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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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MARCH 1997 NUMBER 631 - Part I

Solar-Geophysical Data prompt reports

Data for January, February 1997 and Late Data

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NATIONAL GEOPHYSICAL DATA CENTER
Michael S. Loughridge, Director
Boulder, Colorado

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SOLAR-GEOPHYSICAL DATA

Number 631

(Issued in Two Parts)

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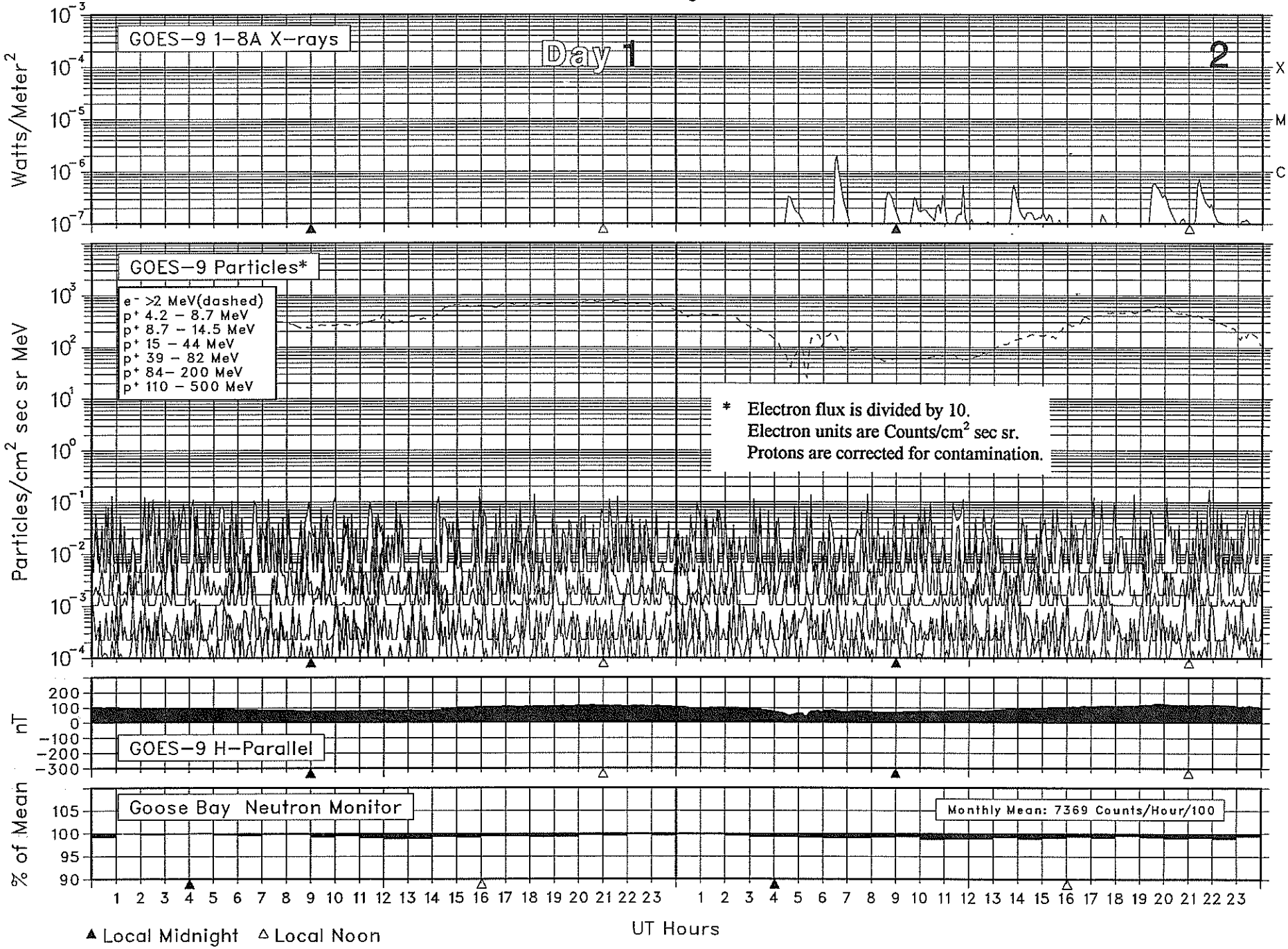

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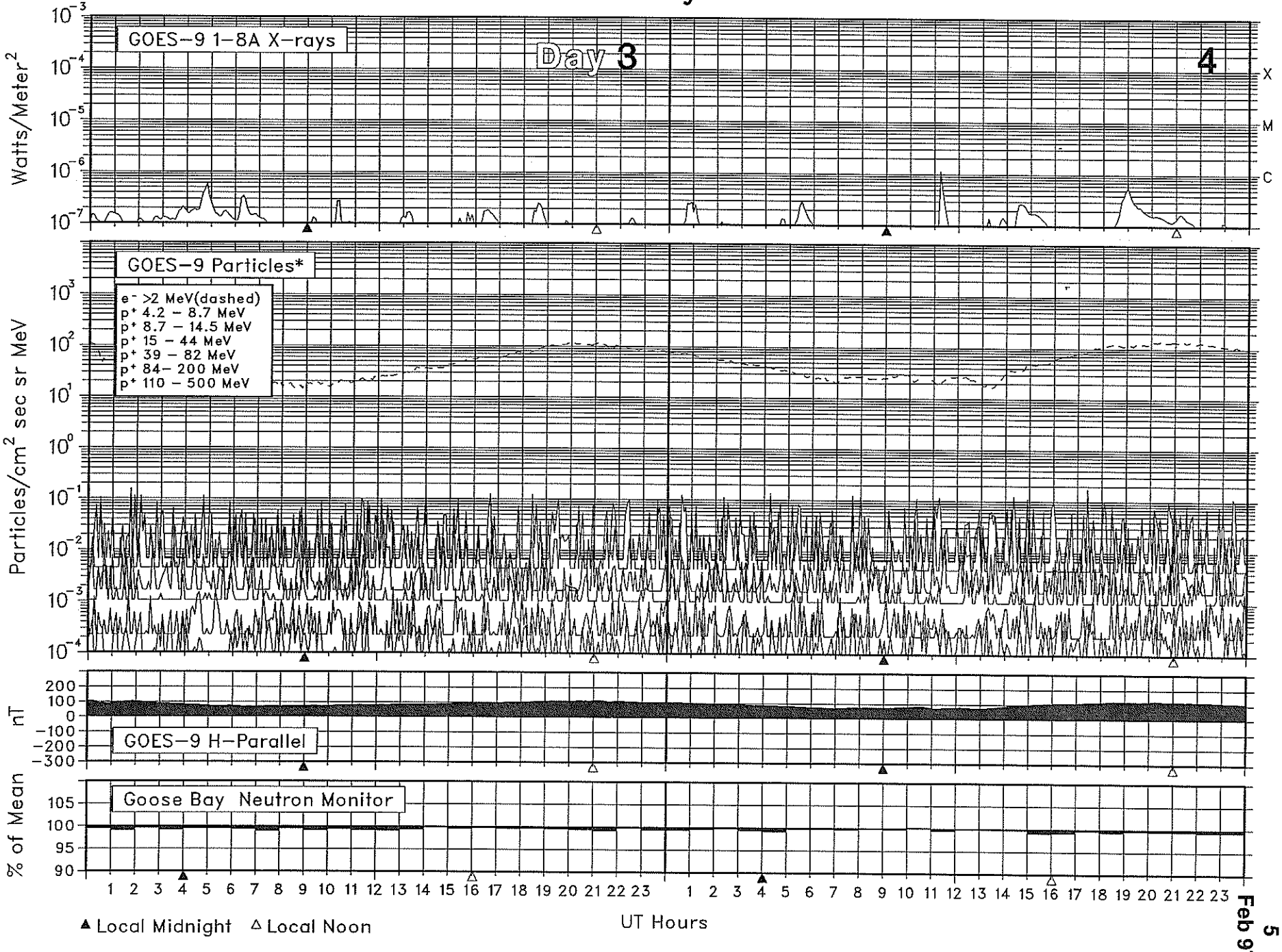

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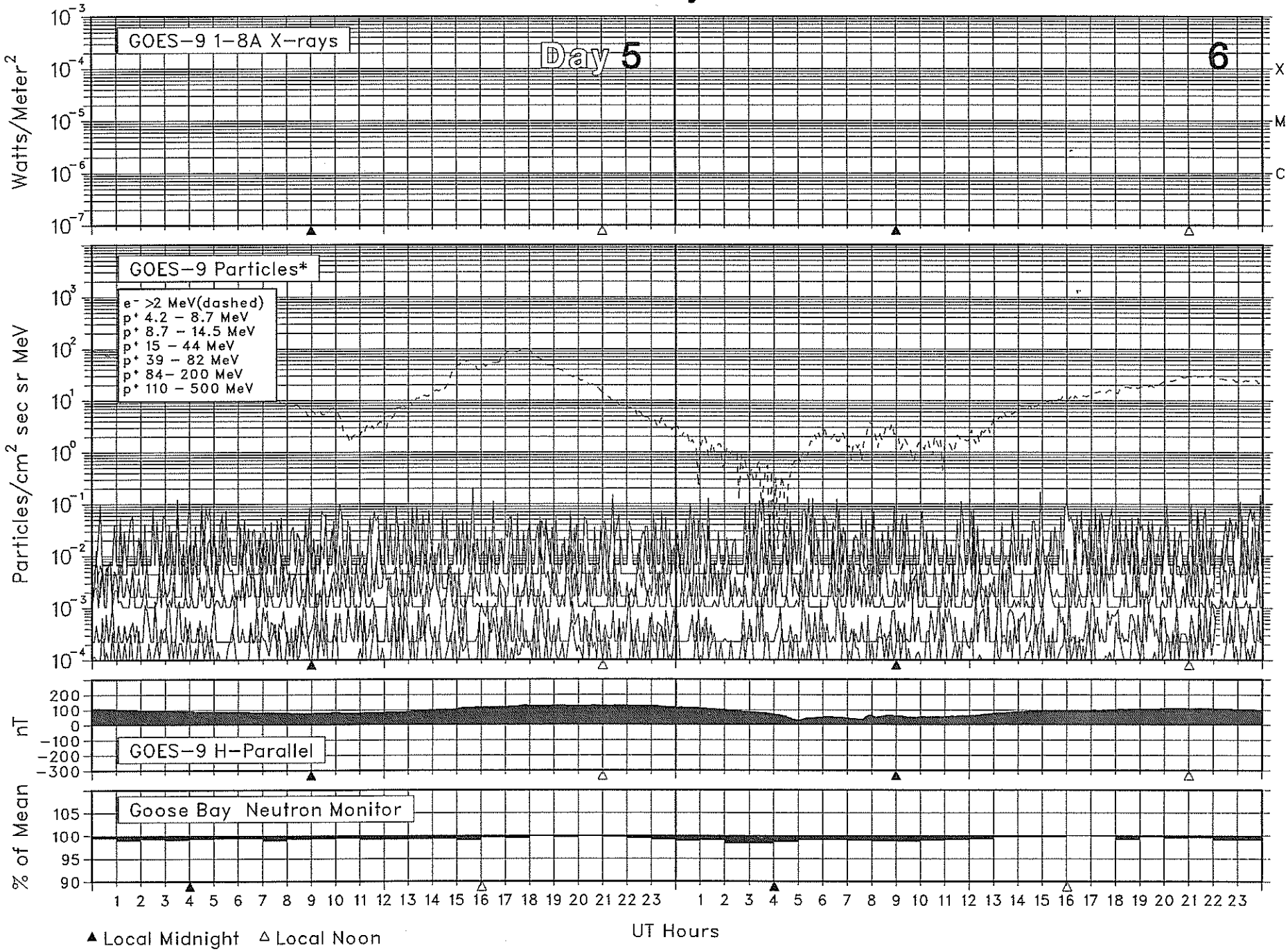

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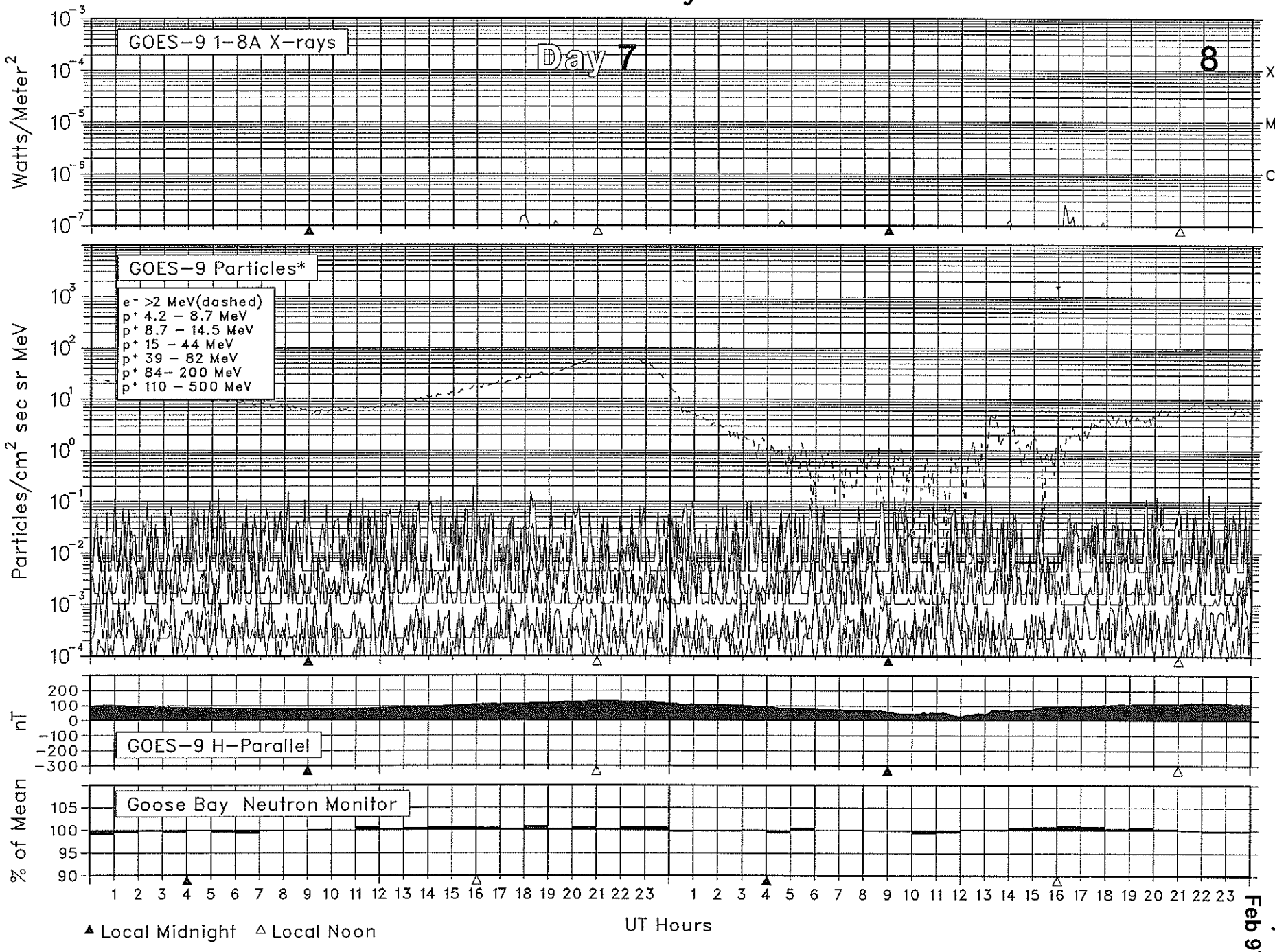

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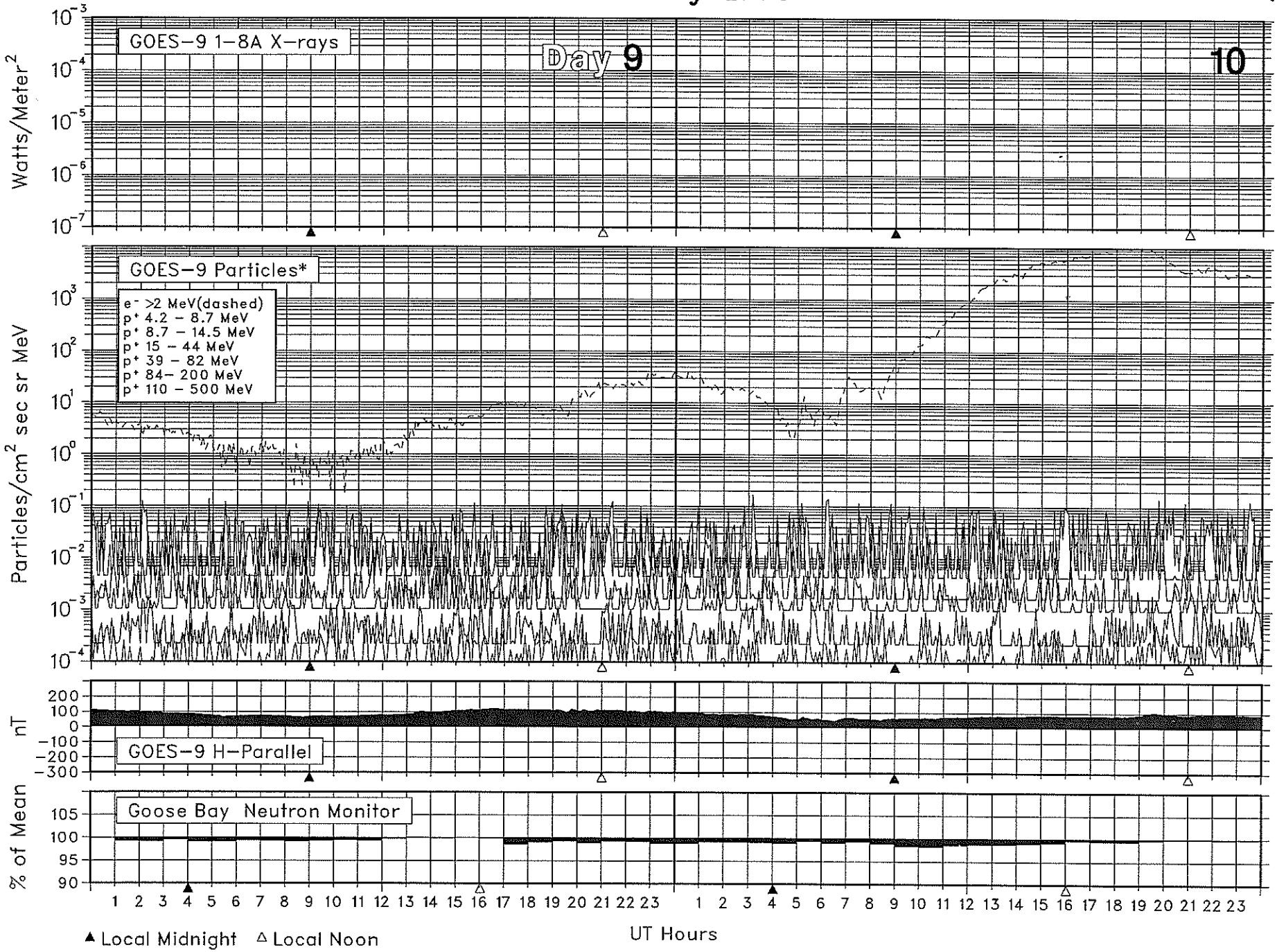

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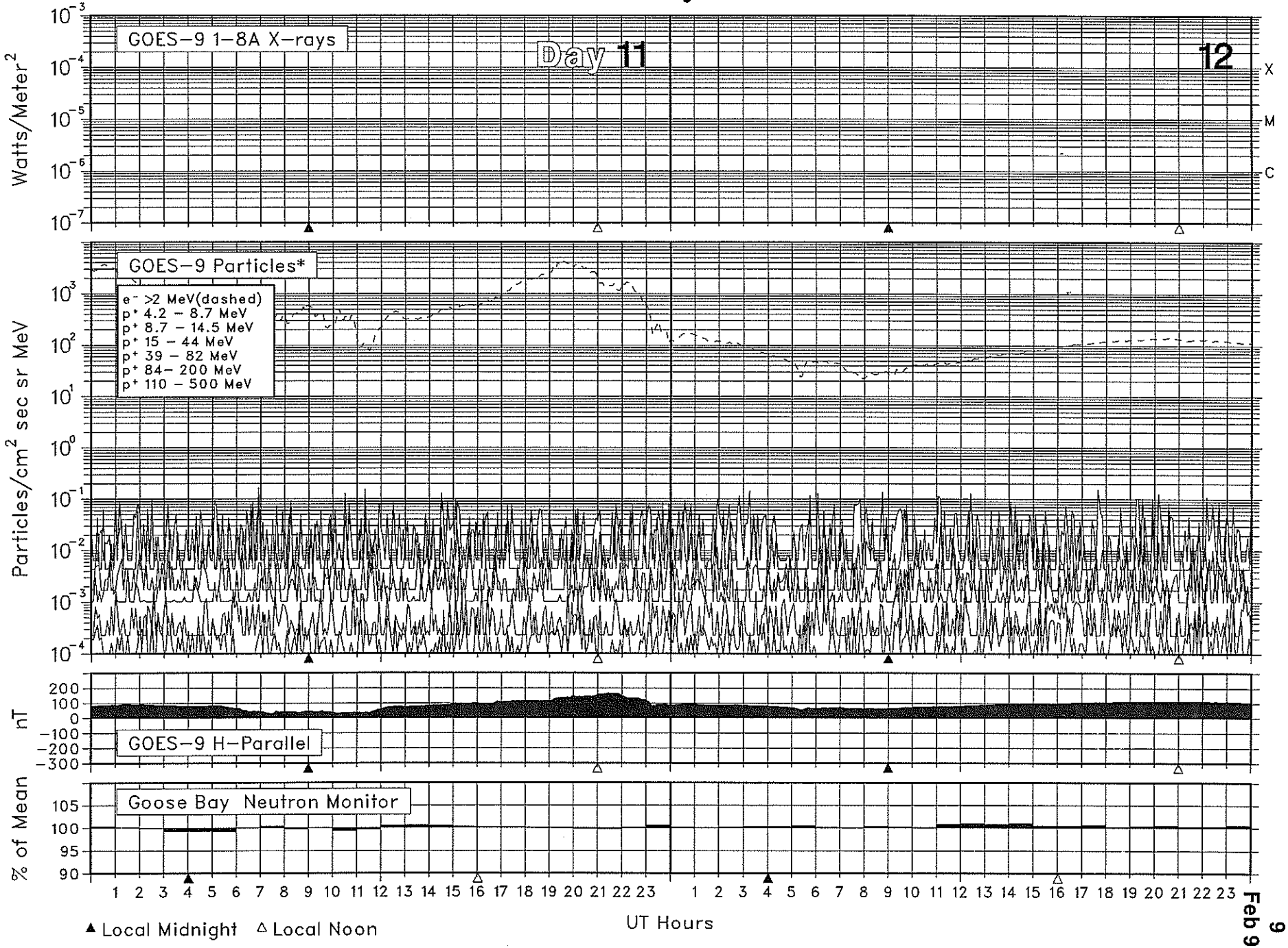

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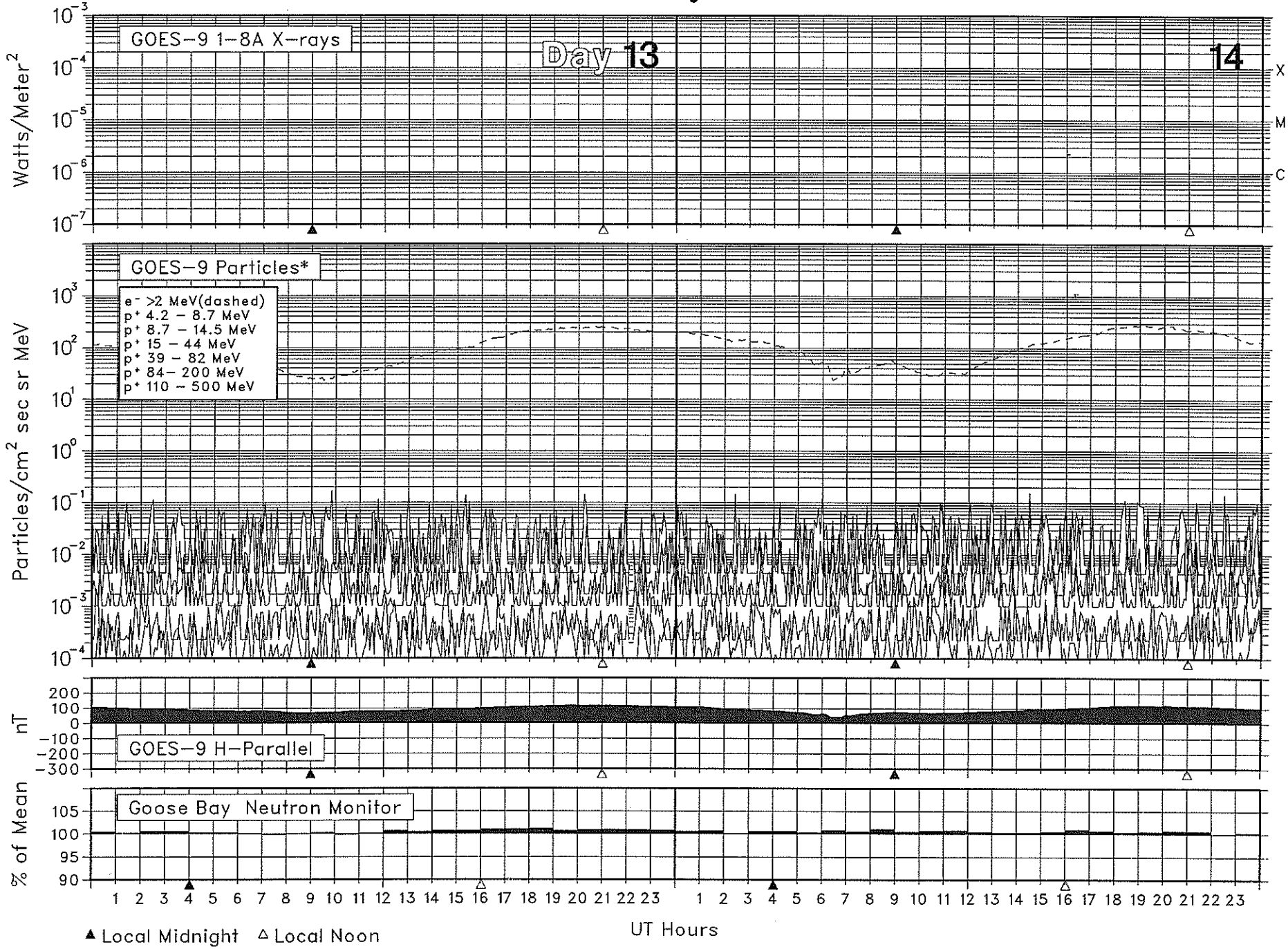

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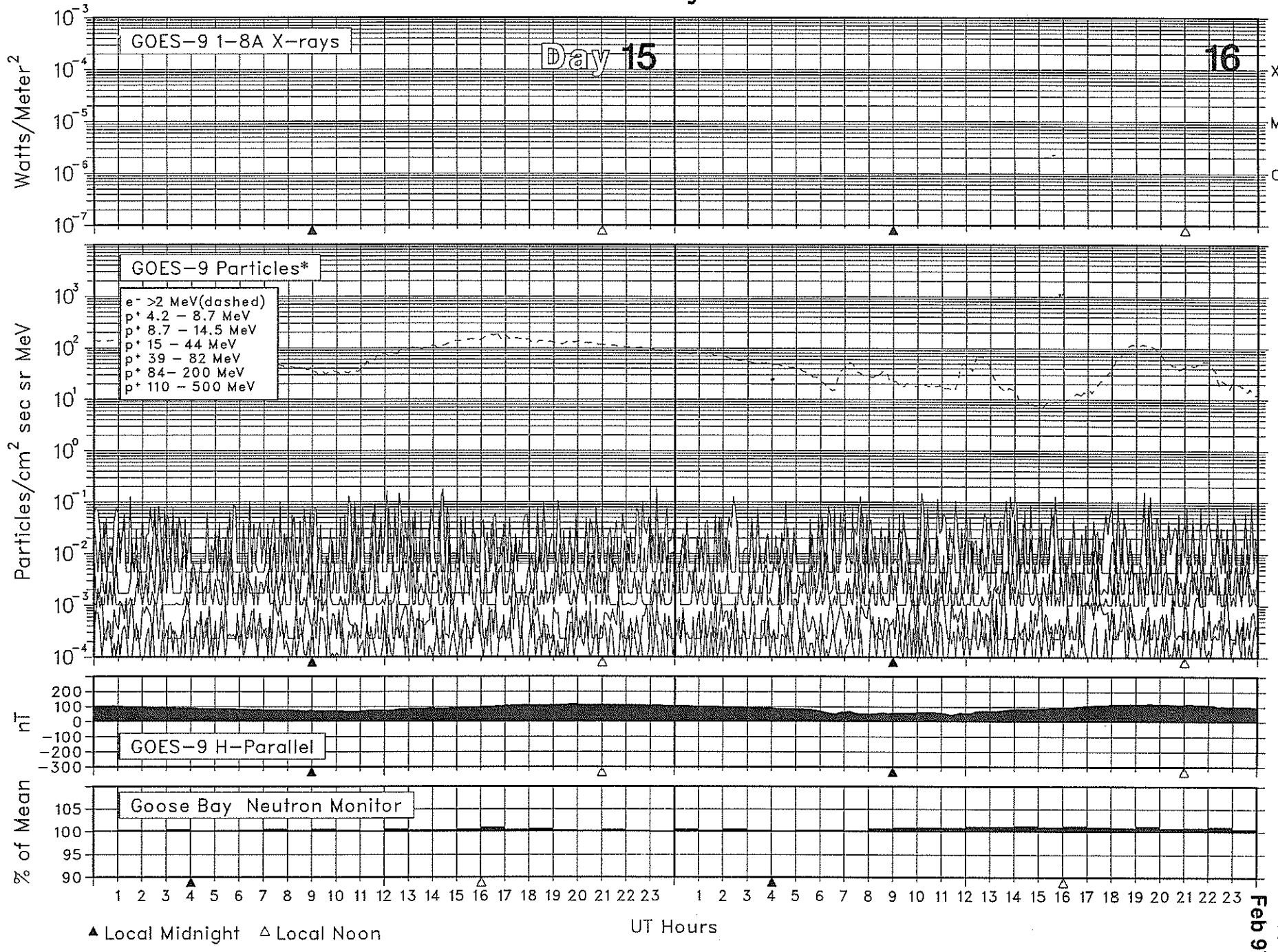

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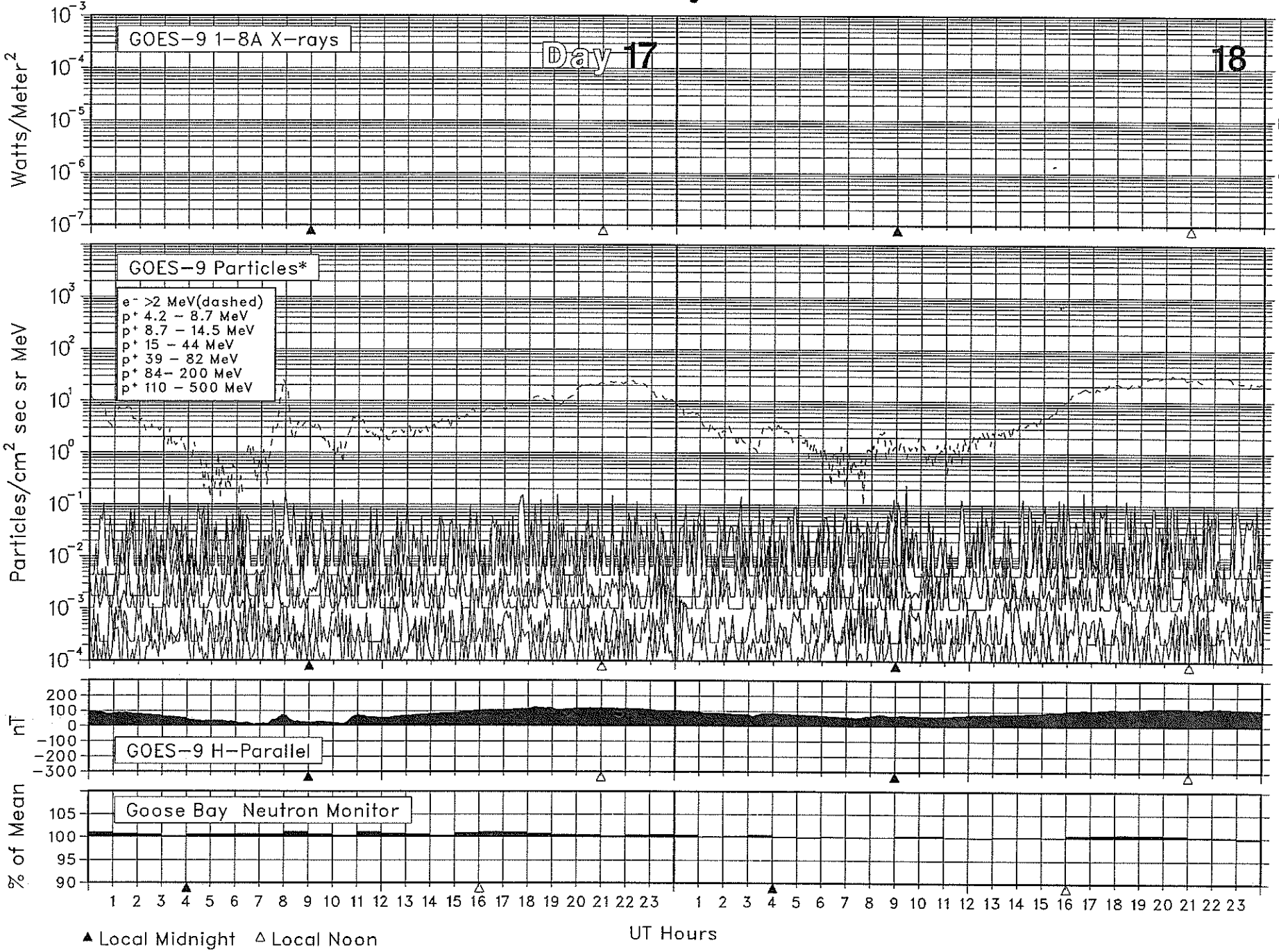

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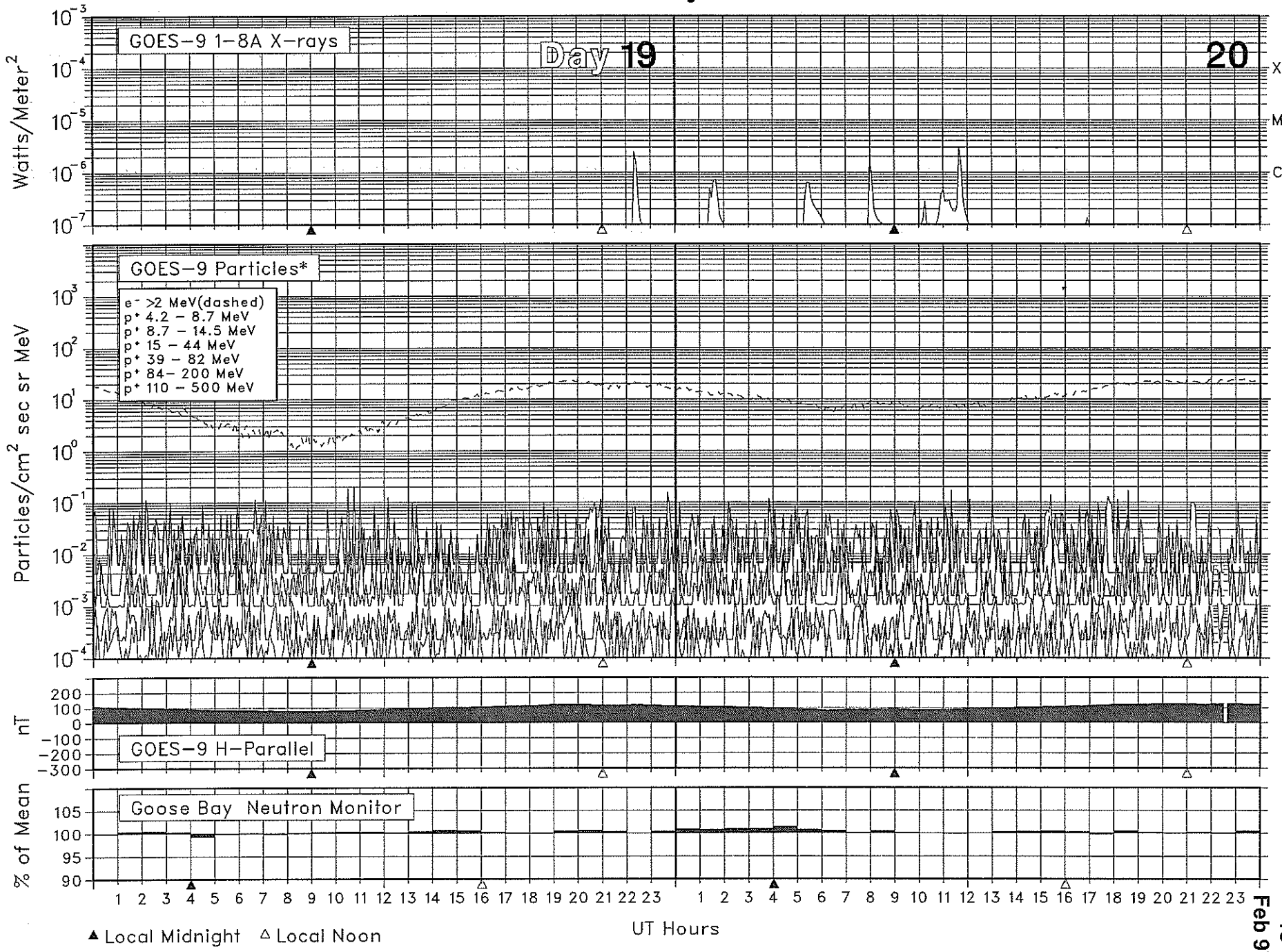

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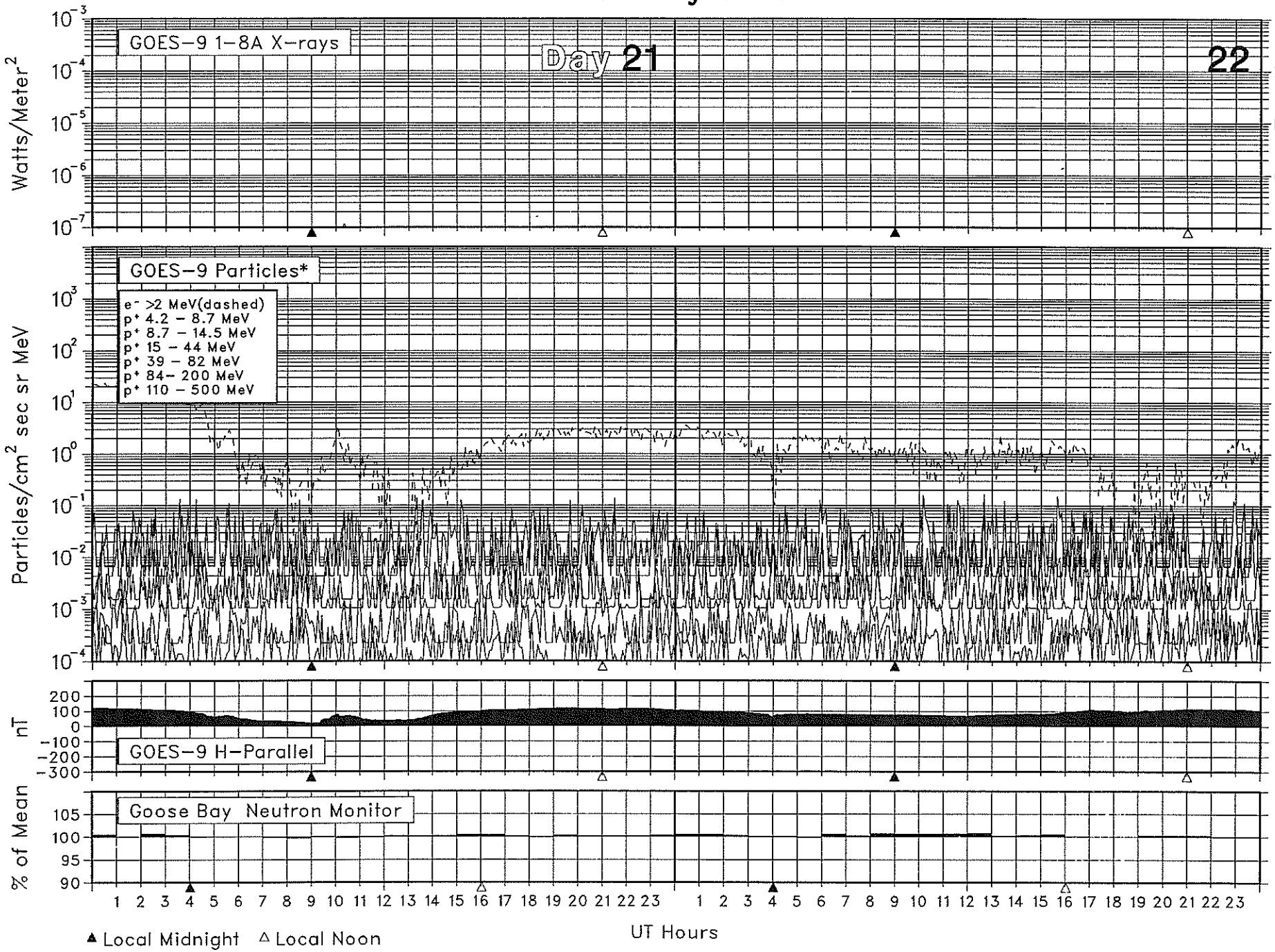

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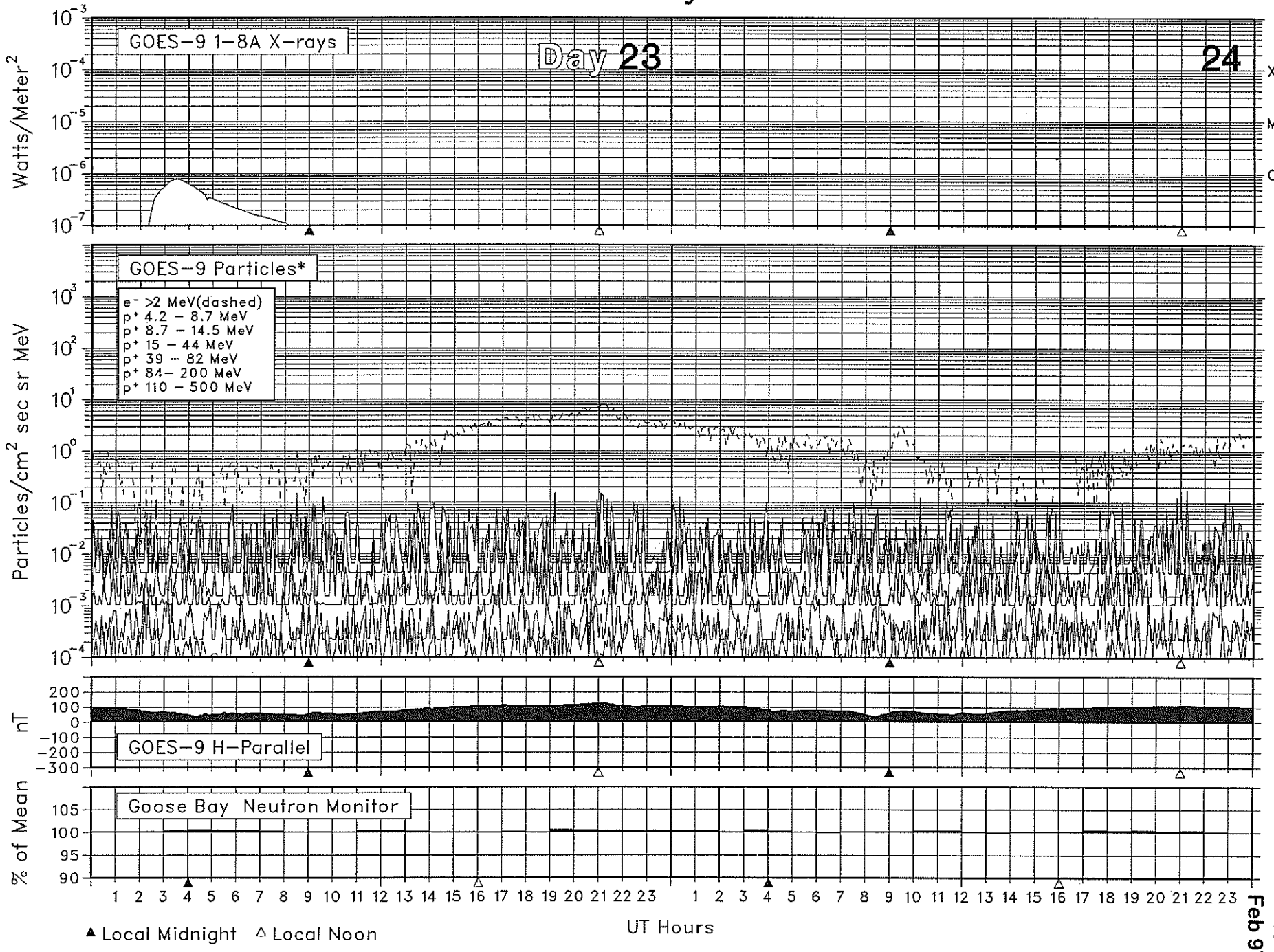

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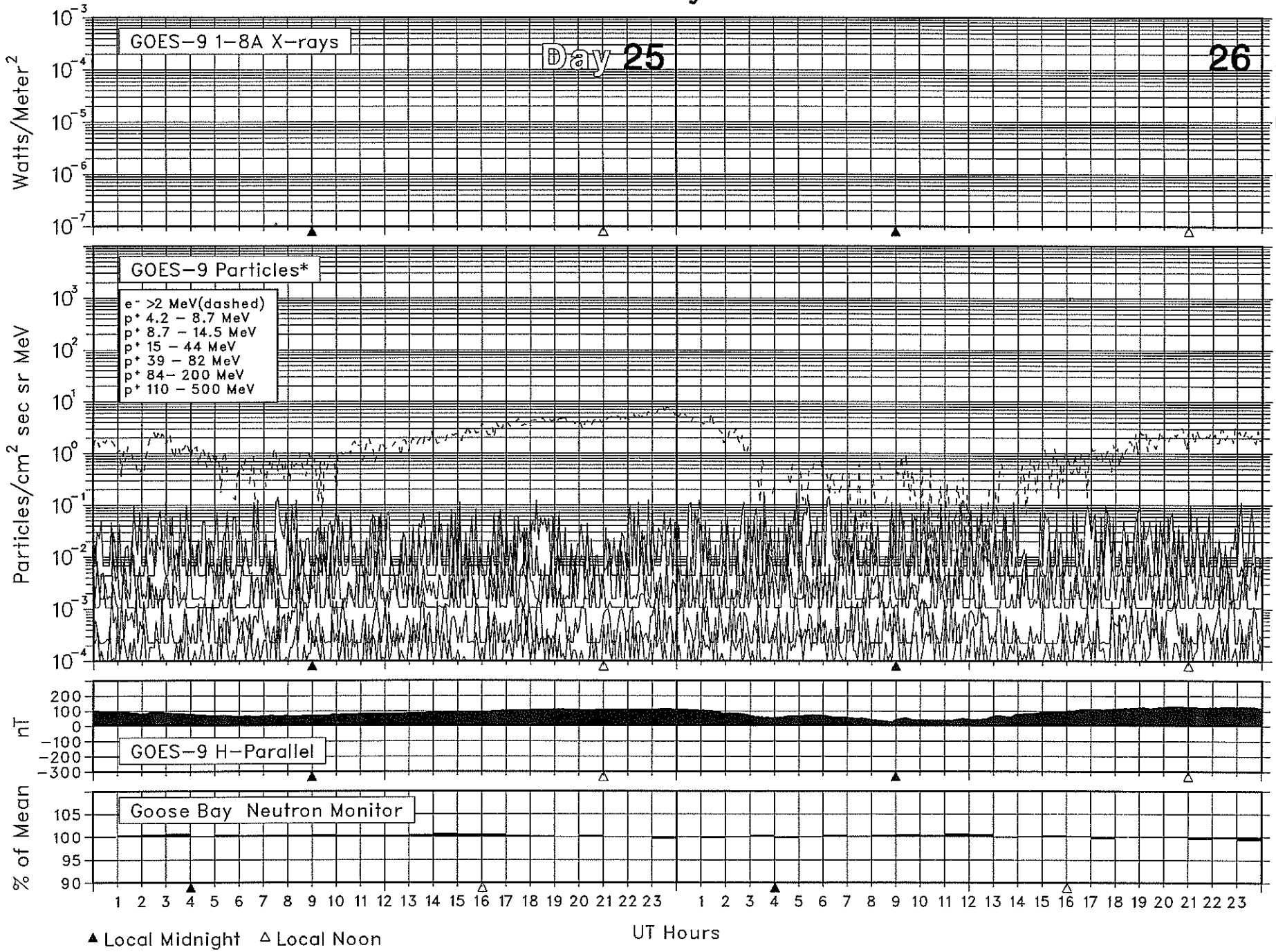

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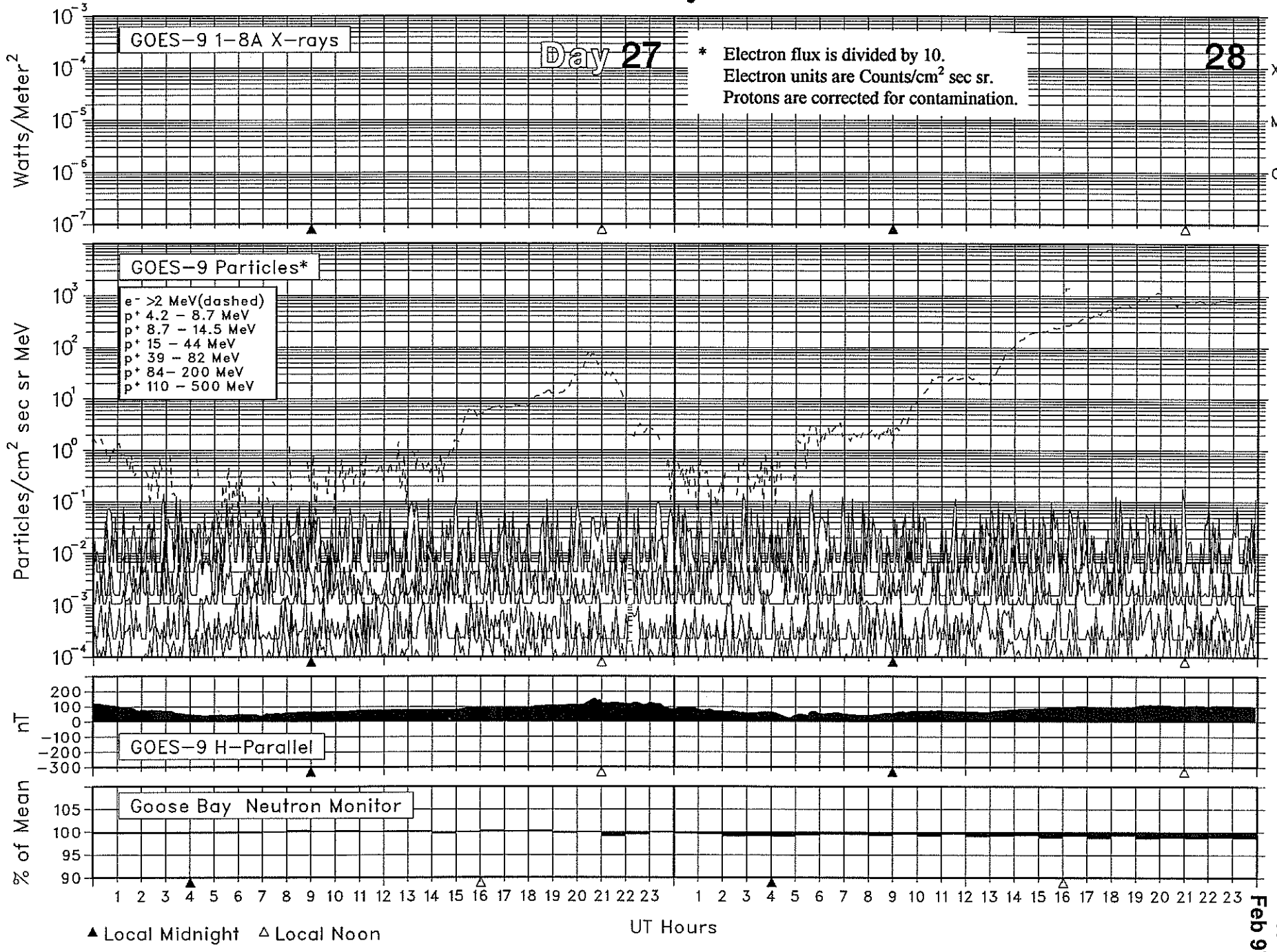

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A L E R T P E R I O D S
The International Space Environment Service

FEBRUARY 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			
032	01	31	13	72	8	N05	E07	0	0	0	01	Q	SOL: Quiet
								0	0	0	01		MAG: Quiet
								0	0	0	01		PRO: Quiet
033	02	01	14	71	3	N04	W08	0	0	0	02	Q	SOL: Quiet
								0	0	0	02		MAG: Quiet
								0	0	0	02		PRO: Quiet
034	03	02	36	78	6	N05	W22	1	0	0	03	Q	SOL: Quiet
						S21	E22	1	0	0	03	Q	MAG: Quiet
								0	0	0	03		PRO: Quiet
035	04	03	45	80	4	N05	W36	1	0	0	04	Q	SOL: Eruptive
						S21	E09	1	0	0	04	Q	MAG: Quiet
								0	0	0	04		PRO: Quiet
036	05	04	44	81	5	N05	W50	2	0	0	05	Q	SOL: Eruptive
						S12	W04	3	0	0	05	Q	MAG: Quiet
								0	0	0	05		PRO: Quiet
037	06	05	33	75	3			0	0	0	06		SOL: Eruptive
								0	0	0	06		MAG: Quiet
								0	0	0	06		PRO: Quiet
038	07	06	35	74	9	N06	W78	0	0	0	07	Q	SOL: Quiet
						S20	W32	0	0	0	07	Q	MAG: Quiet
						N35	W60	0	0	0	07	Q	PRO: Quiet
039	08	07	38	76	2	N04	W90	0	0	0	08	Q	SOL: Quiet
						S19	W45	0	0	0	08	Q	MAG: Quiet
						N33	W72	0	0	0	08	Q	PRO: Quiet
040	09	08	11	75	17	S20	W58	0	0	0	09	Q	SOL: Quiet
								0	0	0	09		MAG: Quiet
								0	0	0	09		PRO: Quiet
041	10	09	11	73	16	S19	W71	0	0	0	10	Q	SOL: Quiet
								0	0	0	10		MAG: Active
								0	0	0	10		PRO: Quiet
042	11	10	0	72	21			0	0	0	11		SOL: Quiet
								0	0	0	11		MAG: Minor
								0	0	0	11		PRO: Quiet
043	12	11	0	71	18			0	0	0	12		SOL: Quiet
								0	0	0	12		MAG: Active
								0	0	0	12		PRO: Quiet
044	13	12	0	71	7			0	0	0	13		SOL: Quiet
								0	0	0	13		MAG: Quiet
								0	0	0	13		PRO: Quiet
045	14	13	0	71	3			0	0	0	14		SOL: Quiet
								0	0	0	14		MAG: Quiet
								0	0	0	14		PRO: Quiet
046	15	14	0	71	4			0	0	0	15		SOL: Quiet
								0	0	0	15		MAG: Quiet
								0	0	0	15		PRO: Quiet
047	16	15	0	72	3			0	0	0	16		SOL: Quiet
								0	0	0	16		MAG: Quiet
								0	0	0	16		PRO: Quiet
048	17	16	0	72	7			0	0	0	17		SOL: Quiet
								0	0	0	17		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

FEBRUARY 1997

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Location Lat	Location Long	Flares Optical	Flares M	Flares X	Date of Forecast	Region Forecast(1)	Geoadvice(1)
049	18	17	0	73	18			0	0	0	18		SOL: Quiet
								0	0	0	18		MAG: Quiet
								0	0	0	18		PRO: Quiet
050	19	18	13	73	6	N10	W60	0	0	0	19	Q	SOL: Quiet
								0	0	0	19		MAG: Quiet
								0	0	0	19		PRO: Quiet
051	20	19	15	72	1	N05	W76	1	0	0	20	Q	SOL: Quiet
								0	0	0	20		MAG: Quiet
								0	0	0	20		PRO: Quiet
052	21	20	0	73	3			0	0	0	21		SOL: Quiet
								0	0	0	21		MAG: Quiet
								0	0	0	21		PRO: Quiet
053	22	21	0	73	9			0	0	0	22		SOL: Quiet
								0	0	0	22		MAG: Quiet
								0	0	0	22		PRO: Quiet
054	23	22	0	74	///			0	0	0	23		SOL: Quiet
								0	0	0	23		MAG: Quiet
								0	0	0	23		PRO: Quiet
055	24	23	0	75	10			0	0	0	24		SOL: Quiet
								0	0	0	24		MAG: Quiet
								0	0	0	24		PRO: Quiet
056	25	24	11	75	8			0	0	0	25		SOL: Quiet
								0	0	0	25		MAG: Quiet
								0	0	0	25		PRO: Quiet
057	26	25	12	74	5	N26	E40	0	0	0	26	Q	SOL: Quiet
								0	0	0	26		MAG: Quiet
								0	0	0	26		PRO: Quiet
058	27	26	0	74	12			0	0	0	27		SOL: Quiet
								0	0	0	27		MAG: Quiet
								0	0	0	27		PRO: Quiet
059	28	27	0	74	18			0	0	0	28		SOL: Quiet
								0	0	0	28		MAG: Active
								0	0	0	28		PRO: Quiet

(1) Region Forecast and Flare (SOL) Advice
- Q = Quiet (<50% probability of C-class flares)
- E = Eruptive (C-class flares expected, probability >=50%)
- A = Active (M-class flares expected, probability >=50%)
- M = Major (X-class flares expected, probability >=50%)
- P = Proton (Proton flares expected, probability >=50%)
- W = Warning (activity levels are expected to increase, but no numerical forecast given)
- / = No forecast available

Magnetic (MAG) Geoadvice

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

Proton (PRO) Geoadvice
'Quiet'

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

FEBRUARY 1997

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

STRATWARM ALERTS

02/04/97 03:30:00 GEOALERT WWA035 STRATWARM ALERT/MONDAY/STRATWARM EXISTS.
A LARGE WARM REGION EXISTS FROM NORTHWESTERN EUROPE ACROSS NORTHERN AND EASTERN EUROPE TO WESTERN AND CENTRAL SIBERIA. WARM AIR SPREADING EASTWARDS.

02/05/97 03:30:00 GEOALERT WWA036 STRATWARM ALERT/TUESDAY/STRATWARM EXISTS.
A LARGE WARM REGION EXISTS FROM NORTHEASTERN EUROPE TO CENTRAL SIBERIA.WARM AIR SPREADING EASTWARDS.

02/06/97 03:30:00 GEOALERT WWA037 STRATWARM ALERT/WEDNESDAY/STRATWARM EXISTS.
A LARGE REGION OF WEAKENING WARMING EXISTS FROM THE CASPIAN SEA ACROSS CENTRAL SIBERIA TO EASTERN SIBERIA. WARM AIR OVER EASTERN SIBERIA SPREADING NORTHWARDS TODAY.

