JANUARY 2009 NUMBER 773 - Part I

Solar-Geophysical Data prompt reports

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

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Data for December and November 2008

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

SOLAR-GEOPHYSICAL DATA

Number 773

(Issued in Two Parts)

Editor: Edward H. Erwin

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

CONTENTS

PART I (PROMPT REPORTS) Page

PART II (COMPREHENSIVE REPORTS) Page

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

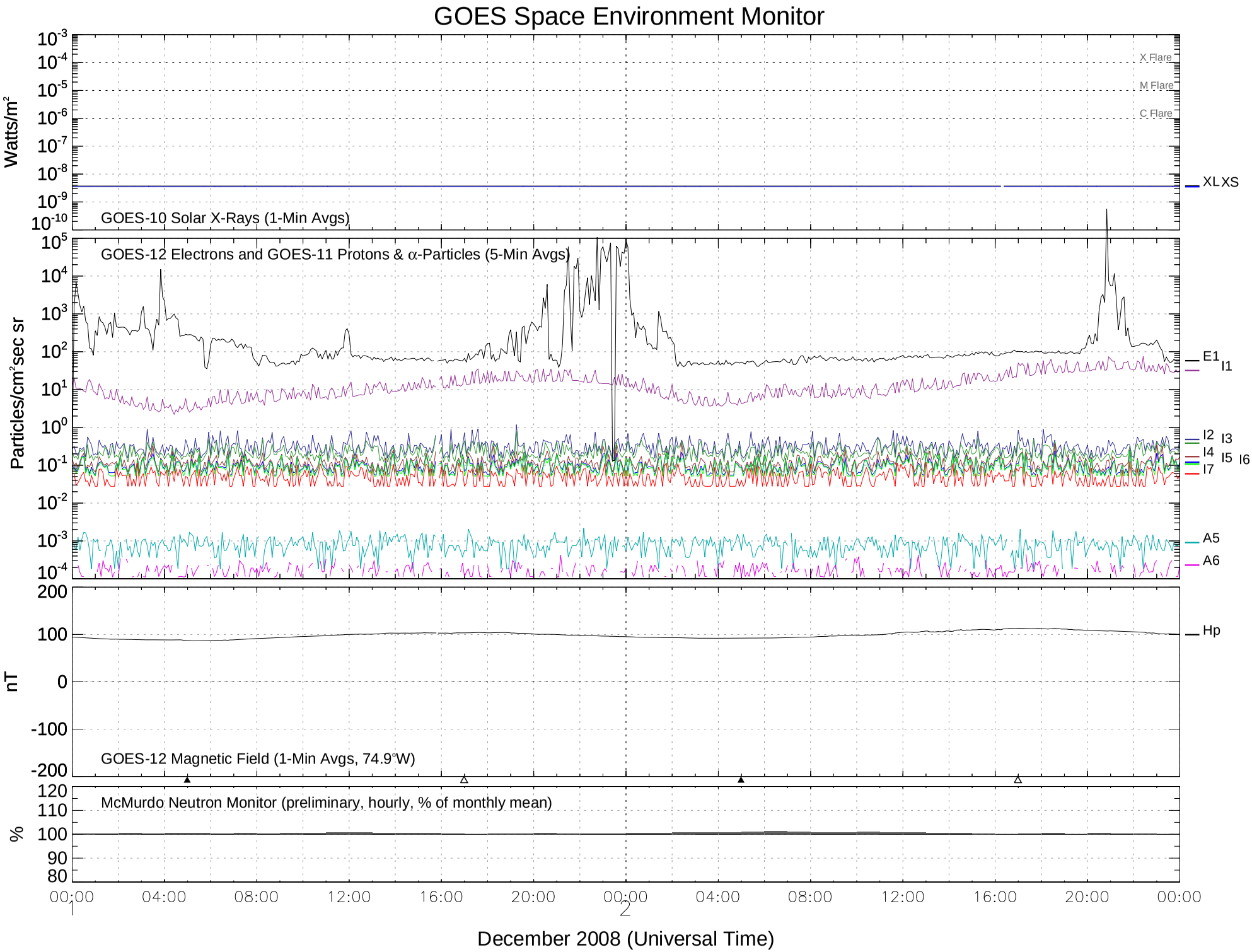
CODE	KIND OF OBSERVATION	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A.	**SOLAR AND INTERPLANETARY**								
A.1	Sunspot Drawings	767A 40	768A 40	769A 40	770A 40	771A 40	772A 40	773A 42	
A.2aa	International Sunspot Numbers	766A 24	767A 23	768A 24	769A 24	770A 23	771A 24	772A 23	773A 22
A.2c	American Sunspot Numbers	766A 24	767A 23	768A 24	769A 24	770A 23	771A 24	772A 23	773A 22
A.3a	Mt. Wilson Magnetograms	767A 40	768A 40	769A 40	770A 40	771A 40	772A 40	773A 42	
A.3b	Sunspot Mag Class and Regions	767A 77	768A 75	769A 77	770A 77	771A 75	772A 77	773A 77	
A.3c	Kitt Peak Magnetograms	767A 40	768A 40	769A 40	770A 40	771A 40	772A 40	773A 42	
A.3d	Mean Solar Mag Field (Stanford)	766A 30	767A 30	768A 30	769A 30	770A 29	771A 31	772A 30	773A 30
A.3e	Stanford Magnetograms	767A 40	768A 40	769A 40	770A 40	771A 40	772A 40	773A 42	
A.4	H-alpha Filtergrams	767A 40	768A 40	769A 40	770A 40	771A 40	772A 40	773A 42	
A.5d	PhotometricCa FaculaeSanFernando	Jan 92-Dec 96-631B 22; 1997-1998 663B 66							
A.6c	Stanford Solar Mag Field Map	767A 34	768A 34	769A 34	770A 34	771A 34	772A 34	773A 36	
A.6d	Kitt Peak Mag Field Synoptic Map	767A 39	768A 39	769A 39	770A 39	771A 39	772A 39	773A 41	
A.6f	Active Prominences and Filaments	771B 16	772B 15	773B 16					
A.6g	Sac Peak Coronal Line Maps	767A 36	768A 36	769A 36	770A 36	771A 36	772A 36	773A 39	
A.6h	Photometric WL SanFernando	Jul-Dec 96 630B 32; 1997-1998 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	767A 40	768A 38	769A 38	770A 38	771A 38	772A 38	773A 40	
A.7j	Coronal Hole Daily Maps (NSO/KP)								
A.7k	Coronal Index (Slovak Academy)	1939-1996 - 644B 28							
A.7m	Coronal Mass Ejections (CSPSW)	770B 21	771B 21	773B 21					
A.8aa	2800 MHz- Solar Flux (Penticton)	766A 24	767A 23	768A 24	769A 24	770A 23	771A 24	772A 23	773A 22
A.8ac	2800 MHz Adj Solar Flux (Pent.)	766A 24	767A 23	768A 24	769A 24	770A 23	771A 24	772A 23	773A 22
A.8g	Adjusted Daily Solar Flux SGMR	766A 24	767A 23	768A 24	769A 24	770A 23	771A 24	772A 23	773A 22
A.10g	Nancay Radiohelio 150.9&327MHz	767A 84	768A 81	769A 83	770A 83	771A 80	772A 83	773A 84	
A.10h	Nobeyama Radioheliogr 17 GHz	767A 71	768A 70	769A 71	770A 71	771A 70	772A 71	773A 72	
A.11g	Solar X-ray GOES (graphs)	771B 9	772B 9	773B 9					
A.11g	Solar X-ray GOES (event table)	766A 28	767A 27	768A 28	769A 28	770A 27	771A 28	772A 27	773A 28
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.11p	Solar UV Mg II Daily Index	771B 17	772B 16	773B 17					
A.12g	Solar Particles (GOES)	766A 4	767A 4	768A 4	769A 4	770A 4	771A 4	772A 4	773A 4
A.12i	Solar Energetic Particles (ACE)	771B 20	772B 19	773B 20					
A.13g	Solar Plasma (ACE)	771B 19	772B 18	773B 19					
A.16c	ERBS	NOAA-9 & Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-May 2001 684B 26 - Complete Mission							
A.16e	VIRGO/SOHO Solar Irradiance	Jan 96-Sep 00 in 678B 46							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan94 in 611A118							
A.17d	ACE Interplanetary Mag Field	771B 18	772B 17	773B 18					
C.	**SOLAR FLARE-ASSOCIATED EVENT**								
C.1a	H-alpha Flares	766A 27	767A 26	768A 27	769A 27	770A 26	771A 27	772A 26	773A 27
C.1ba	H-alpha Flare Groups	771B 4	772B 4	773B 4					
C.1d	Flare Patrol Observations	771B 6	772B 6	773B 6					
C.1h	H-alpha Flare Index (ImpxDur)	Jan 76-Dec 85 in 639B 26; Jan 86-Oct 96 in 635B 24; Jan 96-Dec 98 in 665B 63							
C.3	Radio Bursts Fixed Frequency	771B 8	772B 8	773B 8					
C.3	Radio Bursts Fixed Freq Selected	766A 29	767A 28	768A 29	769A 29	770A 28	771A 29	772A 28	773A 29
C.4	Radio Bursts Spectral	767A 80	768A 78	769A 79	770A 79	771A 77	772A 79	773A 80	
C.6	Sudden Ionospheric Disturbances	767A 79	768A 77	769A 78	770A 78	771A 76	772A 78	773A 79	
D.	**GEOMAGNETIC EVENTS**								
D.1a	Geomagnetic Indices	767A 89	768A 86	769A 90	770A 90	771A 87	772A 90	773A 92	
D.1ba	27-day Chart of Kp Indices	767A 91	768A 88	769A 92	770A 92	771A 89	772A 91	773A 94	
D.1cb	Monthly Mean aa Indices	767A 92	768A 89	769A 93	770A 93	771A 90	772A 93	773A 95	
D.1d	Principal Magnetic Storms	767A 96	768A 93	769A 97	770A 97	771A 94	772A 97	773A 99	
D.1f	Sudden Commencements	767A 97	768A 94	769A 98	770A 98	771A 95	772A 98	773A100	
D.1g	Equatorial Indices Dst	767A 94	768A 91	769A 95	770A 95	771A 92	772A 95	773A 97	
D.1l	Polar Cap (PC) Index	767A 95	768A 92	769A 96	770A 96	771A 93	772A 96	773A 98	
F.	**COSMIC RAYS**								
F.1b	Cosmic Ray Neutron Cts (Climax)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1h	Cosmic Ray Neutron Cts (Thule)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1l	Cosmic Ray Neutron Cts (Kiel)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1n	Cosmic Ray Neutron Cts (Beijing)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1m	Cosmic Ray Neutron (Haleakala)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1o	Cosmic Ray Neutron (Moscow)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
F.1p	Cosmic Ray Neutron Cts (Calgary)	767A 86	768A 82	769A 84	770A 84	771A 82	772A 85	773A 87	
H.	**MISCELLANEOUS**								
H.60	ISES Alert Periods	766A 20	767A 19	768A 20	769A 20	770A 20	771A 20	772A 19	773A 20

The entry "748A 48" under Oct, for example, means the sunspot drawings for Oct appear in SOLAR-GEOPHYSICAL DATA No 748, Part I, and that they begin on page 48, "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

