APRIL 2009 NUMBER 776 - Part I

Solar-Geophysical Data prompt reports

Data for February 2009 and March 2009
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NATIONAL GEOPHYSICAL DATA CENTER
Christopher G. Fox, Director
Boulder, Colorado

SOLAR-GEOPHYSICAL DATA

Number 776

(Issued in Two Parts)

Editor: Edward H. Erwin

Division Chief: William F. Denig
Solar-Terrestrial Physics Division

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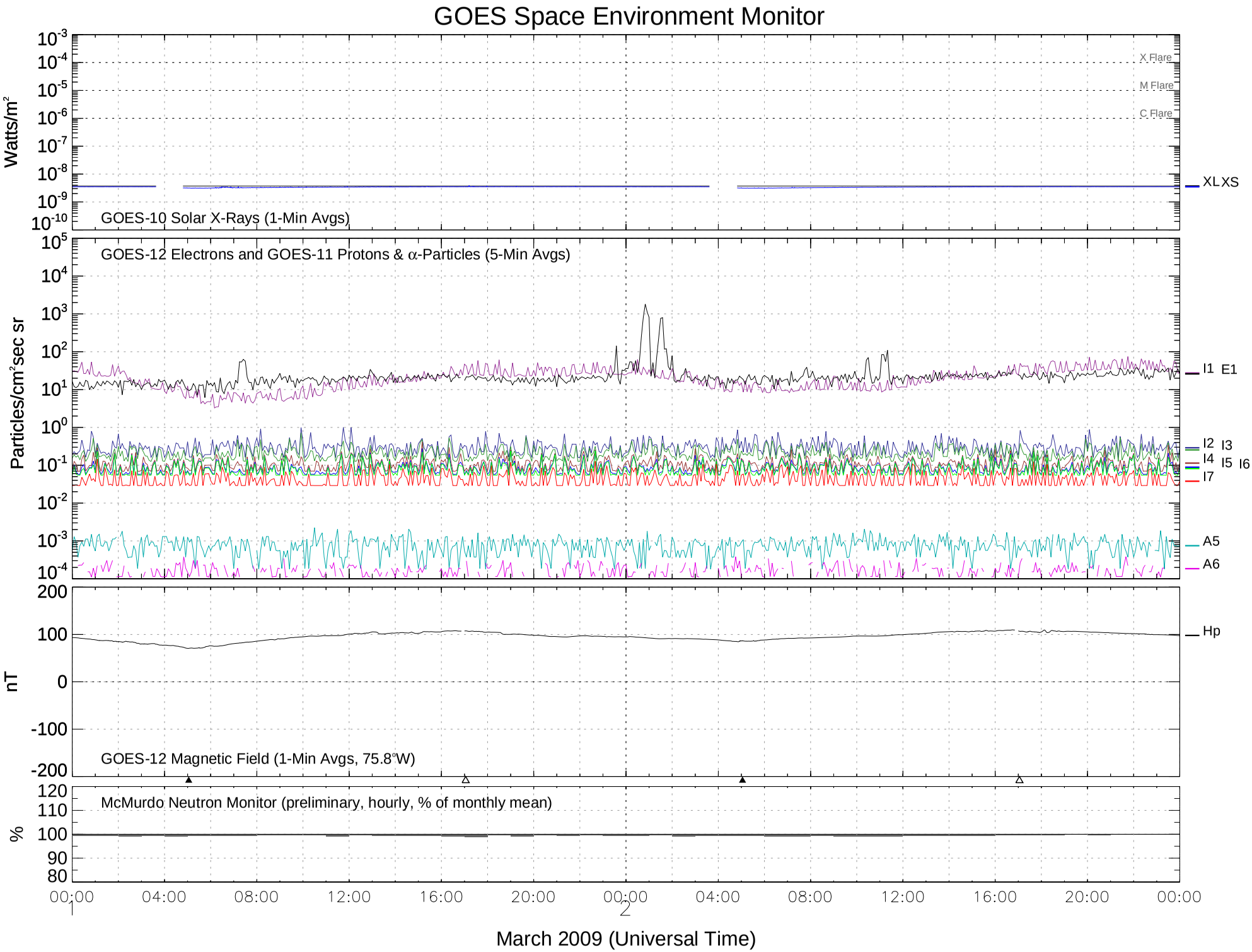
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C Flare
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GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1 E1
I2 I3
I4 I5 I6
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GOES-12 Magnetic Field (1-Min Avgs, 75.8°W)
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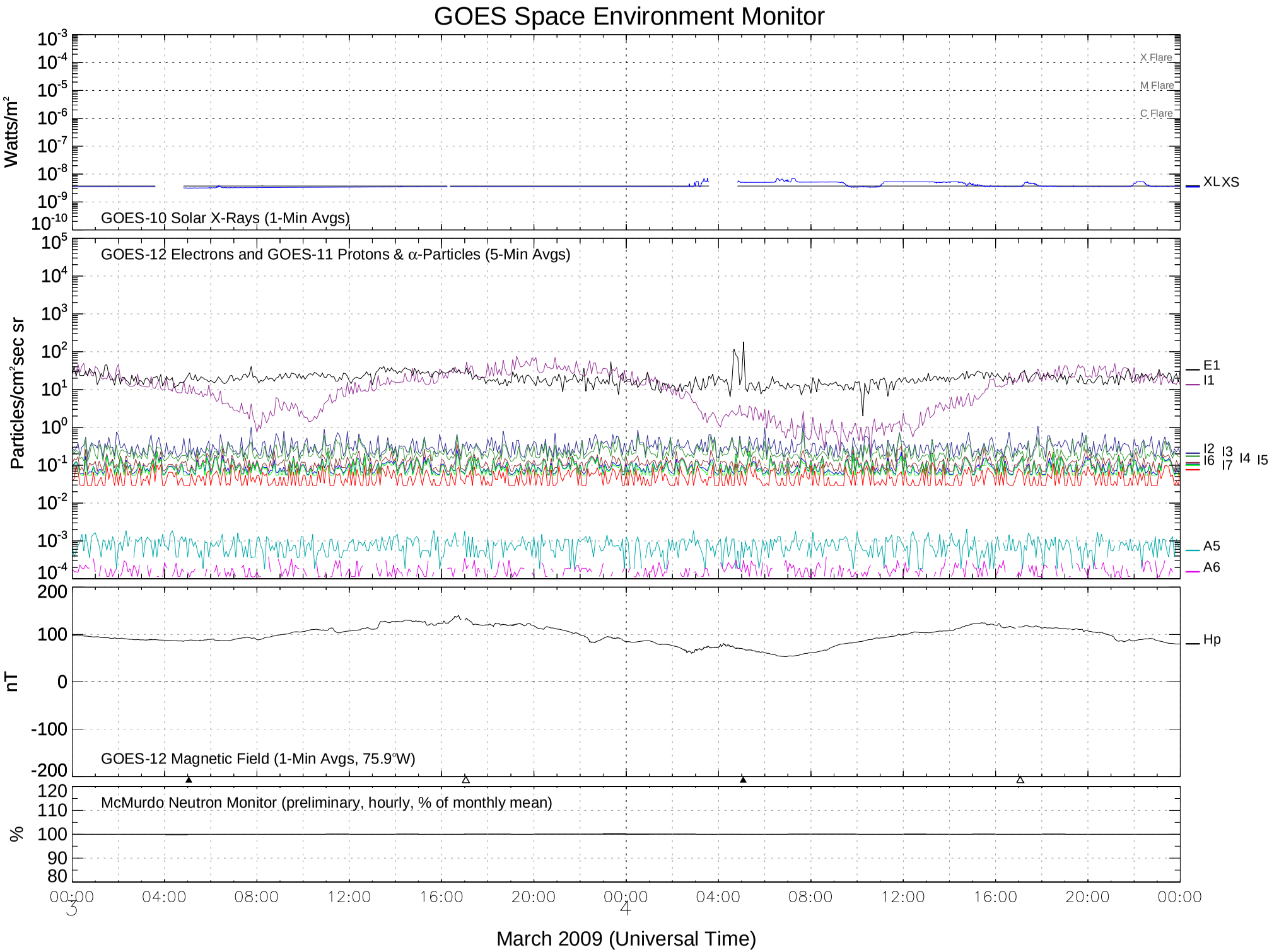
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GOES-12 Magnetic Field (1-Min Avgs, 75.9°W)
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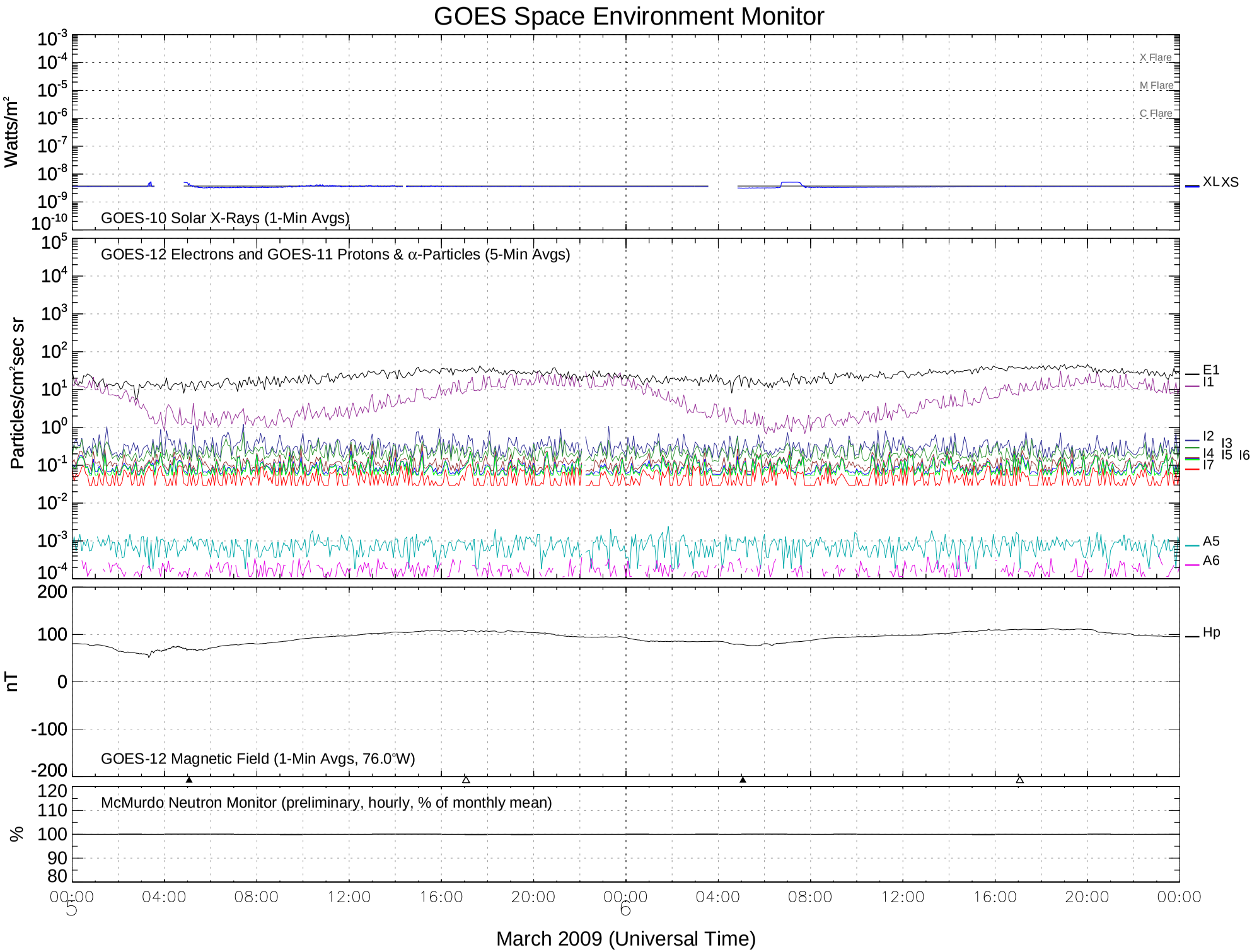
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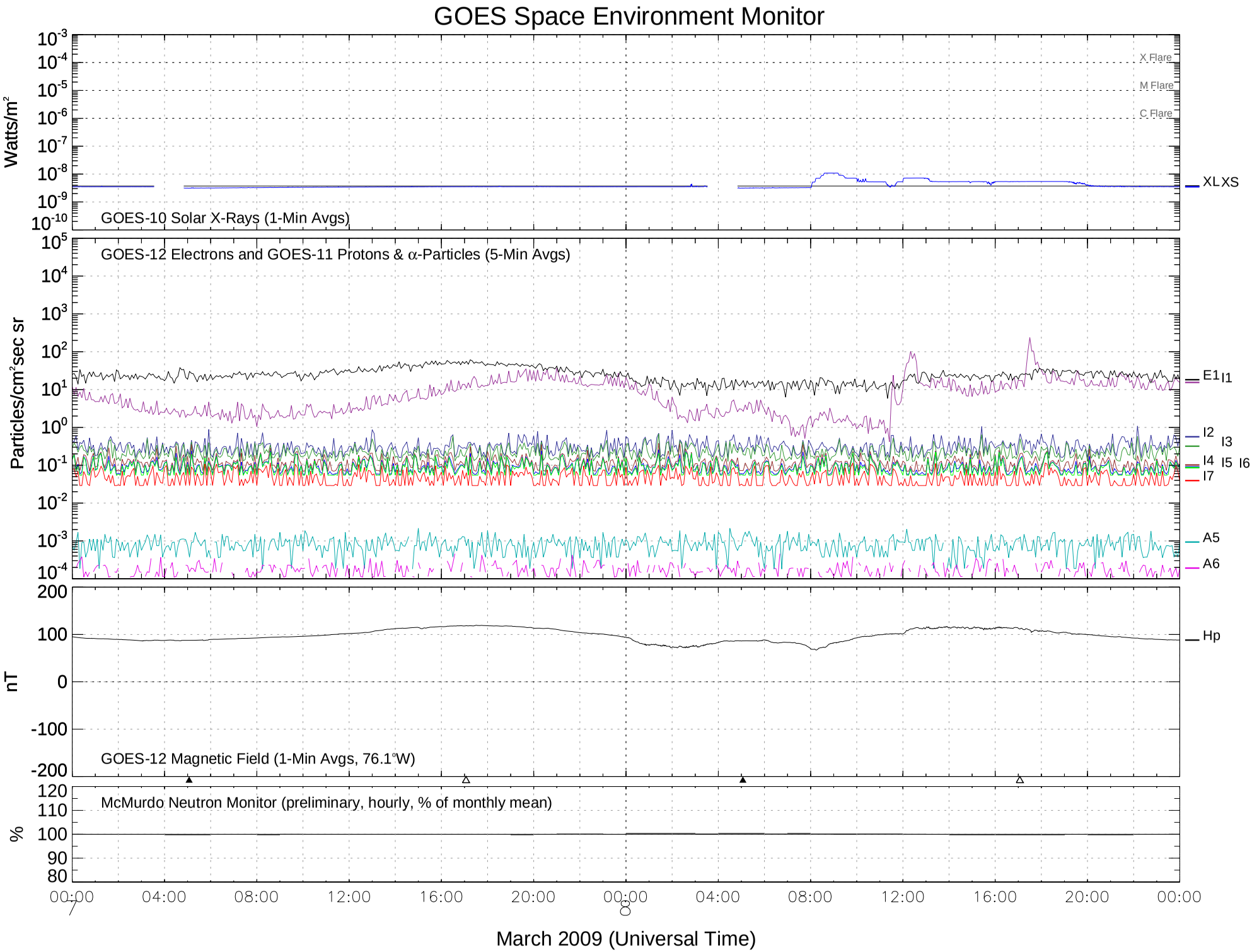
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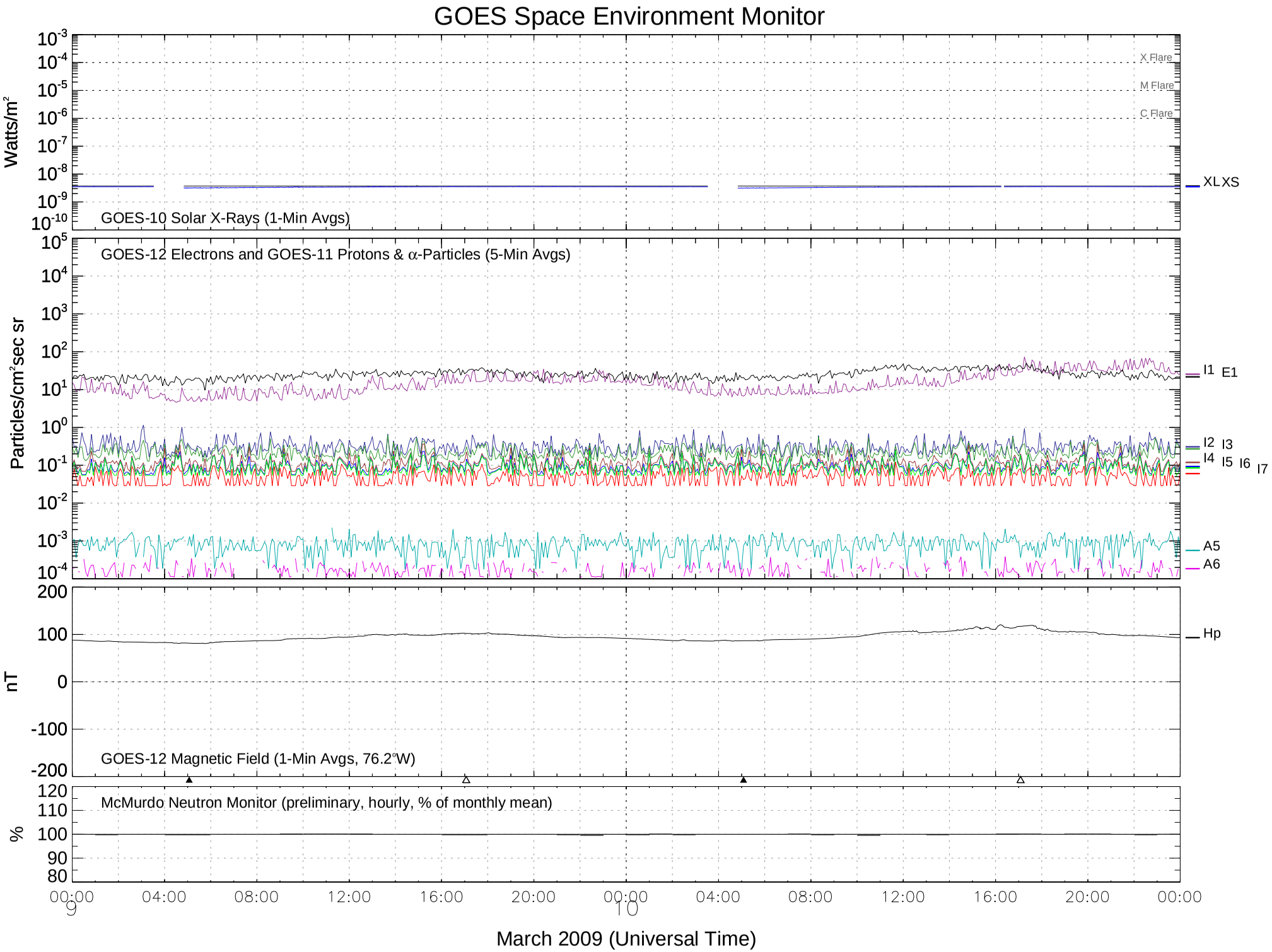
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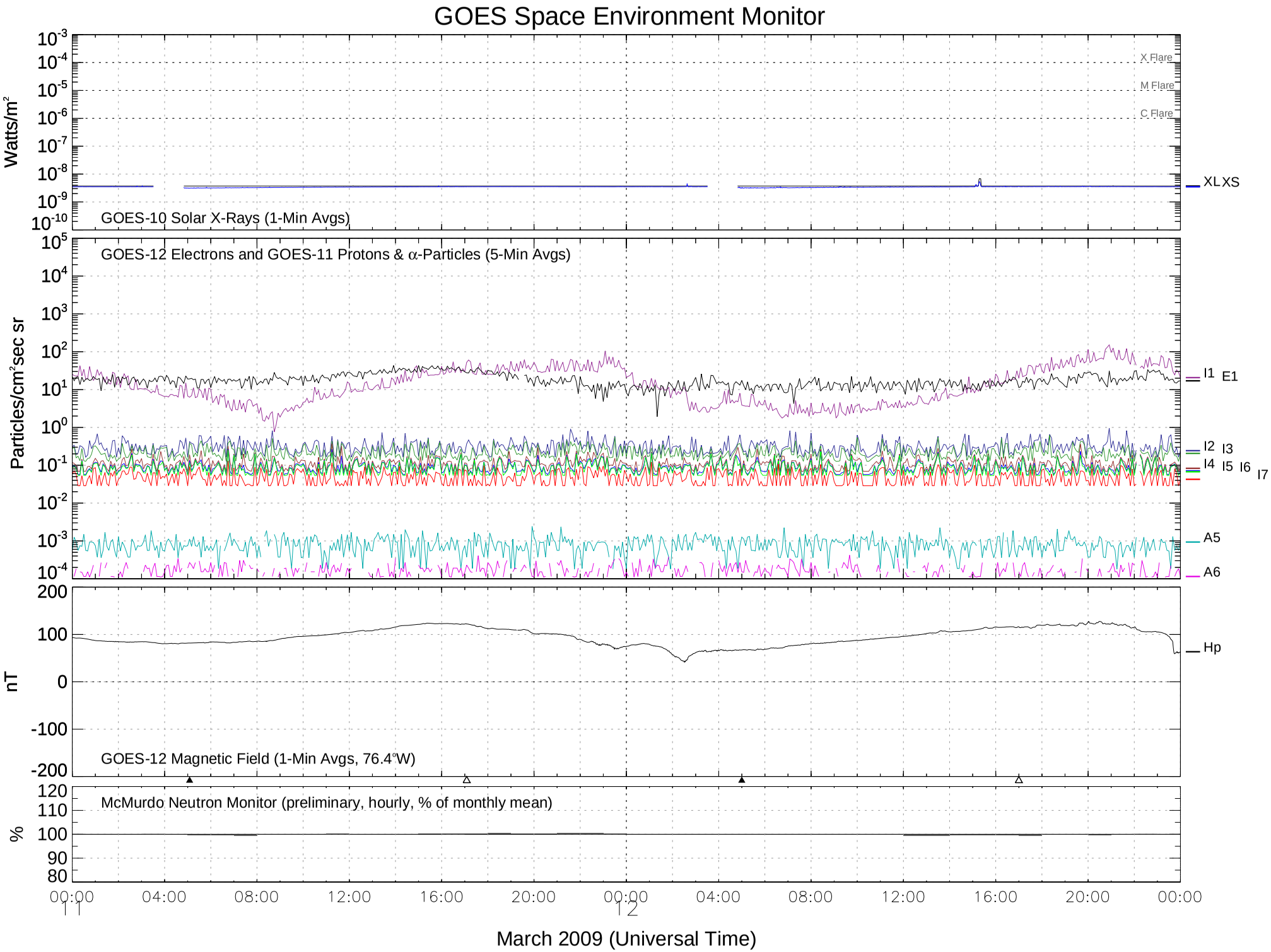
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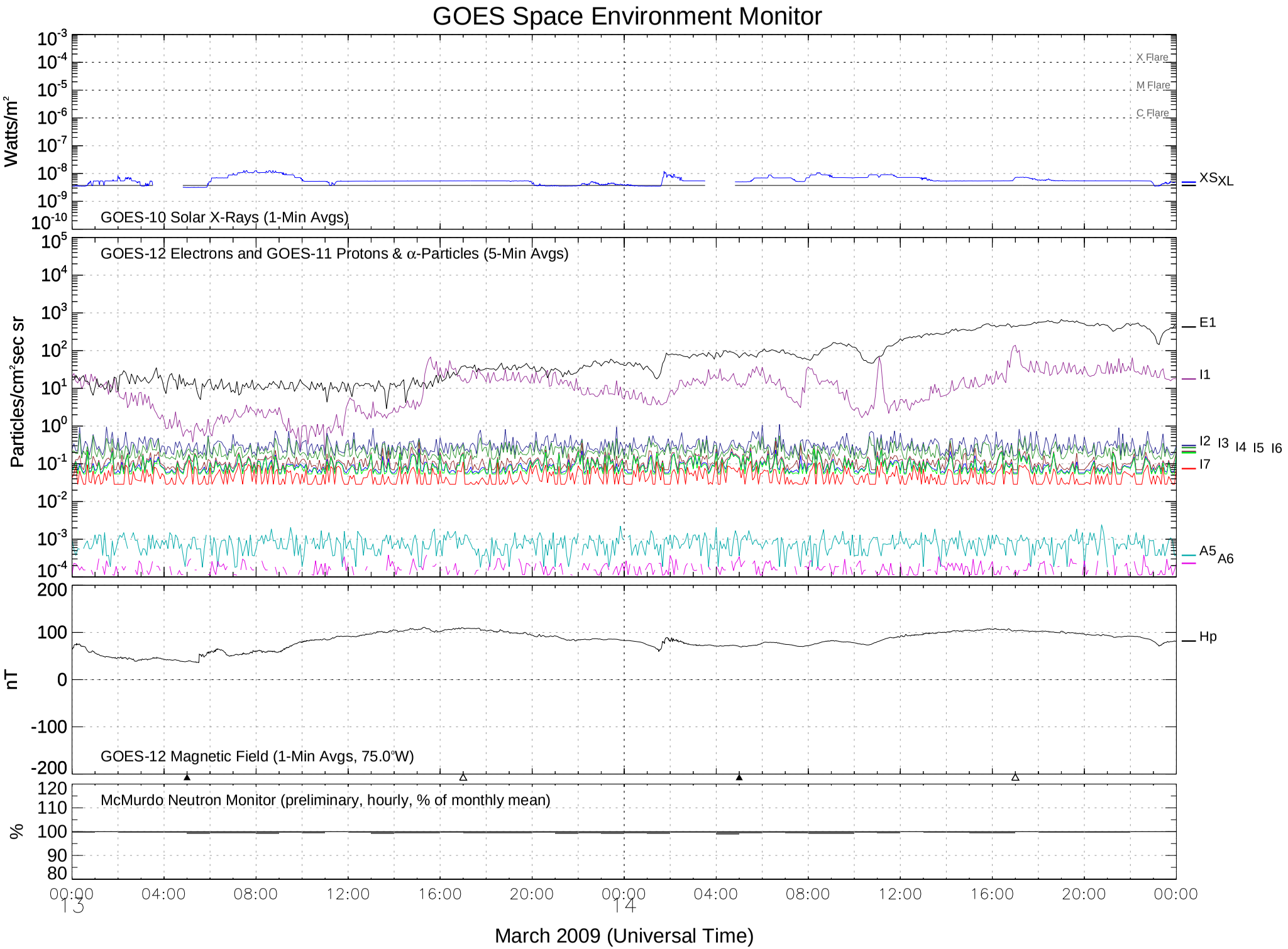
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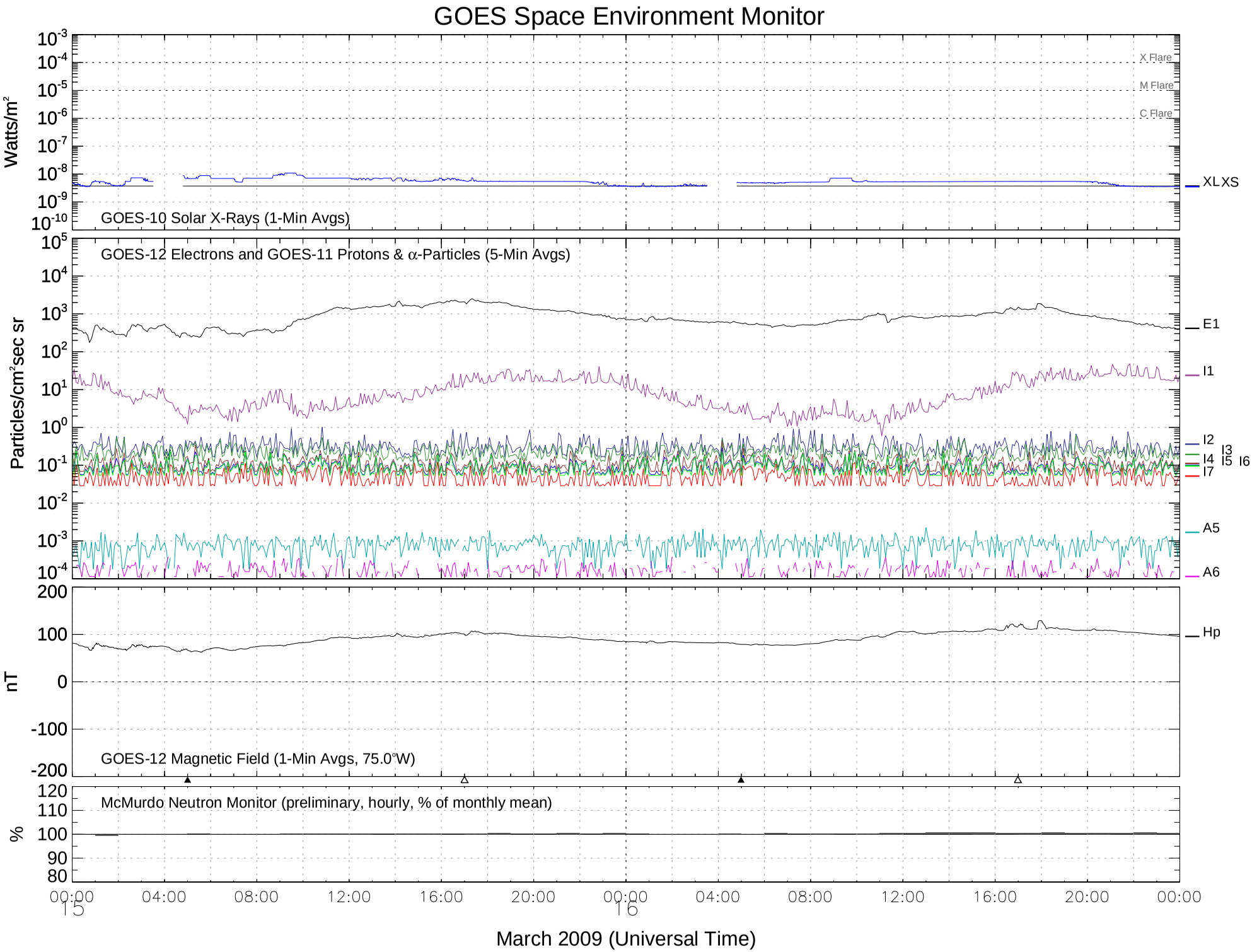
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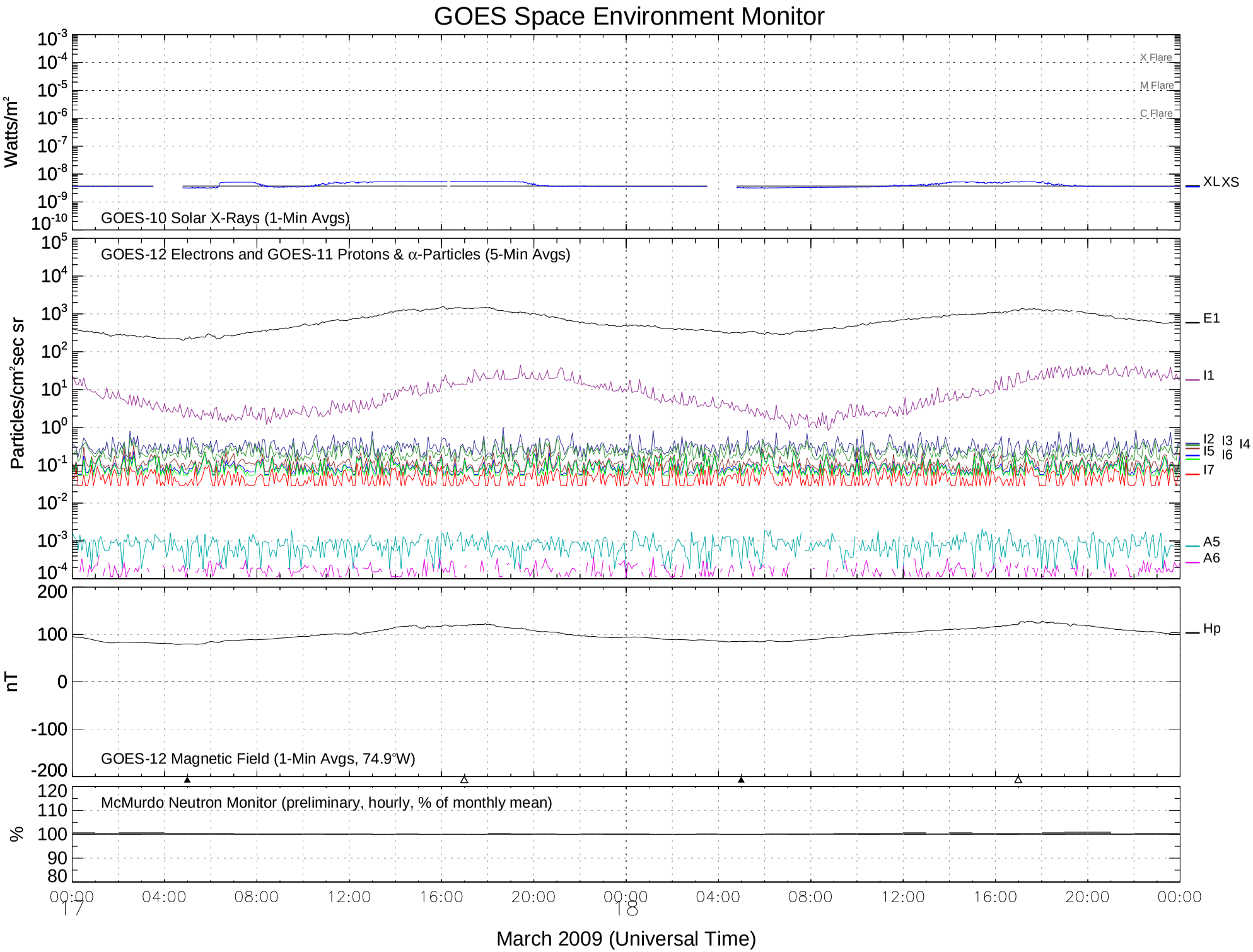
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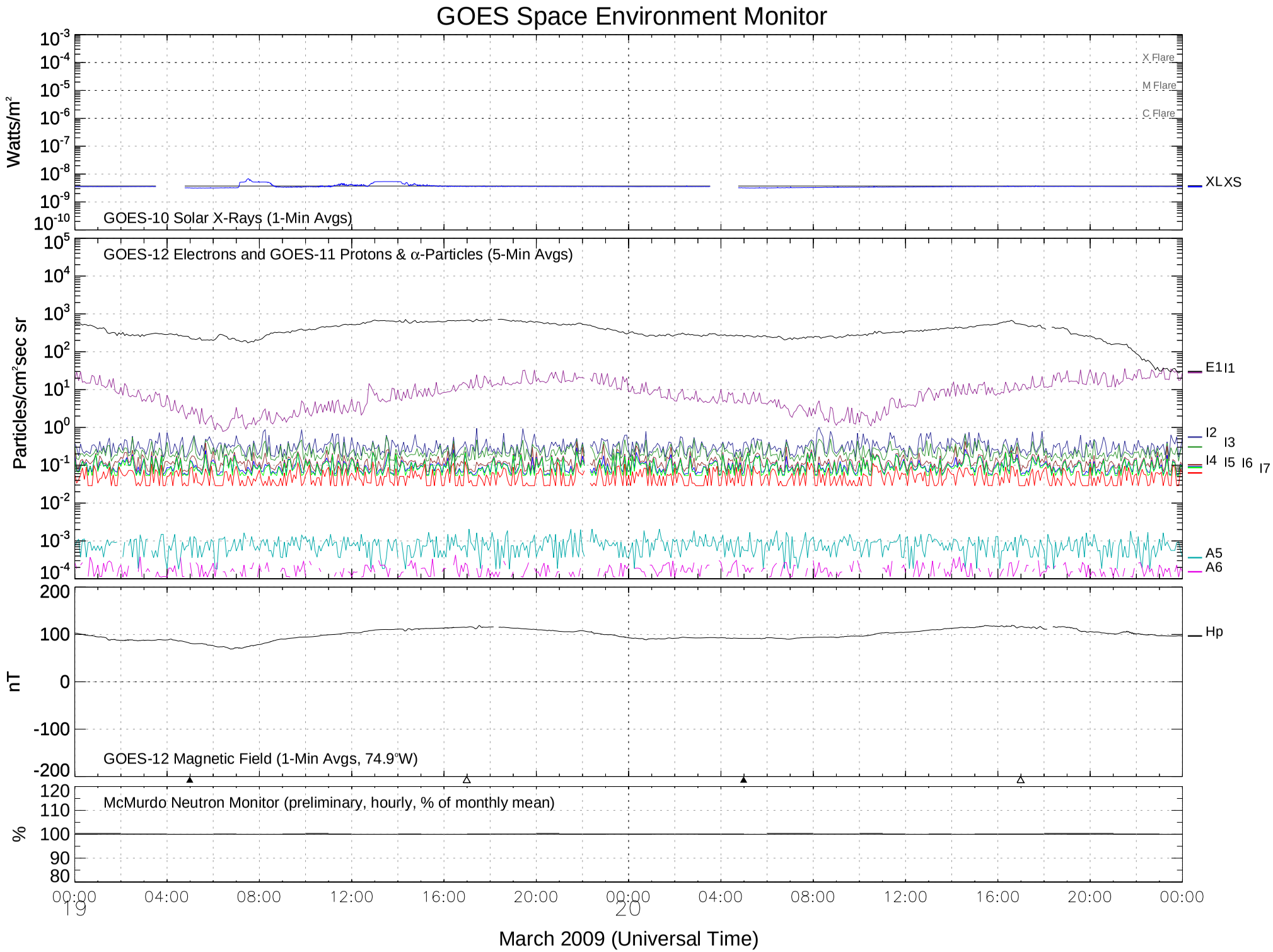
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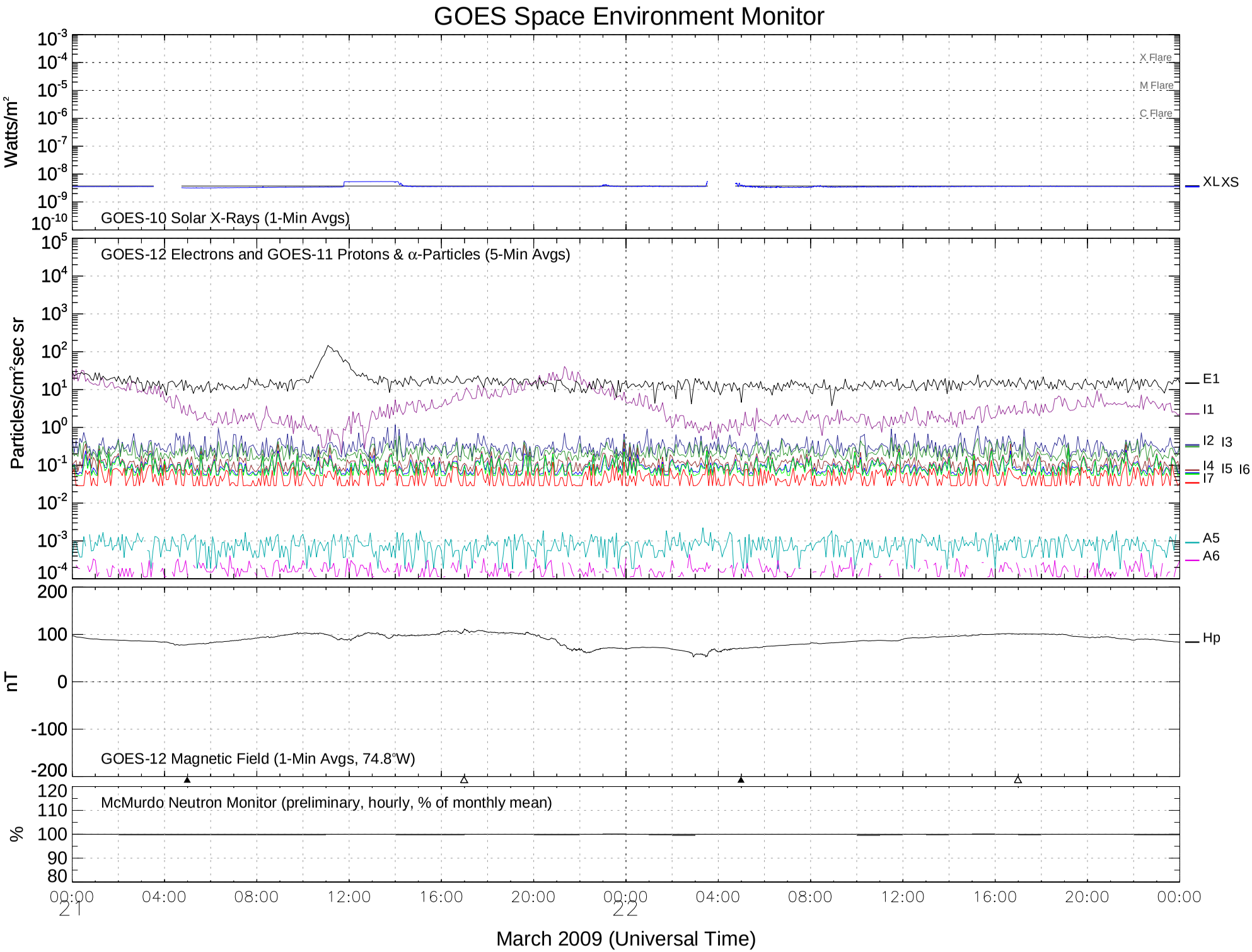
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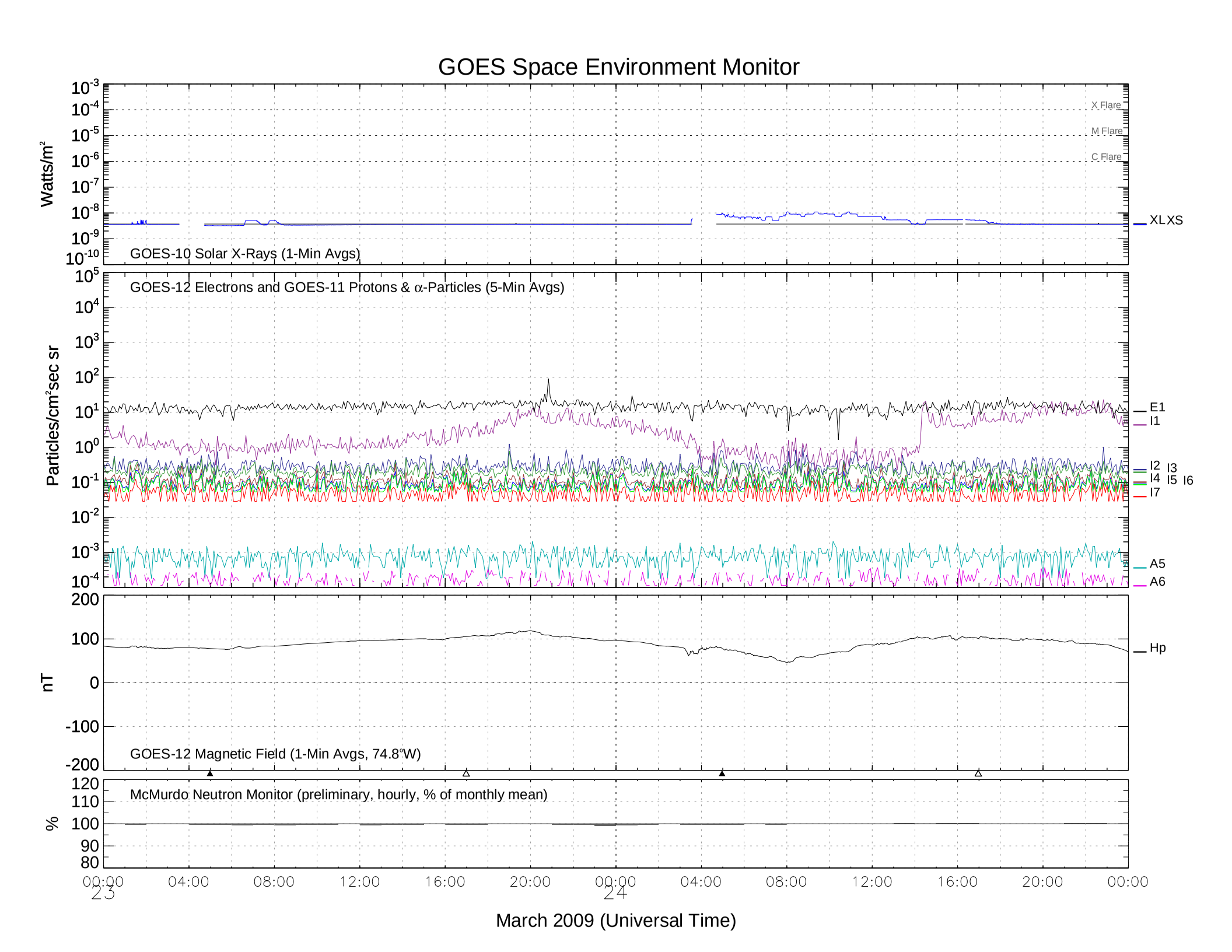
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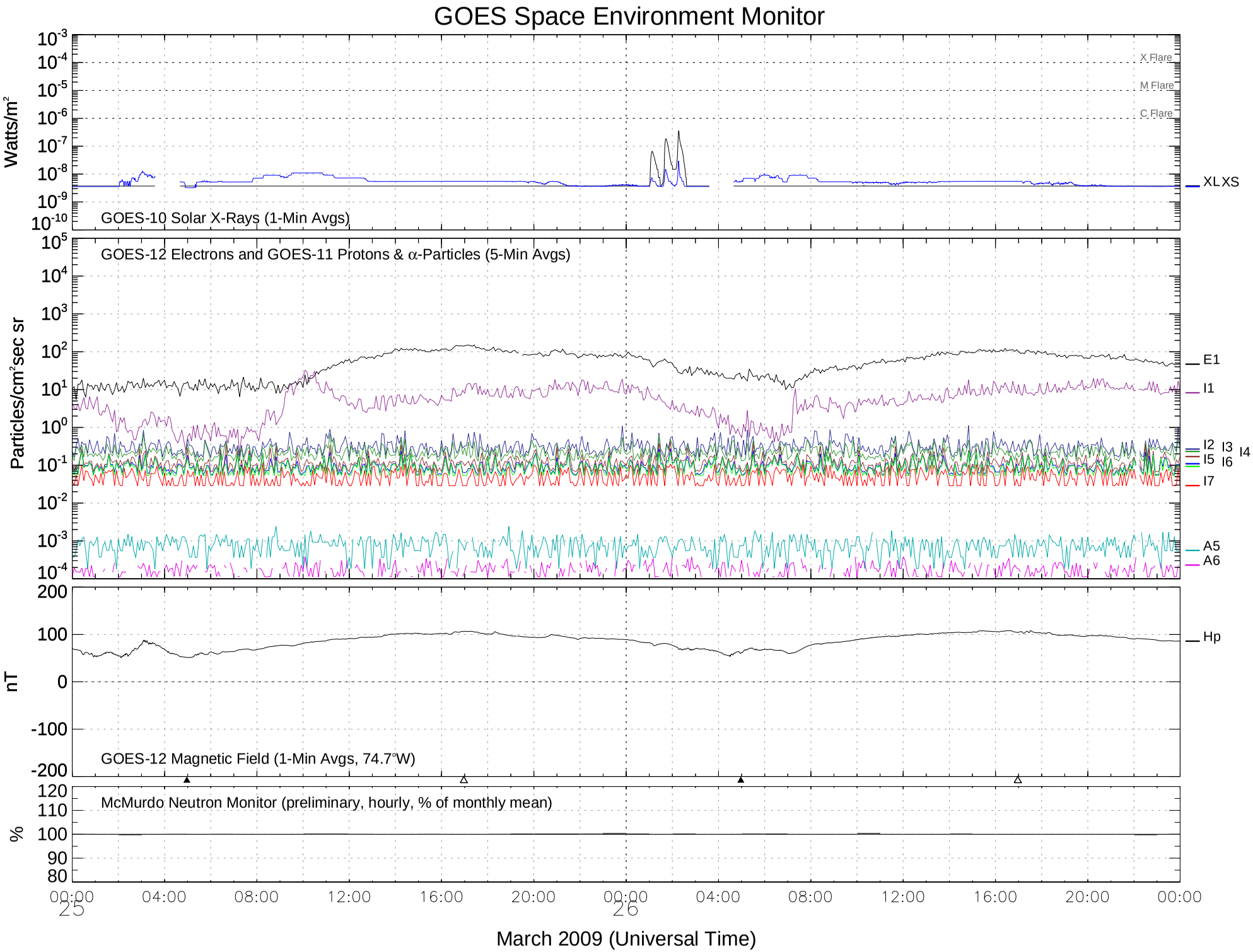
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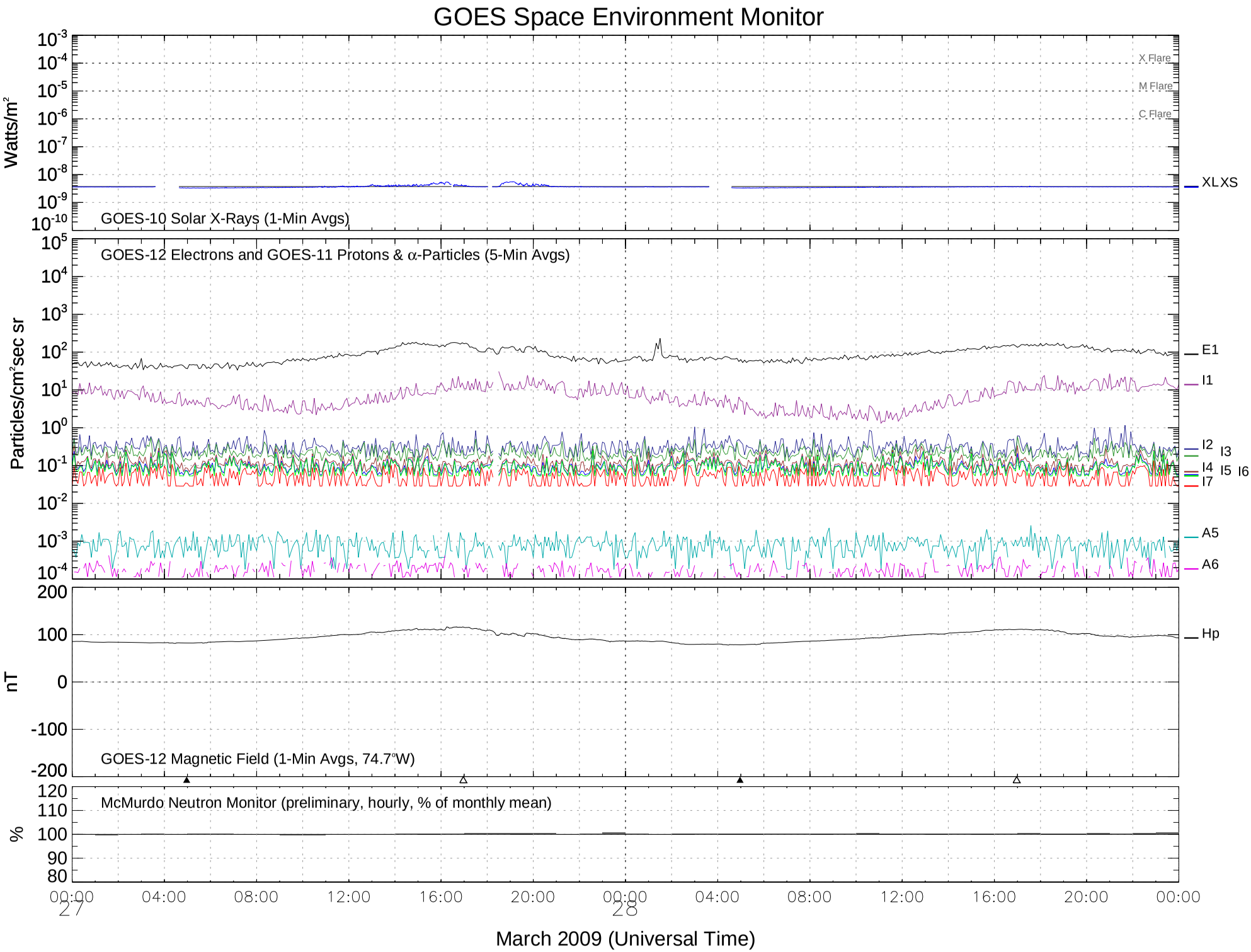
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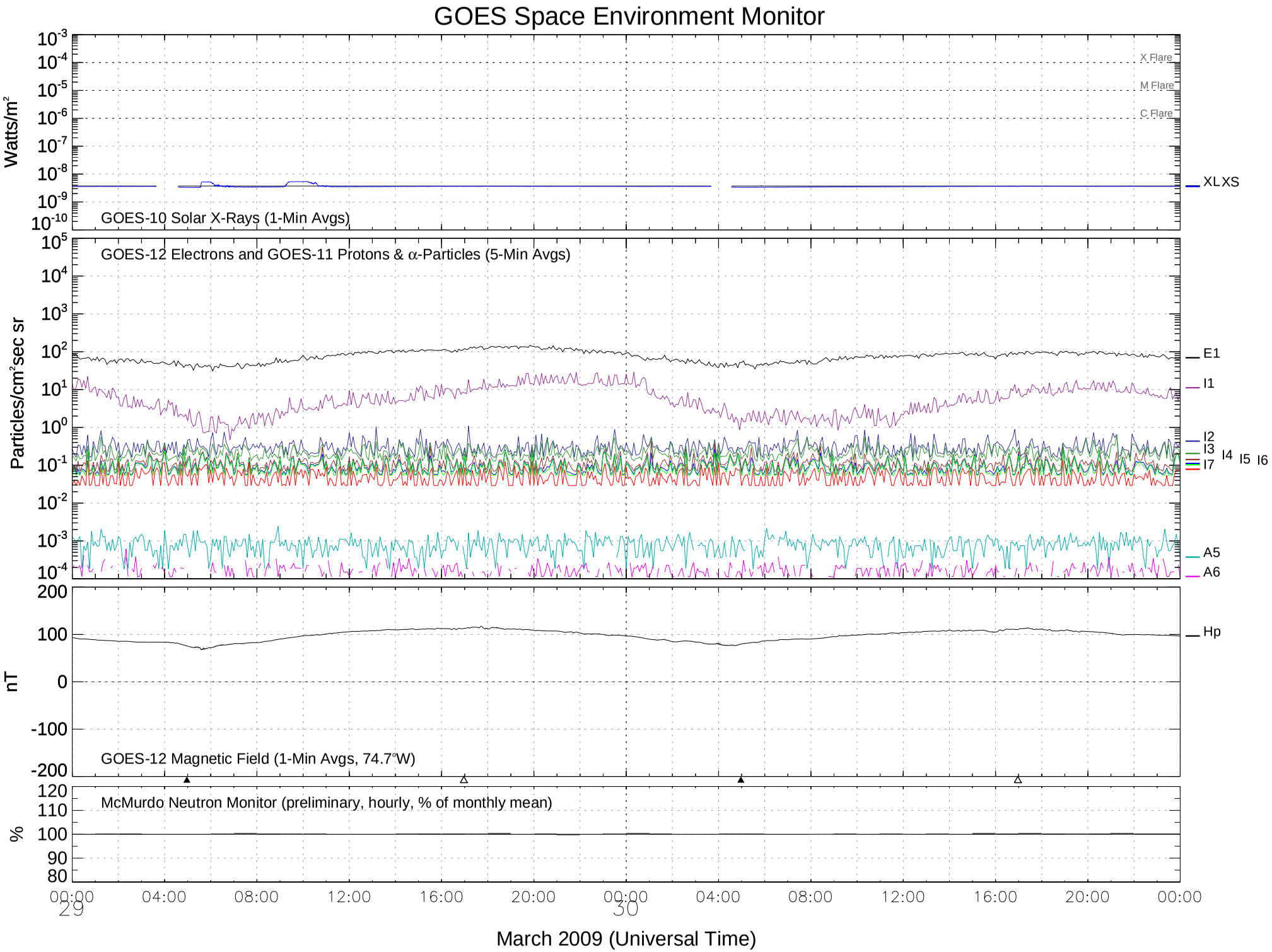
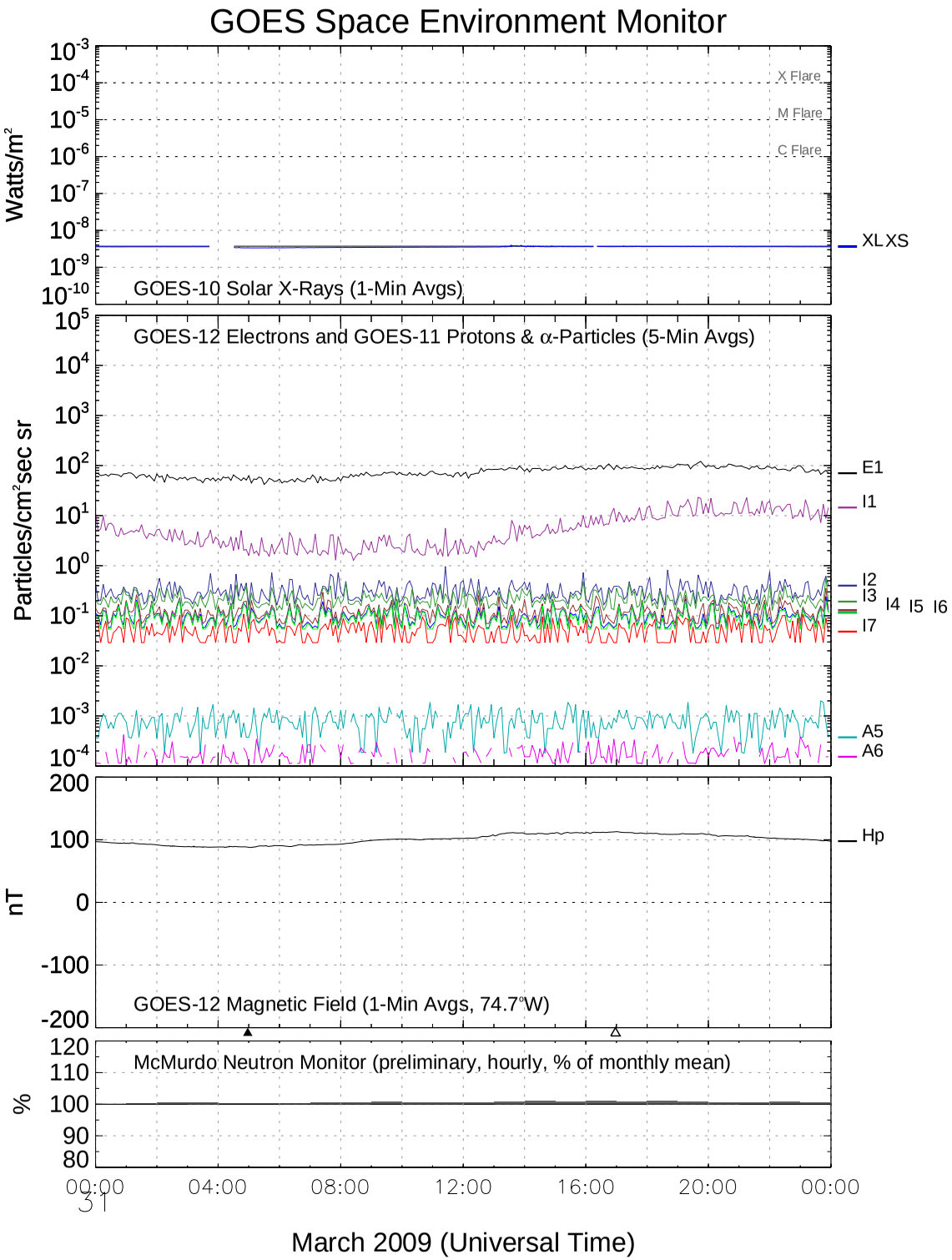
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
%
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
27
28
March 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4 I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
%
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
29
30
March 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4 I5 I6
I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00
04:00
08:00
12:00
16:00
20:00
00:00
31
March 2009 (Universal Time)