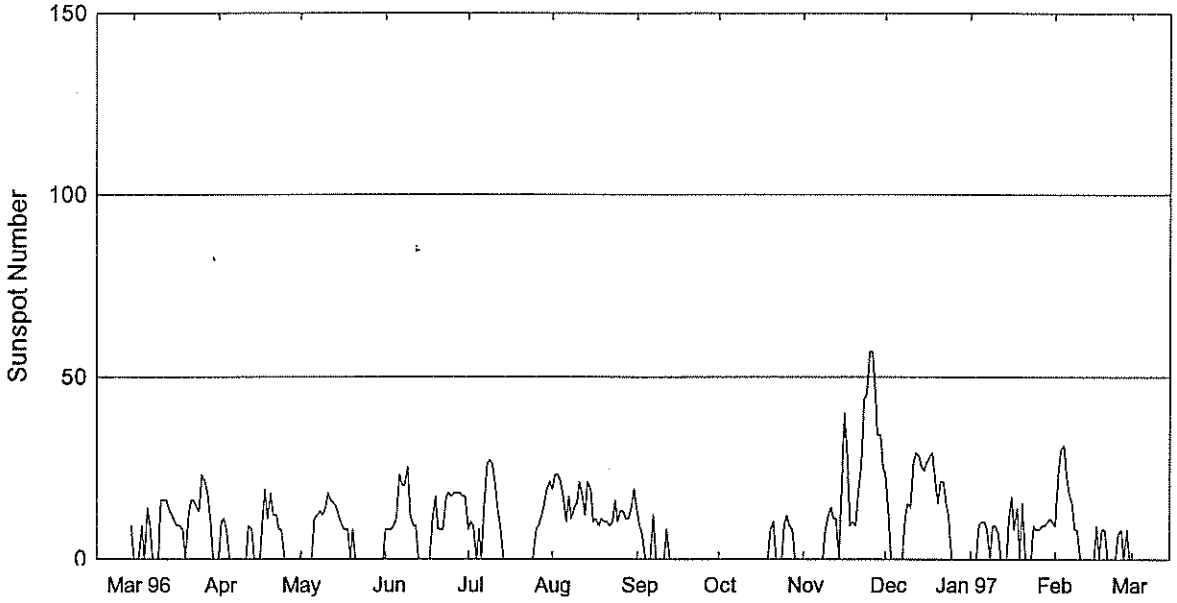
02/07/97 03:30:00 GEOALERT WWA038 STRATWARM ALERT/THURSDAY/STRATWARM EXISTS.
A LARGE REGION OF WEAKENING WARMING CONTINUES FROM THE CASPIAN SEA ACROSS SOUTHERN SIBERIA TO EASTERN SIBERIA. WARM AIR OVER EASTERN SIBERIA SPREADING NORTHEASTWARDS. A NEW WARM AREA EXISTS OVER THE NORTH ATLANTIC BETWEEN NEWFOUNDLAND AND GREAT BRITAIN,TODAY.

02/08/97 03:30:00 GEOALERT WWA039 STRATWARM ALERT/FRIDAY/STRATWARM EXISTS.
ONE LARGE WARMING OVER SOUTHWESTERN EUROPE AND THE OTHER LARGE WARM REGION FURTHER OVER EASTERN EUROPE ACROSS CENTRAL SIBERIA TO EASTERN SIBERIA. DISTURBED CONDITIONS IN THE UPPER STRATOSPHERE RESULTING IN A REVERSED RADIANCE GRADIENT BETWEEN 60N AND THE POLE AT 1, 4 HPA.

02/09/97 03:30:00 GEOALERT WWA040 NONE

02/10/97 03:30:00 GEOALERT WWA041 NONE

International Relative Sunspot Numbers
Mar 1996 - Feb 1997

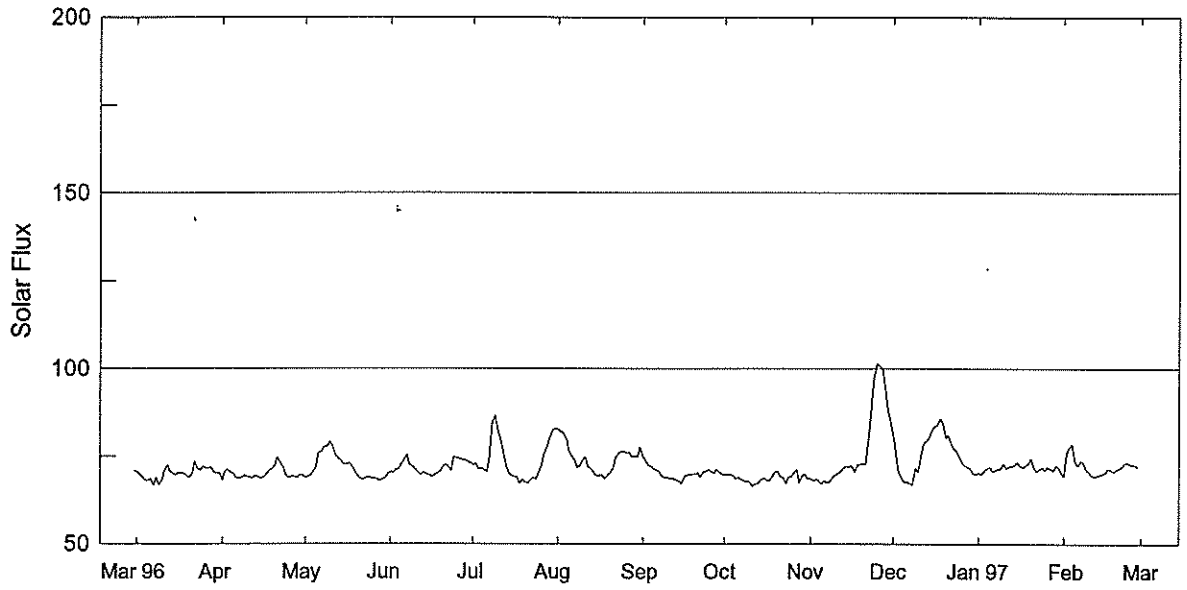


Day	Mar 96	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 97*	Feb *
1	0	0	0	8	8	19	13	0	0	23	0	9
2	0	10	0	8	10	23	9	0	0	12	0	23
3	0	11	0	8	9	23	7	0	0	0	0	30
4	9	8	0	9	0	21	0	0	0	0	9	31
5	0	0	0	11	8	16	0	0	0	0	10	23
6	14	0	11	23	0	10	0	0	0	0	10	18
7	9	0	12	20	14	17	12	0	0	0	8	15
8	0	0	13	20	26	11	0	0	0	11	0	8
9	0	0	12	25	27	14	0	0	8	15	9	8
10	0	0	14	12	26	15	0	0	12	14	9	0
11	16	0	18	9	20	21	0	0	14	26	7	0
12	16	9	16	9	13	17	8	0	11	29	0	0
13	16	8	15	0	9	12	0	0	11	28	0	0
14	13	0	14	0	0	21	0	0	0	25	0	0
15	12	0	11	0	0	19	0	0	20	24	11	0
16	10	0	9	0	0	10	0	0	40	26	17	9
17	9	10	8	0	0	11	0	0	27	28	8	0
18	9	19	8	10	0	9	0	0	9	29	14	8
19	8	11	0	17	0	11	0	0	10	21	0	8
20	0	18	8	8	0	10	0	8	9	15	15	0
21	12	12	0	8	0	10	0	10	18	21	0	0
22	16	12	0	8	0	9	0	0	26	21	0	0
23	16	8	0	17	0	10	0	0	44	15	0	0
24	14	8	0	18	0	16	0	0	45	12	9	7
25	13	0	0	17	0	10	0	9	57	0	8	8
26	23	0	0	18	8	13	0	12	57	0	8	0
27	21	0	0	18	9	13	0	9	48	0	9	8
28	18	0	0	18	12	11	0	8	34	0	9	0
29	10	0	0	17	15	11	0	0	34	0	10	
30	0	0	0	17	19	14	0	0	25	0	11	
31	0		0		21	19		0		0	10	
Mean	9.2	4.8	5.5	11.8	8.2	14.4	1.6	1.8	18.6	12.7	6.5	7.6

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Mar 1996 - Feb 97

Adjusted to 1 AU



Day	Mar 96	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb
1	70.6	68.1	68.9	70.4	72.4	82.8	74.8	69.6	68.5	80.8	70.0	69.2
2	69.8	70.6	69.0	70.2	72.8	81.9	73.6	69.8	67.9	75.7	69.7	76.2
3	69.0	71.1	69.5	71.2	71.3	81.6	72.4	69.6	68.3	70.7	70.8	77.4
4	68.1	70.2	70.6	71.2	71.5	79.9	72.0	69.4	67.8	68.6	71.4	78.4
5	68.0	70.0	72.0	72.8	71.0	76.2	71.4	68.5	67.1	67.6	71.9	73.3
6	68.4	68.8	76.0	73.8	70.5	75.1	70.8	68.8	68.0	67.6	70.6	72.2
7	66.8	68.6	76.3	75.4	74.3	73.7	70.5	68.2	67.3	67.1	70.9	73.7
8	68.8	68.6	77.5	72.4	84.3	71.7	69.2	67.7	67.8	66.6	71.3	73.2
9	66.6	69.3	77.7	72.0	86.5	72.1	68.8	67.7	68.9	71.5	71.3	71.2
10	68.2	69.1	79.1	71.1	82.5	73.6	68.9	67.4	69.6	70.2	72.9	70.4
11	70.9	68.8	78.0	70.2	79.6	74.8	68.5	66.4	70.0	75.2	71.6	69.3
12	72.4	68.7	75.1	69.5	76.2	72.0	68.6	66.9	70.7	78.6	72.1	69.1
13	70.5	69.3	74.3	70.3	72.5	71.4	68.1	67.3	71.5	79.2	72.1	69.3
14	70.0	69.1	73.4	69.8	70.0	70.5	67.9	68.2	72.1	80.0	72.4	69.6
15	69.6	68.5	72.5	69.5	69.3	69.3	67.1	68.6	71.9	82.3	73.3	70.1
16	70.3	68.8	72.6	69.0	69.1	69.3	68.7	68.1	72.2	83.5	72.4	70.3
17	70.0	69.9	72.9	69.6	69.0	69.5	69.6	68.0	70.4	83.6	71.7	71.4
18	70.0	70.8	72.0	69.9	67.0	68.4	69.6	69.0	72.4	85.6	72.2	71.2
19	69.4	71.2	70.4	70.7	68.3	69.3	69.8	70.4	72.6	84.6	72.9	70.4
20	68.8	72.3	69.6	71.9	67.5	70.1	69.7	70.6	72.7	80.3	74.3	71.0
21	69.9	74.8	68.5	72.6	67.2	71.3	70.3	69.0	72.6	80.9	71.8	71.6
22	73.4	73.2	68.1	72.0	68.2	74.5	69.1	69.1	80.6	78.9	70.7	71.9
23	71.6	71.9	68.9	70.9	68.9	75.8	70.4	67.1	88.7	76.9	71.1	73.0
24	70.9	69.5	69.0	74.7	68.3	76.2	70.4	69.1	97.3	76.4	71.9	73.1
25	72.1	68.7	68.7	74.3	70.4	76.3	71.2	69.1	101.7	74.7	70.9	72.6
26	71.6	69.1	68.7	74.2	72.4	75.8	70.4	70.3	100.8	73.0	71.9	72.4
27	71.6	69.2	68.4	73.8	75.6	75.9	70.1	71.2	100.0	72.2	71.3	72.4
28	71.7	68.6	67.8	73.8	77.8	74.7	71.2	67.5	95.4	71.8	70.8	71.5
29	70.3	69.5	68.3	73.3	80.3	75.0	70.3	69.4	88.5	71.4	72.4	
30	70.1	69.6	68.4	73.1	82.3	74.7	69.7	69.7	85.1	70.1	71.5	
31	70.0		69.9		82.7	77.6		68.6		69.8	70.3	
Mean	70.0	69.9	71.7	71.8	73.5	74.2	70.1	68.7	76.9	75.3	71.6	72.0

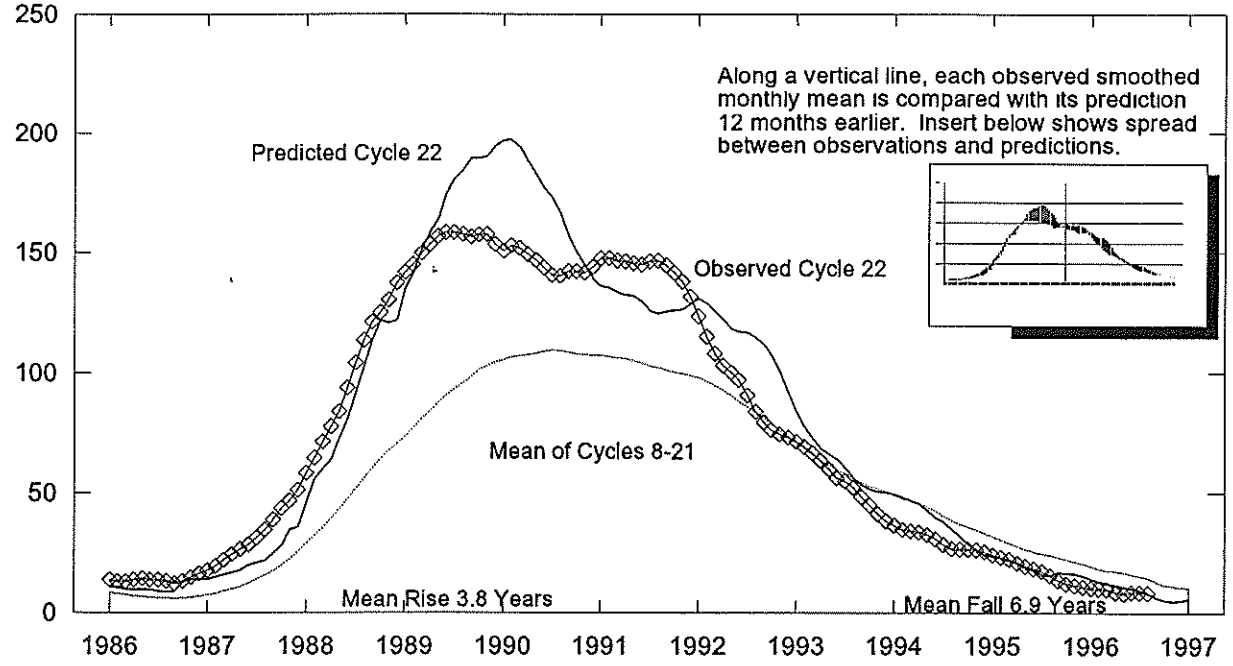
DAILY SOLAR INDICES

February 1997

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers 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	32	23	9	9	71.3	474	152	120	69.2	68	48	34	24	10
2	33	24	23	23	78.4	477	156	124	76.2	70	48	34	24	11
3	34	25	30	27	79.6	479	159	133	77.4	76	51	34	24	12
4	35	26	31	25	80.7	493	207	129	78.4	76	51	35	25	15
5	36	27	23	20	75.3	489	199	126	73.3	74	51	35	25	14
6	37	1	18	21	74.2	497	204	124	72.2	72	50	34	24	10
7	38	2	15	22	75.7	485	205	125	73.7	74	51	36	25	12
8	39	3	8	8	75.2	492	202	124	73.2	73	51	35	24	11
9	40	4	8	7	73.2	504	205	124	71.2	71	50	35	24	10
10	41	5	0	0	72.3	506	203	122	70.4	70	48	34	25	11
11	42	6	0	0	71.1	503	195	121	69.3	69	47	33	23	10
12	43	7	0	0	70.9	513	196	122	69.1	68	47	33	24	10
13	44	8	0	0	71.1	515	199	121	69.3	68	47	34	23	10
14	45	9	0	0	71.3	528	224	120	69.6	68	47	34	16	10
15	46	10	0	0	71.8	535	215	121	70.1	69	48	35	31	11
16	47	11	9	6	72.0	510	215	122	70.3	70	48	34	24	11
17	48	12	0	7	73.1	507	215	121	71.4	69	47	34	23	9
18	49	13	8	8	72.9	500	227	123	71.2	70	48	33	23	10
19	50	14	8	7	72.0	510	235	122	70.4	70	48	34	24	11
20	51	15	0	6	72.6	509	228	124	71.0	70	48	35	24	11
21	52	16	0	0	73.2	494	199	120	71.6	68	48	34	24	11
22	53	17	0	0	73.5	507	204	123	71.9	70	49	34	24	10
23	54	18	0	5	74.6	502	211	127	73.0	73	50	30	21	9
24	55	19	7	7	74.6	506	206	125	73.1	72	49	29	20	8
25	56	20	8	7	74.1	506	231	125	72.6	72	51	33	22	9
26	57	21	0	4	73.8	514	208	124	72.4	72	51	34	23	10
27	58	22	8	3	73.8	505	206	124	72.4	71	50	33	23	10
28	59	23	0	0	72.8	508	216	123	71.5	72	50	--	--	--
MEAN			7.6	7.9	73.8	502	204	123	72.0	70	49	33	23	10

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	8	7	7	6	9
( )									(1)	(3)	(4)	(4)	(1)
1997	7	7	8	8	9	10	11	11	12	13	14	16	11
( )	(4)	(5)	(6)	(7)	(9)	(11)	(13)	(14)	(16)	(17)	(19)	(22)	(12)

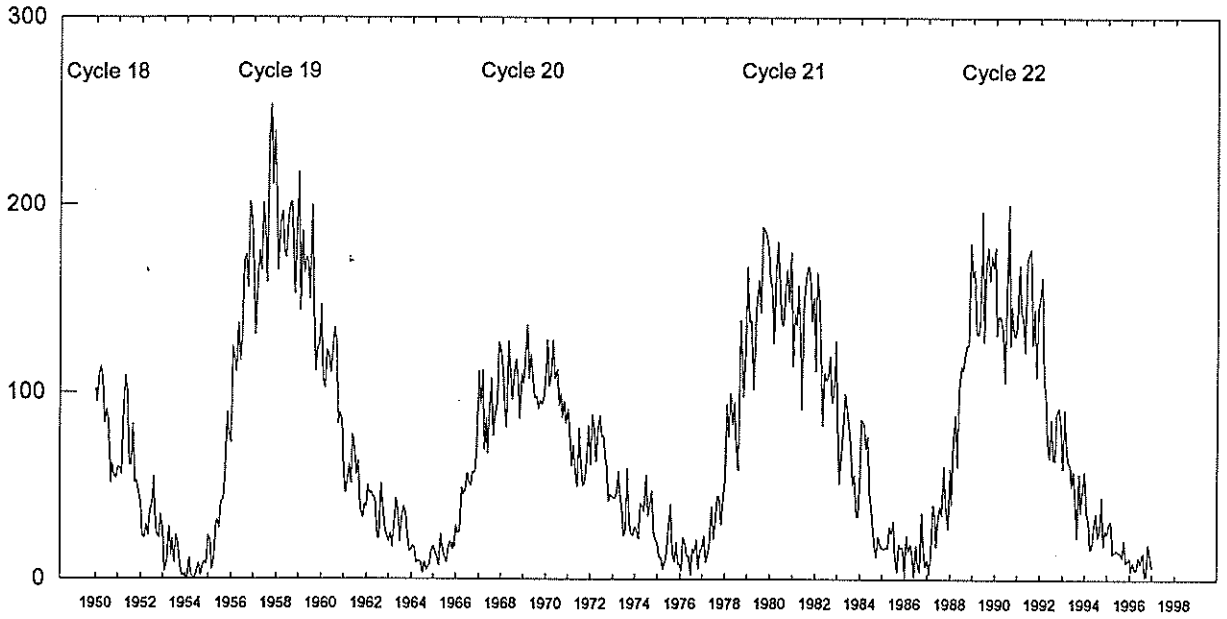
Solar Cycle 22 | Min, Max, and Predictions

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 August 1997 prediction. There exists a 90% chance that in August 1997, the actual smoothed number will fall somewhere between 0 and 25.

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 - Feb 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											7.1	

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

FEBRUARY 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
LEAR	02	0116	0116	0130	N03	W09	8015	02	1.4	14	SF		3	E		15		
GOES		0427	0439	0450						23		B 3.5						
SVTO		0636E	0638U	0646D	S23	E36		02	5.0	10D	SF	C 2.6	2	E		52		F
GOES		0832	0842	0855						23		B 3.8						
SVTO		0931	0933	0939	S20	E31		02	4.8	8	SF		3	E		17		
SVTO		0943	0945	0959	S20	E31		02	4.8	16	SF	B 3.7	3	E		26		
SVTO		1056	1057U	1104D	S20	E30		02	4.7	8D	SF	B 5.2	3	E		19		
GOES		1124	1146	1148						24		B 9.0						
GOES		1134	1137	1140						6		B 1.4						
SVTO		1145	1146	1150	S20	E30		02	4.8	5	SF		3	E		19		
GOES		1242	1246	1251						9		B 1.1						
SVTO		1348	1351	1401	S20	E28		02	4.7	13	SF	B 6.4	3	E		13		
RAMY		1428	1434	1604	S21	E27		02	4.7	96	SF		3	E		25		F
GOES		1457	1500	1506						9		B 1.5						
GOES		1515	1519	1521						6		B 1.9						
GOES		1537	1540	1543						6		B 1.4						
GOES		1720	1726	1736						16		B 1.5						
HOLL		1928	1931	1933	S21	E25	8016	02	4.7	5	SF	B 6.2	3	E		12		
GOES		2042	2045	2047						5		B 1.5						
GOES		2116	2124	2130						14		B 9.0						
GOES	03	0003	0007	0015						12		B 1.5						
GOES		0200	0203	0207						7		B 1.2						
GOES		0446	0450	0453						7		B 7.2						
GOES		0610	0620	0630						20		B 3.5						
GOES		0912	0917	0925						13		B 1.3						
SVTO		1017	1018	1030D	S22	E16	8016	02	4.6	13D	SF	B 4.2	3	E		33		F
LEAR		1018E	1018	1024D	S22	E17	8016	02	4.7	6D	SF		3	E		40		F
RAMY		1258	1300	1329	N05	W28	8015	02	1.4	31	SF		3	E		15		F
GOES		1517	1521	1523						6		B 1.4						
GOES		1537	1541	1544						7		B 1.8						
GOES		1548	1551	1553						5		B 1.7						
GOES		1618	1630	1639						21		B 1.7						
GOES		1820	1838	1850						30		B 2.6						
GOES	04	0042	0057	0100						18		B 3.0						
PALE		0107	0107	0111	S21	E08	8016	02	4.6	4	SF	B 3.6	3	E		13		
LEAR		0125	0129	0136	N05	W36	8015	02	1.4	11	SF		3	E		16		
GOES		0207	0211	0213						6		B 1.2						
GOES		0440	0444	0447						7		B 1.6						
LEAR		0524	0530	0536	S21	E05	8016	02	4.6	12	SF	B 2.8	3	E		22		
SVTO		1116E	1118U	1132D	S21	E01	8016	02	4.5	16D	SF	C 1.8	3	E		20		F
SVTO		1314	1314	1318	N06	W46	8015	02	1.1	4	SF	B 1.6	3	E		24		
GOES		1343	1350	1359						16		B 1.2						
GOES		1422	1436	1454						32		B 2.4						
RAMY		1846	1852	1913	N04	W48	8015	02	1.2	27	SF	B 5.8	3	E		17		F
PALE		1848	1849	1910	N05	W46	8015	02	1.3	22	SF		3	E		14		
GOES	07	1914	1917	1923						9		B 1.2						
GOES	08	1356	1359	1402						6		B 1.9						
GOES		1612	1616	1623						11		B 3.3						
GOES		1633	1636	1639						6		B 1.4						
GOES		1746	1750	1753						7		B 1.3						
HOLL	19	2220	2222	2228	N08	W79	8018	02	14.0	8	SF	C 3.9	3	E		24		
GOES	20	0122	0129	0132						10		B 6.1						
GOES		0134	0139	0143						9		C 1.0						
GOES		0516	0529	0533						17		B 9.0						
GOES		0758	0803	0805						7		C 3.4						
GOES		1010	1015	1019						9		B 3.5						
GOES		1044	1100	1105						21		B 5.0						
GOES		1137	1144	1146						9		C 4.8						
GOES		1652	1655	1658						6		B 1.6						
GOES		1717	1721	1723						6		B 1.5						
GOES	21	1015	1019	1028						13		B 1.3						

Hα SOLAR FLARES

FEBRUARY 1997

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	23	0221	0333	0434						133		B 7.2						
GOES	25	0727	0731	0739						12		B 1.2						

"Remarks"

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

Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

FEBRUARY 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
02	2695	LEAR	4 S/F	0630.0	0633.0	5.0	1.0			QL=4 ST=2 TYP=3
	2695	SVTO	20 GRF	0631.0	0632.0	2.0	3.0			QL=2 ST=3 TYP=2
	2695	SVTO	8 S	1145.0	1146.0	1.0	4.0			QL=4 ST=3 TYP=3
	8800	SVTO	8 S	1145.0	1146.0	1.0	2.0			QL=4 ST=3 TYP=3

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

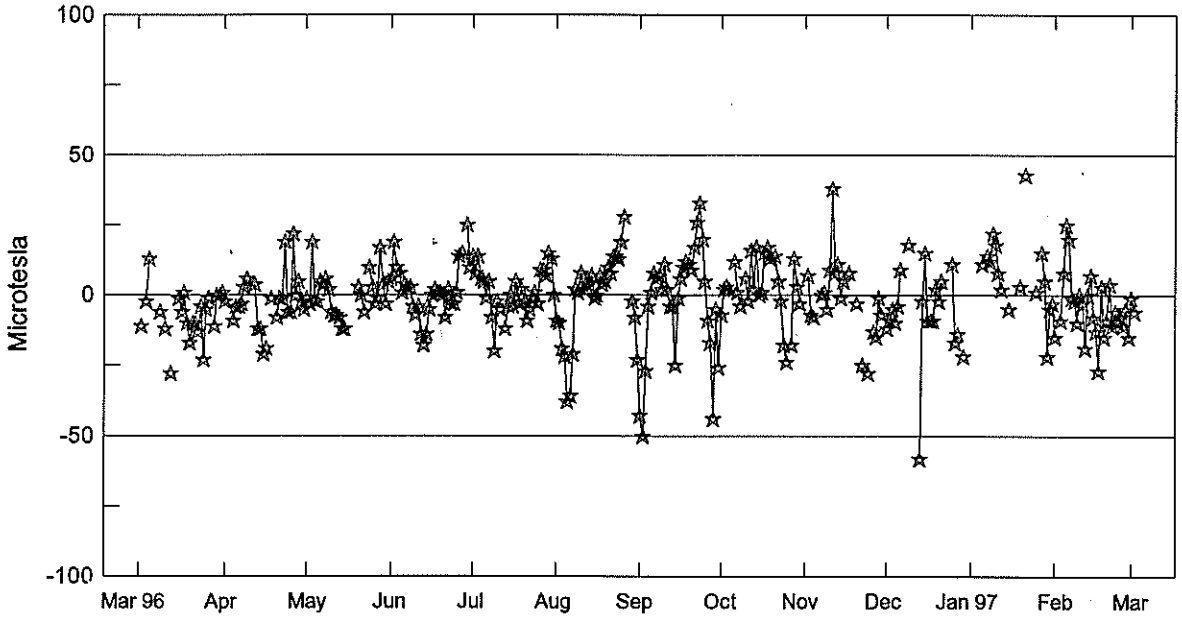
Explanation of Type Code:

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

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

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

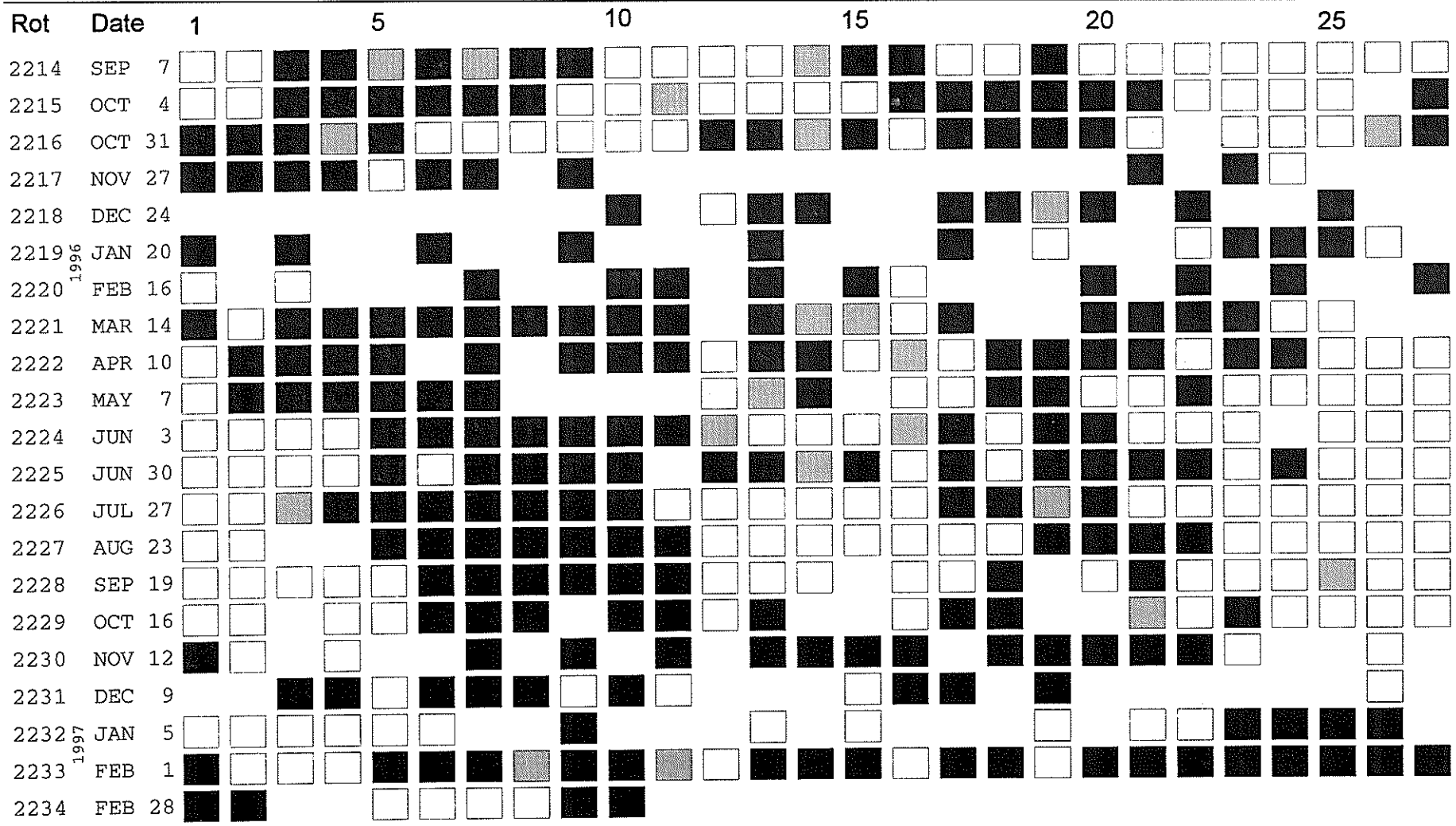
Stanford Mean Solar Magnetic Field (Microtesla)
"Sun-As-A-Star"



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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

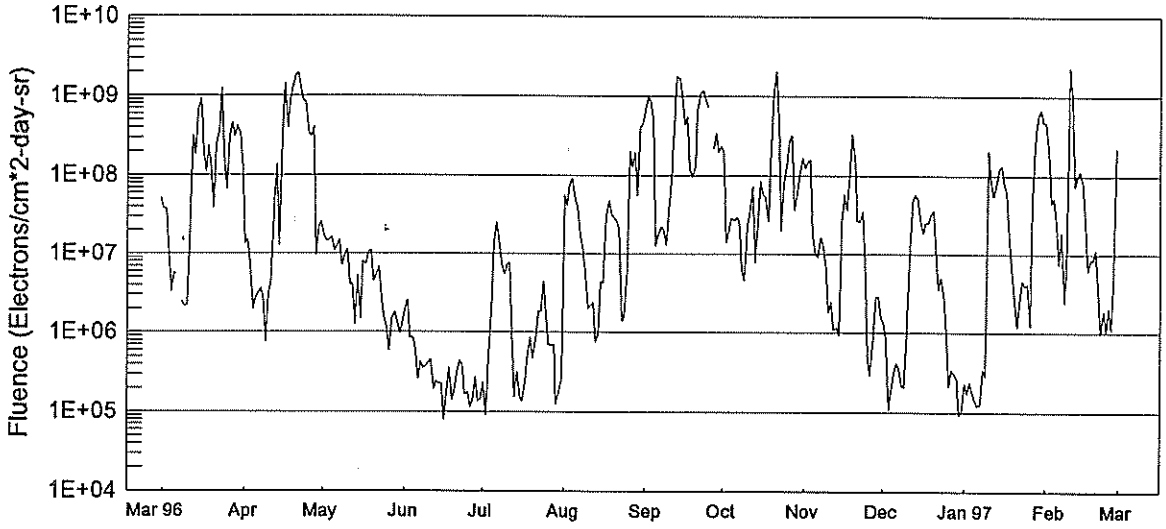


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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
Mar 96 - Feb 97



Day	Mar 96	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97	Feb
1	3.8E+07	1.3E+07	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
2	3.6E+07	1.5E+07	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
3	9.9E+06	7.5E+06	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
4	3.2E+06	1.9E+06	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
5	5.7E+06	2.6E+06	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
6	5.5E+06	3.1E+06	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
7	--	3.6E+06	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
8	2.4E+06	2.6E+06	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
9	2.1E+06	7.5E+05	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
10	2.2E+06	3.0E+06	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
11	2.0E+07	4.3E+06	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
12	3.1E+08	4.9E+07	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
13	1.8E+08	1.3E+08	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
14	6.6E+08	1.2E+07	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
15	9.2E+08	2.9E+08	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
16	1.9E+08	1.4E+09	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
17	1.1E+08	3.9E+08	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
18	2.3E+08	8.2E+08	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
19	1.2E+08	1.3E+09	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
20	3.8E+07	1.8E+09	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
21	2.4E+08	1.9E+09	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
22	3.7E+08	1.2E+09	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
23	1.2E+09	8.6E+08	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
24	1.3E+08	8.3E+08	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
25	6.6E+07	3.3E+08	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
26	3.0E+08	3.0E+08	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
27	4.5E+08	4.1E+08	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
28	3.1E+08	9.5E+06	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
29	4.1E+08	2.1E+07	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	
30	3.3E+08	2.6E+07	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	
31	1.2E+08		1.3E+06		2.5E+05	4.4E+08		1.6E+08		1.0E+05	4.7E+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 631 Part I

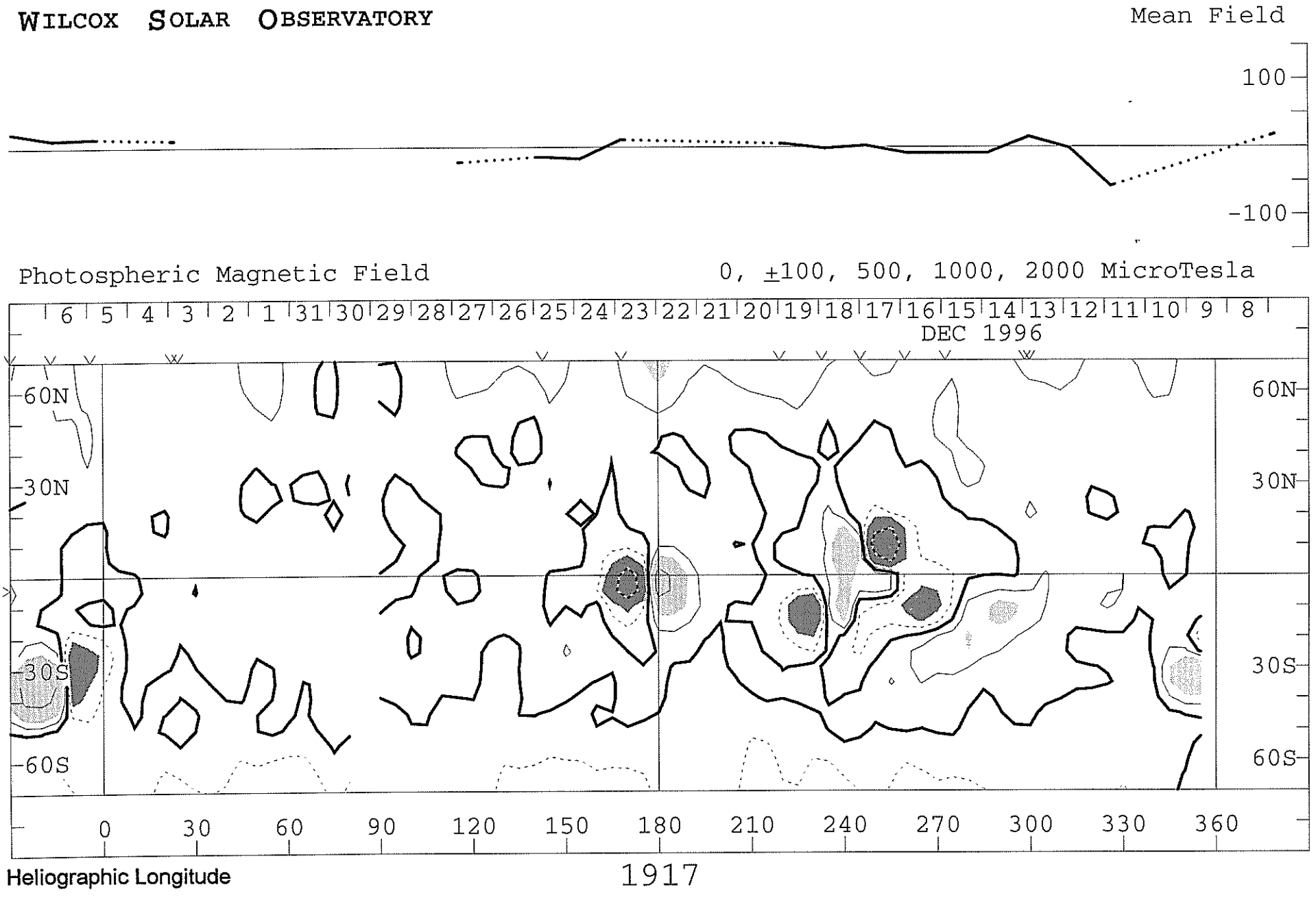
DATA FOR JANUARY 1997

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1917

(9 December 1996 to 5 January 1997)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

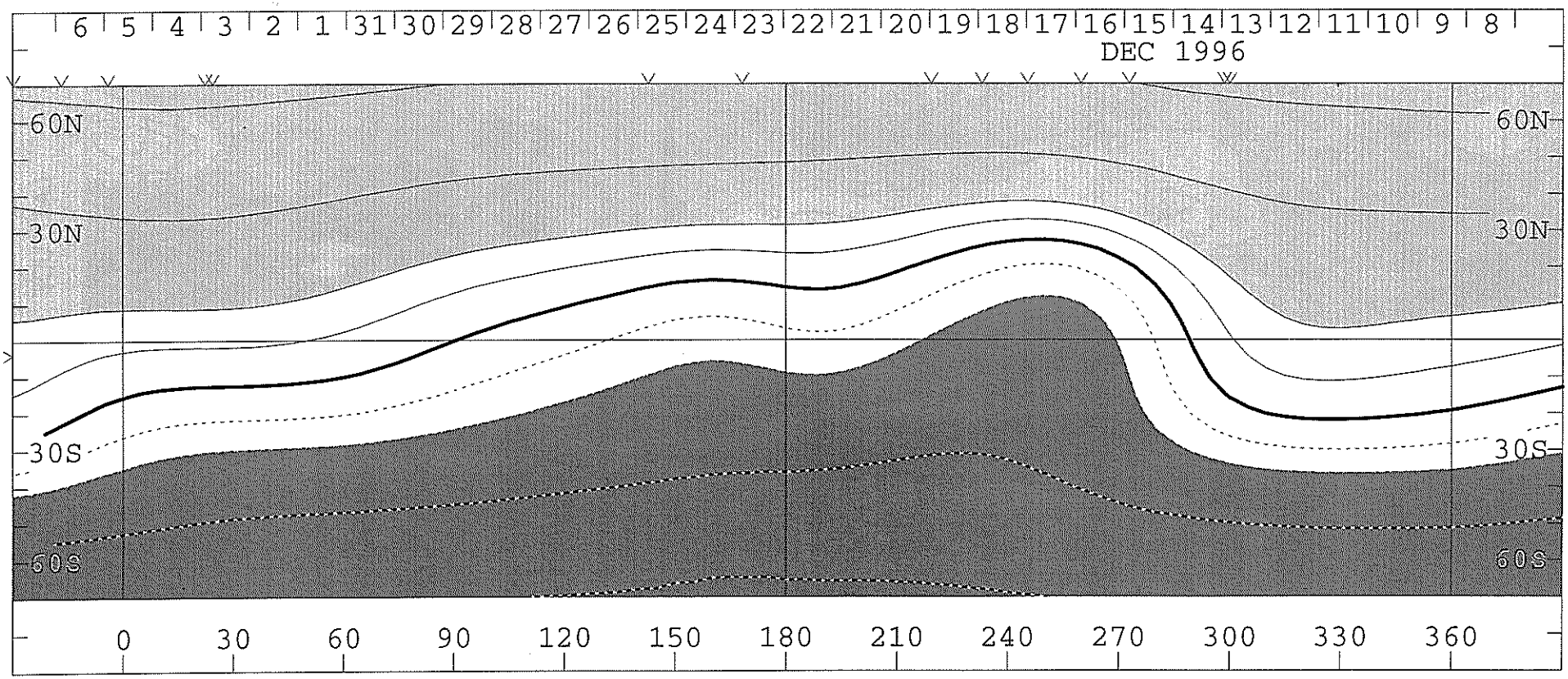
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1917

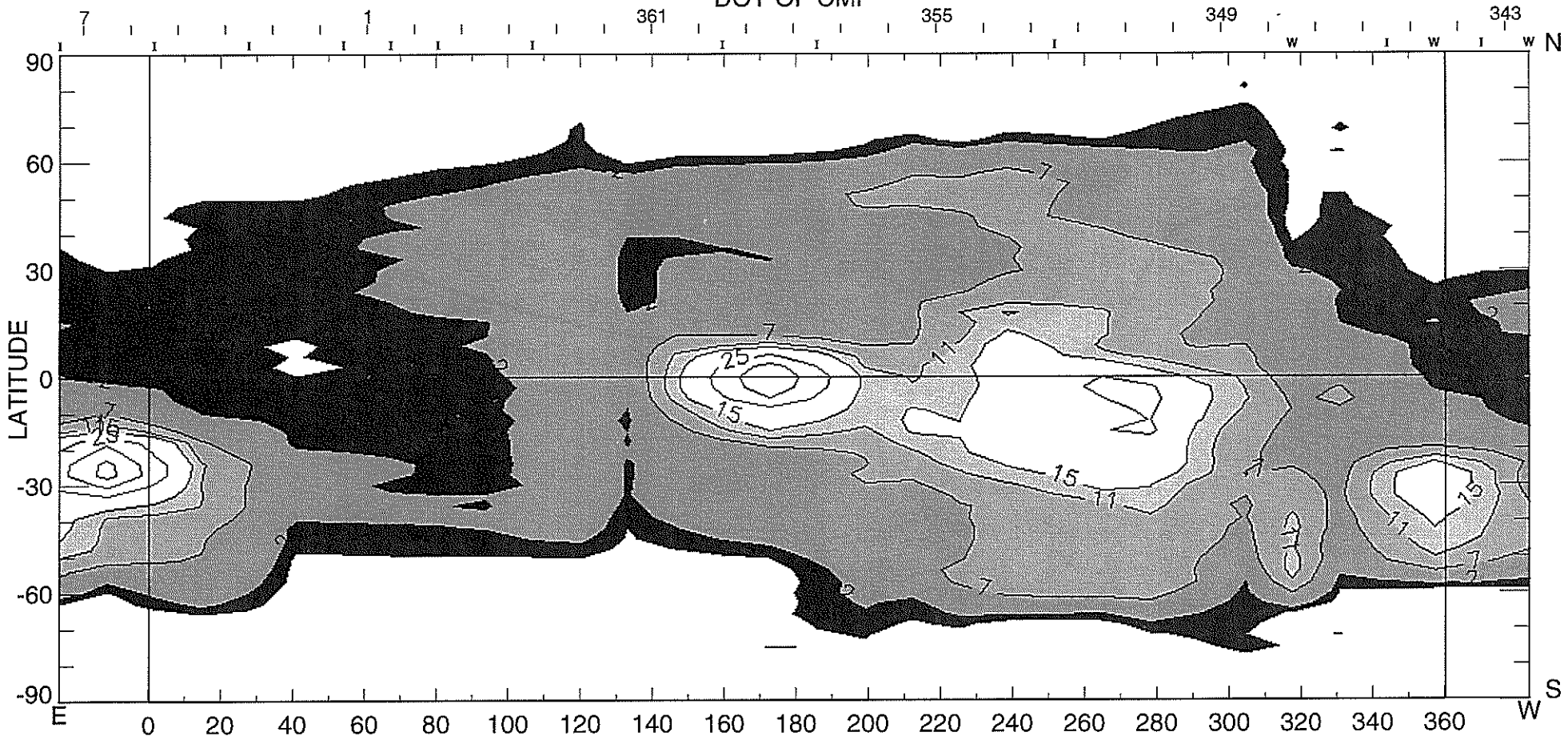
(9 December 1996 to 5 January 1997)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1917 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



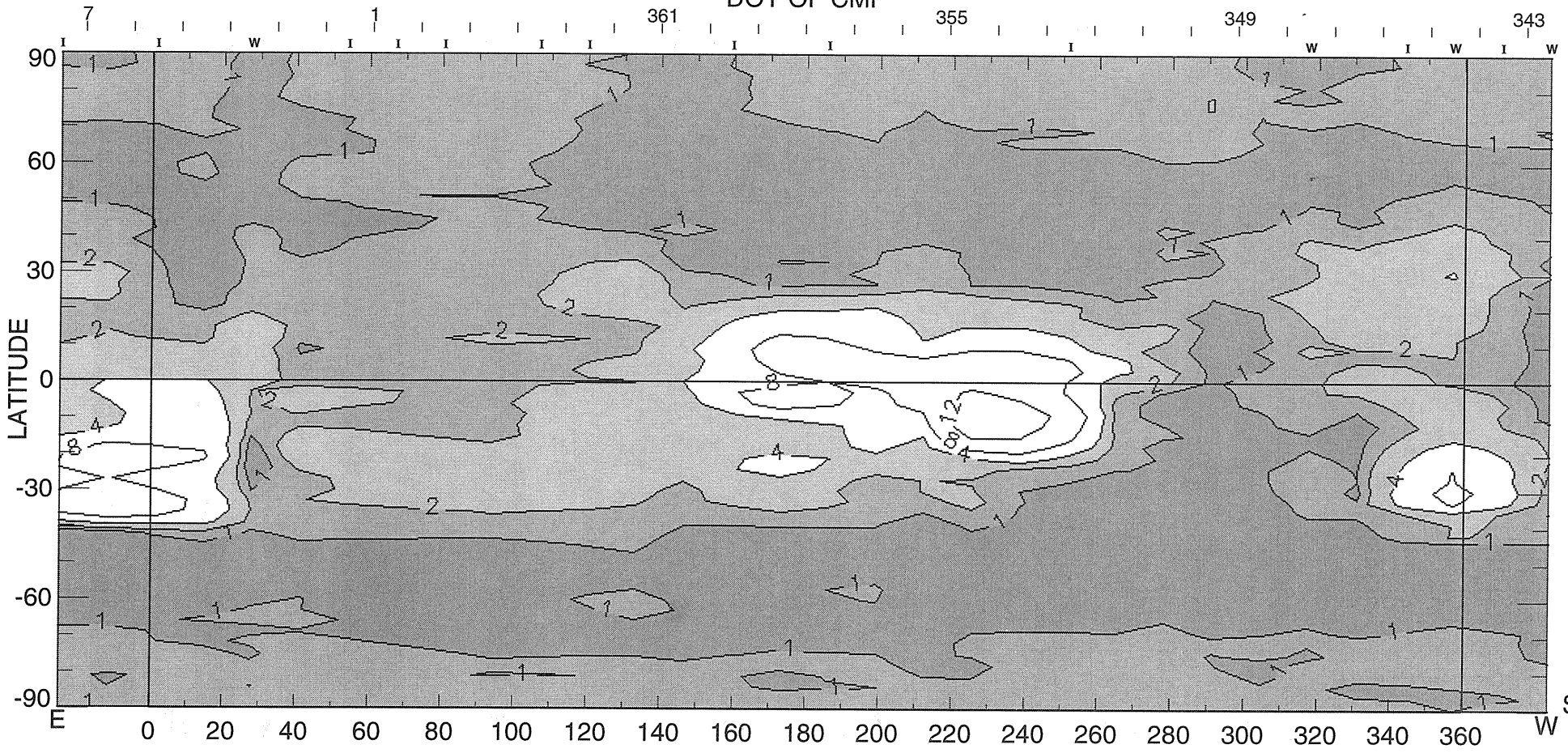
<I> = 4.04μ

(04-Mar-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 1917 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



<I> = 1.80μ

(04-Mar-97)

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

NOTE: No Ca XV emission observed at Sacramento Peak for rotation 1917.

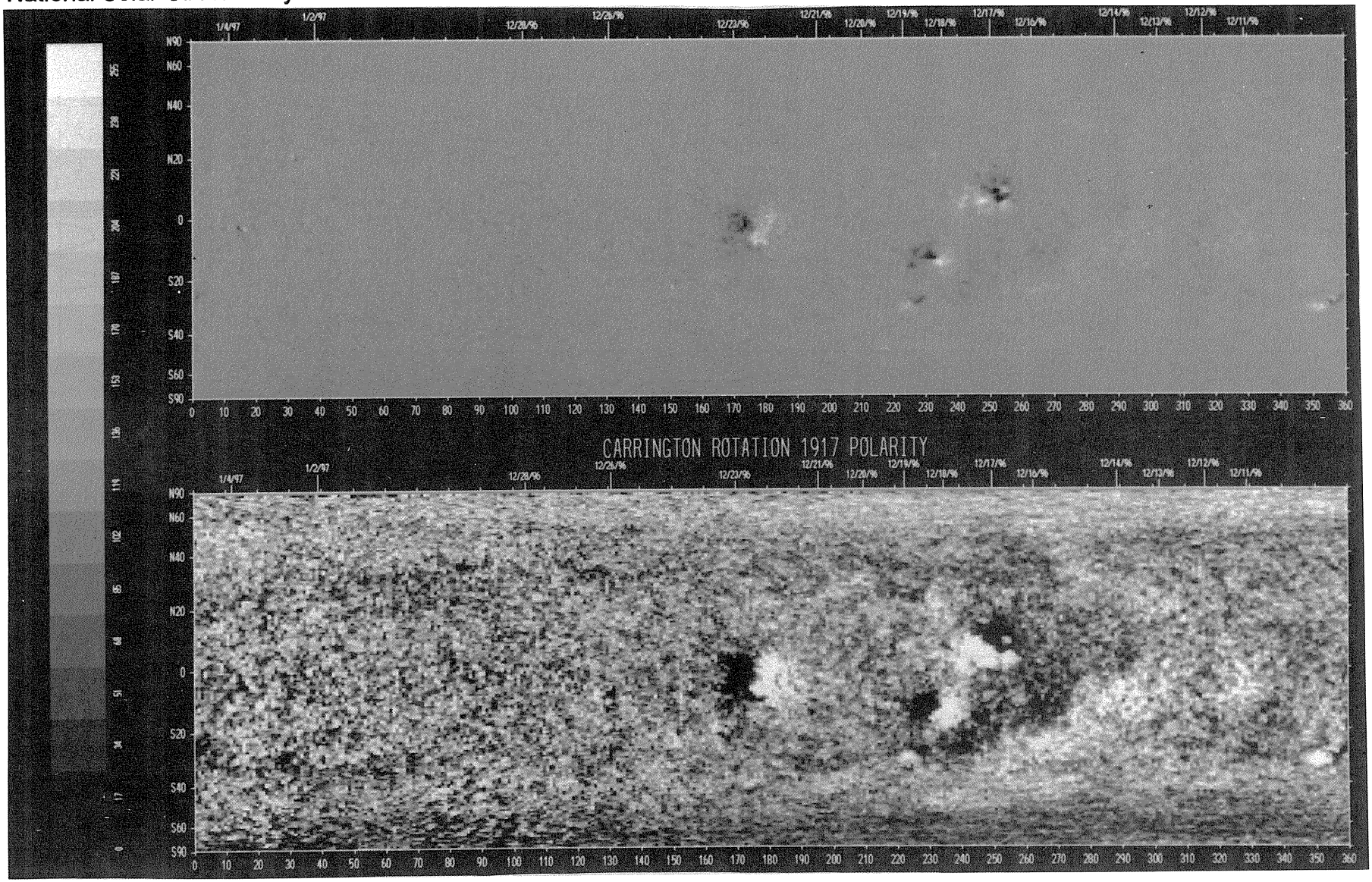
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1917

(9 December 1996 to 5 January 1997)

National Solar Observatory/Kitt Peak

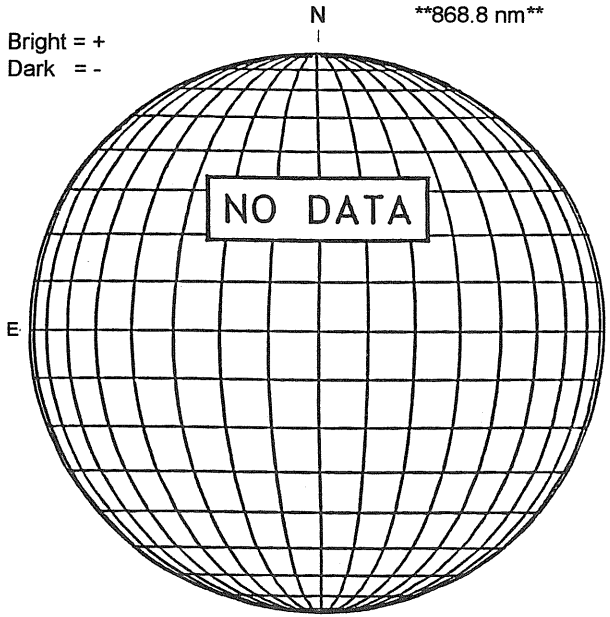
Dates of Observation



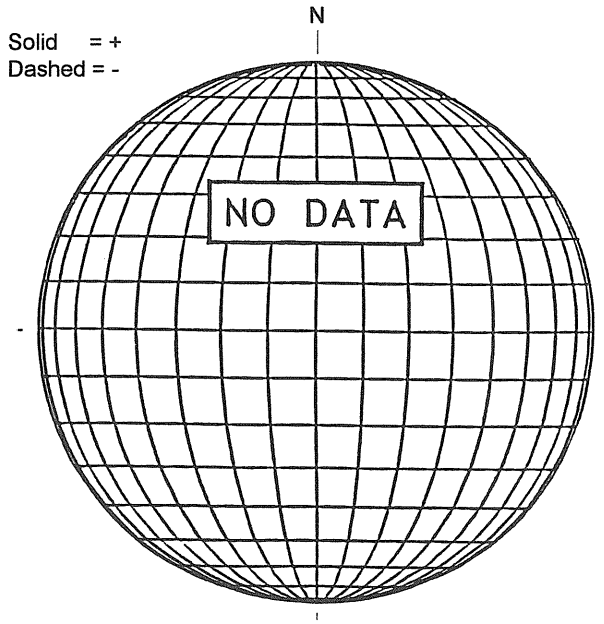
Heliographic Longitude

JANUARY 1, 1997 (P= 2.02 , Bo = - 3.04 , Lo = 60.72)

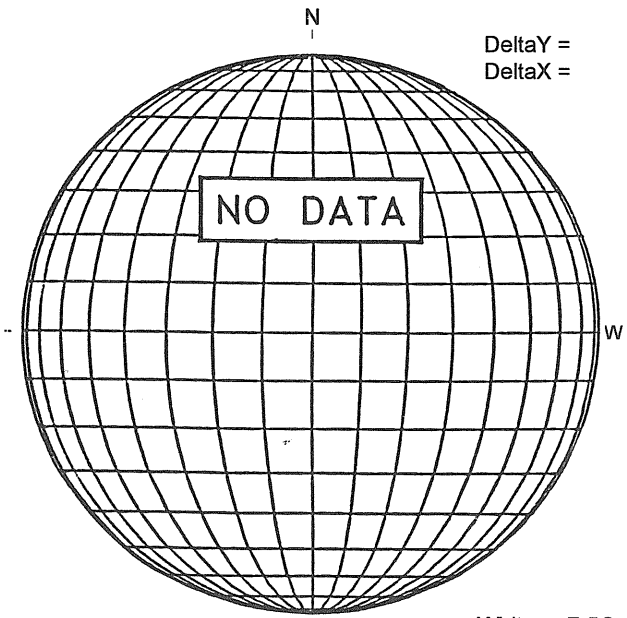
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM

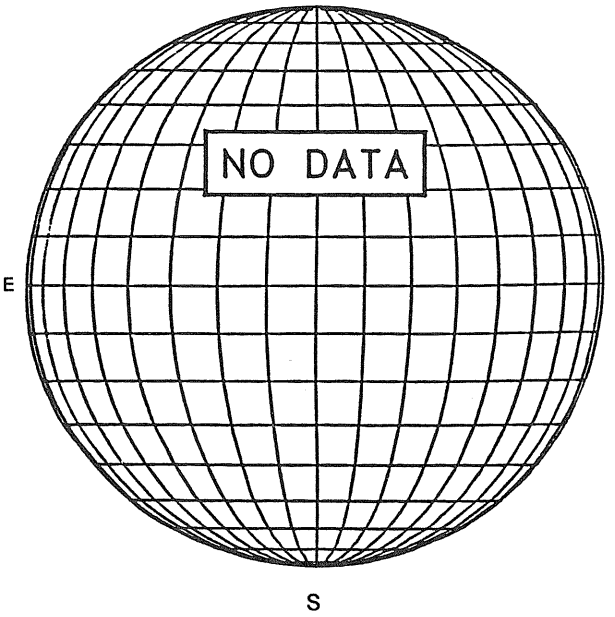


MT. WILSON MAGNETOGRAM

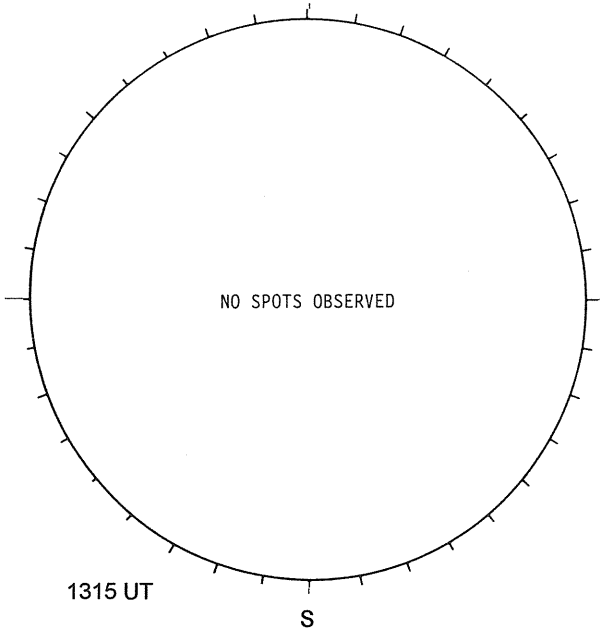


White= +7.5G
Black = -7.5G

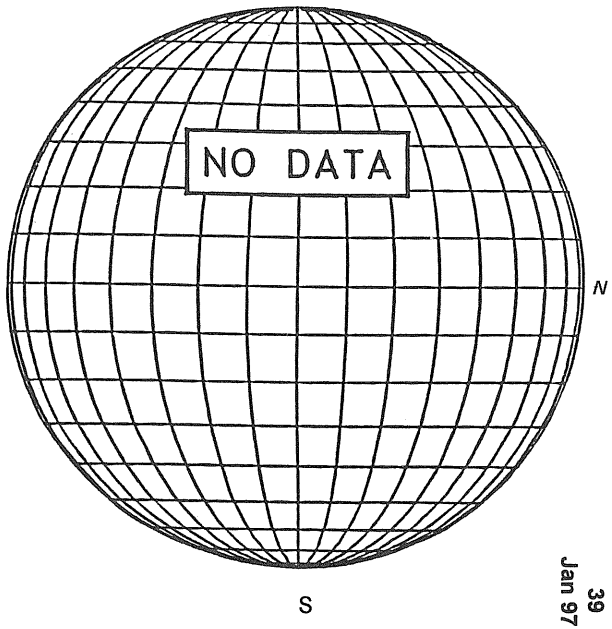
----- SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



