

Hurbanovo  
Istanbul

Learmonth  
Palehua

Peking  
Purple Mt.  
Ramey

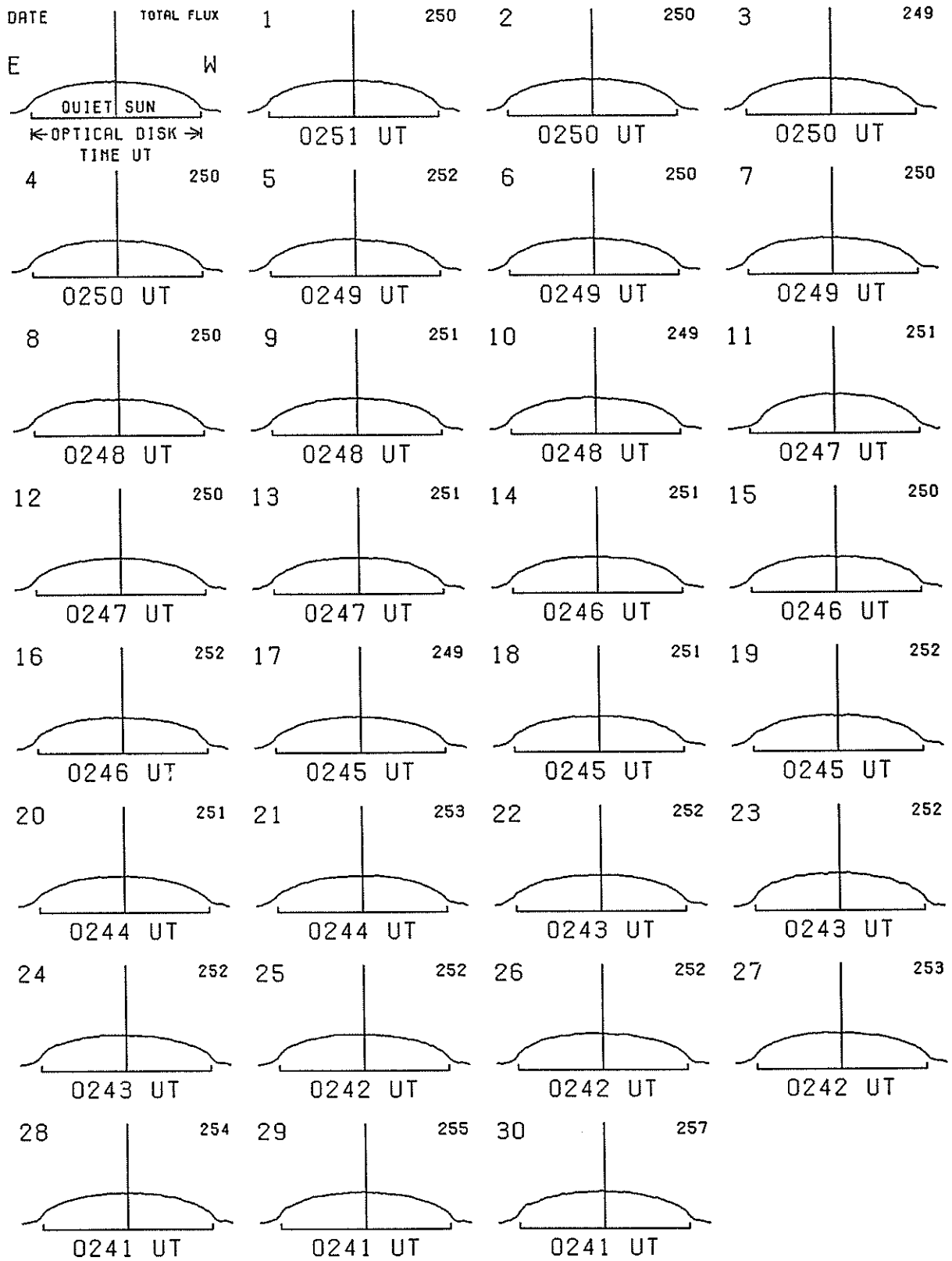
Urumqi  
Wendelstein  
Yunnan

14  
Sep 86

# EAST-WEST SOLAR SCANS SEPTEMBER 1986

TOYOKAWA, JAPAN

3 CM  
FAN BEAM WITH 1.1 MINUTES OF ARC

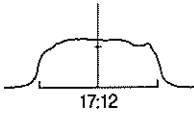


EAST-WEST SOLAR SCANS  
SEPTEMBER 1986

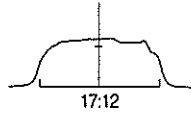
ALGONQUIN RADIO OBSERVATORY  
CANADA

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

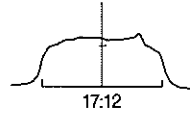
01  
68.7



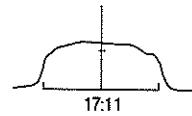
02  
68.0



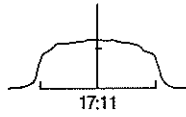
03  
68.1



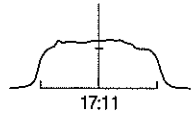
04  
68.2



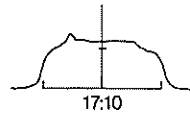
05  
68.5



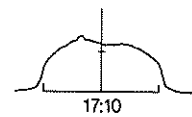
06  
68.4



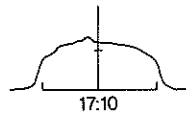
07  
68.9



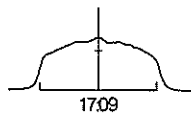
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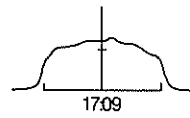
09  
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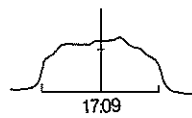
10  
68.3



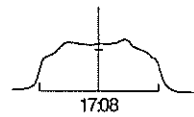
11  
67.9



12  
67.9



13  
68.1



14  
69.1



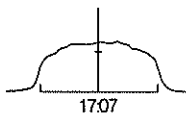
15  
70.7



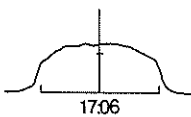
16  
69.7



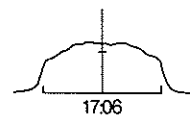
17  
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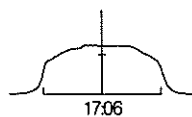
18  
68.2



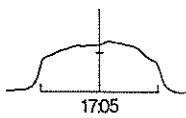
19  
68.1



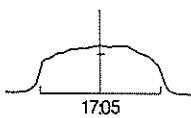
20  
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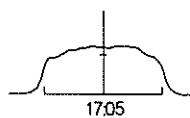
21  
68.3



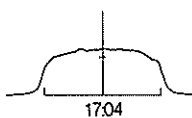
22  
67.8



23  
68.2



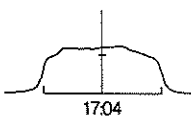
24  
68.4



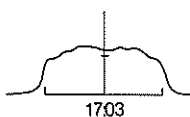
25  
69.1



26  
68.2



27  
68.6



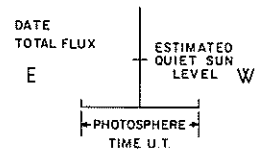
28  
70.0



29  
71.3



30  
71.4

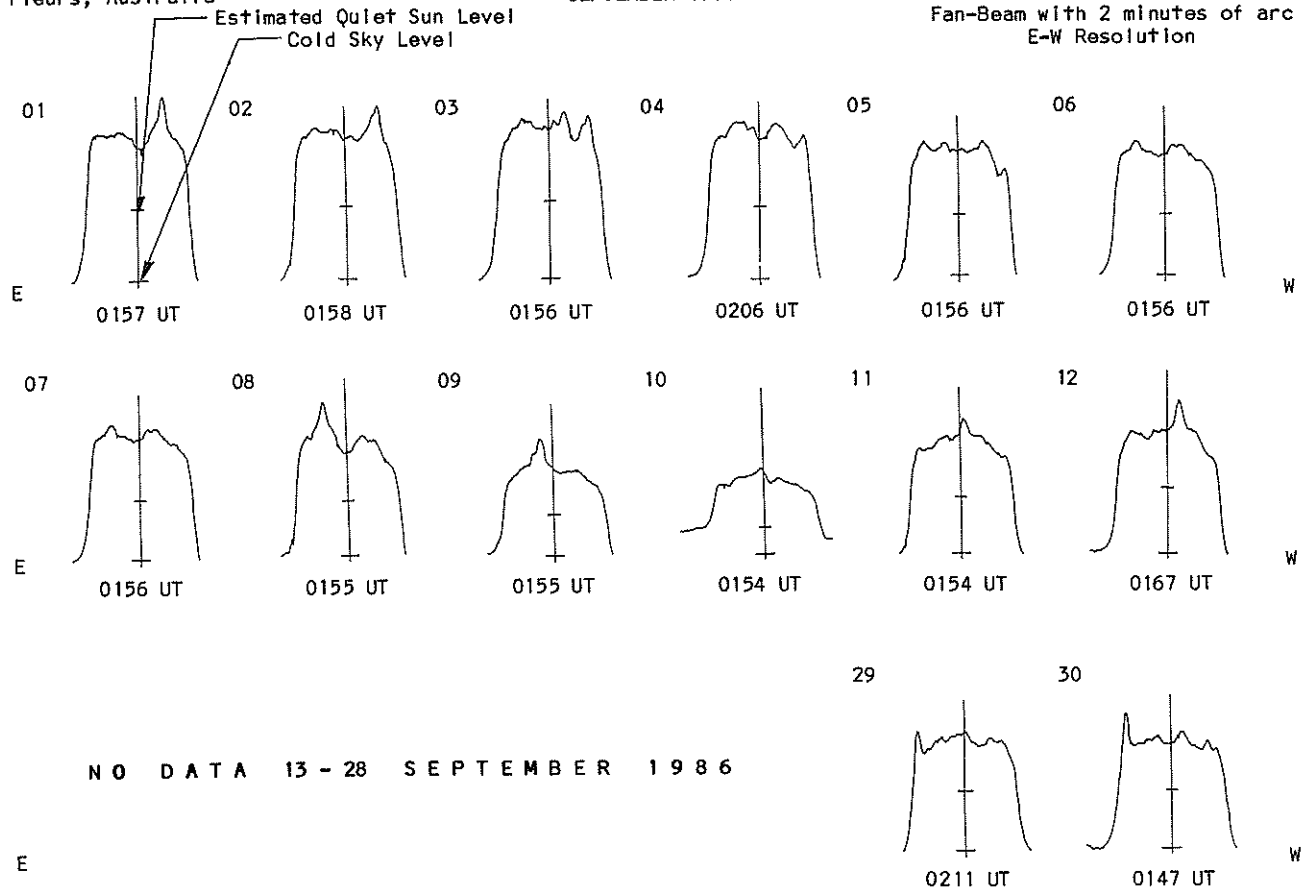


EAST - WEST SOLAR SCANS

Fleurs, Australia

SEPTEMBER 1986

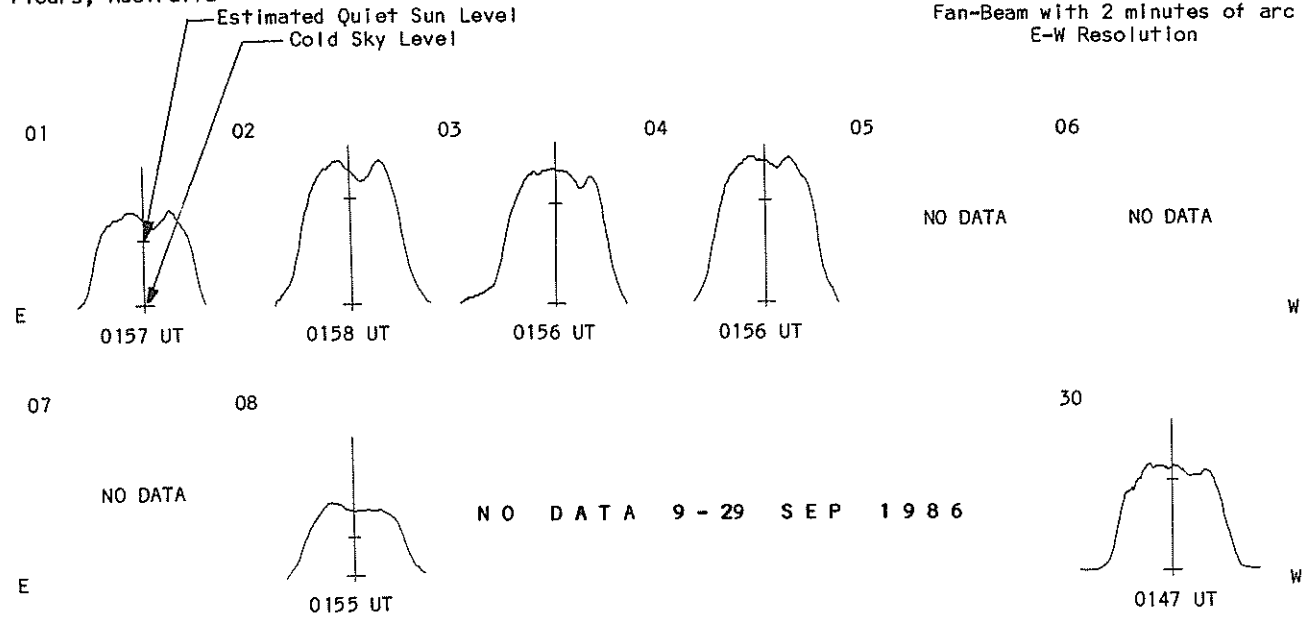
21 cm  
Fan-Beam with 2 minutes of arc  
E-W Resolution

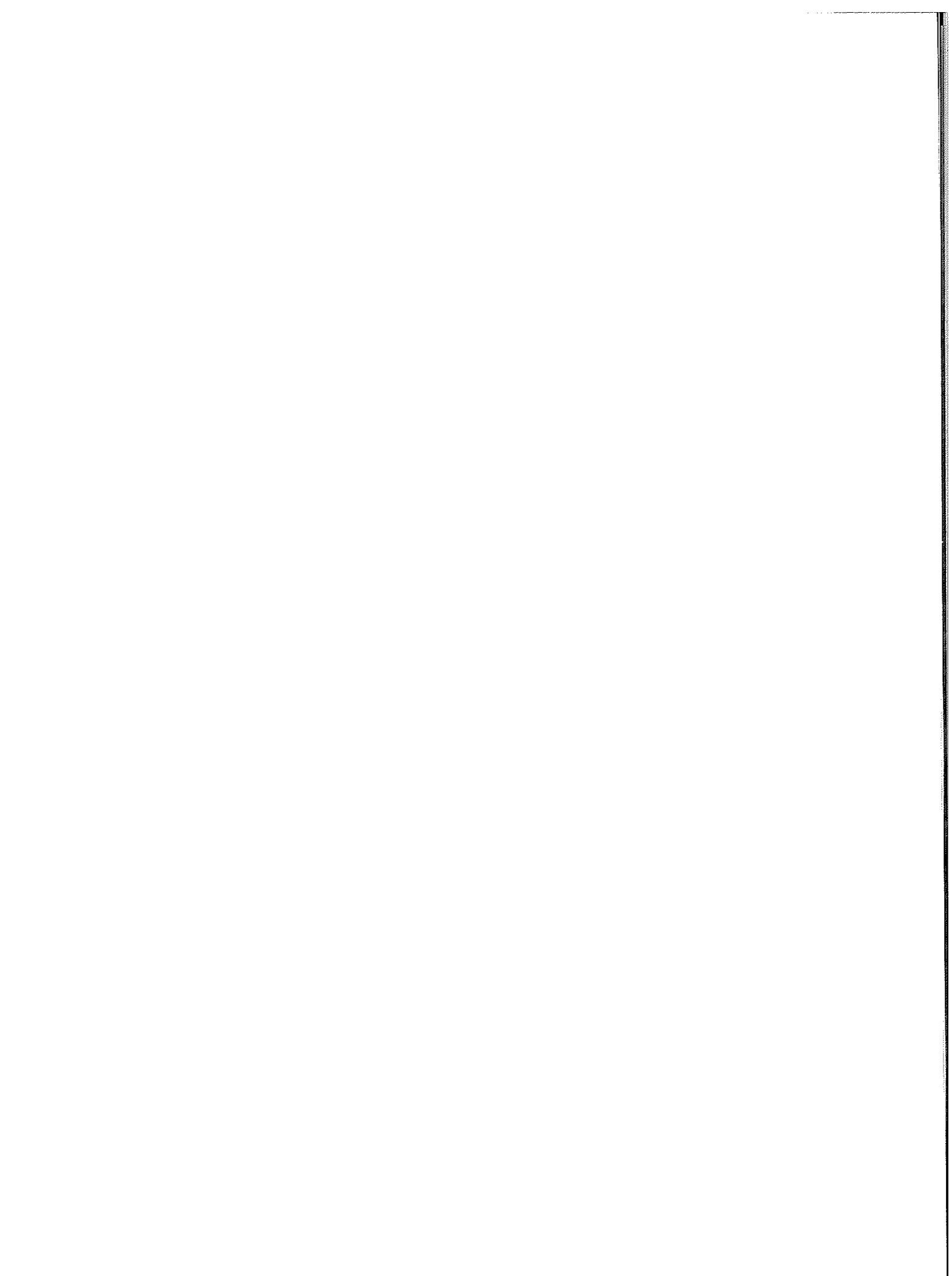


Fleurs, Australia

SEPTEMBER 1986

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





SOLAR RADIO EMISSION  
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1986

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean (2 Hz)		
08	2800 OTTA	3 S	1643.4	1643.4	1.0	13.0	2.6		
	2800 OTTA	8 S	1738.3	1738.5	.8	1.4	.8		
10	8800 PALE	20 GRF	2309.0E	2323.0	51.0D	22.0			QL=5 ST=1 TYP=2
14	2800 OTTA	1 S	1215.0	1216.5	3.5	1.7	.8		
	2800 OTTA	1 S	1711.5	1712.0	1.0	1.8	.9		
	2800 OTTA	4 S/F	1713.4	1713.7	1.6	42.0	10.5		
	2800 OTTA	4 S/F	1723.0	1723.6	2.0	26.1	5.2		
16	8800 SGMR	47 GB	1508.0E	1509.0	2.0D	92.0			QL=1 ST=2 TYP=5

Observatories

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

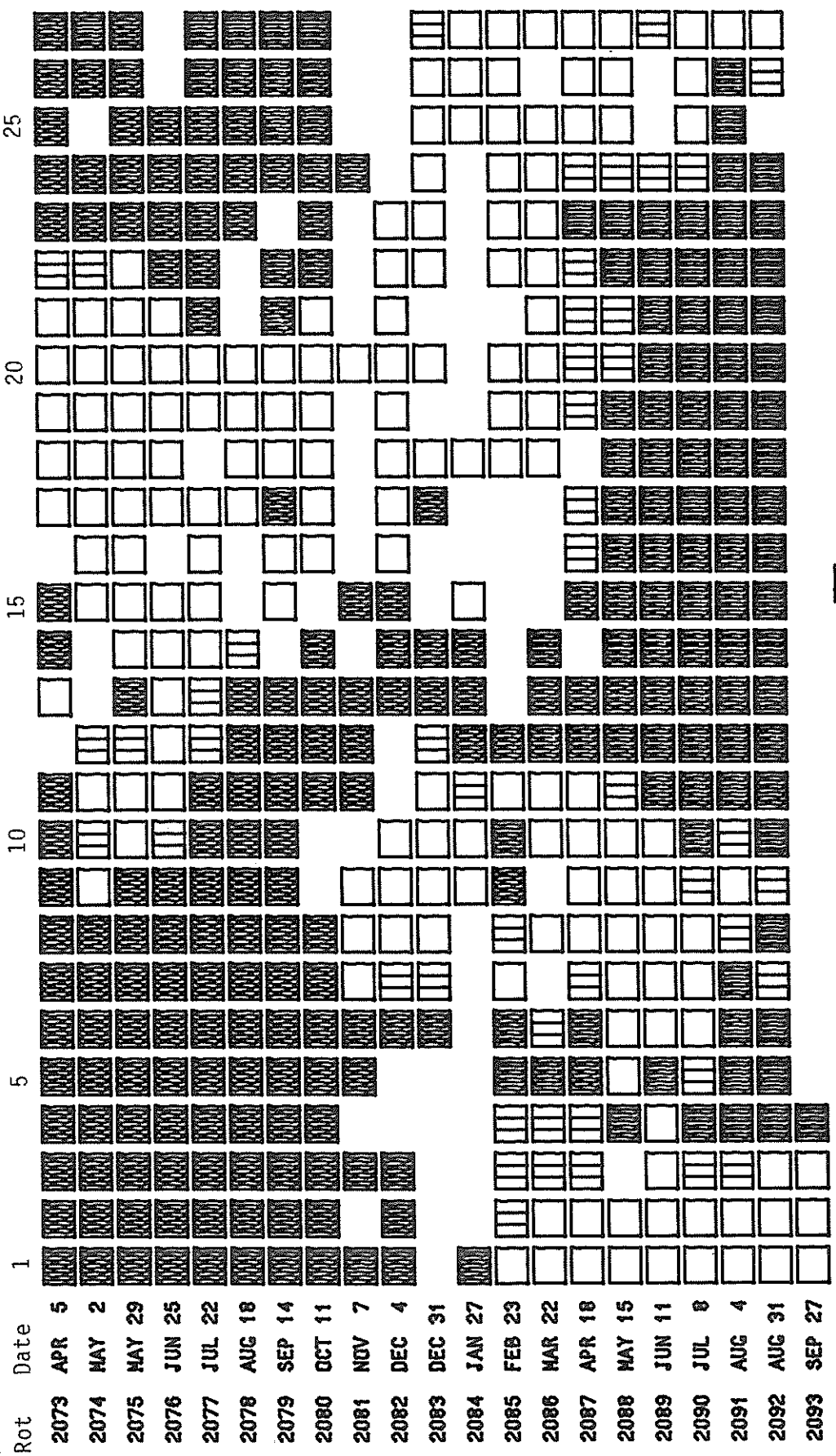
Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	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			1986								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	13	-7	.	.	.	3	10	.	-6	-6	3	4
2	15	-10	.	.	.	0	-3	-7	-2	-5	7	5
3	6	-8	.	.	.	-7	-14	0	1	-7	4	-6
4	-6	-15	-16	.	5	-7	-16	2	-1	2	10	-6
5	-13	-16	-20	-3	15	3	.	.	-4	.	10	-3
6	.	-25	-25	1	2	-11	.	2	-4	.	0	0
7	-20	-26	.	14	-8	.	.	2	0	-1	-2	-2
8	-23	.	.	3	-27	.	6	0	6	10	-5	-1
9	-26	-17	-14	11	-14	.	5	1	4	4	-4	-9
10	-27	.	1	12	4	.	5	-5	11	1	-2	-14
11	-21	-6	13	0	.	.	3	2	5	-5	1	-16
12	-23	-5	8	-19	.	5	5	8	11	0	3	-17
13	-16	5	3	-14	9	11	3	13	4	3	-1	-18
14	-26	11	.	.	.	8	8	13	3	5	-12	-19
15	-20	6	.	.	.	.	7	8	-3	5	-17	-15
16	-27	.	-18	-12	.	14	.	10	6	2	-21	-10
17	-21	-3	-20	21	.	11	8	.	6	-2	-23	-11
18	-25	-2	-21	.	.	12	5	-2	6	-2	-21	-11
19	.	-11	3	24	.	12	6	3	6	-7	-18	-13
20	.	.	11	.	9	12	2	9	6	-23	-13	-14
21	-17	-5	15	16	18	10	-1	7	-4	-21	-14	-15
22	-17	.	22	11	10	8	-5	6	-19	-26	-13	-13
23	-12	.	28	12	9	5	-4	9	-23	-16	-15	-9
24	-8	.	15	15	1	2	1	10	-16	-12	-8	.
25	.	.	21	10	1	-1	7	0	-11	-8	-16	1
26	4	15	8	2	0	-3	13	-22	-8	-7	-9	4
27	19	.	.	-3	-4	0	13	-31	-2	-4	-9	6
28	17	.	.	.	-4	.	10	-25	-4	-5	-8	9
29	14	.	.	.	.	14	-3	-14	-3	-3	-3	3
30	16	-8	.	.	.	.	-14	-8	-3	-22	5	-3
31	5	.	.	.	.	15	.	-4	.	2	12	.

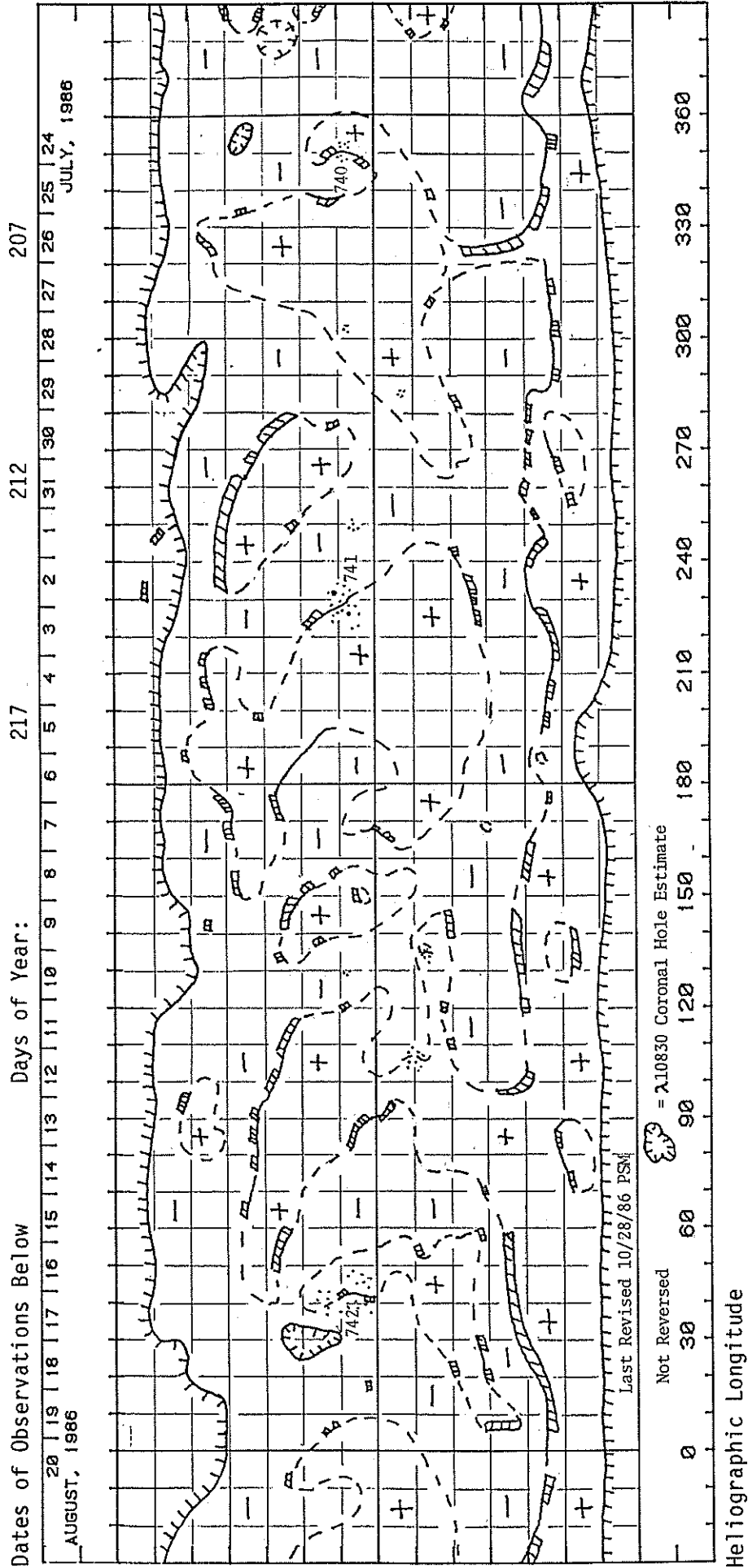
Dot symbol indicates no data available for the day.

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PRELIMINARY H - ALPHA SOLAR SYNOPSIS CHART  
CARRINGTON ROTATION NUMBER 1778  
(July 24 to August 20, 1986)



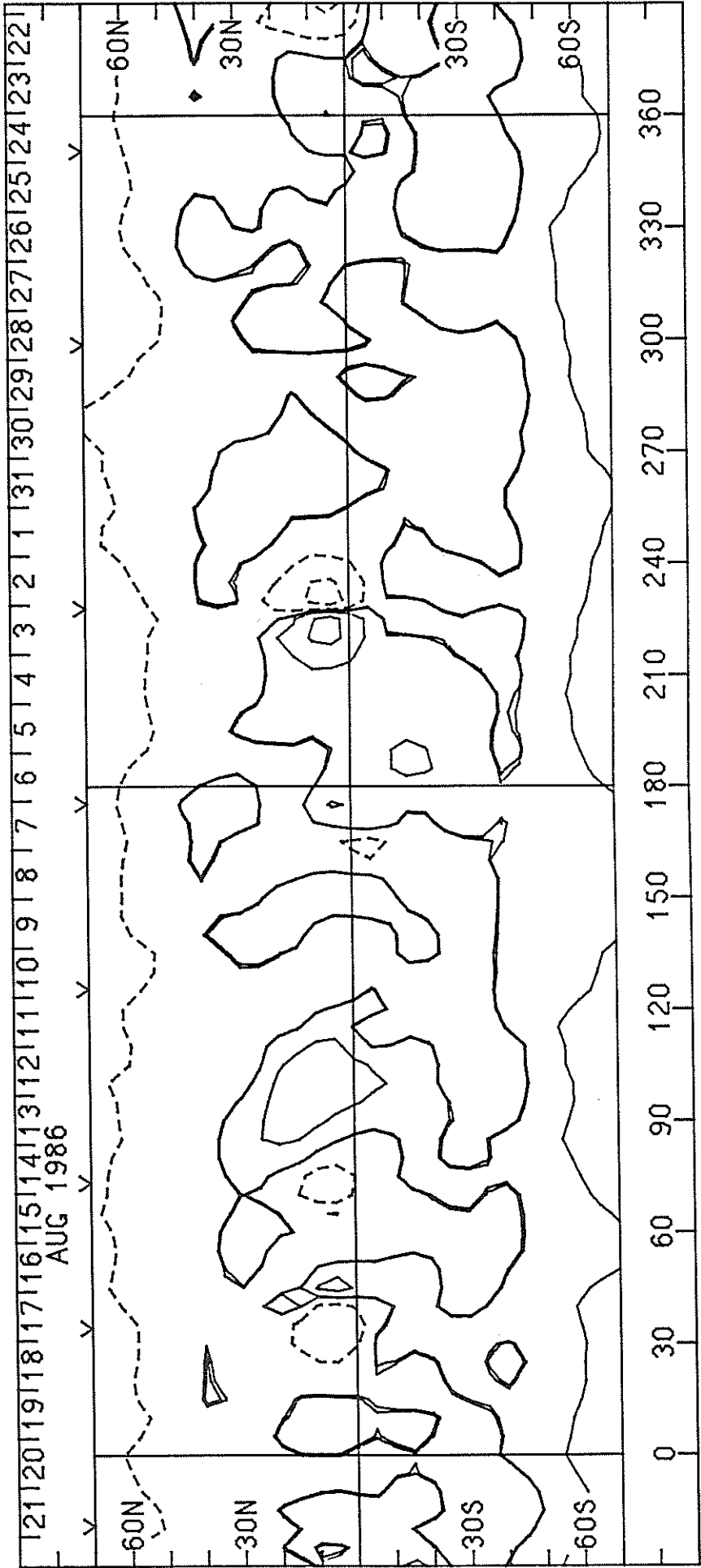
SOLAR MAGNETIC FIELD SYNOPSIS CHART  
 CARRINGTON ROTATION NUMBER 1778  
 (July 24 to August 20, 1986)

0, +100, 500, 1000, 2000 microTesla

100

-100

Stanford Solar Observatory



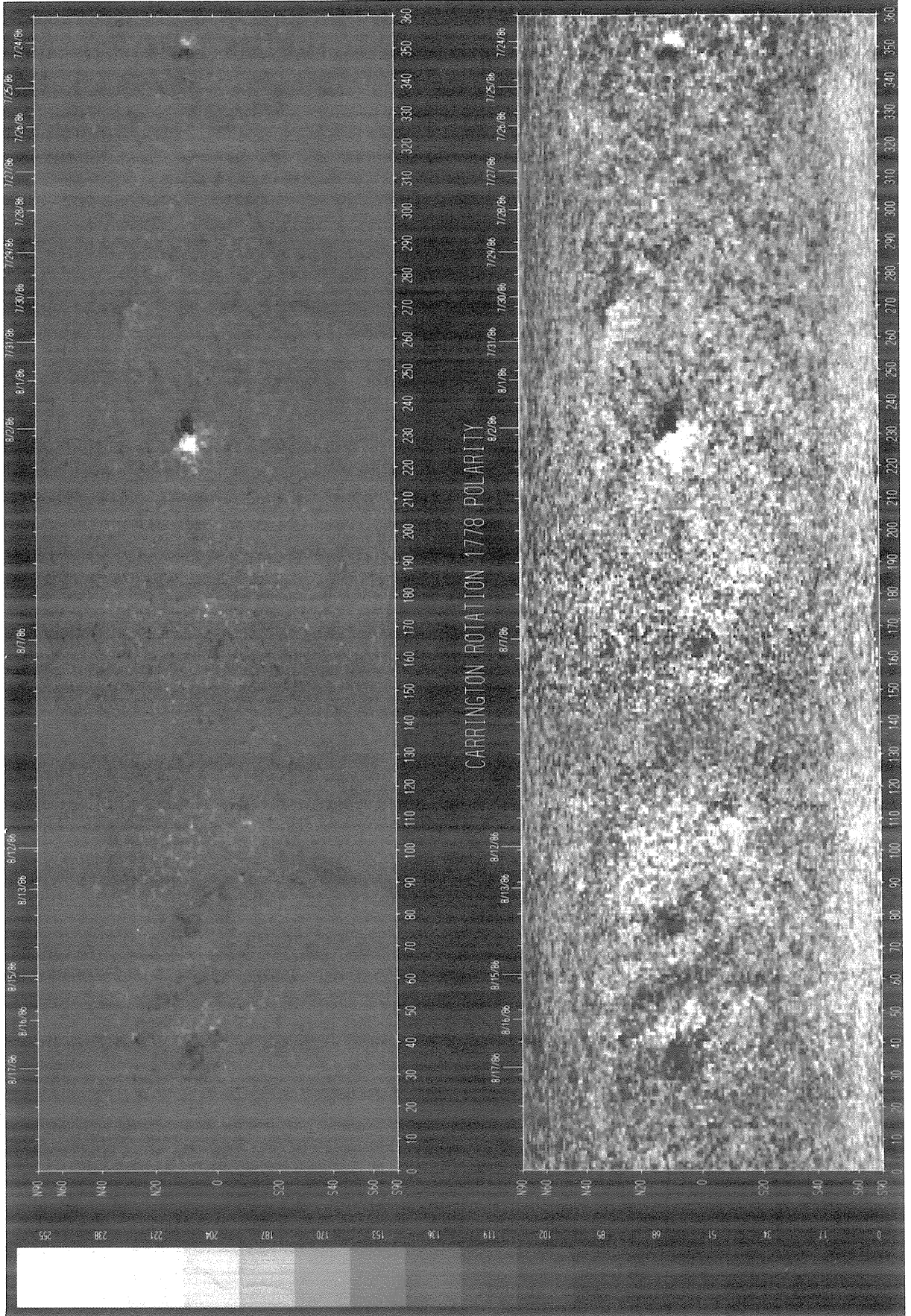
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1778  
(July 24 to August 20, 1986)

Kitt Peak National Observatory

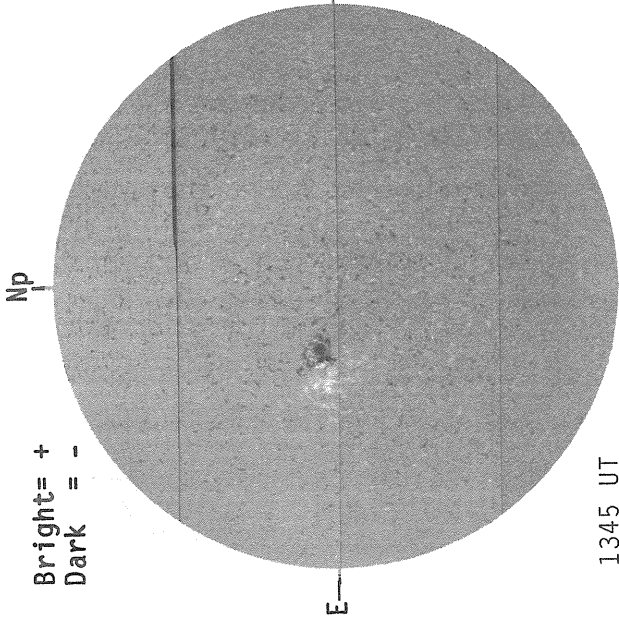
Dates of Observations



AUGUST 01, 1986 (P= 10.74, B<sub>0</sub> = 5.67, L<sub>0</sub> = 254.65)

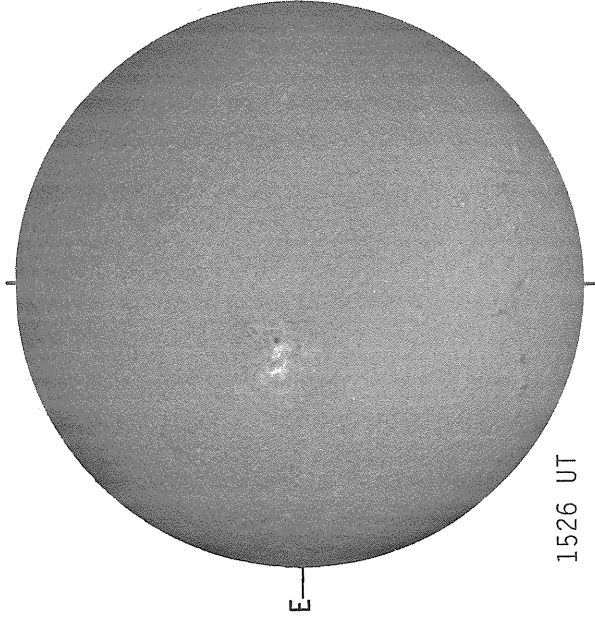
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1345 UT

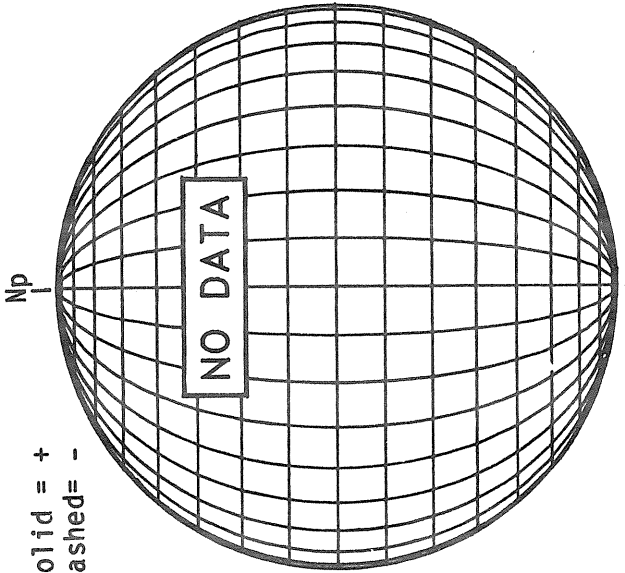
SACRAMENTO PEAK H-ALPHA



1526 UT

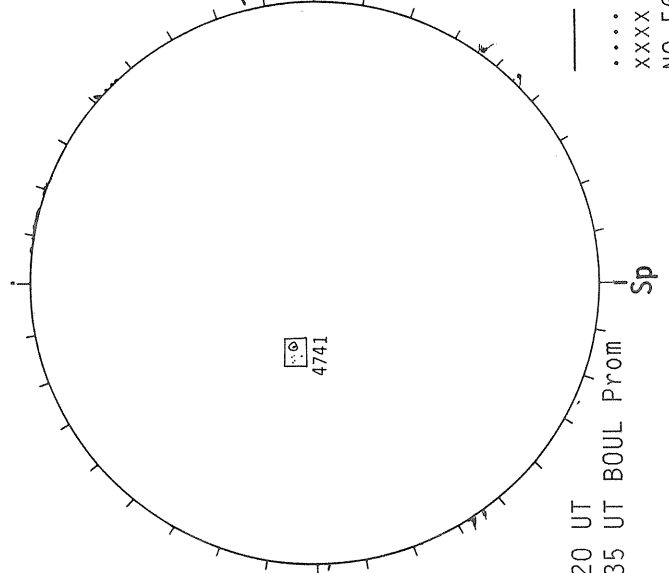
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



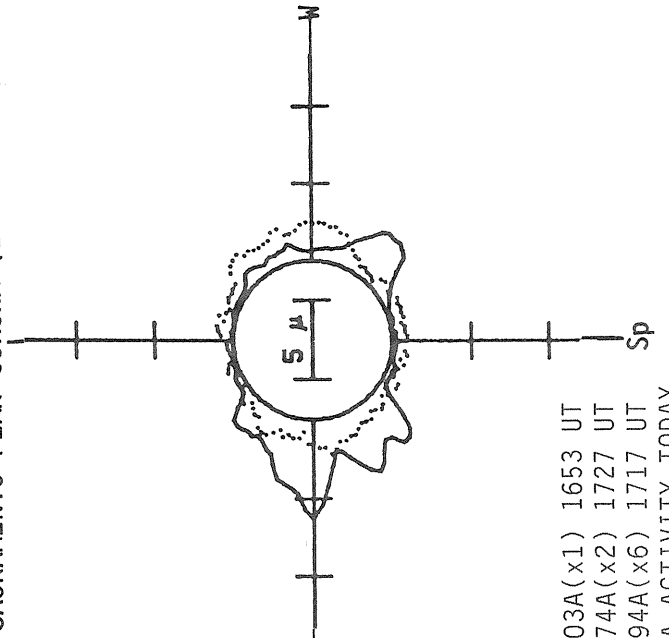
NO DATA

BOULDER SUNSPOTS



1320 UT  
1335 UT BOUL Prom

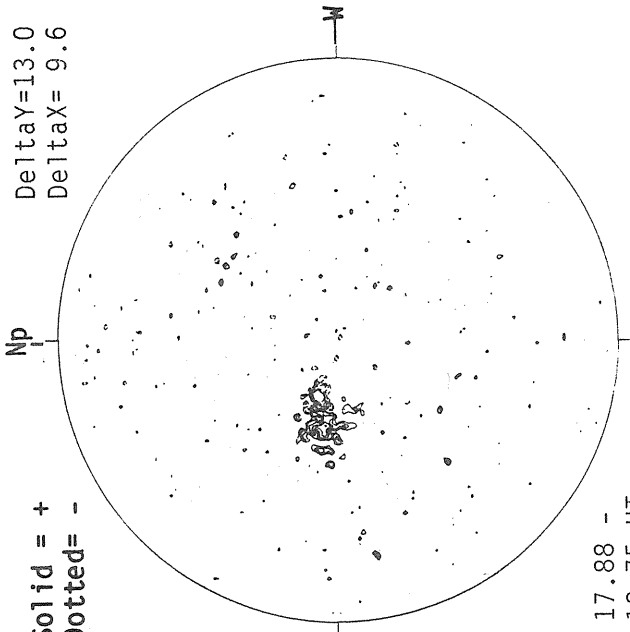
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A(x1) 1653 UT  
..... 6374A(x2) 1727 UT  
xxxxx 5694A(x6) 1717 UT  
NO 5694A ACTIVITY TODAY

MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6



17.88 -  
18.75 UT

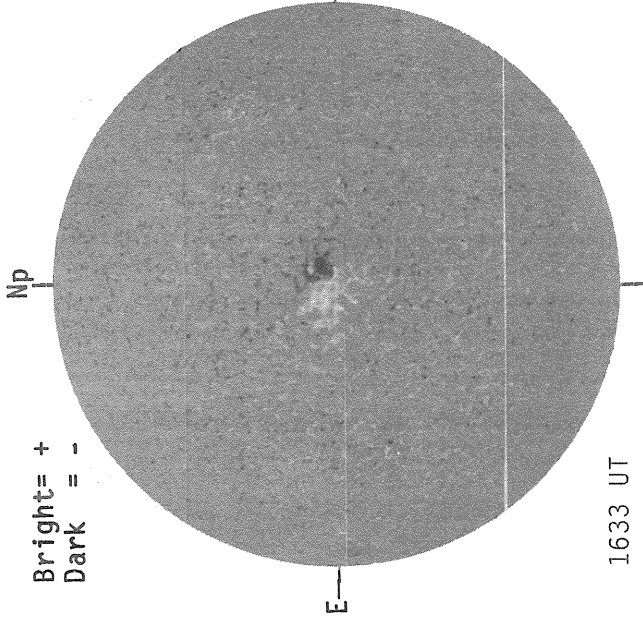


26  
Aug 86

AUGUST 02, 1986 (P= 11.13, B<sub>0</sub> = 5.74, L<sub>0</sub> = 241.42)

KITT PEAK MAGNETOGRAM

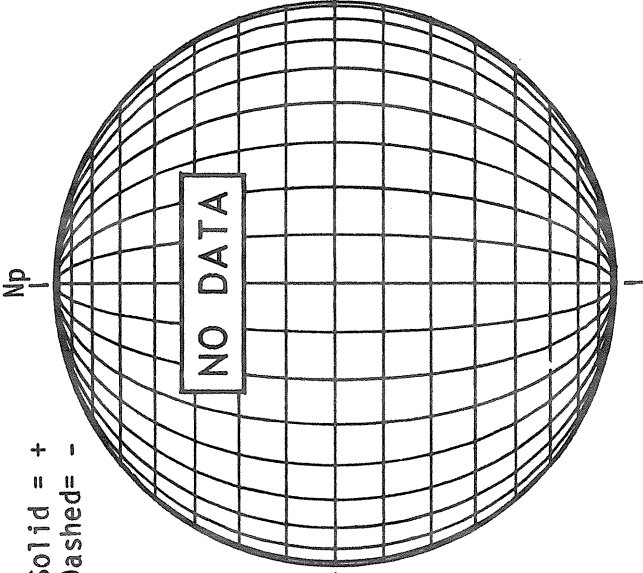
Bright= +  
Dark = -



1633 UT

STANFORD MAGNETOGRAM

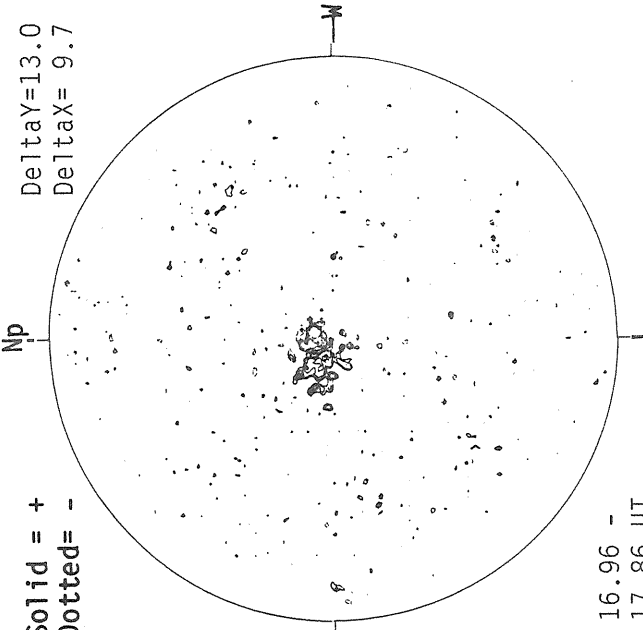
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Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

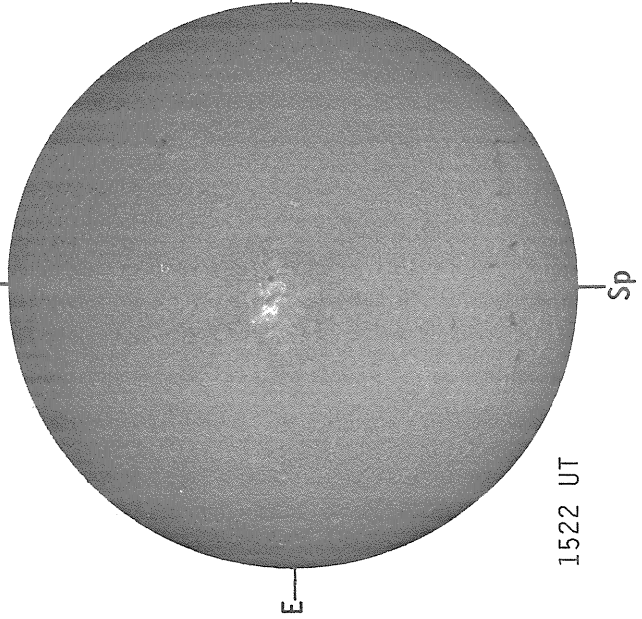
Solid = +  
Dotted = -



Delta Y = 13.0  
Delta X = 9.7

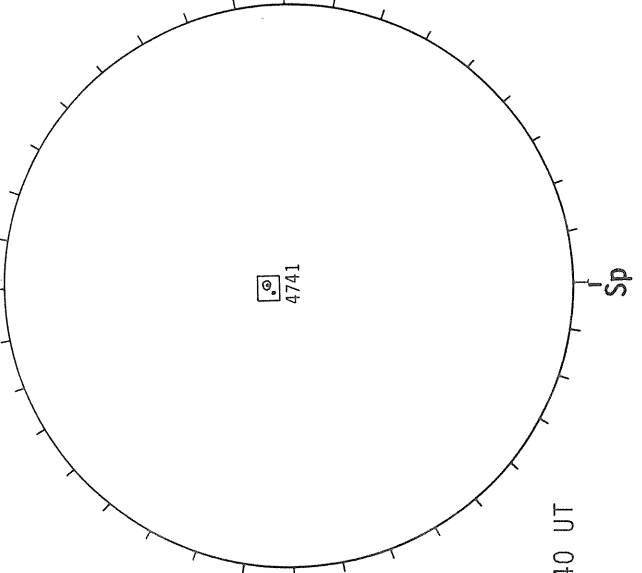
16.96 -  
17.86 UT

SACRAMENTO PEAK H-ALPHA



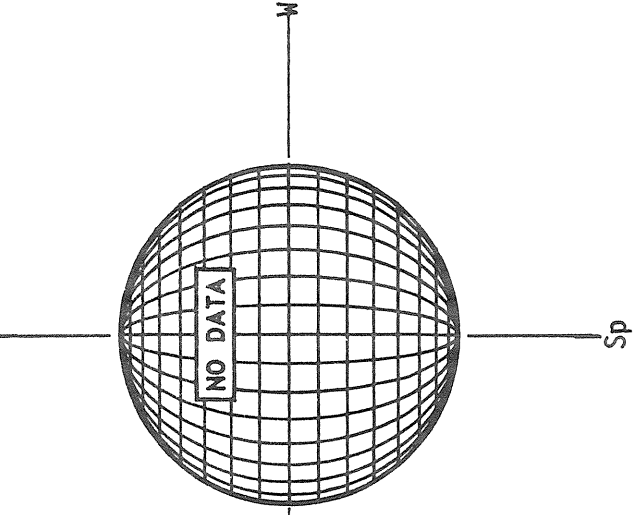
1522 UT

BOULDER SUNSPOTS



1340 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

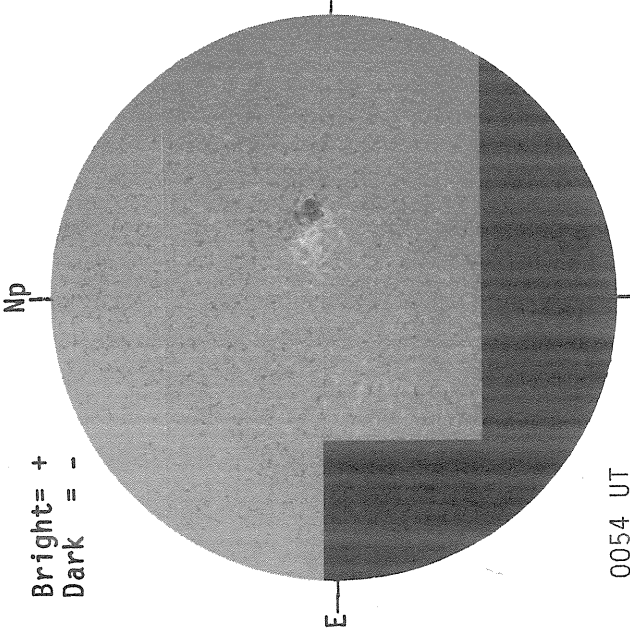


NO DATA

AUGUST 03, 1986 (P= 11.53, B<sub>0</sub> = 5.81, L<sub>0</sub> = 228.20)

