FEBRUARY 2008 NUMBER 762 - Part I

Solar-Geophysical Data prompt reports

Data for December 2007 and January 2008
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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FEBRUARY 2008 NUMBER 762 - Part I

Solar-Geophysical Data prompt reports

Data for December 2007 and January 2008

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NATIONAL GEOPHYSICAL DATA CENTER
Christopher G. Fox, Director
Boulder, Colorado

SOLAR-GEOPHYSICAL DATA

Number 762

(Issued in Two Parts)

Editor: Edward H. Erwin

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

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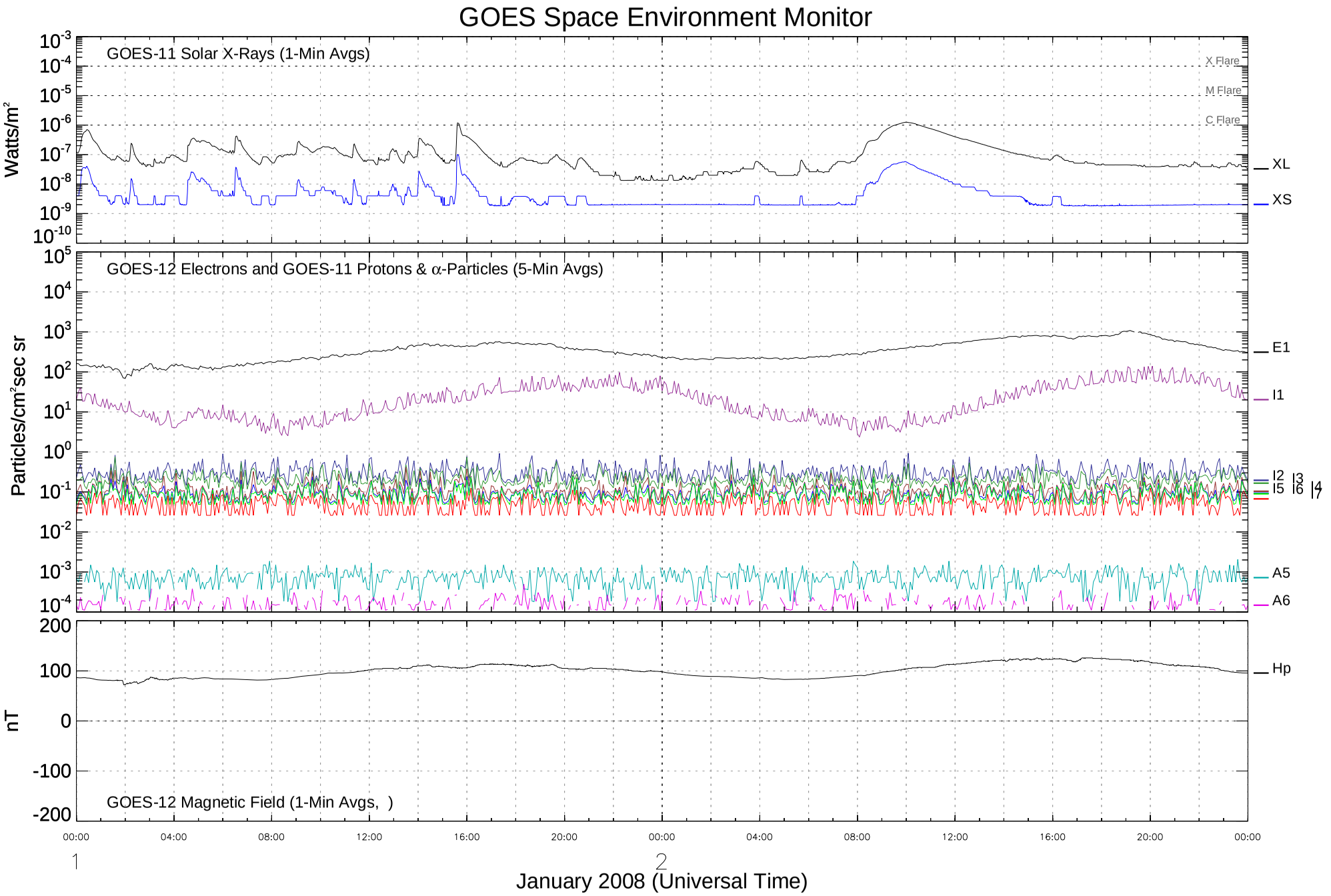
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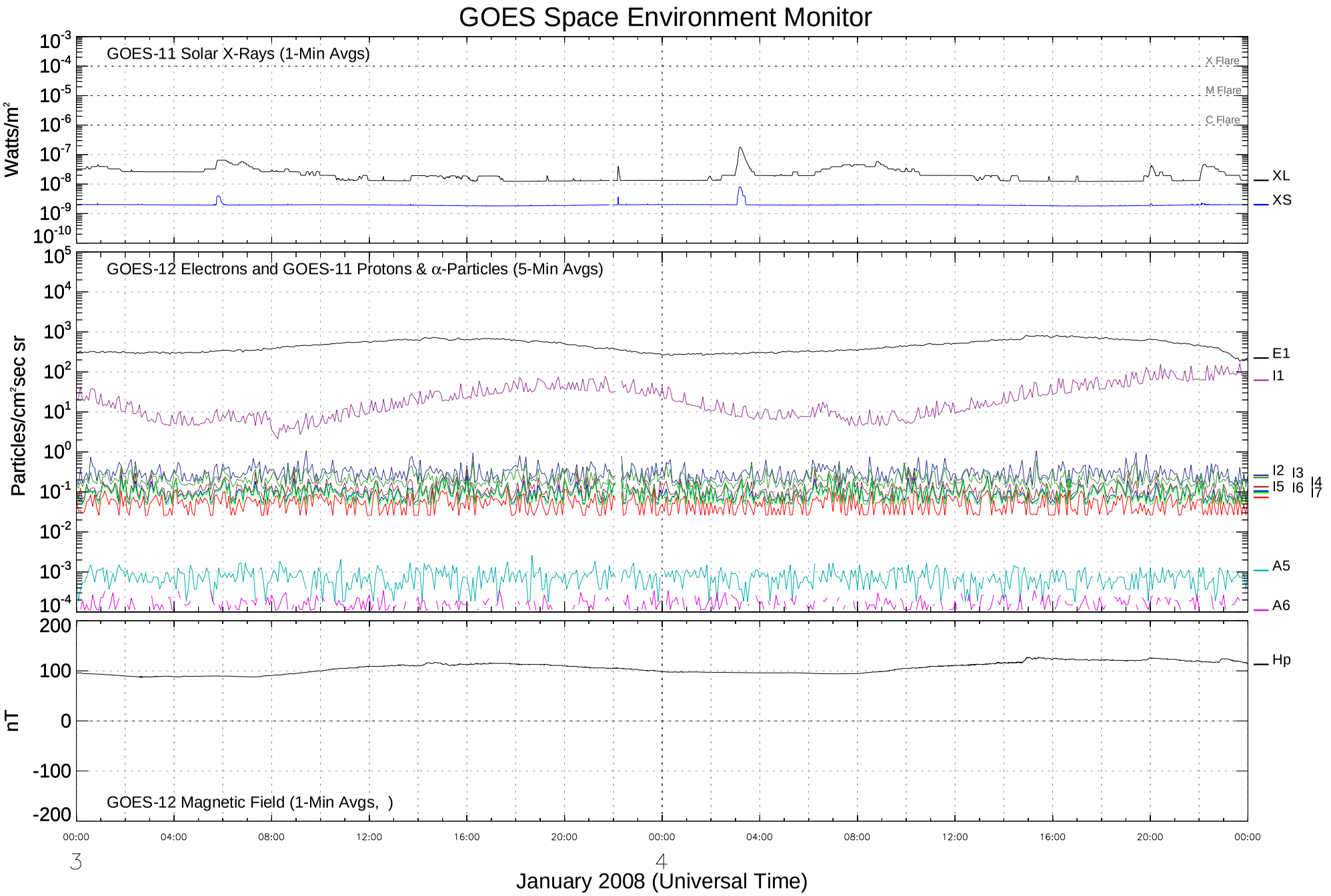
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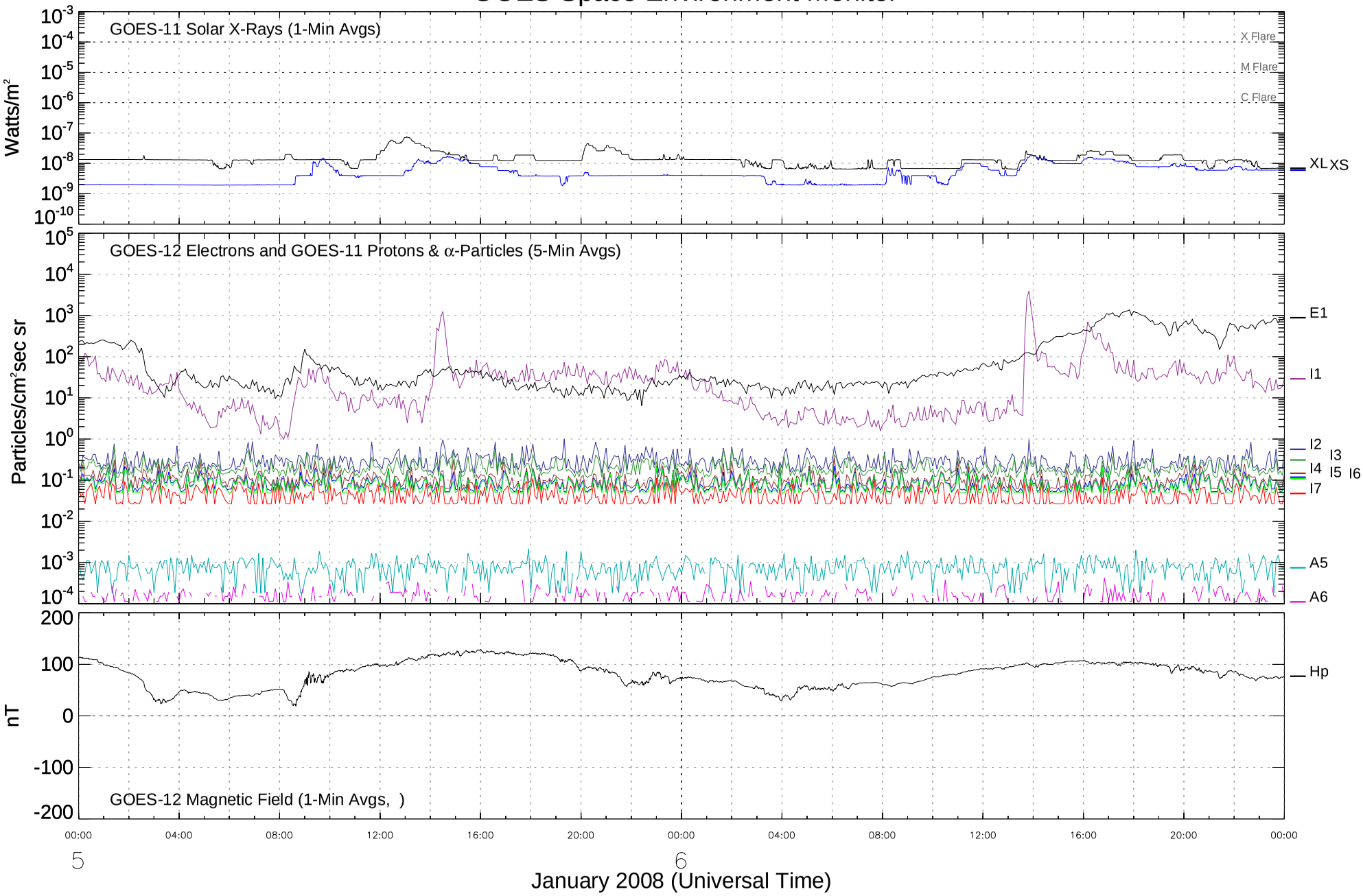

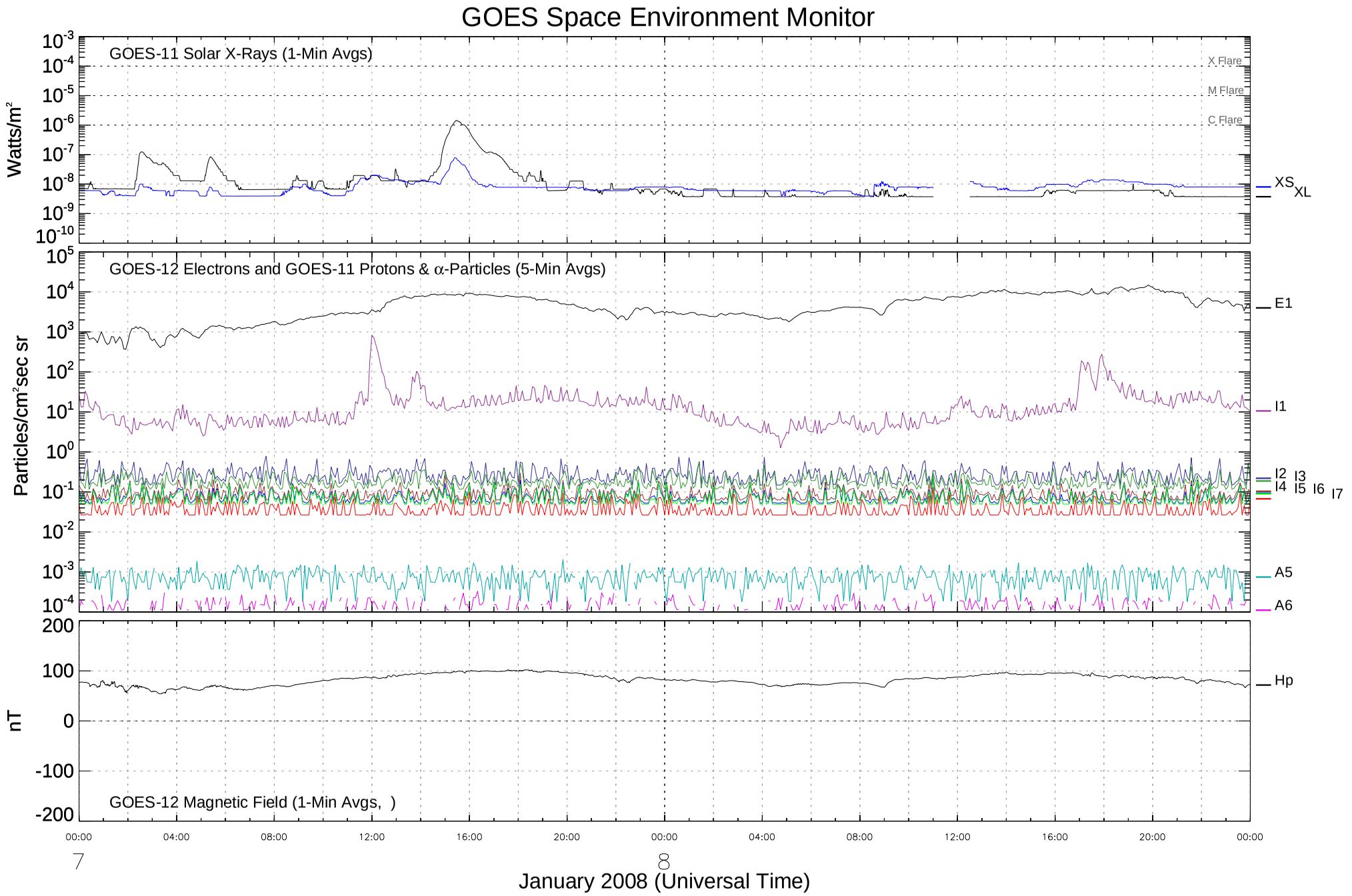
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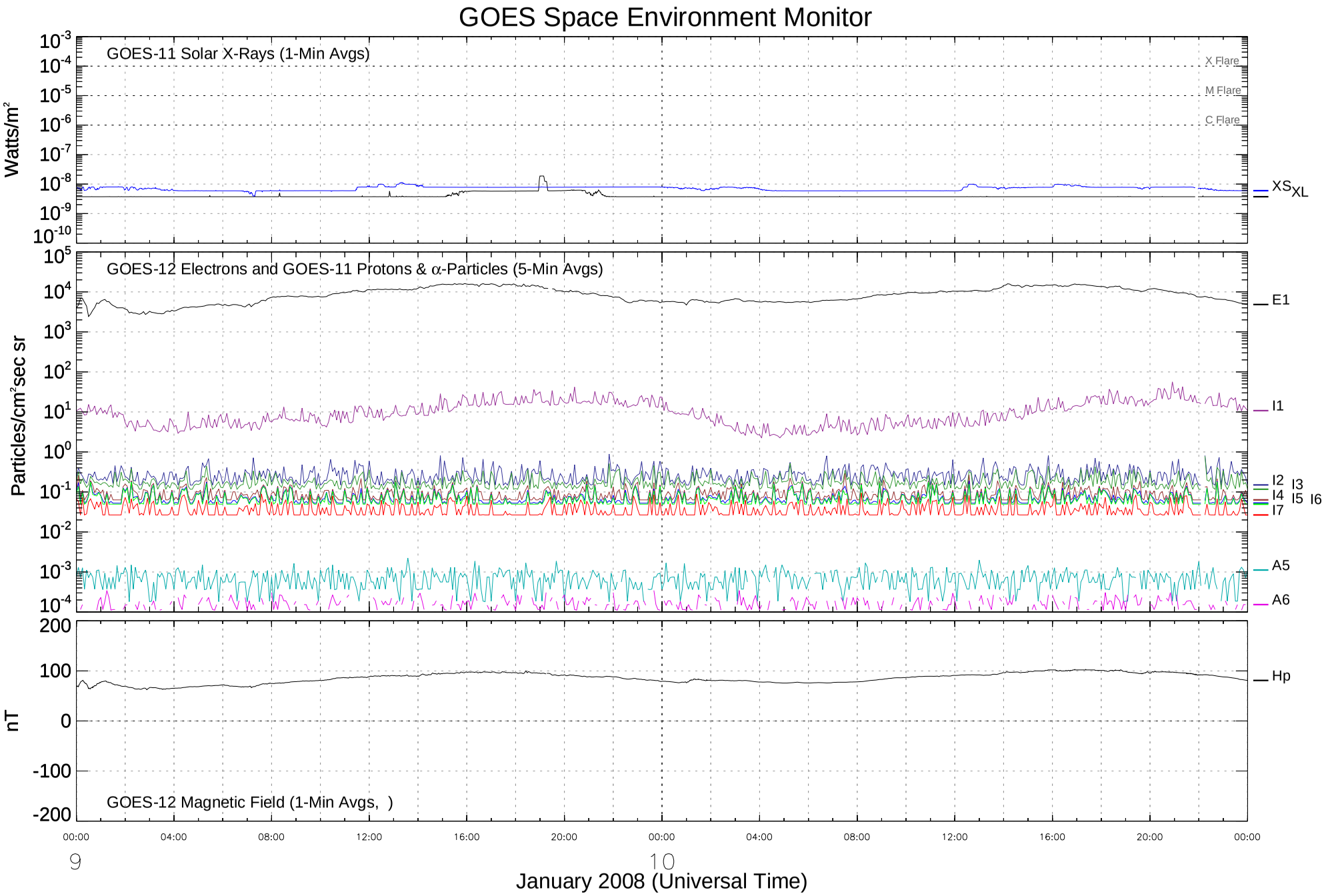
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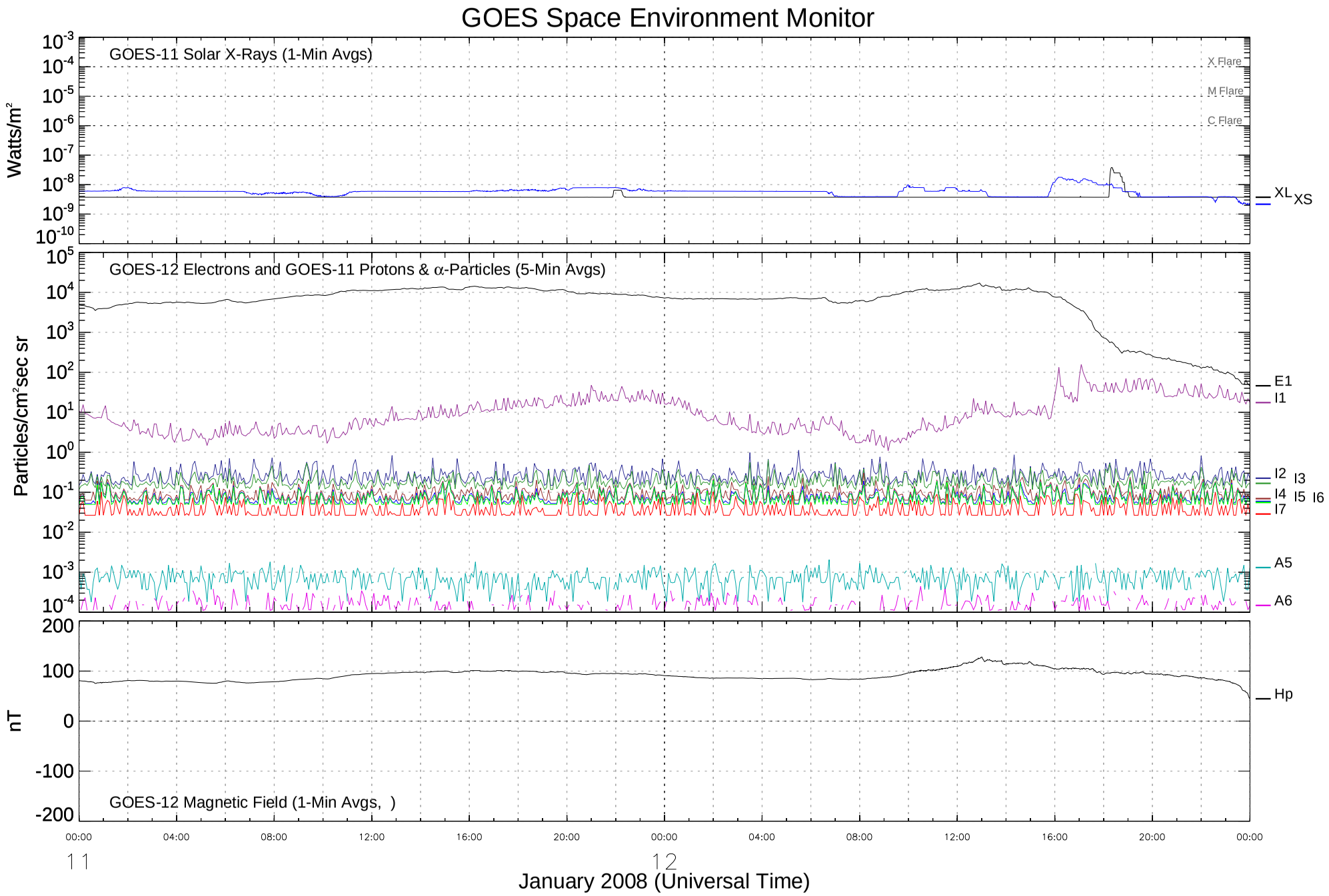
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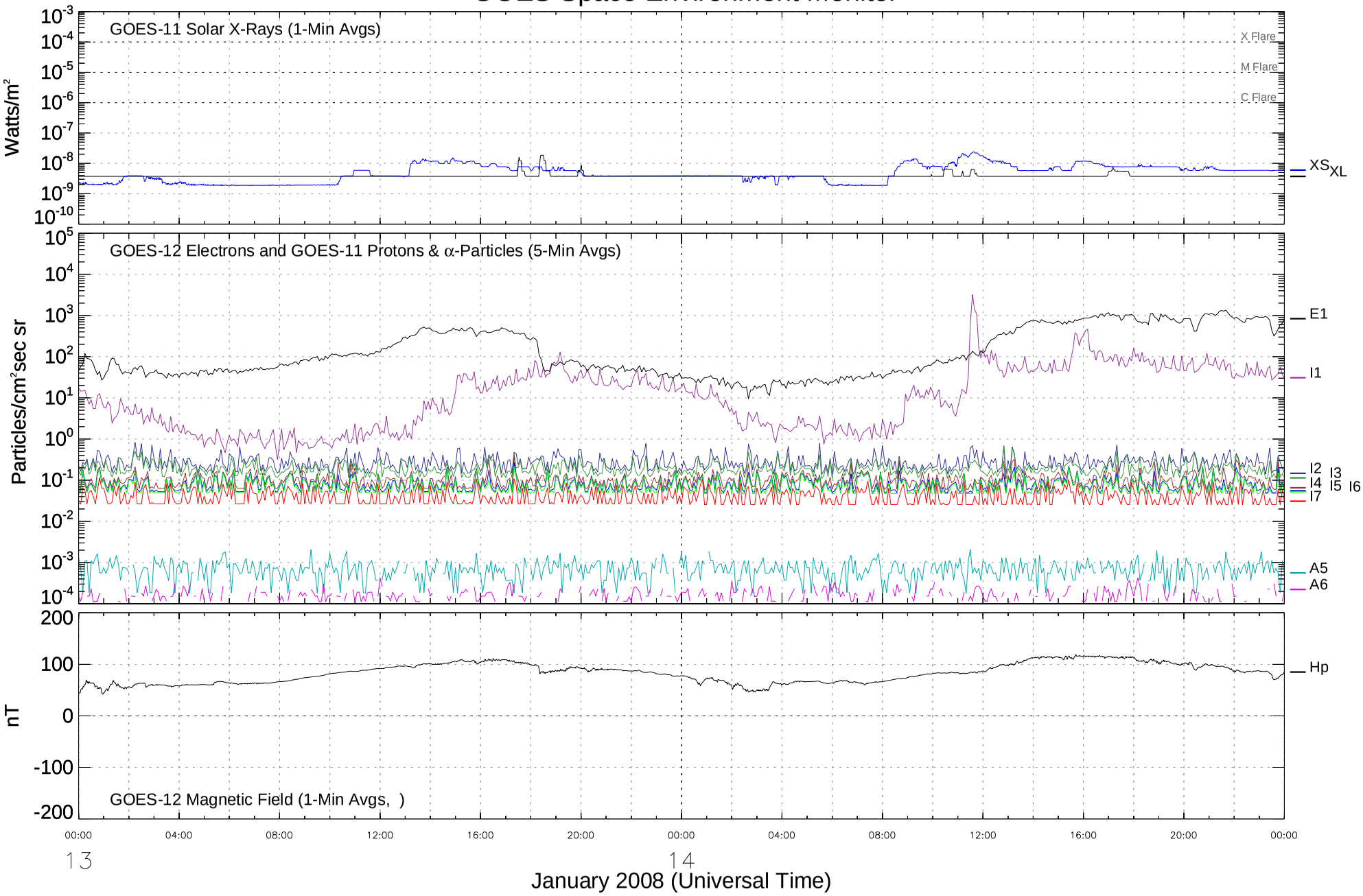

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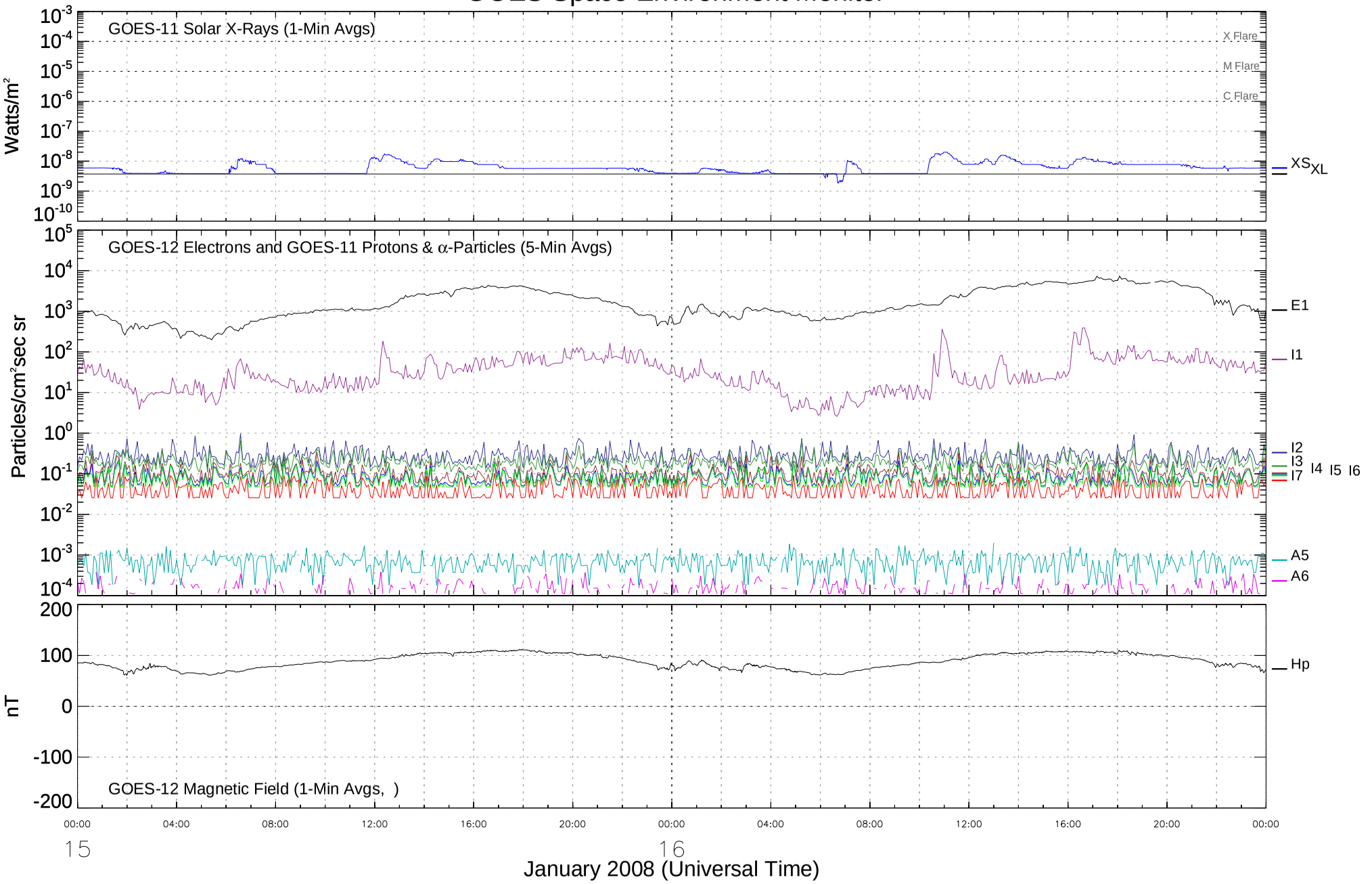

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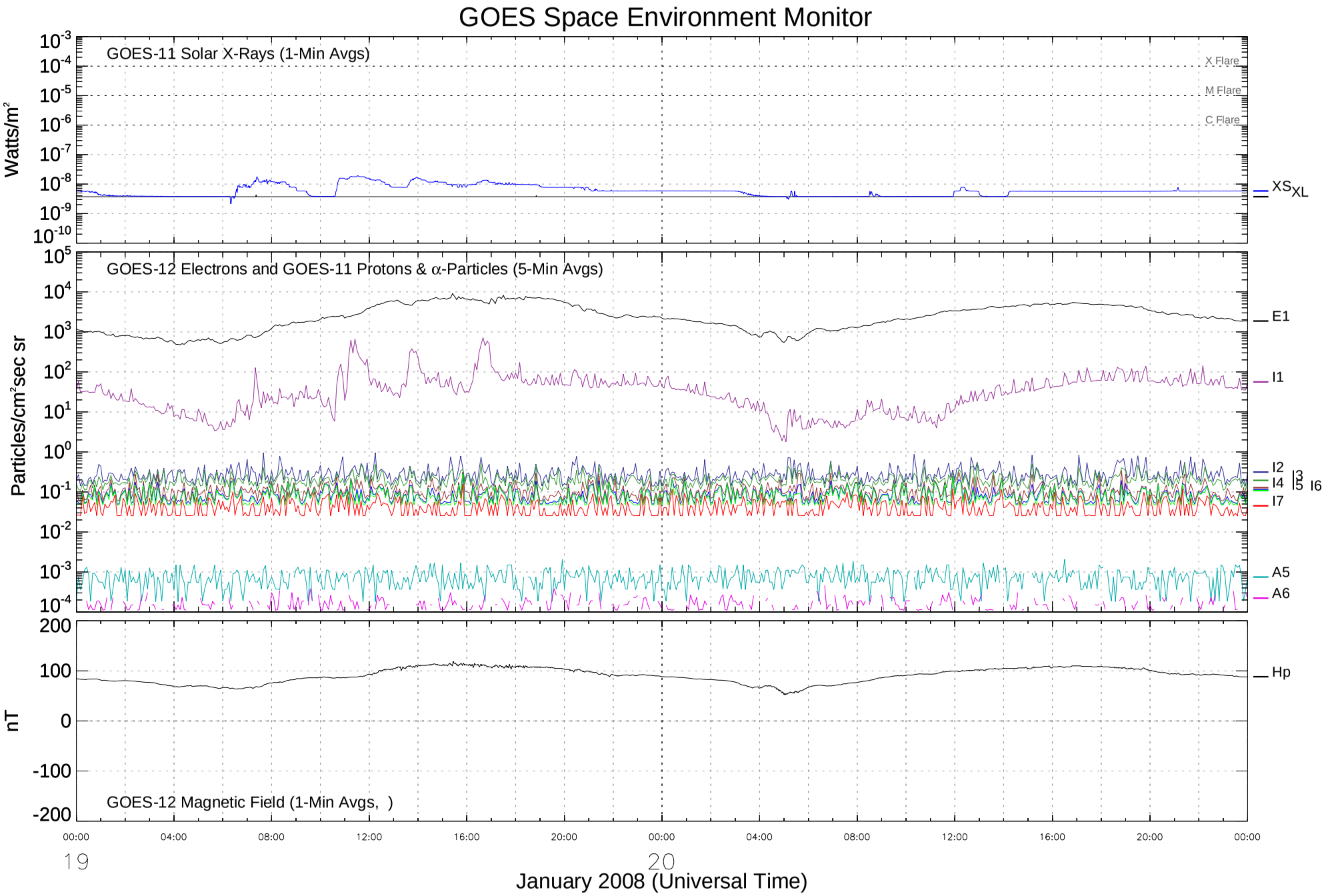
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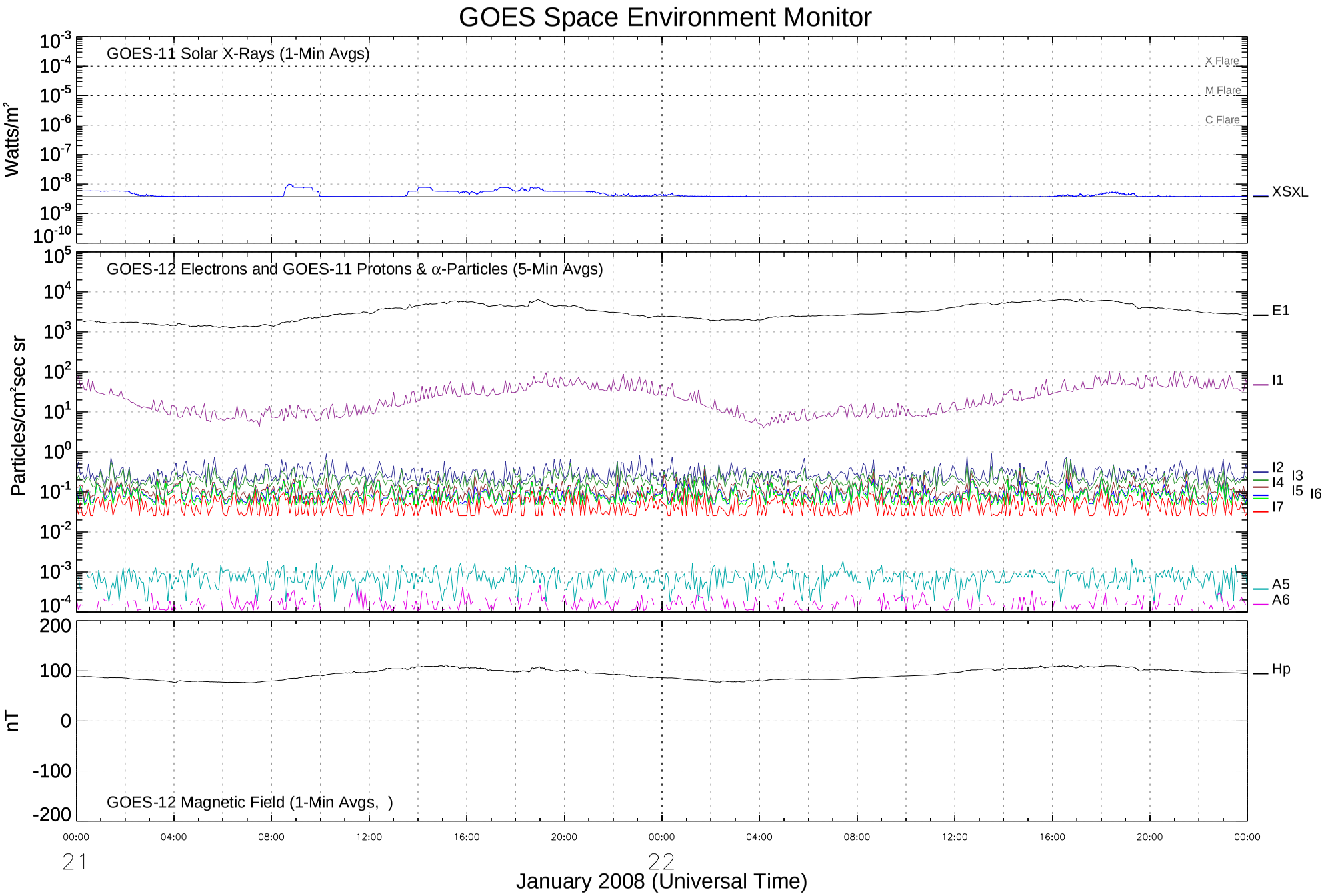
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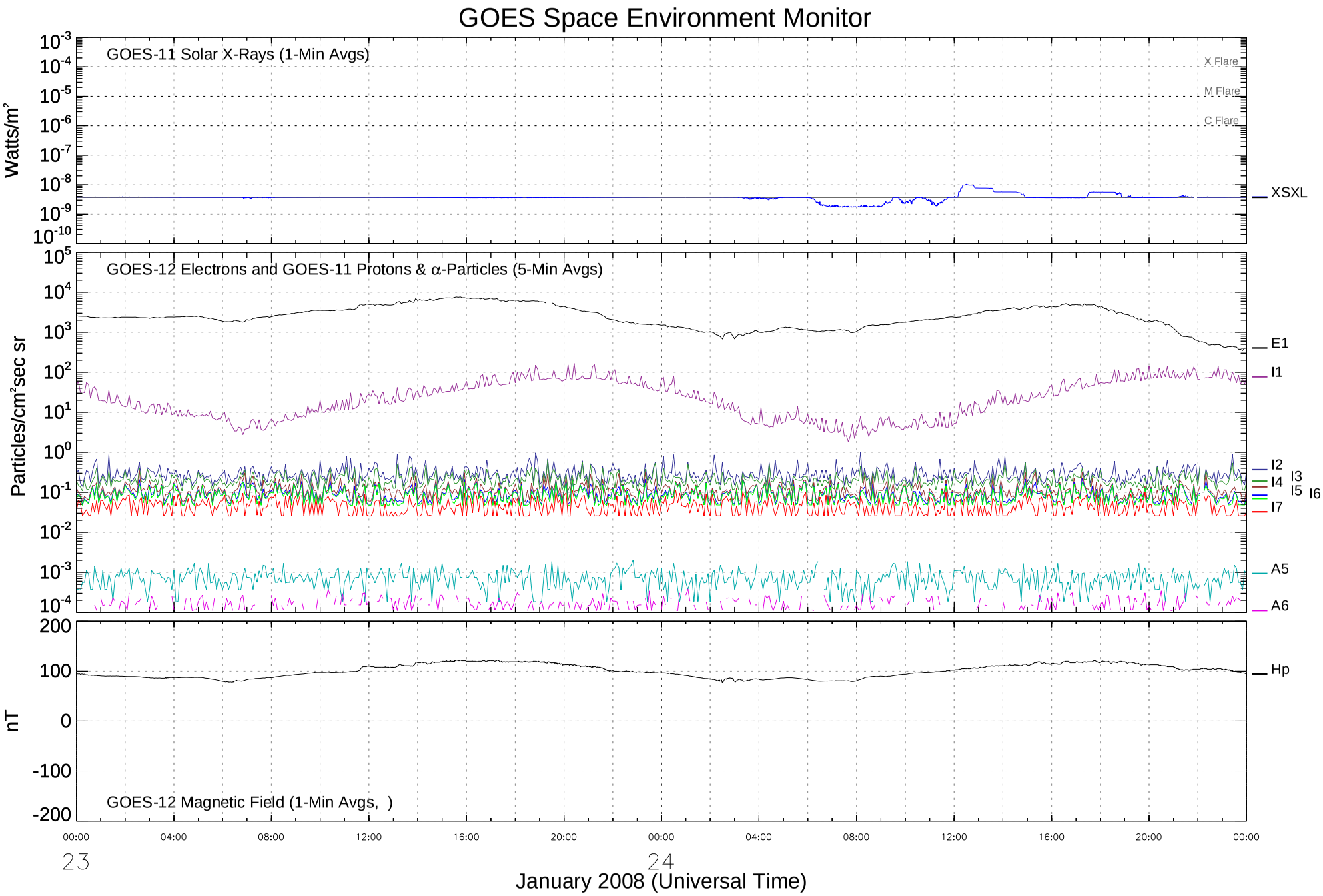
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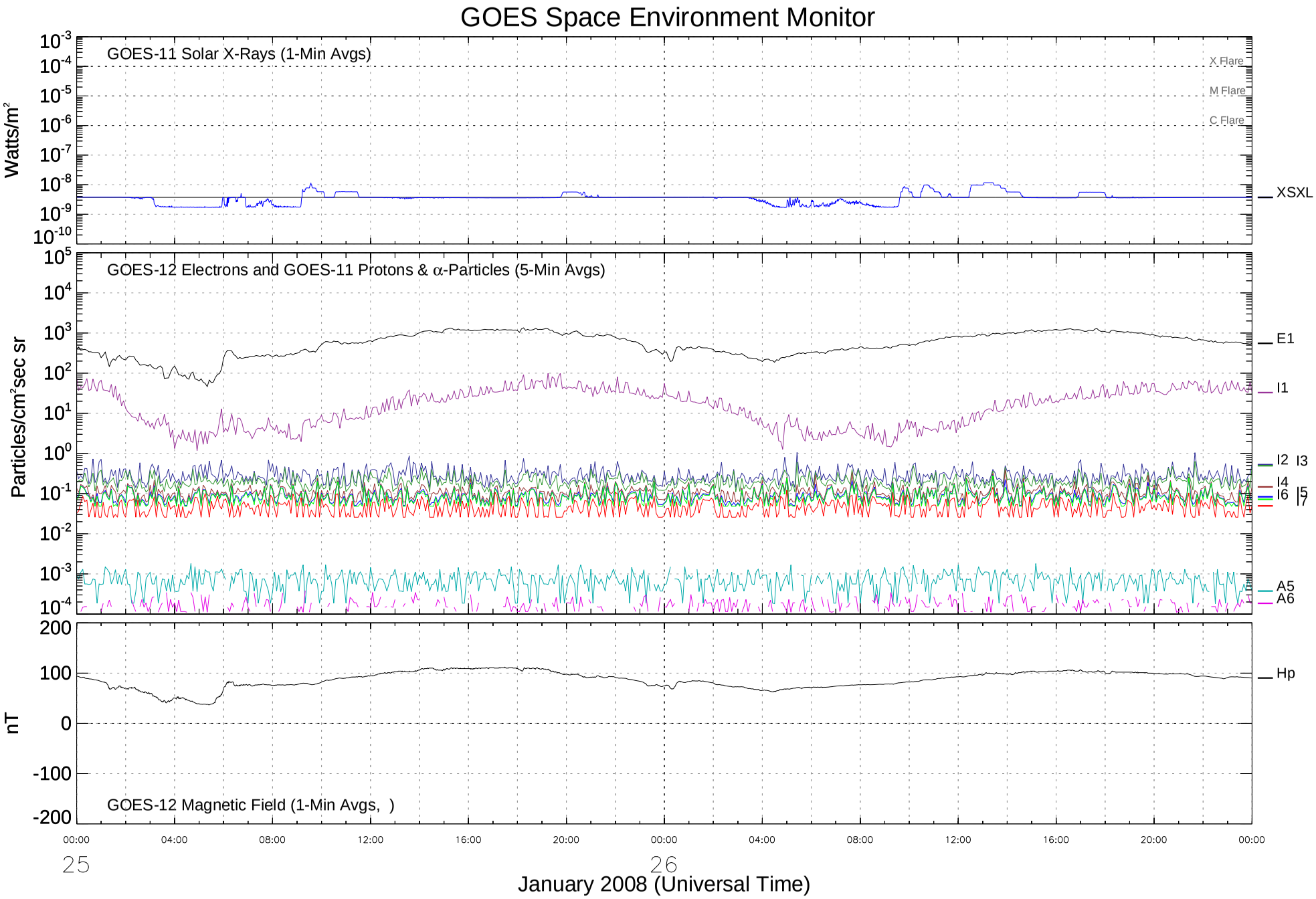
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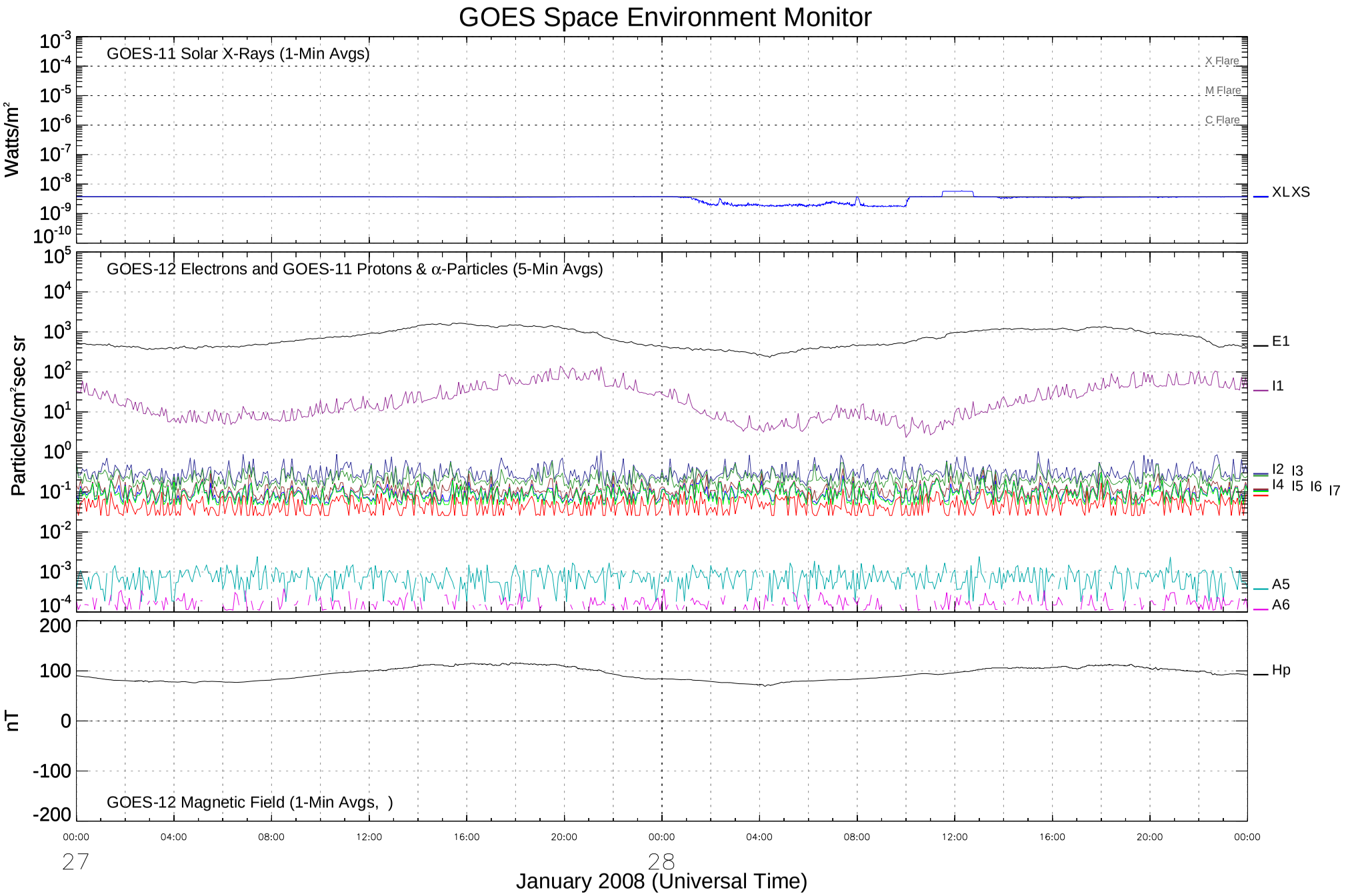
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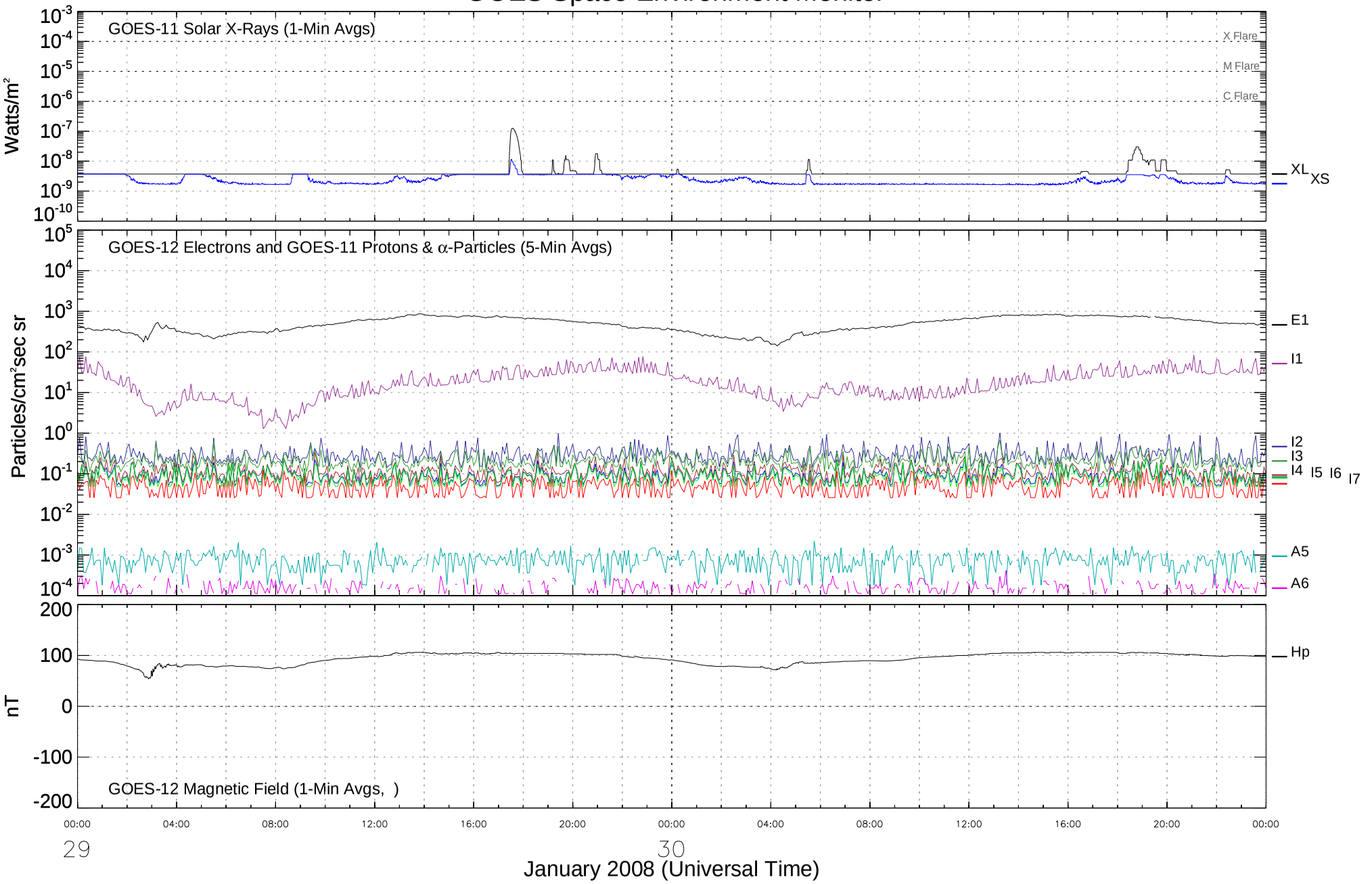

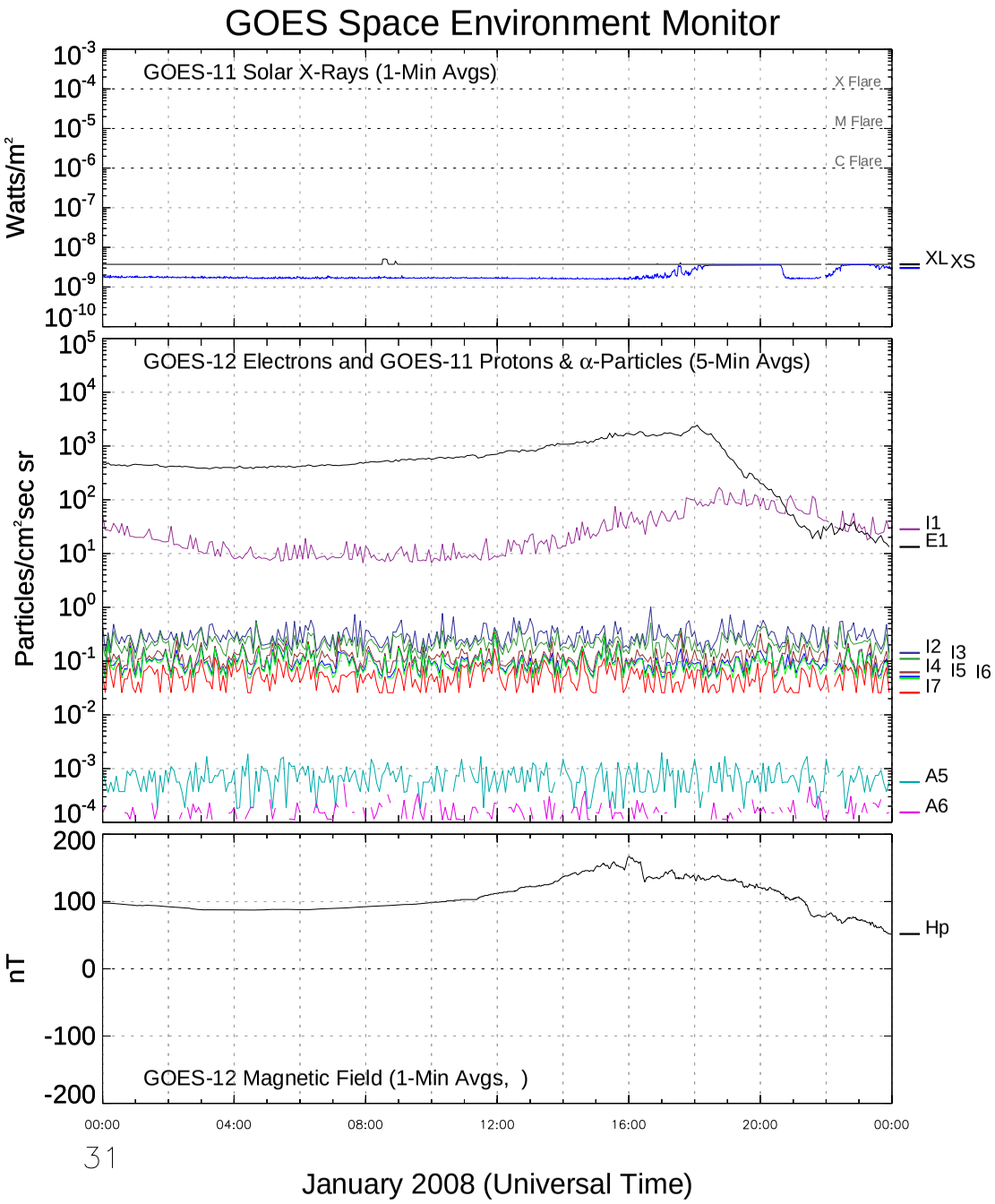
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A L E R T P E R I O D S
The International Space Environment Service