Prompt Reports Number 773 Part I

DATA FOR **DECEMBER 2008**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C Flare
XL XS
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GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
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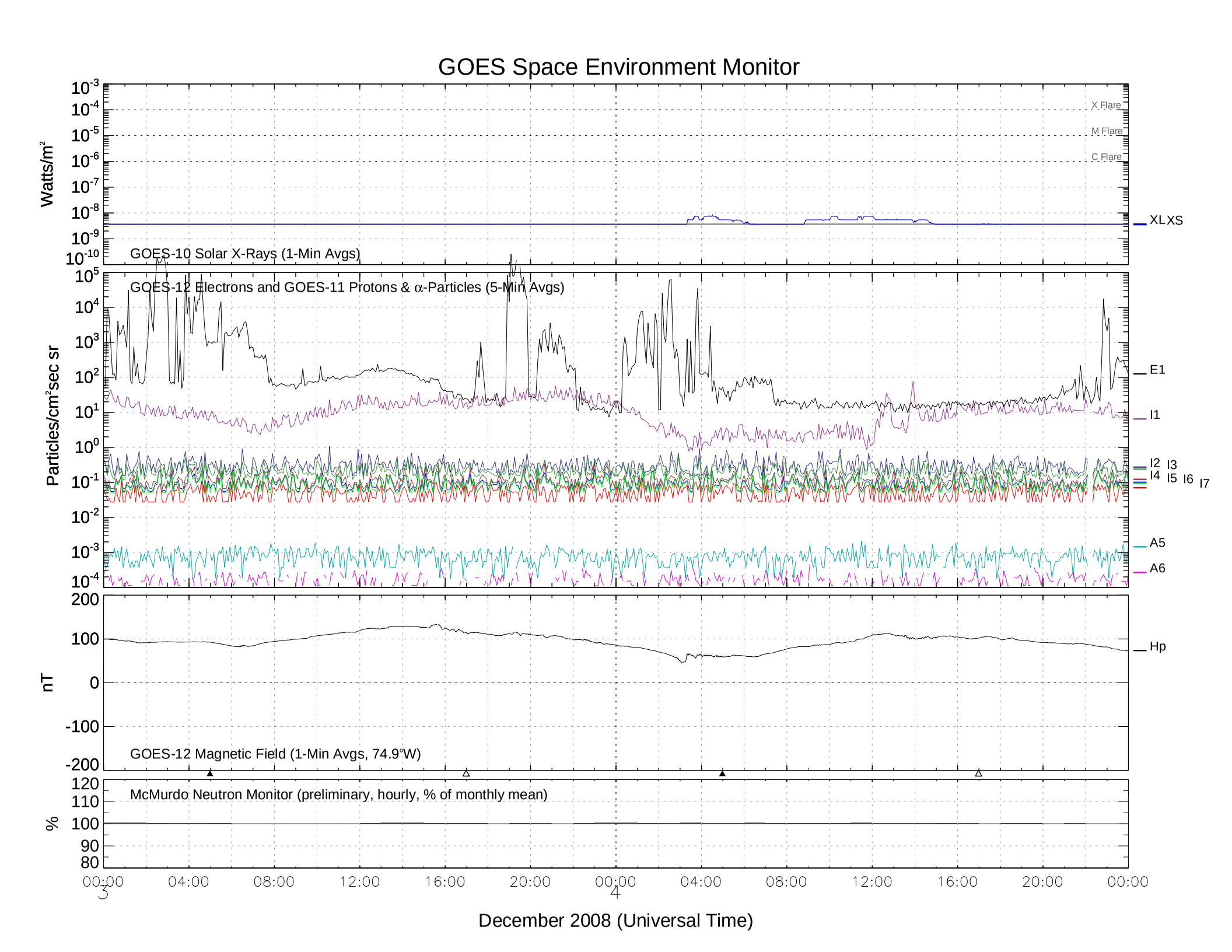
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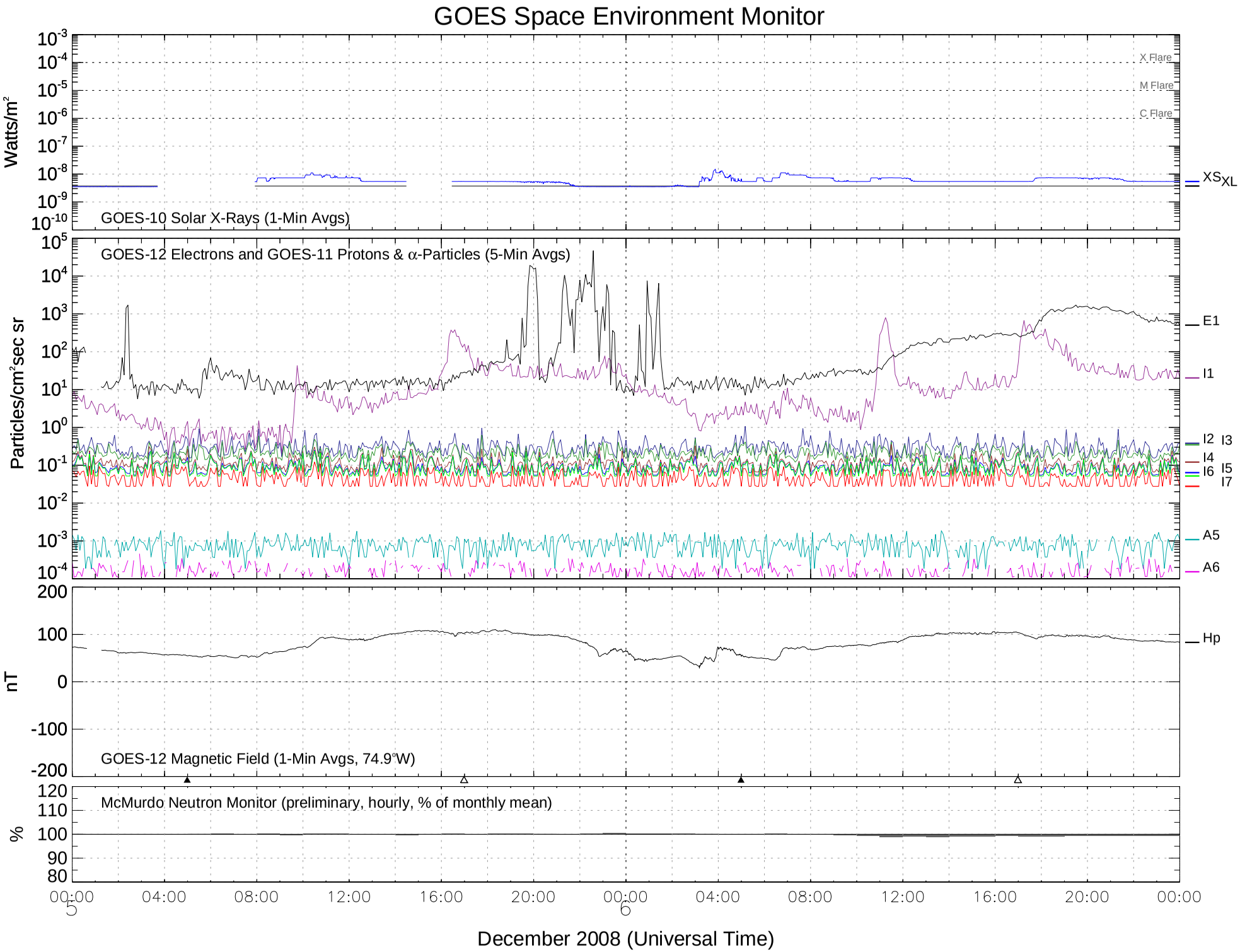
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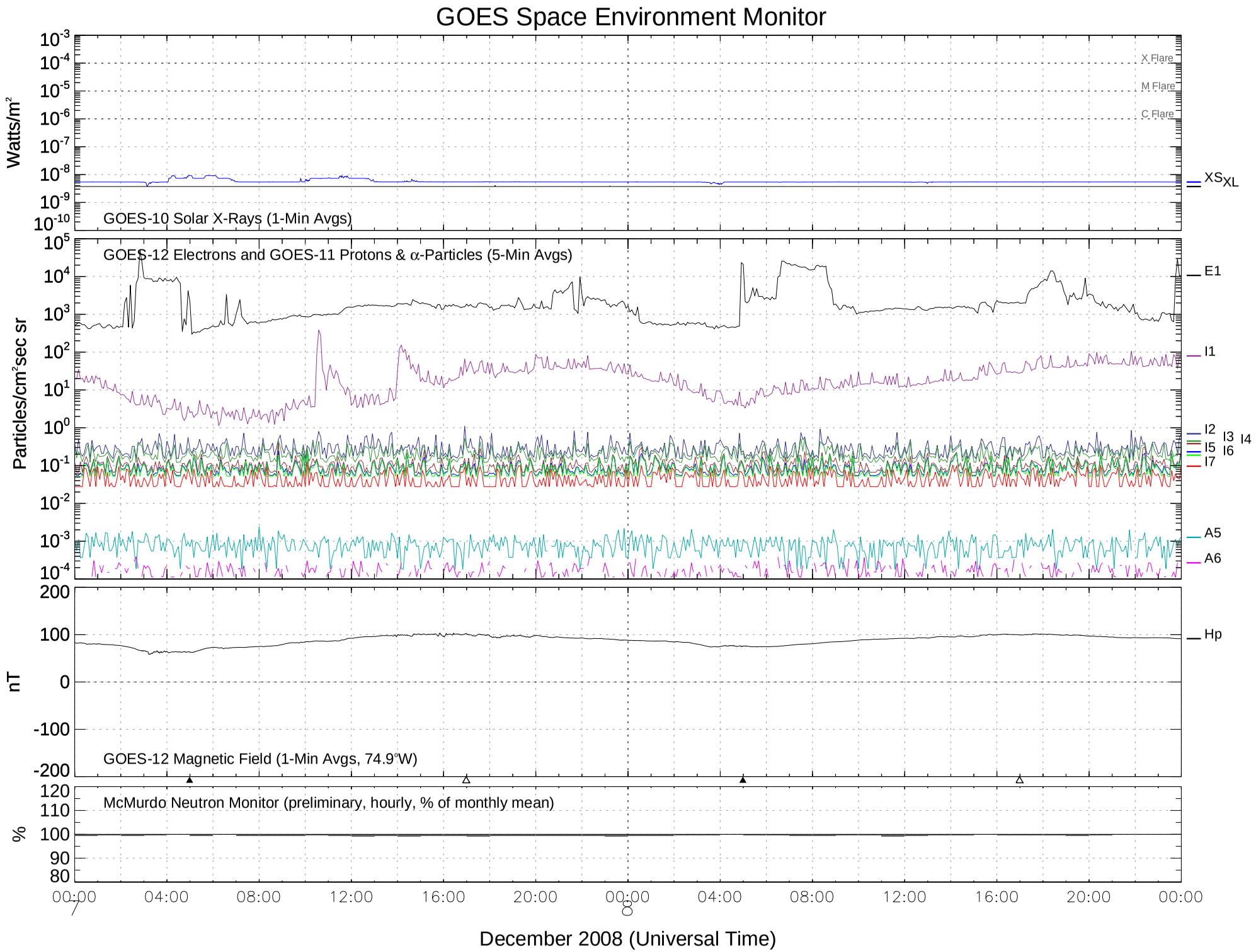