KITT PEAK MAGNETOGRAM

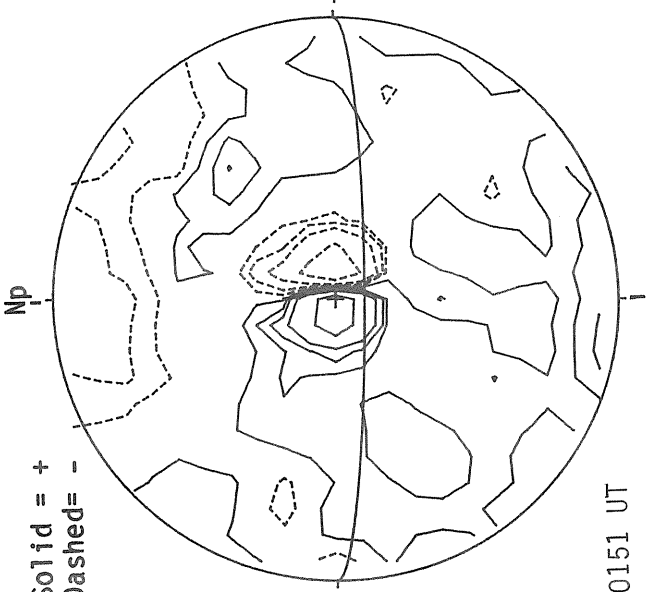
Bright= +  
Dark = -



0054 UT  
Aug. 4

STANFORD MAGNETOGRAM

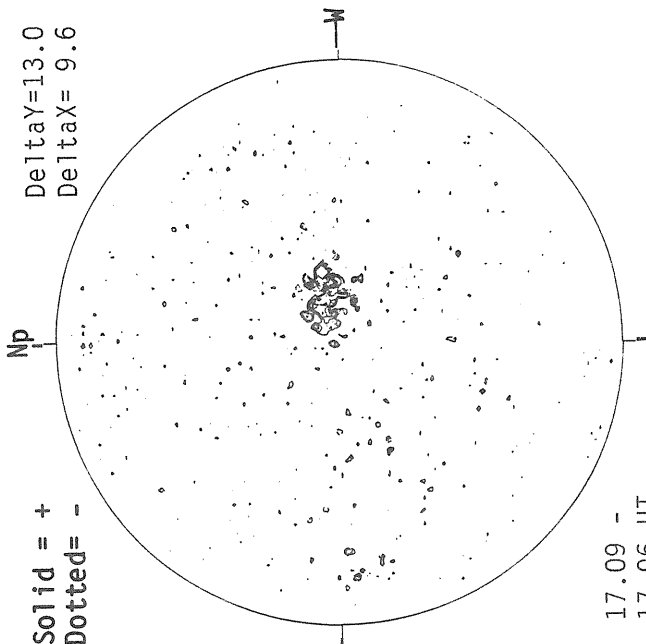
Solid = +  
Dashed = -



0151 UT

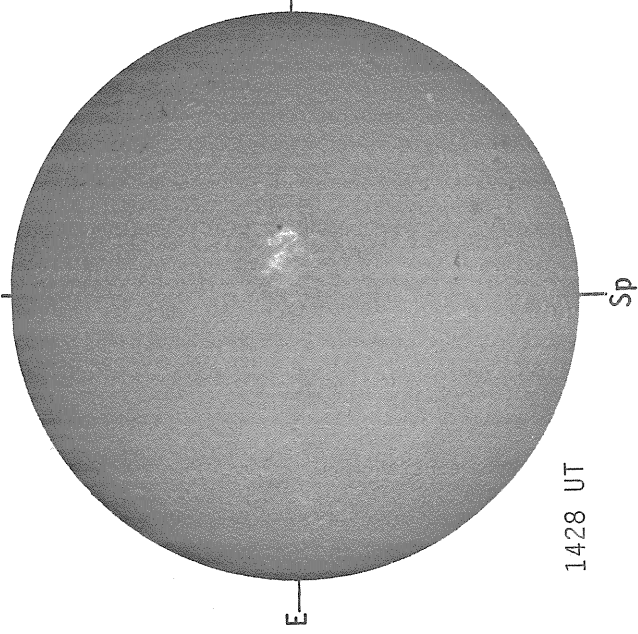
MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6



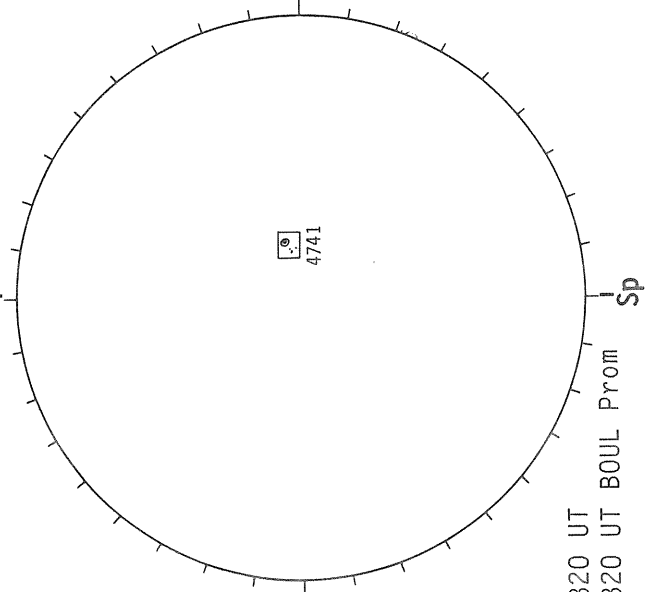
17.09 -  
17.96 UT

SACRAMENTO PEAK H-ALPHA



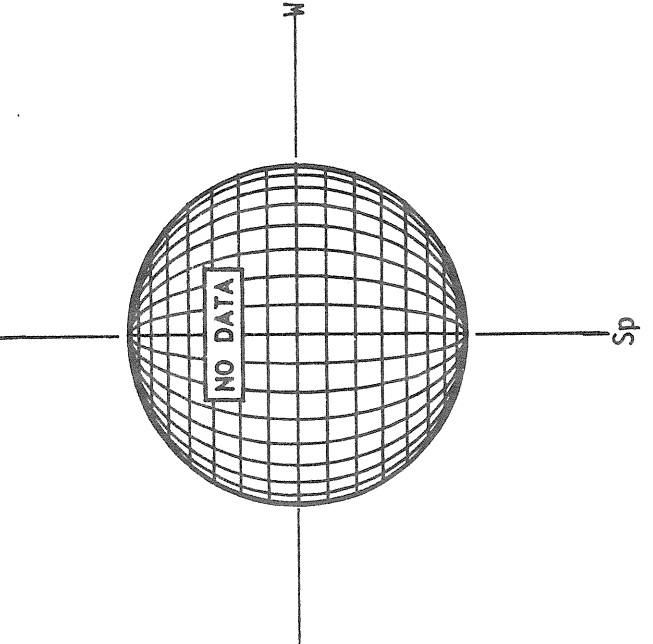
1428 UT

BOULDER SUNSPOTS



1320 UT  
1320 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



Sp

E

E

Sp

Sp

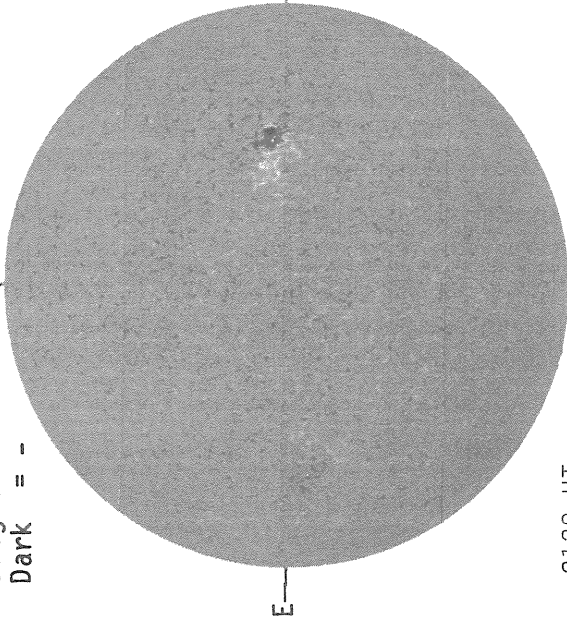
W



AUGUST 04, 1986 (P= 11.91, B<sub>0</sub> = 5.88, L<sub>0</sub> = 214.97)

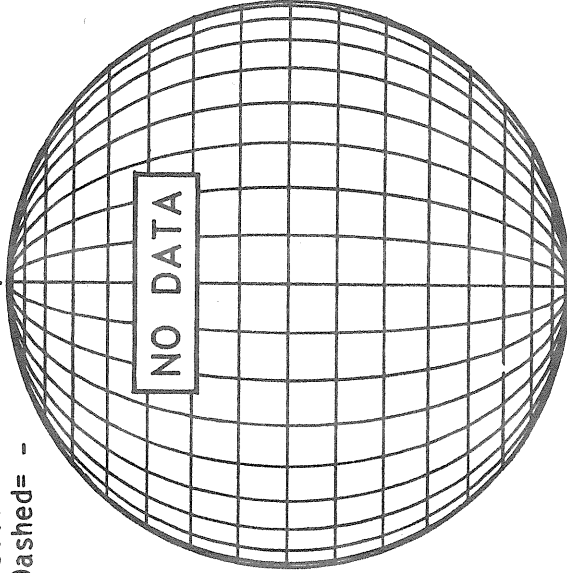
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



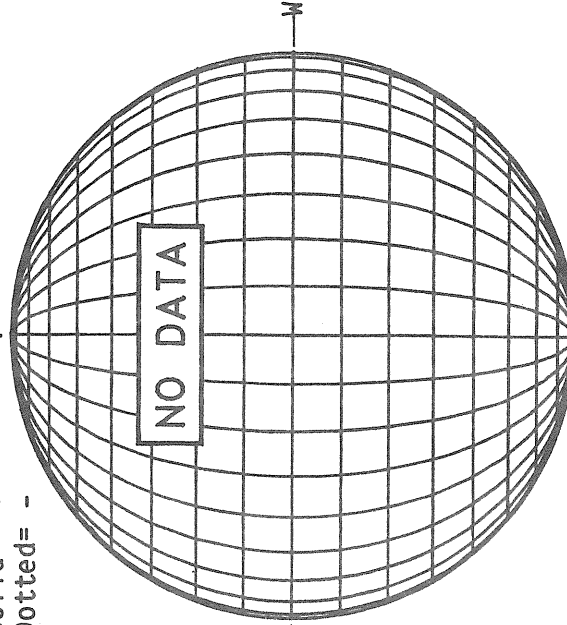
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

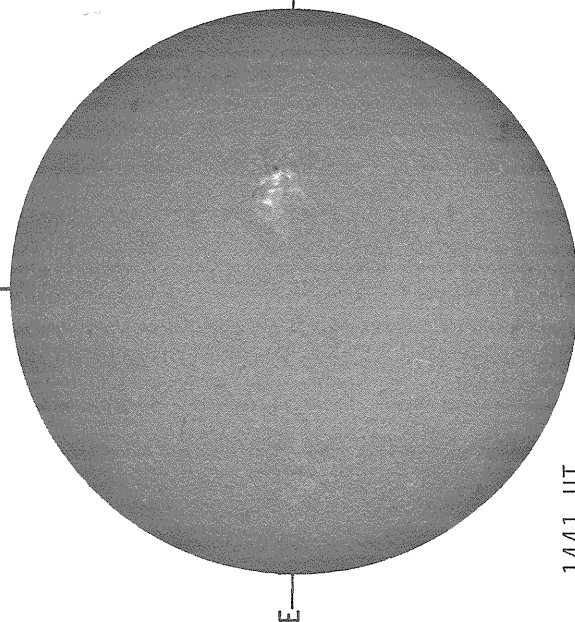


MT. WILSON MAGNETOGRAM

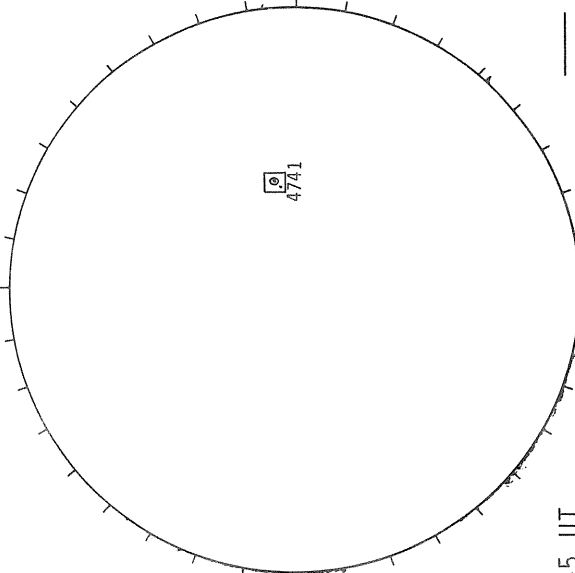
Solid = +  
Dotted = -



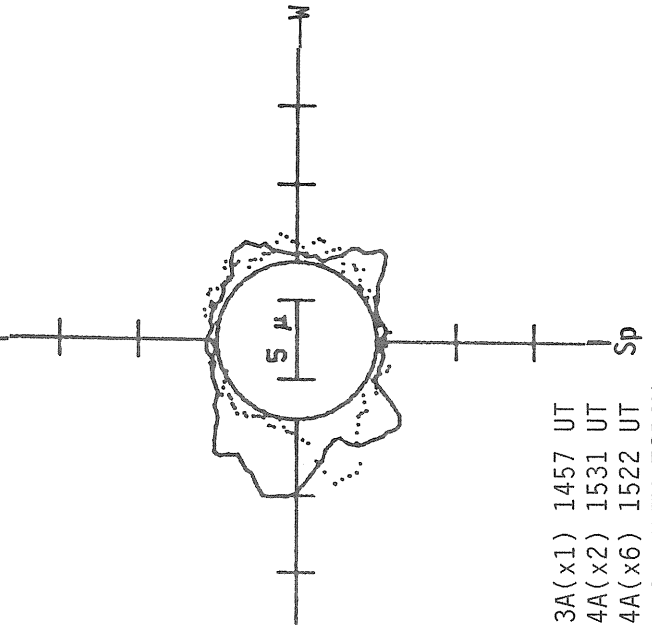
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A(x1) 1457 UT  
 ..... 6374A(x2) 1531 UT  
 xxxxx 5694A(x6) 1522 UT  
 NO 5694A ACTIVITY TODAY

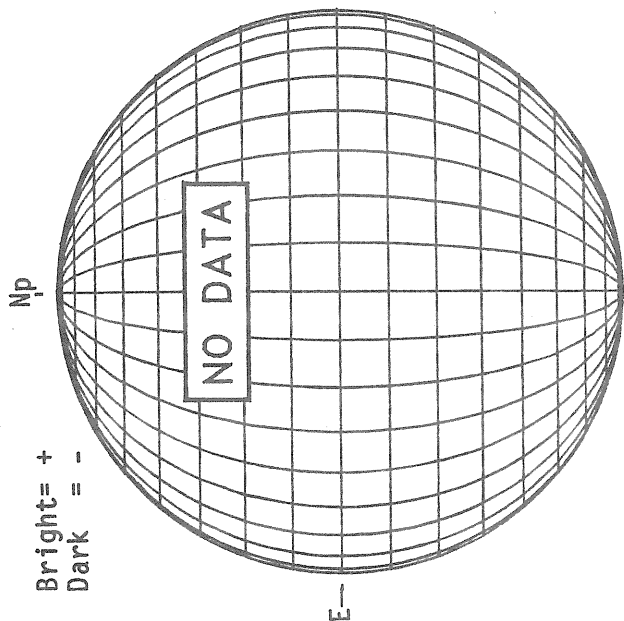
1545 UT  
 1535 UT BOUL Prom

1441 UT

AUGUST 05, 1986 (P= 12.30, B<sub>0</sub> = 5.95, L<sub>0</sub> = 201.75)

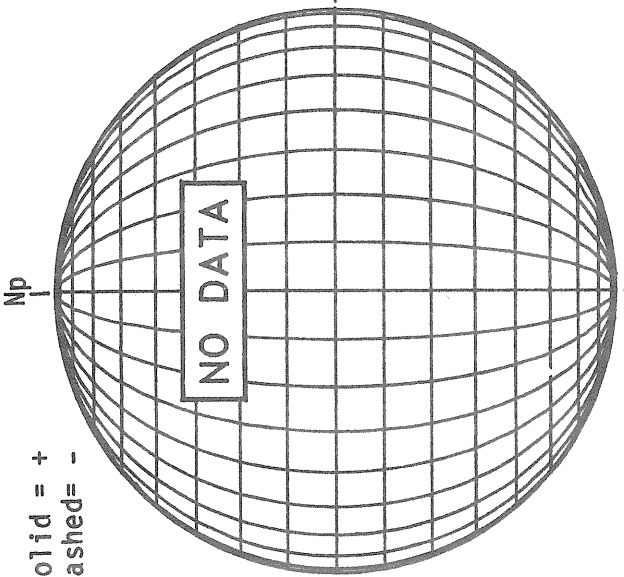
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



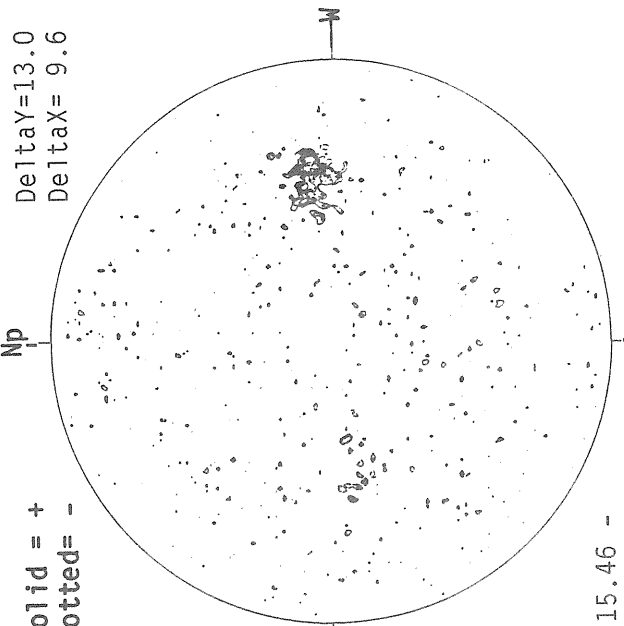
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



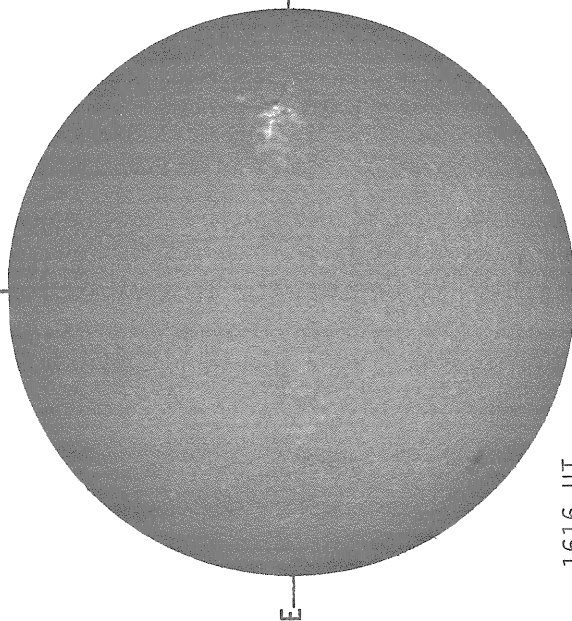
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6



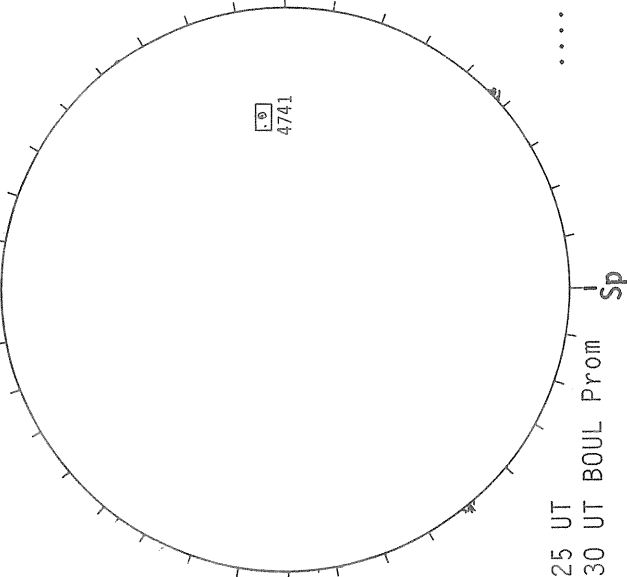
15.46 -  
16.33 UT

SACRAMENTO PEAK H-ALPHA



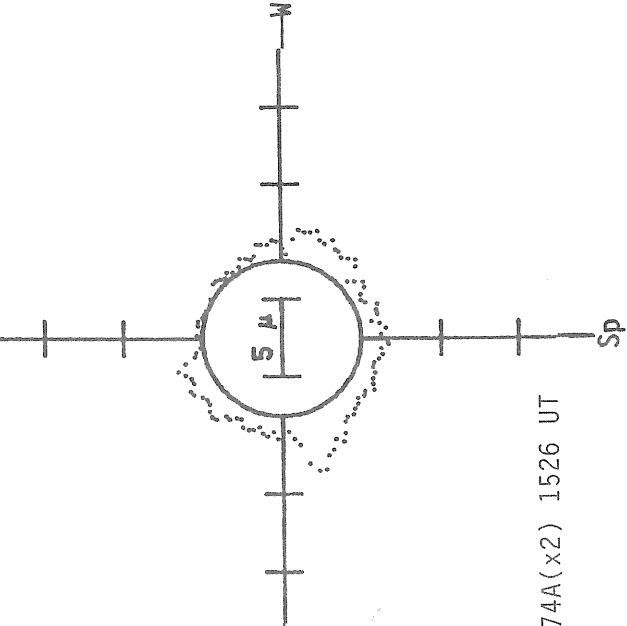
1616 UT

BOULDER SUNSPOTS



1325 UT  
1330 UT BOUL PROM

SACRAMENTO PEAK CORONA (1.15 Radii)



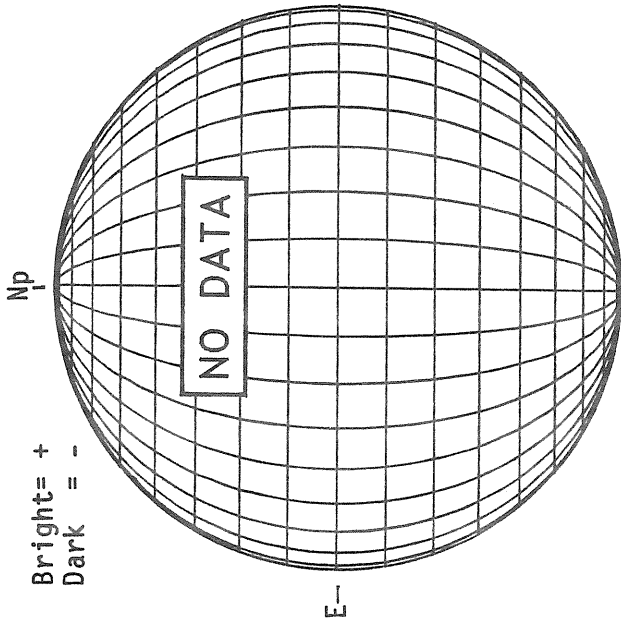
..... 6374A(x2) 1526 UT

AUGUST 06, 1986 (P= 12.68, B<sub>0</sub> = 6.01, L<sub>0</sub> = 188.53)

30  
Aug 86

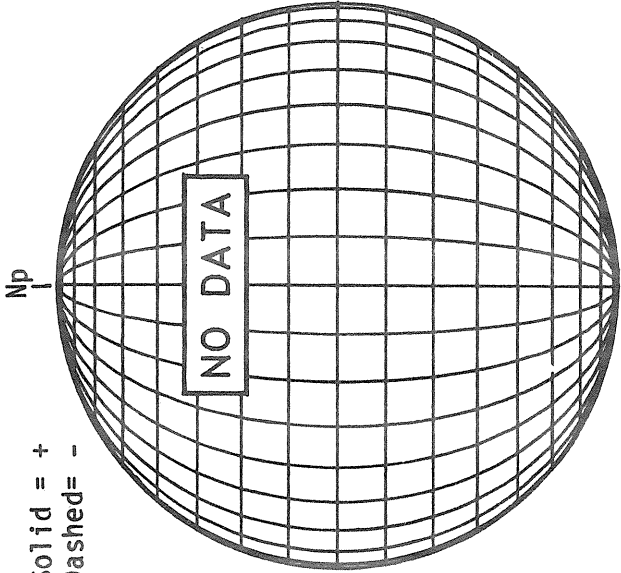
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



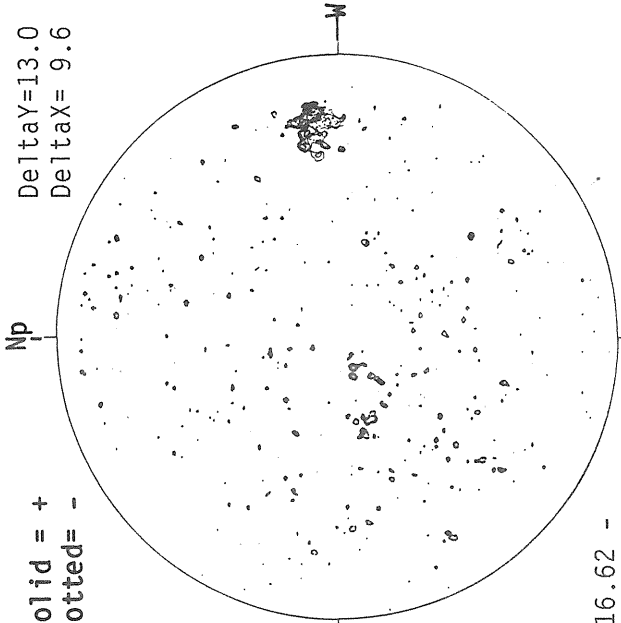
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

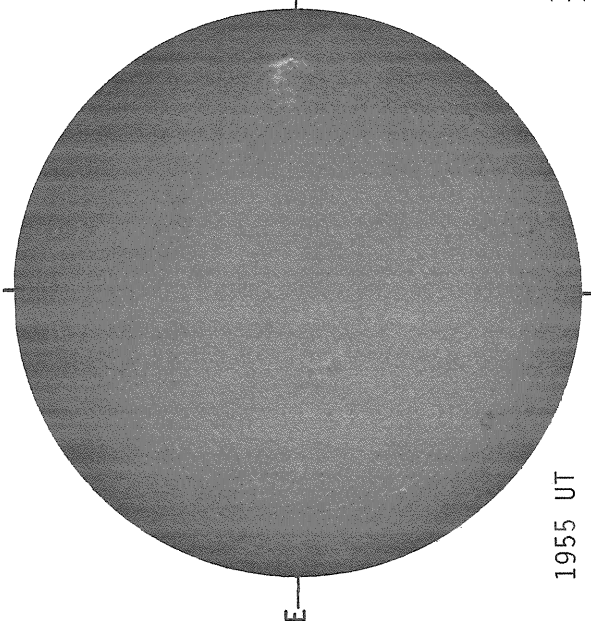


MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6

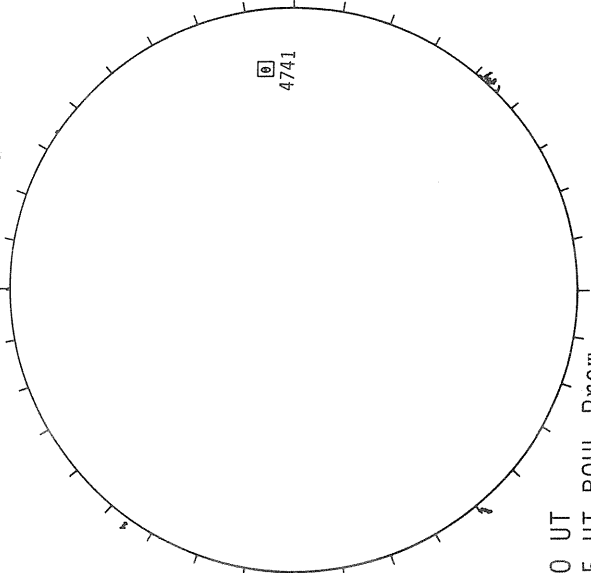


SACRAMENTO PEAK H-ALPHA



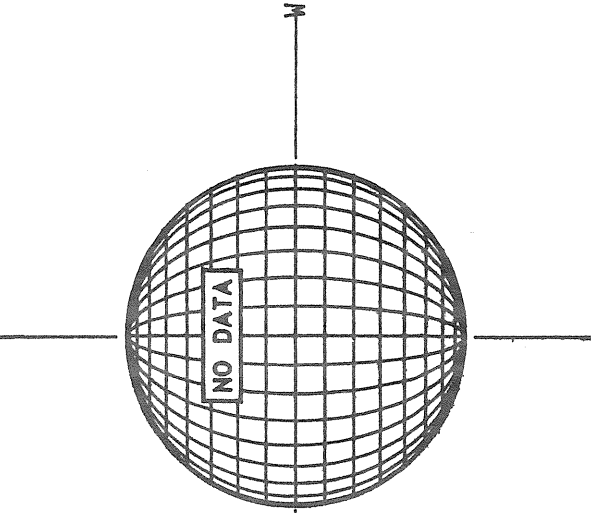
1955 UT

BOULDER SUNSPOTS



1420 UT  
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

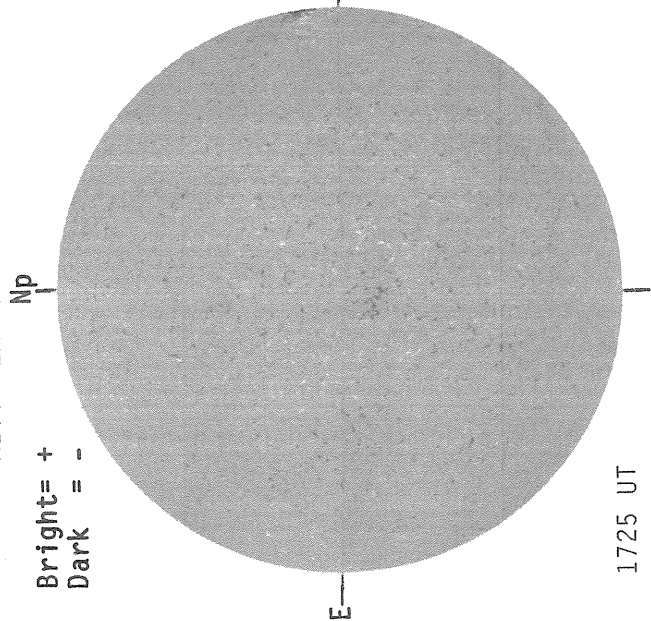


16.62 -  
17.50 UT

AUGUST 07, 1986 (P= 13.06, B<sub>0</sub> = 6.08, L<sub>0</sub> = 175.30)

KITT PEAK MAGNETOGRAM

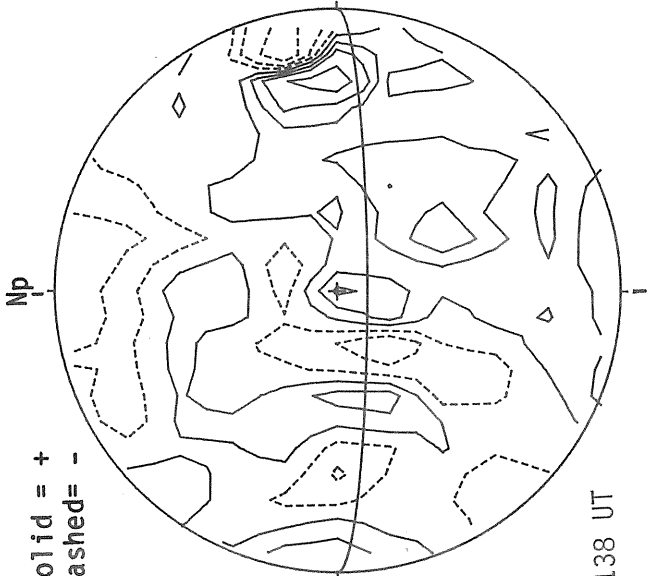
Bright= +  
Dark = -



1725 UT

STANFORD MAGNETOGRAM

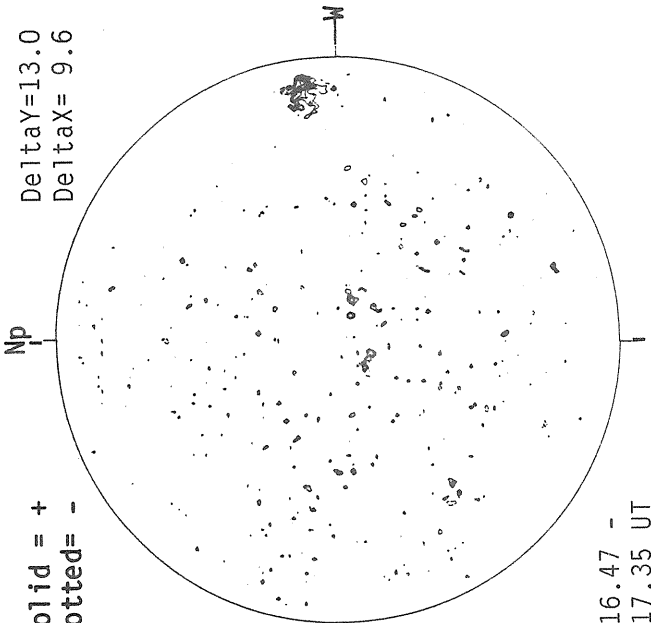
Solid = +  
Dashed = -



0138 UT

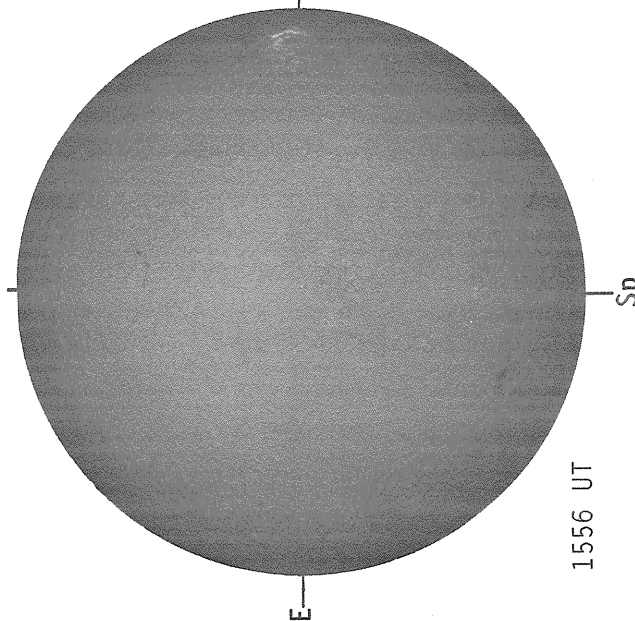
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6



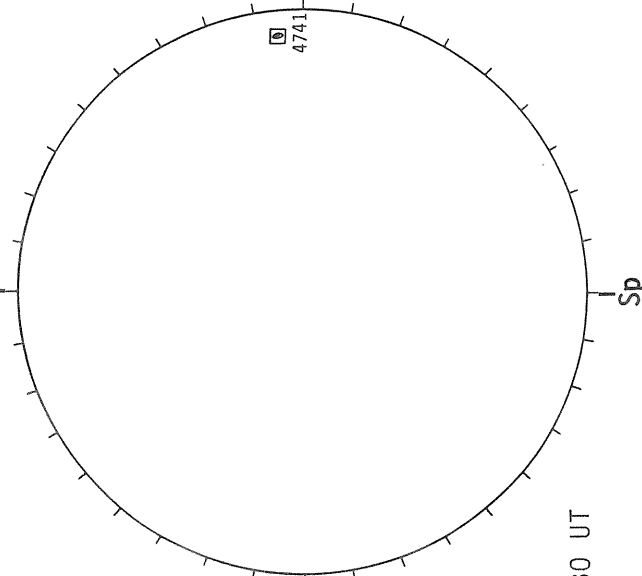
16.47 -  
17.35 UT

SACRAMENTO PEAK H-ALPHA



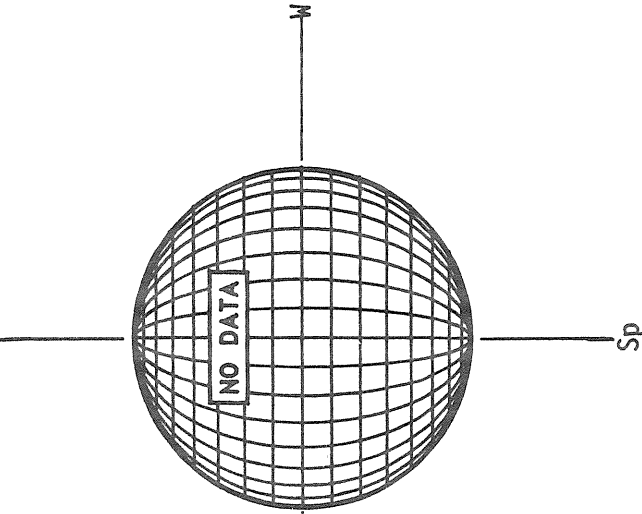
1556 UT

RAMEY SUNSPOTS



1130 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

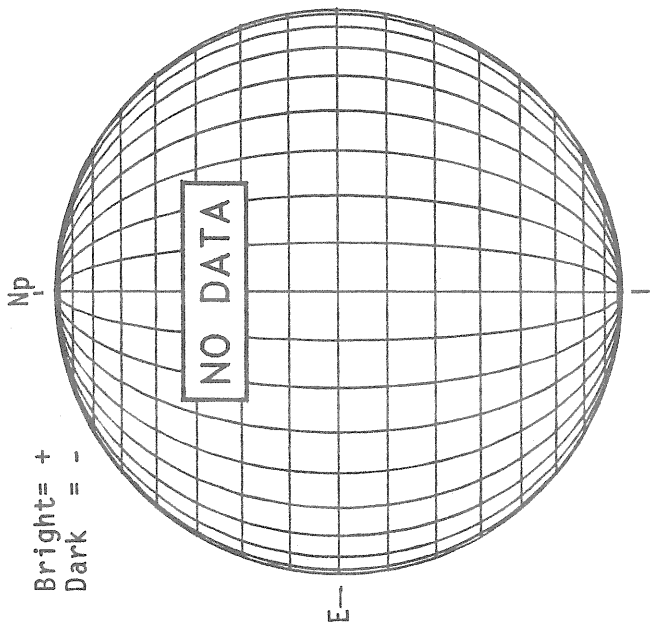


1556 UT

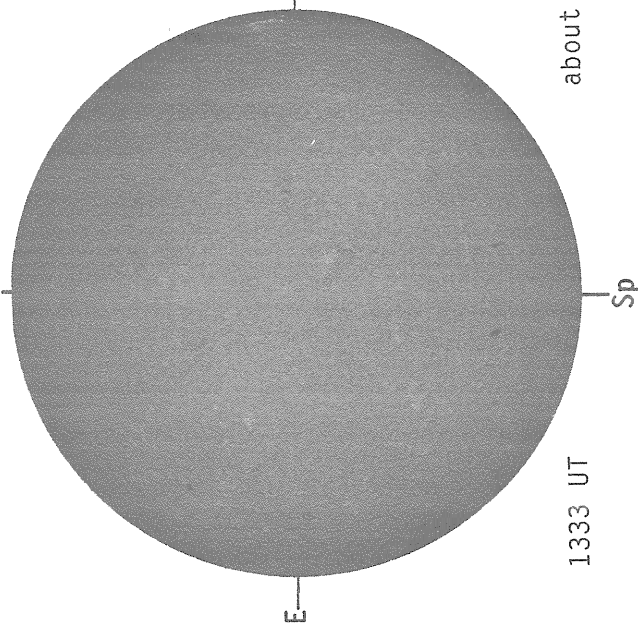
AUGUST 08, 1986 (P= 13.43, B<sub>0</sub> = 6.14, L<sub>0</sub> = 162.08)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



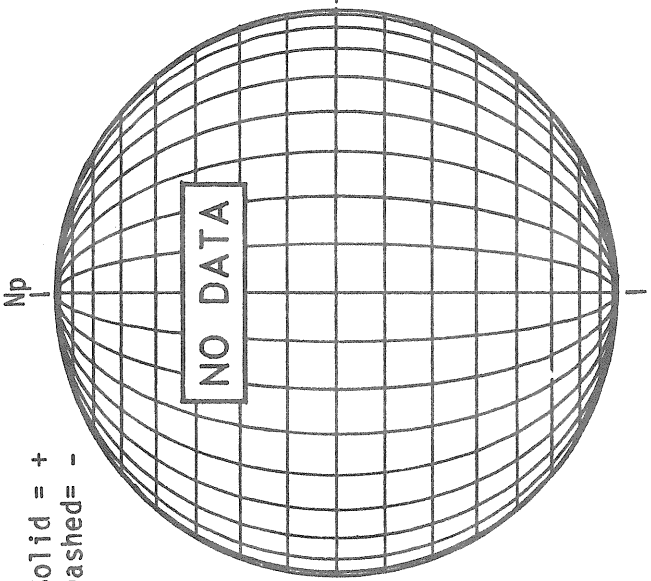
SACRAMENTO PEAK H-ALPHA



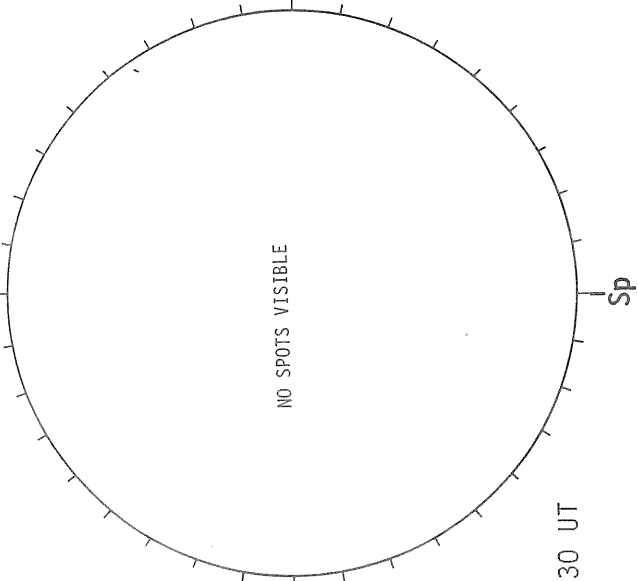
1333 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



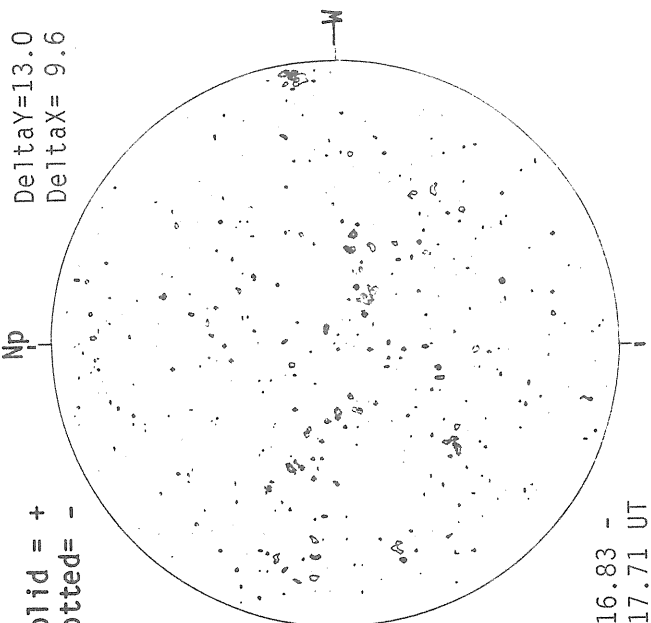
RAMEY SUNSPOTS



about 1130 UT

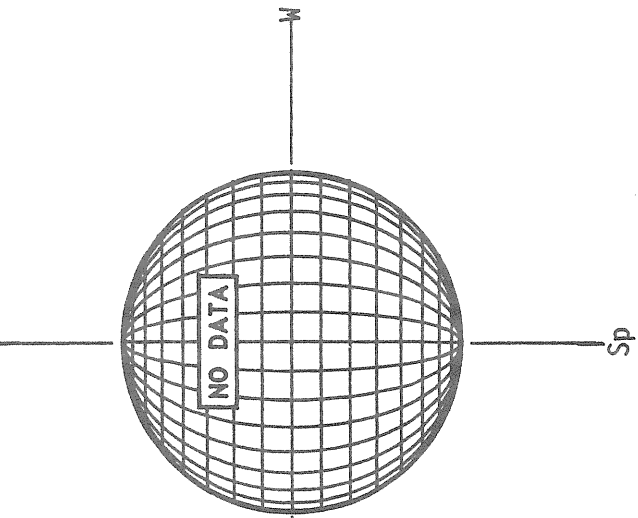
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -



16.83 -  
17.71 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

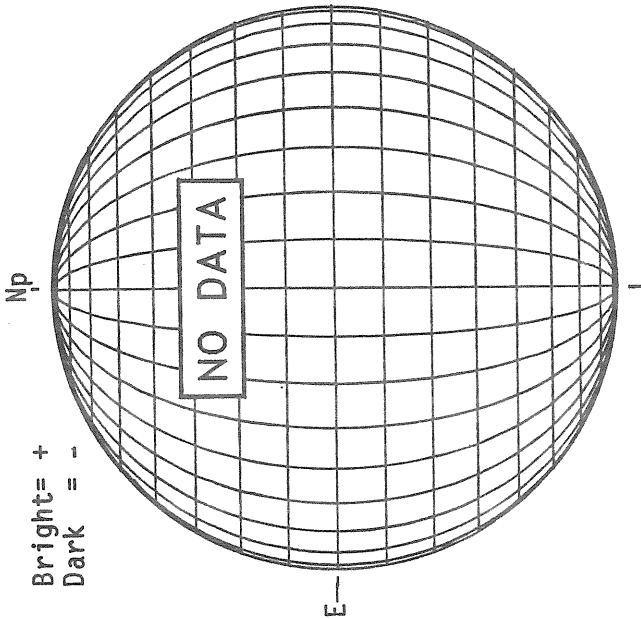


Sp

AUGUST 09, 1986 (P= 13.80, B<sub>0</sub>= 6.20, L<sub>0</sub>= 148.86)

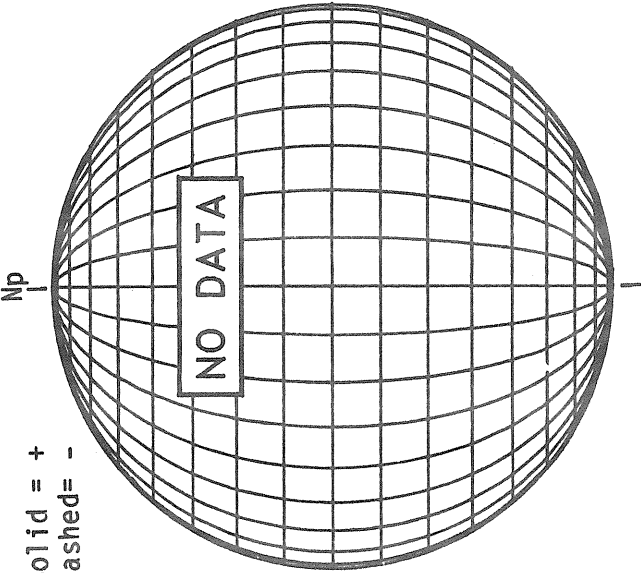
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



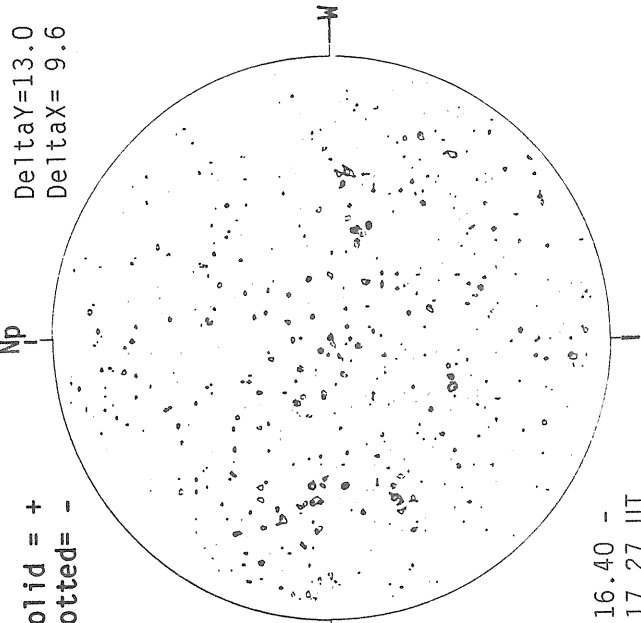
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6

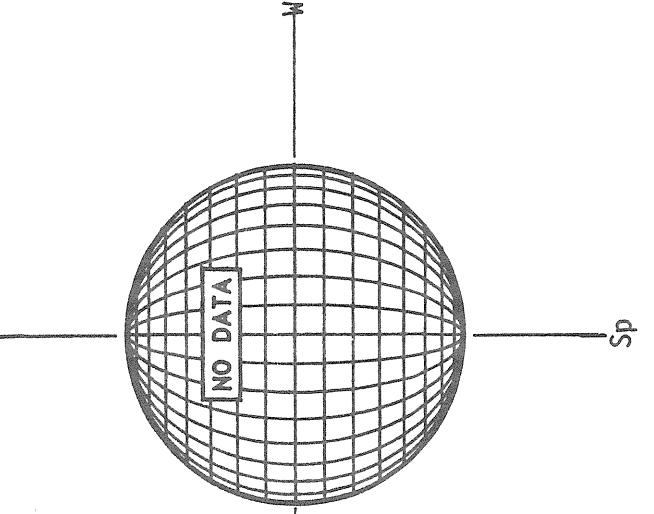
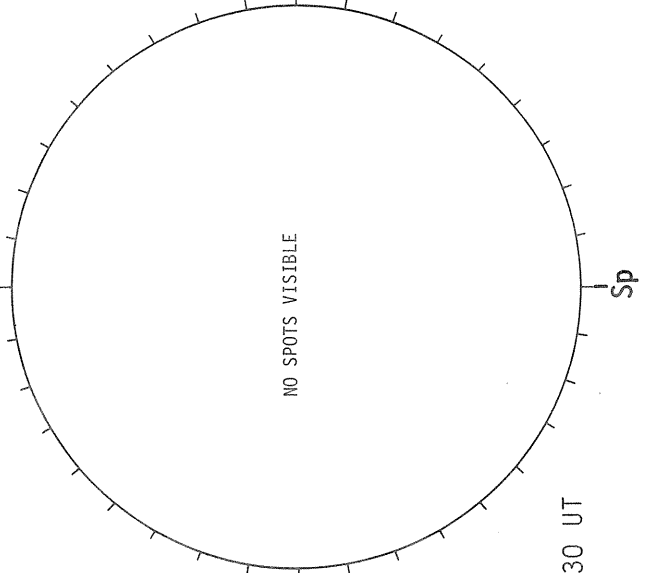
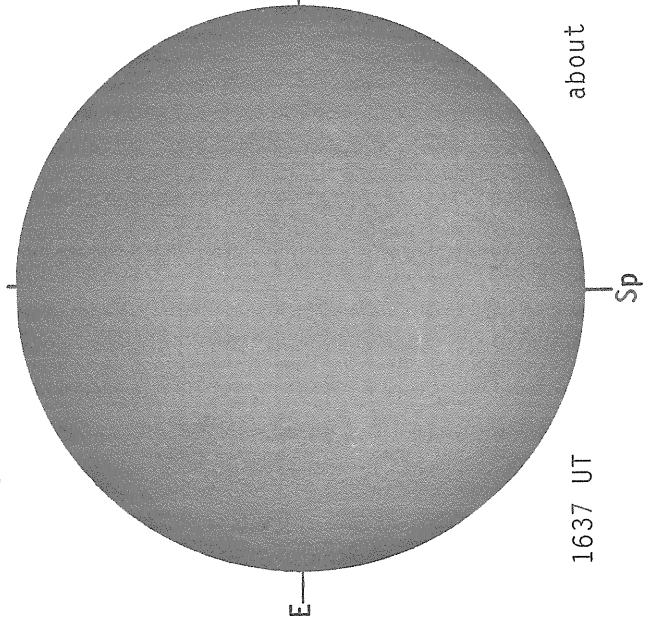


16.40 -  
17.27 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

RAMEY SUNSPOTS

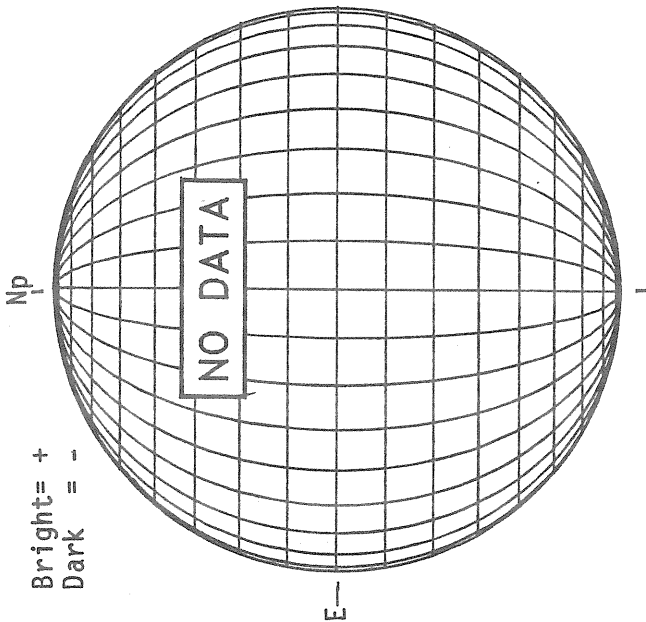
SACRAMENTO PEAK H-ALPHA



AUGUST 10, 1986 (P= 14.16, B<sub>0</sub>= 6.26, L<sub>0</sub>= 135.64)

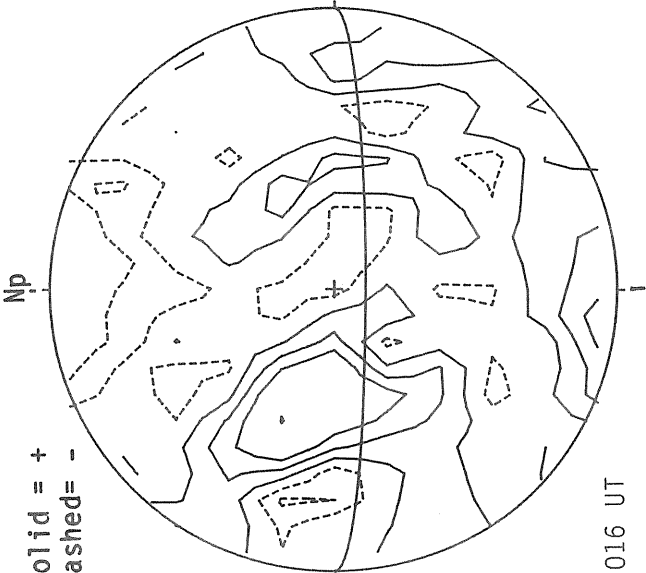
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



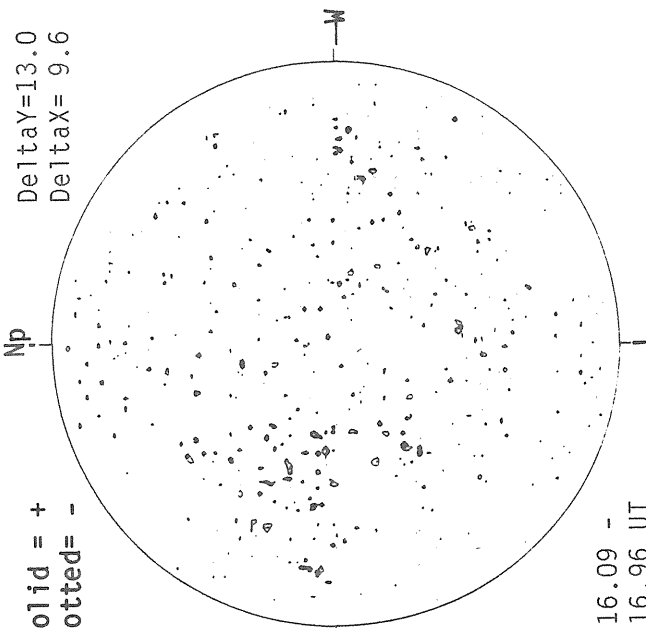
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



