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JUNE 1997 NUMBER 634 - Part I

Solar-Geophysical Data prompt reports

Data for April, May 1997 and Late Data

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SOLAR-GEOPHYSICAL DATA

Number 634

(Issued in Two Parts)

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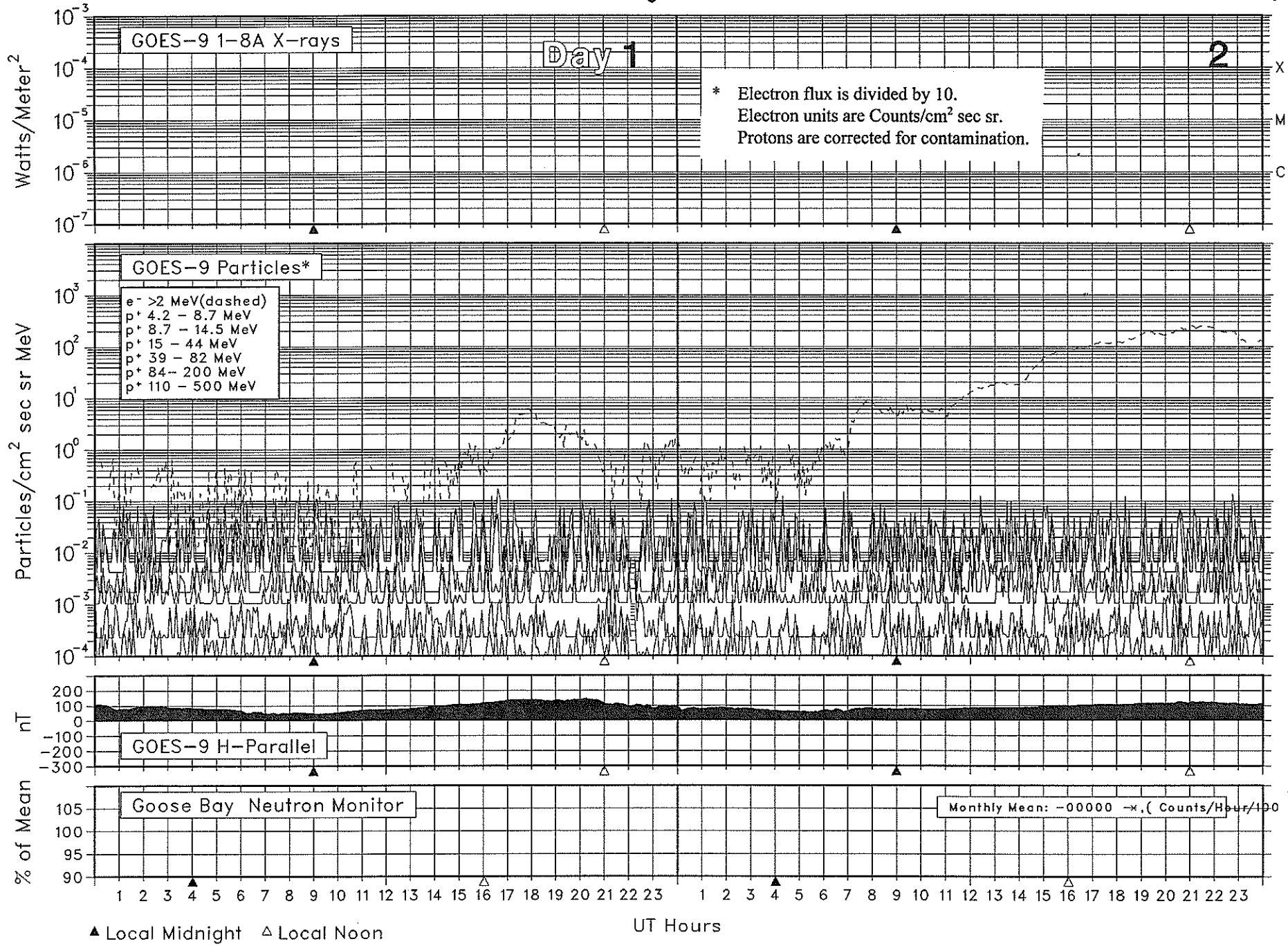

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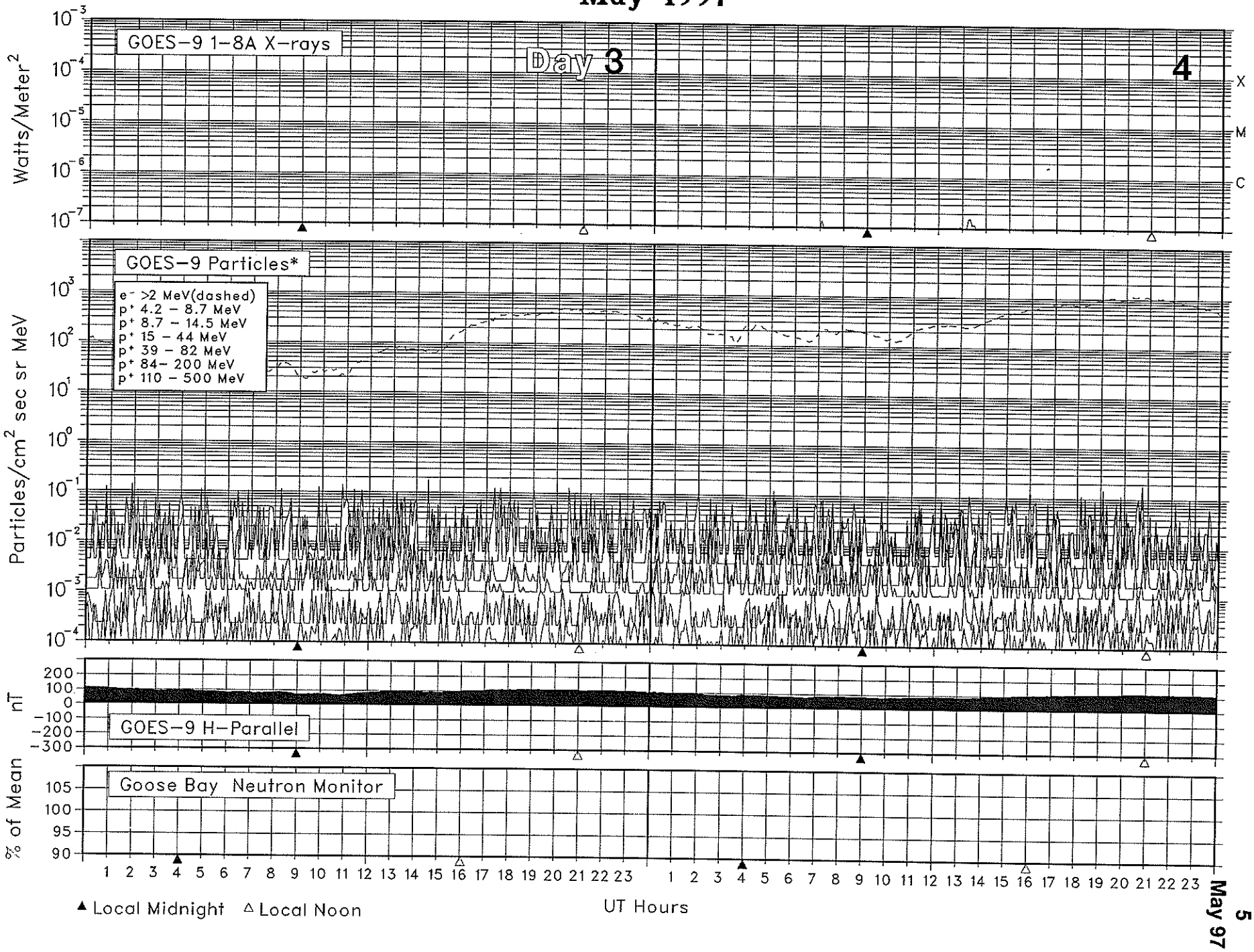

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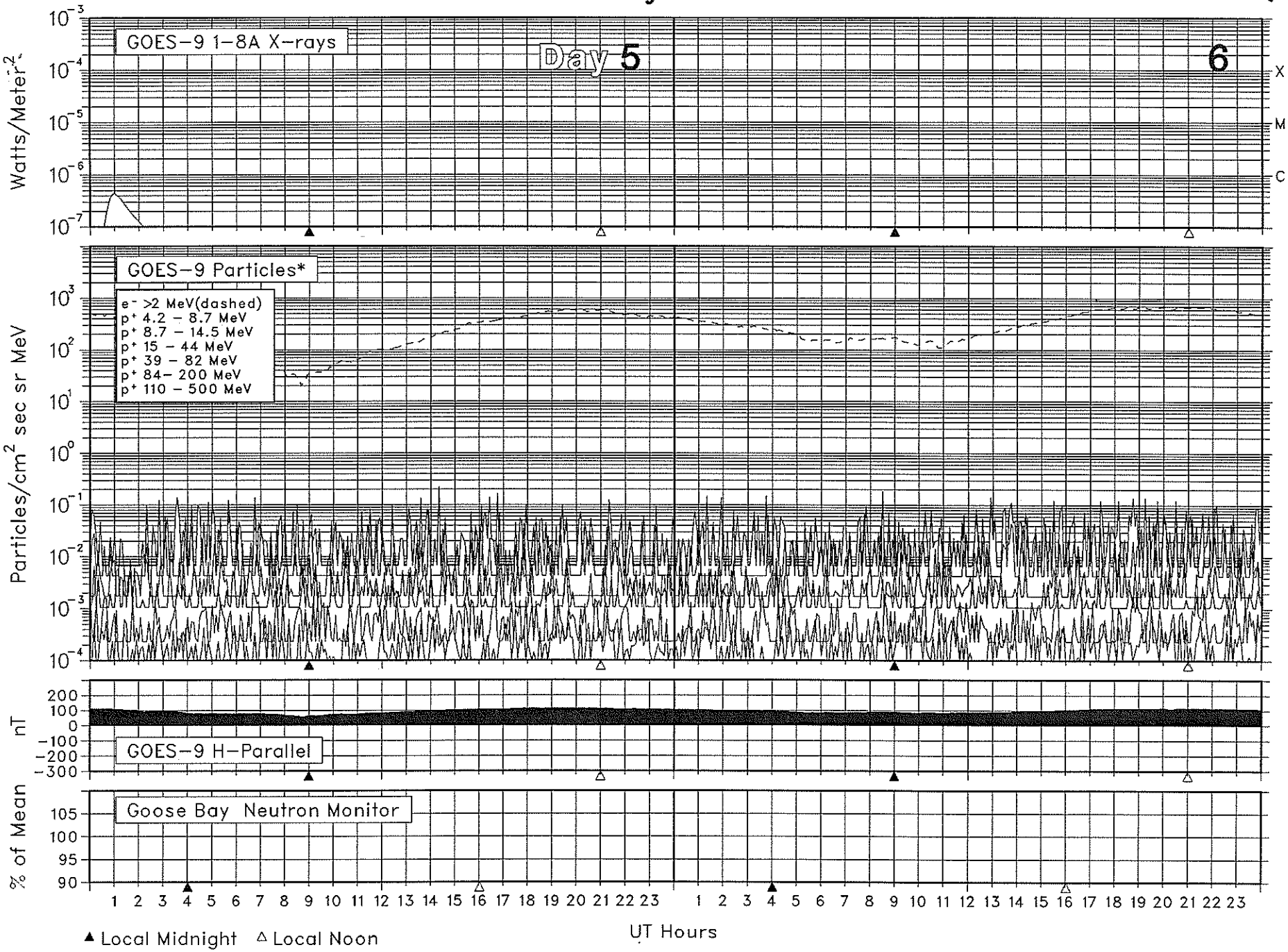

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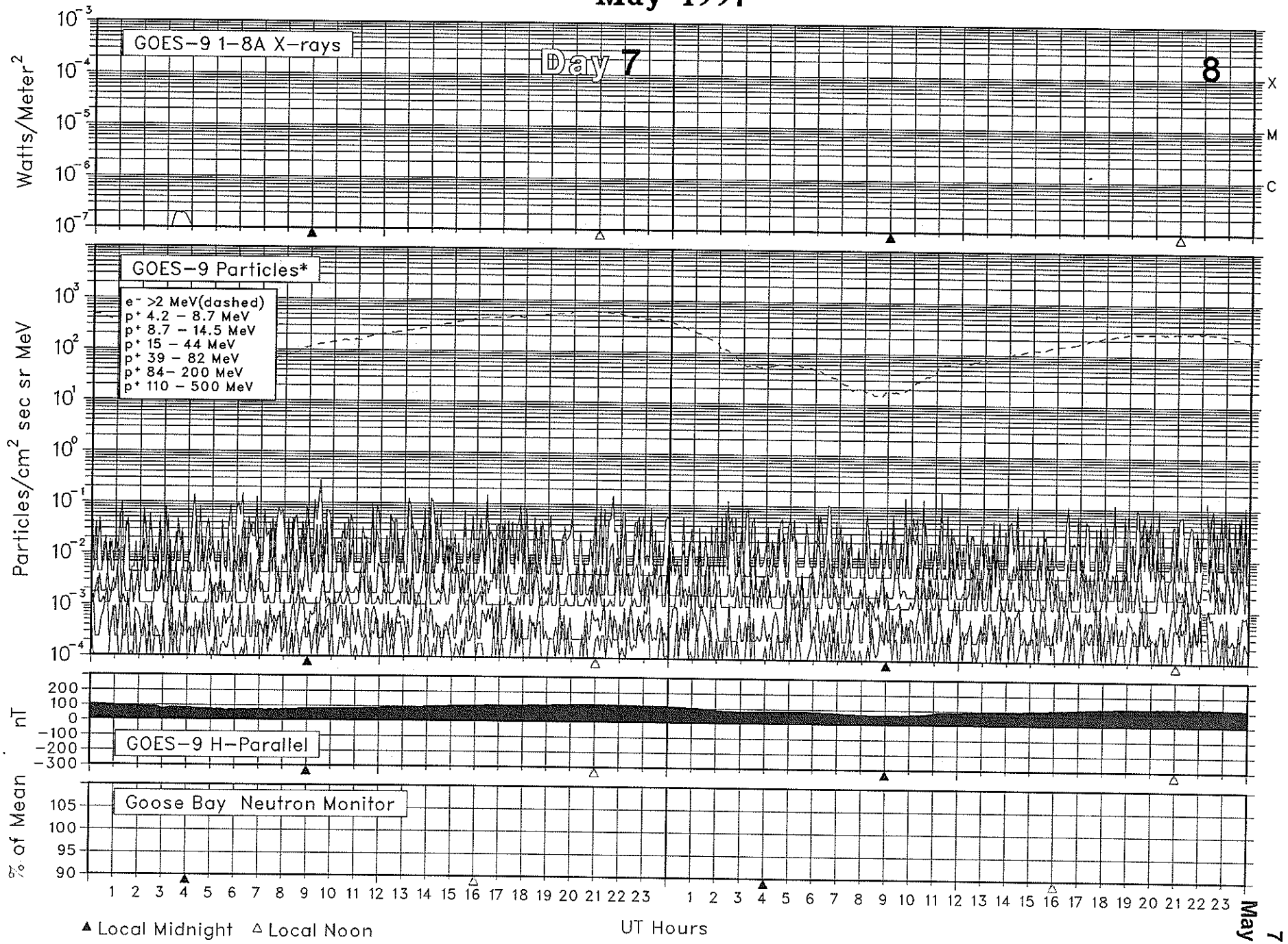

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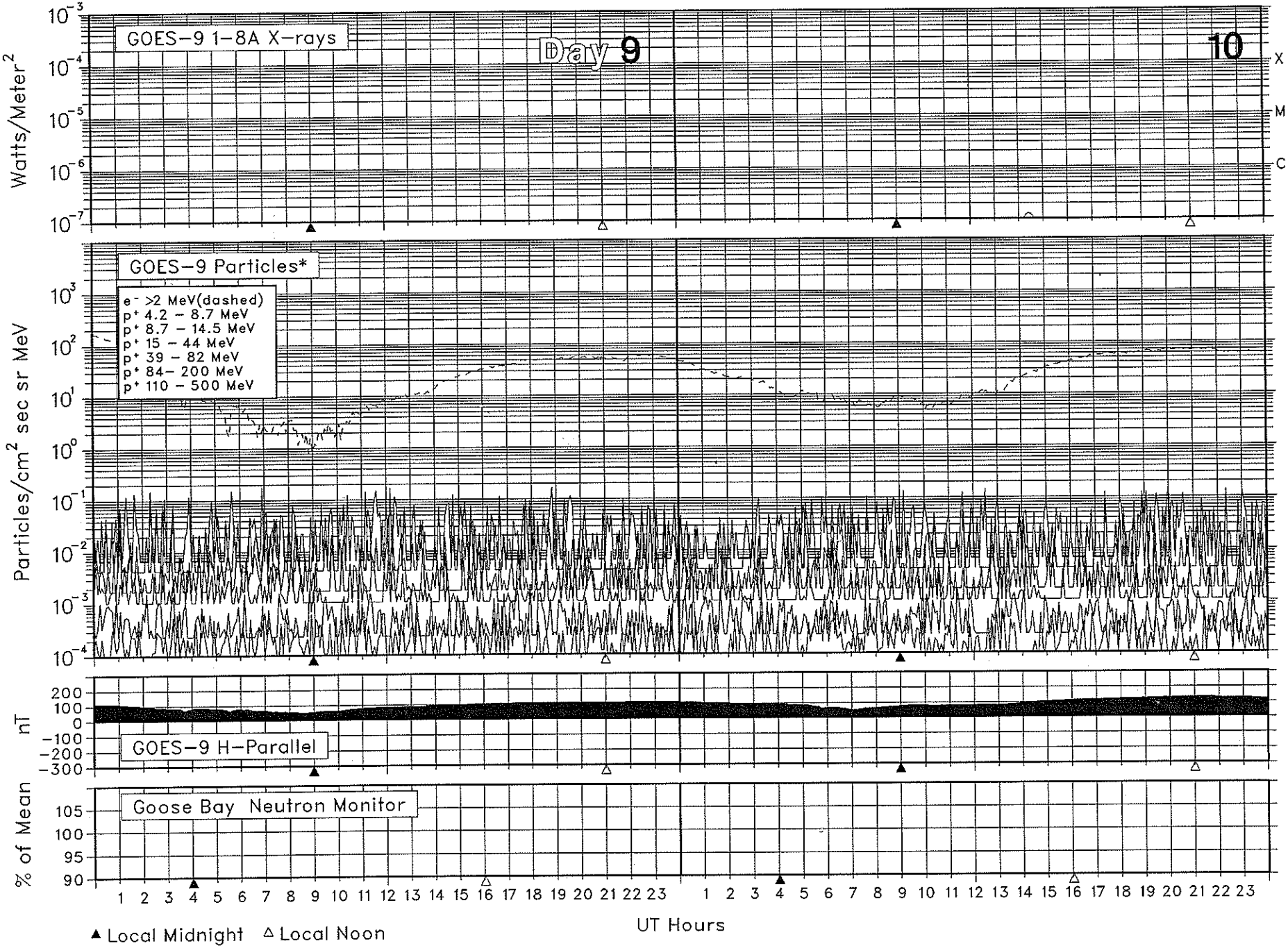

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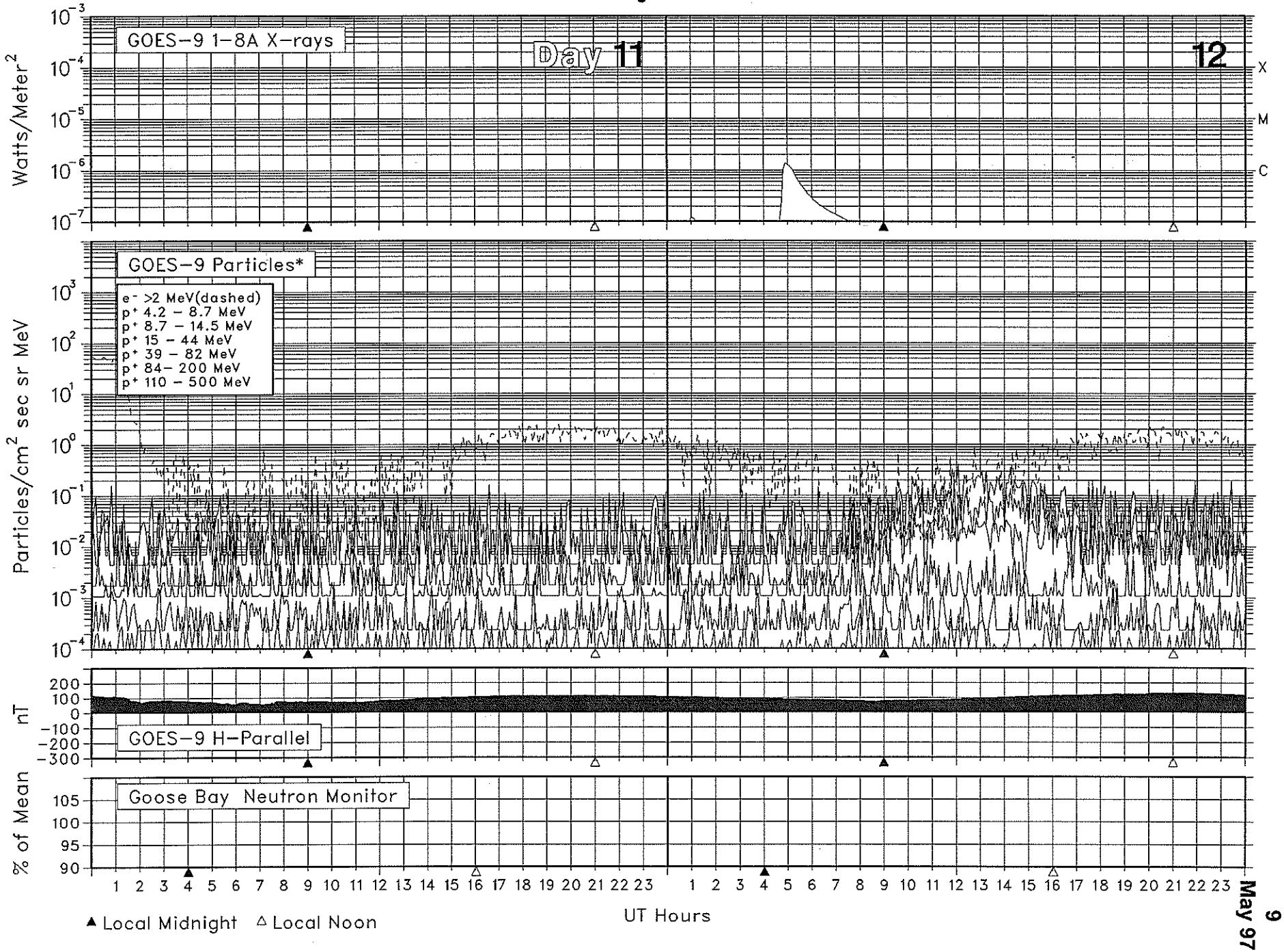

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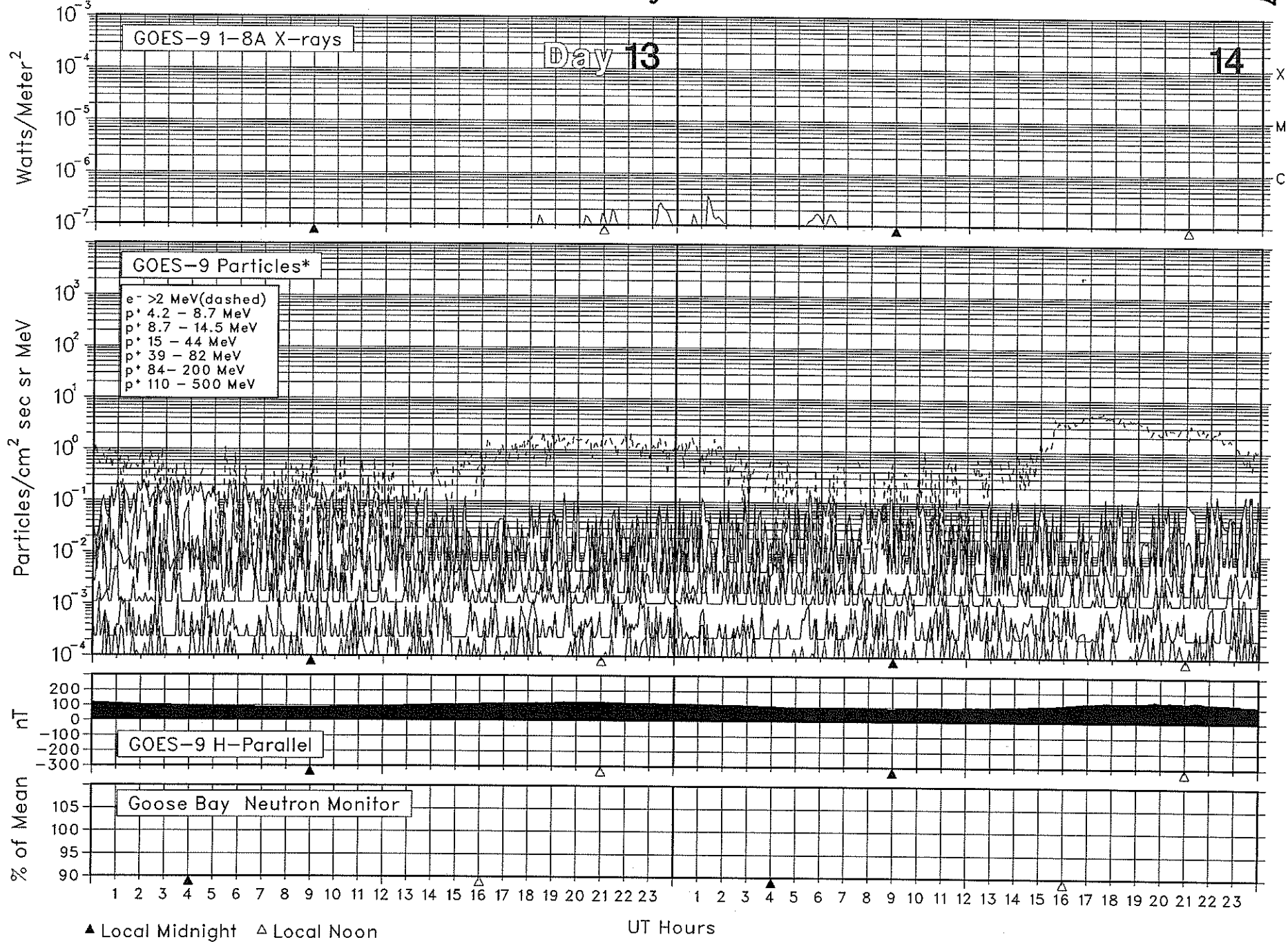

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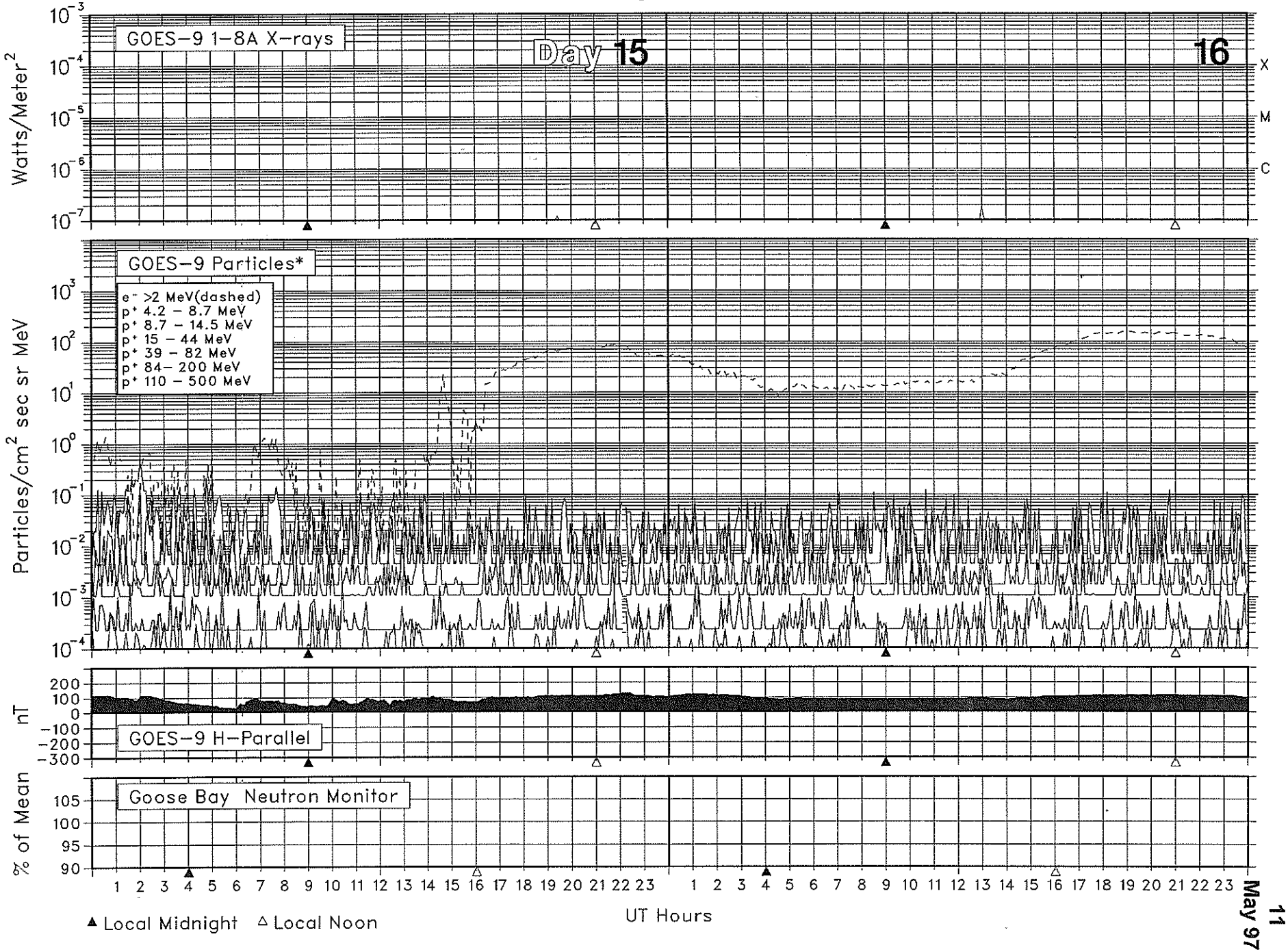

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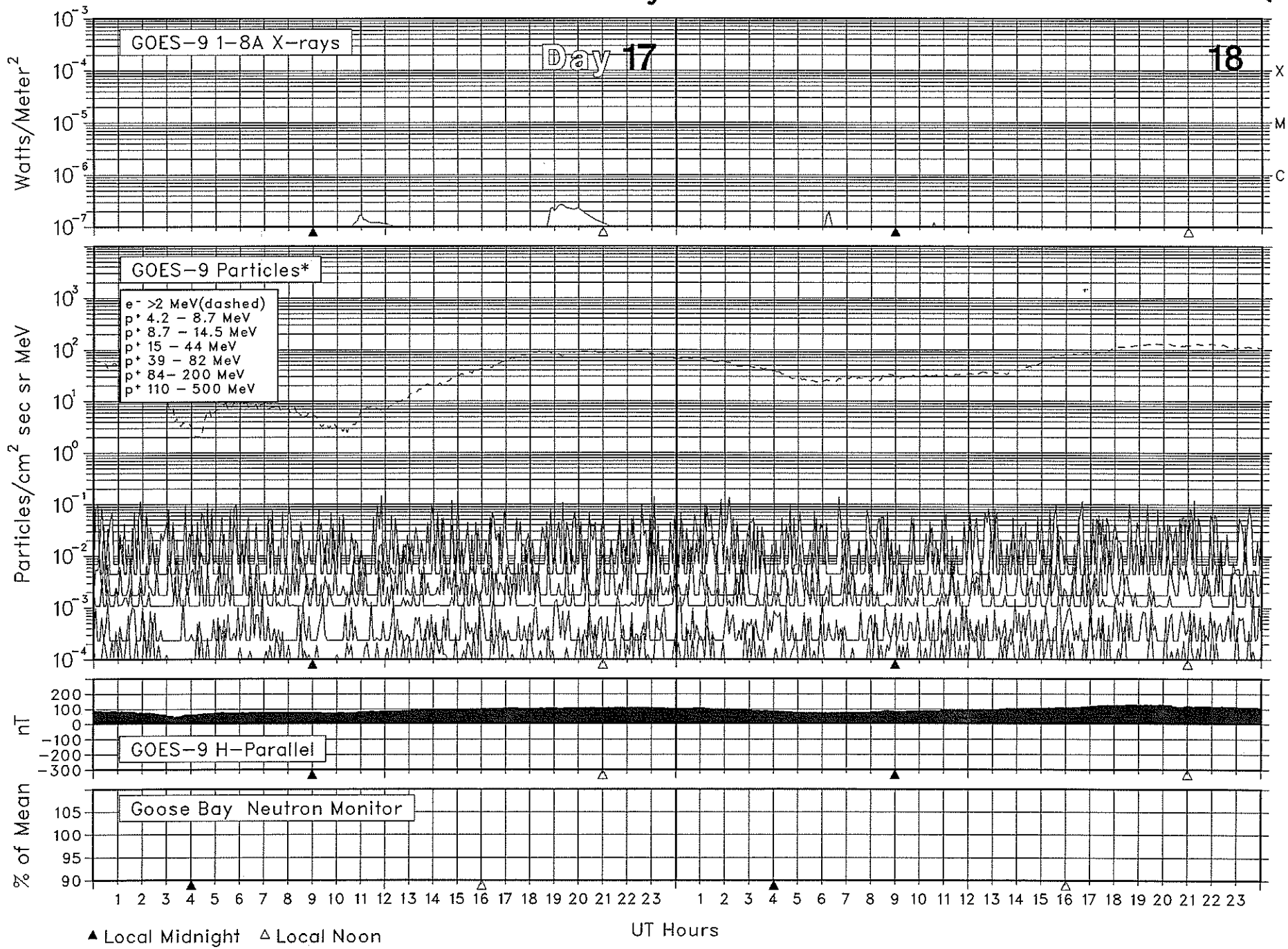

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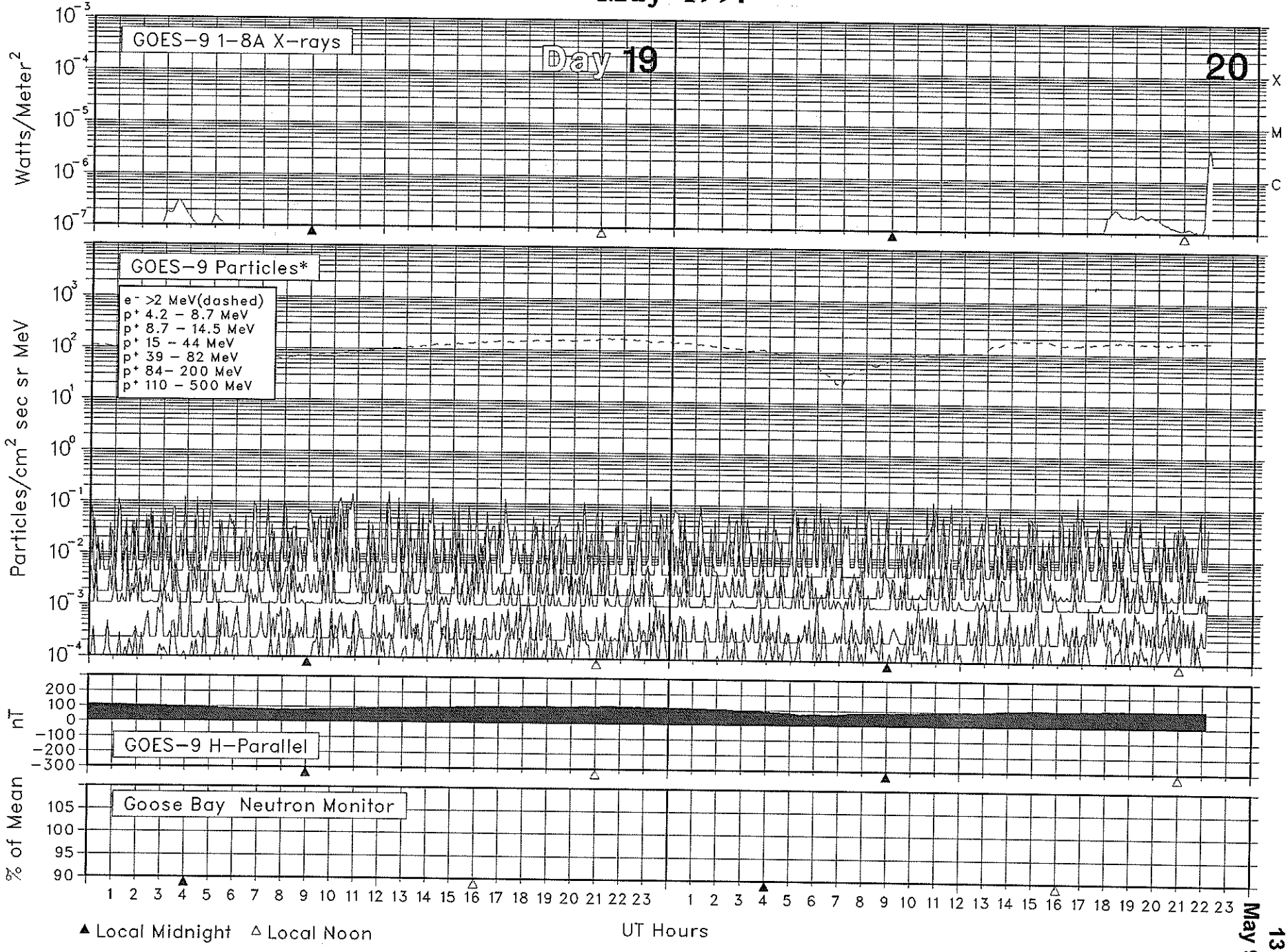

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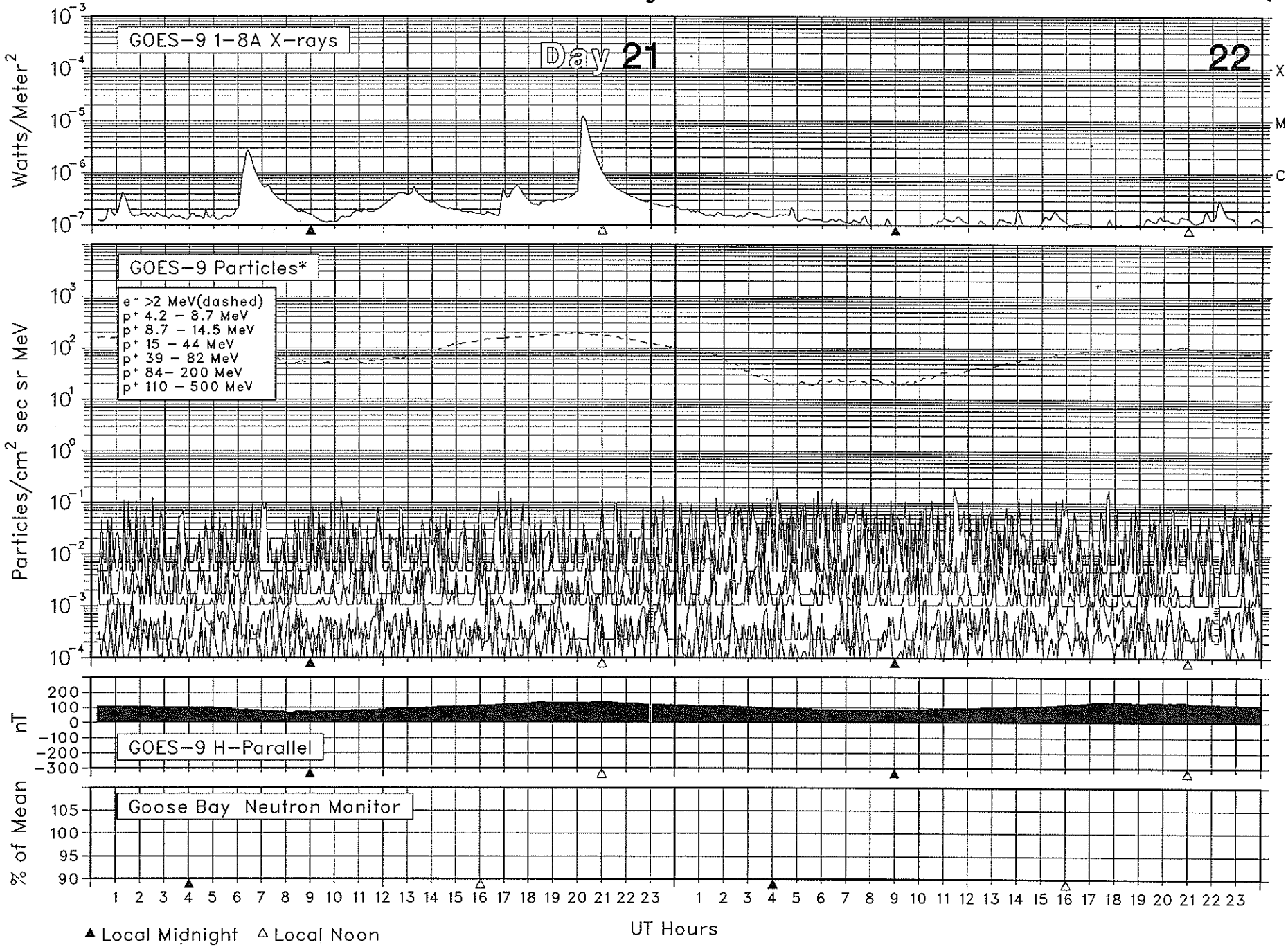

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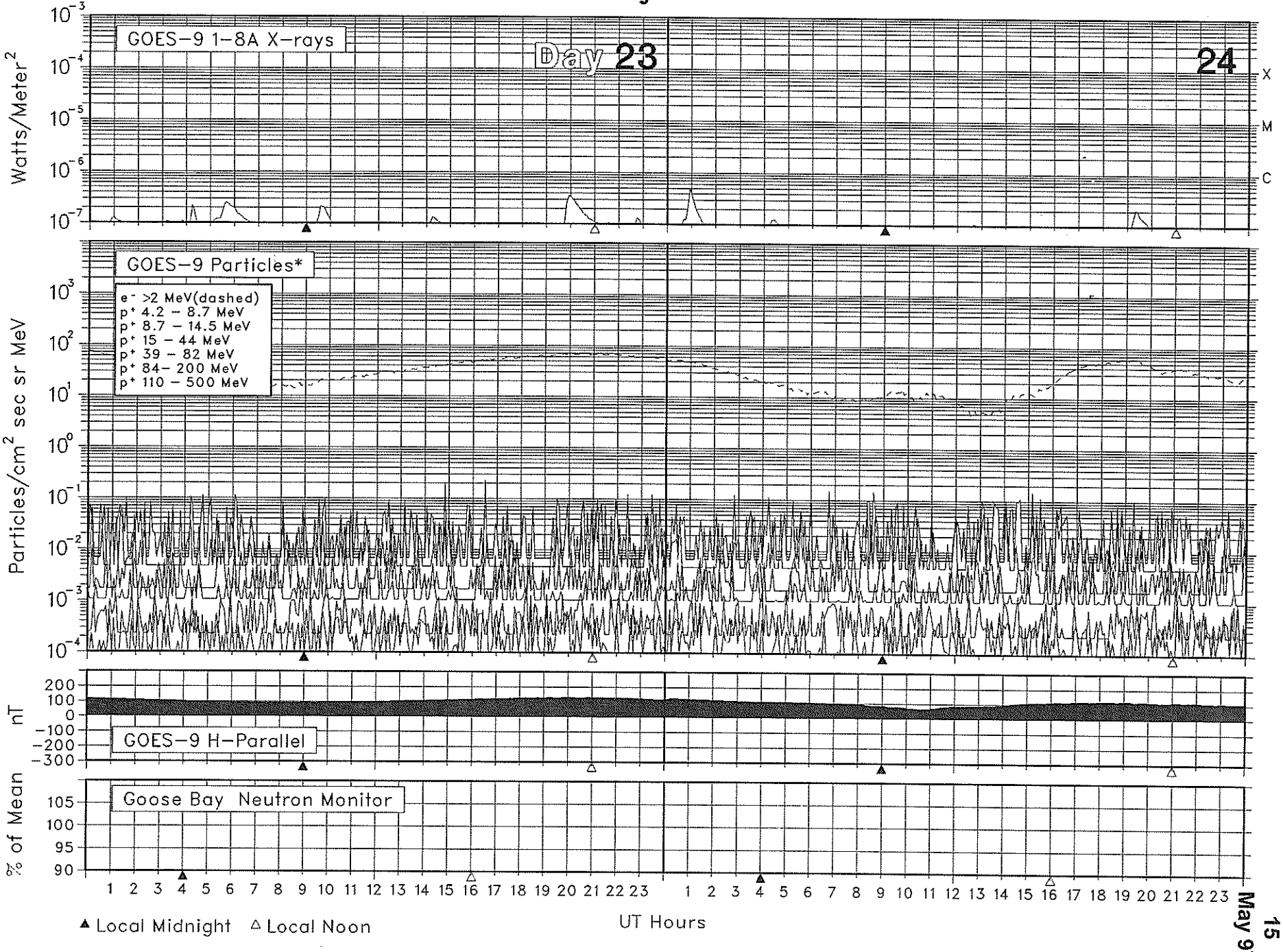

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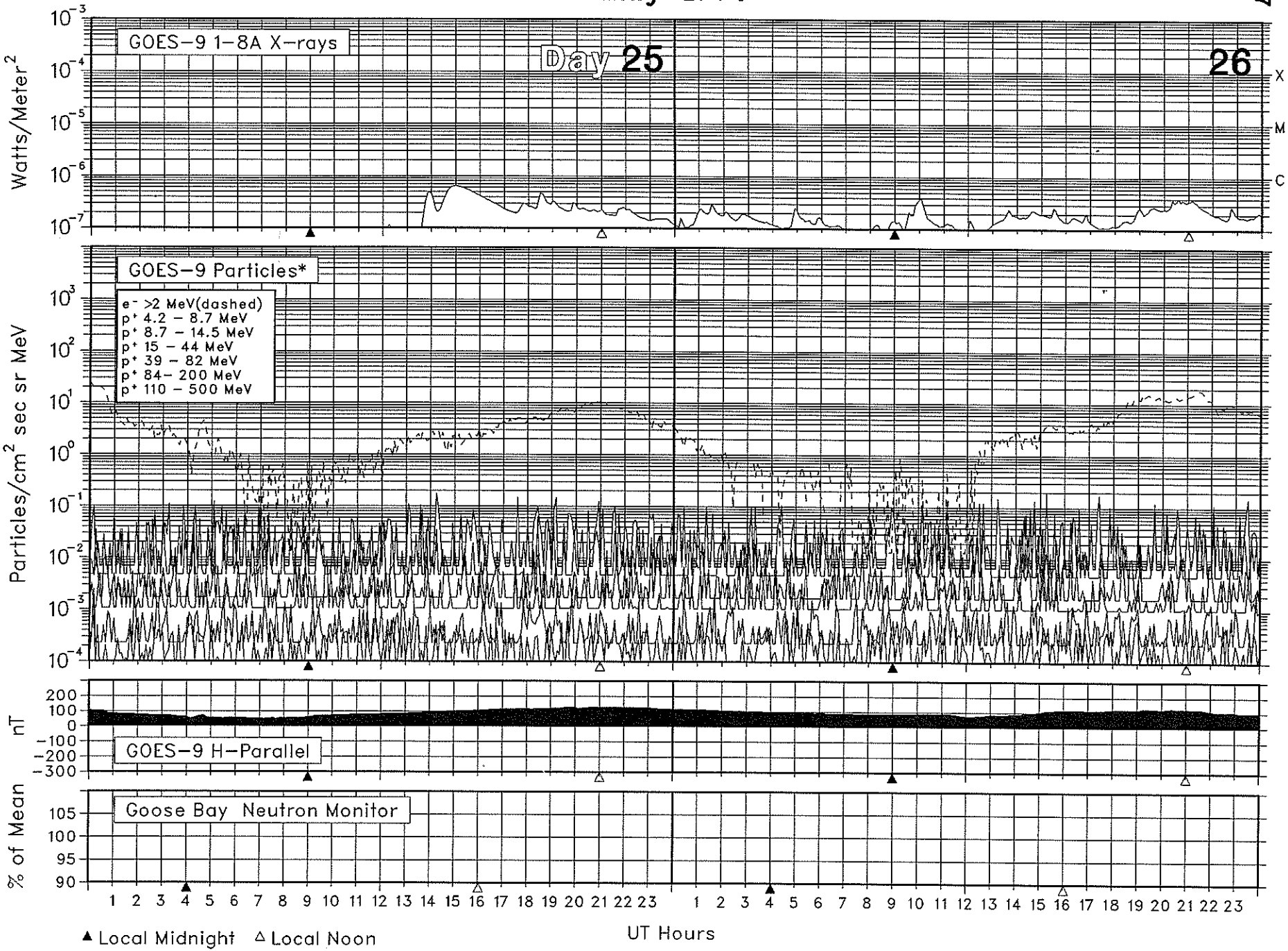

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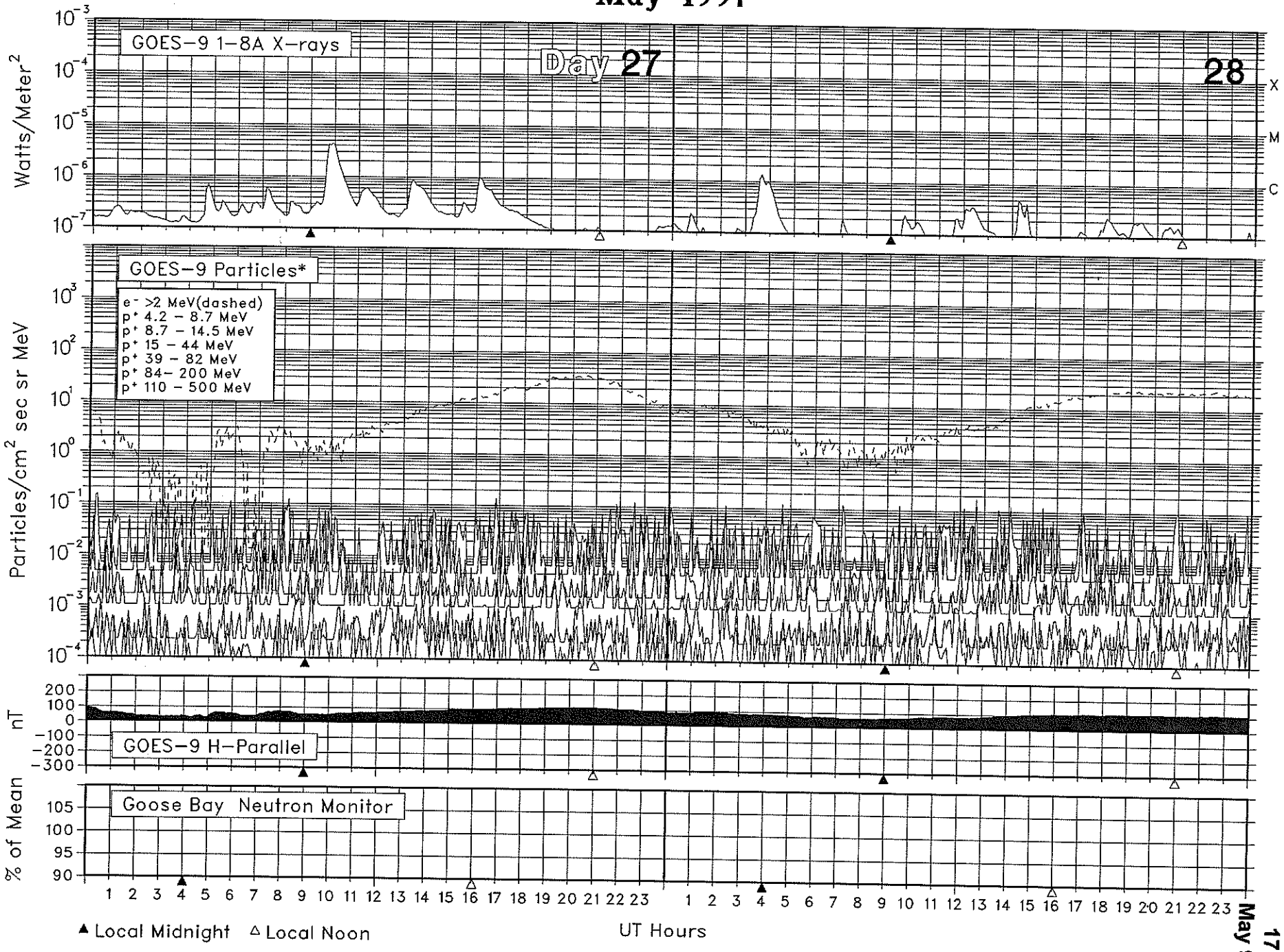

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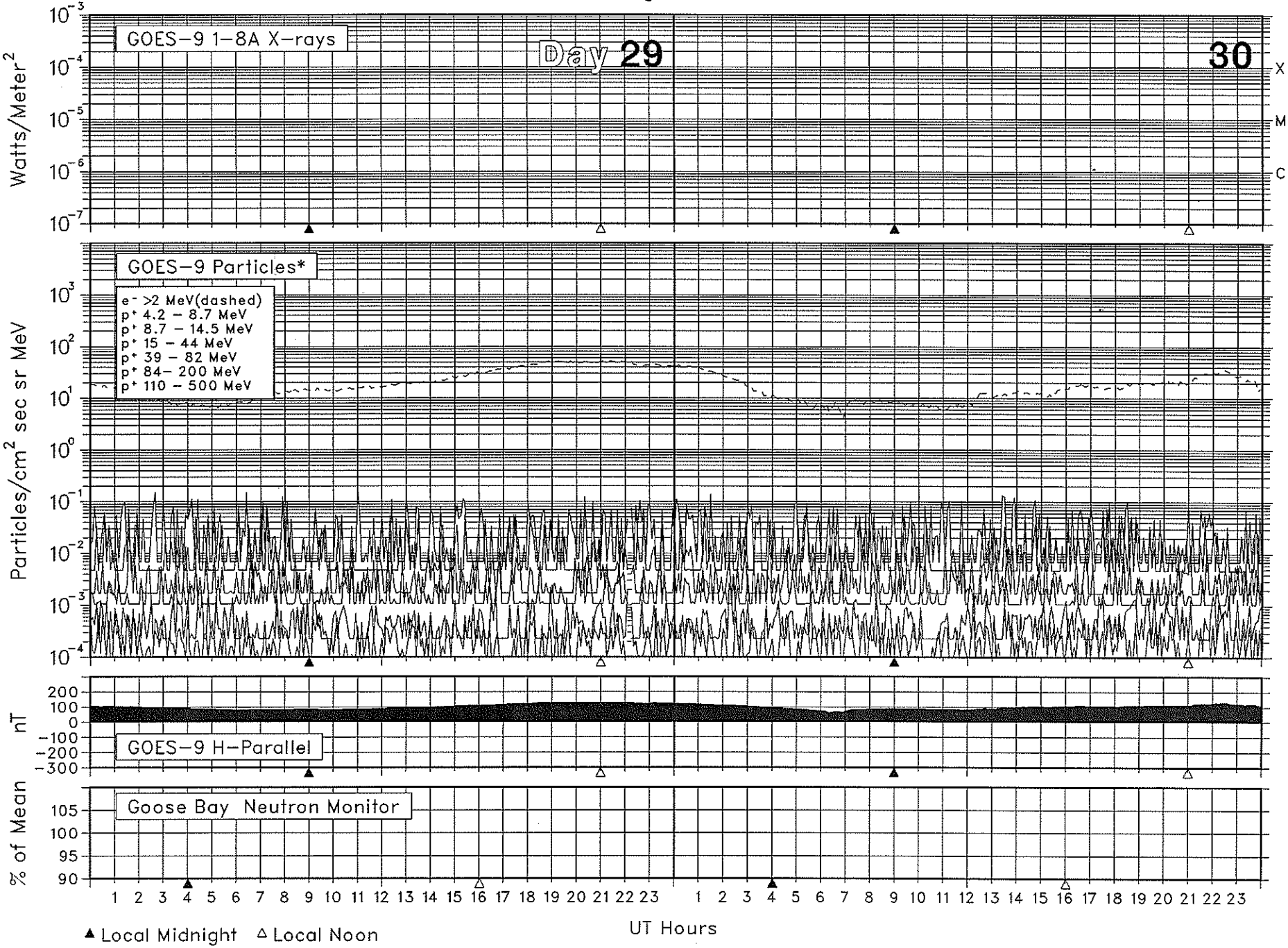

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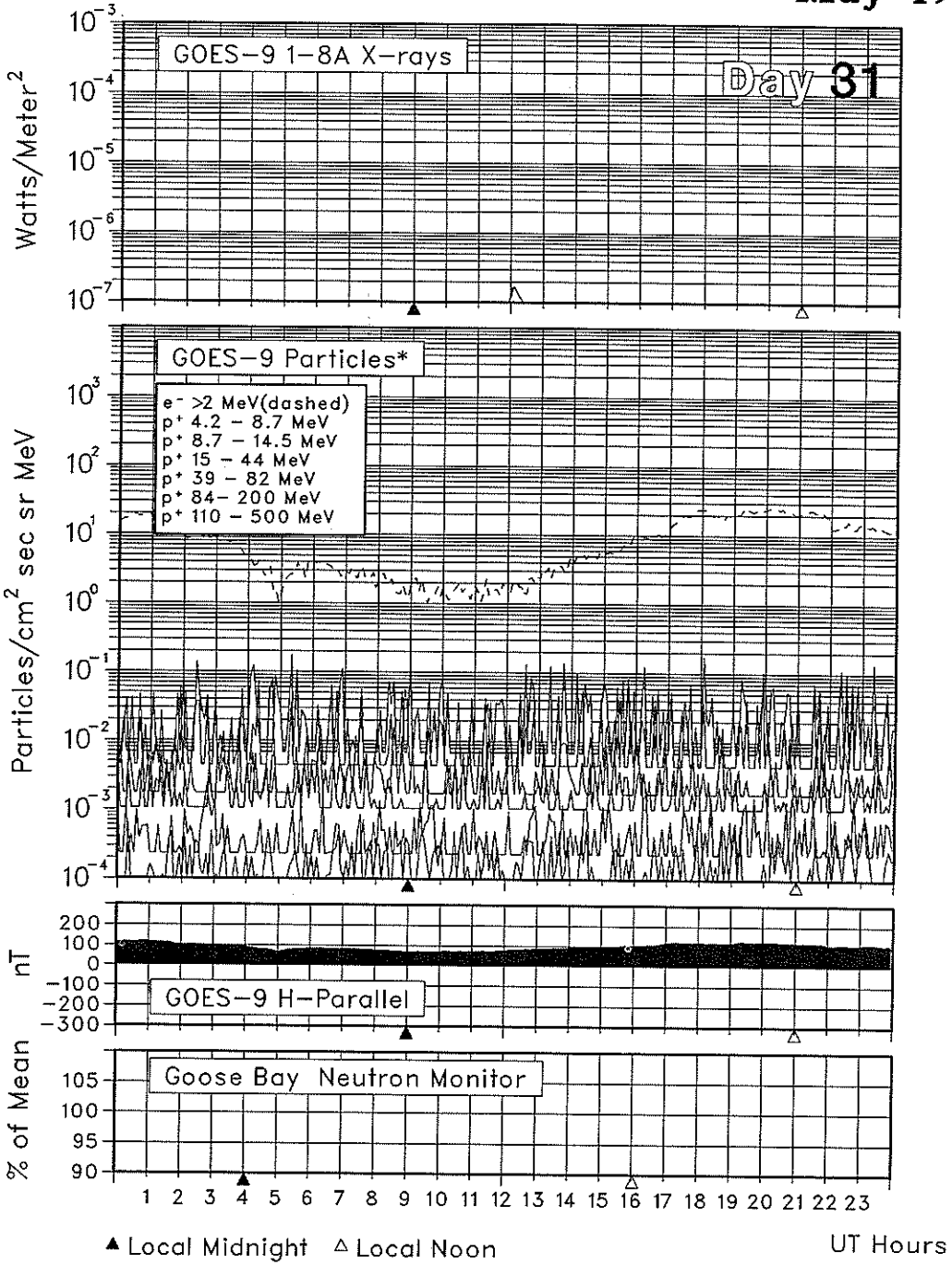


* Electron flux is divided by 10.
Electron units are Counts/cm^2 sec sr.
Protons are corrected for contamination.

A L E R T P E R I O D S
The International Space Environment Service

MAY 1997

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location Lat	Location Long	Flares Optical	Flares M	Flares X	Date of Forecast	Region Forecast(1)	Geoadvice(1)
121	01	30	0	73	10			0	0	0	01		SOL: Quiet
								0	0	0	01		MAG: Quiet
								0	0	0	01		PRO: Quiet
122	02	01	0	72	18			0	0	0	02		SOL: Quiet
								0	0	0	02		MAG: Active
								0	0	0	02		PRO: Quiet
123	03	02	0	72	14			0	0	0	03		SOL: Quiet
								0	0	0	03		MAG: Active
								0	0	0	03		PRO: Quiet
124	04	03	13	71	7	S26	W30	0	0	0	04	Q	SOL: Quiet
								0	0	0	04		MAG: Quiet
								0	0	0	04		PRO: Quiet
125	05	04	11	71	5	S25	W43	0	0	0	05	Q	SOL: Quiet
								0	0	0	05		MAG: Quiet
								0	0	0	05		PRO: Quiet
126	06	05	11	72	5			0	0	0	06		SOL: Quiet
								0	0	0	06		MAG: Quiet
								0	0	0	06		PRO: Quiet
127	07	06	11	72	4	N20	E58	1	0	0	07	Q	SOL: Quiet
								0	0	0	07		MAG: Quiet
								0	0	0	07		PRO: Quiet
128	08	07	11	72	3	N20	E45	0	0	0	08	Q	SOL: Quiet
								0	0	0	08		MAG: Quiet
								0	0	0	08		PRO: Quiet
129	09	08	23	72	4	N21	E27	0	0	0	09	Q	SOL: Quiet
						N23	W32	0	0	0	09	Q	MAG: Quiet
								0	0	0	09		PRO: Quiet
130	10	09	14	72	4	N21	E20	0	0	0	10	Q	SOL: Quiet
								0	0	0	10		MAG: Quiet
								0	0	0	10		PRO: Quiet
131	11	10	23	72	4	N21	E07	0	0	0	11	Q	SOL: Quiet
						N23	W52	0	0	0	11	Q	MAG: Quiet
								0	0	0	11		PRO: Quiet
132	12	11	26	72	6			0	0	0	12		SOL: Quiet
								0	0	0	12		MAG: Quiet
								0	0	0	12		PRO: Quiet
133	13	12	12	72	0	N21	W19	1	0	0	13	E	SOL: Eruptive
								0	0	0	13		MAG: Quiet
								0	0	0	13		PRO: Quiet
134	14	13	15	74	0			0	0	0	14		SOL: Quiet
								0	0	0	14		MAG: Quiet
								0	0	0	14		PRO: Quiet
135	15	14	17	74	3	N20	W44	0	0	0	15	Q	SOL: Quiet
								0	0	0	15		MAG: Quiet
								0	0	0	15		PRO: Quiet
136	16	15	15	73	33	N20	W58	0	0	0	16	Q	SOL: Quiet
								0	0	0	16		MAG: Quiet
								0	0	0	16		PRO: Quiet
137	17	16	27	72	13	N21	W70	1	0	0	17	Q	SOL: Quiet
						N06	E56	0	0	0	17	Q	MAG: Quiet
								0	0	0	17		PRO: Quiet

A L E R T P E R I O D S
The International Space Environment Service

MAY 1997

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location Lat	Location Long	Flares Optical	Flares M	Flares X	Date of Forecast	Region Forecast(1)	Geoadvice(1)
138	18	17	47	73	7			0	0	0	18		SOL: Quiet
								0	0	0	18		MAG: Quiet
								0	0	0	18		PRO: Quiet
139	19	18	32	74	6	N06	E28	0	0	0	19	Q	SOL: Quiet
						N06	E09	0	0	0	19	Q	MAG: Quiet
								0	0	0	19		PRO: Quiet
140	20	19	51	74	2	N05	E13	0	0	0	20	Q	SOL: Quiet
						N28	W40	0	0	0	20	Q	MAG: Quiet
						S35	E77	0	0	0	20	Q	PRO: Quiet
141	21	20	57	79	6	N05	E00	0	0	0	21	Q	SOL: Quiet
						N28	W53	0	0	0	21	Q	MAG: Quiet
						S36	E64	0	0	0	21	Q	PRO: Quiet
142	22	21	79	85	3	N06	W13	12	1	0	22	E	SOL: Eruptive
						N28	W67	6	0	0	22	Q	MAG: Quiet
						S34	E53	0	0	0	22	Q	PRO: Quiet
						N02	E00	0	0	0	22	Q	
143	23	22	66	81	3	N05	W26	0	0	0	23	E	SOL: Eruptive
						N27	W80	0	0	0	23	Q	MAG: Quiet
						S35	E42	0	0	0	23	Q	PRO: Quiet
						N02	W13	0	0	0	23	Q	
144	24	23	58	76	2	N07	W41	1	0	0	24	Q	SOL: Eruptive
						S35	E28	0	0	0	24	Q	MAG: Active
						N03	W28	1	0	0	24	Q	PRO: Quiet
						S26	E67	0	0	0	24	Q	
145	25	24	52	77	7	N06	W54	0	0	0	25	Q	SOL: Quiet
						S35	E17	0	0	0	25	Q	MAG: Active
						N01	W43	0	0	0	25	Q	PRO: Quiet
						S25	E54	1	0	0	25	Q	
146	26	25	50	78	4	N08	W70	0	0	0	26	Q	SOL: Quiet
						S34	E04	0	0	0	26	Q	MAG: Quiet
						N03	W56	0	0	0	26	Q	PRO: Quiet
						S27	E41	1	0	0	26	Q	
147	27	26	38	80	6	N08	W86	0	0	0	27	Q	SOL: Quiet
						N03	W70	0	0	0	27	Q	MAG: Quiet
						S27	E28	0	0	0	27	Q	PRO: Quiet
148	28	27	43	78	20	N02	W85	5	0	0	28	Q	SOL: Quiet
						S26	E14	0	0	0	28	Q	MAG: Quiet
						N26	E68	0	0	0	28	Q	PRO: Quiet
149	29	28	25	77	4	S27	W01	1	0	0	29	Q	SOL: Quiet
						N26	E55	0	0	0	29	Q	MAG: Quiet
								0	0	0	29		PRO: Quiet
150	30	29	27	76	1	S26	W16	1	0	0	30	Q	SOL: Quiet
						N26	E44	0	0	0	30	Q	MAG: Quiet
								0	0	0	30		PRO: Quiet
151	31	30	35	75	5	N27	E31	0	0	0	31	Q	SOL: Quiet
						S28	E55	0	0	0	31	Q	MAG: Quiet
						S26	E17	0	0	0	31	Q	PRO: Quiet

(1) Region Forecast and Flare (SOL) Advice
Q = Quiet (<50% probability of C-class flares)
E = Eruptive (C-class flares expected, probability >=50%)
A = Active (M-class flares expected, probability >=50%)

A L E R T P E R I O D S
The International Space Environment Service

MAY 1997

M = Major (X-class flares expected, probability >=50%)
P = Proton (Proton flares expected, probability >=50%)
W = Warning (activity levels are expected to increase, but no numerical forecast given)
/ = No forecast available

Magnetic (MAG) Geoadvice

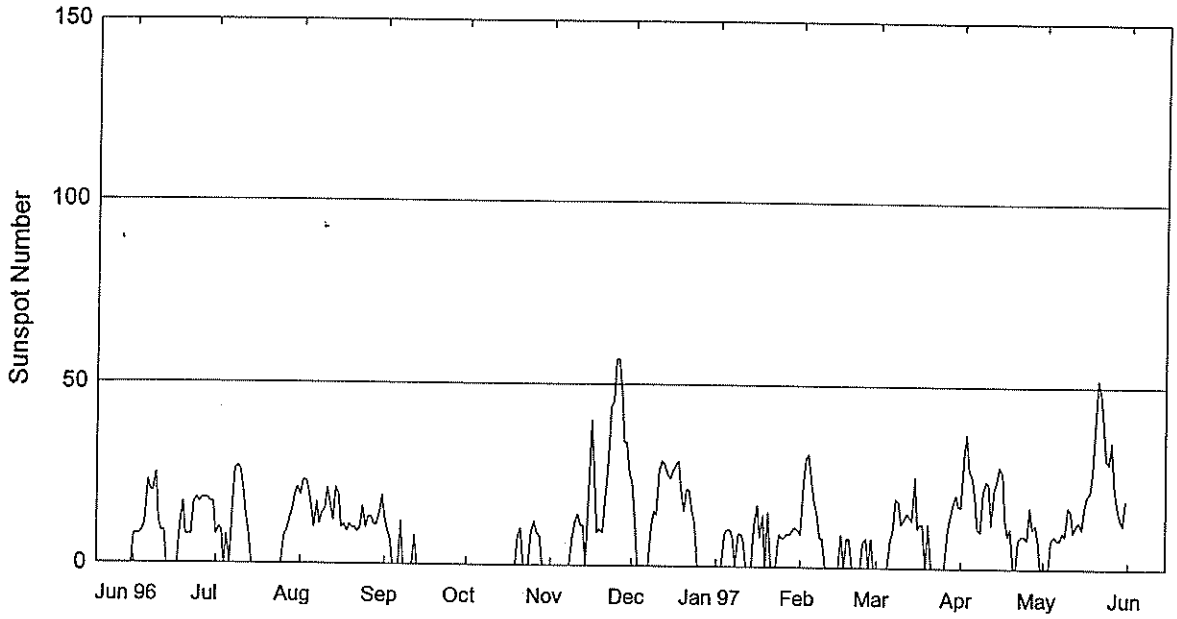
'Quiet'		
'Active'	conditions expected	(A>=20 or K=4)
'Minor'	storm expected	(A>=30 or K=5)
'Major'	storm expected	(A>=50 or K>=6)
'Severe'	storm expected	(A>=100 or K>=7)
'IP'	magstorm in progress	(A>=30 or K>=4)
'Warning'	(activity levels are expected to increase, but no numerical forecast given)	
'/'	no forecast available	

Proton (PRO) Geoadvice

'Quiet'		
'Proton'	event expected	(10pfu at >10MeV)
'Major'	proton event expected	(100pfu at >100 MeV)
'IP'	proton event in progress	(>10 MeV)
'Warning'	(activity levels are expected to increase, but no numerical forecast given)	
'/'	no forecast available	

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
Jun 1996 - May 1997

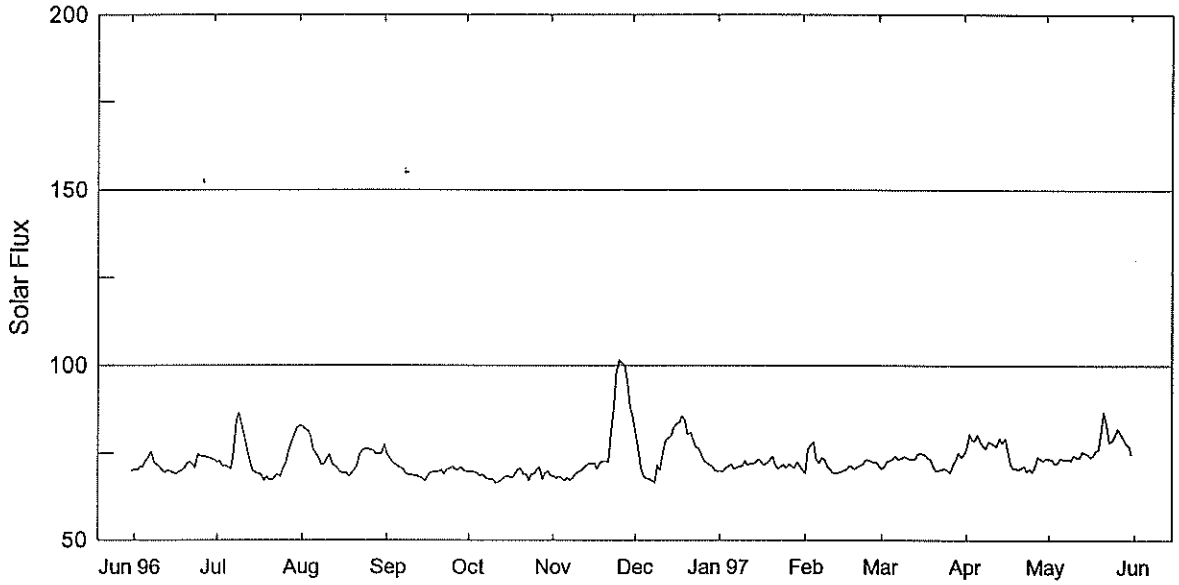


Day	Jun 96	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 97*	Feb *	Mar*	Apr*	May*
1	8	8	19	13	0	0	23	0	9	0	17	0
2	8	10	23	9	0	0	12	0	23	0	31	0
3	8	9	23	7	0	0	0	0	30	0	37	0
4	9	0	21	0	0	0	0	9	31	0	27	8
5	11	8	16	0	0	0	0	10	23	0	25	9
6	23	0	10	0	0	0	0	10	18	8	20	8
7	20	14	17	12	0	0	0	8	15	10	11	8
8	20	26	11	0	0	0	11	0	8	19	10	10
9	25	27	14	0	0	8	15	9	8	18	21	9
10	12	26	15	0	0	12	14	9	0	12	24	17
11	9	20	21	0	0	14	26	7	0	13	23	16
12	9	13	17	8	0	11	29	0	0	15	12	10
13	0	9	12	0	0	11	28	0	0	14	22	12
14	0	0	21	0	0	0	25	0	0	13	24	13
15	0	0	19	0	0	20	24	11	0	25	28	11
16	0	0	10	0	0	40	26	17	9	11	26	17
17	0	0	11	0	0	27	28	8	0	12	13	20
18	10	0	9	0	0	9	29	14	8	12	9	21
19	17	0	11	0	0	10	21	0	8	0	11	27
20	8	0	10	0	8	9	15	15	0	12	0	39
21	8	0	10	0	10	18	21	0	0	0	0	52
22	8	0	9	0	0	26	21	0	0	0	8	48
23	17	0	10	0	0	44	15	0	0	0	9	40
24	18	0	16	0	0	45	12	9	7	0	9	30
25	17	0	10	0	9	57	0	8	8	0	8	29
26	18	8	13	0	12	57	0	8	0	0	17	35
27	18	9	13	0	9	48	0	9	8	10	11	23
28	18	12	11	0	8	34	0	9	0	14	12	17
29	17	15	11	0	0	34	0	10		18	8	14
30	17	19	14	0	0	25	0	11		20	0	12
31		21	19		0		0	10		17		19
Mean	11.8	8.2	14.4	1.6	1.8	18.6	12.7	6.5	7.6	8.8	15.8	18.5

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Jun 96 - May 97

Adjusted to 1 AU



Day	Jun 96	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr	May
1	70.4	72.4	82.8	74.8	69.6	68.5	80.8	70.0	69.2	70.5*	76.2	73.4
2	70.2	72.8	81.9	73.6	69.8	67.9	75.7	69.7	76.2	71.1	80.4	73.3
3	71.2	71.3	81.6	72.4	69.6	68.3	70.7	70.8	77.4	72.8	78.8	72.3
4	71.2	71.5	79.9	72.0	69.4	67.8	68.6	71.4	78.4	72.8	78.6	72.1
5	72.8	71.0	76.2	71.4	68.5	67.1	67.6	71.9	73.3	73.4	80.3	73.6
6	73.8	70.5	75.1	70.8	68.8	68.0	67.6	70.6	72.2	74.2	78.3	73.4
7	75.4	74.3	73.7	70.5	68.2	67.3	67.1	70.9	73.7	73.1	77.0	73.3
8	72.4	84.3	71.7	69.2	67.7	67.8	66.6	71.3	73.2	73.6	76.3	73.3
9	72.0	86.5	72.1	68.8	67.7	68.9	71.5	71.3	71.2	74.1	78.3	73.0
10	71.1	82.5	73.6	68.9	67.4	69.6	70.2	72.9	70.4	73.8	78.0	74.6*
11	70.2	79.6	74.8	68.5	66.4	70.0	75.2	71.6	69.3	73.4	77.4	73.8
12	69.5	76.2	72.0	68.6	66.9	70.7	78.6	72.1	69.1	73.4	76.9	73.7
13	70.3	72.5	71.4	68.1	67.3	71.5	79.2	72.1	69.3	73.3	79.3	75.4
14	69.8	70.0	70.5	67.9	68.2	72.1	80.0	72.4	69.6	74.7	77.9	75.1
15	69.5	69.3	69.3	67.1	68.6	71.9	82.3	73.3	70.1	75.0	79.2	74.7
16	69.0	69.1	69.3	68.7	68.1	72.2	83.5	72.4	70.3	75.0	75.6	73.9
17	69.6	69.0	69.5	69.6	68.0	70.4	83.6	71.7	71.4	74.4	72.3	74.4
18	69.9	67.0	68.4	69.6	69.0	72.4	85.6	72.2	71.2	73.7	70.7	75.8
19	70.7	68.3	69.3	69.8	70.4	72.6	84.6	72.9	70.4	73.1	70.6	76.0
20	71.9	67.5	70.1	69.7	70.6	72.7	80.3	74.3	71.0	71.0	70.4	81.1
21	72.6	67.2	71.3	70.3	69.0	72.6	80.9	71.8	71.6	70.0	70.9	86.9
22	72.0	68.2	74.5	69.1	69.1	80.6	78.9	70.7	71.9	70.1	71.5	83.0
23	70.9	68.9	75.8	70.4	67.1	88.7	76.9	71.1	73.0	70.3	69.7	78.1
24	74.7	68.3	76.2	70.4	69.1	97.3	76.4	71.9	73.1	70.6	70.7	78.9
25	74.3	70.4	76.3	71.2	69.1	101.7	74.7	70.9	72.6	70.2	69.6	80.1
26	74.2	72.4	75.8	70.4	70.3	100.8	73.0	71.9	72.4	69.5	71.8	82.0#
27	73.8	75.6	75.9	70.1	71.2	100.0	72.2	71.3	72.4	71.9	74.1	80.4
28	73.8	77.8	74.7	71.2	67.5	95.4	71.8	70.8	71.5	72.9	73.4	79.5
29	73.3	80.3	75.0	70.3	69.4	88.5	71.4	72.4		75.1	72.9	77.6
30	73.1	82.3	74.7	69.7	69.7	85.1	70.1	71.5		73.8	73.7	77.2
31		82.7	77.6		68.6		69.8	70.3		74.6		74.5
Mean	71.8	73.5	74.2	70.1	68.7	76.9	75.3	71.6	72.0	72.8	75.0	76.3

NOTE: *=Average of 1700 and 2300UT readings. #=1900UT reading.