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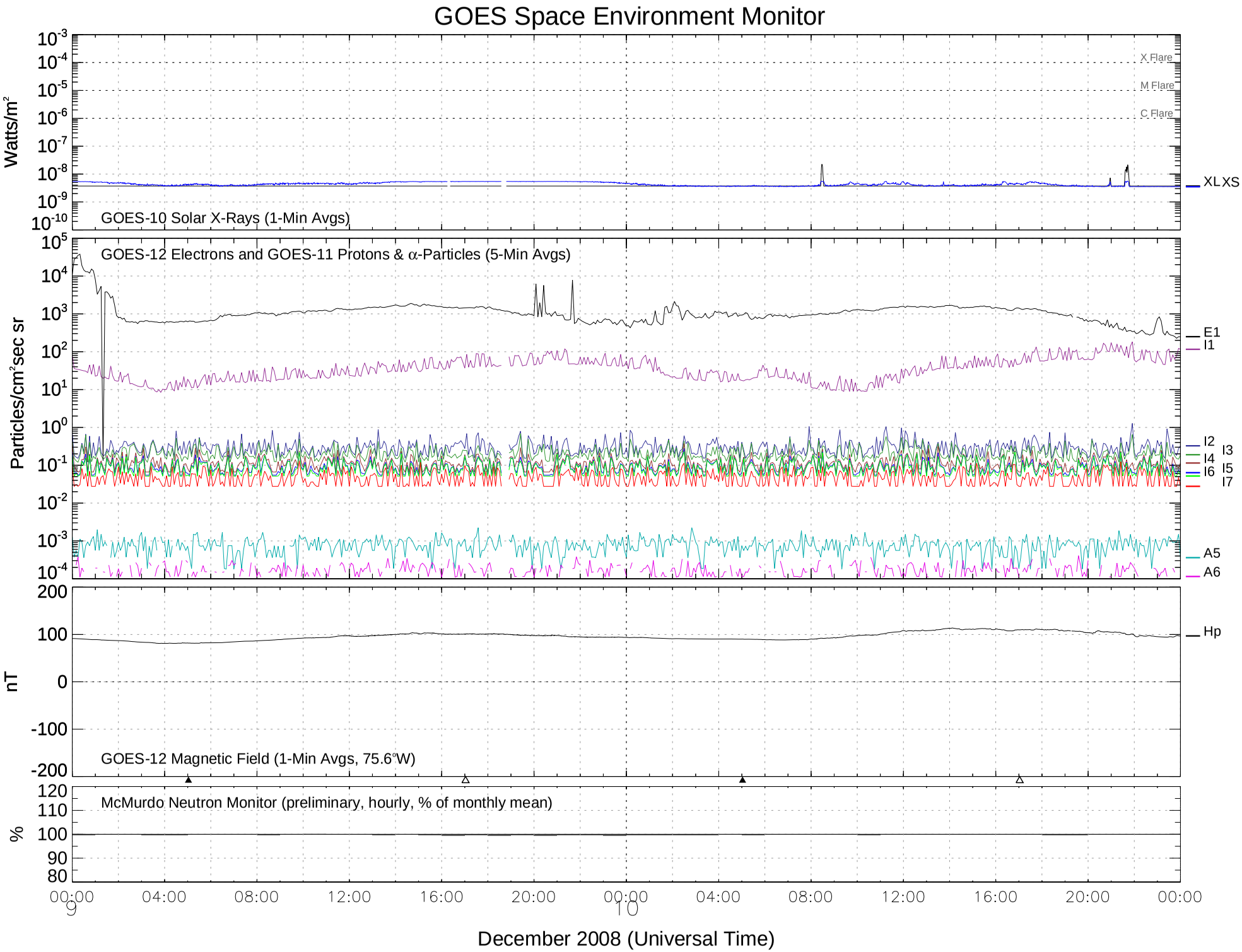
December 2008 (Universal Time)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GOES-12 Magnetic Field (1-Min Avgs, 75.6°W)
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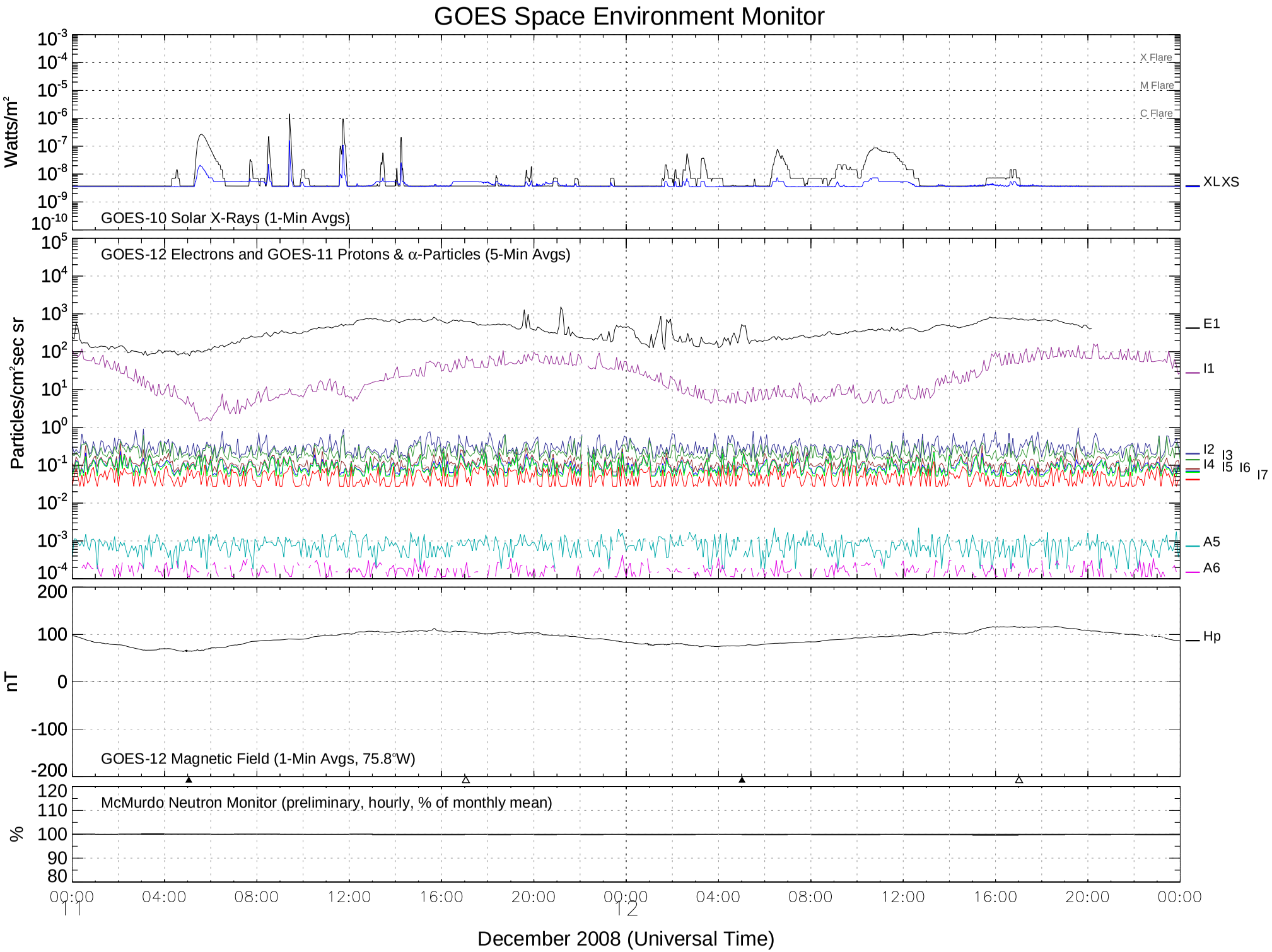
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McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
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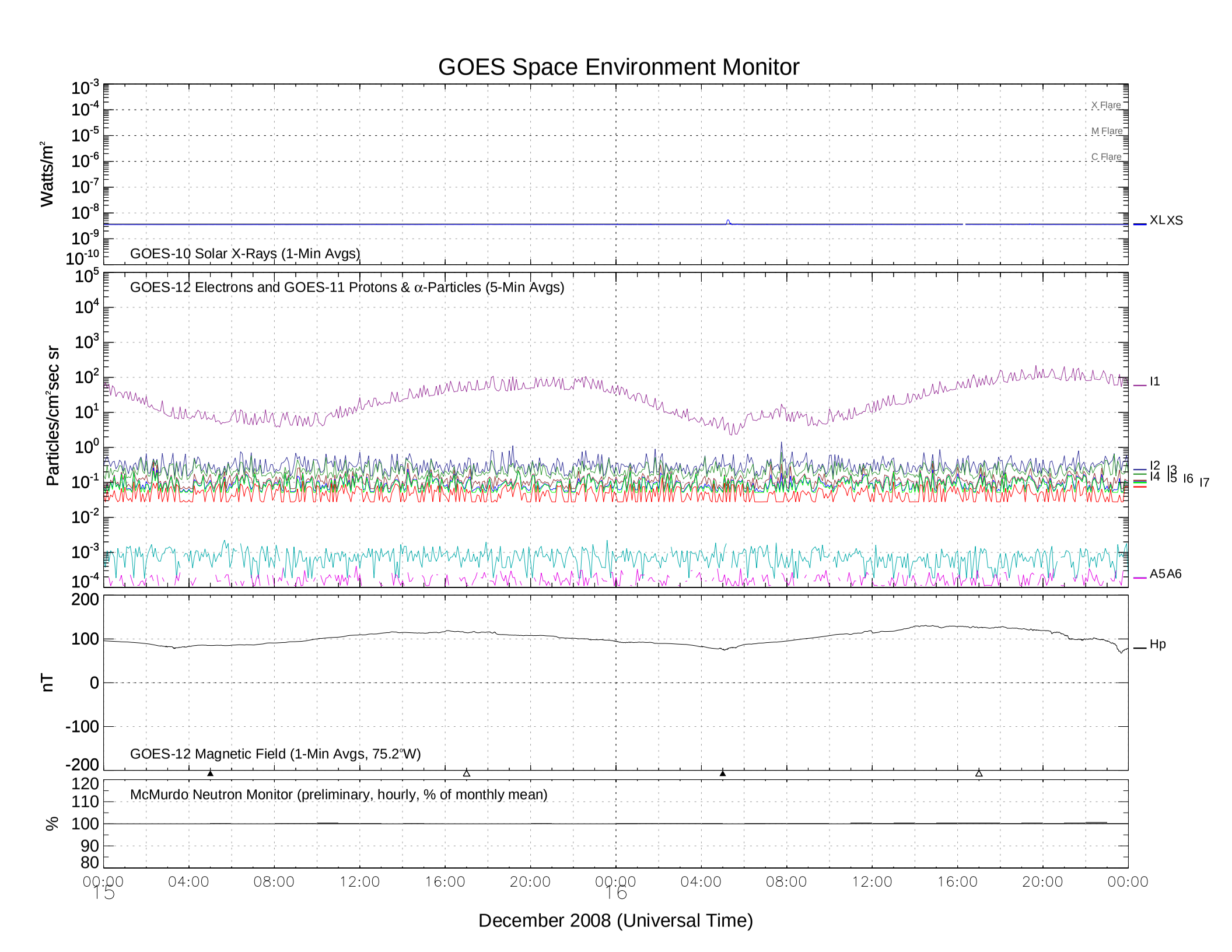
GOES Space Environment Monitor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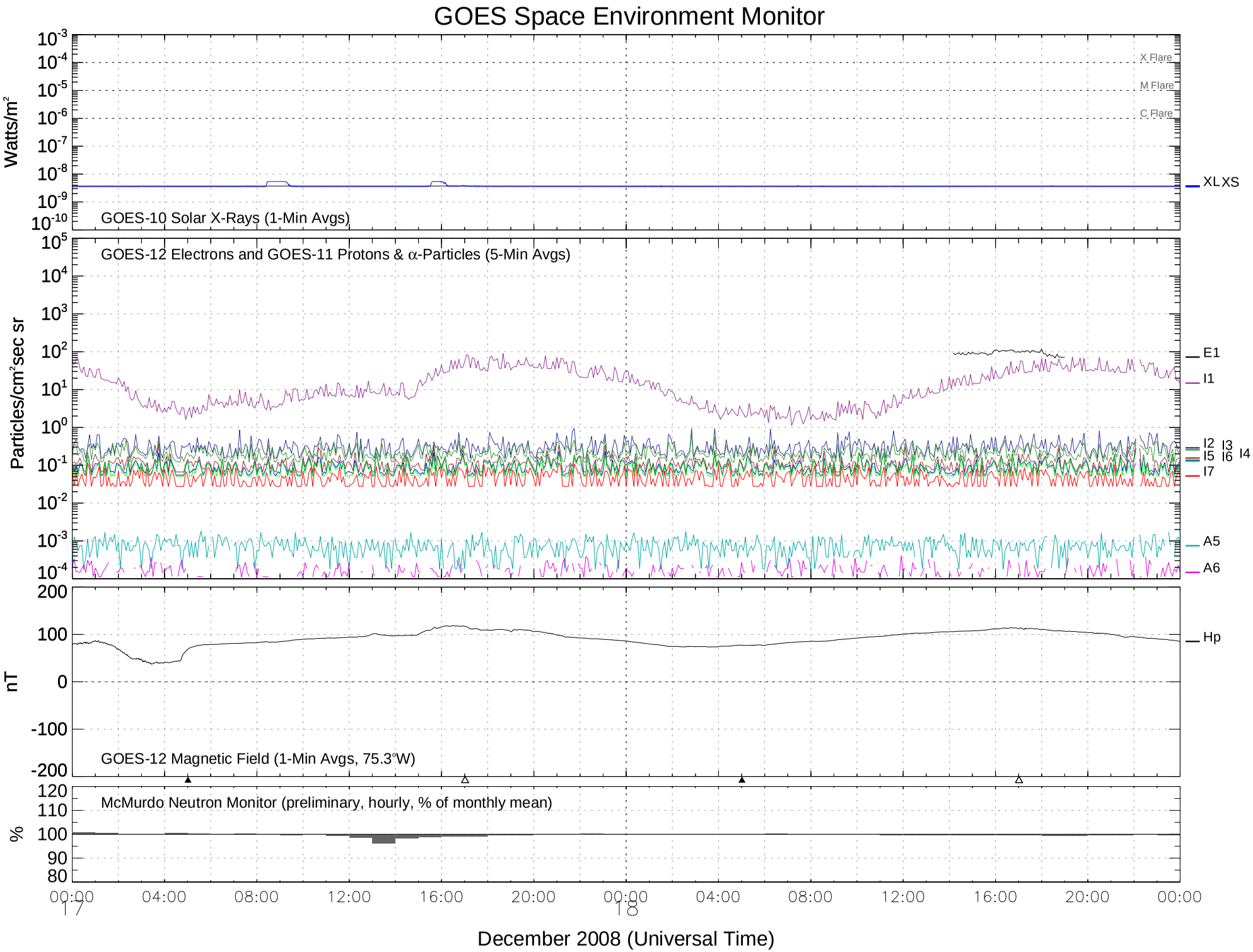