JANUARY 2008

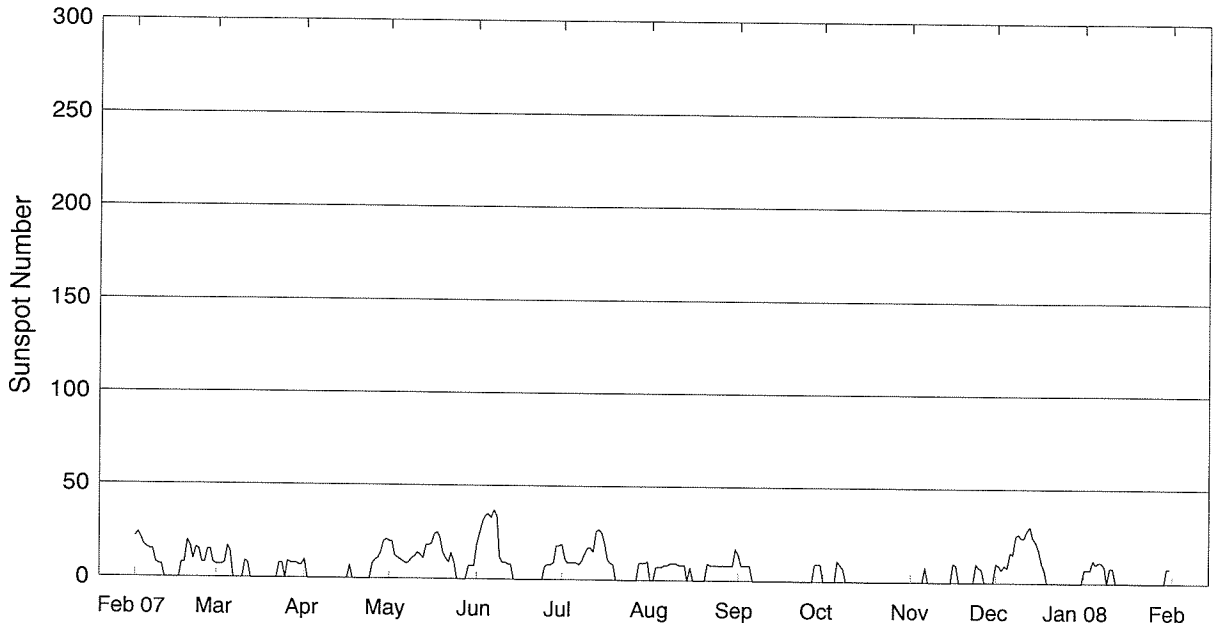
Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
001	01	31	0	77	2				0	0	0	01		SOL: Eruptive
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
002	02	01	12	79	2	10980	S07	E69	1	0	0	02	E	SOL: Eruptive
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
003	03	02	13	80	1	10980	S08	E58	0	0	0	03	E	SOL: Eruptive
									0	0	0	03		MAG: Quiet
									0	0	0	03		PRO: Quiet
004	04	03	13	79	1	10980	S06	E42	0	0	0	04	Q	SOL: Eruptive
									0	0	0	04		MAG: Quiet
									0	0	0	04		PRO: Quiet
005	05	04	26	79	2	10980	S06	E29	0	0	0	05	Q	SOL: Quiet
						10981	N30	E22	0	0	0	05	Q	MAG: Quiet
									0	0	0	05		PRO: Quiet
006	06	05	12	80	17	10981	N29	E14	0	0	0	06	Q	SOL: Quiet
									0	0	0	06		MAG: Quiet
									0	0	0	06		PRO: Quiet
007	07	06	12	79	14	10981	N27	W04	0	0	0	07	Q	SOL: Quiet
									0	0	0	07		MAG: Quiet
									0	0	0	07		PRO: Quiet
008	08	07	14	78	16	10980	S06	W03	1	0	0	08	Q	SOL: Quiet
									0	0	0	08		MAG: Quiet
									0	0	0	08		PRO: Quiet
009	09	08	16	76	12	10980	S08	W23	0	0	0	09	Q	SOL: Quiet
									0	0	0	09		MAG: Quiet
									0	0	0	09		PRO: Quiet
010	10	09	0	77	7				0	0	0	10		SOL: Quiet
									0	0	0	10		MAG: Quiet
									0	0	0	10		PRO: Quiet
011	11	10	0	76	4				0	0	0	11		SOL: Quiet
									0	0	0	11		MAG: Quiet
									0	0	0	11		PRO: Quiet
012	12	11	0	76	2				0	0	0	12		SOL: Quiet
									0	0	0	12		MAG: Quiet
									0	0	0	12		PRO: Quiet
013	13	12	0	76	7				0	0	0	13		SOL: Quiet
									0	0	0	13		MAG: Quiet
									0	0	0	13		PRO: Quiet
014	14	13	0	75	14				0	0	0	14		SOL: Quiet
									0	0	0	14		MAG: Active
									0	0	0	14		PRO: Quiet
015	15	14	0	75	15				0	0	0	15		SOL: Quiet
									0	0	0	15		MAG: Active
									0	0	0	15		PRO: Quiet
016	16	15	0	74	12				0	0	0	16		SOL: Quiet
									0	0	0	16		MAG: Active
									0	0	0	16		PRO: Quiet
017	17	16	0	73	12				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

JANUARY 2008

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)
018	18	17	0	74	11				0	0	0	18		SOL: Quiet
									0	0	0	18		MAG: Quiet
									0	0	0	18		PRO: Quiet
019	19	18	0	71	14				0	0	0	19		SOL: Quiet
									0	0	0	19		MAG: Quiet
									0	0	0	19		PRO: Quiet
020	20	19	0	71	9				0	0	0	20		SOL: Quiet
									0	0	0	20		MAG: Quiet
									0	0	0	20		PRO: Quiet
021	21	20	0	70	7				0	0	0	21		SOL: Quiet
									0	0	0	21		MAG: Quiet
									0	0	0	21		PRO: Quiet
022	22	21	0	72	2				0	0	0	22		SOL: Quiet
									0	0	0	22		MAG: Quiet
									0	0	0	22		PRO: Quiet
023	23	22	0	70	1				0	0	0	23		SOL: Quiet
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
024	24	23	0	71	3				0	0	0	24		SOL: Quiet
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
025	25	24	0	71	4				0	0	0	25		SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
026	26	25	0	71	11				0	0	0	26		SOL: Quiet
									0	0	0	26		MAG: Quiet
									0	0	0	26		PRO: Quiet
027	27	26	0	73	6				0	0	0	27		SOL: Quiet
									0	0	0	27		MAG: Quiet
									0	0	0	27		PRO: Quiet
028	28	27	0	72	4				0	0	0	28		SOL: Quiet
									0	0	0	28		MAG: Quiet
									0	0	0	28		PRO: Quiet
029	29	28	0	71	3				0	0	0	29		SOL: Quiet
									0	0	0	29		MAG: Quiet
									0	0	0	29		PRO: Quiet
030	30	29	13	72	5	10982	S09	E53	0	0	0	30	Q	SOL: Quiet
									0	0	0	30		MAG: Quiet
									0	0	0	30		PRO: Quiet
031	31	30	14	73	1	10982	S09	E40	0	0	0	31	Q	SOL: Quiet
									0	0	0	31		MAG: Quiet
									0	0	0	31		PRO: Quiet

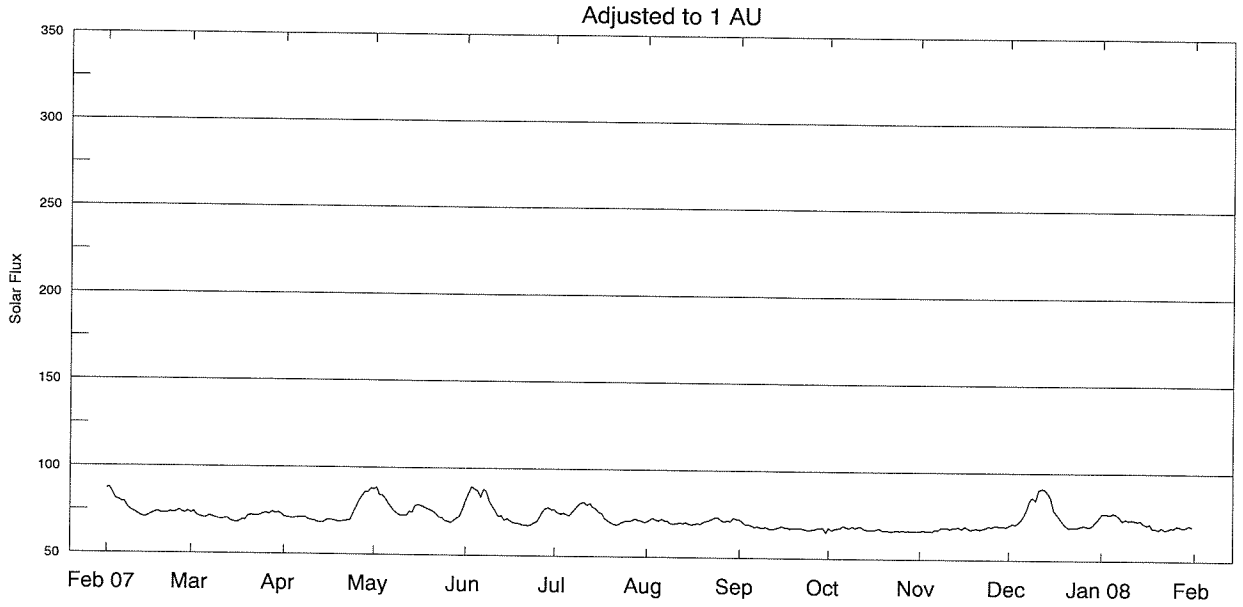
International Relative Sunspot Numbers
Feb 2007 - Jan 2008



Day	Feb 07	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 08*
1	22	7	10	20	19	19	0	14	0	0	10	7
2	24	7	0	20	25	11	0	8	0	0	9	7
3	21	7	0	12	31	9	7	8	0	0	7	7
4	17	8	0	11	34	9	7	8	0	0	9	12
5	16	17	0	10	35	9	7	8	0	0	8	10
6	15	14	0	9	33	9	8	0	11	8	16	11
7	15	0	0	8	37	8	8	0	9	0	15	11
8	8	0	0	9	34	10	9	0	7	0	25	9
9	7	0	0	11	12	14	9	0	0	0	26	0
10	7	0	0	12	9	17	9	0	0	0	24	8
11	0	9	0	14	9	17	8	0	0	0	24	8
12	0	8	0	13	8	15	8	0	0	0	28	0
13	0	0	0	11	8	26	8	0	0	0	30	0
14	0	0	0	18	0	27	0	0	0	0	24	0
15	0	0	0	18	0	25	0	0	0	0	22	0
16	0	0	0	19	0	20	0	0	0	10	18	0
17	8	0	7	24	0	11	0	0	0	9	11	0
18	8	0	0	25	0	9	0	0	0	0	7	0
19	20	0	0	22	0	8	0	0	0	0	0	0
20	17	0	0	14	0	0	0	0	0	0	0	0
21	10	0	0	11	0	0	9	0	0	0	0	0
22	16	0	0	9	0	0	8	0	0	0	0	0
23	15	8	0	14	0	0	8	0	0	0	0	0
24	8	8	0	9	0	0	8	0	0	10	0	0
25	8	0	8	0	7	0	8	0	0	8	0	0
26	15	9	10	0	8	0	8	0	0	7	0	0
27	15	8	11	0	8	0	8	0	0	0	0	0
28	8	8	14	0	9	9	8	9	0	0	0	0
29		8	20	7	18	9	8	9	0	0	0	0
30		7	21	7	18	9	8	9	0	0	0	8
31		7		7		0	17		0		0	8
Mean	10.7	4.5	3.4	11.7	12.1	9.7	6.0	2.4	0.9	1.7	10.1	3.4

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Feb 2007 - Jan 2008



Day	Feb 07	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 08
1	87.3	73.4	71.6	87.6	81.6	76.8	70.4	72.1	67.8	66.3	69.9	76.7
2	87.7	74.2	71.1	88.8	85.6	75.1	71.5	70.6	66.5	66.8	71.0	77.0
3	84.8	72.0	70.8	84.4	89.5	74.2	72.4	69.1	67.3	66.5	70.5	76.7
4	81.3	71.3	70.8	83.9	88.2	74.9	71.4	69.4	67.4	66.5	71.5	76.4
5	80.7	70.8	71.0	82.4	87.1	73.9	70.9	68.8	67.8	66.2	73.1	77.1
6	79.6	70.8	71.1	79.4	83.6	73.5	72.0	67.8	68.9	67.3	75.9	76.6
7	79.8	71.8	71.4	77.1	88.1	75.5	71.0	68.2	68.1	66.9	79.8	75.2
8	76.3	71.4	71.3	74.7	86.8	77.6	71.0	67.6	67.9	68.4	84.4	73.0
9	74.6	70.6	70.2	73.5	81.0	79.7	69.3	67.7	68.6	68.2	86.2	74.0
10	73.9	70.2	69.7	72.6	78.2	80.8	69.3	67.9	67.9	68.4	84.3	73.2
11	72.8	70.1	69.5	72.9	75.6	81.1	69.5	67.0	68.6	67.7	90.5	73.5
12	71.8	70.3	68.6	72.9	72.6	79.5	70.0	66.7	68.3	68.3	91.1	73.2
13	70.9	70.6	68.6	75.0	73.1	80.6	69.5	67.2	67.3	68.4	90.9	72.9
14	70.9	69.2	68.6	74.4	70.6	78.2	70.3	67.6	66.7	68.9	89.0	73.1
15	71.8	68.5	69.8	78.5	71.3	77.1	69.3	68.5	66.8	67.7	86.1	71.3
16	72.9	68.0	69.8	78.9	70.2	75.3	69.0	67.8	66.7	69.1	79.1	70.6
17	73.5	68.6	69.8	78.3	68.9	74.7	69.3	67.6	67.0	68.2	76.9	71.3
18	74.1	69.8	69.3	77.6	68.8	71.8	69.6	67.1	67.7	67.2	74.4	68.8
19	73.2	69.5	68.9	76.6	68.5	70.5	69.4	67.4	66.8	67.9	72.1	68.6
20	73.1	72.0	69.1	75.9	67.8	69.5	70.7	67.4	66.3	68.0	70.2	68.0
21	73.2	72.3	69.4	75.0	67.6	68.6	70.9	67.4	66.6	67.4	68.7	69.3
22	73.9	72.0	69.7	73.7	67.5	68.3	71.6	67.2	66.0	68.0	69.1	68.1
23	73.6	72.0	69.8	71.9	68.1	69.3	72.4	66.8	66.4	68.3	69.1	68.4
24	73.9	72.4	74.0	71.7	69.1	70.2	73.2	66.5	66.8	69.5	69.1	69.1
25	75.1	73.3	77.4	69.9	69.8	70.8	73.1	66.6	66.3	68.8	69.7	68.9
26	73.9	73.5	81.5	69.5	72.8	70.6	71.6	66.8	66.7	69.6	70.2	70.3
27	73.4	73.0	83.8	68.8	75.7	70.9	70.7	67.4	66.2	69.6	69.7	69.8
28	74.4	74.3	86.1	70.5	77.4	72.1	71.6	67.4	66.6	69.3	69.5	69.2
29		73.6	86.0	71.5	77.8	71.1	71.0	67.8	66.2	69.3	70.3	69.5
30		73.9	88.2	72.6	76.4	71.0	73.0	65.1	66.3	69.2	72.5	70.6
31		73.1		76.7		70.1	72.2		66.1		74.2	69.9
Mean	75.8	71.5	72.9	76.0	76.0	74.0	70.9	67.8	67.1	68.1	76.1	71.9

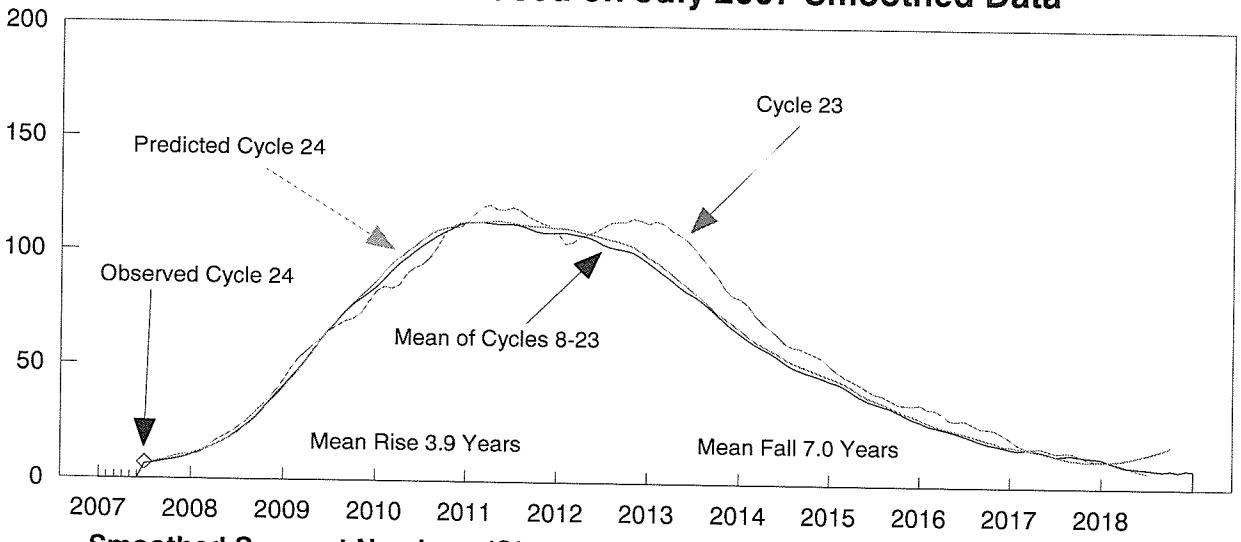
DAILY SOLAR INDICES

January 2008

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Penticton (2800)	SGMR (15400)	-----Solar Flux Adjusted to 1 Astronomical Unit-------- SGMR (8800)	SGMR (4995)	Penticton (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	1	13	7	5	79.4	441	185	136	76.7	53	56	37	24	11
2	2	14	7	8	79.6	433	184	130	77.0	74	56	36	23	10
3	3	15	7	7	79.3	433	189	132	76.7	73	56	37	24	11
4	4	16	12	7	79.0	437	179	131	76.4	70	58	36	22	13
5	5	17	10	5	79.7	443	185	135	77.1	72	58	37	23	10
6	6	18	11	2	79.2	429	181	133	76.6	71	58	37	23	12
7	7	19	11	2	77.7	436	185	138	75.2	76	59	38	23	10
8	8	20	9	3	75.5	435	177	126	73.0	67	56	36	22	12
9	9	21	0	1	76.5	415	174	125	74.0	70	56	37	22	10
10	10	22	8	4	75.7	443	181	132	73.2	66	54	34	22	10
11	11	23	8	5	76.0	---	157	102	73.5	47	43	35	22	12
12	12	24	0	1	75.7	446	181	134	73.2	70	54	35	22	10
13	13	25	0	0	75.3	443	181	130	72.9	67	54	35	22	10
14	14	26	0	0	75.6	425	177	128	73.1	68	53	33	22	8
15	15	27	0	0	73.7	448	177	125	71.3	64	50	35	21	8
16	16	1	0	0	72.9	440	178	128	70.6	63	49	35	22	10
17	17	2	0	0	73.7	442	181	128	71.3	65	49	34	21	9
18	18	3	0	0	71.1	---	---	---	68.8	---	---	---	---	---
19	19	4	0	0	70.8	443	179	125	68.6	67	49	33	21	8
20	20	5	0	0	70.2	445	181	125	68.0	68	47	33	21	8
21	21	6	0	0	71.6	442	183	127	69.3	69	49	34	21	9
22	22	7	0	0	70.3	432	179	130	68.1	63	50	32	21	8
23	23	8	0	0	70.6	434	178	125	68.4	58	48	32	20	8
24	24	9	0	0	71.3	436	180	126	69.1	63	---	33	20	9
25	25	10	0	0	71.0	445	176	126	68.9	66	---	35	21	7
26	26	11	0	0	72.5	444	180	128	70.3	66	50	33	21	8
27	27	12	0	0	72.0	407	180	127	69.8	62	49	32	22	10
28	28	13	0	0	71.3	434	182	128	69.2	62	49	37	22	10
29	29	14	0	1	71.6	442	177	128	69.5	63	50	34	21	12
30	30	15	8	10	72.7	388	178	129	70.6	67	52	31	20	12
31	31	16	8	11	72.0	---	---	---	69.9	---	---	---	---	---
MEAN			3.4	2.3	74.3	435	179	128	71.9	65	52	34	21	9

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

Cycle 24 Smoothed Sunspot Numbers: Observed and Predicted
PRELIMINARY Based on July 2007 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##	7	8	8	9	10	9
								(0)	(1)	(2)	(3)	(4)	(1)
2008	11	12	13	15	16	18	21	23	26	29	33	37	21
	(5)	(6)	(7)	(8)	(10)	(12)	(14)	(16)	(18)	(21)	(23)	(26)	(14)
2009	40	44	48	52	57	62	67	70	74	77	81	84	63
	(29)	(32)	(35)	(39)	(43)	(47)	(50)	(53)	(55)	(58)	(60)	(60)	(47)

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

*** May 1996 marks Cycle 22's mathematical minimum.** **** October 1996 marks the consensus minimum.**

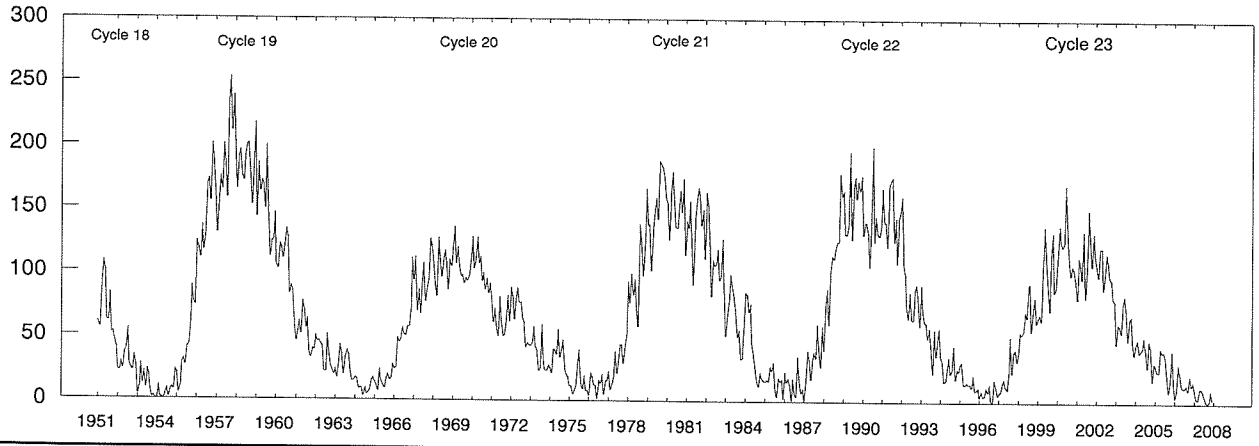
+ April 2000 marks Cycle 23 maximum. ## - Preliminary Cycle 24 Minumum

NOTE: Predictions beyond 2007 will not be determined until solar minimum is reached.

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 Sep 2007 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 July 2008 prediction. There exists a 90% chance that in July 2008, the actual smoothed number will fall somewhere between 7 and 35.

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 July, 2007. This will be updated monthly until the actual minimum is reached.

Mean Monthly Sunspot Numbers
Jan 1951 - Jan 2008



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	3.4												3.4	

Values are preliminary after Sep 07. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

JANUARY 2008

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
HOLL	01	1536	1536	1542	S09	E72	10980	01	7.0	6	SF		3	E		65		FE
HOLL	07	1530E	1530U	1616D	S08	W02	10980	01	7.5	46D	SF		3	E		45		

"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

JANUARY 2008

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	01	0007	0026	0037					30	B 7.0	9.1E-04		
GOES		0210	0215	0220					10	B 2.4	1.0E-04		
GOES		0431	0448	0532					61	B 3.6	1.0E-03		
GOES		0627	0634	0645					18	B 4.2	3.3E-04		
GOES		0859	0907	0918					19	B 2.8	2.5E-04		
GOES		1117	1123	1128					11	B 2.2	1.1E-04		
GOES		1248	1257	1309					21	B 1.5	1.6E-04		
GOES		1357	1403	1418					21	B 3.5	3.4E-04		
GOES		1530	1537	1546	S09 E72	10980			16	C 1.1	6.9E-04		
GOES	02	0651	1000	1123					272	C 1.2	9.1E-03		
GOES	04	0305	0312	0319					14	B 1.8	1.2E-04		
GOES	07	0226	0234	0245					19	B 1.2	1.2E-04		
GOES		1449	1527	1556	S08 W02	10980			67	C 1.4	3.4E-03		
GOES	29	1728	1734	1743		10982			15	B 1.2	9.5E-05		
GOES	30	1821	1846	1900					39	B 3.0	4.1E-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 11 is now primary with 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.

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

JANUARY 2008

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
23	410	LEAR	48 C	0319.0	0320.0	3.0	180000.0			QL=4 ST=2 TYP=8
	410	LEAR	49 GB	0319.0	0319.0	1241.0	180000.0			QL=4 ST=1 TYP=6
26	410	LEAR	48 C	0526.0	0527.0	12.0	12000.0			QL=4 ST=2 TYP=8

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

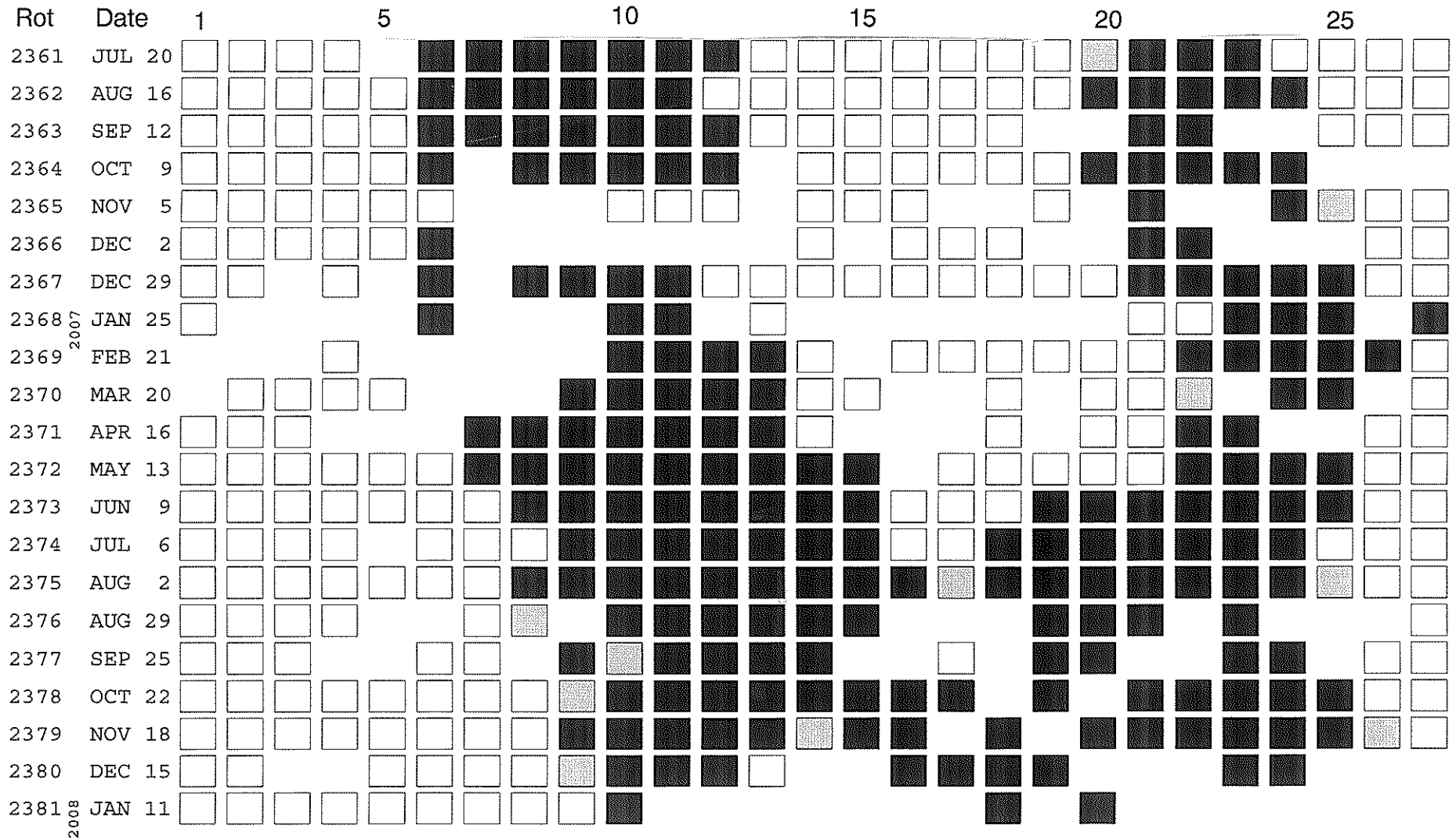
Explanation of Type Code:

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

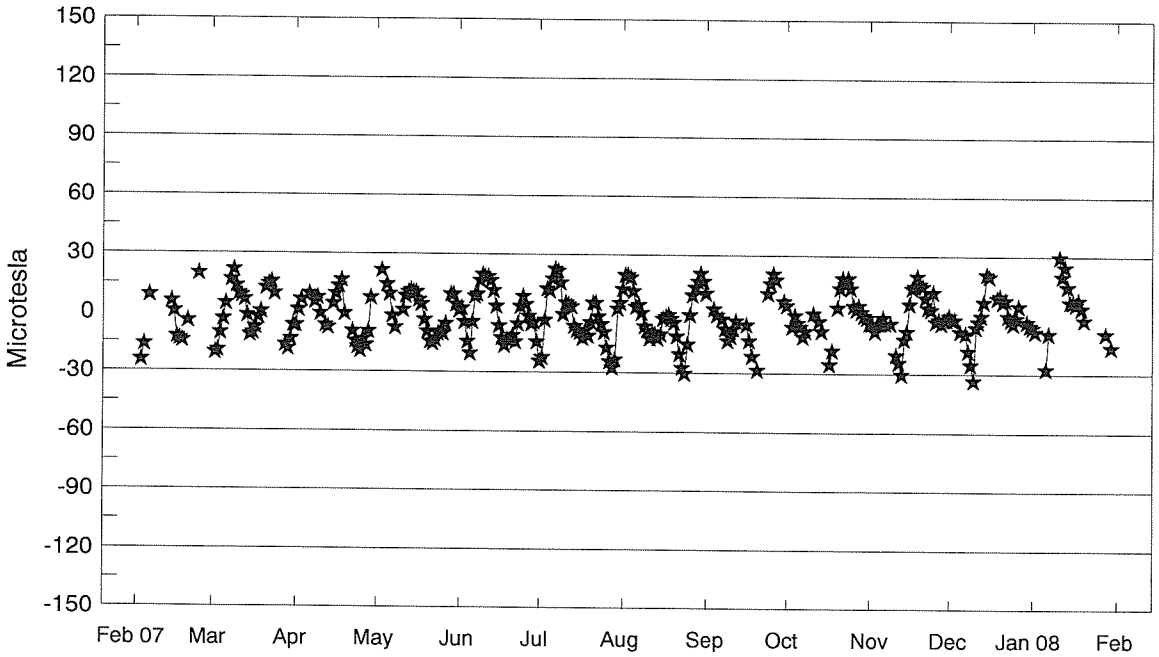


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

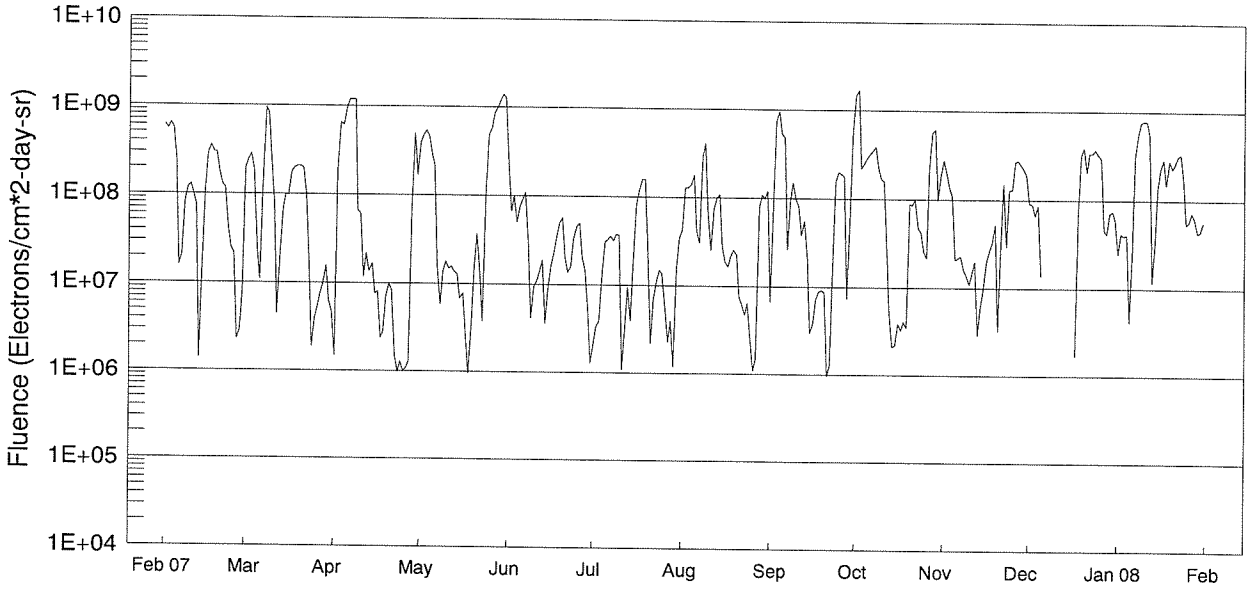
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



Day	Feb 07	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 08
1	---	---	-6	---	2	-24	13	11	5	-4	0	-6
2	---	-20	2	---	3	-22	20	---	---	-4	-2	-8
3	-24	-19	7	22	-4	-3	20	---	-6	-8	-2	---
4	-16	-10	---	---	-14	13	19	3	0	-4	---	---
5	---	-3	---	15	-20	12	12	0	-4	-4	-8	---
6	9	5	10	10	-4	18	4	---	-6	-1	---	-27
7	---	---	.	-1	9	23	5	-2	-11	-4	-9	-9
8	---	17	6	-7	10	22	1	-7	-8	---	-18	---
9	---	22	8	---	17	16	-6	-13	---	-4	-25	---
10	---	14	0	---	20	---	-8	-11	---	---	-33	---
11	---	10	---	2	19	6	-12	-7	1	-20	-6	30
12	---	9	-6	9	19	5	-9	-3	---	-24	-3	20
13	---	7	-7	11	17	4	-10	---	-3	-30	0	25
14	6	-1	---	12	12	-6	-12	---	-8	-12	7	15
15	1	-11	5	11	4	-8	-10	---	---	-8	21	7
16	-12	-10	10	11	-6	-9	-2	-5	---	6	20	7
17	-13	-7	14	7	-12	-12	-1	-13	-25	14	---	6
18	-14	-2	17	5	-16	-8	0	-21	-18	15	---	8
19	---	1	---	-3	-13	-11	-2	---	---	20	9	4
20	-4	---	---	-9	-13	-4	-4	-28	4	16	10	-2
21	---	13	---	-14	-11	6	-11	---	14	15	7	---
22	---	15	-9	-15	-14	6	-20	---	19	9	8	---
23	---	16	-14	-13	-5	-1	-27	---	16	4	0	---
24	20	10	-17	-10	4	-5	-30	11	19	3	-2	---
25	---	---	-19	-9	9	-9	-15	16	14	12	-4	---
26	---	---	-13	-10	5	-17	0	21	5	-3	-1	---
27	---	---	-16	-5	-1	-24	10	18	3	-2	5	---
28	---	-16	-9	---	-5	-27	14	---	5	-4	---	-9
29		-18	8	10	-4	-23	17	---	2	-2	---	---
30		-13	---	10	-14	3	21	7	0	-2	-3	-16
31		-6		5		6	17		-1		-5	---

GOES Daily Electron Fluence
Feb 2007 - Jan 2008



Day	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 08
1	6.1E+08	2.0E+08	1.5E+06	4.0E+08	2.4E+08	2.1E+06	4.3E+07	6.8E+06	1.5E+09	2.8E+08	9.3E+07	2.5E+07
2	5.5E+08	2.5E+08	1.9E+08	4.9E+08	6.7E+07	3.4E+06	1.3E+08	6.3E+07	1.7E+09	2.0E+08	8.8E+07	4.2E+07
3	6.4E+08	2.9E+08	6.6E+08	5.4E+08	1.0E+08	3.9E+06	1.3E+08	7.5E+08	2.2E+08	1.4E+08	6.7E+07	4.0E+07
4	5.6E+08	1.9E+08	6.2E+08	4.6E+08	5.1E+07	1.3E+07	1.4E+08	9.6E+08	2.5E+08	1.1E+08	8.6E+07	4.1E+07
5	2.4E+08	2.5E+07	9.6E+08	2.9E+08	7.7E+07	3.1E+07	1.8E+08	5.3E+08	2.9E+08	2.1E+07	1.4E+07	4.2E+06
6	1.6E+07	1.1E+07	1.2E+09	2.2E+08	9.0E+07	3.3E+07	4.3E+07	4.9E+08	3.2E+08	2.2E+07	---	2.3E+07
7	2.1E+07	1.4E+08	1.2E+09	1.6E+07	1.1E+08	3.6E+07	3.1E+07	2.7E+07	3.5E+08	2.3E+07	---	3.2E+08
8	8.3E+07	9.6E+08	1.2E+09	5.9E+06	3.1E+07	3.2E+07	2.9E+08	9.6E+07	3.9E+08	1.6E+07	---	5.6E+08
9	1.2E+08	8.4E+08	6.7E+07	1.4E+07	4.2E+06	3.8E+07	4.1E+08	1.5E+08	2.3E+08	1.4E+07	---	7.5E+08
10	1.3E+08	2.5E+08	6.2E+07	1.8E+07	9.4E+06	3.7E+07	6.6E+07	1.0E+08	1.7E+08	1.1E+07	---	7.9E+08
11	1.0E+08	8.0E+07	1.2E+07	1.5E+07	1.1E+07	1.1E+06	2.6E+07	8.2E+07	1.6E+08	1.5E+07	---	7.7E+08
12	7.6E+07	4.5E+06	2.2E+07	1.6E+07	1.4E+07	3.0E+06	7.5E+07	3.9E+07	3.1E+07	2.0E+07	---	5.5E+08
13	1.4E+06	2.2E+07	1.4E+07	1.4E+07	1.9E+07	9.6E+06	1.0E+08	5.6E+07	5.0E+06	2.9E+06	---	1.2E+07
14	1.6E+07	6.8E+07	1.7E+07	1.3E+07	3.6E+06	4.0E+06	1.1E+08	2.1E+07	2.1E+06	6.1E+06	---	3.5E+07
15	1.1E+08	1.0E+08	7.7E+06	6.9E+06	8.6E+06	1.9E+07	2.8E+07	3.0E+06	2.2E+06	9.4E+06	---	1.4E+08
16	2.9E+08	1.0E+08	8.2E+06	7.8E+06	1.6E+07	8.1E+07	1.9E+07	3.8E+06	3.9E+06	2.0E+07	---	2.3E+08
17	3.6E+08	1.8E+08	2.4E+06	2.5E+06	2.4E+07	1.2E+08	1.7E+07	7.2E+06	3.3E+06	2.7E+07	1.7E+06	2.9E+08
18	3.0E+08	2.0E+08	2.8E+06	9.6E+05	3.5E+07	1.6E+08	2.2E+07	8.8E+06	4.1E+06	3.3E+07	6.4E+07	1.5E+08
19	3.0E+08	2.1E+08	7.3E+06	3.1E+06	5.0E+07	1.6E+08	2.6E+07	9.3E+06	3.5E+06	5.2E+07	3.2E+08	2.8E+08
20	1.8E+08	2.1E+08	1.0E+07	1.6E+07	5.7E+07	2.3E+07	2.3E+07	8.8E+06	8.9E+07	3.3E+06	3.9E+08	2.3E+08
21	1.3E+08	2.0E+08	8.5E+06	3.7E+07	2.1E+07	2.2E+06	7.7E+06	9.8E+05	8.7E+07	2.6E+07	2.1E+08	2.6E+08
22	1.2E+08	1.0E+08	1.5E+06	1.5E+07	1.4E+07	7.0E+06	6.2E+06	1.3E+06	9.9E+07	1.5E+08	3.4E+08	3.2E+08
23	4.4E+07	1.6E+07	9.9E+05	3.8E+06	1.6E+07	1.1E+07	4.8E+06	2.2E+07	4.7E+07	3.0E+07	3.4E+08	3.3E+08
24	2.5E+07	1.9E+06	1.3E+06	1.0E+08	3.3E+07	1.5E+07	6.5E+06	1.6E+08	4.3E+07	1.3E+08	3.7E+08	1.8E+08
25	2.2E+07	4.0E+06	1.0E+06	4.9E+08	4.6E+07	1.4E+07	2.5E+06	2.0E+08	2.6E+07	1.3E+08	3.3E+08	5.4E+07
26	2.3E+06	5.4E+06	1.1E+06	5.8E+08	5.0E+07	6.3E+06	1.1E+06	1.9E+08	2.2E+07	2.7E+08	3.0E+08	5.8E+07
27	2.9E+06	7.6E+06	1.3E+06	8.6E+08	2.1E+07	2.3E+06	1.5E+06	1.8E+08	2.3E+08	2.8E+08	4.6E+07	7.3E+07
28	7.9E+06	9.9E+06	7.0E+07	9.9E+08	1.5E+07	4.0E+06	7.9E+07	7.5E+06	5.7E+08	2.5E+08	4.2E+07	6.2E+07
29		1.6E+07	5.0E+08	1.2E+09	5.4E+06	1.2E+06	1.1E+08	7.1E+07	6.2E+08	2.2E+08	7.1E+07	4.3E+07
30		6.3E+06	1.7E+08	1.4E+09	1.3E+06	1.6E+07	1.0E+08	6.1E+08	1.0E+08	1.9E+08	7.6E+07	4.5E+07
31		4.8E+06		1.3E+09		3.5E+07	1.2E+08		1.9E+08		6.1E+07	5.7E+07

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 762 Part I

DATA FOR **DECEMBER 2007**

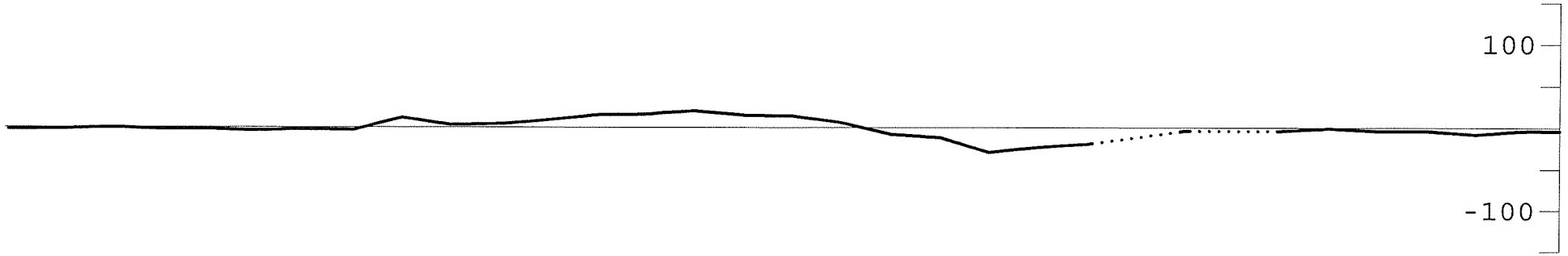
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2063

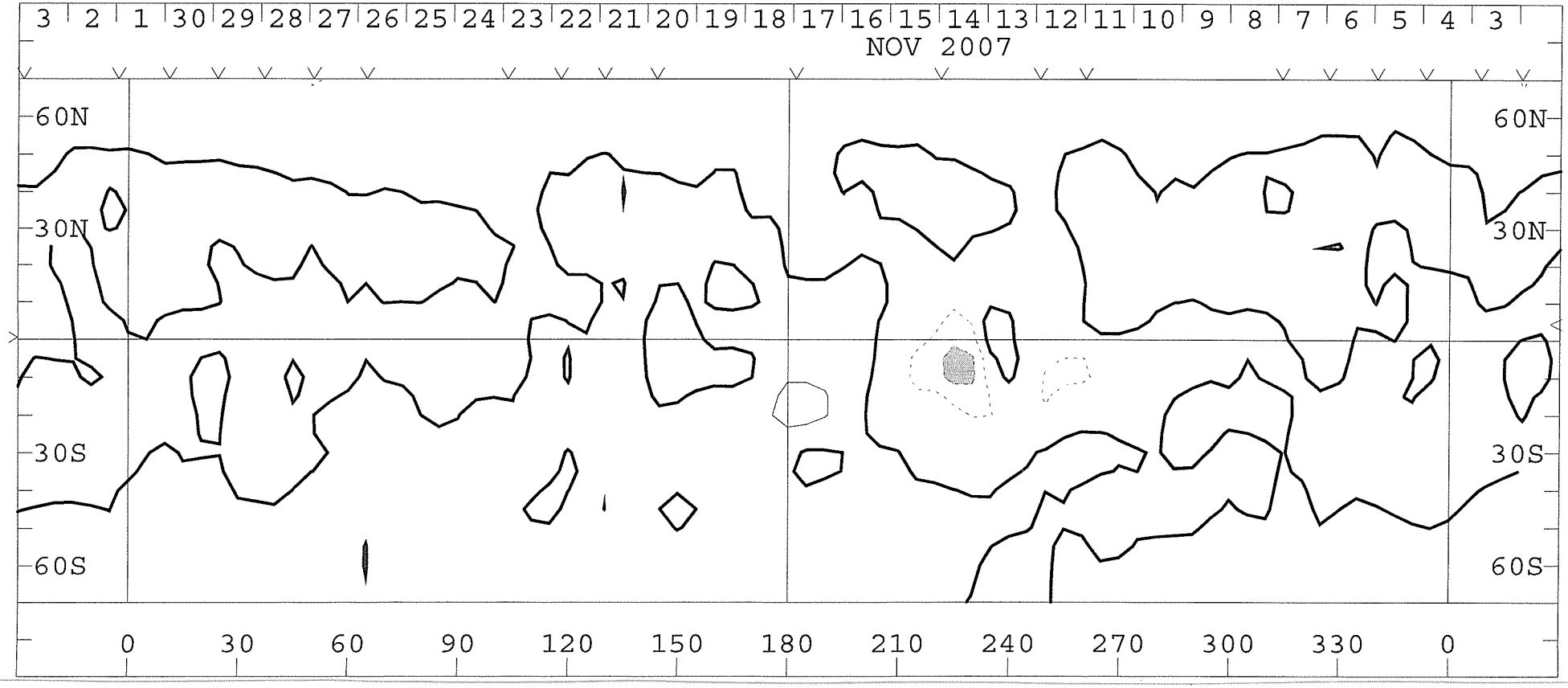
(4 Nov 2007 to Dec 2007)

Wilcox Solar Observatory

Mean Field



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



Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

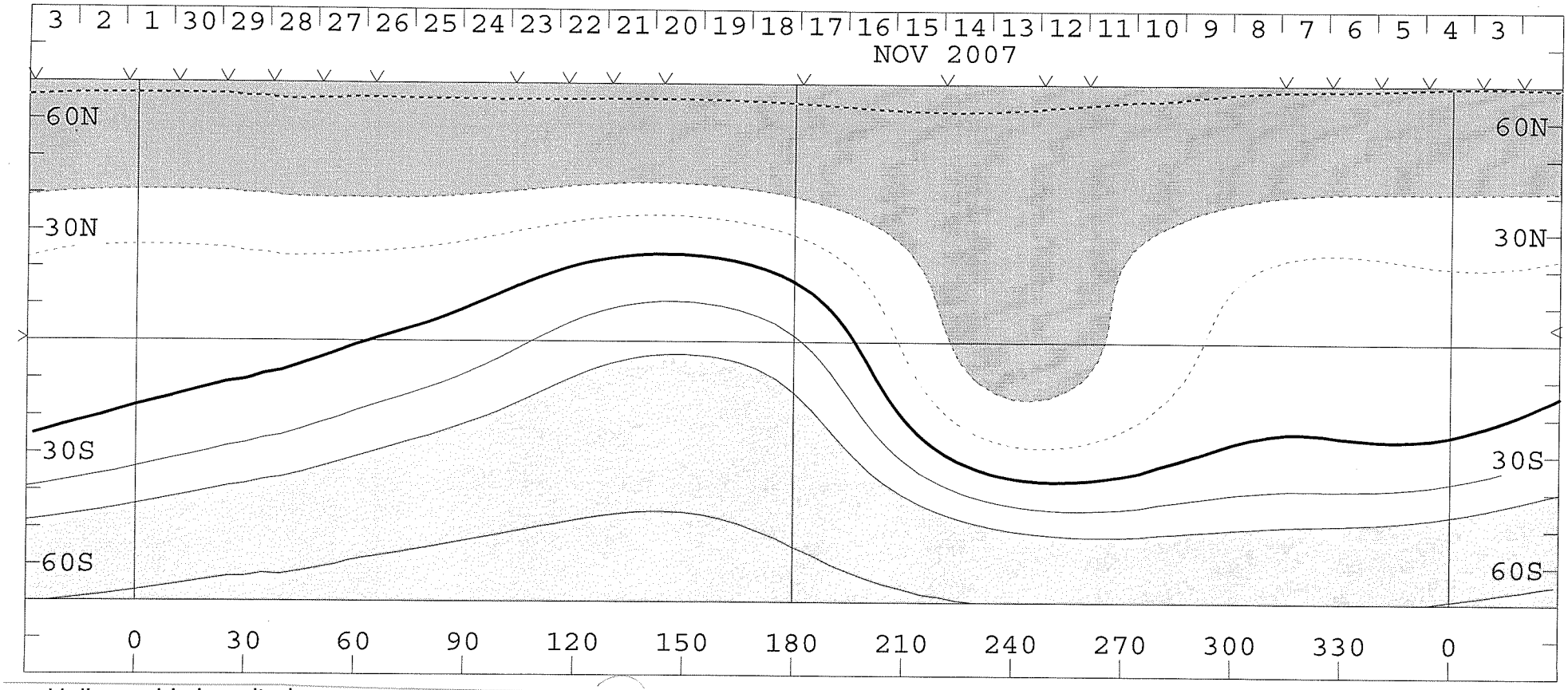
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2063

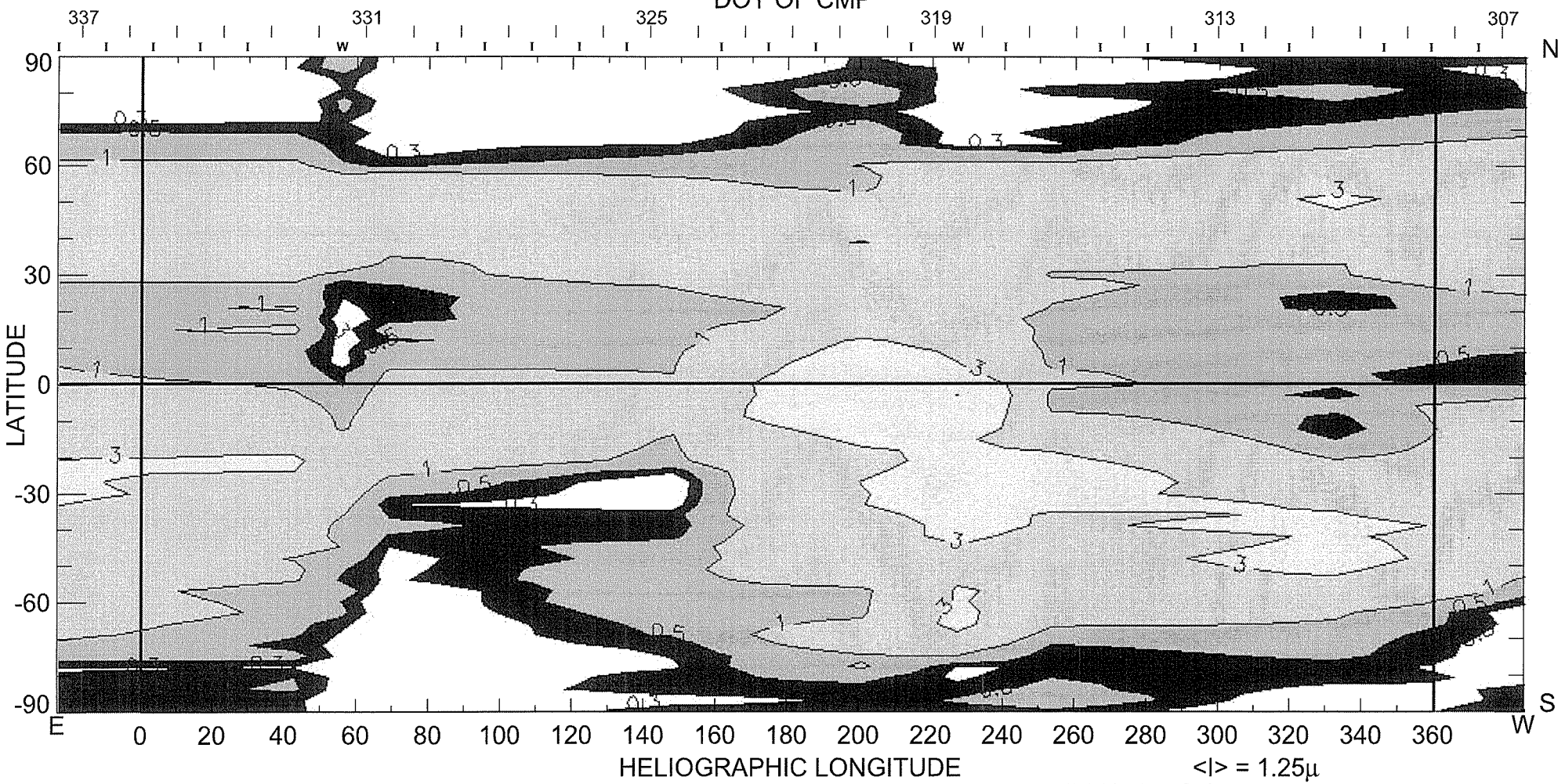
(4 Nov 2007 to 1 Dec 2007)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 2063 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

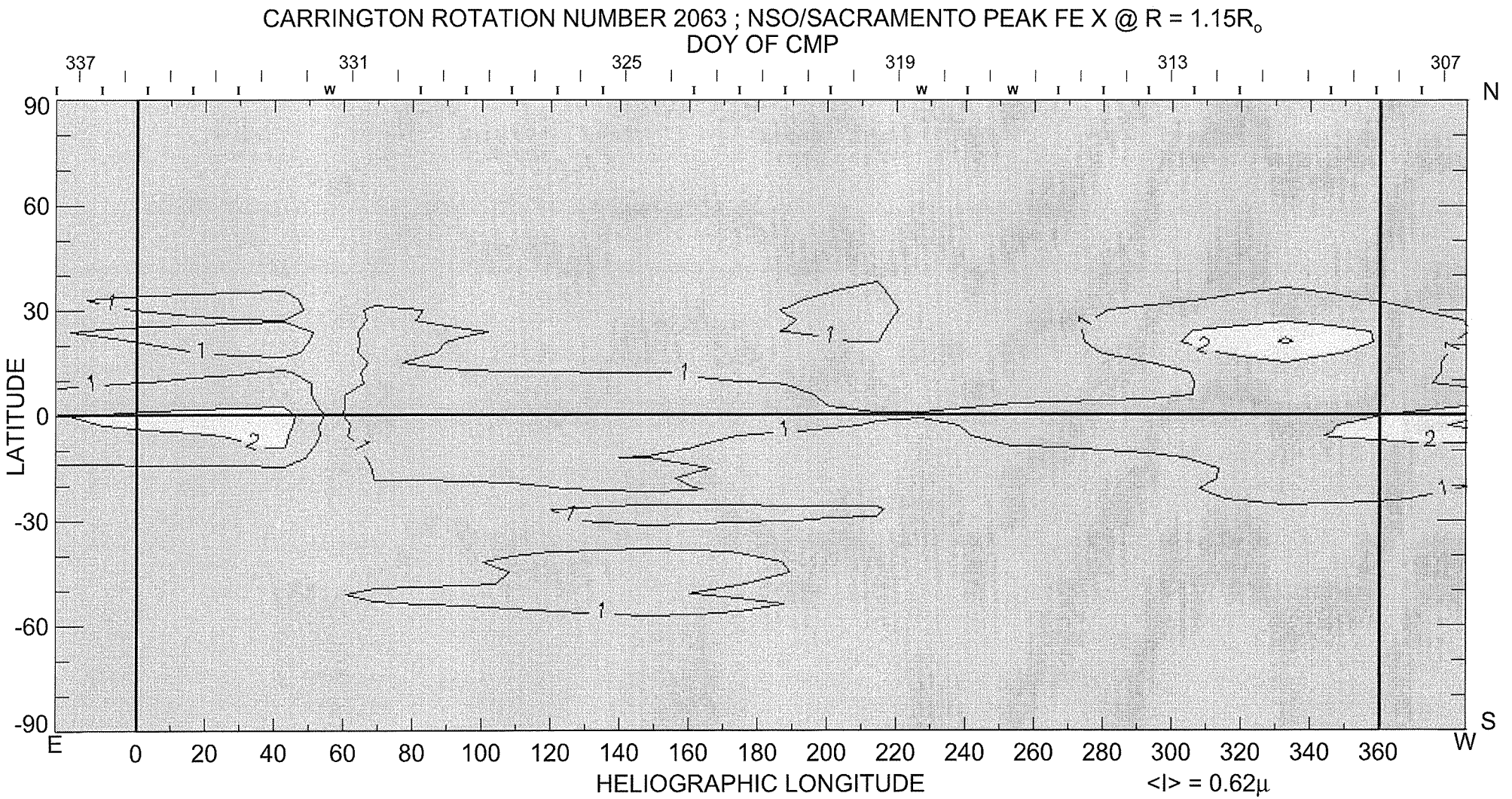


<I> = 1.25μ

(05-Mar-08)