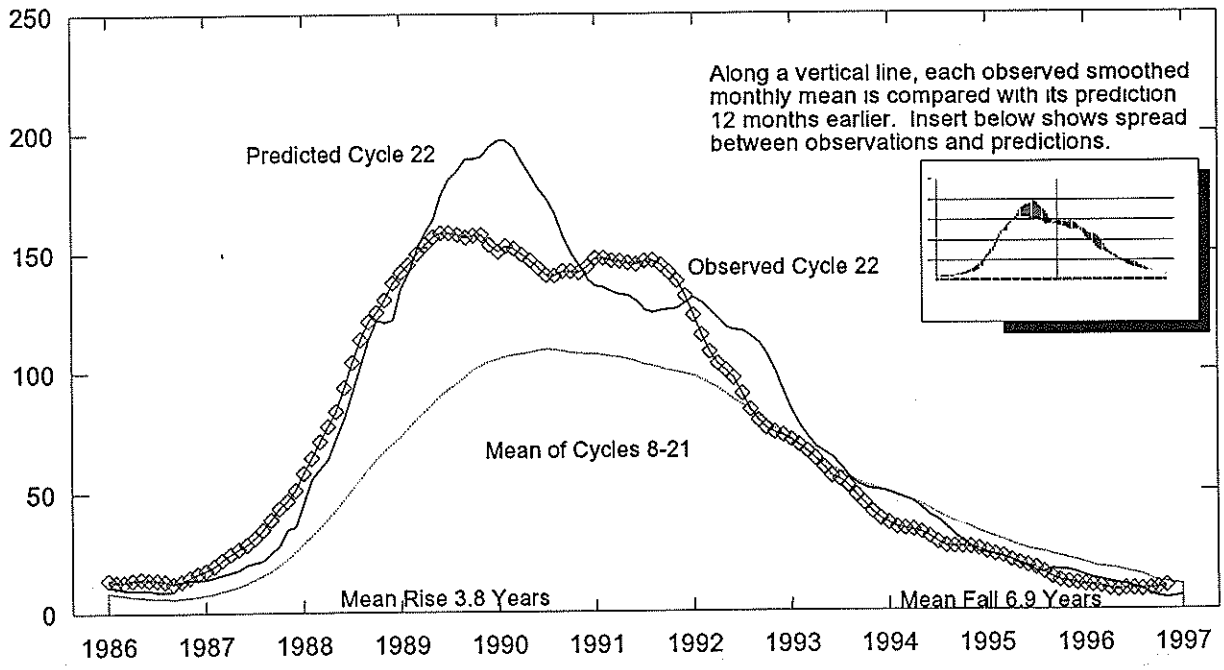
DAILY SOLAR INDICES

May 1997

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit — LEAR (15400)	LEAR (8800)	LEAR (4995)	Pentic (2800)	LEAR (2695)	LEAR (1415)	LEAR (610)	LEAR (410)	LEAR (245)
1	121	4	0	0	72.2	507	201	127	73.4	70	51	37	26	12
2	122	5	0	1	72.1	502	203	128	73.3	70	50	37	25	12
3	123	6	0	1	71.1	499	200	125	72.3	68	50	36	25	11
4	124	7	8	1	70.9	487	199	125	72.1	68	49	37	26	12
5	125	8	9	8	72.3	471	194	126	73.6	69	50	34	24	26
6	126	9	8	10	72.1	513	201	126	73.4	69	50	38	27	14
7	127	10	8	11	72.0	516	204	129	73.3	70	51	39	27	12
8	128	11	10	11	71.9	514	202	128	73.3	69	51	38	26	11
9	129	12	9	12	71.6	507	200	125	73.0	69	49	37	25	11
10	130	13	17	16	73.1*	506	200	127	74.6*	68	50	37	25	11
11	131	14	16	14	72.3	507	200	127	73.8	71	50	37	26	12
12	132	15	10	12	72.2	495	200	127	73.7	70	49	36	24	11
13	133	16	12	15	73.8	509	202	129	75.4	70	49	36	25	11
14	134	17	13	16	73.5	514	200	129	75.1	71	50	35	24	10
15	135	18	11	14	73.0	511	202	127	74.7	71	50	36	25	11
16	136	19	17	21	72.2	489	194	126	73.9	69	50	30	21	9
17	137	20	20	17	72.8	--	197	127	74.4	70	49	30	21	10
18	138	21	21	23	74.1	--	198	126	75.8	70	50	31	21	10
19	139	22	27	28	74.2	331	198	128	76.0	73	51	34	23	12
20	140	23	39	45	79.1	331	198	128	81.1	73	51	34	23	12
21	141	24	52	67	84.8	538	209	137	86.9	78	54	38	30	15
22	142	25	48	56	81.0	526	210	138	83.0	79	55	37	30	22
23	143	26	40	43	76.2	522	205	133	78.1	77	55	37	28	12
24	144	27	30	35	76.9	524	206	132	78.9	74	55	36	26	12
25	145	1	29	34	78.0	522	206	131	80.1	75	54	36	26	11
26	146	2	35	36	79.9#	532	208	134	82.0#	78	55	37	26	11
27	147	3	23	24	78.3	530	210	136	80.4	78	55	38	26	12
28	148	4	17	14	77.4	534	210	125	79.5	77	54	38	25	11
29	149	5	14	17	75.6	529	206	122	77.6	74	55	39	26	12
30	150	6	12	17	75.1	513	198	120	77.2	74	54	38	26	11
31	151	7	19	17	72.5	458	196	119	74.5	73	53	36	25	11
MEAN			18.5	20.5	74.6	497	201	127	76.3	72	51	36	25	12

The International numbers shown above are preliminary values; the American numbers are final.
NOTE: * Values interpolated from the 1700UT and 2300UT readings.
Value measures at 1900UT.

Cycle 22 Smoothed Sunspot Numbers: Observed and Predicted



Smoothed Sunspot Numbers (observed and Predicted) for Parts of Solar Cycles 22 and 23

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1989	142	145	150	154	157	158	158	158	157	157	158	154	154
1990	151	153	152	149	147	144	141	140	142	142	142	144	146
1991	148	148	147	146	146	145	146	147	145	142	138	132	144
1992	124	115	108	103	100	97	91	84	80	76	74	73	94
1993	71	69	67	64	60	56	55	52	48	45	41	38	56
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	16	13	12	11	11	17
1996	11	10	10	9	8	9	9	8	9	9	10	10	9
( )												(1)	(0)
1997	10	10	10	10	10	11	12	12	13	14	15	16	12
( )	(3)	(4)	(5)	(6)	(8)	(10)	(12)	(14)	(15)	(17)	(19)	(22)	(11)

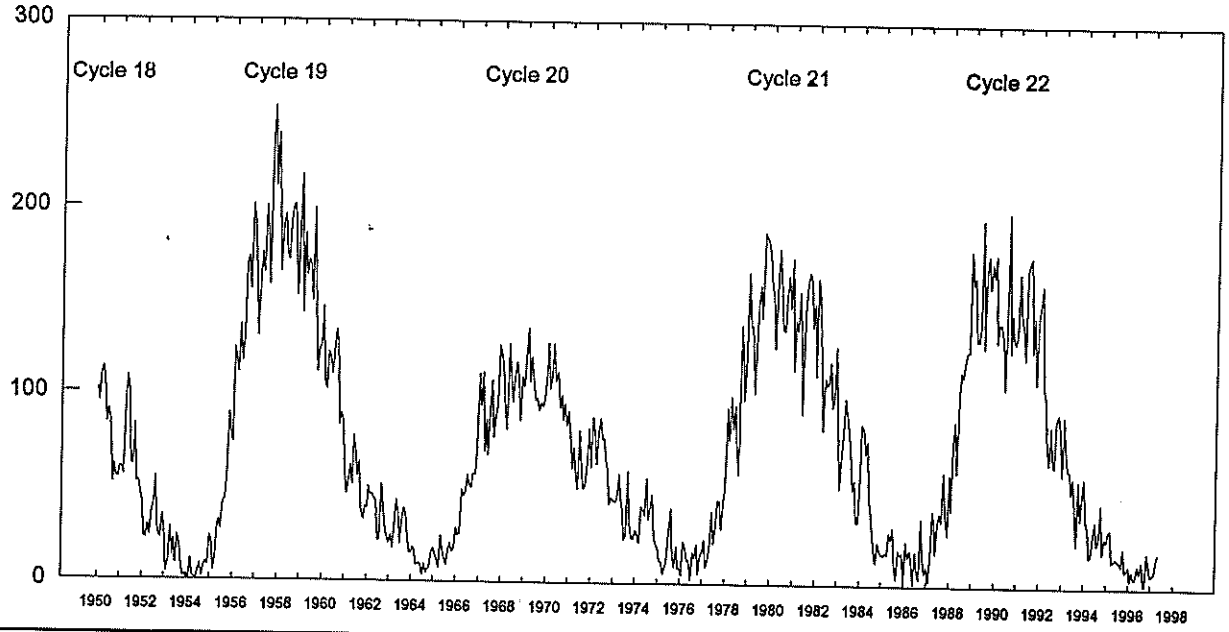
Solar Cycle 22 | Min, Max, and Predictions

September 1986 marks the minimum of Solar Cycle 21 and the onset of Cycle 22, which in turn, reached a maximum in July 1989.

Observed and Predicted Numbers. For the end of Cycle 21, and the rise and decline of Cycle 22, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Jun 1996 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the November 1997 prediction. There exists a 90% chance that in November 1997, the actual smoothed number will fall somewhere between 0 and 34.

Points to Ponder. The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 14 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the minimum value of 12.3 that occurred in Sep 1986.

Mean Monthly Sunspot Numbers
Jan 1950 - May 1997



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
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	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	122.3	
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	47.0	
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	38.0	
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	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4	
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2	
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6	M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6	
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7	
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3	
1993	59.3	91.0	69.8	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6	
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9	
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.2	9.0	10.0	17.5	
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	1.8	18.6	12.7	8.7	
1997	6.5	7.6	8.8	15.8	18.5								11.4	

Values are preliminary after Sep 1996. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

MAY 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	03	1845	1847	1852	S32	E55		05	8.1	7	SF		3	E		13		
GOES		2158	2212	2300						62		B 1.0						
GOES	04	0701	0706	0713						12		B 1.2						
GOES		1251	1255	1301						10		B 1.2						
GOES		1312	1319	1327						15		B 1.7						
GOES	05	0035	0100	0131						56		B 4.3						
RAMY	06	1405	1405	1416	N18	E65	8038	05	11.5	11	SF	B 1.2	4	E		13		H
GOES	07	0312	0323	0356						44		B 1.9						
SVTO	08	0931	0934	0938	S32	W09		05	7.7	7	SF		3	E		13		H
GOES	12	0055	0102	0117						22		B 1.2						
SVTO		0444	0454	0632	N21	W07	8038	05	11.7	108	1N		3	E		195		UF
LEAR		0445	0452	0556	N21	W09	8038	05	11.5	71	1F	C 1.3	3	E		100		H
GOES	13	1816	1823	1829						13		B 1.4						
GOES		2013	2017	2024						11		B 1.5						
GOES		2052	2058	2104						12		B 1.5						
GOES		2117	2123	2129						12		B 1.9						
GOES		2309	2320	2337						28		B 2.5						
GOES	14	0036	0042	0051						15		B 1.5						
GOES		0110	0117	0125						15		B 3.7						
GOES		0609	0620	0627						18		B 1.7						
GOES	15	1922	1926	1929						7		B 1.4						
SVTO	16	1251E	1253U	1256D	N24	W68	8038	05	11.3	5D	SF		3	E		12		F
RAMY		1300	1300	1305	N22	W69	8038	05	11.2	5	SF	B 2.1	3	E		26		
SVTO		1300E	1302U	1305D	N24	W68	8038	05	11.3	5D	SF		3	E		12		F
GOES	17	1844	1920	2038						114		B 2.7						
GOES	18	0607	0616	0624						17		B 1.9						
GOES		1029	1034	1042						13		B 1.3						
GOES	19	0248	0333	0352						64		B 3.1						
GOES		0453	0503	0519						26		B 1.5						
GOES		1018	1021	1023						5		B 1.0						
GOES	20	1745	1812	1847						62		B 2.8						
GOES		2145	2210	2216						31		C 4.2						
LEAR	21	0040	0121	0142	N04	E00	8040	05	21.0	62	SF	B 2.3	3	E		65		H
GOES		0109	0119	0124						15		B 4.6						
LEAR		0234	0254	0310	N04	E00	8040	05	21.1	36	SF		3	E		20		
LEAR		0310	0311	0318	N04	W01	8040	05	21.0	8	SF		3	E		12		
LEAR		0324	0328	0355	N04	W01	8040	05	21.1	31	SF		3	E		18		
GOES		0438	0443	0445						7		B 2.2						
GOES		0553	0556	0558						5		B 2.3						
LEAR		0607	0628	0702	N04	W02	8040	05	21.1	55	SF	C 2.7	3	E		95		F
SVTO		0611	0624U	0645D	N04	W03	8040	05	21.0	34D	1F		3	E		116		F
SVTO		0808	0811	0817	N04	W05	8040	05	21.0	9	SF		3	E		17		
SVTO		0819	0826	0837	N04	W05	8040	05	21.0	18	SF		3	E		12		
SVTO		0838	0842	0849	N28	W56	8043	05	17.0	11	SF		3	E		12		
SVTO		0913	0913	0919	N28	W57	8043	05	16.9	6	SF		3	E		16		
SVTO		1012	1016	1017	N28	W57	8043	05	17.0	5	SF		3	E		15		
SVTO		1101	1114	1123	N28	W58	8043	05	16.9	22	SF		3	E		21		
RAMY		1251	1251	1255	N05	W07	8040	05	21.0	4	SF		3	E		18		
RAMY		1315	1318	1325	N04	W05	8040	05	21.2	10	SF		3	E		21		
SVTO		1315	1318	1327	N04	W07	8040	05	21.0	12	SF		3	E		26		
SVTO		1334	1335	1345	N29	W64	8043	05	16.5	11	SF		3	E		14		F
SVTO		1359	1428U	1438D	N28	W60	8043	05	16.9	39D	SF		3	E		15		F
RAMY		1446	1447	1451	N04	W07	8040	05	21.1	5	SF		3	E		22		

Hα SOLAR FLARES

MAY 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	21	1659E	1659U	1719	N04	W08	8040	05	21.1	20D	SF	B 5.4	2	E		12		F
RAMY		2008E	2008U	2112D	N05	W12	8040	05	20.9	64D	SF	M 1.3	2	E		82		F
HOLL		2045E	2045U	2048D	N04	W10	8040	05	21.1	3D	SF		1	E		21		
GOES	22	0741	0744	0747						6		B 1.9						
GOES		0841	0844	0846						5		B 2.4						
GOES		1356	1401	1407						11		B 2.3						
GOES		1946	1949	1956						10		B 1.6						
GOES		2139	2144	2149						10		B 1.9						
GOES	23	0412	0418	0423						11		B 2.5						
SVTO		0934	0934	0949	N04	W32	8040	05	21.0	15	SF	B 2.2	3	E		12		
GOES		1410	1417	1433						23		B 1.1						
RAMY		2002E	2003U	2017	N02	W26	8045	05	21.9	15D	SF	B 3.5	2	E		14		
GOES		2244	2247	2253						9		B 1.2						
HOLL	24	0041	0041	0045	S28	E66	8046	05	29.2	4	SF	B 5.2	3	E		11		
GOES		1909	1923	1934						25		B 2.1						
RAMY	25	1353	1401	1516	S28	E50	8046	05	29.5	83	SF	B 4.8	4	E		21		F
SVTO		1355	1439	1517	S29	E49	8046	05	29.4	82	SF		3	E		42		F
GOES		1425	1500	1552						87		B 6.5						
GOES		1948	1953	1958						10		B 3.0						
GOES		2139	2155	2216						37		B 2.2						
GOES	26	0127	0131	0138						11		B 3.0						
GOES		0930	1004	1014						44		B 3.7						
GOES		1202	1207	1212						10		B 1.6						
GOES		1528	1532	1537						9		B 2.4						
GOES		2017	2021	2027						10		B 3.6						
GOES		2243	2247	2251						8		B 2.7						
GOES	27	0438	0444	0455						17		B 7.6						
GOES		0517	0522	0530						13		B 3.3						
GOES		0632	0645	0656						24		B 3.2						
GOES		0705	0713	0722						17		B 5.7						
GOES		0807	0813	0831						24		B 3.4						
SVTO		0939	0957U	1007	N02	W80	8045	05	21.4	28	1F	C 4.6	2	E		121		F
RAMY		1112	1116	1128	N00	W75	8045	05	21.9	16	SF		3	E		50		F
HOLL		1238E	1245U	1252	N02	W82	8045	05	21.4	14D	SF		2	E		33		
SVTO		1308	1323	1333	N03	W85	8045	05	21.2	25	SF		3	E		53		
HOLL		1321	1322	1324	N02	W83	8045	05	21.3	3	SF	B 8.4	3	E		28		
RAMY		1322	1324	1328	N02	W75	8045	05	21.9	6	SF		3	E		19		
SVTO		1428	1429	1431	N03	W90	8045	05	20.9	3	SF		3	E		33		
GOES		1517	1524	1530						13		B 3.1						
GOES		1553	1604	1617						24		C 1.0						
GOES	28	0043	0047	0053						10		B 2.1						
GOES		0315	0342	0406						51		C 1.2						
SVTO		0700	0702	0709	S29	E17	8046	05	29.6	9	SF	B 2.2	3	E		36		F
GOES		0927	0937	0948						21		B 2.4						
GOES		1137	1144	1151						14		B 2.4						
GOES		1200	1222	1235						35		B 3.3						
GOES		1410	1420	1426						16		B 4.8						
GOES		1433	1437	1440						7		B 4.5						
GOES		1644	1650	1706						22		B 1.3						
GOES		1749	1755	1809						20		B 2.1						
GOES		2341	2345	2349						8		B 1.4						
HOLL	29	0034	0035	0039	S24	E03	8046	05	29.2	5	SF		3	E		12		
GOES	31	1201	1203	1212						11		B 1.7						

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

MAY 1997

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
14	8800	SGMR	4 S/F	1452.0	1453.0	548.0	64.0			QL=4 ST=1 TYP=3
	2695	SGMR	4 S/F	1452.0	1453.0	548.0	63.0			QL=4 ST=1 TYP=3
21	2695	LEAR	4 S/F	0620.0	0621.0	3.0	15.0			QL=4 ST=2 TYP=3
	2695	PALE	4 S/F	2008.0	2009.0	3.0	46.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	2009.0	2009.0	2.0	65.0			QL=4 ST=3 TYP=3
	2695	PALE	4 S/F	2043.0	2047.0	8.0	66.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:
LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill SVTO = San Vito

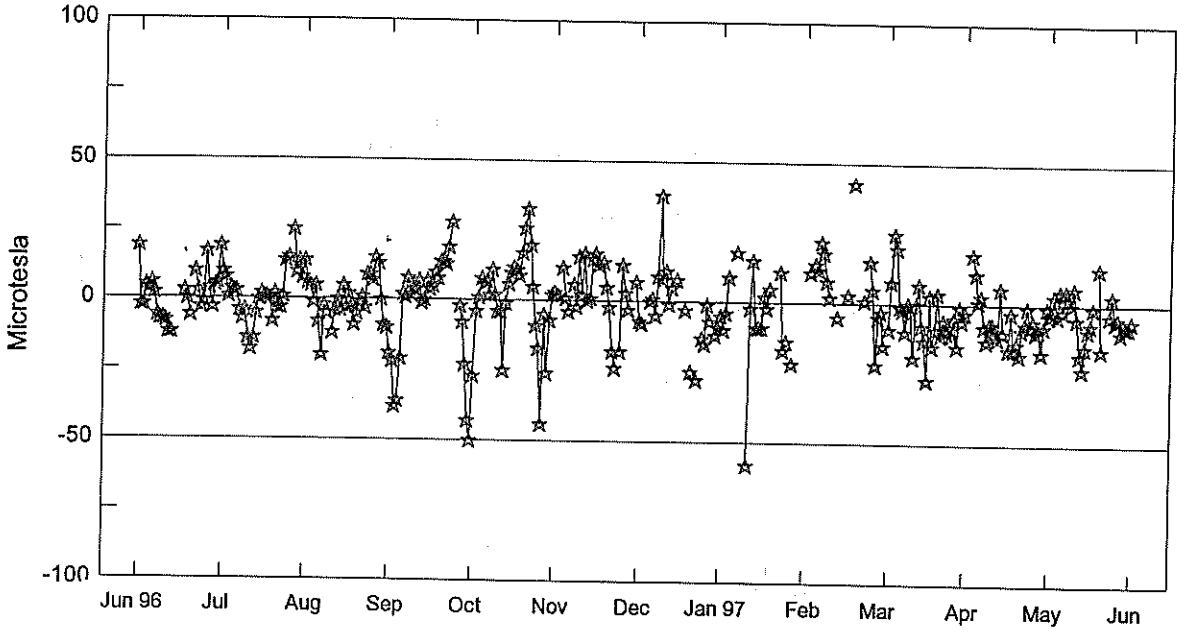
Explanation of Type Code:

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 Precusor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

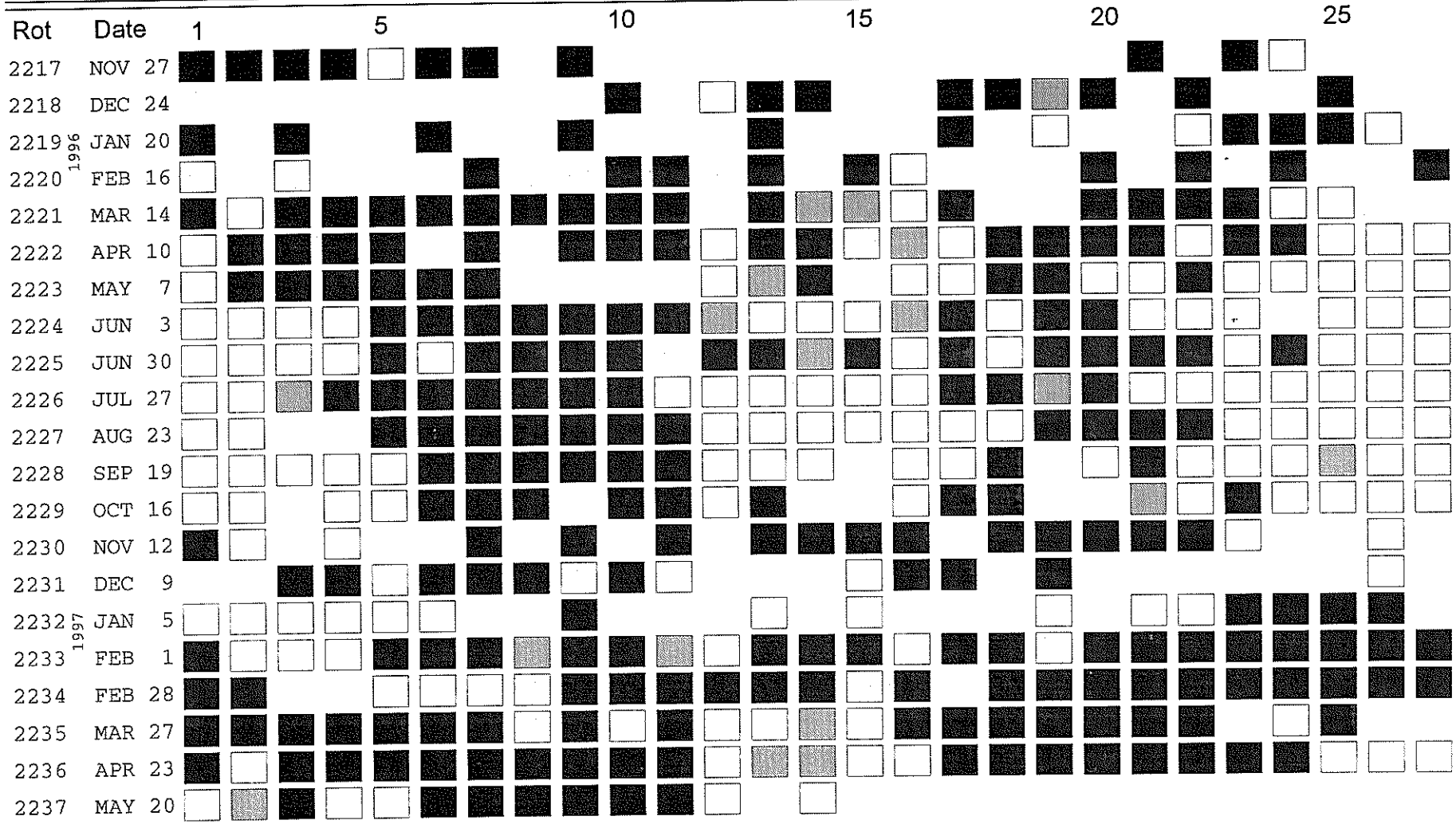
Stanford Mean Solar Magnetic Field (Microtesla)
"Sun-As-A-Star"



Day	Jun 96	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr	May
1	10	14	-19	-27	3	-7	-5	---	-9	-3	-4	-6
2	8	6	-22	-4	2	-8	-10	---	8	---	-3	-4
3	1	5	-38	1	---	---	-4	11	25	---	3	-2
4	4	-1	-36	8	12	---	9	---	20	18	-4	3
5	3	5	-21	6	1	0	---	14	-1	11	5	0
6	3	-8	2	7	-4	1	---	12	-2	1	-2	0
7	-4	-20	1	2	---	-5	18	22	-10	3	5	3
8	-7	-2	8	11	6	9	---	18	0	-8	2	2
9	-4	-5	2	2	-2	38	---	8	-3	-13	0	-6
10	-14	---	4	-4	16	8	---	2	-19	-7	6	-12
11	-18	-12	4	-4	2	11	-58	---	0	-7	-5	-13
12	-14	-4	7	-25	17	-1	-2	---	7	-9	-18	-3
13	-5	0	-1	-1	0	5	15	-5	-8	-12	-23	-12
14	0	-4	0	6	1	---	-9	---	-13	6	-15	-17
15	2	5	7	10	15	8	-9	---	-27	-10	-9	-3
16	1	-3	4	12	17	---	-9	---	3	---	-7	-4
17	1	2	5	11	13	---	2	3	-15	-16	-1	12
18	0	-2	10	9	---	-3	-2	---	-9	-3	---	4
19	-8	-9	8	17	14		5	43	4	-16	13	2
20	2	-5	14	26	5	-25	---	---	-11	-14	-16	2
21	-3	-1	14	33	-2	---	---	---	-6	-18	---	0
22	-3	1	13	20	-18	-28	---	---	-9	-9	---	-8
23	1	-3	19	5	-24	---	11	1	-8	-7	-4	8
24	14	9	28	-9	---	-13	-17	---	-11	-1	3	6
25	15	9	---	-17	-18	-15	-14	15	-5	-8	-6	-5
26	---	7	---	-44	13	-1	---	5	-15	-6	-5	-13
27	25	15	-2	-5	3	-7	-22	-22	-1	-10	-10	-16
28	10	13	-8	-26	-3	---	---	-5	-6	-9	-7	-4
29	14	0	-23	-7	---	-12	---	-3		-17	-8	-7
30	8	-9	-43	2	---	-9	---	-15		-8	-8	-4
31		-10	-50		7		---	---		-1		1

Note: --- Indicates no data available for the day.

STANFORD MEAN SOLAR MAGNETIC FIELD

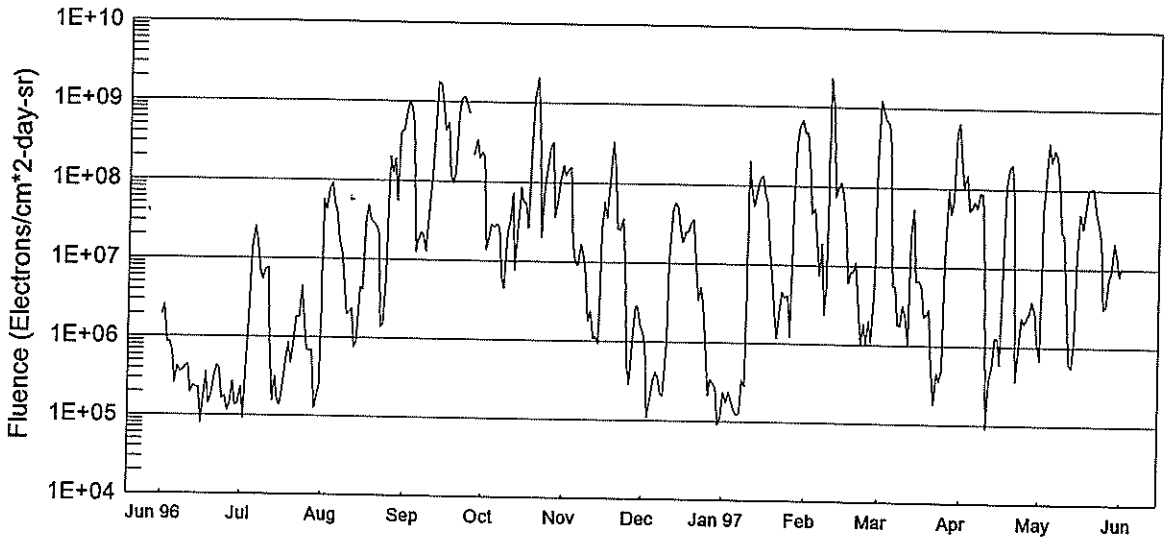


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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 are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

GOES Daily Electron Fluence
Jun 96 - May 97



Day	Jun 96	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr	May
1	1.9E+06	2.3E+05	5.6E+07	7.0E+08	2.0E+08	1.2E+08	1.3E+06	2.3E+05	4.7E+08	1.2E+09	1.8E+08	6.8E+05
2	2.5E+06	9.1E+04	4.2E+07	9.9E+08	1.3E+07	1.4E+08	8.8E+05	1.7E+05	2.0E+08	9.0E+08	1.0E+08	5.2E+07
3	8.5E+05	5.1E+05	7.8E+07	8.3E+08	2.1E+07	1.5E+08	1.0E+05	2.3E+05	4.5E+07	7.0E+08	1.4E+08	1.3E+08
4	8.6E+05	1.8E+06	9.1E+07	4.8E+08	2.8E+07	1.7E+07	1.7E+05	1.8E+05	5.3E+07	6.3E+08	5.2E+07	3.8E+08
5	6.6E+05	1.4E+07	5.1E+07	1.2E+07	2.7E+07	1.0E+07	3.1E+05	1.4E+05	2.4E+07	3.4E+08	5.6E+07	2.2E+08
6	2.5E+05	2.5E+07	3.9E+07	1.7E+07	2.9E+07	9.2E+06	4.1E+05	1.2E+05	7.5E+06	5.6E+06	6.8E+07	3.1E+08
7	4.2E+05	1.5E+07	1.7E+07	2.2E+07	2.6E+07	1.6E+07	3.4E+05	1.2E+05	1.9E+07	5.5E+06	5.6E+07	2.6E+08
8	3.5E+05	6.9E+06	1.2E+07	2.0E+07	6.5E+06	1.2E+07	2.1E+05	3.4E+05	2.4E+06	1.8E+06	8.7E+07	1.1E+08
9	3.7E+05	5.4E+06	6.2E+06	1.2E+07	4.6E+06	6.8E+06	2.0E+05	2.8E+05	6.0E+06	1.8E+06	8.4E+07	2.9E+07
10	4.1E+05	7.4E+06	2.0E+06	3.6E+07	2.4E+07	1.8E+06	9.7E+05	2.0E+08	2.3E+09	3.2E+06	9.8E+06	2.6E+07
11	4.4E+05	7.6E+06	2.1E+06	8.5E+07	3.1E+07	2.4E+06	1.1E+07	8.6E+07	9.7E+08	2.3E+06	9.1E+04	3.1E+06
12	1.9E+05	9.6E+05	2.3E+06	3.8E+08	7.3E+07	1.0E+06	4.7E+07	5.4E+07	7.4E+07	1.0E+06	3.7E+05	6.1E+05
13	2.4E+05	1.5E+05	7.6E+05	1.7E+09	7.7E+06	1.1E+06	5.8E+07	8.2E+07	9.6E+07	2.6E+07	5.7E+05	5.5E+05
14	2.2E+05	3.1E+05	9.2E+05	1.6E+09	2.3E+07	9.4E+05	5.1E+07	1.2E+08	1.1E+08	5.3E+07	1.2E+06	1.2E+06
15	2.2E+05	1.5E+05	4.4E+06	9.7E+08	8.5E+07	2.6E+07	2.7E+07	1.3E+08	8.2E+07	6.6E+06	1.2E+06	1.6E+07
16	7.7E+04	1.3E+05	4.2E+06	4.3E+08	5.8E+07	5.7E+07	1.8E+07	7.9E+07	3.4E+07	6.6E+06	5.9E+05	4.9E+07
17	1.7E+05	2.2E+05	3.0E+07	5.4E+08	5.3E+07	3.7E+07	2.4E+07	6.2E+07	6.1E+06	5.8E+06	9.7E+06	3.2E+07
18	3.6E+05	5.2E+05	4.8E+07	1.2E+08	2.6E+07	1.0E+08	2.5E+07	1.7E+07	8.3E+06	2.4E+06	1.0E+08	5.5E+07
19	1.3E+05	8.5E+05	3.1E+07	9.6E+07	2.2E+08	3.3E+08	3.2E+07	6.8E+06	8.4E+06	2.4E+06	1.8E+08	9.8E+07
20	1.9E+05	4.7E+05	2.9E+07	1.2E+08	1.1E+09	1.4E+08	3.6E+07	2.4E+06	1.1E+07	2.9E+06	2.0E+08	1.0E+08
21	3.2E+05	8.5E+05	2.6E+07	6.5E+08	2.0E+09	2.7E+07	1.1E+07	1.1E+06	3.7E+06	5.6E+05	6.9E+07	1.0E+08
22	4.3E+05	1.8E+06	2.0E+07	1.1E+09	5.0E+08	2.5E+07	3.4E+06	2.6E+06	9.9E+05	1.8E+05	3.6E+05	5.0E+07
23	3.9E+05	1.8E+06	1.3E+06	1.1E+09	2.0E+07	3.5E+07	5.1E+06	4.6E+06	1.8E+06	4.5E+05	8.4E+05	3.6E+07
24	1.6E+05	4.4E+06	1.5E+06	9.3E+08	8.1E+07	7.9E+06	2.8E+06	3.9E+06	1.0E+06	3.5E+05	2.3E+06	2.1E+07
25	1.7E+05	1.6E+06	5.9E+06	7.1E+08	1.4E+08	5.0E+05	9.5E+05	4.0E+06	2.0E+06	4.8E+05	2.0E+06	3.1E+06
26	1.1E+05	6.9E+05	1.9E+08	--	2.8E+08	2.8E+05	2.1E+05	1.2E+06	1.1E+06	1.2E+07	2.3E+06	3.4E+06
27	1.4E+05	6.8E+05	1.2E+08	2.2E+08	3.2E+08	8.9E+05	3.4E+05	5.2E+07	5.7E+06	9.4E+07	2.7E+06	8.0E+06
28	2.7E+05	6.9E+05	1.9E+08	3.4E+08	3.6E+07	2.8E+06	3.0E+05	3.3E+08	2.2E+08	4.7E+07	3.8E+06	8.8E+06
29	1.3E+05	1.2E+05	5.6E+07	2.0E+08	5.7E+07	2.8E+06	2.6E+05	5.7E+08		7.3E+07	2.7E+06	2.1E+07
30	1.4E+05	1.8E+05	4.1E+08	2.3E+08	1.0E+08	1.5E+06	9.0E+04	6.8E+08		4.9E+08	1.2E+06	1.4E+07
31		2.5E+05	4.4E+08		1.6E+08		1.0E+05	4.7E+08		6.6E+08		8.2E+06

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '--' indicates data not available. GOES9 data began April, 1996.

CONTENTS

Prompt Reports

Number 634 Part I

DATA FOR APRIL 1997

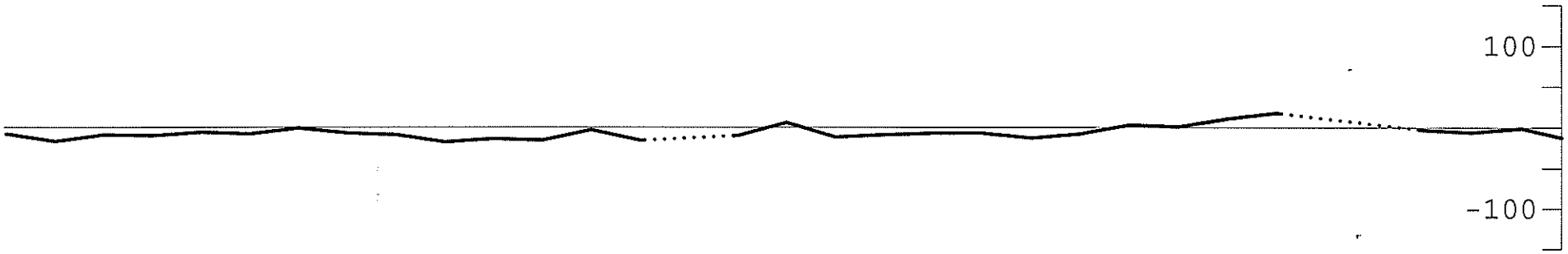
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1920

(1 to 28 March 1997)

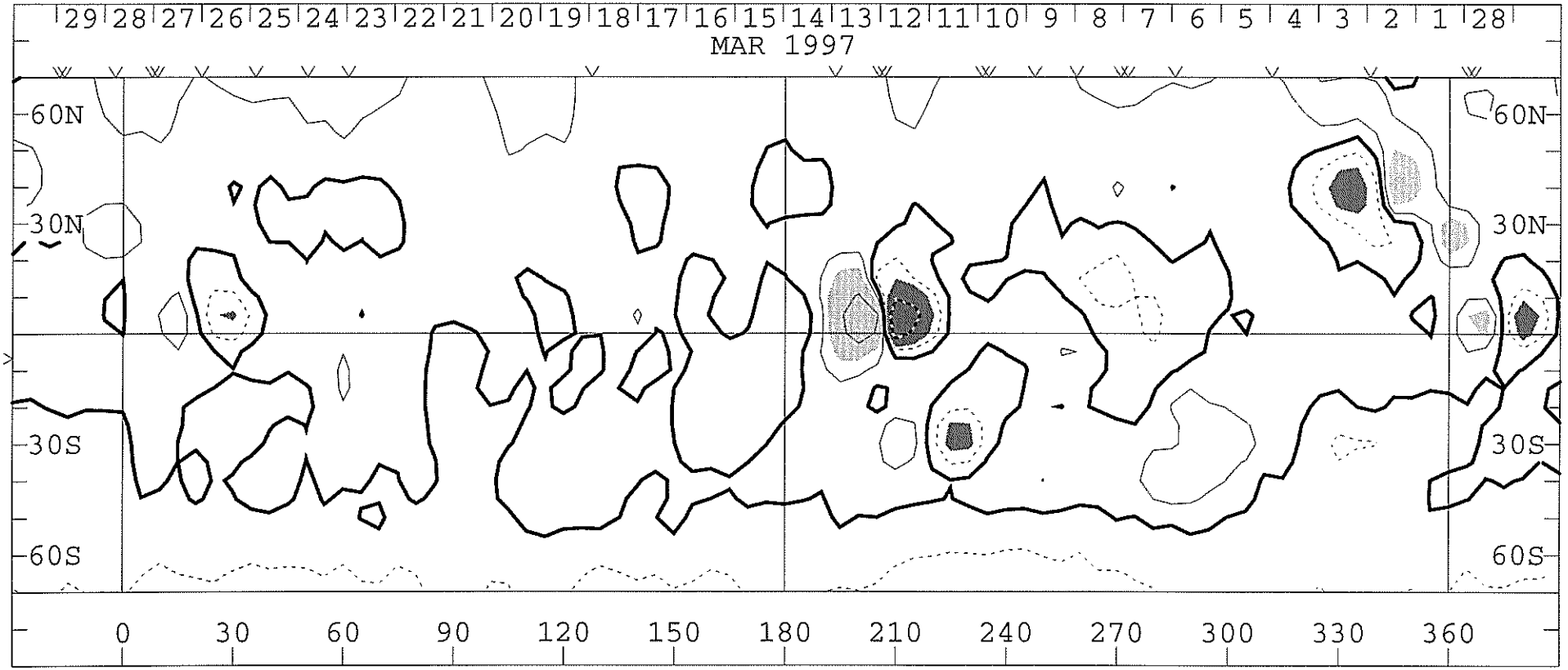
WILCOX SOLAR OBSERVATORY

Mean Field



Photospheric Magnetic Field

0, ±100, 500, 1000, 2000 MicroTesla



Heliographic Longitude

1920

SOLAR MAGNETIC FIELD SYNOPTIC CHART

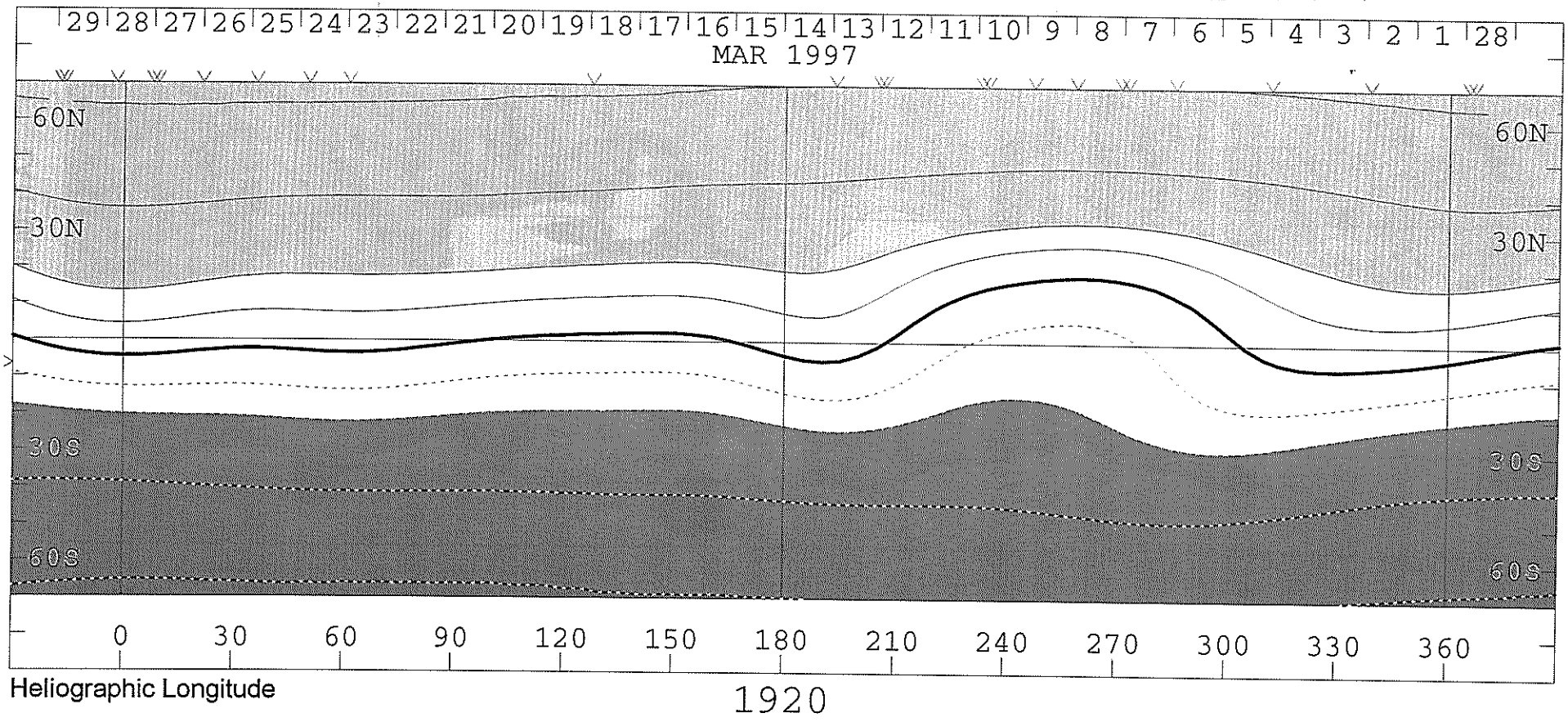
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1920

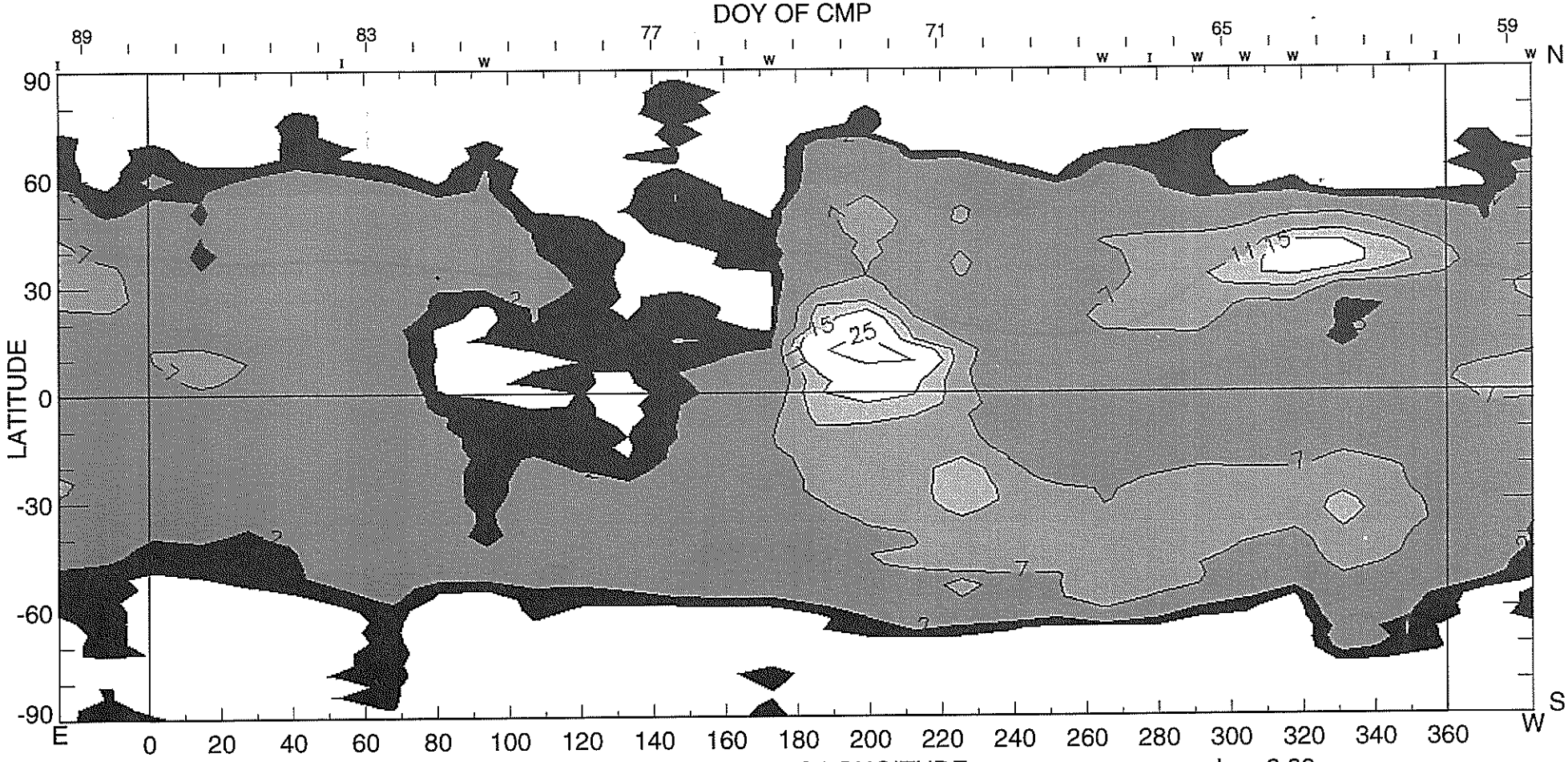
(1 to 28 March 1997)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1920 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



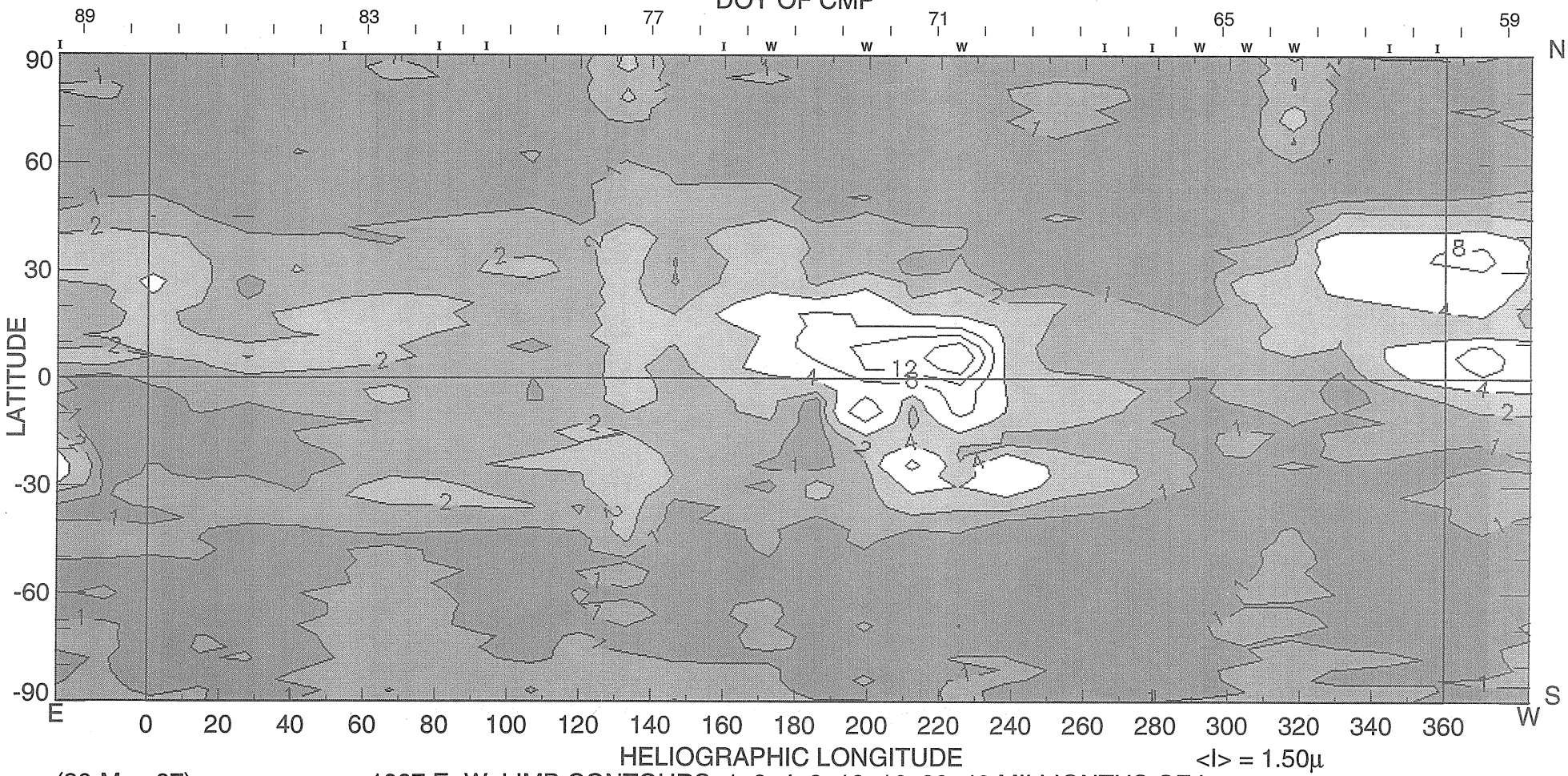
<I> = 3.39μ

(30-May-97)

1997 E+W LIMB CONTOURS: 1, 2, 7, 11, 15, 25, 35, 45 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 1920 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



(30-May-97)

1997 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

NOTE: No Ca XV emission observed at Sacramento Peak for rotation 1920.