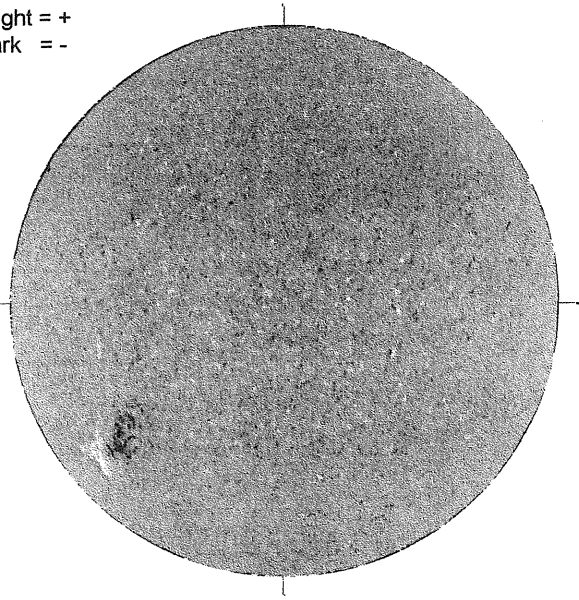
JANUARY 2, 1997 (P= 1.53 , Bo = - 3.16, Lo = 47.55)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



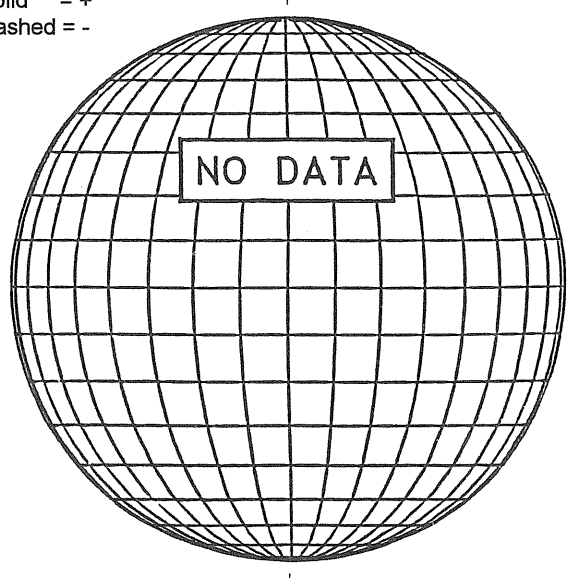
E-

1559 UT

STANFORD MAGNETOGRAM

N

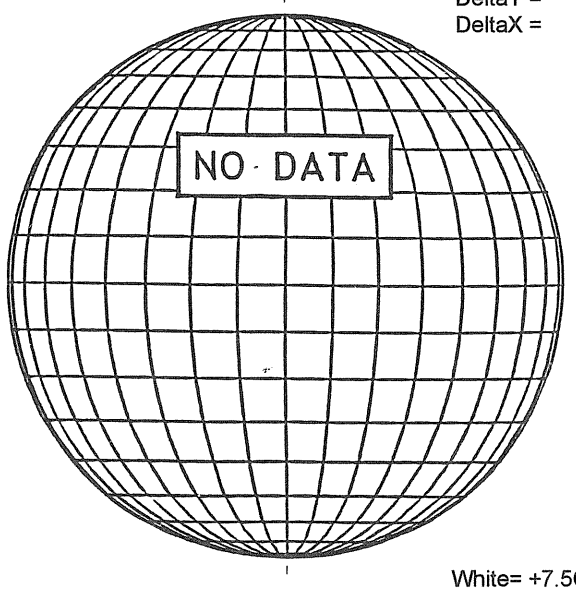
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

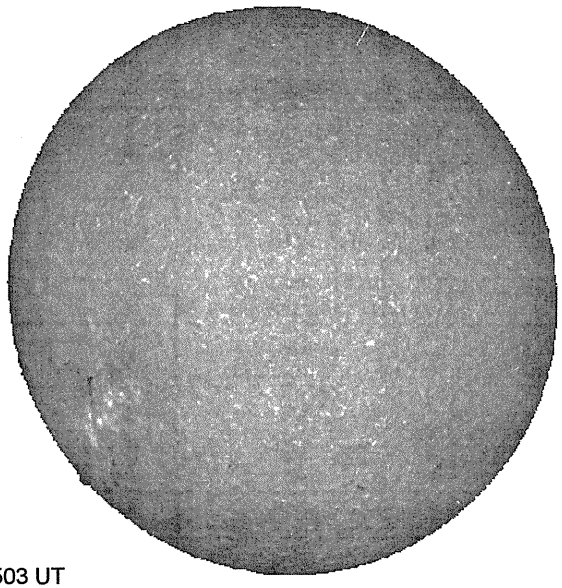
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

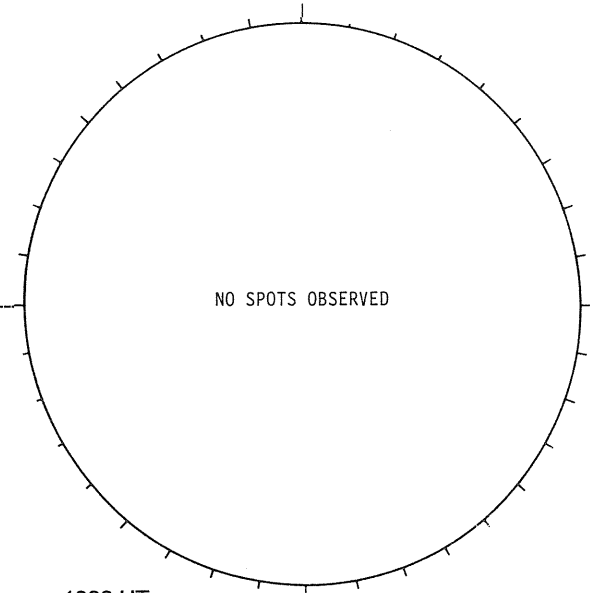


E-

1503 UT

S

RAMEY SUNSPOT

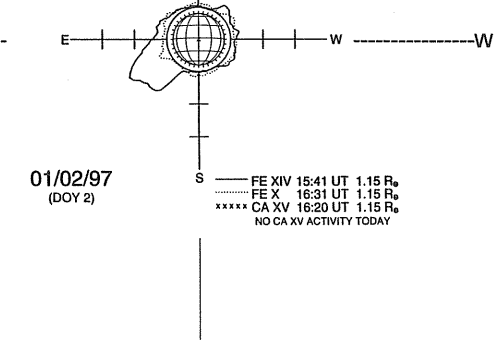


1300 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



01/02/97
(DOY 2)

FE XIV 15:41 UT 1.15 R
FE X 16:31 UT 1.15 R
CA XV 16:20 UT 1.15 R
NO CA XV ACTIVITY TODAY

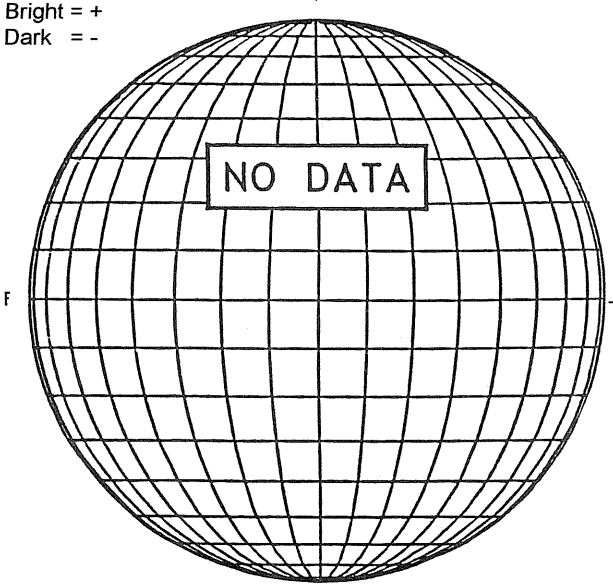
S

JANUARY 3, 1997 (P= 1.05 , Bo = - 3.28 , Lo = 34.38)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

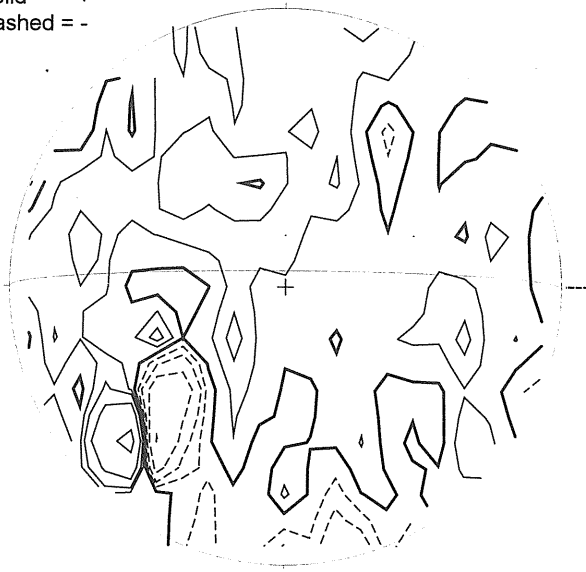
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

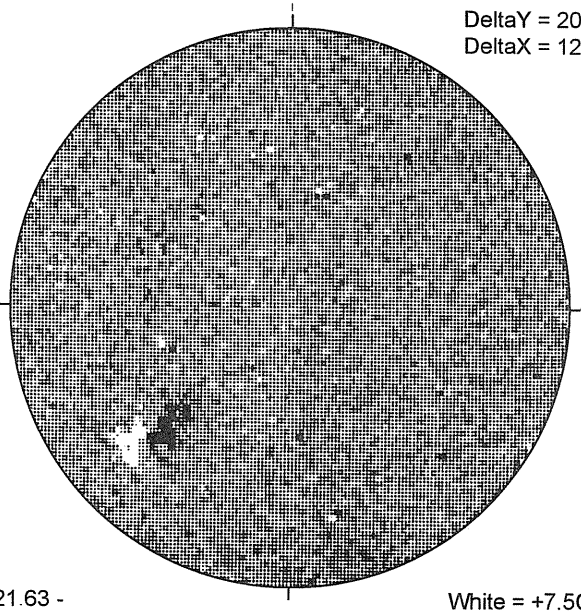


1824 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 20.1
DeltaX = 12.9

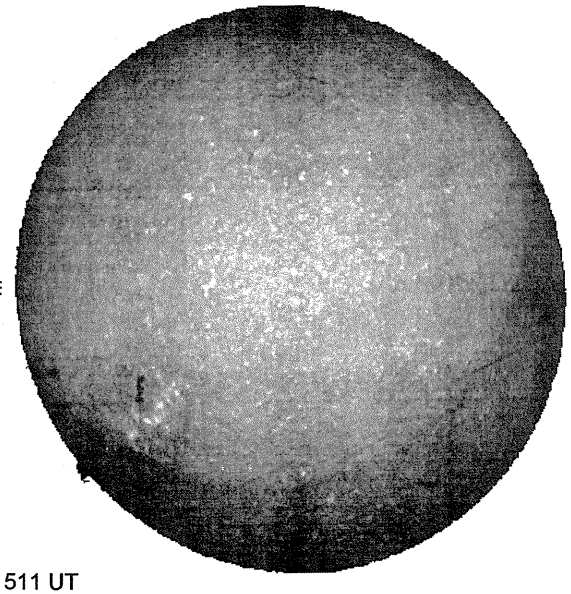


W

21.63 -
22.06 UT

White = +7.5G
Black = -7.5G

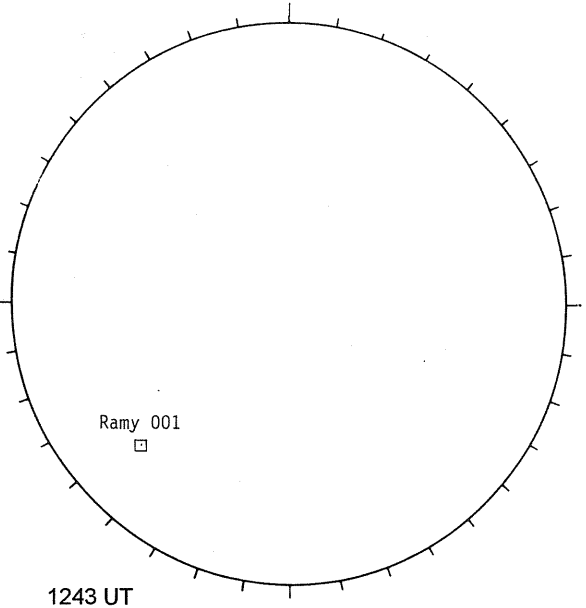
SACRAMENTO PEAK H-ALPHA



1511 UT

S

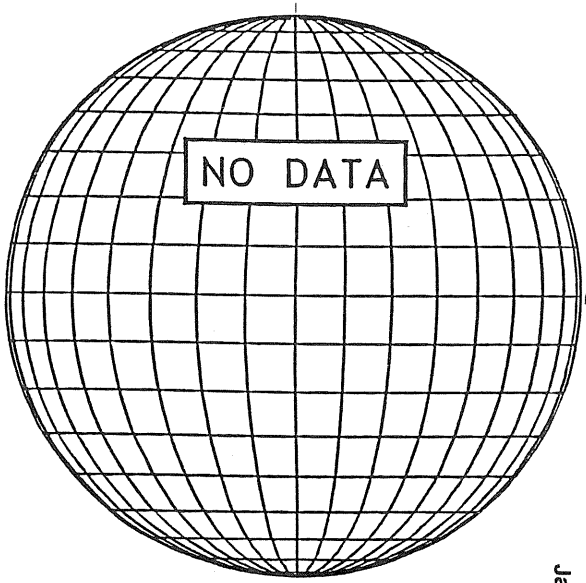
RAMEY SUNSPOT



1243 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



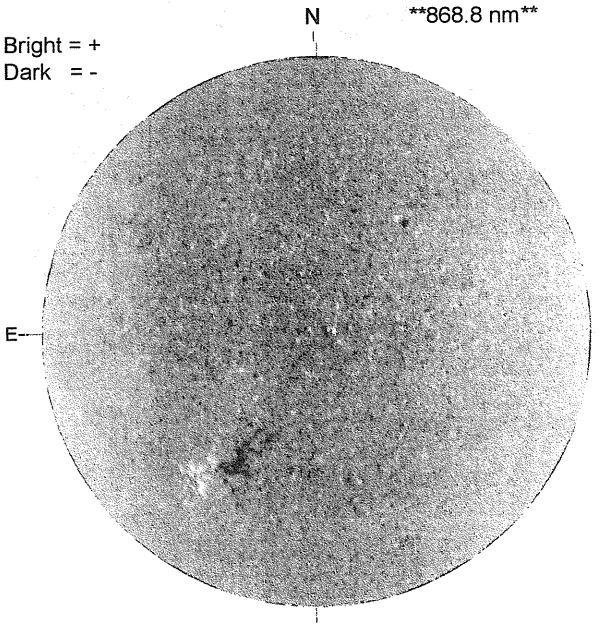
S

JANUARY 4, 1997 (P= 0.56 , Bo = - 3.39 Lo = 21.21)

KITT PEAK MAGNETOGRAM

868.8 nm

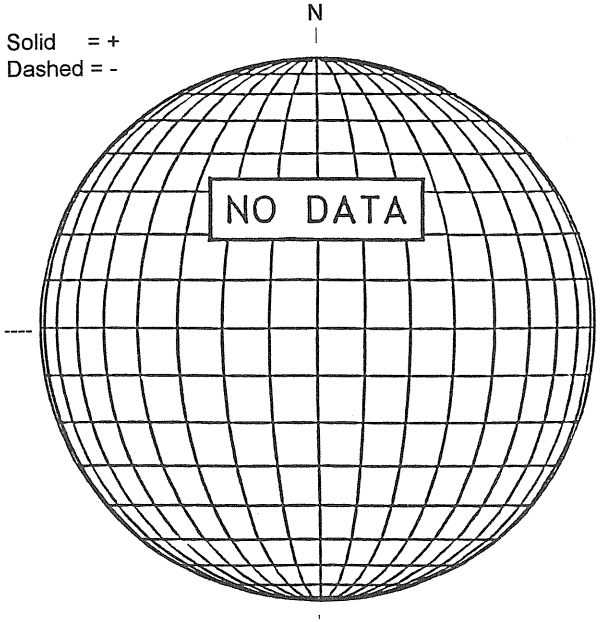
Bright = +
Dark = -



1648 UT

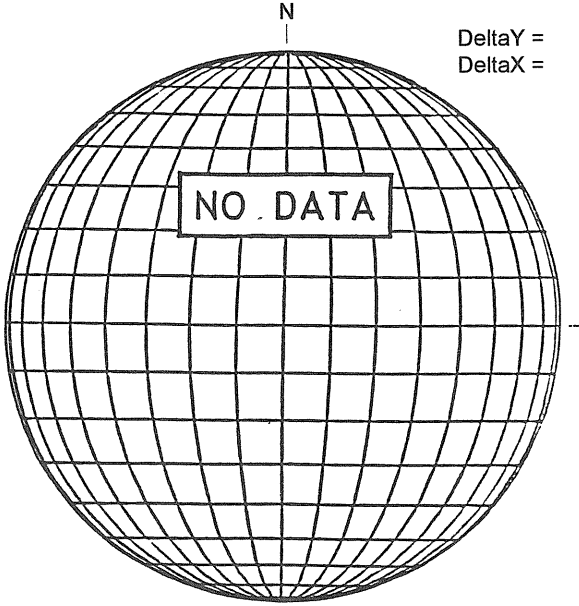
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



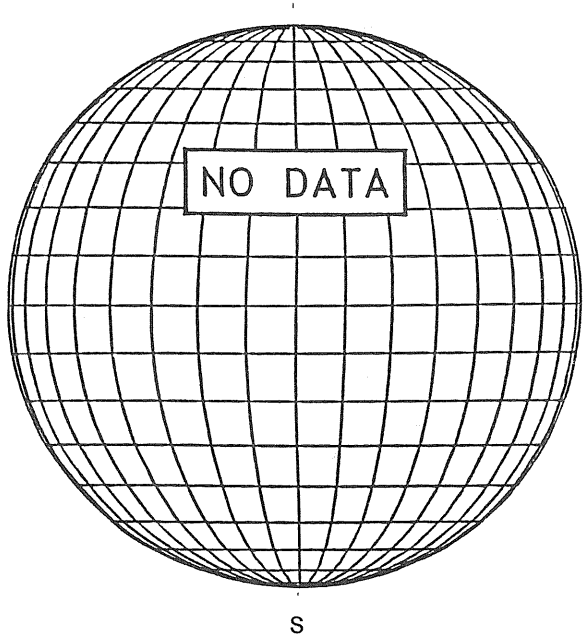
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

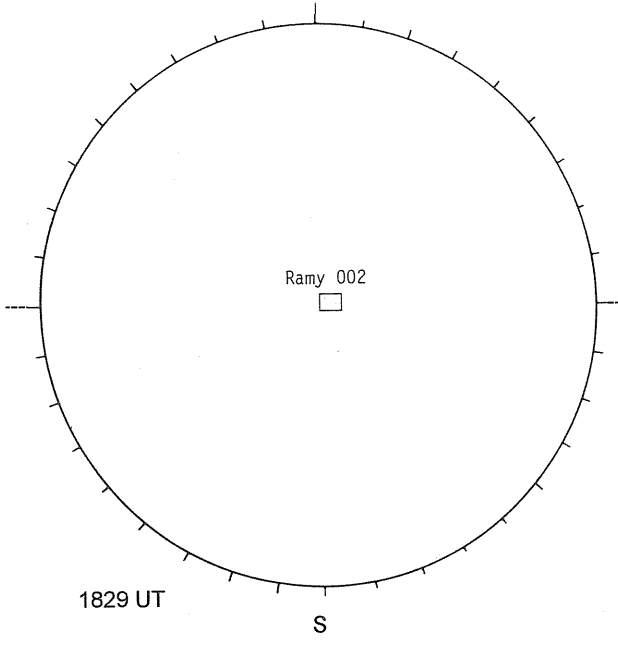


White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

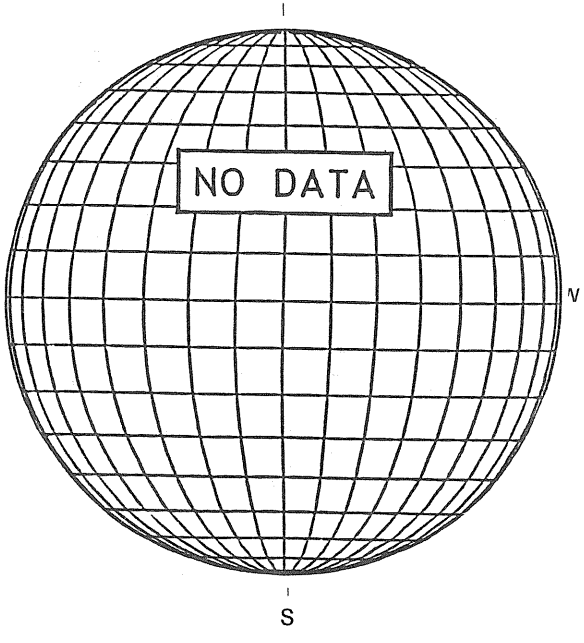


RAMEY SUNSPOT



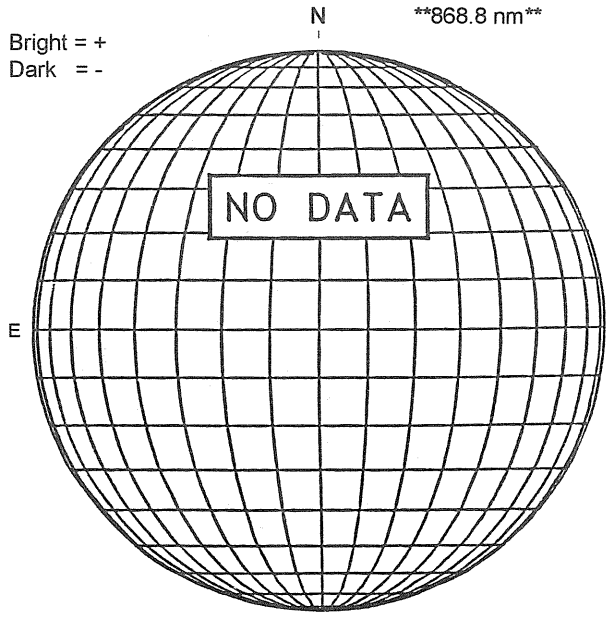
1829 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

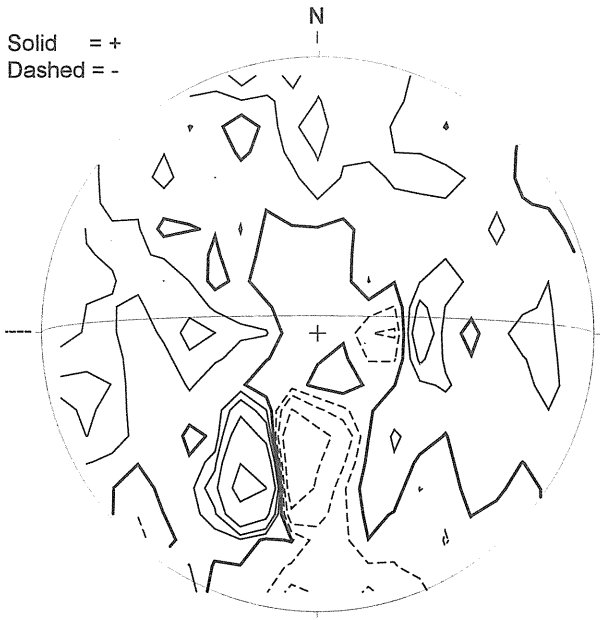


JANUARY 5, 1997 (P= 0.08 , Bo = - 3.50 , Lo = 8.04)

KITT PEAK MAGNETOGRAM

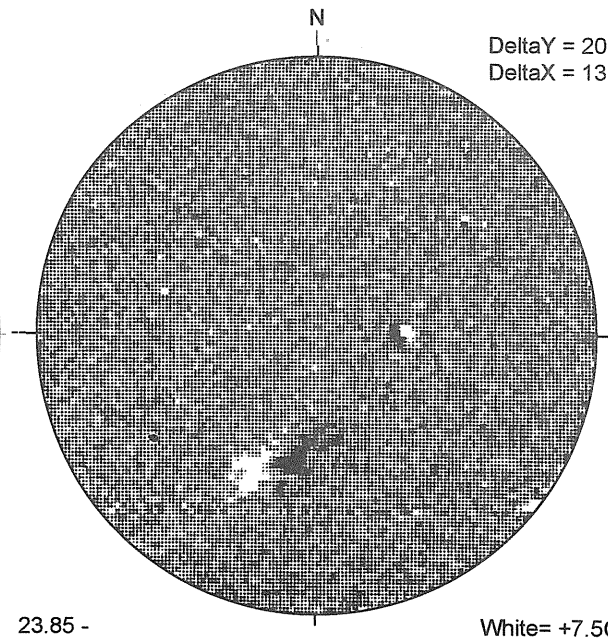


STANFORD MAGNETOGRAM



2210 UT

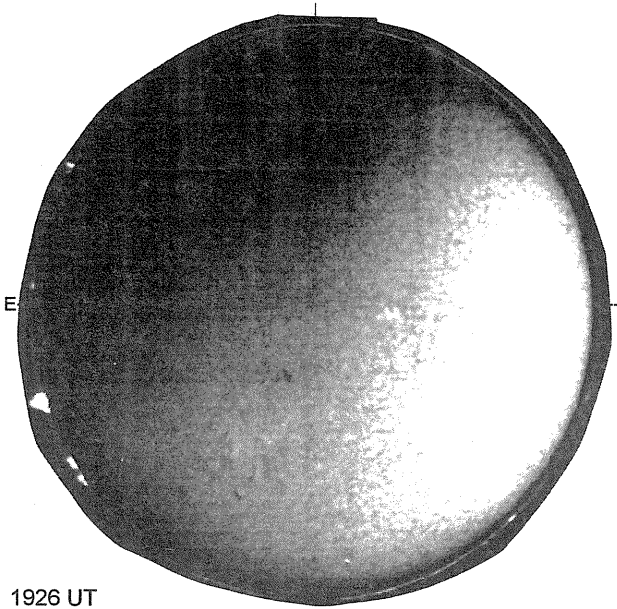
MT. WILSON MAGNETOGRAM



23.85 -
24.27 UT

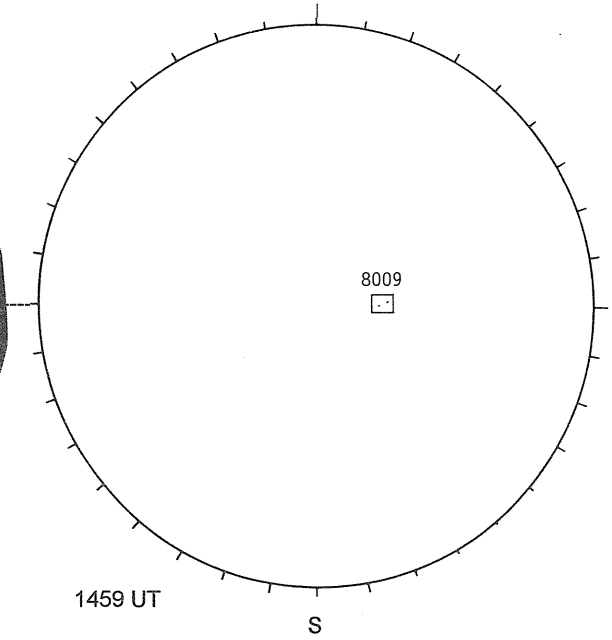
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



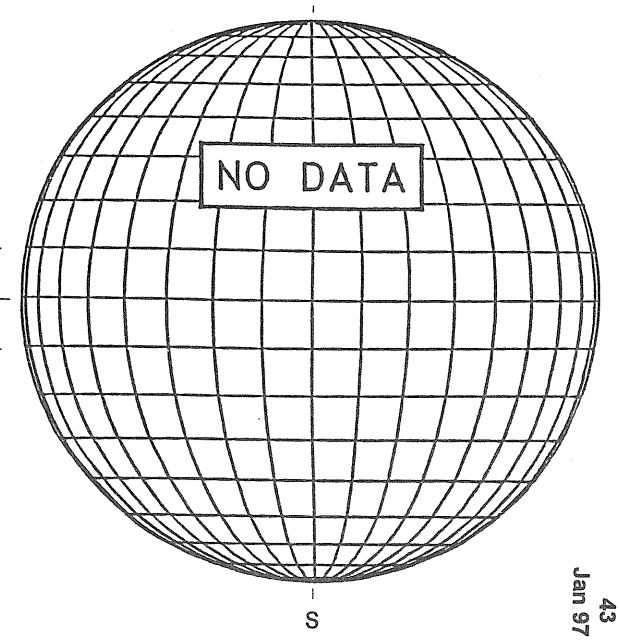
1926 UT
1941 UT Prom

RAMEY SUNSPOT



1459 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

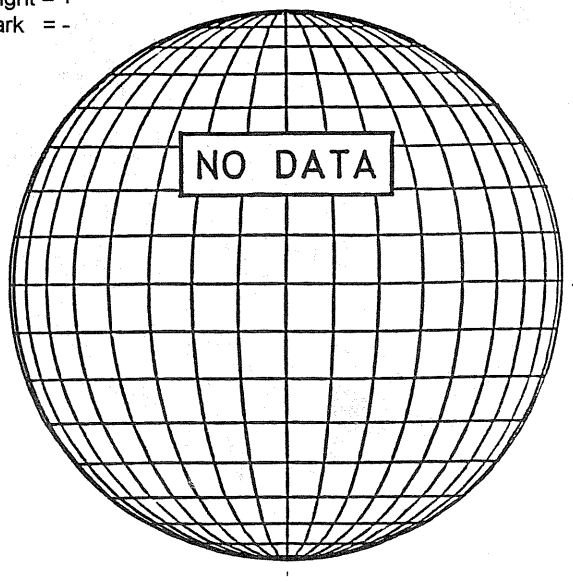


JANUARY 6, 1997 (P= - 0.41 , Bo = - 3.62 , Lo = 354.88)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

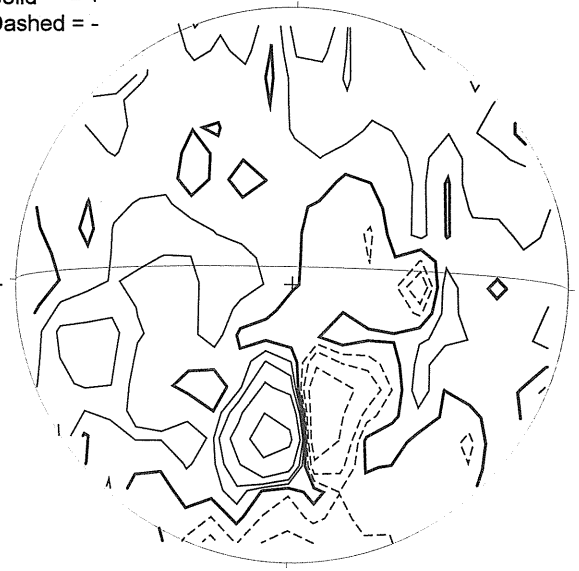


E-

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

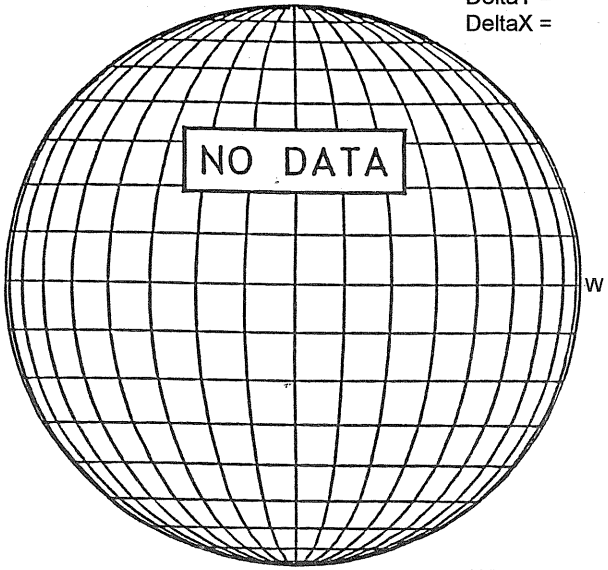


2120 UT

MT. WILSON MAGNETOGRAM

N

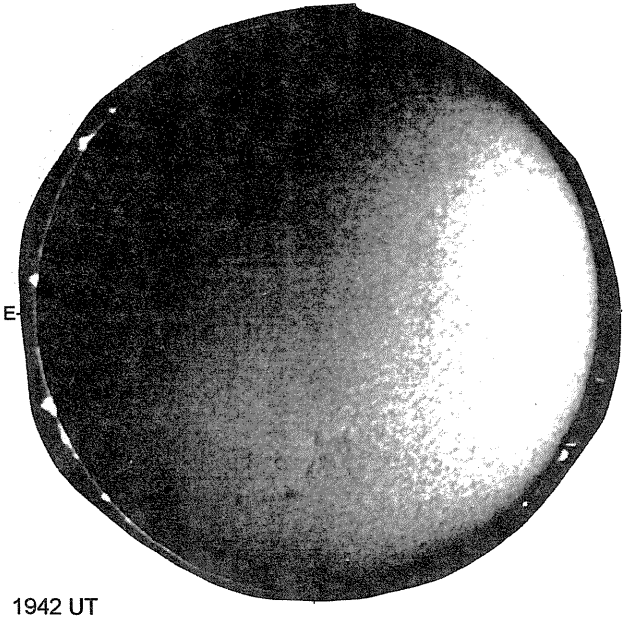
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

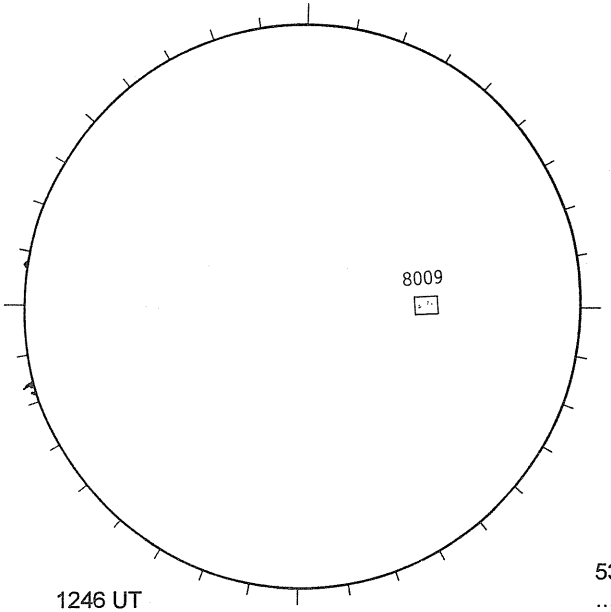


E-

1942 UT
2012 UT Prom

S

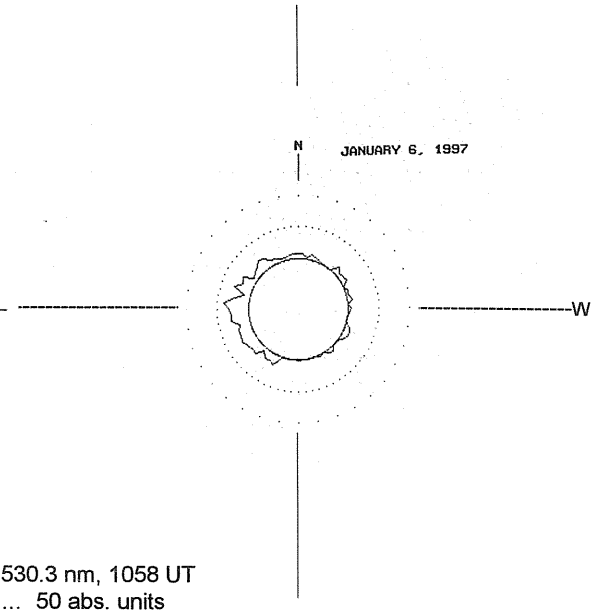
RAMEY SUNSPOT



1246 UT
1022 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)



530.3 nm, 1058 UT
... 50 abs. units
. . 100 abs. units

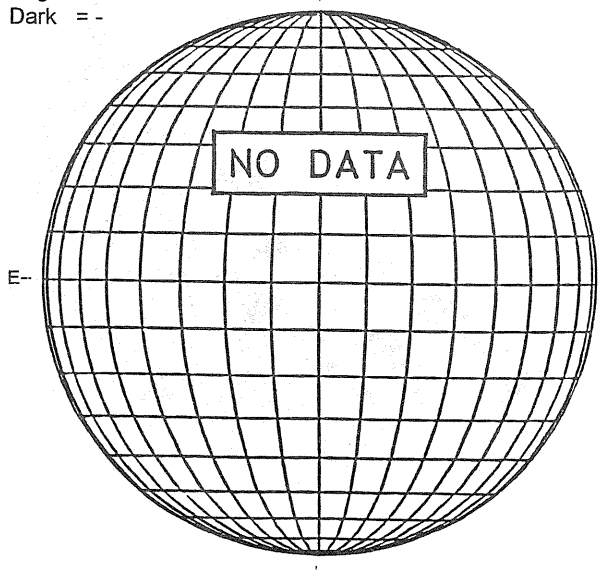
S

JANUARY 7, 1997 (P= - 0.89 , Bo = - 3.73 Lo = 341.71)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

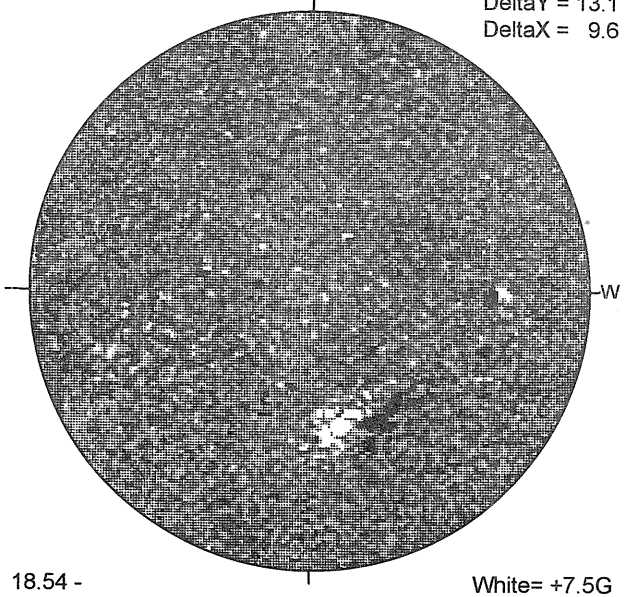
Solid = +
Dashed = -

2106 UT

MT. WILSON MAGNETOGRAM

N

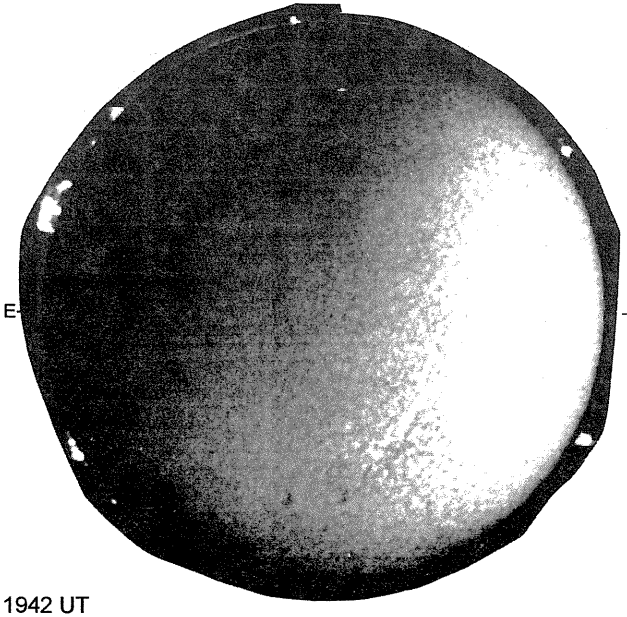
DeltaY = 13.1
DeltaX = 9.6



18.54 -
19.52 UT

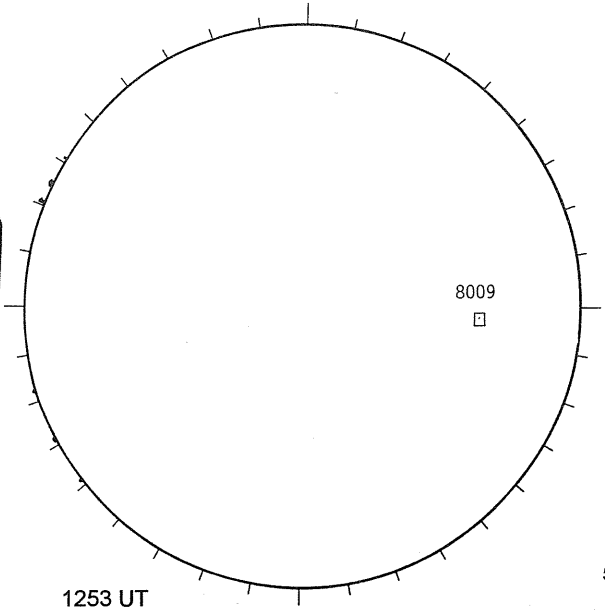
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



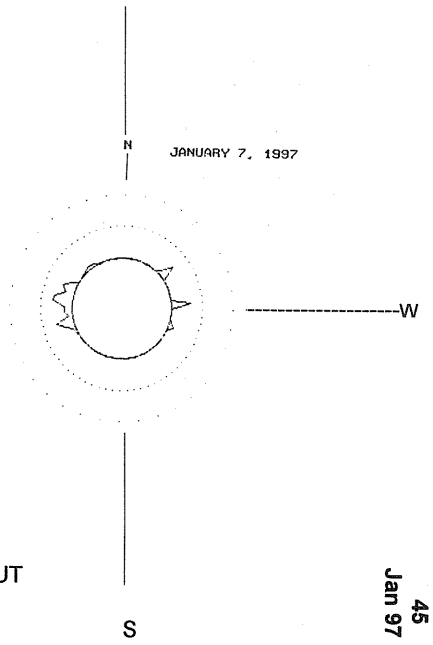
1942 UT
1842 UT Prom S

RAMEY SUNSPOT



1253 UT
0745 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 0801 UT
... 50 abs. units
. . 100 abs. units

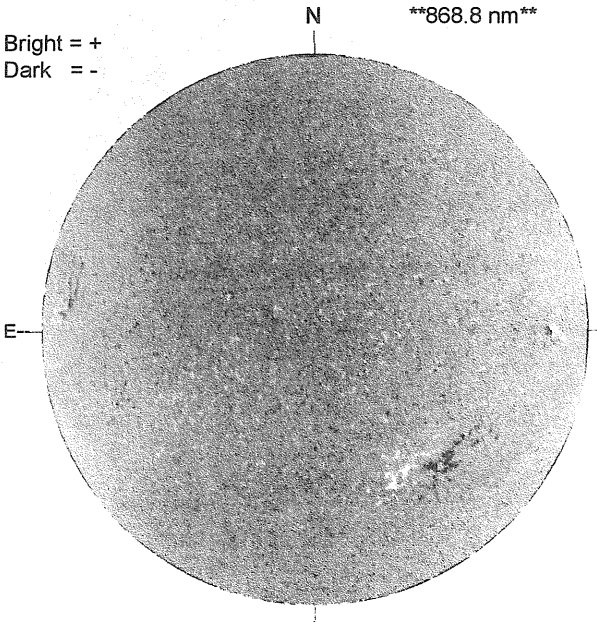
45
Jan 97

JANUARY 8, 1997 (P= - 1.37 , Bo = - 3.84 , Lo = 328.54)

KITT PEAK MAGNETOGRAM

868.8 nm

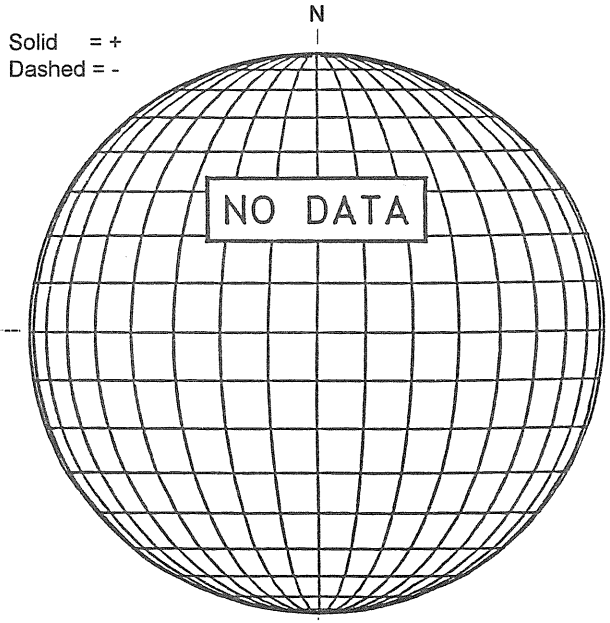
Bright = +
Dark = -



1730 UT

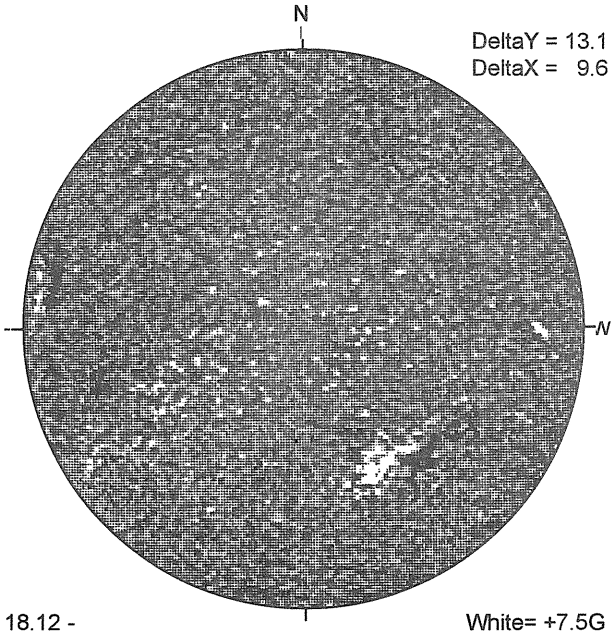
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

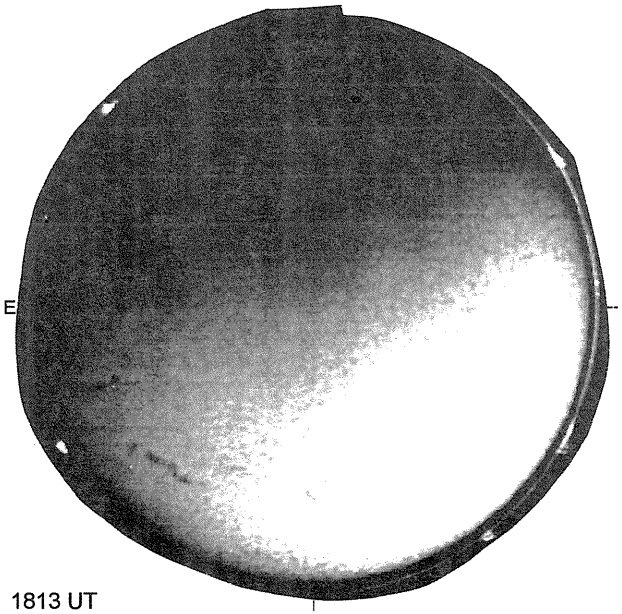
DeltaY = 13.1
DeltaX = 9.6



18.12 -
19.08 UT

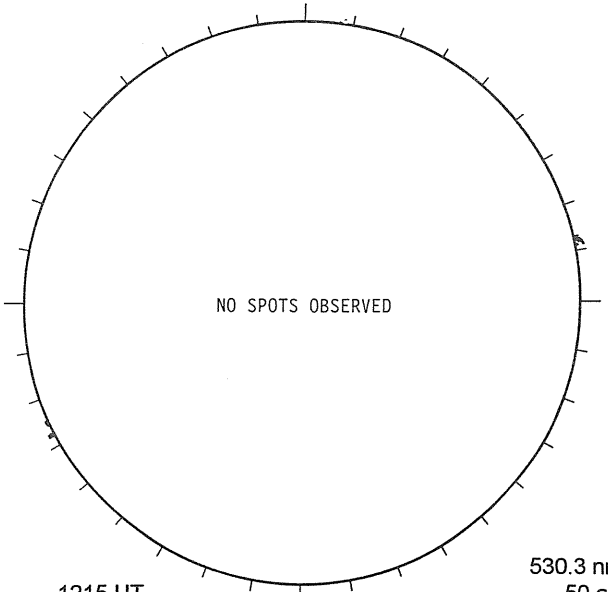
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



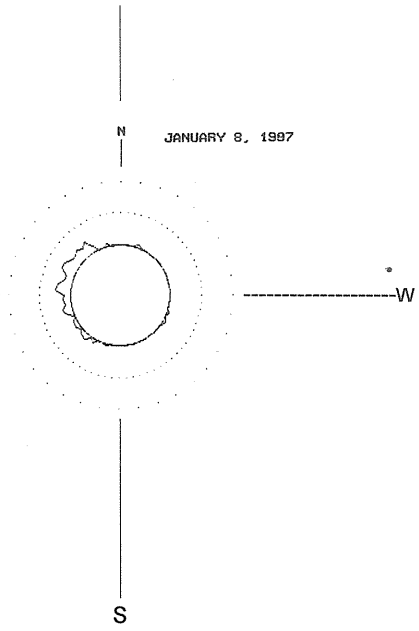
1813 UT
1858 UT Prom

RAMEY SUNSPOT



1215 UT
0903 UT LOMN Prom

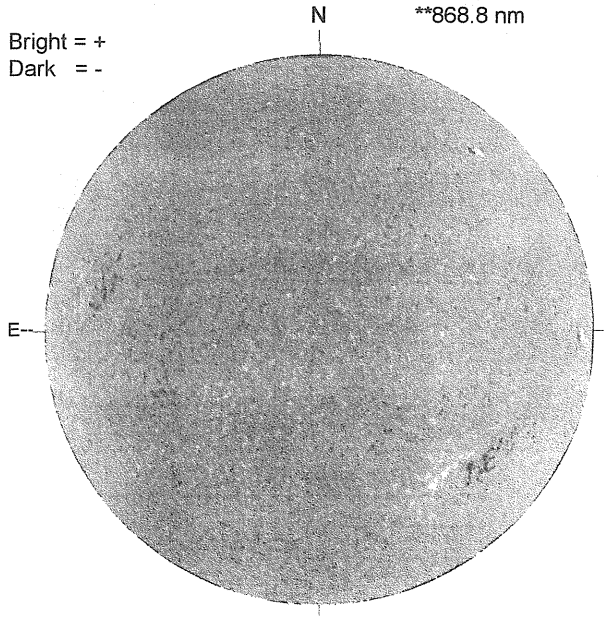
LOMNICKY PEAK CORONA (1.04 Radii)



530.3 nm, 0929 UT
... 50 abs. units
. . 100 abs. units

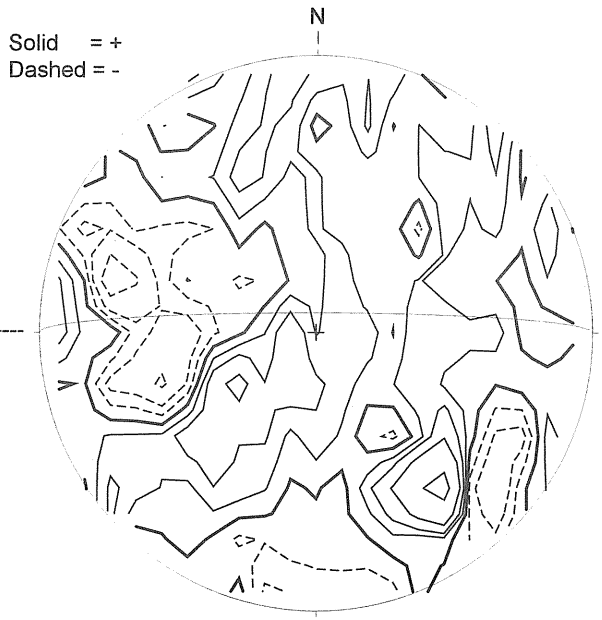
JANUARY 9, 1997 (P= - 1.85 Bo = - 3.95, Lo = 315.37)

KITT PEAK MAGNETOGRAM



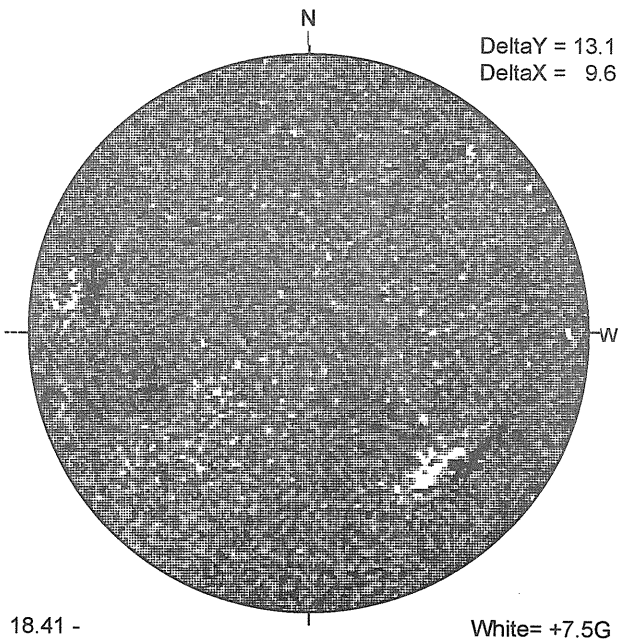
1633 UT

STANFORD MAGNETOGRAM



2054 UT

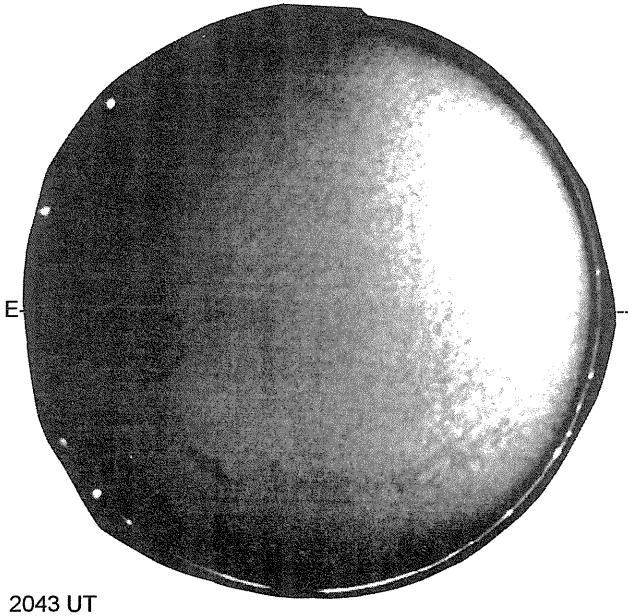
MT. WILSON MAGNETOGRAM



18.41 -
19.38 UT

White= +7.5G
Black = -7.5G

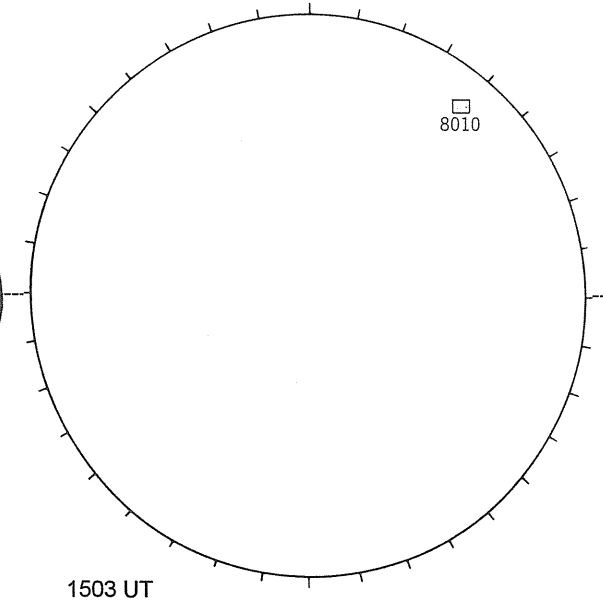
MAUNA LOA H-ALPHA



2043 UT
1925 UT Prom

S

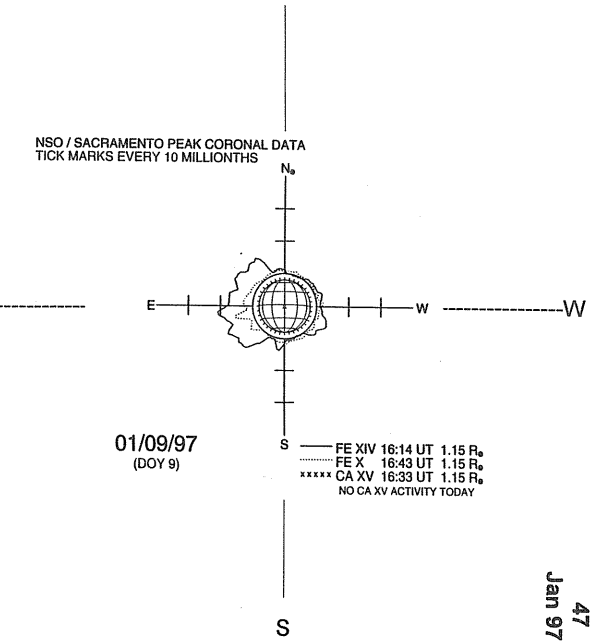
RAMEY SUNSPOT



1503 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

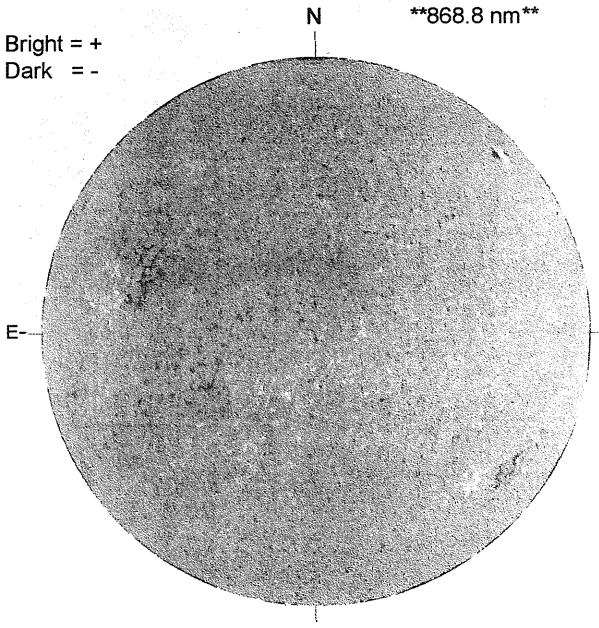


S

47
Jan 97

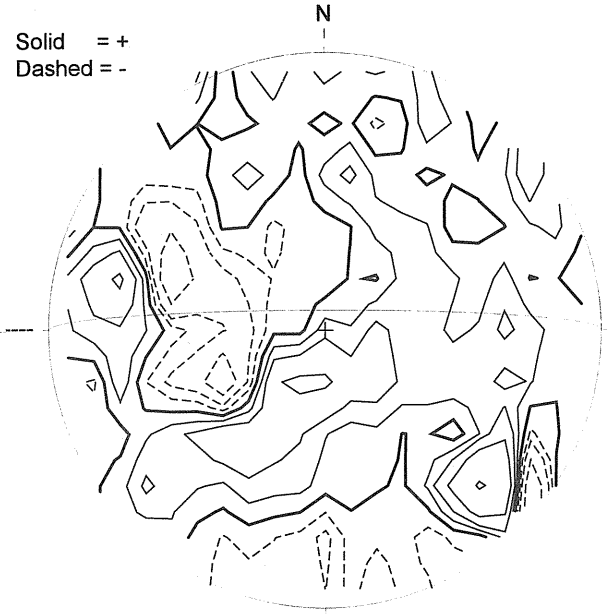
JANUARY 10, 1997 (P= - 2.33 , Bo = - 4.05 Lo = 302.20)