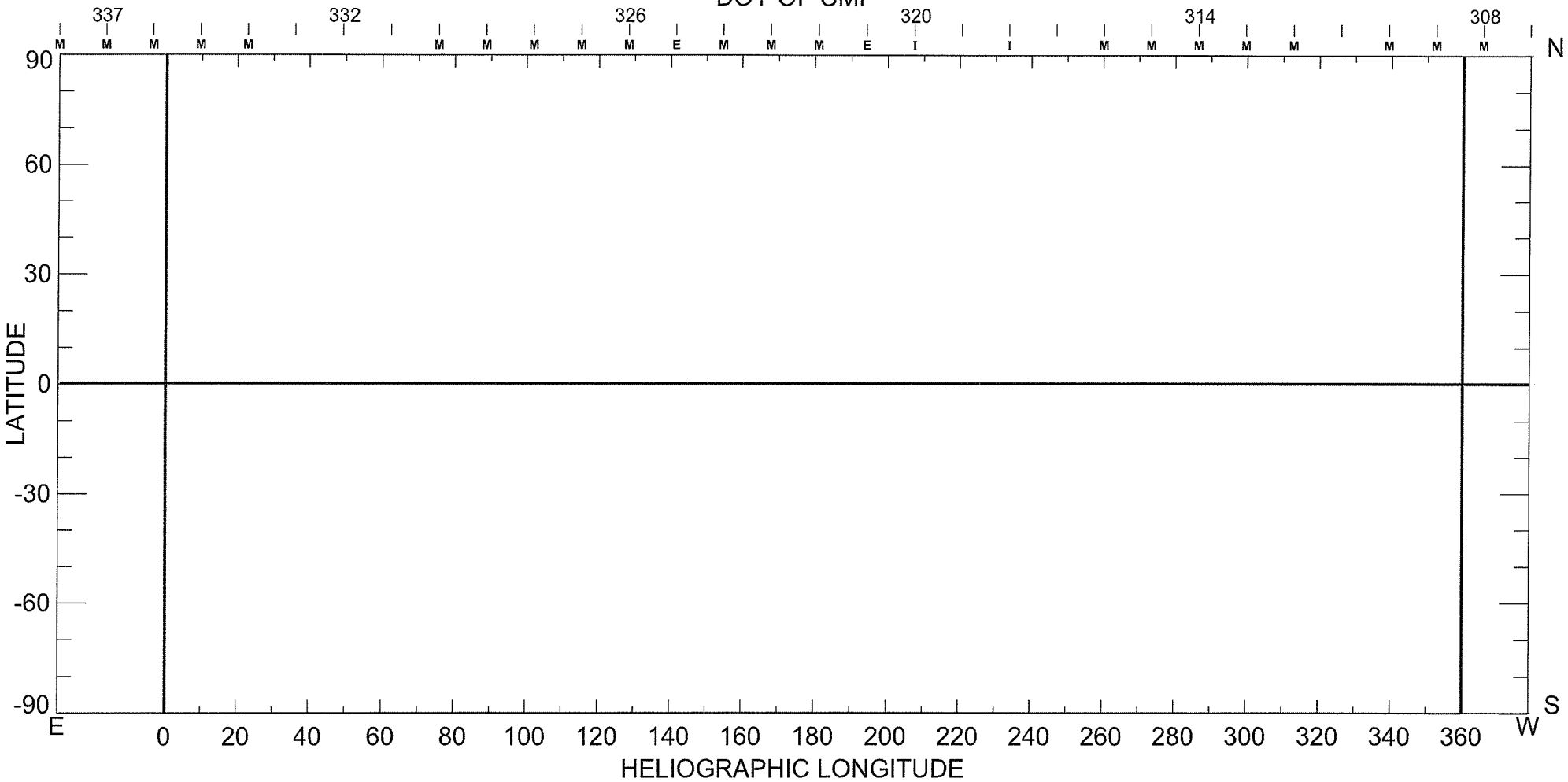
2007 E+W LIMB CONTOURS: 0.3, 0.5, 1, 3, 6, 8, 10, 12, 16, 20 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK



tex Fri Mar 7 09:39:49 2008

CARRINGTON ROTATION NUMBER 2063 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



(20-Feb-08) 2007 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

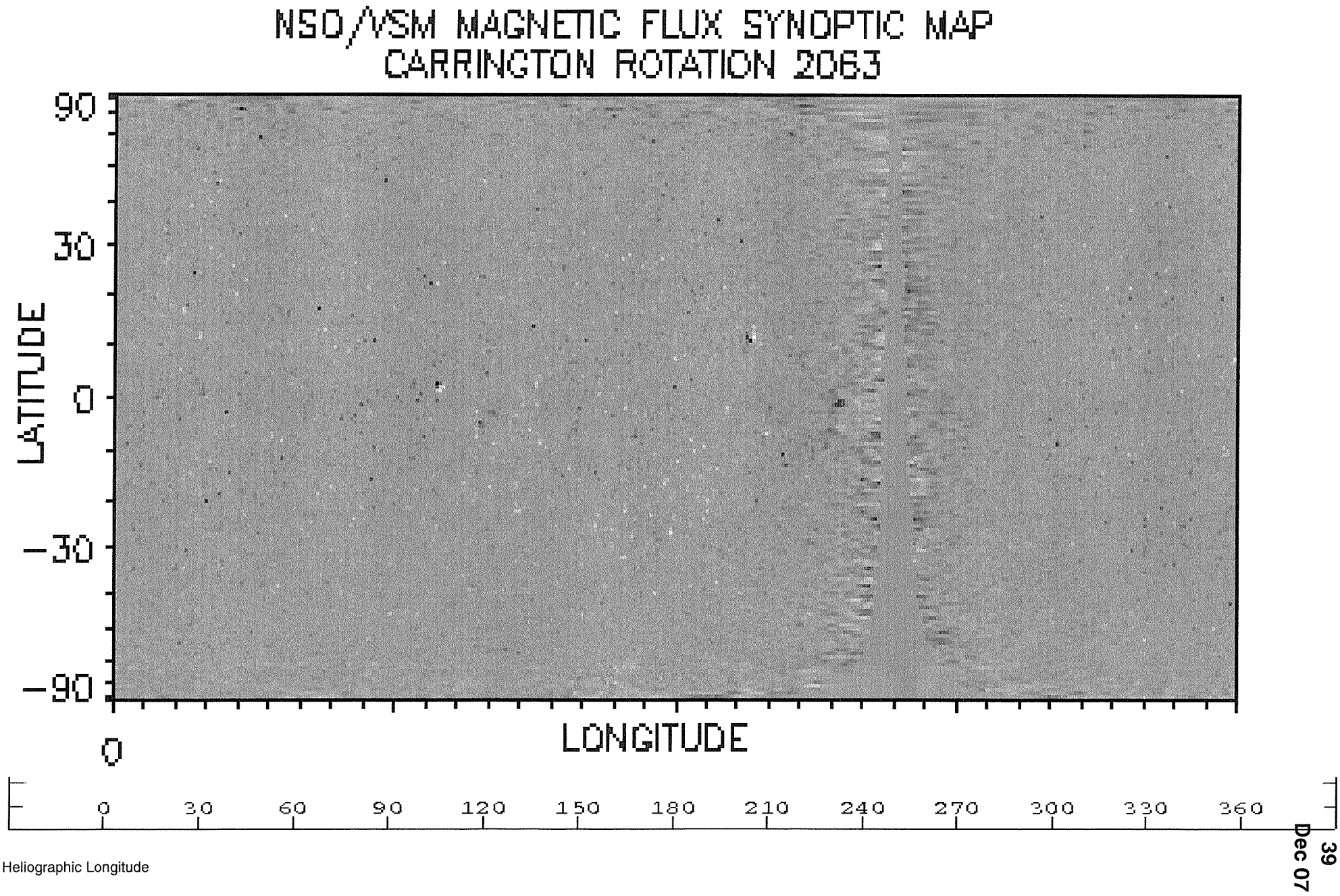
tex Wed Feb 20 09:00:48 2008

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2063

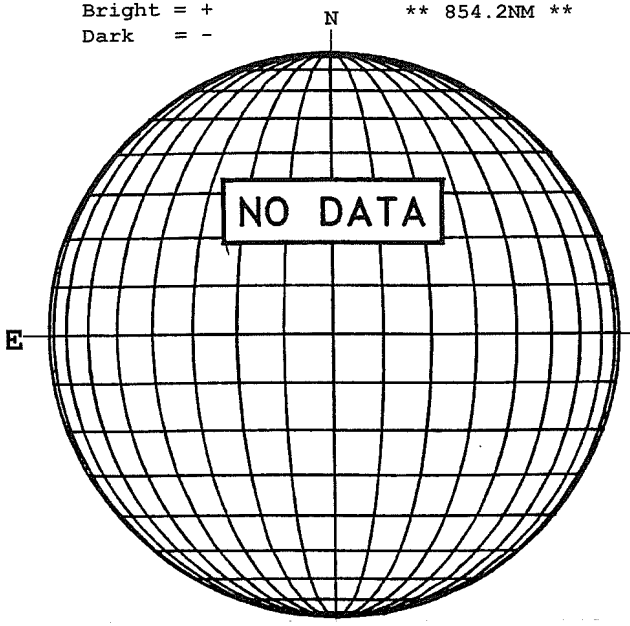
(4 Nov 2007 to 1 Dec 2007)

National Solar Observatory/Kitt Peak

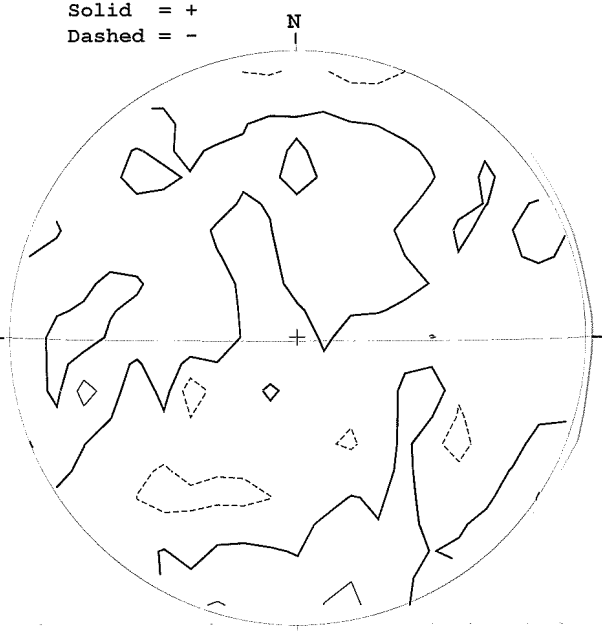


DECEMBER 01, 2007 (P= 16.26, Bo= 0.94, Lo= 9.57)

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

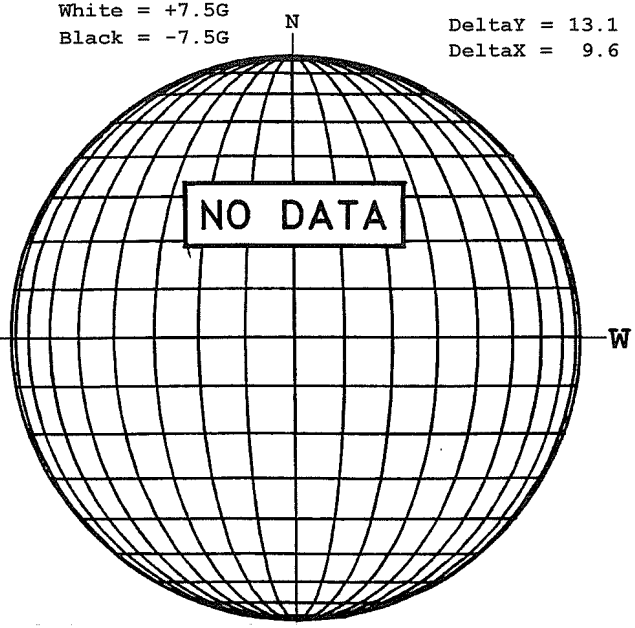


STANFORD MAGNETOGRAM
Solid = +
Dashed = -

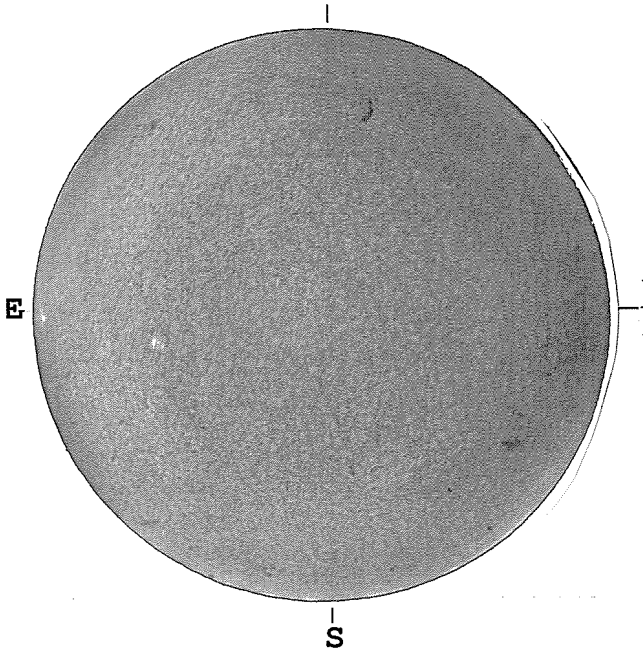


2219 UT

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

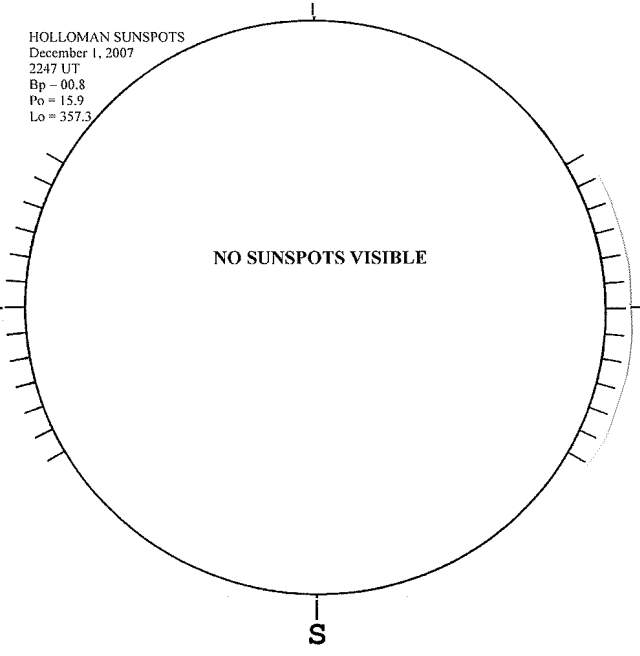


KANZELHOHE H-ALPHA



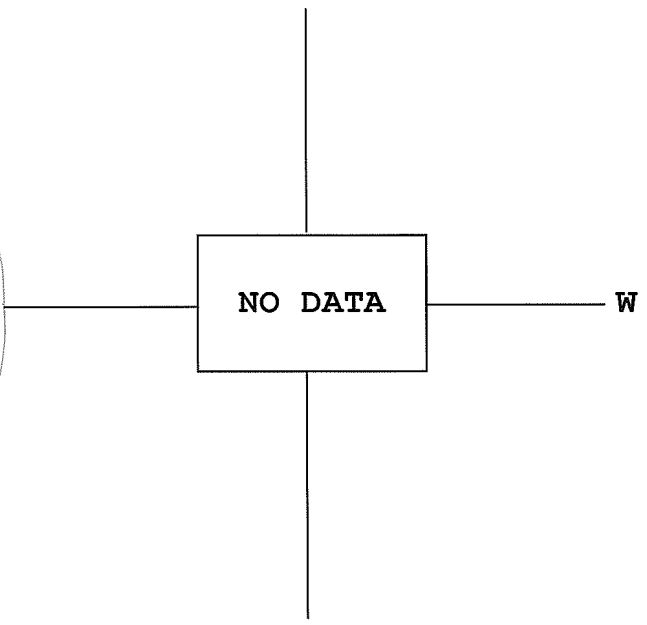
0754 UT

HOLLOMAN SUNSPOTS



2247 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

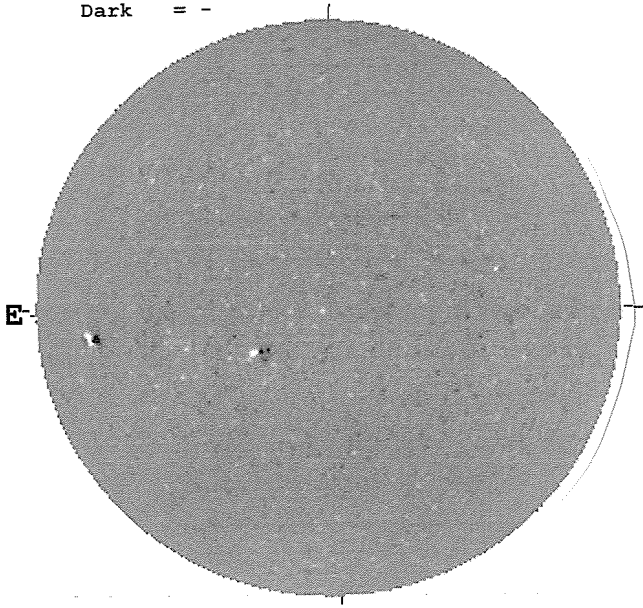


DECEMBER 02, 2007 (P= 15.87, Bo= 0.81, Lo= 356.39)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

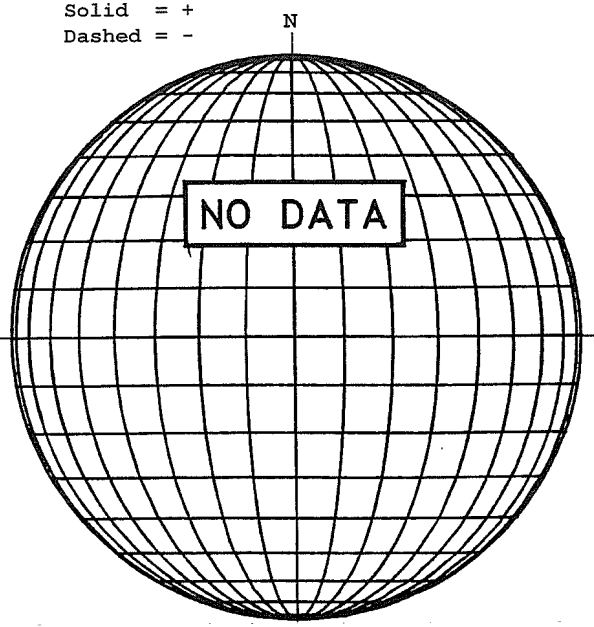
** 854.2NM **



1927 UT

STANFORD MAGNETOGRAM

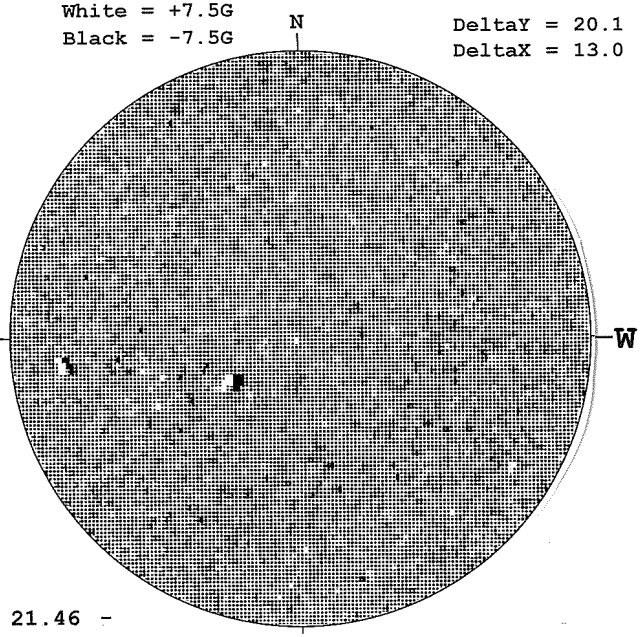
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

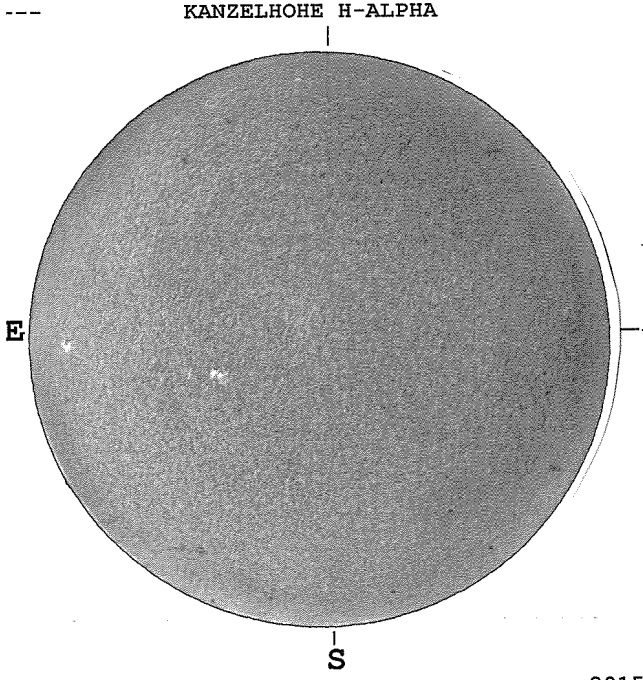
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 13.0



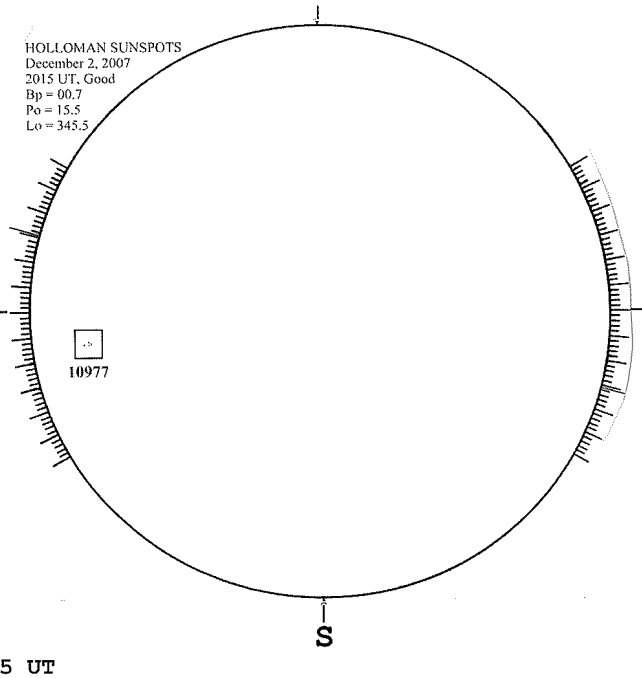
21.46 -
21.89 UT

--- KANZELHOHE H-ALPHA



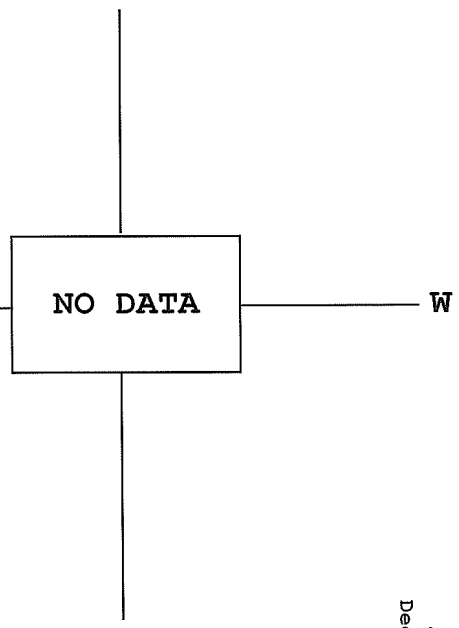
0907 UT

HOLLOMAN SUNSPOTS



2015 UT

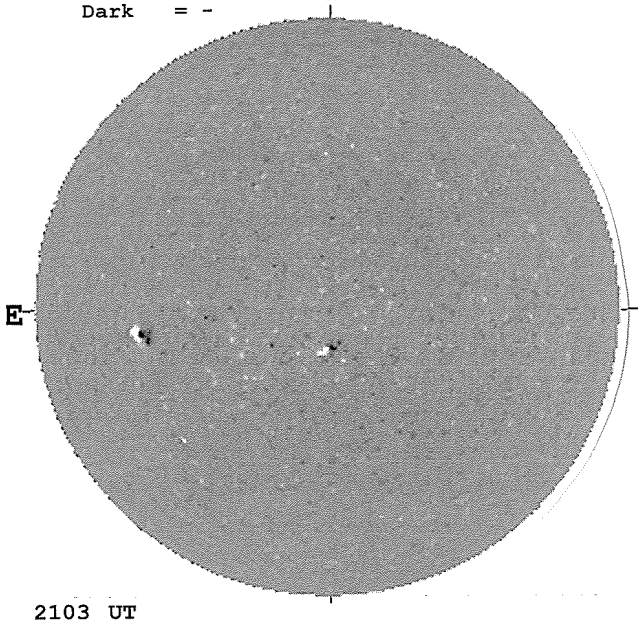
SACRAMENTO PEAK CORONA (1.15 Radii)-----



41
Dec 07

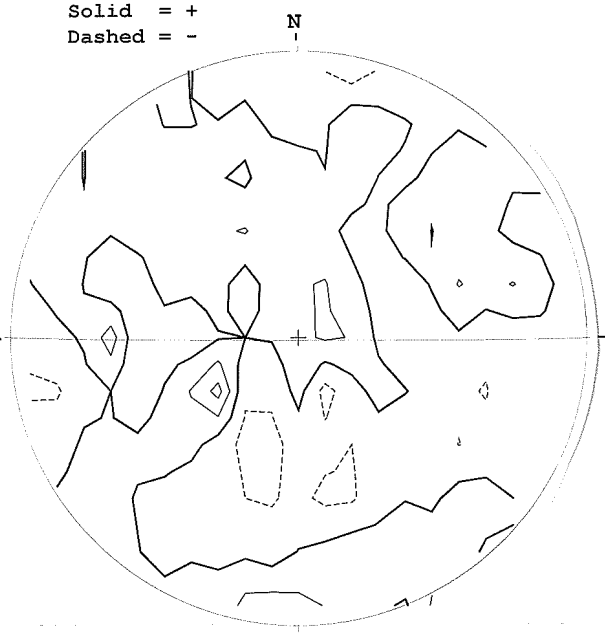
DECEMBER 03, 2007 (P= 15.48, Bo= 0.69, Lo= 343.22)

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



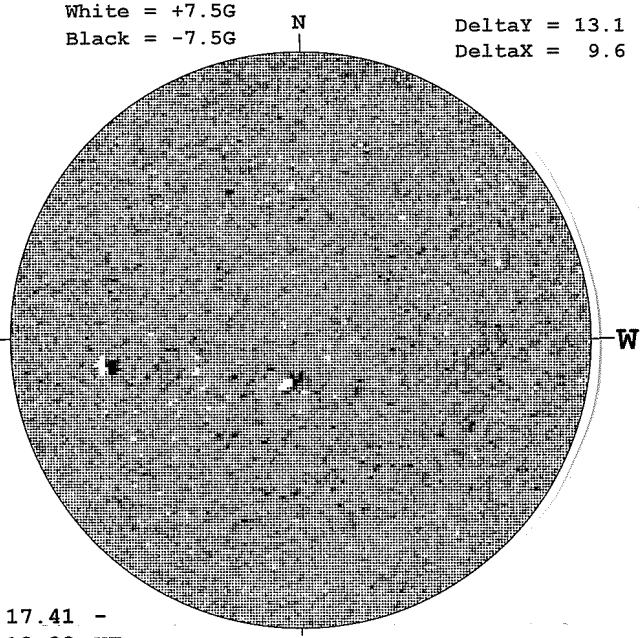
2103 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



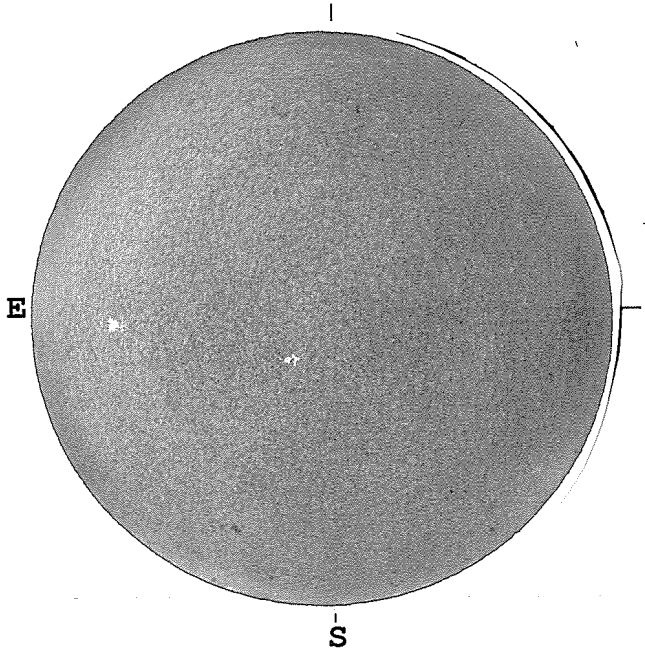
2128 UT

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



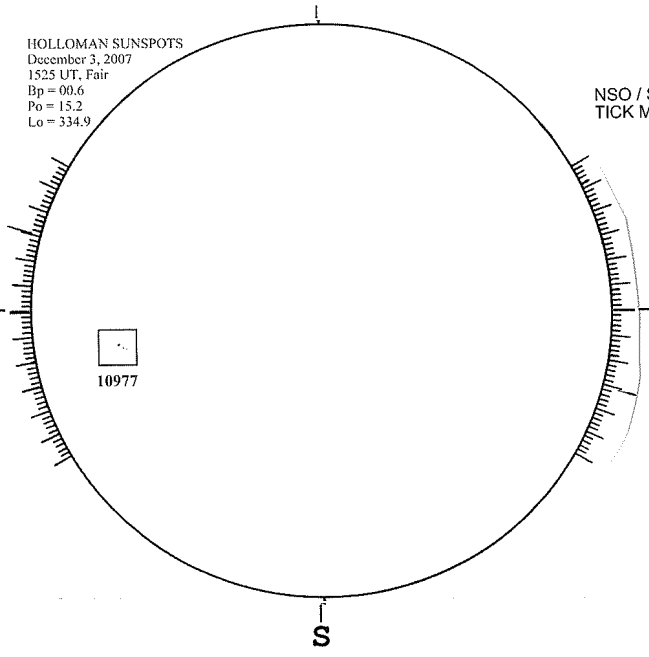
17.41 -
18.38 UT

--- KANZELHOHE H-ALPHA



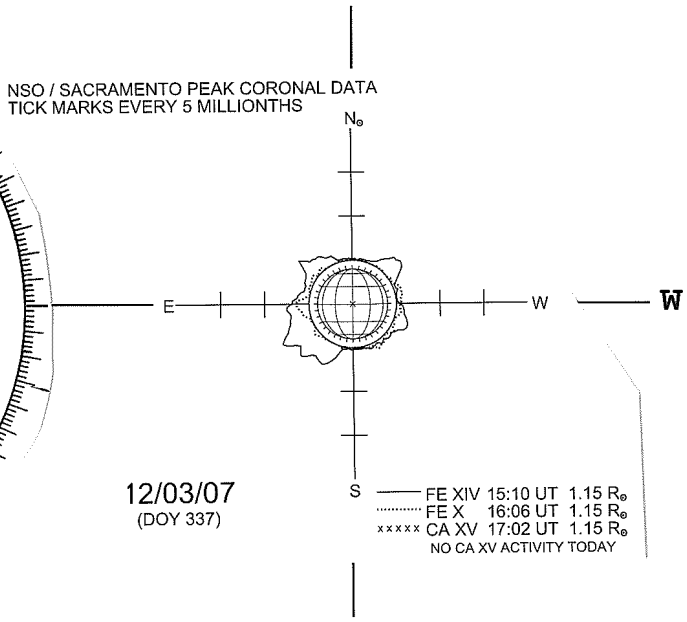
1158 UT

HOLLOMAN SUNSPOTS



1525 UT

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

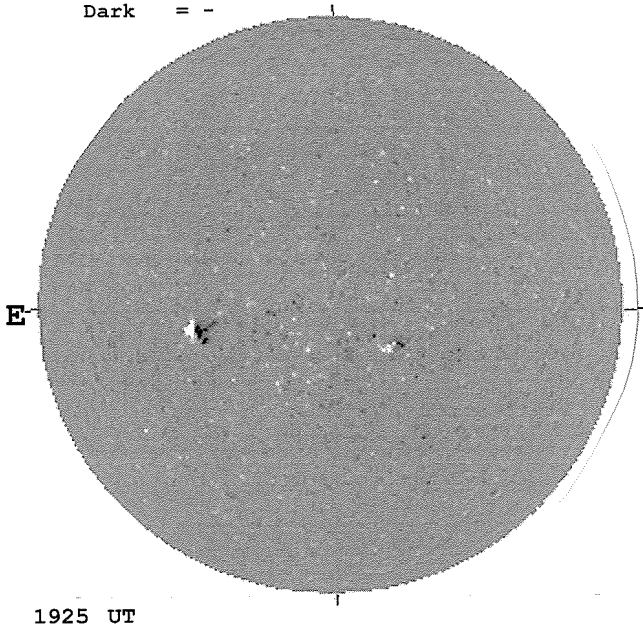


DECEMBER 04, 2007 (P= 15.09, Bo= 0.56, Lo= 330.04)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

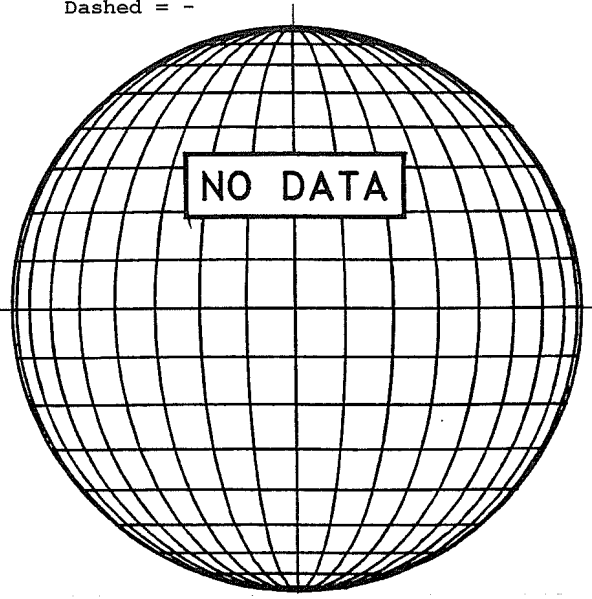
** 854.2NM **



1925 UT

STANFORD MAGNETOGRAM

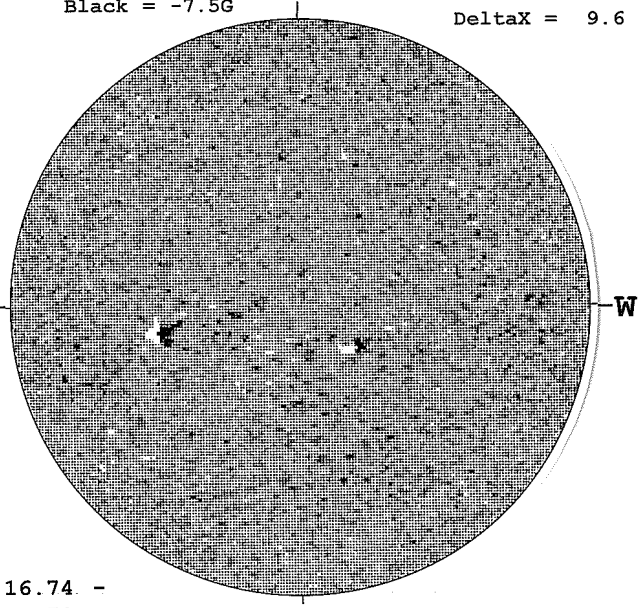
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

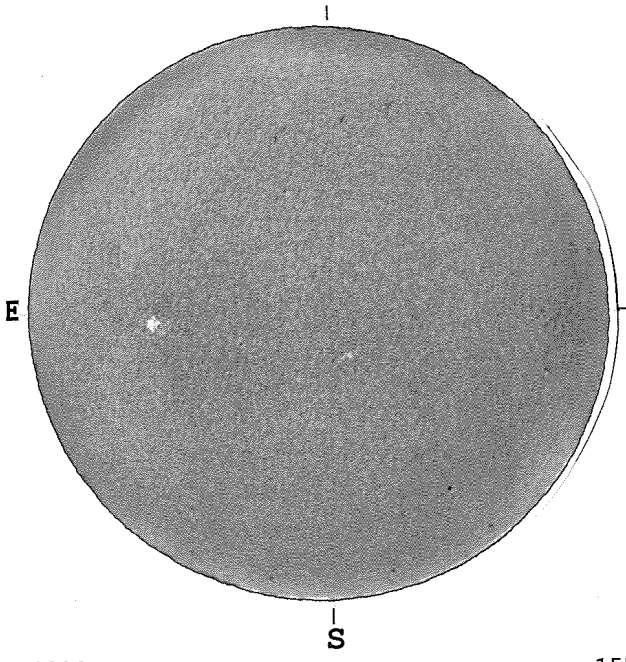
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



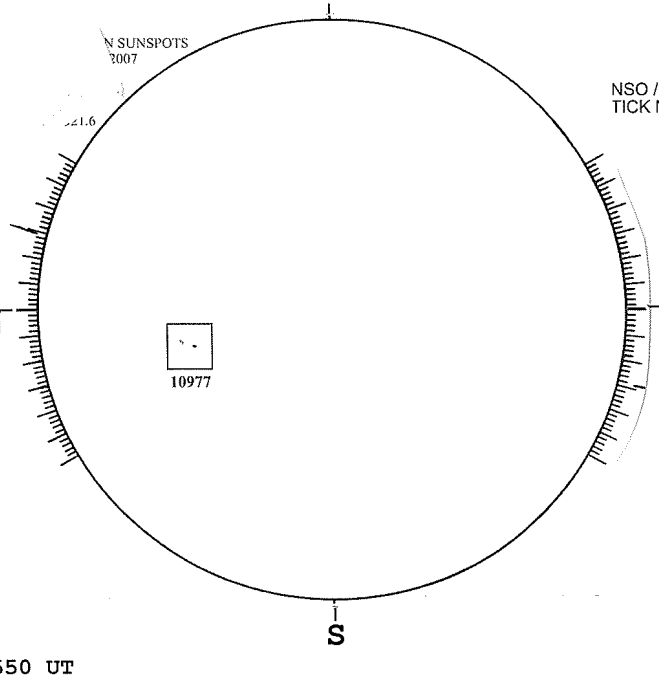
16.74 -
17.70 UT

--- KANZELHOHE H-ALPHA



0820 UT

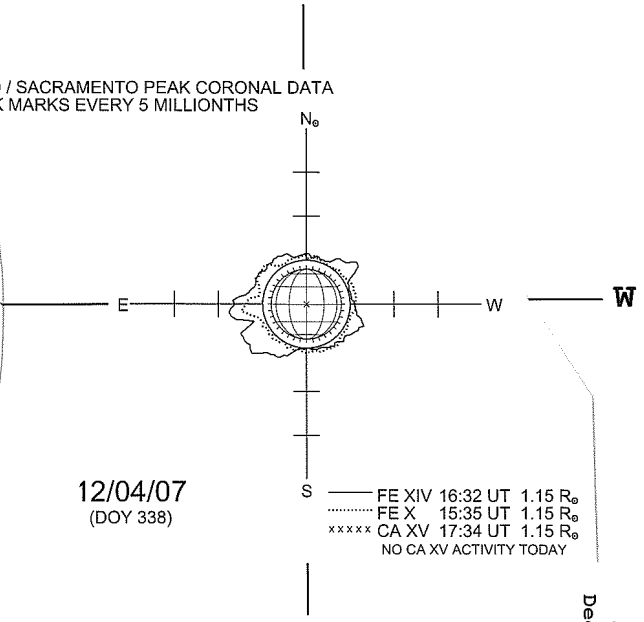
HOLLOMAN SUNSPOTS



1550 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 5 MILLIONTHS



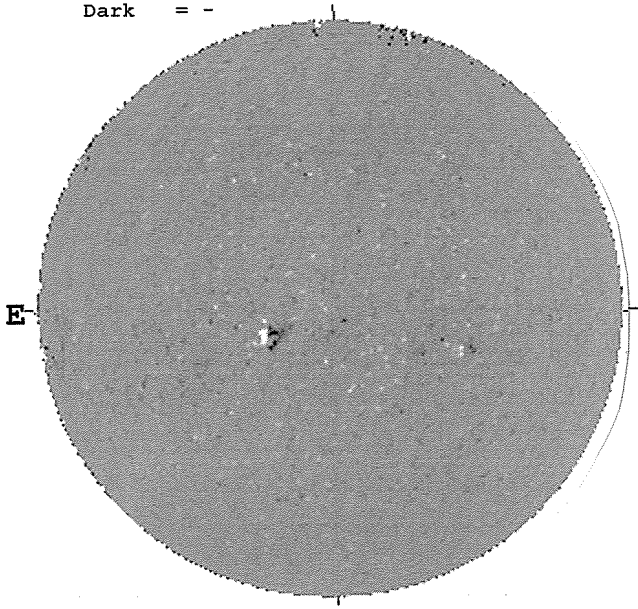
12/04/07
(DOY 338)

FE XIV 16:32 UT 1.15 R⊙
FE X 15:35 UT 1.15 R⊙
CA XV 17:34 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

43
Dec 07

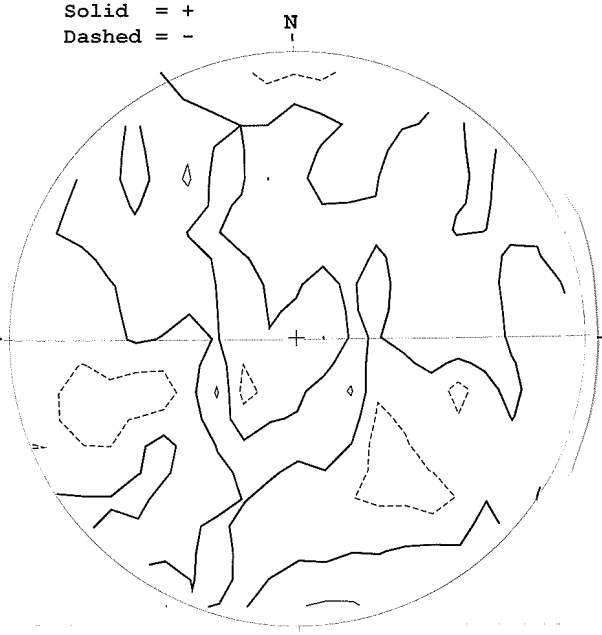
DECEMBER 05, 2007 (P= 14.69, Bo= 0.43, Lo= 316.86)

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



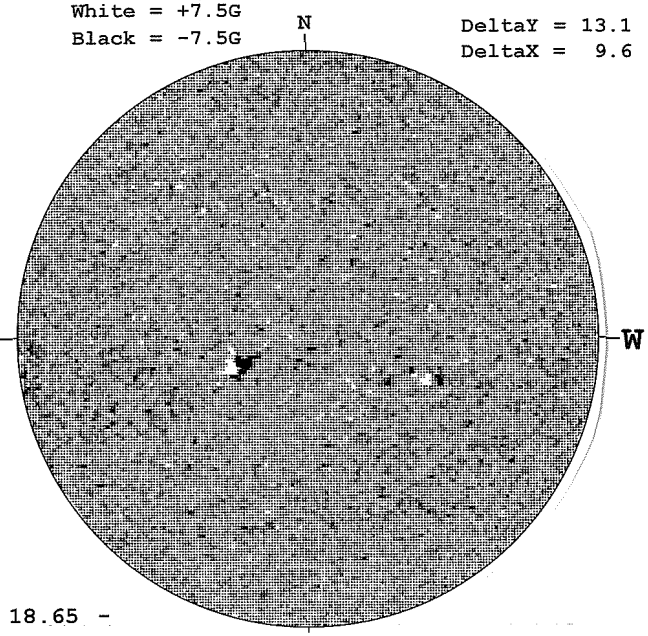
2152 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



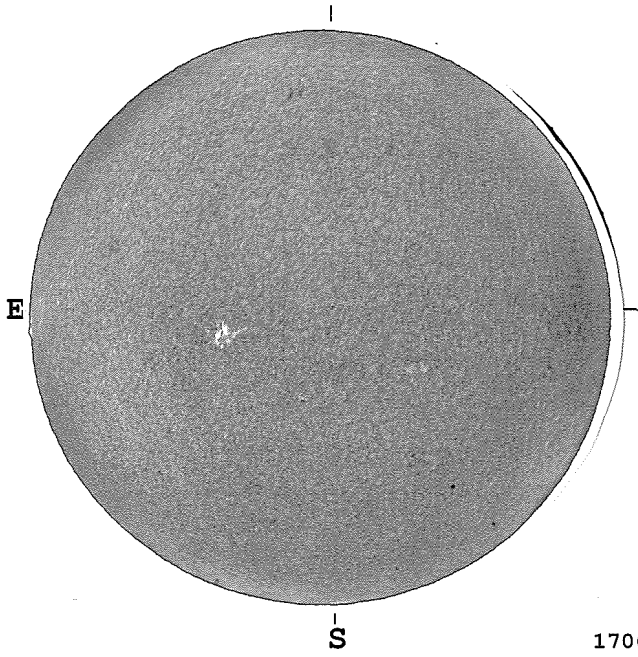
2240 UT

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



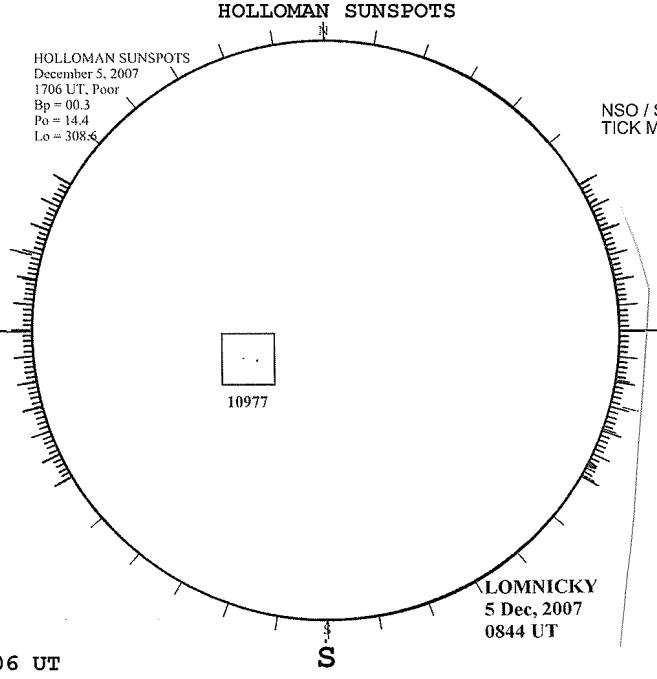
18.65 -
19.62 UT

--- KANZELHOHE H-ALPHA



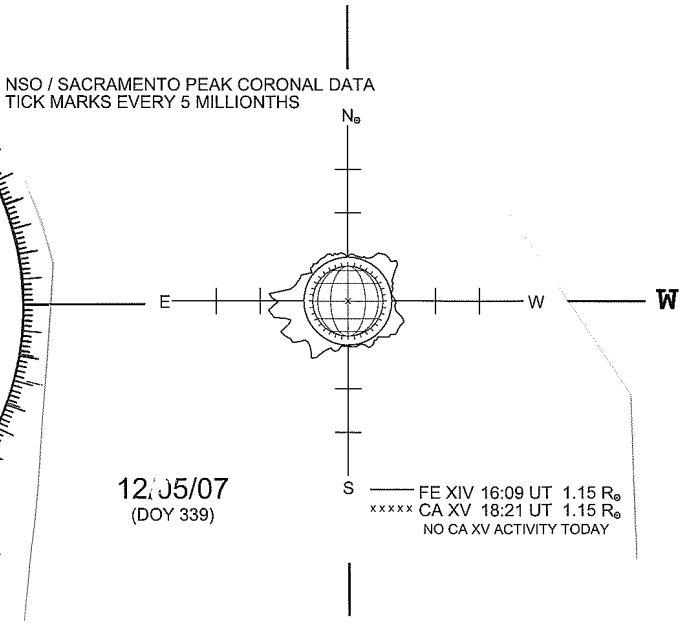
1008 UT

HOLLOMAN SUNSPOTS



1706 UT
0844 UT LOMN PROM

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

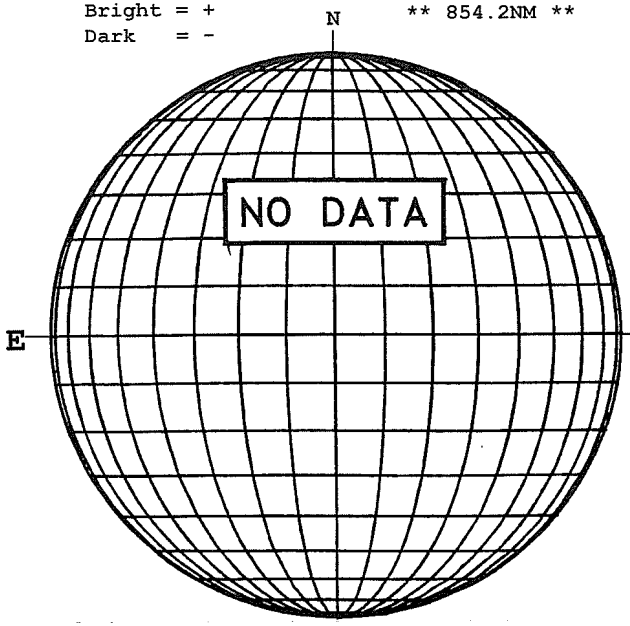


DECEMBER 06, 2007 (P= 14.28, Bo= 0.30, Lo= 303.68)

KITT PEAK MAGNETOGRAM -- SOLIS

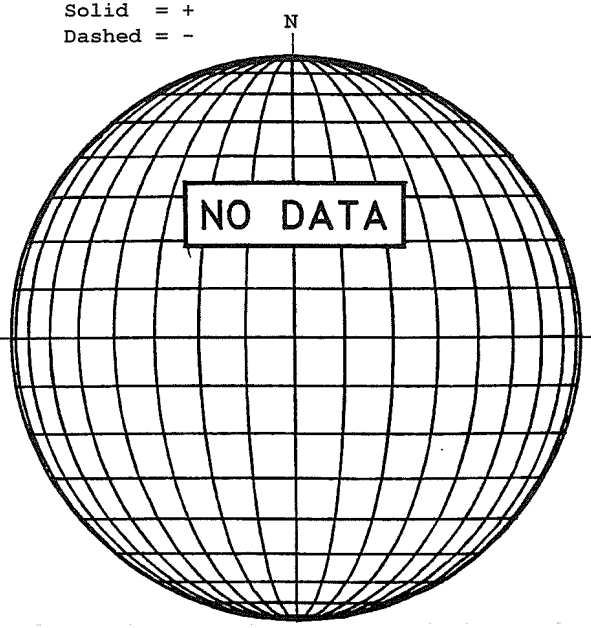
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

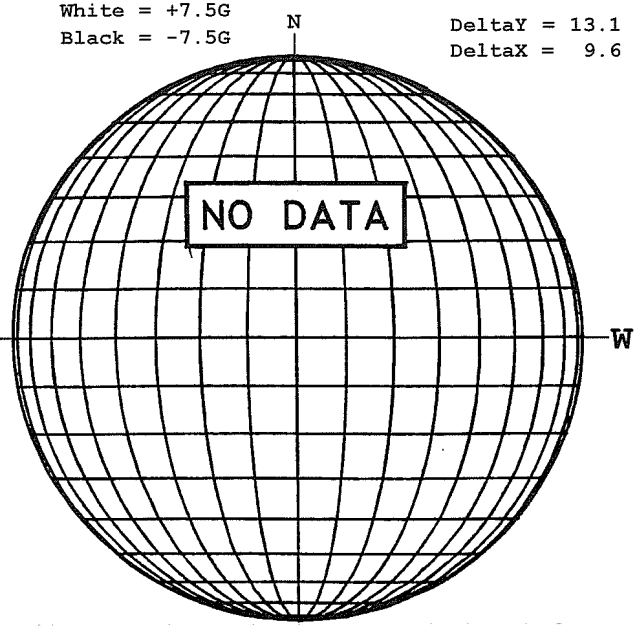
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

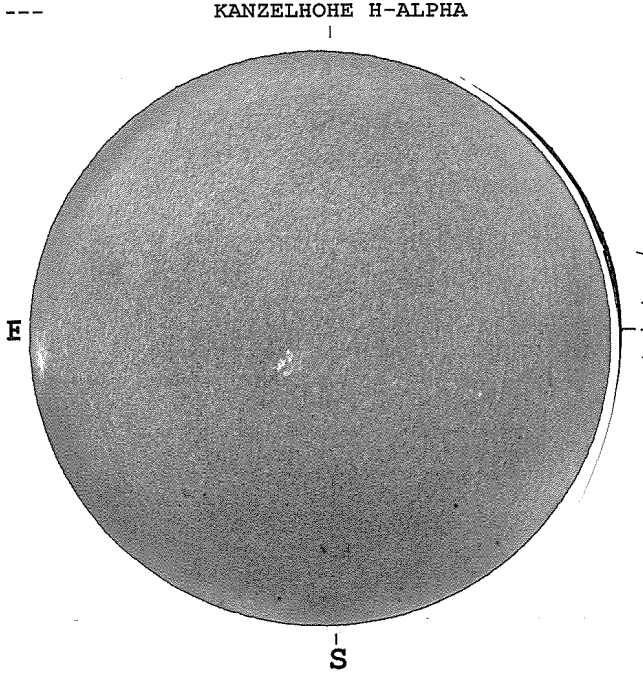
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



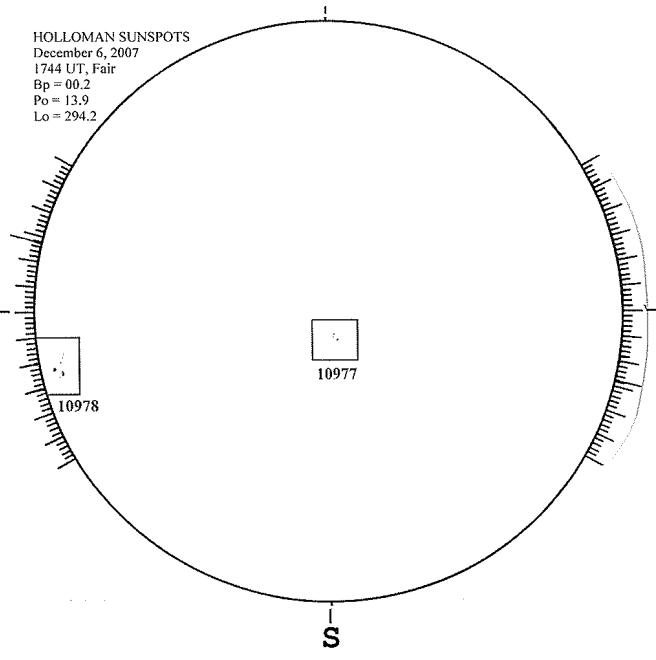
E W

KANZELHOHE H-ALPHA



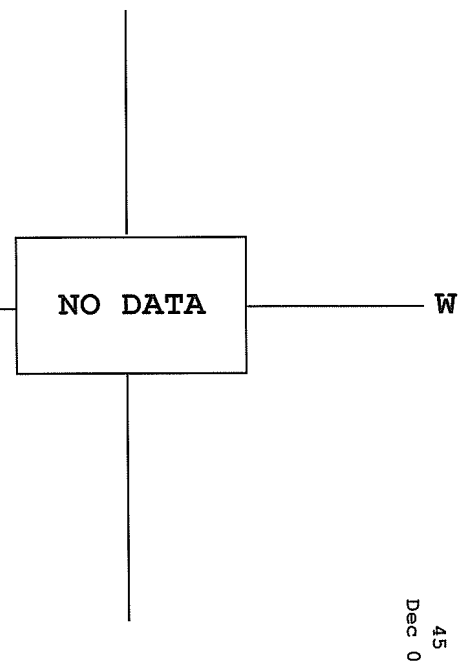
0849 UT

HOLLOMAN SUNSPOTS



1744 UT

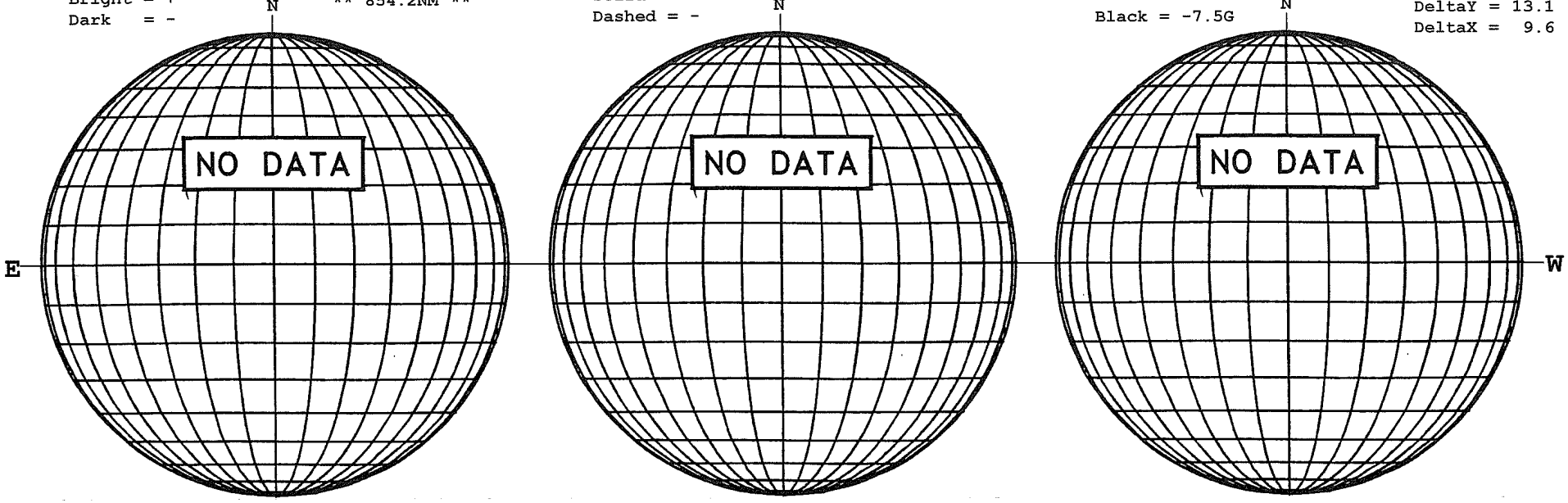
SACRAMENTO PEAK CORONA (1.15 Radii)



