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MAY 1997 NUMBER 633 - Part I

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Data for March, April 1997 and Late Data

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SOLAR-GEOPHYSICAL DATA

Number 633

(Issued in Two Parts)

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CONTENTS

PART I (PROMPT REPORTS) Page

PART II (COMPREHENSIVE REPORTS) Page

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	SEP 96	OCT	NOV	DEC	JAN 97	FEB	MAR	APR
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.2aa	International Provisional Sunspot Numbers	626A 23	627A 25	628A 23	629A 25	630A 25	631A 23	632A 24	633A 23
A.2c	American Sunspot Numbers	626A 23	627A 25	628A 23	629A 25	630A 25	631A 23	632A 24	633A 23
A.3a	Mt. Wilson Magnetograms	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.3b	Sunspot Mag Class and Regions	627A 85	628A 86	629A 86	630A 86	631A 86	632A 79	633A 86	
A.3c	Kitt Peak Magnetograms	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.3d	Mean Solar Magnetic Field (Stanford)	626A 27	627A 29	628A 29	629A 31	630A 29	631A 29	632A 29	633A 28
A.3e	Stanford Magnetograms	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.4	H-alpha Filtergrams	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.5d	Photometric Ca II Faculae (San Fernando)	May 88-Dec 91 in 630B 37; Jan 92-Dec 96 in 631B 22							
A.6c	Stanford Solar Mag Field Synoptic Maps	627A 34	628A 34	629A 36	630A 34	631A 34	632A 32	633A 34	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	627A 39	628A 38	629A 40	630A 38	631A 38	632A 36	633A 38	
A.6f	Active Prominences and Filaments	631B 16	632B 15	633B 20					
A.6g	Sac Peak Coronal Line Synoptic Maps	627A 36	628A 36	629A 38	630A 36	631A 36	632A 34	633A 36	
A.6h	Photometric White Light (San Fernando)	Aug 95-Jun 96 in 624B 24; Jul-Dec 96 630B 32							
A.7h	Coronal Line Emission (Sac Peak)	627A 40	628A 39	629A 41	630A 39	631A 39	632A 37	633A 39	
A.8aa	2800 MHz- Solar Flux (Penticton)	626A 23	627A 25	628A 23	629A 25	630A 25	631A 23	632A 24	633A 23
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	626A 23	627A 25	628A 23	629A 25	630A 25	631A 23	632A 24	633A 23
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	626A 23	627A 25	628A 23	629A 25	630A 25	631A 23	632A 24	633A 23
A.10g	Nancay Radioheliograph - 164&327 MHz	627A 91	628A 92	629A100	630A 96	631A 93	632A 88	633A 97	
A.11g	Solar X-ray GOES (graphs/event table)	631B 9	632B 7	633B 13					
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11n	Solar YOHKOH Soft X-ray Images	627A 70	628A 70	629A 71	630A 70	631A 70	632A 65	633A 70	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	626A 4	627A 4	628A 4	629A 4	630A 4	631A 4	632A 4	633A 4
A.12h	Interplanetary Particles (SAMPEX)	Jul 95-Dec 96 in 632B 22; Jan-Feb 97 in 633B 28							
A.13e	Solar Plasma (IMP-8)	631B 18	632B 18	633B 24					
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Dec 95 in 620B 50; Jan-Dec 96 in 632B 64							
A.16d	UARS Solar Irradiance	1991-1993 in 608B 40							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan 94 in 611A118							
A.17	IMP-8 Interplanetary Mag Field	631B 19	632B 19	633B 25					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	626A 26	627A 28	628A 26	629A 28	630A 28	631A 26	632A 27	633A 26
C.1ba	H-alpha Flare Groups	631B 4	----------	633B 4					
C.1d	Flare Patrol Obsevations	631B 6	632B 4	633B 7					
C.3	Radio Bursts Fixed Frequency	631B 8	632B 5	633B 9					
C.3	Radio Bursts Fixed Frequency Selected	----------	----------	628A 28	629A 30	----------	631A 28	----------	633A 28
C.4	Radio Bursts Spectral	627A 87	628A 88	629A 92	630A 91	631A 89	632A 83	633A 90	
C.6	Sudden Ionospheric Disturbances	627A 86	628A 87	629A 90	630A 89	631A 88	632A 82	633A 89	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	627A100	628A101	629A109	630A105	631A102	633A114	633A103	
D.1ba	27-day Chart of Kp Indices	627A102	628A103	629A111	630A107	631A104	632A 99	633A105	
D.1cb	Monthly Mean aa Indices	627A103	628A104	629A112	630A108	631A105	632A100	633A106	
D.1d	Principal Magnetic Storms	627A107	628A108	629A116	630A115	631A109	632A103	633A109	
D.1f	Sudden Commencements/Flare Effects	627A109	628A109	629A117	630A116	631A110	632A104	633A110	
D.1g	Equatorial Indices Dst	627A106	628A107	629A115	630A114	633A112	633A113		
D.1i	Polar Cap (PC) Index	627A105	628A106	629A114	630A112	631A107	632A102	633A108	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1h	Cosmic Ray Neutron Cts (Thule)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1i	Cosmic Ray Neutron Cts (Kiel)		628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1j	Cosmic Ray Neutron Cts (Tokyo)								
F.1n	Cosmic Ray Neutron Cts (Beijing)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1b	Cosmic Ray Neutron Cts (Haleakala)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1o	Cosmic Ray Neutron Cts (Moscow)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
F.1p	Cosmic Ray Neutron Cts (Calgary)	627A 92	628A 93	629A101	630A 97	631A 94	632A 89	633A 98	
H.	MISCELLANEOUS								
H.60	IUWDS Alert Periods	626A 19	627A 20	628A 19	629A 20	630A 20	631A 18	632A 20	633A 19

The entry "627A 40" under Sep 96, for example, means that the sunspot drawings for Sep 1996 appear in SOLAR-GEOPHYSICAL DATA No. 627, Part I, and that they begin on page 40. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

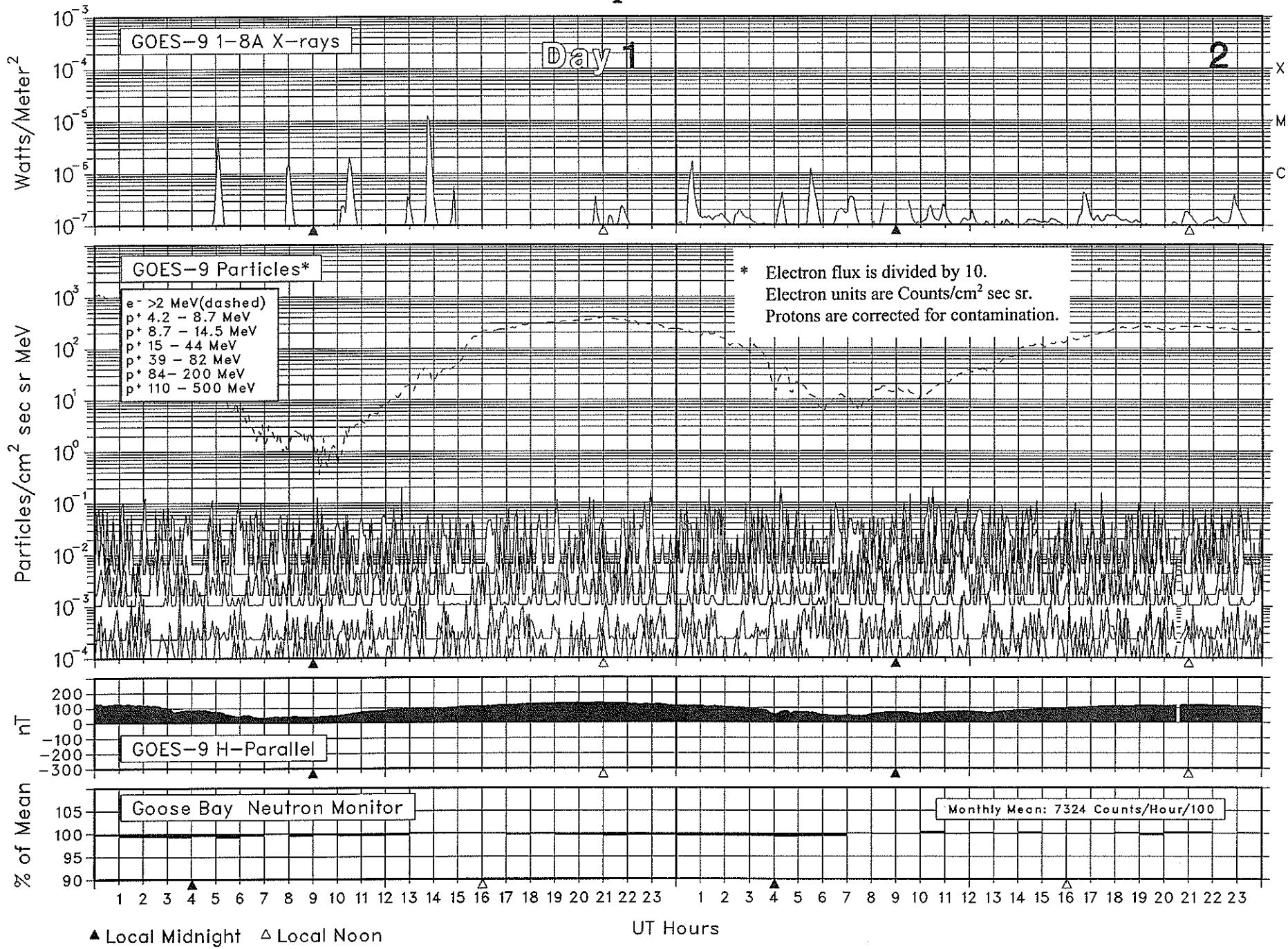
CONTENTS

Prompt Reports

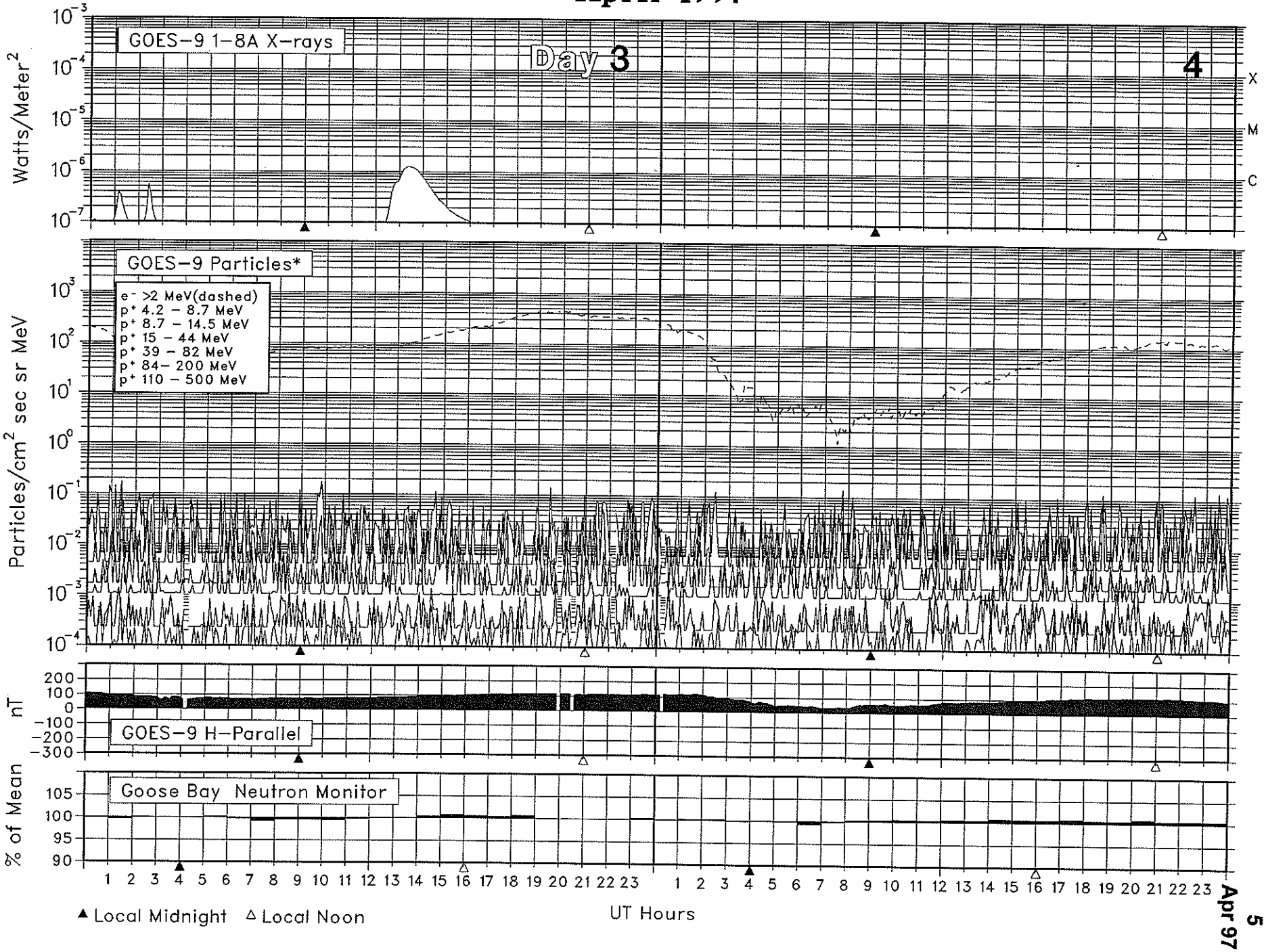
Number 633 Part I

DATA FOR APRIL 1997

SOLAR-TERRESTRIAL ENVIRONMENT
April 1997



SOLAR-TERRESTRIAL ENVIRONMENT
April 1997



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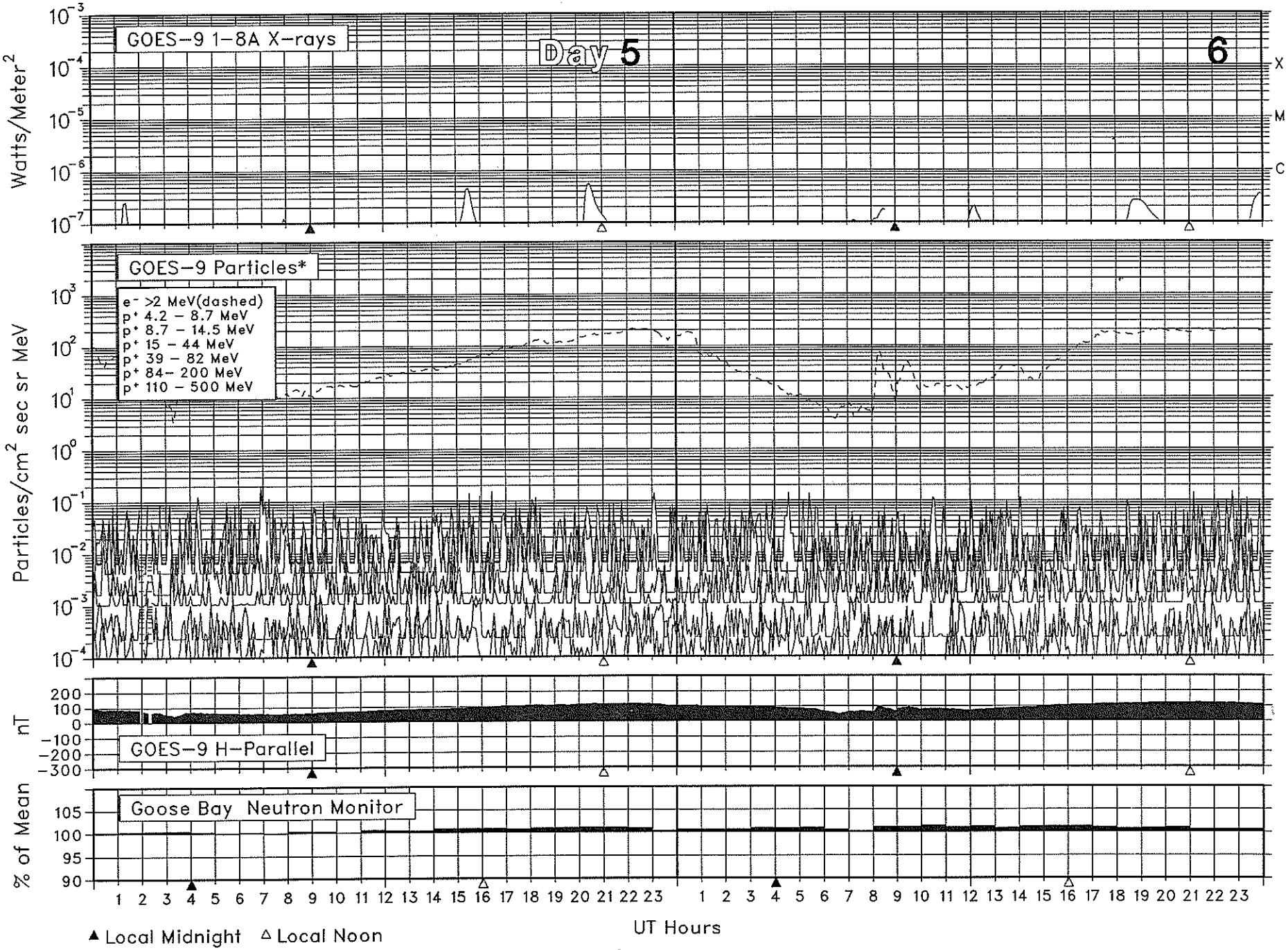
April 1997



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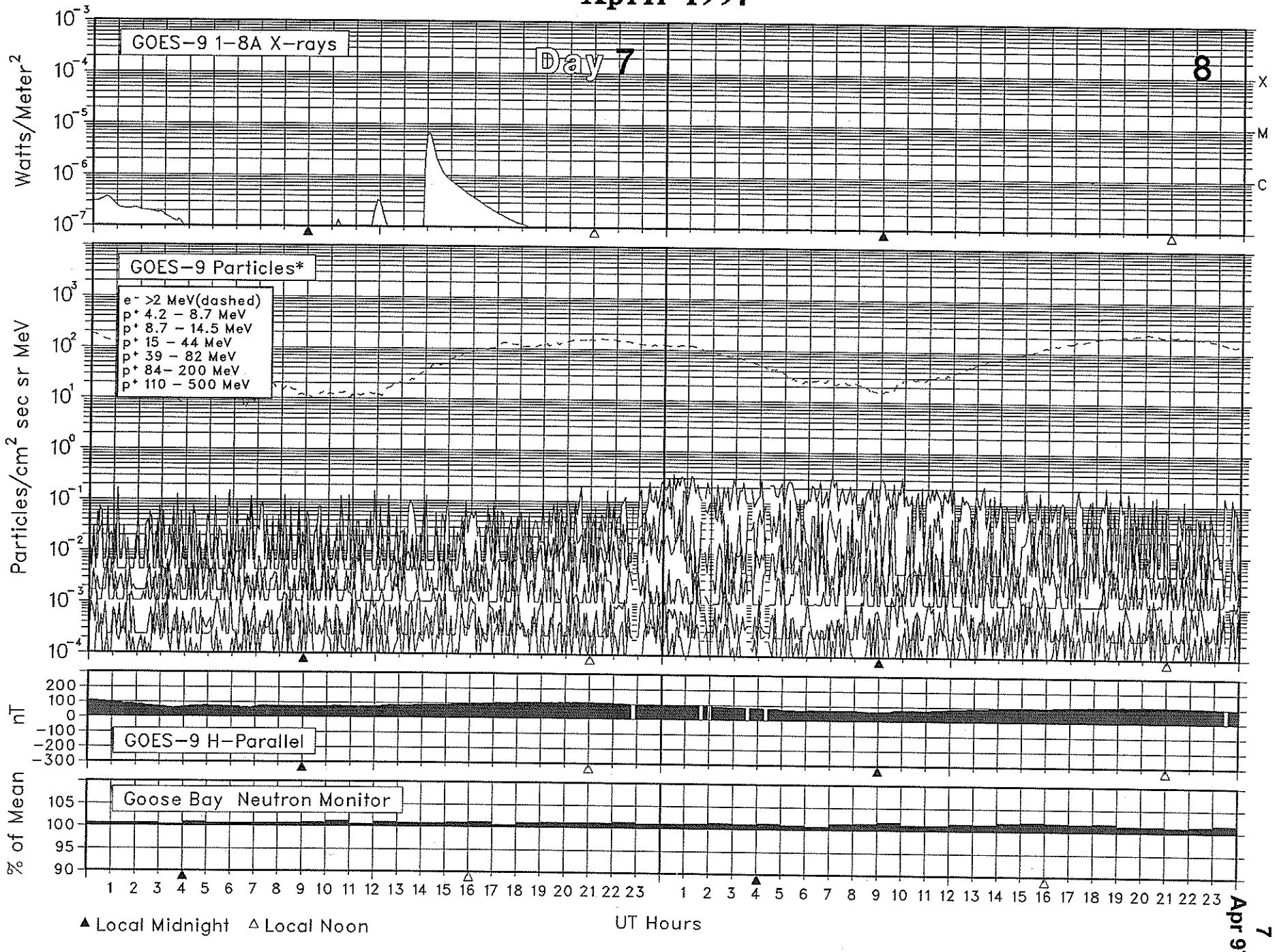
April 1997



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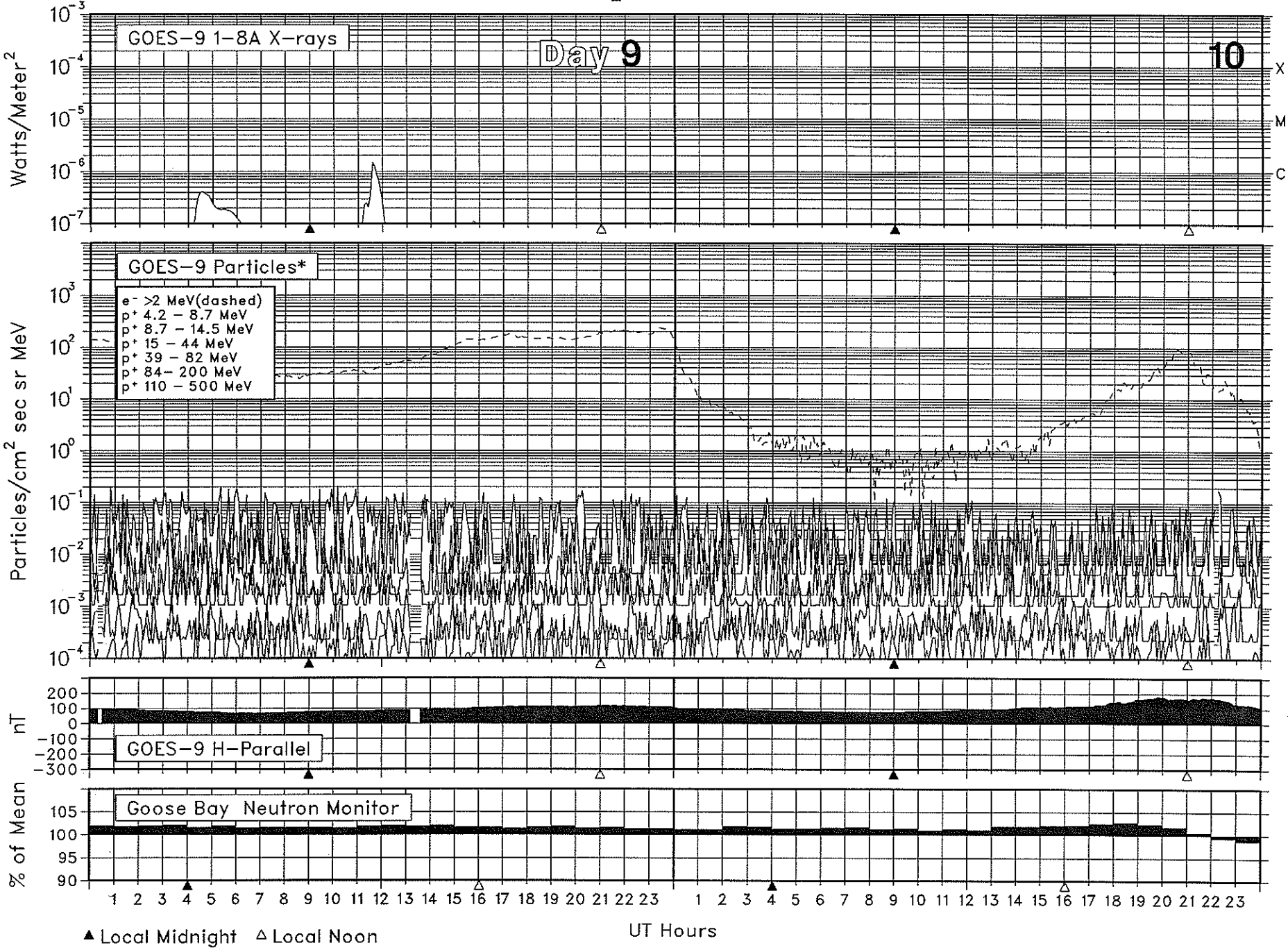
April 1997



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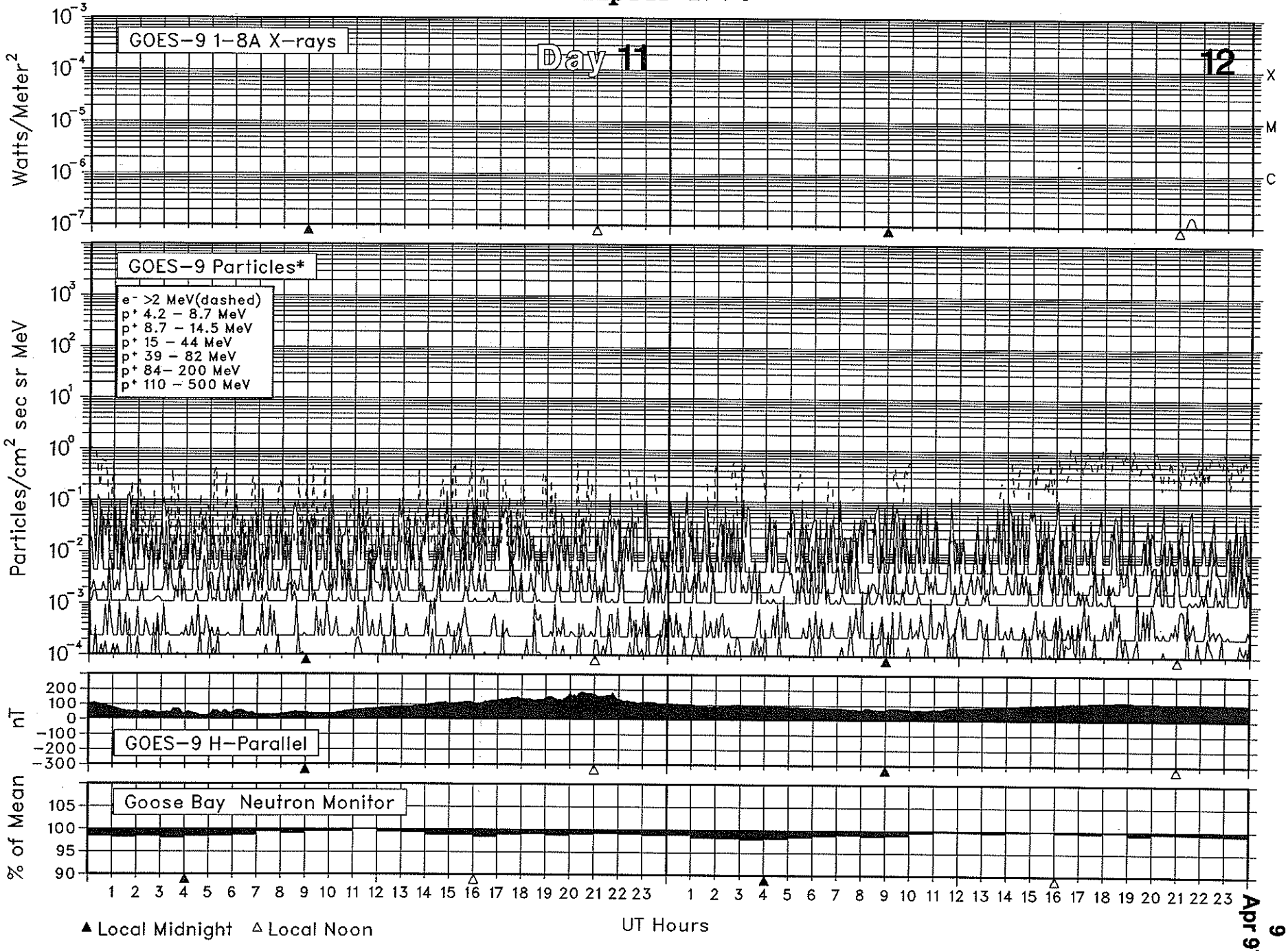
April 1997



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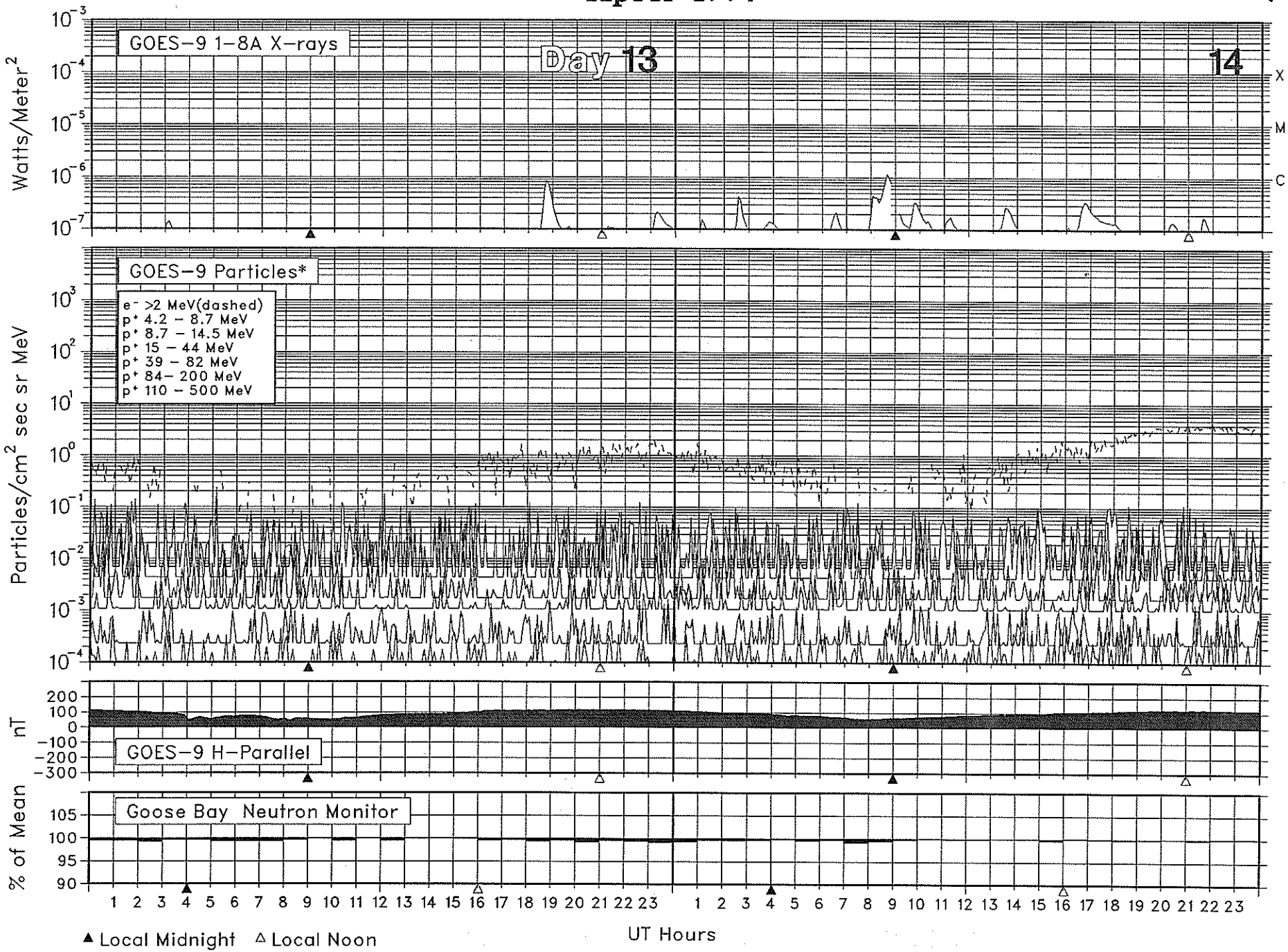
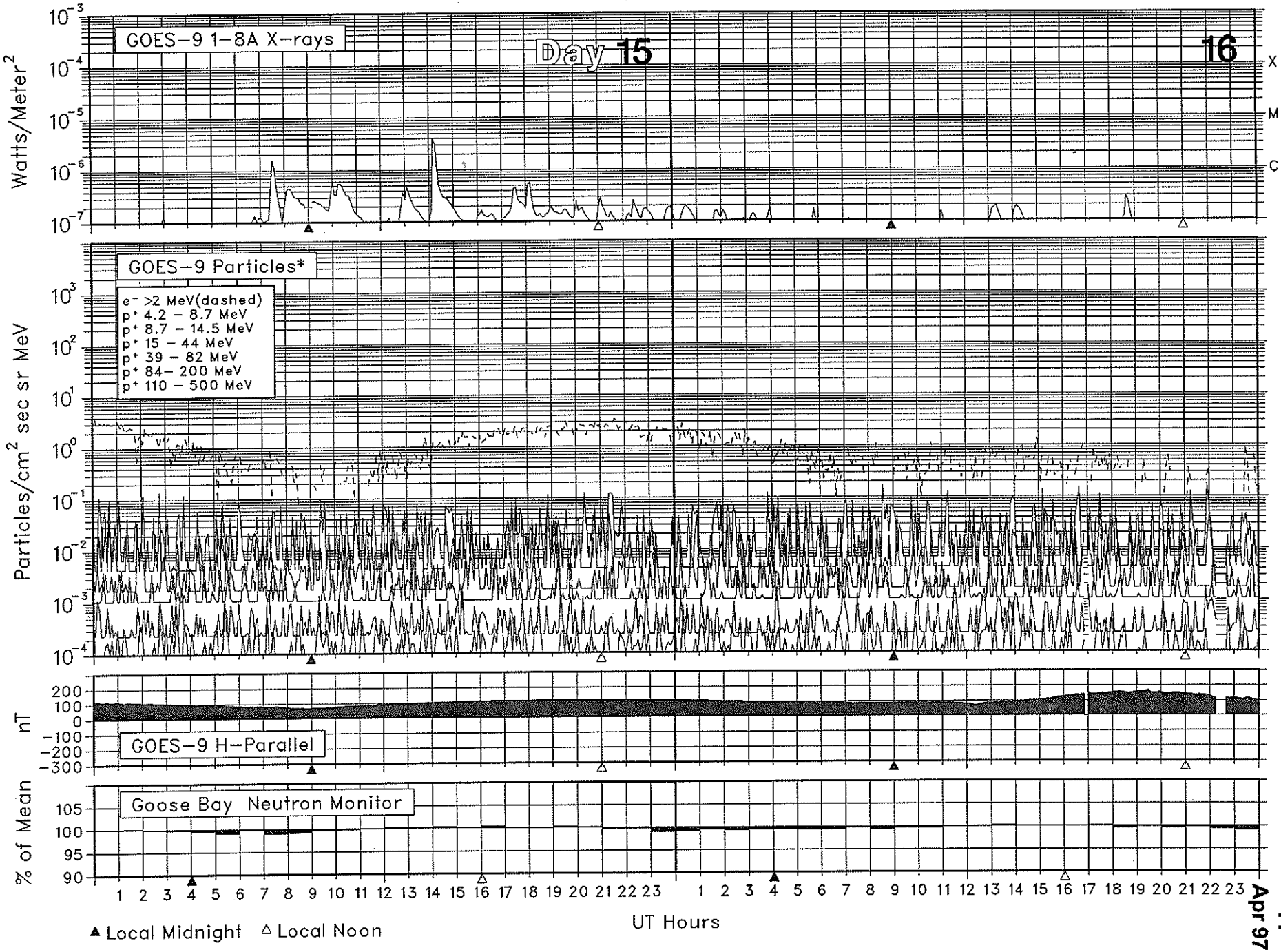
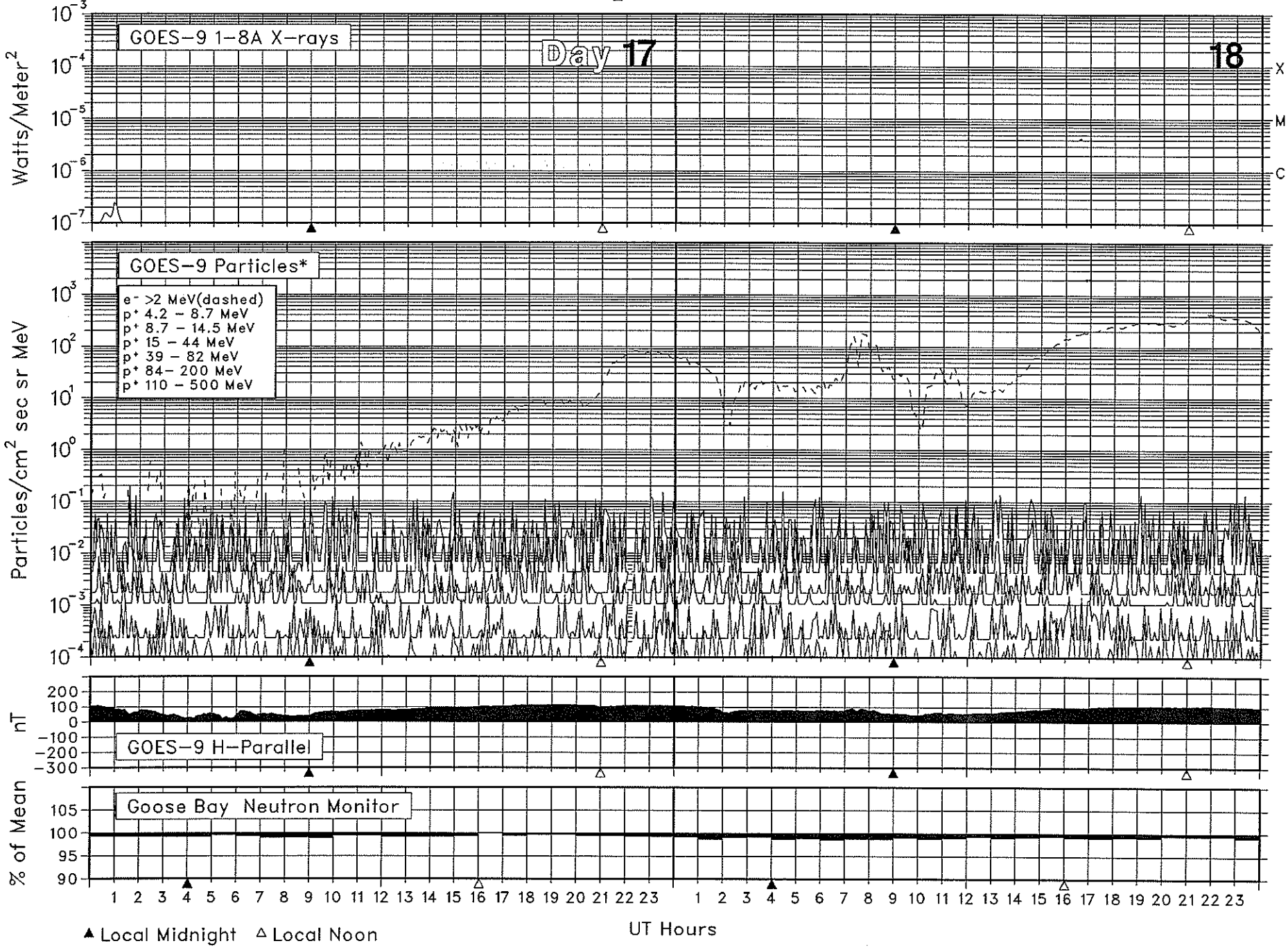


SOLAR-TERRESTRIAL ENVIRONMENT
April 1997



11 Apr 97

SOLAR-TERRESTRIAL ENVIRONMENT
April 1997



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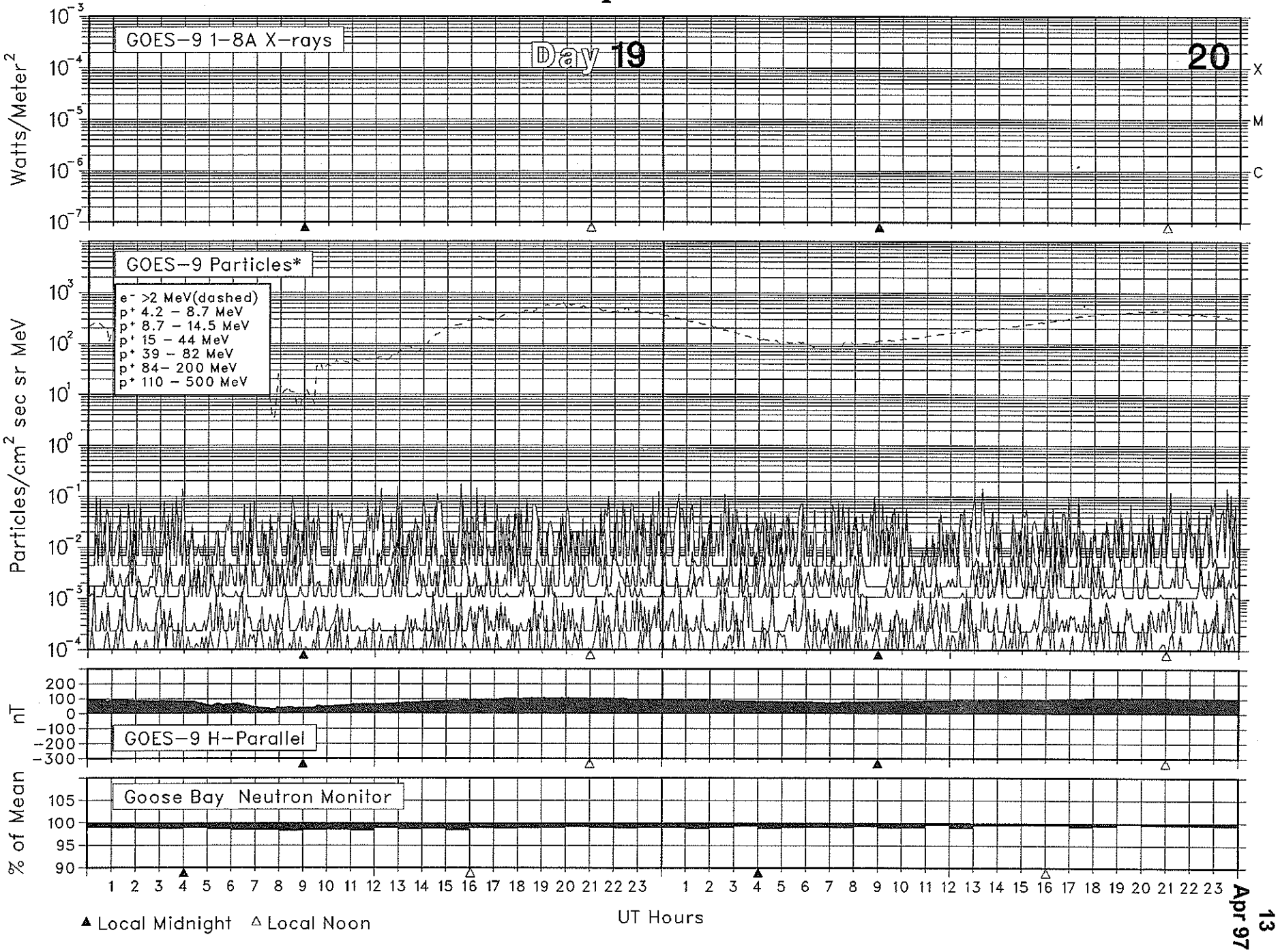

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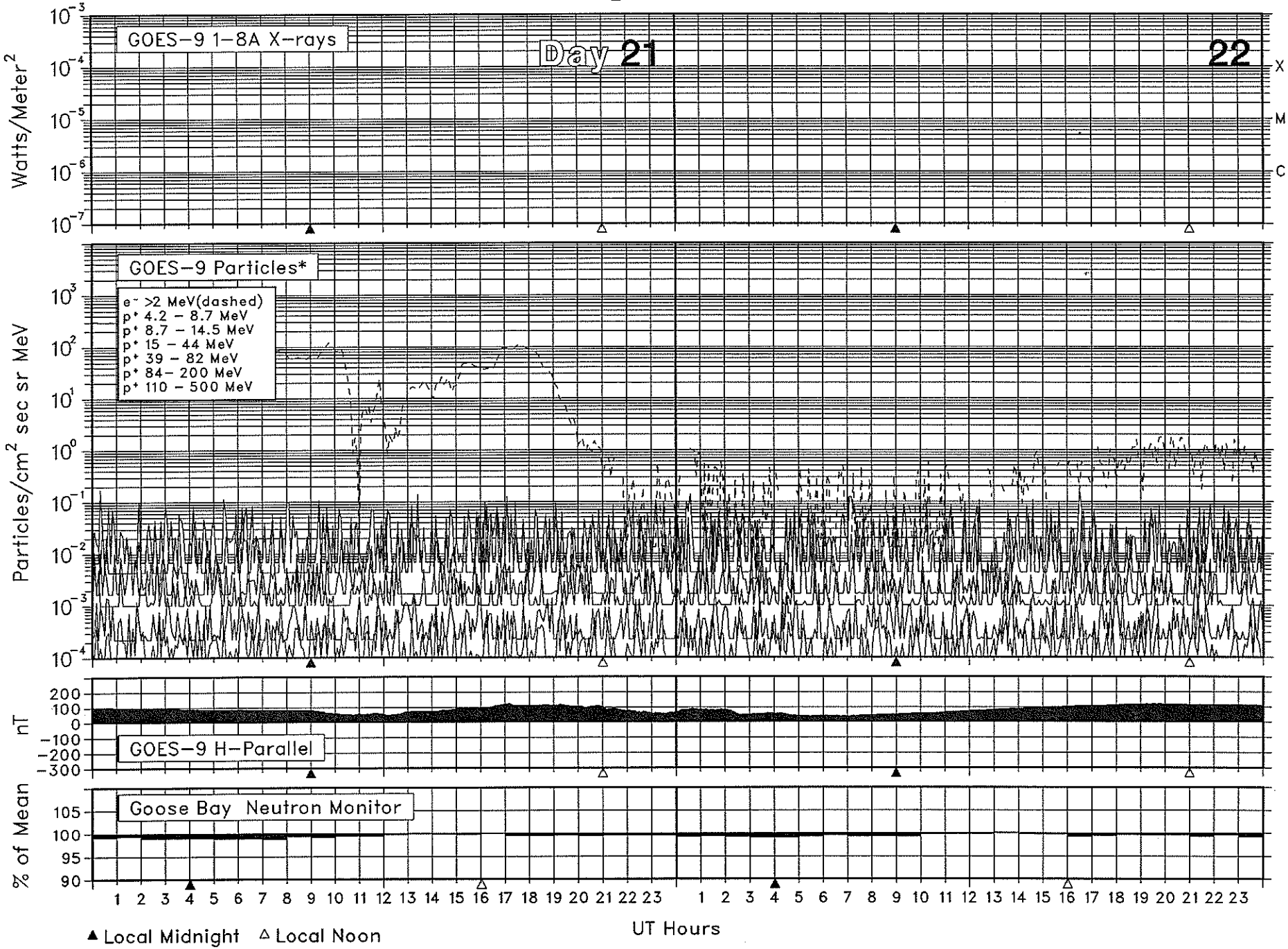
April 1997



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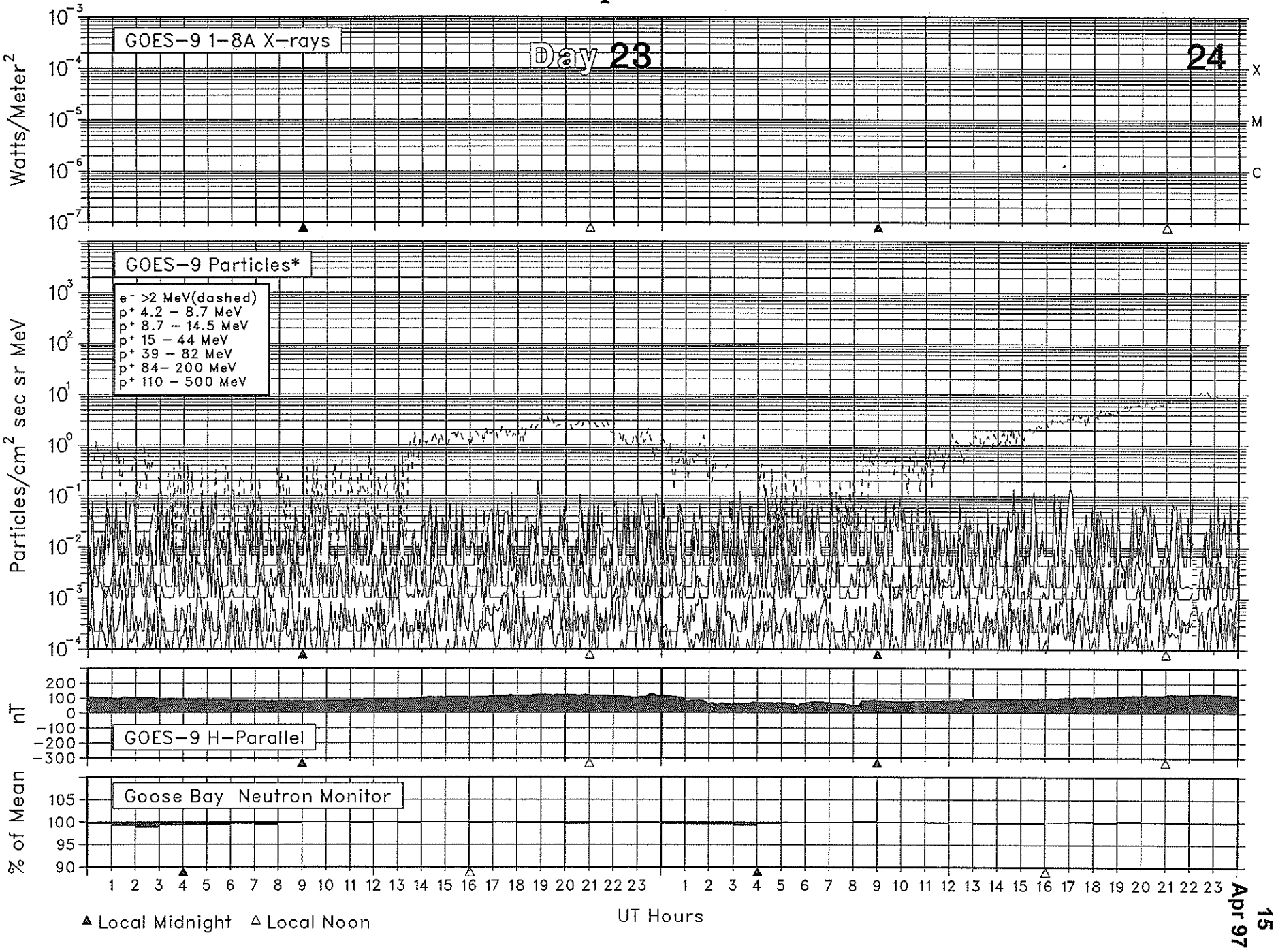
April 1997



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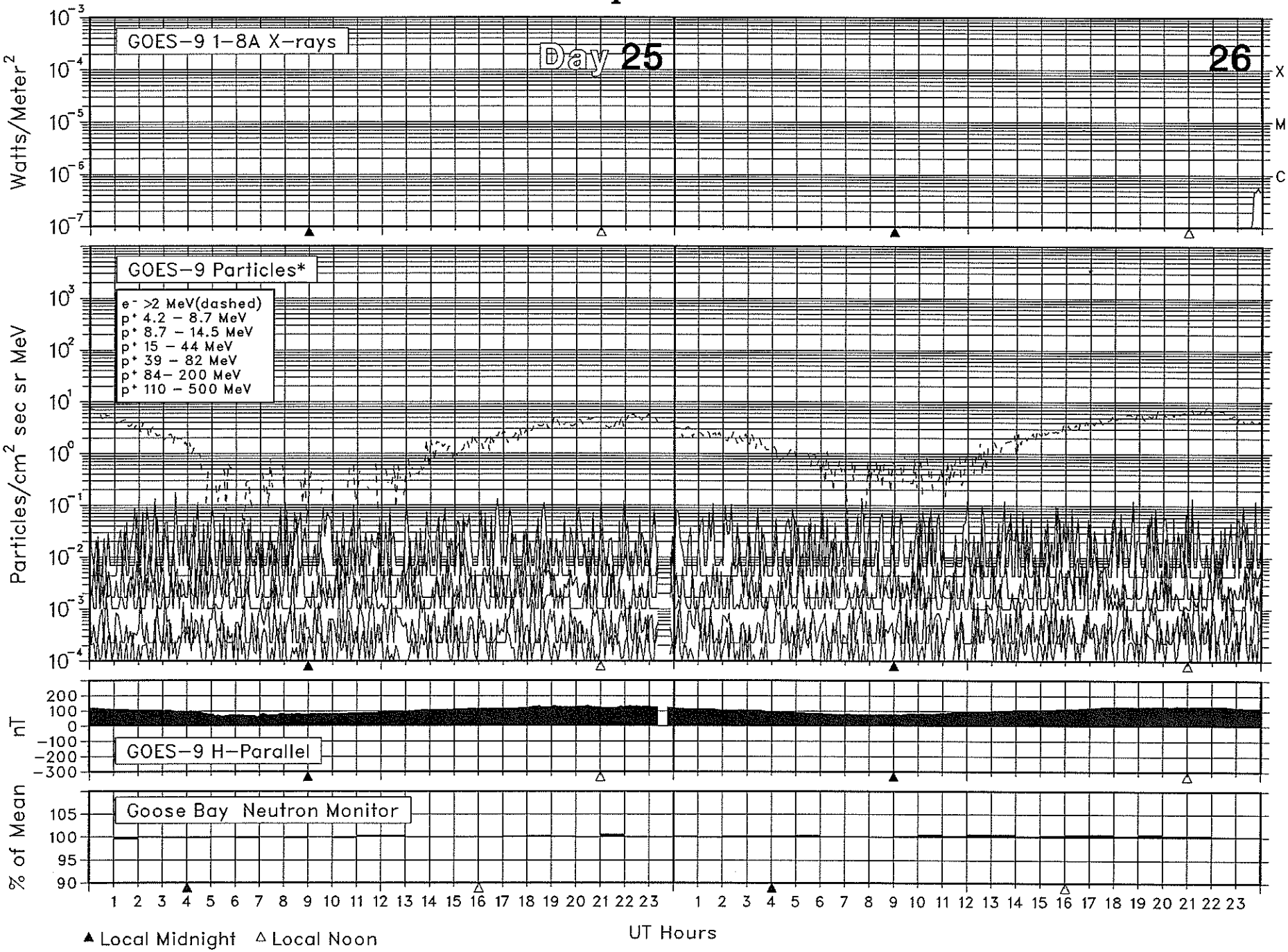
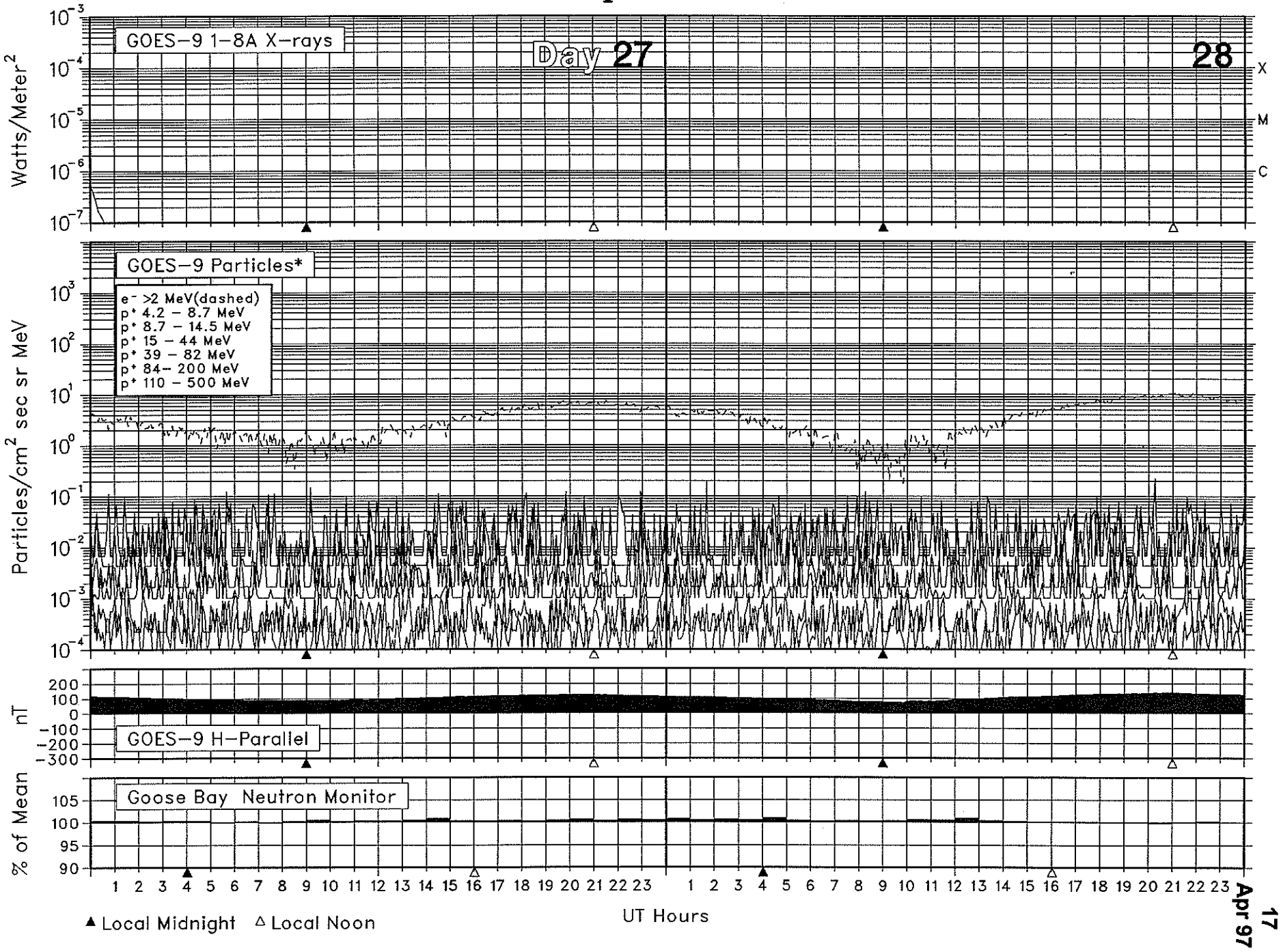


SOLAR-TERRESTRIAL ENVIRONMENT
April 1997



SOLAR-TERRESTRIAL ENVIRONMENT
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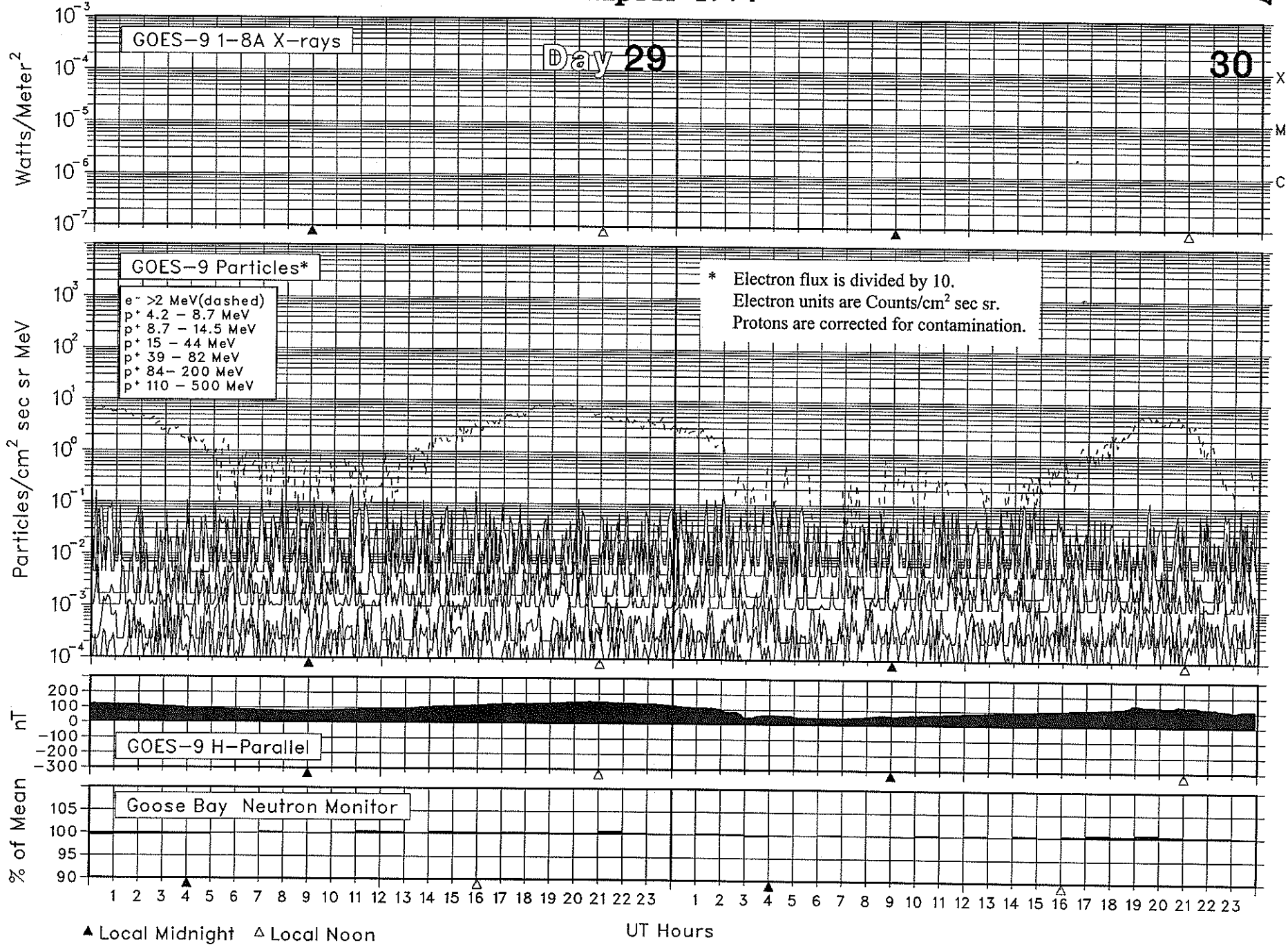

A L E R T P E R I O D S
The International Space Environment Service

APRIL 1997

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
091	01	31	22	75	4	S24	E20	0	0	0	01	Q	SOL: Quiet
								0	0	0	01		MAG: Quiet
								0	0	0	01		PRO: Quiet
092	02	01	23	76	7	S25	E07	6	1	0	02	E	SOL: Eruptive
								0	0	0	02		MAG: Quiet
								0	0	0	02		PRO: Quiet
093	03	02	52	81	6	S24	W02	8	0	0	03	E	SOL: Eruptive
						S30	E77	0	0	0	03	Q	MAG: Quiet
								0	0	0	03		PRO: Quiet
094	04	03	46	79	4	S23	W15	0	0	0	04	Q	SOL: Eruptive
						S27	E64	0	0	0	04	Q	MAG: Active
								0	0	0	04		PRO: Quiet
095	05	04	36	79	12	S23	W25	0	0	0	05	Q	SOL: Quiet
						S29	E51	0	0	0	05	Q	MAG: Quiet
								0	0	0	05		PRO: Quiet
096	06	05	36	80	8	S23	W41	0	0	0	06	Q	SOL: Quiet
						S28	E38	3	0	0	06	Q	MAG: Quiet
								0	0	0	06		PRO: Quiet
097	07	06	28	78	10	S23	W52	0	0	0	07	Q	SOL: Quiet
						S28	E24	1	0	0	07	Q	MAG: Quiet
								0	0	0	07		PRO: Quiet
098	08	07	16	77	7	S28	E12	2	0	0	08	Q	SOL: Quiet
								0	0	0	08		MAG: Quiet
								0	0	0	08		PRO: Quiet
099	09	08	27	76	3	S28	E00	0	0	0	09	Q	SOL: Quiet
						S07	W50	0	0	0	09	Q	MAG: Quiet
								0	0	0	09		PRO: Quiet
100	10	09	30	78	4	S28	W13	1	0	0	10	Q	SOL: Quiet
						N24	W19	0	0	0	10	Q	MAG: Active
								0	0	0	10		PRO: Quiet
101	11	10	47	78	8	S28	W27	0	0	0	11	Q	SOL: Quiet
						N24	W34	1	0	0	11	Q	MAG: Active
						N11	W31	0	0	0	11	Q	PRO: Quiet
102	12	11	31	77	44			0	0	0	12		SOL: Quiet
								0	0	0	12		MAG: Active
								0	0	0	12		PRO: Quiet
103	13	12	30	76	11			0	0	0	13		SOL: Quiet
								0	0	0	13		MAG: Quiet
								0	0	0	13		PRO: Quiet
104	14	13	34	79	6	N24	W74	0	0	0	14	Q	SOL: Quiet
						S30	W50	1	0	0	14	Q	MAG: Quiet
								0	0	0	14		PRO: Quiet
105	15	14	45	77	5	N24	W85	0	0	0	15	Q	SOL: Quiet
						S29	W63	0	0	0	15	E	MAG: Quiet
						S23	E20	0	0	0	15	Q	PRO: Quiet
106	16	15	39	79	2	S30	W78	0	0	0	16	Q	SOL: Quiet
						S22	E06	4	0	0	16	Q	MAG: Quiet
								0	0	0	16		PRO: Quiet
107	17	16	33	75	8	S30	W87	1	0	0	17	Q	SOL: Eruptive
						S22	W08	1	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

APRIL 1997

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Region Forecast(1)	Geoadvice(1)
						Lat	Long	Optical	M	X			
108	18	17	29	72	23	S23	W21	0	0	0	18	Q	SOL: Quiet
						N29	E15	0	0	0	18	Q	MAG: Active
								0	0	0	18		PRO: Quiet
109	19	18	13	70	15	S23	W34	0	0	0	19	Q	SOL: Quiet
								0	0	0	19		MAG: Quiet
								0	0	0	19		PRO: Quiet
110	20	19	12	70	10	N21	W16	0	0	0	20	Q	SOL: Quiet
								0	0	0	20		MAG: Quiet
								0	0	0	20		PRO: Quiet
111	21	20	0	70	3			0	0	0	21		SOL: Quiet
								0	0	0	21		MAG: Quiet
								0	0	0	21		PRO: Quiet
112	22	21	0	70	13			0	0	0	22		SOL: Quiet
								0	0	0	22		MAG: Quiet
								0	0	0	22		PRO: Quiet
113	23	22	12	71	10	N17	E64	0	0	0	23	Q	SOL: Quiet
								0	0	0	23		MAG: Quiet
								0	0	0	23		PRO: Quiet
114	24	23	13	69	7	N18	E51	0	0	0	24	Q	SOL: Quiet
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115	25	24	13	70	12	N18	E35	0	0	0	25	Q	SOL: Quiet
								0	0	0	25		MAG: Quiet
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116	26	25	12	69	6	N18	E23	0	0	0	26	Q	SOL: Quiet
								0	0	0	26		MAG: Quiet
								0	0	0	26		PRO: Quiet
117	27	26	32	71	2	N18	E10	0	0	0	27	Q	SOL: Quiet
						S18	W36	1	0	0	27	Q	MAG: Quiet
								0	0	0	27		PRO: Quiet
118	28	27	17	73	2	S19	W49	0	0	0	28	Q	SOL: Quiet
								0	0	0	28		MAG: Quiet
								0	0	0	28		PRO: Quiet
119	29	28	17	72	2	S18	W63	0	0	0	29	Q	SOL: Quiet
								0	0	0	29		MAG: Quiet
								0	0	0	29		PRO: Quiet
120	30	29	12	72	2	S16	W82	0	0	0	30	Q	SOL: Quiet
								0	0	0	30		MAG: Quiet
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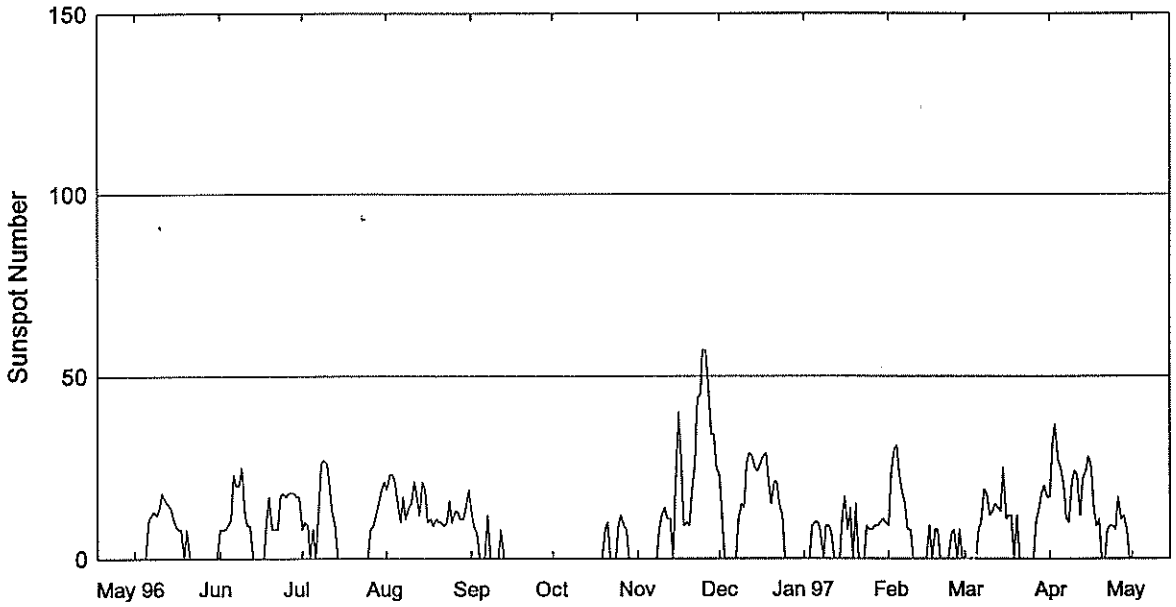
STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
May 1996 - Apr 1997



Day	May 96	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 97*	Feb *	Mar*	Apr*
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8	13	20	26	11	0	0	0	11	0	8	19	10
9	12	25	27	14	0	0	8	15	9	8	18	21
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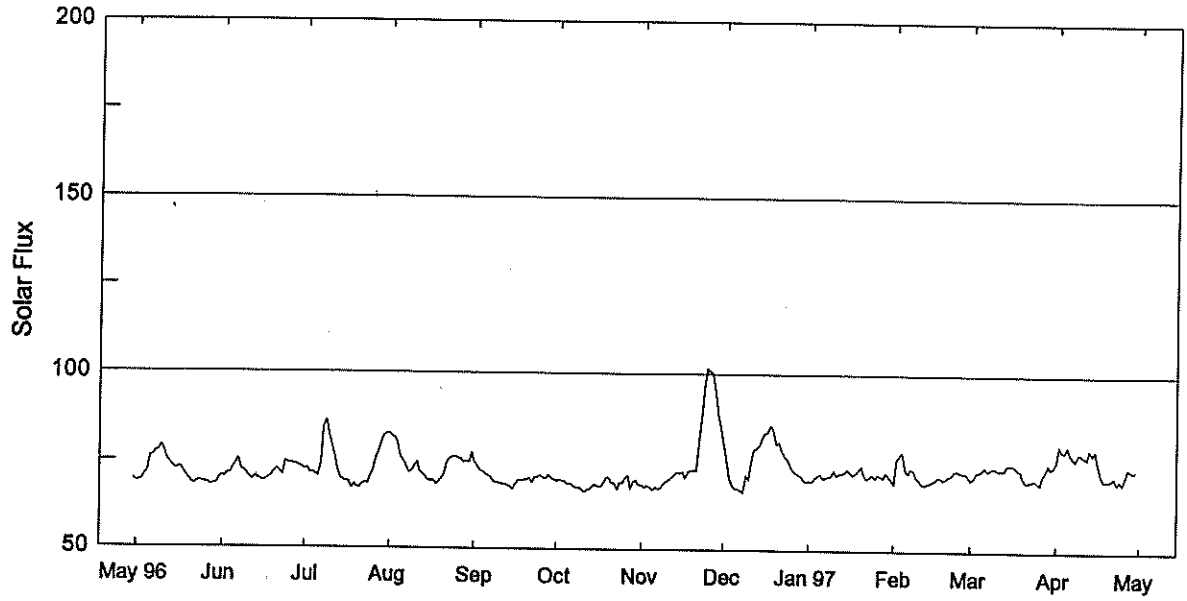
21	0	8	0	10	0	10	18	21	0	0	0	0
22	0	8	0	9	0	0	26	21	0	0	0	8
23	0	17	0	10	0	0	44	15	0	0	0	9
24	0	18	0	16	0	0	45	12	9	7	0	9
25	0	17	0	10	0	9	57	0	8	8	0	8
26	0	18	8	13	0	12	57	0	8	0	0	17
27	0	18	9	13	0	9	48	0	9	8	10	11
28	0	18	12	11	0	8	34	0	9	0	14	12
29	0	17	15	11	0	0	34	0	10		18	8
30	0	17	19	14	0	0	25	0	11		20	0
31	0		21	19		0		0	10		17	
Mean	5.5	11.8	8.2	14.4	1.6	1.8	18.6	12.7	6.5	7.6	8.8	15.8

* = Provisional.