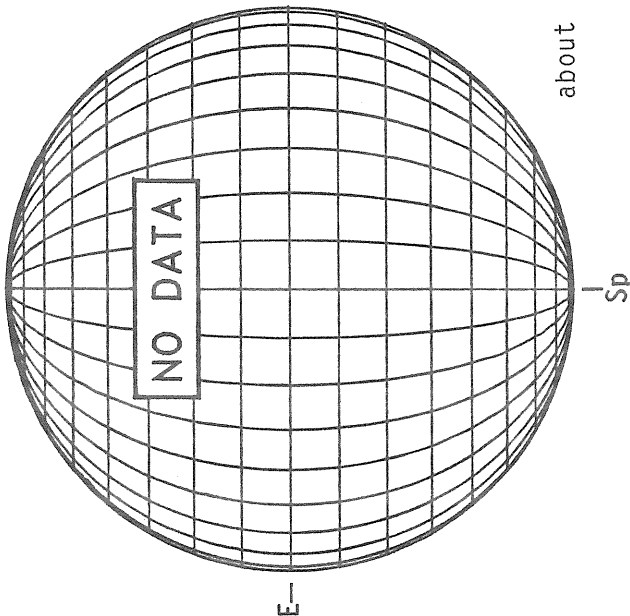
MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6

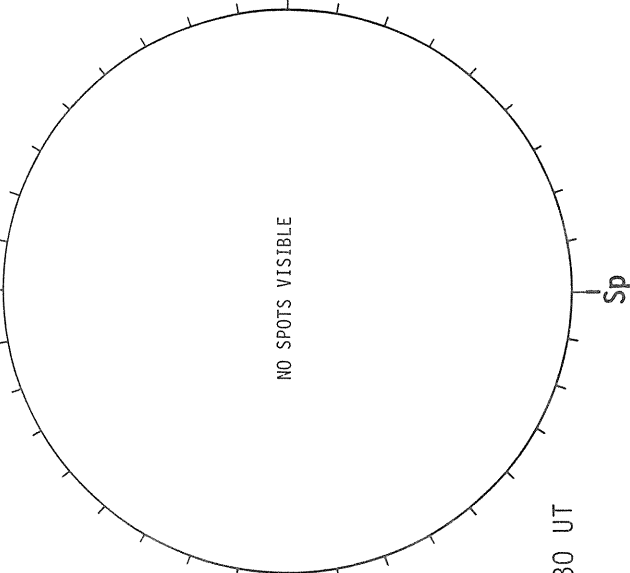


Solid = +  
Dotted = -

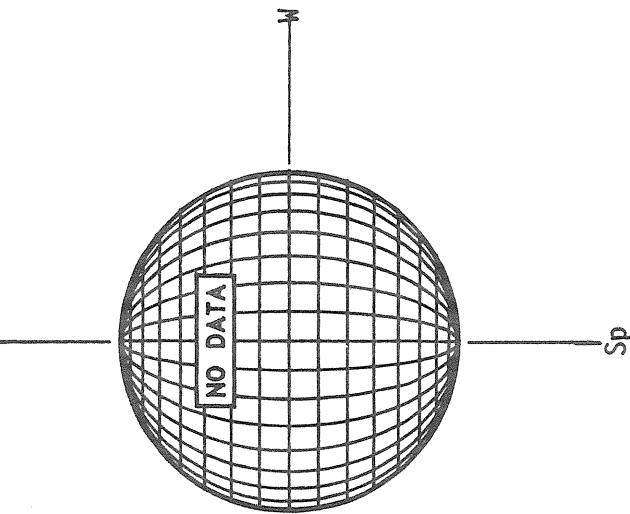
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



16.09 -  
16.96 UT

about 1130 UT

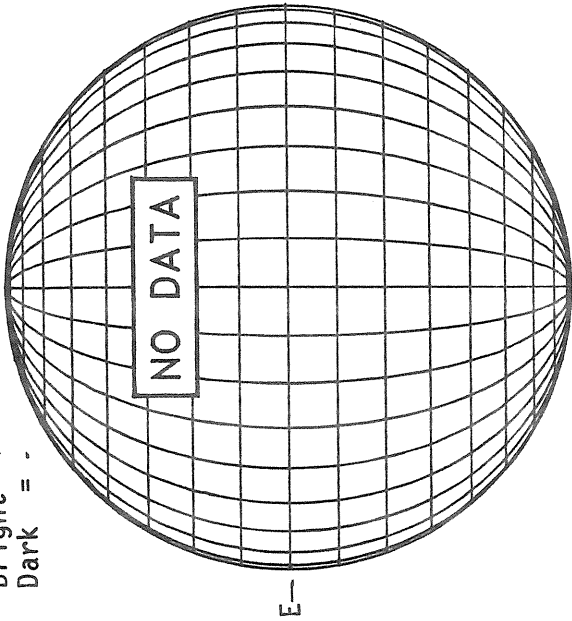


AUGUST 11, 1986 (P= 14.52, B<sub>0</sub>= 6.31, L<sub>0</sub>= 122.42)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

Np

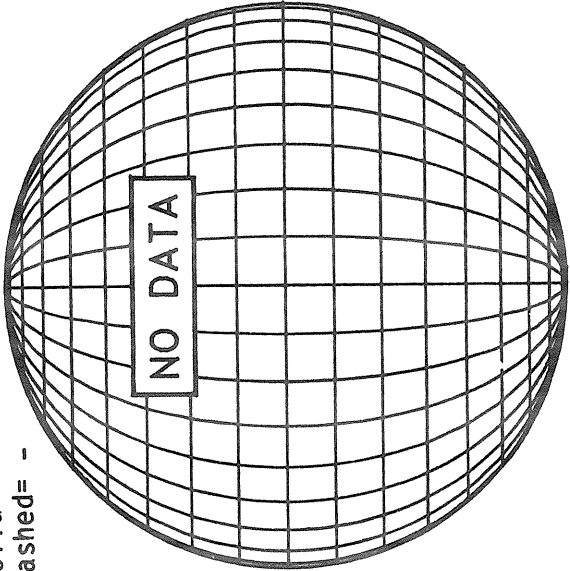


E

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np



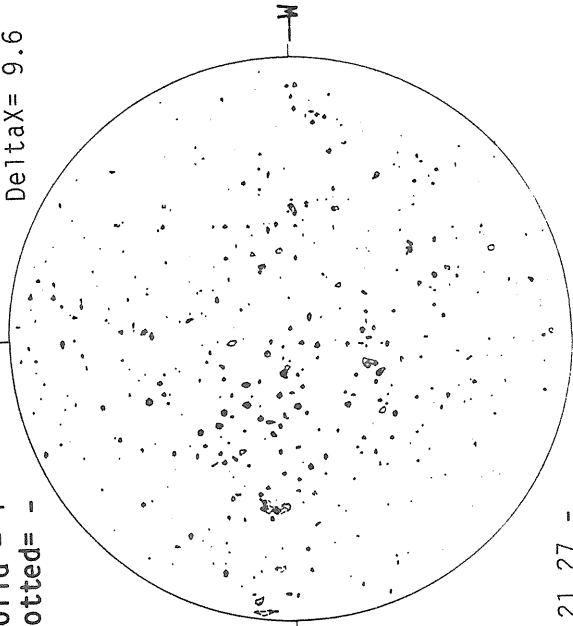
I

MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

Np

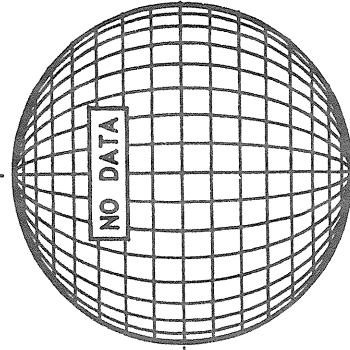
DeltaY=13.0  
DeltaX= 9.6



W

21.27 -  
22.14 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



Sp

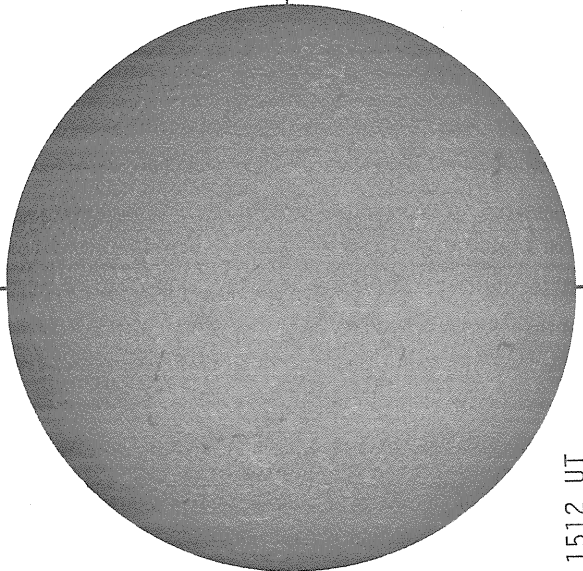
RAMEY SUNSPOTS

NO SPOTS VISIBLE

Sp

1339 UT

SACRAMENTO PEAK H-ALPHA



Sp

1512 UT

E

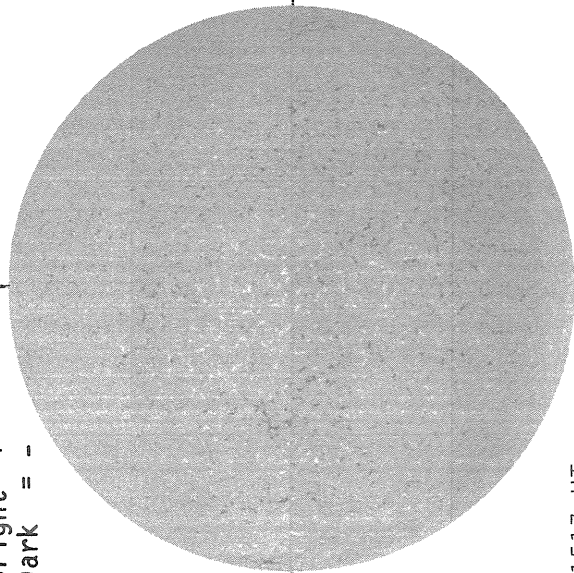


AUGUST 12, 1986 (P= 14.88, B<sub>0</sub> = 6.37, L<sub>0</sub> = 109.20)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

Np

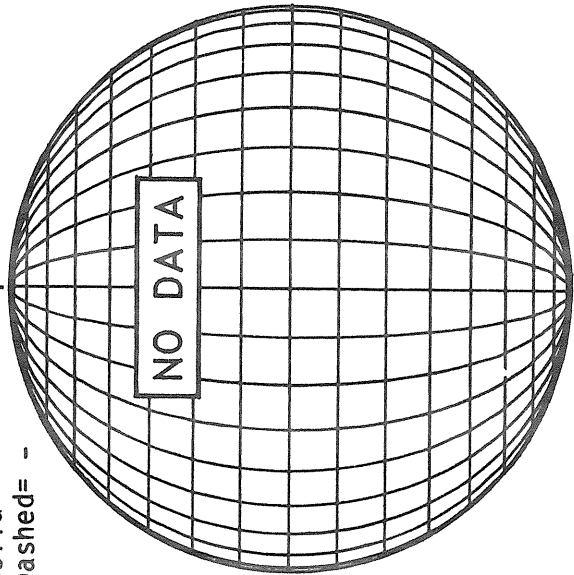


1517 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np



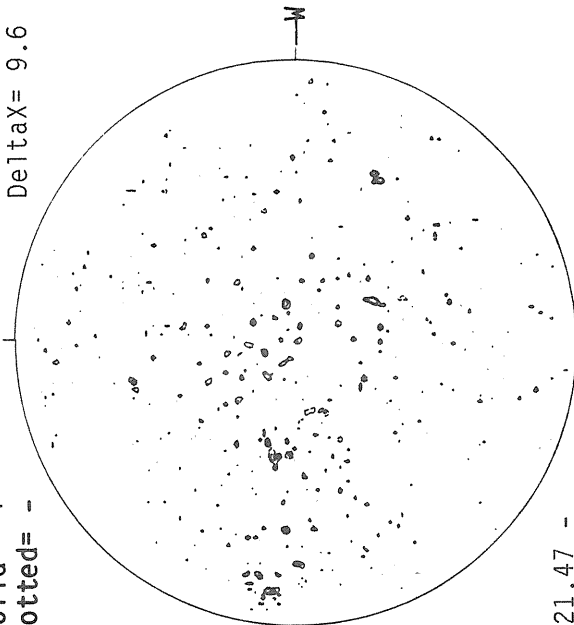
SACRAMENTO PEAK H-ALPHA

1334 UT

MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

Np



21.47 -  
22.34 UT

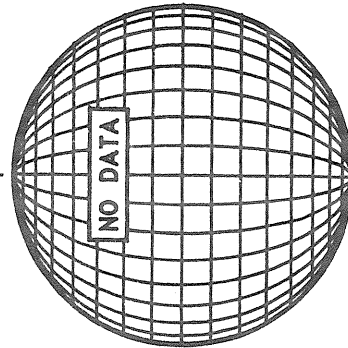
BOULDER SUNSPOTS

NO SPOTS VISIBLE

1450 UT  
1458 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

NO DATA



Sp

Sp

Sp

M

M

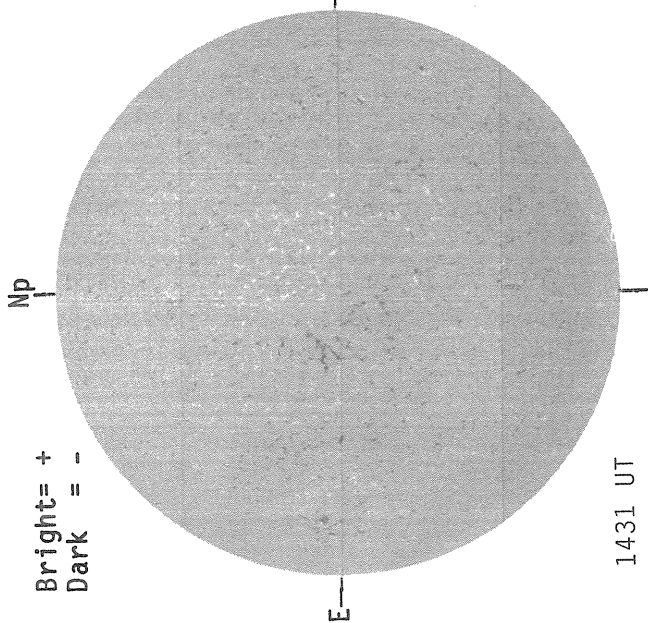
E

E

AUGUST 13, 1986 (P= 15.23, B<sub>0</sub> = 6.42, L<sub>0</sub> = 95.98)

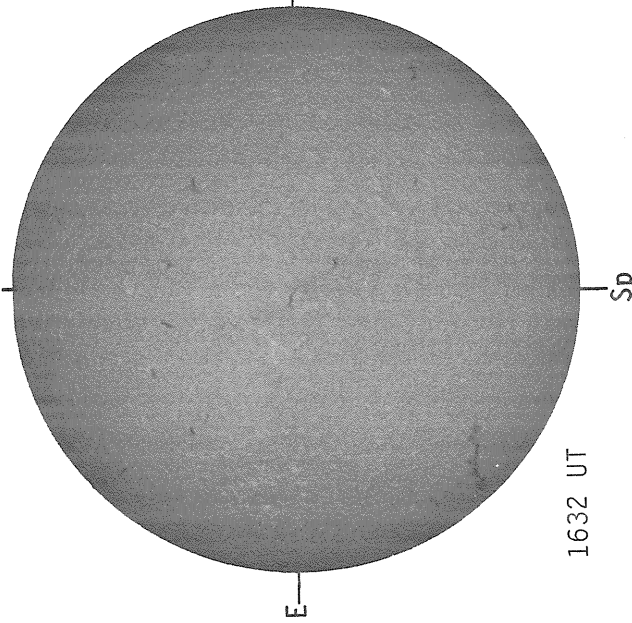
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



1431 UT

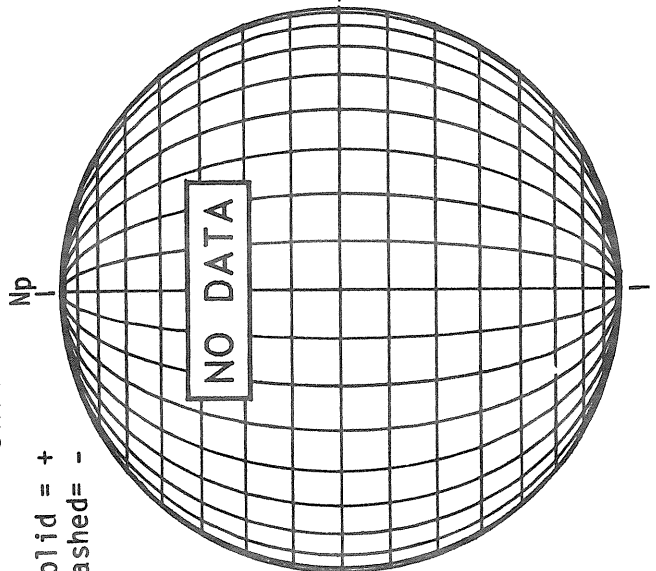
SACRAMENTO PEAK H-ALPHA



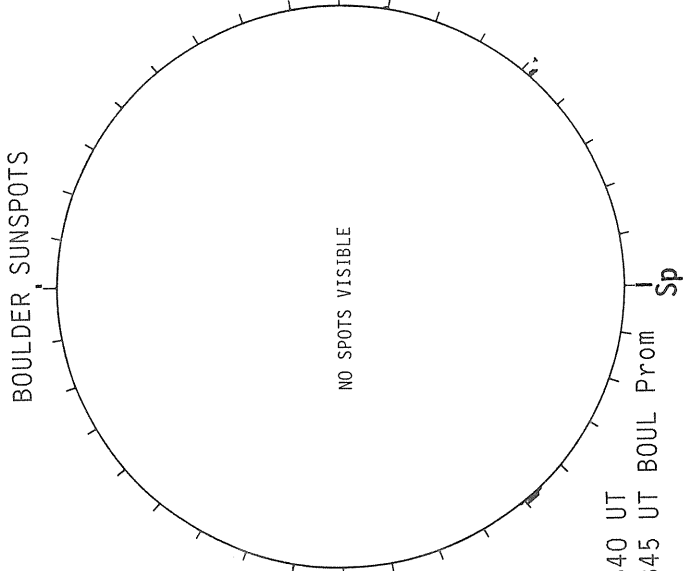
1632 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



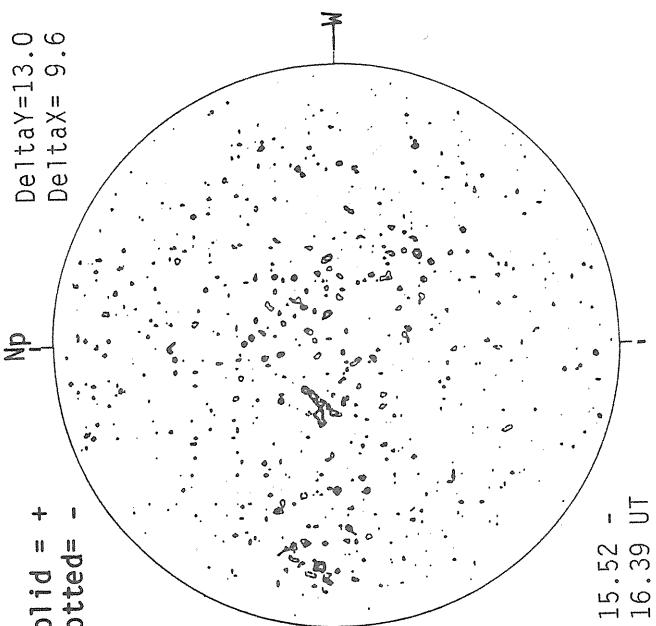
BOULDER SUNSPOTS



1340 UT  
1345 UT BOUL PROM

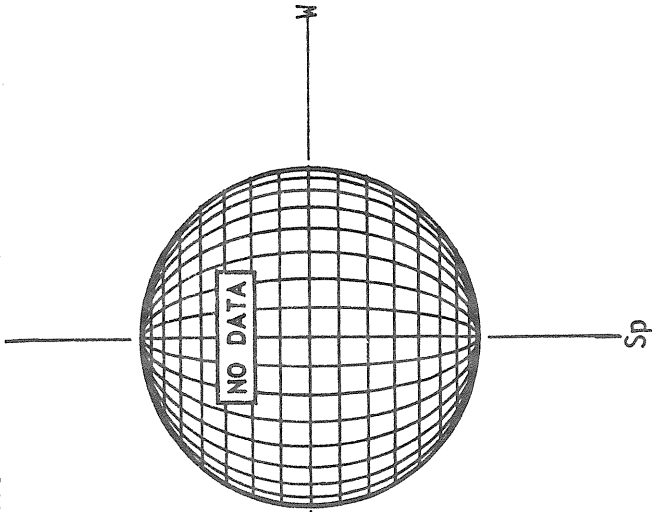
MT. WILSON MAGNETOGRAM

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



15.52 -  
16.39 UT

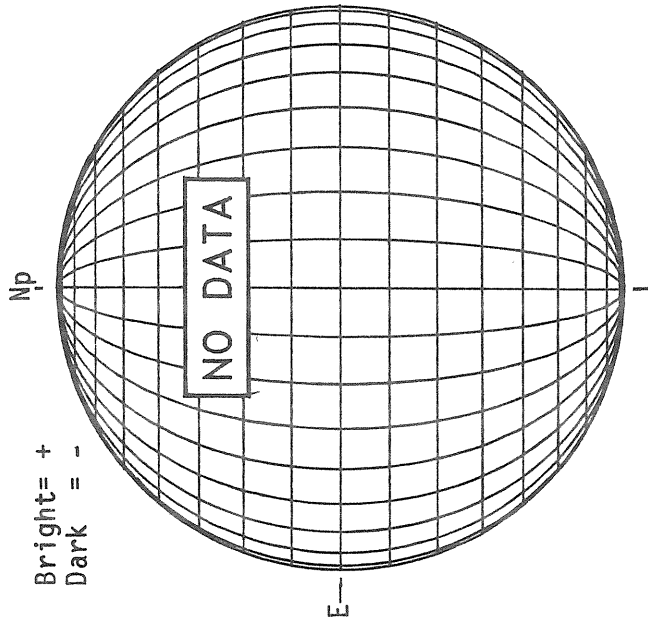
SACRAMENTO PEAK CORONA (1.15 Radii)



Sp

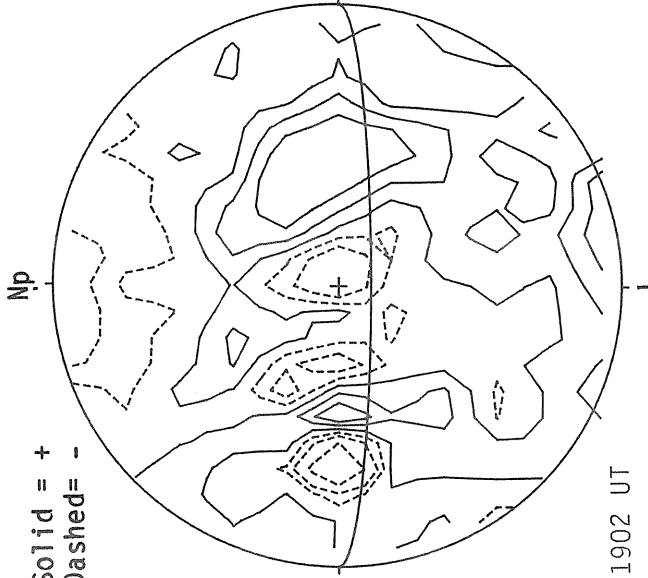
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



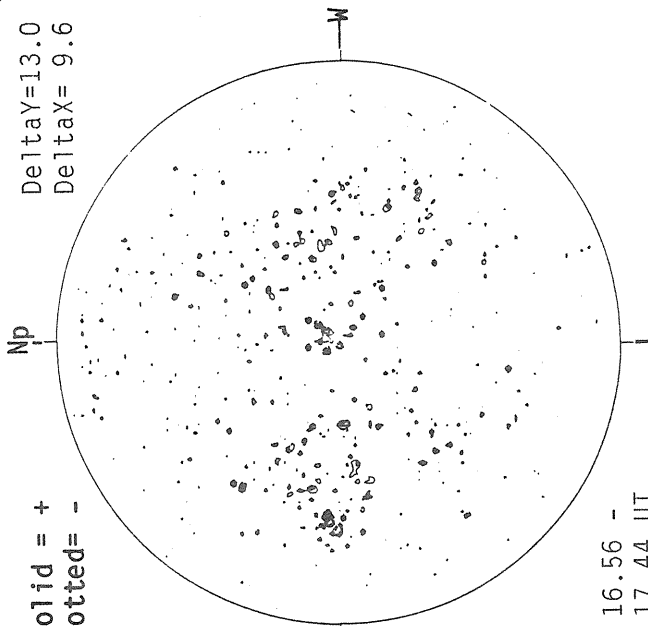
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



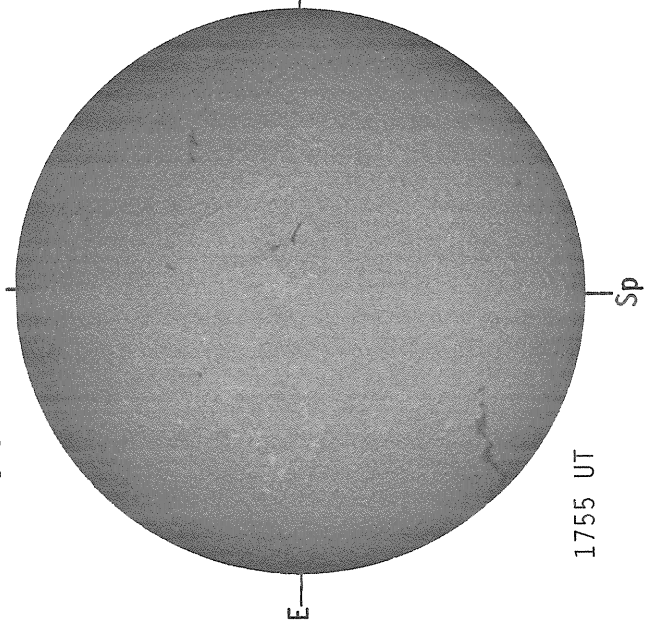
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6



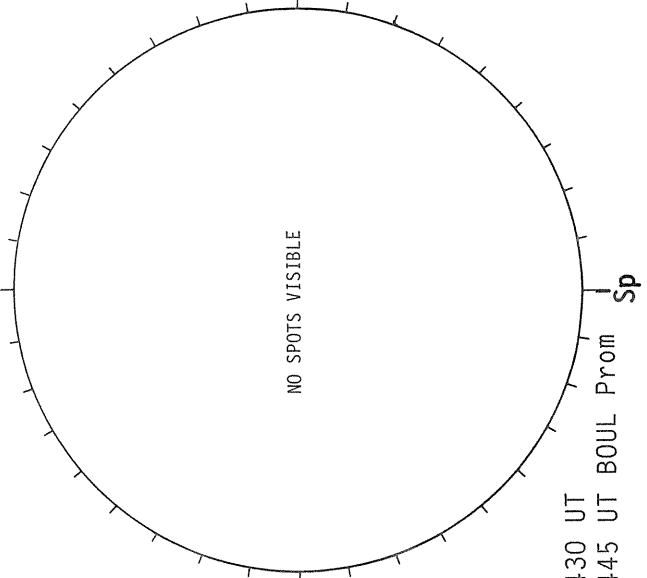
16.56 -  
17.44 UT

SACRAMENTO PEAK H-ALPHA



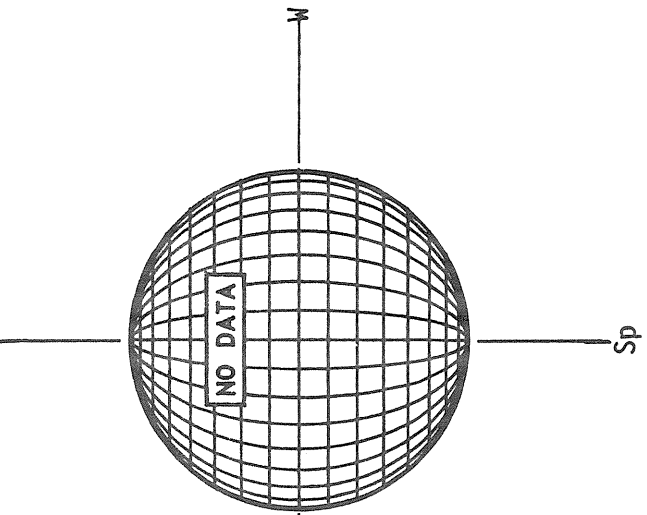
1755 UT

BOULDER SUNSPOTS



1430 UT  
1445 UT BOUL Prom  
Sp

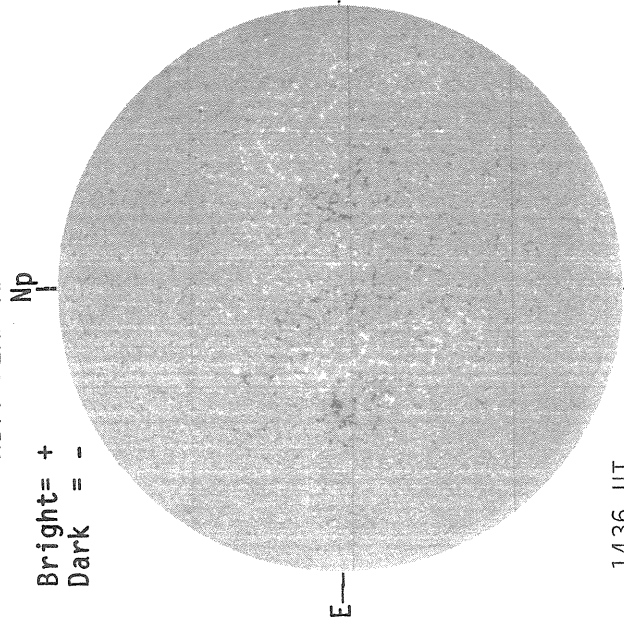
SACRAMENTO PEAK CORONA (1.15 Radii)



AUGUST 15, 1986 (P= 15.92, B<sub>0</sub> = 6.52, L<sub>0</sub> = 69.54)

KITT PEAK MAGNETOGRAM

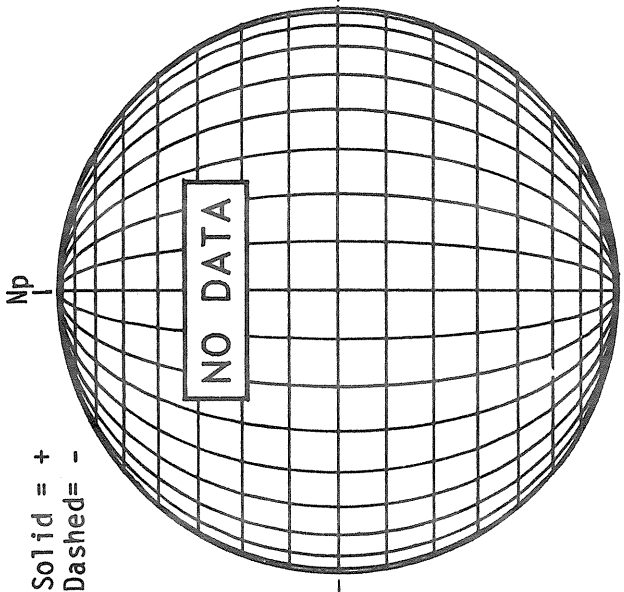
Bright= +  
Dark = -



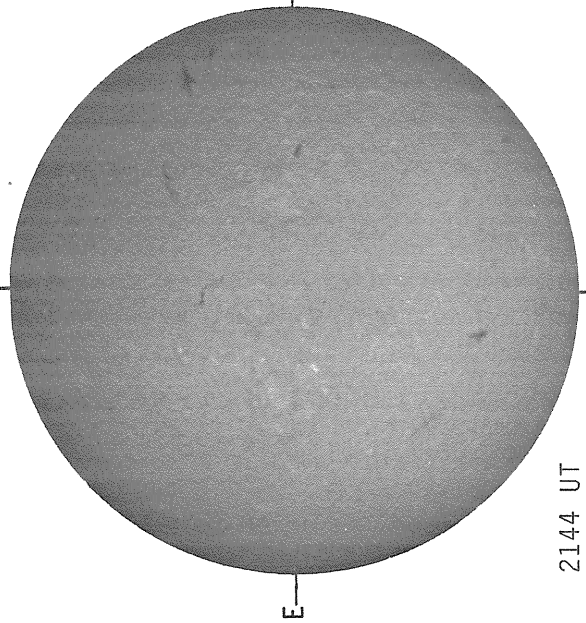
1436 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



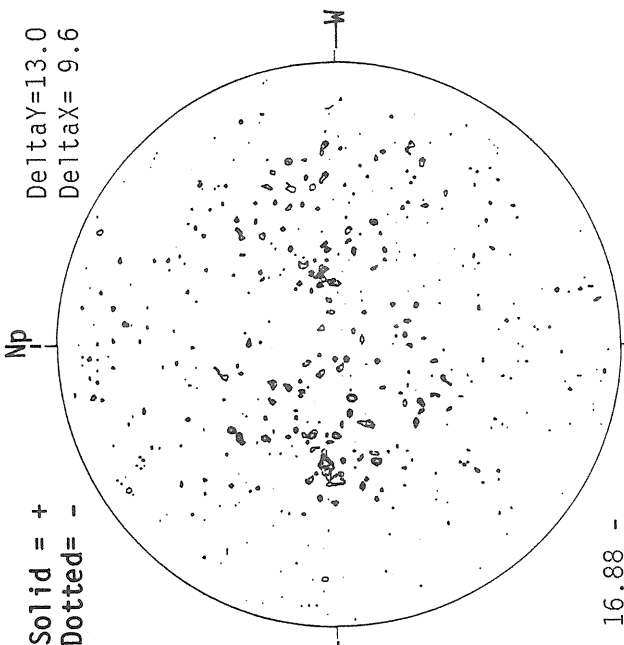
SACRAMENTO PEAK H-ALPHA



2144 UT

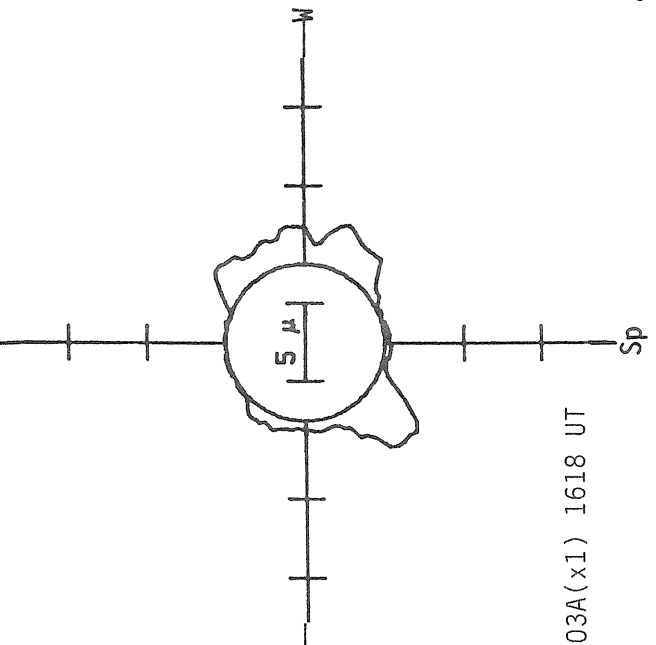
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -



16.88 -  
17.75 UT

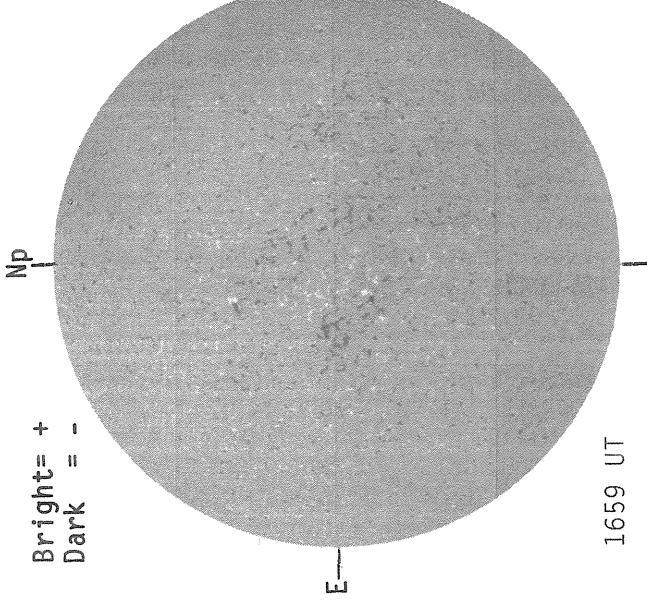
SACRAMENTO PEAK CORONA (1.15 Radii)



5303A(x1) 1618 UT

KITT PEAK MAGNETOGRAM

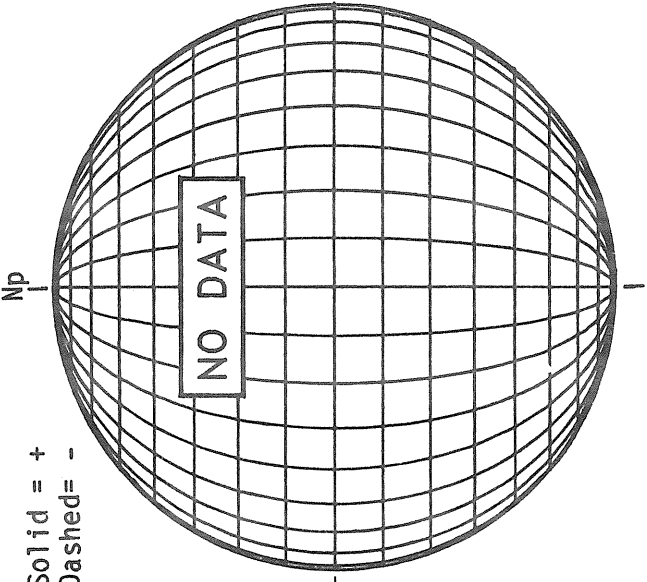
Bright= +  
Dark = -



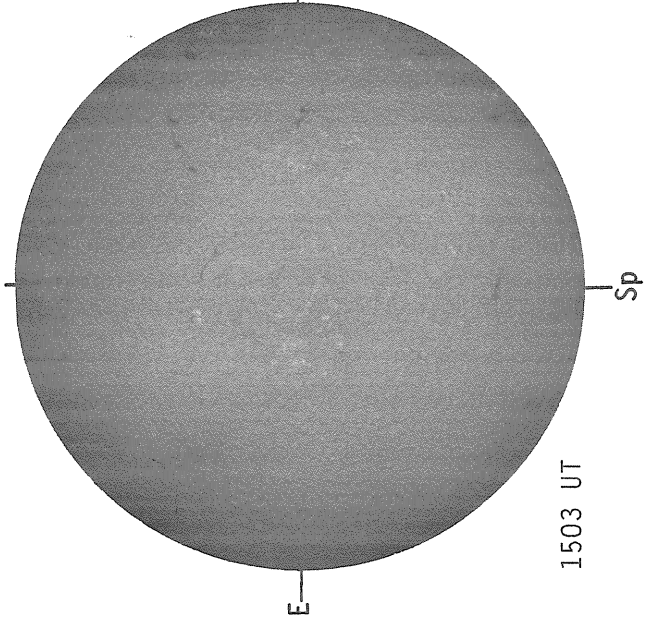
1659 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



SACRAMENTO PEAK H-ALPHA

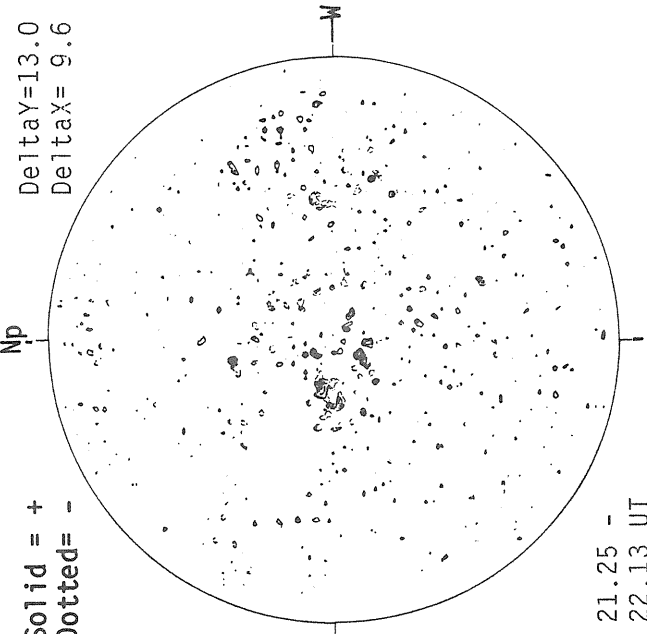


1503 UT

MT. WILSON MAGNETOGRAM

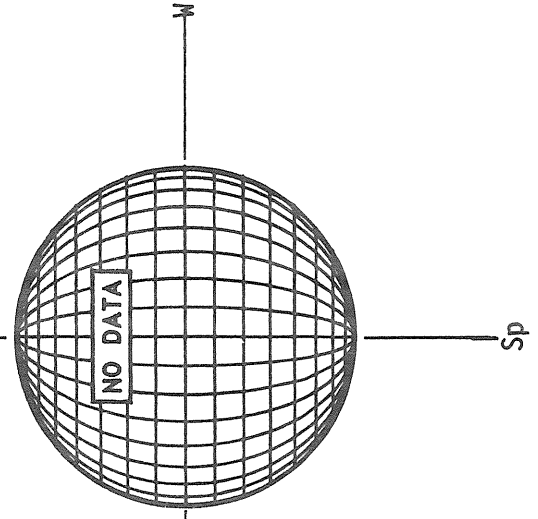
DeltaY=13.0  
DeltaX= 9.6

Solid = +  
Dotted = -

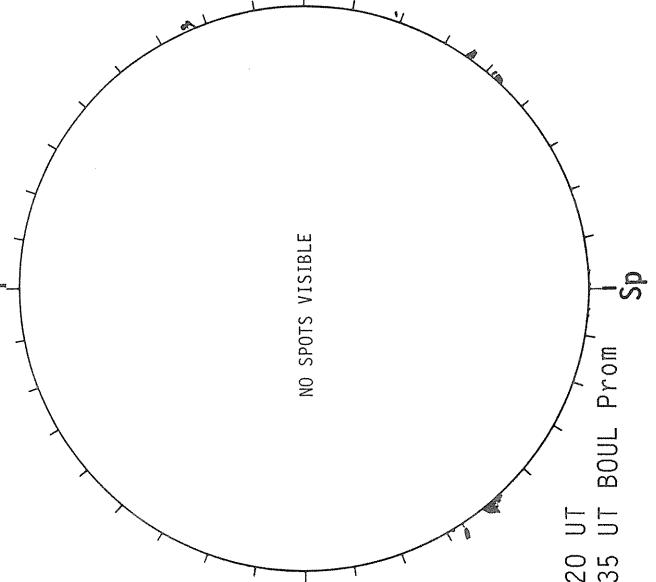


21.25 -  
22.13 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



BOULDER SUNSPOTS

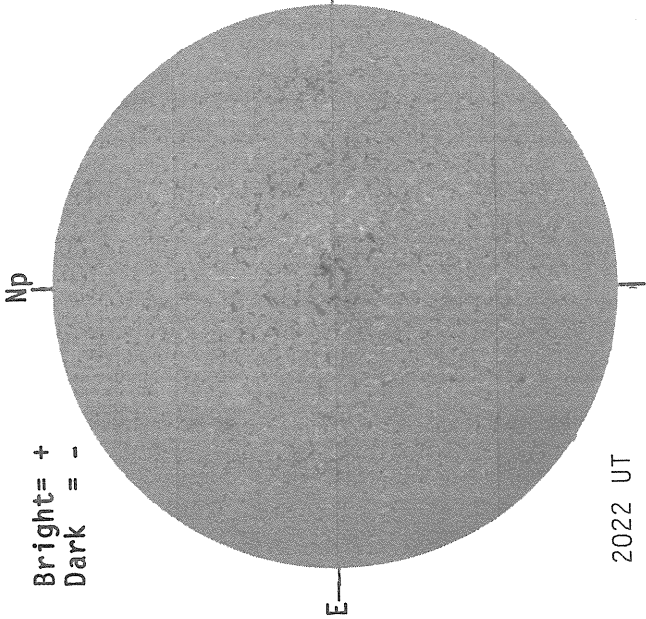


1320 UT  
1435 UT BOUL Prom

AUGUST 17, 1986 (P= 16.59, B<sub>0</sub> = 6.62, L<sub>0</sub> = 43.10)

KITT PEAK MAGNETOGRAM

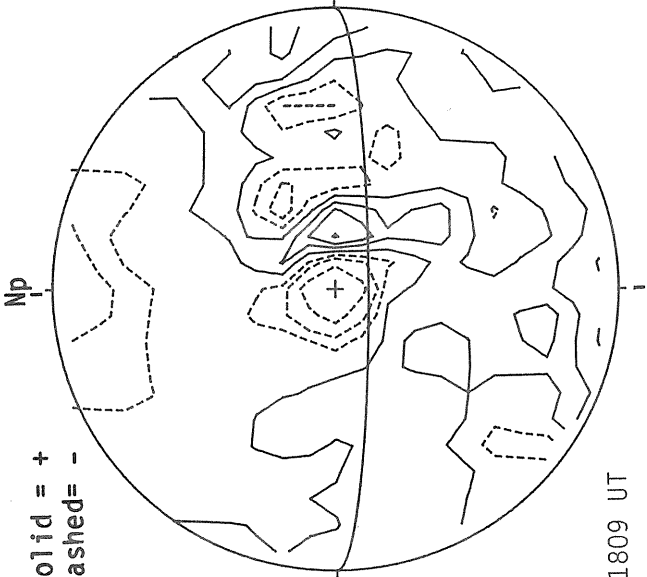
Bright= +  
Dark = -



2022 UT

STANFORD MAGNETOGRAM

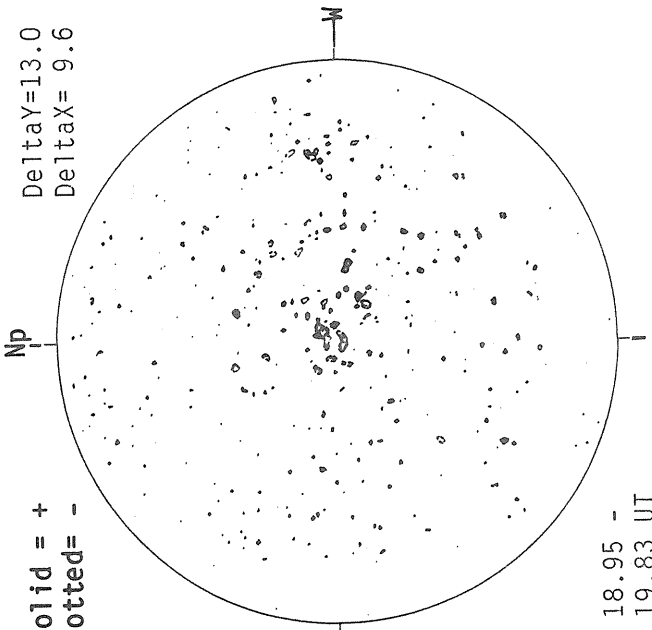
Solid = +  
Dashed = -



1809 UT

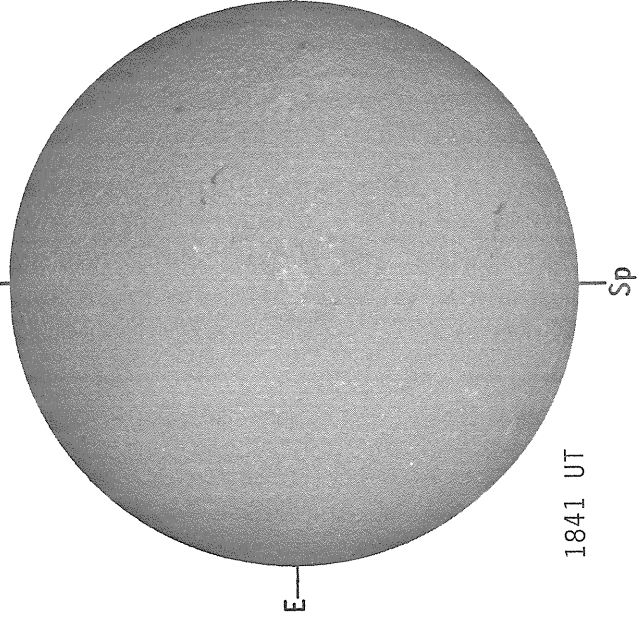
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6



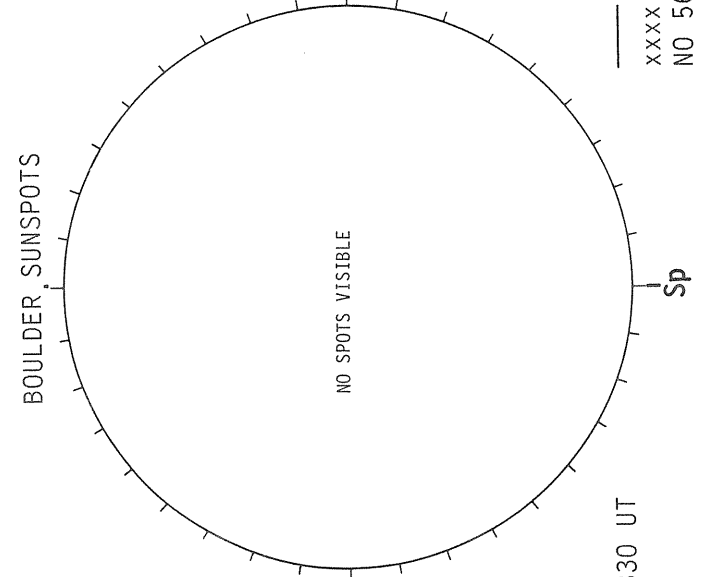
18.95 -  
19.83 UT

SACRAMENTO PEAK H-ALPHA



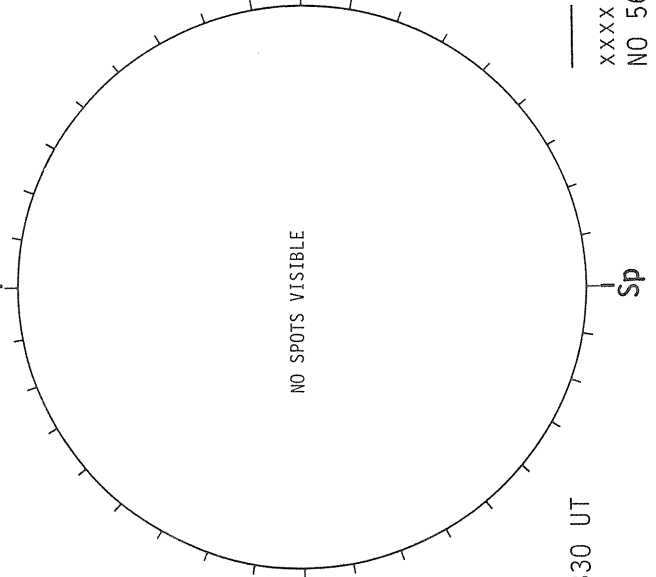
1841 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



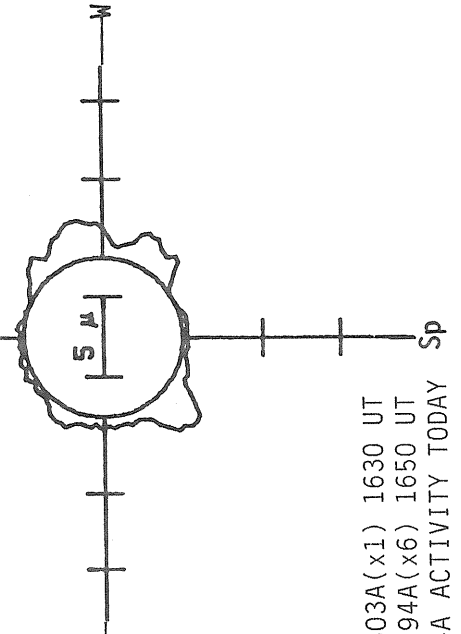
1330 UT

BOULDER SUNSPOTS



NO SPOTS VISIBLE

— 5303A(x1) 1630 UT  
xxxx 5694A(x6) 1650 UT  
NO 5694A ACTIVITY TODAY



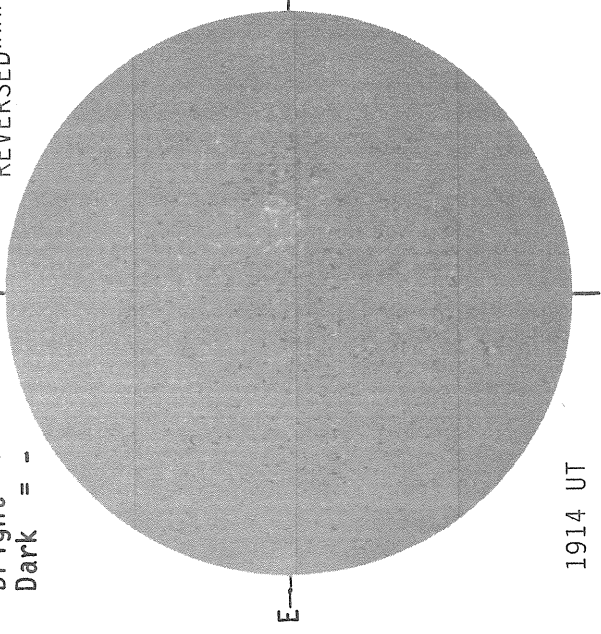


42  
Aug 86

AUGUST 18, 1986 (P= 16.92, B<sub>0</sub> = 6.66, L<sub>0</sub> = 29.88)

KITT PEAK MAGNETOGRAM

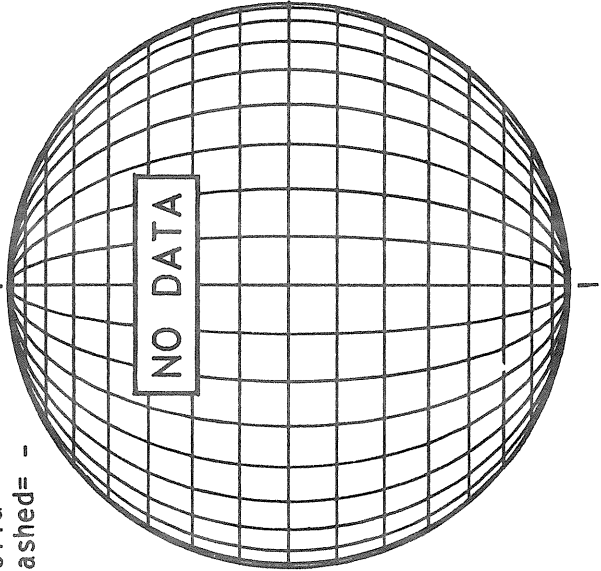
Bright= +  
Dark = -  
Np \*\*\*POLARITIES REVERSED\*\*\*