A L E R T P E R I O D S
The International Space Environment Service
MARCH 2009

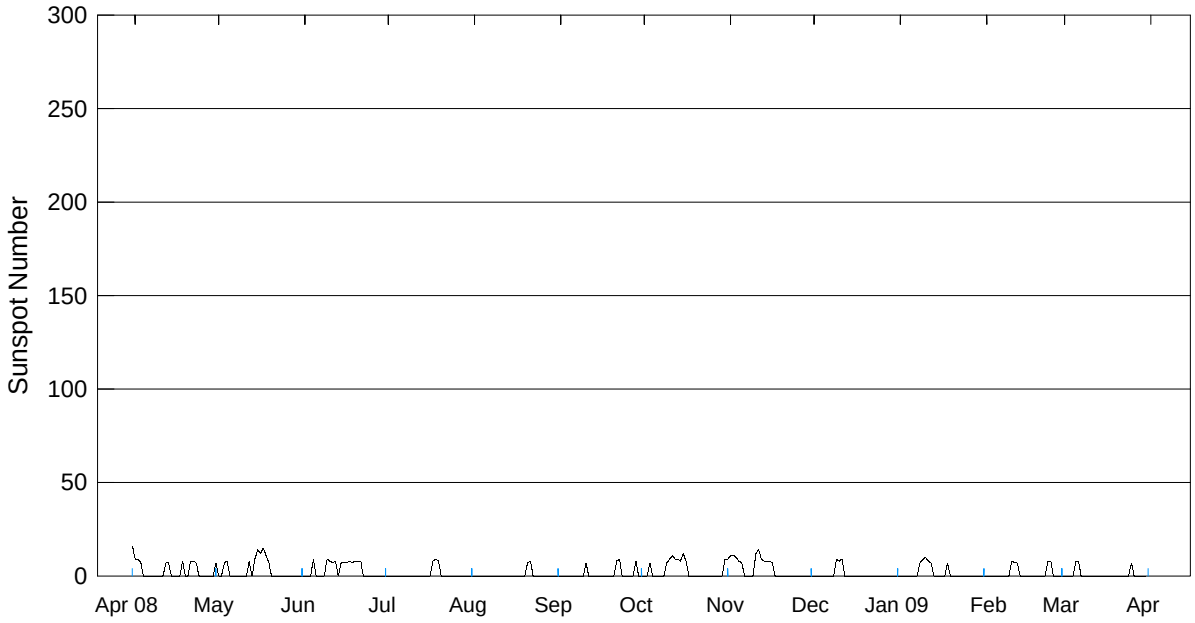
Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
060	01	28	0	71	5				0	0	0	01		SOL: Quiet
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
061	02	01	0	69	3				0	0	0	02		SOL: Quiet
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
062	03	02	0	69	0				0	0	0	03		SOL: Quiet
									0	0	0	03		MAG: Quiet
									0	0	0	03		PRO: Quiet
063	04	03	0	69	5				0	0	0	04		SOL: Quiet
									0	0	0	04		MAG: Quiet
									0	0	0	04		PRO: Quiet
064	05	04	0	70	7				0	0	0	05		SOL: Quiet
									0	0	0	05		MAG: Quiet
									0	0	0	05		PRO: Quiet
065	06	05	0	69	2				0	0	0	06		SOL: Quiet
									0	0	0	06		MAG: Quiet
									0	0	0	06		PRO: Quiet
066	07	06	12	69	1	11014	S04	E00	0	0	0	07	Q	SOL: Quiet
									0	0	0	07		MAG: Quiet
									0	0	0	07		PRO: Quiet
067	08	07	12	69	1	11014	S01	W14	0	0	0	08	Q	SOL: Quiet
									0	0	0	08		MAG: Quiet
									0	0	0	08		PRO: Quiet
068	09	08	0	69	7				0	0	0	09		SOL: Quiet
									0	0	0	09		MAG: Quiet
									0	0	0	09		PRO: Quiet
069	10	09	0	68	0				0	0	0	10		SOL: Quiet
									0	0	0	10		MAG: Quiet
									0	0	0	10		PRO: Quiet
070	11	10	0	69	2				0	0	0	11		SOL: Quiet
									0	0	0	11		MAG: Quiet
									0	0	0	11		PRO: Quiet
071	12	11	0	69	2				0	0	0	12		SOL: Quiet
									0	0	0	12		MAG: Quiet
									0	0	0	12		PRO: Quiet
072	13	12	0	69	7				0	0	0	13		SOL: Quiet
									0	0	0	13		MAG: Quiet
									0	0	0	13		PRO: Quiet
073	14	13	0	68	17				0	0	0	14		SOL: Quiet
									0	0	0	14		MAG: Quiet
									0	0	0	14		PRO: Quiet
074	15	14	0	69	8				0	0	0	15		SOL: Quiet
									0	0	0	15		MAG: Quiet
									0	0	0	15		PRO: Quiet
075	16	15	0	68	10				0	0	0	16		SOL: Quiet
									0	0	0	16		MAG: Quiet
									0	0	0	16		PRO: Quiet
076	17	16	0	69	5				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

MARCH 2009

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
077	18	17	0	69	3				0	0	0	18		SOL: Quiet
									0	0	0	18		MAG: Quiet
									0	0	0	18		PRO: Quiet
078	19	18	0	68	1				0	0	0	19		SOL: Quiet
									0	0	0	19		MAG: Quiet
									0	0	0	19		PRO: Quiet
079	20	19	0	69	4				0	0	0	20		SOL: Quiet
									0	0	0	20		MAG: Quiet
									0	0	0	20		PRO: Quiet
080	21	20	0	69	4				0	0	0	21		SOL: Quiet
									0	0	0	21		MAG: Quiet
									0	0	0	21		PRO: Quiet
081	22	21	0	70	7				0	0	0	22		SOL: Quiet
									0	0	0	22		MAG: Quiet
									0	0	0	22		PRO: Quiet
082	23	22	0	69	4				0	0	0	23		SOL: Quiet
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
083	24	23	0	68	2				0	0	0	24		SOL: Quiet
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
084	25	24	0	69	8				0	0	0	25		SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
085	26	25	0	69	13				0	0	0	26		SOL: Quiet
									0	0	0	26		MAG: Quiet
									0	0	0	26		PRO: Quiet
086	27	26	0	69	9				0	0	0	27		SOL: Quiet
									0	0	0	27		MAG: Quiet
									0	0	0	27		PRO: Quiet
087	28	27	0	72	3				0	0	0	28		SOL: Quiet
									0	0	0	28		MAG: Quiet
									0	0	0	28		PRO: Quiet
088	29	28	0	71	2				0	0	0	29		SOL: Quiet
									0	0	0	29		MAG: Quiet
									0	0	0	29		PRO: Quiet
089	30	29	0	71	3				0	0	0	30		SOL: Quiet
									0	0	0	30		MAG: Quiet
									0	0	0	30		PRO: Quiet
090	31	30	0	71	5				0	0	0	31		SOL: Quiet
									0	0	0	31		MAG: Quiet
									0	0	0	31		PRO: Quiet

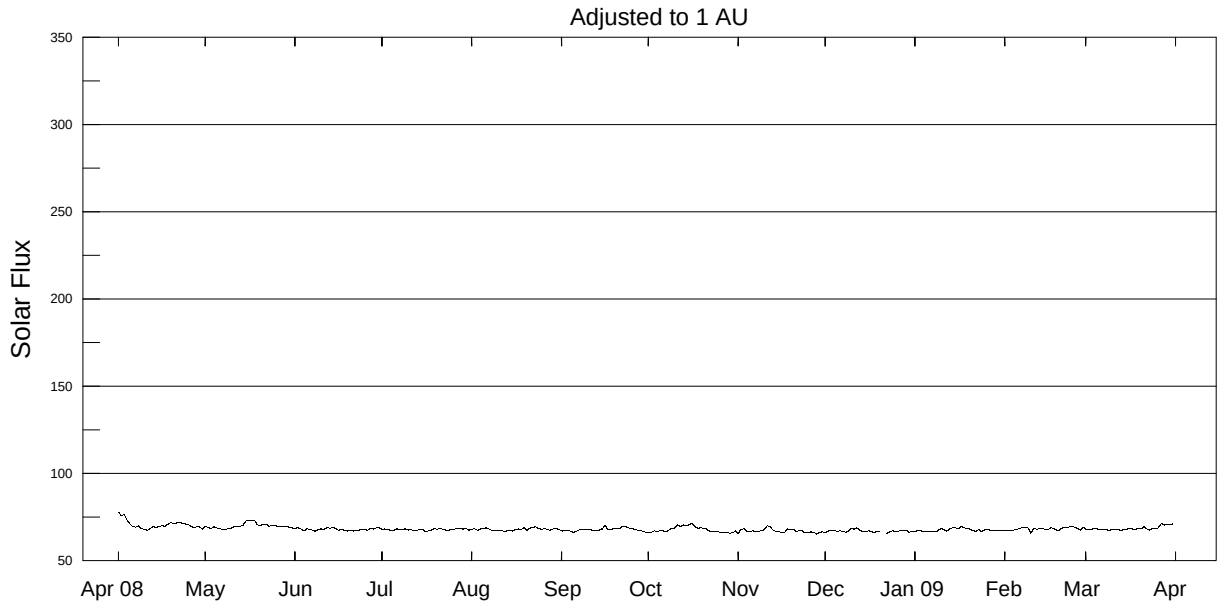
International Relative Sunspot Numbers
Apr 2008 - Mar 2009



Day	Apr 08	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 09*	Feb*	Mar*
1	16	7	0	0	0	0	0	9	0	0	0	0
2	9	0	0	0	0	0	0	11	0	0	0	0
3	9	0	0	0	0	0	0	11	0	0	0	0
4	7	7	0	0	0	0	7	10	0	0	0	0
5	0	8	9	0	0	0	0	8	0	0	0	0
6	0	0	0	0	0	0	0	7	0	0	0	8
7	0	0	0	0	0	0	0	0	0	0	0	8
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	7	0	0
10	0	0	9	0	0	0	7	0	9	9	0	0
11	0	0	8	0	0	7	9	12	8	10	8	0
12	0	0	0	0	0	0	11	14	9	8	7	0
13	7	8	8	0	0	0	9	9	0	7	7	0
14	7	0	7	0	0	0	9	8	0	0	0	0
15	0	9	7	0	0	0	8	8	0	0	0	0
16	0	14	7	0	0	0	12	8	0	0	0	0
17	0	12	7	0	0	0	8	7	0	0	0	0
18	0	15	8	8	0	0	0	0	0	0	0	0
19	8	11	7	9	0	0	0	0	0	7	0	0
20	0	7	8	8	0	0	0	0	0	0	0	0
21	0	0	8	0	7	0	0	0	0	0	0	0
22	8	0	8	0	8	8	0	0	0	0	0	0
23	8	0	0	0	0	9	0	0	0	0	0	0
24	7	0	0	0	0	0	0	0	0	0	8	0
25	0	0	0	0	0	0	0	0	0	0	8	0
26	0	0	0	0	0	0	0	0	0	0	0	7
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	8	0	0	0	0		0
30	0	0	0	0	0	0	0	0	0	0		0
31		0		0	0		9		0	0		0
Mean	2.9	3.2	3.4	0.8	0.5	1.1	2.9	4.1	0.8	1.5	1.4	0.7

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Apr 2008 - Mar 2009



Day	Apr 08	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar
1	77.7	69.6	68.5	67.8	68.1	67.0	65.9	65.6	66.2	66.6	67.5	68.1
2	75.9	69.2	69.0	68.2	68.2	67.2	66.4	68.0	67.0	67.6	67.1	68.0
3	76.4	68.5	68.2	67.7	67.4	67.3	67.2	68.3	67.2	67.2	67.3	68.0
4	73.1	69.5	67.1	67.6	68.2	67.0	66.6	66.8	67.6	66.6	67.5	68.6
5	71.1	68.8	68.4	67.3	68.4	66.3	67.4	66.5	66.8	66.9	68.1	68.1
6	69.5	68.4	67.9	68.3	68.9	66.8	67.2	67.3	67.1	66.5	68.2	68.0
7	69.3	67.8	67.6	67.7	68.0	67.6	66.6	66.5	67.0	66.7	69.2	68.0
8	70.0	67.7	66.9	67.8	67.3	68.0	67.5	67.0	66.4	66.5	69.3	67.9
9	68.2	68.6	68.0	68.3	67.3	68.0	68.5	67.1	66.7	67.4	68.8	67.2
10	68.1	68.7	68.2	67.6	67.4	68.1	68.7	67.9	68.7	68.5	65.8	67.8
11	67.4	69.4	67.8	67.9	67.5	67.8	70.5	70.0	68.0	67.7	68.5	68.0
12	68.5	69.5	69.2	67.1	66.9	67.1	69.7	69.5	68.8	67.0	68.0	67.8
13	69.7	69.7	68.6	67.4	67.0	67.2	70.5	67.6	67.5	68.2	68.3	67.4
14	69.0	70.5	69.2	67.8	67.6	67.6	70.0	66.8	66.6	68.9	68.4	67.7
15	69.7	72.7	68.6	67.9	67.0	68.2	70.5	66.7	66.7	68.8	67.9	67.7
16	70.0	73.2	67.4	66.7	67.8	70.1	71.4	66.2	67.2	68.5	67.9	68.7
17	69.8	72.8	68.1	67.1	68.2	67.7	69.5	66.2	66.6	69.6	69.0	68.2
18	70.8	73.3	67.5	67.4	67.8	67.8	68.6	68.2	66.2	68.8	68.2	67.8
19	71.7	70.5	67.0	68.5	68.9	68.4	69.0	67.7	67.0	68.6	67.4	68.5
20	71.5	70.2	67.3	68.0	67.4	68.4	68.6	67.9	66.9	68.1	67.6	68.2
21	71.6	70.8	67.0	68.4	68.7	68.4	68.2	66.8	*	67.2	69.1	69.6
22	72.1	71.0	67.5	68.0	69.1	69.6	67.0	67.3	65.5	66.9	68.8	68.2
23	71.5	69.6	67.5	67.6	69.4	69.8	66.5	67.2	66.3	67.8	69.3	67.6
24	71.2	70.3	68.0	67.5	68.6	68.8	66.7	66.1	67.1	66.6	69.5	68.7
25	70.7	70.1	68.1	67.9	68.0	68.6	66.7	66.0	67.0	67.7	69.3	68.2
26	69.9	69.8	67.5	68.1	68.3	68.0	66.0	66.5	67.0	67.8	68.6	68.8
27	69.0	69.7	68.3	68.4	68.0	67.6	66.1	66.4	67.1	67.6	67.6	71.4
28	69.4	69.6	68.1	68.3	67.4	67.3	66.2	65.2	67.5	67.4	69.3	70.4
29	69.6	69.9	68.8	68.1	68.1	67.0	65.8	66.4	67.5	67.3		70.7
30	68.0	69.0	68.9	68.5	68.4	66.4	65.9	66.5	66.3	67.1		70.8
31		68.8		67.5	67.9		67.1		67.0	67.4		71.1
Mean	70.7	69.9	68.0	67.8	68.0	67.8	67.8	67.1	67.0	67.3	68.3	68.6

* = No data available.

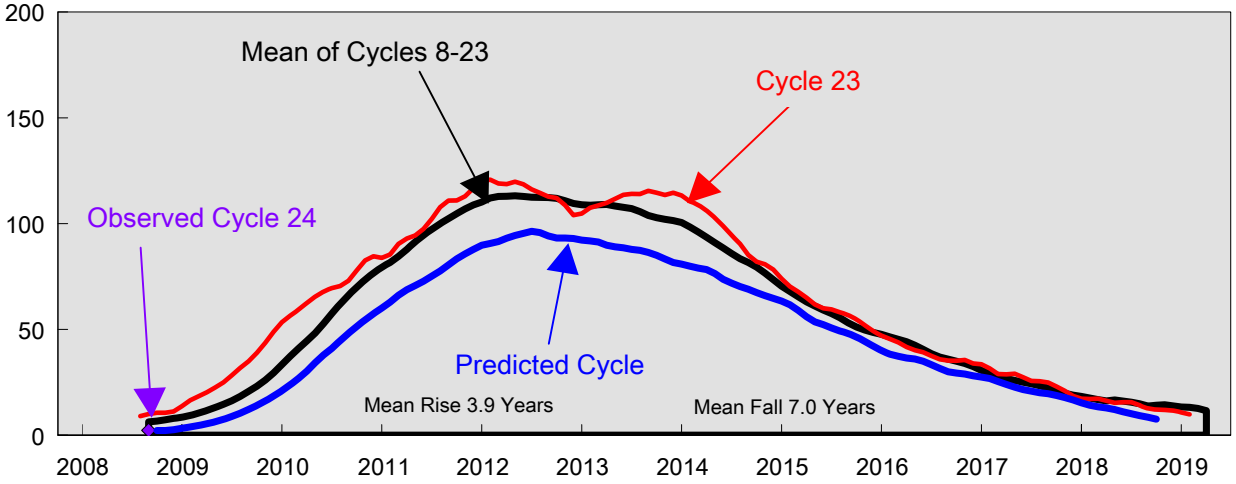
DAILY SOLAR INDICES
MARCH 2009

	Day	Bartels	Sunspot		Obs Flux	-----Solar Flux Adjusted to 1 Astronomical Unit--------								
	of	Cycle	Numbers		Penticton	SGMR	SGMR	SGMR	Penticton	SGMR	SGMR	SGMR	SGMR	SGMR
Day	Year	Day	Int	Amer	(2800)	(15400)	(8800)	(4995)	(2800)	(2695)	(1415)	(610)	(410)	(245)
1	60	6	0	0	69.4	447	215	125	68.1	64	53	39	22	11
2	61	7	0	0	69.2	441	215	123	68.0	63	53	39	22	11
3	62	8	0	0	69.1	450	215	125	68.0	62	53	39	22	12
4	63	9	0	0	69.7	455	208	120	68.6	64	54	40	22	11
5	64	10	0	0	69.2	459	214	124	68.1	58	54	39	21	10
6	65	11	8	5	69.1	435	218	126	68.0	61	53	38	22	10
7	66	12	8	2	69.1	460	249	132	68.0	61	54	38	21	10
8	67	13	0	0	68.9	455	235	128	67.9	60	54	38	22	11
9	68	14	0	0	68.1	370	180	109	67.2	62	49	---	---	---
10	69	15	0	0	68.8	454	223	124	67.8	61	54	38	22	11
11	70	16	0	0	68.9	400	199	122	68.0	64	53	36	20	10
12	71	17	0	0	68.7	459	215	126	67.8	63	55	38	21	11
13	72	18	0	0	68.2	457	204	133	67.4	62	54	39	22	11
14	73	19	0	1	68.5	458	215	124	67.7	63	54	40	21	11
15	74	20	0	0	68.4	458	237	128	67.7	60	55	38	21	11
16	75	21	0	0	69.4	456	219	126	68.7	67	54	33	21	11
17	76	22	0	0	68.8	457	230	126	68.2	62	54	39	21	10
18	77	23	0	0	68.4	452	227	129	67.8	63	55	39	21	10
19	78	24	0	0	69.1	420	229	125	68.5	62	54	39	22	11
20	79	25	0	0	68.7	459	231	128	68.2	62	54	40	22	11
21	80	26	0	0	70.1	457	222	122	69.6	65	57	40	23	11
22	81	27	0	0	68.7	456	227	126	68.2	66	54	40	23	11
23	82	1	0	0	68.0	456	227	139	67.6	60	55	40	23	11
24	83	2	0	0	69.1	456	224	123	68.7	65	53	41	22	11
25	84	3	0	0	68.5	458	235	126	68.2	66	56	40	22	10
26	85	4	7	2	69.1	456	216	131	68.8	60	55	40	22	10
27	86	5	0	0	71.6	464	240	125	71.4	66	55	40	22	12
28	87	6	0	0	70.6	455	229	128	70.4	64	56	39	22	11
29	88	7	0	0	70.9	404	207	124	70.7	67	54	37	21	11
30	89	8	0	0	70.9	400	209	125	70.8	61	56	37	20	11
31	90	9	0	0	71.2	453	207	125	71.1	62	55	39	22	11
MEAN			0.7	0.3	69.2	445	220	125	68.6	62	54	38	21	10

NOTE: Radio flux values are from Sagamore Hill, Massachusetts, USA.

Cycle 24 Smoothed Sunspot Numbers: Observed and Predicted

PRELIMINARY Based on September 2008 Smoothed Data



Smoothed Sunspot Numbers (Observed and Predicted) for Parts of Solar Cycles 23 and 24

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	60	58	57	57	66
2004	53	49	47	46	46	42	40	39	38	36	35	35	42
2005	35	34	34	32	29	29	29	27	26	26	25	23	29
2006	21	19	17	17	17	16	15	16	16	14	13	13	16
2007	12	12	11	10	9	8	7	6	6	6	6	5	8
2008	4	4	3	3	4	3	3	3	2.3###	2	2	3	3
										(1)	(1)	(2)	(0)
2009	3	4	5	5	6	8	9	10	12	14	16	19	9
	(3)	(4)	(5)	(6)	(8)	(9)	(10)	(12)	(14)	(17)	(19)	(22)	(11)

Solar Cycle 22 | Solar Cycle 23 | Min, Max, and Predictions

*** May 1996 marks Cycle 23's mathematical minimum.** **** October 1996 marks the consensus minimum.**

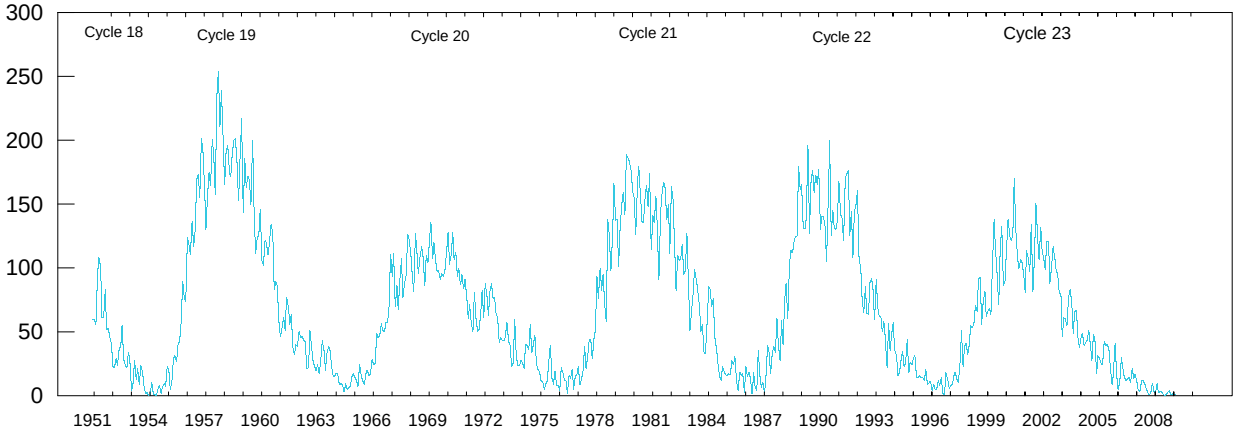
+ April 2000 marks Cycle 23 maximum. ## - Preliminary Cycle 24 Minumum

NOTE: This is a preliminary prediction using September 2008 as solar minimum.

OBSERVED AND PREDICTED NUMBERS: For the end of Cycle 23, and the rise and decline of Cycle 24, 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 Dec 2008 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 September 2009 prediction. There exists a 90% chance that in September 2009, the actual smoothed sunspot will fall somewhere between 0 and 26.

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 16 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 a PRELIMINARY minimum of September, 2008. This will be updated monthly until the actual minimun is reached.

Mean Monthly Sunspot Numbers
Jan 1951 - Mar 2009



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
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	21.1	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	0.9	17.9	13.3	8.6	m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5	
1998	31.9	40.3	54.8	53.4	56.3	70.7	66.6	92.2	92.9	55.5	74.0	81.9	64.3	
1999	62.0	66.3	68.8	63.7	106.4	137.7	113.5	93.7	71.5	116.7	133.2	84.6	93.2	
2000	90.1	112.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	99.4	106.8	104.4	119.6	M
2001	95.6	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.5	106.5	132.2	111.0	
2002	114.1	107.4	98.4	120.7	120.8	88.3	99.9	116.4	109.3	97.5	95.5	80.8	104.0	
2003	79.7	46.0	61.1	60.0	54.6	77.4	83.3	72.7	48.7	65.5	67.3	46.5	63.9	
2004	37.7	45.8	49.1	39.3	41.5	43.2	51.0	40.9	27.7	48.0	43.5	17.9	40.4	
2005	31.3	29.1	24.8	24.2	42.7	39.3	40.1	36.4	21.9	8.7	18.0	41.1	29.8	
2006	15.4	4.7	10.8	30.2	22.2	13.9	12.2	12.9	14.4	10.5	21.4	13.6	15.2	
2007	16.8	10.7	4.5	3.4	11.7	12.1	9.7	6.0	2.4	0.9	1.7	10.1	7.5	
2008	3.3	2.1	9.3	2.9	3.2	3.4	0.8	0.5	1.1	2.9	4.1	0.8	2.9	
2009	1.5	1.4	0.7										1.2	

Values are preliminary afterSep 08. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hà SOLAR FLARES
MARCH 2009

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks

No Reports

"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

X - R A Y S O L A R F L A R E S
MARCH 2009

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Xray	Total Integrated Flux(1)	Total Area(2)	Total(3) Intensity
GOES	26	0138	0143	0149						11	B 1.8	8.6E-05		
GOES		0212	0216	0219						7	B 3.5	8.4E-05		

Note 1: Total integrated flux computed from the event start time to end if available (units=J/m*2).
Note 2: Total area is derived from SXI imagery in units of squared arc seconds of the largest flaring area.
Note 3: Total intensity is derived from SXI imagery in units of data numbers/second of the largest flaring area.

TABLE FORMAT CHANGE: Data are from the GOES full disk xray monitor supplemented with Solar Xray Imager (SXI) from January, 2004, to April 12, 2007. Positions, areas, and intensities are taken from SXI imagery using the largest flare event on the disk. Only the largest event is selected during multiple flares on the disk.

IMPORTANT NOTE: The xray sensor on GOES 12 was turned off on April 12, 2007, at 2250UT. The GOES SXI instrument is also inoperative. GOES 10 backup for xray data. Effective April 13, 2007, xray flare locations will be determined by optical flare reports. Xray event times will still be from the xray data.

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

Selected Fixed Frequency Events

March 2009

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

No Reports

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

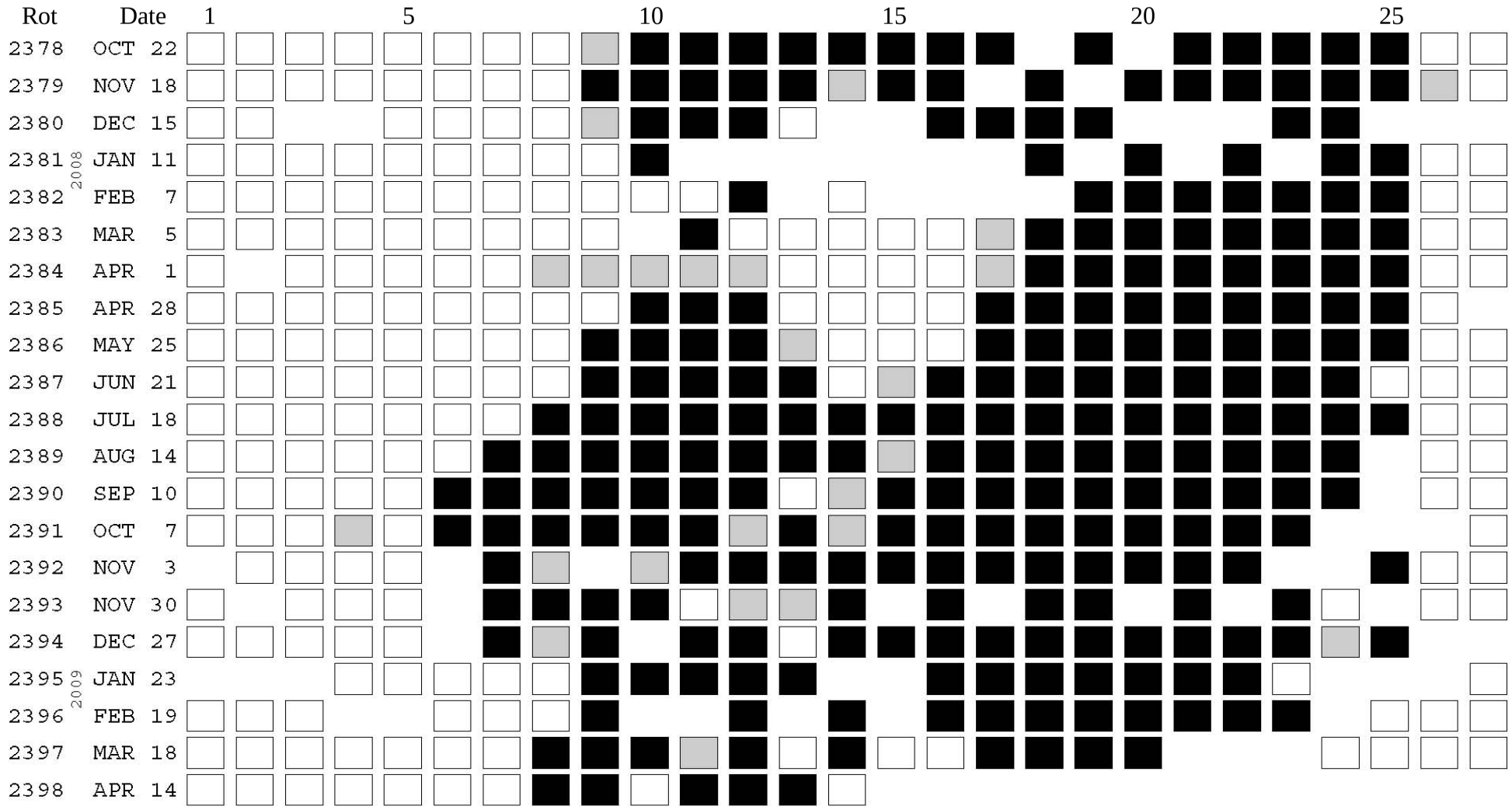
Explanation of Type Code:

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	4O Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	4OF Rise Only F	26O 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; and Hiraiso, Japan 500 and 200 MHz.

STANFORD MEAN SOLAR MAGNETIC FIELD

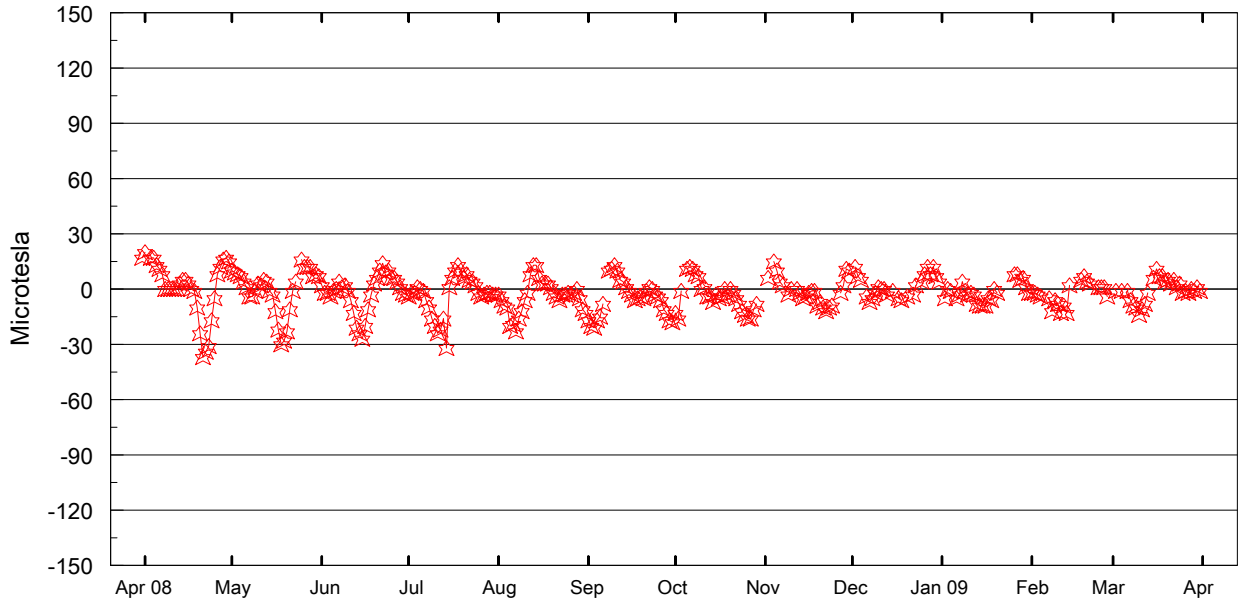


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= field < -2 microT; No box = no data available

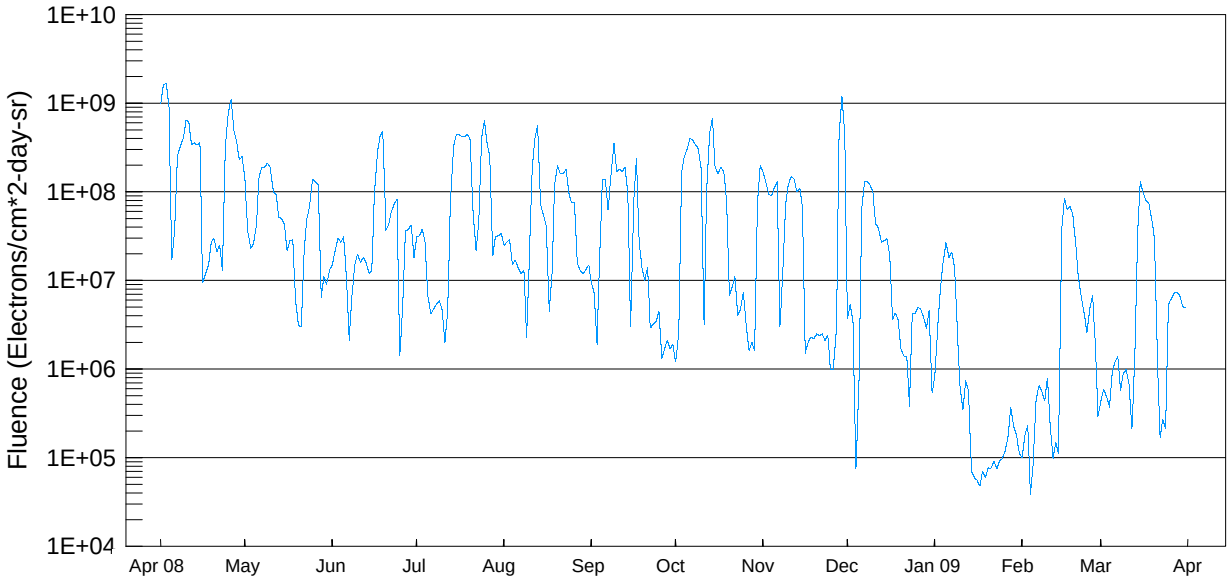
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



Day	Apr 08	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar
1	20	10	2	-4	-3	-17	-13	---	---	---	-2	---
2	---	9	-2	-2	-6	-20	-16	6	12	-5	-2	-1
3	17	8	-2	-2	-9	-21	-1	---	7	0	-3	---
4	17	7	-4	1	-10	-17	---	15	5	-1	-4	-1
5	13	4	-1	0	-20	-15	11	10	---	---	---	---
6	11	1	0	-1	-19	-8	12	4	-4	-5	---	-1
7	8	-4	4	-6	-23	---	11	2	-7	-3	-5	-6
8	0	-4	1	-10	-16	10	8	---	-5	4	-12	-9
9	0	-1	2	-16	-12	11	7	-3	-2	-1	-6	-10
10	0	3	-1	-20	-6	13	0	0	1	-3	-8	-14
11	0	2	-6	-24	-2	10	1	---	0	-2	-13	-11
12	0	5	-13	-22	8	5	-4	0	0	-3	-9	-8
13	3	4	-21	-16	13	4	-4	-2	-3	-8	-13	-2
14	5	-1	-24	-32	13	1	-7	-5	---	-9	2	---
15	5	-3	-27	1	6	-1	-3	-4	-1	-9	---	6
16	3	-12	-20	6	3	-3	-5	-2	---	-9	---	11
17	0	-22	-11	10	3	-6	-4	-1	-5	-5	---	7
18	-1	-30	-3	13	3	-5	0	-1	-6	-6	5	7
19	-10	-28	3	10	1	-4	-3	-9	---	0	7	4
20	-24	-23	6	6	-2	-5	0	-7	-4	-2	4	5
21	-37	-11	10	8	-4	-1	-2	-10	---	---	3	3
22	-34	-1	14	5	-6	1	-5	-12	-3	---	---	5
23	-31	4	9	4	-3	0	-8	-10	2	---	---	1
24	-17	---	10	2	-3	-3	-12	-9	---	---	1	3
25	-5	16	6	-2	-2	-4	-14	---	4	---	1	-2
26	8	12	6	-4	-3	-6	-16	---	8	8	1	-1
27	12	12	4	-3	-2	-11	-16	-2	12	8	-4	-2
28	16	12	1	-2	0	-13	-11	2	8	5	---	0
29	17	7	-2	-2	-5	-17	-8	11	12	6		-1
30	15	8	-3	-3	-11	-18	---	10	7	1		1
31		7		-3	-13		---		4	-2		-1

GOES Daily Electron Fluence
Apr 2008 - Mar 2009



Day	Apr 08	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar
1	1.0E+09	1.4E+08	1.5E+07	3.1E+07	2.5E+07	9.4E+06	1.2E+06	1.7E+08	3.7E+06	8.3E+05	1.0E+05	4.4E+05
2	1.6E+09	3.6E+07	2.1E+07	3.2E+07	2.7E+07	7.3E+06	2.5E+06	1.3E+08	5.4E+06	2.9E+06	1.8E+05	5.9E+05
3	1.7E+09	2.3E+07	3.0E+07	3.8E+07	2.9E+07	1.9E+06	1.6E+08	9.4E+07	3.3E+06	8.1E+06	2.3E+05	4.9E+05
4	8.9E+08	2.6E+07	2.7E+07	2.7E+07	1.5E+07	2.0E+07	2.5E+08	9.1E+07	7.5E+04	1.6E+07	3.9E+04	3.7E+05
5	1.7E+07	4.2E+07	3.1E+07	6.6E+06	1.7E+07	1.4E+08	3.0E+08	1.1E+08	6.5E+05	2.7E+07	8.6E+04	9.2E+05
6	3.6E+07	1.5E+08	1.1E+07	4.2E+06	1.4E+07	1.4E+08	4.0E+08	1.3E+08	6.3E+07	1.8E+07	4.5E+05	1.2E+06
7	2.5E+08	1.9E+08	2.1E+06	4.8E+06	1.2E+07	6.2E+07	3.9E+08	3.0E+06	1.3E+08	2.1E+07	6.6E+05	1.4E+06
8	3.2E+08	1.9E+08	6.7E+06	5.4E+06	1.3E+07	1.6E+08	3.4E+08	1.1E+07	1.3E+08	1.4E+07	5.6E+05	5.8E+05
9	4.0E+08	2.1E+08	1.5E+07	5.9E+06	2.3E+06	3.6E+08	3.1E+08	7.0E+07	1.2E+08	2.7E+06	4.4E+05	8.8E+05
10	6.4E+08	1.9E+08	2.0E+07	4.7E+06	1.8E+07	1.7E+08	1.8E+08	1.2E+08	1.0E+08	6.2E+05	7.9E+05	1.0E+06
11	6.2E+08	1.0E+08	1.6E+07	2.0E+06	1.9E+08	1.8E+08	3.2E+06	1.5E+08	4.4E+07	3.5E+05	2.4E+05	6.6E+05
12	3.4E+08	9.4E+07	1.8E+07	4.3E+06	4.0E+08	1.7E+08	1.1E+08	1.4E+08	3.9E+07	7.5E+05	9.7E+04	2.1E+05
13	3.6E+08	5.2E+07	1.6E+07	7.8E+07	5.7E+08	1.9E+08	4.5E+08	1.0E+08	2.7E+07	5.7E+05	1.5E+05	1.3E+06
14	3.4E+08	5.0E+07	1.2E+07	3.2E+08	7.2E+07	1.0E+08	6.8E+08	1.1E+08	2.8E+07	7.0E+04	1.1E+05	3.1E+07
15	3.6E+08	4.3E+07	1.3E+07	4.4E+08	5.4E+07	3.0E+06	1.9E+08	6.8E+07	3.0E+07	6.0E+04	3.6E+07	1.3E+08
16	9.4E+06	2.2E+07	9.6E+07	4.5E+08	4.1E+07	7.3E+07	1.6E+08	1.5E+06	1.9E+07	5.6E+04	8.5E+07	9.9E+07
17	1.2E+07	2.8E+07	2.7E+08	4.2E+08	4.5E+06	2.4E+08	1.9E+08	2.0E+06	3.6E+06	4.8E+04	6.3E+07	8.0E+07
18	1.5E+07	2.9E+07	4.3E+08	4.2E+08	1.1E+07	2.6E+07	1.7E+08	2.3E+06	4.3E+06	7.1E+04	6.9E+07	7.5E+07
19	2.7E+07	5.6E+06	4.8E+08	4.5E+08	1.2E+08	1.4E+07	8.0E+07	2.2E+06	3.6E+06	5.9E+04	5.6E+07	4.9E+07
20	3.0E+07	3.1E+06	3.7E+07	3.9E+08	2.0E+08	1.0E+07	6.7E+06	2.5E+06	1.7E+06	7.7E+04	2.7E+07	3.0E+07
21	2.1E+07	3.0E+06	4.3E+07	6.4E+07	1.6E+08	1.4E+07	8.4E+06	2.4E+06	1.4E+06	7.6E+04	1.1E+07	1.4E+06
22	2.5E+07	2.3E+07	6.0E+07	2.2E+07	1.6E+08	2.9E+06	1.1E+07	2.5E+06	1.4E+06	9.1E+04	6.8E+06	1.7E+05
23	1.3E+07	5.0E+07	7.3E+07	4.5E+07	1.8E+08	3.2E+06	4.0E+06	2.1E+06	3.8E+05	7.5E+04	4.2E+06	2.7E+05
24	3.0E+08	7.0E+07	8.3E+07	4.0E+08	9.6E+07	3.5E+06	4.7E+06	2.4E+06	4.2E+06	9.2E+04	2.6E+06	2.1E+05
25	7.8E+08	1.4E+08	1.4E+06	6.4E+08	7.5E+07	4.5E+06	7.3E+06	1.0E+06	4.2E+06	9.8E+04	4.7E+06	5.4E+06
26	1.1E+09	1.3E+08	4.8E+06	3.5E+08	7.7E+07	1.3E+06	3.1E+06	1.0E+06	5.0E+06	1.2E+05	6.8E+06	6.2E+06
27	5.0E+08	1.2E+08	3.6E+07	2.5E+08	1.6E+07	1.7E+06	1.6E+06	2.8E+06	4.8E+06	1.7E+05	2.0E+06	7.2E+06
28	3.7E+08	6.4E+06	3.8E+07	1.9E+07	1.3E+07	2.1E+06	2.0E+06	4.5E+08	3.9E+06	3.7E+05	2.9E+05	7.4E+06
29	2.3E+08	1.1E+07	4.2E+07	3.1E+07	1.2E+07	1.7E+06	1.6E+06	1.2E+09	2.9E+06	2.3E+05		6.8E+06
30	2.5E+08	9.1E+06	1.8E+07	3.2E+07	1.3E+07	1.9E+06	7.0E+07	4.5E+08	4.6E+06	1.8E+05		5.1E+06
31		1.3E+07		3.4E+07	1.5E+07		2.0E+08		5.4E+05	1.1E+05		4.9E+06

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '--' indicates data not available.
NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES12 is primary satellite as of 15 May 2003.