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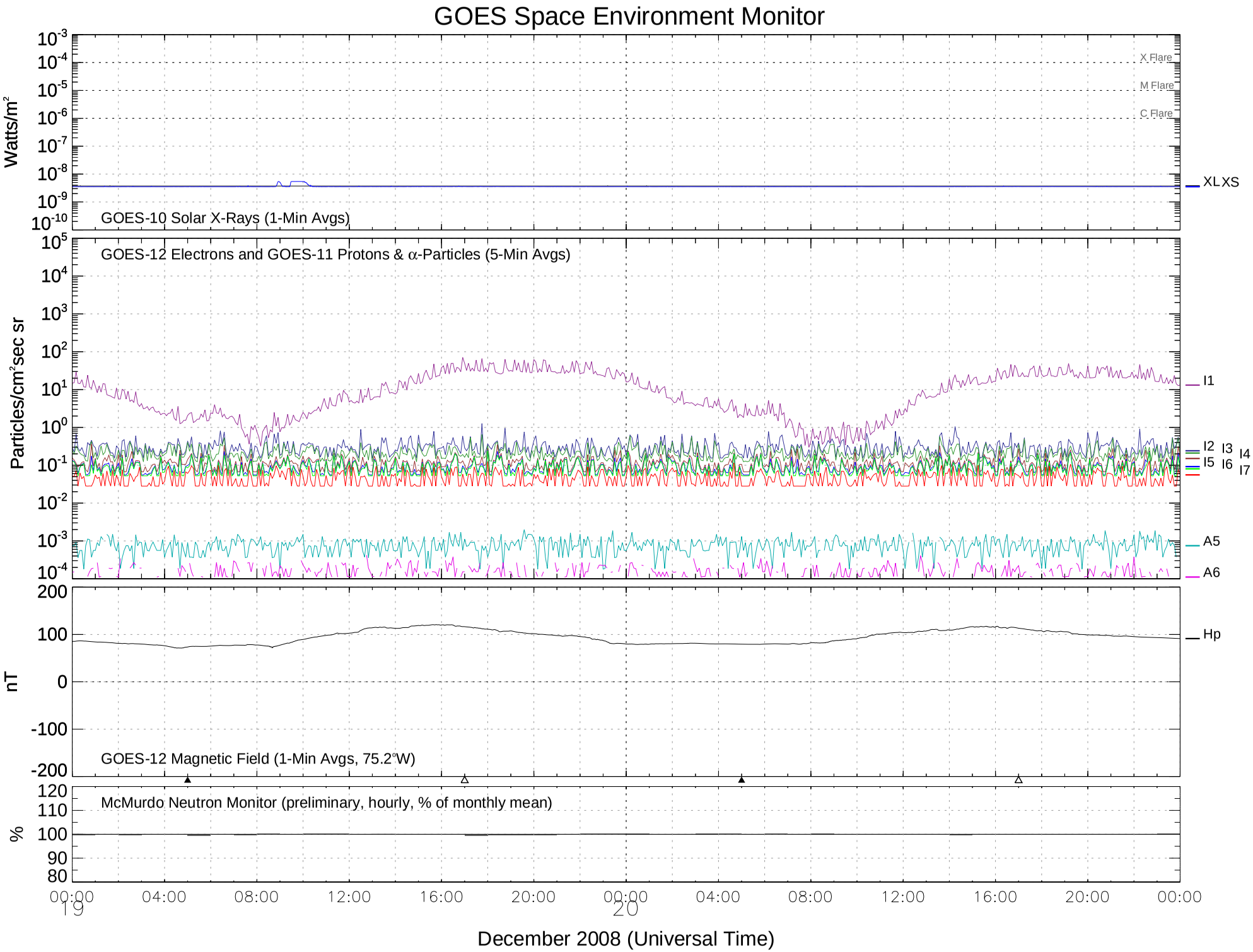
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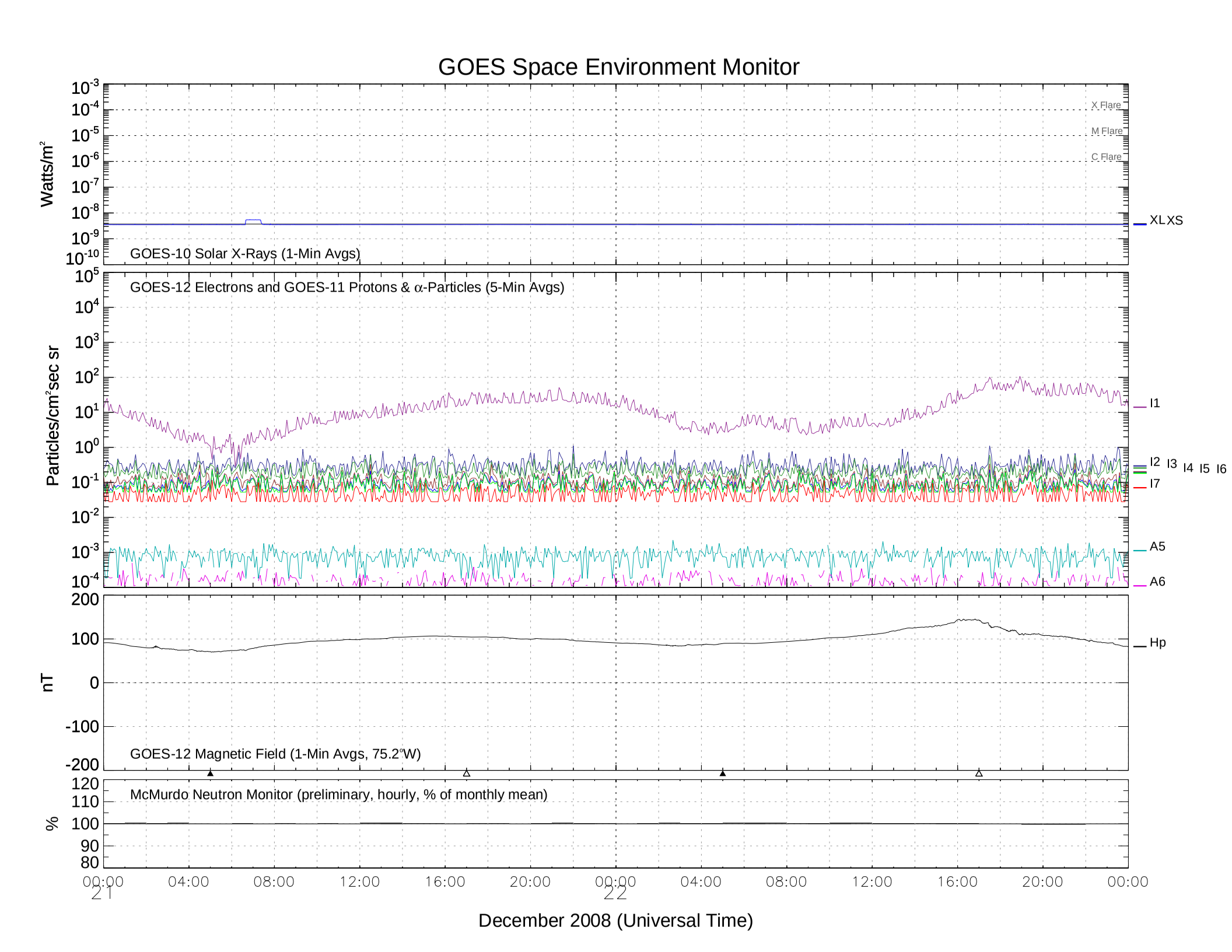
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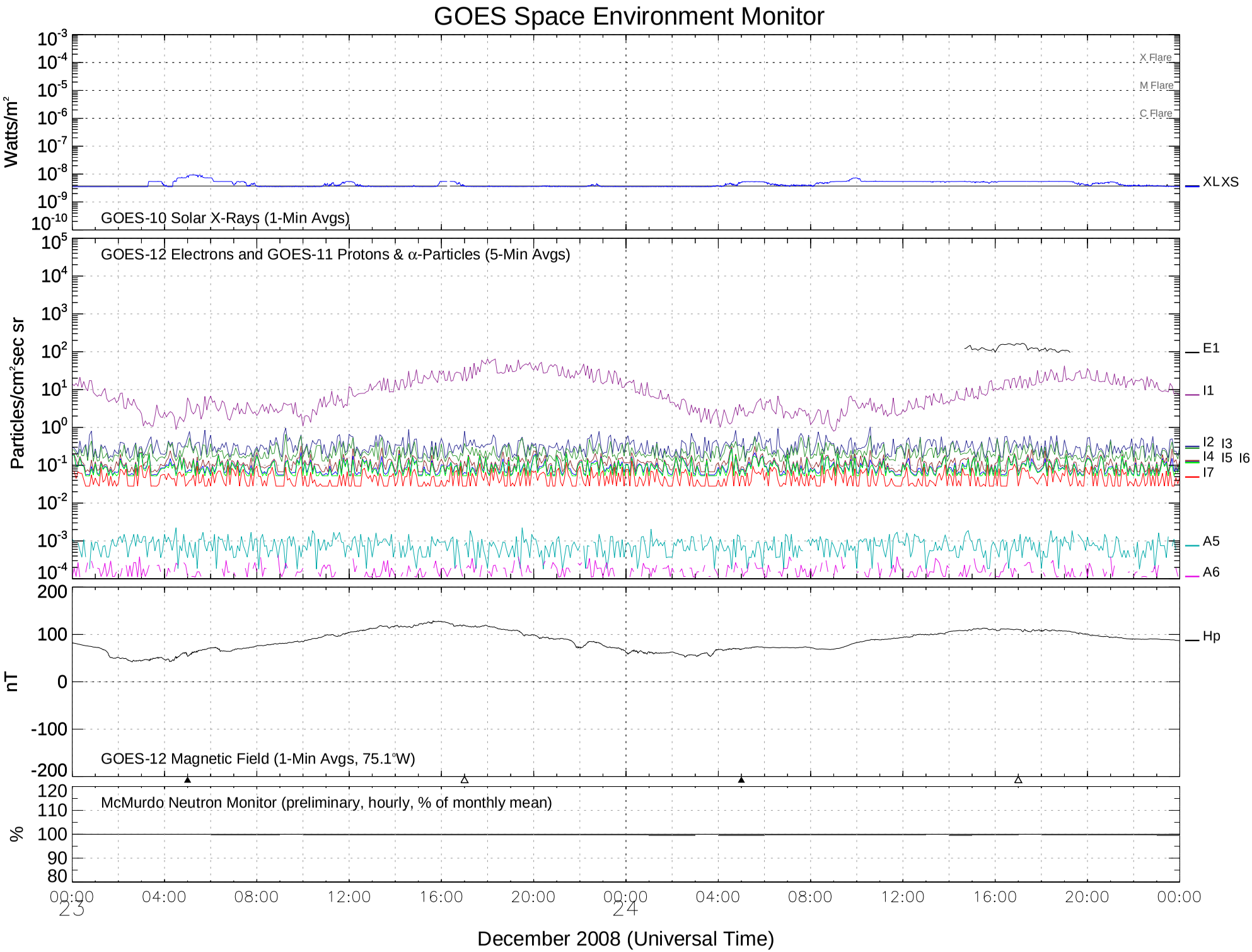
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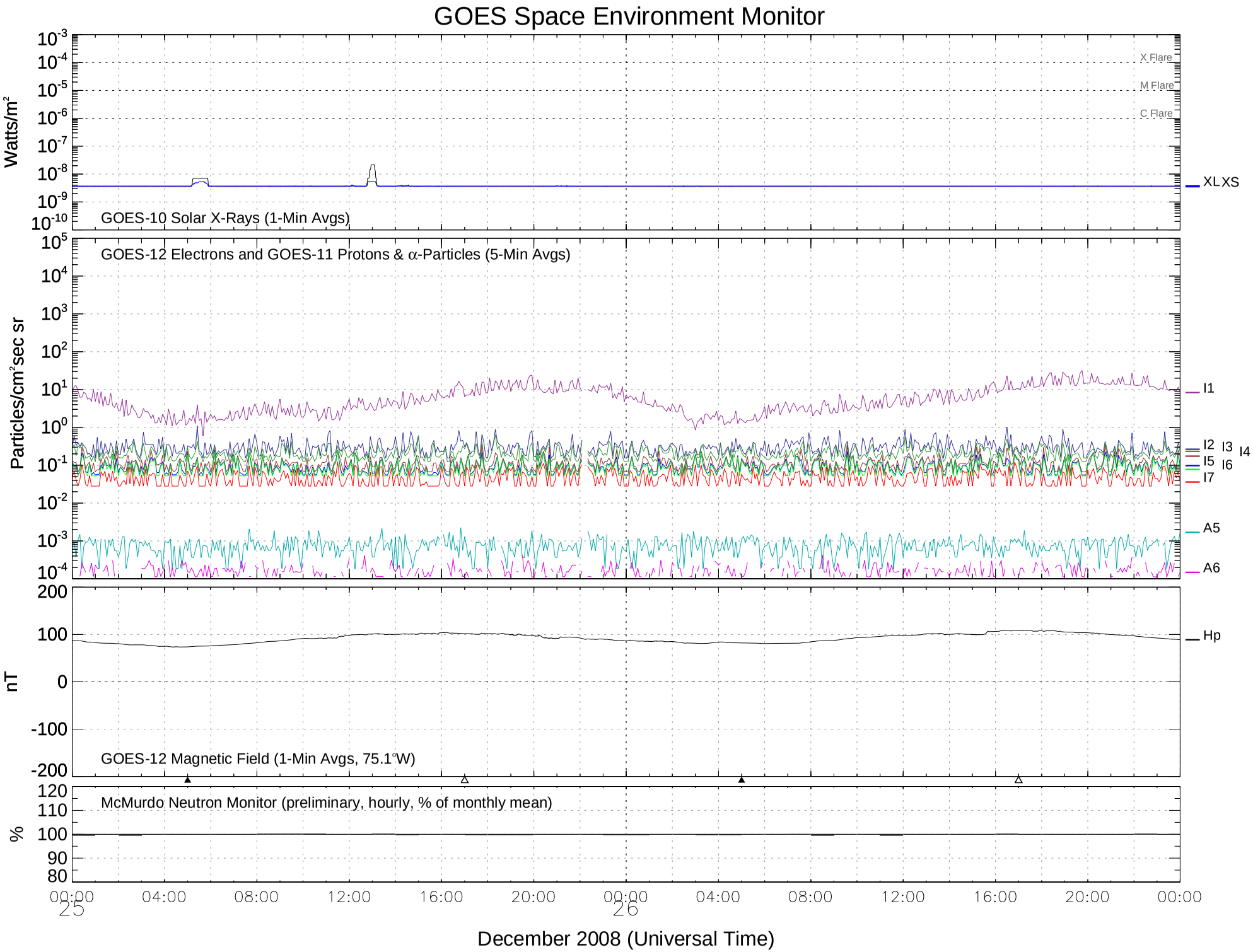
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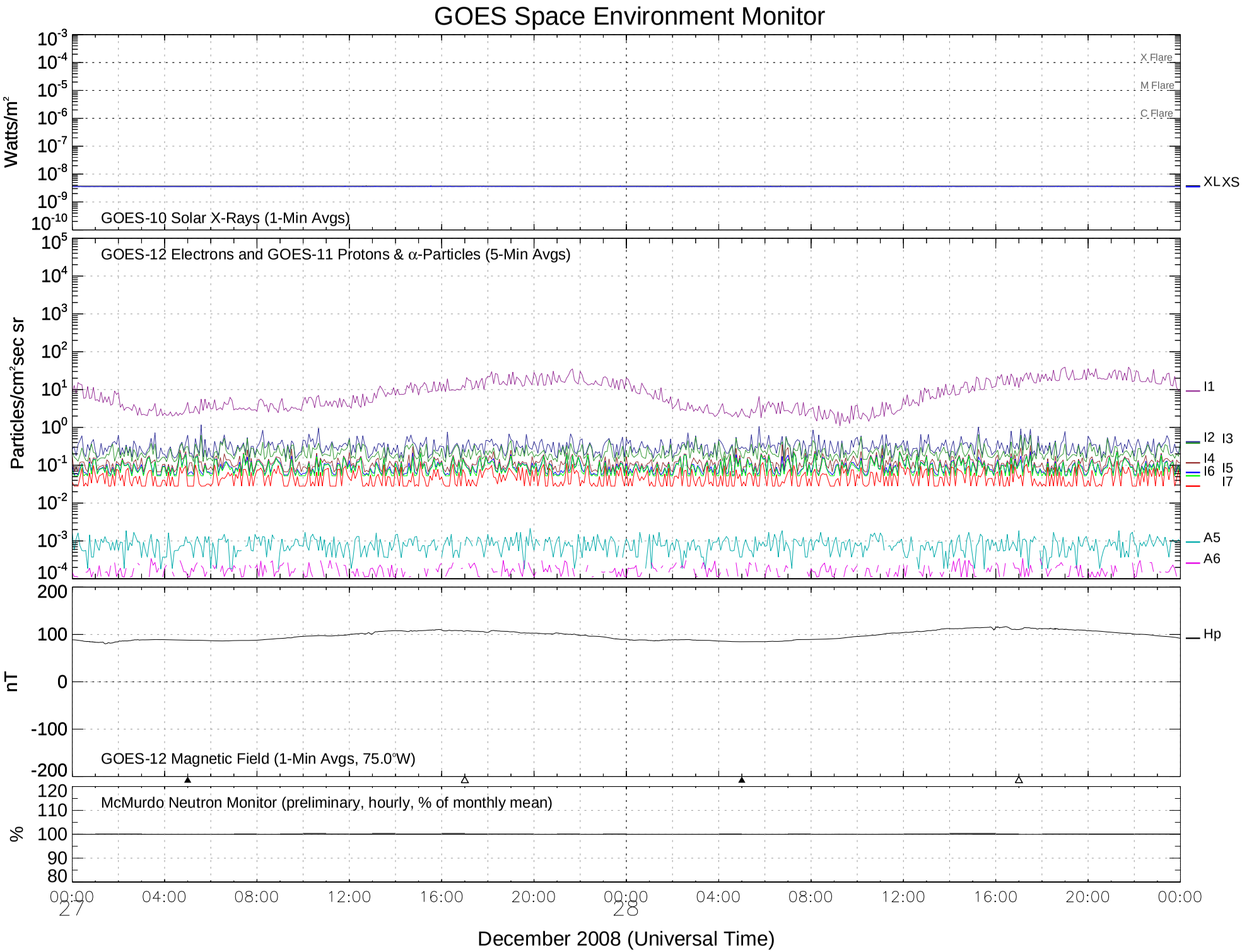
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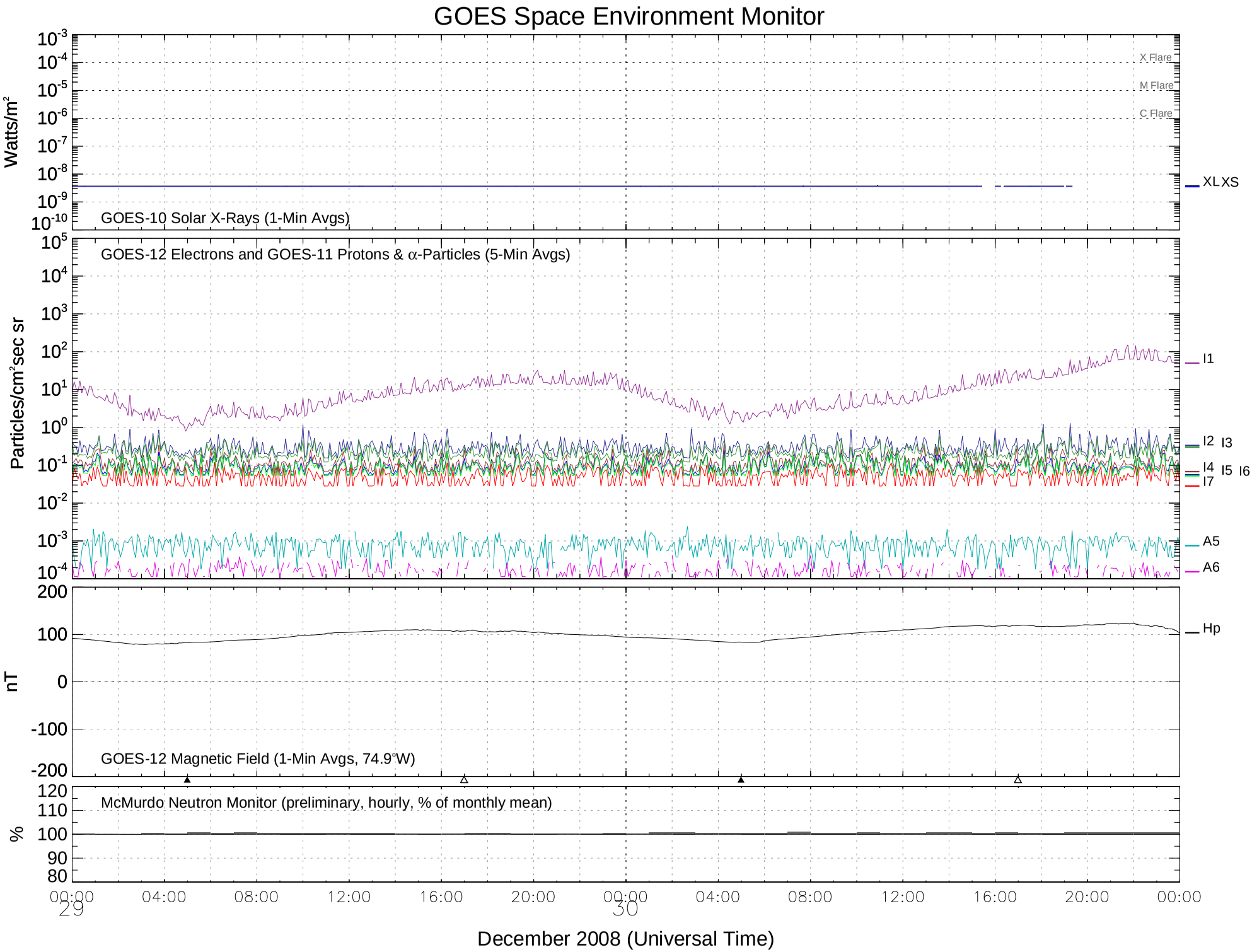