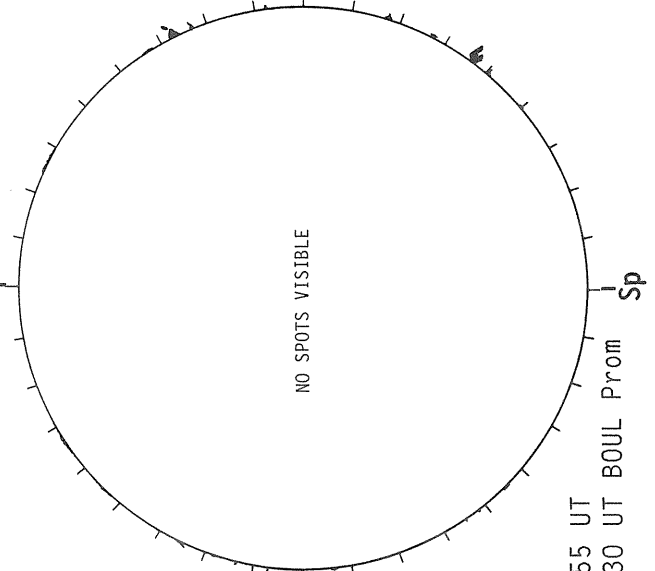
1914 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



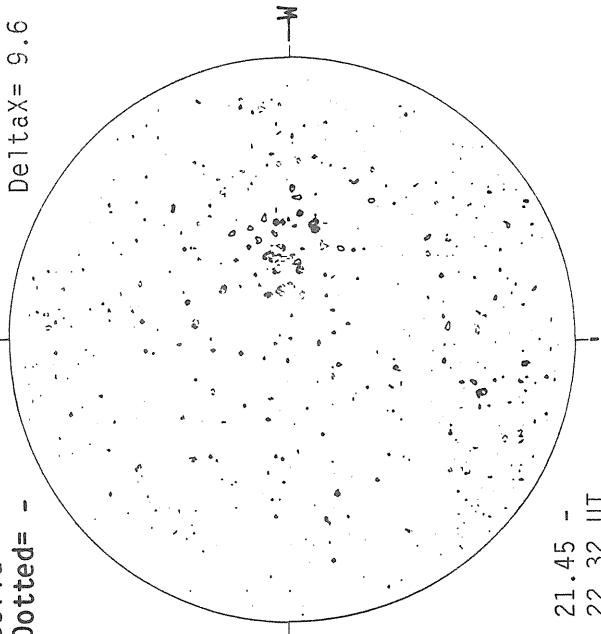
BOULDER SUNSPOTS



1455 UT  
1430 UT BOUL Prom

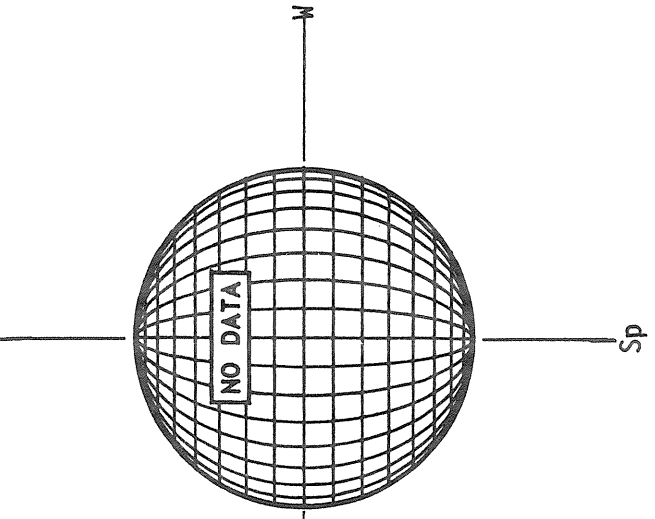
MT. WILSON MAGNETOGRAM

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

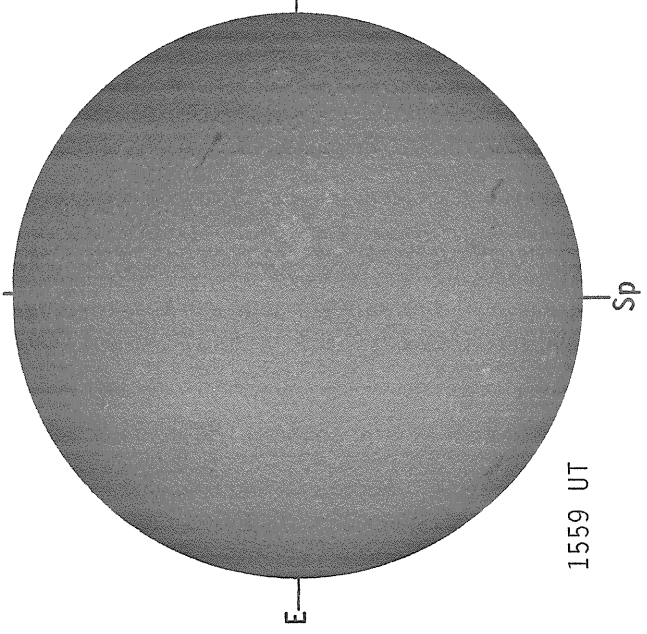


21.45 -  
22.32 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



SACRAMENTO PEAK H-ALPHA



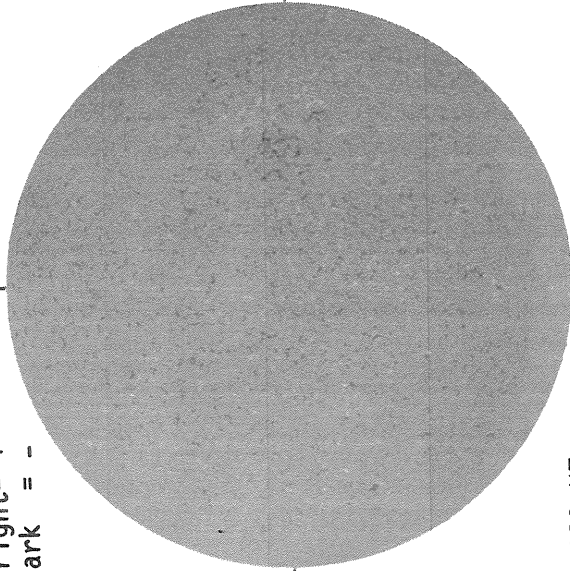
1559 UT

AUGUST 19, 1986 (P= 17.24, B<sub>0</sub> = 6.71, L<sub>0</sub> = 16.66)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

Np

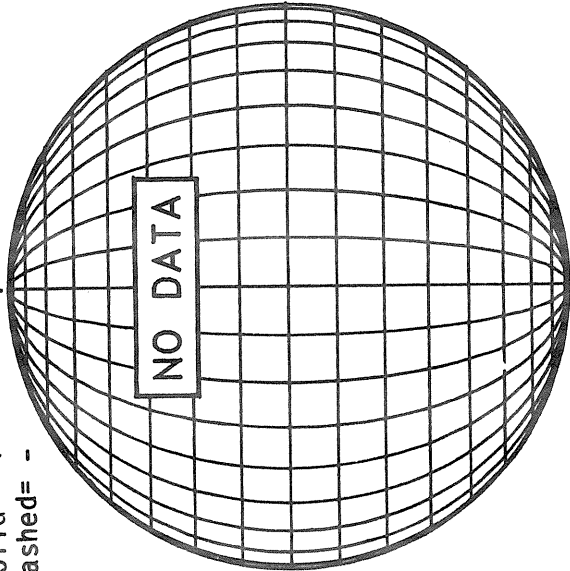


1429 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

Np



NO DATA

BOULDER SUNSPOTS

NO SPOTS VISIBLE

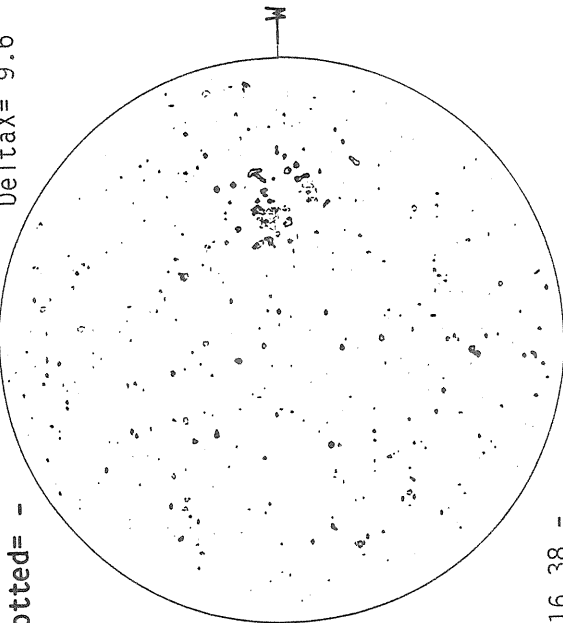
1331 UT  
1405 UT BOUL Prom

Sp

MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6

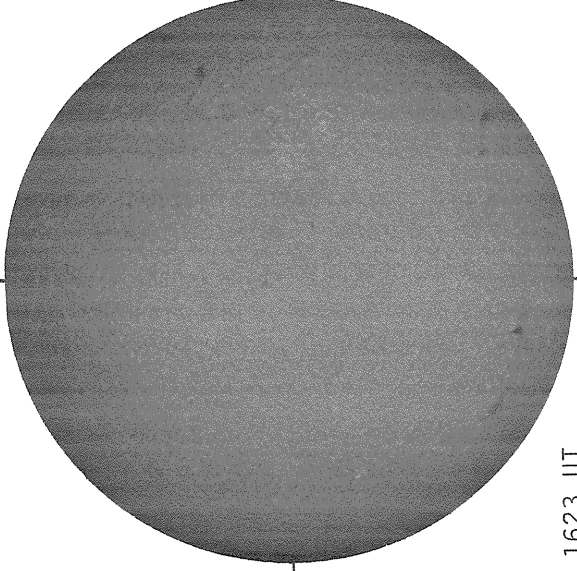
Np



Solid = +  
Dotted = -

16.38 -  
17.25 UT

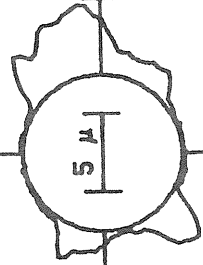
SACRAMENTO PEAK H-ALPHA



1623 UT

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)



15 μ

5303A(x1) 1459 UT

Sp

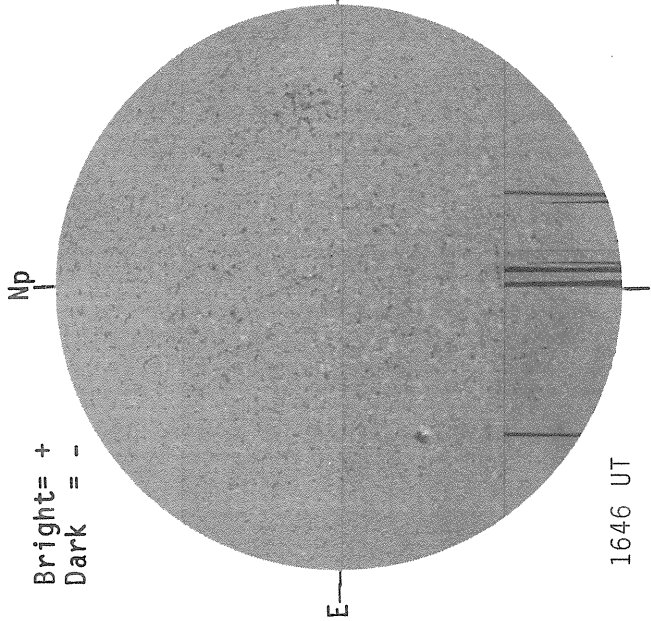


AUGUST 20, 1986 (P= 17.56, B<sub>0</sub> = 6.75, L<sub>0</sub> = 3.45)

44  
Aug 86

KITT PEAK MAGNETOGRAM

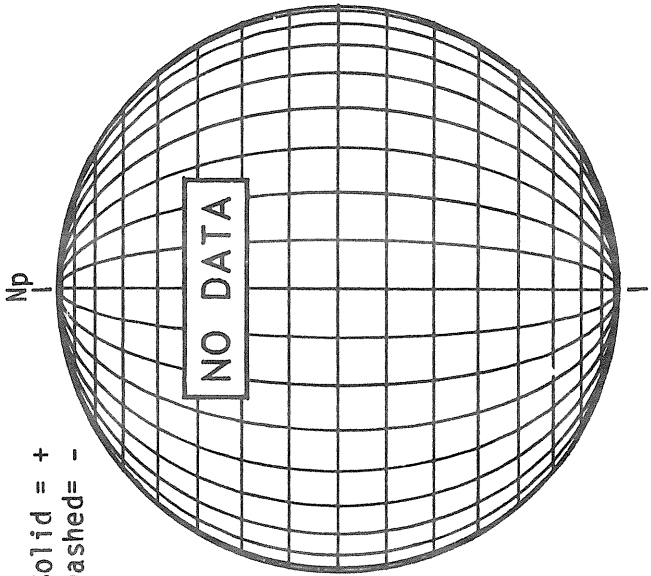
Bright= +  
Dark = -



1646 UT

STANFORD MAGNETOGRAM

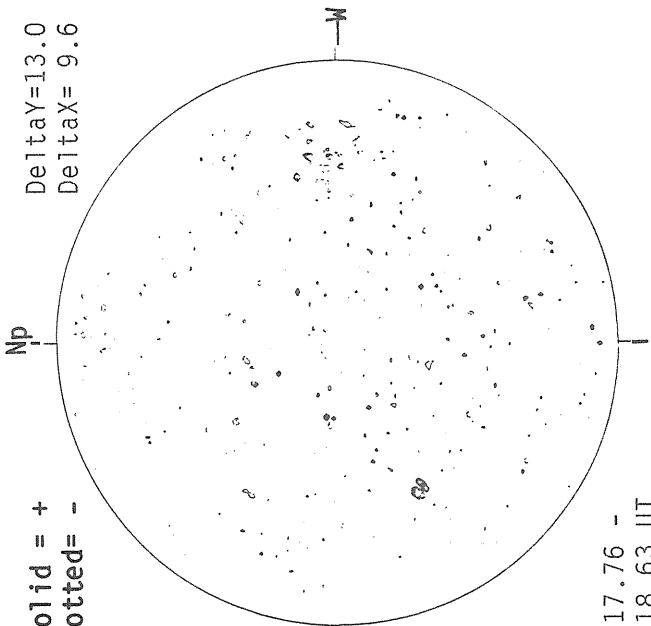
Solid = +  
Dashed = -



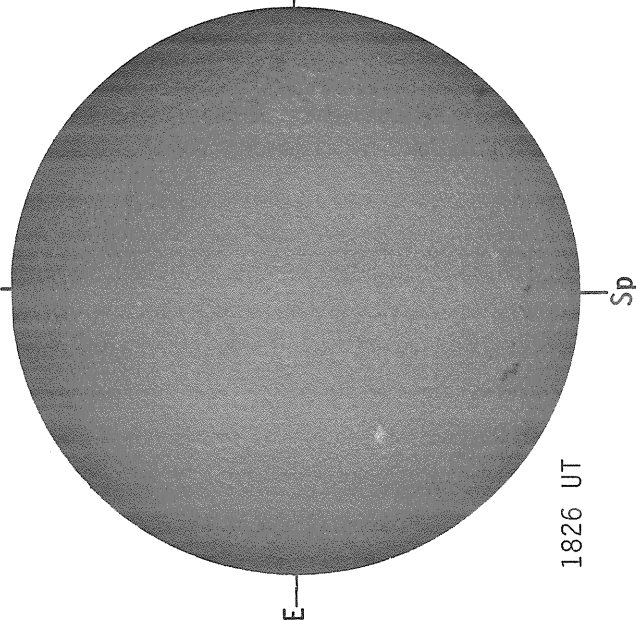
17.76 -  
18.63 UT

MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -  
Delta Y = 13.0  
Delta X = 9.6

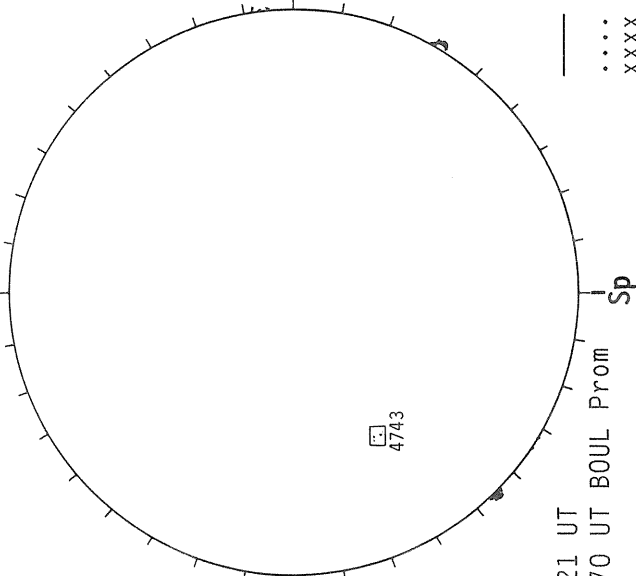


SACRAMENTO PEAK H-ALPHA



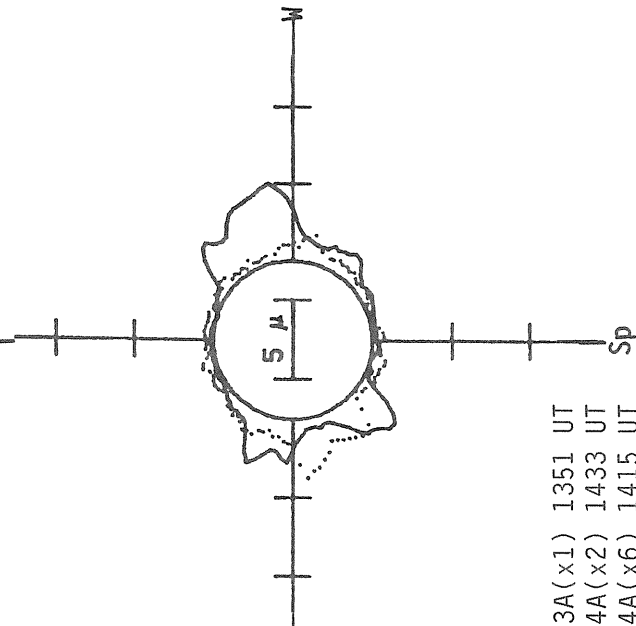
1826 UT

BOULDER SUNSPOTS



1521 UT  
1570 UT BOUL Prom

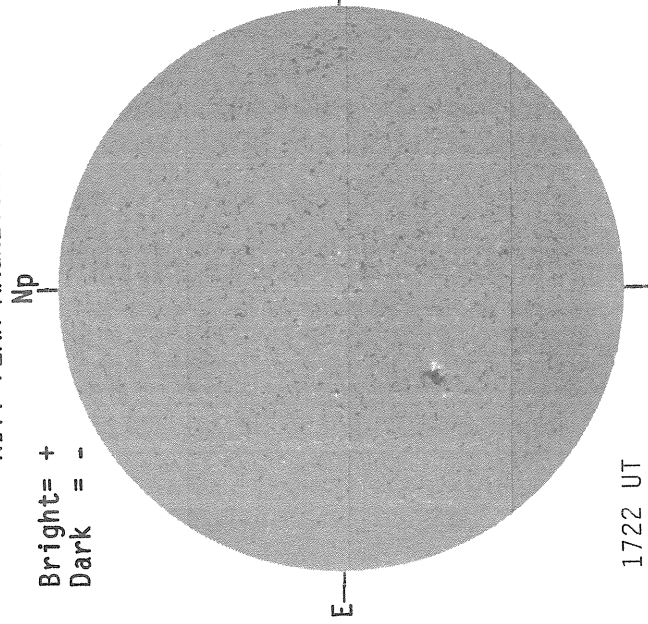
SACRAMENTO PEAK CORONA (1.15 Radii)



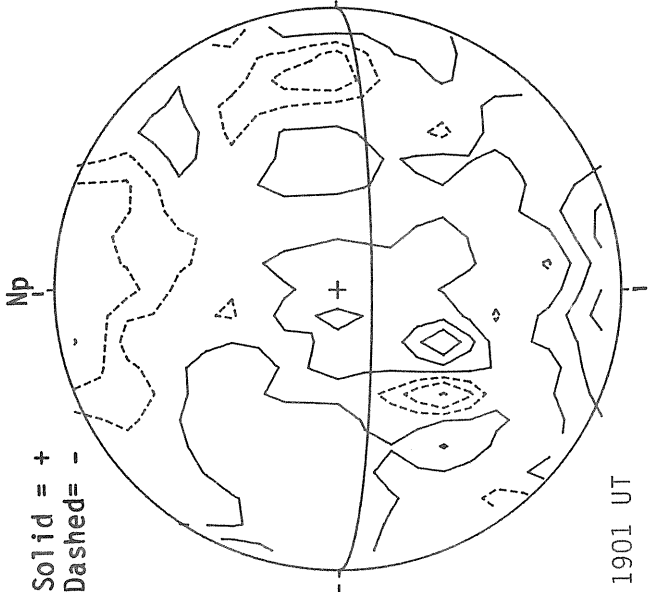
— 5303A(x1) 1351 UT  
.... 6374A(x2) 1433 UT  
xxxx 5694A(x6) 1415 UT  
NO 5694A ACTIVITY TODAY

AUGUST 21, 1986 (P= 17.87, B<sub>0</sub> = 6.78, L<sub>0</sub> = 350.23)

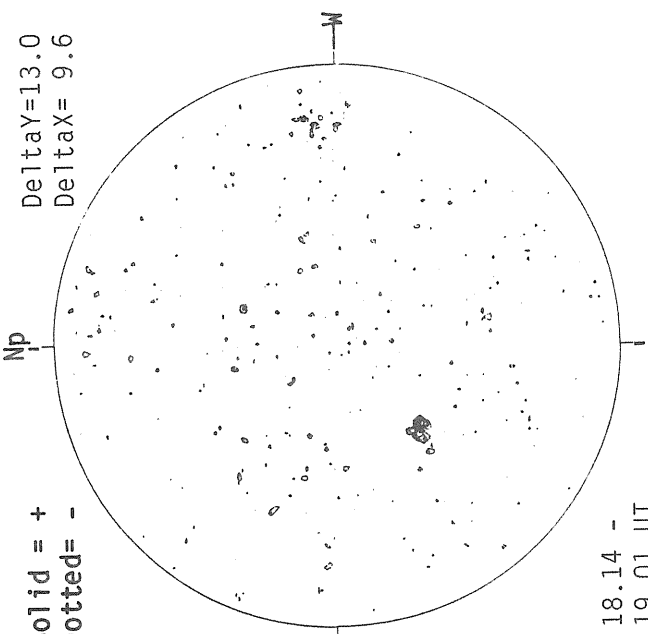
KITT PEAK MAGNETOGRAM



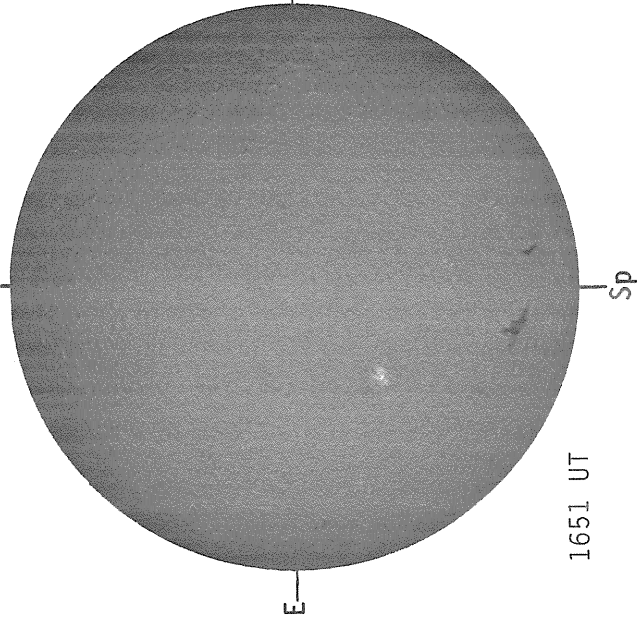
STANFORD MAGNETOGRAM



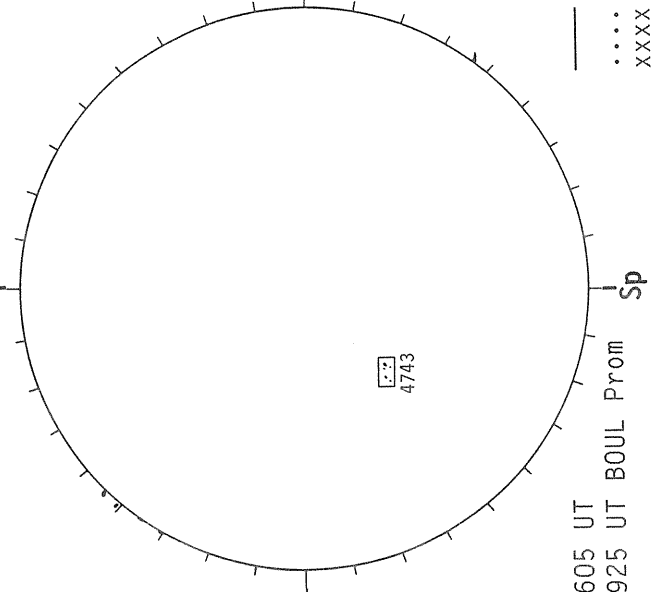
MT. WILSON MAGNETOGRAM



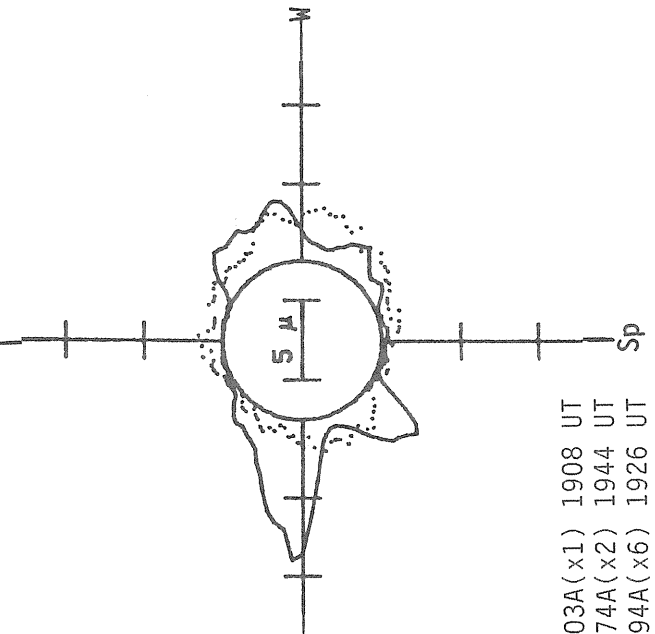
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

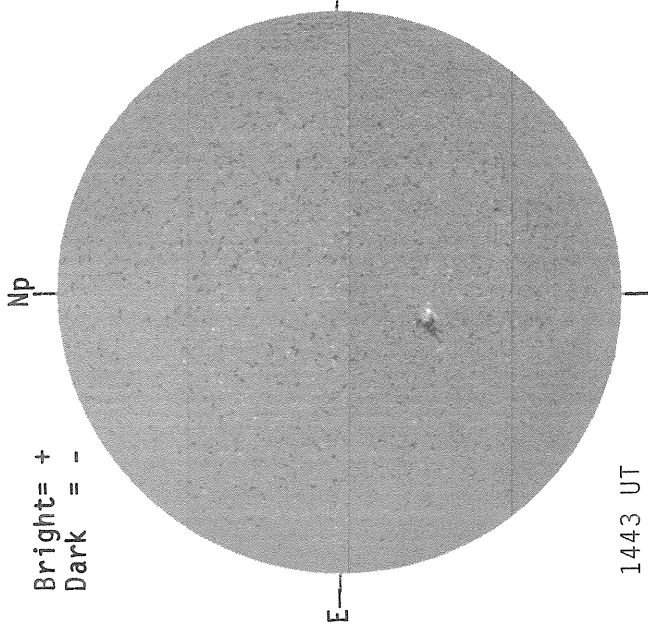


— 5303A(x1) 1908 UT  
 ..... 6374A(x2) 1944 UT  
 xxxxx 5694A(x6) 1926 UT  
 NO 5694A ACTIVITY TODAY

AUGUST 22, 1986 (P= 18.18, B<sub>0</sub> = 6.82, L<sub>0</sub> = 337.02)

KITT PEAK MAGNETOGRAM

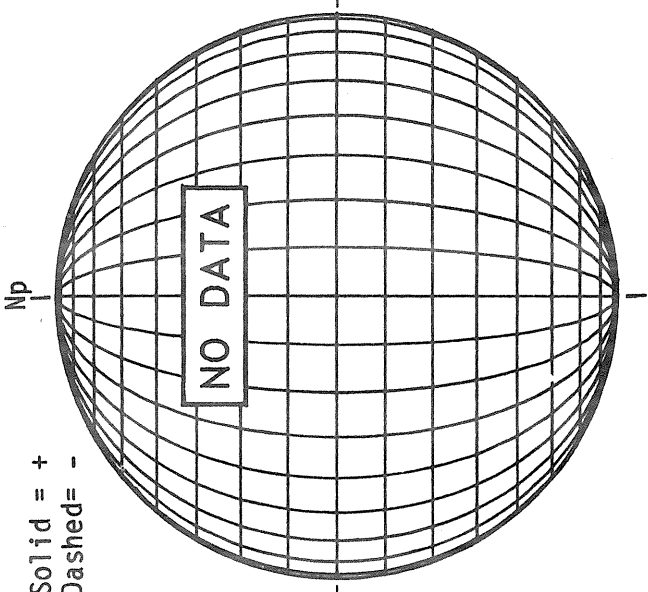
Bright = +  
Dark = -



1443 UT

STANFORD MAGNETOGRAM

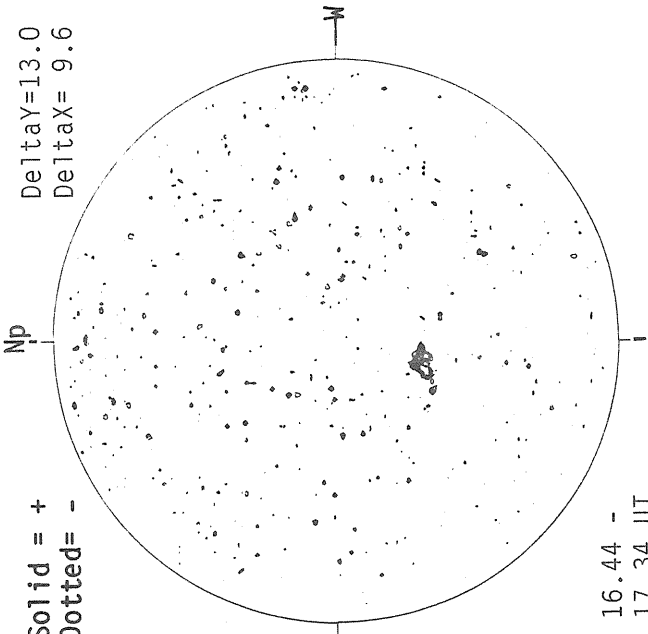
Solid = +  
Dashed = -



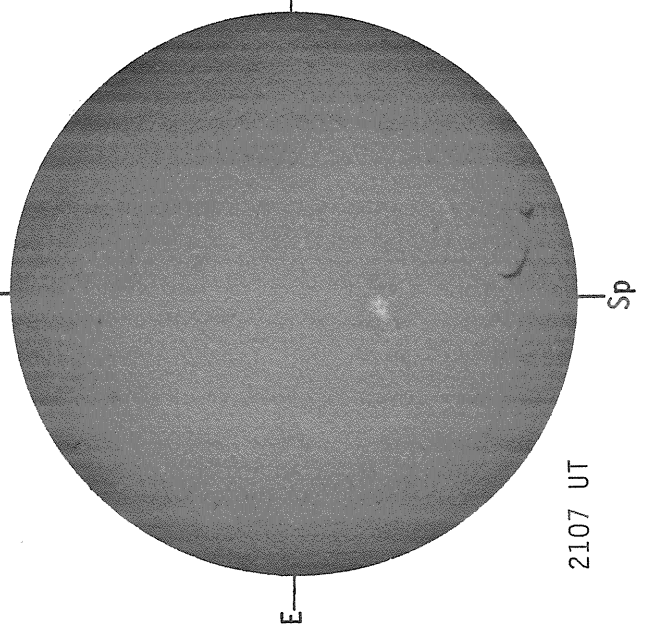
16.44 -  
17.34 UT

MT. WILSON MAGNETOGRAM

DeltaY=13.0  
DeltaX= 9.6

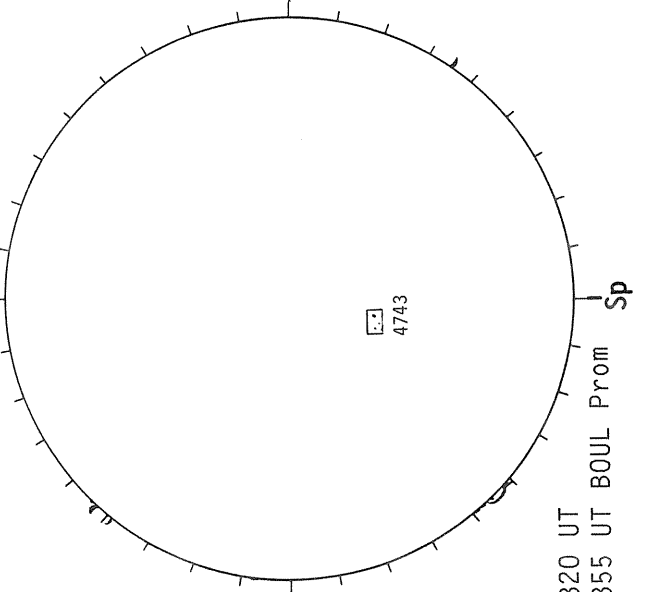


SACRAMENTO PEAK H-ALPHA



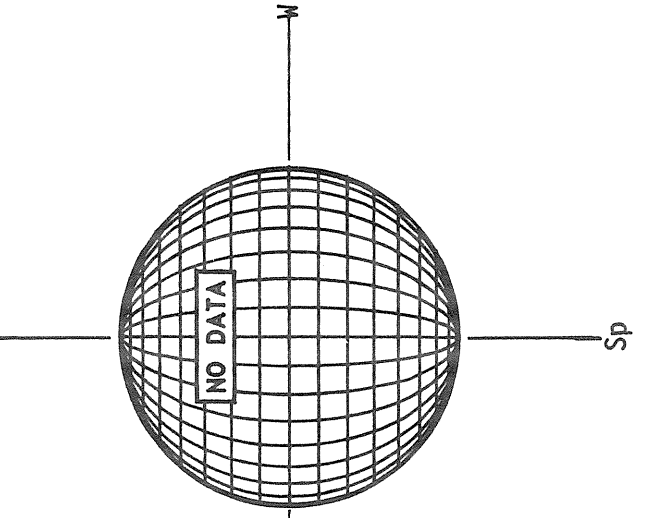
2107 UT

BOULDER SUNSPOTS



1320 UT  
1355 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



NO DATA

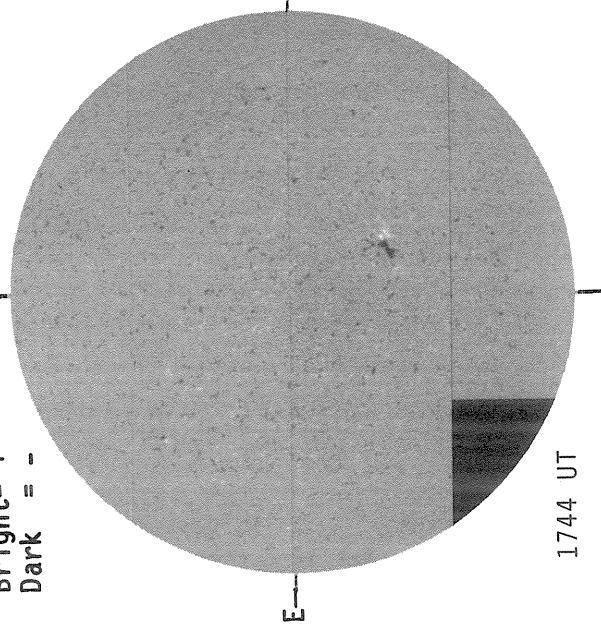
AUGUST 23, 1986 (P= 18.49, B<sub>0</sub>= 6.86, L<sub>0</sub>= 323.80)

KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -

Solid = +  
Dashed = -

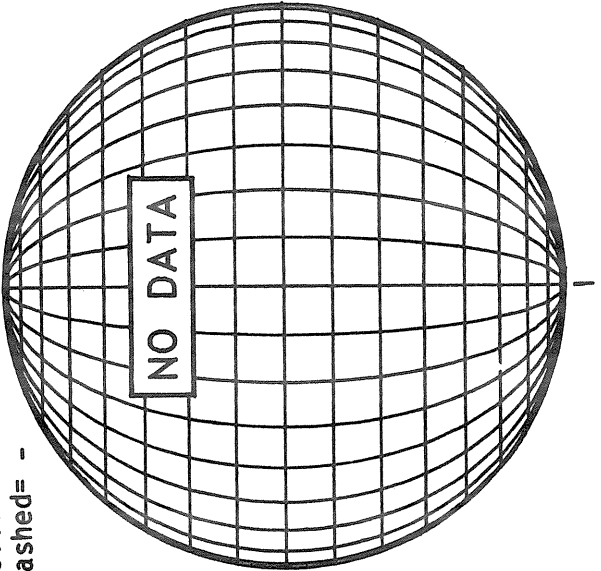
Np



1744 UT

STANFORD MAGNETOGRAM

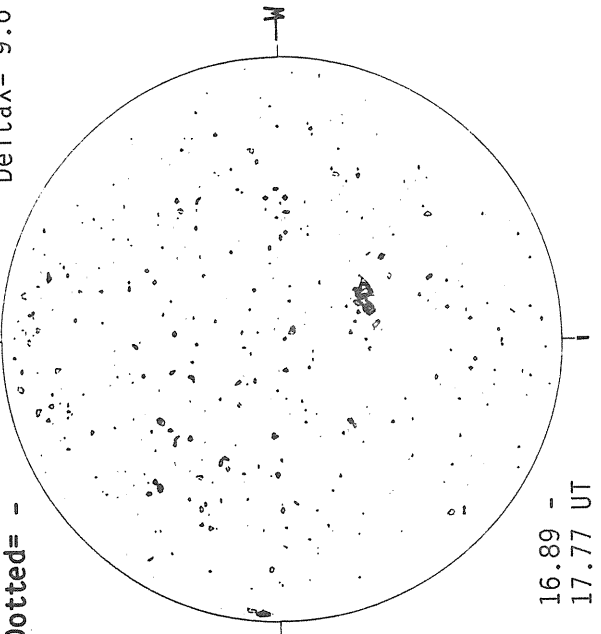
NO DATA



MT. WILSON MAGNETOGRAM

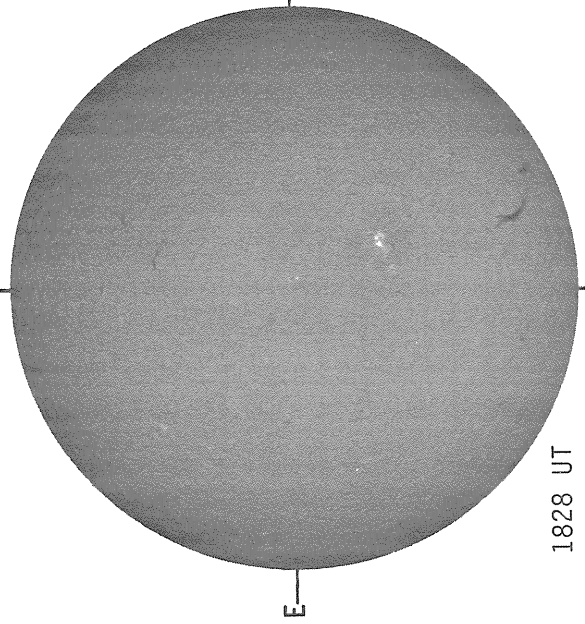
Solid = +  
Dotted = -

Delta Y = 13.0  
Delta X = 9.6



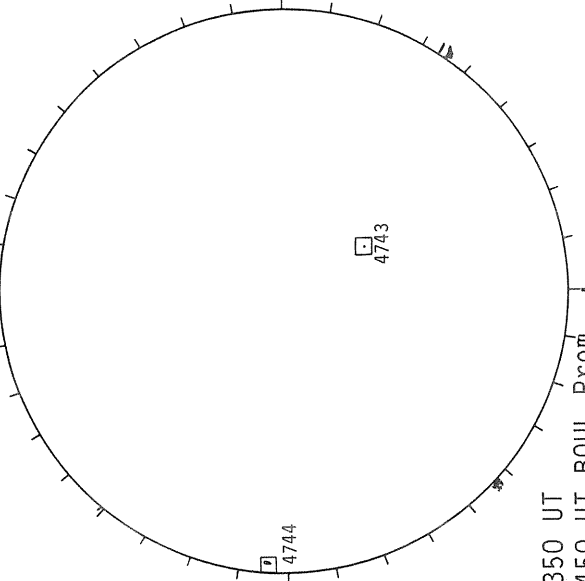
16.89 -  
17.77 UT

SACRAMENTO PEAK H-ALPHA



1828 UT

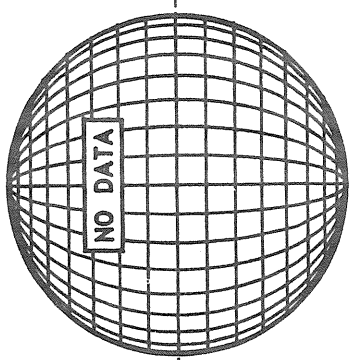
BOULDER SUNSPOTS



1350 UT  
1450 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

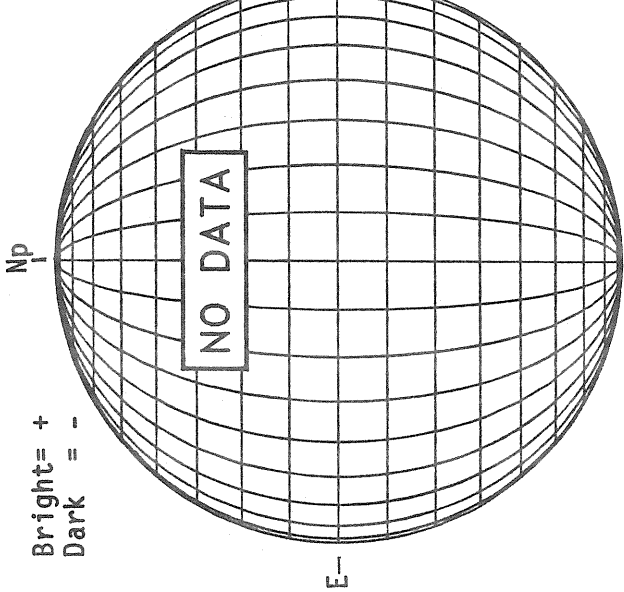
NO DATA



AUGUST 24, 1986 (P= 18.78, B<sub>0</sub> = 6.89, L<sub>0</sub> = 310.59)

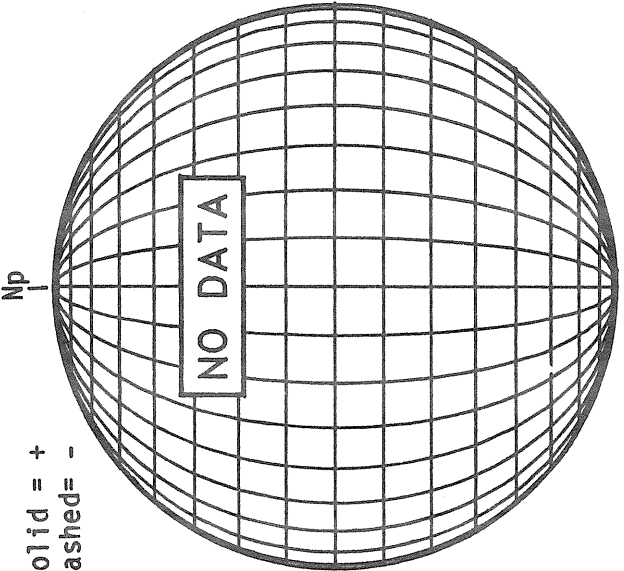
KITT PEAK MAGNETOGRAM

Bright= +  
Dark = -



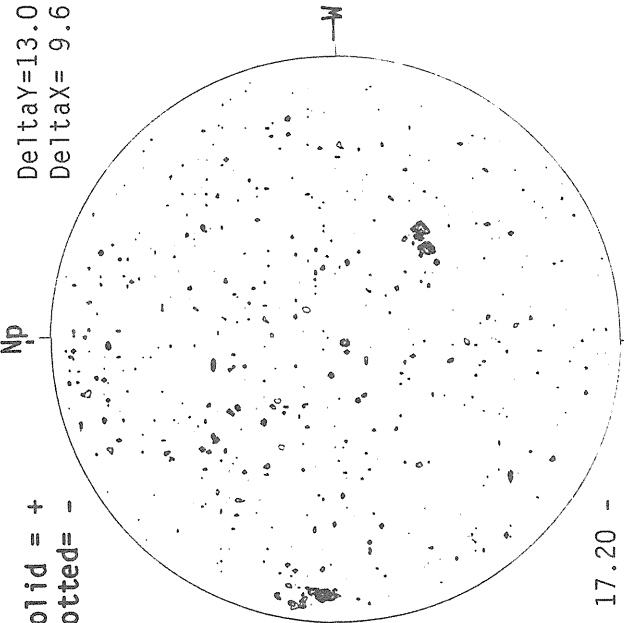
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



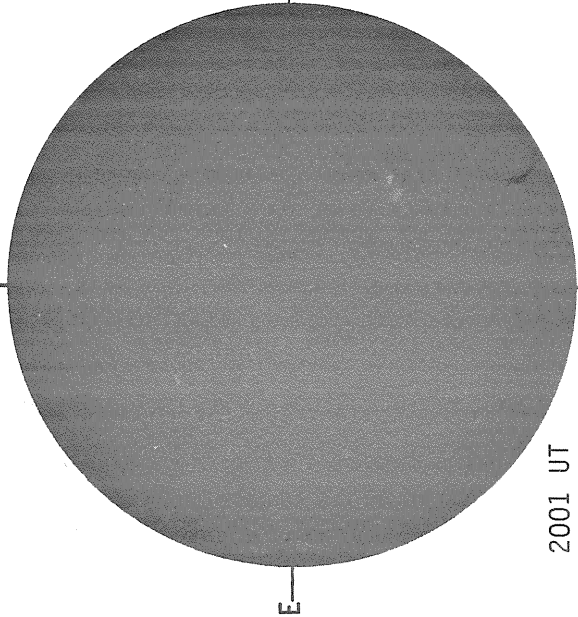
MT. WILSON MAGNETOGRAM

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



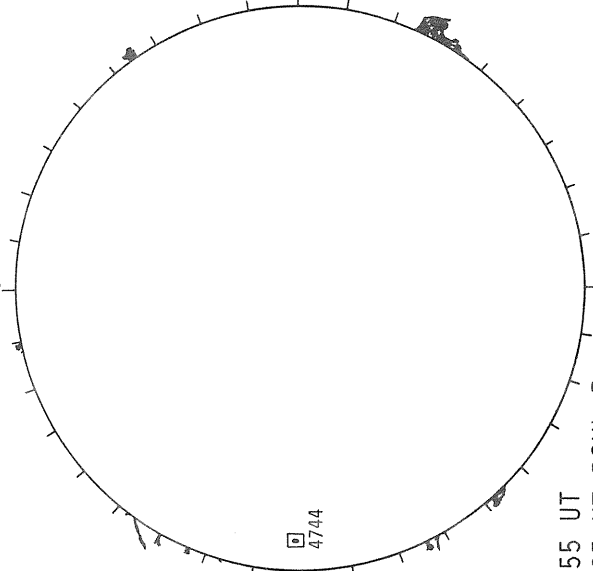
17.20 -  
18.08 UT

SACRAMENTO PEAK H-ALPHA



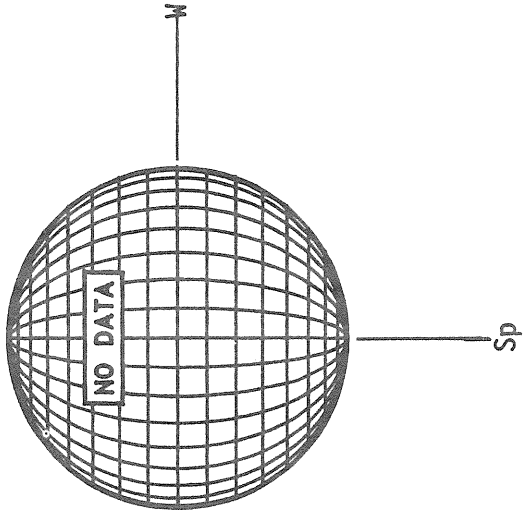
2001 UT

BOULDER SUNSPOTS



1355 UT  
1435 UT BOUL Prom

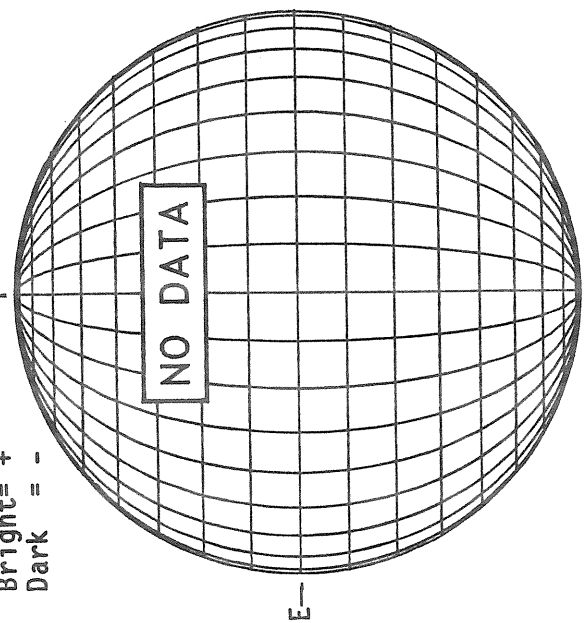
SACRAMENTO PEAK CORONA (1.15 Radii)



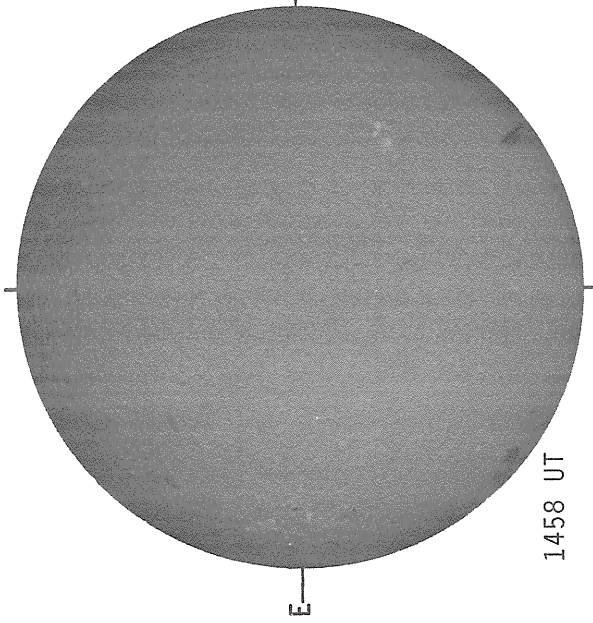
Sp

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



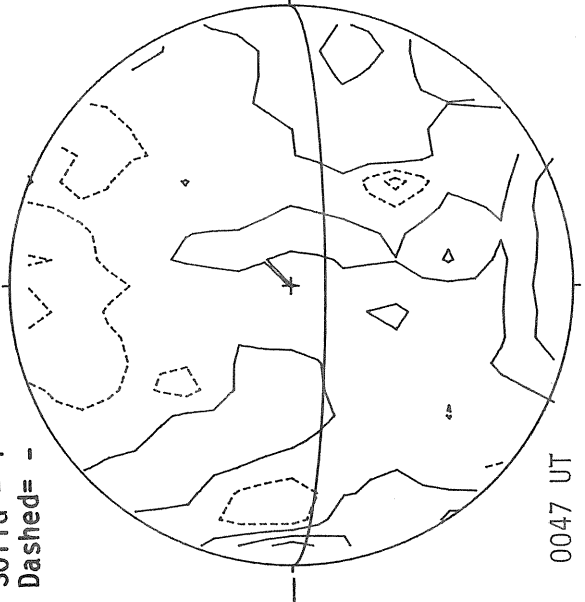
SACRAMENTO PEAK H-ALPHA



1458 UT

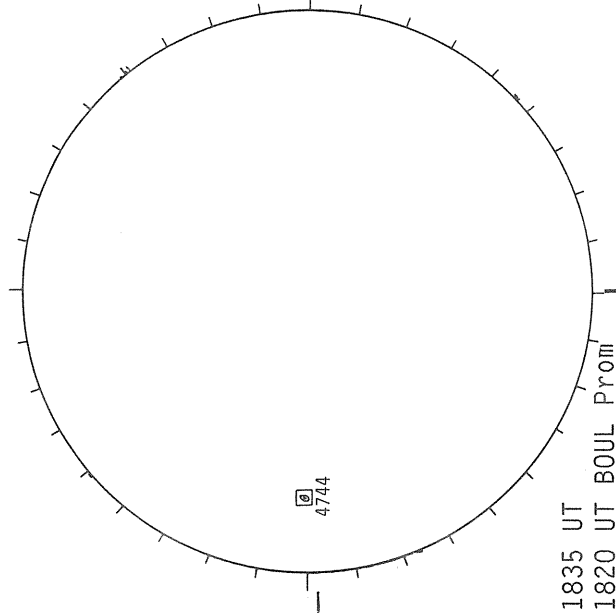
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