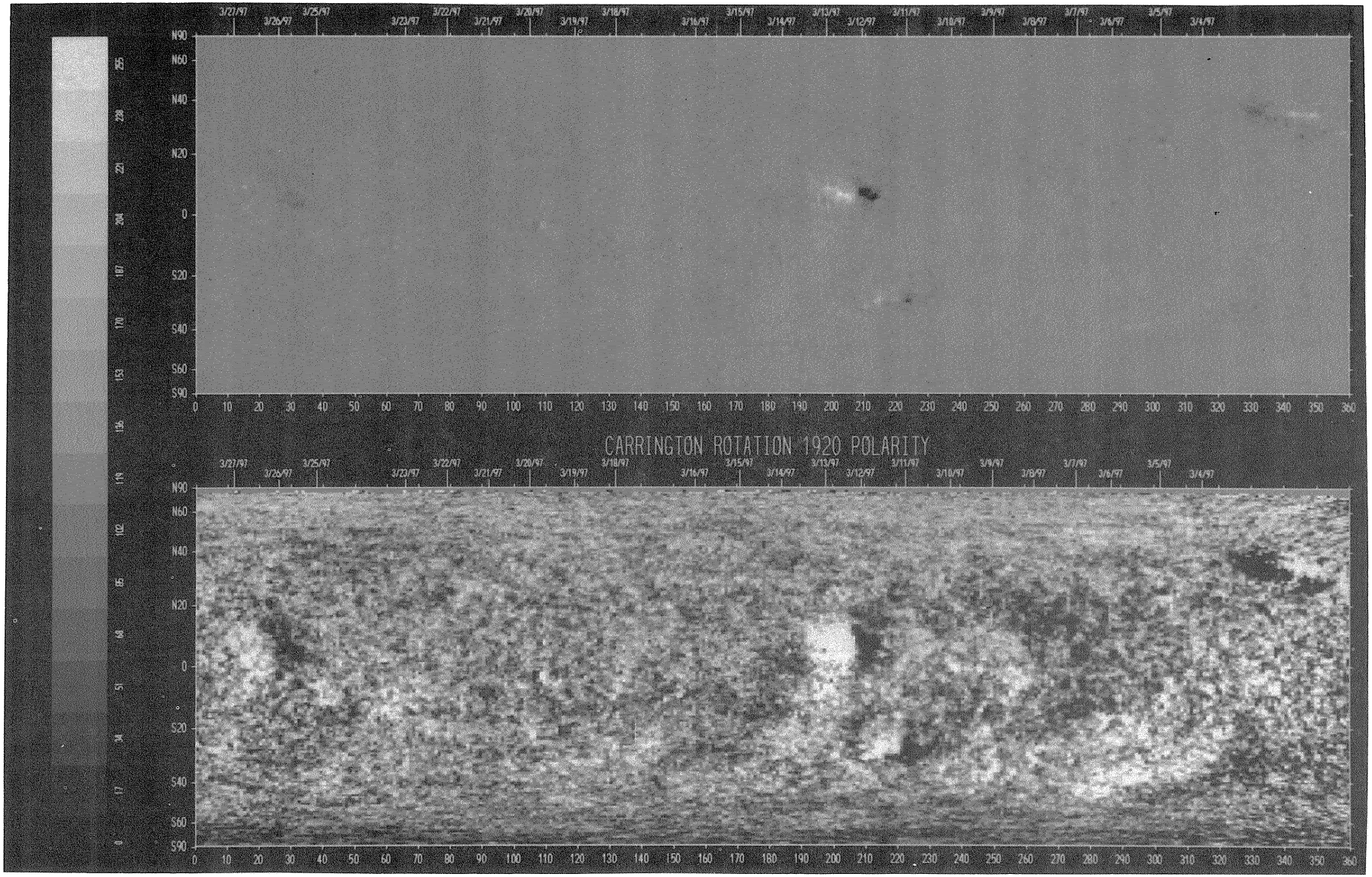
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1920

(1 to 28 March 1997)

National Solar Observatory/Kitt Peak

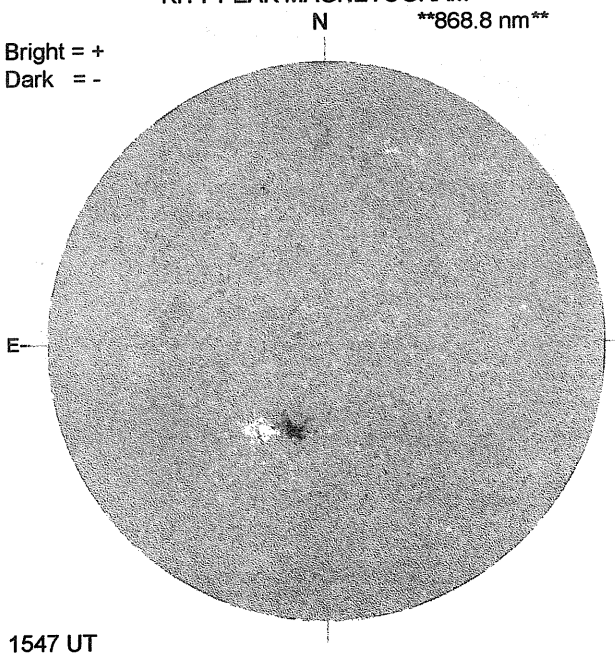
Dates of Observation



Heliographic Longitude

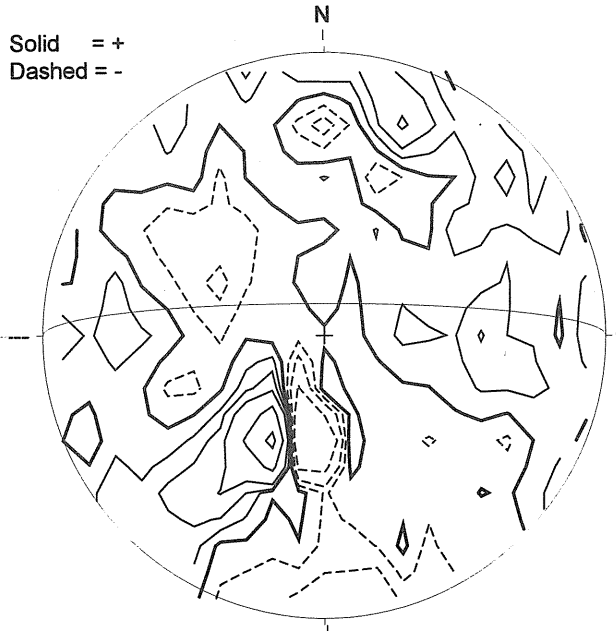
APRIL 1, 1997 (P= - 26.17 ° , B0 = - 6.54 , L0 = 315.16)

KITT PEAK MAGNETOGRAM



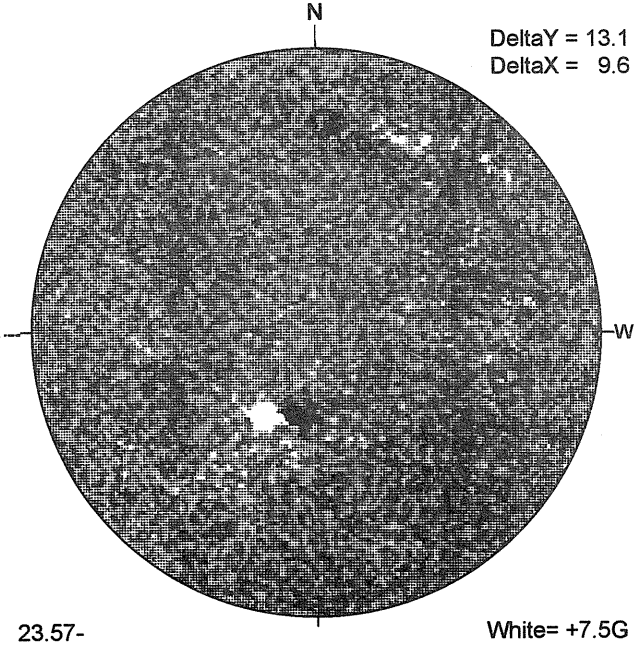
1547 UT

STANFORD MAGNETOGRAM



1929 UT

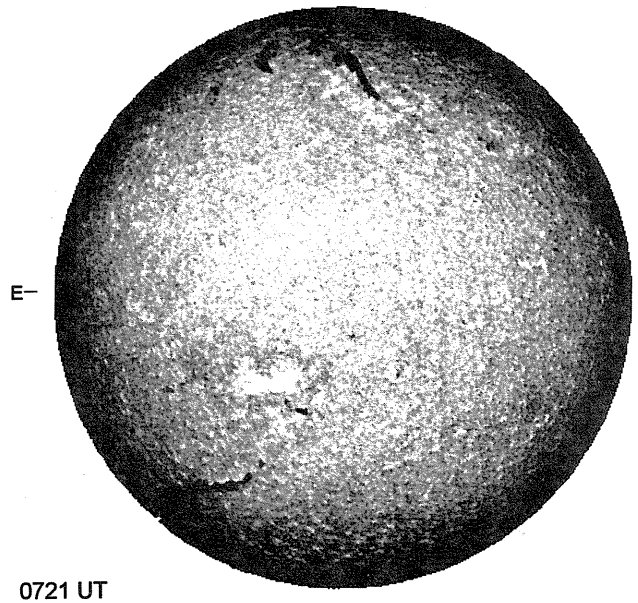
MT. WILSON MAGNETOGRAM



23.57-
24.52 UT

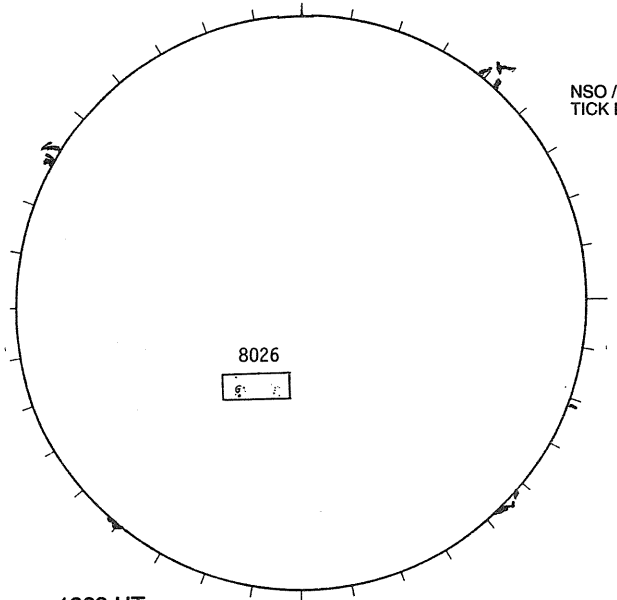
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



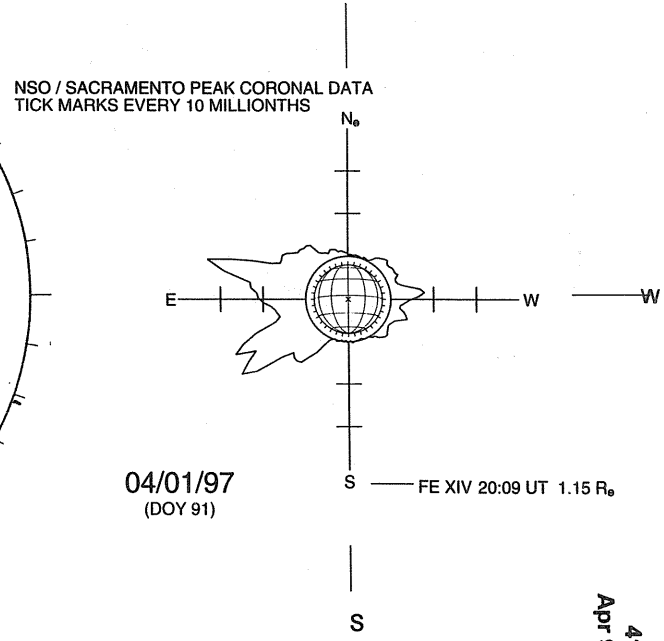
0721 UT

RAMEY SUNSPOT



1203 UT
0529 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

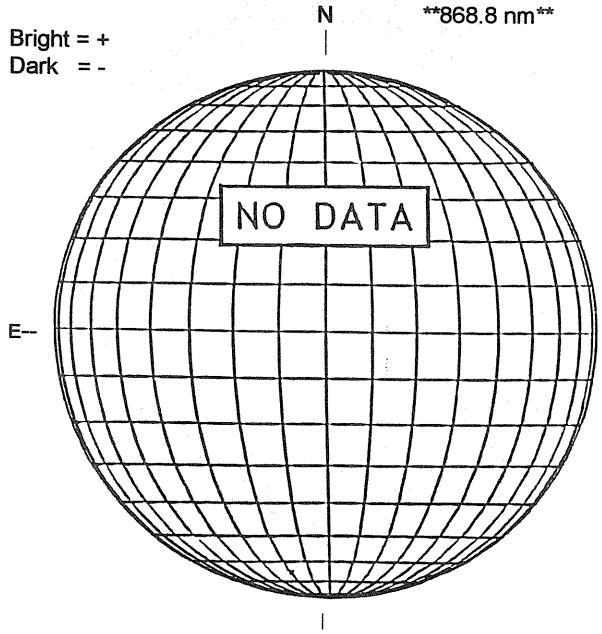


04/01/97
(DOY 91)

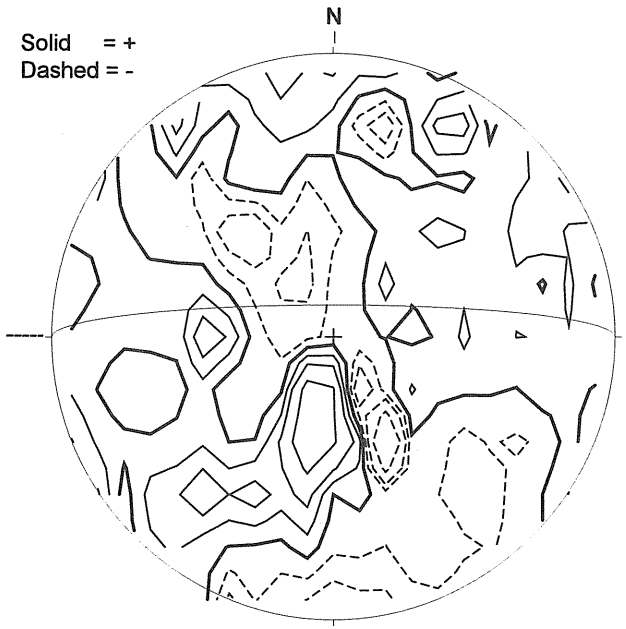
41
Apr 97

APRIL 2, 1997 (P= - 26.21, Bo = - 6.48, Lo = 301.98)

KITT PEAK MAGNETOGRAM

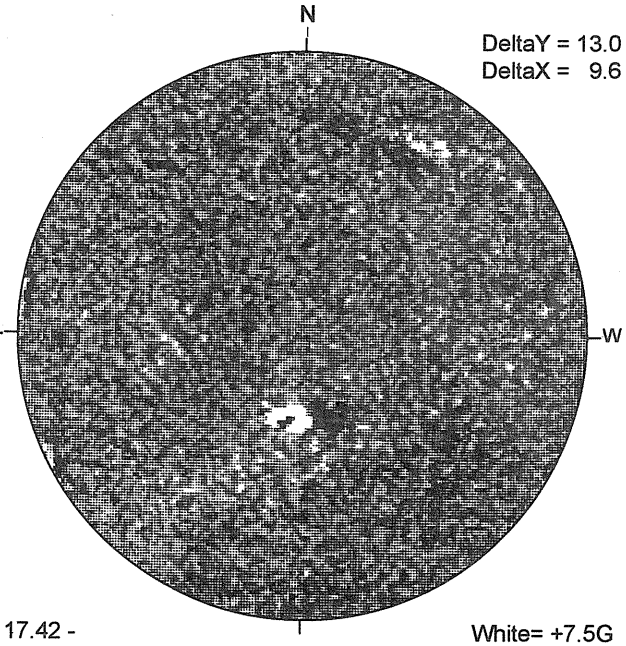


STANFORD MAGNETOGRAM



2110 UT

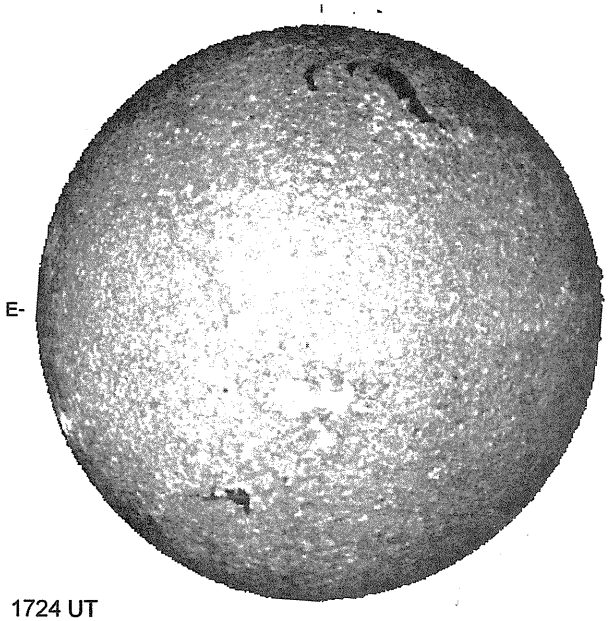
MT. WILSON MAGNETOGRAM



17.42 -
18.37 UT

White= +7.5G
Black = -7.5G

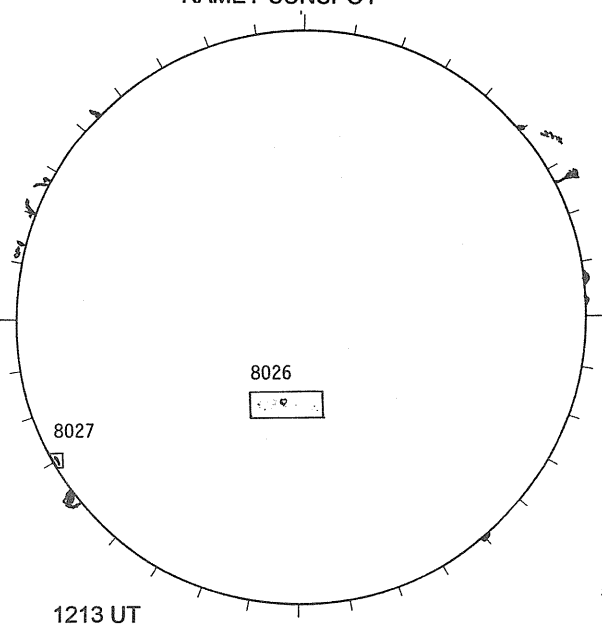
SACRAMENTO PEAK H-ALPHA



1724 UT

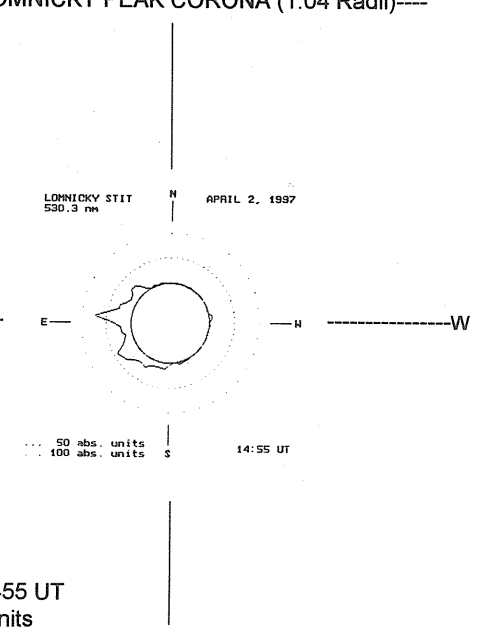
S

RAMEY SUNSPOT



1213 UT
1414 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 1455 UT
... 50 abs. units
. . 100 abs. units

S

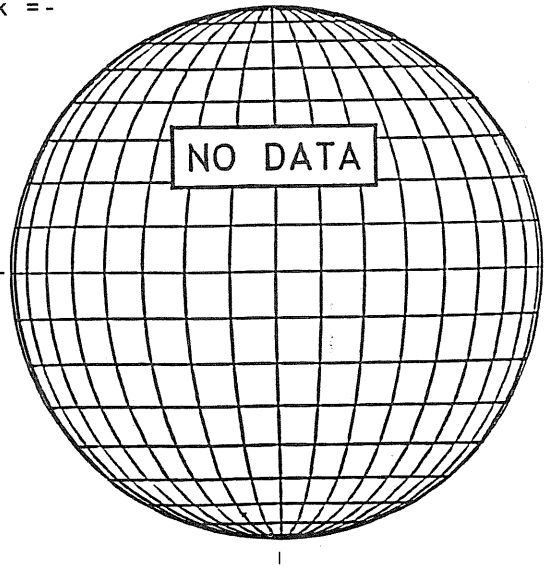
APRIL 3, 1997 (P= - 26.24, Bo = - 6.43 , Lo = 288.79)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



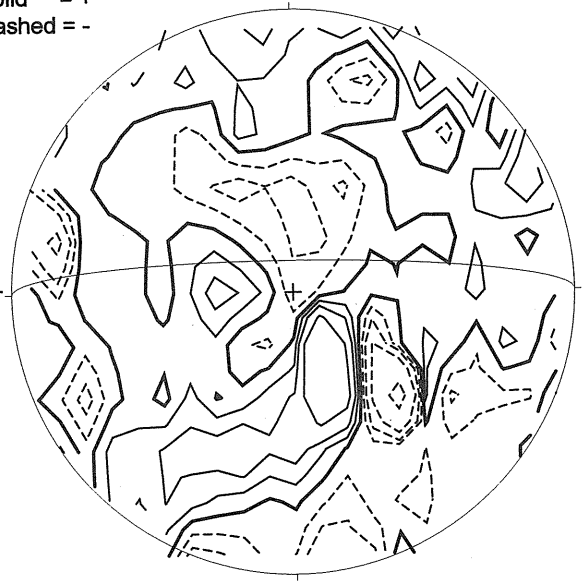
E—

1749 UT

STANFORD MAGNETOGRAM

N

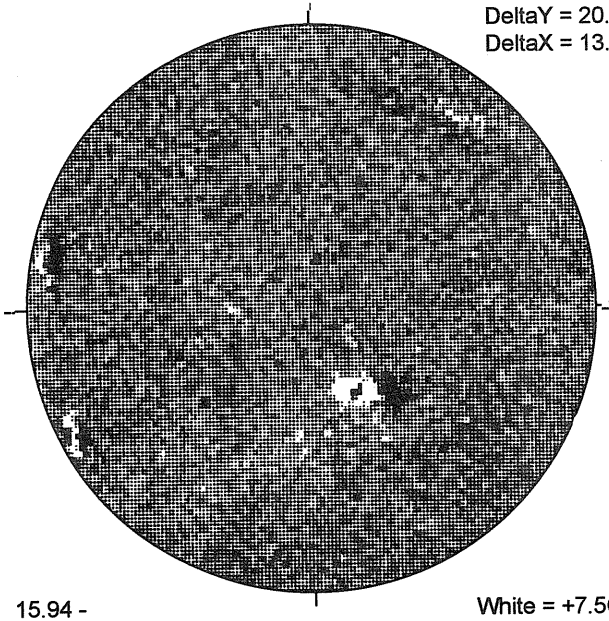
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.0
DeltaX = 13.0

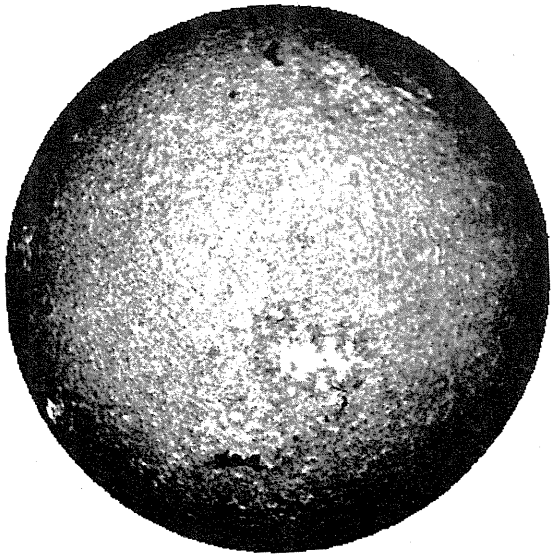


-W

15.94 -
16.35 UT

White = +7.5G
Black = -7.5G

MEUDON H-ALPHA

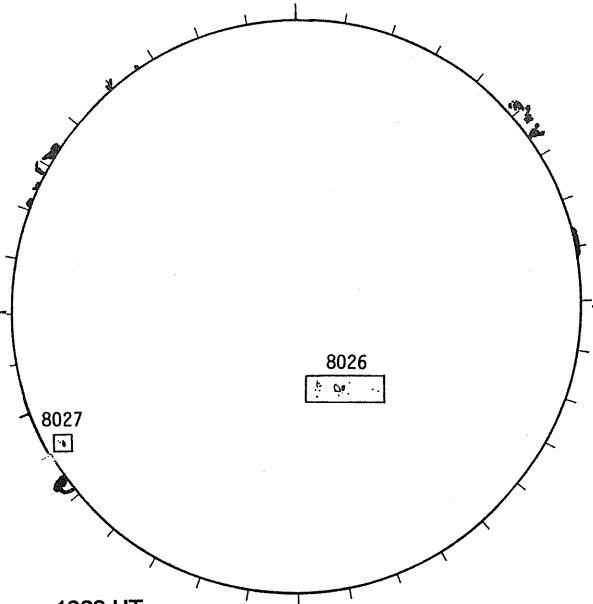


E—

0727 UT

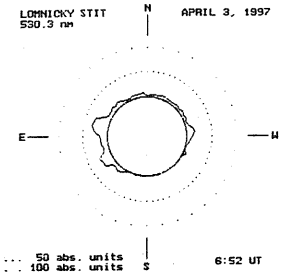
S

RAMEY SUNSPOT



1303 UT
0639 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



W

530.3 nm, 0652 UT
... 50 abs. units
. . 100 abs. units

S

43
Apr 97

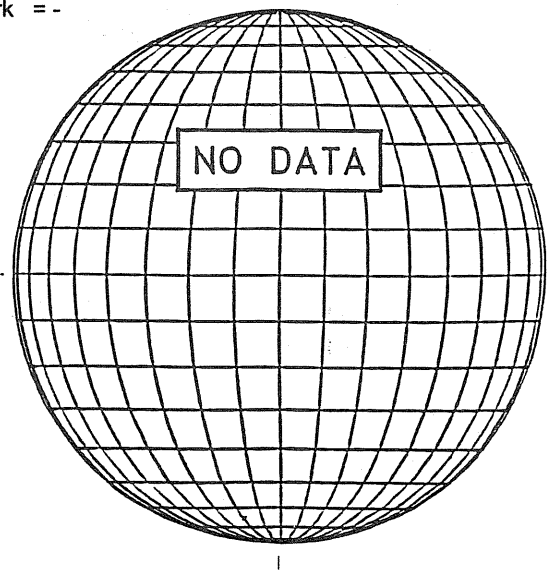
APRIL 4, 1997 (P= - 26.27 , Bo = - 6.37 Lo = 275.60)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

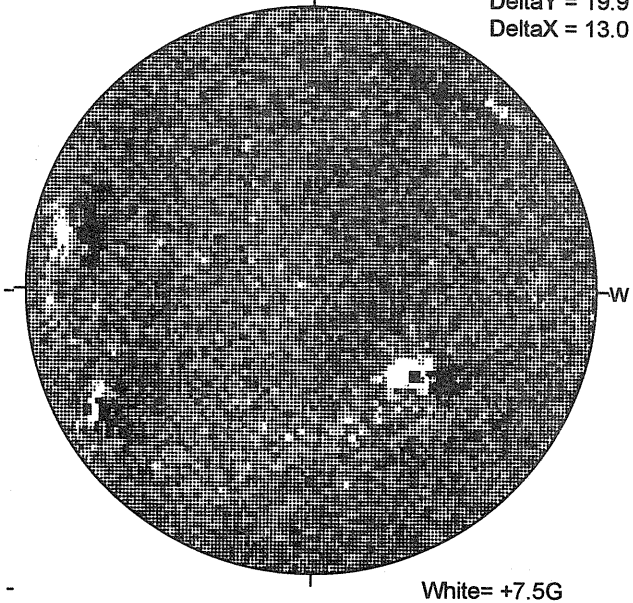
2213 UT

16.70 -
17.11 UT

MT. WILSON MAGNETOGRAM

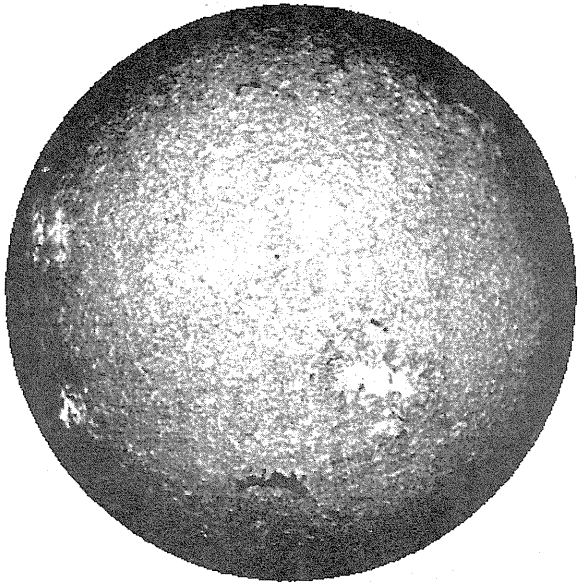
N

DeltaY = 19.9
DeltaX = 13.0



White= +7.5G
Black = -7.5G

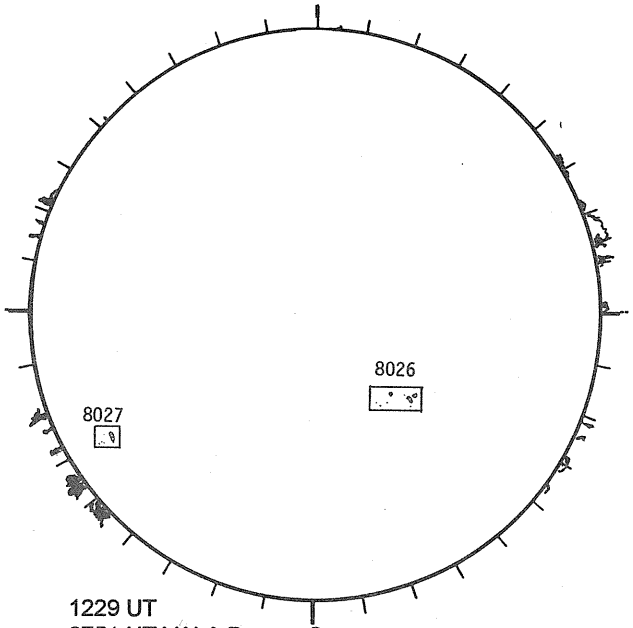
MEUDON H-ALPHA



0657 UT

S

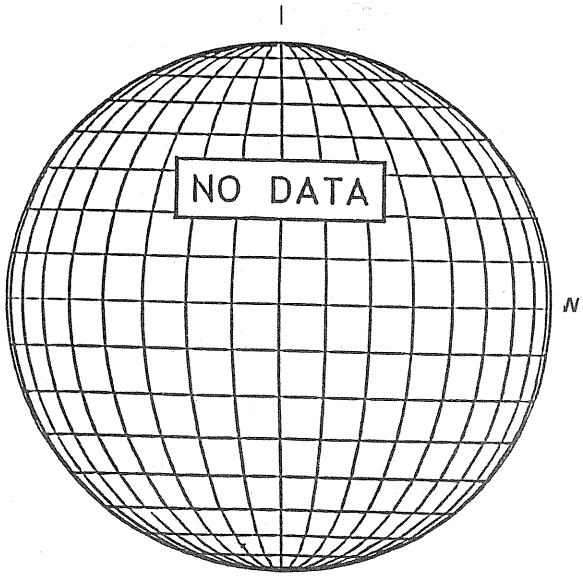
RAMEY SUNSPOT



1229 UT
0751 UT VALA Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

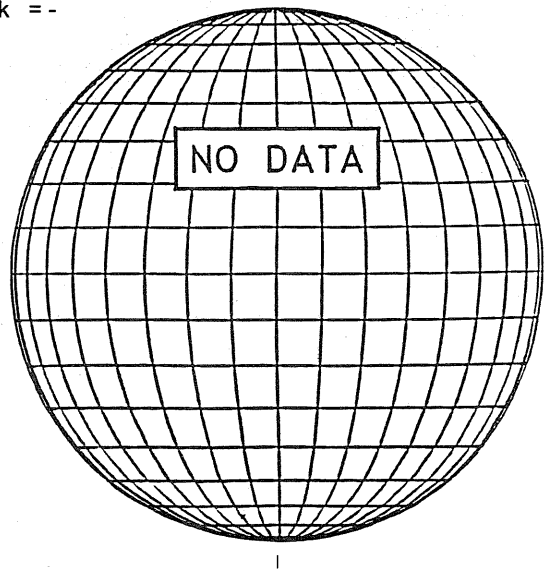
APRIL 5, 1997 (P= - 26.28 , Bo = - 6.31 , Lo = 262.40)

KITT PEAK MAGNETOGRAM

N

868.8 nm

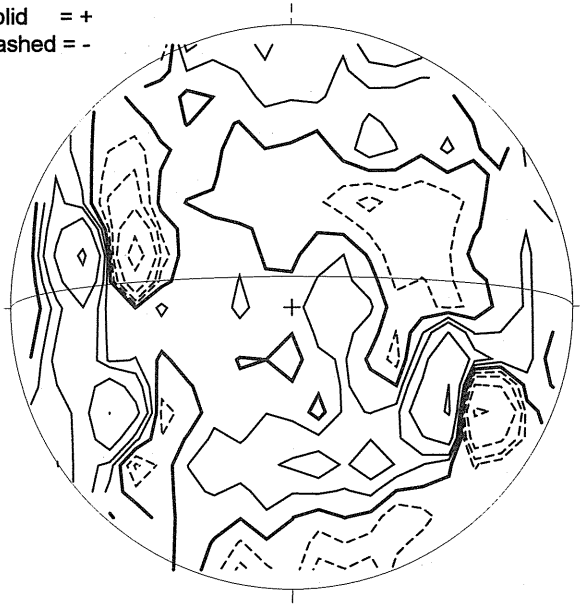
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

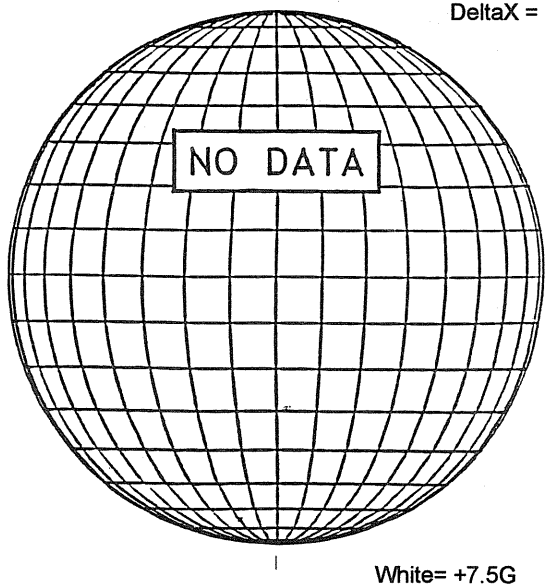


1951 UT

MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =



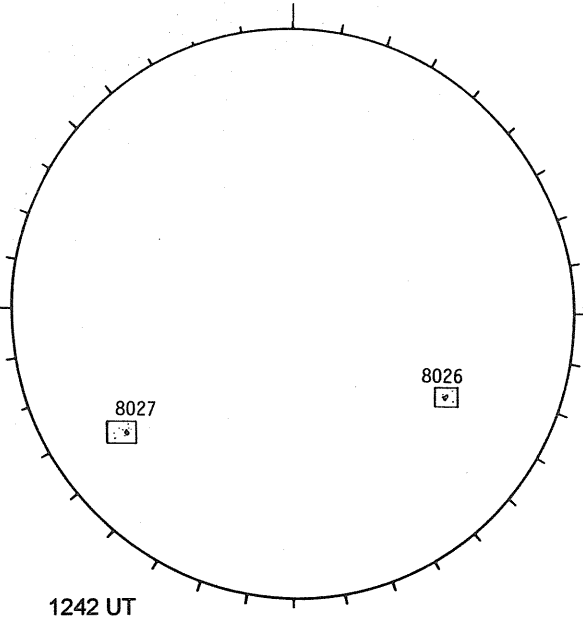
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

1041 UT

S

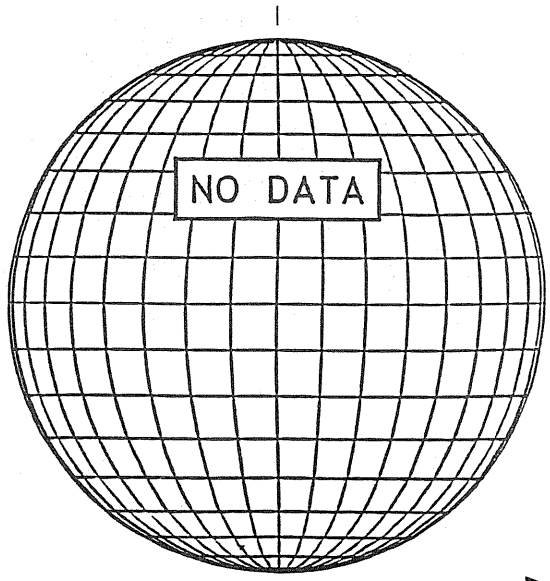
RAMEY SUNSPOT



1242 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

45
Apr 97

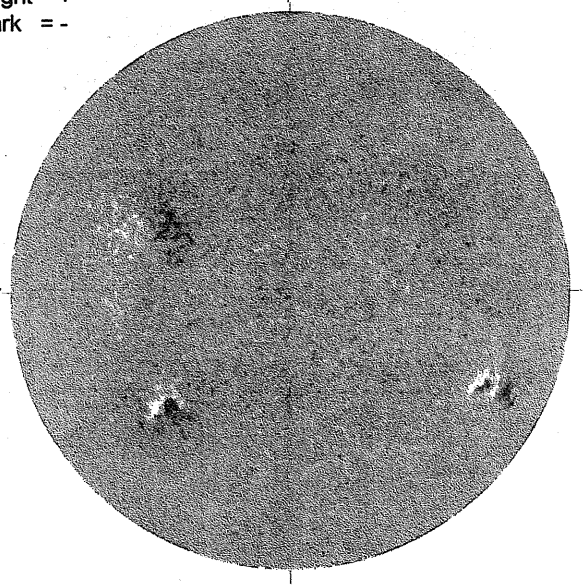
APRIL 6, 1997 (P= - 26.29, Bo = - 6.24 , Lo = 249.21)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



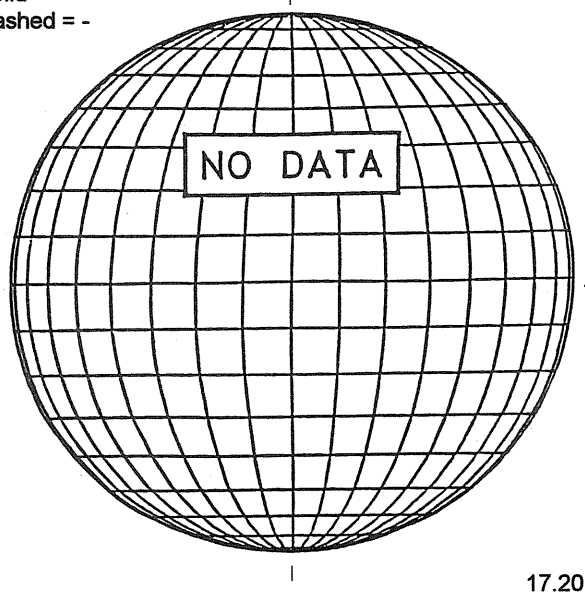
E

1441 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

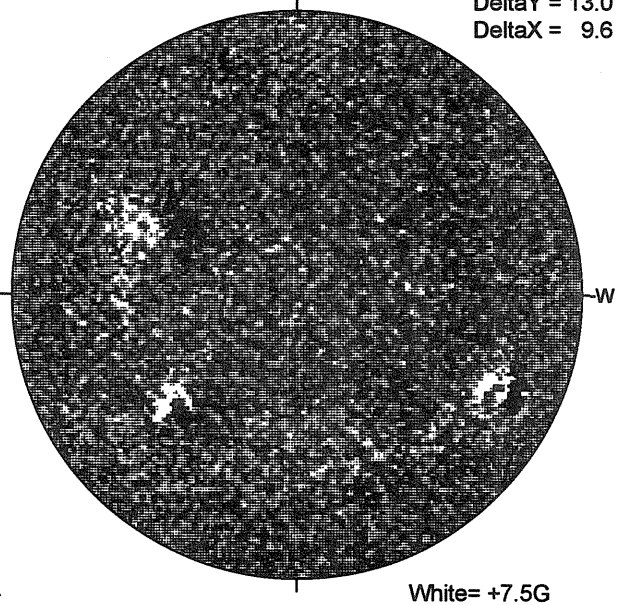


17.20 -
18.15 UT

MT. WILSON MAGNETOGRAM

N

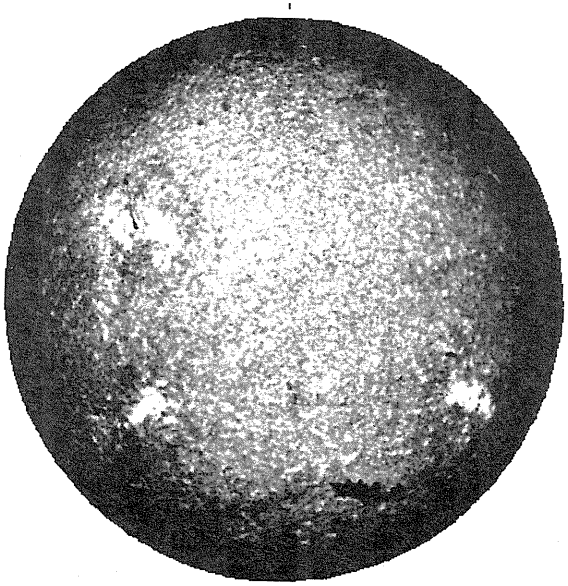
DeltaY = 13.0
DeltaX = 9.6



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

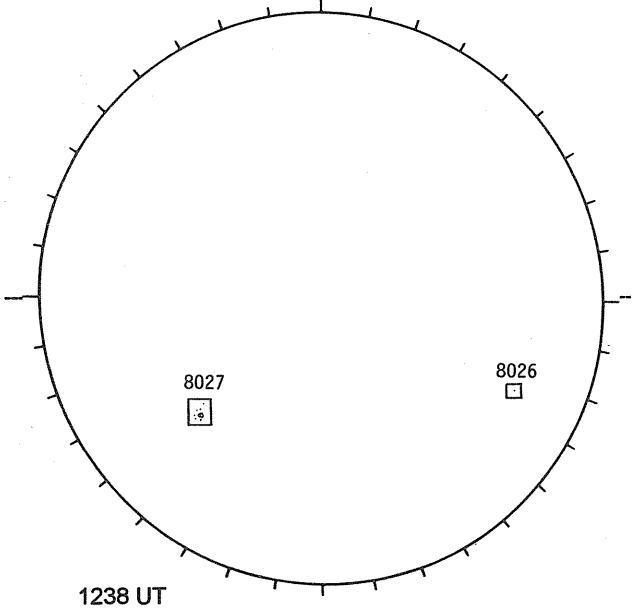


E

1051 UT

S

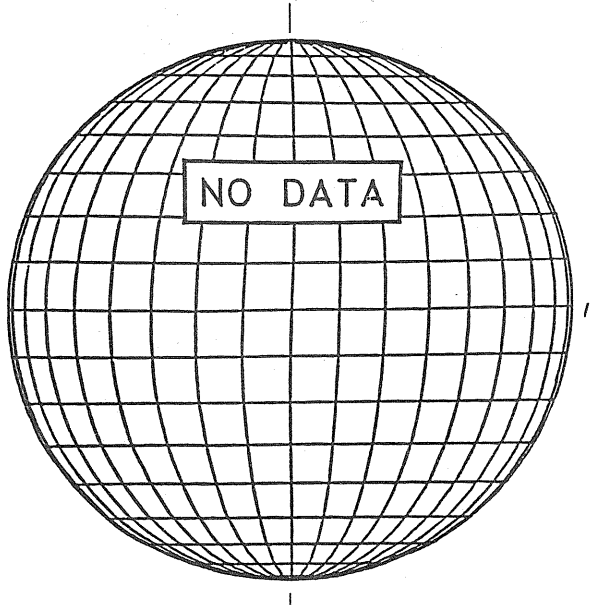
RAMEY SUNSPOT



1238 UT

S

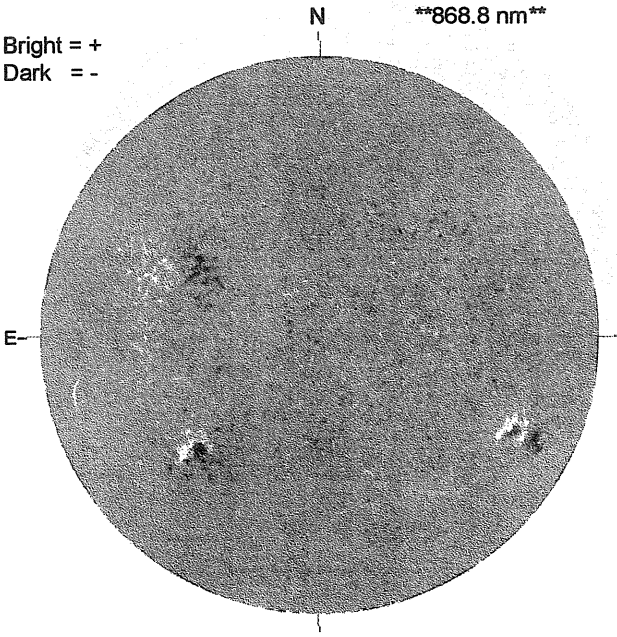
SACRAMENTO PEAK CORONA (1.15 Radii)



S

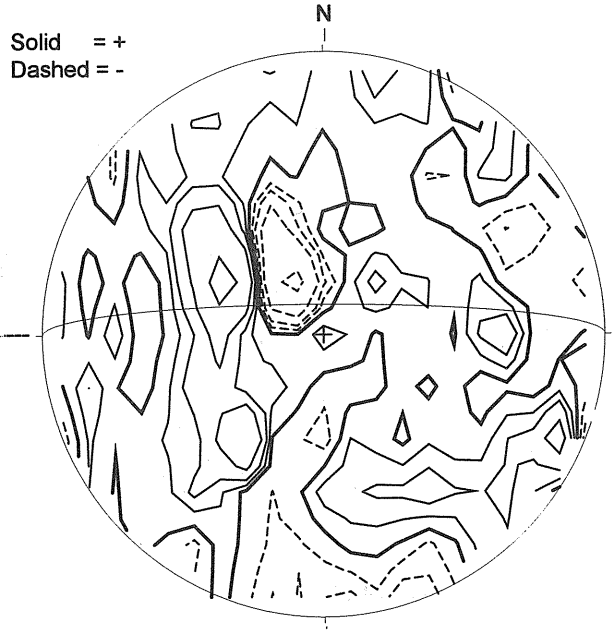
APRIL 7, 1997 (P= - 26.30, Bo = - 6.18 Lo = 236.01)

KITT PEAK MAGNETOGRAM



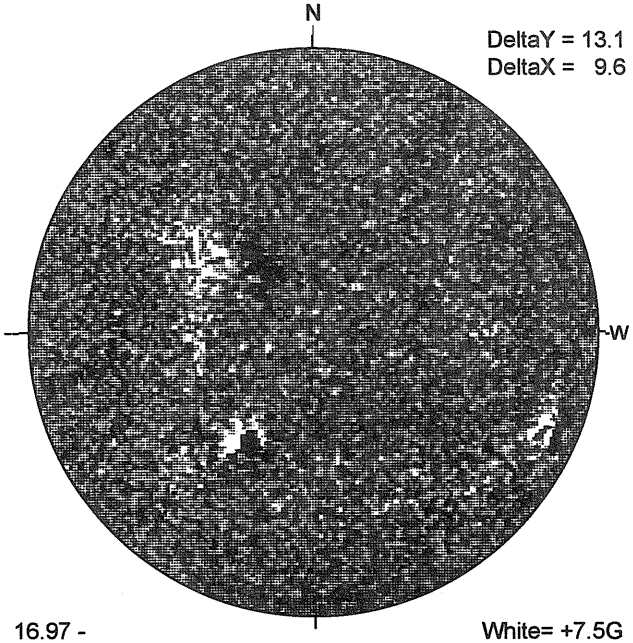
1614 UT

STANFORD MAGNETOGRAM



2009 UT

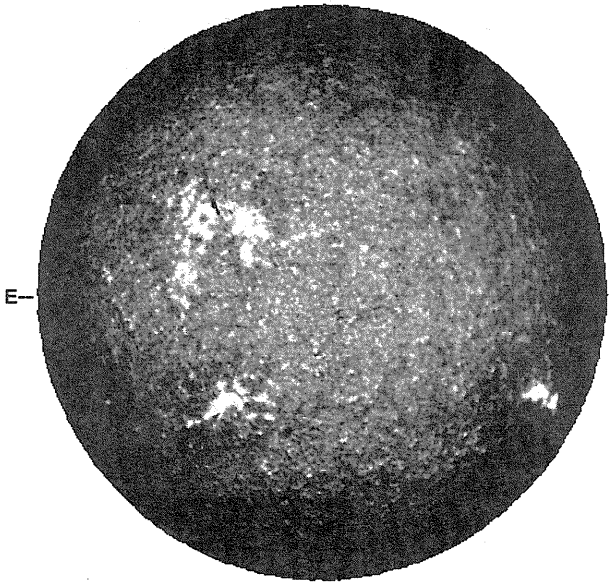
MT. WILSON MAGNETOGRAM



16.97 -
17.91 UT

White= +7.5G
Black = -7.5G

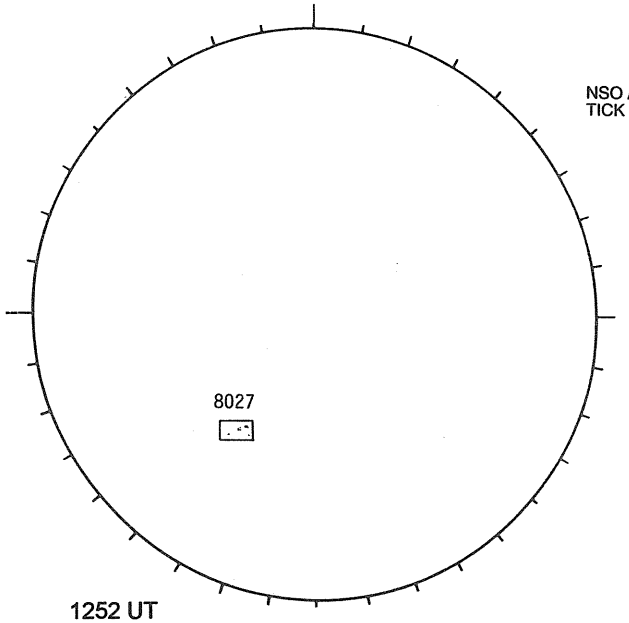
MEUDON H-ALPHA



0643 UT

S

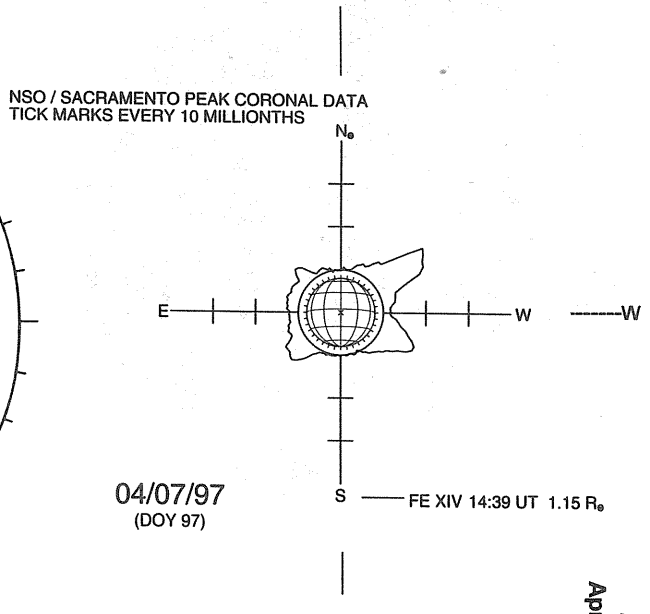
RAMEY SUNSPOT



1252 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



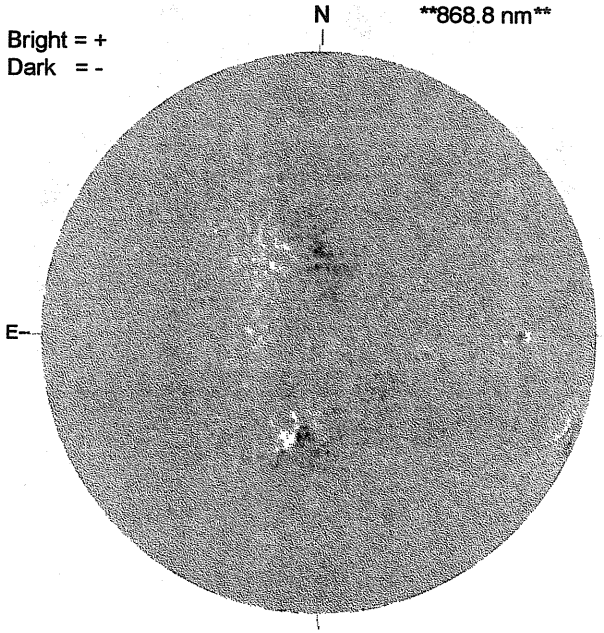
04/07/97
(DOY 97)

S

47
Apr 97

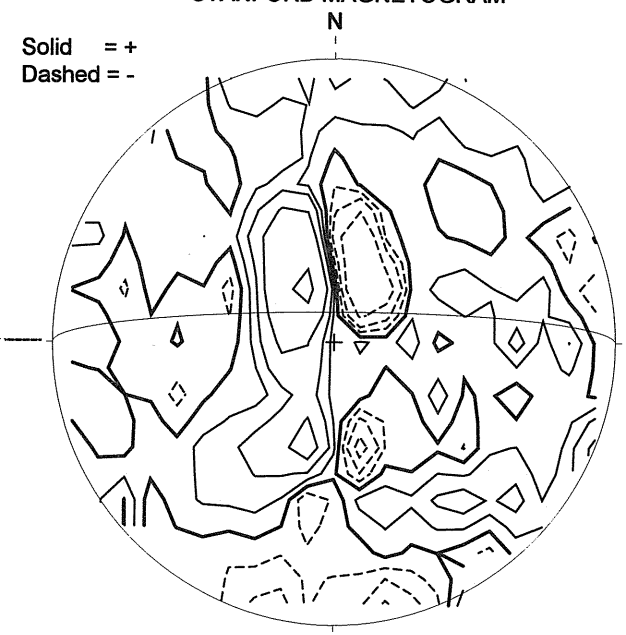
APRIL 8, 1997 (P= - 26.29, Bo = - 6.11 , Lo = 222.81)

KITT PEAK MAGNETOGRAM



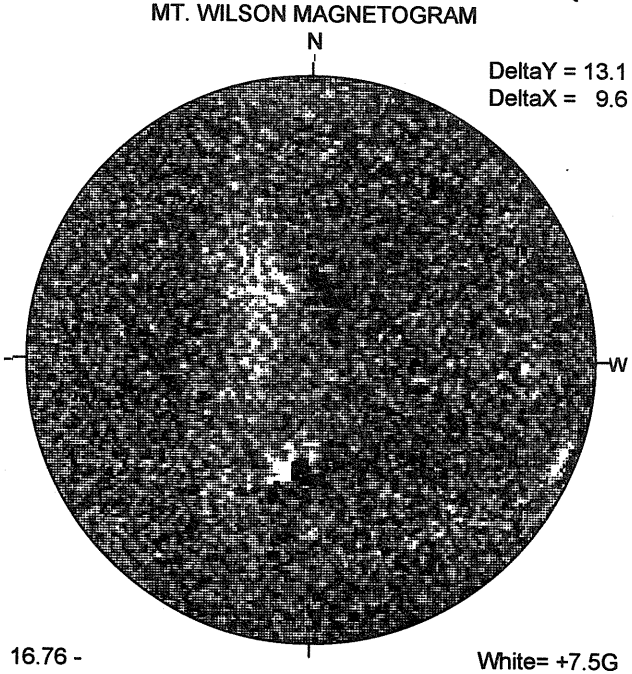
1601 UT

STANFORD MAGNETOGRAM



2129 UT

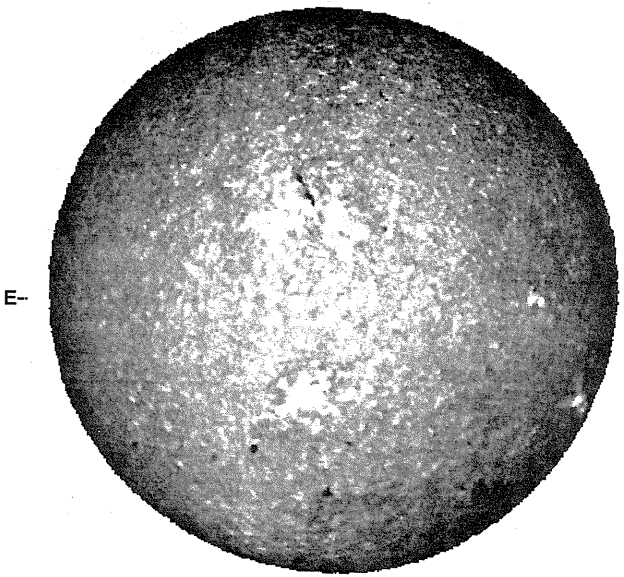
MT. WILSON MAGNETOGRAM



16.76 -
17.70 UT

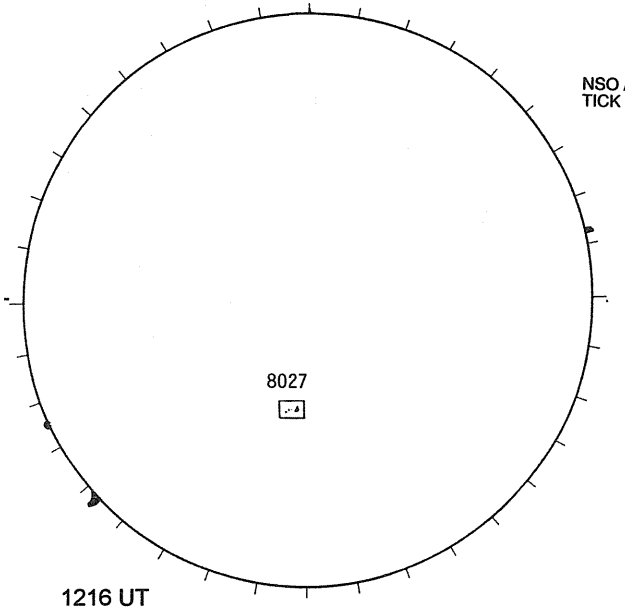
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



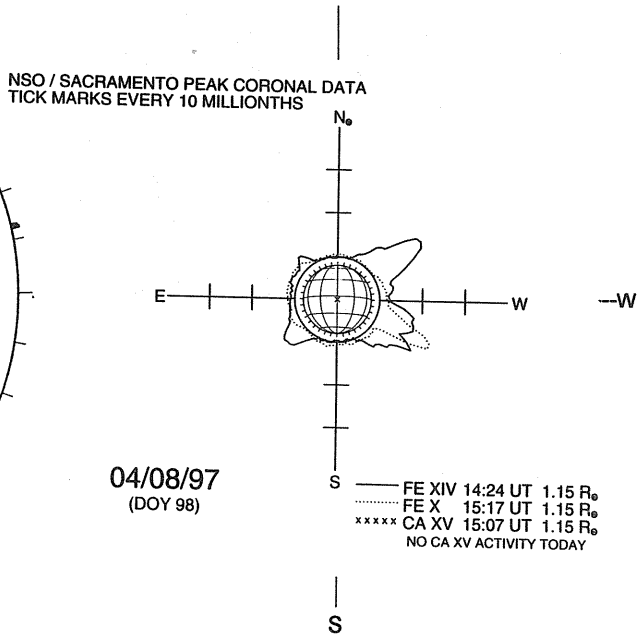
1341 UT

RAMEY SUNSPOT



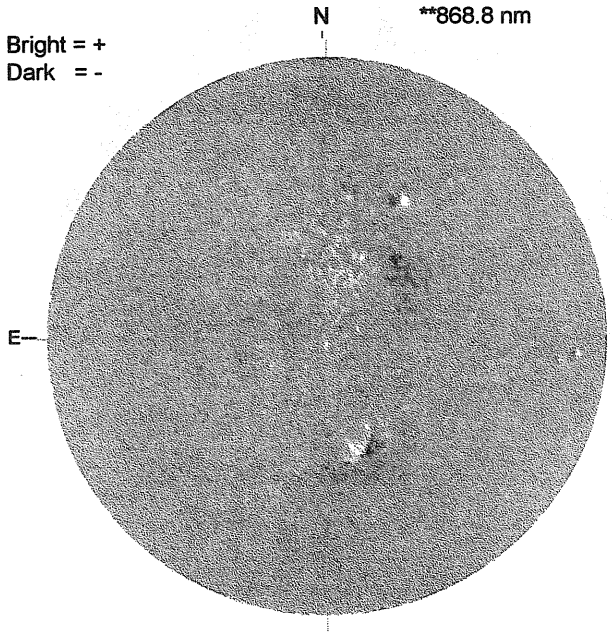
1216 UT
0702 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



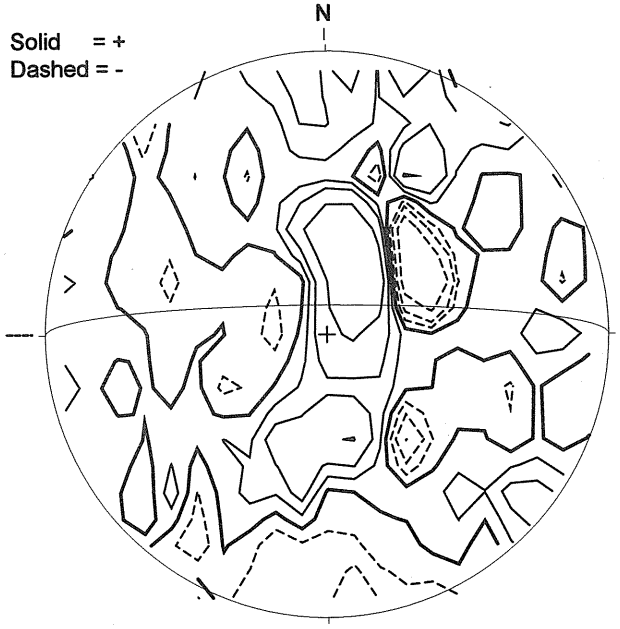
APRIL 9, 1997 (P= - 26.28, Bo = - 6.04, Lo = 209.61)

KITT PEAK MAGNETOGRAM



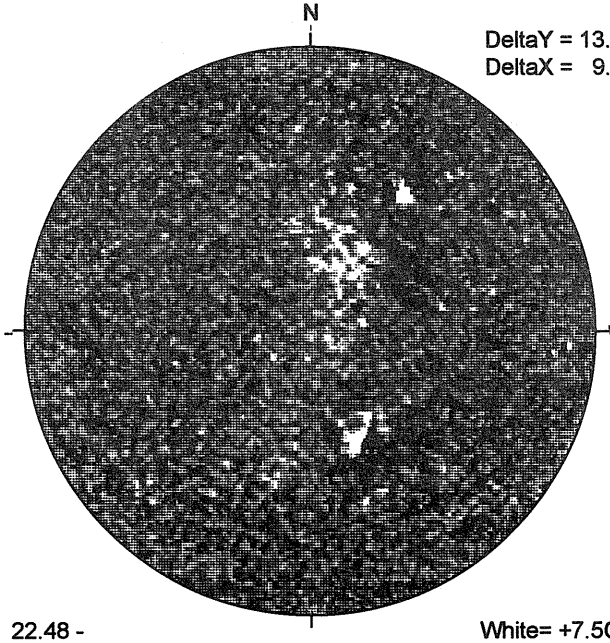
1541 UT

STANFORD MAGNETOGRAM



2136 UT

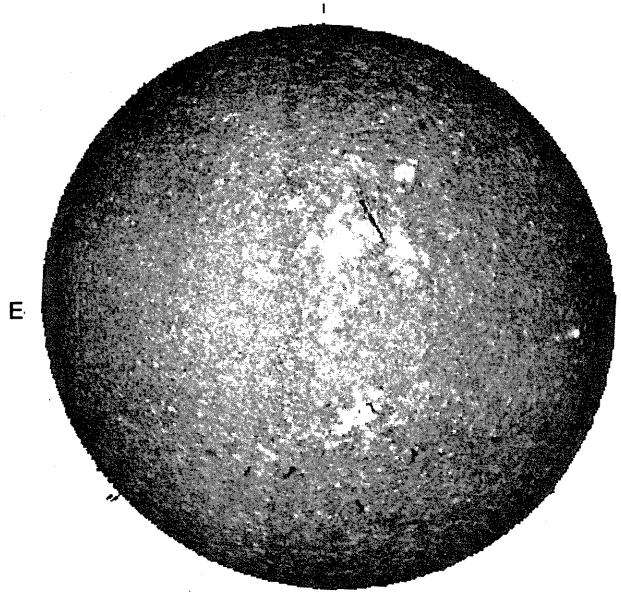
MT. WILSON MAGNETOGRAM



22.48 -
23.43 UT

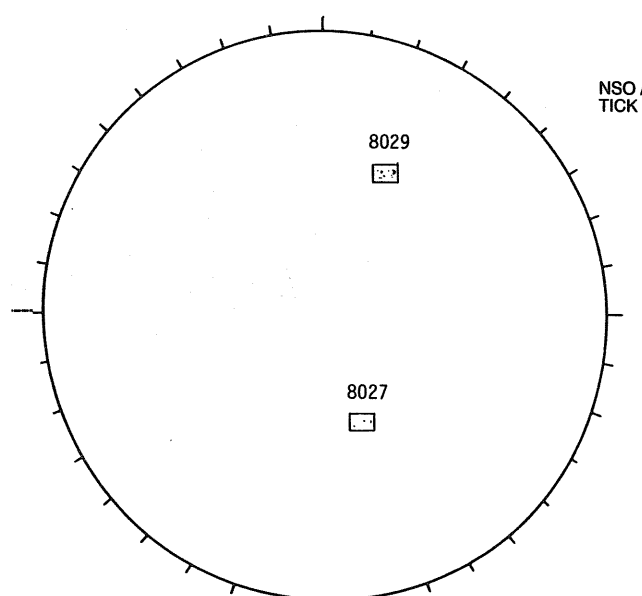
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



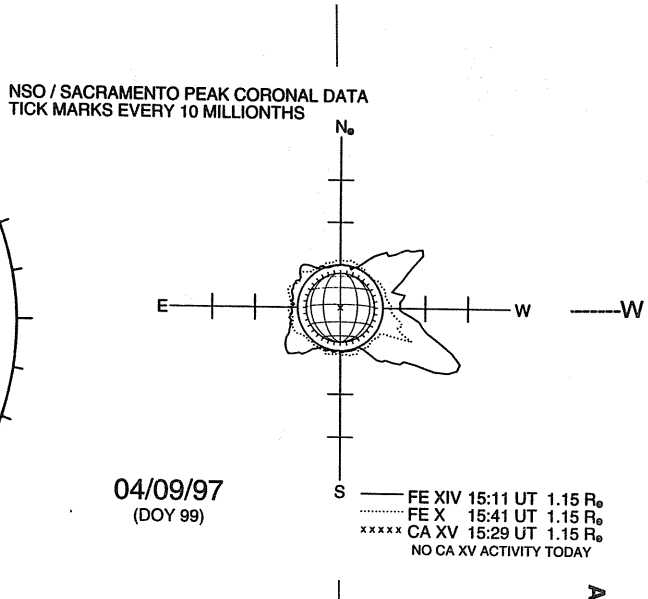
1421 UT

RAMEY SUNSPOT



1312 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



S

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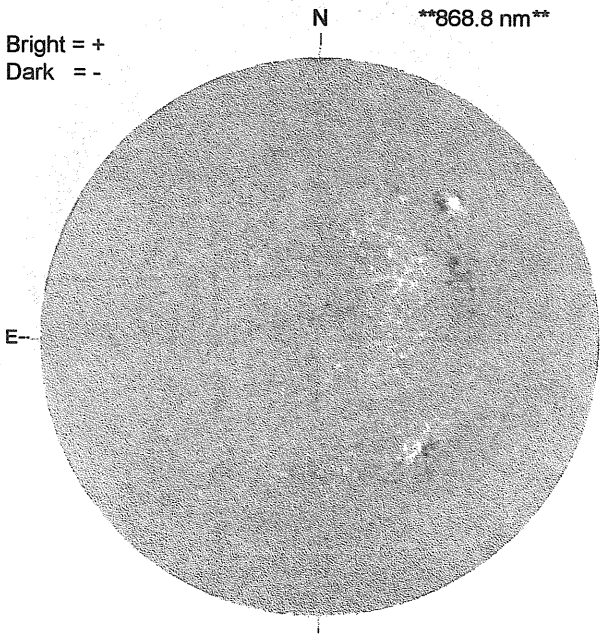
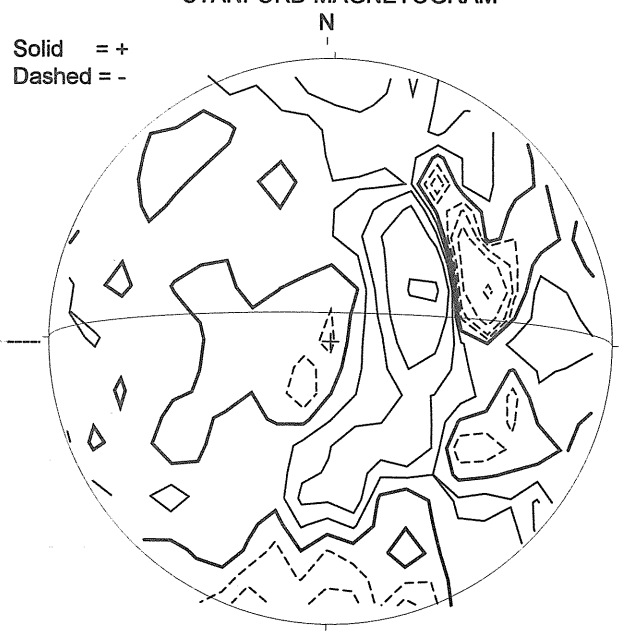
Apr 97

APRIL 10, 1997 (P= - 26.26, Bo = - 5.98 Lo = 196.41)

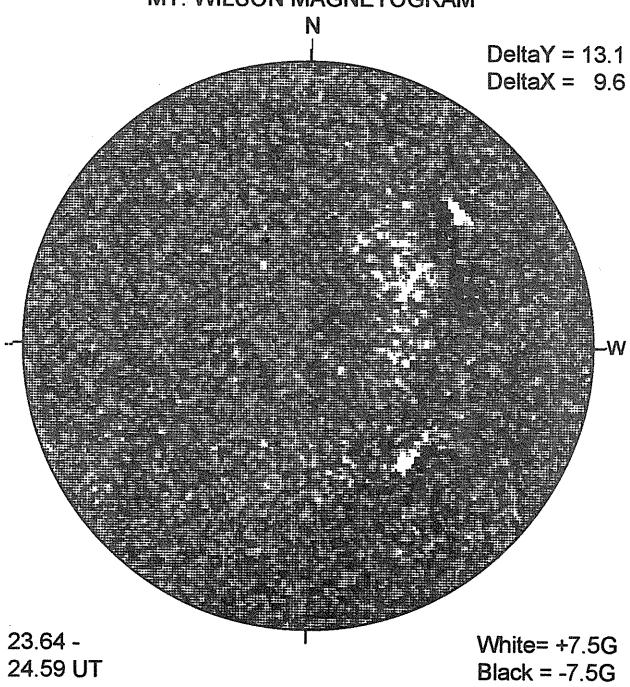
KITT PEAK MAGNETOGRAM



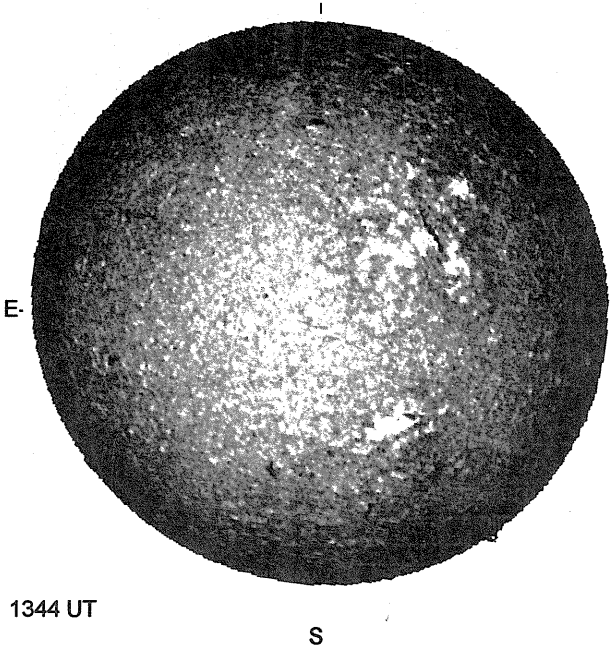
STANFORD MAGNETOGRAM



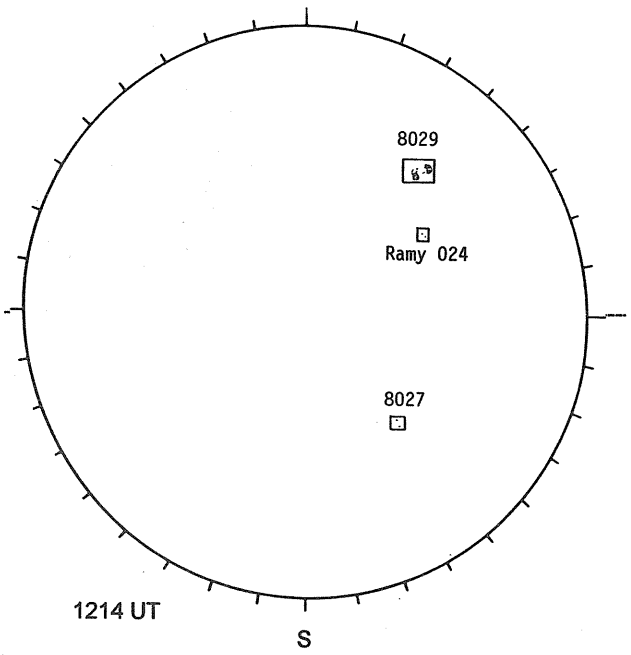
MT. WILSON MAGNETOGRAM



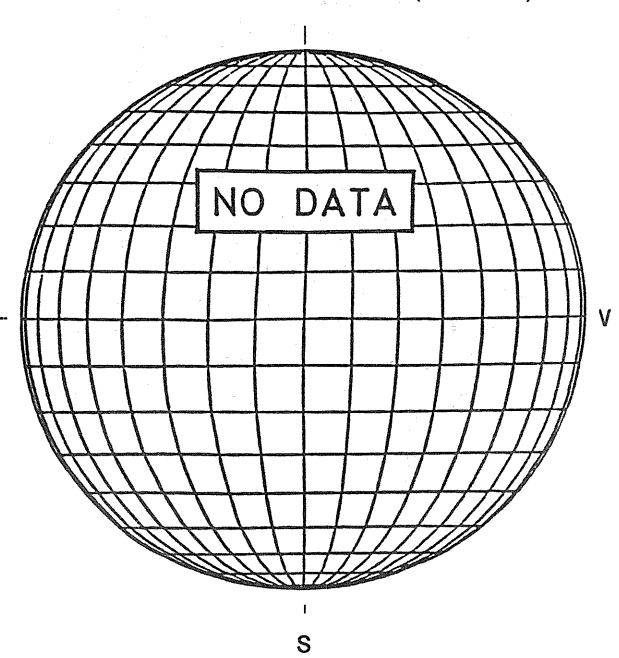
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

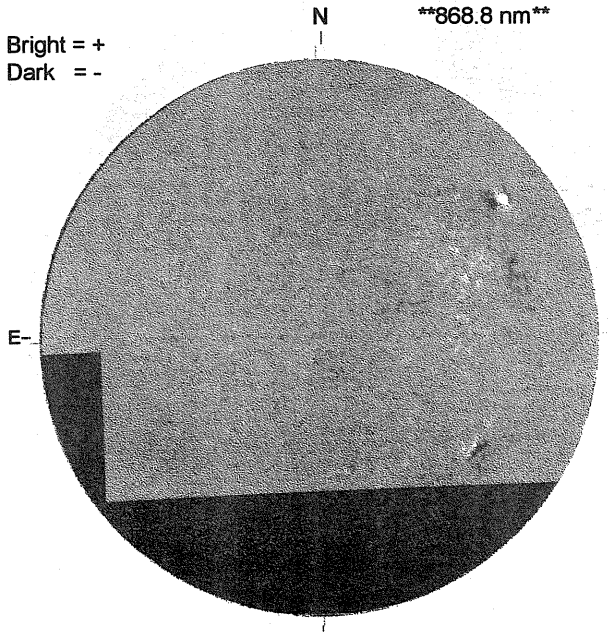


SACRAMENTO PEAK CORONA (1.15 Radii)



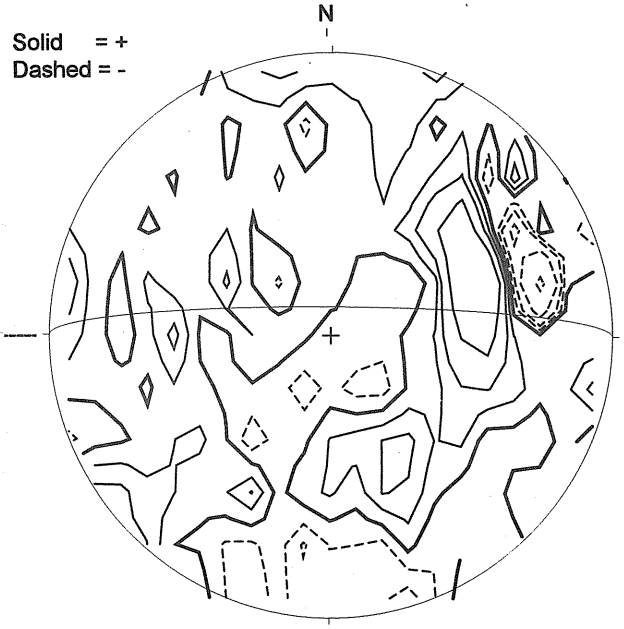
APRIL 11, 1997 (P= - 26.23, Bo = - 5.90, Lo = 183.21)