KITT PEAK MAGNETOGRAM



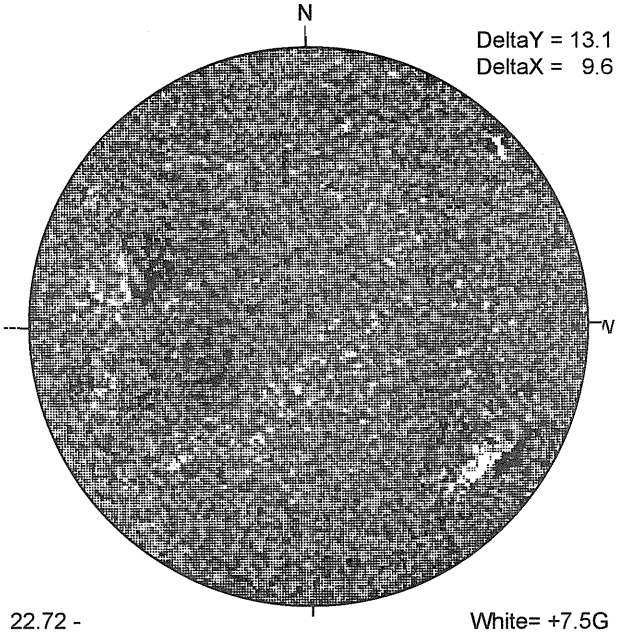
1621 UT

STANFORD MAGNETOGRAM



2048 UT

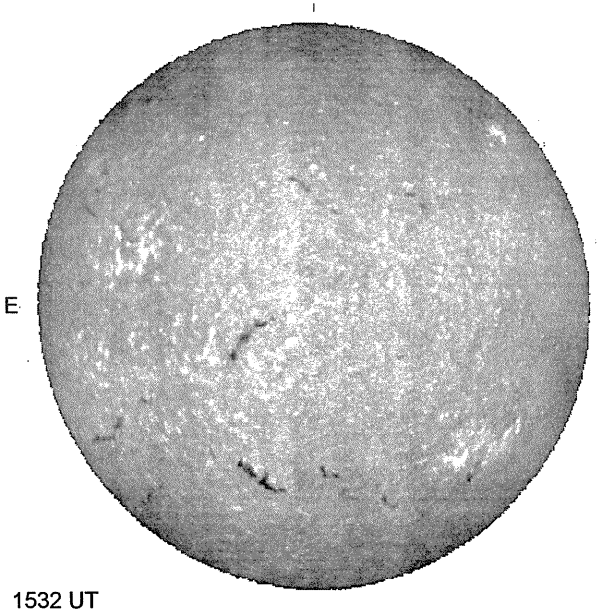
MT. WILSON MAGNETOGRAM



22.72 -
23.69 UT

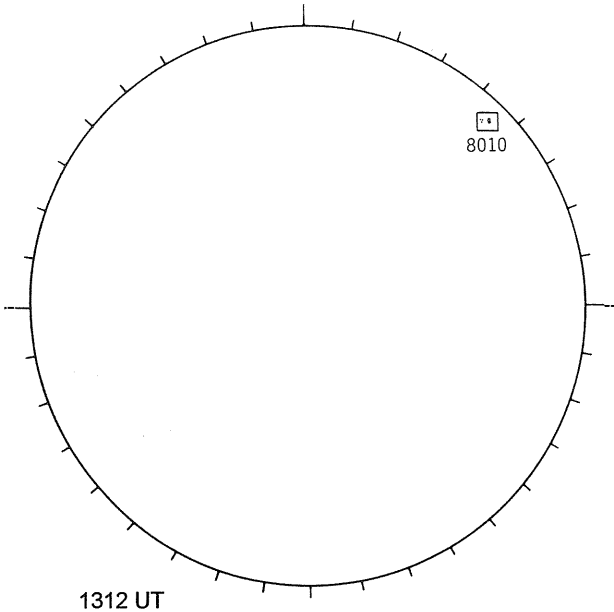
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



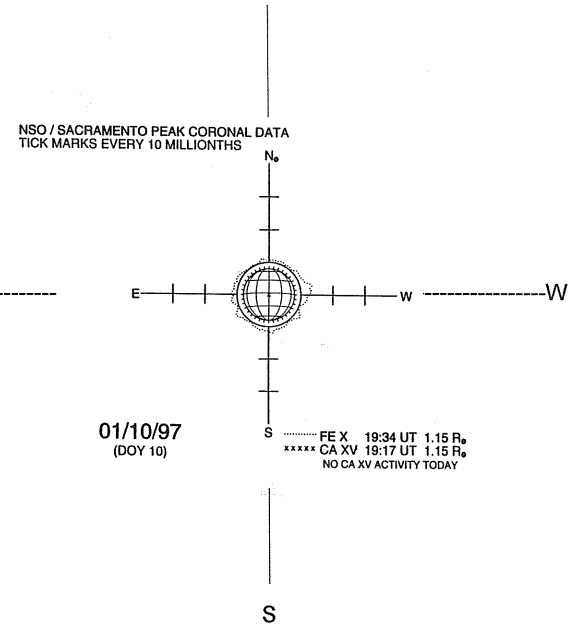
1532 UT

RAMEY SUNSPOT



1312 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



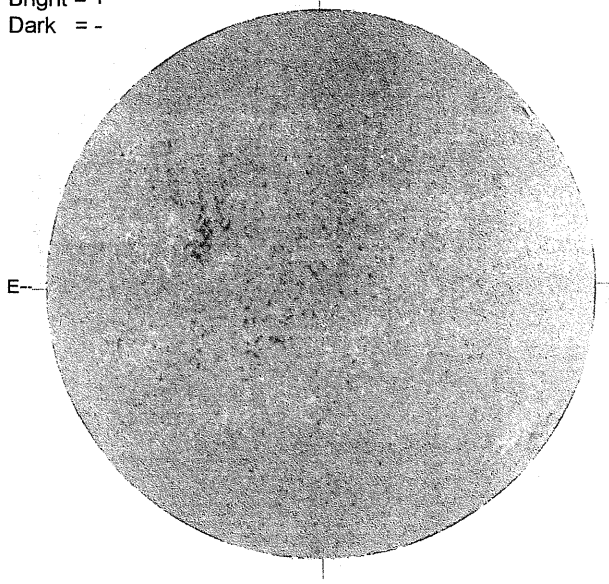
JANUARY 11, 1997 (P= - 2.81, Bo = - 4.16, Lo = 289.03)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



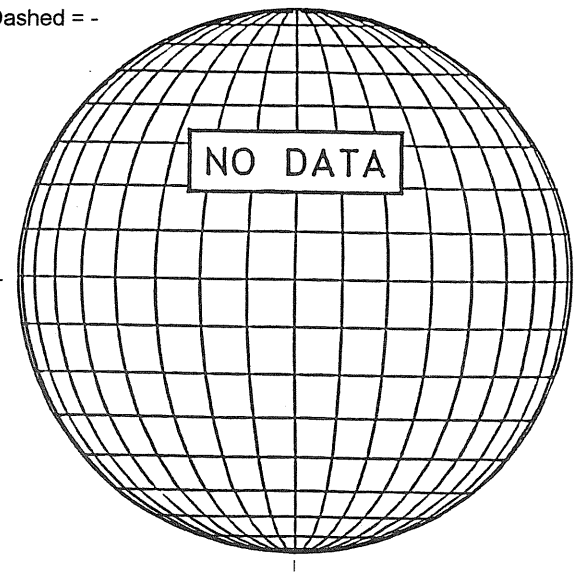
E

1619 UT

STANFORD MAGNETOGRAM

N

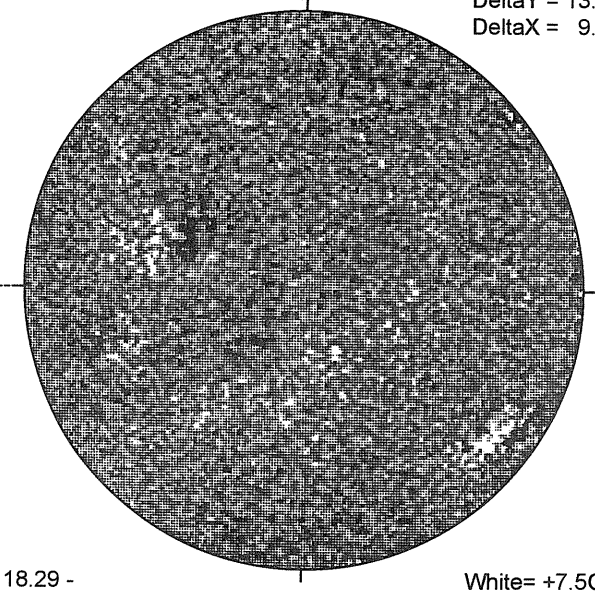
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

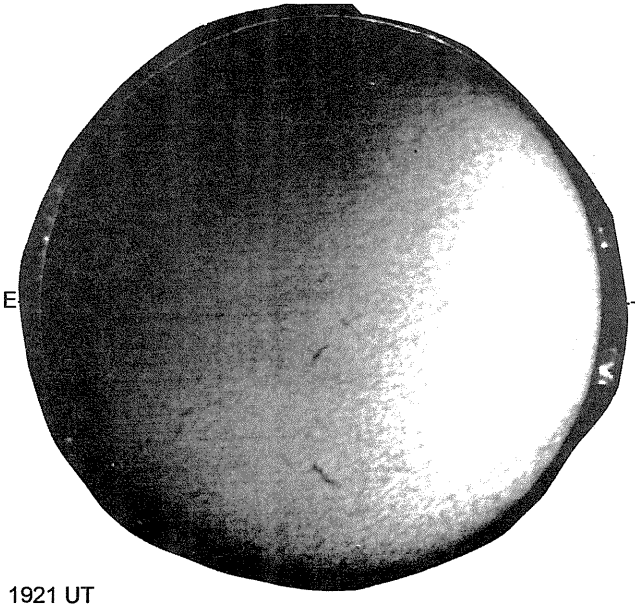


W

18.29 -
19.27 UT

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

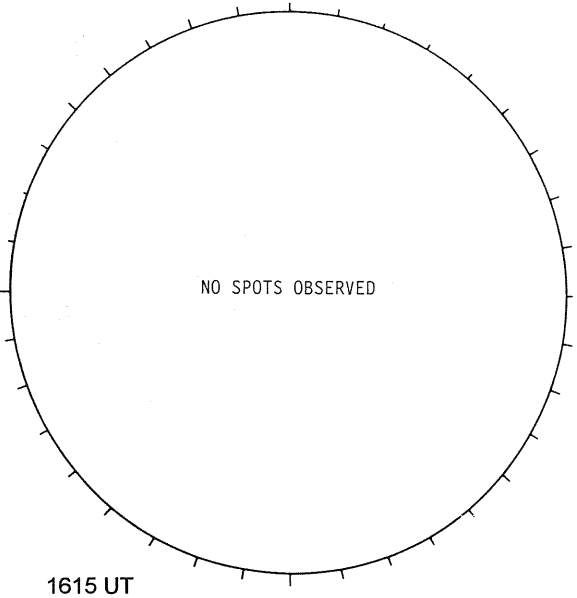


E

1921 UT
1857 UT Prom

S

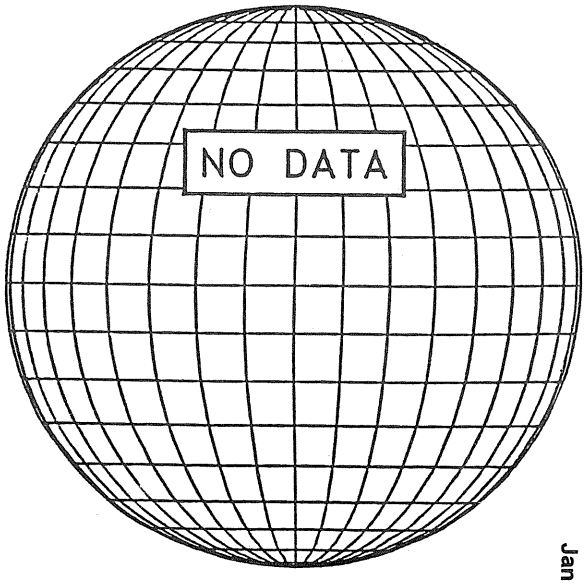
RAMEY SUNSPOT



1615 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



W

S

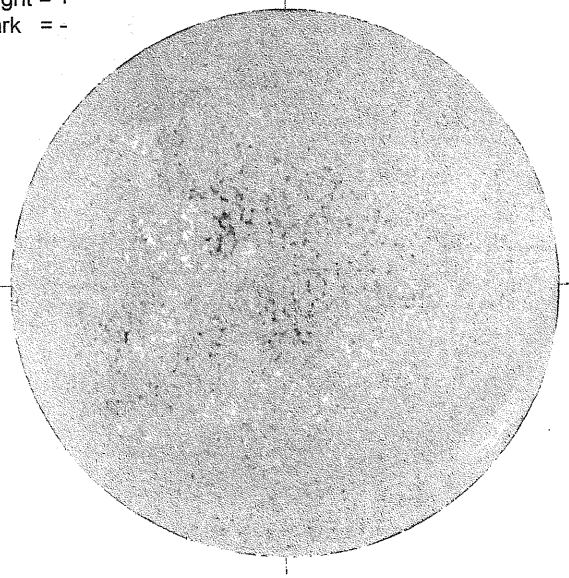
JANUARY 12, 1997 (P= - 3.29, Bo = - 4.27, Lo = 275.87)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



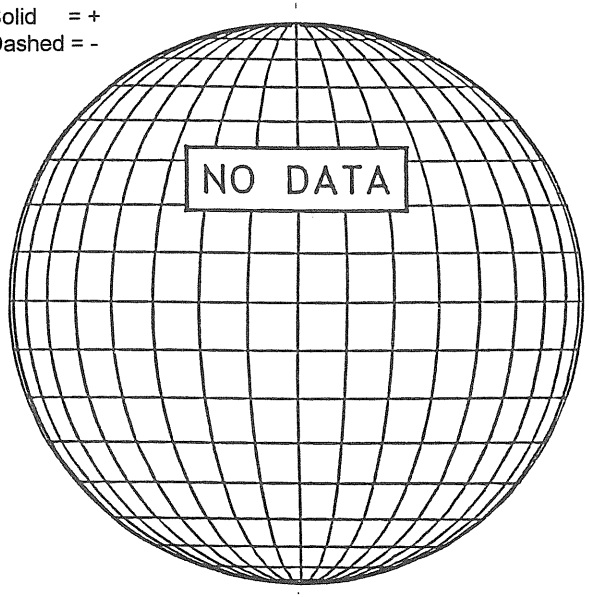
E

1616 UT

STANFORD MAGNETOGRAM

N

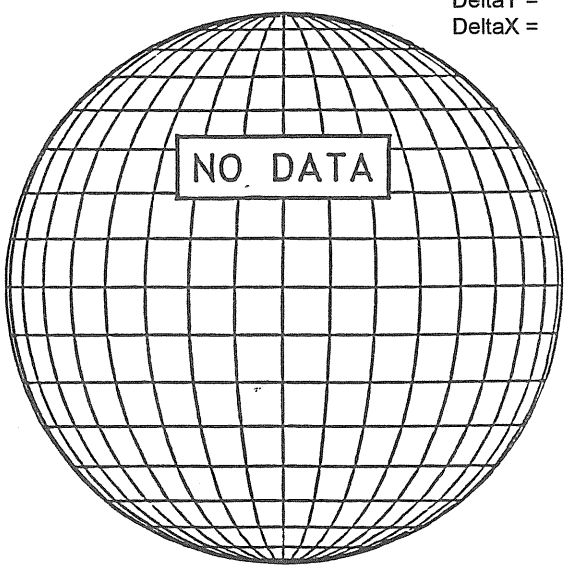
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

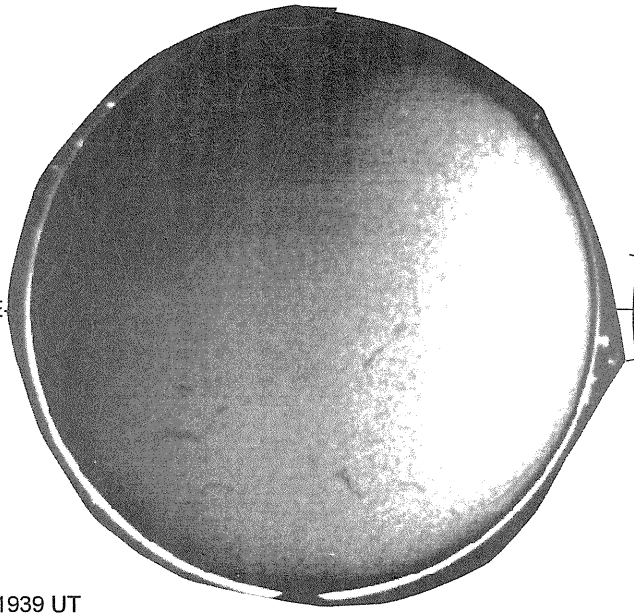
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

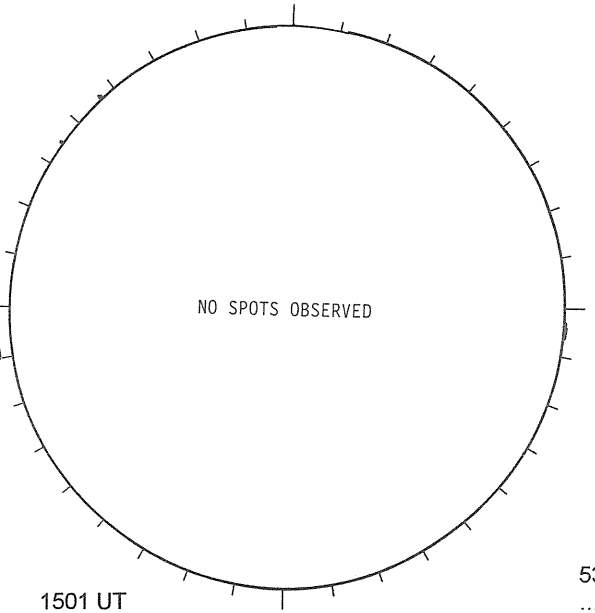


E

S

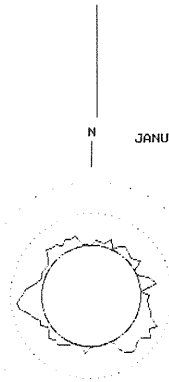
1939 UT
2027 UT Prom

RAMEY SUNSPOT



1501 UT
0748 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)



W

S

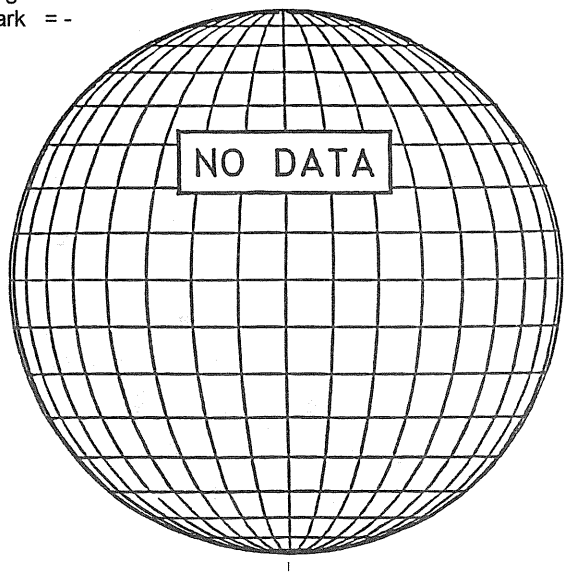
530.3 nm, 0758 UT
... 50 abs. units
. . 100 abs. units

JANUARY 13, 1997 (P= - 3.76, Bo = - 4.37, Lo = 262.70)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

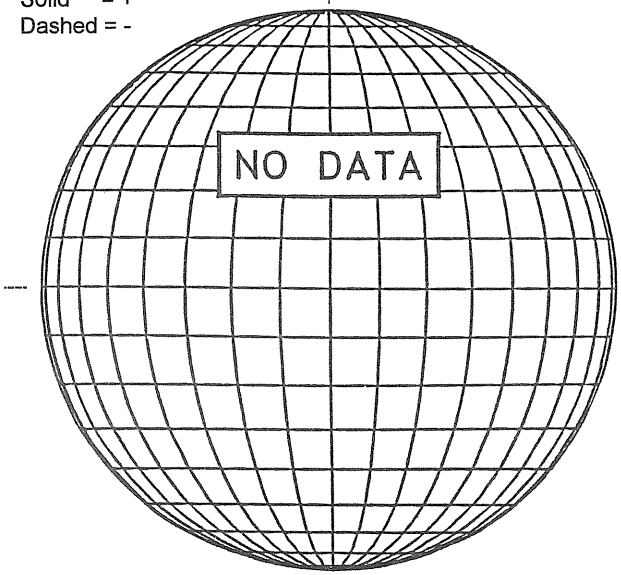
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

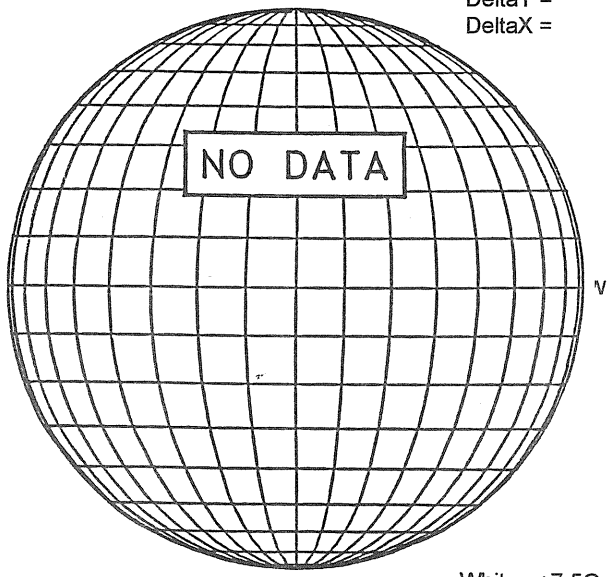
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

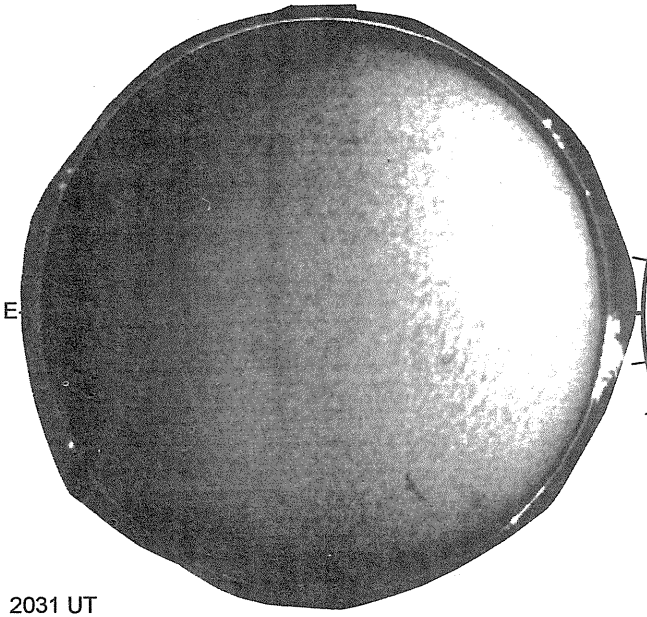
N

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

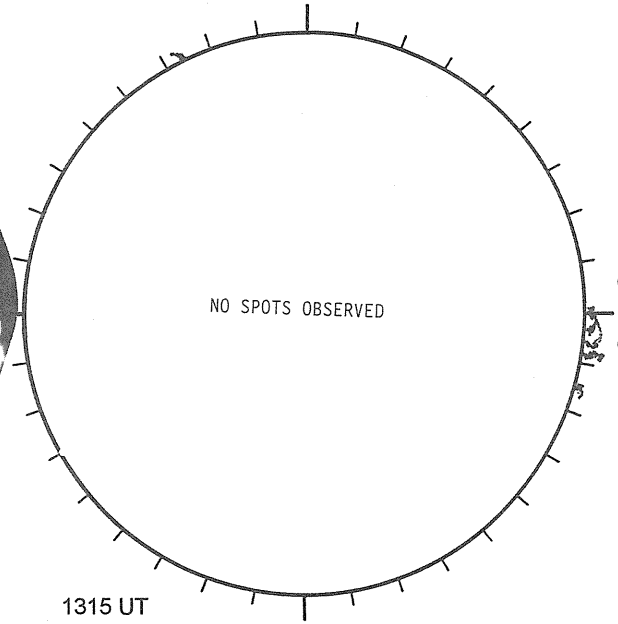
MAUNA LOA H-ALPHA



2031 UT
2049 UT Prom

S

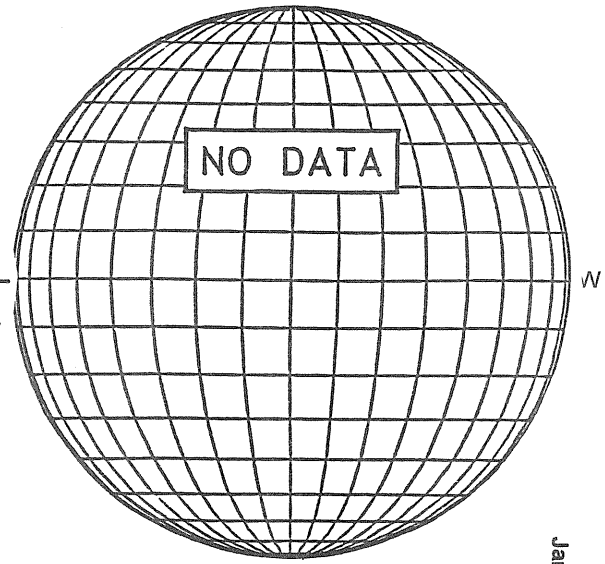
RAMEY SUNSPOT



1315 UT
1024 UT VALA Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

51
Jan 97

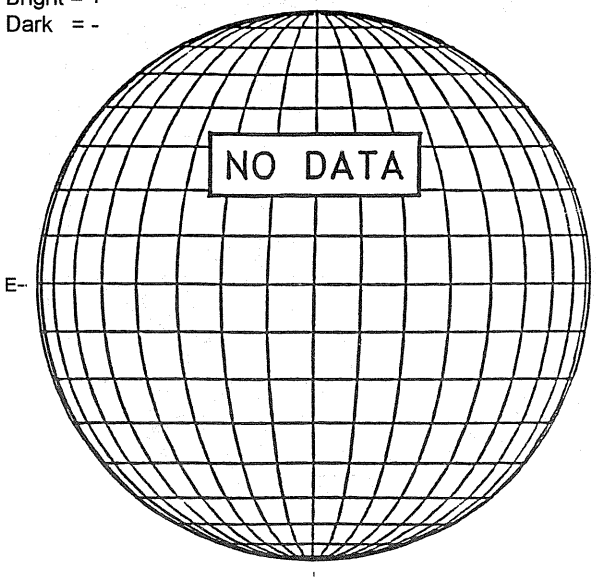
JANUARY 14, 1997 (P= - 4.23, Bo = - 4.47, Lo= 249.53)

KITT PEAK MAGNETOGRAM

N

868.8 nm

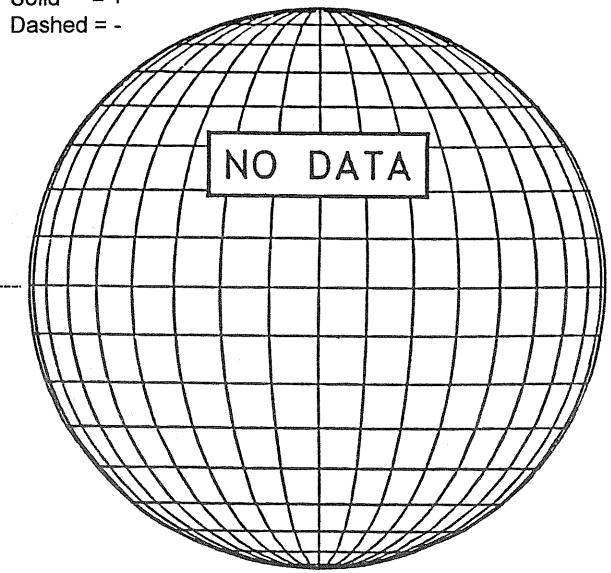
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

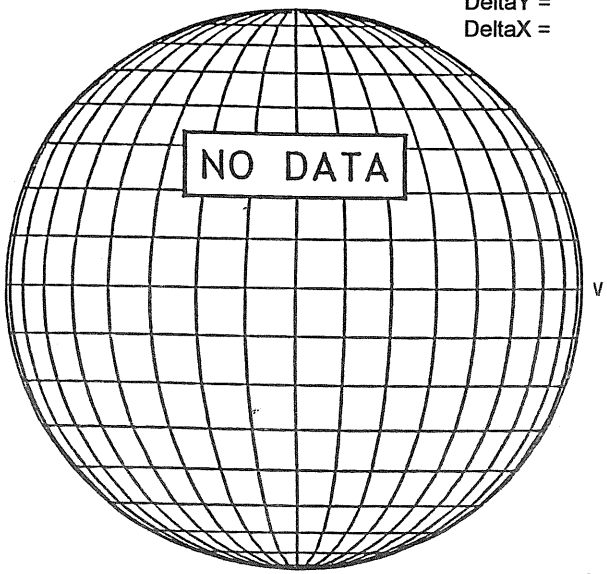
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

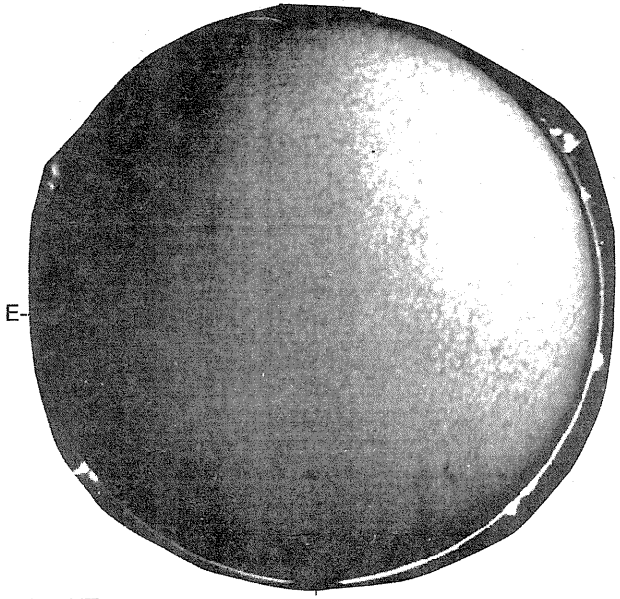
N

DeltaY =
DeltaX =



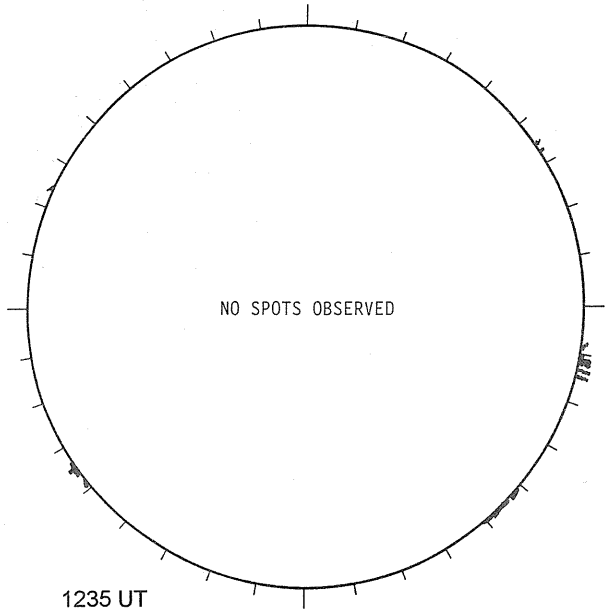
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



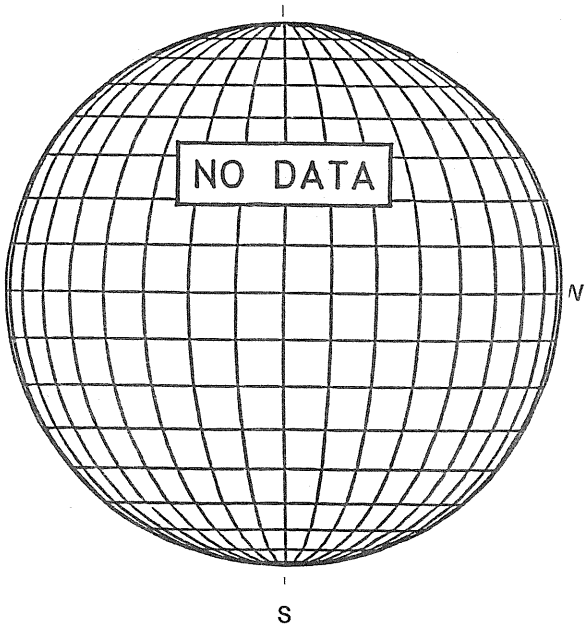
2103 UT
2030 UT Prom

RAMEY SUNSPOT



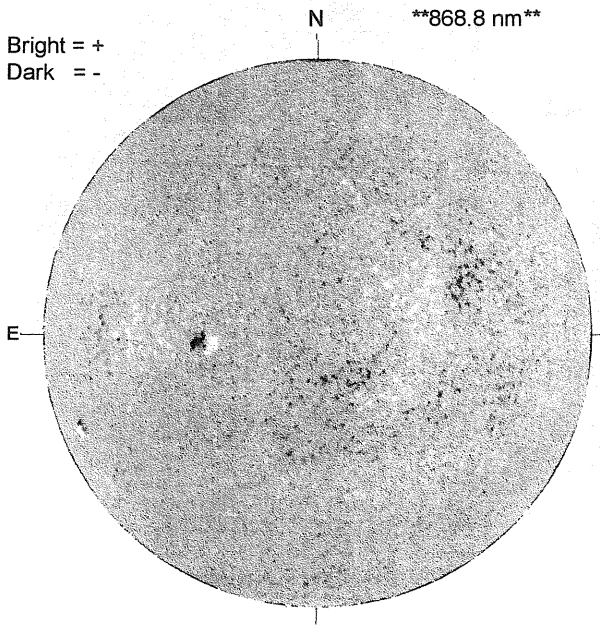
1235 UT
0846 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----



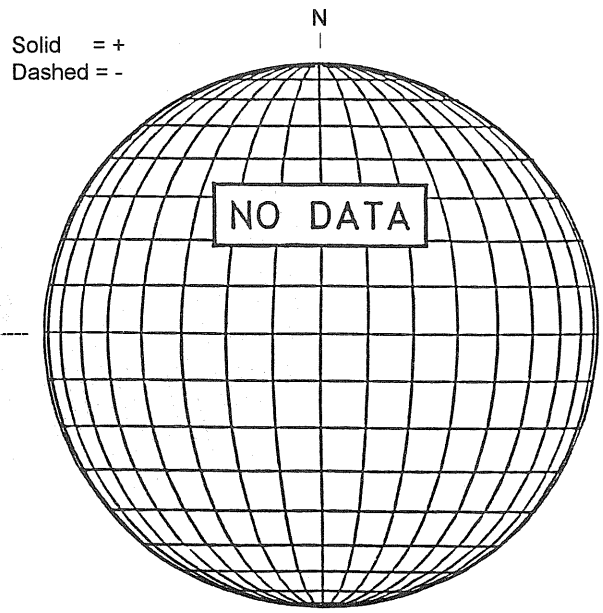
JANUARY 15, 1997 (P= - 4.70, Bo = - 4.57, Lo = 236.36)

KITT PEAK MAGNETOGRAM

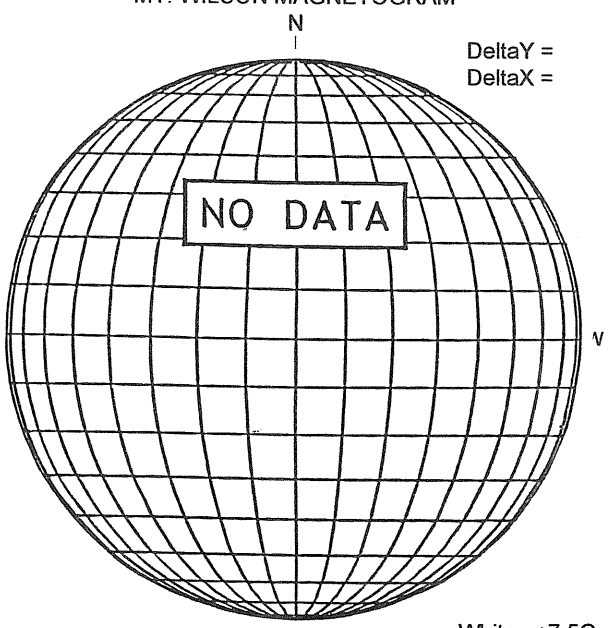


2249 UT

STANFORD MAGNETOGRAM

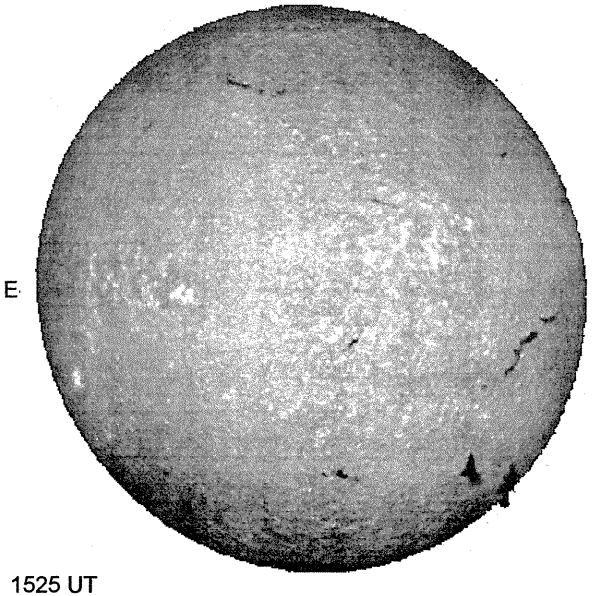


MT. WILSON MAGNETOGRAM



White= +7.5G
Black = -7.5G

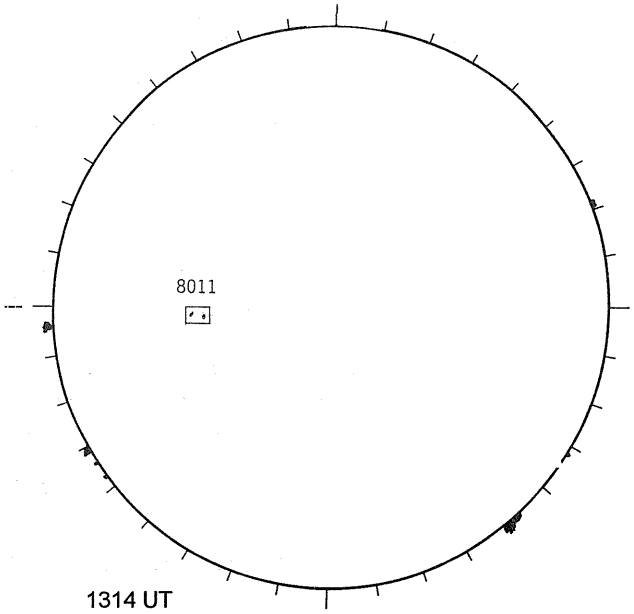
SACRAMENTO PEAK H-ALPHA



1525 UT

S

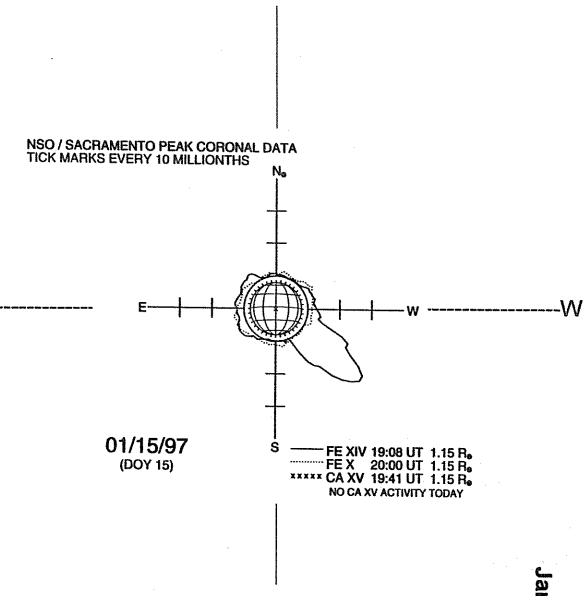
RAMEY SUNSPOT



1314 UT
0836 UT LOMN Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

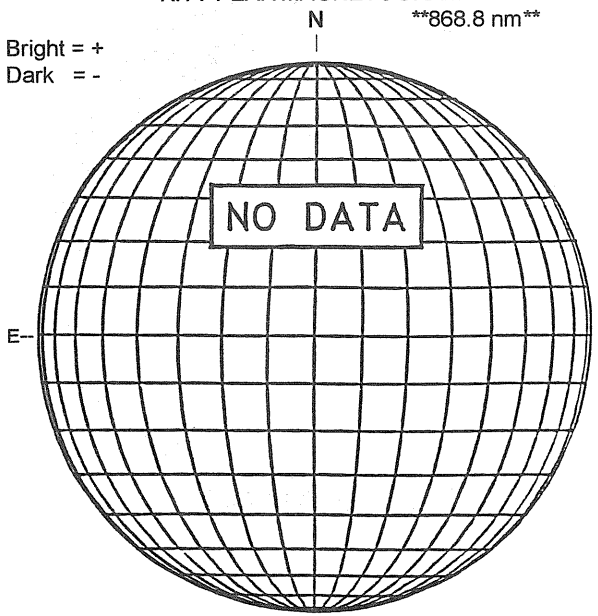
53
Jan 97

JANUARY 16, 1997 (P= - 5.17, Bo = - 4.67, Lo = 223.20)

KITT PEAK MAGNETOGRAM

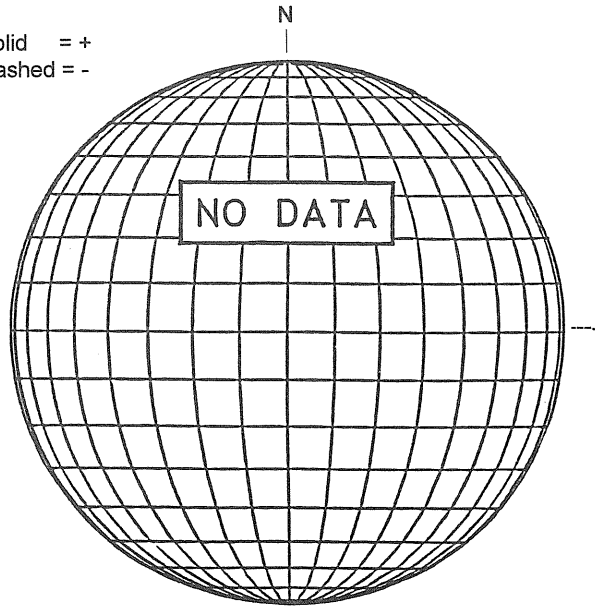
868.8 nm

Bright = +
Dark = -



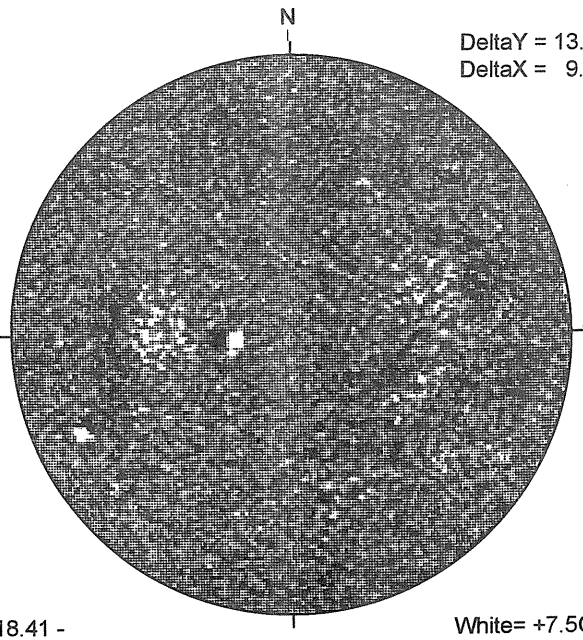
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

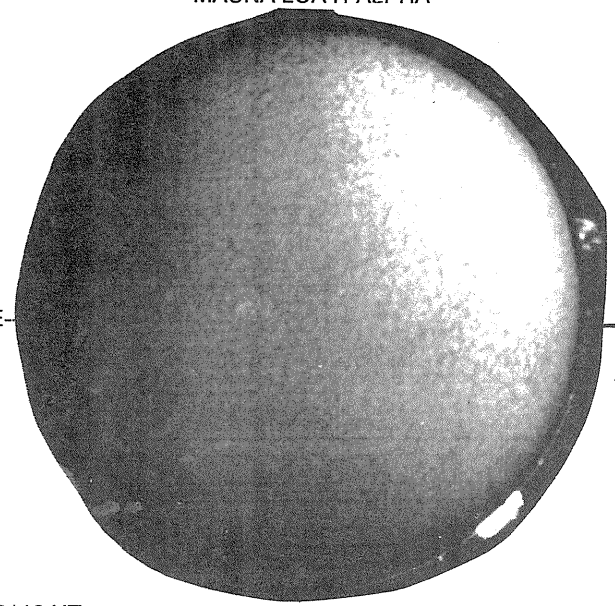
DeltaY = 13.0
DeltaX = 9.6



18.41 -
19.39 UT

White= +7.5G
Black = -7.5G

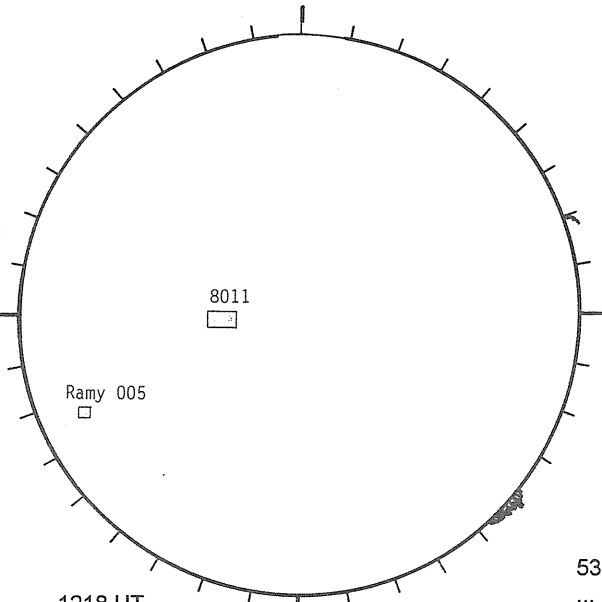
MAUNA LOA H-ALPHA



2116 UT
1837 UT Prom

S

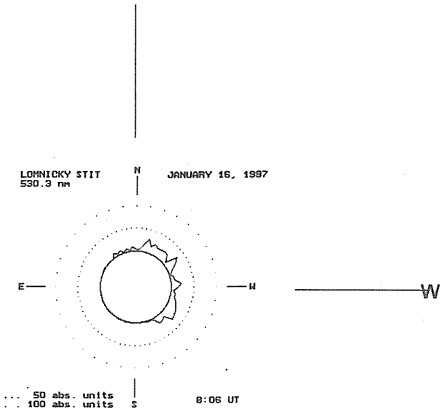
RAMEY SUNSPOT



1218 UT
1059 UT VALA Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----

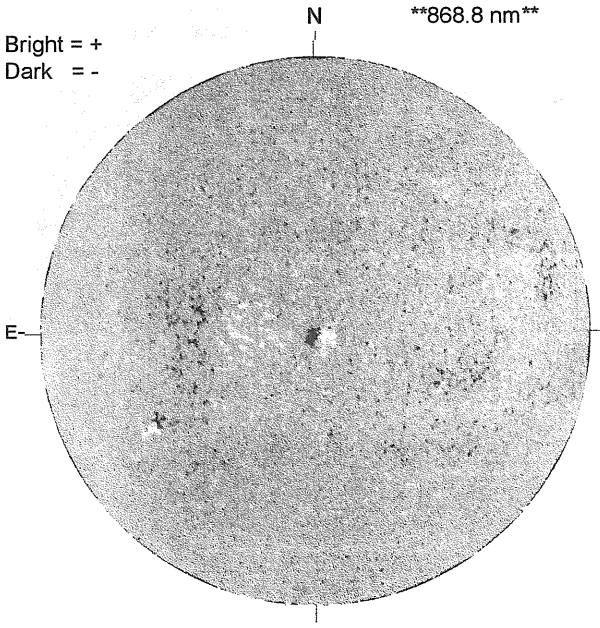


530.3 nm, 0806 UT
... 50 abs. units
. . 100 abs. units

S

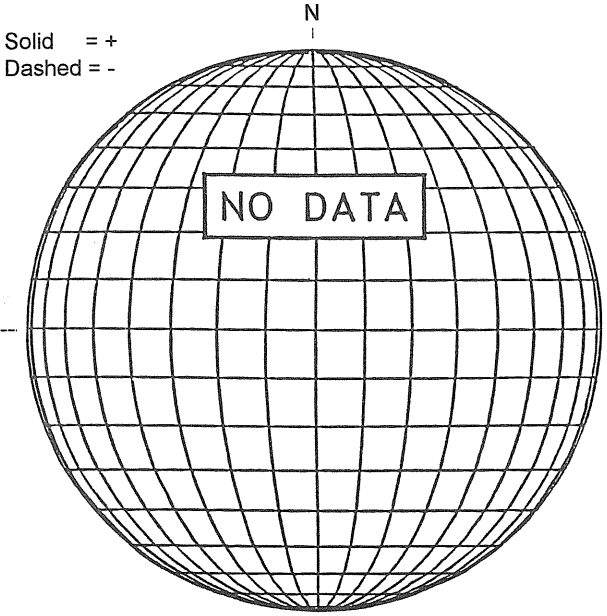
JANUARY 17, 1997 (P= - 5.64, Bo = - 4.77, Lo = 210.03)

KITT PEAK MAGNETOGRAM

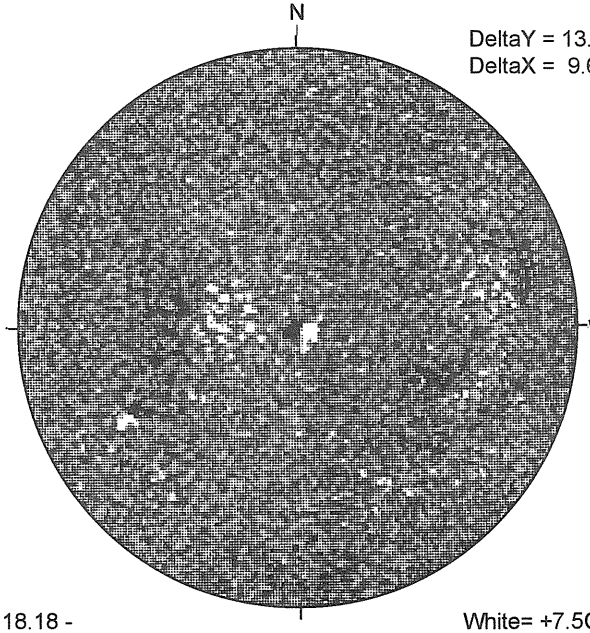


1619 UT

STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM



18.18 -
19.15 UT

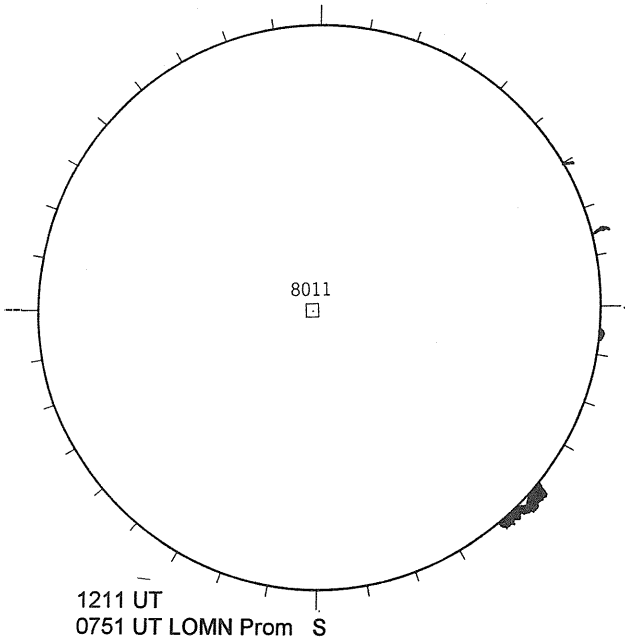
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

1602 UT

S

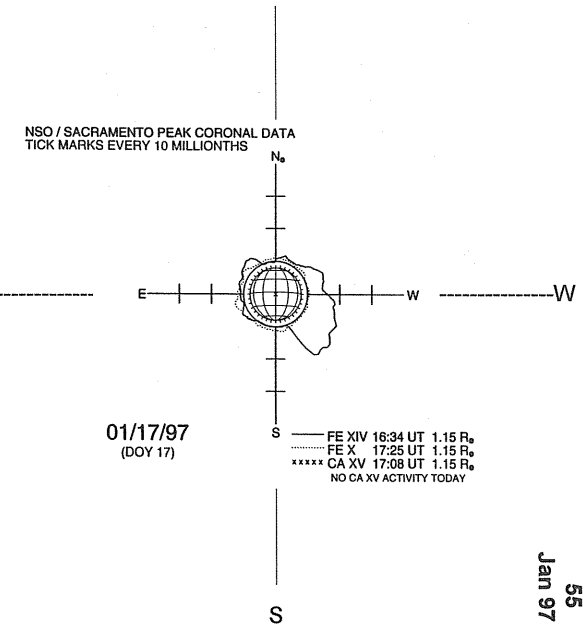
RAMEY SUNSPOT



1211 UT
0751 UT LOMN Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)

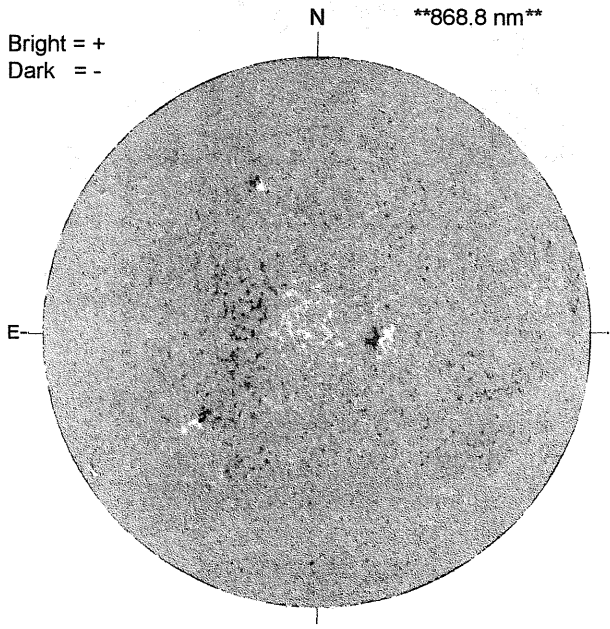


S

55
Jan 97

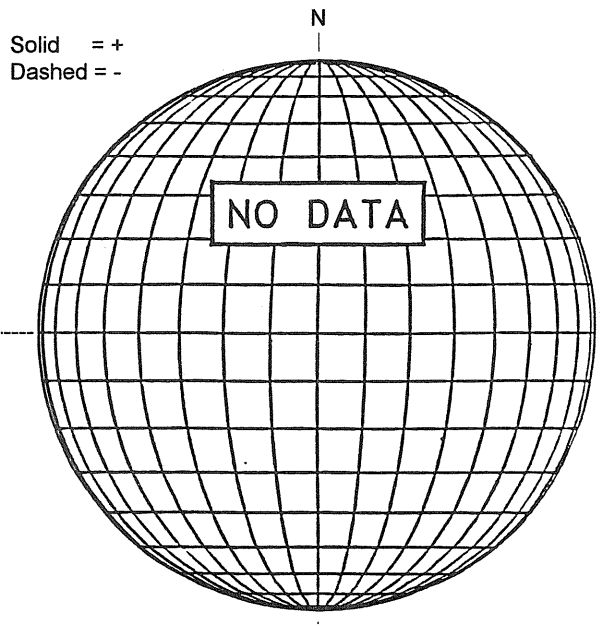
JANUARY 18, 1997 (P= - 6.10, Bo = - 4.86, Lo = 196.86)

KITT PEAK MAGNETOGRAM

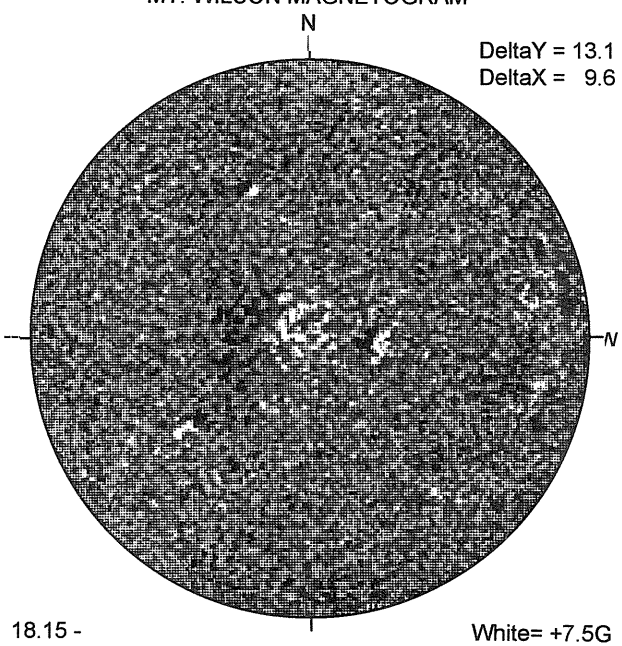


1624 UT

STANFORD MAGNETOGRAM



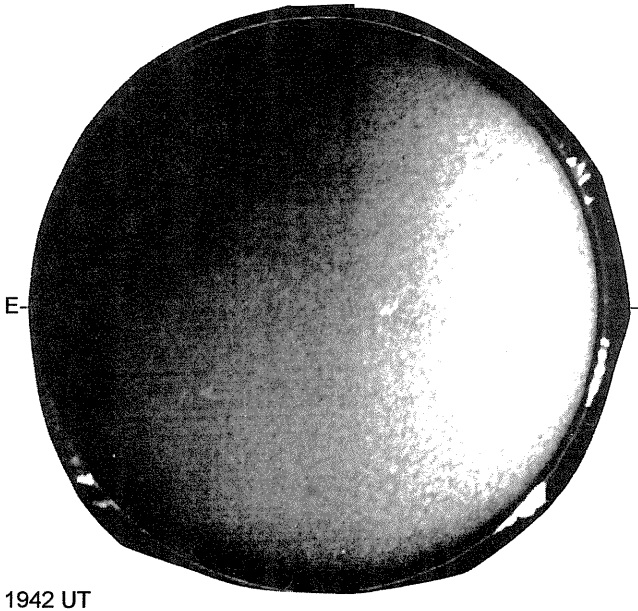
MT. WILSON MAGNETOGRAM



18.15 -
19.12 UT

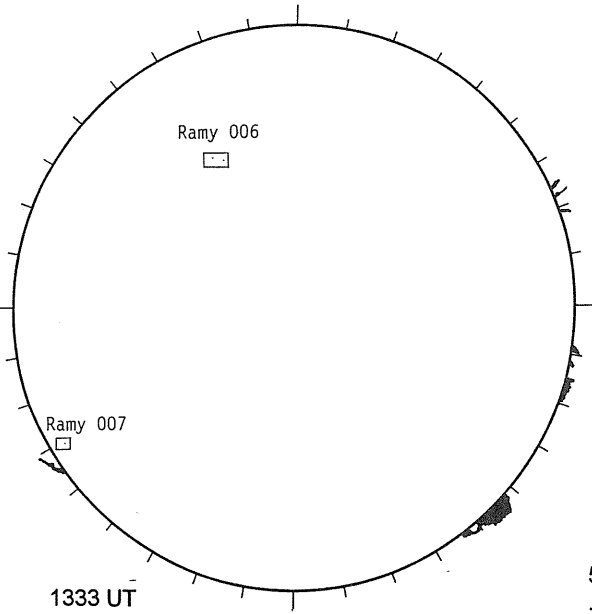
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