0047 UT

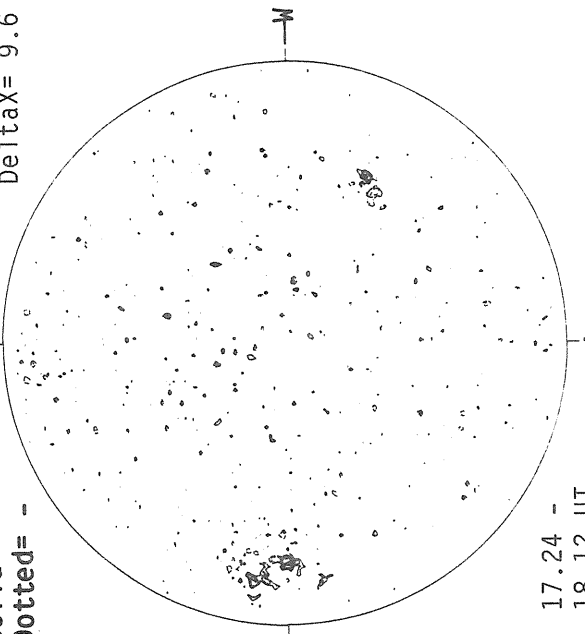
BOULDER SUNSPOTS



1835 UT  
1820 UT BOUL PROM

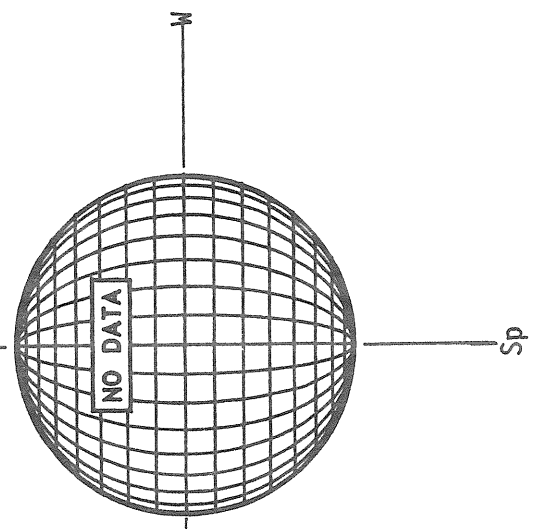
MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6



17.24 -  
18.12 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

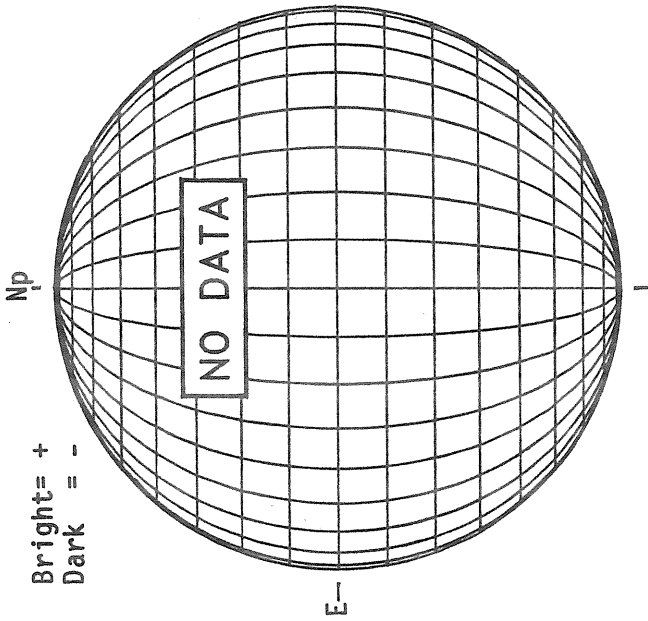




AUGUST 26, 1986 (P= 19.37, B<sub>0</sub> = 6.95, L<sub>0</sub> = 284.16)

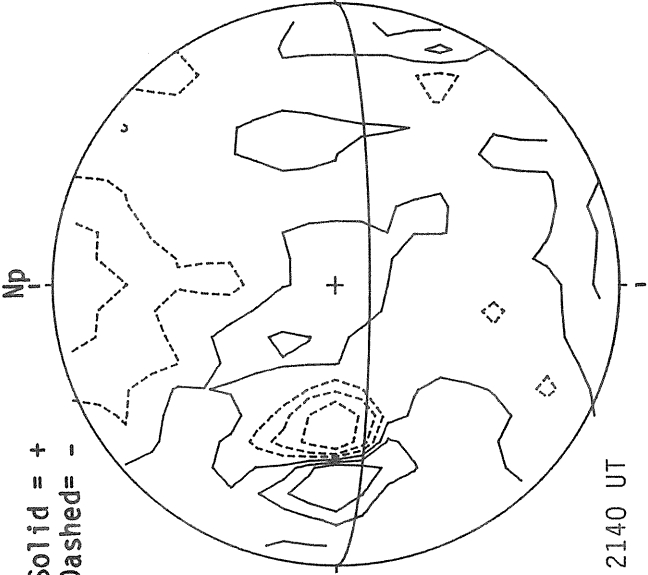
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



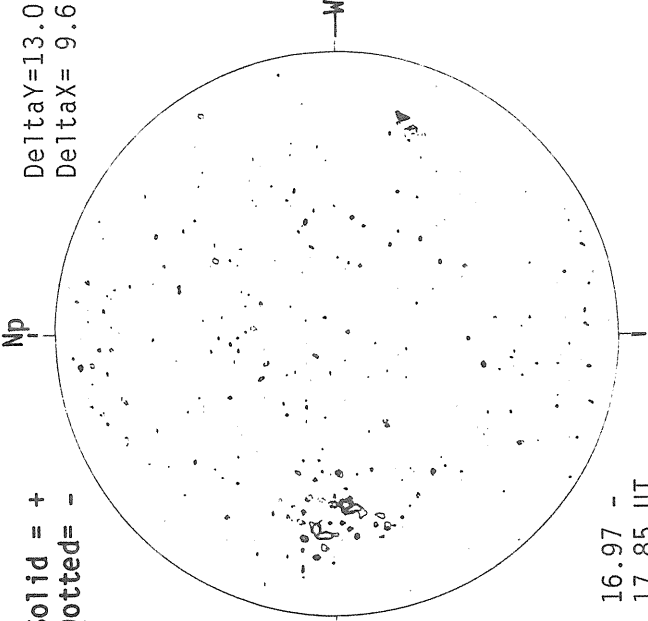
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



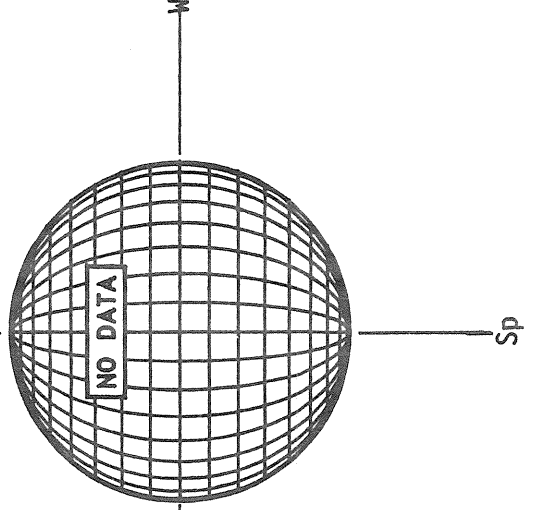
MT. WILSON MAGNETOGRAM

Delta Y = 13.0  
Delta X = 9.6

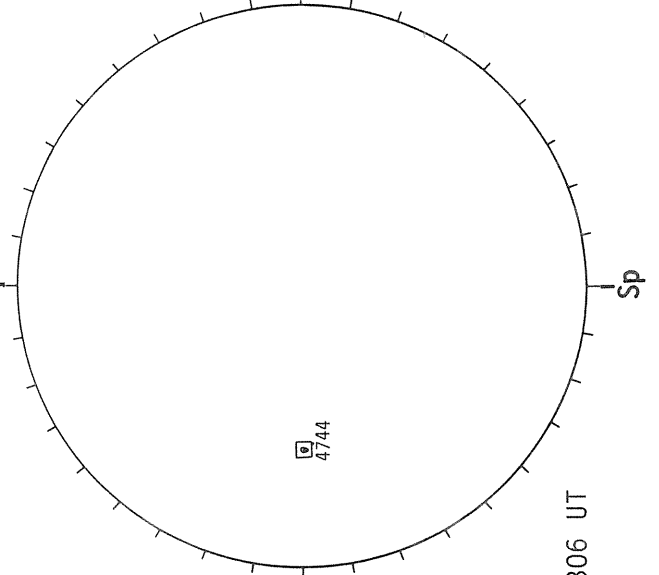


16.97 -  
17.85 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

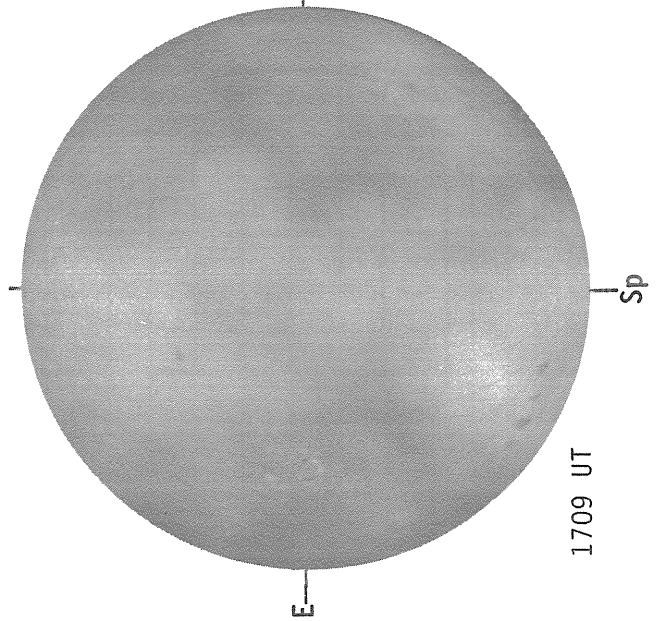


BOULDER SUNSPOTS



1806 UT

SACRAMENTO PEAK H-ALPHA

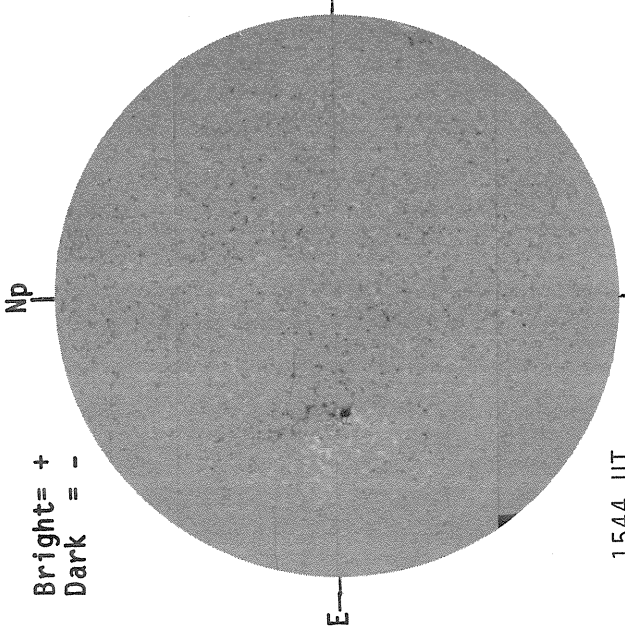


1709 UT

AUGUST 27, 1986 (P= 19.65, B<sub>0</sub> = 6.98, L<sub>0</sub> = 270.95)

KITT PEAK MAGNETOGRAM

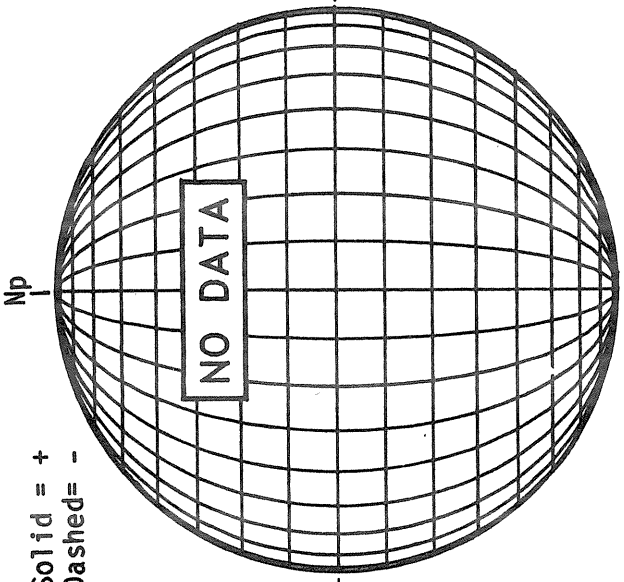
Bright= +  
Dark = -



1544 UT

STANFORD MAGNETOGRAM

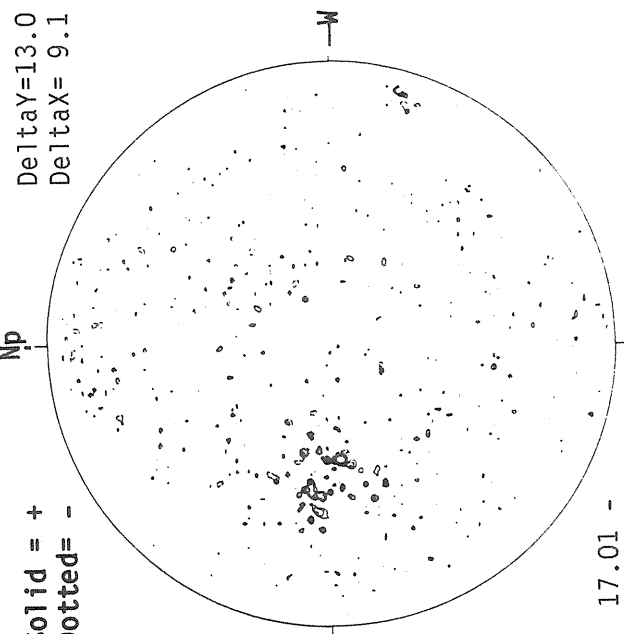
Solid = +  
Dashed = -



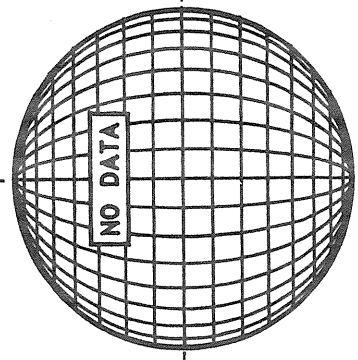
17.01 -  
17.89 UT

MT. WILSON MAGNETOGRAM

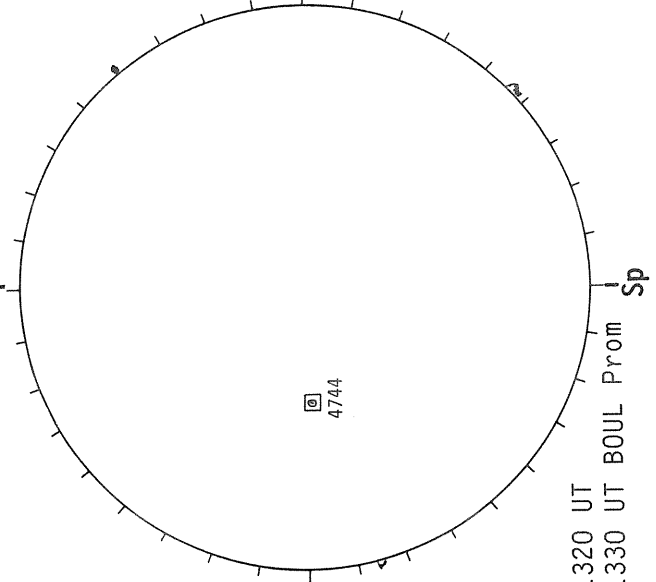
DeltaY=13.0  
DeltaX= 9.1



SACRAMENTO PEAK CORONA (1.15 Radii)

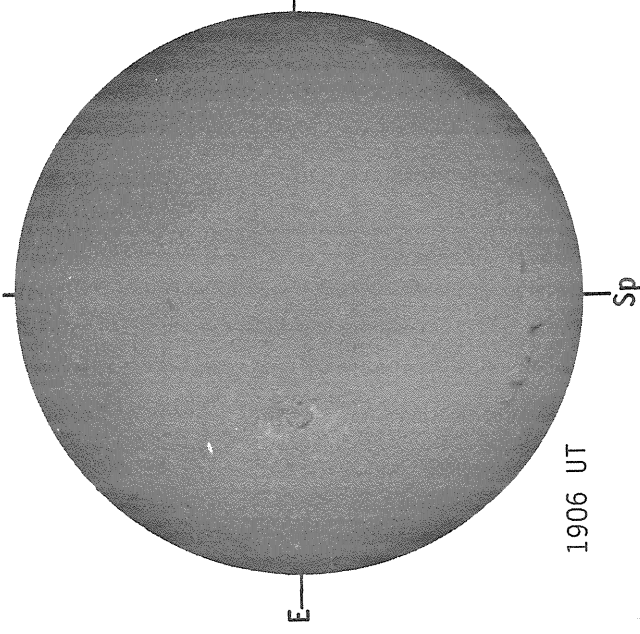


BOULDER SUNSPOTS



1320 UT  
1330 UT BOUL Prom

SACRAMENTO PEAK H-ALPHA



1906 UT



AUGUST 28, 1986 (P= 19.93, B<sub>0</sub> = 7.00, L<sub>0</sub> = 257.73)

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

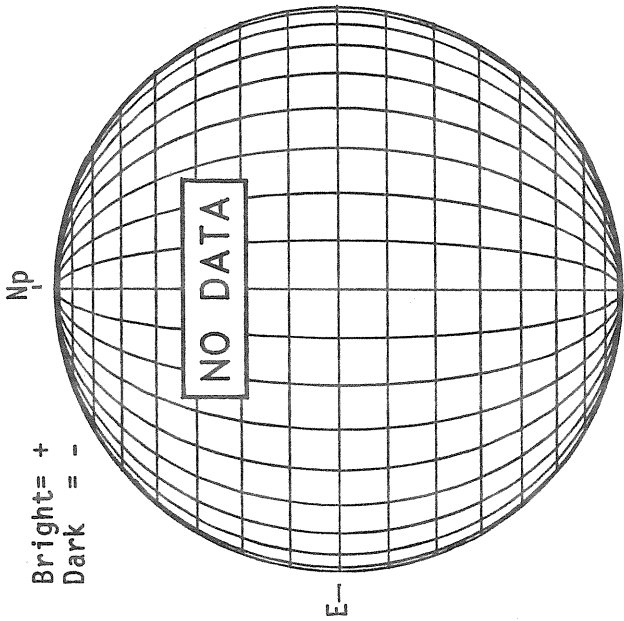
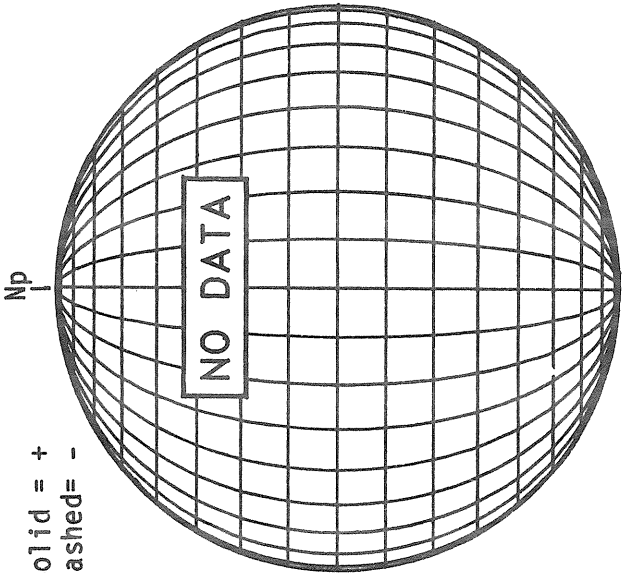
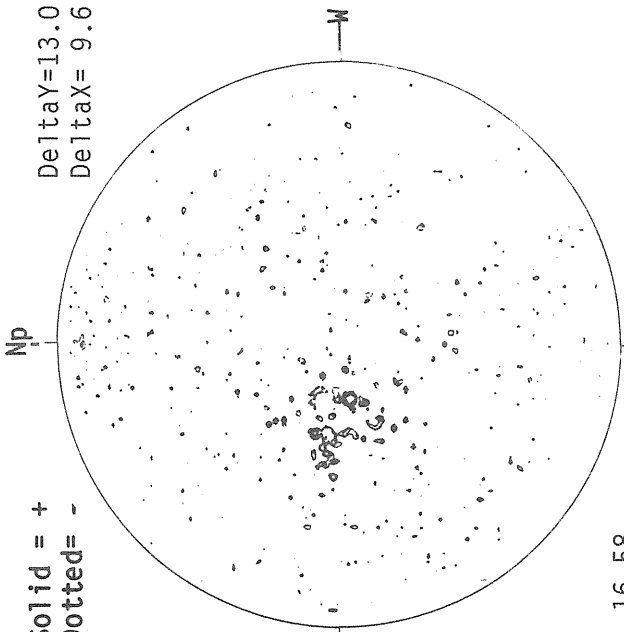
KITT PEAK MAGNETOGRAM

DeltaY=13.0  
DeltaX= 9.6

Solid = +  
Dotted = -

Solid = +  
Dashed = -

Bright = +  
Dark = -

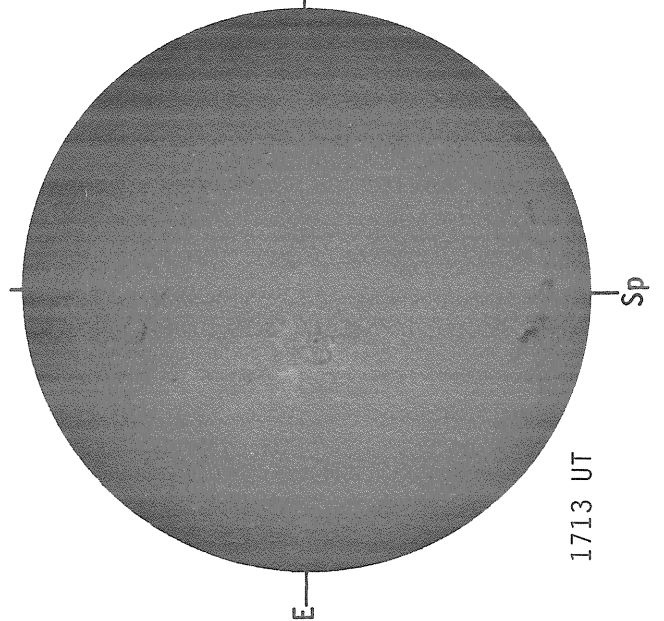
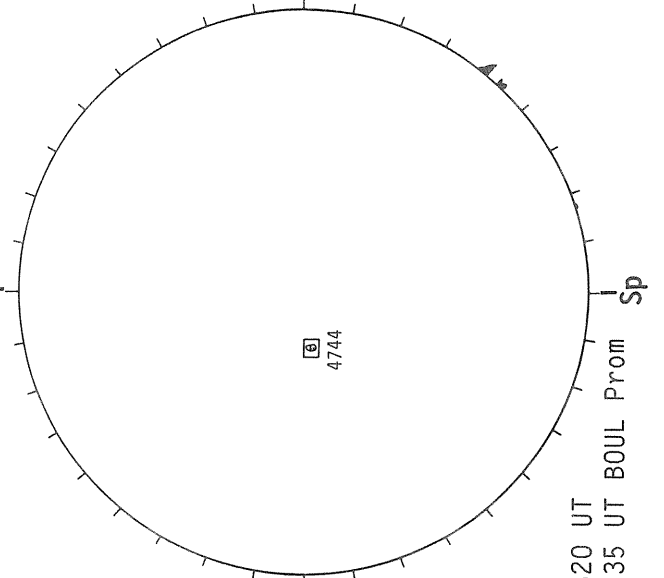
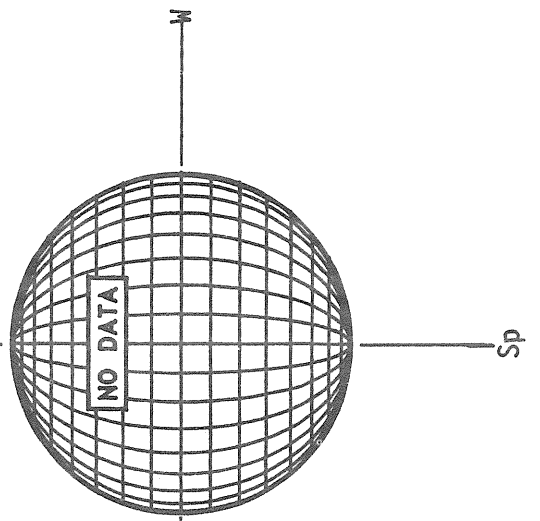


16.58 -  
17.46 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

BOULDER SUNSPOTS

SACRAMENTO PEAK H-ALPHA



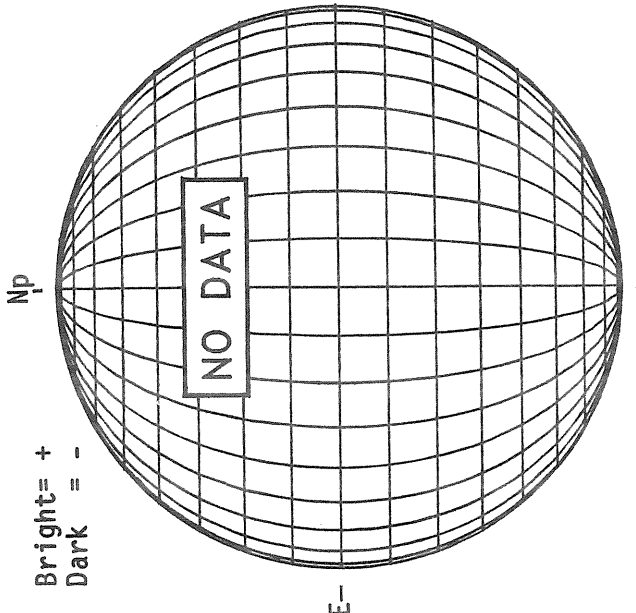
1713 UT

1320 UT  
1335 UT BOUL Prom

AUGUST 29, 1986 (P= 20.20, B<sub>0</sub> = 7.02, L<sub>0</sub> = 244.52)

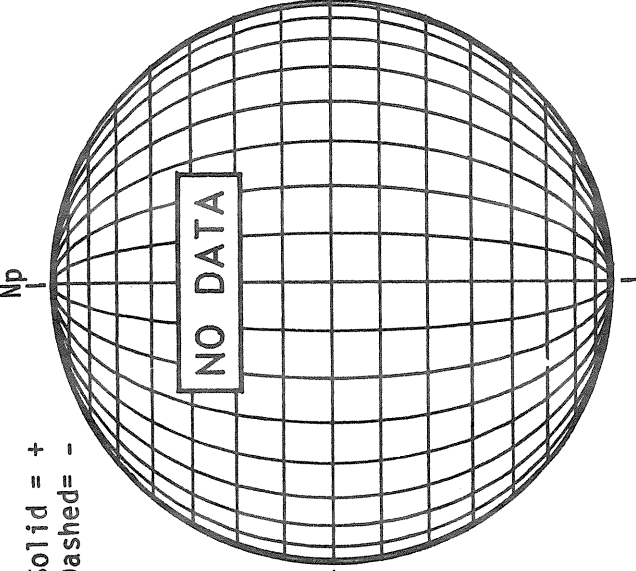
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



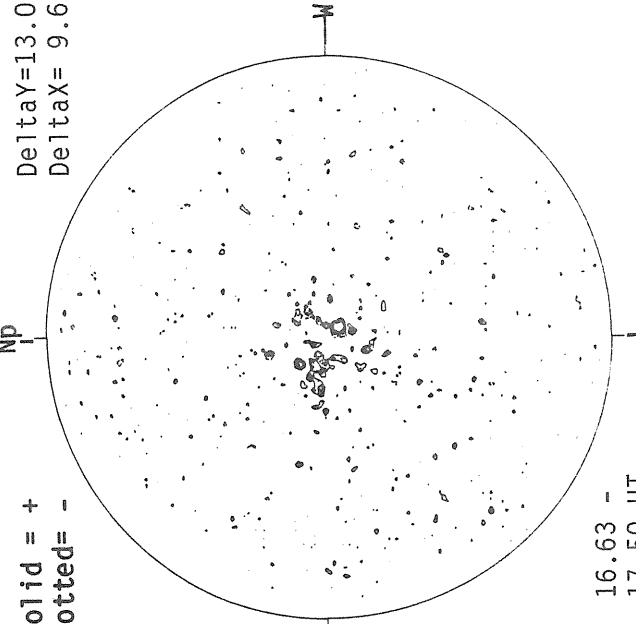
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



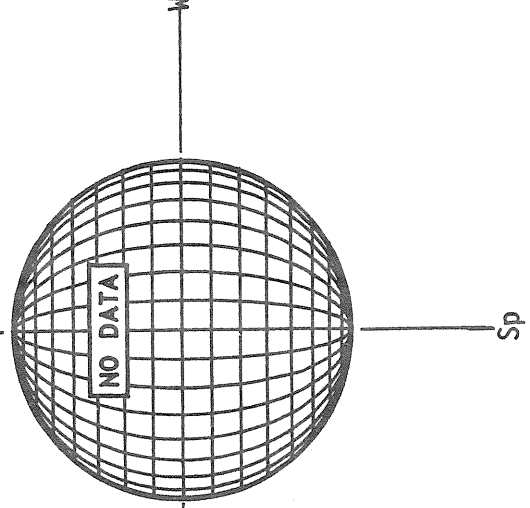
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -

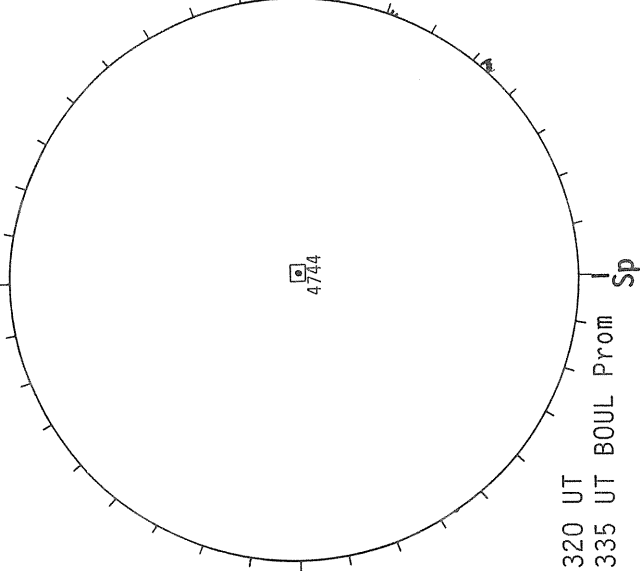


16.63 -  
17.50 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

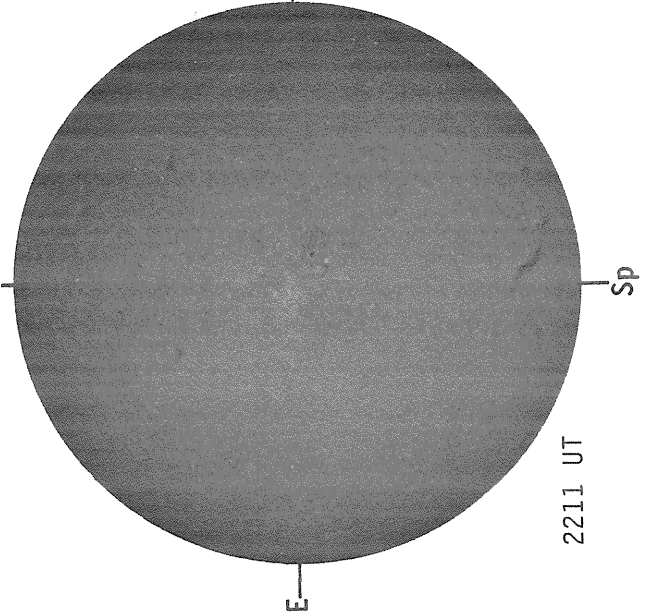


BOULDER SUNSPOTS



1320 UT  
1335 UT BOUL Prom

SACRAMENTO PEAK H-ALPHA



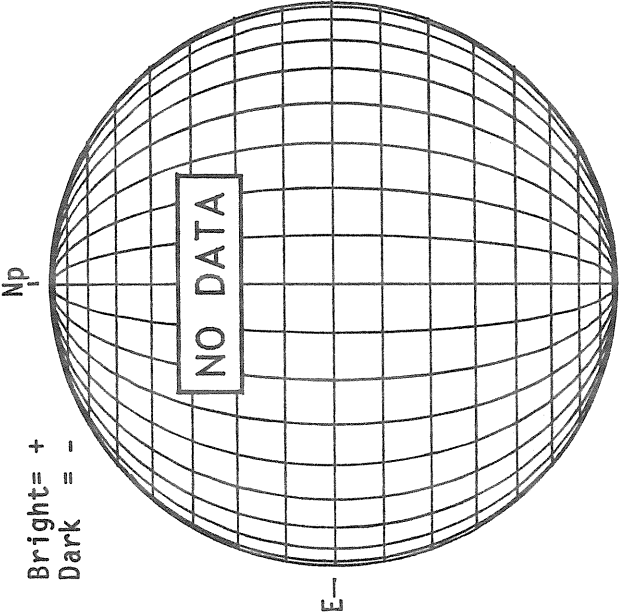
2211 UT

AUGUST 30, 1986 (P= 20.47, B<sub>0</sub> = 7.05, L<sub>0</sub> = 231.31)

54  
Aug 86

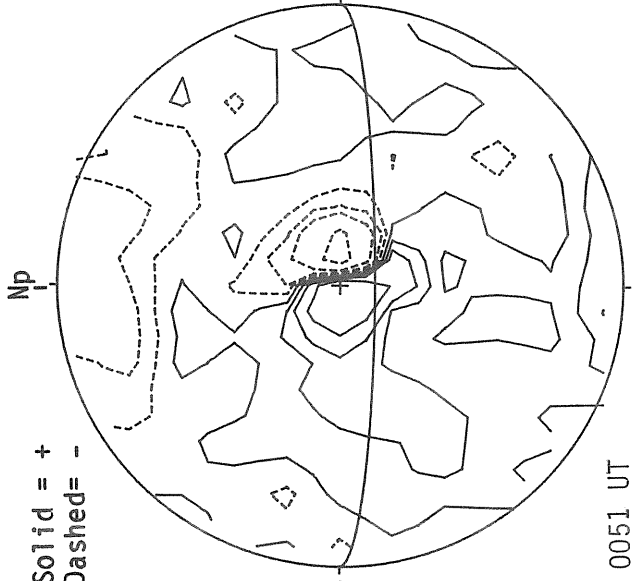
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



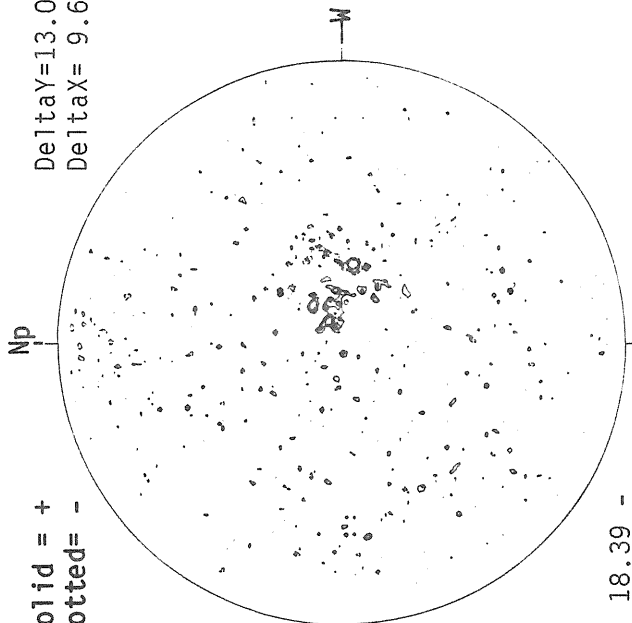
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



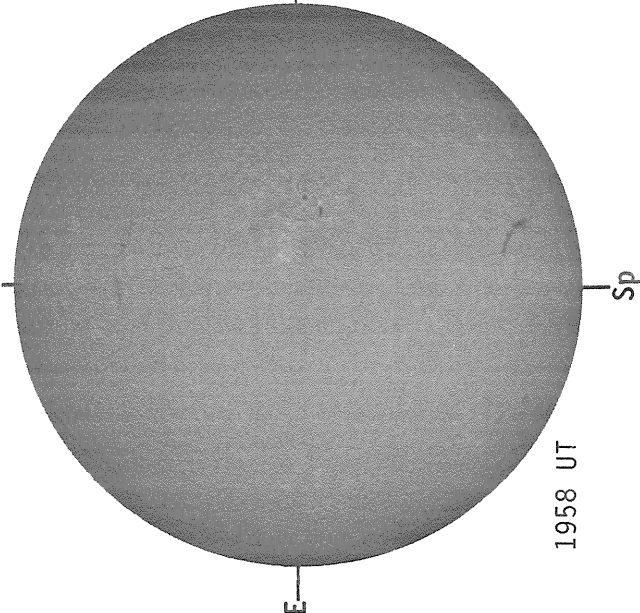
MT. WILSON MAGNETOGRAM

Solid = +  
Dotted = -



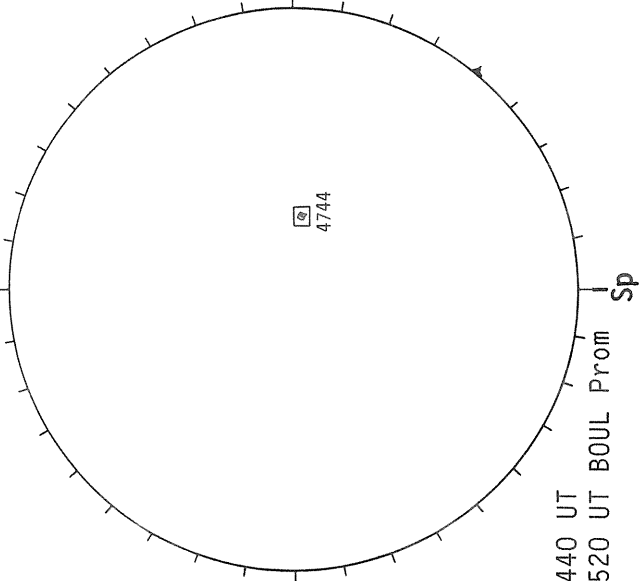
Delta Y = 13.0  
Delta X = 9.6

SACRAMENTO PEAK H-ALPHA



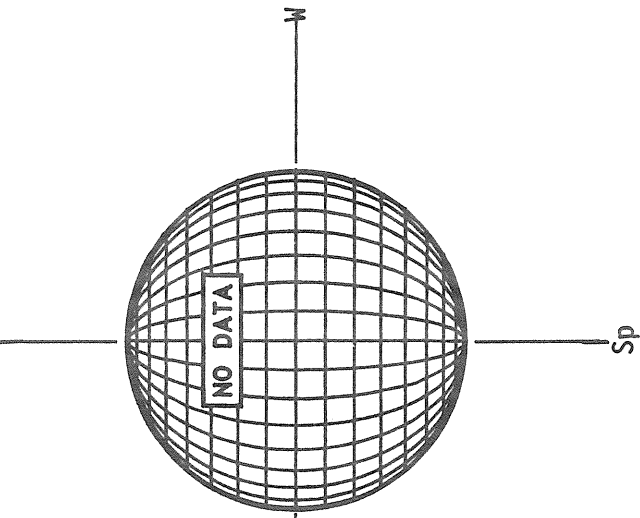
1958 UT

BOULDER SUNSPOTS



1440 UT  
1520 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



18.39 -  
19.27 UT

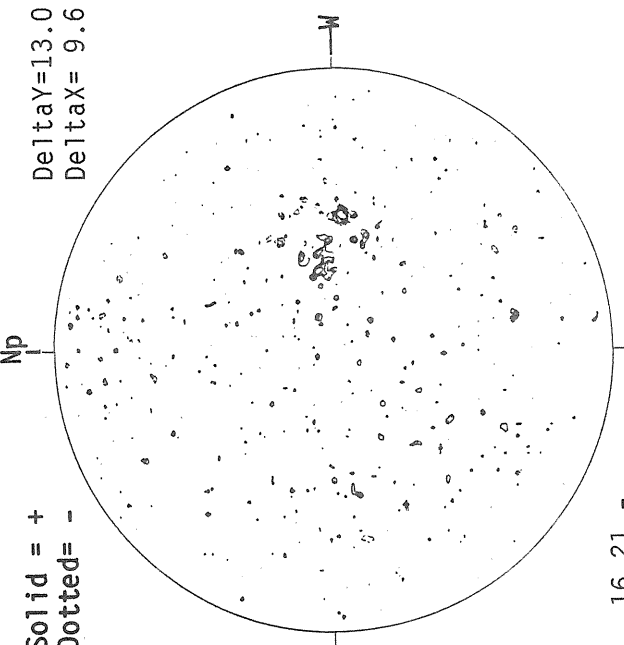
AUGUST 31, 1986 (P= 20.73, B<sub>0</sub> = 7.06, L<sub>0</sub> = 218.10)

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

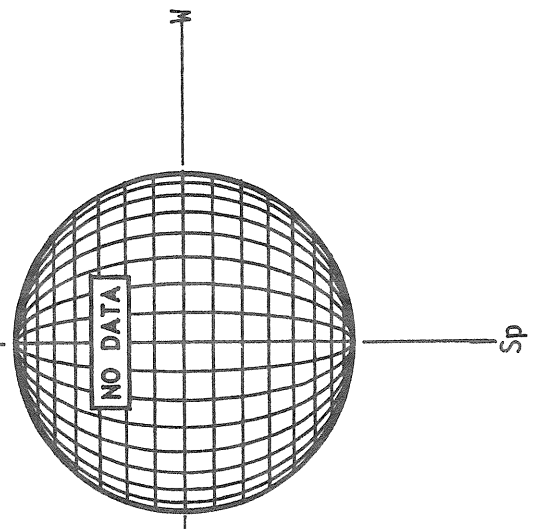
Solid = +  
Dotted = -

Delta Y = 13.0  
Delta X = 9.6



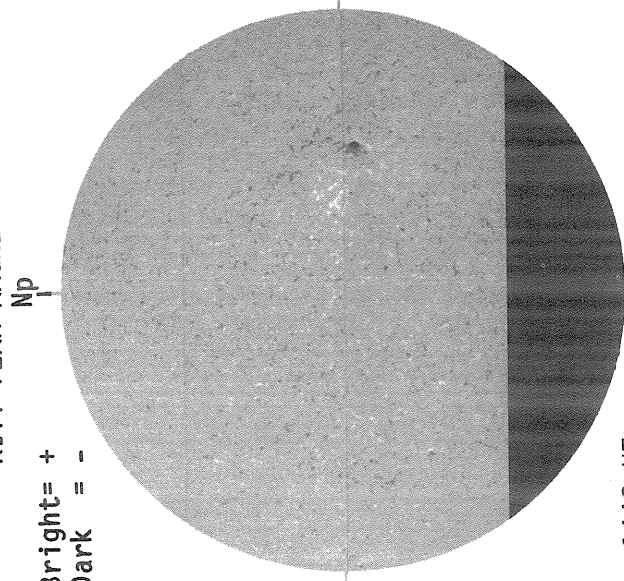
16.21 -  
17.09 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



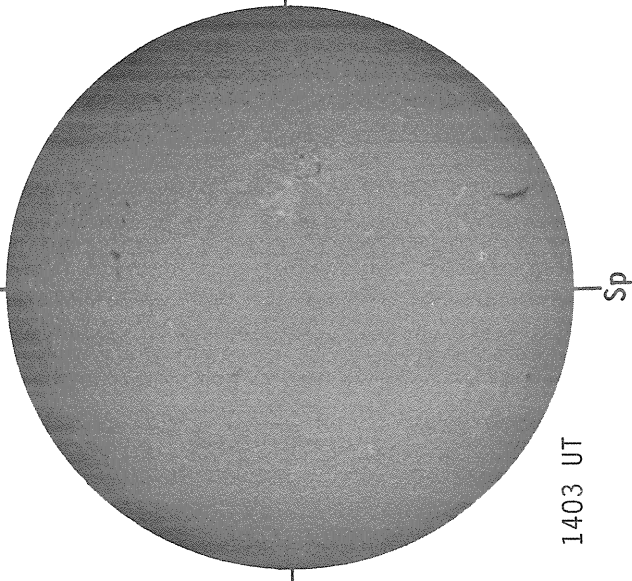
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1442 UT

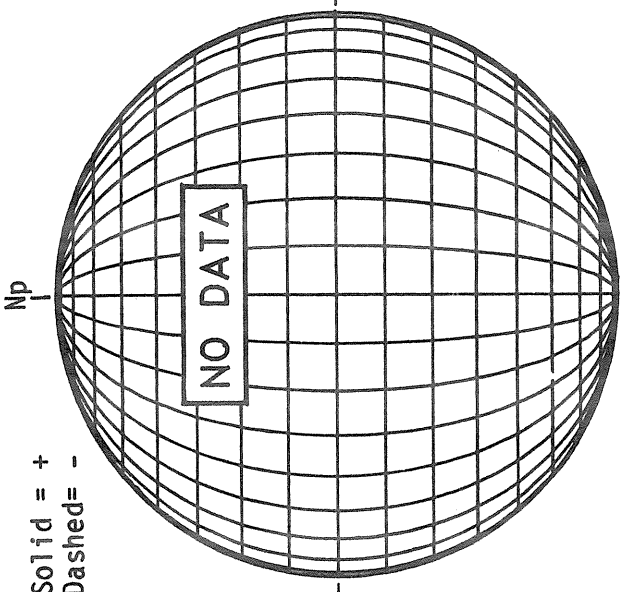
SACRAMENTO PEAK H-ALPHA



1403 UT

BOULDER SUNSPOTS

Solid = +  
Dashed = -



BOULDER SUNSPOTS

4744

1400 UT  
1415 UT BOUL Prom

SUNSPOT GROUPS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

AUGUST 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation		Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day			Mo	Day							
4741		LEAR	07	27	0805	N09 E82	08	2.5		A	AX	30	1	2	3
4741		RAMY	07	27	1428	N11 E79	08	2.5		A	HK	60	1	5	3
4741	24328	MWIL	07	27	1445	N11 E80	08	2.6	5	(AF)					
4741		HOLL	07	27	1535	N11 E80	08	2.7		B	DHO	160	1	8	4
4741		BOUL	07	27	1545	N11 E80	08	2.7		A	AX	70	1	1	3
4741		LEAR	07	28	0242	N10 E74	08	2.7		A	HH	100	2	3	4
4741		CULG	07	28	0345	N10 E72	08	2.6		A	HS	60	1	2	2
4741		ATHN	07	28	0705	N09 E72	08	2.7		A	HH	110	3	3	3
4741	24328	MWIL	07	28	1400	N10 E67	08	2.6	6	(BP)					
4741		BOUL	07	28	1440	N06 E65	08	2.5		A	HS	80	1	2	3
4741		HOLL	07	28	1616	N10 E70	08	2.9		B	CSO	140	3	6	4
4741		PALE	07	28	1700	N08 E69	08	2.9		B	CHO	160	4	6	4
4741		LEAR	07	29	0010	N08 E65	08	2.9		B	DKO	180	6	9	3
4741		CULG	07	29	0410	N09 E62	08	2.8		B	CSO	80	3	5	3
4741		ATHN	07	29	0505	N06 E61	08	2.8			DKO	170	7	9	2
4741		RAMY	07	29	1330	N10 E57	08	2.8		B	DKI	240	7	7	4
4741		BOUL	07	29	1336	N07 E56	08	2.8		B	CSO	140	6	7	3
4741		HOLL	07	29	1405	N09 E57	08	2.9		B	DSI	180	7	8	3
4741	24328	MWIL	07	29	1415	N09 E57	08	2.9	5	(B)					
4741		PALE	07	29	1805	N08 E56	08	2.9		B	DKI	180	10	8	3
4741		CULG	07	30	0320	N08 E49	08	2.8		B	DSO	100	4	7	3
4741		ATHN	07	30	0603	N08 E47	08	2.8			DKI	170	11	8	3
4741		RAMY	07	30	1340	N10 E44	08	2.9		B	DSI	260	9	7	4
4741		BOUL	07	30	1400	N09 E42	08	2.7		B	CSO	140	8	8	4
4741	24328	MWIL	07	30	1415	N09 E43	08	2.8	5	(B)					
4741		PALE	07	30	1728	N09 E43	08	2.9		B	DSO	220	7	8	3
4741		HOLL	07	30	1731	N09 E42	08	2.9		B	DSO	230	8	9	4
4741		LEAR	07	31	0030	N08 E39	08	2.9		B	DSO	200	12	9	3
4741		CULG	07	31	0420	N07 E35	08	2.8			DSO	90	5	7	3
4741		ATHN	07	31	0705	N08 E34	08	2.8			DHO	200	8	9	3
4741		BOUL	07	31	1315	N10 E27	08	2.6		B	DHO	130	3	3	3
4741	24328	MWIL	07	31	1400	N09 E28	08	2.7	5	(BP)					
4741		RAMY	07	31	1421	N10 E29	08	2.8		B	DSI	190	6	7	3
4741		HOLL	07	31	1442	N09 E30	08	2.9		B	CSO	150	8	7	4
4741		PALE	07	31	1820	N09 E26	08	2.7		A	HS	200	4	4	2
4741		LEAR	08	01	0012	N09 E22	08	2.6		B	DHO	160	4	3	3
4741		CULG	08	01	0500	N10 E19	08	2.6		B	DSO	90	5	3	3
4741		ATHN	08	01	0603	N09 E20	08	2.7			DHO	150	3	3	3
4741		RAMY	08	01	1210	N10 E16	08	2.7		B	DSO	160	6	4	4
4741		BOUL	08	01	1320	N09 E15	08	2.7		B	CSO	120	6	5	2
4741	24328	MWIL	08	01	1415	N09 E15	08	2.7	5	(BP)					
4741		HOLL	08	01	1610	N10 E14	08	2.7		B	CSO	160	7	4	3
4741		PALE	08	01	1830	N09 E13	08	2.7		B	CSO	120	8	5	3
4741		LEAR	08	02	0018	N09 E08	08	2.6		B	CSO	130	3	3	3
4741		CULG	08	02	0355	N07 E07	08	2.7		B	CSO	80	2	3	4
4741		ATHN	08	02	0650	N09 E06	08	2.7			DHO	120	2	4	2
4741		RAMY	08	02	1320	N09 E02	08	2.7		B	DSO	170	2	3	4
4741		BOUL	08	02	1340	N10 E01	08	2.6		B	DSO	110	3	3	3
4741	24328	MWIL	08	02	1415	N09 E01	08	2.7	5	(BP)					
4741		HOLL	08	02	1551	N09 E00	08	2.7		B	CSO	150	2	4	4
4741		PALE	08	02	1740	N09 W01	08	2.7		B	CSO	120	3	4	3
4741		LEAR	08	03	0110	N09 W06	08	2.6		B	CSO	160	4	3	4
4741		ATHN	08	03	0645	N09 W07	08	2.7			DSO	140	4	3	3
4741		BOUL	08	03	1320	N09 W11	08	2.7		B	CSO	110	4	3	3
4741		HOLL	08	03	1421	N08 W13	08	2.6		B	CSO	170	4	3	3
4741	24328	MWIL	08	03	1445	N09 W12	08	2.7	5	(B)					
4741		RAMY	08	03	1501	N08 W13	08	2.6		B	DSI	140	11	4	4
4741		PALE	08	03	1748	N09 W14	08	2.7		B	CSO	130	7	5	3
4741		LEAR	08	04	0430	N10 W20	08	2.7		B	CSO	120	7	3	3
4741		CULG	08	04	0500	N09 W22	08	2.5			CSO	100	3	3	2
4741		ATHN	08	04	0505	N09 W20	08	2.7			DSO	130	6	4	3
4741	24328	MWIL	08	04	1400	N09 W26	08	2.6	5	(BG)					
4741		RAMY	08	04	1405	N08 W26	08	2.6		B	DSI	170	6	4	3
4741		HOLL	08	04	1440	N09 W26	08	2.6		B	CSO	170	4	3	3
4741		BOUL	08	04	1545	N10 W23	08	2.9		B	CSO	90	2	2	2
4741		PALE	08	04	1905	N09 W28	08	2.7		A	HS	130	7	4	3
4741		LEAR	08	05	0016	N09 W32	08	2.6		B	CSO	80	3	3	3
4741		ATHN	08	05	0700	N09 W33	08	2.8			CSO	90	5	4	3