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I4 I5 I6
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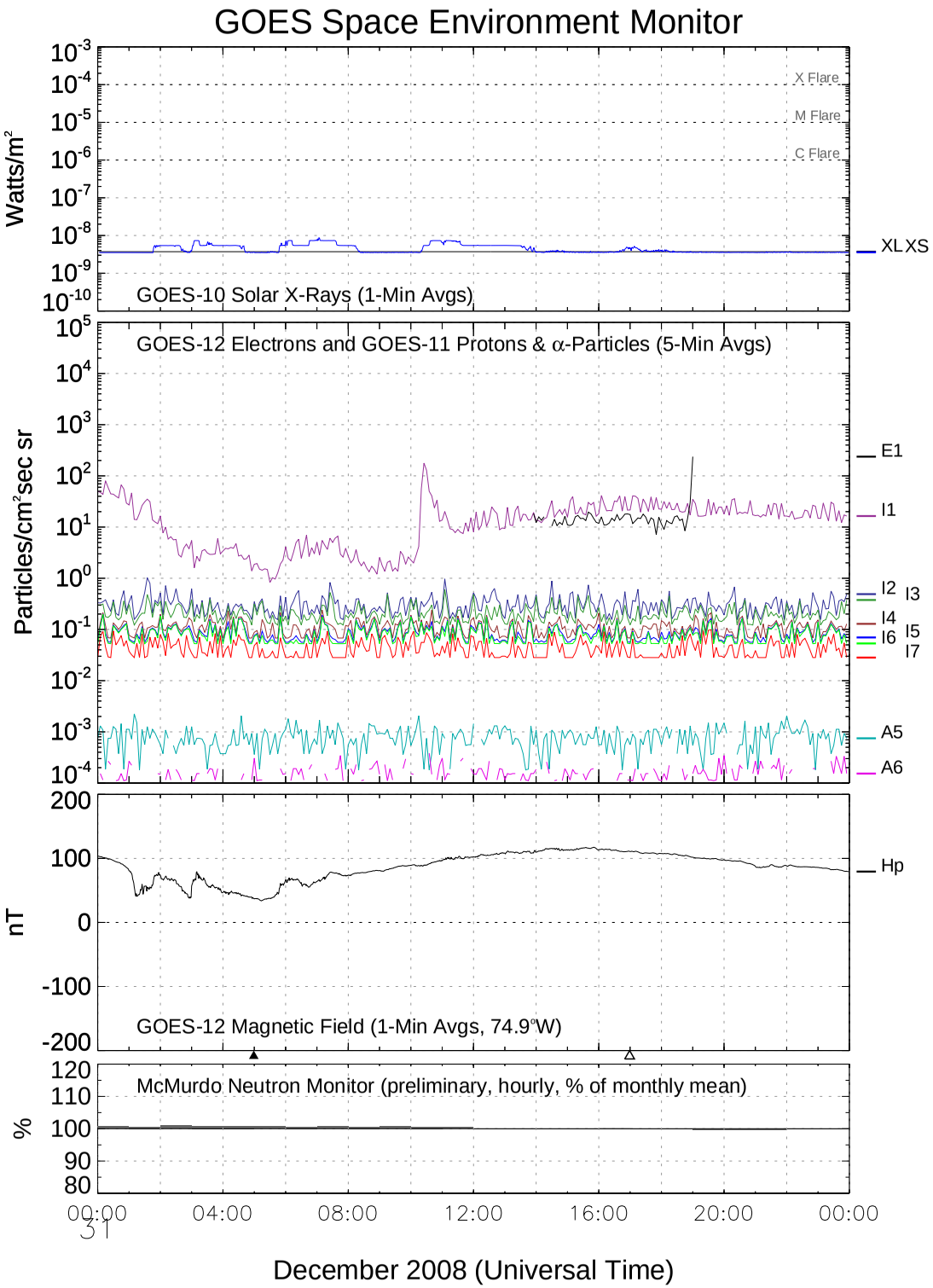
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 74.9°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
29
30
December 2008 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL
XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.9°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00
04:00
08:00
12:00
16:00
20:00
00:00
31
December 2008 (Universal Time)