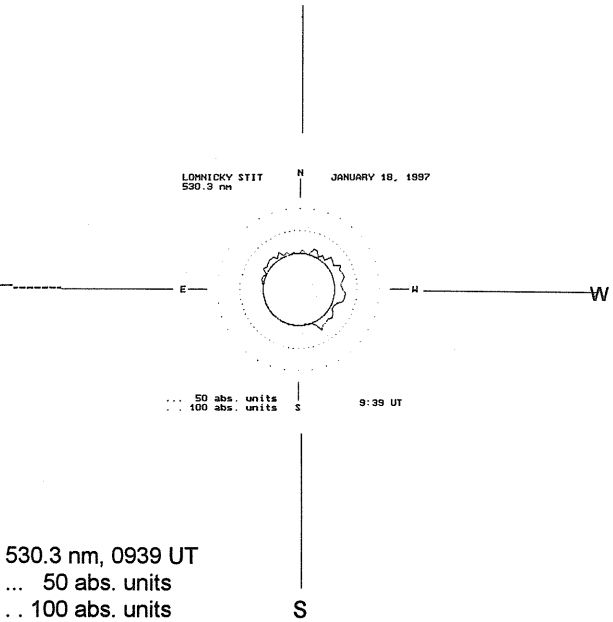
1942 UT
1927 UT Prom S

RAMEY SUNSPOT



1333 UT
0926 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)



530.3 nm, 0939 UT
... 50 abs. units
. . 100 abs. units

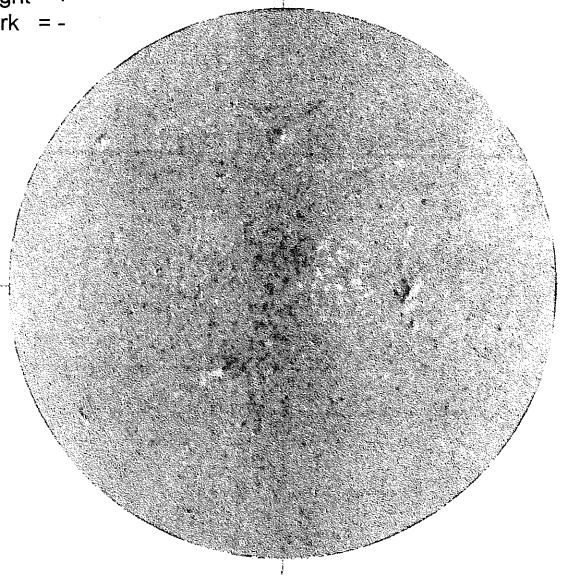
S

JANUARY 19, 1997 (P= - 6.56, Bo = - 4.96, Lo = 183.69)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



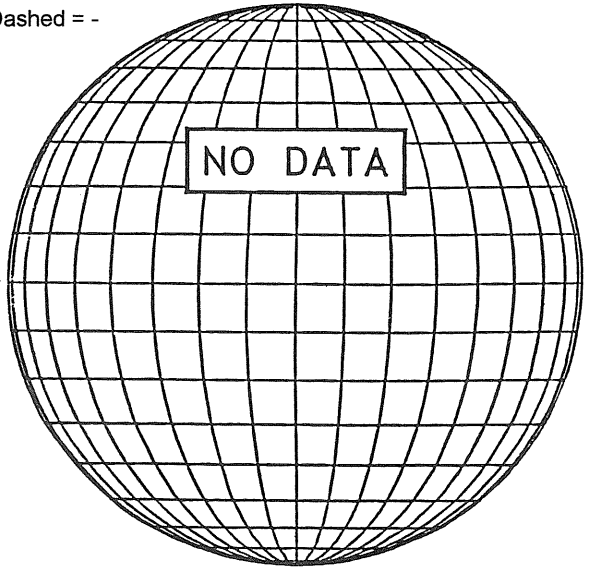
E--

1837 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

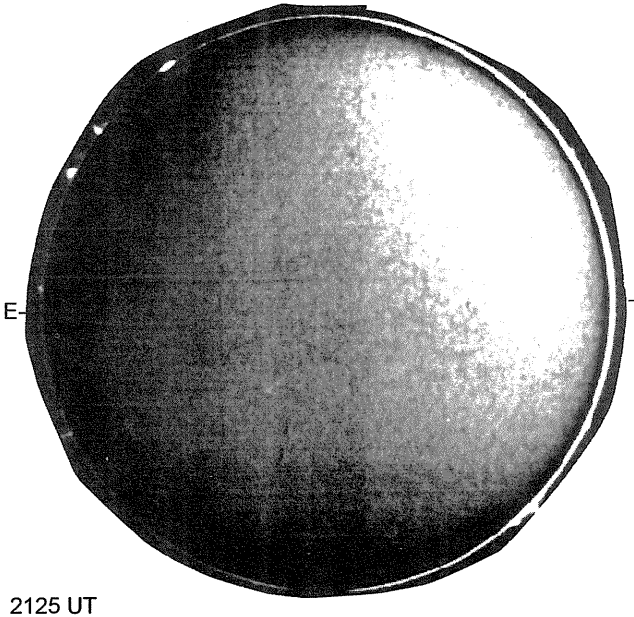
DeltaY = 13.1
DeltaX = 9.6

-W

17.54 -
18.52 UT

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

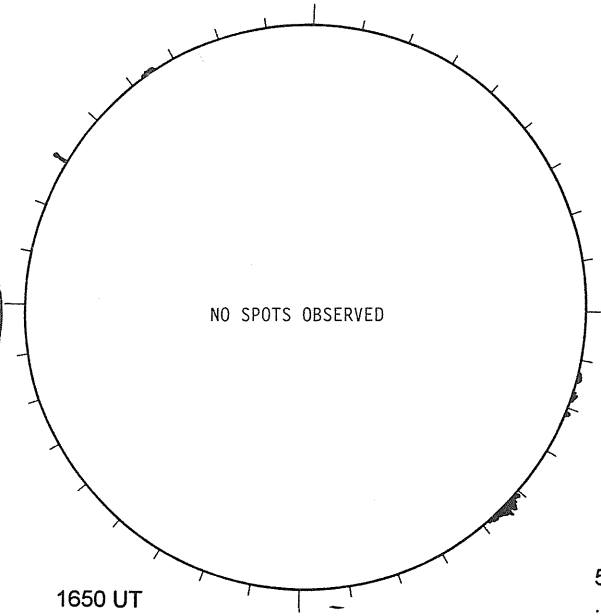


E-

2125 UT
2122 UT Prom

S

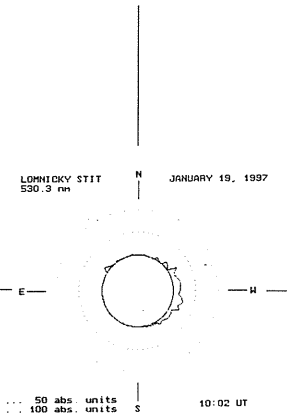
HOLLOMAN SUNSPOT



1650 UT
0950 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



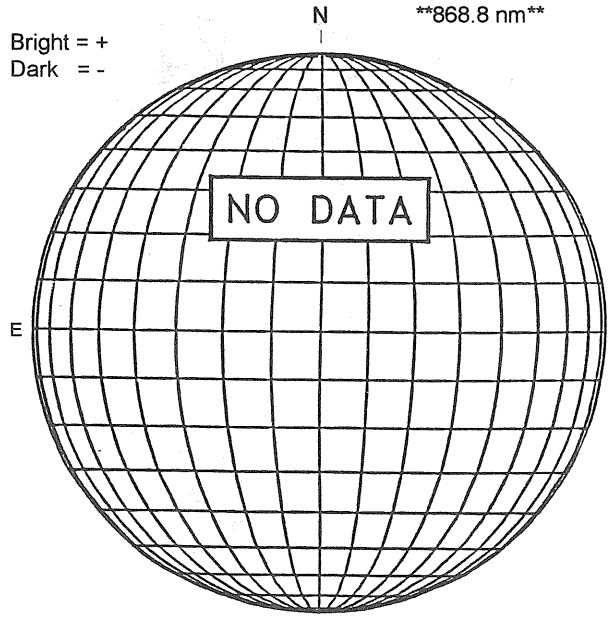
530.3 nm, 1002 UT
... 50 abs. units
. . 100 abs. units

S

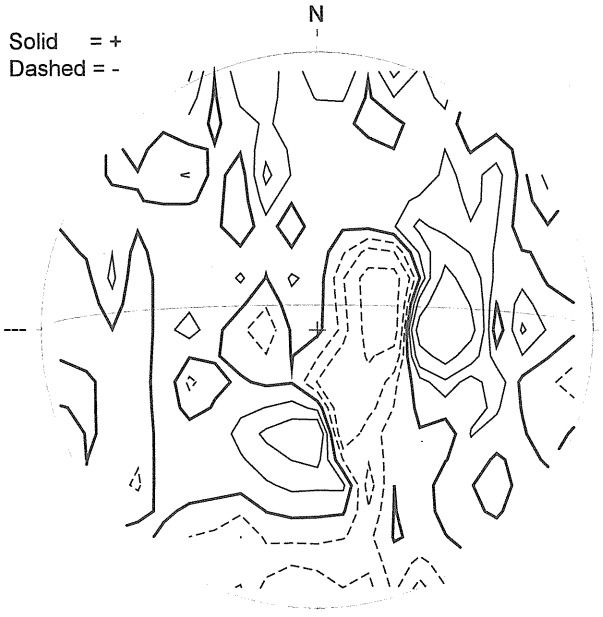
57
Jan 97

JANUARY 20, 1997 (P= - 7.01, Bo = - 5.05, Lo = 170.53)

KITT PEAK MAGNETOGRAM

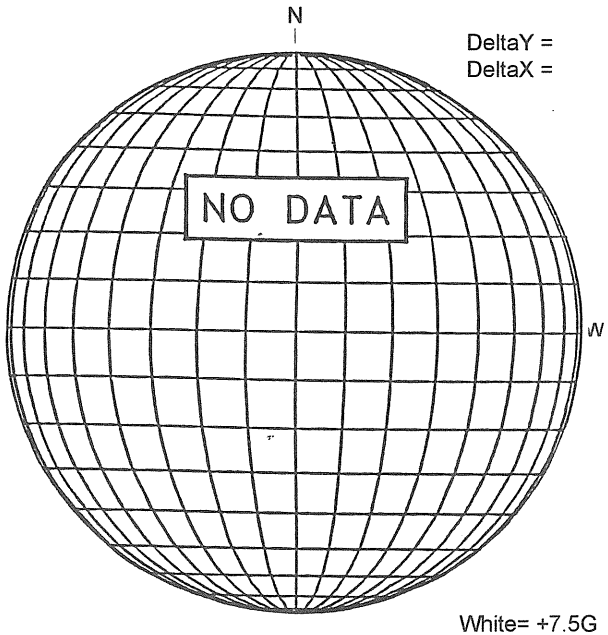


STANFORD MAGNETOGRAM



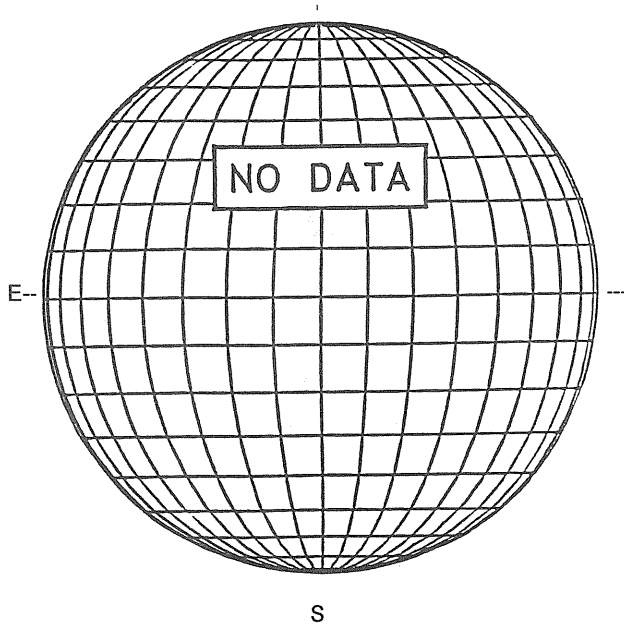
2022 UT

MT. WILSON MAGNETOGRAM

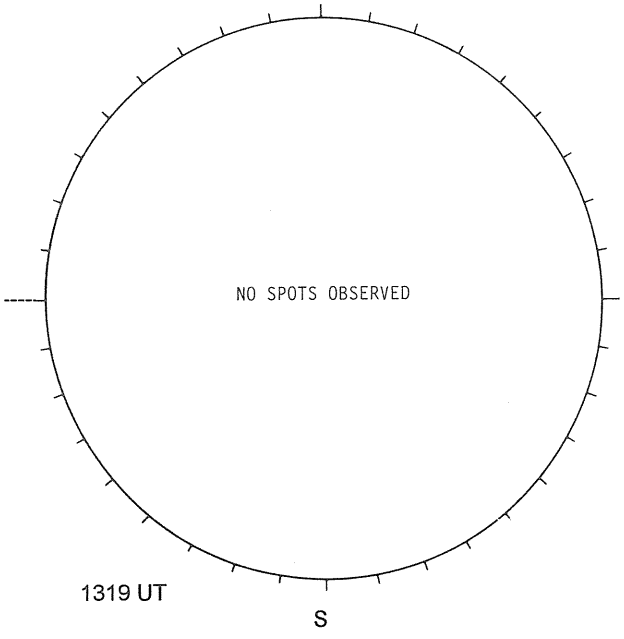


White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

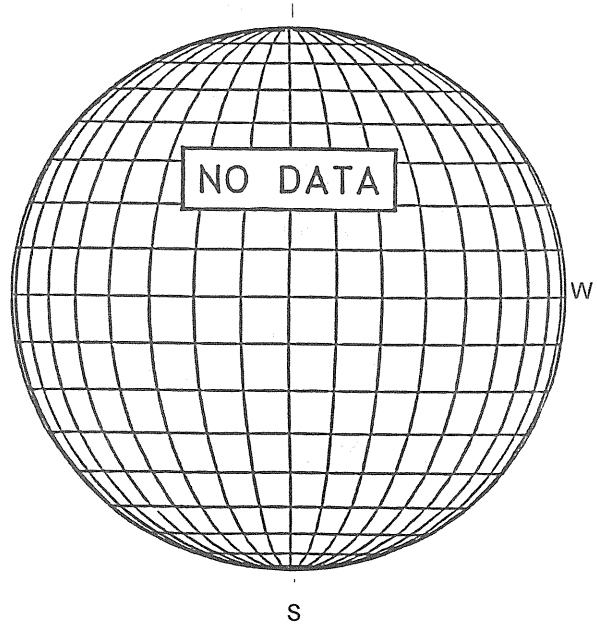


RAMEY SUNSPOT



1319 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



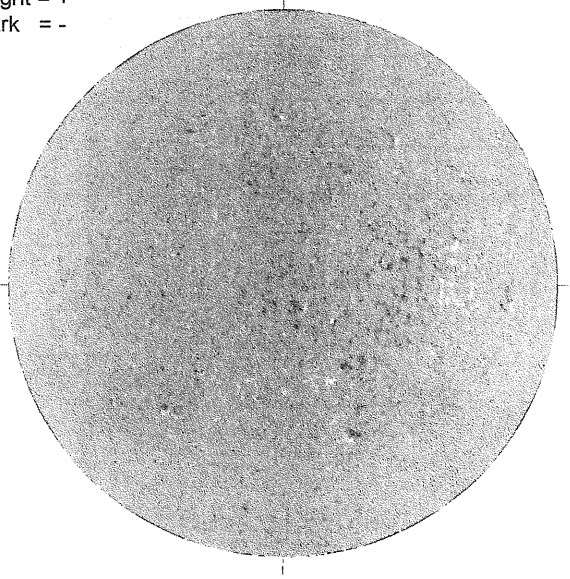
JANUARY 21, 1997 (P= - 7.47, Bo = - 5.14, Lo = 157.36)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



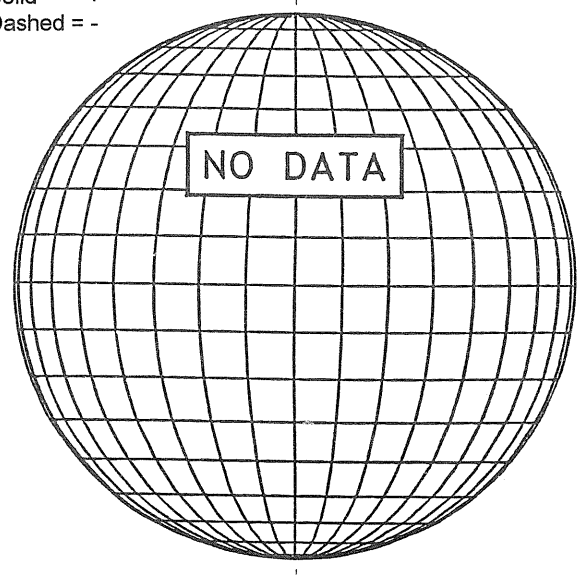
E

1754 UT

STANFORD MAGNETOGRAM

N

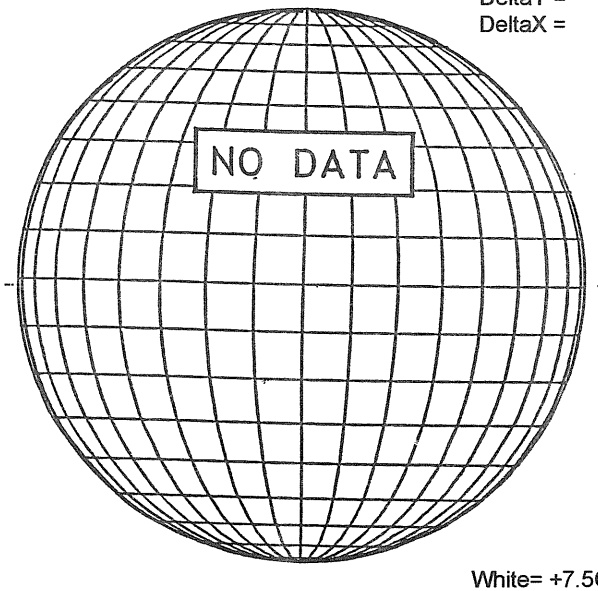
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

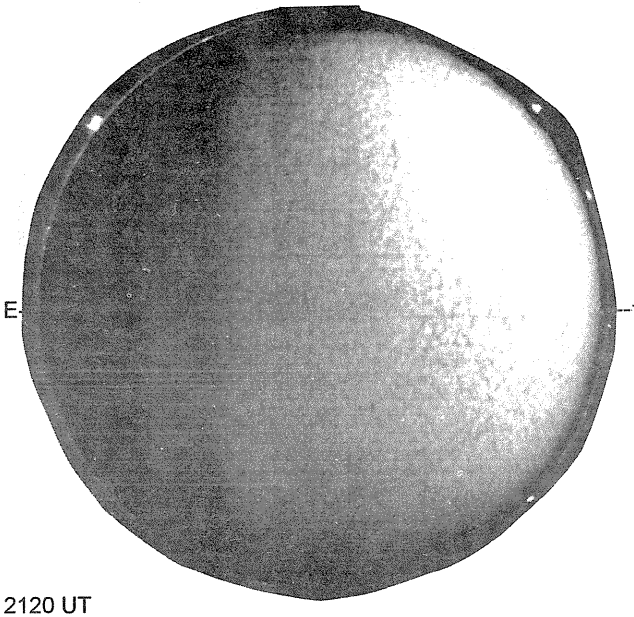
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

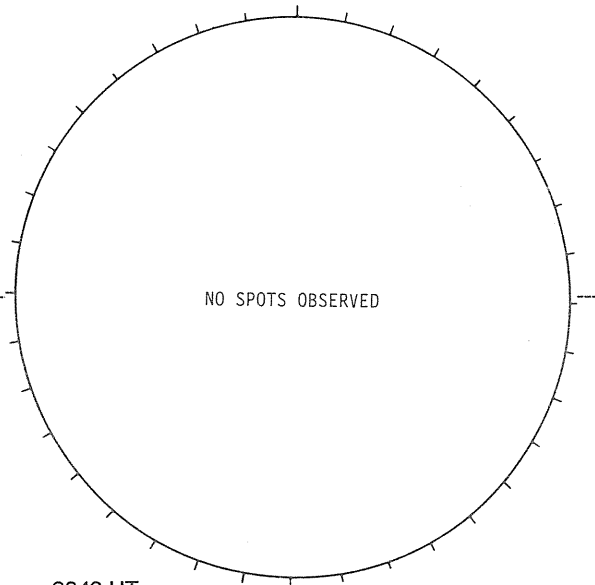


E

2120 UT
2111 UT Prom

S

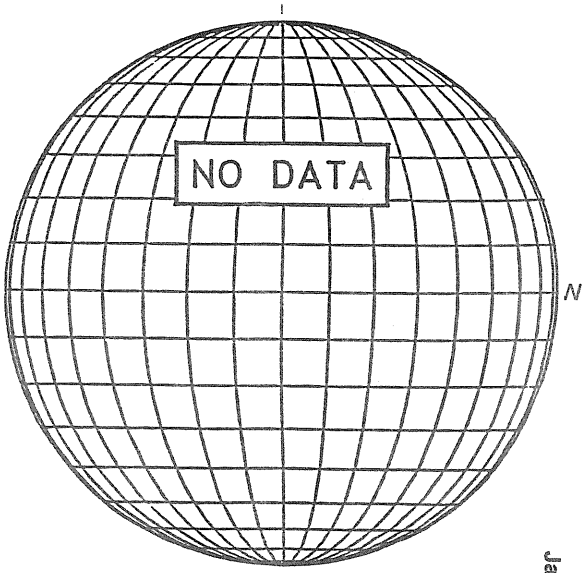
HOLLOMAN SUNSPOT



2043 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



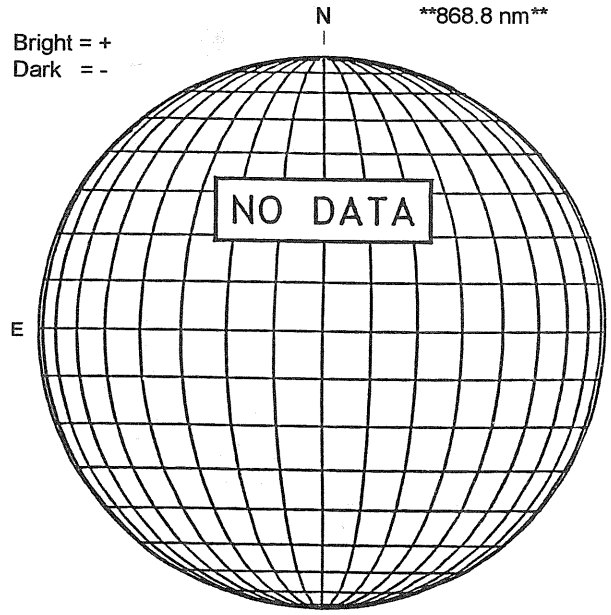
W

S

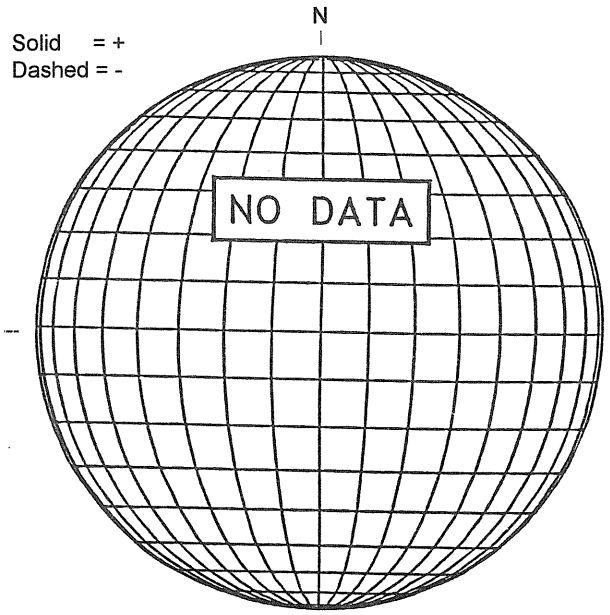
59
Jan 97

JANUARY 22, 1997 (P= - 7.92, Bo = - 5.23, Lo = 144.19)

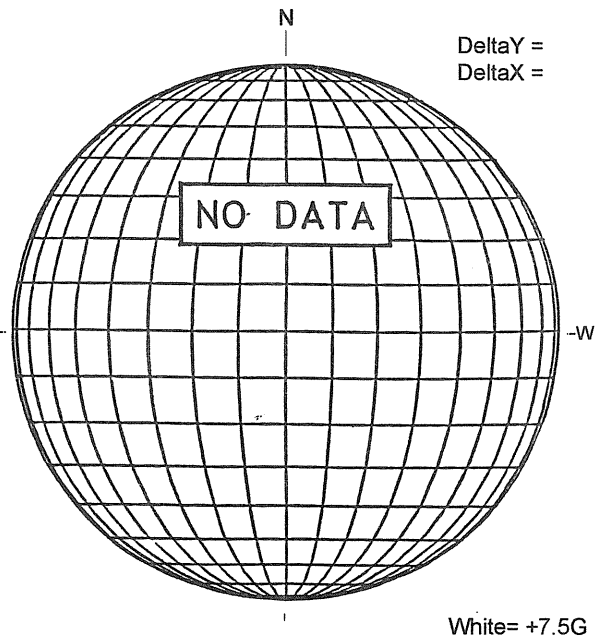
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM

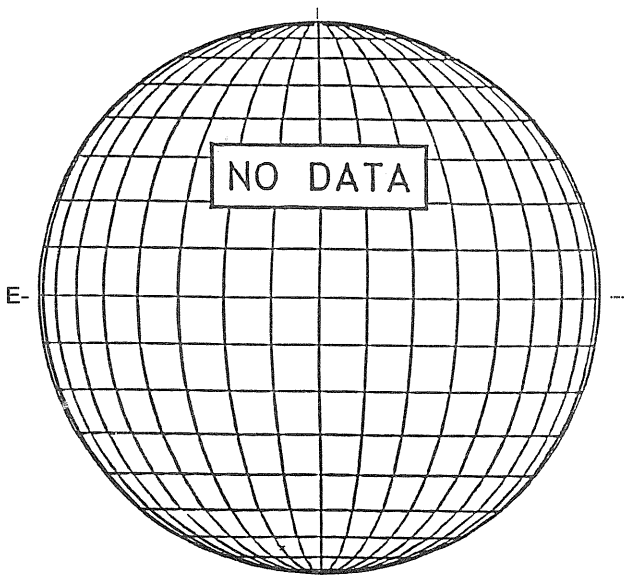


MT. WILSON MAGNETOGRAM

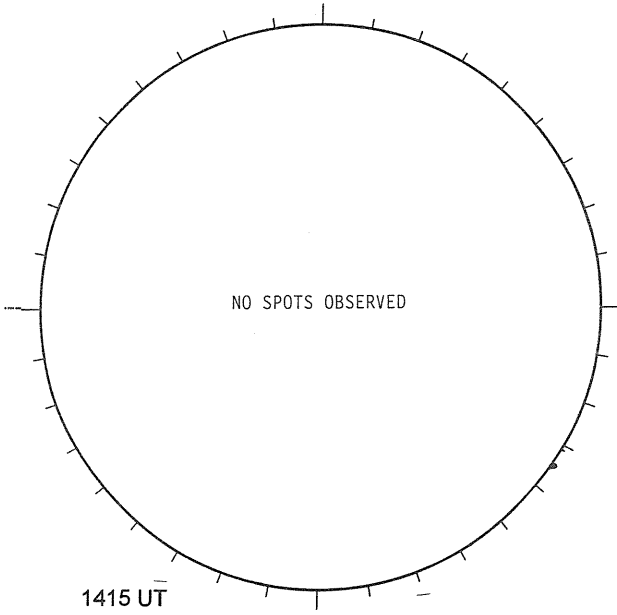


White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA

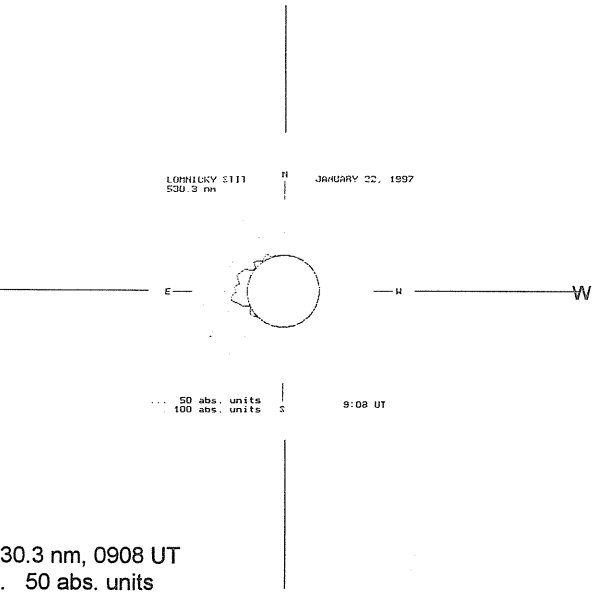


RAMEY SUNSPOT



1415 UT
1001 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)



530.3 nm, 0908 UT
... 50 abs. units
. . 100 abs. units

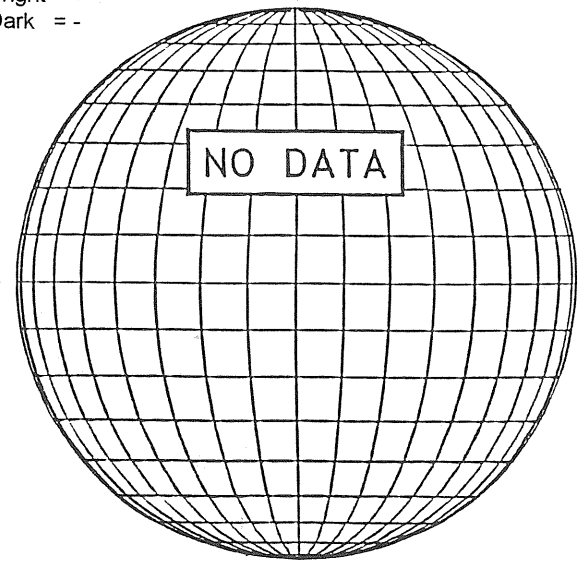
JANUARY 23, 1997 (P= - 8.36, Bo = - 5.32, Lo = 131.03)

KITT PEAK MAGNETOGRAM

N

868.8 nm

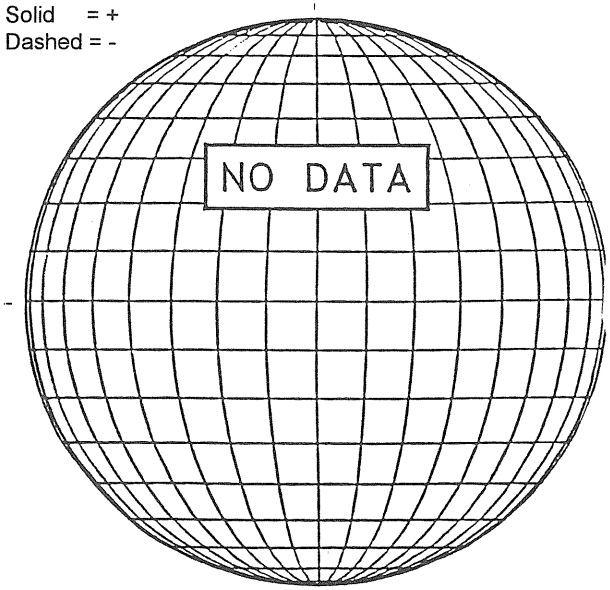
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

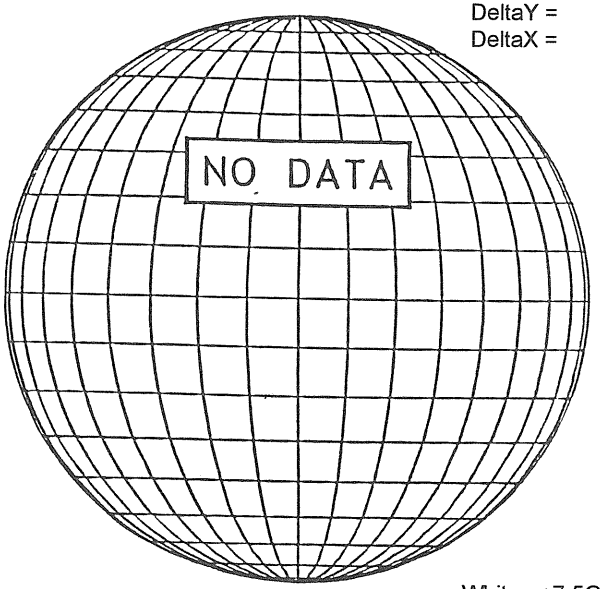
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

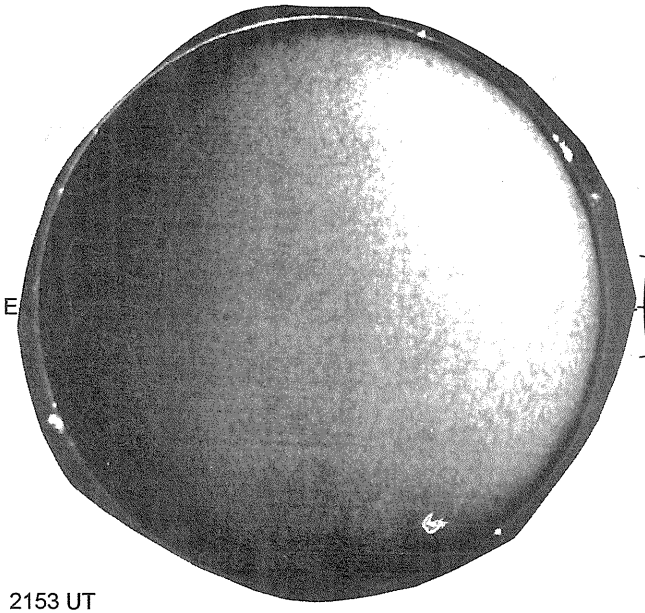
N

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

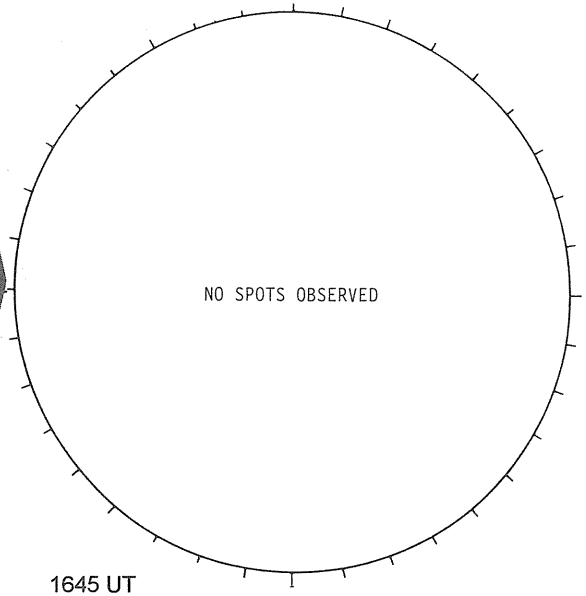
MAUNA LOA H-ALPHA



2153 UT
2150 UT Prom

S

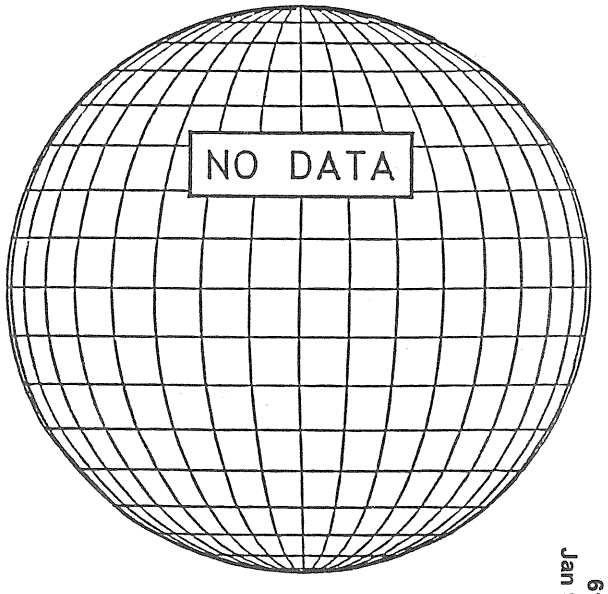
RAMEY SUNSPOT



1645 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

61
Jan 97

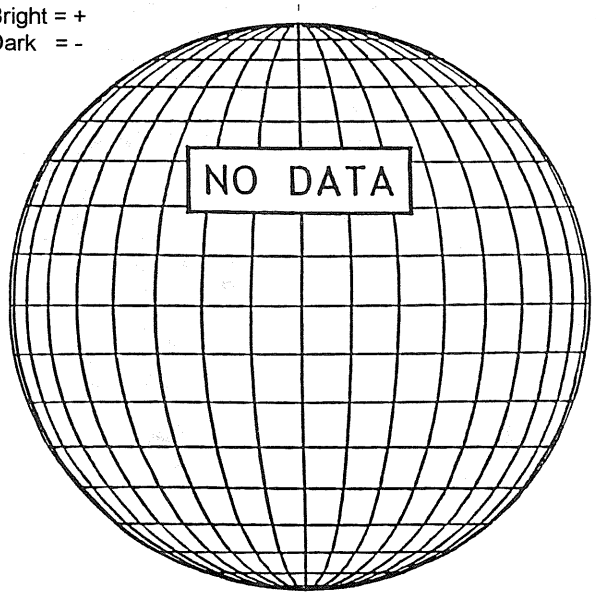
JANUARY 24, 1997 (P= - 8.80, Bo = - 5.41 Lo = 117.86)

KITT PEAK MAGNETOGRAM

N

868.8 nm

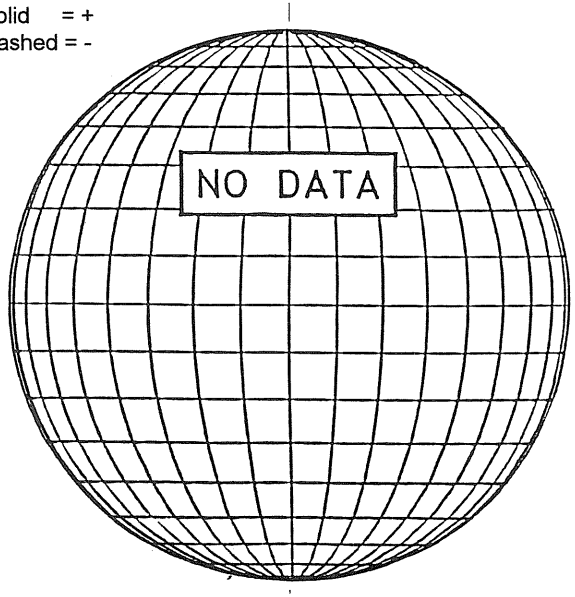
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

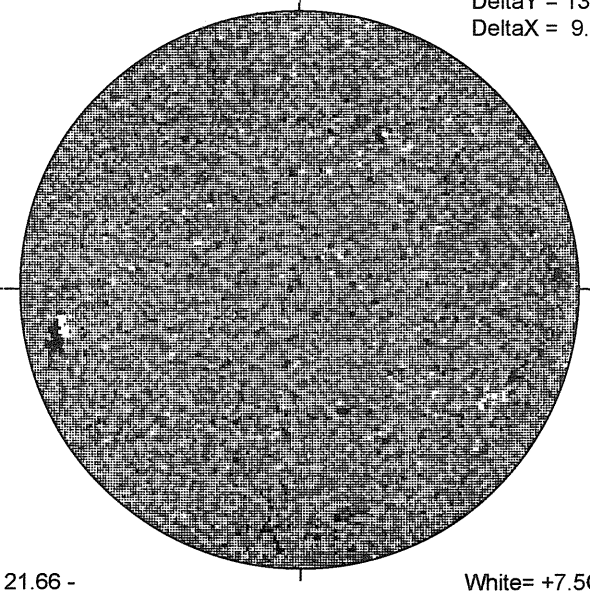
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

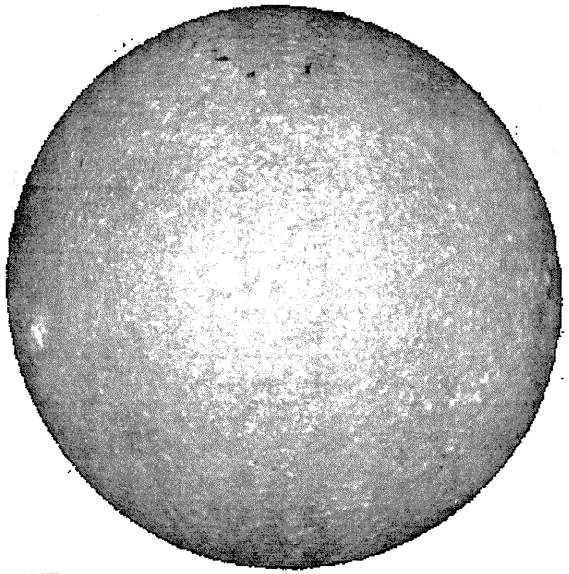


21.66 -
22.64 UT

White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

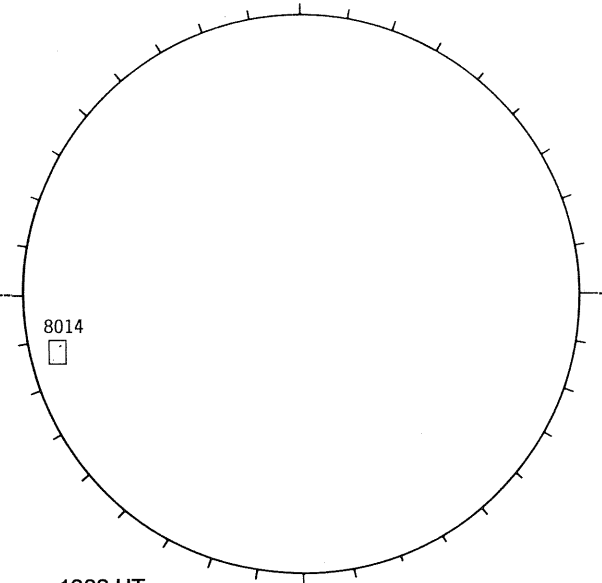
E-



1519 UT

S

RAMEY SUNSPOT

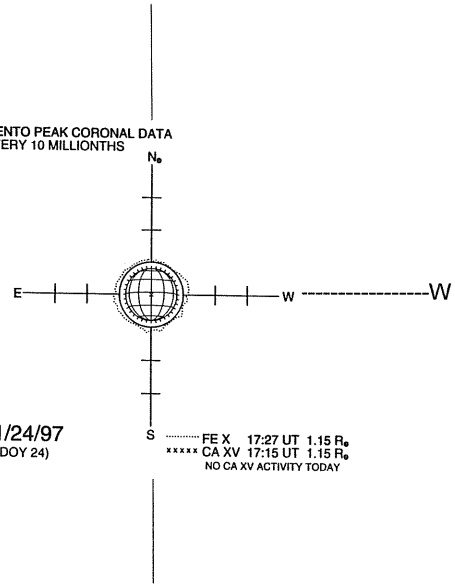


1308 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



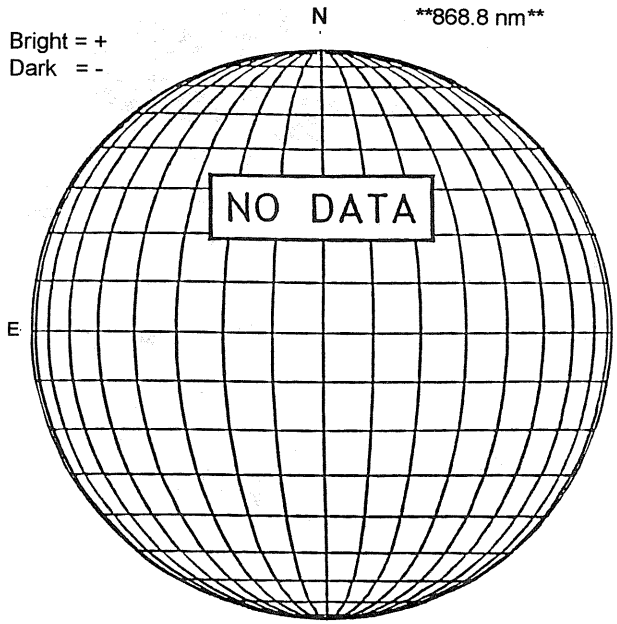
01/24/97
(DOY 24)

FE X 17:27 UT 1.15 R$_\odot$
CA XV 17:15 UT 1.15 R$_\odot$
NO CA XV ACTIVITY TODAY

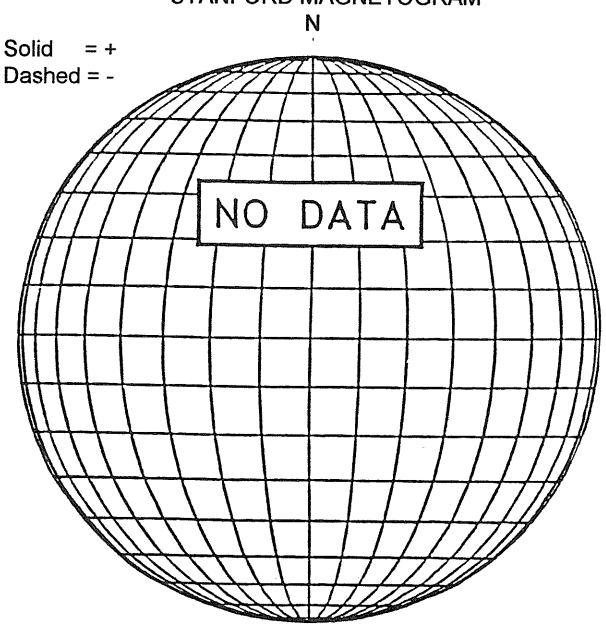
S

JANUARY 25, 1997 (P= - 9.24, Bo = - 5.49, Lo = 104.69)

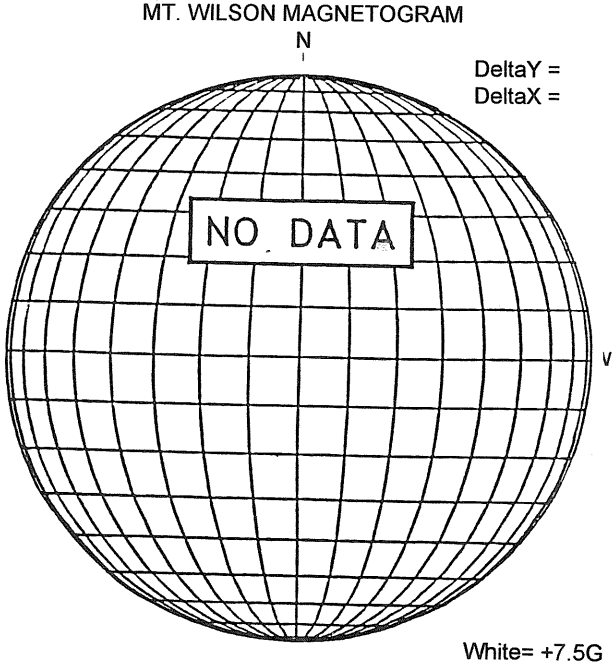
KITT PEAK MAGNETOGRAM



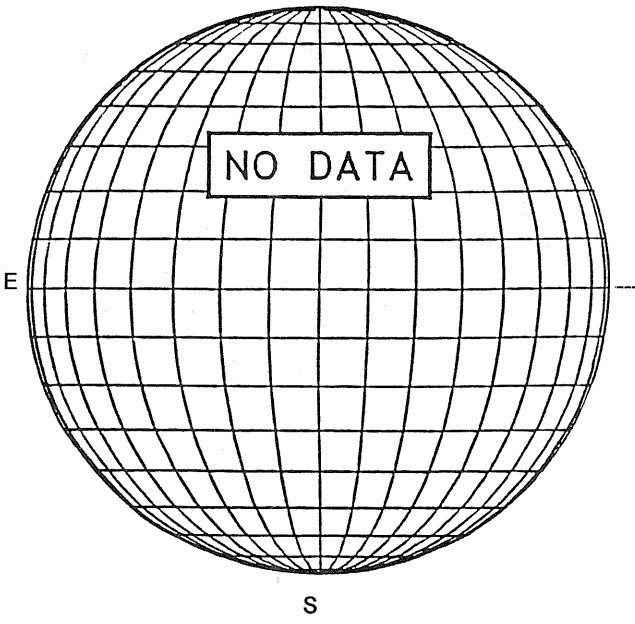
STANFORD MAGNETOGRAM



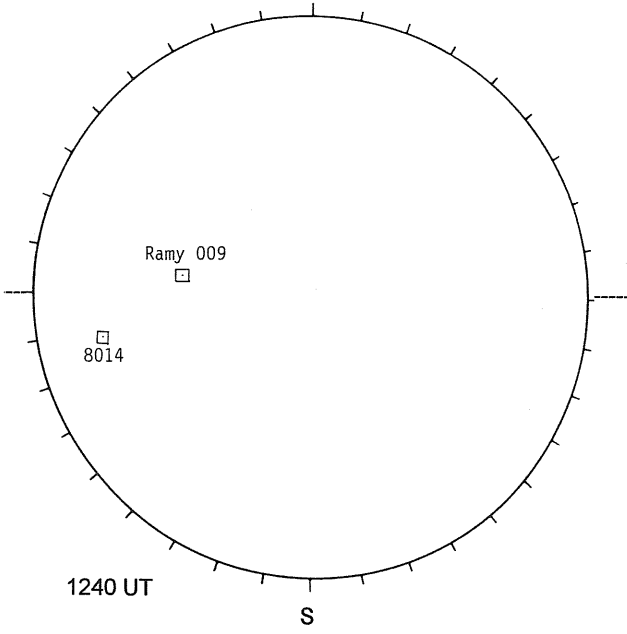
MT. WILSON MAGNETOGRAM



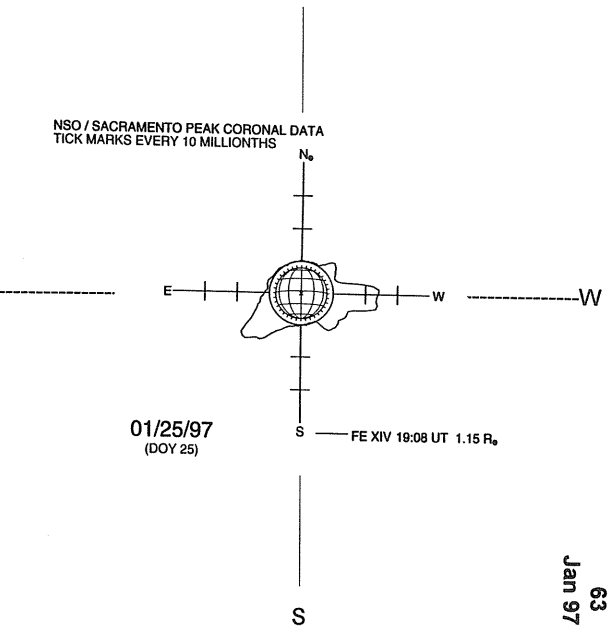
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

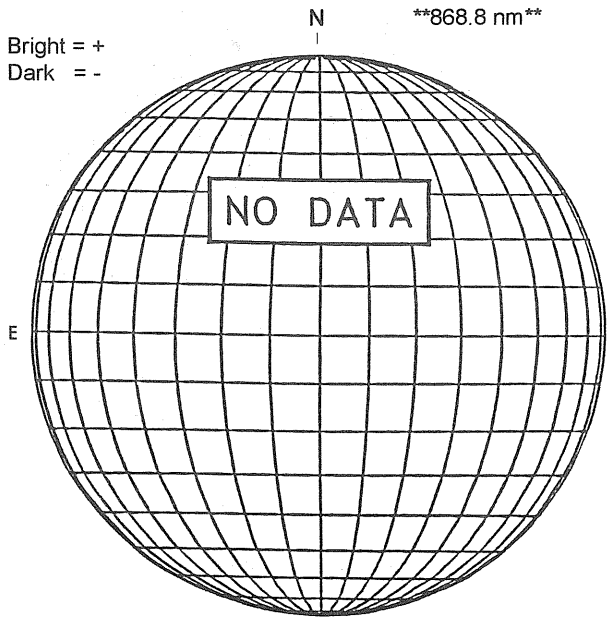


SACRAMENTO PEAK CORONA (1.15 Radii)

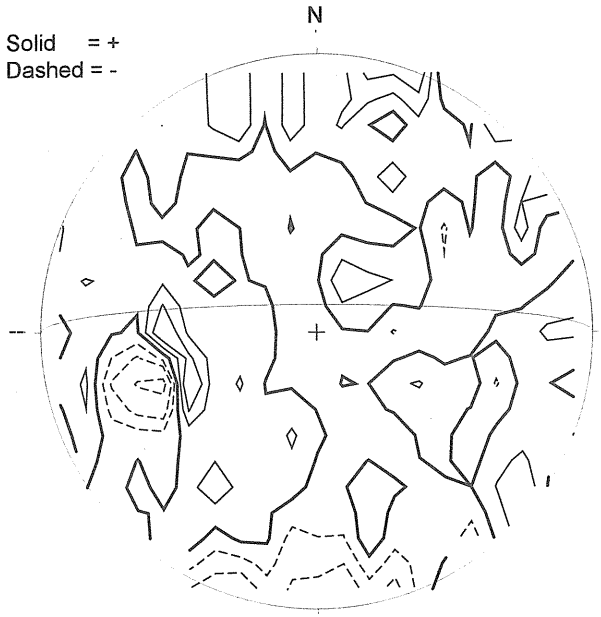


JANUARY 26, 1997 (P= - 9.68, Bo = - 5.58, Lo = 91.53)

KITT PEAK MAGNETOGRAM

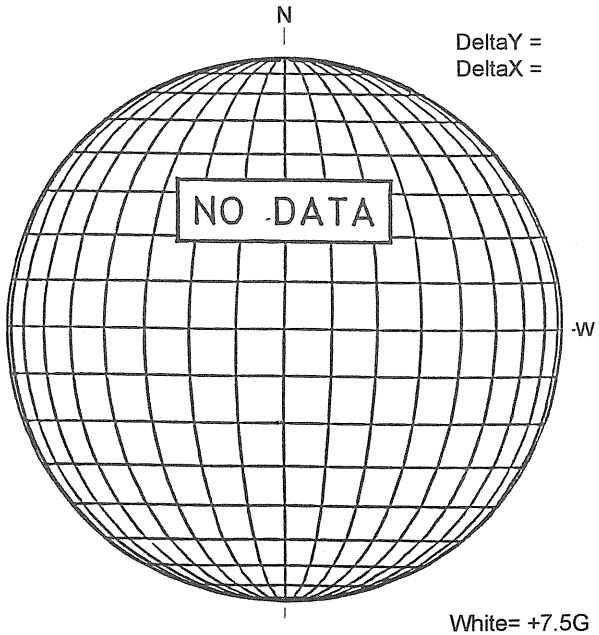


STANFORD MAGNETOGRAM



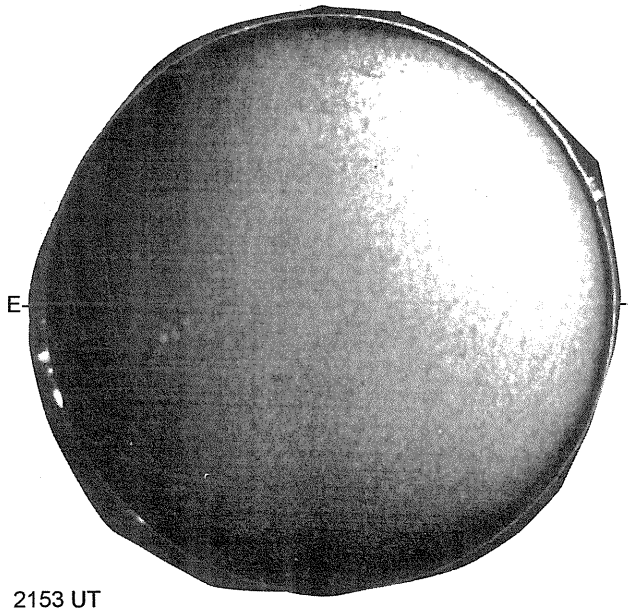
2222 UT

MT. WILSON MAGNETOGRAM



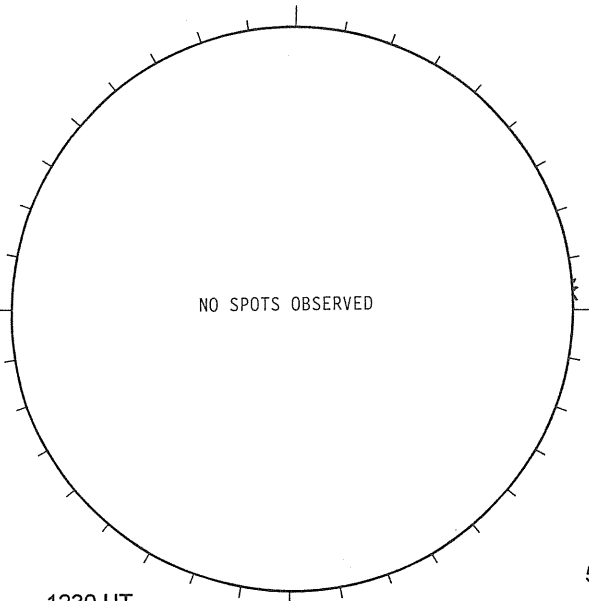
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