KITT PEAK MAGNETOGRAM



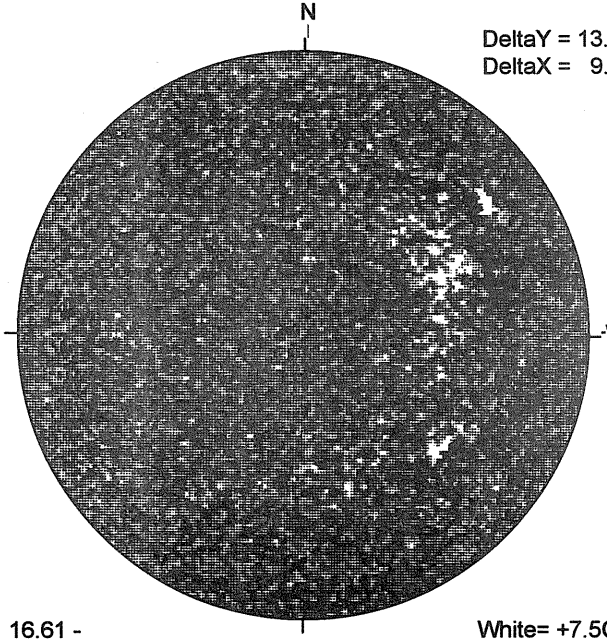
1709 UT

STANFORD MAGNETOGRAM



2143 UT

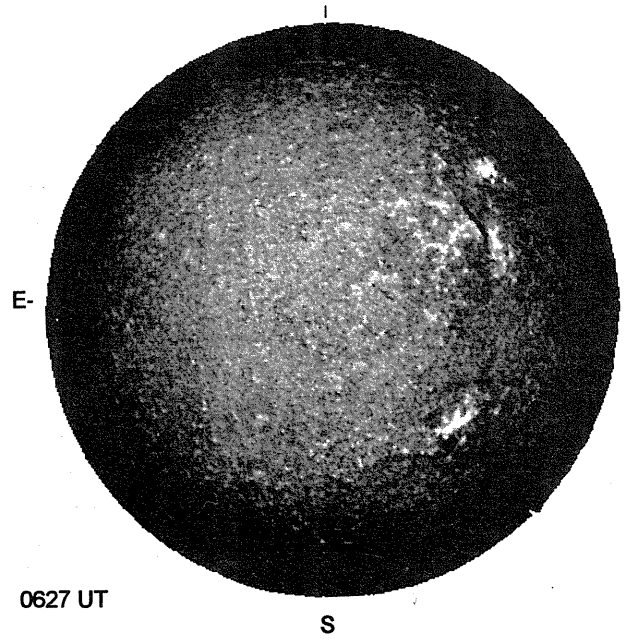
MT. WILSON MAGNETOGRAM



16.61 -
17.55 UT

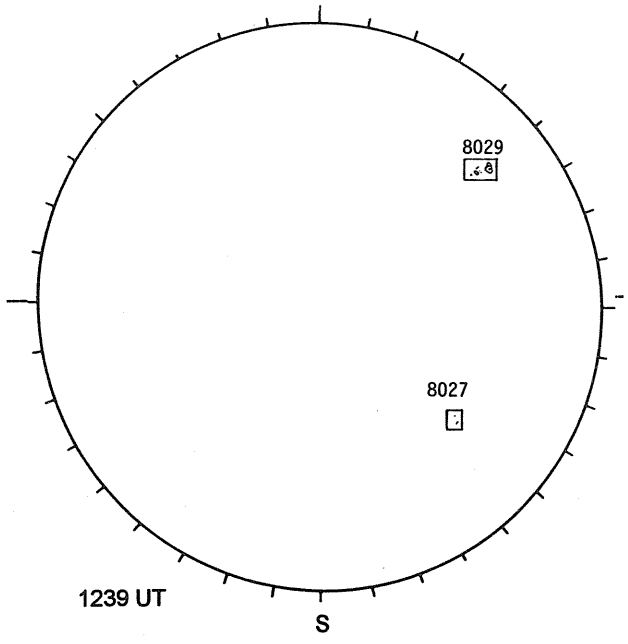
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



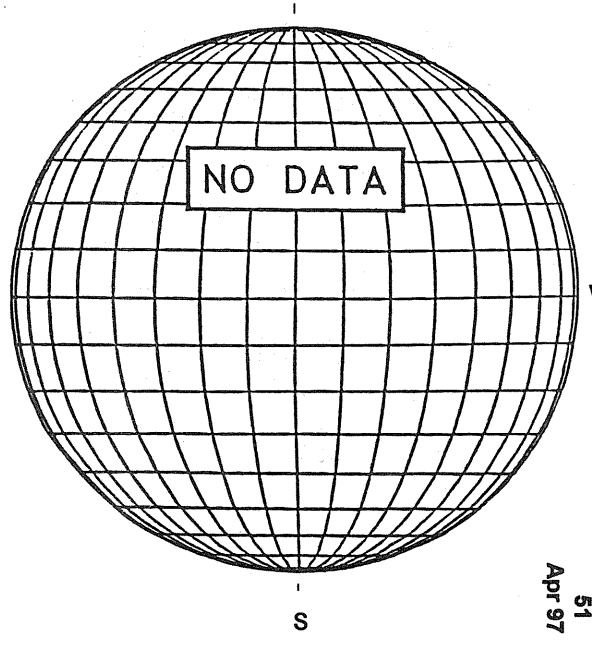
0627 UT

RAMEY SUNSPOT



1239 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



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Apr 97

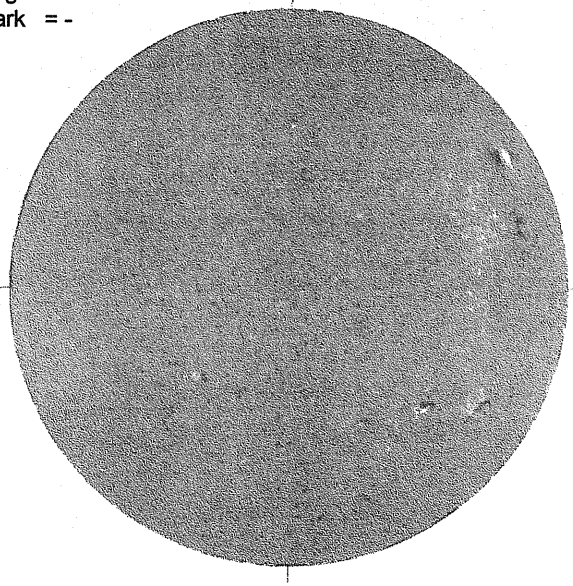
APRIL 12, 1997 (P= - 26.20, Bo = - 5.83, Lo = 170.01)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



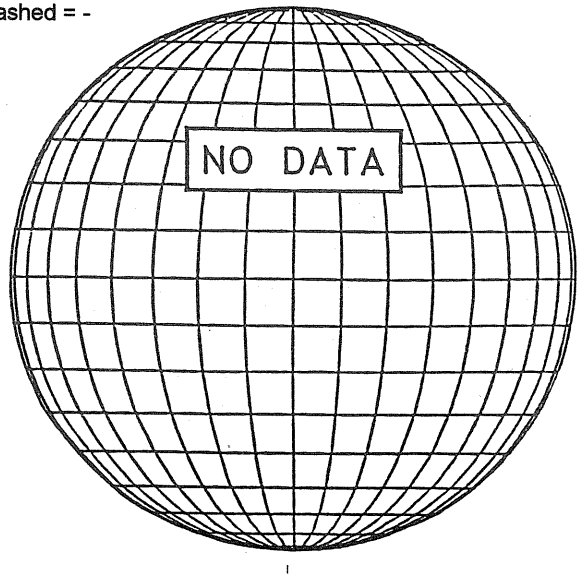
E-

1443 UT

STANFORD MAGNETOGRAM

N

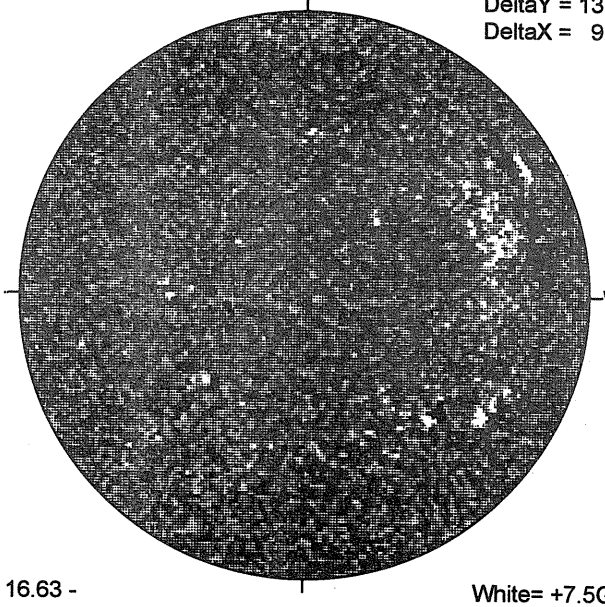
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6



-W

16.63 -
17.58 UT

White= +7.5G
Black = -7.5G

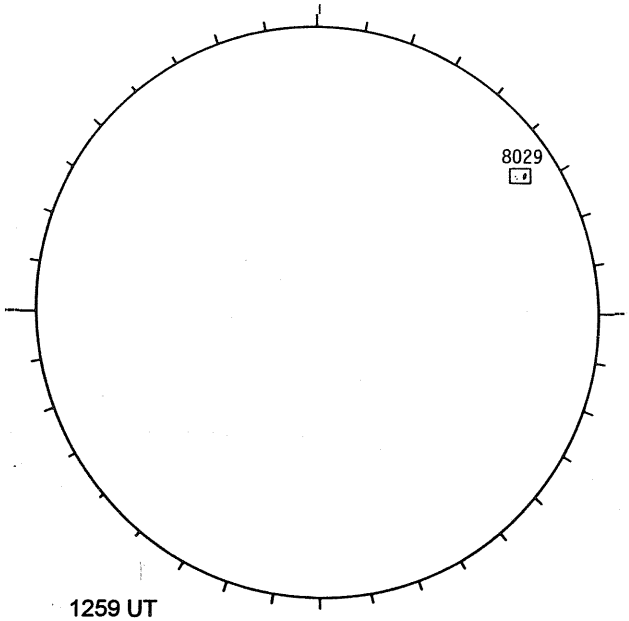
---- MEUDON H-ALPHA

E--

0825 UT

S

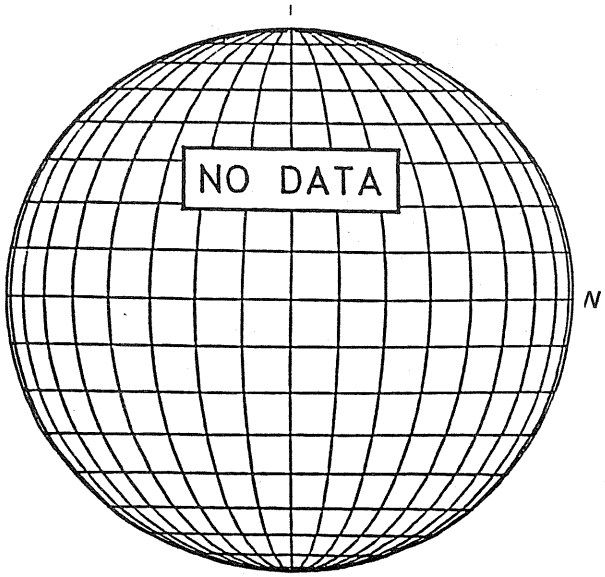
RAMEY SUNSPOT



1259 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

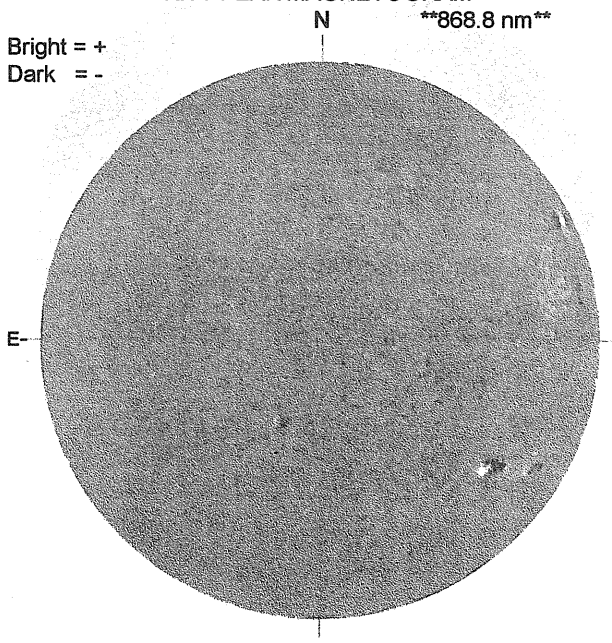


N

S

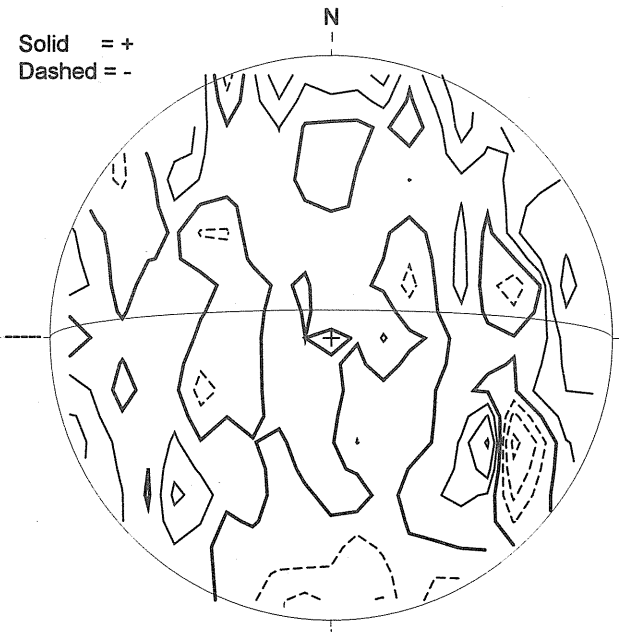
APRIL 13, 1997 (P= - 26.16, Bo = - 5.76, Lo = 156.81)

KITT PEAK MAGNETOGRAM



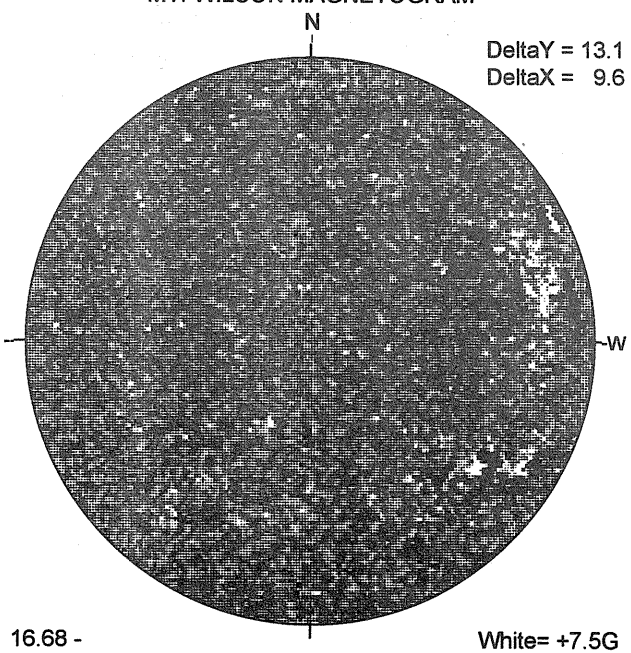
1552 UT

STANFORD MAGNETOGRAM



2126 UT

MT. WILSON MAGNETOGRAM



16.68 -
17.62 UT

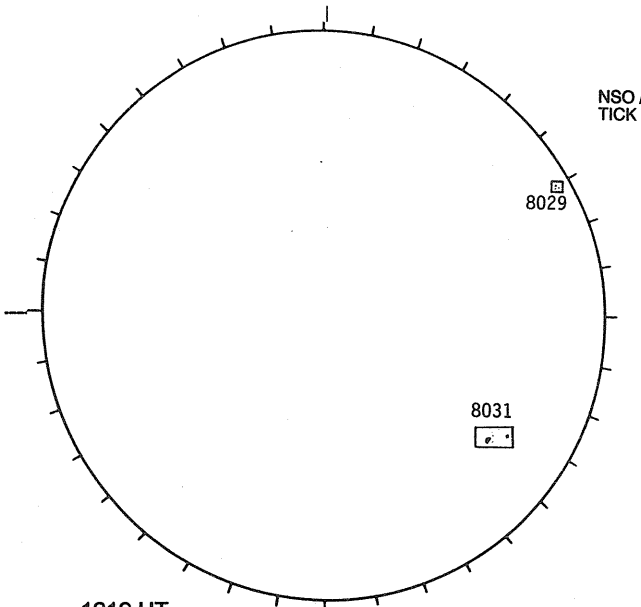
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

0719 UT

S

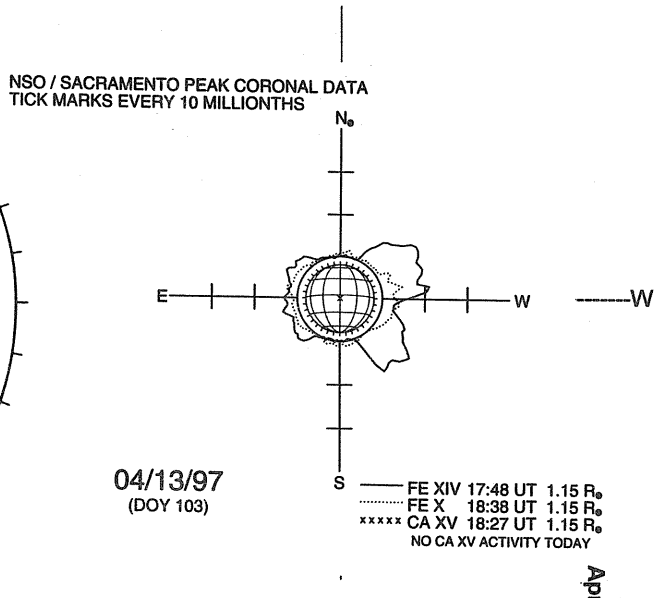
RAMEY SUNSPOT



1219 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

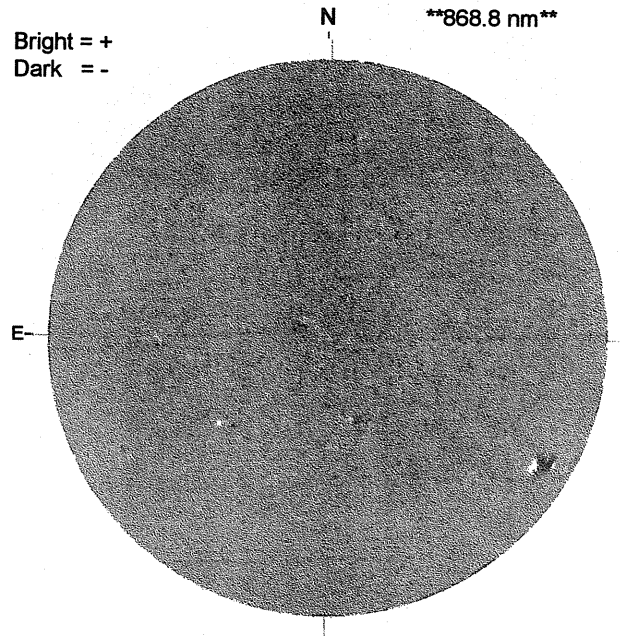


S

Apr 97 53

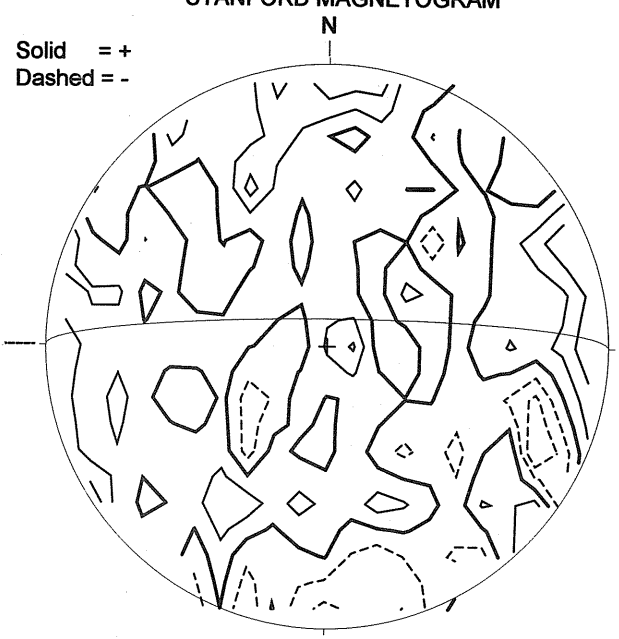
APRIL 14, 1997 (P= - 26.11, Bo = - 5.68, Lo= 143.61)

KITT PEAK MAGNETOGRAM



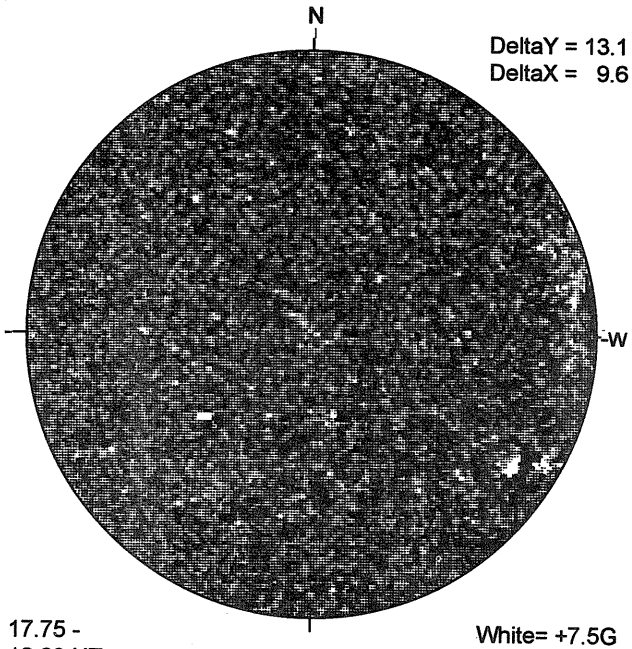
1605 UT

STANFORD MAGNETOGRAM



2203 UT

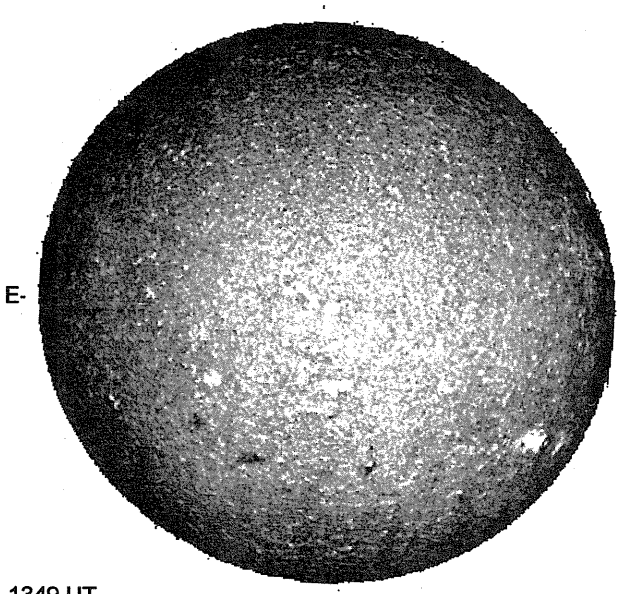
MT. WILSON MAGNETOGRAM



17.75 -
18.69 UT

White= +7.5G
Black = -7.5G

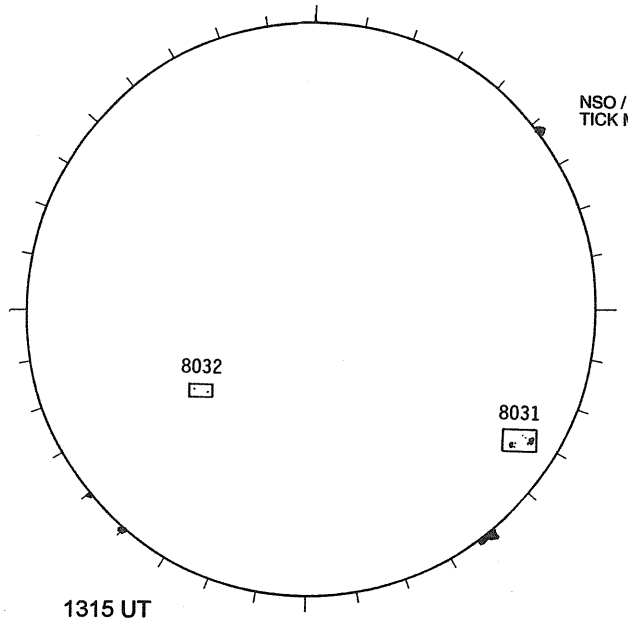
SACRAMENTO PEAK H-ALPHA



1349 UT

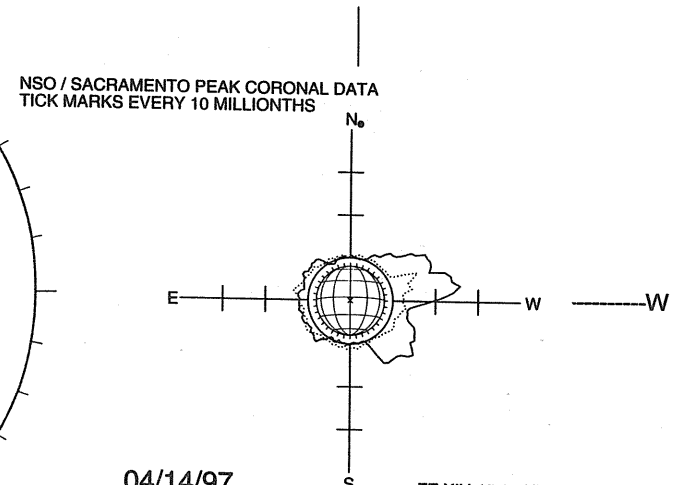
S

RAMEY SUNSPOT



1315 UT
0552 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

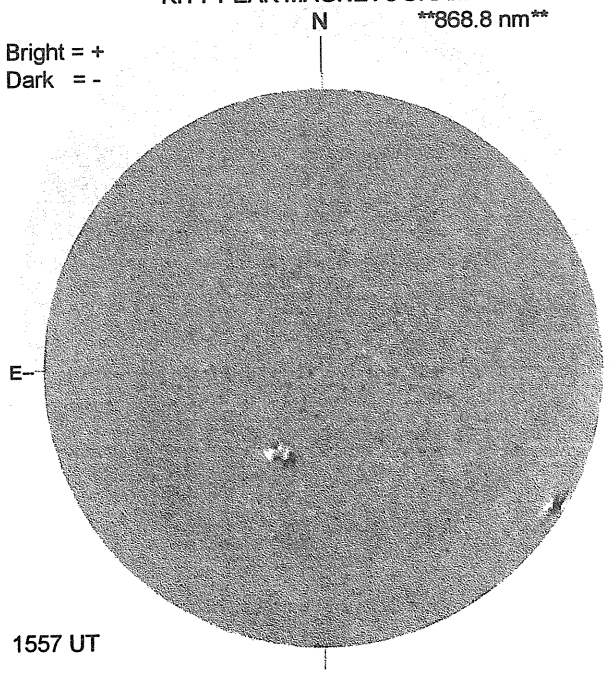


04/14/97
(DOY 104)

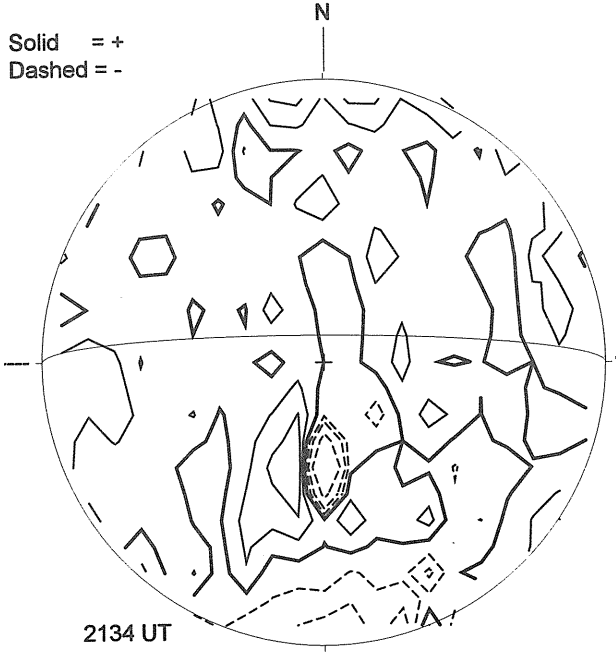
FE XIV 15:05 UT 1.15 $R_\odot$
FE X 15:32 UT 1.15 $R_\odot$
xxxxx CA XV 15:15 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

S

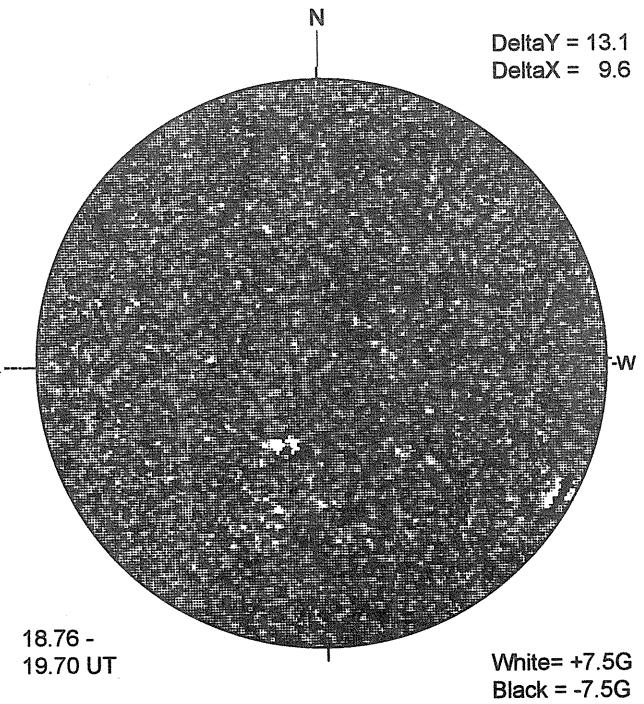
KITT PEAK MAGNETOGRAM



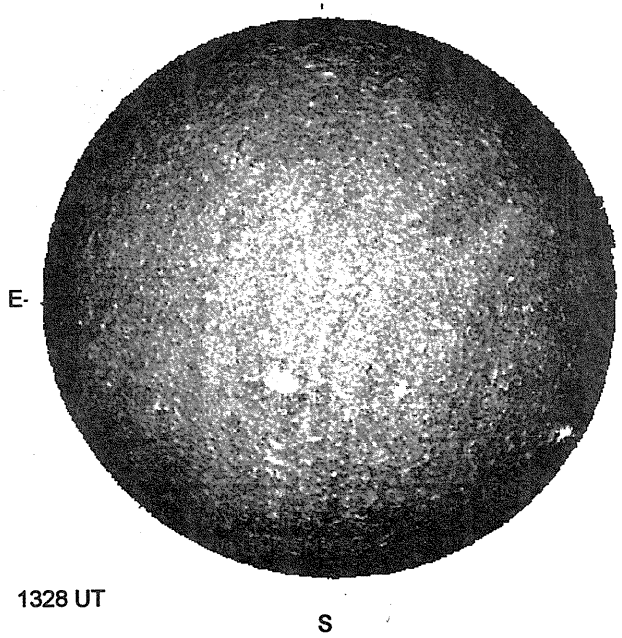
STANFORD MAGNETOGRAM



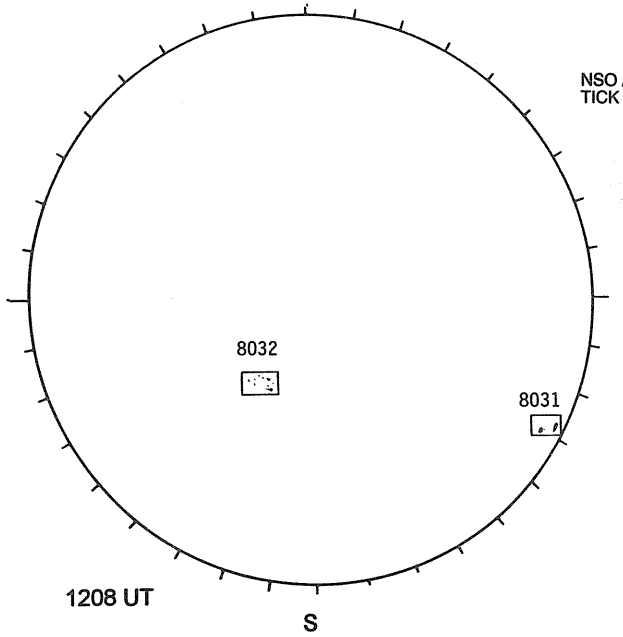
MT. WILSON MAGNETOGRAM



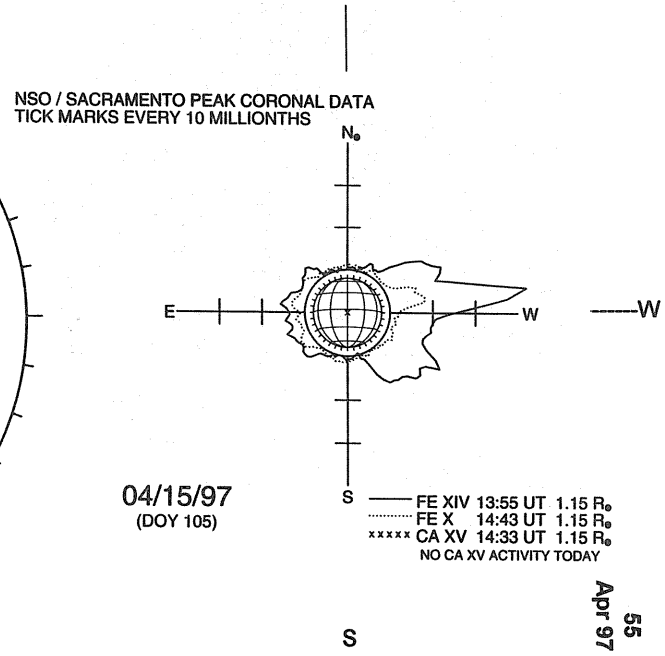
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

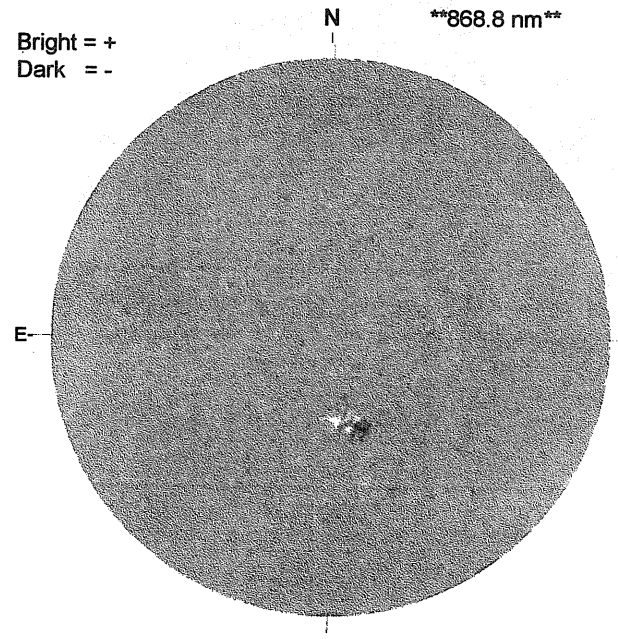


SACRAMENTO PEAK CORONA (1.15 Radii)----



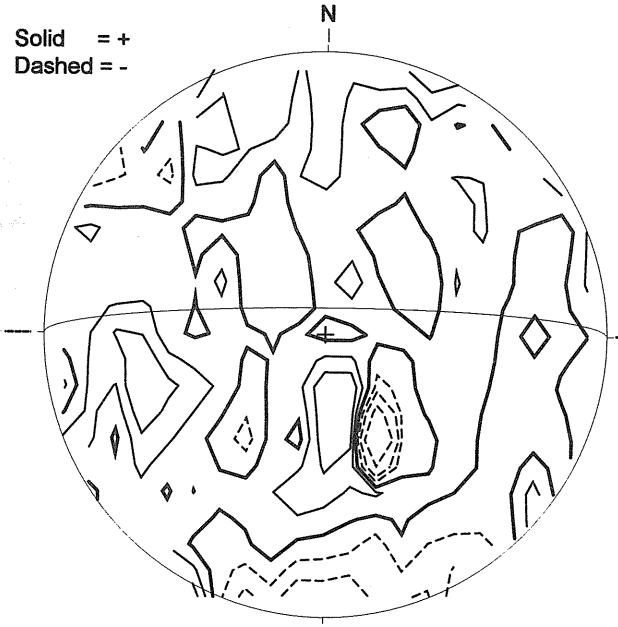
APRIL 16, 1997 (P= - 25.99, Bo = - 5.52, Lo = 117.20)

KITT PEAK MAGNETOGRAM



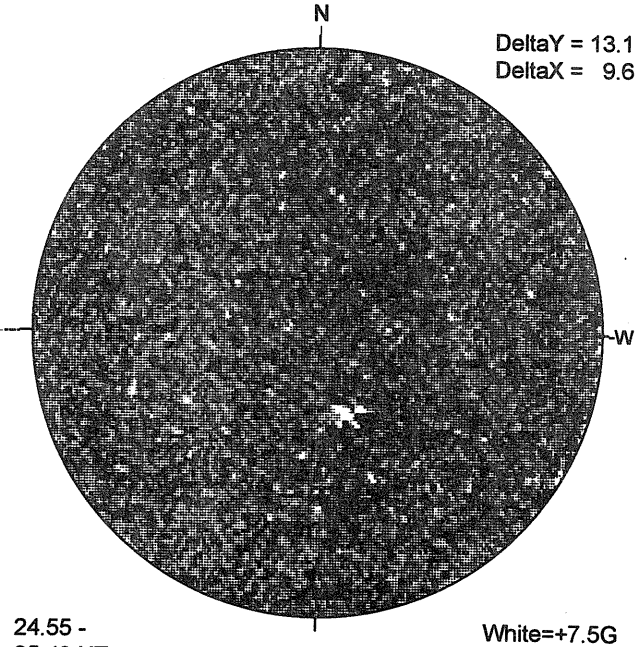
1601 UT

STANFORD MAGNETOGRAM



2114 UT

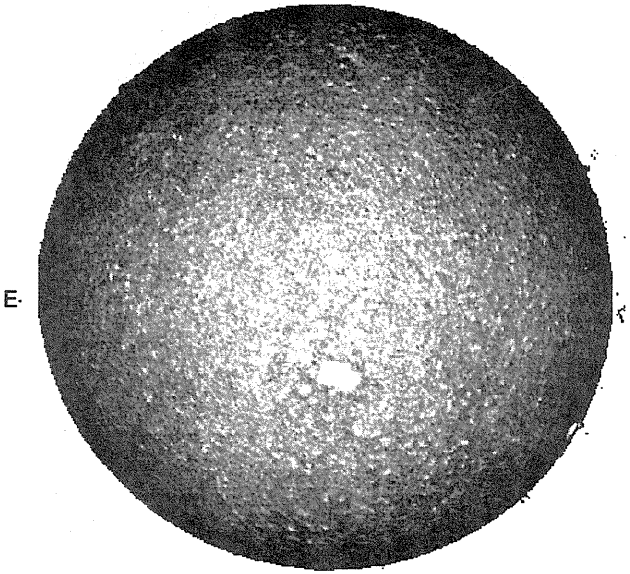
MT. WILSON MAGNETOGRAM



24.55 -
25.49 UT

White=+7.5G
Black = 7.5G

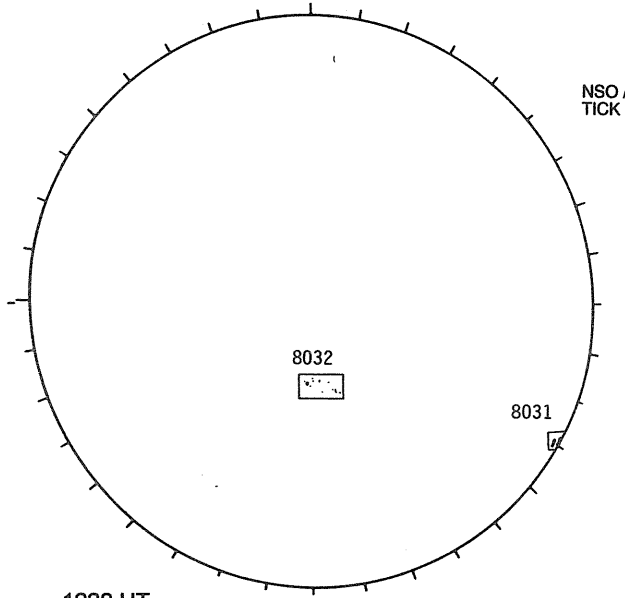
SACRAMENTO PEAK H-ALPHA



1324 UT

S

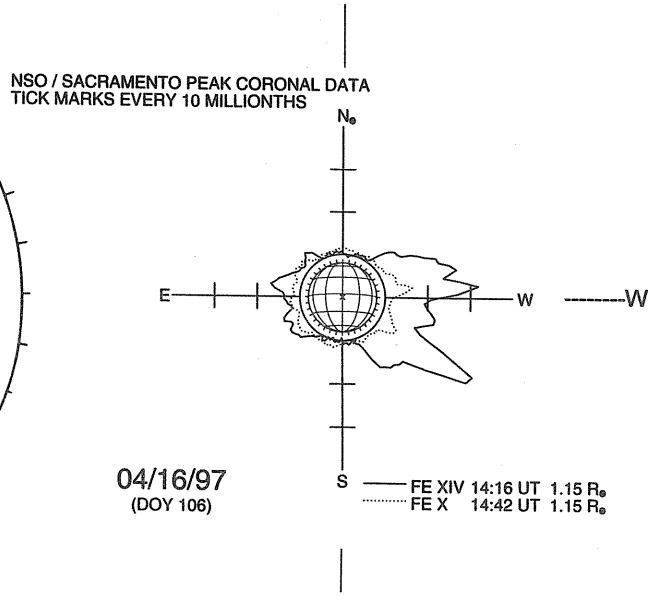
RAMEY SUNSPOT



1228 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

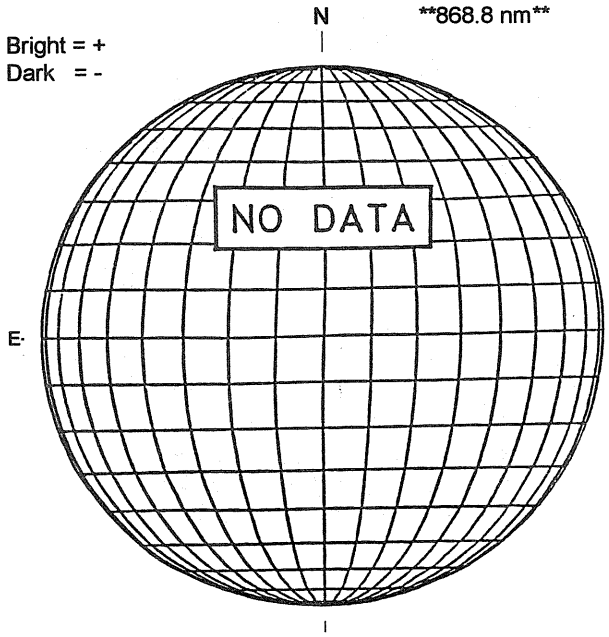


04/16/97
(DOY 106)

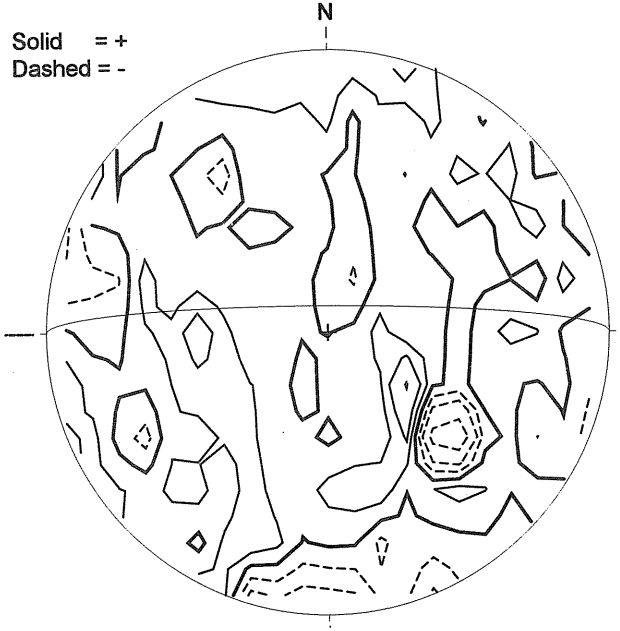
S

APRIL 17, 1997 (P= - 25.91, Bo = - 5.44, Lo = 104.00)

KITT PEAK MAGNETOGRAM

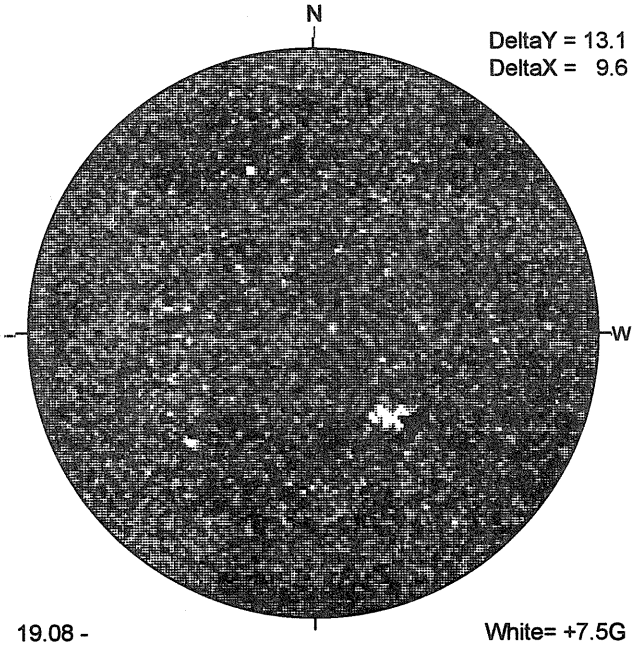


STANFORD MAGNETOGRAM



2340 UT

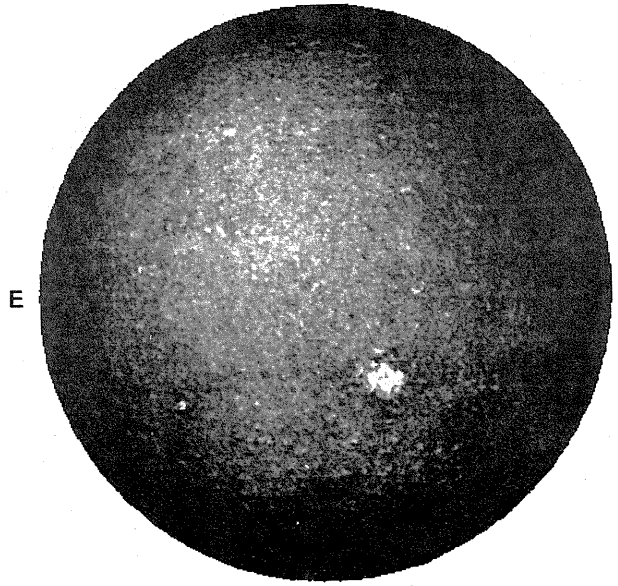
MT. WILSON MAGNETOGRAM



19.08 -
20.01 UT

White= +7.5G
Black = -7.5G

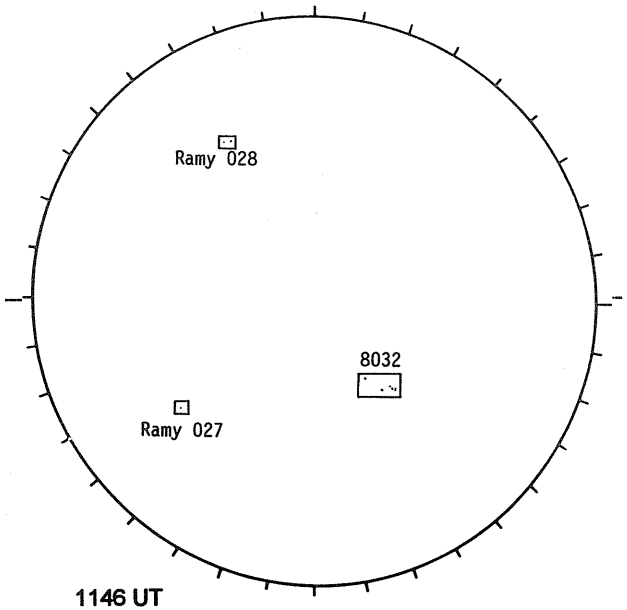
MEUDON H-ALPHA



0652 UT

S

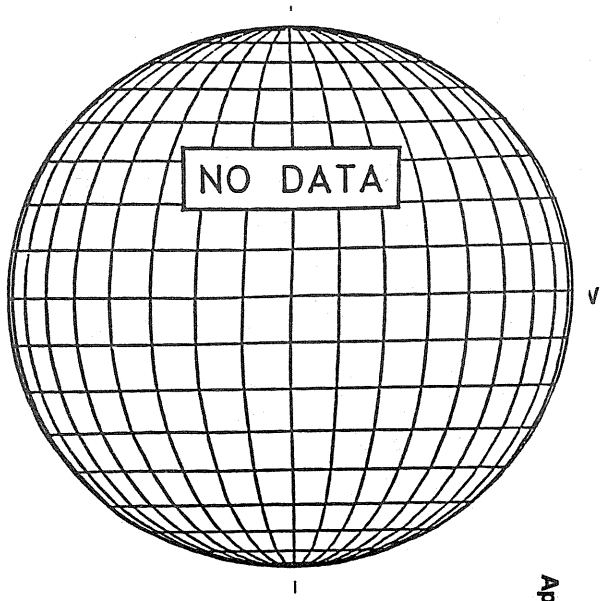
RAMEY SUNSPOT



1146 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



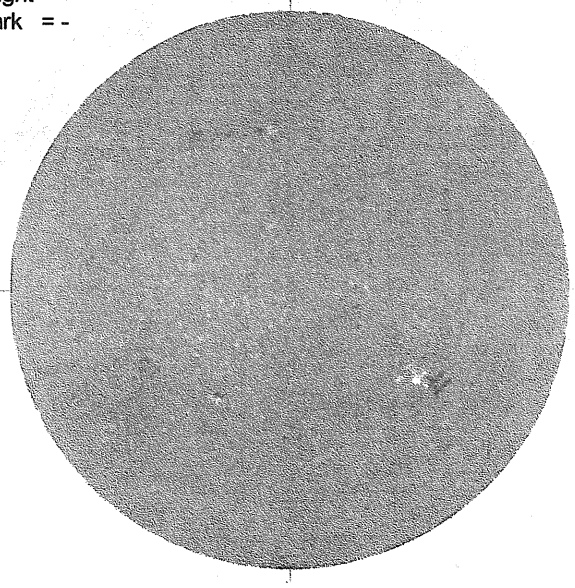
S

APRIL 18, 1997 (P= - 25.84, Bo = - 5.36, Lo = 90.79)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



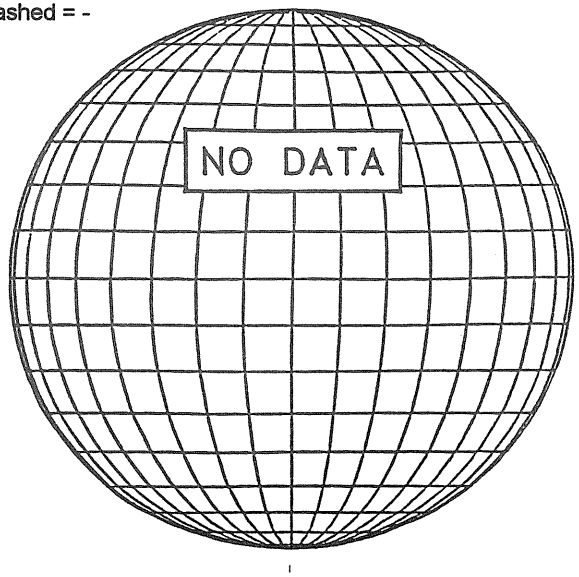
E-

1422 UT

STANFORD MAGNETOGRAM

N

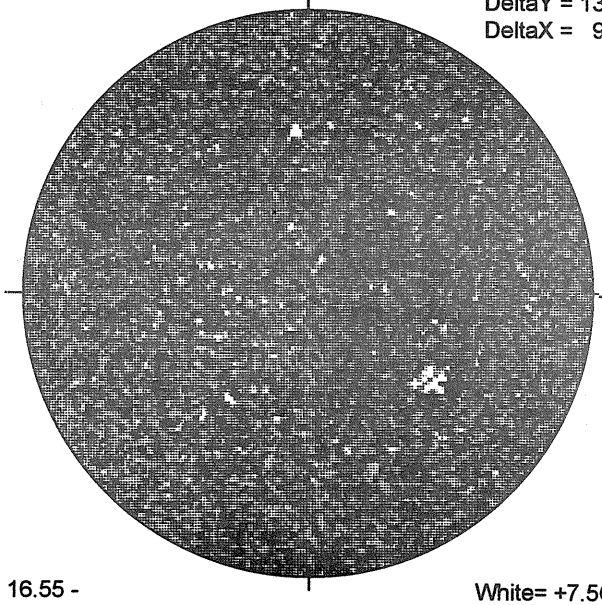
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

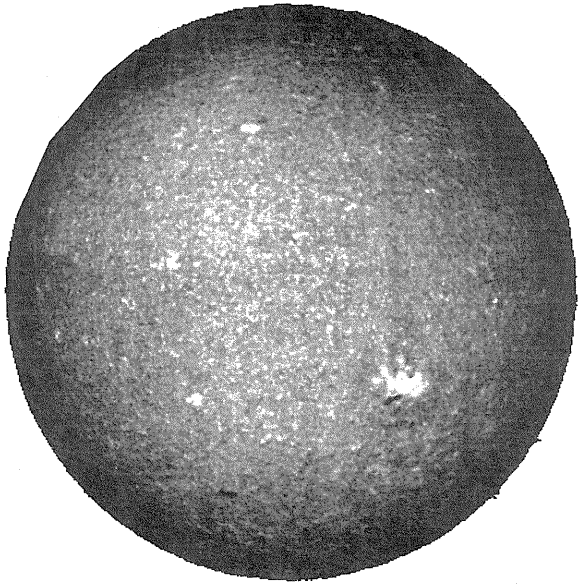


-W

16.55 -
17.49 UT

White= +7.5G
Black = -7.5G

---- MEUDON H-ALPHA

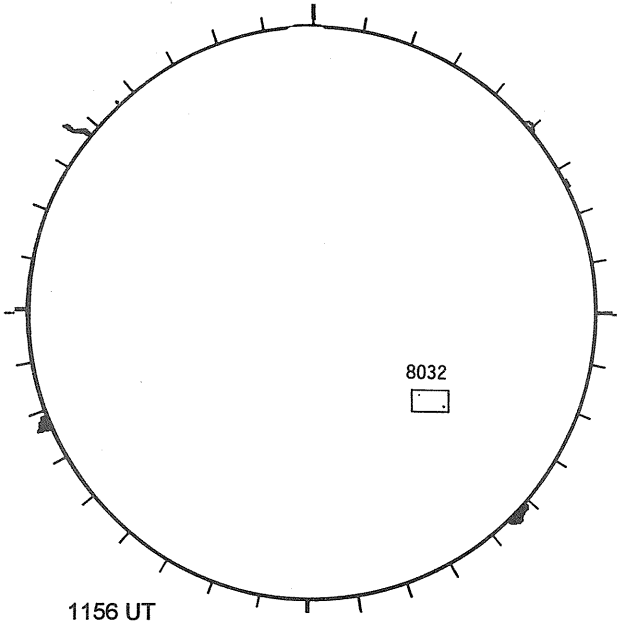


E-

0642 UT

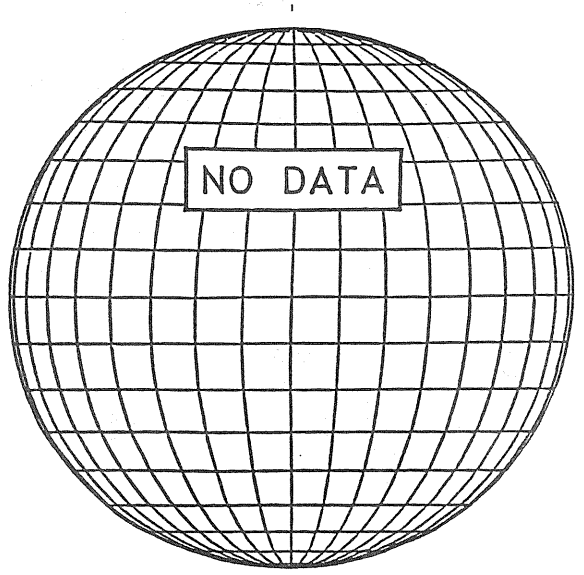
S

RAMEY SUNSPOT



1156 UT
1104 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

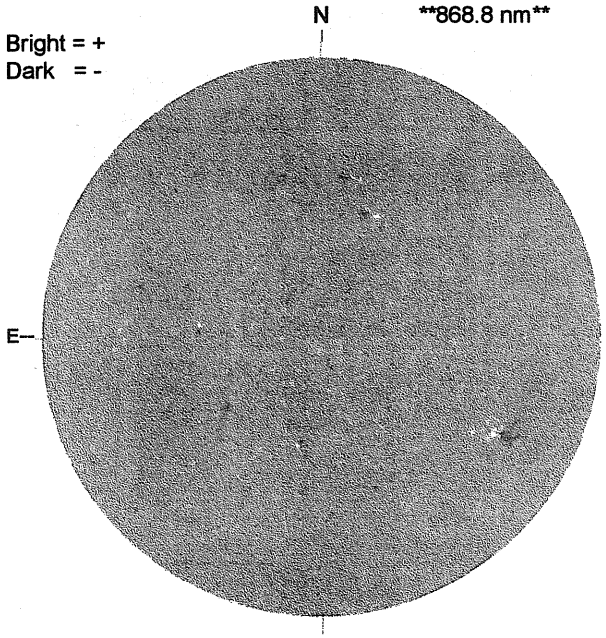


W

S

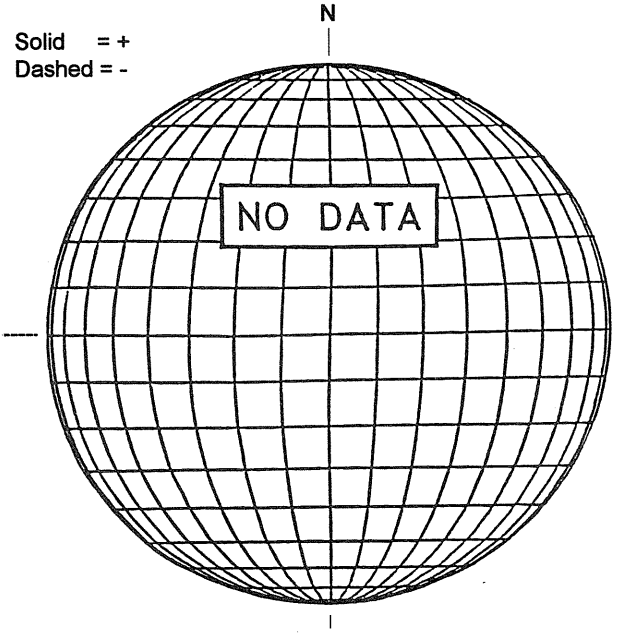
APRIL 19, 1997 (P= - 25.75, Bo = - 5.27, Lo = 77.58)

KITT PEAK MAGNETOGRAM

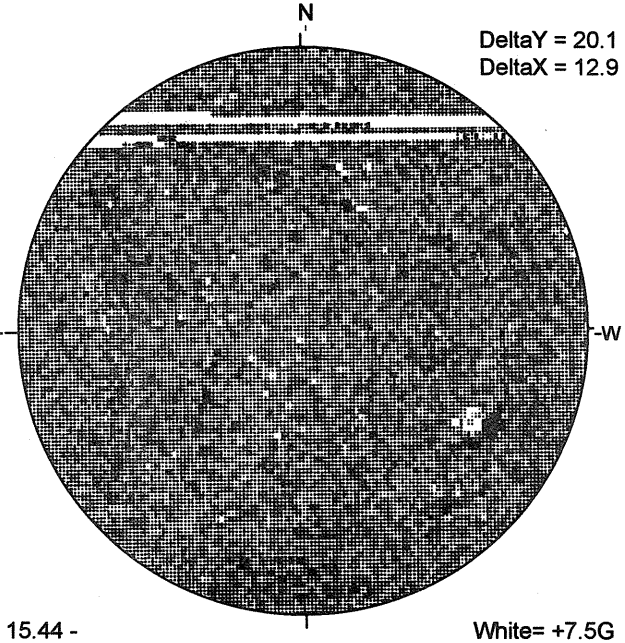


1443 UT

STANFORD MAGNETOGRAM



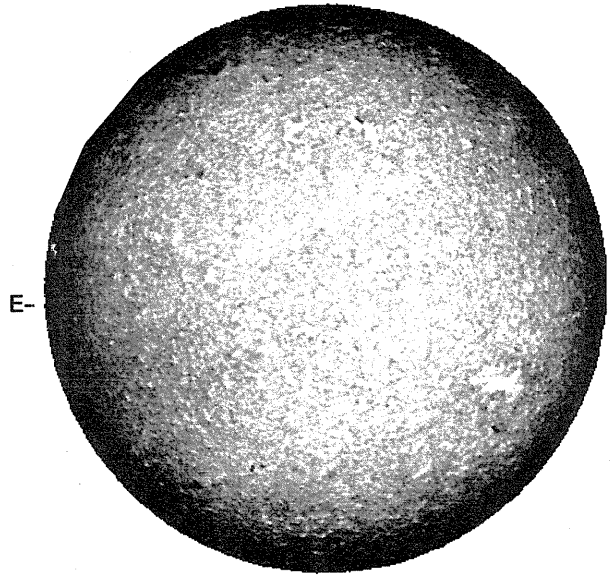
MT. WILSON MAGNETOGRAM



15.44 -
15.85 UT

White= +7.5G
Black = -7.5G

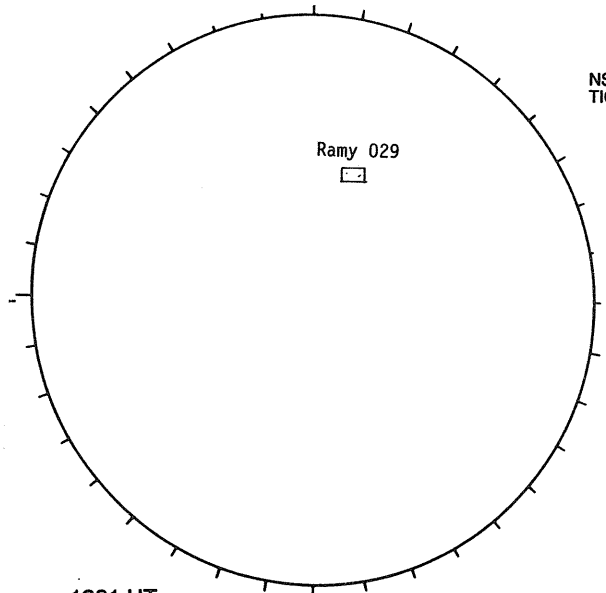
MEUDON H-ALPHA



1618 UT

S

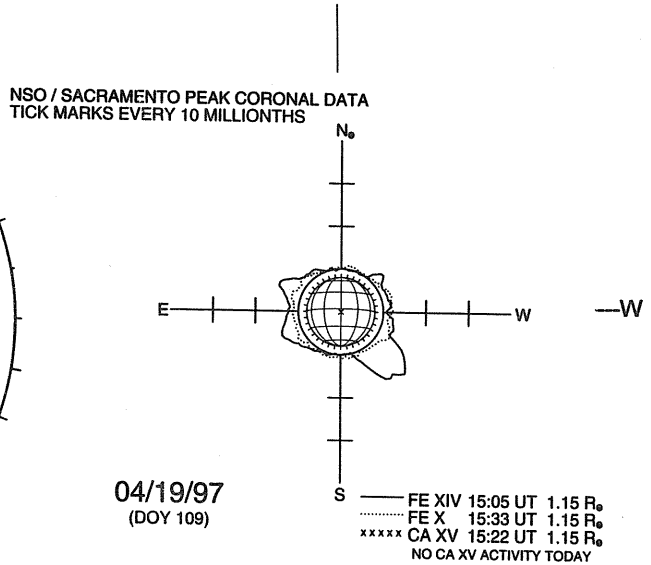
RAMEY SUNSPOT



1201 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



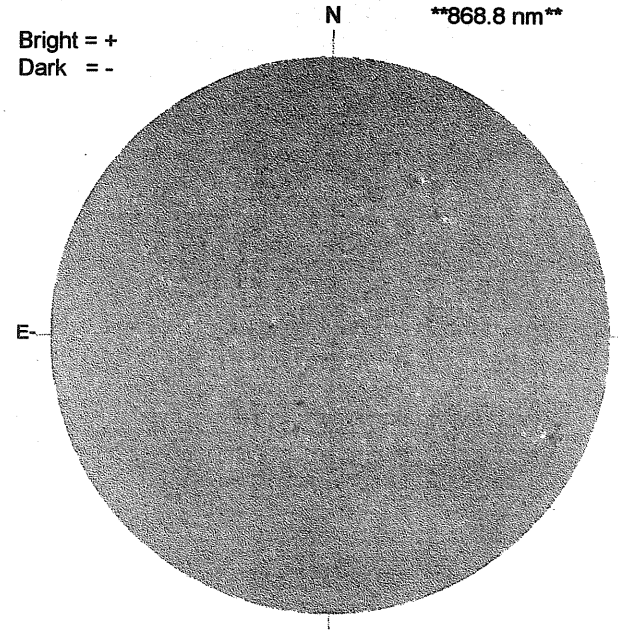
04/19/97
(DOY 109)

S

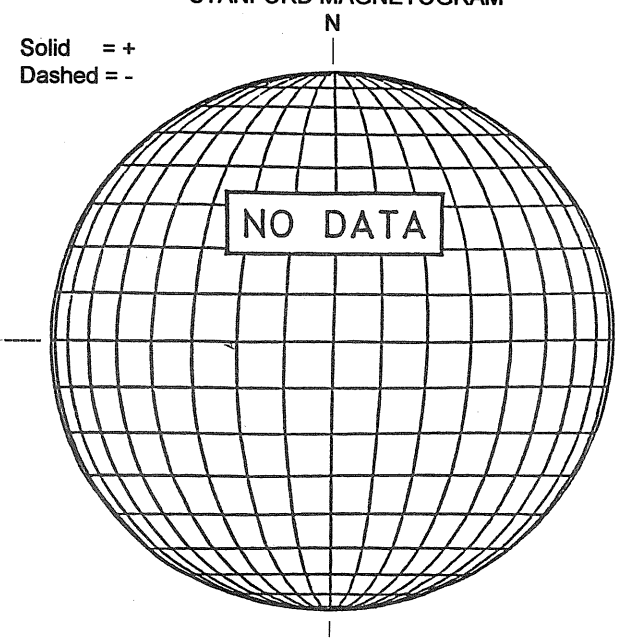
59
Apr 97

APRIL 20, 1997 (P= - 25.66, Bo = - 5.19, Lo = 64.38)