A L E R T P E R I O D S
The International Space Environment Service
December 2008

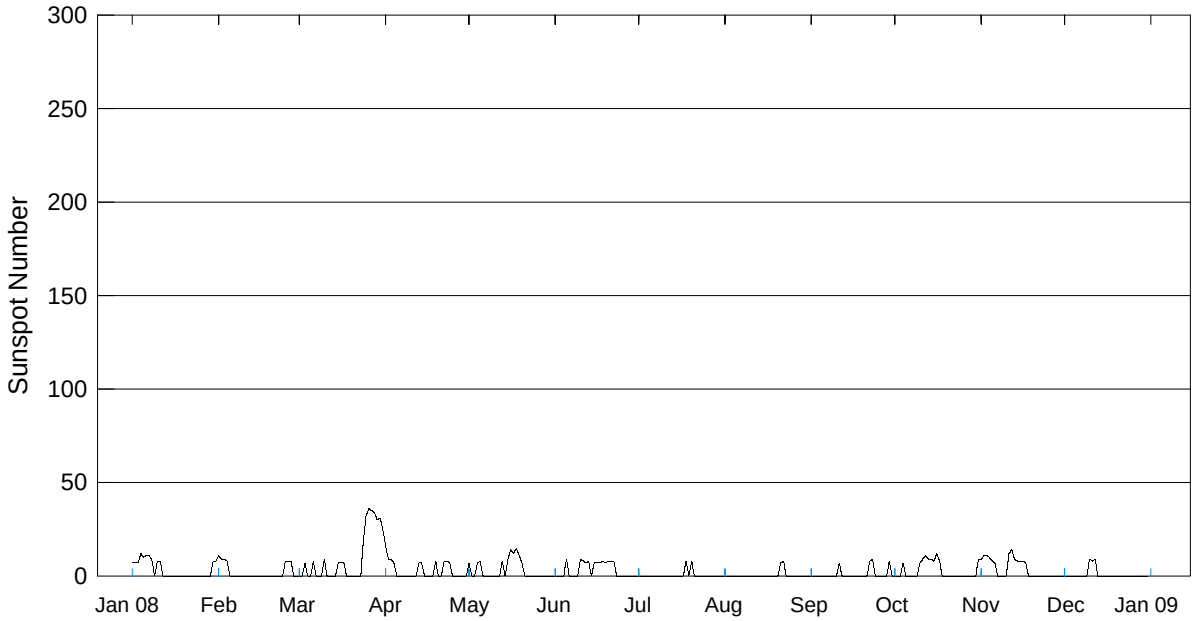
Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
336	01	30	0	68	1				0	0	0	01		SOL: Quiet
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
337	02	01	0	68	0				0	0	0	02		SOL: Quiet
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
338	03	02	0	69	0				0	0	0	03		SOL: Quiet
									0	0	0	03		MAG: Quiet
									0	0	0	03		PRO: Quiet
339	04	03	0	69	5				0	0	0	04		SOL: Quiet
									0	0	0	04		MAG: Quiet
									0	0	0	04		PRO: Quiet
340	05	04	0	70	7				0	0	0	05		SOL: Quiet
									0	0	0	05		MAG: Quiet
									0	0	0	05		PRO: Quiet
341	06	05	0	69	13				0	0	0	06		SOL: Quiet
									0	0	0	06		MAG: Quiet
									0	0	0	06		PRO: Quiet
342	07	06	0	69	20				0	0	0	07		SOL: Quiet
									0	0	0	07		MAG: Quiet
									0	0	0	07		PRO: Quiet
343	08	07	0	69	7				0	0	0	08		SOL: Quiet
									0	0	0	08		MAG: Quiet
									0	0	0	08		PRO: Quiet
344	09	08	0	69	2				0	0	0	09		SOL: Quiet
									0	0	0	09		MAG: Quiet
									0	0	0	09		PRO: Quiet
345	10	09	0	69	0				0	0	0	10		SOL: Quiet
									0	0	0	10		MAG: Quiet
									0	0	0	10		PRO: Quiet
346	11	10	13	71	2	11009	S26	W59	0	0	0	11	Q	SOL: Quiet
									0	0	0	11		MAG: Quiet
									0	0	0	11		PRO: Quiet
347	12	11	12	70	4	11009	S25	W73	0	0	0	12	Q	SOL: Quiet
									0	0	0	12		MAG: Quiet
									0	0	0	12		PRO: Quiet
348	13	12	14	71	2	11009	S25	W90	0	0	0	13	Q	SOL: Quiet
									0	0	0	13		MAG: Quiet
									0	0	0	13		PRO: Quiet
349	14	13	0	70	1				0	0	0	14		SOL: Quiet
									0	0	0	14		MAG: Quiet
									0	0	0	14		PRO: Quiet
350	15	14	0	69	0				0	0	0	15		SOL: Quiet
									0	0	0	15		MAG: Quiet
									0	0	0	15		PRO: Quiet
351	16	15	0	69	1				0	0	0	16		SOL: Quiet
									0	0	0	16		MAG: Quiet
									0	0	0	16		PRO: Quiet
352	17	16	0	69	4				0	0	0	17		SOL: Quiet
									0	0	0	17		MAG: Quiet
									0	0	0	17		PRO: Quiet