CONTENTS

Prompt Reports Number 776 Part I

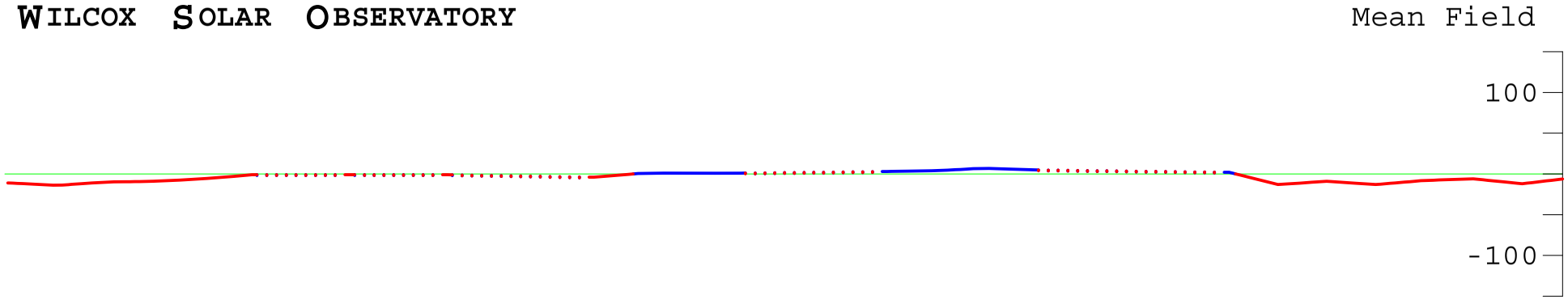
DATA FOR **FEBRUARY 2009**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

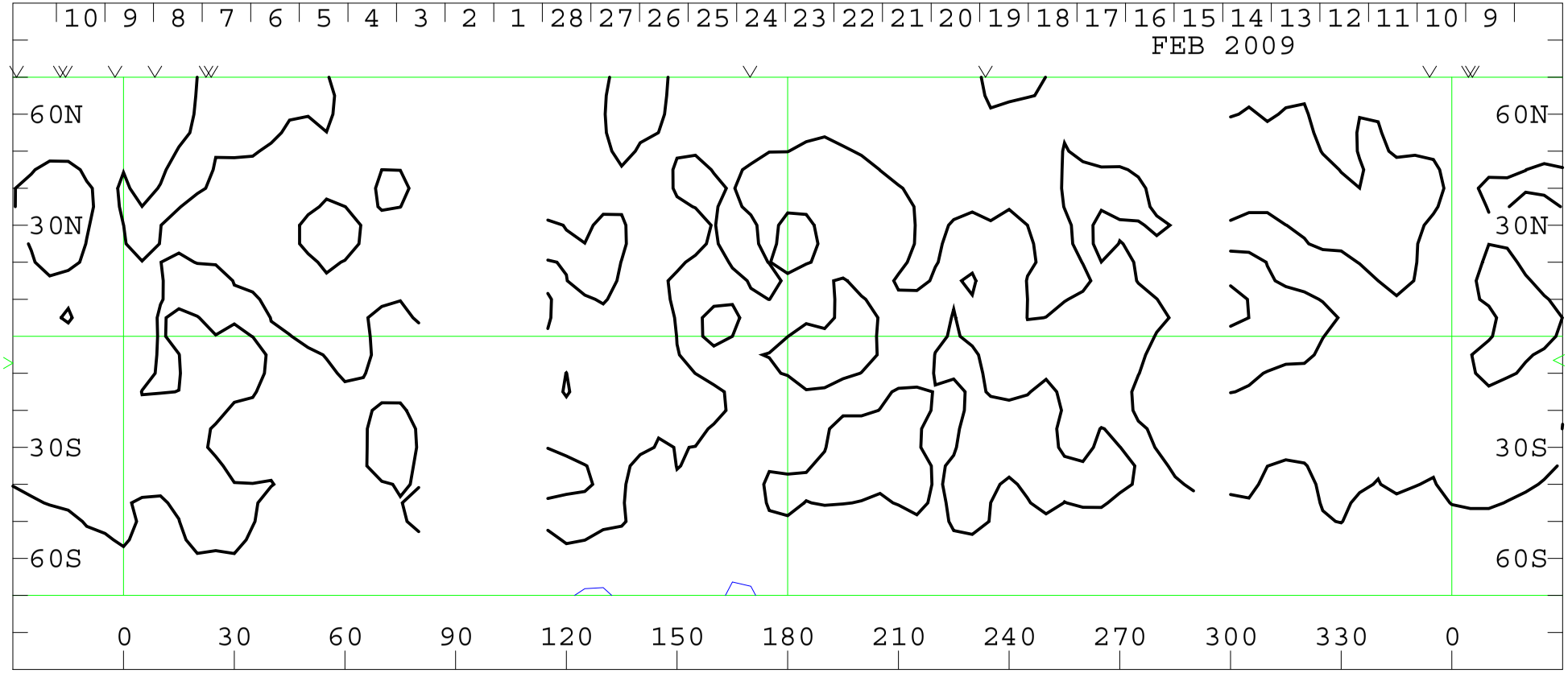
CARRINGTON ROTATION NUMBER 2080

(10 Feb 2009 to 9 mar 2009)

WILCOX SOLAR OBSERVATORY



WSO - Photospheric Magnetic Field 0, ±100, 200, 500, 1000, 2000 MicroTesla



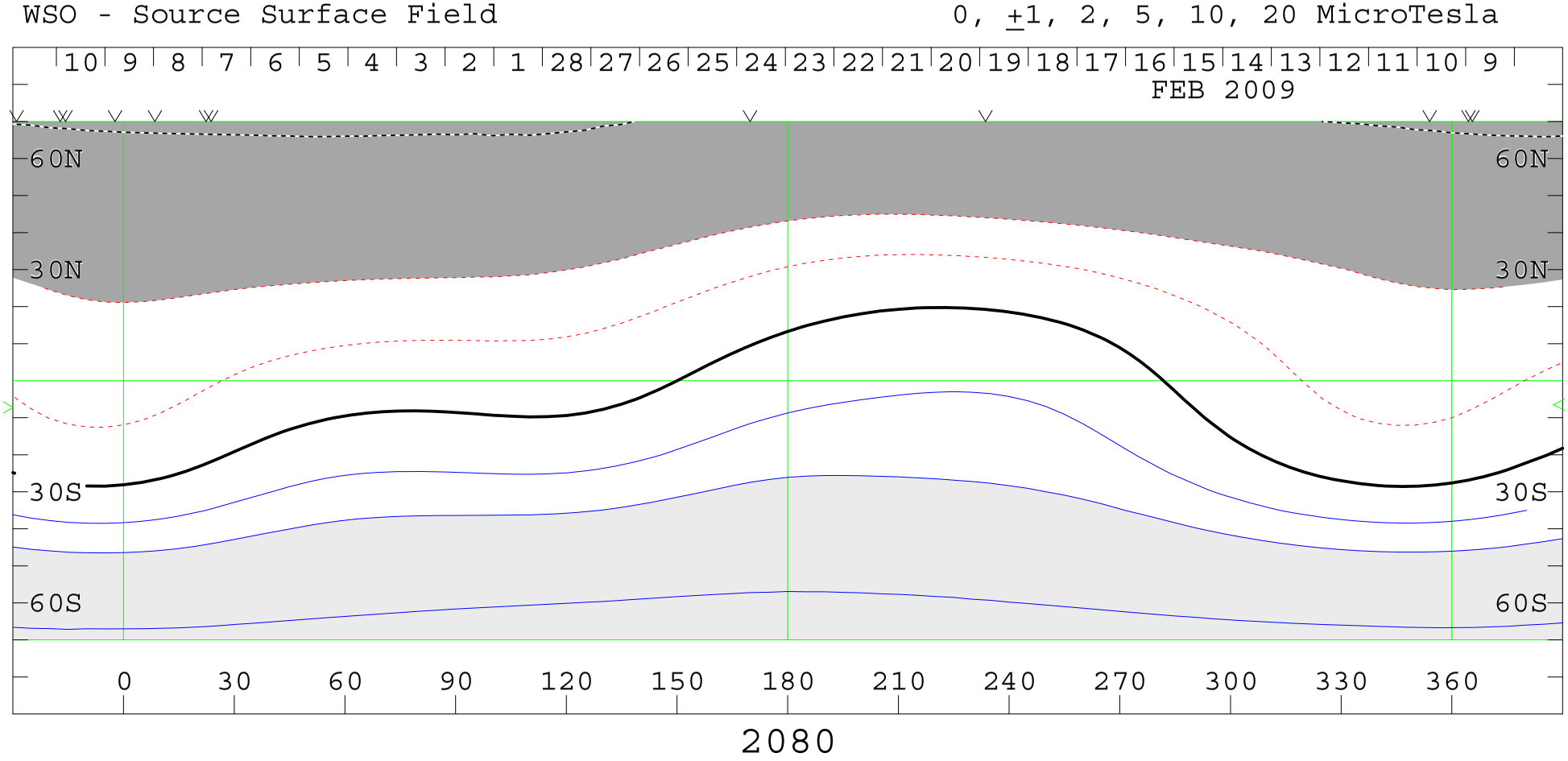
SOLAR MAGNETIC FIELD SYNOPTIC CHART

SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2080

(10 Feb 2009 - 9 Mar 2009)

WILCOX SOLAR OBSERVATORY

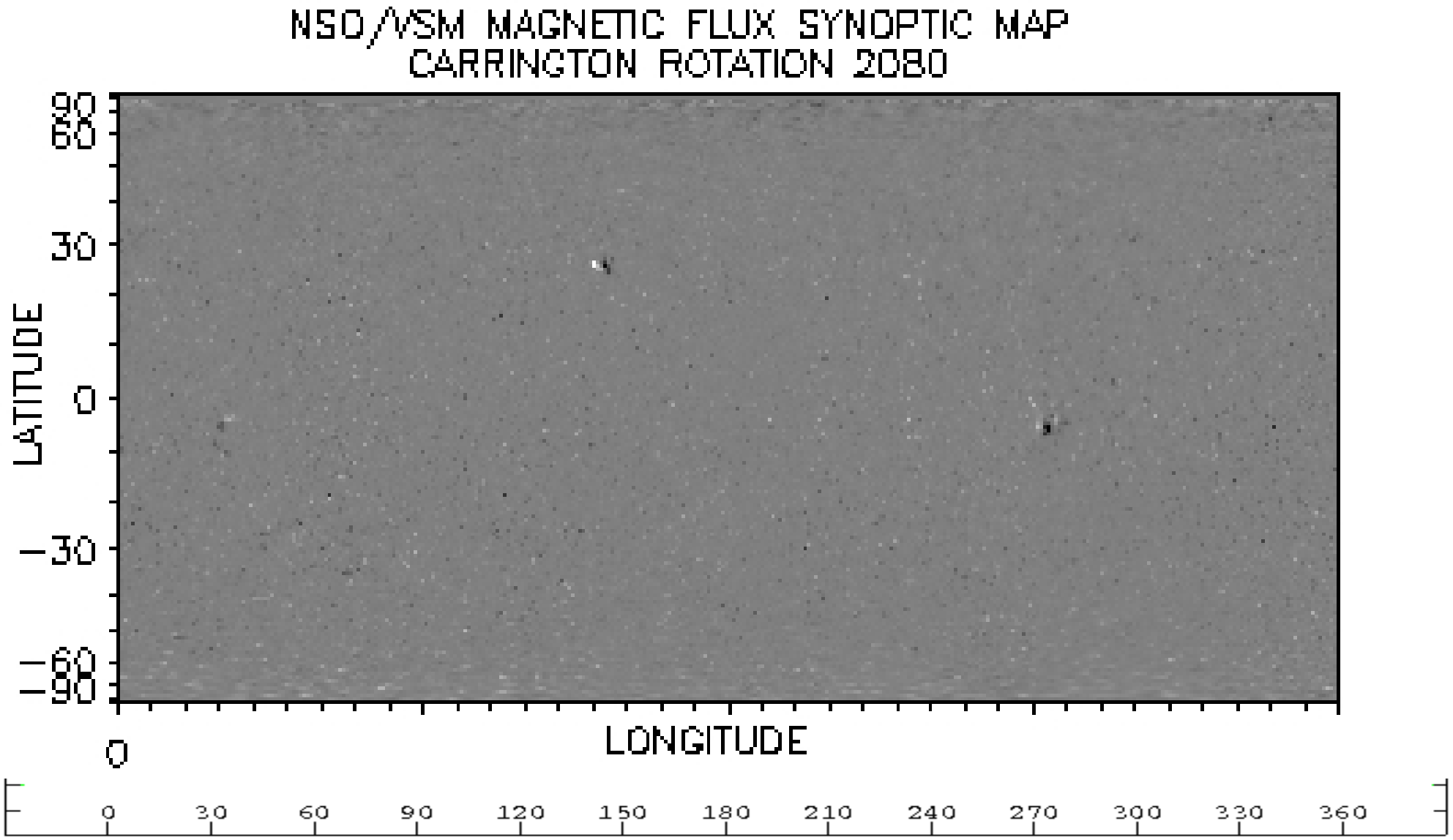


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2080

(10 Feb 2009 to 9 Mar 2009)

National Solar Observatory/Kitt Peak



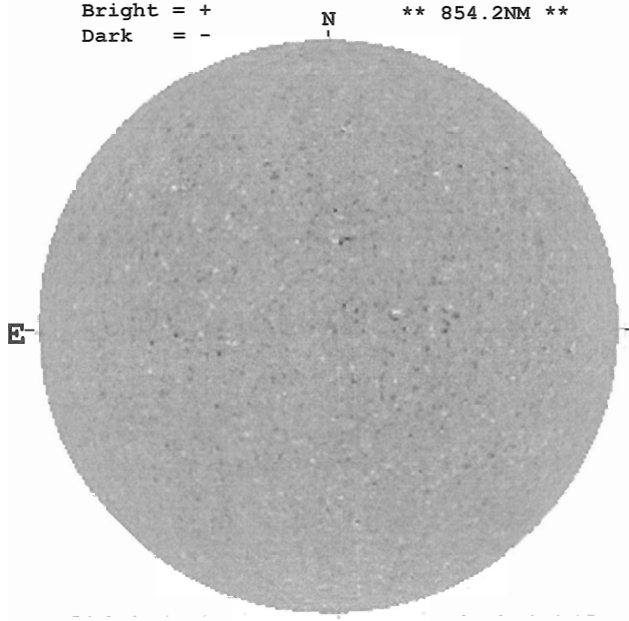
Heliographic Longitude

February 01, 2009 (P=-12.22, Bo=-6.03, Lo= 122.22)

KITT PEAK MAGNETOGRAM -- SOLIS

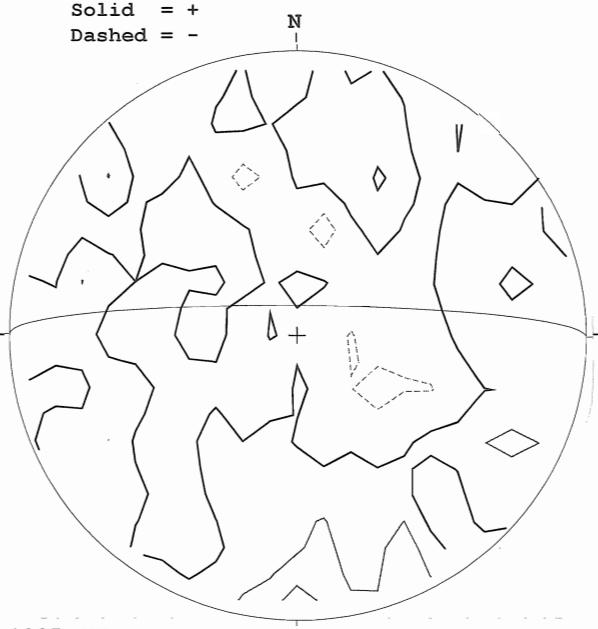
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

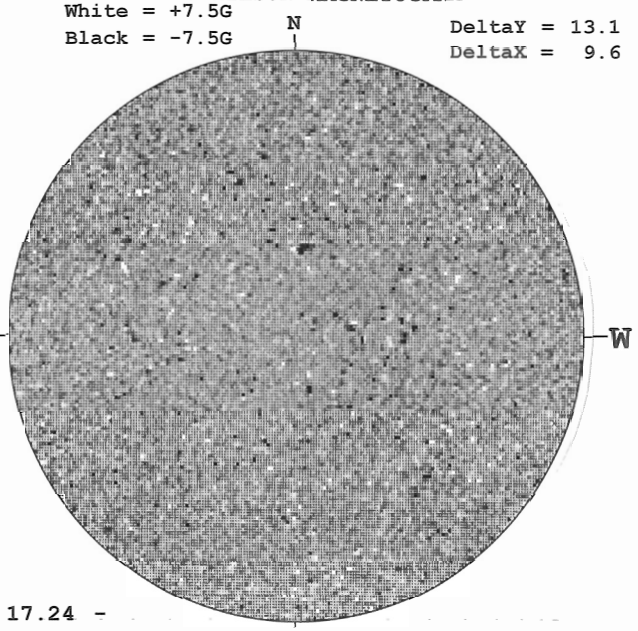
Solid = +
Dashed = -



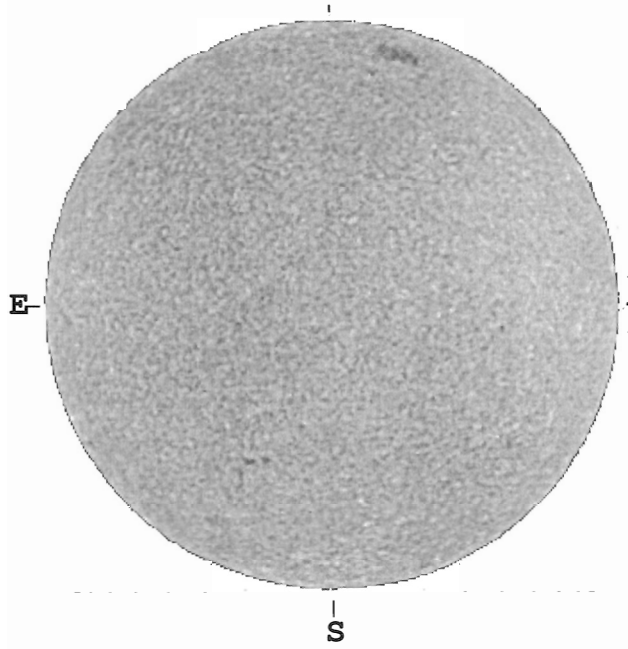
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

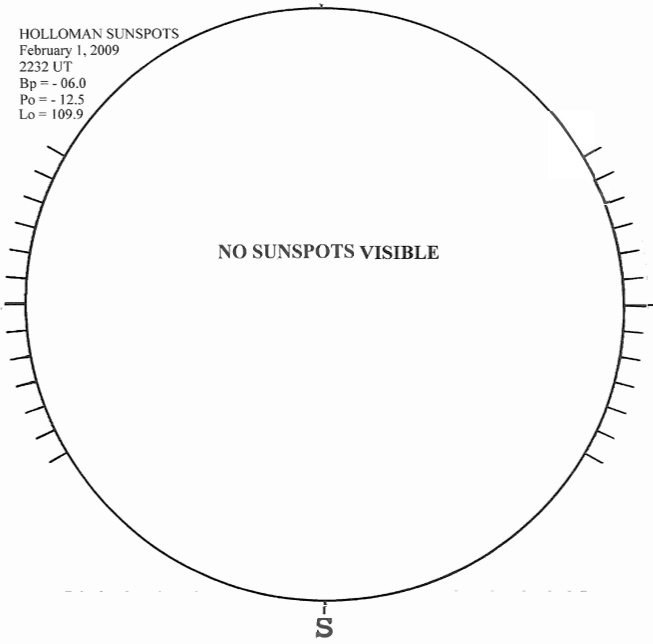
DeltaY = 13.1
DeltaX = 9.6



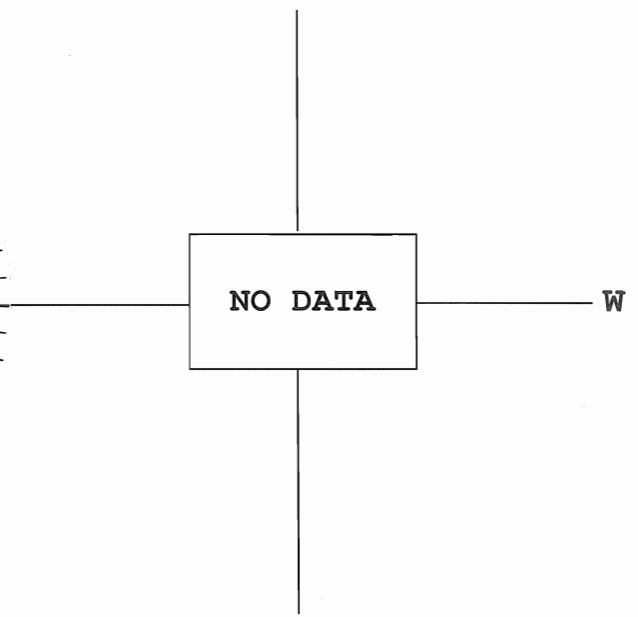
MUANA LOA H-ALPHA



HOLLOMAN SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)------

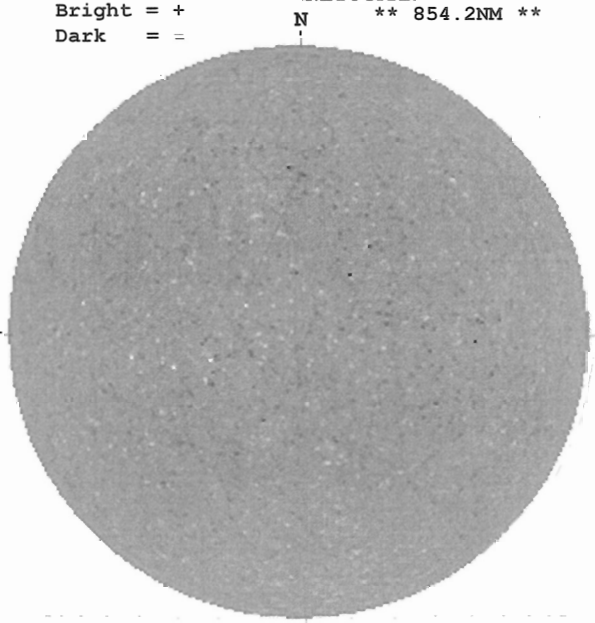


February 02, 2009 (P=-12.63, Bo=-6.10, Lo= 109.06)

KITT PEAK MAGNETOGRAM -- SOLIS

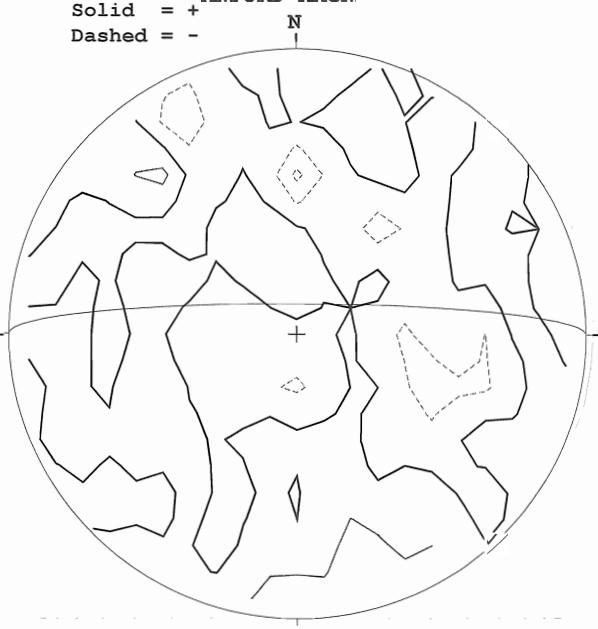
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

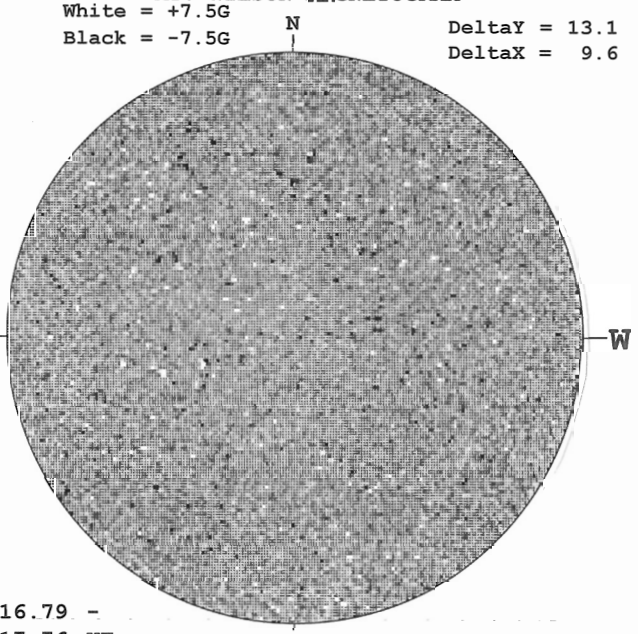
Solid = +
Dashed = -



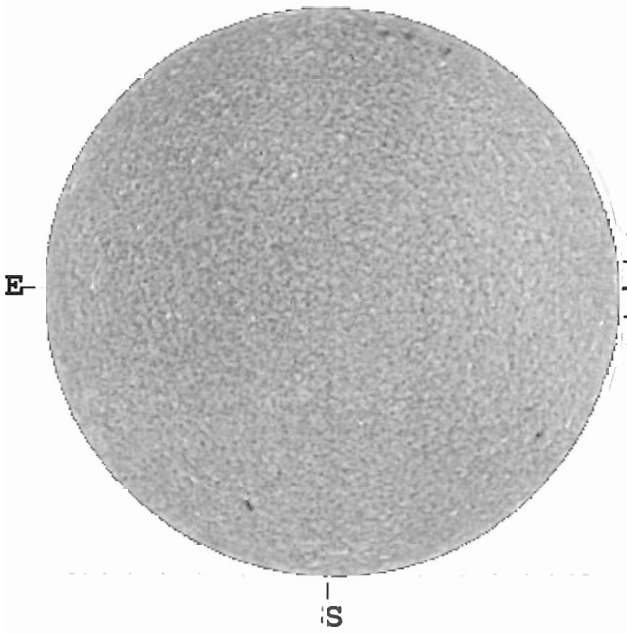
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

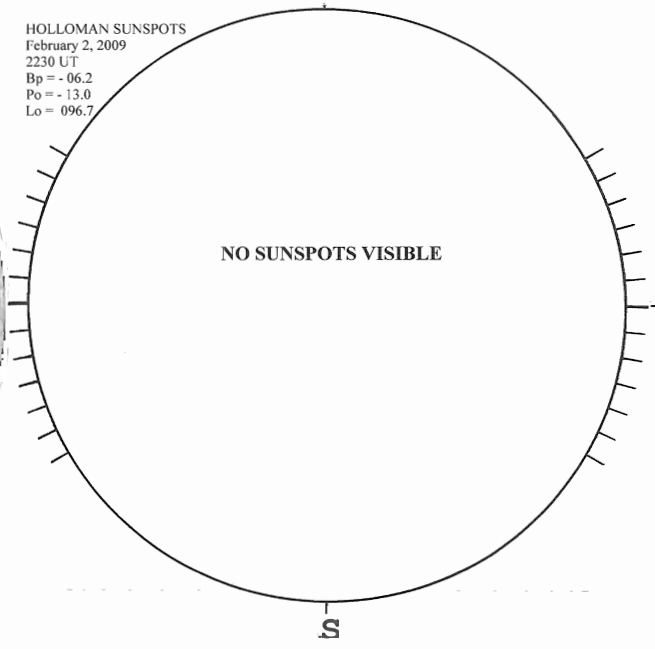


MUANA LOA H-ALPHA

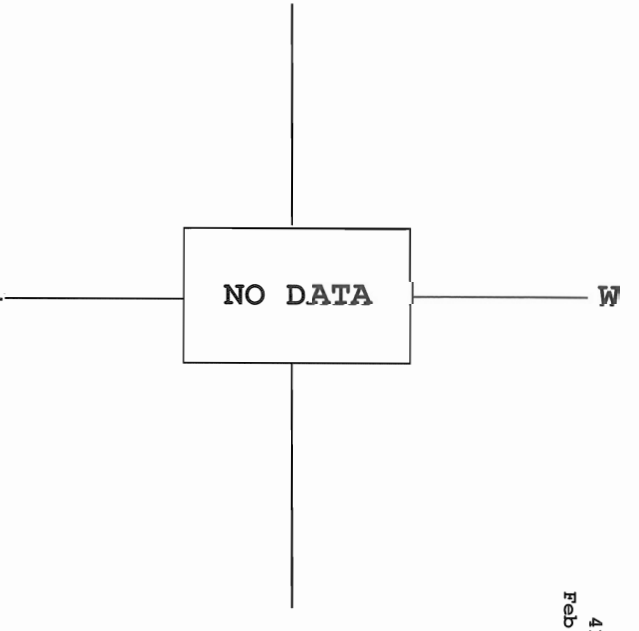


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
February 2, 2009
2230 UT
Bp = - 06.2
Po = - 13.0
Lo = 096.7



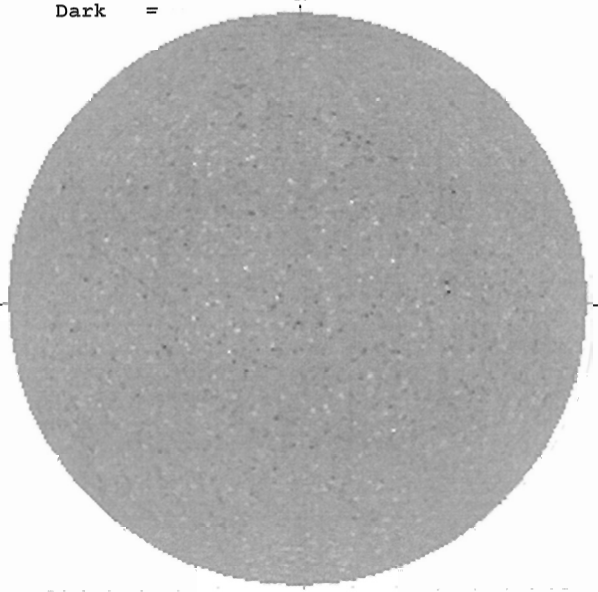
SACRAMENTO PEAK CORONA (1.15 Radii)



41
Feb 09

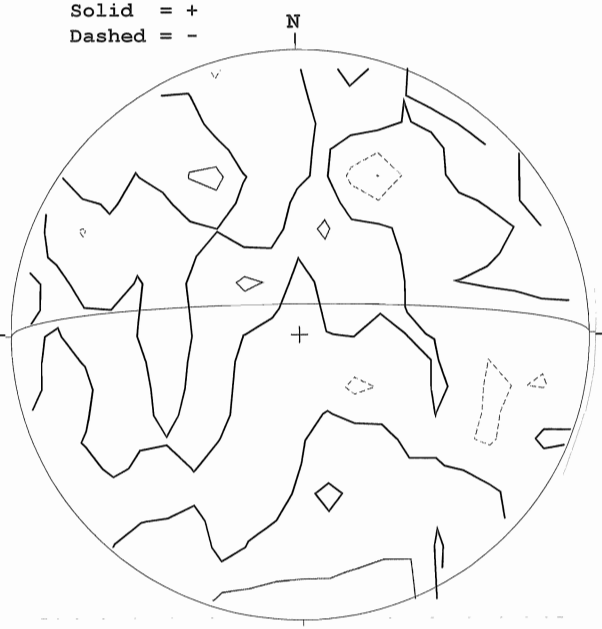
February 03, 2009 (P=-13.03, Bo=-6.17, Lc= 95.89)

KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark =
** 854.2NM **



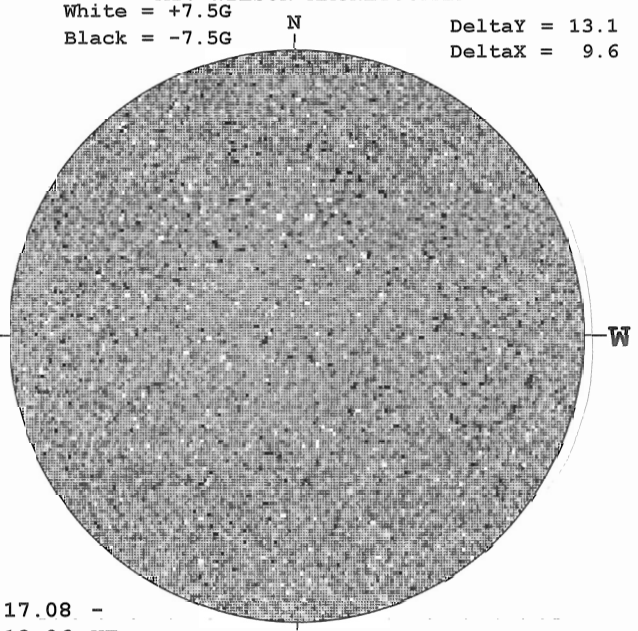
1936 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



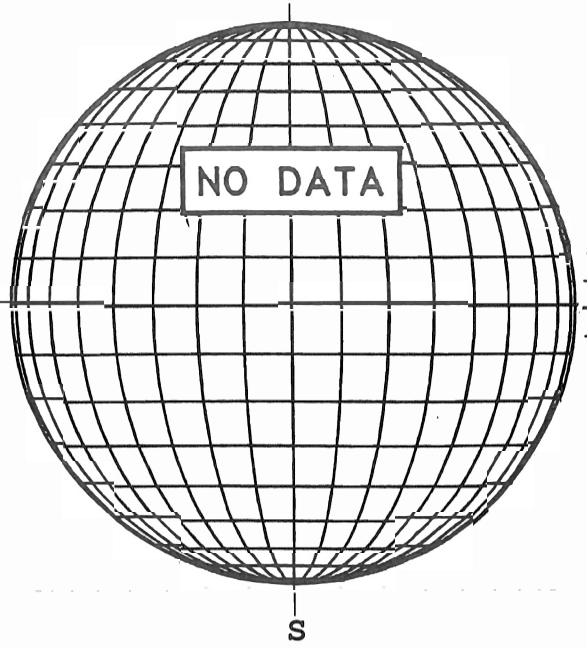
2114 UT

MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

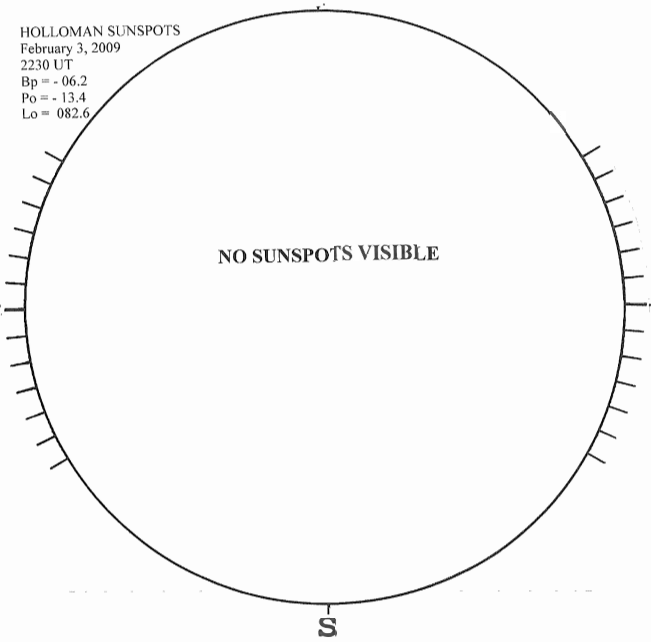


17.08 -
18.06 UT

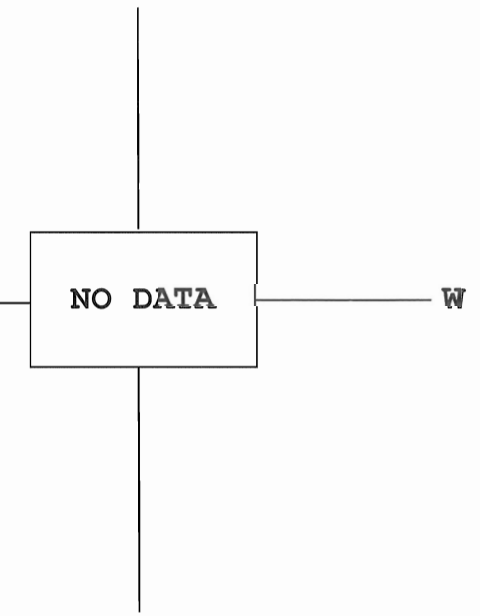
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)------

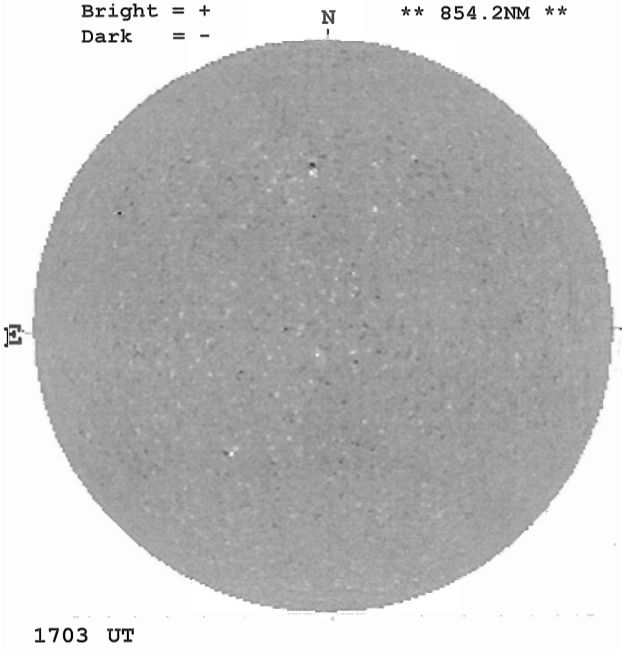


2300 UT

February 04, 2009 (P=-13.42, Bo=-6.24, Lo= 82.73)

KITT PEAK MAGNETOGRAM -- SOLIS

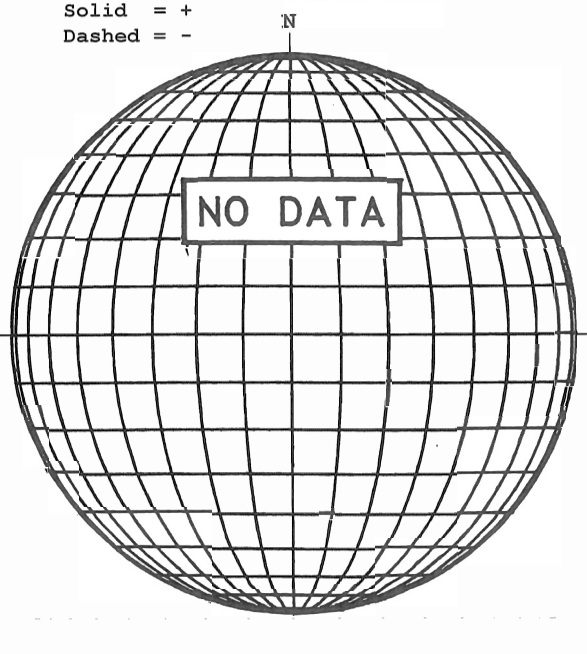
Bright = +
Dark = -



1703 UT

STANFORD MAGNETOGRAM

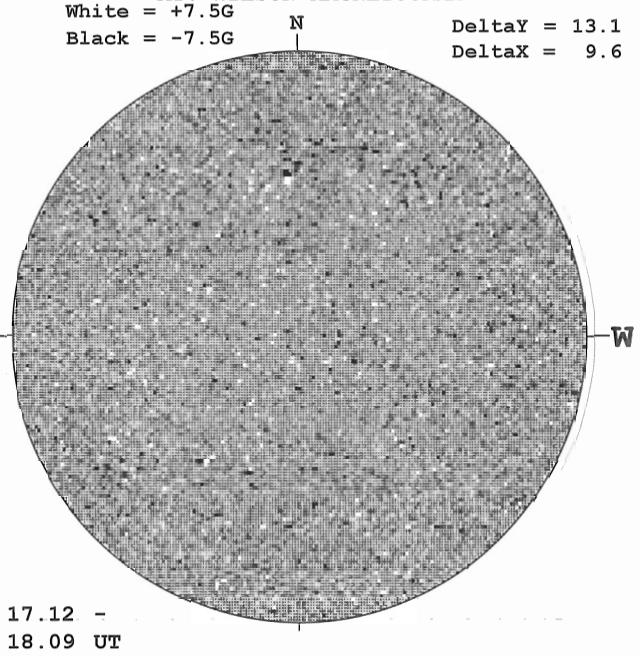
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

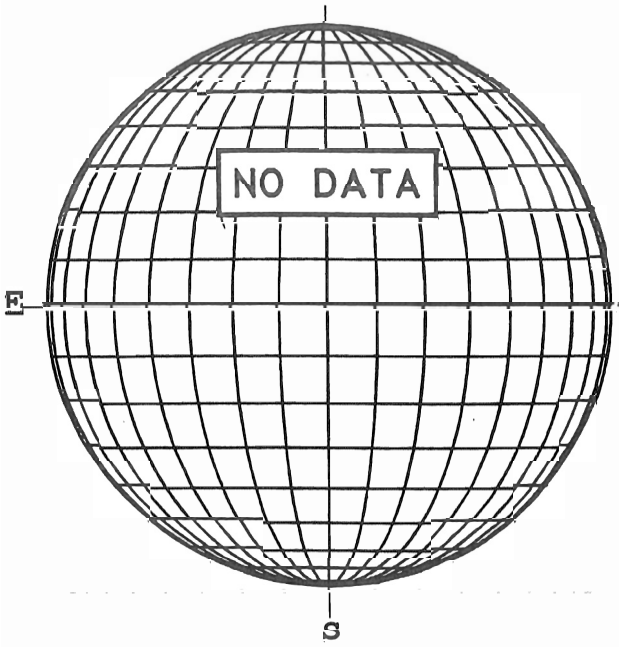
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



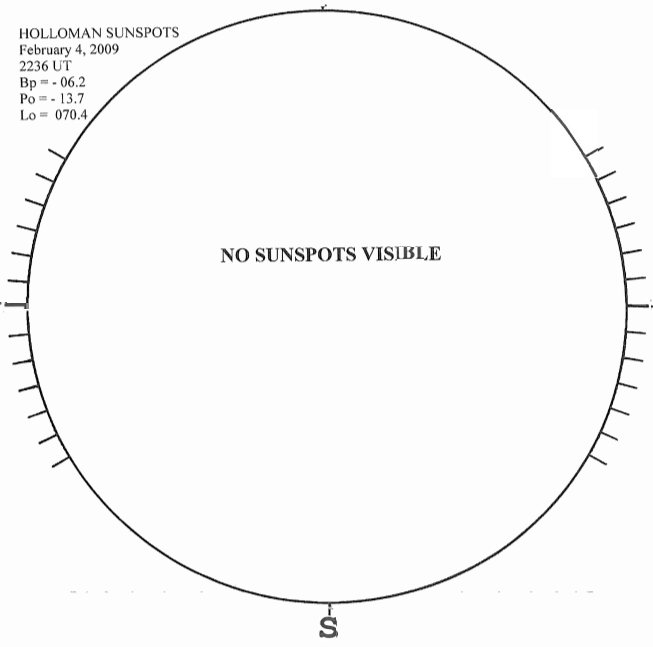
17.12 -
18.09 UT

BIG BEAR H-ALPHA

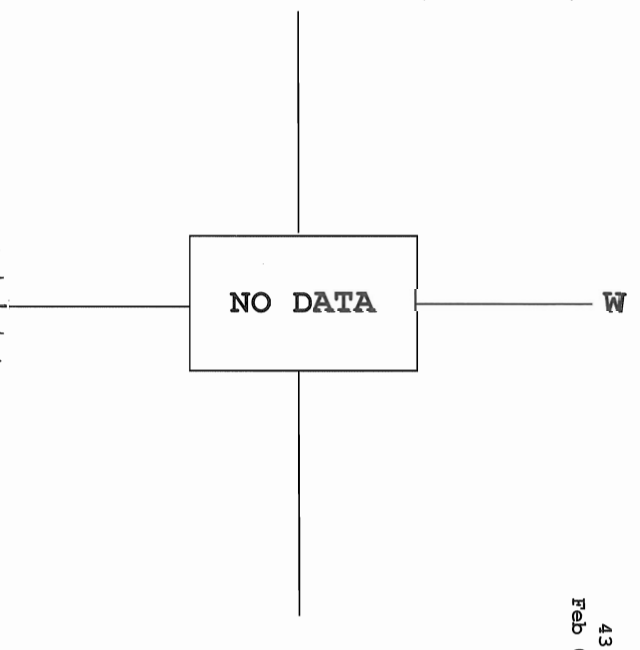


2236 UT

HOLLOMAN SUNSPOTS



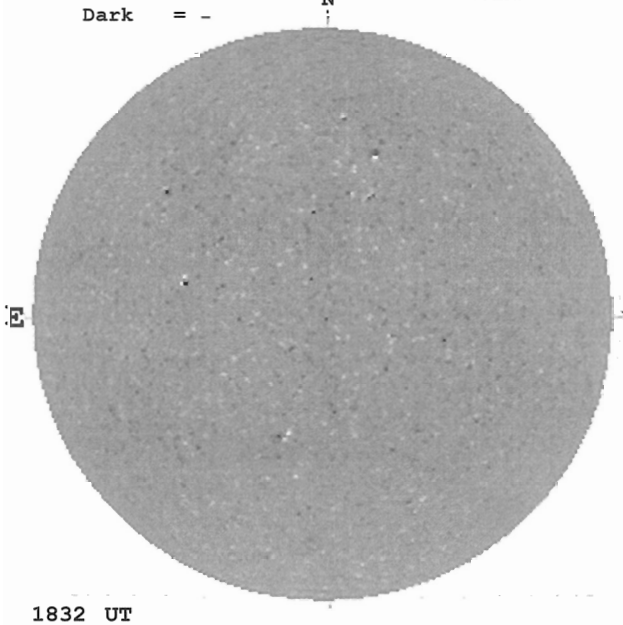
SACRAMENTO PEAK CORONA (1.15 Radii)----



43
Feb 09

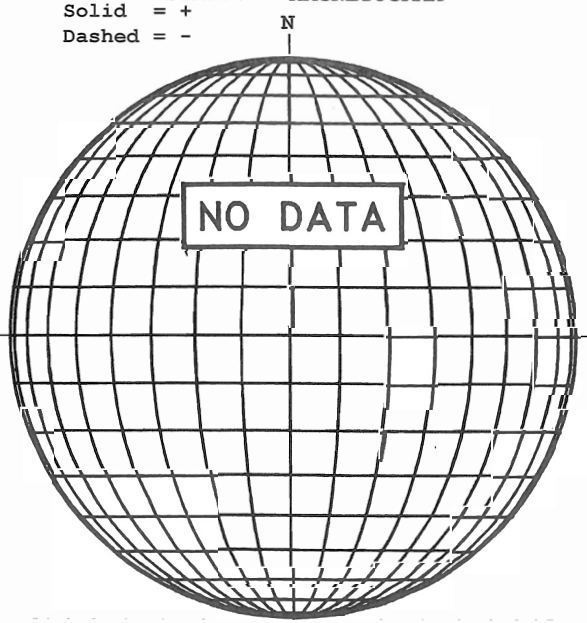
February 05, 2009 (P=-13.81, Bo=-6.30, Lo= 69.56)

KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **

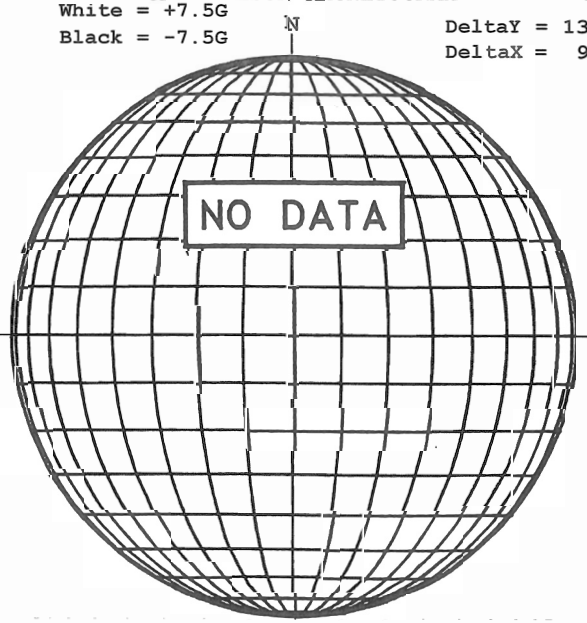


1832 UT

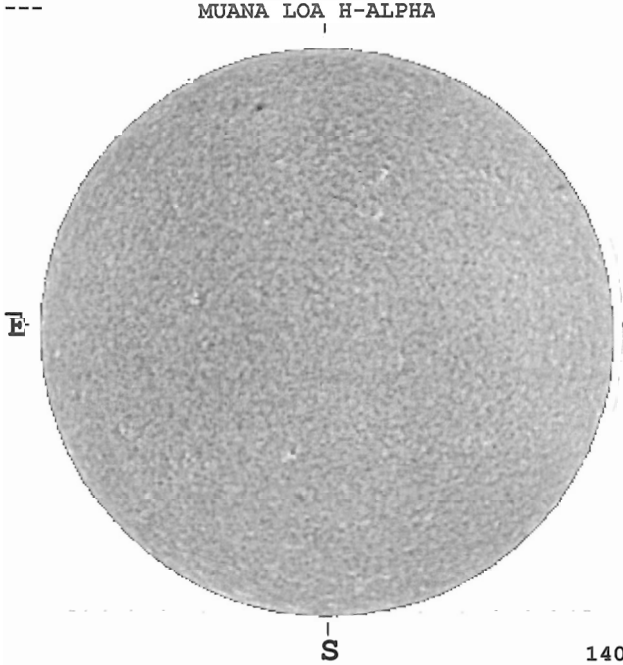
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