45
Dec 07

DECEMBER 07, 2007 (P= 13.86, Bo= 0.17, Lo= 290.51)

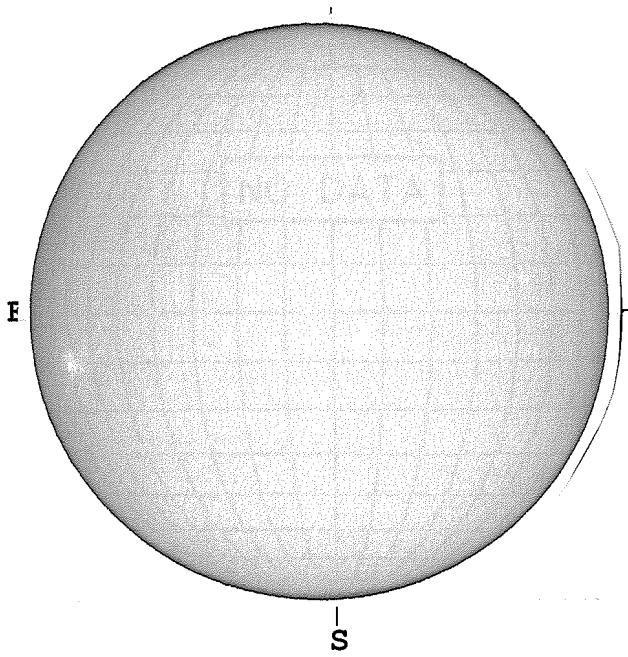
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

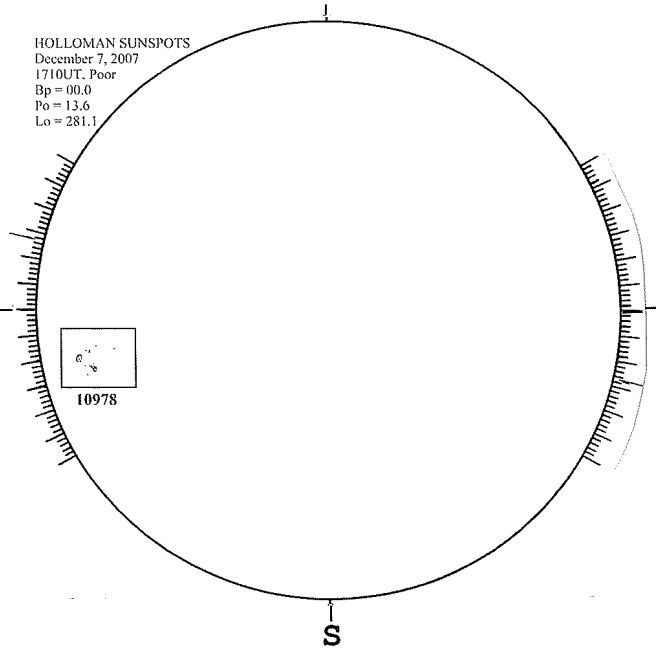
MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

MEUDON H-ALPHA



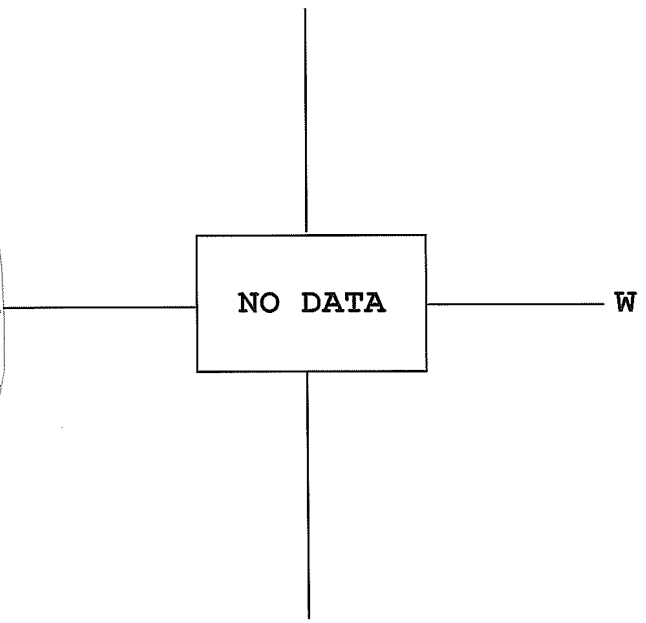
1107 UT

HOLLOMAN SUNSPOTS



1710 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

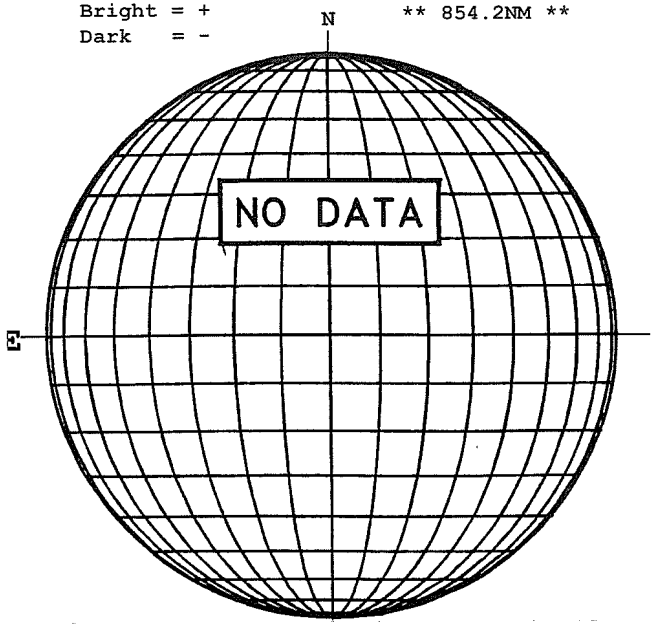


DECEMBER 08, 2007 (P= 13.45, Bo= 0.05, Lo= 277.33)

KITT PEAK MAGNETOGRAM -- SOLIS

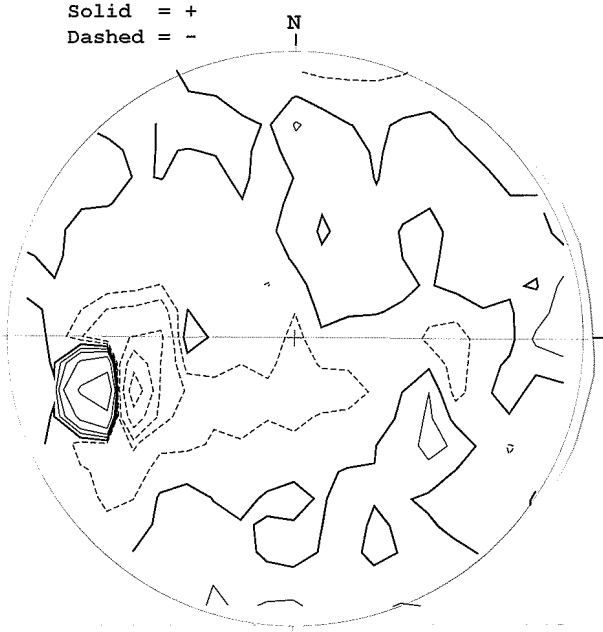
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

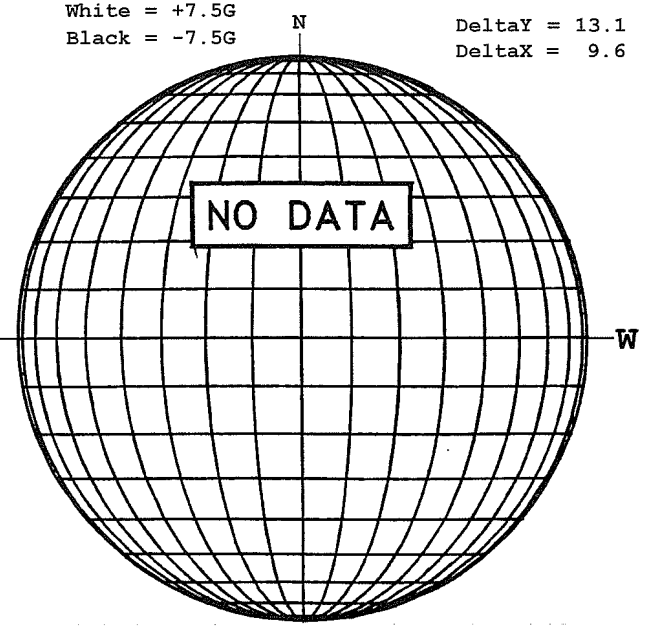


2212 UT

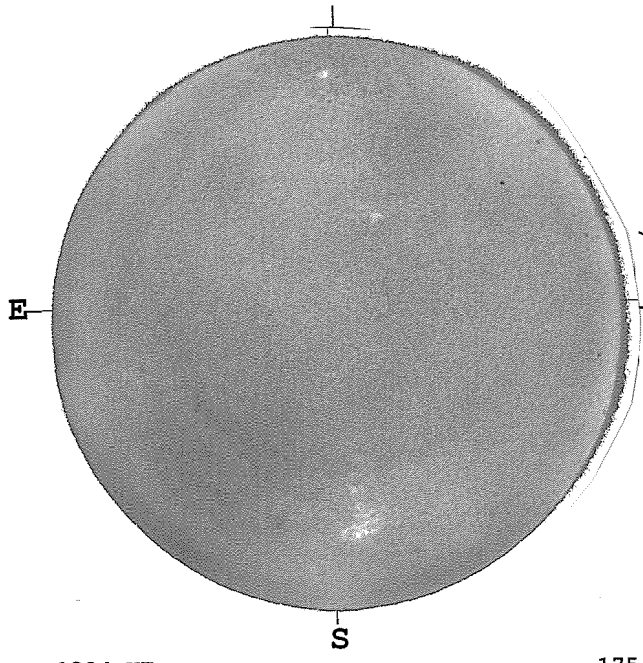
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

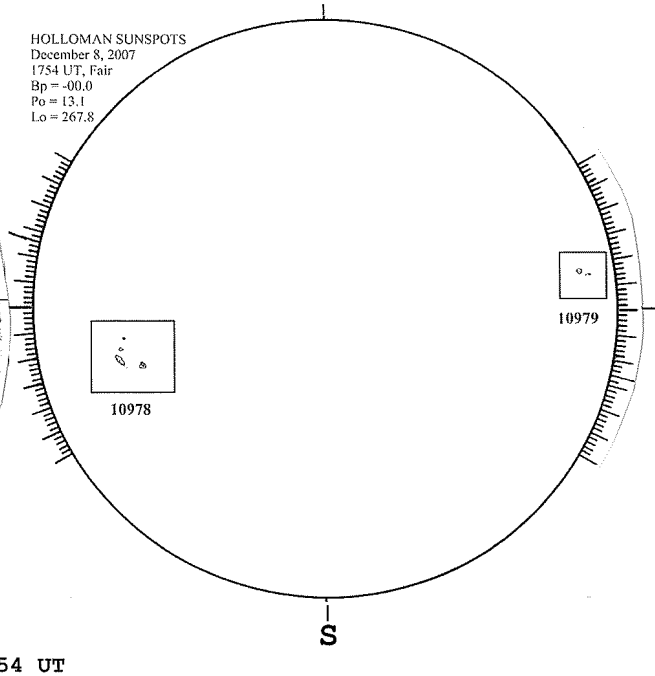


--- KANZELHOHE H-ALPHA



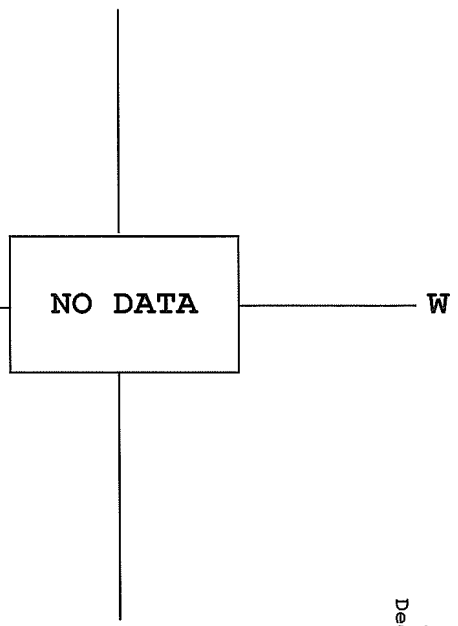
1324 UT

HOLLOMAN SUNSPOTS



1754 UT

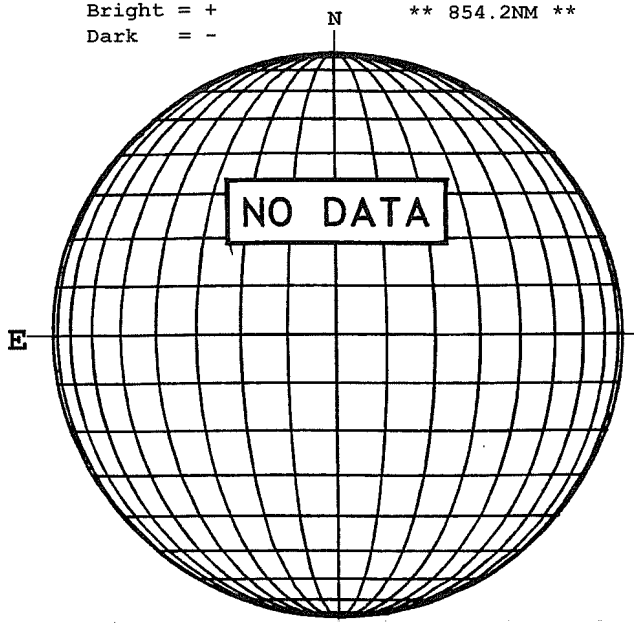
SACRAMENTO PEAK CORONA (1.15 Radii)-----



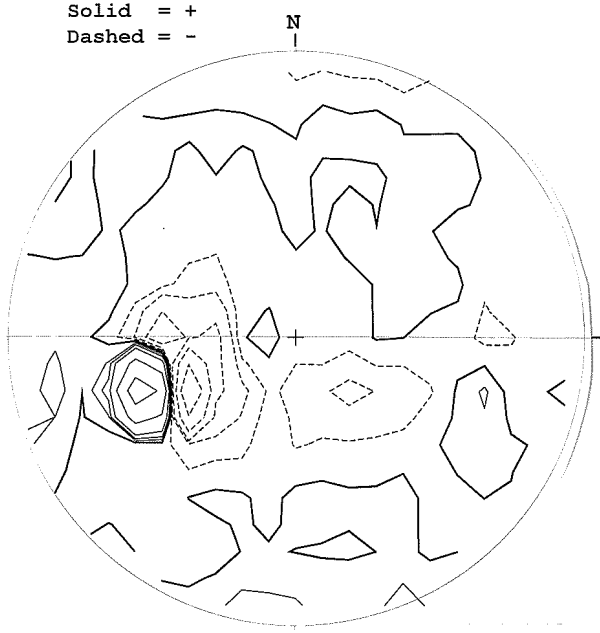
47
Dec 07

DECEMBER 09, 2007 (P= 13.02, Bo=-0.08, Lo= 264.15)

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

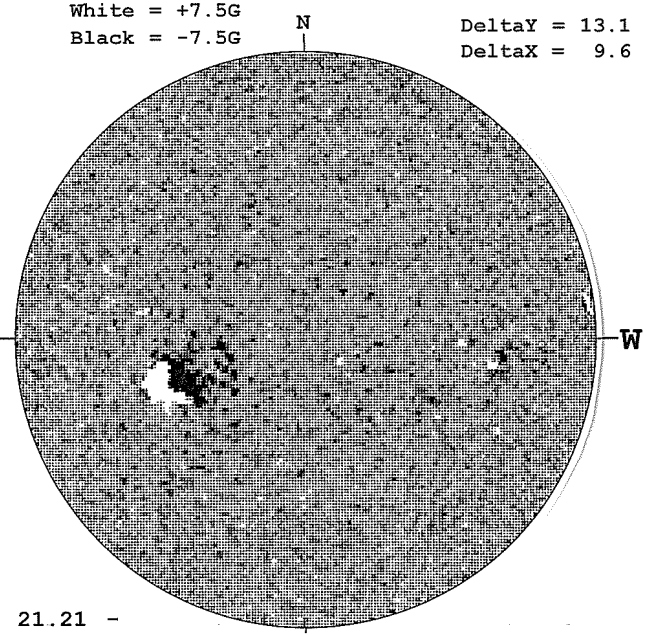


STANFORD MAGNETOGRAM
Solid = +
Dashed = -



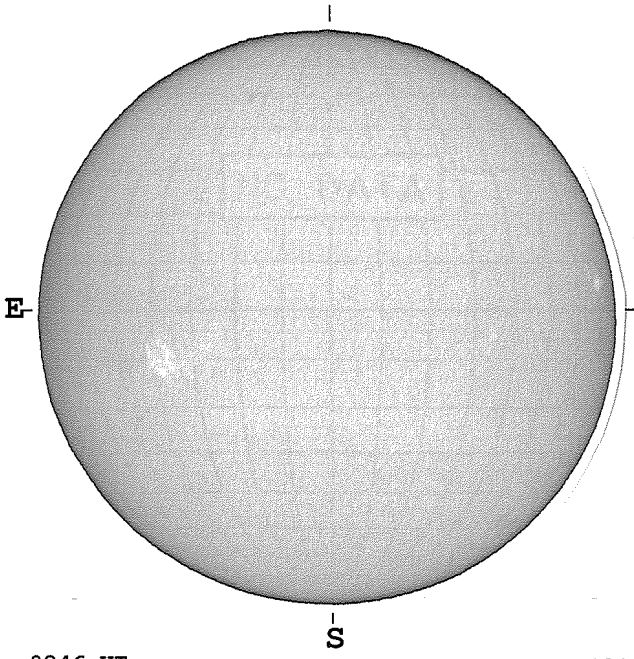
2127 UT

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



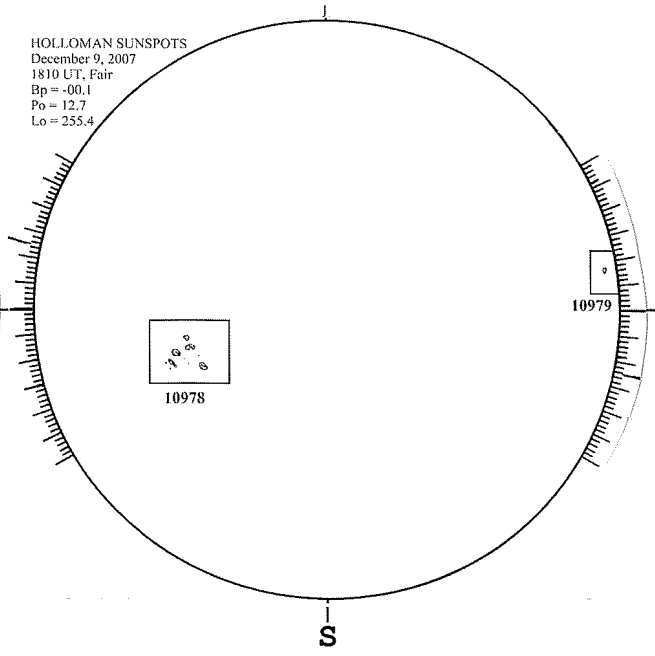
21.21 -
22.18 UT

MEUDON H-ALPHA



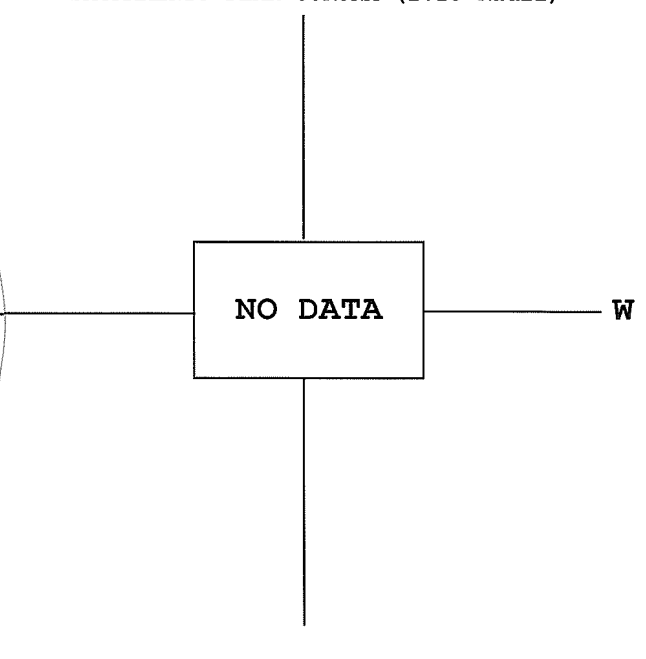
0846 UT

HOLLOMAN SUNSPOTS



1810 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

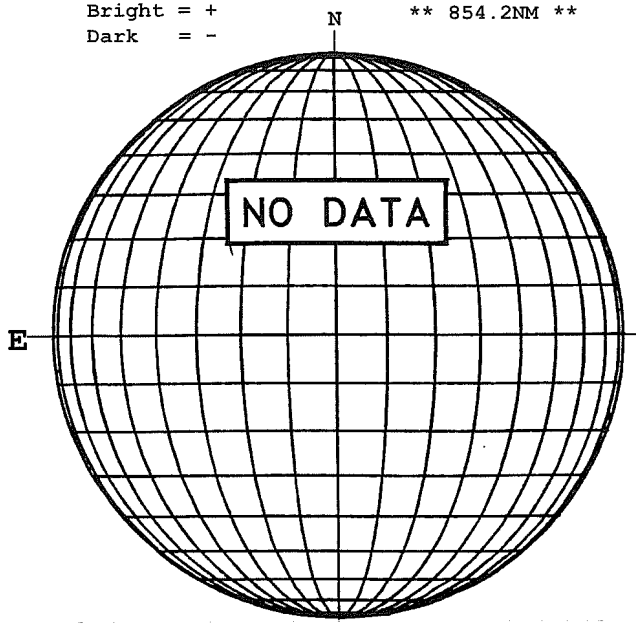


DECEMBER 10, 2007 (P= 12.60, Bo=-0.21, Lo= 250.98)

KITT PEAK MAGNETOGRAM -- SOLIS

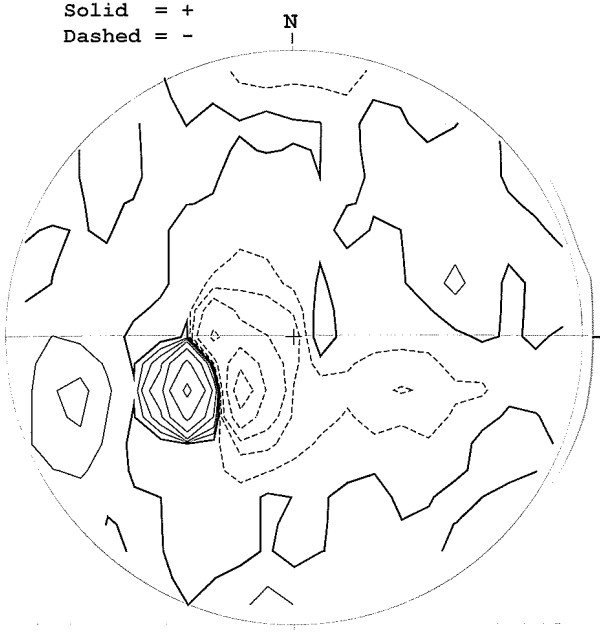
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

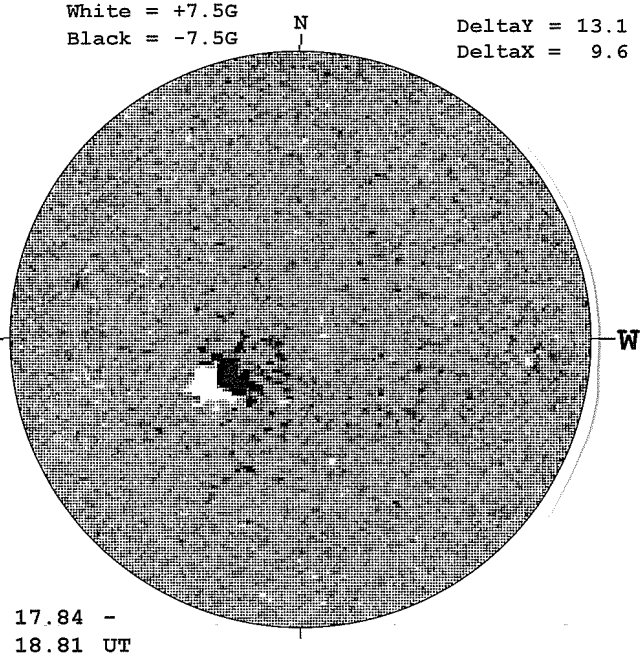


1906 UT

MT. WILSON MAGNETOGRAM

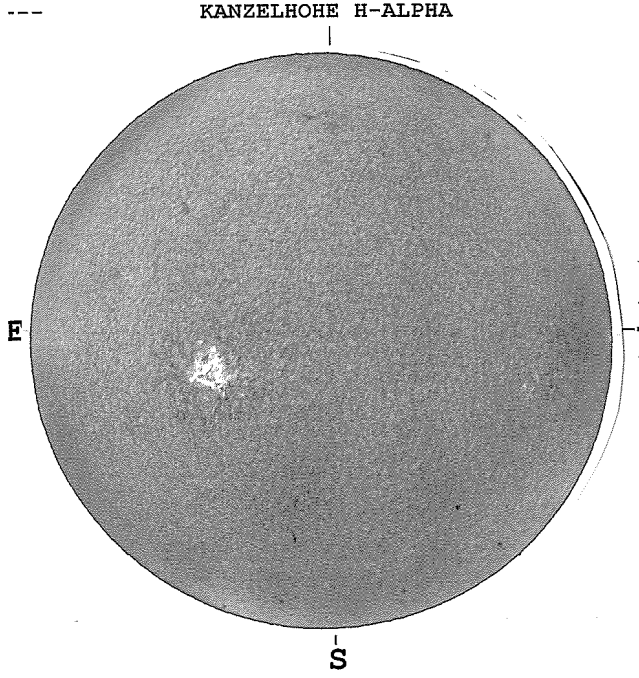
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



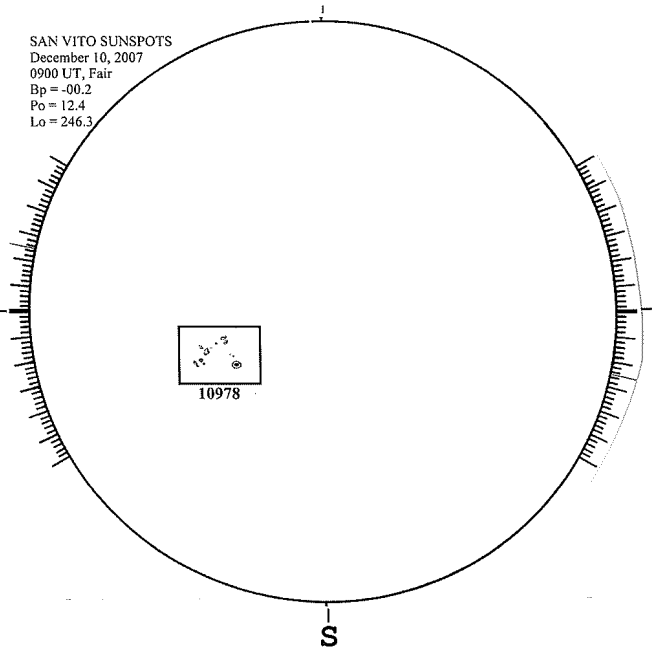
17.84 -
18.81 UT

KANZELHOHE H-ALPHA



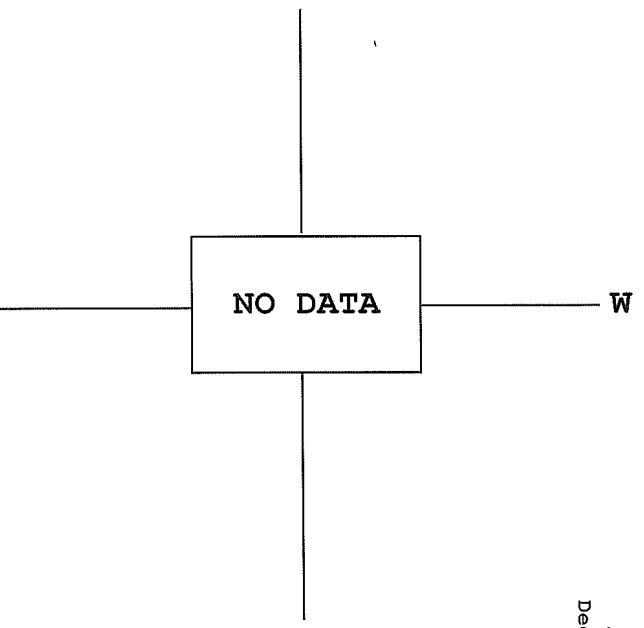
0845 UT

SAN VITO SUNSPOTS



0900 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

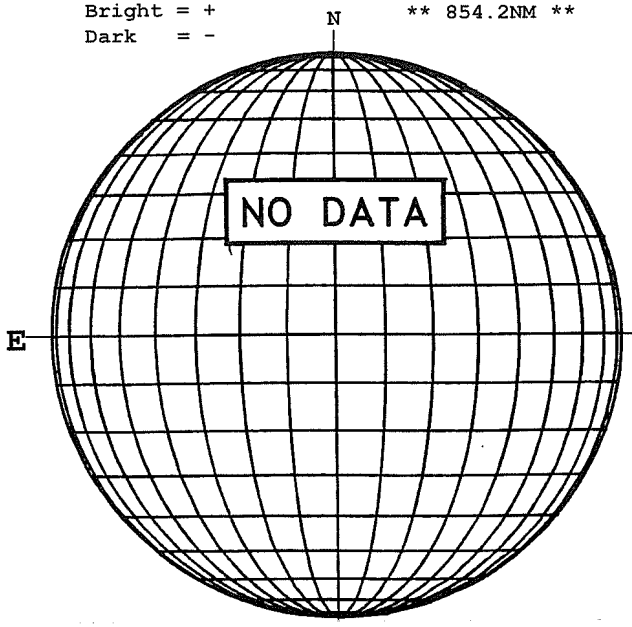


DECEMBER 11, 2007 (P= 12.16, Bo=-0.34, Lo= 237.80)

KITT PEAK MAGNETOGRAM -- SOLIS

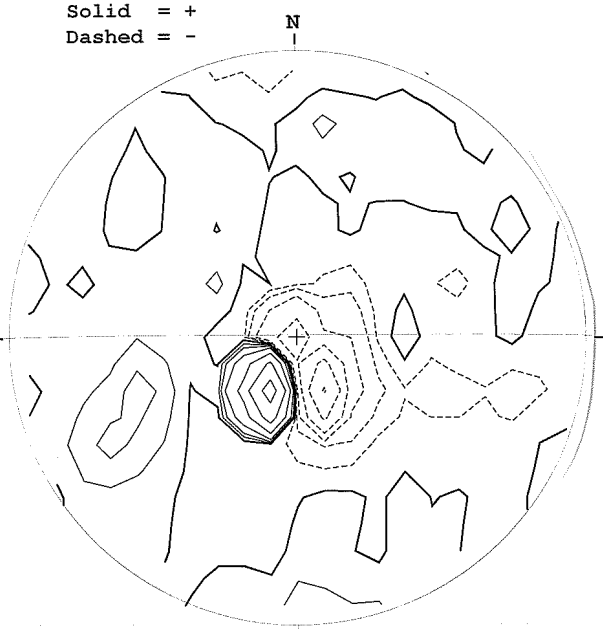
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

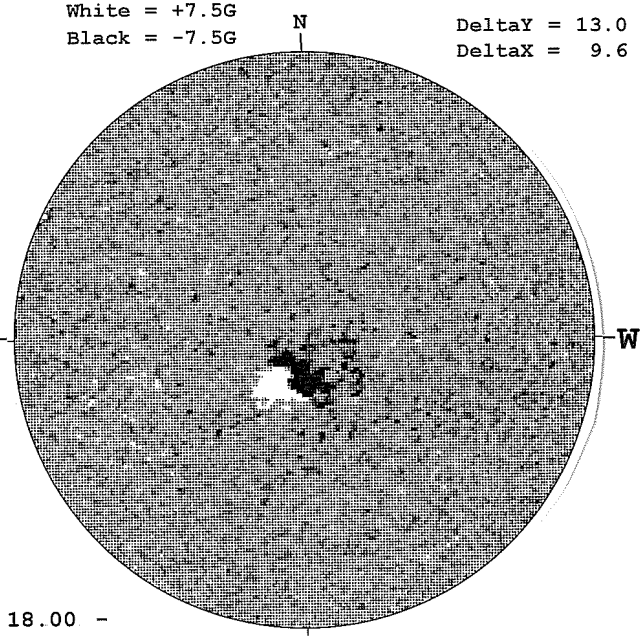


2218 UT

MT. WILSON MAGNETOGRAM

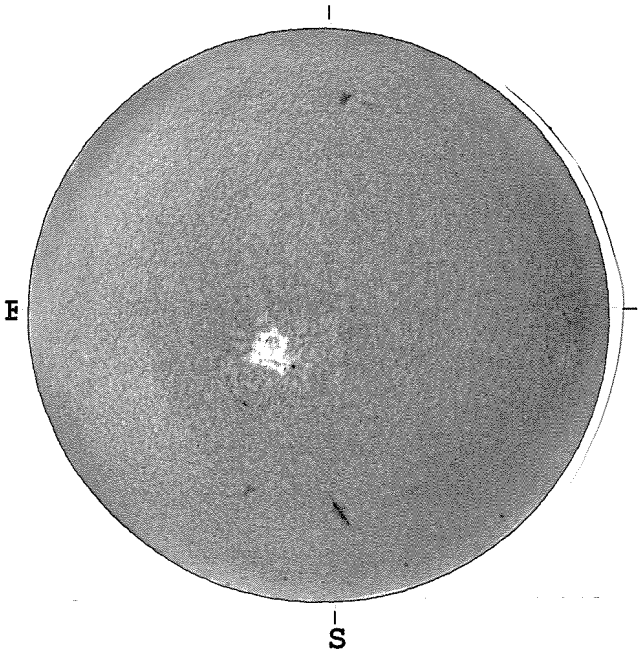
White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6



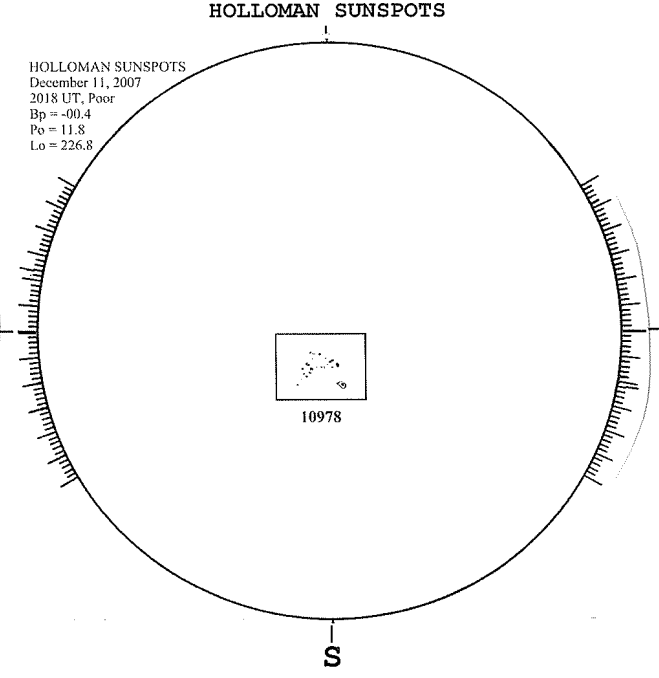
18.00 -
18.97 UT

--- KANZELHOHE H-ALPHA



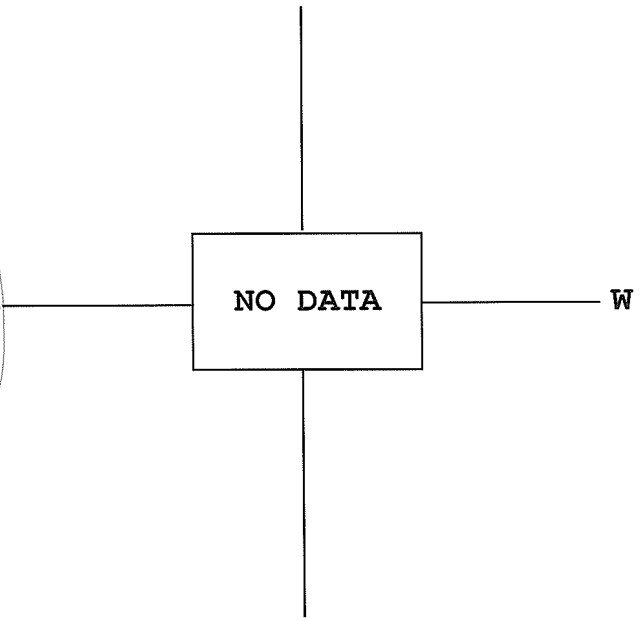
0824 UT

HOLLOMAN SUNSPOTS



2018 UT

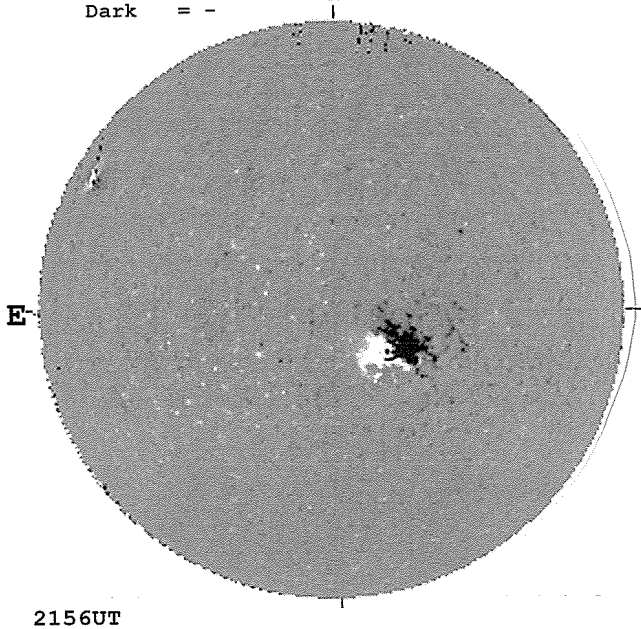
SACRAMENTO PEAK CORONA (1.15 Radii)------



DECEMBER 12, 2007 (P= 11.73, Bo=-0.47, Lo= 224.62)

KITT PEAK MAGNETOGRAM -- SOLIS

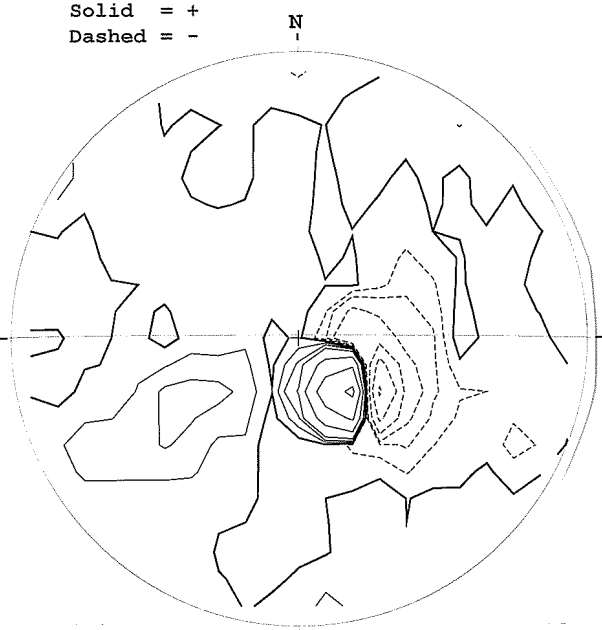
Bright = +
Dark = -



** 854.2NM **

STANFORD MAGNETOGRAM

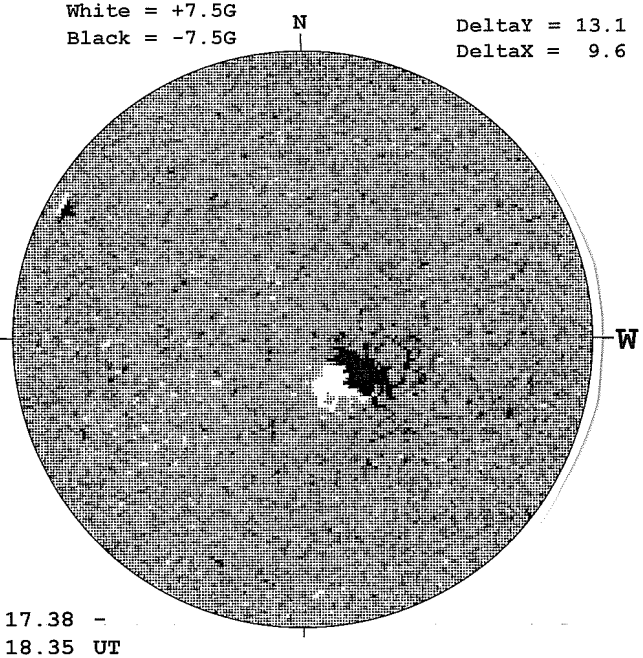
Solid = +
Dashed = -



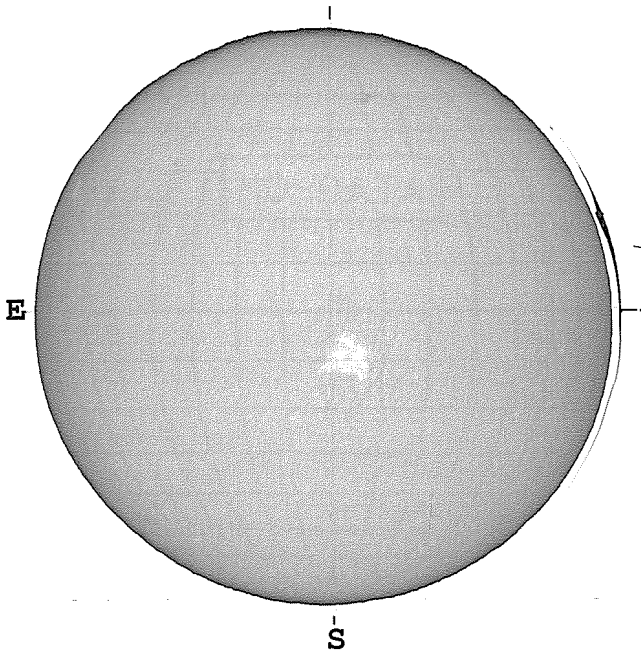
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

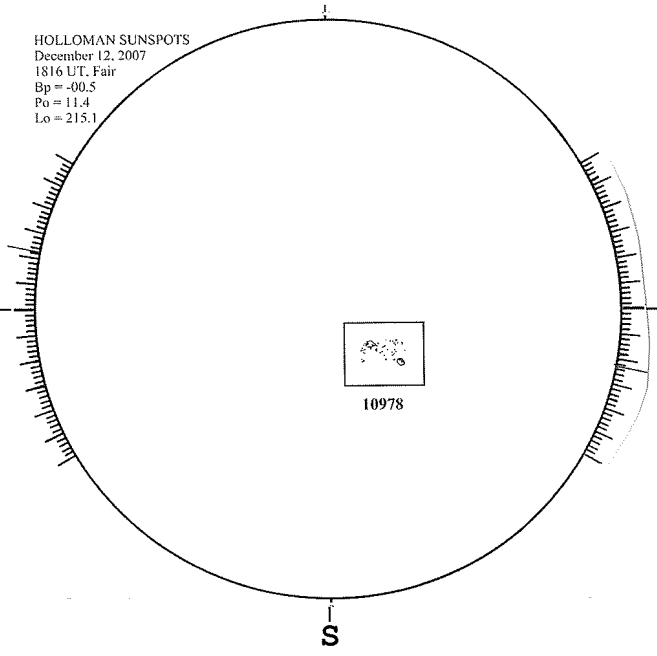
DeltaY = 13.1
DeltaX = 9.6



MEUDON H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

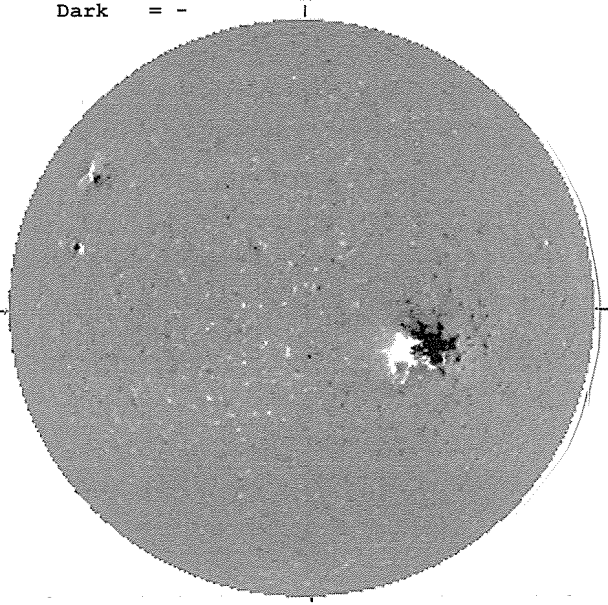
NO DATA

W

51
Dec 07

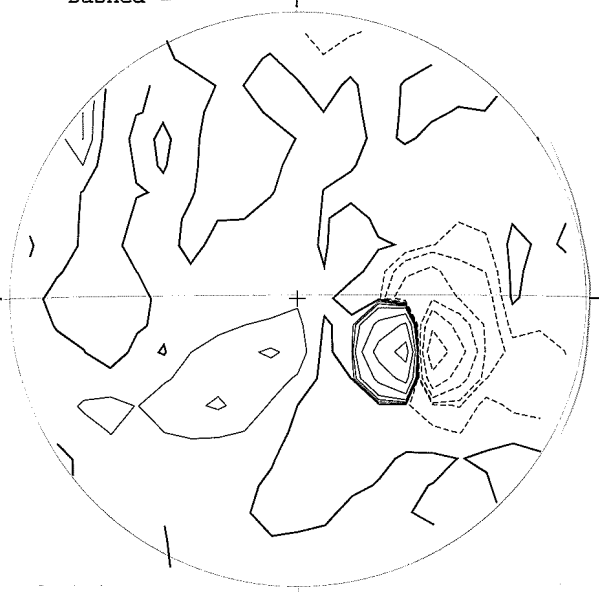
DECEMBER 13, 2007 (P= 11.28, Bo=-0.59, Lo= 211.45)

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



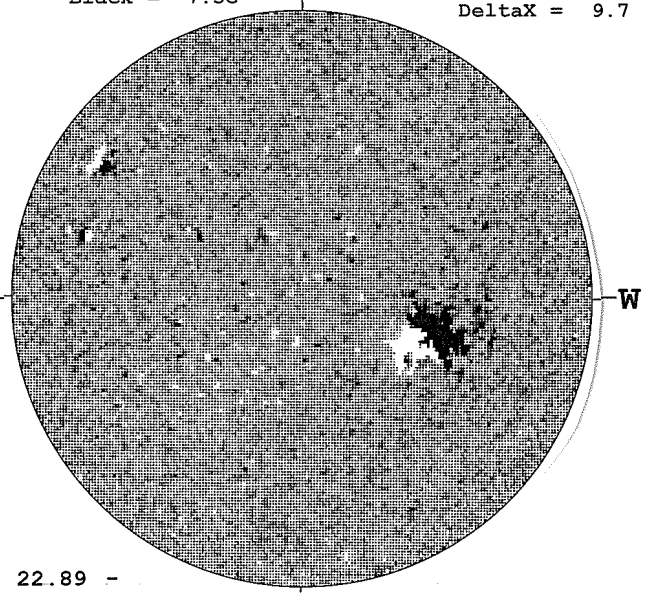
1907 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



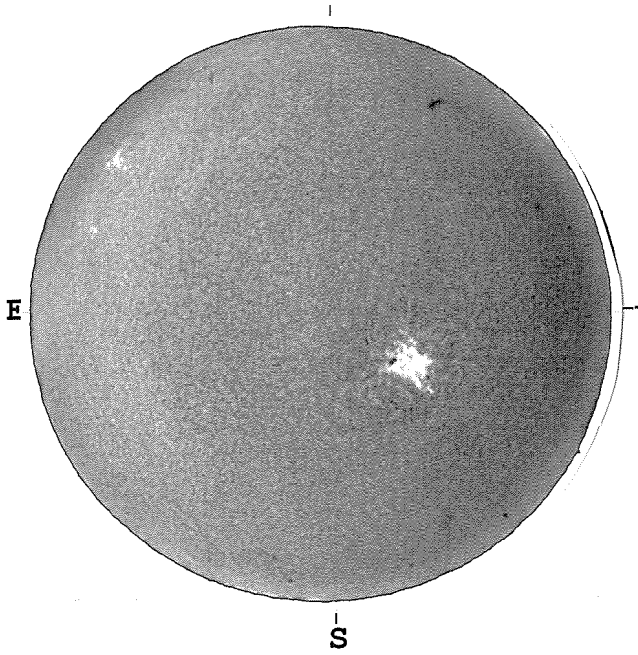
2122 UT

MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.7



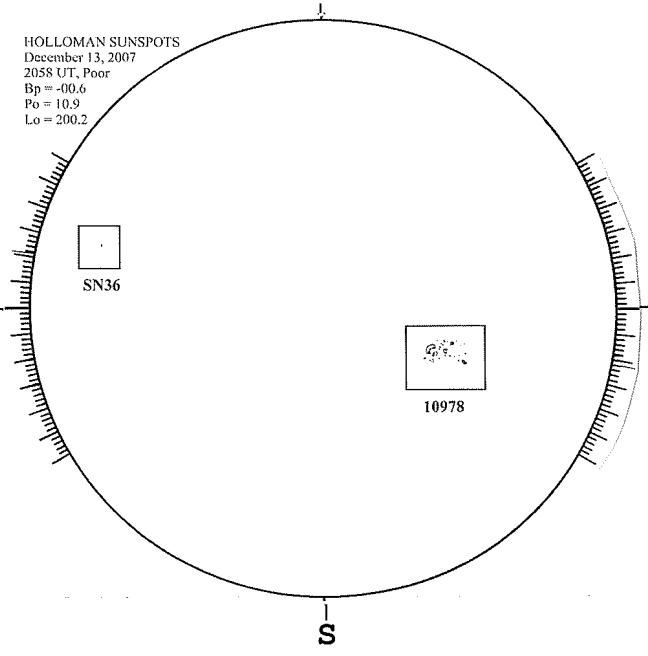
22.89 -
23.87 UT

KANZELHOHE H-ALPHA



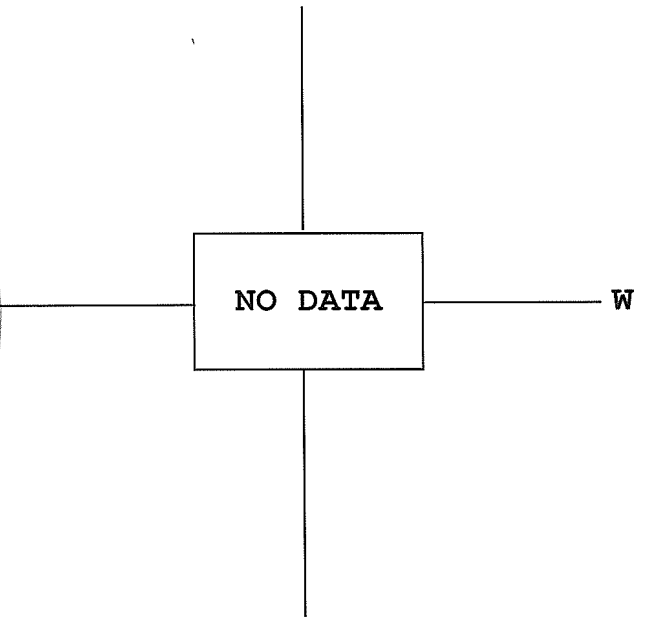
1047 UT

HOLLOMAN SUNSPOTS



2058 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

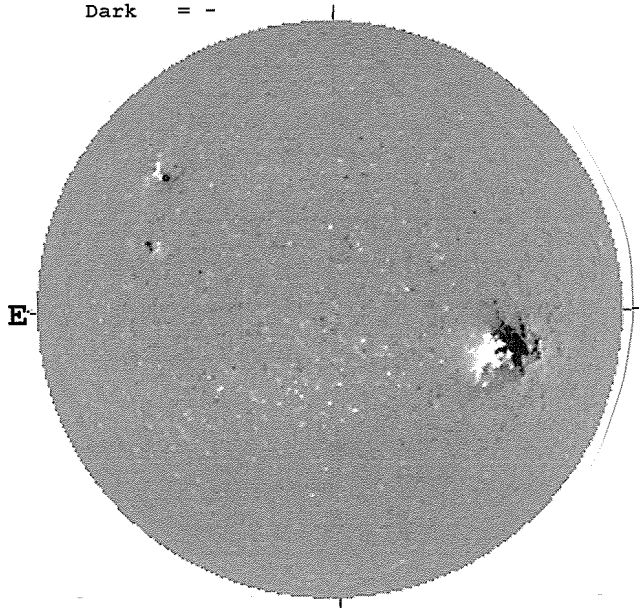


DECEMBER 14, 2007 (P= 10.84, Bo=-0.72, Lo= 198.27)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

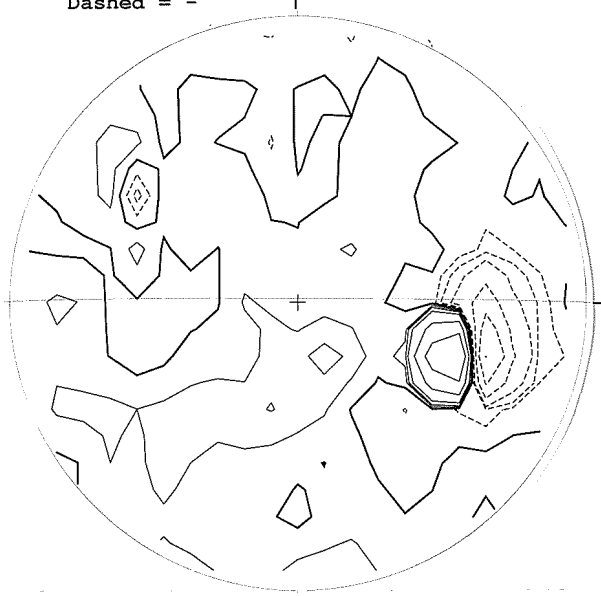
** 854.2NM **



1844 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

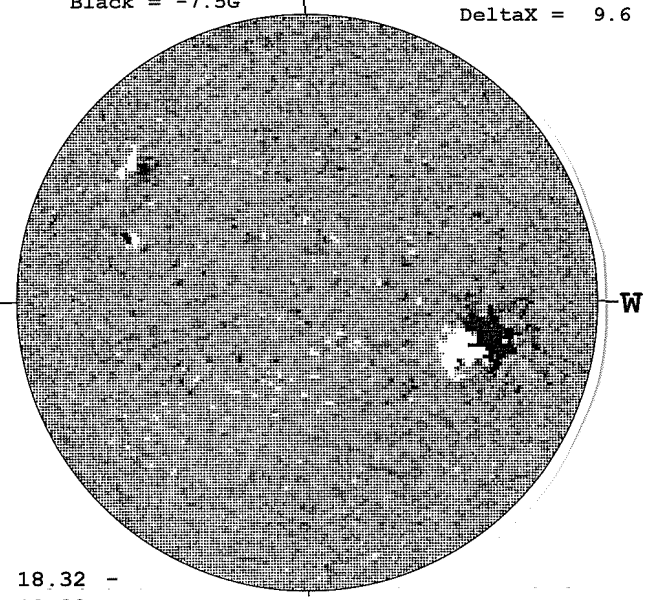


1821 UT

MT. WILSON MAGNETOGRAM

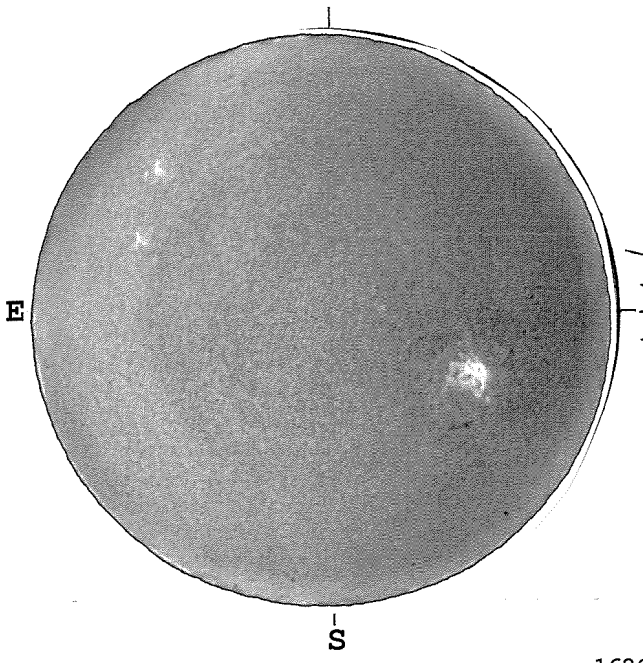
White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6