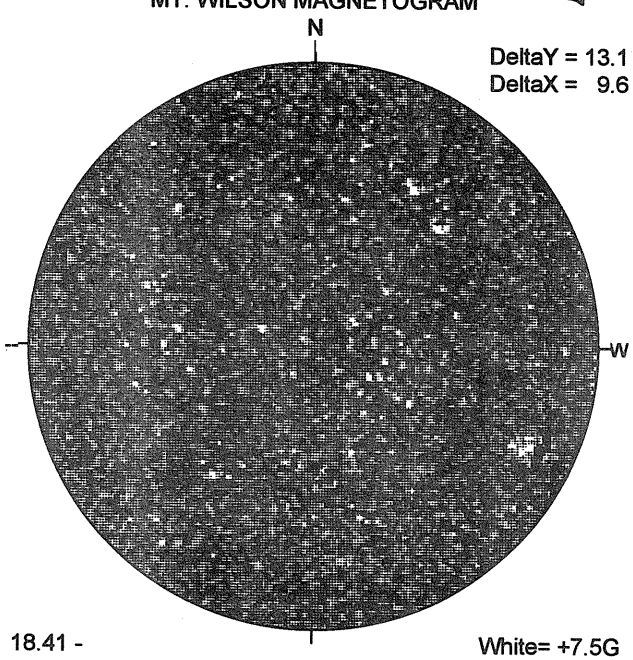
KITT PEAK MAGNETOGRAM



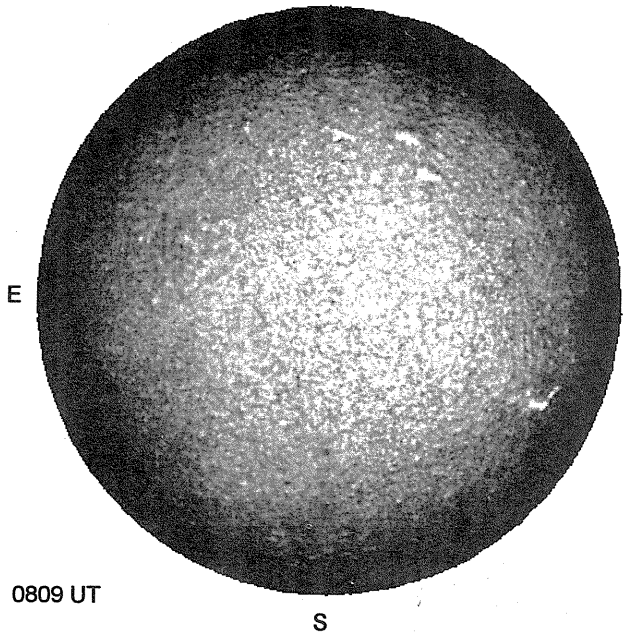
STANFORD MAGNETOGRAM



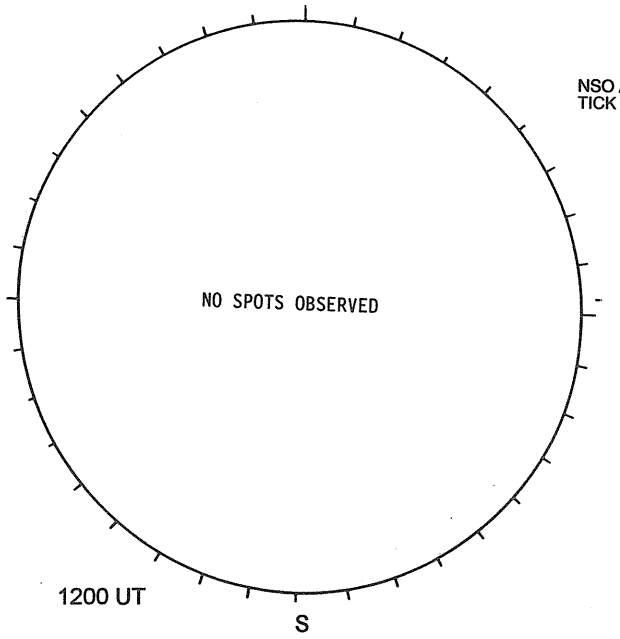
MT. WILSON MAGNETOGRAM



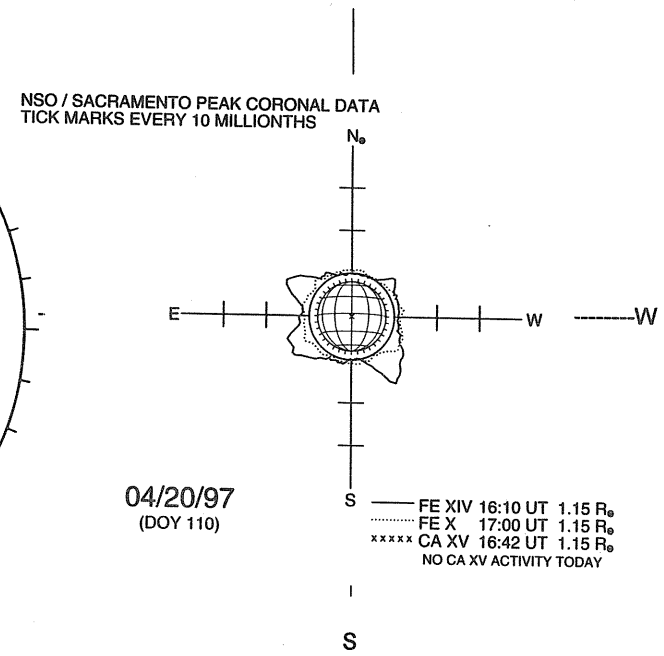
MEUDON H-ALPHA



RAMEY SUNSPOT

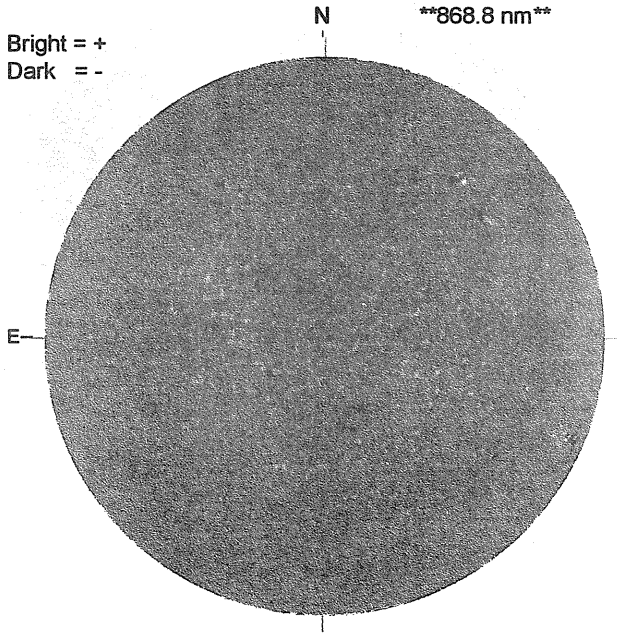


SACRAMENTO PEAK CORONA (1.15 Radii)----

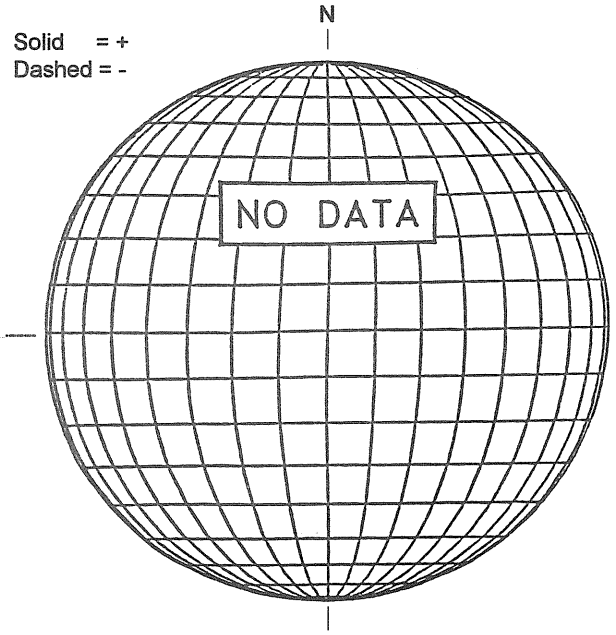


APRIL 21, 1997 (P= - 25.56, Bo = - 5.10, Lo = 51.17)

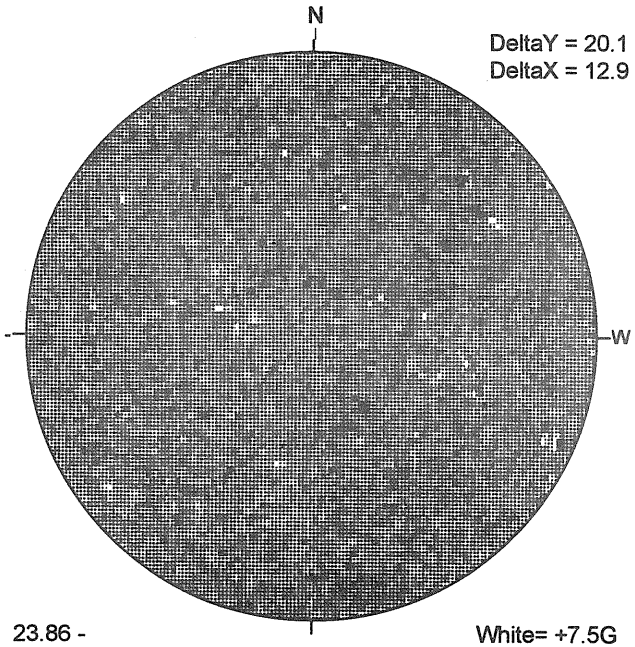
KITT PEAK MAGNETOGRAM



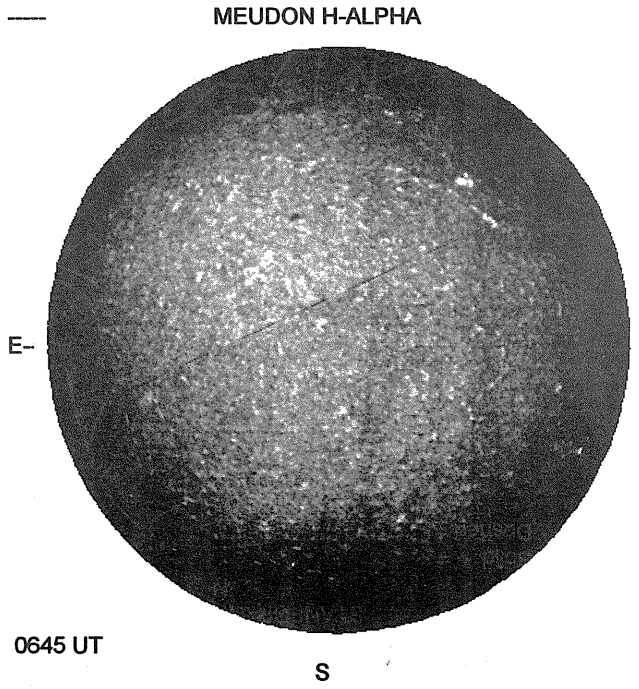
STANFORD MAGNETOGRAM



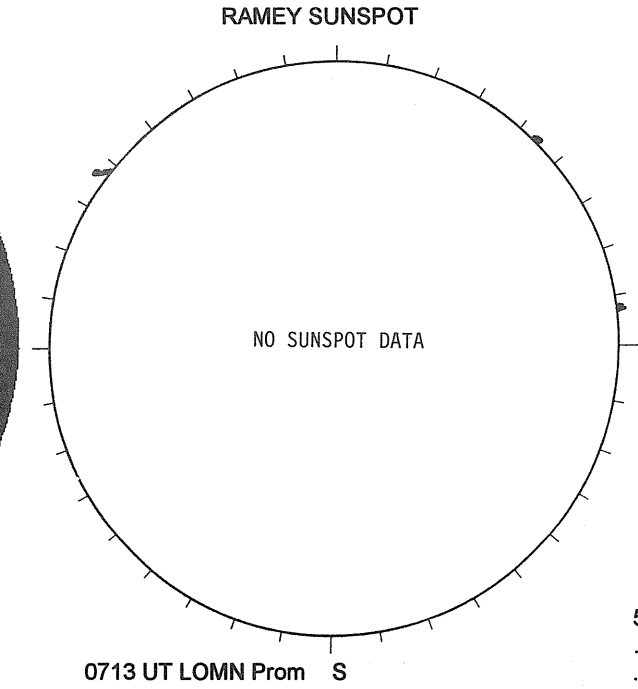
MT. WILSON MAGNETOGRAM



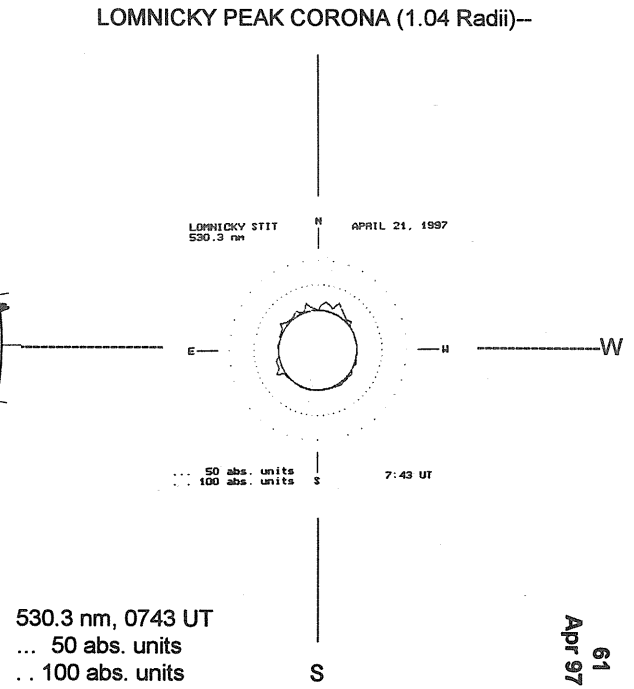
MEUDON H-ALPHA



RAMEY SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)--



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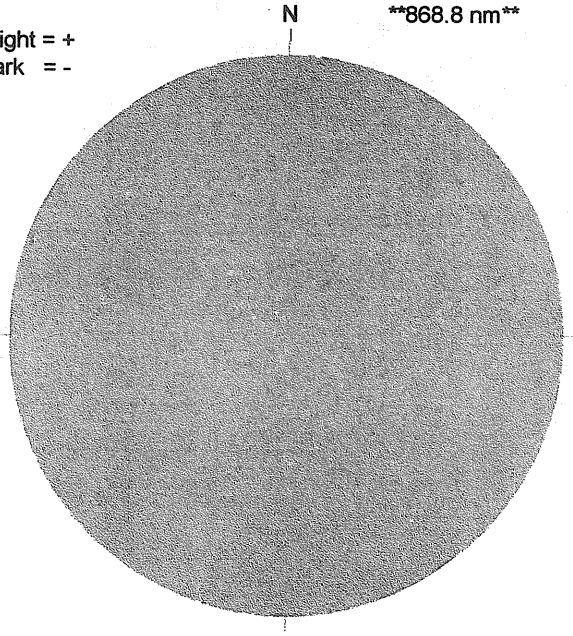
Apr 97

APRIL 22, 1997 (P= - 25.45, Bo = - 5.01, Lo = 37.96)

KITT PEAK MAGNETOGRAM

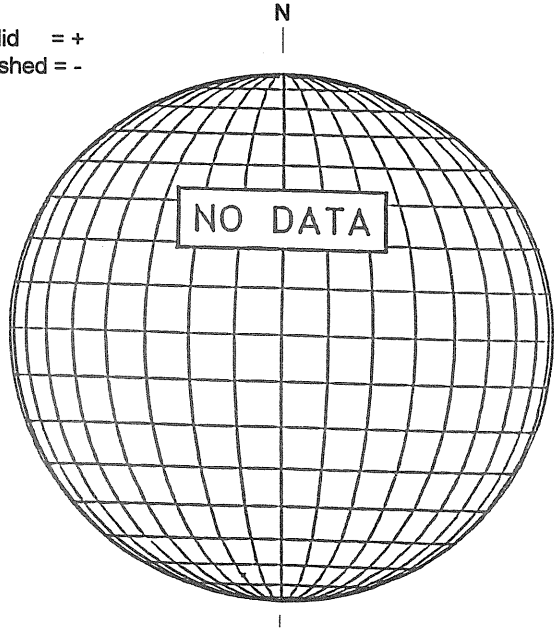
Bright = +
Dark = -



1608 UT

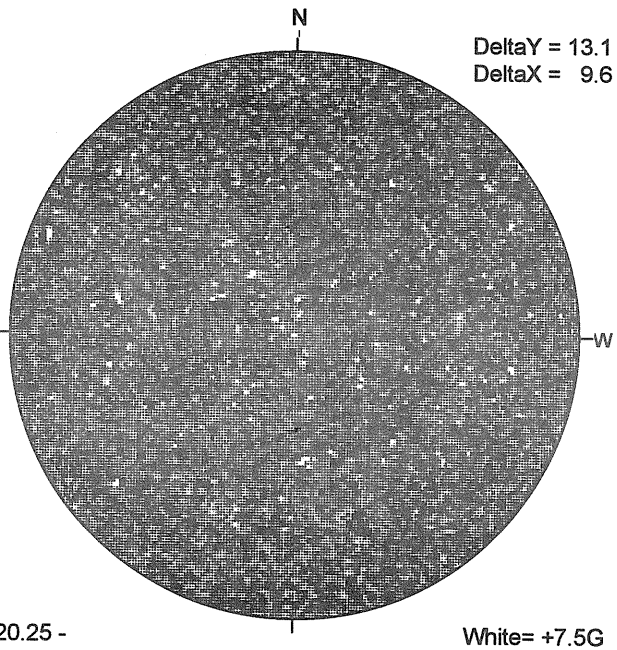
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

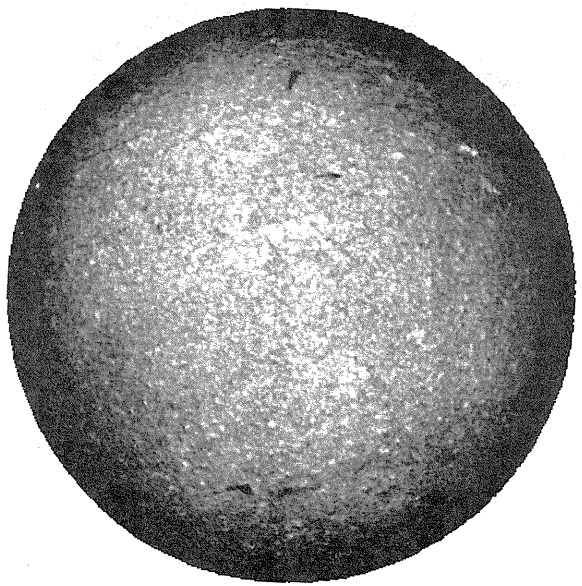
DeltaY = 13.1
DeltaX = 9.6



20.25 -
21.19 UT

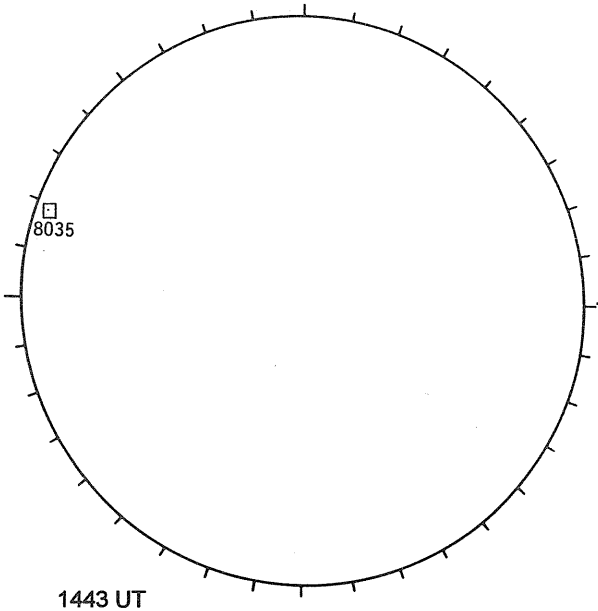
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



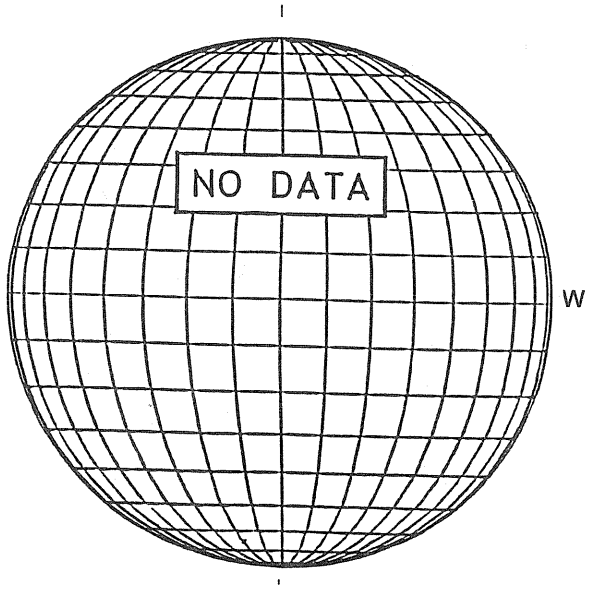
0838 UT

RAMEY SUNSPOT



1443 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



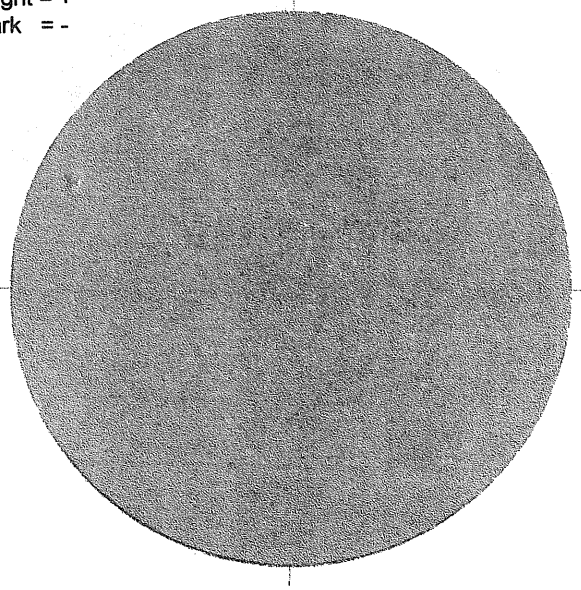
APRIL 23, 1997 (P= - 25.33, Bo = - 4.92, Lo = 24.75)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



1720 UT

STANFORD MAGNETOGRAM

N

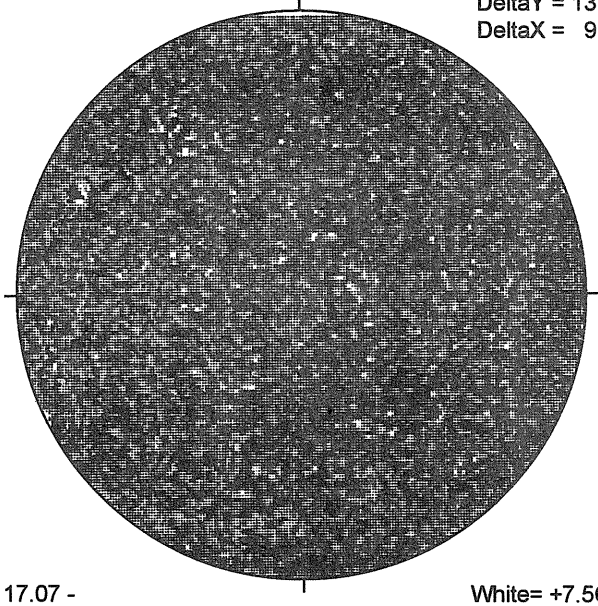
Solid = +
Dashed = -

1723 UT

MT. WILSON MAGNETOGRAM

N

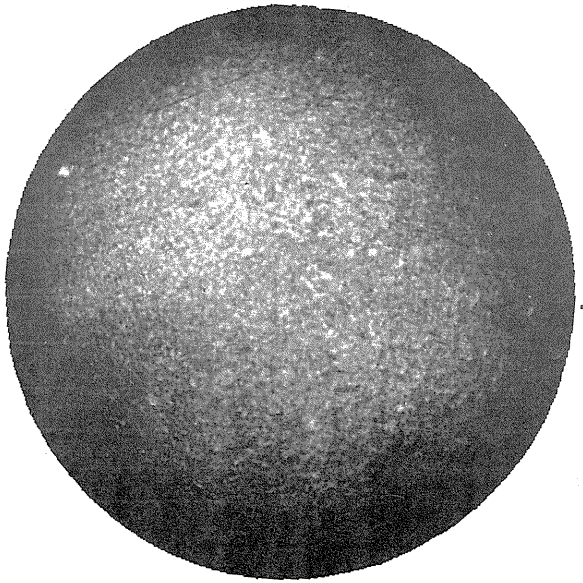
DeltaY = 13.1
DeltaX = 9.6



17.07 -
18.00 UT

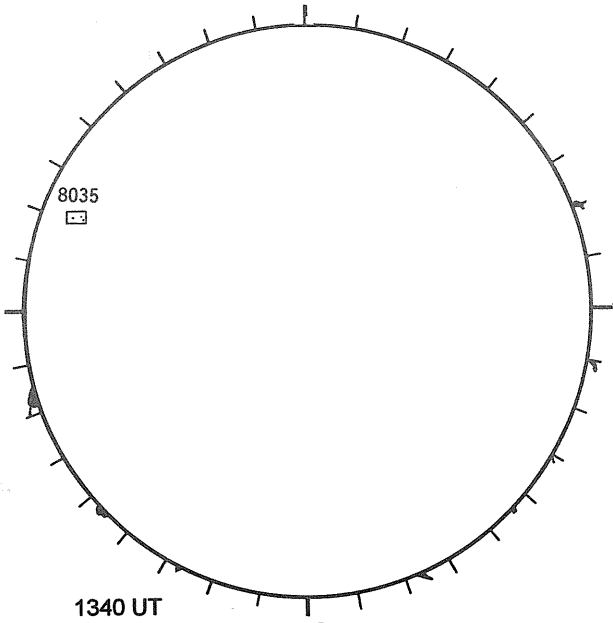
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



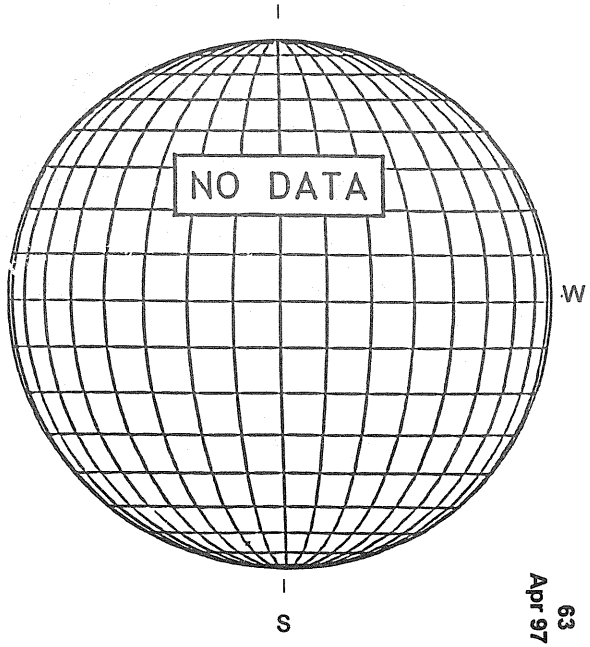
0656 UT

RAMEY SUNSPOT



1340 UT
0659 UT VALA Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----



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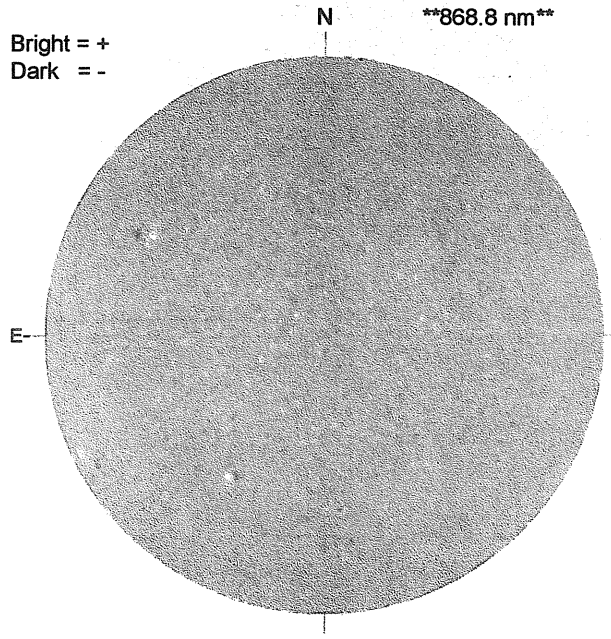
Apr 97

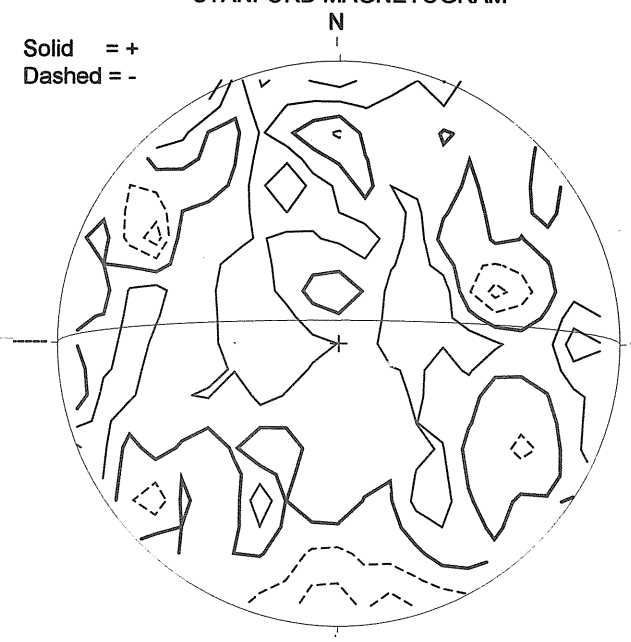
APRIL 24, 1997 (P= - 25.21, Bo = - 4.83 Lo = 11.54)

KITT PEAK MAGNETOGRAM



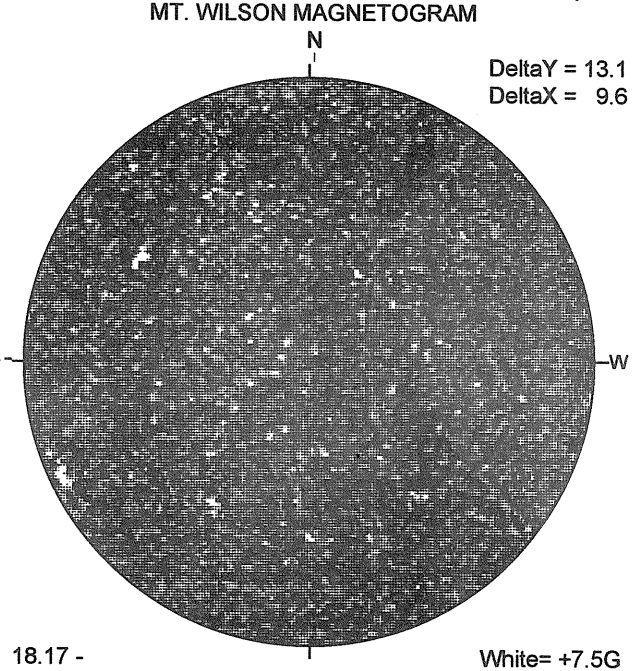
1557 UT

STANFORD MAGNETOGRAM



1930 UT

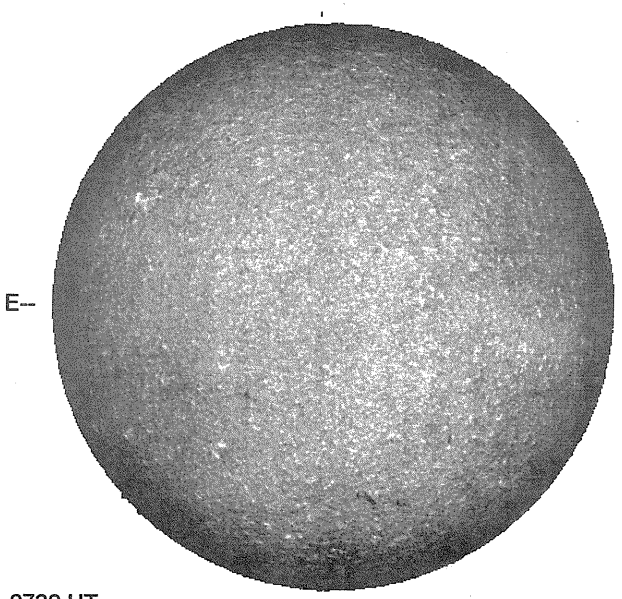
MT. WILSON MAGNETOGRAM



18.17 -
19.11 UT

White= +7.5G
Black = -7.5G

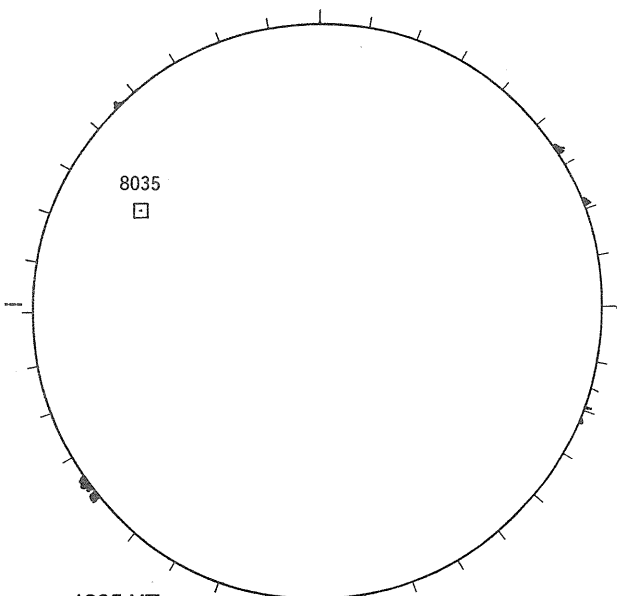
MEUDON H-ALPHA



0730 UT

S

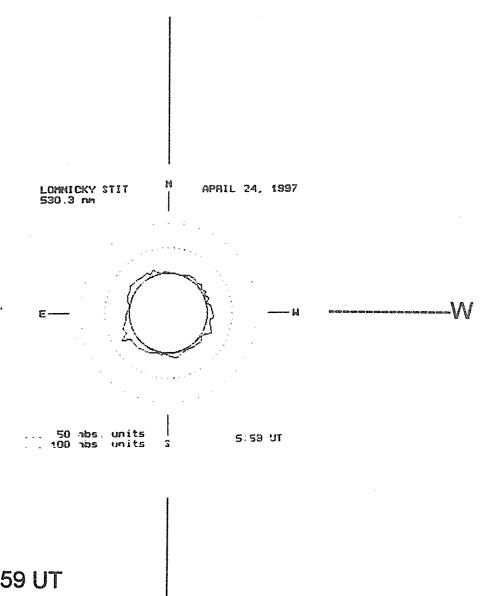
RAMEY SUNSPOT



1305 UT
0515 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----

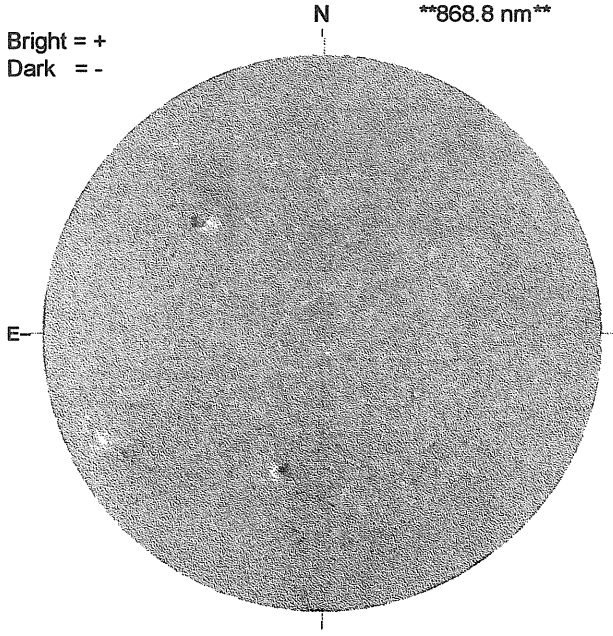


530.3 nm, 0559 UT
... 50 abs.units
. . 100 abs. units

S

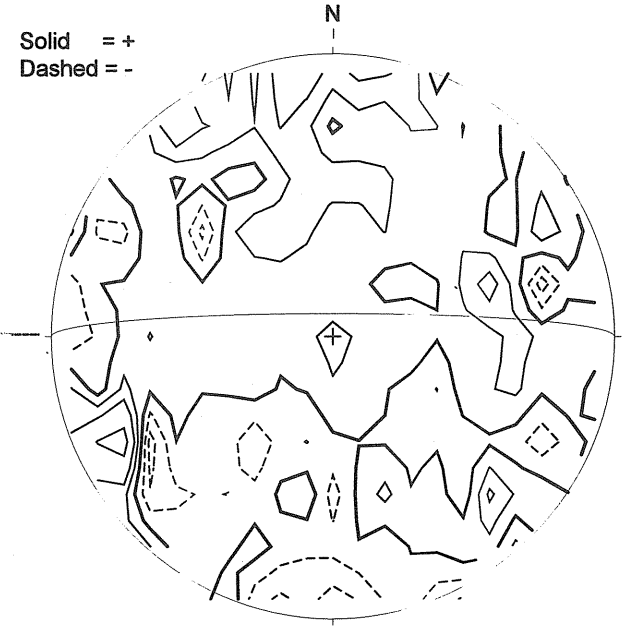
APRIL 25, 1997 (P= - 25.08, Bo = - 4.74, Lo = 358.32)

KITT PEAK MAGNETOGRAM



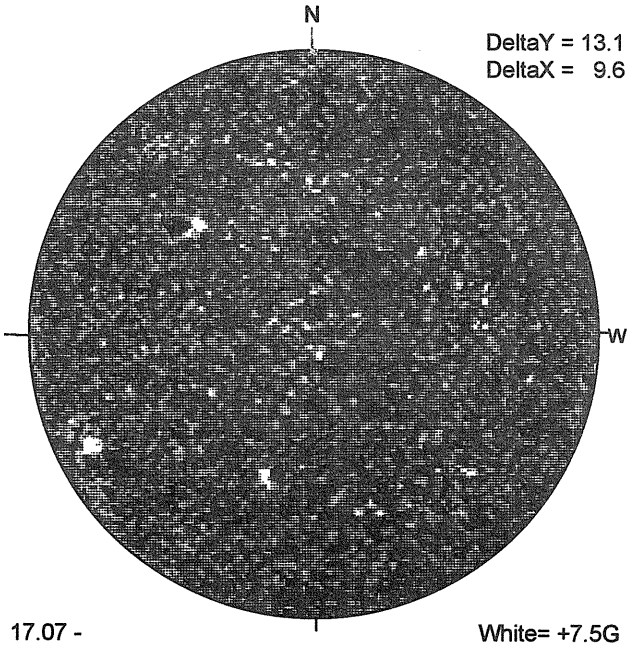
1840 UT

STANFORD MAGNETOGRAM



2228 UT

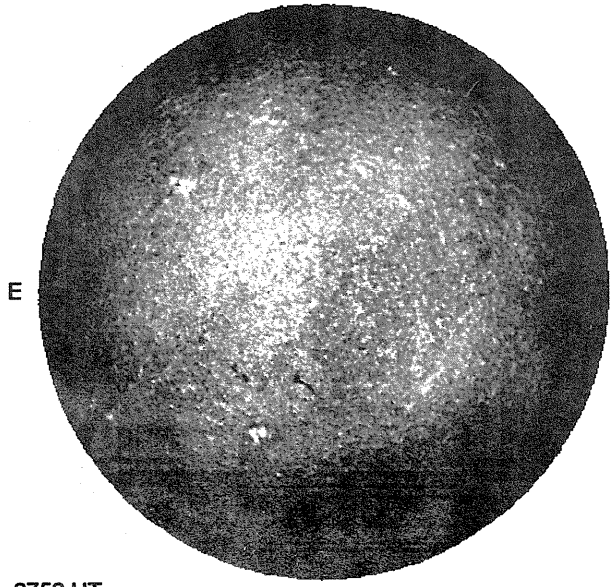
MT. WILSON MAGNETOGRAM



17.07 -
18.00 UT

White= +7.5G
Black = -7.5G

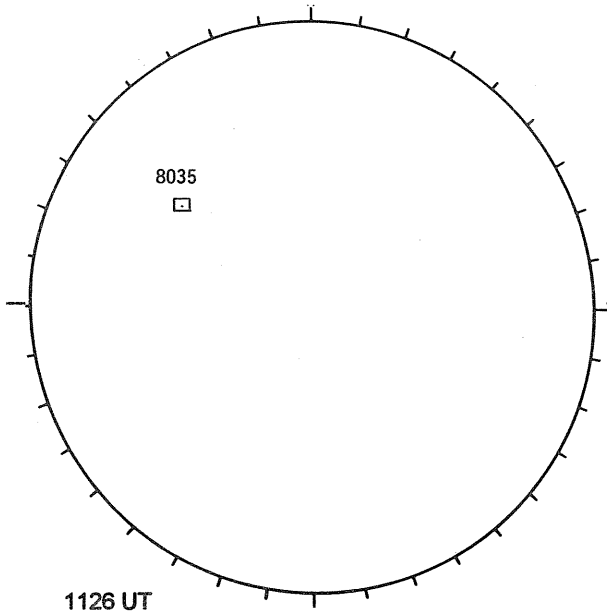
MEUDON H-ALPHA



0752 UT

S

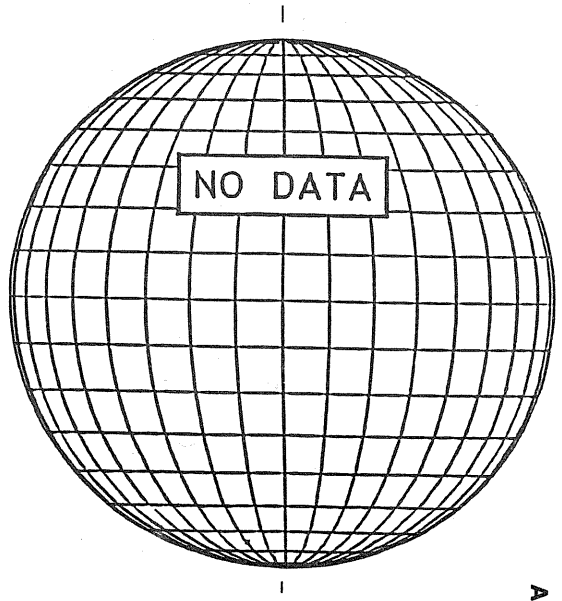
RAMEY SUNSPOT



1126 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

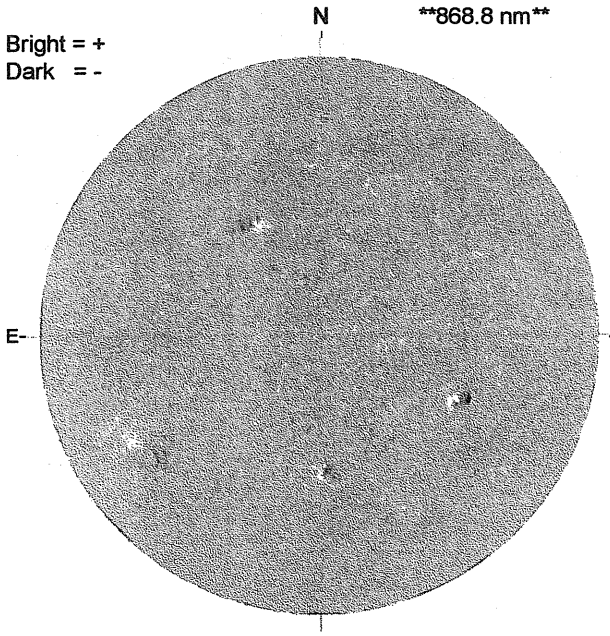


S

65
Apr 97

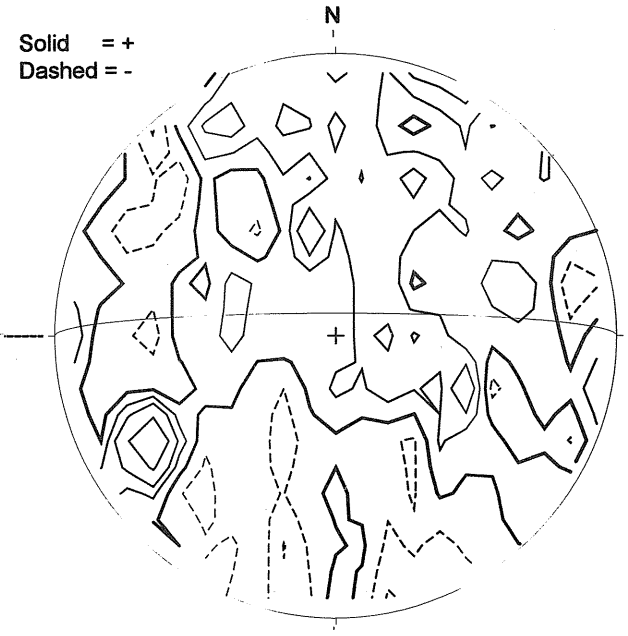
APRIL 26, 1997 (P= - 24.94, Bo = - 4.65, Lo = 345.11)

KITT PEAK MAGNETOGRAM



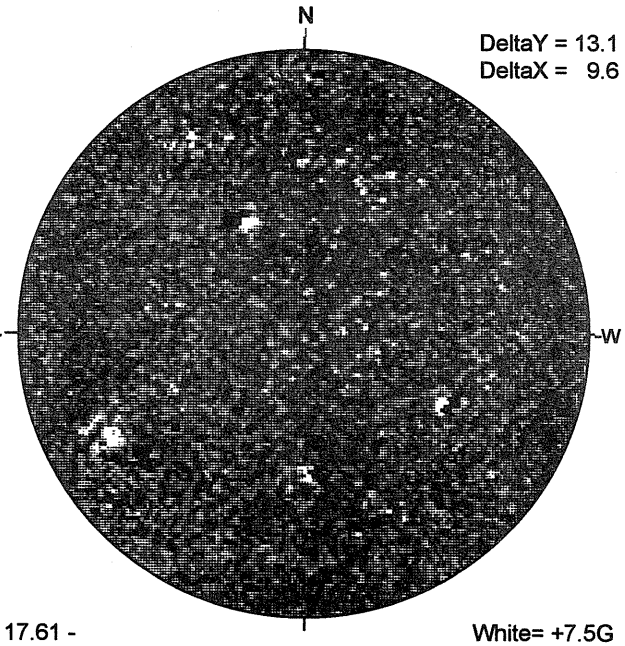
1454 UT

STANFORD MAGNETOGRAM



2057 UT

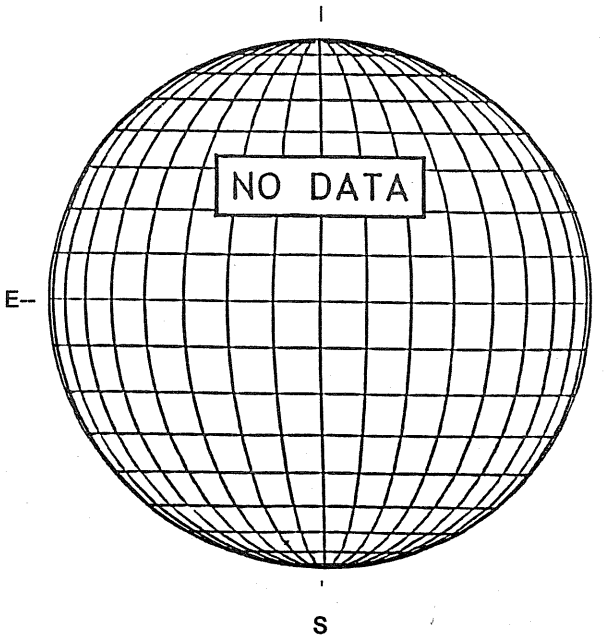
MT. WILSON MAGNETOGRAM



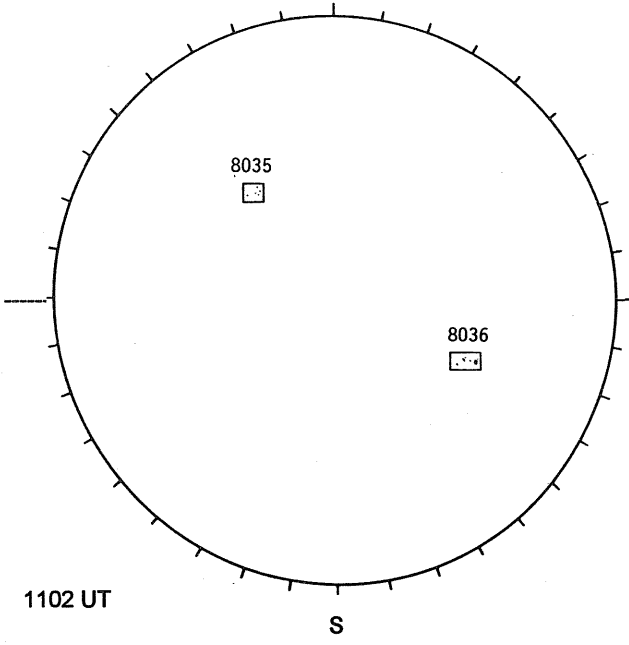
17.61 -
18.55 UT

White= +7.5G
Black = -7.5G

---- MAUNA LOA H-ALPHA

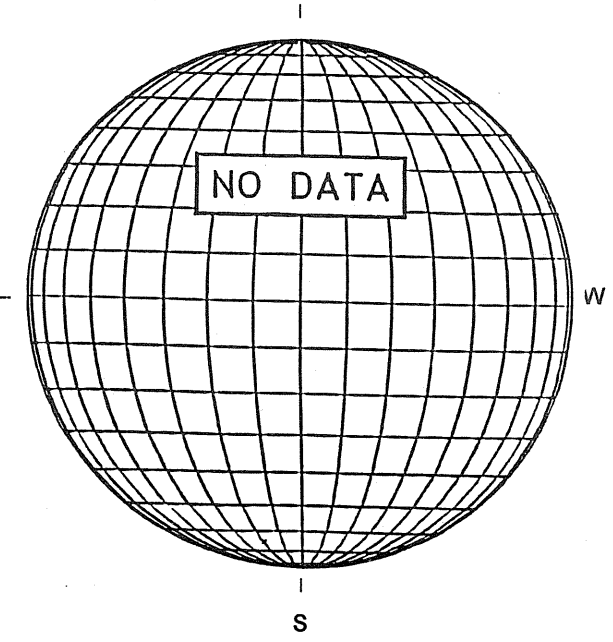


RAMEY SUNSPOT



1102 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



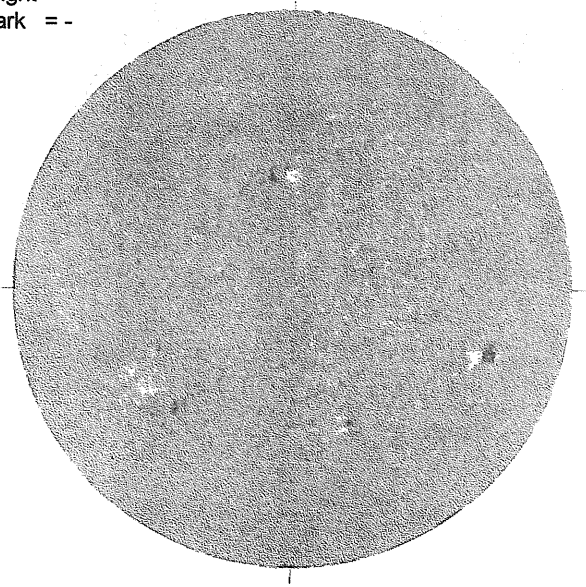
APRIL 27, 1997 (P= - 24.80, Bo = - 4.55, Lo = 331.90)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



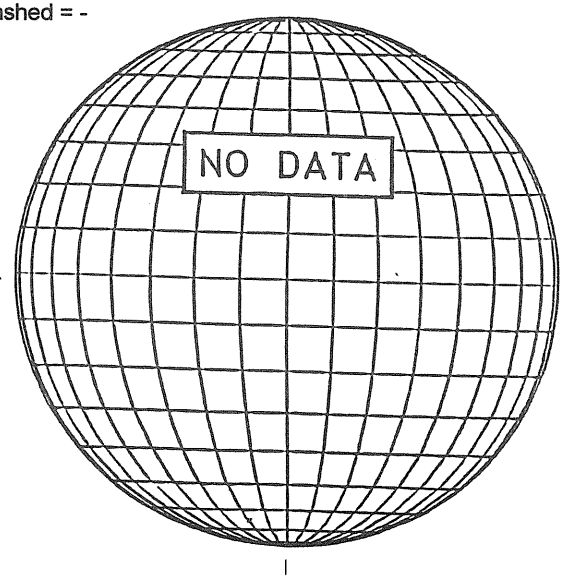
E

1448 UT

STANFORD MAGNETOGRAM

N

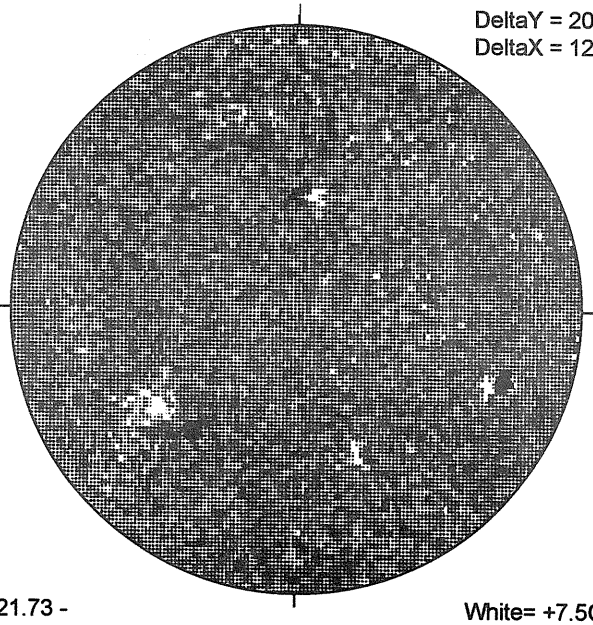
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.1
DeltaX = 12.9

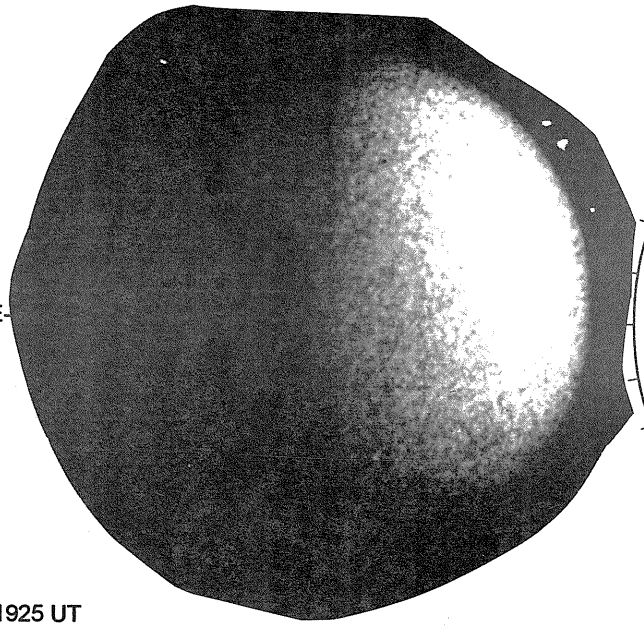


W

21.73 -
22.14 UT

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

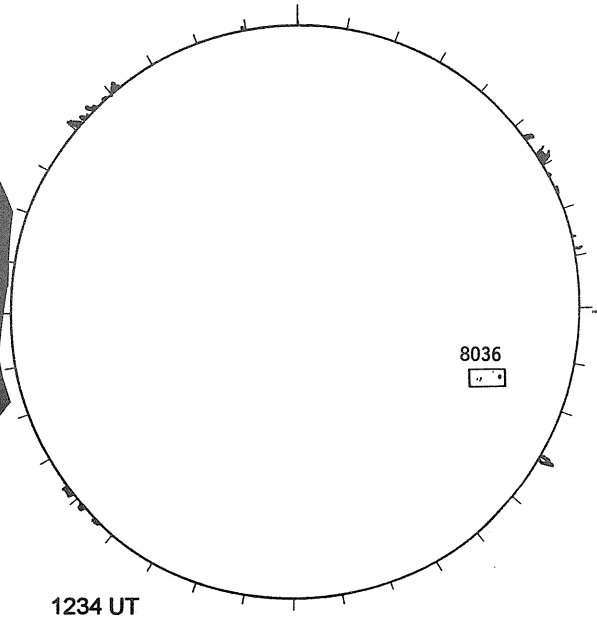


E

1925 UT
1719 UT Prom

S

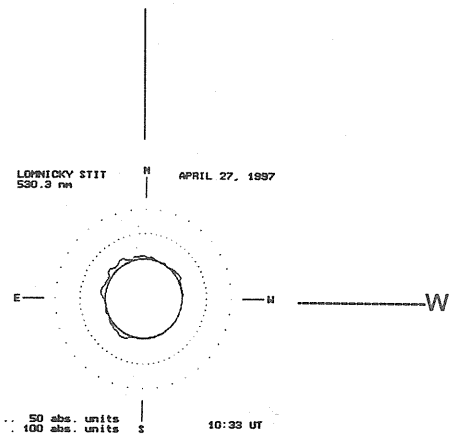
RAMEY SUNSPOT



1234 UT
1016 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)



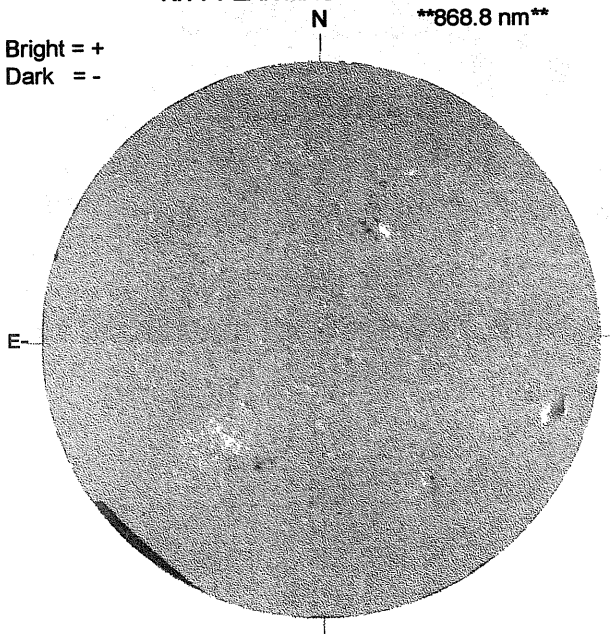
530.3 nm, 1033 UT
... 50 abs. units
. . 100 abs. units

S

67
Apr 97

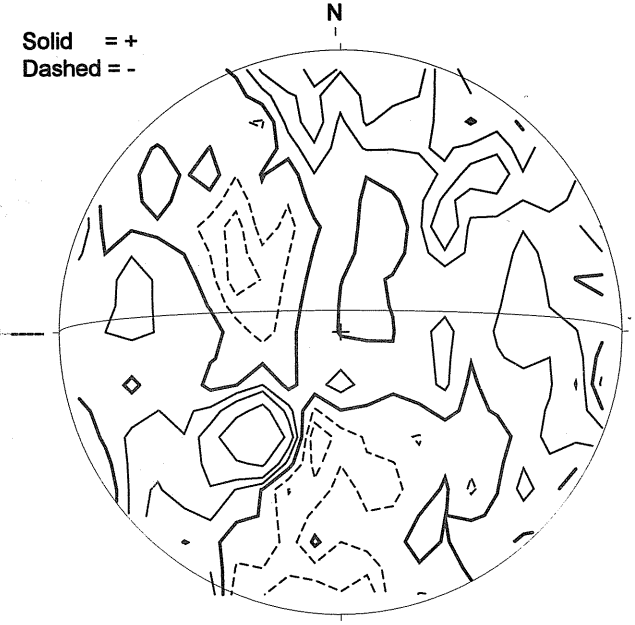
APRIL 28, 1997 (P= - 24.65, Bo = - 4.46, Lo = 318.68)

KITT PEAK MAGNETOGRAM



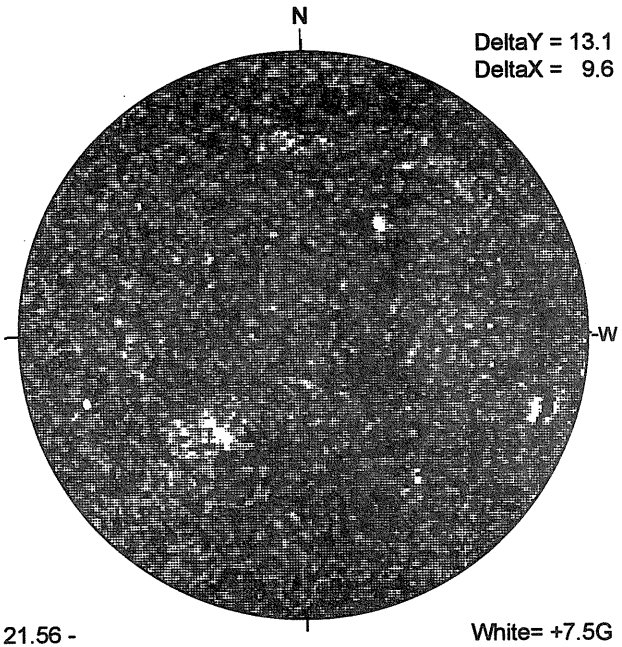
1518 UT

STANFORD MAGNETOGRAM



2353 UT

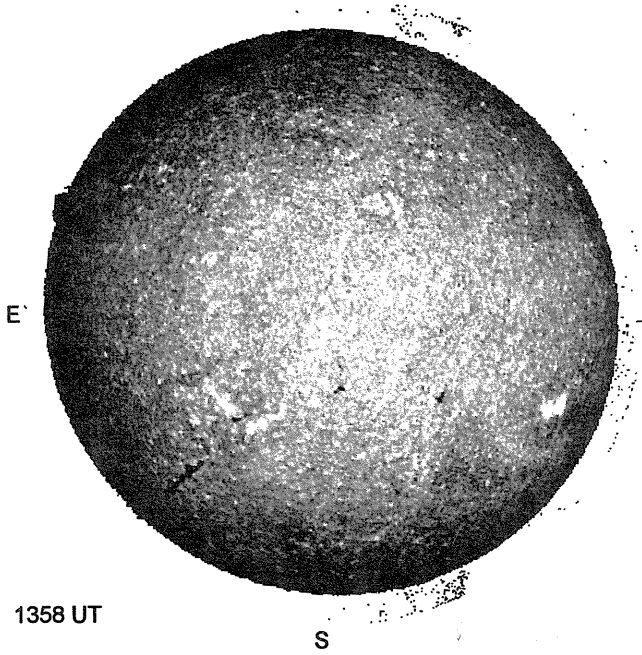
MT. WILSON MAGNETOGRAM



21.56 -
22.49 UT

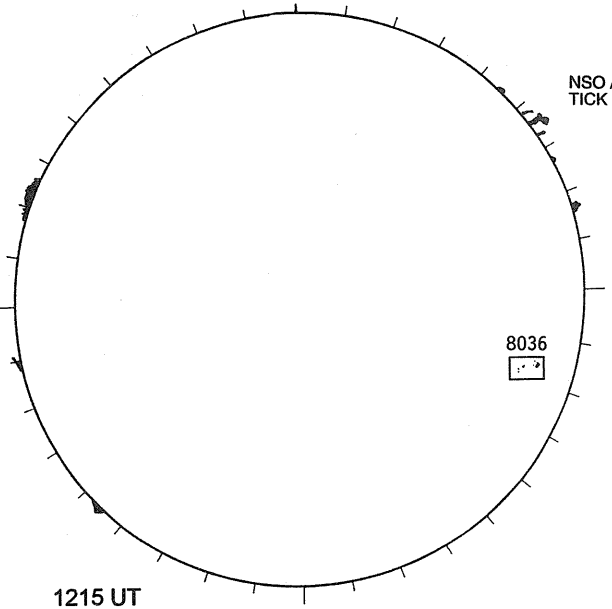
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



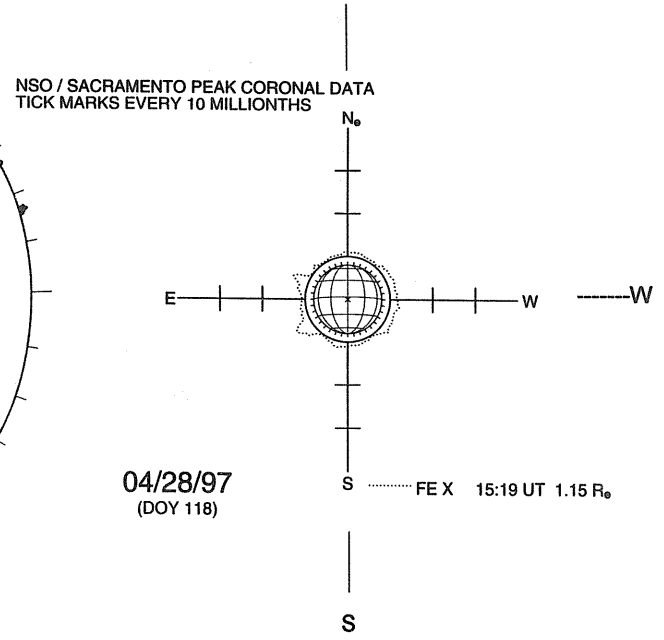
1358 UT

RAMEY SUNSPOT



1215 UT
0450 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

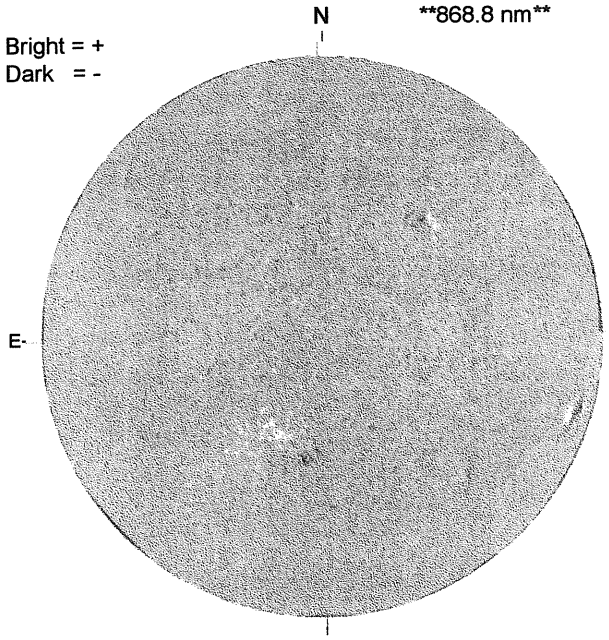


04/28/97
(DOY 118)

S

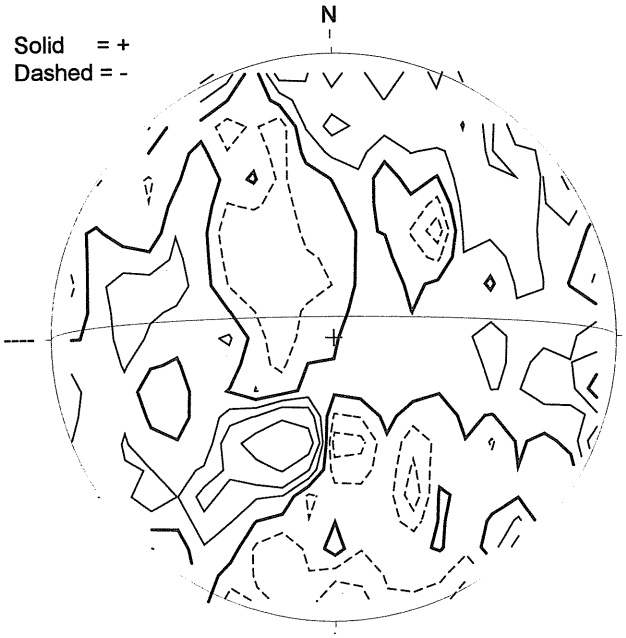
APRIL 29, 1997 (P= - 24.49, Bo = - 4.36, Lo = 305.47)