SUNSPOT GROUPS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

57  
Aug 86

AUGUST 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation			CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	Time (UT)								
4741		RAMY	08	05	1206	N09 W38	08 2.6	B	CSO	160	5	4	4
4741		BOUL	08	05	1325	N10 W37	08 2.8	A	HS	80	3	4	3
4741	24328	MWIL	08	05	1400	N09 W39	08 2.7	5 (BP)					
4741		HOLL	08	05	1500	N08 W40	08 2.6	A	HS	130	3	4	3
4741		PALE	08	05	1749	N09 W42	08 2.6	A	CSO	130	4	5	4
4741		LEAR	08	06	0010	N09 W46	08 2.5	B	CSO	100	4	4	3
4741		CULG	08	06	0350	N07 W46	08 2.7	B	CSO	80	2	4	2
4741		ATHN	08	06	0742	N09 W46	08 2.9		CSO	120	2	4	2
4741		RAMY	08	06	1335	N08 W54	08 2.5	A	HA	140	1	2	4
4741	24328	MWIL	08	06	1400	N10 W54	08 2.5	5 (AF)					
4741		BOUL	08	06	1420	N09 W52	08 2.7	A	HS	90	1	2	2
4741		HOLL	08	06	1609	N08 W54	08 2.6	A	HA	140	1	2	3
4741		PALE	08	06	1748	N09 W56	08 2.5	A	HS	140	1	2	3
4741		LEAR	08	07	0002	N09 W60	08 2.5	A	HH	80	1	3	3
4741		CULG	08	07	0350	N07 W61	08 2.6	A	HS	60	1	2	2
4741		ATHN	08	07	0640	N09 W63	08 2.5		HH	70	1	3	2
4741	24328	MWIL	08	07	1400	N09 W67	08 2.6	5 (BP)					
4741		HOLL	08	07	1553	N08 W69	08 2.5	A	HS	140	1	1	2
4741		PALE	08	07	1914	N09 W70	08 2.5	A	HA	130	1	2	3
4741		LEAR	08	08	0016	N09 W75	08 2.4	A	HS	60	1	2	3
4741		CULG	08	08	0500	N08 W73	08 2.7	A	HS	60	1	2	3
4741		ATHN	08	08	0655	N09 W77	08 2.5		HS	60	1	2	2
4741	24328	MWIL	08	08	1400	N09 W80	08 2.6	4 (AF)					
4741		HOLL	08	08	1651	N08 W82	08 2.5	A	HS	110	1	2	2
4741		PALE	08	08	1815	N08 W84	08 2.5	A	HS	100	1	2	3
4741		LEAR	08	09	0013	N09 W88	08 2.4	A	HS	20	1	1	3
4742		LEAR	08	16	0200	N02 E14	08 17.1	B	BXO	20	3	3	2
4742		ATHN	08	16	0602	N01 E11	08 17.1		BXO	20	3	2	1
4742		HOLL	08	16	1405	N00 E07	08 17.1	A	AX		1		4
4742	24329	MWIL	08	16	1430	N00 E07	08 17.1	3 (AP)					
4742		PALE	08	16	1838	N01 E06	08 17.2	A	AX		1		4
4742		BOUL	08	16	1955	N01 E04	08 17.1	A	AX		1	1	3
4742		LEAR	08	17	0035	N01 E03	08 17.2	A	AX	10	1	1	3
4743		RAMY	08	20	1304	S10 E35	08 23.2	B	BXO	20	4	2	3
4743		HOLL	08	20	1438	S11 E33	08 23.1	B	BXO	10	3	2	3
4743		BOUL	08	20	1521	S11 E31	08 23.0	B	BXO	10	3	2	2
4743	24330	MWIL	08	20	1600	S10 E28	08 22.8	4 (B)					
4743		PALE	08	20	1900	S12 E31	08 23.1	B	BXO	10	3	2	2
4743		ATHN	08	21	0550	S10 E23	08 23.0		CRO	30	6	3	3
4743		LEAR	08	21	0819	S11 E23	08 23.1	B	BXO	20	9	2	2
4743		RAMY	08	21	1405	S10 E19	08 23.0	B	CSO	20	11	4	3
4743	24330	MWIL	08	21	1430	S10 E18	08 23.0	5 (B)					
4743		BOUL	08	21	1605	S09 E17	08 22.9	B	CAO	30	5	5	1
4743		LEAR	08	22	0010	S11 E14	08 23.1	B	BXO	30	10	6	3
4743		ATHN	08	22	0700	S10 E08	08 22.9		BXO	30	4	5	1
4743		RAMY	08	22	1305	S10 E08	08 23.1	B	CSO	20	8	5	3
4743		BOUL	08	22	1320	S11 E04	08 22.8	B	BXO	30	3	4	3
4743	24330	MWIL	08	22	1400	S10 E05	08 23.0	5 (B)					
4743		HOLL	08	22	1522	S11 E06	08 23.1	B	CRO	20	6	5	2
4743		PALE	08	22	1835	S11 E03	08 23.0	B	CRO	20	6	5	3
4743		LEAR	08	23	0004	S11 E01	08 23.1	B	BXO	20	3	4	3
4743		CULG	08	23	0500	S12 W04	08 22.9		AX		1		2
4743		RAMY	08	23	1335	S10 W08	08 23.0	B	BXO	20	5	3	3
4743		BOUL	08	23	1350	S09 W09	08 22.9	A	AX		1	1	2
4743	24330	MWIL	08	23	1400	S10 W09	08 22.9	3 (AF)					
4743		HOLL	08	23	1738	S11 W11	08 22.9	A	AX	10	3	1	4
4743A		HOLL	08	23	1738	N33 E37	08 26.7	A	AX		1		4
4744		LEAR	08	23	0145	N05 E86	08 29.5	A	HS	30	1	1	3
4744		RAMY	08	23	1335	N06 E76	08 29.2	A	HS	60	1	2	3
4744		BOUL	08	23	1350	N06 E76	08 29.3	A	HS	60	1	1	2
4744	24331	MWIL	08	23	1400	N05 E79	08 29.5	3 (AF)					
4744		HOLL	08	23	1738	N05 E76	08 29.4	A	HS	60	1	2	4
4744		PALE	08	23	2040	N05 E78	08 29.7	A	HS	90	1	2	2
4744		LEAR	08	24	0041	N05 E72	08 29.4	A	HS	120	1	2	3

SUNSPOT GROUPS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

AUGUST 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	(UT)		Day							
4744		RAMY	08	24	1237	N06 E66	08	29.5	A	HS	80	1	2	3
4744		BOUL	08	24	1355	N05 E64	08	29.4	A	HS	40	1	2	2
4744	24331	MWIL	08	24	1400	N05 E66	08	29.5	5	(AF)				
4744		HOLL	08	24	1747	N05 E64	08	29.5	A	HS	80	1	9	3
4744		PALE	08	24	1831	N05 E64	08	29.5	A	HS	90	1	2	3
4744		LEAR	08	25	0423	N04 E57	08	29.4	A	HS	70	1	2	2
4744		CULG	08	25	0450	N04 E57	08	29.5	A	HS	40	1	1	3
4744		PALE	08	25	0900	N05 E50	08	29.1	A	HS	90	1	2	3
4744		RAMY	08	25	1210	N07 E52	08	29.4	A	HS	140	1	2	3
4744	24331	MWIL	08	25	1430	N05 E52	08	29.5	5	(AF)				
4744		BOUL	08	25	1835	N06 E48	08	29.4	A	HS	80	1	2	2
4744		LEAR	08	26	0001	N04 E47	08	29.5	A	HS	70	1	2	3
4744		CULG	08	26	0440	N05 E44	08	29.5	A	HS	60	1	1	4
4744	24331	MWIL	08	26	1600	N05 E38	08	29.5	5	(AF)				
4744		HOLL	08	26	1750	N05 E37	08	29.5	A	HS	80	1	2	3
4744		BOUL	08	26	1806	N05 E35	08	29.4	A	HS	70	1	2	3
4744		PALE	08	26	1817	N06 E37	08	29.5	A	HS	90	1	2	3
4744		LEAR	08	27	0043	N05 E34	08	29.6	A	HS	80	1	2	3
4744		CULG	08	27	0500	N05 E31	08	29.5	A	HS	70	1	2	2
4744		BOUL	08	27	1320	N06 E24	08	29.3	A	HS	80	1	2	3
4744	24331	MWIL	08	27	1445	N05 E25	08	29.5	5	(AF)				
4744		HOLL	08	27	1655	N05 E24	08	29.5	A	HS	80	1	2	2
4744		PALE	08	27	1827	N05 E24	08	29.6	A	HS	80	1	2	3
4744		LEAR	08	28	0010	N05 E20	08	29.5	A	HS	80	1	2	3
4744		CULG	08	28	0500	N04 E18	08	29.5	A	HS	60	1	2	3
4744		BOUL	08	28	1320	N05 E11	08	29.4	A	HS	100	2	2	3
4744	24331	MWIL	08	28	1445	N05 E12	08	29.5	5	(AF)				
4744		HOLL	08	28	1620	N05 E11	08	29.5	A	HS	90	1	2	3
4744		PALE	08	28	1836	N05 E10	08	29.5	A	HS	90	2	2	3
4744		LEAR	08	29	0020	N05 E07	08	29.5	A	HS	80	1	2	3
4744		CULG	08	29	0300	N05 E05	08	29.5	A	HS	60	1	2	3
4744		BOUL	08	29	1320	N08 W02	08	29.4	A	HS	80	1	2	3
4744	24331	MWIL	08	29	1400	N05 W01	08	29.5	5	(AF)				
4744		PALE	08	29	1810	N05 W03	08	29.5	A	HS	80	1	2	3
4744		HOLL	08	29	1910	N05 W03	08	29.6	A	HS	100	1	2	3
4744		LEAR	08	30	0055	N03 W08	08	29.4	A	HS	80	1	1	3
4744	24331	MWIL	08	30	1400	N05 W15	08	29.5	5	(AF)				
4744		RAMY	08	30	1409	N04 W15	08	29.5	A	HS	60	1	2	3
4744		BOUL	08	30	1440	N05 W15	08	29.5	A	HS	80	1	2	2
4744		HOLL	08	30	1513	N05 W15	08	29.5	A	HS	80	1	2	4
4744		PALE	08	30	1821	N05 W17	08	29.5	A	HS	80	1	2	3
4744		LEAR	08	31	0116	N05 W21	08	29.5	A	HS	60	1	2	3
4744		CULG	08	31	0410	N03 W22	08	29.5	A	HS	50	1	1	2
4744		RAMY	08	31	1336	N04 W28	08	29.5	A	HS	50	1	2	3
4744		BOUL	08	31	1400	N05 W26	08	29.6	A	HS	90	2	2	3
4744		HOLL	08	31	1410	N05 W27	08	29.6	A	HS	90	1	2	3
4744	24331	MWIL	08	31	1415	N05 W28	08	29.5	5	(AF)				
4744		PALE	08	31	1836	N05 W31	08	29.4	A	HS	70	1	2	4
4744		LEAR	09	01	0002	N05 W33	08	29.6	A	HS	70	1	2	3
4744		CULG	09	01	0345	N04 W36	08	29.6	A	HS	30	1	1	3
4744	24331	MWIL	09	01	1415	N05 W41	08	29.5	5	(AF)				
4744		HOLL	09	01	1418	N05 W42	08	29.5	A	HS	90	1	2	4
4744		RAMY	09	01	1449	N04 W42	08	29.6	A	HS	80	1	2	4
4744		BOUL	09	01	1532	N05 W42	08	29.6	A	HS	50	1	2	3
4744		PALE	09	01	1745	N05 W43	08	29.6	A	HS	60	1	2	3
4744		LEAR	09	02	0042	N05 W47	08	29.6	A	HS	60	1	2	3
4744		CULG	09	02	0450	N04 W49	08	29.6	A	HS	40	1	1	3
4744		BOUL	09	02	1315	N05 W52	08	29.8	A	HS	60	1	2	2
4744	24331	MWIL	09	02	1415	N05 W54	08	29.6	5	(AF)				
4744		RAMY	09	02	1417	N05 W53	08	29.7	A	HS	50	1	2	3
4744		HOLL	09	02	1435	N05 W54	08	29.7	A	HS	60	1	2	3
4744		PALE	09	02	2120	N05 W58	08	29.6	A	HS	70	1	2	1
4744		LEAR	09	03	0001	N05 W61	08	29.5	A	HS	70	1	2	5
4744		CULG	09	03	0400	N05 W62	08	29.6	A	HS	50	1	1	2
4744		BOUL	09	03	1330	N05 W64	08	29.9	A	HS	80	1	2	2
4744	24331	MWIL	09	03	1400	N05 W67	08	29.6	5	(AF)				
4744		RAMY	09	03	1440	N04 W68	08	29.6	A	HS	60	1	2	3
4744		HOLL	09	03	1535	N04 W68	08	29.7	A	HS	60	1	2	4
4744		PALE	09	03	1750	N05 W70	08	29.6	A	HS	90	1	2	3

SUNSPOT GROUPS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

59  
Aug 86

AUGUST 1986

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	Mo	Day	CMP	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4744		LEAR	09	04	0040	N05	W75	08	29.5			A	HS	60	1	2	2
4744		BOUL	09	04	1315	N05	W78	08	29.8			A	AX	20	1	1	2
4744		RAMY	09	04	1430	N04	W80	08	29.7			A	HR	60	1	2	3
4744		HOLL	09	04	1555	N04	W81	08	29.7			A	HS	20	1	1	4
4744		PALE	09	04	1715	N06	W85	08	29.4			A	HS	40	1	2	4
	24332	MWIL	08	29	1400	N08	E11	08	30.4		3	(AP)					

Stations reporting:

ATHN = Athens  
BOUL = Boulder

CULG = Cuigoora  
HOLL = Holloman

LEAR = Learmonth  
MWIL = Mt. Wilson

PALE = Palohua  
RAMY = Ramey



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

AUGUST 1986

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	X-ray Class	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES			
02	1530	1541U	1605	1	1		1					No Flare	
03	0533	0548U	0609	1	1		1					No Flare	
04	1318	1326	1448	1	1		1					No Flare	
13	0728	0734	0833D	1-	1				1			No Flare	
22	0852	0858	0925D	1-	1				1			No Flare	
23	0703	0707	0753D	1-	1				1			No Flare	
23	1229	1243U	1302	1	1		1					No Flare	
27	1206	1219U	1247	1	1		1					*	
29	1441	1450	1537	1	1		1					*	

\* No Flare Patrol

Observatories Reporting for August 1986 \*\*

Amherst, New Hampshire, USA	SES	Lintong, Peoples Rep. of China	SPA
Ayshire, Scotland	SES	Louisville, Kentucky, USA	SES
Darmstadt, GFR	SWF	Maui, Hawaii, USA	SWF
Durham, North Carolina, USA	SES	Paterson, New Jersey, USA	SES
Edenvale, South Africa	SES	Sao Paulo, Brasil	SPA, SES
Farsta, Sweden	SES	St. Cloud, Minnesota, USA	SES
Hiraiso, Japan	SWF	Tucson, Arizona, USA	SES
Inubo, Japan	SPA	Upice, Czechoslovakia	SEA
LaCrescenta, California, USA	SEA	Valley Cottage, New York, USA	SES
Latrobe, Pennsylvania, USA	SES		

\*\* 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

AUGUST 1986

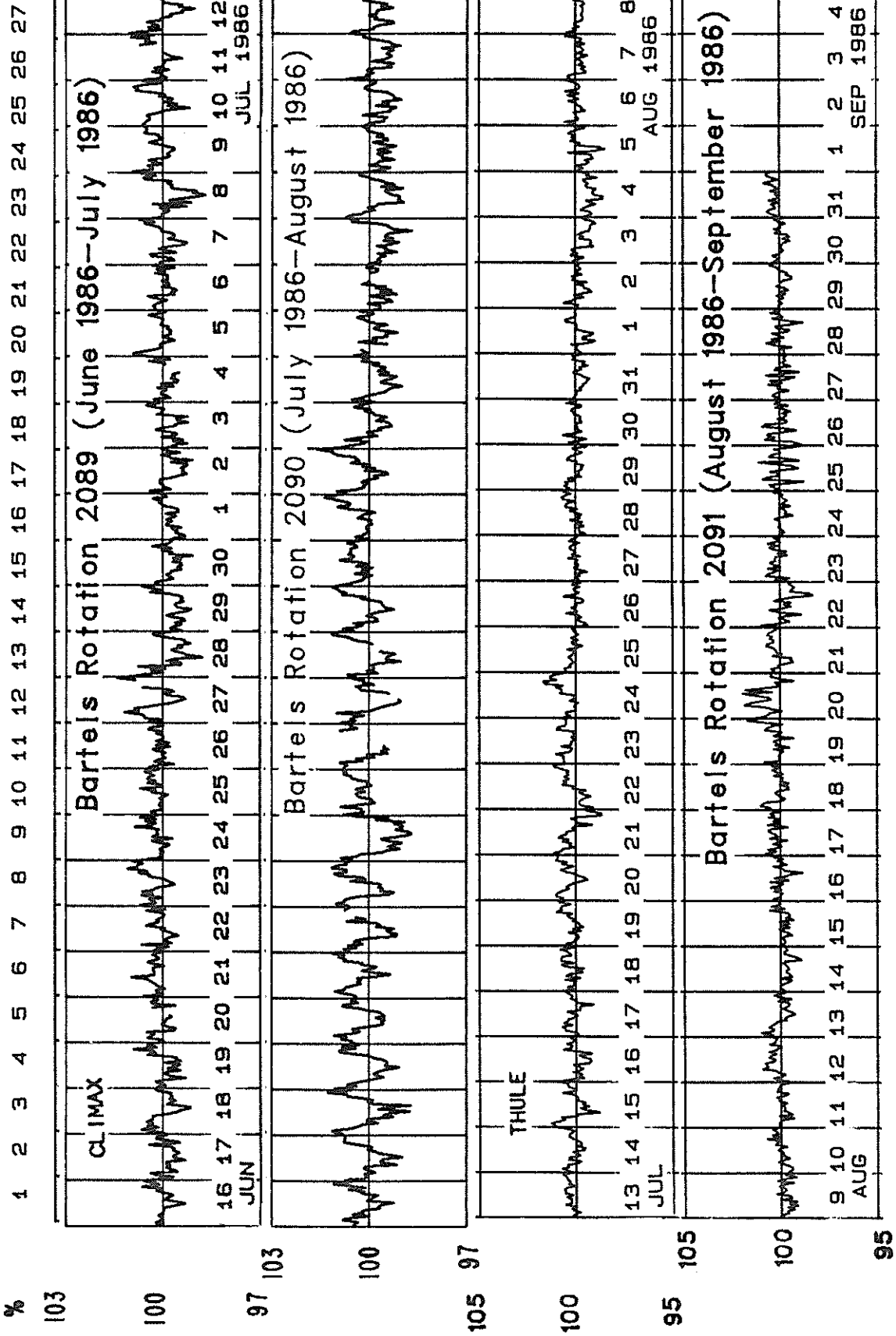
Day:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Events in Region #																															
Events with X-ray																															
Events with No Flare Reported		1	1	1								1										1	2								
Events with No Flare Patrol																											1		1		
Events with No Region Numbers																															
Daily Event Totals		1	1	1								1											1	2				1		1	

S O L A R   R A D I O   E M I S S I O N  
S P E C T R A L   O B S E R V A T I O N S

AUGUST    1986

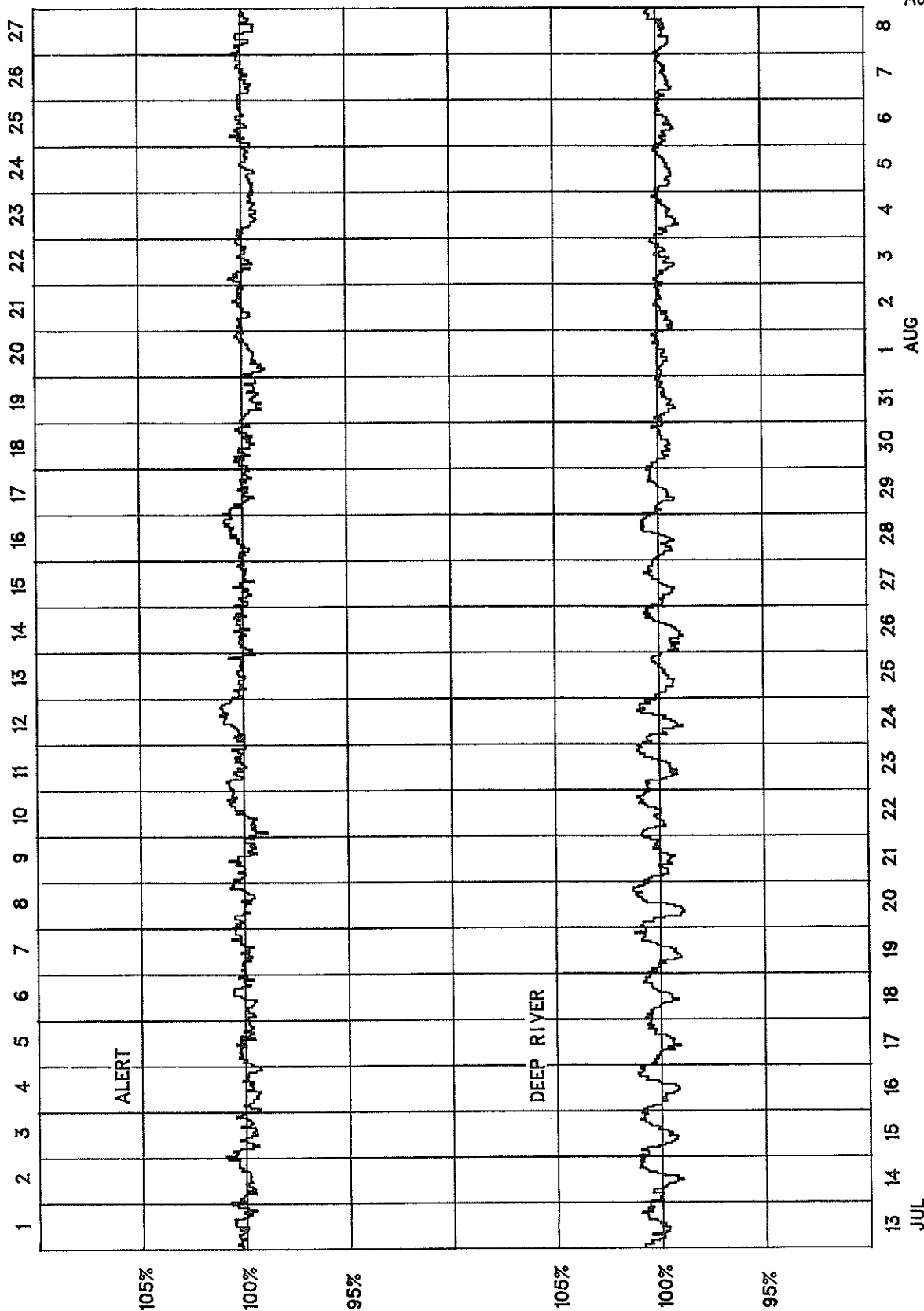
Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
01	0440	0940	WEIS										
02			CULG				2207.0	2208.0	1				III
04	1210	1829	WEIS										
05	0446	0842	WEIS										
	0852	0945	WEIS										
	1012	1827	WEIS										
06	0446	0747	WEIS										
	1427	1826	WEIS										
07	0448	0950	WEIS										
	1017	1825	WEIS										
08	0448	1627	WEIS										
09	0737	1821	WEIS										
10	0450	1430	WEIS										
11	0558	1818	WEIS										
12	0453	1301	WEIS										
	1318	1816	WEIS										
13	0456	1815	WEIS										
14	0455	0655	WEIS										
	0705	1812	WEIS										
15	0458	1409	WEIS										
	1559	1812	WEIS										
16	0458	1810	WEIS										
17	0500	0620	WEIS										
	1132	1457	WEIS										
	1637	1808	WEIS										
18	0634	1807	WEIS										
19	0503	0846	WEIS										
	0927	1217	WEIS										
	1240	1302	WEIS										
		LEAR					2252.0	2253.0	1				III
22	1605	1800	WEIS										
23	0508	1253	WEIS										
	1328	1758	WEIS										
24	0508	0944	WEIS										
	1439	1756	WEIS										
25	0511	0747	WEIS										
	0845	1754	WEIS										
26	0510	1005	WEIS										
	1013	1752	WEIS										
27	0514	1750	WEIS										
28	0513	1748	WEIS										
29	0516	0853	WEIS										
	0939	1746	WEIS										
30	0515	1720	WEIS										
		CULG					2210.0	2210.0	1				III

COSMIC RAY INDICES  
(Neutron Monitor)



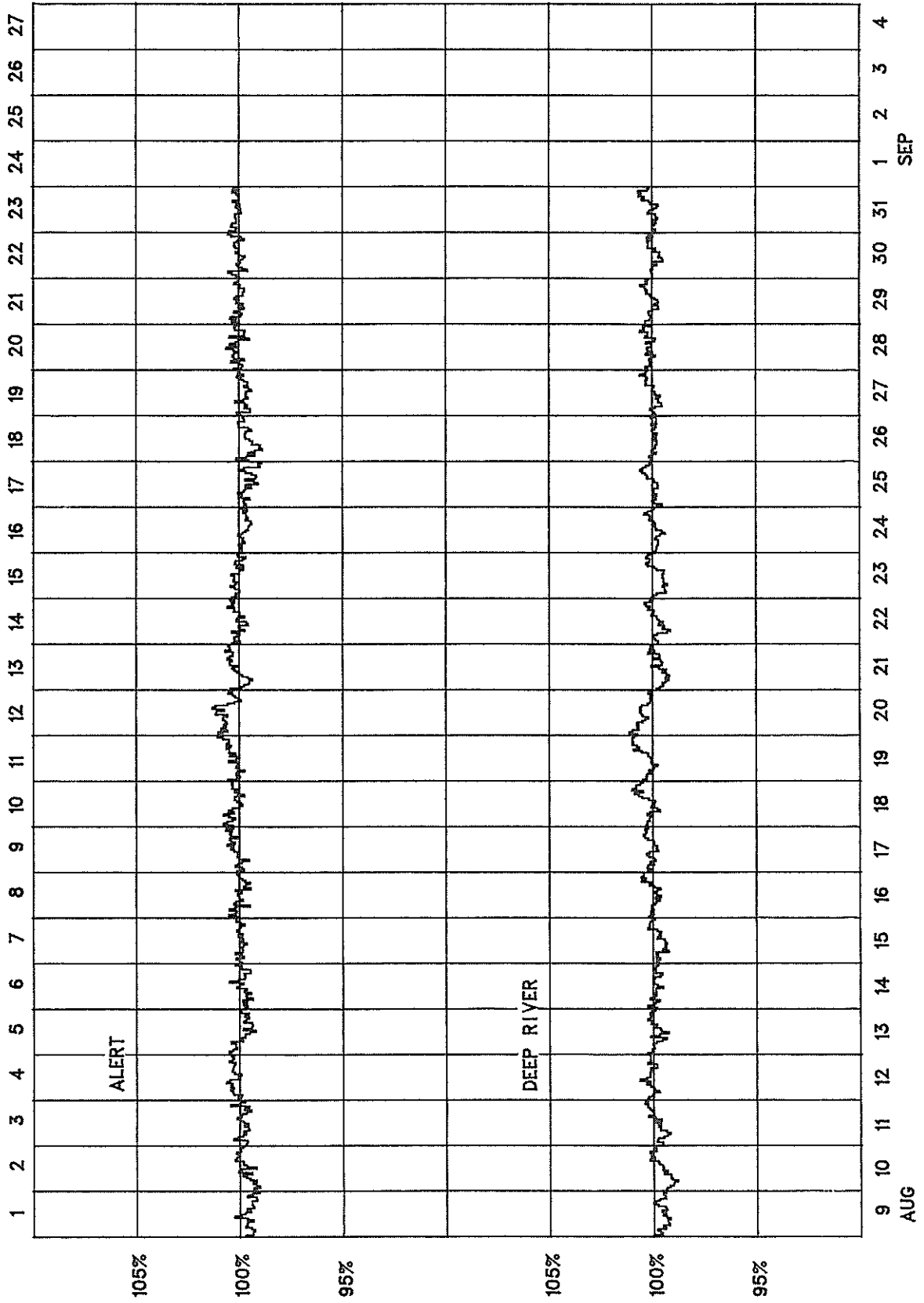
COSMIC RAY INDICES  
(Neutron Monitor)

Bartels Rotation 2090 (July 1986-August 1986)



COSMIC RAY INDICES  
(Neutron Monitor)

Bartels Rotation 2091 (August 1986-September 1986)



COSMIC RAY INDICES  
(Neutron Monitor)

65  
Aug 86

AUGUST 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	PRED IGTSTUHL Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4513	7386.9	7049.1	6291.0	4179.4			
2	4513	7418.5	7040.5	6300.5	4173.9			
3	4501	7417.1	7043.9	6281.9	4166.4			
4	4487	7387.0	7031.5	6279.8	4173.3			
5	4506	7391.2	7033.7	6292.9	4171.5			
6	4522	7416.5	7036.8	6291.1	4170.4			
7	4512	7410.0	7035.5	6297.5	4171.9			
8	4513	7405.3	7048.5	6308.0	4180.8			
9	4519	7407.7	7063.1	6307.6	4182.9(38)			
10	4533	7421.6	7063.4	6319.2	4186.5			
11	4529	7430.1	7083.1	6332.2	4187.2			
12	4550	7463.8	7103.0	6336.1	4203.7(36)			
13	4533	7433.0	7088.0	6337.7	4205.3			
14	4519	7428.1	7084.9	6345.6	4204.9			
15	4527	7439.8	7075.9	6352.3	4211.5			
16	4534	7442.9	7097.7	6352.5	4210.8			
17	4548	7458.3	7103.2	6362.5	4210.9			
18	4540	7463.6	7116.1	6364.7	4211.0			
19	4548	7468.4	7122.7	6364.4	4209.3			
20	4566	7492.7	7127.1	6382.1	4217.0			
21	4543	7455.4	7070.4	6341.5	4195.3			
22	4517	7451.7	7082.1	6334.5	4195.9			
23	4544	7451.5	7077.3	6352.7	4199.1			
24	4528	7424.4	7085.5	6332.4	4195.9			
25	4532	7410.5	7095.9	6331.4	4201.1			
26	4533	7411.7	7088.5	6351.1	4204.6(30)			
27	4531	7425.3	7094.2	6346.1	----			
28	4531	7451.4	7105.8	6343.2	----			
29	4529	7445.5	7102.0	6340.7	----			
30	4531	7448.5	7091.0	6332.5	----			
31	4551	7454.7	7099.9	6342.2	----			
Mean	4528	7432.7	7078.7	6330.6	4192.8			

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.



## DAILY AVERAGE INDICES Ap

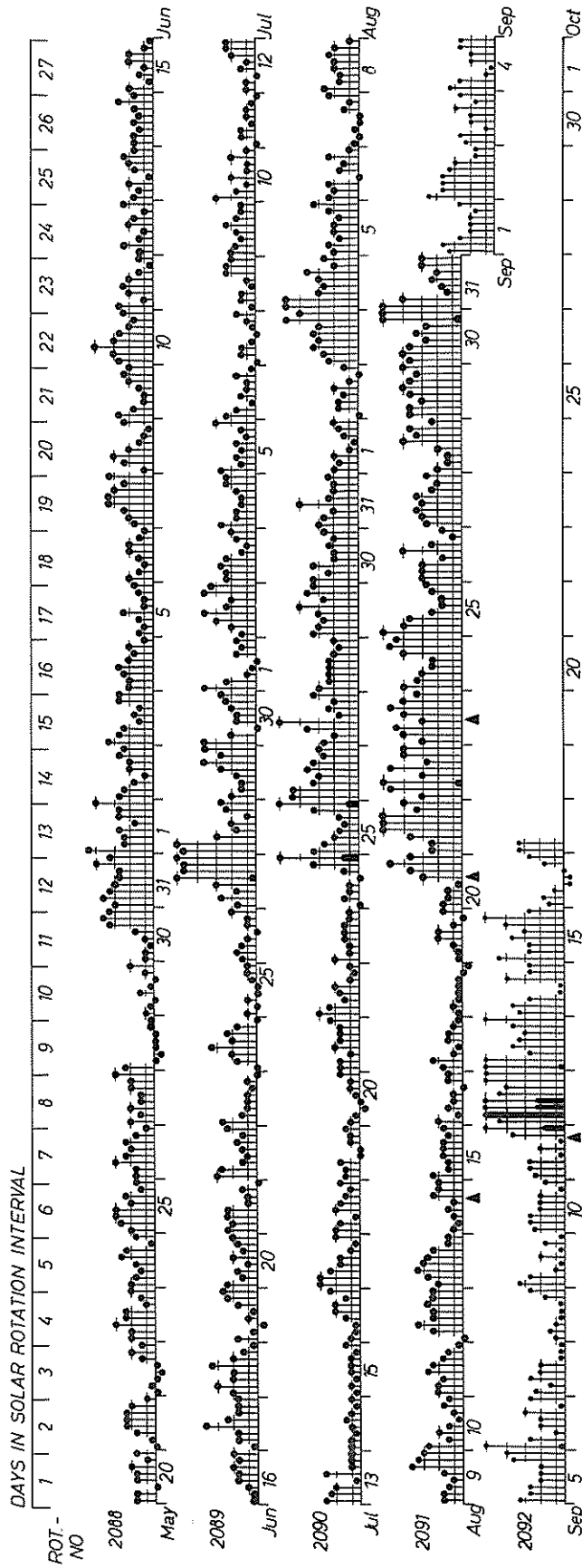
DAY	1985				1986							
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	6	3	15	15	25	5	18	8	5	15	7	6
2	4	5	32	14	18	6	12	5	43	8	13	5
3	4	11	28	9	10	6	12	14	40	10	8	19
4	2	12	16	12	5	5	8	4	17	7	7	20
5	3	66	10	8	4	7	8	9	17	5	7	9
6	9	41	13	7	20	11	32	4	67	6	5	6
7	9	27	7	5	32	82	33	5	12	12	4	4
8	10	16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



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

Kp through August 31, 1986

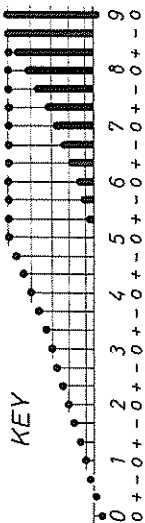
University of Göttingen



PLANETARY MAGNETIC  
THREE-HOUR-RANGE INDICES  
Kp (after Bartels)

Ks (from Wingst and Göttingen) till Sep 17  
Kp till 1986 August 31

▲ = sudden commencement



PRINCIPAL MAGNETIC STORMS

AUGUST 1986

Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End	
		Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D (Min)	H (Gamma)	Z (Gamma)	Day (UT)	Hour
KRC 16.4N	02	0410	..	..	..	..	03(7)	5	5	64	38	07	07
HYB 07.6N	02	2300	..	..	..	..	03(7)	5	5	86	19	04	21
FRD 49.6N	03	03--	..	..	..	..	04(2)	5	22	102	40	05	--
HER 33.7S	03	19--	..	..	..	..	04(2)	5	30	40	67	04	09
HYB 07.6N	12	0300	..	..	..	..	12(6) 13(4)	4	5	87	25	13	18
COL 64.6N	20	1351	SC*	..	20	..	21(5)	7	198	1490	1230	21	20
WIT 54.2N	20	1351	SC*	- 2.*	27	0	20(7) 21(4,6)	5	26	135	64	22	23
							22(3,5,7,8)						
FRD 49.6N	20	1350	SC	- 1	8	- 3	21(4,6) 23(3,6) 25(1)	5	20	139	48	25	--
BJI 28.5N	20	1351	SC	- 0.9	33	2	22(3)	6	10	134	29	24	09
JAI 17.3N	20	1348	SC	- 0.6	22	- 4		-	8	127	47	23	24
KRC 16.4N	20	1305	SC	2	30	18	20(7) 21(4,5,6)	5	5	138	50	26	22
							22(3,5) 23(6) 24(7)						
							26(5)						
SHL 14.7N	20	1348	SC	- 0.2	22	4		-	7	126	25	23	24
UJJ 13.5N	20	1348	SC	- 0.5	25	- 5		-	7	131	42	23	24
ABG 09.5N	20	1348	SC	- 0.7	21	- 7	20(7)	5	7	129	46	23	24
HYB 07.6N	20	1351	SC	- 0.4	22	- 2	21(5)	6	7	144	31	22	22
ANN 01.5N	20	1348	SC	..	..	..		-	--	--	--	23	24
ETT 00.6S	20	1351	SC	- 0.6	18	18		-	-3	190	75	24	20
TRD 01.1S	20	1348	SC	- 0.3	20	25		-	5	187	98	23	24
HER 33.7S	20	1351	SC	1	17	16	20(7)	4	13	66	85	20	24
GNA 43.2S	20	1352	SC	0.4	13	6	21(6) 22(5)	6	23	120	120	22	23
CNB 43.9S	20	1352	SC	..	17	2	21(6) 22(3,5)	5	20	134	43	23	18
KGL 56.5S	20	1351	SC	1	- 10	- 4	20(7)	5	28	210	160	25	13
SIT 60.0N	21	0833	SC	11	73	- 8	21(5)	7	50	600	820	22	14
GUA 04.0N	21	0705	..	..	..	..	21(6)	5	--	70	10	21	20
HER 33.7S	21	07--	..	..	..	..	22(2,5)	5	26	101	86	22	15
GUA 04.0N	22	0303	..	..	..	..	22(3)	5	--	80	20	22	17
WIT 54.2N	23	1207	SC	2	27	0	23(6,7) 24(6,7) 25(1)	5	27	146	52	25	09
JAI 17.3N	28	0800	..	..	..	..		-	12	61	37	31	03
SHL 14.7N	28	0800	..	..	..	..		-	4	72	22	31	03
UJJ 13.5N	28	0800	..	..	..	..		-	7	69	35	31	03
ABG 09.5N	28	0800	..	..	..	..	21(5,6) 22(3) 28(5,7)	4	8	76	56	31	03
							29(5)						
HYB 07.6N	28	0800	..	..	..	..	28(5) 29(4,5)	4	5	89	16	29	21
ANN 01.5N	28	0800	..	..	..	..		-	--	--	--	31	03
TRD 01.1S	28	0800	..	..	..	..		-	5	145	100	31	03
FRD 49.6N	30	20--	..	..	..	..	30(8) 31(1)	5	24	85	48	01	--
GUA 04.0N	30	2000	..	..	..	..	30(8)	5	10	30	10	31	05
HER 33.7S	30	19--	..	..	..	..	30(7)	5	18	72	77	31	04
KGL 56.5S	30	1254	SC	5	28	14	31(1)	5	32	192	150	31	18

Stations Reporting:

ABG = ALIBAG  
ANN = ANNAMALAINAGAR  
BJI = BEIJING  
CNB = CANBERRA  
COL = COLLEGE

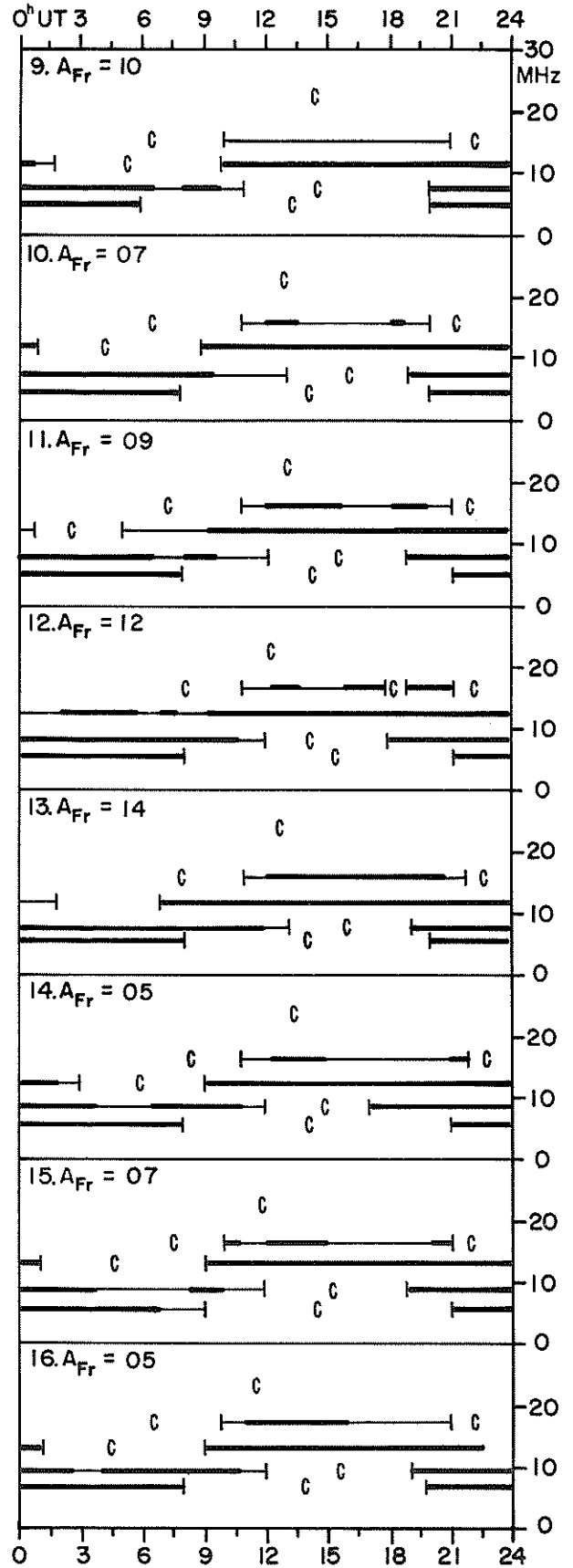
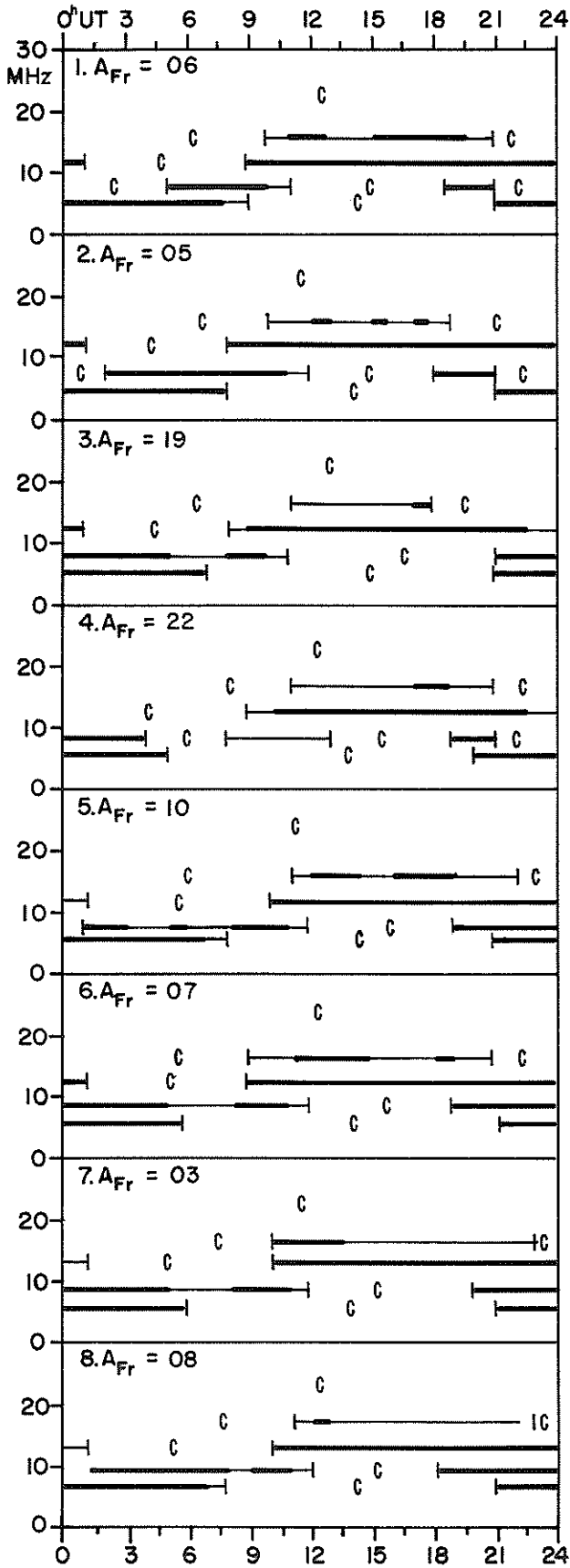
ETT = ETAIYAPURAM  
FRD = FREDERICKSBURG  
GNA = GNANGARA  
GUA = GUAM  
HER = HERMANUS

HYB = HYDERABAD  
JAI = JAIPUR  
KRC = KARACHI  
KGL = KERGUELEN  
SHL = SHILLONG

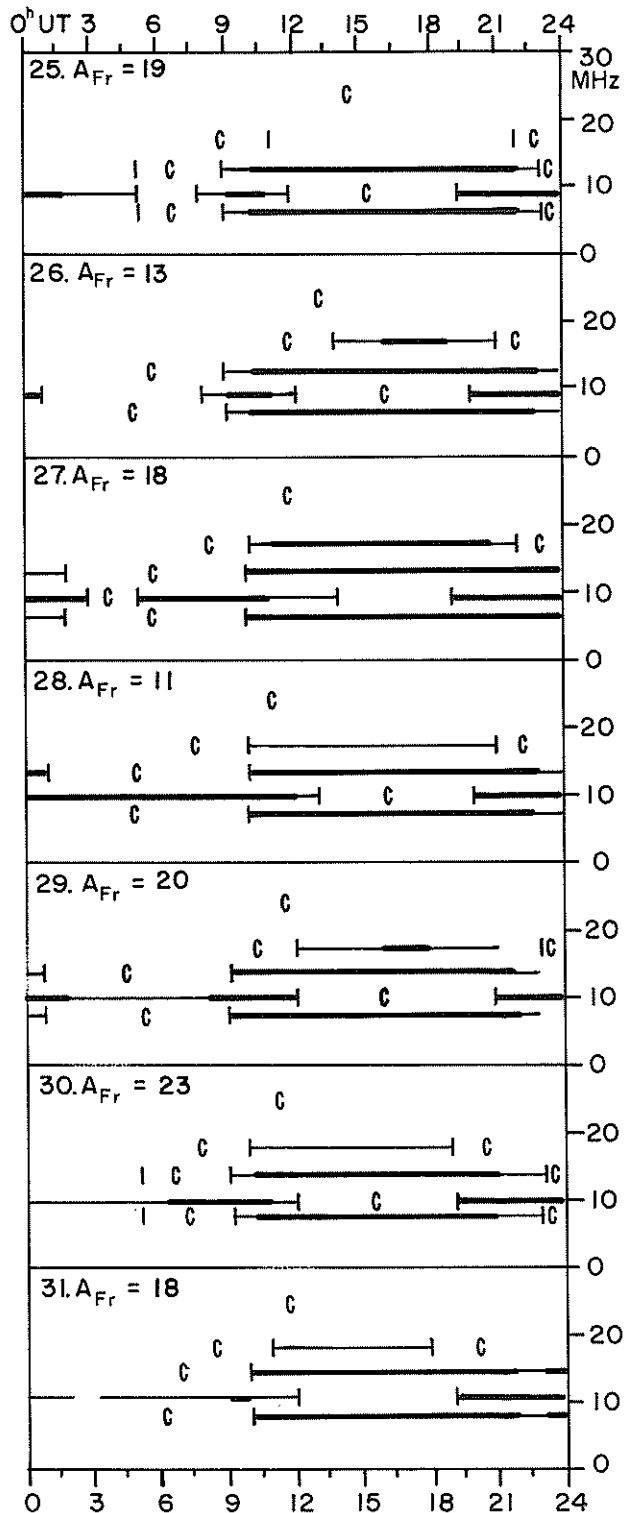
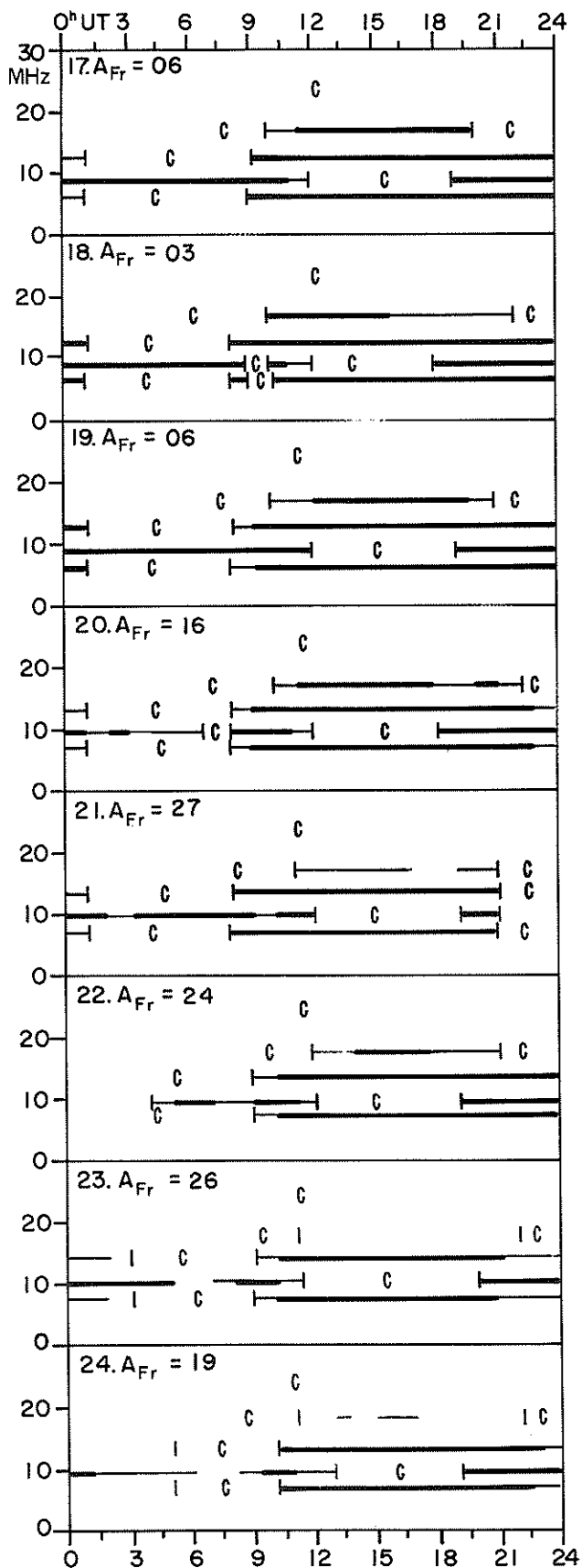
SIT = SITKA  
TRD = TRIVANDRUM  
UJJ = UJJAIN  
WIT = WITTEVEEN

TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1986



AUGUST 1986



Field strengths from four frequencies (6.4, 8.6, 13.0 and 17.0 MHz), observed on a Norddeich-New York circuit, are shown above. Heavy solid lines represent field strength greater than or equal to -12 dB above 1 microvolt per meter (transmitter power reduced to 1 kilowatt). Observed field strengths between -12 and -40 dB above 1 microvolt per meter are represented by fine lines.

RADIO PROPAGATION QUALITY INDICES

AUGUST 1986

Day	Bracknell	Teheran	New York	Tokyo	S. Africa	Canberra
1	3.1	3.0	5.1	5.6	4.2	1.9
2	2.3	5.8	5.1	6.3	3.2	2.9
3	3.2	6.6	2.8	6.6	6.7	6.0
4	3.2	2.9	3.3	2.0	5.9	2.5
5	4.5	4.5	5.0	4.5	5.1	4.6
6	3.7	4.9	5.7	5.8	5.9	2.9
7	3.4	5.4	5.5	7.2	5.6	3.7
8	3.5	6.5	4.6	6.5	4.4	3.6
9	4.8	4.7	5.9	6.8	6.0	6.2
10	5.8	5.6	5.5	7.1	6.1	5.8
11	4.5	7.6	5.7	6.8	6.9	6.0
12	4.7	5.6	6.1	7.1	6.4	4.6
13	4.0	5.7	6.3	7.1	7.0	4.3
14	5.5	4.3	6.4	6.5	5.0	5.5
15	4.7	4.6	5.3	6.9	4.4	6.5
16	2.8	4.7	5.9	7.4	5.8	4.6
17	3.7	5.8	6.8	7.8	6.0	5.6
18	3.5	4.7	7.2	9.0	5.9	5.3
19	3.3	4.5	7.4	7.2	5.9	6.4
20	3.3	3.9	5.8	5.9	8.4	5.7
21	3.1	4.9	4.5	3.4	7.6	7.7
22	5.0	2.8	4.7	1.9	6.7	6.5
23	2.0	3.8	2.1	2.1	6.3	4.5
24	2.3	2.3	2.7	2.4	5.9	4.0
25	2.4	2.8	2.4	1.6	6.6	3.4
26	2.7	3.1	4.6	3.1	6.5	6.0
27	4.7	5.1	6.3	4.4	8.3	6.5
28	3.0	4.0	4.6	6.8	5.7	4.6
29	2.2	4.3	3.8	2.8	8.6	3.8
30	3.2	4.0	3.3	5.1	7.0	5.6
31	3.0	5.3	3.4	6.4	5.9	6.4
Mean	3.6	4.6	5.0	5.5	6.1	5.0

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

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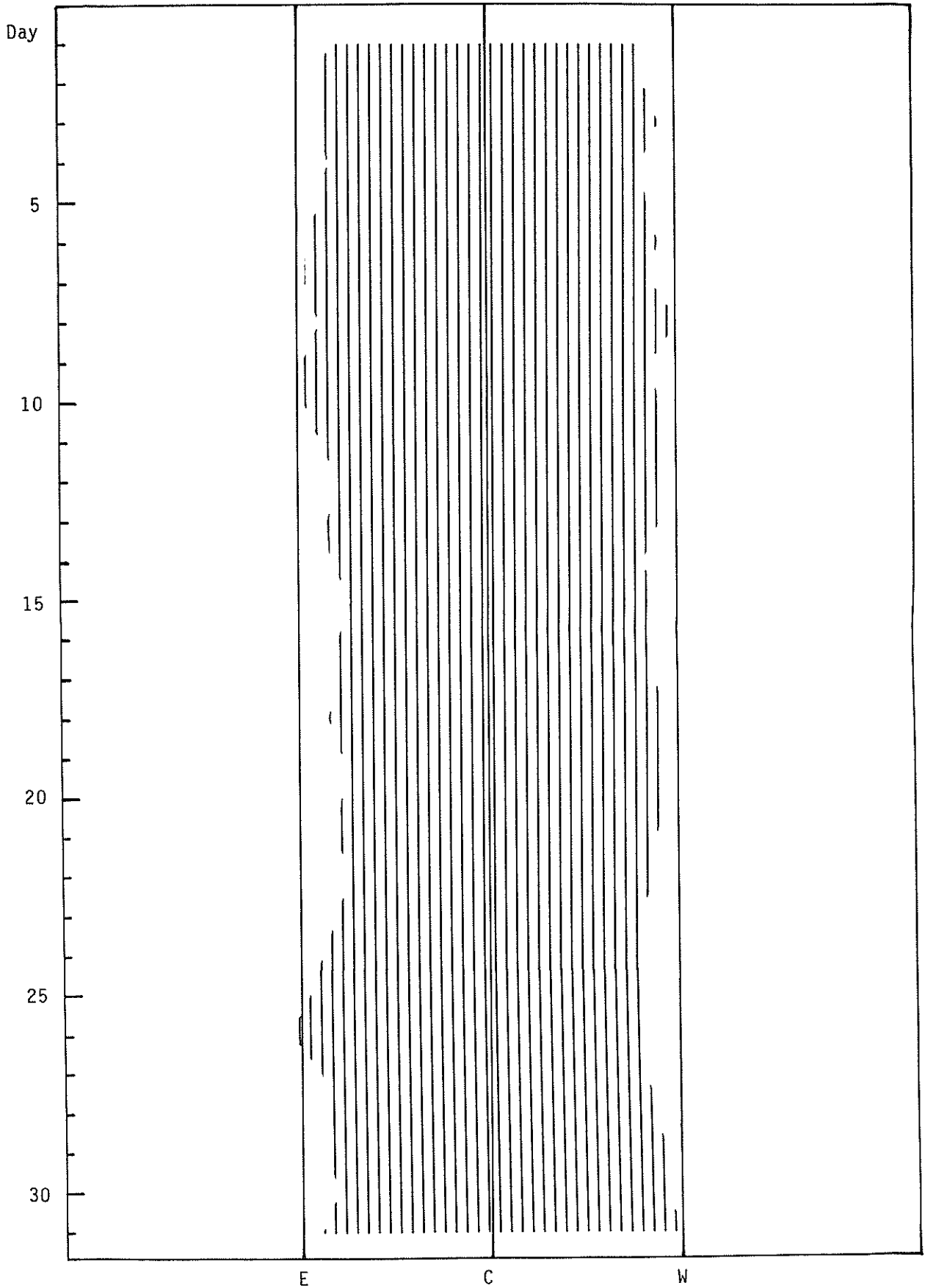
74  
Late  
Aug 86

SOLAR INTERFEROMETRIC OBSERVATIONS

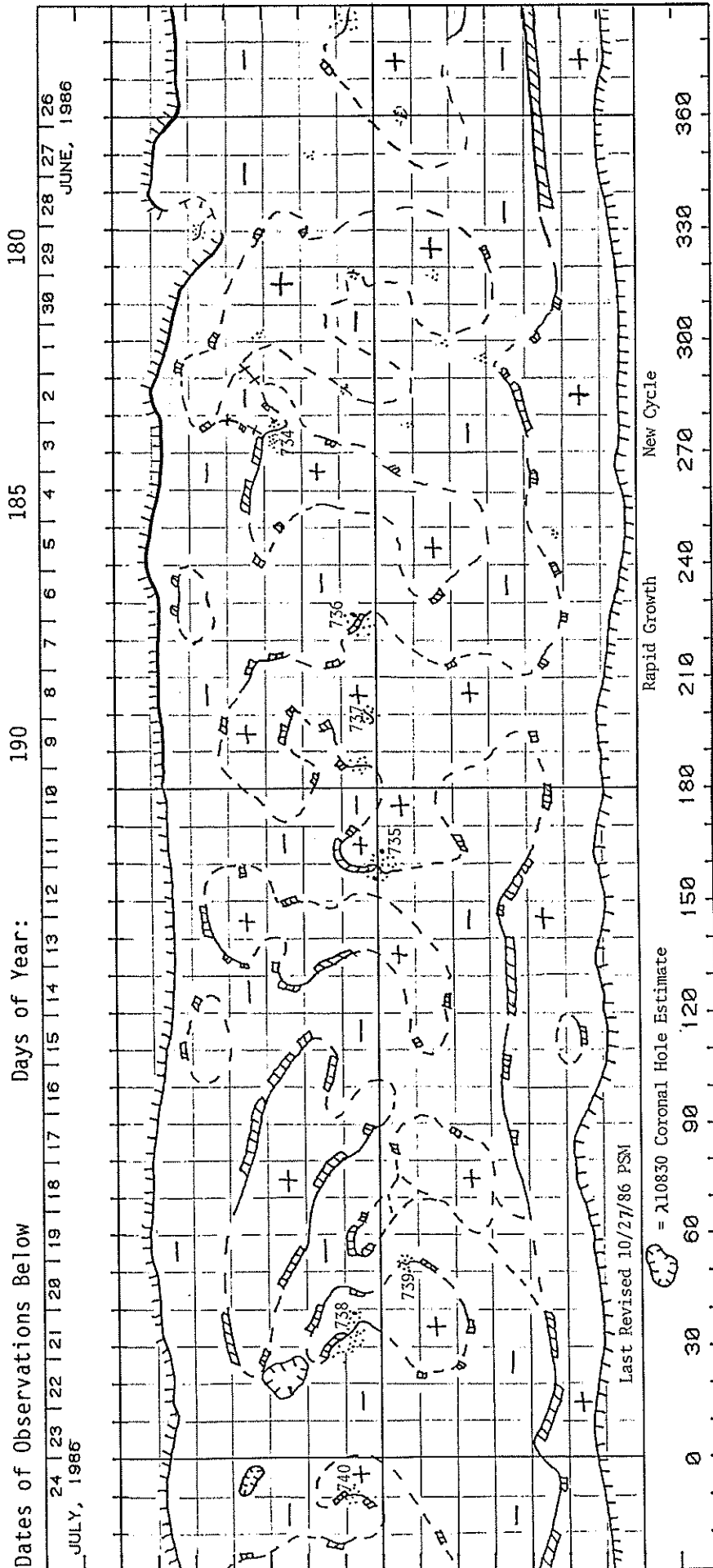
Nancay

AUGUST 1986

164 MHz



PRELIMINARY H - ALPHA SOLAR SYNOPTIC CHART  
 CARRINGTON ROTATION NUMBER 1777  
 (June 26 to July 24, 1986)





76  
Late  
Apr 86

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.

