JANUARY 2008 NUMBER 761 - Part I

Solar-Geophysical Data prompt reports

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

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JANUARY 2008 NUMBER 761 - Part I

Solar-Geophysical Data prompt reports

Data for November and December 2007

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

SOLAR-GEOPHYSICAL DATA

Number 761

(Issued in Two Parts)

Editor: Edward H. Erwin

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

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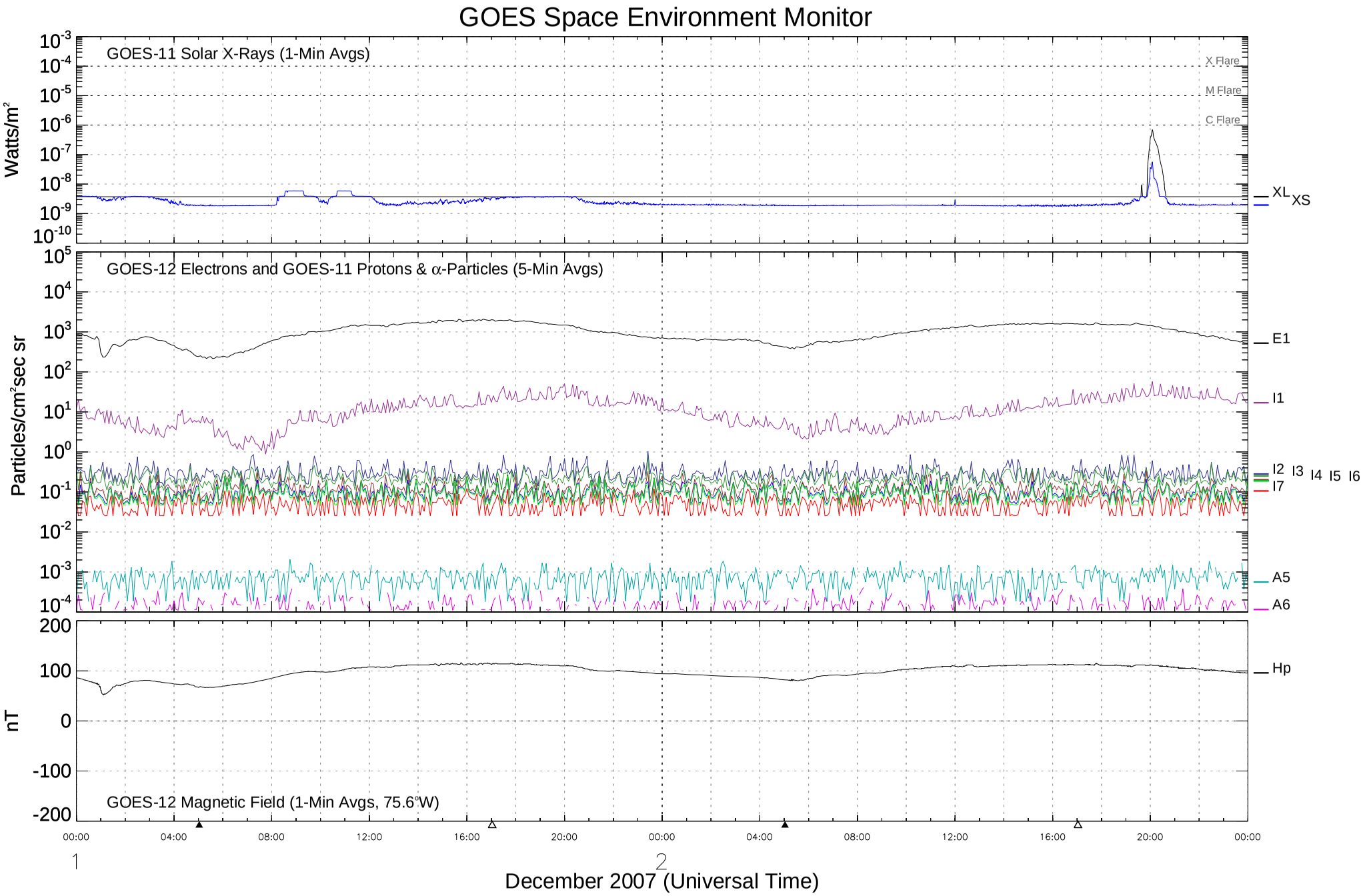
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C Flare
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XS
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Particles/cm²sec sr
E1
I1
I2 I3 I4 I5 I6
I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.6°W)
00:00
04:00
08:00
12:00
16:00
20:00
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1
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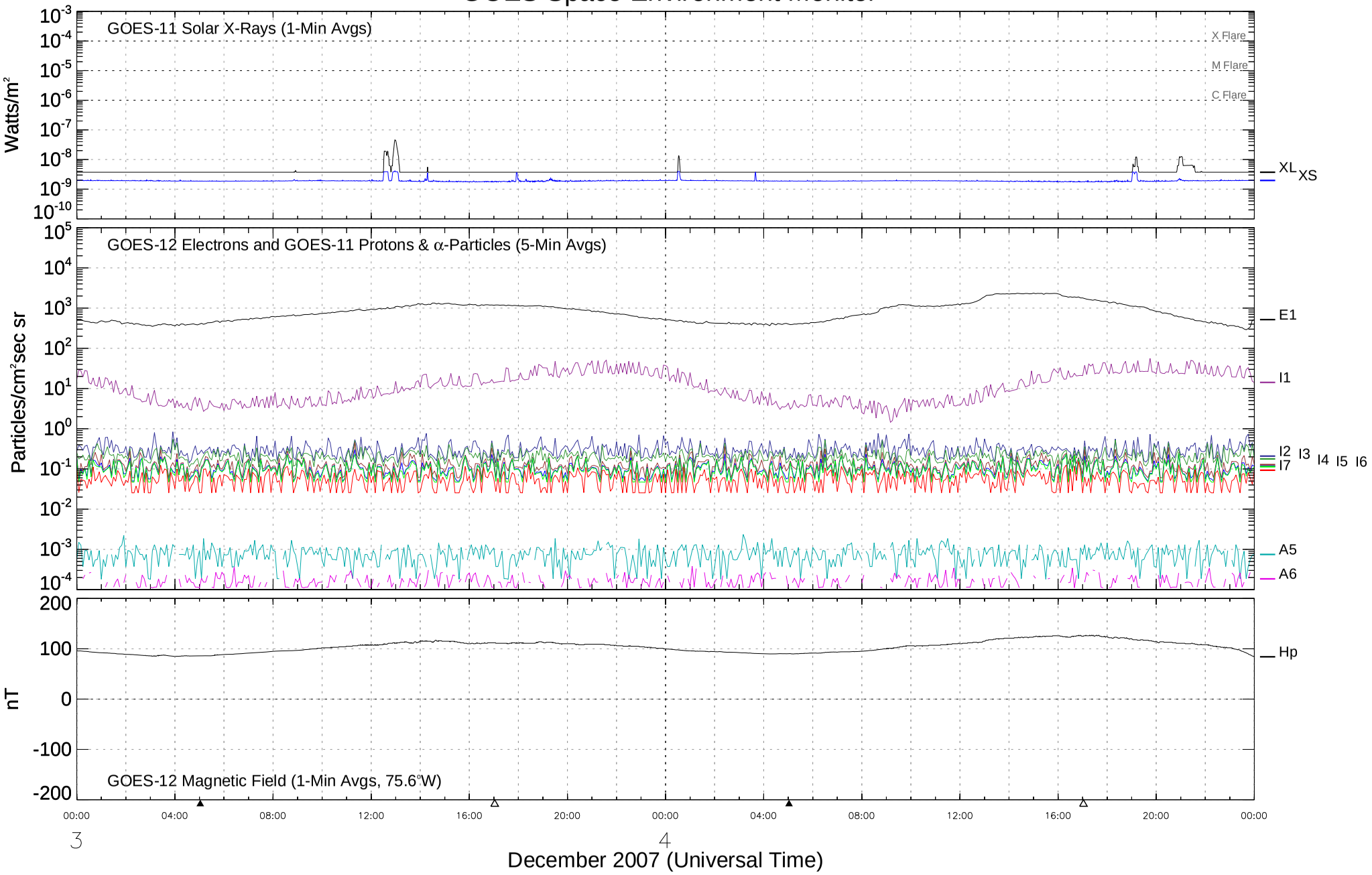

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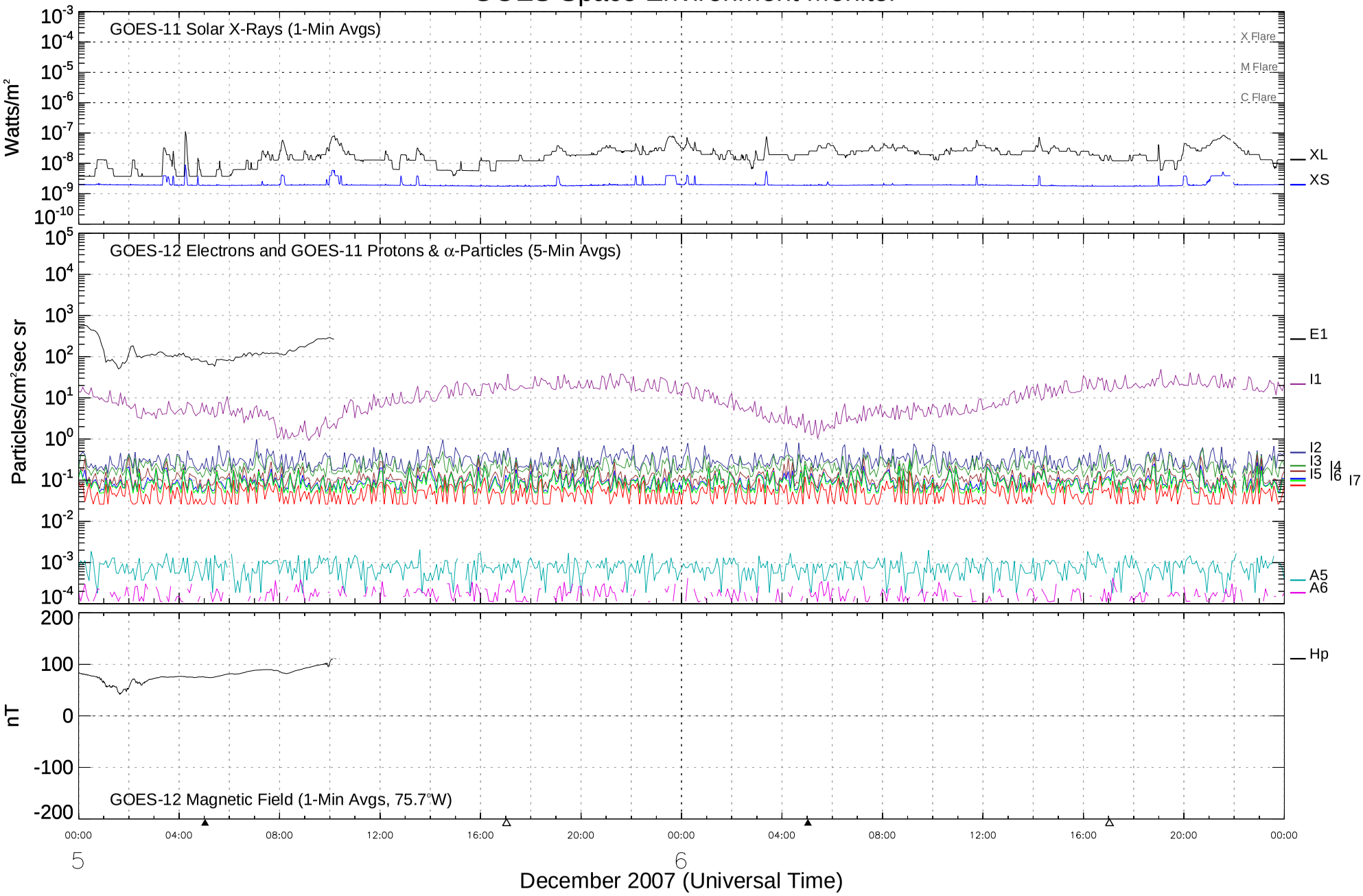

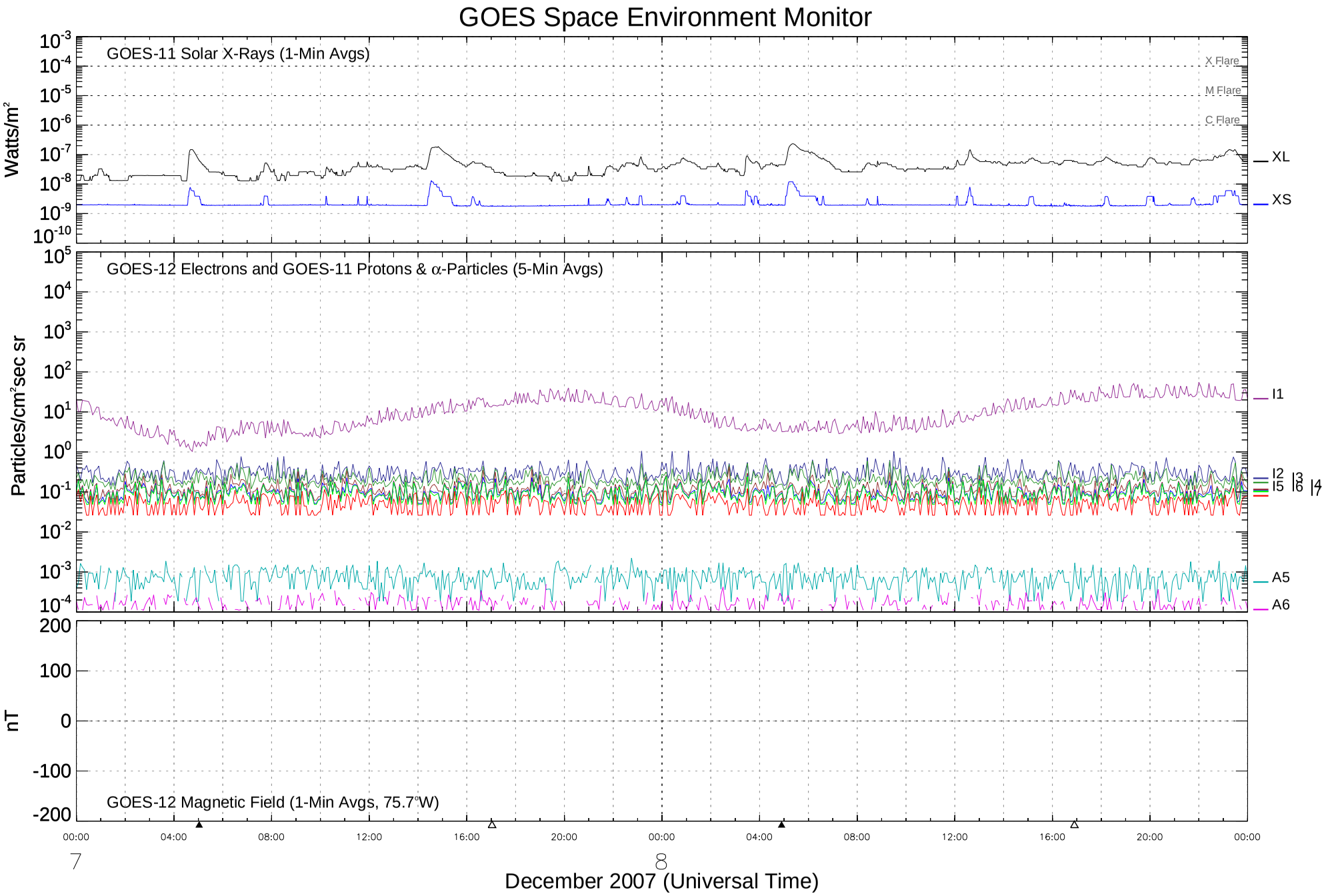
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X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1
I2
I3
I5
I6
I4
I7
A5
A6
GOES-12 Magnetic Field (1-Min Avgs, 75.7°W)
nT
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
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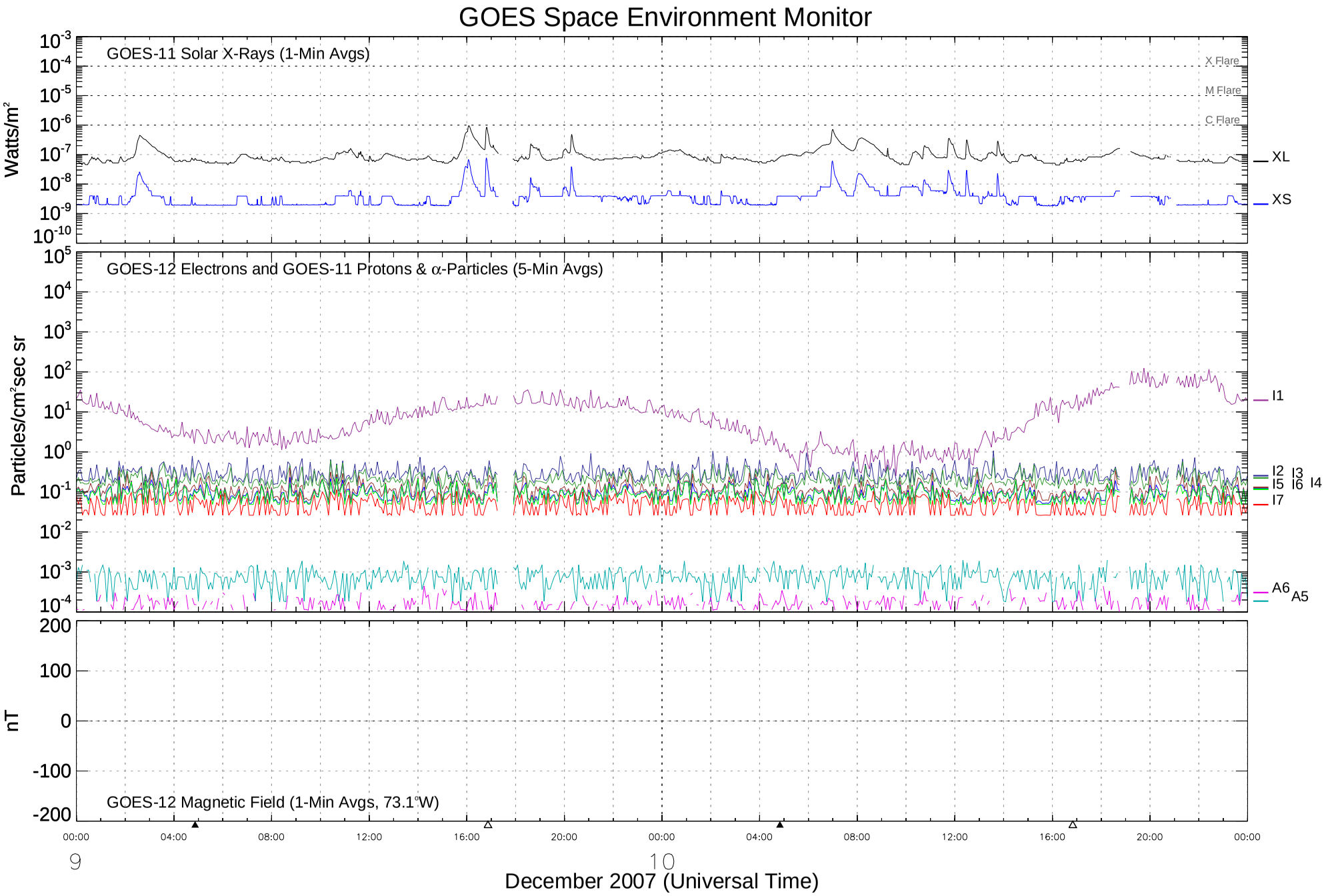
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M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1
I2 I3
I5 I6 I4
I7
A6 A5
GOES-12 Magnetic Field (1-Min Avgs, 73.1°W)
nT
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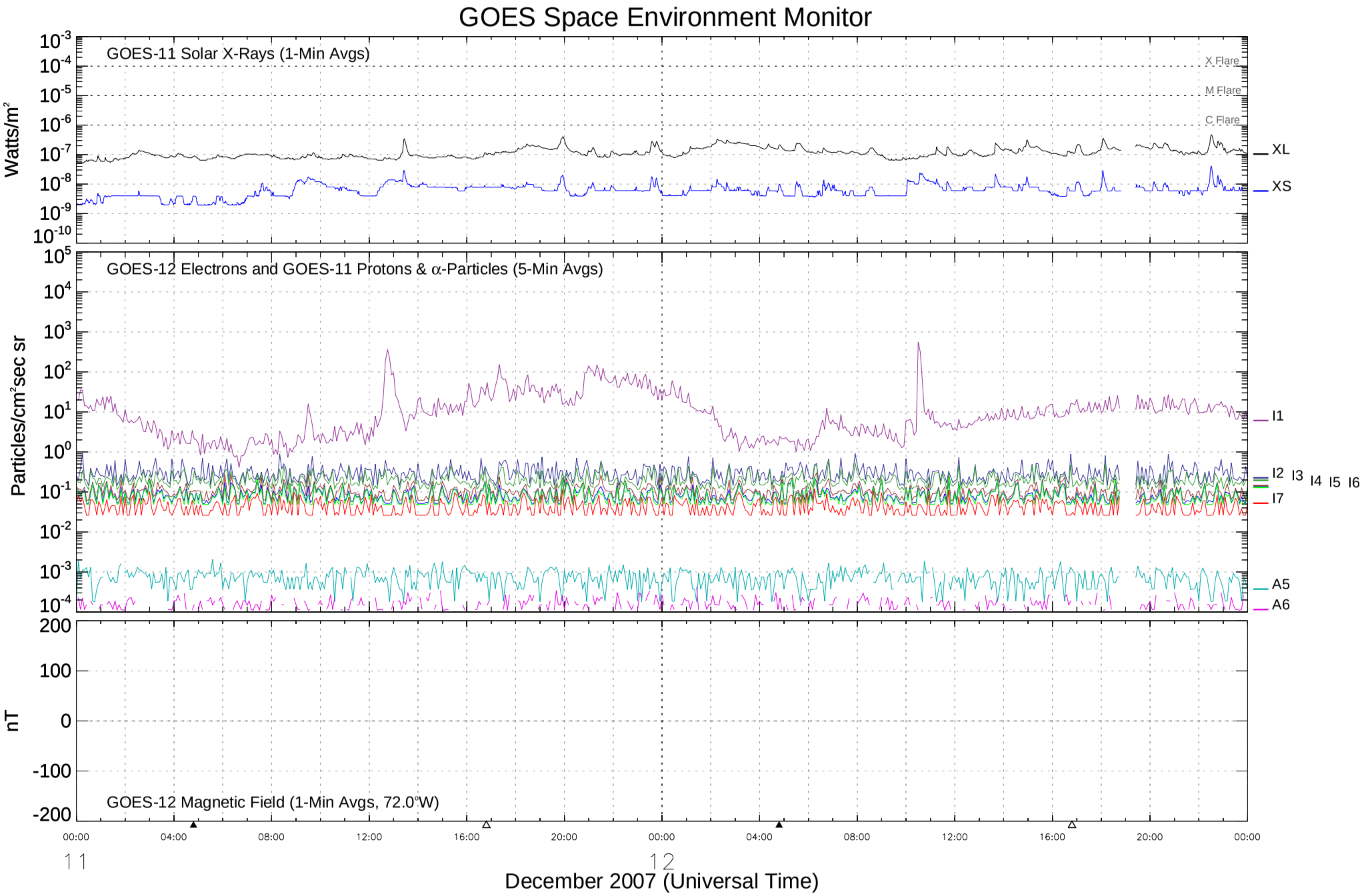
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M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1
I2 I3 I4 I5 I6
I7
A5
A6
GOES-12 Magnetic Field (1-Min Avgs, 72.0°W)
nT
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
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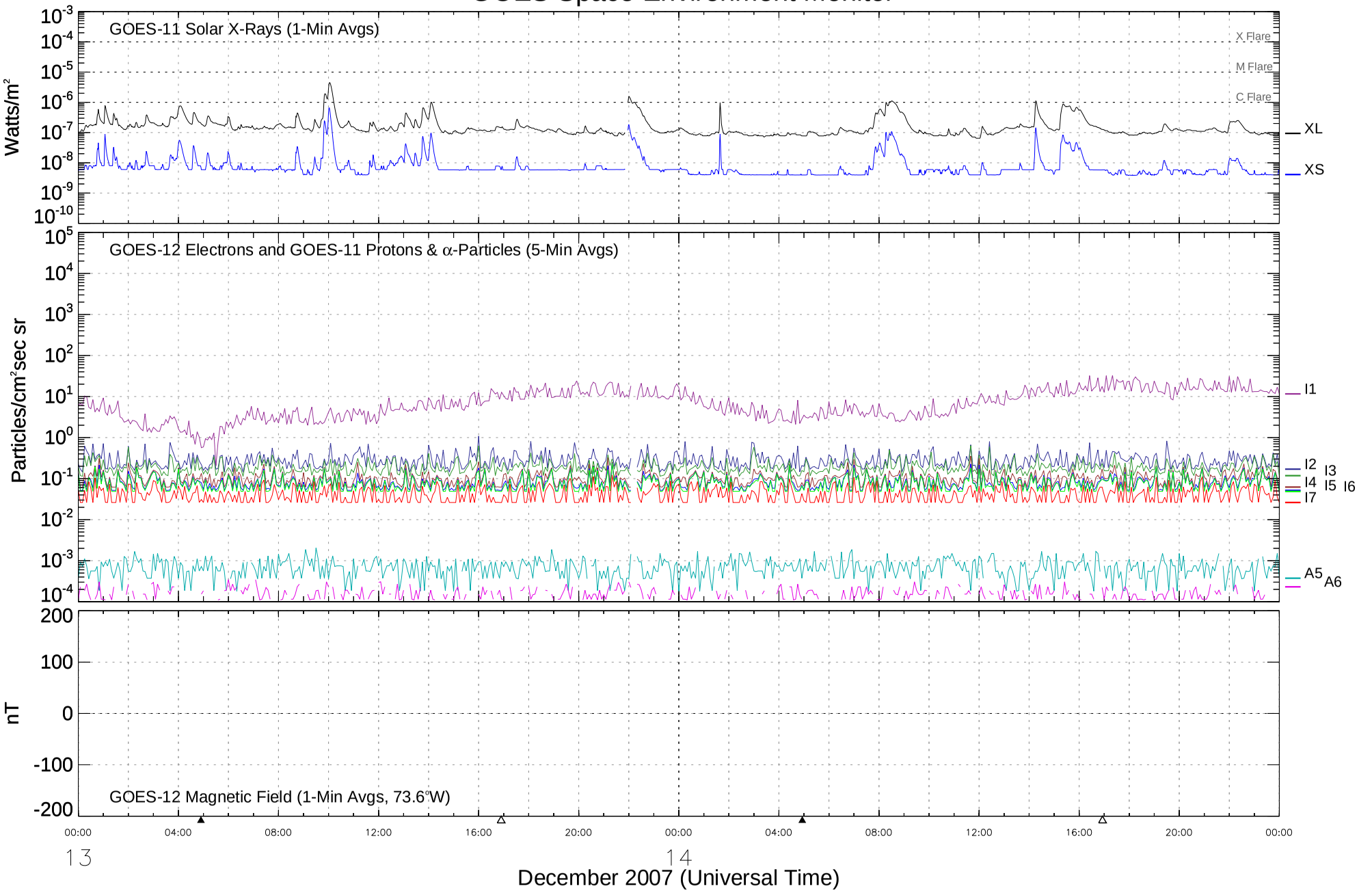

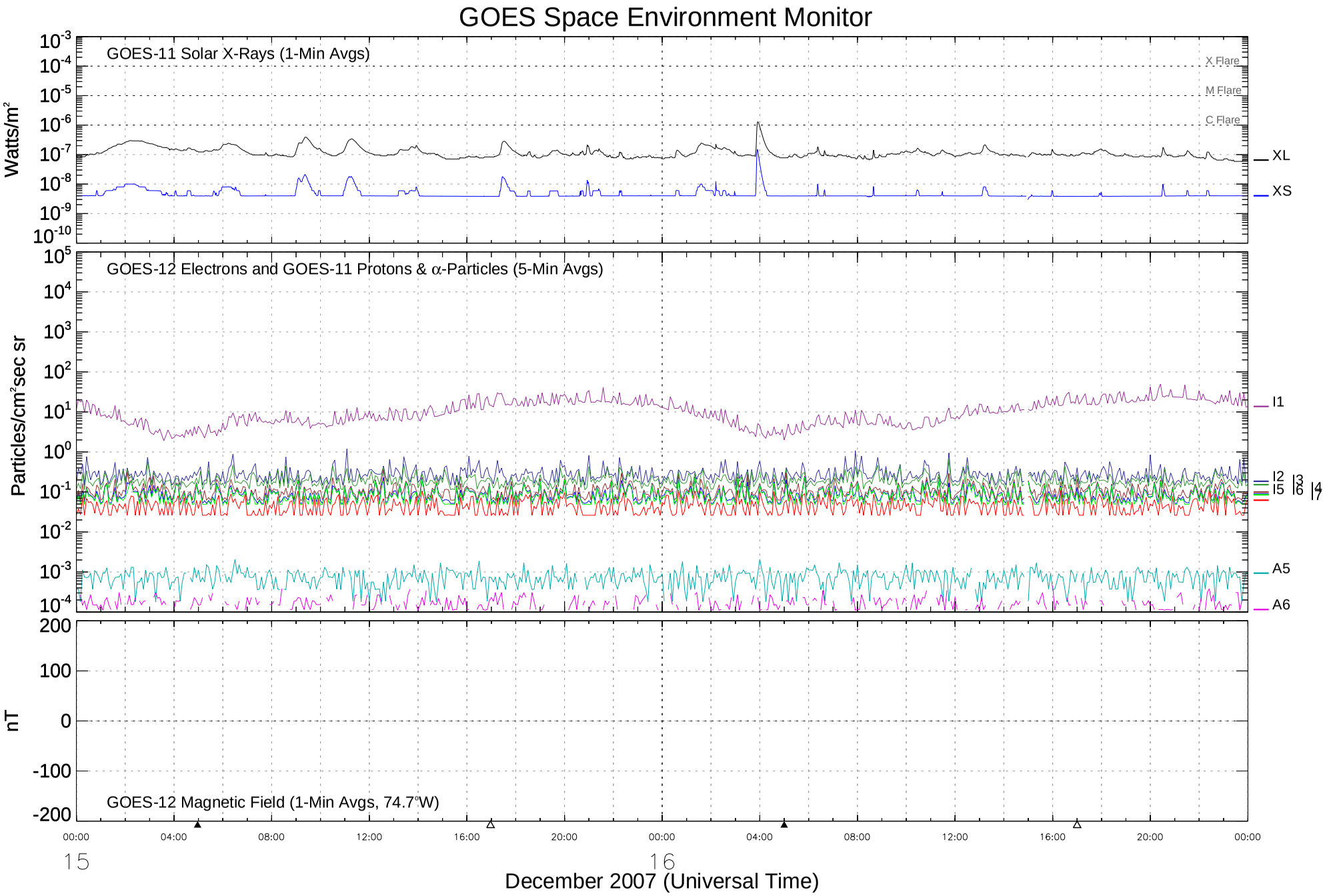
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X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1
I2
I3
I5
I6
I7
A5
A6
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
nT
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
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15
16
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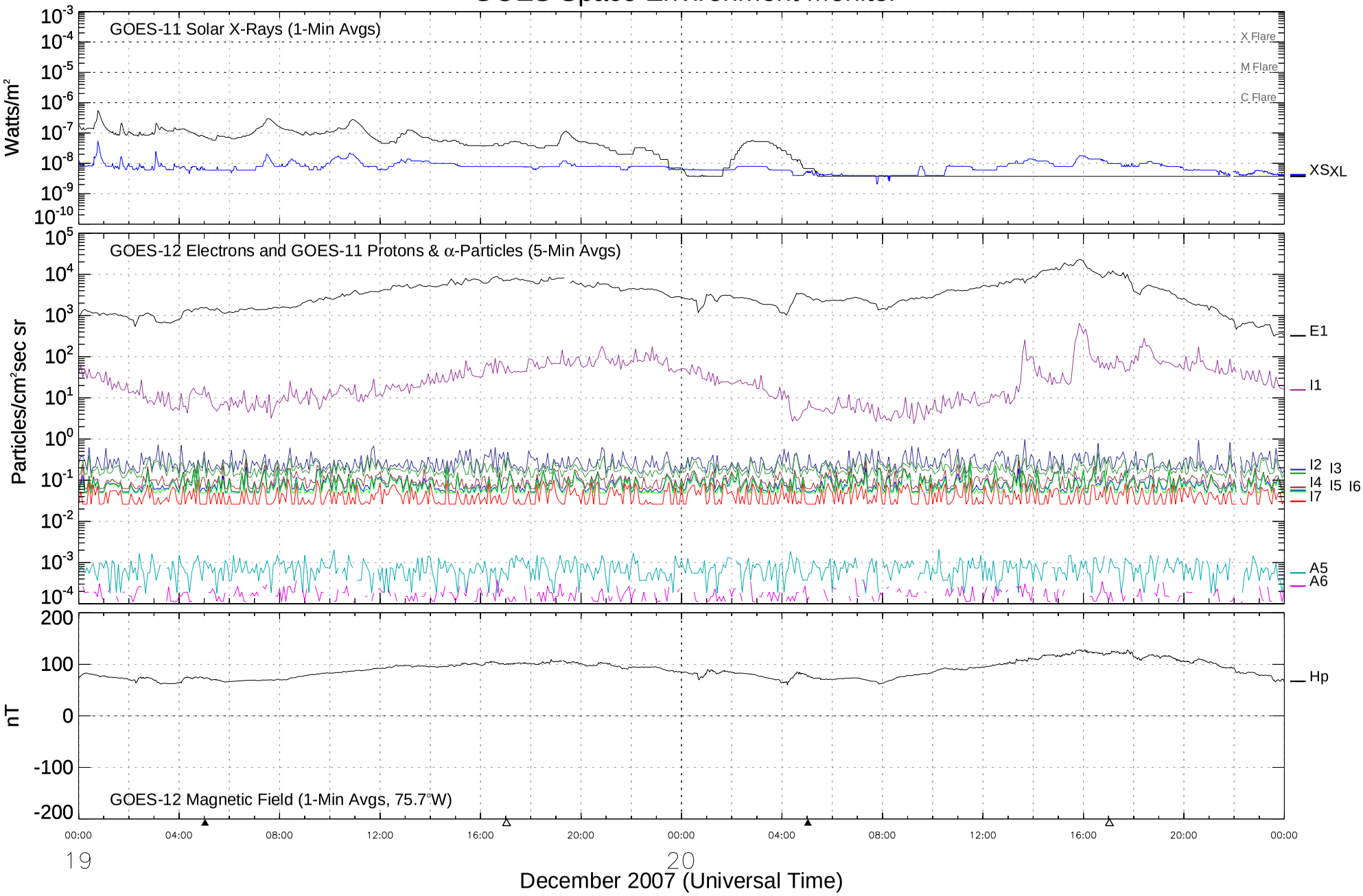
GOES Space Environment Monitor

GOES Space Environment Monitor



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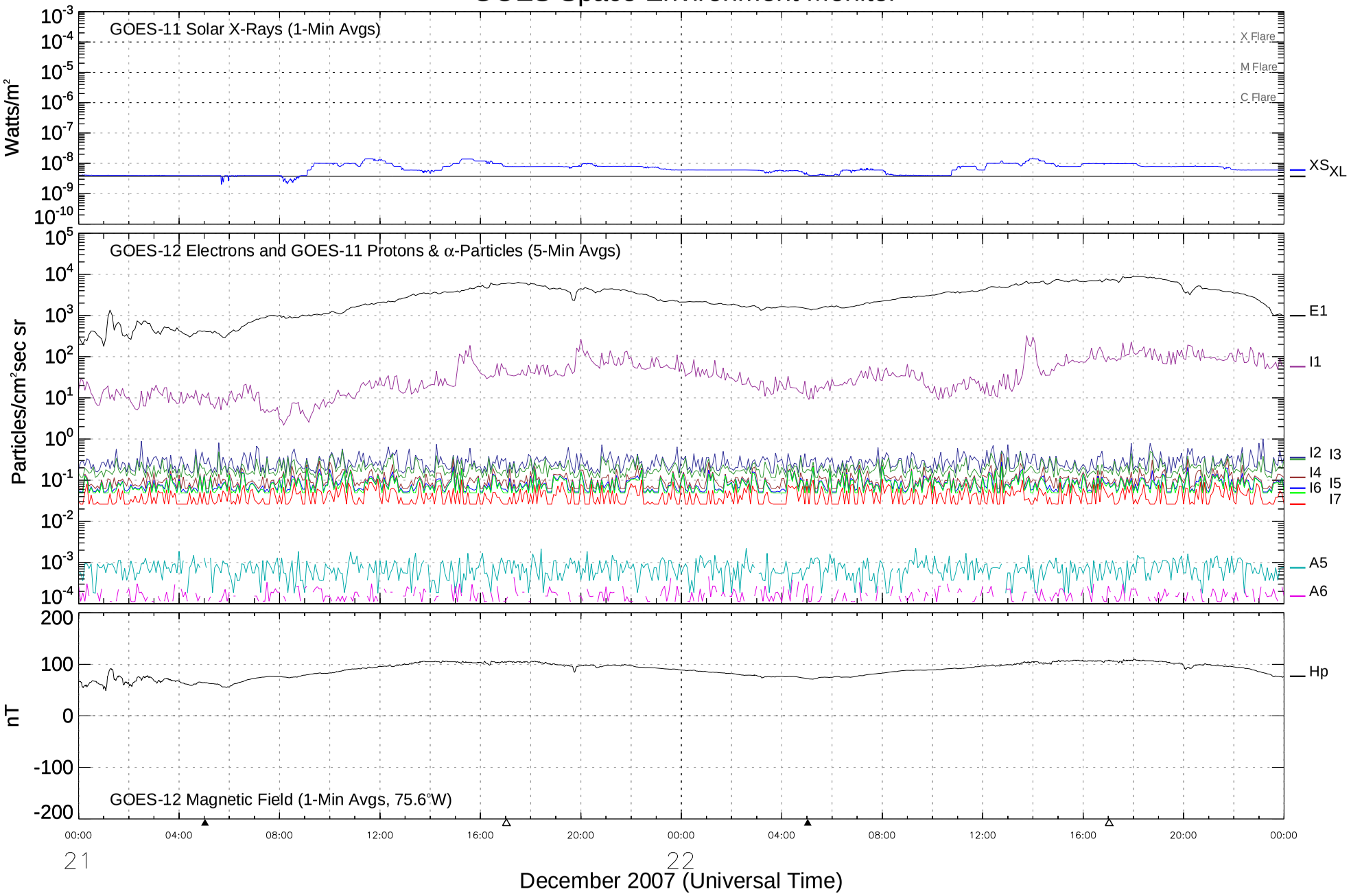

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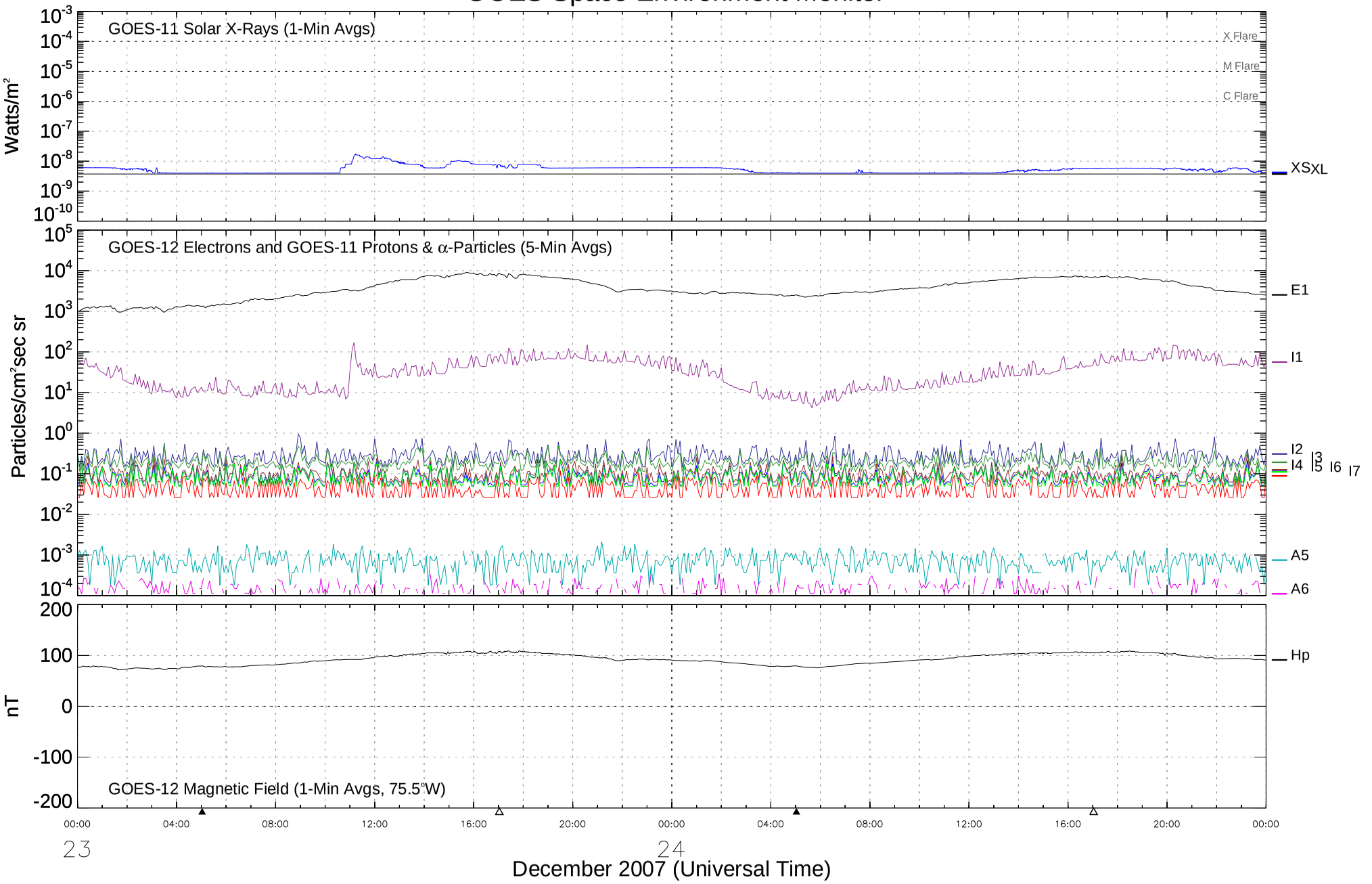

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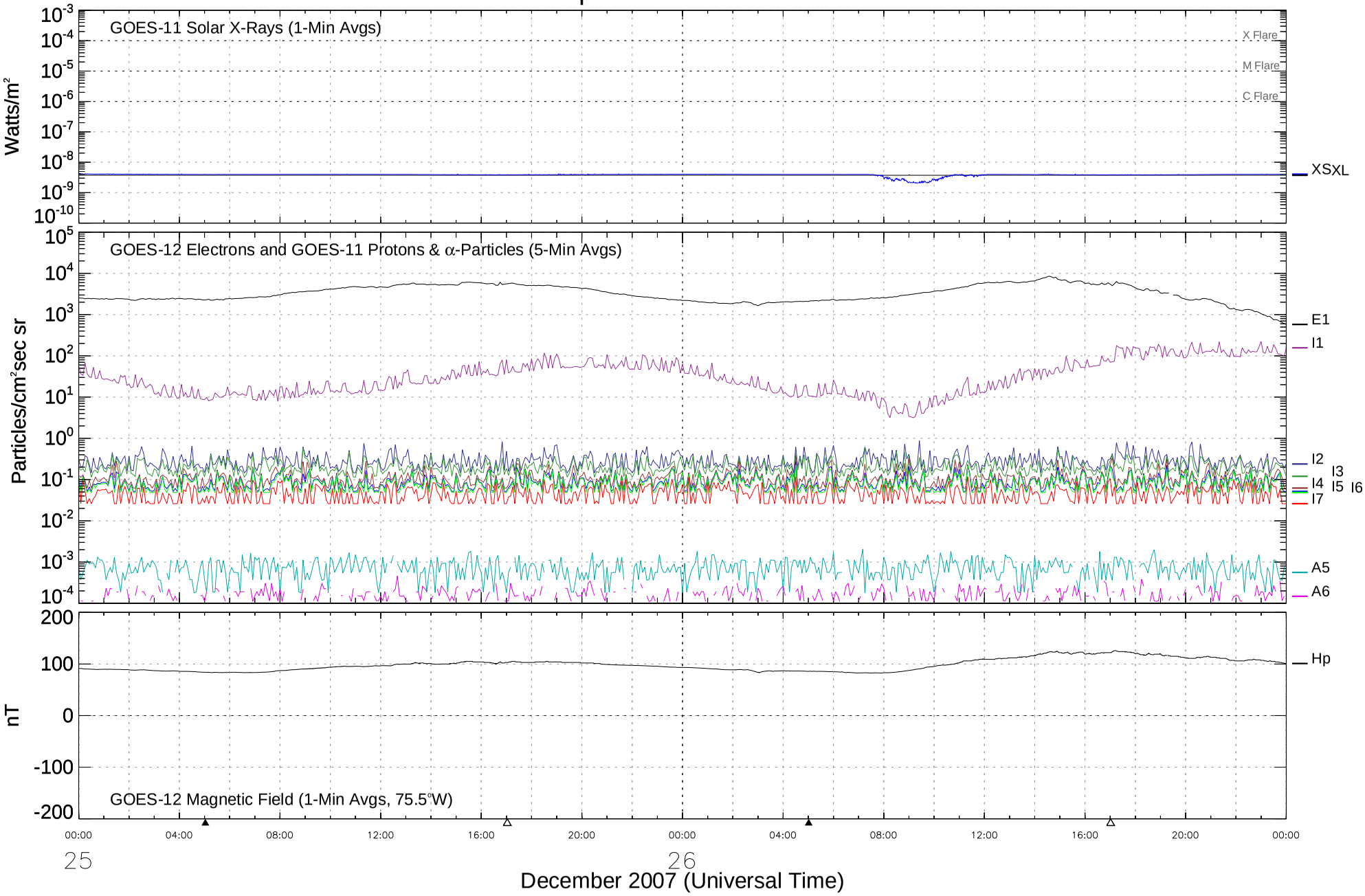

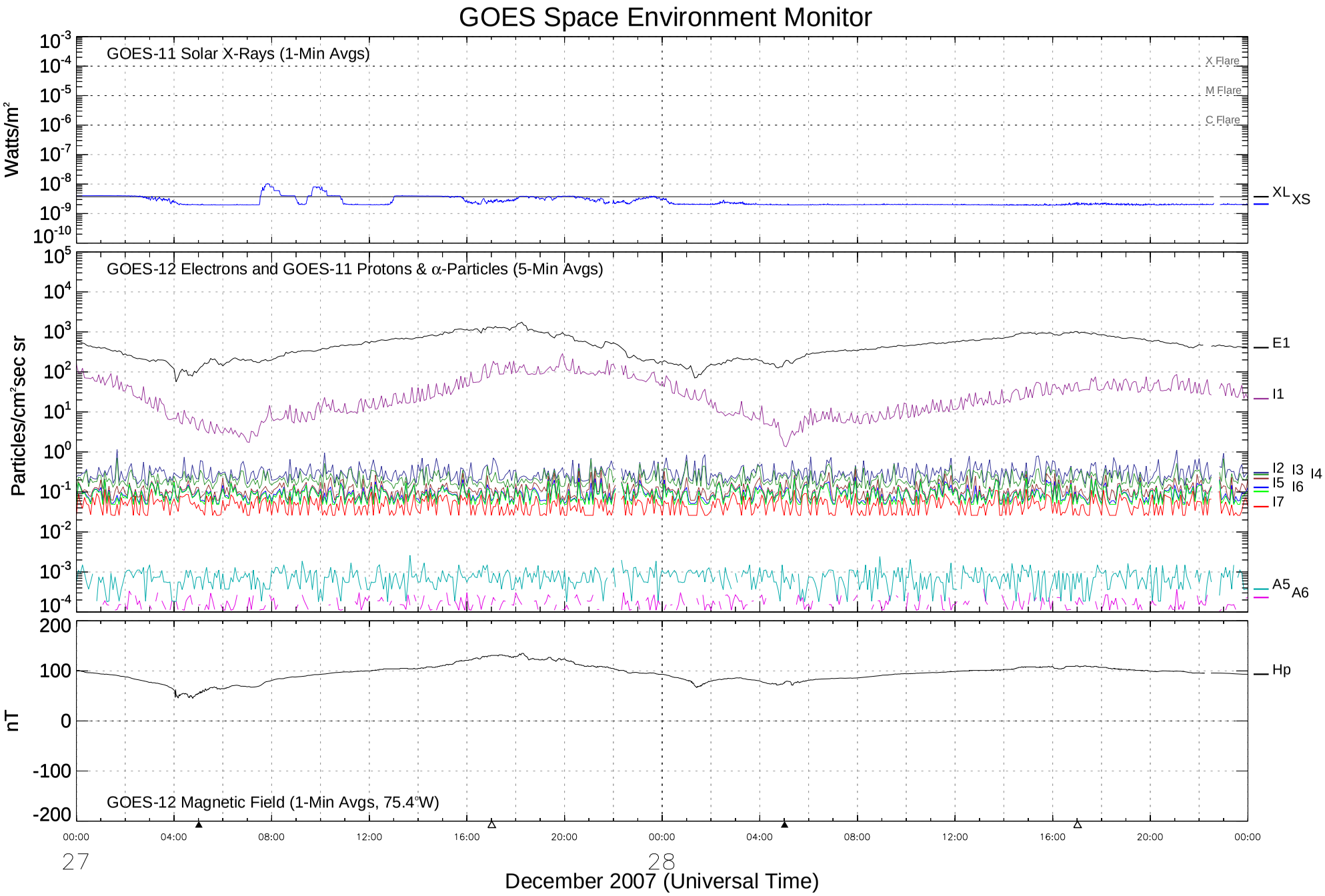
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M Flare
C Flare
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XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.4°W)
00:00
04:00
08:00
12:00
16:00
20:00
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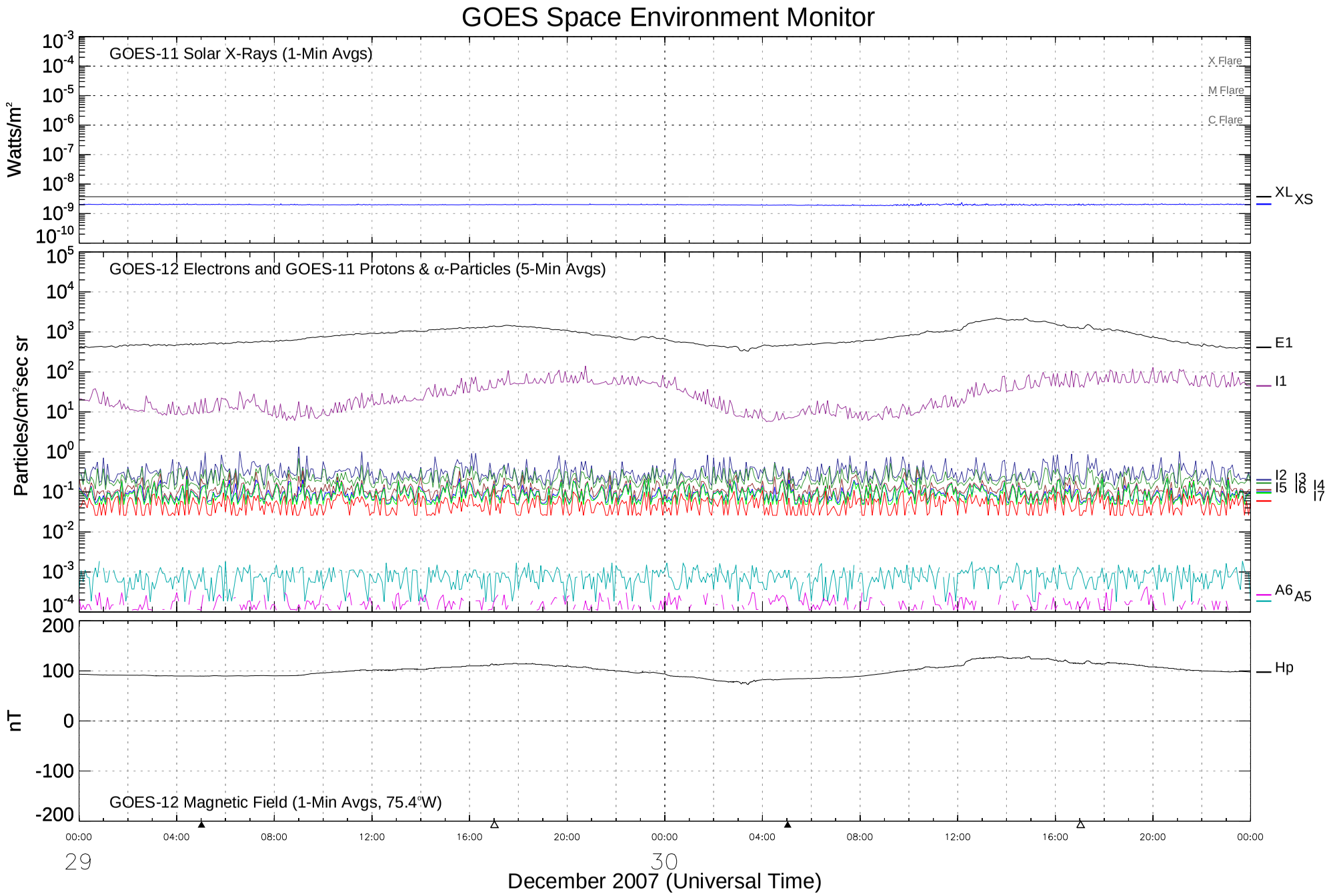
27
28
December 2007 (Universal Time)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X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I5
I6
I4
I7
A6
A5
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.4°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
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29
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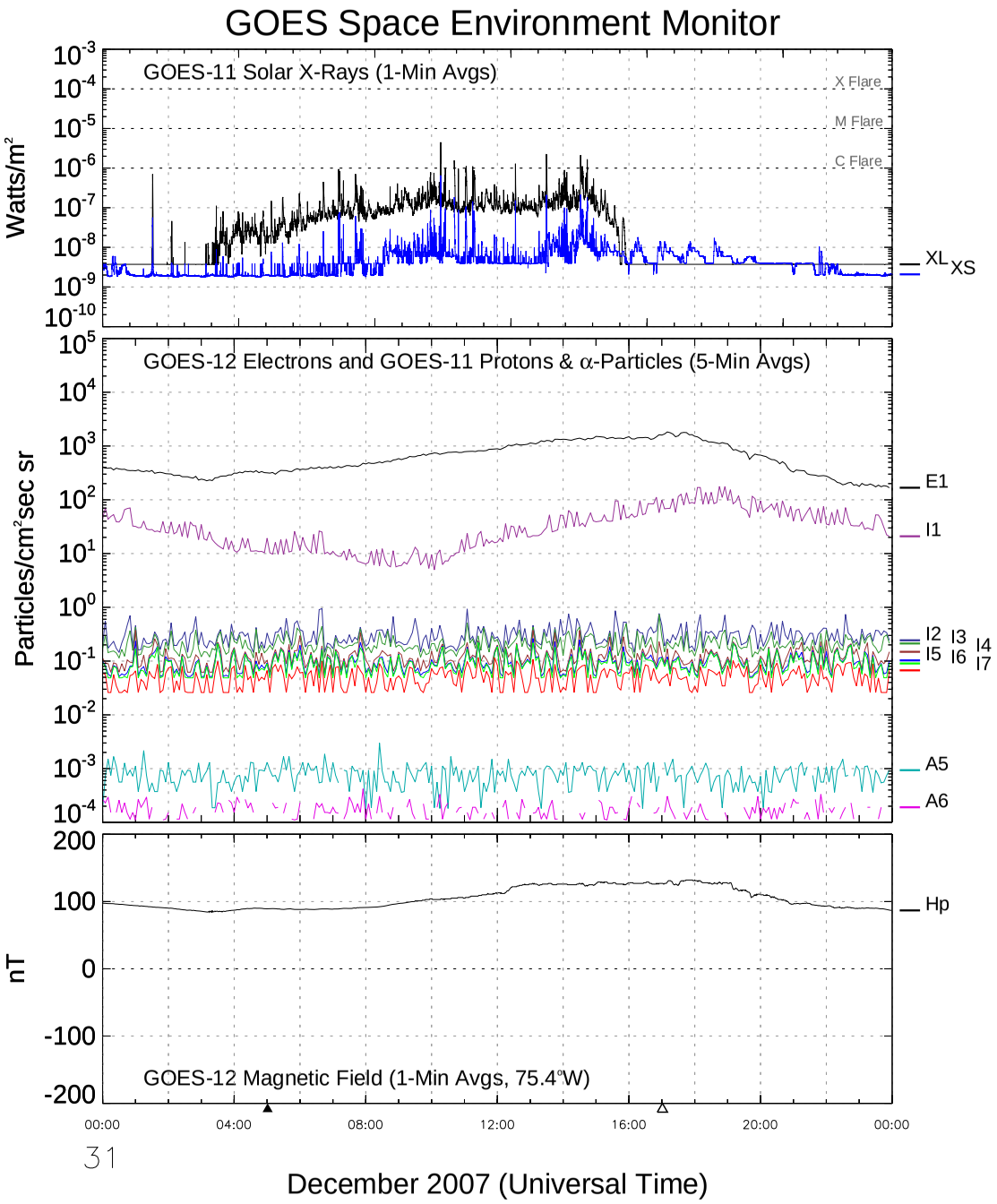
GOES Space Environment Monitor
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X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.4°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
31
December 2007 (Universal Time)