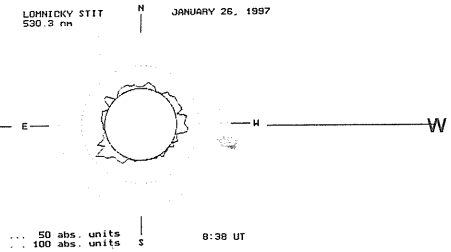
2153 UT
2132 UT Prom S

RAMEY SUNSPOT



1230 UT
0808 UT LOMN Prom S

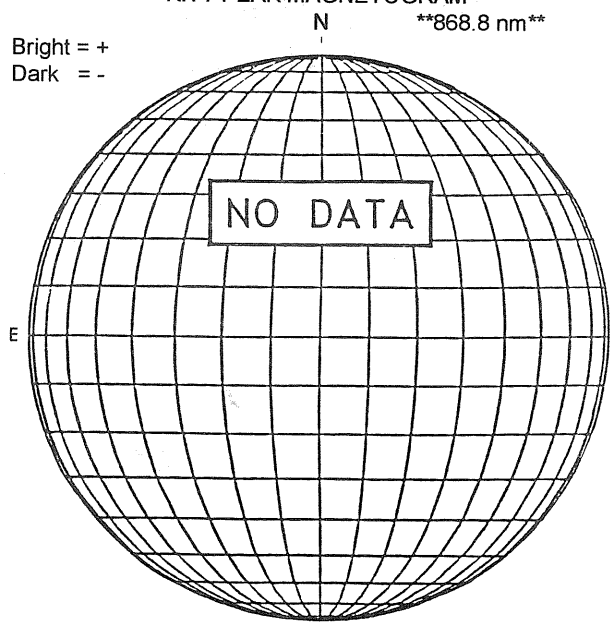
LOMNICKY PEAK CORONA (1.04 Radii)----



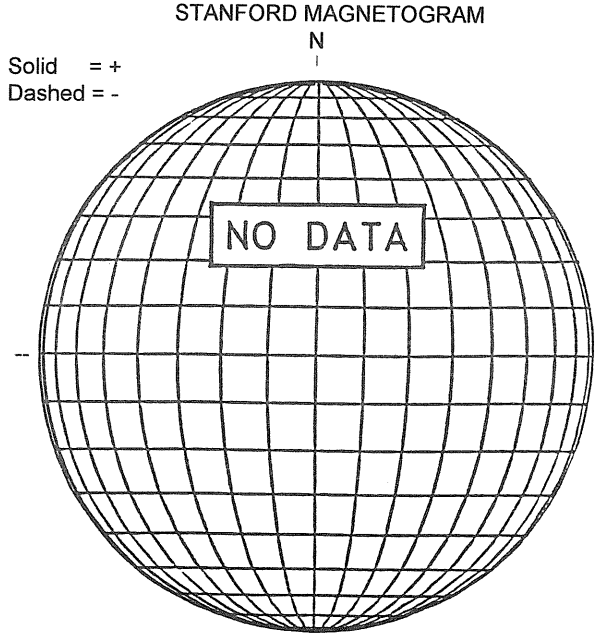
530.3 nm, 0838 UT
... 50 abs. units
. . 100 abs. units
S

JANUARY 27, 1997 (P= - 10.11, Bo = - 5.66, Lo = 78.36)

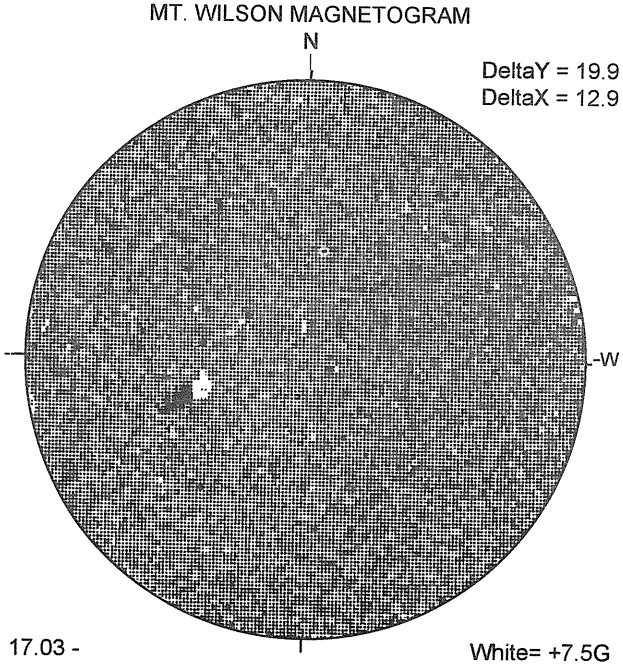
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM



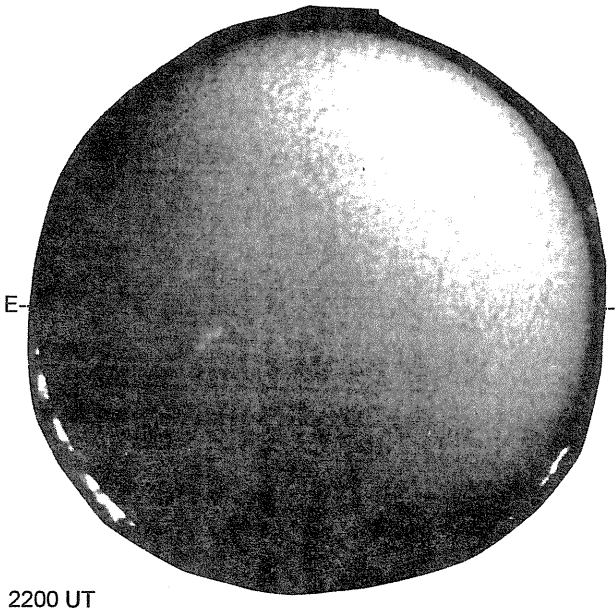
MT. WILSON MAGNETOGRAM



17.03 -
17.46 UT

White= +7.5G
Black = -7.5G

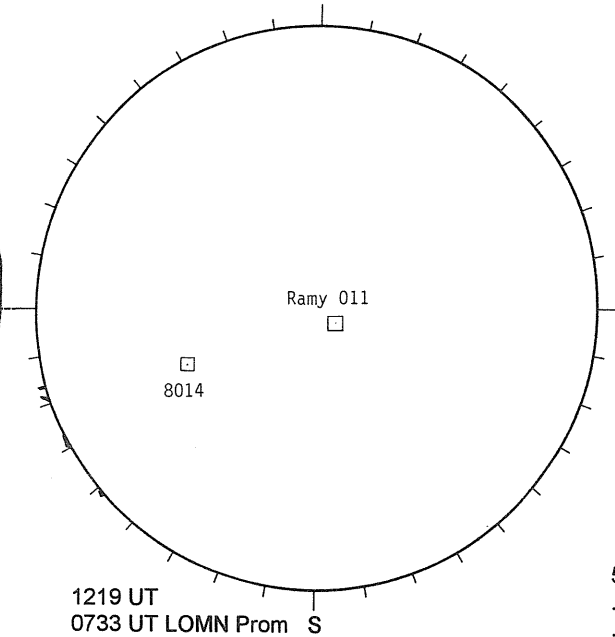
MAUNA LOA H-ALPHA



2200 UT
1840 UT Prom

S

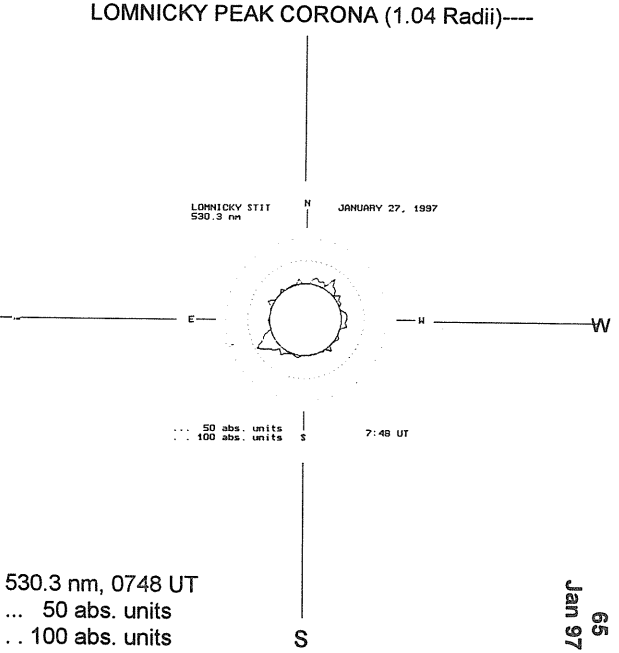
RAMEY SUNSPOT



1219 UT
0733 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



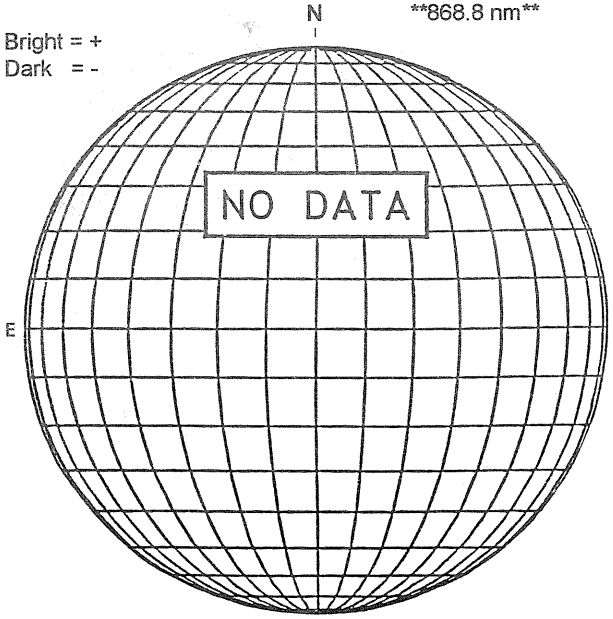
530.3 nm, 0748 UT
... 50 abs. units
. . 100 abs. units

S

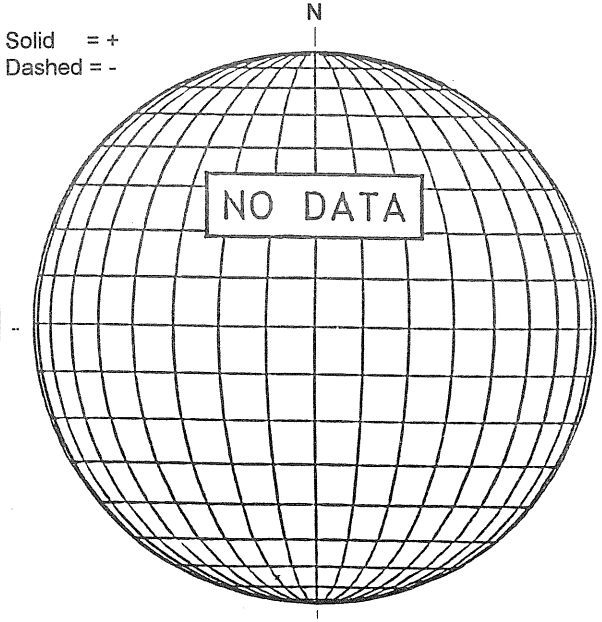
65
Jan 97

JANUARY 28, 1997 (P= - 10.54, Bo = - 5.74, Lo = 65.19)

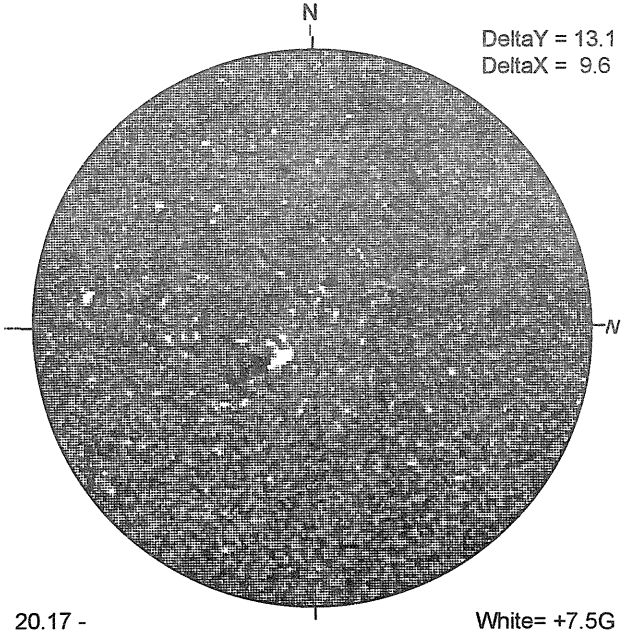
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM



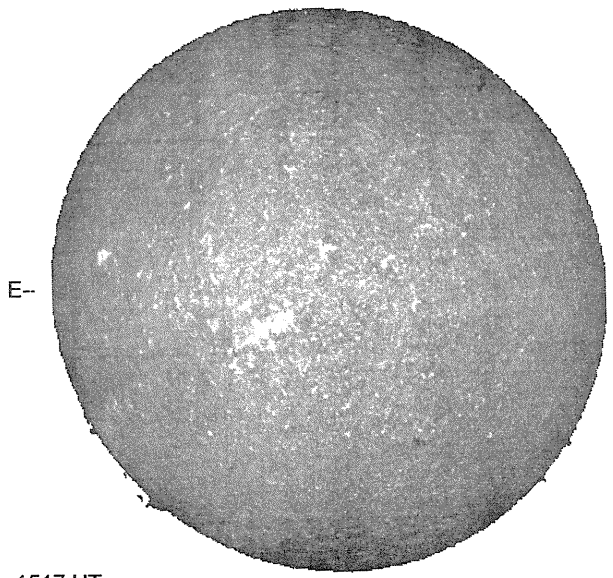
MT. WILSON MAGNETOGRAM



20.17 - 21.14 UT

White= +7.5G
Black = -7.5G

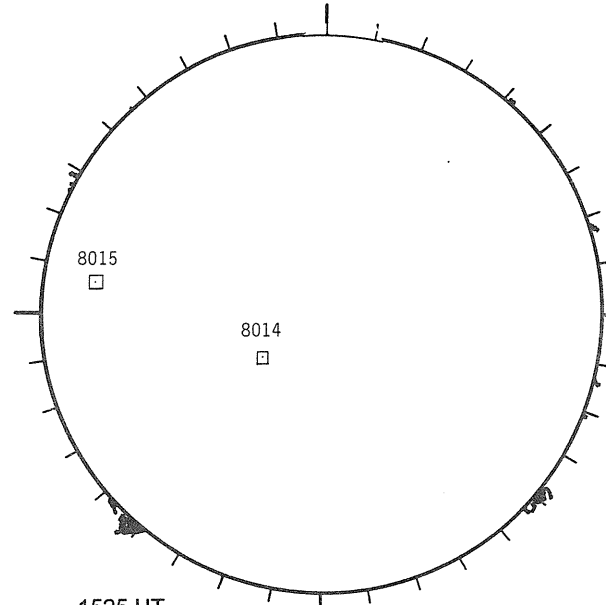
SACRAMENTO PEAK H-ALPHA



1517 UT

S

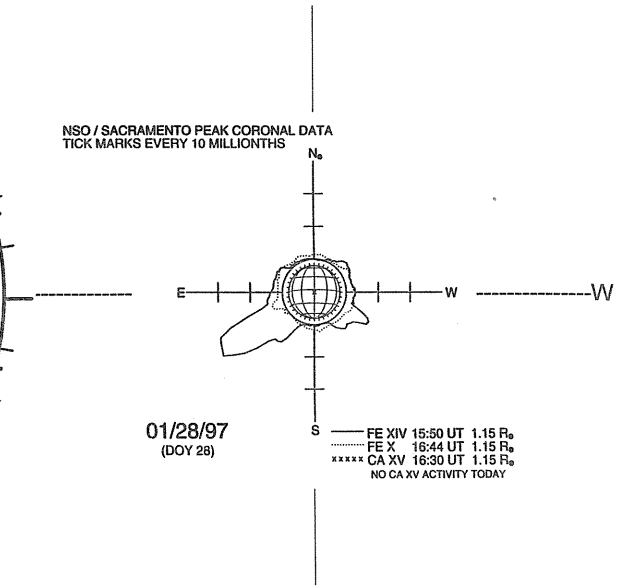
RAMEY SUNSPOT



1525 UT
0847 UT VALA Prom

S

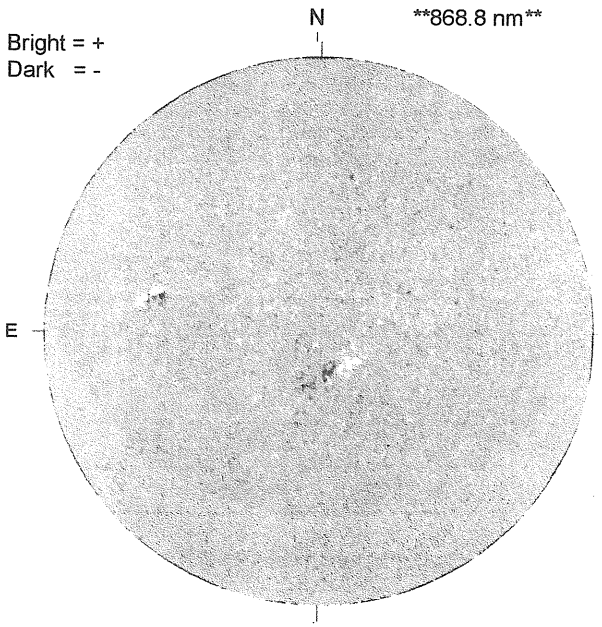
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

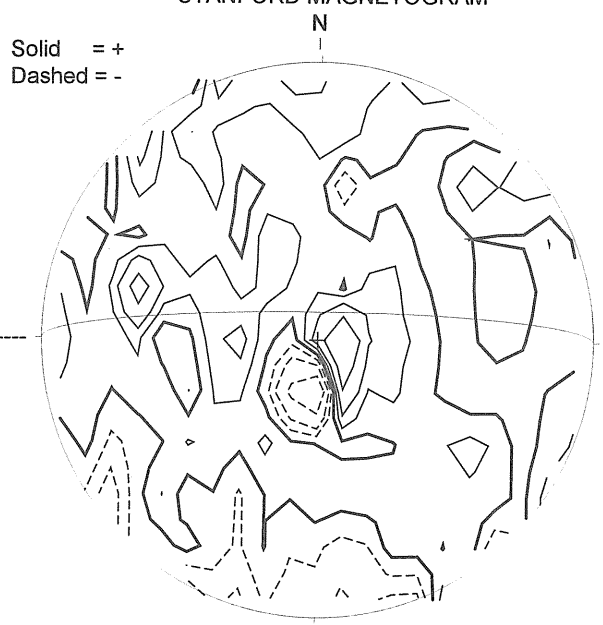
JANUARY 29, 1997 (P= - 10.96, Bo = - 5.82, Lo = 52.03)

KITT PEAK MAGNETOGRAM



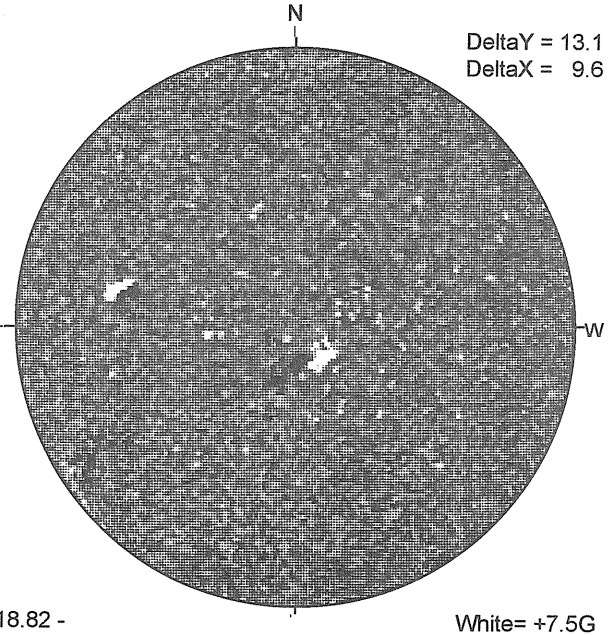
1725 UT

STANFORD MAGNETOGRAM



1725 UT

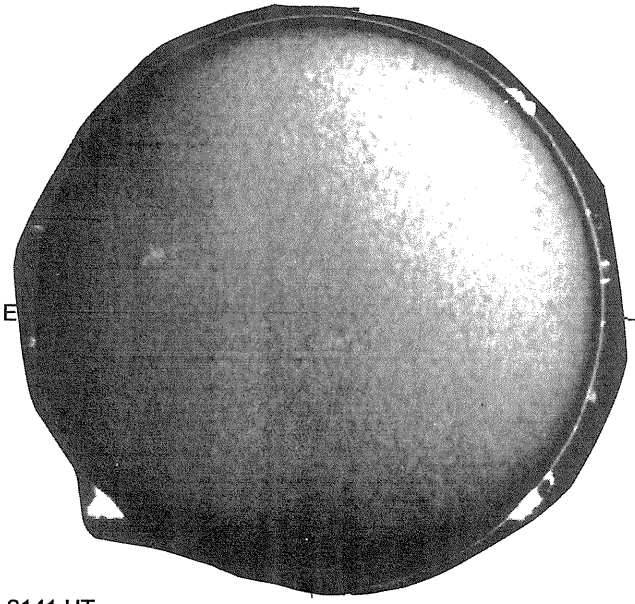
MT. WILSON MAGNETOGRAM



18.82 -
19.80 UT

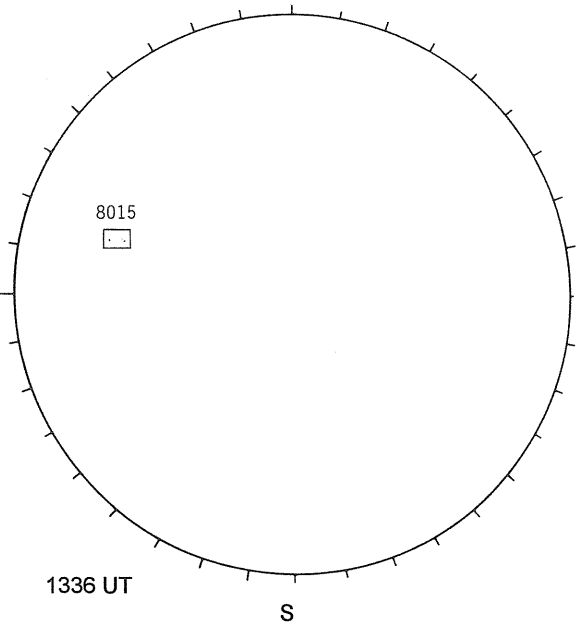
White= +7.5G
Black = -7.5G

MAUNA LOA H-ALPHA



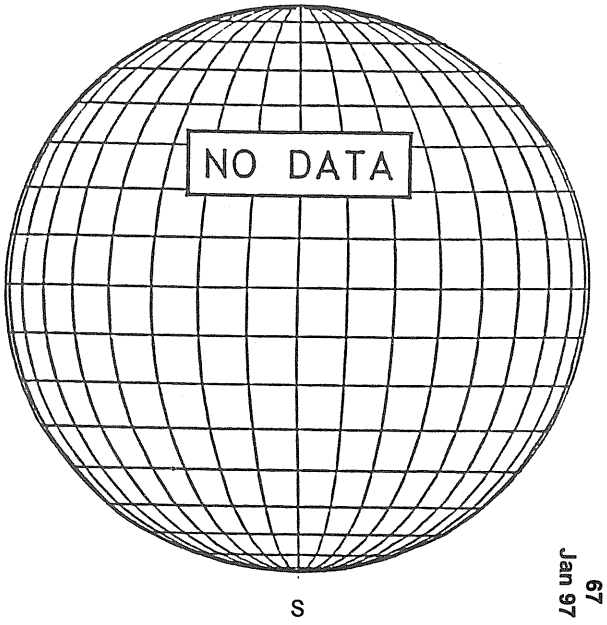
2141 UT
1944 UT Prom

RAMEY SUNSPOT



1336 UT

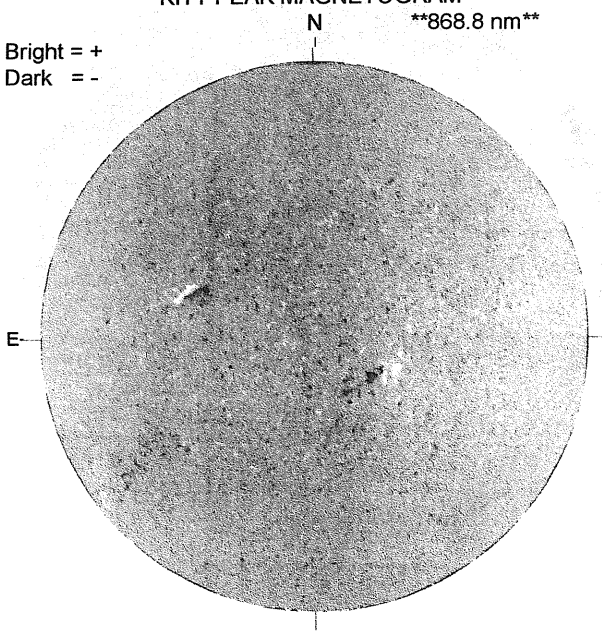
LOMNICKY PEAK CORONA (1.04 Radii)----



Jan 97

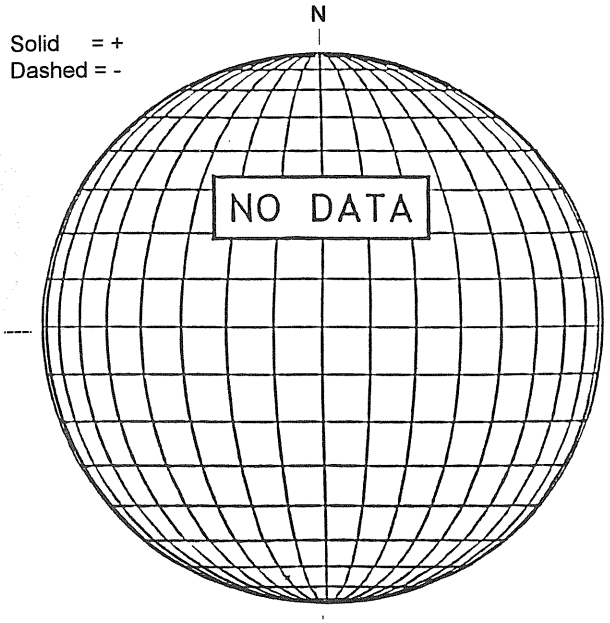
JANUARY 30, 1997 (P= - 11.38, Bo = - 5.89, Lo = 38.86)

KITT PEAK MAGNETOGRAM

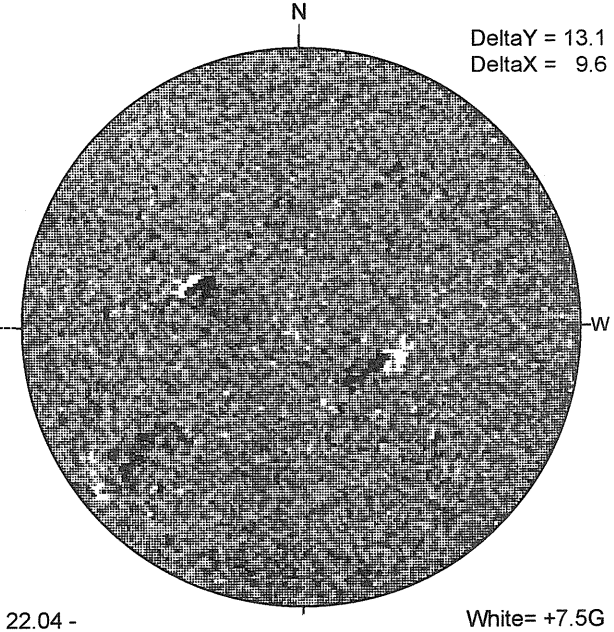


1639 UT

STANFORD MAGNETOGRAM



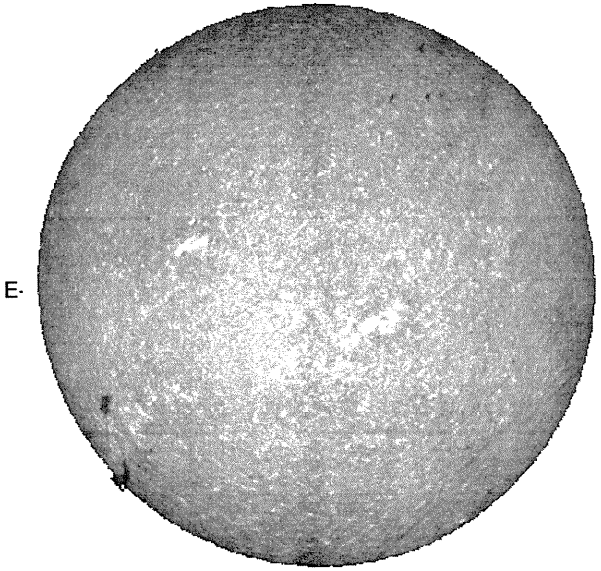
MT. WILSON MAGNETOGRAM



22.04 -
23.01 UT

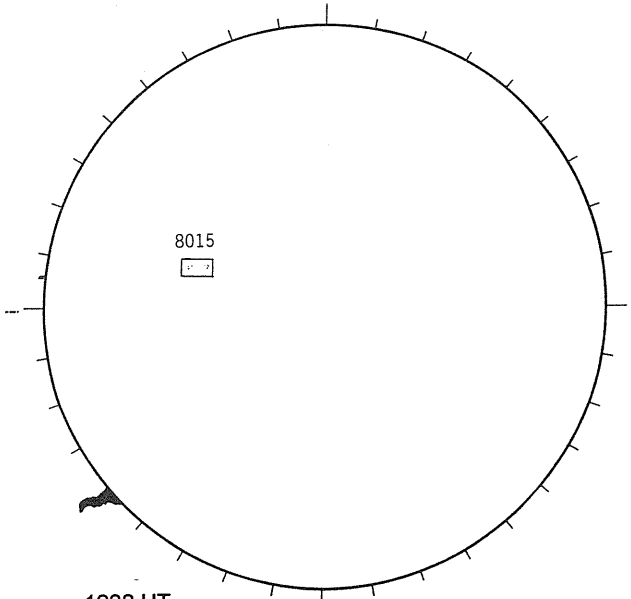
White= +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



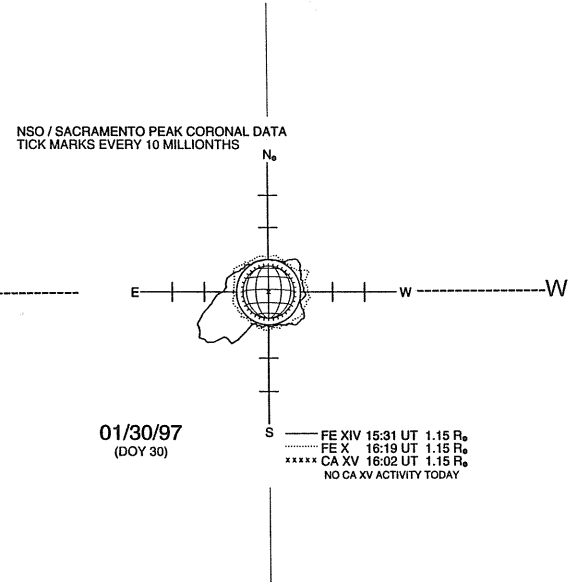
1500 UT

RAMEY SUNSPOT



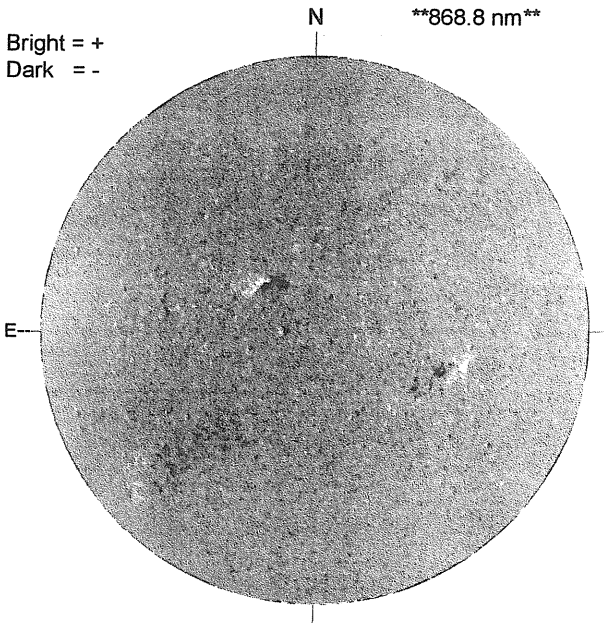
1238 UT
0726 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

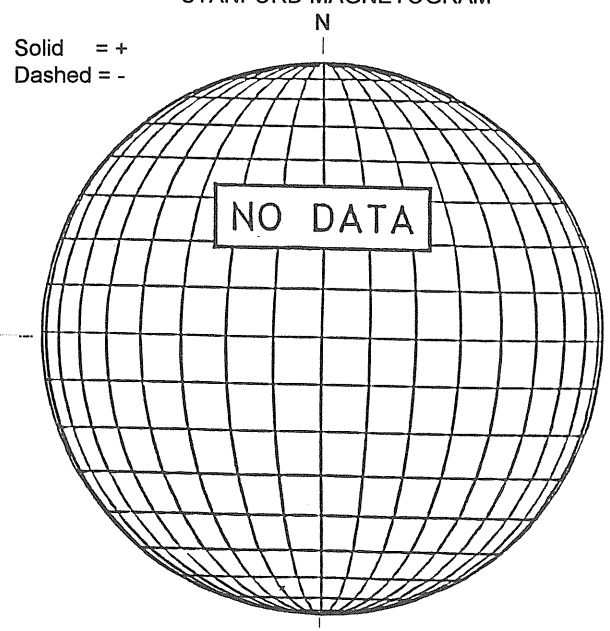


JANUARY 31, 1997 (P= - 11.79, Bo = - 5.97, Lo = 25.69)

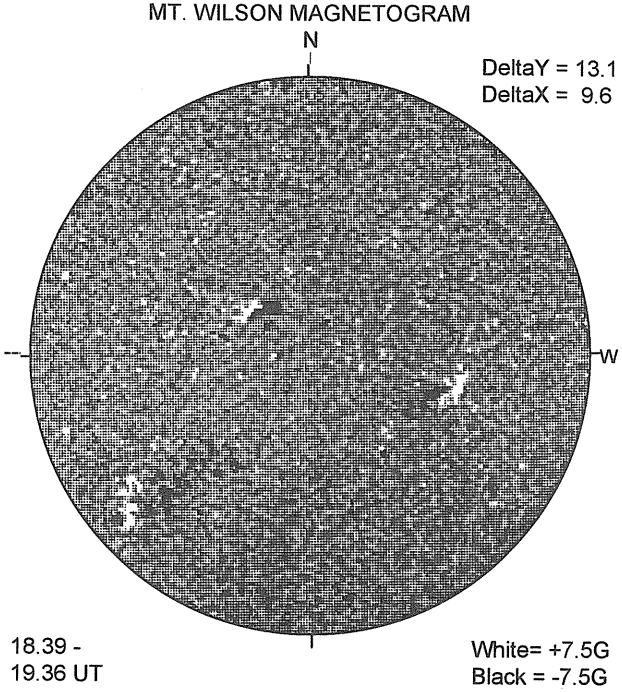
KITT PEAK MAGNETOGRAM



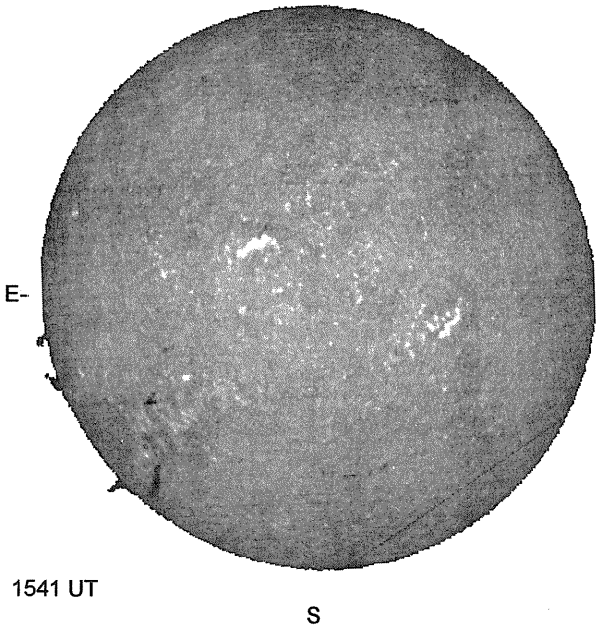
STANFORD MAGNETOGRAM



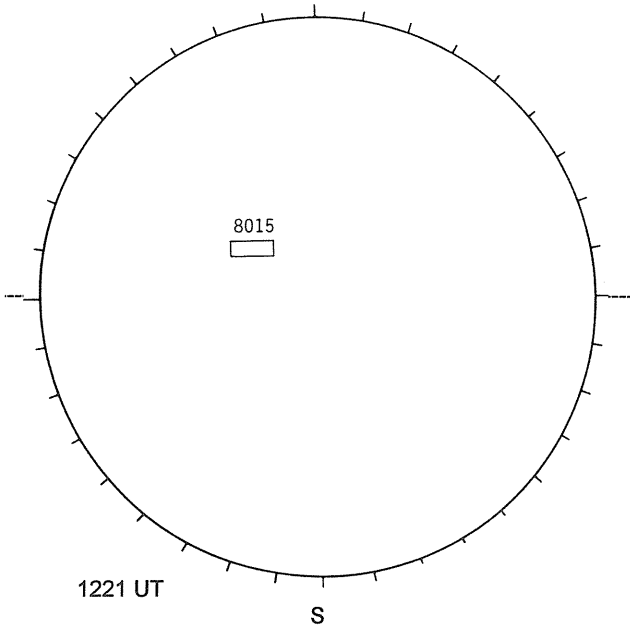
MT. WILSON MAGNETOGRAM



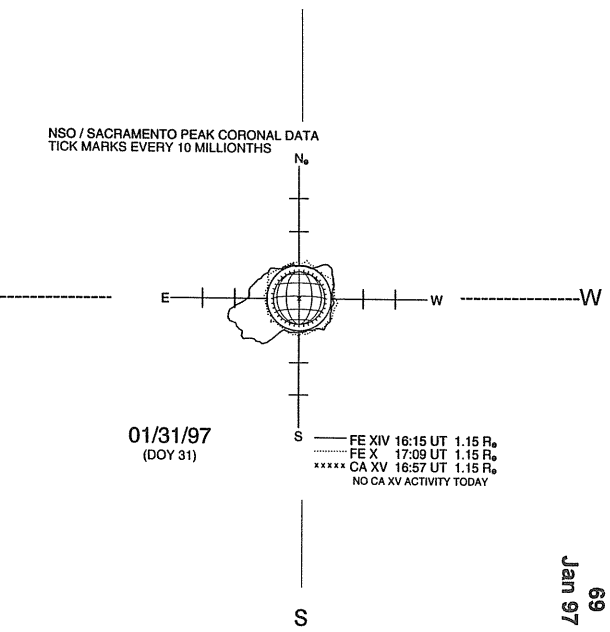
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

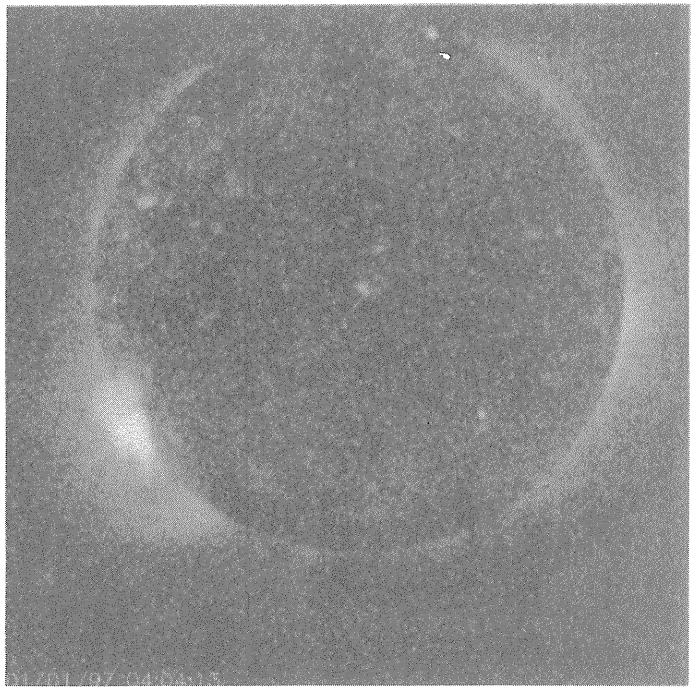


SACRAMENTO PEAK CORONA (1.15 Radii)----

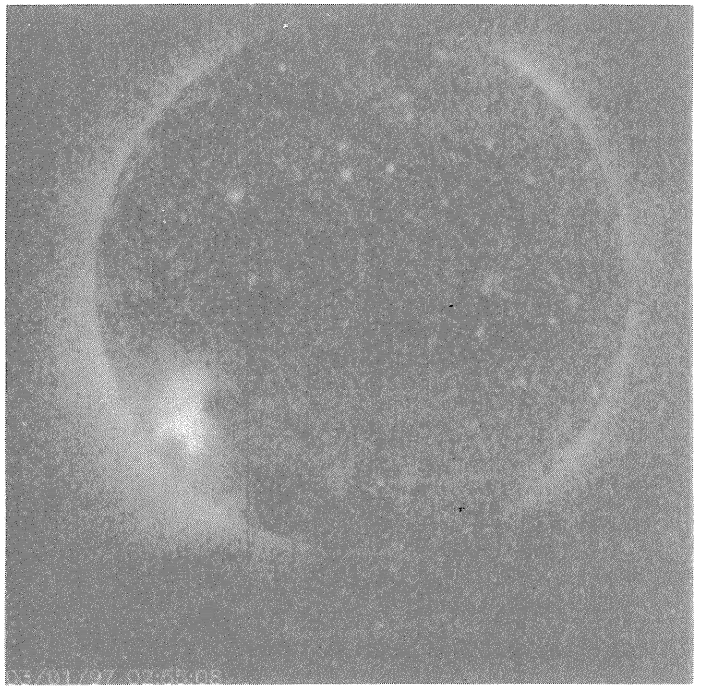


YOHKOH SOFT X-RAY TELESCOPE IMAGES

January 1997

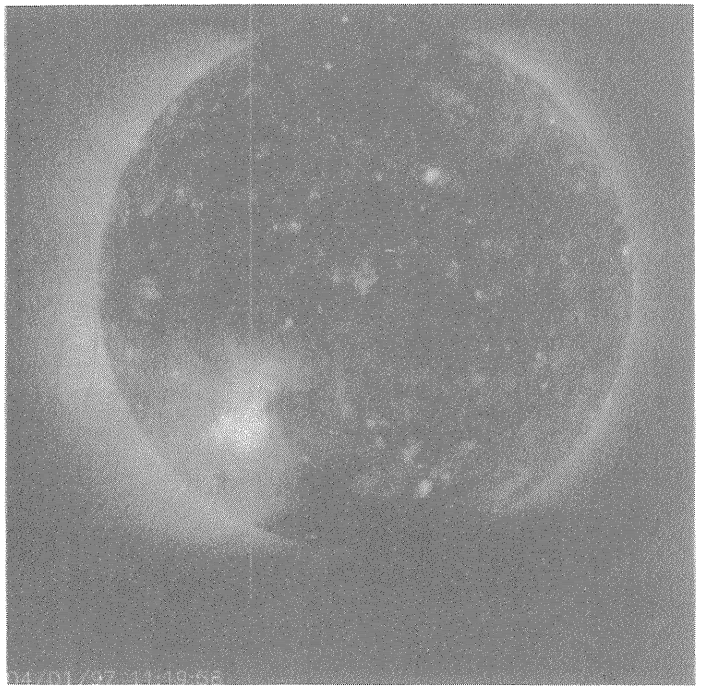


Day 1
04:04:13 UT



Day 3
02:55:08 UT

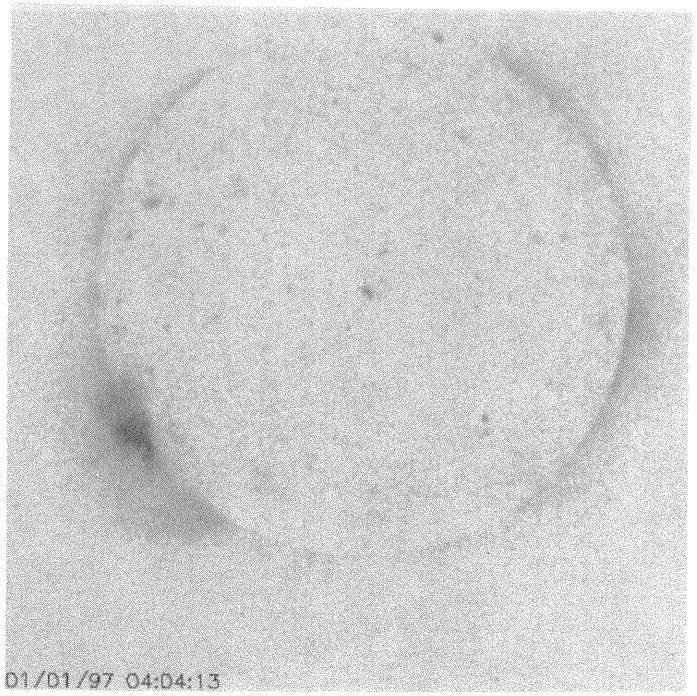
Day 2
02:41:55 UT



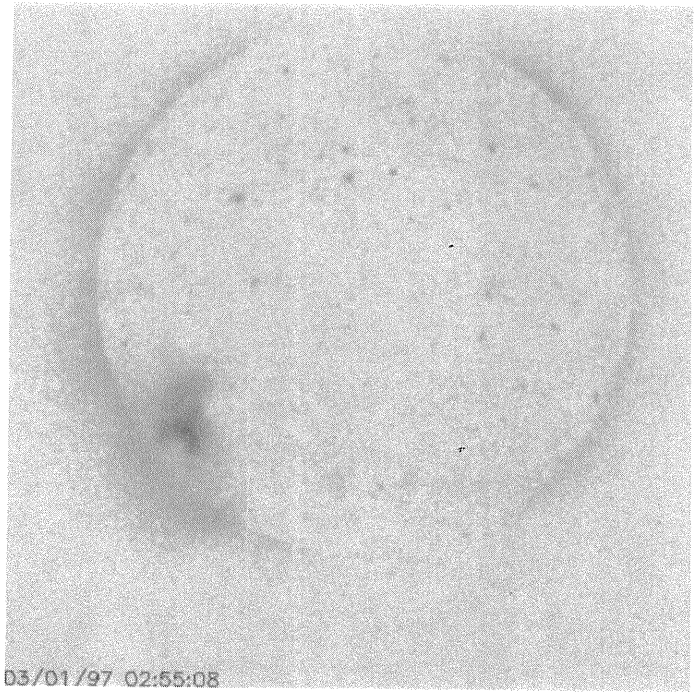
Day 4
11:19:56 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

January 1997

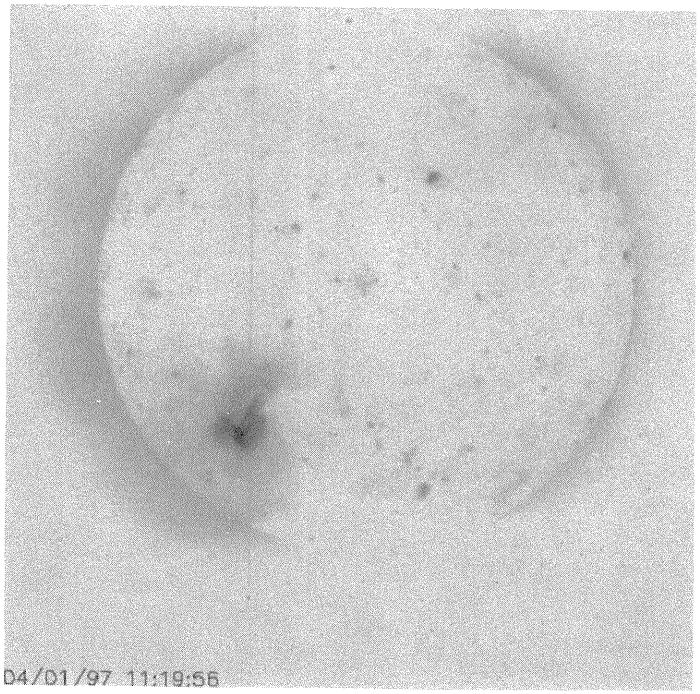


Day 1
04:04:13 UT



Day 3
02:55:08 UT

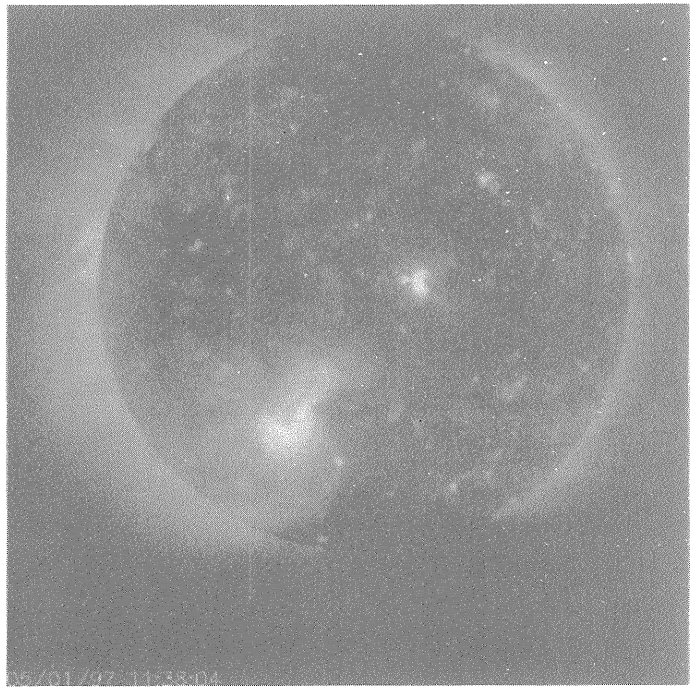
Day 2
02:41:55 UT



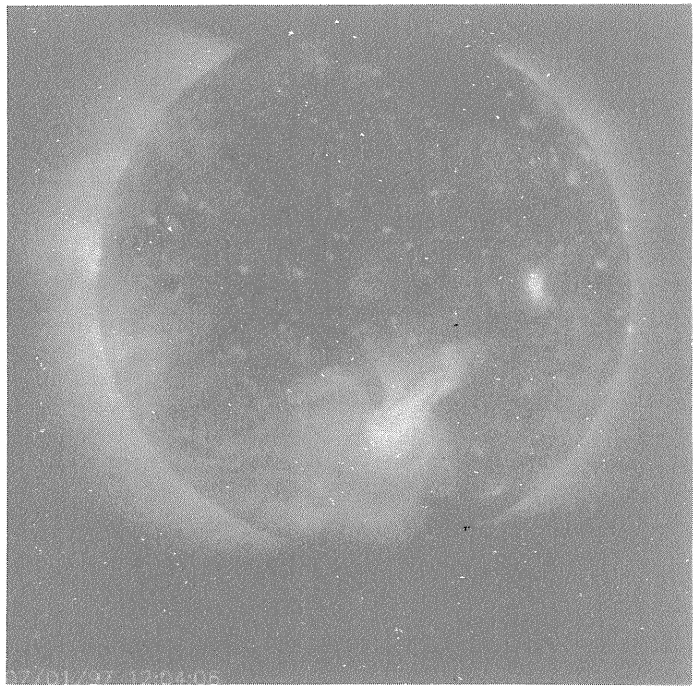
Day 4
11:19:56 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

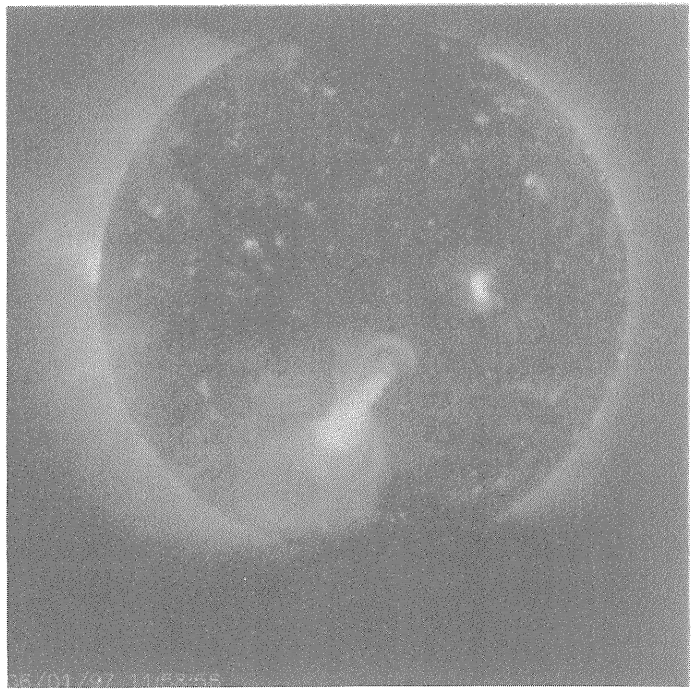
January
1997



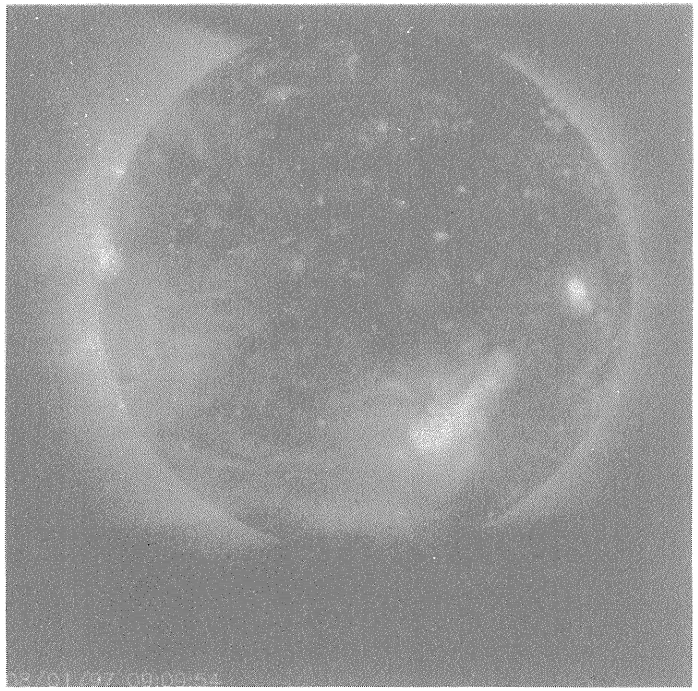
Day 5
11:38:04 UT



Day 7
12:04:06 UT



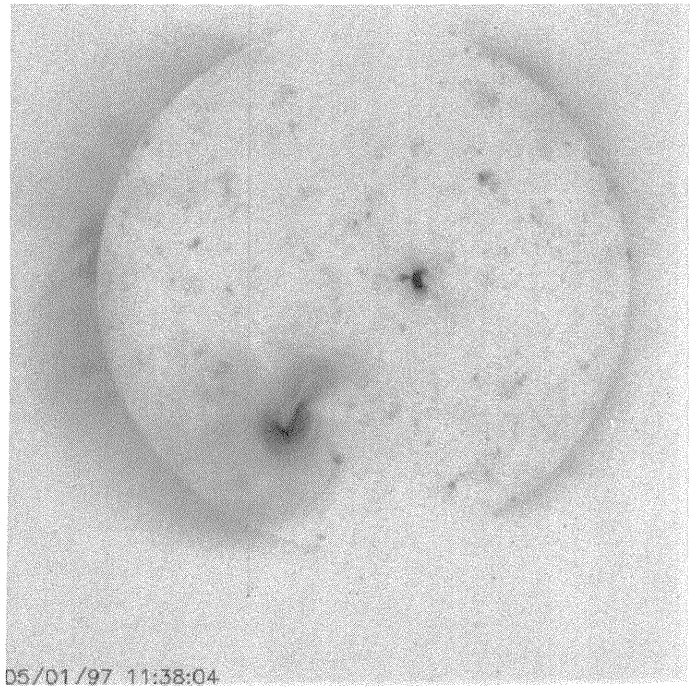
Day 6
11:58:56 UT



Day 8
09:09:54 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

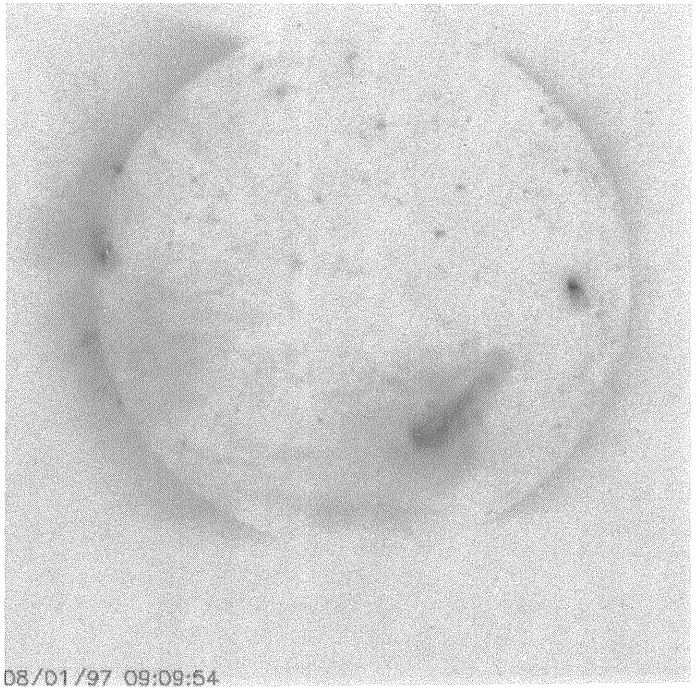
January 1997



Day 5
11:38:04 UT

Day 7
12:04:06 UT

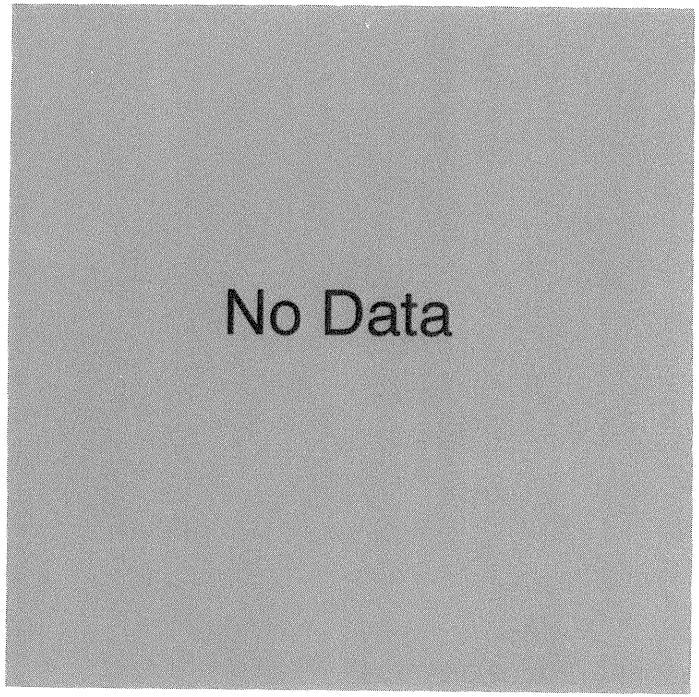
Day 6
11:58:56 UT



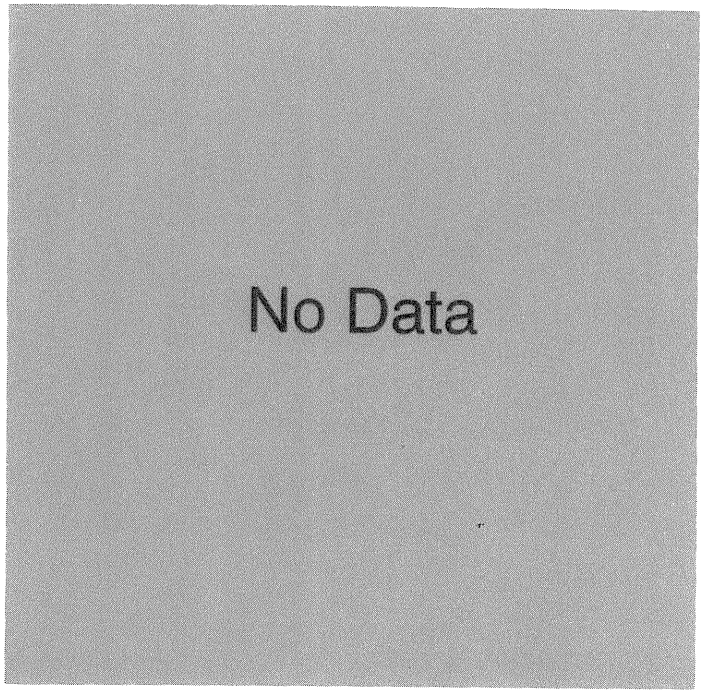
Day 8
09:09:54 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