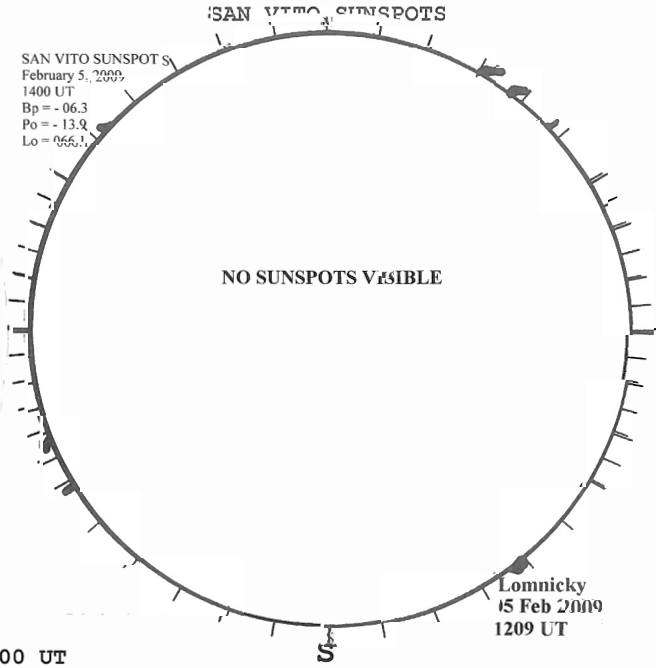


MUANA LOA H-ALPHA



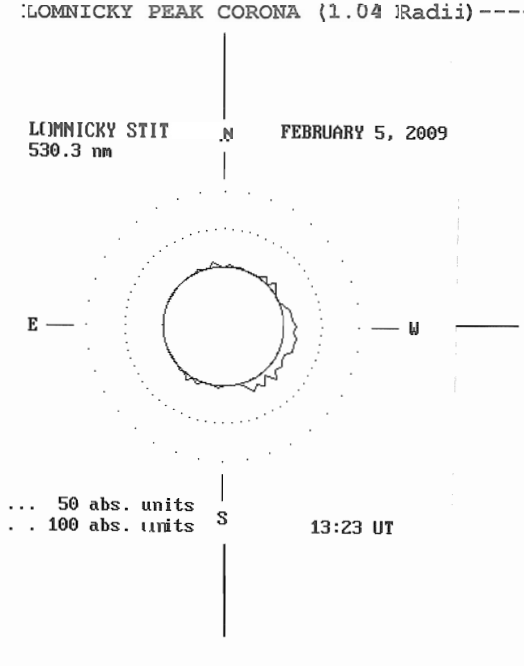
2100 UT

SAN VITO SUNSPOTS



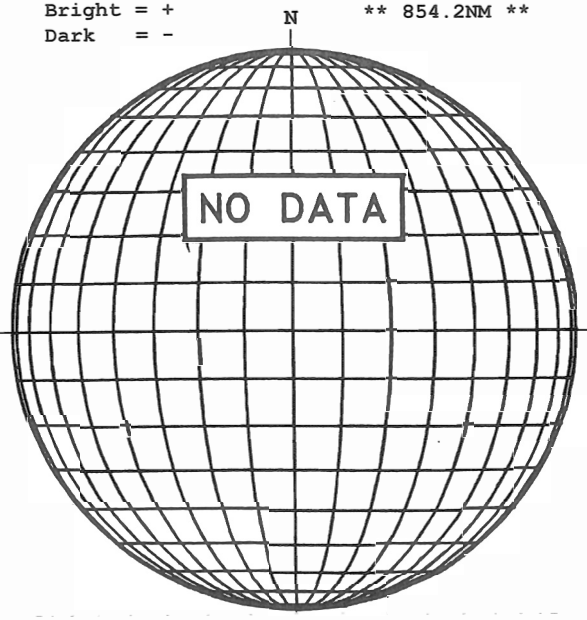
1400 UT
1209 UT LOMN PROM

LOMNICKY PEAK CORONA (1.04 Radii)

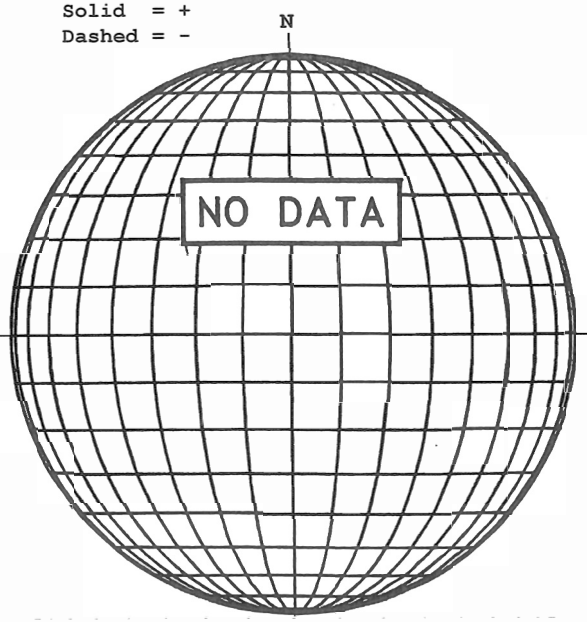


February 06, 2009 (P=-14.20, Bo=-6.37, Lo= 56.39)

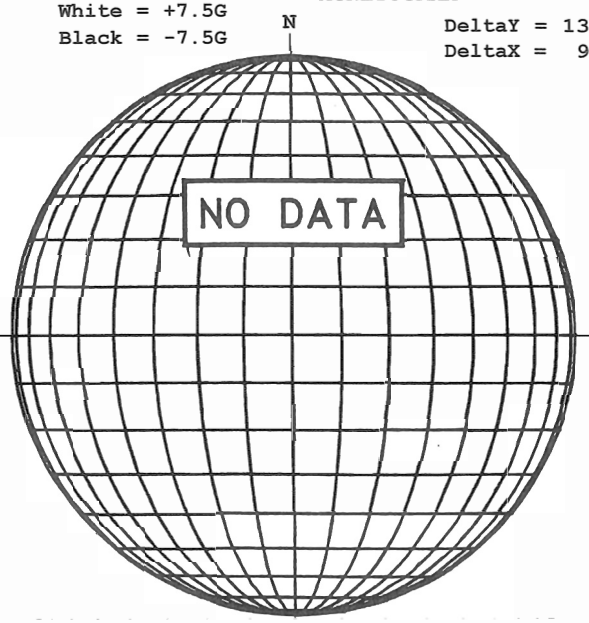
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

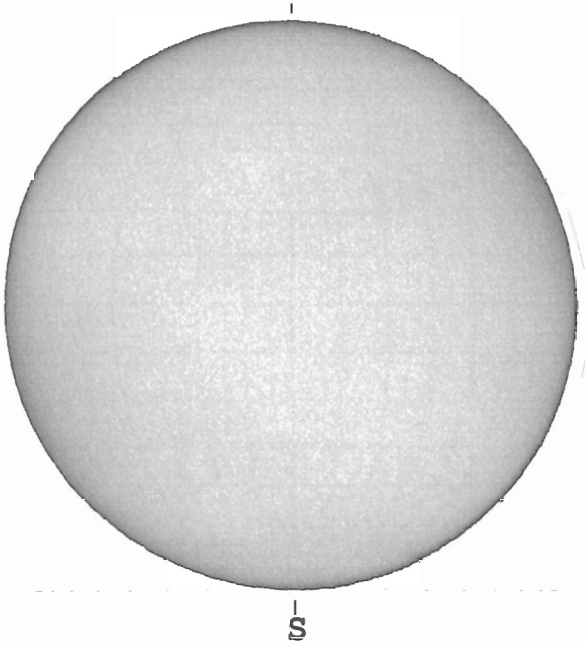


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



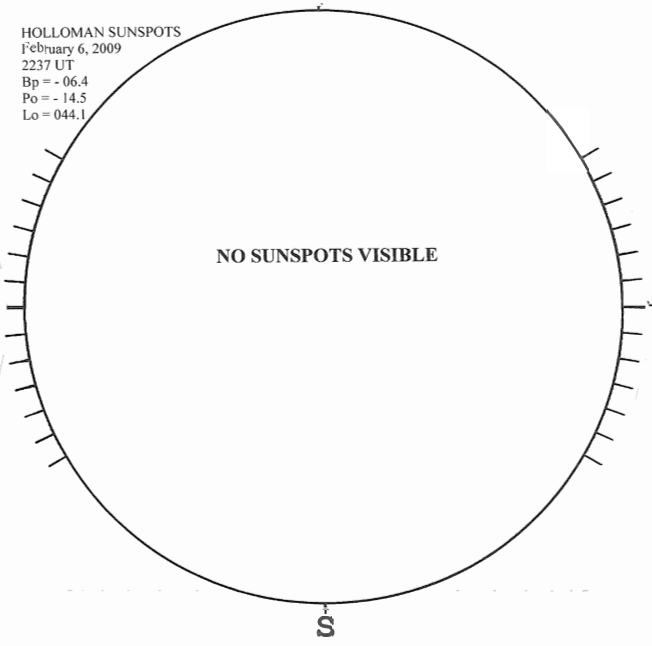
E W

--- MEUDON H-ALPHA



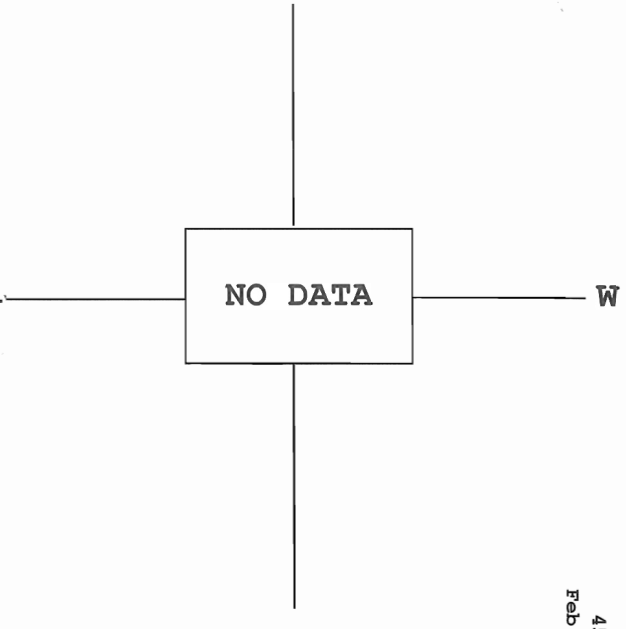
0852 UT

HOLLOMAN SUNSPOTS



2237 UT

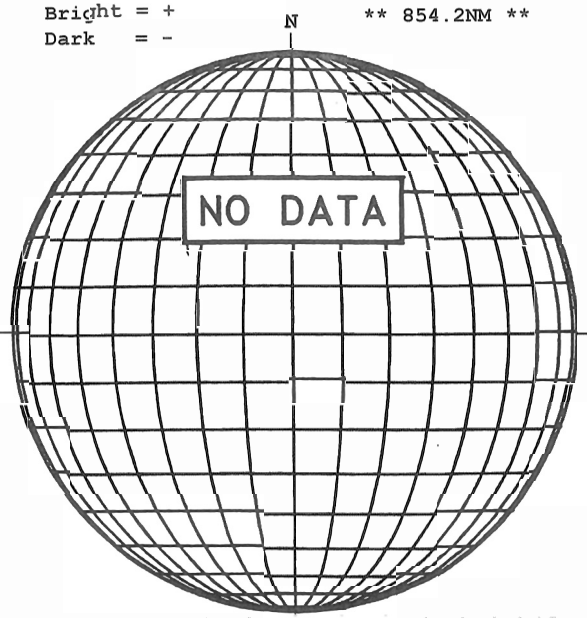
SACRAMENTO PEAK CORONA (1.15 Radii)-----



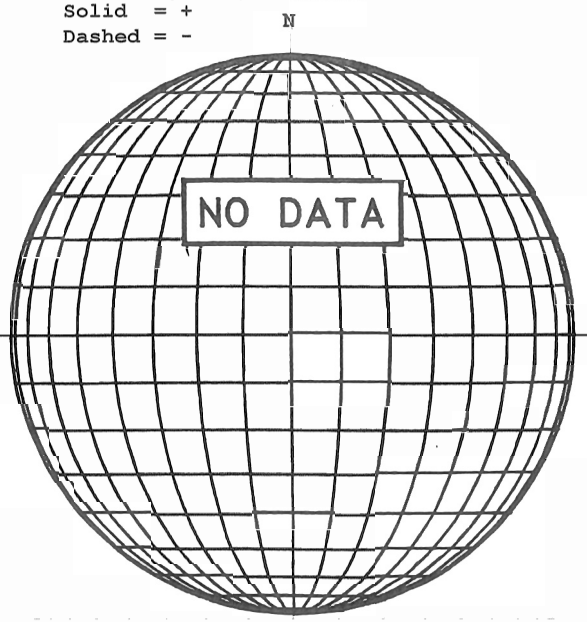
45
Feb 09

February 07, 2009 (P=-14.58, Eo=-6.43, Lo= 43.23)

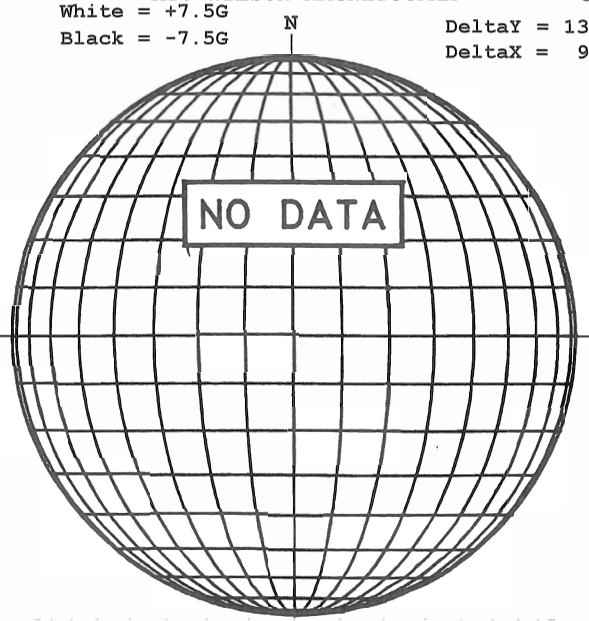
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

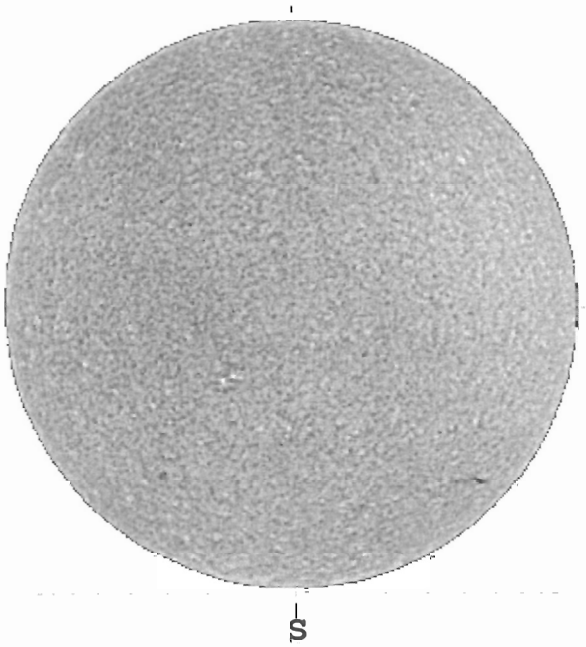


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

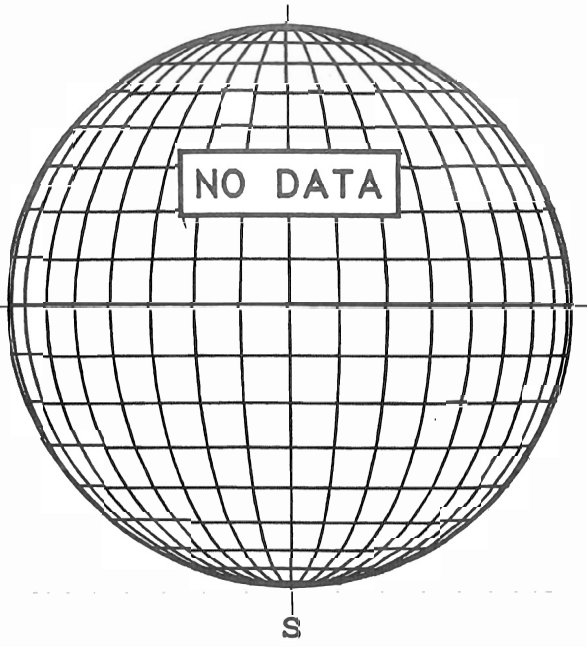


E W

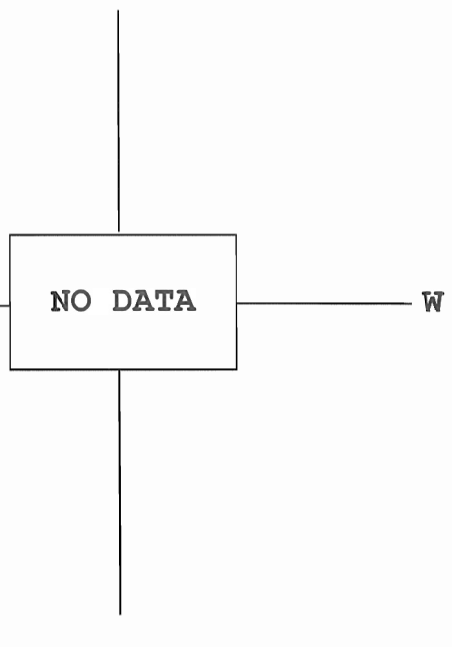
MUANA LOA H-ALPHA



HOLLOMAN SUNSPOTS



IOMNICKY PEAK CORONA (1.04 Radii)

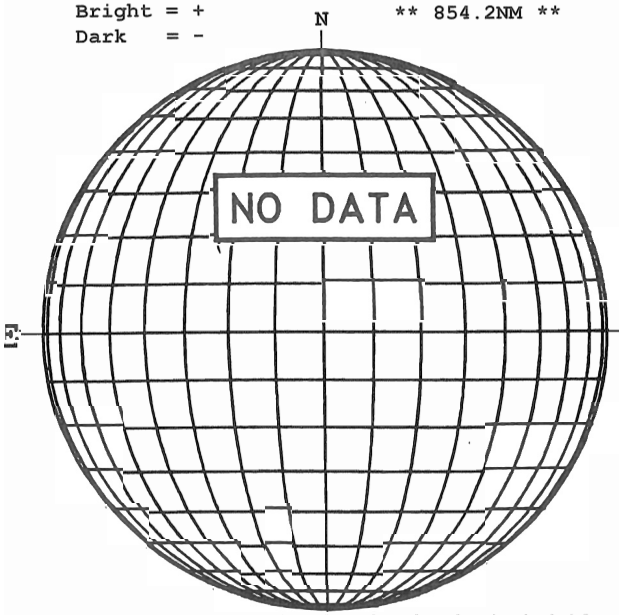


E W

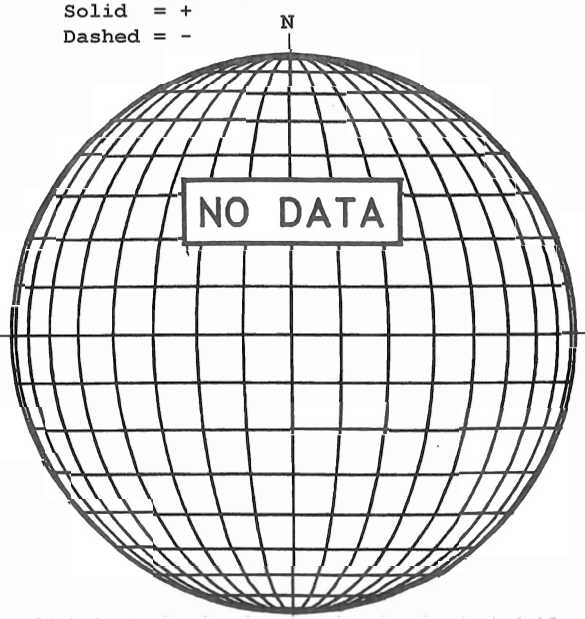
1808 UT

February 08, 2009 (P=-14.96, Bo=-6.48, Lo= 30.06)

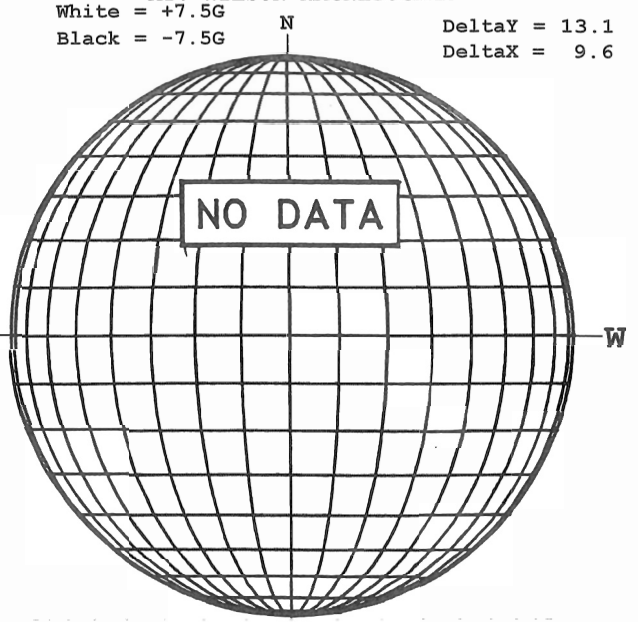
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



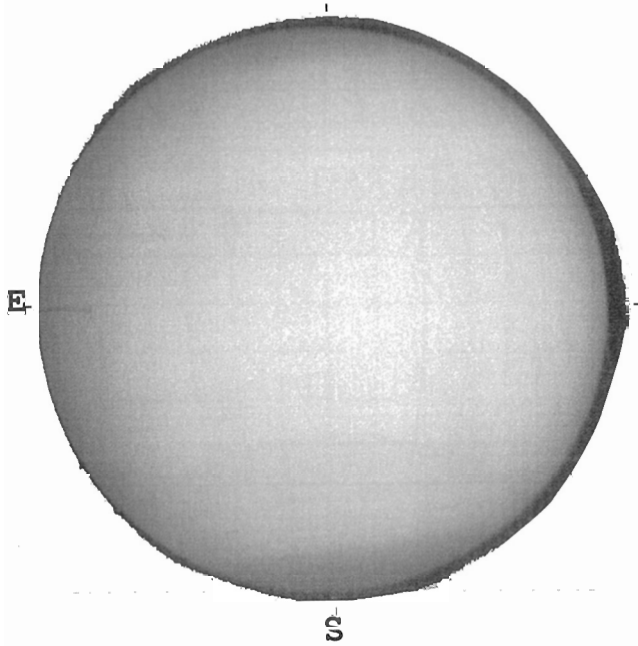
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

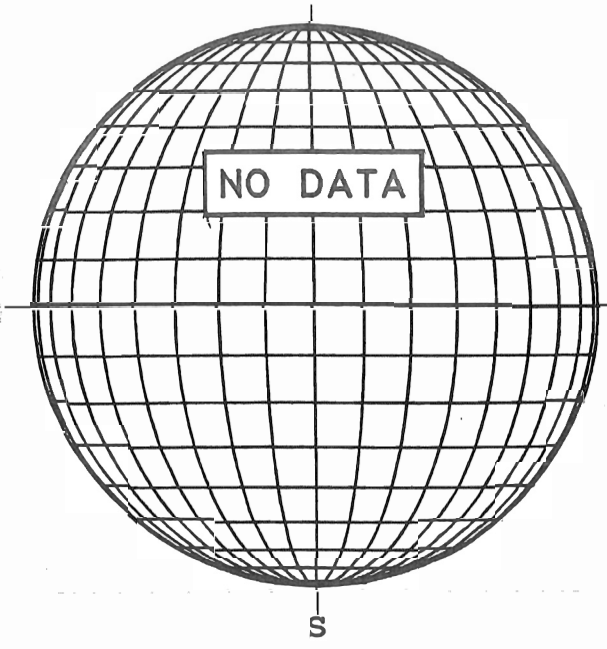


MEUDON H-ALPHA

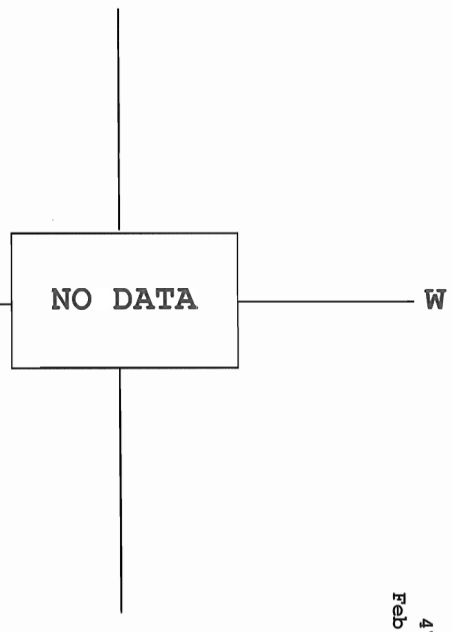


1259 UT

HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



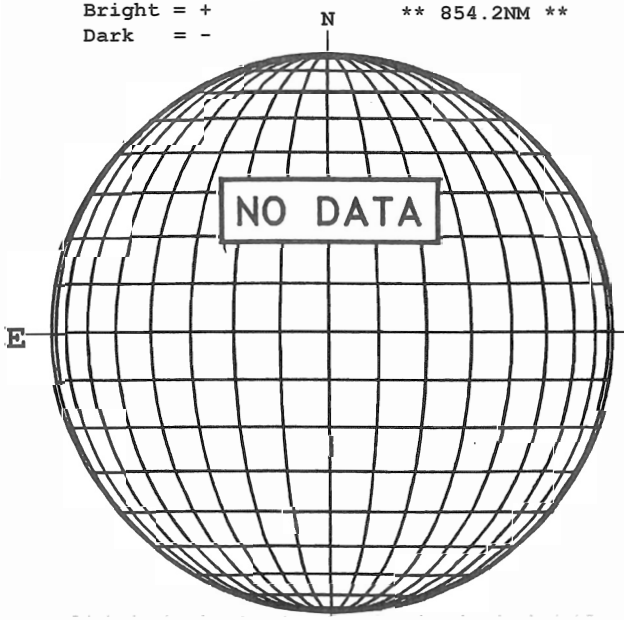
47
Feb 09

February 09, 2009 (P=-15.33, Bo=-6.54, Lo= 16.89)

KITT PEAK MAGNETOGRAM -- SOLIS

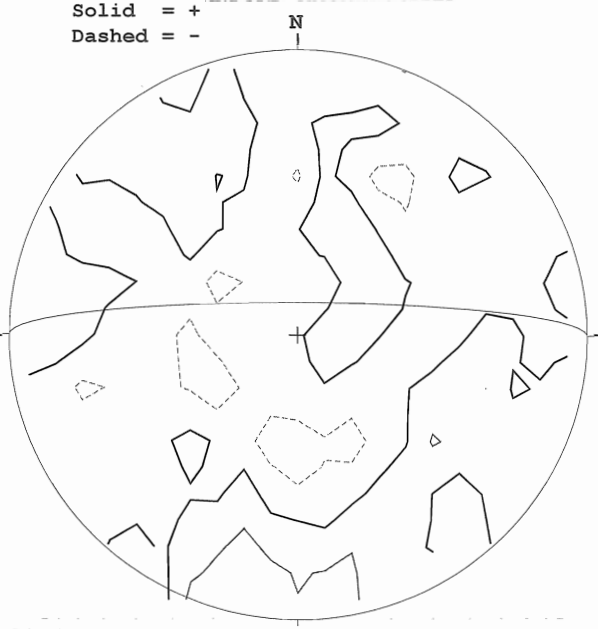
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

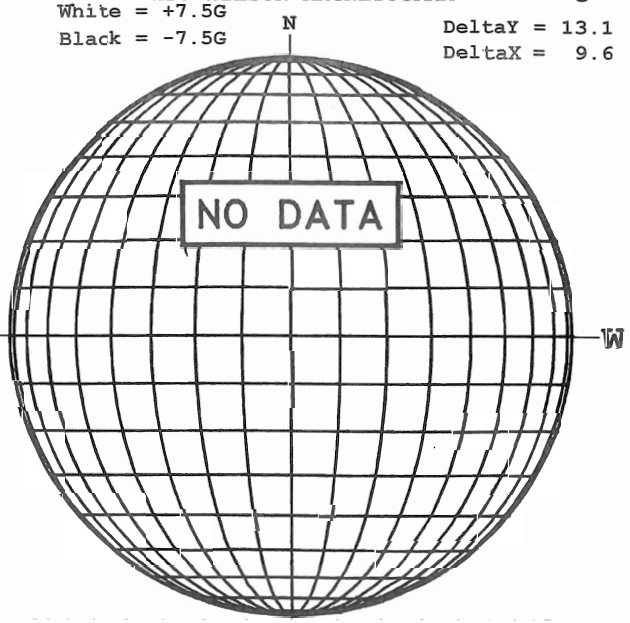


2044 UT

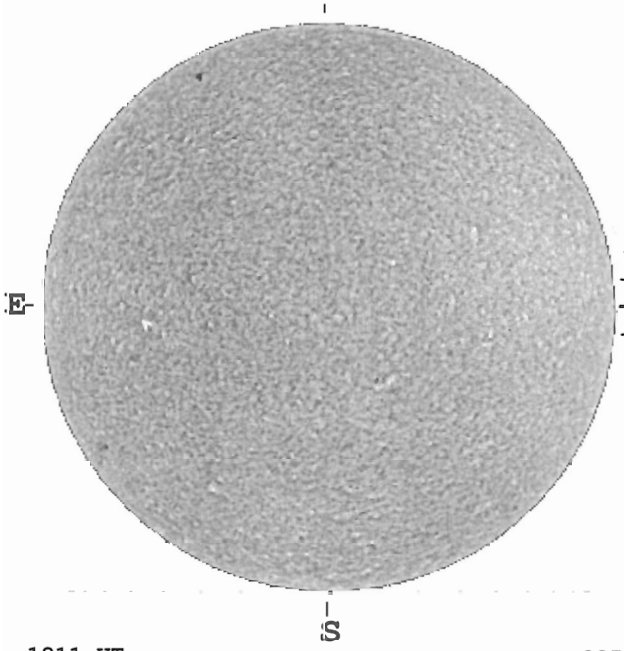
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

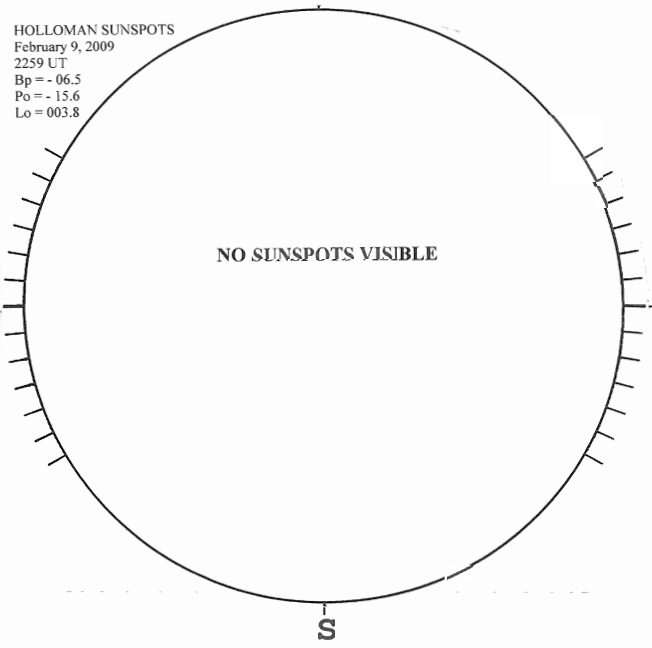


--- MUANA LOA H-ALPHA



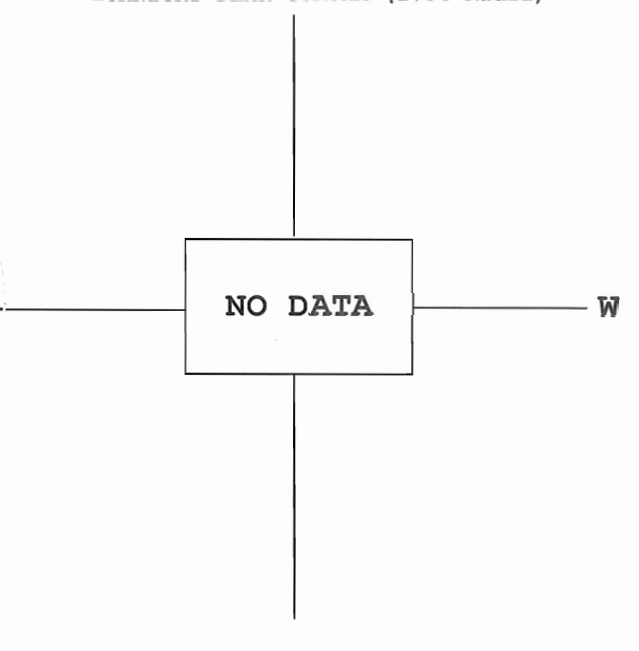
1811 UT

HOLLOMAN SUNSPOTS



2259 UT

LOMNICKY PEAK CORONA (1.04 Radii)------

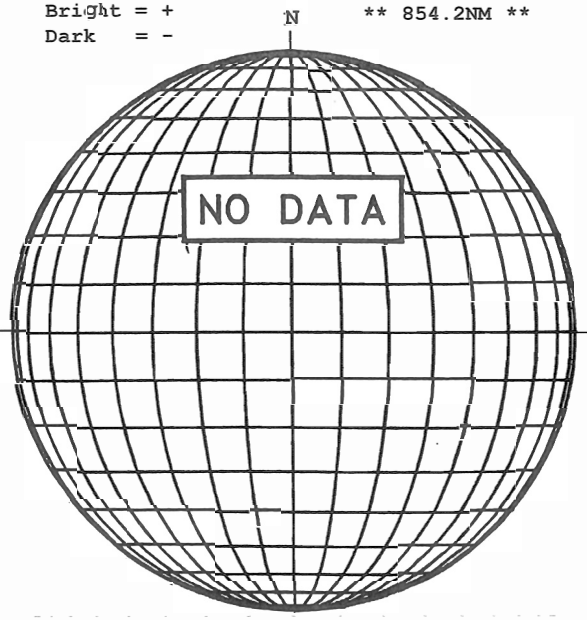


February 10, 2009 (P=-15.69, Bo=-6.60, Lo= 3.72)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

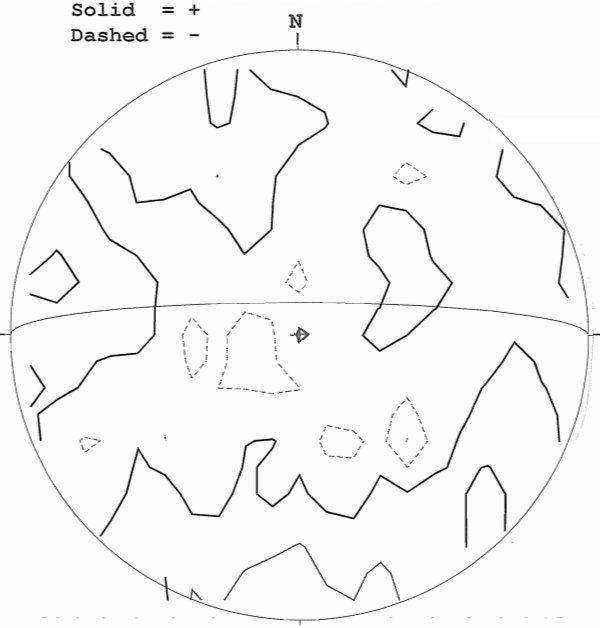
** 854.2NM **



1747 UT

STANFORD MAGNETOGRAM

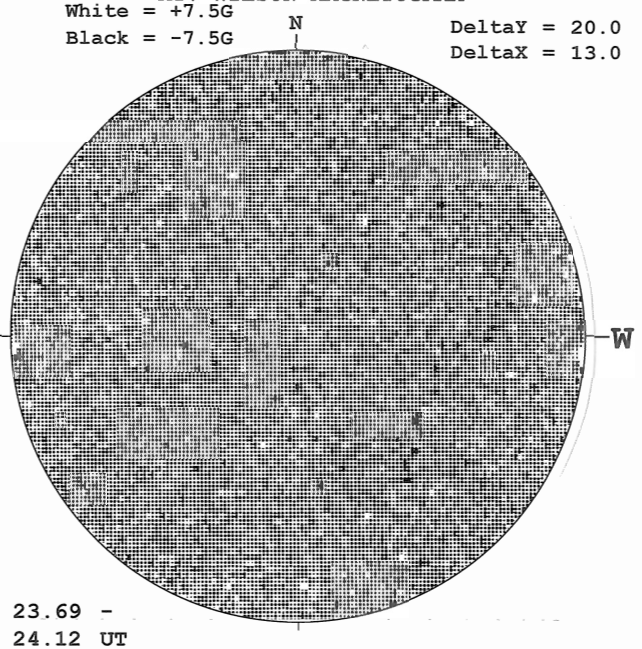
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

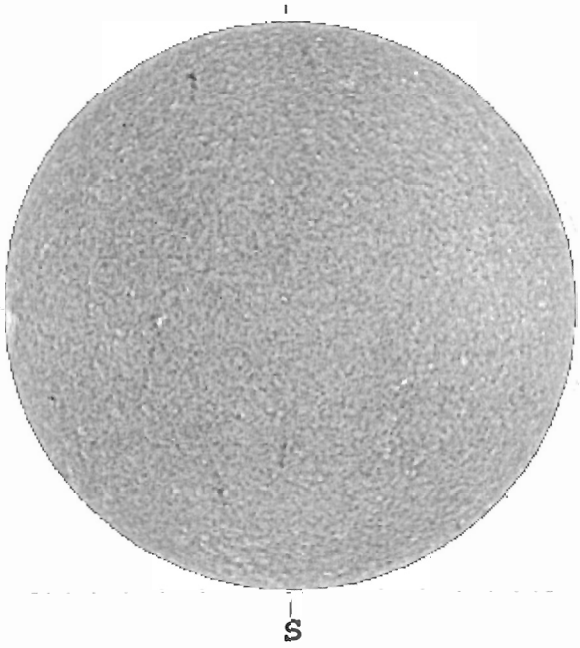
White = +7.5G
Black = -7.5G

DeltaY = 20.0
DeltaX = 13.0



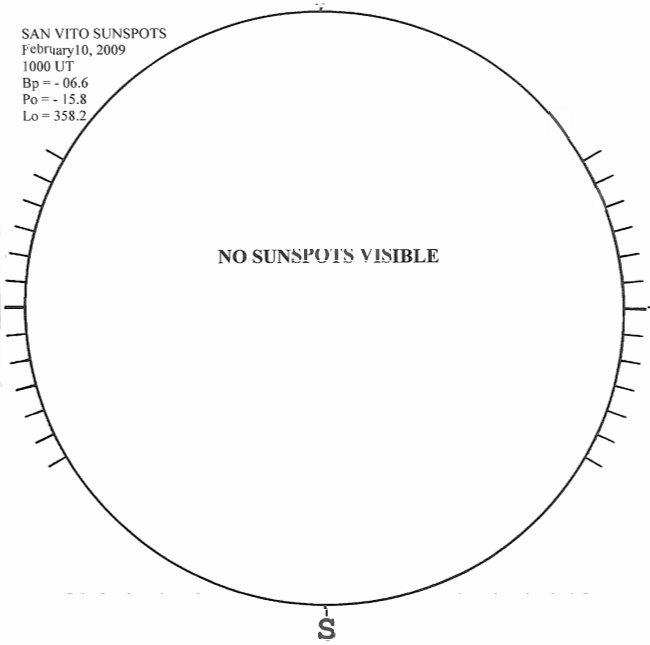
23.69 -
24.12 UT

--- MUANA LOA H-ALPHA



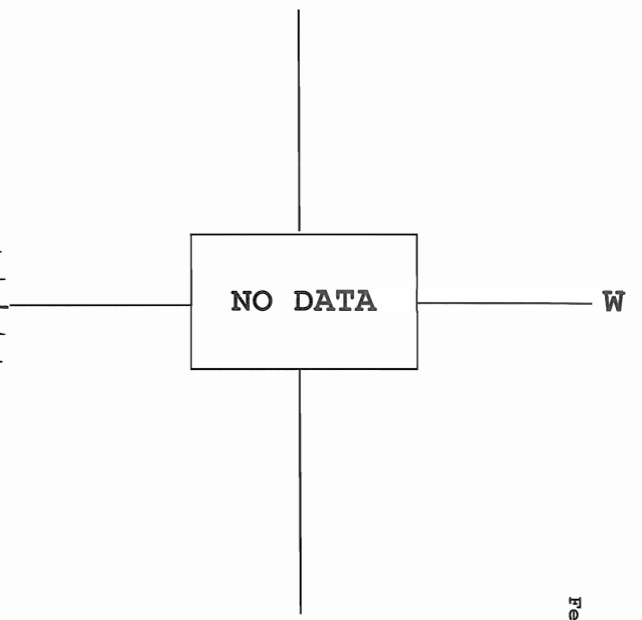
1820 UT

SAN VITO SUNSPOTS



1000 UT

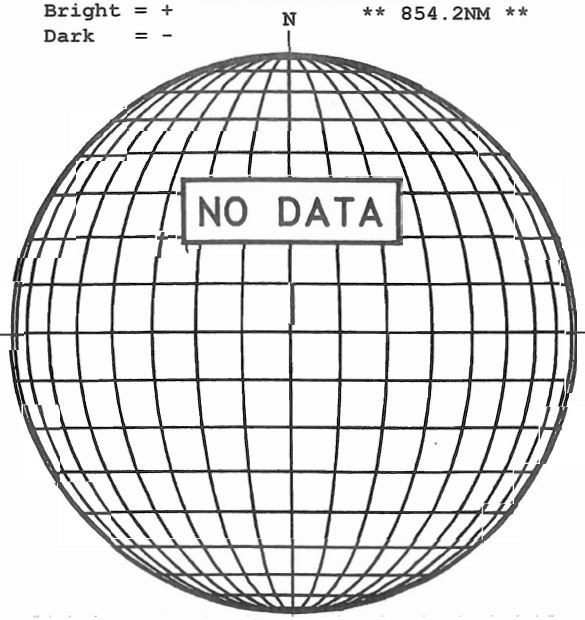
LOMNICKY PEAK CORONA (1.04 Radii)------



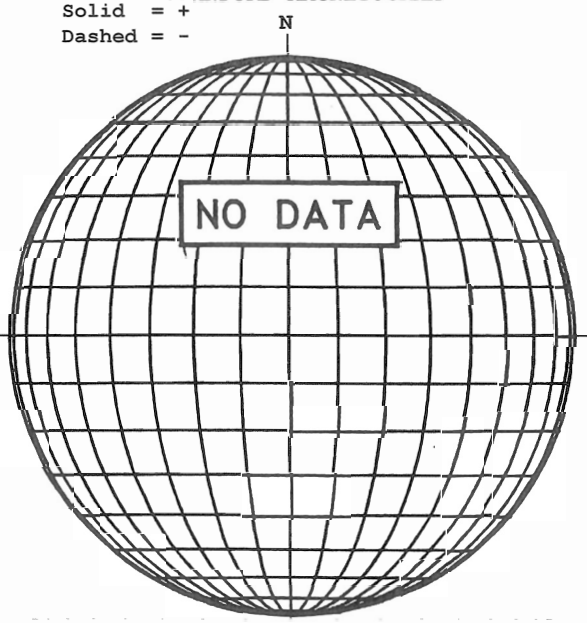
February 11, 2009 (P=-16.05, Bo=-6.65, Lo= 350.56)

Feb 09 50

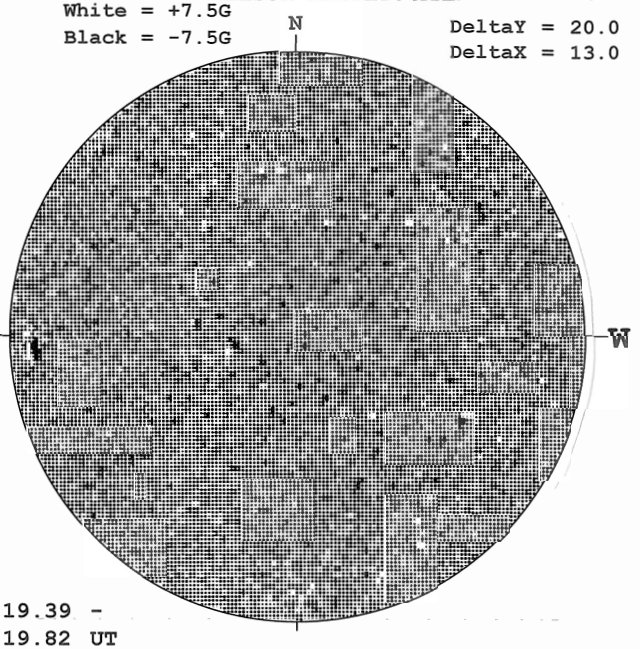
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

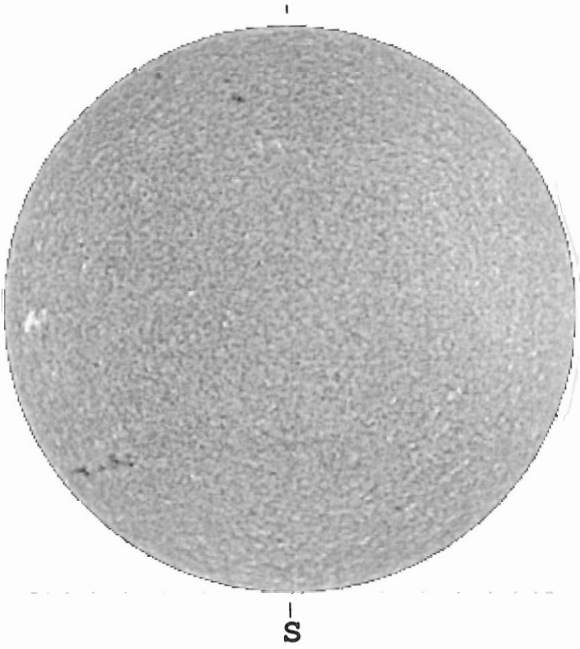


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 20.0
DeltaX = 13.0



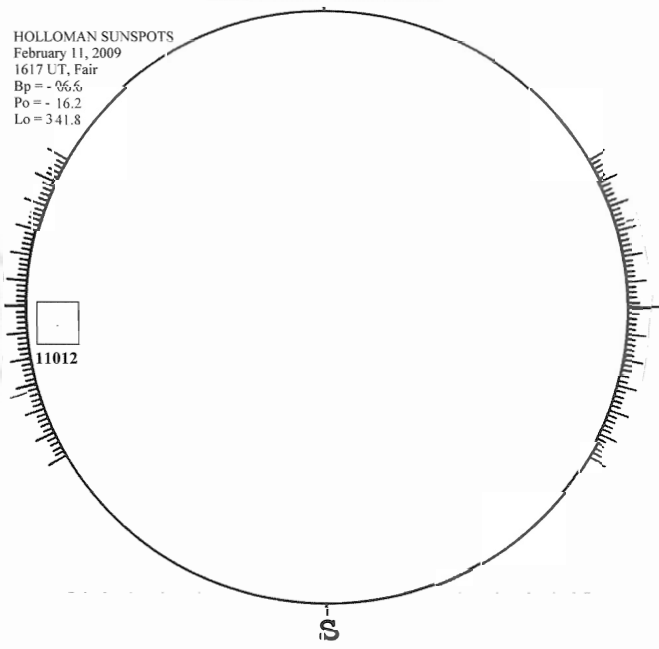
19.39 -
19.82 UT

MUANA LOA H-ALPHA



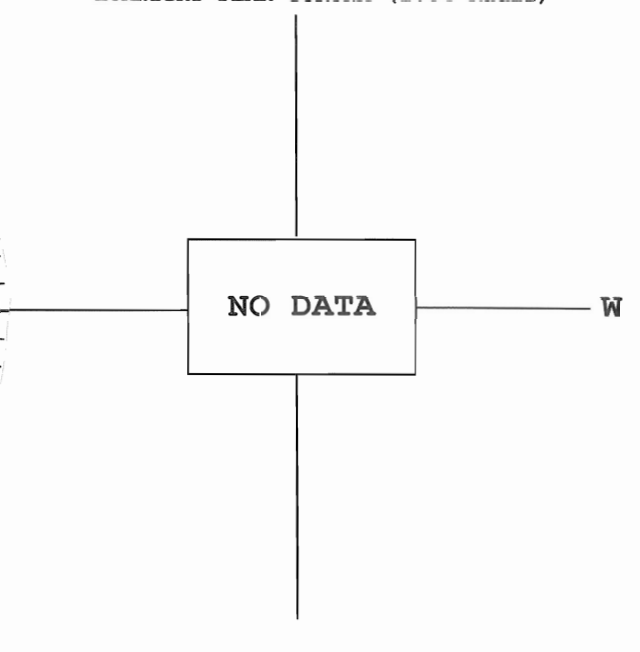
1949 UT

HOLLOMAN SUNSPOTS



1617 UT

LOMNICKY PEAK CORONA (1.04 Radii)



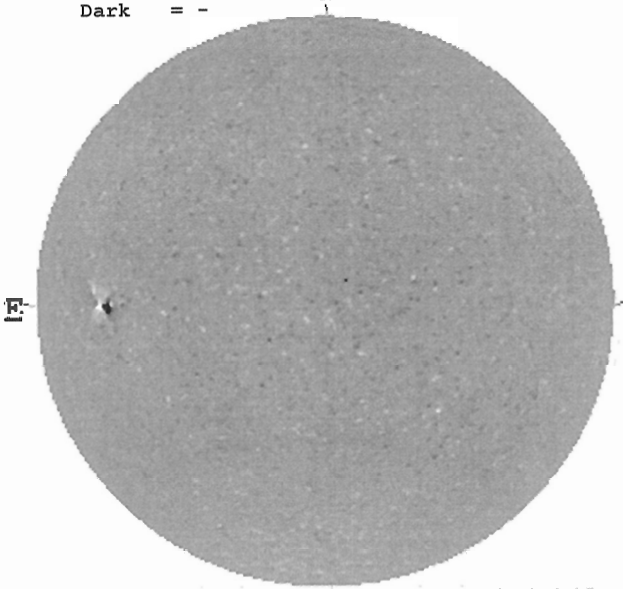
February 12, 2009 (P=-16.41, Bo=-6.70, Lo= 337.39)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