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

DECEMBER 2007

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)
335	01	30	0	71	2				0	0	0	01		SOL: Quiet
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
336	02	01	13	72	2	10976	S08	E27	0	0	0	02	Q	SOL: Quiet
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
337	03	02	26	73	1	10976	S09	E10	0	0	0	03	Q	SOL: Quiet
						10977	S05	E53	11	0	0	03	Q	MAG: Quiet
									0	0	0	03		PRO: Quiet
338	04	03	13	73	0	10977	S06	E40	0	0	0	04	Q	SOL: Quiet
									0	0	0	04		MAG: Quiet
									0	0	0	04		PRO: Quiet
339	05	04	13	74	1	10977	S05	E26	0	0	0	05	Q	SOL: Quiet
									0	0	0	05		MAG: Quiet
									0	0	0	05		PRO: Quiet
340	06	05	13	75	2	10977	S06	E13	1	0	0	06	Q	SOL: Quiet
									0	0	0	06		MAG: Quiet
									0	0	0	06		PRO: Quiet
341	07	06	29	78	3	10977	S05	W03	0	0	0	07	Q	SOL: Quiet
						10978	S09	E68	2	0	0	07	Q	MAG: Quiet
									0	0	0	07		PRO: Quiet
342	08	07	24	82	0	10978	S09	E54	14	0	0	08	Q	SOL: Quiet
									0	0	0	08		MAG: Quiet
									0	0	0	08		PRO: Quiet
343	09	08	36	87	0	10978	S10	E39	5	0	0	09	Q	SOL: Eruptive
						10979	N07	W65	0	0	0	09	Q	MAG: Quiet
									0	0	0	09		PRO: Quiet
344	10	09	42	89	1	10978	S09	E26	7	0	0	10	E	SOL: Eruptive
						10979	N08	W78	0	0	0	10	Q	MAG: Quiet
									0	0	0	10		PRO: Quiet
345	11	10	43	87	9	10978	S01	E14	2	0	0	11	E	SOL: Eruptive
						10979	N08	W93	0	0	0	11	Q	MAG: Active
									0	0	0	11		PRO: Quiet
346	12	11	44	93	13	10978	S07	E01	6	0	0	12	E	SOL: Eruptive
									0	0	0	12		MAG: Active
									0	0	0	12		PRO: Quiet
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									0	0	0	13		MAG: Quiet
									0	0	0	13		PRO: Quiet
348	14	13	39	94	5	10978	S08	W25	13	0	0	14	E	SOL: Eruptive
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									0	0	0	14		PRO: Quiet
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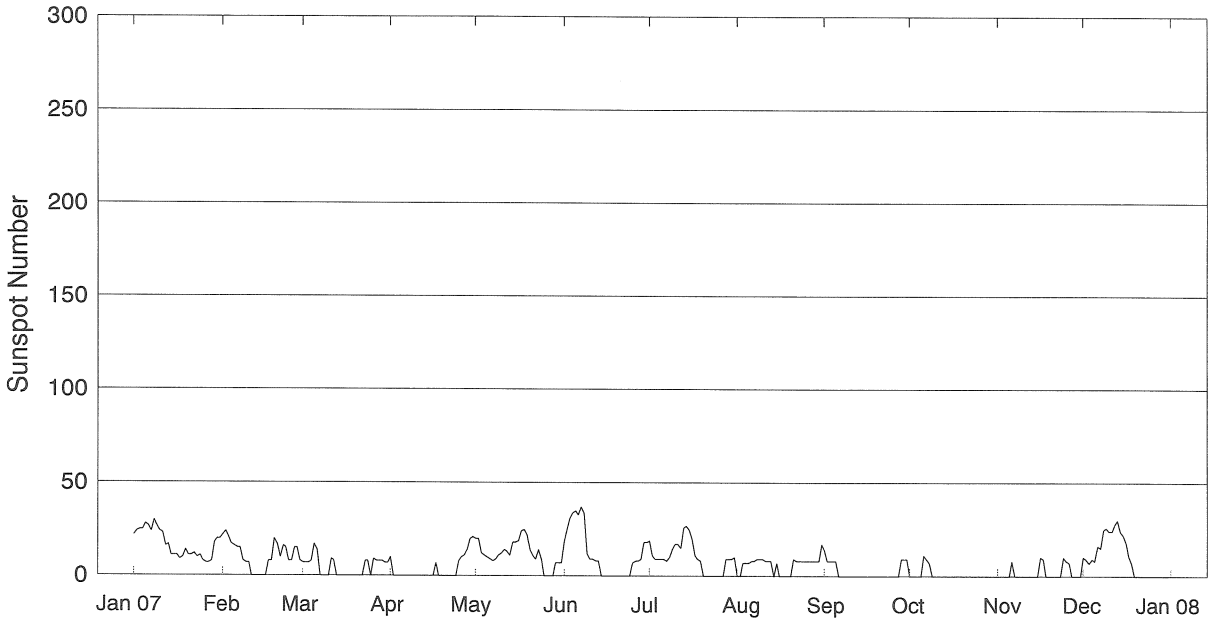
									0	0	0	15		PRO: Quiet
350	16	15	39	89	2	10978	S10	W52	0	0	0	16	Q	SOL: Quiet
									0	0	0	16		MAG: Quiet
									0	0	0	16		PRO: Quiet
351	17	16	28	82	2	10978	S10	W65	0	0	0	17	Q	SOL: Quiet
									0	0	0	17		MAG: Active
									0	0	0	17		PRO: Quiet

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

DECEMBER 2007

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)
352	18	17	14	80	24	10978	S09	W78	2	0	0	18	Q	SOL: Quiet
									0	0	0	18		MAG: Active
									0	0	0	18		PRO: Quiet
353	19	18	14	77	18	10978	S08	W91	1	0	0	19	E	SOL: Eruptive
									0	0	0	19		MAG: Active
									0	0	0	19		PRO: Quiet
354	20	19	0	75	12				0	0	0	20		SOL: Quiet
									0	0	0	20		MAG: Quiet
									0	0	0	20		PRO: Quiet
355	21	20	0	73	14				0	0	0	21		SOL: Quiet
									0	0	0	21		MAG: Quiet
									0	0	0	21		PRO: Quiet
356	22	21	0	71	10				0	0	0	22		SOL: Quiet
									0	0	0	22		MAG: Quiet
									0	0	0	22		PRO: Quiet
357	23	22	0	72	8				0	0	0	23		SOL: Quiet
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
358	24	23	0	71	6				0	0	0	24		SOL: Quiet
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
359	25	24	0	71	2				0	0	0	25		SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
360	26	25	0	72	1				0	0	0	26		SOL: Quiet
									0	0	0	26		MAG: Quiet
									0	0	0	26		PRO: Quiet
361	27	26	0	73	2				0	0	0	27		SOL: Quiet
									0	0	0	27		MAG: Quiet
									0	0	0	27		PRO: Quiet
362	28	27	0	72	6				0	0	0	28		SOL: Quiet
									0	0	0	28		MAG: Quiet
									0	0	0	28		PRO: Quiet
363	29	28	0	72	3				0	0	0	29		SOL: Quiet
									0	0	0	29		MAG: Quiet
									0	0	0	29		PRO: Quiet
364	30	29	0	73	1				0	0	0	30		SOL: Quiet
									0	0	0	30		MAG: Quiet
									0	0	0	30		PRO: Quiet
365	31	30	0	75	2				0	0	0	31		SOL: Quiet
									0	0	0	31		MAG: Quiet
									0	0	0	31		PRO: Quiet

International Relative Sunspot Numbers
Jan 2007 - Dec 2007

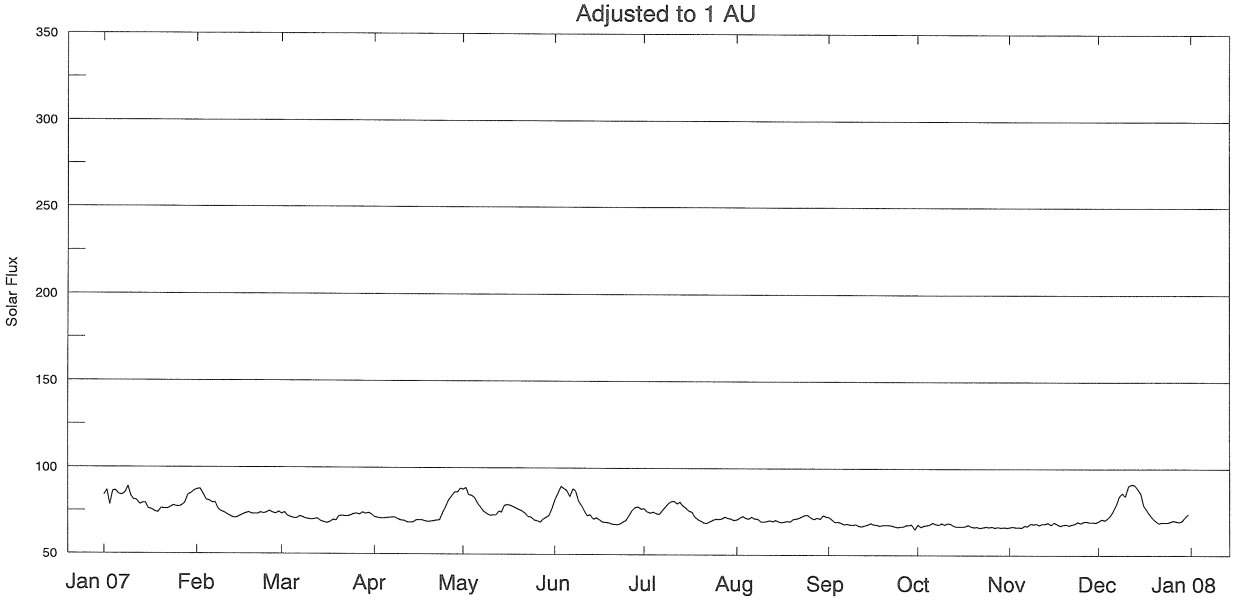


Day	Jan 07	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*	Oct*	Nov*	Dec*
1	22	22	7	10	20	19	19	0	14	0	0	10
2	24	24	7	0	20	25	11	0	8	0	0	9
3	25	21	7	0	12	31	9	7	8	0	0	7
4	25	17	8	0	11	34	9	7	8	0	0	9
5	28	16	17	0	10	35	9	7	8	0	0	8
6	27	15	14	0	9	33	9	8	0	11	8	16
7	24	15	0	0	8	37	8	8	0	9	0	15
8	30	8	0	0	9	34	10	9	0	7	0	25
9	27	7	0	0	11	12	14	9	0	0	0	26
10	24	7	0	0	12	9	17	9	0	0	0	24
11	23	0	9	0	14	9	17	8	0	0	0	24
12	16	0	8	0	13	8	15	8	0	0	0	28
13	17	0	0	0	11	8	26	8	0	0	0	30
14	11	0	0	0	18	0	27	0	0	0	0	24
15	11	0	0	0	18	0	25	7	0	0	0	22
16	11	0	0	0	19	0	20	0	0	0	10	18
17	9	8	0	7	24	0	11	0	0	0	9	11
18	10	8	0	0	25	0	9	0	0	0	0	7
19	14	20	0	0	22	0	8	0	0	0	0	0
20	18	17	0	0	14	0	0	0	0	0	0	0
21	11	10	0	0	11	0	0	9	0	0	0	0
22	12	16	0	0	9	0	0	8	0	0	0	0
23	10	15	8	0	14	0	0	8	0	0	0	0
24	11	8	8	0	9	0	0	8	0	0	10	0
25	8	8	0	8	0	7	0	8	0	0	8	0
26	7	15	9	10	0	8	0	8	0	0	7	0
27	7	15	8	11	0	8	0	8	0	0	0	0
28	8	8	8	14	0	9	9	8	9	0	0	0
29	18		8	20	7	18	9	8	9	0	0	0
30	20		7	21	7	18	9	8	9	0	0	0
31	20		7		7		10	17		0		0
Mean	16.8	10.7	4.5	3.4	11.7	12.1	10.0	6.2	2.4	0.9	1.7	10.1

* = Provisional.

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

Adjusted to 1 AU



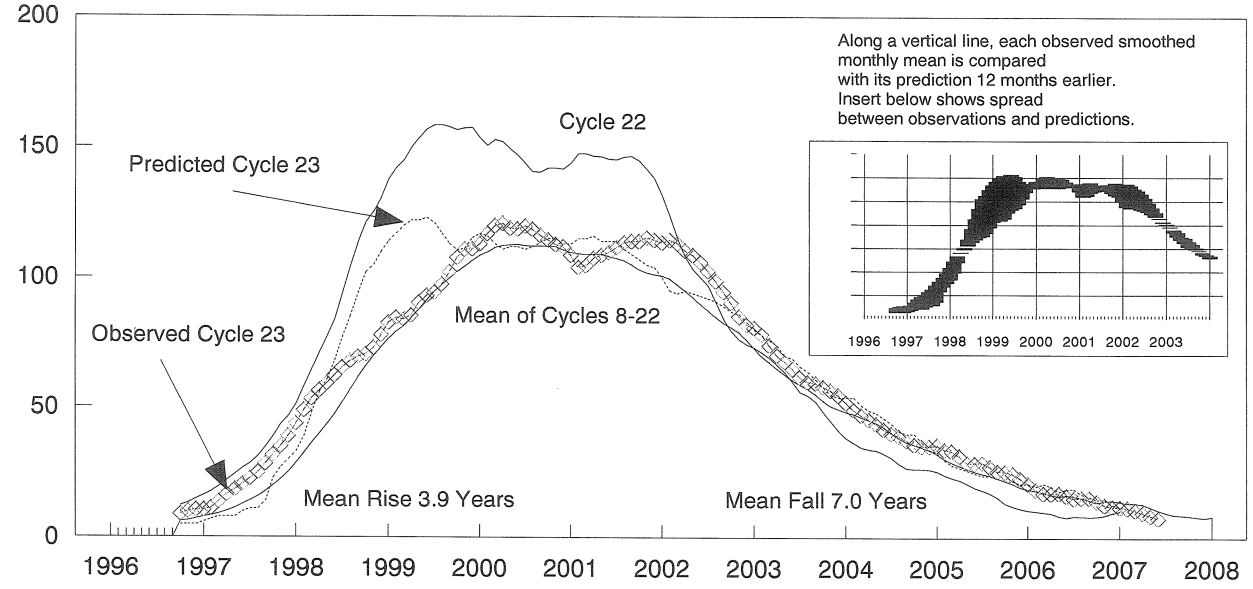
Day	Jan 07	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	84.1	87.3	73.4	71.6	87.6	81.6	76.8	70.4	72.1	67.8	66.3	69.9
2	87.0	87.7	74.2	71.1	88.8	85.6	75.1	71.5	70.6	66.5	66.8	71.0
3	78.6	84.8	72.0	70.8	84.4	89.5	74.2	72.4	69.1	67.3	66.5	70.5
4	86.4	81.3	71.3	70.8	83.9	88.2	74.9	71.4	69.4	67.4	66.5	71.5
5	86.5	80.7	70.8	71.0	82.4	87.1	73.9	70.9	68.8	67.8	66.2	73.1
6	84.4	79.6	70.8	71.1	79.4	83.6	73.5	72.0	67.8	68.9	67.3	75.9
7	83.9	79.8	71.8	71.4	77.1	88.1	75.5	71.0	68.2	68.1	66.9	79.8
8	85.1	76.3	71.4	71.3	74.7	86.8	77.6	71.0	67.6	67.9	68.4	84.4
9	89.1	74.6	70.6	70.2	73.5	81.0	79.7	69.3	67.7	68.6	68.2	86.2
10	83.3	73.9	70.2	69.7	72.6	78.2	80.8	69.3	67.9	67.9	68.4	84.3
11	81.2	72.8	70.1	69.5	72.9	75.6	81.1	69.5	67.0	68.6	67.7	90.5
12	81.0	71.8	70.3	68.6	72.9	72.6	79.5	70.0	66.7	68.3	68.3	91.1
13	78.7	70.9	70.6	68.6	75.0	73.1	80.6	69.5	67.2	67.3	68.4	90.9
14	79.4	70.9	69.2	68.6	74.4	70.6	78.2	70.3	67.6	66.7	68.9	89.0
15	79.3	71.8	68.5	69.8	78.5	71.3	77.1	69.3	68.5	66.8	67.7	86.1
16	76.1	72.9	68.0	69.8	78.9	70.2	75.3	69.0	67.8	66.7	69.1	79.1
17	75.6	73.5	68.6	69.8	78.3	68.9	74.7	69.3	67.6	67.0	68.2	76.9
18	74.4	74.1	69.8	69.3	77.6	68.8	71.8	69.6	67.1	67.7	67.2	74.4
19	73.9	73.2	69.5	68.9	76.6	68.5	70.5	69.4	67.4	66.8	67.9	72.1
20	76.3	73.1	72.0	69.1	75.9	67.8	69.5	70.7	67.4	66.3	68.0	70.2
21	76.1	73.2	72.3	69.4	75.0	67.6	68.6	70.9	67.4	66.6	67.4	68.7
22	76.0	73.9	72.0	69.7	73.7	67.5	68.3	71.6	67.2	66.0	68.0	69.1
23	76.8	73.6	72.0	69.8	71.9	68.1	69.3	72.4	66.8	66.4	68.3	69.1
24	77.9	73.9	72.4	74.0	71.7	69.1	70.2	73.2	66.5	66.8	69.5	69.1
25	77.5	75.1	73.3	77.4	69.9	69.8	70.8	73.1	66.6	66.3	68.8	69.7
26	77.3	73.9	73.5	81.5	69.5	72.8	70.6	71.6	66.8	66.7	69.6	70.2
27	78.0	73.4	73.0	83.8	68.8	75.7	70.9	70.7	67.4	66.2	69.6	69.7
28	79.3	74.4	74.3	86.1	70.5	77.4	72.1	71.6	67.4	66.6	69.3	69.5
29	84.1		73.6	86.0	71.5	77.8	71.1	71.0	67.8	66.2	69.3	70.3
30	84.9		73.9	88.2	72.6	76.4	71.0	73.0	65.1	66.3	69.2	72.5
31	86.6		73.1		76.7		70.1	72.2		66.1		74.2
Mean	80.8	75.8	71.5	72.9	76.0	76.0	74.0	70.9	67.8	67.1	68.1	76.1

DAILY SOLAR INDICES
December 2007

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	335	9	10	6	71.9	445	185	124	69.9	66	56	33	21	11
2	336	10	9	4	73.0	427	195	127	71.0	70	61	33	22	15
3	337	11	7	5	72.6	---	---	---	70.5	---	---	---	---	---
4	338	12	9	9	73.6	437	203	131	71.5	65	55	34	24	10
5	339	13	8	9	75.3	441	194	128	73.1	69	54	34	22	11
6	340	14	16	15	78.2	444	207	133	75.9	69	62	35	23	11
7	341	15	15	17	82.2	430	231	139	79.8	77	51	36	22	15
8	342	16	25	26	86.9	436	194	137	84.4	78	67	36	23	15
9	343	17	26	31	88.9	435	206	147	86.2	83	70	36	23	12
10	344	18	24	26	86.9	407	206	136	84.3	78	65	37	23	11
11	345	19	24	30	93.4	428	208	141	90.5	85	64	37	24	12
12	346	20	28	29	93.9	443	216	145	91.1	86	56	35	22	13
13	347	21	30	32	93.8	446	225	154	90.9	86	68	36	23	11
14	348	22	24	32	91.9	447	203	135	89.0	85	62	36	23	11
15	349	23	22	23	88.9	444	217	137	86.1	80	59	35	23	11
16	350	24	18	20	81.7	359	208	135	79.1	73	54	34	22	14
17	351	25	11	11	79.5	432	232	136	76.9	71	59	34	22	13
18	352	26	7	2	76.8	446	226	130	74.4	74	56	34	23	16
19	353	27	0	0	74.5	434	220	122	72.1	71	56	33	22	16
20	354	1	0	0	72.6	415	209	127	70.2	62	56	34	22	13
21	355	2	0	0	71.0	420	196	118	68.7	61	49	32	22	10
22	356	3	0	0	71.5	430	174	115	69.1	66	47	31	22	10
23	357	4	0	0	71.4	---	---	---	69.1	---	---	---	---	---
24	358	5	0	0	71.4	438	188	128	69.1	88	50	33	22	15
25	359	6	0	1	72.0	439	212	127	69.7	88	49	34	23	13
26	360	7	0	0	72.6	420	---	128	70.2	61	49	34	22	13
27	361	8	0	0	72.1	---	---	---	69.7	---	---	33	23	11
28	362	9	0	0	71.8	409	174	126	69.5	58	50	34	22	12
29	363	10	0	0	72.7	410	175	127	70.3	63	50	35	23	11
30	364	11	0	0	75.0	441	182	129	72.5	61	53	35	23	12
31	365	12	0	0	76.7	402	166	122	74.2	66	53	35	23	13
MEAN			10.1	10.6	78.5	429	202	132	76.1	73	56	34	23	12

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
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	8	9	9	10	10	11	10
							(3)	(5)	(7)	(9)	(11)	(14)	(4)

Solar Cycle 22 | Solar Cycle 23 | Min, Max, and Prediction.

*** May 1996 marks Cycle 22's mathematical minimum.** **** October 1996 marks the consensus minimum** minimum NGDC is now using.

+ April 2000 marks Cycle 23 maximum.

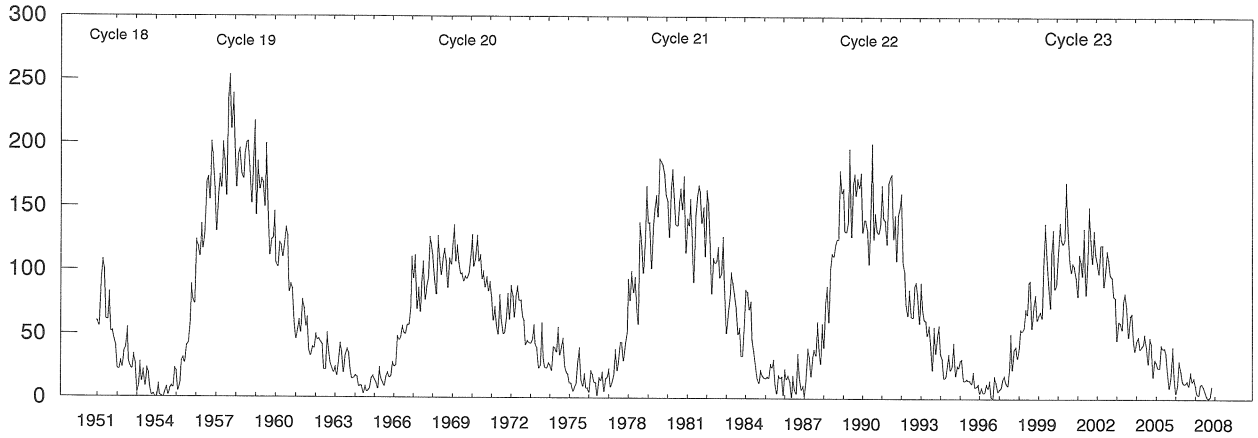
NOTE: Predictions beyond 2007 will not be determined until solar minimum is reached.

Observed and Predicted Numbers. For the end of Cycle 22 and the rise and decline of Cycle 23, 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 Mar 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 December 2007 prediction. There exists a 90% chance that in December 2007, the actual smoothed number will fall somewhere between 0 and 25.

Points to Ponder. The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 15 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the consensus minimum value of 8.8 that occurred in October 1996.

Note: Please visit http://www.sec.noaa.gov for solar minimum and Cycle 23 discussions.

Mean Monthly Sunspot Numbers
Jan 1951 - Dec 2007



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	10.0	6.2	2.4	0.9	1.7	10.1	7.5	

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

Hα SOLAR FLARES

DECEMBER 2007

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
LEAR	01	2311	2403	0205	S06	E65		12	6.8	174	SF		3	E		32		M
LEAR	02	0205	0205	0210	S06	E64		12	6.9	5	SF		3	E		25		
LEAR		0212	0217	0225	S06	E65		12	6.9	13	SF		3	E		27		EH
LEAR		0226	0228	0231	S06	E64		12	6.9	5	SF		3	E		15		EH
LEAR		0237	0238	0243	S06	E64		12	6.9	6	SF		3	E		11		H
LEAR		0300	0300	0304	S06	E64		12	6.9	4	SF		3	E		10		
LEAR		0320	0323	0325	S06	E64		12	6.9	5	SF		3	E		17		
LEAR		0330	0338	0341	S06	E64		12	6.9	11	SF		3	E		10		
LEAR		0350	0352	0355	S06	E64		12	7.0	5	SF		3	E		29		
LEAR		0403	0408	0411	S06	E63		12	6.9	8	SF		3	E		10		
HOLL		1959	2005	2017	S07	E66		12	7.8	18	SF		3	E		56		
LEAR		2256	2256	2300	S07	E65	10977	12	7.8	4	SF		3	E		12		
LEAR	04	0018	0019	0022	S06	E39	10977	12	6.9	4	SF		3	E		11		
LEAR	05	0414	0416	0423	S04	E22	10977	12	6.8	9	SF		3	E		38		UF
LEAR		2342	2344	2344	S10	E76		12	11.7	2	SF		3	E		18		
LEAR		2342	2344	2347	S10	E76		12	11.7	5	SF		3	E		18		
LEAR	06	0009	0010	0019	S11	E76		12	11.7	10	SF		3	E		77		
LEAR		0157	0157	0159	S12	E80		12	12.1	2	SF		3	E		20		
LEAR		0313	0313	0320	S11	E78		12	12.0	7	SF		3	E		16		
LEAR		0433	0437	0439	S12	E79		12	12.1	6	SF		3	E		12		
LEAR		0442	0447	0450	S10	E76		12	11.9	8	SF		3	E		26		
LEAR		0735	0738	0740	S12	E76		12	12.0	5	SF		3	E		19		
LEAR		2247	2249	2251	S10	E67	10978	12	12.0	4	SF		3	E		74		
LEAR		2252	2253	2257	S10	E67	10978	12	12.0	5	1F		3	E		105		
LEAR		2300	2450	0234	S10	E66	10978	12	11.9	214	2F		3	E		431		
LEAR	07	0246	0252		S11	E65	10978	12	12.0	1274	2F		3	E		484		
LEAR		0246	0259	0458	S11	E66	10978	12	12.1	132	2F		3	E		463		
LEAR		0436	0439	0501	S05	W06	10977	12	6.7	25	SF		3	E		70		U
LEAR		0541	0549	0555	S10	E63	10978	12	12.0	14	SF		3	E		18		
LEAR		0605	0608	0611	S10	E63	10978	12	12.0	6	SF		3	E		31		
LEAR		0612	0612	0615	S10	E63	10978	12	12.0	3	SF		3	E		59		
LEAR		0620	0621	0634	S10	E63	10978	12	12.0	14	SF		3	E		50		
LEAR		0635	0650	0655	S10	E63	10978	12	12.0	20	SF		3	E		29		
LEAR		0706	0708	0710	S10	E63	10978	12	12.0	4	SF		3	E		13		
LEAR		0745	0745	0749	S10	E62	10978	12	12.0	4	SF		3	E		10		
LEAR		0757	0759	0801	S10	E62	10978	12	12.0	4	SF		3	E		11		
LEAR		0841	0843	0848	S10	E62	10978	12	12.0	7	SF		3	E		14		
LEAR		0848	0918	0939	S11	E62	10978	12	12.0	51	SF		3	E		50		
LEAR		0941	0945	1004	S10	E61	10978	12	12.0	23	SF		3	E		64		
LEAR		2220	2225	2230	S11	E55	10978	12	12.1	10	SF		2	E		16		
LEAR		2243	2244	2249	S11	E52	10978	12	11.8	6	SF		2	E		47		
LEAR		2349	2349	2353	S11	E52	10978	12	11.9	4	SF		3	E		16		
LEAR		2356	2358	2402	S11	E52	10978	12	11.9	6	SF		3	E		25		
LEAR	08	0012	0012	0016	S11	E51	10978	12	11.8	4	SF		3	E		22		
LEAR		0035	0039	0042	S11	E51	10978	12	11.9	7	SF		3	E		61		
LEAR		0044	0058	0100	S11	E51	10978	12	11.9	16	SF		3	E		74		
LEAR		0108	0117	0128	S11	E51	10978	12	11.9	20	SF		3	E		35		
LEAR		0129	0133	0135	S11	E51	10978	12	11.9	6	SF		3	E		39		
LEAR		0136	0201	0210	S11	E50	10978	12	11.8	34	SF		3	E		45		
LEAR		0210	0216	0250	S11	E50	10978	12	11.8	40	SF		3	E		54		
LEAR		0327	0330	0332	N07	W55		12	4.0	5	SF		3	E		61		
LEAR		0328	0330	0334	S11	E50	10978	12	11.9	6	SF		3	E		42		
LEAR		0333	0334	0336	N07	W55		12	4.0	3	SF		3	E		59		
LEAR		0340	0342	0347	N07	W56		12	3.9	7	SF		3	E		70		
LEAR		0340	0343	0347	S11	E50	10978	12	11.9	7	SF		3	E		41		
LEAR		0359	0403	0414	N07	W55		12	4.0	15	SF		3	E		91		
LEAR		0431	0433	0434	N07	W56		12	4.0	3	SF		3	E		13		
LEAR		0615	0615	0618	N08	W58		12	3.9	3	SF		3	E		10		
LEAR		0637	0638	0642	N07	W58		12	3.9	5	SF		3	E		27		
LEAR		0740	0740	0744	N07	W58		12	4.0	4	SF		3	E		25		
LEAR		0802	0819	0823	N07	W59		12	3.9	21	SF		3	E		16		
LEAR		0850	0851	0853	S11	E49	10978	12	12.0	3	SF		3	E		22		

Hα SOLAR FLARES

DECEMBER 2007

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
LEAR	08	0850	0851	0854	N07	W59		12	3.9	4	SF		3	E		17		
LEAR	09	0145	0148	0158	S10	E40	10978	12	12.1	13	SF		3	E		15		
LEAR		0229	0235	0245	S11	E33	10978	12	11.6	16	SF		3	E		23		
LEAR		0937	0938	0949	S11	E34	10978	12	11.9	12	SF		3	E		50		
LEAR		0954	1002	1008	S11	E35	10978	12	12.0	14	SF		3	E		34		
HOLL		1603	1607U	1621D	S10	E25	10978	12	11.5	18D	SF		3	E		38		
HOLL		1646E	1646U	1714D	S10	E25	10978	12	11.6	28D	SF		3	E		11		
HOLL		2017	2017	2034	S10	E23	10978	12	11.6	17	SF		3	E		31		
LEAR	10	0700	0700	0716	S09	E21	10978	12	11.9	16	SF		4	E		81		UF
LEAR		0838	0840	0846	S09	E21	10978	12	11.9	8	SF		3	E		22		UF
LEAR	11	0248	0251	0256	S10	E06	10978	12	11.6	8	SF		3	E		43		
LEAR		0749	0750	0753	S08	E09	10978	12	12.0	4	SF		3	E		27		
LEAR		0910	0912	0915	S06	E08	10978	12	12.0	5	SF		3	E		24		E
LEAR		0927	0928	0934	S06	E09	10978	12	12.1	7	1F		4	E		124		F
LEAR		0941	0950	1005	S07	E08	10978	12	12.0	24	SF		3	E		43		F
LEAR		2335	2337	2340	S10	E01	10978	12	12.0	5	2F		3	E		331		E
LEAR		2345	2349	2403	S07	E01	10978	12	12.1	18	SF		3	E		21		
LEAR	12	0539	0540	0541	S10	W09	10978	12	11.5	2	SF		3	E		19		
LEAR		1015	1016	1023	S13	W09	10978	12	11.7	8	SF		3	E		27		
HOLL		1806	1806	1812	S09	W10	10978	12	12.0	6	SF		3	E		11		
HOLL		1901	1905	1923	S12	W12	10978	12	11.9	22	SF		3	E		19		
LEAR		2223	2254	2317	S11	W15	10978	12	11.8	54	SF		3	E		83		
HOLL		2229	2230	2235	S08	W12	10978	12	12.0	6	SF		3	E		17		
LEAR	13	0048	0050	0056	S09	W14	10978	12	12.0	8	SF		3	E		60		
LEAR		0048	0050	0056	S09	W14	10978	12	12.0	8	2F		3	E		432		
LEAR		0102	0105	0111	S09	W14	10978	12	12.0	9	SF		3	E		63		
LEAR		0142	0143	0152	S09	W14	10978	12	12.0	10	SF		3	E		70		
LEAR		0359	0401	0414	S10	W16	10978	12	12.0	15	SF		3	E		88		
LEAR		0437	0441	0449	S09	W16	10978	12	12.0	12	SF		3	E		30		
LEAR		0507	0510	0514	S08	W18	10978	12	11.9	7	SF		3	E		27		
LEAR		0515	0516	0524	S10	W23	10978	12	11.5	9	SF		3	E		16		
LEAR		0533	0537	0547	S08	W19	10978	12	11.8	14	SF		3	E		23		
LEAR		0559	0600	0605	S10	W17	10978	12	12.0	6	SF		3	E		40		
LEAR		0842	0842	0849	S11	W18	10978	12	12.0	7	SF		3	E		15		
LEAR		0931	0931	0933	S08	W20	10978	12	11.9	2	SF		3	E		14		
LEAR		0946	0951	1023	S07	W21	10978	12	11.8	37	1F		3	E		100		F
SVTO		0950	1001	1018	S08	W20	10978	12	11.9	28	SF		3	E		53		F
HOLL		2157	2200	2300D	S07	W25	10978	12	12.0	63D	SF		3	E		64		F
LEAR	14	0139	0141	0144	S10	W29	10978	12	11.9	5	SF		3	E		46		
LEAR		0751	0759	0811	S07	W32	10978	12	11.9	20	SF		3	E		20		
LEAR		0812	0831	0909	S07	W32	10978	12	11.9	57	SF		3	E		71		
HOLL		1516	1525	1612	S10	W42	10978	12	11.5	56	SF		3	E		60		F
LEAR	17	0712	0714	0730	S09	W75	10978	12	11.7	18	SF		2	E		25		FE
LEAR		0730	0731	0739	S10	W78	10978	12	11.4	9	SF		2	E		31		FE
HOLL	18	1524	1524	1529	S06	W90	10978	12	11.9	5	SF		3	E		32		

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

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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	02	1954	2005	2009	S07	E66	10977			15	B 7.0	3.4E-04		
GOES	05	0412	0415	0418	S04	E22	10977			6	B 1.1	2.4E-05		
GOES	07	0435	0441	0455	S05	W06	10977			20	B 1.4	1.5E-04		
GOES		1426	1450	1504						38	B 1.8	3.6E-04		
GOES	08	0325	0330	0338	N07	W55	10978			13	B 1.0	7.0E-05		
GOES		0506	0521	0540						34	B 2.3	3.8E-04		
GOES		1231	1238	1241						10	B 1.4	7.1E-05		
GOES	09	0224	0236	0255	S11	E33	10978			31	B 4.5	6.0E-04		
GOES		1132	1139	1141						9	B 1.2	5.8E-05		
GOES		1546	1606	1613	S10	E25	10978			27	B 9.4	8.8E-04		
GOES		1643	1649	1653	S10	E25	10978			10	B 8.4	3.2E-04		
GOES		1833	1838	1854						21	B 2.3	2.2E-04		
GOES		1954	2003	2009						15	B 1.5	1.2E-04		
GOES		2013	2018	2021	S10	E23	10978			8	B 4.8	1.5E-04		
GOES	10	0223	0226	0249						26	B 1.0	1.3E-04		
GOES		0654	0700	0705	S09	E21	10978			11	B 7.0	3.5E-04		
GOES		0756	0810	0829						33	B 3.6	6.2E-04		
GOES		1013	1024	1033						20	B 1.2	1.4E-04		
GOES		1040	1046	1059						19	B 2.0	1.8E-04		
GOES		1139	1146	1156						17	B 3.5	2.4E-04		
GOES		1225	1229	1233						8	B 3.1	1.0E-04		
GOES		1341	1346	1349						8	B 2.8	9.3E-05		
GOES	11	0050	0053	0057						7	B 1.0	3.9E-05		
GOES		1052	1055	1101						9	B 1.2	6.0E-05		
GOES		1320	1326	1331						11	B 3.3	1.5E-04		
GOES		1949	1956	2000						11	B 4.0	2.3E-04		
GOES		2056	2110	2115						19	B 1.7	1.6E-04		
GOES		2152	2156	2208						16	B 1.3	1.1E-04		
GOES		2329	2336	2341	S10	E01	10978			12	B 2.7	1.6E-04		
GOES		2343	2347	2350	S07	E01	10978			7	B 2.7	1.0E-04		
GOES	12	0107	0110	0120						13	B 1.9	1.3E-04		
GOES		0526	0532	0544	S10	W09	10978			18	B 2.4	2.4E-04		
GOES		1112	1115	1118						6	B 1.8	5.4E-05		
GOES		1137	1142	1149						12	B 1.8	1.1E-04		
GOES		1336	1340	1349						13	B 2.5	1.5E-04		
GOES		1435	1438	1443						8	B 1.6	7.1E-05		
GOES		1454	1458	1501						7	B 3.1	1.1E-04		
GOES		1635	1639	1653						18	B 1.3	1.3E-04		
GOES		1656	1704	1710						14	B 2.2	1.6E-04		
GOES		1800	1805	1810	S09	W10	10978			10	B 3.5	1.7E-04		
GOES		2221	2231	2236	S11	W15	10978			15	B 4.7	2.7E-04		
GOES		2244	2247	2250						6	B 2.8	8.8E-05		
GOES	13	0042	0048	0050	S09	W14	10978			8	B 5.9	1.8E-04		
GOES		0101	0104	0108	S09	W14	10978			7	B 7.8	2.2E-04		
GOES		0122	0125	0128						6	B 4.3	1.2E-04		
GOES		0215	0219	0222						7	B 2.1	8.1E-05		
GOES		0239	0244	0248						9	B 3.8	1.6E-04		
GOES		0337	0404	0413	S10	W16	10978			36	B 7.6	9.6E-04		
GOES		0432	0437	0443	S09	W16	10978			11	B 4.6	2.4E-04		
GOES		0506	0511	0517	S08	W18	10978			11	B 3.5	2.0E-04		
GOES		0556	0559	0604	S10	W17	10978			8	B 3.3	1.4E-04		
GOES		0839	0845	0850	S11	W18	10978			11	B 4.9	2.5E-04		
GOES		0922	0927	0932	S08	W20	10978			10	B 2.7	1.2E-04		
GOES		0939	1003	1009	S07	W21	10978			30	C 4.5	3.3E-03		
GOES		1137	1147	1152						15	B 2.2	1.7E-04		
GOES		1246	1254	1300						14	B 2.1	1.6E-04		
GOES		1301	1306	1313						12	B 4.4	2.5E-04		
GOES		1324	1328	1332						8	B 2.7	1.1E-04		
GOES		1339	1347	1354						15	B 6.6	3.9E-04		
GOES		1359	1406	1412						13	C 1.0	5.4E-04		

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

DECEMBER 2007

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	13	1726	1732	1737					11	B 2.7	1.4E-04		
GOES		2012	2016	2019					7	B 1.6	6.0E-05		
GOES		2152	2200	2219	S07 W25	10978			27	C 1.7	1.7E-03		
GOES	14	0135	0139	0141	S10 W29	10978			6	B 9.6	1.6E-04		
GOES		0745	0803	0813	S07 W32	10978			28	B 6.0	7.2E-04		
GOES		0813	0831	0844	S07 W32	10978			31	C 1.1	1.7E-03		
GOES		1044	1047	1049					5	B 1.3	3.4E-05		
GOES		1203	1208	1215					12	B 1.6	9.0E-05		
GOES		1411	1416	1421					10	C 1.1	4.1E-04		
GOES		1511	1522	1548	S10 W42	10978			37	B 8.8	1.4E-03		
GOES		1919	1926	1933					14	B 1.9	1.4E-04		
GOES		2155	2221	2231					36	B 2.5	4.6E-04		
GOES	15	0903	0923	0935					32	B 3.8	5.8E-04		
GOES		1721	1732	1743					22	B 2.8	3.1E-04		
GOES		2052	2056	2101					9	B 2.1	9.2E-05		
GOES		2212	2216	2222					10	B 1.2	6.5E-05		
GOES	16	0031	0037	0046					15	B 1.4	1.1E-04		
GOES		0349	0355	0403					14	C 1.2	6.9E-04		
GOES		0620	0623	0625					5	B 1.8	4.7E-05		
GOES		0836	0840	0842					6	B 1.4	3.8E-05		
GOES		1555	1559	1602					7	B 1.4	5.4E-05		
GOES		2027	2031	2035					8	B 1.7	6.7E-05		
GOES		2216	2221	2227					11	B 1.2	7.3E-05		
GOES	17	0010	0047	0052					42	B 3.7	4.5E-04		
GOES		0218	0222	0226					8	B 1.5	6.1E-05		
GOES		0328	0335	0355					27	B 2.6	3.7E-04		
GOES		0554	0601	0607					13	B 2.5	1.7E-04		
GOES		0647	0716	0726	S09 W75	10978			39	C 2.2	2.1E-03		
GOES		1802	1828	1843					41	B 5.4	9.1E-04		
GOES		2030	2035	2037					7	B 3.8	1.2E-04		
GOES		2058	2101	2105					7	B 1.6	6.2E-05		
GOES		2106	2110	2113					7	B 4.3	1.2E-04		
GOES		2120	2125	2131					11	B 3.6	1.6E-04		
GOES		2226	2307	2311					45	B 8.9	1.2E-03		
GOES		2353	0004	0014					21	B 5.7	5.9E-04		
GOES	18	0107	0112	0116					9	B 7.9	2.6E-04		
GOES		0130	0134	0136					6	B 2.4	6.6E-05		
GOES		0234	0237	0239					5	B 1.9	4.4E-05		
GOES		0246	0250	0254					8	B 1.4	6.3E-05		
GOES		0342	0345	0348					6	B 1.3	3.9E-05		
GOES		0349	0353	0355					6	B 1.5	4.5E-05		
GOES		0425	0429	0431					6	B 2.2	5.4E-05		
GOES		0633	0643	0653					20	B 3.6	3.3E-04		
GOES		0654	0701	0708					14	B 3.8	2.8E-04		
GOES		0855	0900	0910					15	B 1.8	1.5E-04		
GOES		0936	0940	0944					8	B 2.9	9.9E-05		
GOES		0954	1000	1003					9	B 2.5	1.1E-04		
GOES		1028	1038	1044					16	B 1.5	1.3E-04		
GOES		1308	1320	1329					21	C 2.1	1.7E-03		
GOES		1430	1434	1438					8	B 6.3	2.6E-04		
GOES		1447	1452	1456					9	C 1.1	4.5E-04		
GOES		1518	1524	1539	S06 W90	10978			21	B 8.4	7.8E-04		
GOES		1741	1747	1752					11	B 5.7	2.9E-04		
GOES		1818	1822	1827					9	B 5.8	2.7E-04		
GOES		1827	1831	1834					7	B 7.6	2.7E-04		
GOES		1907	1915	1921					14	C 1.6	9.5E-04		
GOES		2235	2239	2242					7	B 2.2	7.6E-05		
GOES	19	0036	0046	0053					17	B 5.4	3.4E-04		
GOES		0137	0143	0146					9	B 2.1	8.8E-05		
GOES		0301	0305	0311					10	B 2.0	1.0E-04		
GOES		0630	0732	0753					83	B 2.9	8.1E-04		
GOES	30	1932	2005	2019					47	C 1.7	2.7E-03		

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

DECEMBER 2007

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	31	0037	0111	0138						61	C 8.3	2.1E-02		
GOES		1158	1202	1207						9	B 1.5	7.1E-05		
GOES		1258	1305	1310						12	B 3.8	2.5E-04		
GOES		1956	1959	2004						8	B 1.0	4.5E-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

DECEMBER 2007

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
05	410	SGMR	48 C	1318.0	1322.0	7.0	520.0			QL=4 ST=3 TYP=8
	410	SGMR	48 C	1320.0	1322.0	640.0	520.0			QL=2 ST=2 TYP=8
08	410	SGMR	48 C	1305.0	1309.0	6.0	490.0			QL=4 ST=2 TYP=8
10	410	SGMR	48 C	1305.0	1307.0	4.0	260.0			QL=4 ST=2 TYP=8
	410	SGMR	4 S/F	1305.0	1307.0	655.0	260.0			QL=4 ST=1 TYP=3

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

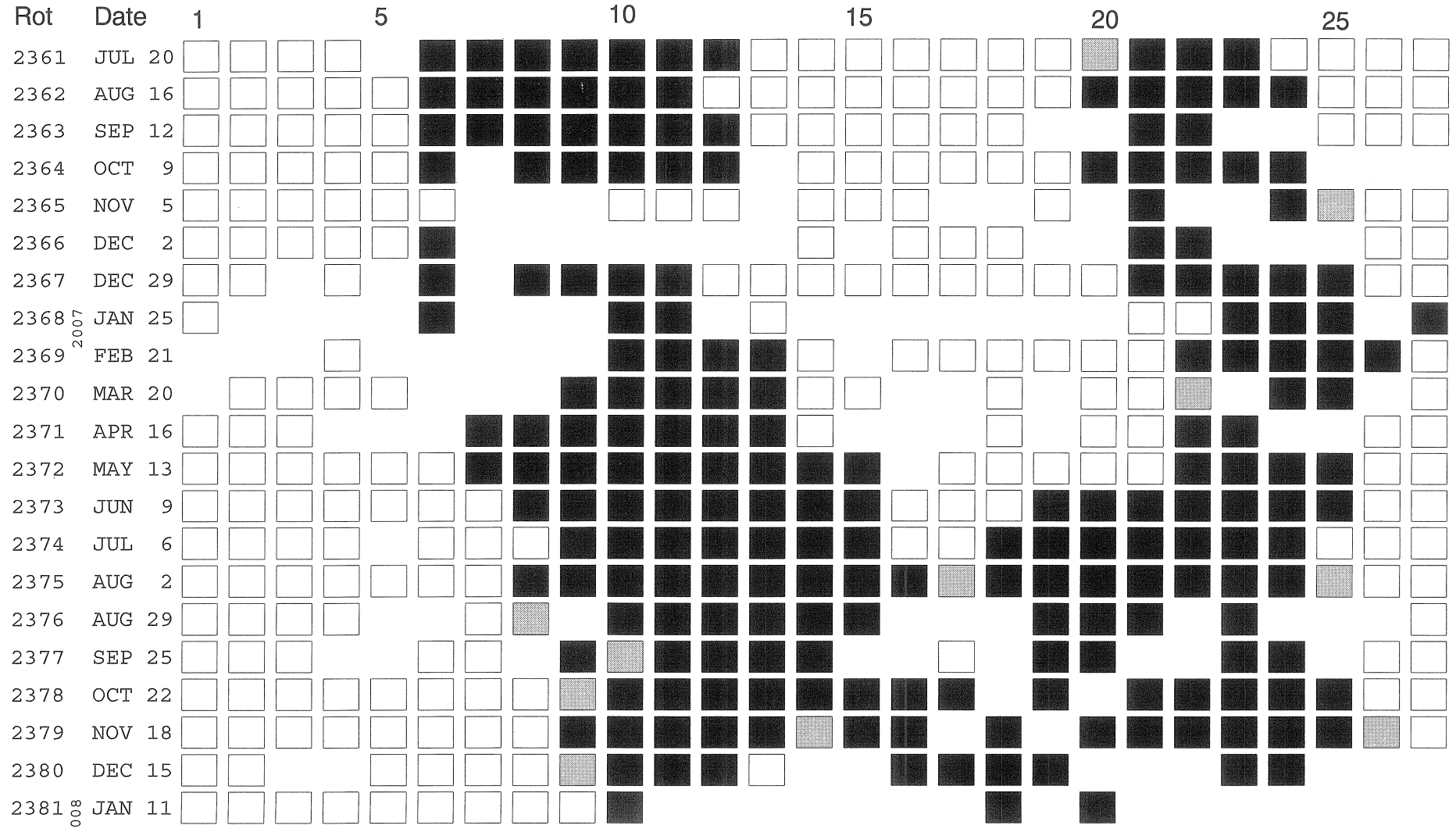
Explanation of Type Code:

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

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	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

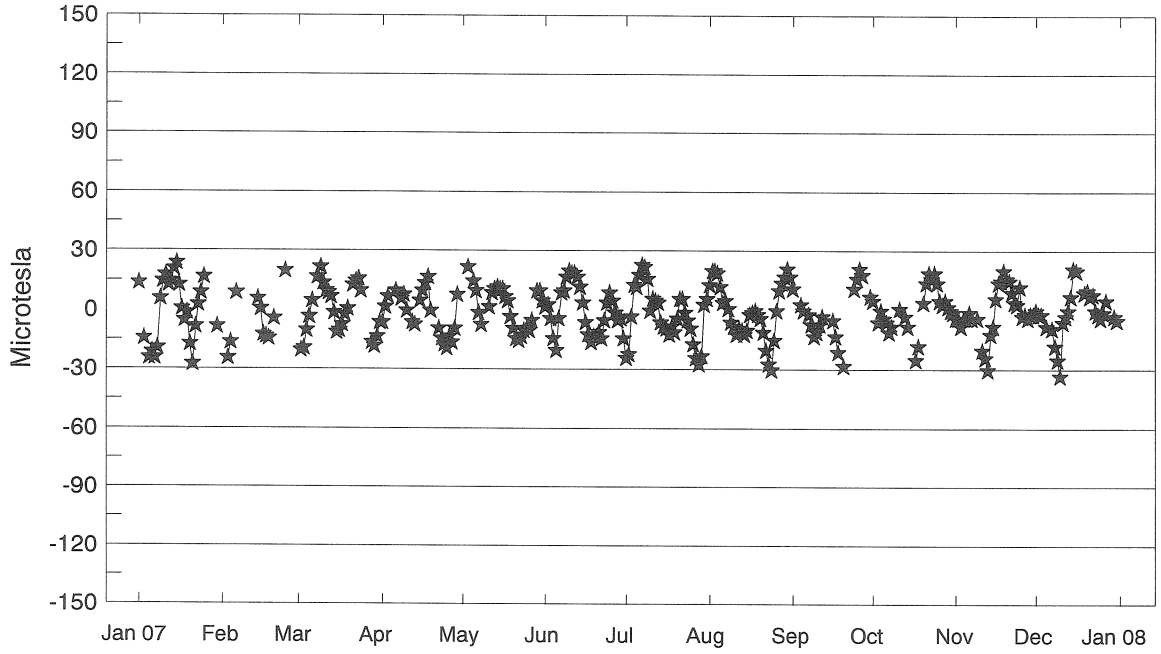


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

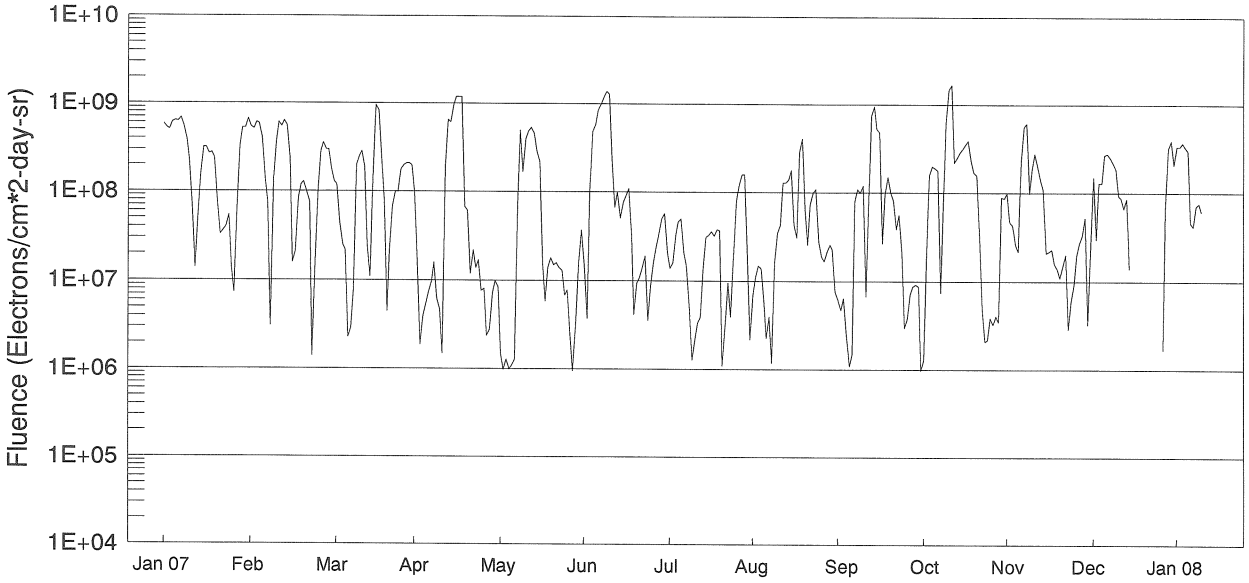
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



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

GOES Daily Electron Fluence
Jan 2007 - Dec 2007



Day	Jan 07	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7.0E+07	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	1.4E+07	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
3	4.9E+07	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	1.6E+08	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
5	3.2E+08	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
6	3.2E+08	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	---
7	2.7E+08	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	---
8	2.8E+08	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	---
9	2.4E+08	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	---
10	7.9E+07	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	---
11	3.3E+07	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	---
12	3.6E+07	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	---
13	4.0E+07	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	---
14	5.4E+07	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	---
15	1.4E+07	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	---
16	7.4E+06	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	---
17	6.3E+07	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
18	3.3E+08	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
19	5.3E+08	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
20	5.3E+08	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
21	6.7E+08	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
22	5.5E+08	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
23	5.2E+08	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
24	6.1E+08	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
25	5.9E+08	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
26	4.1E+08	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
27	1.4E+08	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
28	7.6E+07	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
29	3.1E+06		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
30	1.4E+08		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
31	3.6E+08		4.8E+06		1.3E+09		3.5E+07	1.2E+08		1.9E+08		6.1E+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 761 Part I

DATA FOR **NOVEMBER 2007**

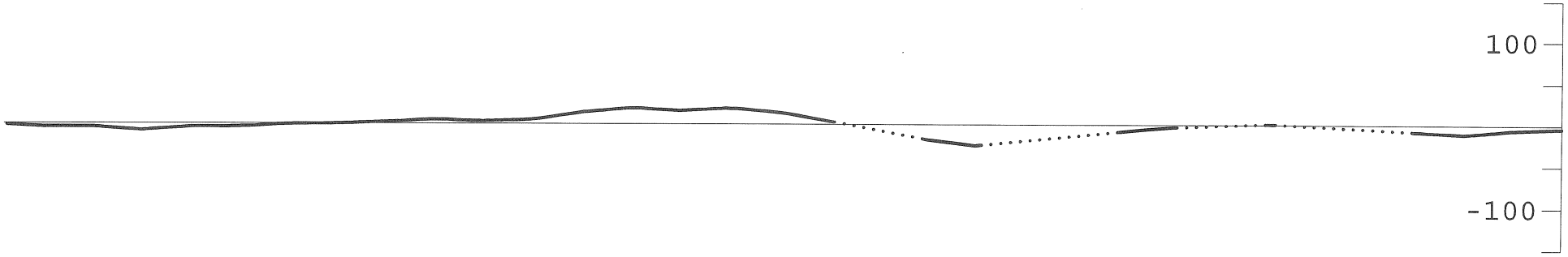
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2062

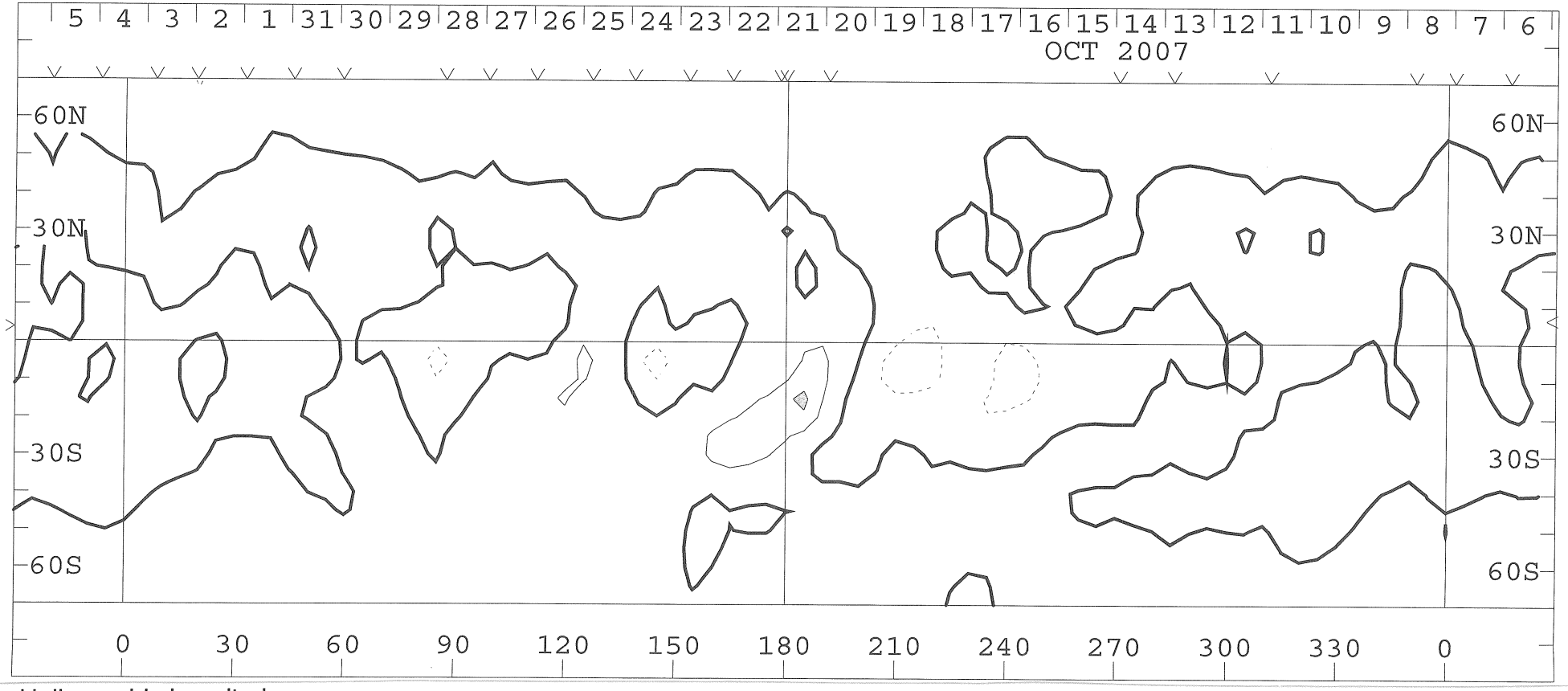
(8 Oct 2007 to 4 Nov 2007)