C O S M I C R A Y I N D I C E S  
(Neutron Monitor)

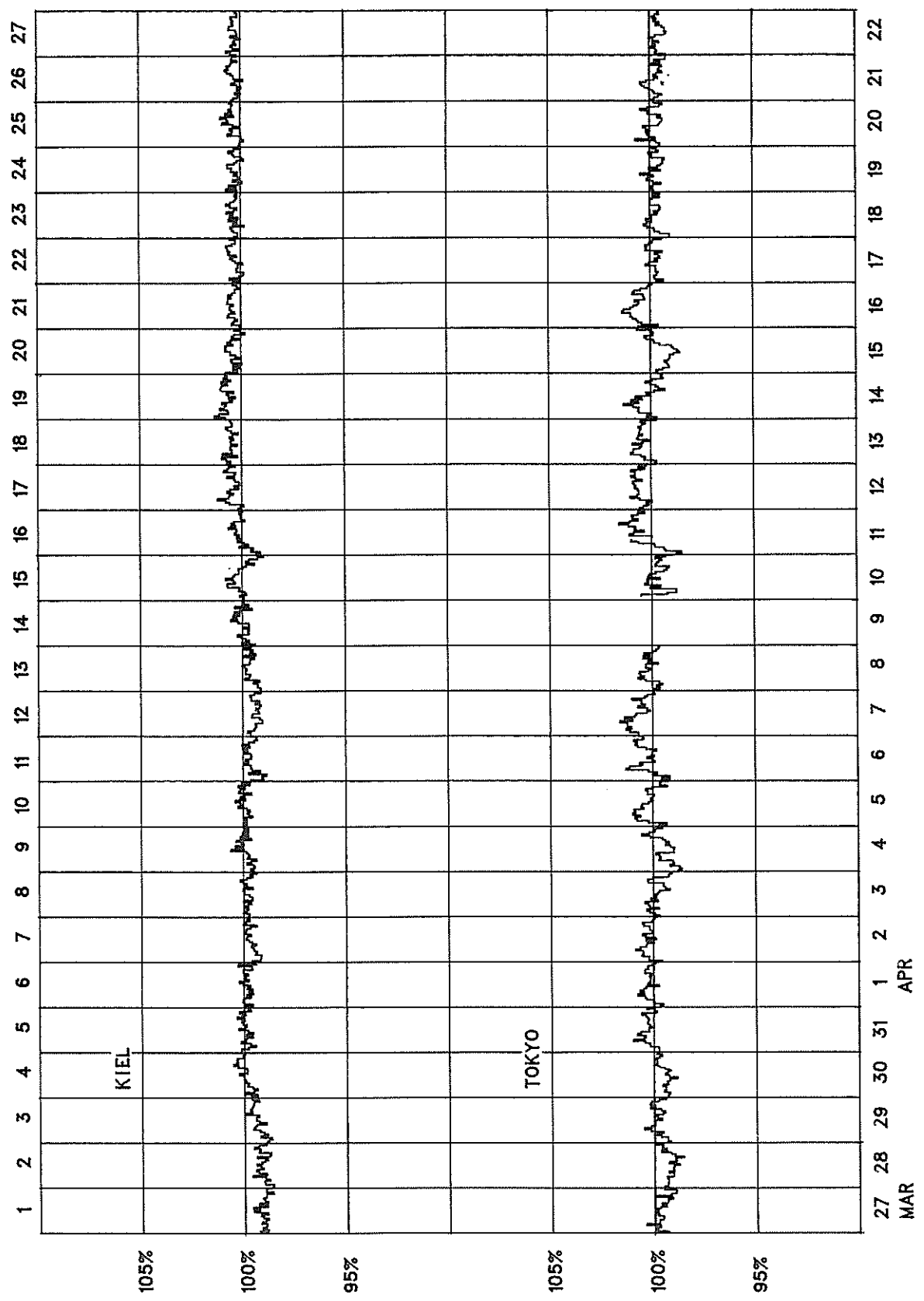
JULY 1986

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	6339.6	4186.6		3663.3	
2	4509	7389.0	7076.0	6354.4	4185.3		3663.4	
3	4522	7421.5	7086.1	6355.7	4188.0		3665.6	
4	4510	7410.3	7073.2	6352.2	4192.7		3664.0	
5	4520	7400.6	7046.6	6368.6	4199.8		3657.4	
6	4522	7428.1	7041.7	6384.8	4196.4		3656.8	
7	4542	7450.1	7071.7	6394.7	4194.8		3660.2	
8	4534	7447.2	7083.3	6380.5	4186.4		3658.0	
9	4545	7465.2	7114.7	6383.1	4204.2		3663.5	
10	4531	7436.9	7112.8	6377.1	4205.5		3659.5	
11	4528	7446.2	7100.4	6364.6	4202.0		3655.9	
12	4519	7436.8	7096.1	6361.9	4199.3		3656.8	
13	4535	7430.6	7083.4	6343.8	4193.1		3662.0	
14	4527	7419.1	7073.4	6340.5	4185.6		3659.8	
15	4527	7414.7	7078.5	6320.5	4187.8		3652.0	
16	4516	7389.0	7072.8	6314.3	4187.0		3649.3	
17	4528	7413.0	7060.3	6335.5	4194.0		3656.0	
18	4534	7411.7	7072.9	6348.9	4201.4		3666.9	
19	4533	7420.3	7065.7	6356.2	4188.0		3668.2	
20	4542	7422.6	7080.2	6370.3	4200.5		3667.7	
21	4525	7414.2	7057.6	6333.8	4162.3		3648.7	
22	4528	7416.1	7088.7	6353.7	4198.5		3661.1	
23	4541	7436.9	7072.2	6370.8	4193.4 (34)		3659.8	
24	4547	7458.6	7069.5	6368.6	4184.9		3661.0	
25	4527	7425.3	7045.7	6351.3	4185.5		3664.7	
26	4518	7420.0	7035.2	6339.5	4191.1		3666.3	
27	4520	7411.7	7058.4	6321.5	4201.4		3667.7	
28	4526	7438.2	7064.9	6315.5	4200.2		3669.3	
29	4521	7415.9	7059.1	6318.3	4198.8		3670.7	
30	4519	7407.8	7046.6	6312.5	4184.2		3666.0	
31	4510	7380.5	7036.8	6300.1	4172.0		3667.7	
Mean	4527	7421.9	7070.8	6349.4	4192.0		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.

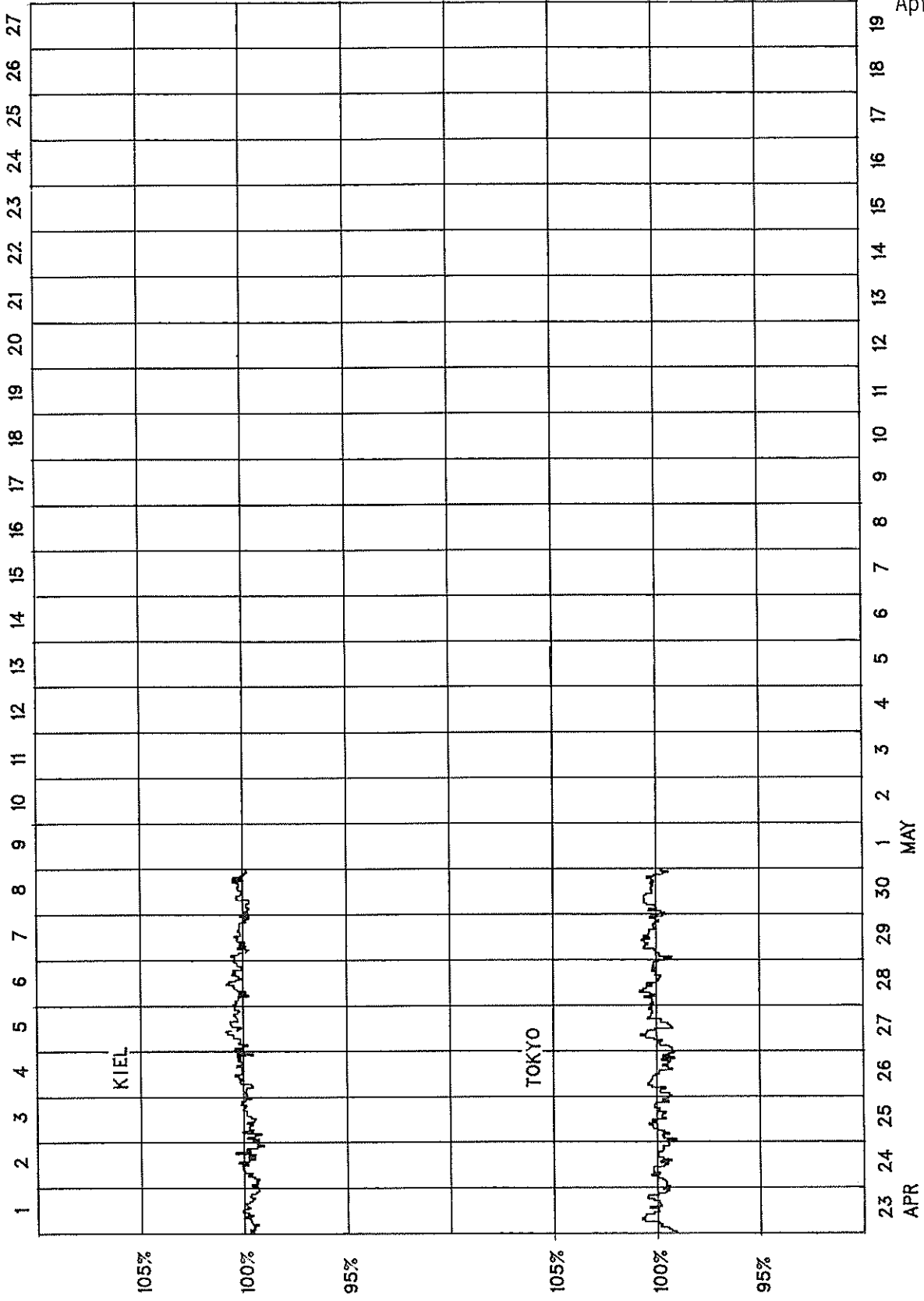
COSMIC RAY INDICES  
(Neutron Monitor)

Bartels Rotation 2086 (March 1986-April 1986)



COSMIC RAY INDICES  
(Neutron Monitor)

Bartels Rotation 2087 (April 1986-May 1986)



80  
Late  
Dec 85

CALCIUM PLAGE REGIONS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

DECEMBER 1985

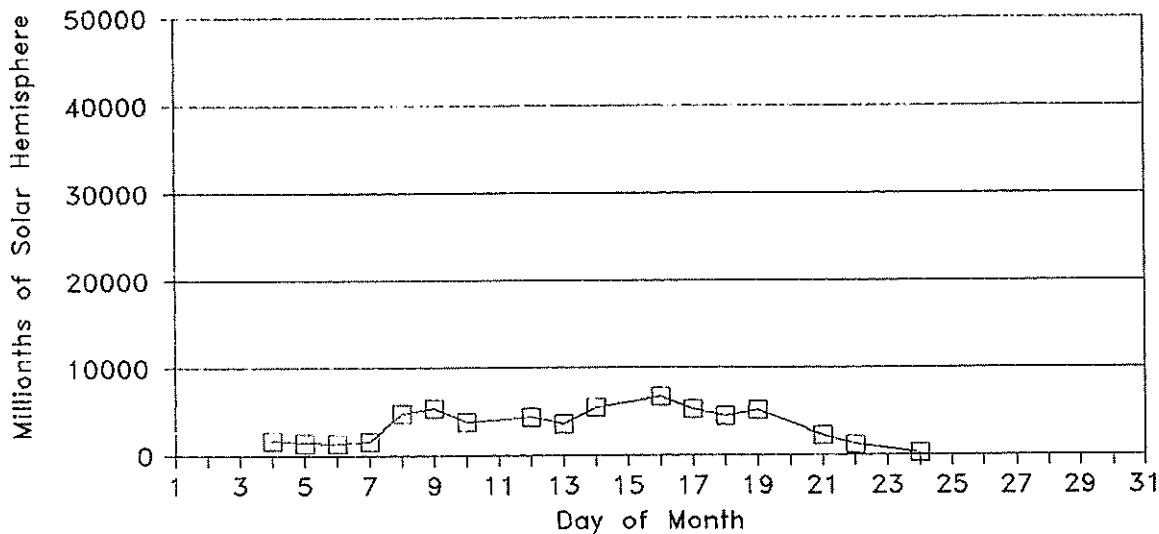
Calcium Plage Region	Sta	Observation Time		Lat CMD	CMP		Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups			
		Mo	Day (UT)		Mo	Day			#1	#2	#3	
19688	BIGB	12	05	2208	N21 W28	12	3.8	3.5	0420	4706		
19688	BIGB	12	06	1935	N21 W40	12	3.7	2.8	0910	4706		
19688	BIGB	12	07	2239	N20 W64	12	3.0	2.2	1240	4706		
19688	BIGB	12	08	1712	N20 W74	12	3.0	2.3	1480	4706		
19688	BIGB	12	09	1634	N20 W80	12	3.6	2.6	1440	4706		
19685	BIGB	11	30	2159	S05 E54	12	4.9	1.6	0570	4706A		
19685	BIGB	12	04	1829	S02 E03	12	5.0	1.4	0630	4706A		
19685	BIGB	12	05	2208	S02 W13	12	4.9	1.4	0500	4706A		
19685	BIGB	12	06	1935	S02 W24	12	5.0	1.3	0320	4706A		
19685	BIGB	12	07	2239	S02 W39	12	5.0	.9	0290	4706A		
19685	BIGB	12	08	1712	S02 W49	12	5.0	.8	0290	4706A		
19685	BIGB	12	09	1634	S02 W62	12	5.0	.8	0215	4706A		
19685	BIGB	12	10	1715	S02 W76	12	5.0	.3	0100	4706A		
19687	BIGB	12	04	1829	S04 E48	12	8.3	1.8	0550			
19687	BIGB	12	05	2208	S04 E33	12	8.4	.5	0130			
19687	BIGB	12	06	1935	S04 E21	12	8.4	.7	0060			
19689	BIGB	12	06	1935	N08 E21	12	8.4	.8	0100	4707		
19690	BIGB	12	08	1712	N06 E81	12	14.8	1.9	2181			
19690	BIGB	12	09	1634	N05 E70	12	14.9	2.6	1450			
19690	BIGB	12	10	1715	N06 E52	12	14.6	1.2	1070			
19690	BIGB	12	12	2222	N07 E22	12	14.6	2.2	1250			
19690	BIGB	12	13	2045	N07 E09	12	14.5	1.7	1120			
19690	BIGB	12	14	2006	N07 W04	12	14.5	2.1	1240			
19690	BIGB	12	16	1812	N07 W29	12	14.6	1.9	1190			
19690	BIGB	12	17	2147	N08 W44	12	14.6	1.7	0850			
19690	BIGB	12	18	1708	N08 W55	12	14.6	1.1	0750			
19690	BIGB	12	19	1904	N08 W69	12	14.6	1.3	0700			
19691	BIGB	12	08	1712	S11 E77	12	14.5	.6	0800			
19691	BIGB	12	09	1634	S11 E66	12	14.6	1.0	1010			
19691	BIGB	12	10	1715	S11 E52	12	14.6	.8	0860			
19691	BIGB	12	12	2222	S11 E23	12	14.7	1.3	0530			
19691	BIGB	12	13	2045	S11 E11	12	14.7	1.1	0470			
19691	BIGB	12	14	2006	S11 W02	12	14.7	1.6	0530			
19691	BIGB	12	16	1812	S11 W28	12	14.6	1.4	0320			
19691	BIGB	12	17	2147	S11 W43	12	14.7	1.1	0240			
19691	BIGB	12	18	1708	S11 W54	12	14.6	.7	0240			
19691	BIGB	12	19	1904	S11 W68	12	14.7	.8	0210			
19692	BIGB	12	09	1634	N02 E79	12	15.6	3.7	1183	4708		
19692	BIGB	12	10	1715	N02 E66	12	15.6	3.0	1736	4708		
19692	BIGB	12	12	2222	N02 E39	12	15.8	3.0	2630	4708		
19692	BIGB	12	13	2045	N01 E26	12	15.8	3.1	1950	4708		
19692	BIGB	12	14	2006	N01 E14	12	15.9	2.9	3180	4708		
19692	BIGB	12	16	1812	N01 W12	12	15.9	2.5	3080	4708		
19692	BIGB	12	17	2147	N02 W27	12	15.9	2.5	2180	4708		
19692	BIGB	12	18	1708	N02 W38	12	15.9	2.3	1832	4708		
19692	BIGB	12	19	1904	N02 W52	12	15.9	2.5	1890	4708		
19692	BIGB	12	21	2033	N02 W78	12	16.0	2.1	0821	4708		
19693	BIGB	12	14	2006	S10 E33	12	17.3	3.6	0500	4709		
19693	BIGB	12	16	1812	S10 E07	12	17.3	3.2	2080	4709		
19693	BIGB	12	17	2147	S10 W08	12	17.3	2.5	1970	4709		
19693	BIGB	12	18	1708	S10 W19	12	17.3	2.1	1669	4709		
19693	BIGB	12	19	1904	S10 W33	12	17.3	2.3	2330	4709		
19693	BIGB	12	21	2033	S10 W61	12	17.3	2.2	1452	4709		
19693	BIGB	12	22	1935	S10 W75	12	17.2	1.6	0884	4709		
19695	BIGB	12	24	1827	N27 W48	12	21.0	1.2	0240			
19694	BIGB	12	22	1935	S02 E01	12	22.9	.8	0290			

DAILY PLAGE SUMMARIES

DECEMBER 1985

Day	Sta	Plage Index	Plage Count	Smallest Plage (Millionths of Solar Hemisphere)	Largest Plage	Total Area	Smallest Intensity	Largest Intensity
01	No Observations This DAY							
02	No Observations This DAY							
03	No Observations This DAY							
04	BIGB	1.7	3	480	630	1660	.7	1.8
05	BIGB	2.0	4	130	500	1410	.5	3.5
06	BIGB	2.3	4	60	910	1390	.7	2.8
07	BIGB	1.3	2	290	1240	1530	.9	2.2
08	BIGB	1.5	4	290	2181	4751	.6	2.3
09	BIGB	2.8	5	215	1450	5298	.8	3.7
10	BIGB	3.2	4	100	1736	3766	.3	3.0
11	No Observations This DAY							
12	BIGB	9.2	3	530	2630	4410	1.3	3.0
13	BIGB	7.8	3	470	1950	3540	1.1	3.1
14	BIGB	13.8	4	500	3180	5450	1.6	3.6
15	No Observations This DAY							
16	BIGB	16.4	4	320	3080	6670	1.4	3.2
17	BIGB	10.8	4	240	2180	5240	1.1	2.5
18	BIGB	7.1	4	240	1832	4491	.7	2.3
19	BIGB	7.6	4	210	2330	5130	.8	2.5
20	No Observations This DAY							
21	BIGB	1.8	2	821	1452	2273	2.1	2.2
22	BIGB	0.5	2	290	884	1174	.8	1.6
23	No Observations This DAY							
24	BIGB	0.2	1	240	240	240	1.2	1.2
25	No Observations This DAY							
26	No Observations This DAY							
27	No Observations This DAY							
28	No Observations This DAY							
29	No Observations This DAY							
30	No Observations This DAY							
31	No Observations This DAY							

DAILY PLAGE AREAS FOR DECEMBER 1985



82  
Late  
Dec 85

BIG BEAR SOLAR OBSERVATORY  
ACTIVE REGION SUMMARY

DECEMBER 1985

Region Number	Return Of Region	Rotation Age	First Seen This Rotation	Duration This Rotation
19685	New	1	851130	11
19687	New	1	851204	>01
19688	New	1	851205	<u>05</u> Days
19689	New	1	851206	01
19690	19680	3	851208	12
19691	19681	2	851208	<u>&gt;12</u>
19692	New in location of trailing portion of 19680	1	851209	13
19693	New	1	851214	10
19694	New	1	851222	>01
19695	New	1	851224	<u>&gt;01</u>

1. No Cak data on December 1-3, 11, 15, 20, 23, 25, 30, 31.
2. No KPNO magnetograms on December 5, 11, 12, 16, 24, 25, 31.
3. Contiguous Plages: 19690/19691/19692
4. No Active Plage Regions observed December 26-29.

CALCIUM PLAGE REGIONS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JANUARY 1986

Calcium Plage Region	Sta	Observation Time		Lat CMD	CMP Mo Day	Intensity	Corrected Area (10-6 Hemi)	NOAA/USAF Sunspot Groups			
		Mo	Day (UT)					#1	#2	#3	
19698	BIGB	01	13	1514	S12 W46	01 10.2	3.6	1110	4710		
19698	BIGB	01	16	1447	S11 W83	01 10.4	3.9	1500	4710		
19696	BIGB	01	06	1915	N07 E59	01 11.2	2.4	3840			
19696	BIGB	01	07	2153	N07 E46	01 11.3	2.5	3810			
19696	BIGB	01	08	1508	N07 E34	01 11.2	2.3	3380			
19696	BIGB	01	09	1509	N07 E20	01 11.1	1.9	3620			
19696	BIGB	01	10	1500	N07 E07	01 11.1	1.6	3020			
19696	BIGB	01	11	1506	N07 W06	01 11.2	2.1	2690			
19696	BIGB	01	12	1459	N07 W19	01 11.2	1.8	2090			
19696	BIGB	01	13	1514	N07 W32	01 11.2	1.3	2200			
19696	BIGB	01	16	1447	N07 W68	01 11.5	1.7	1232			
19696	BIGB	01	17	1446	N07 W75	01 12.0	2.0	0990			
19699	BIGB	01	16	1447	N22 W52	01 12.6	2.5	0160			
19699	BIGB	01	17	1446	N22 W65	01 12.6	1.2	0110			
19697	BIGB	01	06	1915	S09 E82	01 12.9	1.8	0910			
19697	BIGB	01	07	2153	S09 E68	01 13.0	2.5	1890			
19697	BIGB	01	08	1508	S09 E60	01 13.1	3.2	2150			
19697	BIGB	01	09	1509	S09 E47	01 13.1	2.9	2510			
19697	BIGB	01	10	1500	S09 E35	01 13.2	2.3	1970			
19697	BIGB	01	11	1506	S09 E19	01 13.0	2.5	1700			
19697	BIGB	01	12	1459	S09 E06	01 13.1	2.4	1450			
19697	BIGB	01	13	1514	S09 W06	01 13.2	1.3	1440			
19697	BIGB	01	16	1447	S09 W45	01 13.2	2.2	1190			
19697	BIGB	01	17	1446	S09 W59	01 13.2	2.4	1080			
19697	BIGB	01	18	1504	S09 W72	01 13.2	2.4	0970			
19697	BIGB	01	19	1535	S09 W85	01 13.3	.7	0901			
19701	BIGB	01	22	1549	N03 W04	01 22.4	1.3	0060			
19701	BIGB	01	24	1455	N03 W30	01 22.4	1.1	0200			
19703	BIGB	01	24	1455	N16 W20	01 23.1	1.4	0220			
19702	BIGB	01	24	1455	N20 W10	01 23.8	1.4	0140			
19700	BIGB	01	21	1921	N32 E70	01 27.3	3.1	0227	4710B		
19700	BIGB	01	22	1549	N32 E59	01 27.3	2.5	0210	4710B		
19700	BIGB	01	24	1455	N32 E33	01 27.2	2.5	0500	4710B		
19700	BIGB	01	26	1528	N32 E07	01 27.2	1.7	0560	4710B		
19700	BIGB	01	27	1607	N32 W03	01 27.4	1.7	0330	4710B		
19704	BIGB	01	26	1528	S31 E13	01 27.7	1.4	0150	4710C		
19707	BIGB	02	03	1549	S04 W55	01 30.6	3.0	1410	4712		

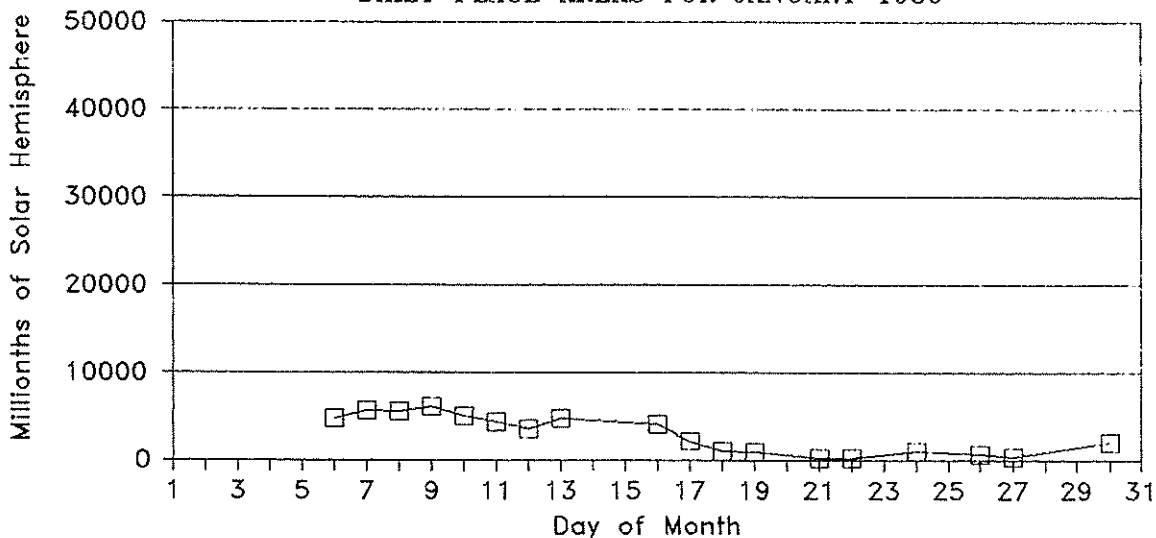


DAILY PLAGE SUMMARIES

JANUARY 1986

Day	Sta	Plage Index	Plage Count	Smallest Plage (Millionths)	Largest Plage (Millionths)	Total Area (Millionths of Solar Hemisphere)	Smallest Intensity	Largest Intensity
01	No Observations This DAY							
02	No Observations This DAY							
03	No Observations This DAY							
04	No Observations This DAY							
05	No Observations This DAY							
06	BIGB	4.7	2	910	3840	4750	1.8	2.4
07	BIGB	8.0	2	1890	3810	5700	2.5	2.5
08	BIGB	9.6	2	2150	3380	5530	2.3	3.2
09	BIGB	11.2	2	2510	3620	6130	1.9	2.9
10	BIGB	8.4	2	1970	3020	4990	1.6	2.3
11	BIGB	9.5	2	1700	2690	4390	2.1	2.5
12	BIGB	6.9	2	1450	2090	3540	1.8	2.4
13	BIGB	6.9	3	1110	2200	4750	1.3	3.6
14	No Observations This DAY							
15	No Observations This DAY							
16	BIGB	3.2	4	160	1500	4082	1.7	3.9
17	BIGB	1.8	3	110	1080	2180	1.2	2.4
18	BIGB	0.6	1	970	970	970	2.4	2.4
19	BIGB	0.0	1	901	901	901	.7	.7
20	No Observations This DAY							
21	BIGB	0.2	1	227	227	227	3.1	3.1
22	BIGB	0.3	2	60	210	270	1.3	2.5
23	No Observations This DAY							
24	BIGB	1.5	4	140	500	1060	1.1	2.5
25	No Observations This DAY							
26	BIGB	1.0	2	150	560	710	1.4	1.7
27	BIGB	0.5	1	330	330	330	1.7	1.7
28	No Observations This DAY							
29	No Observations This DAY							
30	BIGB	1.0	1	2008	2008	2008	3.2	3.2
31	No Observations This DAY							

DAILY PLAGE AREAS FOR JANUARY 1986



BIG BEAR SOLAR OBSERVATORY  
ACTIVE REGION SUMMARY

JANUARY 1986

Region Number	Return Of Region	Rotation Age	First Seen This Rotation	Duration This Rotation
19696	19690, 19692	4 & 2	860106	>12 days
19697	19693	2	860106	14
19698	New	1	860113	04
19699	New	1	860116	>02
19700	New	1	860121	07
19701	New	1	860122	3
19702	New	1	860124	>01
19703	New	1	860124	>01
19704	New	1	860126	01
19707	New	1	860203	>01

1. No BBSO Cak Data on January 2, 4, 5, 14, 15, 23, 25 and 31.
2. No KPNO Magnetograms on January 2,3, 7, 14, 15, 30 and 31.
3. Contiguous Plages: None
4. Plageless (no Calcium Plages) days: January 1, 3, 20, 28 and 29.

86  
Late  
Feb 86

CALCIUM PLAGE REGIONS  
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1986

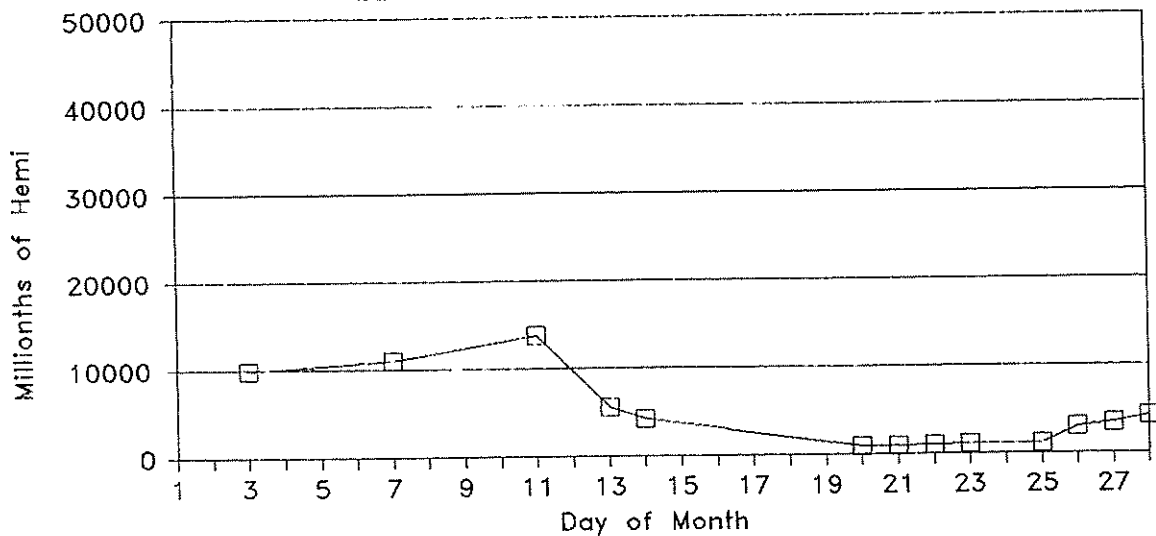
Calcium Plage Region	Sta	Observation Time		Lat CMD	OMP		Intensity	Corrected Area (10-6 Hem1)	NOAA/USAF Sunspot Groups			
		Mo	Day (UT)		Mo	Day			#1	#2	#3	
19705	BIGB	01	30	1515	S12 E79	02	5.6	3.2	2008	4711		
19705	BIGB	02	03	1549	S12 E30	02	5.9	3.9	4652	4711		
19705	BIGB	02	07	1820	S12 W24	02	5.9	4.4	5287	4711		
19705	BIGB	02	11	1600	S13 W79	02	5.7	3.6	6409	4711		
19706	BIGB	02	03	1549	N05 E45	02	7.0	1.7	1980			
19706	BIGB	02	07	1820	N05 W10	02	7.0	1.5	2069			
19706	BIGB	02	11	1600	N05 W67	02	6.6	1.3	1990			
19708	BIGB	02	03	1549	S14 E73	02	9.2	2.2	0560			
19708	BIGB	02	07	1820	S14 E19	02	9.2	1.2	0960			
19708	BIGB	02	11	1600	S14 W35	02	9.0	1.2	0820			
19708	BIGB	02	13	1458	S14 W62	02	8.9	1.2	0605			
19708	BIGB	02	14	1628	S14 W77	02	8.9	1.2	0215			
19709	BIGB	02	03	1549	S02 E78	02	9.5	3.7	1350	4713		
19709	BIGB	02	07	1820	S02 E20	02	9.2	4.1	2717	4713		
19709	BIGB	02	11	1600	S02 W37	02	8.9	4.3	4539	4713		
19709	BIGB	02	13	1458	S02 W63	02	8.9	4.1	4949	4713		
19709	BIGB	02	14	1628	S02 W77	02	8.9	3.5	4003	4713		
19711	BIGB	02	21	1520	S12 E05	02	22.0	2.0	0110			
19711	BIGB	02	22	1429	S12 W08	02	22.0	.8	0110			
19710	BIGB	02	20	1447	S04 E76	02	26.3	2.0	0940	4714		
19710	BIGB	02	21	1520	S04 E63	02	26.3	2.0	0764	4714		
19710	BIGB	02	22	1429	S04 E50	02	26.3	2.1	0906	4714		
19710	BIGB	02	23	1449	S04 E37	02	26.4	2.2	1117	4714		
19710	BIGB	02	25	1433	S04 E11	02	26.4	1.9	1130	4714		
19710	BIGB	02	26	1412	S04 W08	02	26.0	2.2	0890	4714		
19710	BIGB	02	27	1420	S04 W21	02	26.0	1.6	0860	4714		
19710	BIGB	02	28	1417	S04 W33	02	26.1	2.0	0630	4714		
19710	BIGB	03	01	1422	S05 W46	02	26.2	2.0	0630	4714		
19710	BIGB	03	02	1459	S05 W60	02	26.2	1.3	0440	4714		
19710	BIGB	03	03	1457	S05 W74	02	26.2	1.4	0480	4714		
19715	BIGB	03	01	1422	N08 W42	02	26.5	1.1	0110			
19712	BIGB	02	26	1412	N01 E02	02	26.7	2.7	0160	4716		
19712	BIGB	02	27	1420	N01 W12	02	26.7	2.6	0750	4716		
19712	BIGB	02	28	1417	N01 W25	02	26.7	2.5	0600	4716		
19712	BIGB	03	01	1422	N01 W39	02	26.8	2.3	0390	4716		
19712	BIGB	03	02	1459	N01 W52	02	26.8	2.1	0300	4716		
19712	BIGB	03	03	1457	N02 W71	02	26.4	1.2	0185	4716		
19719	BIGB	03	06	1420	S17 W82	02	28.4	1.4	0468			
19718A	BIGB	03	03	1457	N03 W36	02	28.9	2.0	0100			

DAILY PLAGE SUMMARIES

FEBRUARY 1986

Day	Sta	Plage Index	Plage Count	Smallest Plage (Millionths of Solar Hemisphere)	Largest Plage	Total Area	Smallest Intensity	Largest Intensity
01	No Observations This DAY							
02	No Observations This DAY							
03	BIGB	21.1	5	560	4652	9952	1.7	3.9
04	No Observations This DAY							
05	No Observations This DAY							
06	No Observations This DAY							
07	BIGB	35.2	4	960	5287	11033	1.2	4.4
08	No Observations This DAY							
09	No Observations This DAY							
10	No Observations This DAY							
11	BIGB	20.6	4	820	6409	13758	1.2	4.3
12	No Observations This DAY							
13	BIGB	9.0	2	605	4949	5554	1.2	4.1
14	BIGB	2.7	2	215	4003	4218	1.2	3.5
15	No Observations This DAY							
16	No Observations This DAY							
17	No Observations This DAY							
18	No Observations This DAY							
19	No Observations This DAY							
20	BIGB	0.4	1	940	940	940	2.0	2.0
21	BIGB	0.9	2	110	764	874	2.0	2.0
22	BIGB	1.3	2	110	906	1016	.8	2.1
23	BIGB	1.9	1	1117	1117	1117	2.2	2.2
24	No Observations This DAY							
25	BIGB	2.1	1	1130	1130	1130	1.9	1.9
26	BIGB	2.9	3	160	1929	2979	2.2	2.7
27	BIGB	4.5	3	750	1830	3440	1.6	2.6
28	BIGB	5.4	4	600	1760	4231	1.5	2.7

DAILY PLAGE AREAS FOR FEBRUARY 1986



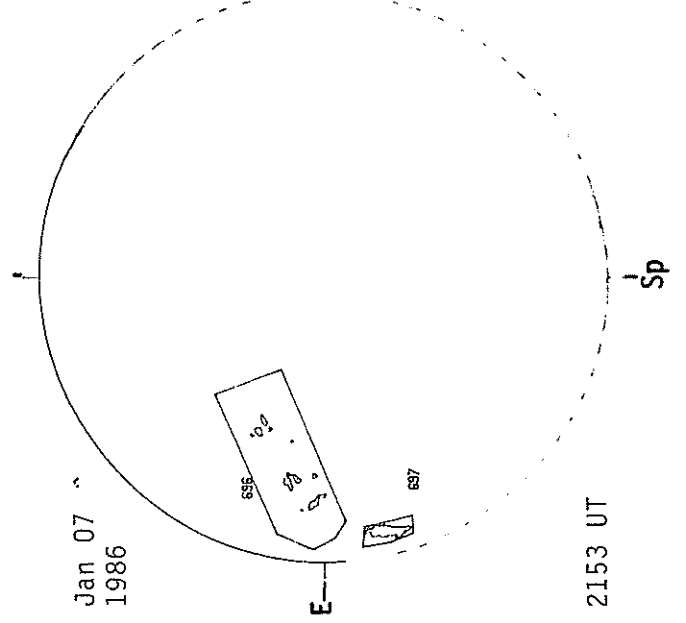
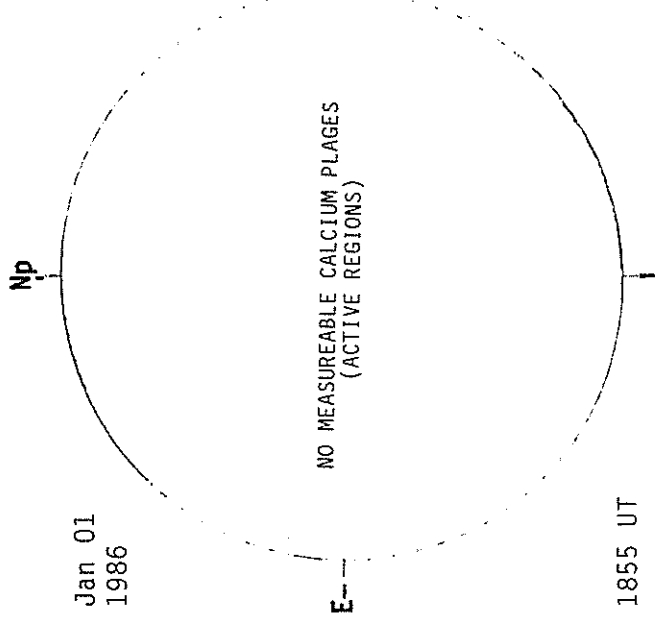
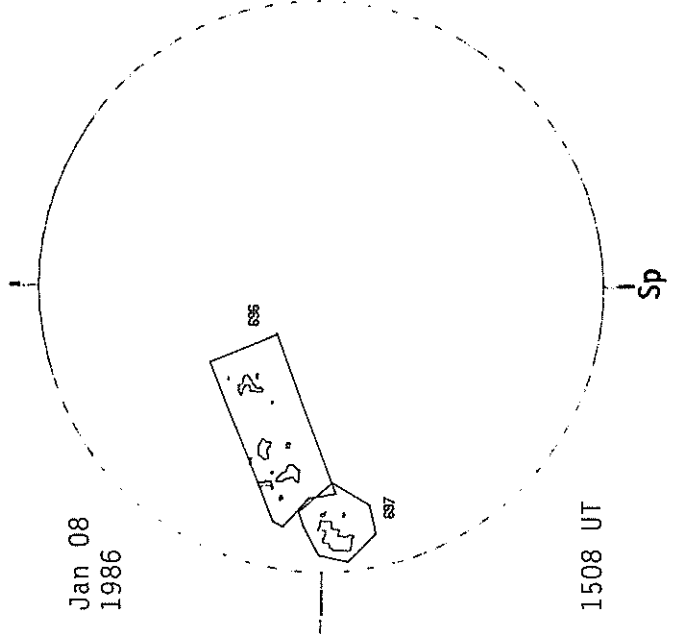
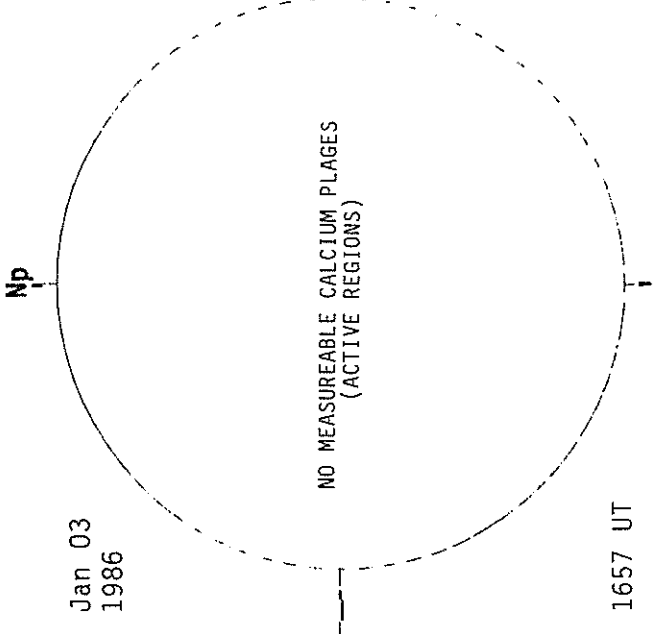
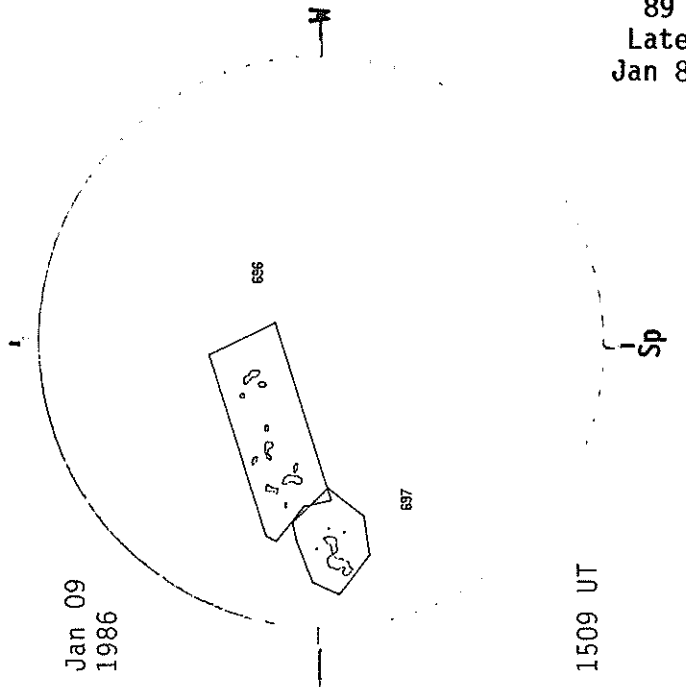
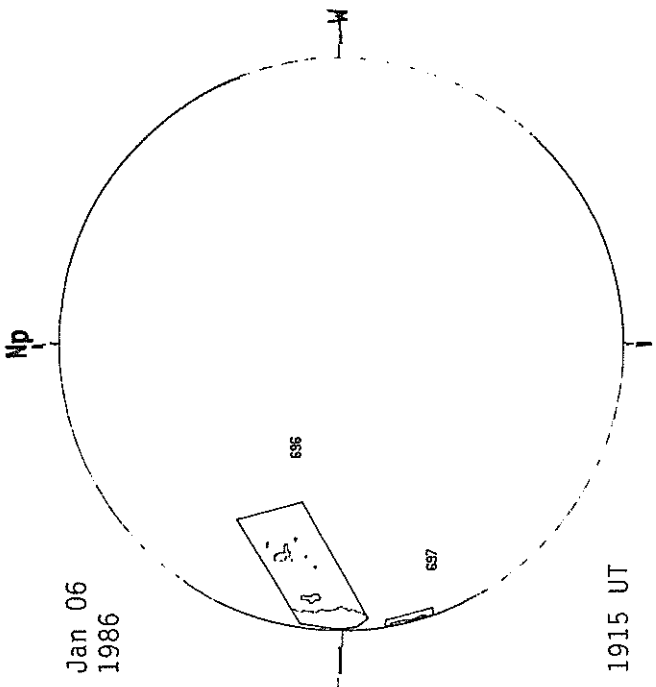
88  
Late  
Feb 86

BIG BEAR SOLAR OBSERVATORY  
ACTIVE REGION SUMMARY

FEBRUARY 1986

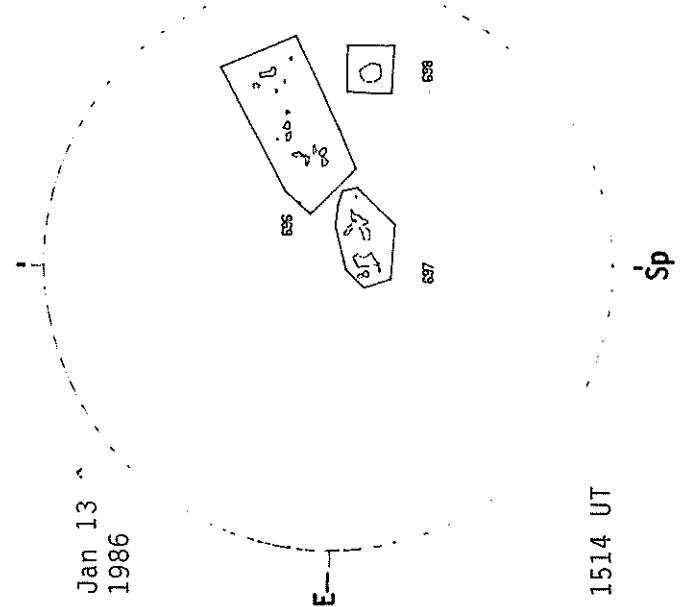
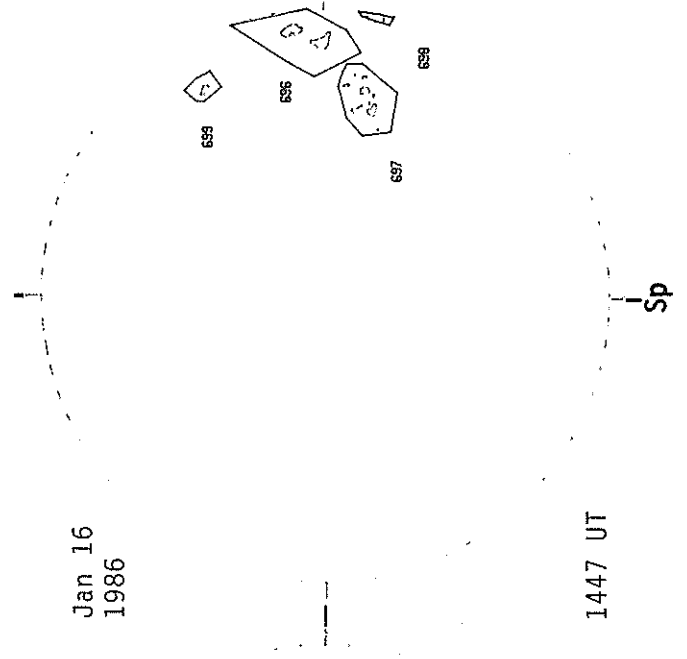
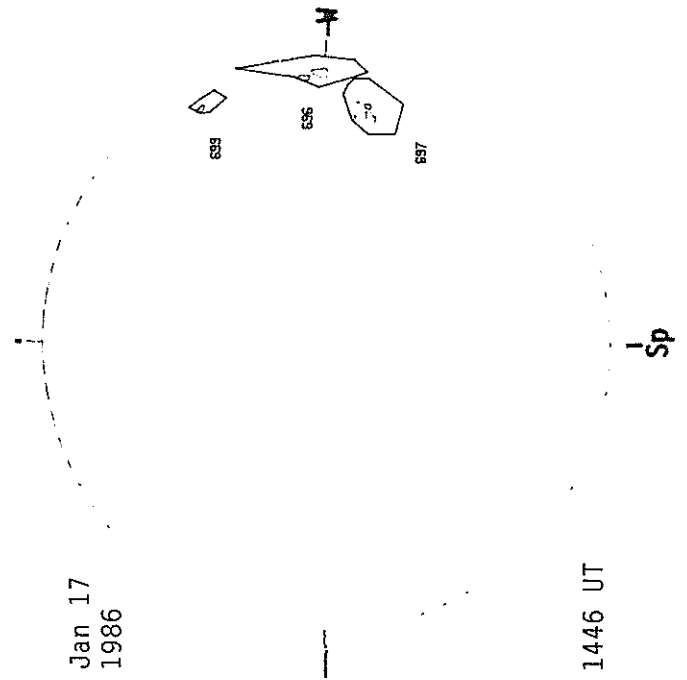
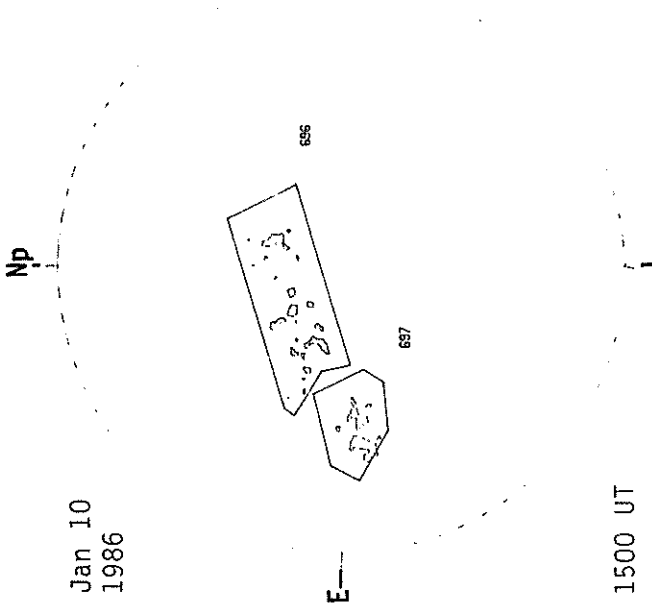
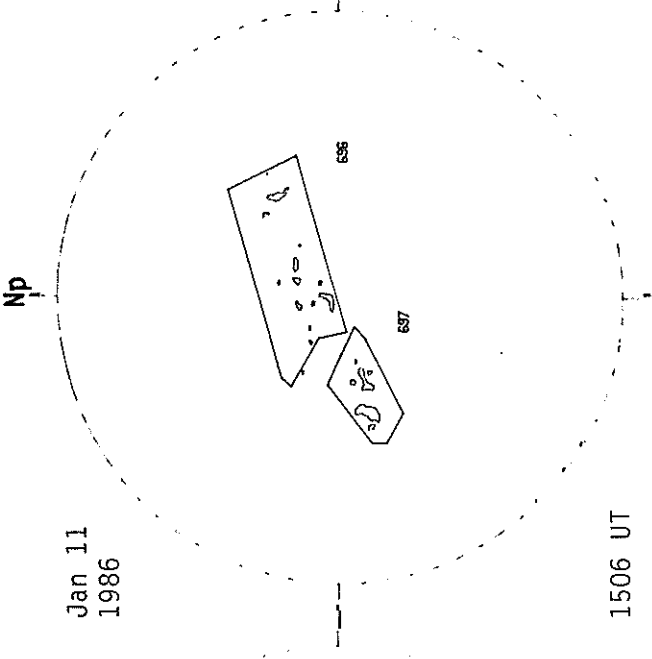
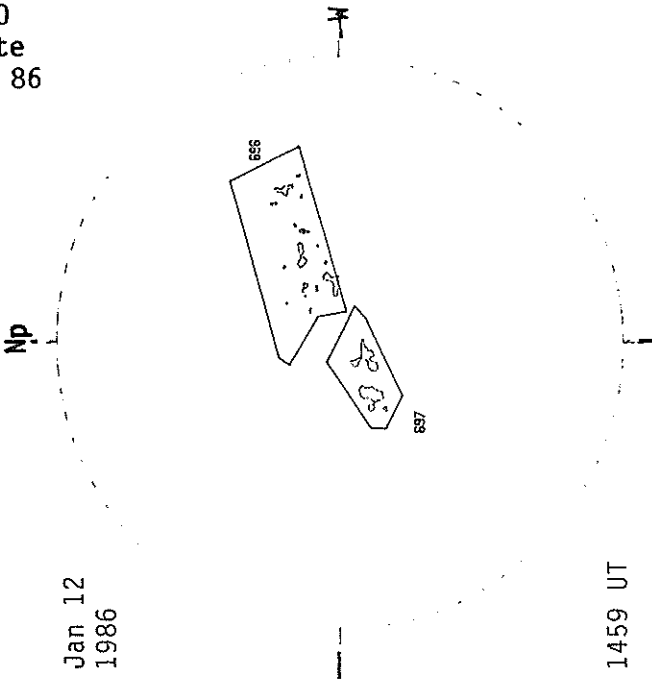
Region Number	Return Of Region	Rotation Age	First Seen This Rotation	Duration This Rotation
19705	19698	2	860130	>13 days
19706	19696	5 & 3	860203	>11
19708	19697	3	860203	13
19709	New	1	860203	13
19710	19707	2	860220	>13
19711	New	1	860221	02
19712	New	1	860226	07
19715	New	1	860301	01

1. No BBSO Cak Data on February 1, 2, 4-6, 8-10, 12, 15, 16, 18 and 24.
2. No KPNO Magnetograms on February 1, 4, 6, 8, 9, 15 and 16.
3. Contiguous Plages: 19710/19712
4. Plageless (no Calcium Plages) days: February 17, 19.