N

** 854.2NM **



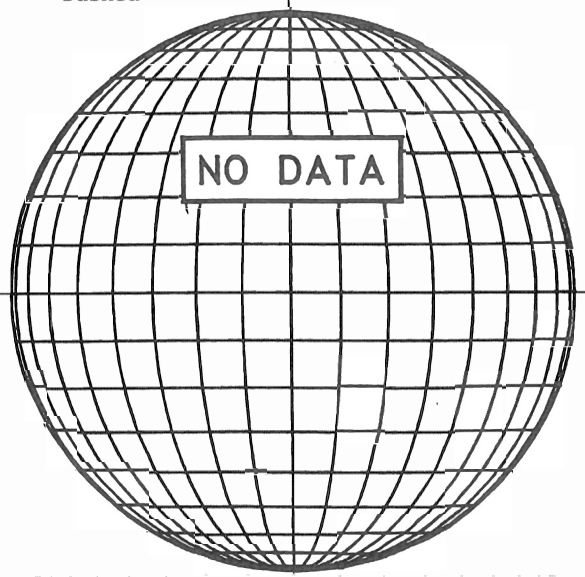
E

2038 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

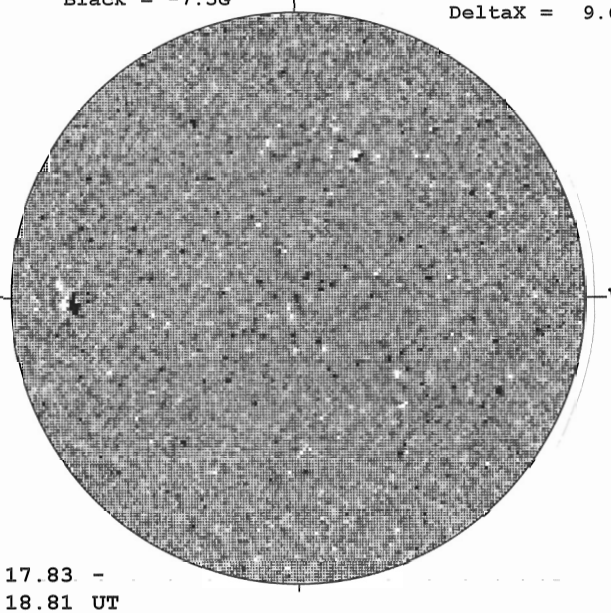


MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

N

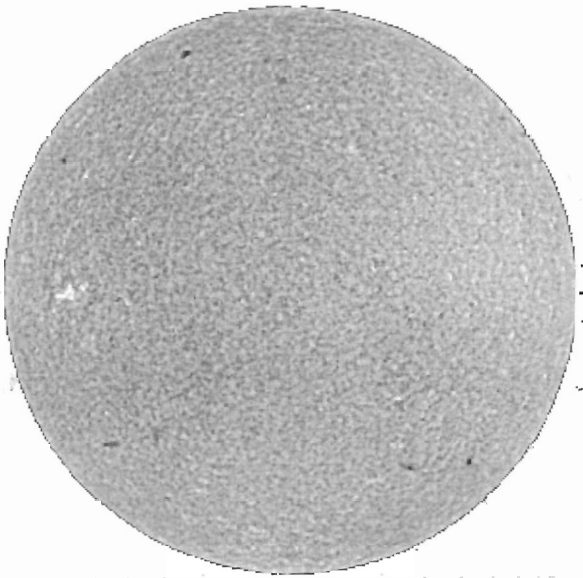
DeltaY = 13.0
DeltaX = 9.6



W

17.83 -
18.81 UT

MUANA LOA H-ALPHA

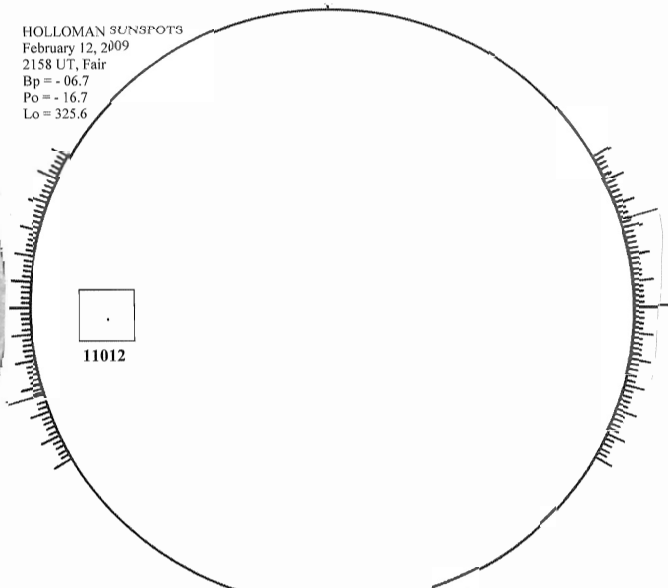


E

S

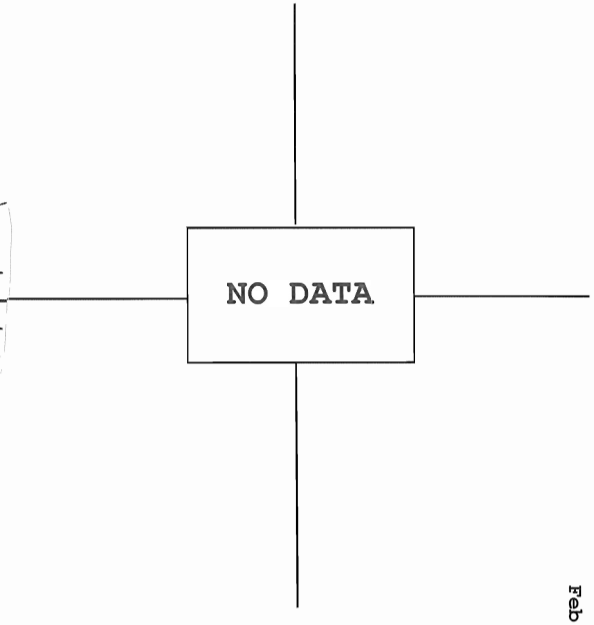
1934 UT

HOLLOMAN SUNSPOTS



2158 UT

LOMNICKY PEAK CORONA (1.04 Radii)------



51
Feb 09

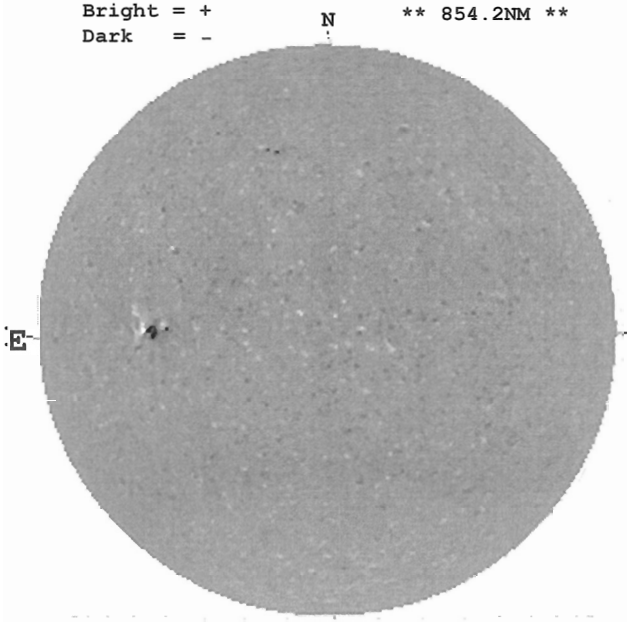
February 13, 2009 (P=-16.75, Bo=-6.75, Lo= 324.22)

Feb 09 52

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

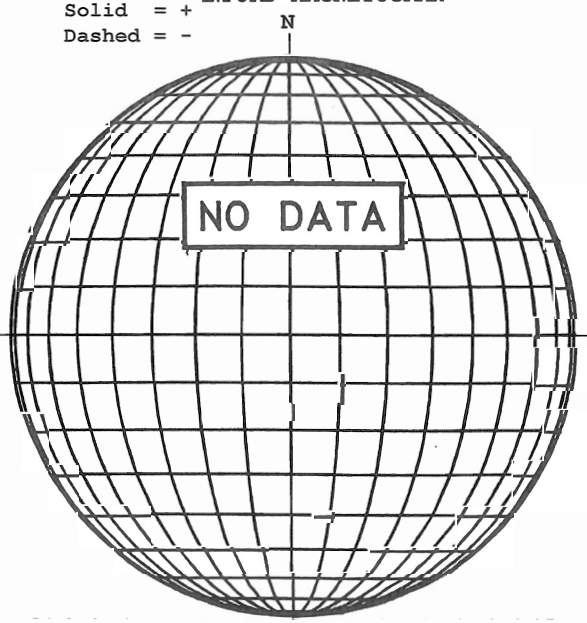
** 854.2NM **



1757 UT

STANFORD MAGNETOGRAM

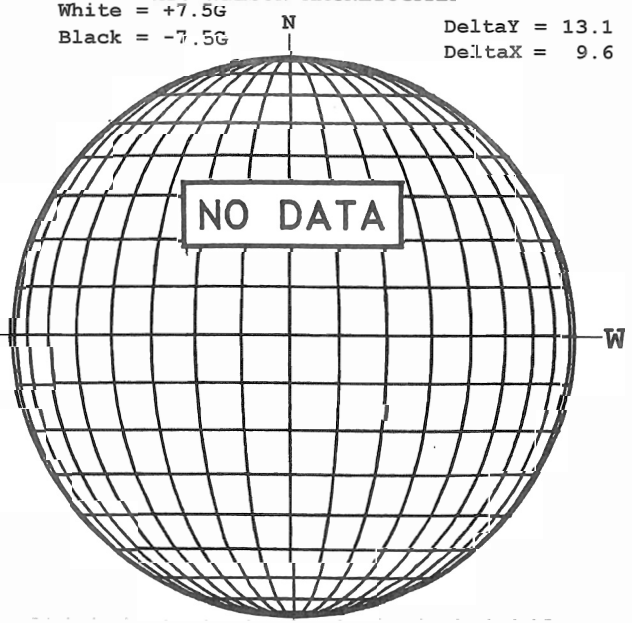
Solid = +
Dashed = -



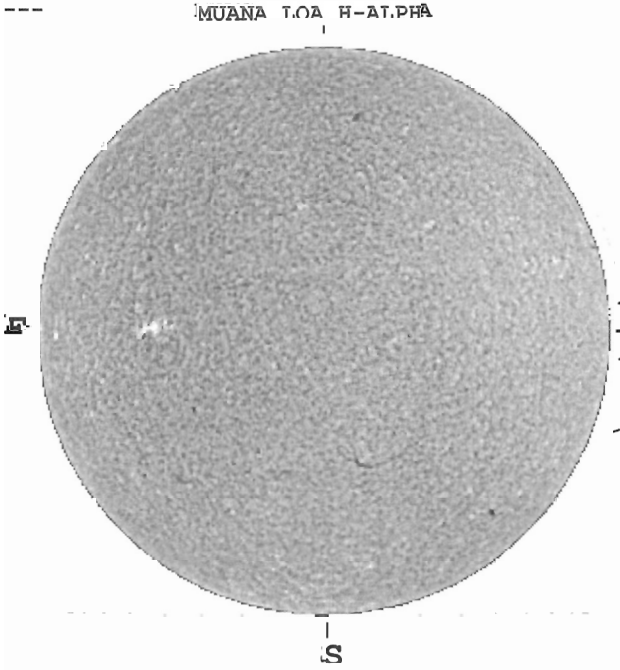
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

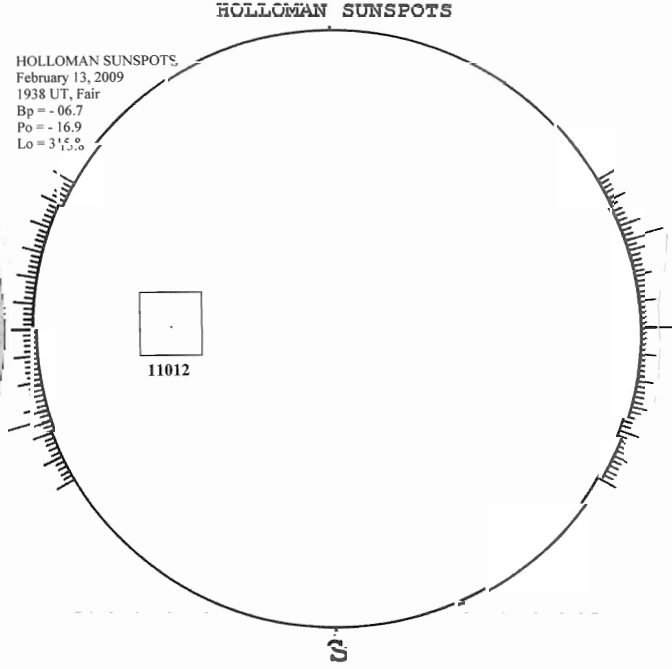


MUANA LOA H-ALPHA



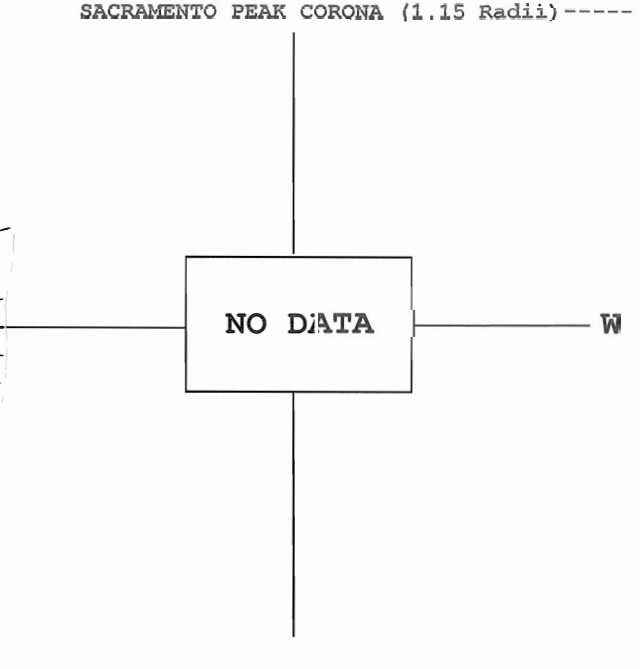
2046 UT

HOLLOMAN SUNSPOTS



1938 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

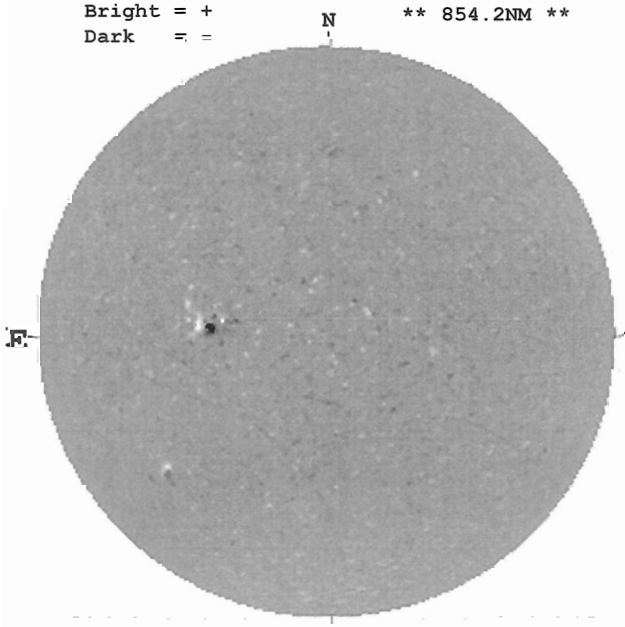


February 14, 2009 (P=-17.10, Bo=-6.79, Lo= 311.05)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

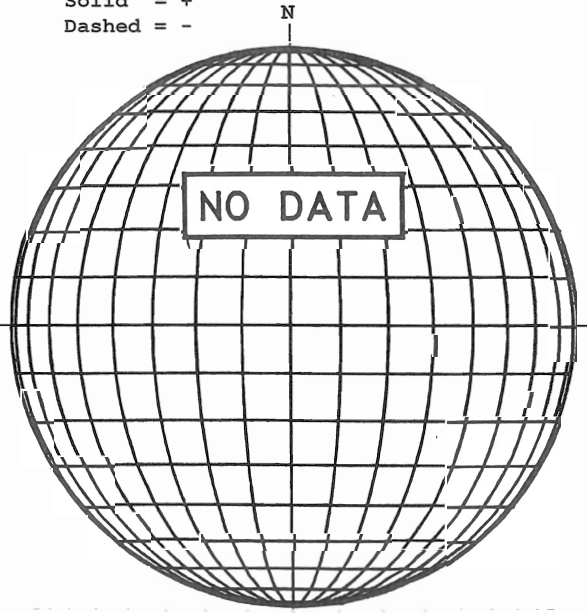
** 854.2NM **



1800 UT

STANFORD MAGNETOGRAM

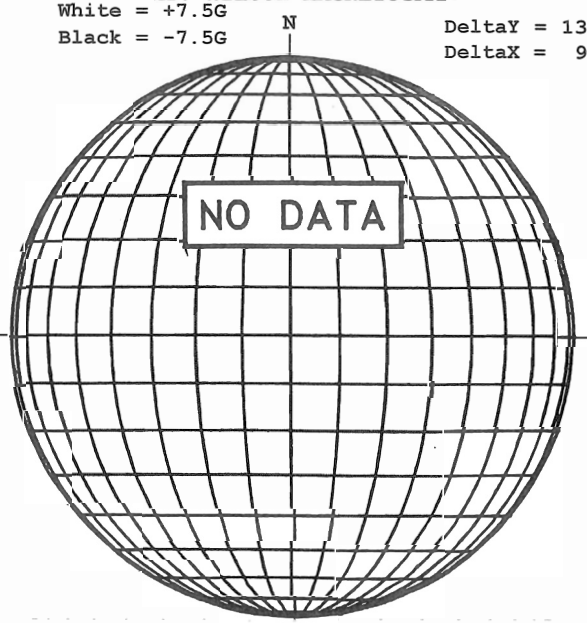
Solid = +
Dashed = -



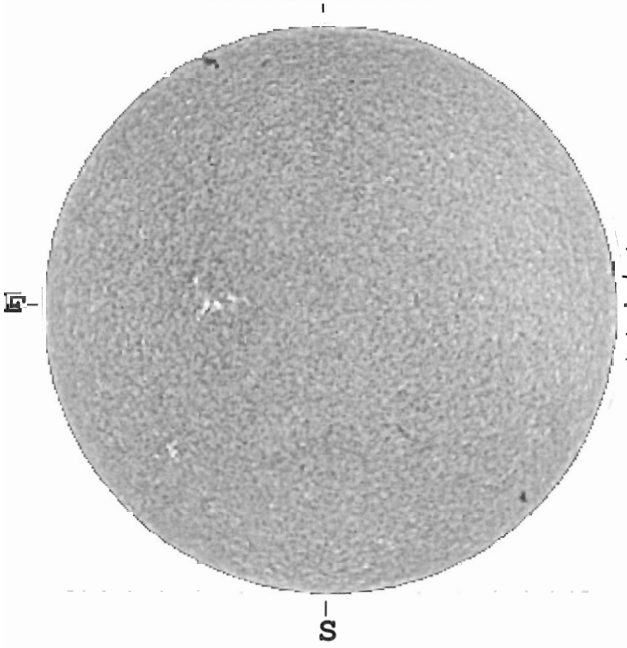
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



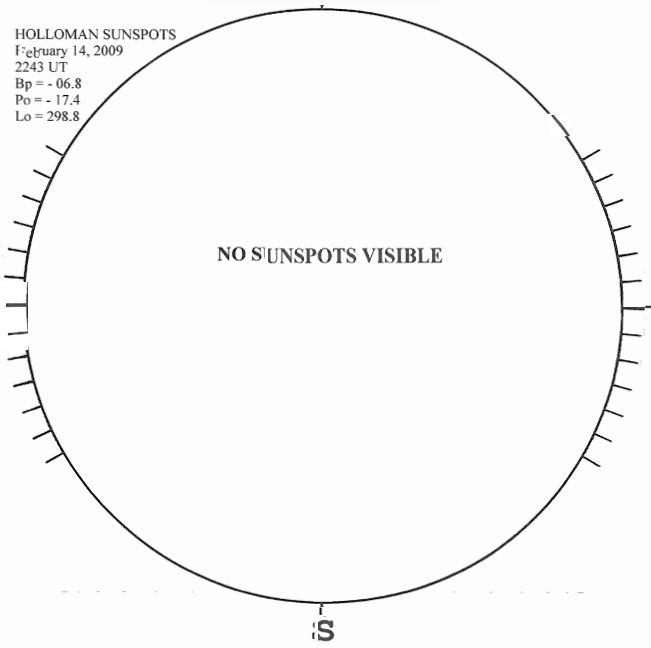
MUANA LOA H-ALPHA



1954 UT

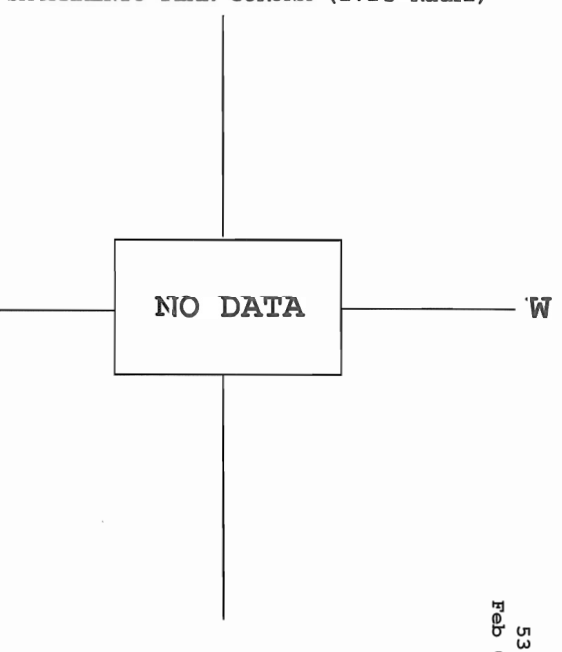
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
February 14, 2009
2243 UT
Bp = - 06.8
Po = - 17.4
Lo = 298.8



2243 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

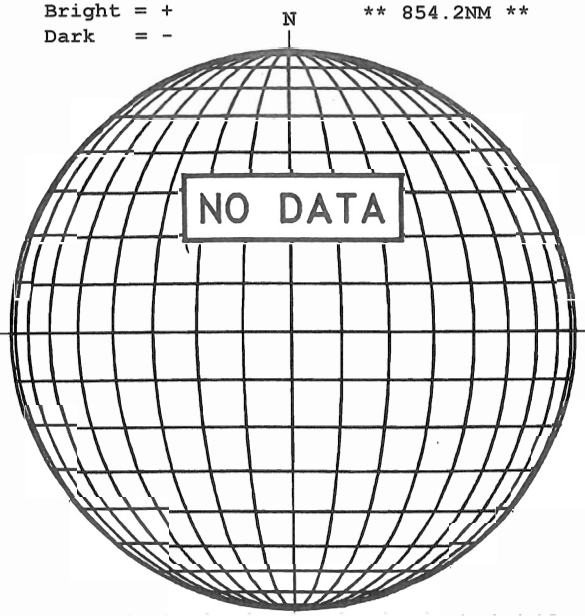


53
Feb 09

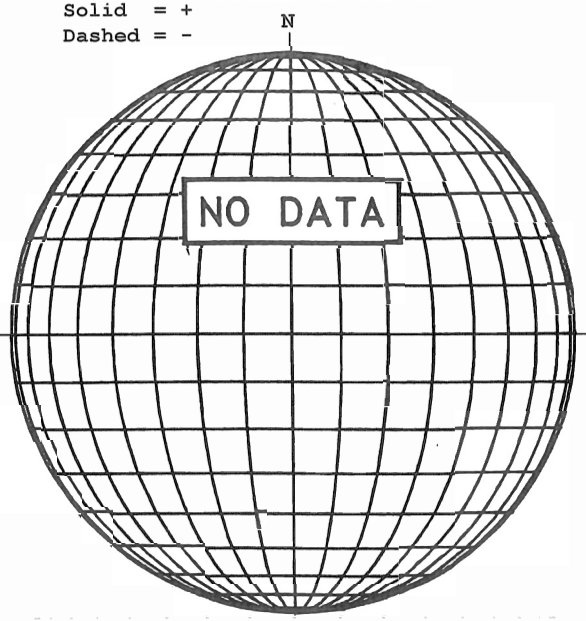
February 15, 2009 (P=-17.44, Bo=-6.84, Lo= 297.88)

Feb 09 54

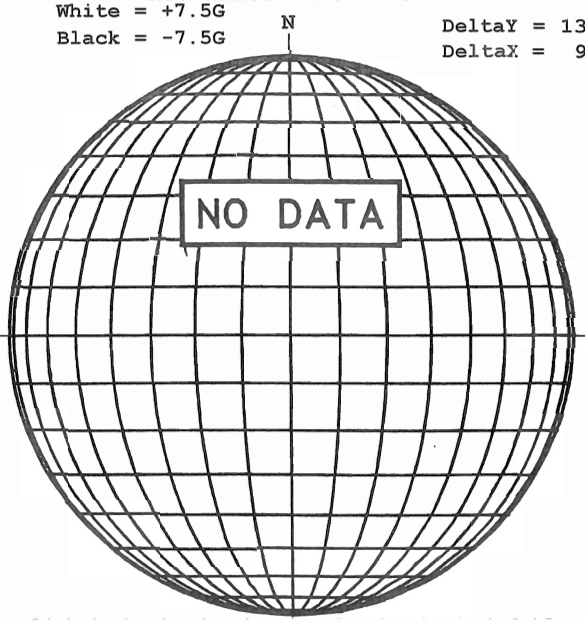
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

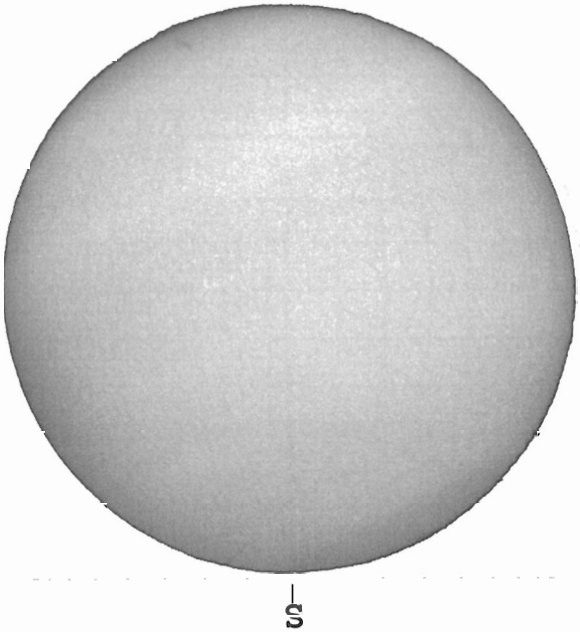


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

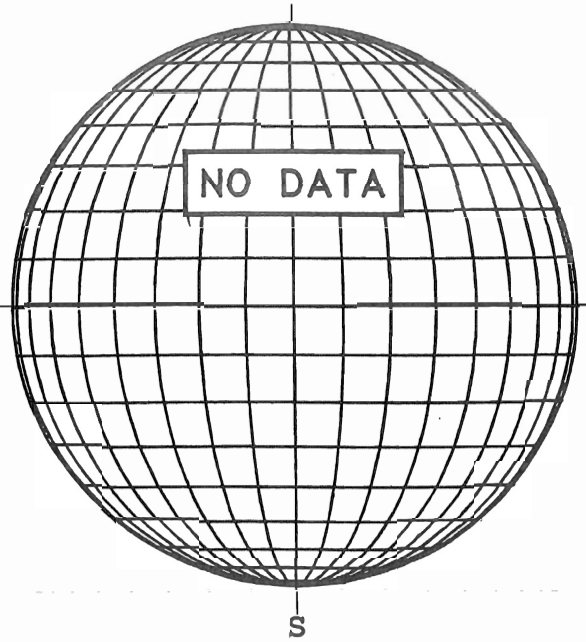


E W

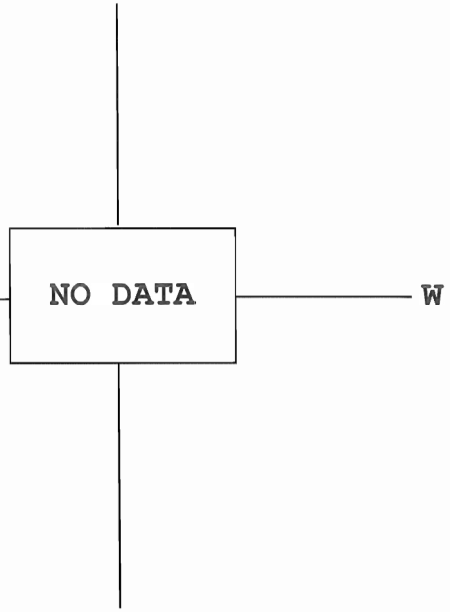
MEUDON H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)-----



E W

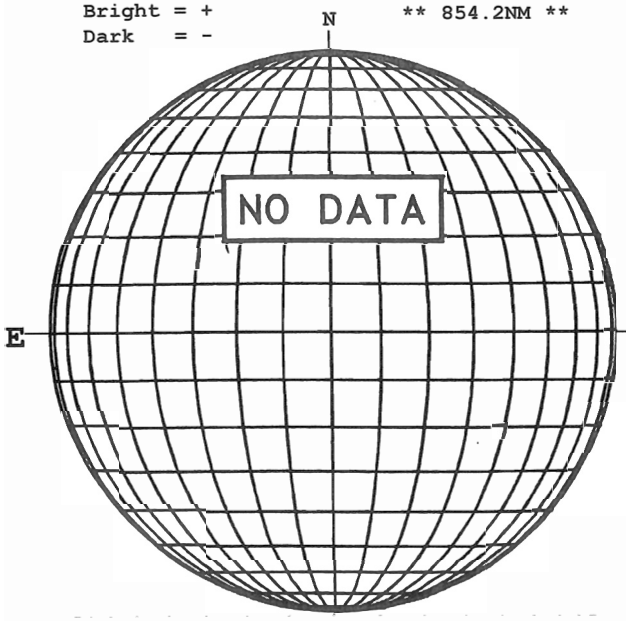
1105 UT

February 16, 2009 (P=-17.77, Bo=-6.88, Lo= 284.72)

KITT PEAK MAGNETOGRAM -- SOLIS

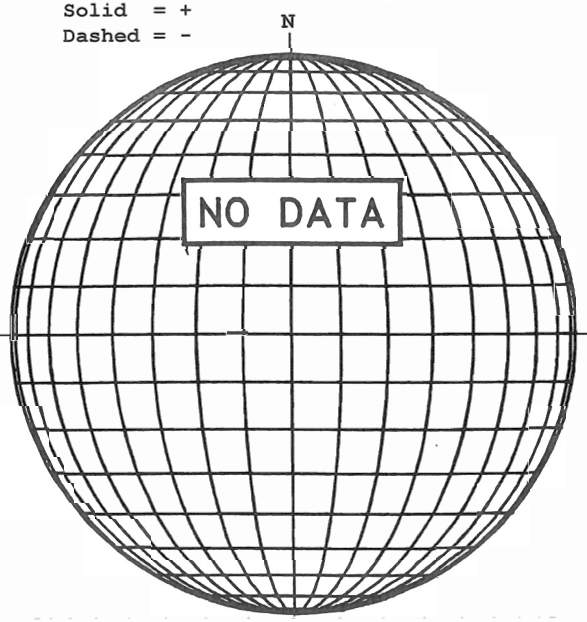
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

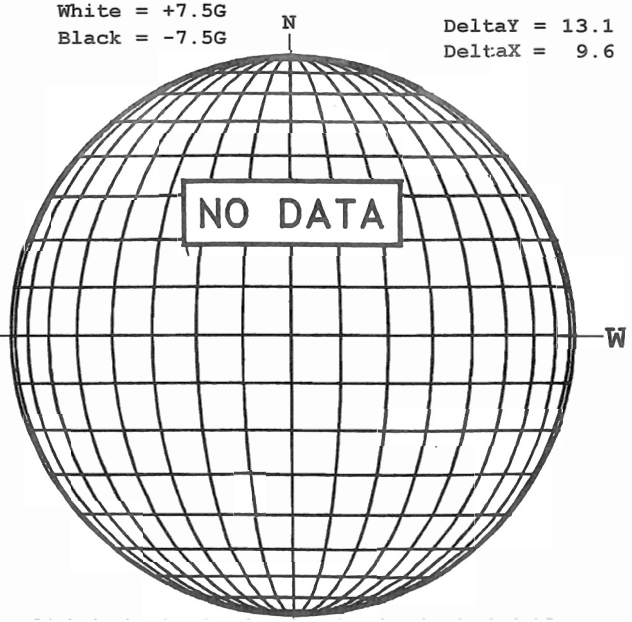
Solid = +
Dashed = -



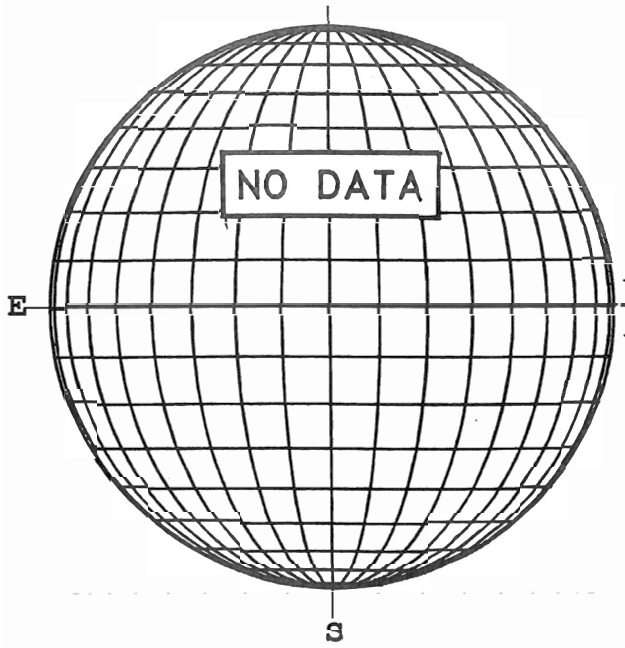
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

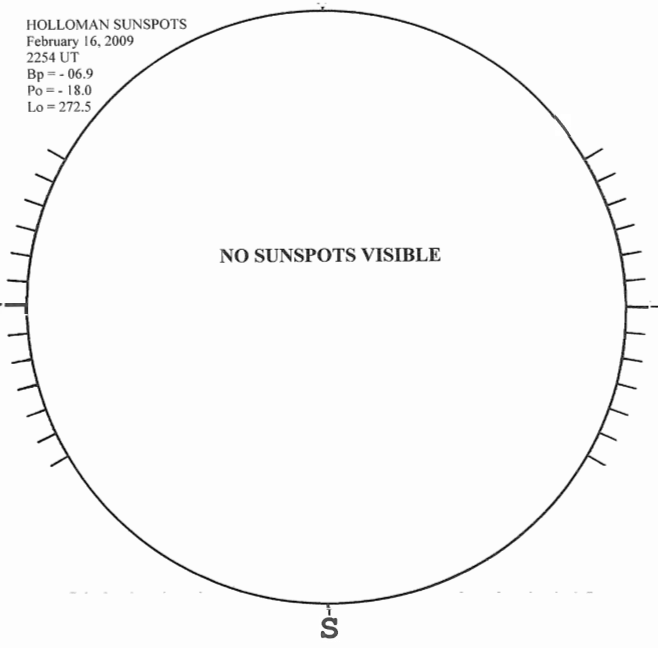


MUANA LOA H-ALPHA

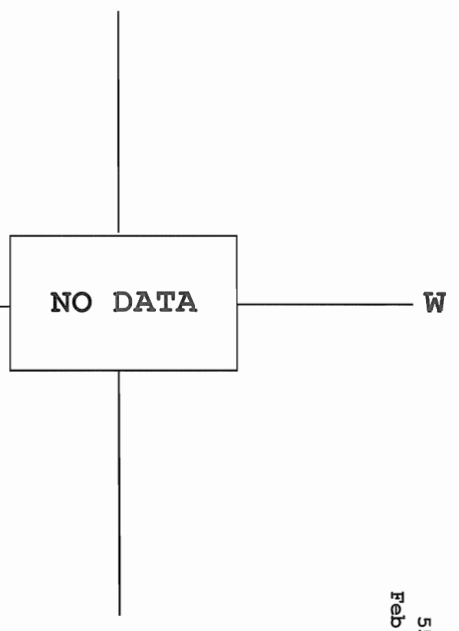


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
February 16, 2009
2254 UT
Bp = - 06.9
Po = - 18.0
Lo = 272.5



SACRAMENTO PEAK CORONA (1.15 Radii)



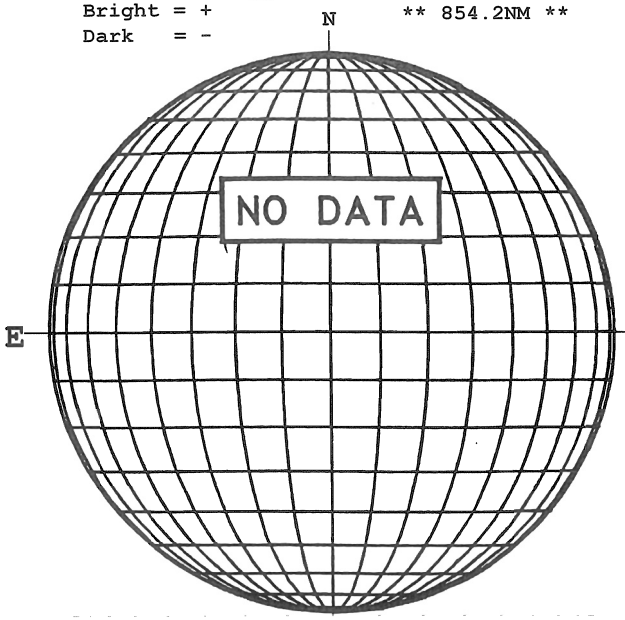
2254 UT

55
Feb 09

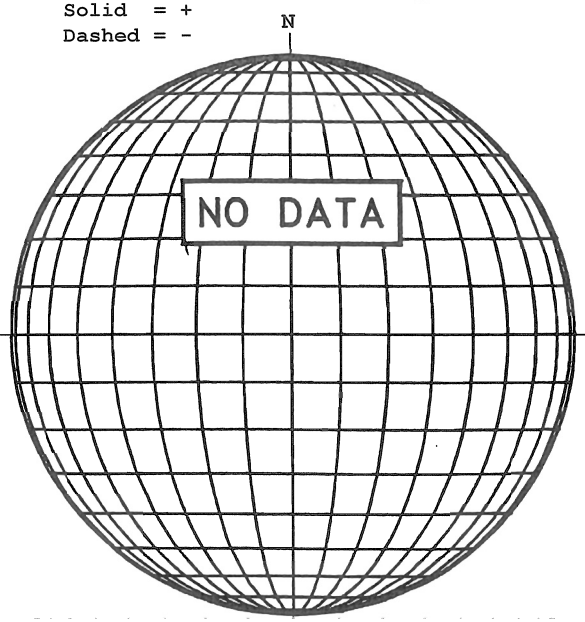
February 17, 2009 (P=-18.09, Bo=-6.92, Lo= 271.55)

Feb 09 56

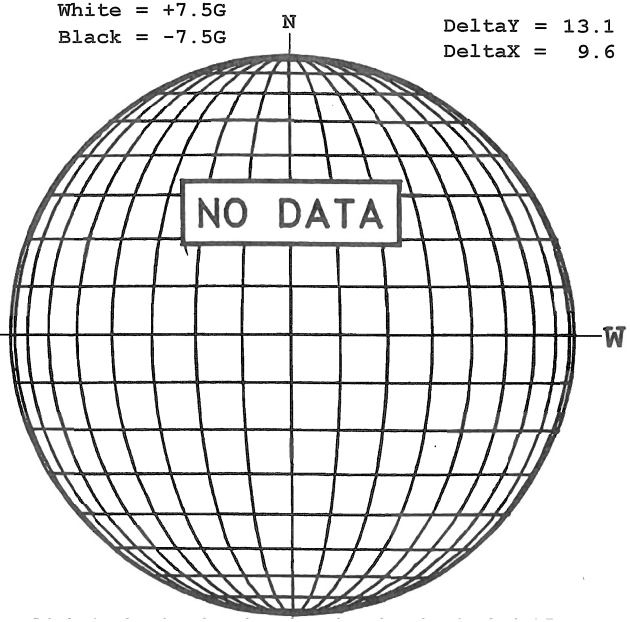
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



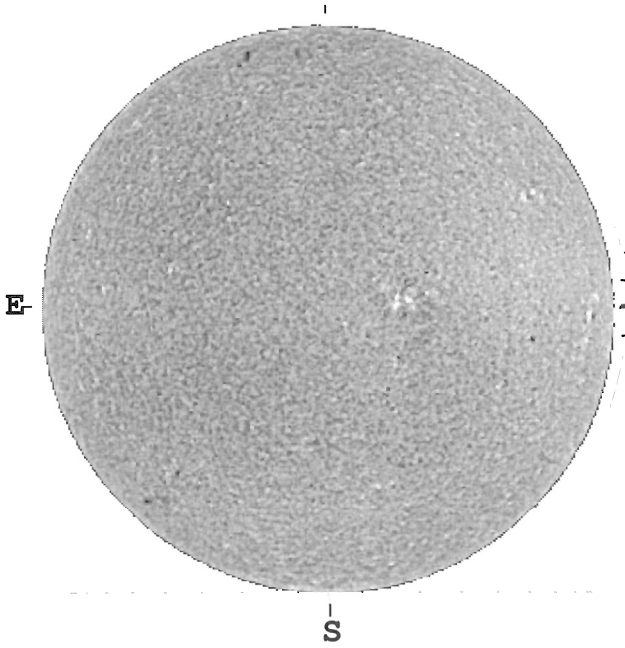
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

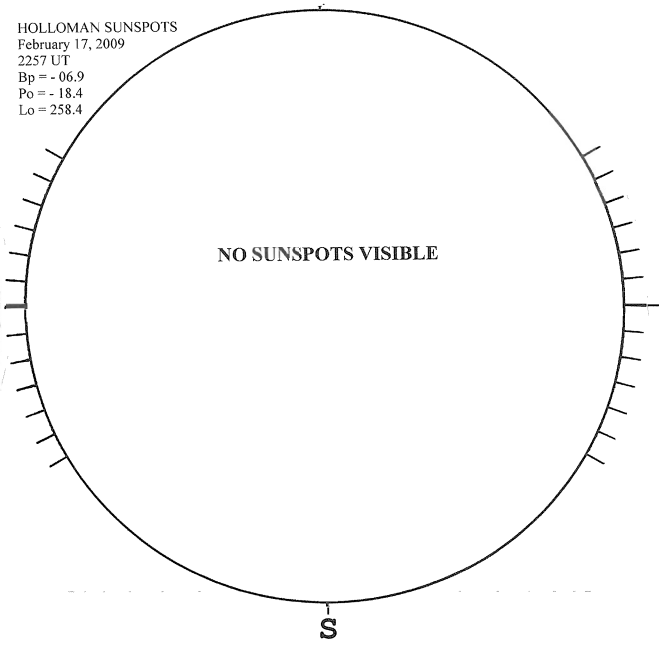


MUANA LOA H-ALPHA



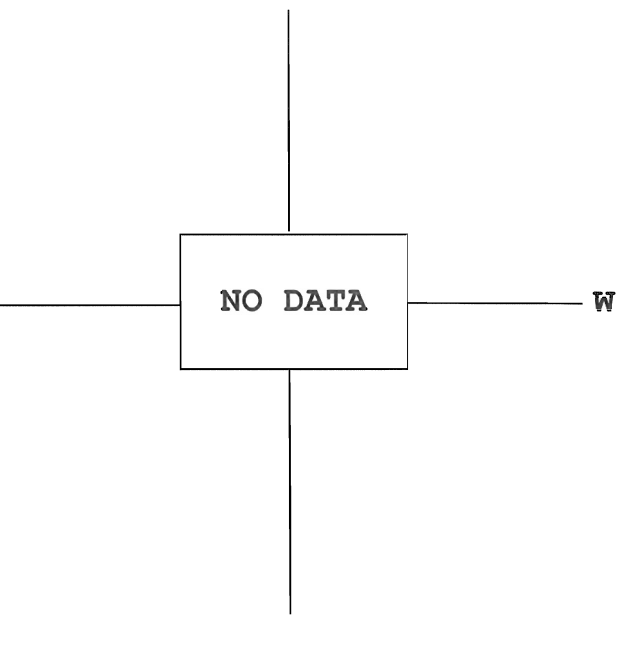
1804 UT

HOLLOMAN SUNSPOTS



2257 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

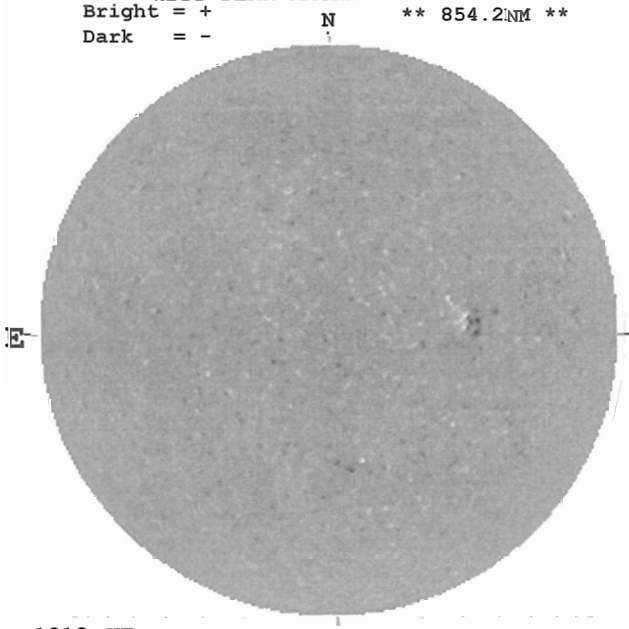


February 18, 2009 (P=-18.42, Bo=-6.95, Lo= 258.38)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

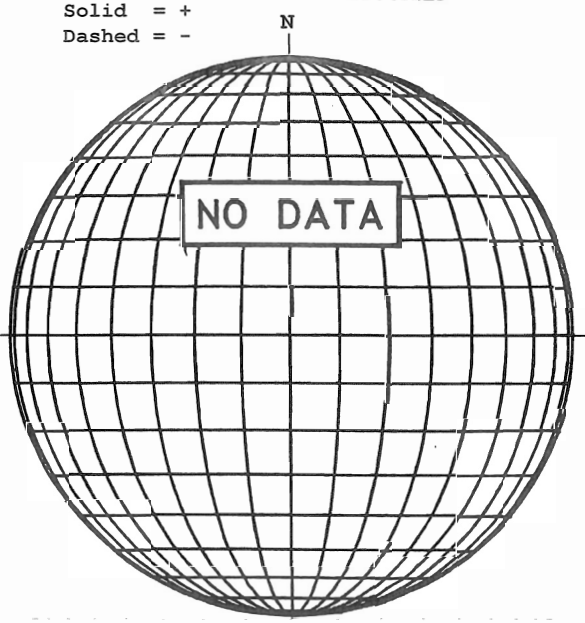
** 854.2NM **



1813 UT

STANFORD MAGNETOGRAM

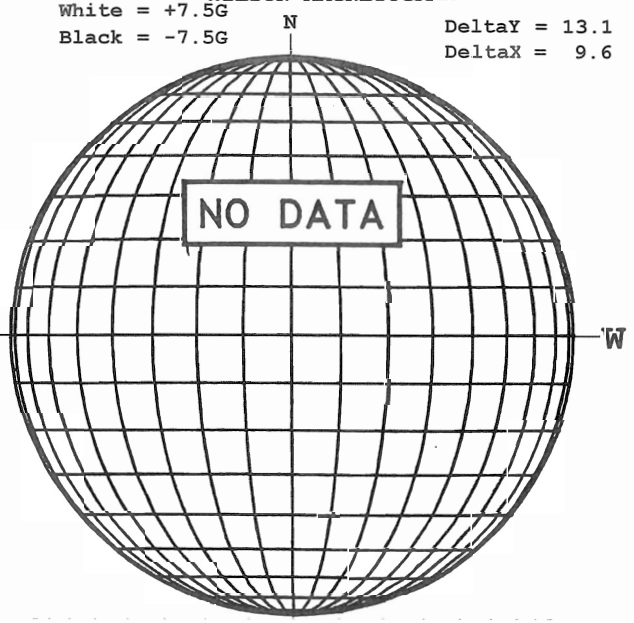
Solid = +
Dashed = -



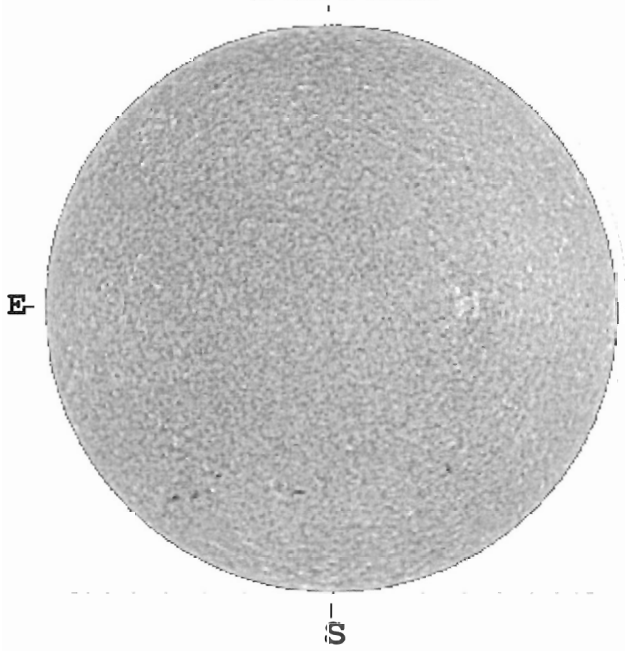
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

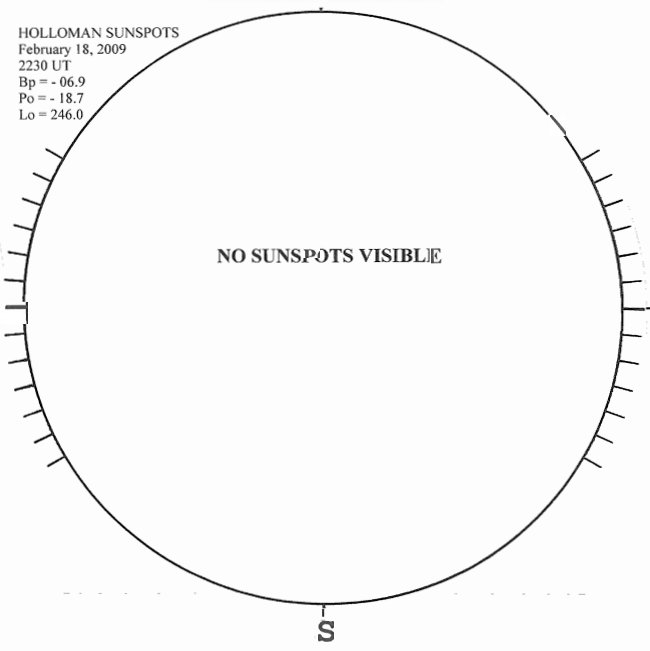


MUANA LOA H-ALPHA



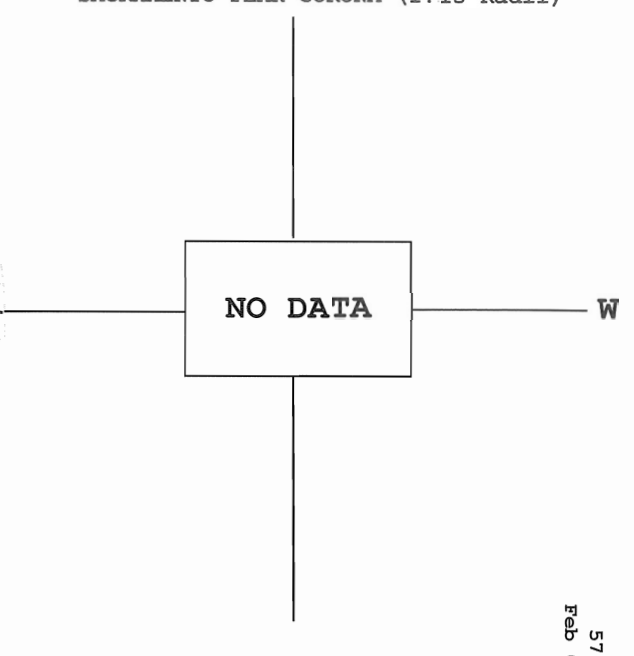
1812 UT

HOLLOMAN SUNSPOTS



2230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

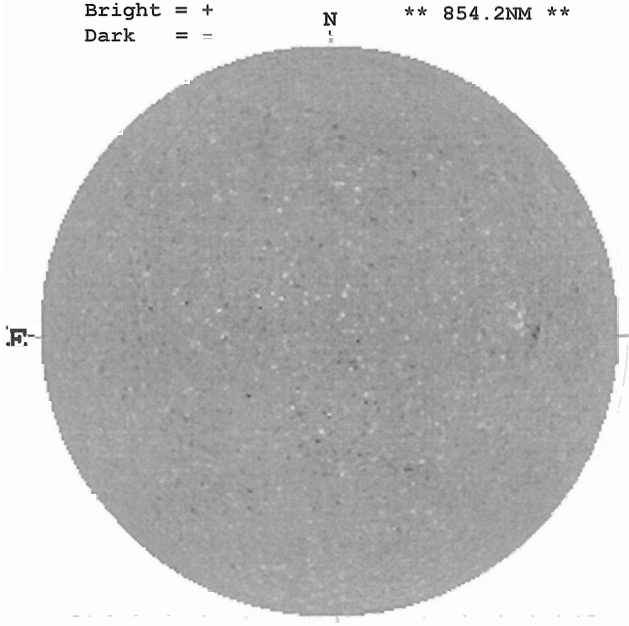


57
Feb 09

February 19, 2009 (P=-18.73, Bo=-6.99, Lo= 245.21)