Wilcox Solar Observatory

Mean Field



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



Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

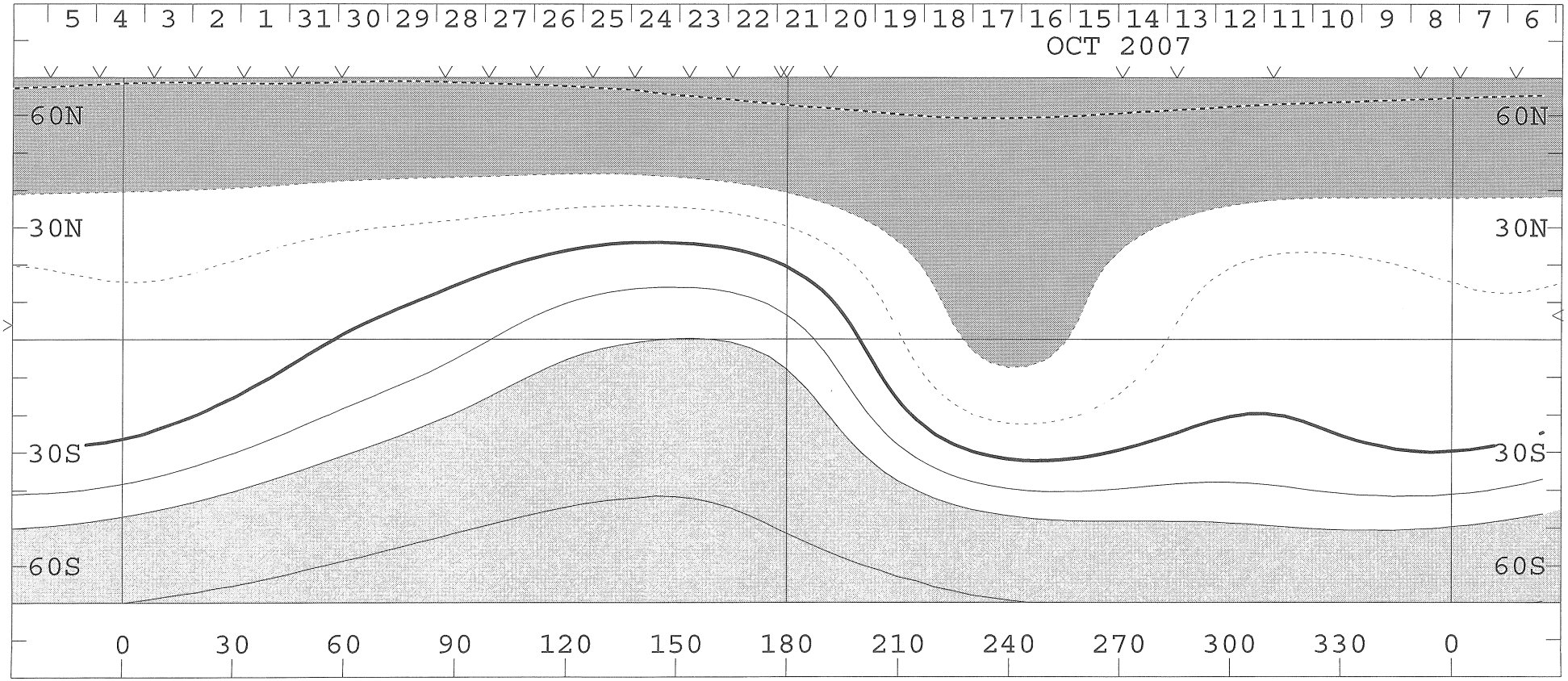
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2062

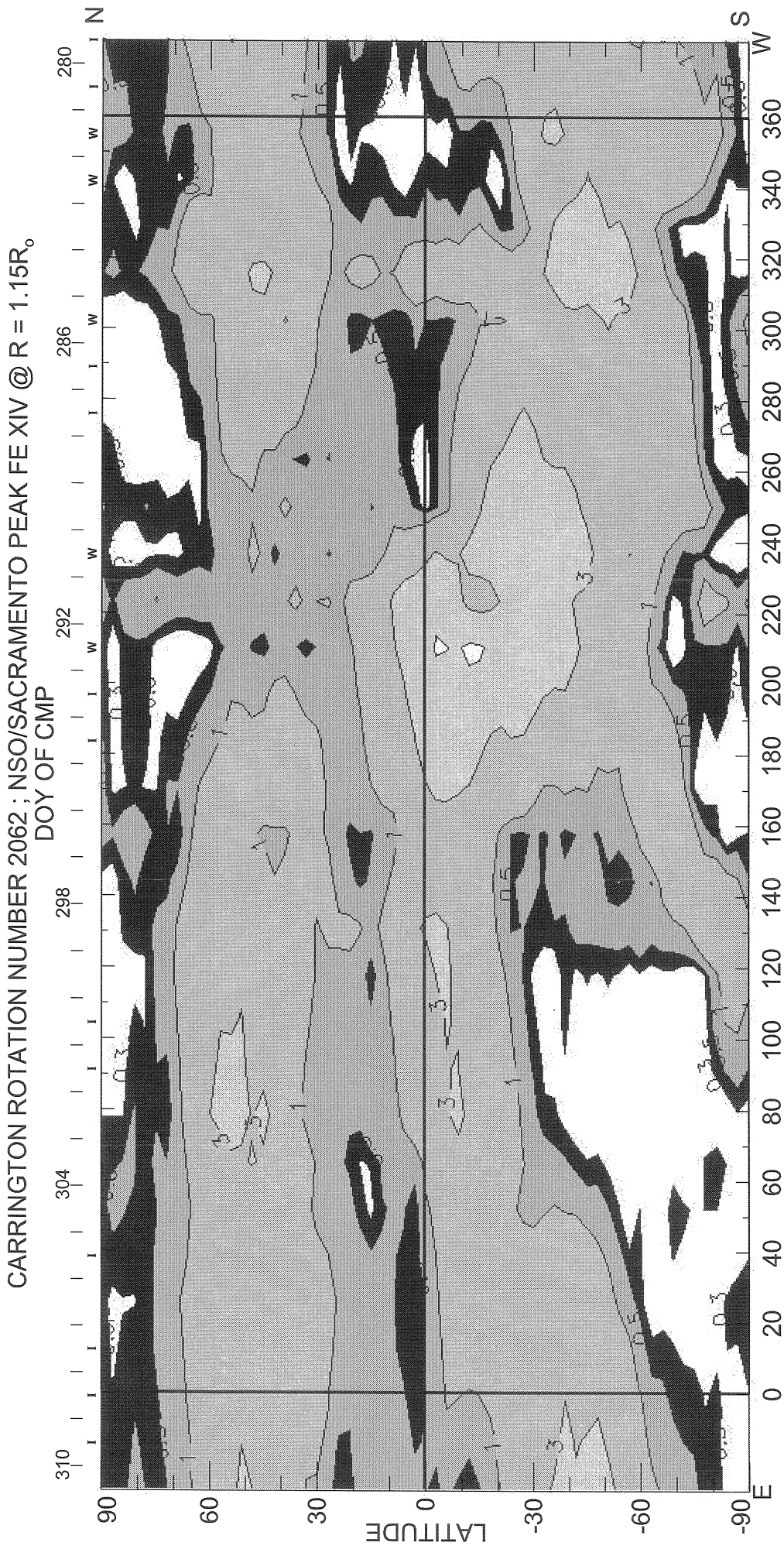
(8 Oct 2007 to 4 Nov 2007)

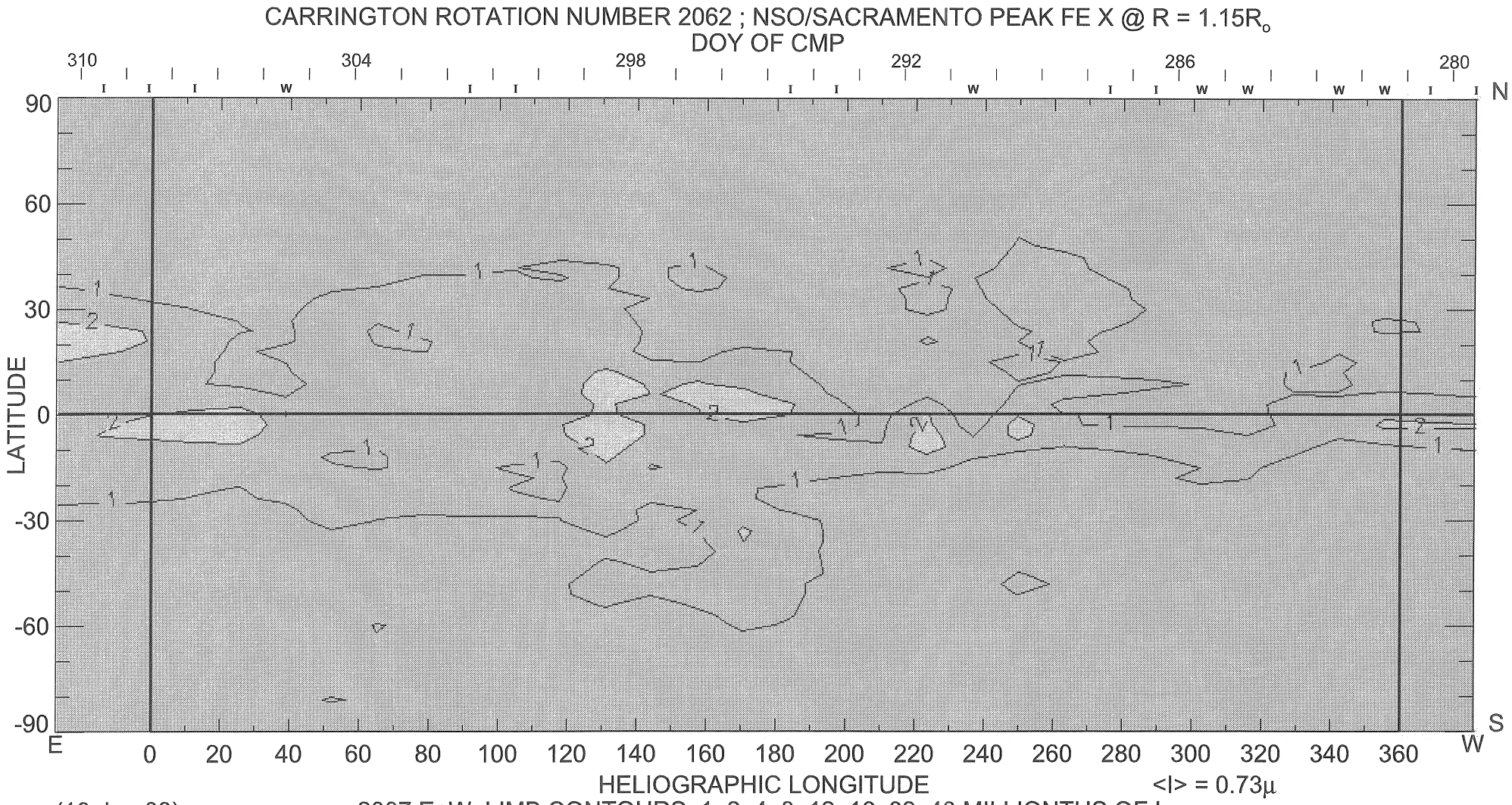
Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



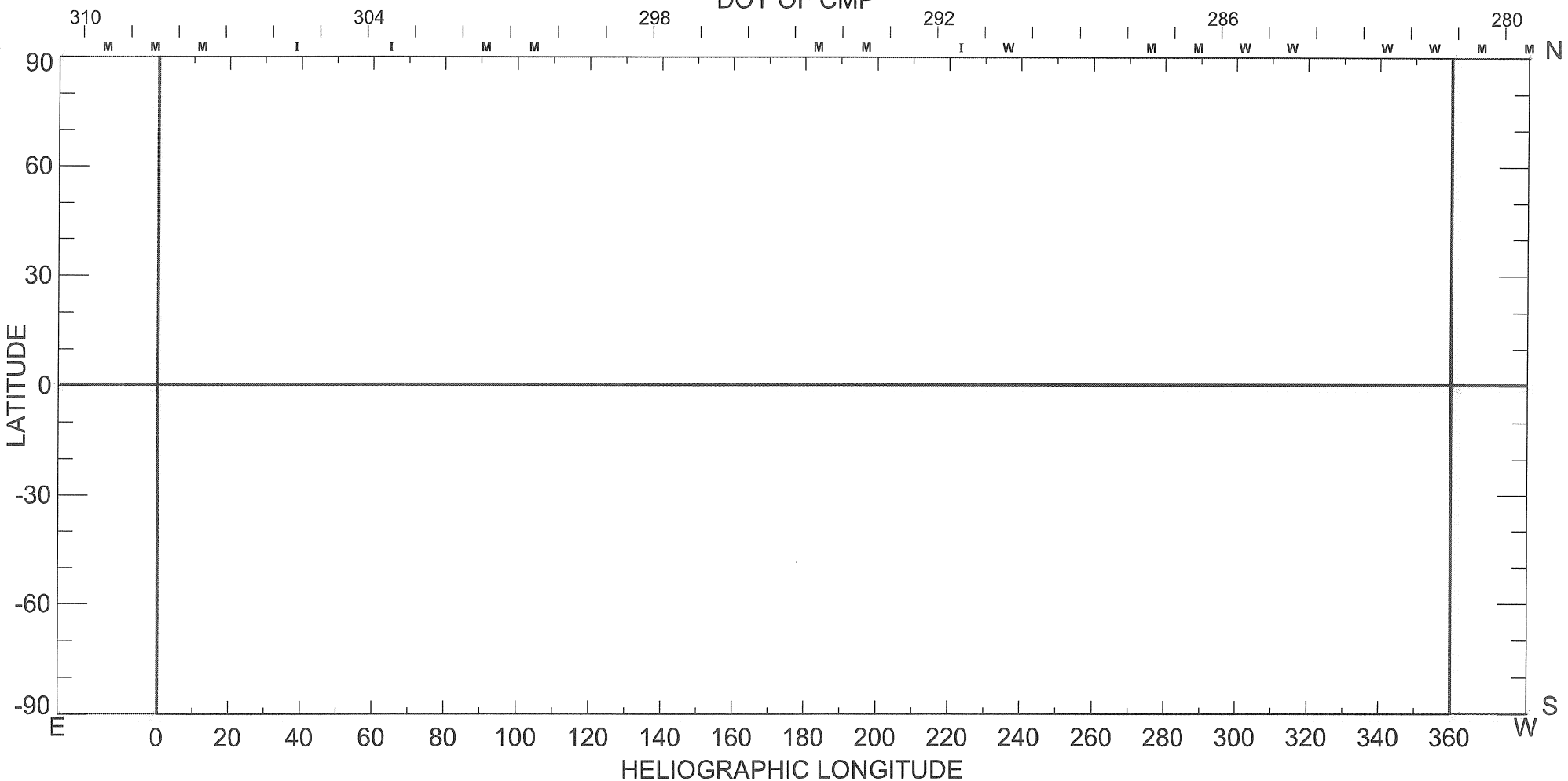
Heliographic Longitude


CARRINGTON ROTATION NUMBER 2062 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R$_o$
DOY OF CMP
310
304
298
292
286
280
N
S
W
E
90
60
30
0
-30
-60
-90
LATITUDE
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
HELIOGRAPHIC LONGITUDE
(28-Jan-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
<I> = 1.28μ



tex Wed Jan 16 14:13:49 2008

CARRINGTON ROTATION NUMBER 2062 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



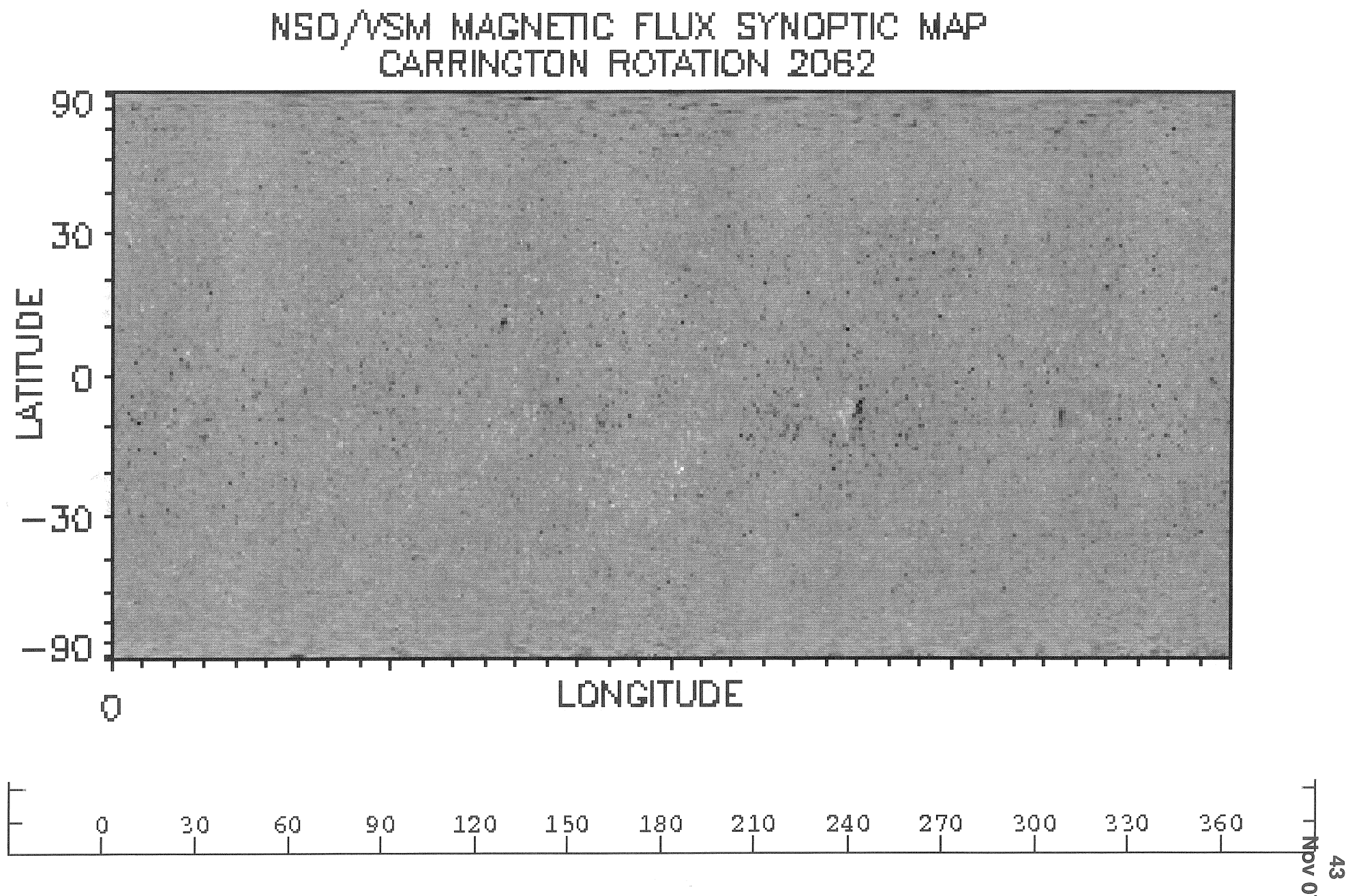
(16-Jan-08) 2007 E+W LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2061

(8 Oct 2007 to 4 Nov 2007)

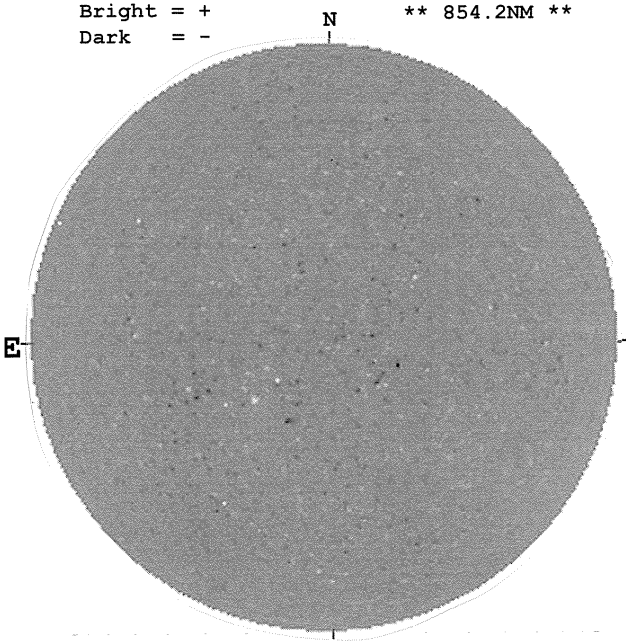
National Solar Observatory/Kitt Peak



NOVEMBER 01, 2007 (P= 24.57, Bo= 4.43, Lo= 45.05)

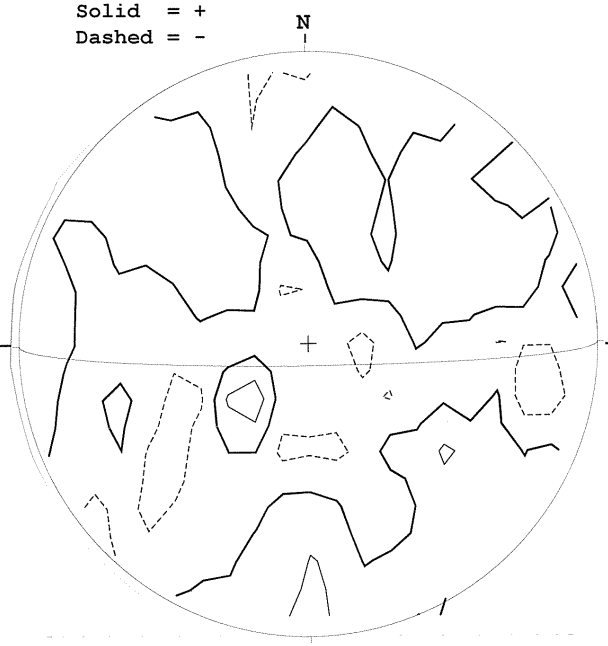
Nov 07 44

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



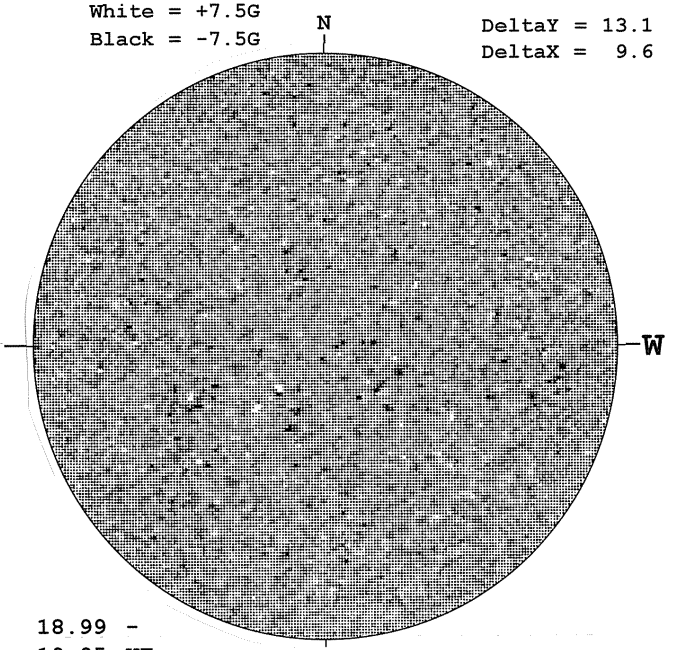
1833 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



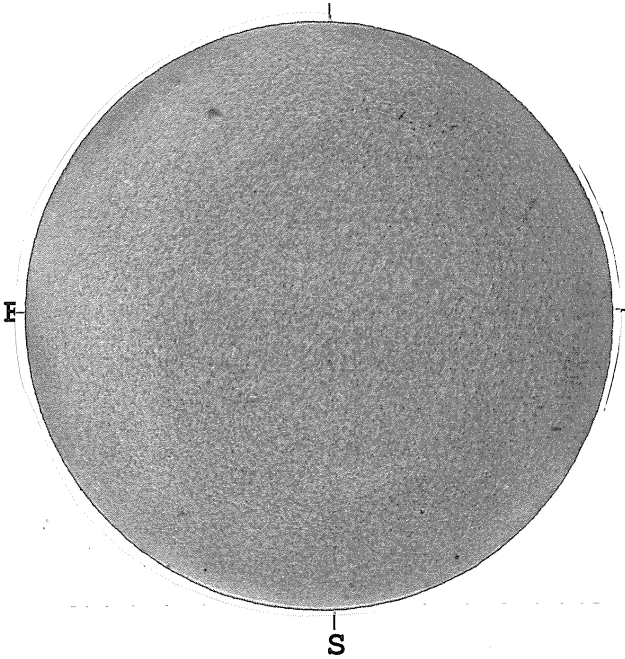
2214 UT

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



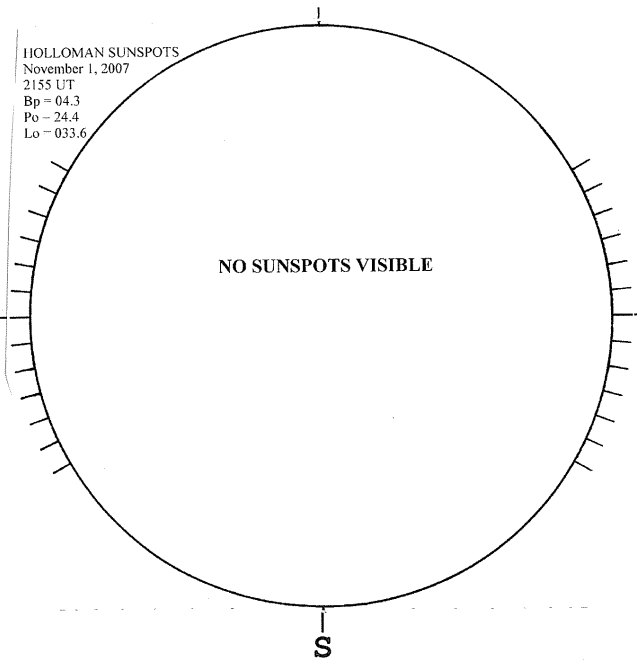
18.99 -
19.95 UT

KANZELHOHE H-ALPHA



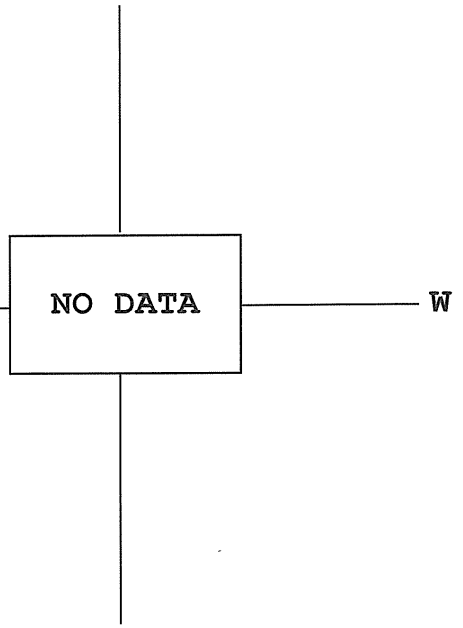
0723 UT

HOLLOMAN SUNSPOTS



2155 UT

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

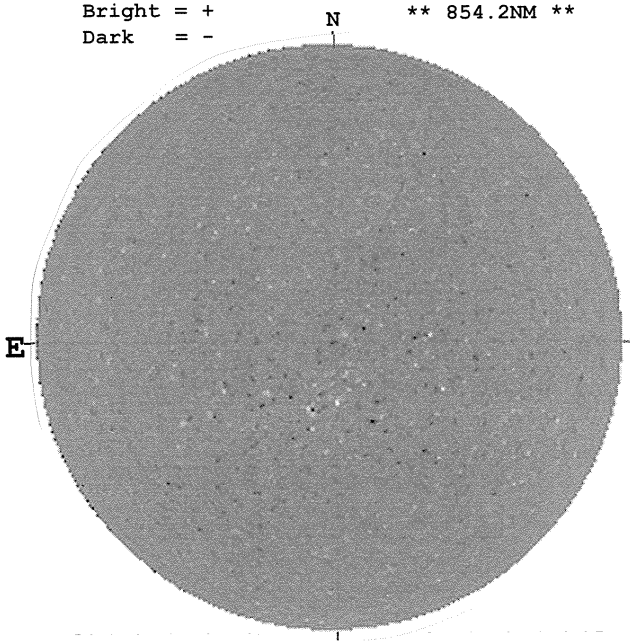


NOVEMBER 02, 2007 (P= 24.40, Bo= 4.32, Lo= 31.87)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

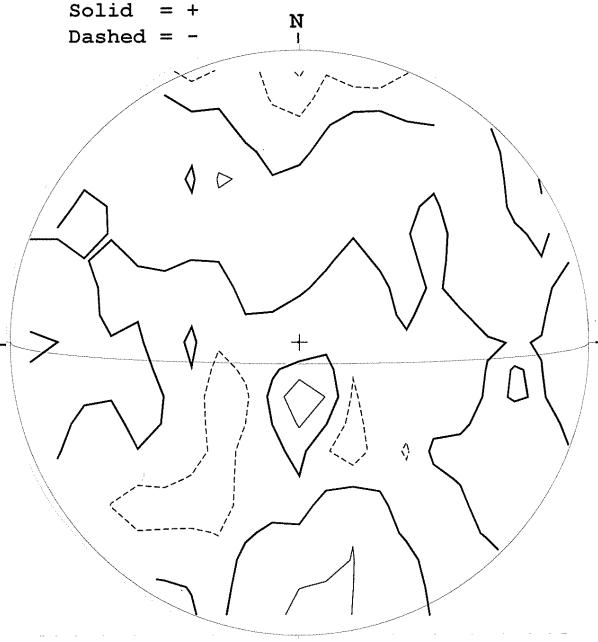
** 854.2NM **



2216 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

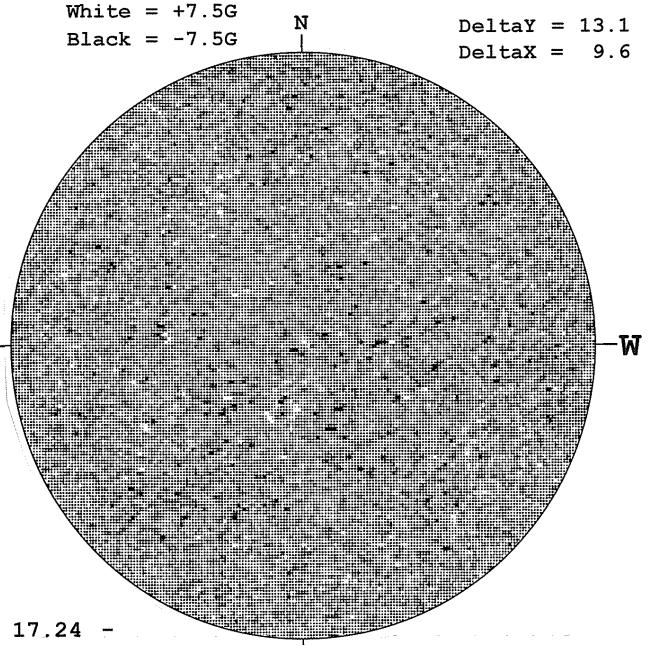


2228 UT

MT. WILSON MAGNETOGRAM

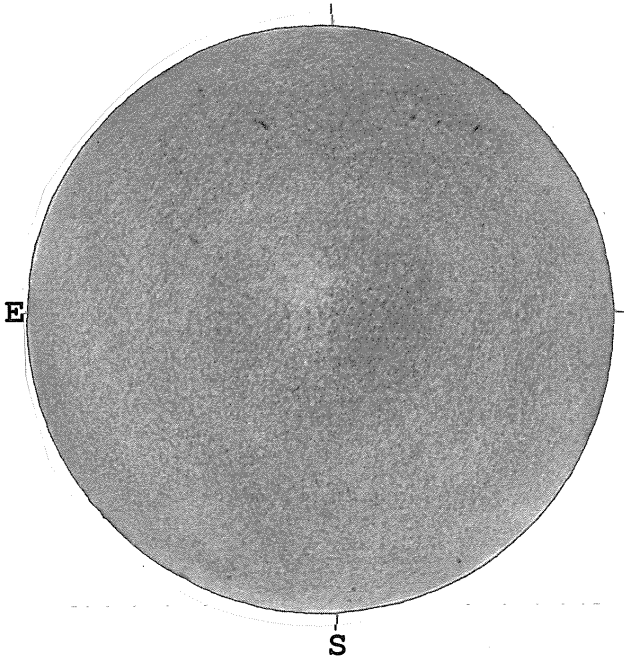
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



17.24 -
18.20 UT

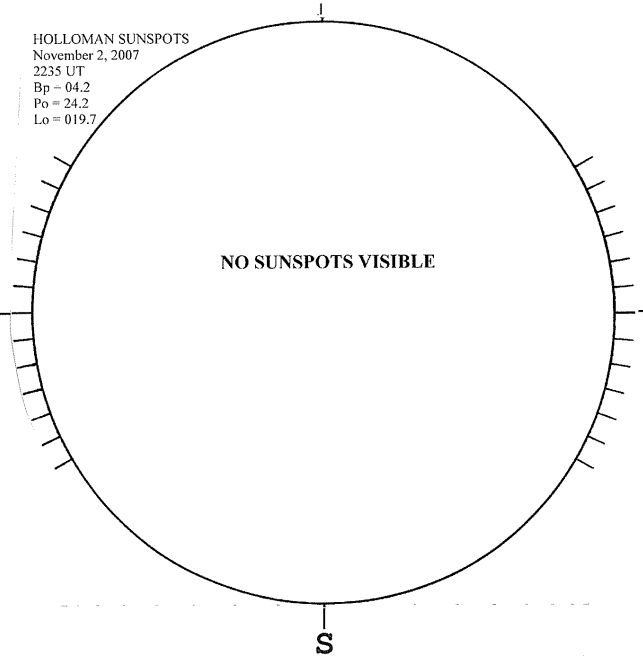
--- KANZELHOHE H-ALPHA



0722 UT

HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
November 2, 2007
2235 UT
Bp = 04.2
Po = 24.2
Lo = 019.7

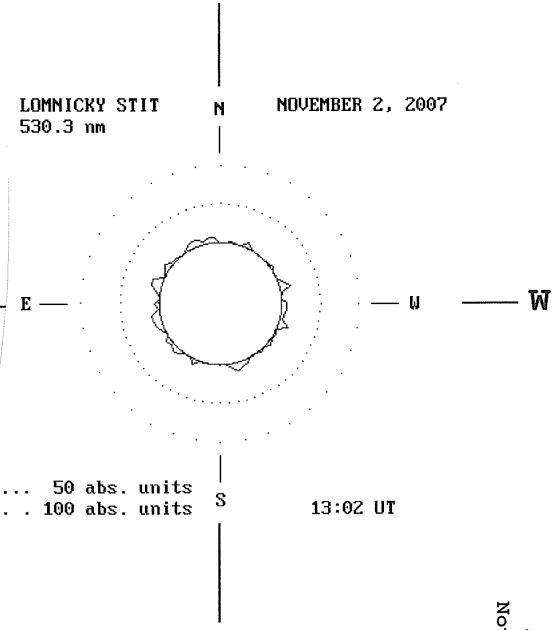


2235 UT

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

LOMNICKY STIT
530.3 nm

NOVEMBER 2, 2007



... 50 abs. units
. . 100 abs. units

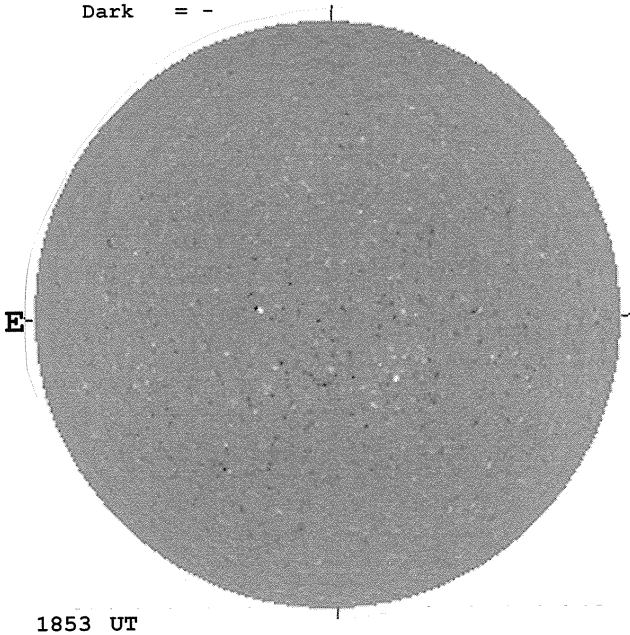
13:02 UT

45
Nov 07

NOVEMBER 03, 2007 (P= 24.23, Bo= 4.22, Lo= 18.68)

KITT PEAK MAGNETOGRAM -- SOLIS

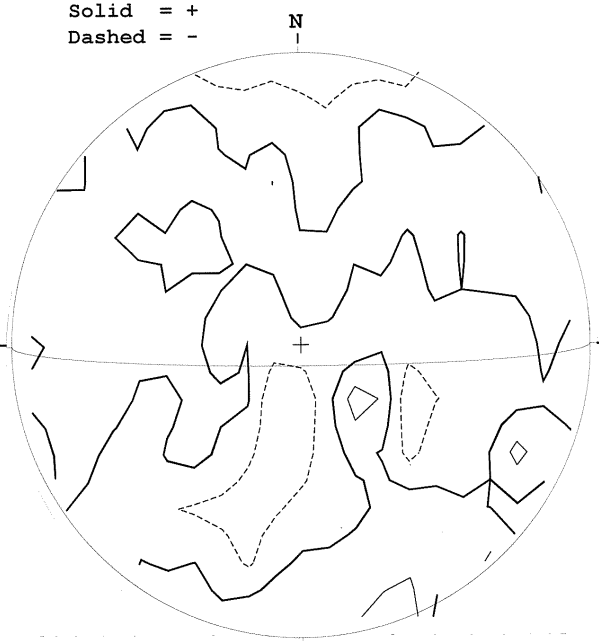
Bright = +
Dark = -
** 854.2NM **



1853 UT

STANFORD MAGNETOGRAM

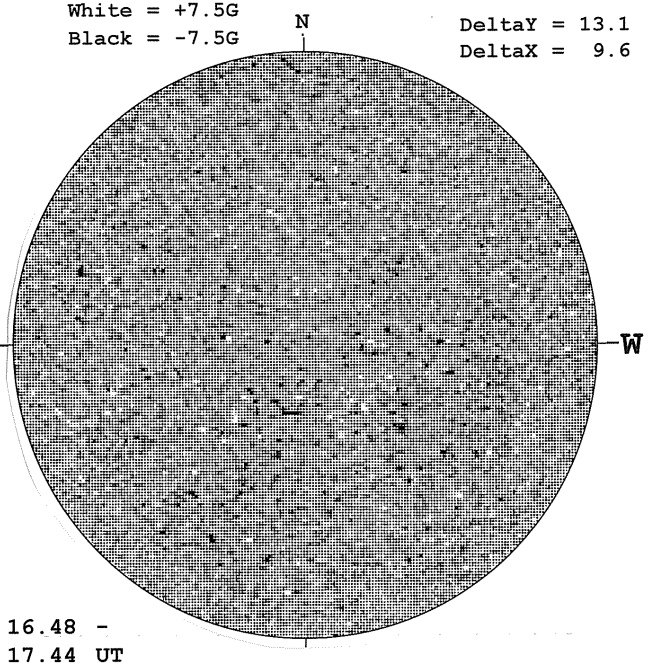
Solid = +
Dashed = -



1855 UT

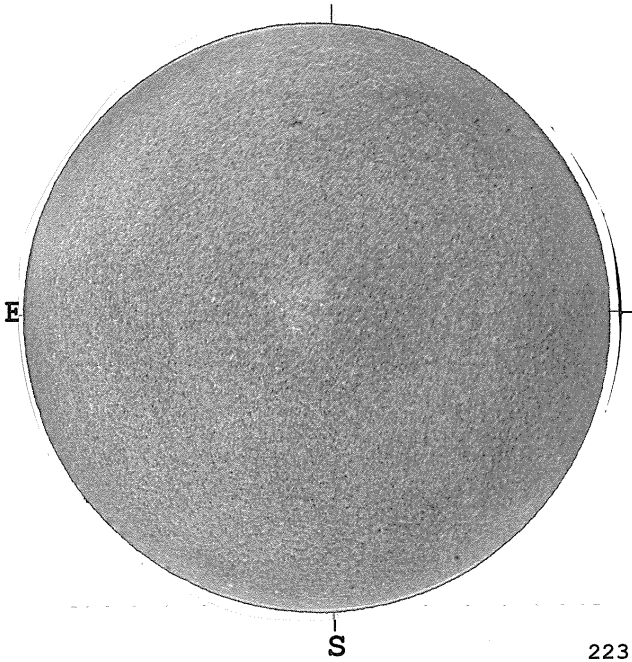
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



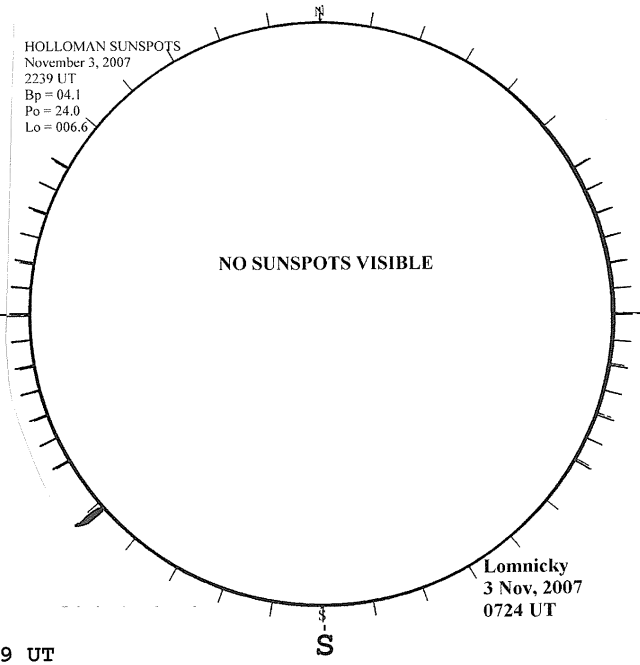
16.48 -
17.44 UT

KANZELHOHE H-ALPHA



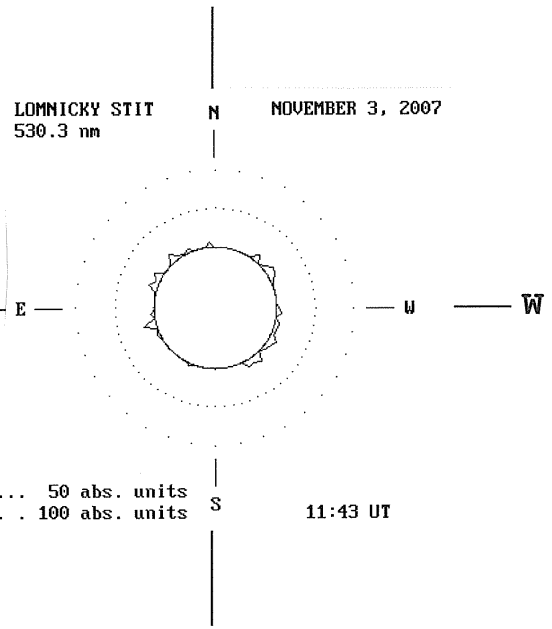
0710 UT

HOLLOMAN SUNSPOTS



2239 UT
0724 UT LOMN PROM

LOMNICKY PEAK CORONA (1.04 Radii)

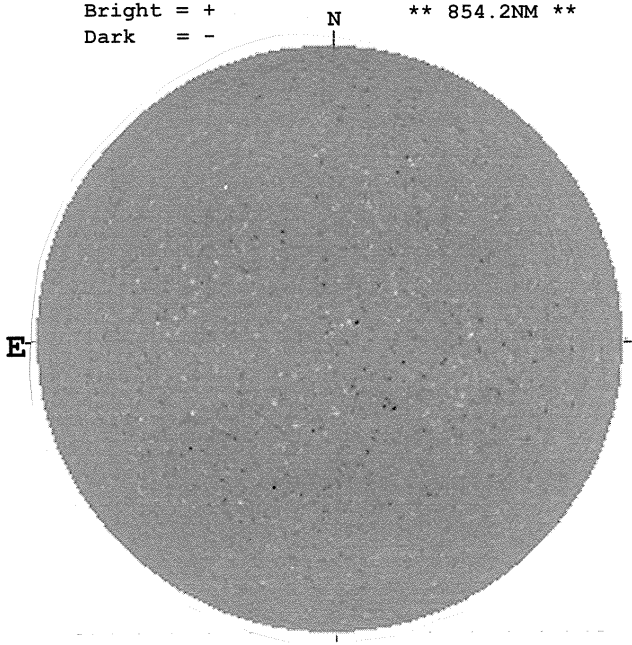


NOVEMBER 04, 2007 (P= 24.04, Bo= 4.12, Lo= 5.49)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

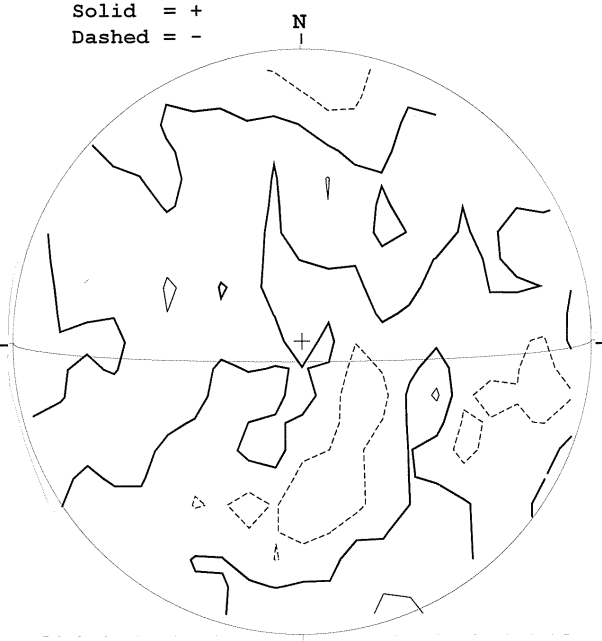
** 854.2NM **



1859 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

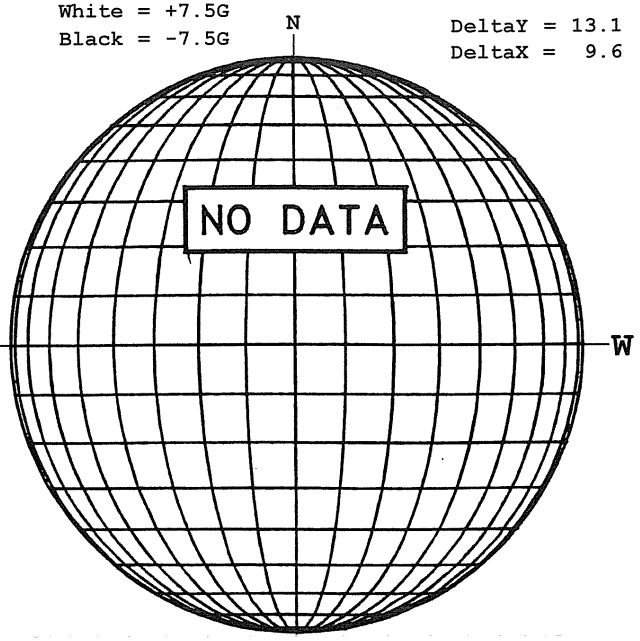


2207 UT

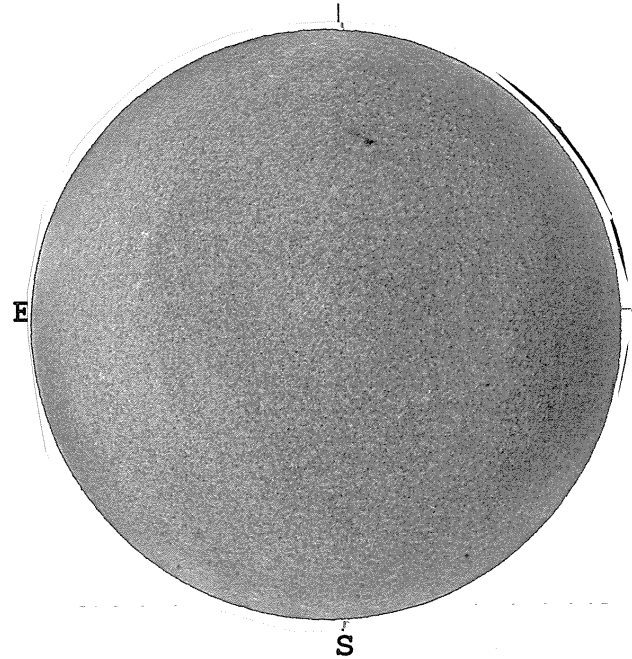
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

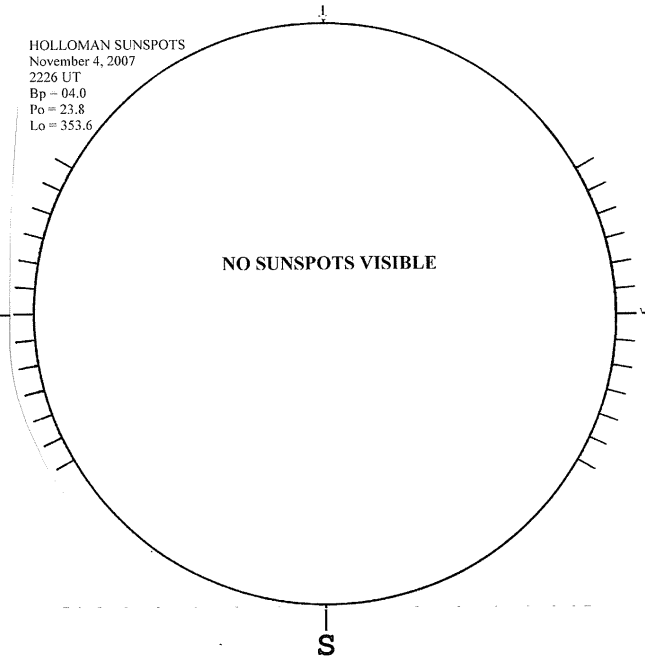


--- KANZELHOHE H-ALPHA



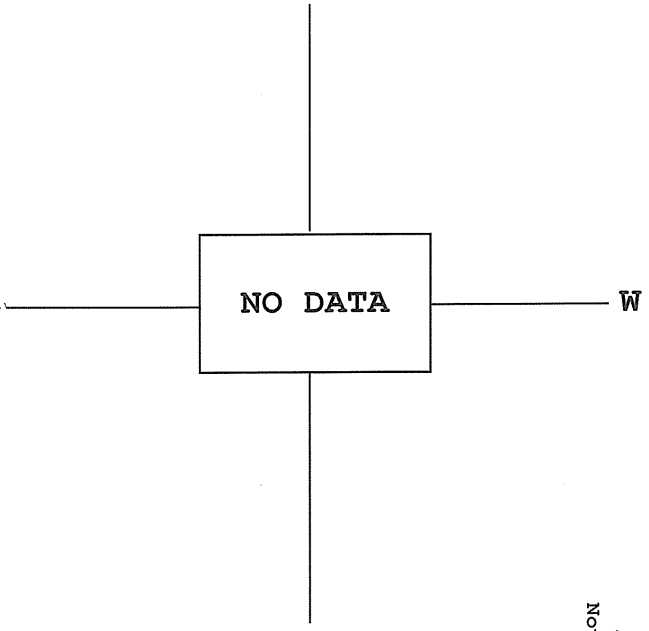
1037 UT

HOLLOMAN SUNSPOTS



2226 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



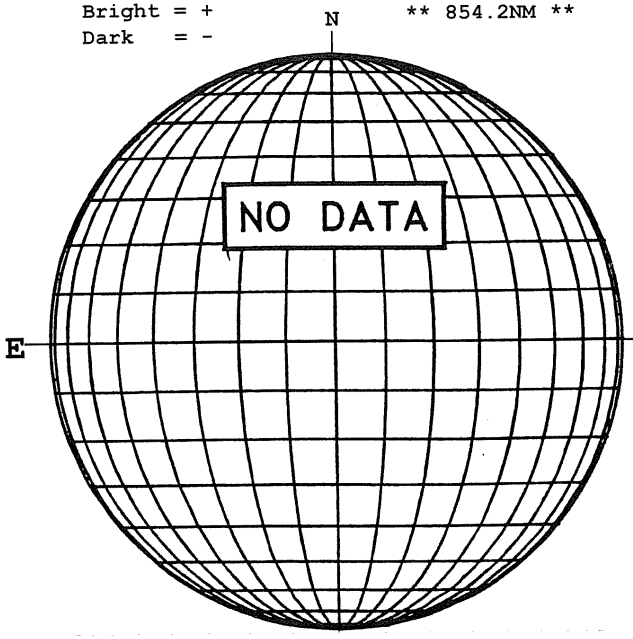
47
Nov 07

NOVEMBER 06, 2007 (P= 23.65, Bo= 3.91, Lo= 339.12)

KITT PEAK MAGNETOGRAM -- SOLIS

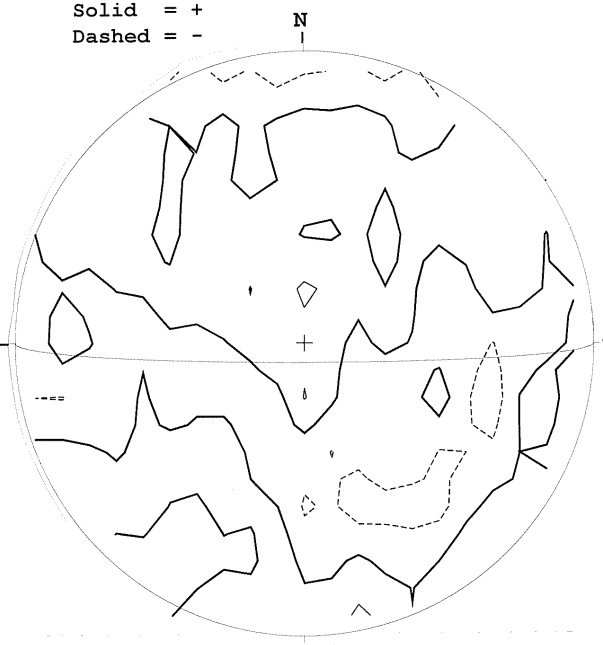
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

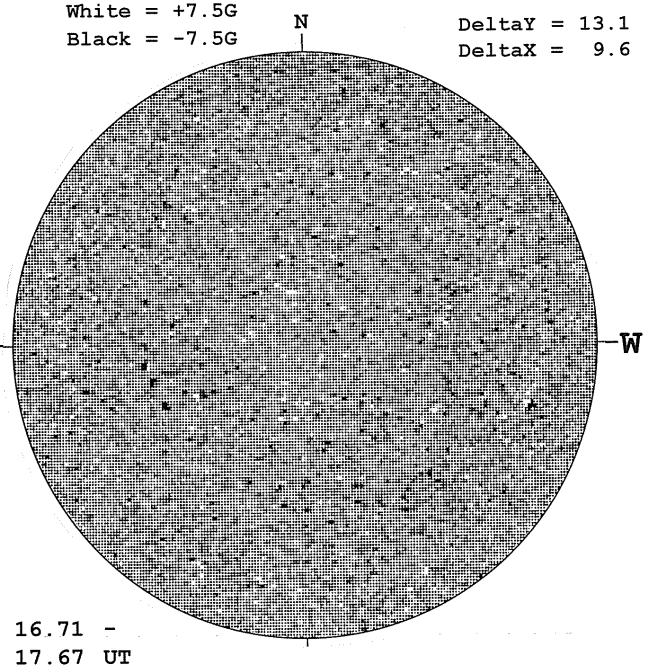


2202 UT

MT. WILSON MAGNETOGRAM

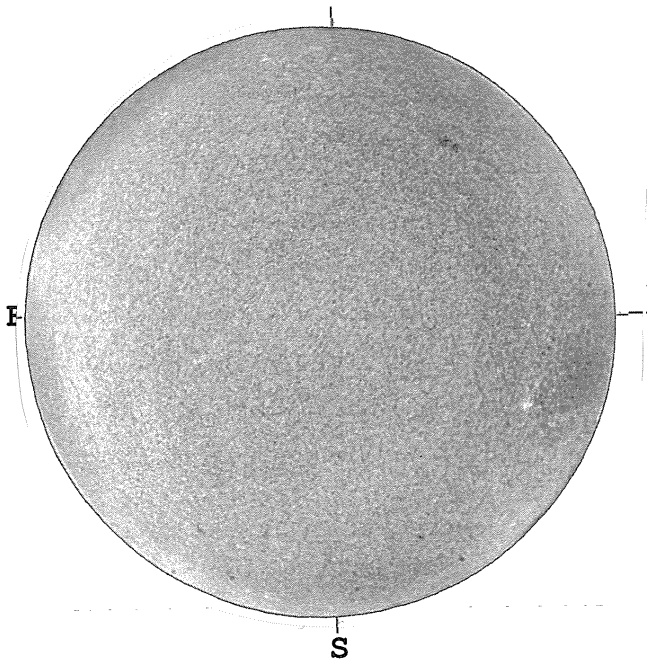
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