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

Adjusted to 1 AU



Day	May 96	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr
1	68.9	70.4	72.4	82.8	74.8	69.6	68.5	80.8	70.0	69.2	70.5*	76.2
2	69.0	70.2	72.8	81.9	73.6	69.8	67.9	75.7	69.7	76.2	71.1	80.4
3	69.5	71.2	71.3	81.6	72.4	69.6	68.3	70.7	70.8	77.4	72.8	78.8
4	70.6	71.2	71.5	79.9	72.0	69.4	67.8	68.6	71.4	78.4	72.8	78.6
5	72.0	72.8	71.0	76.2	71.4	68.5	67.1	67.6	71.9	73.3	73.4	80.3
6	76.0	73.8	70.5	75.1	70.8	68.8	68.0	67.6	70.6	72.2	74.2	78.3
7	76.3	75.4	74.3	73.7	70.5	68.2	67.3	67.1	70.9	73.7	73.1	77.0
8	77.5	72.4	84.3	71.7	69.2	67.7	67.8	66.6	71.3	73.2	73.6	76.3
9	77.7	72.0	86.5	72.1	68.8	67.7	68.9	71.5	71.3	71.2	74.1	78.3
10	79.1	71.1	82.5	73.6	68.9	67.4	69.6	70.2	72.9	70.4	73.8	78.0
11	78.0	70.2	79.6	74.8	68.5	66.4	70.0	75.2	71.6	69.3	73.4	77.4
12	75.1	69.5	76.2	72.0	68.6	66.9	70.7	78.6	72.1	69.1	73.4	76.9
13	74.3	70.3	72.5	71.4	68.1	67.3	71.5	79.2	72.1	69.3	73.3	79.3
14	73.4	69.8	70.0	70.5	67.9	68.2	72.1	80.0	72.4	69.6	74.7	77.9
15	72.5	69.5	69.3	69.3	67.1	68.6	71.9	82.3	73.3	70.1	75.0	79.2
16	72.6	69.0	69.1	69.3	68.7	68.1	72.2	83.5	72.4	70.3	75.0	75.6
17	72.9	69.6	69.0	69.5	69.6	68.0	70.4	83.6	71.7	71.4	74.4	72.3
18	72.0	69.9	67.0	68.4	69.6	69.0	72.4	85.6	72.2	71.2	73.7	70.7
19	70.4	70.7	68.3	69.3	69.8	70.4	72.6	84.6	72.9	70.4	73.1	70.6
20	69.6	71.9	67.5	70.1	69.7	70.6	72.7	80.3	74.3	71.0	71.0	70.4
21	68.5	72.6	67.2	71.3	70.3	69.0	72.6	80.9	71.8	71.6	70.0	70.9
22	68.1	72.0	68.2	74.5	69.1	69.1	80.6	78.9	70.7	71.9	70.1	71.5
23	68.9	70.9	68.9	75.8	70.4	67.1	88.7	76.9	71.1	73.0	70.3	69.7
24	69.0	74.7	68.3	76.2	70.4	69.1	97.3	76.4	71.9	73.1	70.6	70.7
25	68.7	74.3	70.4	76.3	71.2	69.1	101.7	74.7	70.9	72.6	70.2	69.6
26	68.7	74.2	72.4	75.8	70.4	70.3	100.8	73.0	71.9	72.4	69.5	71.8
27	68.4	73.8	75.6	75.9	70.1	71.2	100.0	72.2	71.3	72.4	71.9	74.1
28	67.8	73.8	77.8	74.7	71.2	67.5	95.4	71.8	70.8	71.5	72.9	73.4
29	68.3	73.3	80.3	75.0	70.3	69.4	88.5	71.4	72.4		75.1	72.9
30	68.4	73.1	82.3	74.7	69.7	69.7	85.1	70.1	71.5		73.8	73.7
31	69.9		82.7	77.6		68.6		69.8	70.3		74.6	
Mean	71.7	71.8	73.5	74.2	70.1	68.7	76.9	75.3	71.6	72.0	72.8	75.0

NOTE: *=Average of 1700 and 2300UT readings. Snow on antennas at 2000UT.

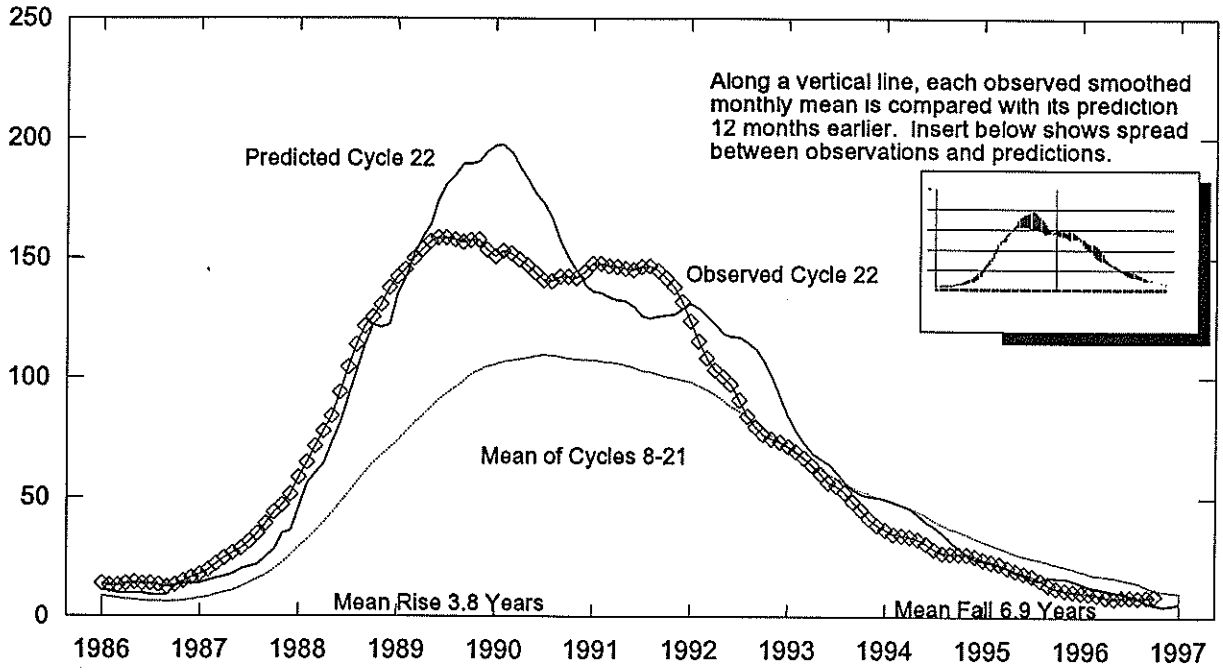
DAILY SOLAR INDICES

April 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	91	1	17	24	76.3	518	197	126	76.2	73	52	38	28	29
2	92	2	31	38	80.5	510	205	130	80.4	76	52	38	32	20
3	93	3	37	43	78.8	502	202	133	78.8	80	54	38	28	17
4	94	4	27	42	78.5	510	202	129	78.6	76	54	38	26	12
5	95	5	25	28	80.2	512	201	129	80.3	78	55	39	27	12
6	96	6	20	20	78.1	508	203	129	78.3	77	55	31	20	9
7	97	7	11	14	76.8	521	199	128	77.0	73	54	33	23	13
8	98	8	10	13	76.1	505	200	127	76.3	73	53	33	23	11
9	99	9	21	24	78.1	511	196	127	78.3	74	53	34	23	11
10	100	10	24	26	77.6	521	199	130	78.0	74	53	35	24	11
11	101	11	23	28	77.1	500	199	130	77.4	74	52	33	23	10
12	102	12	12	20	76.4	505	202	128	76.9	70	52	33	23	10
13	103	13	22	22	78.8	523	192	127	79.3	74	53	33	24	17
14	104	14	24	26	77.4	513	203	132	77.9	76	53	34	25	20
15	105	15	28	36	78.7	511	204	129	79.2	73	52	35	26	23
16	106	16	26	30	75.0	505	192	128	75.6	72	52	35	26	20
17	107	17	13	18	71.7	510	191	124	72.3	71	49	35	24	11
18	108	18	9	9	70.1	518	195	123	70.7	69	48	35	23	10
19	109	19	11	2	69.9	510	199	123	70.6	68	48	35	22	11
20	110	20	0	0	69.7	509	199	124	70.4	68	47	35	19	11
21	111	21	0	0	70.1	513	201	124	70.9	66	47	35	24	10
22	112	22	8	1	70.7	508	200	123	71.5	67	48	35	24	10
23	113	23	9	6	68.9	512	198	123	69.7	68	47	34	22	11
24	114	24	9	6	69.8	515	198	123	70.7	66	47	35	24	11
25	115	25	8	2	68.7	509	199	123	69.6	67	47	34	22	11
26	116	26	17	16	70.9	512	199	124	71.8	67	48	35	24	11
27	117	27	11	16	73.1	506	201	126	74.1	70	50	34	25	11
28	118	1	12	13	72.4	515	202	127	73.4	71	51	35	26	11
29	119	2	8	9	71.9	512	200	126	72.9	69	50	36	25	11
30	120	3	0	1	72.6	523	203	126	73.7	70	49	37	25	12
MEAN			15.8	17.8	74.5	511	199	126	75.0	71	50	35	24	13

The International numbers shown above are preliminary values; the American numbers are final.

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	8	8	9
( )											(1)	(2)	(0)
1997	8	8	9	9	10	10	11	12	13	13	14	16	11
( )	(3)	(4)	(5)	(7)	(8)	(10)	(12)	(14)	(15)	(17)	(19)	(22)	(11)

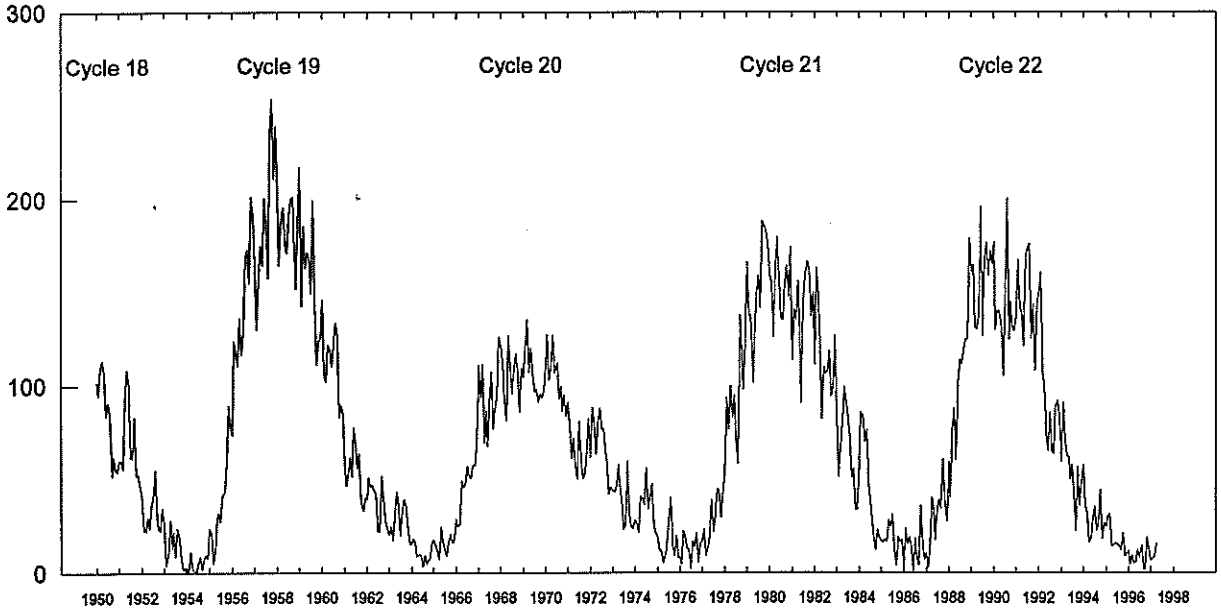
Solar Cycle 22 — Min, Max, and Predictions

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 October 1997 prediction. There exists a 90% chance that in October 1997, the actual smoothed number will fall somewhere between 0 and 30.

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 - Apr 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									9.7	

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

APRIL 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	01	0506E	0508U	0515	S26	E22	8026	04	2.9	9D	SB		2	E		21		
SVTO		0757	0759	0807	S25	E20	8026	04	2.9	10	SF		3	E		11		F
GOES		0949	0952	0955						6		B 1.1						
GOES		1007	1015	1022						15		B 2.3						
GOES		1023	1032	1038						15		C 2.1						
RAMY		1143	1143	1147	S26	E17	8026	04	2.8	4	SF	B 1.6	3	E		12		
RAMY		1252E	1254U	1259D	S26	E17	8026	04	2.8	7D	SF	B 3.6	4	E		10		
RAMY		1343	1348	1410	S25	E16	8026	04	2.8	27	1B	M 1.9	4	E		135		EH
SVTO		1344	1347	1404	S25	E16	8026	04	2.8	20	1N		3	E		100		EH
HOLL		1346	1347	1408	S26	E16	8026	04	2.8	22	1N		3	E		130		EH
RAMY		1452	1453	1458	S26	E17	8026	04	2.9	6	SF	B 6.6	4	E		12		
GOES		2035	2041	2046						11		B 4.1						
GOES		2115	2118	2121						6		B 2.2						
GOES		2138	2149	2156						18		B 2.1						
HOLL	02	0031	0040	0048	S27	E09	8026	04	2.7	17	SF	C 2.2	3	E		29		H
LEAR		0039	0040	0047	S25	E08	8026	04	2.6	8	SF		3	E		14		HS
GOES		0223	0238	0242						19		B 2.2						
GOES		0408	0412	0414						6		B 2.2						
GOES		0415	0420	0424						9		B 5.2						
LEAR		0529	0530	0532	S25	E05	8026	04	2.6	3	SF	C 1.3	3	E		13		
SVTO		0705	0709	0724	S24	E09	8026	04	3.0	19	SF	B 3.8	3	E		24		F
SVTO		0800	0800	0804	S25	E07	8026	04	2.9	4	SF		3	E		11		F
GOES		0803	0806	0808						5		B 1.3						
SVTO		0832	0834	0849	S24	E08	8026	04	3.0	17	SF	B 3.5	3	E		15		F
SVTO		0924	0927	0942	S24	E07	8026	04	2.9	18	SF	B 6.8	3	E		35		F
SVTO		1023	1024	1035	S24	E06	8026	04	2.9	12	SF	B 2.4	3	E		19		
GOES		1051	1057	1103						12		B 2.4						
SVTO		1205	1207	1224	S24	E06	8026	04	3.0	19	SF	B 2.4	3	E		34		F
GOES		1240	1243	1245						5		B 1.2						
GOES		1637	1643	1650						13		B 4.4						
GOES		2045	2054	2108						23		B 1.9						
GOES		2241	2251	2256						15		B 4.2						
GOES	03	0010	0013	0015						5		B 1.0						
GOES		0104	0113	0119						15		B 4.2						
GOES		0216	0227	0231						15		B 8.4						
GOES		1230	1327	1408						98		C 1.2						
GOES	04	1710	1714	1719						9		B 1.0						
GOES		2006	2009	2016						10		B 1.2						
PALE	05	0107	0107	0112	S28	E50	8027	04	8.9	5	SF		3	E		17		
GOES		0117	0124	0129						12		B 3.0						
GOES		0752	0758	0805						13		B 1.2						
SVTO		1528	1535	1538	S29	E41	8027	04	8.8	10	SF	B 4.8	3	E		11		F
RAMY		2025E	2026U	2041	S30	E38	8027	04	8.8	16D	SF		3	E		40		
PALE		2028	2028	2039	S27	E40	8027	04	9.0	11	SF	B 5.6	3	E		39		
GOES	06	0713	0720	0726						13		B 1.1						
GOES		0759	0832	0839						40		B 1.8						
SVTO		1206	1213	1227	S28	E29	8027	04	8.8	21	SF		3	E		21		F
GOES		1829	1846	1923						54		B 2.6						
GOES		2333	2434	2502						89		B 3.7						
GOES	07	1012	1016	1024						12		B 1.2						
GOES		1142	1159	1209						27		B 3.3						
RAMY		1354	1403	1524	S30	E19	8027	04	9.1	90	2N	C 6.8	4	E		297		UY
HOLL		1355	1359	1456	S29	E17	8027	04	8.9	61	1F		3	E		161		US
SVTO		1355	1401U	1459D	S30	E19	8027	04	9.1	64D	2N		2	E		290		US
SVTO	09	0440E	0445U	0503D	S29	W04	8027	04	8.9	23D	SF	B 4.2	1	E		55		
GOES		1050	1140	1150						60		C 1.5						
GOES		1732	1735	1738						6		B 1.0						
GOES		2059	2103	2106						7		B 1.0						
GOES		2120	2123	2126						6		B 1.0						
SVTO	10	1021	1029	1033	N24	W28	8029	04	8.3	12	SF		3	E		13		

Hα SOLAR FLARES

APRIL 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	13	1248	1252	1257						9		B 1.1						
RAMY		1838	1842	1855	S29	W47	8031	04	10.1	17	SF	B 8.2	3	E		21		F
HOLL		1841	1842	1851	S30	W45	8031	04	10.2	10	SF		3	E		17		
GOES		2037	2040	2044						7		B 1.0						
GOES		2304	2317	2334						30		B 2.1						
GOES	14	0103	0107	0113						10		B 1.7						
GOES		0229	0238	0243						14		B 4.9						
GOES		0623	0637	0642						19		B 2.0						
GOES		0658	0701	0704						6		B 1.1						
GOES		0758	0842	0854						56		C 1.2						
GOES		0939	0950	1001						22		B 3.2						
GOES		1102	1116	1125						23		B 1.8						
GOES		1325	1333	1346						21		B 2.5						
GOES		1523	1526	1548						25		B 1.1						
GOES		1600	1605	1610						10		B 1.0						
GOES		1632	1649	1659						27		B 3.6						
GOES		2131	2138	2146						15		B 1.9						
GOES		2311	2314	2317						6		B 1.0						
GOES	15	0254	0301	0303						9		B 1.8						
SVTO		0629	0645	0713	S23	E13	8032	04	16.3	44	SF	B 1.7	3	E		31		
GOES		0715	0735	0741						26		C 1.0						
GOES		0758	0812	0838						40		B 4.5						
SVTO		0959	1001	1007	S23	E11	8032	04	16.3	8	SF	B 6.8	3	E		34		F
SVTO		1011	1018U	1028D	S23	E11	8032	04	16.3	17D	SF	B 5.9	3	E		29		F
GOES		1218	1221	1226						8		B 1.3						
GOES		1245	1255	1259						14		B 4.8						
GOES		1301	1306	1314						13		B 4.3						
HOLL		1409	1413	1432	S24	E08	8032	04	16.2	23	SF	C 1.0	3	E		73		H
RAMY		1410	1412	1432	S23	E09	8032	04	16.3	22	1N		3	E		102		
HOLL		1730	1731	1740	S27	W78	8031	04	9.6	10	SF		3	E		39		
RAMY		1730	1731	1743	S28	W76	8031	04	9.8	13	SF	B 5.3	3	E		55		
GOES		1804	1809	1812						8		B 9.4						
HOLL		2006	2007	2010	S24	E04	8032	04	16.1	4	SF	B 3.1	3	E		22		
GOES		2059	2105	2108						9		B 3.8						
GOES		2225	2228	2230						5		B 4.7						
GOES		2249	2254	2301						12		B 1.8						
GOES		2343	2357	2403						20		B 1.7						
LEAR	16	0400	0401	0403	S30	W74	8031	04	10.3	3	SF		3	E		37		
RAMY		1106E	1108U	1113	S20	W01	8032	04	16.4	7D	SF		2	E		16		
GOES		1310	1321	1325						15		B 2.1						
GOES		1403	1412	1423						20		B 1.9						
GOES		1550	1553	1559						9		B 1.0						
GOES		1626	1629	1631						5		B 1.5						
GOES		1831	1843	1848						17		B 3.5						
GOES	17	0023	0058	0106						43		B 2.7						
GOES	26	0120	0125	0130						10		B 1.1						
LEAR		2340	2351	2355	S17	W37	8036	04	24.2	15	SF	B 6.8	3	E		16		F

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

APRIL 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
01	2695	LEAR	8 S	0503.0	0504.0	2.0	20.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0503.0	0504.0	2.0	33.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	0503.0	0504.0	1.0	30.0			QL=2 ST=3 TYP=3
	2695	LEAR	8 S	0756.0	0756.0	1.0	59.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	0756.0	0756.0	1.0	59.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0756.0	0756.0	1.0	190.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1346.0	1347.0	2.0	96.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1346.0	1346.0	2.0	360.0			QL=2 ST=2 TYP=3
	2695	SVTO	8 S	1346.0	1347.0	2.0	84.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1346.0	1346.0	2.0	350.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1352.0	1352.0	1.0	30.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1352.0	1352.0	1.0	33.0			QL=2 ST=2 TYP=3
	2800	PENT	1 S	2038.8	2040.8		6.5			
07	2695	SGMR	48 C	1356.0	1407.0	24.0	220.0			QL=4 ST=2 TYP=8
	8800	SGMR	20 GRF	1359.0	1407.0	21.0	87.0			QL=4 ST=2 TYP=2

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

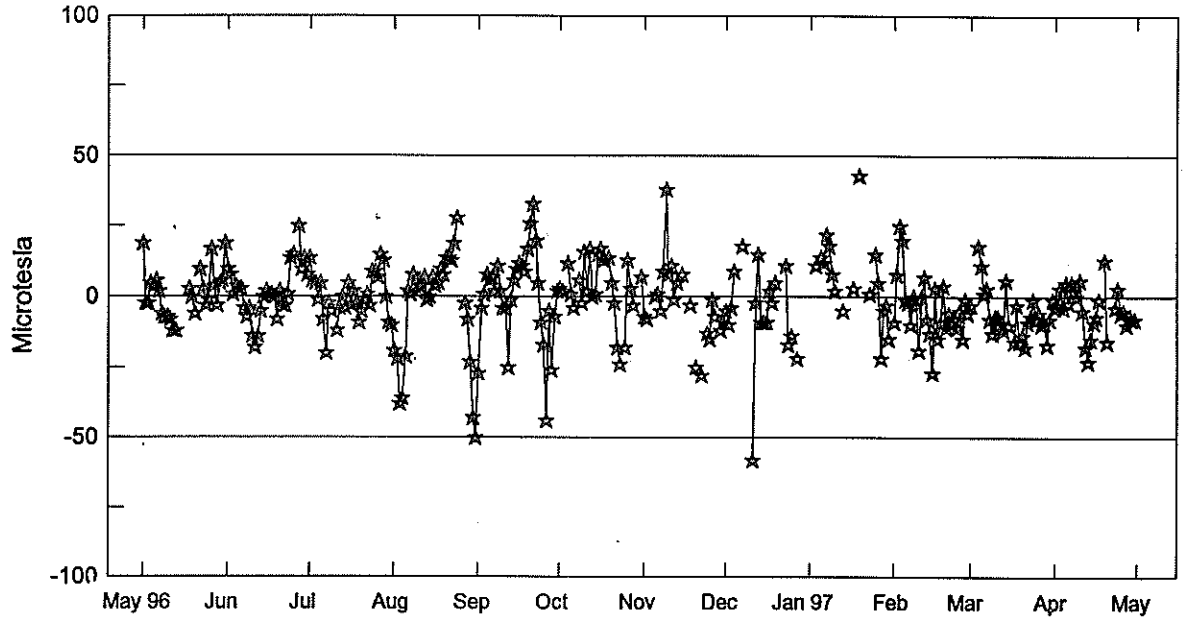
Explanation of Type Code:

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.

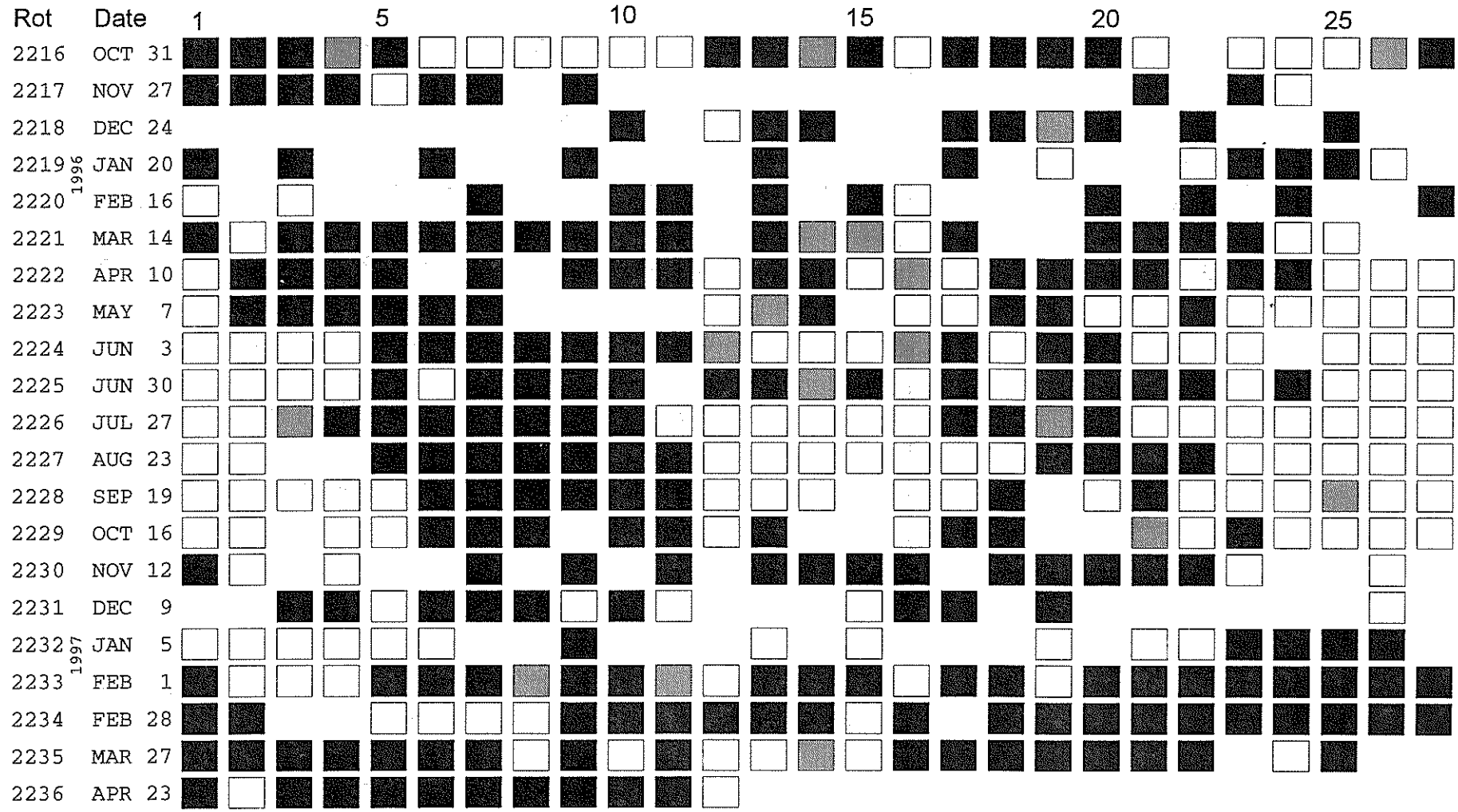
Stanford Mean Solar Magnetic Field (Microtesla)
"Sun-As-A-Star"



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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

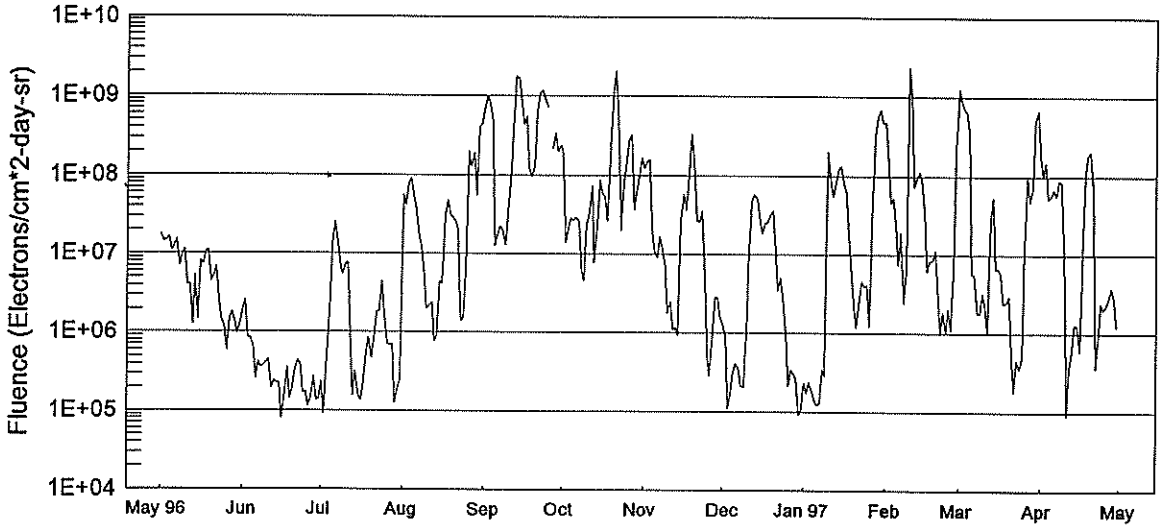


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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
May 96 - Apr 97



Day	May 96	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar	Apr
1	1.7E+07	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
2	1.4E+07	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
3	1.4E+07	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
4	1.6E+07	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
5	1.1E+07	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
6	1.2E+07	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
7	1.5E+07	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
8	7.1E+06	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
9	1.0E+07	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
10	1.1E+07	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
11	4.0E+06	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
12	4.1E+06	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
13	1.2E+06	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
14	5.2E+06	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
15	1.4E+06	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
16	8.0E+06	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
17	7.4E+06	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
18	1.0E+07	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
19	1.1E+07	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
20	4.5E+06	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
21	5.2E+06	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
22	6.8E+06	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
23	2.6E+06	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
24	1.4E+06	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
25	1.1E+06	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
26	5.8E+05	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
27	1.4E+06	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
28	1.8E+06	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
29	1.4E+06	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
30	9.7E+05	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
31	1.3E+06		2.5E+05	4.4E+08		1.6E+08		1.0E+05	4.7E+08		6.6E+08	

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 633 Part I

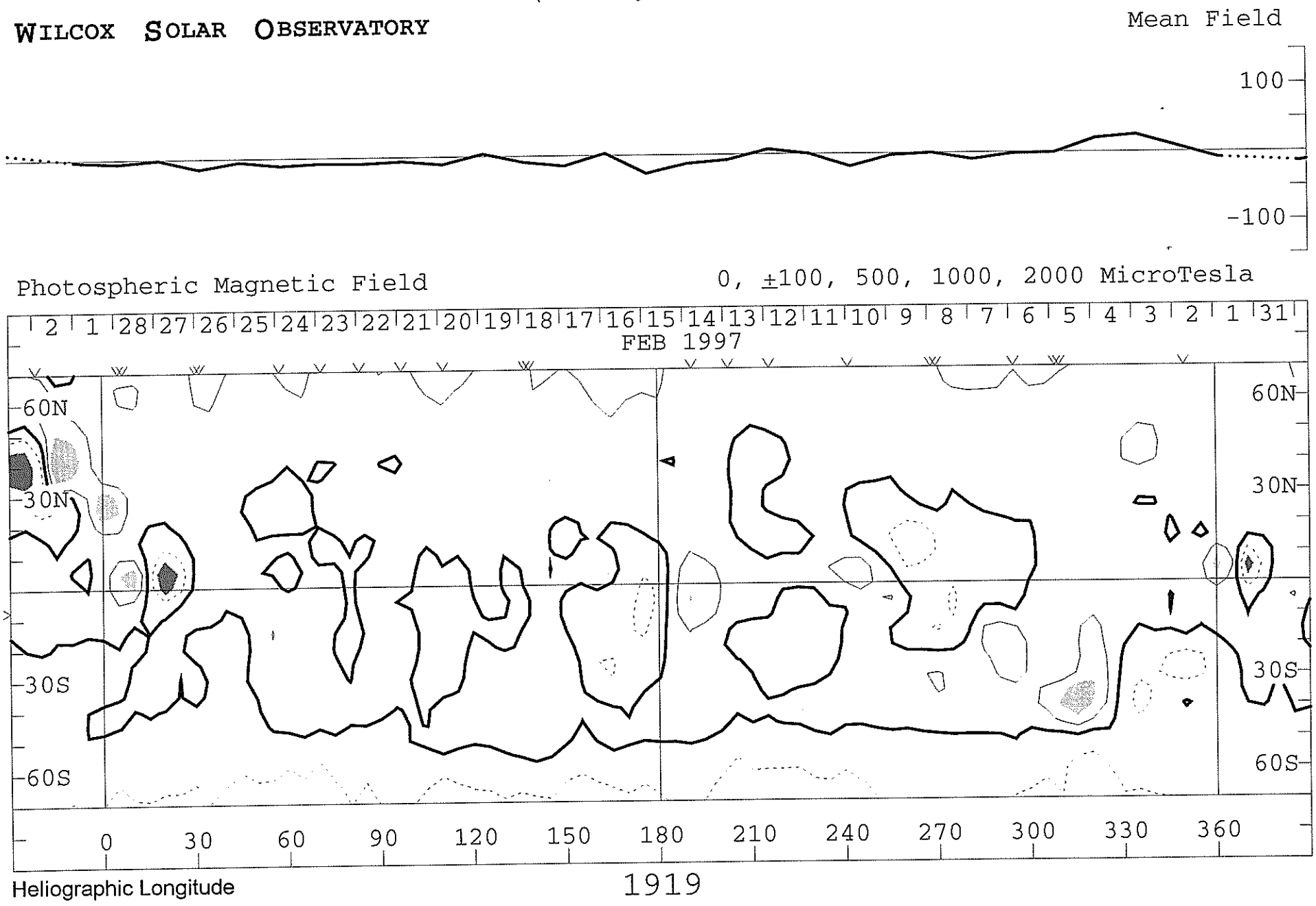
DATA FOR **MARCH 1997**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1919

(1 February to 1 March 1997)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

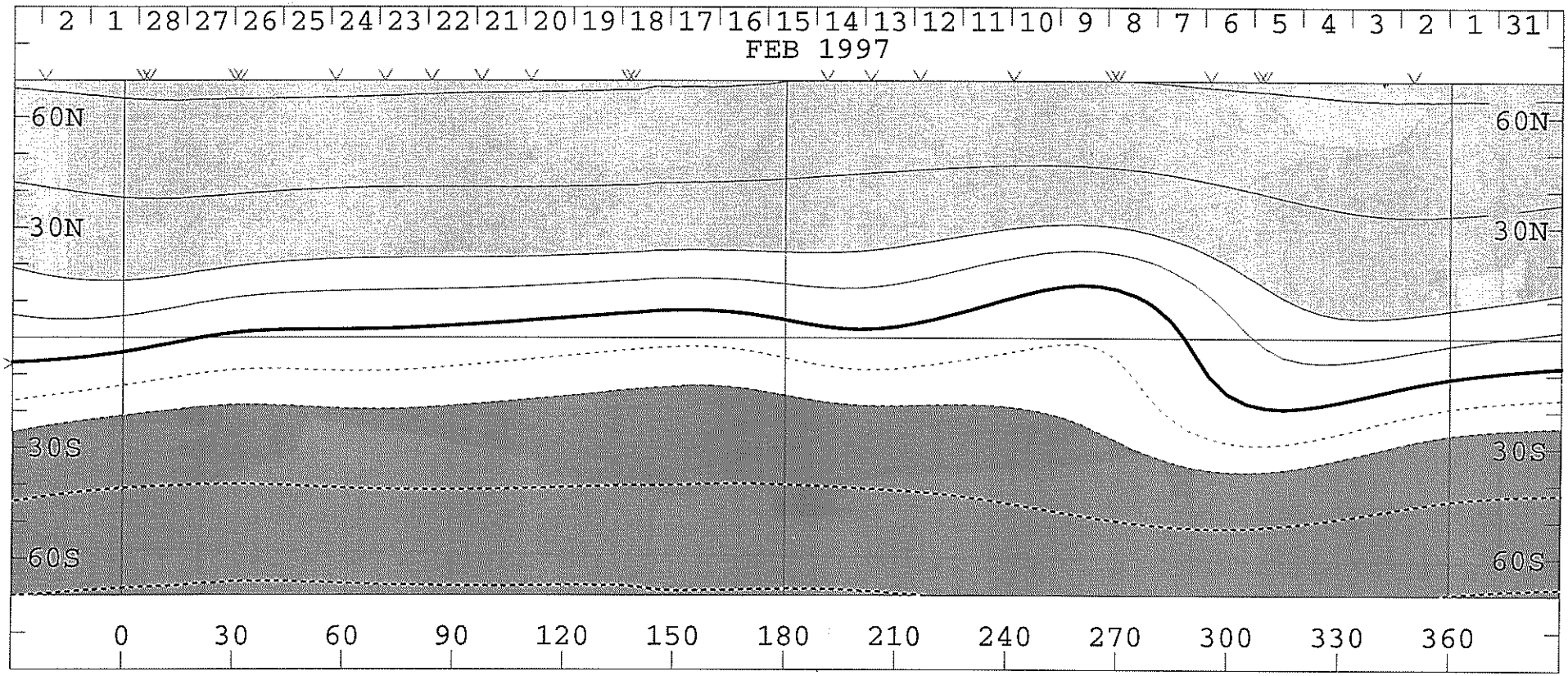
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1919

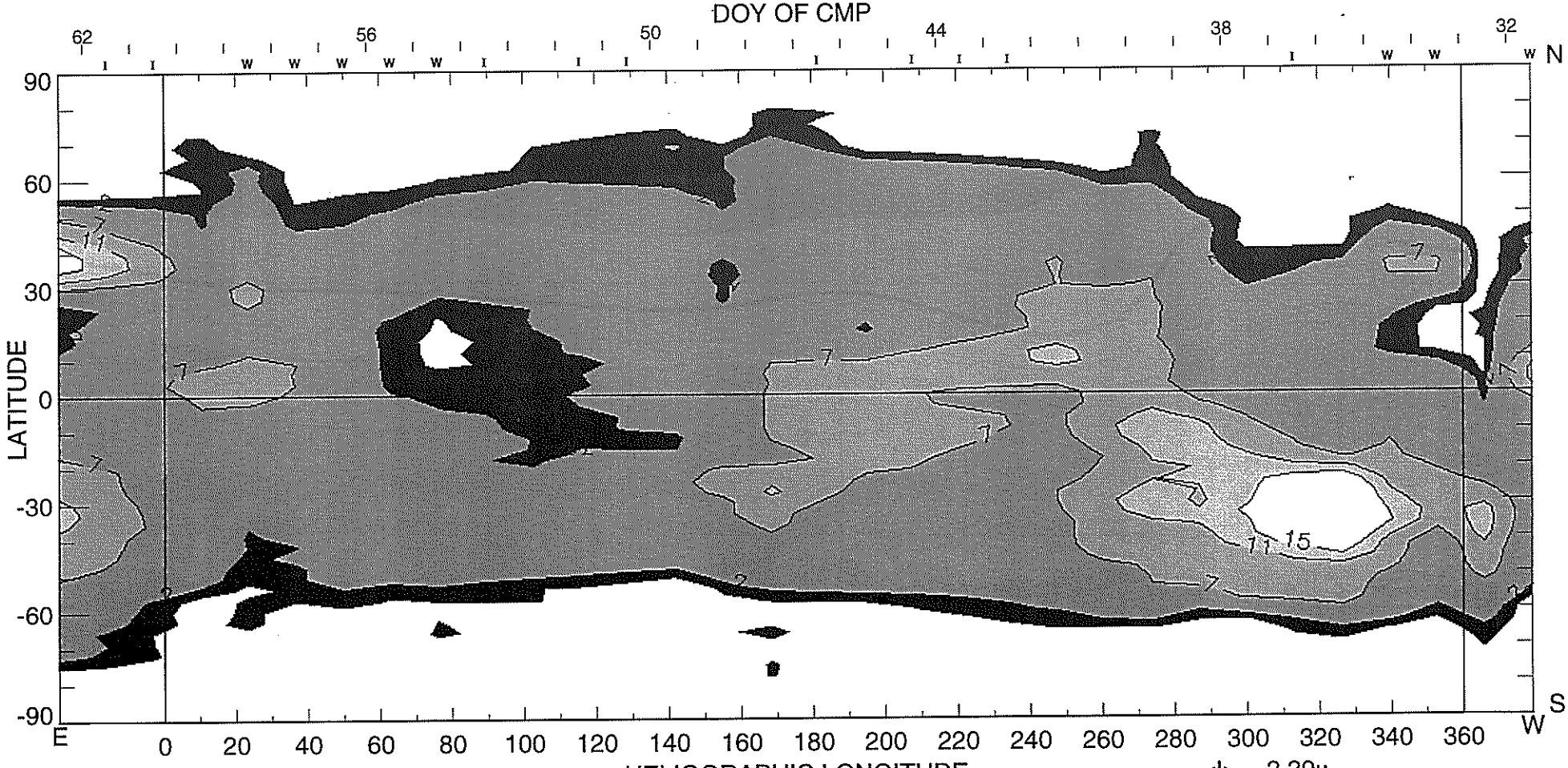
(1 February to 1 March 1997)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1919 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



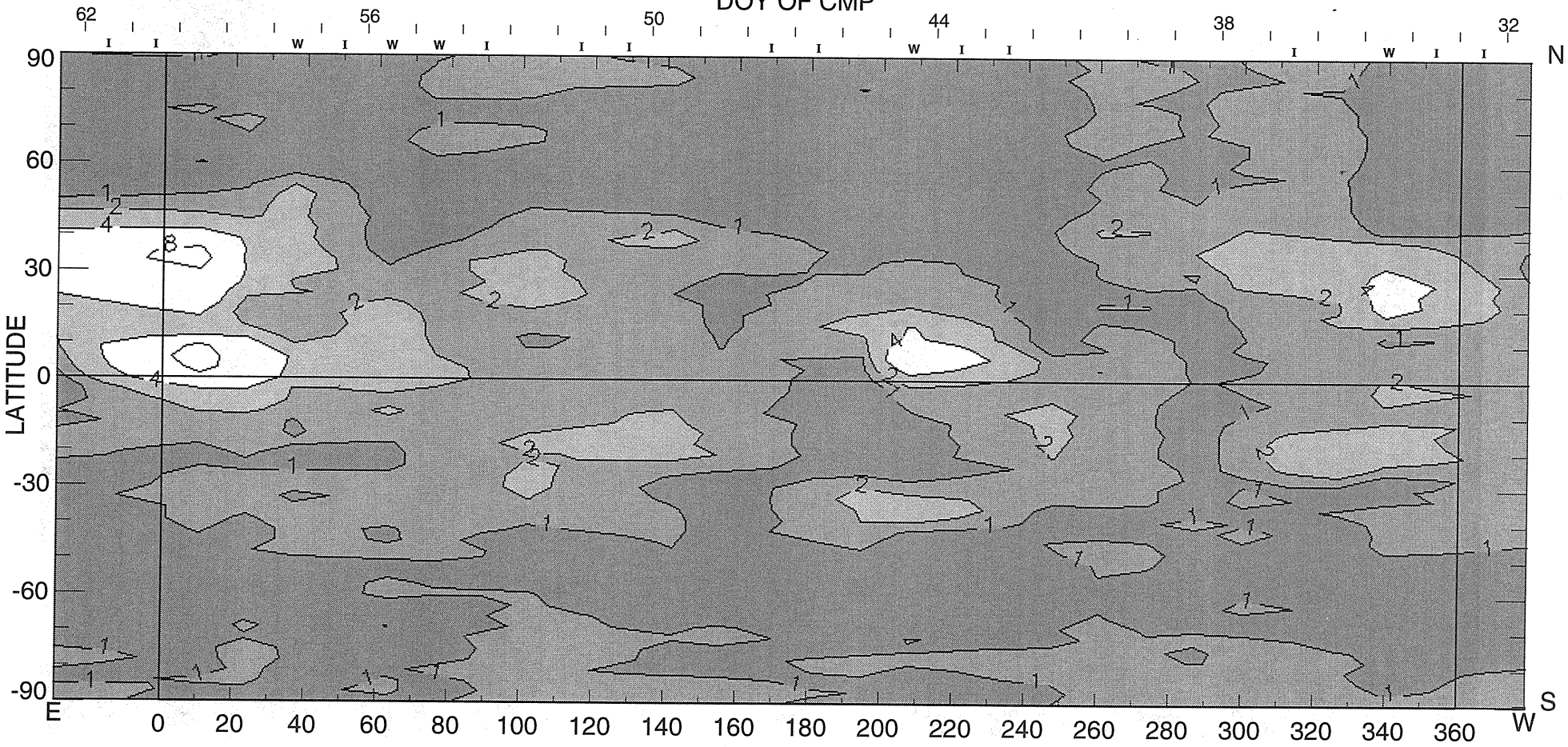
<I_o> = 3.39μ

(30-Apr-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 1919 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



(30-Apr-97)

<I> = 1.27μ

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 1919.

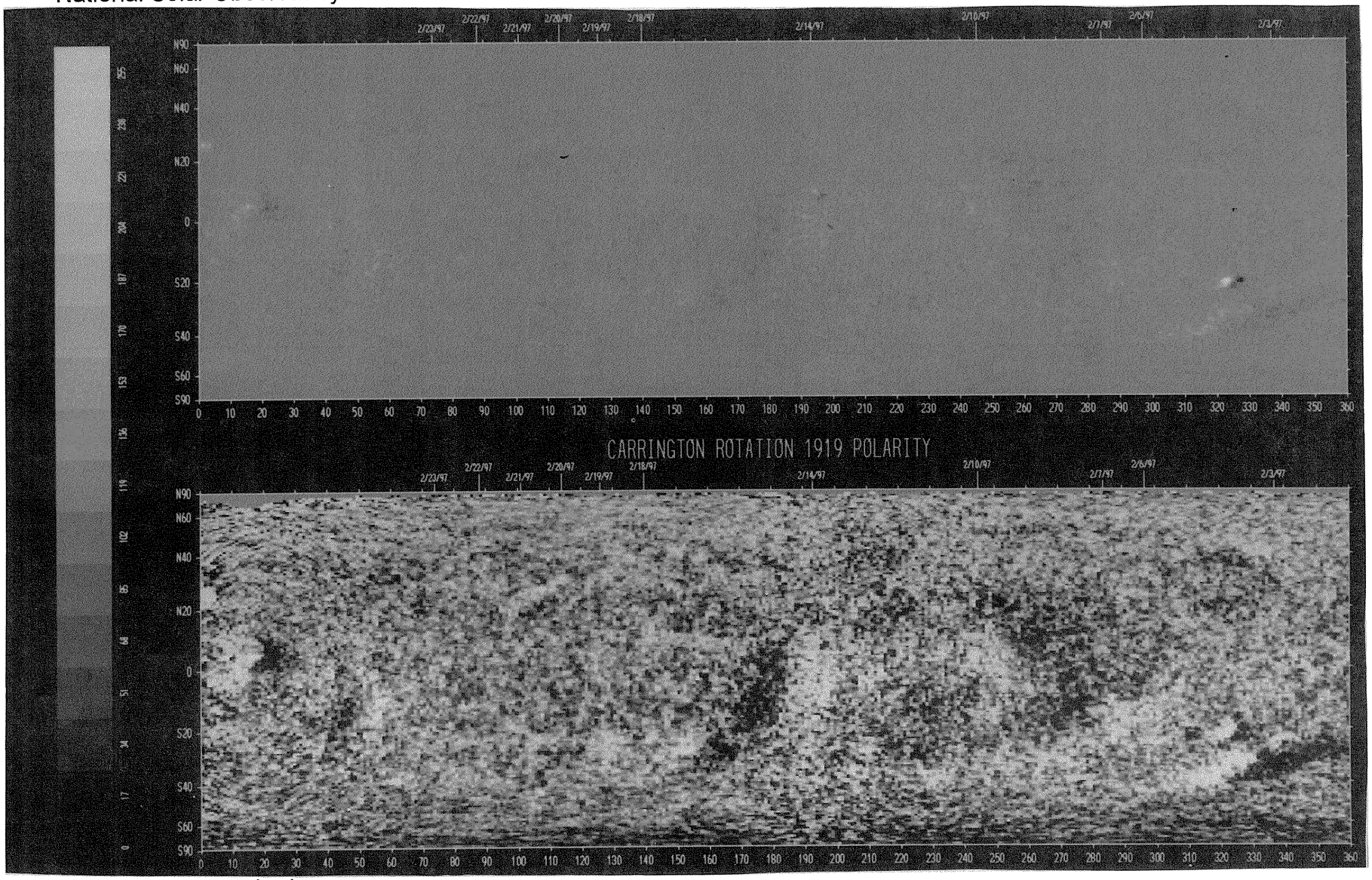
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1919

(1 February to 1 March 1997)

National Solar Observatory/Kitt Peak

Dates of Observation



Heliographic Longitude

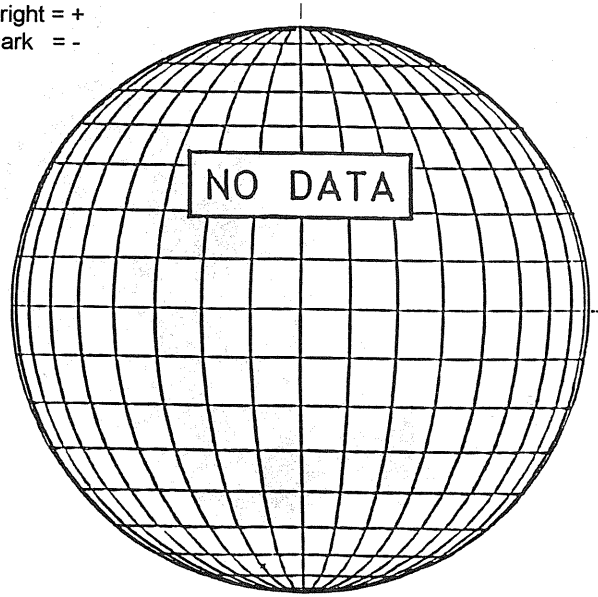
MARCH 1, 1997 (P= - 21.55 , B0 = - 7.22 , L0 = 3.81)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

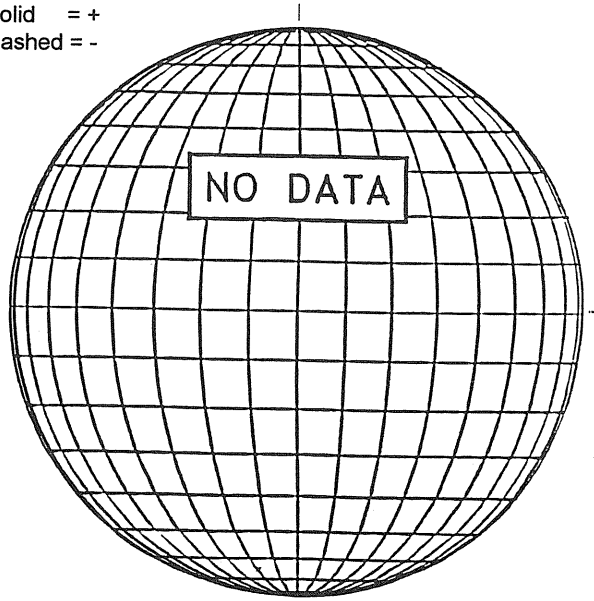


E

STANFORD MAGNETOGRAM

N

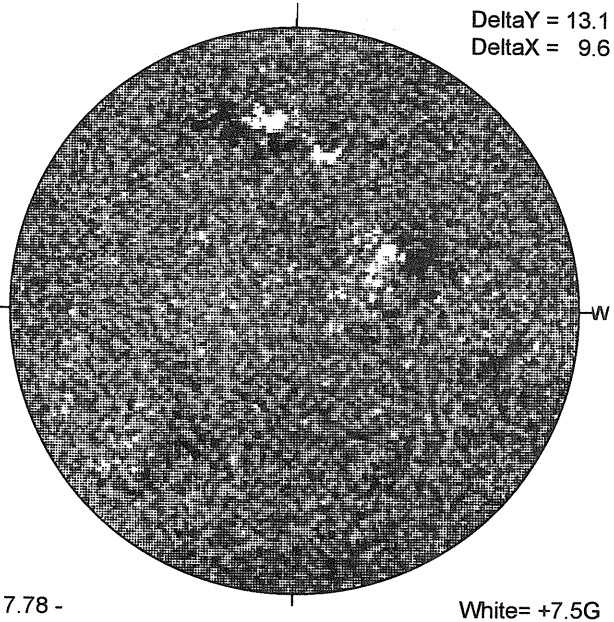
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

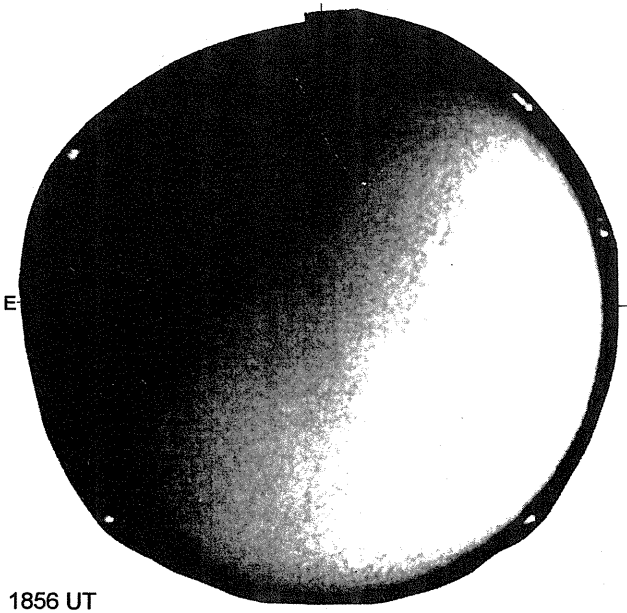


W

17.78 -
18.74 UT

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

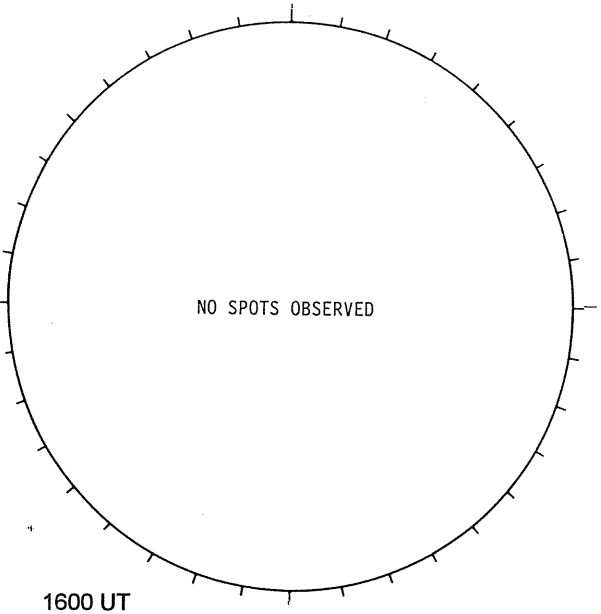


E

1856 UT
1902 UT Prom

S

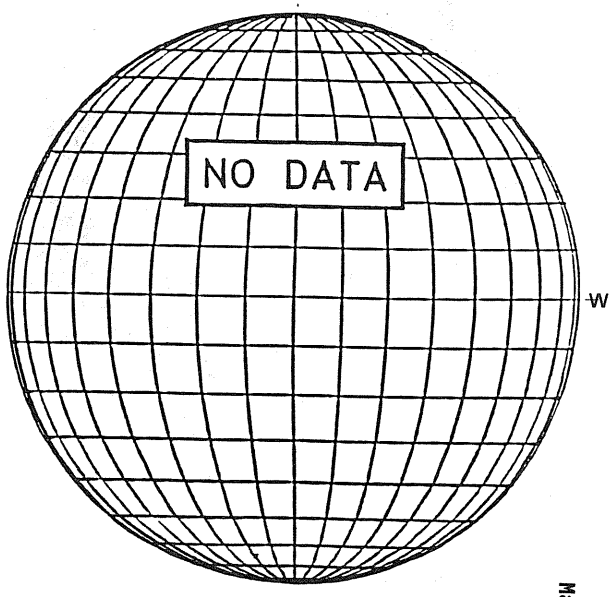
HOLLOMAN SUNSPOT



1600 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

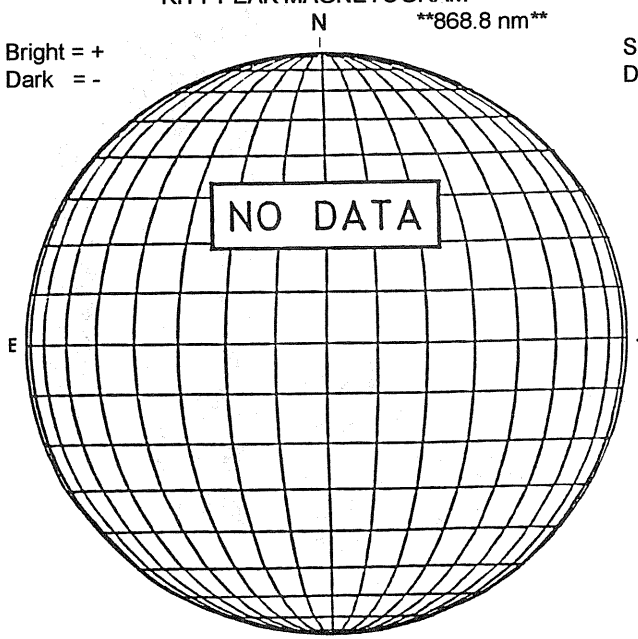


W

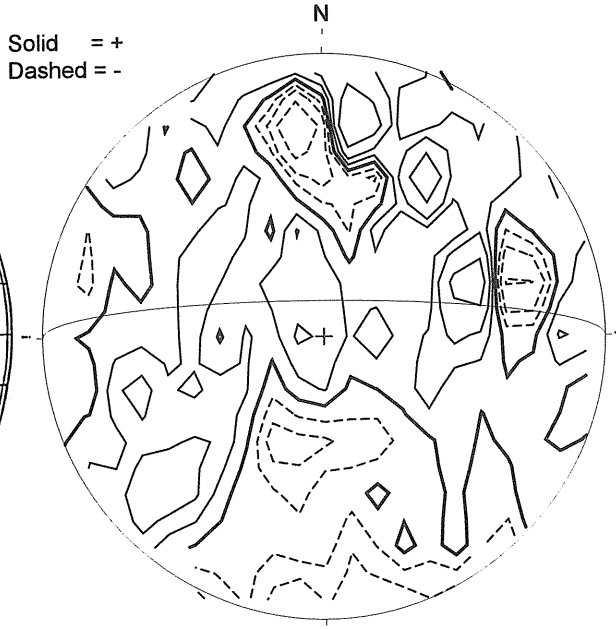
S

MARCH 2, 1997 (P= - 21.80, Bo = - 7.23, Lo = 350.64)

KITT PEAK MAGNETOGRAM

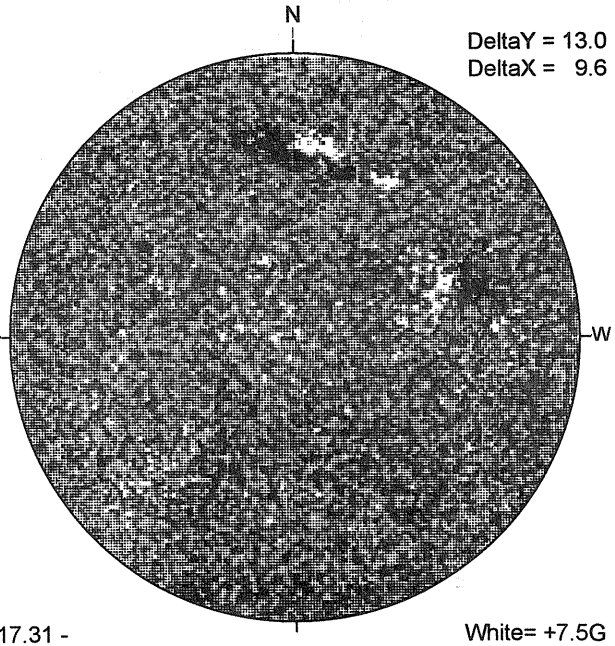


STANFORD MAGNETOGRAM



2205 UT

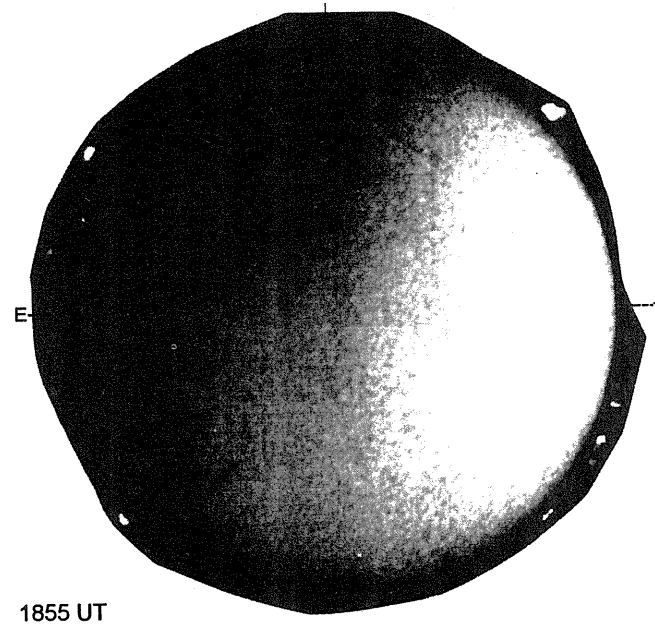
MT. WILSON MAGNETOGRAM



17.31 -
18.26 UT

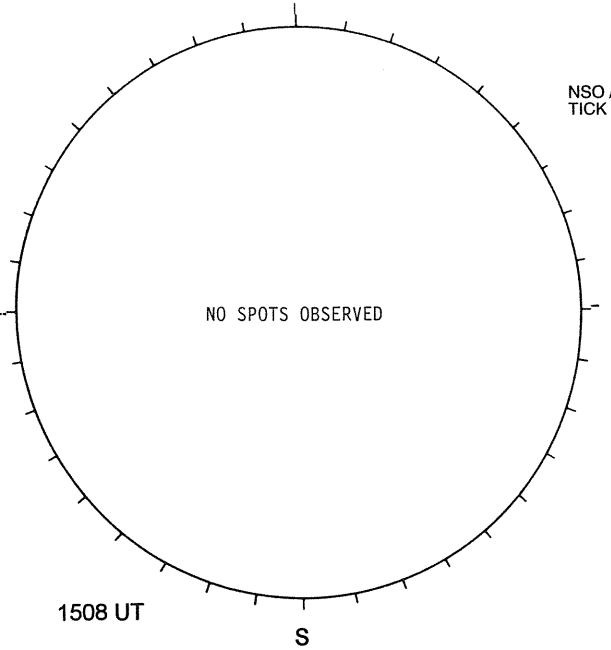
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



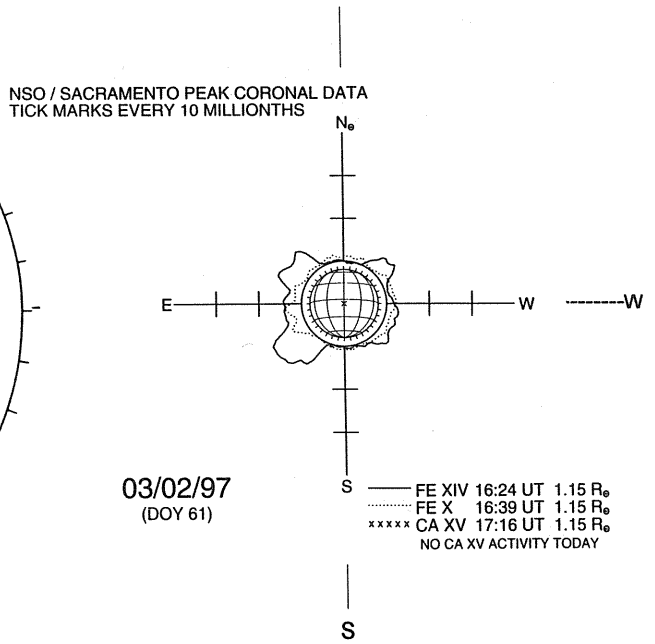
1855 UT
1949 UT

HOLLOMAN SUNSPOT



1508 UT

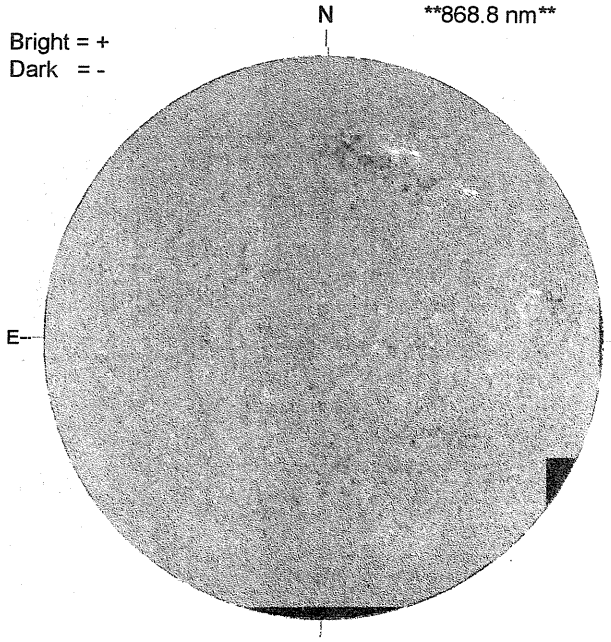
SACRAMENTO PEAK CORONA (1.15 Radii)----



03/02/97
(DOY 61)