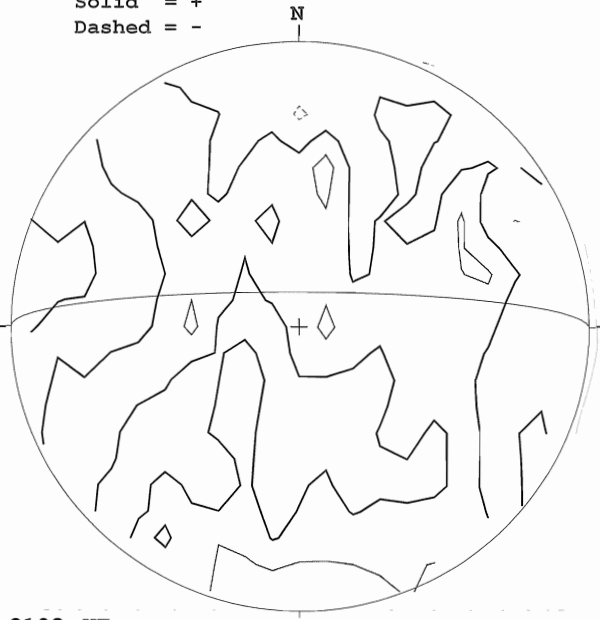
Feb 09 58

KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



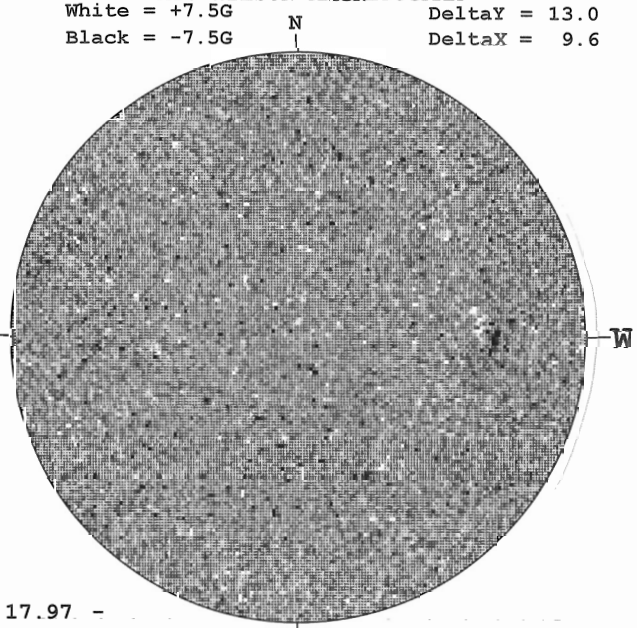
2033 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



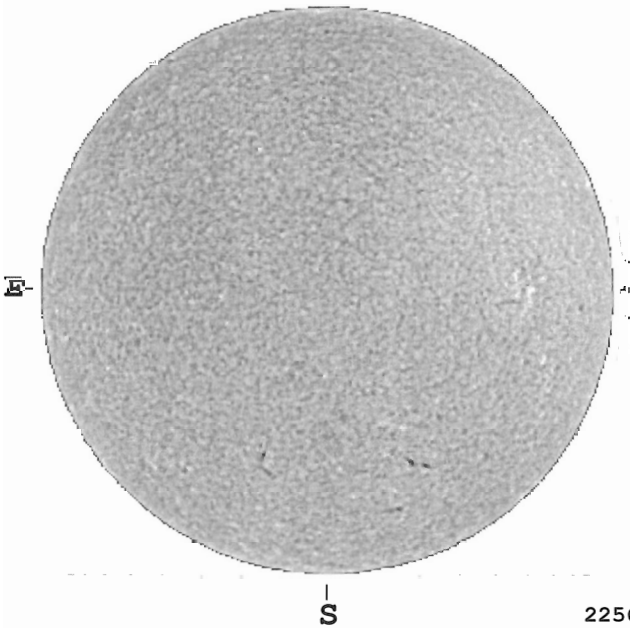
2108 UT

MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.0
DeltaX = 9.6



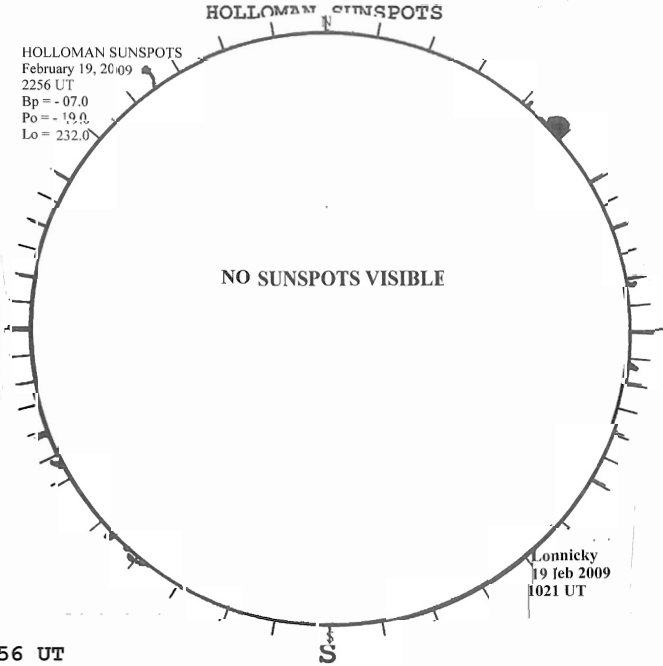
17.97 -
18.94 UT

--- MUANA LOA H-ALPHA



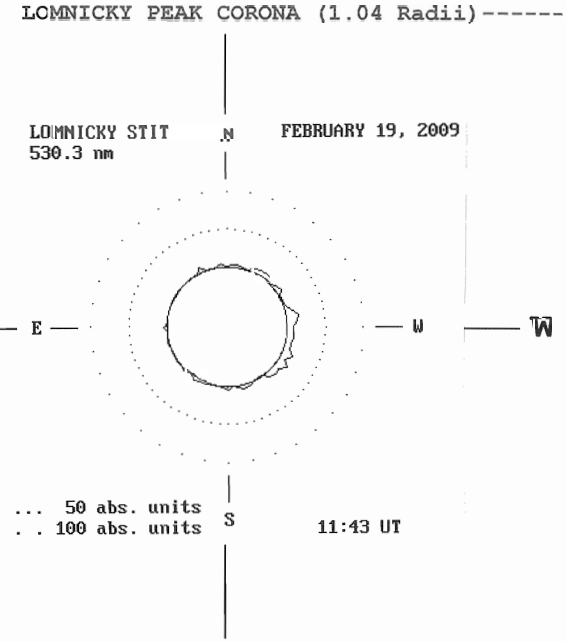
1949 UT

HOLLOMAN SUNSPOTS



2256 UT
1021 UT LOMN PROM

LOMNICKY PEAK CORONA (1.04 Radii)------

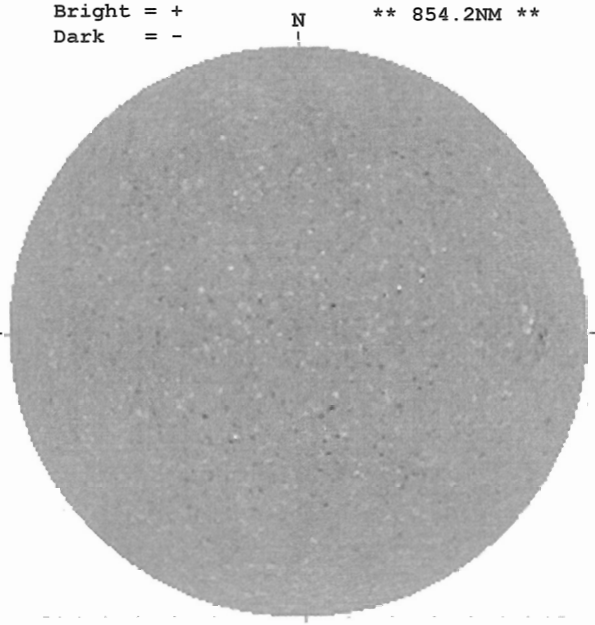


February 20, 2009 (P=-19.04, Bo=-7.02, Lo= 232.04)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

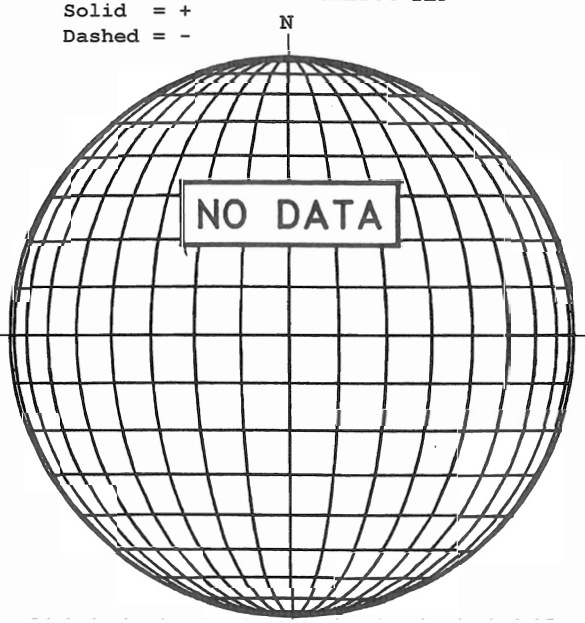
** 854.2NM **



1848 UT

STANFORD MAGNETOGRAM

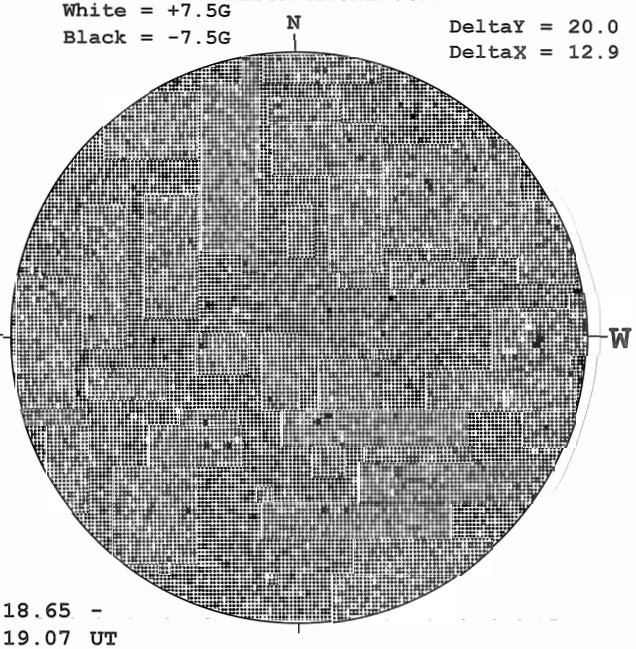
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

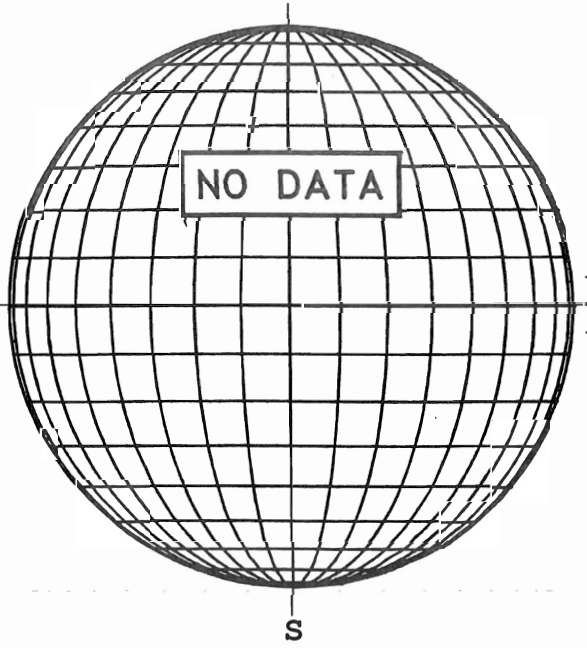
White = +7.5G
Black = -7.5G

DeltaY = 20.0
DeltaX = 12.9

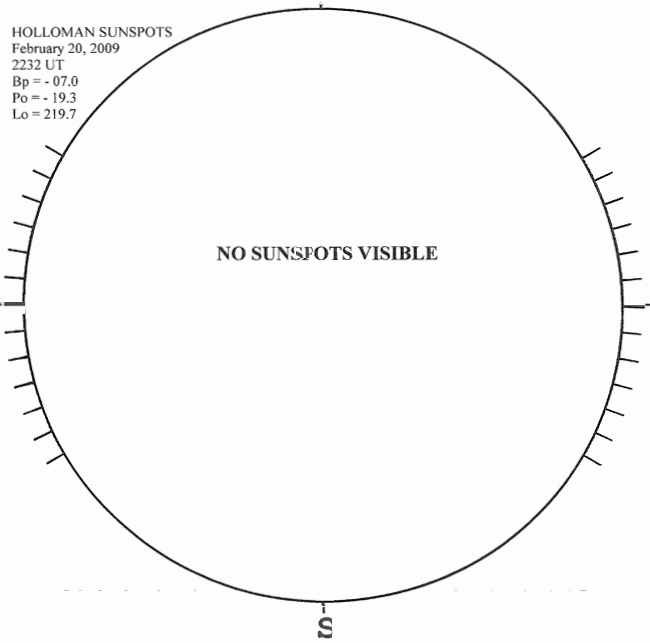


18.65 -
19.07 UT

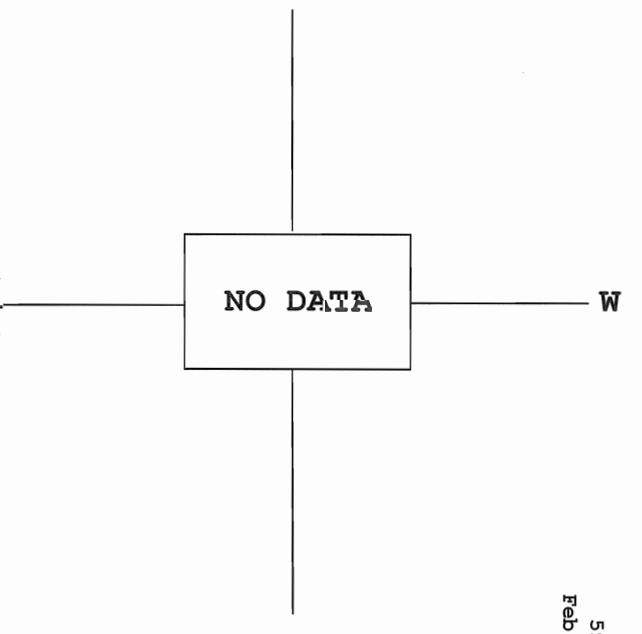
--- MUANA LOA H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)-----



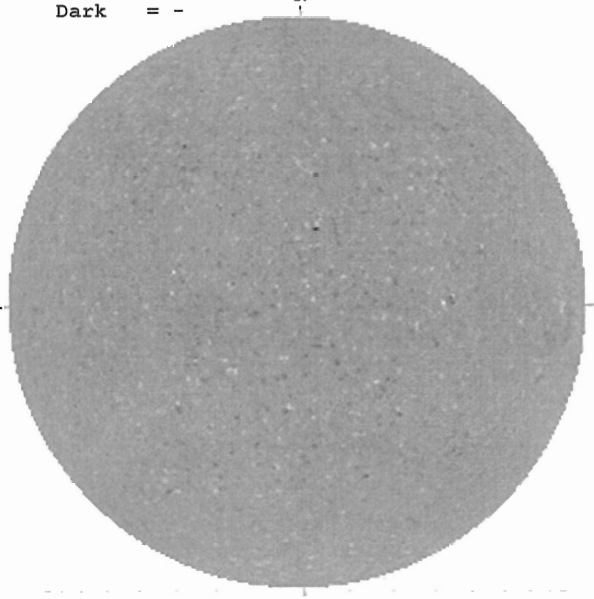
2232 UT

59
Feb 09

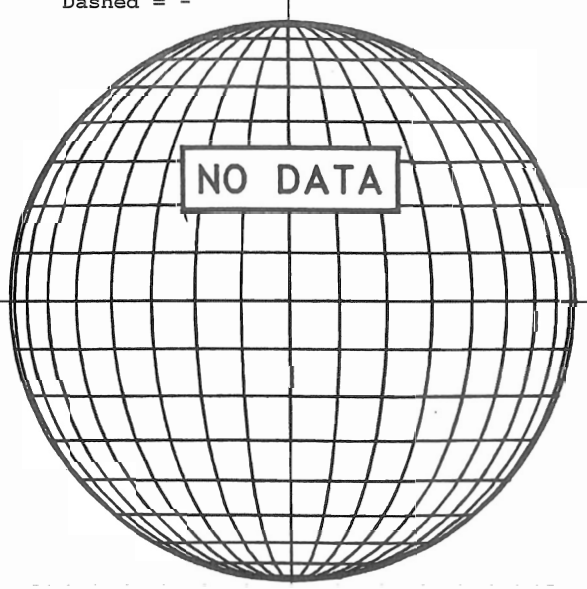
February 21, 2009 (P=-19.34, Bo=-7.05, Lo= 218.87)

Feb 09 60

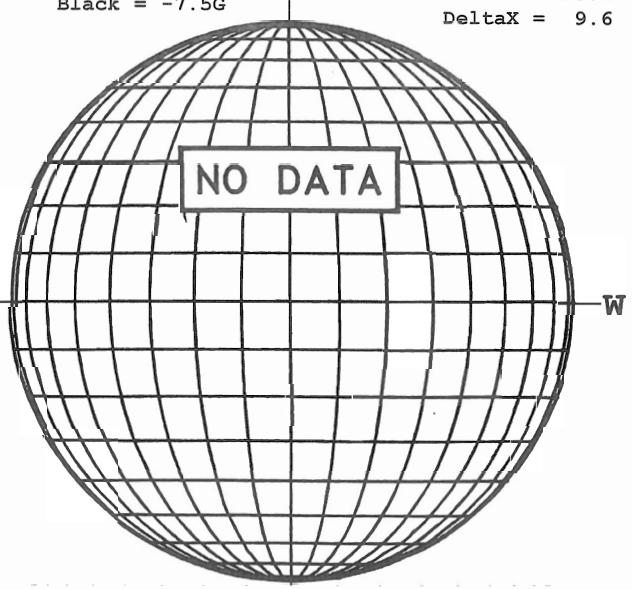
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



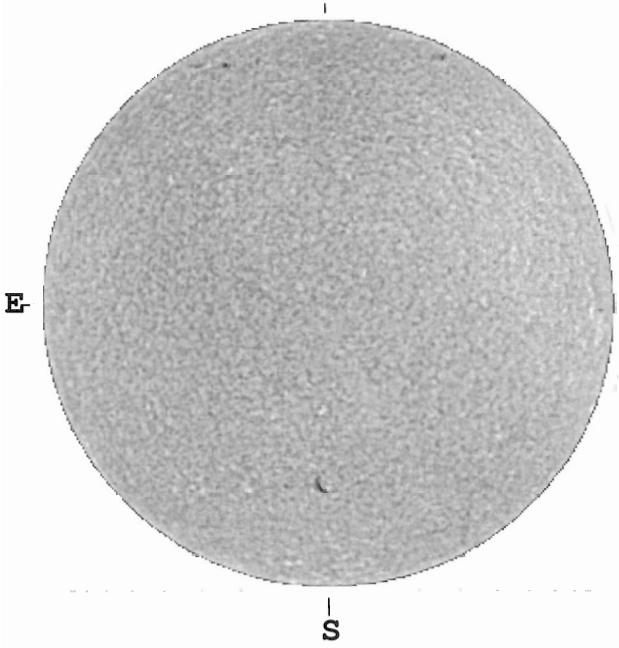
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



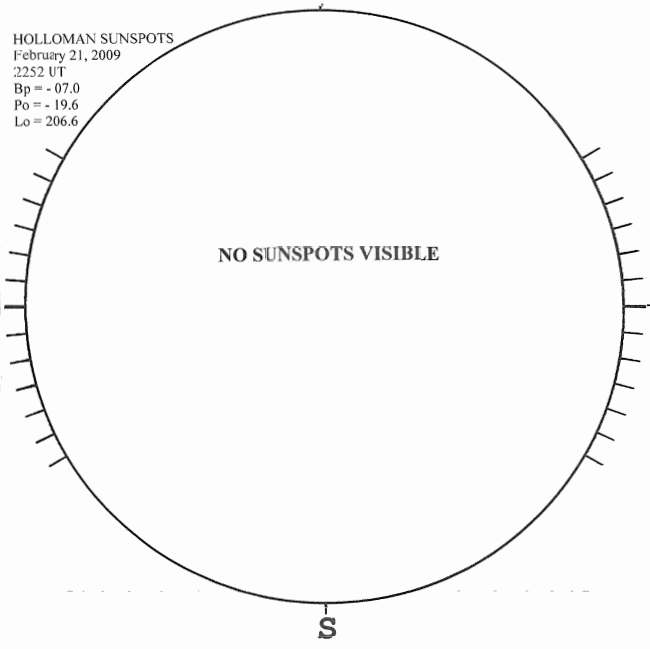
MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



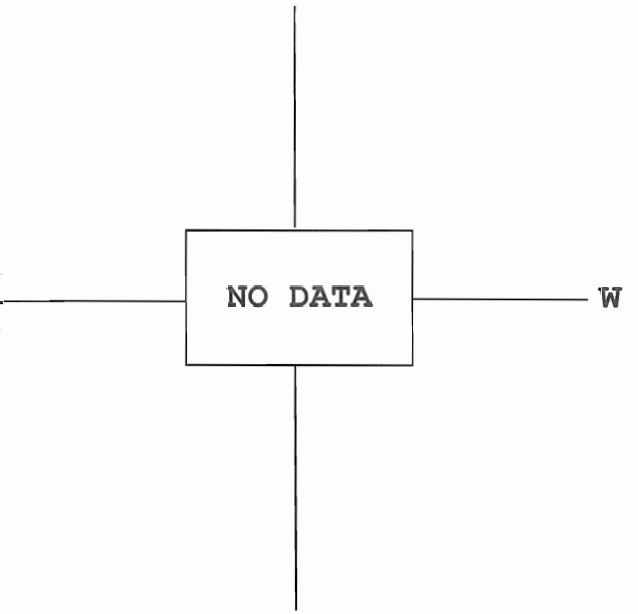
MUANA LOA H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)-----

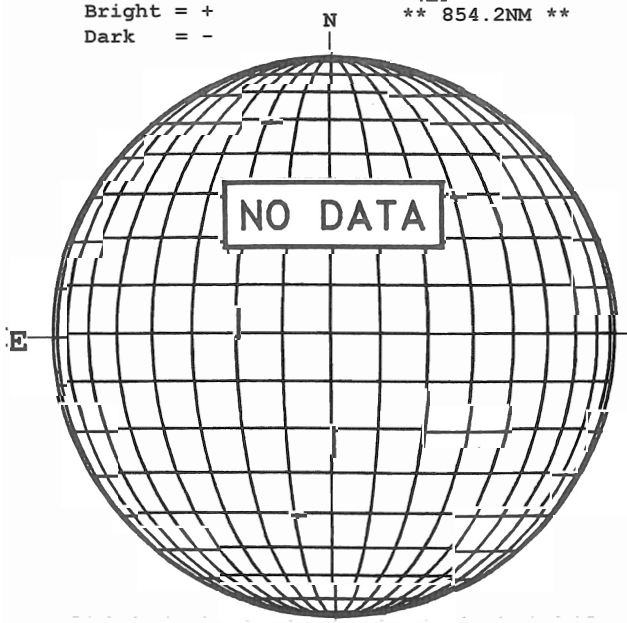


February 22, 2009 (P=-19.64, Bo=-7.08, Lo= 205.70)

KITT PEAK MAGNETOGRAM -- SOLIS

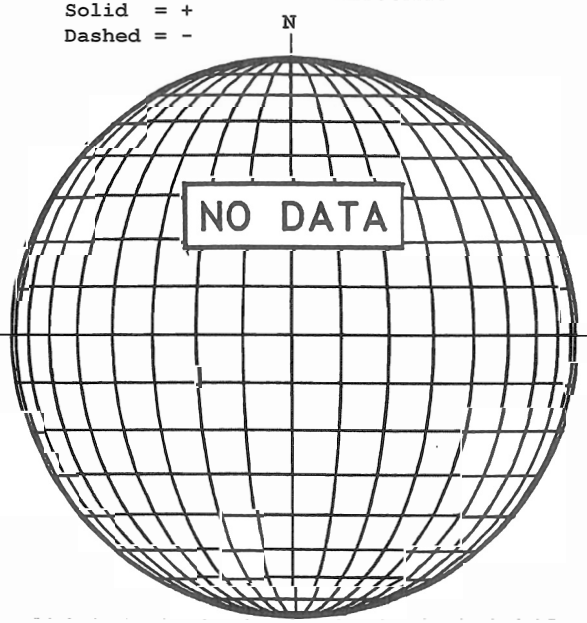
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

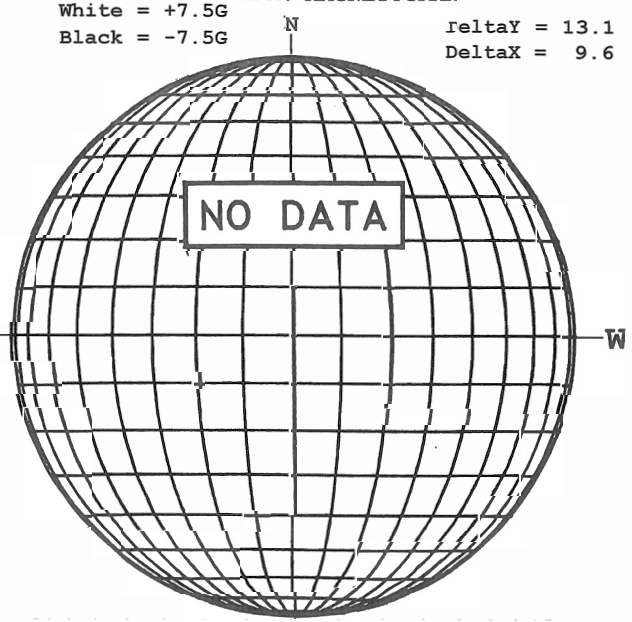
Solid = +
Dashed = -



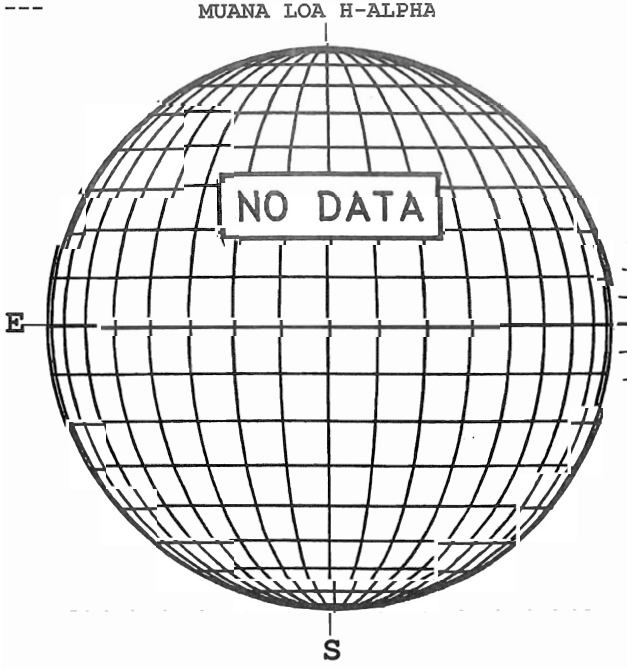
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

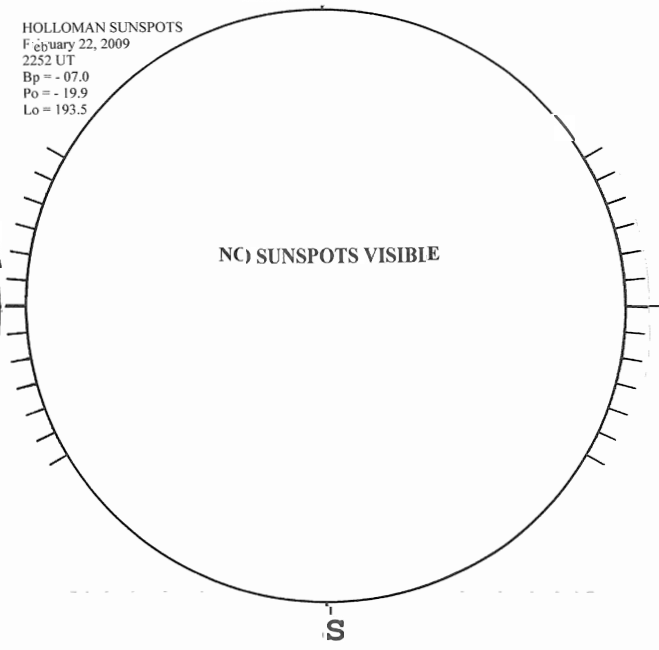


MUANA LOA H-ALPHA

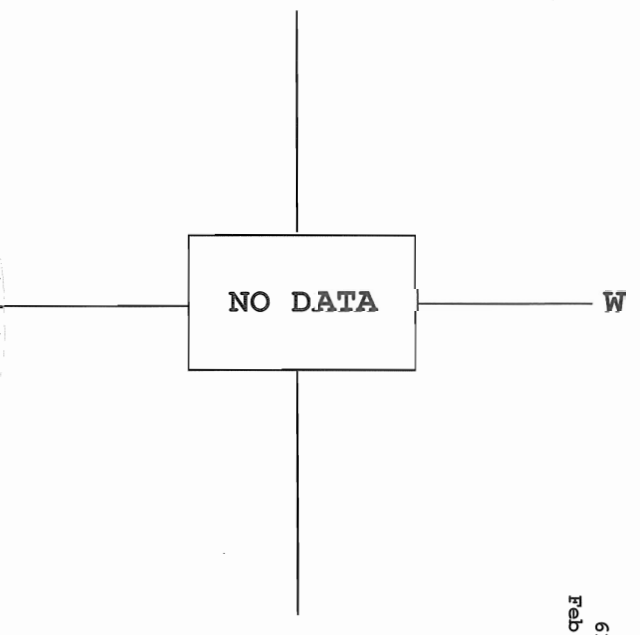


HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
February 22, 2009
2252 UT
Bp = - 07.0
Po = - 19.9
Lo = 193.5



SACRAMENTO PEAK CORONA (1.15 Radii)-----



2252 UT

61
Feb 09

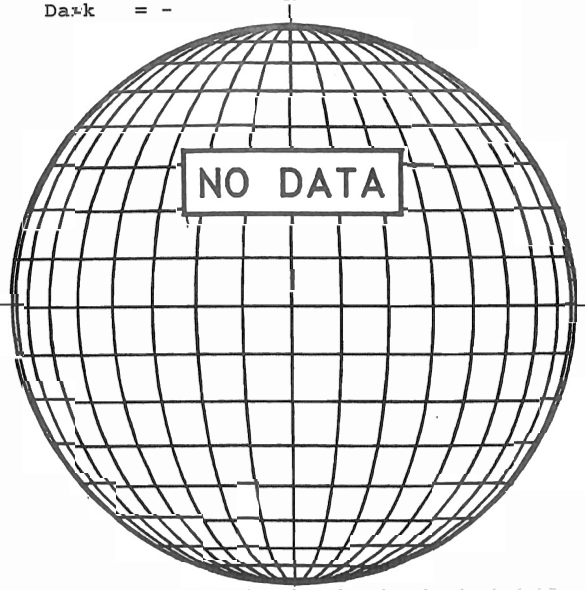
February 23, 2009 (P=-19.93, Bo=-7.11, Lo= 192.53)

Feb 09 62

KITT PEAK MAGNETOGRAM -- SOLIS

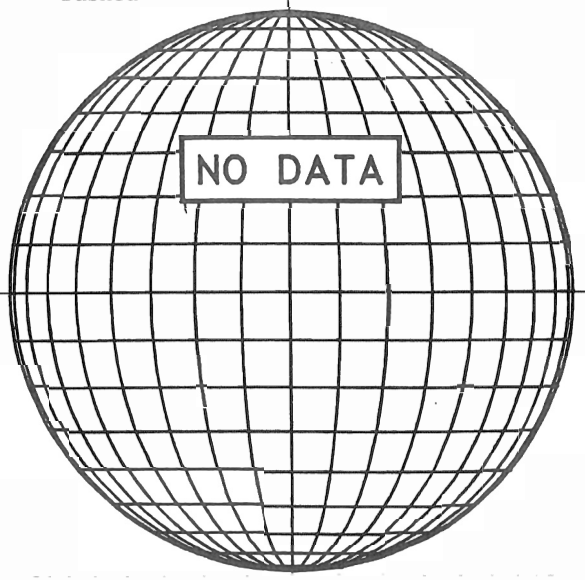
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

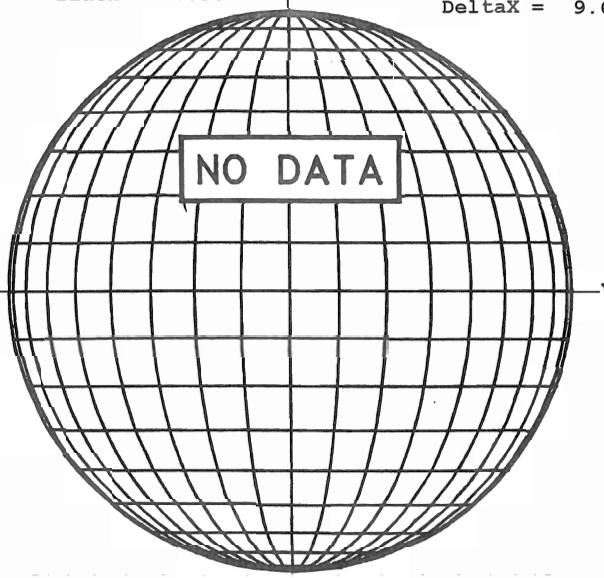
Solid = +
Dashed = -



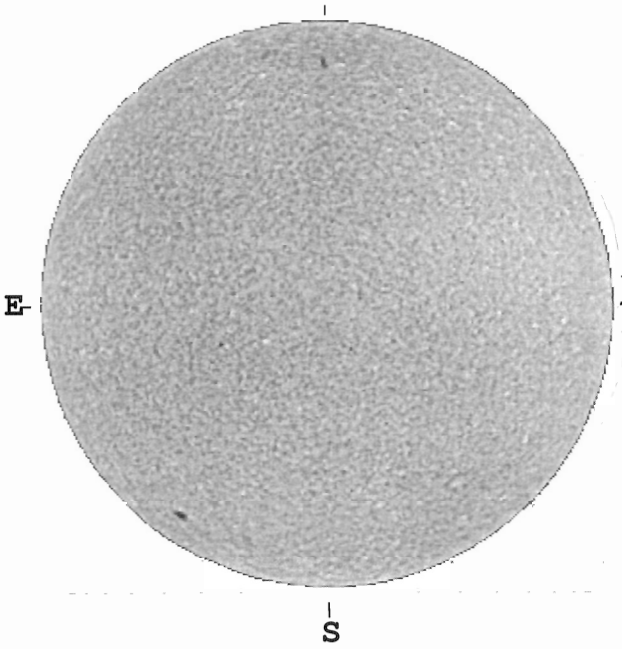
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

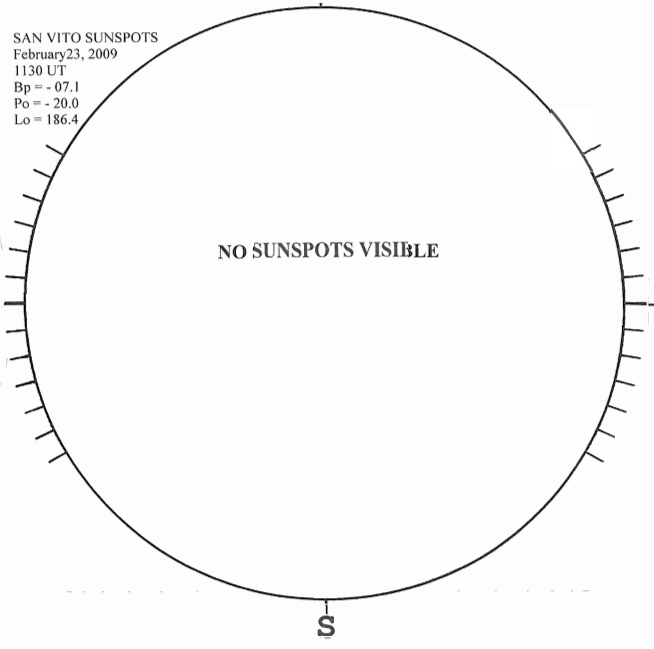


MUANA LOA H-ALPHA



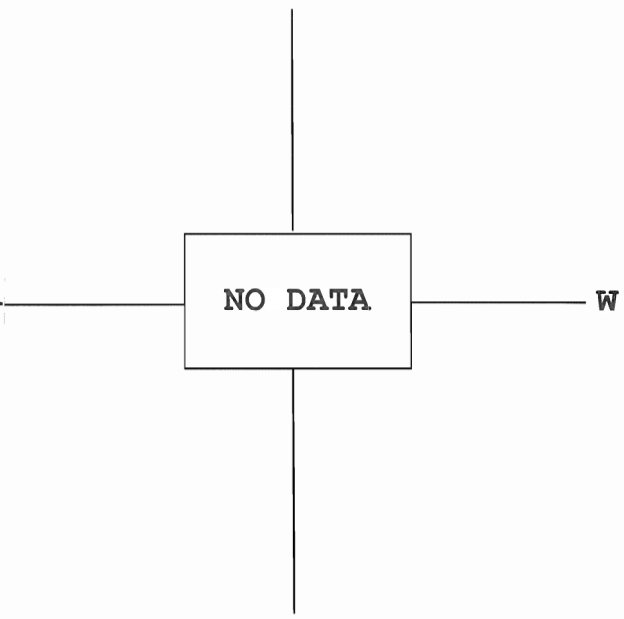
1757 UT

SAN VITO SUNSPOTS



1130 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

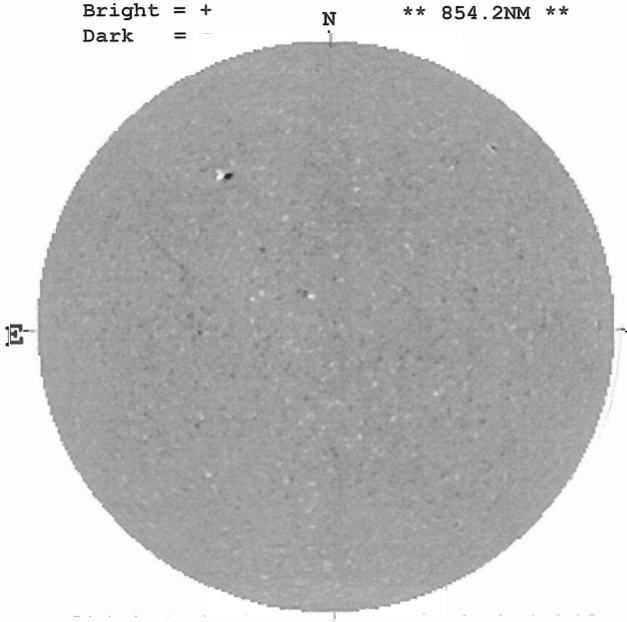


February 24, 2009 (P=-20.22, Bo=-7.13, Lo= 179.36)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

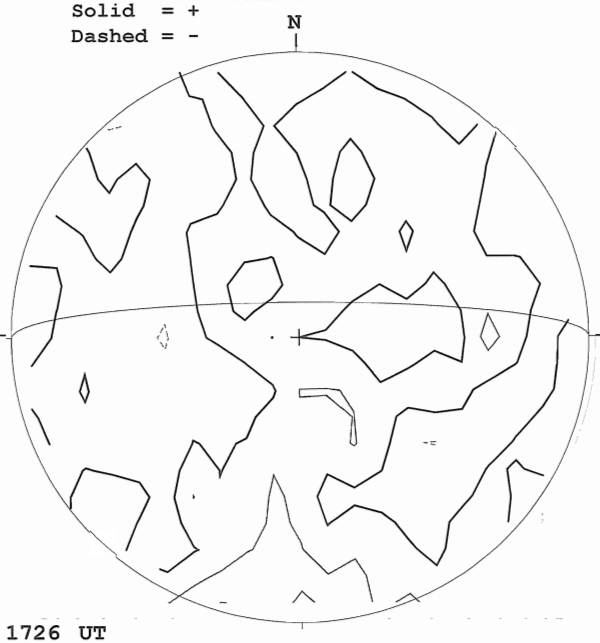
** 854.2NM **



1852 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

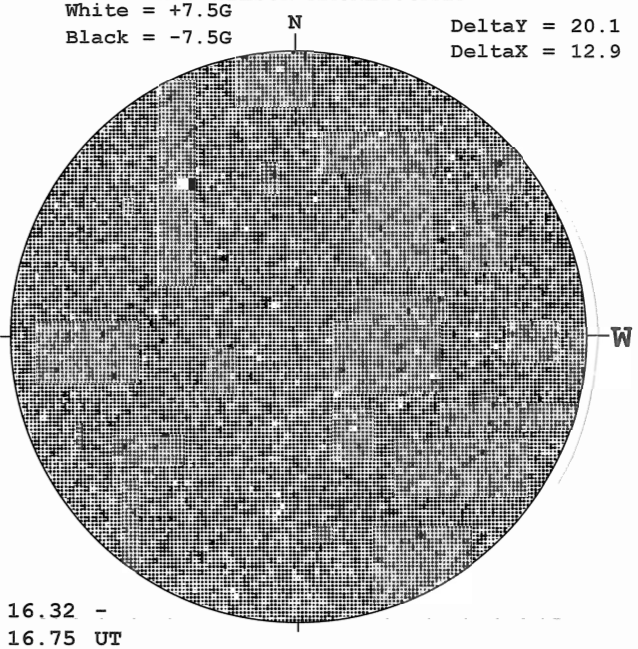


1726 UT

MT. WILSON MAGNETOGRAM

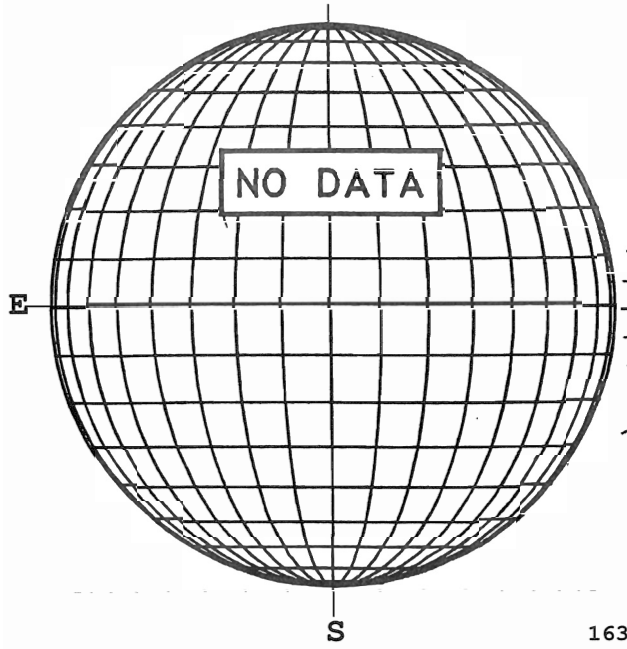
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 12.9

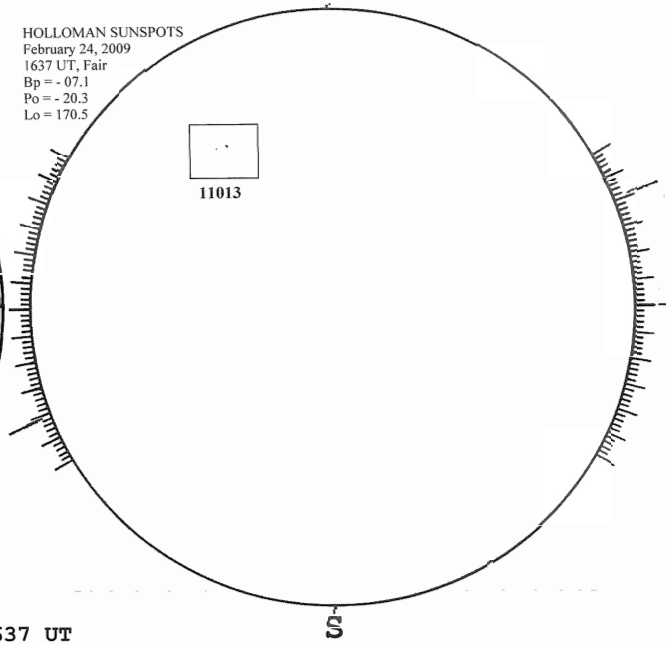


16.32 -
16.75 UT

MUANA LOA H-ALPHA

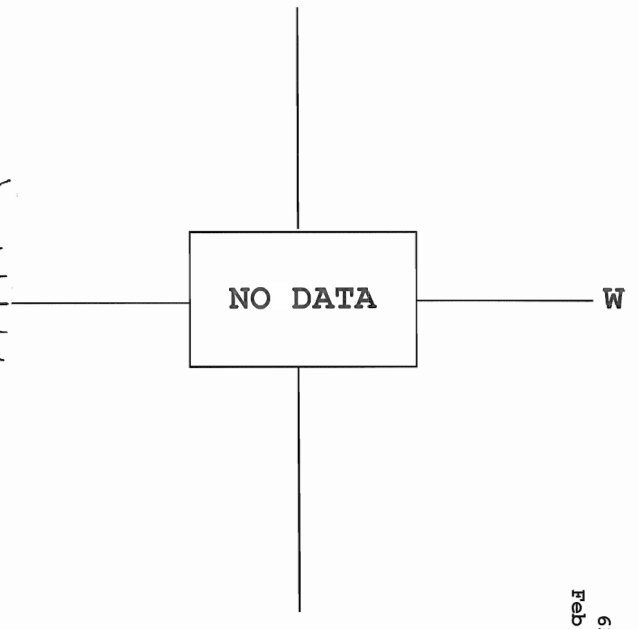


HOLLOMAN SUNSPOTS



1637 UT
0659 UT LOMN PROM

SACRAMENTO PEAK CORONA (1.15 Radii)-----

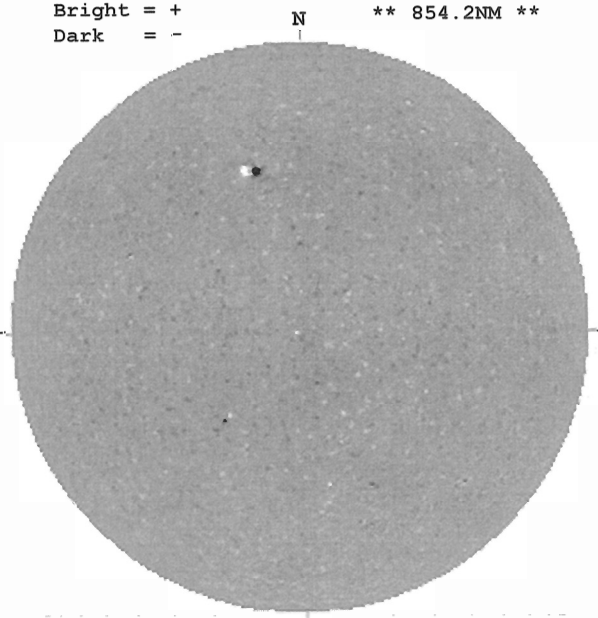


63
Feb 09

February 25, 2009 (P=-20.50, Bo=-7.15, Lo= 166.19)

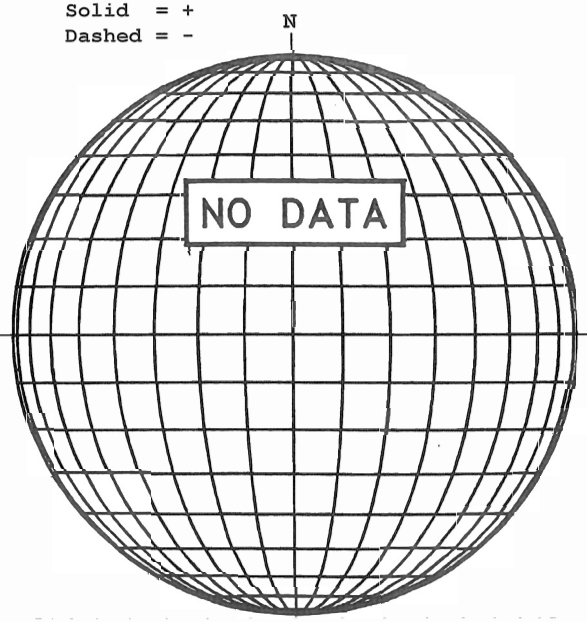
Feb 09
64

KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **

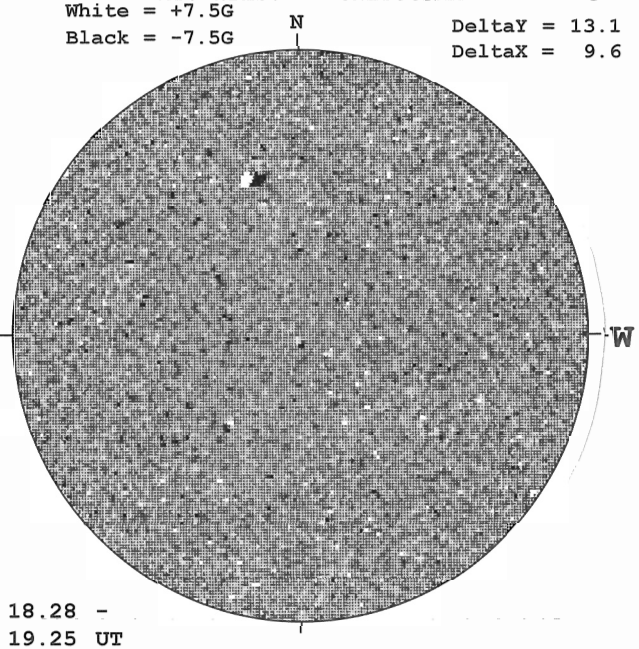


1739 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

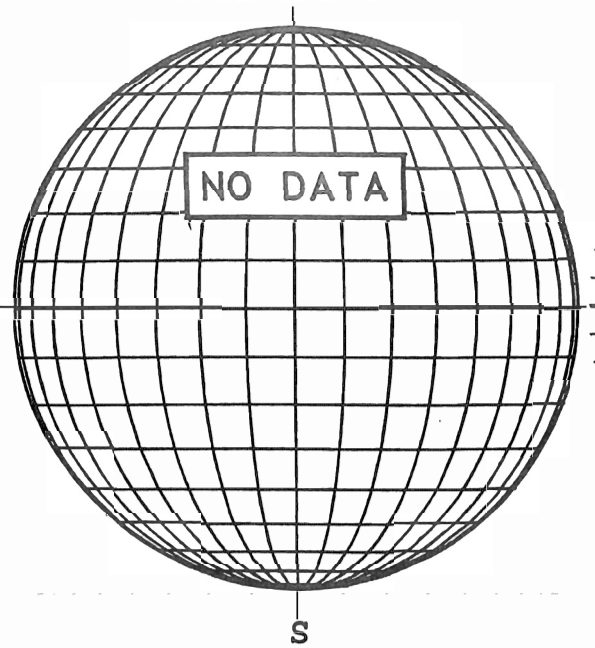


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

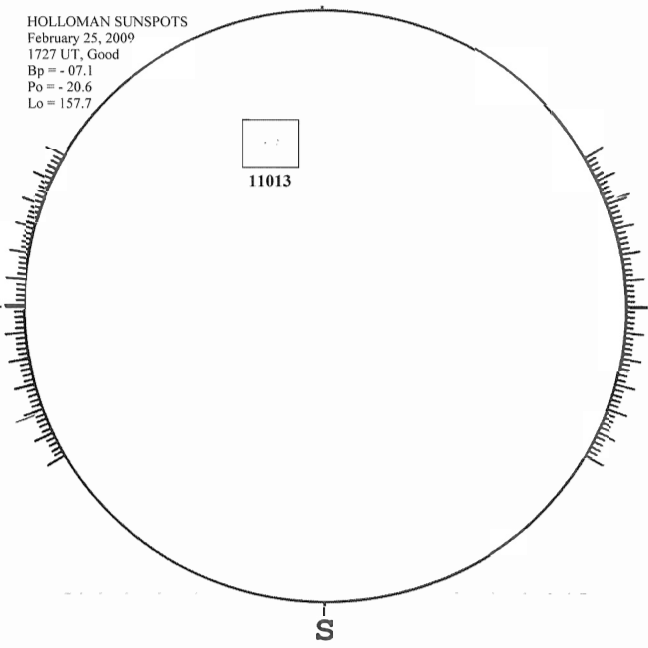


18.28 -
19.25 UT

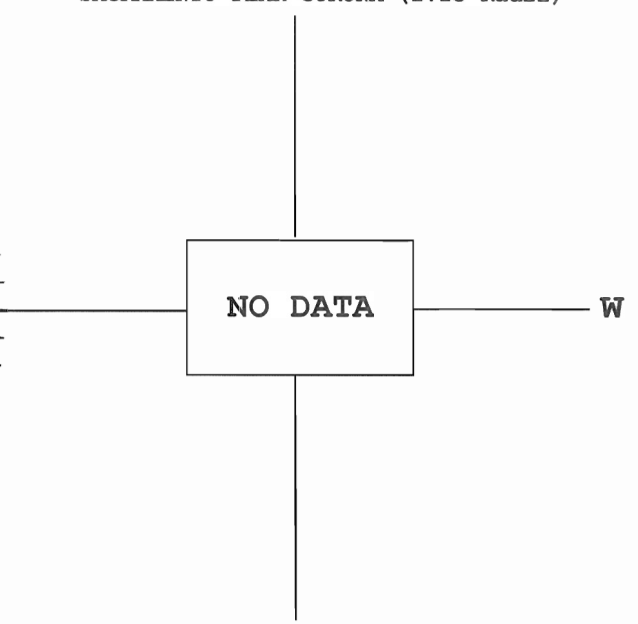
MUANA LOA H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)-----