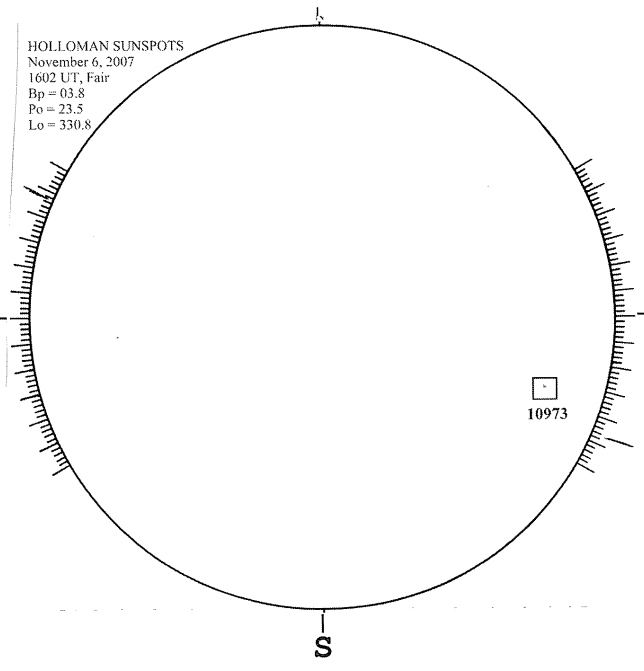
16.71 -
17.67 UT

KANZELHOHE H-ALPHA



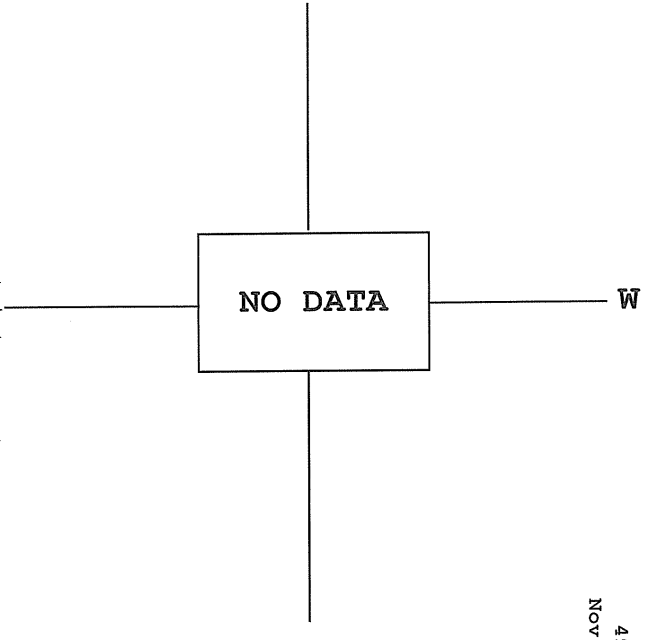
1131 UT

HOLLOMAN SUNSPOTS



1602 UT

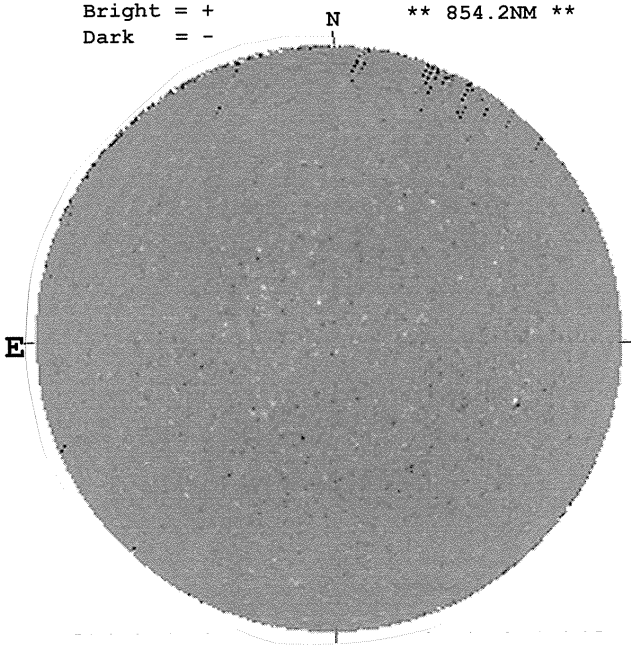
SACRAMENTO PEAK CORONA (1.15 Radii)-----



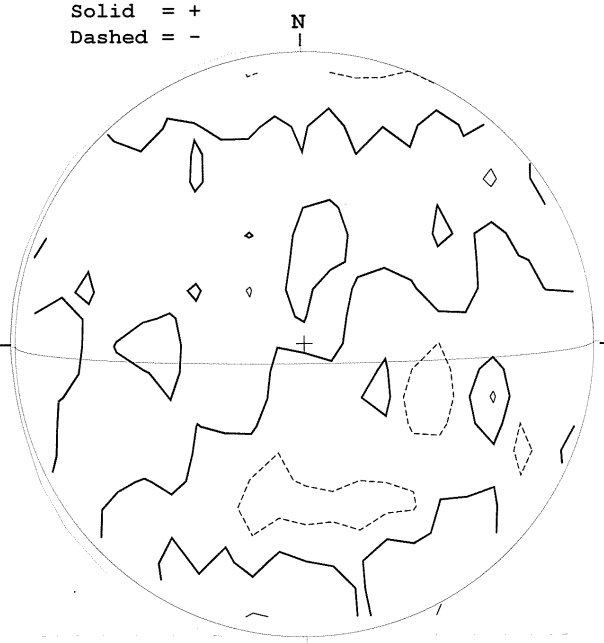
49
Nov 07

NOVEMBER 05, 2007 (P= 23.85, Bo= 4.01, Lo= 352.31)

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

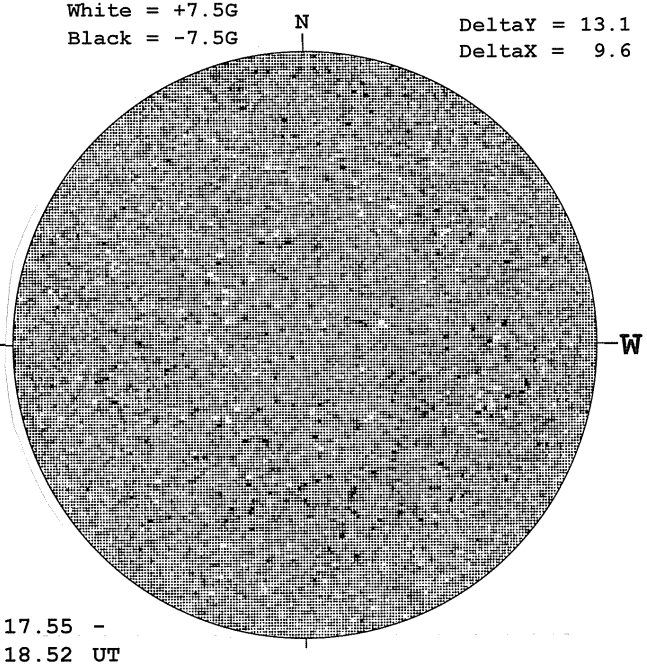


STANFORD MAGNETOGRAM
Solid = +
Dashed = -



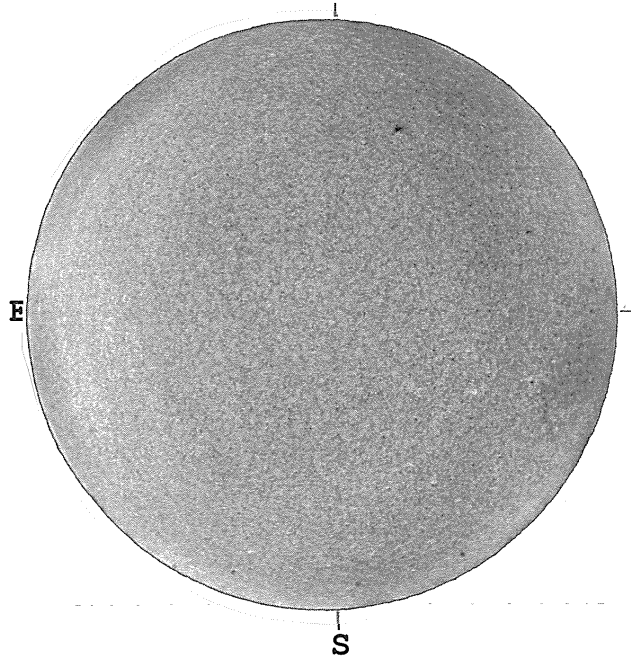
2213 UT

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



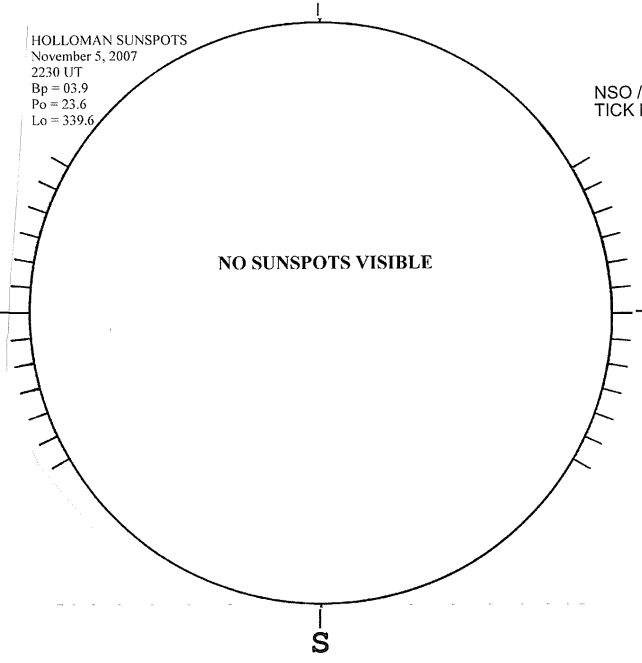
17.55 -
18.52 UT

--- KANZELHOHE H-ALPHA



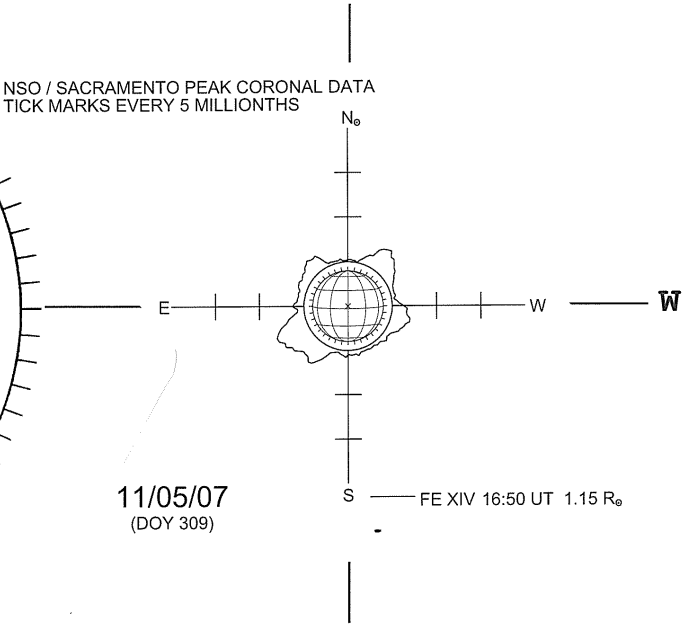
1014 UT

HOLLOMAN SUNSPOTS



2230 UT

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



11/05/07
(DOY 309)

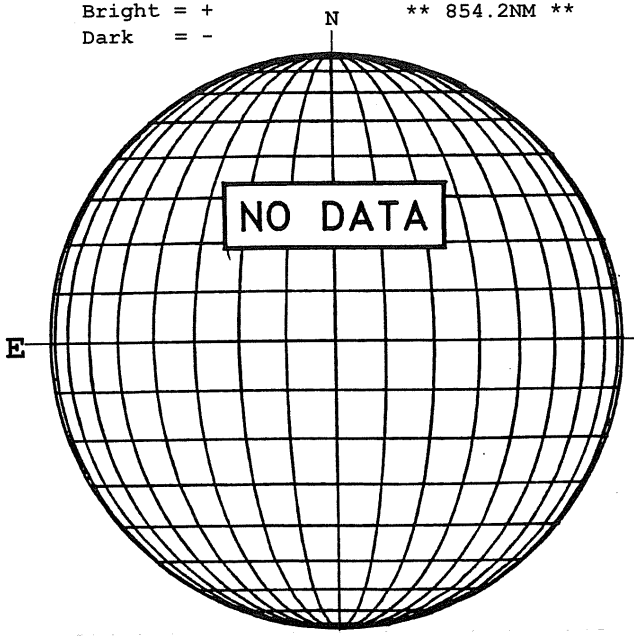
NOVEMBER 07, 2007 (P= 23.45, Bo= 3.80, Lo= 325.94)

Nov 07 50

KITT PEAK MAGNETOGRAM -- SOLIS

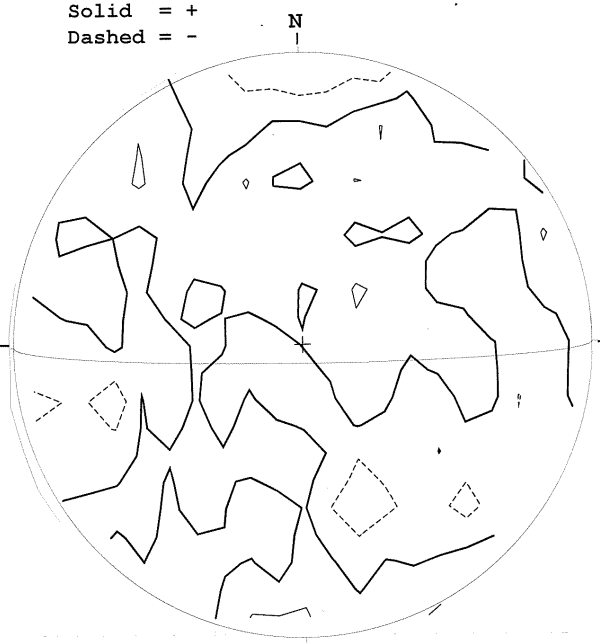
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

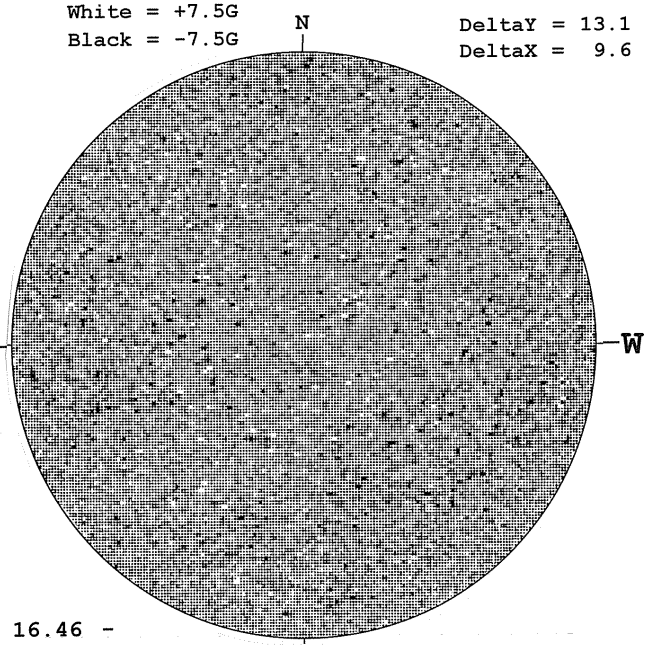


2128 UT

MT. WILSON MAGNETOGRAM

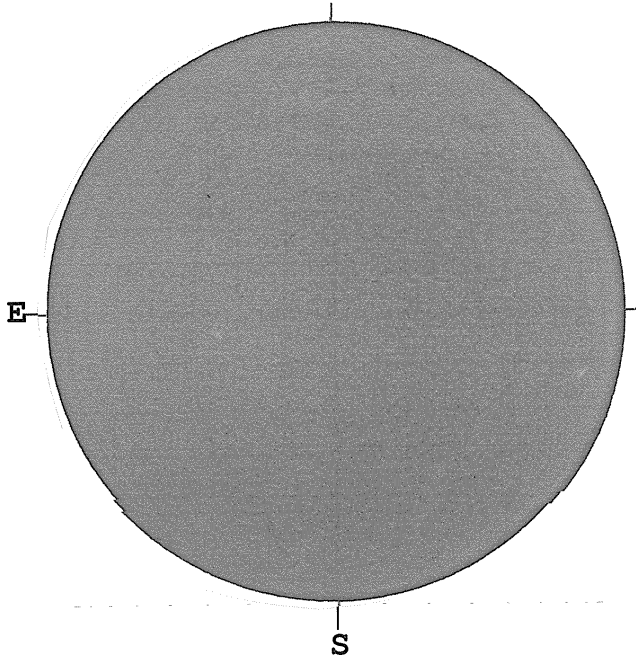
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



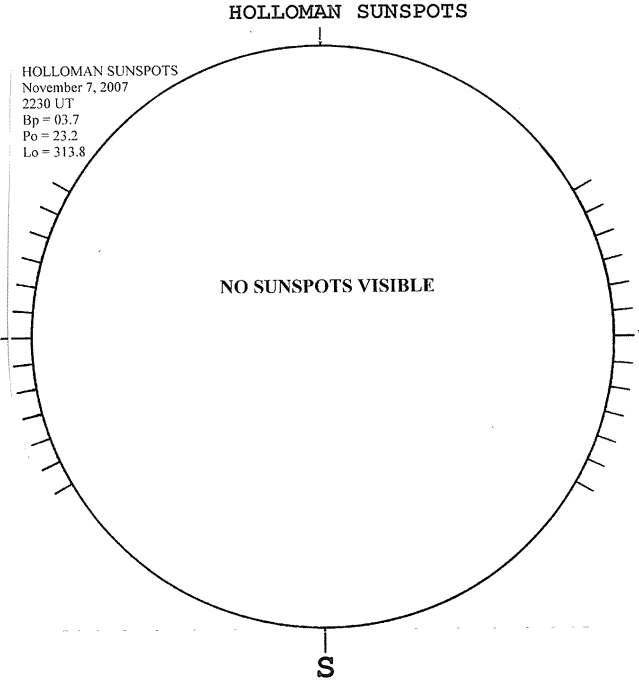
16.46 -
17.42 UT

--- CATANIA H-ALPHA



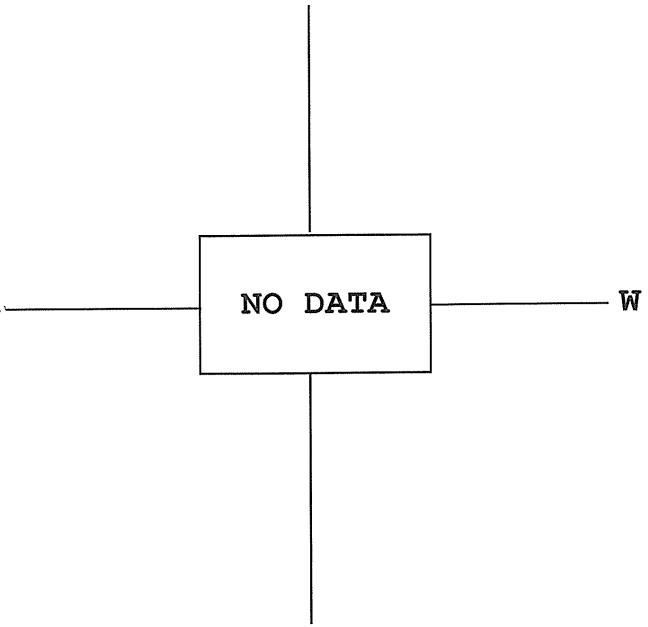
0832 UT

HOLLOMAN SUNSPOTS



2230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

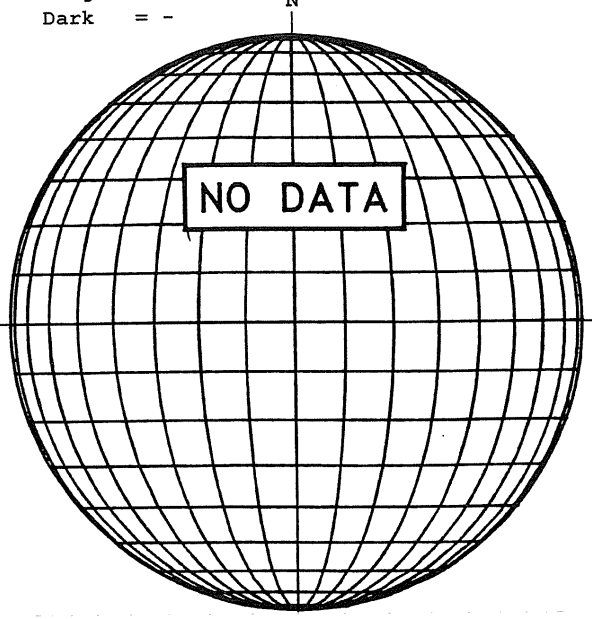


NOVEMBER 08, 2007 (P= 23.23, Bo= 3.69, Lo= 312.76)

KITT PEAK MAGNETOGRAM -- SOLIS

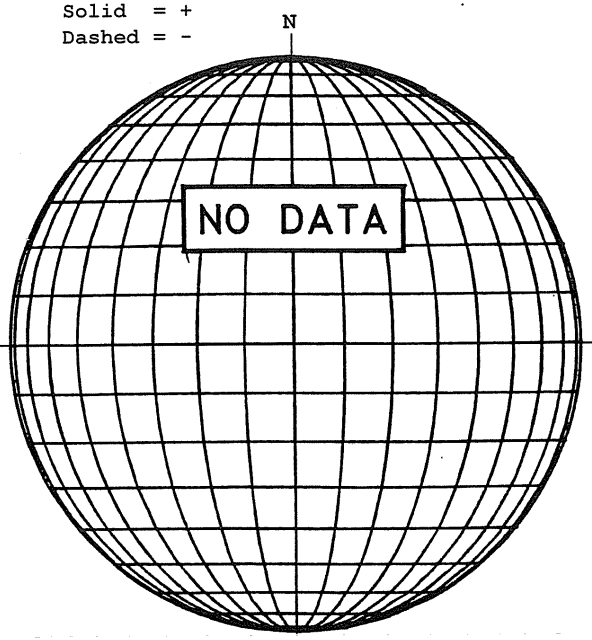
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

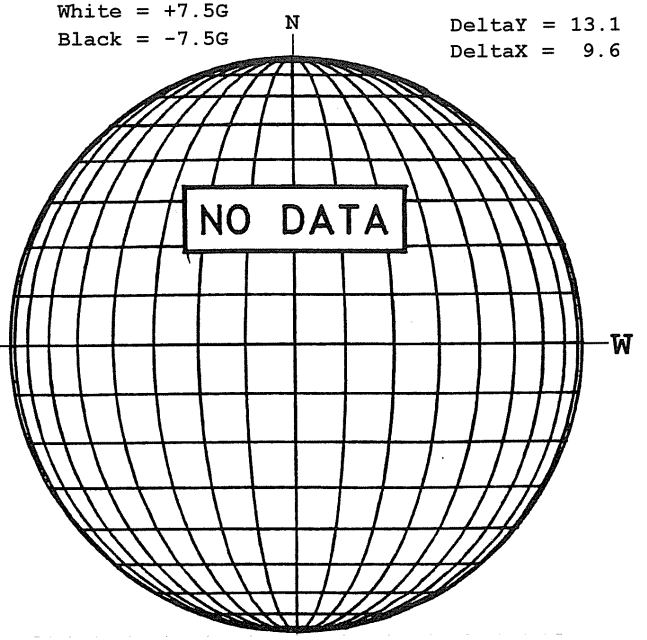
Solid = +
Dashed = -



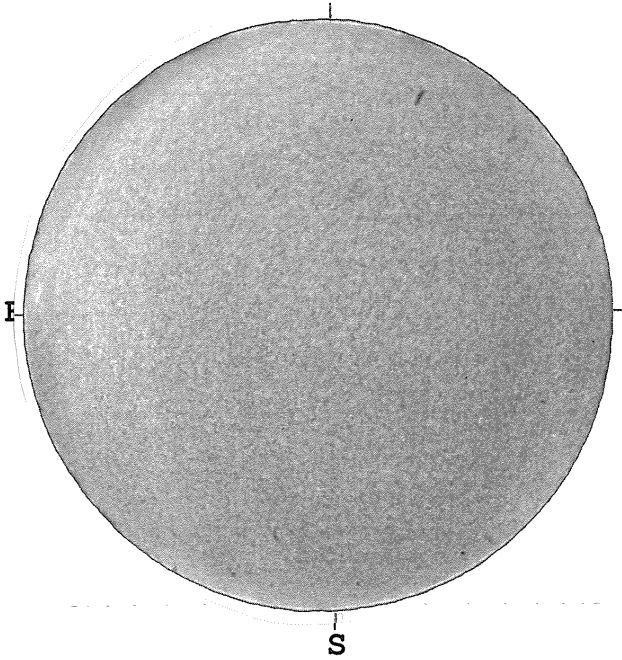
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

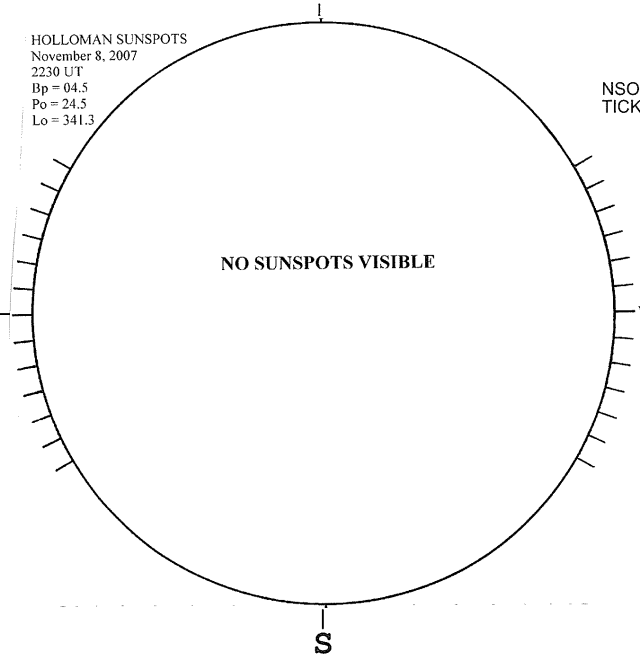


--- KANZELHOHE H-ALPHA



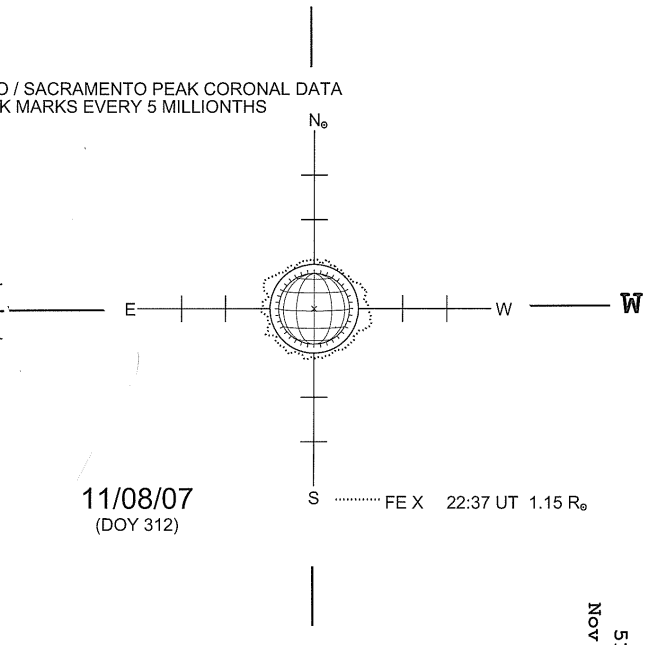
0741 UT

HOLLOMAN SUNSPOTS



2230 UT

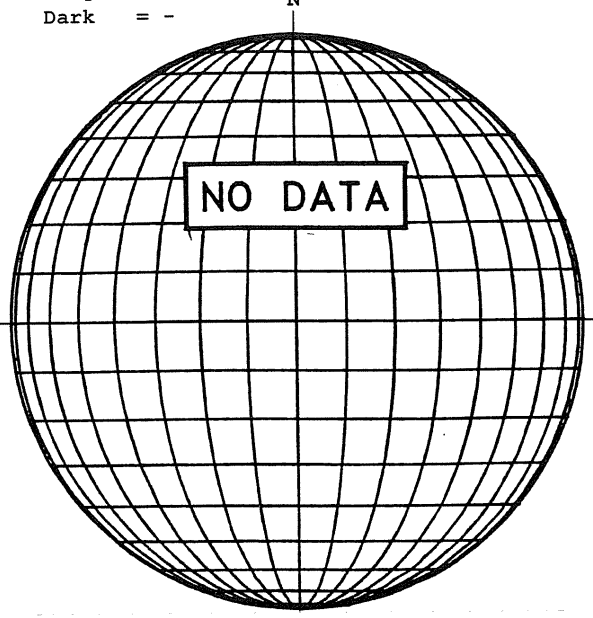
SACRAMENTO PEAK CORONA (1.15 Radii)-----



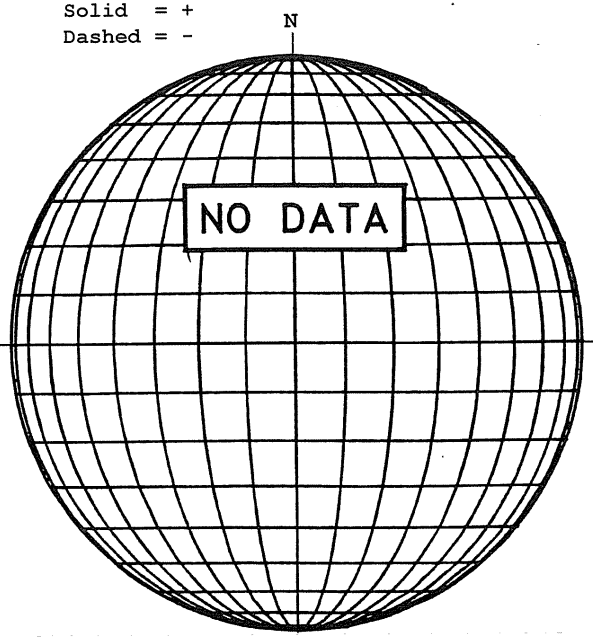
NOVEMBER 09, 2007 (P= 23.01, Bo= 3.58, Lo= 299.57)

Nov 07 52

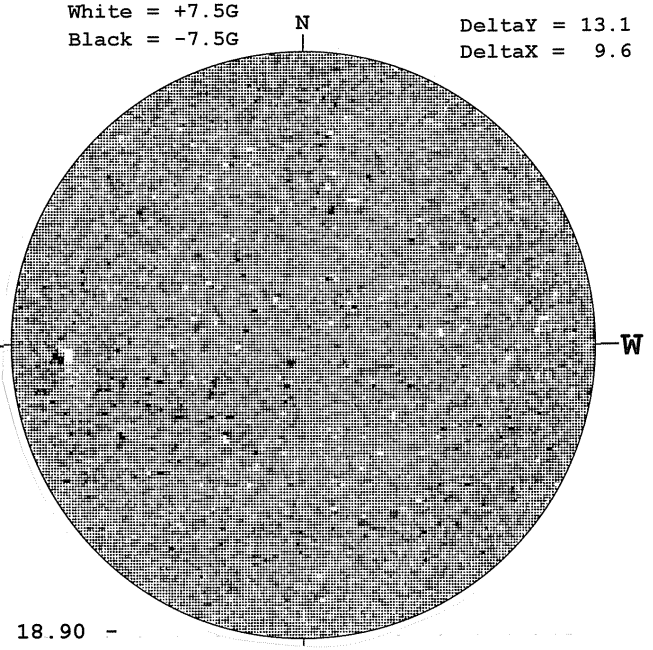
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

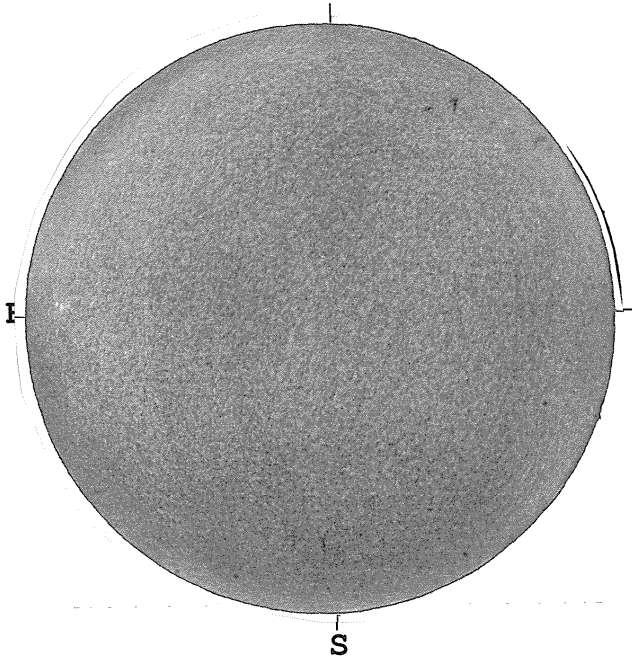


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



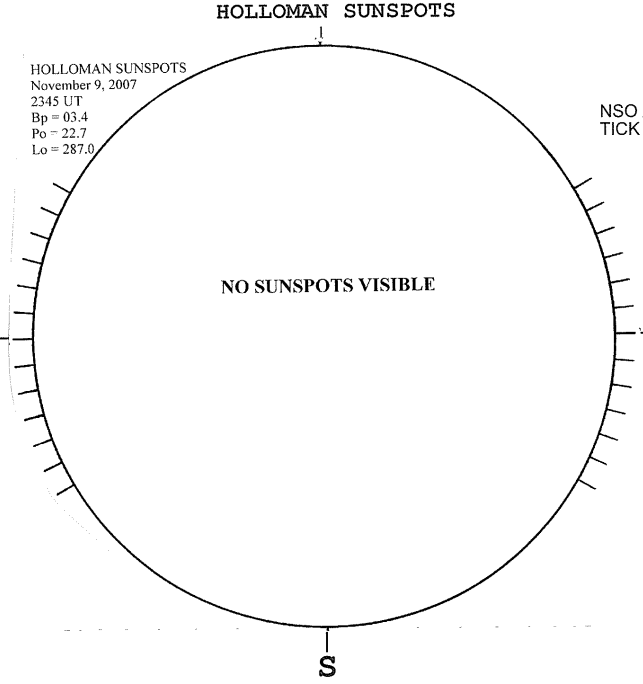
18.90 -
19.87 UT

KANZELHOHE H-ALPHA



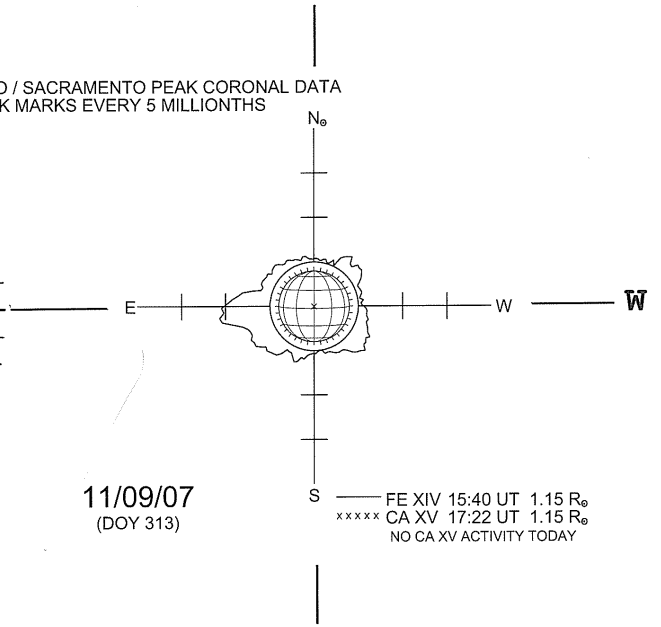
0815 UT

HOLLOMAN SUNSPOTS



2245 UT

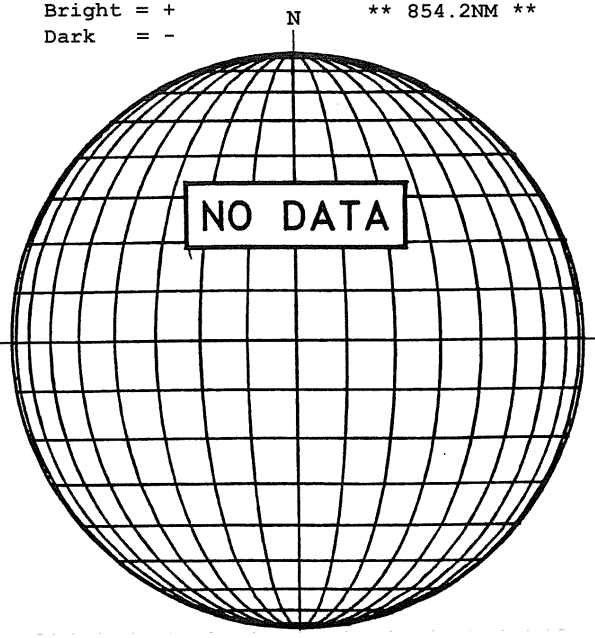
SACRAMENTO PEAK CORONA (1.15 Radii)



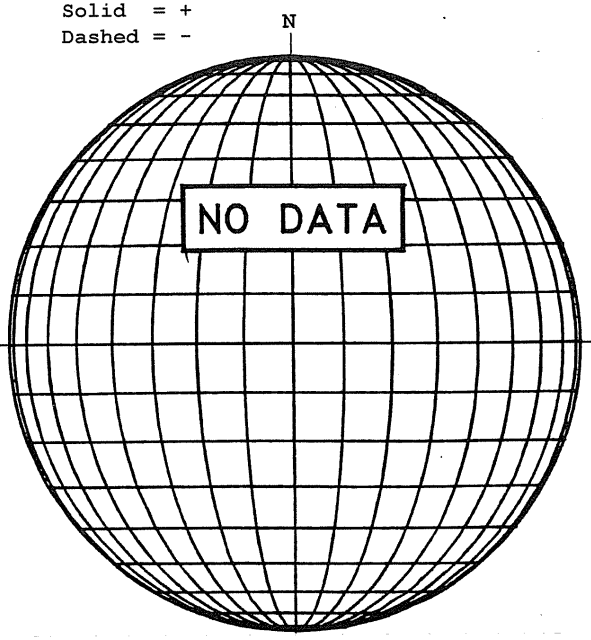
11/09/07
(DOY 313)

NOVEMBER 10, 2007 (P= 22.78, Bo= 3.47, Lo= 286.39)

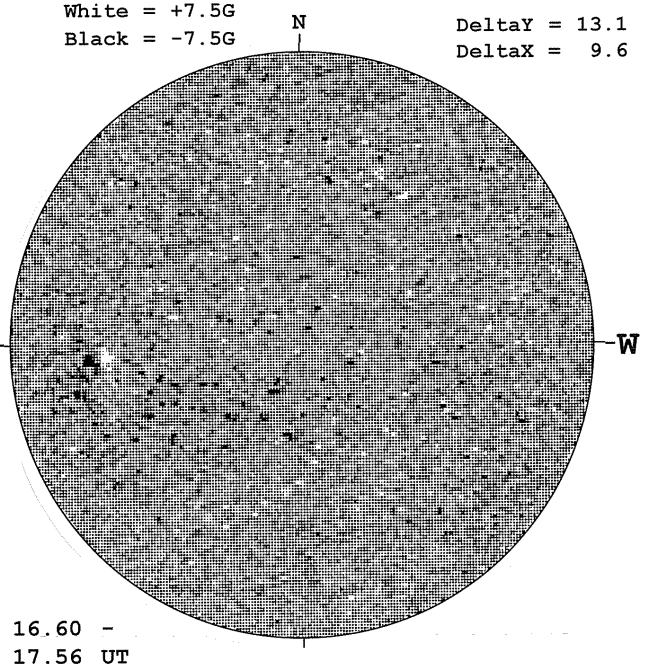
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

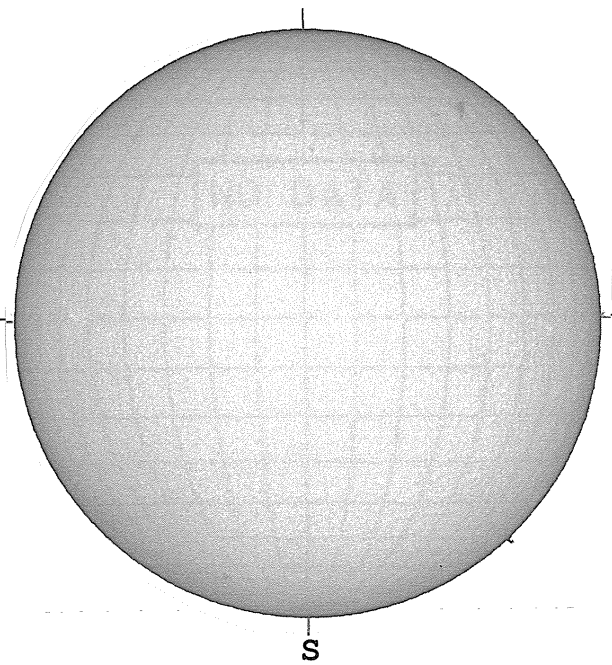


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



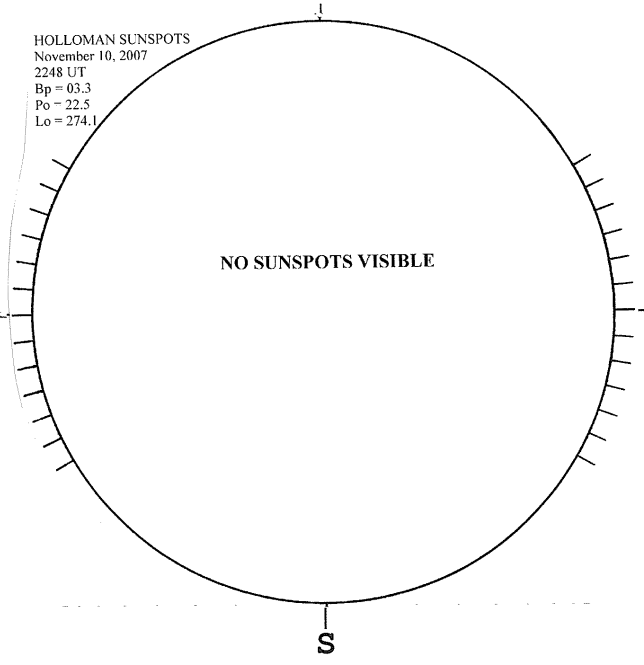
16.60 -
17.56 UT

--- YUNNAN H-ALPHA



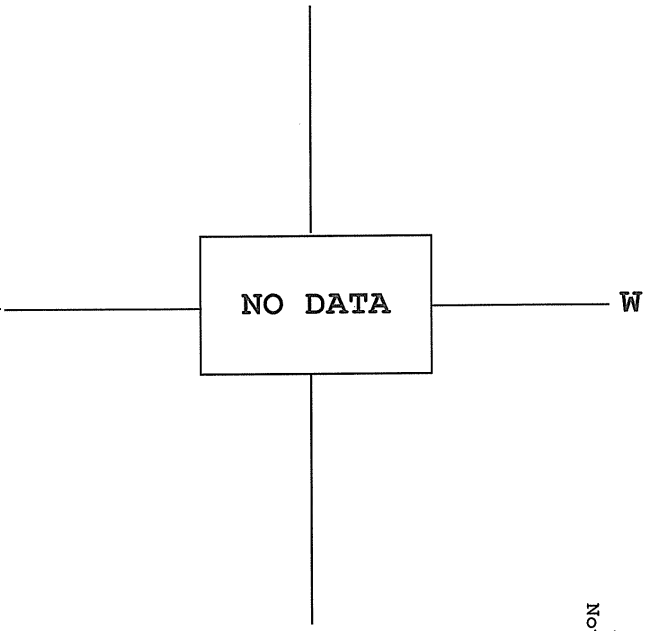
0138 UT

HOLLOMAN SUNSPOTS



2248 UT

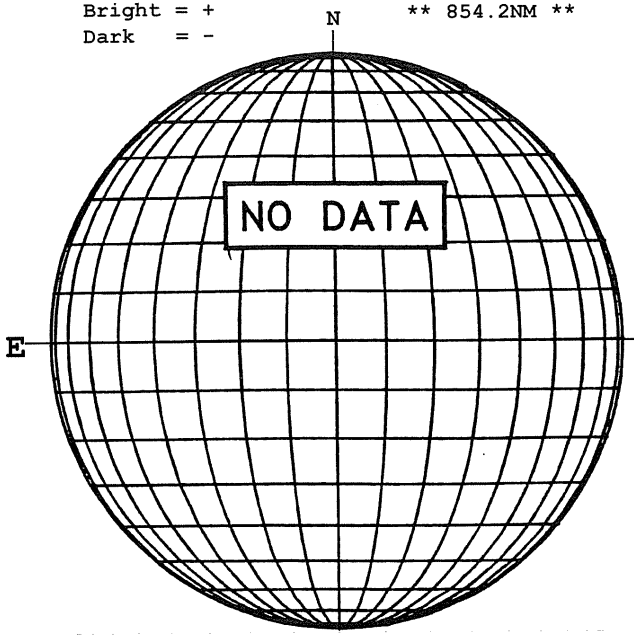
SACRAMENTO PEAK CORONA (1.15 Radii)----



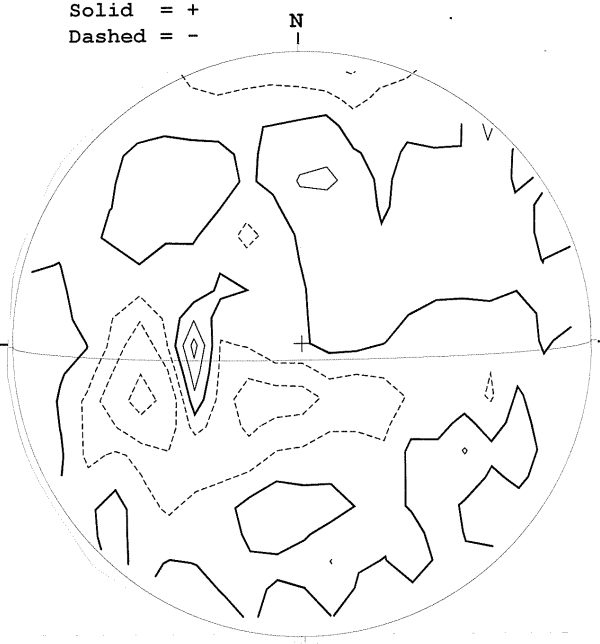
53
Nov 07

NOVEMBER 11, 2007 (P= 22.54, Bo= 3.36, Lo= 273.20)

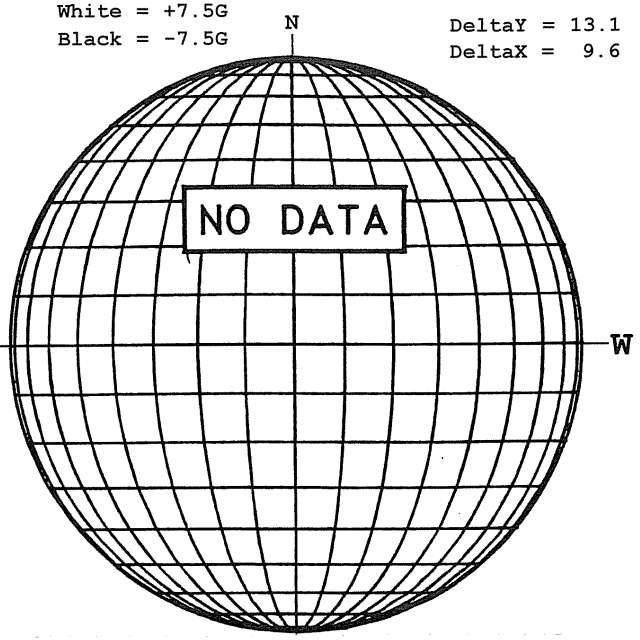
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

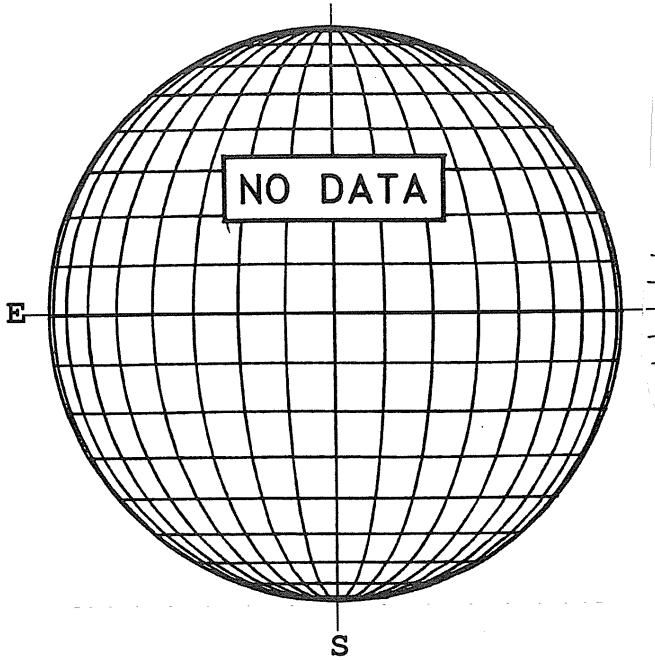


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6

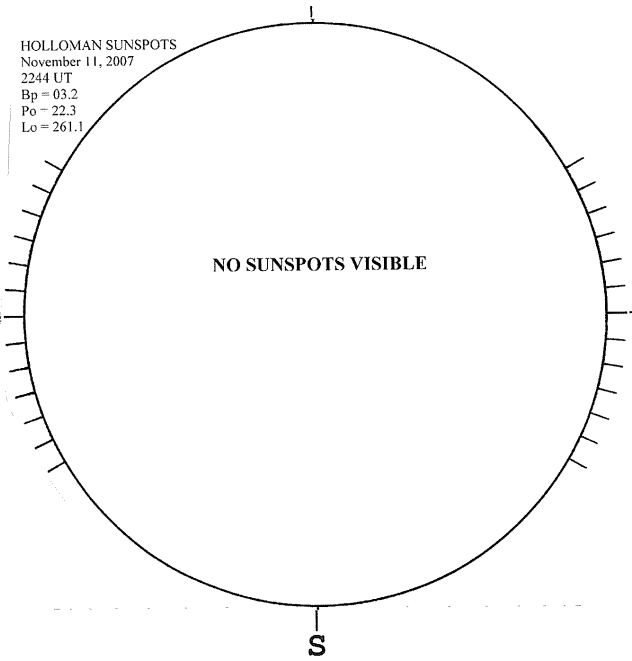


2309 UT

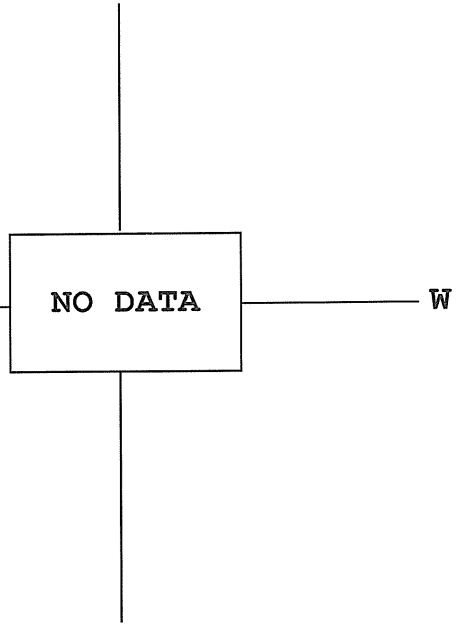
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



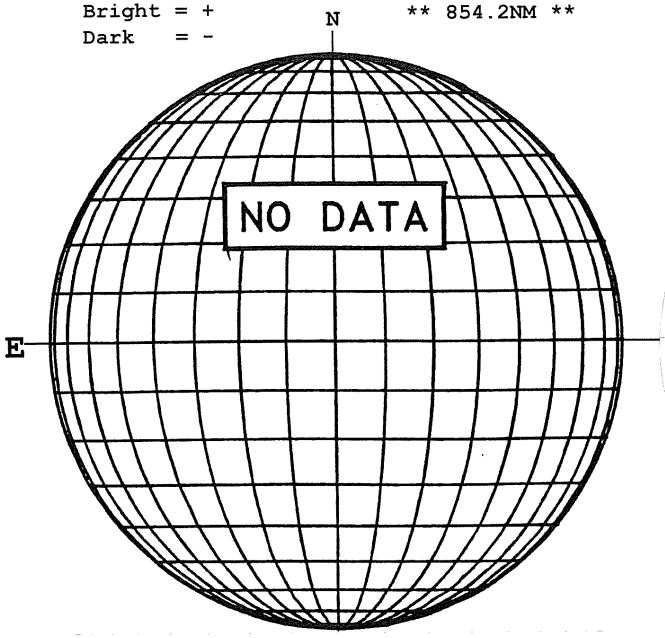
2244 UT

NOVEMBER 12, 2007 (P= 22.30, Bo= 3.25, Lo= 260.02)

KITT PEAK MAGNETOGRAM -- SOLIS

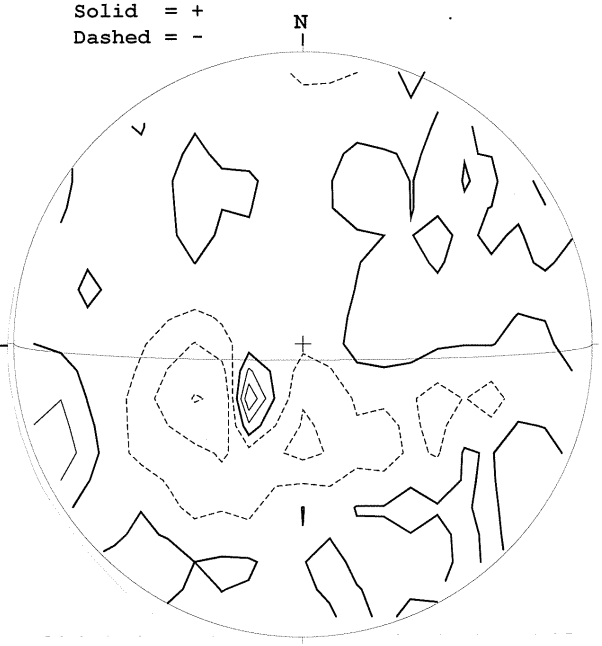
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

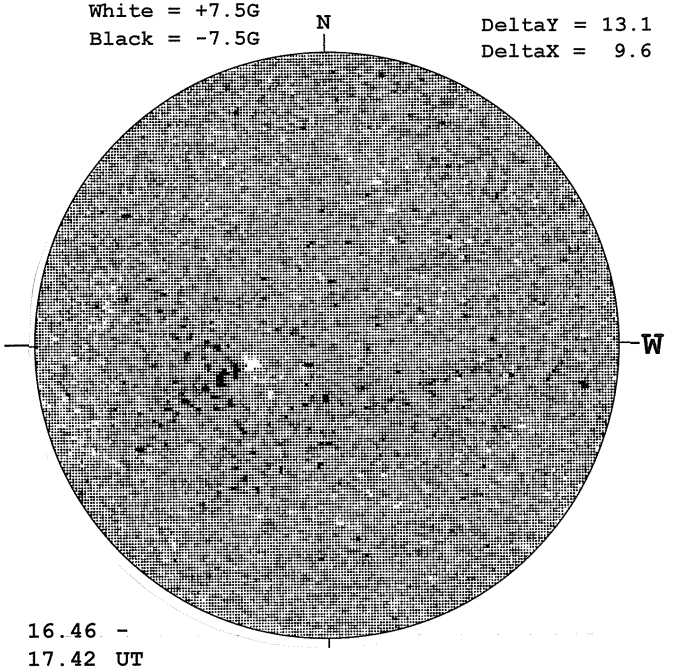


2141 UT

MT. WILSON MAGNETOGRAM

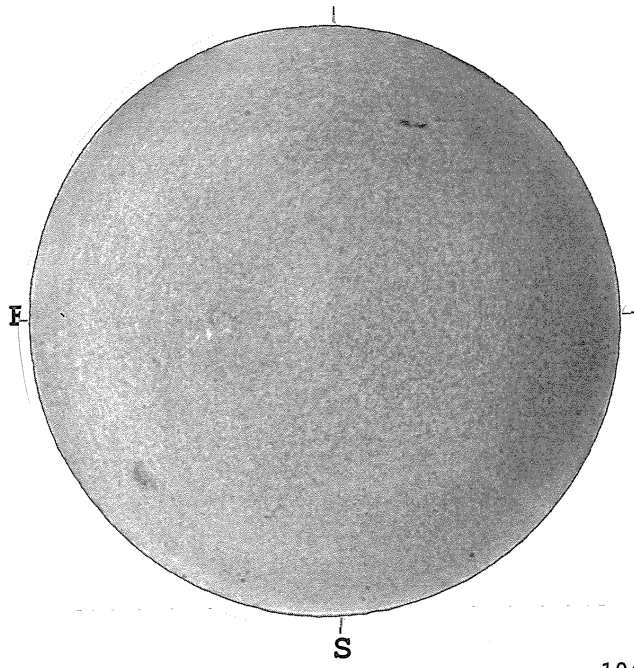
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