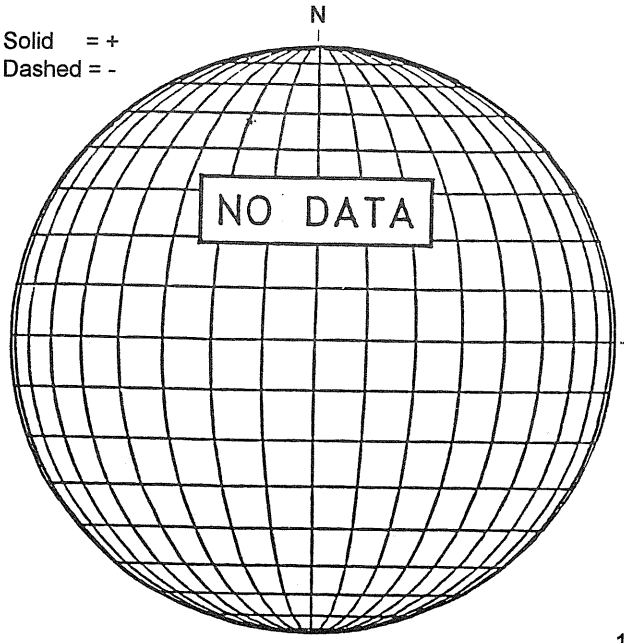
MARCH 3, 1997 (P= - 22.04, Bo = - 7.24 , Lo = 337.46)

KITT PEAK MAGNETOGRAM

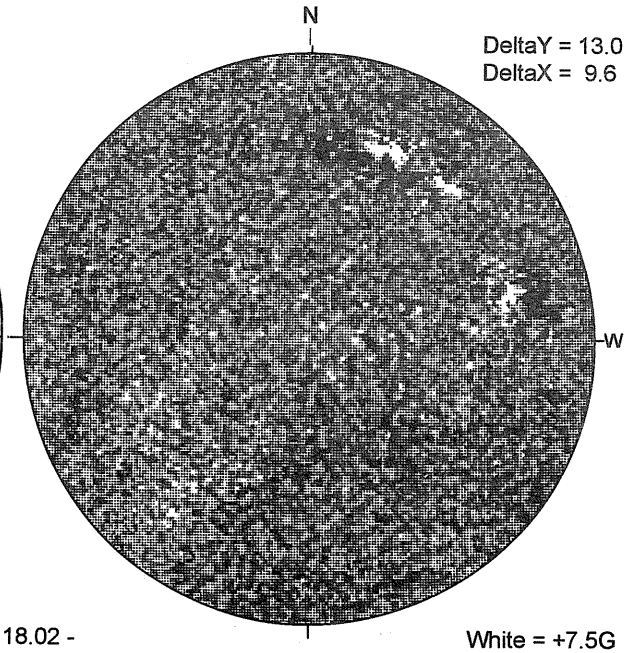


1825 UT

STANFORD MAGNETOGRAM



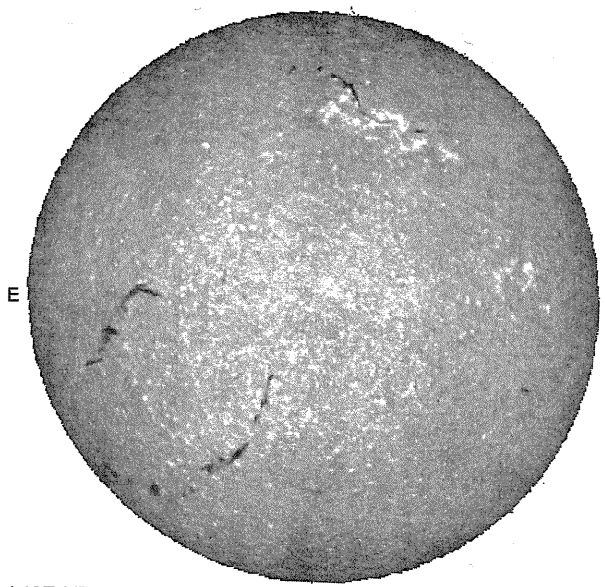
MT. WILSON MAGNETOGRAM



18.02 -
18.98 UT

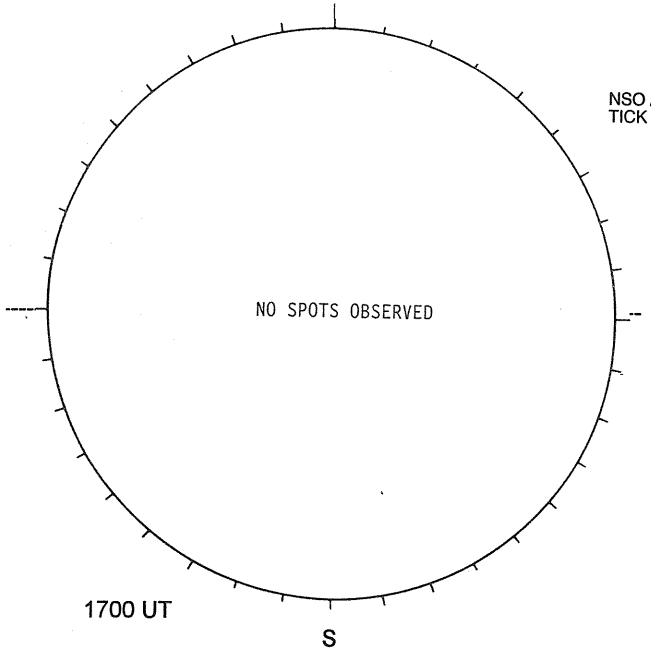
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1427 UT

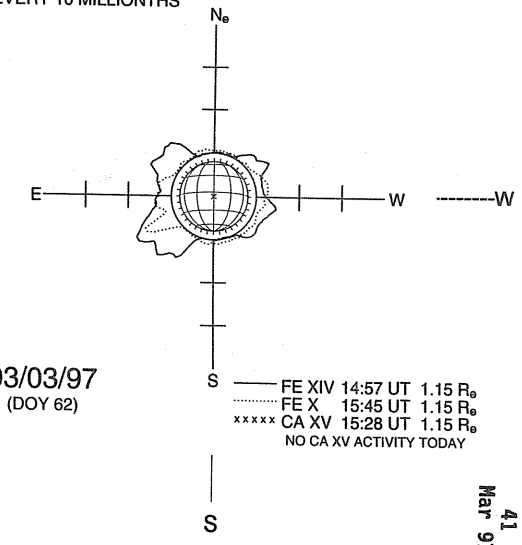
HOLLOMAN SUNSPOT



1700 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



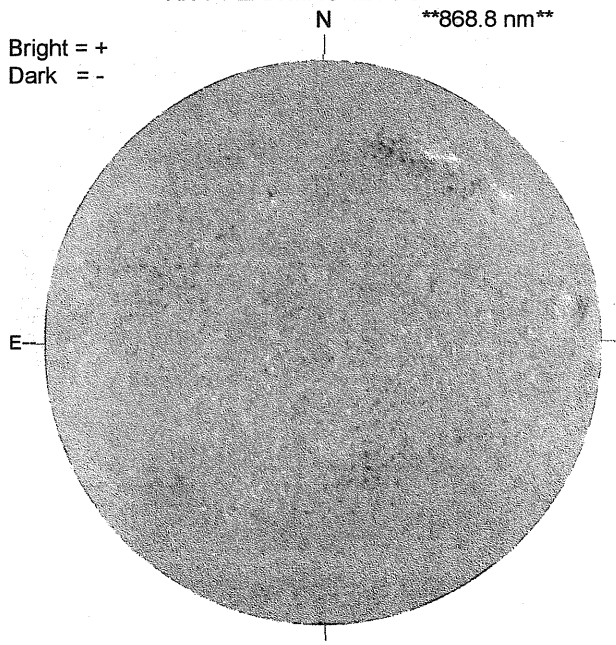
03/03/97
(DOY 62)

FE XIV 14:57 UT 1.15 $R_\odot$
FE X 15:45 UT 1.15 $R_\odot$
CA XV 15:28 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

41
Mar 97

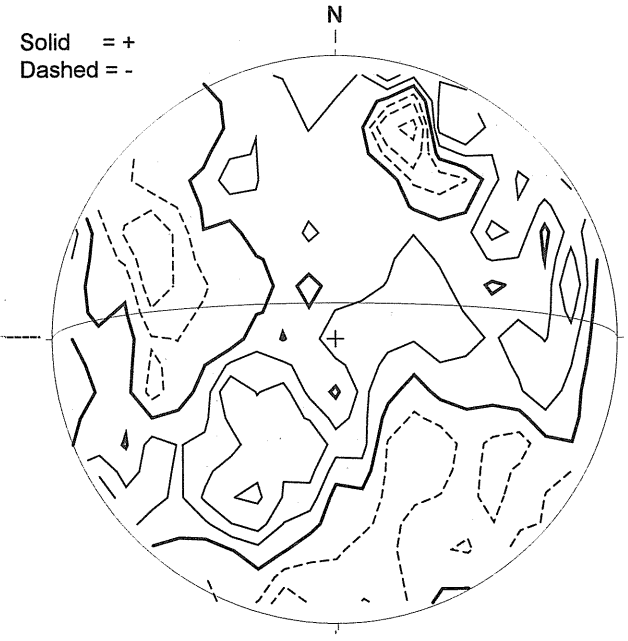
MARCH 4, 1997 (P= - 22.28 , Bo = - 7.25 Lo = 324.29)

KITT PEAK MAGNETOGRAM



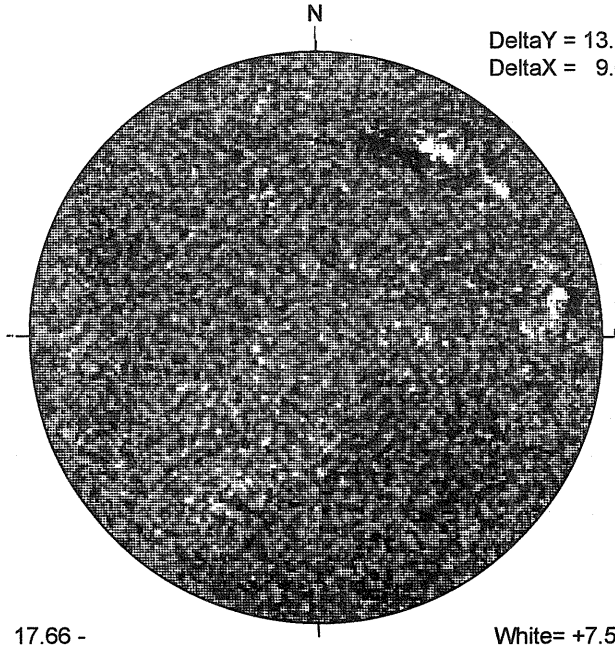
1731 UT

STANFORD MAGNETOGRAM



2243 UT

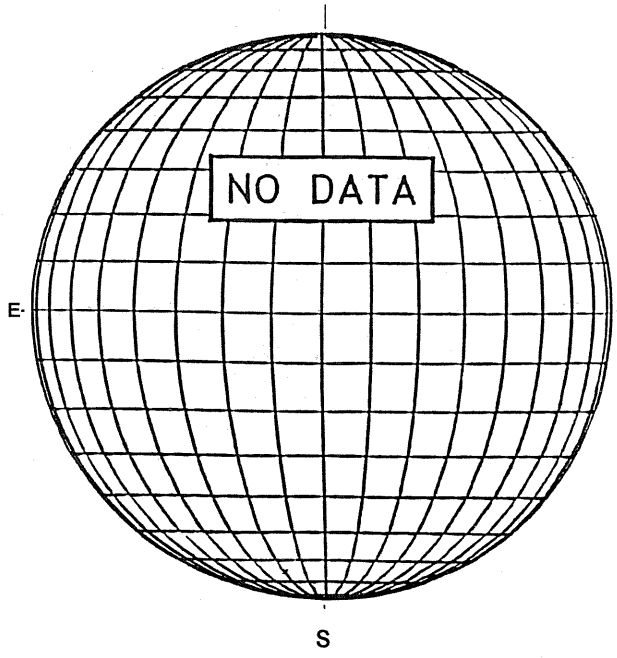
MT. WILSON MAGNETOGRAM



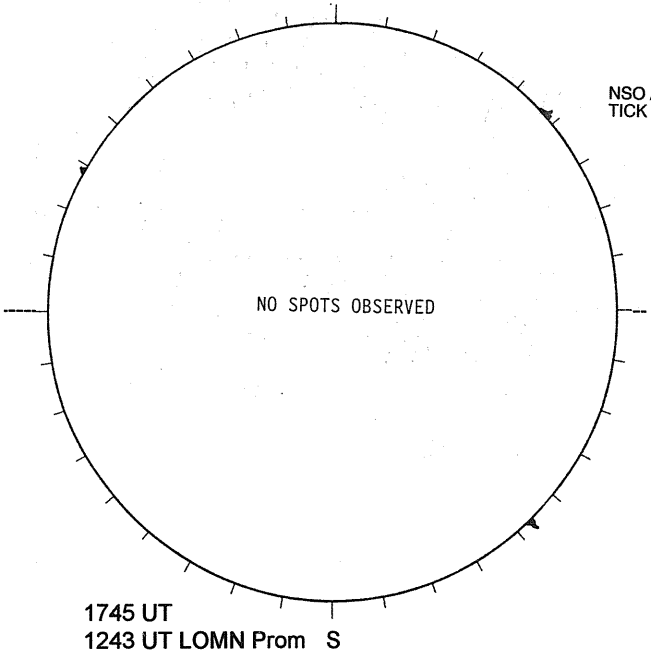
17.66 -
18.62 UT

White= +7.5G
Black = -7.5G

MAUNA LOA PEAK H-ALPHA

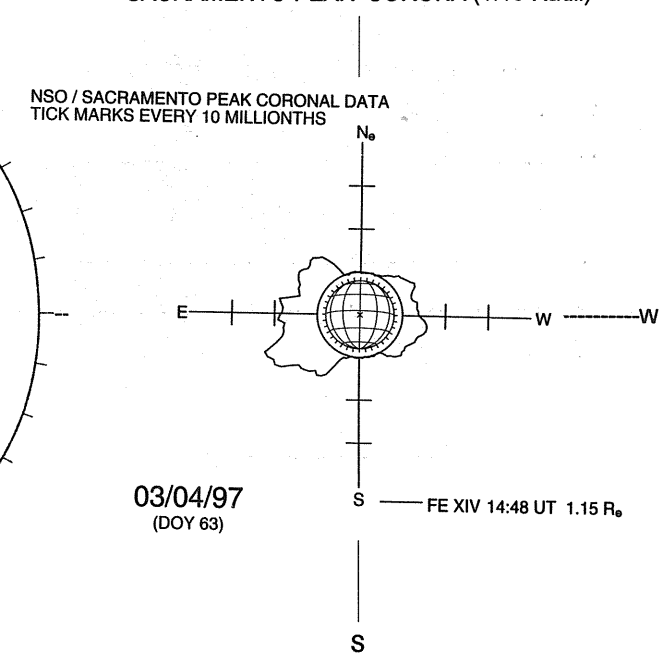


RAMEY SUNSPOT



1745 UT
1243 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

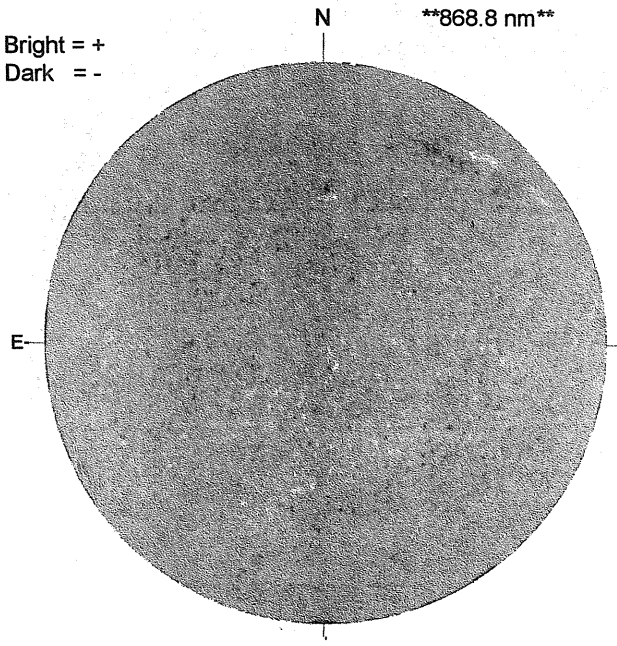


03/04/97
(DOY 63)

S

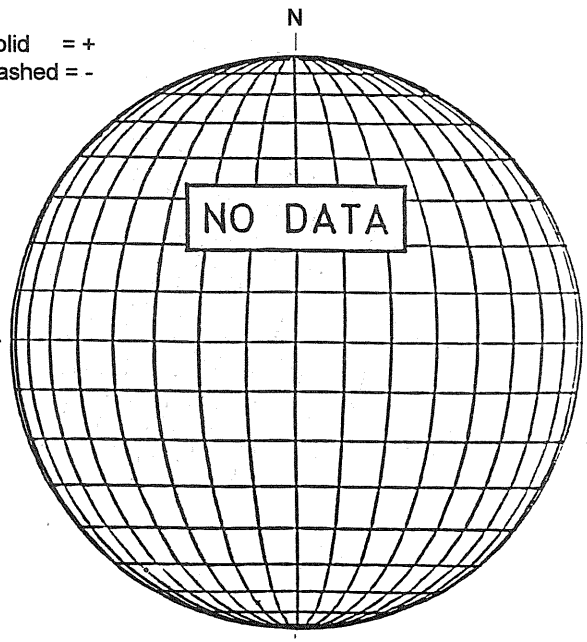
MARCH 5, 1997 (P= - 22.51 , Bo = - 7.25 , Lo = 311.12)

KITT PEAK MAGNETOGRAM

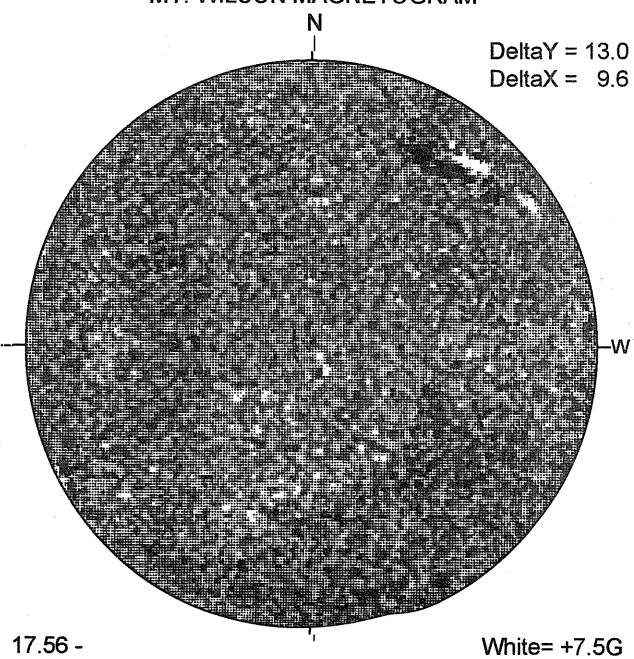


1548 UT

STANFORD MAGNETOGRAM



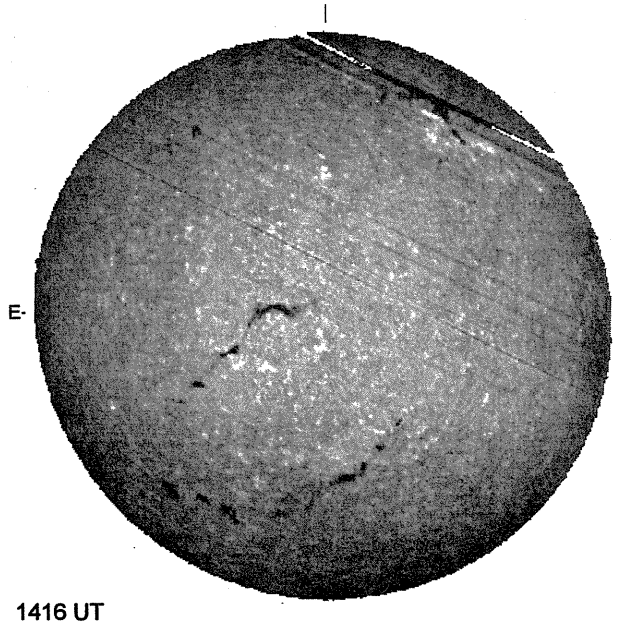
MT. WILSON MAGNETOGRAM



17.56 -
18.52 UT

White= +7.5G
Black = -7.5G

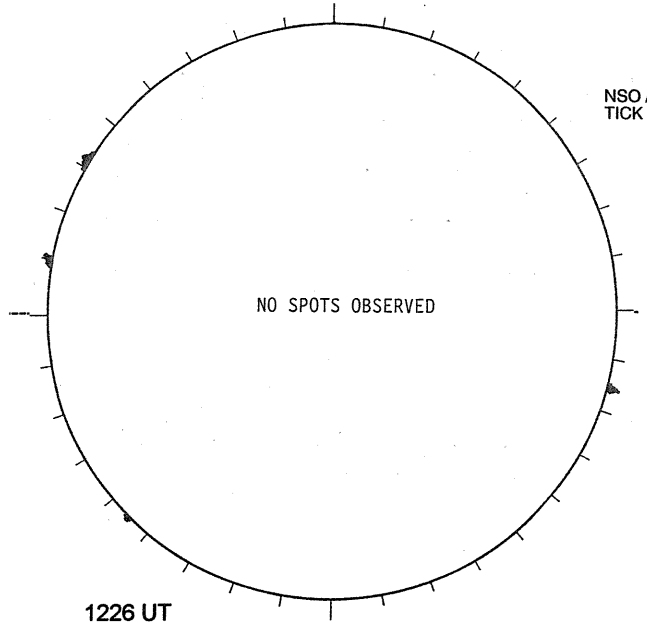
----- SACRAMENTO PEAK H-ALPHA



1416 UT

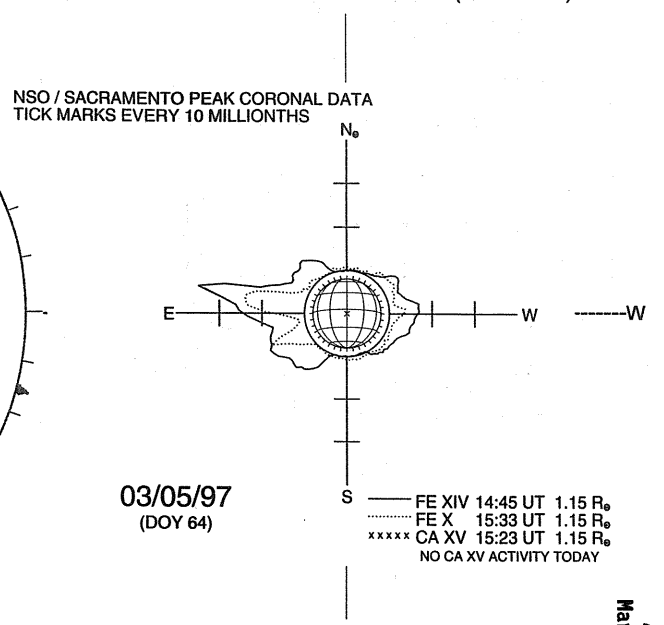
S

RAMEY SUNSPOT



1226 UT
0726 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



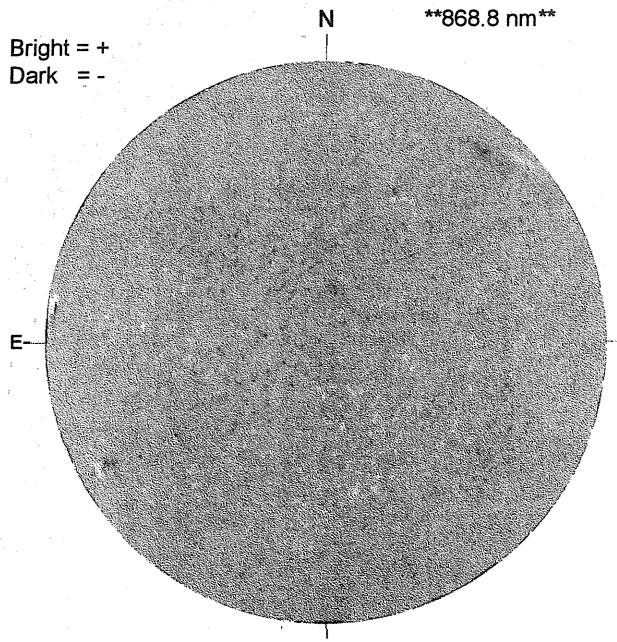
03/05/97
(DOY 64)

S

43
Mar 97

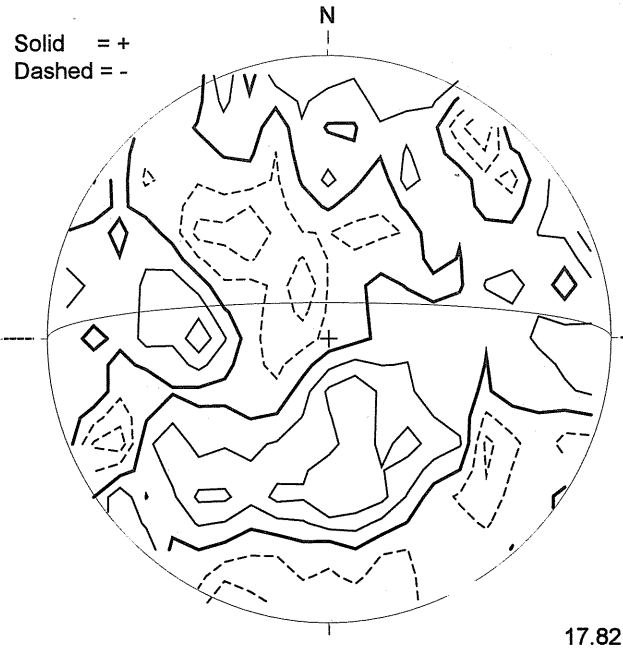
MARCH 6, 1997 (P= - 22.73, Bo = - 7.25 , Lo = 297.94)

KITT PEAK MAGNETOGRAM



1913 UT

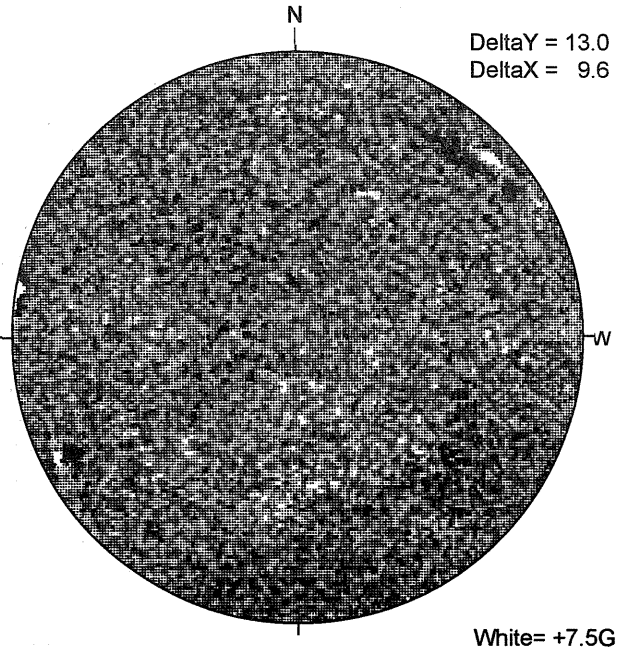
STANFORD MAGNETOGRAM



2214 UT

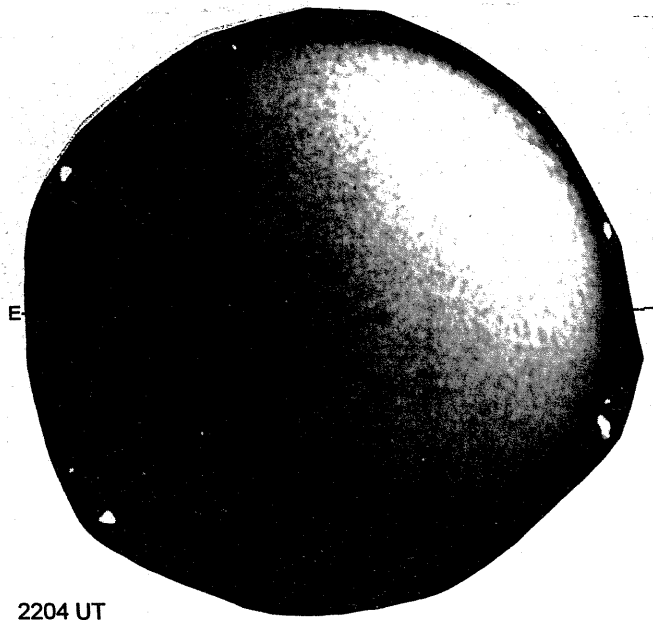
17.82 -
18.78 UT

MT. WILSON MAGNETOGRAM



White= +7.5G
Black = -7.5G

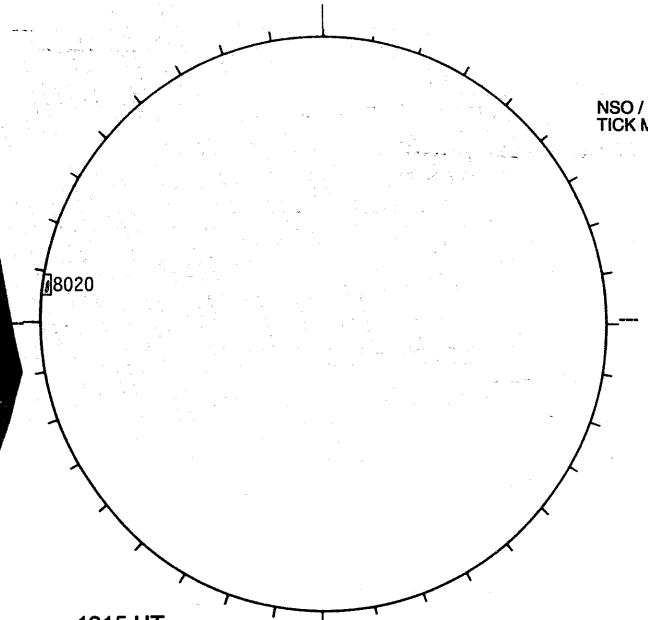
MAUNA LOA H-ALPHA



2204 UT
2210 UT Prom

S

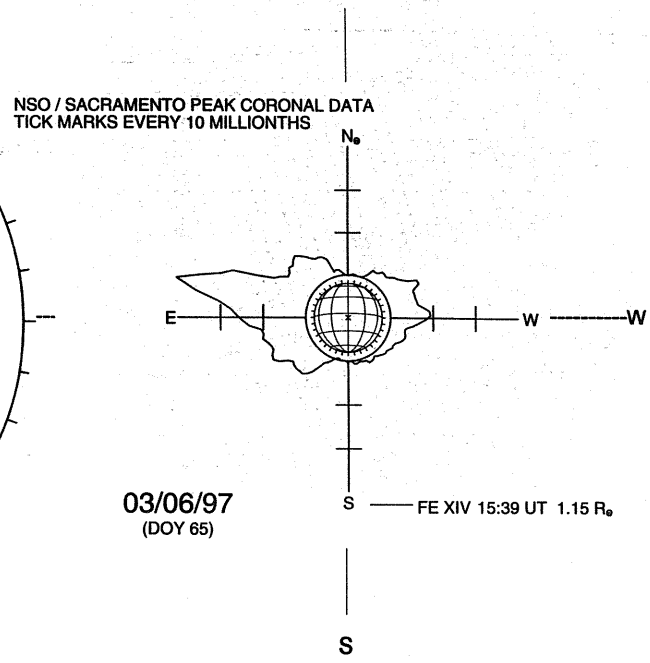
RAMEY SUNSPOT



1315 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

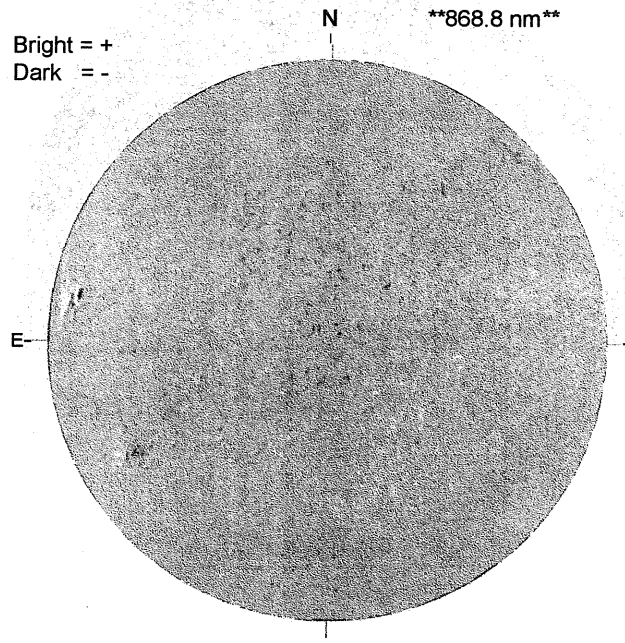


03/06/97
(DOY 65)

S

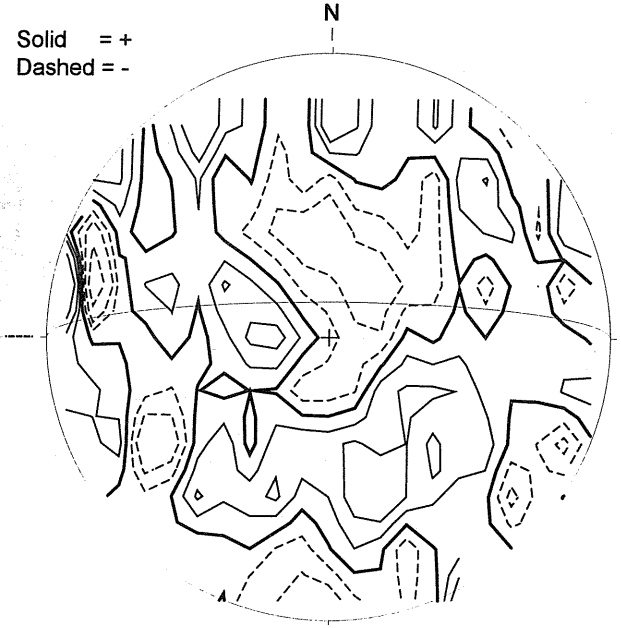
MARCH 7, 1997 (P= - 22.95, Bo = - 7.25 Lo = 284.77)

KITT PEAK MAGNETOGRAM



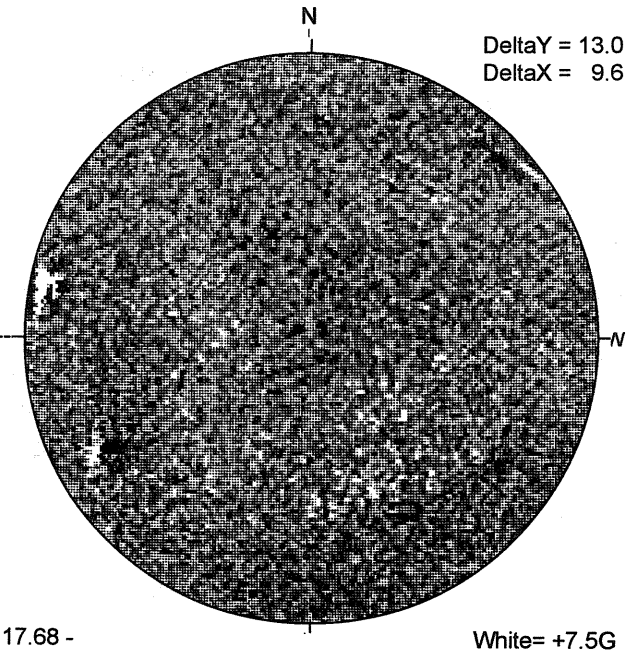
1506 UT

STANFORD MAGNETOGRAM



0104 UT
Mar. 8

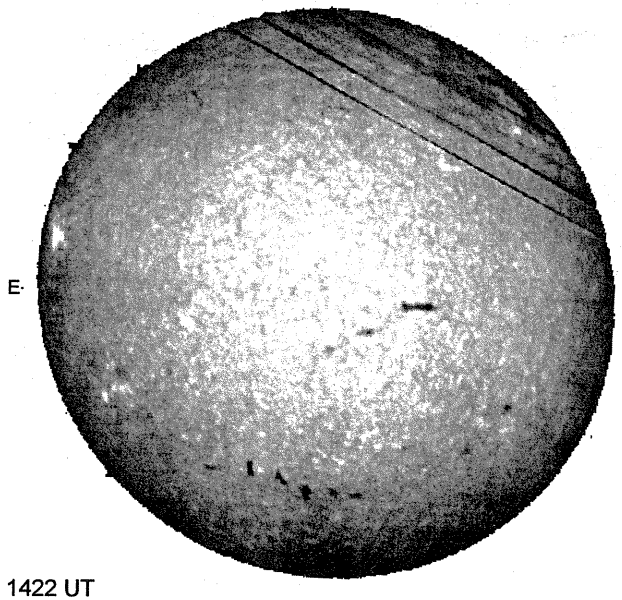
MT. WILSON MAGNETOGRAM



17.68 -
18.64 UT

White= +7.5G
Black = -7.5G

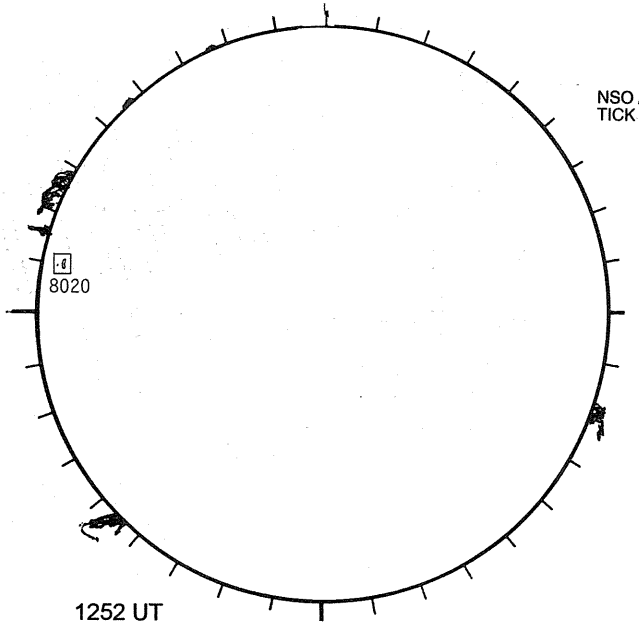
----- SACRAMENTO PEAK H-ALPHA



1422 UT

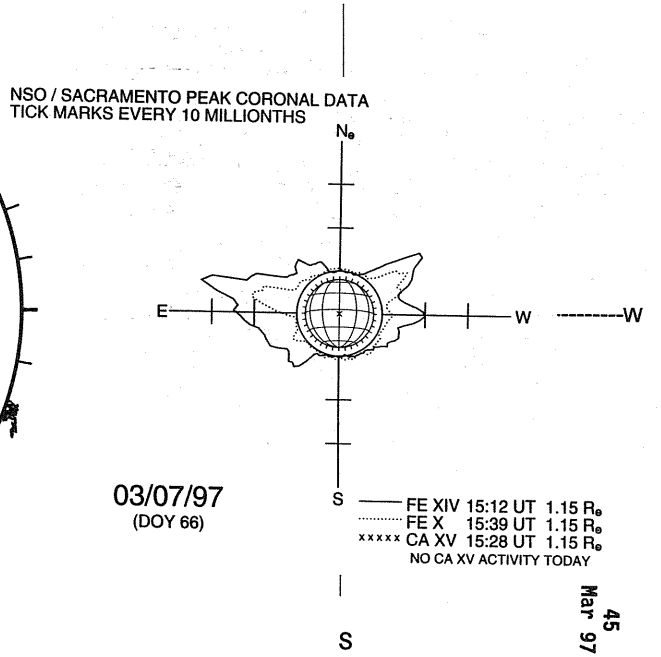
S

RAMEY SUNSPOT



1252 UT
1224 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

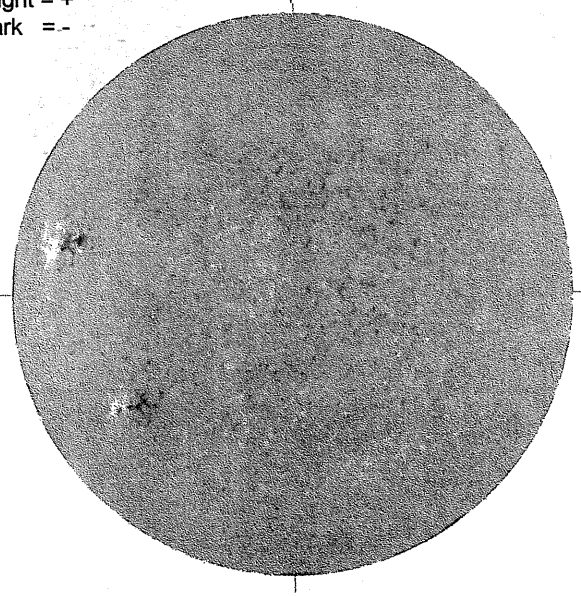


S

MARCH 8, 1997 (P= - 23.16, Bo = - 7.25 , Lo = 271.59)

KITT PEAK MAGNETOGRAM

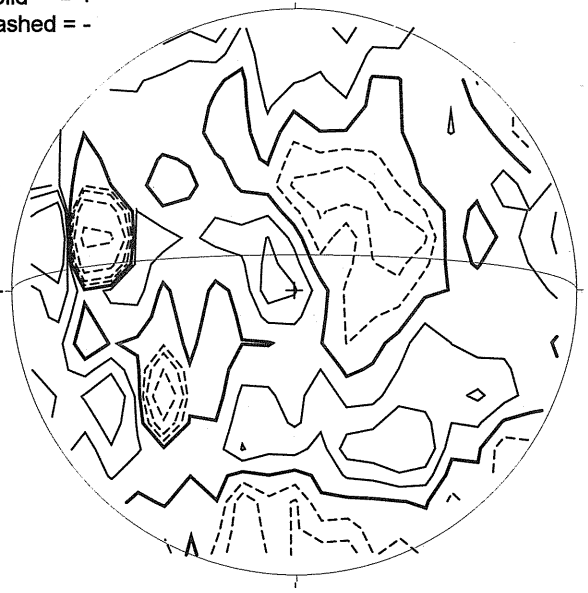
N
868.8 nm
Bright = +
Dark = -
E



1544 UT

STANFORD MAGNETOGRAM

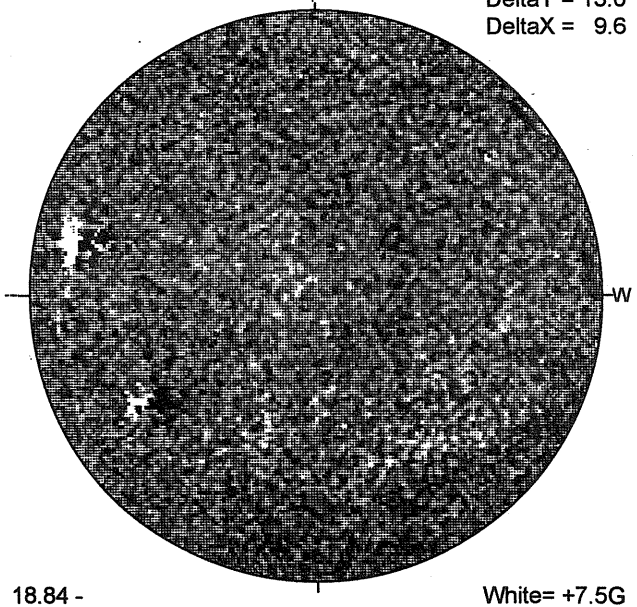
N
Solid = +
Dashed = -



2254 UT

MT. WILSON MAGNETOGRAM

N
DeltaY = 13.0
DeltaX = 9.6
W

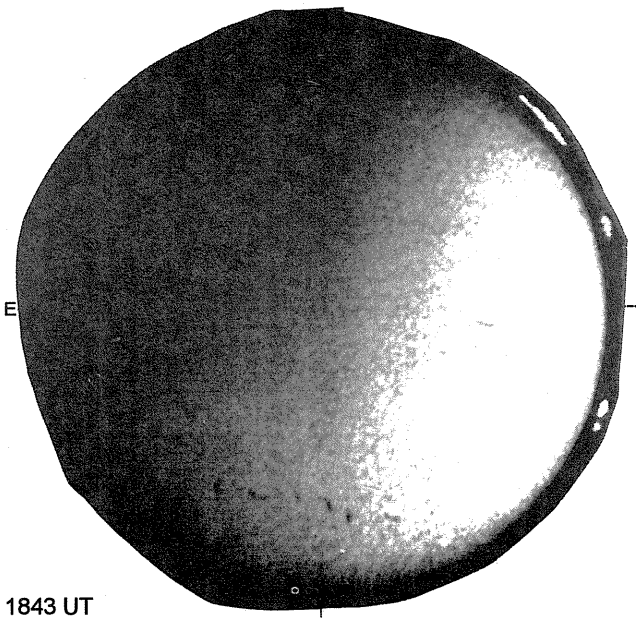


18.84 -
19.81 UT

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

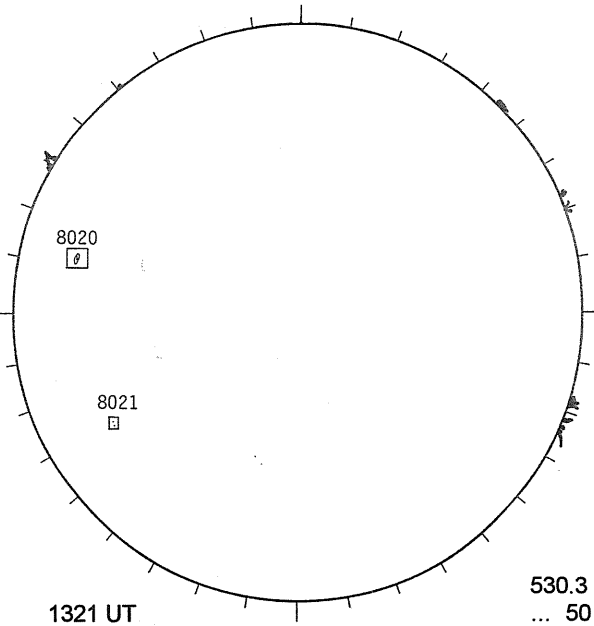
E



S

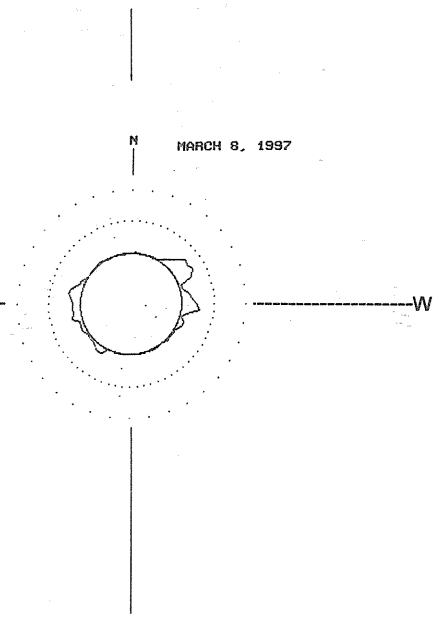
1843 UT
1955 UT Prom

RAMEY SUNSPOT



1321 UT
0602 UT LOMN Prom S

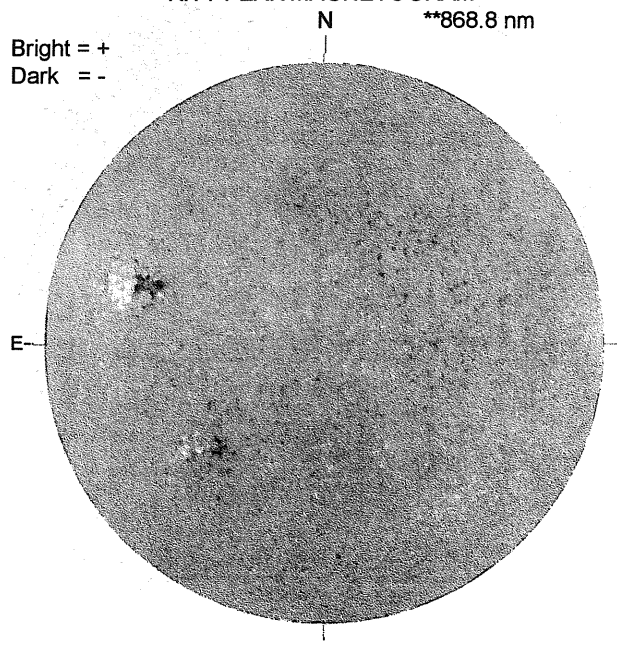
LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 0736 UT
... 50 abs. units
. . 100 abs. units

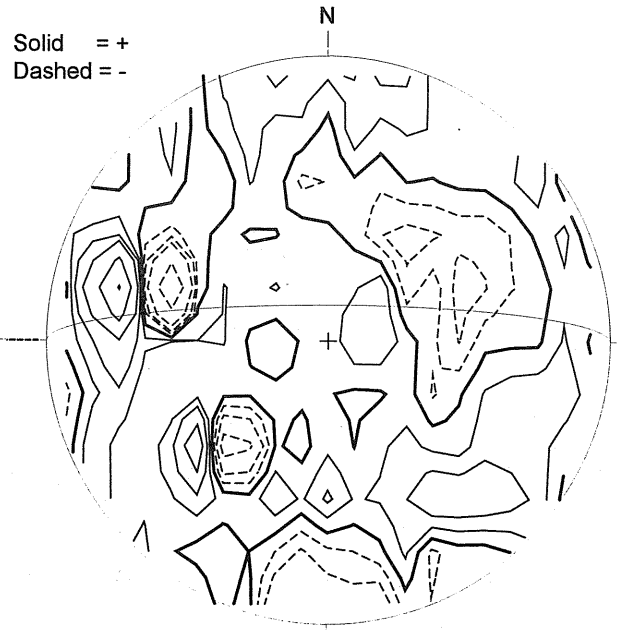
MARCH 9, 1997 (P= - 23.36, Bo = - 7.24, Lo = 258.42)

KITT PEAK MAGNETOGRAM



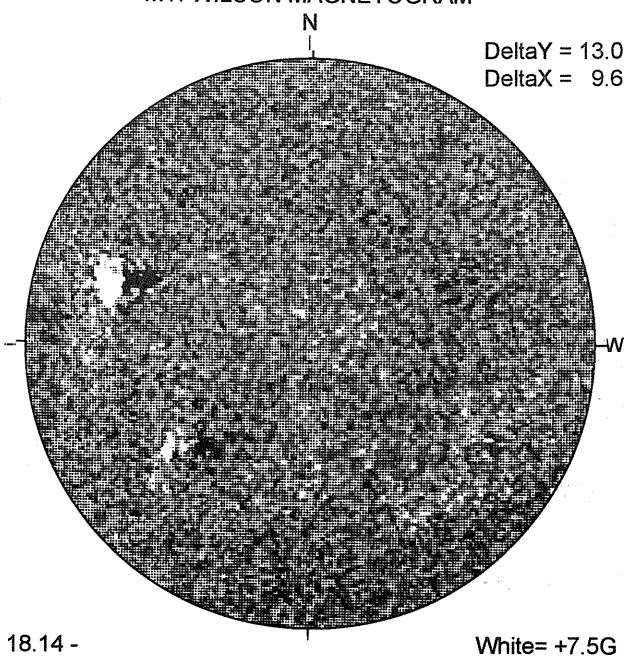
1526 UT

STANFORD MAGNETOGRAM



1935 UT

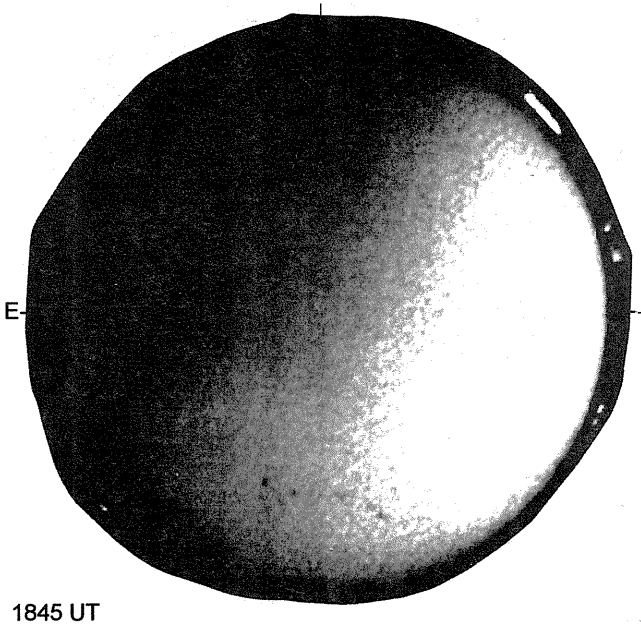
MT. WILSON MAGNETOGRAM



18.14 -
19.10 UT

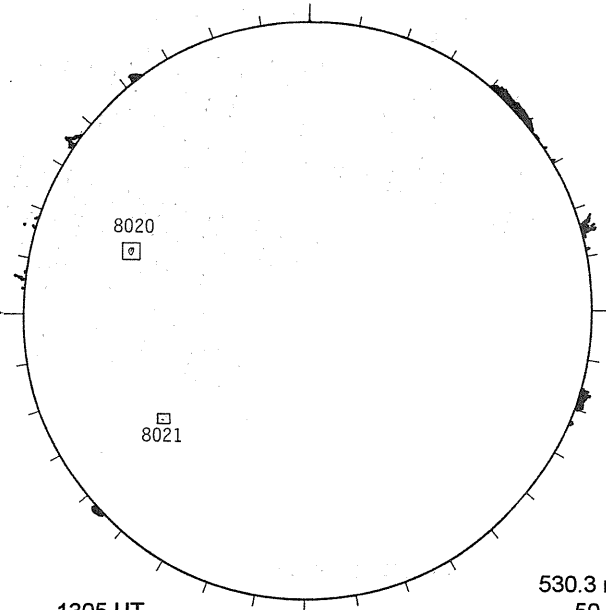
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



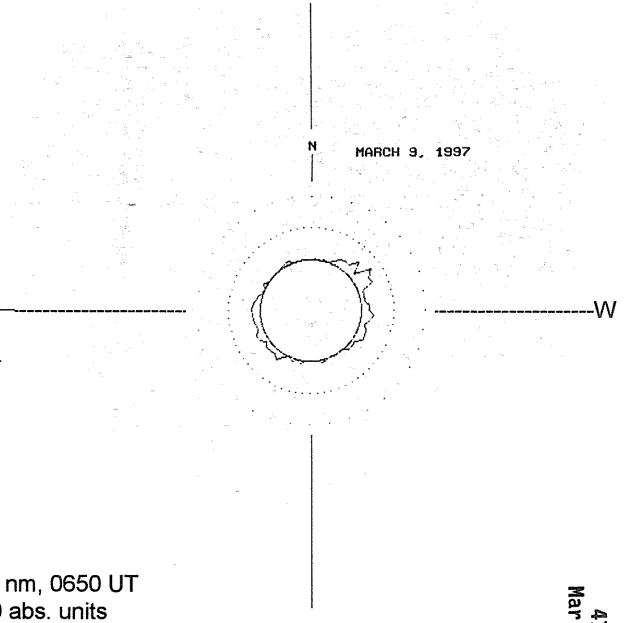
1845 UT
1818 UT Prom

RAMEY SUNSPOT



1305 UT
0559 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

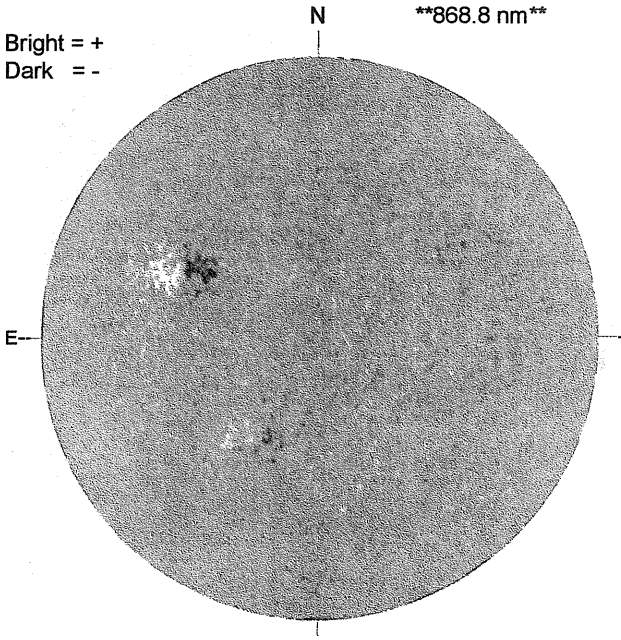


530.3 nm, 0650 UT
... 50 abs. units
. . 100 abs. units

47
Mar 97

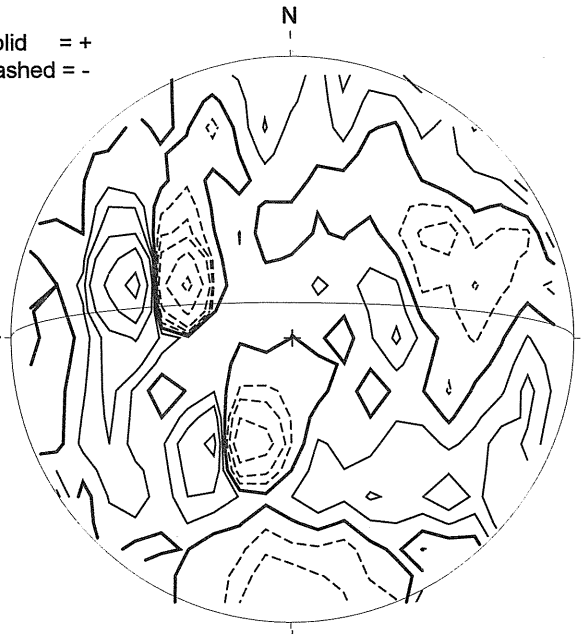
MARCH 10, 1997 (P= - 23.56, Bo = - 7.24 Lo = 245.24)

KITT PEAK MAGNETOGRAM



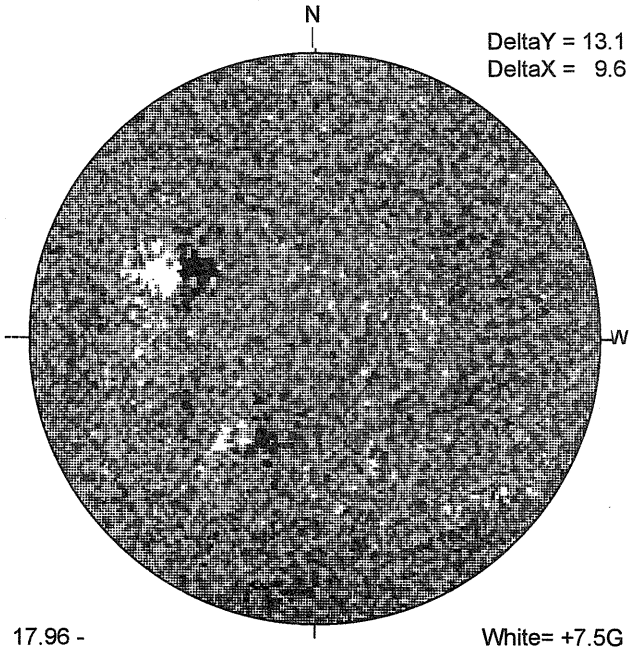
1545 UT

STANFORD MAGNETOGRAM



1823 UT

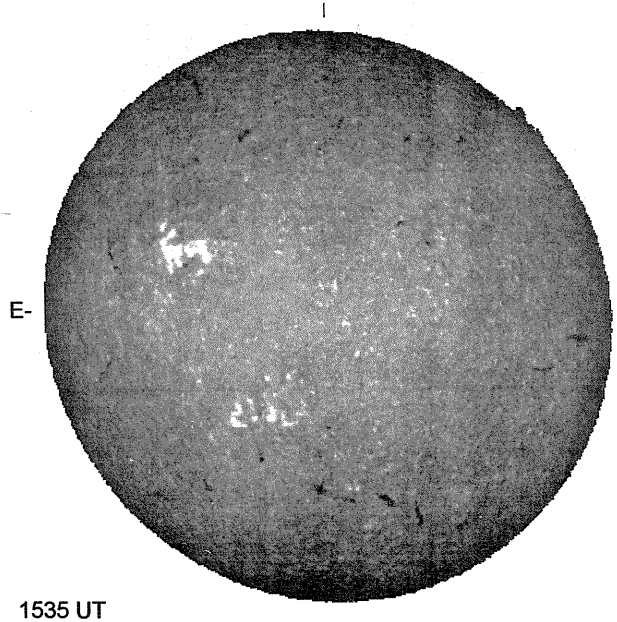
MT. WILSON MAGNETOGRAM



17.96 -
18.92 UT

White= +7.5G
Black = -7.5G

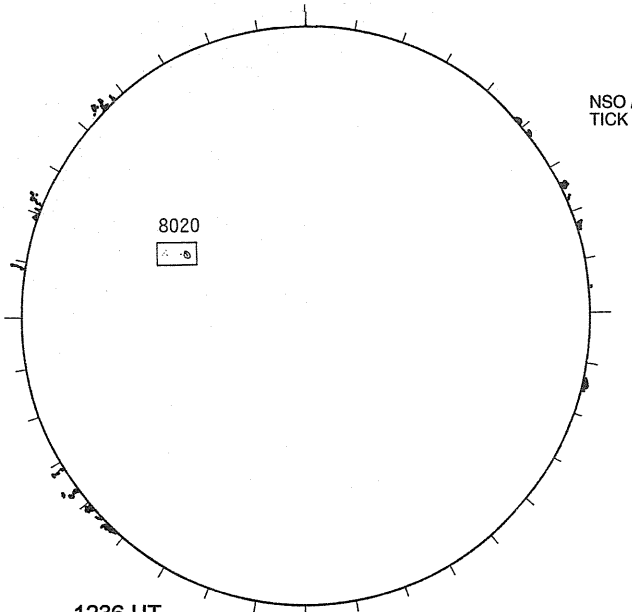
SACRAMENTO PEAK H-ALPHA



1535 UT

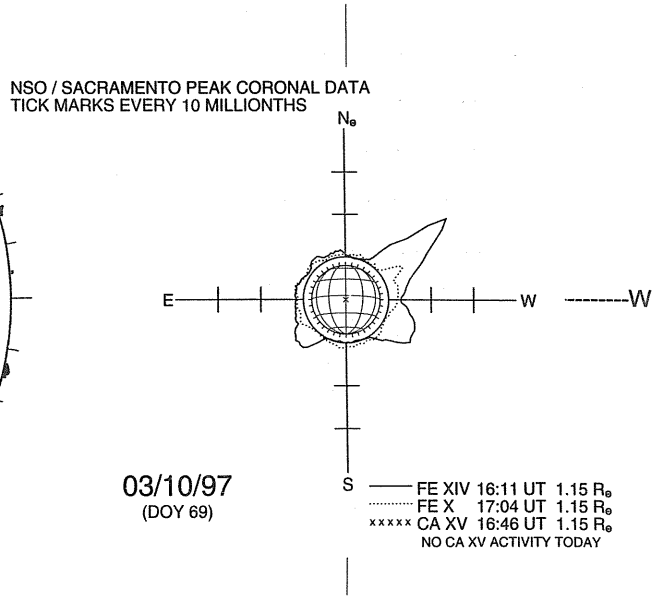
S

RAMEY SUNSPOT



1236 UT
0630 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



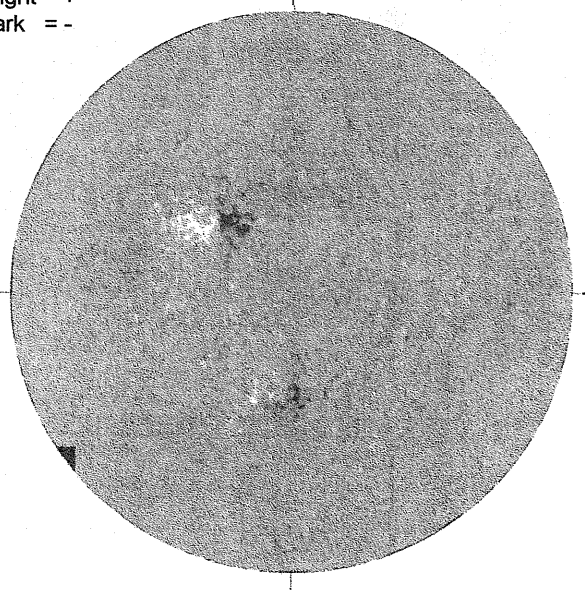
S

MARCH 11, 1997 (P= - 23.75, Bo = - 7.23, Lo = 232.06)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



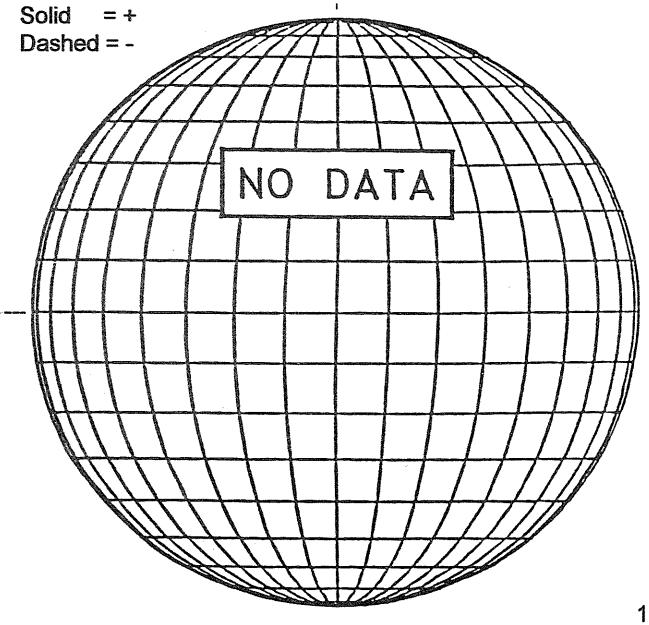
E

1611 UT

STANFORD MAGNETOGRAM

N

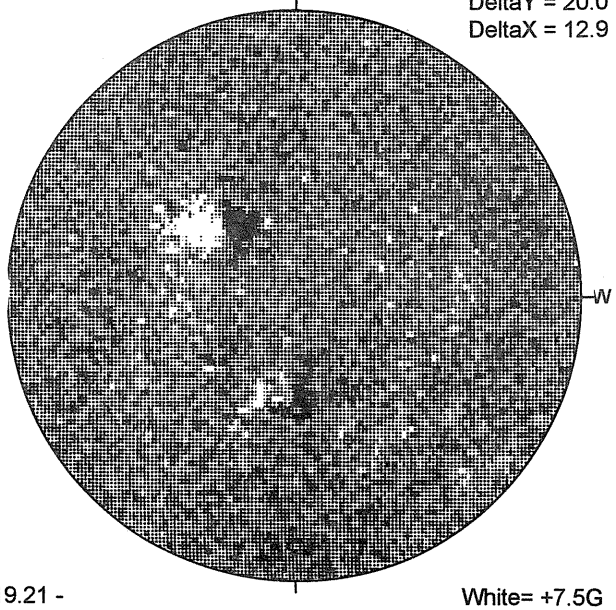
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.0
DeltaX = 12.9

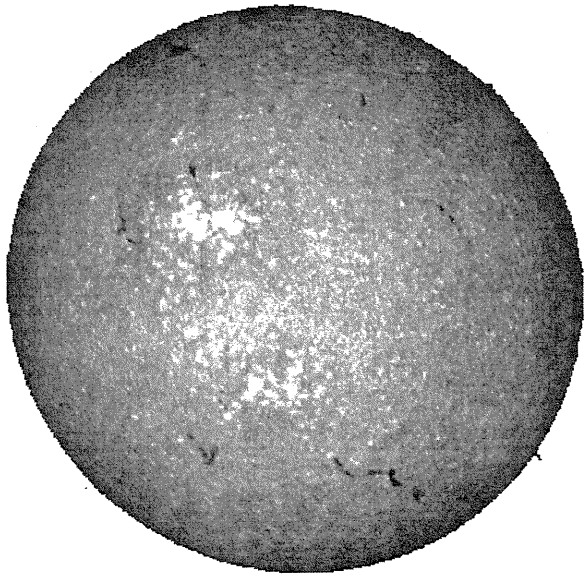


W

19.21 -
19.63 UT

White= +7.5G
Black = -7.5G

----- SACRAMEMTO PEAK H-ALPHA

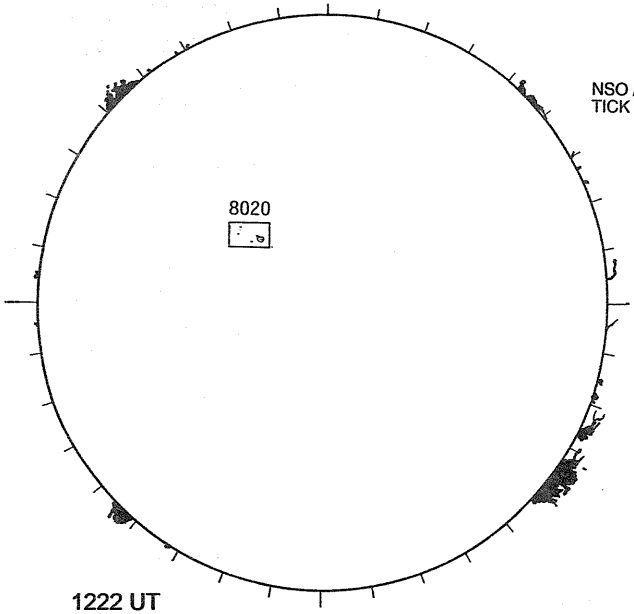


E

1436 UT

S

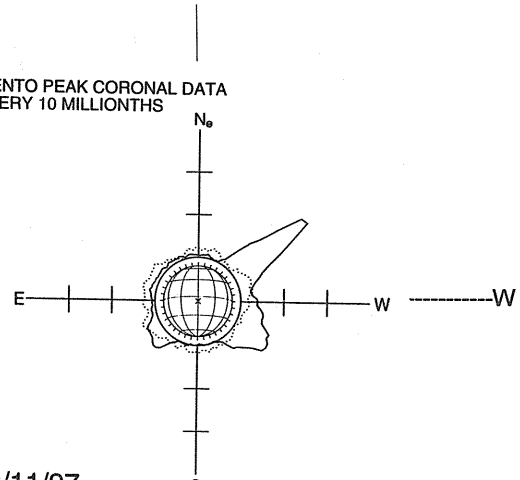
RAMEY SUNSPOT



1222 UT
0614 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



03/11/97
(DOY 70)