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

DECEMBER 2008

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
353	18	17	0	69	6				0	0	0	18		SOL: Quiet
									0	0	0	18		MAG: Quiet
									0	0	0	18		PRO: Quiet
354	19	18	0	68	1				0	0	0	19		SOL: Quiet
									0	0	0	19		MAG: Quiet
									0	0	0	19		PRO: Quiet
355	20	19	0	69	4				0	0	0	20		SOL: Quiet
									0	0	0	20		MAG: Quiet
									0	0	0	20		PRO: Quiet
356	21	20	0	69	2				0	0	0	21		SOL: Quiet
									0	0	0	21		MAG: Quiet
									0	0	0	21		PRO: Quiet
357	22	21	0	69	2				0	0	0	22		SOL: Quiet
									0	0	0	22		MAG: Quiet
									0	0	0	22		PRO: Quiet
358	23	22	0	68	4				0	0	0	23		SOL: Quiet
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
359	24	23	0	69	7				0	0	0	24		SOL: Quiet
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
360	25	24	0	69	8				0	0	0	25		SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
361	26	25	0	69	3				0	0	0	26		SOL: Quiet
									0	0	0	26		MAG: Quiet
									0	0	0	26		PRO: Quiet
362	27	26	0	69	2				0	0	0	27		SOL: Quiet
									0	0	0	27		MAG: Quiet
									0	0	0	27		PRO: Quiet
363	28	27	0	69	1				0	0	0	28		SOL: Quiet
									0	0	0	28		MAG: Quiet
									0	0	0	28		PRO: Quiet
364	29	28	0	70	1				0	0	0	29		SOL: Quiet
									0	0	0	29		MAG: Quiet
									0	0	0	29		PRO: Quiet
365	30	29	0	70	0				0	0	0	30		SOL: Quiet
									0	0	0	30		MAG: Quiet
									0	0	0	30		PRO: Quiet
366	31	30	0	69	0				0	0	0	31		SOL: Quiet
									0	0	0	31		MAG: Quiet
									0	0	0	31		PRO: Quiet

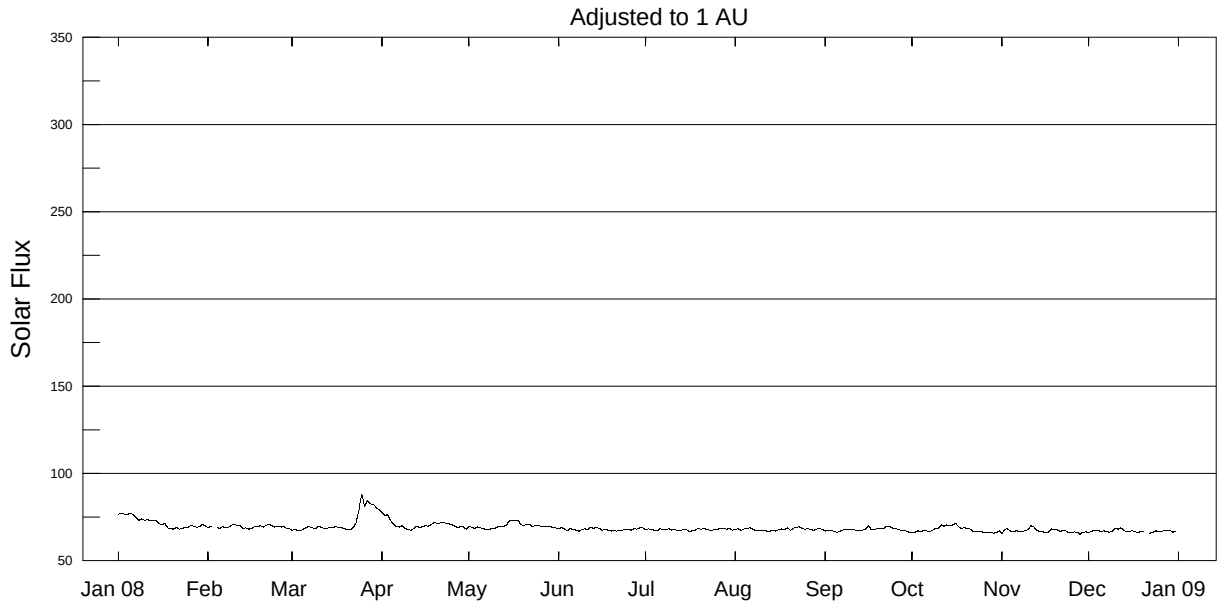
International Relative Sunspot Numbers
Jan 2008 - Dec 2008



Day	Jan 08	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*	Oct*	Nov*	Dec*
1	7	11	0	16	7	0	0	0	0	0	9	0
2	7	9	0	9	0	0	0	0	0	0	11	0
3	7	9	7	9	0	0	0	0	0	0	11	0
4	10	8	0	7	7	0	0	0	0	7	10	0
5	8	0	0	0	8	9	0	0	0	0	8	0
6	11	0	8	0	0	0	0	0	0	0	7	0
7	11	0	0	0	0	0	0	0	0	0	0	0
8	9	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	8	0	9	0	0	9	0	0	0	7	0	9
11	8	0	0	0	0	8	0	0	7	9	12	8
12	0	0	0	0	0	0	0	0	0	11	14	9
13	0	0	0	7	8	8	0	0	0	9	9	0
14	0	0	0	7	0	7	0	0	0	9	8	0
15	0	0	7	0	9	7	0	0	0	8	8	0
16	0	0	7	0	14	7	0	0	0	12	8	0
17	0	0	7	0	12	7	0	0	0	8	7	0
18	0	0	0	0	15	8	8	0	0	0	0	0
19	0	0	0	8	11	7	0	0	0	0	0	0
20	0	0	0	0	7	8	8	0	0	0	0	0
21	0	0	0	0	0	8	0	7	0	0	0	0
22	0	0	0	8	0	8	0	8	8	0	0	0
23	0	0	0	8	0	0	0	0	9	0	0	0
24	0	0	19	7	0	0	0	0	0	0	0	0
25	0	8	32	0	0	0	0	0	0	0	0	0
26	0	8	36	0	0	0	0	0	0	0	0	0
27	0	8	35	0	0	0	0	0	0	0	0	0
28	0	0	34	0	0	0	0	0	0	0	0	0
29	0	0	30	0	0	0	0	0	8	0	0	0
30	8		31	0	0	0	0	0	0	0	0	0
31	8		25		0		0	0		9		0
Mean	3.3	2.1	9.3	2.9	3.2	3.4	0.5	0.5	1.1	2.9	4.1	0.8

* = Provisional.

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



Day	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	76.7	69.0	67.4	77.7	69.6	68.5	67.8	68.1	67.0	65.9	65.6	66.2
2	77.0	69.8	68.0	75.9	69.2	69.0	68.2	68.2	67.2	66.4	68.0	67.0
3	76.7	*	67.3	76.4	68.5	68.2	67.7	67.4	67.3	67.2	68.3	67.2
4	76.4	69.3	67.2	73.1	69.5	67.1	67.6	68.2	67.0	66.6	66.8	67.6
5	77.1	68.5	68.2	71.1	68.8	68.4	67.3	68.4	66.3	67.4	66.5	66.8
6	76.6	69.6	69.3	69.5	68.4	67.9	68.3	68.9	66.8	67.2	67.3	67.1
7	75.2	68.9	69.5	69.3	67.8	67.6	67.7	68.0	67.6	66.6	66.5	67.0
8	73.0	69.0	68.8	70.0	67.7	66.9	67.8	67.3	68.0	67.5	67.0	66.4
9	74.0	70.3	68.5	68.2	68.6	68.0	68.3	67.3	68.0	68.5	67.1	66.7
10	73.2	70.7	69.4	68.1	68.7	68.2	67.6	67.4	68.1	68.7	67.9	68.7
11	73.5	70.2	69.3	67.4	69.4	67.8	67.9	67.5	67.8	70.5	70.0	68.0
12	73.2	70.3	68.5	68.5	69.5	69.2	67.1	66.9	67.1	69.7	69.5	68.8
13	72.9	68.7	68.7	69.7	69.7	68.6	67.4	67.0	67.2	70.5	67.6	67.5
14	73.1	68.8	69.1	69.0	70.5	69.2	67.8	67.6	67.6	70.0	66.8	66.6
15	71.3	68.0	68.8	69.7	72.7	68.6	67.9	67.0	68.2	70.5	66.7	66.7
16	70.6	68.6	69.6	70.0	73.2	67.4	66.7	67.8	70.1	71.4	66.2	67.2
17	71.3	69.4	69.1	69.8	72.8	68.1	67.1	68.2	67.7	69.5	66.2	66.6
18	68.8	69.5	69.0	70.8	73.3	67.5	67.4	67.8	67.8	68.6	68.2	66.2
19	68.6	70.0	68.4	71.7	70.5	67.0	68.5	68.9	68.4	69.0	67.7	67.0
20	68.0	69.3	67.9	71.5	70.2	67.3	68.0	67.4	68.4	68.6	67.9	66.9
21	69.3	70.3	67.7	71.6	70.8	67.0	68.4	68.7	68.4	68.2	66.8	*
22	68.1	70.8	69.1	72.1	71.0	67.5	68.0	69.1	69.6	67.0	67.3	65.5
23	68.4	70.1	71.5	71.5	69.6	67.5	67.6	69.4	69.8	66.5	67.2	66.3
24	69.1	69.3	79.0	71.2	70.3	68.0	67.5	68.6	68.8	66.7	66.1	67.1
25	68.9	69.9	88.2	70.7	70.1	68.1	67.9	68.0	68.6	66.7	66.0	67.0
26	70.3	69.3	81.2	69.9	69.8	67.5	68.1	68.3	68.0	66.0	66.5	67.0
27	69.8	69.4	84.5	69.0	69.7	68.3	68.4	68.0	67.6	66.1	66.4	67.1
28	69.2	68.7	82.6	69.4	69.6	68.1	68.3	67.4	67.3	66.2	65.2	67.5
29	69.5	68.5	82.4	69.6	69.9	68.8	68.1	68.1	67.0	65.8	66.4	67.5
30	70.6		80.4	68.0	69.0	68.9	68.5	68.4	66.4	65.9	66.5	66.3
31	69.9		79.1		68.8		67.5	67.9		67.1		67.0
Mean	71.9	69.4	72.2	70.7	69.9	68.0	67.8	68.0	67.8	67.8	67.1	67.0

* = No data available.