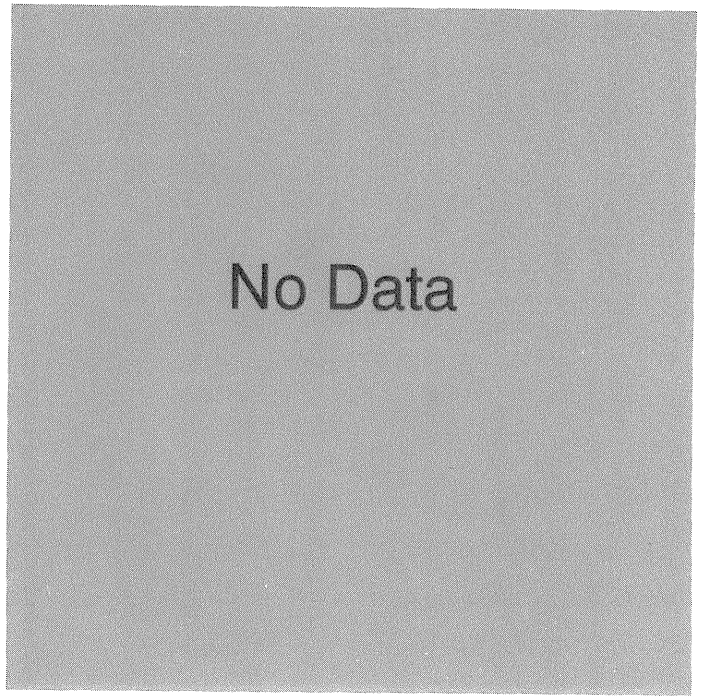
January
1997



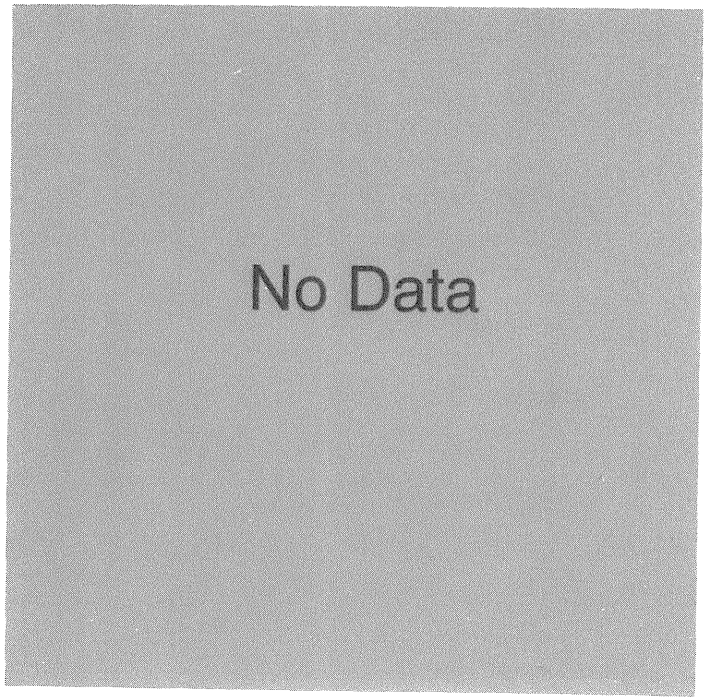
Day 9



Day 11



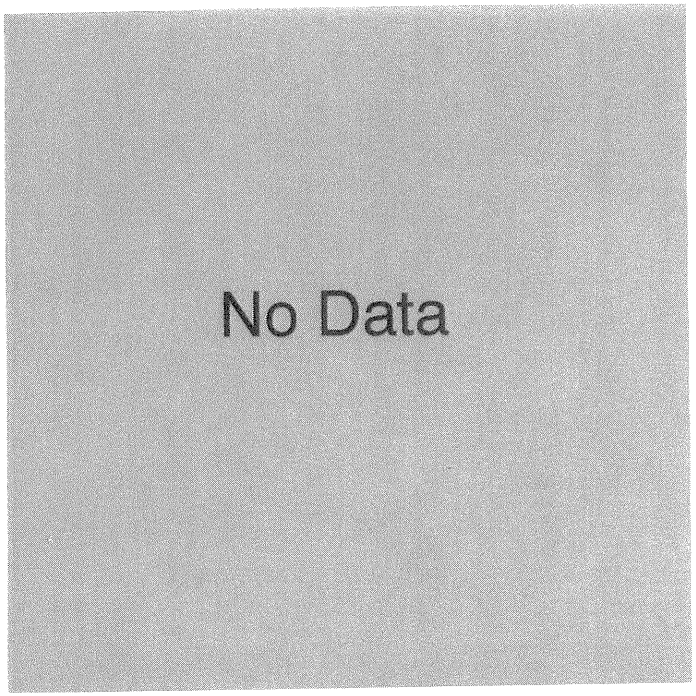
Day 10



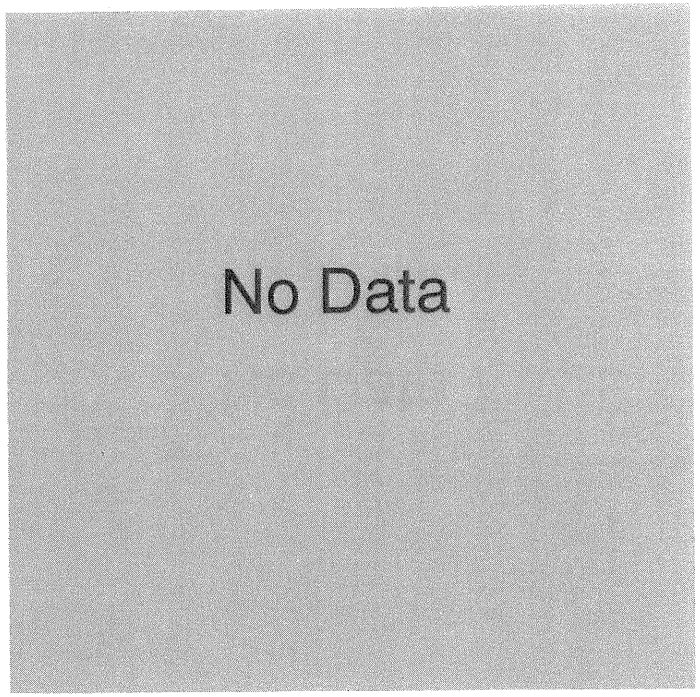
Day 12

YOHKOH SOFT X-RAY TELESCOPE IMAGES

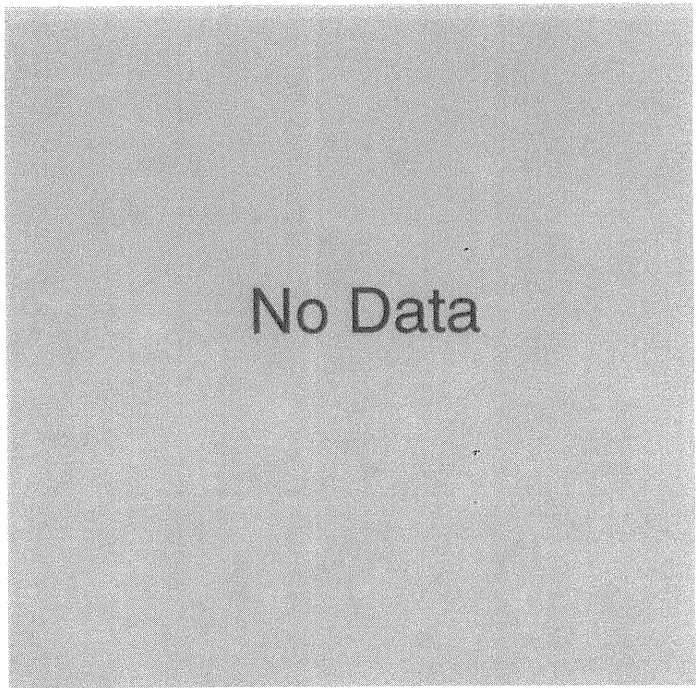
January 1997



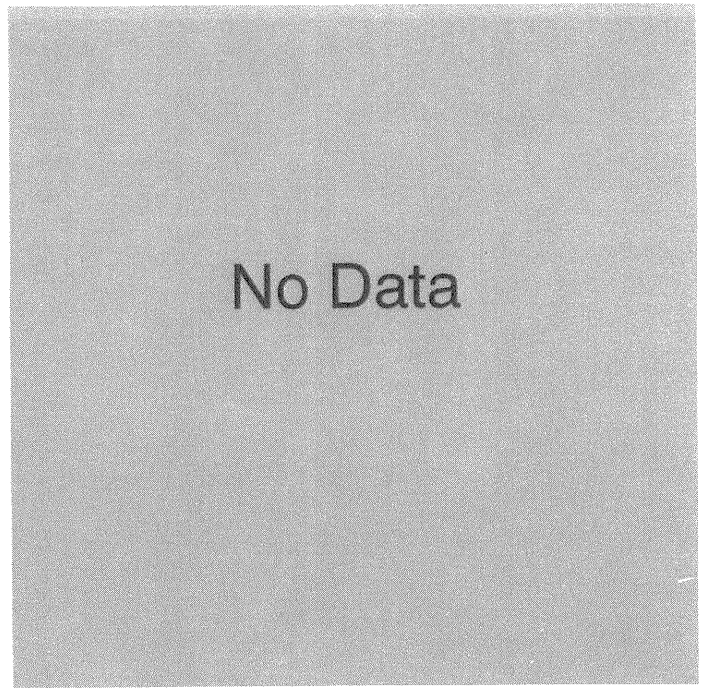
Day 9



Day 10



Day 11



Day 12

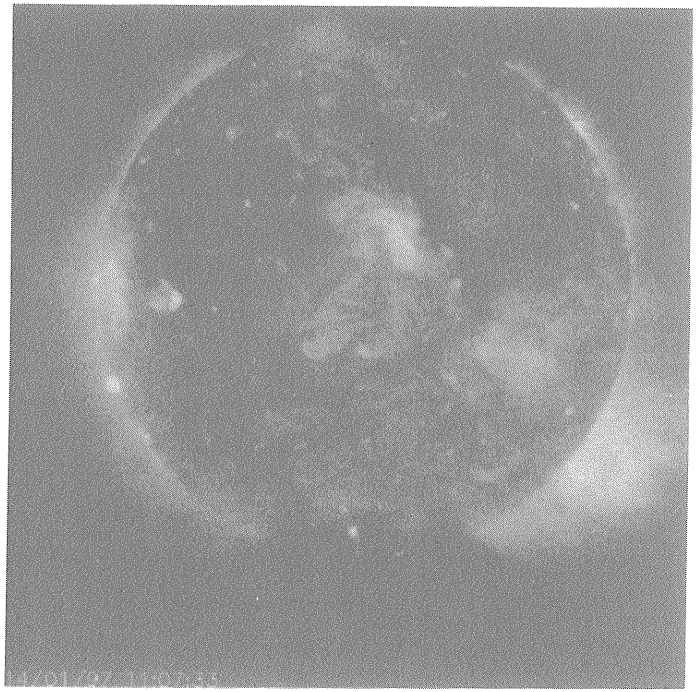
YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997

No Data

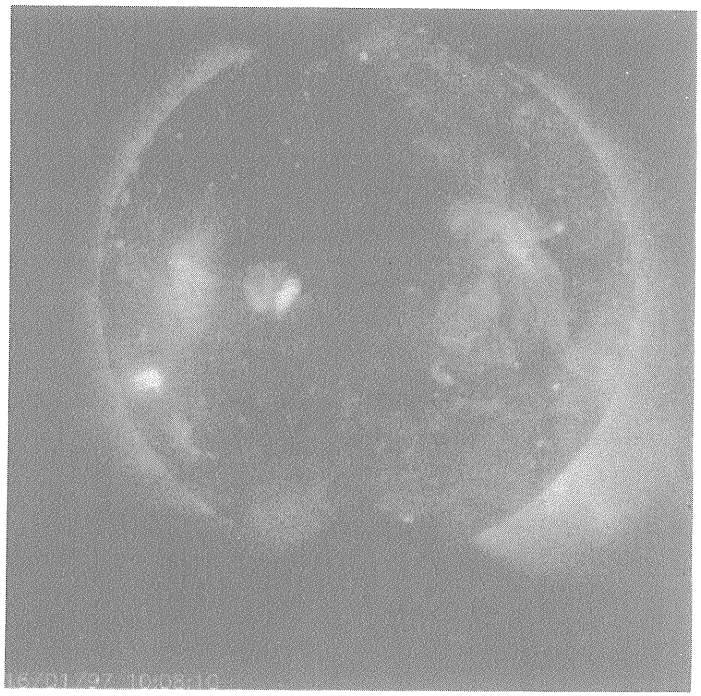
Day 13

Day 15
11:26:28 UT



Day 14
11:07:33 UT

Day 16
10:08:10 UT



YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997

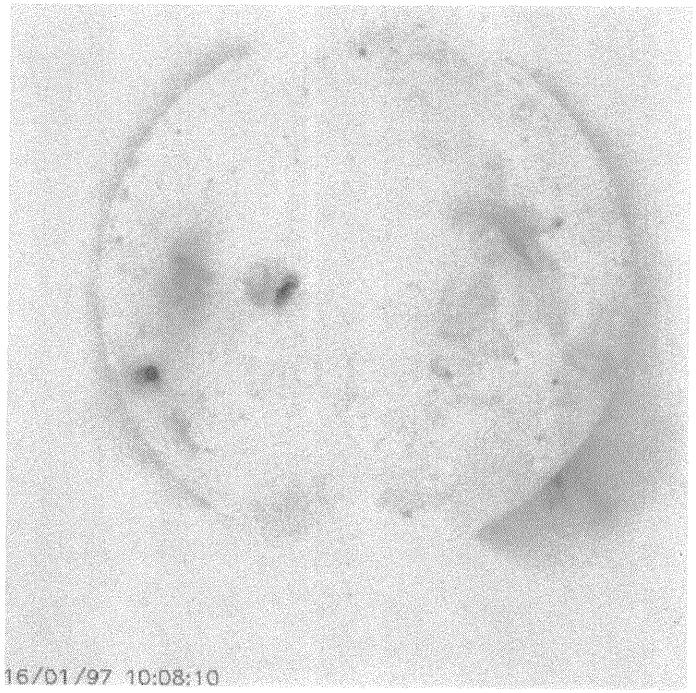
No Data

Day 13

Day 15
11:26:28 UT

Day 14
11:07:33 UT

Day 16
10:08:10 UT



YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997

Day 17
02:03:02 UT

No Data

Day 19

No Data

Day 18

No Data

Day 20

YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997

Day 17
02:03:02 UT

No Data

Day 19

No Data

Day 18

No Data

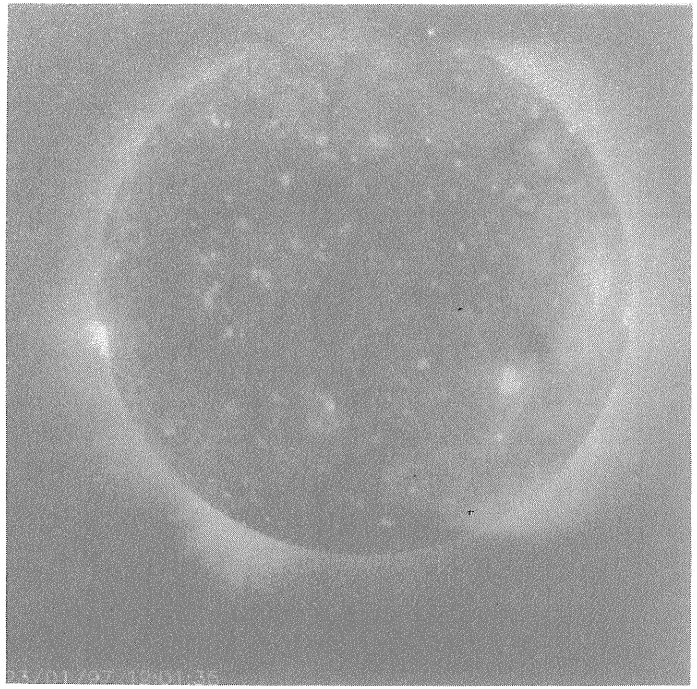
Day 20

YOHKOH SOFT X-RAY TELESCOPE IMAGES

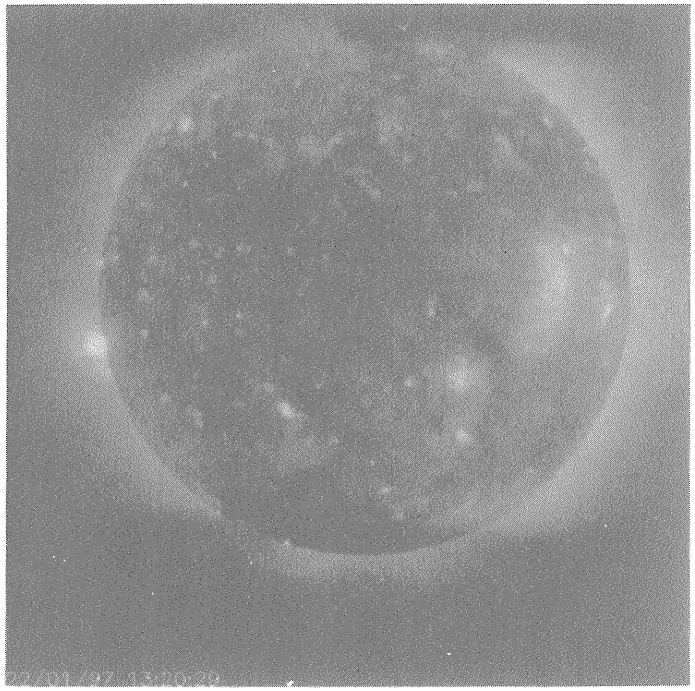
January
1997

No Data

Day 21



Day 23
12:01:35 UT

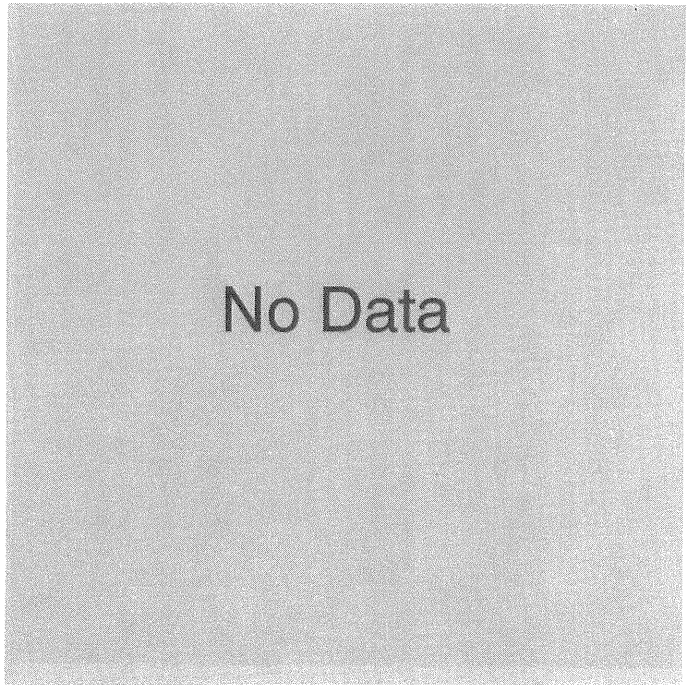


Day 22
13:20:29 UT

Day 24
11:44:41 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

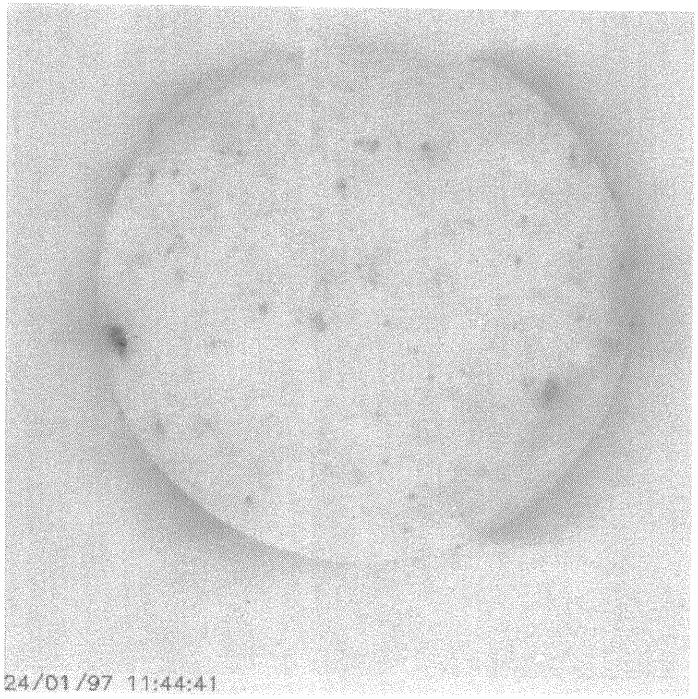
January
1997



Day 21

Day 23
12:01:35 UT

Day 22
13:20:29 UT



Day 24
11:44:41 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997

Day 25
12:37:31 UT

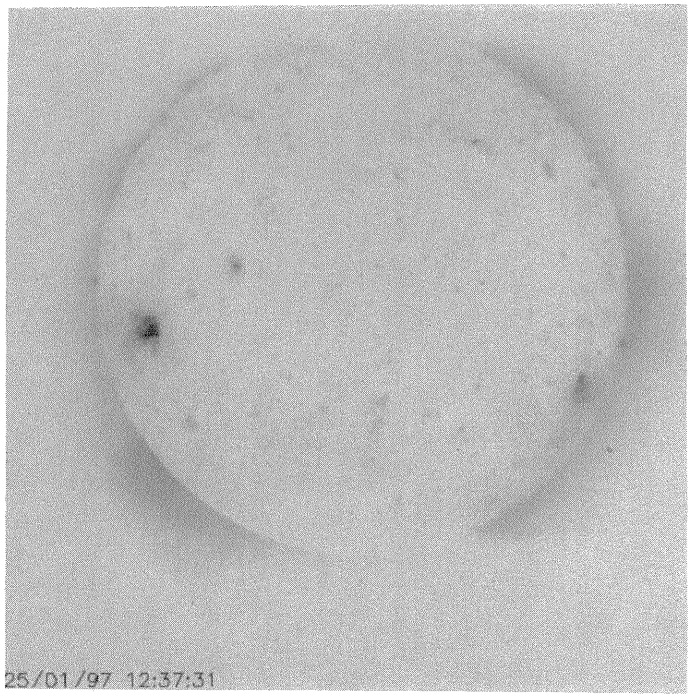
Day 27
11:49:56 UT

Day 26
11:31:22 UT

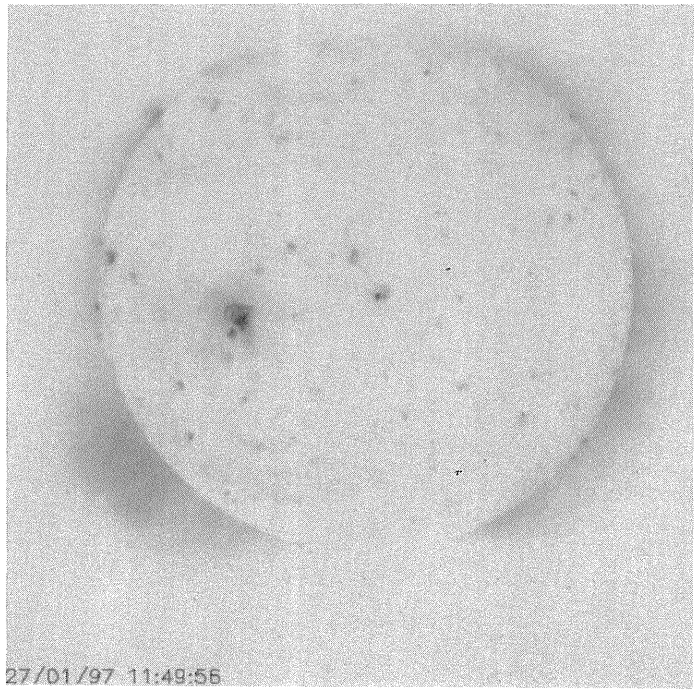
Day 28
14:37:28 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

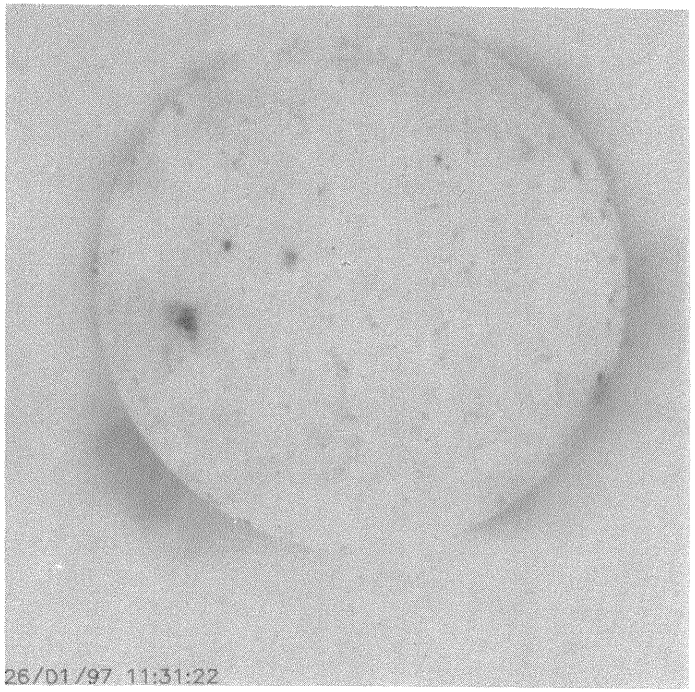
January
1997



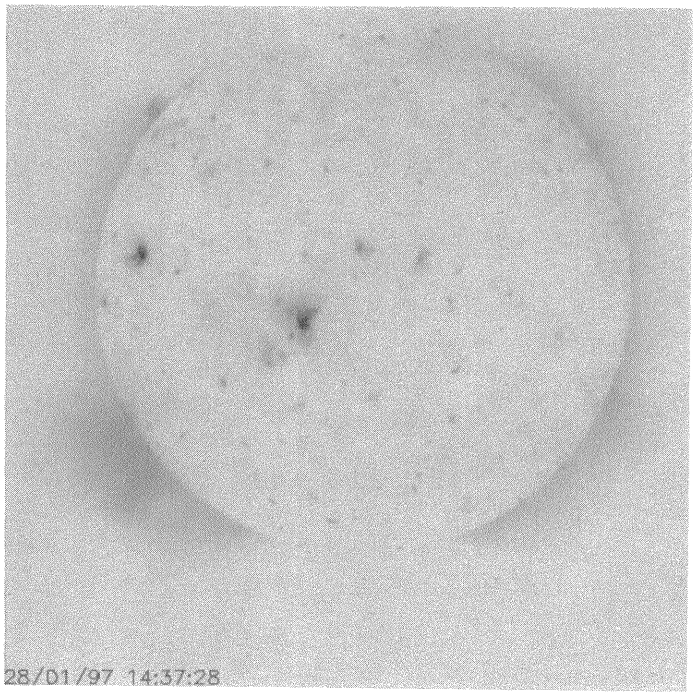
Day 25
12:37:31 UT



Day 27
11:49:56 UT



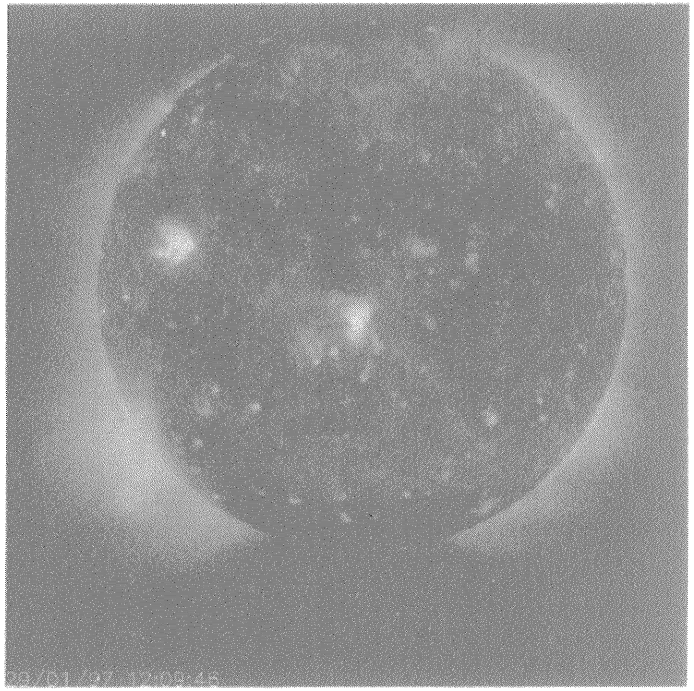
Day 26
11:31:22 UT



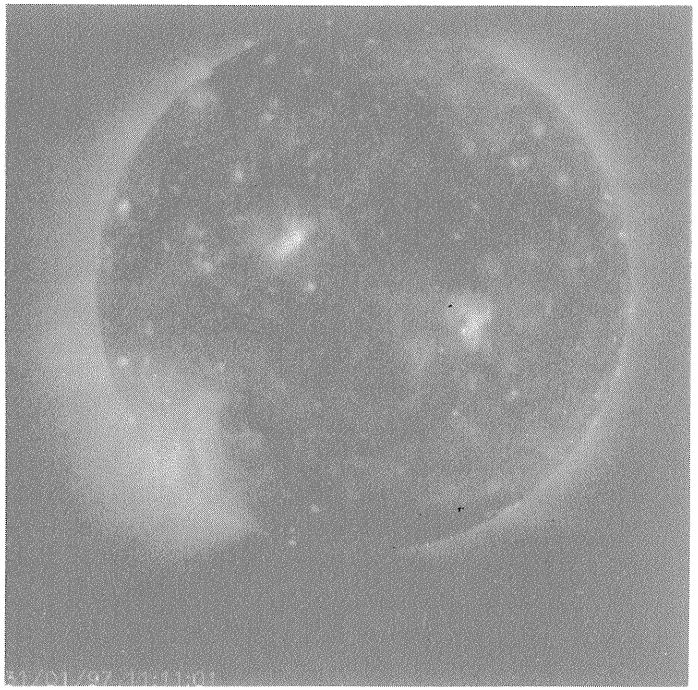
Day 28
14:37:28 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997



Day 29
12:09:46 UT

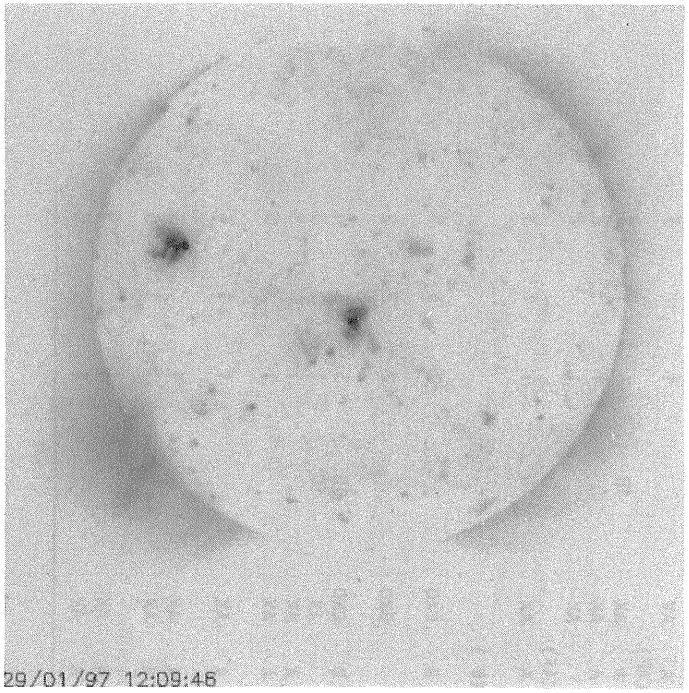


Day 31
11:11:01 UT

Day 30
12:33:58 UT

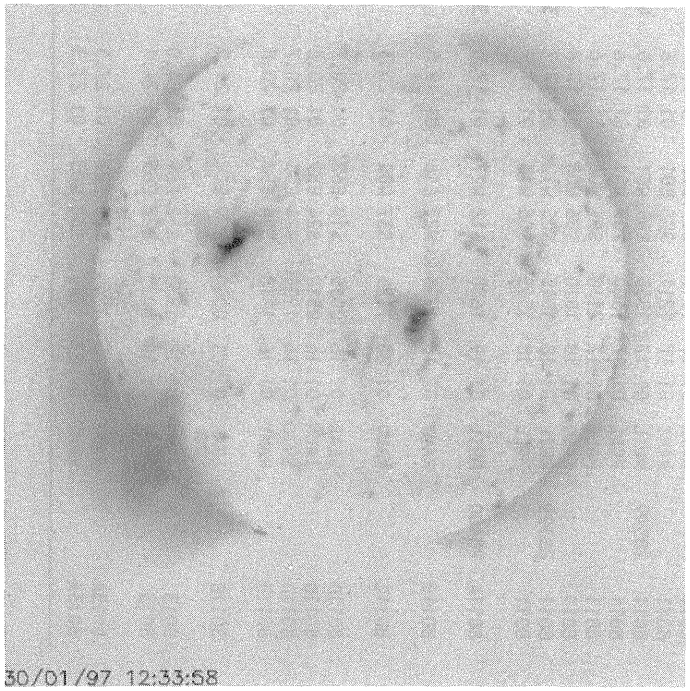
YOHKOH SOFT X-RAY TELESCOPE IMAGES

January
1997



Day 29
12:09:46 UT

Day 31
11:11:01 UT



Day 30
12:33:58 UT

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 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
8009		RAMY	01 04 1320	S02 E00	01 4.5		A	AX		1		3
8009		HOLL	01 04 1610	S02 W02	01 4.5		B	BX	20	3	3	3
8009		LEAR	01 05 0002	S03 W06	01 4.5		B	BXO	20	6	3	4
8009		SVTO	01 05 0830	S03 W10	01 4.6		B	BXO	30	6	4	3
8009		RAMY	01 05 1459	S04 W14	01 4.6		B	BXO	10	4	3	3
8009	28397	MWIL	01 05 1930	S02 W17	01 4.5	4	B					
8009		PALE	01 05 2210	S02 W17	01 4.6		B	ASO	40	4	4	3
8009		LEAR	01 06 0000	S05 W20	01 4.5		B	BXO	20	5	3	3
8009		KAND	01 06 0840	S04 W24	01 4.6			BXO		6	4	4
8009		RAMY	01 06 1246	S04 W26	01 4.6		B	BXO	10	5	4	4
8009		PALE	01 06 2115	S01 W29	01 4.7		B	ASO	10	2	1	3
8009		LEAR	01 07 0045	S05 W30	01 4.8		B	BXO	10	6	3	3
8009		SVTO	01 07 0830	S02 W37	01 4.6		A	AX		1		2
8009		RAMY	01 07 1253	S05 W38	01 4.7		A	AX		2		4
8010A		VORO	01 10 0000	S38 W56	01 5.5			A	35	4	1	3
8010		RAMY	01 09 1503	N39 W44	01 6.0		B	BXO	10	2	5	3
8010	28398	MWIL	01 09 1530	N38 W46	01 5.9	4	(B)					
8010		HOLL	01 09 1615	N38 W44	01 6.1		B	BXO	20	2	4	4
8010		LEAR	01 10 0104	N36 W50	01 6.0		B	BXO	20	4	3	3
8010		KAND	01 10 0715	N37 W53	01 6.0			BXO		2	3	2
8010		TACH	01 10 0827	N37 W52	01 6.2			BR	11	2	4	4
8010		RAMY	01 10 1312	N38 W56	01 6.0		B	CRO	30	4	5	4
8010		HOLL	01 10 1602	N38 W58	01 6.0		B	BXO	20	2	3	2
8010	28398	MWIL	01 10 1700	N38 W58	01 6.0	4	(B)					
8010		PALE	01 10 2110	N40 W57	01 6.2		B	BXO	30	2	4	2
8010		LEAR	01 11 0012	N36 W61	01 6.1		B	BXO	20	2	4	4
8010	28398	MWIL	01 11 1530	N39 W71	01 5.9	3	(B)					
8010B		RAMY	01 03 1243	S32 E38	01 6.5		A	AX		1		4
8011		SVTO	01 15 0736	S06 E31	01 17.6		B	DRO	40	4	3	3
8011		RAMY	01 15 1314	S06 E29	01 17.7		B	DRO	20	4	4	3
8011		LEAR	01 16 0015	S04 E22	01 17.6		B	CXO	20	8	4	4
8011		TACH	01 16 0512	S05 E19	01 17.6			BXO	20	4	4	3
8011		KAND	01 16 0745	S06 E19	01 17.7			BXO		3	4	2
8011		SVTO	01 16 1205	S06 E16	01 17.7		B	CRO	20	6	4	3
8011		RAMY	01 16 1218	S06 E16	01 17.7		B	BXO	10	5	4	5
8011	28399	MWIL	01 16 1545	S06 E12	01 17.5	4	(AP)					
8011		LEAR	01 17 0036	S06 E09	01 17.7		B	BXO	20	5	4	4
8011		KAND	01 17 0820	S05 E04	01 17.6			AX		1		4
8011		SVTO	01 17 1047	S07 E03	01 17.7		A	AX		1		2
8011		RAMY	01 17 1211	S06 E01	01 17.6		A	AX		1		3
8011	28399	MWIL	01 17 1545	S05 W01	01 17.6	4	(AP)					
8011		HOLL	01 17 1600	S07 W01	01 17.6		A	AX	10	3	1	3
8011		PALE	01 17 2118	S05 W04	01 17.6		A	AX		1		2
8011		KAND	01 18 1010	S06 W08	01 17.8			AX		1		2
8011	28399	MWIL	01 18 1545	S05 W12	01 17.7	3	(AF)					
8011		HOLL	01 18 1545	S06 W13	01 17.7		A	AX	10	1	1	3
8011A	28400	MWIL	01 19 1630	S12 W27	01 17.6	3	(B)					
8011B		RAMY	01 18 1333	N27 E16	01 19.8		B	BXO		2	3	5
8011C		KAND	01 20 1125	S37 W02	01 20.3			BXO		2	2	2
8011D		LEAR	01 16 0015	S19 E62	01 20.7		B	CXO	10	3	3	4
8011D		TACH	01 16 0512	S24 E59	01 20.8			AX	10	1	1	3
8011D		SVTO	01 16 1205	S24 E55	01 20.7		A	AX		1		3
8011D		RAMY	01 16 1218	S24 E56	01 20.8		A	AX		1		5
8011E		LEAR	01 21 0040	S09 E07	01 21.5		A	AX		1	1	4
8013		RAMY	01 18 1333	S32 E69	01 24.0		A	AX		1		5
8013		LEAR	01 19 0035	S27 E65	01 24.1		A	AX		1	1	3
8013A		RAMY	01 25 1240	S05 E27	01 27.5		A	AX		1		3
8013A		RAMY	01 27 1219	S08 W03	01 27.3		A	AX		1		3

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

JANUARY 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
8013A		HOLL	01 27 1532	S08 W05	01 27.3		A	AX		1		3
8014		KAND	01 24 0725	S12 E72	01 29.7			CAO		4	14	4
8014		SVTO	01 24 0818	S12 E68	01 29.5		B	BXO	40	2	8	3
8014		RAMY	01 24 1308	S14 E63	01 29.3		B	BXO	10	2	6	3
8014	28401	MWIL	01 24 1730	S12 E59	01 29.2	3	(AP)					
8014		PALE	01 24 2225	S14 E57	01 29.2		A	AX	10	1	1	3
8014		LEAR	01 25 0305	S09 E55	01 29.2		A	AX		1	1	2
8014		SVTO	01 25 0938	S14 E51	01 29.2		A	AX		1		3
8014		RAMY	01 25 1240	S13 E49	01 29.2		A	AX		1		3
8014		HOLL	01 25 1702	S12 E50	01 29.5		B	BXO	10	2	6	3
8014		LEAR	01 26 0115	S12 E45	01 29.4		B	BXO		2	5	3
8014		KAND	01 26 1030	S12 E44	01 29.7			AX		3	2	3
8014		PALE	01 26 2215	S16 E37	01 29.7		A	AX	10	2	2	2
8014		LEAR	01 27 0012	S13 E37	01 29.8		BG	BXO	10	3	2	4
8014		SVTO	01 27 0831	S17 E32	01 29.8		A	AX		1		3
8014		RAMY	01 27 1219	S16 E30	01 29.8		A	AX		1		3
8014		HOLL	01 27 1532	S15 E28	01 29.8		A	AX		1		3
8014	28402	MWIL	01 27 1545	S16 E28	01 29.8	4	(AP)					
8014		RAMY	01 28 1525	S15 E13	01 29.6		A	AX		1		3

Stations reporting:

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

JANUARY 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	1134	1149U	1220	1	1		1				No flare		
04	1257	1300	1334	1	1		1				No flare		
04	1404	1413	1430	1-	1					1	No flare		
05	1259	1322	1407	1	1		1				1331	A6.0	
06	1420	1429	1457	1	1		1				No flare		
07	1104E	1109U	1135	1	1		1				*		
10	1255	1259	1322	1	1		1				No flare		
11	1226	1316U	1438	1	1		1				*		
12	1347	1354	1427	1	1		1				No flare		
15	0921	0931	1051	1	1		1				No flare		
18	0900	0903	0930	1	1		1				No flare		
20	0829	0842	0859	1	1		1				0831	B4.5	
25	1216	1224	1324	1	1		1				No flare		
25	1317	1351	1423	1	1		1				No flare		
29	1258	1308	1417	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR JANUARY 1997

Brazilian Antarctic Station	SPA	Koniz, Switzerland	SES
Cambridge, England, UK	SES	LaCrescenta, California, USA	SES
Cranford, New Jersey, USA	SES	Nerja, Spain	SES
Crystal Lake, Illinois, USA	SES	Rimavska Sobota, Slovakia	SEA
Dodgeville, Wisconsin, 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
Gettysburg, Pennsylvania, USA	SES	Tucson, Arizona, USA	SES
Houston, Texas, USA	SES	Upice, Czech Republic	SEA
Huancayo, Peru	SWF	Wellington, Ohio, USA	SES
Hudson, Ohio, USA	SES	Windsor Locks, Connecticut, USA	SES
Indianapolis, Indiana, USA	SES	Ziar nad Hronom, Slovakia	SEA
Inubo, Japan	SPA	Zilina, Slovakia	SEA
Itapetinga, Brazil	SPA		

Observations are not necessarily continuous.

All stations except Upice and Sofia reported no events observed.

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 1997

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	FREQUENCY Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
01	0000	0739	HIRA								
	0000	0805	CULG								
	0715	1200	IZMI								
	0803	1355	POTS								
	0836	1332	ONDR								
	2048	2400	CULG								
	2148	2400	HIRA								
02	0000	0740	HIRA								
	0000	0806	CULG								
	0710	1205	IZMI								
	0803	1355	POTS								
	0836	1333	ONDR								
	2048	2400	CULG								
	2148	2400	HIRA								
03	0000	0741	HIRA								
	0000	0806	CULG								
	0705	1200	IZMI								
	0803	1355	POTS								
	0835	1334	ONDR								
	2049	2400	CULG								
	2148	2400	HIRA								
04	0000	0742	HIRA								
	0000	0807	CULG								
	0710	1205	IZMI								
	0803	1355	POTS								
	0839	1335	ONDR								
	2049	2400	CULG								
	2148	2400	HIRA								
05	0000	0742	HIRA								
	0000	0807	CULG								
	0705	1200	IZMI								
	0803	1355	POTS								
	0838	1336	ONDR								
	2050	2400	CULG								
	2148	2400	HIRA								
06	0000	0743	HIRA								
	0000	0808	CULG								
			LEAR	0717.0	0822.0	CONT		1	30	55	
	0803	1355	POTS								
	0833	1339	ONDR								
	0650	1200	IZMI	1106 1	1106 3	UNCLF		1	110	130	
	2051	2400	CULG								
	2148	2400	HIRA								
07	0000	0744	HIRA								
	0000	0809	CULG								
	0655	1200	IZMI								
	0803	1355	POTS								
	0833	1342	ONDR								
	2051	2400	CULG								
	2148	2400	HIRA								
08	0000	0745	HIRA								
	0000	0809	CULG								
	0700	1200	IZMI								
	0803	1355	POTS								
	0832	1343	ONDR								
	2051	2400	CULG								
	2148	2400	HIRA								
09	0000	0746	HIRA								
	0000	0809	CULG								
	0700	1200	IZMI								
	0803	1355	POTS								

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

JANUARY 1997

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
09	0831	1343	ONDR								
	2051	2400	CULG								
	2148	2400	HIRA								
10	0000	0747	HIRA								
	0000	0810	CULG								
	0700	1200	IZMI								
	0803	1355	POTS								
	0830	1345	ONDR								
	2052	2400	CULG								
	2148	2400	HIRA								
11	0000	0748	HIRA								
	0000	0810	CULG								
	0700	1200	IZMI								
	0800	1410	POTS								
	0833	1348	ONDR								
	2052	2400	CULG								
	2148	2400	HIRA								
12	0000	0749	HIRA								
	0000	0810	CULG								
	0700	1200	IZMI								
	0800	1410	POTS								
	0828	1350	ONDR								
	2052	2400	CULG								
	2148	2400	HIRA								
13	0000	0750	HIRA								
	0000	0810	CULG								
	0656	0840	IZMI								
	0800	1410	POTS								
	0831	1352	ONDR								
	0908	0917	IZMI								
	0945	1200	IZMI								
	2053	2400	CULG								
	2148	2400	HIRA								
14	0000	0751	HIRA								
	0000	0810	CULG								
	0725	1200	IZMI								
	0800	1410	POTS								
	0825	1354	ONDR								
	2053	2400	CULG								
	2147	2400	HIRA								
15	0000	0752	HIRA								
	0000	0811	CULG								
	0700	1205	IZMI								
	0824	1356	ONDR								
	0800	1410	POTS	0842.2	1028	I	S	2	110U	250	
	2052	2400	CULG								
	2147	2400	HIRA								
16	0000	0753	HIRA								
	0000	0809	CULG								
	0700	1205	IZMI								
	0800	1410	POTS	0800 E	0807	I	S	2	110U	170U	
	0823	1358	ONDR								
			POTS	1214	1216	I	S	1	160	170U	
			POTS	1312	1320	I	S	1	130	170U	
			POTS	1329	1351	I	S	1	120	250	
			SGMR	1824.0	1828.0	III		1	42	58	
	2051	2400	CULG								
	2147	2400	HIRA								
17	0000	0754	HIRA								
	0000	0809	CULG								
	0700	1200	IZMI								

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 1997

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
17	0800	1410	POTS								
	0821	1400	ONDR								
	2052	2400	CULG								
	2147	2400	HIRA								
18	0000	0755	HIRA								
	0000	0810	CULG								
	0700	1215	IZMI								
	0800	1410	POTS								
	0820	1403	ONDR								
	2052	2400	CULG								
	2146	2400	HIRA								
19	0000	0756	HIRA								
	0000	0810	CULG								
	0710	1205	IZMI								
	0800	1410	POTS								
	0818	1403	ONDR								
	2052	2400	CULG								
	2146	2400	HIRA								
20	0000	0757	HIRA								
	0000	0810	CULG								
	0701	0726	IZMI								
	0802	0806	IZMI								
	0824	1405	ONDR								
	0800	1410	POTS	0829.7	0831.8	I	S,W	1	150	170U	
			POTS	0832.5	0835.3	III	G	2	65	250	
			LEAR	0850.0	0858.0	UNCLF		1	30U	50U	
	0906	1200	IZMI								
	2052	2400	CULG								
	2145	2400	HIRA								
21			LEAR	0021.0	0021.0	III		1	55	72	
			LEAR	0124.0	0125.0	III		1	45	74	
			LEAR	0421.0	0421.0	III		1	30	65	
			LEAR	0648.0	0649.0	III		2	30	80	
			SVTO	0648.0	0649.0	III		1	37U	47U	
	0000	0758	HIRA	0648.8	0648.9	III	B	1	25X	110	
	0000	0810	CULG	0649.0	0649.0	III	B	2	57X	110	
			LEAR	0655.0	0655.0	III		1	37	58	
	0700	1200	IZMI								
	0750	1426	POTS								
	0815	1406	ONDR								
	2052	2400	CULG								
	2145	2400	HIRA								
22	0000	0759	HIRA								
	0000	0810	CULG								
	0750	1426	POTS								
	0814	1411	ONDR								
	0815	1200	IZMI								
	2053	2400	CULG								
	2144	2400	HIRA								
23	0000	0800	HIRA								
	0000	0811	CULG								
	0705	1200	IZMI								
	0750	1426	POTS								
	0812	1412	ONDR								
	2053	2400	CULG								
	2201	2400	HIRA								
24	0000	0801	HIRA								
	0000	0811	CULG								
	0710	1200	IZMI	0724 5	0724 6	III	B	2	50	90	
			LEAR	0724.0	0724.0	III		1	45	70	
	0811	1415	ONDR								
	0750	1426	POTS	0922.8	0922.9	III	B	2	110U	250	

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

JANUARY 1997

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	EVENT Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
24			POTS	1028.3	1028.4	UNCLF		1	220	240	
			POTS	1029.4	1029.8	III	G	1	110U	250	
	2053	2400	CULG								
	2143	2400	HIRA								
25	0000	0802	HIRA								
	0000	0812	CULG								
	0700	1200	IZMI								
	0750	1426	POTS								
	0816	1417	ONDR								
	2054	2400	CULG								
	2153	2400	HIRA								
26	0000	0803	HIRA								
	0000	0812	CULG								
	0655	1205	IZMI								
	0750	1426	POTS								
	0807	1417	ONDR								
	2053	2400	CULG								
	2142	2400	HIRA								
27	0000	0804	HIRA								
	0000	0812	CULG								
	0705	1205	IZMI								
	0805	1422	ONDR								
	0750	1426	POTS	1419.6	1424.6	III	GG,RS	2	110U	300	
	2054	2400	CULG								
	2141	2400	HIRA								
28	0000	0805	HIRA								
	0000	0812	CULG								
	0705	1200	IZMI								
	0750	1426	POTS								
	0803	1423	ONDR								
	2054	2400	CULG								
	2141	2400	HIRA								
29	0000	0806	HIRA								
	0000	0812	CULG								
	0700	1200	IZMI								
	0750	1426	POTS								
	0802	1425	ONDR								
	2055	2400	CULG								
	2140	2400	HIRA								
30	0000	0807	HIRA								
	0000	0813	CULG								
	0700	1205	IZMI								
	0750	1426	POTS								
	0800	1427	ONDR								
	2056	2400	CULG								
	2139	2400	HIRA								
31	0000	0808	HIRA								
	0000	0814	CULG								
	0705	1200	IZMI								
	0750	1426	POTS								
	0805	1431	ONDR								
	2056	2400	CULG								
	2138	2400	HIRA								

SOLAR RADIO NOISE STORM AT 164 MHZ FROM NANÇAY RADIOHELIOGRAPH

JANUARY 1997

	HELIOGRAPHIÇS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
15/01/97	-0.87	-0.30	1	E	12h00

SOLAR RADIO NOISE STORM AT 327 MHZ FROM NANÇAY RADIOHELIOGRAPH

JANUARY 1997

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)

01,08,09,16,17,18,23 JANUARY : 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 IMP4> 300 SFU

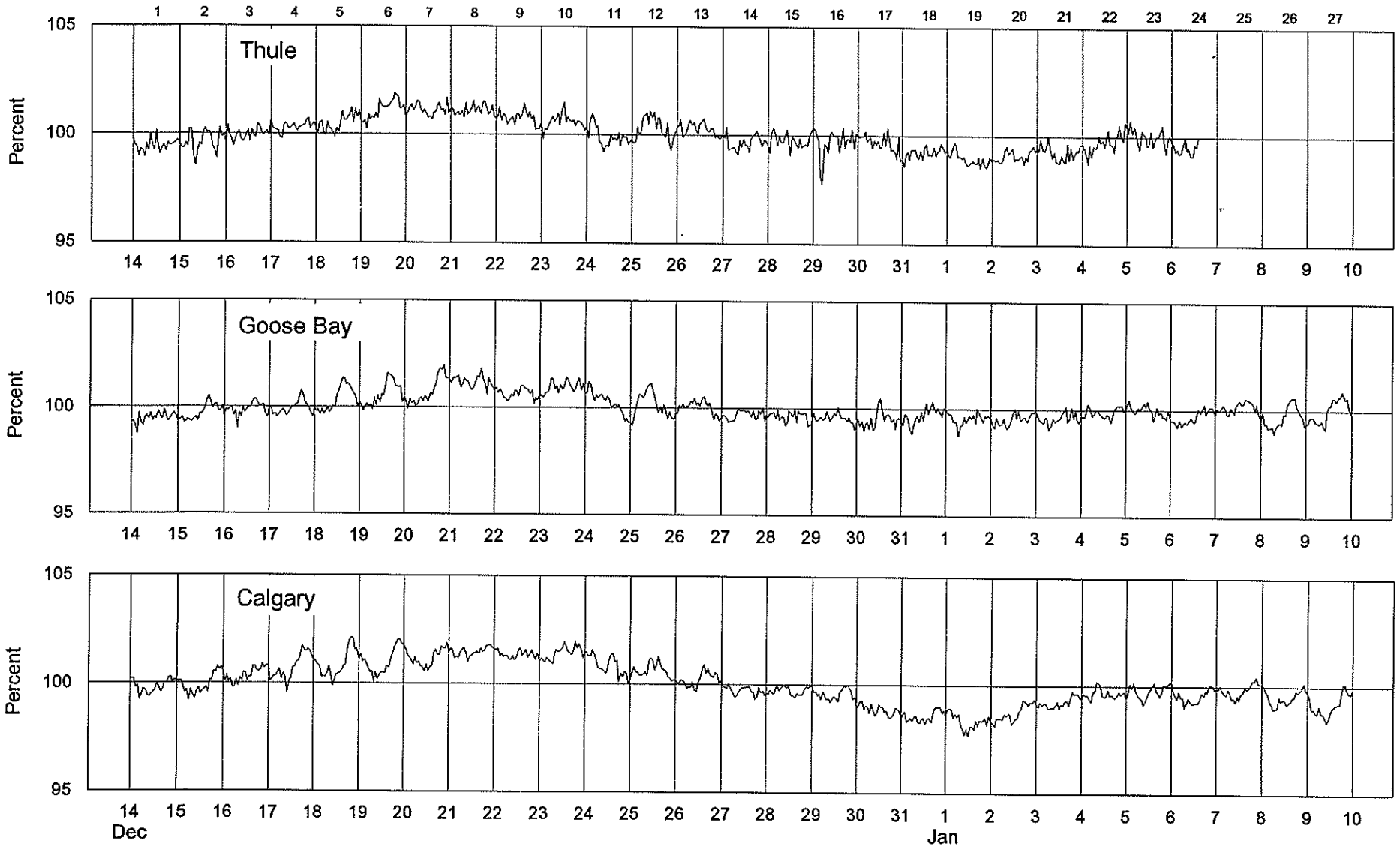
[3] E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

COSMIC RAY INDICES
(Neutron Monitor)
JANUARY 1997

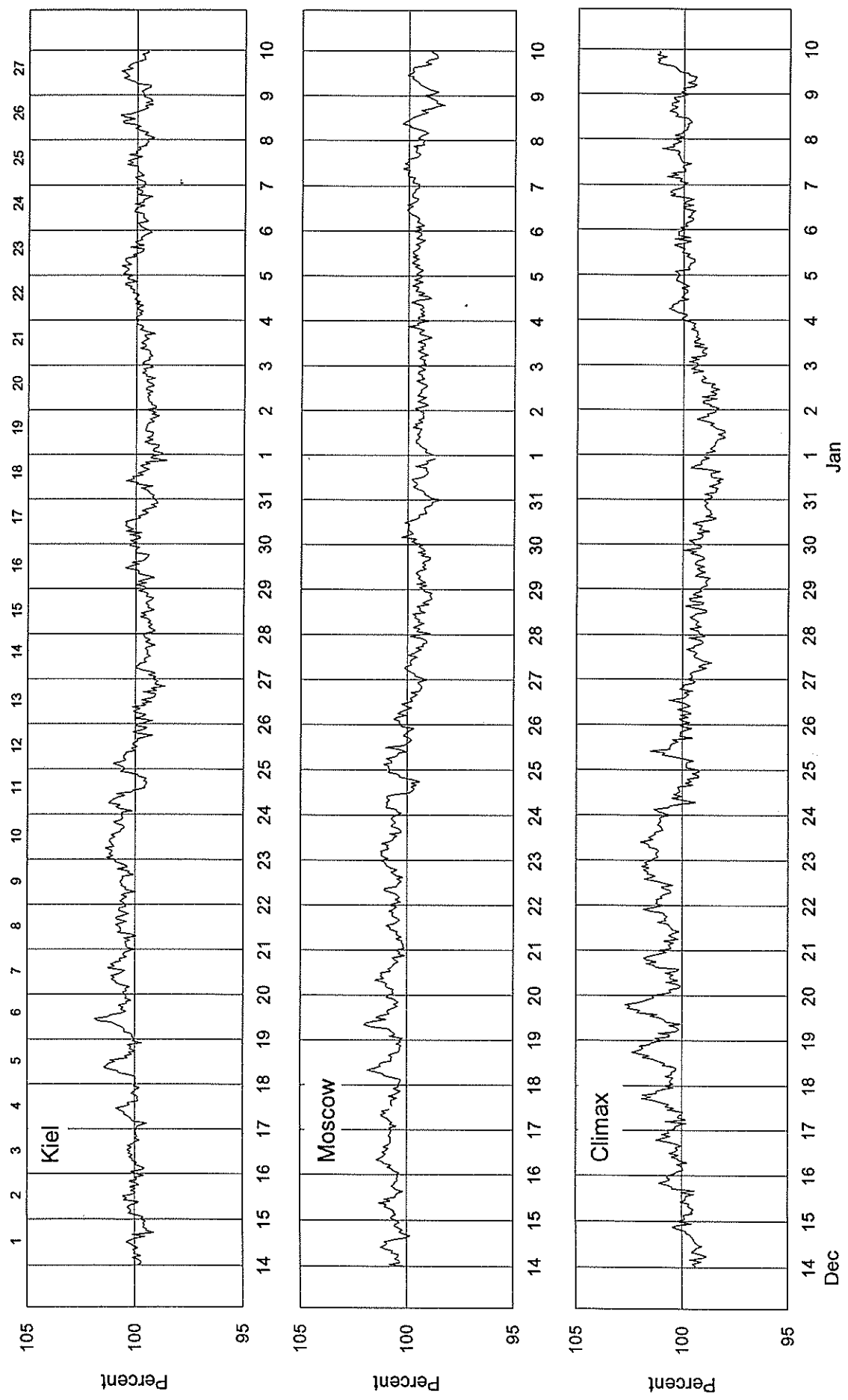
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4471	7306.9	3896.7	6267.0	9169.2	4144.1	2031.4	3520.0
2	4477	7304.5	3911.3	6276.7	9167.3	4153.5	2030.3	3531.3
3	4485	7310.6	3931.8	6287.9	9167.5	4176.6	2037.7	3514.0
4	4506	7330.1	3948.3	6318.2	9174.2	4207.7	2038.1	3535.7
5	4518	7338.8	3953.0	6320.5	9185.1	4202.4	2037.7	3527.7
6	4496	7315.4	3944.8	6299.2	9198.0	4199.7	2041.0	3549.4
7	---	7351.1	3955.3	6309.6	9206.0	4212.7	2045.0	3554.2
8	---	7318.9	3943.5	6305.0	9166.3	4210.5	2038.2	3563.0
9	---	7339.2	3929.7	6315.5	9162.5	4215.9	2041.1	3568.7
10	---	7369.1	3949.5	6348.5	9216.3	4264.1	2045.4 (7)	3592.0
11	---	7337.9	3931.3	6315.9	9189.1	4239.5	2041.5	3574.3
12	---	7343.0	3934.5	6290.0	9166.3	4243.2	2039.6	3570.3
13	---	7349.4	3928.0	6289.9	9200.1	4236.6	2046.2	3563.8
14	---	7379.5	3933.0	6307.8	9240.5	4259.0	2048.6 (7)	3569.2
15	---	7397.9	3948.0	6324.7	9266.3	4248.0	2042.5 (20)	3568.8
16	---	7378.5	3963.3	6332.6	9309.2	4245.8	2041.1	3568.6
17	---	7357.4 (12)	3959.5	6357.2	9343.1	4246.5	2043.5	3563.4
18	---	---	3974.7	6382.7	9366.8	4247.7	2048.6	3583.9
19	---	---	3983.7	6397.5	9379.3	4255.9	2051.5	3584.8
20	---	---	3981.5	6377.9	9353.7	4254.8	2045.8	3547.2
21	---	---	3977.5	6352.5	9332.2	4272.5	2044.3	3563.4
22	---	---	3977.8	6341.5	9293.6	4258.7	2045.2 (19)	3540.1
23	---	7380.0 (4)	3971.5	6319.1	9265.4	4246.9	2043.5	3533.3
24	---	7382.7	3978.3	6313.2	9291.0	4244.3	2042.2	3557.5
25	---	7357.8	3973.0	6307.9	9279.5	4240.9	2041.2	3568.0
26	---	7314.4	3946.8	6292.8	9214.7	4206.4	2034.4	3554.9
27	---	7322.6	3927.7	6271.3	9201.2	4191.3	2034.6	3554.8
28	---	7285.1	3909.5	6254.2	9212.7	4176.4	2037.7 (8)	3526.6
29	---	7299.8	3900.3	6256.7	9236.2	4176.8	2028.4	3545.0
30	---	7318.4	3917.5	6256.4	9230.2	4179.2	2029.4	3563.5
31	---	7352.5	3984.5	6296.4	9259.9	4202.2	2034.7	3575.2
Mean	4492	7340.1	3947.3	6312.5	9240.1	4221.3	2040.3	3555.9

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.