FE XIV 15:11 UT 1.15 $R_\odot$
FE X 16:01 UT 1.15 $R_\odot$
xxxxx CA XV 15:49 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

S

49
Mar 97

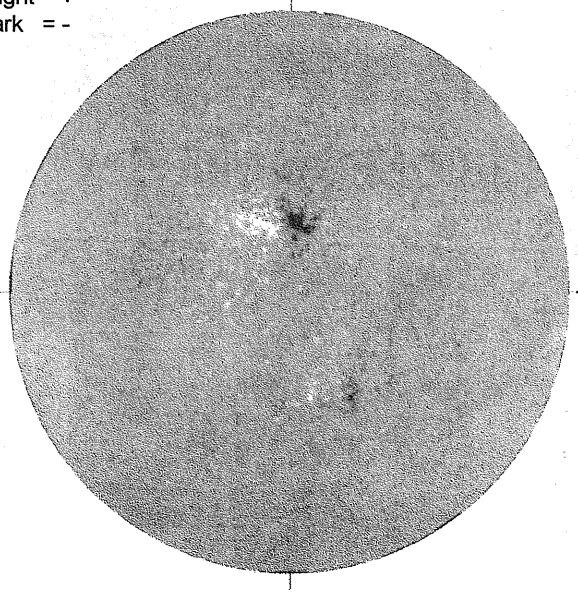
MARCH 12, 1997 (P= - 23.93, Bo = - 7.22, Lo = 218.88)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



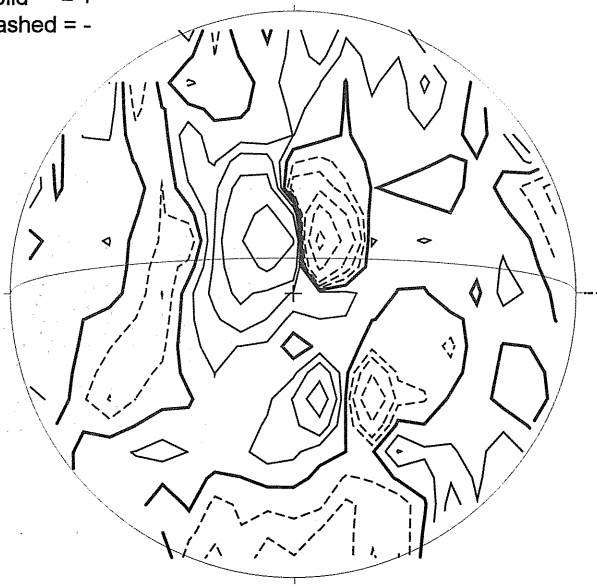
E

1754 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

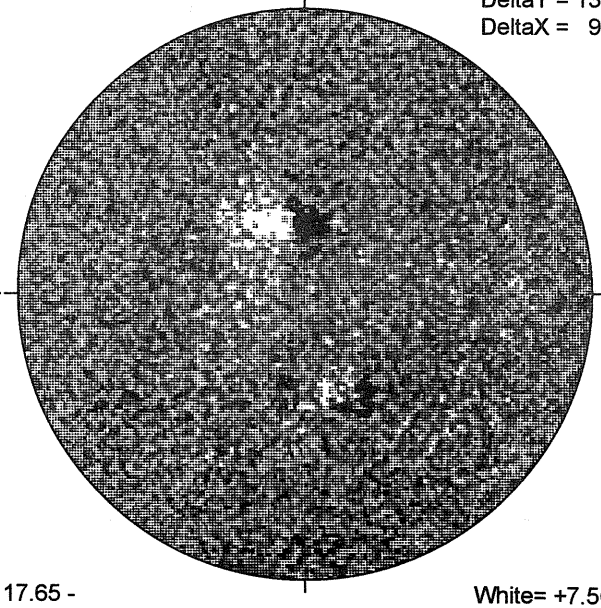


2143 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

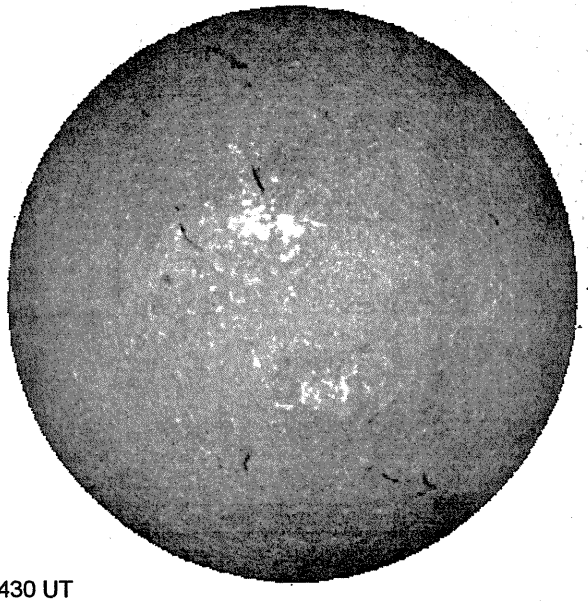


W

17.65 -
18.61 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

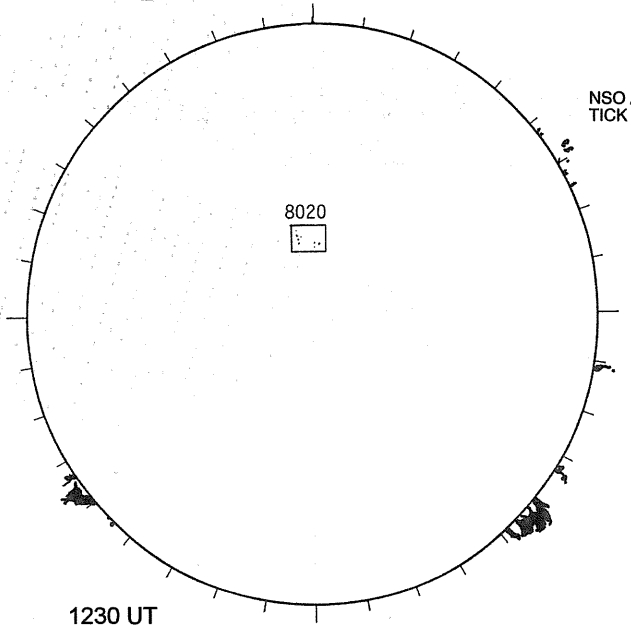


E

1430 UT

S

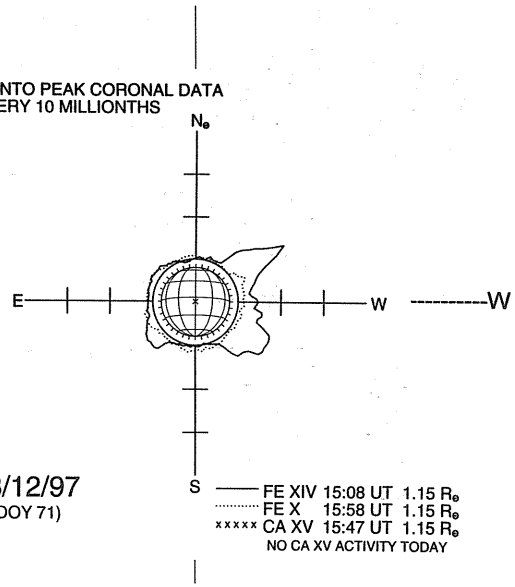
RAMEY SUNSPOT



1230 UT
0606 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



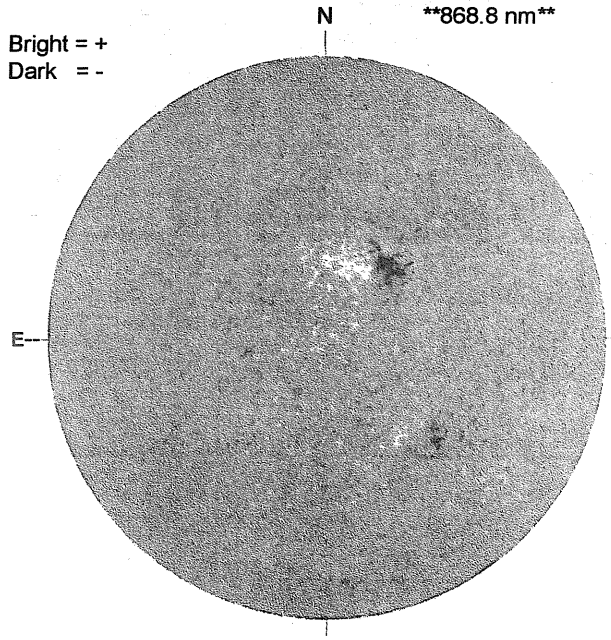
03/12/97
(DOY 71)

FE XIV 15:08 UT 1.15 $R_\odot$
FE X 15:58 UT 1.15 $R_\odot$
CA XV 15:47 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

S

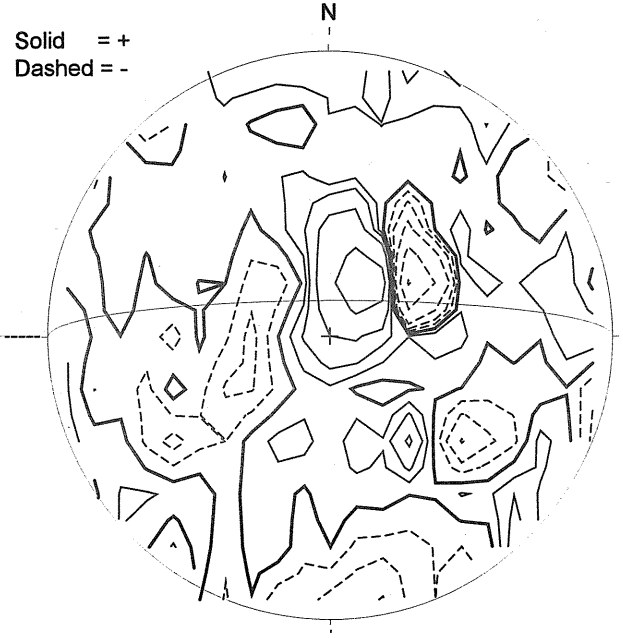
MARCH 13, 1997 (P= - 24.11, Bo = - 7.20, Lo = 205.71)

KITT PEAK MAGNETOGRAM



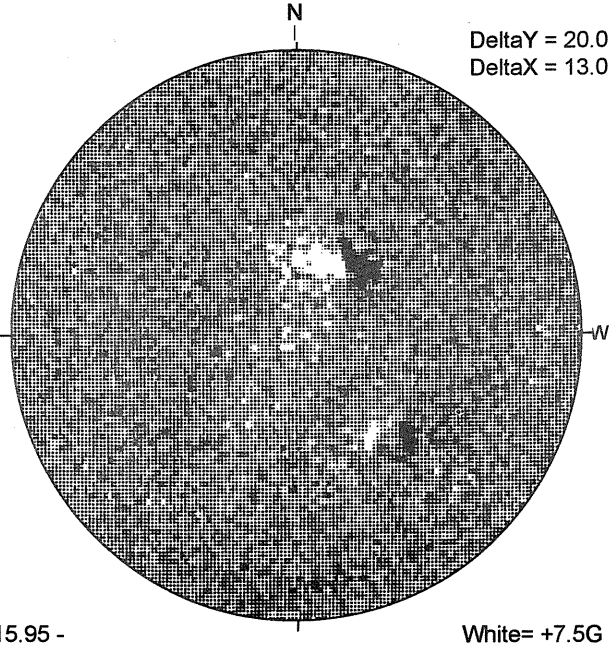
1451 UT

STANFORD MAGNETOGRAM



2202 UT

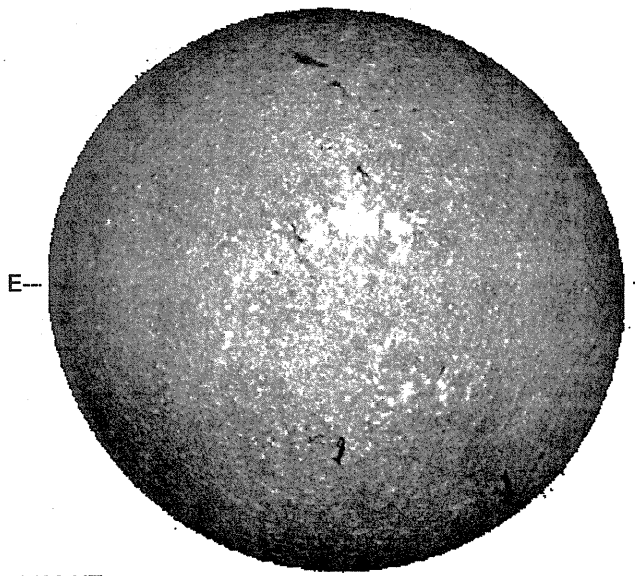
MT. WILSON MAGNETOGRAM



15.95 -
16.37 UT

White= +7.5G
Black = -7.5G

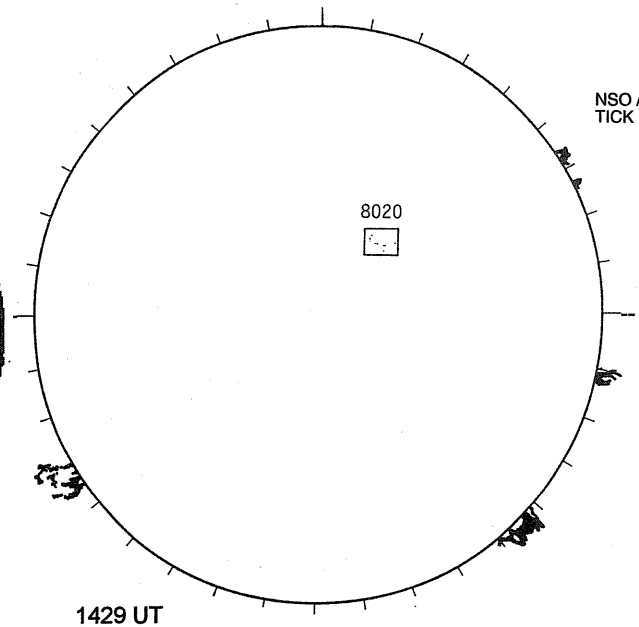
---- SACRAMENTO PEAK H-ALPHA



1423 UT

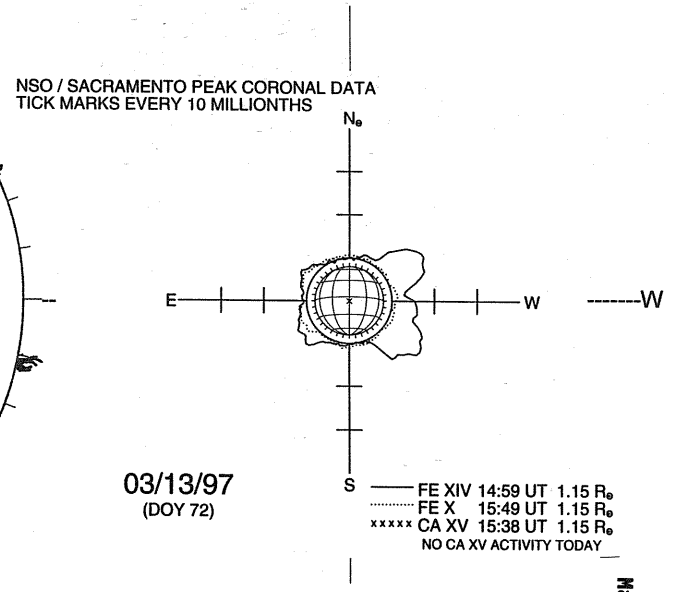
S

RAMEY SUNSPOT



1429 UT
0743 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

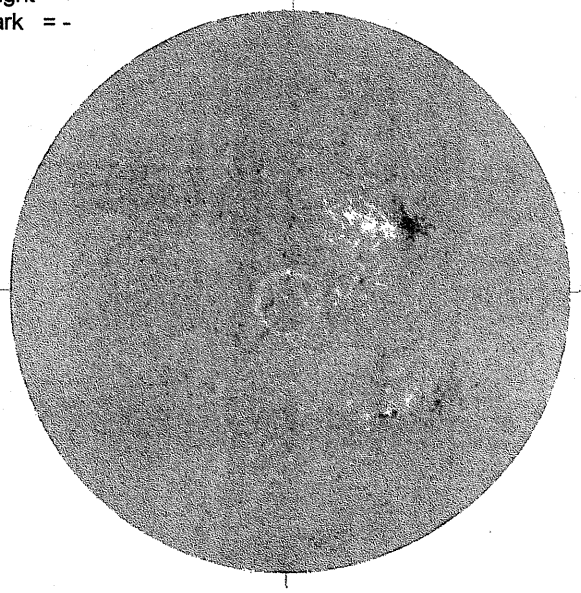
MARCH 14, 1997 (P= - 24.28, Bo = - 7.19, Lo= 192.53)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



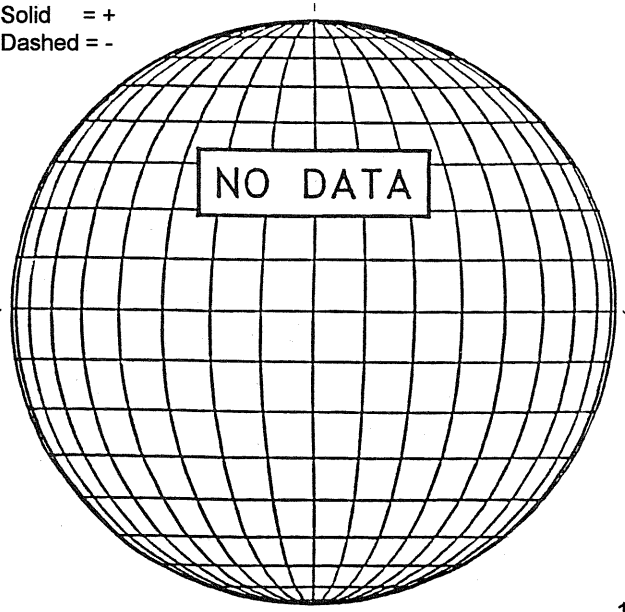
E

1445 UT

STANFORD MAGNETOGRAM

N

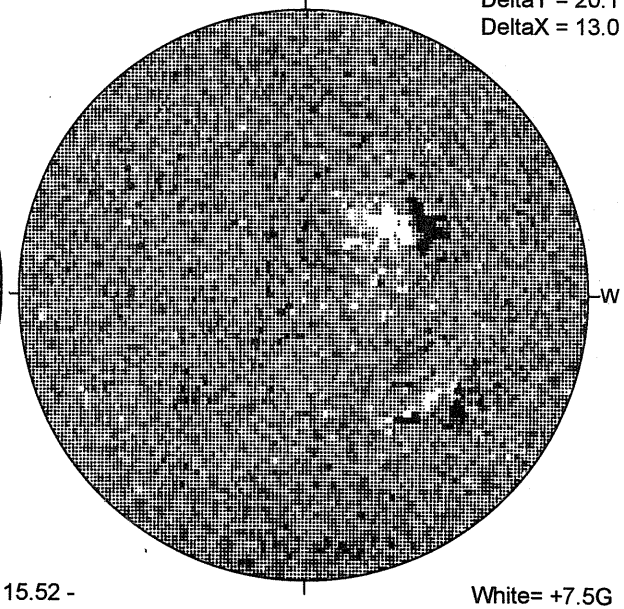
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.1
DeltaX = 13.0

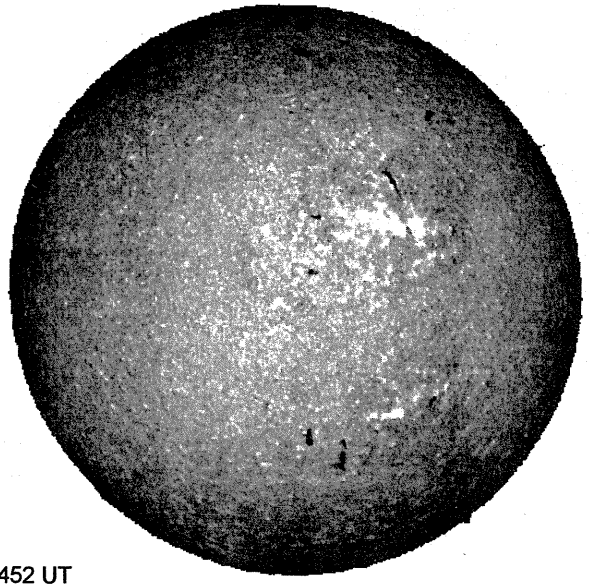


W

15.52 -
15.94 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

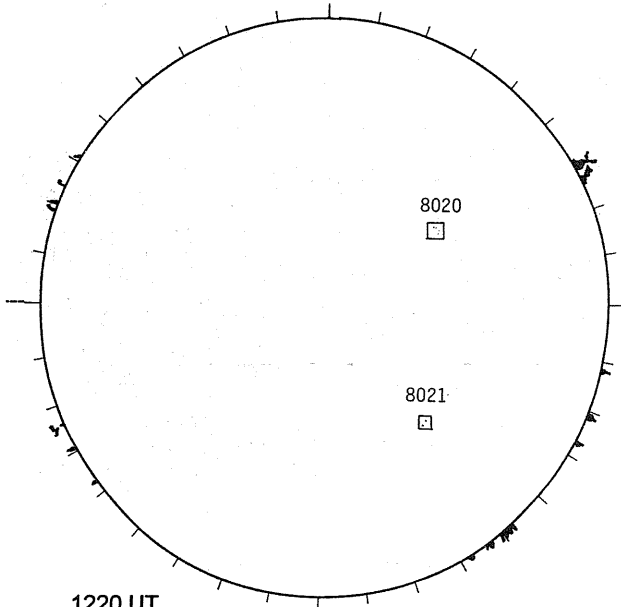


E

1452 UT

S

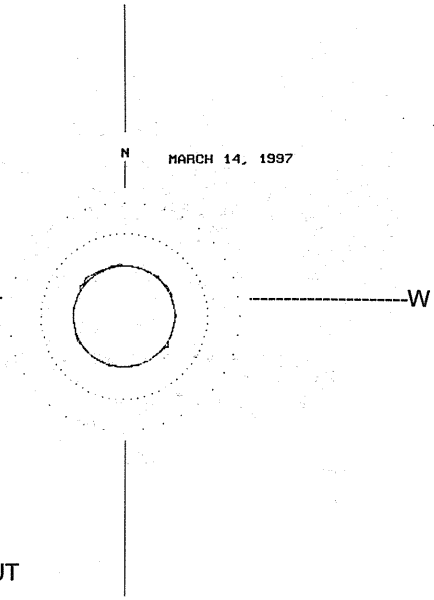
RAMEY SUNSPOT



1220 UT
0708 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



W

530.3 nm, 0721 UT
... 50 abs. units
. . 100 abs. units

S

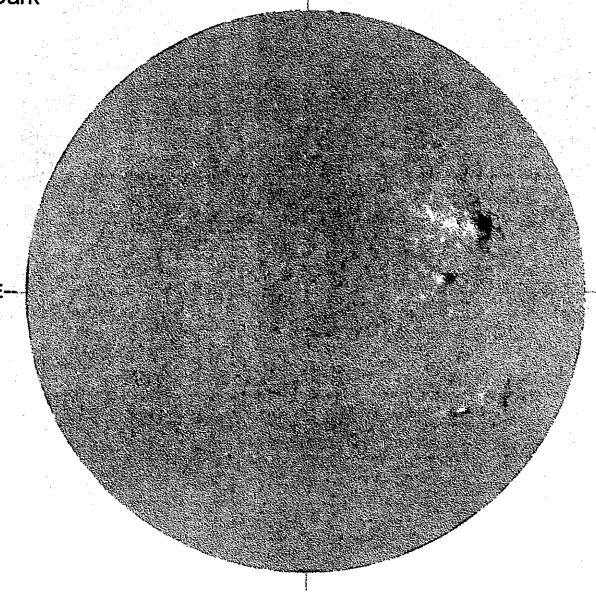
MARCH 15, 1997 (P= - 24.45, Bo = - 7.17, Lo = 179.35)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



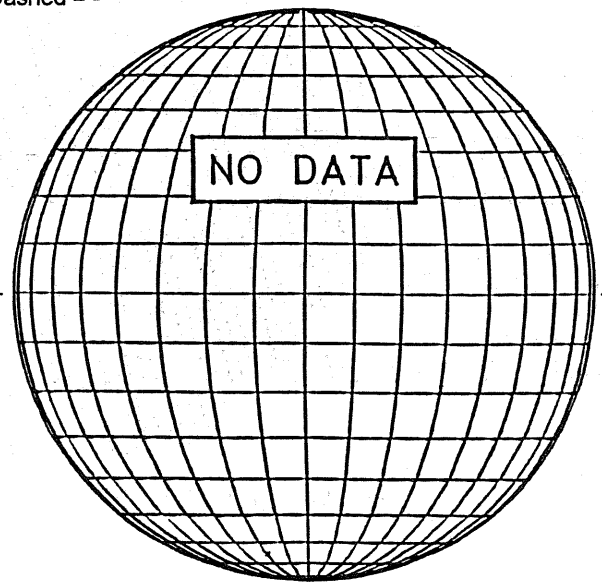
E

1453 UT

STANFORD MAGNETOGRAM

N

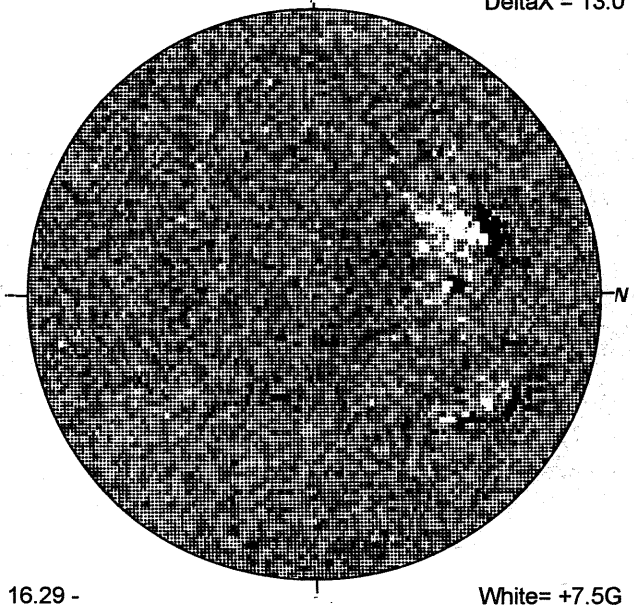
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.0
DeltaX = 13.0

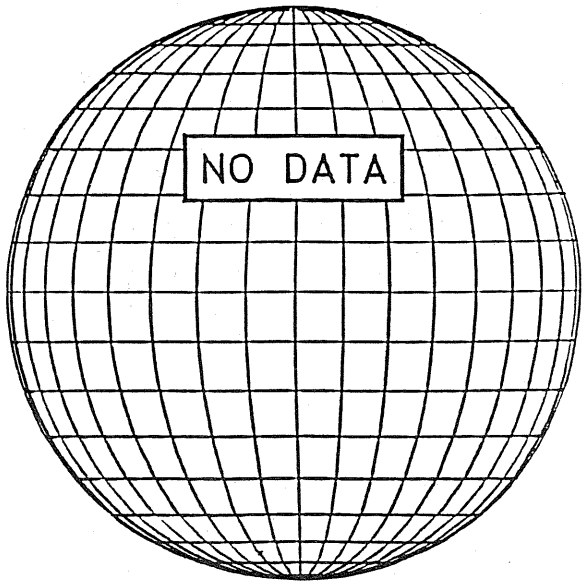


W

16.29 -
16.71 UT

White= +7.5G
Black = -7.5G

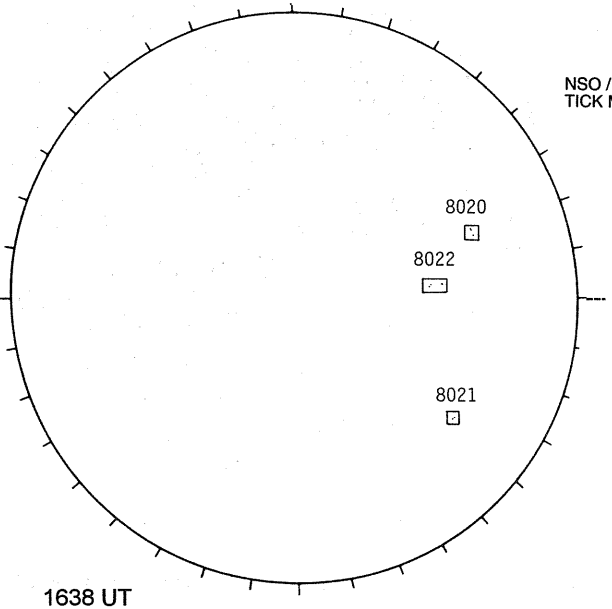
MAUNA LOA H-ALPHA



E

S

RAMEY SUNSPOT

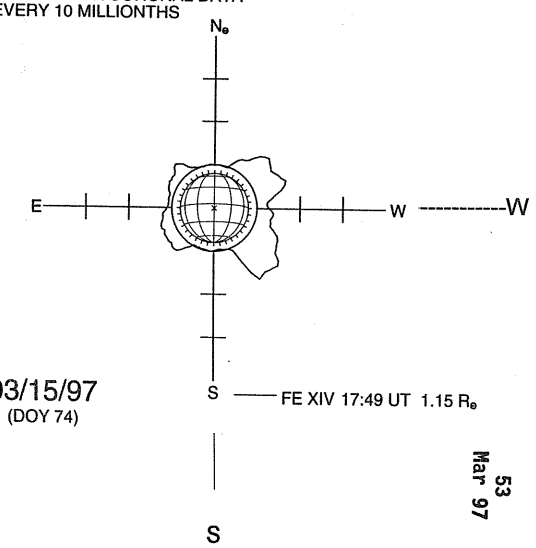


1638 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



03/15/97
(DOY 74)

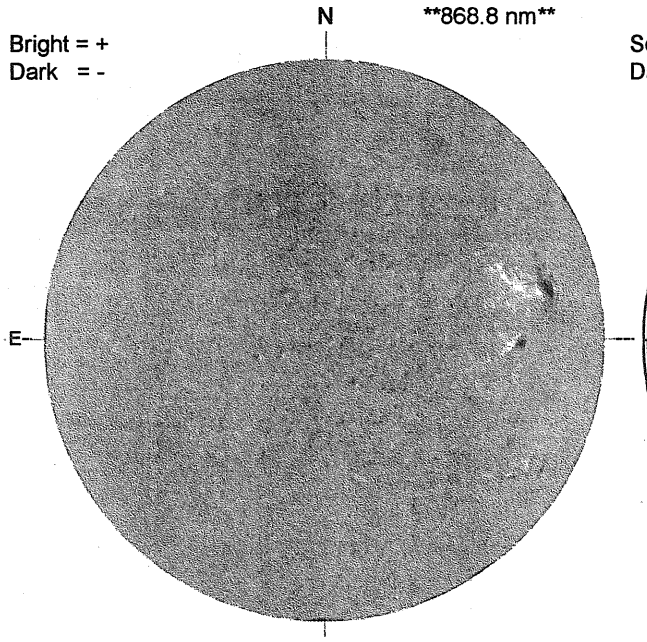
FE XIV 17:49 UT 1.15 R_e

S

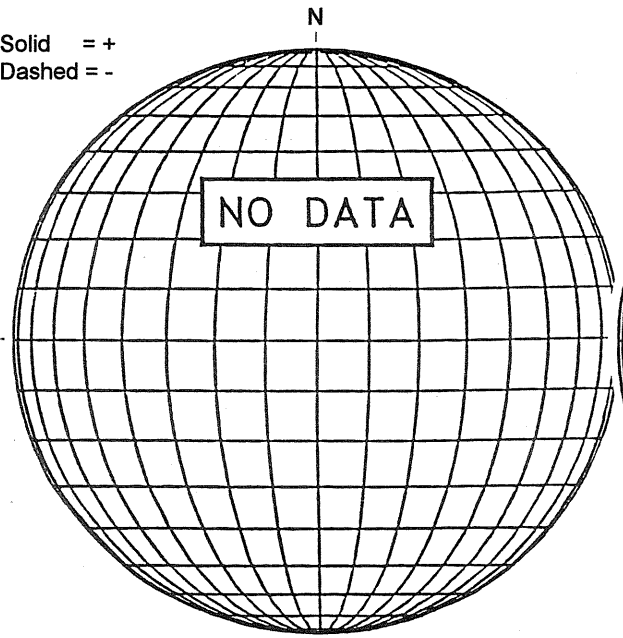
53
Mar 97

MARCH 16, 1997 (P= - 24.60, Bo = - 7.15, Lo = 166.17)

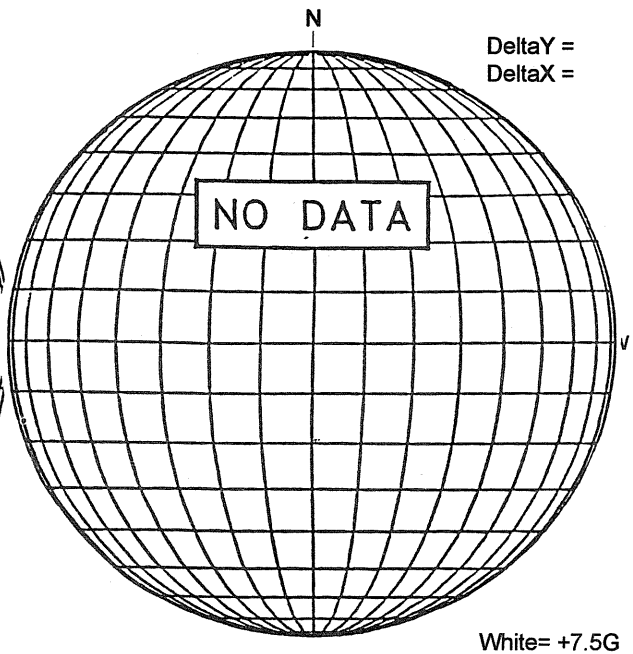
KITT PEAK MAGNETOGRAM



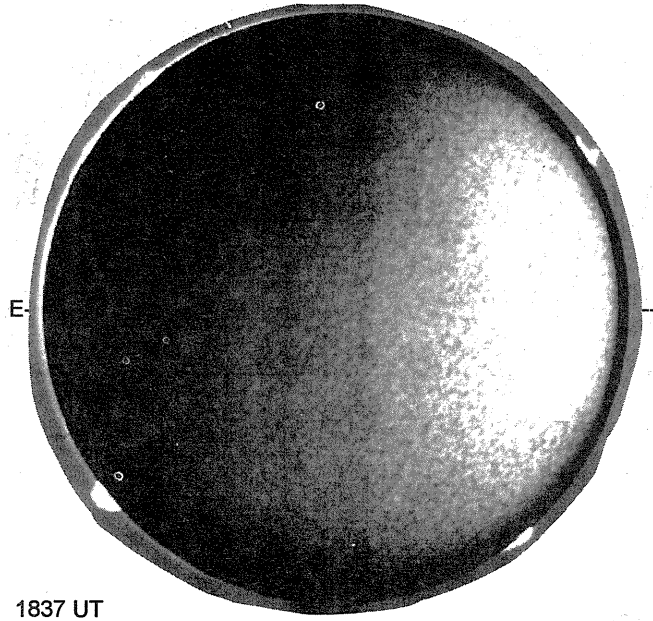
STANFORD MAGNETOGRAM



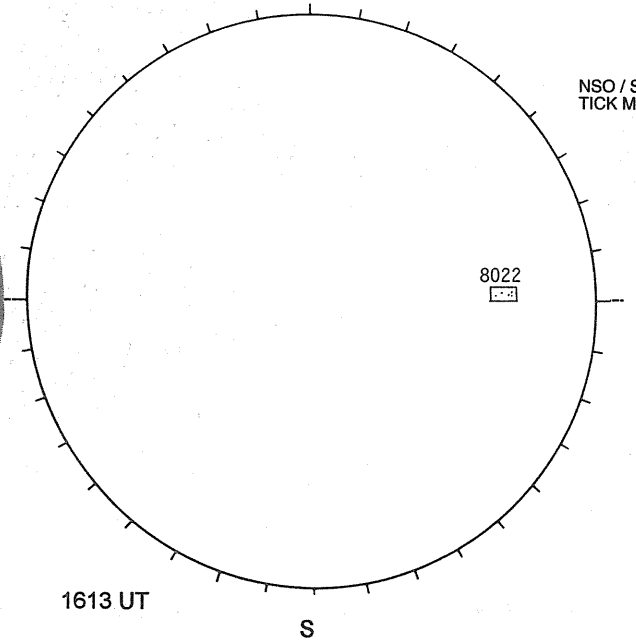
MT. WILSON MAGNETOGRAM



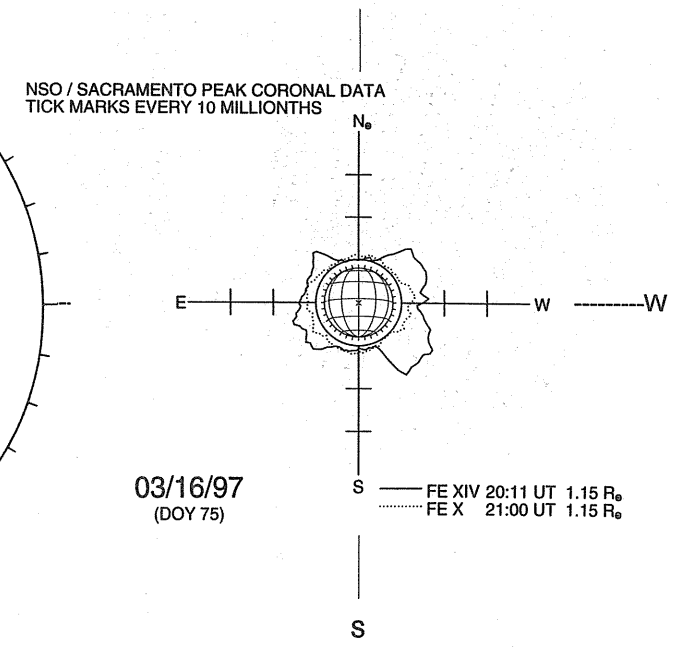
MAUNA LOA H-ALPHA



RAMEY SUNSPOT

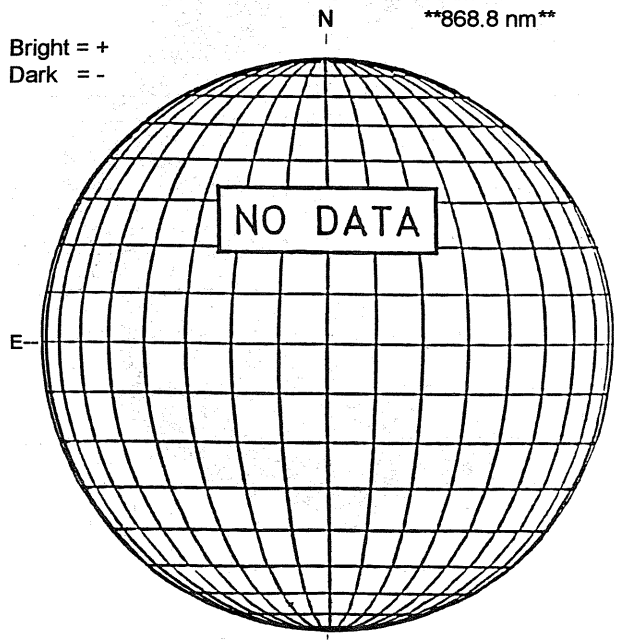


SACRAMENTO PEAK CORONA (1.15 Radii)----

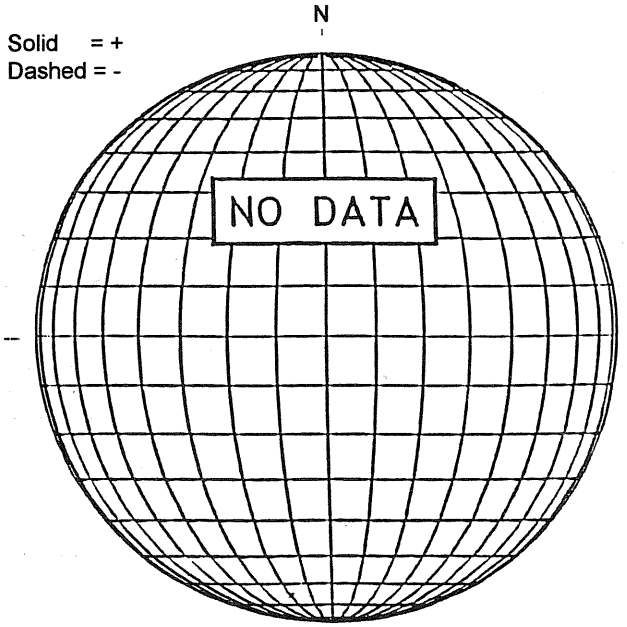


MARCH 17, 1997 (P= - 24.75, Bo = - 7.12, Lo = 152.98)

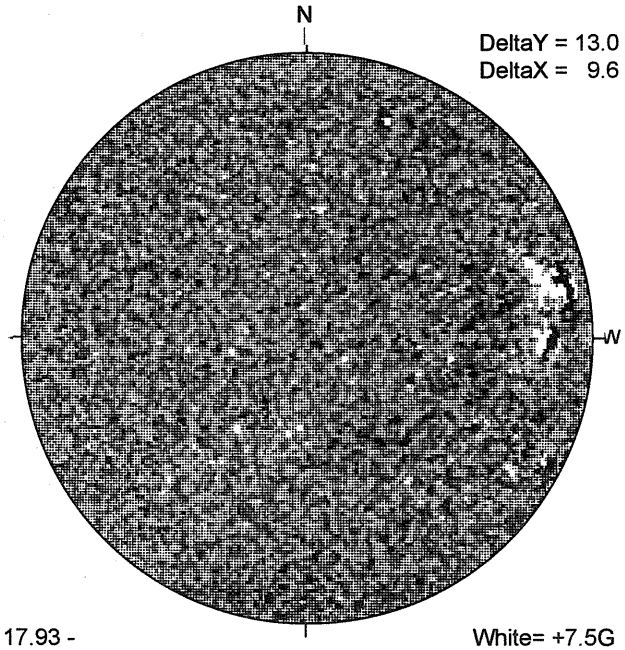
KITT PEAK MAGNETOGRAM



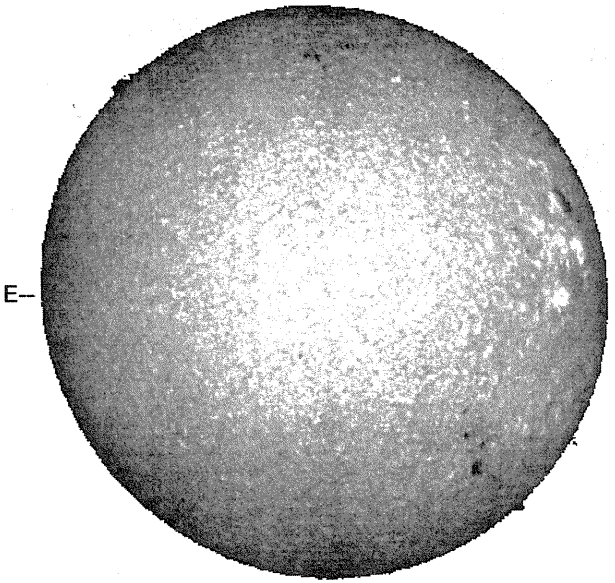
STANFORD MAGNETOGRAM



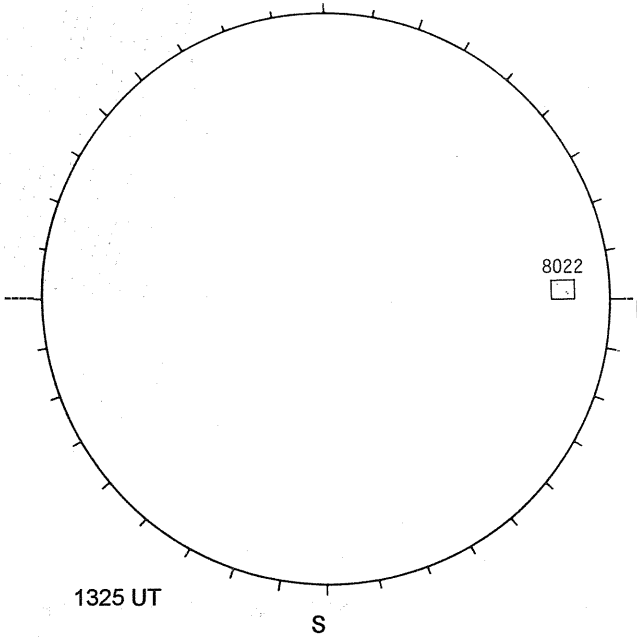
MT. WILSON MAGNETOGRAM



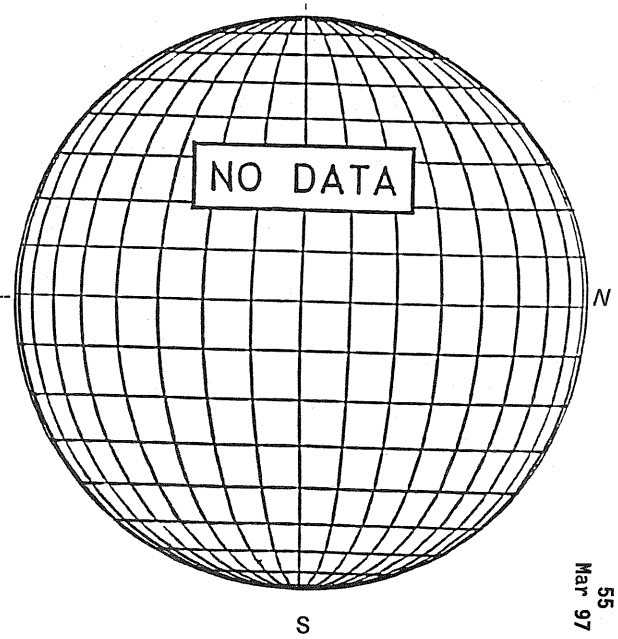
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



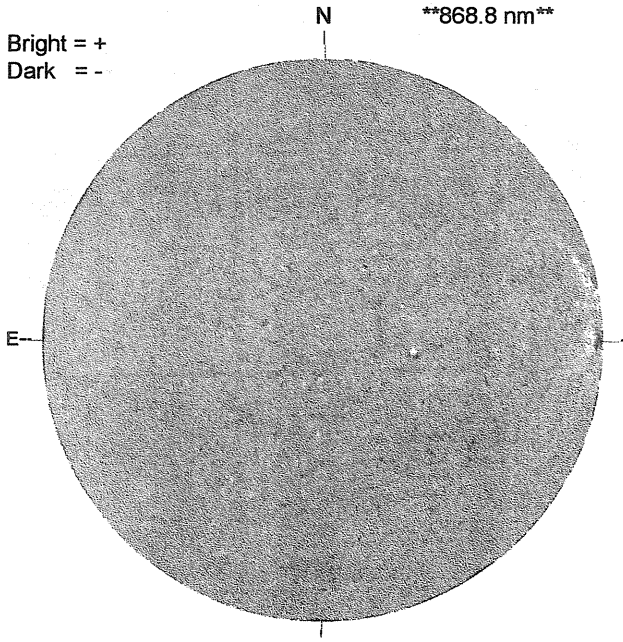
LOMNICKY PEAK CORONA (1.04 Radii)----



55
Mar 97

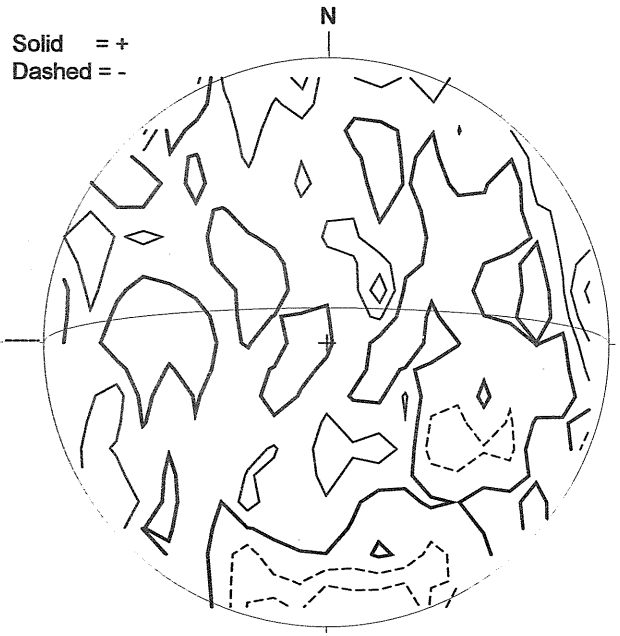
MARCH 18, 1997 (P= - 24.90, Bo = - 7.10, Lo = 139.80)

KITT PEAK MAGNETOGRAM



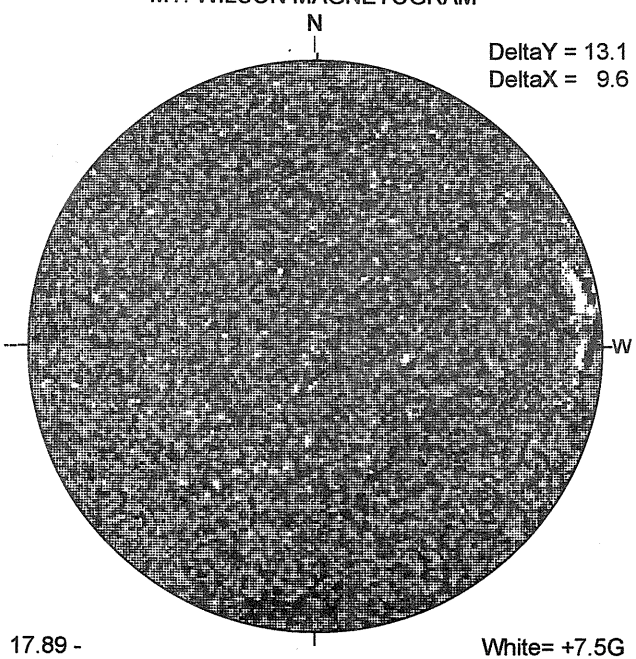
1446 UT

STANFORD MAGNETOGRAM



2218 UT

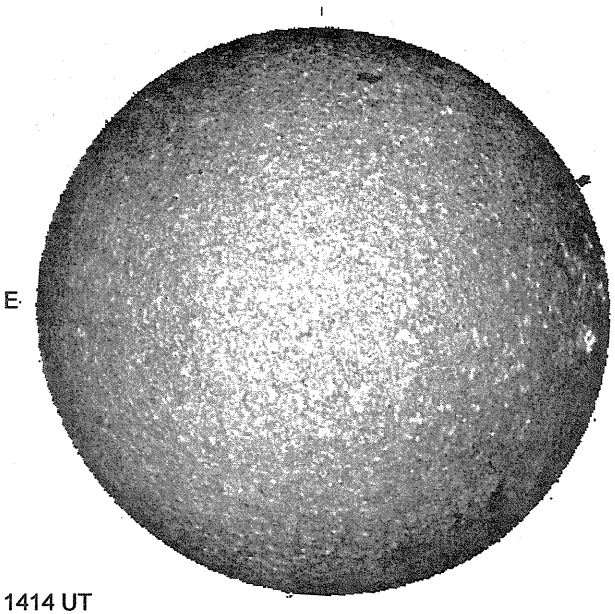
MT. WILSON MAGNETOGRAM



17.89 -
18.85 UT

White= +7.5G
Black = -7.5G

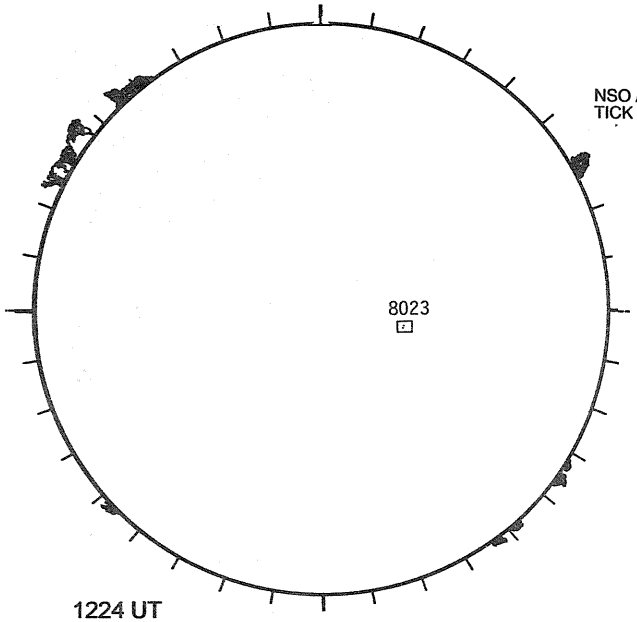
----- SACRAMENTO PEAK H-ALPHA



1414 UT

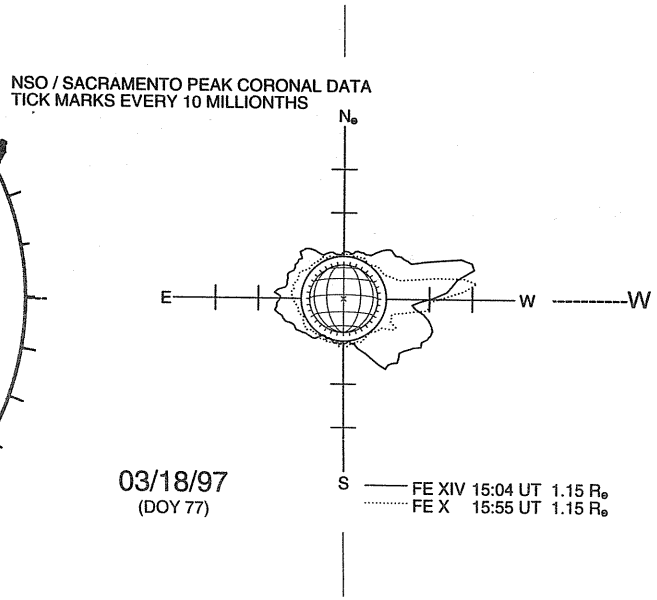
S

RAMEY SUNSPOT



1224 UT
0915 UT VALA Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

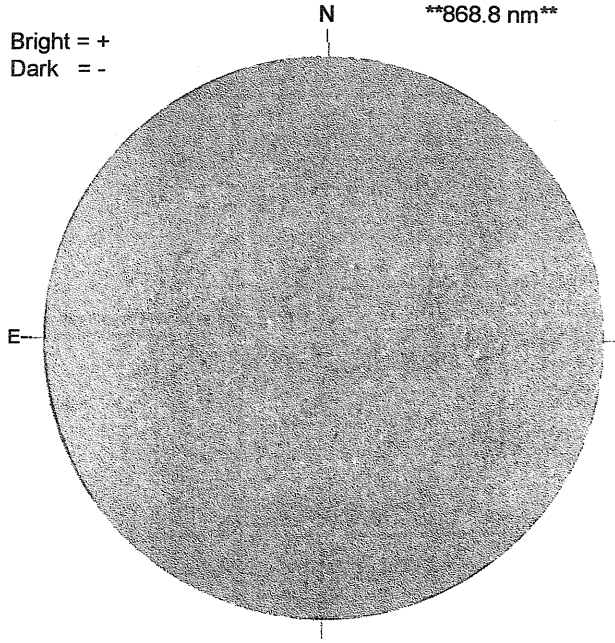


03/18/97
(DOY 77)

S

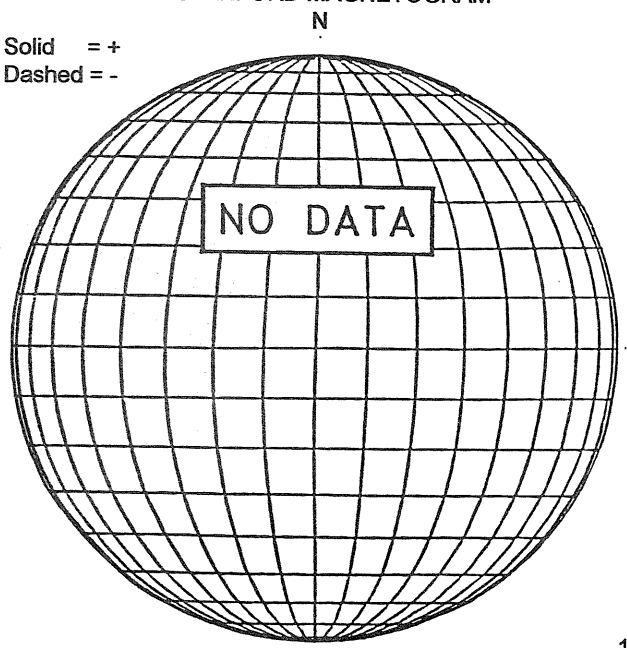
MARCH 19, 1997 (P= - 25.03, Bo = - 7.07, Lo = 126.62)

KITT PEAK MAGNETOGRAM

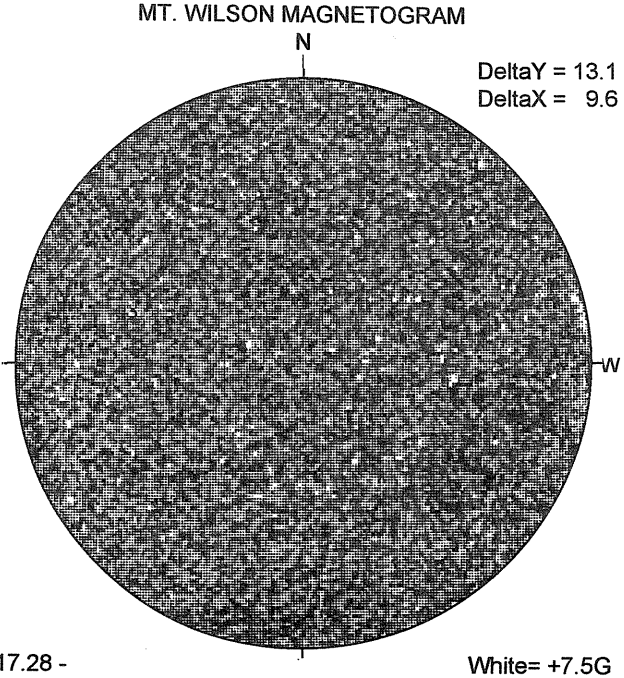


1429 UT

STANFORD MAGNETOGRAM



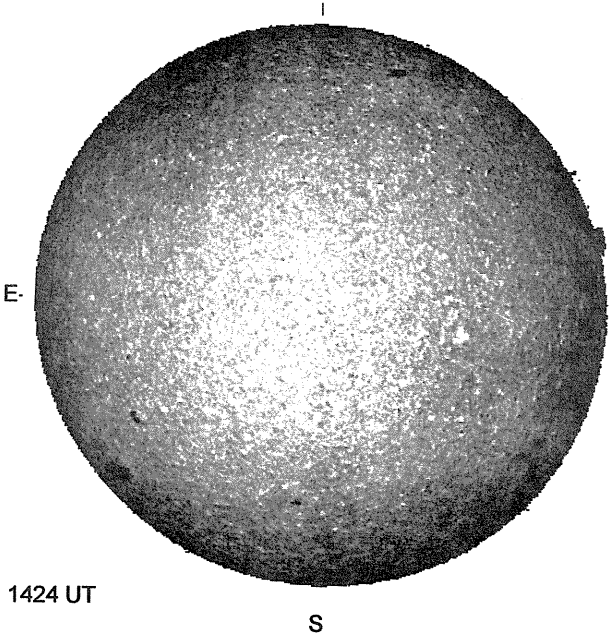
MT. WILSON MAGNETOGRAM



17.28 -
18.23 UT

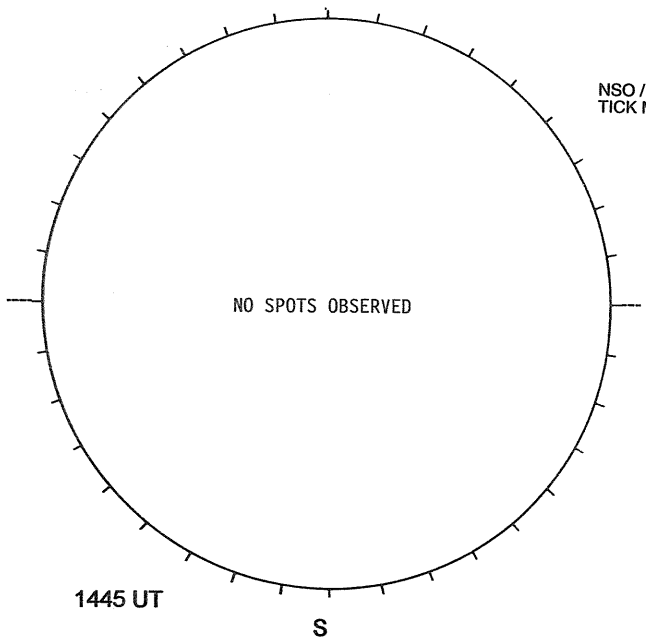
White= +7.5G
Black = -7.5G

----- SACRAMENTO PEAK H-ALPHA



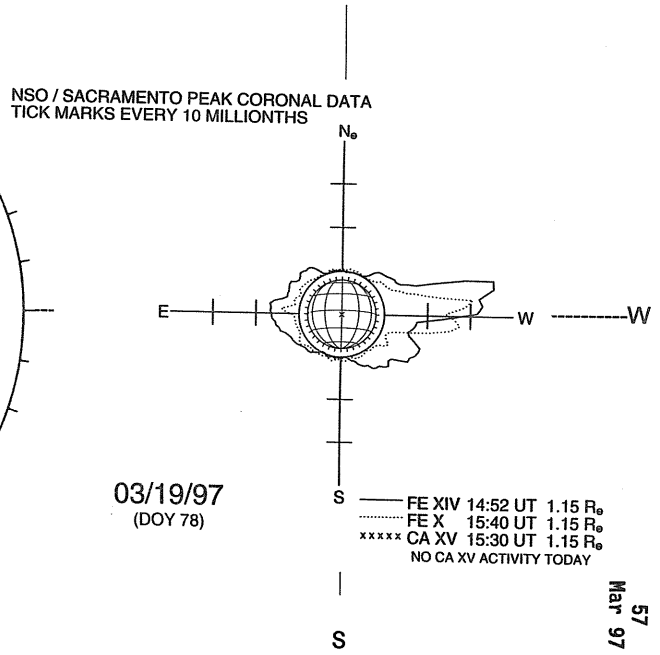
1424 UT

RAMEY SUNSPOT



1445 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

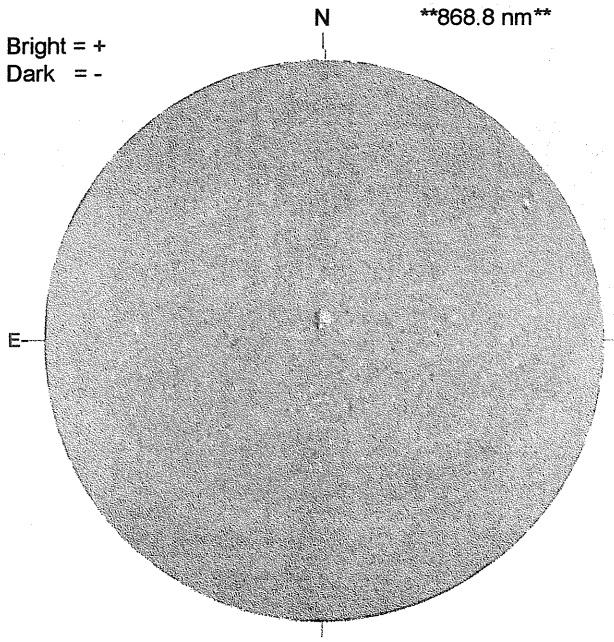


03/19/97
(DOY 78)

57
Mar 97

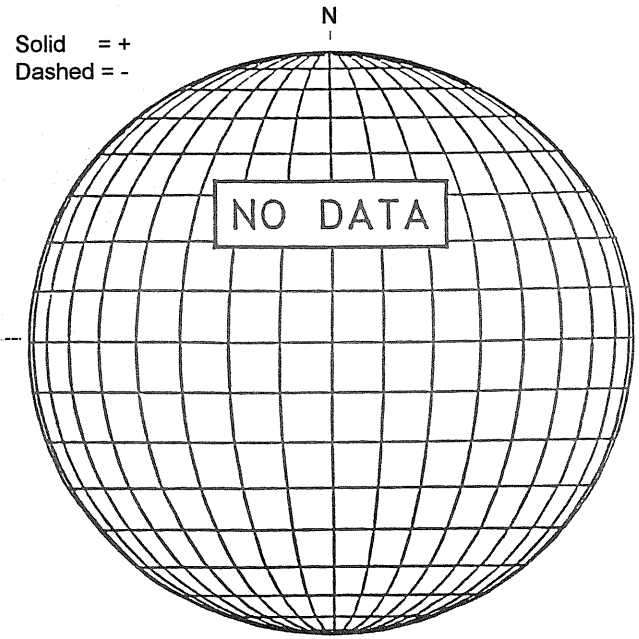
MARCH 20, 1997 (P= - 25.16, Bo = - 7.04, Lo = 113.44)

KITT PEAK MAGNETOGRAM

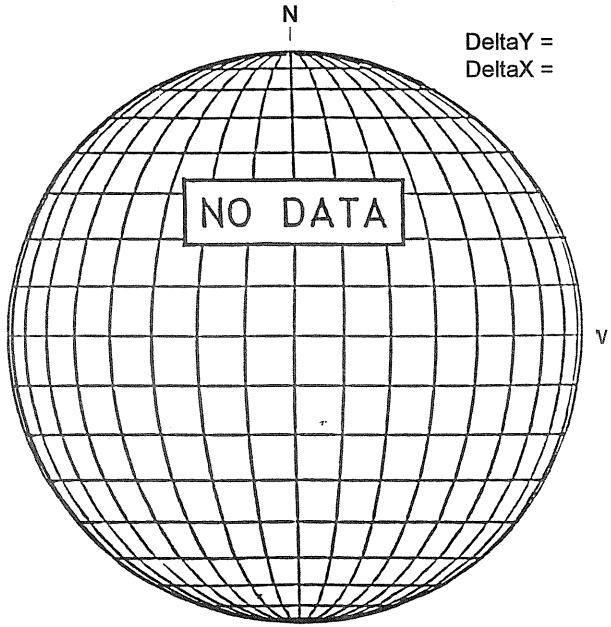


1448 UT

STANFORD MAGNETOGRAM

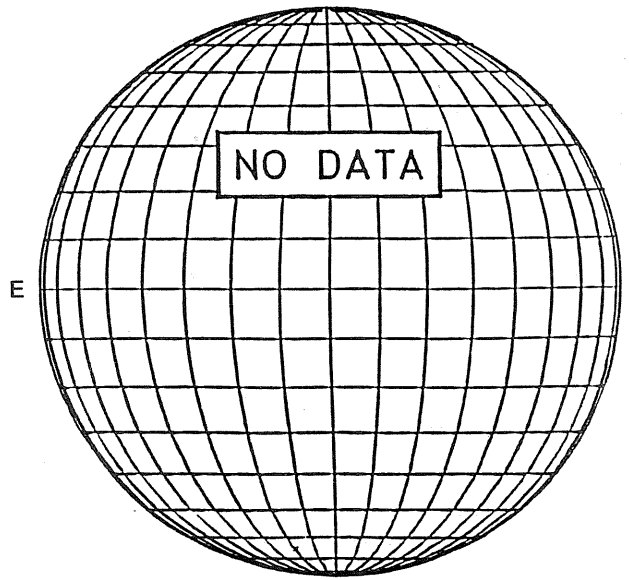


MT. WILSON MAGNETOGRAM

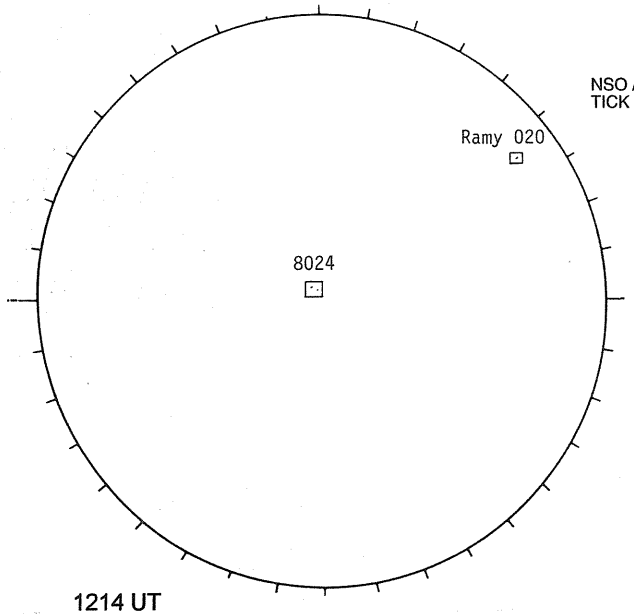


White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

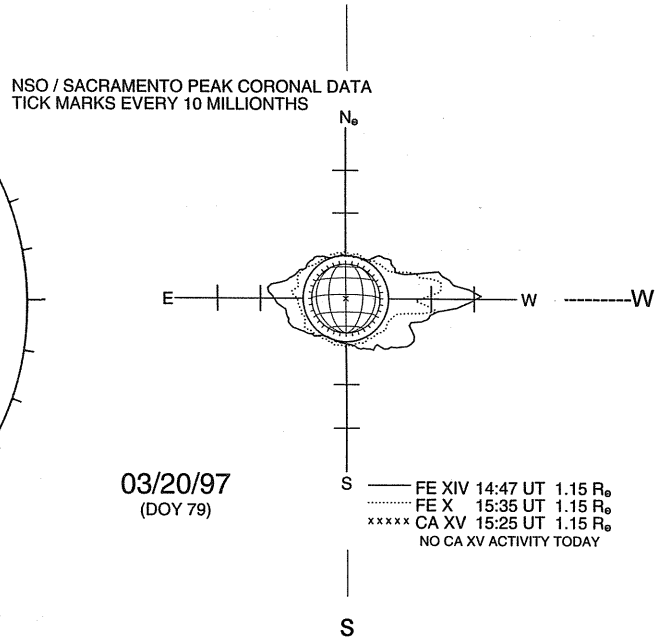


RAMEY SUNSPOT



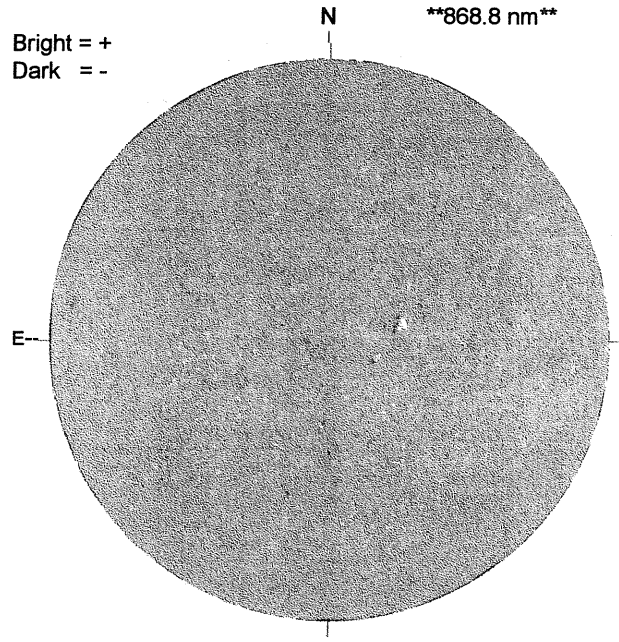
1214 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