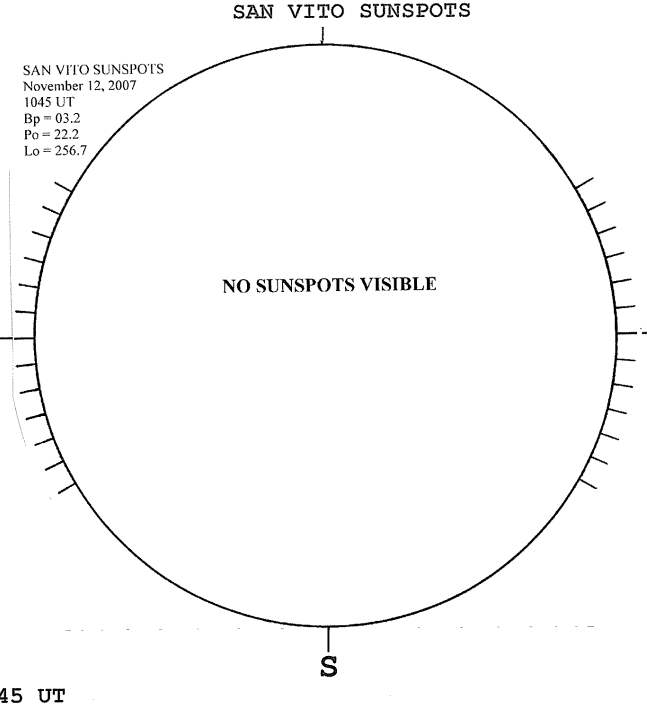
16.46 -
17.42 UT

KANZELHOHE H-ALPHA



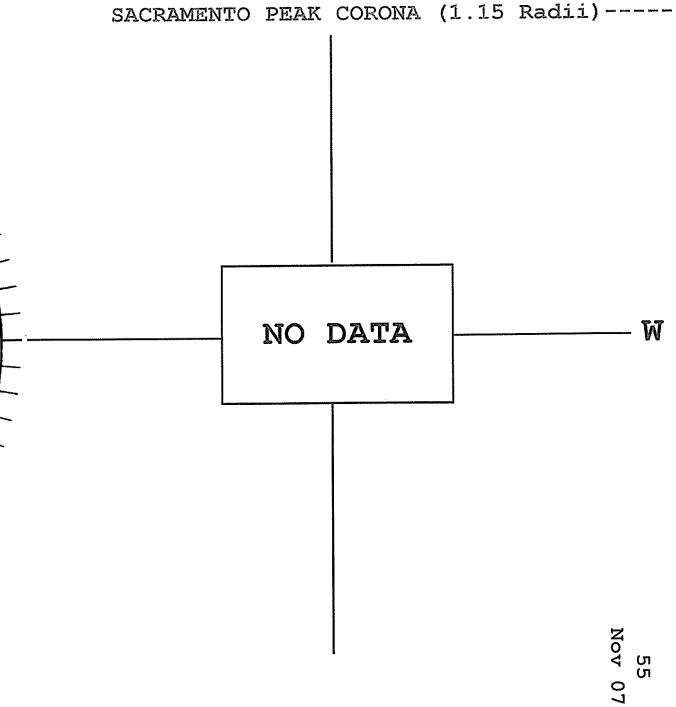
0811 UT

SAN VITO SUNSPOTS



1045 UT

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

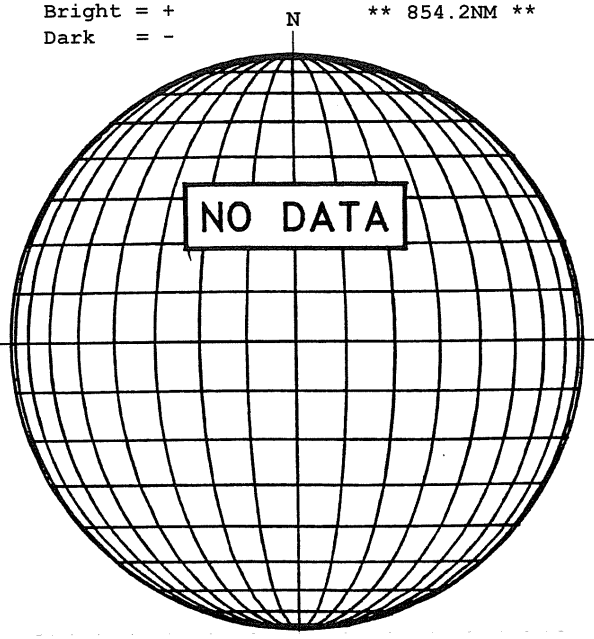


55
Nov 07

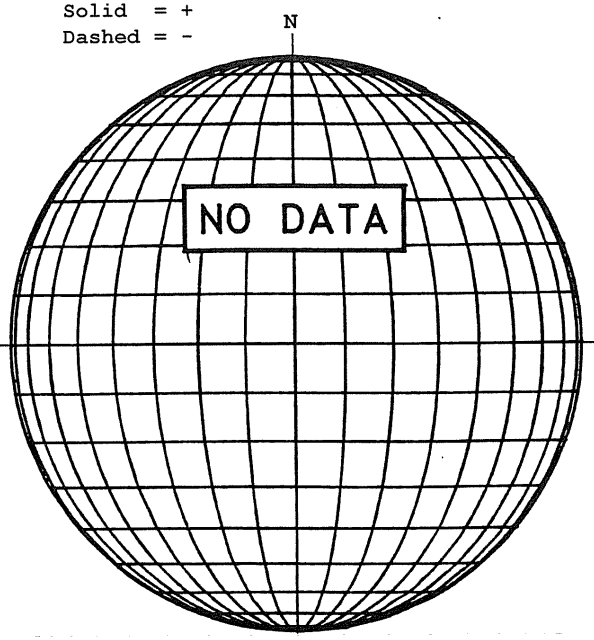
NOVEMBER 13, 2007 (P= 22.05, Bo= 3.13, Lo= 246.84)

Nov 07 56

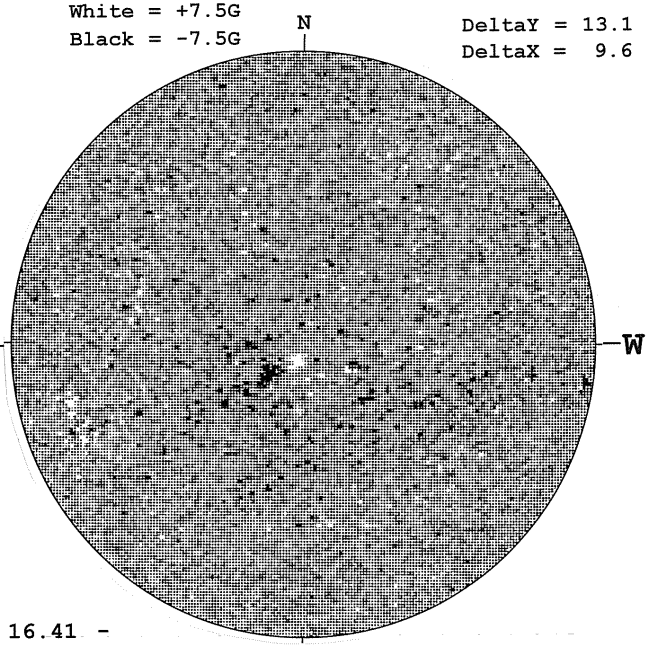
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

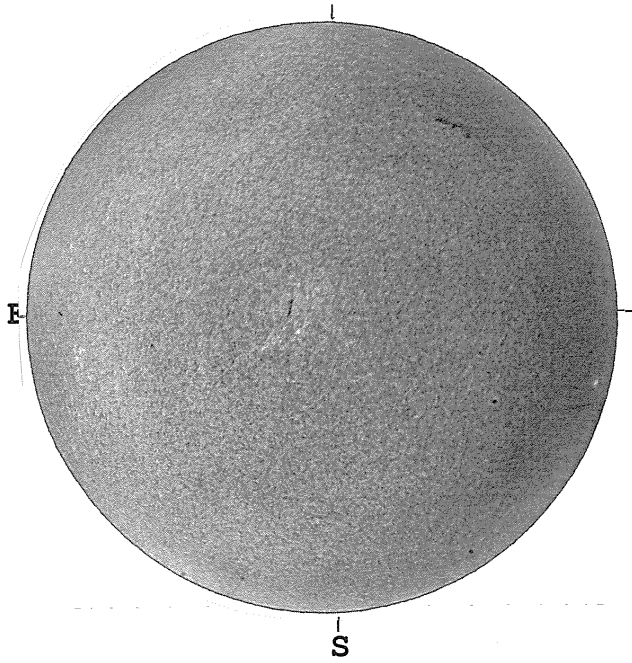


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



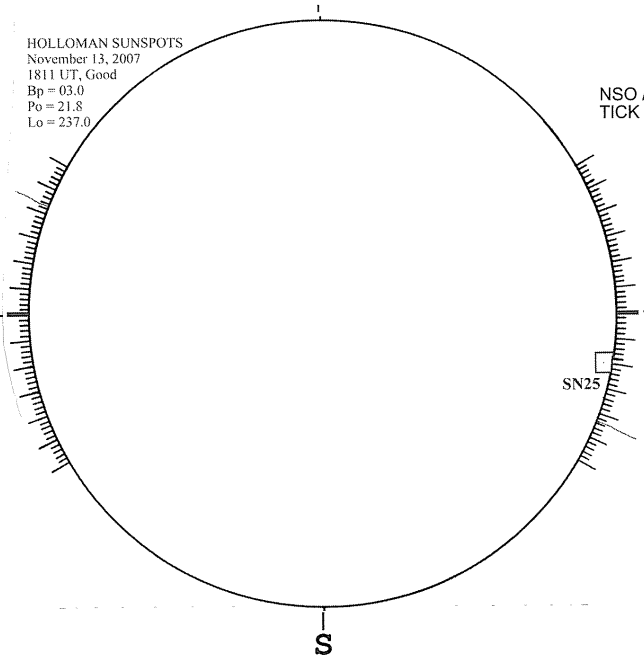
16.41 -
17.37 UT

KANZELHOHE H-ALPHA



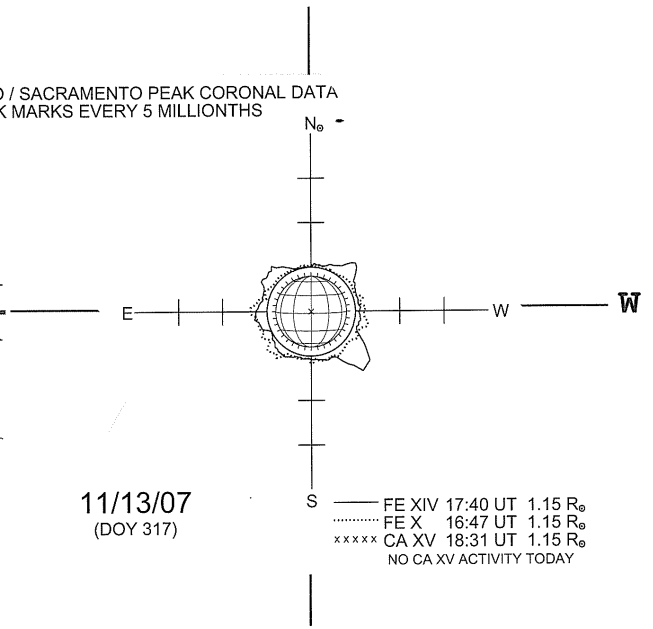
1036 UT

HOLLOMAN SUNSPOTS



1811 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



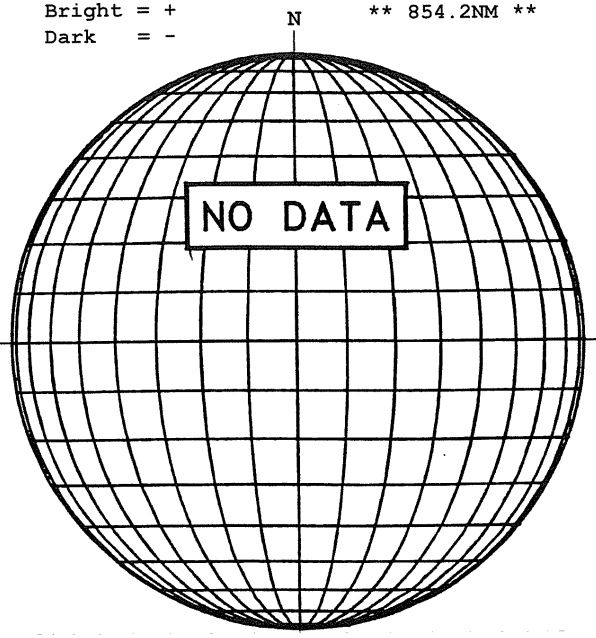
11/13/07
(DOY 317)

NOVEMBER 14, 2007 (P= 21.79, Bo= 3.02, Lo= 233.65)

KITT PEAK MAGNETOGRAM -- SOLIS

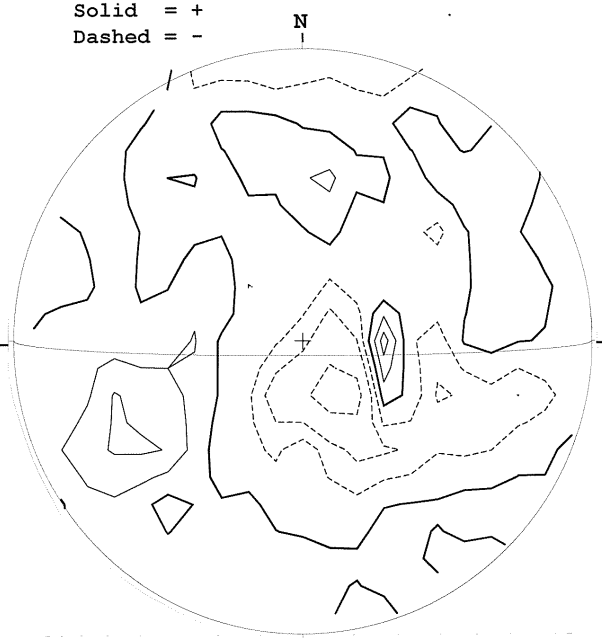
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

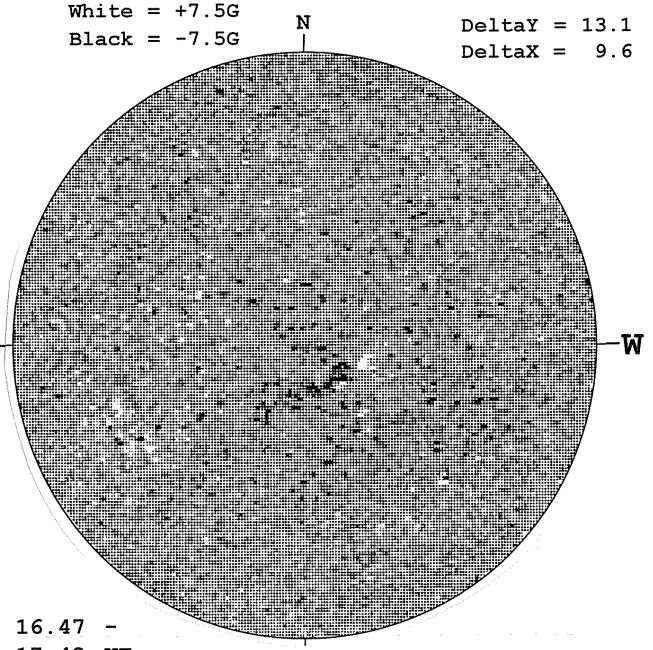


2235 UT

MT. WILSON MAGNETOGRAM

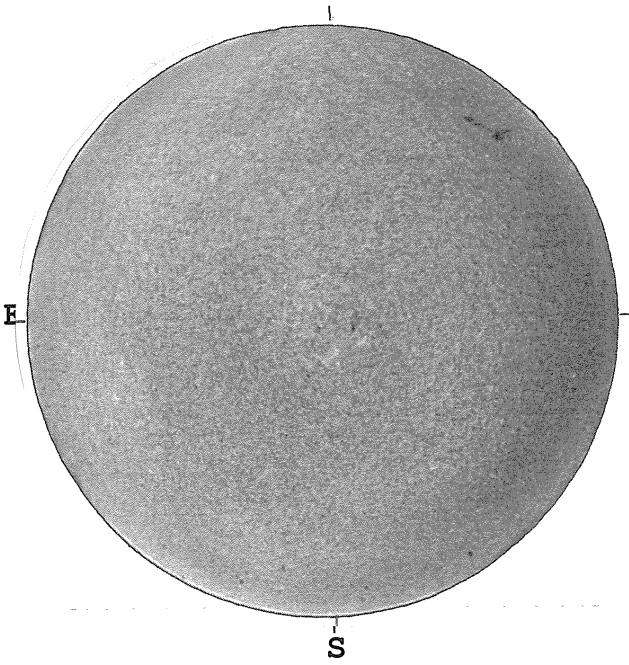
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



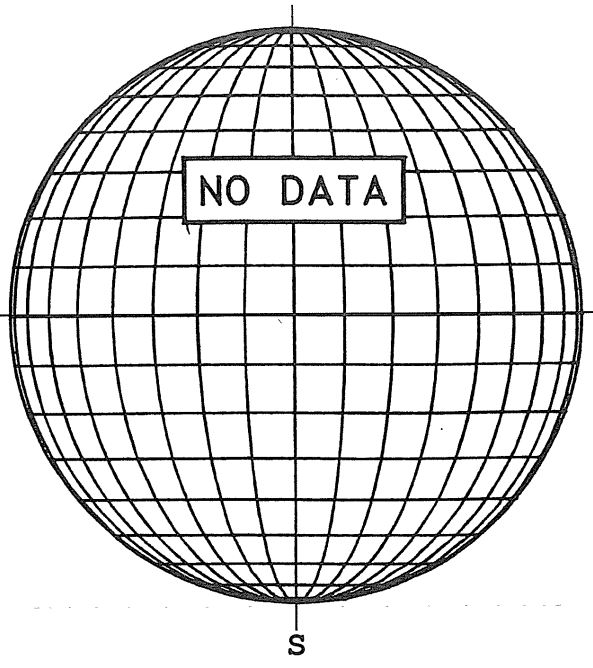
16.47 -
17.43 UT

KANZELHOHE H-ALPHA

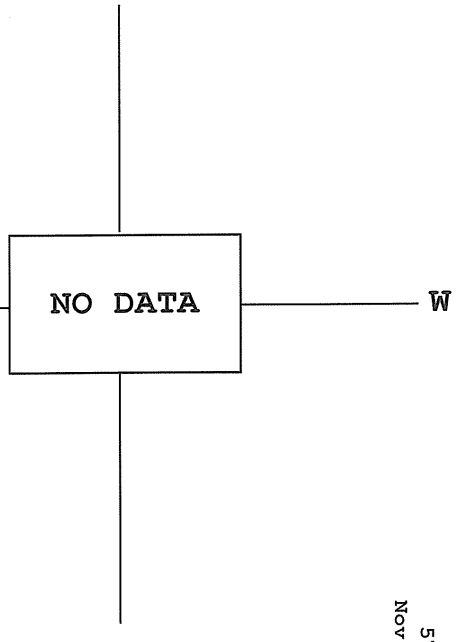


0922 UT

HOLLOMAN SUNSPOTS



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

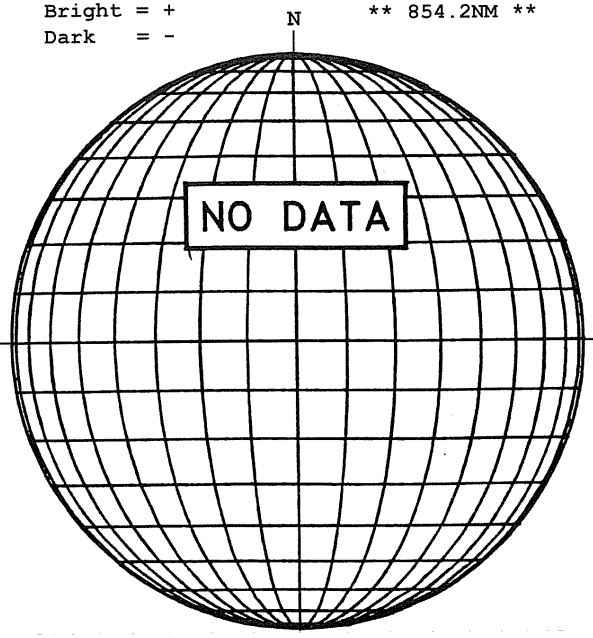


57
Nov 07

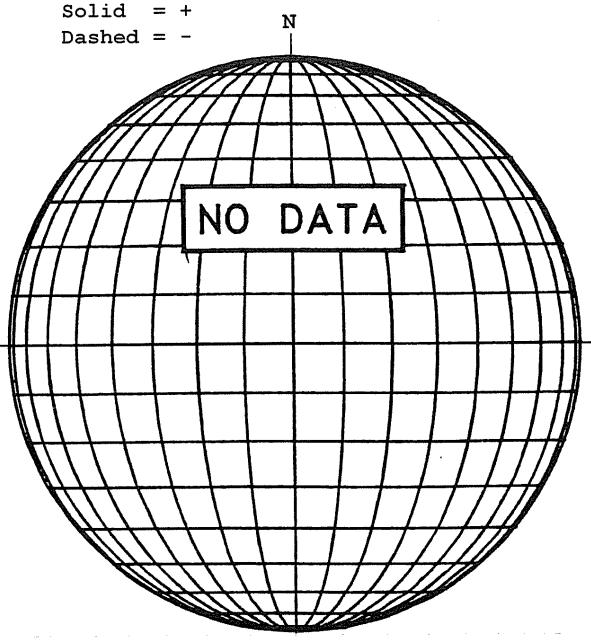
NOVEMBER 15, 2007 (P= 21.52, Bo= 2.90, Lo= 220.47)

Nov 07 58

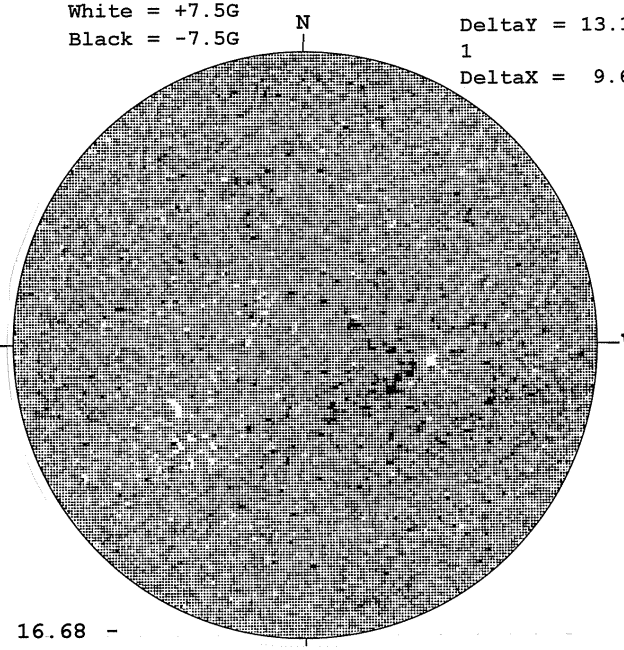
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

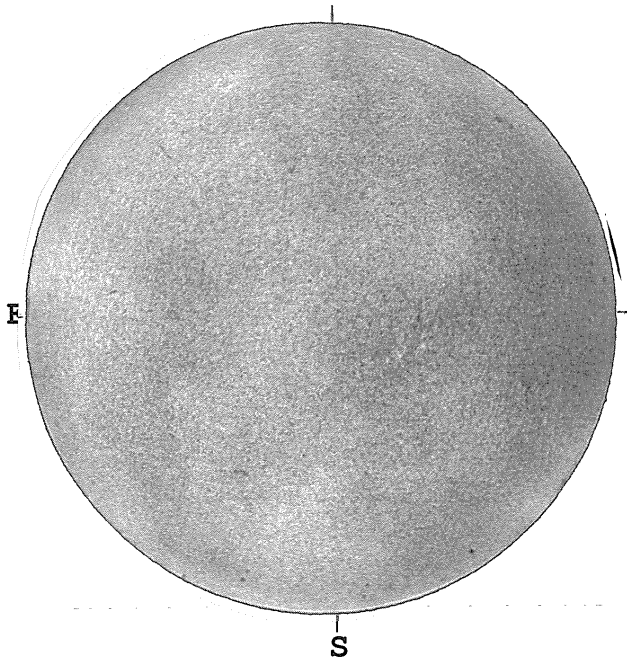


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
1
DeltaX = 9.6



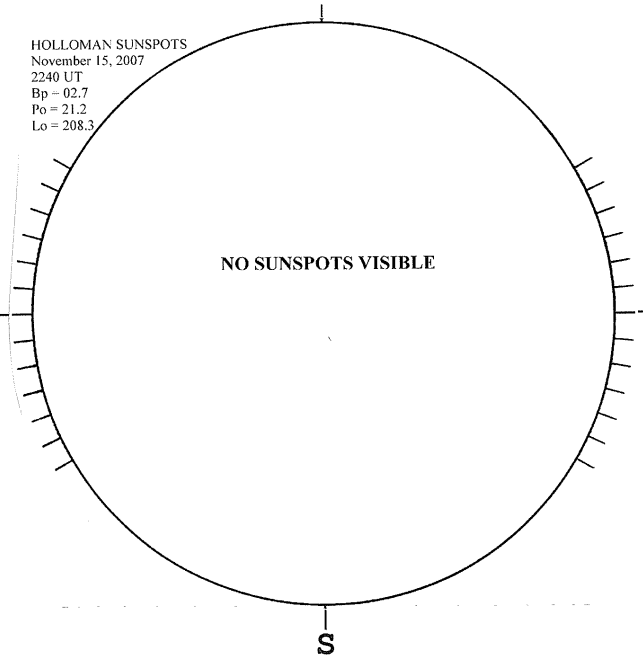
16.68 -
17.64 UT

KANZELHOHE H-ALPHA



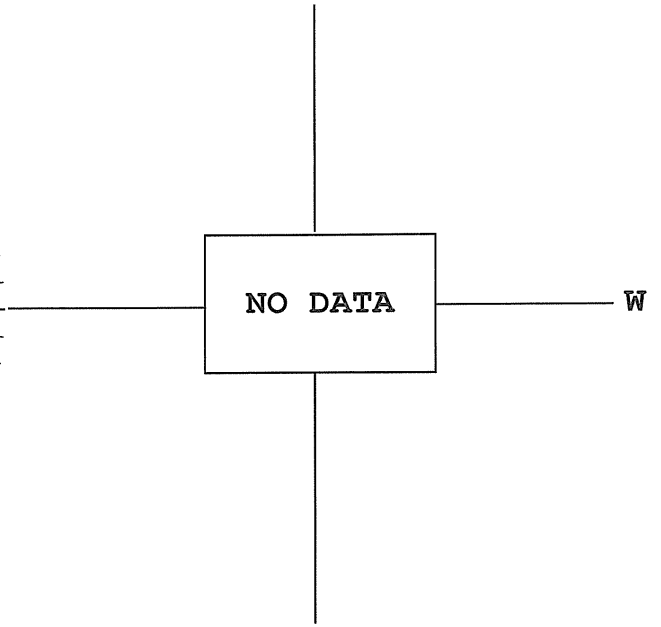
0835 UT

HOLLOMAN SUNSPOTS



2240 UT

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

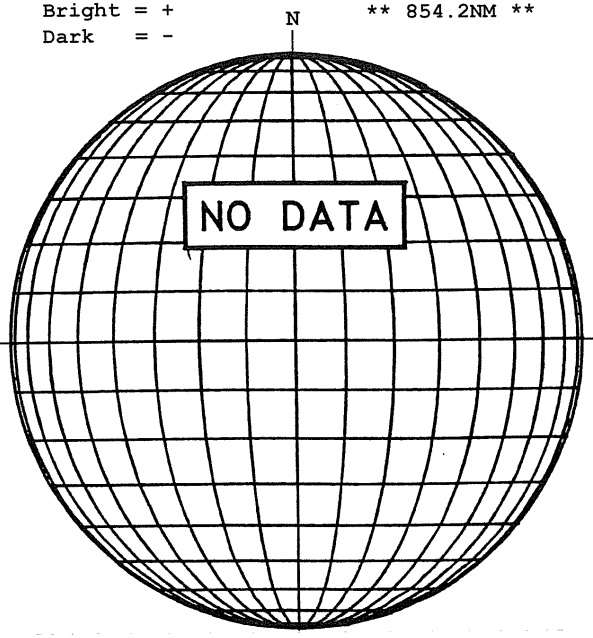


NOVEMBER 16, 2007 (P= 21.24, Bo= 2.78, Lo= 207.29)

KITT PEAK MAGNETOGRAM -- SOLIS

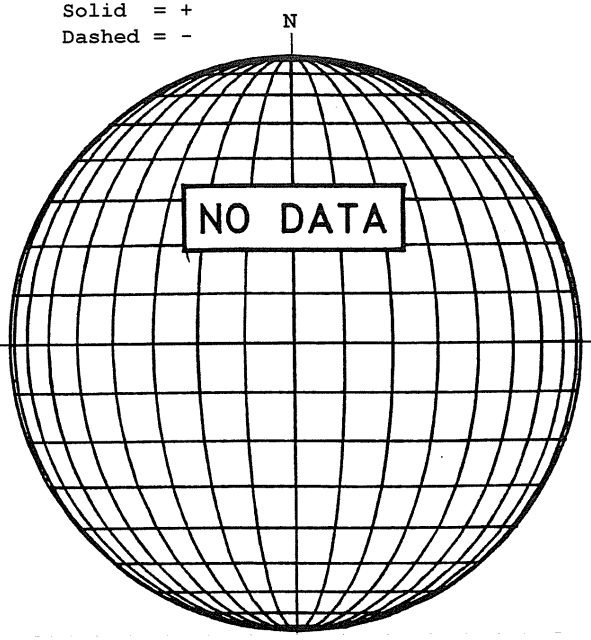
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

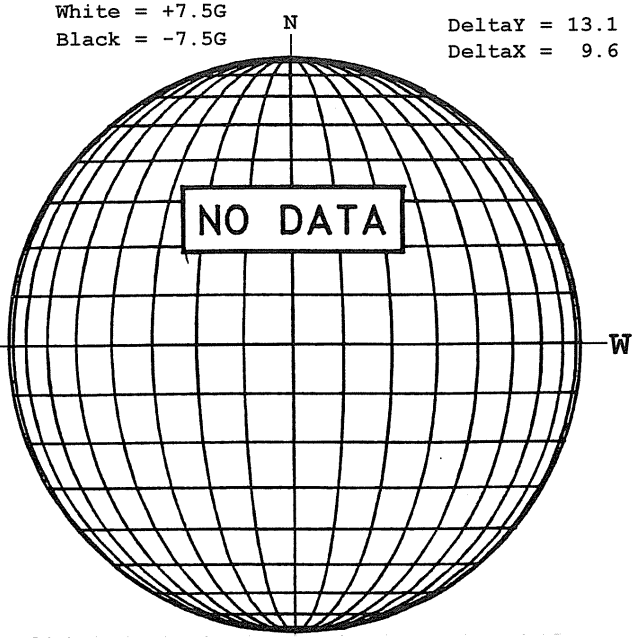
Solid = +
Dashed = -



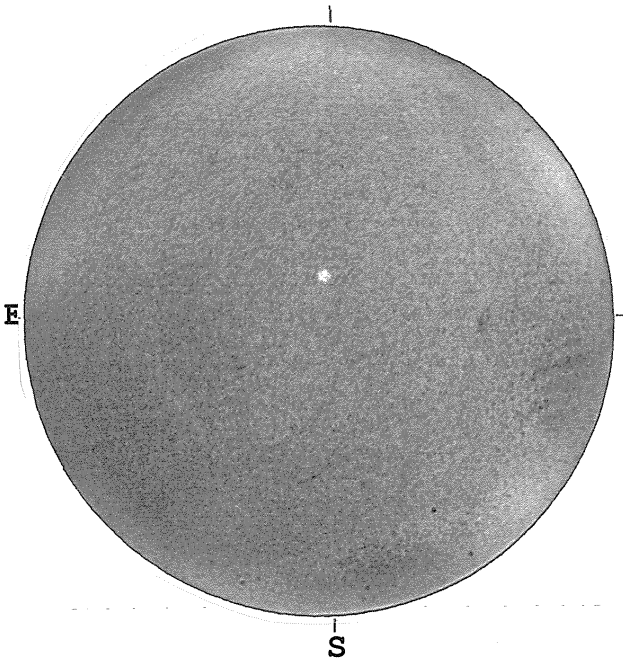
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

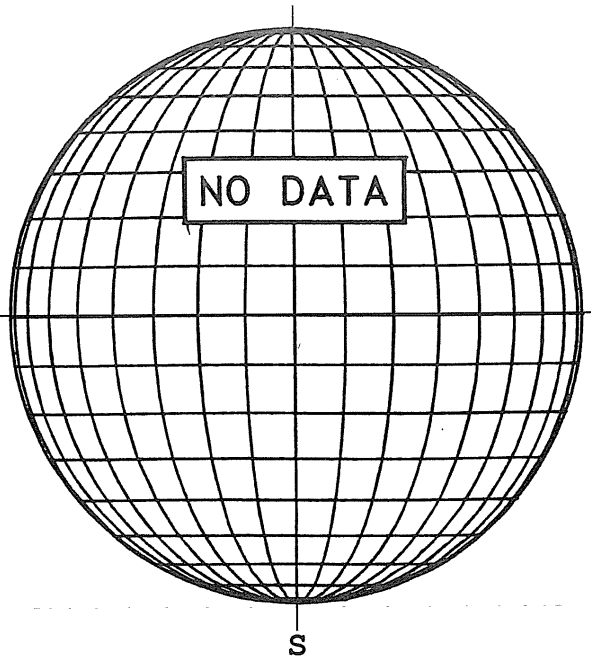
DeltaY = 13.1
DeltaX = 9.6



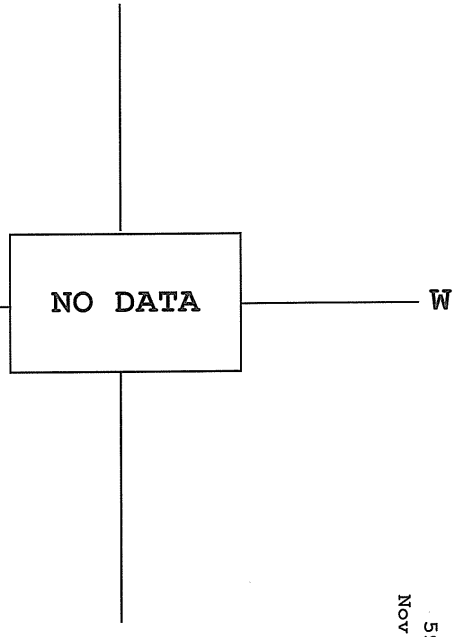
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



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



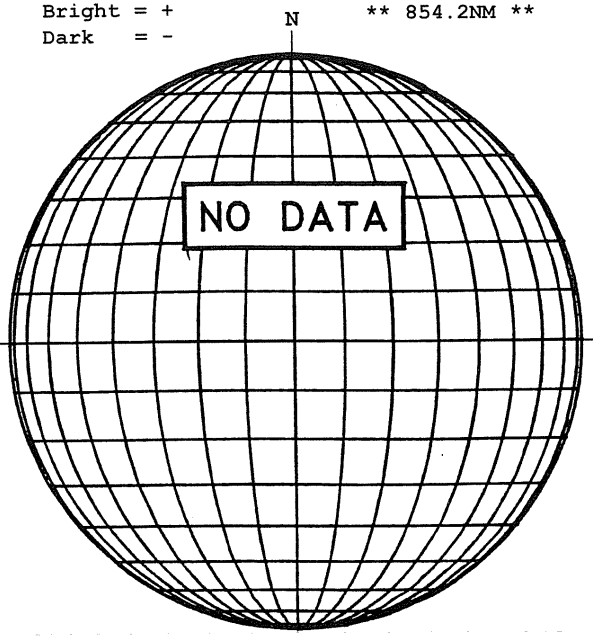
0808 UT

59
Nov 07

NOVEMBER 17, 2007 (P= 20.96, Bo= 2.67, Lo= 194.11)

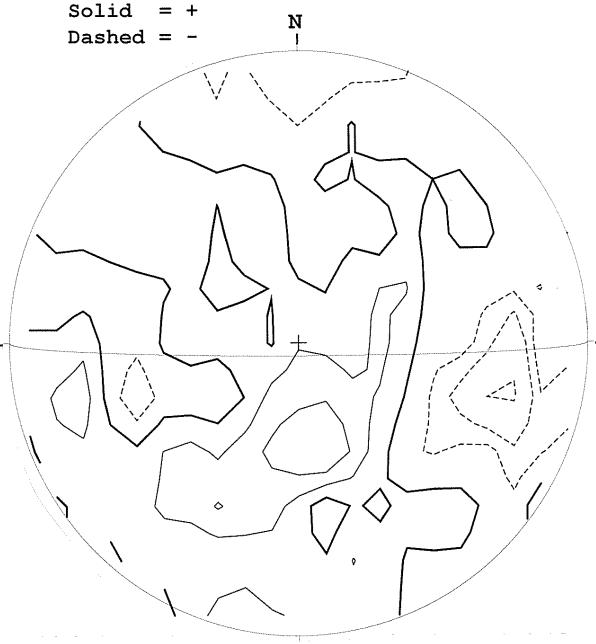
Nov 07 60

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

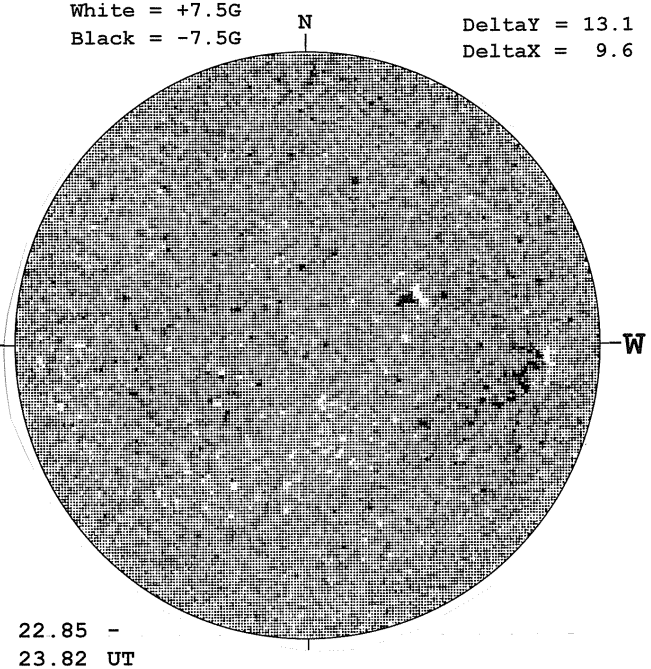


2215 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

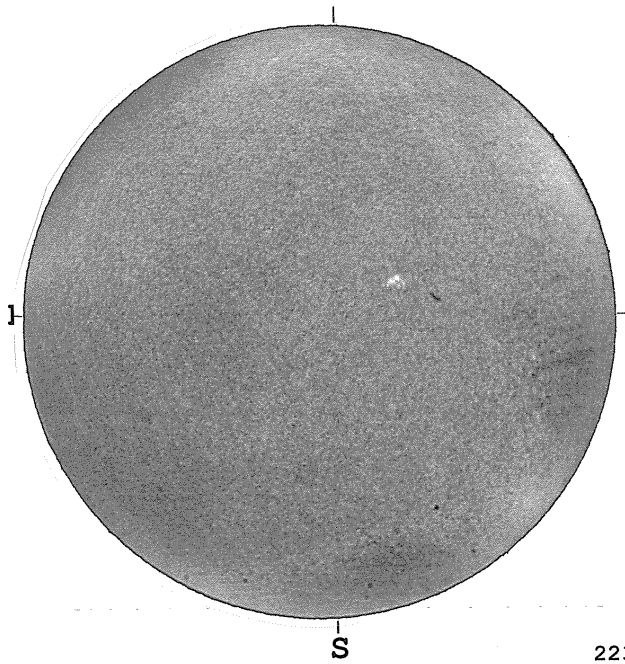


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



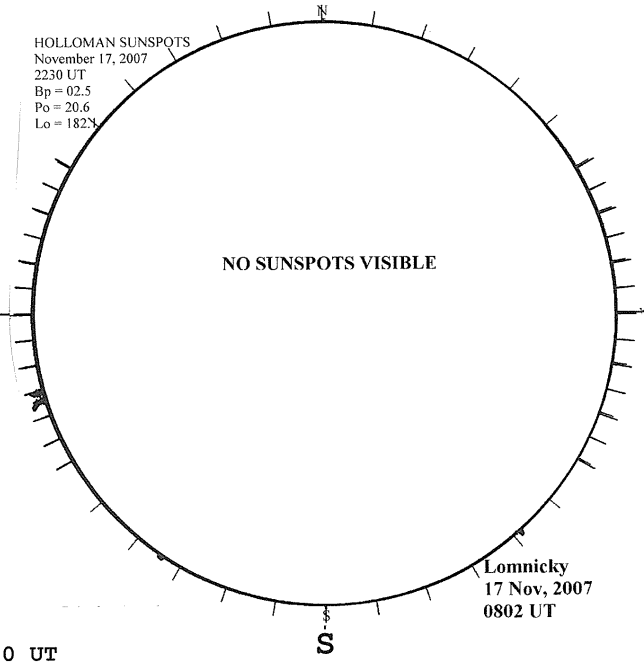
22.85 -
23.82 UT

KANZELHOHE H-ALPHA



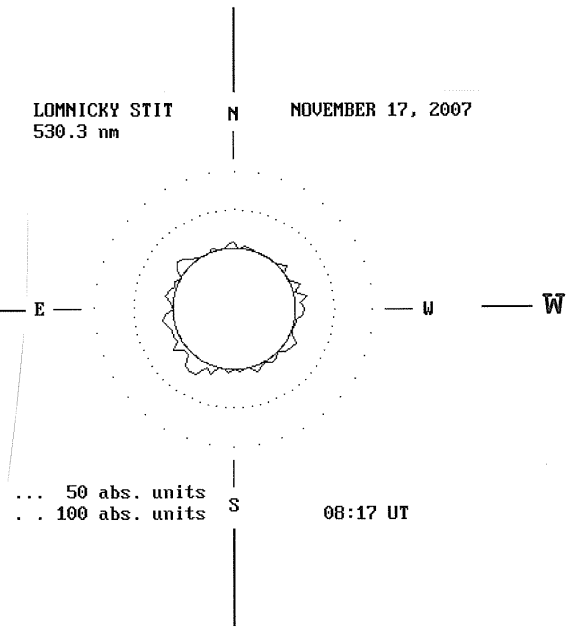
0946 UT

HOLLOMAN SUNSPOTS



2230 UT
0802 UT LOMN PROM

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

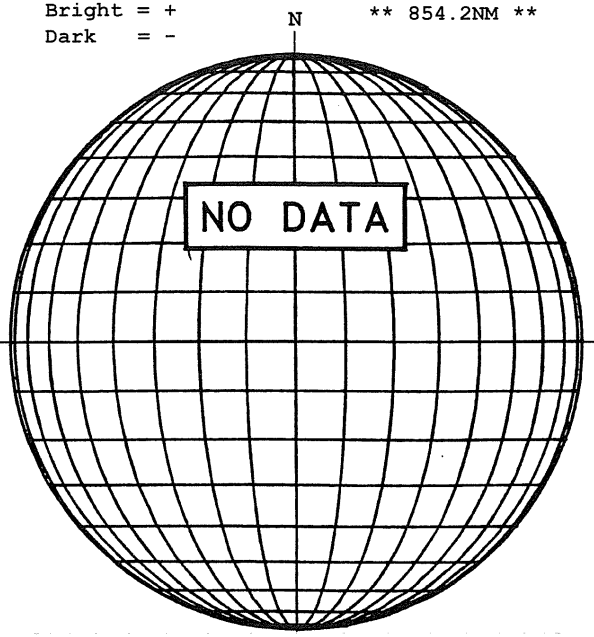


NOVEMBER 18, 2007 (P= 20.67, Bo= 2.55, Lo= 180.92)

KITT PEAK MAGNETOGRAM -- SOLIS

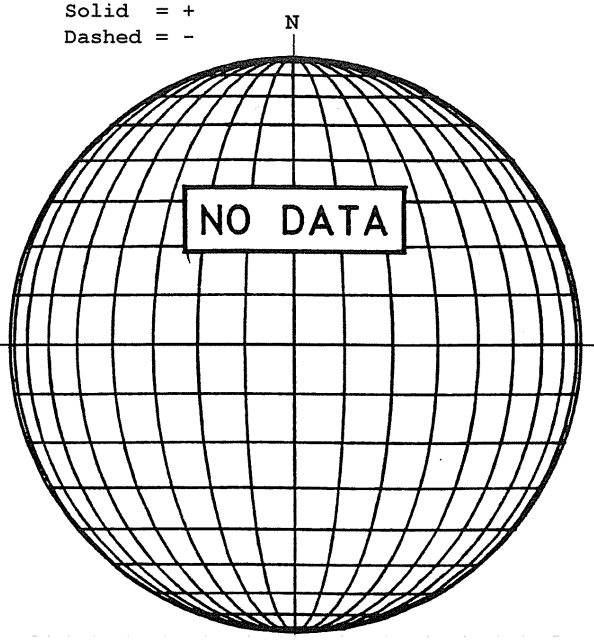
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

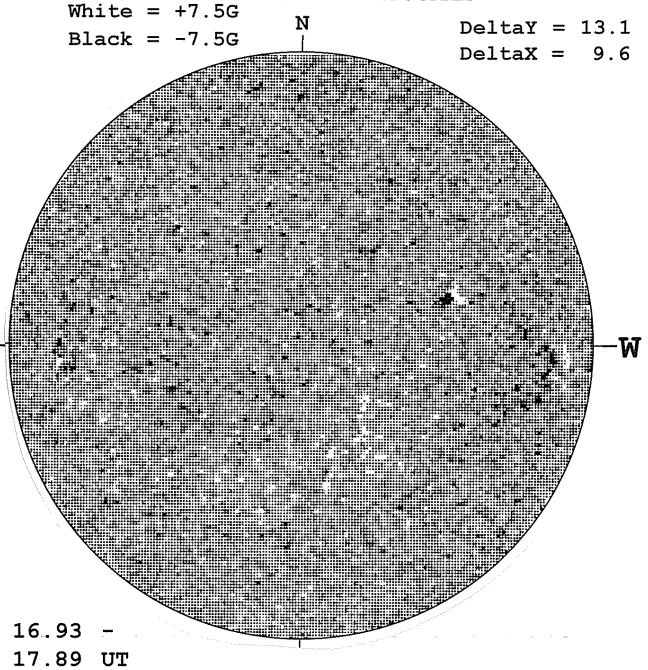
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

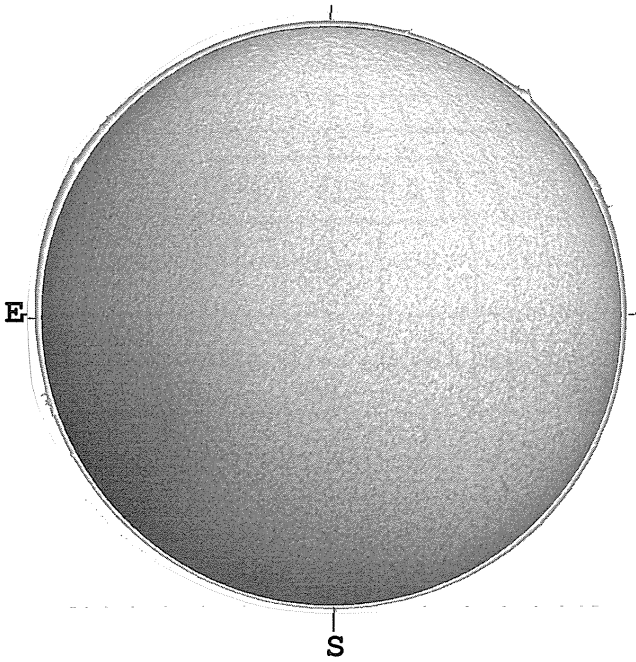
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



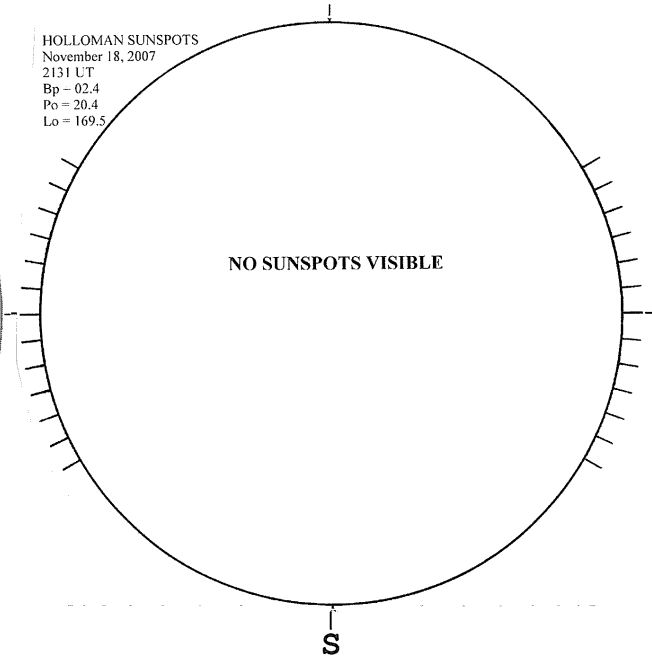
16.93 -
17.89 UT

--- PIC DU MIDI H-ALPHA



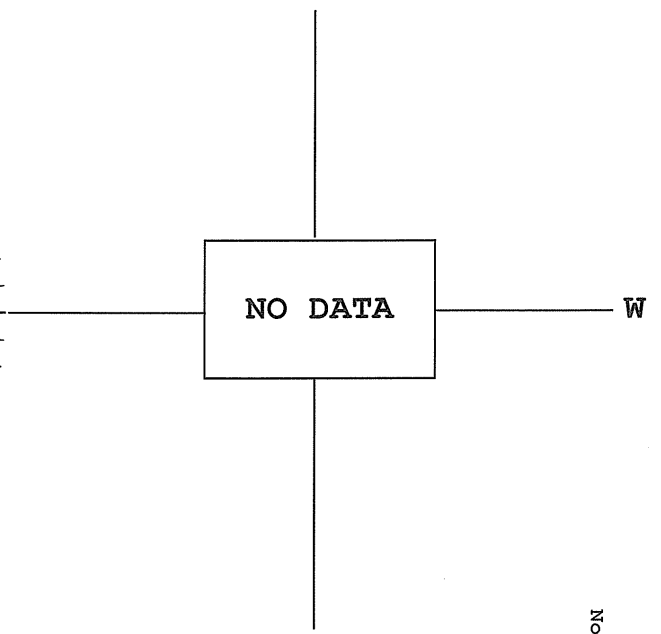
0953 UT

HOLLOMAN SUNSPOTS



2131 UT

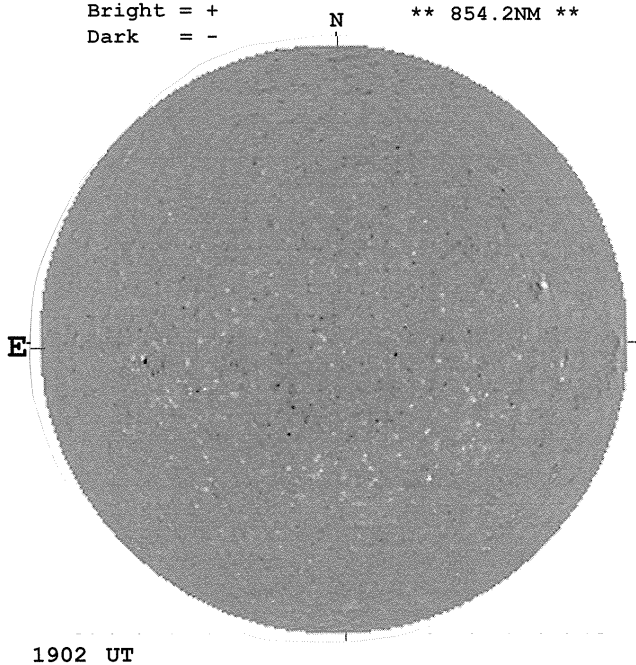
SACRAMENTO PEAK CORONA (1.15 Radii)----



61
Nov 07

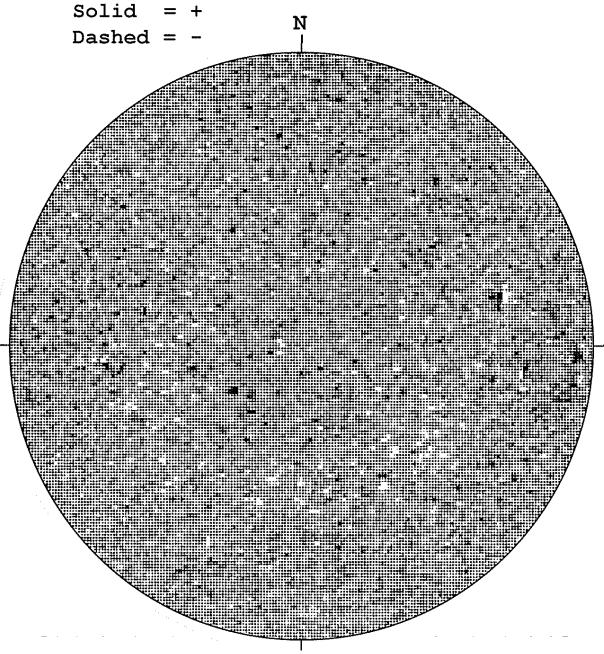
NOVEMBER 19, 2007 (P= 20.37, Bo= 2.43, Lo= 167.74)

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

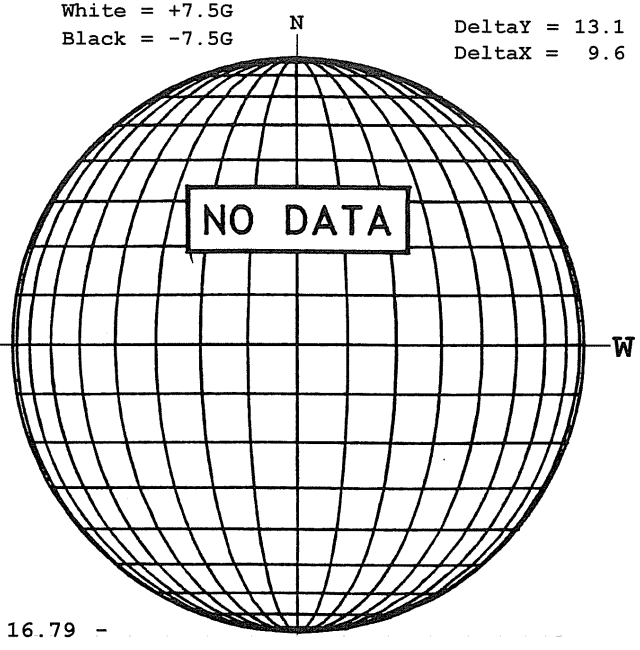


1902 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

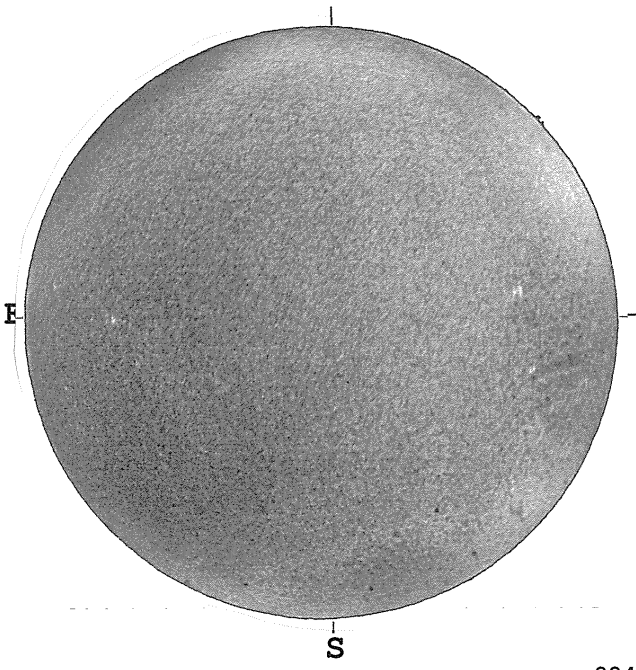


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



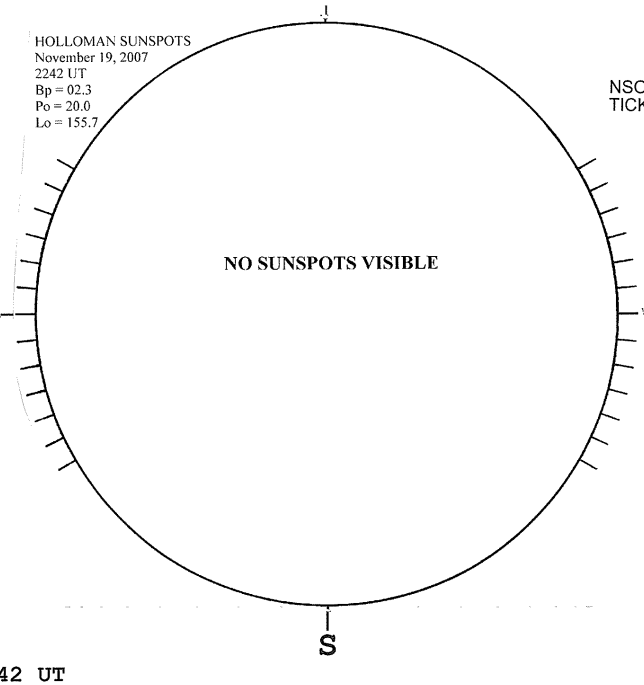
16.79 -
17.75 UT

--- KANZELHOHE H-ALPHA



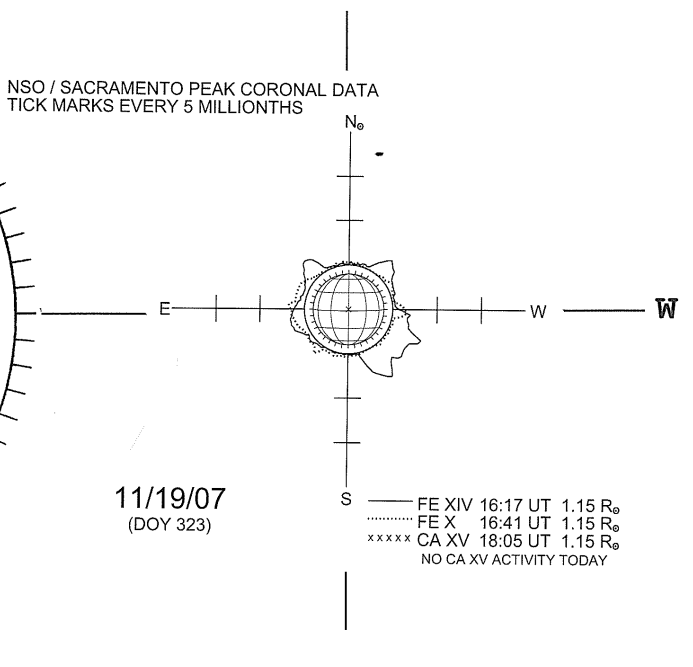
1120 UT

HOLLOMAN SUNSPOTS



2242 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

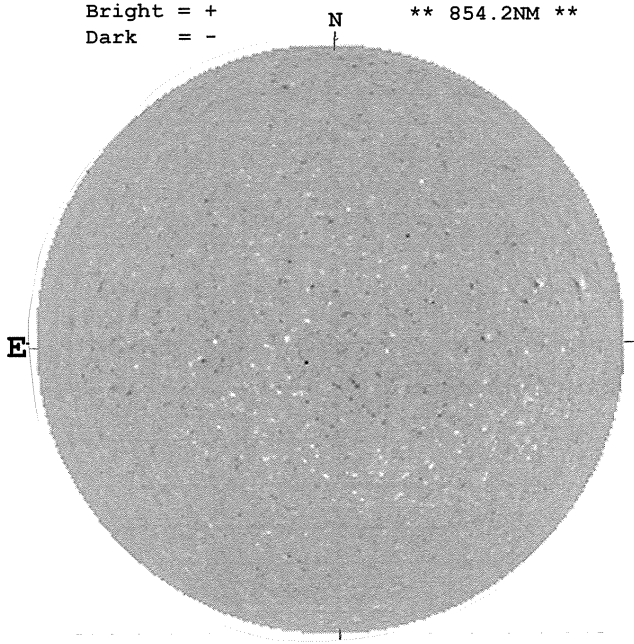


NOVEMBER 20, 2007 (P= 20.07, Bo= 2.31, Lo= 154.56)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