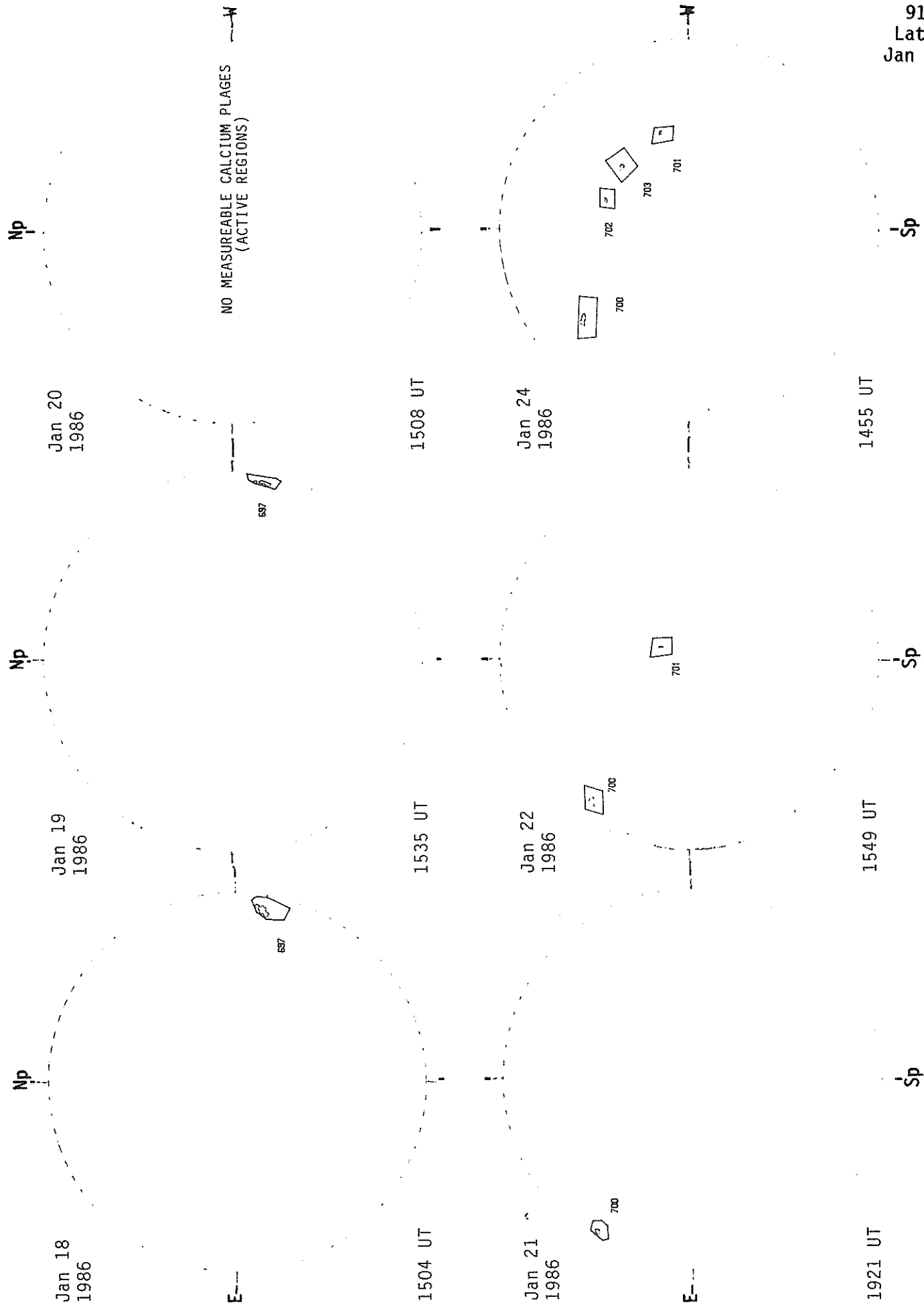
90  
Late  
Jan 86

BIG BEAR SOLAR CALCIUM PLAGE REGIONS



BIG BEAR SOLAR CALCIUM PLAGE REGIONS

91  
Late  
Jan 86



Jan 18  
1986

Jan 19  
1986

Jan 20  
1986

Jan 21  
1986

Jan 22  
1986

Jan 24  
1986

1504 UT

1535 UT

1508 UT

1921 UT

1549 UT

1455 UT

E---

E---

Np

Np

Np

Sp

Sp

Sp

NO MEASUREABLE CALCIUM PLAGES  
(ACTIVE REGIONS)

W---

W---

Sp

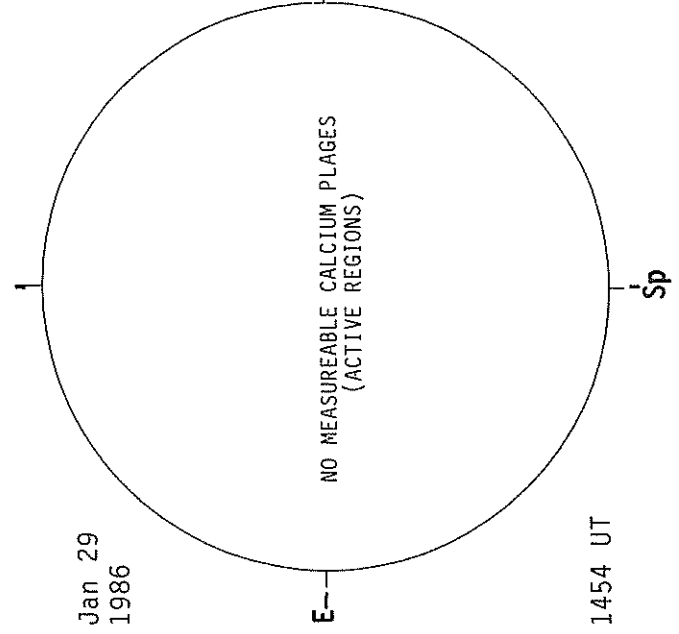
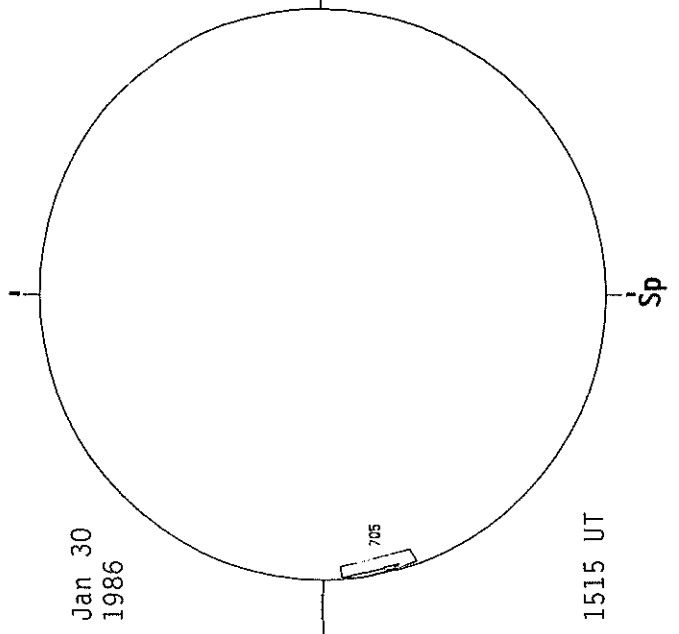
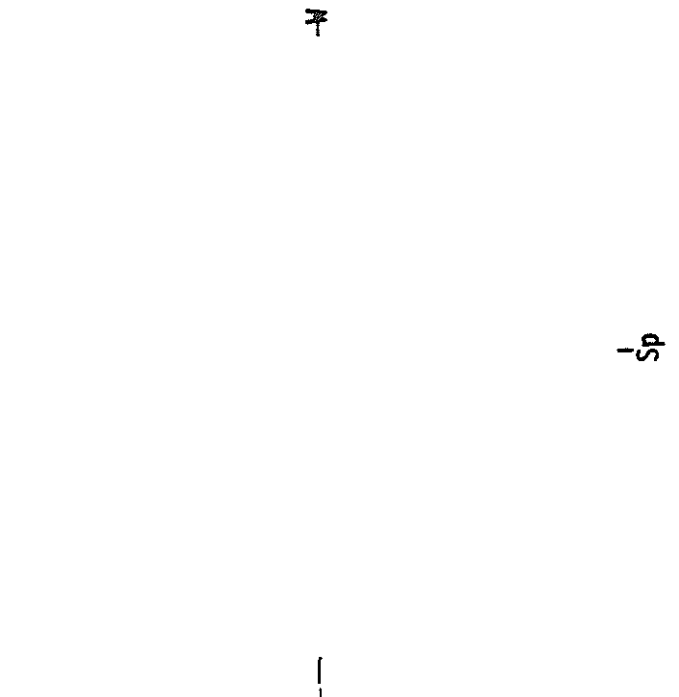
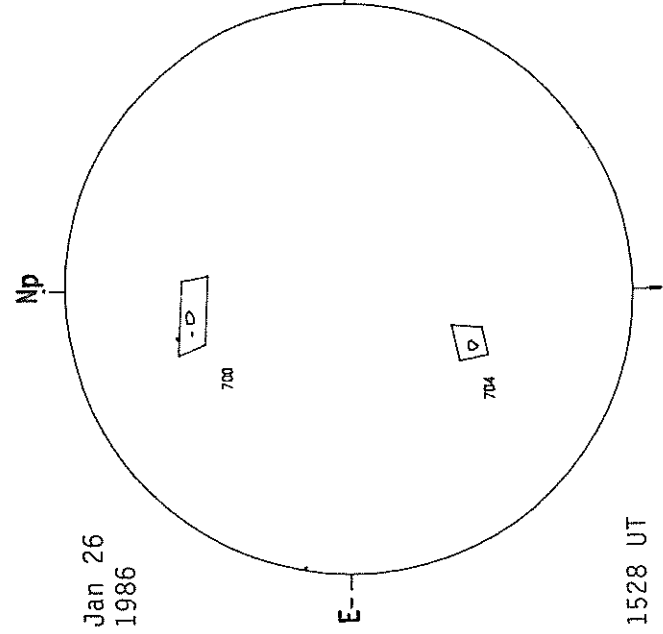
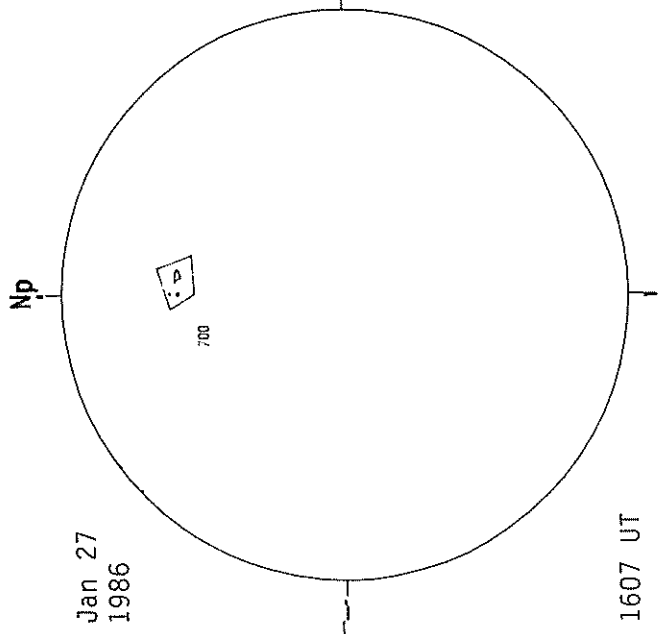
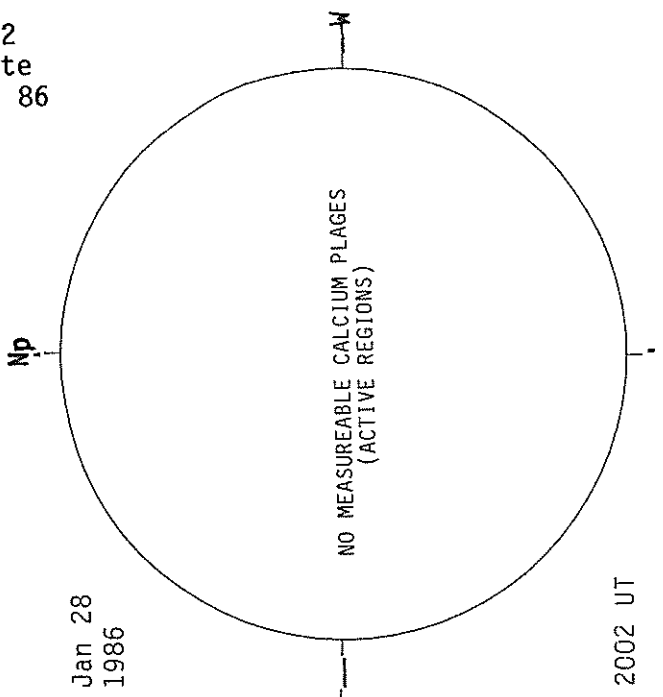
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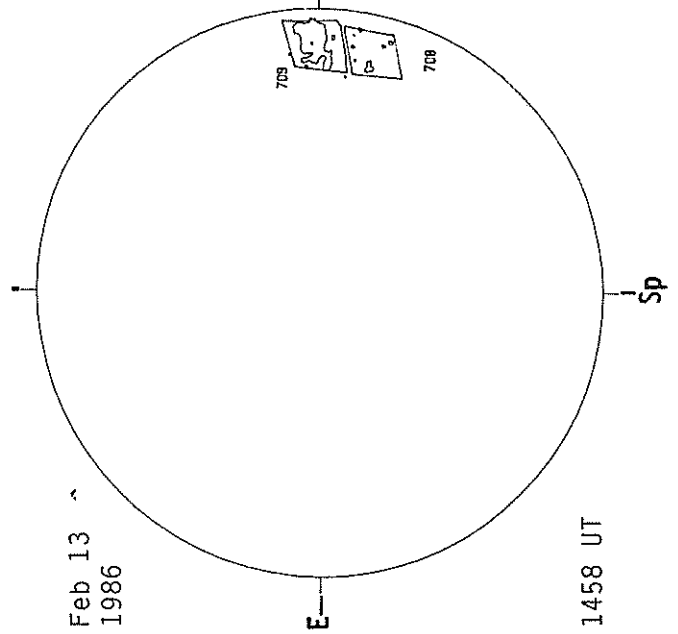
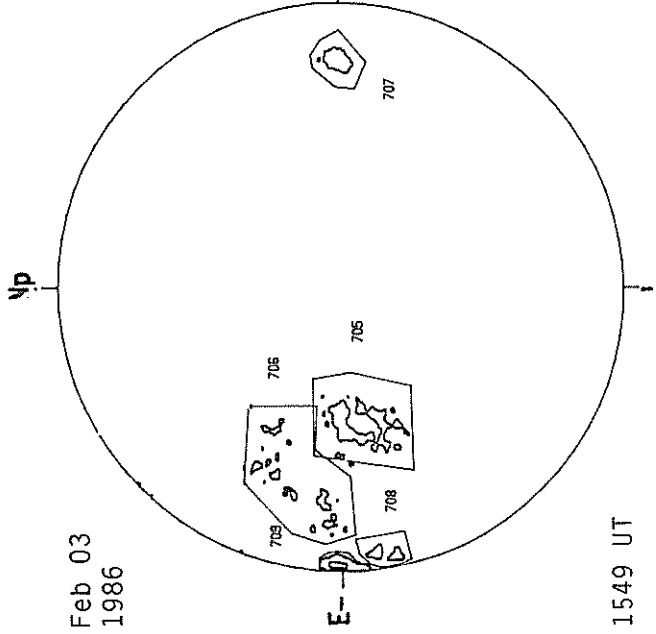
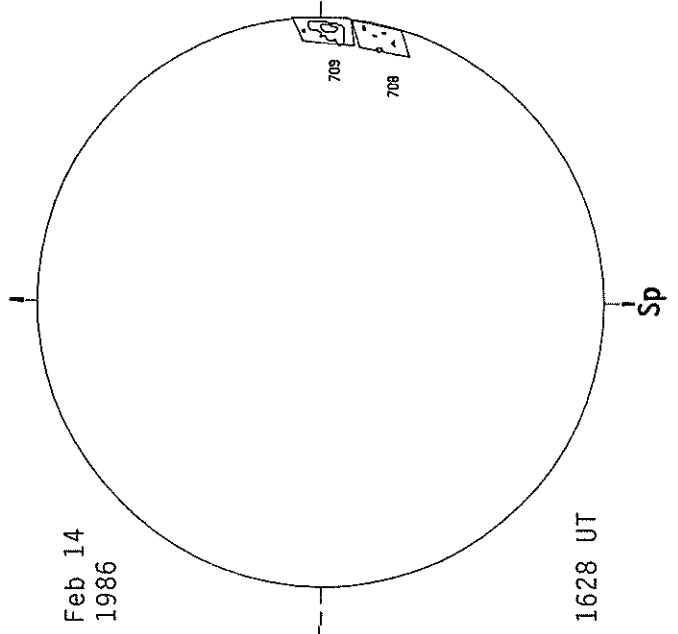
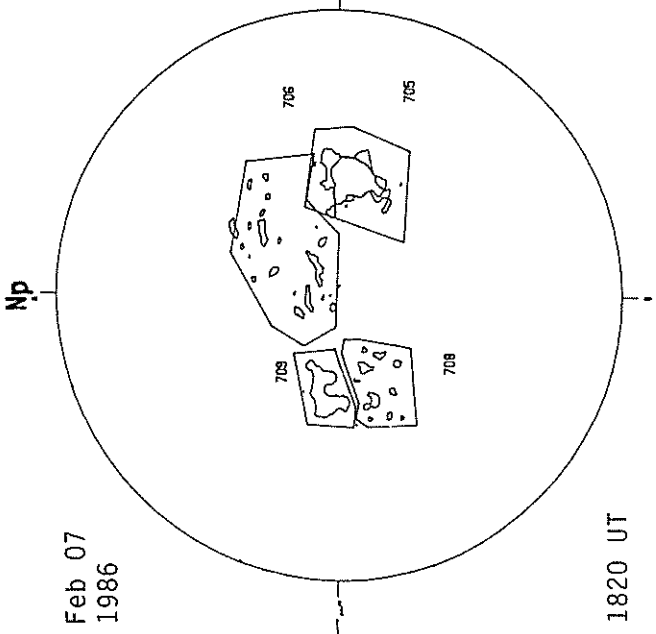
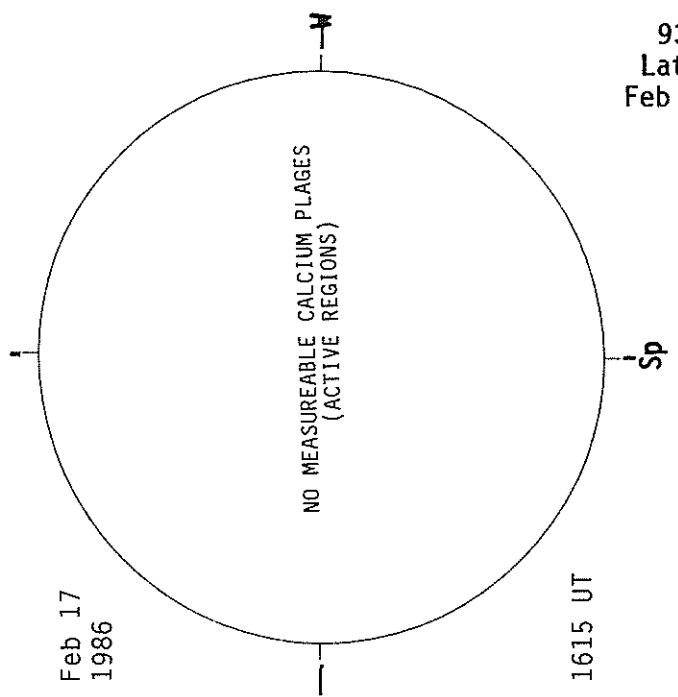
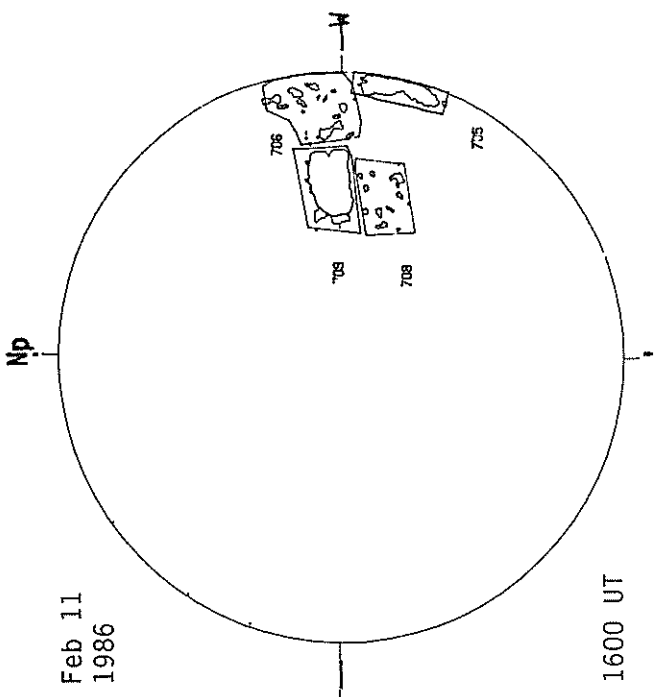
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BIG BEAR SOLAR CALCIUM PLAGE REGIONS

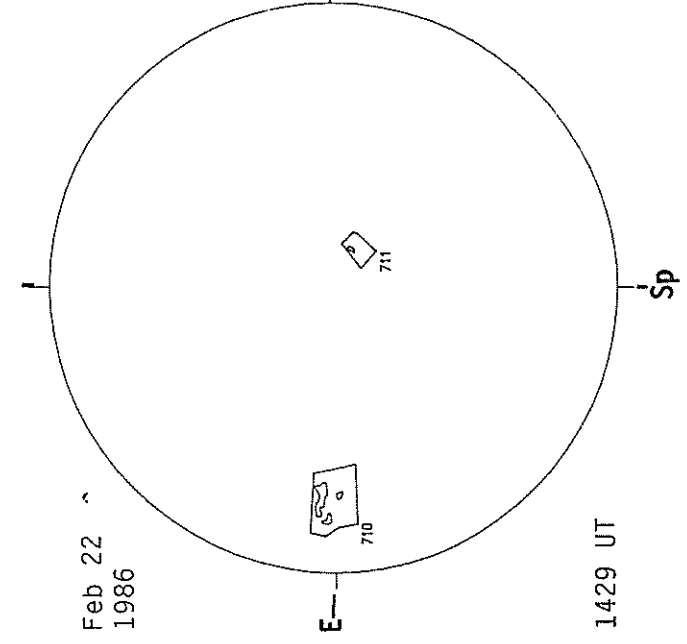
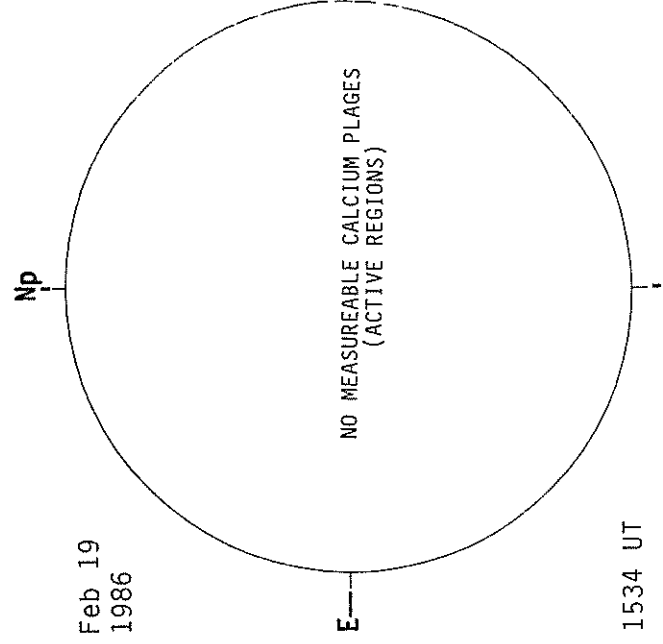
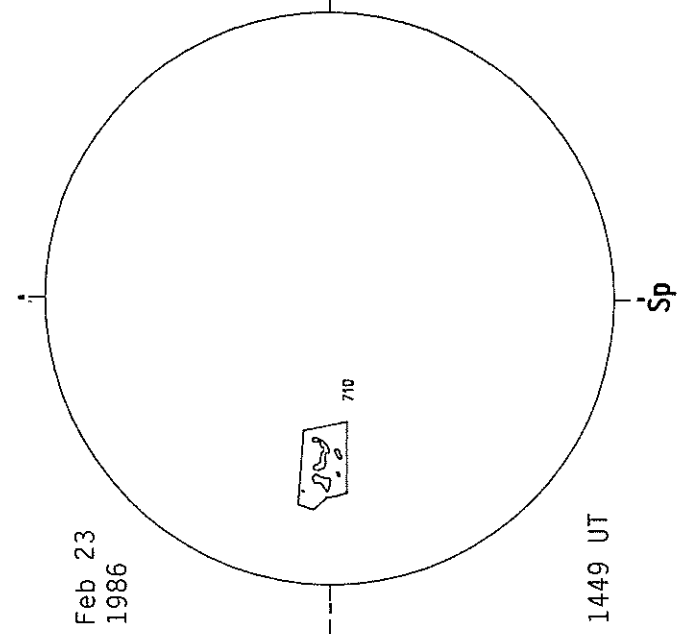
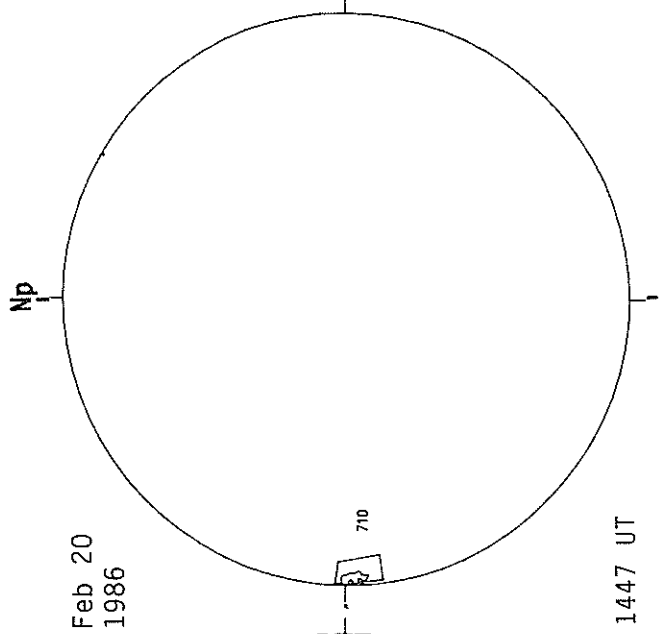
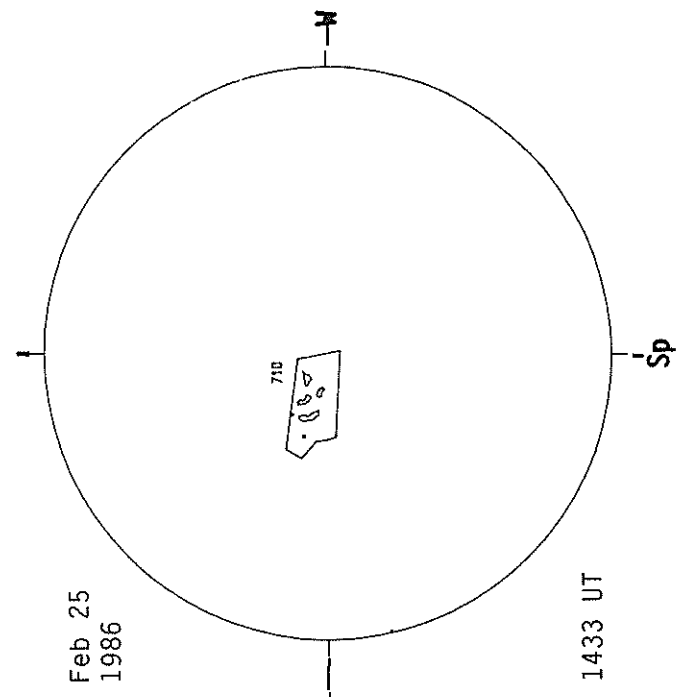
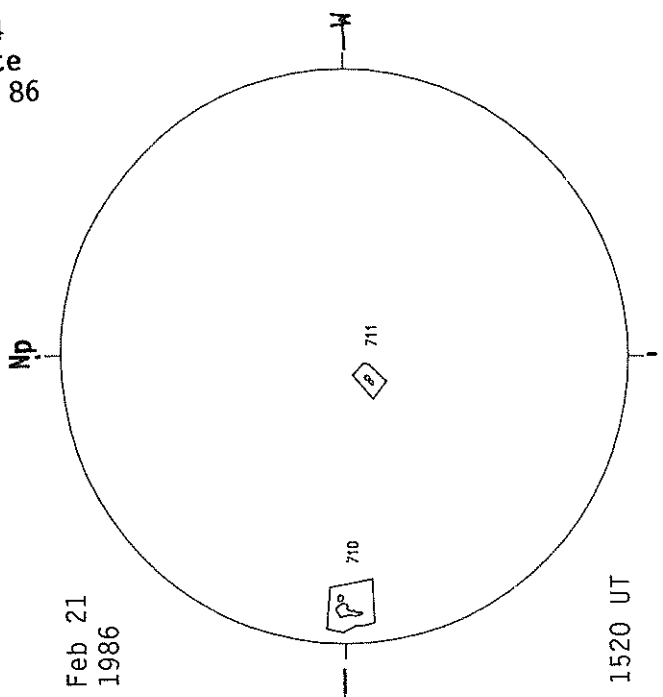
92  
Late  
Jan 86



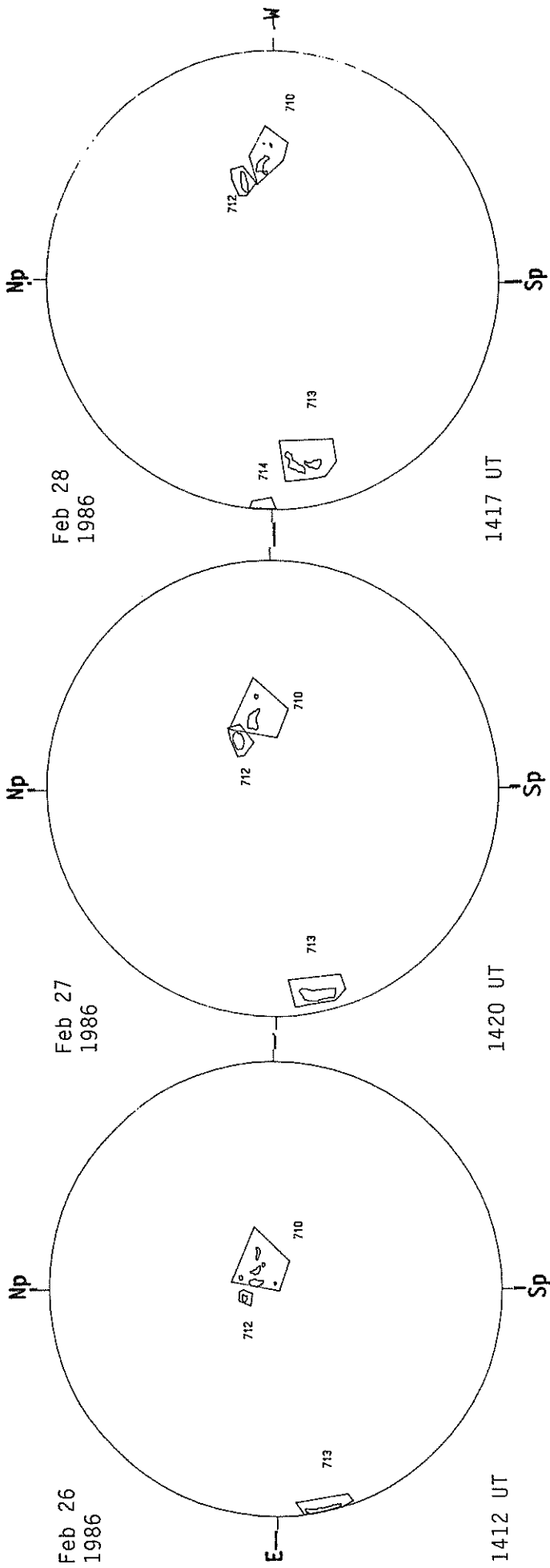


94  
Late  
Feb 86

BIG BEAR SOLAR CALCIUM PLAGE REGIONS

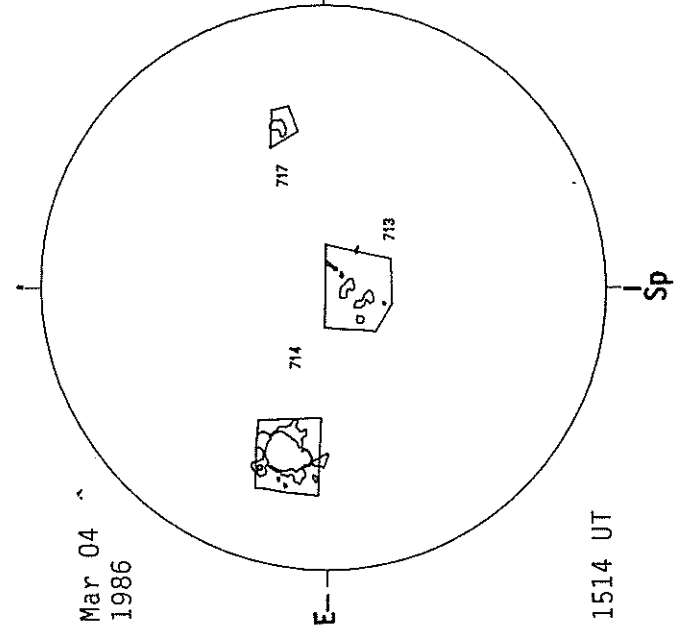
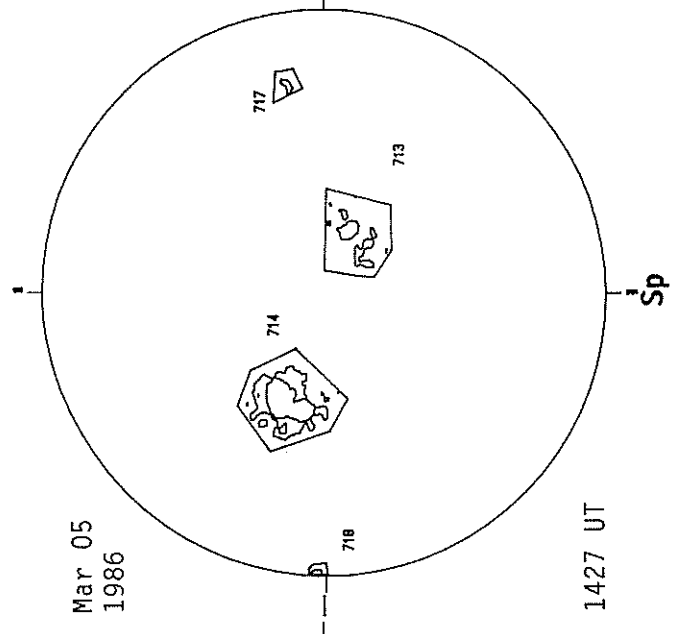
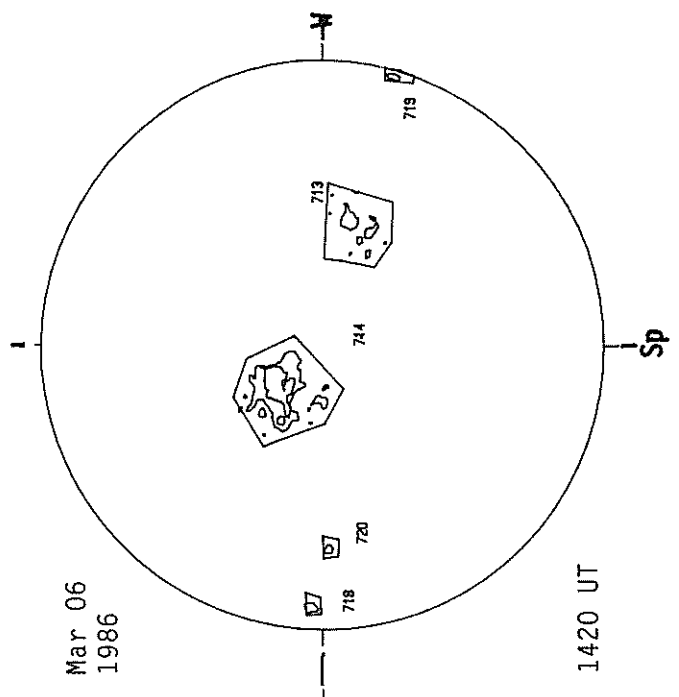
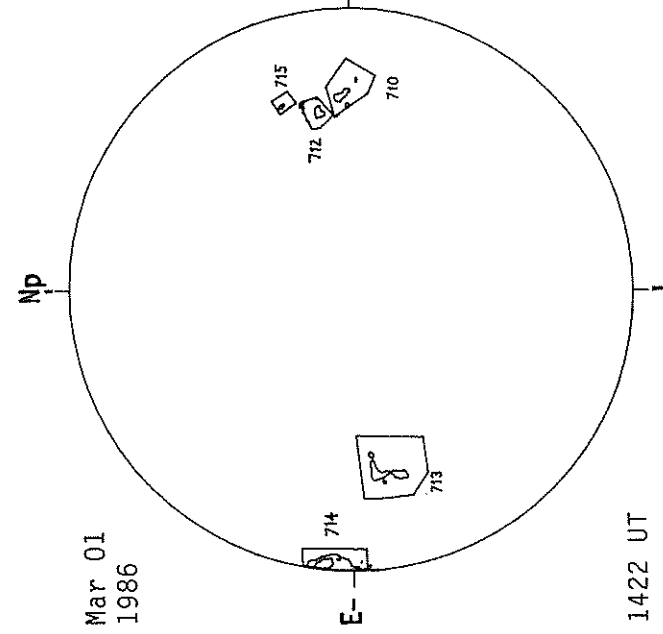
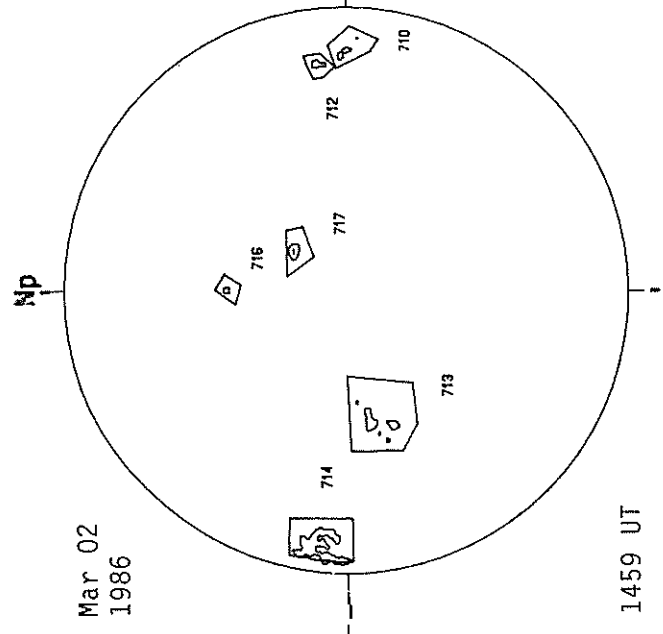
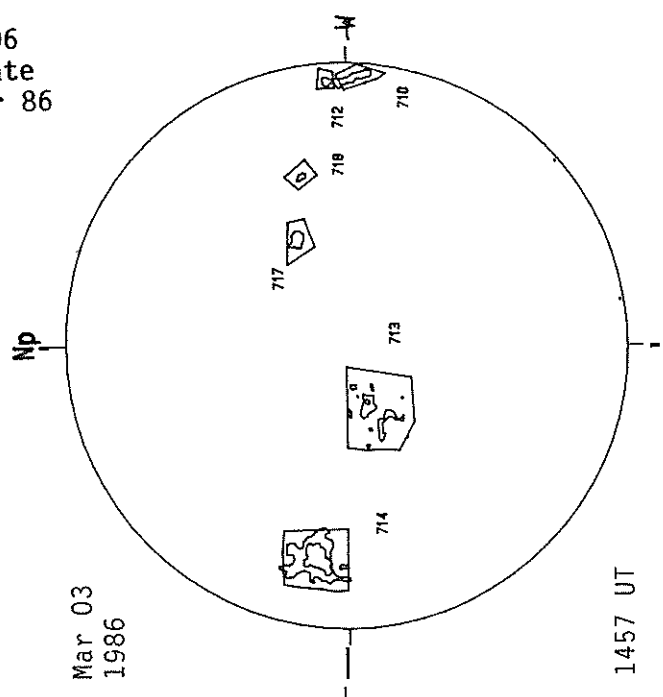


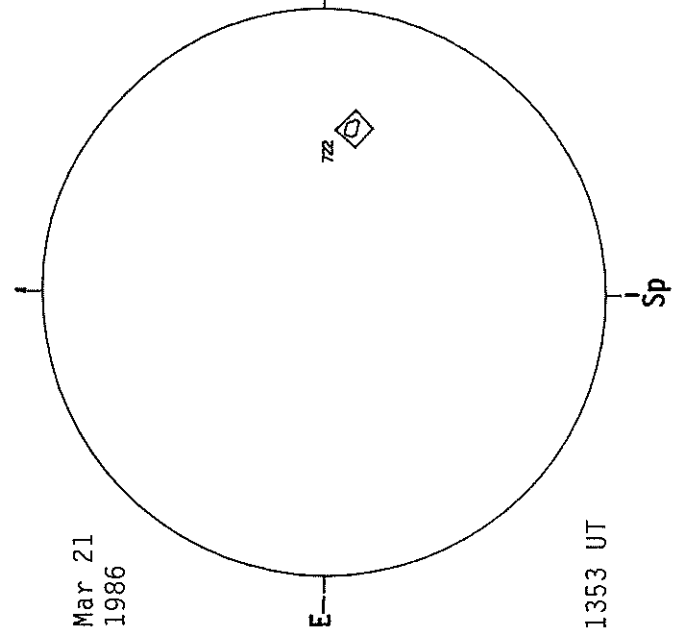
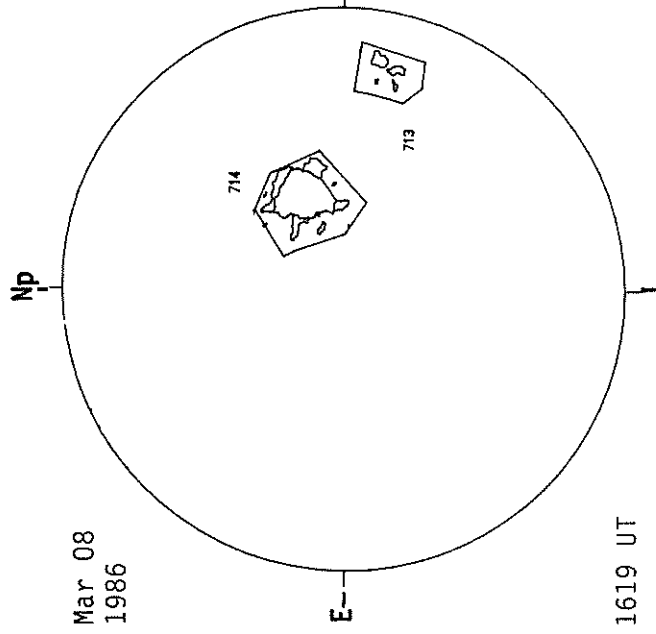
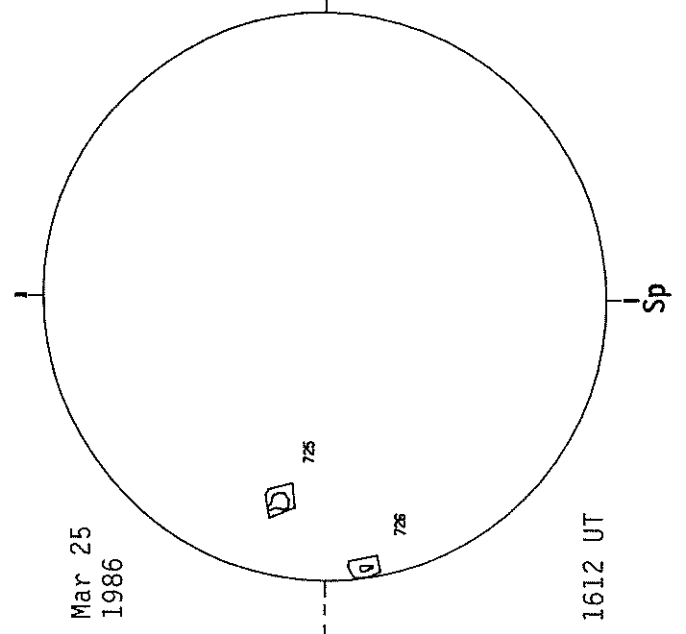
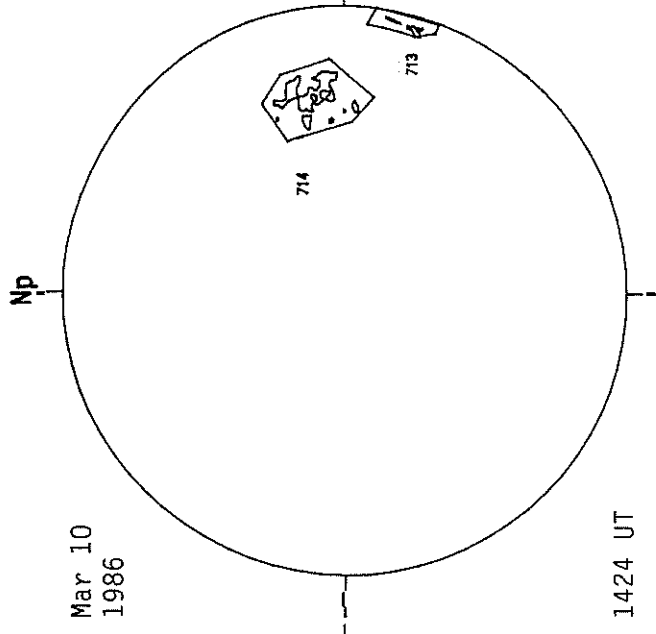
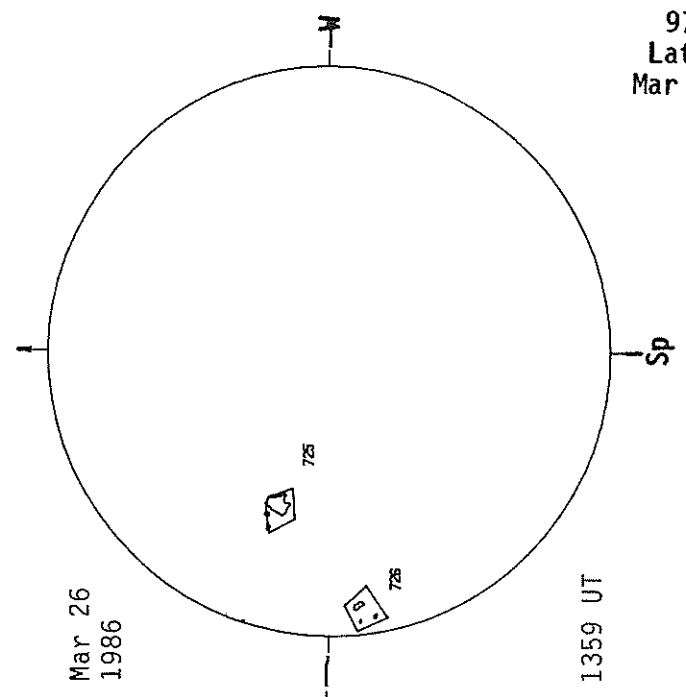
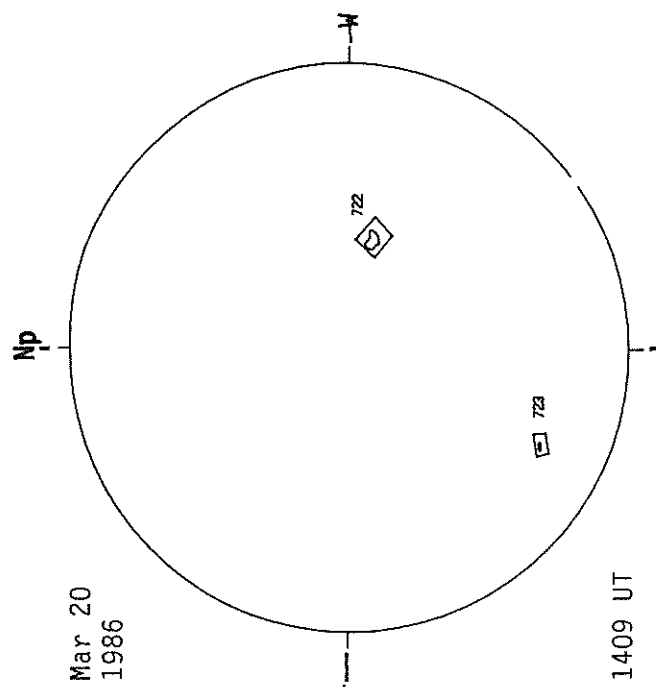
BIG BEAR SOLAR CALCIUM PLAGE REGIONS



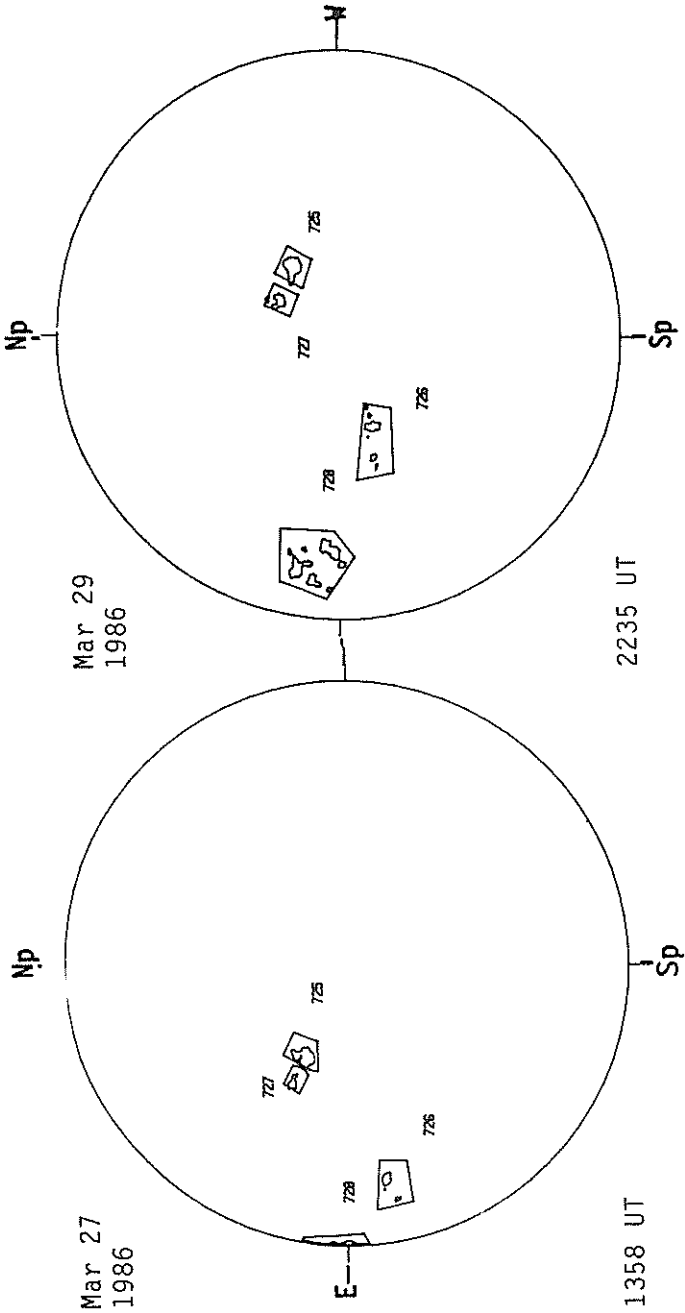
BIG BEAR SOLAR CALCIUM PLAGE REGIONS

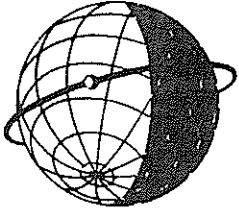
96  
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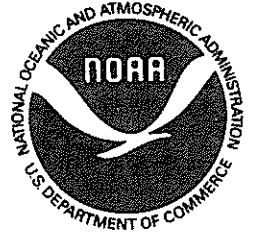


BIG BEAR SOLAR CALCIUM PLAGE REGIONS





**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."