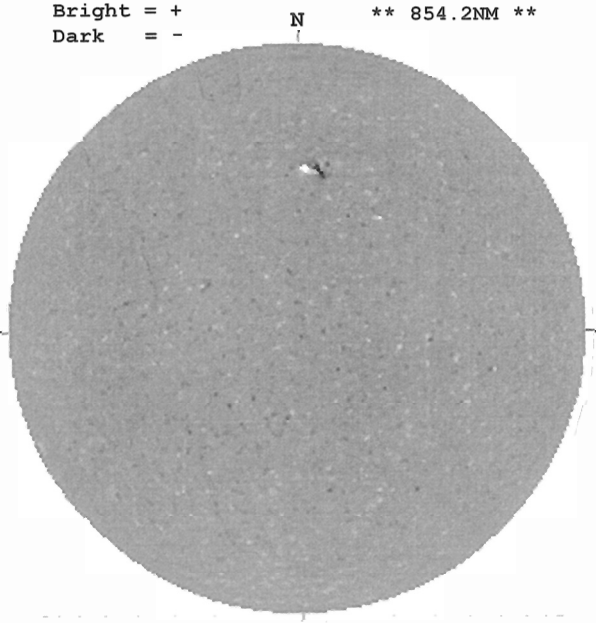


1727 UT

February 26, 2009 (P=-20.77, Bo=-7.17, Lo= 153.02)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

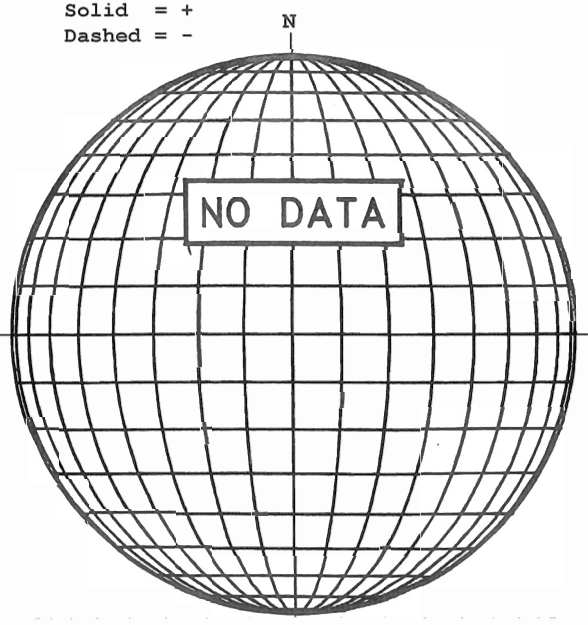


** 854.2NM **

2024 UT

STANFORD MAGNETOGRAM

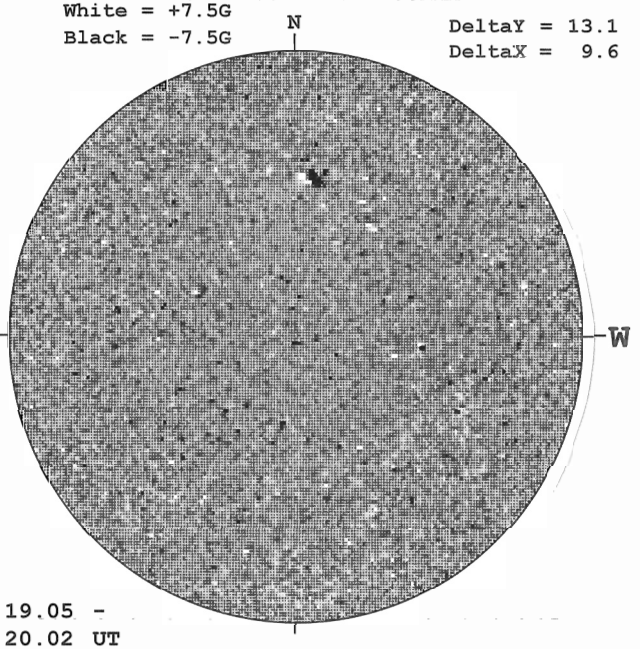
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

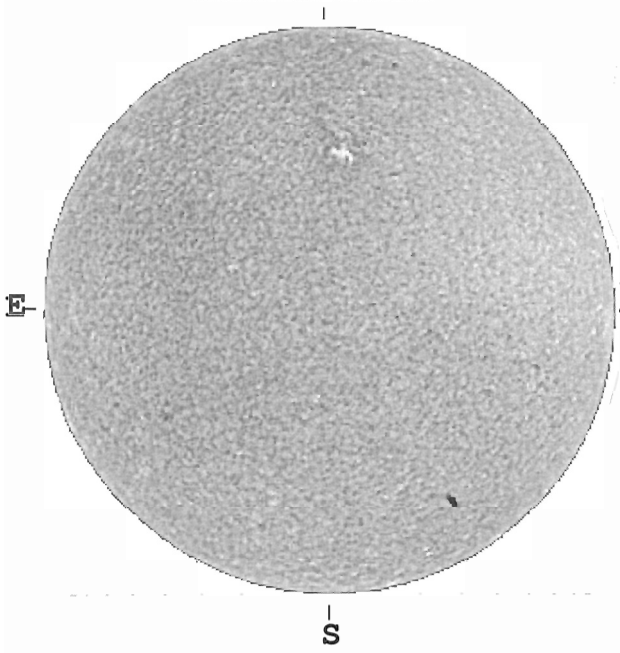
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



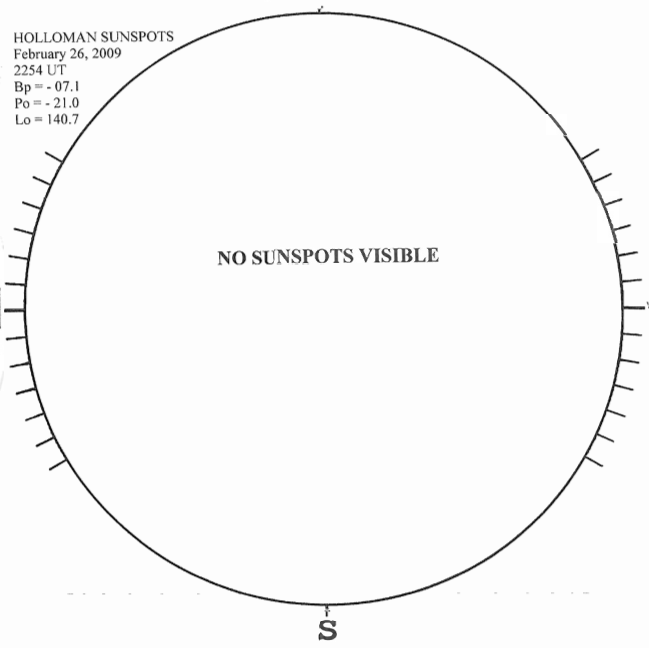
19.05 -
20.02 UT

--- MUANA LOA H-ALPHA



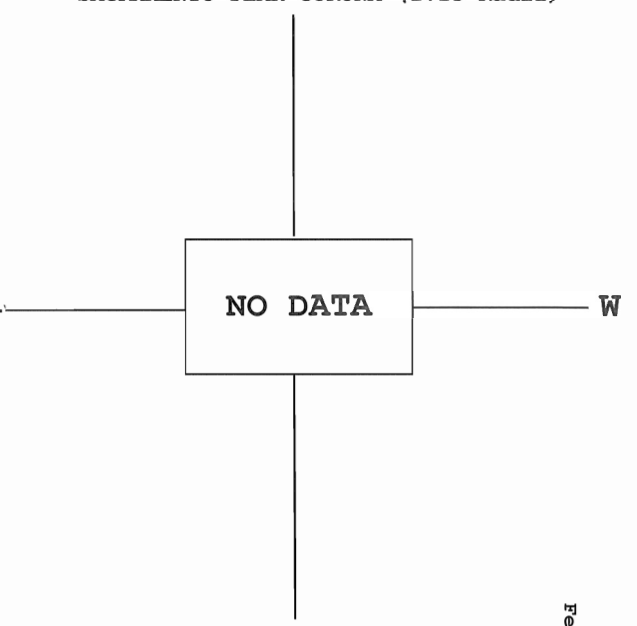
1856 UT

HOLLOMAN SUNSPOTS



2254 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----



65
Feb 09

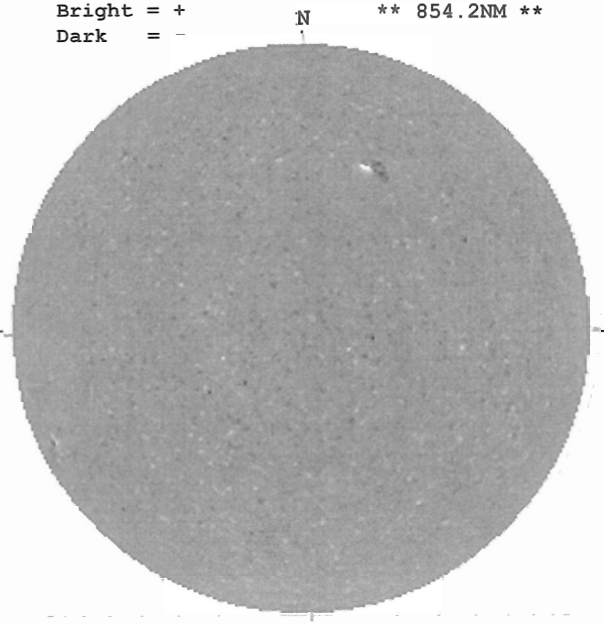
February 27, 2009 (P=-21.04, Bo=-7.19, Lo= 139.85)

Feb 09 66

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

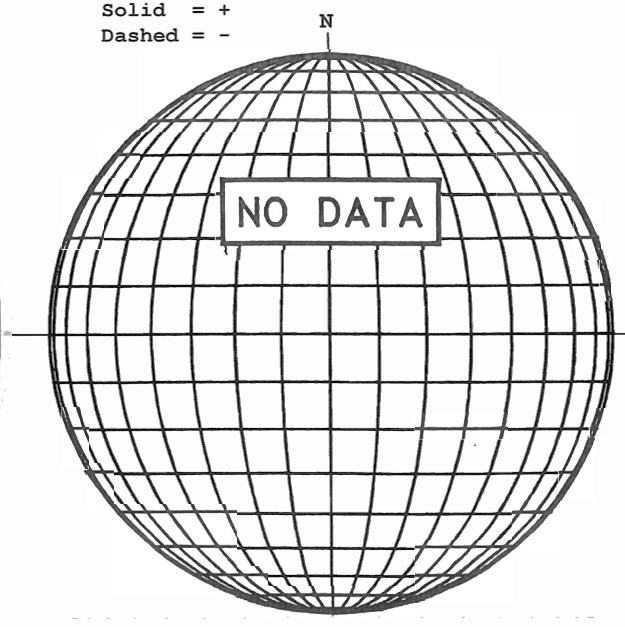
** 854.2NM **



1948 UT

STANFORD MAGNETOGRAM

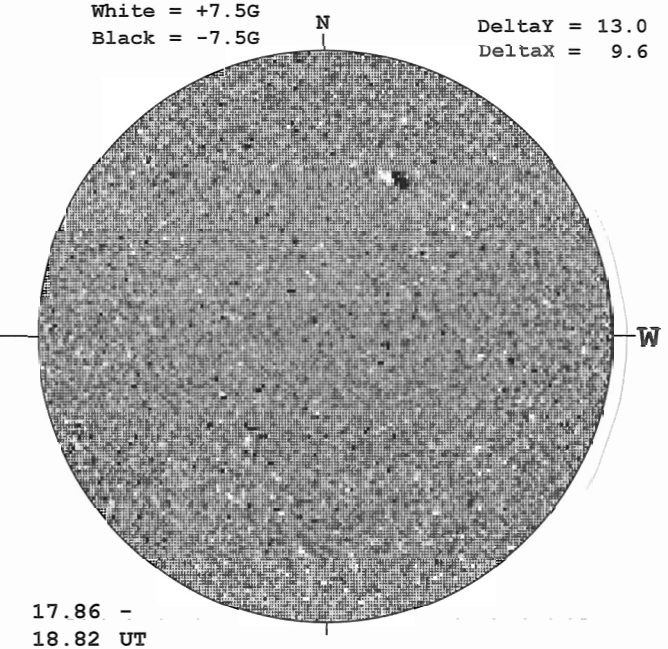
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

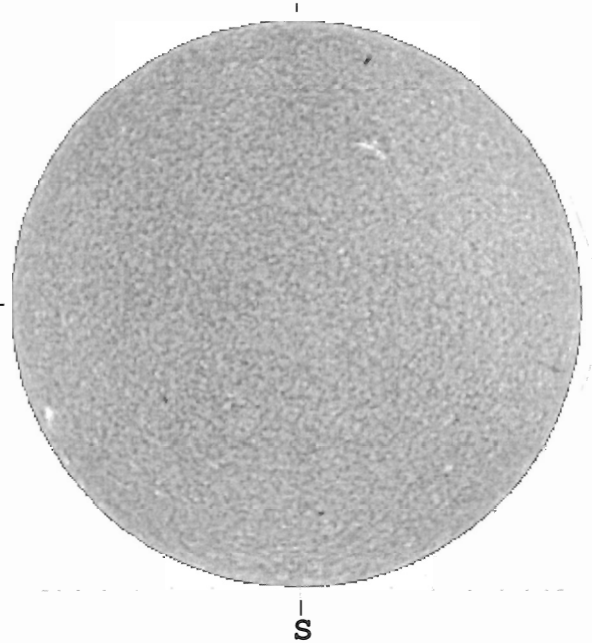
White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6



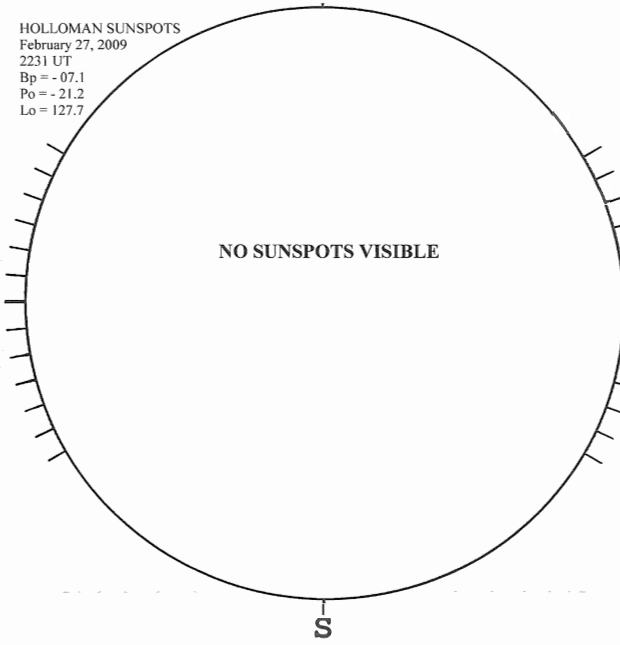
17.86 -
18.82 UT

MUANA LOA H-ALPHA



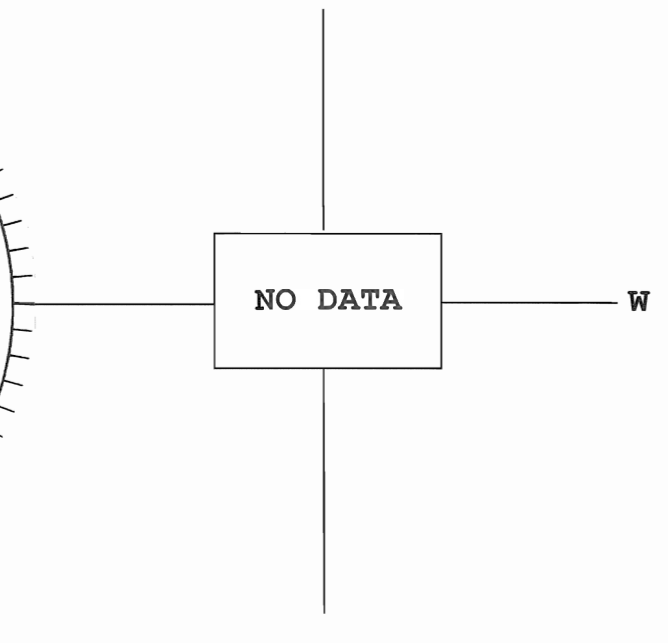
2038 UT

HOLLOMAN SUNSPOTS



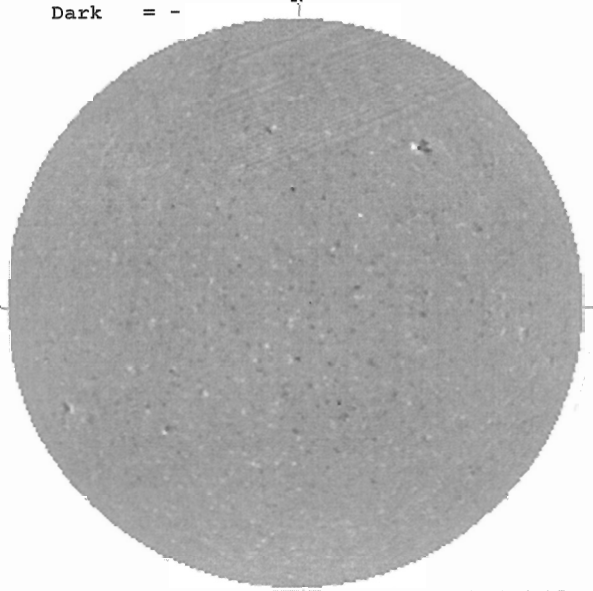
2230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



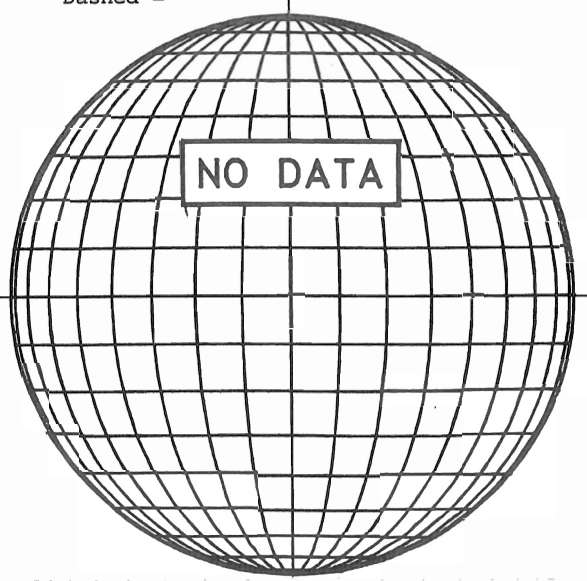
February 28, 2009 (P=-21.30, Bo=-7.21, Lo= 126.68)

KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **

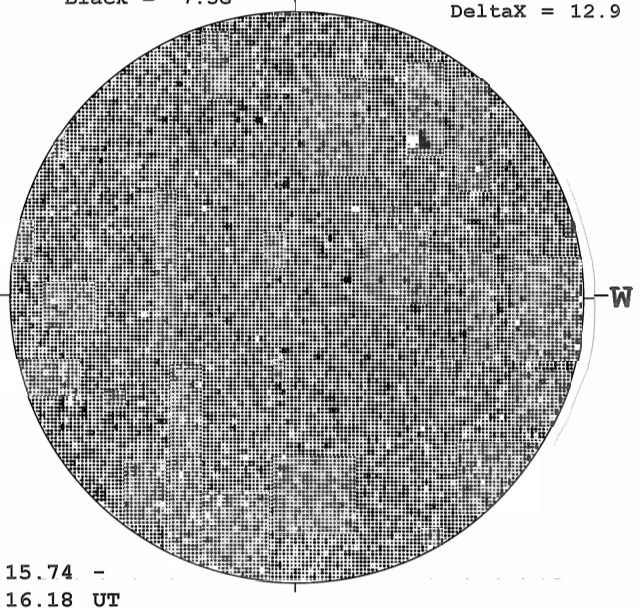


1840 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

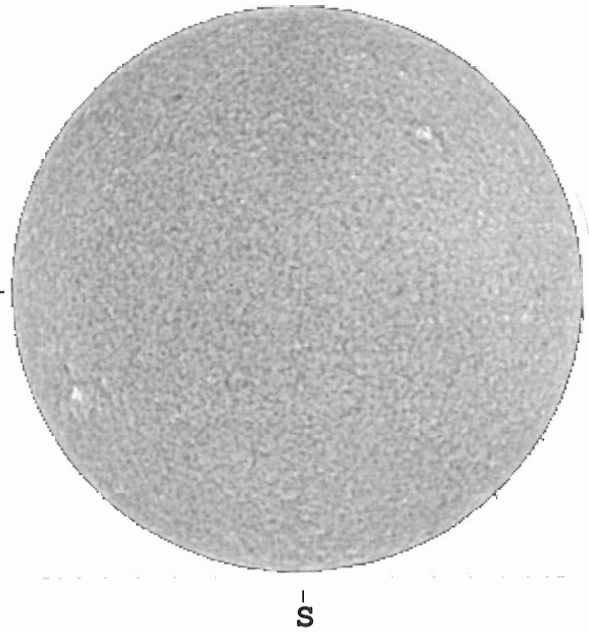


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 20.1
DeltaX = 12.9



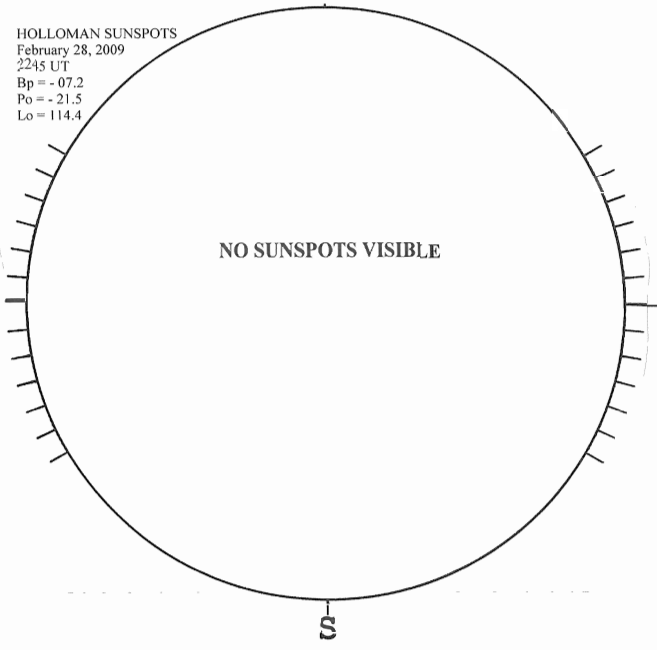
15.74 -
16.18 UT

--- MUANA LOA H-ALPHA



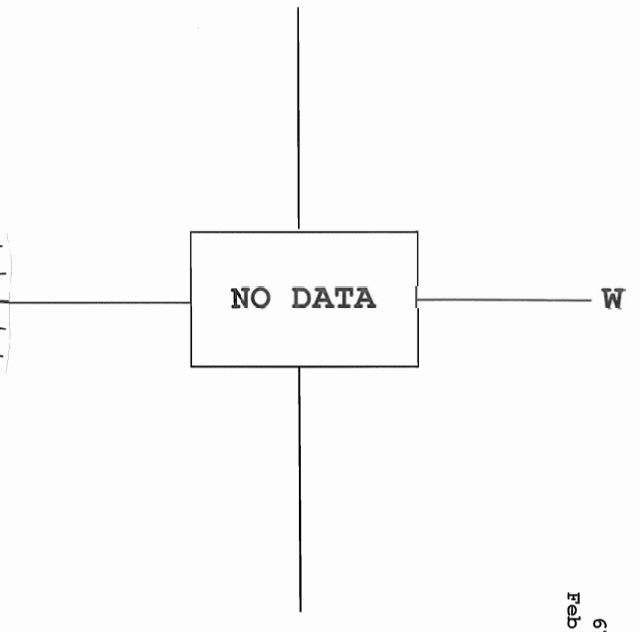
2036 UT

HOLLOMAN SUNSPOTS



2245 UT

SACRAMENTO PEAK CORONA (1.15 Radii) -----



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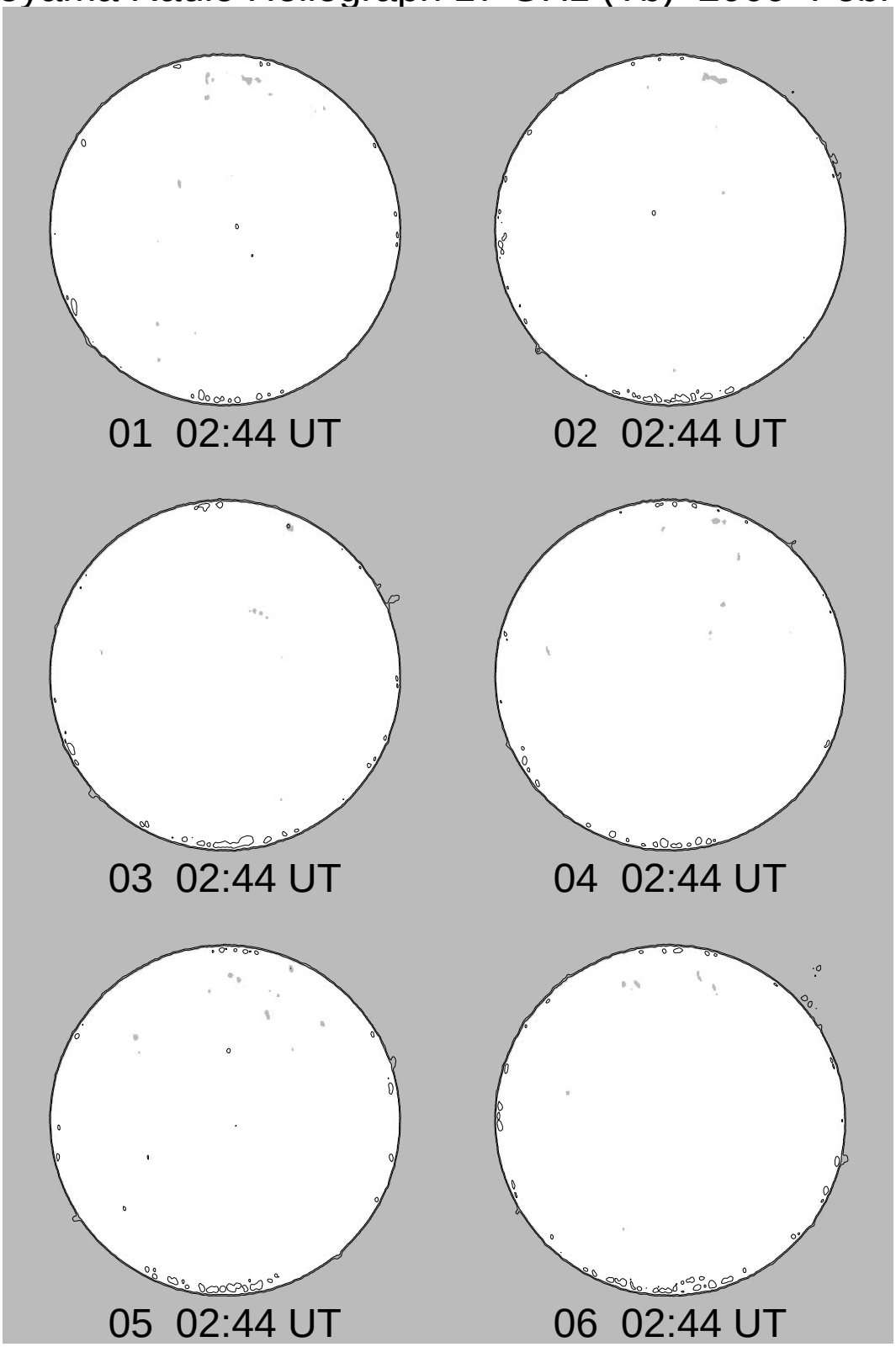
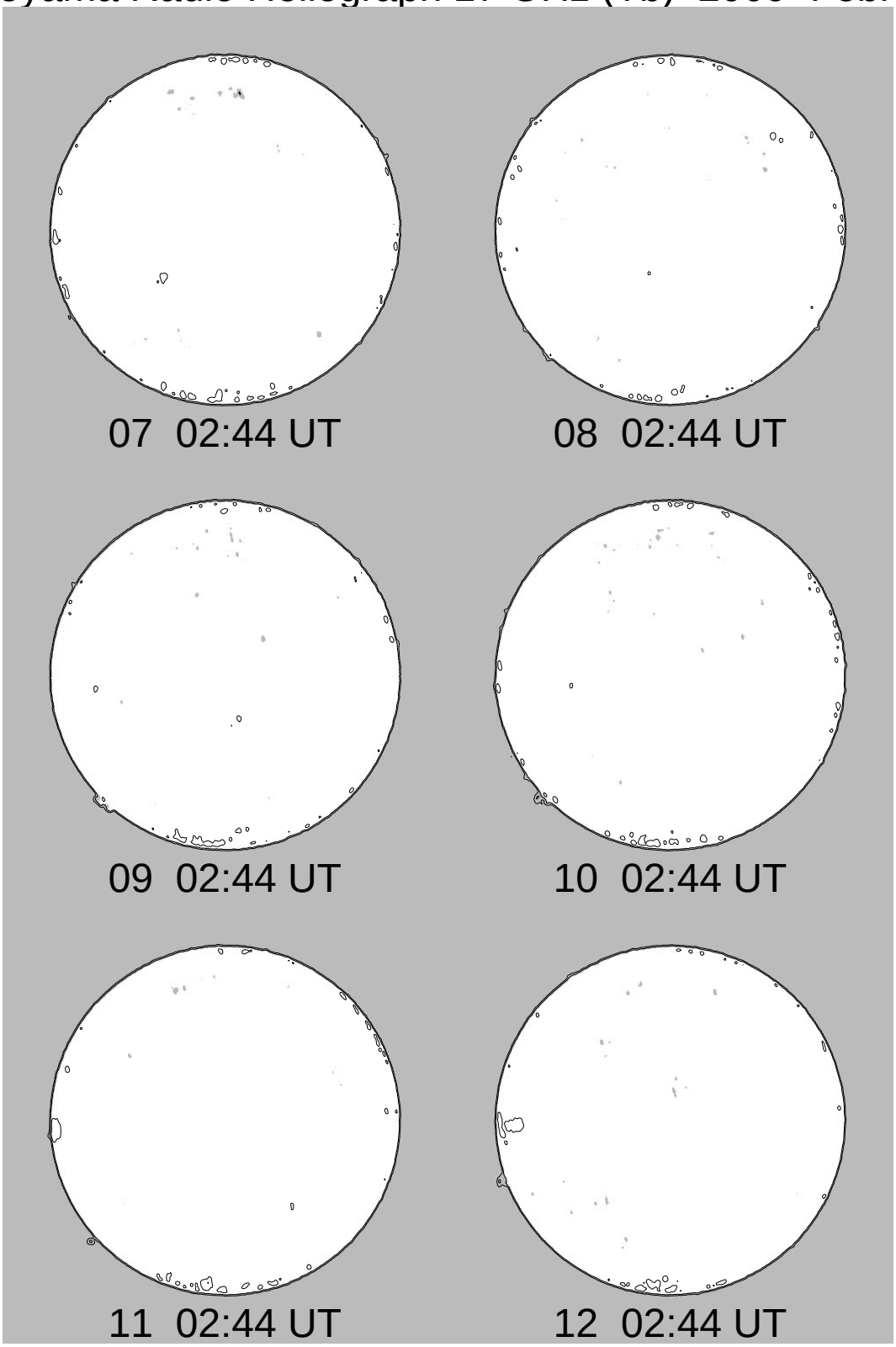
Feb 09

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 February



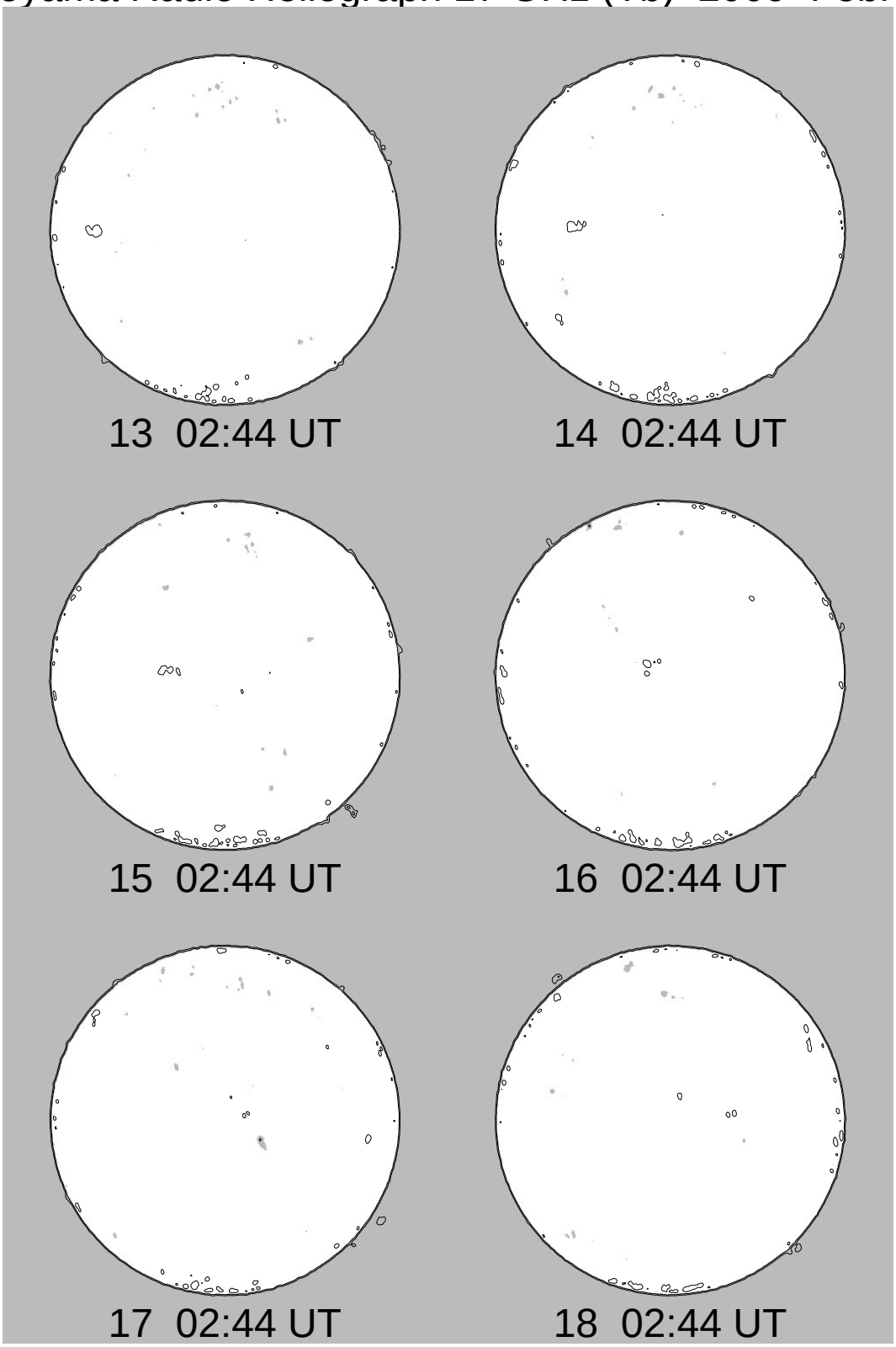
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 February



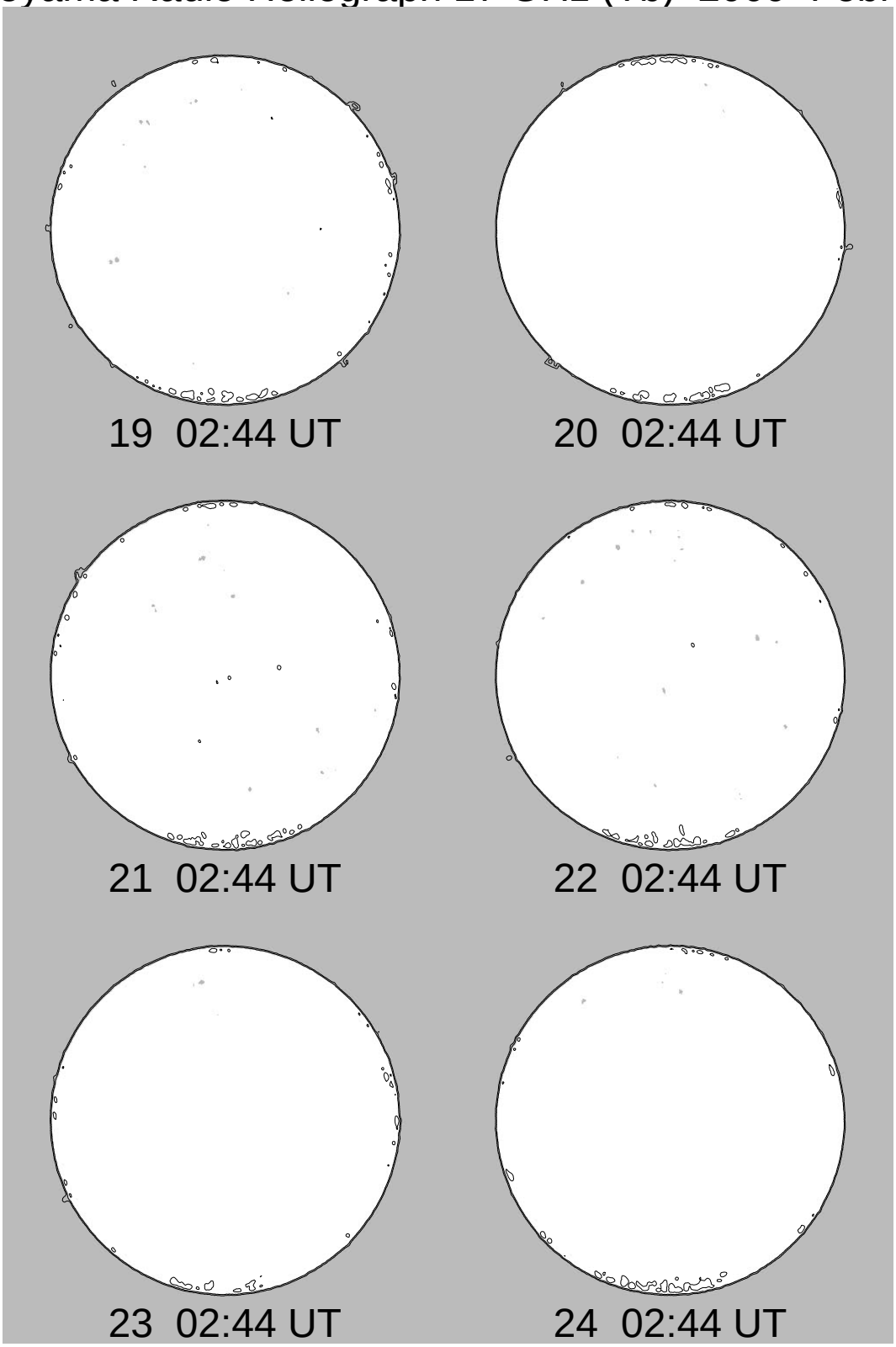
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 February



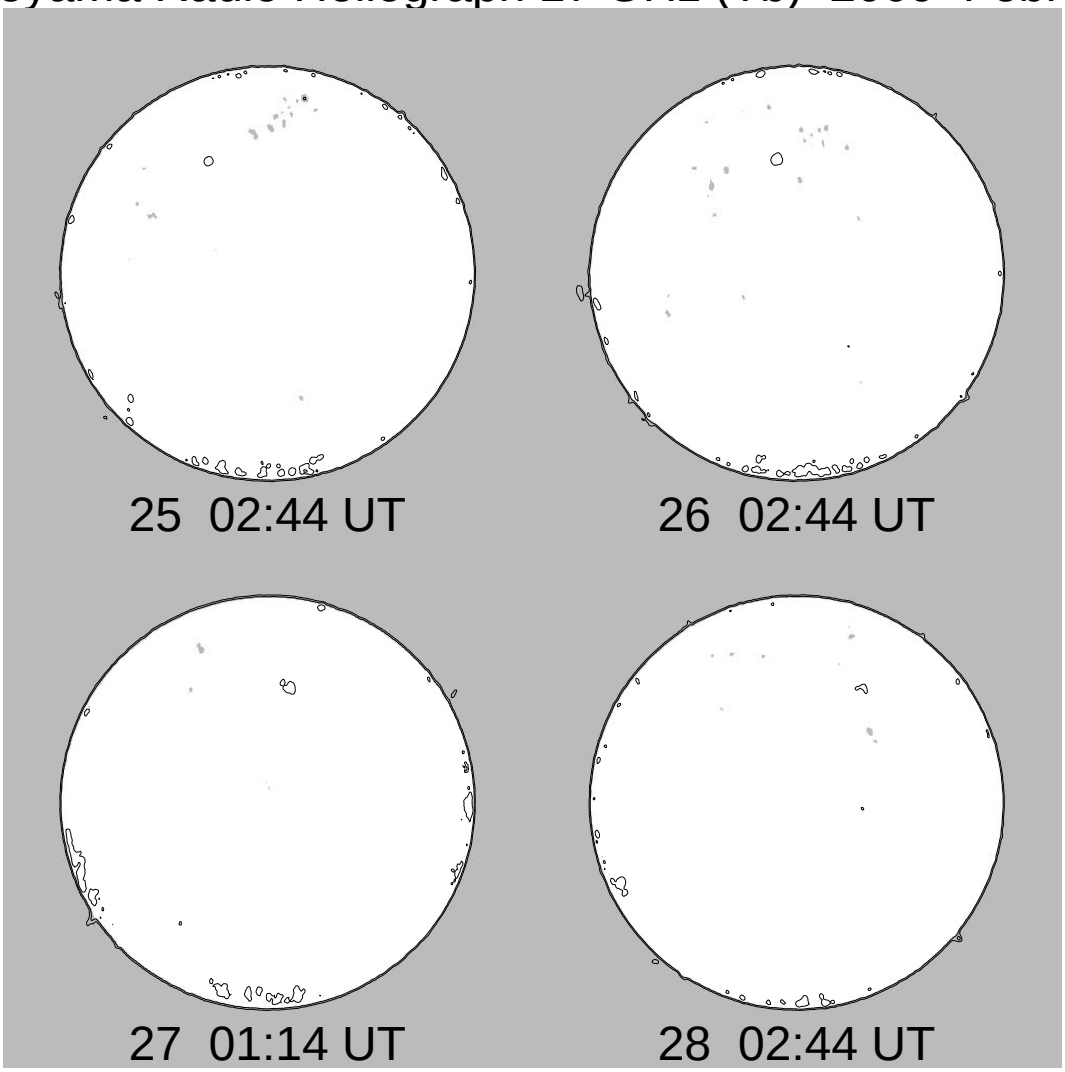
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 February



Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 February



Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

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

(Ordered by Central Meridian Passage Date)

FEBRUARY 2009

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
11011B		KAND	02	06	0840	S23	E32	02	8.8			AX		1		4
11012		PURP	02	11	0048	S06	E74	02	16.6			AXX	8	1	1	4
11012		VORO	02	11	0127	S04	E74	02	16.6			AXX	10	1		4
11012		LEAR	02	11	0127	S05	E75	02	16.7		A	AXX	30	1	1	3
11012		SVTO	02	11	1345	S05	E67	02	16.6		A	AXX	20	1	1	3
11012		HOLL	02	11	1617	S07	E66	02	16.6		A	AXX		1	1	3
11012		PURP	02	12	0036	S05	E61	02	16.6			AXX	4	1	1	4
11012		LEAR	02	12	0111	S05	E59	02	16.5		A	AXX	20	1	1	3
11012		SVTO	02	12	0652	S04	E58	02	16.6		A	AXX	20	1	1	2
11012		KAND	02	12	1355	S08	E53	02	16.5			AX		1	1	3
11012		HOLL	02	12	2158	S07	E47	02	16.4		A	AXX	10	1	1	3
11012		LEAR	02	13	0154	S06	E46	02	16.5		A	AXX	10	1	1	3
11012		HOLL	02	13	1938	S06	E33	02	16.3		A	AXX	10	1	1	3
11013		SVTO	02	24	0939	N25	E29	02	26.6		A	AXX	20	1	1	3
11013		HOLL	02	24	1637	N27	E22	02	26.4		B	CSO	10	2	3	3
11013		VORO	02	24	2343	N25	E20	02	26.5			AXX	9	2	3	3
11013		LEAR	02	25	0105	N26	E18	02	26.4		B	BXO	10	3	3	3
11013		SVTO	02	25	0651	N26	E17	02	26.6		A	AXX	20	1	1	3
11013		HOLL	02	25	1727	N27	E11	02	26.6		B	BXO	10	4	4	4
11013		VORO	02	25	2340	N26	E09	02	26.7			AXX	5	1		3
11013		LEAR	02	26	1038	N26	E07	02	27.0		B	BXO	10	2	2	2

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth
PALE = Palehua
PURP = Purple Mountain
SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES
FEBRUARY 2009

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
07	1051	1114	1145	1	1						No Flare		
07	1256	1311	1428	1	1						No Flare		
12	1342	1354U	1432	1	1						No Flare		

OBSERVATORIES REPORTING FOR FEBRUARY 2009

Upice, Czech Republic	SEA

Observations are not necessarily continuous.
* = No Flare Patrol

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

Spectral Observations

FEBRUARY 2009

OBSERVATION			EVENT				FREQUENCY			
Start	End		Start	End	Spectral	Event	Int	Lower	Upper	Remarks
Day (UT)	(UT)	Sta	(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)	
01 0000	0800	CULG								
0758	1434	ONDR								
0825	1530	BLEN								
2000	2400	CULG	2024.0	2026.0	III	G	1	23	65	
02 0000	0800	CULG								
0756	1436	ONDR								
0825	1530	BLEN								
2000	2400	CULG								
03 0000	0800	CULG								
0754	1438	ONDR								
0825	1530	BLEN								
2000	2400	CULG								
04 0000	0800	CULG								
0752	1440	ONDR								
0820	1530	BLEN								
2000	2400	CULG								
2130	2400	HIRA								
05 0000	0800	CULG								
0000	0813	HIRA								
0750	1443	ONDR								
0815	1530	BLEN								
2000	2400	CULG								
2129	2400	HIRA								
06 0000	0800	CULG								
0000	0815	HIRA								
0748	1445	ONDR								
0810	1530	BLEN								
2000	2400	CULG								
2128	2400	HIRA								
07 0000	0800	CULG								
0000	0815	HIRA								
0746	1447	ONDR								
0805	1535	BLEN								
2000	2400	CULG								
2127	2400	HIRA								
08 0000	0816	HIRA								
0000	0800	CULG	0052.0	0054.0	III	G	1	20	80	
0744	1449	ONDR								
0800	1535	BLEN								
2000	2400	CULG								
2126	2400	HIRA								
09 0000	0800	CULG								
0000	0817	HIRA								
0742	1451	ONDR								
0750	1535	BLEN								
2000	2400	CULG								
2124	2400	HIRA								
10 0000	0800	CULG								
0000	0818	HIRA								
0740	1453	ONDR								
1010	1535	BLEN								
2000	2400	CULG								
2123	2400	HIRA								
11 0000	0800	CULG								
0000	0819	HIRA								
0738	1456	ONDR								
0745	1540	BLEN								
2000	2400	CULG								
2122	2400	HIRA								

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

Spectral Observations

FEBRUARY 2009

OBSERVATION			EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
12	0000	0800	CULG								
	0000	0820	HIRA								
	0736	1458	ONDR								
	0745	1540	BLEN								
	2000	2400	CULG								
	2121	2400	HIRA								
13	0000	0800	CULG								
	0000	0821	HIRA								
	0733	1445	ONDR								
	0745	1540	BLEN								
	2000	2400	CULG								
	2121	2400	HIRA								
14	0000	0800	CULG								
	0000	0822	HIRA								
	0731	1502	ONDR								
	0745	1545	BLEN								
	2000	2400	CULG								
	2120	2400	HIRA								
15	0000	0800	CULG								
	0000	0823	HIRA								
	0729	1504	ONDR								
	0740	1545	BLEN								
	2000	2400	CULG								
	2119	2400	HIRA								
16	0000	0800	CULG								
	0000	0824	HIRA								
	0727	1506	ONDR								
	0740	1545	BLEN								
	2000	2400	CULG								
	2117	2400	HIRA								
17	0000	0800	CULG								
	0000	0826	HIRA								
	0725	1453	ONDR								
	0735	1545	BLEN								
	2000	2400	CULG								
	2116	2400	HIRA								
18	0000	0800	CULG								
	0000	0828	HIRA								
	0722	1510	ONDR								
	0735	1545	BLEN								
	2000	2400	CULG								
	2115	2400	HIRA								
19	0000	0212	HIRA								
	0000	0800	CULG								
	0720	1512	ONDR								
	0735	1545	BLEN								
	2000	2400	CULG								
	2115	2400	HIRA								
20	0000	0800	CULG								
	0000	0829	HIRA								
	0718	1514	ONDR								
	0735	1550	BLEN								
	2000	2400	CULG								
	2114	2400	HIRA								
21	0000	0800	CULG								
	0000	0830	HIRA								
	0716	1516	ONDR								
	0730	1550	BLEN								
	2000	2400	CULG								
	2112	2400	HIRA								