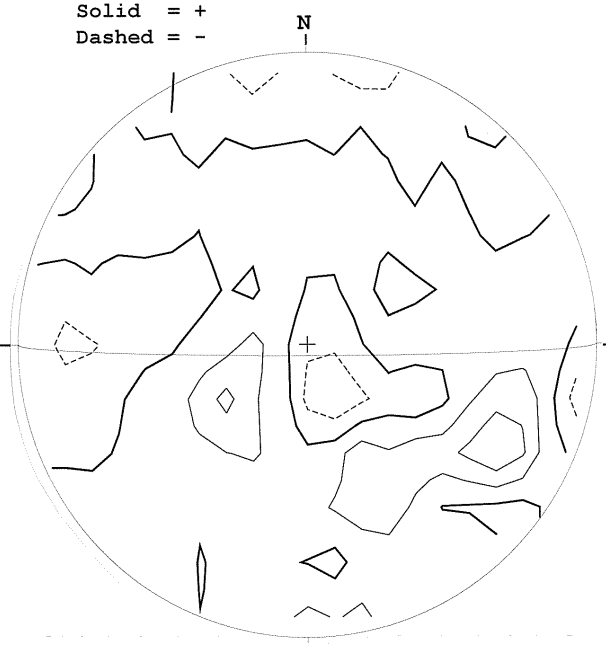
** 854.2NM **



2109 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

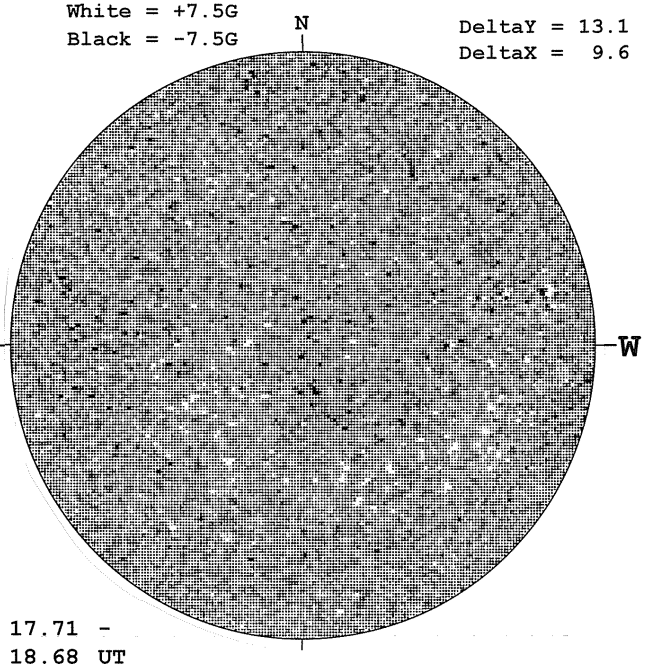


1903 UT

MT. WILSON MAGNETOGRAM

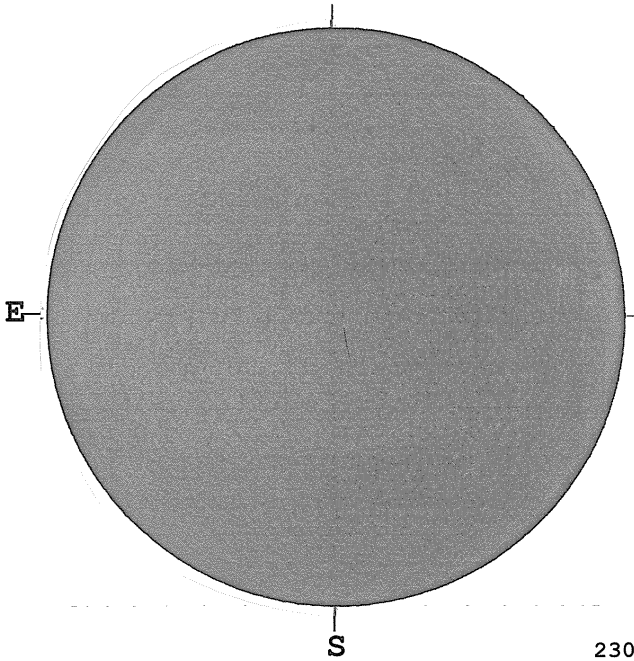
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



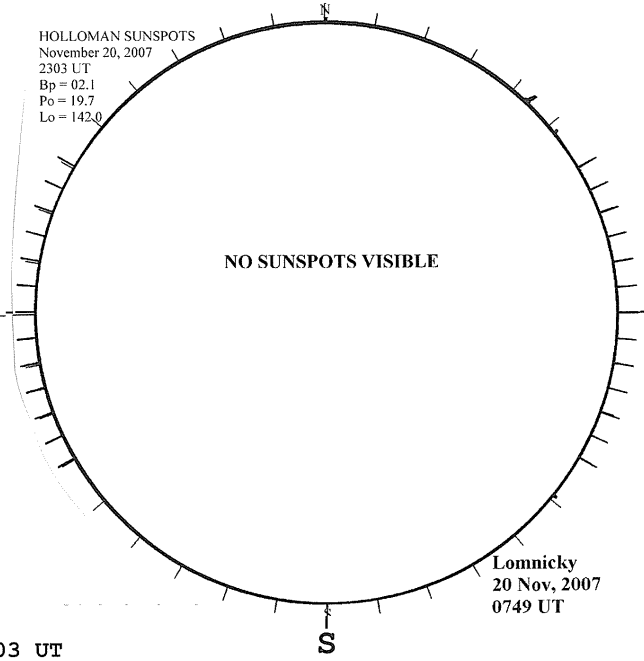
17.71 -
18.68 UT

CATANIA H-ALPHA



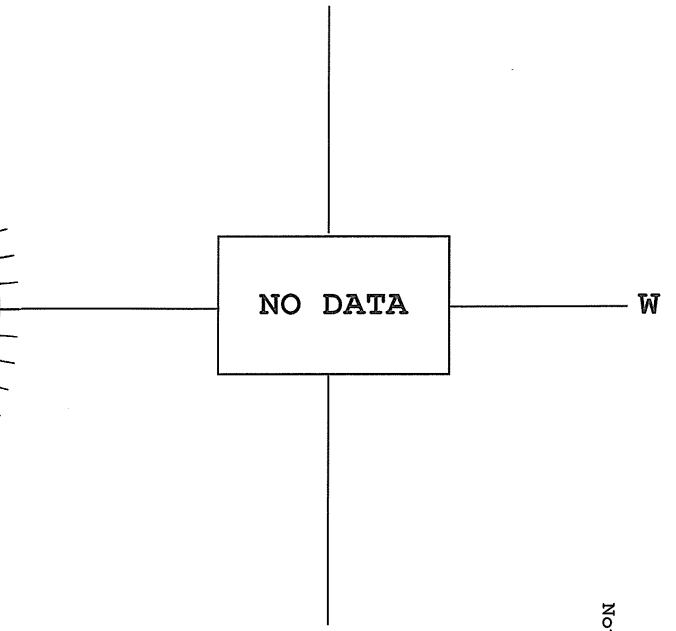
0923 UT

HOLLOMAN SUNSPOTS



2303 UT
0749 UT LOMN PROM

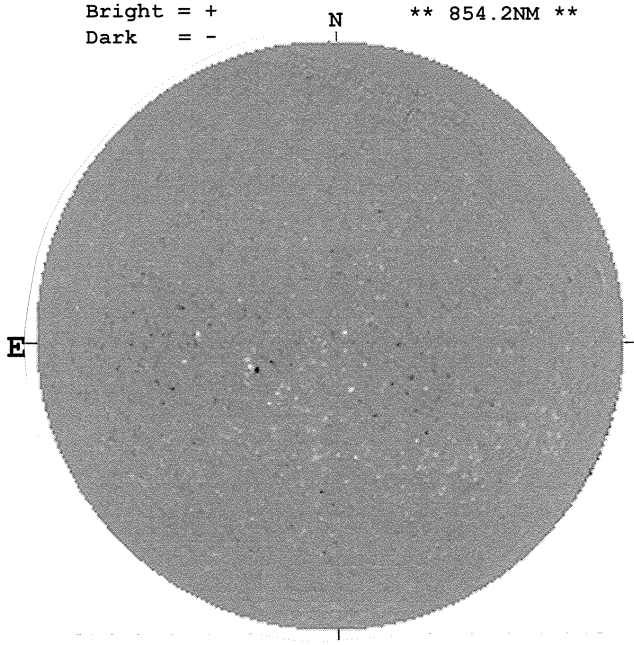
SACRAMENTO PEAK CORONA (1.15 Radii)-----



63
Nov 07

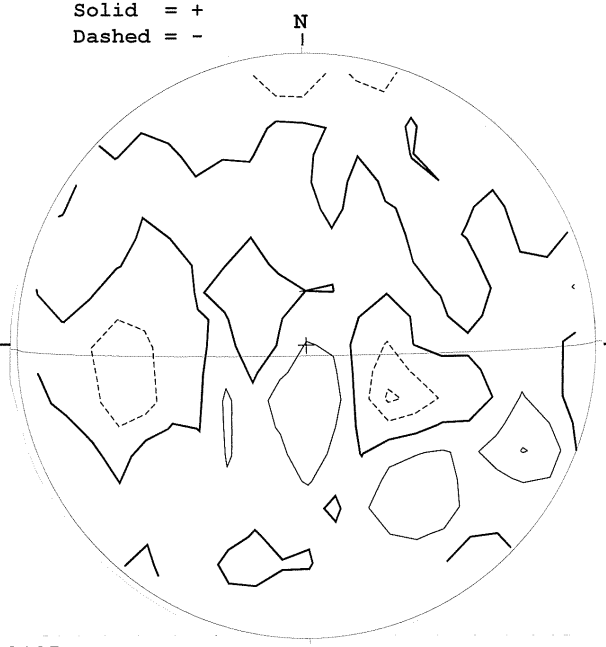
NOVEMBER 21, 2007 (P= 19.75, Bo= 2.19, Lo= 141.38)

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



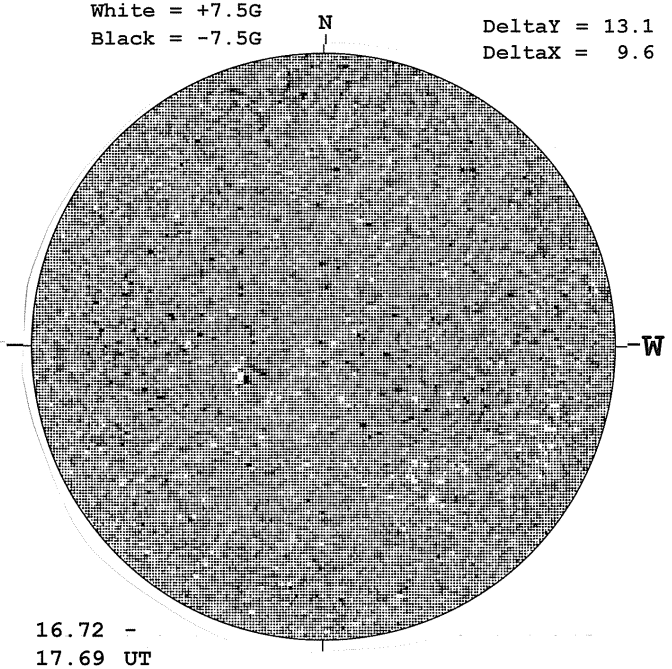
1756 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



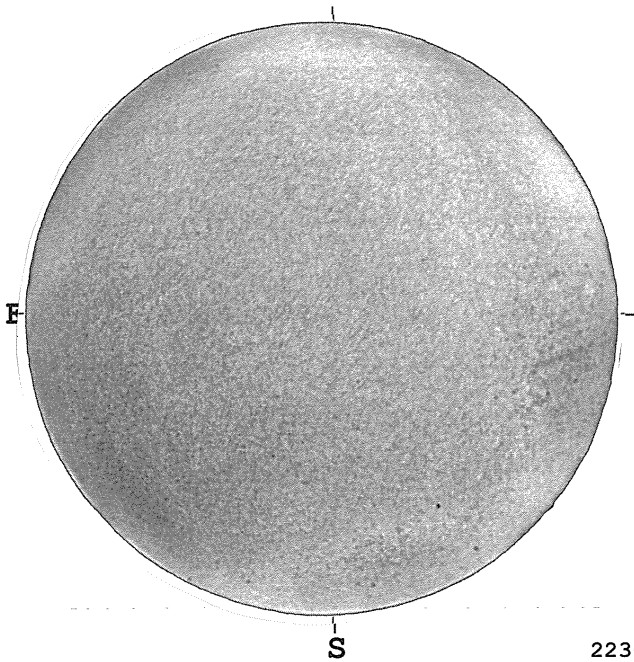
2105 UT

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



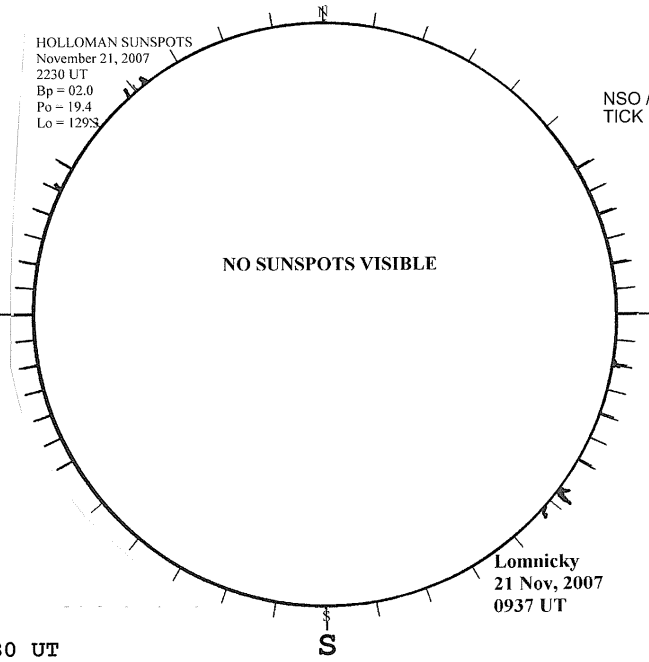
16.72 -
17.69 UT

--- KANZELHOHE H-ALPHA



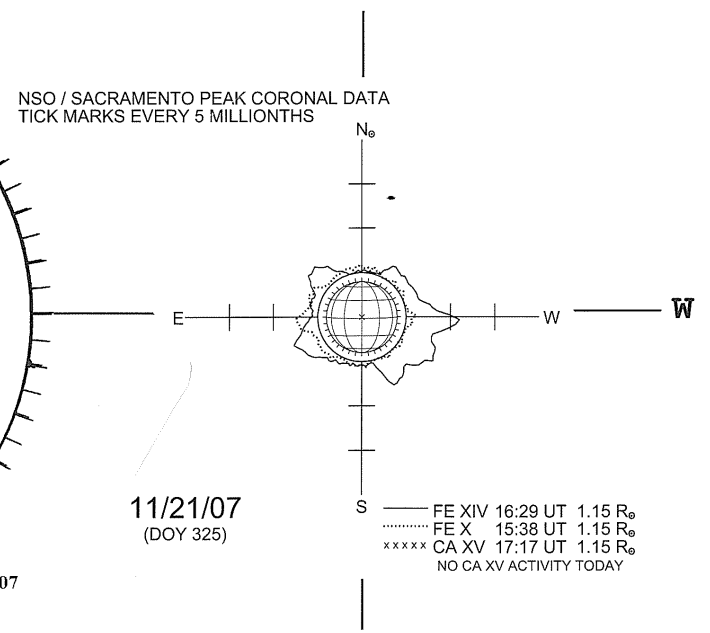
0757 UT

HOLLOMAN SUNSPOTS



2230 UT
0937 UT LOMN PROM

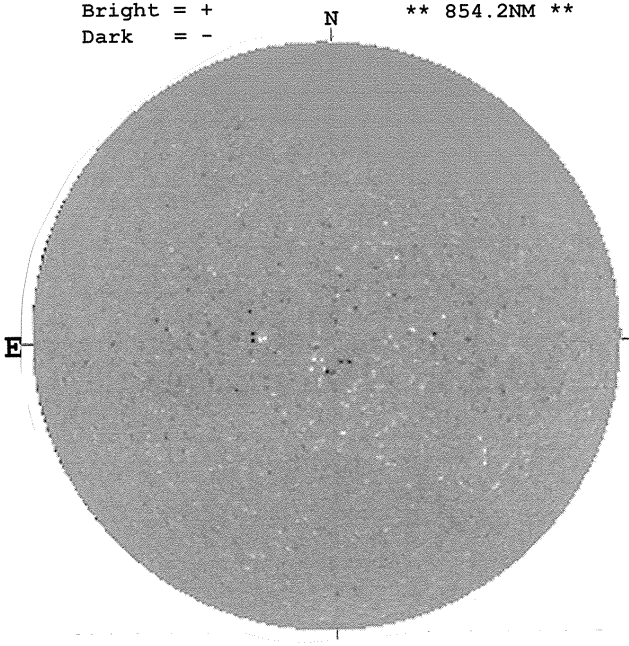
SACRAMENTO PEAK CORONA (1.15 Radii)-----



NOVEMBER 22, 2007 (P= 19.44, Bo= 2.06, Lo= 128.20)

KITT PEAK MAGNETOGRAM -- SOLIS

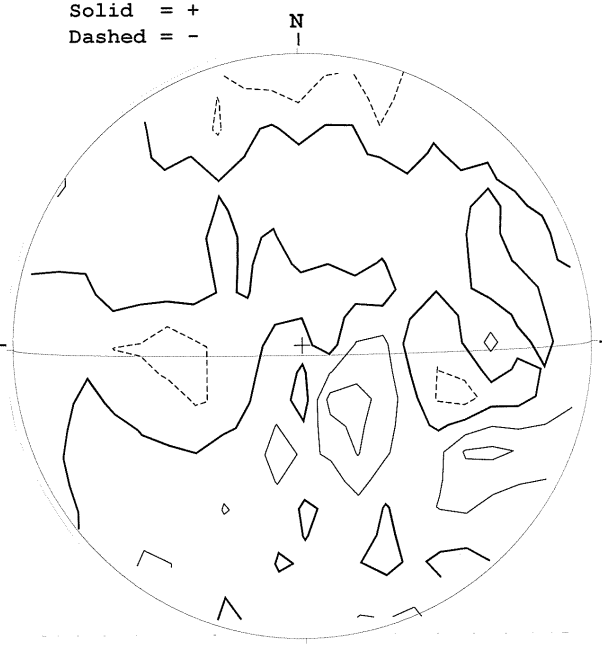
Bright = +
Dark = -
** 854.2NM **



2237 UT

STANFORD MAGNETOGRAM

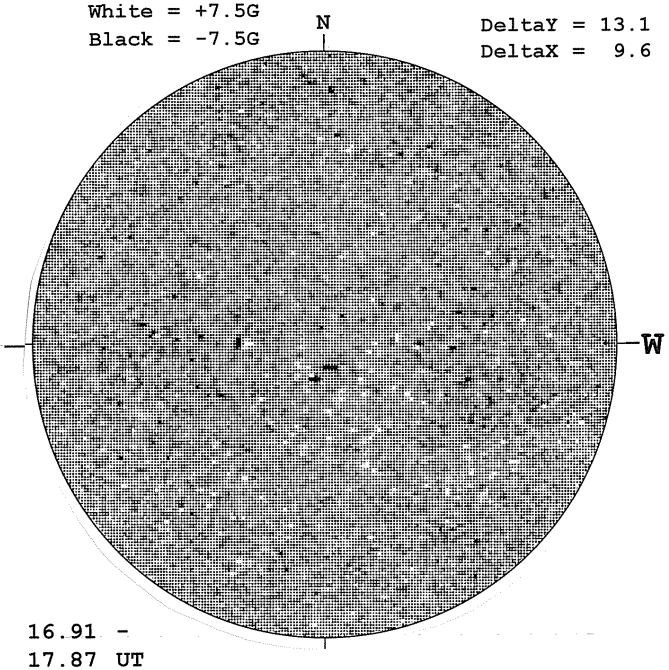
Solid = +
Dashed = -



1856 UT

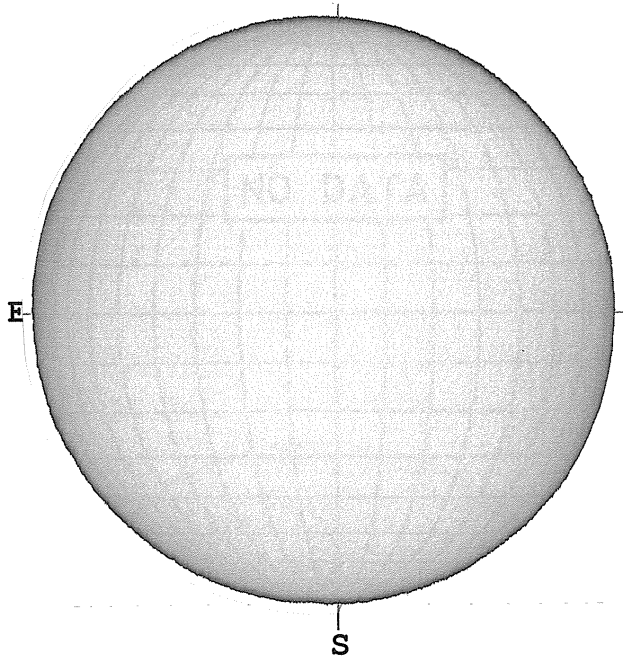
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



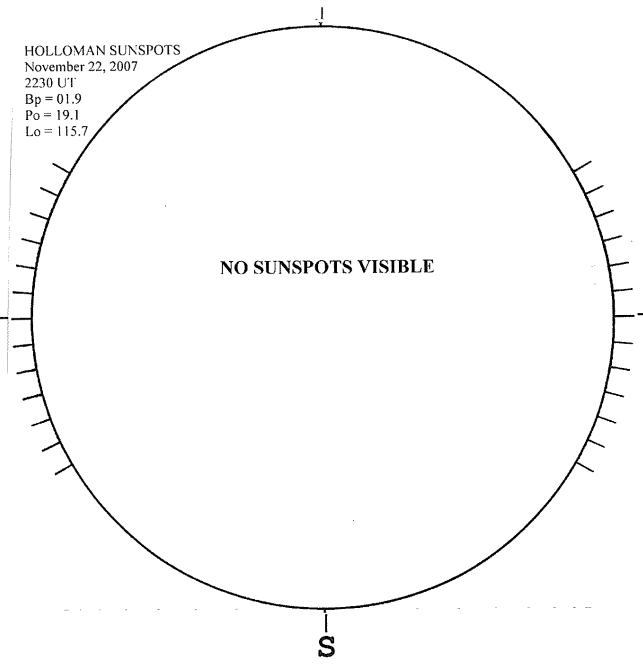
16.91 -
17.87 UT

MEUDON H-ALPHA



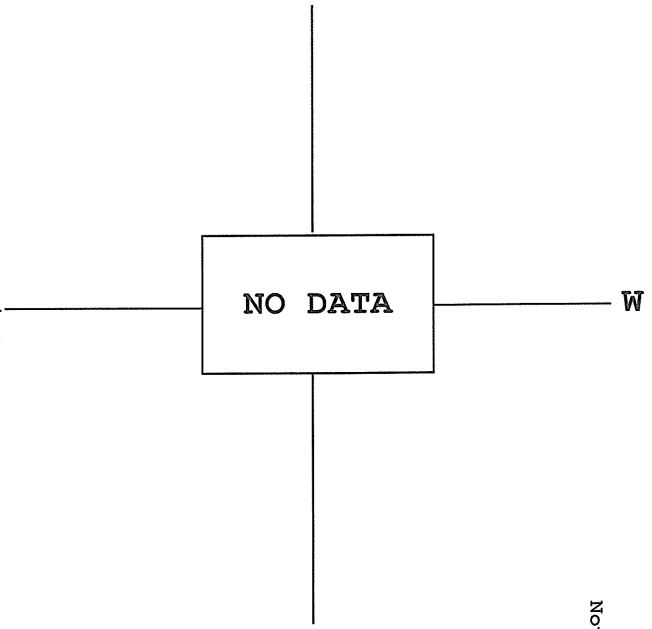
0812 UT

HOLLOMAN SUNSPOTS



2230 UT

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

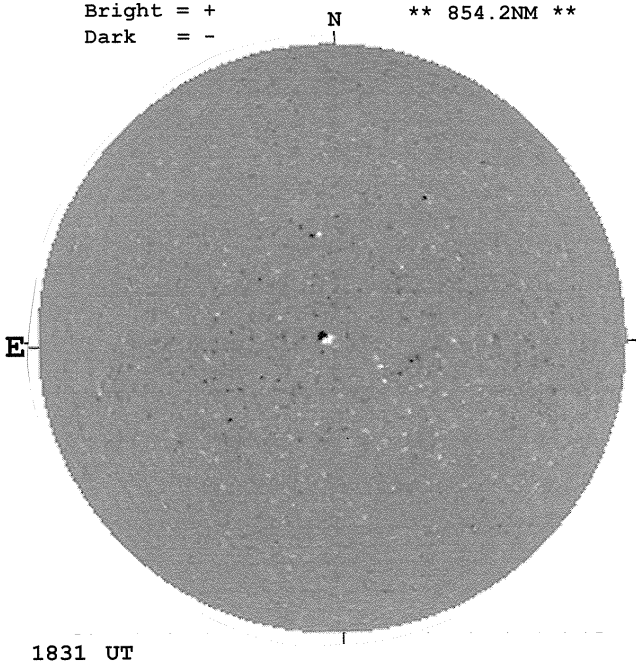


65
Nov 07

NOVEMBER 23, 2007 (P= 19.11, Bo= 1.94, Lo= 115.01)

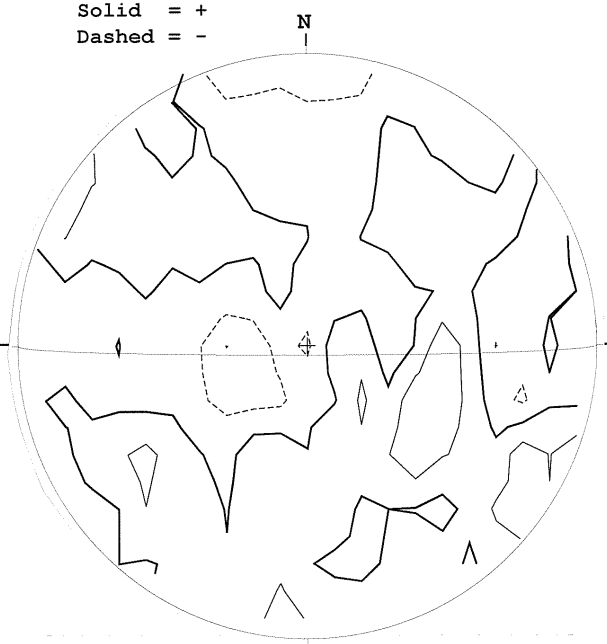
Nov 07 66

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



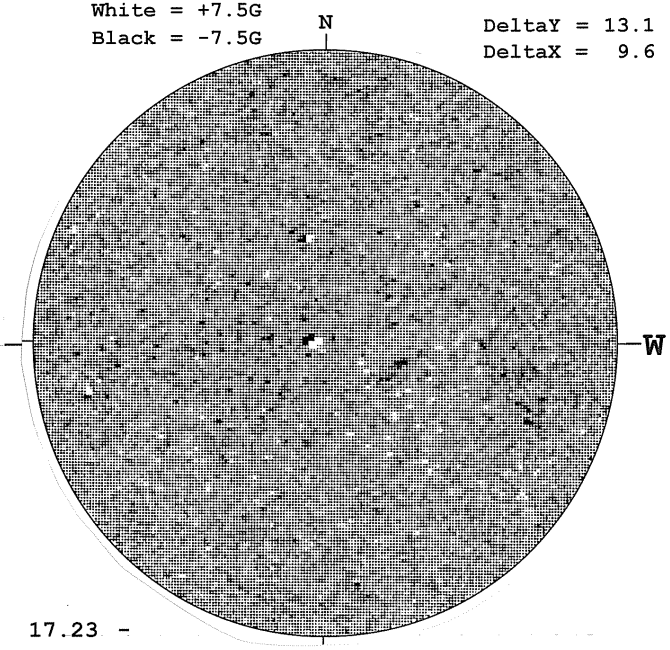
1831 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -



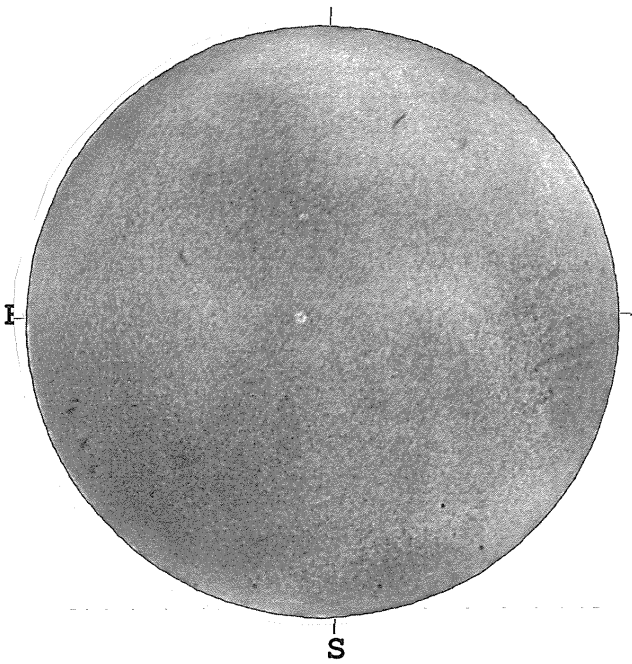
2111 UT

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



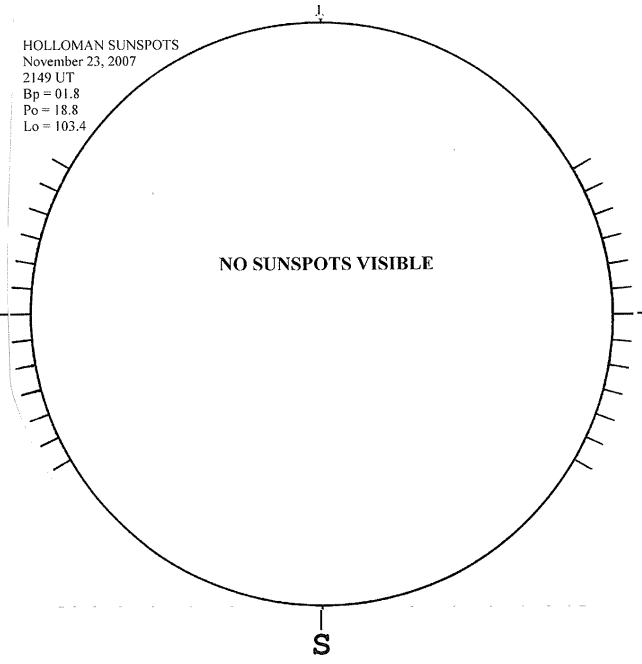
17.23 -
18.20 UT

--- KANZELHOHE H-ALPHA



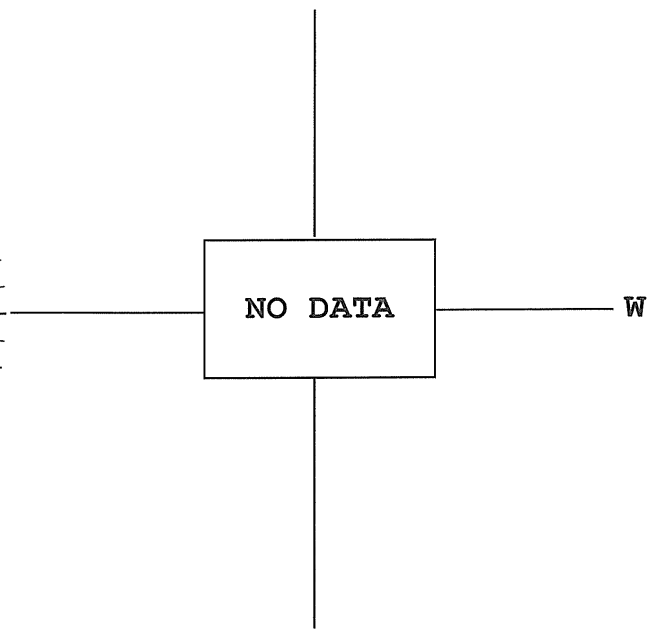
1335 UT

HOLLOMAN SUNSPOTS



2149 UT

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

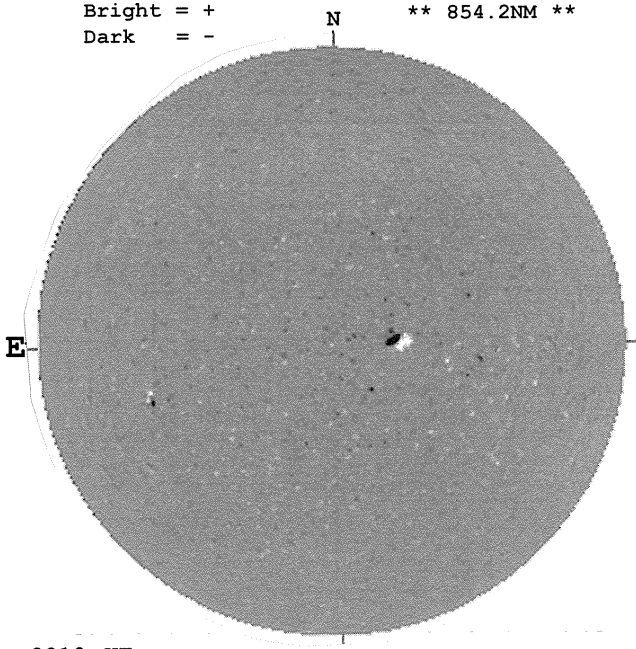


NOVEMBER 24, 2007 (P= 18.78, Bo= 1.82, Lo= 101.83)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

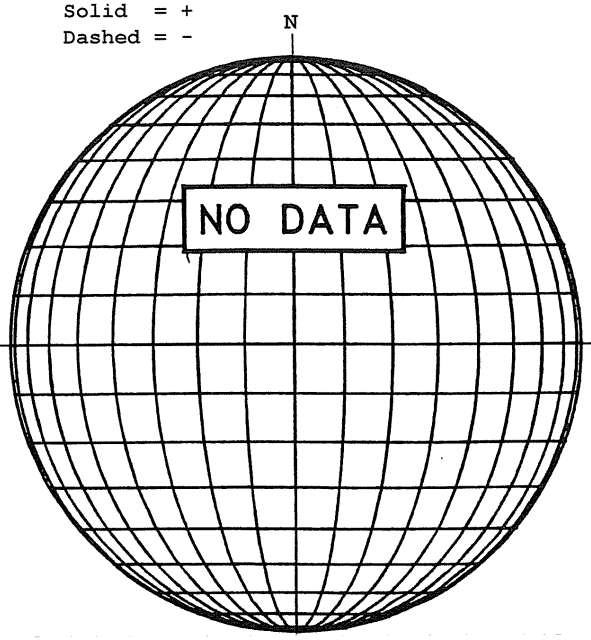
** 854.2NM **



2019 UT

STANFORD MAGNETOGRAM

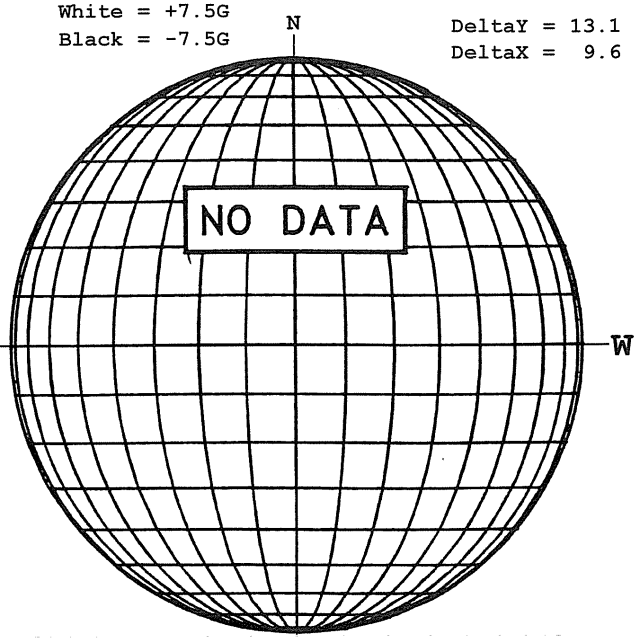
Solid = +
Dashed = -



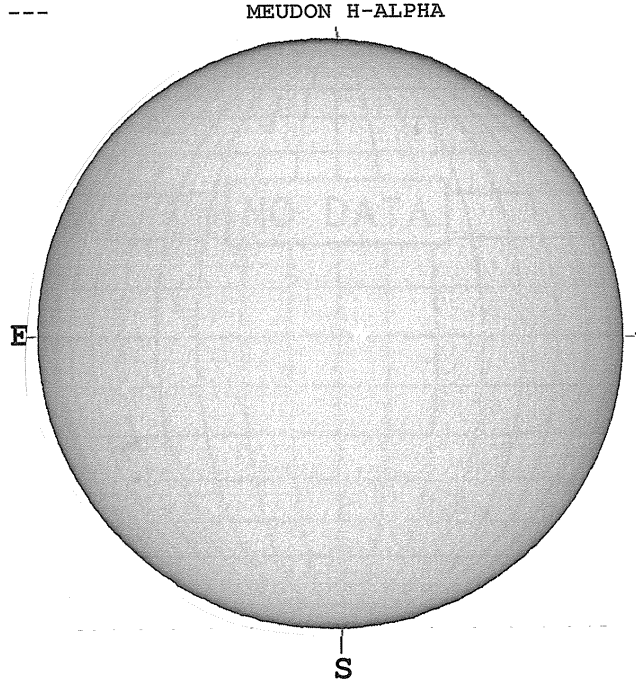
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

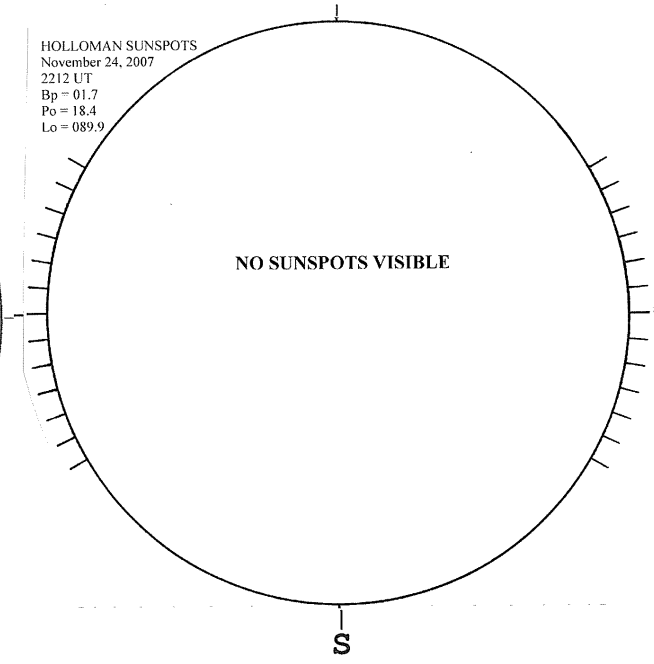


MEUDON H-ALPHA



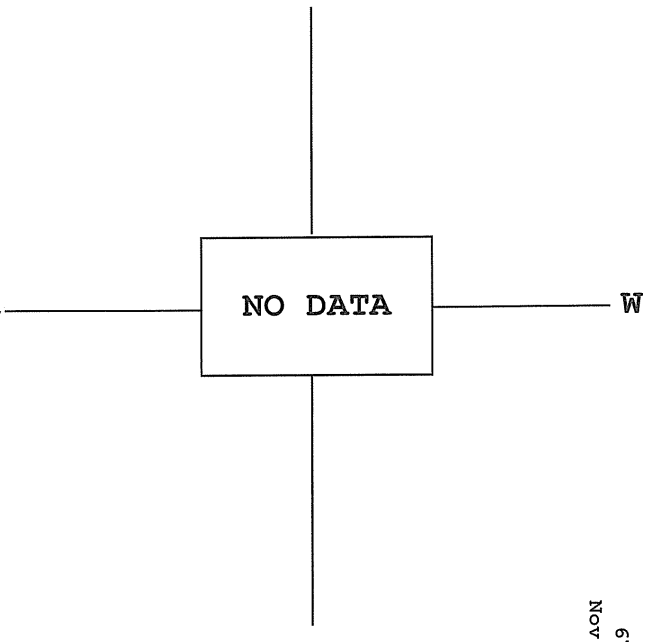
0828 UT

HOLLOMAN SUNSPOTS



2212 UT

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

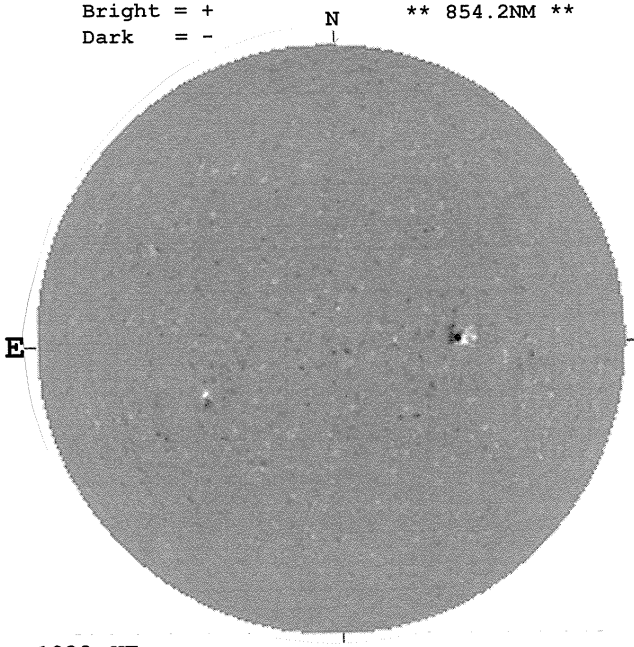


Nov 07

NOVEMBER 25, 2007 (P= 18.44, Bo= 1.69, Lo= 88.65)

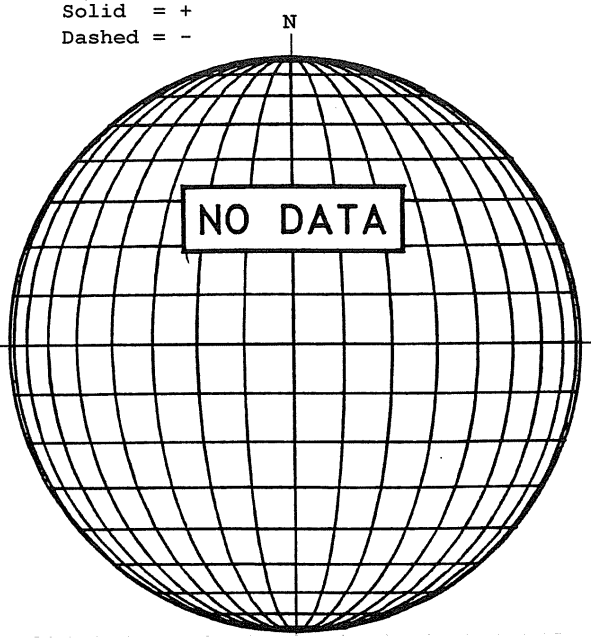
Nov 07 08

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

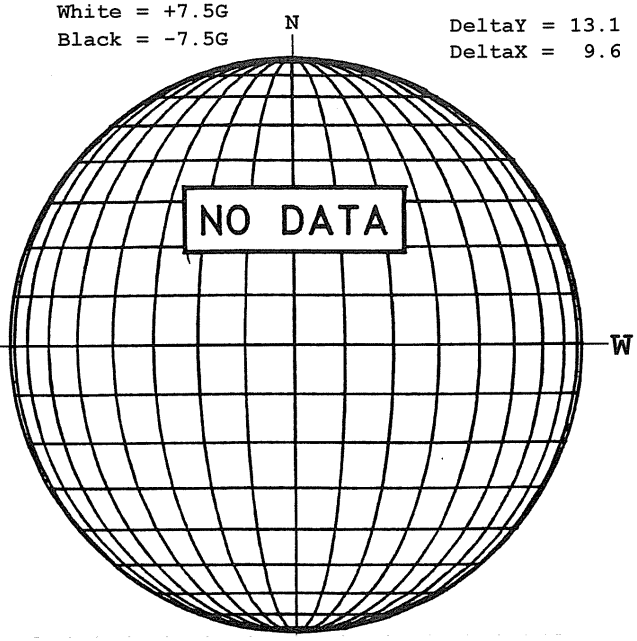


1929 UT

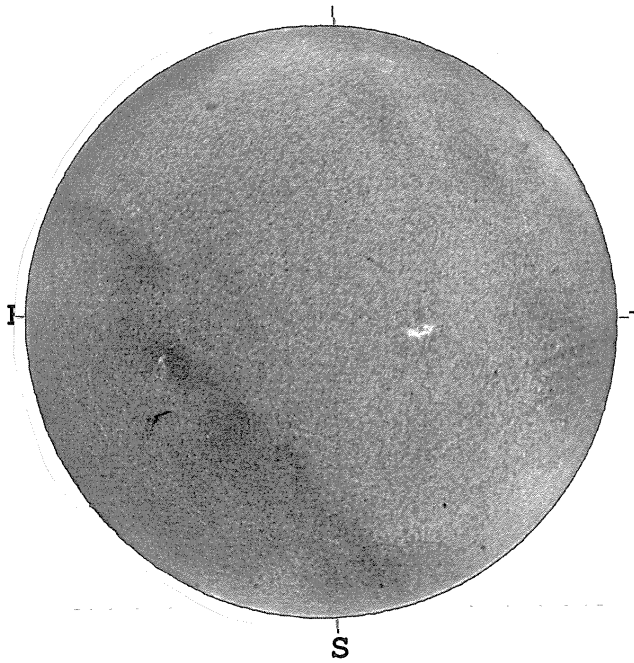
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



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

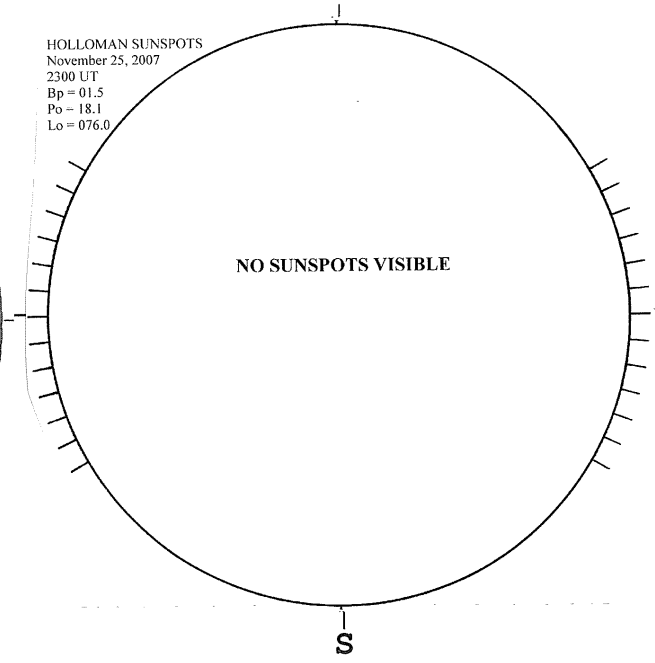


KANZELHOHE H-ALPHA



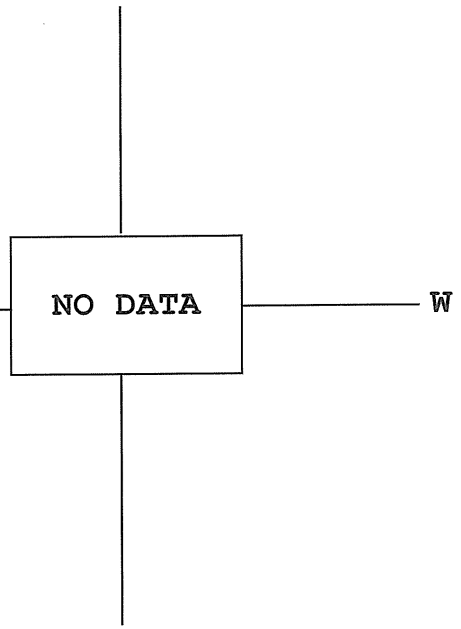
0755 UT

HOLLOMAN SUNSPOTS



2300 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

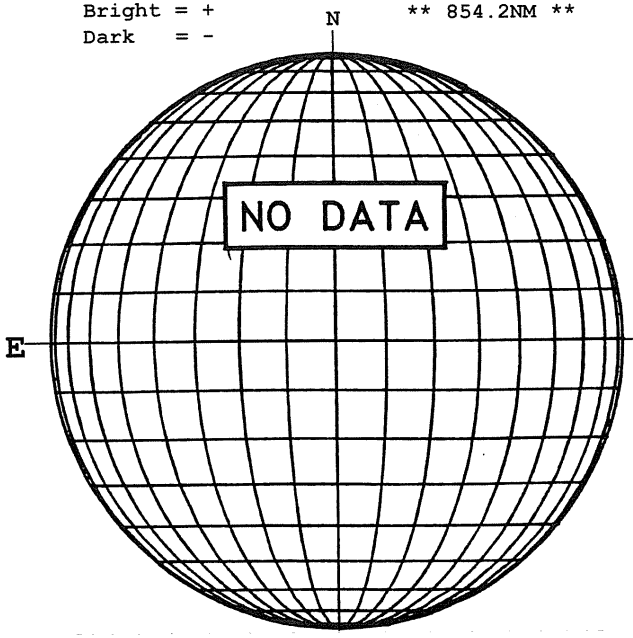


NOVEMBER 26, 2007 (P= 18.09, Bo= 1.57, Lo= 75.47)

KITT PEAK MAGNETOGRAM -- SOLIS

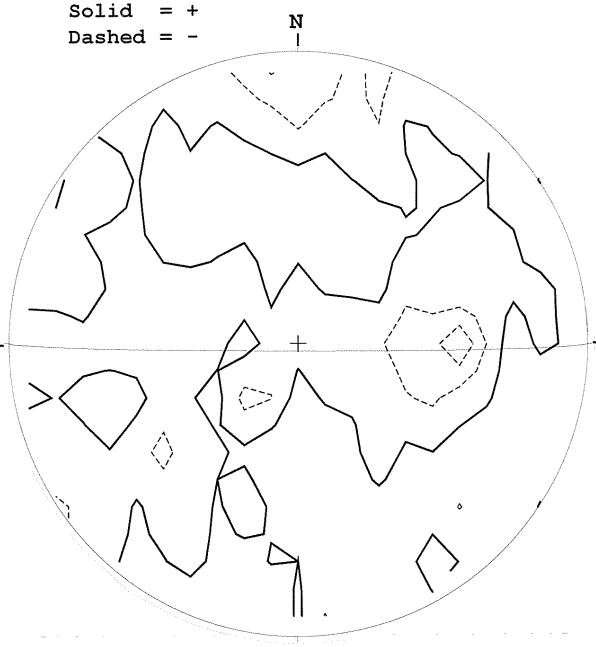
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

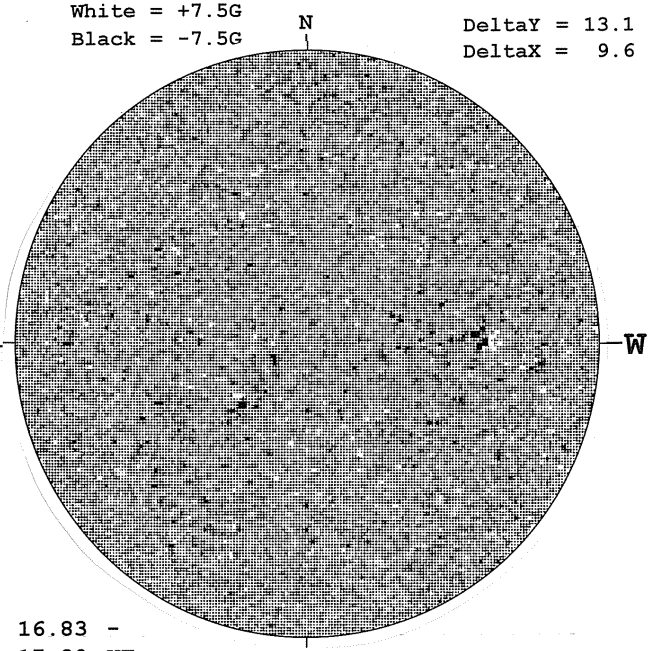


1900 UT

MT. WILSON MAGNETOGRAM

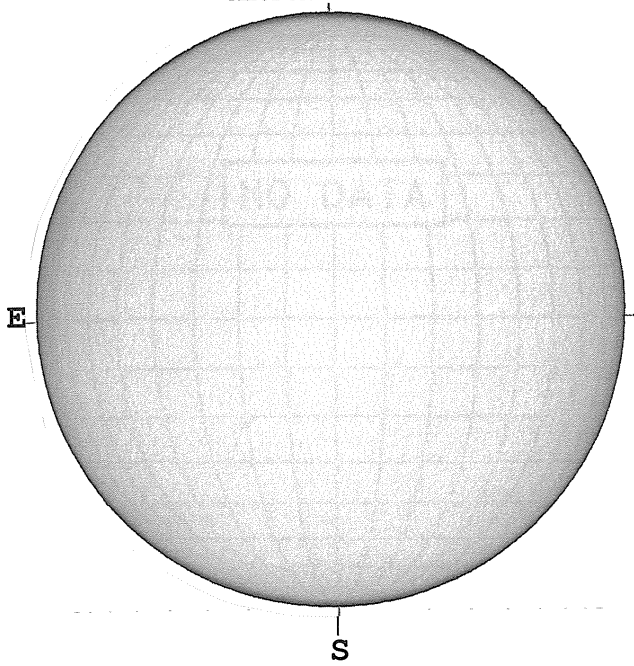
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