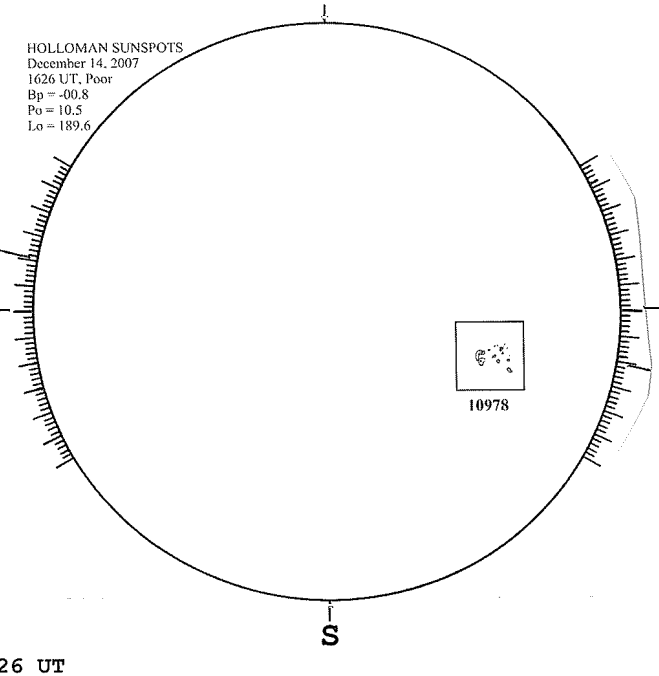
18.32 -
19.30 UT

KANZELHOHE H-ALPHA



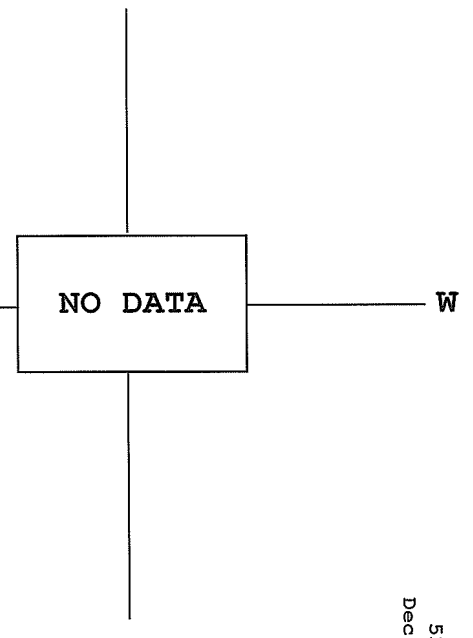
1206 UT

HOLLOMAN SUNSPOTS



1626 UT

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

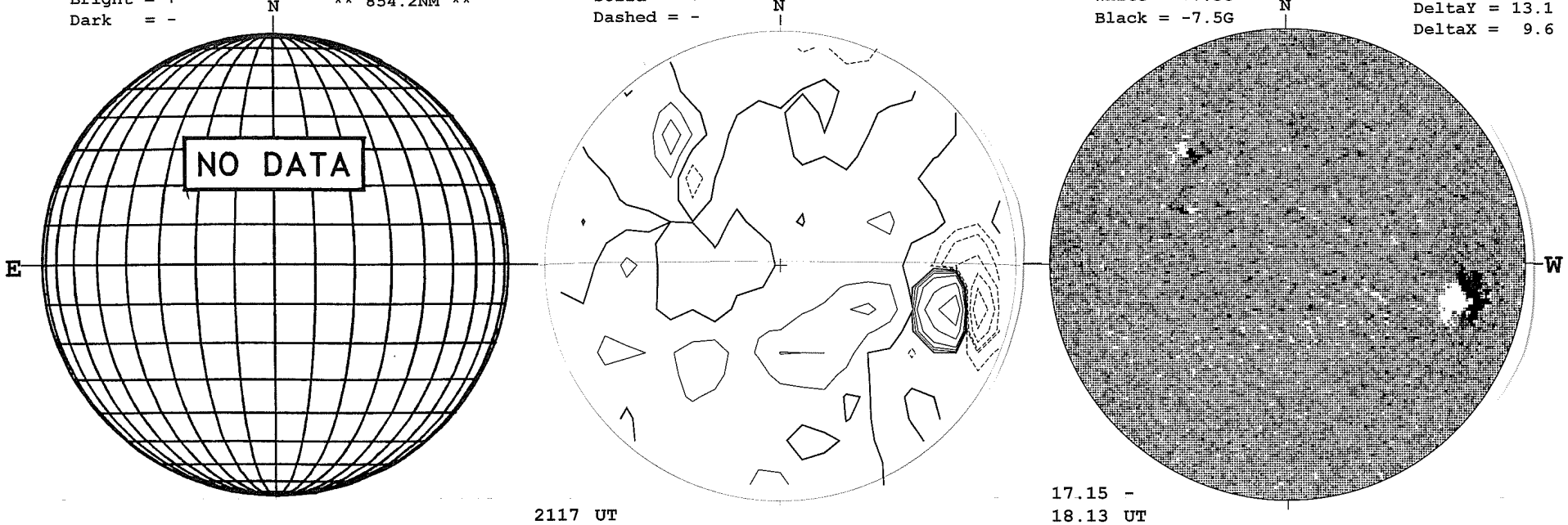


DECEMBER 15, 2007 (P= 10.39, Bo=-0.85, Lo= 185.10)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

** 854.2NM **



2117 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

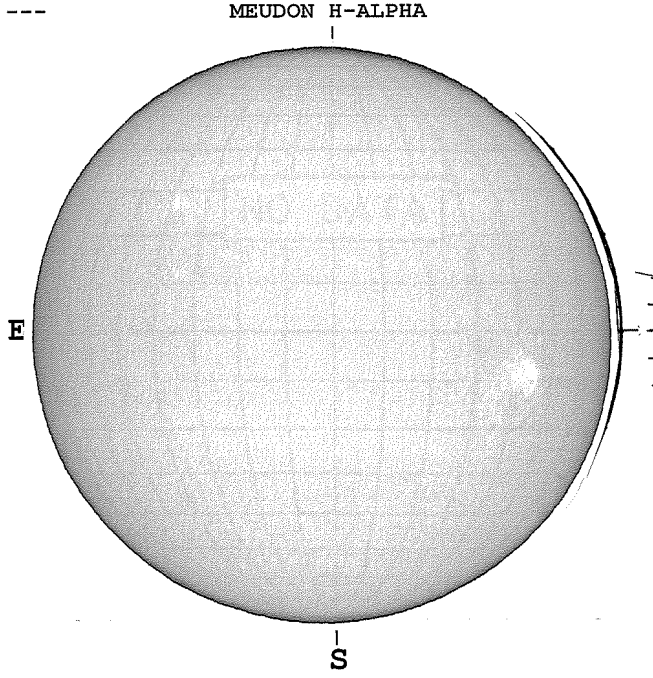
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

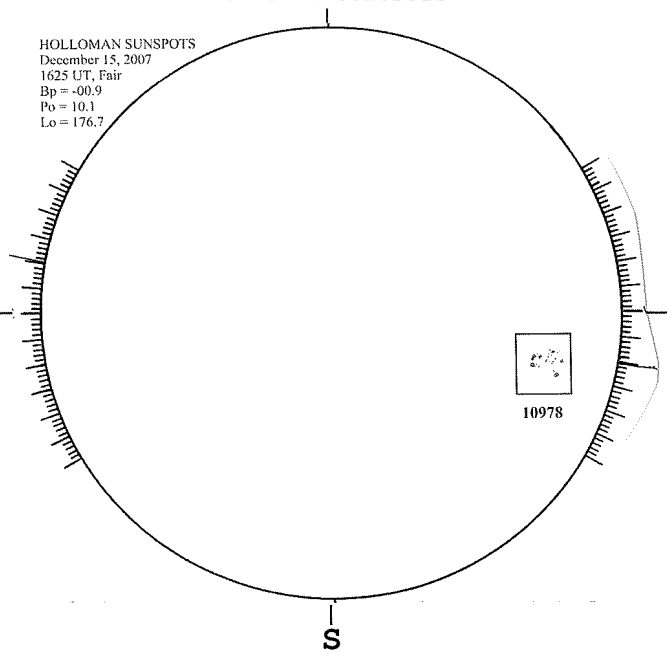
17.15 -
18.13 UT

MEUDON H-ALPHA



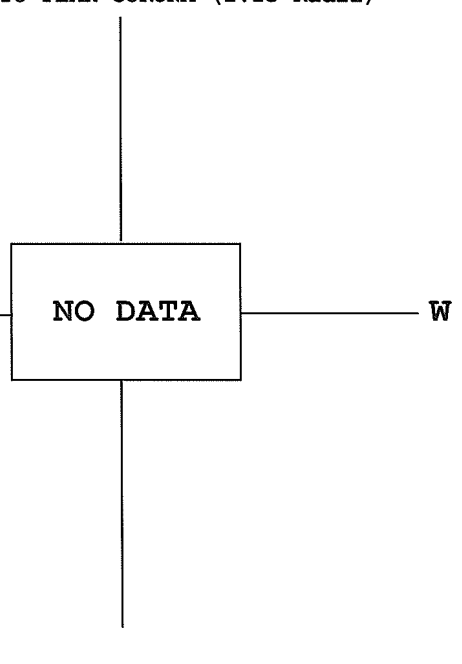
0859 UT

HOLLOMAN SUNSPOTS



1625 UT

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

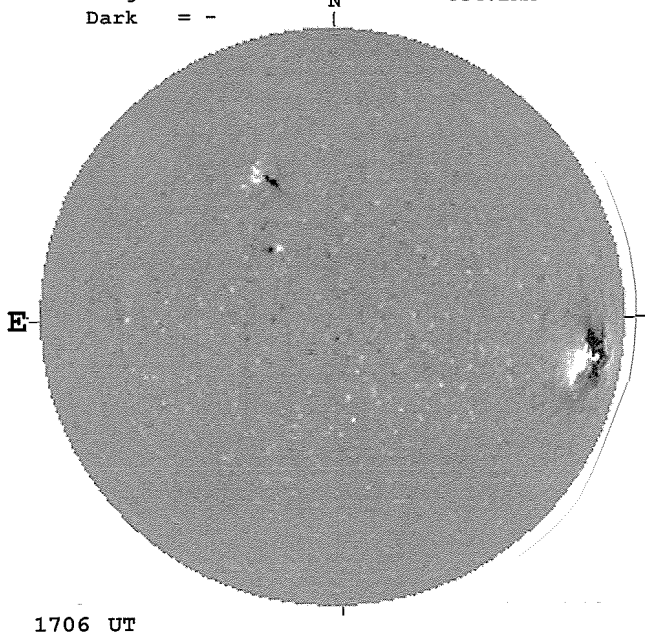


DECEMBER 16, 2007 (P= 9.94, Bo=-0.98, Lo= 171.92)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

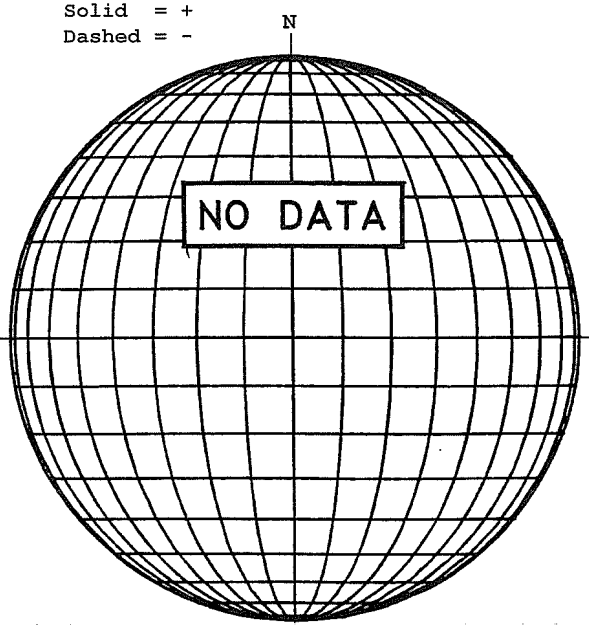
** 854.2NM **



1706 UT

STANFORD MAGNETOGRAM

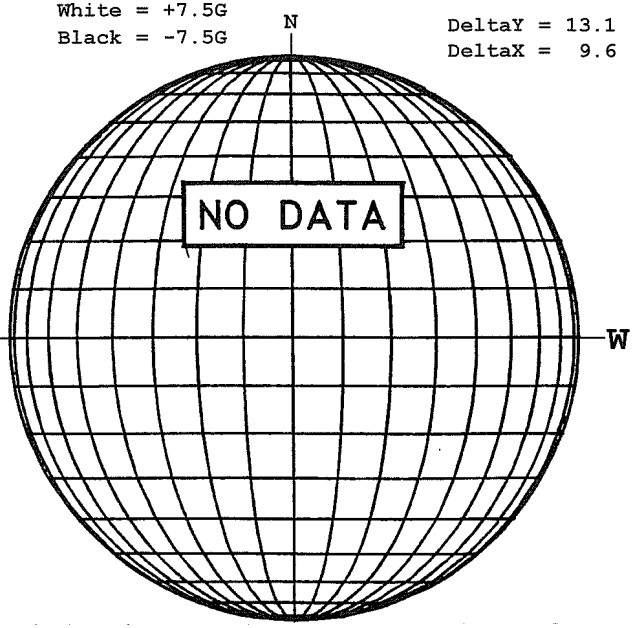
Solid = +
Dashed = -



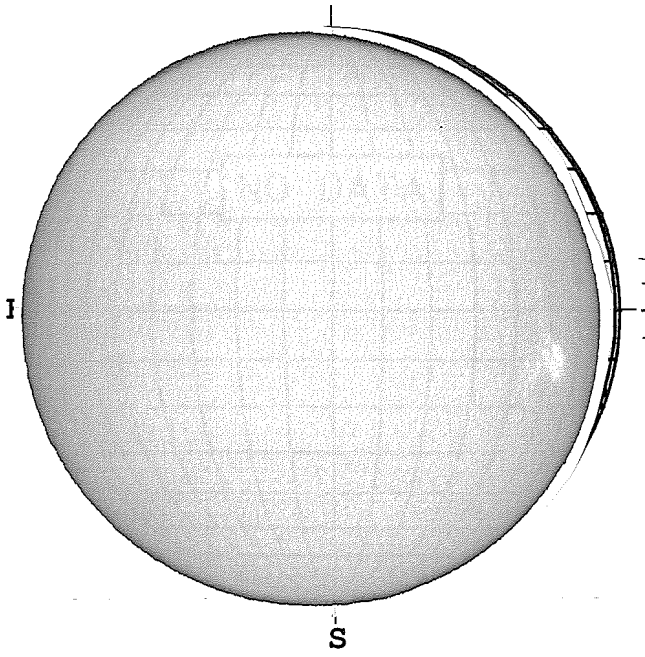
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

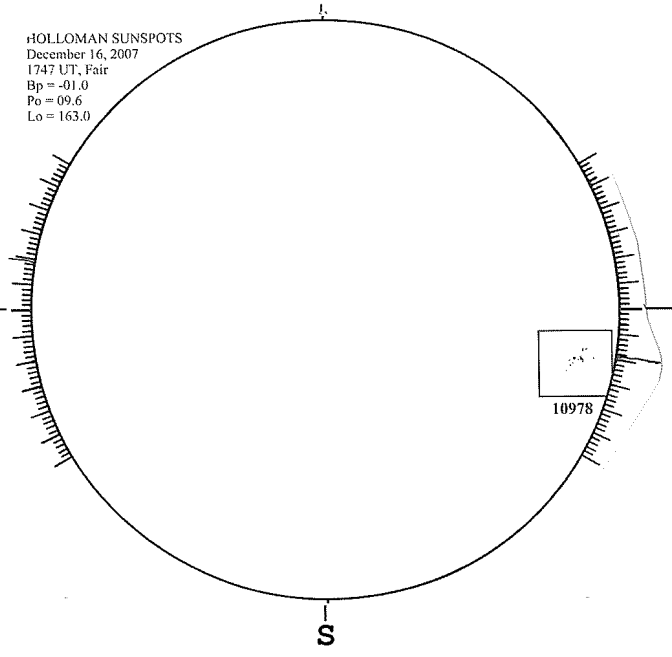


MEUDON H-ALPHA



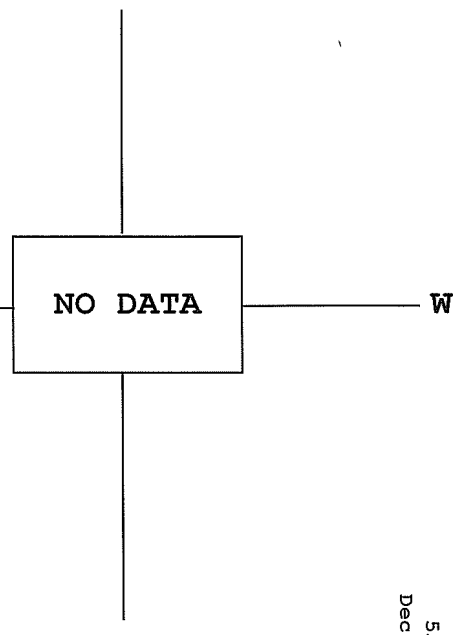
0836 UT

HOLLOMAN SUNSPOTS



1747 UT

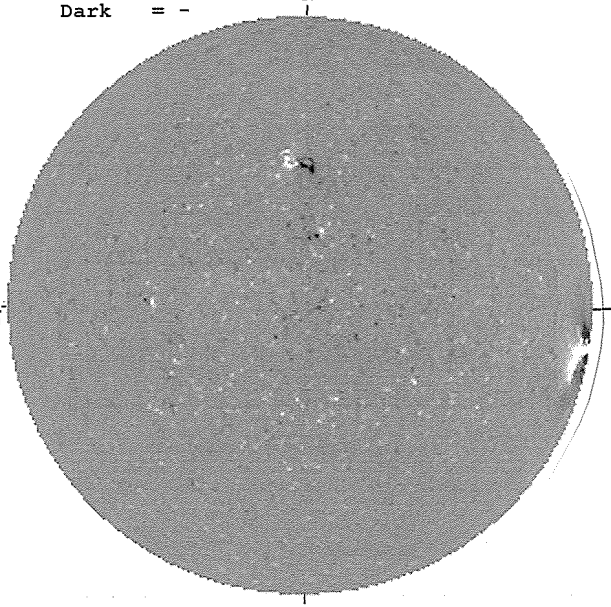
SACRAMENTO PEAK CORONA (1.15 Radii)-----



55
Dec 07

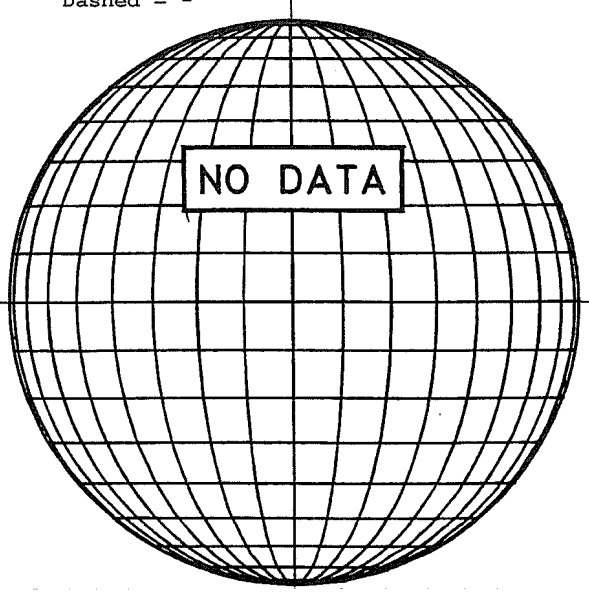
DECEMBER 17, 2007 (P= 9.48, Bo=-1.10, Lo= 158.75)

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

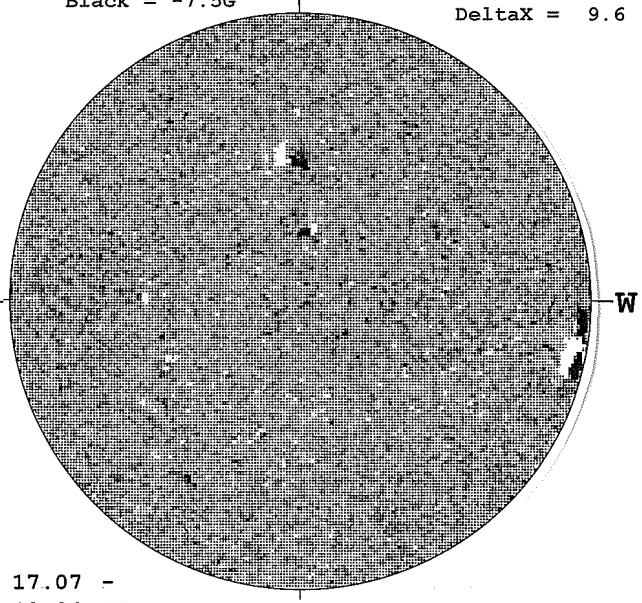


1928 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

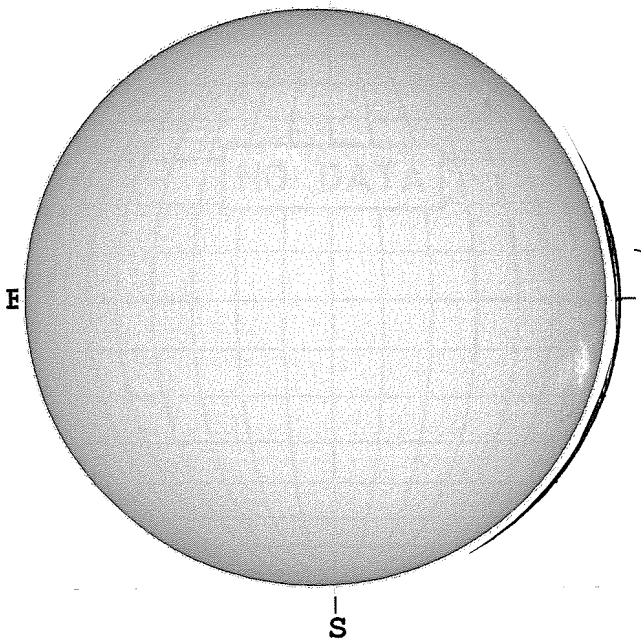


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



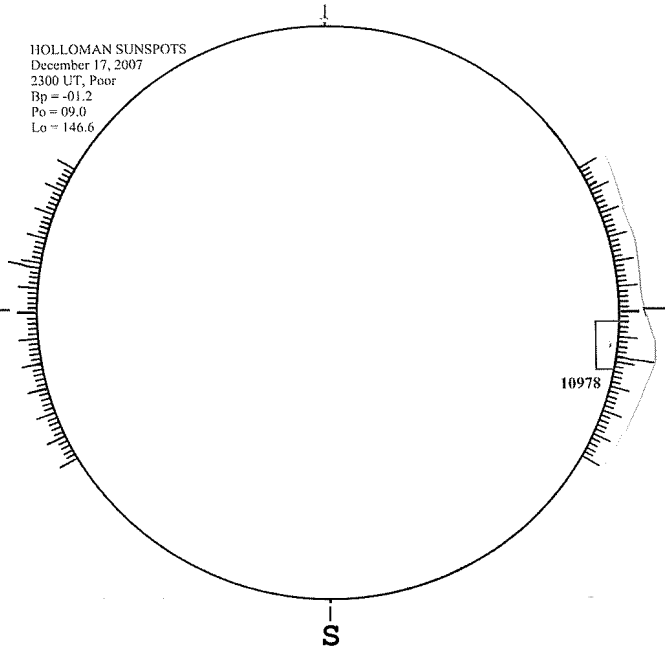
17.07 -
18.04 UT

--- YUNNAN H-ALPHA



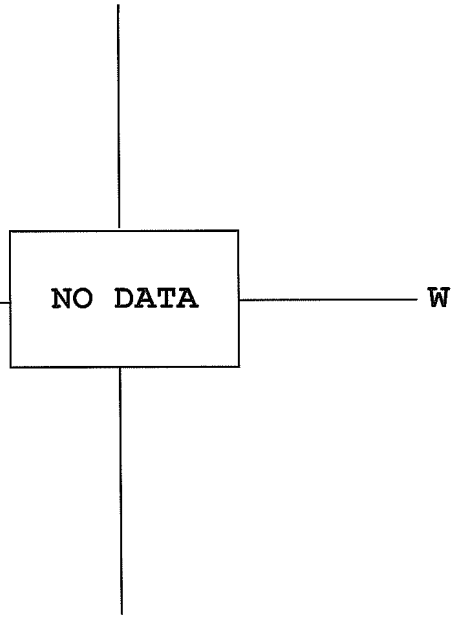
0522 UT

HOLLOMAN SUNSPOTS



2300 UT

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

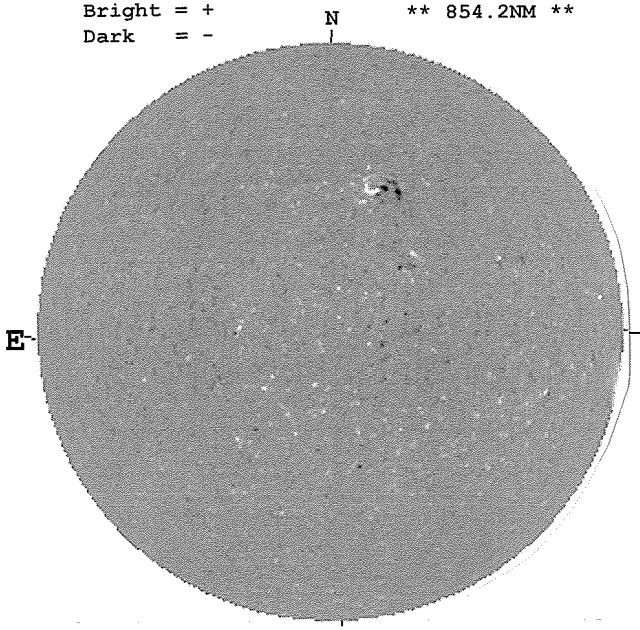


DECEMBER 18, 2007 (P= 9.02, Bo=-1.23, Lo= 145.57)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

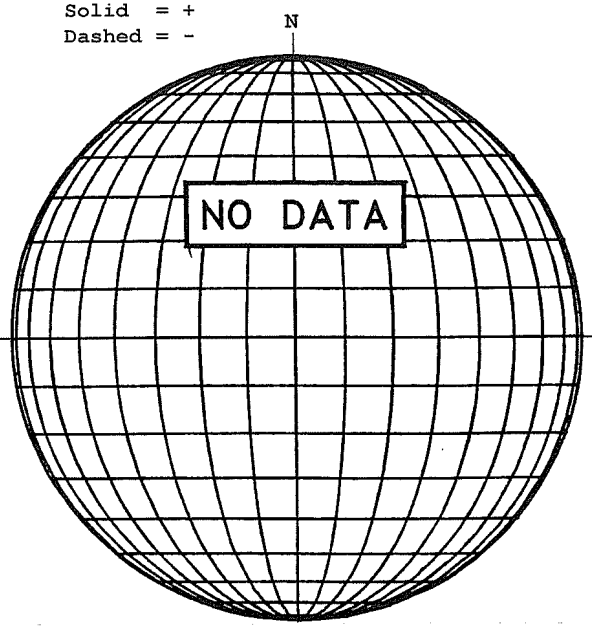
** 854.2NM **



1817 UT

STANFORD MAGNETOGRAM

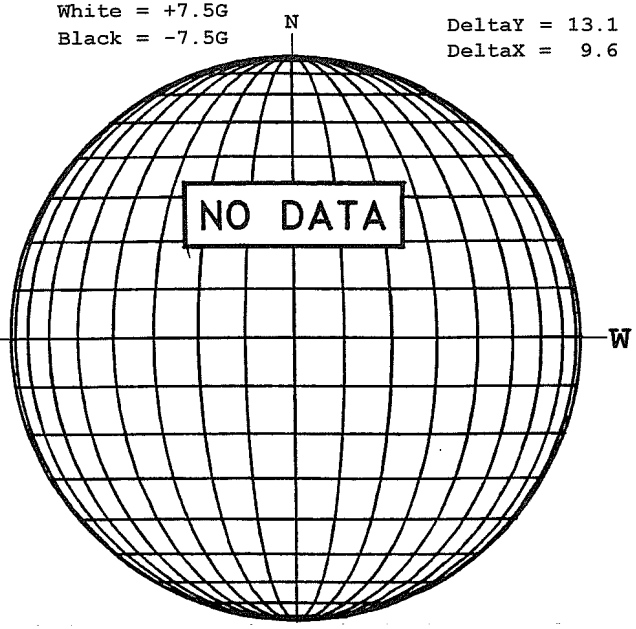
Solid = +
Dashed = -



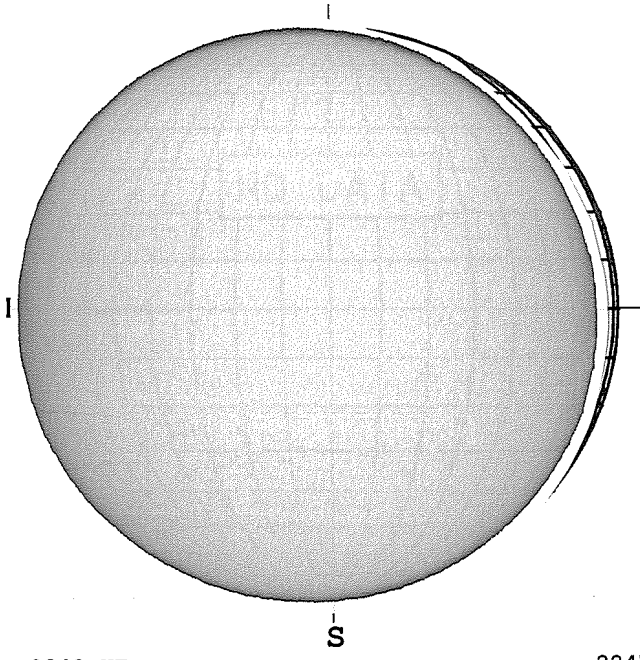
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

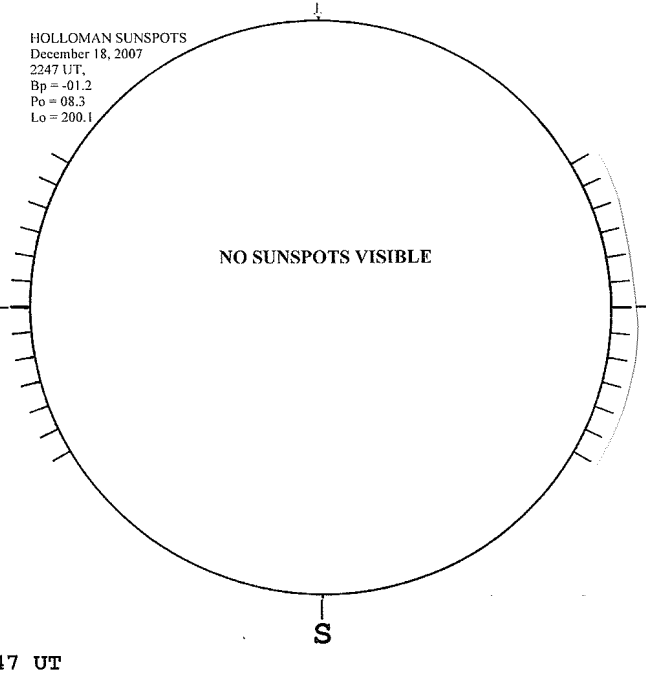


--- MEUDON H-ALPHA



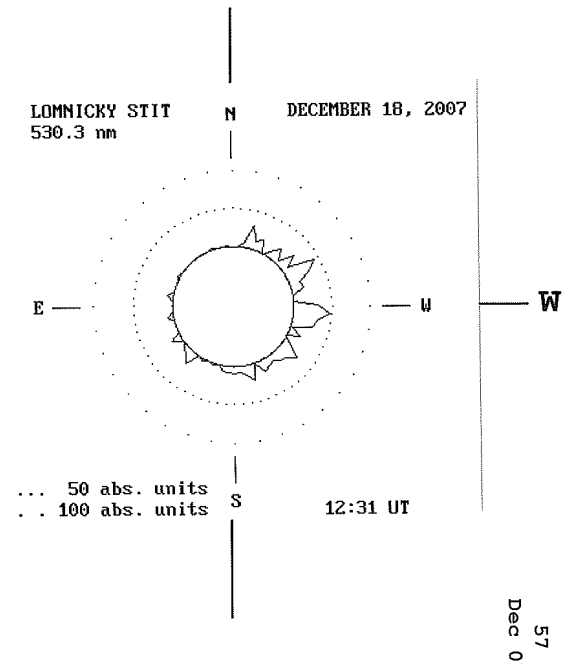
0849 UT

HOLLOMAN SUNSPOTS



2247 UT

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



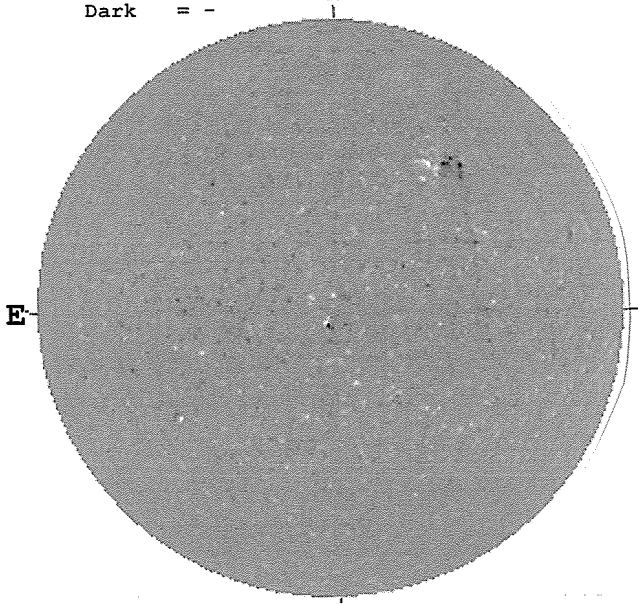
57
Dec 07

DECEMBER 19, 2007 (P= 8.56, Bo=-1.36, Lo= 132.40)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

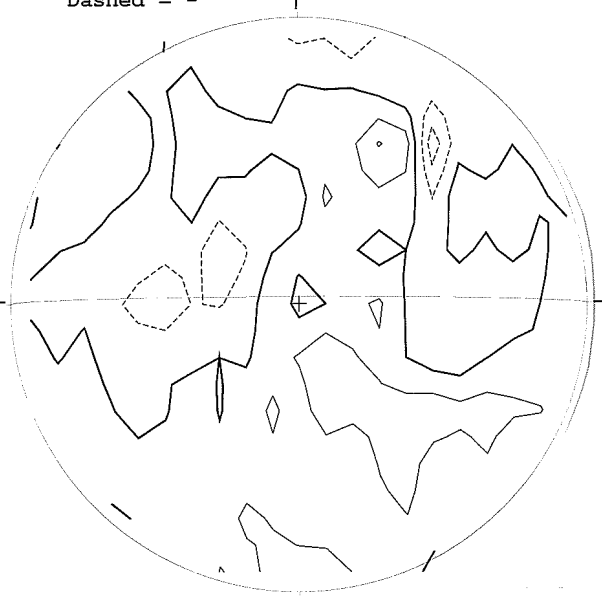
** 854.2NM **



2030 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

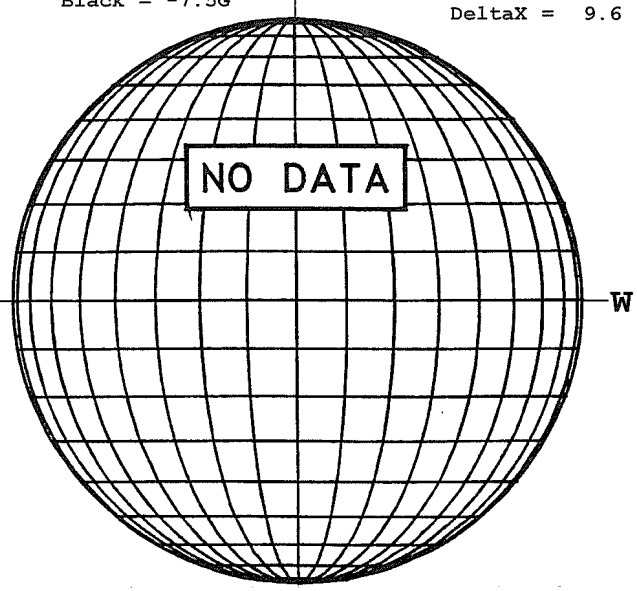


1833 UT

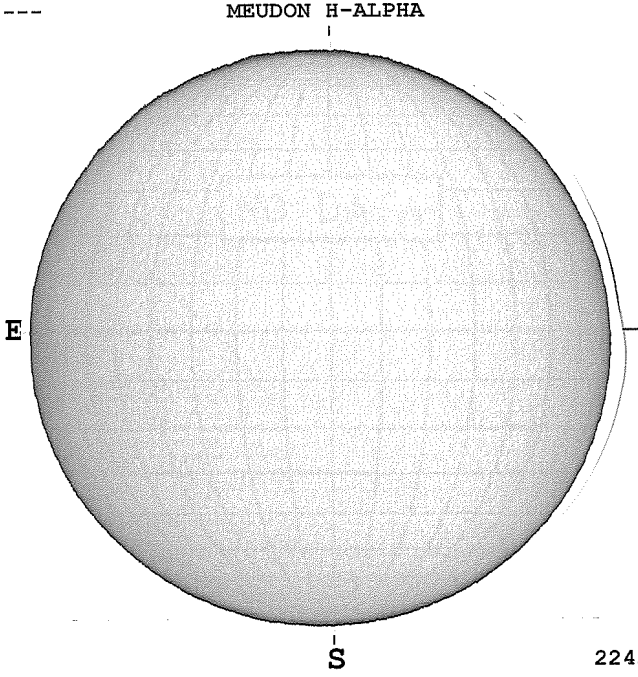
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

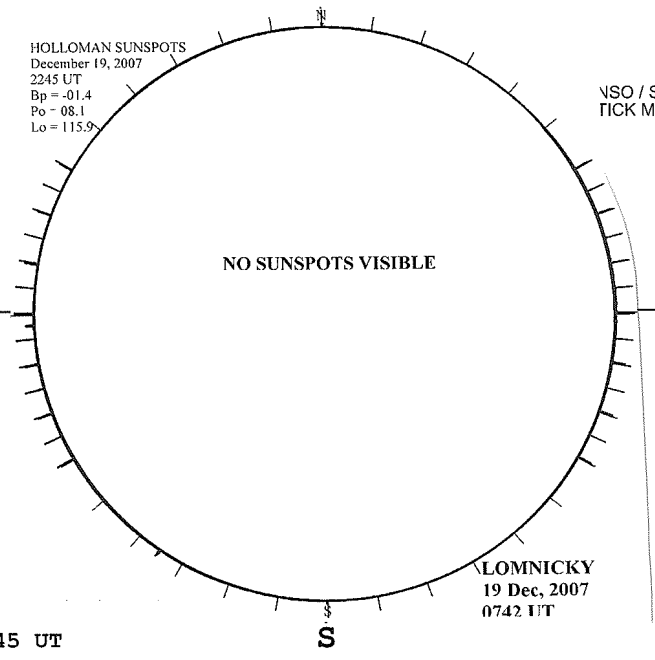


MEUDON H-ALPHA



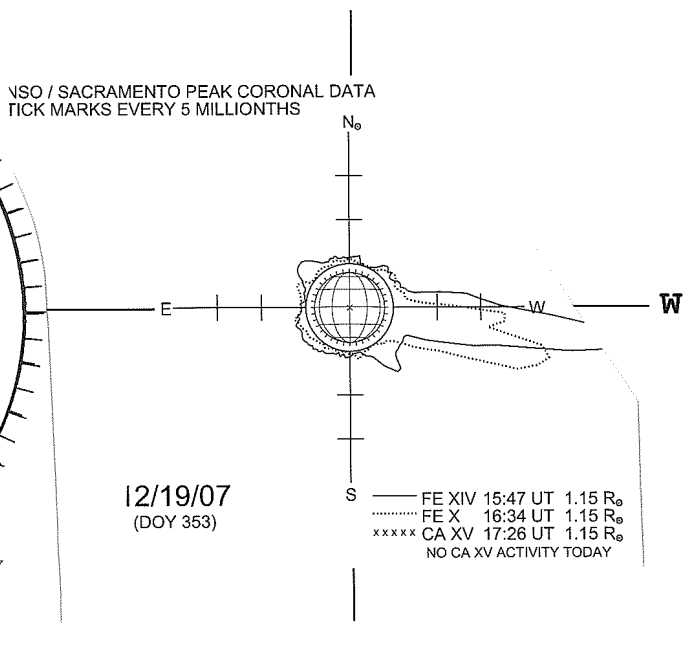
0918 UT

HOLLOMAN SUNSPOTS



2245 UT
0742 UT LOMN PROM

SACRAMENTO PEAK CORONA (1.15 Radii)

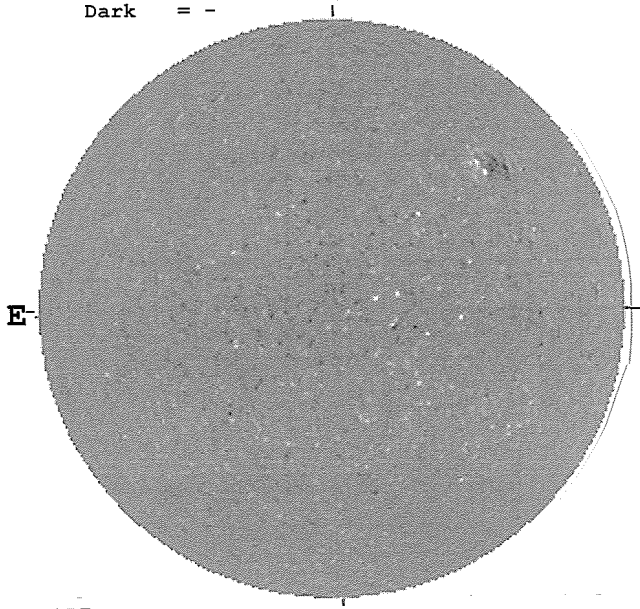


DECEMBER 20, 2007 (P= 8.09, Bo=-1.48, Lo= 119.23)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

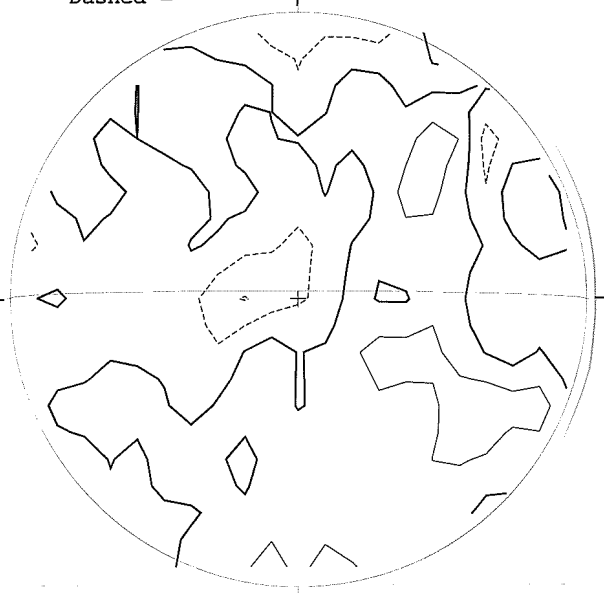
** 854.2NM **



1857 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

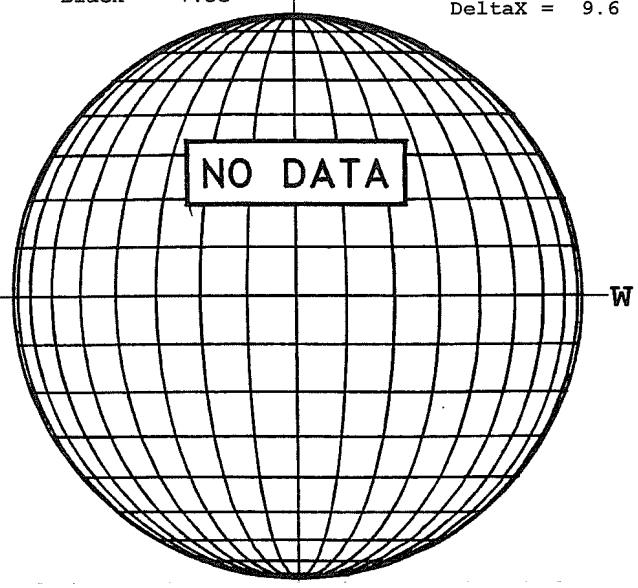


2208 UT

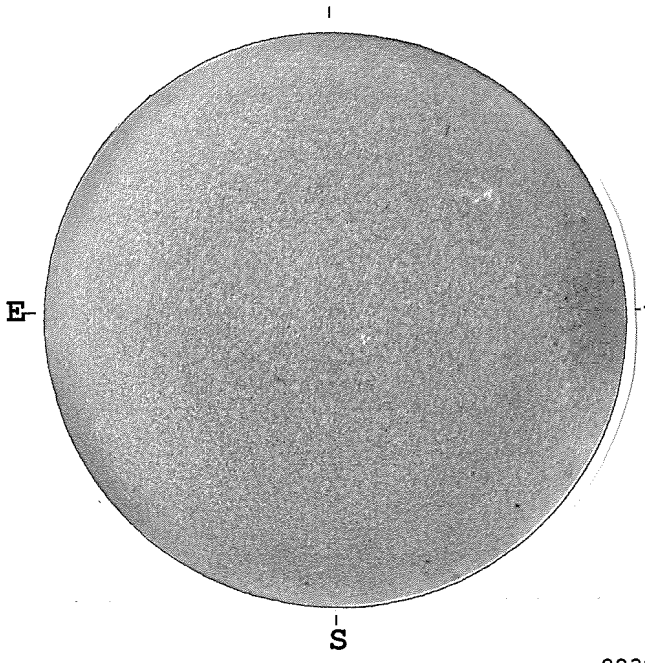
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

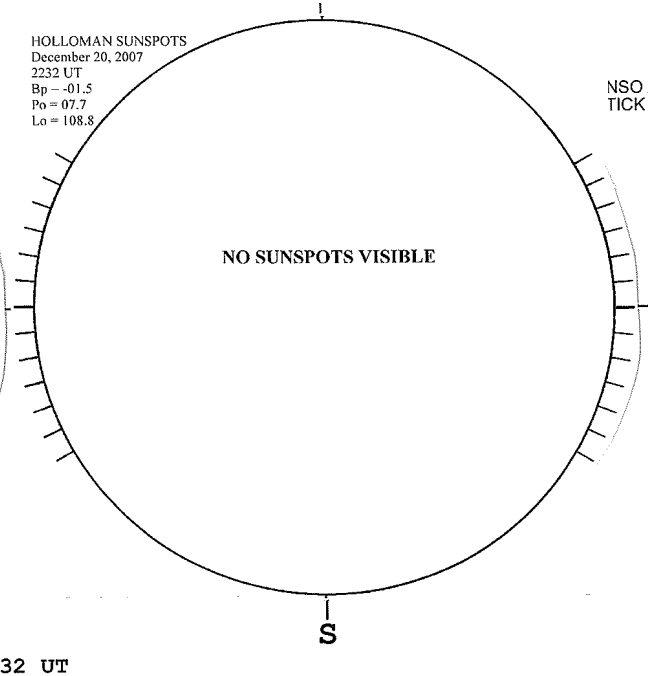


KANZELHOHE H-ALPHA



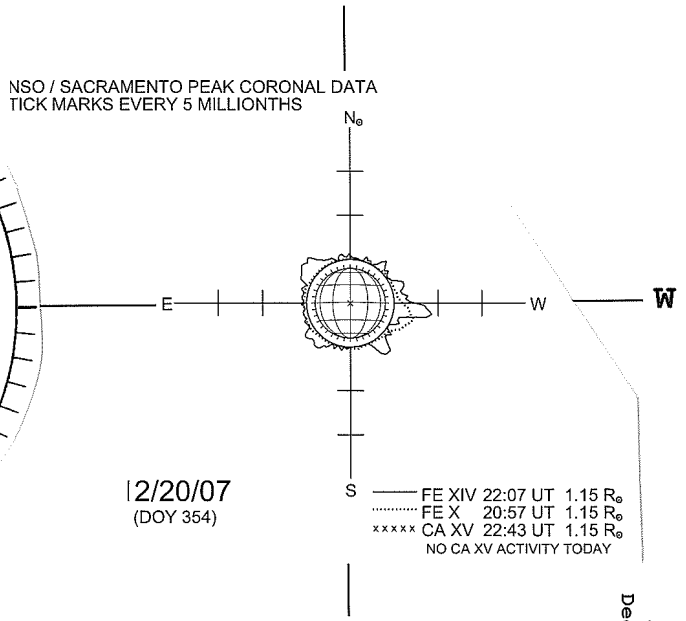
0814 UT

HOLLOMAN SUNSPOTS



2232 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



59 Dec 07

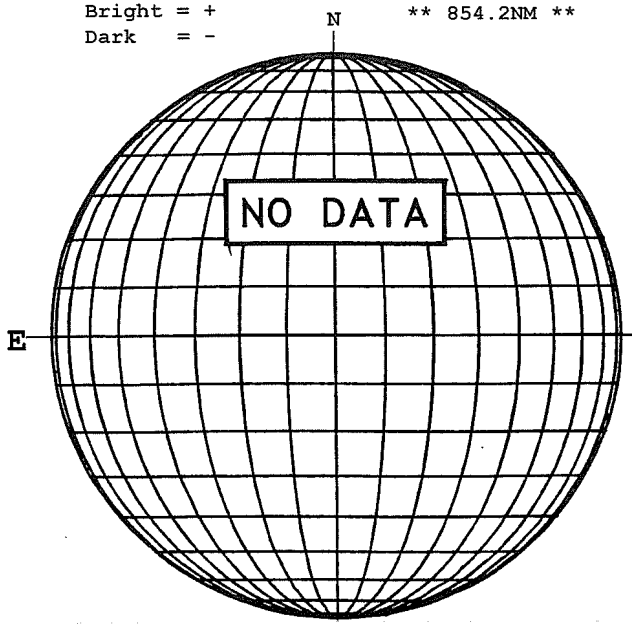
DECEMBER 21, 2007 (P= 7.62, Bo=-1.61, Lo= 106.05)

Dec 07 60

KITT PEAK MAGNETOGRAM -- SOLIS

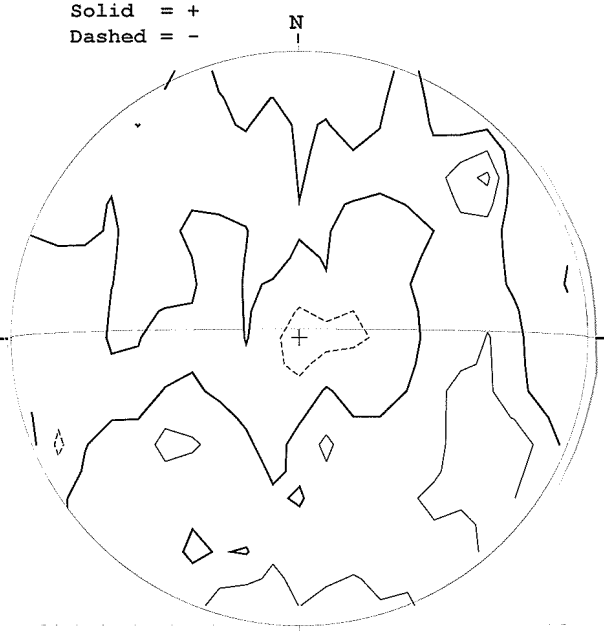
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

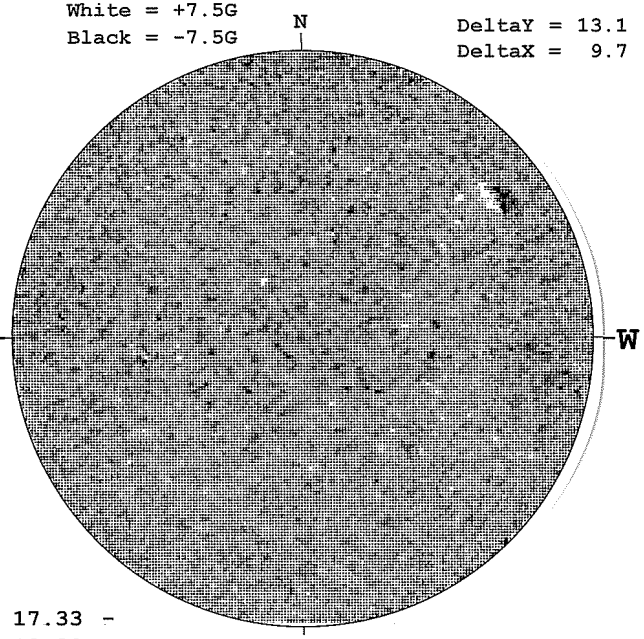


2236 UT

MT. WILSON MAGNETOGRAM

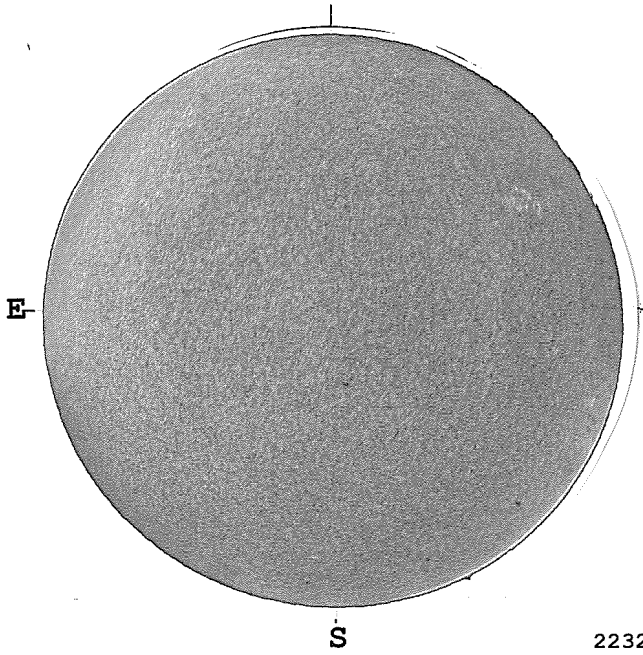
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.7



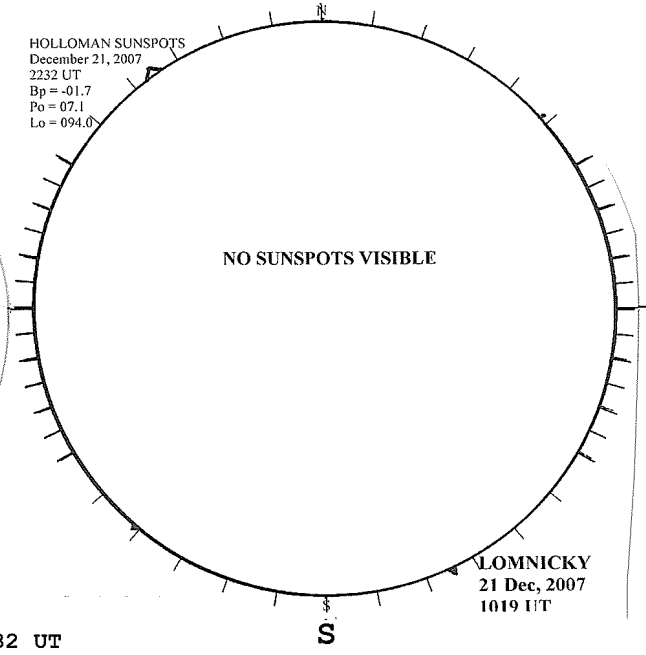
17.33 -
18.30 UT

KANZELHOHE H-ALPHA



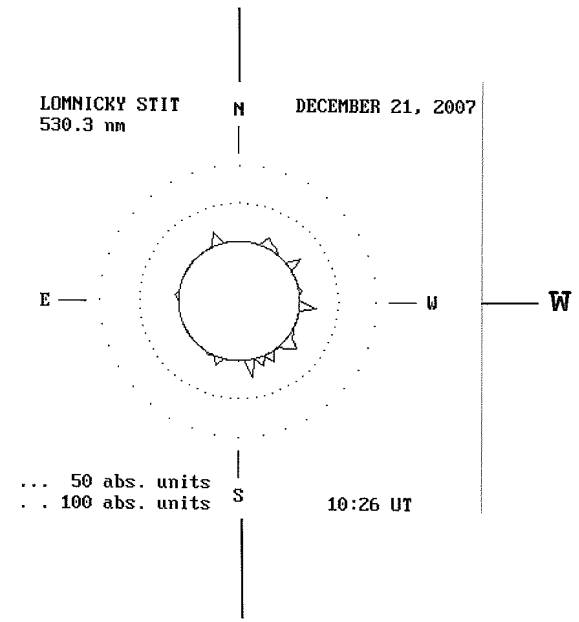
0755 UT

HOLLOMAN SUNSPOTS



2232 UT
1019 UT LOMN PROM

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

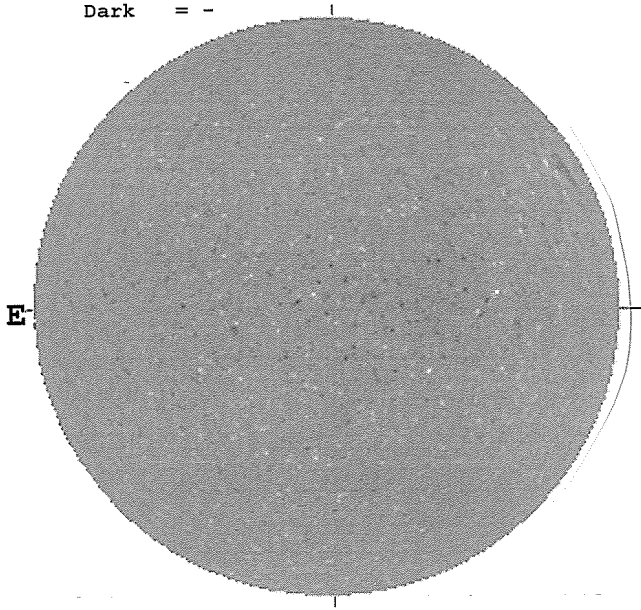


DECEMBER 22, 2007 (P= 7.15, Bo=-1.73, Lo= 92.88)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