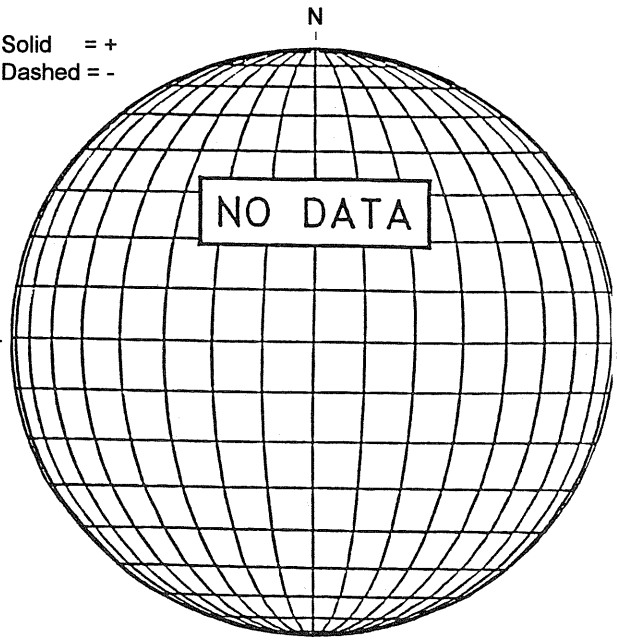
MARCH 21, 1997 (P= - 25.29, Bo = - 7.01, Lo = 100.25)

KITT PEAK MAGNETOGRAM

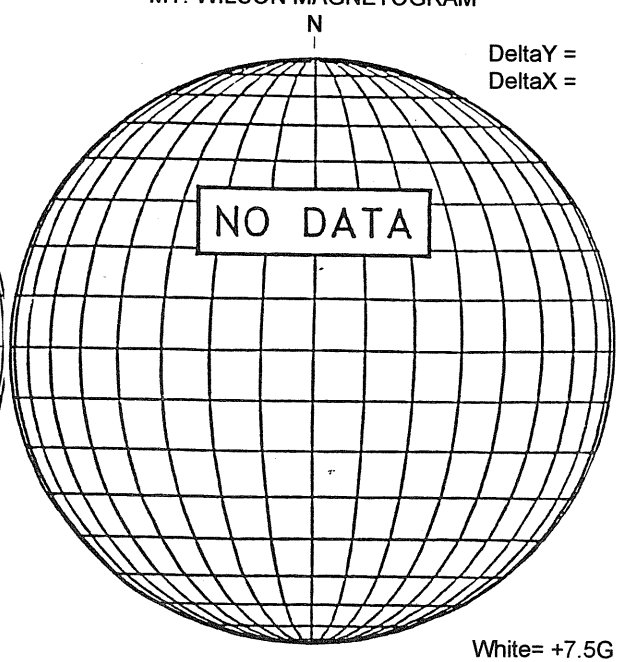


1435 UT

STANFORD MAGNETOGRAM

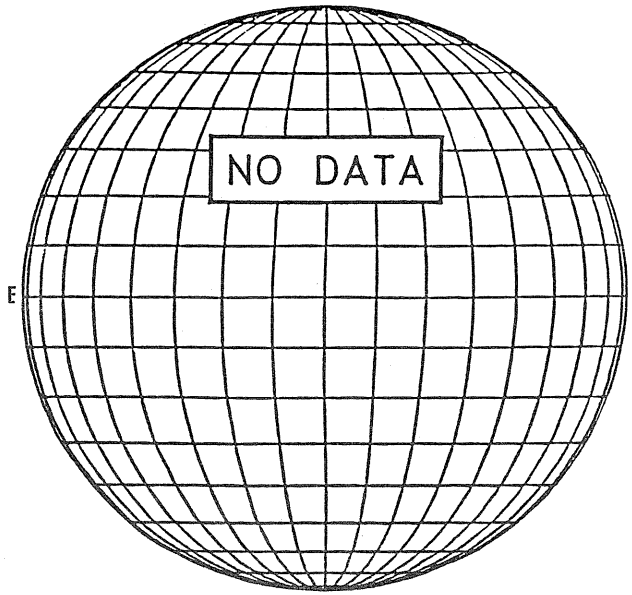


MT. WILSON MAGNETOGRAM

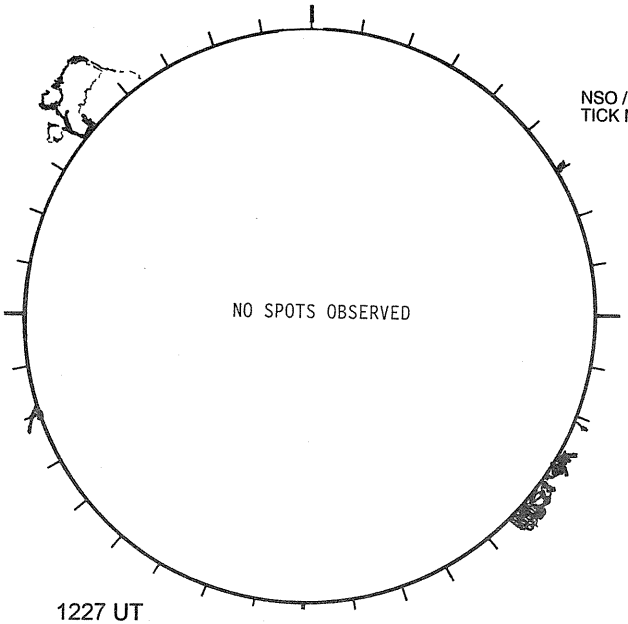


White= +7.5G
Black = -7.5G

----- SACRAMENTO PEAK H-ALPHA

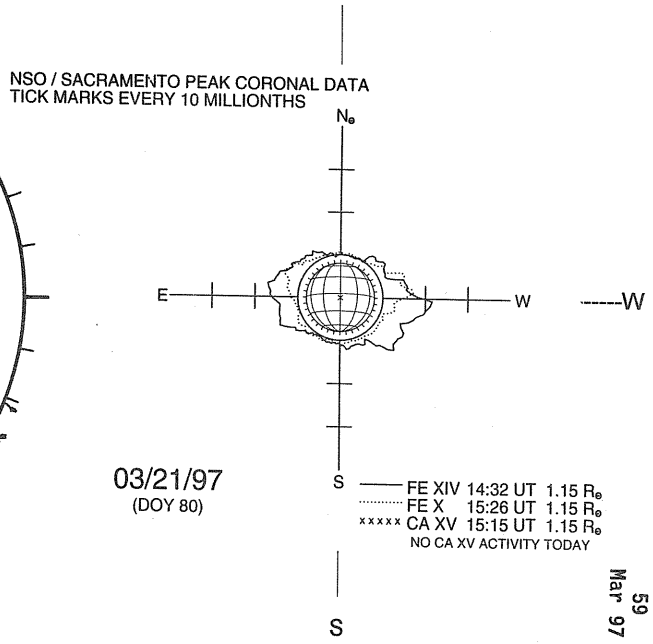


RAMEY SUNSPOT



1227 UT
0929 UT VALA Prom S

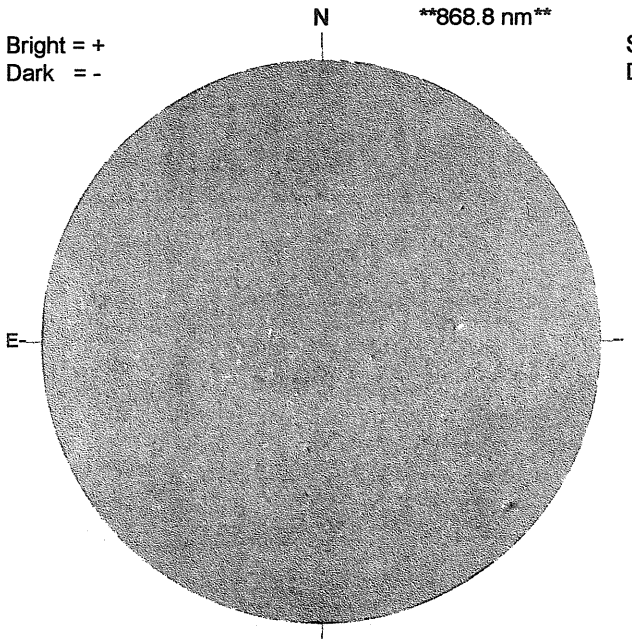
SACRAMENTO PEAK CORONA (1.15 Radii)--



59
Mar 97

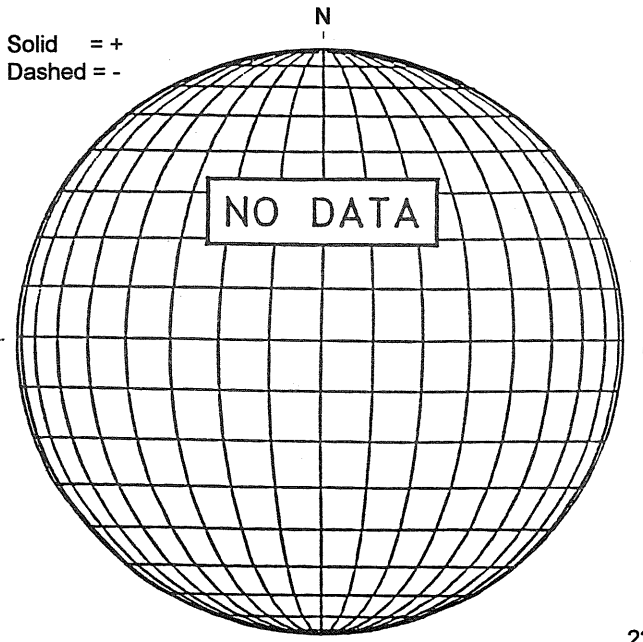
MARCH 22, 1997 (P= - 25.40, Bo = - 6.98, Lo = 87.07)

KITT PEAK MAGNETOGRAM

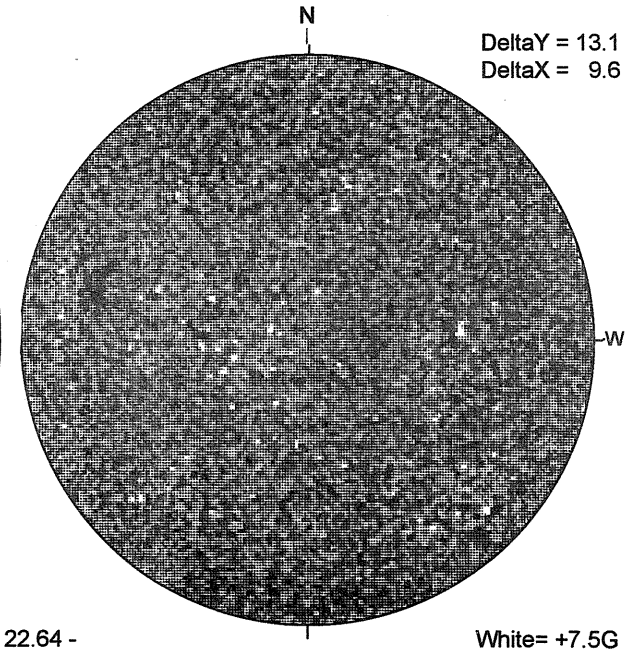


1448 UT

STANFORD MAGNETOGRAM



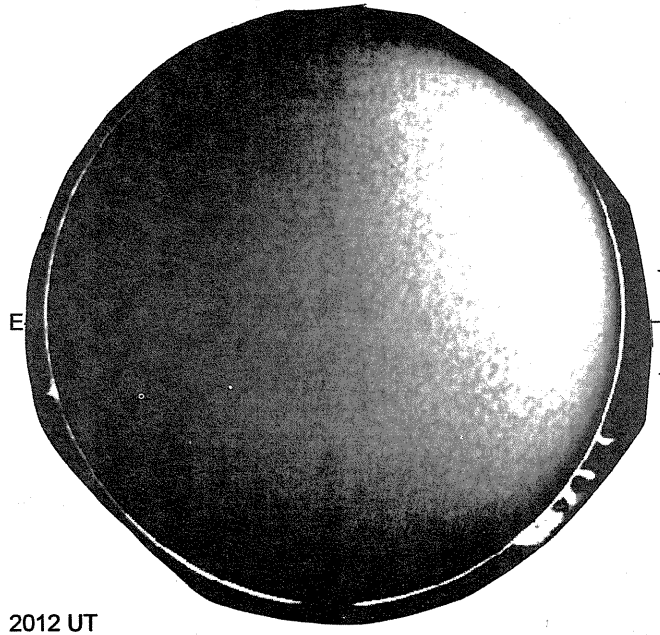
MT. WILSON MAGNETOGRAM



22.64 -
23.59 UT

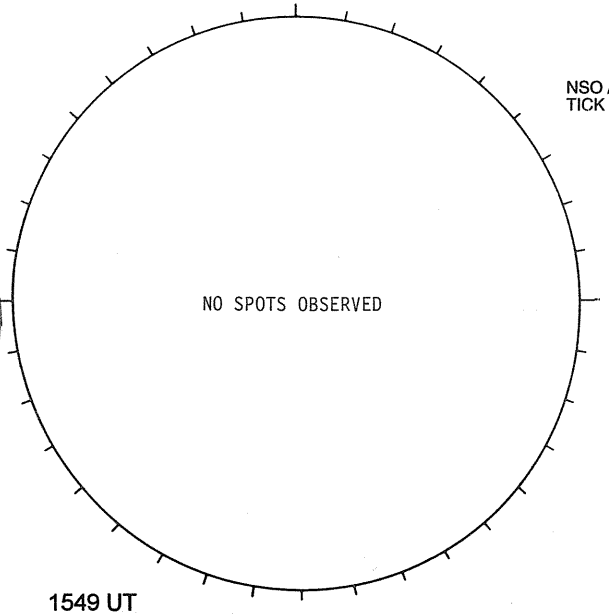
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



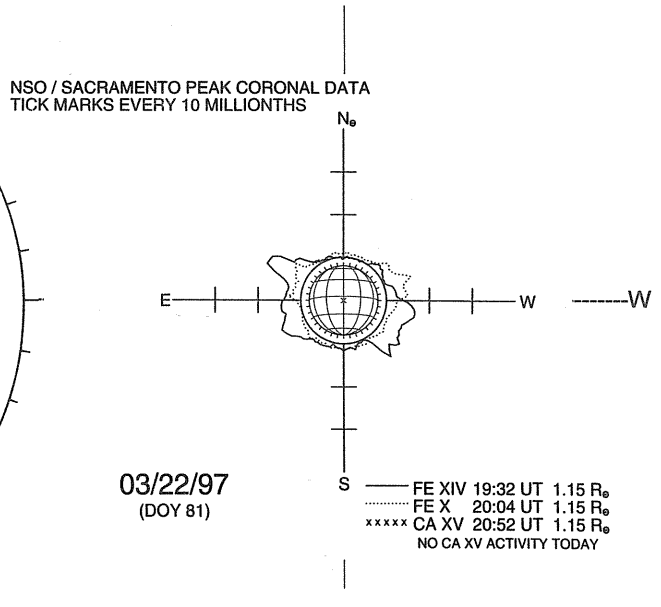
2012 UT
2006 UT Prom

RAMEY SUNSPOT



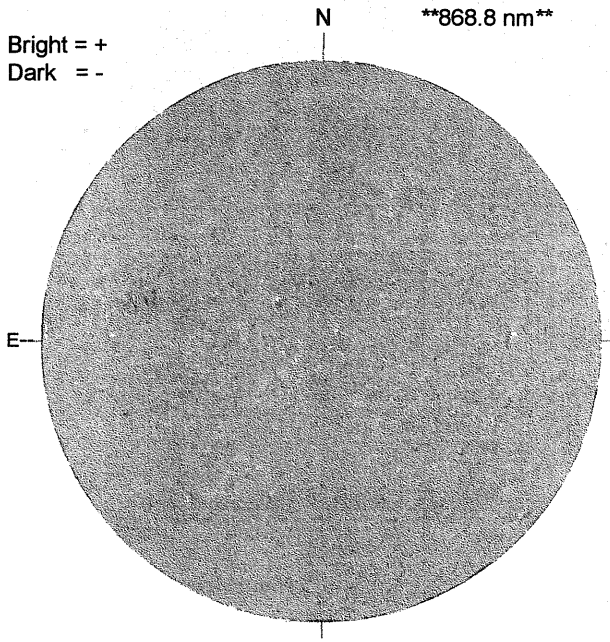
1549 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



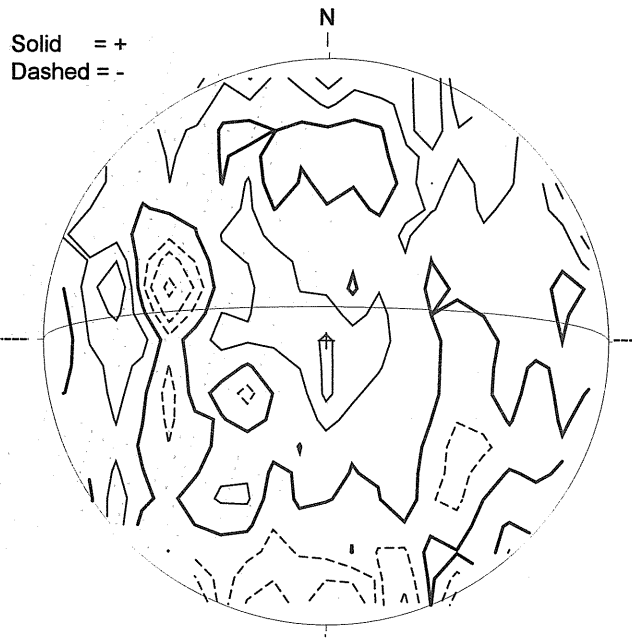
MARCH 23, 1997 (P= - 25.51, Bo = - 6.95, Lo = 73.88)

KITT PEAK MAGNETOGRAM



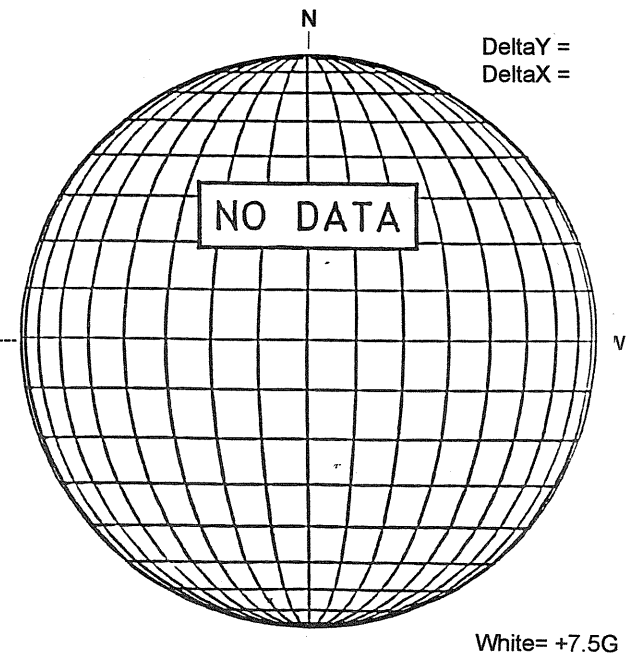
1441 UT

STANFORD MAGNETOGRAM



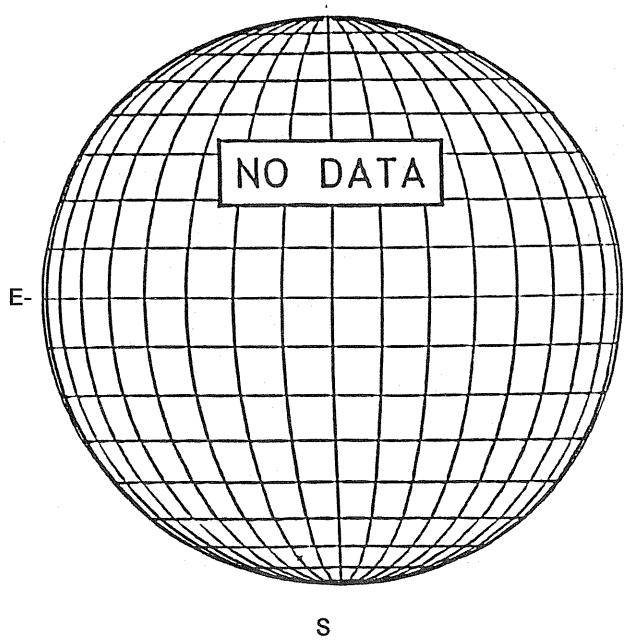
2252 UT

MT. WILSON MAGNETOGRAM

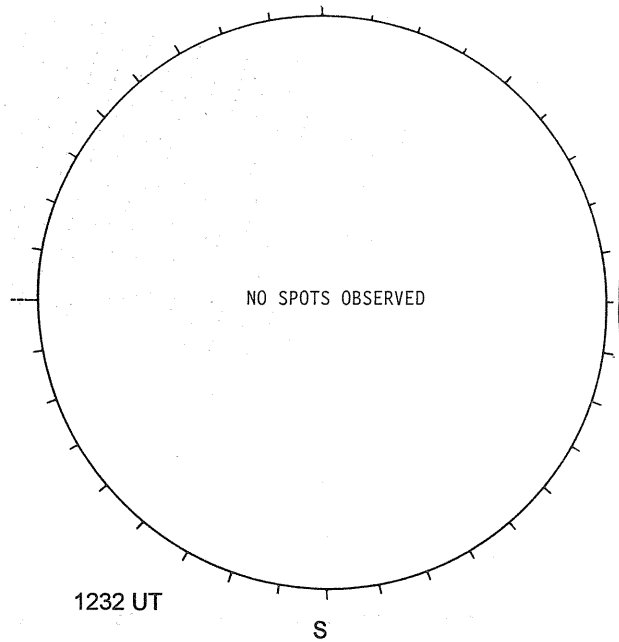


White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

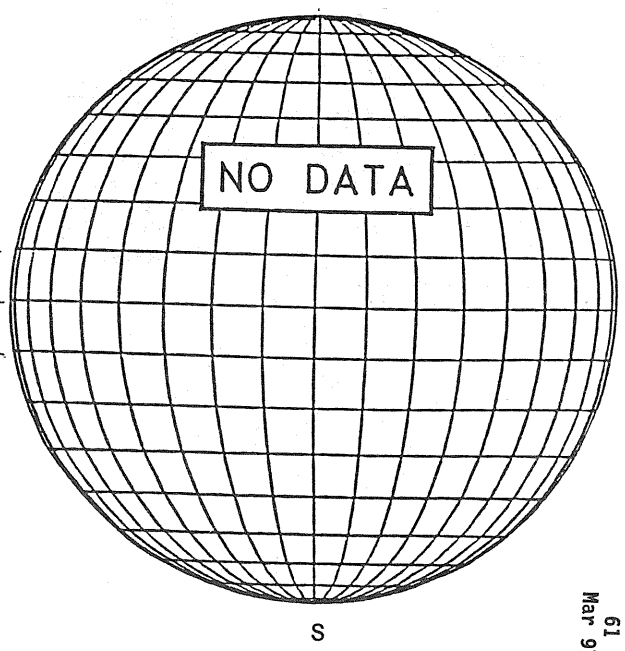


RAMEY SUNSPOT



1232 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



61
Mar 97

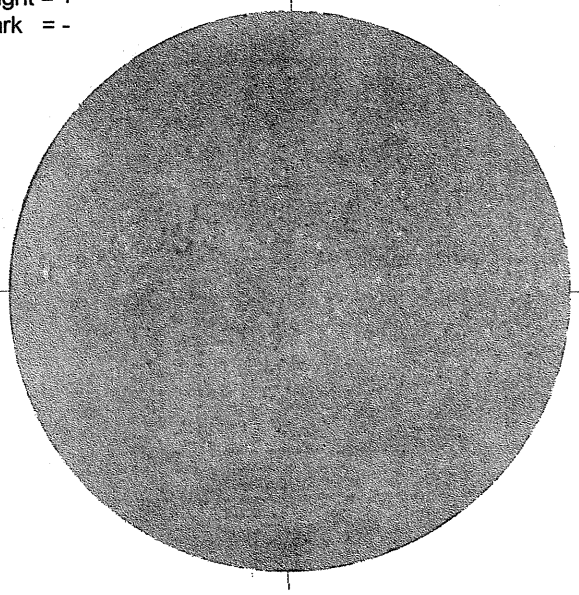
MARCH 24, 1997 (P= - 25.61, Bo = - 6.91 Lo = 60.69)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

E



1639 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

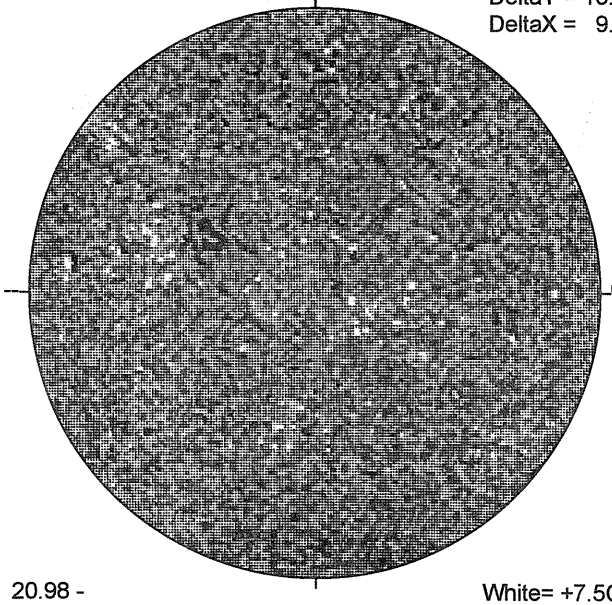
1903 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

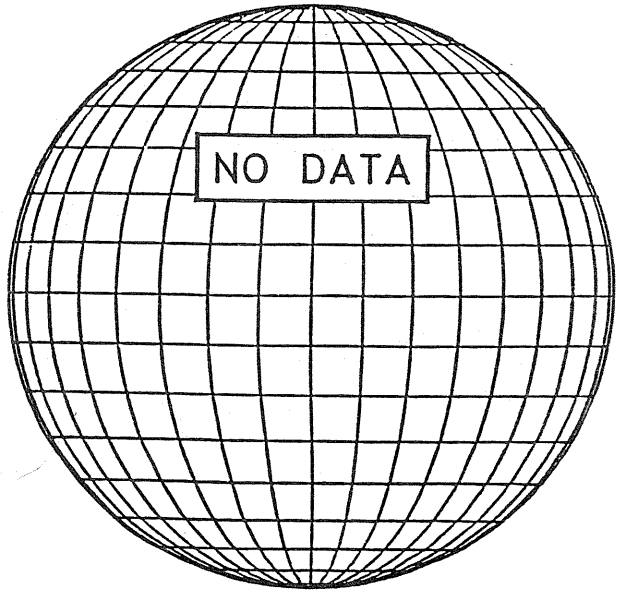
W



20.98 -
21.93 UT

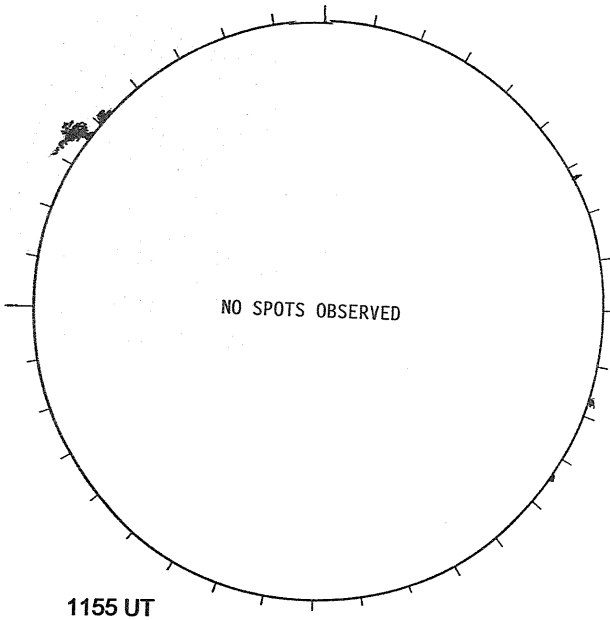
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



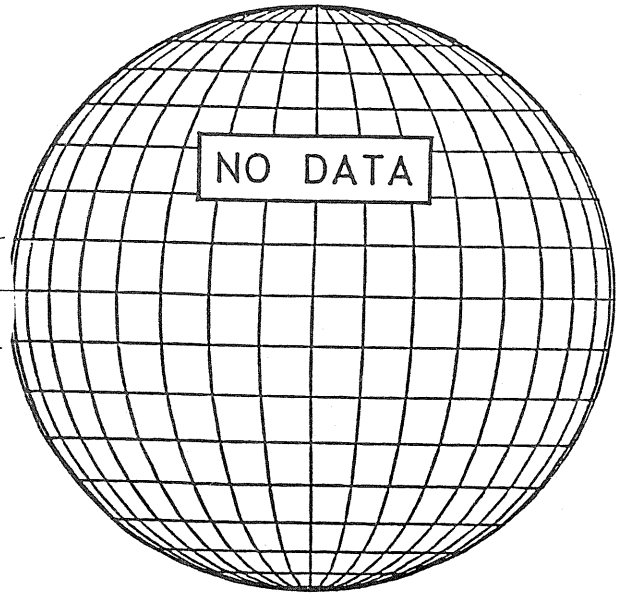
S

RAMEY SUNSPOT



1155 UT
0829 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

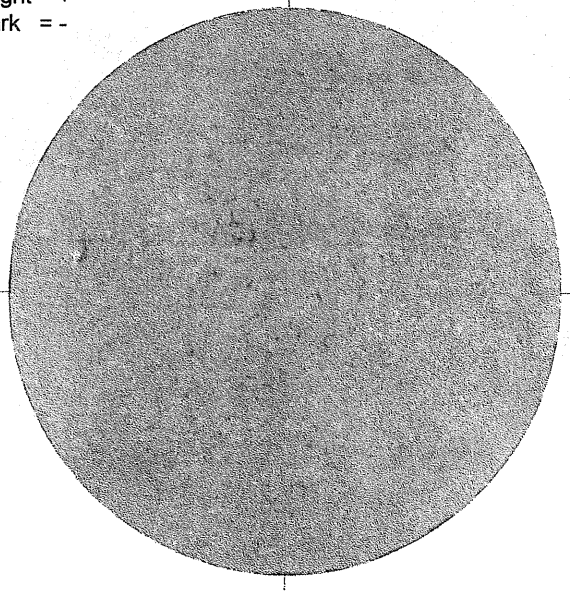
MARCH 25, 1997 (P= - 25.71, Bo = - 6.87, Lo = 47.51)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

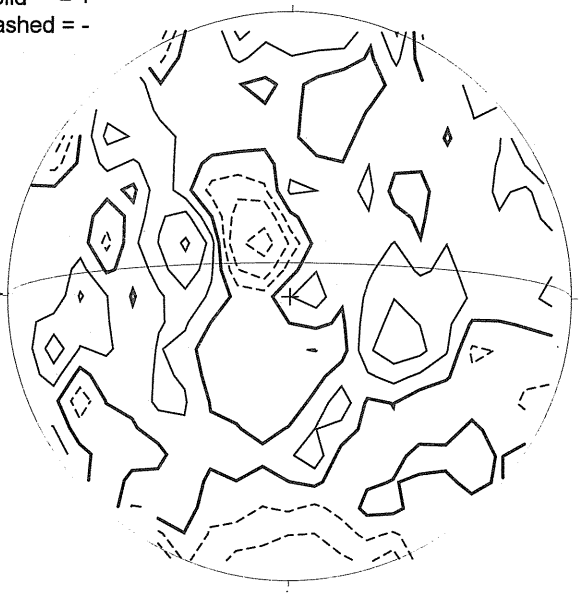


1804 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

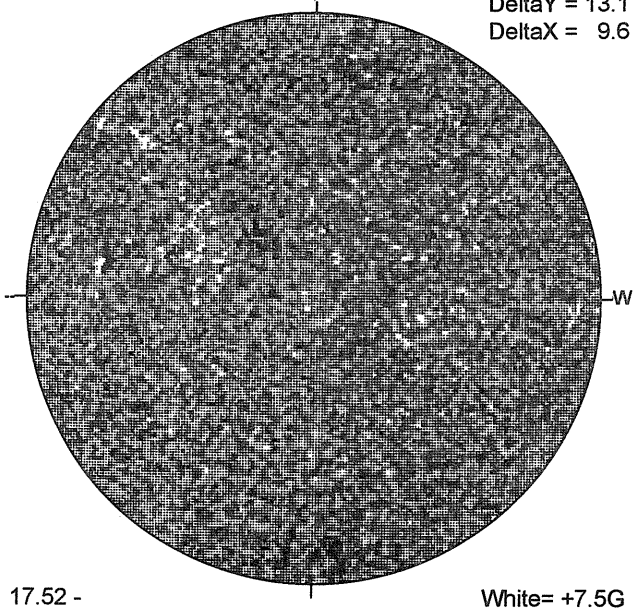


2101 UT

MT. WILSON MAGNETOGRAM

N

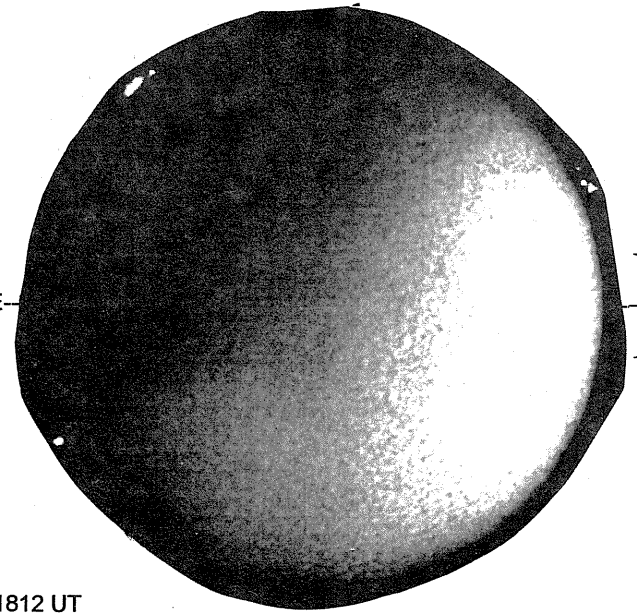
DeltaY = 13.1
DeltaX = 9.6



17.52 -
18.47 UT

White= +7.5G
Black = -7.5G

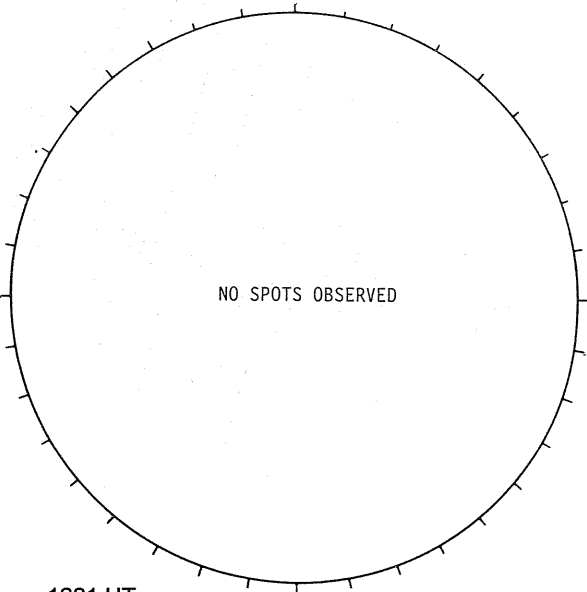
MAUNA LOA H-ALPHA



1812 UT
1742 UT Prom

S

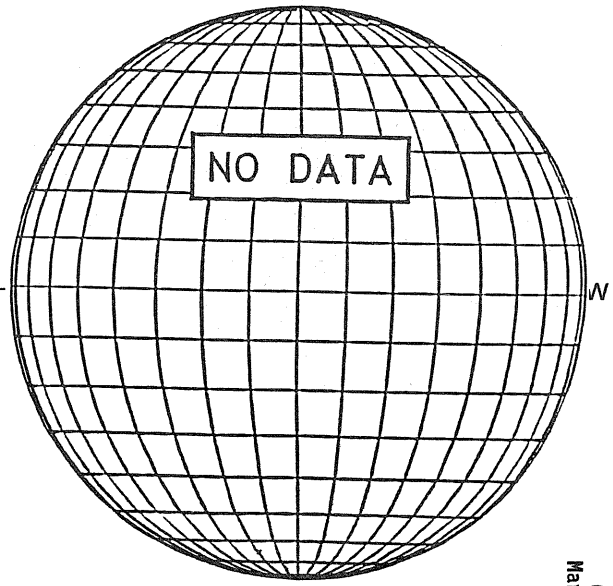
RAMEY SUNSPOT



1201 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

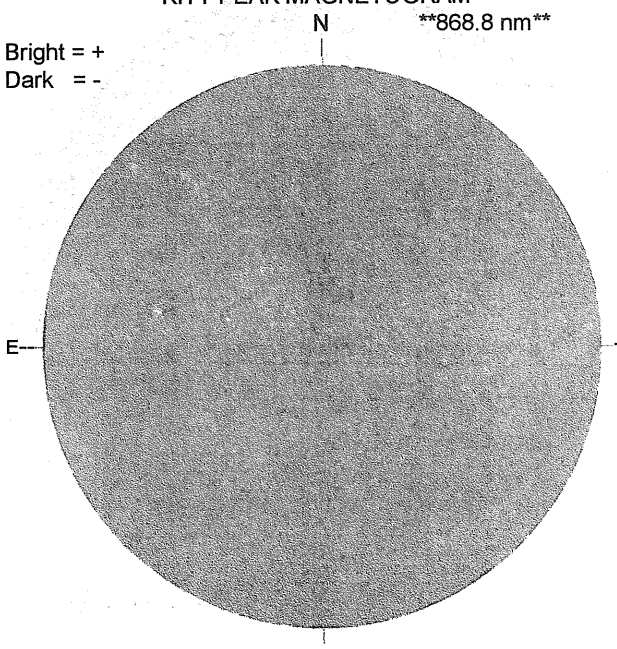


S

63
Mar 97

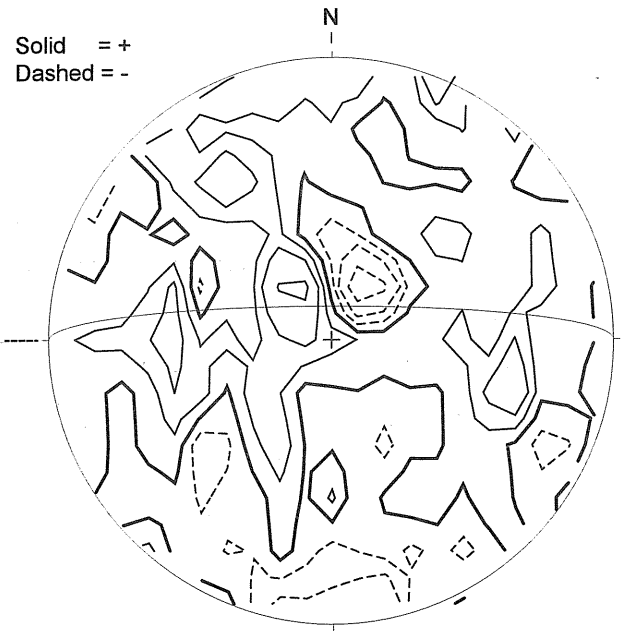
MARCH 26, 1997 (P= - 25.80, Bo = - 6.83, Lo = 34.32)

KITT PEAK MAGNETOGRAM



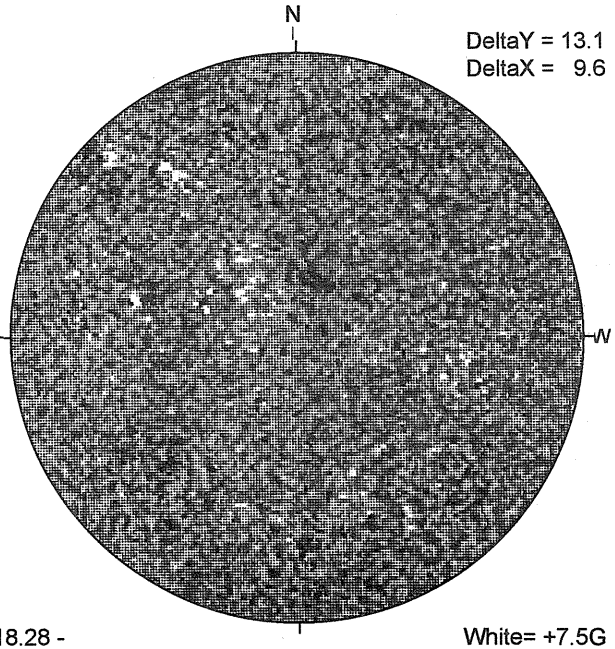
1550 UT

STANFORD MAGNETOGRAM



2346 UT

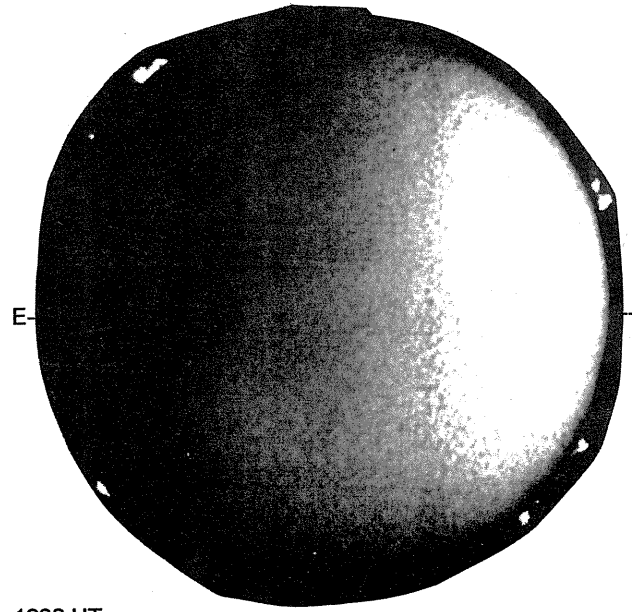
MT. WILSON MAGNETOGRAM



18.28 -
19.23 UT

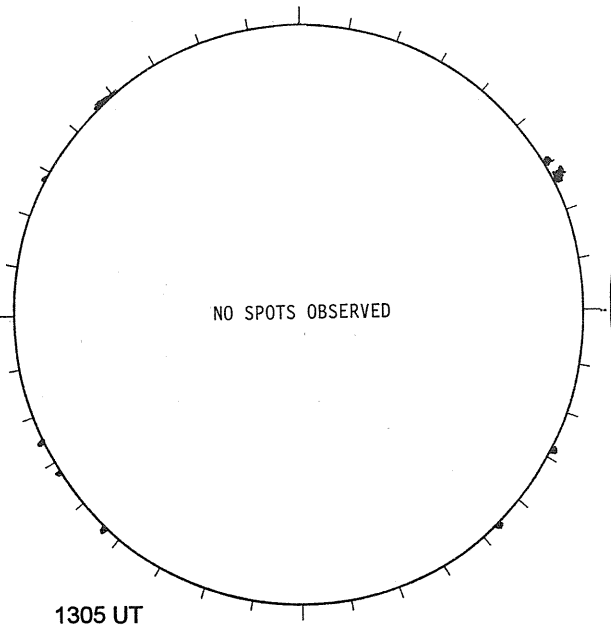
White= +7.5G
Black = -7.5G

----- MAUNA LOA H-ALPHA



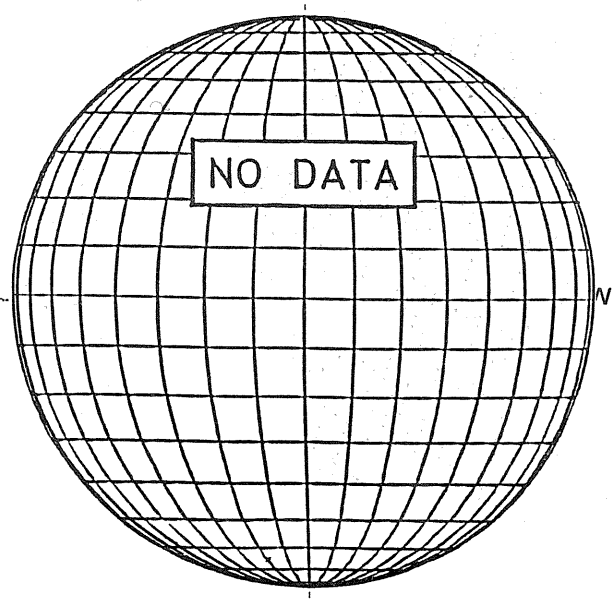
1938 UT
1728 UT Prom S

RAMEY SUNSPOT



1305 UT
1200 UT LOMN Prom S

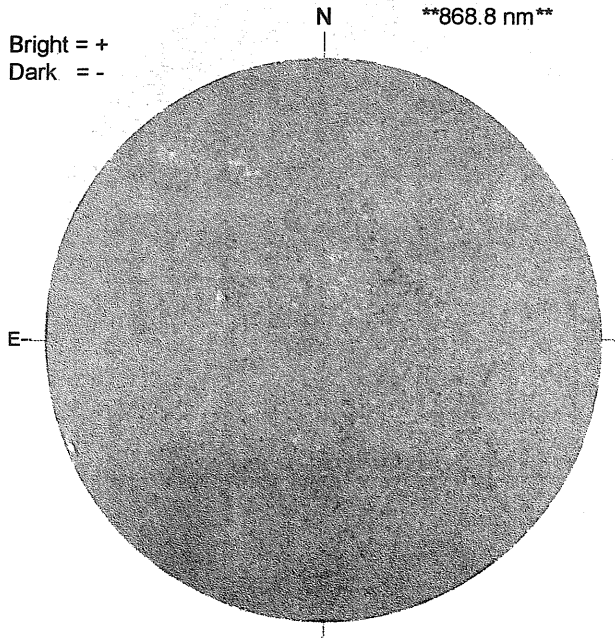
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

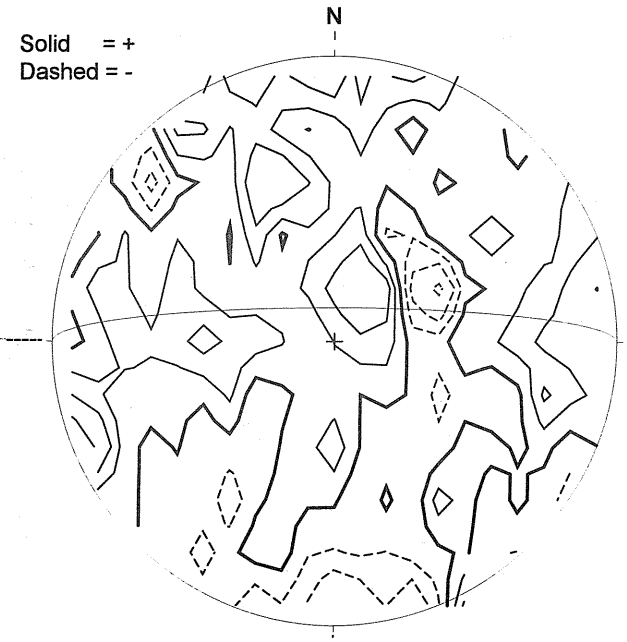
MARCH 27, 1997 (P= - 25.88, Bo = - 6.78, Lo = 21.13)

KITT PEAK MAGNETOGRAM



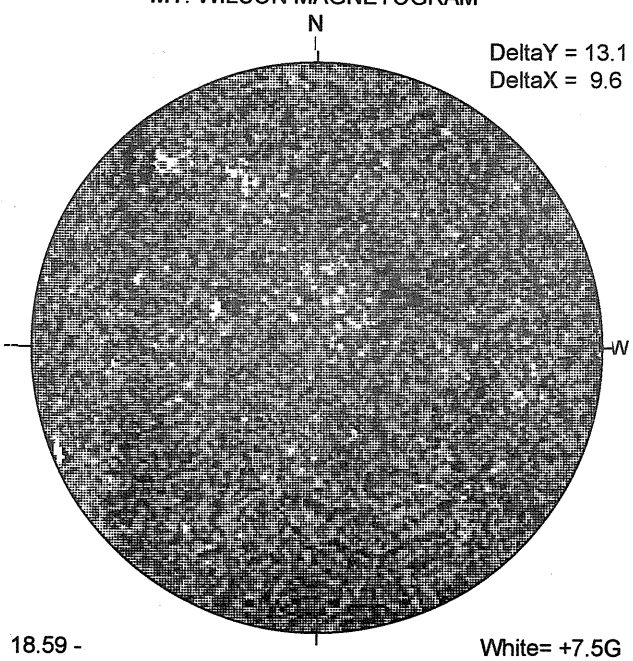
1550 UT

STANFORD MAGNETOGRAM



2149 UT

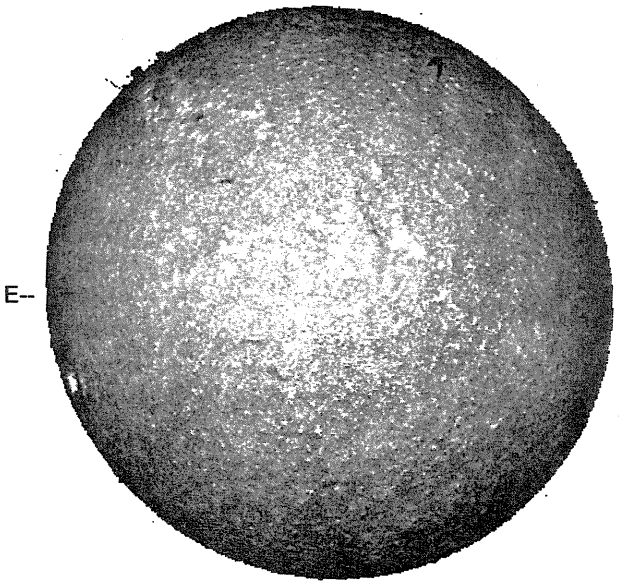
MT. WILSON MAGNETOGRAM



18.59 -
19.54 UT

White= +7.5G
Black = -7.5G

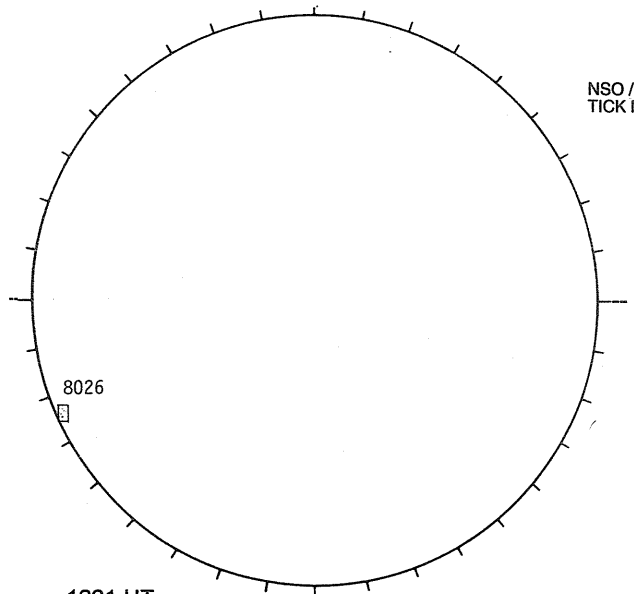
----- SACRAMENTO PEAK H-ALPHA



1548 UT

S

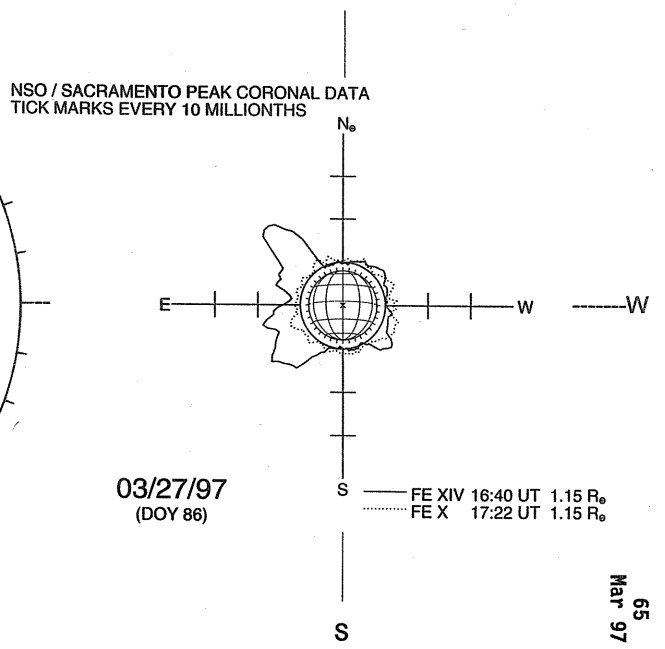
RAMEY SUNSPOT



1221 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



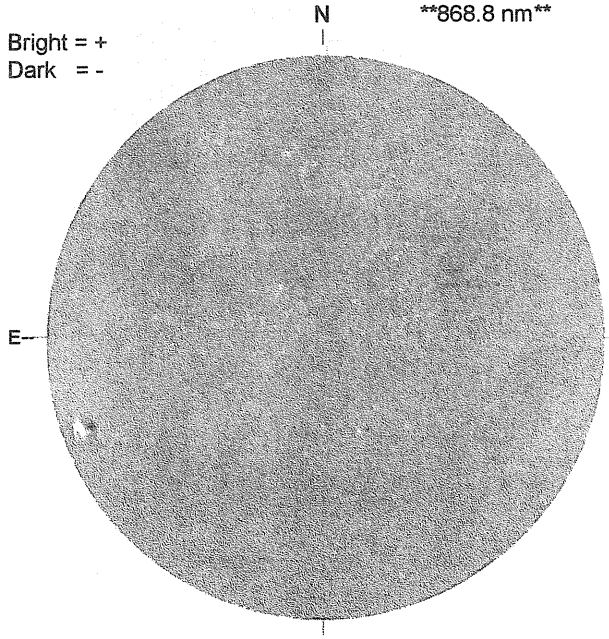
03/27/97
(DOY 86)

S

65
Mar 97

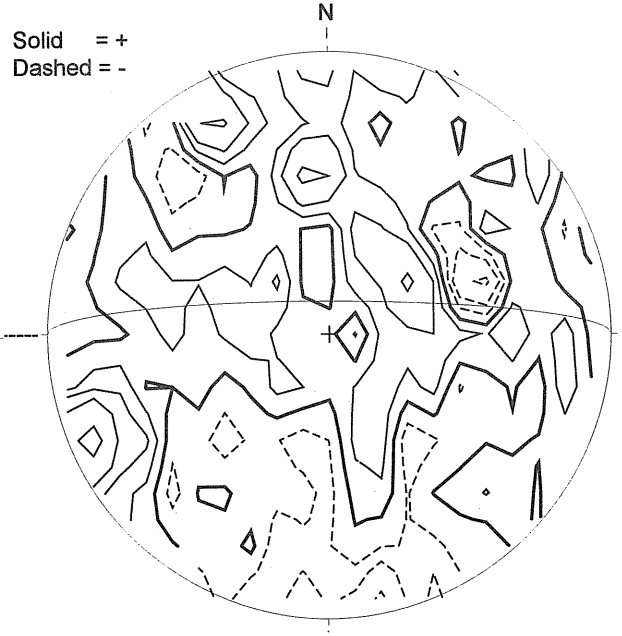
MARCH 28, 1997 (P= - 25.95, Bo = - 6.74, Lo = 7.94)

KITT PEAK MAGNETOGRAM



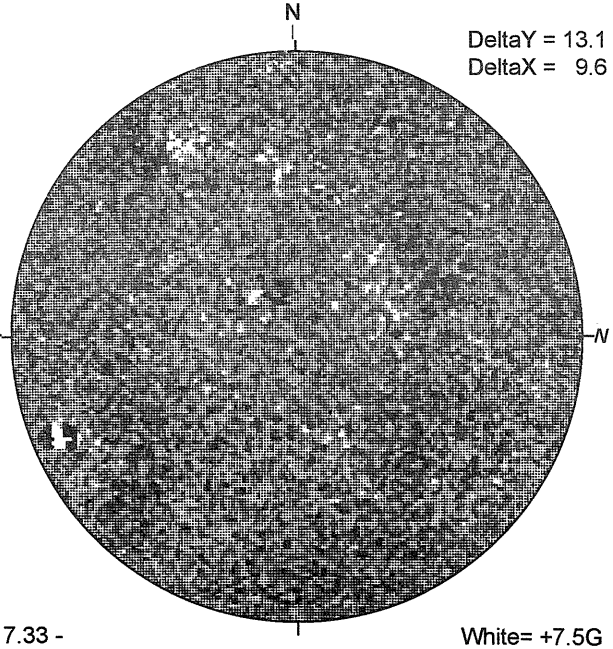
1528 UT

STANFORD MAGNETOGRAM



1829 UT

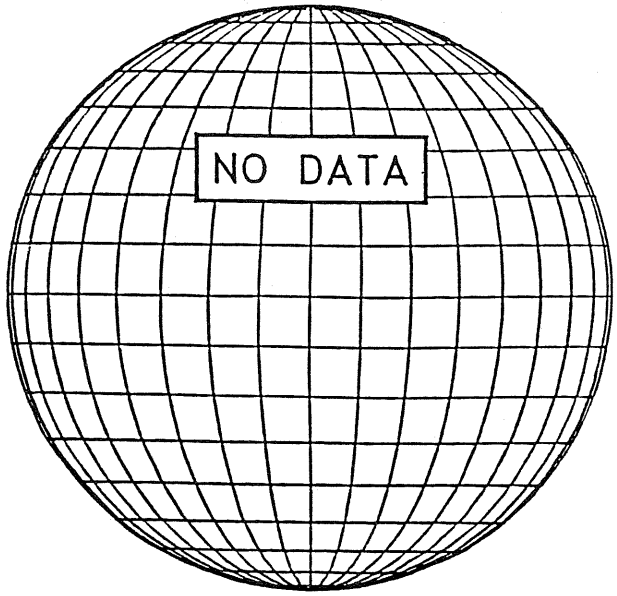
MT. WILSON MAGNETOGRAM



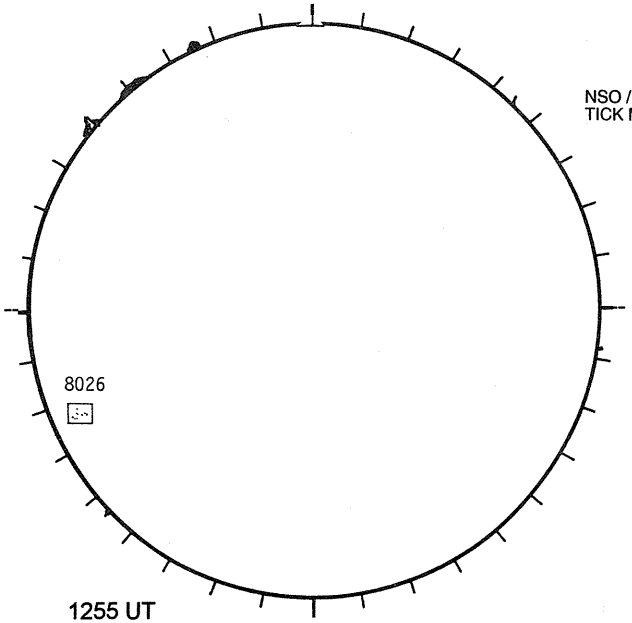
17.33 -
18.28 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

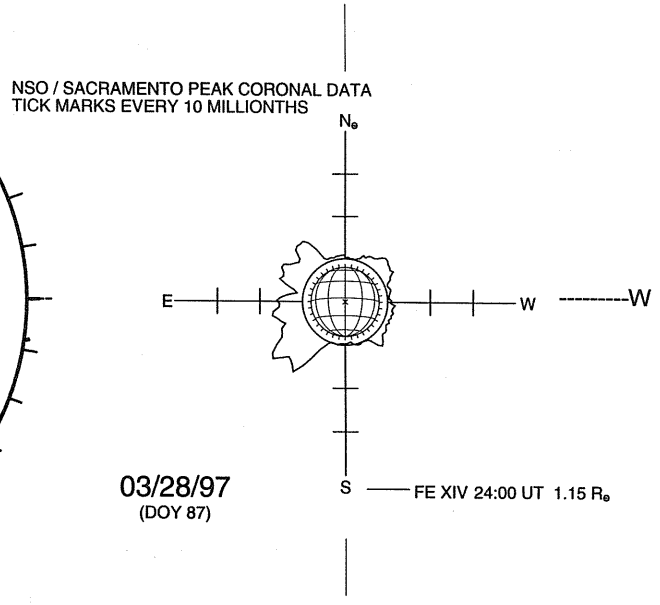


RAMEY SUNSPOT



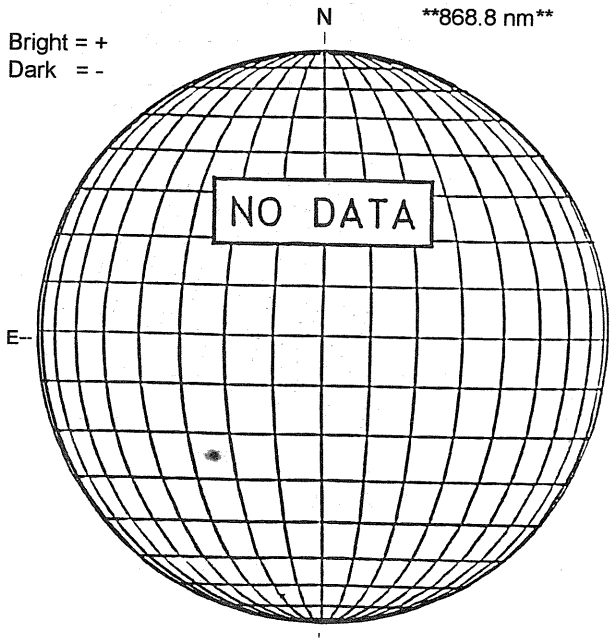
1255 UT
1223 UT VALA Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----

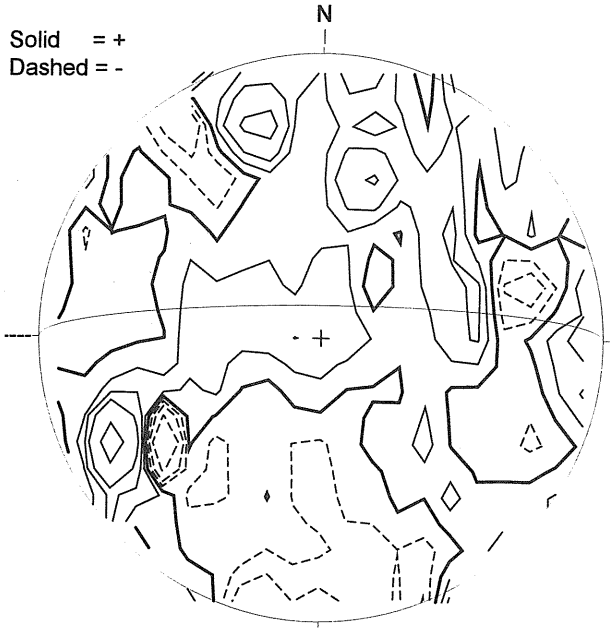


MARCH 29, 1997 (P= - 26.02, Bo = - 6.69, Lo = 354.75)

KITT PEAK MAGNETOGRAM

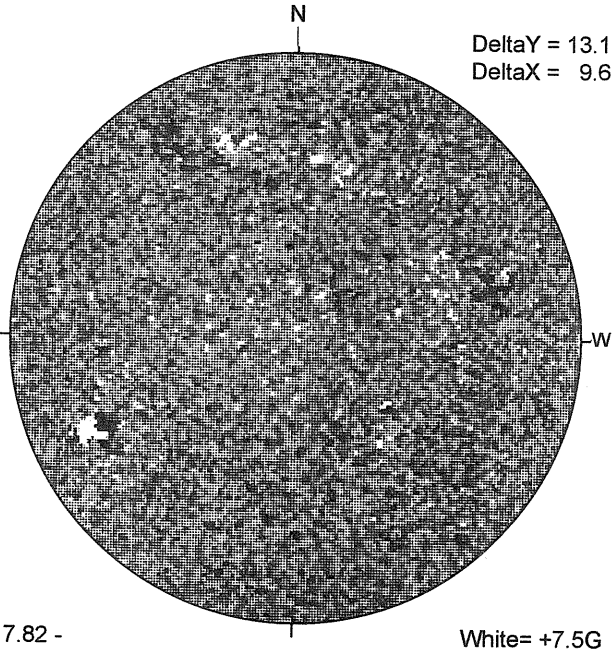


STANFORD MAGNETOGRAM



1946 UT

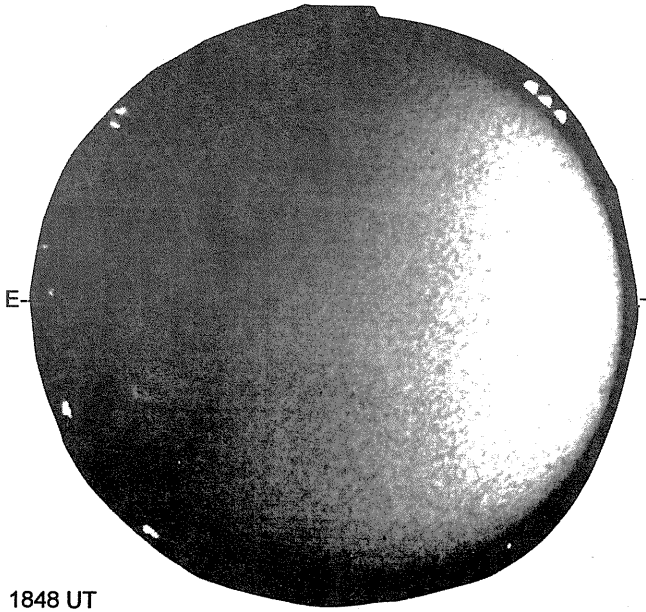
MT. WILSON MAGNETOGRAM



17.82 -
18.76 UT

White= +7.5G
Black = -7.5G

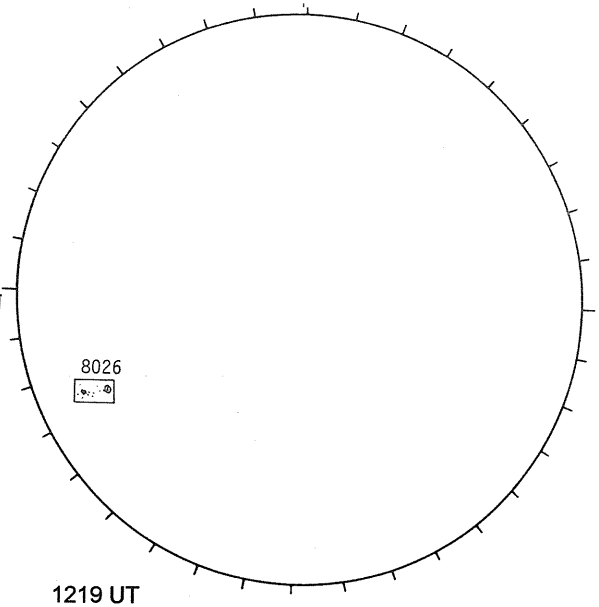
MAUNA LOA H-ALPHA



1848 UT
1736 UT Prom

S

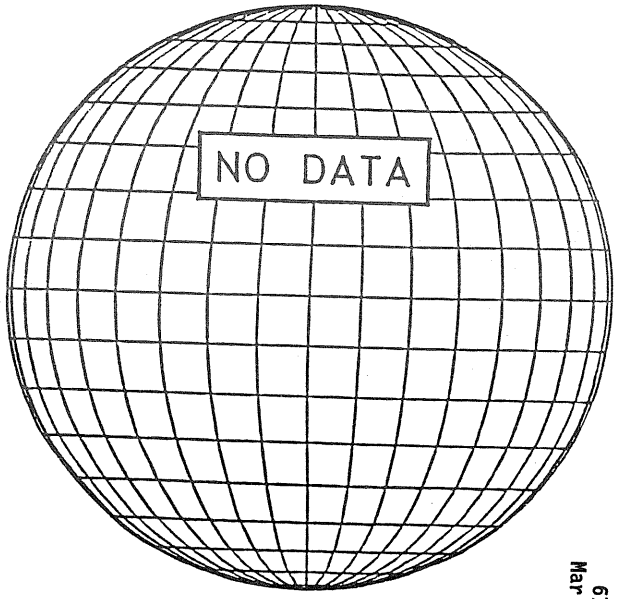
RAMEY SUNSPOT



1219 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

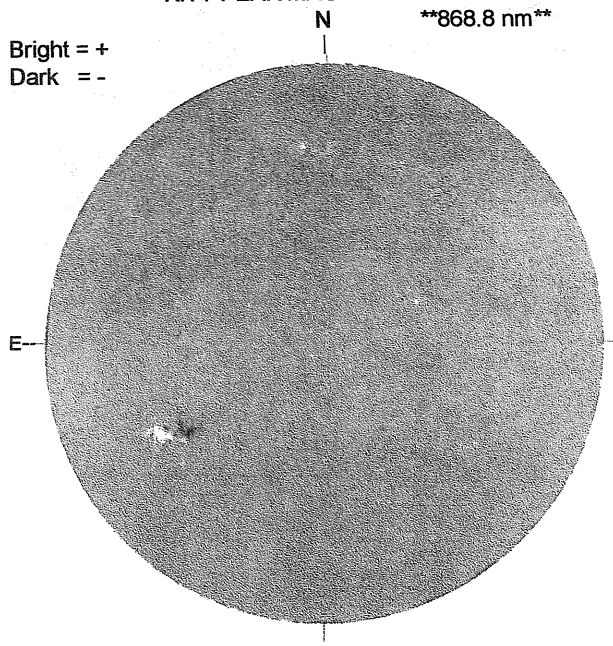


S

67
Mar 97

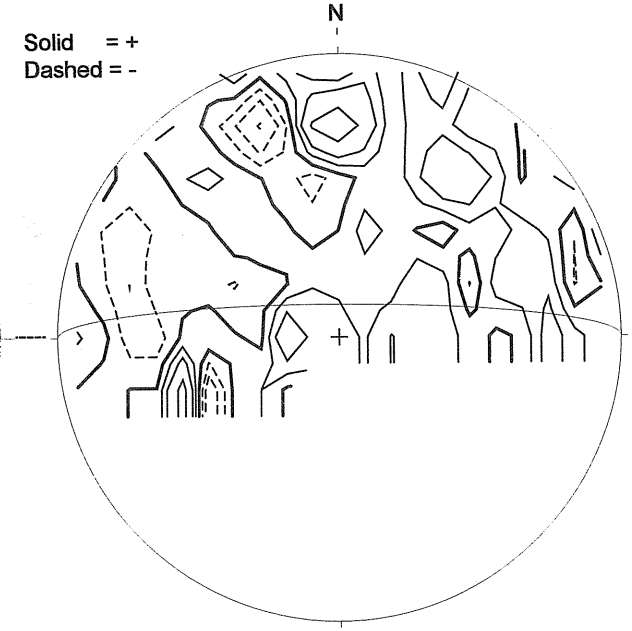
MARCH 30, 1997 (P= - 26.08, Bo = - 6.64, Lo = 341.56)