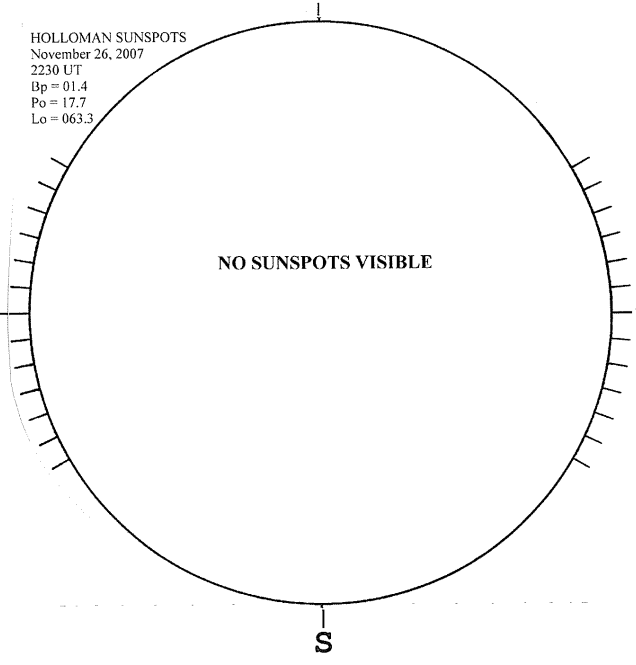
16.83 -
17.80 UT

MEUDON H-ALPHA



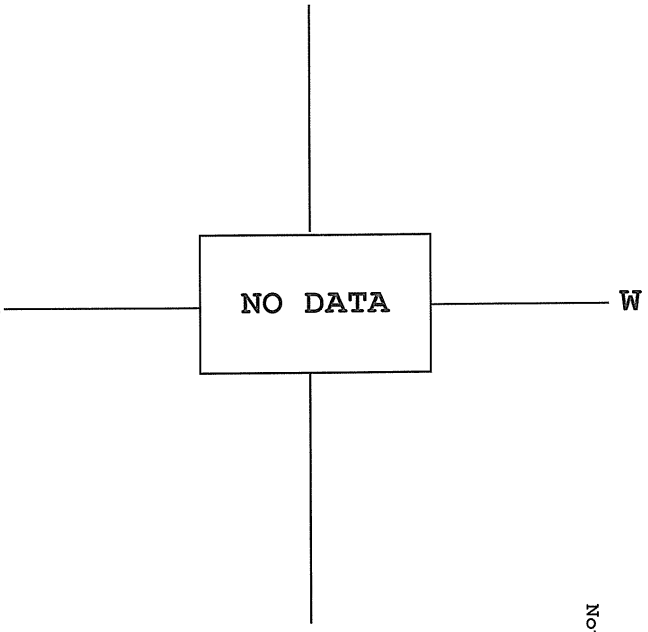
0935 UT

HOLLOMAN SUNSPOTS



2230 UT

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

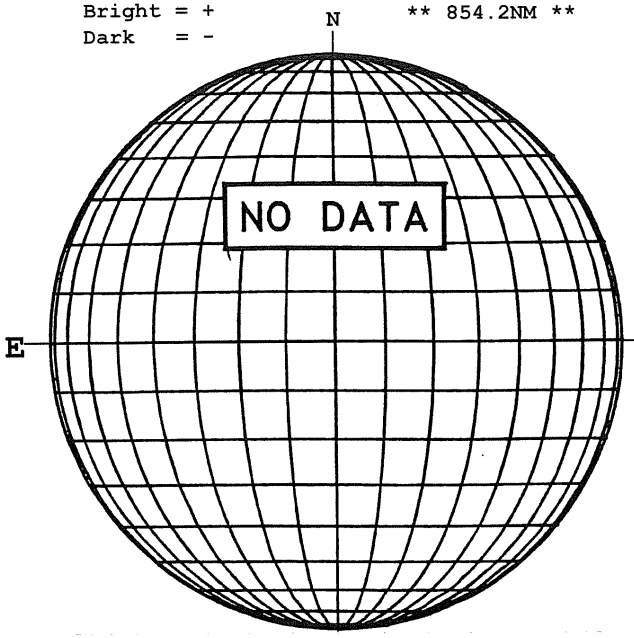


Nov 07 69

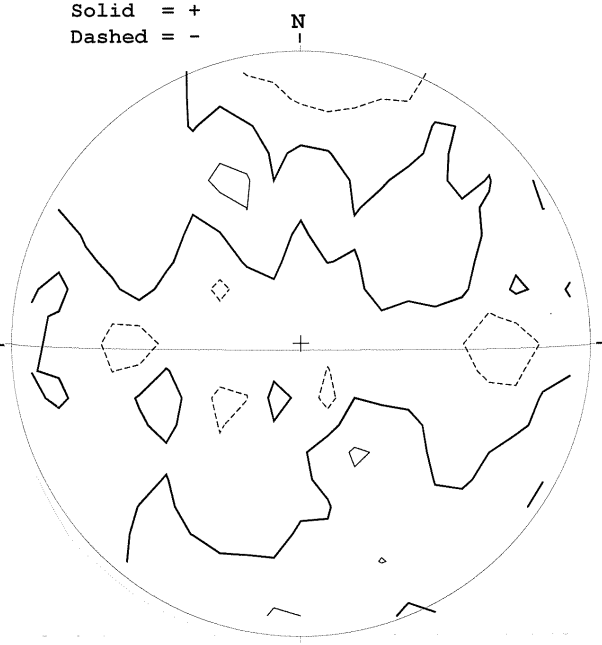
NOVEMBER 27, 2007 (P= 17.74, Bo= 1.44, Lo= 62.29)

Nov 07 70

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

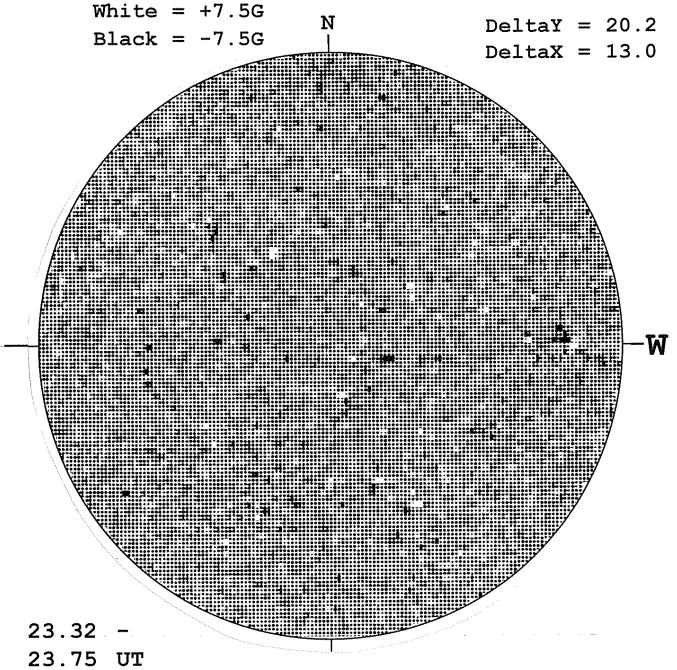


STANFORD MAGNETOGRAM
Solid = +
Dashed = -



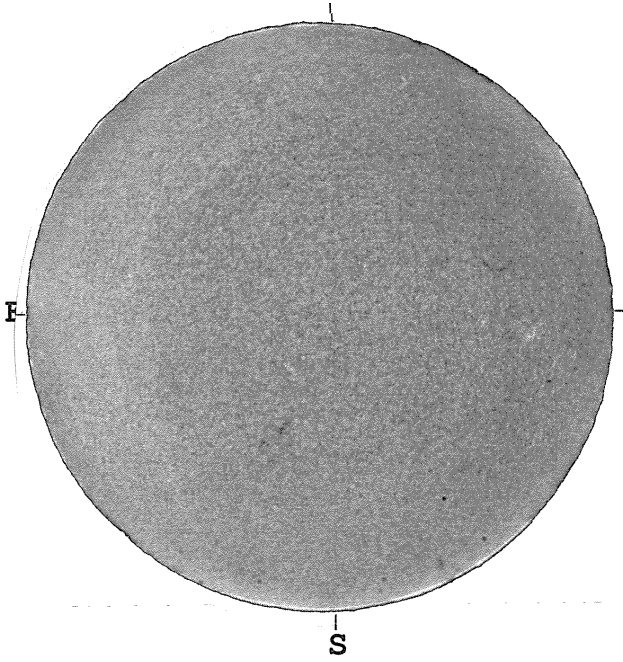
2127 UT

MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 20.2
DeltaX = 13.0



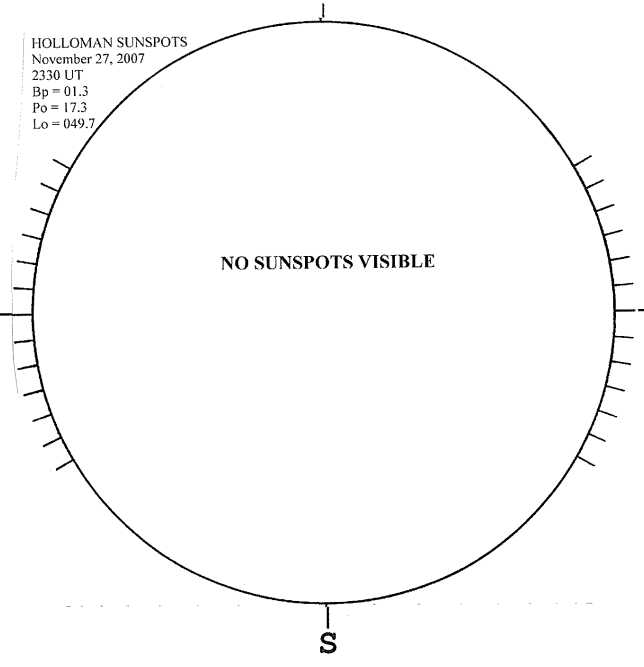
23.32 -
23.75 UT

--- KANZELHOHE H-ALPHA



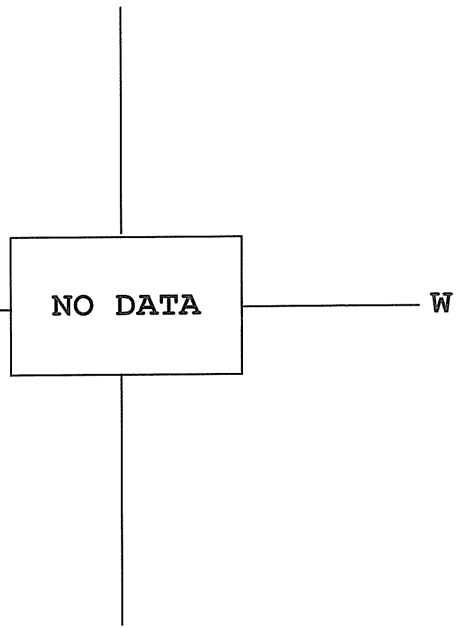
0806 UT

HOLLOMAN SPOTSPOTS



2330 UT

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

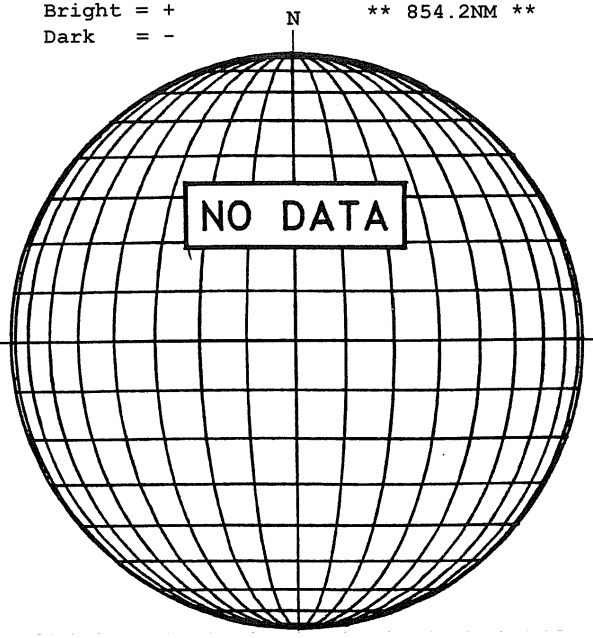


NOVEMBER 28, 2007 (P= 17.38, Bo= 1.32, Lo= 49.11)

KITT PEAK MAGNETOGRAM -- SOLIS

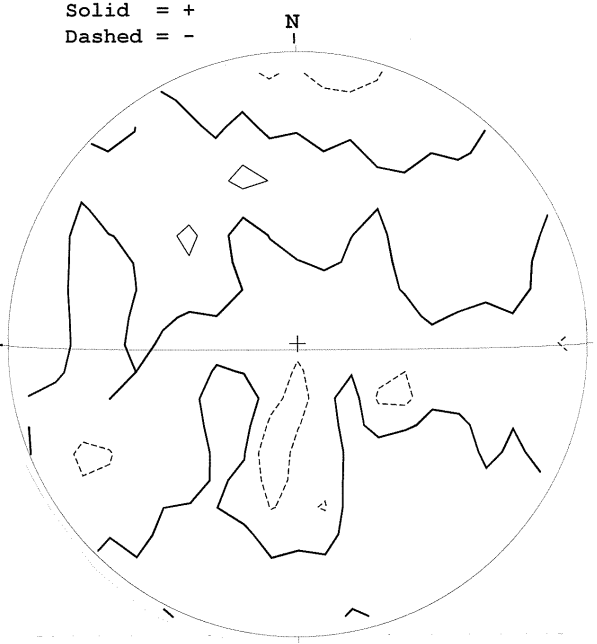
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

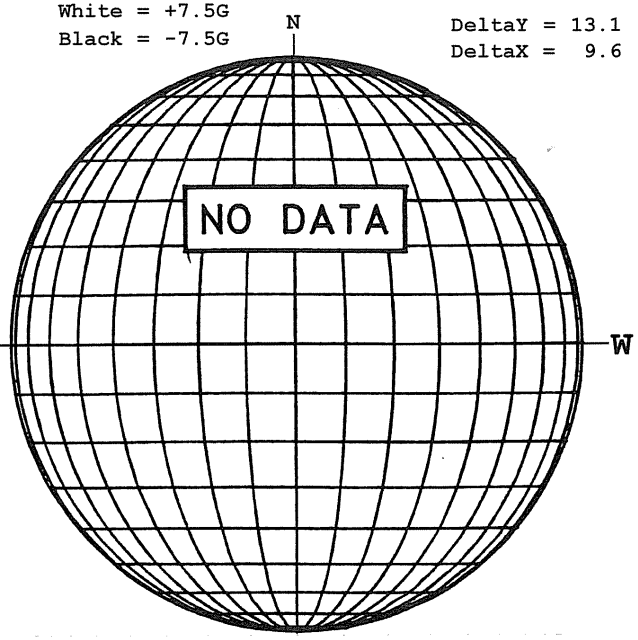


2203 UT

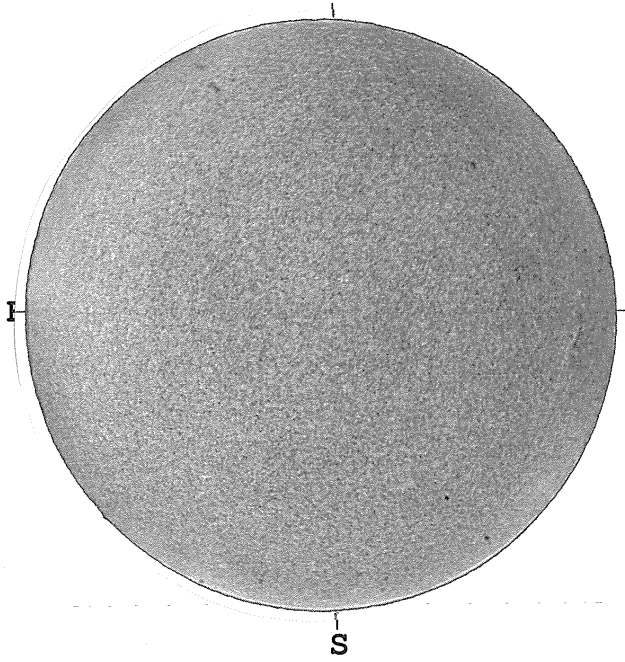
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

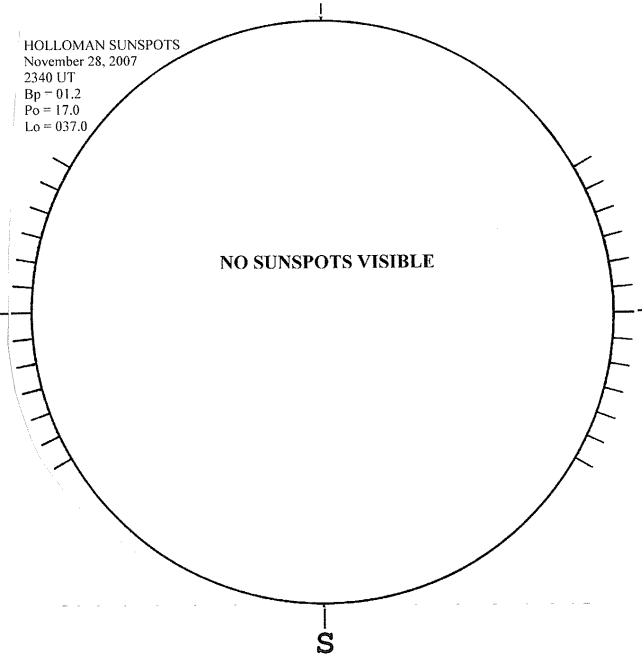


--- KANZELHOHE H-ALPHA



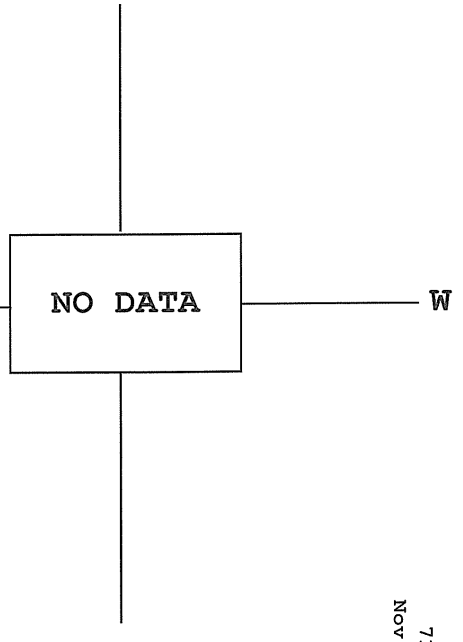
0800 UT

HOLLOMAN SUNSPOTS



2340 UT

SACRAMENTO PEAK CORONA (1.15 Radii) ----



71
Nov 07

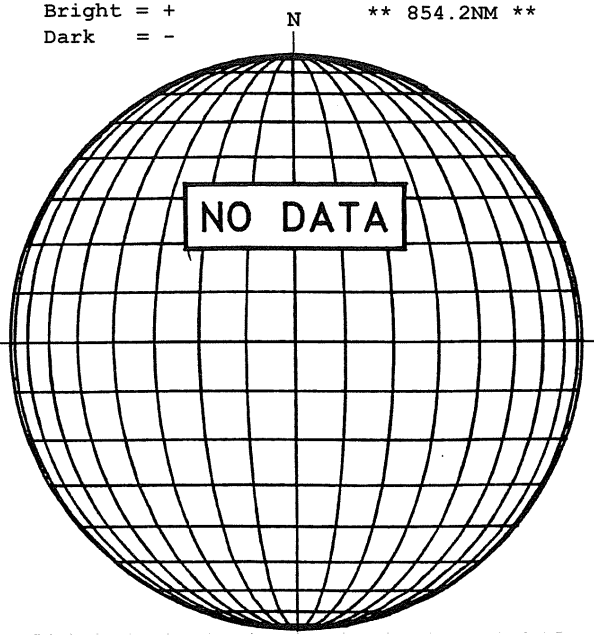
NOVEMBER 29, 2007 (P= 17.01, Bo= 1.19, Lo= 35.93)

Nov 07 72

KITT PEAK MAGNETOGRAM -- SOLIS

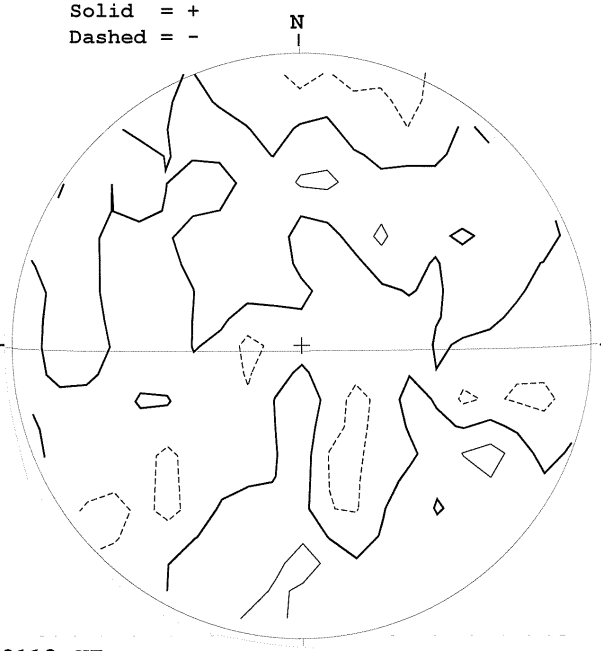
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

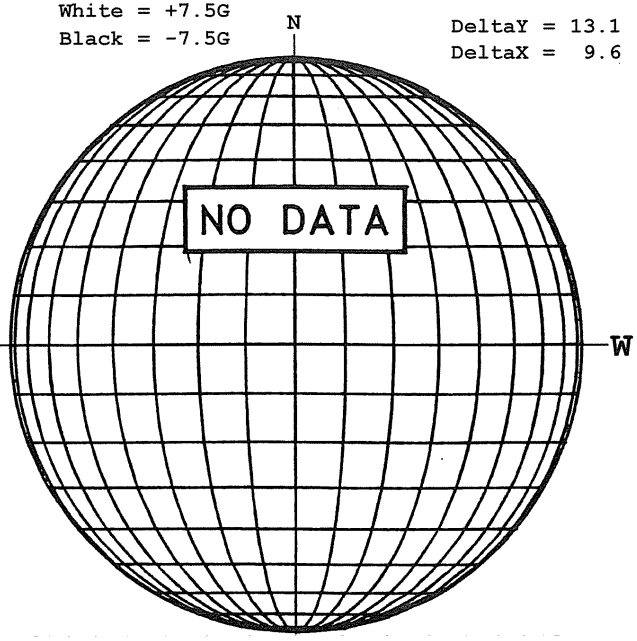
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

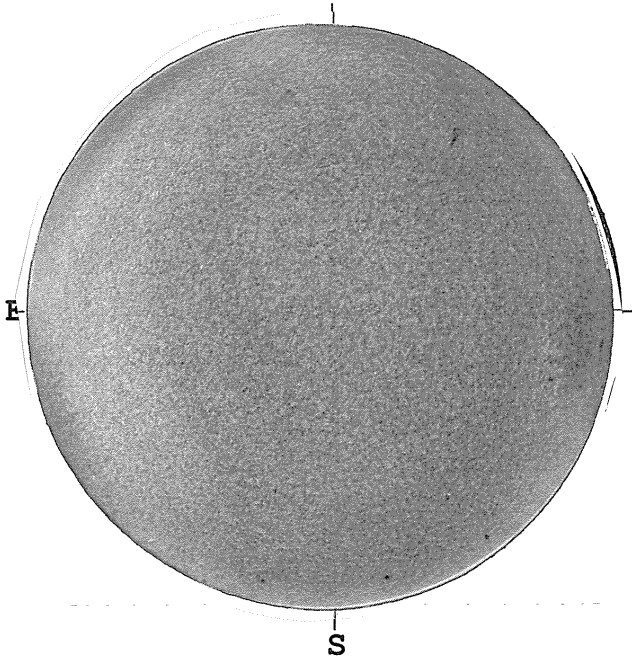
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



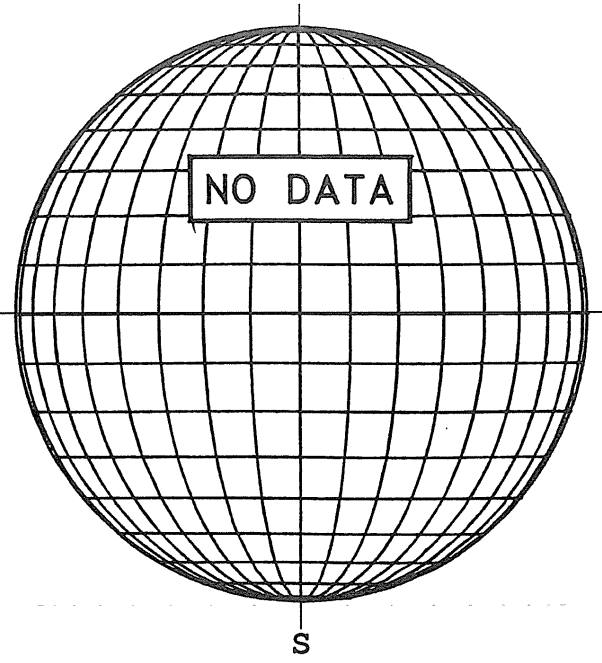
2113 UT

--- KANZELHOHE H-ALPHA



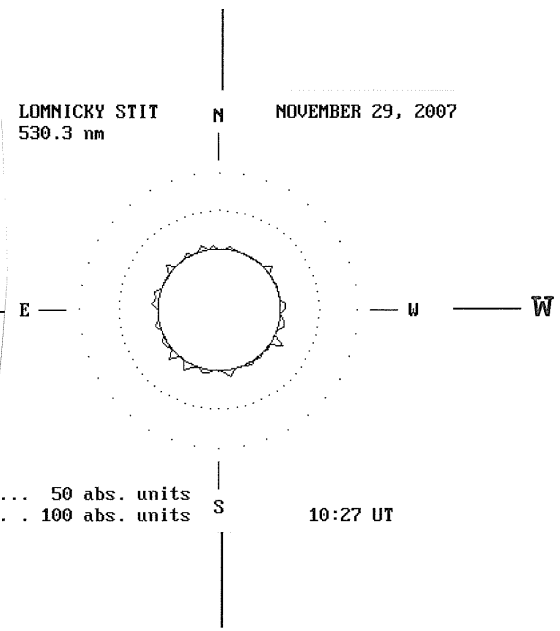
0756 UT

HOLLOMAN SUNSPOTS



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

LOMNICKY STIT
530.3 nm



... 50 abs. units
. . 100 abs. units

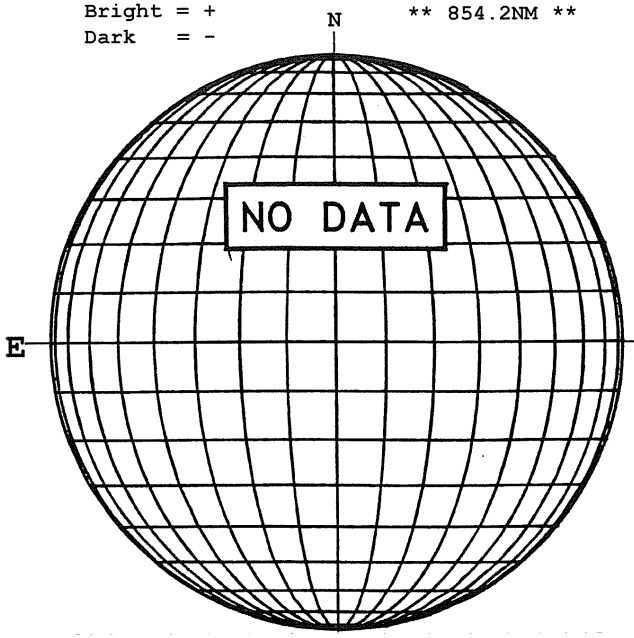
10:27 UT

NOVEMBER 30, 2007 (P= 16.64, Bo= 1.07, Lo= 22.75)

KITT PEAK MAGNETOGRAM -- SOLIS

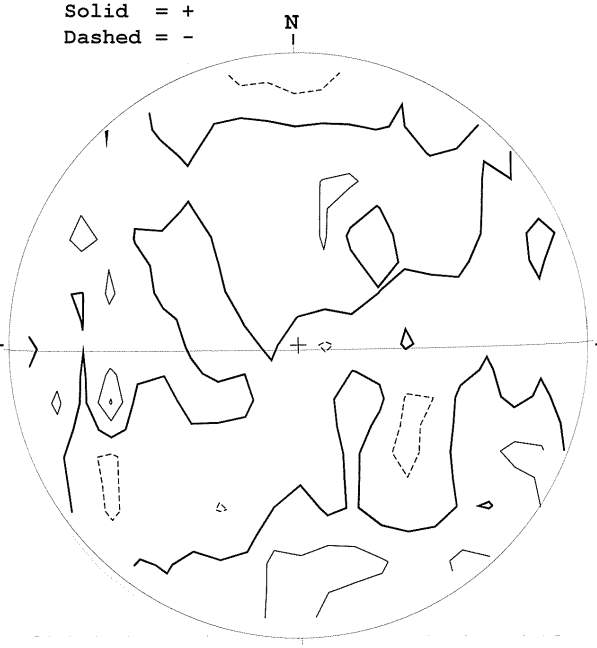
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

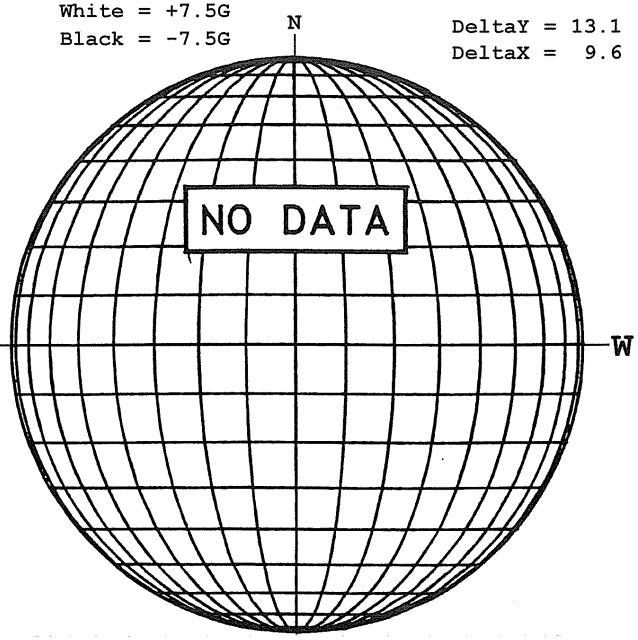


2116 UT

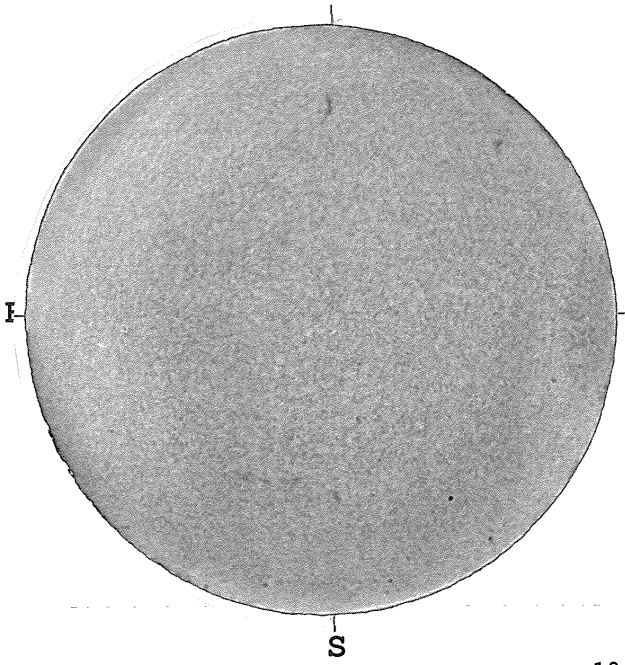
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

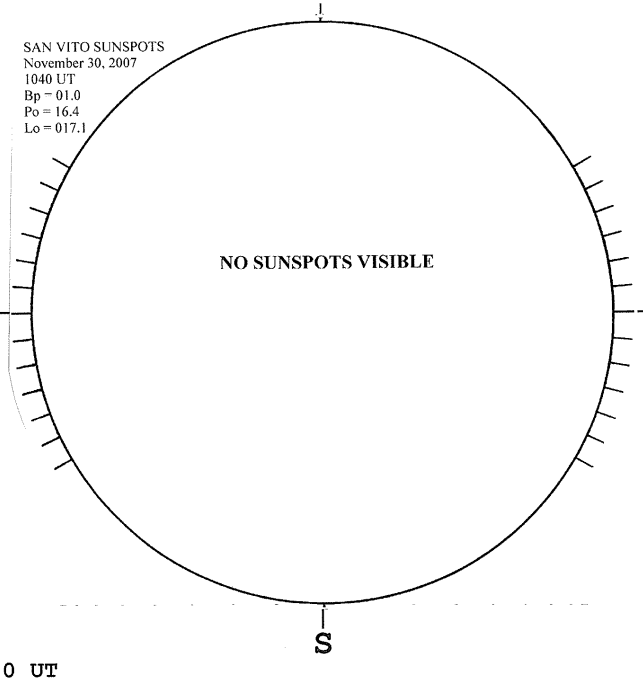


--- KANZELHOHE H-ALPHA



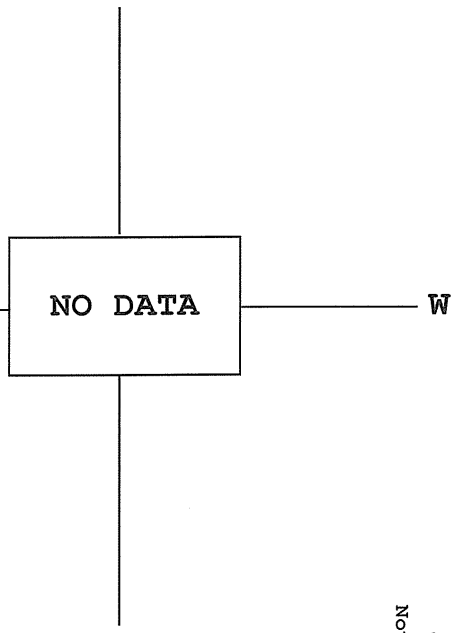
08008 UT

SAN VITO SUNSPOTS



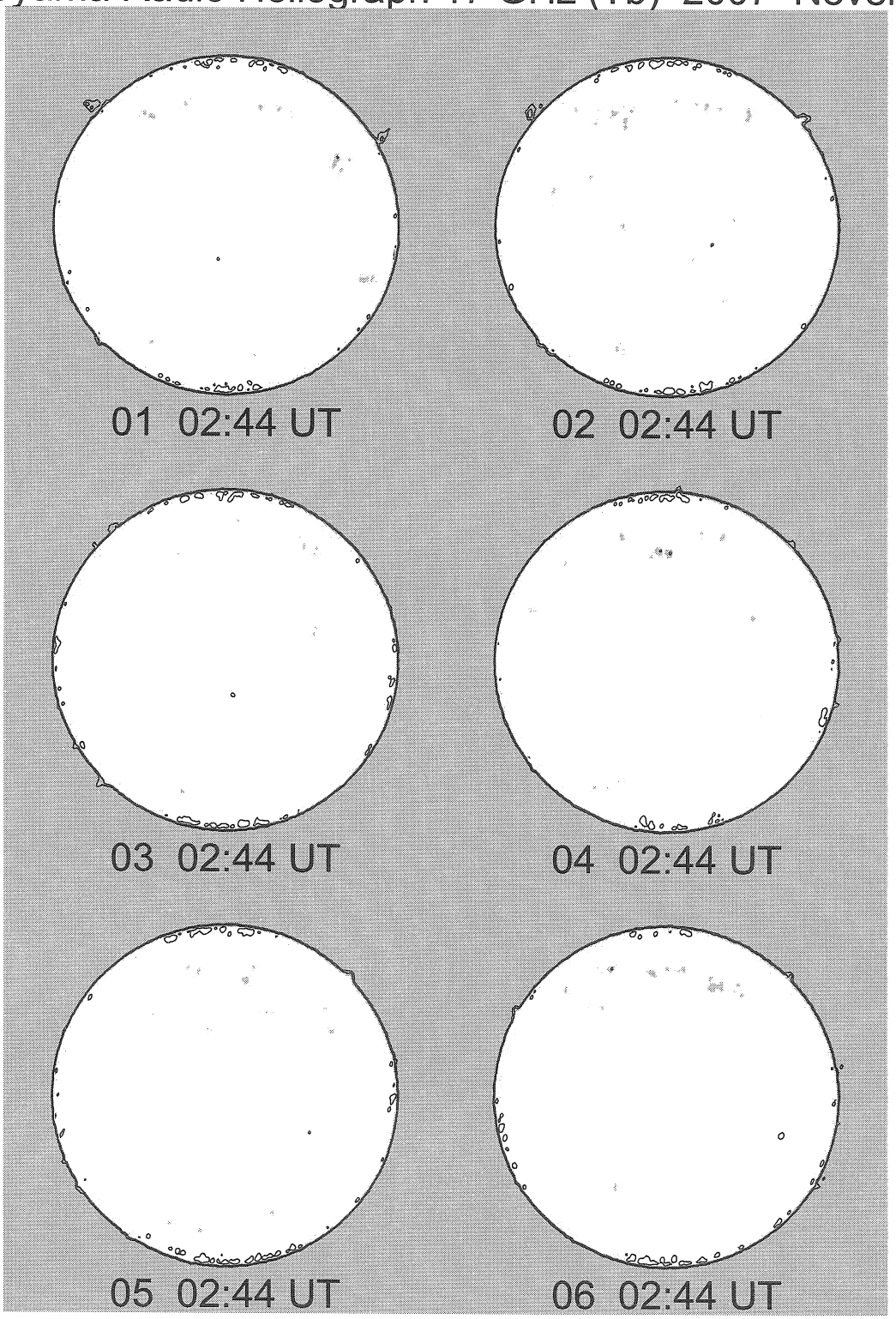
1040 UT

SACRAMENTO PEAK CORONA (1.15 Radii) ---



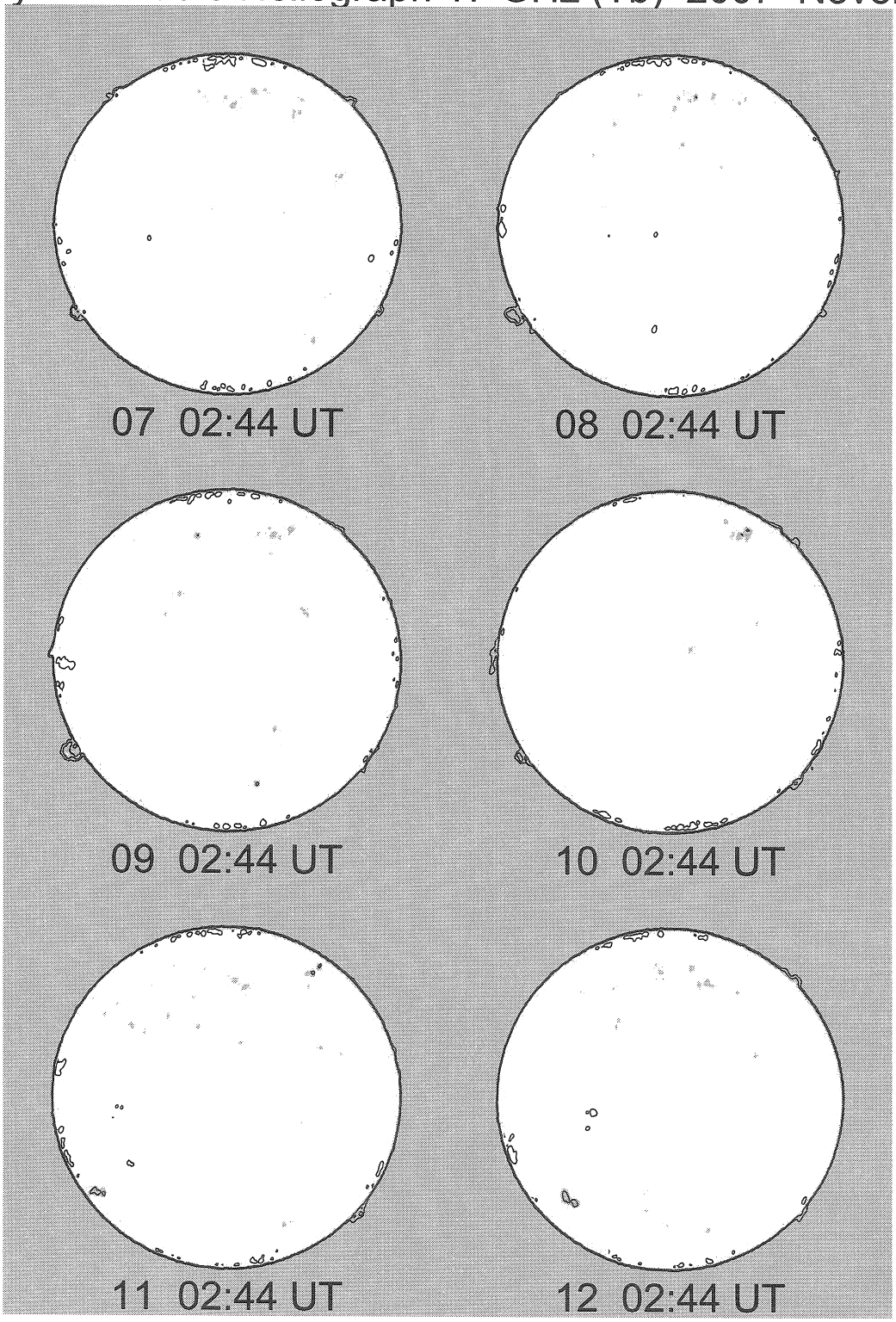
73
Nov 07

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 November



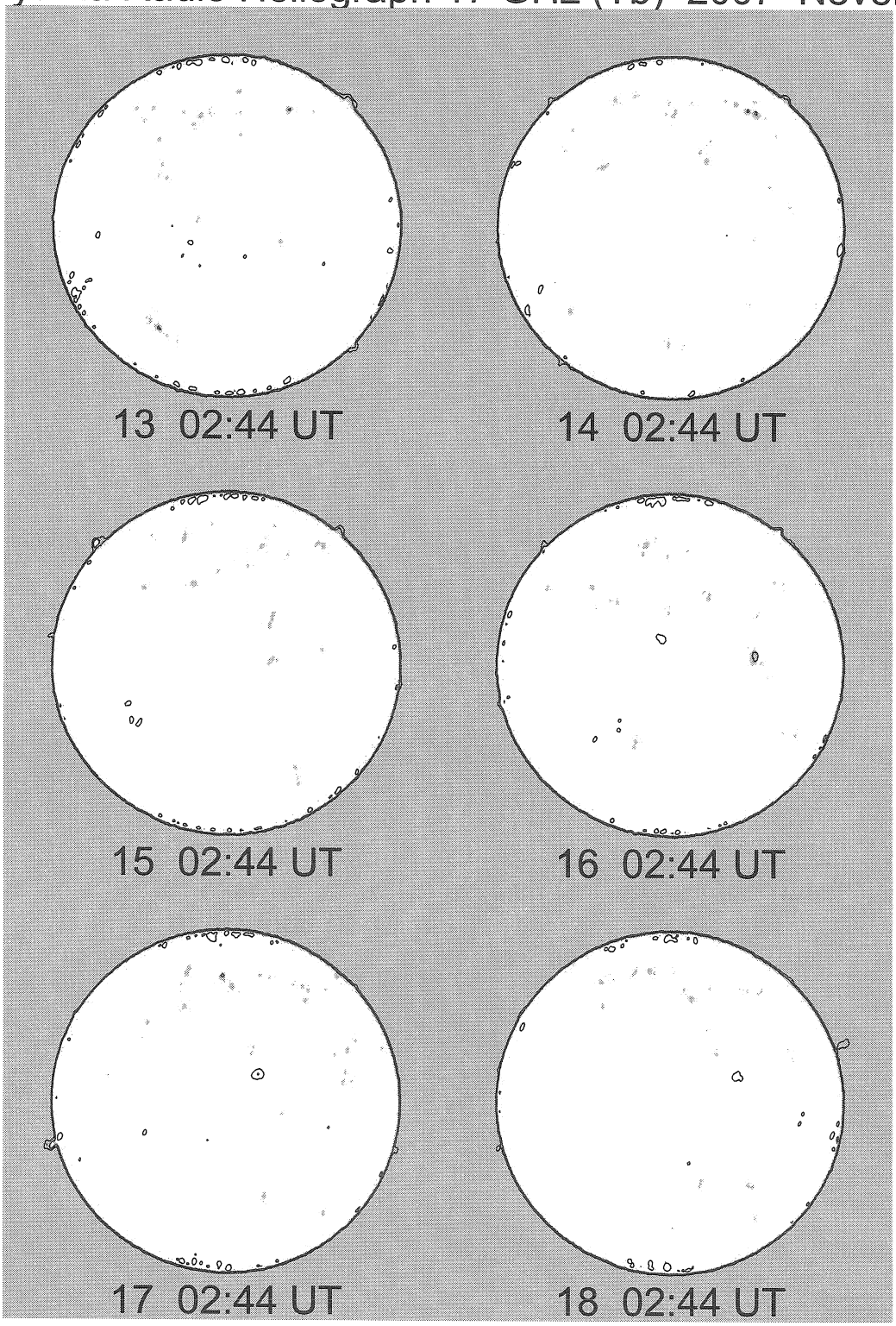
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 November



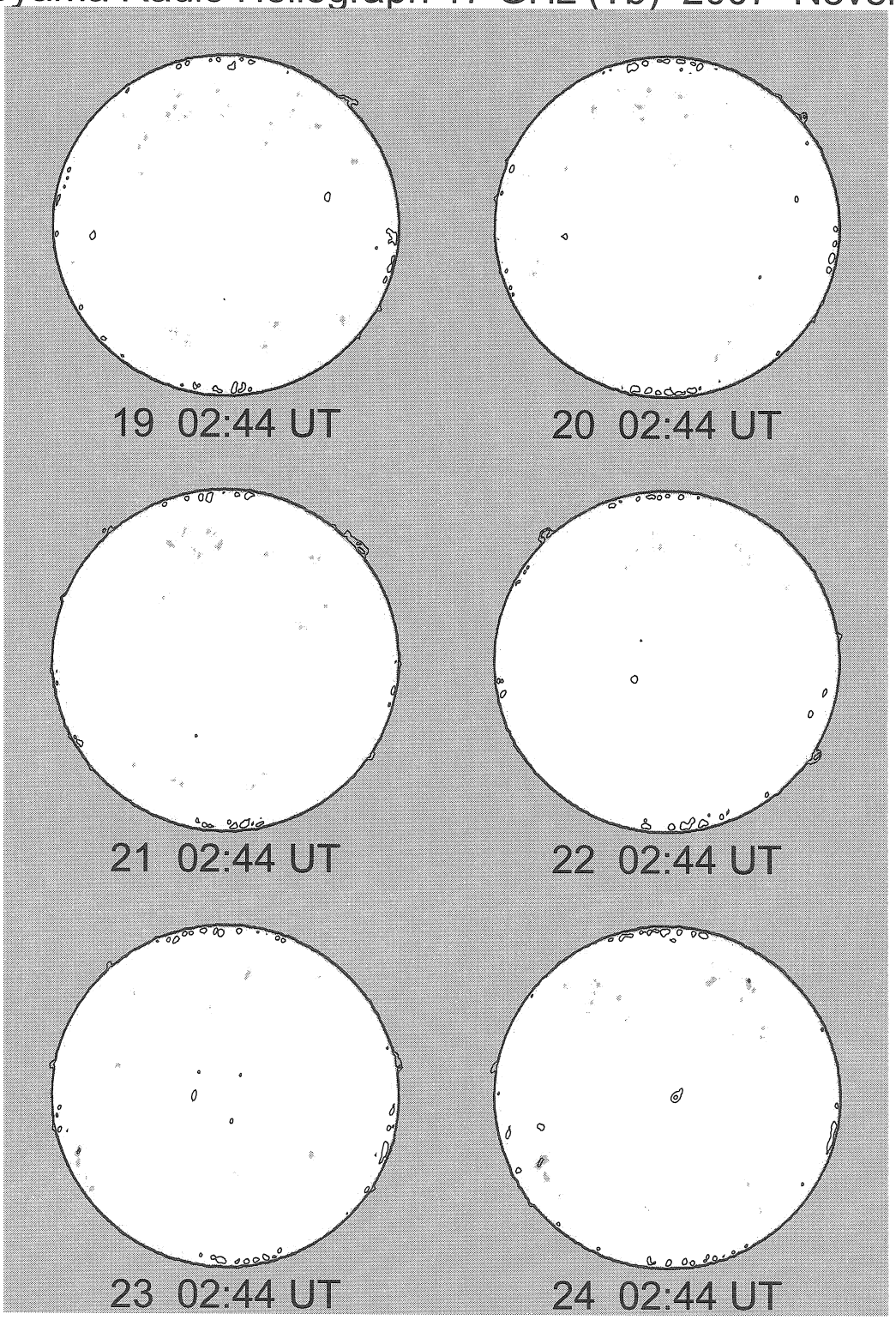
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 November



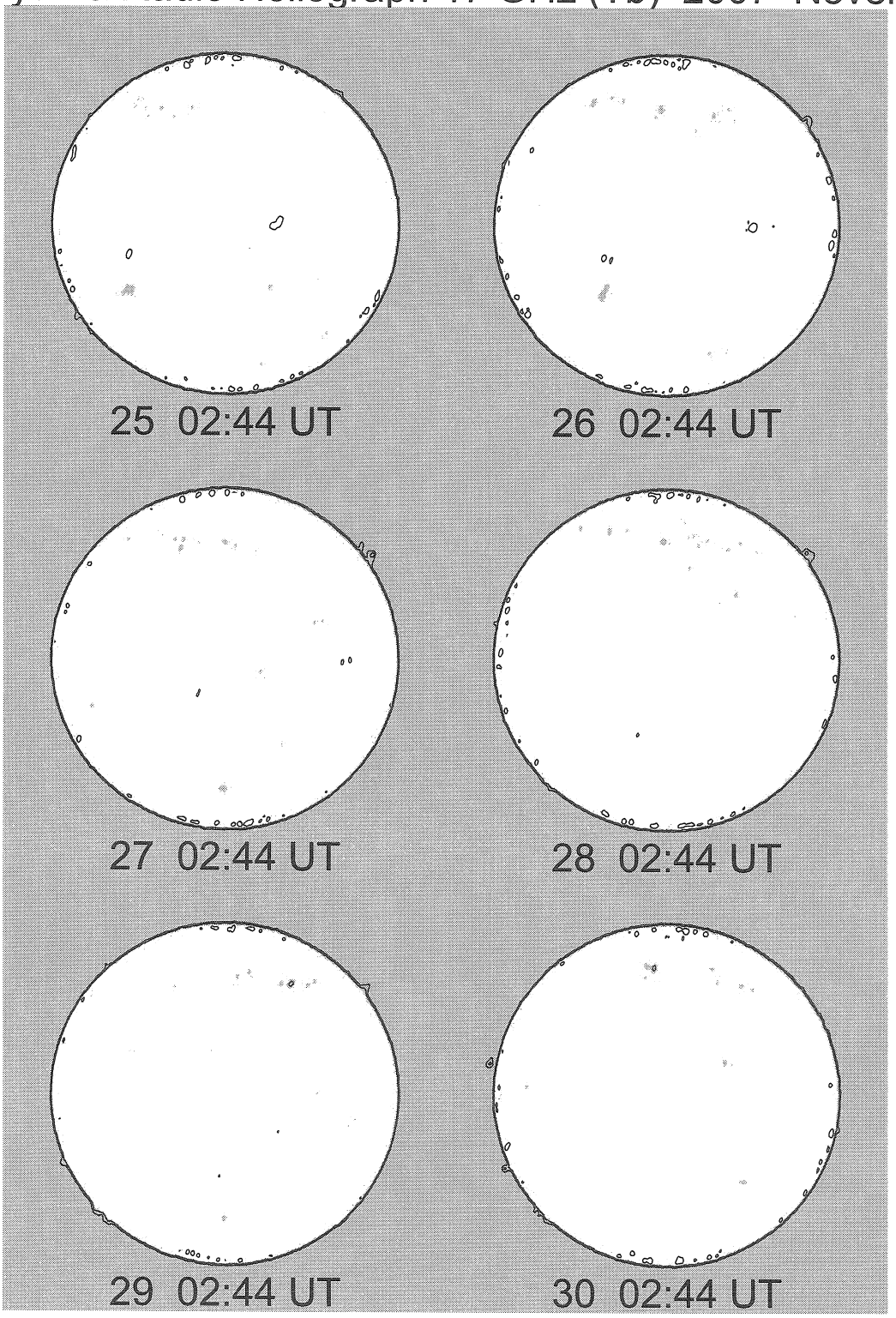
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2007 November



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 November



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)

NOVEMBER 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
10973		LEAR	11 06 0600	S10 W45	11 2.9		A	AXX	10	1	1	3
10973		SVTO	11 06 0845	S12 W46	11 2.9		A	AXX	10	1	1	2
10973		HOLL	11 06 1602	S11 W50	11 2.9		A	HSX	20	1	1	3
10973A		LEAR	11 13 0435	S08 W68	11 8.1		A	AXX	10	1	1	2
10973A		HOLL	11 13 1811	S08 W78	11 7.9		A	AXX	10	1	1	4
10974		LEAR	11 16 0445	N12 E04	11 16.5		B	BXO	20	3	2	3
10974		LEAR	11 17 0103	N13 W09	11 16.4		BG	DAO	40	3	3	2
10974		TACH	11 17 0654	N12 W12	11 16.4			BXO	4	2	3	4
10974		KAND	11 17 1005	N12 W13	11 16.4			BXO		6	4	3
10975		VORO	11 24 0053	N02 W02	11 23.9			BXX	10	2	1	3
10975		LEAR	11 24 0356	N02 W14	11 23.1		B	BXO	20	5	2	2
10975		TACH	11 24 0705	N02 W14	11 23.2			BRO	8	3	3	4
10975		LEAR	11 25 0030	N02 W25	11 23.1		B	BXO	10	2	3	2
10975		VORO	11 26 0152	N02 W28	11 24.0			BXX	4	3	2	3
10975		KAND	11 26 0815	N00 W32	11 23.9			AX		1		4
10975		SVTO	11 26 1157	N04 W35	11 23.9		A	AXX	10	1	1	2
10975		LEAR	11 26 1253	N03 W38	11 23.7		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
NOVEMBER 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
16	0734	0746	0800D	1	1		1				No flare		
16	0800	0807	0843	1	1		1				No flare		
29	1236	1243U	1302	1	1		1				*		
30	1230	1235	1310	1	1		1				*		

OBSERVATORIES REPORTING FOR NOVEMBER 2007

Upice, Czech Republic	SEA

Observations are not necessarily continuous.
* = No Flare Patrol

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

NOVEMBER 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
01	0000	0747	HIRA								
	0000	0800	CULG								
	0710	1421	ONDR								
	0715	1500	BLEN								
	2000	2400	CULG								
	2055	2400	HIRA								
02	0000	0746	HIRA								
	0000	0800	CULG								
	0712	1419	ONDR								
	0715	1500	BLEN								
	2000	2400	CULG								
	2056	2400	HIRA								
03	0000	0745	HIRA								
	0000	0800	CULG								
	0714	1417	ONDR								
	0720	1500	BLEN								
	2000	2400	CULG								
	2057	2400	HIRA								
04	0000	0744	HIRA								
	0000	0800	CULG								
	0716	1415	ONDR								
	0725	1500	BLEN								
	2000	2400	CULG								
	2058	2400	HIRA								
05	0000	0743	HIRA								
	0000	0800	CULG								
	0718	1413	ONDR								
	0725	1500	BLEN								
	2000	2400	CULG								
	2059	2400	HIRA								
06	0000	0743	HIRA								
	0000	0800	CULG								
	0720	1411	ONDR								
	0730	1500	BLEN								
	2000	2400	CULG								
	2100	2400	HIRA								
07	0000	0742	HIRA								
	0000	0800	CULG								
	0723	1409	ONDR								
	0735	1500	BLEN								
	2000	2400	CULG								
	2101	2400	HIRA								
08	0000	0741	HIRA								
	0000	0800	CULG								
	0725	1407	ONDR								
	0740	1500	BLEN								
	2000	2400	CULG								
	2102	2400	HIRA								
09	0000	0740	HIRA								
	0000	0800	CULG								
	0727	1351	ONDR								
	0745	1500	BLEN								
	2000	2400	CULG								
	2103	2400	HIRA								
10	0000	0739	HIRA								
	0000	0800	CULG								
	0729	1403	ONDR								
	1015	1500	BLEN								
	2000	2400	CULG								
	2104	2400	HIRA								

SOLAR RADIO EMISSION
Spectral Observations

NOVEMBER 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
11	0000	0738	HIRA								
	0000	0800	CULG								
	0731	1401	ONDR								
	2000	2400	CULG								
	2105	2400	HIRA								
12	0000	0737	HIRA								
	0000	0800	CULG								
	0733	1359	ONDR								
	0750	1500	BLEN								
	2000	2400	CULG								
	2106	2400	HIRA								
13	0000	0736	HIRA								
	0000	0800	CULG								
	0735	1357	ONDR								
	0755	1500	BLEN								
	2000	2400	CULG								
	2107	2400	HIRA								
14	0000	0735	HIRA								
	0000	0800	CULG								
	0738	1355	ONDR								
	0755	1450	BLEN								
	2000	2400	CULG								
	2108	2400	HIRA								
15	0000	0735	HIRA								
	0000	0800	CULG								
			LEAR	0208.0	0209.0	III		1	25	56	
			PALE	0208.0	0209.0	III		1	25	47	
	0740	1353	ONDR								
	0755	1450	BLEN								
	2000	2400	CULG								
	2109	2400	HIRA								
16	0000	0734	HIRA								
	0000	0800	CULG								
	0742	1351	ONDR								
	0755	1450	BLEN								
			LEAR	0850.0	0851.0	III		1	25	44	
			LEAR	0856.0	0859.0	III		1	25	42	
			LEAR	0917.0	0917.0	III		1	25	42	
			LEAR	0926.0	0927.0	III		1	25	42	
			LEAR	0942.0	0943.0	III		1	25	39	
	2000	2400	CULG								
	2110	2400	HIRA								
17	0000	0733	HIRA								
	0000	0800	CULG								
	0744	1336	ONDR								
	0755	1450	BLEN								
	2000	2400	CULG								
	2111	2400	HIRA								
18	0000	0733	HIRA								
	0000	0800	CULG								
	0746	1348	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2112	2400	HIRA								
19	0000	0732	HIRA								
	0000	0800	CULG								
	0748	1346	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2113	2400	HIRA								

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

NOVEMBER 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
20	0000	0731	HIRA								
	0000	0800	CULG								
	0750	1345	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2114	2400	HIRA								
21	0000	0731	HIRA								
	0000	0800	CULG								
	0753	1343	ONDR								
	0805	1450	BLEN								
	2000	2230	CULG								
	2115	2400	HIRA								
22	0000	0731	HIRA								
	0000	0800	CULG								
	0755	1341	ONDR								
	0810	1450	BLEN								
	2000	2400	CULG								
	2116	2400	HIRA								
23	0000	0730	HIRA								
	0000	0800	CULG								
	0757	1340	ONDR								
	0815	1450	BLEN								
	2000	2400	CULG								
	2117	2400	HIRA								
24	0000	0730	HIRA								
	0000	0800	CULG								
	0759	1338	ONDR								
	0815	1450	BLEN								
	2000	2400	CULG								
	2117	2400	HIRA								
25	0000	0730	HIRA								
	0000	0800	CULG								
	0801	1337	ONDR								
	0820	1445	BLEN								
	2000	2400	CULG								
	2118	2400	HIRA								
26	0000	0730	HIRA								
	0000	0800	CULG								
	0803	1336	ONDR								
	0820	1445	BLEN								
	2000	2400	CULG								
	2119	2400	HIRA								
27	0000	0730	HIRA								
	0000	0800	CULG								
	0805	1334	ONDR								
	0820	1445	BLEN								
	2000	2400	CULG								
	2120	2400	HIRA								
28	0000	0729	HIRA								
	0000	0800	CULG								
	0807	1333	ONDR								
	0825	1445	BLEN								
	2000	2400	CULG								
	2121	2400	HIRA								
29	0000	0729	HIRA								
	0000	0800	CULG								
	0809	1332	ONDR								
	0825	1425	BLEN								
	2000	2400	CULG								
	2122	2400	HIRA								

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

NOVEMBER 2007

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
30	0000	0729	HIRA								
	0000	0800	CULG								
	0811	1331	ONDR								
	0825	1425	BLEN								
	2000	2400	CULG								
	2123	2400	HIRA								

Event Remarks:

B = Single burst	N = Intermittent activity in this period
C = Underlying 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

NOVEMBER 2007

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

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

NOVEMBER 2007

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

OTHERS DAYS: NO DETECTABLE NOISE STORM

- For the days marked by an asterisk, intense ionospheric gravity waves are observed during the whole day. Without a mode detailed analysis leadind 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

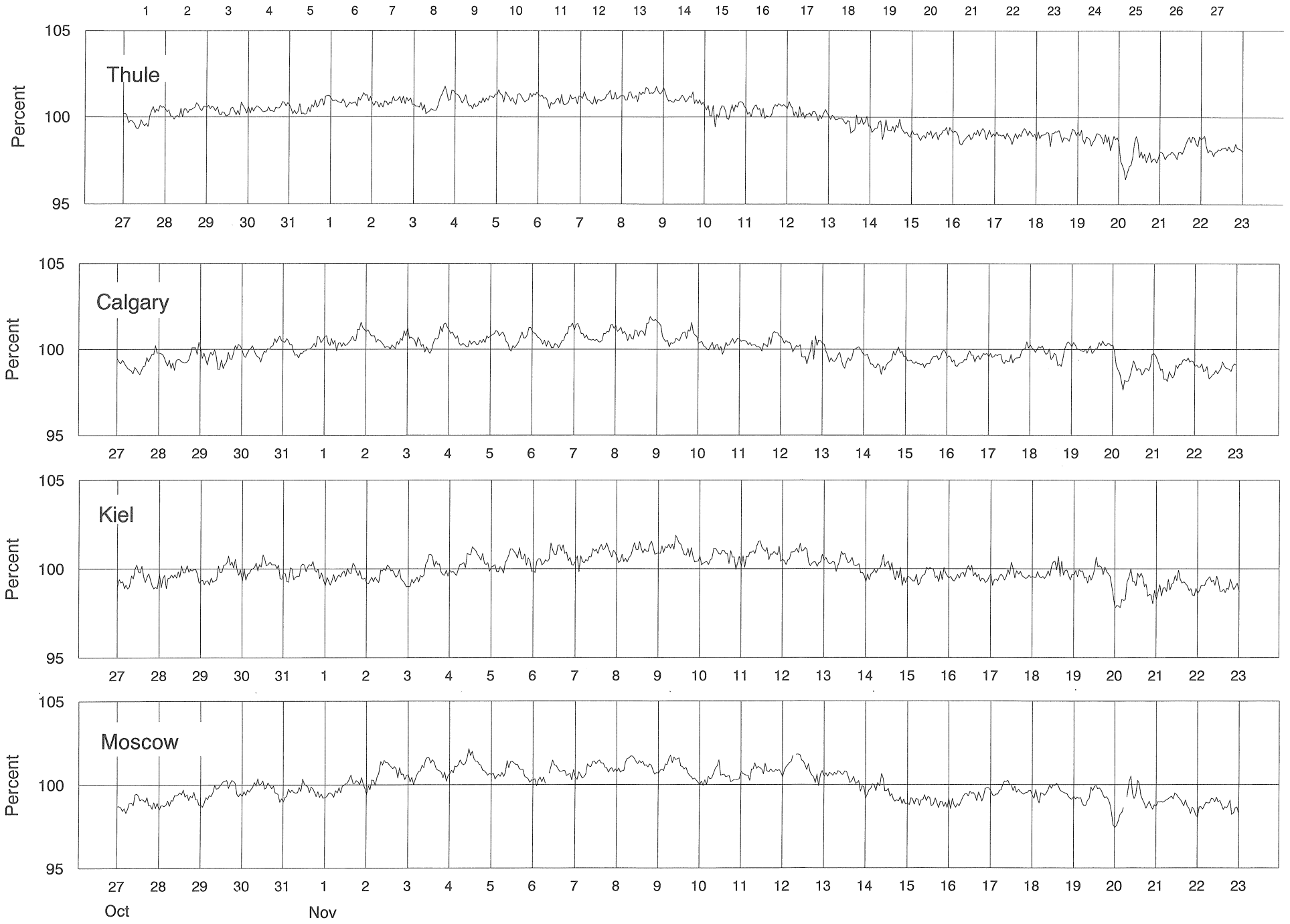
COSMIC RAY INDICES
(Neutron Monitor)
November 2007

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	4616.6	4023.5	6310.4	9453.7		2092.7	
2	4613.5	4020.3	6308.3	9531.2		2091.3	
3	4610.4	4023.5	6323.8	9546.8		2092.8	
4	4617.4	4020.3	6358.4	9580.9		2088.8	
5	4626.5	4027.0	6362.0	9540.4		2089.5	
6	4618.1	4024.7	6375.2	9527.3(23)		2088.8	
7	4623.3	4035.5	6386.0	9557.3	data	2092.6	data
8	4634.4	4045.5	6392.7	9579.4	not	2096.8	not
9	4620.8	4032.5	6401.5	9560.4	available	2091.3	available
10	4591.6	4009.7	6375.5	9509.9		2081.8	
11	4591.5	4017.5	6390.5	9545.8		2083.6	
12	4583.9	4005.0	6376.6	9563.6(23)		2084.5	
13	4561.9	3985.5	6354.8	9507.9		2077.0	
14	4541.9	3974.8	6323.5	9422.1		2075.3	
15	4529.5	3975.0	6310.4	9369.2		2072.1	
16	4525.7	3978.8	6308.8	9394.7		2076.1	
17	4526.4	3985.0	6309.8	9438.0		2085.7	
18	4525.6	3993.7	6321.8	9423.1		2082.9	
19	4517.2	4004.7	6315.9	9391.8		2080.6	
20	4465.7	3952.5	6259.2	9367.7(23)		2081.0	
21	4489.6	3959.8	6270.9	9365.5		2075.4	
22	4491.6	3953.7	6274.8	9348.2		2072.7	
23	4488.3	3951.7	6277.8	9340.0		2078.6	
24	4500.2	3968.0	6308.0	9374.7		2076.1	
25	4507.2	3977.3	6324.1	9390.9		2083.2	
26	4531.7	3984.2	6341.0	9465.5		2090.7	
27	4538.7	3997.5	6346.2	9545.3		2081.8	
28	4544.8	3999.5	6345.6	9573.5		2092.0	
29	4558.0	4013.0	6368.3	9563.5		2092.8	
30	4562.0	4028.8	6361.5	9527.1		2089.7	
Mean	4558.0	3998.9	6336.1	9476.8		2084.6	

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.