KITT PEAK MAGNETOGRAM



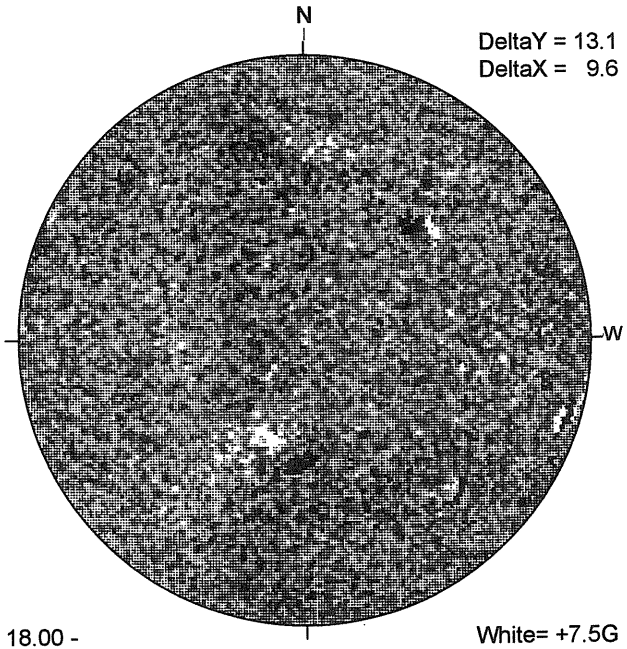
1425 UT

STANFORD MAGNETOGRAM



1816 UT

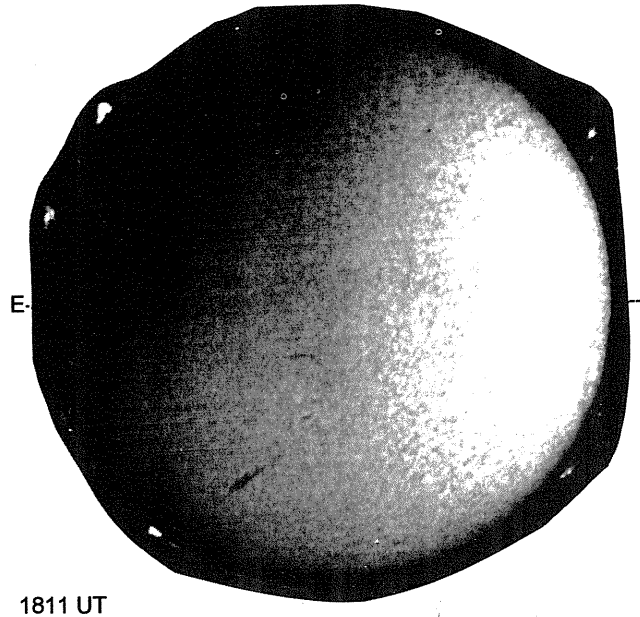
MT. WILSON MAGNETOGRAM



18.00 -
18.93 UT

White= +7.5G
Black = -7.5G

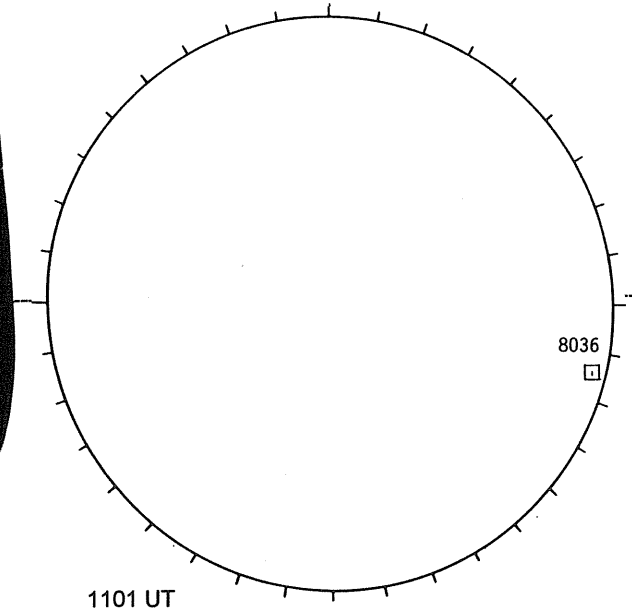
MAUNA LOA H-ALPHA



1811 UT
1911 UT Prom

S

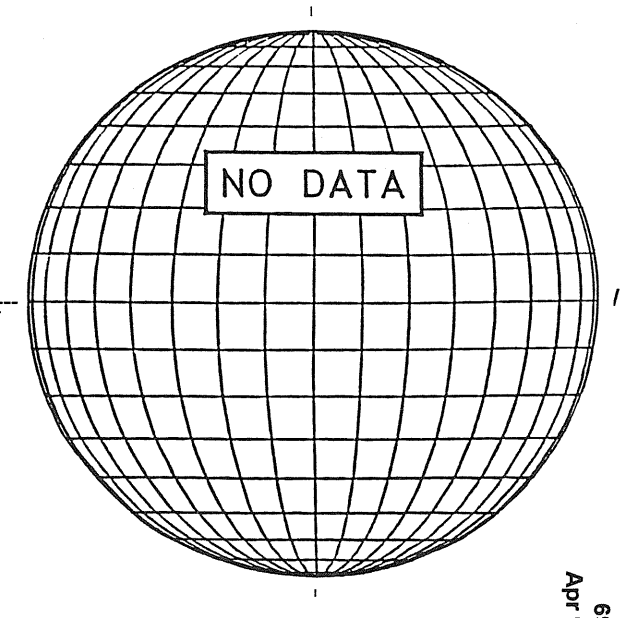
RAMEY SUNSPOT



1101 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

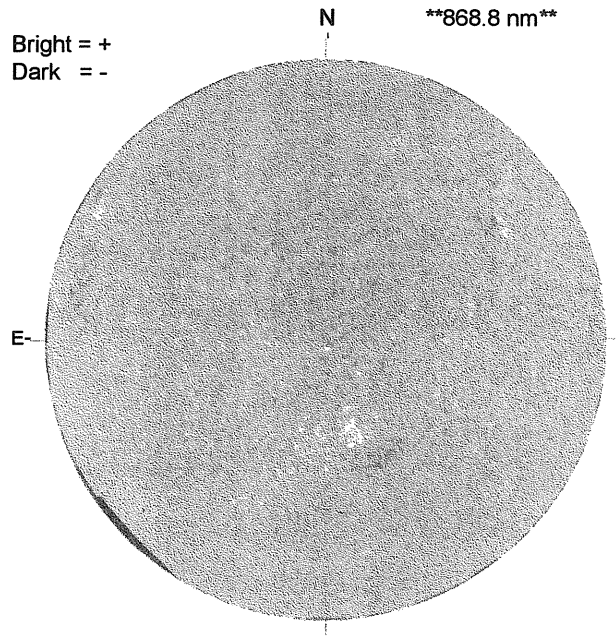


S

69
Apr 97

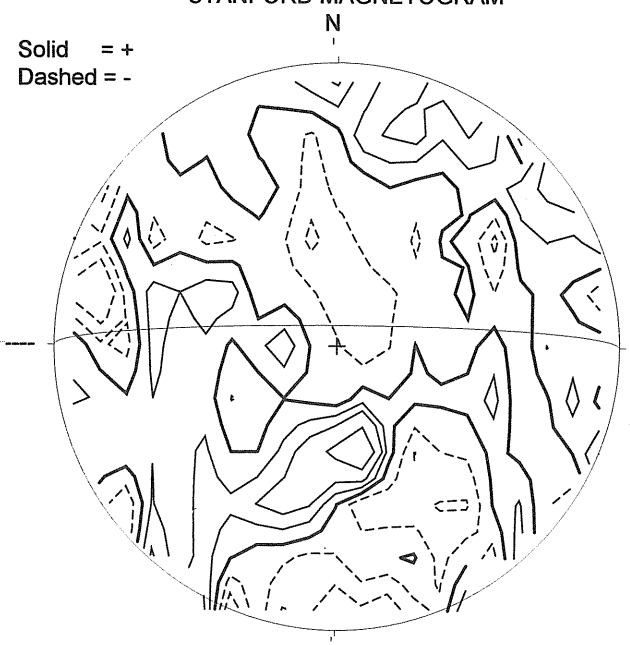
APRIL 30, 1997 (P= - 24.32, Bo = - 4.26, Lo = 292.25)

KITT PEAK MAGNETOGRAM



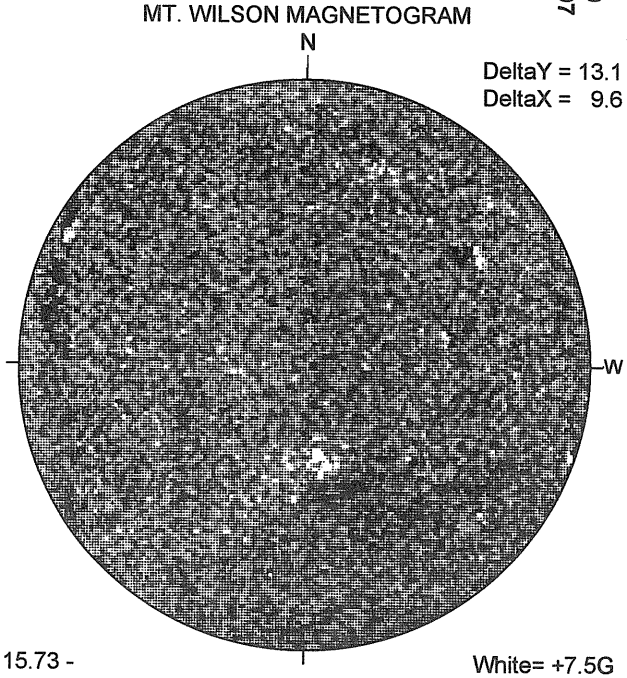
1810 UT

STANFORD MAGNETOGRAM



2003 UT

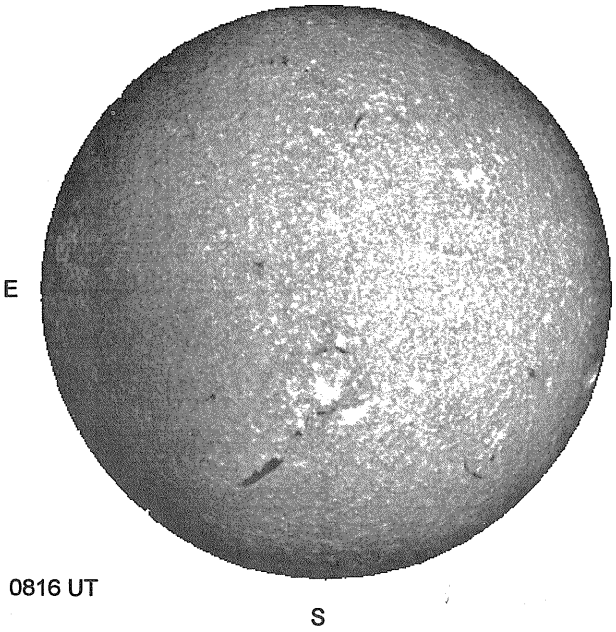
MT. WILSON MAGNETOGRAM



15.73 -
16.66 UT

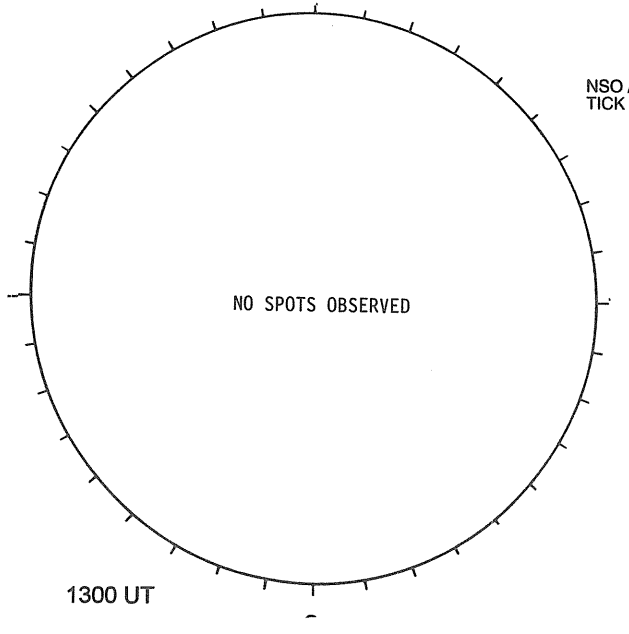
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



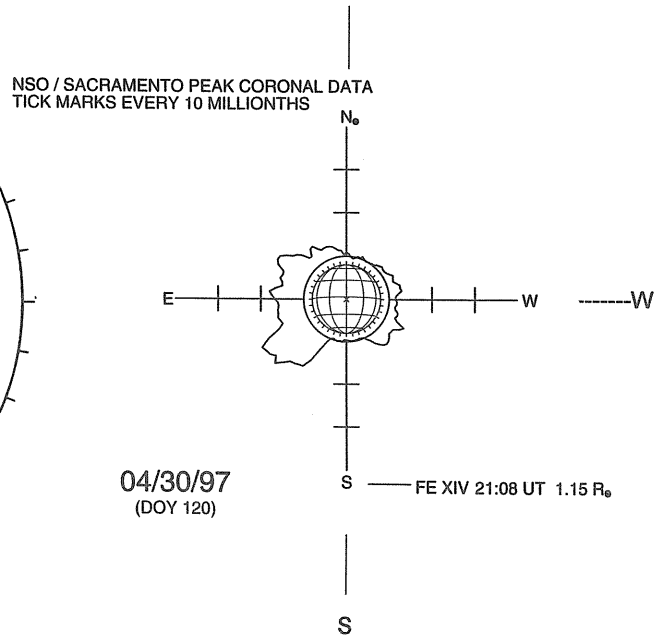
0816 UT

RAMEY SUNSPOT



1300 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



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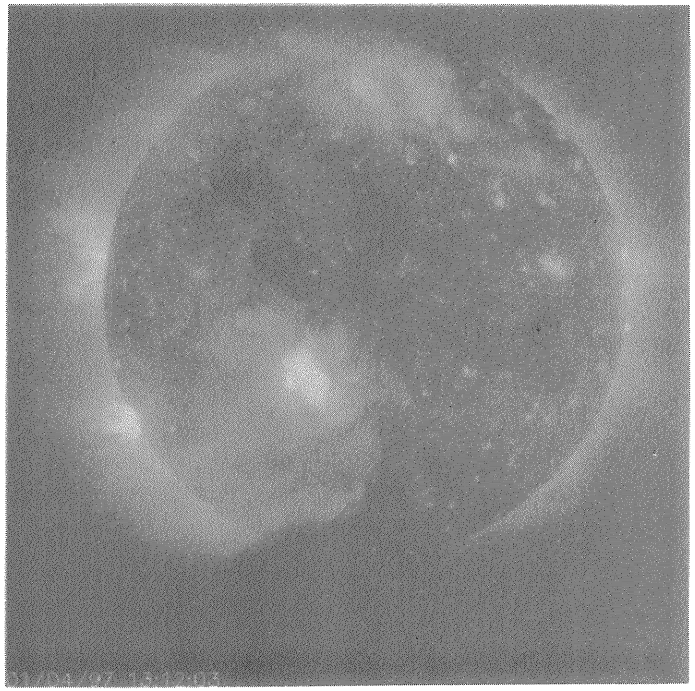
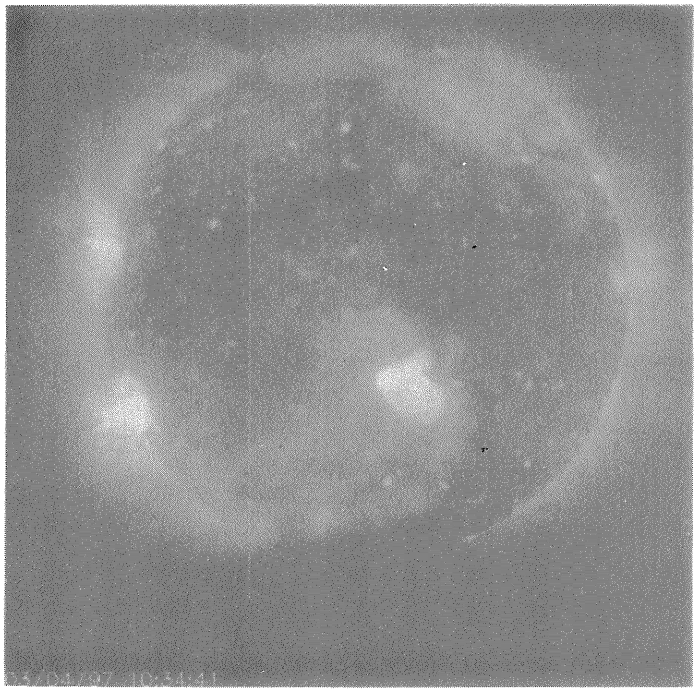
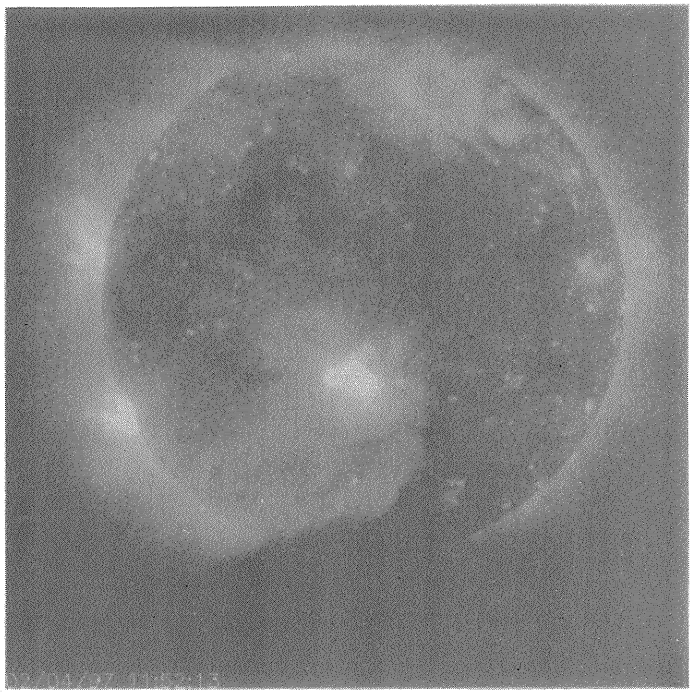


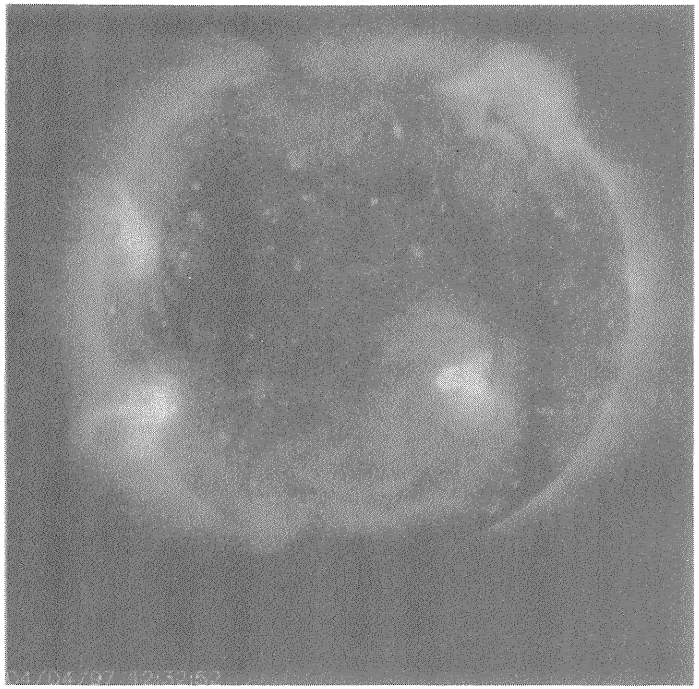
Day 1
13:12:03 UT



Day 3
10:34:41 UT



Day 2
11:52:13 UT



Day 4
12:32:52 UT

71
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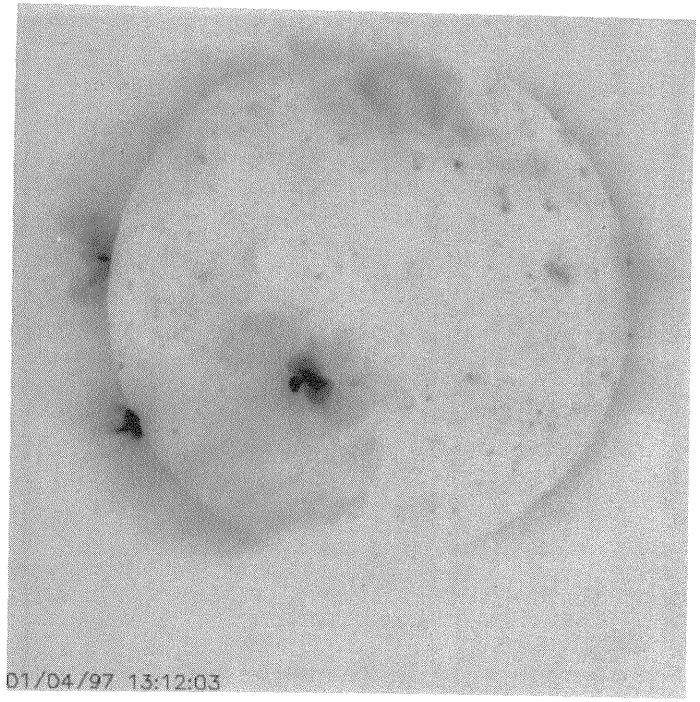
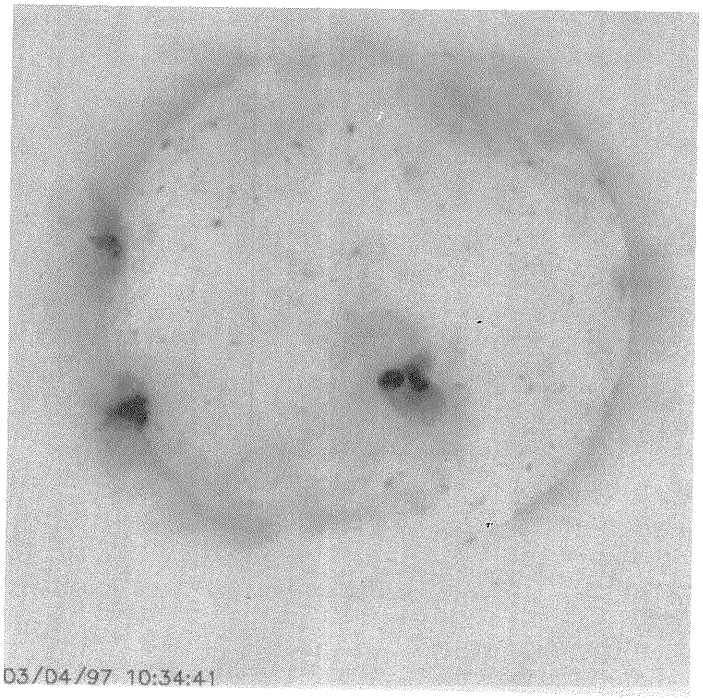
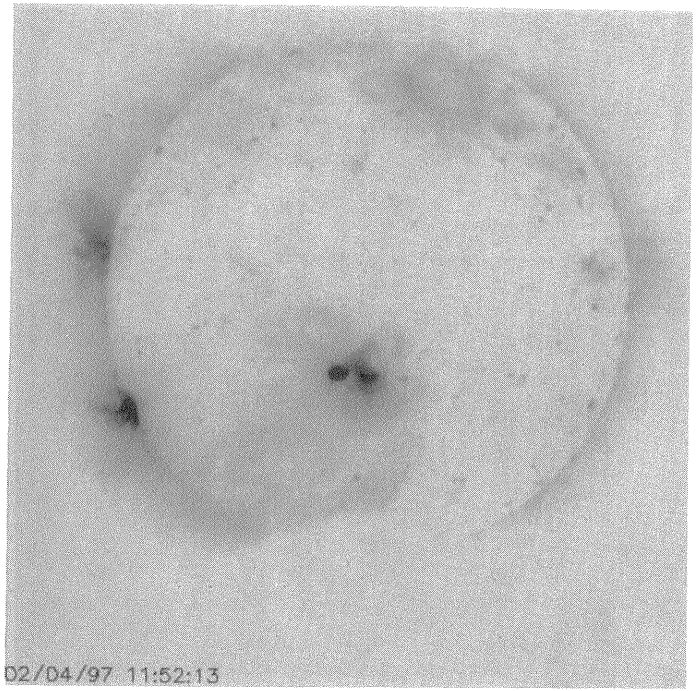


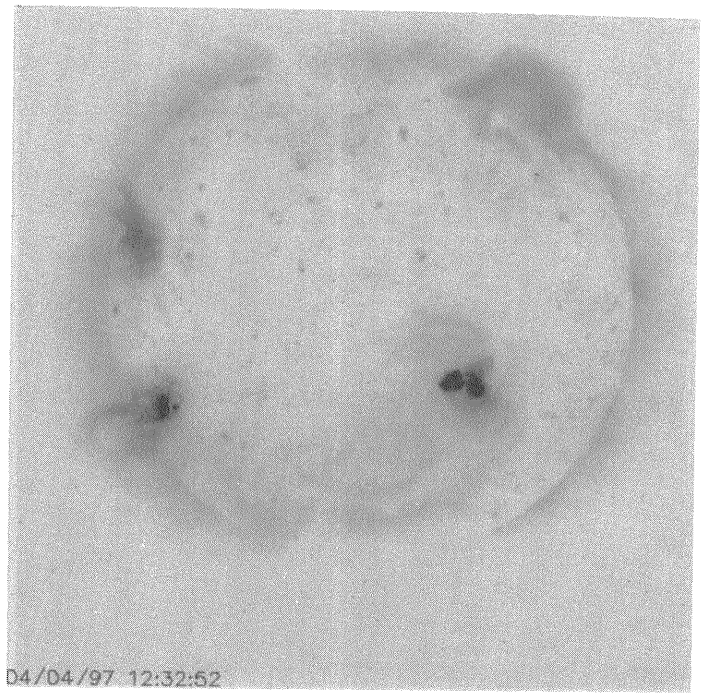
Day 1
13:12:03 UT



Day 3
10:34:41 UT



Day 2
11:52:13 UT



Day 4
12:32:52 UT

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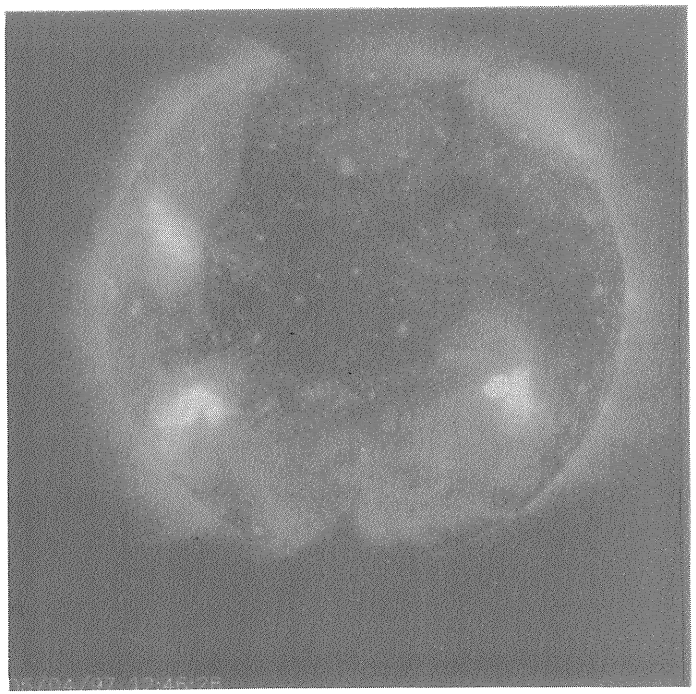
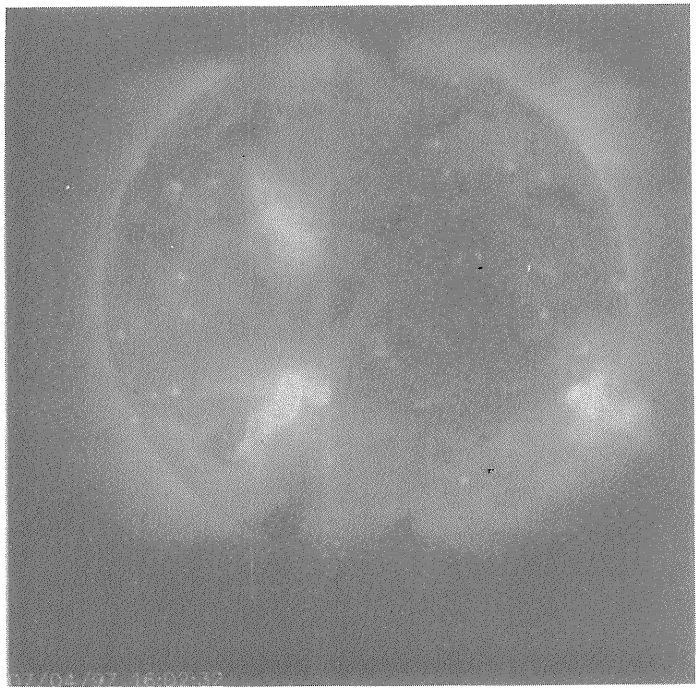
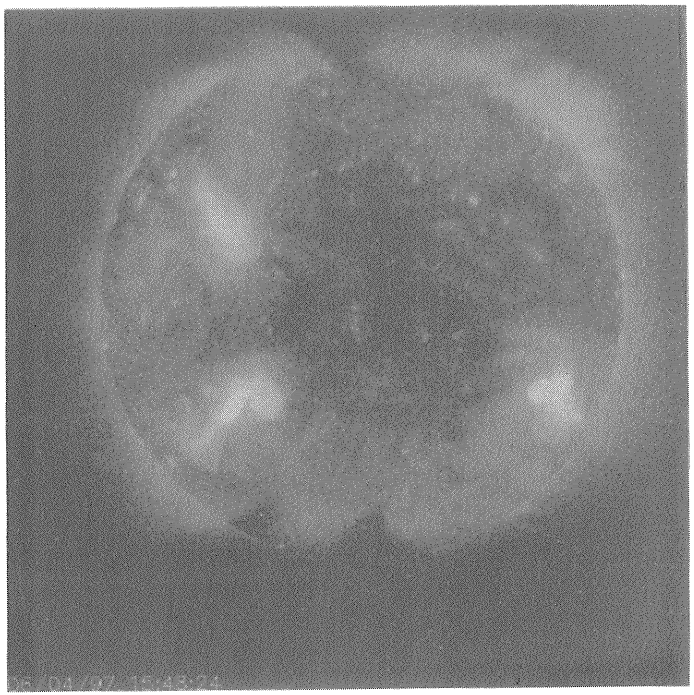


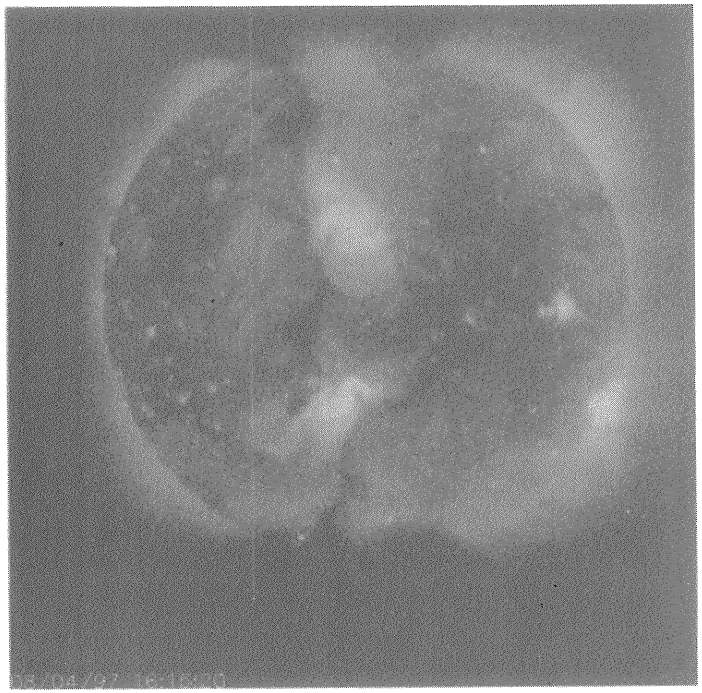
Day 5
12:46:26 UT



Day 7
16:02:32 UT



Day 6
15:48:24 UT



Day 8
16:15:20 UT

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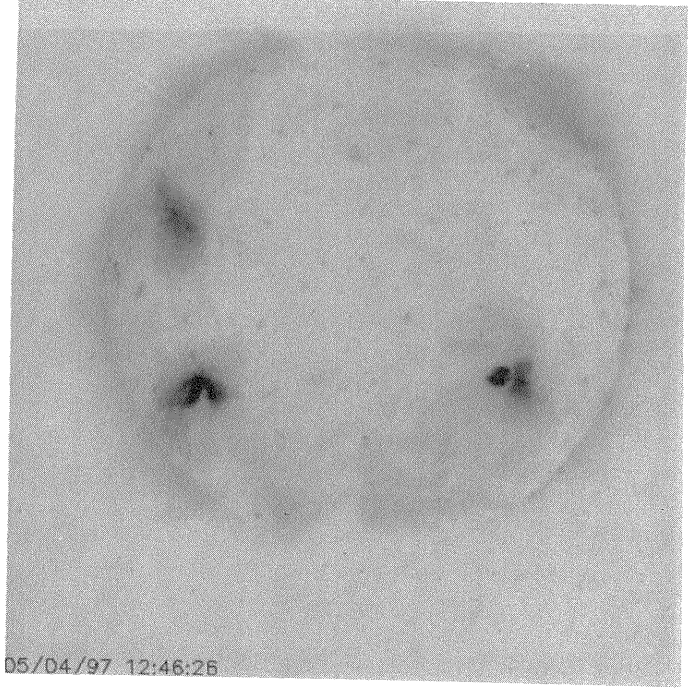
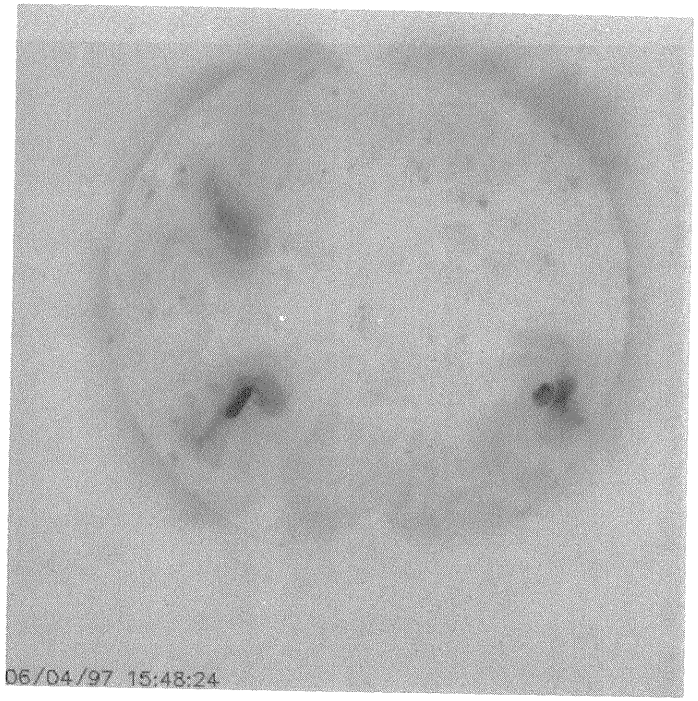


Day 5
12:46:26 UT

Day 7
16:02:32 UT



Day 6
15:48:24 UT

Day 8
16:15:20 UT

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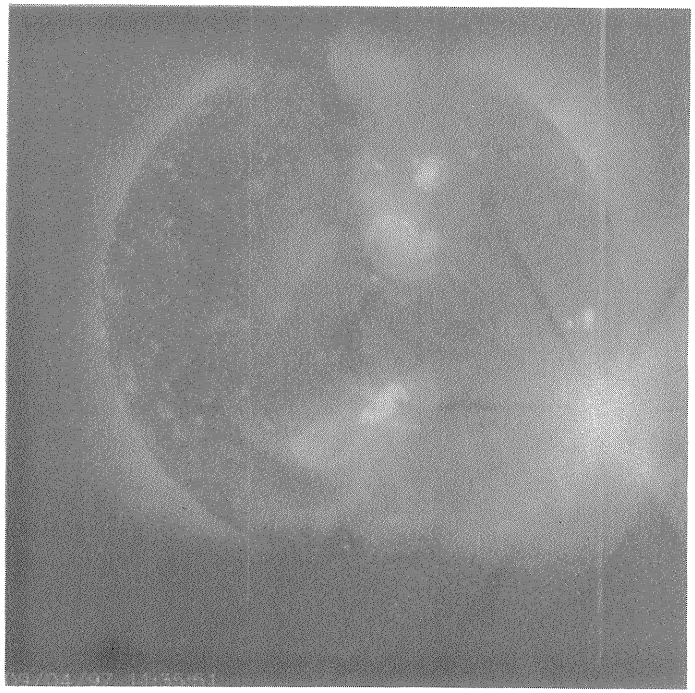
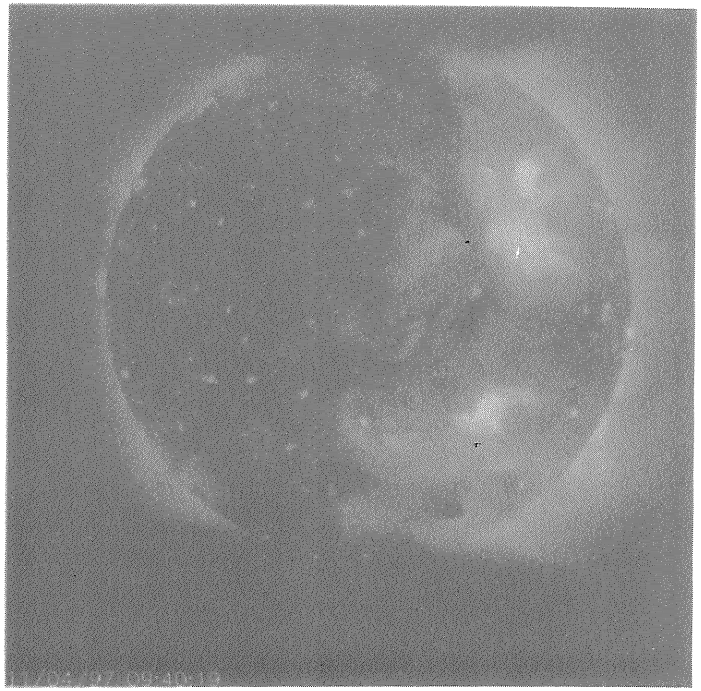
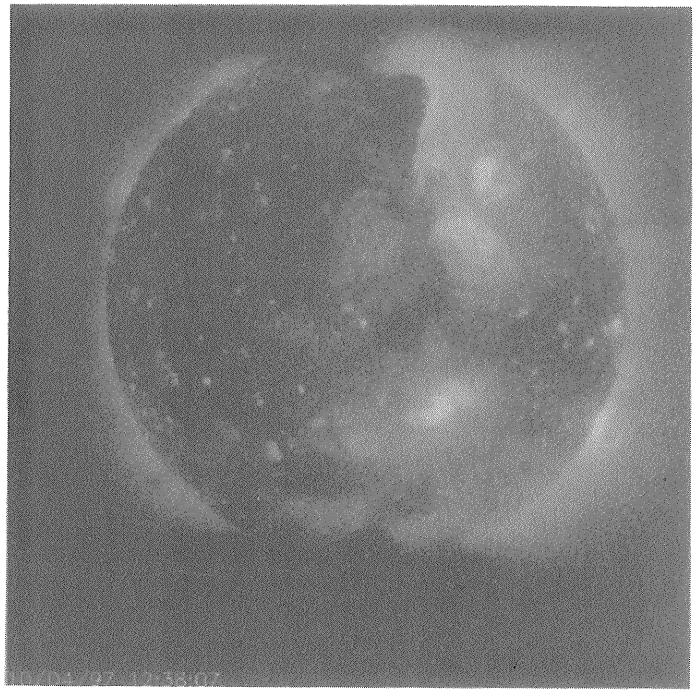


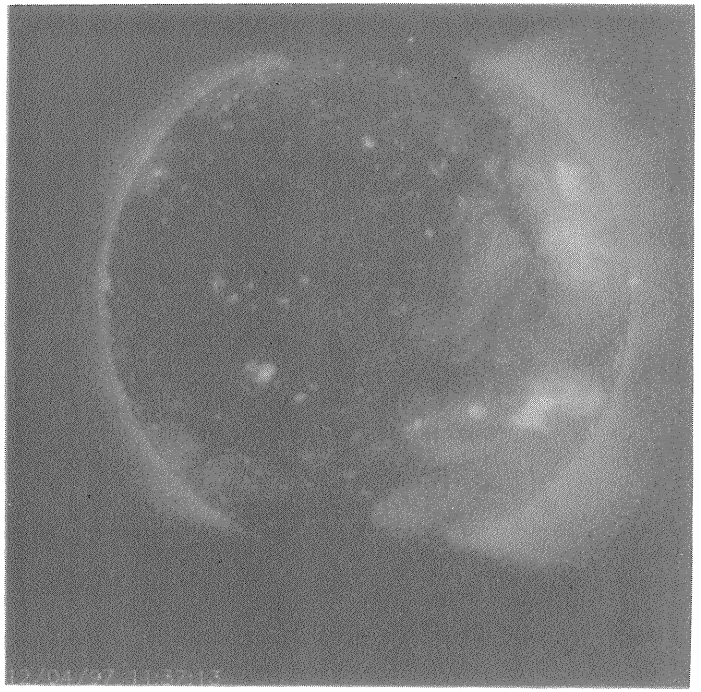
Day 9
11:35:51 UT



Day 11
09:40:19 UT



Day 10
12:38:07 UT



Day 12
11:37:13 UT

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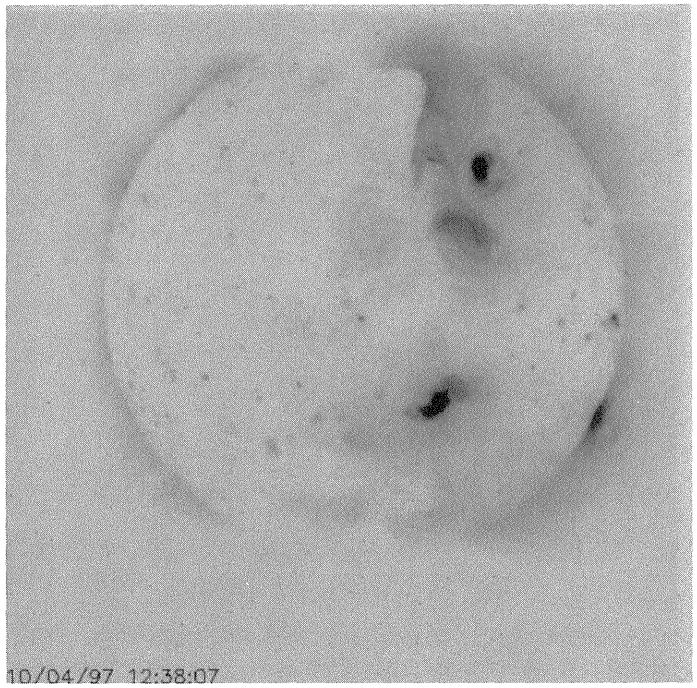
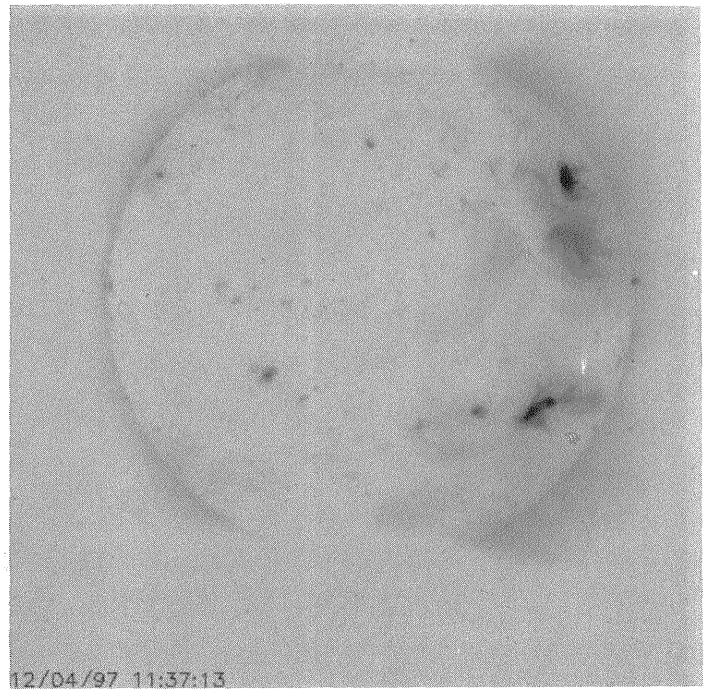
Day 9
11:35:51 UT

Day 11
09:40:19 UT



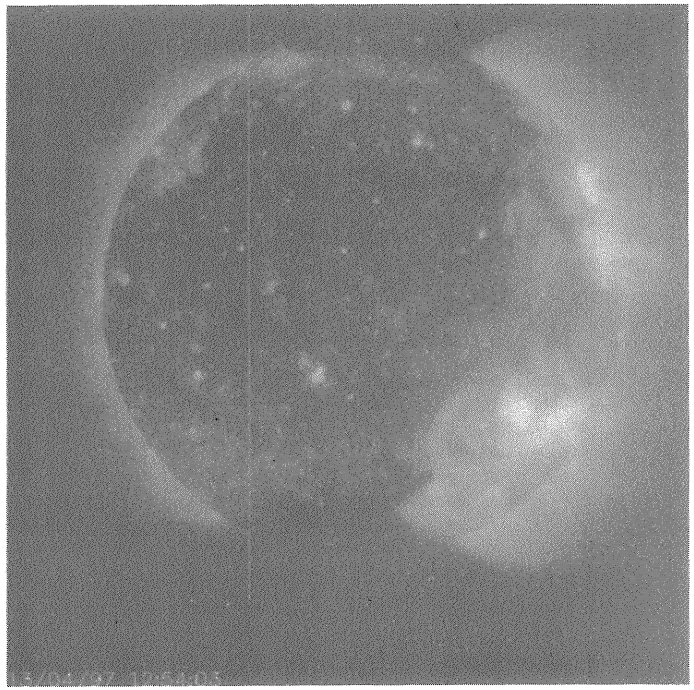
Day 10
12:38:07 UT



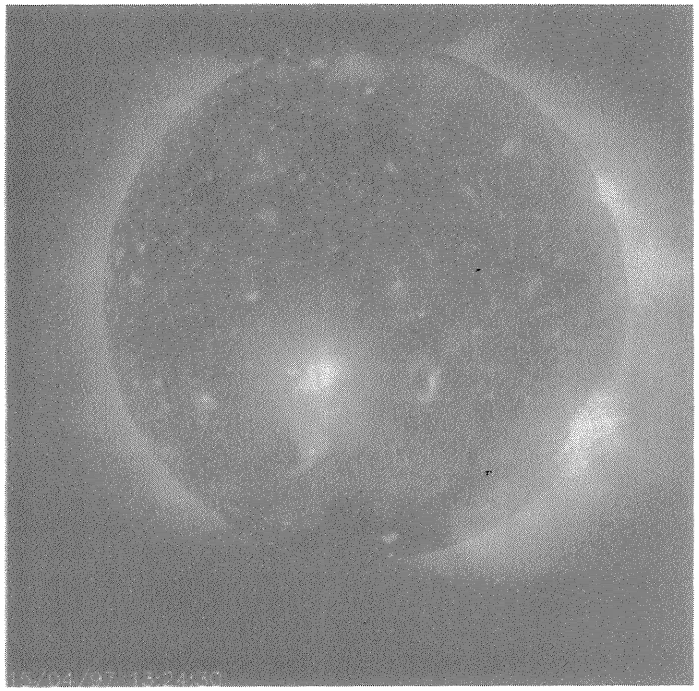
Day 12
11:37:13 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

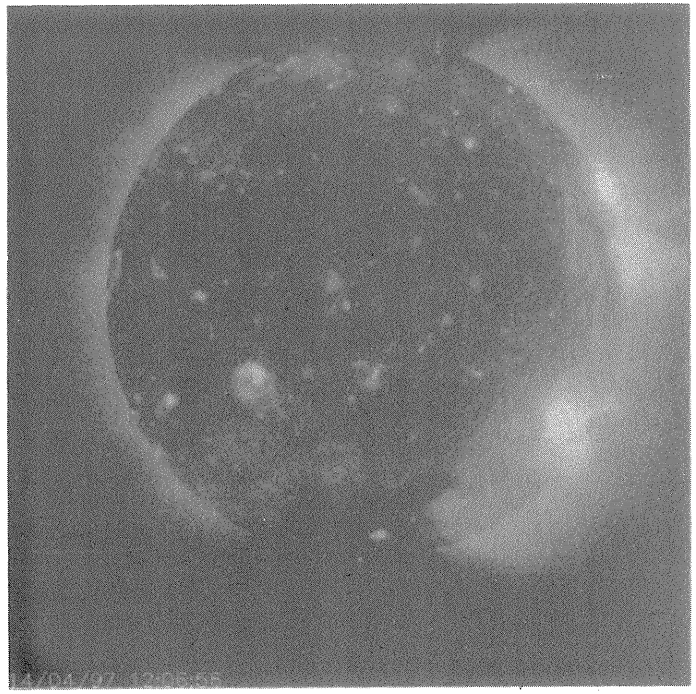
April
1997



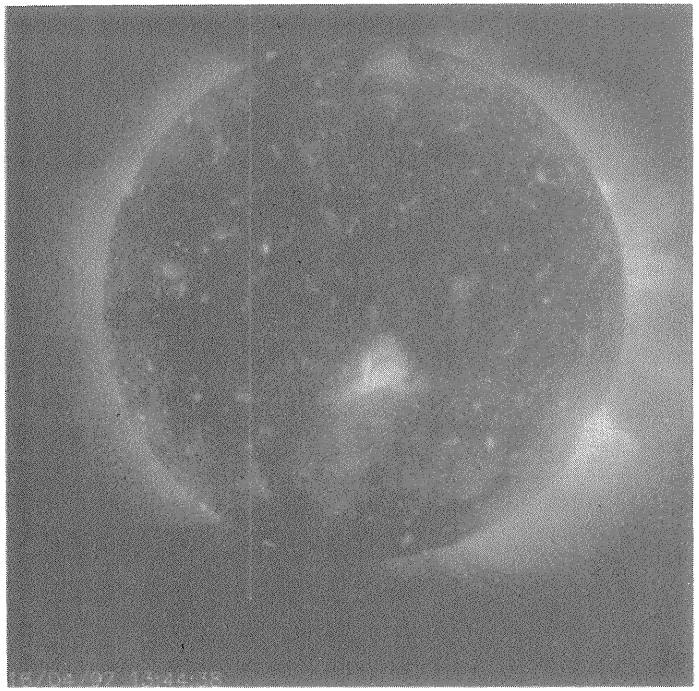
Day 13
12:54:03 UT



Day 15
13:24:30 UT



Day 14
12:06:56 UT

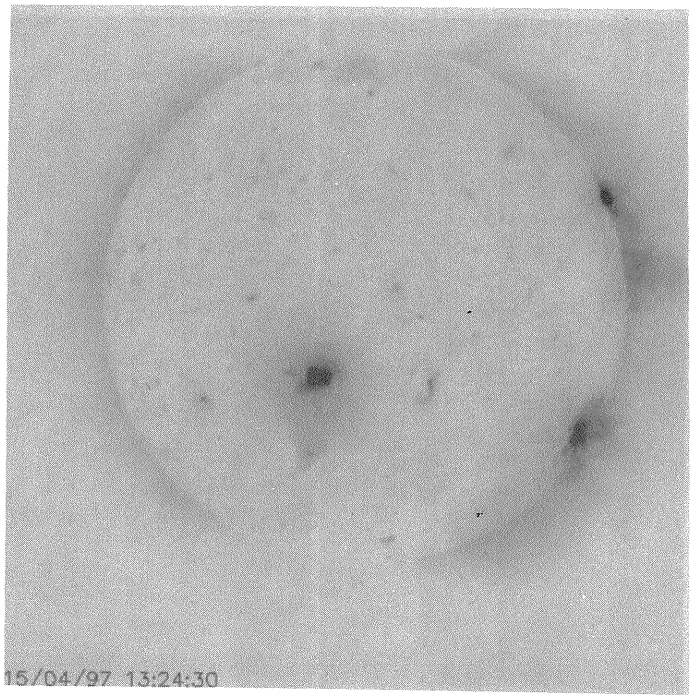


Day 16
13:44:38 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

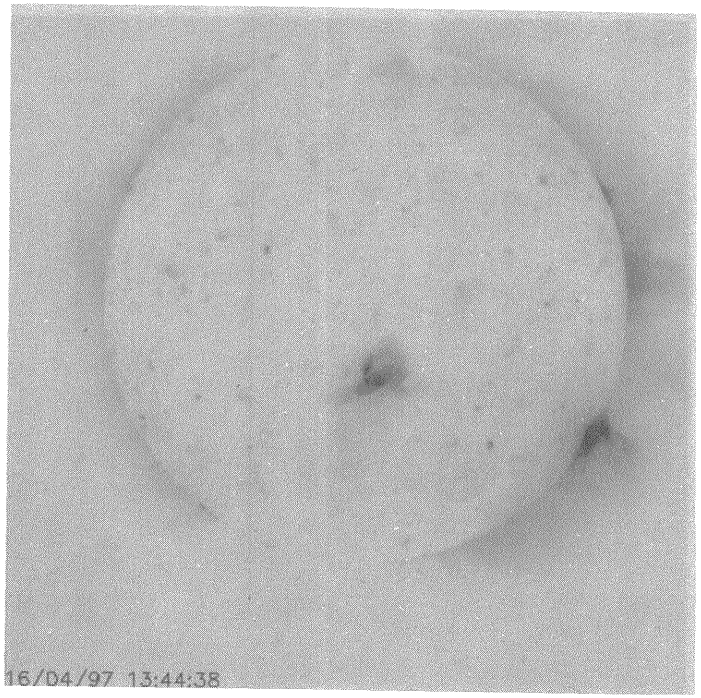
April
1997

Day 13
12:54:03 UT



Day 15
13:24:30 UT

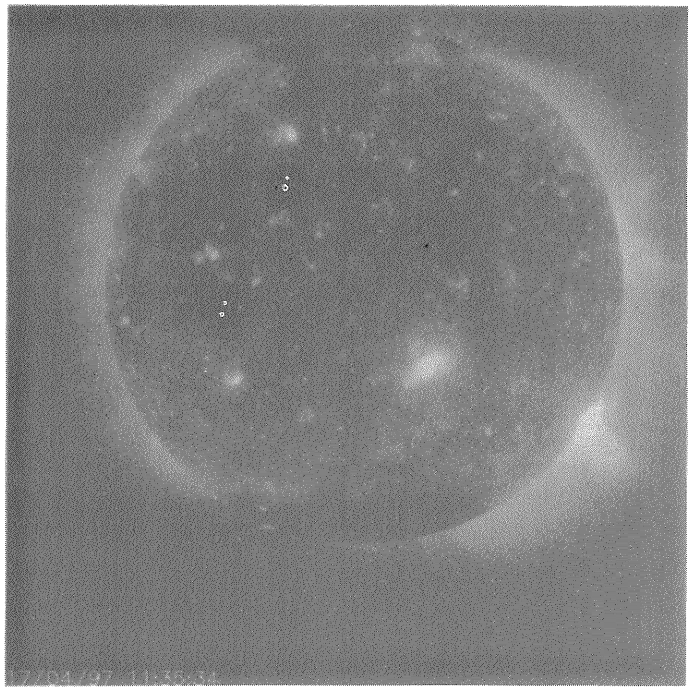
Day 14
12:06:56 UT



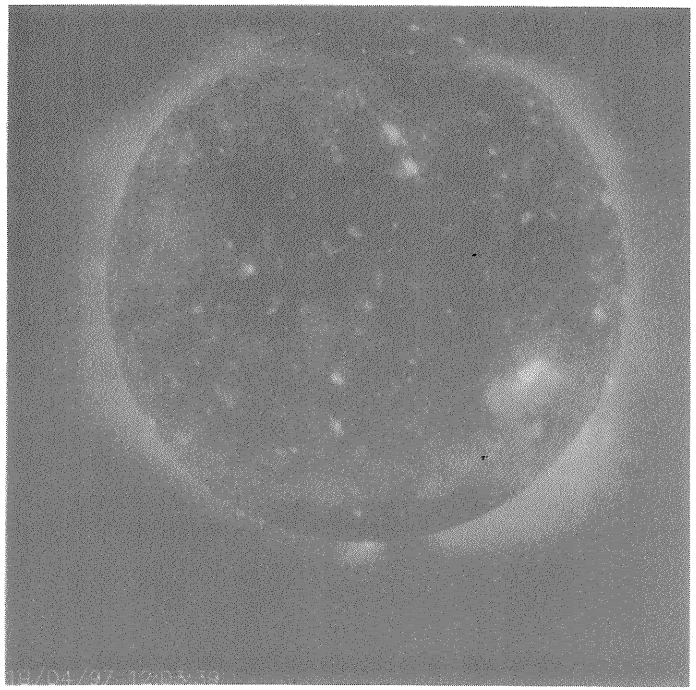
Day 16
13:44:38 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

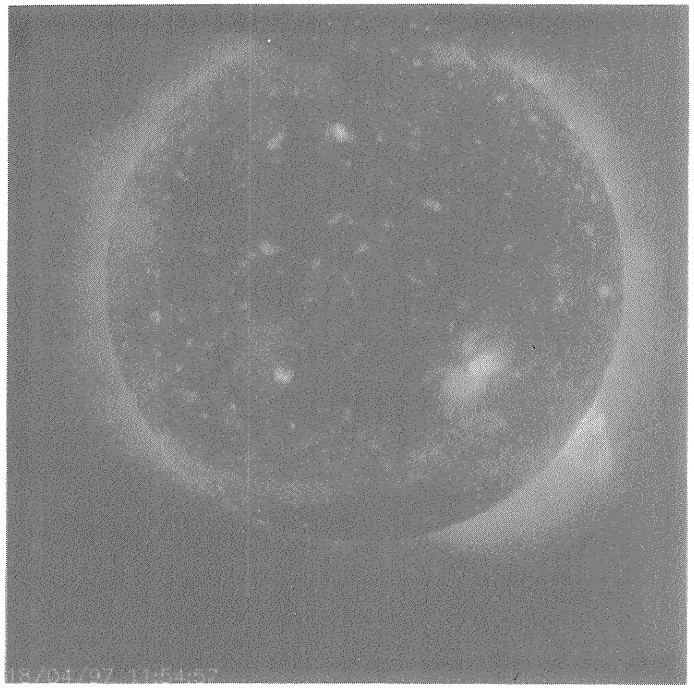
April
1997



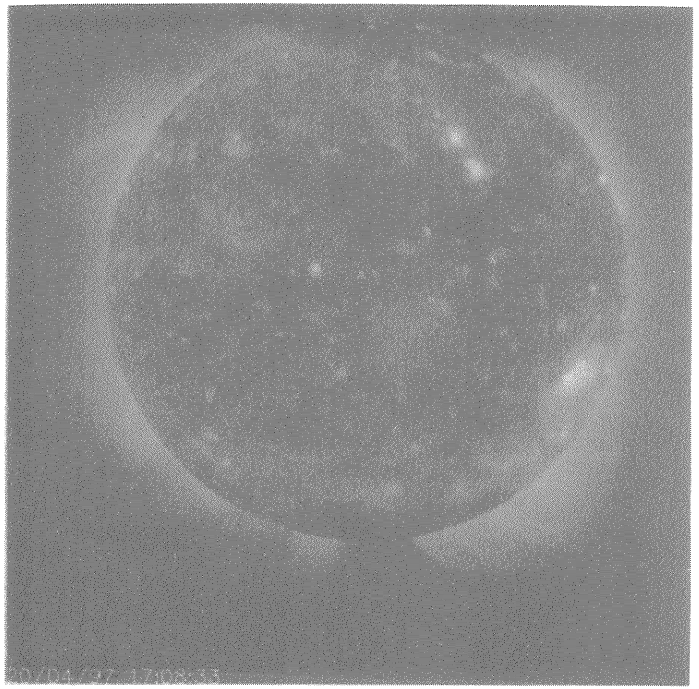
Day 17
11:35:34 UT



Day 19
12:03:39 UT



Day 18
11:54:57 UT

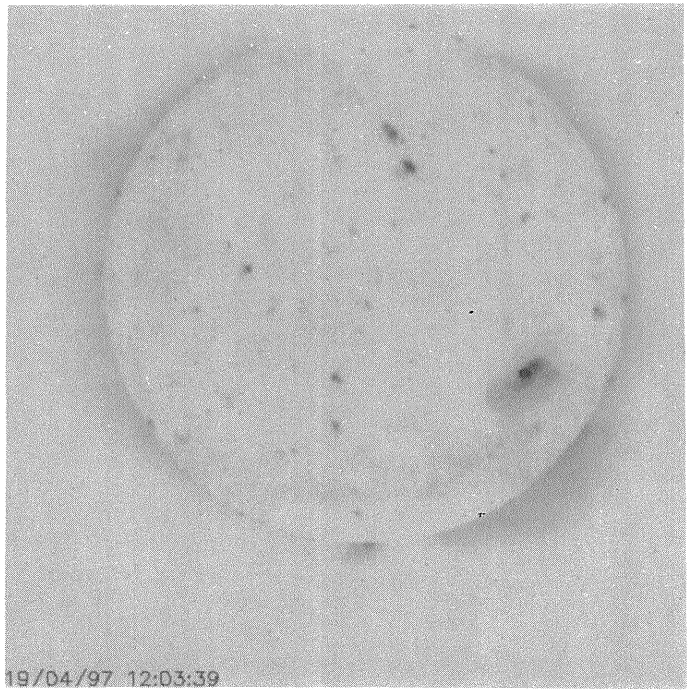


Day 20
17:08:33 UT

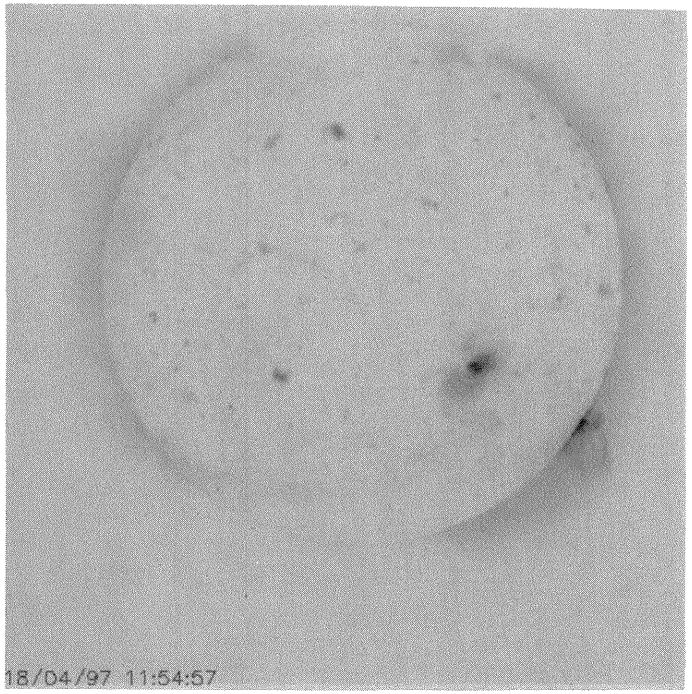
YOHKOH SOFT X-RAY TELESCOPE IMAGES

April
1997

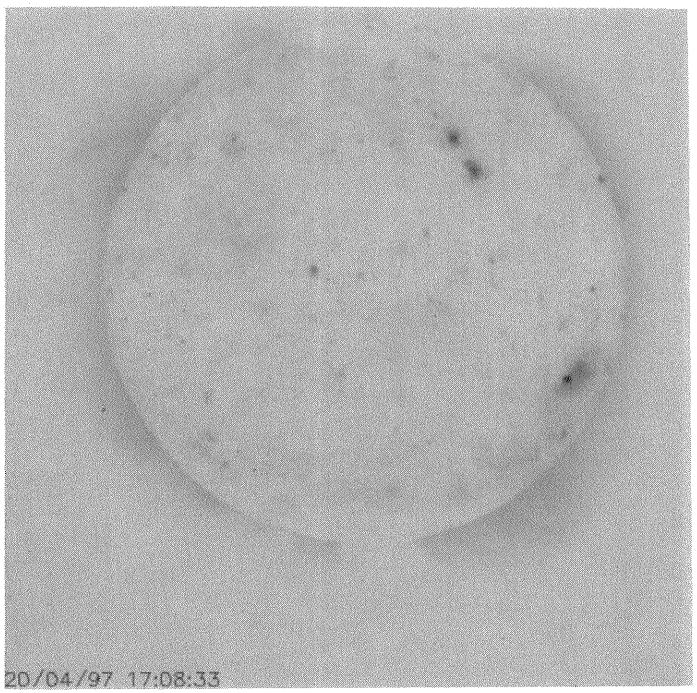
Day 17
11:35:34 UT



Day 19
12:03:39 UT



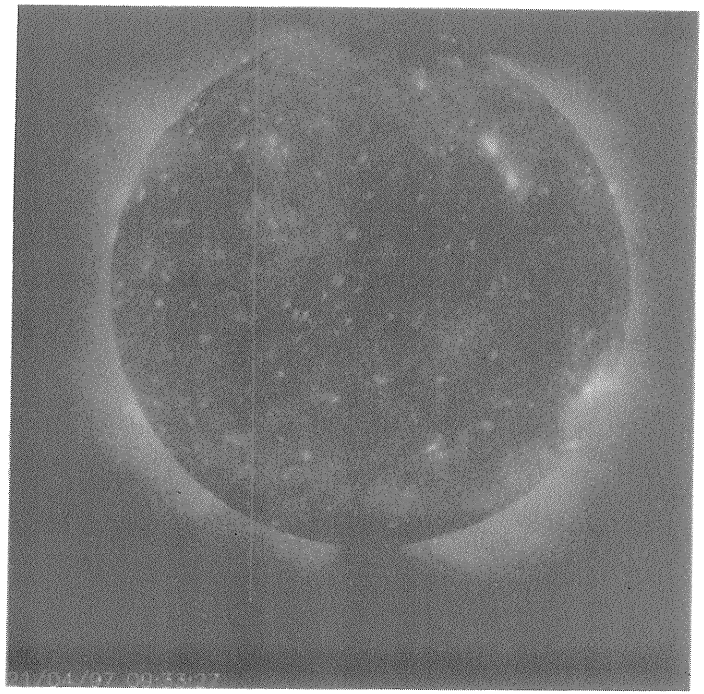
Day 18
11:54:57 UT



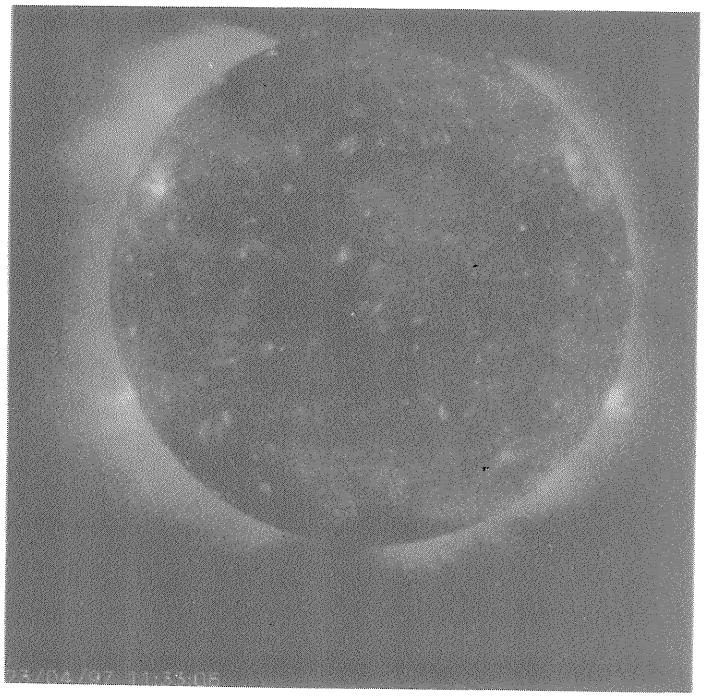
Day 20
17:08:33 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

April
1997

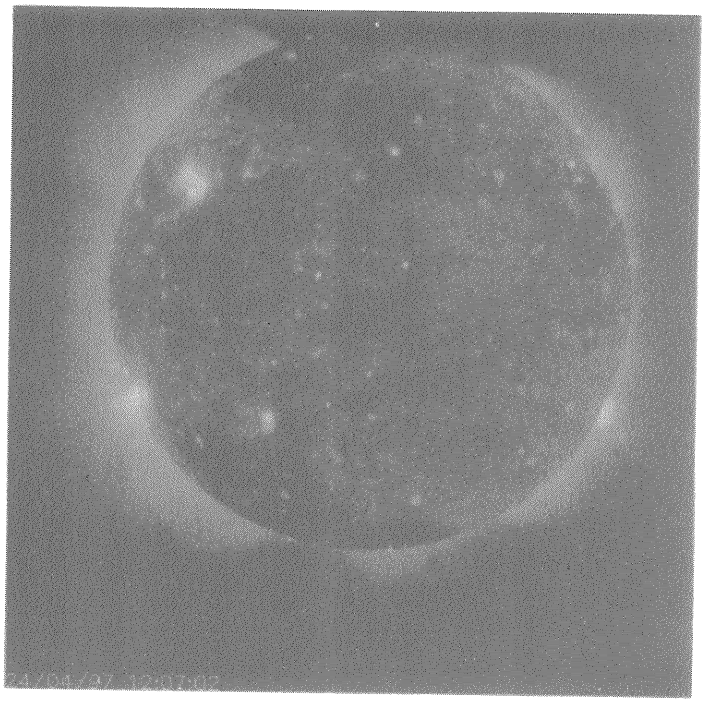


Day 21
09:33:27 UT



Day 23
11:33:06 UT

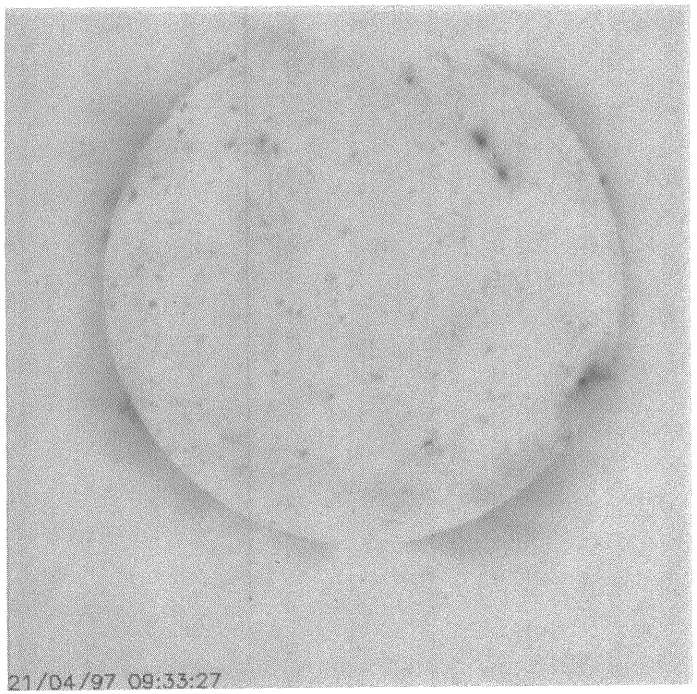
Day 22
12:16:13 UT



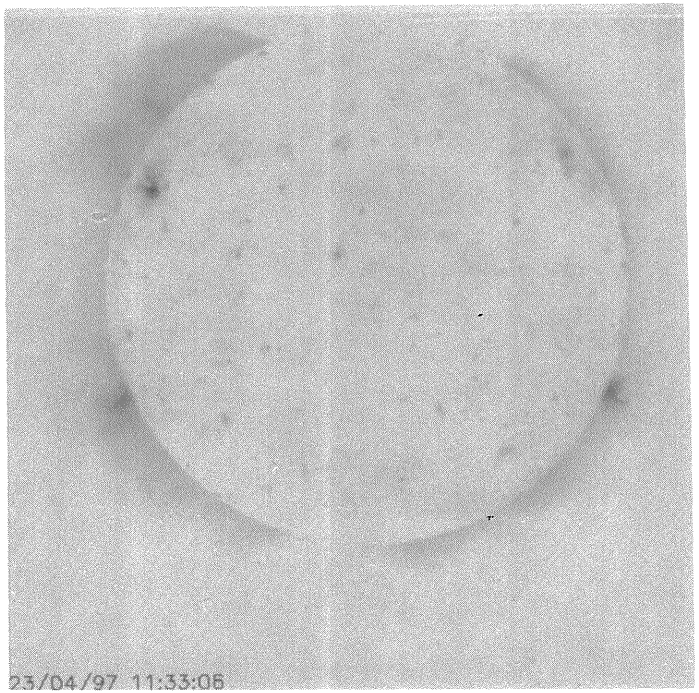
Day 24
12:07:02 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