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

Spectral Observations

FEBRUARY 2009

OBSERVATION			EVENT				FREQUENCY		
Start	End		Start	End	Spectral	Event	Int	Lower	Upper	Remarks
Day (UT)	(UT)	Sta	(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)	
22 0000	0425	CULG								
0000	0831	HIRA								
0713	1518	ONDR								
0730	1550	BLEN								
2110	2400	HIRA								
2115	2400	CULG								
23 0000	0800	CULG								
0000	0831	HIRA								
0711	1308	ONDR								
0730	1555	BLEN								
2000	2400	CULG								
2108	2400	HIRA								
24 0000	0800	CULG								
0000	0832	HIRA								
0715	1522	ONDR								
0730	1600	BLEN								
2000	2400	CULG								
2107	2400	HIRA								
25 0000	0800	CULG								
0000	0833	HIRA								
0707	1524	ONDR								
0730	1600	BLEN								
2000	2400	CULG								
2106	2400	HIRA								
26 0000	0800	CULG								
0000	0834	HIRA								
0704	1526	ONDR								
0720	1600	BLEN								
2000	2400	CULG								
2105	2400	HIRA								
27 0000	0800	CULG								
0000	0835	HIRA								
0702	1528	ONDR								
0715	1600	BLEN								
2000	2400	CULG								
2104	2400	HIRA								
28 0000	0800	CULG								
0000	0836	HIRA								
0700	1530	ONDR								
0715	1600	BLEN								
2000	2400	CULG								
2103	2400	HIRA								

SOLAR RADIO NOISE STORM AT 150.9 MHZ

FROM NANÇAY RADIOHELIOGRAPH

FEBRUARY 2009

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

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

FEBRUARY 2009

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

OTHERS DAYS: NO DETECTABLE NOISE STORM

- For the days marked by an asterisk, intense ionospheric gravity waves are observed during the whole day. Without a mode detailed analysis leading to increase uncertainties in the deviation , the positions which are indicated are estimated within 0.2 R

** Following a large burst

*** importance not well determined due to the proximity off the very strong other source

**** no flux measurements available

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

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

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

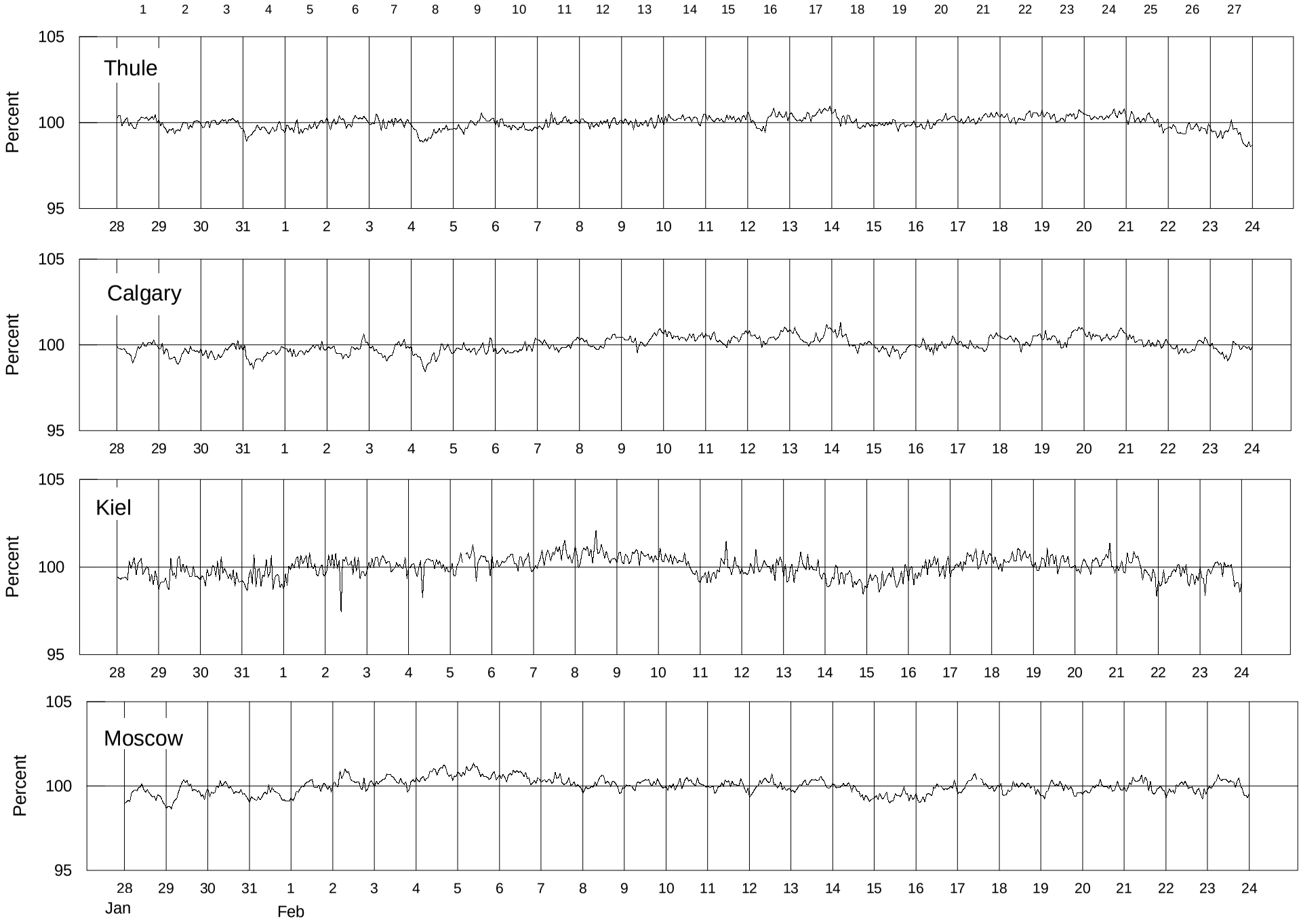
COSMIC RAY INDICES
(Neutron Monitor)
FEBRUARY 2009

Day	THULE 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	4660.0	4092.0	6474.9	9561.4		2110.8	
2	4675.7	4094.2	6475.7	9599.5		2117.4	
3	4672.0	4092.5	6485.7	9599.5		2119.4	
4	4643.2	4078.8	6477.6	9638.4		2125.0	
5	4668.8	4095.0	6442.2	9645.4		2123.5	
6	4660.8	4093.7	6496.2	9626.0		2120.0	
7	4671.7	4104.7	6516.0	9596.6	data	2114.5	data
8	4670.8	4111.2	6526.1	9578.7	not	2116.6	not
9	4671.7	4117.7	6513.2	9583.0	available	2115.1	available
10	4681.4	4124.5	6492.6	9582.7		2117.0	
11	4681.6	4119.7	6465.0	9574.3		2114.7	
12	4679.7	4124.5	6476.1	9573.7		2118.6	
13	4692.6	4124.7	6467.7	9583.2		2122.2	
14	4676.0	4115.7	6429.9	9546.5		2119.3	
15	4666.5	4093.0	6433.3	9512.2		2120.4	
16	4672.5	4103.3	6469.4	9542.4		2124.0	
17	4682.6	4107.2	6495.7	9578.5(23)		2114.9	
18	4686.7	4116.3	6504.6	9561.2		2113.0	
19	4689.4	4122.8	6492.9	9553.6		2115.1	
20	4690.9	4126.7	6489.0	9560.8		2129.3	
21	4676.5	4111.7	6471.9	9576.7		2121.8	
22	4654.7	4099.5	6443.0	9552.5		2122.3	
23	4639.5	4093.2	6455.0	9581.9		2117.3	
24	4639.0	4085.0	6446.3	9578.3		2107.9	
25	4654.4	4091.7	6440.1	9595.4		2116.3	
26	4658.3	4092.0	6461.0	9594.0		2117.8	
27	4657.7	4069.0	6447.5	9581.7		2116.3	
28	4663.4	4070.2	6447.6	9599.0		2117.0	
29							
30							
31							
Mean	4669.0	4102.5	6472.7	9580.6		2118.1	

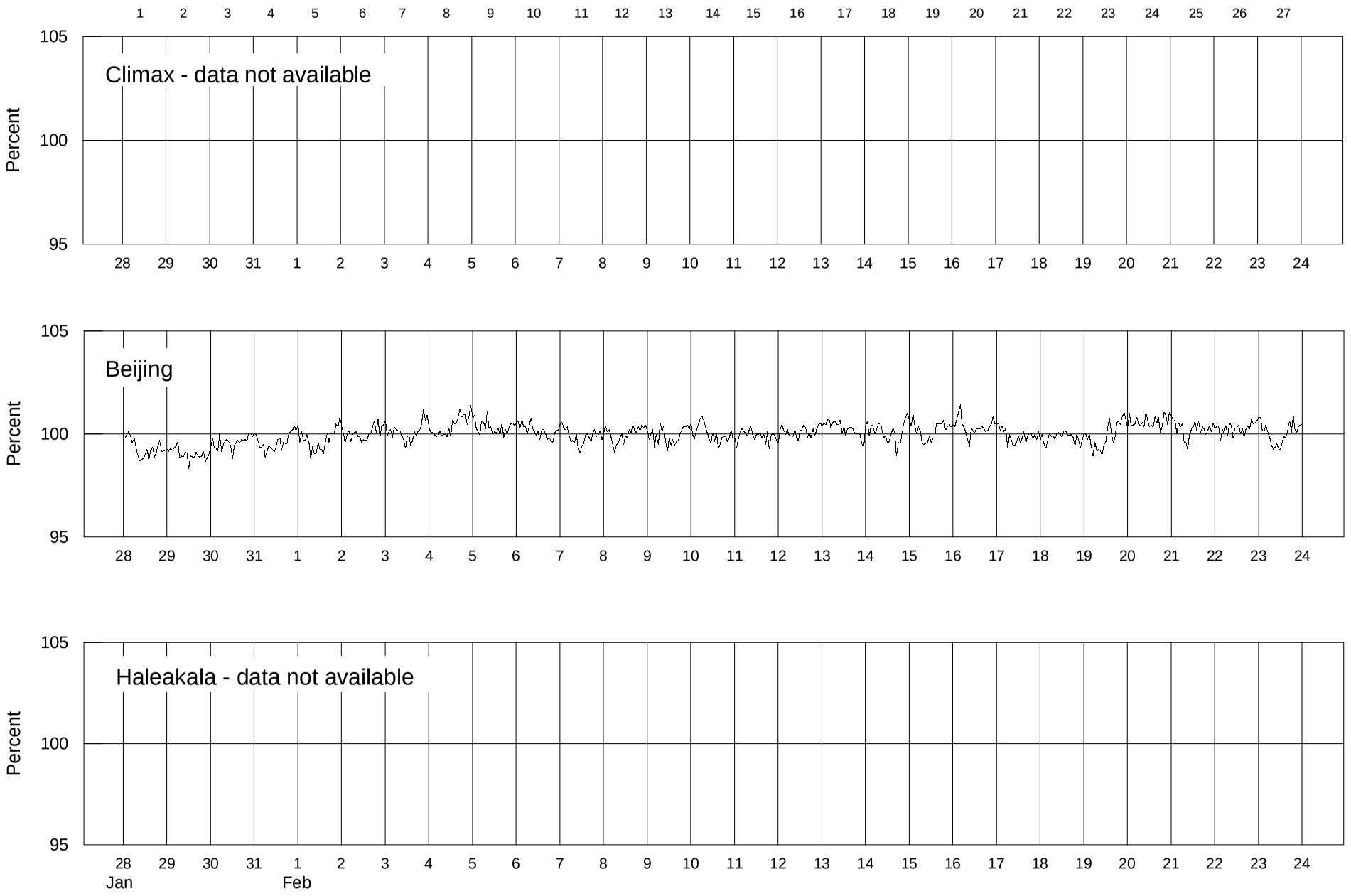
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

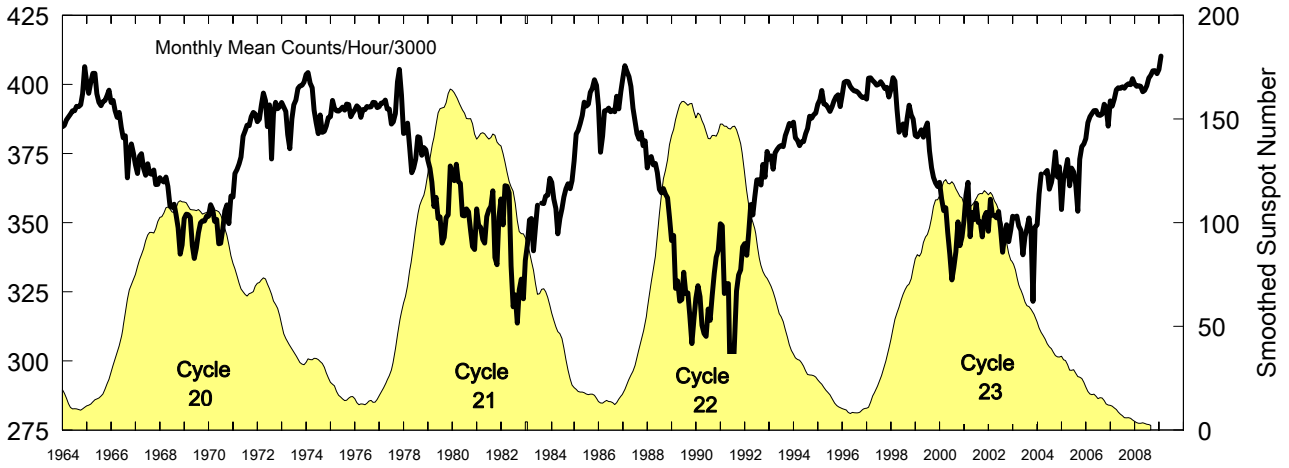
Bartels Rotation 2395 - Beginning 28 Jan 2009



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2395 - Beginning 28 Jan 2009



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Feb 2009



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1964	3847	3852	3872	3883	3892	3905	3905	3921	3920	3926	3966	4064	3913
1965	4006	3968	4007	4040	4040	3967	3935	3923	3938	3942	3960	3980	3976
1966	3935	3943	3906	3881	3899	3844	3807	3814	3663	3758	3785	3750	3832
1967	3710	3678	3741	3750	3697	3671	3713	3679	3675	3691	3638	3639	3690
1968	3663	3653	3647	3665	3632	3561	3556	3567	3529	3482	3386	3420	3563
1969	3515	3531	3529	3520	3417	3370	3408	3464	3500	3507	3506	3524	3483
1970	3523	3565	3548	3505	3512	3424	3426	3477	3543	3564	3497	3596	3515
1971	3593	3678	3693	3712	3737	3813	3832	3853	3851	3883	3899	3893	3786
1972	3865	3875	3924	3969	3942	3847	3926	3731	3895	3935	3912	3920	3895
1973	3935	3919	3903	3819	3768	3875	3926	3944	3986	3995	3997	4008	3923
1974	4036	4043	4005	3988	3906	3861	3822	3890	3827	3831	3850	3881	3912
1975	3883	3943	3914	3905	3904	3910	3918	3907	3929	3927	3884	3897	3910
1976	3908	3923	3915	3881	387	3909	3921	3918	3920	3936	3935	3916	3916
1977	3919	3933	3933	3943	3911	3911	3857	3865	3895	4010	4055	3961	3933
1978	3823	3826	3860	3773	3681	3697	3730	3811	3808	3744	3772	3764	3774
1979	3726	3696	3647	3559	3592	3516	3521	3427	3447	3519	3528	3705	3573
1980	3681	3652	3711	3649	3643	3527	3525	3550	3540	3471	3414	3403	3564
1981	3550	3491	3483	3440	3426	3522	3546	3560	3615	3374	3348	3520	3490
1982	3586	3492	3634	3632	3608	3344	3196	3239	3137	3257	3296	3225	3387
1983	3364	3421	3510	3515	3399	3487	3563	No Data	3571	3569	3597	3599	3509
1984	3661	3646	3586	3551	3460	3515	3551	3593	3623	3641	3623	3652	3592
1985	3723	3821	3834	3858	3888	3936	3921	3929	3971	3987	4017	3997	3907
1986	3923	3755	3814	3905	3906	3915	3902	3907	3902	3958	3912	3974	3898
1987	4025	4068	4047	4028	3993	3914	3866	3822	3802	3827	3779	3796	3914
1988	3698	3729	3739	3709	3714	3682	3621	3608	3624	3603	3590	3520	3653
1989	3436	3454	3263	3290	3216	3222	3321	3224	3246	3164	3063	3152	3254
1990	3227	3272	3232	3129	3099	3089	3188	3147	3237	3317	3375	3401	3226
1991	3496	3489	3244	3279	3280	2873	2896	3078	3253	3311	3330	3412	3245
1992	3425	3382	3463	3566	3528	3593	3655	3655	3636	3711	3665	3758	3586
1993	3730	3741	3693	3753	3765	3775	3780	3775	3815	3836	3859	3852	3781
1994	3864	3807	3798	3779	3793	3793	3822	3841	3885	3878	3891	3896	3837
1995	3929	3945	3919	3929	3927	3917	3902	3919	3940	3956	3963	3920	3931
1996	3960	4008	4012	4010	3993	3983	3976	3976	3970	3960	3953	3955	3980
1997	3947	4023	4024	4014	4007	3998	4001	4010	3999	3985	3990	3955	3996
1998	3982	4025	4013	3910	3827	3839	3857	3817	3876	3925	3890	3875	3903
1999	3816	3811	3823	3836	3810	3843	3861	3760	3699	3664	3644	3631	3767
2000	3646	3586	3544	3554	3465	3386	3293	3337	3395	3503	3417	3447	3464
2001	3510	3599	3646	3449	3537	3511	3570	3501	3504	3449	3521	3537	3528
2002	3469	3585	3527	3526	3517	3541	3479	3393	3455	3493	3431	3474	3491
2003	3523	3517	3524	3488	3473	3384	3450	3480	3517	3460	3216	3485	3460
2004	3492	3604	3676	---	3680	3689	3612	3645	3683	3756	3665	3702	3655
2005	3546	3658	3688	3729	3633	3698	3684	3640	3541	3729	3775	3785	3676
2006	3804	3862	3883	3894	3905	3906	3890	3888	3893	3929	3918	3849	3885
2007	3940	3921	3947	3981	3988	3986	3992	3986	3997	4002	3999	4021	3980
2008	4002	3993	3996	3993	3974	3979	3995	4023	4033	4049	4050	4039	4011
2009	4054	4103											4079

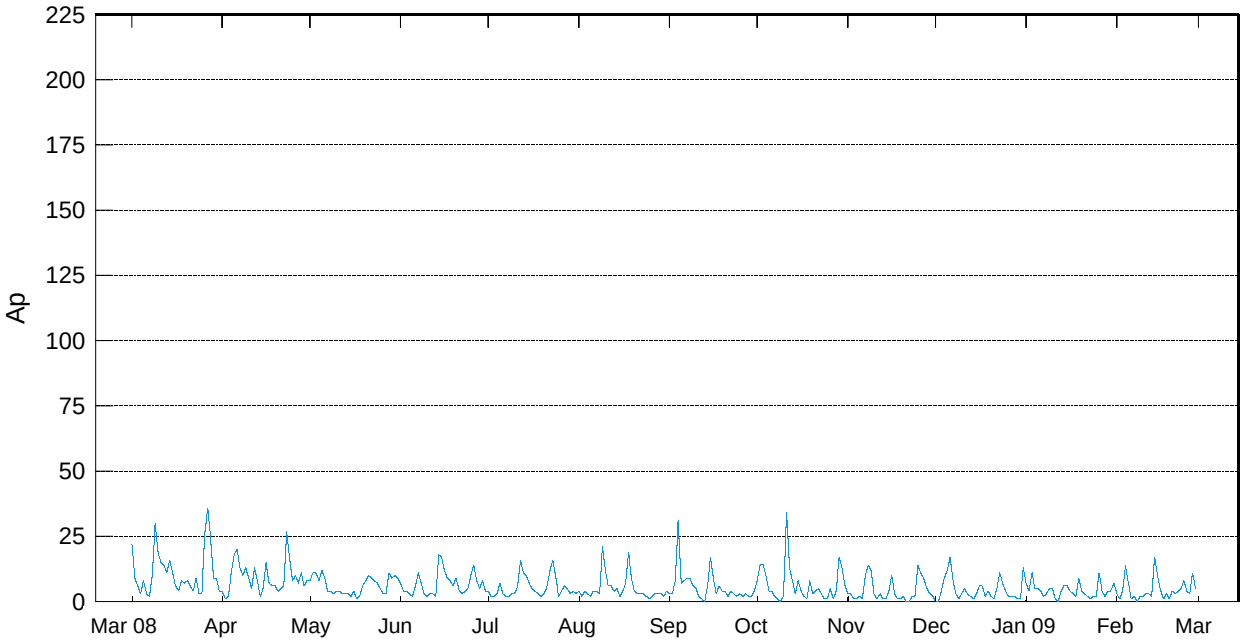
Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

Geomagnetic Activity Indices
FEBRUARY 2009

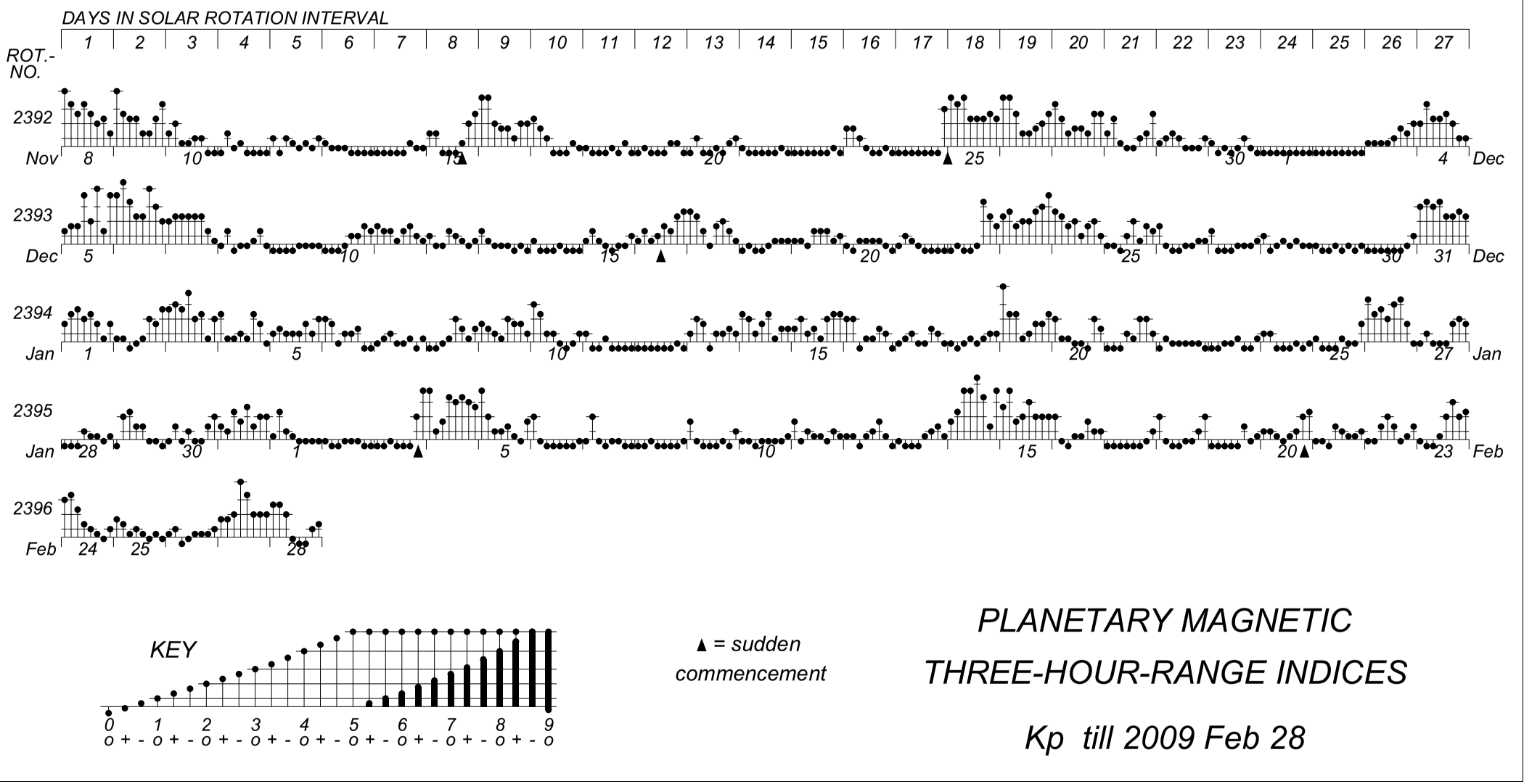
Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		1-	2+	1	1-	0+	0+	0+	0+	6	3	0.1	1-	1+	1o	1o	0+	0o	0+	0+	5	6	5	7	5	CC
2	Q2	0+	0	0	0+	0+	0+	0	0	1+	1	0.0	1-	0+	0o	0+	0+	0+	0+	0+	3	4	4	4	4	CC
3		0	0	0+	0	0	0	2	4-	6	4	0.1	0+	0o	1-	1-	0o	0+	2o	3+	8	12	8	3	17	KK
4	D2*	4-	1	2-	3+	3	3+	3	3-	22-	14	0.8	3-	1o	2o	3+	3o	3+	3o	2+	25	28	29	24	33	
5		4-	2	1	1	1+	1-	0+	2-	12-	7	0.3	3+	1+	1-	1+	2-	1o	0+	2-	11	13	12	14	10	C
6	Q9	2	0+	0	0	0	0	0	0+	3-	1	0.0	2o	0o	0o	0+	0o	0o	0o	1o	3	5	2	4	3	CC
7	Q10	0+	2	0+	0	0+	0+	0	0	3+	2	0.0	1-	1+	0+	0+	1o	1-	0o	0o	4	5	5	5	5	CC
8	Q1	0	0	0+	0	0	0	0	0+	1-	0	0.0	0+	1-	0+	0+	0o	0+	0o	1-	2	4	4	4	4	CC
9	Q8	2-	0+	0	0	0	0+	0	1	3+	2	0.0	1o	0+	0o	0+	0+	0+	0o	1o	3	6	5	5	6	CC
10	Q4	0+	0+	0	0+	0+	0+	0+	1-	3-	2	0.0	0+	1-	0+	0+	1-	0+	1-	0+	3	4	7	4	7	CC
11		2-	0+	1	1-	1-	0+	1	1-	6+	3	0.1	2-	1-	1-	1-	1-	1-	1+	1-	6	5	7	6	7	CC
12		1-	1-	0	1-	1	2-	1-	0	5+	3	0.0	1-	1o	0o	1+	1+	2-	1-	0o	6	7	11	9	9	CC
13	Q6	0+	0	0	0	1-	1	1+	1-	4	2	0.0	0+	0o	0o	1-	1-	1+	1o	1o	4	5	6	3	8	CK
14	D1*	2-	2+	4-	4-	4+	3+	1+	4-	24	17	0.9	2-	2+	4-	3+	4+	3o	1+	3o	30	34	39	32	41	
15	D4*	3-	4-	2-	2	3	2	2	2	19	10	0.6	2o	3+	2-	2+	3o	2o	2o	2-	19	23	28	26	26	
16		2	0+	0	1-	1-	2-	1	1	7+	4	0.1	1+	1-	0+	1o	1o	2-	2-	1o	8	8	9	7	10	CK
17	Q3	0	0	0	0	0	0	0+	1	1+	1	0.0	0+	0o	0o	0o	0o	0+	0+	1o	2	4	3	2	4	CC
18		2	0+	0	0	0+	0+	1	2	6	3	0.1	1+	0+	0o	0+	0+	1-	1+	2o	6	11	5	5	11	CC
19	Q5	0	0	0	0	0	1+	0+	1-	2+	1	0.0	0o	0o	0o	0+	0+	1+	0+	1o	3	4	6	3	6	CC
20		1	1	1-	0+	1-	1	2	2+	9	4	0.2	1+	1+	1o	1-	1-	1+	2o	2+	10	13	9	7	15	CC
21		0+	0+	0	1+	1	1-	1-	1	5+	3	0.1	0+	0+	0+	2o	1+	1-	1o	2-	7	6	8	6	8	CC
22		0+	0+	1+	2	1+	0+	1-	1+	8-	4	0.1	1-	1-	1+	2o	1+	0+	1o	1+	8	9	10	8	11	CC
23		0+	0	0	1-	2	3	2	2+	10+	5	0.2	1-	0+	0+	1o	2+	3-	2o	2o	11	14	13	6	22	
24	D5*	3	3+	2+	1+	1	1-	0+	1	13	8	0.4	2-	3-	2o	1+	1o	1o	0+	1o	11	15	9	16	8	CK
25		2-	1+	1-	1	1-	0+	1-	0+	7-	4	0.1	2-	1o	1-	1+	1-	1o	1o	0+	6	10	4	8	6	CC
26	Q7	1-	1	0	0+	1-	1-	1-	1	5	3	0.0	1-	1o	0o	1-	1-	1o	1-	1+	5	7	6	6	7	CK
27	D3*	2-	2-	2	4	3+	2	2	2	19-	11	0.6	2-	2-	2-	3+	3+	2+	2+	2-	19	23	22	22	23	
28		3-	3-	2	0+	0	0	1	1+	10	5	0.2	2-	2o	2-	1-	0o	0+	1o	1+	8	14	6	13	8	CK
Mean											5	0.18									8.4	10.8	10.1	10.3	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	0+	2-	1o	1o	0+	0o	0o	0+	4	1o	1+	1-	1o	0+	0o	1-	0+	5	67.5	0	0	11	
2	0o	0o	0o	0o	0o	1-	0o	0o	1	1o	1o	0o	1-	1-	0o	0+	1-	4	67.1	0	0	10	
3	0o	0o	0o	0o	0o	0+	2-	3+	7	1o	0o	1o	1+	0o	0+	2+	3o	9	67.3	0	0	11	
4	3o	1-	2o	4-	3+	4-	3o	2+	28	3-	1+	2-	3o	3-	3o	3o	2+	22	67.5	0	0	11	
5	3o	1+	1o	1o	1+	1o	0+	1+	10	3+	1+	0+	1+	2-	1+	1-	2-	12	68.1	0	0	12	
6	2-	0o	0o	0o	0o	0o	0o	1-	2	2+	0+	0o	0+	0o	0o	0o	1o	4	68.2	0	0	12	
7	0o	1+	0+	0o	1o	1-	0o	0o	3	1o	2-	1-	1-	1o	1o	0o	0o	5	69.2	0	0	13	
8	0o	0o	0+	0o	0o	0+	0o	0+	1	1-	1+	1-	0+	0o	0+	0+	1o	4	69.3	0	0	13	
9	1-	0o	0o	0o	0+	0+	0o	1o	2	1+	0+	0+	1-	0o	0o	0o	1o	3	68.8	0	0	12	
10	0o	0+	0o	0+	0+	1-	1-	0+	3	1-	1+	1-	0+	1o	0+	1-	0+	4	65.8	0	1	9	
11	2-	0+	0+	1-	1-	1-	1+	0+	5	2-	1o	1-	1-	1o	1-	1+	1+	7	68.5	8	3	12	
12	0+	1-	0o	1o	1o	2-	1-	0o	5	1+	1+	0o	2o	1+	2-	1-	0o	8	68.0	7	5	11	
13	0o	0o	0o	0+	1-	1+	1+	1o	4	0+	0+	0+	1o	1-	1o	1o	1o	5	68.3	7	1	12	
14	1+	2o	3+	3o	5-	3+	1+	3o	31	2o	3-	4-	3+	4o	3-	1+	3o	30	68.4	0	0	12	
15	2o	3+	1+	2+	3+	2o	2+	2-	21	2o	3o	2o	2o	3o	2o	2-	1+	18	67.9	0	0	11	
16	1+	0+	0+	1-	1-	2-	1+	1-	6	1+	1-	1-	1o	1+	2o	2-	1o	9	67.9	0	0	11	
17	0o	0o	0o	0o	0o	0+	0+	1-	1	1-	0o	0o	0o	0+	0o	0+	1+	3	69.0	0	0	13	
18	1o	0o	0o	0o	1-	1o	1+	2o	6	2-	1-	0+	1-	0o	0+	1o	2o	6	68.2	0	0	12	
19	0o	0o	0o	0o	1o	2-	0+	1o	4	0+	0o	0o	1-	0o	1+	0+	1o	4	67.4	0	0	11	
20	1o	1o	1-	0+	1-	1+	2+	2+	9	1+	2-	1+	1o	1-	1+	2o	2o	10	67.6	0	0	11	
21	1-	0+	0o	2+	1+	1-	1-	1+	7	0+	1-	1-	2-	1o	1-	1+	2-	7	69.1	0	0	13	
22	0+	0+	1+	2o	2-	0+	1o	1+	8	1o	1o	2-	2-	1+	0+	1+	2-	8	68.8	0	0	12	
23	0+	0o	0o	1-	3-	3o	2+	2o	12	1o	1o	1-	1o	2o	2+	2-	2o	11	69.3	0	0	13	
24	2o	3o	2+	1+	1o	1+	0+	1o	12	2-	3-	2-	1+	1+	1-	0+	1+	10	69.5	8	5	13	
25	1+	1+	1-	1+	1-	1o	1o	0+	7	2-	1o	1-	1+	0+	1-	1o	1-	6	69.3	8	3	13	
26	1-	1-	0o	0+	1-	1+	1-	1o	5	1o	1o	0o	1o	1-	1-	1-	2-	6	68.6	0	1	12	
27	2-	1o	2o	3+	4-	3-	2+	2-	21	2o	2o	2-	3o	3o	2o	2o	1+	17	67.6	0	0	11	
28	2-	2o	2-	0+	0o	0+	1o	1+	8	2-	2o	2-	1-	0o	0o	1o	1o	7	69.3	0	0	13	
Mean									8.3									8.7	68.3	1.4	0.7	11.8	

Daily Average Indices Ap
Mar 2008 - Feb 2009



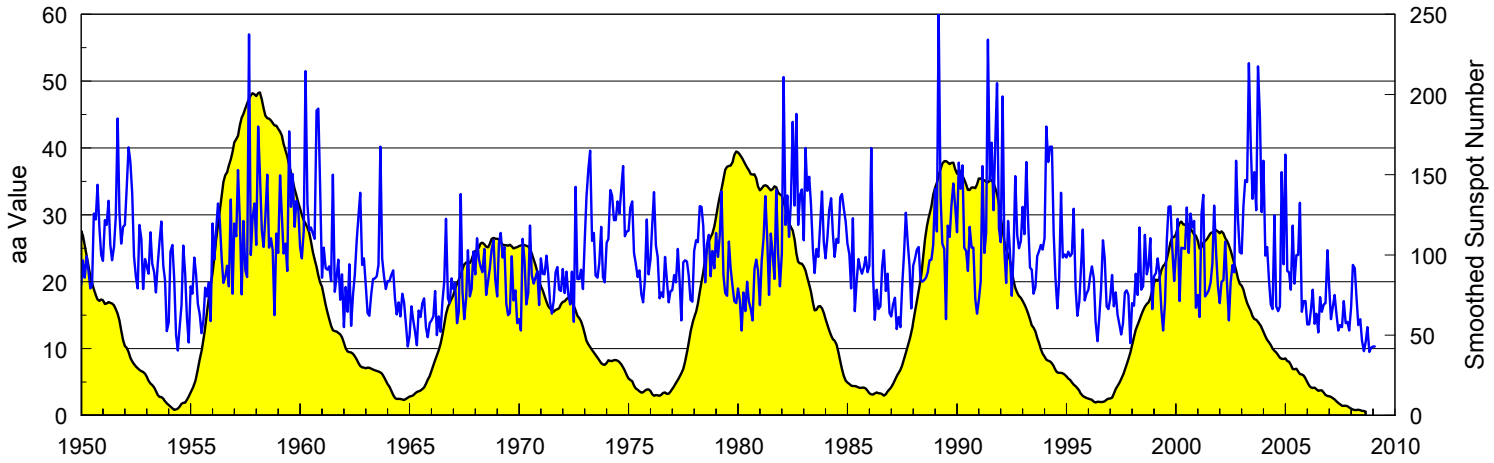
Day	Mar 08	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 09	Feb
1	22	4	8	7	4	4	3	8	3	0	7	3
2	9	1	11	4	2	2	3	14	3	0	4	1
3	6	2	11	4	2	4	8	14	1	4	11	4
4	3	11	8	3	3	3	31	10	1	9	5	14
5	8	18	12	2	7	2	7	4	2	12	5	7
6	3	20	9	6	3	4	8	4	1	17	4	1
7	2	13	4	11	2	4	9	2	10	8	2	2
8	10	10	4	7	2	3	9	1	14	3	3	0
9	30	13	3	3	3	21	6	0	12	1	5	2
10	19	9	4	2	3	12	5	2	3	3	5	2
11	15	5	4	3	6	6	2	34	1	5	1	3
12	14	13	3	3	16	6	1	13	3	3	0	3
13	11	8	3	2	11	4	0	8	1	2	4	2
14	16	2	3	18	10	5	6	3	1	1	6	17
15	11	5	2	17	7	2	17	8	4	3	6	10
16	6	15	4	12	5	4	9	4	10	6	4	4
17	4	7	1	9	4	7	3	2	3	6	3	1
18	8	6	2	8	3	19	6	1	1	2	2	3
19	7	6	6	6	2	9	4	8	1	4	9	1
20	8	4	8	9	3	4	4	3	2	2	4	4
21	6	5	10	4	5	3	2	4	0	1	3	3
22	4	6	9	3	11	3	4	5	0	5	2	4
23	9	27	8	4	16	3	3	3	2	11	1	5
24	3	16	7	5	10	2	2	1	2	7	2	8
25	3	8	5	10	2	1	3	1	14	4	2	4
26	26	10	3	14	4	2	2	5	11	2	11	3
27	36	7	3	8	6	3	3	1	9	2	4	11
28	24	11	11	5	5	3	2	4	5	2	2	5
29	9	6	9	8	3	3	2	17	3	1	4	
30	9	8	10	4	4	2	4	13	2	1	4	
31	4		9		3	4		6		13	7	
Mean	11	9	6	7	5	5	6	7	4	4	4	5



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 2009 Feb 28

Monthly Mean aa Index Jan 1950 - Feb 2009



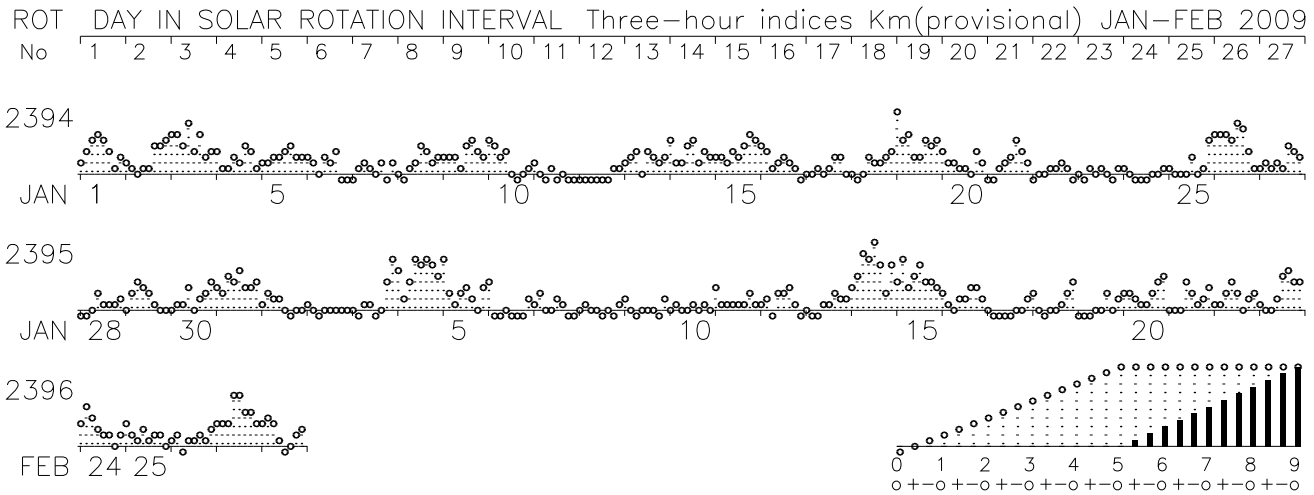
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1	18.8	19.3	27.0	21.1	22.4	26.5	15.9	21.0
1999	20.8	21.3	23.5	21.3	15.8	12.7	16.9	26.2	31.2	31.3	25.1	20.1	22.2
2000	24.2	29.4	17.1	25.1	25.0	24.9	31.1	24.3	30.2	28.1	29.1	16.1	25.4
2001	18.0	14.7	30.2	33.0	17.8	18.2	18.7	19.9	22.7	31.4	24.4	19.5	22.4
2002	16.8	20.0	20.2	26.0	19.9	14.2	19.9	22.5	21.4	38.1	29.3	24.4	22.7
2003	24.2	31.3	35.2	34.9	52.7	40.2	32.4	36.4	30.7	52.2	44.7	30.4	37.1
2004	38.1	23.9	25.2	20.1	16.6	15.9	29.9	16.3	15.6	16.3	36.4	22.6	23.1
2005	39.0	21.6	21.4	18.8	28.4	19.7	24.0	24.0	31.8	15.5	17.1	17.1	23.2
2006	13.6	13.6	15.8	18.8	13.7	15.2	12.4	17.7	15.5	16.6	16.8	24.7	16.2
2007	19.2	14.4	16.3	18.0	15.0	12.7	13.5	13.2	17.1	13.8	14.0	12.7	15.0
2008	16.2	22.5	22.0	17.5	13.5	14.4	11.2	9.6	11.0	13.2	9.5	10.1	14.2
2009	10.3	10.3											10.3

PLANETARY GEOMAGNETIC ACTIVITY

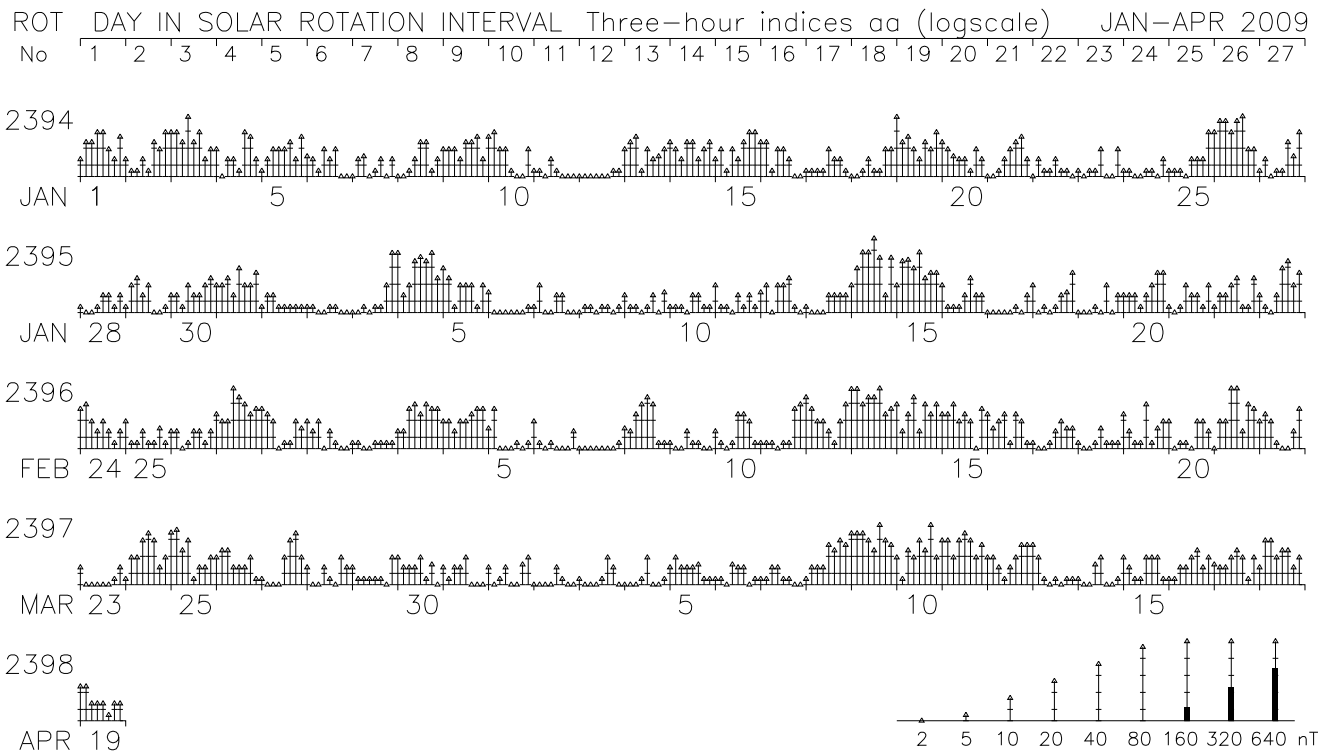
3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

ISGI PUBLICATION OFFICE - EMail : ISGI.PUBOFF@cetp.ipsl.fr

CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX - FRANCE



Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

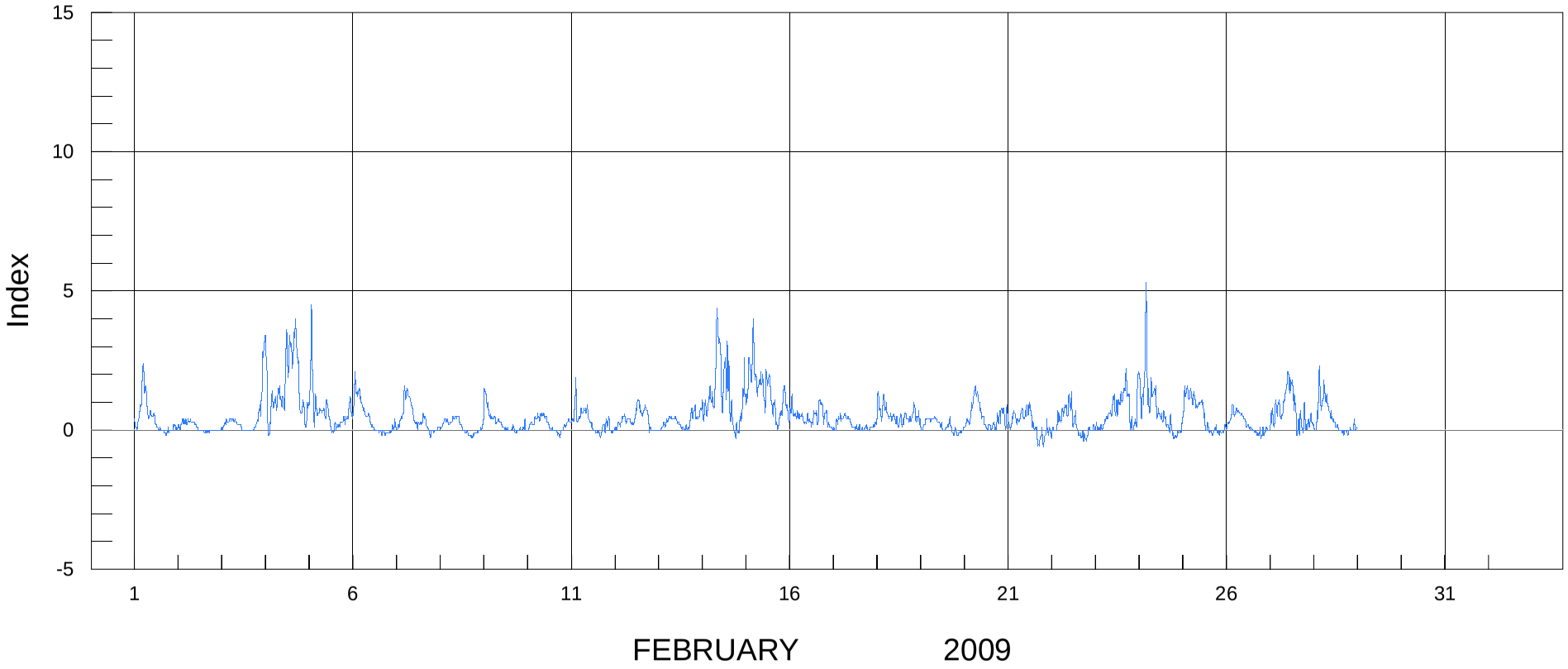


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

Polar Cap Index

Qaanaaq - Thule

WDC C1 for Geomagnetism, Copenhagen



Data Source: Geomagnetism and Space Physics
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

FEBRUARY 2009

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Hour Day	(UT)
JAI	17.4N	03	2000	..	..	..	..		-	4	99	23	05	18
NGP	11.3N	03	2000	..	..	..	..		-	3	110	22	05	18
ABG	09.4N	03	2000	..	..	..	..	4(5,7)	4	3	122	37	05	18
HYB	07.6N	03	2010	SC-	0.3	12.-	1	4(5,6)	5	3	88	05	06	02
PND	02.0N	03	2000	..	..	..	..		-	3	130	37	05	18
TIR	00.6S	03	2000	..	..	..	..		-	3	148	50	05	18
HYB	07.6N	13	1300	..	..	..	..	14(2)	5	4	137	19	15	22
JAI	17.4N	14	0400	..	..	..	..		-	5	106	18	15	23
NGP	11.3N	14	0400	..	..	..	..		-	4	121	17	15	23
ABG	09.4N	14	0400	..	..	..	..	14(5,6)	4	4	117	35	15	23
PND	02.0N	14	0400	..	..	..	..		-	4	145	73	15	23
TIR	00.6S	14	0400	..	..	..	..		-	7	220	69	15	23
HYB	07.6N	19	1400	..	..	..	..	20(7)	3	2	43	09	21	02
HYB	07.6N	23	0800	..	..	..	..	23(5)	4	2	66	10	25	03
JAI	17.4N	26	1900	..	..	..	..		-	4	66	19	27	23
NGP	11.3N	26	1900	..	..	..	..		-	3	76	16	27	23
ABG	09.4N	26	1900	..	..	..	..	27(4)	4	4	79	25	27	23
HYB	07.6N	26	1300	..	..	..	..	27(4)	5	3	81	13	28	01
PND	02.0N	26	1900	..	..	..	..		-	3	85	39	27	23
TIR	00.6S	26	1900	..	..	..	..		-	5	123	46	27	23

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

FEBRUARY 2009

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
03	2012	A: VAL	20	1746-1848	GUI
		B: LER* ESK* HAD* NAG SPT* GUI LIV			
		C: NGK* DOU BDV* CLF GCK HYB			
20	2012	B: NUR CLF			
		C: NGK* DOU BDV			

REPORTING OBSERVATORIES (up to 02-04-2009):
NUR LER ESK NGK VAL HAD DOU BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY
GUI HYB GNA CNB LIV

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 (+).

Note that we have included data of the Antartic Station LIVINGSTONE (62º 39' 44" S, 60º23' 41" W) -- Luis F.

Criterion on Provisional SSC data

From December 2002, we are giving as provisional SSC only the SSC reported by more than 4 observatories. This is a change with respect to the previous criterion according to which we used to give the SSC reported by more than 5 observatories. The change, pending IAGA confirmation, has been provisionally taken because of the decreasing number of reporting observatories in order to keep the homogeneity of the data. The idea is to keep the same minimum percentage of the observatories reporting an SSC, relative to the total number of reporting observatories, to be considered as a probable SSC.