KITT PEAK MAGNETOGRAM



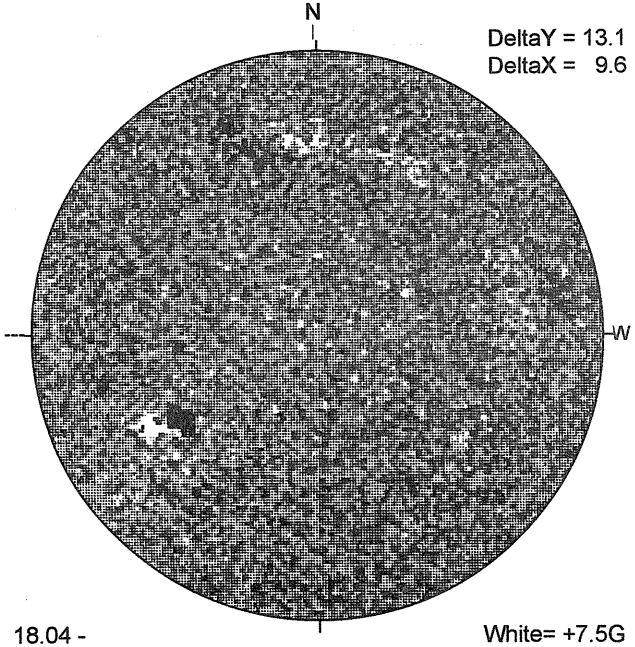
1920 UT

STANFORD MAGNETOGRAM



2306 UT

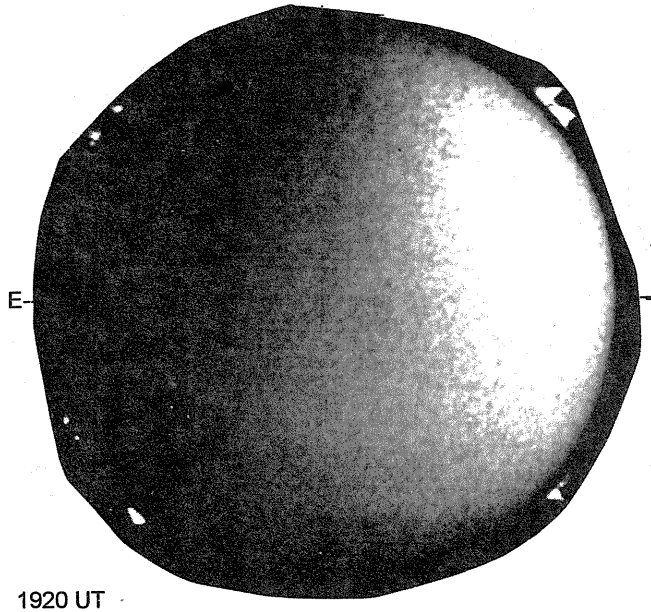
MT. WILSON MAGNETOGRAM



18.04 -
18.98 UT

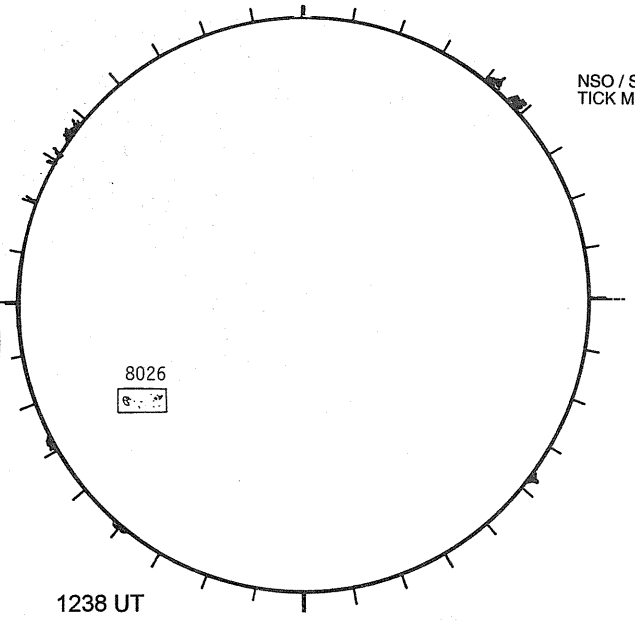
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



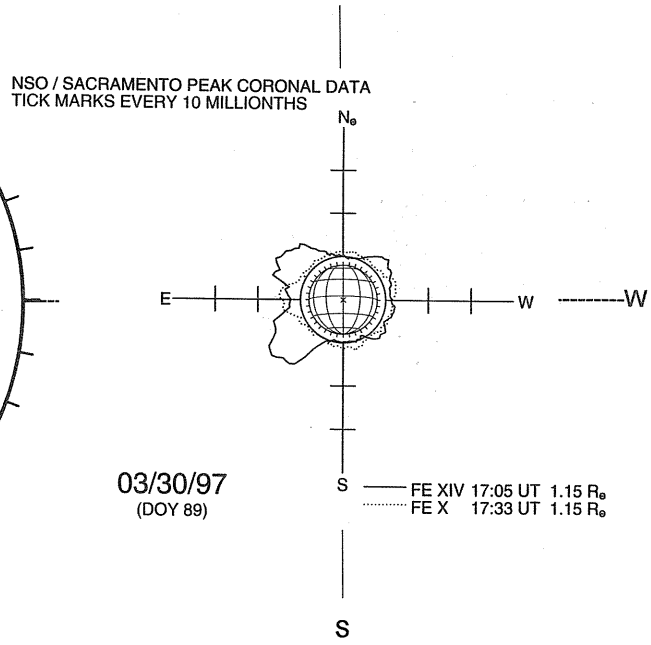
1920 UT
1755 UT Prom

RAMEY SUNSPOT



1238 UT
0706 UT VALA Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----

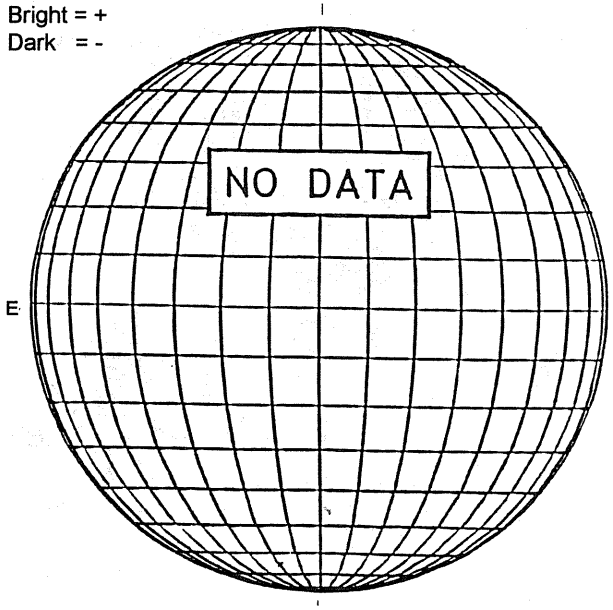


KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

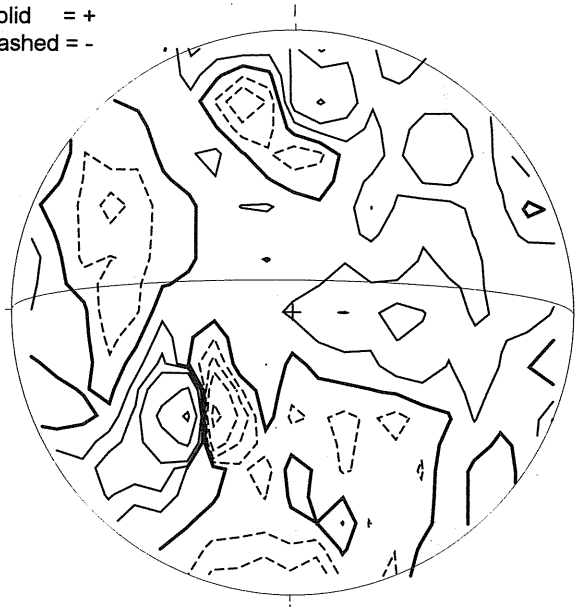


E

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

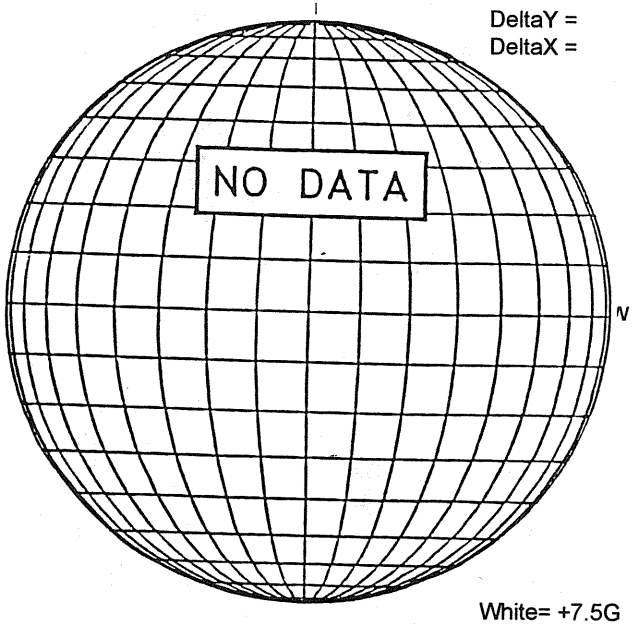


1841 UT

MT. WILSON MAGNETOGRAM

N

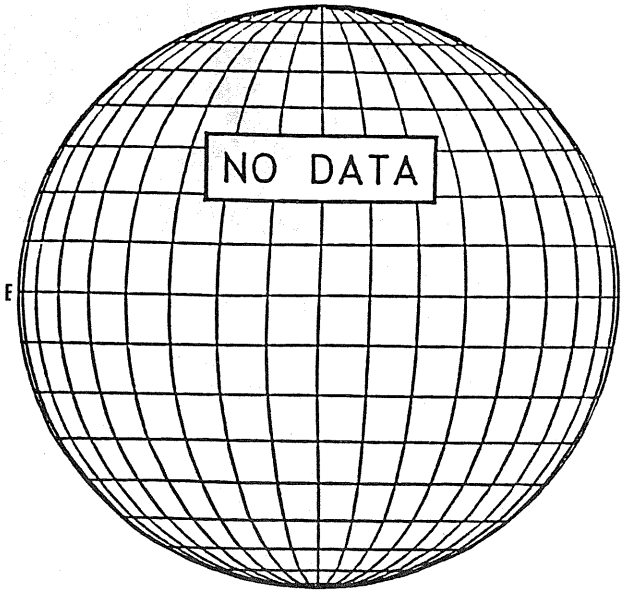
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

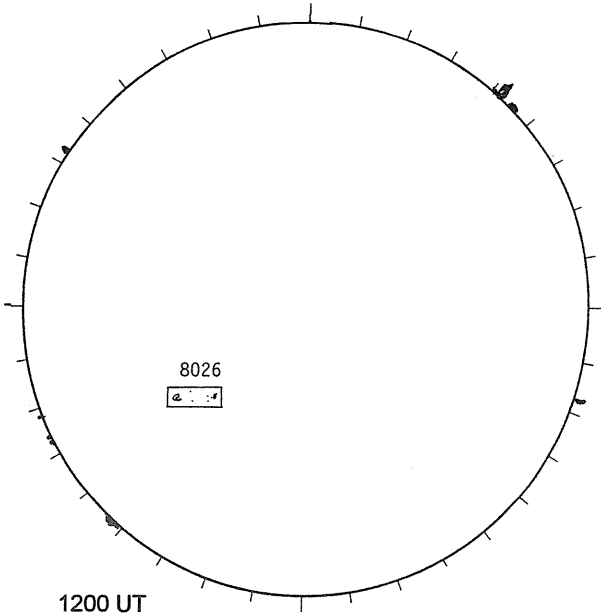
SACRAMENTO PEAK H-ALPHA



E

S

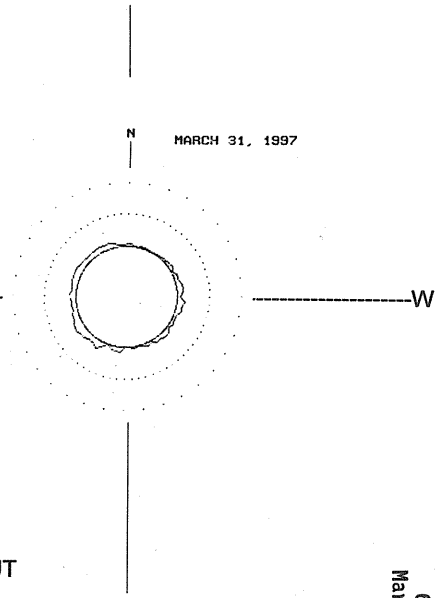
RAMEY SUNSPOT



1200 UT
0516 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----

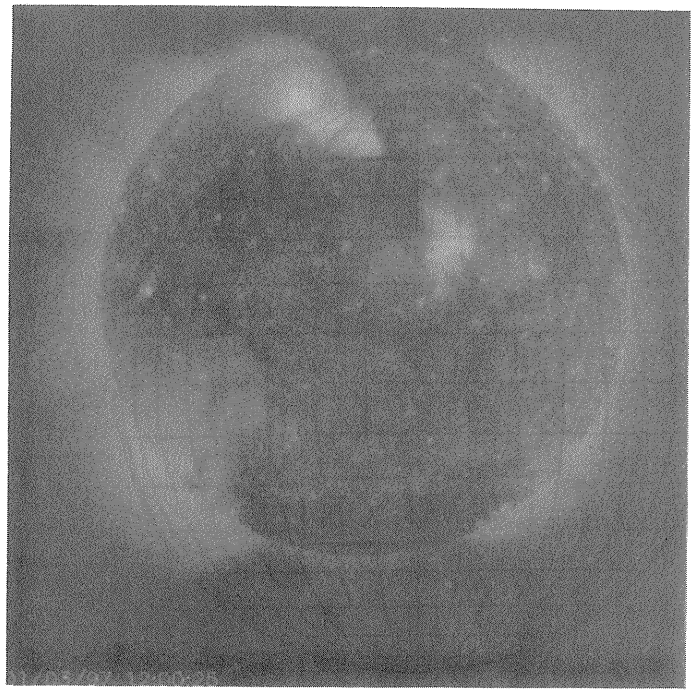


530.3 nm 0618 UT
... 50 abs. units
. . 100 abs. units

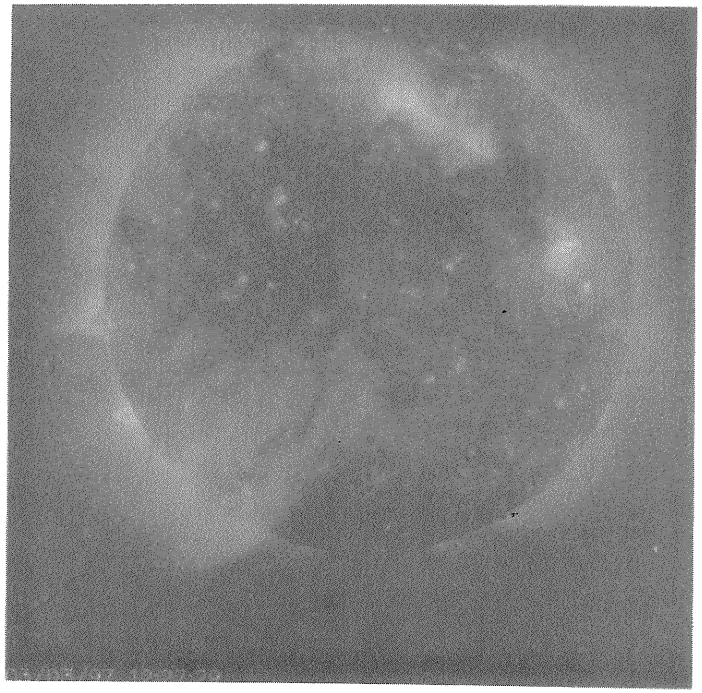
69
Mar 97

YOHKOH SOFT X-RAY TELESCOPE IMAGES

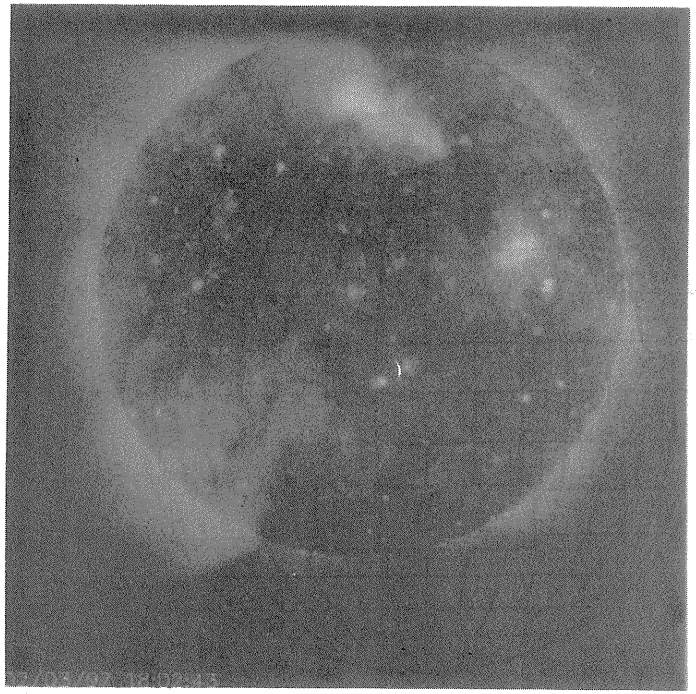
March
1997



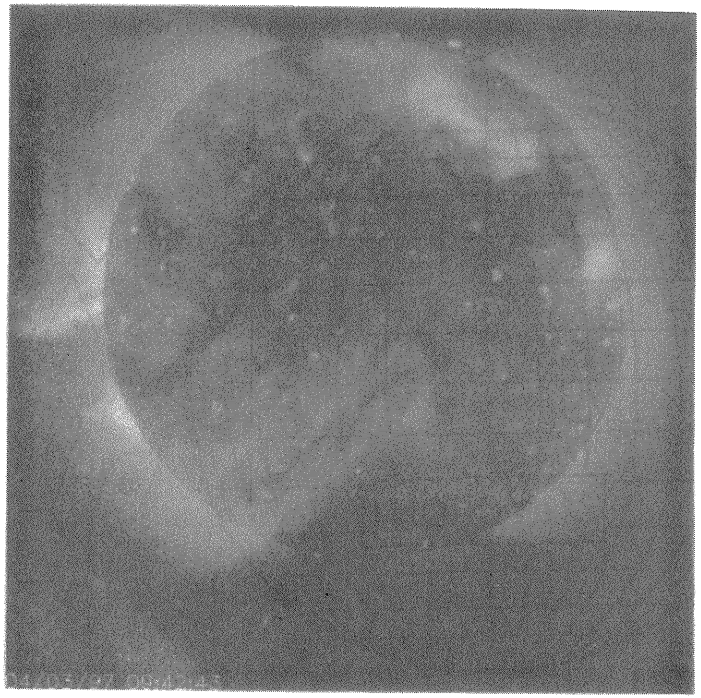
Day 1
12:00:25 UT



Day 3
12:27:29 UT



Day 2
18:02:43 UT

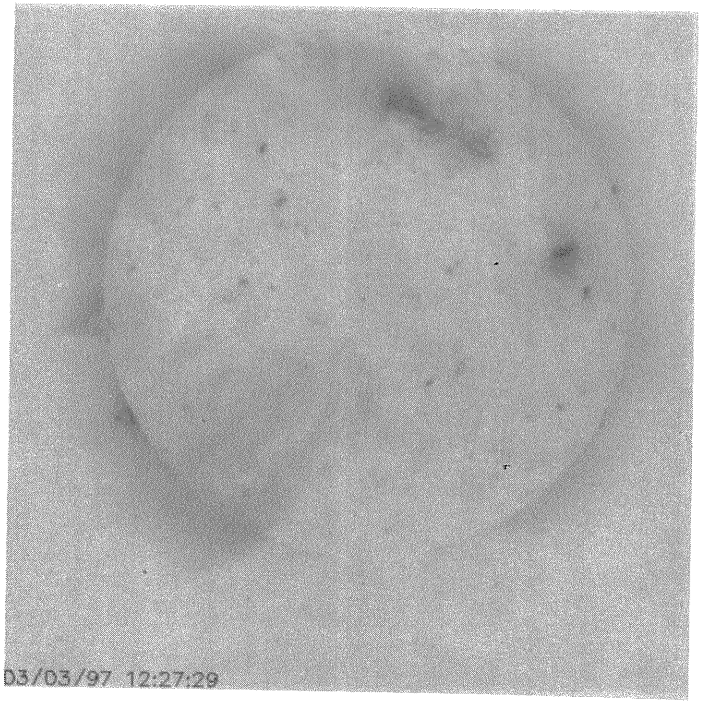


Day 4
09:42:43 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

March
1997

Day 1
12:00:25 UT



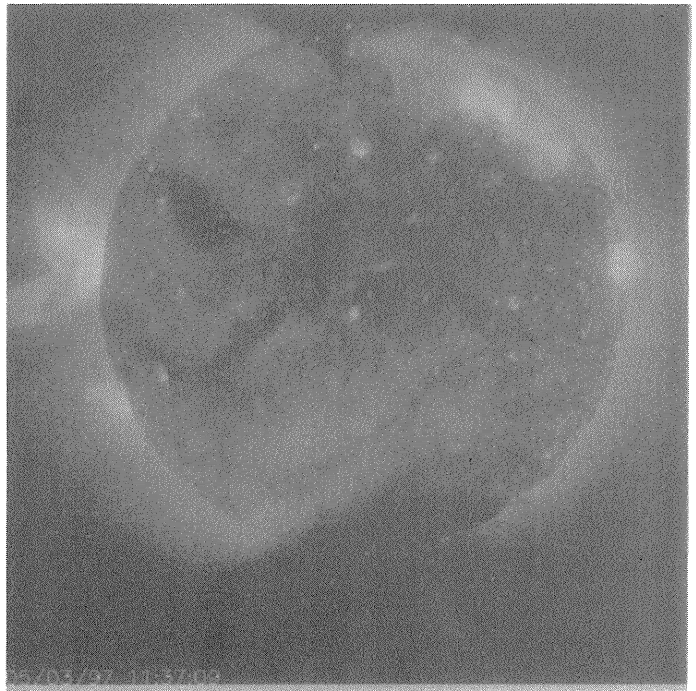
Day 3
12:27:29 UT

Day 2
18:02:43 UT

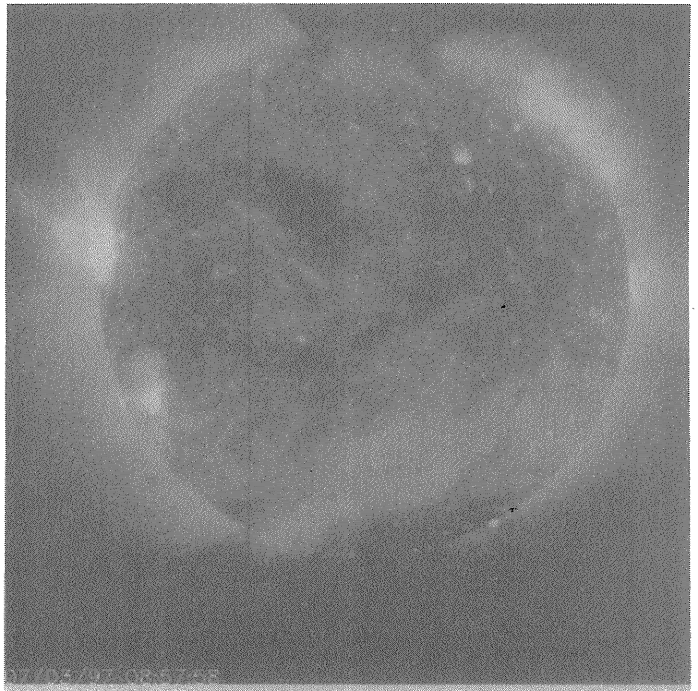
Day 4
09:42:43 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

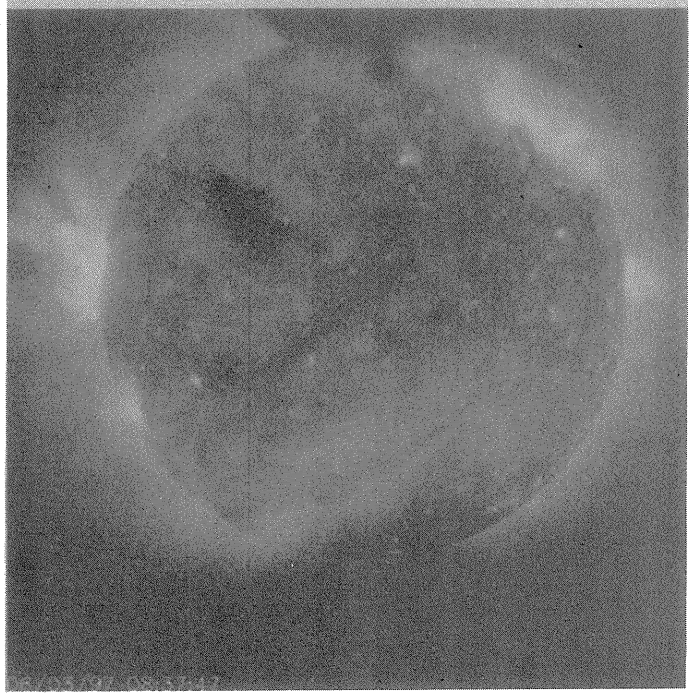
March 1997



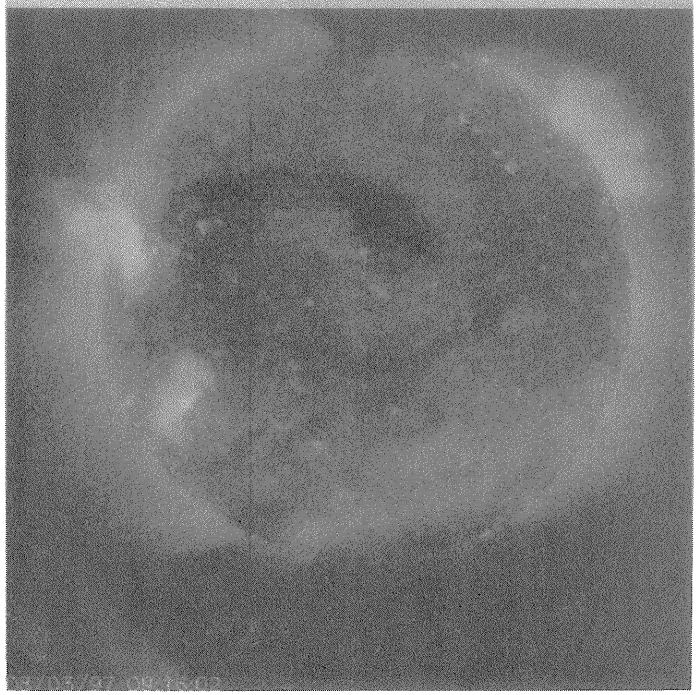
Day 5
11:37:09 UT



Day 7
08:57:58 UT



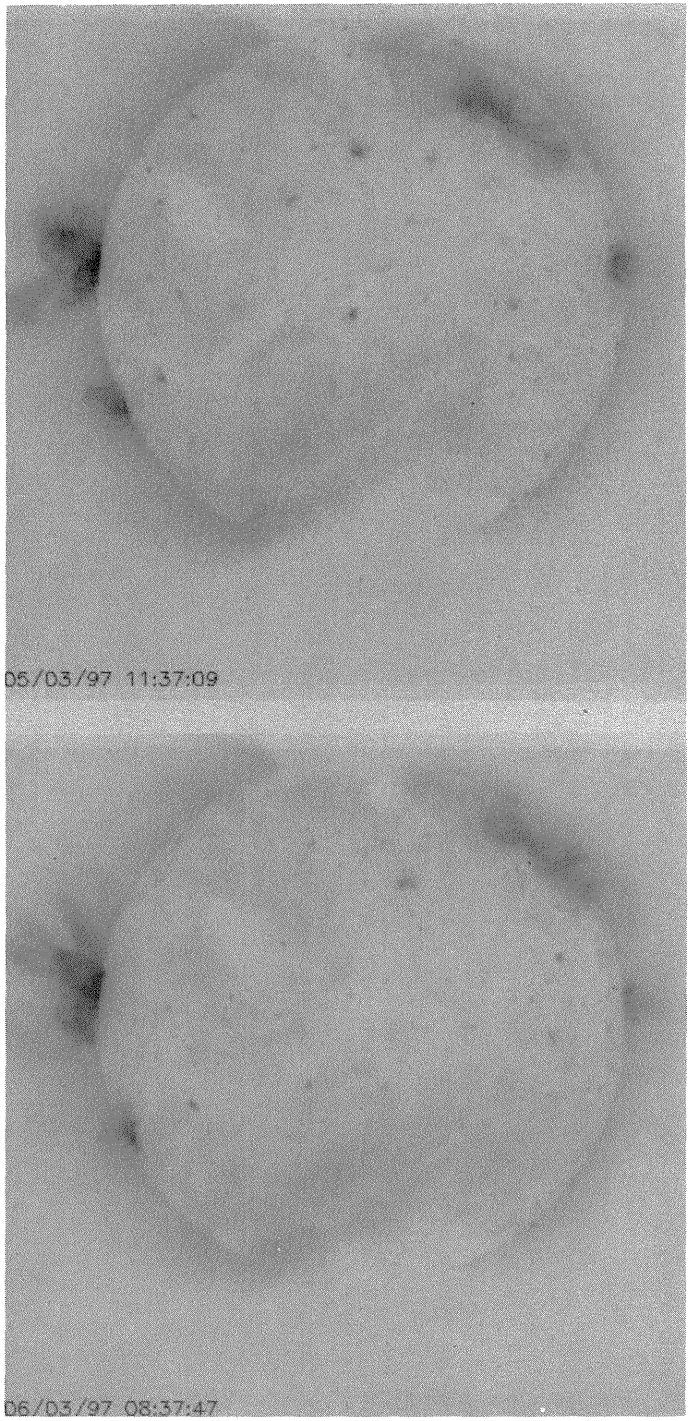
Day 6
08:37:47 UT



Day 8
09:16:02 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

March
1997



Day 5
11:37:09 UT

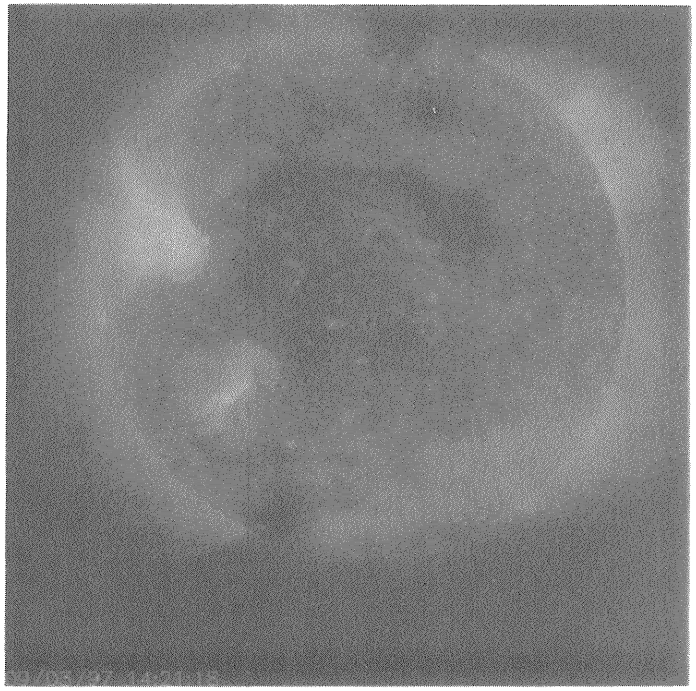
Day 7
08:57:58 UT

Day 6
08:37:47 UT

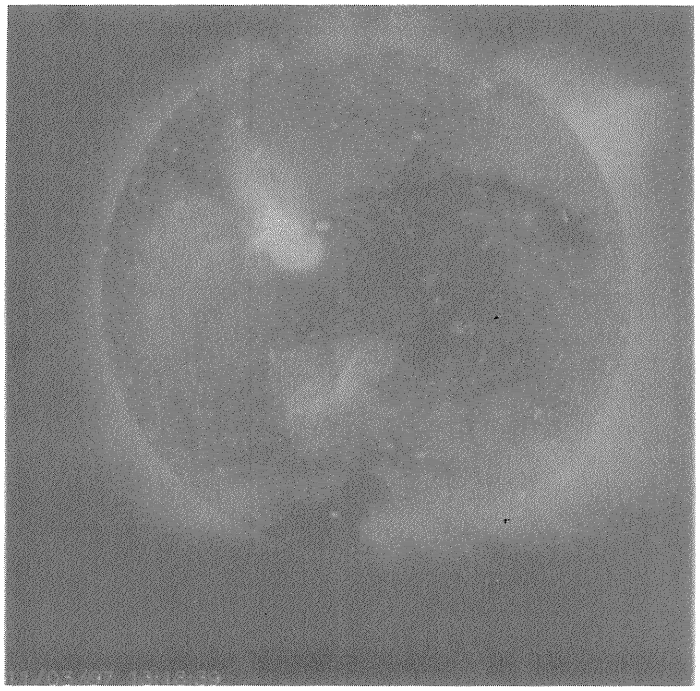
Day 8
09:16:02 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

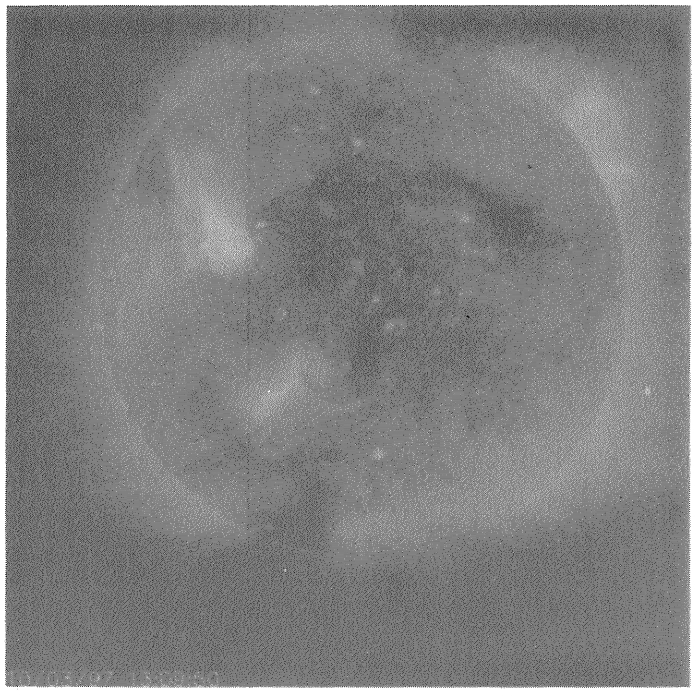
March
1997



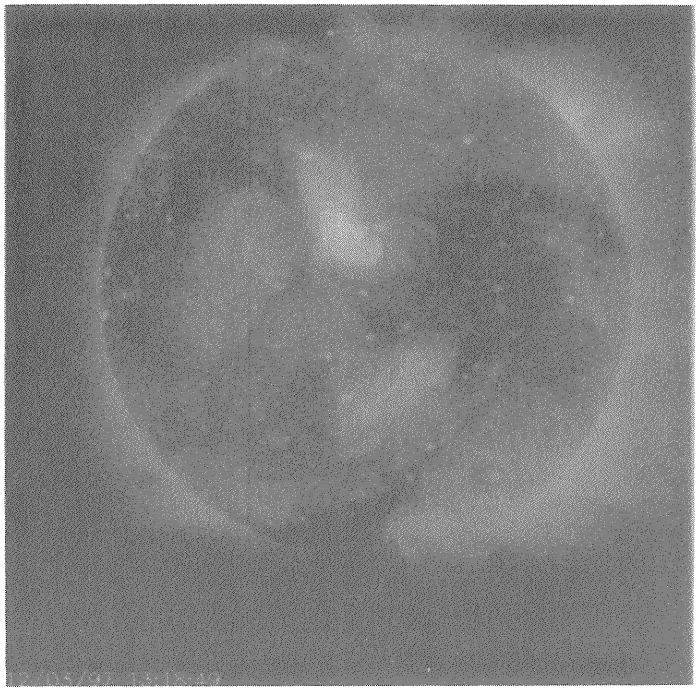
Day 9
14:21:18 UT



Day 11
13:18:39 UT



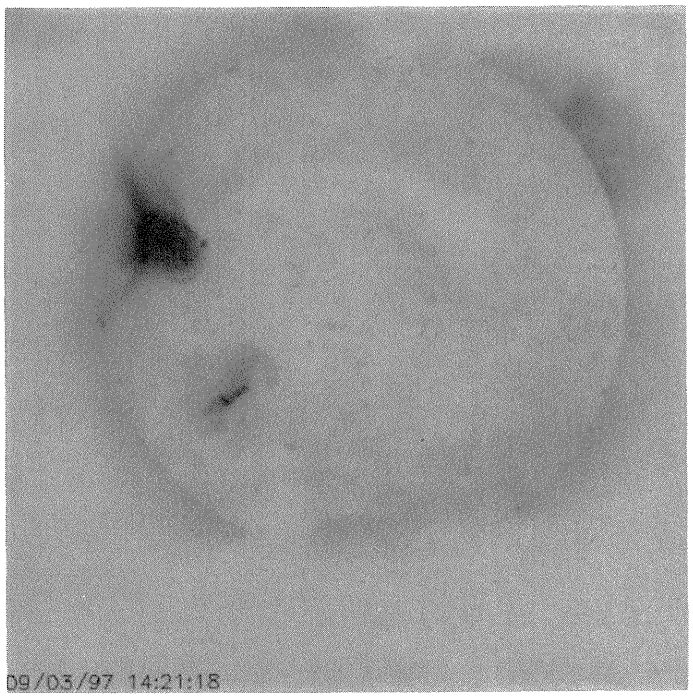
Day 10
13:09:50 UT



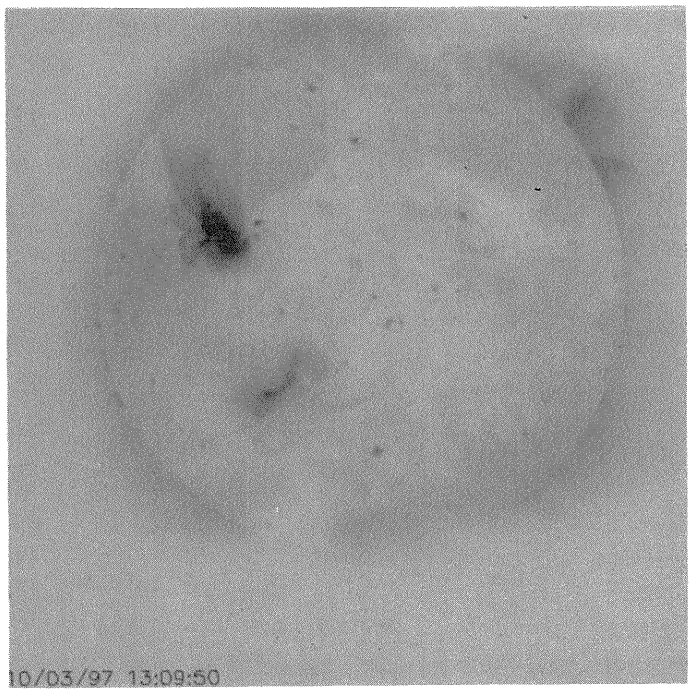
Day 12
13:18:49 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

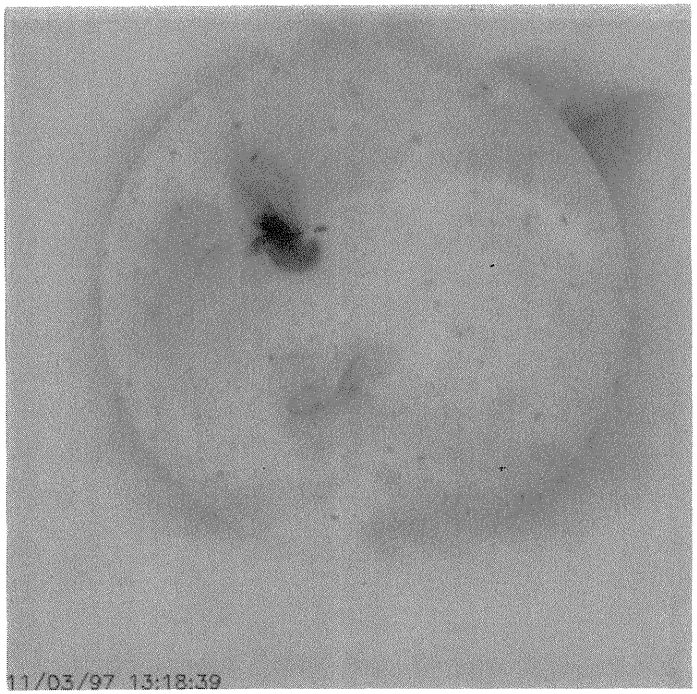
March 1997



Day 9
14:21:18 UT



Day 10
13:09:50 UT

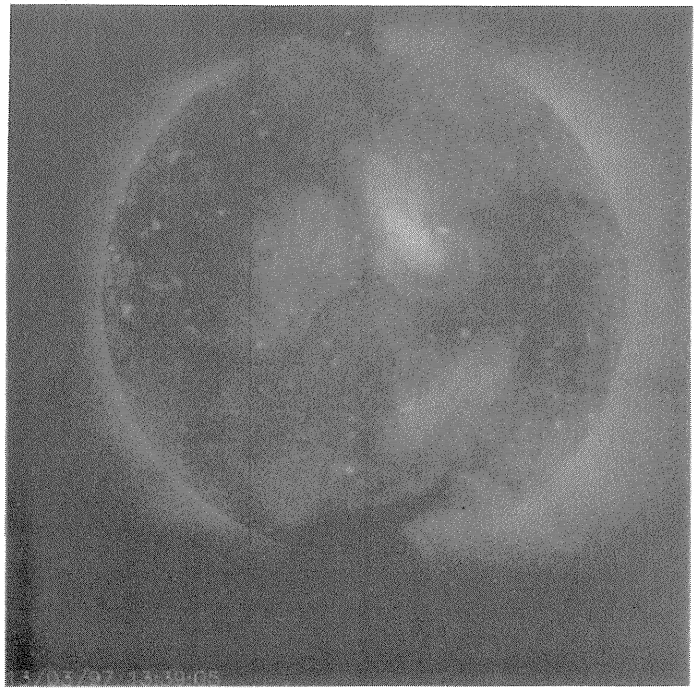


Day 11
13:18:39 UT

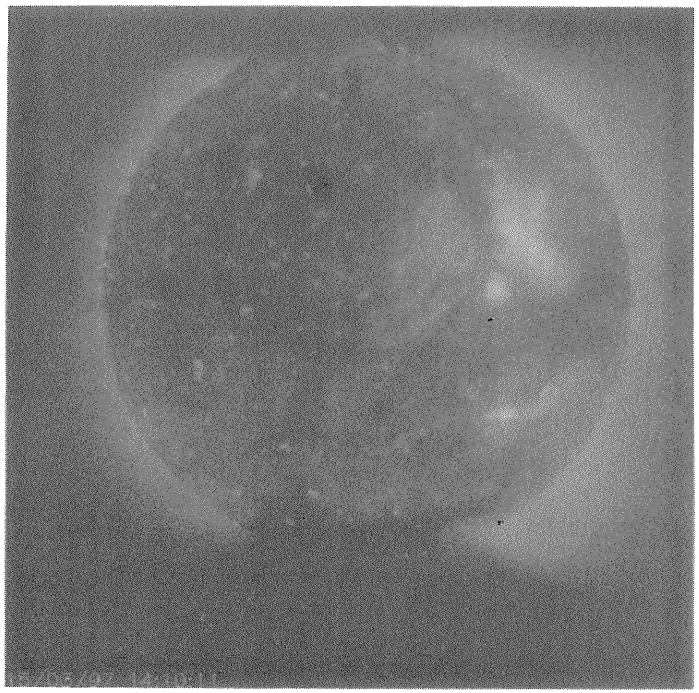
Day 12
13:18:49 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

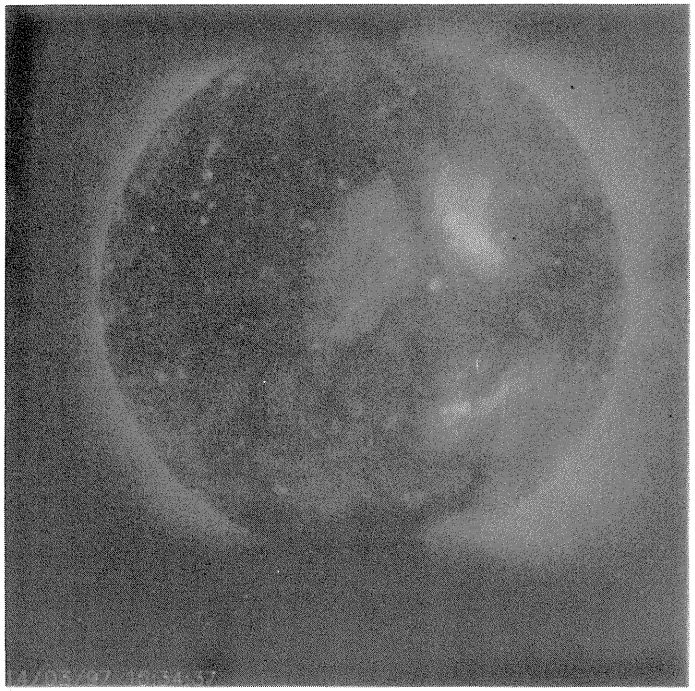
March
1997



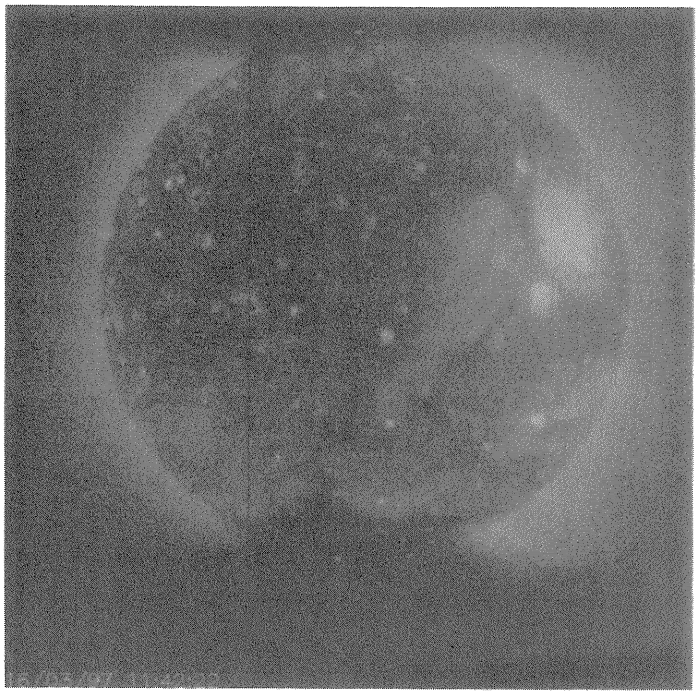
Day 13
13:39:05 UT



Day 15
14:10:11 UT



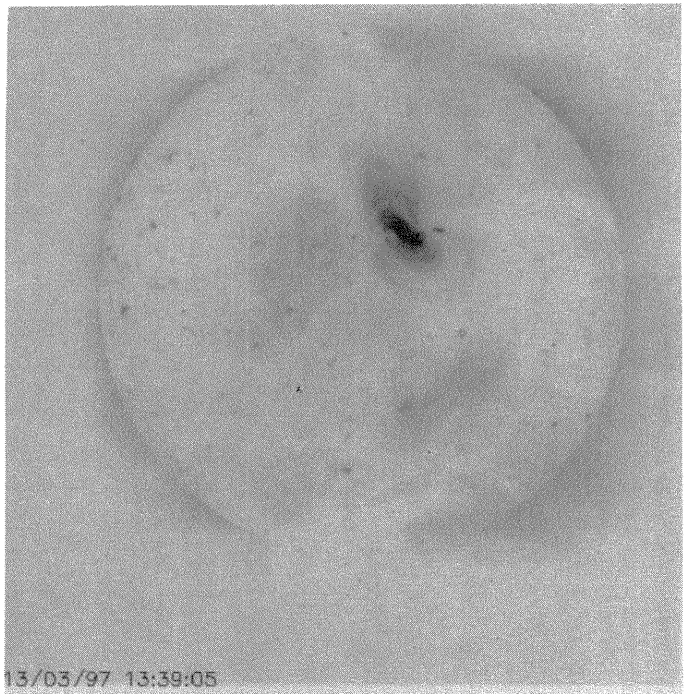
Day 14
15:34:37 UT



Day 16
11:42:22 UT

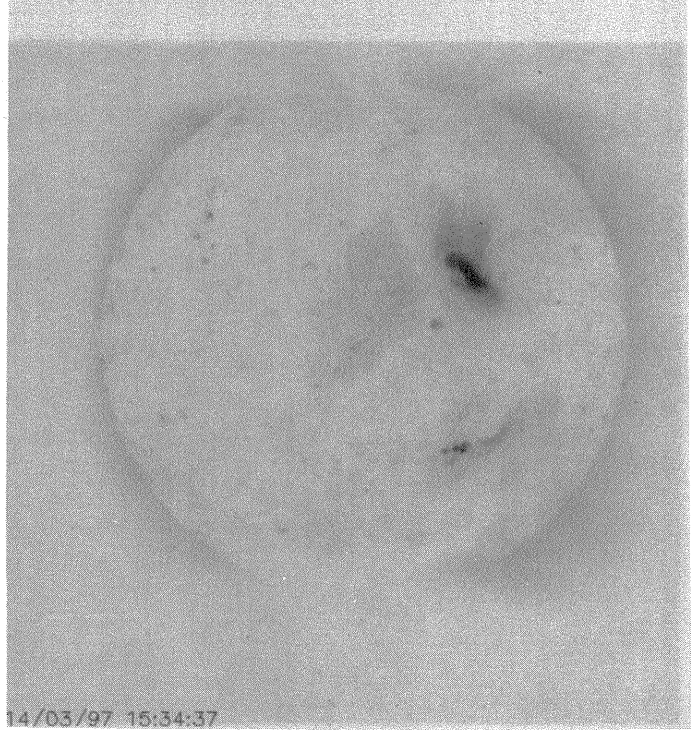
YOHKOH SOFT X-RAY TELESCOPE IMAGES

March 1997

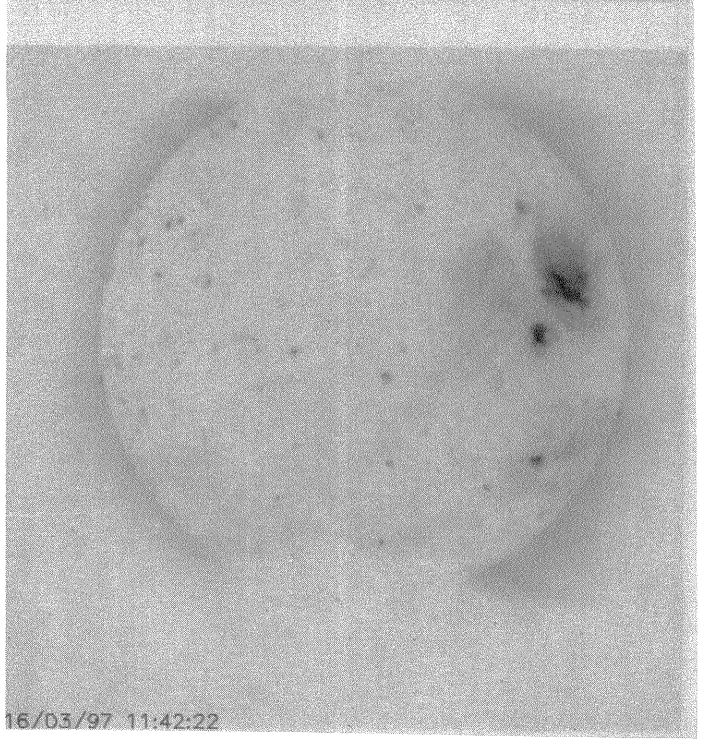


Day 13
13:39:05 UT

Day 15
14:10:11 UT



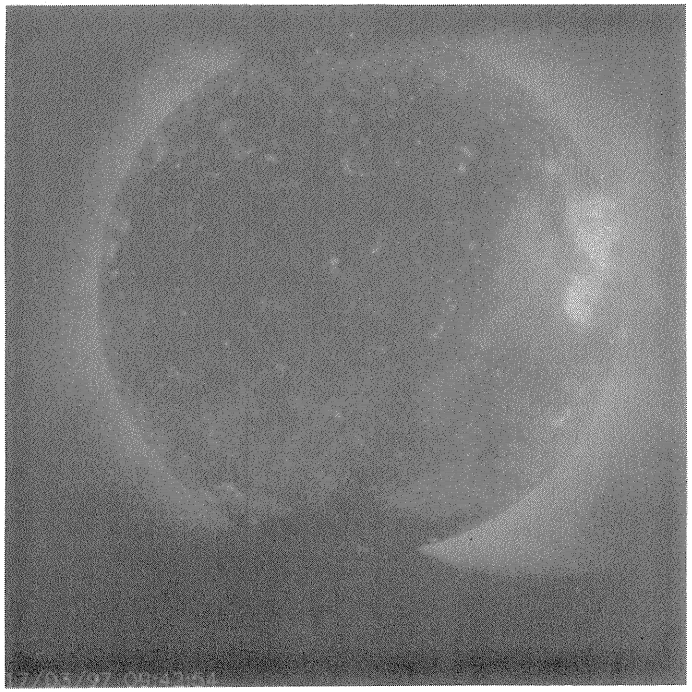
Day 14
15:34:37 UT



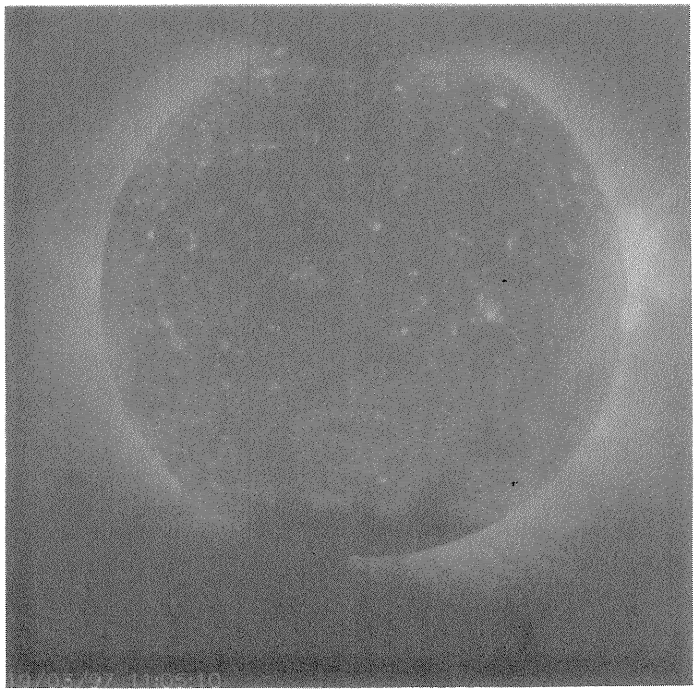
Day 16
11:42:22 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

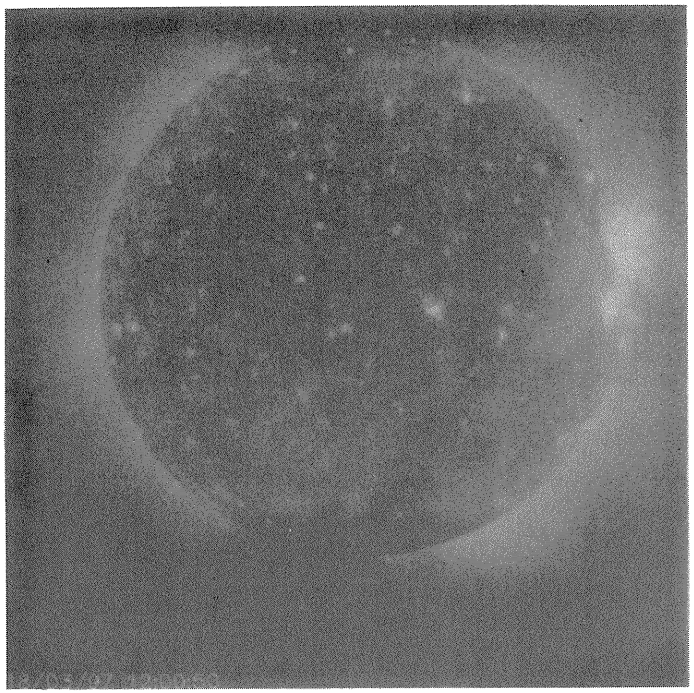
March
1997



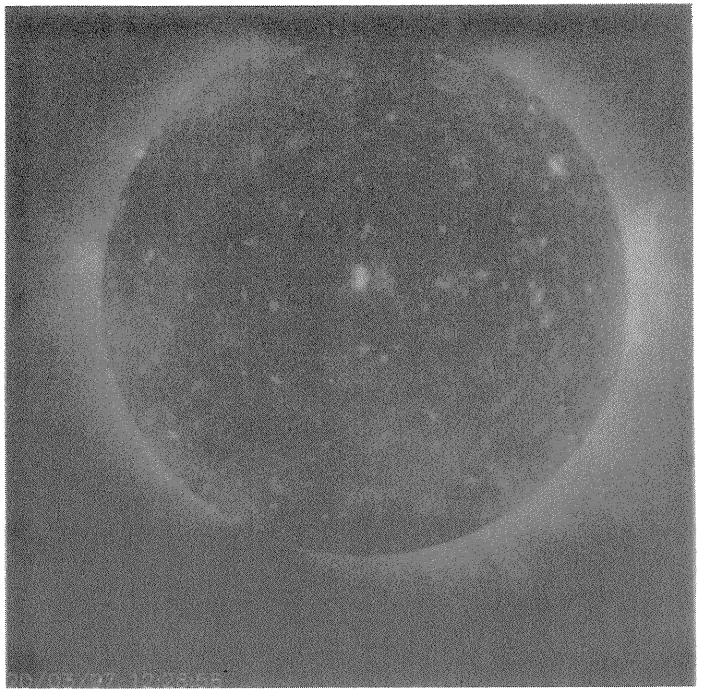
Day 17
09:42:54 UT



Day 19
11:05:10 UT



Day 18
12:00:50 UT

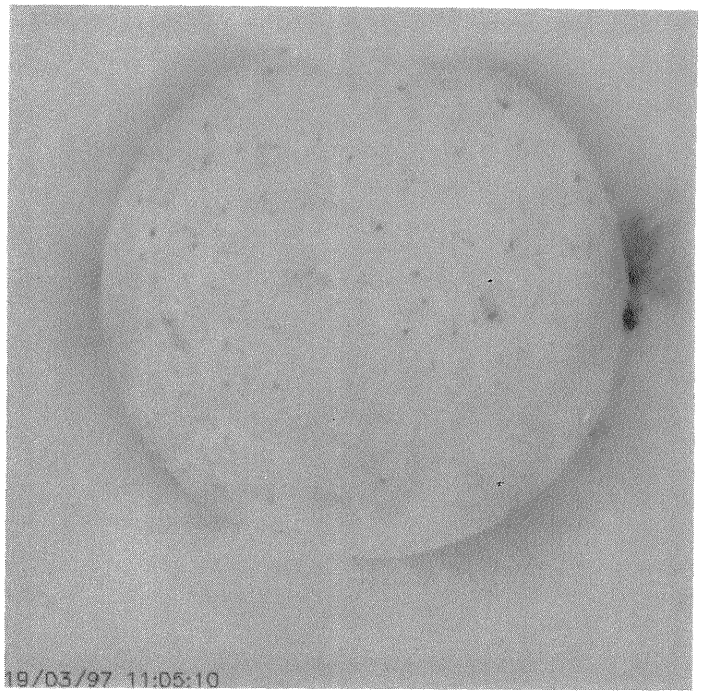


Day 20
12:28:56 UT

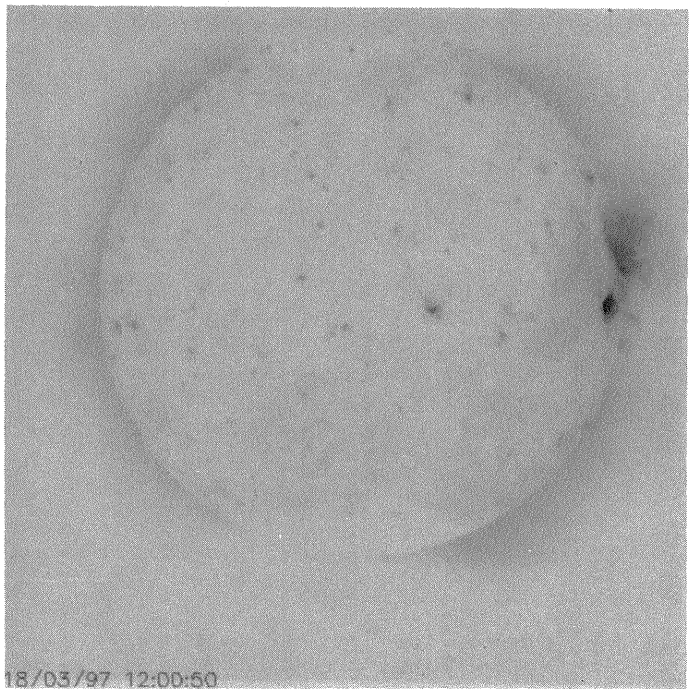
YOHKOH SOFT X-RAY TELESCOPE IMAGES

March
1997

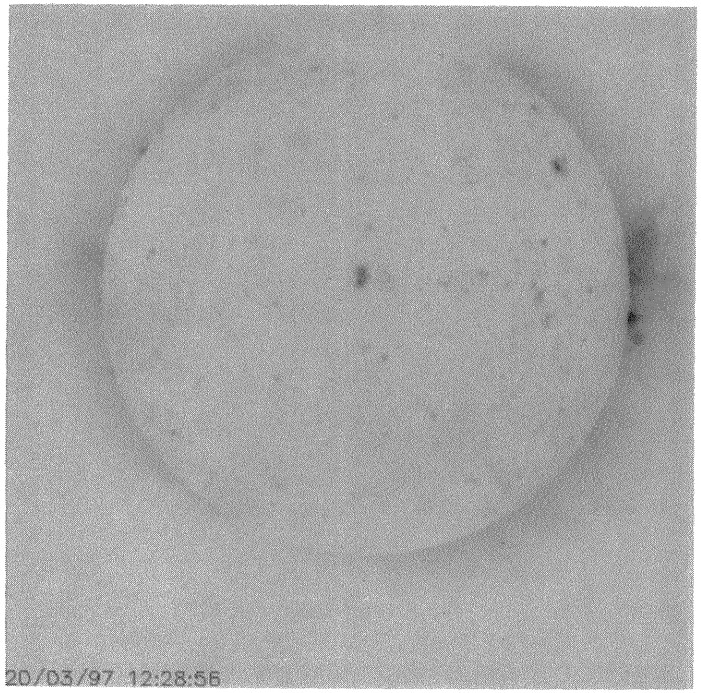
Day 17
09:42:54 UT



Day 19
11:05:10 UT



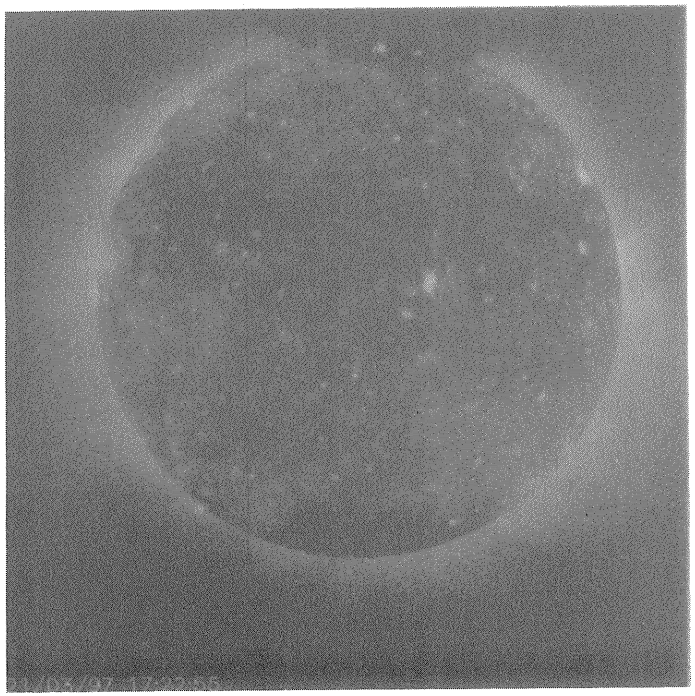
Day 18
12:00:50 UT



Day 20
12:28:56 UT

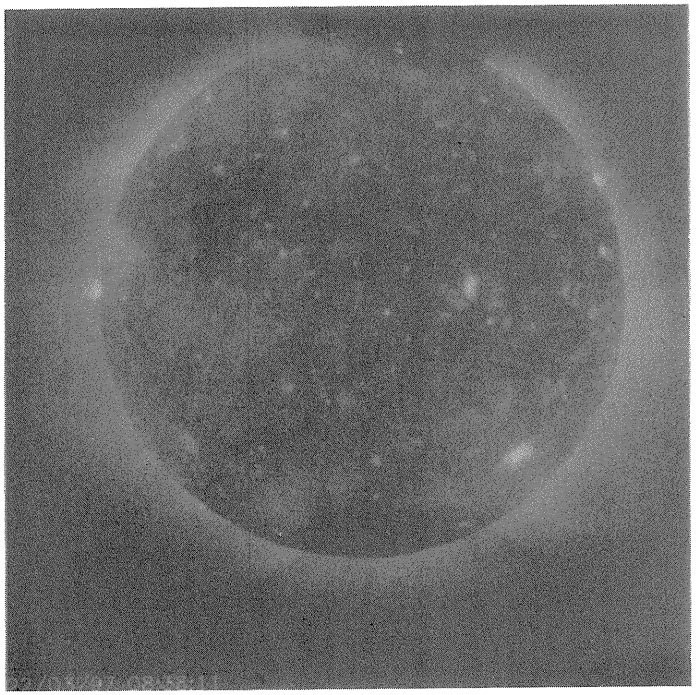
YOHKOH SOFT X-RAY TELESCOPE IMAGES

March
1997

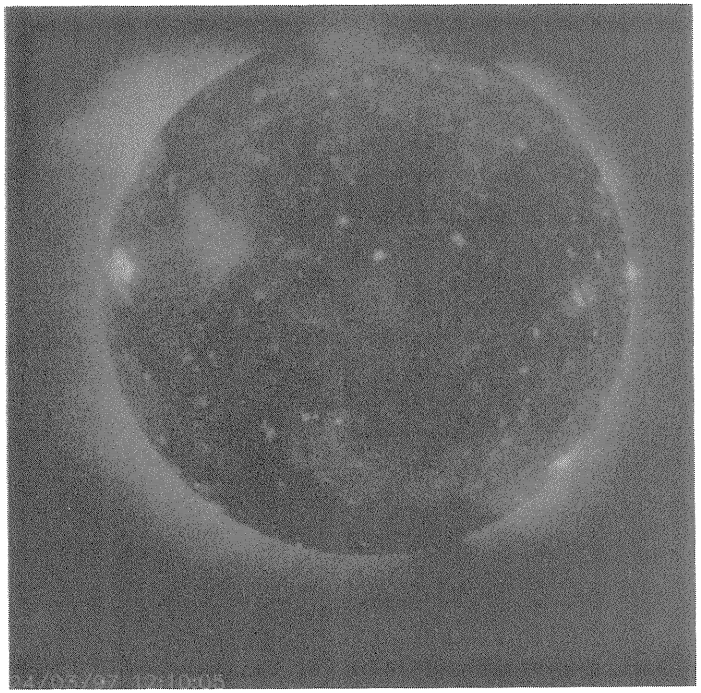


Day 21
17:22:55 UT

Day 23
14:56:29 UT



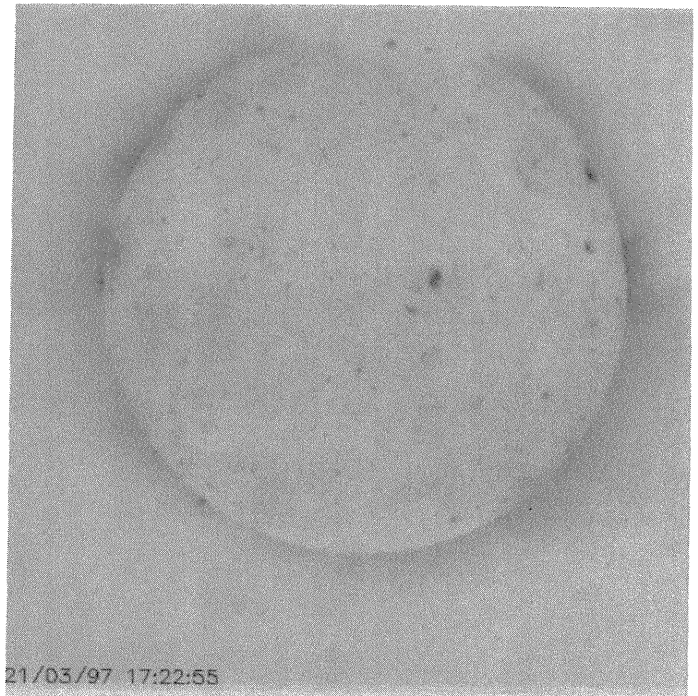
Day 22
08:38:11 UT



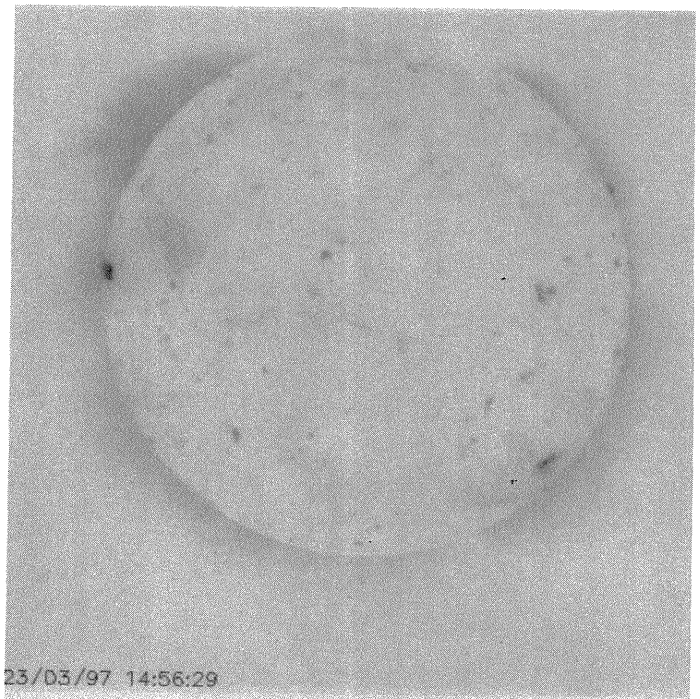
Day 24
12:10:05 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