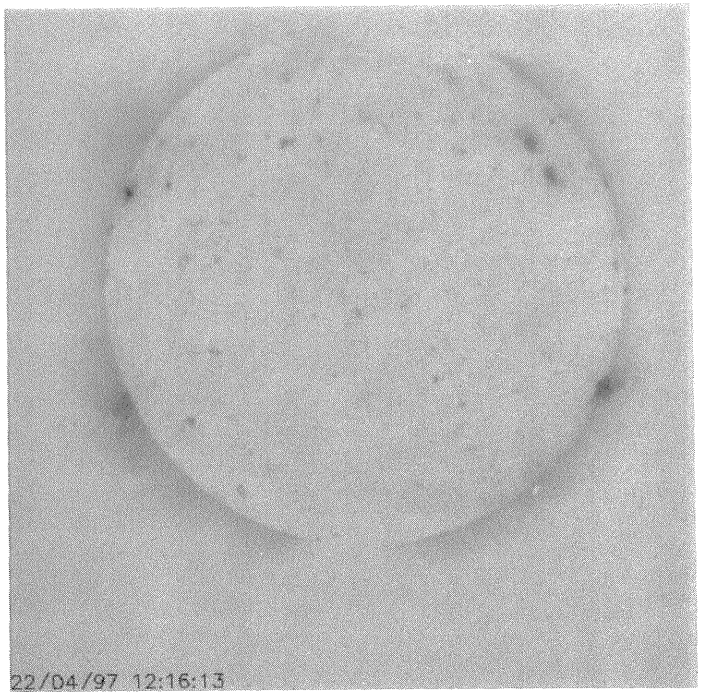
April
1997



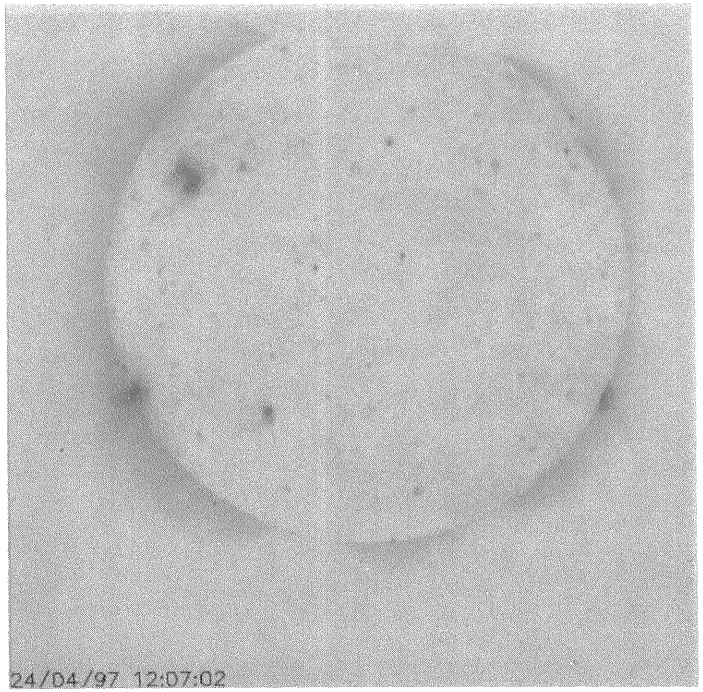
Day 21
09:33:27 UT



Day 23
11:33:06 UT



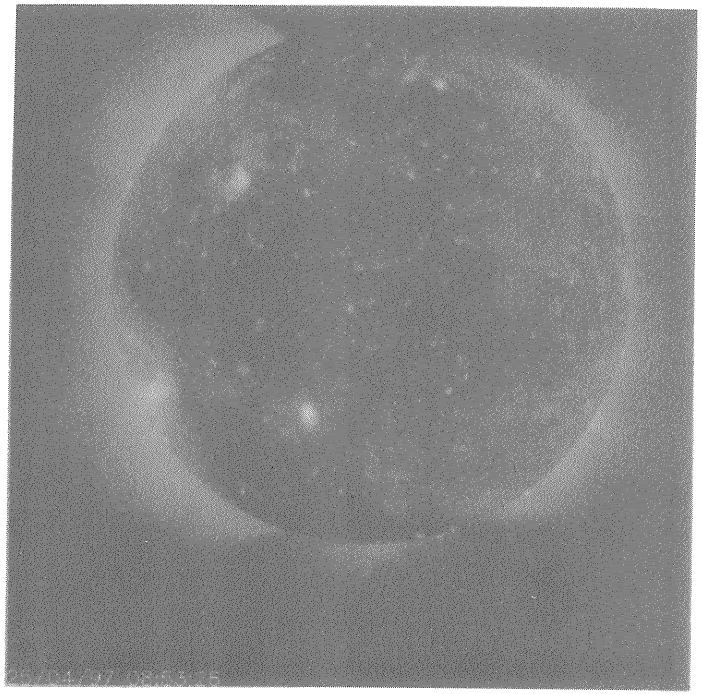
Day 22
12:16:13 UT



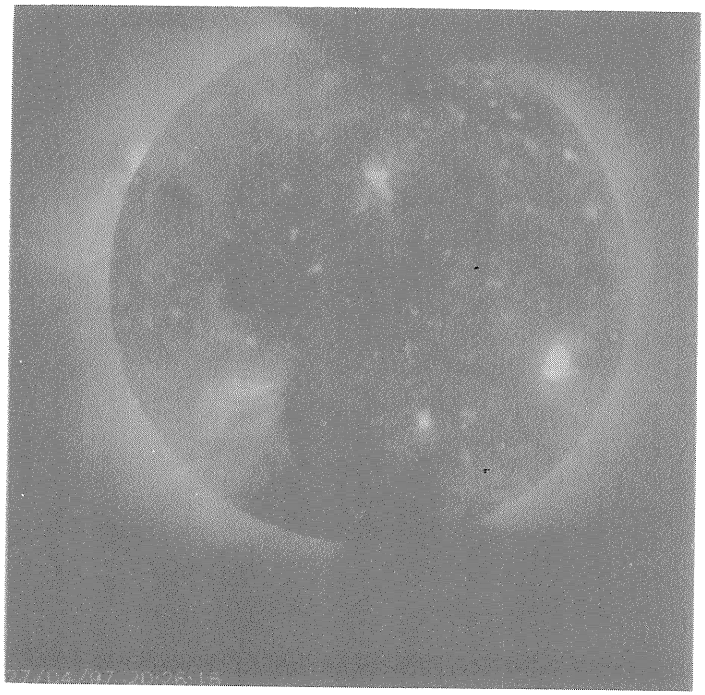
Day 24
12:07:02 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

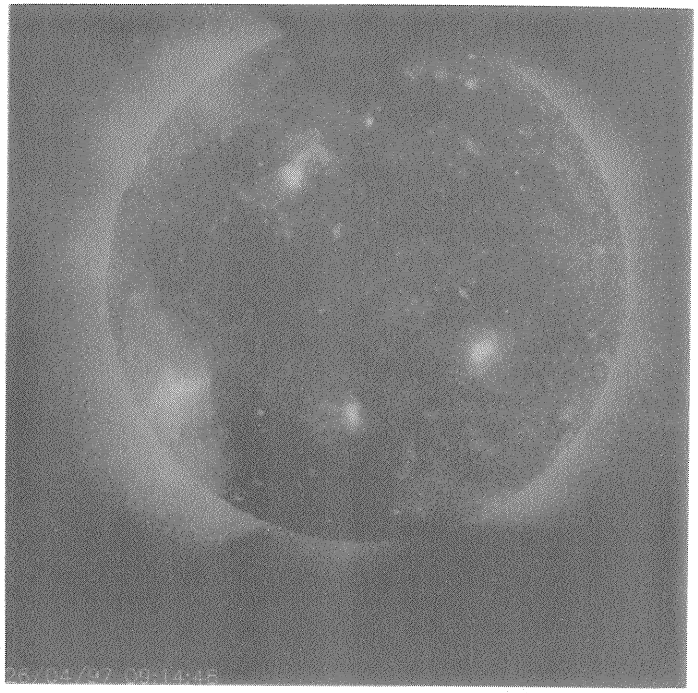
April
1997



Day 25
08:53:26 UT



Day 27
20:26:16 UT

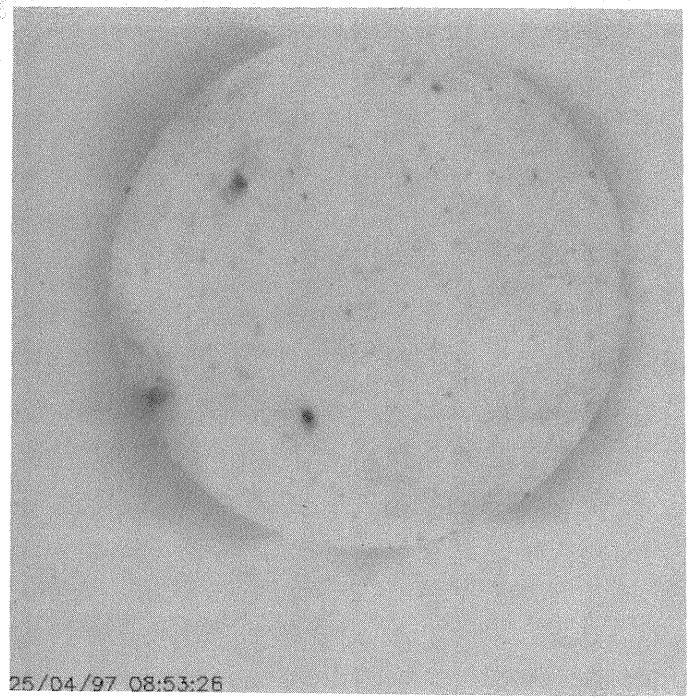


Day 26
09:14:46 UT

Day 28
09:52:43 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

April
1997



Day 25
08:53:26 UT

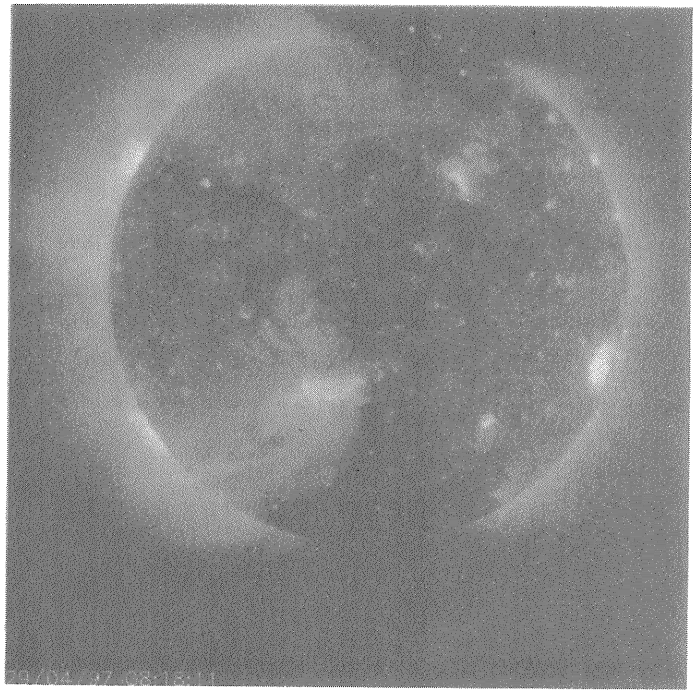
Day 27
20:26:16 UT

Day 26
09:14:46 UT

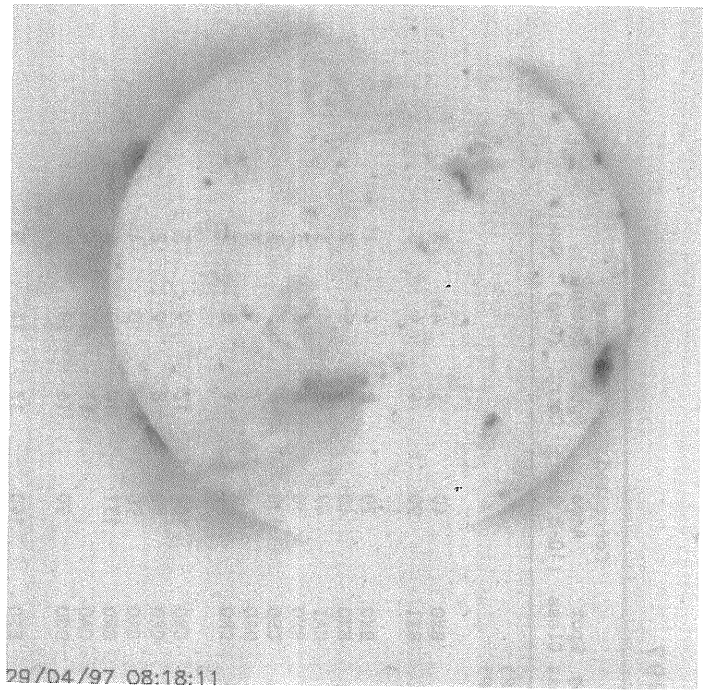
Day 28
09:52:43 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

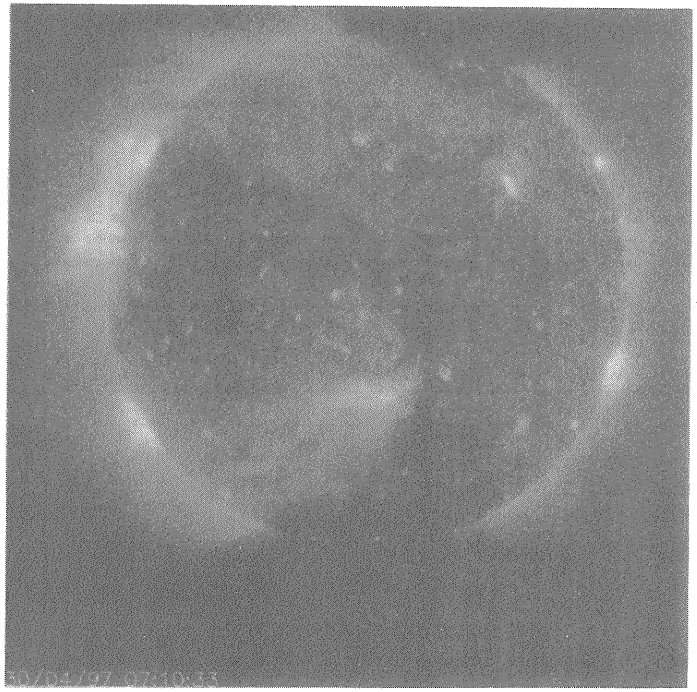
April
1997



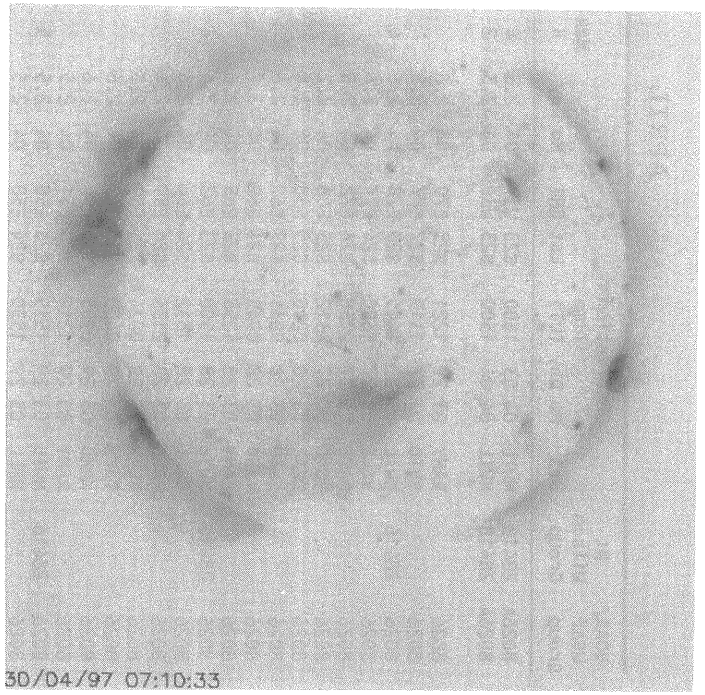
Day 29
08:18:11 UT



Day 29
08:18:11 UT



Day 30
07:10:33 UT



Day 30
07:10:33 UT

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8026A	28418	MWIL	04 03 1500	S23 W17	04 2.3	4	(AP)					
8026A	28418	MWIL	04 04 1500	S23 W30	04 2.3	2	(AP)					
8026		RAMY	03 27 1221	S25 E79	04 2.6		B	BXO	40	5	4	3
8026		SVTO	03 27 1313	S27 E77	04 2.5		B	BXI	90	4	4	3
8026	28416	MWIL	03 27 1445	S23 E78	04 2.6	4	(B)					
8026		HOLL	03 27 1620	S24 E77	04 2.6		B	BXO	20	2	4	4
8026		PALE	03 27 2238	S26 E72	04 2.5		B	BXO	40	2	5	2
8026		VORO	03 27 2312	S25 E68	04 2.2			CAI	49	3	4	3
8026		LEAR	03 28 0240	S29 E68	04 2.4		B	BXO	30	6	6	3
8026		SVTO	03 28 0831	S27 E67	04 2.6		B	CSO	130	6	5	3
8026		KAND	03 28 0945	S24 E69	04 2.7			DAO		7	9	3
8026		RAMY	03 28 1255	S25 E65	04 2.6		B	CRO	50	9	8	3
8026	28416	MWIL	03 28 1500	S23 E62	04 2.4	4	(B)					
8026		HOLL	03 28 1612	S24 E64	04 2.6		B	CRO	100	12	9	3
8026		PALE	03 28 2135	S24 E59	04 2.4		B	CRO	80	8	9	2
8026		LEAR	03 29 0024	S21 E59	04 2.5		B	CAO	90	14	10	4
8026		TACH	03 29 0405	S23 E57	04 2.6			BRO	131	10	10	4
8026		KAND	03 29 0905	S25 E55	04 2.6			CAO		17	13	4
8026		RAMY	03 29 1219	S25 E51	04 2.5		B	DSO	90	16	10	3
8026	28416	MWIL	03 29 1515	S23 E50	04 2.5	5	(B)					
8026		HOLL	03 29 1530	S24 E50	04 2.5		B	ESO	140	17	11	3
8026		PALE	03 29 2205	S24 E47	04 2.5		B	DAO	90	18	10	3
8026		LEAR	03 30 0120	S22 E44	04 2.4		B	DRO	60	20	10	2
8026		TACH	03 30 0508	S23 E43	04 2.5			DSX	253	8	9	3
8026		KAND	03 30 0950	S24 E41	04 2.6			DAO		12	10	3
8026		RAMY	03 30 1238	S26 E38	04 2.5		B	EAO	90	20	12	3
8026	28416	MWIL	03 30 1515	S24 E37	04 2.5	5	(D)					
8026		HOLL	03 30 1559	S25 E36	04 2.4		B	ESO	200	16	11	3
8026		PALE	03 30 1735	S26 E35	04 2.4		B	EAO	170	21	12	3
8026		VORO	03 30 2215	S24 E34	04 2.5			CRI	97	8	9	3
8026		LEAR	03 31 0101	S25 E35	04 2.7		B	EAO	160	12	11	3
8026		TACH	03 31 0442	S23 E29	04 2.4			DSX	260	12	10	4
8026		SVTO	03 31 0830	S27 E26	04 2.4		B	CAO	70	13	12	3
8026		RAMY	03 31 1200	S25 E26	04 2.5		B	DAO	50	11	10	3
8026		KAND	03 31 1200	S25 E27	04 2.6			CAO		7	10	1
8026		PALE	03 31 2117	S24 E20	04 2.4		B	EAO	80	12	11	2
8026		VORO	03 31 2237	S24 E21	04 2.6			CRI	88	9	9	3
8026		HOLL	03 31 2350	S25 E20	04 2.5		B	DSO	160	12	10	1
8026		LEAR	04 01 0355	S22 E23	04 2.9		B	ESO	90	11	11	1
8026		SVTO	04 01 0555	S25 E15	04 2.4		B	CAO	50	13	10	3
8026		RAMY	04 01 1203	S26 E13	04 2.5		B	CAO	40	15	10	4
8026	28416	MWIL	04 01 1500	S25 E13	04 2.6	5	(D)					
8026		HOLL	04 01 1555	S25 E11	04 2.5		B	DAO	110	12	10	3
8026		SVTO	04 02 0700	S24 E08	04 2.9		BG	CAO	50	17	17	4
8026		KAND	04 02 1015	S24 E06	04 2.9			CAO		14	8	3
8026		RAMY	04 02 1213	S24 E03	04 2.7		G	EAI	90	24	13	4
8026	28416	MWIL	04 02 1500	S23 E03	04 2.8	5	(G)					
8026		VORO	04 02 2207	S24 W02	04 2.8			CRI	107	13	12	3
8026		LEAR	04 03 0115	S22 W02	04 2.9		BG	EAI	20	24	14	3
8026		RAMY	04 03 1303	S23 W11	04 2.7		BG	EAO	90	21	14	4
8026		KAND	04 03 1315	S23 W10	04 2.8			EAC		9	13	2
8026	28416	MWIL	04 03 1500	S23 W07	04 3.1	4	(BG)					
8026		HOLL	04 03 1527	S23 W11	04 2.8		BG	EAO	150	27	14	3
8026		PALE	04 03 2105	S23 W12	04 2.9		BG	DAO	90	12	8	2
8026		VORO	04 03 2223	S23 W12	04 3.0			CRI	106	6	5	3
8026		LEAR	04 04 0015	S24 W12	04 3.1		BG	DAI	30	22	10	2
8026		KAND	04 04 0805	S23 W17	04 3.0			DAO		3	7	1
8026		SVTO	04 04 0840	S23 W17	04 3.0		BG	DAO	90	10	8	3
8026		RAMY	04 04 1229	S23 W18	04 3.1		BG	DSO	60	11	9	2
8026	28416	MWIL	04 04 1500	S22 W21	04 3.0	4	(BG)					
8026		HOLL	04 04 1649	S23 W24	04 2.8		B	CSO	130	8	7	2
8026		PALE	04 04 1735	S22 W23	04 3.0		B	CAO	70	12	7	3
8026		VORO	04 04 2214	S24 W27	04 2.8			HAX	55	4		3
8026		LEAR	04 05 0005	S24 W26	04 3.0		BG	DAO	20	10	7	4
8026		TACH	04 05 0512	S22 W28	04 3.1			BRO	47	6	3	3
8026		SVTO	04 05 0650	S23 W32	04 2.8		BG	CSO	40	5	3	3
8026		RAMY	04 05 1242	S22 W36	04 2.8		B	CSO	30	5	4	3
8026		HOLL	04 05 1432	S24 W35	04 2.9		B	CSO	70	4	4	2

S U N S P O T G R O U P S
(Ordered by Central Meridian Passage Date)

APRIL 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8026		PALE	04	05	1745	S21	W39	04	2.7		B	CAO	20	3	4	3
8026		VORO	04	05	2237	S24	W40	04	2.8			AXX	13	2		3
8026		LEAR	04	06	0230	S25	W41	04	2.9		A	HS	20	1	1	2
8026		KAND	04	06	0645	S24	W44	04	2.9			AX		2	1	2
8026		SVTO	04	06	0755	S22	W45	04	2.9		A	HR	10	1	1	2
8026		RAMY	04	06	1238	S23	W47	04	2.9		A	AX		1		4
8026	28416	MWIL	04	06	1515	S23	W49	04	2.8	3	(AP)					
8026		PALE	04	06	1725	S21	W50	04	2.9		A	AX	10	1		3
8026		HOLL	04	06	1730	S23	W48	04	3.0		A	AX	10	1	1	2
8026		VORO	04	06	2242	S22	W57	04	2.6			AXX	15	1		3
8026		KAND	04	07	0620	S26	W68	04	2.0			BXO		3	6	3
8026B		LEAR	04	08	0009	S08	W38	04	5.1		B	BXO	10	3	2	3
8026B		HOLL	04	08	1613	S06	W46	04	5.2		A	AX		1	1	3
8029		SVTO	04	09	0540	N25	W09	04	8.5		B	CRO	10	2	4	3
8029		KAND	04	09	0600	N24	W14	04	8.2			HS		2	2	2
8029		TACH	04	09	0610	N23	W11	04	8.4			BRO	9	3	2	3
8029		RAMY	04	09	1312	N24	W14	04	8.5		B	CRO	20	9	4	4
8029	28419	MWIL	04	09	1640	N24	W17	04	8.4	4	(B)					
8029		LEAR	04	10	0015	N23	W23	04	8.2		B	DSO	60	15	5	3
8029		TACH	04	10	0413	N24	W22	04	8.5			DSI	206	9	4	4
8029		SVTO	04	10	0720	N24	W25	04	8.4		B	DSO	200	12	5	3
8029		KAND	04	10	0725	N23	W25	04	8.4			CAO		8	6	3
8029		RAMY	04	10	1214	N25	W26	04	8.5		B	DAO	110	14	6	4
8029	28419	MWIL	04	10	1500	N24	W29	04	8.4	5	(B)					
8029		HOLL	04	10	1514	N23	W29	04	8.4		B	DAO	170	10	6	3
8029		VORO	04	10	2306	N24	W34	04	8.3			DAI	184	12	4	2
8029		SVTO	04	11	0550	N25	W35	04	8.5		B	DAO	170	6	5	3
8029		KAND	04	11	0930	N23	W39	04	8.4			CAO		6	6	3
8029		RAMY	04	11	1239	N25	W39	04	8.5		B	DAO	120	9	6	3
8029	28419	MWIL	04	11	1445	N24	W41	04	8.4	4	(B)					
8029		HOLL	04	11	1533	N23	W43	04	8.3		B	DAO	100	10	7	3
8029		LEAR	04	12	0030	N20	W47	04	8.4		B	CAO	100	9	7	3
8029		VORO	04	12	0119	N25	W50	04	8.2			HRX	47	1		3
8029		SVTO	04	12	0600	N25	W49	04	8.4		B	CAO	60	6	4	3
8029		KAND	04	12	0710	N24	W54	04	8.1			HA		1	1	3
8029		RAMY	04	12	1259	N25	W53	04	8.4		B	CSO	20	3	5	3
8029	28419	MWIL	04	12	1445	N24	W57	04	8.2	4	(BP)					
8029		HOLL	04	12	1815	N24	W57	04	8.3		B	CSO	50	2	5	3
8029		LEAR	04	13	0015	N22	W65	04	8.0		B	CSO	80	6	8	3
8029		SVTO	04	13	0630	N26	W64	04	8.3		A	HA	20	2	2	3
8029		RAMY	04	13	1219	N25	W65	04	8.5		A	AX	10	3	2	3
8029	28419	MWIL	04	13	1445	N24	W70	04	8.2	4	(AP)					
8029		HOLL	04	13	1450	N24	W69	04	8.3		B	BXO	30	3	3	3
8029		VORO	04	14	0142	N25	W73	04	8.4			HRX	25	1		2
8029		LEAR	04	14	0352	N20	W76	04	8.3		A	AX		1	1	3
8029		SVTO	04	14	0550	N25	W75	04	8.4		A	AX		1		3
8029A		TACH	04	10	0413	N11	W20	04	8.7			AX	5	1	1	4
8029A		SVTO	04	10	0720	N11	W22	04	8.6		A	AX	10	2	2	3
8029A		KAND	04	10	0725	N10	W23	04	8.6			AX		3	1	3
8029A		RAMY	04	10	1214	N11	W25	04	8.6		A	AX		2	1	4
8027		SVTO	04	02	0700	S30	E86	04	9.0		A	HS	30	1	2	4
8027		KAND	04	02	1015	S29	E89	04	9.4			AX		2		3
8027		RAMY	04	02	1213	S30	E82	04	8.9		A	HS	60	2	2	4
8027	28417	MWIL	04	02	1500	S28	E80	04	8.9	4	AP					
8027		VORO	04	02	2207	S28	E80	04	9.2			HSX	84	1		3
8027		LEAR	04	03	0115	S25	E75	04	8.9		B	CAO	60	2	2	3
8027		RAMY	04	03	1303	S28	E69	04	8.9		B	CAO	30	6	5	4
8027		KAND	04	03	1315	S29	E71	04	9.1			CSO		2	2	2
8027	28417	MWIL	04	03	1500	S28	E70	04	9.1	4	(B)					
8027		HOLL	04	03	1527	S27	E70	04	9.1		B	CSO	110	3	4	3
8027		PALE	04	03	2105	S31	E65	04	9.0		B	CAO	80	4	8	2
8027		VORO	04	03	2223	S28	E65	04	9.0			HSX	46	1		3
8027		LEAR	04	04	0015	S26	E62	04	8.8		B	CAO	40	3	6	2
8027		KAND	04	04	0805	S29	E60	04	9.0			HA		1	1	1
8027		SVTO	04	04	0840	S29	E60	04	9.1		B	CAO	80	2	5	3

S U N S P O T G R O U P S
(Ordered by Central Meridian Passage Date)

APRIL 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8027		RAMY	04	04	1229	S29	E56	04	8.9		B	CSO	50	6	6	2
8027	28417	MWIL	04	04	1500	S28	E56	04	9.0	4	(BP)					
8027		HOLL	04	04	1649	S28	E54	04	8.9		B	CAO	110	4	7	2
8027		PALE	04	04	1735	S32	E55	04	9.1		B	CAO	100	6	6	3
8027		VORO	04	04	2214	S29	E55	04	9.2			CAI	89	5	5	3
8027		LEAR	04	05	0005	S28	E52	04	9.1		B	DAO	60	9	7	4
8027		TACH	04	05	0512	S28	E50	04	9.1			BRO	65	7	6	3
8027		SVTO	04	05	0650	S28	E47	04	8.9		B	CSO	30	5	6	3
8027		RAMY	04	05	1242	S28	E43	04	8.9		B	CSO	60	10	6	3
8027		HOLL	04	05	1432	S28	E45	04	9.1		B	CSO	210	10	8	2
8027		PALE	04	05	1745	S30	E40	04	8.9		B	CAO	50	14	6	3
8027		VORO	04	05	2237	S29	E41	04	9.1			CAI	95	8	4	3
8027		LEAR	04	06	0230	S27	E37	04	9.0		BG	DAO	70	8	6	2
8027		KAND	04	06	0645	S28	E34	04	8.9			CSO		9	4	2
8027		SVTO	04	06	0755	S29	E30	04	8.7		B	CAO	30	9	4	2
8027		RAMY	04	06	1238	S28	E30	04	8.9		B	CSO	30	7	4	4
8027	28417	MWIL	04	06	1515	S27	E29	04	8.9	4	(BF)					
8027		PALE	04	06	1725	S30	E27	04	8.8		B	CAO	70	5	4	3
8027		HOLL	04	06	1730	S27	E26	04	8.7		B	CSO	50	5	3	2
8027		VORO	04	06	2242	S28	E25	04	8.9			HAX	60	4		3
8027		LEAR	04	07	0259	S24	E24	04	9.0		B	BAO	30	3	3	1
8027		TACH	04	07	0518	S28	E22	04	8.9			AR	46	4	2	4
8027		KAND	04	07	0620	S29	E20	04	8.8			CAO		6	4	3
8027		SVTO	04	07	0635	S29	E21	04	8.9		A	HA	30	4	3	2
8027		RAMY	04	07	1252	S29	E18	04	8.9		B	CRO	20	6	6	4
8027	28417	MWIL	04	07	1515	S28	E17	04	9.0	4	(BP)					
8027		HOLL	04	07	1600	S28	E16	04	8.9		B	CA	30	7	5	3
8027		PALE	04	07	1710	S29	E15	04	8.9		B	CRO	20	6	5	2
8027		VORO	04	07	2300	S28	E12	04	8.9			BXO	24	4	2	3
8027		LEAR	04	08	0009	S27	E13	04	9.0		BG	CAO	20	4	3	3
8027		TACH	04	08	0420	S27	E09	04	8.9			AR	25	2	2	3
8027		SVTO	04	08	1033	S28	E06	04	8.9		B	CAO	30	4	4	2
8027		RAMY	04	08	1216	S28	E05	04	8.9		B	CRO	10	4	3	4
8027	28417	MWIL	04	08	1500	S28	E04	04	8.9	4	(BP)					
8027		HOLL	04	08	1613	S28	E04	04	9.0		B	CAO	30	4	2	3
8027		LEAR	04	09	0030	S28	E00	04	9.0		B	BXO	10	2	3	3
8027		SVTO	04	09	0540	S28	W04	04	8.9		BG	BXO	10	6	5	3
8027		KAND	04	09	0600	S29	W05	04	8.8			BXO		4	5	2
8027		TACH	04	09	0610	S28	W04	04	8.9			AR	27	3	4	3
8027		RAMY	04	09	1312	S28	W08	04	8.9		B	BXO	10	4	4	4
8027	28417	MWIL	04	09	1640	S28	W09	04	9.0	3	(B)					
8027		LEAR	04	10	0015	S28	W11	04	9.1		A	AX		1	1	3
8027		SVTO	04	10	0720	S28	W19	04	8.8		A	AX	10	2	2	3
8027		RAMY	04	10	1214	S28	W22	04	8.8		A	AX	10	2	2	4
8027	28417	MWIL	04	10	1500	S28	W22	04	8.9	4	(AP)					
8027		HOLL	04	10	1514	S30	W22	04	8.9		A	AX	10	2	1	3
8027		SVTO	04	11	0550	S27	W29	04	9.0		A	AX	10	3	2	3
8027		KAND	04	11	0930	S31	W31	04	8.9			HS		1	1	3
8027		RAMY	04	11	1239	S28	W33	04	8.9		B	BXO	10	4	2	3
8027	28417	MWIL	04	11	1445	S29	W33	04	9.0	4	(B)					
8027		HOLL	04	11	1533	S30	W35	04	8.9		B	BXO	10	2	3	3
8031		VORO	04	12	0119	S31	W27	04	9.9			HRX	40	3		3
8031	28420	MWIL	04	12	1445	S29	W32	04	10.1	4	(B)					
8031		HOLL	04	12	1815	S30	W34	04	10.1		B	BXO	20	5	4	3
8031		LEAR	04	13	0015	S33	W36	04	10.1		B	CSO	40	9	5	3
8031		SVTO	04	13	0630	S28	W42	04	10.0		B	DSO	40	11	8	3
8031		RAMY	04	13	1219	S28	W44	04	10.1		B	DSO	60	7	8	3
8031	28420	MWIL	04	13	1445	S29	W45	04	10.1	5	(B)					
8031		HOLL	04	13	1450	S30	W46	04	10.0		B	DSO	80	7	8	3
8031		VORO	04	14	0142	S31	W53	04	9.9			DAO	113	2	7	2
8031		LEAR	04	14	0352	S32	W51	04	10.1		B	DSO	100	13	8	3
8031		SVTO	04	14	0550	S28	W54	04	10.0		B	DAO	70	11	9	3
8031		KAND	04	14	1100	S31	W56	04	10.0			BAO		10	10	2
8031		RAMY	04	14	1315	S28	W58	04	10.0		B	DAO	110	14	10	4
8031	28420	MWIL	04	14	1445	S30	W59	04	10.0	5	(BG)					
8031		HOLL	04	14	1525	S30	W59	04	10.0		B	DAO	110	11	10	4
8031		LEAR	04	15	0209	S32	W66	04	9.9		B	DSI	200	7	10	4
8031		VORO	04	15	0640	S31	W68	04	9.9			DAO	122	2	8	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8031		SVTO	04 15 0833	S28 W70	04 9.9		B	EKO	260	6	11	3
8031		KAND	04 15 0950	S31 W72	04 9.7			EAI		8	12	3
8031		RAMY	04 15 1208	S28 W71	04 9.9		B	ESO	80	5	11	4
8031	28420	MWIL	04 15 1445	S31 W71	04 10.0	4	(B)					
8031		HOLL	04 15 1503	S31 W74	04 9.8		B	DAO	140	6	6	3
8031		LEAR	04 16 0000	S33 W71	04 10.4		B	DHO	180	2	5	4
8031		SVTO	04 16 0708	S29 W80	04 10.0		B	DAO	90	2	9	2
8031		KAND	04 16 1100	S30 W80	04 10.2			DAO		3	10	3
8031		RAMY	04 16 1228	S29 W86	04 9.8		B	DSO	80	3	10	3
8031		HOLL	04 16 1448	S31 W81	04 10.2		A	HS	40	1	2	3
8031	28420	MWIL	04 16 1500	S31 W80	04 10.3	4	AF)					
8032		KAND	04 14 1100	S23 E26	04 16.5			BXO		2	3	2
8032		RAMY	04 14 1315	S23 E24	04 16.4		B	BXO		2	4	4
8032	28421	MWIL	04 14 1445	S23 E24	04 16.5	4	(B)					
8032		HOLL	04 14 1525	S23 E24	04 16.5		B	CRO	20	2	3	4
8032		LEAR	04 15 0209	S21 E18	04 16.5		B	DAO	10	6	4	4
8032		VORO	04 15 0640	S23 E14	04 16.3			AXX	14	4		2
8032		SVTO	04 15 0833	S23 E13	04 16.3		BG	BXO	30	11	6	3
8032		KAND	04 15 0950	S23 E13	04 16.4			CSO		11	6	3
8032		RAMY	04 15 1208	S23 E12	04 16.4		B	CRO	30	14	6	4
8032	28421	MWIL	04 15 1445	S23 E10	04 16.4	5	(D)					
8032		HOLL	04 15 1503	S23 E09	04 16.3		B	EAO	90	22	11	3
8032		LEAR	04 16 0000	S22 E08	04 16.6		B	DAO	70	8	8	4
8032		SVTO	04 16 0708	S22 W01	04 16.2		BG	DAI	50	11	7	2
8032		KAND	04 16 1100	S21 E00	04 16.4			DSI		8	7	3
8032		RAMY	04 16 1228	S22 W03	04 16.3		B	CRO	40	13	8	3
8032		HOLL	04 16 1448	S23 W04	04 16.3		B	DSI	100	12	7	3
8032	28421	MWIL	04 16 1500	S22 W03	04 16.4	5	(B)					
8032		TACH	04 17 0520	S23 W11	04 16.4			CRO	66	6	6	4
8032		KAND	04 17 0635	S23 W11	04 16.4			CAO		5	7	2
8032		SVTO	04 17 1120	S23 W14	04 16.4		B	BXO	30	5	7	1
8032		RAMY	04 17 1146	S23 W15	04 16.3		B	BXO	30	9	7	4
8032	28421	MWIL	04 17 1430	S22 W16	04 16.4	4	(B)					
8032		HOLL	04 17 1725	S23 W17	04 16.4		B	BXO	20	3	7	1
8032		LEAR	04 18 0030	S24 W21	04 16.4		B	BXO	10	5	7	3
8032		TACH	04 18 0510	S23 W27	04 16.1			AX	10	1	1	4
8032		KAND	04 18 0555	S23 W27	04 16.2			AX		1		3
8032		SVTO	04 18 0750	S21 W30	04 16.0		B	BXO		2	3	1
8032		RAMY	04 18 1156	S22 W27	04 16.4		B	BXO	10	2	7	3
8032		HOLL	04 18 1525	S23 W32	04 16.2		A	AX		1		2
8032	28421	MWIL	04 18 1530	S23 W29	04 16.4	4	(B)					
8032		LEAR	04 19 0015	S24 W36	04 16.2		B	BXO	10	4	3	3
8033		LEAR	04 19 0015	N21 W06	04 18.5		A	AX		1	1	3
8033		TACH	04 19 0448	N21 W06	04 18.7			BX	6	2	2	4
8033		KAND	04 19 0750	N21 W07	04 18.8			BXO		2	3	3
8033		RAMY	04 19 1201	N21 W08	04 18.9		B	BXO		3	3	3
8033		HOLL	04 19 1420	N21 W12	04 18.7		A	AX	20	2	1	4
8033	28424	MWIL	04 19 1430	N21 W12	04 18.7	3	(AP)					
8033A		RAMY	04 17 1146	N29 E21	04 19.1		B	BXO	10	2	2	4
8033A	28422	MWIL	04 17 1430	N30 E18	04 19.0	4	(B)					
8033A	28426	MWIL	04 20 2015	N28 W23	04 19.0	3	(B)					
8033B		RAMY	04 17 1146	S28 E31	04 19.9		A	AX		1		4
8033B	28423	MWIL	04 17 1430	S26 E31	04 20.0	4	(AF)					
8033C		HOLL	04 19 1420	S02 E26	04 21.5		A	AX	10	1	1	4
8033C	28425	MWIL	04 19 1430	S01 E26	04 21.5	3	(AP)					
8036		LEAR	04 26 0145	S19 W22	04 24.4		B	BXO	20	5	5	4
8036		SVTO	04 26 0515	S19 W26	04 24.2		B	CRO	20	10	6	4
8036		KAND	04 26 1030	S19 W29	04 24.2			CAO		4	4	3
8036		RAMY	04 26 1102	S17 W30	04 24.2		B	CRO	30	8	6	4
8036	28428	MWIL	04 26 1445	S18 W32	04 24.2	4	(B)					
8036		VORO	04 26 2210	S19 W37	04 24.1			BXO	27	2	4	2
8036		LEAR	04 27 0005	S21 W36	04 24.2		B	CRO	30	9	5	4
8036		TACH	04 27 0422	S18 W39	04 24.2			CXO	40	2	4	3

S U N S P O T G R O U P S
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APRIL 1997

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8036		SVTO	04 27 0540	S18 W39	04 24.3		B	CSO	20	6	6	4
8036		KAND	04 27 0720	S18 W42	04 24.1			BXO		2	5	3
8036		RAMY	04 27 1234	S17 W44	04 24.2		B	CRO	30	5	7	3
8036	28428	MWIL	04 27 1445	S18 W46	04 24.1	4	(B)					
8036		HOLL	04 27 1725	S18 W47	04 24.1		B	CSO	40	7	7	3
8036		LEAR	04 28 0005	S20 W49	04 24.2		B	CRO	30	8	7	3
8036		TACH	04 28 0342	S16 W51	04 24.3			CRO	46	5	6	3
8036		KAND	04 28 0720	S18 W55	04 24.1			CRO		6	8	2
8036		RAMY	04 28 1215	S17 W57	04 24.2		B	CRO	40	8	9	3
8036	28428	MWIL	04 28 1445	S18 W59	04 24.1	4	(B)					
8036		HOLL	04 28 1447	S18 W58	04 24.2		B	CSO	40	5	7	3
8036		VORO	04 28 2209	S17 W63	04 24.1			BXO	32	2	8	3
8036		KAND	04 29 0645	S17 W71	04 23.9			AX		1	1	3
8036		RAMY	04 29 1101	S16 W74	04 23.8		A	AX	20	2		3
8036	28428	MWIL	04 29 1530	S17 W75	04 23.9	4	(AP)					
8036		HOLL	04 29 1640	S17 W79	04 23.7		A	AX	10	1		2
8035		RAMY	04 22 1443	N17 E69	04 27.8		A	AX	10	1		3
8035	28427	MWIL	04 22 1445	N18 E70	04 27.9	3	(AP)					
8035		VORO	04 22 2300	N19 E67	04 28.1			BXI	33	3	4	3
8035		LEAR	04 23 0102	N22 E64	04 28.0		B	BXO		3	5	3
8035		KAND	04 23 0800	N18 E58	04 27.7			AX		1		2
8035		SVTO	04 23 1152	N19 E55	04 27.7		A	AX		1		1
8035		RAMY	04 23 1340	N16 E56	04 27.8		B	BXO	10	2	4	3
8035	28427	MWIL	04 23 2045	N18 E51	04 27.7	4	(AP)					
8035		LEAR	04 24 0130	N19 E46	04 27.6		B	BXO	10	3	3	3
8035		VORO	04 24 0203	N18 E47	04 27.7			AXX	19	1		2
8035		SVTO	04 24 0815	N15 E45	04 27.7		A	AX		1		1
8035	28427	MWIL	04 24 1615	N18 E39	04 27.6	3	(AP)					
8035		LEAR	04 25 0100	N20 E32	04 27.5		B	BXO	10	2	1	4
8035		SVTO	04 25 0715	N17 E35	04 28.0		B	BXO	10	3	4	3
8035		RAMY	04 25 1126	N17 E29	04 27.7		A	AX		1		4
8035		SVTO	04 26 0515	N19 E19	04 27.7		B	BXO		2	2	4
8035		KAND	04 26 1030	N18 E15	04 27.6			AX		3	2	3
8035		RAMY	04 26 1102	N18 E17	04 27.7		B	BXO	10	5	4	4
8035	28427	MWIL	04 26 1445	N18 E13	04 27.6	4	(B)					
8035		LEAR	04 27 0005	N18 E07	04 27.5		A	AX	10	2	1	4
8036A		HOLL	04 22 1538	N18 E67	04 27.7		A	AX	10	1		2

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth
MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey
SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

APRIL 1997

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0504	0512	0630	3-	1			1			0506E		8026
01	0618	0636	0730	1	1		1				No flare		
01	0756	0804	0840	1-	5		1	1		1	0757		8026
01	1026	1034	1100	1	5		1	1		1	1023	C2.1	
01	1240	1257	1346	1	1		1				1252E	B3.6	8026
01	1340	1356	1520	2	5	1	3	1		1	1343	M1.9	8026
02	0037	0045	0130	1-	1			1			0031	C2.2	8026
02	0528	0538	0630	1-	1			1			0529	C1.3	8026
02	0904	0934	1039	1	1		1				0924	B6.8	8026
03	0841	0900	0929	1	1		1				*		
03	1214	1307	1356	1	1		1				1230	C1.2	
04	1413	1432	1520	1	1		1				*		
05	1500	1525	1546	1	1		1				1528	B4.8	8027
06	1300	1311	1400	1	1		1				No flare		
07	0941	0948	1032	1	1		1				1012	B1.2	
07	1211	1231	1358	1	1		1				No flare		
07	1400	1410	1507	1-	5		1	1		1	1354	C6.8	8027
07	1500	1527	1558	1	1		1				No flare		
09	0612	0736	0815	3	1		1				No flare		
09	1000	1019	1127	1	1		1				1050	C1.5	
11	0838	0908	0949	1	1		1				No flare		
11	1412	1446	1522	1	1		1				No flare		
14	1155	1208U	1232	1	1		1				No flare		
15	0730	0736	0830	1-	5		1	1			0715	C1.0	
15	0919	1027	1105	1	1		1				0959	B6.8	8032
15	1259	1315	1353	1	1		1				1301	B4.3	
15	1410	1421	1505	1-	5		1	1		1	1409	C1.0	8032
16	1109	1117	1140	1	1		1				1106E		8032
25	0940	0943	1017	1	1		1				No flare		
28	1040	1120	1200	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR APRIL 1997

Inubo, Japan	SPA	Upice, Czech Republic	SEA
Panska Ves, Czech Republic	SES, SEA, SWF	Ziar nad Hronom, Slovakia	SEA
Rimavska Sobota, Slovakia	SEA	Zilina, Slovakia	SEA
Uccle, Belgium	SEA		

Observations are not necessarily continuous.

S O L A R R A D I O E M I S S I O N
Spectral Observations

APRIL 1997

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01		LEAR	0014.0	0015.0	III		3	30	80	
		PALE	0014.0	0016.0	III		3	25	75	
0000	0905	HIRA	0014.9	0015.1	III	B	3	25X	470	
0000	0430	CULG	0015.0	0016.0	III	B	3	57X	270U	
		CULG	0024.0	0025.0	III	B	2	57X	180	
		LEAR	0024.0	0024.0	III		2	38	80	
		PALE	0024.0	0024.0	III		1	37	55	
		HIRA	0024.7	0025.0	III	B	1	70	470	
		CULG	0033.0	0033.0	III	B	1	70	160	
		LEAR	0238.0	0240.0	III		1	30	52	
		CULG	0239.0	0239.0	III	B	1	60	160	
		HIRA	0239.0	0239.1	III	B	1	60	310	
		CULG	0241.0	0242.0	III	B	1	100	180	
		HIRA	0241.3	0241.6	III	B	1	100	250	
		HIRA	0303.9	0304.2	III	B	1	90	240	
		CULG	0304.0	0305.0	III	G	1	57X	180	
		CULG	0321.0	0321.0	III	B	1	70	130	
		LEAR	0438.0	0439.0	III		1	30	80	
		HIRA	0438.5	0438.6	III	B	2	40	150	
		HIRA	0438.6	0439.6	III	G	1	100	420	
		LEAR	0503.0	0504.0	III		3	30	80	
		SVTO	0503.0	0504.0	III		3	35	85	
		SVTO	0503.0	0504.0	II		3	35	85	ESS 4000
		SVTO	0503.0	0505.0	III		3	35	85	
		HIRA	0503.6	0504.4	III	B	3	25X	700	
		LEAR	0508.0	0518.0	III		2	30	75	
		SVTO	0510.0	0517.0	CONT		3	35	50	
		SVTO	0510.0	0517.0	CONT		3	35	61	
		HIRA	0510.4	0513.9	III	G	2	60	430	
		POTS	0518 E	1641 U	III	N	1	110U	170U	
		POTS	0518 E	1641 U	III	N	2	110U	170U	
0518	1641	POTS	0518 E	1641 U	I	S,C,DC	2	60	400	
		LEAR	0520.0	0603.0	CONT		1	30	70	
0600	1200	IZMI	0600.0E	1200.0D	I	N	1	45U	180U	
		IZMI	0601.5	0601.9	III	G	1	55	75	
		IZMI	0603.8	0604.3	III	G	1	75	145	
		IZMI	0617.6	0618.6	III	GG	1	55	160	
		POTS	0617.7	0617.9	III	G	1	40X	90U	
		IZMI	0637.1	0637.8	III	G	2	45	95	
		POTS	0637.6	0637.8	III	G	1	40X	90U	
		IZMI	0649.6	0651.9	III	GG	1	50	145	
		POTS	0649.6	0649.7	III	G	3	110U	160	
		POTS	0650.9	0651.4	III	G	3	50	170U	
		IZMI	0727.0	0727.2	III	G	1	105	150	
		POTS	0727.9	0728.2	III	G,RS	3	60	400	
		IZMI	0739.5	0739.7	III	B	2	45	145	
		POTS	0739.5	0739.7	III	B	3	40X	170U	
		IZMI	0747.9	0748.1	III	G	1	105	165	
		POTS	0747.9	0748.1	III	G,RS	3	110U	170U	
		POTS	0749.4	0800	IV	FS	3	40X	800X	
		LEAR	0754.0	0758.0	III		3	30	80	
		SVTO	0755.0	0806.0	III		3	35	85	
		IZMI	0755.6	0757.1	III	GG	3	45X	270X	
		ONDR	0756.1	0758.1	DCIM	G	2	1000X	2000X	
0546	1624	ONDR	0756.2	0757.2	DCIM	G	2	2000X	4440X	
		HIRA	0756.4	0757.6	III	B	3	25X	2500X	
		IZMI	0756.6	0757.8	III	V	3	45X	145	
		LEAR	0800.0	0805.0	III		2	30	80	
		POTS	0801	0806	II	F,H	1	40X	90U	
		IZMI	0801.1	0805.8	II	HARM	2	45	90	
		SVTO	0809.0	0846.0	CONT		2	35	85	
		IZMI	0817.1	0817.6	III	G	2	45	150	
		POTS	0817.1	0819.7	III	G	3	40X	150	
		POTS	0818.3	0818.4	III	B,RS	2	200U	350	
		IZMI	0945.7	0952.8	III	GG	3	45X	270X	
		POTS	0945.8	0953.1	III	GG	3	40X	700	
		LEAR	0948.0	0951.0	III		2	30	80	
		SVTO	0949.0	0952.0	III		3	35	85	
		IZMI	1011.1	1013.9	III	GG	2	45X	160	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 1997

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
01			POTS	1011.1	1014.5	III	GG	3	40X	275	
			IZMI	1024.3	1033.9	III	GG	2	45X	270X	
			POTS	1024.3	1041.9	III	GG,RS,C	3	40X	800X	
			SVTO	1025.0	1117.0	III	N	3	35	85	
			ONDR	1025.3	1032.5	DCIM	G	1	2000X	4440X	
			POTS	1032	1038	II	UE	1	40X	90U	
			IZMI	1032.1	1037.9	II		2	45	95	
			IZMI	1035.7	1040.2	III	GG	2	45X	270X	
			POTS	1100.5	1106.1	III	GG,RS	3	40X	700	
			IZMI	1101.4	1106.0	III	GG	2	45X	170	
			IZMI	1114.6	1114.9	III	G	3	45X	270	
			POTS	1114.6	1115.1	III	G	3	40X	450	
			IZMI	1114.7	1115.3	V		3	45X	180	
			POTS	1115.1	1115.6	V		2	40X	70	
			IZMI	1125.2	1125.6	III	G	2	55	265	
			POTS	1125.2	1126.6	III	G	3	40X	300	
			POTS	1136.9	1143.7	III	GG	3	40X	650	
			IZMI	1137.1	1137.4	III	G	2	45	160	
			SGMR	1141.0	1143.0	V		2	30	80	
			SVTO	1141.0	1143.0	III		2	35U	80U	
			IZMI	1141.3	1142.2	V	G	2	45X	95	
			IZMI	1141.3	1143.7	III	GG	3	45X	265	
			POTS	1234.8	1235.5	DCIM		2	200U	450	
			POTS	1241.0	1242.6	III	GG,FS,C	3	40X	300	
			SGMR	1241.0	1241.0	III		1	40	75	
			POTS	1250.9	1259.3	III	GG,RS,C	3	40X	375	
			SGMR	1252.0	1255.0	V		2	30	80	
			SVTO	1252.0	1256.0	III		2	35U	79U	
			ONDR	1252.3	1255.3	DCIM	G	1	2000X	4410	
			POTS	1300.1	1300.9	UNCLF		1	65	80	
			POTS	1341.6	1359	III	GG	3	40X	400	
			ONDR	1344.0	1350.0	DCIM	G	2	1000X	2000X	
			SVTO	1344.0	1356.0	III		3	35	85	
			SGMR	1345.0	1356.0	III		3	30	80	
			ONDR	1345.5	1354.4	DCIM	G	3	2000X	4440X	
			POTS	1345.8	1359	IV	FS	3	40X	800X	
			POTS	1348.8	1359	II	UE,H	3	40X	160	
			POTS	1403.1	1413.4	III	GG,RS	3	40X	700	
			POTS	1417.5	1417.6	III	B	2	110U	400	
			POTS	1440.1	1454.3	III	GG,RSG,FS,C	3	40X	800X	
			SGMR	1446.0	1449.0	V		3	03	80	
			SVTO	1446.0	1449.0	V		3	35	85	
			POTS	1519.1	1521.5	DCIM		2	200U	400	
			POTS	1526.5	1532.7	DCIM		2	150	270	
			POTS	1541.7	1548.3	III	GG,FS,RS,C	2	40X	400	
			SGMR	1542.0	1543.0	III		1	30	58	
			SVTO	1543.0	1544.0	III		2	55U	60U	
			POTS	1601.6	1601.8	DCIM		2	160	400	
			POTS	1618.3	1618.5	III	G	3	65	300	
			SGMR	1830.0	1833.0	V		2	30	80	
			PALE	1832.0	1832.0	III		2	25	75	
			SGMR	1914.0	1915.0	III		1	30	55	
			PALE	2038.0	2040.0	III		3	25	75	
			SGMR	2038.0	2040.0	III		3	30	80	
	2022	2400	HIRA	2039.0	2040.1	III	B	3	25X	500	
			SGMR	2045.0	2052.0	III		1	30	60	
			HIRA	2050.0	2055.0	III	G	1	60	300	
	2046	2400	CULG	2050.0	2050.0	III	G	1	57X	160	
			CULG	2116.0	2118.0	III	G	3	57X	180	
			PALE	2116.0	2118.0	III		3	25	75	
			SGMR	2116.0	2118.0	III		3	30	80	
			HIRA	2117.0	2118.3	III	B	3	25X	340	
			CULG	2341.0	2342.0	III	G	2	57X	160	
			LEAR	2341.0	2342.0	III		2	30	80	
			HIRA	2341.4	2342.1	III	B	2	25X	170	
02			LEAR	0030.0	0046.0	III	N	3	30	80	
			PALE	0030.0	0043.0	III	N	/	25	75	
	0000	0430	CULG	0031.0	0047.0	III	GG	2	57X	440	

S O L A R R A D I O E M I S S I O N
Spectral Observations

APRIL 1997

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
02	0000	0906	HIRA	0031.1	0046.8	III	GG	2	25X	400	
			CULG	0100.0	0100.0	III	B	2	57X	95	
			LEAR	0100.0	0100.0	III		2	30	76	
			CULG	0236.0	0238.0	III	G	1	57X	130	
			LEAR	0236.0	0238.0	III		2	30	60	
			HIRA	0236.7	0237.7	III	B	1	25X	240	
			PALE	0237.0	0238.0	III		/	25	53	
			CULG	0329.0	0329.0	III	B	1	57X	90	
			CULG	0400.0	0401.0	III	B	2	57X	160	
			LEAR	0400.0	0401.0	III		2	30	80	
			HIRA	0400.3	0400.5	III	B	2	30	250	
			POTS	0518 E	1641 U	III	N	2	110U	170U	
	0518	1641	POTS	0518 E	1641 U	III	N	1	110U	170U	
			POTS	0525.7	0535.8	III	GG,RS	3	40X	350	
			LEAR	0527.0	0641.0	II		2	30	80	ESS 1000
			LEAR	0528.0	0553.0	III	N	2	30	80	
			SVTO	0528.0	0529.0	III		2	35U	61U	
			HIRA	0528.2	0531.3	III	G	1	25X	300	
			POTS	0536.4	0541.5	II	UE	1	45	90U	
			LEAR	0537.0	0641.0	II		2	30	80	ESS 1000
			SVTO	0537.0	0541.0	II		2	35	76	ESS 1600
			POTS	0542.1	0554.4	III	GG,RS,FS,C	3	40X	800X	
			SVTO	0543.0	0620.0	III	N	2	35	85	
			HIRA	0543.3	0546.9	III	G	2	30	320	
	0545	1625	ONDR								
			HIRA	0550.6	0553.9	III	G	2	60	400	
			POTS	0643	0644	I	S	2	140	170U	
			POTS	0658.3	0712.8	III	GG	3	40X	450	
	0600	1200	IZMI	0703.7	0712.3	III	GG	3	45X	270	
			LEAR	0705.0	0706.0	III		3	30	80	
			SVTO	0705.0	0706.0	III		3	35	85	
			HIRA	0705.6	0705.7	III	B	2	25X	210	
			POTS	0705.7	0706.1	V		3	40X	55	
			SVTO	0718.0	0719.0	III		2	35U	70U	
			IZMI	0719.2	0720.5	III	G	2	45	180	
			POTS	0719.7	0721.3	III	GG	3	40X	375	
			SVTO	0728.0	0728.0	III		2	50	61	
			POTS	0728.3	0728.9	III	G	3	40X	160	
			IZMI	0728.4	0728.6	III	B	2	45	65	
			LEAR	0758.0	0800.0	III		3	30	80	
			SVTO	0758.0	0800.0	III		3	35	85	
			IZMI	0758.1	0759.8	III	G	3	45X	270X	
			POTS	0758.2	0800.1	III	G,U	3	40X	650	
			HIRA	0758.8	0759.5	III	B	3	25X	400	
			IZMI	0759.0	0800.0	V		2	45X	145	
			POTS	0759.3	0800.2	V		3	40X	55	
			POTS	0804.5	0814.2	III	GG	2	40X	750	
			SVTO	0828.0	0931.0	III	N	3	35	85	
			SVTO	0828.0	0933.0	III	N	3	35	85	
			IZMI	0828.9	0834.3	III	G	2	45X	170	
			POTS	0828.9	0834.3	III	GG	3	40X	170U	
			HIRA	0829.8	0832.4	III	G	2	50	140	
			LEAR	0830.0	0832.0	III		2	30	80	
			IZMI	0849.0	0853.4	III	G	3	45X	165	
			LEAR	0849.0	0853.0	III		2	30	80	
			POTS	0849.1	0853.4	III	GG	3	40X	220	
			POTS	0851.4	0851.8	V		2	40X	50	
			POTS	0853.1	0853.5	V		1	40X	50	
			LEAR	0906.0	0906.0	III		1	30	80	
			IZMI	0906.2	0906.6	III	G	2	45X	90	
			POTS	0906.3	0906.6	III	B	2	40X	170U	
			POTS	0909.4	0909.6	III	G	2	130	300	
			POTS	0917.9	0918.3	III	G	2	40X	170U	
			POTS	0922.7	0930.1	III	GG,RS	3	40X	375	
			IZMI	0923.0	0926.9	III	GG	2	45	175	
			LEAR	0923.0	0924.0	III		1	30	80	
			POTS	0927.5	0934	II	UE	3	40X	130	
			IZMI	0928.0	0934.5	III	GG	2	45X	160	
			IZMI	0928.1	0933.8	II		2	50	125	

SOLAR RADIO EMISSION
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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
02			POTS	1020.4	1022.7	III	G	2	40X	170U	
			POTS	1037.3	1037.7	III	G	2	65	250	
			POTS	1050.4	1055.6	III	GG	3	40X	350	
			IZMI	1052.5	1055.3	III	GG	2	45	150	
			POTS	1101	1641 U	I	S	2	110U	250	
			POTS	1146.5	1147.3	III	G	3	60	150	
			IZMI	1146.7	1147.2	III	G, RS	2	105	135	
			POTS	1314.4	1314.6	III	G	1	40X	70	
	2022	2400	HIRA								
	2046	2400	CULG								
			PALE	2341.0	2342.0	III		1	28	52	
03	0000	0430	CULG								
	0000	0700	HIRA								
	0518	1641	POTS	0518 E	1641 U	I	S	1	110U	400	
	0541	1625	ONDR								
	0600	1200	IZMI								
			POTS	0856.1	0856.2	III	B	1	110U	170U	
			POTS	0931.8	0932.1	DCIM		2	225	700	
	2045	2400	CULG								
04	0000	0430	CULG								
	0042	0908	HIRA								
	0539	1627	ONDR								
	0600	1200	IZMI								
	0518	1641	POTS	1636.9	1637.0	III	B	2	110U	400	
			SGMR	1711.0	1712.0	III		1	30	52	
	2208	2400	HIRA								
05			LEAR	0332.0	0332.0	III		2	30	56	
	0000	0908	HIRA	0332.1	0332.3	III	B	1	25X	170	
	0518	1641	POTS	0536	1641 U	I	S,W	1	120	250	
	0545	1629	ONDR								
	0600	1200	IZMI								
	2037	2400	HIRA								
06	0000	0909	HIRA								
	0518	1641	POTS								
	0535	1629	ONDR								
	0605	1200	IZMI								
	2045	2400	CULG								
07	0000	0430	CULG								
	0053	0800	HIRA								
	0518	1641	POTS	0518 E	1641 U	I	S	1	110U	170U	
	0610	1200	IZMI								
			POTS	1354	1502	IV	FS	3	110U	800X	
	0646	1631	ONDR	1354.0	1454.0	CONT	G	3	2000X	4440X	
			POTS	1354.7	1354.8	III	U	2	200U	400	
			ONDR	1355.0	1423.2	CONT		3	1000X	2000X	
			POTS	1356	1531	III	GG,RS	3	40X	400	
			SGMR	1356.0	1358.0	III		3	30	72	
			SVTO	1356.0	1358.0	V		3	35	60	
			SGMR	1358.0	1408.0	II		3	30	80	ESS 0900
			SVTO	1358.0	1404.0	II		3	65	80	ESS 1000
			POTS	1358.1	1406	II	SH,H	3	40X	250	
			POTS	1358.3	1403	II	F	3	40X	90U	
			SVTO	1404.0	1610.0	IV		3	35	85	
			SGMR	1408.0	1928.0	IV		1	30	80	
	2013	2400	HIRA								
	2045	2400	CULG								
08	0000	0430	CULG								
	0518	0811	POTS								
	0538	1632	ONDR								
	0600	1200	IZMI								
	0650	0911	HIRA								
	1021	1616	POTS	1529.9	1531.4	III	G	1	110U	170U	
	2012	2400	HIRA								

S O L A R R A D I O E M I S S I O N
Spectral Observations

APRIL 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	EVENT Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
08			PALE	2059.0	2059.0	III		1	25	55	
			SGMR	2059.0	2059.0	III		1	30	58	
	2044	2400	CULG	2100.0	2100.0	III	B	1	59	90	
			SGMR	2117.0	2118.0	III		1	30	55	
09	0000	0430	CULG								
	0000	0912	HIRA								
			SVTO	0456.0	0557.0	CONT		2	35U	74U	
	0518	1641	POTS	0539.1	0539.2	DCIM		2	250	400	
			POTS	0544.2	0544.3	DCIM		1	350	400	
	0623	1635	ONDR								
	0640	1200	IZMI								
			POTS	1139.6	1139.8	III	G	1	110U	170U	
	2044	2400	CULG								
	2246	2400	HIRA								
10	0000	0430	CULG								
	0000	0913	HIRA								
	0527	1635	ONDR								
	0600	1200	IZMI								
	0518	1641	POTS	0901.2	0901.5	III	G	2	40X	325	
	2010	2400	HIRA								
11	0000	0913	HIRA								
	0527	1638	ONDR								
	0600	1200	IZMI								
	0454	1701	POTS	1423.2	1425.3	DCIM		1	130	400	
			POTS	1658.9	1659.4	DCIM		1	200U	400	
	2008	2400	HIRA								
12	0000	0914	HIRA								
	0454	1701	POTS								
	0523	1639	ONDR								
	0600	1200	IZMI								
	2007	2400	HIRA								
13	0000	0915	HIRA								
	0521	1640	ONDR								
	0600	1200	IZMI	0912.0U	1200.0D	I	S	1	110	160	
			IZMI	1141.0U	1200.0D	I	S	1	180	270	
	2005	2400	HIRA								
	2043	2400	CULG								
14	0000	0430	CULG								
	0000	0916	HIRA								
	0519	1642	ONDR								
	0600	1200	IZMI								
	0625	1702	POTS	0625 E	1702 U	I	S	1	110U	400	
			POTS	1110.0	1110.2	III	G	2	110U	160	
			POTS	1304.9	1305.1	III	B	2	110U	300	
			POTS	1306.1	1306.8	III	G	1	110U	300	
			POTS	1323.7	1323.8	III	G	3	110U	170U	
			POTS	1438.9	1439.0	III	B	1	110U	170U	
			POTS	1626.8	1629.8	III	GG,RS	2	110U	170U	
			SGMR	2022.0	2023.0	III		1	50	63	
	2043	2400	CULG								
	2205	2400	HIRA								
15			LEAR	0025.0	0025.0	III		1	30	77	
			PALE	0025.0	0025.0	III		1	30	53	
	0000	0430	CULG	0025.0	0025.0	III	B	2	57X	95	
	0000	0917	HIRA	0025.0	0025.2	III	B	1	50	160	
			CULG	0136.0	0138.0	III	G	2	57X	170	
			LEAR	0136.0	0137.0	III		2	30	70	
			HIRA	0136.4	0137.0	III	G	1	50	200	
			PALE	0137.0	0138.0	III		1	30	55	
			CULG	0204.0	0205.0	III	B	1	57X	130	
			LEAR	0204.0	0210.0	III		1	30	55	
			PALE	0204.0	0209.0	III		1	30	55	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 1997