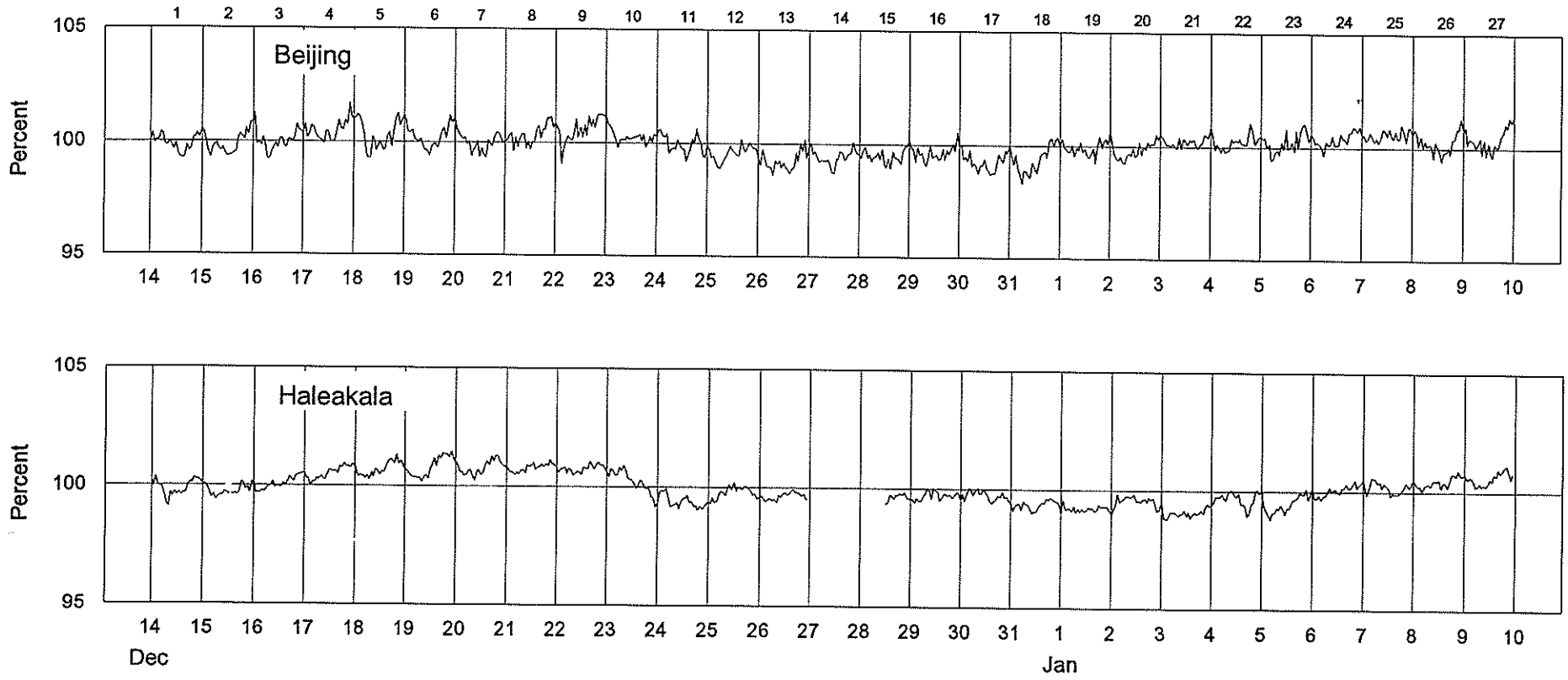
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2231 - Beginning 14 Dec 96



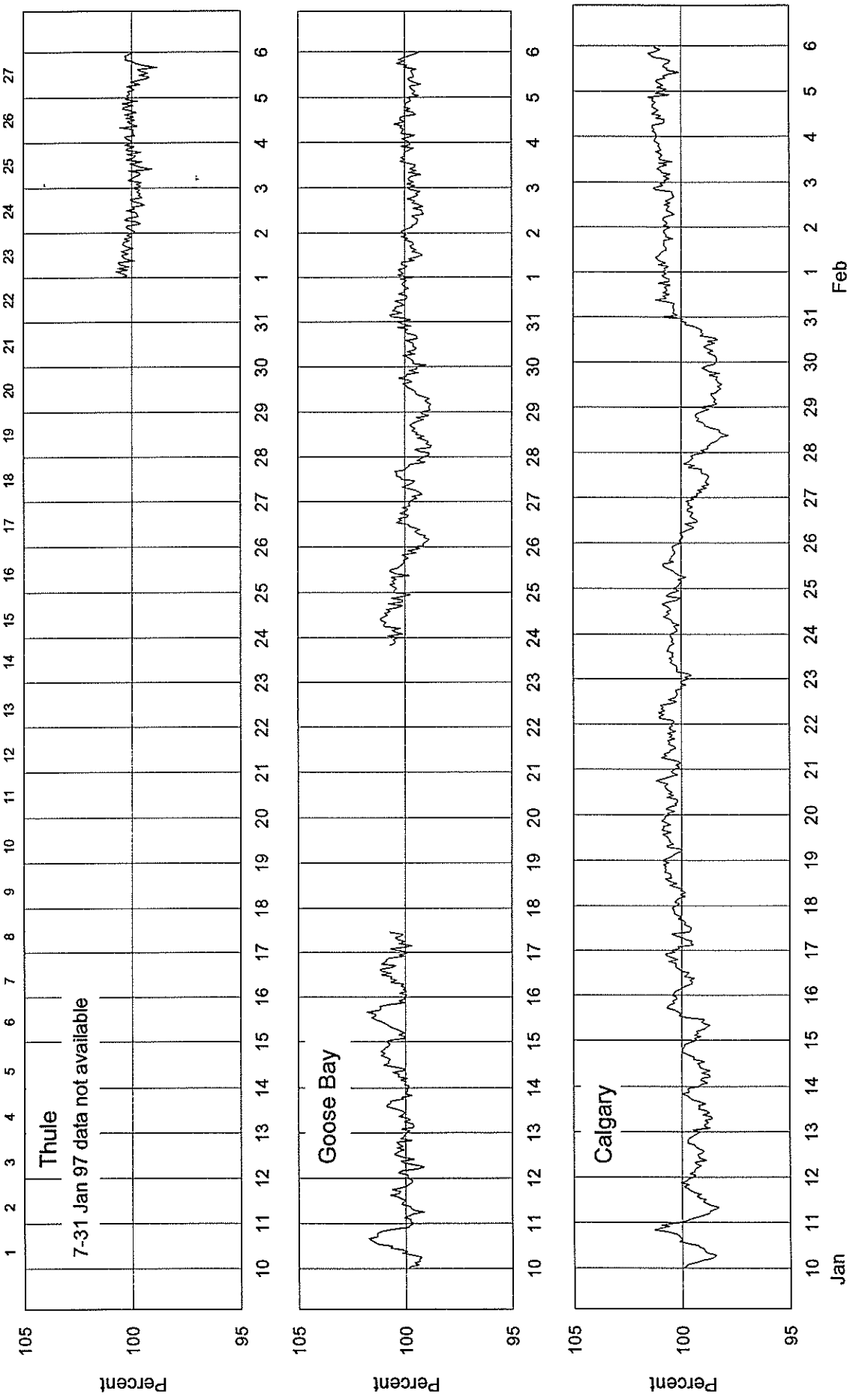
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2231 - Beginning 14 Dec 96



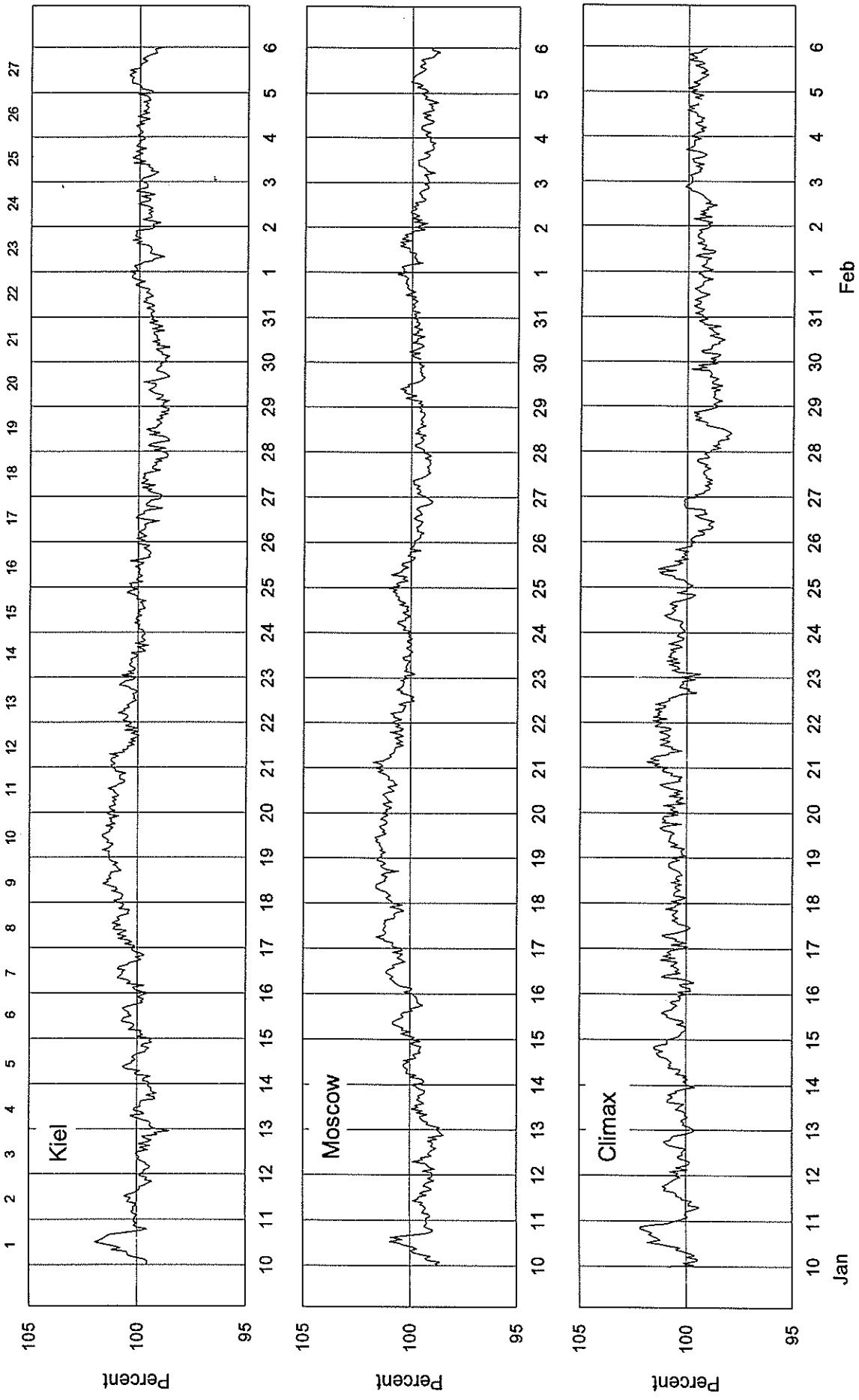
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2231 - Beginning 14 Dec 96



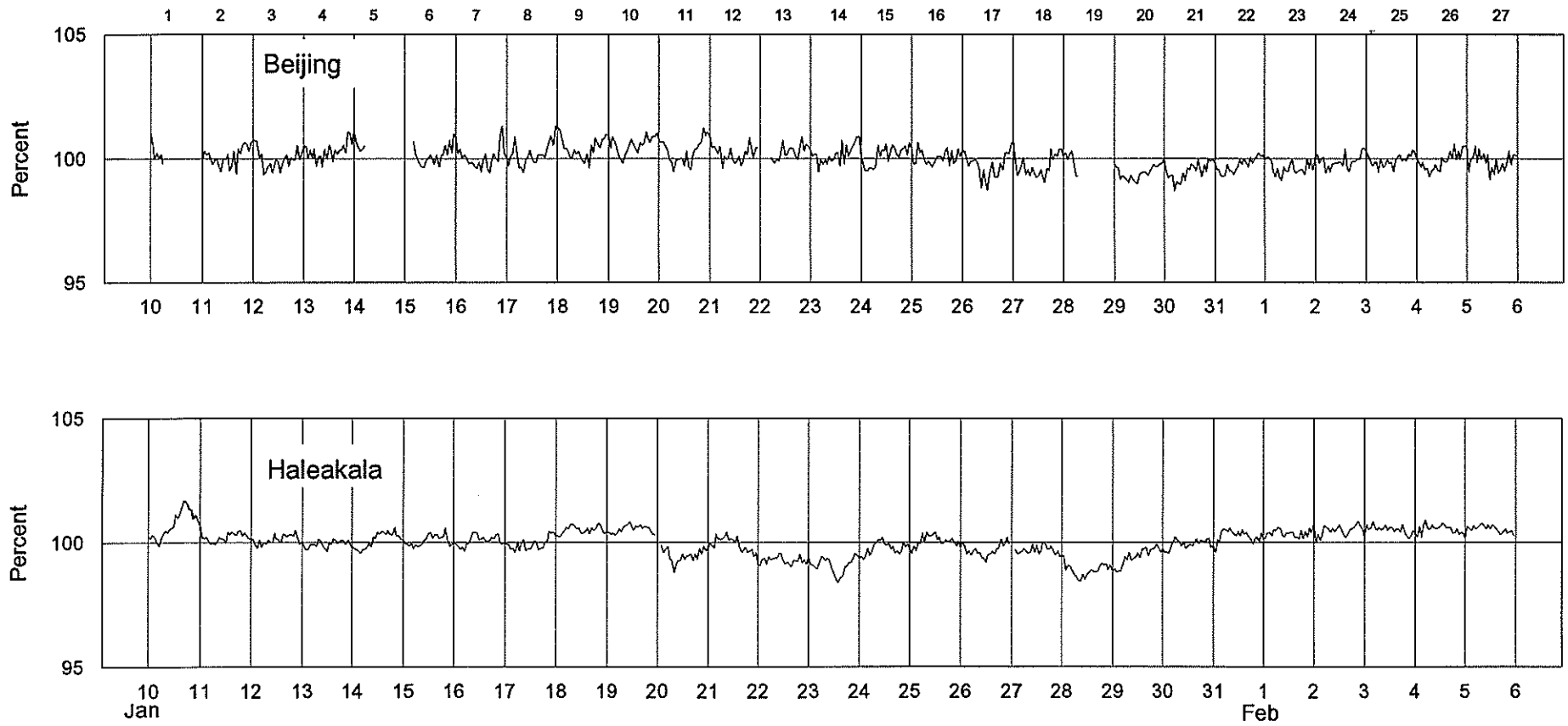
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2232 - Beginning 10 Jan 97



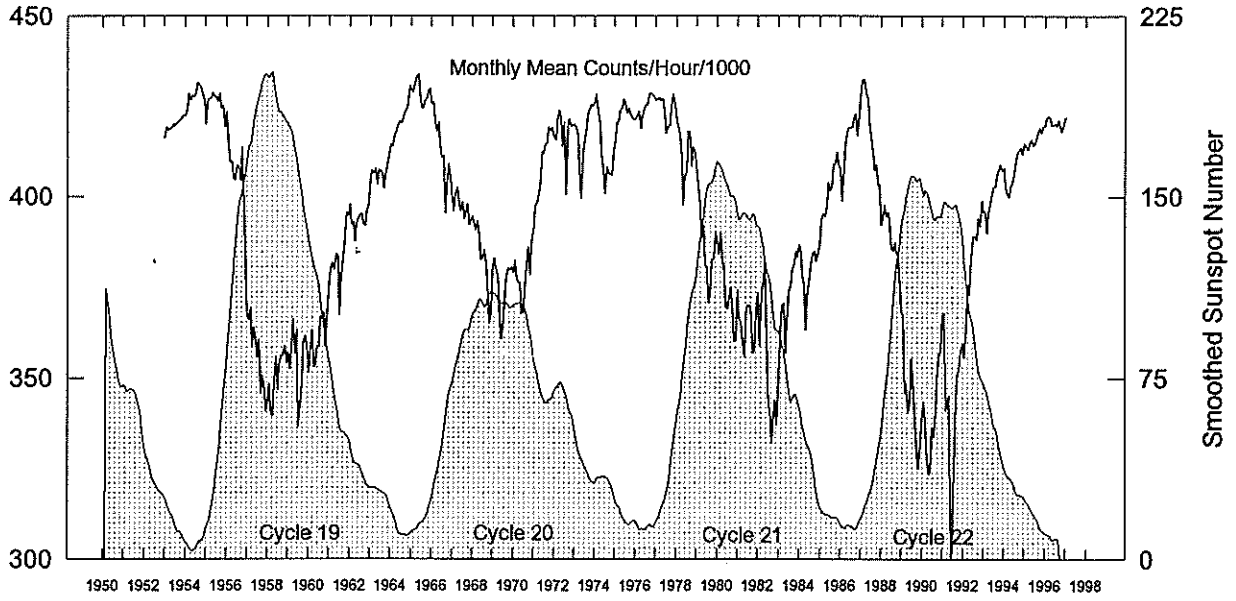
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2232 - Beginning 10 Jan 97



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2232 - Beginning 10 Jan 97



Climax Neutron Monitor Pressure-Corrected Values
Jan 1953 - Jan 1997



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1953	4163	4193	4183	4187	4190	4200	4196	4205	4209	4213	4220	4226	4199
1954	4225	4246	4286	4269	4280	4277	4285	4317	4308	4306	4286	4269	4279
1955	4200	4267	4272	4273	4287	4278	4279	4264	4286	4244	4252	4193	4258
1956	4234	4160	4097	4097	4049	4045	4088	4083	4044	4135	3980	3799	4068
1957	3677	3660	3695	3585	3640	3603	3557	3606	3458	3509	3484	3410	3574
1958	3434	3485	3401	3396	3490	3560	3467	3537	3561	3564	3589	3542	3502
1959	3573	3526	3606	3664	3567	3633	3369	3420	3484	3597	3615	3587	3553
1960	3516	3573	3631	3531	3534	3589	3587	3670	3671	3682	3586	3681	3604
1961	3762	3801	3818	3800	3843	3838	3675	3784	3834	3870	3955	3949	3827
1962	3977	3922	3931	3878	3927	3941	3950	3953	3924	3919	3963	3971	3938
1963	4049	4074	4065	4077	4034	4075	4072	4060	4023	4066	4094	4112	4067
1964	4145	4139	4168	4181	4198	4208	4202	4213	4232	4240	4254	4307	4207
1965	4295	4290	4314	4335	4340	4288	4247	4246	4268	4271	4294	4300	4291
1966	4258	4262	4211	4180	4207	4146	4108	4112	3956	4055	4091	4053	4137
1967	3991	3960	4014	4025	3974	3960	3985	3940	3956	3980	3922	3933	3970
1968	3946	3925	3909	3932	3895	3830	3830	3853	3817	3761	3652	3685	3836
1969	3801	3831	3798	3783	3656	3610	3652	3730	3781	3803	3798	3807	3754
1970	3792	3824	3781	3765	3765	3679	3684	3755	3832	3862	3786	3895	3785
1971	3898	3976	3981	4003	4032	4124	4117	4145	4149	4193	4181	4192	4083
1972	4163	4158	4211	4239	4215	4141	4207	4005	4198	4214	4198	4198	4179
1973	4201	4193	4173	4075	3997	4119	4151	4180	4235	4240	4255	4253	4172
1974	4262	4283	4238	4207	4121	4077	4009	4083	4064	4064	4058	4131	4133
1975	4146	4206	4210	4239	4245	4271	4262	4231	4243	4231	4218	4214	4226
1976	4216	4223	4236	4188	4218	4244	4254	4253	4283	4287	4285	4280	4247
1977	4268	4272	4274	4267	4272	4231	4175	4194	4197	4245	4284	4260	4245
1978	4213	4198	4173	4107	3977	4058	4068	4183	4180	4085	4139	4128	4126
1979	4071	4035	3983	3888	3921	3815	3808	3710	3745	3829	3829	3905	3878
1980	3874	3842	3900	3820	3817	3697	3692	3719	3750	3687	3604	3604	3750
1981	3744	3663	3656	3601	3558	3683	3703	3702	3687	3570	3581	3682	3652
1982	3735	3590	3732	3773	3814	3606	3421	3415	3324	3402	3441	3372	3552
1983	3508	3600	3699	3708	3570	3656	3744	3752	3799	3814	3850	3834	3711
1984	3868	3850	3784	3760	3633	3727	3767	3818	3844	3851	3825	3844	3798
1985	3872	3937	3954	3948	3977	4039	4018	4026	4089	4090	4124	4091	4014
1986	4079	3988	4049	4148	4181	4191	4192	4193	4226	4229	4171	4226	4156
1987	4279	4324	4325	4294	4271	4203	4165	4120	4073	4089	4031	4035	4184
1988	3923	3949	3976	3948	3957	3934	3859	3852	3876	3846	3840	3752	3893
1989	3686	3673	3458	3485	3405	3437	3551	3494	3382	3311	3252	3309	3454
1990	3392	3434	3383	3278	3236	3244	3366	3337	3409	3497	3564	3577	3393
1991	3675	3680	3409	3428	3452	3005	3026	3253	3440	3508	3527	3585	3416
1992	3595	3557	3639	3757	3730	3830	3891	3892	3880	3941	3919	3988	3801
1993	3961	3959	3901	3955	3979	4012	4026	4027	4063	4073	4089	4073	4010
1994	4080	4030	4009	3999	4027	4036	4068	4090	4123	4129	4137	4118	4071
1995	4146	4143	4130	4149	4157	4143	4146	4159	4184	4190	4176	4195	4160
1996	4198	4216	4224	4218	4200	4199	4203	4196	4212	4192	4180	4199	4203
1997	4221												4221

Multiply table entries by 100 to obtain hourly counting rate. Climax, Colorado: N39, W106, Alt=3400 m, Cutoff Rigidity=2.99GV (1980).
NOTE: Data may differ from previously reported values due to subsequent cleanup of data and slight changes in the averaging algorithm.
Sunspot numbers are preliminary after Dec 96.

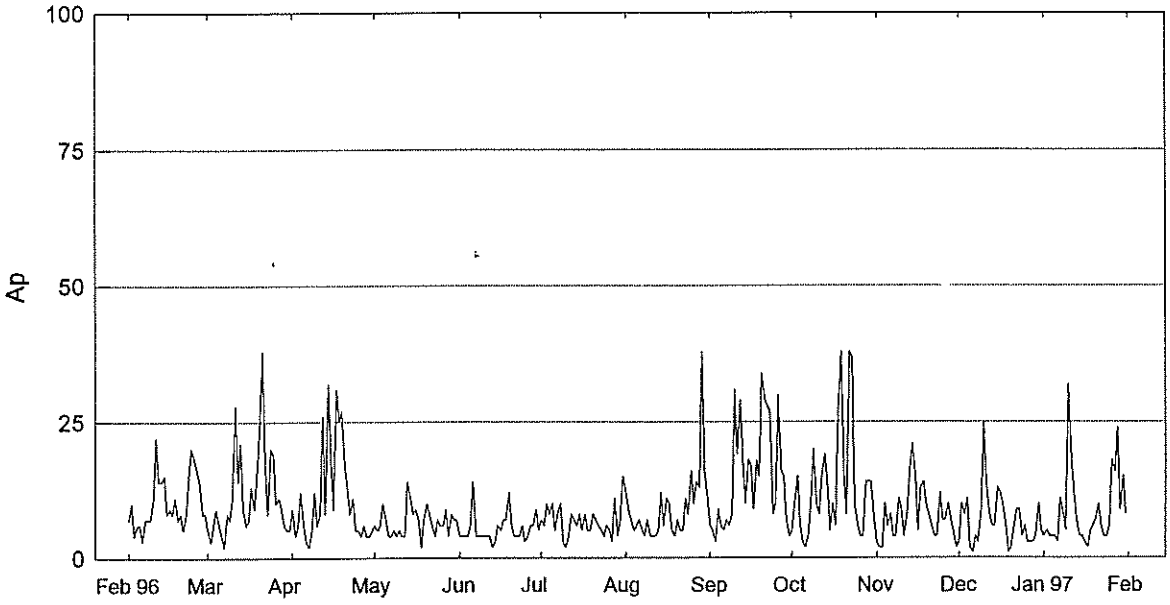
Geomagnetic Activity Indices

January 1997

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		2	2-	1-	1-	1	1	1	1+	9+	4	0.2	2-	2-	1+	1+	1+	1o	1+	2-	10	11	11	12	10	CC
2		1+	1	1+	2-	2-	2-	2-	1	11+	5	0.2	1+	1o	1+	2o	2o	2o	2-	2-	12	14	11	10	15	CC
3	Q5	1+	1-	0+	1	0+	1	1+	1	7	4	0.1	1+	1-	1-	1+	1o	1+	1+	1+	8	9	9	9	9	CC
4	Q4	1+	1	1	1+	0+	0+	0+	1	7-	4	0.1	1+	1-	1-	1+	1o	1-	1o	2-	7	7	8	8	8	CC
5	Q6	1+	1+	1-	1	1-	1+	1-	0+	7+	4	0.1	1+	2-	1o	2-	1o	2-	1o	1+	9	8	12	9	11	CC
6	Q2	1-	1-	0+	1-	1+	1-	0+	0+	5	3	0.1	1o	1-	0+	1+	2o	1-	1-	1+	7	6	9	7	8	CK
7		2+	4	2	2+	3-	3-	2+	2-	20	11	0.7	3-	3+	2-	3-	3o	3-	3-	2o	23	24	22	22	24	
8		3-	3+	1+	1	2	1+	1+	2-	15-	8	0.4	2+	2+	1+	1o	2+	2-	2-	2-	13	17	12	15	14	
9		2	1+	2+	1	1-	0+	1+	2	11	5	0.2	2-	1o	2+	1+	1o	0+	1+	2-	10	10	6	9	7	C
10	D1	3-	5-	6	5	4-	3+	4	3-	32	32	1.3	3-	4o	5+	5o	4-	4-	4o	3+	56	46	70	73	44	
11	D4*	5-	4	2+	4	4-	1+	2-	1+	23	18	1.0	5+	5-	3+	4-	4o	2-	2o	1+	45	27	51	58	21	
12		2-	2	5-	3-	2	3-	2+	2	20	12	0.7	2-	2-	4o	3-	2o	3-	2+	2o	22	23	17	22	18	
13		2	3-	2-	1	2+	2-	2-	1	14	7	0.3	1+	2o	2-	1+	3-	2-	1+	1+	13	14	13	13	14	C
14	Q10	1-	1-	1+	1-	1+	1	2-	2-	9	4	0.2	1-	1o	1+	1o	2-	1+	1+	2-	9	7	10	6	11	CC
15	Q9	1-	1-	1	1	2-	2	1	0+	8+	4	0.1	1-	0+	1+	1+	2o	2o	1+	1o	9	6	13	9	11	CC
16	Q1	1	1	1-	1-	0+	0	0+	1	5	3	0.0	1o	1+	1+	1o	1-	0o	0o	1o	5	5	9	9	5	CC
17	Q3	0	0	0	0	1-	1	1	1+	4	2	0.0	0o	0+	0o	0+	1+	1+	1+	2-	6	5	9	3	11	CC
18		3	2	1+	1+	1-	1-	1-	0+	10	5	0.2	3-	2-	2-	2-	1-	1+	1+	1+	11	12	14	19	7	KC
19		1	1-	0+	1	2	3	1+	1	10+	6	0.2	1-	0+	1o	1+	2+	3-	2-	1+	11	11	15	8	19	KK
20		1-	0+	1+	1	2-	3	2	3-	13-	7	0.3	1-	1+	2o	1+	2-	3o	2+	3-	15	16	19	11	25	
21		3+	2-	2-	2	3	3	2	1	18-	10	0.5	3o	1+	2o	2o	3+	3o	2o	1+	20	14	22	14	22	
22		2	2+	1	1	1-	2-	2-	2-	12	6	0.3	2-	2-	1+	1o	1+	2-	2-	2o	11	10	10	8	12	CK
23	Q7	2+	0+	1-	1-	1	1-	1-	0+	7-	4	0.1	2-	0+	1o	1o	1+	0+	1o	0+	6	7	6	7	6	CC
24	Q8	0+	1	1-	1-	1-	1+	1	2+	8	4	0.1	1-	2-	2o	2-	1o	2-	1+	2+	12	9	12	10	12	CC
25		2+	1+	1	1	1	0+	2+	3-	12	6	0.3	2-	1+	1+	1o	1+	1-	2+	2+	11	14	10	9	15	CC
26	D3*	2+	2	1-	2-	4-	4-	4+	5-	23	18	1.0	2o	2-	1+	2+	4o	4o	4+	4o	36	46	32	12	66	
27	D5*	3	4-	2	3-	1+	3+	3+	4	23+	16	0.9	2+	3o	2-	3+	1+	3+	4-	4-	29	30	27	25	33	
28	D2	3+	5-	3-	3-	4	4	4+	4-	29+	24	1.1	3o	4o	3o	3-	4o	4o	4-	4-	41	43	43	32	54	
29		3-	2	2-	2	2	2-	3	2+	17+	9	0.5	3-	2-	2-	2-	2+	2o	3o	2o	17	19	15	13	21	
30		3	2+	3-	1+	3	4	4-	3+	23+	15	0.9	3-	2-	2+	2-	3o	4-	3o	3-	24	31	28	19	40	
31		3-	3	1-	1	1	2-	2	2+	14+	8	0.4	2+	2+	1-	1o	1+	2o	2+	2+	13	17	8	10	15	C
Mean											9	0.40									16.8	16.8	18.0		17.4	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	1+	1o	1o	1+	1+	1+	1o	1+	8	2o	2o	2-	1+	1+	1o	1+	2+	12	70.0	0	0	14	
2	1o	1o	1+	2o	2o	2+	2-	1o	12	1+	1o	2-	2o	2o	2-	2-	2o	12	69.7	0	0	13	
3	1o	1-	0o	1o	1o	1+	1+	1o	6	2-	1o	1o	2-	1o	1+	1+	2-	9	70.8	0	0	14	
4	1+	0+	1o	1+	1o	1-	1-	1+	7	1o	1o	0+	2-	1-	1o	1o	2o	7	71.4	9	8	15	
5	1+	2-	1o	1+	1o	2-	0+	1o	8	2-	2-	1o	2o	1o	2-	2-	1+	11	71.9	10	9	16	
6	1o	1o	0+	1+	2-	1-	1-	1o	6	1o	1-	1-	1o	2o	1-	1o	2-	8	70.6	10	10	14	
7	3-	3o	2-	3+	3o	3-	3-	2o	23	3-	3+	2o	2o	3o	2+	3-	2+	23	70.9	8	7	15	
8	2+	3-	1+	1o	3-	2-	1+	2-	14	3-	2o	1o	1-	2o	2-	2+	2-	13	71.3	0	0	15	
9	2-	1o	3-	1+	1o	0+	1+	2-	11	2-	1+	1+	1+	1-	1-	2-	1+	9	71.3	9	8	15	
10	3-	4o	5+	5o	3+	4-	4+	3o	58	3-	4-	5+	5o	4-	3+	4-	3+	55	72.9	9	8	17	
11	5+	4+	3o	4o	4+	1+	2o	1+	45	5+	5o	3+	4-	3+	2-	2+	2-	46	71.6	7	7	15	
12	2o	1+	5-	2+	2o	3-	2+	2-	23	2-	2o	4-	3o	2o	3-	2+	2+	21	72.1	0	0	16	
13	1+	2+	2-	2-	3-	2o	2o	1o	14	1+	2-	2o	1+	2+	1+	1-	2-	11	72.1	0	0	16	
14	0+	1-	1o	1-	2-	1+	2-	1+	8	1o	1o	1+	1+	2-	1+	1+	2-	9	72.4	0	0	16	
15	1-	0+	1+	1o	2o	3-	1o	0+	8	1-	0+	1+	1+	2o	2-	1+	2-	9	73.3	11	8	17	
16	1-	1o	1+	1-	1o	0o	0+	1-	5	1+	1+	1+	1o	1-	0o	0o	1+	6	72.4	17	16	16	
17	0o	0o	0o	0o	1+	1+	1+	1o	4	0o	0+	0o	1-	1+	1+	2-	2+	7	71.7	8	8	15	
18	2+	1+	1+	1+	0+	1o	1o	1o	8	3-	2o	2o	2o	1o	1+	2-	1+	13	72.2	14	12	16	
19	0+	0+	0+	2-	3-	3o	2-	1+	11	1o	1-	1+	1+	2+	3-	1+	1o	11	72.9	0	0	17	
20	1-	1-	1+	1o	2o	3o	2+	2+	14	1o	2-	3-	2-	2-	3o	2+	3-	16	74.3	15	4	18	
21	3o	1+	2+	2o	3+	3o	2+	1o	21	3-	1o	2-	2o	3+	3o	2o	2-	19	71.8	0	0	16	
22	1+	2o	1+	1o	1+	2-	2-	2-	11	2-	2-	1o	1o	1+	2o	1+	2o	11	70.7	0	0	14	
23	2-	0+	1-	1o	2-	0+	1-	0o	6	2-	0+	1o	1o	1o	1-	1+	1-	7	71.1	0	0	15	
24	0o	1+	2o	1o	1o	2-	1+	2+	10	1o	2-	2o	2+	1o	2-	2-	2+	13	71.9	9	7	16	
25	2-	1+	1o	1o	1+	1+	3-	3-	12	1+	1+	1+	1o	1+	0+	2-	2o	9	70.9	8	7	15	
26	2-	2-	1o	2o	4+	4o	4+	4+	38	3-	2-	2-	3-	4o	4o	4o	4-	35	71.9	8	7	16	
27	3-	3o	1+	3+	2-	3+	4-	4-	31	2o	3-	2o	3+	1+	3o	3+	4-	26	71.3	9	8	15	
28	3o	4o	3-	3-	4+	4-	4-	4-	42	3o	4o	3o	3-	4-	4o	4-	4-	41	70.8	9	8	14	
29	2+	2-	2-	2o	3-	2o	3o	2o	18	3o	2-	2-	2-	2o	2-	3-	2o	17	72.4	10	9	16	
30	3-	2-	2o	1+	3o	4-	3+	3-	24	3-	2-	3-	2-	3-	4-	3o	3-	24	71.5	11	10	15	
31	2o	3-	1-	1o	1+	2+	2o	3-	14	2+	2-	1-	1-	1o	2-	2+	2-	11	70.3	10	8	14	
Mean									16.8									16.8	71.6	6.5	5.5	15.3	

Daily Average Indices Ap
Feb 1996 - Jan 1997

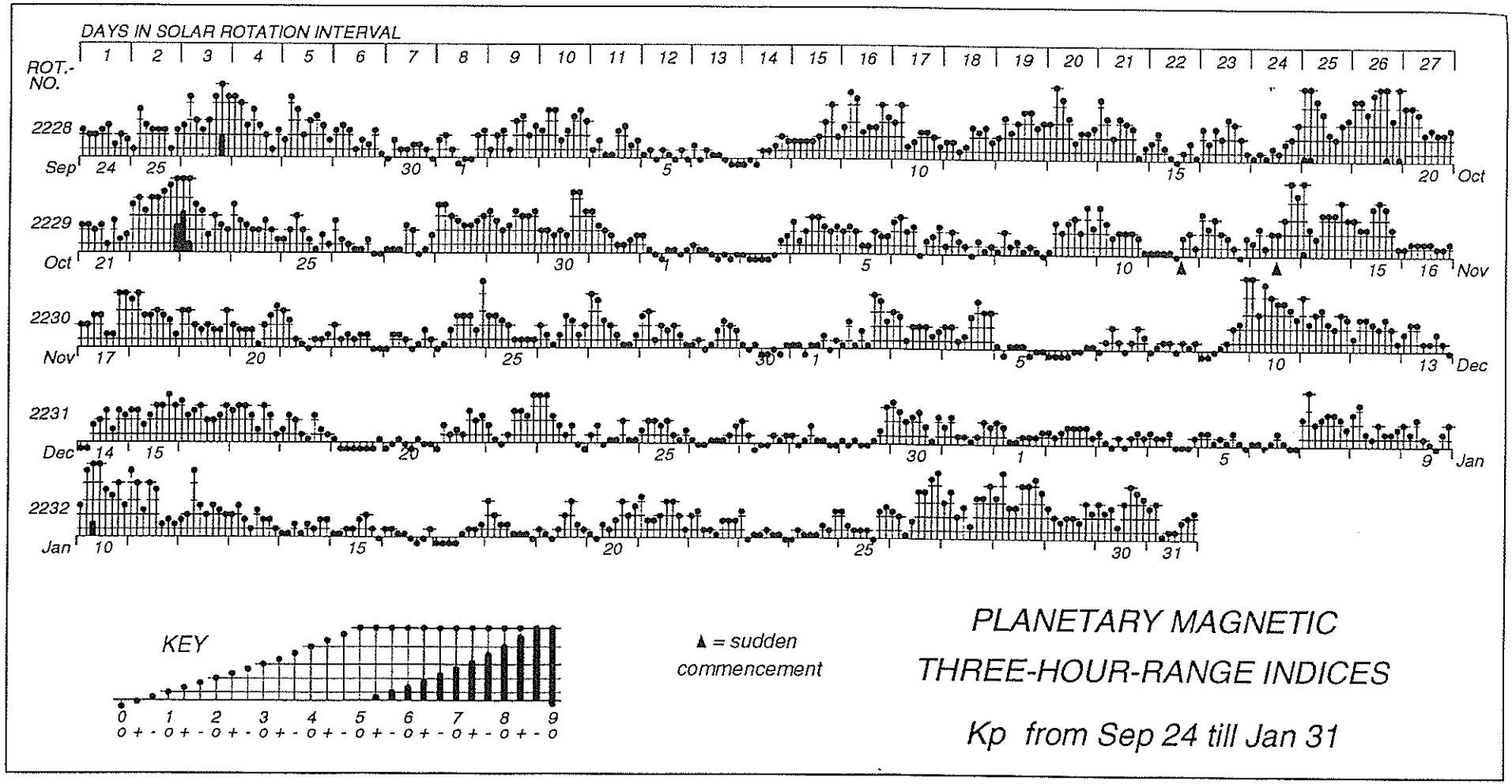


Day	Feb 96	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 97
1	7	5	9	6	4	7	12	6	5	3	3	4
2	10	3	4	5	4	6	9	5	10	2	10	5
3	4	6	6	6	4	10	7	3	15	2	8	4
4	6	9	12	10	4	8	5	9	6	10	11	4
5	6	6	6	7	6	10	6	6	3	6	2	4
6	3	4	3	4	14	5	7	5	2	8	1	3
7	7	2	2	4	4	8	5	7	4	4	4	11
8	7	8	5	5	4	10	4	6	10	4	3	8
9	7	7	12	4	4	3	7	8	20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

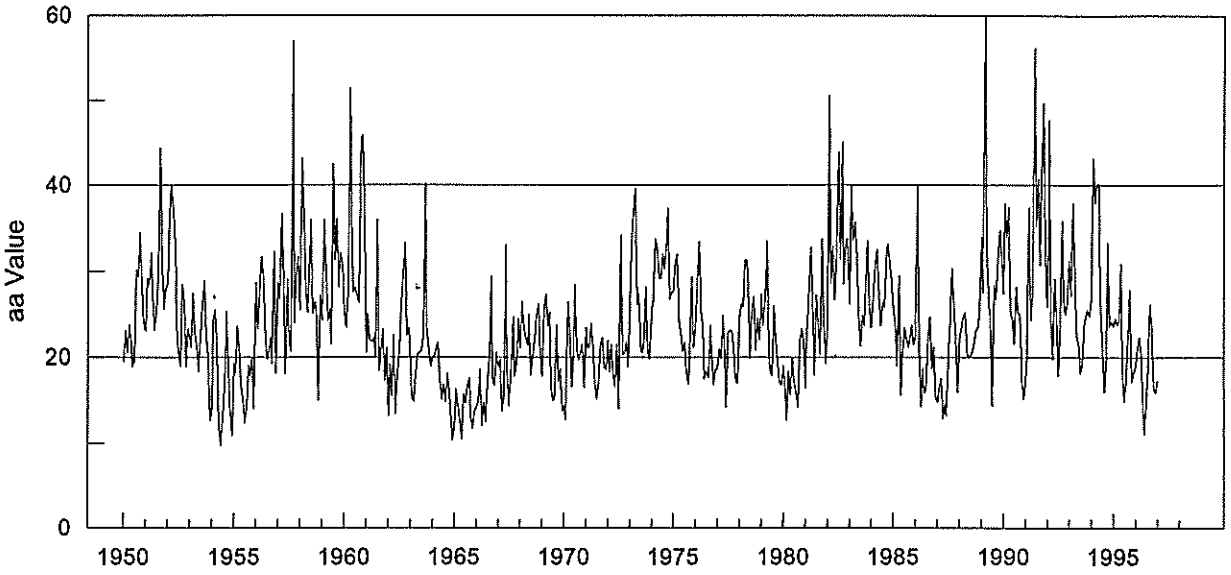
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Gottingen

Kp through January 31, 1997



Monthly Mean aa Index Jan 1950 - Jan 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												17.4

PLANETARY GEOMAGNETIC ACTIVITY

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

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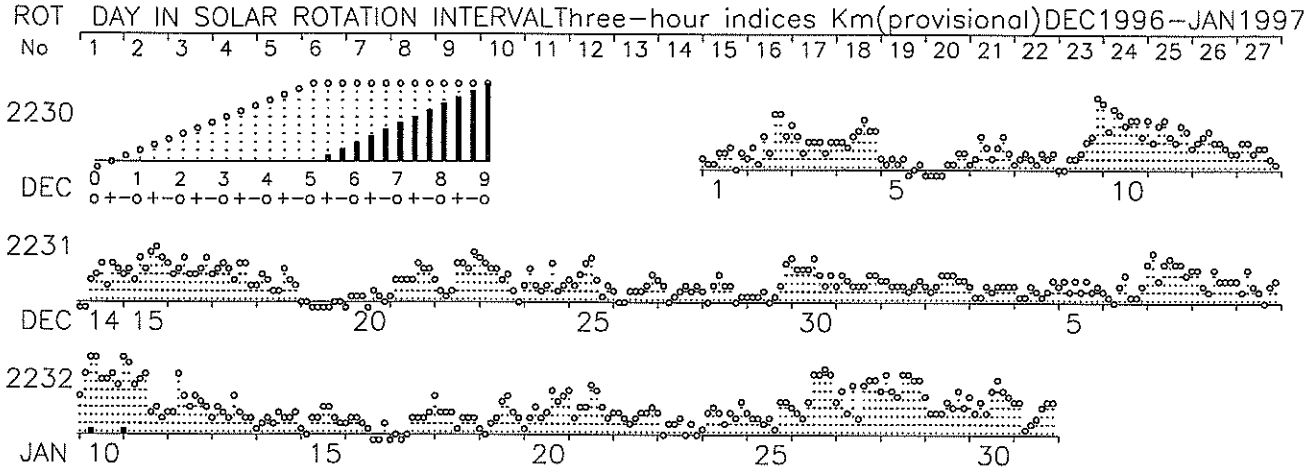
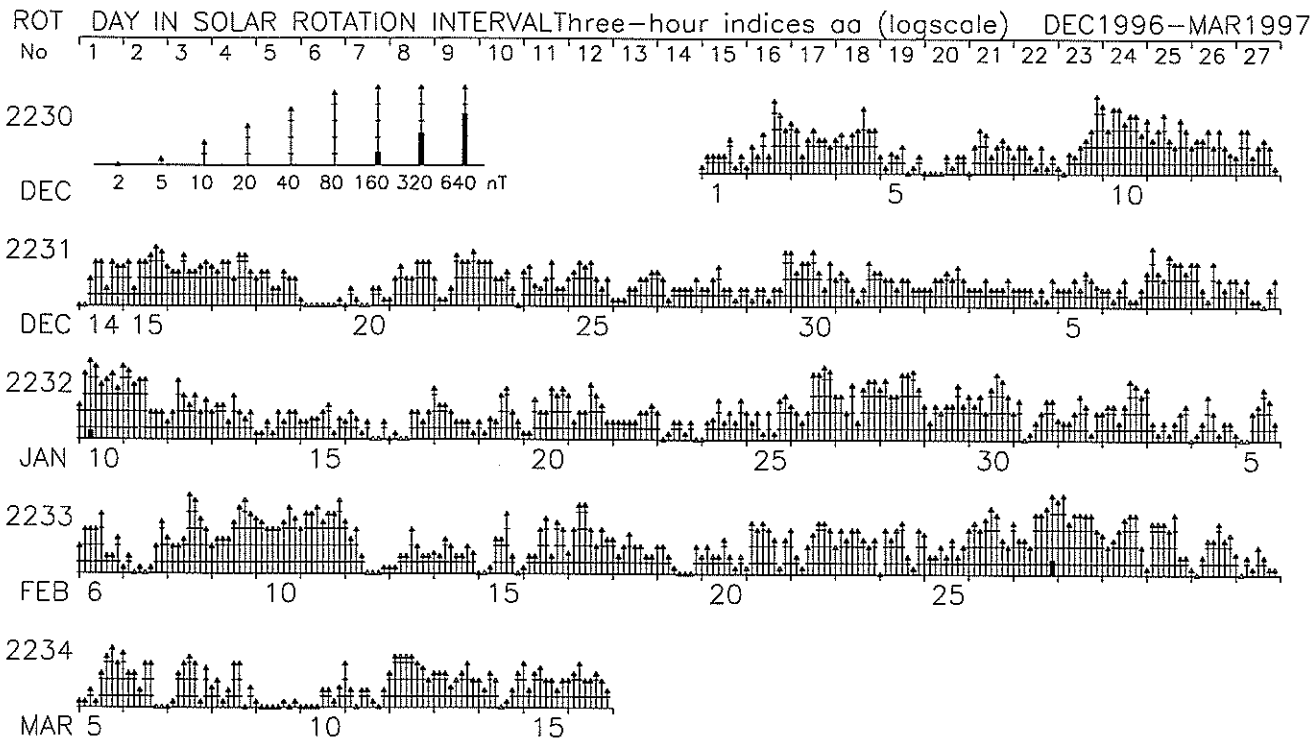


Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.

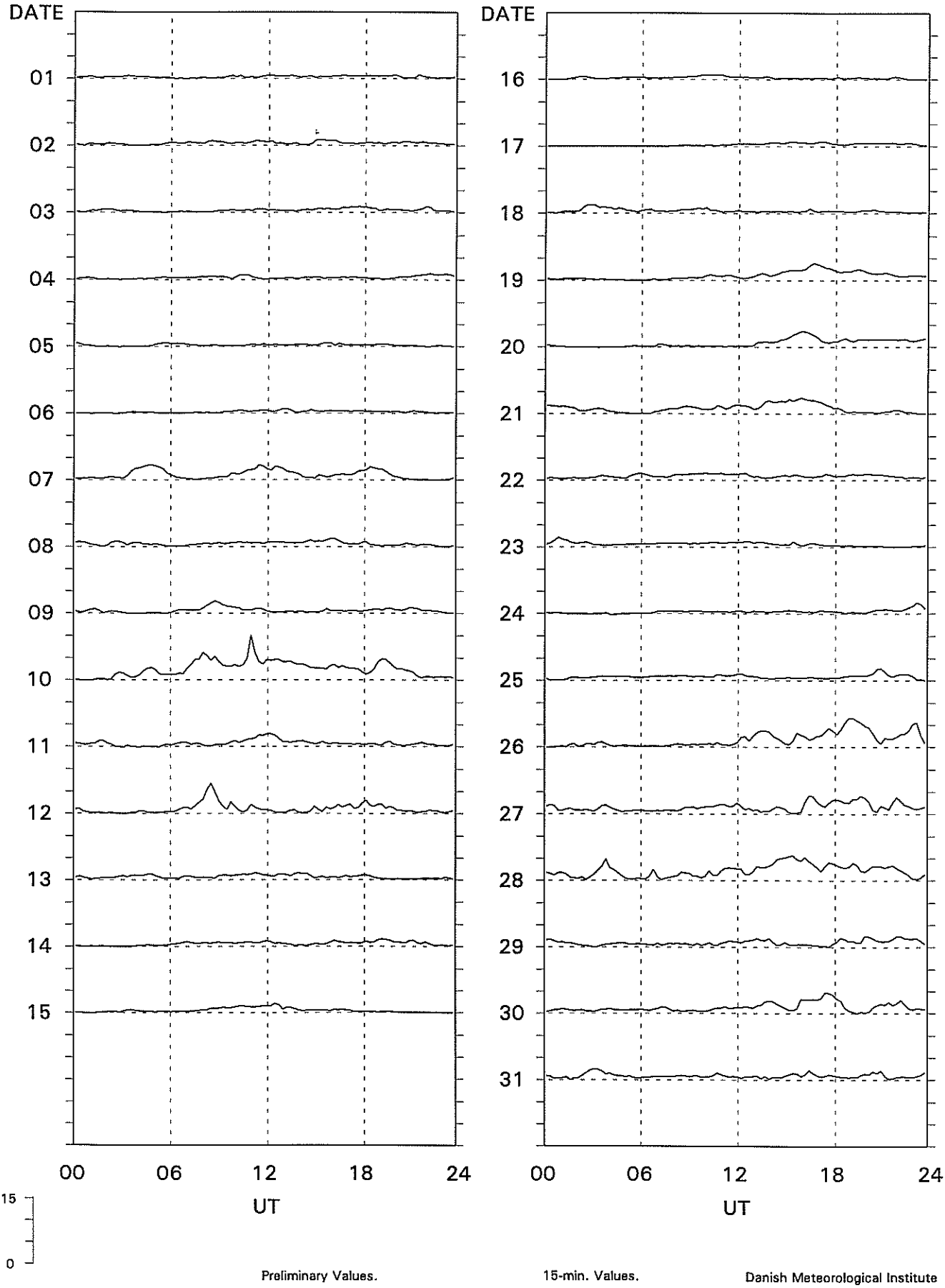


Indices Derivation at Universite Paris Sud; Graph Prepared at ISGI Publication Office.

PC-INDEX

Thule

January, 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

JANUARY 1997

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
DRV	75.2S	07	00--	..	..	..	..	07(1) 11(1)	6	740	689	964	13	04
UJJ	13.6N	10	0100	..	..	..	..		-	4	203	40	11	21
NGP	11.3N	10	0100	SC	--	--	--		-	5	220	29	11	21
ABG	09.4N	10	0100	..	..	..	..	10(3) 11(1,2)	6	5	210	39	11	21
HYB	07.6N	10	0104	SC	- 0.2	9	0	10(3,4) 11(1,2)	6	5	230	17	11	22
GUA	04.3N	10	01--	..	..	..	..	10(3)	6	10	190	20	11	01
PND	02.0N	10	0100	..	..	..	..		-	5	244	116	11	21
ETT	00.7S	10	0104	SC	0	9	10		-	--	226	90	11	20
TRD	01.1S	10	0100	..	..	..	..		-	5	223	132	11	21
HER	33.6S	10	01--		..	..	..	11(01)	6	22	172	101	11	06
AMS	46.8S	10	0105	SC	1.9	2	- 2	11(1)	5	20	180	90	11	15
CZT	51.5S	10	0105	SC	2	5	1	10(2,3,4,5,7) 11(1,2)	4	25	190	80	11	15
PAF	57.2S	10	0105	SC*	3.1	- 16.4*	- 6.4*	10(4,5,7)	5	38	223	195	10	22
HYB	07.6N	11	0115	SC	- 1	39	- 2		-	--	--	--	--	--
GUA	04.3N	11	0115	SC*	--	53	- 11	11(1)	6	--	210	30	11	15
ETT	00.7S	11	0115	SC	- 0.8	37	34		-	--	--	--	--	--
UJJ	13.6N	20	0400	..	..	..	..		-	2	60	15	21	24
NGP	11.3N	20	0400	..	..	..	..		-	3	83	14	21	24
ABG	09.4N	20	0400	..	..	..	..	21(6)	4	3	71	22	21	24
PND	02.0N	20	0400	..	..	..	..		-	2	73	25	21	24
TRD	01.1S	20	0400	..	..	..	..		-	2	81	47	21	24
DRV	75.2S	20	14--	..	..	..	..	21(1)	5	327	261	500	22	12
PAF	57.2S	25	20--	..	..	..	..	26(7,8)	5	25	159	170	26	23
UJJ	13.6N	26	0800	..	..	..	..		-	2	83	21	27	23
NGP	11.3N	26	0800	..	..	..	..		-	2	106	15	27	23
HYB	07.6N	26	0700	..	..	..	..	26(5,7) 28(6)	5	2	99	15	28	23
ABG	04.4N	26	0800	..	..	..	..	26(5)	6	2	94	25	27	23
GUA	04.3N	26	08--	..	..	..	..	26(5)	5	--	70	10	27	04
PND	02.0N	26	0800	..	..	..	..		-	3	101	43	27	23
ETT	00.7S	26	0300	..	..	..	..		-	--	130	49	28	21
TRD	01.1S	26	0800	..	..	..	..		-	2	109	71	27	23
CZT	51.5S	27	16--	..	..	..	..	28(6)	5	24	--	52	28	23
PAF	57.2S	27	16--	..	..	..	..	28(5,6)	5	25	180	138	29	01
UJJ	13.6N	28	0600	..	..	..	..		-	3	63	28	30	21
NGP	11.3N	28	0600	..	..	..	..		-	3	83	20	30	21
ABG	09.4N	28	0600	..	..	..	..	28(5,6,7) 30(6,7)	4	3	69	34	30	21
GUA	04.3N	28	08--	..	..	..	..	28(5)	5	--	40	10	28	23
PND	02.0N	28	0600	..	..	..	..		-	3	90	50	30	21
TRD	01.1S	28	0600	..	..	..	..		-	2	131	53	30	21
AMS	46.8S	28	13--	..	..	..	..	28(5)	5	18	68	44	29	01

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: FRD

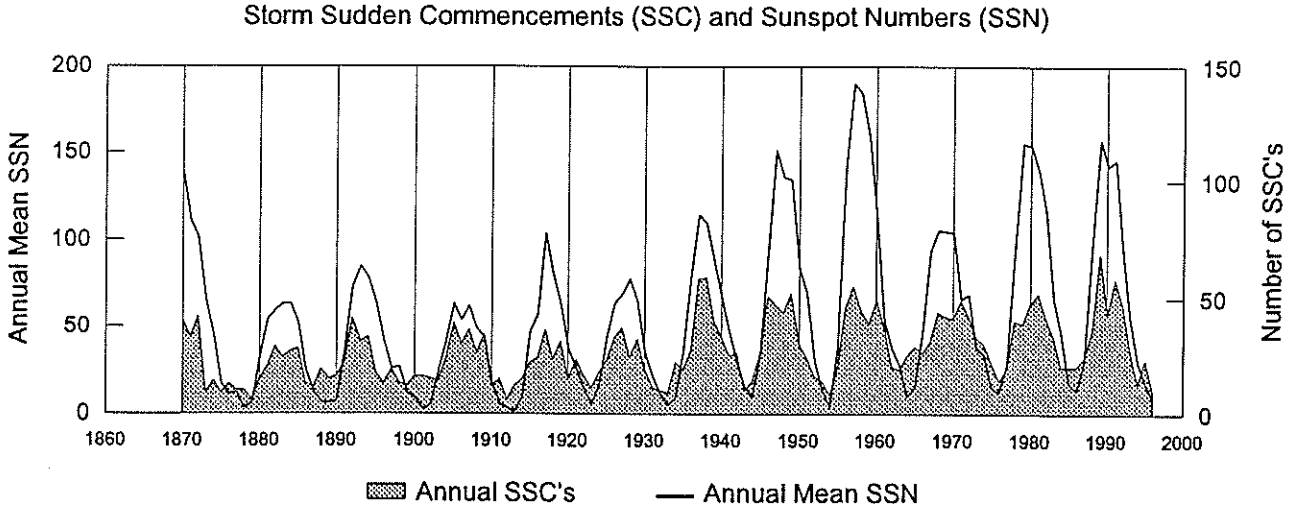
MAGNETIC STORM SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS (PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS)

JANUARY 1997

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
10	0104	A: HRB COI TEN	24	0328-0350	TEN
		B: WNG NAG MMB* LNP PAF*	26	1631-1638	TEN
		C: NGK BDV CLF EBR SPT QUE HYB ETT AMS CZT	27	0722-0731	BDV
11	0116	A: HRB* HTY* KNY* HYB ETT			
		B: WNG* CLF NAG* MMB* KAK* TEN			
		C: EBR*			
		si: SPT			

REPORTING OBSERVATORIES (up to the 4th of March 1997):
SOD NUR WNG NGK BDV CLF HRB NAG GCK MMB EBR COI SPT FRD KAK HTY KNY QUE TEN LNP HYB ETT HER CNB AMS CZT PAF DRV

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 (+).



* U.S. GOVERNMENT PRINTING OFFICE:1997-575-109/65044

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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

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