March 1997

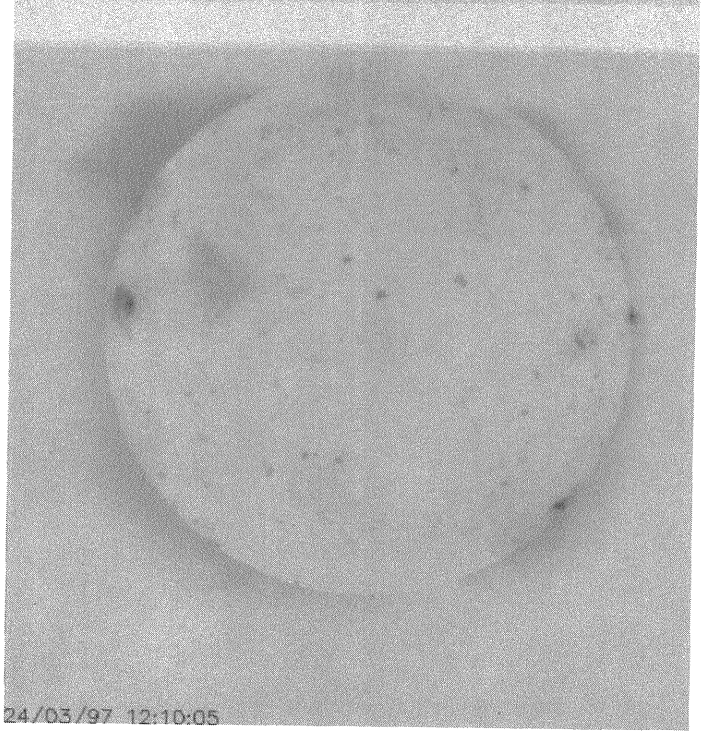


Day 21
17:22:55 UT



Day 23
14:56:29 UT

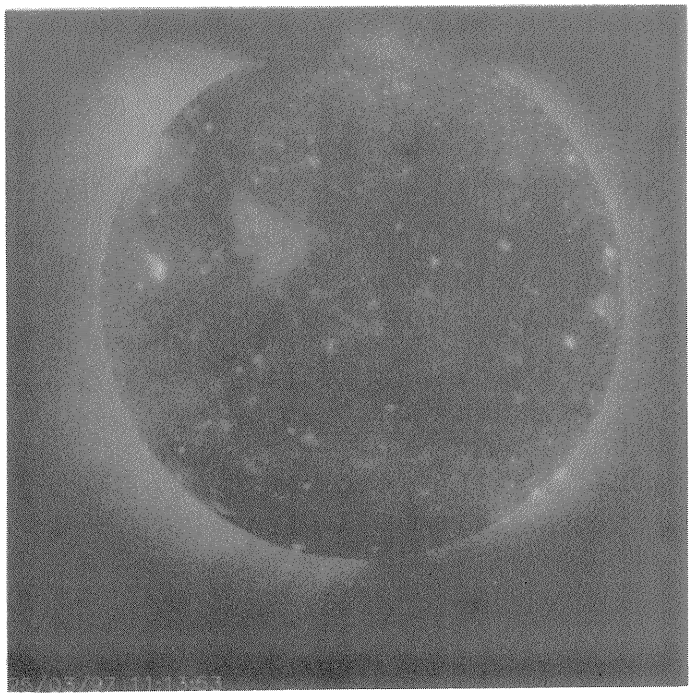
Day 22
08:38:11 UT



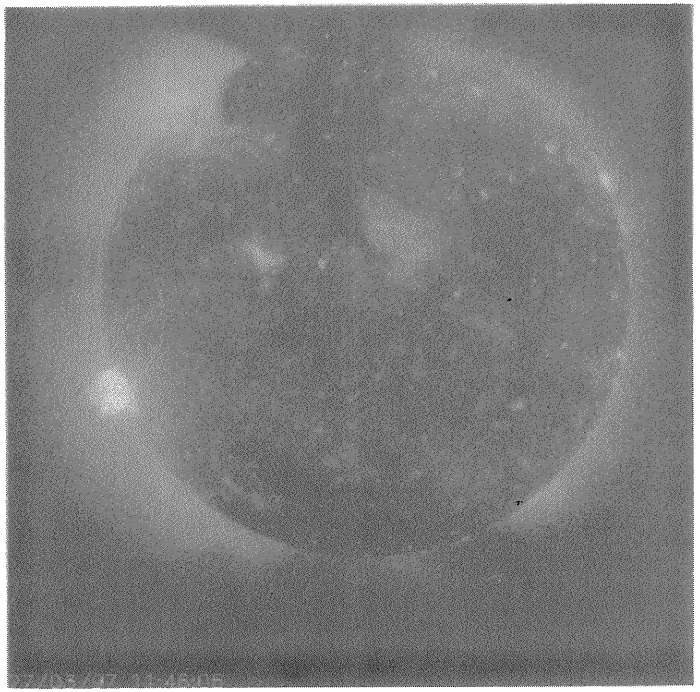
Day 24
12:10:05 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

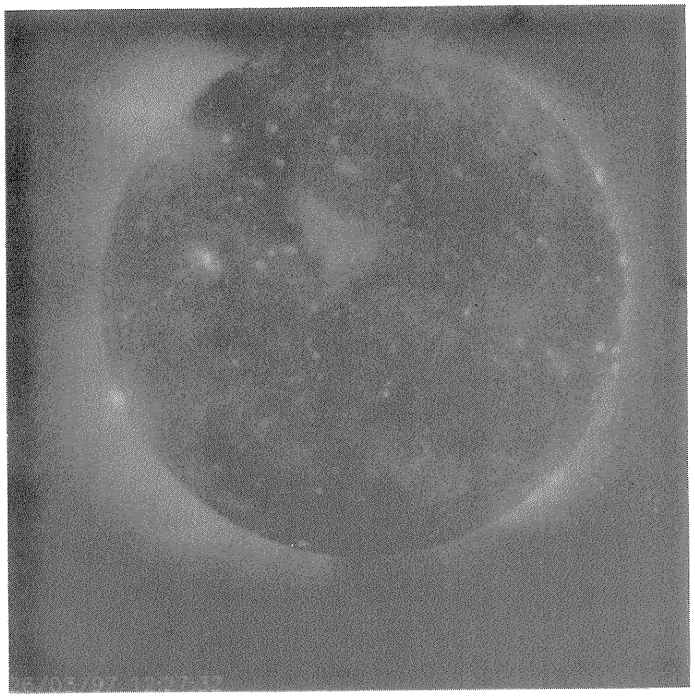
March
1997



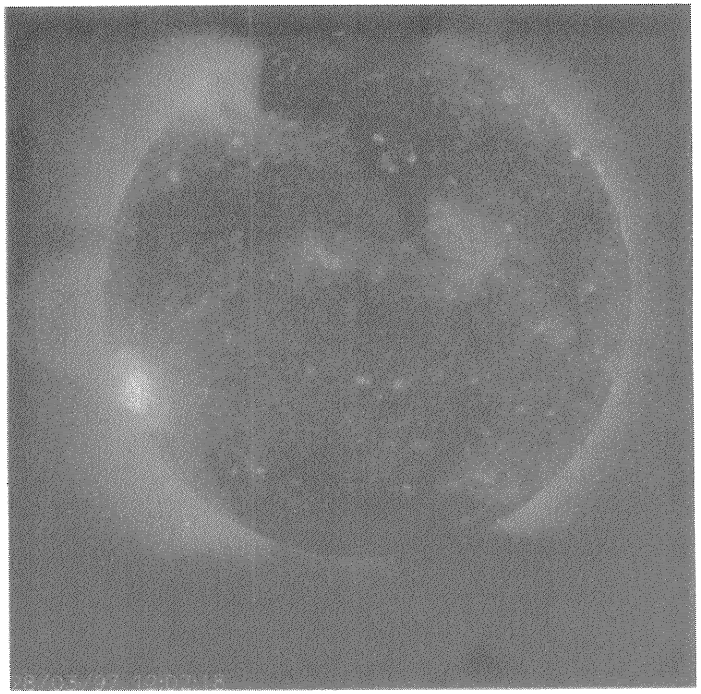
Day 25
11:13:53 UT



Day 27
11:46:06 UT



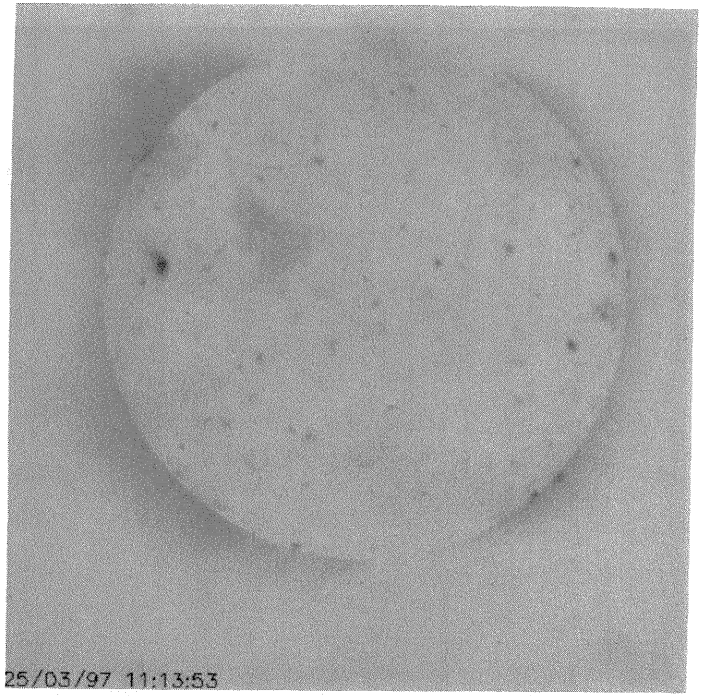
Day 26
12:27:32 UT



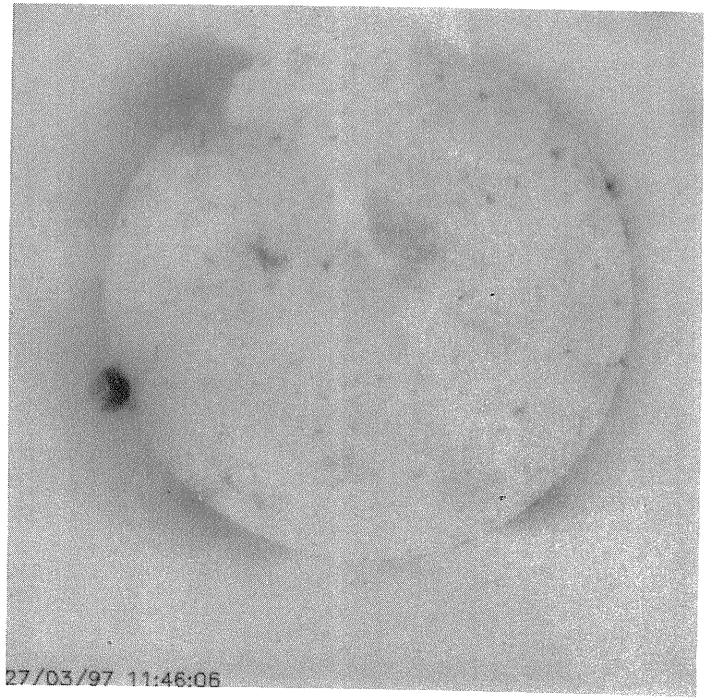
Day 28
12:02:18 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

March 1997

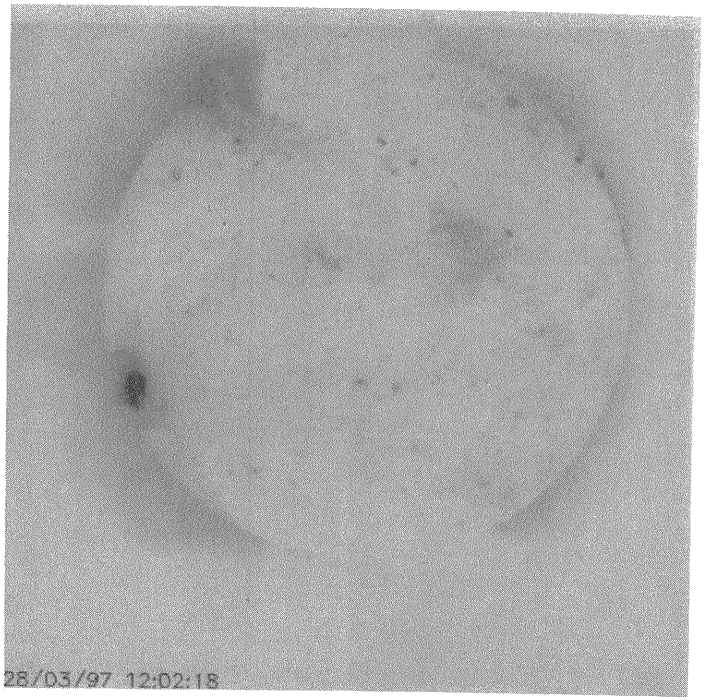


Day 25
11:13:53 UT



Day 27
11:46:06 UT

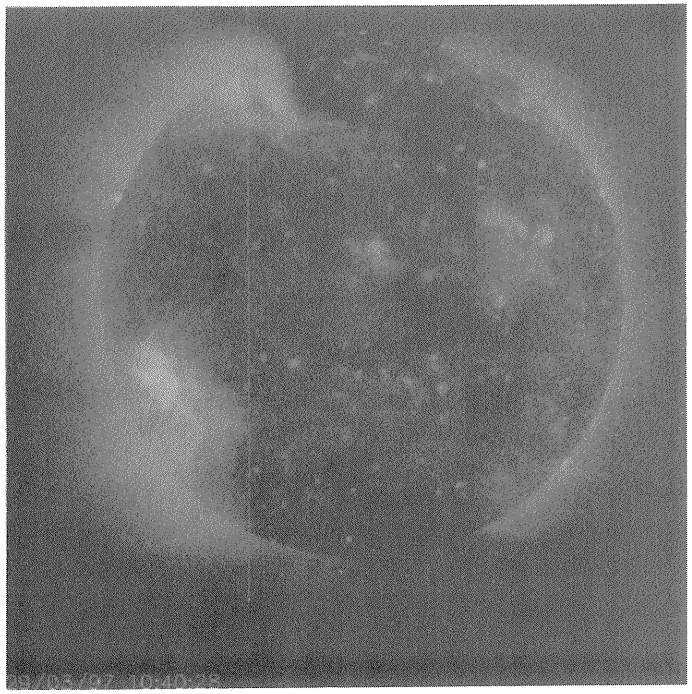
Day 26
12:27:32 UT



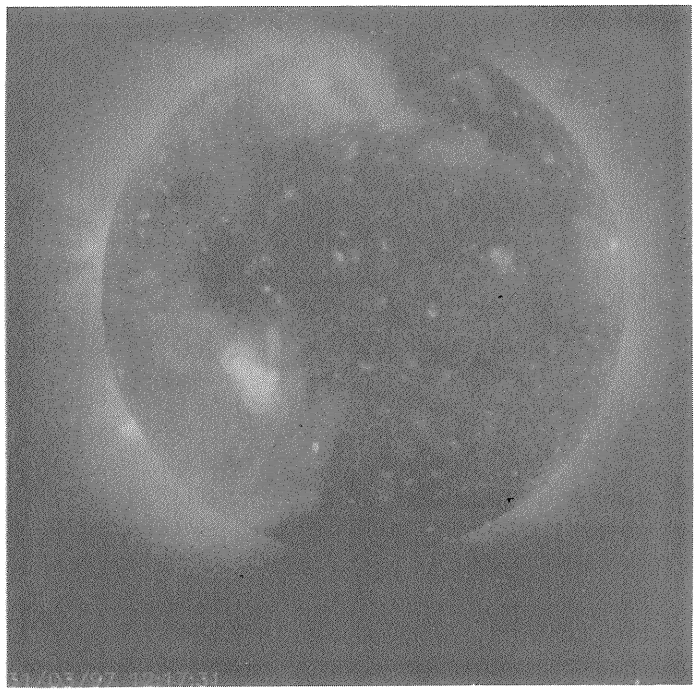
Day 28
12:02:18 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

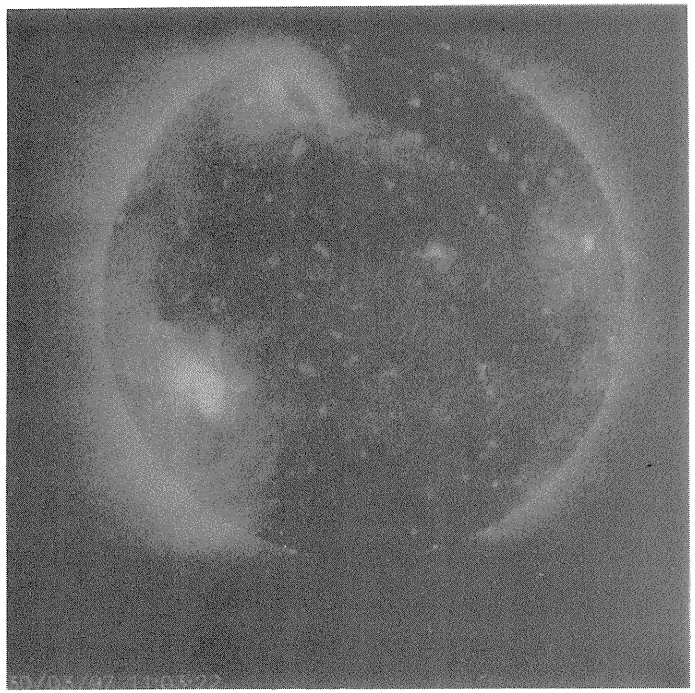
March
1997



Day 29
10:40:28 UT



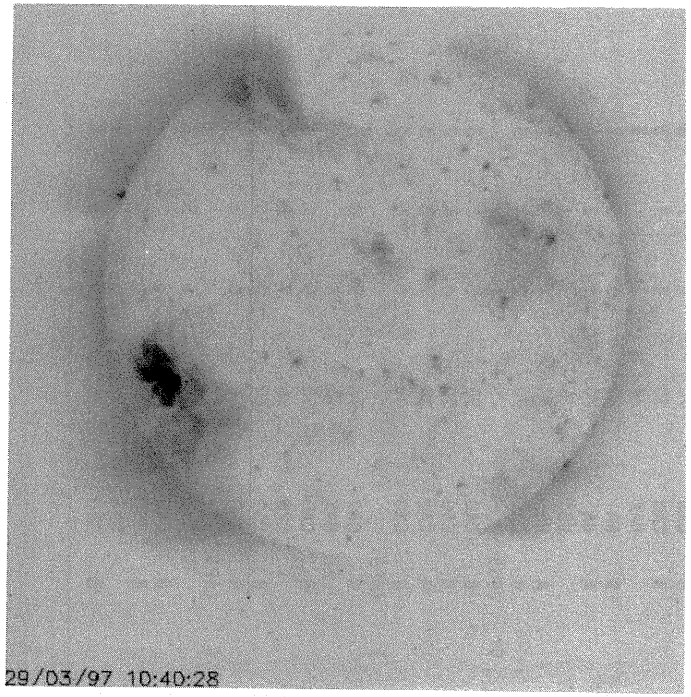
Day 31
12:17:31 UT



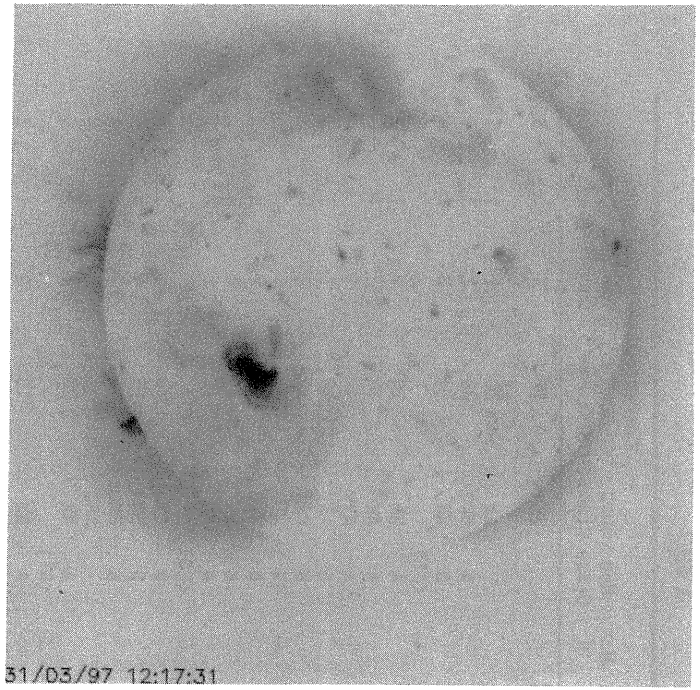
Day 30
11:03:22 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

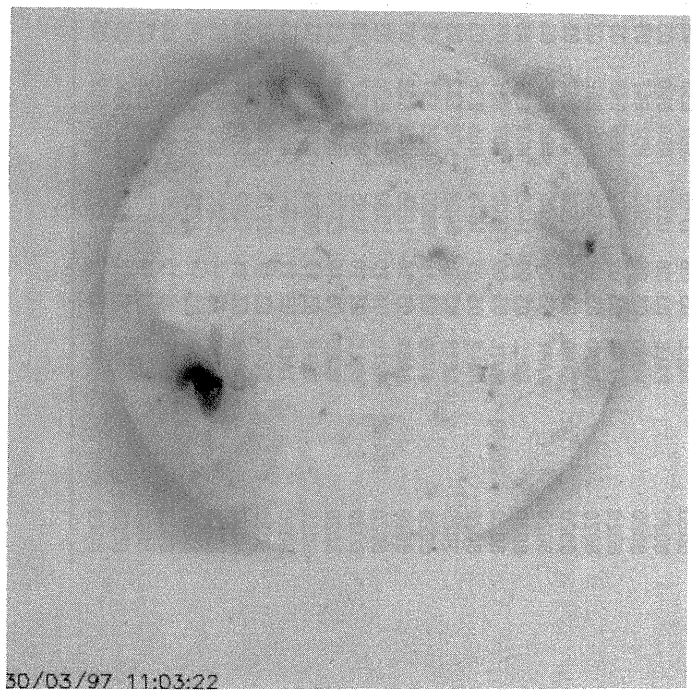
March 1997



Day 29
10:40:28 UT



Day 31
12:17:31 UT



Day 30
11:03:22 UT

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MARCH 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
8019A		VORO	03	11	2255	N07	W44	03	8.6			AXX	17	3		3
8021		TACH	03	08	0500	S27	E51	03	12.2			AX	20	1	1	3
8021		SVTO	03	08	0705	S28	E51	03	12.3		B	CRO	20	2	3	3
8021		RAMY	03	08	1321	S29	E47	03	12.2		A	AX		2	1	4
8021	28409	MWIL	03	08	1515	S27	E48	03	12.4	4	(AF)					
8021		HOLL	03	08	1710	S29	E47	03	12.4		A	HR	20	1	1	2
8021		PALE	03	08	1815	S32	E45	03	12.3		A	AX	10	2	1	3
8021		SVTO	03	09	0725	S28	E40	03	12.4		A	AX		1		4
8021		RAMY	03	09	1305	S29	E35	03	12.3		A	AX	10	2	2	3
8021		HOLL	03	09	1445	S29	E34	03	12.3		B	CRO	50	2	2	3
8021	28409	MWIL	03	09	1500	S28	E33	03	12.2	4	(B)					
8021		PALE	03	09	1815	S32	E32	03	12.3		B	BXO	10	2	2	3
8021		LEAR	03	10	0408	S28	E28	03	12.4		B	BX		2	2	2
8021		RAMY	03	14	1220	S31	W25	03	12.5		A	AX		2	2	2
8021	28410	MWIL	03	14	1500	S31	W26	03	12.6	4	(BG)					
8021		HOLL	03	14	1616	S28	W28	03	12.5		B	BXO	20	4	3	4
8021		LEAR	03	15	0010	S32	W30	03	12.6		B	BXO	10	4	2	4
8021		SVTO	03	15	0700	S31	W34	03	12.6		B	BXO	10	5	3	4
8021		KAND	03	15	0920	S31	W34	03	12.7			CRO		2	2	2
8021		HOLL	03	15	1450	S32	W37	03	12.7		A	AX	20	2	1	4
8021	28410	MWIL	03	15	1515	S31	W37	03	12.7	3	(B)					
8021		RAMY	03	15	1638	S30	W39	03	12.6		A	AX	10	2	1	2
8021		LEAR	03	16	0005	S33	W41	03	12.7		A	AX		1		4
8020		SVTO	03	06	1101	N07	E79	03	12.4		A	HA	40	1	2	3
8020		RAMY	03	06	1315	N06	E78	03	12.4		A	HS	60	1	2	4
8020	28408	MWIL	03	06	1500	N06	E78	03	12.5	4	(AP)					
8020		HOLL	03	06	1542	N08	E80	03	12.6		A	HS	60	1	1	3
8020		PALE	03	06	1925	N03	E75	03	12.4		A	HS	120	1	2	2
8020		VORO	03	06	2226	N08	E79	03	12.8			HRX	212	1		2
8020		LEAR	03	07	0049	N09	E74	03	12.6		B	CAO	120	2	5	3
8020		KAND	03	07	0815	N07	E73	03	12.8			CAO		2	5	4
8020		RAMY	03	07	1252	N08	E69	03	12.7		B	CSO	80	2	4	4
8020	28408	MWIL	03	07	1500	N06	E65	03	12.5	5	(AP)					
8020		HOLL	03	07	1550	N07	E65	03	12.5		B	CAO	90	2	4	3
8020		PALE	03	07	2125	N03	E63	03	12.6		B	CSO	130	2	5	2
8020		VORO	03	07	2310	N07	E60	03	12.4			HAX	171	1		2
8020		LEAR	03	08	0012	N09	E60	03	12.5		A	HS	140	3	4	3
8020		TACH	03	08	0500	N08	E55	03	12.3			HSX	250	2	2	3
8020		SVTO	03	08	0705	N07	E58	03	12.6		B	CAO	180	5	5	3
8020		RAMY	03	08	1321	N05	E53	03	12.5		B	CAO	70	3	4	4
8020	28408	MWIL	03	08	1515	N07	E51	03	12.4	5	(AP)					
8020		HOLL	03	08	1710	N07	E53	03	12.7		B	CAO	90	4	7	2
8020		PALE	03	08	1815	N04	E50	03	12.5		B	CAO	60	3	3	3
8020		VORO	03	08	2303	N07	E47	03	12.5			HAX	129	1		3
8020		LEAR	03	09	0359	N09	E43	03	12.4		B	HA	80	3	3	2
8020		SVTO	03	09	0725	N06	E42	03	12.4		A	HA	70	4	2	4
8020		KAND	03	09	1030	N07	E42	03	12.6			HS		1	1	1
8020		RAMY	03	09	1305	N06	E38	03	12.4		A	HS	30	4	3	3
8020		HOLL	03	09	1445	N07	E37	03	12.4		B	CAO	90	2	3	3
8020	28408	MWIL	03	09	1500	N07	E37	03	12.4	5	(BG)					
8020		PALE	03	09	1815	N04	E36	03	12.4		B	CAO	50	3	3	3
8020		LEAR	03	10	0408	N08	E32	03	12.6		B	CAO	50	6	4	2
8020		SVTO	03	10	0800	N06	E31	03	12.6		B	CAO	30	7	8	3
8020		RAMY	03	10	1236	N06	E28	03	12.6		B	CSO	40	6	6	3
8020	28408	MWIL	03	10	1500	N06	E26	03	12.6	5	(AP)					
8020		HOLL	03	10	1605	N07	E27	03	12.7		B	CAO	70	9	8	3
8020		VORO	03	10	2340	N07	E20	03	12.5			HAX	44	3		2
8020		LEAR	03	11	0024	N08	E21	03	12.6		B	CAO	50	5	5	3
8020		TACH	03	11	0454	N06	E18	03	12.5			BRO	66	7	7	3
8020		SVTO	03	11	0915	N06	E15	03	12.5		B	CSO	20	5	4	3
8020		RAMY	03	11	1222	N06	E15	03	12.6		B	CSO	30	6	5	3
8020	28408	MWIL	03	11	1500	N07	E12	03	12.5	4	(AP)					
8020		VORO	03	11	2255	N07	E09	03	12.6			BXO	30	6	5	3
8020		LEAR	03	12	0020	N08	E06	03	12.5		B	CRO	30	12	5	4
8020		SVTO	03	12	0830	N07	E03	03	12.6		B	CSO	40	10	6	3
8020		KAND	03	12	1020	N08	E04	03	12.7			BXO		5	6	1
8020		RAMY	03	12	1230	N07	E02	03	12.7		B	BXO	20	9	6	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MARCH 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
8020	28408	MWIL	03 12 1500	N07 E00	03 12.6	4	(AP)					
8020		HOLL	03 12 1510	N07 W01	03 12.5		B	BXO	20	12	6	4
8020		PALE	03 12 2105	N08 W07	03 12.3		B	BXO	10	2	2	1
8020		TACH	03 13 0500	N08 W08	03 12.6			BRO	30	3	4	2
8020		LEAR	03 13 0605	N08 W11	03 12.4		B	BXO	30	11	4	2
8020		KAND	03 13 0800	N08 W10	03 12.6			CRO		5	6	3
8020		RAMY	03 13 1429	N07 W12	03 12.7		B	BXO	10	8	6	2
8020	28408	MWIL	03 13 1500	N07 W12	03 12.7	4	(AP)					
8020		HOLL	03 13 1652	N08 W16	03 12.5		B	CRO	30	6	6	3
8020		LEAR	03 14 0020	N08 W17	03 12.7		B	BXO	10	6	3	3
8020		VORO	03 14 0130	N08 W18	03 12.7			HAX	60	4	1	3
8020		SVTO	03 14 0710	N09 W22	03 12.6		A	AX	10	8	3	4
8020		KAND	03 14 0845	N08 W22	03 12.7			AX		3	2	1
8020		RAMY	03 14 1220	N08 W24	03 12.7		A	AX	10	4	3	2
8020	28408	MWIL	03 14 1500	N08 W25	03 12.7	4	(AP)					
8020		HOLL	03 14 1616	N08 W27	03 12.6		A	AX	20	7	2	4
8020		LEAR	03 15 0010	N06 W32	03 12.6		A	AX	10	7	3	4
8020		SVTO	03 15 0700	N08 W35	03 12.7		A	AX	10	5	3	4
8020		HOLL	03 15 1450	N07 W38	03 12.8		A	AX	20	2	2	4
8020	28408	MWIL	03 15 1515	N08 W39	03 12.7	3	(AP)					
8020		RAMY	03 15 1638	N08 W39	03 12.8		A	AX	10	2	2	2
8022		VORO	03 14 0130	S04 W10	03 13.3			AXX	5	1		3
8022	28411	MWIL	03 14 1500	S04 W15	03 13.5	4	(B)					
8022		HOLL	03 14 1616	S05 W17	03 13.4		B	BXO	30	2	3	4
8022		LEAR	03 15 0010	S05 W21	03 13.4		B	BXO	10	3	3	4
8022		SVTO	03 15 0700	S04 W24	03 13.5		B	BXO	10	4	3	4
8022		KAND	03 15 0920	S04 W27	03 13.4			CRO		3	3	2
8022		HOLL	03 15 1450	S05 W28	03 13.5		B	BXO	30	3	3	4
8022	28411	MWIL	03 15 1515	S04 W28	03 13.5	4	(B)					
8022		RAMY	03 15 1638	S04 W29	03 13.5		B	BXO	10	3	3	2
8022		PALE	03 15 1805	S03 W30	03 13.5		B	BXO	10	3	4	3
8022		LEAR	03 16 0005	S06 W34	03 13.4		B	BXO	20	4	4	4
8022		VORO	03 16 0102	S05 W36	03 13.3			AXX	10	2		2
8022		SVTO	03 16 0710	S03 W38	03 13.4		B	CRO	10	5	4	3
8022		KAND	03 16 1150	S04 W41	03 13.4			CRO		3	4	2
8022		HOLL	03 16 1535	S04 W43	03 13.4		B	BXO	50	5	3	4
8022		RAMY	03 16 1613	S03 W42	03 13.5		B	BXO	10	5	5	2
8022	28411	MWIL	03 16 1700	S04 W43	03 13.5	4	(B)					
8022		PALE	03 16 2125	S02 W47	03 13.4		B	CRO	20	3	2	2
8022		LEAR	03 17 0215	S07 W49	03 13.4		B	BRO	30	4	4	4
8022		TACH	03 17 0525	S03 W50	03 13.5			BRO	29	6	3	3
8022		SVTO	03 17 1035	S02 W55	03 13.3		B	BXO	30	5	5	3
8022		RAMY	03 17 1325	S03 W55	03 13.4		B	BXO	20	5	5	3
8022	28411	MWIL	03 17 1515	S04 W58	03 13.3	4	(B)					
8022		HOLL	03 17 1658	S04 W58	03 13.4		B	BXO	20	5	4	3
8022		LEAR	03 18 0140	S08 W62	03 13.4		B	CRO	10	3	5	3
8022		SVTO	03 18 0750	S04 W65	03 13.5		B	BXO	10	2	8	4
8022		KAND	03 18 1430	S04 W73	03 13.1			BXO		2	7	1
8022	28411	MWIL	03 18 1500	S04 W73	03 13.2	3	(AP)					
8022A	28412	MWIL	03 15 1515	N07 W29	03 13.5	3	(AF)					
8022A		TACH	03 16 0512	N04 W35	03 13.6			BRO	12	2	4	2
8022B		TACH	03 20 0435	N27 W46	03 16.6			AX	7	2	1	3
8022B		RAMY	03 20 1214	N24 W49	03 16.7		A	AX		1		4
8022B	28415	MWIL	03 20 1500	N24 W52	03 16.6	3	(AF)					
8023		SVTO	03 18 1010	S10 W15	03 17.3		A	AX		2	2	3
8023		RAMY	03 18 1224	S11 W17	03 17.2		A	AX		2	1	4
8023	28413	MWIL	03 18 1500	S10 W18	03 17.3	4	(AF)					
8023		HOLL	03 18 1630	S10 W18	03 17.3		A	AX	10	2		3
8023	28413?	MWIL	03 19 1830	S06 W31	03 17.4	3	(AF)					
8023A		LEAR	03 22 0330	S45 W46	03 18.3		A	AX	10	1	1	3
8024	28414	MWIL	03 19 1830	S03 E10	03 20.5	4	(AP)					
8024		RAMY	03 20 1214	S05 E02	03 20.6		B	BXO		2	2	4
8024	28414	MWIL	03 20 1500	S05 E00	03 20.6	4	(AF)					

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

MARCH 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
8024		HOLL	03 20 1525	S05 W01	03 20.6		B	BXO	20	2	3	4
8024A		TACH	03 25 0520	N01 E52	03 29.1			AX	5	1	1	4

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES
MARCH 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
04	1437	1440	1505	1-	1			1			No flare		
06	0035	0100	0108	1-	1			1			0047	B8.9	
06	0642	0800U	0850	1	1		1				No flare		
07	1025	1040	1052	1-	1					1	*		
08	0050	0057	0130	1-	1			1			No flare		
09	0903	0918	0957	1	1		1				No flare		
09	1008	1015	1031	1	1		1				No flare		
09	1149	1204	1239	1	3		3				No flare		
10	1057	1121	1130	1	1		1				No flare		
11	0830	0857	0904	1	1		1				No flare		
11	1047	1051	1130	1	1		1				No flare		
11	1316	1318	1326	1	1		1				No flare		
12	1130	1310	1329	1	1		1				No flare		
15	0538	0612	0710	1	1		1				No flare		
15	1150U	1200U	1450U	2	1		1				No flare		
15	1327	1332U	1401	1	1		1				No flare		
15	1355	1407	1500U	1	1		2				No flare		
16	0756	0824	0909	1	1		1				No flare		
16	0956	1002	1034	1	1		1				No flare		
16	1239	1240	1245	1	1					1	No flare		
16	1249	1255	1349	1	1		1				No flare		
22	0828	0848	1011	1	1		1				No flare		
23	0656	0703	0718	1	1		1				No flare		
25	0734	0831	0903	1	1		1				No flare		
25	0910	0957	1106	1	1		1				No flare		
25	1123	1144	1202	1	1		1				No flare		
26	1118	1132	1156	1	1		1				No flare		
26	1300	1328	1443	1	1		1				No flare		
26	1446	1454	1514	1	1		1				No flare		
27	1031	1040	1055	1-	1					1	1022	C1.0	
28	0110	0125	0150	1-	1			1			0109	C1.5	
29	1152	1218	1252	1	1		1				No flare		
30	0844	0903	0937	1	1		1				*		
31	0826	0849	0906	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR MARCH 1997

Brazilian Antarctic Station	SPA	Nerja, Spain	SES
Cambridge, England, UK	SES	Rimavska Sobota, Slovakia	SEA
Crystal Lake, Illinois, USA	SES	Rochester, New Hampshire, USA	SES
Edenvale, Rep of S. Africa	SES	Sofia, Bulgaria	SES
Fort Wayne, Indiana, USA	SES	Spring Green, Wisconsin, USA	SES
Houston, Texas, USA	SES	Tucson, Arizona, USA	SES
Hudson, Ohio, USA	SES	Upice, Czech Republic	SEA
Indianapolis, Indiana, USA	SES	Windsor Locks, Connecticut, USA	SES
Inubo, Japan	SPA	Ziar nad Hronom, Slovakia	SEA
Itapetinga, Brazil	SPA	Zilina, Slovakia	SEA
Koniz, Switzerland	SES		

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

MARCH 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
01	0000	0838	HIRA								
	0630	1544	POTS								
	0658	1530	ONDR								
	0820	1040	IZMI								
	2106	2400	HIRA								
02	0000	0839	HIRA								
	0630	1210	IZMI								
	0700	1532	ONDR								
	2058	2400	CULG								
	2105	2400	HIRA								
03	0000	0430	CULG								
	0000	0839	HIRA								
	0651	1534	ONDR								
	1040	1200	IZMI								
	0630	1544	POTS	1202	1544 U	I	S,W	1	110U	170U	
	2058	2400	CULG								
	2104	2400	HIRA								
04	0000	0430	CULG								
	0000	0840	HIRA								
	0648	1537	ONDR								
	0700	1150	IZMI								
	0630	1544	POTS	0710	1544 U	I	S,W	1	130	170U	
			POTS	0720.0	0720.2	III	G	2	110U	170U	
			POTS	0721.0	0721.4	III	G	1	110U	170U	
			POTS	0907.8	0911.6	III	GG	2	110U	170U	
			POTS	0914.9	0915.0	III	B	1	110U	170U	
			POTS	0935.5	0935.8	UNCLF		1	130	170U	
			POTS	1000.7	1001.0	III	G	2	110U	170U	
			SGMR	1308.0	1309.0	III		1	30	70	
			SVTO	1308.0	1309.0	III		2	35	75	
			POTS	1308.5	1309.1	III	G	2	40X	170U	
			POTS	1342.5	1342.7	III	G	1	110U	170U	
	2103	2400	HIRA								
	2056	2400	CULG	2211.0	2211.0	III	G	1	57X	150	
05	0000	0430	CULG								
			LEAR	0502.0	0503.0	III		1	30	60	
			LEAR	0550.0	0550.0	III		1	30	55	
	0000	0841	HIRA	0550.6	0551.4	III	G	1	50	240	
	0646	1537	ONDR								
	0630	1545	POTS	1037.9	1039.1	III	G	1	110U	170U	
			POTS	1136.1	1138.4	III	G	2	40X	170U	
			POTS	1142.0	1153.5	III	GG	3	40X	750	
			SVTO	1143.0	1208.0	III	N	3	35U	75U	
	0700	1200	IZMI	1143.4	1150.9	III	GG	2	45X	240	
			SGMR	1155.0	1208.0	III	N	1	30	72	
			POTS	1155.6	1202.6	III	GG	3	40X	550	
			IZMI	1155.7	1159.9	III	GG	2	45X	275X	
			IZMI	1201.2	1201.4	III	B	1	55	90U	
			POTS	1207.5	1208.6	III	G	3	40X	370	
			POTS	1211.6	1211.7	III	B	1	110U	170U	
			POTS	1233.3	1233.6	III	G	2	40X	200U	
			POTS	1244.4	1255.1	III	GG	3	40X	400	
			SGMR	1246.0	1251.0	III		1	30	75	
			POTS	1259.7	1328.8	III	GG	3	40X	800X	
			POTS	1407.7	1408.0	III	G	2	40X	170U	
			POTS	1408.9	1410.1	III	G	2	40X	170U	
			POTS	1422.5	1422.6	III	B	1	110U	170U	
			POTS	1433.2	1433.3	III	B	1	110U	170U	
			POTS	1434.9	1435.0	III	B	1	110U	170U	
			POTS	1518.7	1520.6	III	G	2	40X	170U	
			POTS	1540.1	1544.9	III	GG	3	40X	300	
			POTS	1540.9	1541.5	V		2	40X	60	
			PALE	2056.0	2058.0	V		1	25	60	
			SGMR	2056.0	2058.0	III		1	30	80	
	2056	2400	CULG	2056.0	2100.0	III	G	2	57X	310	

SOLAR RADIO EMISSION
Spectral Observations

MARCH 1997

OBSERVATION Start (UT)	OBSERVATION End (UT)	Day	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
		05	PALE	2244.0	2245.0	III		1	25	55	
			CULG	2245.0	2245.0	III	B	1	57X	140	
			LEAR	2308.0	2308.0	III		1	34	57	
			PALE	2308.0	2308.0	III		1	25	55	
2102	2400		HIRA	2308.4	2308.5	III	B	1	25X	160	
		06	LEAR	0027.0	0031.0	III		3	30	80	
			PALE	0027.0	0149.0	III	N	/	25U	75U	
0000	0430		CULG	0027.0	0031.0	III	G	3	57X	280U	
0000	0842		HIRA	0027.9	0031.0	III	G	3	25X	260	
			CULG	0035.0	0036.0	III	B	1	57X	180U	
			CULG	0043.0	0054.0	III	G	2	57X	180	
			LEAR	0043.0	0156.0	III	N	2	30	80	
			HIRA	0043.3	0053.9	III	G	1	25X	300	
			CULG	0107.0	0108.0	III	G	1	57X	130	
			CULG	0123.0	0128.0	III	G	1	57X	170	
			HIRA	0123.7	0128.7	III	G	1	25X	190	
			CULG	0136.0	0156.0	III	GG	2	57X	180U	
			HIRA	0140.4	0150.9	III	G	1	25X	220	
			CULG	0240.0	0241.0	III	G	1	57X	90	
			LEAR	0240.0	0243.0	III		2	30	60	
			PALE	0240.0	0241.0	III		2	25	55	
			CULG	0317.0	0325.0	III	G	1	57X	180U	
			HIRA	0319.0	0324.6	III	G	1	25X	140	
			LEAR	0319.0	0348.0	III	N	2	30	60	
			CULG	0334.0	0336.0	III	G	1	57X	160	
			PALE	0335.0	0346.0	III	N	2	35	60	
			HIRA	0335.4	0336.1	III	G	1	25X	150	
			CULG	0342.0	0353.0	III	GG	2	57X	180U	
			HIRA	0342.3	0346.6	III	G	2	25X	260	
			LEAR	0445.0	0446.0	III		1	30	55	
			LEAR	0504.0	0507.0	III		2	30	60	
			HIRA	0505.3	0507.8	III	G	1	50	180	
			HIRA	0522.7	0522.9	III	B	1	50	250	
			LEAR	0542.0	0542.0	III		1	30	50	
			HIRA	0543.2	0543.3	III	B	1	60	190	
			LEAR	0558.0	0559.0	III		1	30	40	
			HIRA	0612.8	0612.9	III	B	1	90	250	
0644	1539		ONDR								
0630	1544		POTS	0644.0	0644.2	III	G	1	130	170U	
			POTS	0650.8	0654.2	III	GG	2	40X	350	
			POTS	0657.7	0658.1	III	G	2	110U	170U	
			POTS	0659.0	0659.5	III	G	2	40X	170U	
			POTS	0701.9	0702.0	III	B	1	130	170U	
			POTS	0704.9	0707.8	III	G	2	70	170U	
			POTS	0758.7	0759.0	III	G	1	110U	170U	
			LEAR	0802.0	0824.0	III	N	2	30	80	
			POTS	0803.9	0806.5	III	G	2	40X	170U	
			SVTO	0804.0	0814.0	III	N	2	35	73	
			HIRA	0806.4	0807.0	III	G	1	25X	130	
0700	1200		IZMI	0812.7	0814.2	III	G	2	45X	170	
			POTS	0812.8	0818.3	III	G	3	40X	350	
			POTS	0813.5	0813.9	V		2	40X	55	
			POTS	0819.3	0819.7	III	G	1	110U	170U	
			POTS	0823.8	0824.0	DCIM		1	250	350	
			POTS	0824.6	0825.5	III	G	2	40X	170U	
			POTS	0929.4	0931.3	III	G	2	40X	170U	
			POTS	1011.5	1011.9	III	G	1	110U	170U	
			POTS	1039.2	1044.8	III	GG	3	40X	170U	
			IZMI	1043.9	1044.3	III	G	2	45X	160	
			POTS	1158	1544 U	I	S	1	130	170U	
			POTS	1235.2	1235.6	III	G	2	110U	170U	
			POTS	1301.4	1301.5	III	B	2	125	350	
			POTS	1417.8	1417.9	III	B	1	40X	70	
			POTS	1514.3	1516.2	DCIM		1	300	450	
			POTS	1526.3	1526.4	III	B	2	110U	170U	
			SGMR	1659.0	1659.0	III		1	30	60	
			PALE	1725.0	1725.0	III		2	30	55	
			PALE	1754.0	1802.0	III		2	25	55	

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

MARCH 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
06		SGMR	1814.0	1815.0	III		1	30	45	
		PALE	2023.0	2024.0	III		2	27	55	
		SGMR	2023.0	2024.0	III		1	30	50	
2056	2400	CULG	2233.0	2233.0	III	B	1	57X	130	
		CULG	2308.0	2308.0	III	B	1	57X	150	
		LEAR	2333.0	2333.0	III		1	33	64	
		CULG	2334.0	2334.0	III	B	1	57X	130	
		PALE	2334.0	2334.0	III		2	27	55	
2100	2400	HIRA	2334.7	2334.8	III	G	1	25X	120	
07 0000	0430	CULG	0423.0	0424.0	III	B	1	57X	160	
		LEAR	0424.0	0424.0	III		1	33	58	
0000	0843	HIRA	0424.0	0424.1	III	B	1	25X	120	
		LEAR	0530.0	0530.0	III		2	30	52	
0630	1544	POTS	0632	1544 U	I	S,W	1	110U	350	
		POTS	0642.6	0642.8	III	G	2	110U	350	
0649	1542	ONDR								
		POTS	0830.3	0830.4	III	G	2	110U	140	
		POTS	0838.6	0839.1	UNCLF		2	110U	120	
		POTS	0918.8	0919.8	III	GG	2	110U	140	
		POTS	0946.7	0949.6	III	GG	3	40X	170U	
0715	1200	IZMI	0947.7	0948.7	III	G	1	45	145	
		POTS	1006.8	1007.2	III	G	3	40X	140	
		IZMI	1006.9	1007.1	III	B	1	45X	125	
		POTS	1010.0	1010.5	III	G	2	40X	170U	
		POTS	1010.0	1010.7	DCIM		1	300	500	
		POTS	1033.2	1034.1	III	G	2	40X	170U	
		POTS	1055.9	1056.1	III	B	2	110U	170U	
		POTS	1223.8	1225.8	III	G	2	110U	170U	
		POTS	1310.3	1310.7	III	G	2	110U	140	
		POTS	1325.6	1326.1	III	G	2	110U	170U	
		POTS	1455.3	1500.0	III	GG	3	40X	400	
		SGMR	1456.0	1456.0	III		1	30	55	
		SGMR	1552.0	1557.0	III		1	30	55	
2059	2400	HIRA								
08 0000	0844	HIRA								
0639	1543	ONDR								
0630	1544	POTS	0642	1544 U	I	S	1	110U	350	
0700	1200	IZMI								
		POTS	0748.6	0756.8	III	GG,U	2	110U	325	
		POTS	0840.3	0840.4	III	B	2	110U	170U	
		POTS	0848.6	0848.7	III	G	2	110U	300	
		POTS	0915.8	0915.9	III	B	2	110U	140	
		POTS	0933.4	0933.6	III	B	1	110U	150	
		POTS	1050.3	1050.4	III	B	1	110U	170U	
		POTS	1054.8	1054.9	III	B	1	110U	170U	
		POTS	1107.6	1107.9	III	G	2	60	300	
		POTS	1156.2	1200.1	III	G	1	110U	350	
		POTS	1226.7	1226.8	III	B	1	110U	140	
		POTS	1246.5	1247.3	III	G	1	110U	250	
		POTS	1303.7	1303.9	III	G	1	110U	140	
		POTS	1333.5	1341.1	III	GG	3	40X	350	
		POTS	1401.9	1402.0	III	B	1	110U	250	
		SGMR	1552.0	1557.0	III		1	30	55	
2057	2400	HIRA								
09 0000	0845	HIRA	0344.1	0554.0	I	S	1	90	200	
		LEAR	0556.0	0835.0	CONT		1	30	80	
		SVTO	0620.0	0957.0	CONT		2	35U	70U	
0630	1544	POTS	0630 E	1544 U	I	S,C,DC	3	110U	350	
0637	1544	ONDR								
0700	0850	IZMI	0700.0E	0730.0U	III	N	1	45X	90U	
		IZMI	0733.2	0850.0	I	S	1	60	145	
		IZMI	0739.1	0739.2	III	B	1	50	85	
		POTS	0739.1	0739.2	III	B	1	40X	70	
		POTS	0806.9	0807.5	III	G	1	40X	70	
		POTS	0852.6	0852.7	UNCLF		1	40X	50	
		POTS	0858.0	0858.1	UNCLF		1	40X	50	

SOLAR RADIO EMISSION
Spectral Observations

MARCH 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
09			POTS	0900.3	0900.4	UNCLF		1	40X	50	
			POTS	0907.9	0908.0	UNCLF		1	40X	50	
			IZMI	1045.0E	1218.0D	I	N	1	60U	145U	
	2056	2400	CULG								
	2056	2400	HIRA								
10	0000	0430	CULG								
	0000	0846	HIRA								
			LEAR	0443.0	0443.0	III		1	30	55	
	0630	1544	POTS	0630 E	1544 U	I	S	2	110U	350	
	0642	1546	ONDR								
	0700	1200	IZMI	0814.0U	0850.0U	I	N	1	95	125	
			POTS	1532.8	1533.2	III	G	1	110U	170U	
	2054	2400	HIRA								
	2056	2400	CULG								
11	0000	0430	CULG								
	0000	0847	HIRA								
	0640	1547	ONDR								
	0702	1600	POTS	0702 E	1600 U	I	S	1	110U	170U	
	0700	1200	IZMI	0734.0	0735.7	I	GG	1	85	95	
	2053	2400	HIRA								
	2056	2400	CULG								
12	0000	0430	CULG								
	0000	0847	HIRA								
	0630	1550	ONDR								
	0700	1200	IZMI								
	2051	2400	HIRA								
	2055	2400	CULG								
13	0000	0430	CULG								
	0000	0848	HIRA								
	0628	1551	ONDR								
	1000	1200	IZMI								
	2050	2400	HIRA								
	2055	2400	CULG								
14	0000	0430	CULG								
	0000	0849	HIRA								
	0626	1554	ONDR								
	0830	1200	IZMI								
	2048	2400	HIRA								
15	0000	0850	HIRA								
	0623	1556	ONDR								
	0700	1200	IZMI								
	2047	2400	HIRA								
16			LEAR	0041.0	0042.0	III		2	30	80	
			PALE	0041.0	0042.0	III		1	25	55	
	0000	0851	HIRA	0041.5	0041.7	III	B	1	25X	240	
	0621	1557	ONDR								
	0700	1200	IZMI								
	2046	2400	HIRA								
	2223	2400	CULG								
17	0000	0430	CULG								
	0000	0852	HIRA								
	0619	1558	ONDR								
	0700	1200	IZMI								
	0758	1551	POTS	0807	0823	I	S,W	1	130	150	
	2044	2400	HIRA								
	2053	2400	CULG								
18			LEAR	0204.0	0204.0	III		2	30	60	
			PALE	0204.0	0204.0	III		1	25	54	
	0000	0430	CULG	0204.0	0204.0	III	B	1	57X	90	
	0000	0853	HIRA	0204.5	0204.7	III	B	1	25X	120	

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

MARCH 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
18	0617	1600	ONDR								
	0700	1200	IZMI								
	0607	1605	POTS	1021.2	1021.5	DCIM		1	250	375	
	2043	2400	HIRA								
	2053	2400	CULG								
19	0000	0430	CULG								
	0000	0854	HIRA								
	0607	1607	POTS								
	0614	1603	ONDR								
	0700	1200	IZMI								
	2041	2400	HIRA								
	2053	2400	CULG								
20	0000	0430	CULG								
	0000	0855	HIRA								
	0607	1607	POTS								
	0612	1604	ONDR								
	0700	1200	IZMI								
	2040	2400	HIRA								
	2053	2400	CULG								
21	0000	0430	CULG								
	0000	0855	HIRA								
	0543	1620	POTS								
	0617	1606	ONDR								
	0700	1200	IZMI								
	2038	2400	HIRA								
22	0000	0856	HIRA								
	0608	1607	ONDR								
	0700	1200	IZMI								
	2037	2400	HIRA								
23	0000	0857	HIRA								
	0613	1608	ONDR								
	0700	1200	IZMI								
	2035	2400	HIRA								
	2051	2400	CULG								
24	0000	0430	CULG								
	0000	0858	HIRA								
	0603	1611	ONDR								
	0640	1625	POTS								
	0700	1200	IZMI								
	2034	2400	HIRA								
	2049	2400	CULG								
25	0000	0430	CULG								
	0000	0859	HIRA								
	0543	1620	POTS								
	0601	1613	ONDR								
	0700	1200	IZMI								
	2032	2400	HIRA								
	2049	2400	CULG								
26	0000	0430	CULG								
	0000	0900	HIRA								
	0543	1620	POTS								
	0559	1614	ONDR								
	0700	1200	IZMI								
	2031	2400	HIRA								
	2048	2400	CULG								
27	0000	0430	CULG								
	0000	0901	HIRA	0518.5	0519.2	III	B	1	25X	150	
	0556	1614	ONDR								
	0700	1200	IZMI								
	0543	1620	POTS	0721	0726	I	S	1	120	170U	

SOLAR RADIO EMISSION
Spectral Observations

MARCH 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
27			POTS	0749	0750	I	S	1	150	170U	
	2029	2400	HIRA								
28	0000	0902	HIRA								
	0554	1618	ONDR								
	0700	1200	IZMI								
	2028	2400	HIRA								
29	0000	0903	HIRA								
	0552	1618	ONDR								
	0700	1200	IZMI								
	2027	2400	HIRA	2125.1	2125.2	III	B	1	60	340	
			HIRA	2355.4	2355.5	III	B	1	60	180	
30	0550	1620	ONDR								
	0000	0904	HIRA	0716.2	0716.3	III	B	1	90	180	
			HIRA	0724.7	0725.0	III	B	1	60	260	
	0700	1200	IZMI	0724.8	0725.5	III	G	2	60	260	
			HIRA	0734.2	0734.7	III	B	1	60	140	
			IZMI	0734.2	0734.8	III	G	2	55	150	
			IZMI	0743.4	0743.9	III	G	3	55	175	
			HIRA	0743.7	0743.8	III	B	1	60	160	
			IZMI	0758.6	0758.8	III	G	2	80	175	
			IZMI	0819.7	0820.4	III	G	1	105	150	
			IZMI	0842.4	0842.7	III	G	1	115	260	
			IZMI	0853.0	0853.9	III	G	2	80	175	
			LEAR	0949.0	0950.0	III		1	35	80	
			SVTO	0949.0	0950.0	III		2	35	85	
			IZMI	0949.5	0949.8	III	G	3	45	270	
			IZMI	0949.7	0950.3	V		2	45	150	
			SVTO	1011.0	1012.0	III		1	50U	62U	
			IZMI	1011.9	1012.2	III	G	2	55	135	
			IZMI	1101.7	1101.9	III	G	1	50	135	
			IZMI	1150.2	1150.3	III	B	1	165	175	
			IZMI	1150.6	1150.9	III	G	3	55	270	
	1317	1630	POTS	1317 E	1630 U	I	S	2	110U	400	
			POTS	1329.8	1331.1	III	G	2	110U	400	
			POTS	1332.9	1333.0	III	B	1	110U	160	
			POTS	1335.2	1336.2	III	G	2	110U	250	
			POTS	1343.2	1344.4	III	G	3	60	170U	
			POTS	1346.6	1349.9	III	GG	2	110U	250	
			POTS	1350.7	1357.1	III	GG	2	110U	250	
			POTS	1403.4	1404.2	III	G	2	110U	375	
			POTS	1406.5	1407.2	III	G	3	40X	350	
			POTS	1409.9	1410.1	III	G	2	110U	170U	
			POTS	1435.4	1519.4	III	GG	3	40X	350	
			POTS	1538.8	1552.9	III	GG	3	40X	300	
			POTS	1552.7	1552.8	DCIM		1	500	800X	
			POTS	1601.8	1609.4	III	GG	3	40X	800X	
			SGMR	1604.0	1604.0	III		1	30	70	
			SVTO	1604.0	1604.0	III		2	42U	76U	
			POTS	1620.2	1620.3	III	B	2	110U	170U	
			PALE	1729.0	1729.0	III		1	35	55	
			SGMR	1729.0	1729.0	III		2	30	80	
			SGMR	1904.0	1905.0	III		1	38	80	
			PALE	1905.0	1905.0	III		1	40	75	
			PALE	2000.0	2000.0	III		1	43	55	
			SGMR	2000.0	2000.0	III		1	43	58	
			PALE	2108.0	2109.0	III		2	40	53	
	2026	2400	HIRA	2108.8	2108.9	III	B	1	40	200	
			SGMR	2118.0	2118.0	III		1	45	58	
			HIRA	2124.6	2128.3	III	G	2	25X	260	
			SGMR	2127.0	2128.0	III		1	30	80	
			PALE	2128.0	2128.0	III		2	25	60	
			PALE	2218.0	2218.0	III		2	27	55	
			SGMR	2218.0	2218.0	III		1	45	58	
			HIRA	2218.1	2218.2	III	B	2	25X	220	
			HIRA	2239.1	2239.2	III	B	1	60	280	
			LEAR	2254.0	2255.0	III		1	50	80	

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

MARCH 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
30			PALE	2254.0	2256.0	III		2	27	55	
			HIRA	2255.0	2255.9	III	B	3	25X	320	
31	0000	0904	HIRA	0512.7	0513.3	III	G	1	80	200	
			POTS	0543 E	1620 U	III	N	1	110U	170U	
			POTS	0543 E	1620 U	III	N	2	110U	170U	
	0543	1620	POTS	0543 E	1620 U	I	S	2	110U	350	
	0548	1622	ONDR								
	0600	1200	IZMI	0712.9	0722.1	III	G	1	80	140	
			IZMI	0726.9	0727.2	III	G	2	80	175	
			POTS	0726.9	0727.2	III	G	3	110U	250	
			IZMI	0736.2	0736.4	III	G	2	50	170	
			POTS	0736.2	0736.4	III	G	3	40X	275	
			IZMI	0757.4	0757.6	III	G	1	90	180	
			POTS	0757.4	0759.3	III	G	3	40X	400	
			IZMI	0758.8	0759.3	III	G	2	60	160	
			POTS	0811.3	0813.4	III	G	2	40X	170U	
			IZMI	0813.2	0813.4	III	B, HARM	2	45X	130	
			IZMI	0841.1	0841.9	III	G	2	70	180	
			POTS	0841.3	0841.9	III	G	3	70	275	
			POTS	0858.0	0858.1	III	B	2	110U	250	
			POTS	0910.2	0910.4	III	G	2	110U	275	
			IZMI	0938.3	0939.5	III	G	2	55	245	
			POTS	0938.4	0941.3	III	G	3	40X	400	
			IZMI	1020.9	1023.0	III	GG	3	45X	270X	
			POTS	1020.9	1023.0	III	G,U	3	40X	500	
			SVTO	1021.0	1023.0	III		2	35	80	
			IZMI	1022.0	1022.4	V		2	45	165	
			POTS	1022.2	1022.5	V		3	40X	60	
			POTS	1022.7	1023.1	V		1	40X	50	
			IZMI	1106.7	1106.9	III	G	1	105	175	
			POTS	1106.7	1106.9	III	G	3	65	170U	
			IZMI	1139.7	1139.9	III	G	2	85	140	
			POTS	1139.7	1140.0	III	G	3	110U	170U	
			IZMI	1153.2	1153.3	III	B	2	85	150	
			POTS	1153.2	1153.6	III	UG	3	110U	160	
			POTS	1155.3	1155.6	III	G,RS	3	110U	170U	
			IZMI	1155.4	1155.5	III	B	2	105	150	
			POTS	1211.9	1212.1	III	G	3	110U	170U	
			POTS	1306.7	1307.8	III	GG	3	45	250	
			POTS	1320.6	1320.7	III	B	3	110U	150	
			POTS	1352.1	1352.4	III	G	3	70	170U	
			POTS	1407.5	1407.6	UNCLF		3	110U	120	
			POTS	1409.5	1409.6	III	B	3	110U	160	
			SGMR	1423.0	1424.0	III		1	30	69	
			SVTO	1423.0	1424.0	III		1	35U	73U	
			POTS	1423.8	1424.3	III	G	3	40X	250	
			POTS	1453.4	1453.5	III	G,U	3	110U	130	
			POTS	1507.1	1507.8	III	G	3	40X	170U	
			SGMR	1509.0	1509.0	III		1	30	70	
			SVTO	1509.0	1509.0	III		2	36U	78U	
			POTS	1509.2	1509.3	III	G	3	40X	170U	
			POTS	1509.4	1509.6	V		2	40X	50	
			POTS	1613.4	1613.6	III	G	2	40X	170U	
			PALE	1843.0	1843.0	III		2	25	75	
			SGMR	1843.0	1844.0	III		2	30	80	
			SGMR	1857.0	1858.0	III		2	30	80	
			PALE	1858.0	1858.0	III		1	40	53	
			PALE	1956.0	1957.0	III		2	25	75	
			SGMR	1956.0	2007.0	III	N	1	30	80	
			PALE	2001.0	2007.0	III		2	25	75	
			PALE	2124.0	2126.0	III		3	25	75	
			SGMR	2124.0	2125.0	III		3	30	80	
	2046	2400	CULG	2124.0	2125.0	III	B	3	57X	170	
	2025	2400	HIRA	2124.7	2125.4	III	B	3	25X	240	

SOLAR RADIO NOISE STORM AT 164 MHZ FROM NANÇAY RADIOHELIOGRAPH

MARCH 1997

	HELIOGRAPHIÇS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
04/03/97	-0.89	+0.92	1	E	D
06/03/97	-0.98	+0.08	1	9h40	D
07/03/97	-1.00	+0.13	1	E	D
08/03/97	-0.63	+0.07	1	E	D
09/03/97	-0.35	-0.21	1	E	D
10/03/97	-0.20	-0.05	1	E	14h30
11/03/97	-0.14	-0.05	1	E	D
15/03/97	+0.65	-0.16	1	E	D
28/03/97	-0.92	-0.25	1	E	D
30/03/97	-0.65	-0.52	1	E	D
31/03/97	-0.47	-0.52	1	E	D

SOLAR RADIO NOISE STORM AT 327 MHZ FROM NANÇAY RADIOHELIOGRAPH

MARCH 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
07/03/97	-0.81	+0.16	1	E	D
08/03/97	-0.69	+0.26	1	E	D
09/03/97	-0.71	+0.15	1	E	13h00
10/03/97	-0.39	+0.23	1	E	D
28/03/97	-0.92	-0.21	1	11h00	D
30/03/97	-0.61	-0.50	1	E	D
31/03/97	-0.49	-0.52	1	E	D