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
15		HIRA	0204.5	0204.6	III	B	1	60	130	
		CULG	0209.0	0210.0	III	B	1	57X	130	
		HIRA	0209.3	0209.6	III	B	1	80	130	
		POTS	0454 E	1701 U	III	N	1	110U	170U	
0454	1701	POTS	0454 E	1701 U	I	S,C,DC	2	80	400	
		POTS	0454.0	0455.2	III	G	1	110U	250	
		POTS	0456.3	0456.5	III	G	2	110U	250	
		POTS	0515.7	0517.7	III	G	2	110U	170U	
0517	1645	ONDR								
		POTS	0610.2	0610.3	III	B	2	150	250	
		POTS	0618.2	0618.7	III	G	2	110U	250	
		POTS	0623.0	0623.9	III	G	2	110U	170U	
		POTS	0633.5	0642.9	IV	FS	3	130	800X	
		POTS	0635.0	0635.2	III	G	2	110U	170U	
0600	1200	IZMI	0637.7	0641.0U	UNCLF		2	200U	270X	
		HIRA	0638.0	0642.1	III	G	3	150	600	
		IZMI	0649.9	0653.0U	UNCLF		2	85U	270X	
		POTS	0649.9	0658.9	DCIM	FS	3	110U	800X	
		HIRA	0650.0	0652.8	III	G	2	100	1200	
		HIRA	0657.2	0658.8	III	G	1	600	1200	
		POTS	0807.8	0810	DCIM		2	300	700	
		HIRA	0808.8	0809.0	III	B	1	340	660	
		IZMI	0819.0	0819.2	III	G	1	45	90	
		POTS	0819.0	0819.3	III	G	1	40X	90U	
		POTS	0837.5	0837.6	III	G	2	110U	170U	
		POTS	0922.0	0922.5	DCIM		1	200U	600	
		IZMI	0935.4	0936.6	III	G	2	45	150	
		POTS	0935.4	0936.7	III	GG	3	40X	170U	
		POTS	0941.5	0941.6	III	B	2	110U	160	
		POTS	0948.7	0949.9	III	G	2	110U	170U	
		POTS	0950.6	0951.0	III	G	2	110U	170U	
		POTS	0952.2	0953.2	III	B	2	110U	170U	
		SVTO	1009.0	1010.0	III		1	66U	75U	
		POTS	1014.2	1019.3	III	G,U	2	110U	170U	
		POTS	1047.5	1047.7	DCIM		1	325	400	
		POTS	1122.0	1122.3	III	G	2	110U	150	
		POTS	1136.6	1136.7	III	B	2	110U	150	
		POTS	1229.1	1229.3	III	G	2	40X	250	
		POTS	1415.0	1416.3	DCIM		1	600	750	
		SGMR	1415.0	1416.0	III		1	30	70	
		SVTO	1415.0	1416.0	V		2	35U	77U	
		POTS	1415.3	1426	II	SH,H	3	55	250	
		POTS	1415.9	1420	II	F	3	40X	90U	
		SGMR	1416.0	1427.0	II		1	30	80	ESS 1000
		SVTO	1416.0	1426.0	II		3	35U	75U	ESS 0900
		POTS	1428.9	1432.3	DCIM		2	250	800X	
		POTS	1512.8	1512.9	III	G	2	60	170U	
		SGMR	1522.0	1523.0	V		2	30	80	
		SVTO	1522.0	1522.0	III		3	35	85	
		POTS	1522.2	1522.5	III	G	3	40X	250	
		POTS	1522.5	1522.7	V		3	40X	55	
		SGMR	1541.0	1542.0	III		1	30	56	
		SVTO	1541.0	1542.0	III		2	35U	60U	
		POTS	1541.8	1550.8	III	GG	3	40X	250	
		SGMR	1544.0	1551.0	III		1	30	55	
		SVTO	1544.0	1545.0	III		3	35U	75U	
		POTS	1544.7	1544.8	DCIM		2	700	800X	
		SGMR	1559.0	1600.0	III		1	30	55	
		SVTO	1559.0	1600.0	III		2	41U	57U	
		POTS	1559.7	1600.0	III	G	2	40X	170U	
		SGMR	1614.0	1614.0	III		1	30	48	
		POTS	1614.3	1614.4	III	B	2	40X	90U	
		POTS	1619.7	1619.8	III	B	3	120	170U	
		POTS	1621.1	1621.8	III	G	2	110U	170U	
		SGMR	1719.0	1719.0	III		1	30	46	
2003	2400	HIRA								
		PALE	2100.0	2100.0	III		1	45	55	
		SGMR	2100.0	2100.0	III		1	30	57	
2042	2400	CULG	2100.0	2100.0	III	B	1	57X	95	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
16	0000	0918	HIRA								
	0000	0430	CULG	0050.0	0430.0D	I	S	1	57X	170	
			LEAR	0321.0	0321.0	III		1	30	45	
			POTS	0454 E	1701 U	III	N	1	110U	170U	
	0454	1701	POTS	0454 E	1701 U	I	S	2	110U	400	
	0515	1645	ONDR								
			POTS	0548.1	0548.2	III	B	2	110U	160	
			SVTO	0604.0	0604.0	III		2	57U	68U	
			POTS	0708.7	0713.7	DCIM		2	200U	650	
	0600	1200	IZMI	0720.0U	1115.0U	I	N	1	110U	160U	
			POTS	1102.7	1104.3	III	GG	2	60	170U	
			SGMR	1142.0	1143.0	III		1	35	58	
			SVTO	1142.0	1143.0	III		2	35U	60U	
			POTS	1142.1	1143.1	III	G	2	40X	170U	
			IZMI	1142.6	1142.9	III	B	2	45X	135	
			POTS	1142.9	1143.1	V		2	40X	50	
			POTS	1151.1	1155.8	III	G,RS	3	110U	170U	
			IZMI	1151.2	1151.3	III	B	1	110	150	
			POTS	1325.0	1325.3	DCIM		2	250	500	
	2001	2400	HIRA								
	2042	2400	CULG								
17	0000	0919	HIRA	0025.1	0025.2	III	B	1	60	150	
	0000	0430	CULG	0138.0	0335.0	I	S	1	57X	120	
			LEAR	0217.0	0223.0	III		2	30	55	
			CULG	0218.0	0224.0	III	G	1	57X	110	
			PALE	0218.0	0233.0	III	N	1	25	55	
			LEAR	0232.0	0232.0	III		1	30	45	
	0454	1701	POTS	0503	1701 U	I	S	1	110U	400	
	0513	1648	ONDR								
			POTS	0548.4	0548.5	III	B	2	110U	170U	
			POTS	0555.6	0555.7	III	B	1	110U	170U	
	0600	1200	IZMI								
			POTS	0659.8	0700.3	III	G	1	110U	250	
			POTS	0733.5	0733.8	III	G	2	110U	170U	
			POTS	0800.9	0801.0	III	B	2	120	170U	
			POTS	0817.9	0818.0	III	B	2	110U	170U	
			POTS	1129.3	1129.6	DCIM		1	130	300	
			POTS	1138.3	1138.4	III	B	2	110U	160	
			POTS	1204.3	1204.4	III	B	2	110U	150	
			POTS	1441.3	1441.4	III	B	2	110U	150	
			POTS	1509.8	1509.9	III	B	2	40X	170U	
			POTS	1621.4	1621.5	III	B	2	110U	170U	
	2000	2400	HIRA								
	2042	2400	CULG								
18	0000	0430	CULG								
	0000	0920	HIRA								
	0511	1646	ONDR								
	0454	1701	POTS	0528	1701 U	I	S,W	1	130	170U	
	0640	1200	IZMI								
	1959	2400	HIRA								
19	0000	0921	HIRA								
	0454	1701	POTS	0454 E	1616	I	S,W	1	120	170U	
	0510	1649	ONDR								
	0600	1200	IZMI								
	1957	2400	HIRA								
20	0000	0921	HIRA								
	0454	1701	POTS								
	0508	1650	ONDR								
	0600	1200	IZMI								
	1956	2400	HIRA								
	2042	2400	CULG								
21	0000	0430	CULG								
	0000	0922	HIRA								
	0434	1715	POTS								

SOLAR RADIO EMISSION
Spectral Observations

APRIL 1997

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
21	0623	1651	ONDR								
	0655	1200	IZMI								
	1955	2400	HIRA								
22	0000	0923	HIRA								
	0505	1653	ONDR								
	0600	1200	IZMI								
	0434	1715	POTS	1026.1	1026.4	III	U	2	65	170U	
	1953	2400	HIRA								
23	0000	0924	HIRA								
	0434	1030	POTS								
	0502	1655	ONDR								
	0600	0739	IZMI								
	0743	1200	IZMI								
	1233	1715	POTS								
	1952	2400	HIRA								
24	0000	0925	HIRA								
	0434	1715	POTS								
	0500	1656	ONDR								
	0600	1200	IZMI								
	1951	2400	HIRA								
25	0000	0926	HIRA								
	0459	1659	ONDR								
	0600	1200	IZMI								
	0434	1715	POTS	0712.6	0713.0	III	G	1	110U	170U	
	1950	2400	HIRA								
26	0000	0927	HIRA								
	0457	1700	ONDR								
	0600	1200	IZMI								
	0434	1715	POTS	1610	1715 U	I	S,W	1	200U	300	
	1948	2400	HIRA								
27	0000	0928	HIRA								
	0434	1715	POTS								
	0502	1700	ONDR								
	0600	1200	IZMI								
	1947	2400	HIRA								
28	0000	0929	HIRA								
	0434	1715	POTS								
	0501	1703	ONDR								
	0600	1200	IZMI								
	1946	2400	HIRA								
29	0000	0929	HIRA								
	0434	0509	POTS								
	0452	1703	ONDR								
	0600	1050	IZMI								
	1120	1200	IZMI								
	1249	1715	POTS								
	1945	2400	HIRA								
30	0000	0930	HIRA								
	0458	1705	ONDR								
	0540	1715	POTS								
	0605	1200	IZMI								
	1944	2400	HIRA								

SOLAR RADIO NOISE STORM AT 164 MHZ
FROM NANÇAY RADIOHELIOGRAPH
APRIL 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/04/97	-0.28	-0.54	2	E	D
02/04/97	-0.21	-0.64	1	E	D
03/04/97	-1.00	-0.59	1	13H00	D
05/04/97	-0.87	-0.37	1	E	D
07/04/97	-0.11	-0.54	1	E	D
13/04/97	+0.61	-0.60	3	E	D
14/04/97	+0.89	-0.29	1	E	D
14/04/97	+0.89	-0.75	1	E	D
15/04/97	-0.15	-0.21	1	E	D
15/04/97	-0.12	-0.34	1	E	D
15/04/97	+1.03	-0.78	1	E	D
16/04/97	-0.09	-0.37	1	E	D
16/04/97	+1.33	-0.37	1	E	D
17/04/97	+1.12	-0.81	1	E	D
18/04/97	+1.12	-0.78	1	E	D
19/08/97	+0.78	-1.35	1	E	D

SOLAR RADIO NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH
APRIL 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/04/97	-0.31	-0.43	1	E	D
02/04/97	-0.19	-0.43	1	10H30	D
03/04/97	+0.03	-0.27	1	E	D
04/04/97	+0.31	-0.37	1	E	13H00
05/05/97	-0.73	-0.35	1	E	D
07/04/97	-0.17	-0.48	1	13H50	D
13/04/97	+0.71	-0.60	2	E	D
14/04/97	+0.89	-0.32	1	E	D
14/04/97	+0.95	-0.54	1	E	D
15/04/97	+1.04	-0.58	1	E	D
16/04/97	-0.03	-0.32	1	E	D
26/04/97	+0.59	-0.29	1	E	D

NO DATA
OTHERS DAYS: NO DETECTABLE NOISE STORM

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[1] POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT

[2] IMP1: FLUX< 5 SFU IMP2: 5< FLUX < 20 SFU IMP3: 20< FLUX <100 SFU
IMP4: 100< FLUX <300 SFU IMP5> 300 SFU

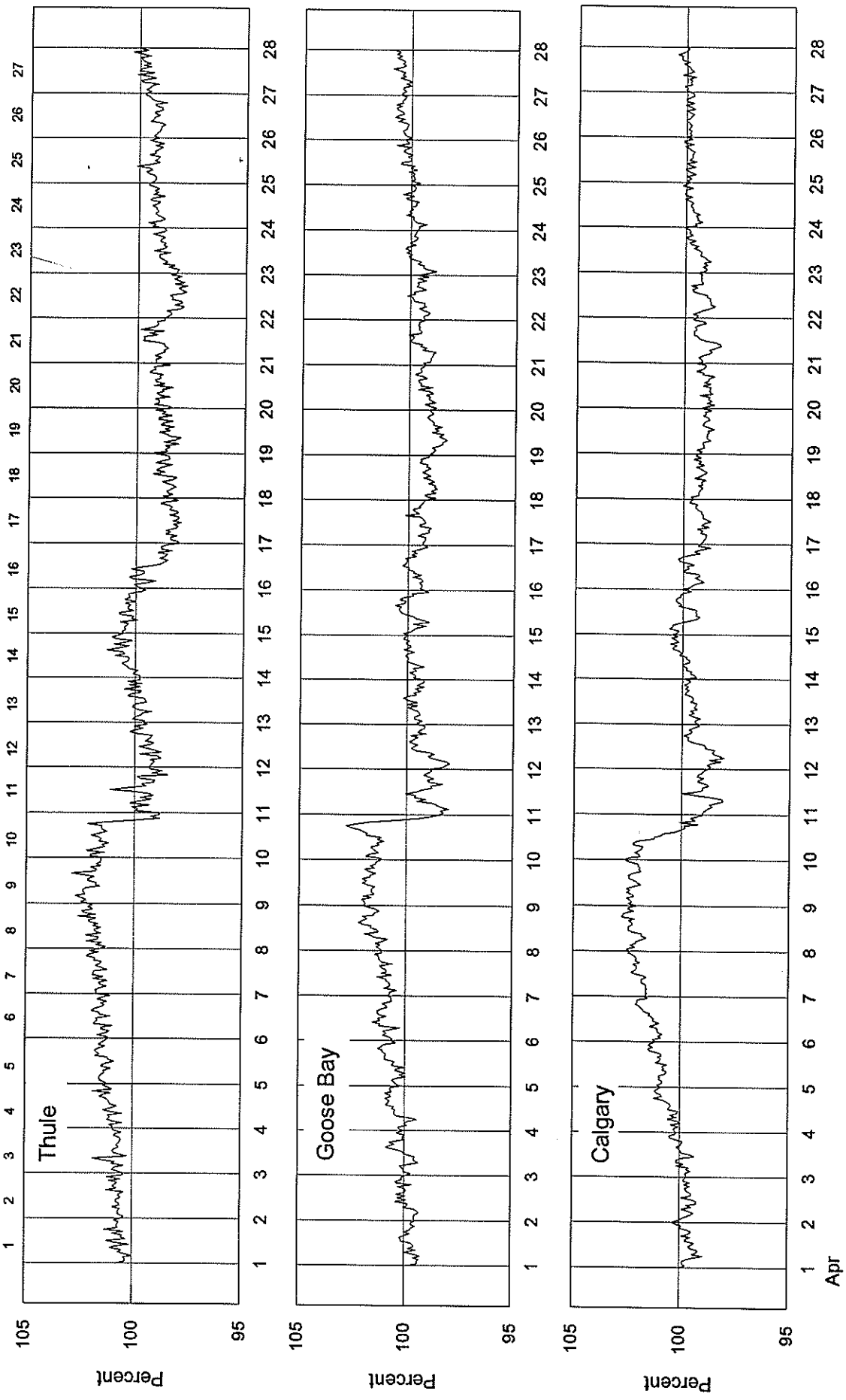
[3] E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

COSMIC RAY INDICES
(Neutron Monitor)
APRIL 1997

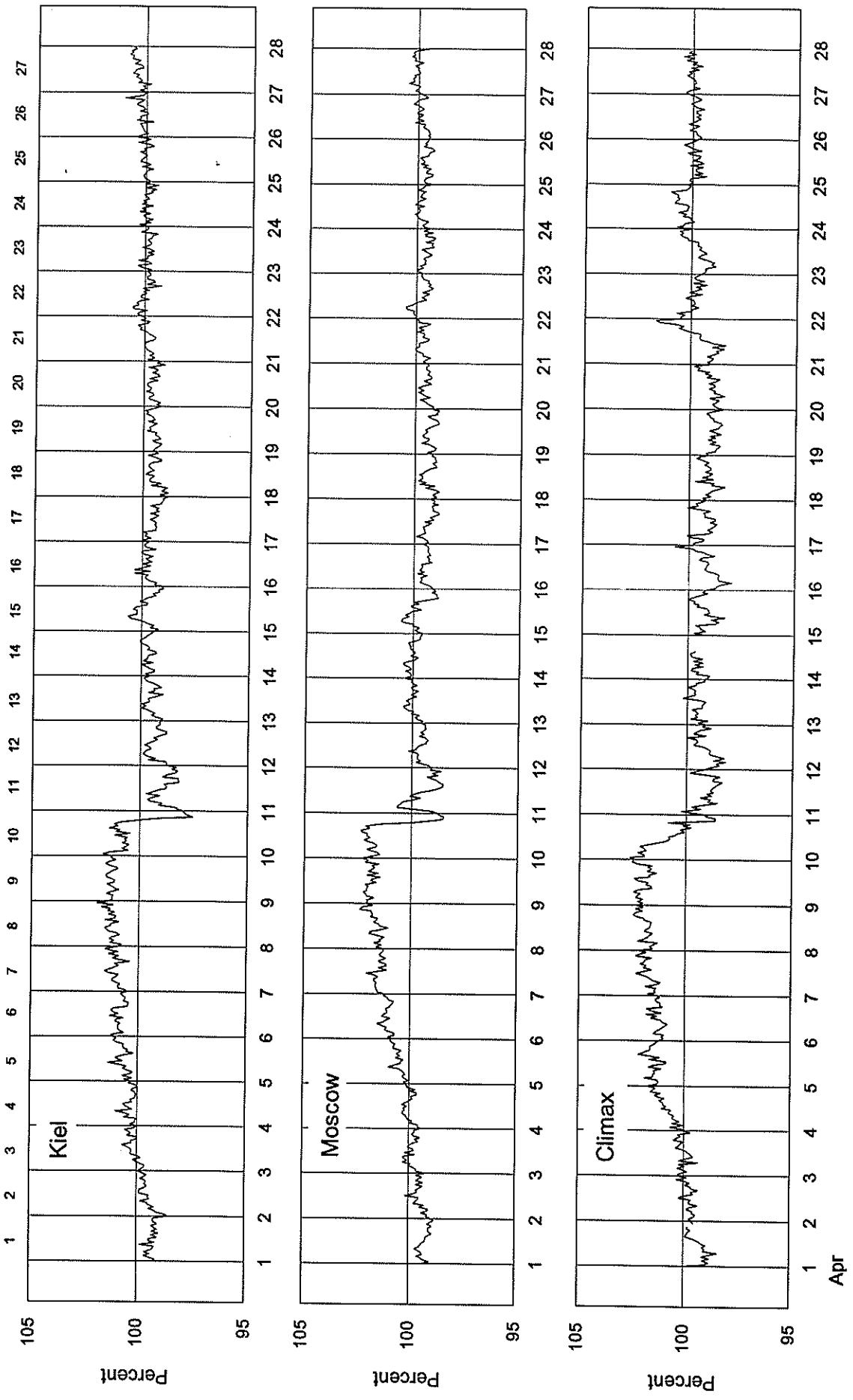
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4514	7299.8	3997.8	6268.2	9235.2	4191.8	2012.8	3563.9
2	4518	7315.2	4000.0	6280.9	9256.9	4210.2	2024.3	3569.6
3	4522	7326.4	4010.5	6323.0	9292.3	4224.9	2027.5	3579.7
4	4536	7352.5	4034.3	6331.8	9304.2	4256.3	2030.5	3586.3
5	4550	7365.4	4053.3	6355.7	9351.8	4286.4	2031.0	3597.1
6	4552	7391.2	4069.5	6368.3	9404.7	4274.6	2028.4	3598.0
7	4562	7391.6	4089.8	6380.5	9443.6	4296.5	2033.5	3605.6
8	4571	7434.0	4104.5	6394.2	9460.7	4300.8	2042.7	3609.0
9	4580	7448.6	4102.8	6394.7	9485.7	4308.4	2043.1	3604.7
10	4542	7427.1	4055.2	6340.1	9429.7	4260.5	2019.8	3575.0
11	4467	7243.2	3971.3	6237.0	9249.0	4181.4	2006.2	3558.8
12	4461	7257.4	3974.5	6268.9	9264.3	4183.4	2003.6	3561.0
13	4481	7292.3	3995.8	6281.3	9305.0	4204.6	2005.5	3567.8
14	4508	7310.0	4013.3	6293.7	9312.9	4202.3 (32)	2004.5	3573.0
15	4502	7314.1	4012.8	6301.5	9287.7	4192.2	2004.5	3572.1
16	4455	7297.6	3997.2	6297.6	9254.6	4182.9	2005.5	3570.2
17	4411	7277.0	3980.5	6279.8	9241.5	4192.6	2008.3	3578.2
18	4425	7254.5	3984.3	6275.7	9239.9	4185.7	2001.3	3574.0
19	4426	7231.0	3974.0	6284.2	9237.0	4175.7	1995.4	3577.0
20	4440	7266.4	3971.7	6284.2	9258.5	4179.0	1997.9	3578.5
21	4448	7280.0	3979.3	6302.6	9278.2	4202.7	2004.5	3588.3
22	4407	7286.0	3982.2	6313.8	9287.6	4218.8	2011.8	3595.1
23	4432	7303.2	3990.7	6304.9	9264.6	4208.8	2003.6	3583.2
24	4451	7312.7	4003.5	6308.7	9289.2	4238.9	2001.8	3589.0
25	4457	7327.7	4006.7	6314.1	9266.7	4218.5	1993.8	3573.2
26	4451	7351.2	4007.8	6327.0	9288.0	4216.0	1994.0	3574.0
27	4474	7352.7	4012.7	6338.8	9317.2	4223.6	1989.4	3582.7
28	4486	7353.0	4020.7	6333.2	9272.1	4229.2	1987.3	3585.5
29	4483	7334.1	4013.7	6327.3	9236.7	4209.6	1981.8	3574.2
30	4487	7342.6	4016.5	6308.8	9230.0	4228.3	1983.9	3580.7
Mean	4487	7324.6	4014.2	6314.0	9301.5	4223.1	2009.3	3547.5

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

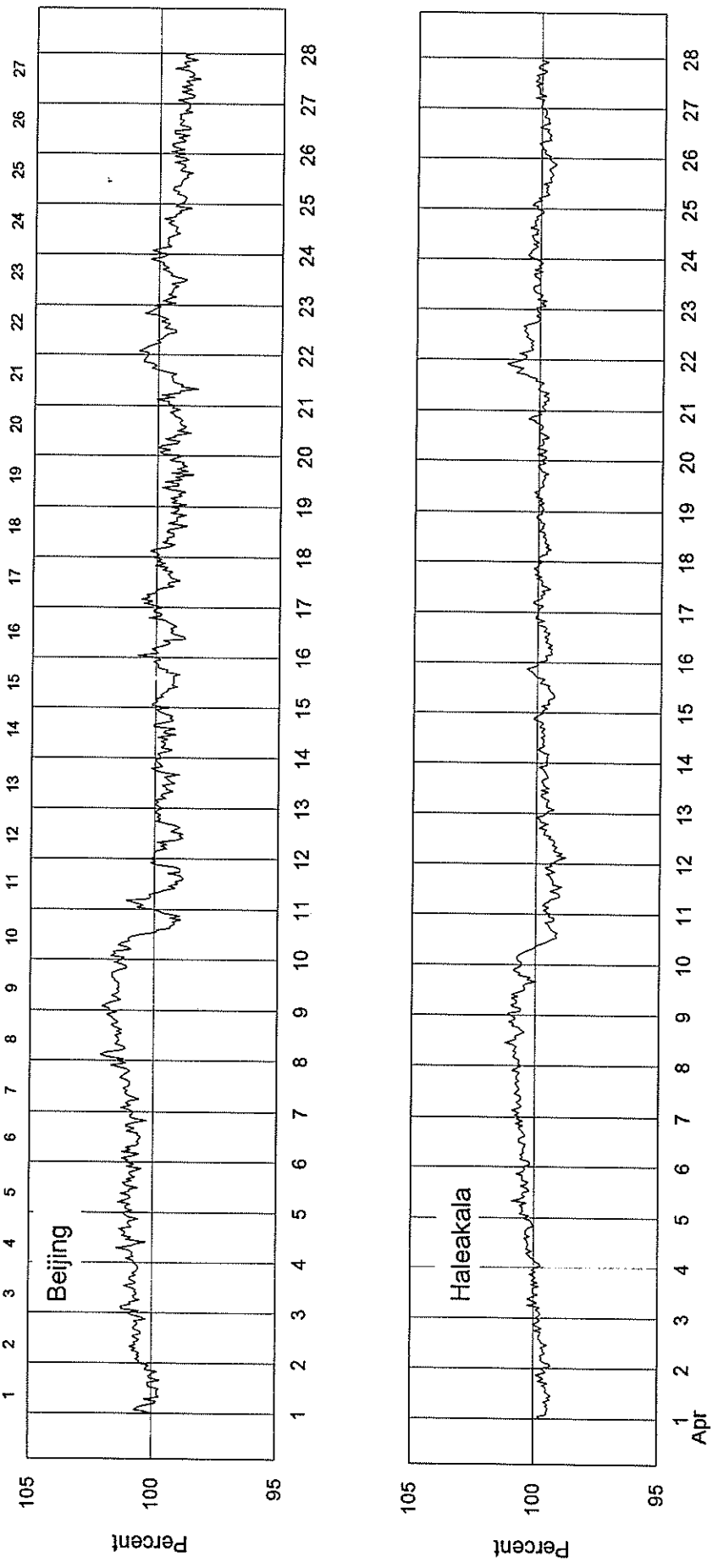
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2235 - Beginning 1 Apr 97



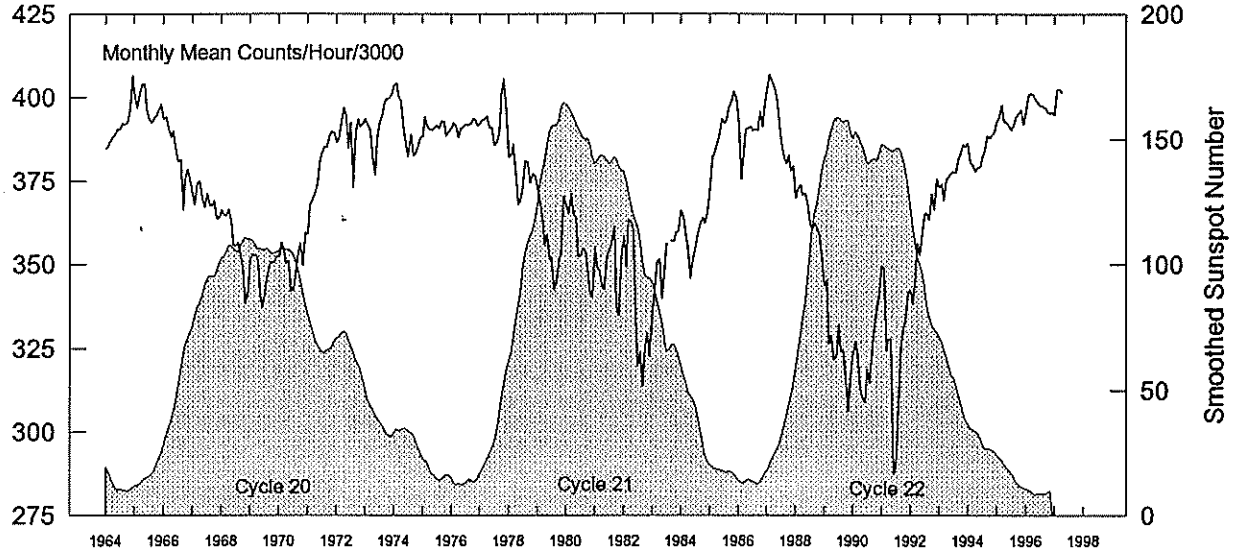
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2235 - Beginning 1 Apr 97



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2235 - Beginning 1 Apr 97



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Apr 1997



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1964	3847	3852	3872	3883	3892	3905	3905	3921	3920	3926	3966	4064	3913
1965	4006	3968	4007	4040	4040	3967	3935	3923	3938	3942	3960	3980	3976
1966	3935	3943	3906	3881	3899	3844	3807	3814	3663	3758	3785	3750	3832
1967	3710	3678	3741	3750	3697	3671	3713	3679	3675	3691	3638	3639	3690
1968	3663	3653	3647	3665	3632	3561	3556	3567	3529	3482	3386	3420	3563
1969	3515	3531	3529	3520	3417	3370	3408	3464	3500	3507	3506	3524	3483
1970	3523	3565	3548	3505	3512	3424	3426	3477	3543	3564	3497	3596	3515
1971	3593	3678	3693	3712	3737	3813	3832	3853	3851	3883	3899	3893	3786
1972	3865	3875	3924	3969	3942	3847	3926	3731	3895	3935	3912	3920	3895
1973	3935	3919	3903	3819	3768	3875	3926	3944	3986	3995	3997	4008	3923
1974	4036	4043	4005	3988	3906	3861	3822	3890	3827	3831	3850	3881	3912
1975	3883	3943	3914	3905	3904	3910	3918	3907	3929	3927	3884	3897	3910
1976	3908	3923	3915	3881	3909	3909	3921	3918	3920	3936	3935	3916	3916
1977	3919	3933	3933	3943	3911	3911	3857	3865	3895	4010	4055	3961	3933
1978	3823	3826	3860	3773	3681	3697	3730	3811	3808	3744	3772	3764	3774
1979	3726	3696	3647	3559	3592	3516	3521	3427	3447	3519	3528	3705	3573
1980	3681	3652	3711	3649	3643	3527	3525	3550	3540	3471	3414	3403	3564
1981	3550	3491	3483	3440	3426	3522	3546	3560	3615	3374	3348	3520	3490
1982	3586	3492	3634	3632	3608	3344	3196	3239	3137	3257	3296	3225	3387
1983	3364	3421	3510	3515	3399	3487	3563	No Data	3571	3569	3597	3599	3509
1984	3661	3646	3586	3551	3460	3515	3551	3593	3623	3641	3623	3652	3592
1985	3723	3821	3834	3858	3888	3936	3921	3929	3971	3987	4017	3997	3907
1986	3923	3755	3814	3905	3906	3915	3902	3907	3902	3958	3912	3974	3898
1987	4025	4068	4047	4028	3993	3914	3866	3822	3802	3827	3779	3796	3914
1988	3698	3729	3739	3709	3714	3682	3621	3608	3624	3603	3590	3520	3653
1989	3436	3454	3263	3290	3216	3222	3321	3224	3246	3164	3063	3152	3254
1990	3227	3272	3232	3129	3099	3089	3188	3147	3237	3317	3375	3401	3226
1991	3496	3489	3244	3279	3280	2873	2896	3078	3253	3311	3330	3412	3245
1992	3425	3382	3463	3566	3528	3593	3655	3655	3636	3711	3665	3758	3586
1993	3730	3741	3693	3753	3765	3775	3780	3775	3815	3836	3859	3852	3781
1994	3864	3807	3798	3779	3793	3793	3822	3841	3885	3878	3891	3896	3837
1995	3929	3945	3919	3929	3927	3917	3902	3919	3940	3956	3963	3920	3931
1996	3960	4008	4012	4010	3993	3983	3976	3976	3970	3960	3953	3955	3980
1997	3947	4023	4024	4014									4002

Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

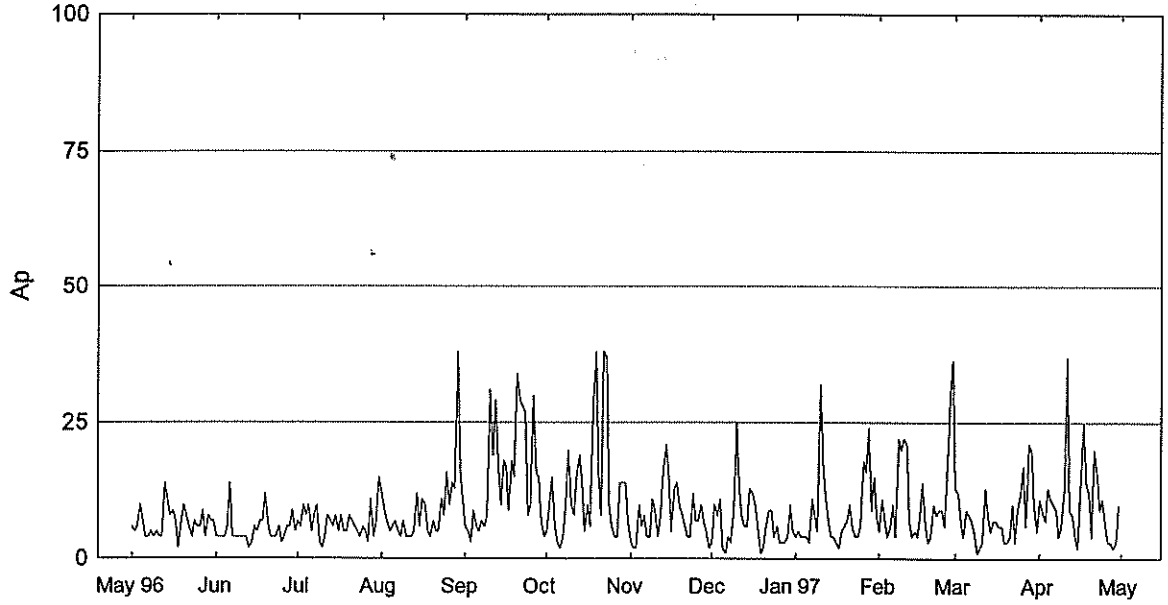
Geomagnetic Activity Indices

April 1997

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		3	4+	3	1	2-	1	1	2-	17-	11	0.6	3-	4-	3+	1+	2-	1-	1o	2-	19	22	24	36	10	
2		2	3	2+	1+	3-	2-	3	1	17	9	0.5	2+	3-	2+	2-	2+	2-	2+	1o	16	19	17	17	18	
3		3	4-	1	0+	1-	0+	2-	1-	11+	7	0.4	3-	3+	1+	1-	1-	0+	2-	1o	12	15	8	16	6	K
4		4	3+	3-	2	2	2-	2+	3	21	13	0.7	3+	3o	3-	2+	2+	1+	2-	3o	23	28	20	29	19	
5		4-	3+	1	1+	0+	2	2+	4-	18-	11	0.6	3+	3-	1o	2-	0+	2-	2o	4-	19	27	13	21	19	
6		2+	1	3-	3-	2+	3+	1-	3-	18-	10	0.6	2+	1-	3-	3-	3-	3-	1-	3-	18	21	19	15	25	
7		3	3	1+	1+	2	2	2	2+	17	9	0.5	3-	2+	2-	1o	2o	2o	2o	3-	16	22	12	14	20	
8	Q7	1+	1-	1-	1	1	1-	2-	1+	8+	4	0.1	1o	1-	1o	2-	1+	0+	1+	1+	8	9	9	8	11	CC
9	Q9	2-	2-	0+	1-	2-	2-	1	3-	11+	6	0.3	1+	1+	1-	0+	2-	2-	1+	2+	9	12	8	5	15	CC
10		3	0+	0	0+	2	3	3	5	17-	13	0.7	2+	1-	0+	0+	2-	2+	3-	4o	18	28	16	8	36	
11	D1	5	7-	5-	2-	3+	4-	4-	4	33-	37	1.4	4+	6-	4o	2+	3o	3o	3+	4-	52	55	41	54	42	
12		3+	2-	2-	3	3-	2-	1	0+	15+	9	0.5	3o	1+	2o	3+	2+	1+	1-	1-	16	18	19	26	12	
13		1	3+	2-	2-	2	2	1+	2	15	8	0.4	1o	3o	2+	2-	2-	2-	1+	2-	14	16	17	16	17	K
14	Q8	2	2	1	1-	1+	2-	0+	0	9	4	0.1	1+	2-	1o	1o	1+	1-	0o	0+	6	7	8	9	6	CC
15	Q2	2	0+	1-	1-	0	0	0	0	4-	2	0.0	2-	1-	1o	1-	0o	0o	0o	0o	4	5	6	9	2	CC
16		0	0	0	1-	4-	4-	4+	5	17+	16	0.9	0o	0o	0o	1-	4-	3o	4-	5o	28	38	28	3	63	
17	D2	5-	5+	4	3-	2	2+	4-	4-	28+	24	1.2	4+	4+	4o	3-	2-	2+	4-	4-	43	39	41	42	39	
18	D5*	4-	2+	4-	3	3+	2-	2+	2	22	14	0.8	4o	2+	3+	3o	3+	1+	3-	2o	29	23	34	35	23	
19		3-	3	3+	3	3	2-	2+	2+	21+	12	0.7	3-	3o	3o	3-	3o	1+	2-	2o	22	22	21	24	19	
20	Q6	0+	1	1+	0+	0+	1-	1+	2	7+	4	0.1	0+	1o	1+	0+	0o	1-	1+	2-	6	10	5	4	11	CK
21	D3	0+	1-	1	2+	5-	4+	4+	5-	22+	20	1.0	0o	1-	1+	3-	4o	4-	4-	4+	30	33	38	11	61	
22	D4*	5+	4+	2-	2-	1	1-	2+	2	19	15	0.9	5-	4+	2o	2-	1-	1-	2o	2-	26	25	18	33	11	
23		1+	1+	1-	2	2-	2-	3	4-	15+	9	0.5	1+	1+	1+	2+	2o	2-	3-	3+	17	20	11	9	22	
24		5-	3+	3-	2	2	2-	2-	2-	20-	13	0.7	5-	3o	3o	2o	1+	2-	1+	2o	25	27	21	35	13	
25	Q10	2-	2+	1+	1	1+	1+	2-	2+	13	6	0.3	2-	2+	1+	1o	1+	1+	2-	3-	12	15	11	12	14	CC
26	Q3	1-	1	1-	1-	1	1-	1	1-	6+	3	0.1	1-	1+	1-	1+	1-	1-	1-	1-	6	7	8	9	7	CC
27	Q4	0+	0	0+	0+	1-	1	1	2-	5+	3	0.1	1-	0+	1-	0+	1-	1o	1o	2-	5	5	6	4	8	CC
28	Q1	1-	0+	0	1	1-	1-	1-	0+	4+	2	0.0	1-	0+	0o	1+	0+	1o	1-	0o	4	4	3	4	4	CC
29	Q5	0	0	0	1-	1-	1+	2-	1+	6-	3	0.0	0o	0o	0+	1+	1o	1+	2-	2-	6	10	6	4	12	CC
30		3	3+	2-	1	1	1	3+	3	17+	10	0.6	3o	3o	2-	1+	1+	1o	3+	3o	20	19	14	17	16	
Mean											10	0.51									17.6	20.2	16.8	18.4		

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	3o	3+	3+	1+	2-	1o	1o	2-	19	3-	4-	3+	1+	2-	0+	1+	2-	19	76.2	17	24	20	
2	2o	3-	3-	2-	2+	2-	3-	1o	16	2+	3-	2+	2-	2+	2-	2-	1+	16	80.4	31	38	25	
3	3-	3+	1o	1-	1-	1-	2-	1o	12	3o	3+	1+	1-	1-	0o	1+	1o	13	78.8	37	43	23	
4	3+	3o	2+	3-	3-	2-	2+	3o	23	3+	3o	3o	2o	2+	1o	1o	3o	23	78.6	27	42	23	
5	3o	3-	1+	2-	0+	2o	2+	3+	18	3+	3-	1o	2o	0+	2-	2-	4o	20	80.3	25	28	25	
6	2-	1-	3-	3-	3o	3o	1-	3o	21	3-	0+	2+	3-	2+	2o	0+	2o	15	78.3	20	20	23	
7	3-	2+	2-	1+	2o	2o	2-	2+	16	3o	2o	2-	1o	2-	2-	2+	3-	16	77.0	11	14	21	
8	1-	0+	1o	1+	1o	1-	2-	1+	7	1+	1o	1o	2o	1+	0+	1+	1+	8	76.3	10	13	20	
9	1+	1o	0o	0+	2-	2-	1+	2+	9	1o	1+	1o	1-	1+	1+	1o	2+	9	78.3	21	24	23	
10	2+	0+	0o	0+	2-	3-	3o	4+	20	2+	1o	0+	0+	1+	2-	3-	4o	16	78.0	24	26	22	
11	5-	6-	5-	2+	3+	3o	4-	4-	58	4o	6-	4-	2+	3-	3-	3-	4-	45	77.4	23	28	22	
12	3+	1+	2-	3o	3-	2-	1-	1-	17	3-	2-	2o	3+	2-	1o	1-	1-	14	76.9	12	20	21	
13	1-	3-	2+	2-	2o	2+	2-	2o	15	1o	3o	2o	2o	2-	1+	1o	1+	13	79.3	22	22	24	
14	2-	2-	1o	1o	2-	1o	0o	0+	8	1+	2-	1o	1-	1o	1-	0o	0o	6	77.9	24	26	22	
15	2o	0+	1o	1-	0o	0o	0o	0o	4	2-	1-	1o	1-	0o	0o	0o	0o	4	79.2	28	36	24	
16	0o	0o	0o	1o	4-	3+	4-	5-	26	0o	0o	0+	1-	3+	3-	4o	5+	29	75.6	26	30	20	
17	4+	5-	4-	3-	2-	3-	3+	4-	41	4+	4o	4+	3-	1+	2o	4+	4o	44	72.3	13	18	16	
18	4-	3-	4-	3o	4-	2-	2+	2o	28	4+	2+	3o	3+	3+	1+	3-	2o	29	70.7	9	9	14	
19	2o	3+	3o	3-	3+	2-	2-	2o	23	3o	3-	3-	3-	3-	1o	2-	2+	21	70.6	11	2	14	
20	1-	1+	1+	0o	0+	1o	1+	2o	7	0+	1o	2-	0+	0o	1-	1+	2-	6	70.4	0	0	14	
21	0o	1-	1+	3-	4+	4-	4-	4+	34	0o	1-	1o	3-	4-	3+	4-	4+	27	70.9	0	0	15	
22	4+	4-	2-	2-	1o	1-	2o	2-	22	5o	5-	2+	2-	0+	1-	2o	2-	30	71.5	8	1	15	
23	1+	1+	1+	3-	2+	2-	3-	3+	18	1+	2-	1o	2-	2-	2-	3-	3+	15	69.7	9	6	13	
24	4o	3o	3o	2o	2o	2o	1+	2o	24	5o	3+	3-	2+	1o	1+	1o	2+	26	70.7	9	6	14	
25	2-	3-	1+	1o	1+	2-	2-	2+	13	2-	2+	1+	1o	1o	1o	1+	3-	11	69.6	8	2	13	
26	1o	1+	1-	1+	1+	1o	1o	1o	7	1-	1+	1o	1+	0+	0+	0+	1-	5	71.8	17	16	16	
27	1-	0+	0+	0o	1-	1o	1+	2-	5	1-	0+	1o	1-	1-	1-	1o	1+	5	74.1	11	16	18	
28	0+	0+	0o	1+	1-	1+	1-	0o	4	1-	0+	0+	1+	0o	1-	0+	0o	3	73.4	12	13	17	
29	0o	0o	0o	1+	1+	2-	2o	2o	8	0+	0o	1-	1o	1o	1o	1o	1+	5	72.9	8	9	17	
30	3-	3o	2-	1+	1+	1+	4-	3o	20	3o	3o	2-	2-	1o	0+	3o	3-	19	73.7	0	1	18	
Mean									18.1									17.1	75.0	15.8	17.8	19.0	

Daily Average Indices Ap
May 1996 - Apr 1997

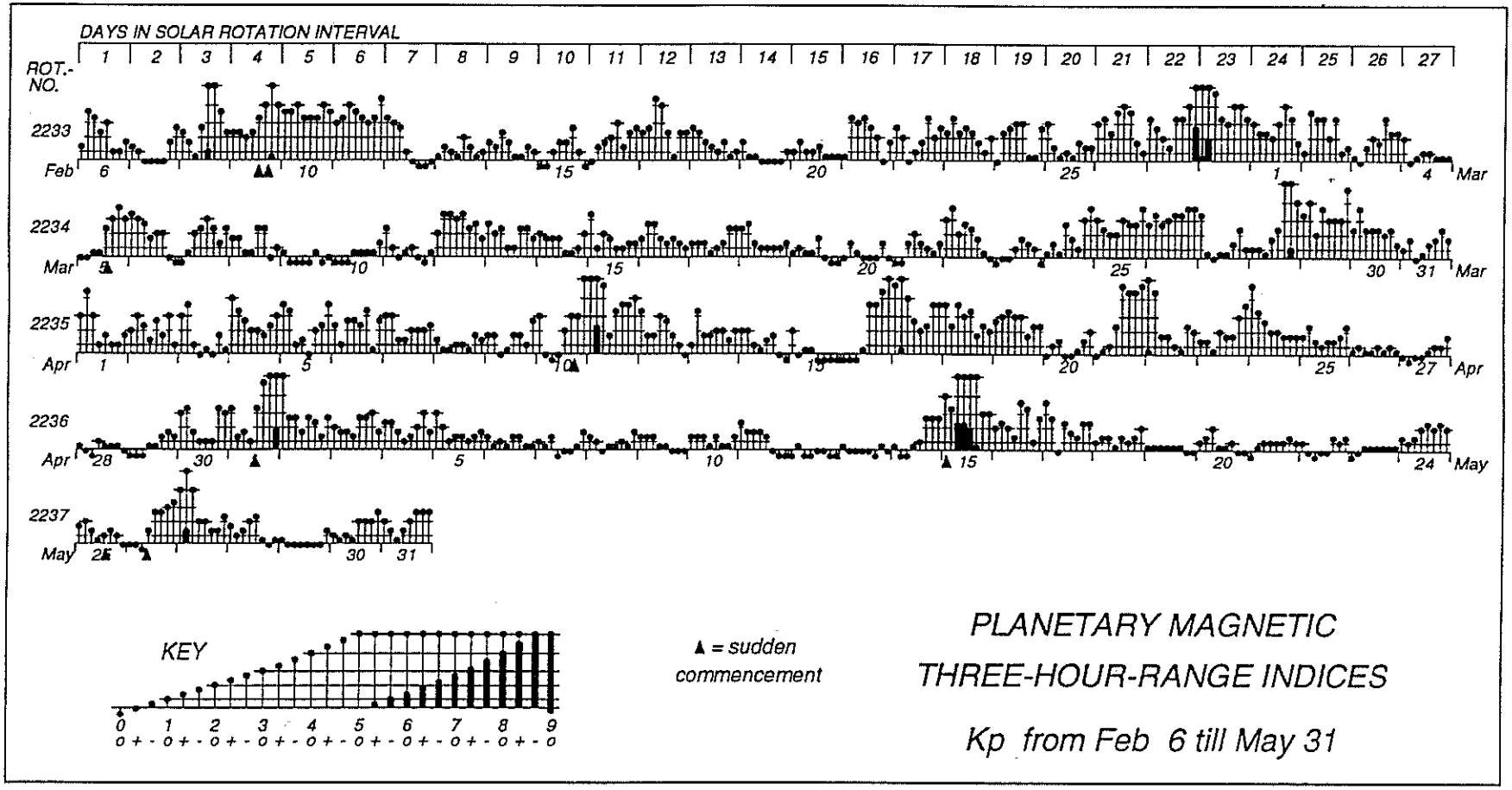


Day	May 96	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr
1	6	4	7	12	6	5	3	3	4	5	13	11
2	5	4	6	9	5	10	2	10	5	11	12	9
3	6	4	10	7	3	15	2	8	4	7	7	7
4	10	4	8	5	9	6	10	11	4	4	4	13
5	7	6	10	6	6	3	6	2	4	6	9	11
6	4	14	5	7	5	2	8	1	3	10	8	10
7	4	4	8	5	7	4	4	4	11	4	7	9
8	5	4	10	4	6	10	4	3	8	22	5	4
9	4	4	3	7	8	20	11	9	5	20	1	6
10	5	4	2	4	31	10	9	25	32	22	2	13
11	4	4	4	4	19	8	4	14	18	21	3	37
12	4	4	8	4	29	15	8	8	12	7	13	9
13	14	2	7	5	18	19	16	6	7	4	8	8
14	11	3	6	12	10	14	21	6	4	5	5	4
15	8	6	8	6	18	5	15	13	4	4	7	2
16	9	5	5	11	17	10	5	12	3	8	7	15
17	7	7	8	10	9	6	13	10	2	14	6	25
18	2	7	5	5	18	27	14	6	5	6	6	14
19	7	12	5	4	15	38	10	1	6	3	3	12
20	10	6	8	7	34	16	8	2	7	4	3	4
21	8	4	7	5	29	8	6	6	10	10	4	20
22	6	4	6	5	28	38	4	9	6	8	10	15
23	4	4	5	11	27	37	4	9	4	9	3	9
24	7	6	4	8	8	10	12	4	4	9	9	11
25	6	3	6	16	10	6	7	6	6	6	12	6
26	6	4	5	10	30	4	7	3	18	15	17	3
27	9	6	3	14	16	4	10	3	16	30	6	3
28	4	6	11	13	15	14	7	3	24	37	21	2
29	8	9	4	38	7	14	5	4	9		20	3
30	7	5	7	16	4	14	2	10	15		10	10
31	7		15	11		7		5	8		5	5
Mean	7	5	7	9	15	13	8	7	9	11	8	10

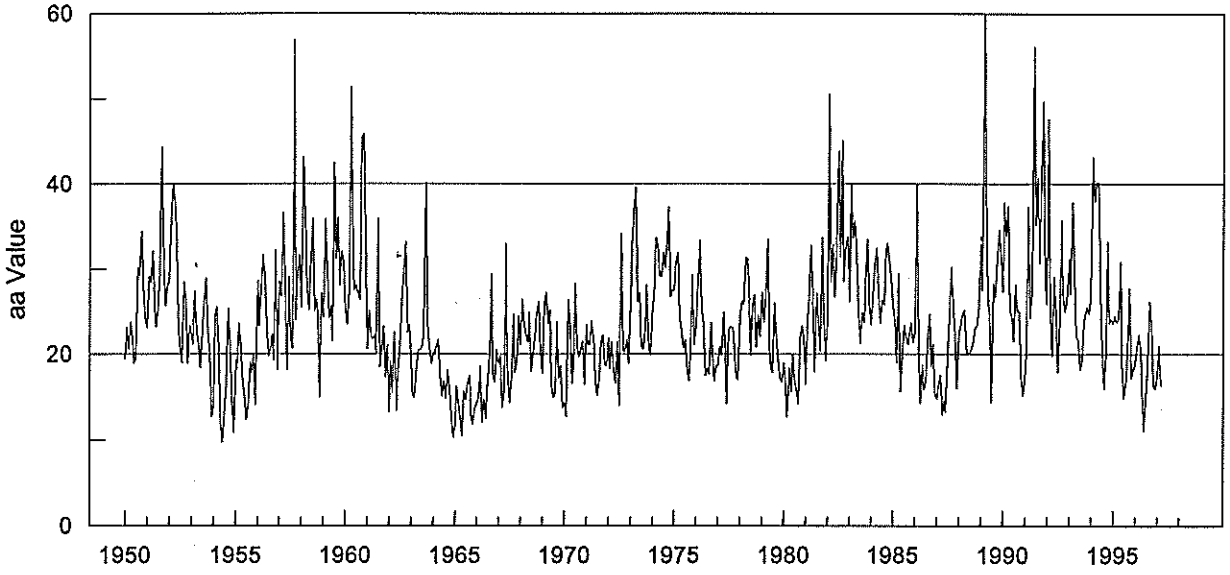
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through April 30, 1997



Monthly Mean aa Index Jan 1950 - Mar 1997

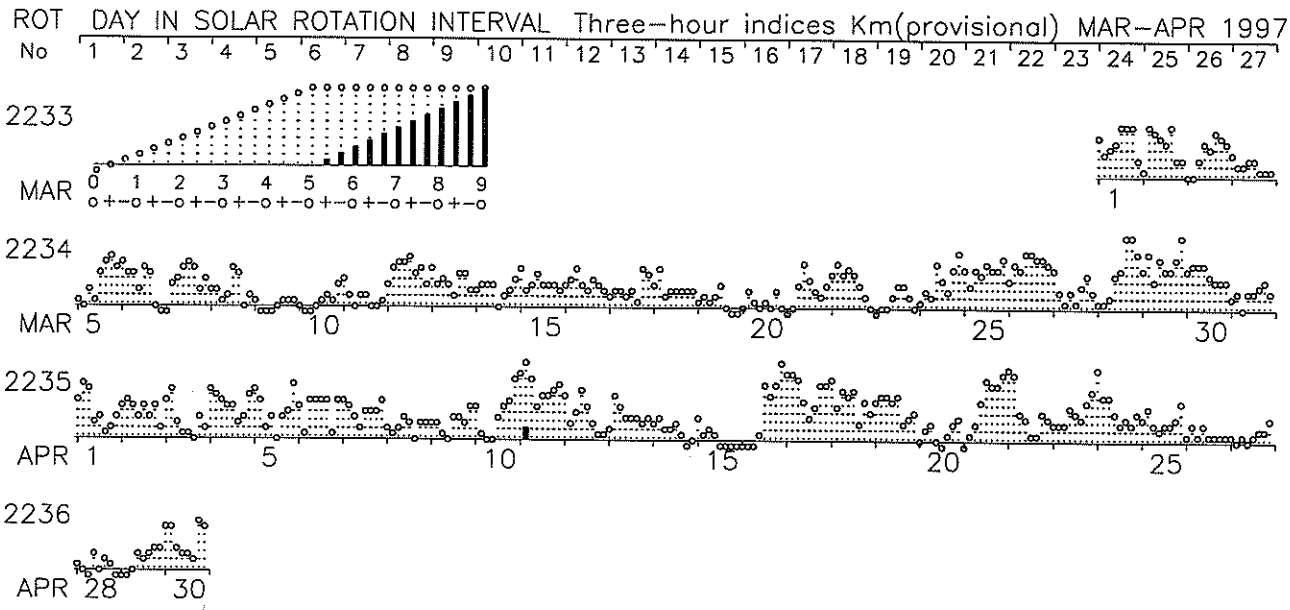


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4									18.3

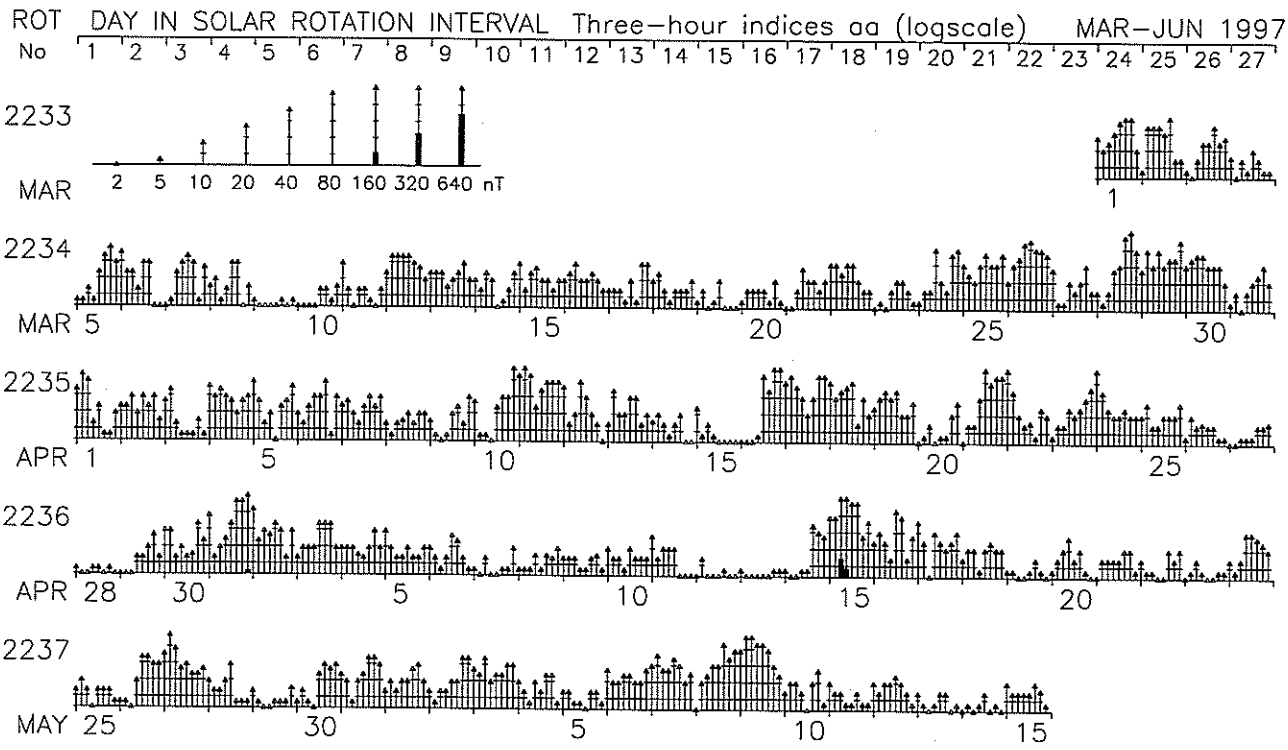
PLANETARY GEOMAGNETIC ACTIVITY

3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

ISGI PUBLICATION OFFICE - EMail : ISGI.PUBOFF@cetp.ipsl.fr
CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX - FRANCE



Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.



Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.

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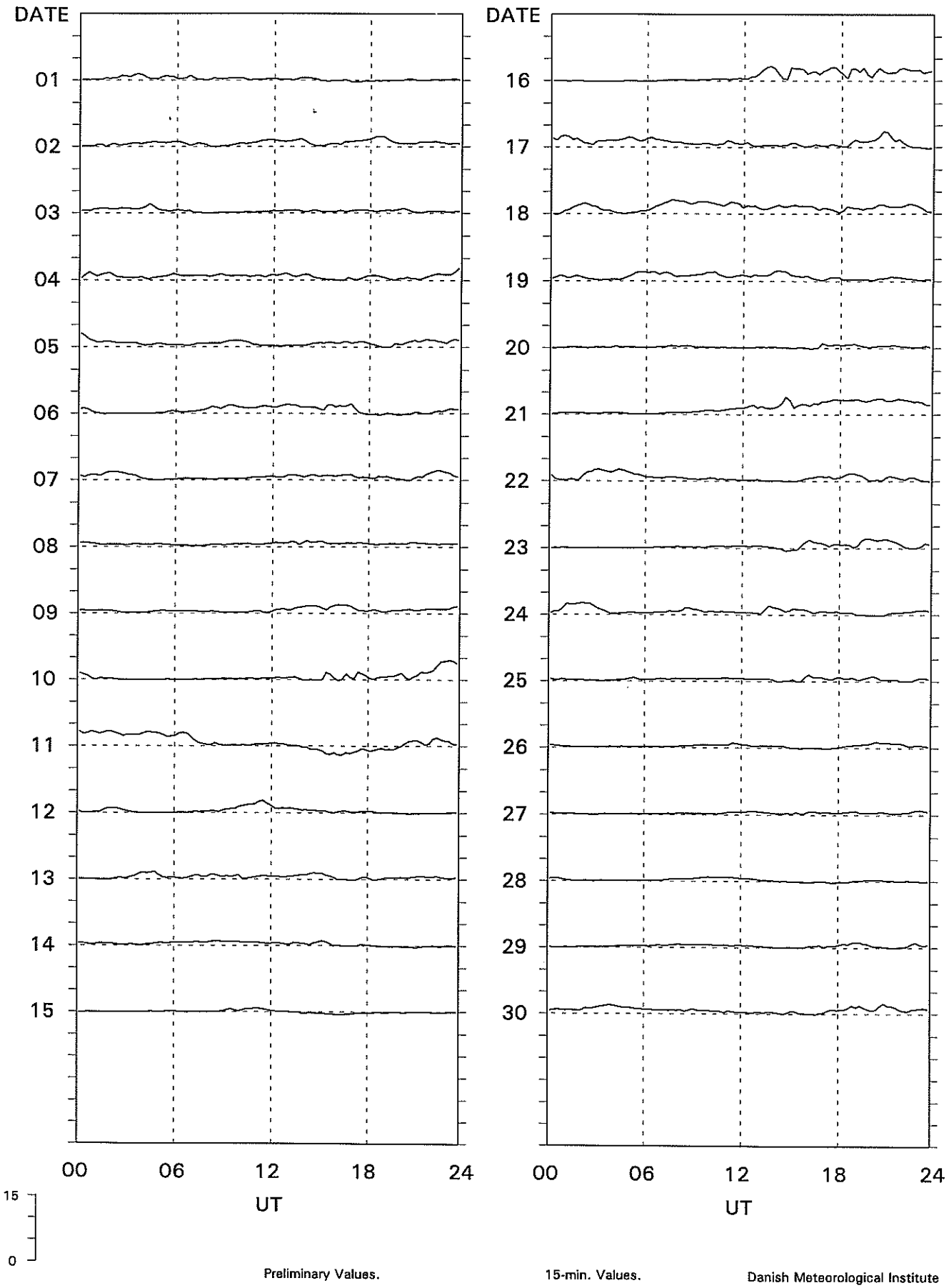
111
Apr 97

Thule

April, 1997



Preliminary Values.

15-min. Values.

Danish Meteorological Institute

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

APRIL 1997

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-1	1	0	-3	4	6	8	-5	1	2	-3	-5	-2	-5	-10	-11	-10	-7	-6	-5	-7	-8	-9	-10
2	-9	-9	-8	-13	-11	-3	-11	-16	-14	-11	-16	-19	-24	-26	-24	-19	-16	-19	-19	-21	-19	-14	-16	-20
3	-23	-20	-22	-24	-22	-19	-18	-18	-17	-15	-15	-15	-11	-12	-12	-9	-7	-7	-10	-12	-13	-11	-11	-12
4	-7	-1	-5	-7	-9	-14	-17	-24	-24	-21	-23	-23	-20	-21	-21	-17	-16	-13	-13	-13	-13	-14	-13	-20
5	-23	-28	-32	-28	-30	-28	-27	-26	-25	-20	-19	-18	-17	-18	-18	-19	-20	-18	-17	-14	-11	-10	-15	-19
6	-21	-19	-15	-12	-9	-9	-13	-11	-12	-12	-7	-9	-12	-22	-25	-22	-18	-16	-12	-10	-9	-8	-10	-14
7	-15	-20	-21	-25	-23	-20	-20	-21	-18	-16	-16	-19	-19	-19	-22	-22	-21	-20	-13	-12	-13	-15	-18	-20
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9	-21	-20	-20	-19	-18	-17	-17	-16	-12	-9	-10	-11	-10	-12	-17	-19	-17	-16	-14	-11	-11	-14	-22	-25
10	-23	-19	-15	-10	-8	-3	0	1	1	1	0	1	3	3	8	6	4	8	8	15	5	3	-11	-15
11	-31	-54	-68	-74	-80	-69	-69	-68	-53	-48	-44	-43	-29	-30	-16	-16	-21	-8	-13	-10	2	-15	-30	-32
12	-39	-36	-28	-21	-17	-16	-17	-19	-21	-22	-20	-19	-15	-14	-14	-12	-11	-12	-12	-14	-16	-15	-15	-17
13	-17	-15	-15	-14	-15	-15	-12	-14	-15	-12	-12	-11	-11	-14	-19	-22	-19	-17	-18	-16	-17	-17	-19	-18
14	-16	-14	-10	-8	-8	-9	-11	-14	-15	-13	-11	-11	-12	-16	-16	-16	-16	-14	-10	-5	-4	-1	-2	-2
15	-1	-1	-2	-4	-3	-2	0	1	-1	0	0	-1	-1	-2	-3	-2	-2	-3	-2	-2	-1	-1	-4	-6
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26	-6	-4	-6	-3	-4	-4	-6	-7	-8	-8	-6	-7	-6	-5	-6	-6	-5	-1	0	-2	-4	-2	-1	-2
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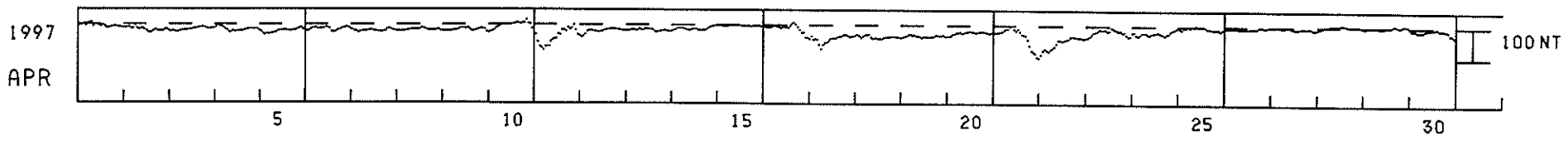
28	-6	-4	-1	1	2	3	5	5	5	6	6	8	8	8	6	4	3	3	4	4	4	4	1	-1
29	-3	-1	2	1	1	2	1	-1	-3	-2	-2	1	0	1	5	7	6	4	2	5	7	8	5	-1
30	-8	-8	-8	-13	-12	-14	-11	-8	-5	-5	-3	-3	-3	-2	-6	-6	-7	-7	-8	-12	-19	-23	-29	-28



Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for April 1997.

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

APRIL 1997

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
FRD	49.4N	10	17--	..	..	..	..	11(2)	6	31	136	66	12	03
KRC	16.4N	10	2217	..	..	..	..	10(8) 11(1)	5	8	102	43	11	--
UJJ	13.6N	10	1300	..	..	..	..		-	5	87	30	11	23
NGP	11.3N	10	1300	..	..	..	..		-	5	90	27	11	23
ABG	09.4N	10	1300	..	..	..	..	10(8) 11(1,2,3)	5	5	86	41	11	23
HYB	07.6N	10	1300	..	..	..	..	11(1)	6	5	113	32	12	18
GUA	04.3N	10	13--	..	..	..	..	11(1)	5	--	100	10	11	10
PND	02.0N	10	1300	..	..	..	..		-	4	81	77	11	23
ETT	00.7S	10	1300	..	..	..	..		-	--	127	73	12	14
TRD	01.1S	10	1300	..	..	..	..		-	3	111	89	11	23
HER	33.6S	10	21--	..	..	..	..	11(8)	5	26	76	75	12	03
GUA	04.3N	11	11--	..	..	..	..	11(8)	5	--	70	20	12	03
FRD	49.4N	16	13--	..	..	..	..	16(8) 17(1)	5	22	110	59	19	14
KRC	16.4N	16	1207	..	..	..	..	16(6) 17(2)	5	7	74	42	17	07
UJJ	13.6N	16	1300	..	..	..	..		-	5	64	27	17	22
NGP	11.3N	16	1300	..	..	..	..		-	--	--	--	17	22
ABG	09.4N	16	1300	..	..	..	..	16(6)	5	4	58	35	17	22
HYB	07.6N	16	1321	SC	- 0.1	7	- 1	16(6) 17(2)	5	4	82	26	18	21
PND	02.0N	16	1300	..	..	..	..		-	3	64	65	17	22
ETT	00.7S	16	1321	SC	- 0.1	6	6		-	--	117	50	19	21
TRD	01.1S	16	1300	..	..	..	..		-	3	103	66	17	22
HER	33.6S	16	13--	..	..	..	..	16(8)	6	26	80	105	17	13
KRC	16.4N	21	0425	..	..	..	..	21(6,7)	5	7	111	28	22	10
UJJ	13.6N	21	1000	..	..	..	..		-	5	83	33	22	21
NGP	11.3N	21	1000	..	..	..	..		-	--	--	--	22	21
ABG	09.4N	21	1000	..	..	..	..	21(5,6) 23(8) 24(1) 30(7)	4	5	100	47	22	21
HYB	07.6N	21	0500	..	..	..	..	21(5)	5	6	133	33	24	13
GUA	04.3N	21	11--	..	..	..	..	21(8)	6	--	100	20	22	10
PND	02.0N	21	1000	..	..	..	..		-	5	101	50	22	21
ETT	00.7S	21	0500	..	..	..	..		-	--	194	35	24	20
TRD	01.1S	21	1000	..	..	..	..		-	4	120	51	22	21
HER	33.6S	21	16--	..	..	..	..	22(1)	5	25	98	131	22	06
HER	33.6S	23	22--	..	..	..	..	24(1)	5	16	62	63	24	05
GUA	04.3N	24	00--	..	..	..	..	24(1)	5	--	70	20	24	11

Stations:

ABG = ALIBAG
AMS = MARTIN DE VIVIES
ANN = ANNAMALAINAGAR
BJI = BEIJING
CAN = CANBERRA
CMO = COLLEGE
CZT = PORT ALFRED
DRV = DUMONT D'URVILLE
ETT = ETAIYAPURAM
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KRC = KARACHI
NGP = NAGPUR
PAF = PORT AUX FRANCAIS
PMG = PORT MORESBY
PND = PONDICHERRY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN

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

APRIL 1997

Storm Sudden Commencements (SSC)

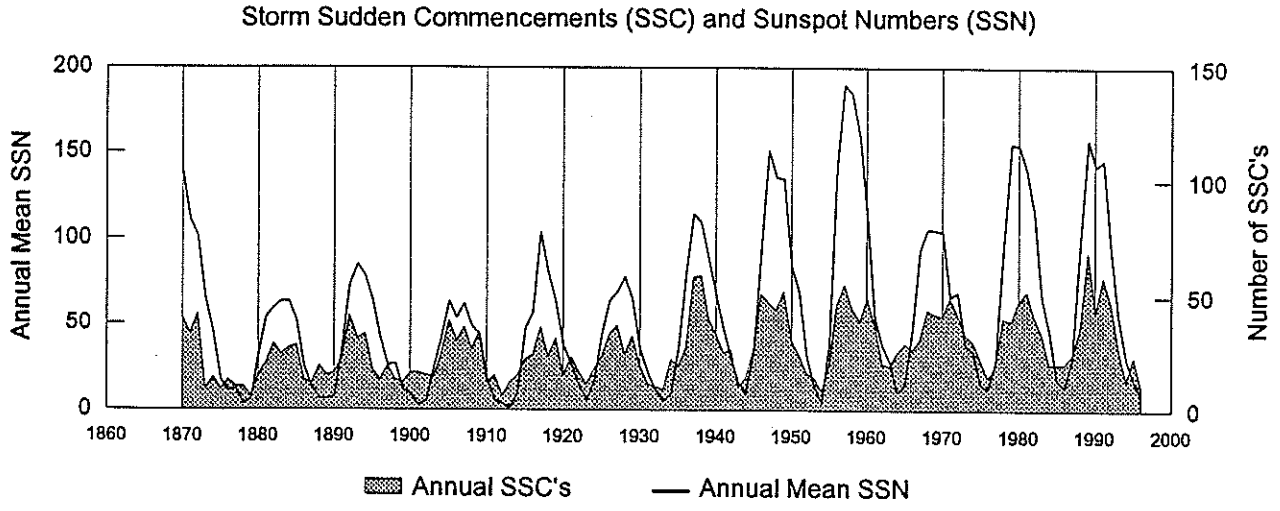
Day	Time	Quality: Station Group*
10	1745	A: HRB
		B: COI
		C: NGK BDV* GCK*
16	1320	A: HRB*
		B: NAG* BJI SPT* LNP
		C: WNG GCK* MMB COI HTY TEN HYB ETT

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
01	1345-1420	WNG BDV+ TEN
17	1228-1234	BDV
21	1359-1407	NAG

REPORTING OBSERVATORIES (up to the 3rd of June 1997):
SOD DOB NUR WNG NGK BDV CLF HRB NAG GCK MMB EBR COI BJI SPT FRD KAK HTY KNY QUE TEN LNP HYB ETT HER CNB

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, but unmistakable; C means very poor, doubtful; and - means no quality figure given. The * means that the SSC, at least in one component, was preceded by a small reversed impulse. SSCs are given only when five or more stations report the event. SFEs include all reports. If an SFE is confirmed by solar or ionospheric events, the name of the station is identified with a plus sign (+).



CONTENTS

Prompt Reports Number 634 Part I

LATE DATA

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

MARCH 1997

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-35	-33	-35	-38	-39	-40	-37	-33	-32	-26	-27	-30	-28	-26	-21	-28	-28	-25	-28	-23	-24	-27	-32	-33
2	-31	-26	-26	-27	-33	-31	-33	-30	-28	-22	-20	-20	-21	-20	-22	-21	-26	-26	-23	-19	-17	-18	-21	-20
3	-20	-21	-23	-26	-26	-24	-25	-22	-19	-16	-19	-18	-17	-18	-20	-24	-22	-23	-28	-27	-25	-26	-26	-24
4	-22	-23	-22	-24	-24	-22	-20	-21	-20	-16	-13	-14	-14	-15	-13	-13	-15	-17	-17	-18	-19	-19	-19	-16
5	-14	-12	-5	-7	-9	-12	-12	-13	-15	-13	-14	-13	-11	-9	7	8	15	3	-23	-22	-15	-11	-13	-20
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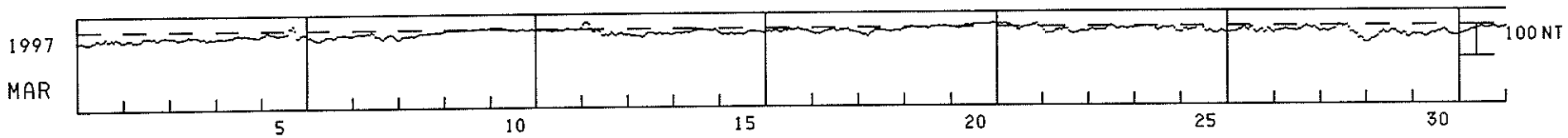

Note: Beginning January 1997, the Provisional Dst Index is derived from data obtained at the following five observatories: Hermanus, Alibag, Kakioka, Honolulu and San Juan; that is, Alibag is added to the four observatories previously used. This addition should improve the quality of the Provisional Equatorial Dst Index.

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

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