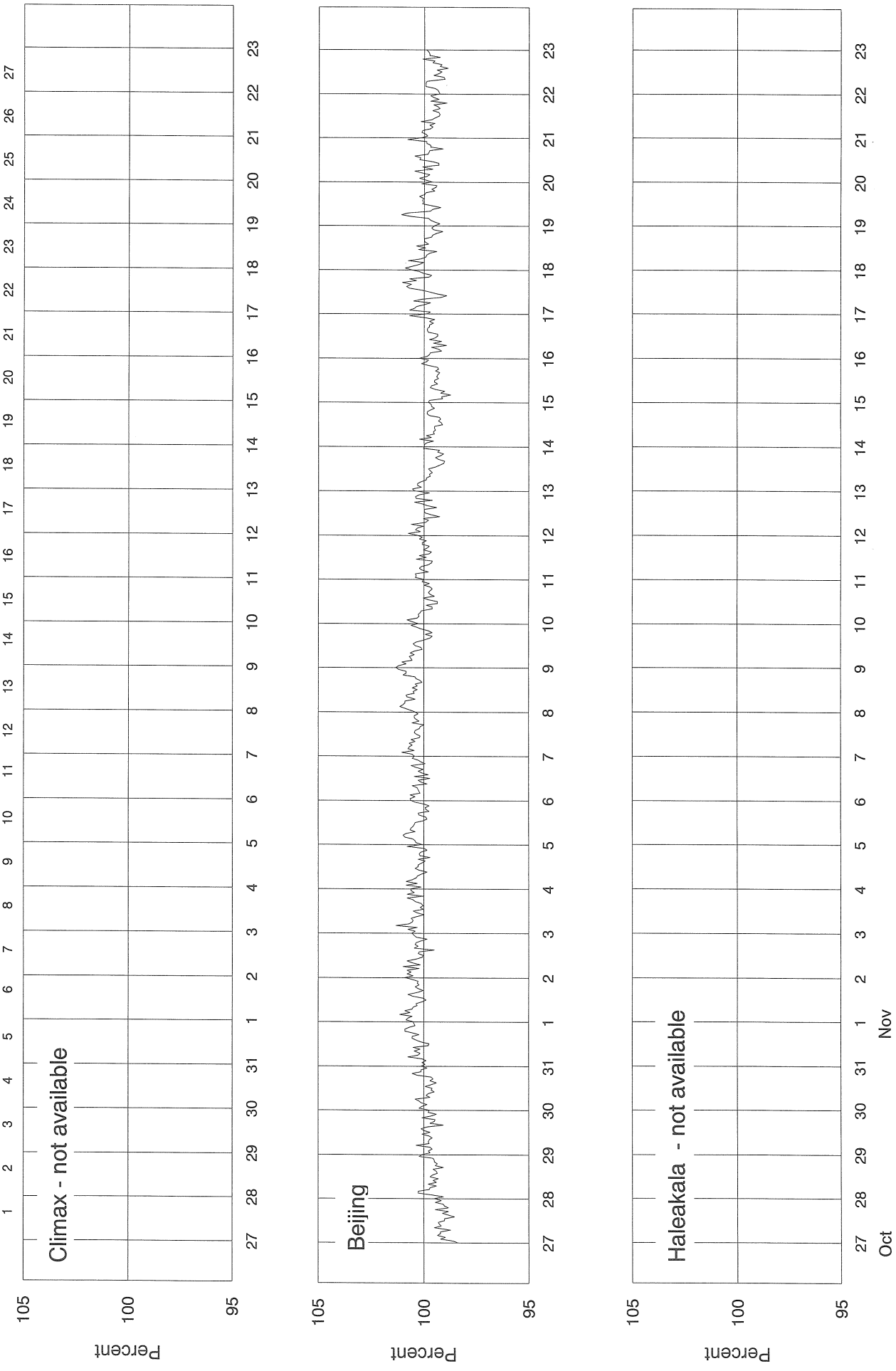
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2378 - Beginning 27 Oct 2007



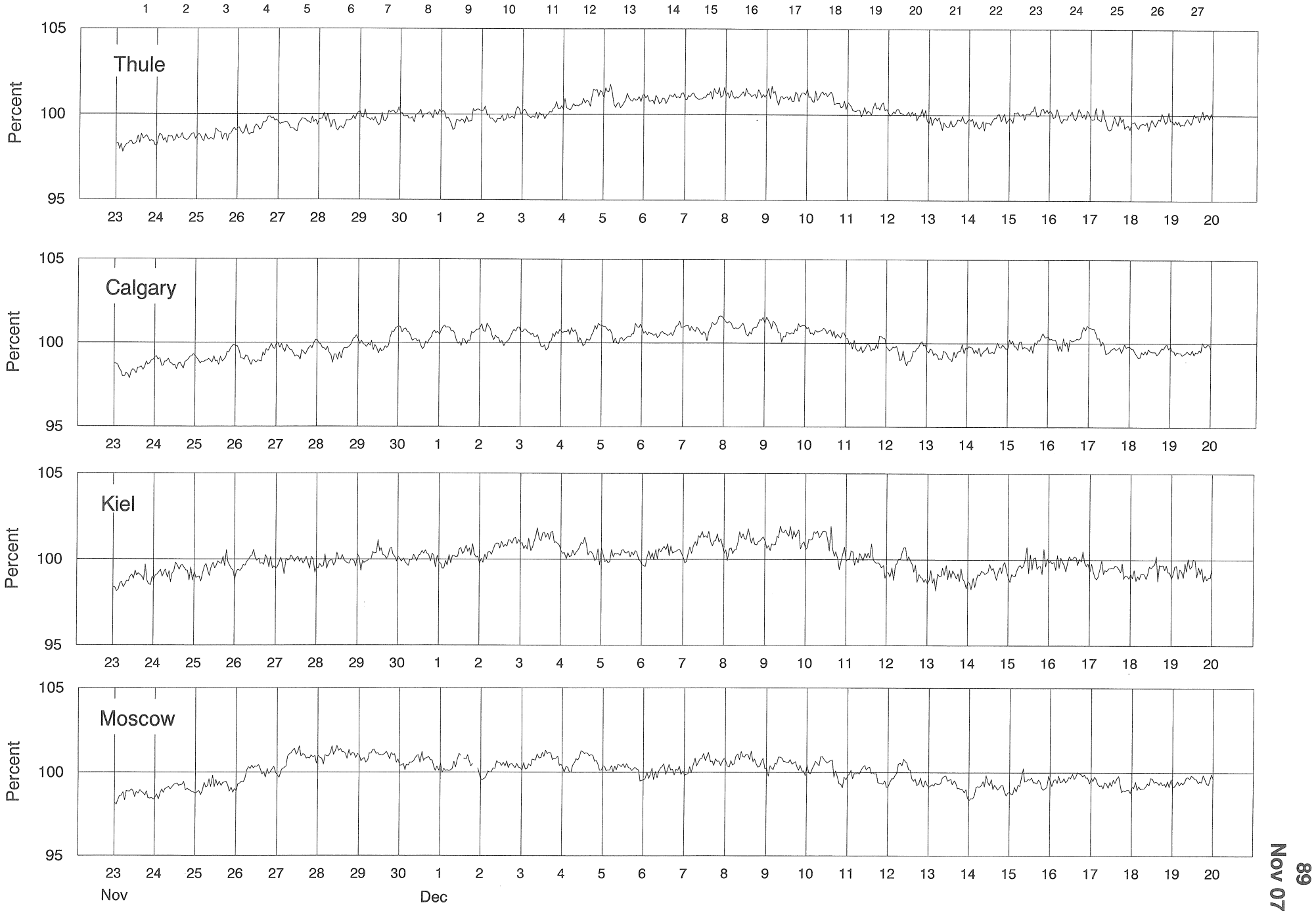
87
Nov 07

COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2378 - Beginning 27 Oct 2007

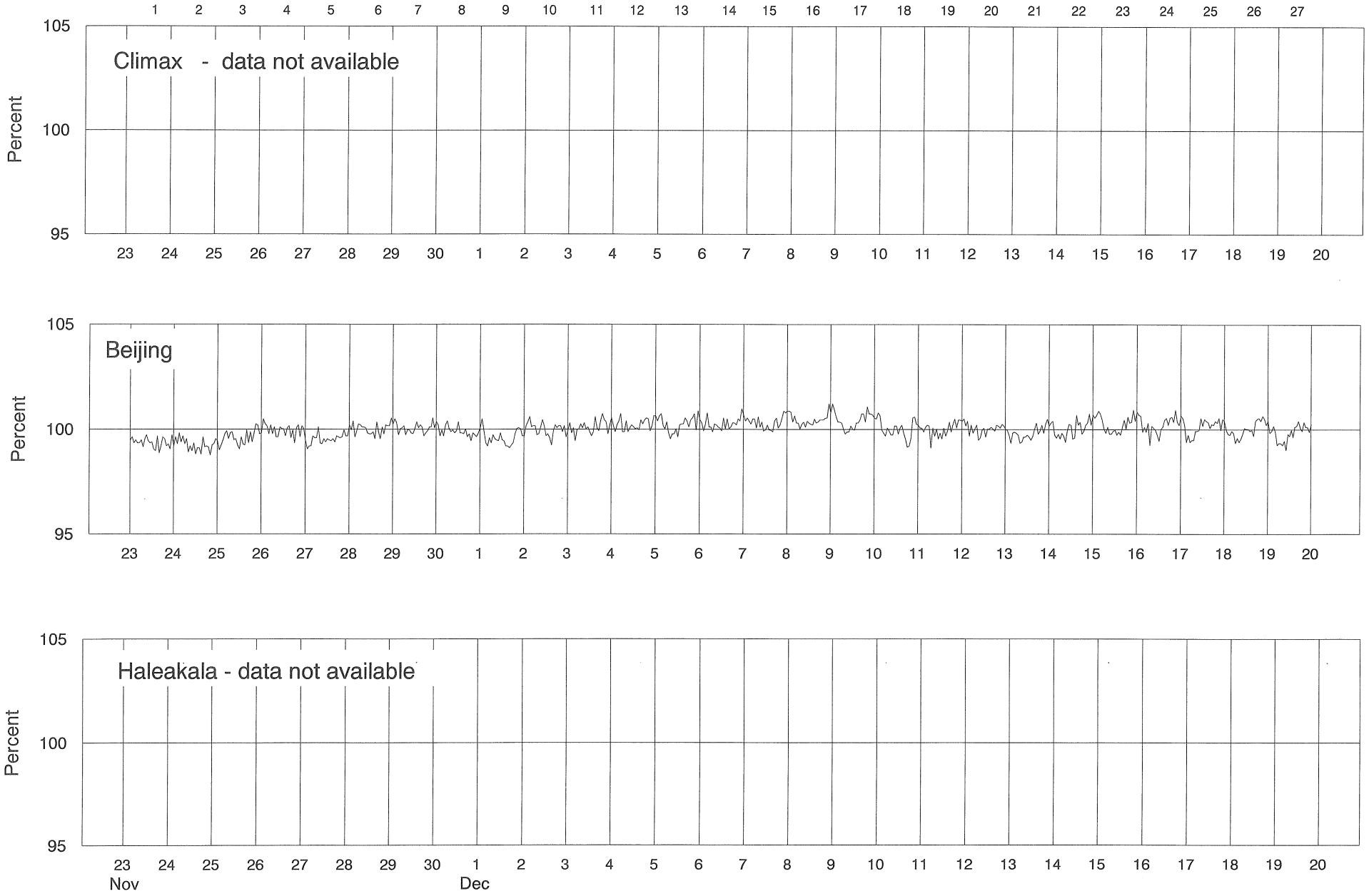


COSMIC RAY INDICES
(Neutron Monitor)

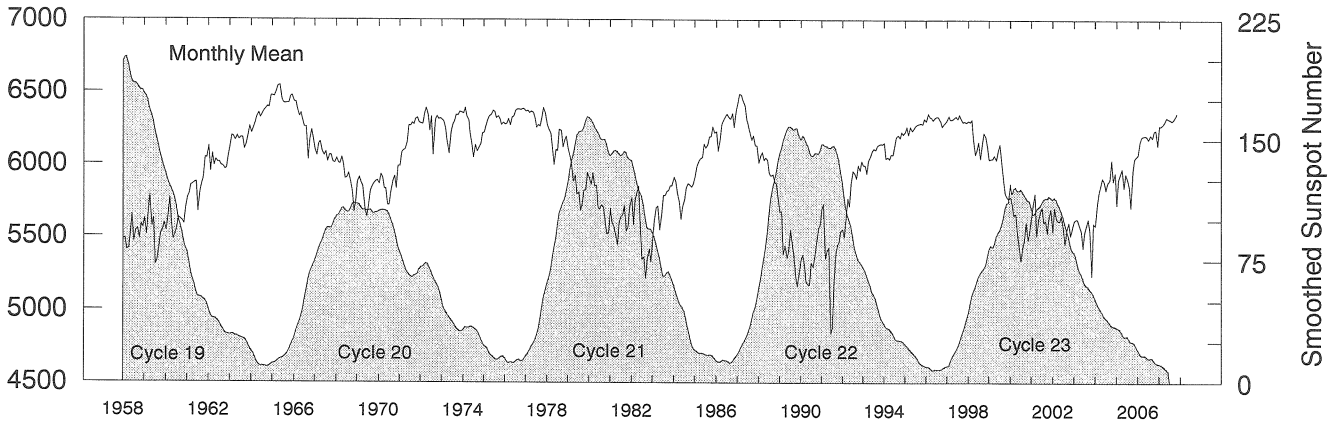
Bartels Rotation 2379 - Beginning 23 Nov 2007



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



Kiel Neutron Monitor Pressure-Corrected Values
Jan 1958 - Nov 2007



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	5481	5488	5409	5417	5523	5651	5466	5538	5553	5485	5584	5561	5513
1959	5623	5515	5659	5783	5569	5625	5307	5328	5420	5518	5536	5593	5540
1960	5539	5628	5764	5596	5480	5509	5557	5628	5620	5607	5586	5692	5601
1961	5766	5793	5853	5856	5872	5874	5672	5804	5859	5898	6046	6041	5861
1962	6122	5949	6072	5989	6030	6010	6013	5991	5982	5963	5971	6052	6012
1963	6125	6197	6191	6163	6194	6168	6185	6182	6103	6133	6197	6260	6175
1964	6215	6253	6287	6331	6355	6321	6347	6366	6383	6399	6393	6475	6344
1965	6474	6469	6506	6542	6545	6451	6424	6420	6423	6424	6467	6475	6468
1966	6433	6432	6375	6330	6353	6300	6258	6258	6033	6168	6236	6172	6279
1967	6101	6061	6139	6155	6088	6061	6086	6016	6064	6063	6014	6009	6071
1968	6041	6011	6001	6048	5997	5901	5910	5937	5878	5805	5673	5739	5912
1969	5876	5909	5872	5845	5686	5640	5700	5812	5843	5864	5879	5887	5818
1970	5863	5928	5906	5830	5831	5716	5719	5803	5885	5915	5832	5985	5851
1971	5985	6081	6094	6103	6151	6268	6265	6286	6275	6314	6322	6288	6203
1972	6281	6278	6351	6387	6344	6232	6328	6065	6306	6334	6313	6318	6295
1973	6309	6298	6250	6155	6074	6220	6271	6296	6341	6340	6365	6360	6273
1974	6353	6391	6331	6308	6201	6139	6047	6132	6090	6113	6139	6215	6205
1975	6217	6267	6308	6334	6341	6370	6363	6320	6334	6313	6272	6286	6310
1976	6275	6281	6314	6269	6325	6331	6370	6380	6379	6375	6383	6380	6339
1977	6366	6371	6355	6366	6357	6322	6254	6272	6263	6317	6391	6355	6332
1978	6271	6242	6215	6113	5998	6101	6095	6241	6232	6117	6167	6193	6165
1979	6104	6063	6006	5883	5923	5794	5806	5682	5723	5820	5827	5942	5881
1980	5905	5862	5942	5850	5854	5702	5690	5717	5704	5611	5522	5528	5741
1981	5697	5600	5569	5517	5447	5600	5642	5650	5717	5539	5564	5702	5604
1982	5772	5586	5755	5799	5848	5582	5347	5362	5217	5349	5414	5329	5530
1983	5481	5606	5702	5711	5549	5659	5787	5785	5814	5820	5852	5849	5718
1984	5911	5880	5799	5740	5622	5706	5753	5837	5867	5856	5844	5864	5807
1985	5911	5986	6016	6038	6049	6142	6114	6135	6193	6192	6260	6220	6105
1986	6229	6093	6176	6280	6308	6336	6350	6331	6315	6356	6259	6359	6283
1987	6429	6489	6484	6443	6410	6319	6273	6217	6171	6198	6131	6131	6308
1988	6013	6064	6085	6030	6047	6033	5945	5922	5931	5880	5872	5761	5965
1989	5673	5678	5385	5441	5360	5407	5552	5460	5378	5228	5167	5241	5414
1990	5348	5381	5313	5197	5177	5173	5324	5297	5382	5471	5563	5584	5351
1991	5696	5726	5355	5405	5431	4841	4882	5162	5390	5443	5466	5540	5361
1992	5553	5500	5624	5766	5713	5869	5956	5942	5905	5994	5960	6024	5817
1993	5996	5992	5937	6026	6061	6094	6108	6099	6129	6137	6142	6141	6072
1994	6150	6042	6052	6067	6070	6068	6129	6189	6203	6183	6226	6209	6132
1995	6225	6260	6205	6260	6234	6250	6267	6279	6281	6285	6279	6319	6262
1996	6301	6354	6330	6324	6306	6325	6332	6331	6303	6262	6277	6294	6312
1997	6313	6337	6313	6314	6324	6336	6317	6347	6319	6295	6301	6289	6317
1998	6305	6293	6312	6177	6069	6101	6154	6042	6149	6220	6190	6124	6178
1999	6034	6040	6041	6062	6032	6100	6140	6023	5898	5805	5780	5765	5977
2000	5778	5729	5650	5661	5537	5441	5339	5425	5487	5602	5481	5542	5556
2001	5629	5736	5800	5509	5631	5678	5707	5602	5614	5527	5637	5694	5647
2002	5540	5701	5628	5613	5610	5651	5562	5455	5556	5599	5512	5558	5582
2003	5613	5624	5624	5588	5543	5428	5532	5582	5624	5544	5235	5595	5544
2004	5579	5730	5810	5854	5908	5882	5856	5874	5898	6029	5887	5941	5854
2005	5723	5898	5931	5970	5840	5936	5899	5847	5705	5956	6042	6056	5900
2006	6070	6161	6192	6198	6202	6197	6176	6206	6186	6234	6238	6133	6183
2007	6270	6268	6281	6298	6330	6317	6316	6304	6314	6336	6357		6308

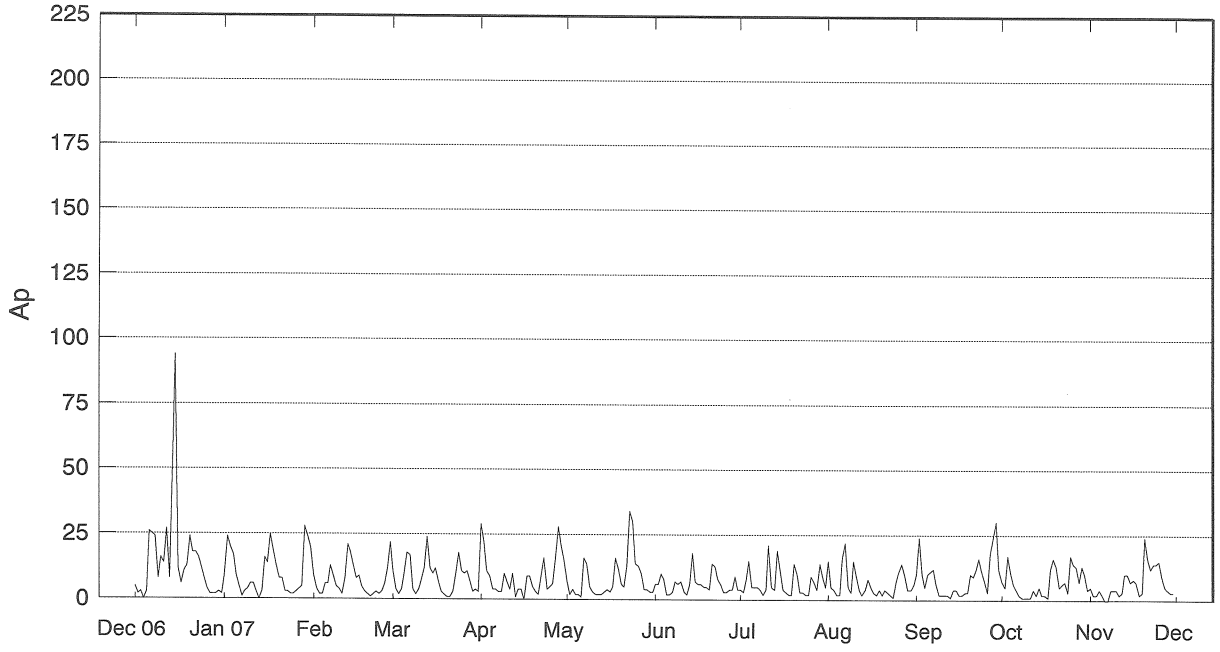
Multiply table entries by 100 to obtain hourly counting rate. Kiel, Germany: N54, E10, Alt= 54 m, Cutoff Rigidity= 2.32GV.

Geomagnetic Activity Indices
November 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	aa Provisional Am	N	S	M	
1		3-	1-	1+	1	0+	1	1	1-	9-	5	0.2	2+	1-	1o	1o	0+	1+	1o	1-	8	12	9	12	9 CC
2	Q5	0+	1+	1	1	0	0	0+	0+	4+	2	0.0	0+	1o	1o	1+	0o	0o	0+	1-	4	5	6	7	4 CC
3	Q3	1-	0+	0+	1-	1	0	0	0	3	2	0.0	0+	0+	0+	1o	1+	0+	0+	0o	3	4	5	4	5 CC
4		1	0	0+	0+	1	2+	2-	2	9-	4	0.1	1-	0o	0o	0+	1+	2+	2o	2-	8	13	9	4	17 CC
5	Q7	1-	1+	1	1	0	0	0	1-	5-	2	0.0	1-	1-	1o	1+	0+	0o	0o	1-	4	4	8	8	4 CC
6	Q2	0	0	0	0	1-	0	0	0	1-	0	0.0	0o	0o	0o	0o	0+	0o	0o	0+	1	3	3	2	4 CC
7	Q1	0	0	0	0	0	0	0	0+	0+	0	0.0	0+	0o	0o	0+	0o	0o	0o	0+	1	2	3	2	3 CC
8		1	1+	1	0	0+	1-	1+	1+	7	4	0.1	1-	1-	1-	0o	1-	1o	1+	2-	6	6	8	6	9 CC
9		1+	1-	0+	1-	2-	1+	0+	2	8+	4	0.1	1+	0+	0+	1+	1+	2-	1-	2-	7	9	9	8	10 CC
10		2	0+	1	1+	1+	1+	0+	0	8-	4	0.1	1+	1-	2-	2-	1+	1+	0+	0+	8	7	12	12	6 CC
11	Q4	1	0+	1-	0+	1-	0	0+	1	4+	2	0.0	0+	0+	0+	1o	1o	0o	1o	1o	4	6	6	6	6 CC
12	Q9	0+	0	0	0+	0+	1+	2-	2-	6-	3	0.1	0+	0o	0o	1-	0+	1+	2o	2+	7	8	8	4	12 CK
13		3	3	2	2	3-	1+	2	3	19	10	0.6	3o	3o	2-	2+	3o	2-	2+	3-	21	21	26	24	23
14		3	3-	2	2+	3-	3	1+	2-	19-	10	0.6	3-	2+	2o	2+	3-	3o	1+	2-	19	21	19	20	20
15		2	2-	1-	1-	2	2	2+	3-	14	7	0.3	2-	1+	1-	1+	2o	2o	2+	3-	13	17	11	10	18
16		1+	1-	2-	2	2	2-	2+	3+	15	8	0.4	1o	1o	1+	2o	2o	2o	2o	3o	14	17	15	11	21
17		3+	2+	2+	1-	1	2-	1+	0+	13	7	0.4	3o	2-	2+	1o	1+	2-	2-	0+	13	14	12	17	10 KK
18	Q8	1	2-	0	0+	0+	1	0	0	4+	2	0.0	1-	1o	0o	0+	0+	1+	0o	0+	4	5	6	5	6 CC
19		1-	0	0	0	0	0	2	3-	5+	3	0.0	1-	0o	0+	0o	0o	0+	2+	3-	7	8	11	5	14 K
20	D1	3-	2	3-	4+	5+	4+	3+	4-	28+	24	1.2	3-	2o	2+	4o	5+	4+	3+	3+	45	54	51	30	75
21	D2*	3+	4	4-	4	3	2+	2-	1+	23+	16	0.9	3-	3o	3+	3+	3-	2+	2-	1+	23	21	30	35	16
22		1-	3-	1+	1+	1+	4-	4-	4-	18+	12	0.7	0+	2-	1+	2-	2-	4o	4o	3o	23	28	25	11	43
23	D5*	4	3+	3	2	3	2	3-	2	22	14	0.8	3-	3-	3-	3-	3-	2-	2+	2-	20	27	19	25	21
24	D4*	3-	2	2+	2	3-	4	4-	3-	22	14	0.8	2+	1+	2o	3-	2+	4-	4-	3-	23	36	23	17	42
25	D3*	3	3	3+	2+	3-	3+	3-	3+	24-	15	0.8	2+	2+	3-	3-	2+	3+	2+	3o	22	33	22	26	29
26		3	3	2+	3-	1	1	2-	2-	16+	9	0.5	2+	2o	2o	2+	1+	1o	2-	2o	14	18	13	21	10
27		1	3-	1+	1	1-	1+	1+	1+	11-	5	0.2	1o	2-	1+	1+	1+	1+	1+	1+	9	11	7	9	9 CC
28		2	0+	1-	1-	1+	2+	1-	1	9	4	0.2	1+	0o	1-	1o	2-	2+	1-	1+	8	11	11	7	15 KC
29	Q10	0	0+	0+	1-	1	2	1+	0+	6	3	0.1	0o	0+	0+	1o	1+	2o	1+	1-	6	7	9	4	11 CC
30	Q6	0	0	1-	1-	1-	1-	1+	1	5	3	0.0	0o	0o	1-	1o	1o	1+	2-	1+	6	7	8	5	9 CC
Mean											7	0.31									11.7	14.6	13.6	14.0	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	2+	1-	1+	1+	1-	2-	1+	0o	8	2+	1-	1o	1o	0o	1-	1o	1o	7	66.3	0	0	10		
2	0+	1+	1-	2-	0o	0o	0+	0+	4	1-	1-	1o	1+	0o	0+	1-	1o	5	66.8	0	0	10		
3	0+	0o	0+	1-	1+	0+	0o	0o	3	1-	1-	0+	1o	1o	0o	1-	0o	4	66.5	0	0	10		
4	0+	0o	0o	0+	2-	3-	2o	2o	8	1-	0o	0+	1-	1+	2o	2-	1o	7	66.5	0	0	10		
5	0+	1-	1+	2-	1-	0o	0o	0+	4	1o	1-	1o	1+	0+	0o	0o	1o	5	66.2	0	0	9		
6	0o	0o	0o	0o	1-	0o	0o	0o	1	0o	0o	0o	0o	0+	0o	0o	1-	1	67.3	8	2	11		
7	0o	0o	0o	0o	0o	0o	0o	0o	0	1-	0+	0+	0+	0o	0o	0o	0+	2	66.9	0	1	10		
8	0+	1o	1o	0o	1-	1o	1+	1+	5	1o	1-	1-	0o	0+	1o	1+	2o	6	68.4	0	0	12		
9	1o	0+	0o	1o	1+	2-	1-	2-	7	1+	1-	0+	1+	1+	1+	1-	2o	8	68.2	0	0	12		
10	1+	0+	1o	2-	2-	1+	0o	0+	7	2-	1+	2o	2o	1+	2-	1-	1-	10	68.4	0	0	12		
11	0+	0o	0+	1-	1o	0o	1-	1-	3	0+	1-	0+	1+	1o	0o	1+	1o	5	67.7	0	0	11		
12	0o	0o	0o	0+	0+	1+	2o	2o	6	1o	0o	0+	1o	0+	1+	2o	3-	8	68.3	0	0	12		
13	3-	2+	2-	2o	3o	2-	2+	3-	19	3o	3+	2o	3-	3o	2-	3-	3-	24	68.4	0	0	12		
14	3-	2+	2o	3-	3o	3o	2-	1+	20	3-	2o	2o	2o	3-	3o	1+	2-	18	68.9	0	0	12		
15	1+	1o	1-	1o	2+	2o	2+	2+	13	2o	1+	1-	1+	2-	2o	3-	3-	14	67.7	0	0	11		
16	1o	1-	1+	2o	2+	2+	2+	3+	16	1o	1+	1+	2-	2o	2o	2o	3-	13	69.1	10	7	13		
17	3o	1+	2o	1o	1+	2o	2-	0o	12	3-	2-	3-	1+	1+	2-	1+	1-	13	68.2	9	2	12		
18	1-	1o	0o	0o	0+	1+	0o	0o	3	1o	1o	0o	0+	0+	2-	0o	1-	5	67.2	0	1	11		
19	0+	0o	0o	0o	0o	0+	2o	3-	5	1o	0+	0+	0o	0+	1-	3-	3o	9	67.9	0	0	11		
20	3-	2-	2+	4o	6-	5-	3+	4-	50	3-	2o	3-	4o	5o	4o	3+	3o	41	68.0	0	0	11		
21	3-	3o	3+	4-	3-	2+	1+	1o	25	2+	3-	3o	3+	3-	2+	2o	1+	22	67.4	0	0	11		
22	0+	2o	1+	1+	2o	4o	4-	3-	23	0+	1+	1+	2o	2-	4o	4o	3o	23	68.0	0	0	11		
23	3o	3o	3-	3-	3o	2-	2+	2-	22	2+	3-	2+	2+	2+	2-	2+	2-	17	68.3	0	2	12		
24	2+	2-	2+	3-	3-	4o	4o	3-	29	2-	1o	1+	2o	2o	3+	3o	2+	17	69.5	10	7	13		
25	3-	3-	3o	3-	3-	3+	3-	3o	26	2o	2o	2+	2+	2o	3o	2+	3-	19	68.8	8	3	12		
26	3-	2+	3-	3-	1+	1o	2-	2o	16	2o	1+	2-	2o	2-	1+	1+	2-	12	69.6	7	3	13		
27	1-	2o	2-	1+	2-	1+	2-	1+	10	1o	2-	1o	1o	1o	1+	1o	1+	8	69.6	0	0	13		
28	2-	0o	0+	1+	2-	3-	1-	1+	9	1+	0+	1-	1o	1+	2o	1-	1o	7	69.3	0	0	13		
29	0o	0+	0+	1o	2-	2+	1+	0+	6	0o	1-	0+	1o	1+	2-	1o	1o	6	69.3	0	0	13		
30	0o	0o	0o	1o	1-	1+	2-	1o	5	0+	0+	1o	1+	1o	1o	2-	2-	7	69.2	0	1	13		
Mean									12.2									11.4	68.1	1.7	1.0	11.5		

Daily Average Indices Ap
Dec 2006 - Nov 2007

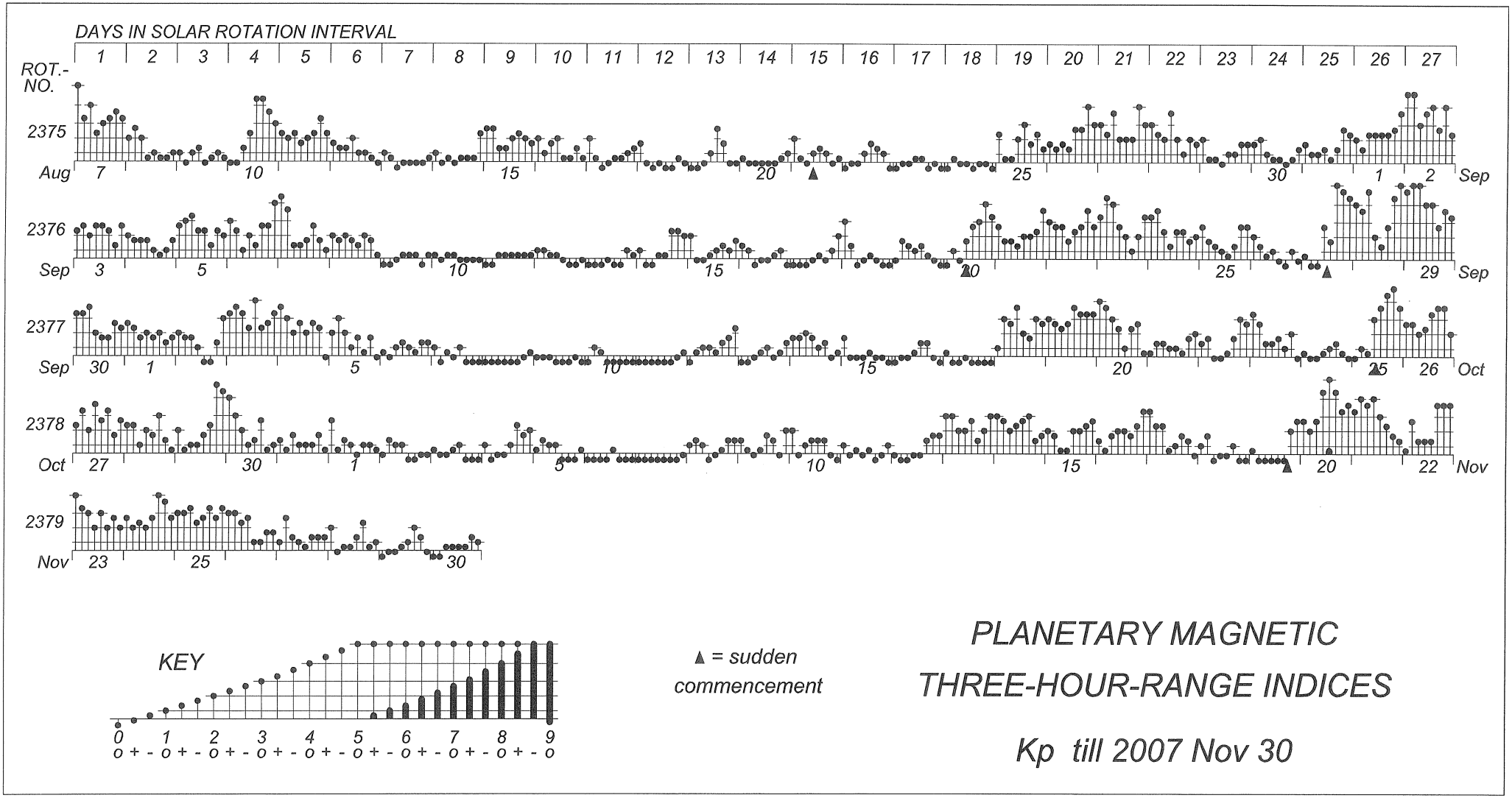


Day	Dec 06	Jan 07	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	5	9	9	11	29	7	6	4	15	10	7	5
2	2	24	4	4	22	2	6	3	5	24	8	2
3	3	20	2	2	11	4	10	8	4	10	9	2
4	0	17	2	4	9	2	8	15	2	5	10	4
5	3	9	6	10	4	2	2	5	2	10	11	2
6	26	5	6	18	4	1	2	5	16	11	4	0
7	25	1	13	17	3	16	3	5	22	12	2	0
8	24	3	9	4	3	14	7	4	5	6	1	4
9	8	4	5	2	10	5	6	2	3	2	1	4
10	16	6	4	4	7	3	7	4	15	2	1	4
11	14	6	2	8	4	2	3	21	9	2	1	2
12	27	3	8	12	10	2	2	5	4	2	4	3
13	8	0	21	24	1	2	6	4	2	1	2	10
14	47	3	18	12	4	3	18	19	4	4	5	10
15	94	16	13	10	4	4	7	12	8	4	2	7
16	12	14	8	12	0	3	6	4	5	2	2	8
17	6	25	9	7	9	5	6	3	3	2	1	7
18	11	18	5	3	9	16	5	2	2	3	12	2
19	13	13	3	2	5	12	5	2	4	3	16	3
20	24	8	2	1	3	6	4	14	2	10	13	24
21	18	8	1	1	2	5	14	10	4	9	5	16
22	18	3	2	3	9	13	13	3	3	12	6	12
23	16	3	3	10	16	34	8	3	2	16	7	14
24	12	2	2	18	4	30	6	2	1	11	3	14
25	8	2	3	11	5	14	3	2	7	7	17	15
26	4	3	6	10	6	13	3	9	11	3	14	9
27	2	4	12	11	16	10	4	7	14	18	13	5
28	2	5	22	7	28	4	4	4	10	24	7	4
29	2	28		3	21	4	9	14	4	30	13	3
30	3	24		4	15	3	4	9	4	12	10	3
31	2	20		3		3		5	6		4	
Mean	15	10	7	8	9	8	6	7	6	9	7	7

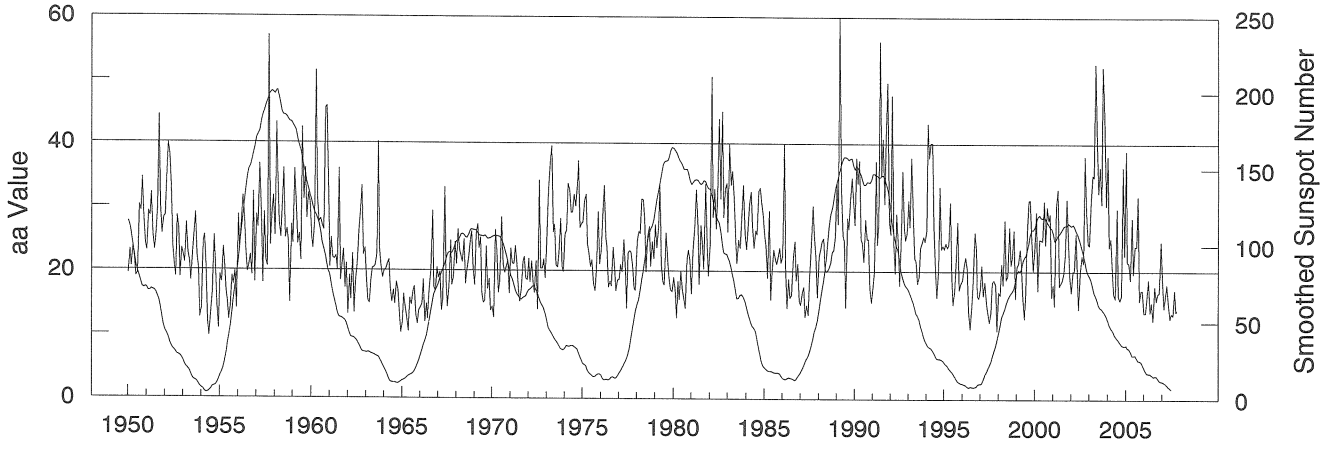
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through November 30, 2007



Monthly Mean aa Index Jan 1950 - Nov 2007

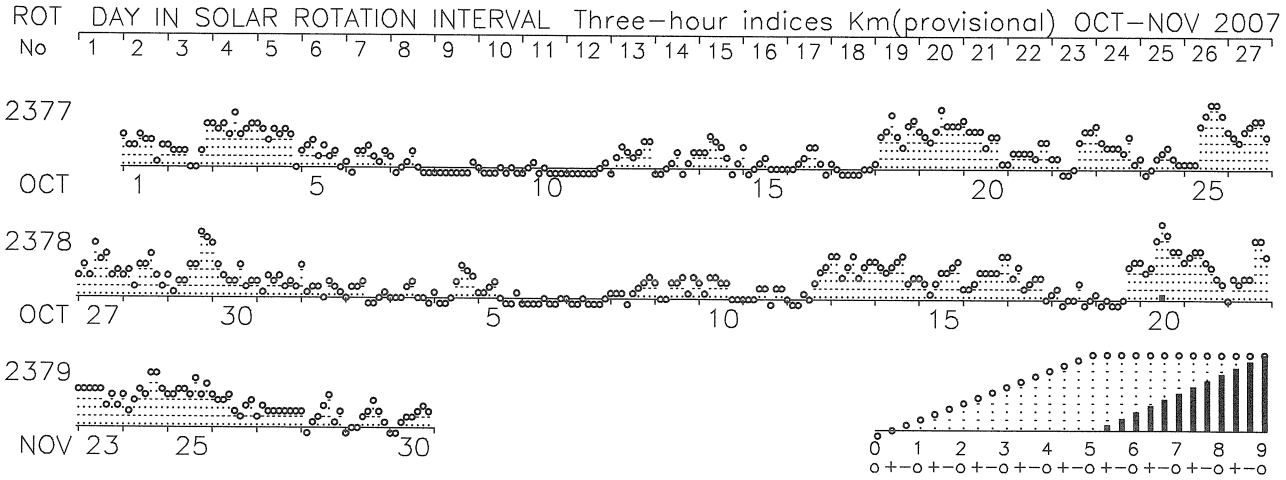


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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		15.2

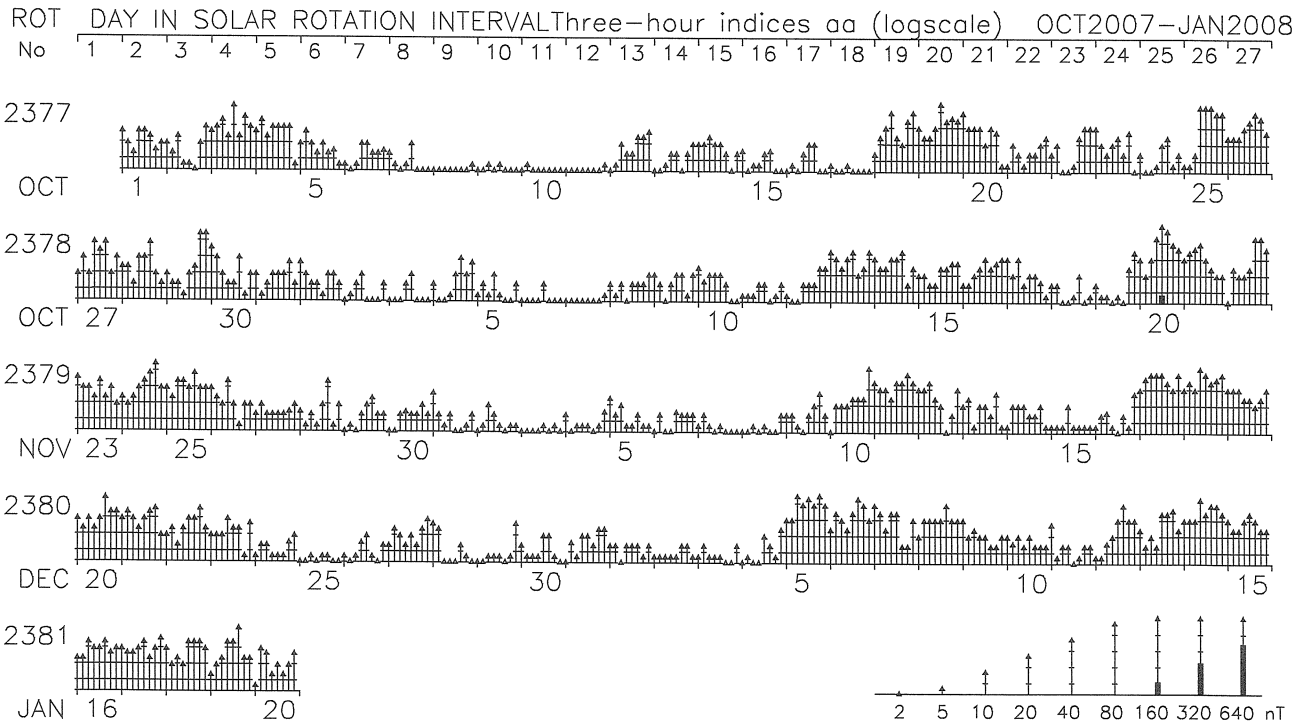
PLANETARY GEOMAGNETIC ACTIVITY

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

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



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

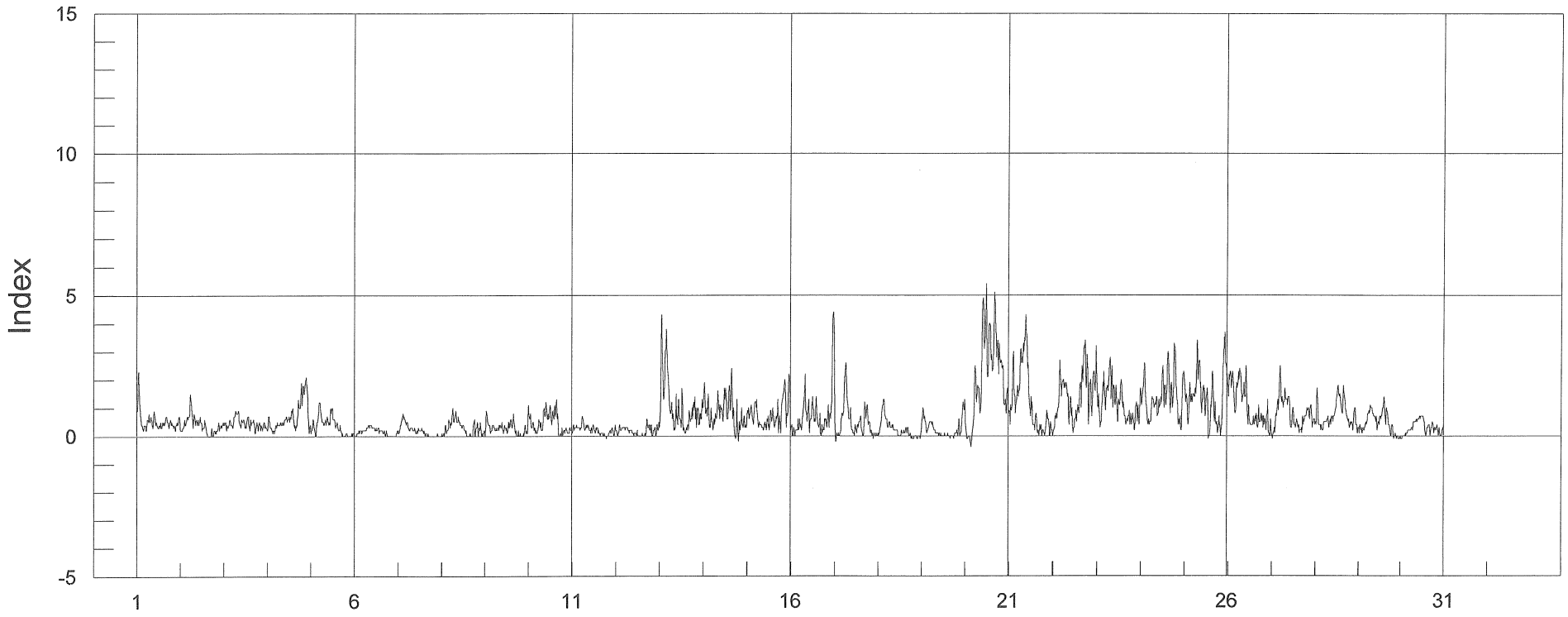


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

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

NOVEMBER 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)
HYB	07.6N	12	1000	..	..	..	..	12,13(7,4) 14,15(4,5,6,7,8)	3	2	67	11	15	24
HYB	07.6N	16	0500	..	..	..	..	16(5,6,7,8) 17(1)	3	2	40	12	17	19
JAI	17.4N	19	1810	SC	- 0.4	13	- 3		-	6	135	15	21	22
NGP	11.3N	19	1810	SC	- 0.1	12	- 1		-	5	150	11	21	22
ABG	09.4N	19	1810	SC	- 0.3	12	- 3	20(4)	5	5	--	20	21	22
HYB	07.6N	19	1810	SC	- 0.3	15	- 2	20(5)	6	5	162	13	21	20
PND	02.0N	19	1810	SC	- 0.1	12	11		-	3	156	46	21	22
TIR	00.6S	19	0600	..	..	..	..		-	3	96	105	25	20
TIR	00.6S	19	1810	SC	- 0.2	11	12		-	4	188	64	21	22
GNA	43.0S	19	1818	..	..	..	..	20(5)	6	20	116	126	21	17
CAN	43.6S	19	1810	..	..	..	..	20(5)	6	16	122	36	21	21
JAI	17.4N	22	0600	..	..	..	..		-	4	73	22	25	20
NGP	11.3N	22	0600	..	..	..	..		-	3	80	19	25	20
ABG	09.4N	22	0600	..	..	..	..	22(6)	5	3	76	24	25	20
HYB	07.6N	22	0500	..	..	..	..	22(6) 24(6,7)	4	3	79	17	25	24
PND	02.0N	22	0600	..	..	..	..		-	3	75	38	25	20

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

NOVEMBER 2007

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
19	1811	A: LER* ESK* HAD*	09	1310-1320	GUI
		B: NUR HRB NAG SPT* GUI	11	1119-1138	GUI
		C: NGK* DOU BDV* GCK EBR*	22	1012-1029	GUI

REPORTING OBSERVATORIES (up to 03/01/2008):
NUR LER ESK NGK HAD DOU BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY GUI 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 (62º 39' 44" S, 60º23' 41" W) -- Luis F.

Criterion on Provisional SSC data

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