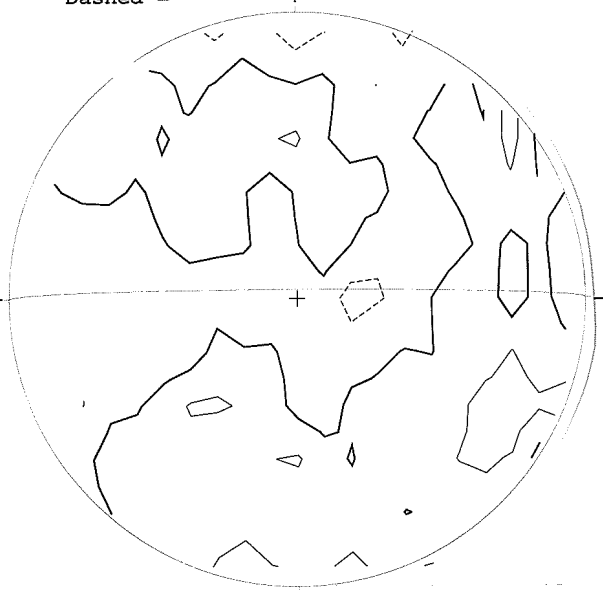
** 854.2NM **



1900 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

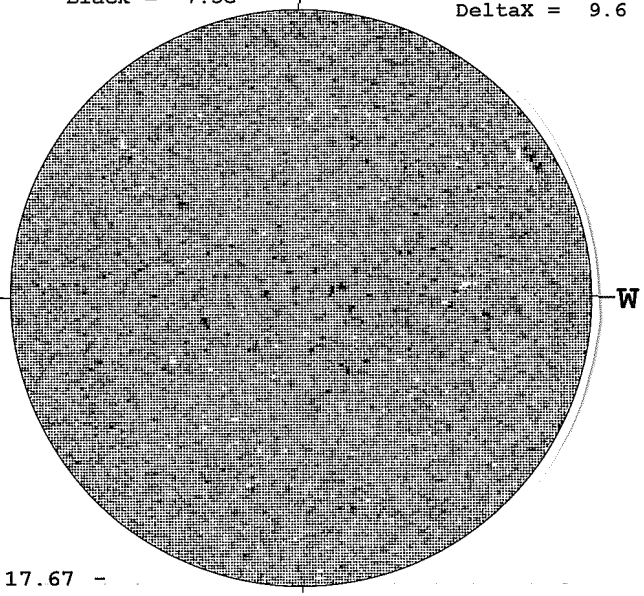


1758 UT

MT. WILSON MAGNETOGRAM

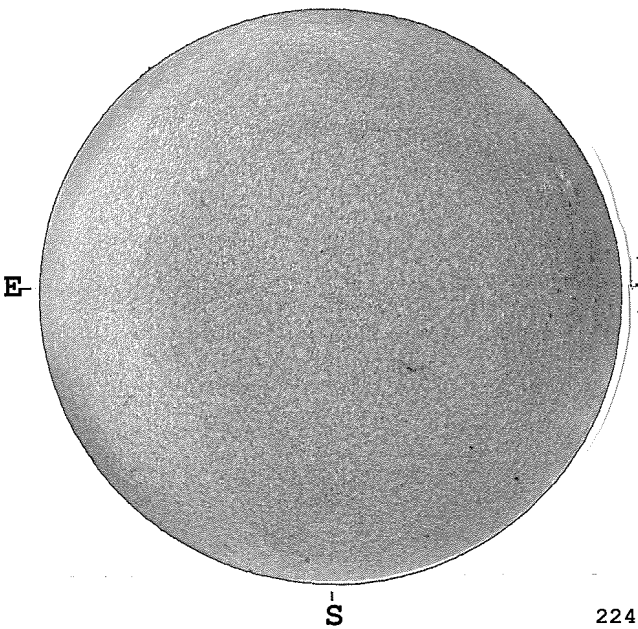
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



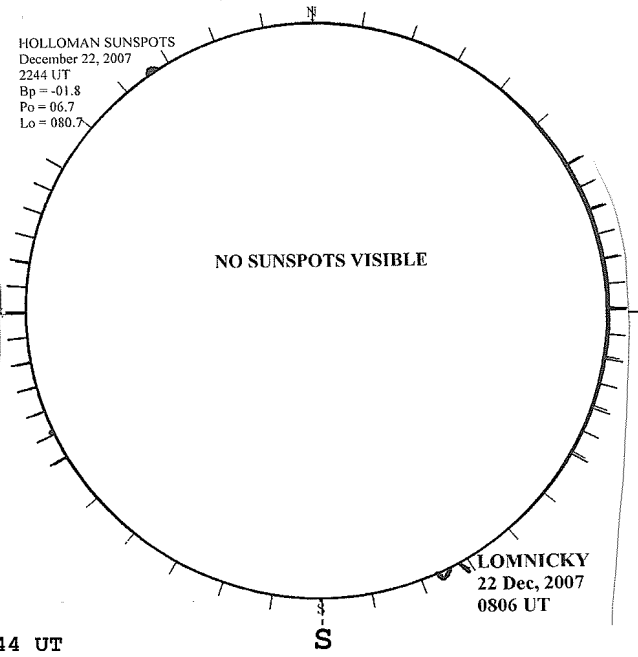
17.67 -
18.65 UT

KANZELHOHE H-ALPHA



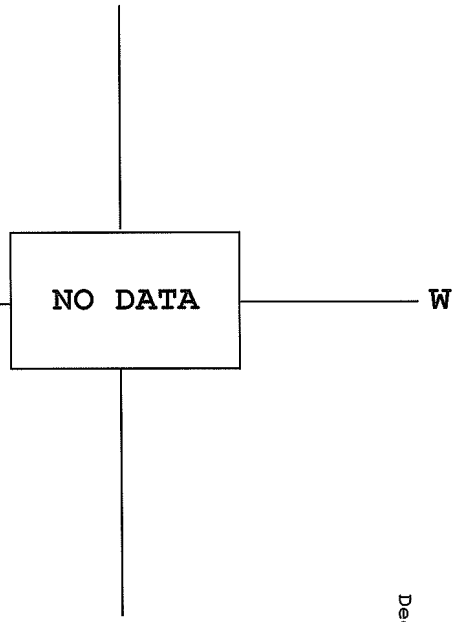
0823 UT

HOLLOMAN SUNSPOTS



2244 UT
0806 UT LOMN PROM

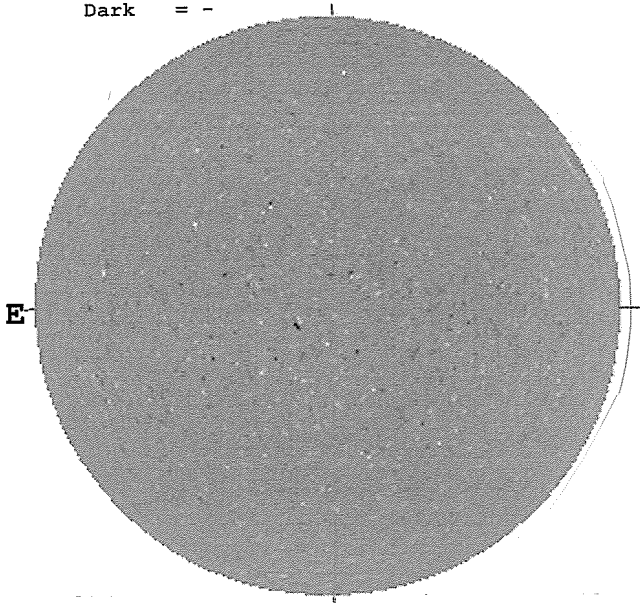
SACRAMENTO PEAK CORONA (1.15 Radii)-----



61
Dec 07

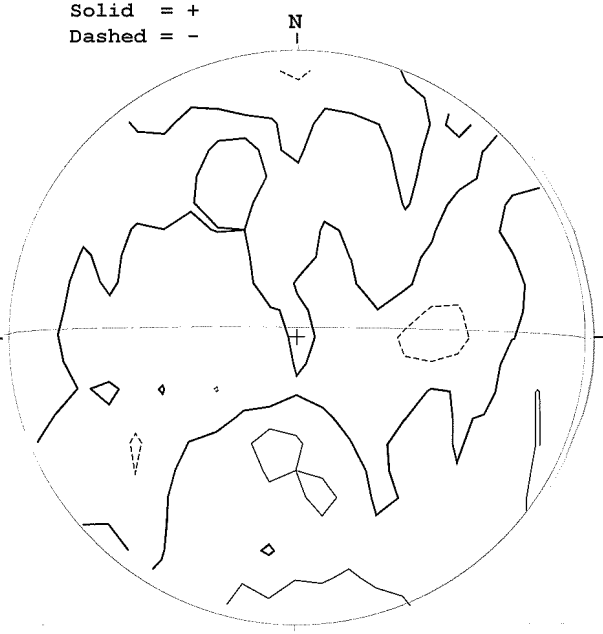
DECEMBER 23, 2007 (P= 6.68, Bo=-1.86, Lo= 79.71)

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



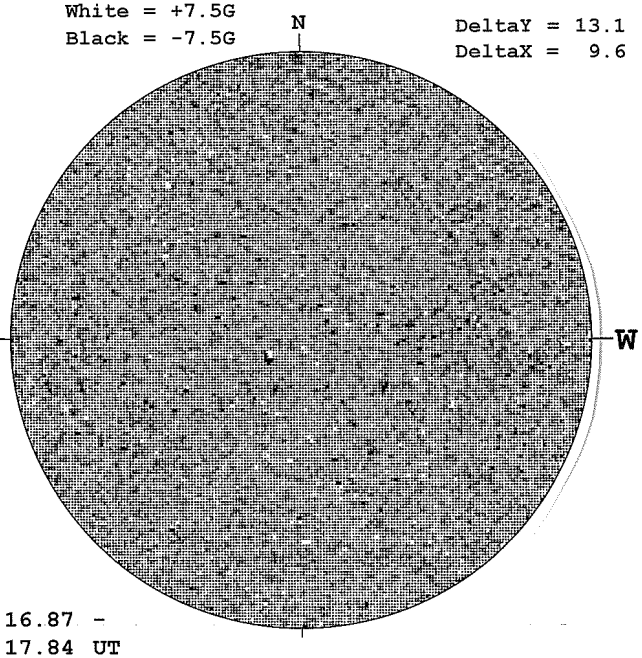
1759 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



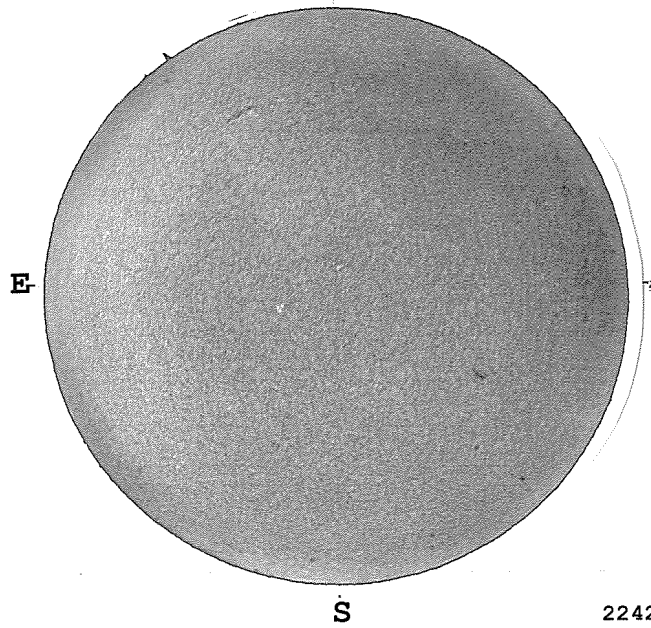
1750 UT

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



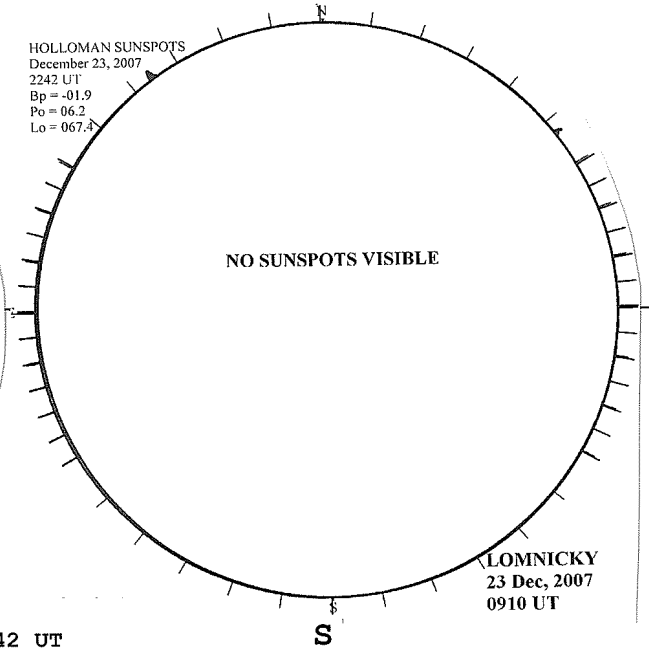
16.87 -
17.84 UT

--- KANZELHOHE H-ALPHA



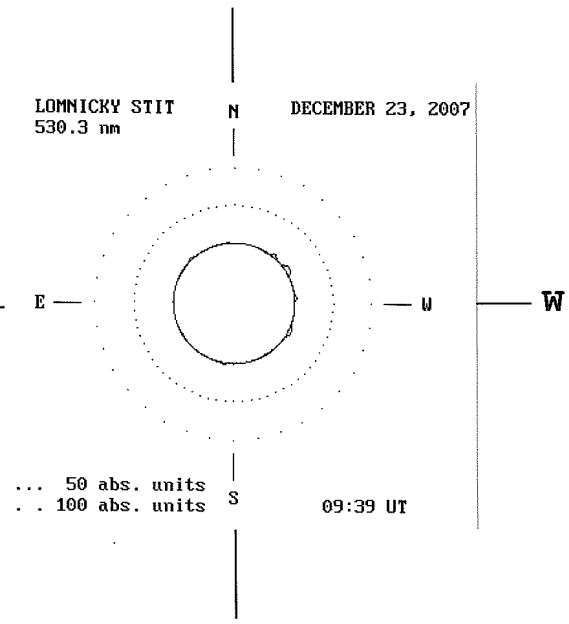
0900 UT

HOLLOMAN SUNSPOTS



2242 UT
0910 UT LOMN PROM

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

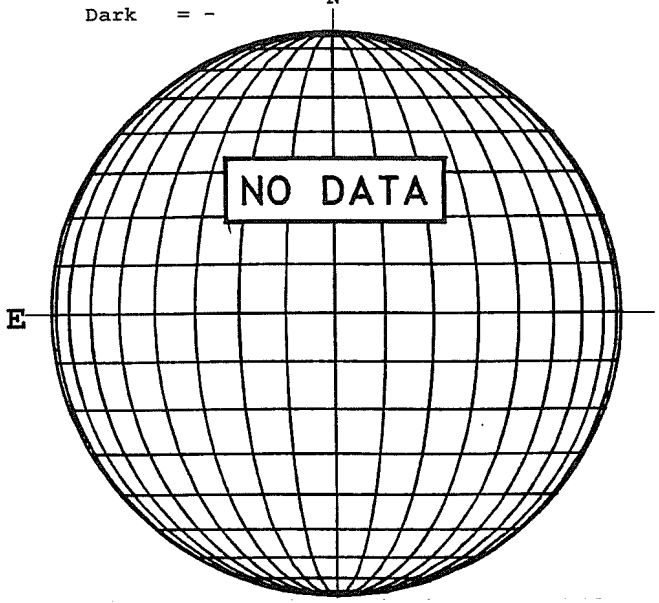


DECEMBER 24, 2007 (P= 6.21, Bo=-1.98, Lo= 66.53)

KITT PEAK MAGNETOGRAM -- SOLIS

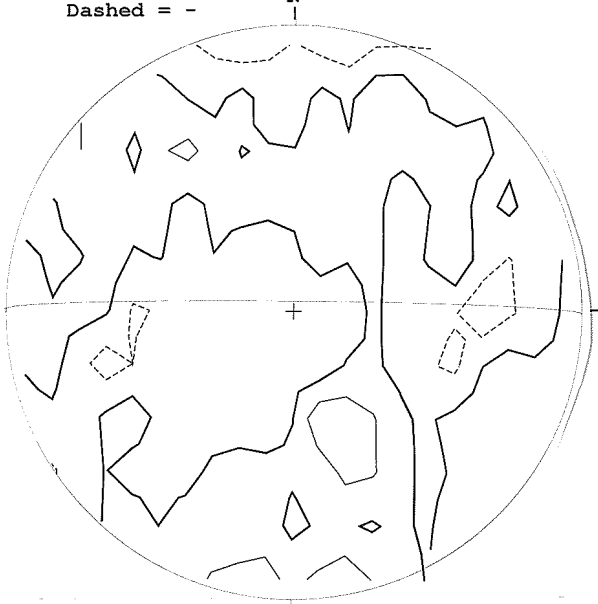
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

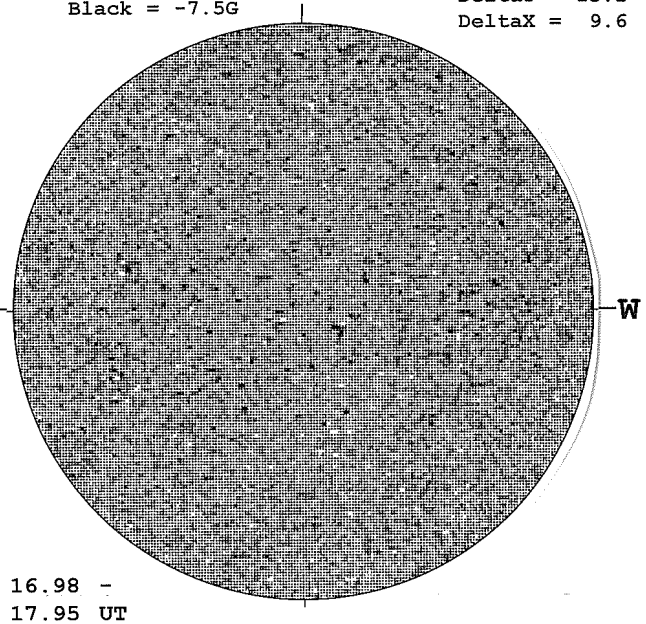


2142 UT

MT. WILSON MAGNETOGRAM

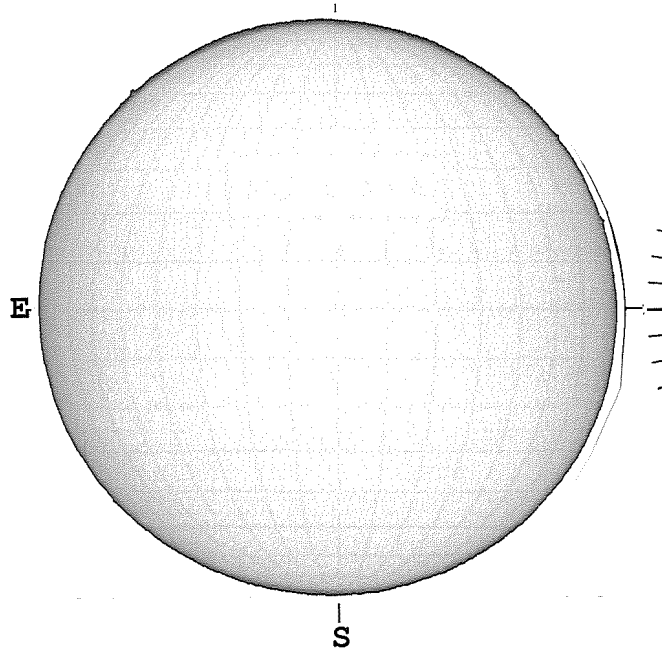
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



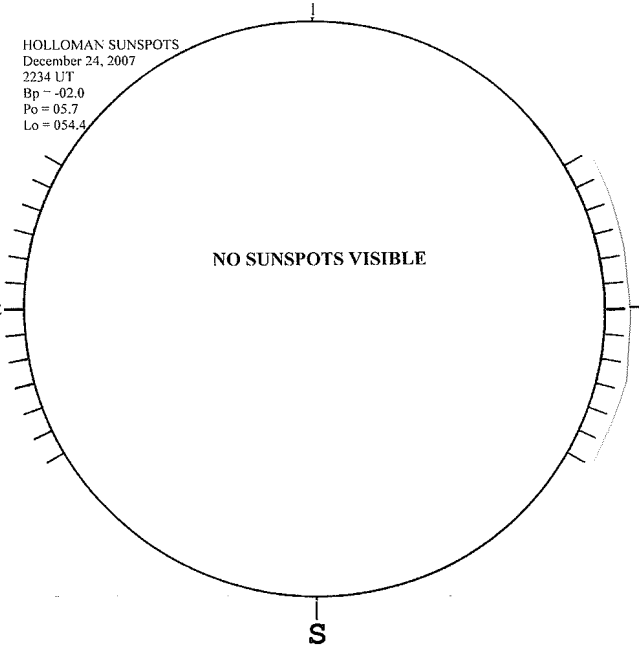
16.98 -
17.95 UT

MEUDON H-ALPHA



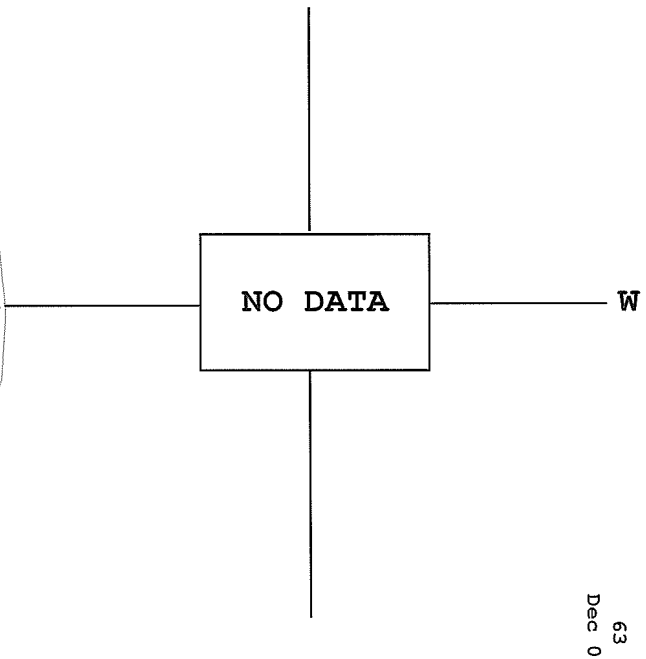
0901 UT

HOLLOMAN SUNSPOTS



2234 UT

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

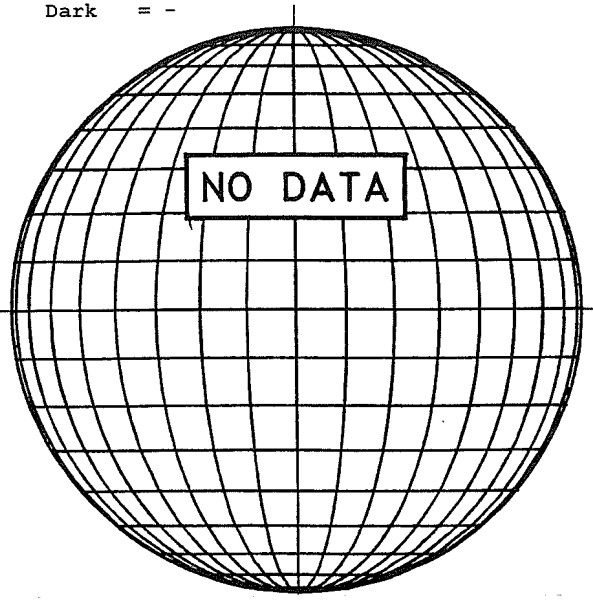


63
Dec 07

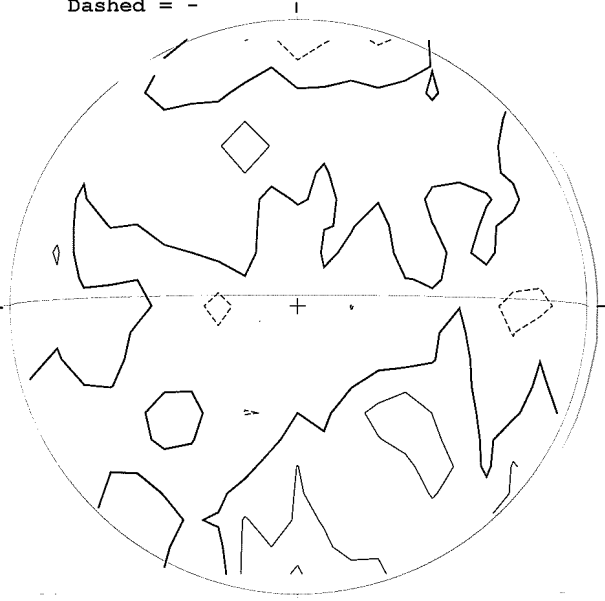
DECEMBER 25, 2007 (P= 5.73, Bo=-2.11, Lo= 53.36)

64
Dec 07

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

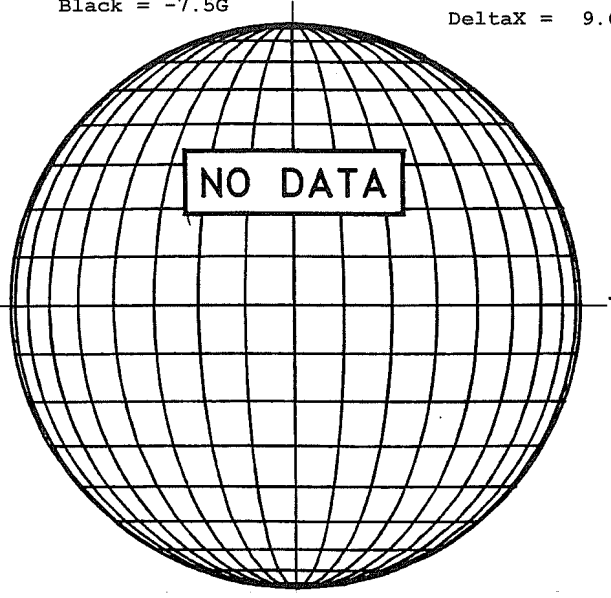


STANFORD MAGNETOGRAM
Solid = +
Dashed = -



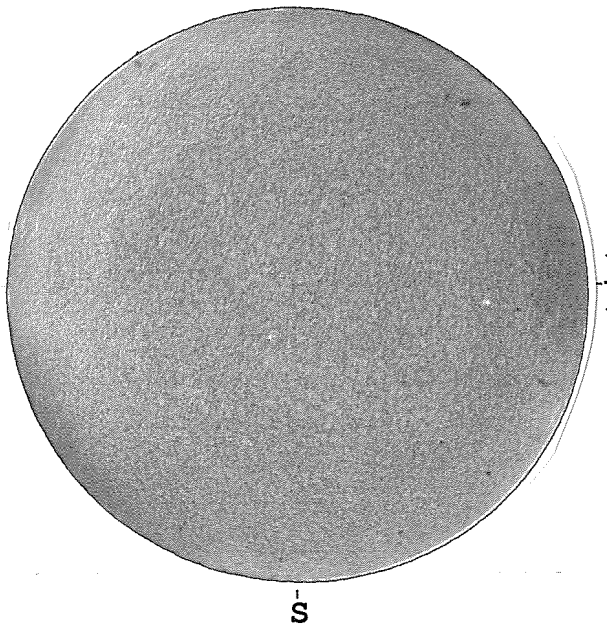
1940 UT

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



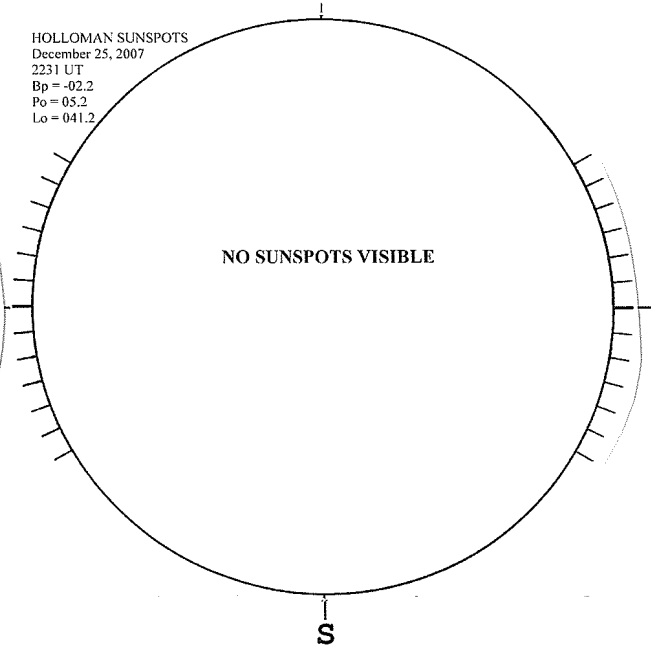
E W

KANZELHOHE H-ALPHA



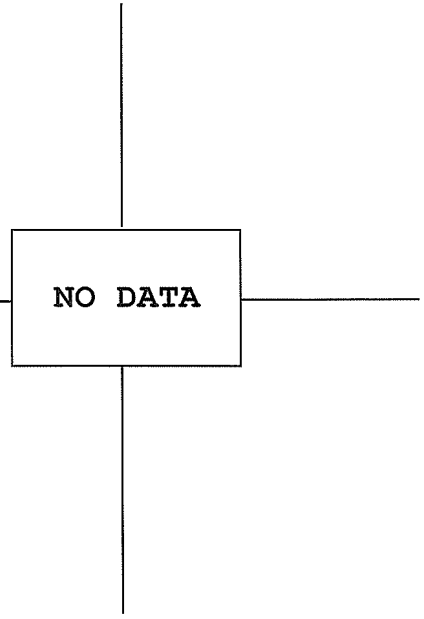
0816 UT

HOLLOMAN SUNSPOTS



2231 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



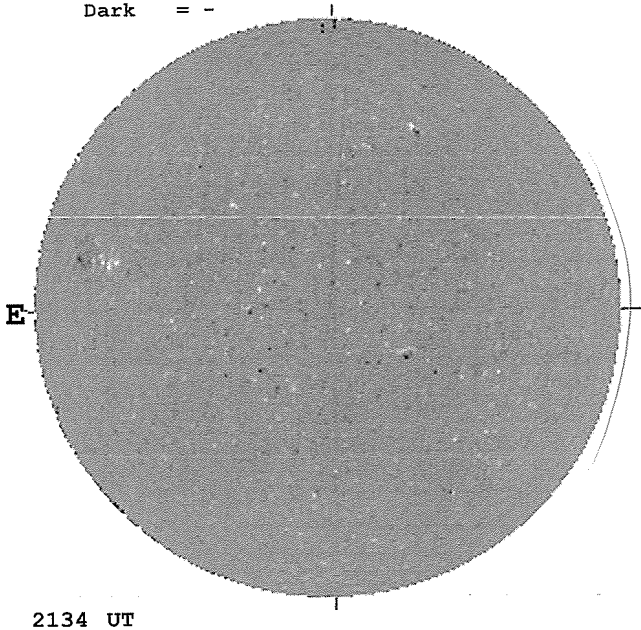
E W

DECEMBER 26, 2007 (P= 5.25, Bo=-2.23, Lo= 40.19)

KITT PEAK MAGNETOGRAM -- SOLIS

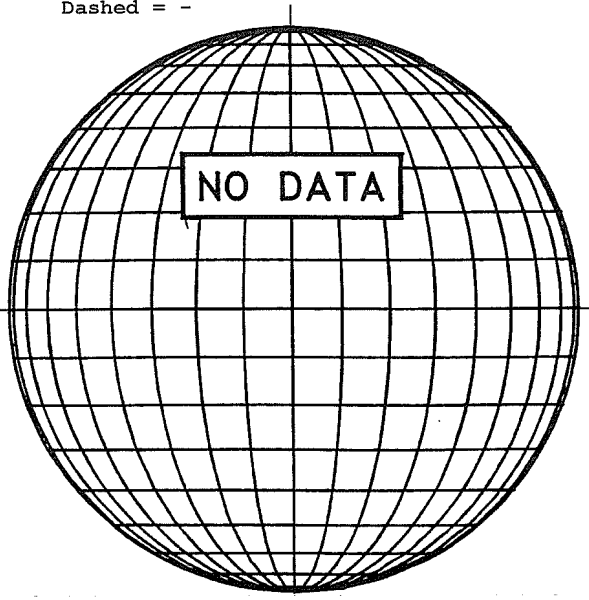
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

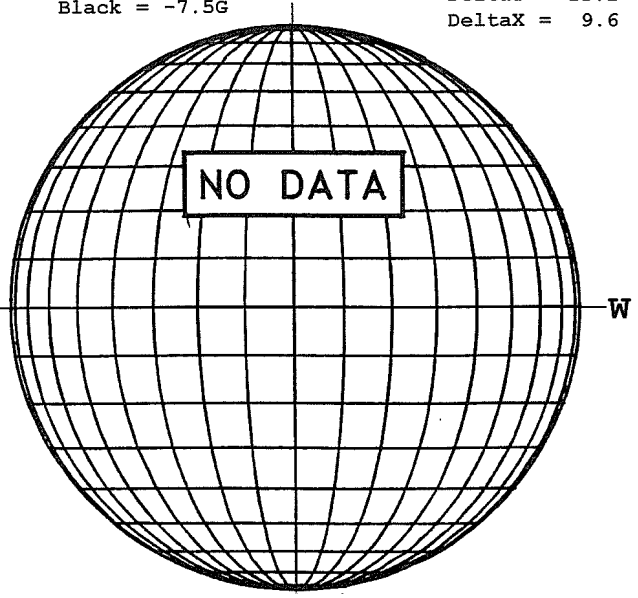
Solid = +
Dashed = -



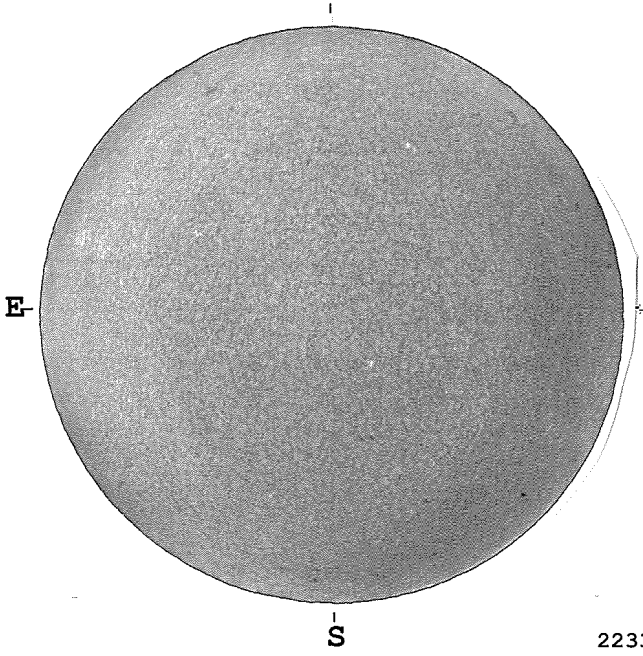
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

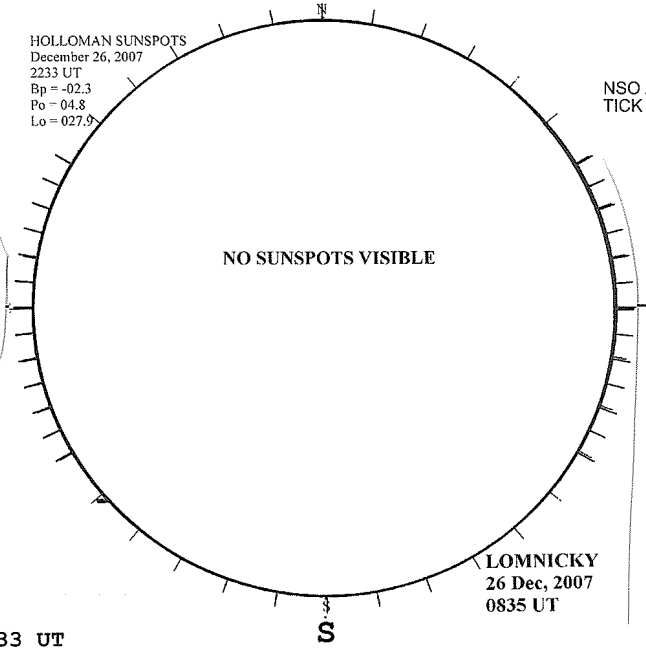
DeltaY = 13.1
DeltaX = 9.6



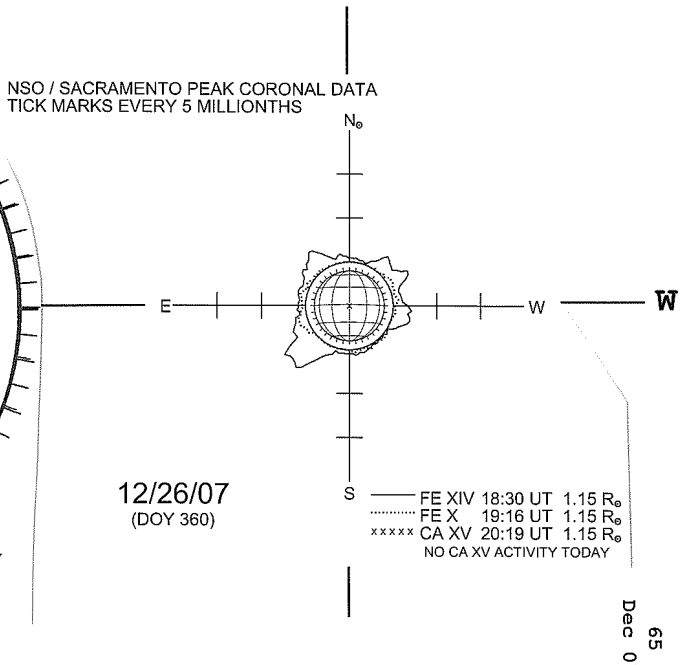
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



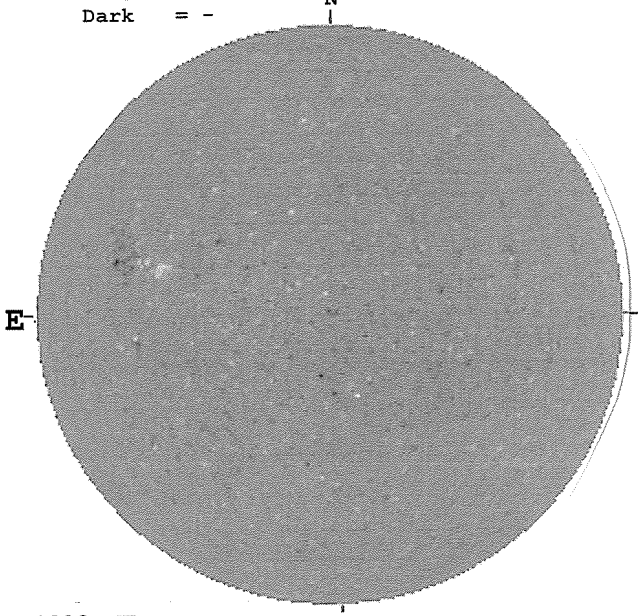
DECEMBER 27, 2007 (P= 4.77, Bo=-2.35, Lo= 27.01)

Dec 07 96

KITT PEAK MAGNETOGRAM -- SOLIS

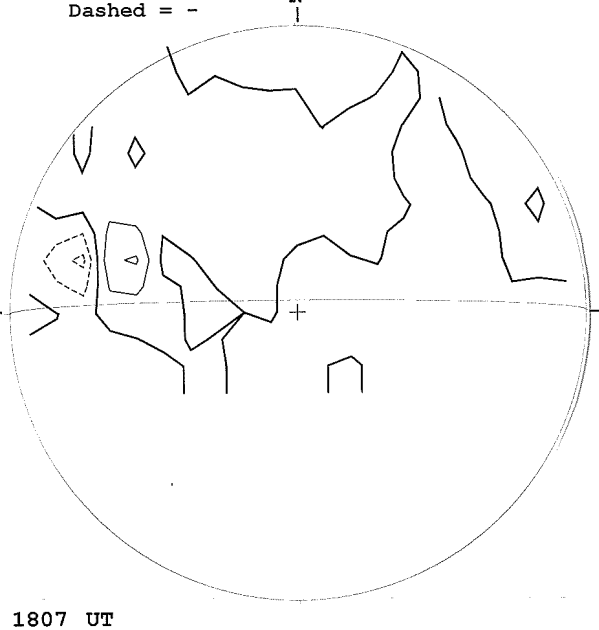
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

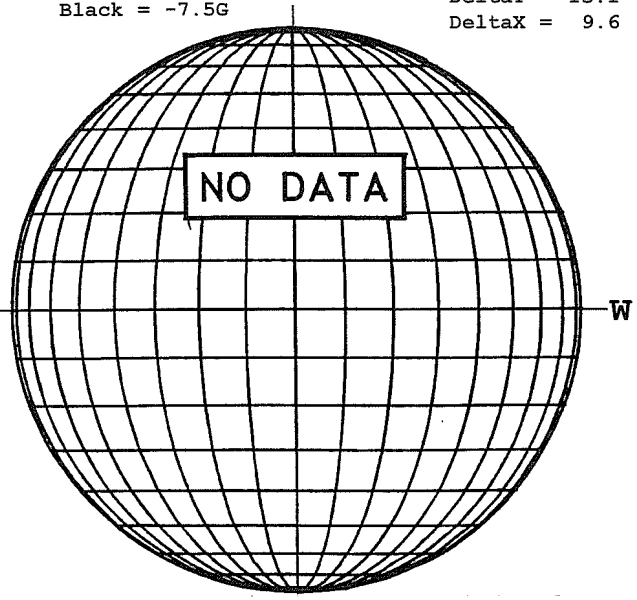
Solid = +
Dashed = -



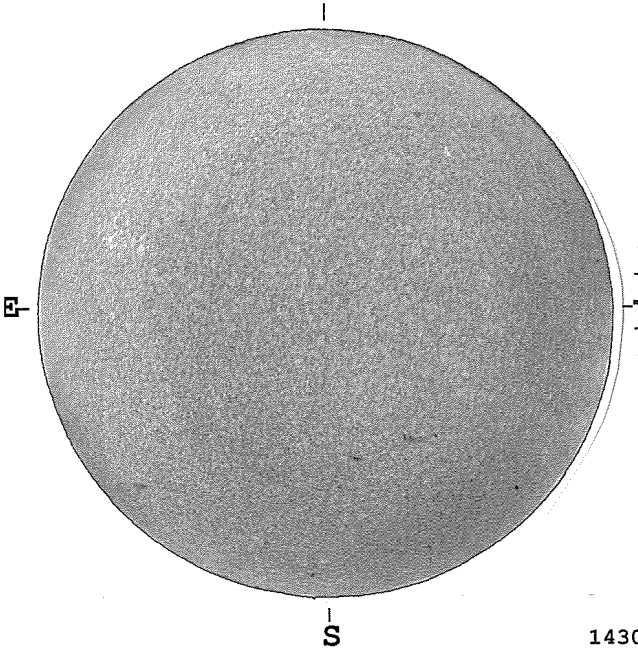
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

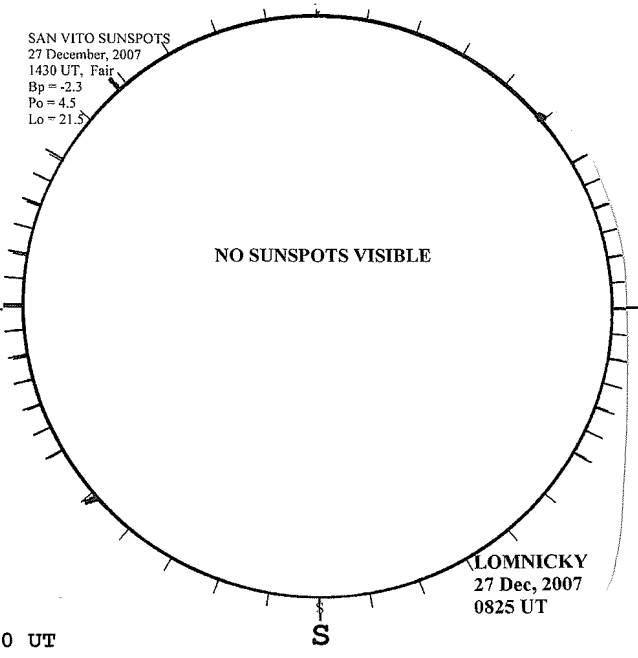
DeltaY = 13.1
DeltaX = 9.6



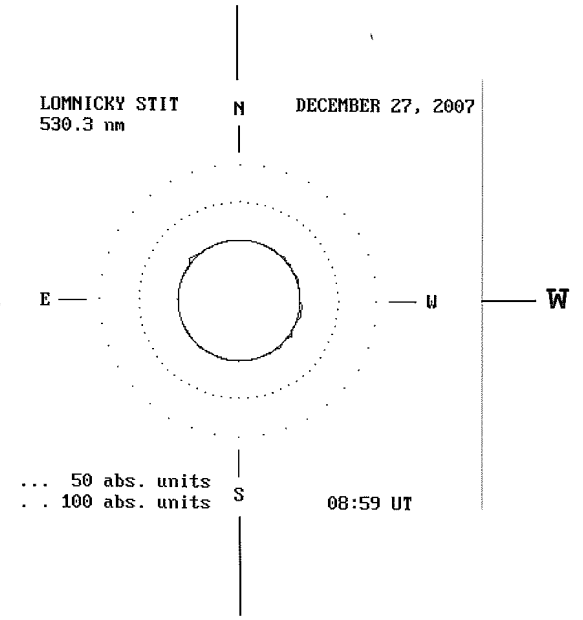
KANZELHOHE H-ALPHA



SAN VITO SUNSPOTS



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

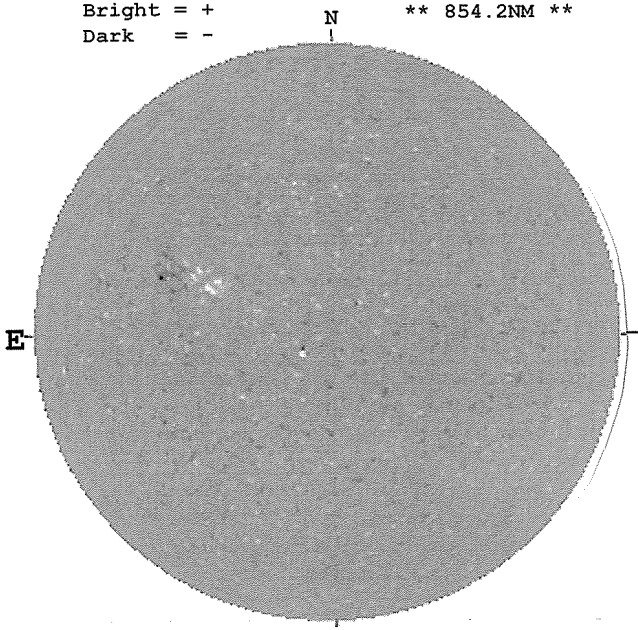


DECEMBER 28, 2007 (P= 4.29, Bo=-2.47, Lo= 13.84)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

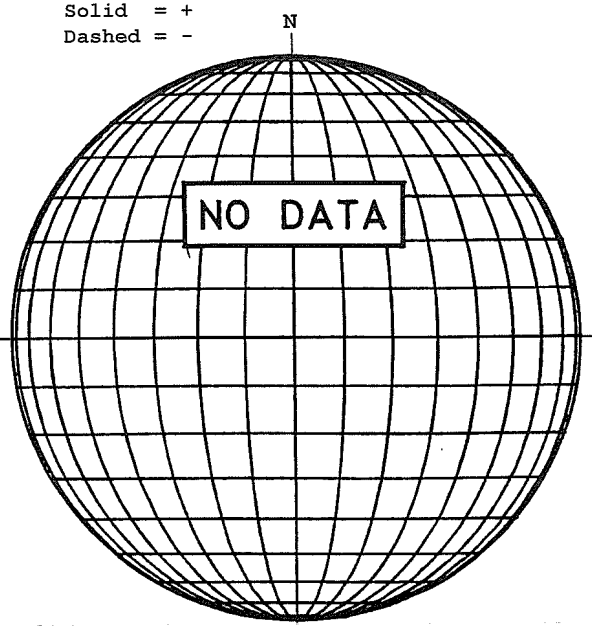
** 854.2NM **



1918 UT

STANFORD MAGNETOGRAM

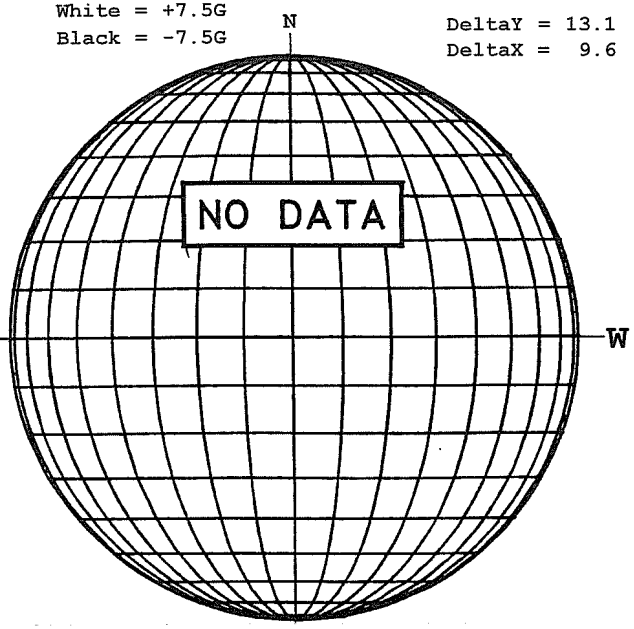
Solid = +
Dashed = -



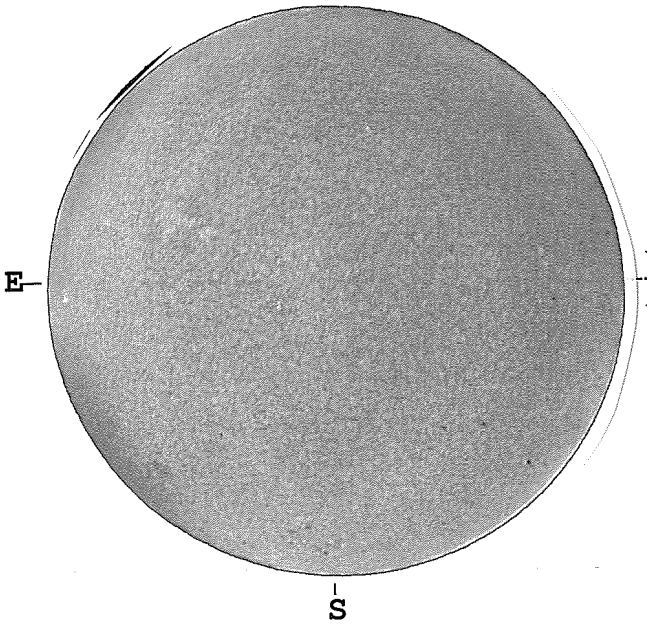
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

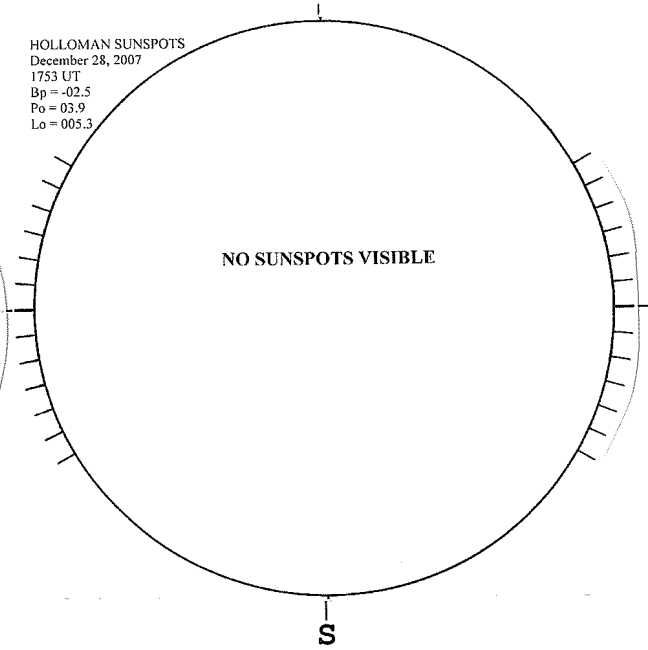


KANZELHOHE H-ALPHA



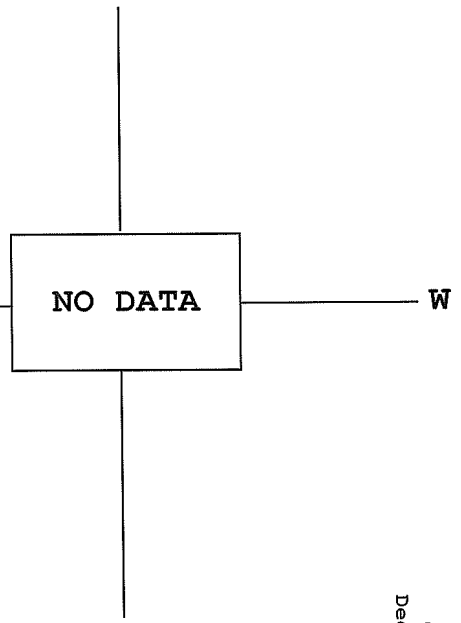
0825 UT

HOLLOMAN SUNSPOTS



1753 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



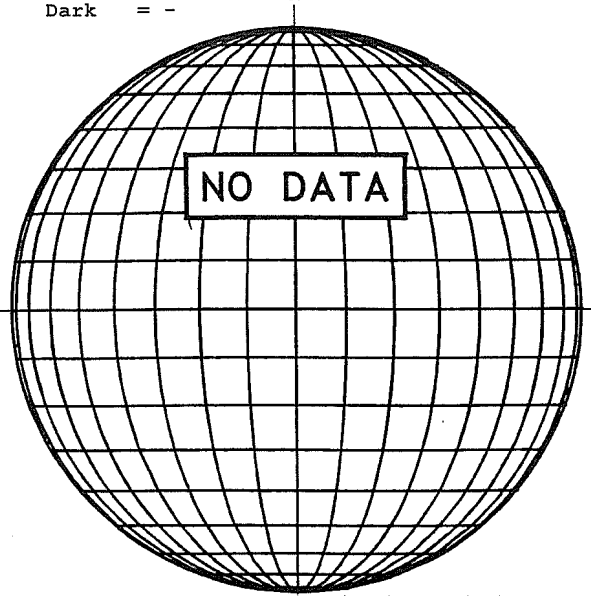
67
Dec 07

DECEMBER 29, 2007 (P= 3.81, Bo=-2.59, Lo= 0.67)

KITT PEAK MAGNETOGRAM -- SOLIS

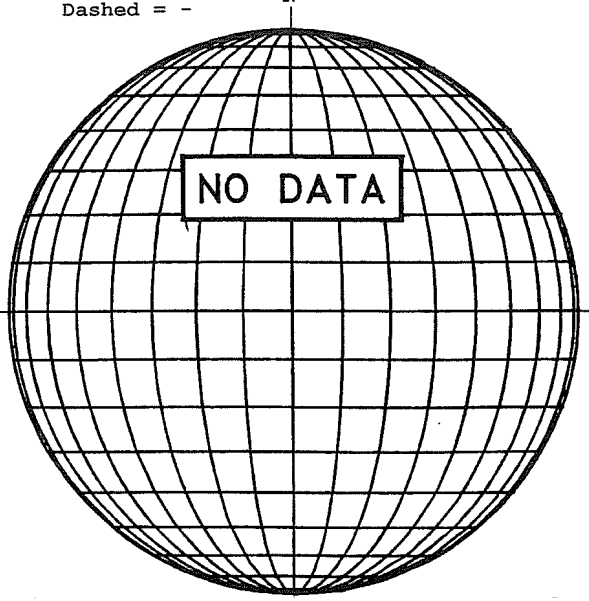
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

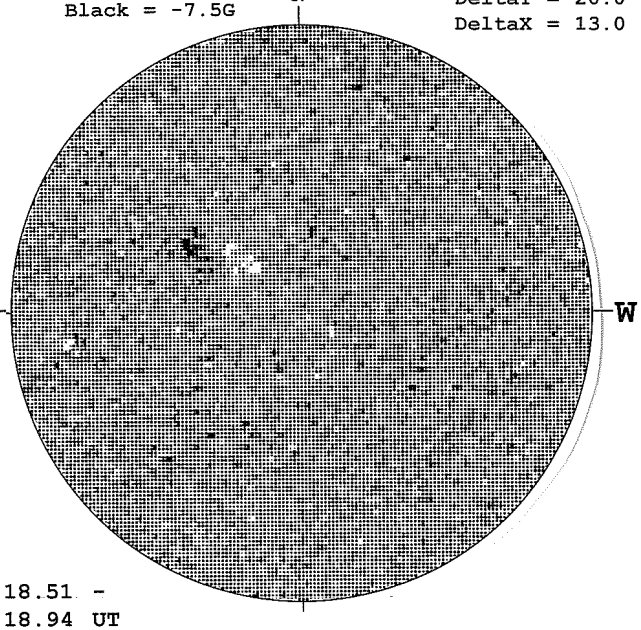
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