03,18 MARCH : 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

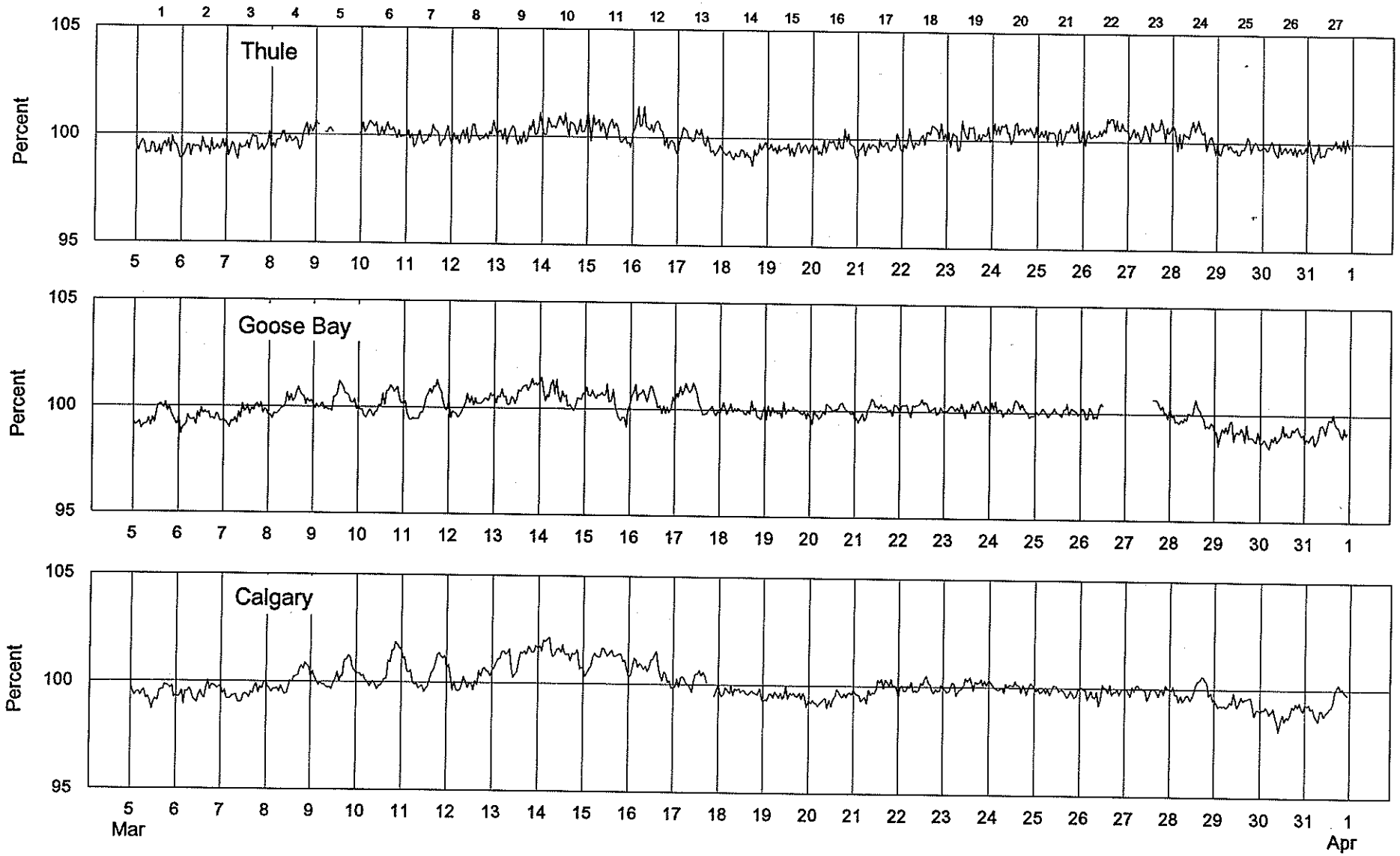
[3] E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

COSMIC RAY INDICES
(Neutron Monitor)
MARCH 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	4476	7269.0	3978.2	6251.2	9230.9	4202.3	2026.7	3569.2
2	4480	7277.7	3980.7	6249.7	9226.1	4193.2	2030.3	3570.9
3	4477	7323.4	3985.5	6254.1	9242.2	4212.1	2020.5	3571.3
4	4488	7319.9	3997.8	6271.0	9295.7	4211.2	2015.1	3578.9
5	4502	7337.0	4007.0	6275.7	9319.7	4212.5	2010.7	3579.3
6	4500	7332.7	4008.7	6271.5	9294.1	4210.7	2015.5	3581.6
7	4506	7350.8	4007.0	6266.4	9267.7	4208.7	2009.3	3577.1
8	4523	7387.2	4030.5	6289.5	9290.7	4229.8	2016.7	3578.8
9	4543 (9)	7396.8	4039.8	6298.7	9325.4	4228.8	2019.1	3575.5
10	4541	7389.9	4048.7	6307.7	9316.6	4231.8	2015.4	3571.7
11	4528	7388.4	4049.7	6306.8	9309.7	4242.0	2012.4	3567.5
12	4532	7387.5	4035.3	6317.1	9335.1	4238.6	2015.6	3570.0
13	4537	7428.8	4077.3	6360.4	9402.3	4281.0	2022.6	3584.7
14	4552	7422.2	4089.7	6377.4	9432.0	4285.1	2025.8	3588.4
15	4544	7401.8	4076.7	6379.7	9451.8	4277.9	2034.4	3592.3
16	4545	7410.2	4058.5	6362.3	9447.3	4263.6	2031.9	3582.6
17	4524	7410.0	4035.3 (21)	6338.3	9441.3	4228.8	2017.9	---
18	4499	7373.6	4017.3	6324.0	9407.4	4209.2	2021.5	---
19	4509	7372.6	4010.0	6309.0	9363.5 (21)	4191.1	2021.8	3560.9
20	4517	7375.0	4005.7	6318.3	9333.8	4192.8	2020.8	3567.4
21	4516	7380.5	4023.3	6328.7	9324.8	4214.2	2025.0	3571.0
22	4536	7390.9	4028.3	6331.3	9324.3	4221.5	2032.9	3578.9
23	4539	7388.3	4032.5	6334.5	9311.0	4227.1	2033.6	3566.6
24	4551	7386.9	4031.5	6347.6	9346.5	4240.6	2029.5	3560.3
25	4545	7380.3	4023.5	6336.2	9362.8	4244.7	2031.0	3573.0
26	4554	7380.3 (13)	4022.5	6329.3	9369.1	4232.7	2030.8	3578.3
27	4551	7400.7 (9)	4026.5	6321.7	9359.0	4238.2	2026.2	---
28	4544	7366.2	4026.3	6347.2	9359.3 (23)	4238.7	2025.0	3574.5
29	4521	7311.7	4003.7	6312.7	9310.0 (22)	4220.4	2023.2	3580.7
30	4517	7302.0	3987.0	6283.4	9284.4	4198.6	2024.2	3579.9
31	4520	7320.1	4004.3	6285.0	9276.2	4205.4	2020.9	3584.2
Mean	4523	7366.5	4024.2	6312.5	9334.2	4226.9	2022.8	3547.1

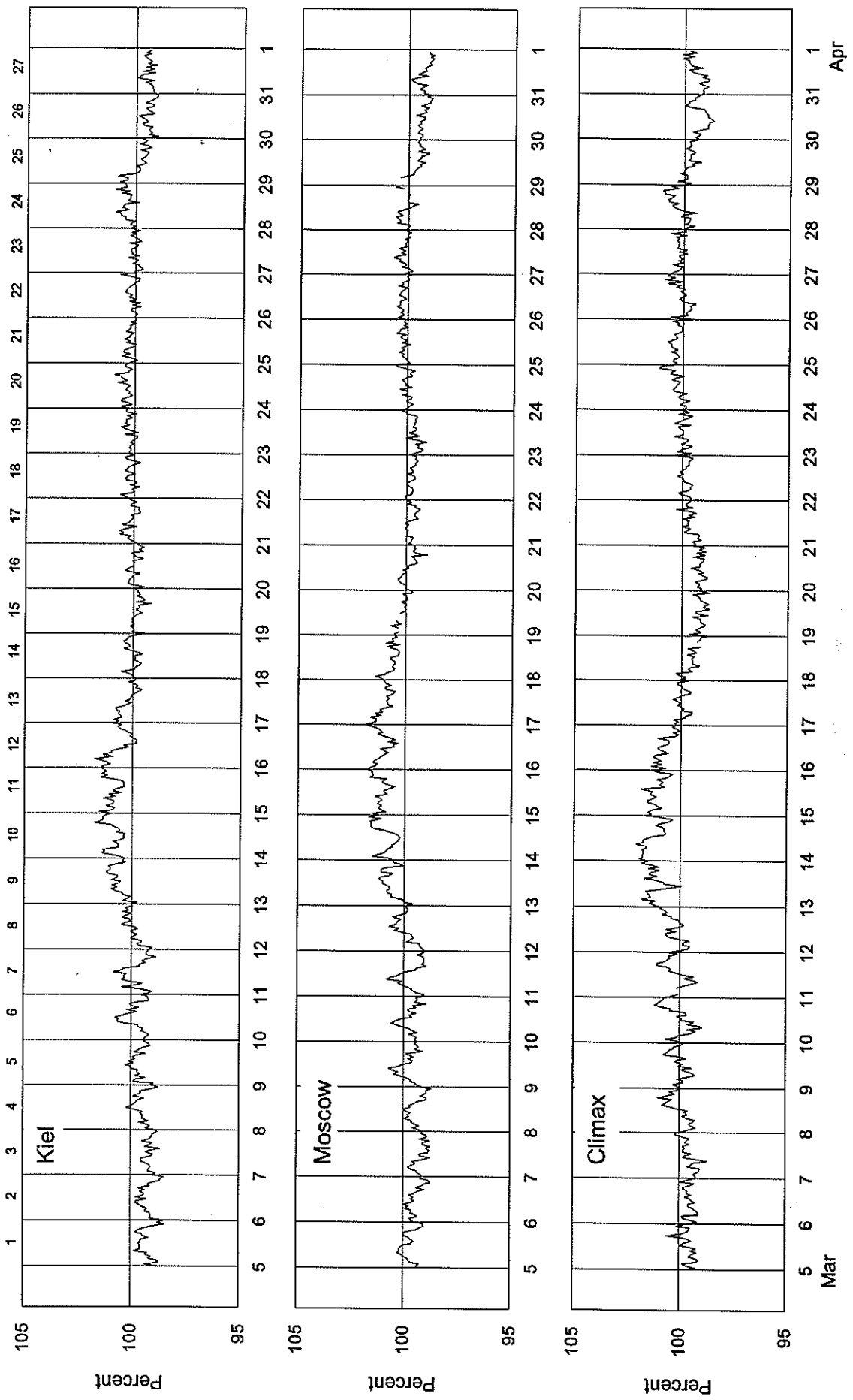
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2234 - Beginning 5 Mar 97

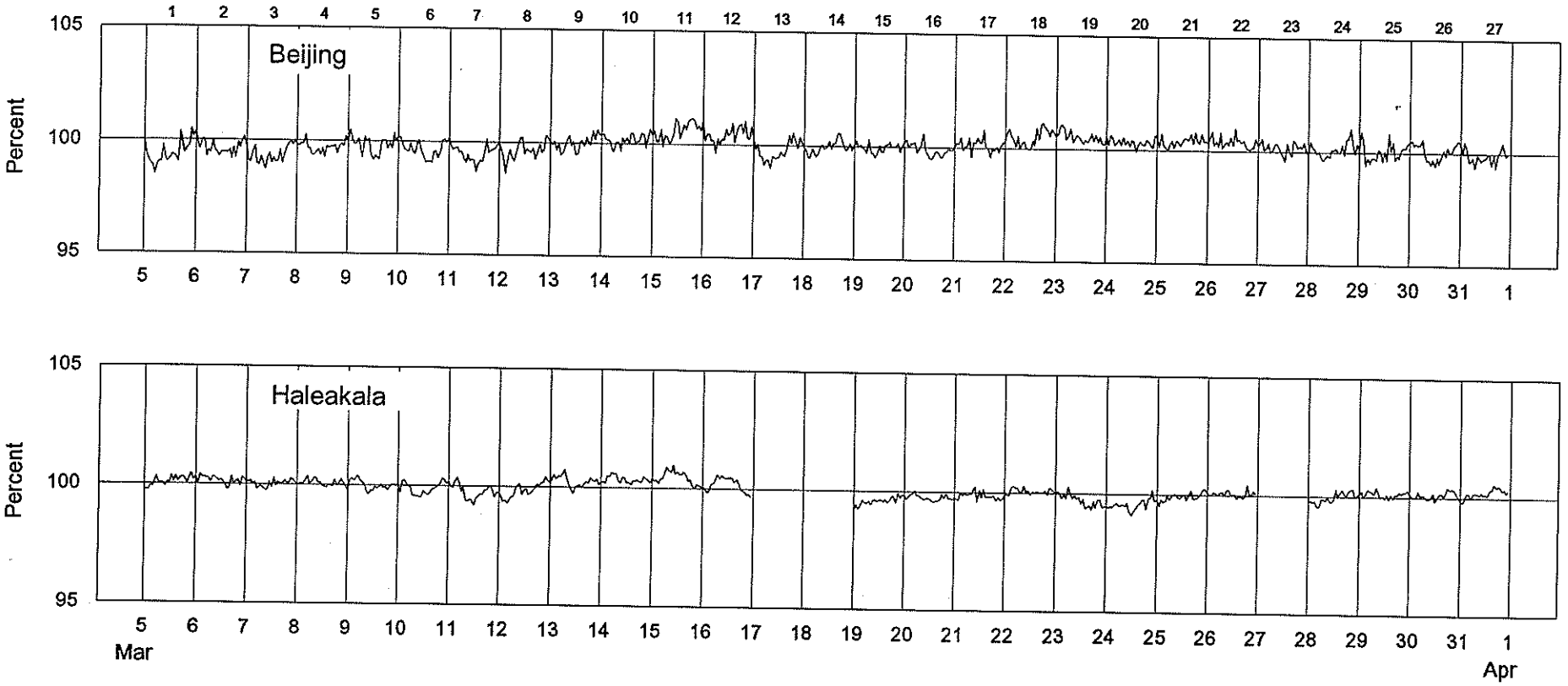


99
Mar 97

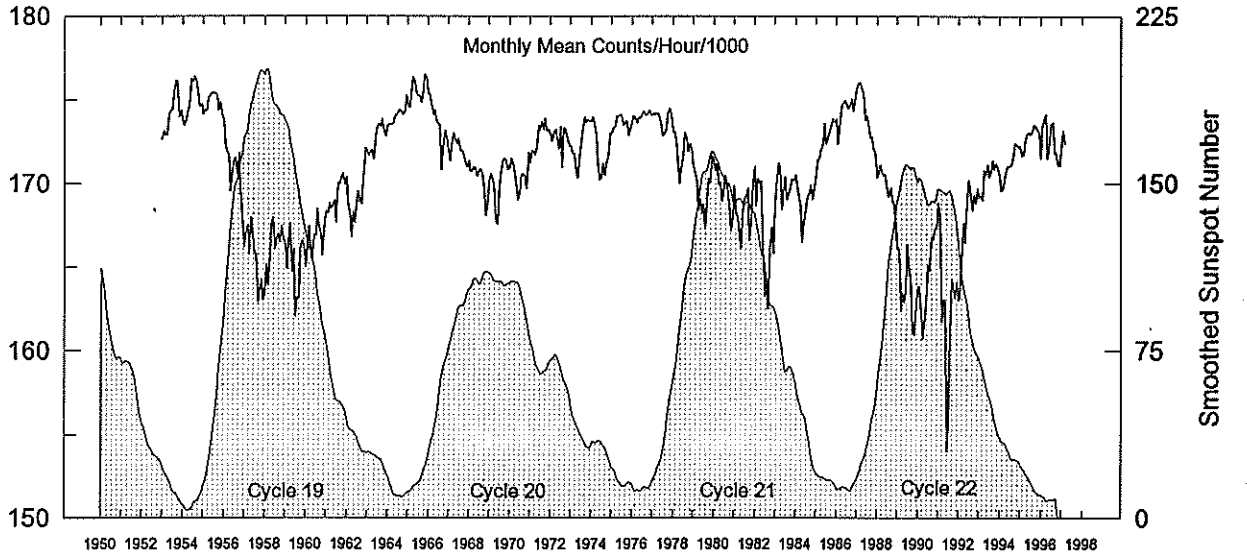
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2234 - Beginning 5 Mar 97



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2234 - Beginning 5 Mar 97



Huancayo* Neutron Monitor Pressure-Corrected/Adjusted Values
Jan 1953 - Mar 1997



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1953	1727	1732	1730	1729	1742	1744	1744	1756	1762	1761	1740	1744	1743
1954	1737	1735	1738	1744	1747	1763	1761	1764	1762	1754	1746	1748	1750
1955	1742	1744	1744	1751	1754	1755	1754	1755	1753	1744	1749	1741	1749
1956	1738	1724	1719	1718	1696	1707	1715	1716	1706	1719	1697	1675	1711
1957	1663	1671	1675	1658	1680	1670	1659	1658	1630	1633	1643	1630	1656
1958	1635	1652	1639	1657	1677	1680	1661	1667	1670	1665	1675	1666	1662
1959	1666	1649	1671	1676	1647	1661	1621	1632	1632	1661	1666	1663	1654
1960	1650	1663	1675	1660	1654	1669	1669	1685	1674	1670	1657	1677	1667
1961	1684	1682	1688	1685	1688	1690	1677	1701	1700	1704	1706	1699	1692
1962	1704	1687	1683	1668	1683	1677	1690	1695	1690	1688	1703	1721	1691
1963	1720	1718	1720	1720	1715	1729	1734	1736	1734	1739	1732	1729	1727
1964	1735	1736	1736	1736	1739	1741	1742	1744	1744	1741	1743	1753	1741
1965	1748	1745	1756	1764	1762	1754	1753	1753	1748	1754	1765	1764	1755
1966	1754	1754	1747	1741	1744	1737	1736	1736	1708	1725	1732	1727	1737
1967	1721	1714	1726	1731	1727	1724	1727	1720	1720	1718	1713	1710	1721
1968	1714	1708	1708	1710	1710	1705	1708	1709	1706	1698	1681	1689	1704
1969	1702	1706	1702	1698	1678	1676	1695	1708	1714	1716	1714	1709	1701
1970	1709	1715	1712	1707	1701	1691	1695	1705	1706	1705	1697	1719	1705
1971	1712	1720	1720	1718	1722	1735	1732	1737	1732	1739	1732	1732	1728
1972	1730	1726	1731	1732	1728	1721	1734	1710	1733	1733	1726	1723	1727
1973	1723	1719	1718	1709	1704	1716	1723	1733	1740	1737	1738	1738	1725
1974	1737	1740	1736	1729	1713	1703	1704	1712	1705	1713	1718	1731	1720
1975	1730	1733	1734	1740	1740	1742	1740	1735	1737	1738	1729	1733	1736
1976	1738	1741	1739	1737	1740	1740	1742	1743	1742	1742	1744	1741	1741
1977	1741	1743	1742	1742	1740	1735	1729	1730	1732	1742	1745	1741	1739
1978	1731	1731	1726	1710	1700	1710	1717	1731	1729	1719	1724	1720	1721
1979	1711	1707	1702	1684	1691	1682	1688	1674	1689	1703	1700	1717	1696
1980	1713	1708	1712	1699	1701	1690	1698	1705	1699	1688	1672	1680	1697
1981	1699	1682	1680	1671	1662	1685	1690	1693	1697	1666	1675	1700	1683
1982	1710	1687	1703	1700	1702	1662	1632	1643	1625	1662	1674	1658	1671
1983	1688	1703	1713	1709	1685	1697	1704	1690	1694	1697	1703	1702	1699
1984	1705	1699	1693	1685	1665	1677	1684	1691	1695	1699	1691	1698	1690
1985	1703	1714	1716	1721	1723	1736	1724	1727	1732	1734	1739	1737	1725
1986	1739	1724	1734	1746	1748	1750	1748	1745	1747	1751	1744	1752	1744
1987	1757	1760	1760	1757	1754	1738	1741	1735	1728	1728	1721	1718	1741
1988	1704	1706	1711	1706	1705	1705	1696	1692	1698	1690	1688	1674	1698
1989	1663	1660	1624	1635	1629	1638	1664	1650	1640	1611	1609	1627	1637
1990	1638	1638	1623	1608	1616	1630	1651	1648	1668	1666	1673	1673	1644
1991	1689	1682	1617	1631	1630	1540	1555	1611	1642	1638	1632	1641	1626
1992	1630	1635	1659	1677	1665	1689	1702	1696	1684	1693	1688	1697	1676
1993	1692	1692	1690	1708	1705	1711	1704	1707	1714	1709	1712	1709	1705
1994	1705	1696	1697	1703	1708	1711	1711	1711	1718	1724	1723	1722	1711
1995	1723	1718	1718	1725	1730	1731	1730	1731	1735	1735	1732	1731	1728
1996	1716	1734	1738	1742	1716	1722	1736	1737	1719	1719	1712	1711	1725
1997	1720	1732	1724										1725

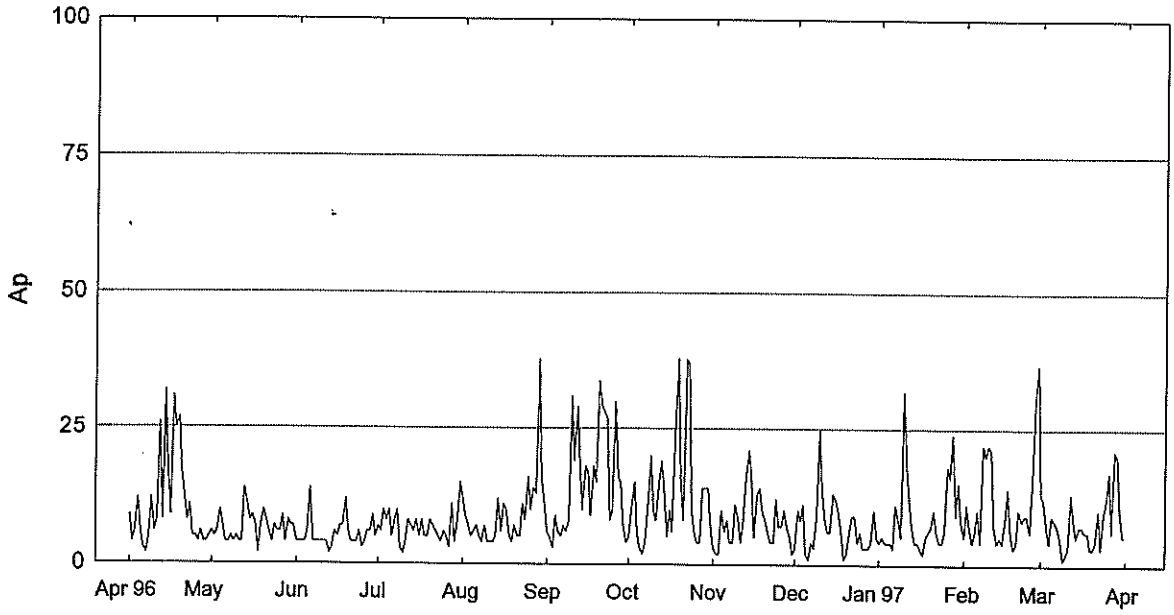
Multiply table entries by 100 to obtain hourly counting rate for Huancayo, Peru: S12 W75, Alt=3400m, Cutoff Rigidity=12.92GV (1980). NOTE: Secular changes in the Earth's magnetic field resulted in a slow lowering of the geomagnetic cutoff rigidity at Huancayo over the 40 year period. This dataset was adjusted by applying a linear time-correction based on the calculated change in response to the change in the vertical cutoff. * Data from Jan 92 on are from the 18-NM64 at Haleakala, Hawaii: N20 W156, Alt=3030m, Cutoff Rigitity=12.91GV (1980). Multiply table entries by 2057.6 to obtain equivalent Haleakala counting rate.

Geomagnetic Activity Indices
March 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	aa Provisional Am	N	S	M	
1	D4*	3	2+	2+	2	3	4	3+	2-	22-	13	0.8	3-	2-	2o	2+	3+	3+	3+	1+	23	28	25	18	35	
2		1	4-	3+	3+	2	3+	1	1+	19	12	0.7	1-	3+	3o	3-	2+	3+	1+	1+	22	21	26	25	22	
3		1-	0+	1+	2	2-	3+	2+	2+	14	7	0.4	0+	0+	1+	2+	2o	3o	3-	2+	14	16	13	8	21	
4	Q6	2	0+	1-	1	1	1-	1-	1-	7	4	0.1	2-	1o	1o	1+	1+	1-	1-	1-	7	7	6	6	8	CC
5		0+	0+	1-	1-	2+	3	4-	3	14	9	0.5	1-	0+	1+	1-	2+	3o	3+	3-	15	20	15	6	29	
6		3+	3	3-	2-	2	2	0+	0	15	8	0.5	3o	2+	2+	1+	3-	2+	0+	0o	15	17	16	19	13	
7		0	1-	2	2+	3	2+	1+	2+	14	7	0.4	0o	2-	2o	3-	3o	3-	1+	2o	16	15	17	12	20	K
8		2-	2-	1-	1-	2+	2+	0+	1	11-	5	0.2	1+	1+	1-	1o	3-	2+	0+	1o	11	12	12	9	15	KK
9	Q1	1-	0	0	0	0	1-	0	0+	2-	1	0.0	1-	0o	0o	0o	0+	1-	1-	1-	3	3	4	3	4	CC
10	Q2	0	0	0	1-	1-	1-	1-	1+	4	2	0.0	0+	0o	0o	0+	1-	1o	1-	2-	5	6	4	2	8	CC
11	Q7	2+	1	0+	1-	1	0+	0	1-	6+	3	0.1	2o	1o	0+	1o	1o	0+	0+	1-	6	7	9	11	6	CK
12	D5*	2	3+	3+	3	3+	2+	3-	2-	22-	13	0.7	2-	3-	3o	3o	3+	2+	3-	2-	24	28	22	28	22	
13		3-	2	2+	1	1	2+	2+	2-	15+	8	0.4	3-	2-	2o	2-	1o	2+	2+	1+	15	15	15	14	16	
14	Q10	2	2-	2-	2-	1-	1-	1	2	11+	5	0.2	1+	2-	2-	2-	0+	1o	1+	2o	10	9	10	12	8	CC
15		3+	1	2	2-	1	1	1+	1+	13-	7	0.3	3-	1+	2-	2+	2-	2-	2-	1+	13	13	15	17	11	C
16		2-	3-	3-	2-	1+	2-	1+	1	14	7	0.4	2-	2o	3-	2-	1+	2o	2-	1+	13	14	14	16	12	C
17		1+	1+	1+	1-	1	1+	2+	2+	12-	6	0.3	1o	1+	1+	1o	1+	1-	3-	2+	10	13	10	7	16	KC
18		2+	3-	1+	1	1	1	1	1+	12-	6	0.3	2-	3-	1o	1+	1+	1+	1+	1+	10	10	9	10	9	CC
19	Q4	1-	1	1-	1-	2-	0+	0	0	5	3	0.0	1-	1o	1-	1o	2-	0+	0o	0o	5	4	6	5	5	CC
20	Q3	0+	1+	1-	0+	0+	0+	1+	0+	5	3	0.1	0+	1+	1-	0+	1-	0+	1+	0+	5	8	7	7	8	CC
21	Q8	0	0	1+	2	1+	1	1-	1+	8-	4	0.1	0o	0+	2-	3o	2o	1+	1o	2-	11	6	13	8	11	CK
22		3	4-	2	3-	2+	2-	1-	0+	16+	10	0.5	2+	3o	2+	3-	2+	2-	1o	0+	17	18	17	22	13	K
23	Q5	0	0+	0+	1	2-	1+	1	0	6-	3	0.1	0o	0+	0+	1o	2-	2-	1o	0+	6	5	9	4	9	CK
24		1-	1+	1-	3-	2-	1	3	4-	15-	9	0.5	1-	1+	1o	3o	2o	1+	3-	4-	19	23	20	17	26	
25		3	2+	2	2	3	3-	3-	4-	21+	12	0.7	3-	2-	3-	2+	3o	3-	3-	3+	24	24	26	19	31	
26	D3*	3-	3+	3-	3	3+	3+	4-	4-	26-	17	0.9	2o	3o	3-	4-	4-	3+	3+	3o	33	34	46	32	49	
27		3+	1-	0+	1-	1-	1+	2+	1	10+	6	0.3	3-	1+	1-	1+	1-	2-	2+	1+	11	12	11	11	13	C
28	D2	1	1	1-	2-	2+	5	6-	4	21+	21	1.1	1-	1-	1o	2+	3-	5-	5-	4-	32	33	40	10	63	
29	D1	3+	4	2	4-	3	3	3	5-	27-	20	1.0	3-	4-	2o	3+	3-	3-	3+	5-	34	42	31	34	39	
30		2+	4-	2+	2+	2+	2	2+	1+	19-	10	0.6	3-	3o	3o	3o	2+	2o	2o	2o	23	20	34	33	21	
31	Q9	1	2-	0+	1-	1+	2-	2+	2-	11-	5	0.2	1o	1+	0+	1+	1+	2-	2o	1+	9	12	10	6	16	C
Mean											8	0.40									14.9	16.1	16.5		16.3	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	3-	2-	2+	2+	3+	3+	3o	1+	24	2+	2-	2o	3-	3o	3+	3+	2-	23	70.5*	0	0	14	
2	1-	3+	4-	3o	2o	3+	2-	1+	23	1-	3+	3-	3-	2+	3+	1+	1+	20	71.1	0	0	15	
3	0+	0+	2-	2o	2o	3o	3-	2+	14	0o	1-	1+	2+	2-	3o	3-	2+	14	72.8	0	0	17	
4	2-	1o	1-	1o	1+	1-	1-	0+	7	2-	1-	1o	1+	1+	1o	1-	1-	7	72.8	0	0	17	
5	1-	0o	1o	1-	3-	3o	3+	3o	17	1-	1-	1+	1-	2o	3-	3o	2o	13	73.4	0	0	17	
6	3o	2+	2+	2-	3o	2+	0o	0o	16	3-	2+	2+	1o	3-	2+	0+	0o	14	74.2	8	7	18	
7	0o	1o	2-	3-	3o	3-	1o	2+	16	0o	2o	2o	3o	3-	2+	1+	2-	15	73.1	10	8	17	
8	2-	1+	0+	1o	3o	2+	0o	1-	11	1+	1+	1o	1o	3-	2+	1-	1+	11	73.6	19	17	17	
9	1-	0o	0o	0o	0o	0+	1o	0+	2	1-	0+	0o	0+	0+	1o	0+	1-	3	74.1	18	17	18	
10	0+	0o	0o	1-	1o	1o	0+	2-	4	0+	0o	0+	0o	1-	1o	1o	2o	5	73.8	12	14	18	
11	2o	1-	0+	1o	1o	0+	0o	1-	5	2+	1+	1-	1o	1-	0+	0+	1-	6	73.4	13	10	17	
12	2-	3o	3+	3+	3o	3-	3-	2-	25	2o	3-	3o	3-	4-	2o	3-	2-	23	73.4	15	12	17	
13	2o	2-	2o	2-	1o	3-	2o	1+	14	3+	2o	2o	1+	1o	2+	2+	1+	15	73.3	14	12	17	
14	1+	2-	2-	2-	1-	1-	1+	2o	10	2-	1+	2o	1+	0+	1+	1+	2o	10	74.7	13	18	19	
15	3-	1+	2-	2o	1+	1+	1+	1+	12	3-	1o	2-	2+	2-	2-	2-	1+	13	75.0	25	14	19	
16	2-	2o	3-	2-	1+	2+	2-	1+	14	1+	2o	3-	2-	1o	2-	2-	1o	12	75.0	11	14	19	
17	1-	1+	2-	1o	1o	1-	3-	2+	10	1+	1+	1+	1o	2-	0+	3-	2+	11	74.4	12	11	18	
18	2-	2+	1o	1+	1+	1+	1+	1+	11	2-	3-	1o	1o	1+	1o	1o	1+	10	73.7	12	11	18	
19	1-	1o	1-	1o	2-	0o	0o	0o	5	1o	1o	0+	1o	2-	0+	0o	0o	5	73.1	0	0	17	
20	0o	1+	0+	0o	1-	1-	2-	1o	5	0+	1+	1o	0+	1-	0o	1+	0o	5	71.0	12	8	15	
21	0o	0+	2-	3+	2+	2-	1o	2-	12	0o	0+	2-	2+	2o	1+	1o	2-	9	70.0	0	0	14	
22	3-	3+	2o	2+	2+	2-	0+	0+	16	2o	3o	3-	3-	3-	1+	1+	0+	17	70.1	0	0	14	
23	0o	0o	0+	1+	2+	2o	1o	0o	7	0o	0+	0+	1-	1+	2-	1+	0+	5	70.3	0	0	14	
24	1-	1+	1o	3-	2+	1+	3-	3+	16	1o	1+	1+	3+	1+	1o	3-	4+	20	70.6	0	0	14	
25	2+	2-	3-	3-	3+	3-	3-	3+	25	3-	2-	2+	2o	3o	3-	3-	3+	23	70.2	0	4	14	
26	2o	3o	3-	3+	4-	3+	3+	4-	34	2-	3-	3-	4o	4-	3+	3+	3-	31	69.5	0	0	13	
27	3o	1o	0o	1+	1-	2-	2+	1o	11	2+	1+	1o	1+	1-	2-	2+	1+	11	71.9	10	8	16	
28	1-	1o	1o	2o	3-	5-	4+	3+	28	1o	0+	1o	2+	3-	5-	5+	4-	36	72.9	14	11	17	
29	3o	3+	2o	4-	3-	3-	3o	4-	30	2+	4-	2o	3o	3-	3-	4-	5o	38	75.1	18	19	19	
30	3-	3o	3-	3o	3-	2-	2+	1+	21	3-	3+	4-	3o	2+	2+	2-	2+	25	73.8	20	17	18	
31	1-	1+	0o	1+	1+	2-	2+	2-	9	1o	2-	1-	2-	1+	2-	2o	1+	10	74.6	17	13	19	
Mean									14.6									14.8	72.8	8.8	7.9	16.6	

Daily Average Indices Ap
Apr 1996 - Mar 1997

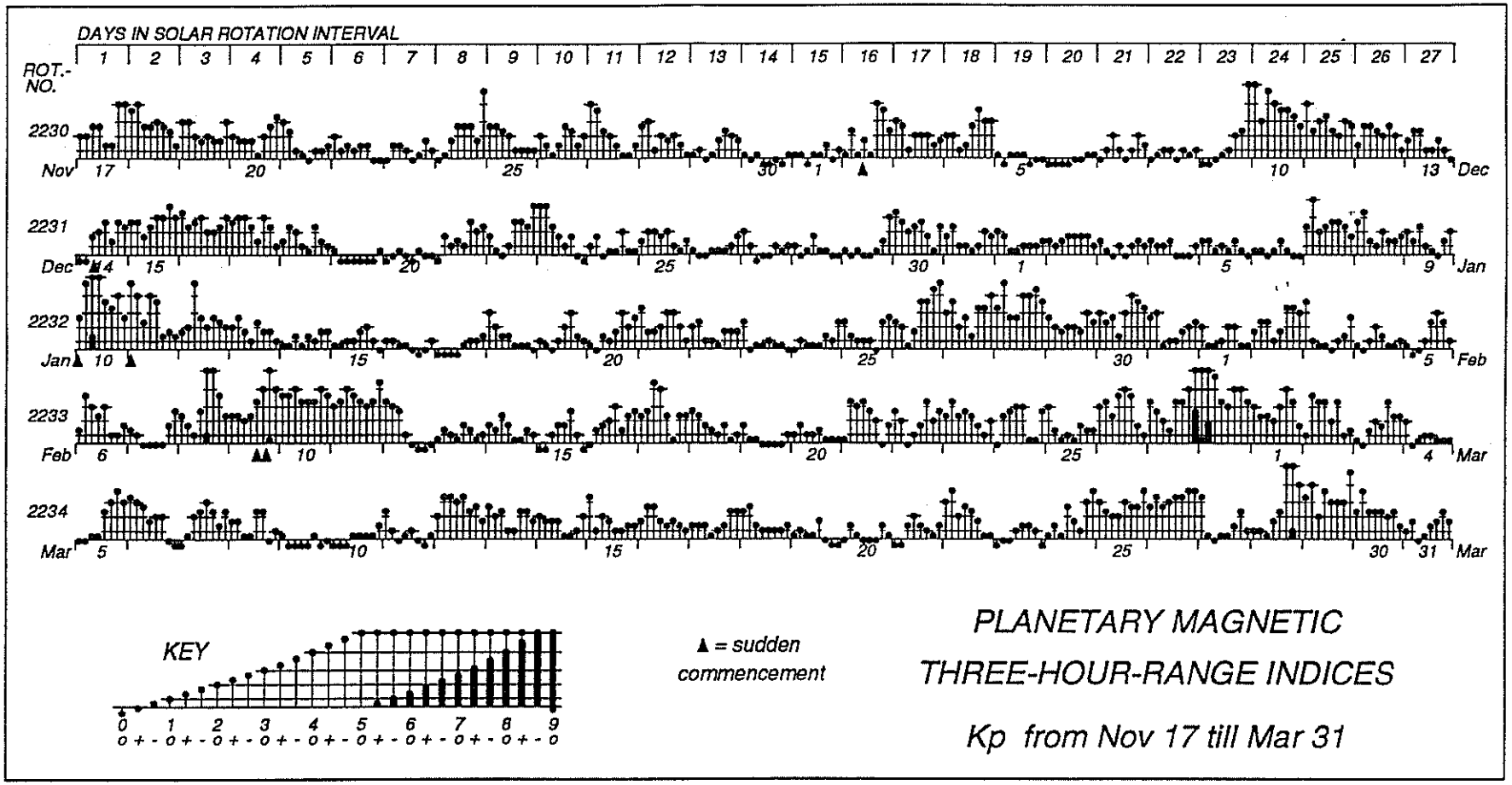


Day	Apr 96	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb	Mar
1	9	6	4	7	12	6	5	3	3	4	5	13
2	4	5	4	6	9	5	10	2	10	5	11	12
3	6	6	4	10	7	3	15	2	8	4	7	7
4	12	10	4	8	5	9	6	10	11	4	4	4
5	6	7	6	10	6	6	3	6	2	4	6	9
6	3	4	14	5	7	5	2	8	1	3	10	8
7	2	4	4	8	5	7	4	4	4	11	4	7
8	5	5	4	10	4	6	10	4	3	8	22	5
9	12	4	4	3	7	8	20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

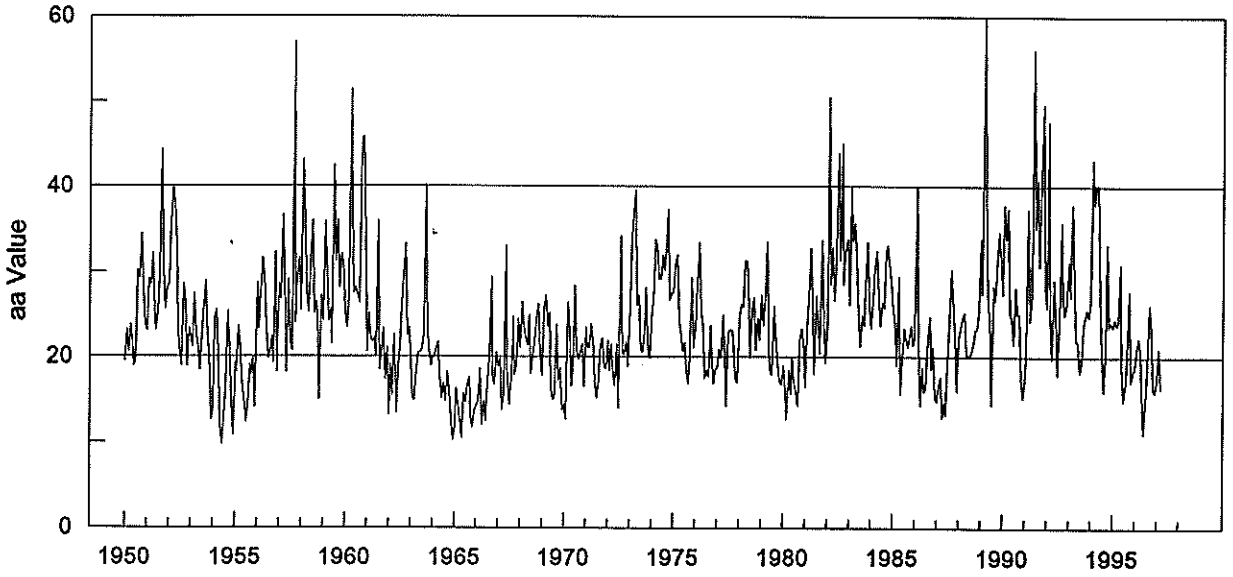
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through March 31, 1997



Monthly Mean aa Index Jan 1950 - Mar 1997

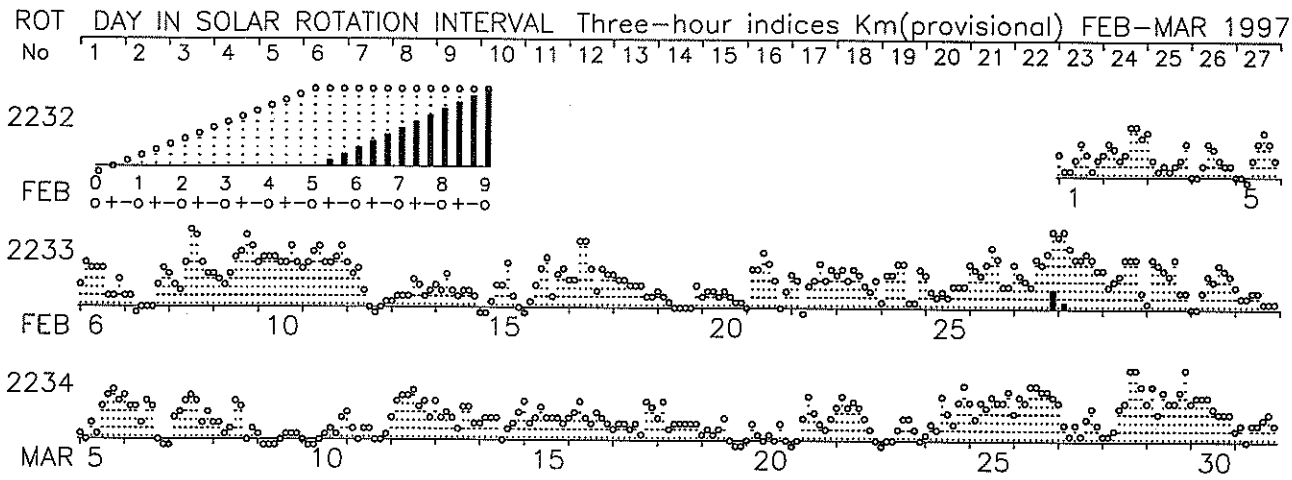


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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										18.2

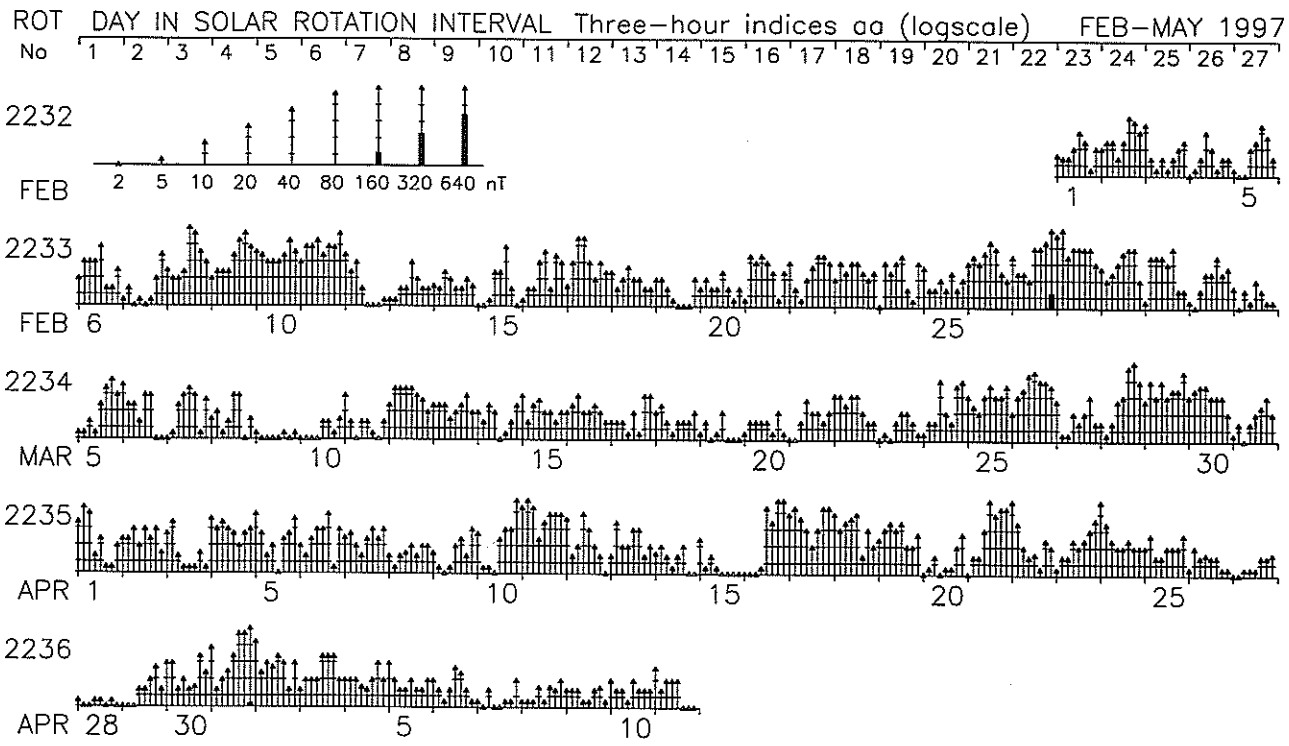
PLANETARY GEOMAGNETIC ACTIVITY

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.



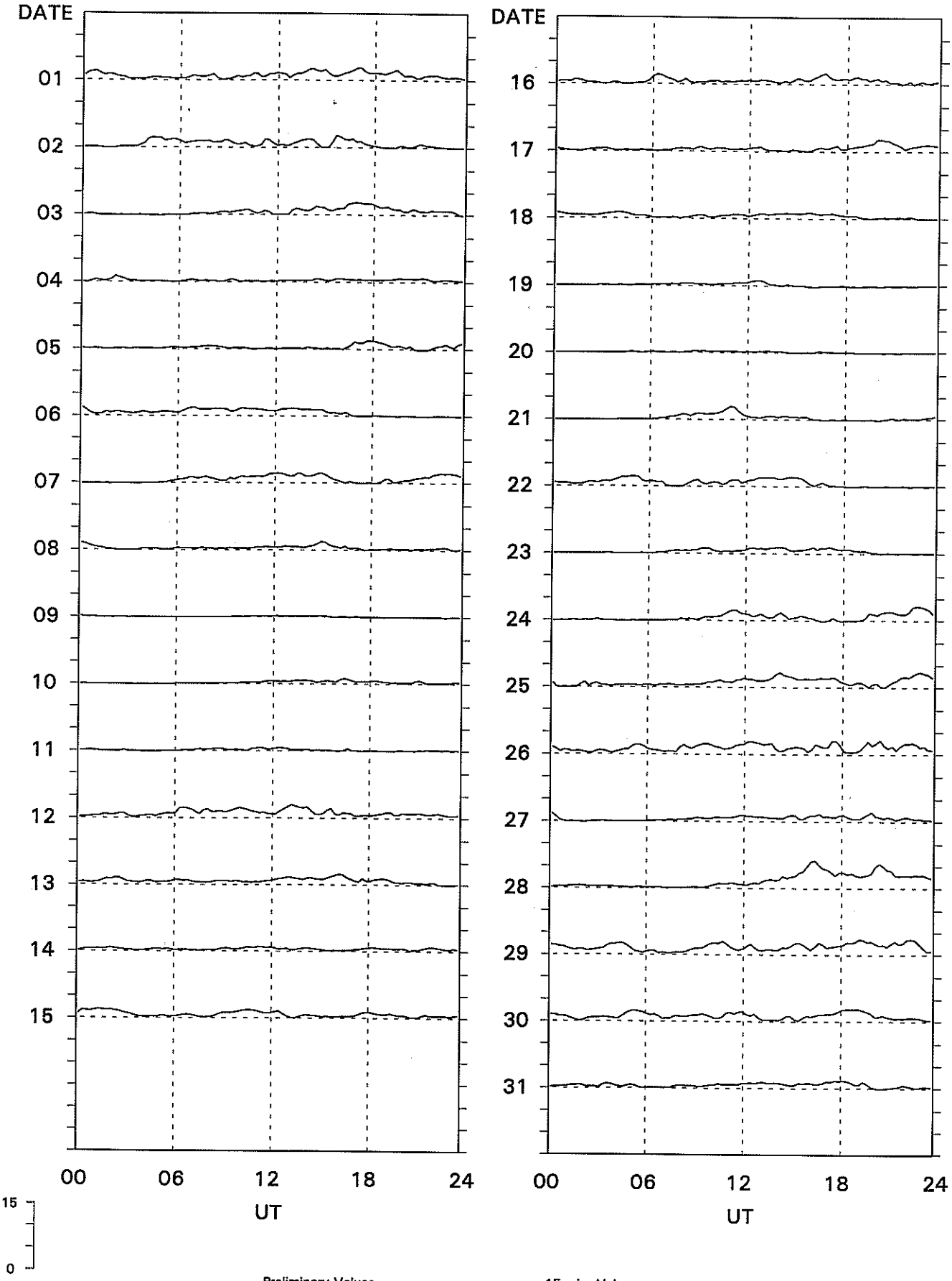
Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.

108
Mar 97

PC-INDEX

Thule

March, 1997



Preliminary Values.

15-min. Values.

Danish Meteorological Institute

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

MARCH 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)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
KRC	16.4N	05	1350	SC	0.1	22	12	05(7)	5	4	84	33	06	09
UJJ	13.6N	05	1300	..	..	..	..		-	3	63	20	06	18
NGP	11.3N	05	1300	..	..	..	..		-	4	70	8	06	18
ABG	09.4N	05	1300	..	..	..	..	05(6)	5	3	74	24	06	18
HYB	07.6N	05	1356	SC	- 0.3	14	- 1	05(6,7) 06(5) 07(6)	4	3	68	13	07	23
PND	02.0N	05	1300	..	..	..	..		-	3	63	39	06	18
ETT	00.7S	05	1356	SC	- 0.4	10	10		-	--	91	34	06	17
TRD	01.1S	05	1300	..	..	..	..		-	3	98	63	06	18
UJJ	13.6N	12	0000	..	..	..	..		-	3	75	23	13	22
NGP	11.3N	12	0000	..	..	..	..		-	3	97	20	13	22
ABG	09.4N	12	0000	..	..	..	..	12(2,5)	4	3	86	25	13	22
GUA	04.3N	12	00--	..	..	..	..	12(2)	6	--	150	10	12	18
PND	02.0N	12	0000	..	..	..	..		-	3	108	47	13	22
TRD	01.1S	12	0000	..	..	..	..		-	2	153	60	13	22
HYB	07.6N	20	2044	SC	- 0.2	9	- 1		-	--	--	--	--	--
ETT	00.7S	20	2044	SC	- 0.3	6	7		-	--	--	--	--	--
UJJ	13.6N	24	0800	..	..	..	..		-	3	74	27	26	21
NGP	11.3N	24	0800	..	..	..	..		-	--	--	--	26	21
ABG	09.4N	24	0800	..	..	..	..	24(4) 25(7,8) 26(6,7)	4	--	--	--	26	21
HYB	07.6N	24	0800	..	..	..	..	24(4) 25(7,8)	4	3	94	16	27	04
PND	02.0N	24	0800	..	..	..	..		-	2	113	45	26	21
ETT	00.7S	24	0100	..	..	..	..		-	--	146	51	27	04
TRD	01.1S	24	0800	..	..	..	..		-	2	152	71	26	21
KRC	16.4N	25	1407	..	..	..	..	26(7)	5	5	75	41	27	06
GUA	04.3N	26	02--	..	..	..	..	26(5)	5	--	60	20	26	21
KRC	16.4N	28	0325	..	..	..	..	28(6,7)	5	7	86	40	29	23
UJJ	13.6N	28	0800	..	..	..	..		-	5	75	23	29	22
NGP	11.3N	28	0800	..	..	..	..		-	--	--	--	29	22
ABG	09.4N	28	0800	..	..	..	..	29 (4)	4	5	87	29	29	22
HYB	07.6N	28	0800	..	..	..	..	28(6,7)	5	5	93	22	30	19
PND	02.0N	28	0800	..	..	..	..		-	5	95	42	29	22
ETT	00.7S	28	0800	..	..	..	..		-	--	122	38	30	20
TRD	01.1S	28	0800	..	..	..	..		-	3	123	68	29	22
HER	33.6S	28	15--	..	..	..	..	28(7) 29(8)	5	21	84	92	30	01
AMS	46.8S	28	15--	..	..	..	..	28(6,7)	5	20	70	52	29	23
CZT	51.5S	28	15--	..	..	..	..	28(7) 29(8)	5	21	120	52	30	00
PAF	57.2S	28	15--	..	..	..	..	28(7)	7	44	412	224	30	23

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

Stations reporting no storms observed: BJI DRV FRD

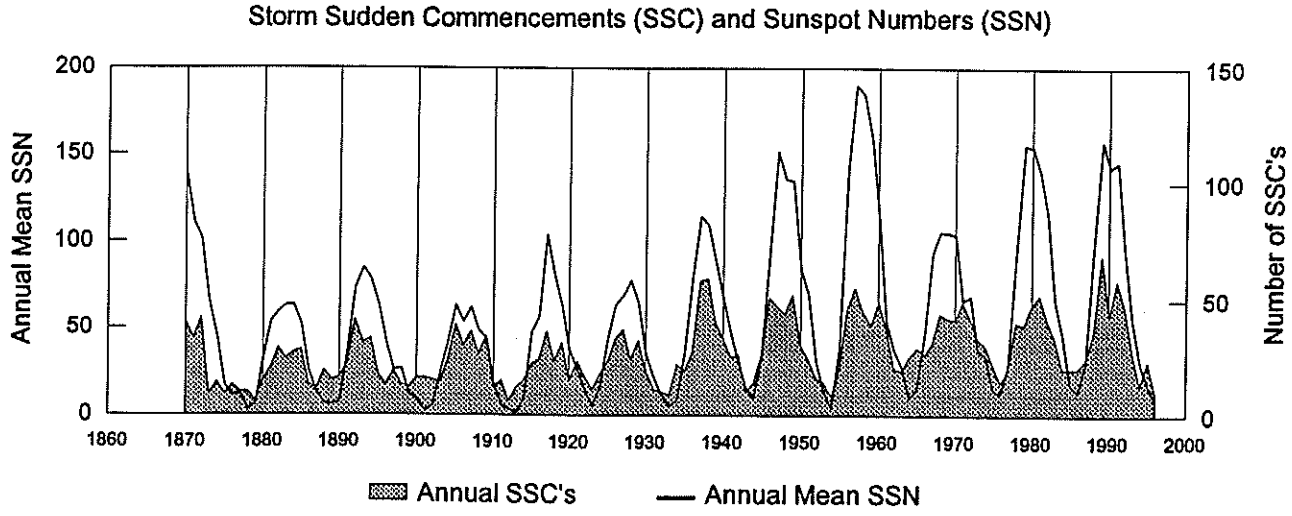
MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS (PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

MARCH 1997

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
05	1357	A: HRB	07	1108-1122	TEN
		B: WNG DOU TEN*	11	0326-0336	BDV
		C: NGK BDV EBR* SPT QUE LNP HYB ETT CNB			

REPORTING OBSERVATORIES (up to the 5th of May 1997):
SOD DOB NUR WNG NGK DOU BDV CLF HRB NAG GCK MMB EBR COI 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 633 Part I

LATE DATA

WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JANUARY 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	-8	-3	2	4	8	7	0	-3	-1	3	1	-2	-3	-5	-5	-5	-5	-5	-4	-2	-6	-4	-10	-6
2	-6	-4	-1	-2	0	0	-6	-9	-6	-1	3	3	3	1	2	1	-6	-4	-2	-5	-7	-7	-6	-6
3	-8	-5	-2	2	3	2	0	-1	-1	-1	0	1	1	-1	-1	-4	-1	0	1	-1	-2	0	1	1
4	-1	-5	-1	0	0	-1	-2	-3	-2	-2	1	1	2	2	1	-1	-1	0	-1	0	0	-1	-4	-6
5	-9	-7	-3	2	5	4	4	4	1	-1	0	4	0	0	1	4	7	7	5	3	1	6	8	5
6	5	5	7	9	8	8	6	6	6	7	4	4	7	9	9	8	6	4	2	3	6	8	10	15
7	19	19	7	-2	-4	-11	-18	-16	-15	-11	-13	-13	-14	-15	-9	-7	-7	-8	-8	-15	-13	-9	-3	5
8	1	-3	-2	-2	0	-2	-5	-8	-11	-12	-12	-12	-12	-9	-5	1	1	3	5	4	3	2	4	4
9	4	6	4	2	6	8	10	4	-2	-3	-5	-4	-6	-5	-5	-2	0	-1	0	-1	-6	-6	-3	0
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11	0	49	44	20	-2	9	9	-4	-15	-18	-24	-39	-47	-40	-27	-21	-23	-26	-24	-19	-21	-21	-19	-16
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24	3	7	17	18	15	14	13	8	-3	-5	-4	-3	-3	-1	2	4	2	5	4	2	1	-3	-7	-5
25	-2	4	8	8	6	1	-1	-7	-11	-11	-9	-9	-10	-8	-4	-3	-4	-4	-3	-3	-4	0	4	8
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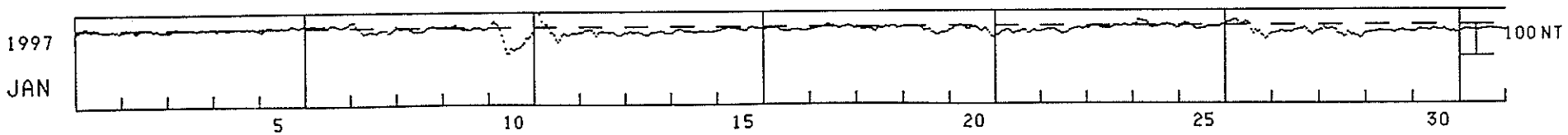

Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for January 1997. Beginning October 1994, the observatory data include realtime INTERMAGNET data.

WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

FEBRUARY 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	-17	-16	-16	-13	-10	-3	-2	-1	-4	-8	-11	-12	-10	-13	-18	-18	-16	-16	-15	-14	-11	-11	-11	-9
2	-11	-14	-11	-11	-18	-16	-10	-6	-7	-9	-8	-11	-12	-13	-11	-8	-15	-18	-21	-19	-18	-20	-21	-20
3	-16	-18	-16	-19	-20	-21	-20	-19	-18	-16	-17	-16	-16	-17	-19	-20	-18	-16	-15	-16	-15	-12	-13	-13
4	-14	-13	-14	-14	-13	-12	-12	-11	-10	-9	-5	-10	-13	-13	-12	-8	-9	-8	-7	-6	-6	-7	-7	-7
5	-8	-9	-9	-7	-7	-6	-6	-6	-6	-6	-2	-1	0	3	-1	-1	-8	-16	-17	-14	-8	-1	0	2
6	3	0	0	-2	-9	-13	-12	-15	-17	-15	-15	-15	-14	-12	-13	-14	-15	-15	-13	-14	-14	-14	-13	-10
7	-9	-9	-11	-10	-8	-7	-6	-5	-4	-4	-6	-5	-2	0	0	2	3	0	-2	-1	-1	-1	-6	-4
8	1	0	2	1	-1	2	8	5	-5	-10	-6	-3	-16	-32	-44	-35	-34	-37	-36	-35	-27	-21	-17	-17
9	-18	-18	-17	-18	-14	-15	-16	-18	-23	-28	-30	-27	-24	-11	-13	-14	-13	-27	-48	-48	-54	-53	-44	-43
10	-40	-41	-33	-36	-44	-49	-55	-59	-63	-69	-72	-71	-69	-64	-62	-63	-62	-61	-58	-52	-50	-45	-41	-40
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22	-10	-10	-12	-16	-13	-9	-6	-6	-8	-10	-9	-10	-10	-12	-20	-29	-35	-32	-28	-23	-21	-24	-21	-14
23	-14	-16	-19	-25	-30	-28	-23	-22	-23	-22	-16	-6	-3	0	1	0	-3	-9	-11	-11	-7	-6	-12	-8
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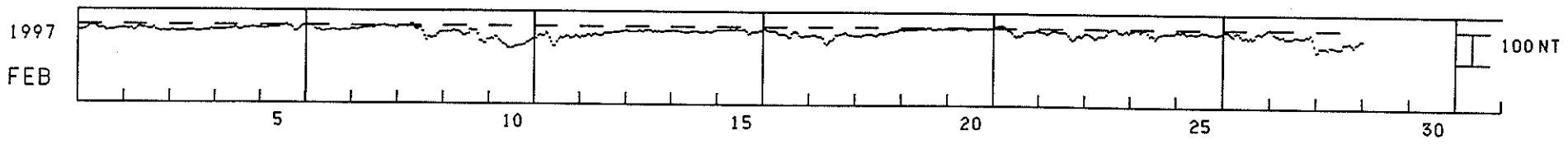

Geomagnetic Activity Indices
February 1997

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	aa Provisional Am	N	S	M	
1	Q7	2	1-	1-	1	2+	2	1-	1-	10	5	0.2	2-	1-	1-	1+	2+	2-	1-	1+	9	10	13	9	14 CC
2		2-	2+	2+	1	2-	3+	3+	3	19-	11	0.6	2-	2+	2o	1+	2-	3+	3+	3-	20	26	17	13	31
3		4-	1	1-	1-	0+	1	1+	3-	11+	7	0.3	3o	1+	1-	1o	1-	1o	1+	2+	11	15	9	14	10 K
4	Q3	1-	0+	1	2	1+	1-	1-	1	8-	4	0.1	0+	0+	1o	2+	2o	1+	1o	1o	9	7	11	10	8 CC
5	Q10K	1-	0	0+	1	2+	3	2+	1	11-	6	0.3	0+	0+	0o	1+	2+	3o	2+	1+	11	13	11	5	19 KK
6		1+	4-	3+	2+	3	1	1	2-	17+	10	0.6	2-	3o	3-	3-	3-	1o	1o	2o	18	22	19	21	20
7	Q5	1+	1	0+	0+	0+	0+	2-	3-	8	4	0.2	1o	1o	0o	0+	0+	0+	2-	3-	7	13	5	5	13 KK
8		2+	2-	1-	3-	6-	5	4-	2+	24	22	1.1	2+	2-	1+	3o	5o	5-	3o	2+	38	44	31	14	61
9	D5	2+	2+	2	2+	3+	4	5+	4	26-	20	1.0	2+	2o	2-	2+	3+	4-	5-	4o	36	39	30	15	54
10	D3	4-	4-	4	3+	3+	3+	4	4-	29	22	1.1	3o	3+	3+	3+	3o	3o	4o	3o	36	38	30	29	38
11	D4	3	3+	4	4-	3+	3	3+	4+	28	21	1.1	3-	3o	4-	4o	3o	3o	3+	4o	40	42	53	44	51
12		3+	3	3-	1	0+	0	0	0+	11-	7	0.3	3o	2+	3-	1+	0+	0o	0+	1-	11	13	10	20	3 K
13	Q4	1-	1+	1	1-	2	1+	1-	1	9-	4	0.1	1-	1o	1o	1o	2o	2-	1o	1+	8	8	11	7	13 CC
14	Q8	2-	1+	2+	2-	1-	1-	1+	1	11-	5	0.2	2-	1+	2+	1+	1o	1+	1+	1o	10	12	9	11	9 CC
15	Q6	0	0	1	2-	2-	3-	1	0	8	4	0.1	0o	0o	1-	2-	2-	3o	1o	0+	9	11	14	6	18 KK
16		0+	1+	2-	2	3	1+	2+	3-	15-	8	0.4	0o	1-	2-	3-	3+	1o	2+	3-	16	15	22	11	26
17		2+	3-	4+	4	2+	1-	2+	2+	21	14	0.8	2o	2o	4+	4+	3-	1+	3-	2+	30	23	38	42	19
18		3-	2+	2-	1+	1	2-	1-	1	12+	6	0.3	2+	2o	2o	2-	2-	2-	1o	1o	12	9	15	14	10 CC
19	Q1	2-	1-	1-	0+	0+	0+	0+	1	5+	3	0.1	1+	1o	1-	0+	0+	0+	0+	2-	5	6	8	9	5 CC
20	Q2	1	2-	1	1	1+	1-	1-	1-	8	4	0.1	1o	1+	1+	1o	1+	1o	1-	1-	7	9	9	9	9 CK
21		1-	3+	3	3+	3-	2	0+	2-	17	10	0.6	0+	3-	3-	4-	3o	2o	0+	1+	19	17	22	23	15
22		3-	2	0+	1	2-	3+	2	3-	16-	8	0.5	2+	2o	0o	2-	2o	3o	2o	3-	16	19	20	12	27
23		2+	3+	2+	3-	2+	2-	1	2	18-	9	0.5	2+	3-	2o	3-	2+	2-	1+	2o	17	17	19	19	17
24		0+	2+	3-	3	3	1-	1-	3-	15+	9	0.5	1-	2+	2+	3o	3o	1-	1-	3-	17	15	19	17	17
25	Q9K	3	1+	1-	1	1-	2-	1+	1+	11	6	0.3	2+	1+	1o	1+	1o	2-	2-	2-	11	13	10	12	11 C
26		3	3+	2+	4-	4	4-	2-	1	23-	15	0.9	3o	3-	2+	3o	4o	3+	2-	2-	28	35	28	29	33
27	D2	3+	3-	2	1+	3+	3+	4	7	27	30	1.3	3o	2+	2o	2-	3+	3o	4-	6o	43	45	54	19	81
28	D1	5+	6+	5-	3+	3	4	4	3+	34	37	1.4	5-	5+	4o	3+	3+	4-	3+	3-	53	56	49	65	40
Mean											11	0.54									19.5	21.2	21.0		21.0

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	1+	1-	1-	1o	2o	2-	0+	1o	8	2o	1-	1o	1+	2+	2-	1+	1+	11	69.2	9	9	13	
2	1+	2o	2o	1o	2-	4-	3+	3-	20	2-	3-	2-	1+	2-	3o	3o	3o	20	76.2	23	23	20	
3	3+	1o	0+	1-	1-	1+	1+	2o	11	3-	2-	1o	1+	1-	1o	2-	2+	11	77.4	30	27	22	
4	0+	0o	1o	2+	2+	1+	1-	0+	8	0+	1o	1o	2+	2-	1+	1o	1+	9	78.4	31	25	23	
5	0+	0o	0o	1o	3-	3o	3-	1-	11	1-	1-	0o	2-	2o	3o	2o	1+	11	73.3	23	20	17	
6	1+	3o	3o	2+	3-	1o	1-	2-	17	2-	3o	3-	3-	3o	1+	1+	2+	19	72.2	18	21	16	
7	1-	1-	0o	0o	0o	1-	1+	3-	6	1+	1+	0+	1o	0+	0+	2-	2+	7	73.7	15	22	18	
8	2o	1+	1+	3-	5+	5o	3+	3-	39	2+	2+	2-	3+	5o	4+	3o	2+	37	73.2	8	8	17	
9	2o	2o	1+	3-	4-	4-	4+	4-	34	2+	2+	2o	2o	3o	4-	5o	4+	39	71.2	8	7	15	
10	3+	4-	3+	3o	3+	3+	4o	3+	38	3-	3o	3+	4-	3o	3o	4-	3o	33	70.4	0	0	14	
11	3o	3o	4o	4o	3+	3+	4-	4o	42	3-	3+	4-	4o	3o	3o	3o	4o	37	69.3	0	0	13	
12	3o	3-	3-	1+	0+	0o	0o	0o	12	3-	2-	3-	2-	0+	0o	0+	1o	10	69.1	0	0	13	
13	1-	1+	1+	1+	2+	2o	1-	1o	9	1-	1-	1o	1o	2o	1+	1o	1+	8	69.3	0	0	13	
14	2-	1+	2o	1+	1+	1o	1+	1-	9	2o	1+	2+	1+	1-	1+	1+	1o	10	69.6	0	0	13	
15	0o	0o	1o	1+	2-	3o	1-	0o	9	0o	0o	1-	2-	2-	3o	1o	0+	9	70.1	0	0	14	
16	0o	0+	2-	3-	3+	1+	2+	3-	15	0+	1-	1+	3-	3+	1o	3-	3-	17	70.3	9	6	14	
17	2-	2+	5-	4+	3o	1+	3-	2-	30	2o	2o	4o	4o	2+	1+	3-	3-	28	71.4	0	7	15	
18	2+	2o	2o	2-	2o	2-	1-	1o	13	2+	2-	2o	2-	1+	2-	1+	1o	12	71.2	8	8	15	
19	1o	1-	1-	0o	0o	0o	0o	1+	4	1+	1+	0+	1-	0+	1-	1-	2-	6	70.4	8	7	14	
20	1-	1+	1+	1o	1+	1o	0+	0+	7	1o	1+	1+	1+	2-	1o	1-	1o	8	71.0	0	6	15	
21	0+	3-	2+	4-	3-	2-	0o	2-	17	0+	3-	3o	4-	3o	2+	1-	1+	20	71.6	0	0	15	
22	2+	2-	0o	2-	2-	3o	2o	3-	15	3-	2+	0+	2-	2+	3o	2o	3-	17	71.9	0	0	16	
23	3-	3-	2o	3-	2+	2-	1+	2o	17	2+	3-	2o	2+	2+	1+	2-	2-	16	73.0	0	5	17	
24	0+	3-	3-	3o	3+	1-	0+	2+	17	1-	2+	2+	3o	2+	1o	1+	3-	17	73.1	7	7	17	
25	3-	1o	1o	1+	1+	2+	1+	2-	11	2+	2-	1o	1o	1-	1+	2-	2-	10	72.6	8	7	16	
26	3-	3o	2+	3o	4o	4-	2o	1+	29	3o	3-	2+	3o	4o	3o	2-	2-	27	72.4	0	4	16	
27	3o	2+	2o	2-	4-	3+	4-	6-	43	3o	2+	2o	2-	3o	3-	4-	6o	42	72.4	8	3	16	
28	4+	6-	4o	4-	3+	3+	3+	3-	55	5-	5o	4o	3+	3+	4-	3+	3-	52	71.5	0	0	15	
Mean									19.5									19.4	72.0	7.6	7.9	15.8	

ERR* -- Errata -- Corrected Kp indices for February 1997 appear here.

* U.S. GOVERNMENT PRINTING OFFICE: 1997-573-001/29001

WORLD DATA CENTER A
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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."