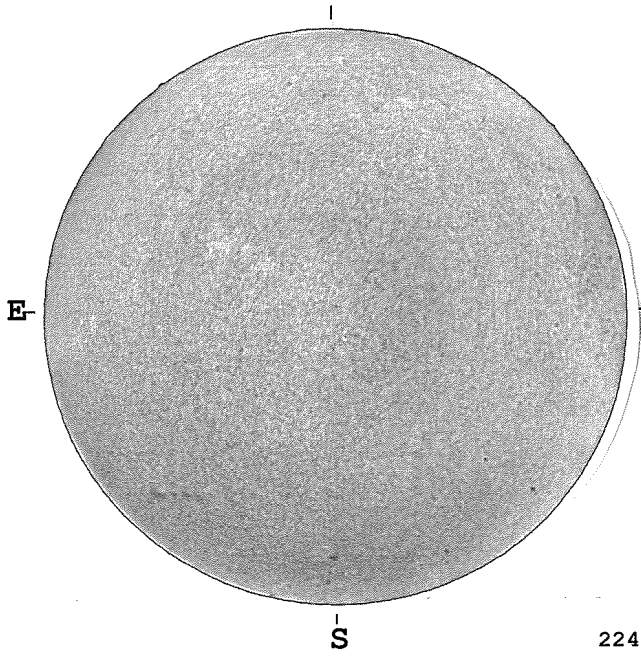
White = +7.5G
Black = -7.5G

DeltaY = 20.0
DeltaX = 13.0



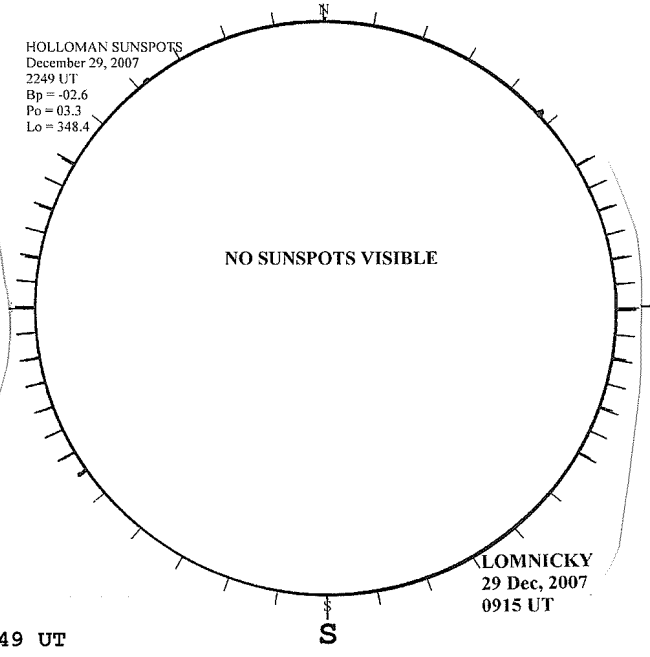
18.51 -
18.94 UT

KANZELHOHE H-ALPHA



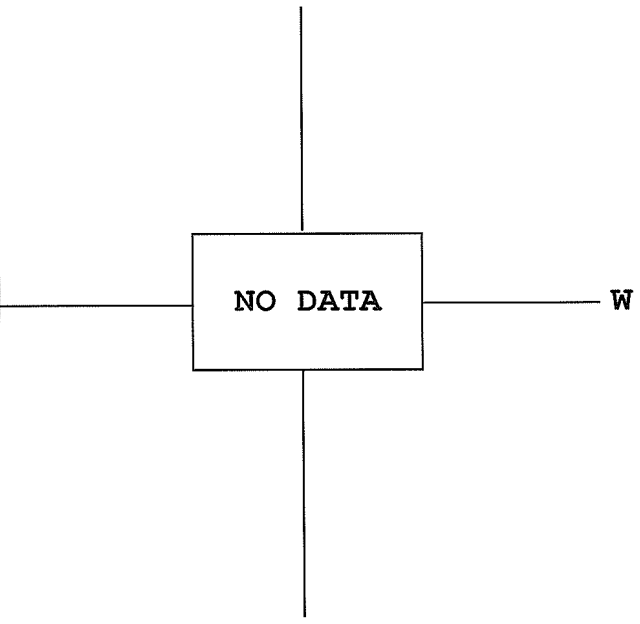
0849 UT

HOLLOMAN SUNSPOTS



2249 UT
0915 UT LOMN PROM

SACRAMENTO PEAK CORONA (1.15 Radii)----

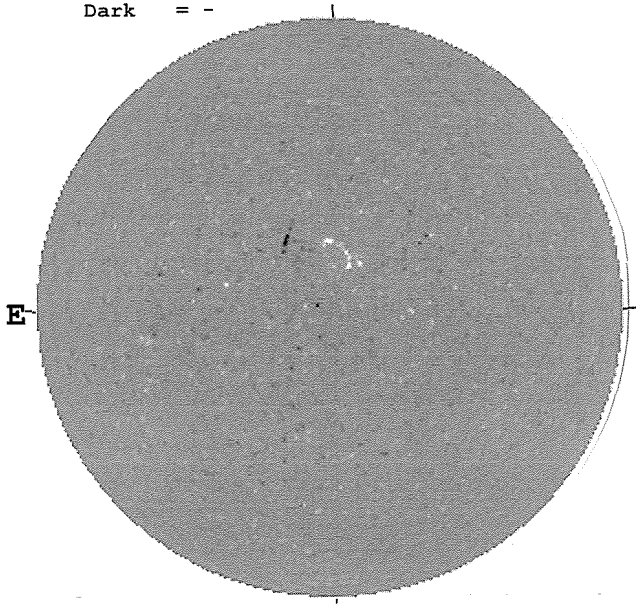


DECEMBER 30, 2007 (P= 3.32, Bo=-2.71, Lo= 347.50)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

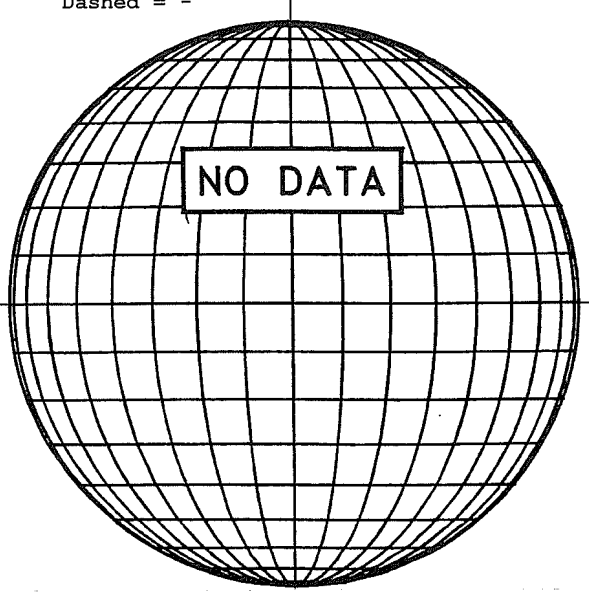
** 854.2NM **



1835 UT

STANFORD MAGNETOGRAM

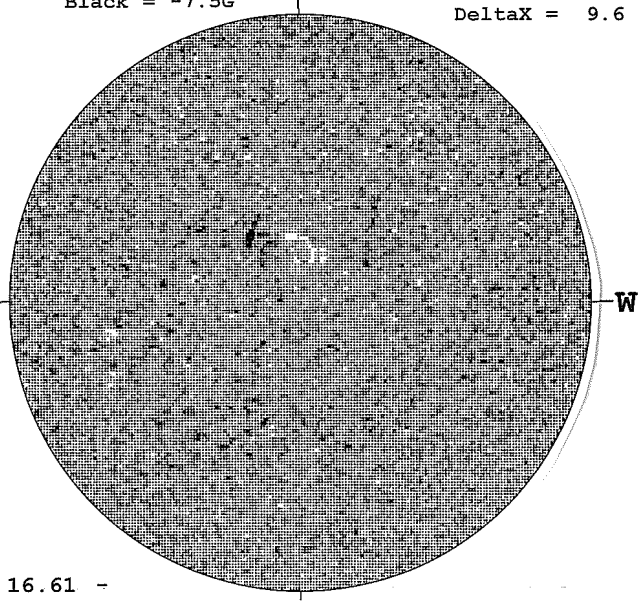
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

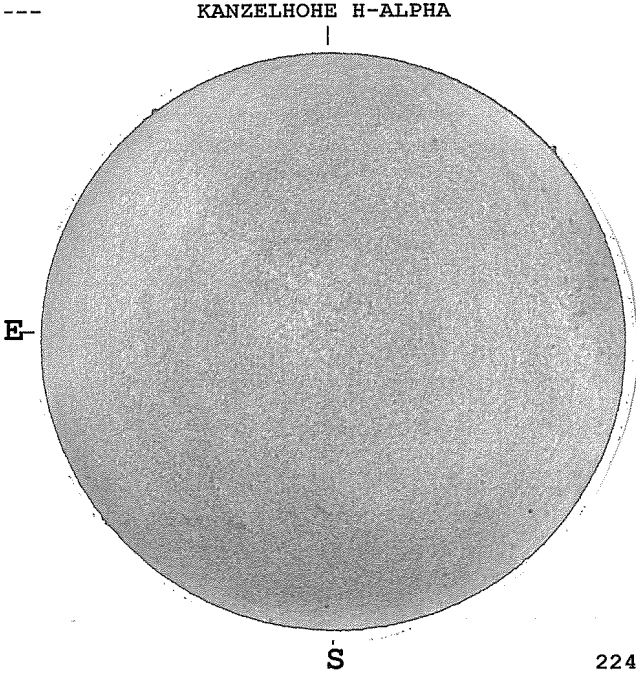
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



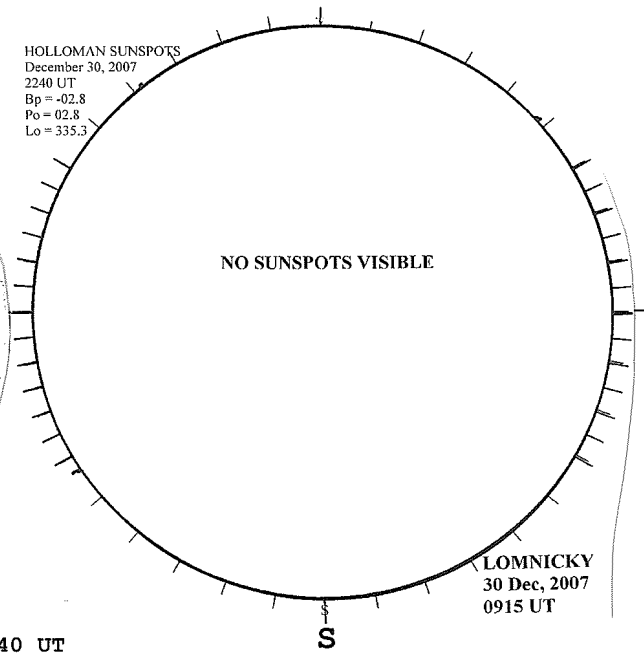
16.61 -
17.59 UT

--- KANZELHOHE H-ALPHA



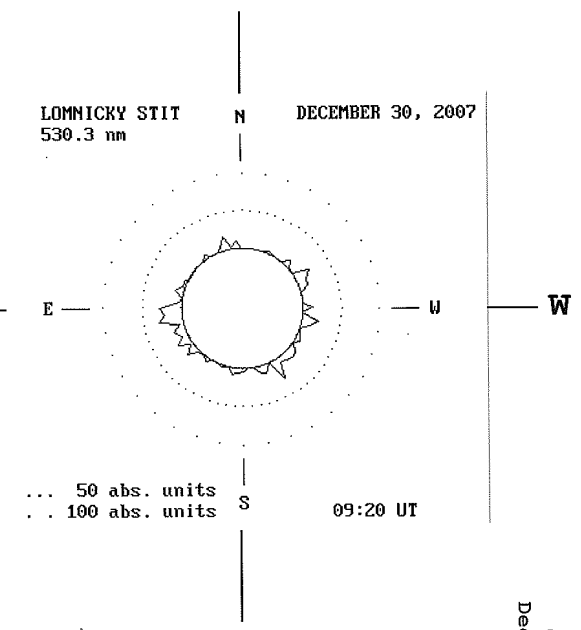
1012 UT

HOLLOMAN SUNSPOTS



2240 UT
0915 UT LOMN PROM

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



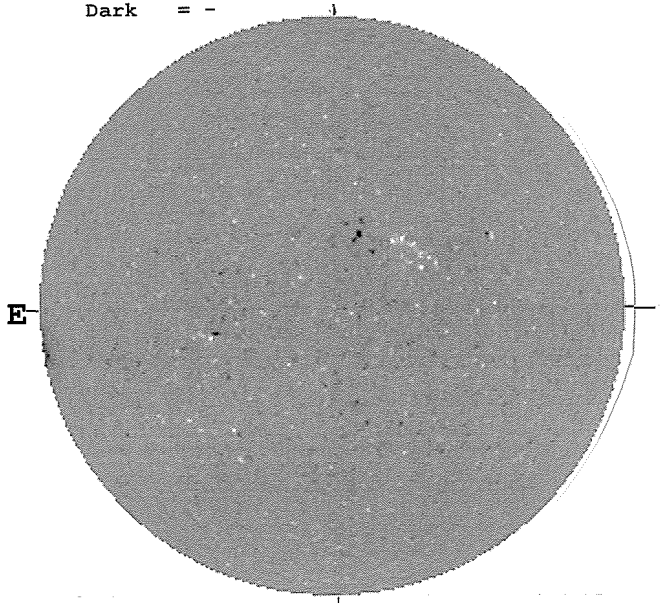
DECEMBER 31, 2007 (P= 2.84, Bo=-2.83, Lo= 334.33)

Dec 07 70

KITT PEAK MAGNETOGRAM -- SOLIS

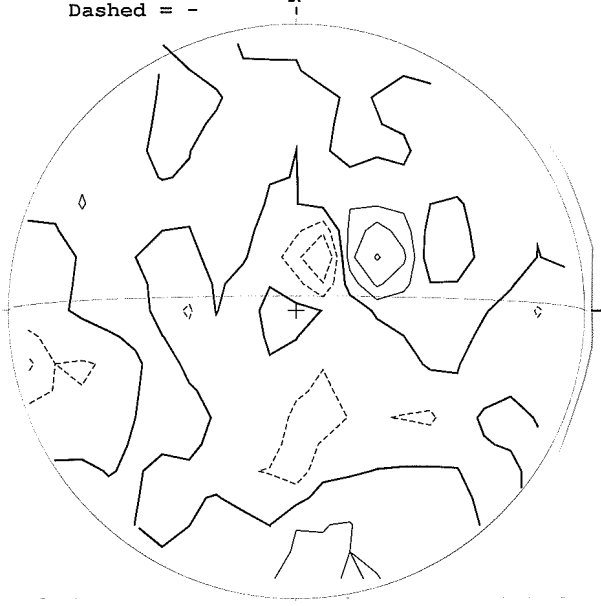
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

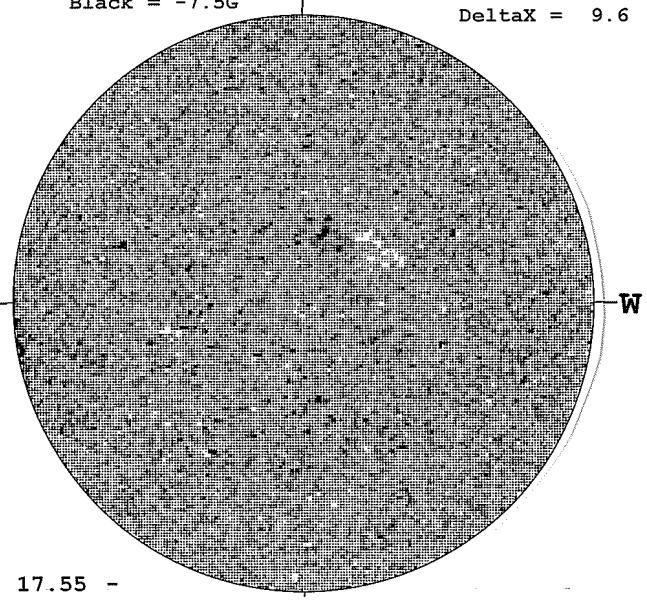
Solid = +
Dashed = -



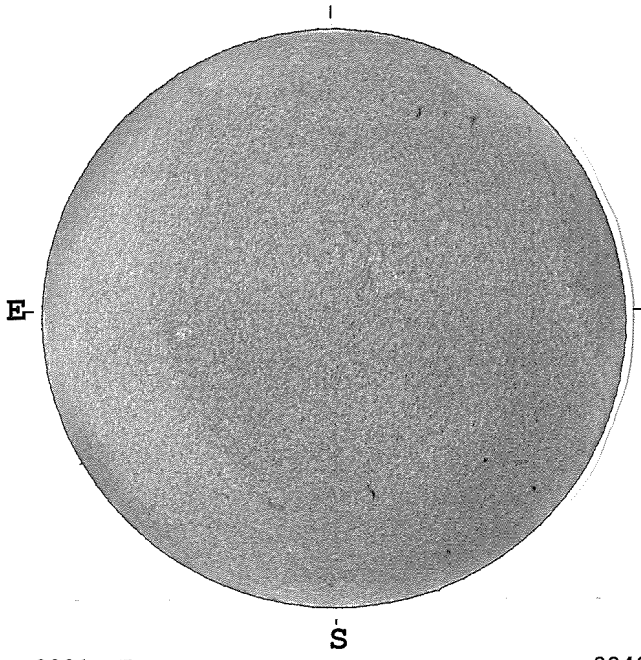
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

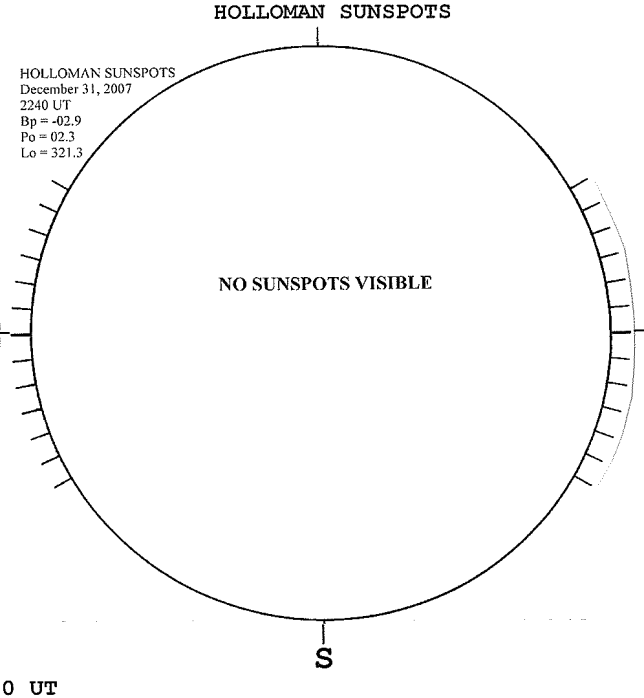
DeltaY = 13.1
DeltaX = 9.6



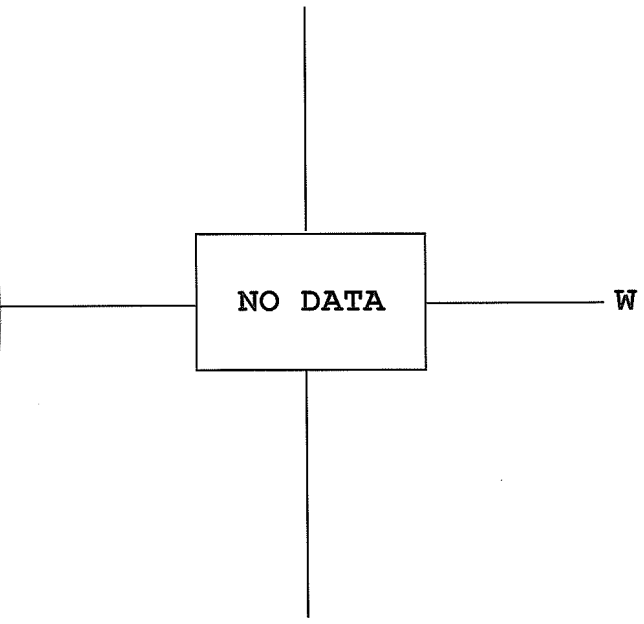
--- KANZELHOHE H-ALPHA



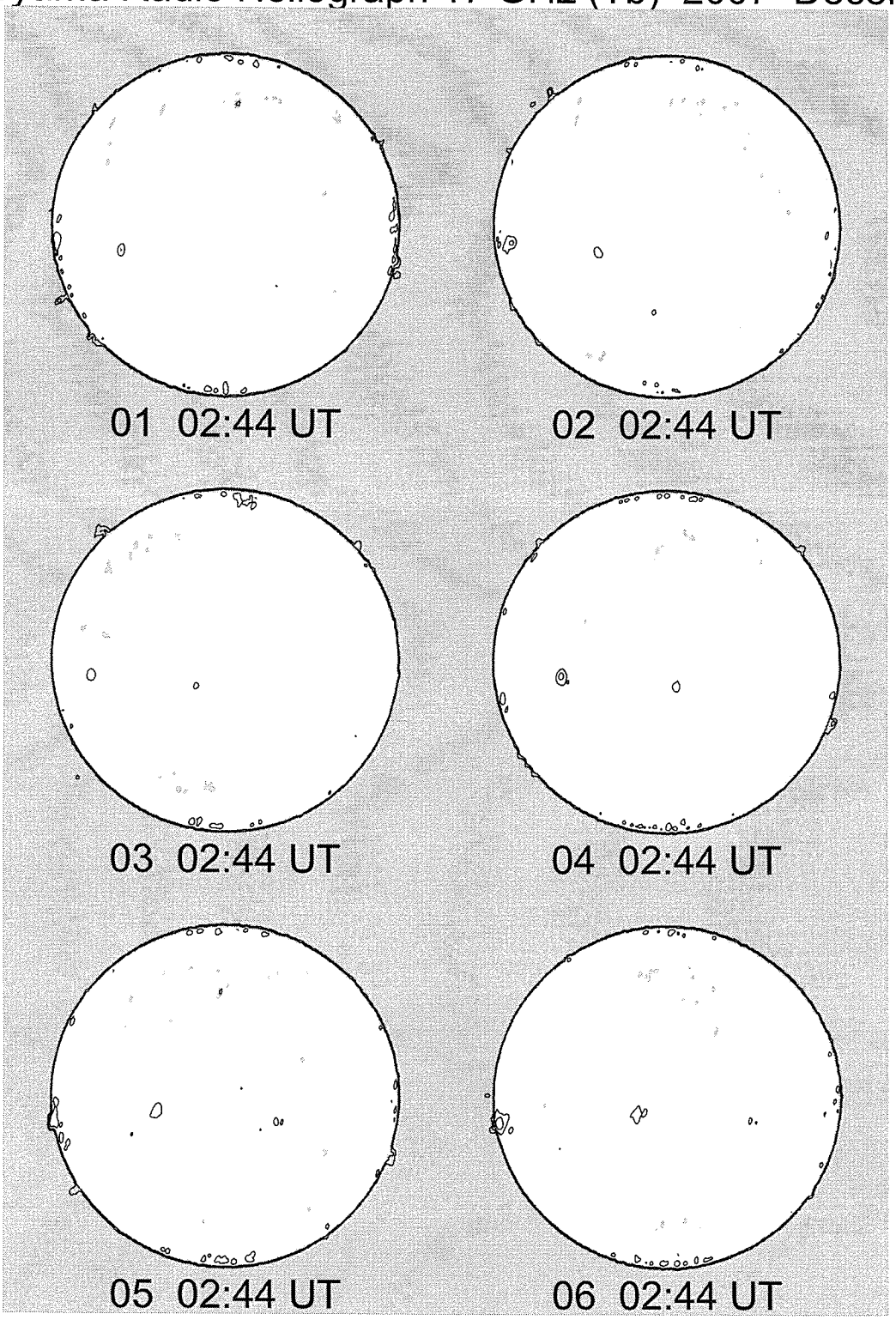
HOLLOMAN SUNSPOTS



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

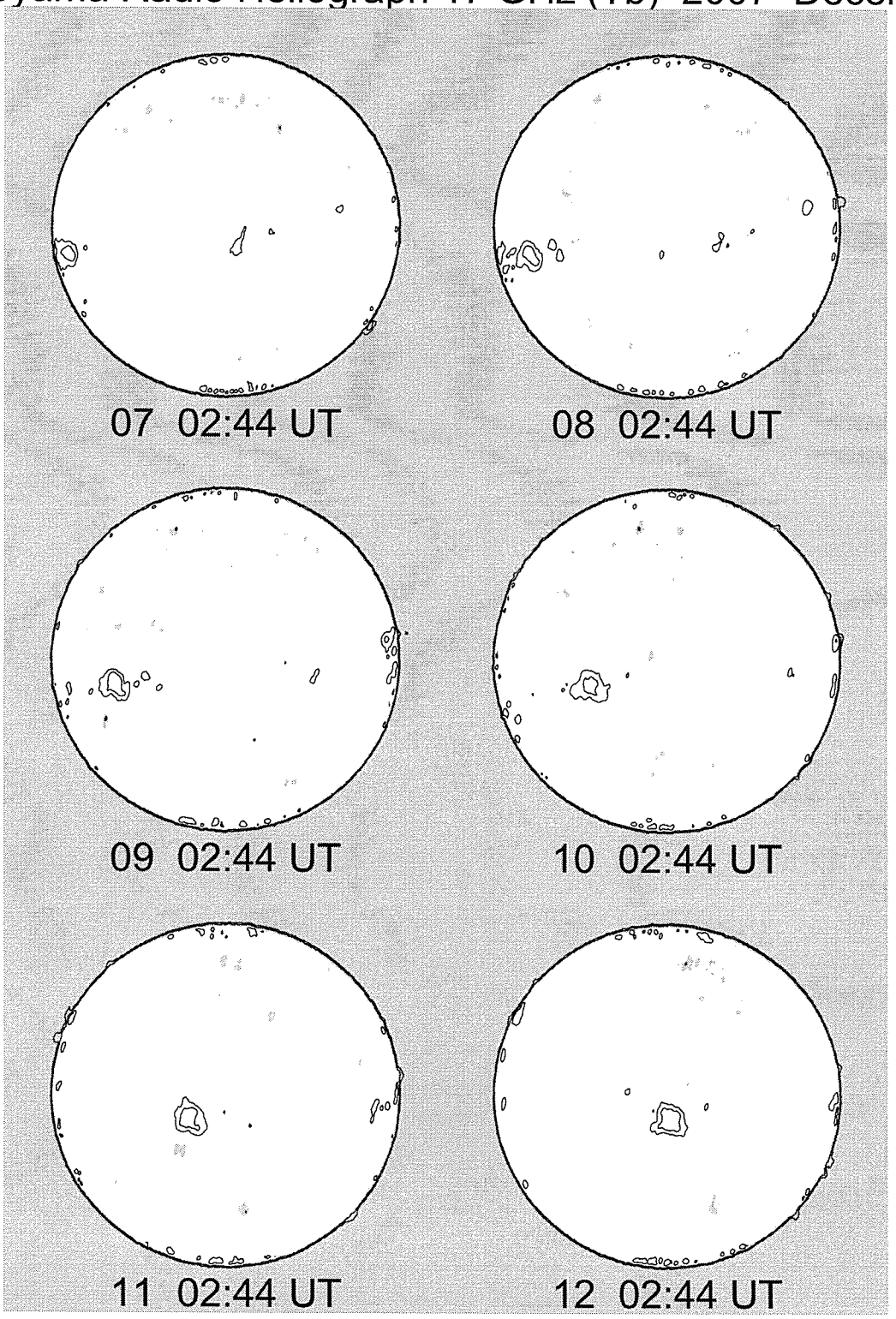


Nobeyama Radio Heliograph 17 GHz (Tb) 2007 December



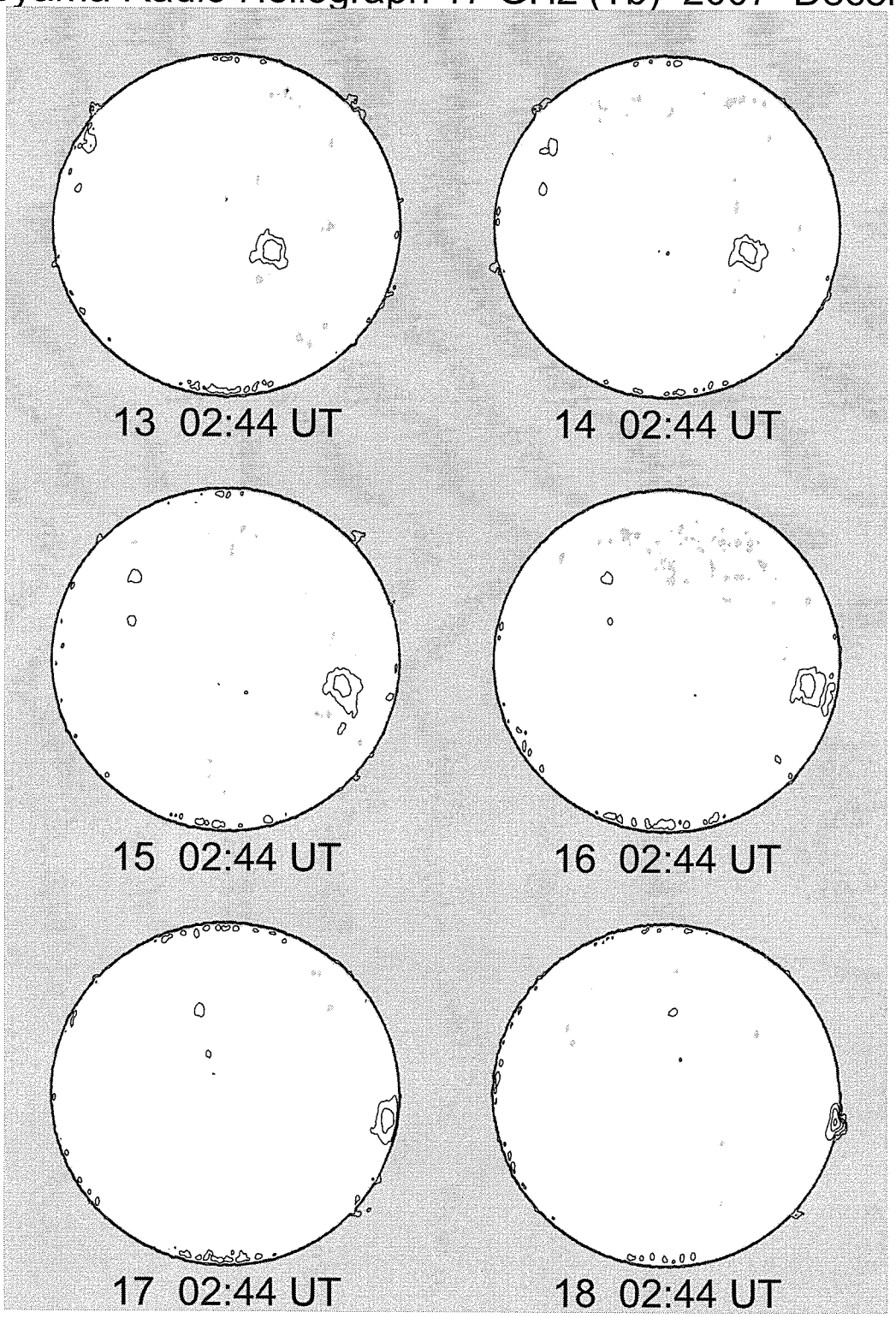
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 December



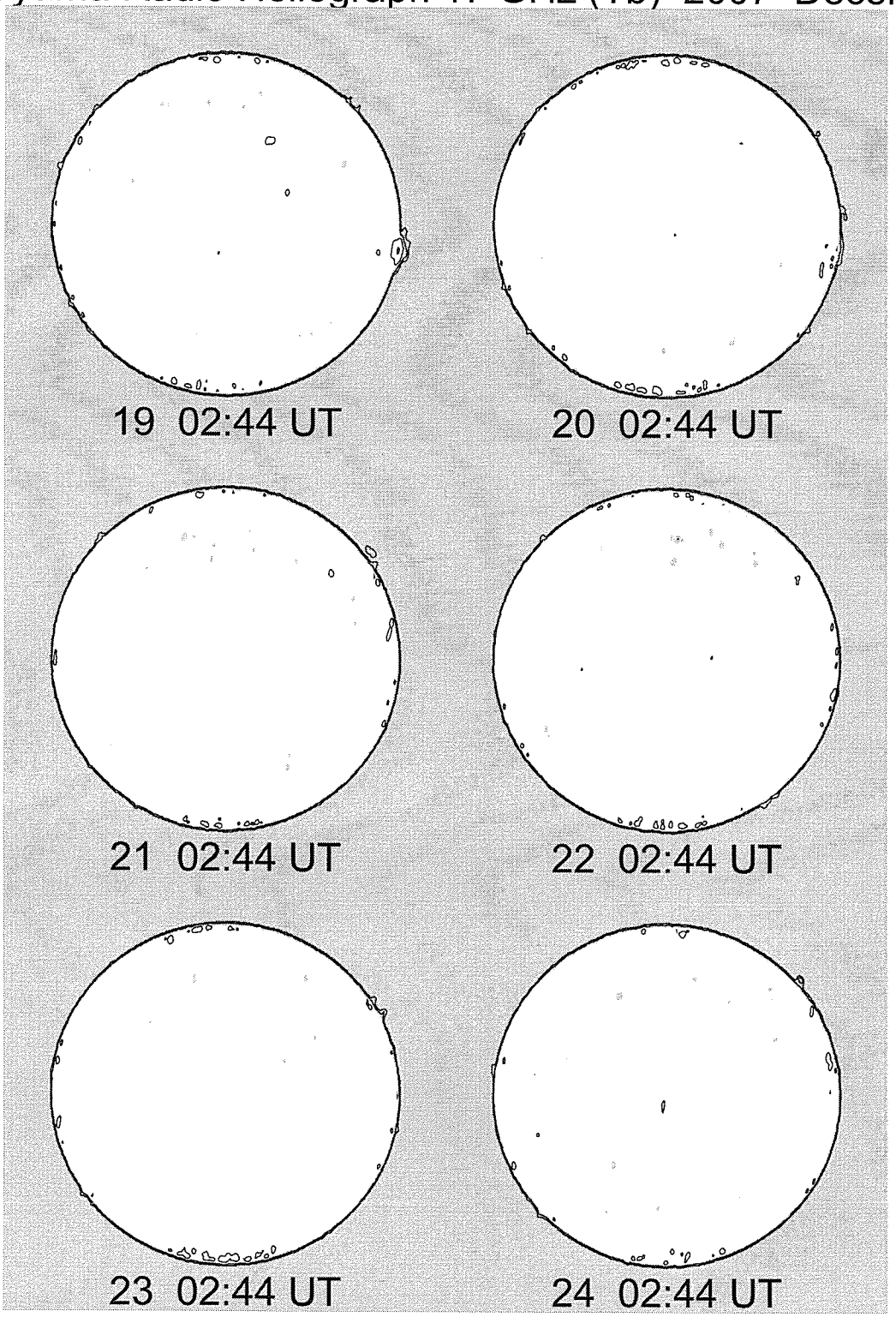
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 December



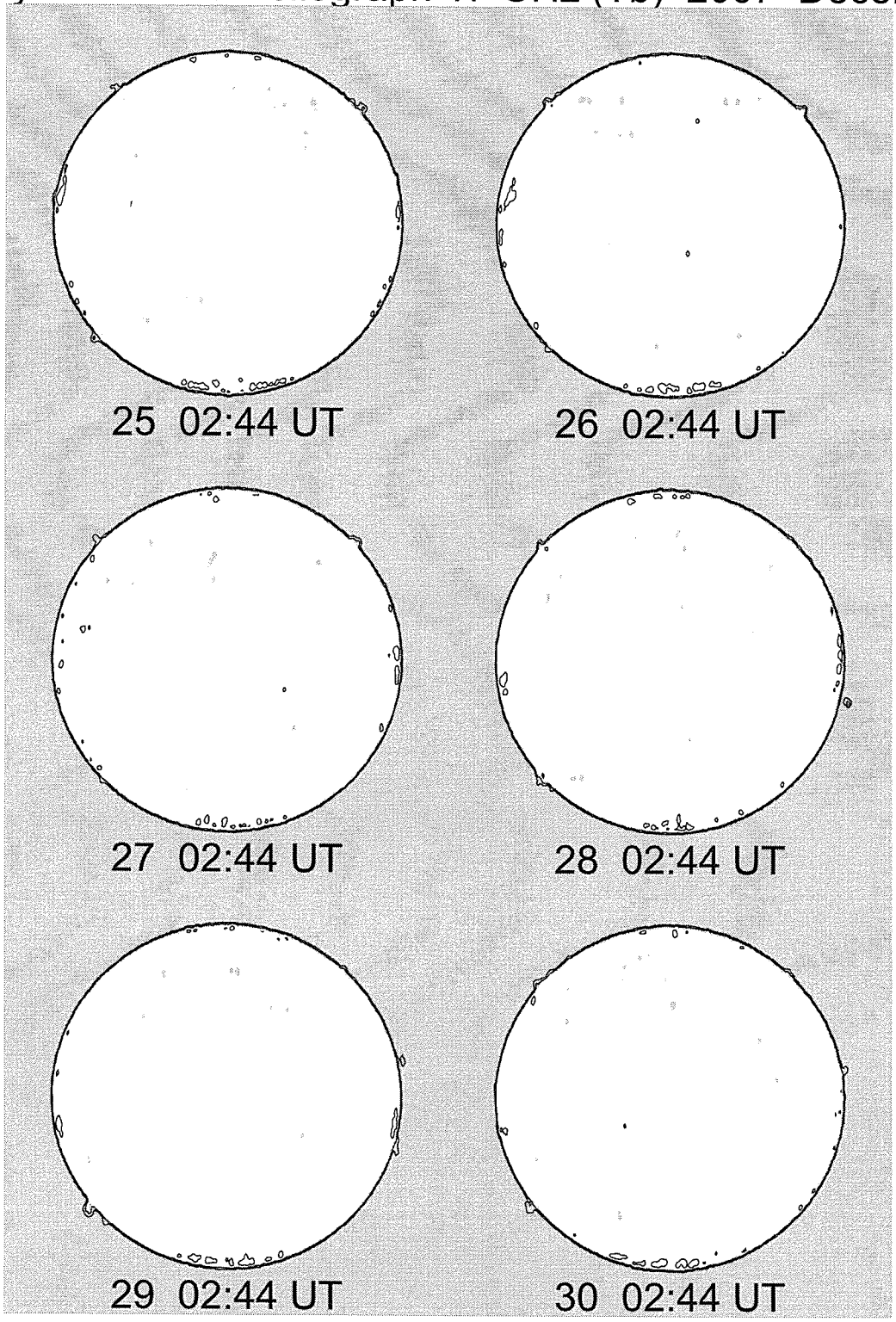
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 December



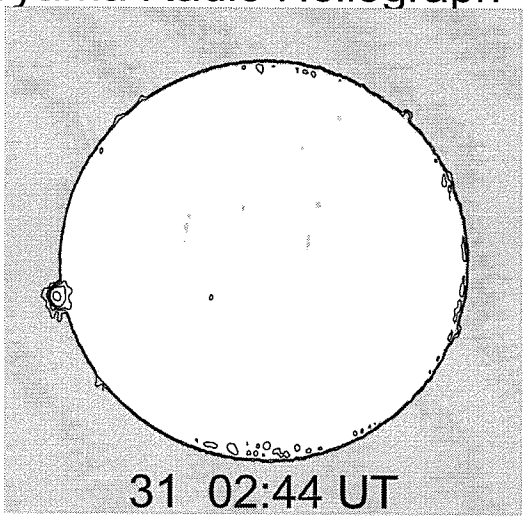
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 December



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) 2007 December



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

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

DECEMBER 2007

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
0976		VORO	12	01	0032	S08	E38	12	3.9			BRO	14	3	3	3
0976		VORO	12	01	0032	S08	E38	12	3.9			BRO	14	3	3	3
0976		LEAR	12	01	0131	S09	E38	12	3.9		B	BXO	20	3	3	3
0976		SVTO	12	01	0800	S08	E36	12	4.0		B	BXO	30	3	3	3
0976		KAND	12	01	1200	S10	E32	12	3.9			BXO		3	4	4
0976		LEAR	12	02	0127	S09	E22	12	3.7		B	BXO	10	2	2	2
0976		PURP	12	03	0053	S09	E09	12	3.7			BXO	2	2	2	3
0979		VORO	12	07	0057	N07	W39	12	4.1			AXX	12	4		3
0979		LEAR	12	07	0122	N08	W39	12	4.1		A	AXX	10	1	1	3
0979		PURP	12	08	0103	N06	W54	12	4.0			HSX	14	2	1	4
0979		VORO	12	08	0113	N07	W52	12	4.1			HAX	8	1		3
0979		LEAR	12	08	0207	N07	W53	12	4.1		A	AXX	10	1	1	3
0979		TACH	12	08	0706	N08	W56	12	4.1			BX0	18	2	3	4
0979		KAND	12	08	0820	N06	W58	12	4.0			CSO		2	5	2
0979		HOLL	12	08	1754	N07	W63	12	4.0		B	DSO	80	4	7	3
0979		PURP	12	09	0115	N07	W67	12	4.0			HSX	21	1	1	3
0979		LEAR	12	09	0118	N08	W67	12	4.0		B	CAO	70	2	4	3
0979		VORO	12	09	0133	N07	W67	12	4.0			CAO	66	2	5	3
0979		SVTO	12	09	0845	N07	W71	12	4.0		A	AXX	60	2	2	3
0979		HOLL	12	09	1810	N08	W75	12	4.1		A	HHX	120	1	5	3
0979		VORO	12	10	0105	N07	W77	12	4.3			HAX	56	1		3
0979		LEAR	12	10	0220	N08	W82	12	3.9		A	HAX	60	1	1	2
0977		LEAR	12	02	0127	S06	E66	12	7.0		B	BXO	40	3	4	2
0977		KAND	12	02	0820	S06	E64	12	7.1			BXO		5	4	4
0977		TACH	12	02	0829	S06	E62	12	7.0			AR	5	2	2	3
0977		HOLL	12	02	2015	S05	E55	12	6.9		B	BXO	20	5	4	4
0977		VORO	12	03	0018	S05	E52	12	6.9			BXO	4	4	1	3
0977		VORO	12	03	0018	S05	E52	12	6.9			BXO	4	4	1	3
0977		PURP	12	03	0053	S05	E52	12	6.9			BXO	10	3	3	3
0977		KAND	12	03	0745	S05	E47	12	6.8			BXO		3	5	4
0977		HOLL	12	03	1525	S06	E44	12	6.9		B	CSO	30	3	3	3
0977		PURP	12	04	0041	S05	E39	12	6.9			CSO	14	3	2	4
0977		VORO	12	04	0113	S04	E38	12	6.9			BRO	14	3	1	3
0977		VORO	12	04	0113	S04	E38	12	6.9			BRO	14	3	1	3
0977		LEAR	12	04	0210	S06	E38	12	6.9		B	CSO	30	4	3	2
0977		SVTO	12	04	0753	S04	E35	12	6.9		B	DSO	40	4	4	3
0977		KAND	12	04	1015	S04	E32	12	6.8			CAO		7	4	3
0977		HOLL	12	04	1550	S06	E30	12	6.9		B	DSO	20	2	4	3
0977		LEAR	12	05	0112	S06	E25	12	6.9		B	DSO	20	3	3	2
0977		VORO	12	05	0117	S05	E24	12	6.8			BRO	13	6	3	3
0977		VORO	12	05	0117	S05	E24	12	6.8			BRO	13	6	3	3
0977		PURP	12	05	0430	S05	E23	12	6.9			DSO	14	3	4	3
0977		SVTO	12	05	0833	S05	E21	12	6.9		B	DSO	20	3	3	2
0977		HOLL	12	05	1706	S06	E16	12	6.9		B	DSO	10	3	4	2
0977		VORO	12	06	0050	S04	E11	12	6.8			BRO	6	4	3	3
0977		VORO	12	06	0050	S04	E11	12	6.8			BRO	6	4	3	3
0977		LEAR	12	06	0104	S06	E11	12	6.9		B	BXO	20	4	3	3
0977		SVTO	12	06	1137	S04	E03	12	6.7		A	HRX	10	1		3
0977		HOLL	12	06	1744	S06	W02	12	6.6		B	BXO	10	3	2	3
0977		PURP	12	07	0048	S05	W03	12	6.8			BXO	4	3	3	3
0978		VORO	12	06	0050	S07	E78	12	11.9			HRX	20	1		3
0978		LEAR	12	06	0104	S08	E78	12	11.9		B	BXO	60	3	4	3
0978		SVTO	12	06	1137	S08	E75	12	12.1		B	DSO	90	4	9	3
0978		HOLL	12	06	1744	S11	E71	12	12.1		B	DSO	60	8	5	3
0978		PURP	12	07	0048	S10	E68	12	12.1			DSO	127	5	8	3
0978		VORO	12	07	0057	S09	E66	12	12.0			DAI	211	11	5	3
0978		LEAR	12	07	0122	S09	E65	12	11.9		B	DAO	60	7	9	3
0978		SVTO	12	07	0840	S08	E62	12	12.0		B	DAO	60	7	9	3
0978		HOLL	12	07	1705	S10	E57	12	12.0		B	DAO	110	19	6	2
0978		PURP	12	08	0103	S10	E56	12	12.2			EAC	225	20	14	4
0978		VORO	12	08	0113	S10	E52	12	11.9			DAI	184	13	6	3
0978		LEAR	12	08	0207	S10	E48	12	11.7		B	EAO	150	13	14	3
0978		TACH	12	08	0706	S10	E49	12	12.0			CAI	98	7	7	4
0978		KAND	12	08	0820	S11	E50	12	12.1			DAO		9	8	2
0978		SVTO	12	08	1115	S10	E48	12	12.1		B	DAO	130	7	9	2
0978		HOLL	12	08	1754	S09	E43	12	12.0		B	DKC	180	15	9	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

DECEMBER 2007

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
0978		PURP	12	09	0115	S10	E40	12	12.0			DAO	114	16	8	3
0978		LEAR	12	09	0118	S09	E37	12	11.8		B	DAC	180	16	9	3
0978		VORO	12	09	0133	S10	E38	12	11.9			DAI	167	20	7	3
0978		SVTO	12	09	0845	S09	E35	12	12.0		B	EAO	230	13	12	3
0978		HOLL	12	09	1810	S08	E30	12	12.0		B	DKC	250	32	10	3
0978		VORO	12	10	0105	S08	E25	12	11.9			DAI	281	13	7	3
0978		LEAR	12	10	0220	S08	E25	12	12.0		BG	EAC	220	33	11	2
0978		KAND	12	10	0850	S09	E22	12	12.0			DAC		23	10	4
0978		SVTO	12	10	0900	S08	E21	12	11.9		B	ESI	270	14	13	3
0978		LEAR	12	11	0150	S06	E13	12	12.0		BG	EAC	220	45	11	2
0978		TACH	12	11	0607	S07	E10	12	12.0			CAI	65	27	9	4
0978		SVTO	12	11	1035	S08	E07	12	12.0		B	ESI	270	23	13	2
0978		HOLL	12	11	2018	S08	E03	12	12.1		BG	ESC	230	59	11	2
0978		LEAR	12	12	0020	S08	W01	12	11.9		B	DAC	170	20	10	3
0978		VORO	12	12	0058	S08	W00	12	12.0			DAI	277	25	9	3
0978		KAND	12	12	1010	S09	W06	12	12.0			EAI		19	11	3
0978		SVTO	12	12	1130	S08	W08	12	11.9		B	DSI	180	17	10	2
0978		HOLL	12	12	1816	S04	W05	12	12.4		BG	DAC	240	46	10	3
0978		LEAR	12	13	0040	S09	W13	12	12.0		BG	DAC	280	25	9	3
0978		VORO	12	13	0304	S09	W15	12	12.0			DKI	450	10	7	3
0978		PURP	12	13	0435	S09	W15	12	12.1			EKI	297	42	10	3
0978		SVTO	12	13	0805	S08	W18	12	12.0		B	DAC	440	30	10	3
0978		HOLL	12	13	2058	S09	W25	12	12.0		BG	DAI	270	35	10	2
0978		LEAR	12	14	0030	S07	W29	12	11.8		B	DKC	290	23	10	3
0978		PURP	12	14	0100	S09	W28	12	11.9			EAC	221	31	10	3
0978		VORO	12	14	0140	S10	W27	12	12.0			DKI	477	20	8	3
0978		TACH	12	14	0640	S09	W31	12	11.9			DAI	85	14	7	3
0978		KAND	12	14	0925	S10	W31	12	12.1			DAI		31	10	2
0978		SVTO	12	14	1007	S10	W33	12	11.9		B	EAC	500	25	13	2
0978		HOLL	12	14	1626	S10	W34	12	12.1		BG	DKC	290	27	9	2
0978		PURP	12	15	0043	S10	W39	12	12.1			EAO	179	30	10	3
0978		LEAR	12	15	0152	S08	W40	12	12.1		BG	DKC	340	29	9	2
0978		VORO	12	15	0351	S10	W42	12	12.0			DKI	227	22	8	3
0978		TACH	12	15	0706	S09	W44	12	12.0			BRI	53	20	37	4
0978		SVTO	12	15	0740	S11	W45	12	11.9		B	EAC	380	19	11	2
0978		KAND	12	15	0935	S10	W45	12	12.0			DAC		22	10	2
0978		HOLL	12	15	1625	S11	W48	12	12.1		BG	DSC	310	35	10	3
0978		VORO	12	16	0137	S10	W53	12	12.1			DAI	159	14	8	3
0978		LEAR	12	16	0148	S09	W55	12	11.9		B	EAC	240	21	11	2
0978		HOLL	12	16	1747	S10	W61	12	12.1		BG	DAI	240	16	11	3
0978		VORO	12	17	0330	S10	W66	12	12.2			CAO	104	5	5	3
0978		LEAR	12	17	0600	S10	W69	12	12.1		B	CAO	120	4	8	2
0978		HOLL	12	17	2300	S08	W79	12	12.0		B	CAO	70	3	3	2
0978		LEAR	12	18	0028	S08	W79	12	12.1		B	CAO	120	4	3	3
0978		VORO	12	18	0154	S10	W81	12	12.0			HKX	166	6	1	3
0978		PURP	12	18	0704	S09	W85	12	11.9			HSX	28	1	1	3
0978A		HOLL	12	13	2058	N12	E51	12	17.7		A	AXX	10	1		2
0978A		LEAR	12	14	0030	N12	E48	12	17.6		A	HSX	10	1	1	3
0978A		PURP	12	14	0100	N12	E49	12	17.7			AXX	3	1	1	3
0978A		VORO	12	14	0140	N12	E48	12	17.7			AXX	9	1		3
0978C		LEAR	12	26	0002	N36	W10	12	25.2		B	BXO	10	2	3	3
0978B		LEAR	12	25	0040	S11	E09	12	25.7		A	AXX	10	1	1	3

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES
DECEMBER 2007

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
06	1300	1326U	1402	1	1		1				No flare		
09	1542	1602	1618	2	1					1	No flare		
12	1339	1346	1355	1-	1					1	1336	B2.5	
13	0950	0958	1011	1-	3					2	0930	C4.5	10978
14	1410	1415	1420	1-	1					1	1411	C1.1	
15	0933	0938	1020	1	1		1				No flare		
18	1312	1320	1401	2	3					2	1308	C2.1	
18	1451	1454	1510	1	1					1	1447	C1.1	
26	1325	1333	1358	1	1		1				No flare		
29	1446	1455	1530	1	1		1				*		
30	1014	1026U	1103	1	1		1				No flare		
30	1202	1220	1259	1	1		1				No flare		
30	1259	1318U	1342	1	1		1				*		
31	1255	1310U	1331	1	1		1				No flare		

OBSERVATORIES REPORTING FOR NOVEMBER 2007

Beauvais, France	SES
Cambridge, England, UK	SES
Malboro, Massachusetts, USA	SES
Southern France	SES
Upice, Czech Republic	SEA
Villiersdorp, South Africa	SES

Observations are not necessarily continuous.
* = No Flare Patrol

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2007

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	EVENT Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01	0000	0729	HIRA								
	0000	0800	CULG								
	0812	1100	ONDR								
	0820	1435	BLEN								
	2000	2400	CULG								
	2124	2400	HIRA								
02	0000	0729	HIRA								
	0000	0800	CULG								
	0820	1435	BLEN								
	2000	2400	CULG								
	2125	2400	HIRA								
03	0000	0728	HIRA								
	0000	0800	CULG								
	0835	1435	BLEN								
	1008	1328	ONDR								
	2000	2400	CULG								
	2126	2400	HIRA								
04	0000	0728	HIRA								
	0000	0800	CULG								
	0817	1327	ONDR								
	0835	1435	BLEN								
	2000	2400	CULG								
	2127	2400	HIRA								
05	0000	0728	HIRA								
			LEAR	0653.0	0655.0	III		1	25	67	
			SVTO	0653.0	0653.0	III		1	25	54	
	0000	0800	CULG	0653.0	0655.0	III	G	1	20	45	
	0819	1326	ONDR								
	0835	1435	BLEN								
	2000	2400	CULG								
	2128	2400	HIRA								
06	0000	0800	CULG	0004.0	0004.0	III	B	1	20	50	
			CULG	0053.0	0053.0	III	B	1	20	80	
			LEAR	0053.0	0053.0	III		1	25	66	
	0000	0728	HIRA	0053.0	0053.5	III	B	1	30	70	
			CULG	0326.0	0327.0	III	G	1	20	80	
			LEAR	0326.0	0327.0	III		1	25	73	
	0821	1325	ONDR								
	0835	1435	BLEN								
	2000	2400	CULG								
	2128	2400	HIRA								
07			LEAR	0434.0	0437.0	III		1	25	58	
	0000	0728	HIRA	0436.5	0437.0	III	B	1	50	70	
	0000	0800	CULG	0437.0	0439.0	III	G	1	30	80	
	0822	1310	ONDR								
	0840	1435	BLEN								
	2000	2400	CULG								
	2129	2400	HIRA								
08	0000	0728	HIRA								
	0000	0800	CULG								
			LEAR	0740.0	0740.0	III		1	54	180	
	0824	1324	ONDR								
	0840	1435	BLEN								
	2000	2400	CULG								
	2130	2400	HIRA								
09	0000	0728	HIRA								
	0000	0800	CULG								
	0825	1323	ONDR								
	0845	1435	BLEN								
	2000	2400	CULG								
	2131	2400	HIRA								

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

DECEMBER 2007

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
10			LEAR	0215.0	0216.0	III		1	25	76	
	0000	0728	HIRA	0215.5	0216.0	III	B	1	50	120	
	0000	0800	CULG	0216.0	0216.0	III	B	1	18	70	
	0827	1323	ONDR								
	0845	1435	BLEN								
	2000	2400	CULG								
	2132	2400	HIRA								
11	0000	0729	HIRA								
			LEAR	0324.0	0324.0	III		1	25	53	
			LEAR	0416.0	0417.0	III		1	25	45	
	0000	0800	CULG	0541.0	0541.0	III	B	1	20	60	
	0828	1322	ONDR								
			SVTO	0832.0	0834.0	III		1	25	40	
	0845	1435	BLEN								
	2000	2400	CULG								
	2133	2400	HIRA								
12	0000	0729	HIRA								
	0000	0800	CULG								
	0829	1322	ONDR								
	0845	1435	BLEN								
	2000	2400	CULG								
	2133	2400	HIRA								
13	0000	0729	HIRA								
	0000	0800	CULG								
	0830	1322	ONDR								
	0850	1435	BLEN								
	2000	2400	CULG								
	2134	2400	HIRA								
14	0000	0730	HIRA								
	0000	0800	CULG								
	0832	1321	ONDR								
	0850	1435	BLEN								
	2000	2400	CULG								
	2134	2400	HIRA								
15	0000	0730	HIRA								
	0000	0800	CULG								
	0833	1321	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2135	2400	HIRA								
16	0000	0730	HIRA								
	0000	0800	CULG								
	0834	1321	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2136	2400	HIRA								
17	0000	0730	HIRA								
	0000	0800	CULG								
	0835	1321	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2137	2400	HIRA								
18	0000	0731	HIRA								
	0000	0800	CULG								
	0835	1307	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2137	2400	HIRA								
19	0000	0731	HIRA								
	0000	0800	CULG								

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

DECEMBER 2007

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
19	0836	1322	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2137	2400	HIRA								
20	0000	0731	HIRA								
	0000	0800	CULG								
	0837	1322	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2138	2400	HIRA								
21	0000	0732	HIRA								
	0000	0800	CULG								
	0838	1310	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2138	2400	HIRA								
22	0000	0732	HIRA								
	0000	0800	CULG								
	0838	1323	ONDR								
	0855	1435	BLEN								
	2000	2400	CULG								
	2139	2400	HIRA								
23	0000	0733	HIRA								
	0000	0800	CULG								
	0838	1310	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2140	2400	HIRA								
24	0000	0733	HIRA								
	0000	0800	CULG								
	0839	1324	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2140	2400	HIRA								
25	0000	0733	HIRA								
	0000	0800	CULG								
	0839	1311	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2141	2400	HIRA								
26	0000	0734	HIRA								
	0000	0800	CULG								
	0839	1326	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2141	2400	HIRA								
27	0000	0735	HIRA								
	0000	0800	CULG								
	0839	1311	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2142	2400	HIRA								
28	0000	0735	HIRA								
	0000	0800	CULG								
	0839	1327	ONDR								
	0900	1435	BLEN								
	2000	2400	CULG								
	2142	2400	HIRA								
29	0000	0736	HIRA								

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

DECEMBER 2007

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
Day										
29 0000	0800	CULG								
0840	1329	ONDR								
0900	1435	BLEN								
2000	2400	CULG								
2143	2400	HIRA								
30 0000	0737	HIRA								
0000	0800	CULG								
0839	1330	ONDR								
0900	1435	BLEN								
2000	2400	CULG								
2143	2400	HIRA								
31		LEAR	0053.0	0110.0	II		1	46	110	ESS 0582
		PALE	0053.0	0058.0	II		2	58U	121U	ESS 0682
		PALE	0053.0	0108.0	II		1	30	118	ESS 0744
0000	0738	HIRA	0053.0	0059.0	II		2	50	110	
0000	0800	CULG	0054.0	0100.0	II	UE	2	45	110	
		LEAR	0059.0	0114.0	IV		1	25	177	
		PALE	0059.0	0127.0	IV		2	75U	147U	
		HIRA	0059.5	0113.0	IV		1	50	210	
		CULG	0103.0	0112.0	II	FN	1	23	45	ESS 550
		CULG	0105.0	0111.0	II	SH	1	35	80	
0839	1331	ONDR								
0900	1435	BLEN								
2000	2400	CULG								
2143	2400	HIRA								

Event Remarks:

B = Single burst	N = Intermittent activity in this period
C = Underlyling continuum (particularly with Type I)	MOV = Moving (Type IV)
DC = Drifting chains	MWB = Meter wave burst
DP = Drifting pairs	RS = Reverse slope burst
F = Fundamental emission (Type II)	S = Storm in the sense of intermittent but apparently connected actively
FS = Fine structures (Type IV)	SH = Secondary harmonic emission
G = Small group of bursts (<10)	STA = Stationary (Type IV)
GG = Large group of bursts (>10)	U = U-shaped burst of Type III
H = Herringbone	UE = Uncertain emission (Type II)
HARM = Harmonic	W = Weak

Frequency qualifiers:

X = Extends beyond instrument range	U = Uncertain frequency

Remarks:
SWF = Associated short wave fade observed
ESS = Estimated shock speed in km/s (Type II)
FLA = Associated flare observed (class optional)

Stations Reporting:

CULG = Culgoora	IZMI = Izmiran	LEAR = Learmonth	ONDR = Ondrejov	BLEN = Bleien
PALE = Palehua	POTS = Potsdam	SGMR = Sagamore Hill	SVTO = San Vito	

NOTE 1: Beginning June 26, 2001, the Bleien observatory changed to higher frequencies (1-4Ghz).
NOTE 2: Potsdam has reduced sensitivity in the 400-800 MHz range.

SOLAR RADIO NOISE STORM AT 150.9 MHZ

FROM NANÇAY RADIOHELIOGRAPH

DECEMBER 2007

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
09/12/07*	+1.06	+0.14	I	13H17	15H13 D
13/12/07*	+0.59	-0.25	I	8H20 E	15H15 D

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

DECEMBER 2007

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
09/12/07*	+1.05	+0.09	I	10H15	15H13 D
13/12/07*	+0.57	-0.20	I	8H20 E	12H22

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

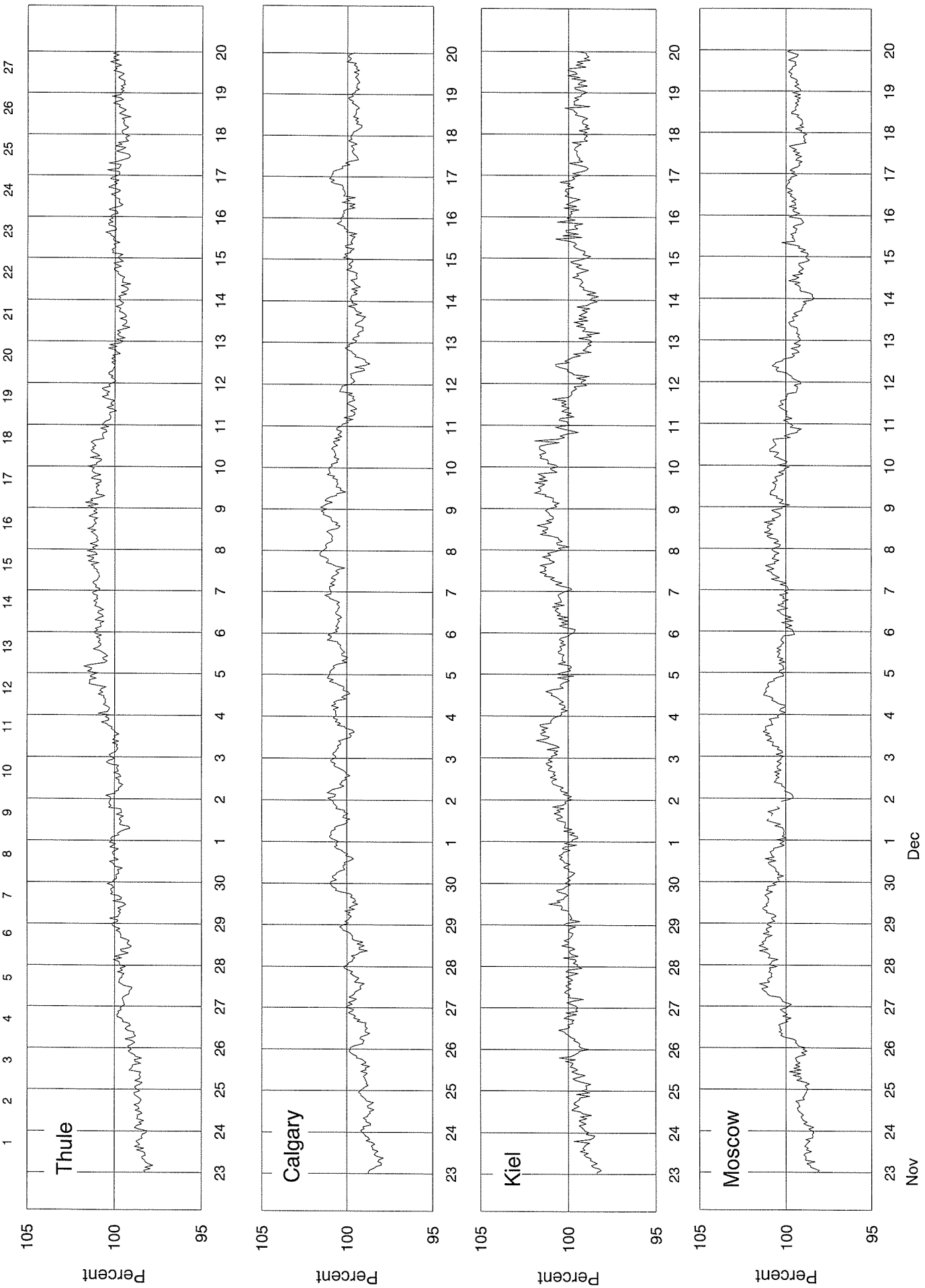
COSMIC RAY INDICES
(Neutron Monitor)
December 2007

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	4554.0	4033.7	6367.3	9513.2(21)		2083.5	
2	4559.9	4034.8	6397.8	9493.7		2091.6	
3	4568.2	4027.7	6425.9	9541.8		2093.6	
4	4598.8	4035.3	6382.6	9531.7		2096.3	
5	4605.4	4036.3	6372.4	9490.7		2096.8	
6	4606.4	4039.8	6377.5	9473.0		2097.1	
7	4614.0	4051.3	6413.9	9523.8	data	2098.3	data
8	4615.5	4054.5	6416.5	9539.1	not	2001.1	not
9	4612.6	4048.0	6435.0	9511.1	available	2100.6	available
10	4606.4	4040.5	6415.1	9490.7		2092.0	
11	4579.0	4009.8	6356.5	9457.2		2091.7	
12	4566.4	3993.8	6327.3	9453.0		2092.6	
13	4544.6	3989.2	6293.1	9402.2		2087.9	
14	4546.7	3999.3	6303.3	9381.8		2092.0	
15	4566.7	4012.8	6331.8	9407.0		2096.8	
16	4562.7	4022.7	6349.4	9437.1		2096.2	
17	4547.3	4013.3	6314.7	9403.4		2094.2	
18	4545.1	3995.0	6313.7	9404.2		2091.8	
19	4552.9	3996.2	6314.3	9424.9		2088.2	
20	4552.4	3995.7	6315.1	9486.5		2086.6	
21	4547.2	3999.8	6313.2	9456.6		2083.4	
22	4559.1	3997.5	6334.7	9451.4		2075.1	
23	4562.3	3999.3	6340.8	9422.7		2082.0	
24	4565.3	4004.3	6327.2	9400.9		2080.8	
25	4555.3	4011.8	6339.7	9429.3		2080.3	
26	4571.7	4018.3	6336.9	9422.0		2082.0	
27	4578.5	4028.3	6338.7	9431.2		2082.4	
28	4590.5	4028.8	6341.6	9462.1		2082.9	
29	4609.0	4041.5	6378.8	9475.0		2099.7	
30	4610.2	4049.8	6393.8	9473.7		2095.6	
	4605.2	4047.0	6381.6	9486.7		2100.8	
Mean	4576.0	4021.2	6356.5	9460.4		2087.5	

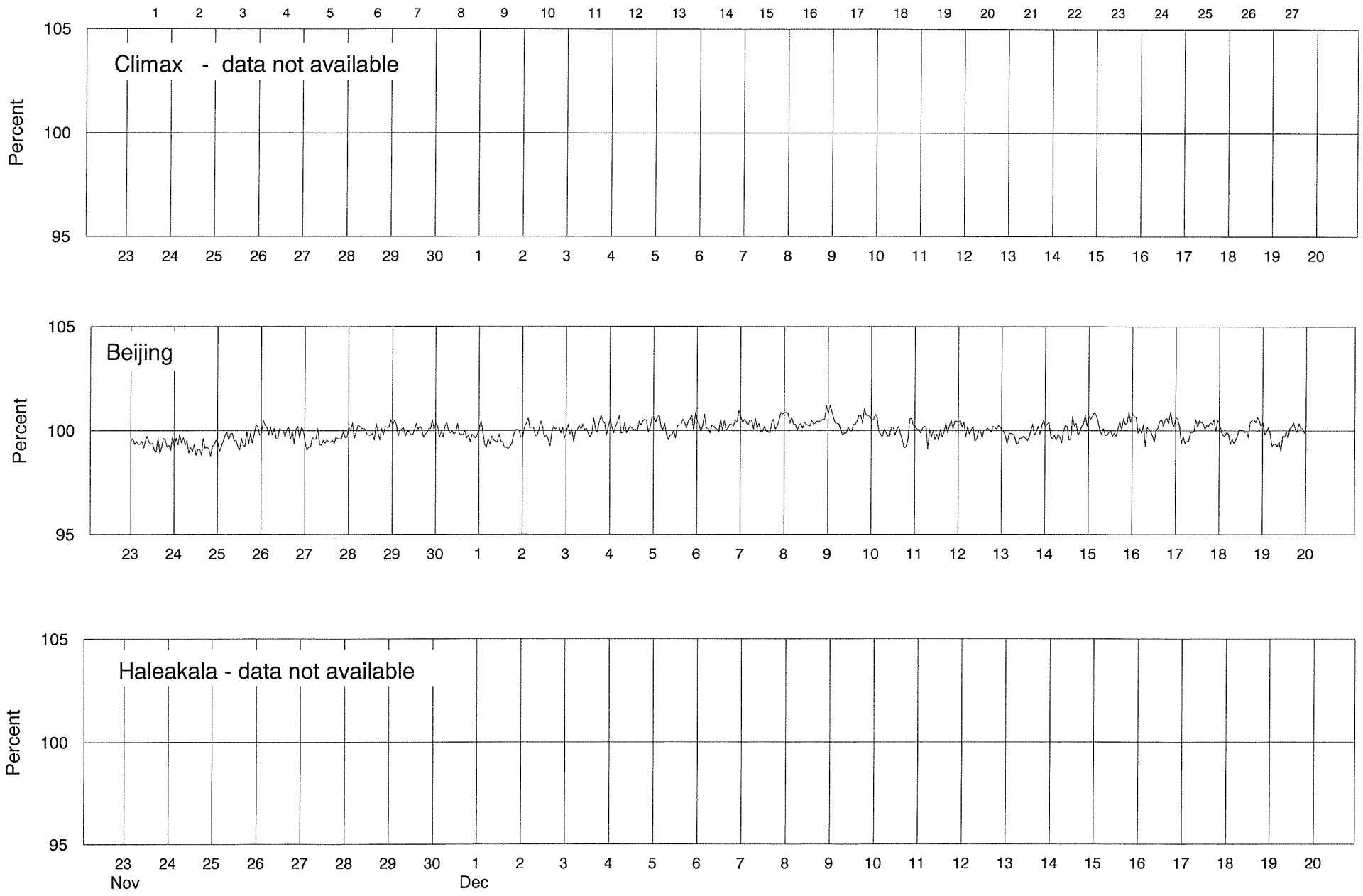
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2379 - Beginning 23 Nov 2007

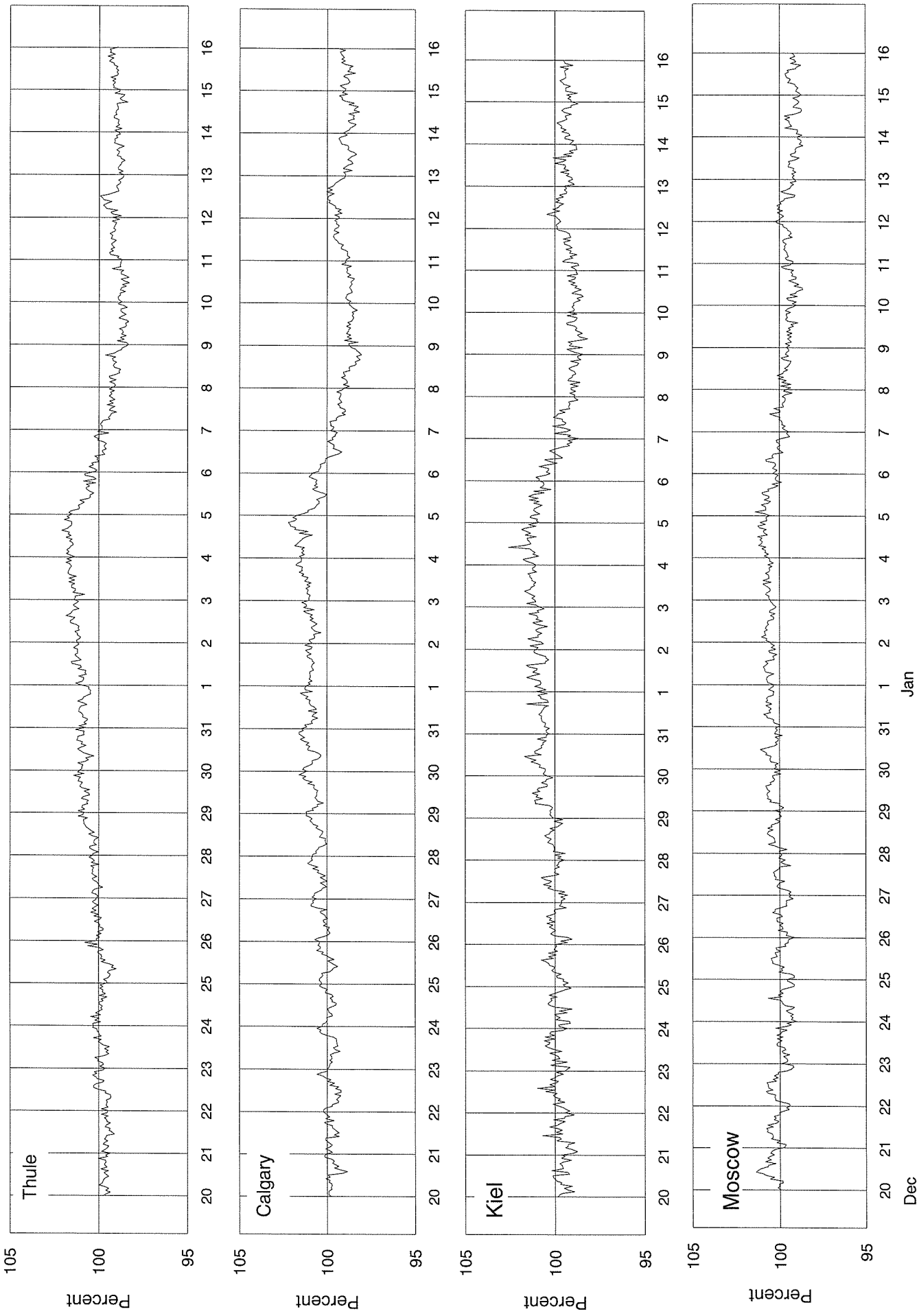


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2379 - Beginning 23 Nov 2007

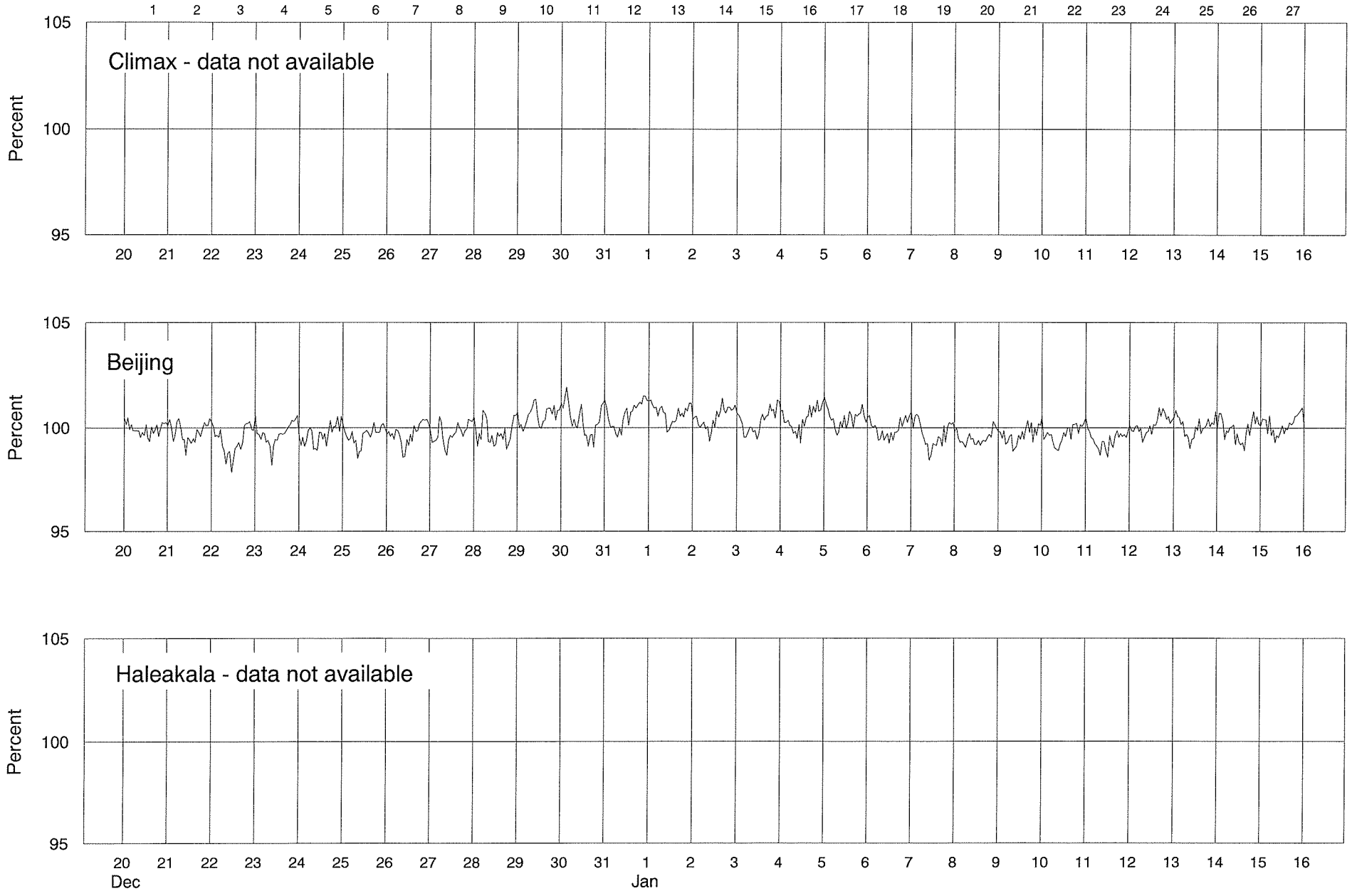


COSMIC RAY INDICES
(Neutron Monitor)

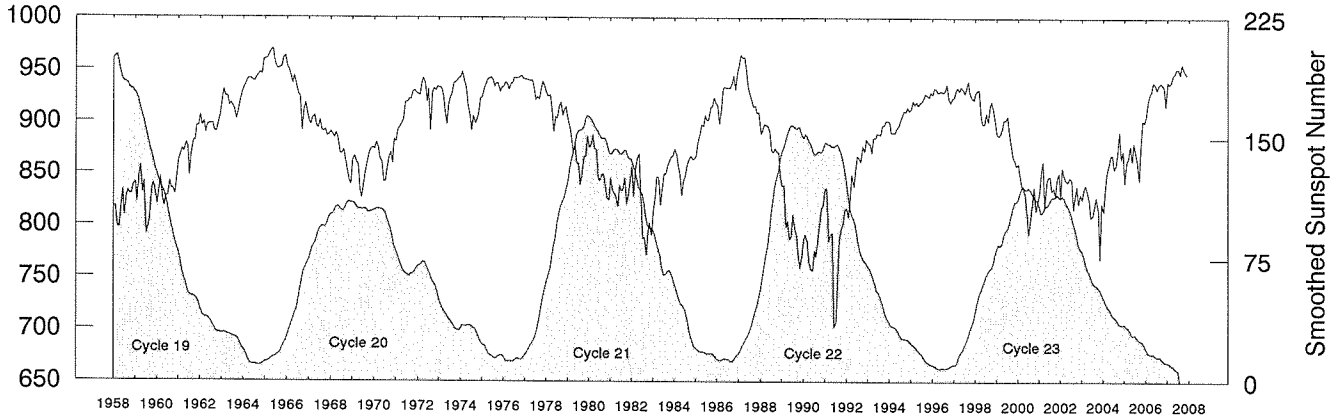
Bartels Rotation 2380 - Beginning 20 Dec 2007



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2380 - Beginning 20 Dec 2007



Moscow Neutron Monitor Pressure-Corrected Values
Jan 1958 - Dec 2007



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	8171*	8175*	7973*	7971*	8145*	8330*	8087*	8266*	8324*	8291*	8294*	8378*	8200*
1959	8405	8223	8443	8565	8309	8416	7911	7972	8054	8351	8397	8325	8281
1960	8199	8313	8459	8264*	8178*	8272*	8272*	8417	8348	8348	8295	8464	8319*
1961	8619	8682	8731*	8708*	8791*	8759*	8472	8676	8808	8816	8957	8956	8748*
1962	9061	8959	8996	8891	8964*	8974	8977	8977	8908	8902	8973	9056	8940*
1963	9201	9308	9243	9239	9154	9180	9147	9109	9020	9110	9194	9259	9180
1964	9321	9353	9395	9416	9410	9396	9384	9425	9442	9473	9458	9594	9422
1965	9602	9608	9642	9685	9701	9586	9530	9505	9520	9525	9608	9630	9595
1966	9531	9502	9439	9367	9438	9336	9261	9242*	8916	9105*	9178	9094	9284*
1967	9006	8973	9038	9059	8956	8940	9015	8913	8911	8924	8860	8873	8956
1968	8904	8875*	8844*	8892*	8825*	8690*	8689	8725	8635*	8533*	8428	8394	8703*
1969	8628	8666	8606	8584	8334	8261	8378	8510	8612	8689	8731	8751	8562
1970	8735	8799	8749	8639	8608	8418	8420	8540	8656	8702	8596	8827	8641
1971	8805	8921	8952	8982	9028	9185	9190	9219	9215	9285	9302	9276	9113
1972	9260	9254	9367	9419	9364	9192	9311	8916	9275	9319	9298	9336	9275
1973	9333	9321	9258	9107	8975	9160	9233	9263	9368	9376	9392	9423	9267
1974	9431	9481	9390	9327	9153	9062	8916	9054	8983	9027	9092	9222	9178
1975	9238	9317	9361	9405	9415	9425	9395	9339	9370	9361	9285*	9330	9353*
1976	9339	9375	9370	9310	9363	9371	9423	9418	9423	9428	9440	9415	9380
1977	9405	9404	9401	9392	9399	9318	9209	9236	9216	9302	9384*	9341	9334*
1978	9279	9243	9254	9113	8907	9050	9035	9149	9189	9062	9118	9145	9216
1979	9012	8955	8860	8693	8778	8599	8592	8396	8470	8662	8661	8857	8740
1980	8752	8776	8871	8737	8732	8463	8430	8490	8491	8379	8259	8242	8552
1981	8451	8330	8311	8277	8176	8379	8332	8338	8452	8206	8289	8439	8332
1982	8565	8277	8565	8649	8686	8279	7870	7882	7712	7931	8023	7902	8195
1983	8150	8253	8460	8460	8194	8343	8498	8492	8575	8625	8658	8670	8448
1984	8736	8686	8574	8505	8286	8421	8476	8590	8632	8669	8641	8644	8575
1985	8671	8813	8878	8973	8958	9066	9018	9017	9140	9155	9233	9183	9009
1986	9162	8982	9125	9316	9339	9328	9326	9327	9368	9444	9312	9472	9292
1987	9553	9646	9619	9618	9505	9349	9268	9202	9149	9153	9085	9094	9353
1988	8885	8922	8979	8968	8961	8904	8724	8704	8745	8716	8699	8474	8807
1989	8381	8385	7985	8043	7868	7888	8102	7977	7897	7709	7592	7701	7961
1990	7871	7910	7846	7652	7574	7569	7755	7701	7864	8037	8168	8185	7844
1991	8356	8347	7850	7915	7926	7025	7082	7510	7863	7964	8008	8153	7833
1992	8169	8078	8247	8490	8378	8535	8670	8649	8614	8767	8717	8833	8512
1993	8804	8784	8705	8846	8842	8888	8884	8880	8968	8968	9010	9011	8882
1994	9001	8895	8899	8898	8942	8963	9013	9055	9110	9098	9141	9112	9011
1995	9122	9206	9169	9193	9159	9186	9203	9228	9272	9257	9241	9286	9210
1996	9266	9328	9324	9287	9291	9302	9295	9302	9364	9226	9192	9227	9284
1997	9240	9311	9334	9302	9340	9318	9277	9322	9390	9281	9233	9217	9297
1998	9273	9306	9312	9057	8981	8983	9088	9007	9157	9196	9133	9036	9127
1999	8883	8867	8887	8937	9021	9018	9058	8904	8794	8660	8627	8574	8853
2000	8600	8481	8377	8358	8283	8107	7921	8081	8224	8365	8146	8215	8263
2001	8314	8521	8617	8168	8428	8468	8473	8334	8359	8289	8447	8505	8410
2002	8277	8555	8462	8434	8420	8462	8438	8157	8289	8374	8207	8297	8364
2003	8251	8344	8398	8329	8238	8075	8099	8178	8268	8150	7675	8209	8185
2004	8139	8385	8525	8580	8676	8684	8546	8589	8715	8909	8646	8718	8593
2005	8411	8614	8649	8770	8624	8792	8707	8632	8436	8793	9015	9001	8704
2006	9061	9204	9273	9303	9385	9361	9318	9353	9379	9367	9339	9156	9292
2007	9389	9367	9381	9461	9473	9513	9514	9465	9561	9506	9477	9460	9464

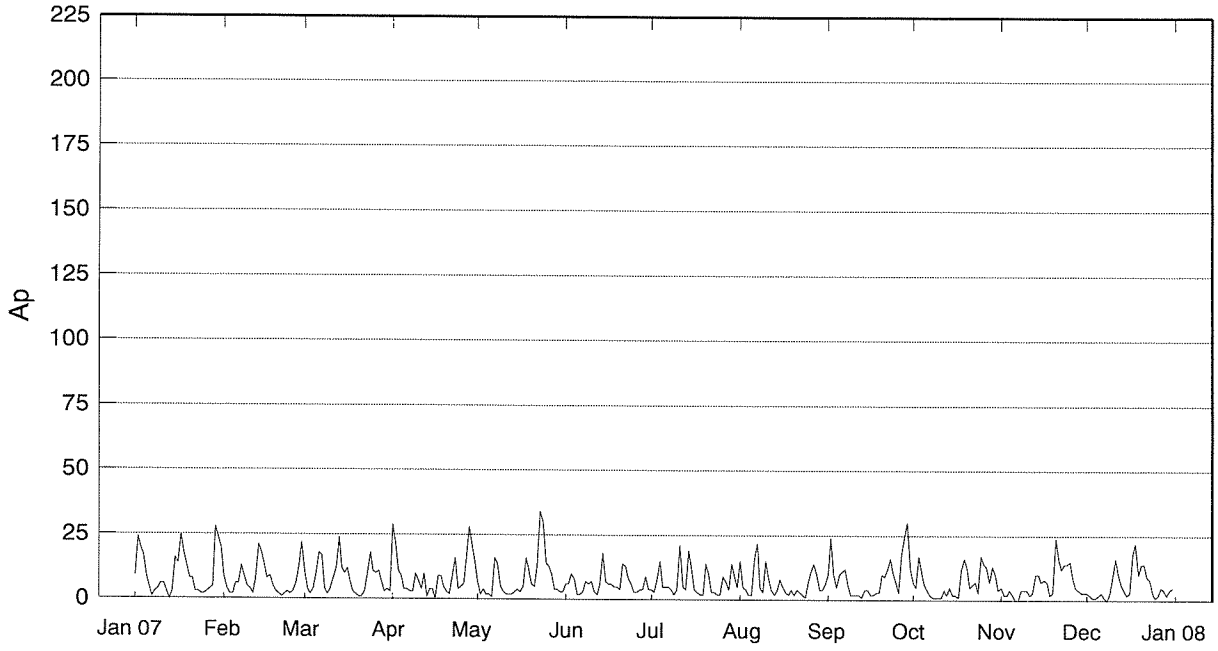
Multiply table entries by 64 to obtain hourly counting rate. Moscow, Russia: N55, E37, Alt= 200 m, Cutoff Rigidity= 2.42GV.
NOTE: * Indicates data have been restored using the corresponding data of other cosmic ray stations.

Geomagnetic Activity Indices
December 2007

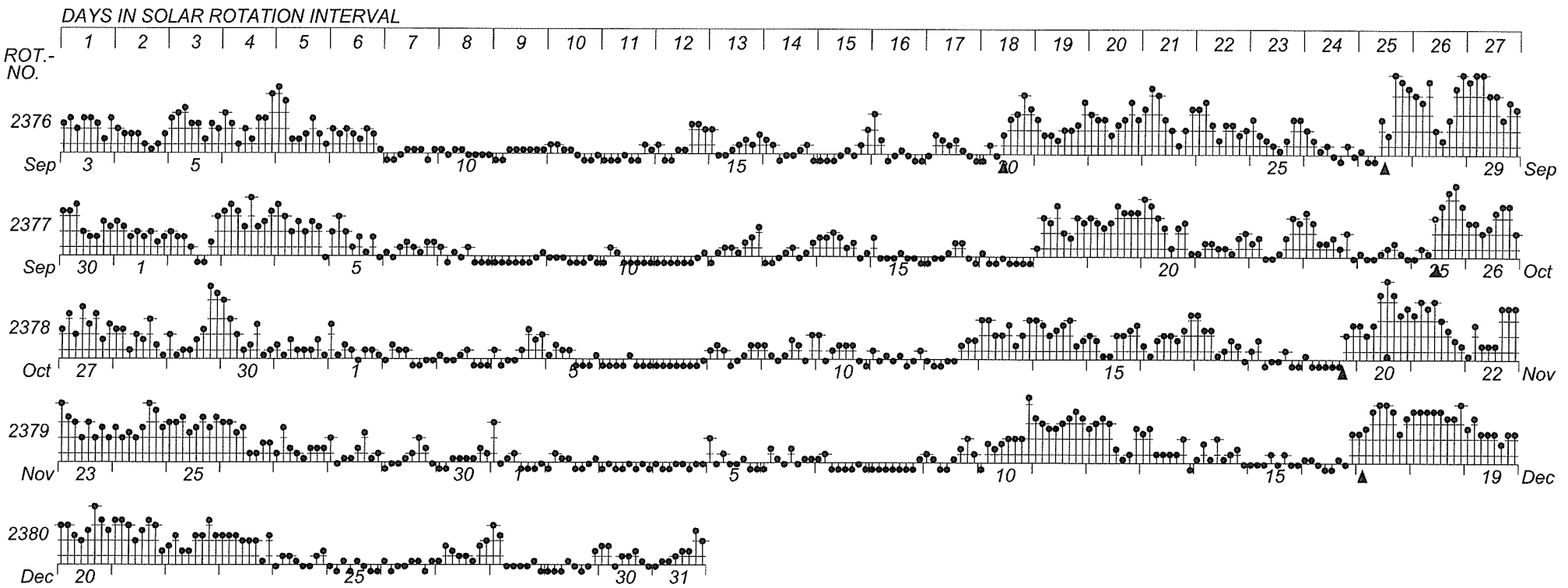
Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		3	0+	1-	1	0	0	0	0+	5+	3	0.1	2+	1-	0+	1+	0o	0o	0+	1-	6	8	7	10	4	CC
2	Q7	0	1	1-	1-	0	0	0+	1-	3+	2	0.0	0o	1o	1o	1o	1-	0+	1-	1o	5	4	8	7	4	CC
3	Q1	0	0+	0	0	0+	0	0+	0	1	1	0.0	0o	0+	0o	0+	0+	0o	0o	0+	1	3	3	2	4	CC
4	Q3	0+	0	0	0+	0+	0	0+	0+	2-	1	0.0	1-	0o	0+	1-	1-	0+	0+	1o	4	3	8	5	5	CC
5		2	0+	1	0+	0+	1-	0	0	5-	2	0.0	2o	0+	2-	1-	1o	1-	0+	0+	6	6	10	10	6	CC
6	Q10	0	1+	1-	0+	1+	0+	1-	1-	5+	3	0.1	0+	1o	0+	0+	1o	0+	1o	1o	5	7	5	4	8	CC
7	Q5	1-	1	0	0	0	0	0+	0	2	1	0.0	1-	1o	0o	0o	0+	0o	1-	0+	3	4	5	5	3	CC
8	Q2	0	0	0	0	0	0	0	1-	1-	0	0.0	0o	0o	0+	0+	0+	0o	0+	1-	2	4	4	3	4	CC
9		1	1-	0	0	1-	1+	2	1	7-	3	0.1	1+	1o	0+	0+	2-	1+	2+	1o	8	9	8	6	12	CC
10		0	2-	1+	2-	2	2	2	4+	15	9	0.5	0o	2-	2-	2-	2o	2o	3-	4o	18	16	20	10	27	
11	D3*	3+	3	3-	3-	3	3+	4-	3+	25	16	0.9	3o	2+	3-	3-	3o	3o	3o	3-	27	29	30	24	35	
12		3-	3	3+	3	1+	1-	1	3-	18-	10	0.6	3-	3-	3o	3-	2-	0+	1+	2o	17	18	18	24	12	
13		2+	3-	1	1	1	1	2	0	11	6	0.2	2-	2+	1o	2-	2-	1+	2o	0+	11	11	11	11	11	CC
14		1-	2-	1-	2	1-	1	1+	0+	8+	4	0.1	1-	1+	1+	2o	0+	1+	2o	1-	8	7	11	10	8	CC
15	Q9	0+	0+	0+	1	0+	1	0+	0+	4	2	0.0	0+	0+	1-	1o	1-	1-	0+	1-	4	4	8	7	5	CC
16		1-	1-	0+	0	0	1-	0+	2+	5	3	0.0	1-	1-	0+	0o	0+	1+	1-	2+	6	9	7	7	9	C
17	D2*	2+	3-	4-	4	4	4-	2+	3+	26	18	1.0	2+	3-	4-	4-	4+	3+	3-	3o	37	29	46	39	37	
18	D1	4-	4-	4-	4-	4-	3+	3+	4	29	22	1.1	3-	3o	3o	4-	4-	3o	3o	4-	35	42	33	35	40	
19		3-	3+	2+	2+	2+	2-	2+	2+	19+	10	0.6	2+	3o	2o	2+	2+	2-	2+	2+	18	20	19	22	17	
20	D4*	3	3	2+	2	3-	4	3+	3-	23	14	0.8	3-	3-	2+	2o	3-	4o	3+	3-	26	27	30	20	37	
21	D5*	3+	3+	3	2	3-	3+	3	1+	22	14	0.8	3-	3-	2+	3-	3-	3o	3o	1o	22	31	19	24	26	
22		2-	2+	1+	1+	2+	2+	3+	2+	17	9	0.5	1+	2o	1+	2o	3-	2+	3o	2o	16	22	16	13	25	
23		2+	2+	2+	2	2	2	1-	2+	16	8	0.4	2o	2o	2o	2+	2+	2o	1o	2o	15	15	14	15	14	
24		0+	1	1	1-	0+	0+	1	1+	6	3	0.1	1-	1o	1o	1o	0+	1-	1o	1+	6	8	7	7	8	CC
25	Q4	0+	0	1-	0	1-	0+	0	0	2	1	0.0	0+	0o	1-	0o	1-	0+	0+	0o	2	3	4	3	4	CC
26	Q6	1-	0	0+	0+	1-	1-	0	1-	3+	2	0.0	0+	0o	1-	1o	1o	1-	0+	1o	5	4	8	5	7	CC
27		1-	2-	1+	1	1	1-	2-	2	10	5	0.2	1+	2-	1+	1+	1+	1+	2+	2o	11	13	13	11	15	CC
28		3	2+	0+	0+	0+	0+	1-	0	7+	4	0.2	2+	2-	1-	1-	0+	1-	1-	0+	6	9	6	10	4	CC
29	Q8	0	0	0	1-	0+	0	0+	1+	3-	2	0.0	0o	0o	0+	1o	1-	0+	1-	2-	4	6	6	4	8	CC
30		2-	2-	0+	1	1	1+	1-	0+	8	4	0.1	1+	1-	0+	1+	2-	1+	1-	0+	6	7	7	6	8	CC
31		0+	1-	1-	1	1+	1+	3-	2	10	5	0.2	0o	1o	0+	1+	1+	2o	2o	1+	8	8	12	7	13	CC
Mean											6	0.28									11.2	12.5	13.0	12.7	

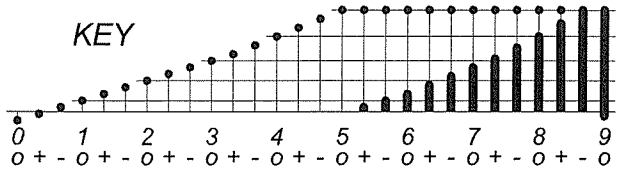
Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	2+	1-	0+	1+	0o	0o	0o	1-	5	2+	1-	0+	1o	0+	0o	1-	1o	6	69.9	10	6	13	
2	0o	0+	1-	1-	1-	0o	0+	0+	3	0+	1+	1+	1+	1o	0+	1o	1+	7	71.0	9	4	15	
3	0o	0o	0o	0o	0+	0o	0o	0o	1	0o	0+	0o	0+	0+	0o	0+	0+	2	70.5	7	5	14	
4	0o	0o	0o	0+	1o	1-	0o	0+	2	1o	0o	1-	1o	0+	0+	1-	2-	5	71.5	9	9	15	
5	2-	0+	1+	0+	1o	0+	0o	0o	4	2o	1-	2o	1o	1o	1o	1-	1-	8	73.1	8	9	17	
6	0o	1o	0+	0o	1o	0o	1-	0+	3	1-	1o	0+	1-	1o	1-	1o	1+	6	75.9	16	15	20	
7	0+	1o	0o	0o	0+	0o	0+	0+	2	1o	1+	0+	0o	0o	0o	1o	1-	3	79.8	15	17	24	
8	0o	0o	0o	0o	0+	0o	0o	1-	1	0o	0+	1o	1-	0+	0o	0+	1o	3	84.4	25	26	29	
9	1o	1-	0o	0o	2-	2-	2+	1o	7	2-	1+	1o	1-	2-	1+	2o	1o	9	86.2	26	31	31	
10	0o	1o	1+	2-	2+	2+	2+	4o	17	0+	2o	2-	2o	2o	2o	3-	4-	18	84.3	24	26	29	
11	3-	2+	2+	3-	3+	3+	3o	3-	28	3o	2+	3-	3-	3o	3-	3o	3-	26	90.5	24	30	36	
12	2+	2+	3+	3-	2-	0+	1o	2+	18	3o	3o	3-	2+	2-	0o	2-	2o	17	91.1	28	29	36	
13	2-	2o	1+	1o	2-	1o	2o	0+	10	1+	3-	1o	2+	1+	2-	2-	0+	12	90.9	30	32	36	
14	0+	1o	1-	2o	0+	1o	2-	0+	7	1o	1+	1+	2o	0+	1+	2+	1o	9	89.0	24	32	34	
15	0o	0o	0+	1o	1o	1o	0o	0o	3	1-	1-	1o	1+	0+	1-	1-	1+	6	86.1	22	23	31	
16	0+	0+	0o	0o	0+	2-	0+	2+	5	1-	1o	1-	0+	0o	1o	1-	2+	6	79.1	18	20	23	
17	2o	2+	4-	4-	5-	4-	3-	3+	37	3-	3+	4-	4-	4o	3o	3-	3o	36	76.9	11	11	21	
18	3-	3+	3+	4o	4-	3+	3o	4-	39	3-	3-	3-	3o	3+	3o	3o	4-	30	74.4	7	2	18	
19	2+	3o	2o	2+	2+	2-	2o	2o	18	2+	3-	2o	2o	2o	2-	2+	3-	18	72.1	0	0	16	
20	2+	3-	2+	2o	3o	4o	3+	2+	28	3-	2+	2+	2o	2+	4-	3o	3-	24	70.2	0	0	14	
21	3o	3-	3-	3-	3o	3+	3+	1o	26	3-	2+	2o	2o	2+	3-	3-	1o	18	68.7	0	0	12	
22	1+	2o	1+	2o	3-	3-	3o	2+	17	1+	2o	1+	2-	2+	2o	3-	2o	15	69.1	0	0	13	
23	2o	2+	2+	3-	3-	2o	1o	2+	18	2o	2-	1+	2-	2-	2-	1-	2o	12	69.1	0	0	13	
24	0+	1-	1o	1o	1-	1-	1+	1o	6	1o	1+	1o	1o	0+	0+	1o	1+	6	69.1	0	0	13	
25	0o	0o	0+	0o	1-	0+	0o	0o	1	0+	0+	1o	0+	1o	0+	0+	0o	3	69.7	0	1	13	
26	0+	0o	1-	1-	1o	1-	0o	1-	4	1-	0+	1o	1+	1+	1o	1-	1+	6	70.2	0	0	14	
27	1-	1+	2-	1+	2-	1+	2o	2-	10	2-	2o	1+	1o	1o	1+	2+	2o	12	69.7	0	0	13	
28	2o	2-	0+	1-	1-	0+	1-	0o	6	2+	2-	1-	1-	0+	1-	0+	1-	7	69.5	0	0	13	
29	0o	0o	0o	1o	0+	0+	0+	1+	3	0+	0+	1-	1o	1-	0+	1o	2-	5	70.3	0	0	14	
30	1+	1-	0o	1-	1o	1+	1-	0o	5	2-	0+	1-	2-	2o	1o	1-	1-	7	72.5	0	0	16	
31	0o	0+	0o	1+	1+	2+	2o	1+	8	0+	1+	1-	2-	2-	2-	2o	1+	10	74.2	0	0	18	-
Mean									11.0									11.4	76.1	10.1	10.6.	20.2	

Daily Average Indices Ap
Jan 2007 - Dec 2007



Day	Jan 07	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	9	9	11	29	7	6	4	15	10	7	5	3
2	24	4	4	22	2	6	3	5	24	8	2	2
3	20	2	2	11	4	10	8	4	10	9	2	1
4	17	2	4	9	2	8	15	2	5	10	4	1
5	9	6	10	4	2	2	5	2	10	11	2	2
6	5	6	18	4	1	2	5	16	11	4	0	3
7	1	13	17	3	16	3	5	22	12	2	0	1
8	3	9	4	3	14	7	4	5	6	1	4	0
9	4	5	2	10	5	6	2	3	2	1	4	3
10	6	4	4	7	3	7	4	15	2	1	4	9
11	6	2	8	4	2	3	21	9	2	1	2	16
12	3	8	12	10	2	2	5	4	2	4	3	10
13	0	21	24	1	2	6	4	2	1	2	10	6
14	3	18	12	4	3	18	19	4	4	5	10	4
15	16	13	10	4	4	7	12	8	4	2	7	2
16	14	8	12	0	3	6	4	5	2	2	8	3
17	25	9	7	9	5	6	3	3	2	1	7	18
18	18	5	3	9	16	5	2	2	3	12	2	22
19	13	3	2	5	12	5	2	4	3	16	3	10
20	8	2	1	3	6	4	14	2	10	13	24	14
21	8	1	1	2	5	14	10	4	9	5	16	14
22	3	2	3	9	13	13	3	3	12	6	12	9
23	3	3	10	16	34	8	3	2	16	7	14	8
24	2	2	18	4	30	6	2	1	11	3	14	3
25	2	3	11	5	14	3	2	7	7	17	15	1
26	3	6	10	6	13	3	9	11	3	14	9	2
27	4	12	11	16	10	4	7	14	18	13	5	5
28	5	22	7	28	4	4	4	10	24	7	4	4
29	28		3	21	4	9	14	4	30	13	3	2
30	24		4	15	3	4	9	4	12	10	3	4
31	20		3		3		5	6		4		5
Mean	10	7	8	9	8	6	7	6	9	7	7	6



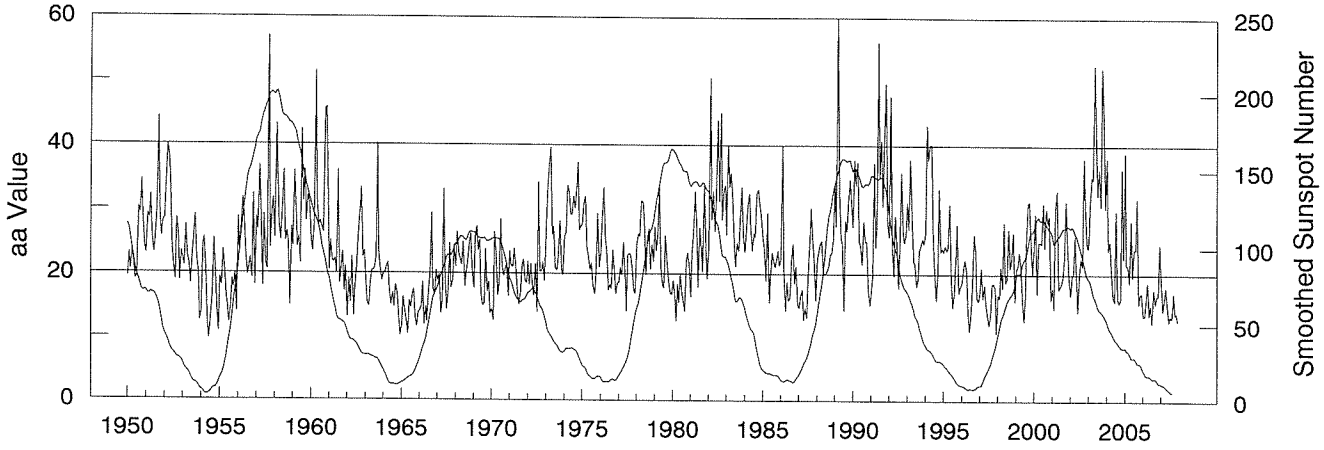


▲ = sudden commencement

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 2007 Dec 31

Monthly Mean aa Index Jan 1950 - Dec 2007



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

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

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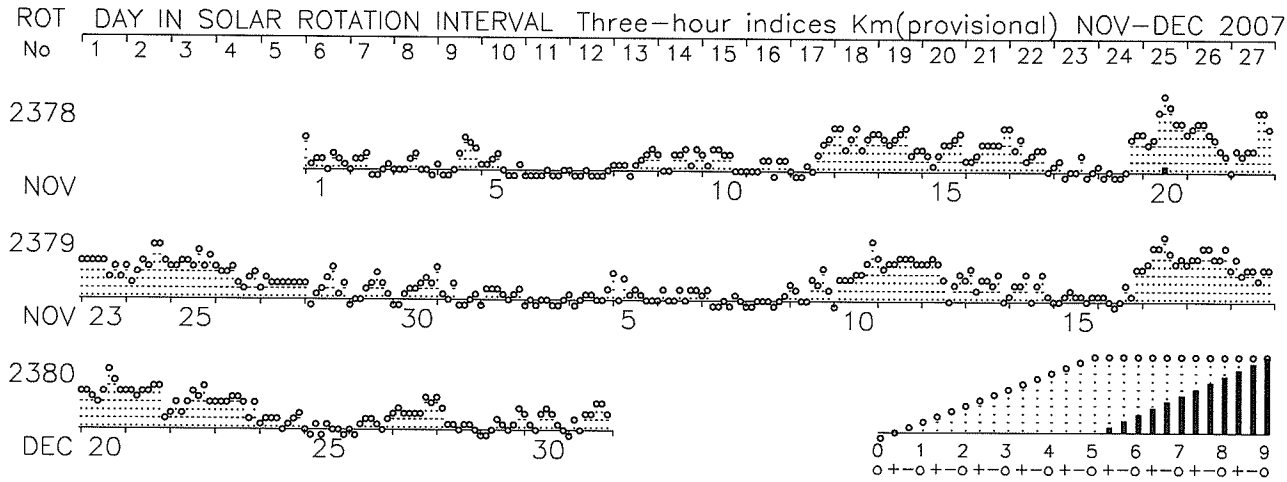
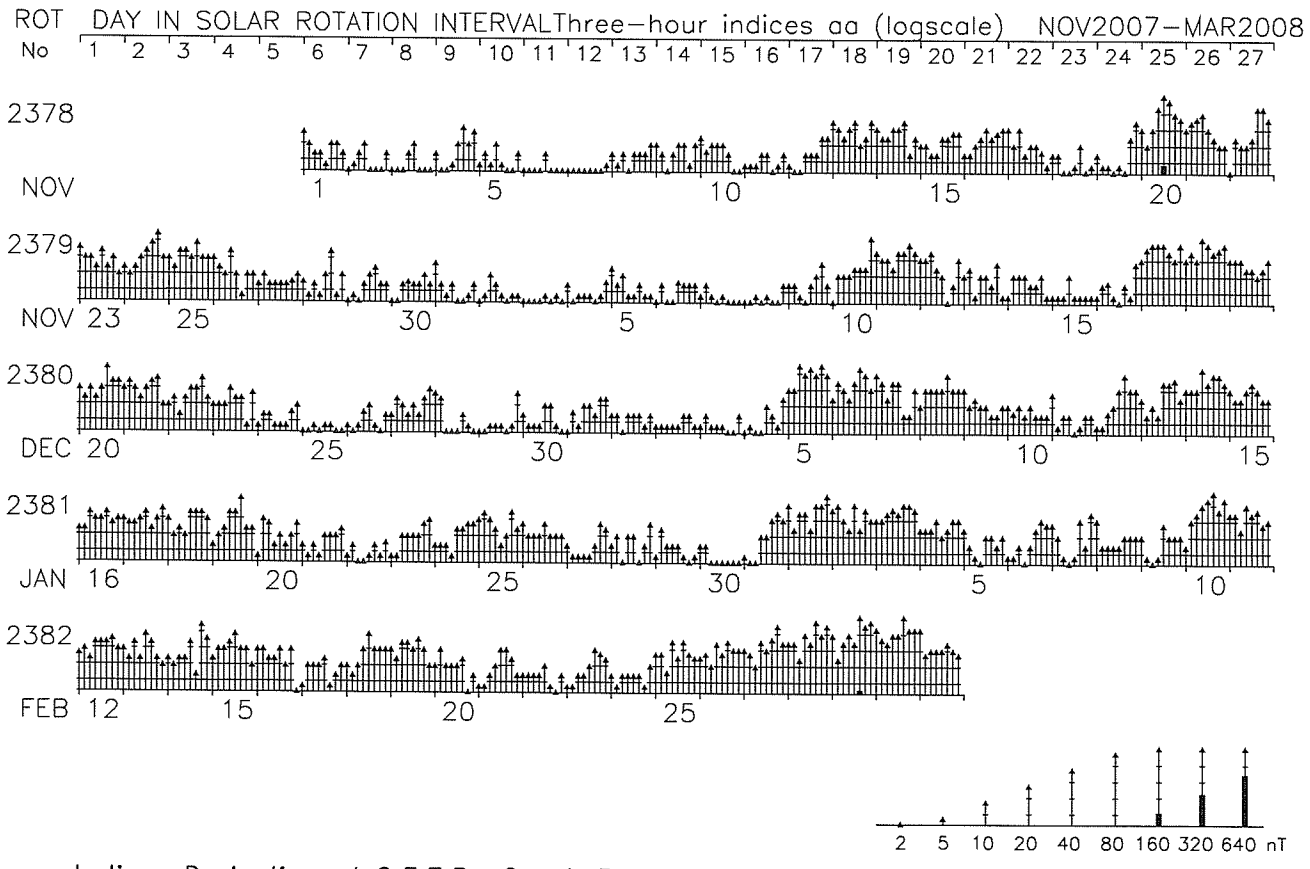


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

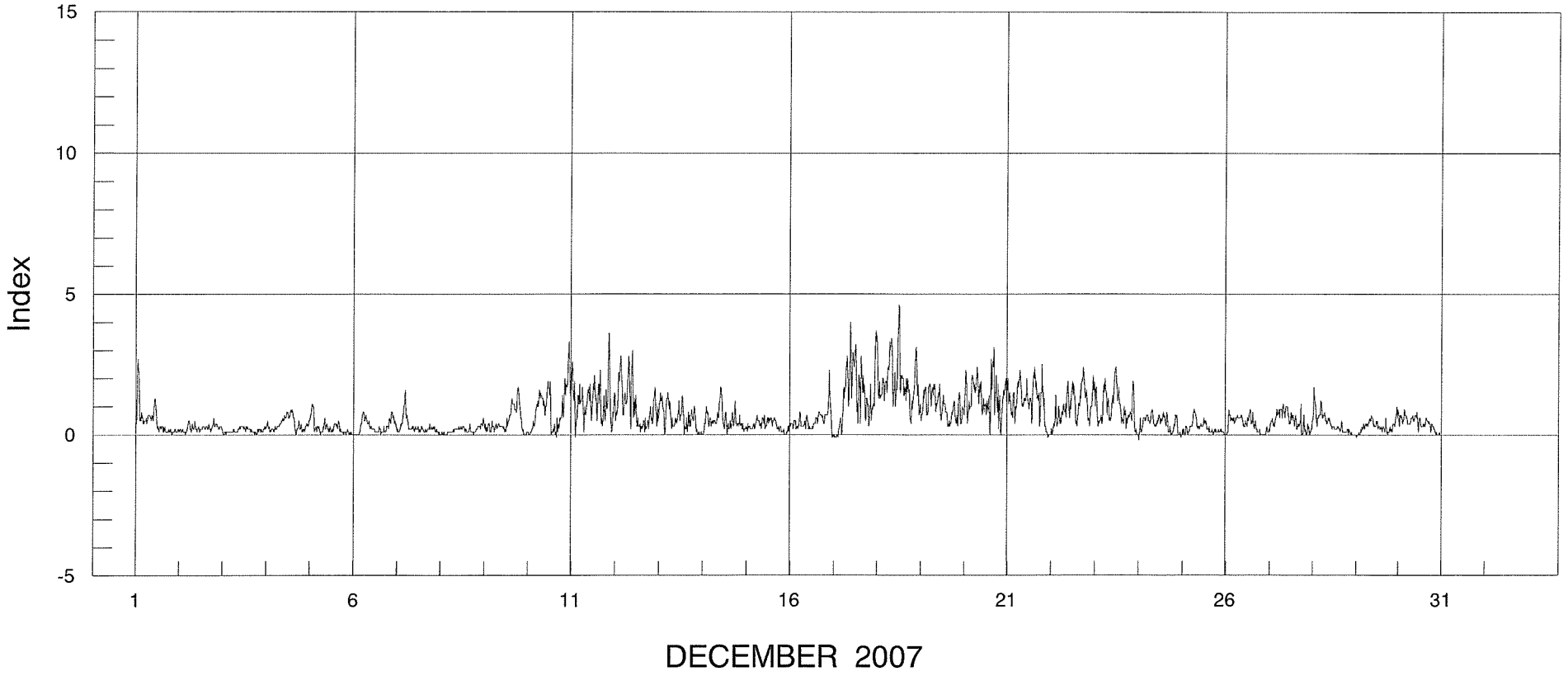


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

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

DECEMBER 2007

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 Day	Hour (UT)
JAI	17.4N	10	0500	..	..	..	..		-	2	99	10	12	18
NGP	11.3N	10	0500	..	..	..	..		-	3	67	14	12	18
ABG	09.4N	10	0500	..	..	..	..	10(8) 11(6,7)	4	-	--	--	12	18
PND	02.0N	10	0500	..	..	..	..		-	2	67	31	12	18
TIR	00.6S	10	0500	..	..	..	..		-	3	86	41	12	18
HYB	07.6N	11	0400	..	..	..	..	11(6)	4	2	54	12	13	21
JAI	17.4N	17	0252	SC	- 0.3	11	- 3		-	4	129	19	18	24
NGP	11.3N	17	0252	SC	- 0.2	15	- 2		-	4	141	15	18	24
ABG	09.4N	17	0252	SC	- 0.3	16	- 4	17(2,3,4)	5	4	141	22	18	24
HYB	07.6N	17	0254	SC	- 0.4	14	- 3	17(2,3,4)	5	4	149	11	18	24
PND	02.0N	17	0252	SC	- 0.2	16	12		-	3	142	52	18	24
TIR	00.6S	17	0252	SC	- 0.4	16	20		-	4	158	80	18	24
HYB	07.6N	19	0400	..	..	..	..	20(6)	4	3	52	09	23	22
HYB	07.6N	25	0600	..	..	..	..	27(6)	3	3	38	12	28	22
HYB	07.6N	29	1700	..	..	..	..	31(7)	3	2	36	14	31	24

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

DECEMBER 2007

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
17	0253	A: SOD* LER* ESK* HAD* NAG SPT* B: NUR NGK* DOU BDV* MMB* EBR* KAK KNY GUI C: CLF GCK HYB		NONE	

REPORTING OBSERVATORIES (up to 02/02/2008):
SOD NUR LER ESK NGK HAD DOU BDV CLF NAG GCK MMB EBR SPT KAK KNY GUI HYB GNA CNB

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

Note that we have included data of the Antartic Station LIVINGSTONE (62° 39' 44" S, 60°23' 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.