DAILY SOLAR INDICES
DECEMBER 2008

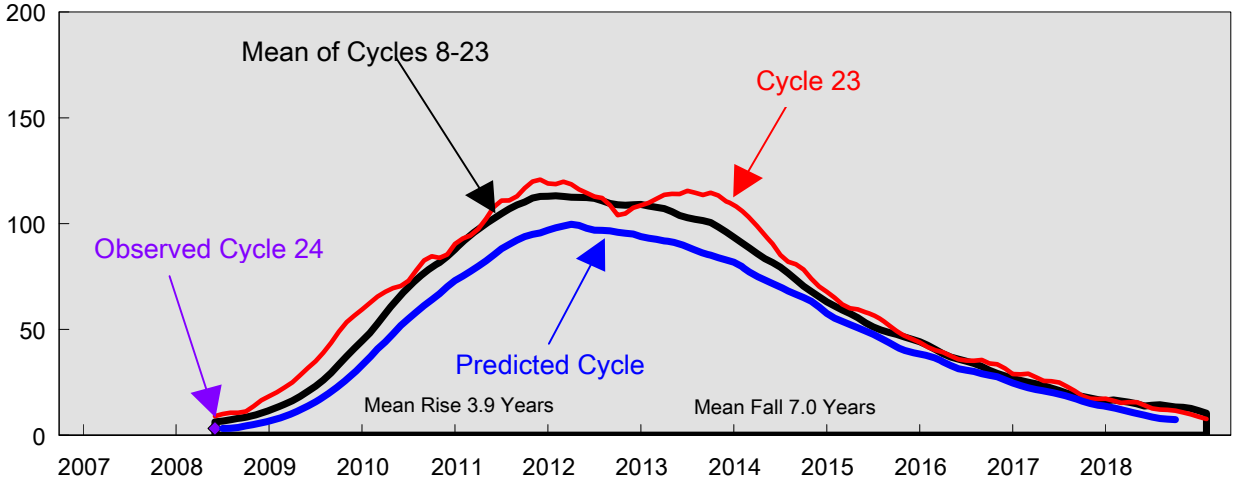
	Day	Bartels	Sunspot		Obs Flux			-----Solar Flux Adjusted to 1 Astronomical Unit--------						
	of	Cycle	Numbers		Penticton	SGMR	SGMR	SGMR	Penticton	SGMR	SGMR	SGMR	SGMR	SGMR
Day	Year	Day	Int	Amer	(2800)	(15400)	(8800)	(4995)	(2800)	(2695)	(1415)	(610)	(410)	(245)
1	336	24	0	0	68.1	404	209	124	66.2	67	53	35	21	11
2	337	25	0	0	68.9	456	209	126	67.0	62	54	38	21	11
3	338	26	0	0	69.2	454	212	124	67.2	62	54	39	21	12
4	339	27	0	0	69.6	452	211	127	67.6	63	55	---	---	---
5	340	1	0	0	68.8	452	214	125	66.8	63	54	39	21	12
6	341	2	0	0	69.1	455	211	126	67.1	65	53	40	22	11
7	342	3	0	0	69.0	366	191	121	67.0	62	52	40	22	12
8	343	4	0	0	68.5	445	195	122	66.4	75	52	42	21	11
9	344	5	0	0	68.7	448	211	126	66.7	63	54	37	21	11
10	345	6	9	6	70.8	311	187	133	68.7	60	55	36	22	12
11	346	7	8	7	70.2	368	182	122	68.0	60	52	38	22	14
12	347	8	9	4	71.0	310	192	124	68.8	63	55	40	22	13
13	348	9	0	0	69.7	458	210	128	67.5	68	55	37	22	12
14	349	10	0	0	68.8	456	207	126	66.6	66	54	37	22	13
15	350	11	0	0	68.9	447	209	132	66.7	61	54	38	22	13
16	351	12	0	0	69.4	455	200	129	67.2	63	55	32	22	13
17	352	13	0	0	68.8	354	198	125	66.6	72	53	39	22	13
18	353	14	0	0	68.4	407	206	129	66.2	68	55	38	21	13
19	354	15	0	0	69.2	451	214	126	67.0	65	54	41	22	14
20	355	16	0	0	69.1	446	213	125	66.9	71	55	41	22	14
21	356	17	0	0	**	448	210	126	**	62	55	39	22	14
22	357	18	0	0	67.7	376	186	114	65.5	74	51	30	22	14
23	358	19	0	0	68.6	433	201	120	66.3	75	54	39	23	14
24	359	20	0	0	69.4	421	205	133	67.1	65	55	39	23	14
25	360	21	0	0	69.3	461	210	127	67.0	64	55	38	21	14
26	361	22	0	0	69.2	459	209	124	67.0	63	55	38	22	12
27	362	23	0	0	69.4	374	201	126	67.1	64	54	39	21	12
28	363	24	0	0	69.8	446	210	131	67.5	64	55	37	22	12
29	364	25	0	0	69.8	458	207	128	67.5	67	55	39	21	12
30	365	26	0	0	68.5	455	213	128	66.3	66	55	39	22	12
31	366	27	0	0	69.3	448	214	127	67.0	70	54	41	21	11
MEAN			0.8	0.5	69.2	424	204	125	67.0	65	54	38	21	12

** = No data available.

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

Cycle 24 Smoothed Sunspot Numbers: Observed and Predicted

PRELIMINARY Based on June 2008 Smoothed Data



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	60	58	57	57	66
2004	53	49	47	46	46	42	40	39	38	36	35	35	42
2005	35	34	34	32	29	29	29	27	26	26	25	23	29
2006	21	19	17	17	17	16	15	16	16	14	13	13	16
2007	12	12	11	10	9	8	7	6	6	6	6	5	8
2008	4	4	3	3	4	3.2##	3	3	4	4	5	6	4
							(1)	(1)	(2)	(3)	(4)	(5)	(1)
2009	7	8	9	10	12	14	16	18	21	23	26	29	16
	(6)	(7)	(9)	(10)	(12)	(14)	(16)	(19)	(21)	(24)	(27)	(30)	(16)

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

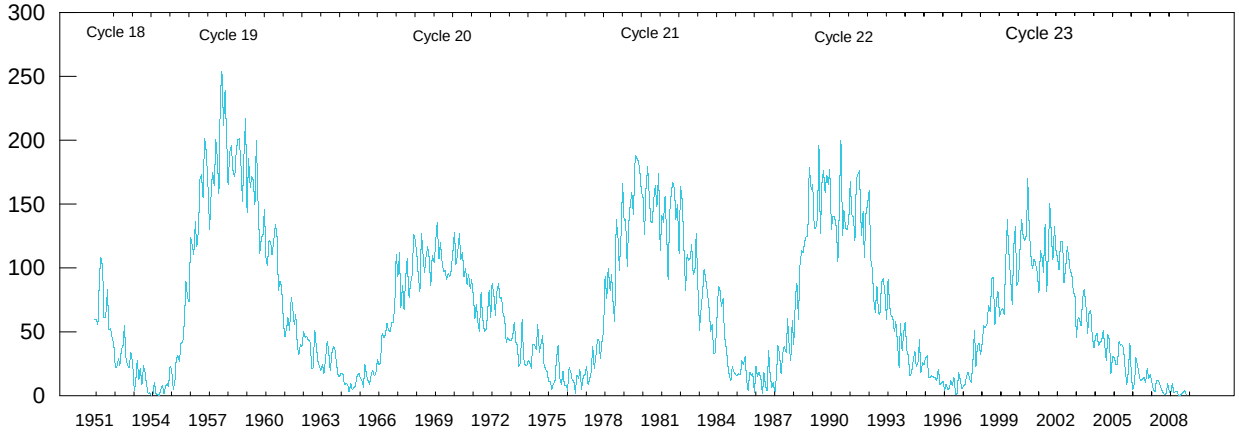
*** May 1996 marks Cycle 23's mathematical minimum.** **** October 1996 marks the consensus minimum.**

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

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

OBSERVED AND PREDICTED NUMBERS: For the end of Cycle 23, and the rise and decline of Cycle 24, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Jun 2008 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. See page 9 in the Jul 1987 supplement to Solar-Geophysical Data. Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the June 2009 prediction. There exists a 90% chance that in June 2009, the actual smoothed sunspot will fall somewhere between 0 and 28.

Mean Monthly Sunspot Numbers
Jan 1951 - Dec 2008



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4	
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5	
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9	
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4	m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	122.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6	
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9	
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2	m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1	
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0	
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8	
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9	M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5	
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5	
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6	
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9	
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0	
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5	
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5	
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6	m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5	
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5	
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4	M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6	
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4	
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9	
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4	
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2	
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6	M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6	
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7	
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3	
1993	59.3	91.0	69.8	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6	
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9	
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.1	9.0	10.0	17.5	
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	0.9	17.9	13.3	8.6	m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5	
1998	31.9	40.3	54.8	53.4	56.3	70.7	66.6	92.2	92.9	55.5	74.0	81.9	64.3	
1999	62.0	66.3	68.8	63.7	106.4	137.7	113.5	93.7	71.5	116.7	133.2	84.6	93.2	
2000	90.1	112.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	99.4	106.8	104.4	119.6	M
2001	95.6	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.5	106.5	132.2	111.0	
2002	114.1	107.4	98.4	120.7	120.8	88.3	99.9	116.4	109.3	97.5	95.5	80.8	104.0	
2003	79.7	46.0	61.1	60.0	54.6	77.4	83.3	72.7	48.7	65.5	67.3	46.5	63.9	
2004	37.7	45.8	49.1	39.3	41.5	43.2	51.0	40.9	27.7	48.0	43.5	17.9	40.4	
2005	31.3	29.1	24.8	24.2	42.7	39.3	40.1	36.4	21.9	8.7	18.0	41.1	29.8	
2006	15.4	4.7	10.8	30.2	22.2	13.9	12.2	12.9	14.4	10.5	21.4	13.6	15.2	
2007	16.8	10.7	4.5	3.4	11.7	12.1	9.7	6.0	2.4	0.9	1.7	10.1	7.5	
2008	3.3	2.1	9.3	2.9	3.2	3.4	0.5	0.5	1.1	2.9	4.1	0.8	2.8	

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

Hà SOLAR FLARES
DECEMBER 2008

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

No Reports

"Remarks"

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

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

X - R A Y S O L A R F L A R E S
DECEMBER 2008

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Xray	Total Integrated Flux(1)	Total Area(2)	Total(3) Intensity
GOES 11		0522	0537	0550			11009			28	B 2.6	3.4E-04		
GOES		0827	0831	0833			11009			6	B 2.2	4.6E-05		
GOES		0922	0925	0927			11009			5	C 1.4	2.1E-04		
GOES		1134	1137	1141			11009			7	B 1.0	2.8E-05		
GOES		1141	1144	1146			11009			5	B 9.6	1.9E-04		
GOES		1412	1415	1417			11009			5	B 2.1	3.4E-05		

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

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

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

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

Outstanding Occurrences

DECEMBER 2008

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	410	SVTO	8 S	0923.0	0924.0	1.0	220.0			QL=4 ST=2 TYP=3
	410	LEAR	8 S	0924.0	0924.0	U	100.0			QL=4 ST=2 TYP=3

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

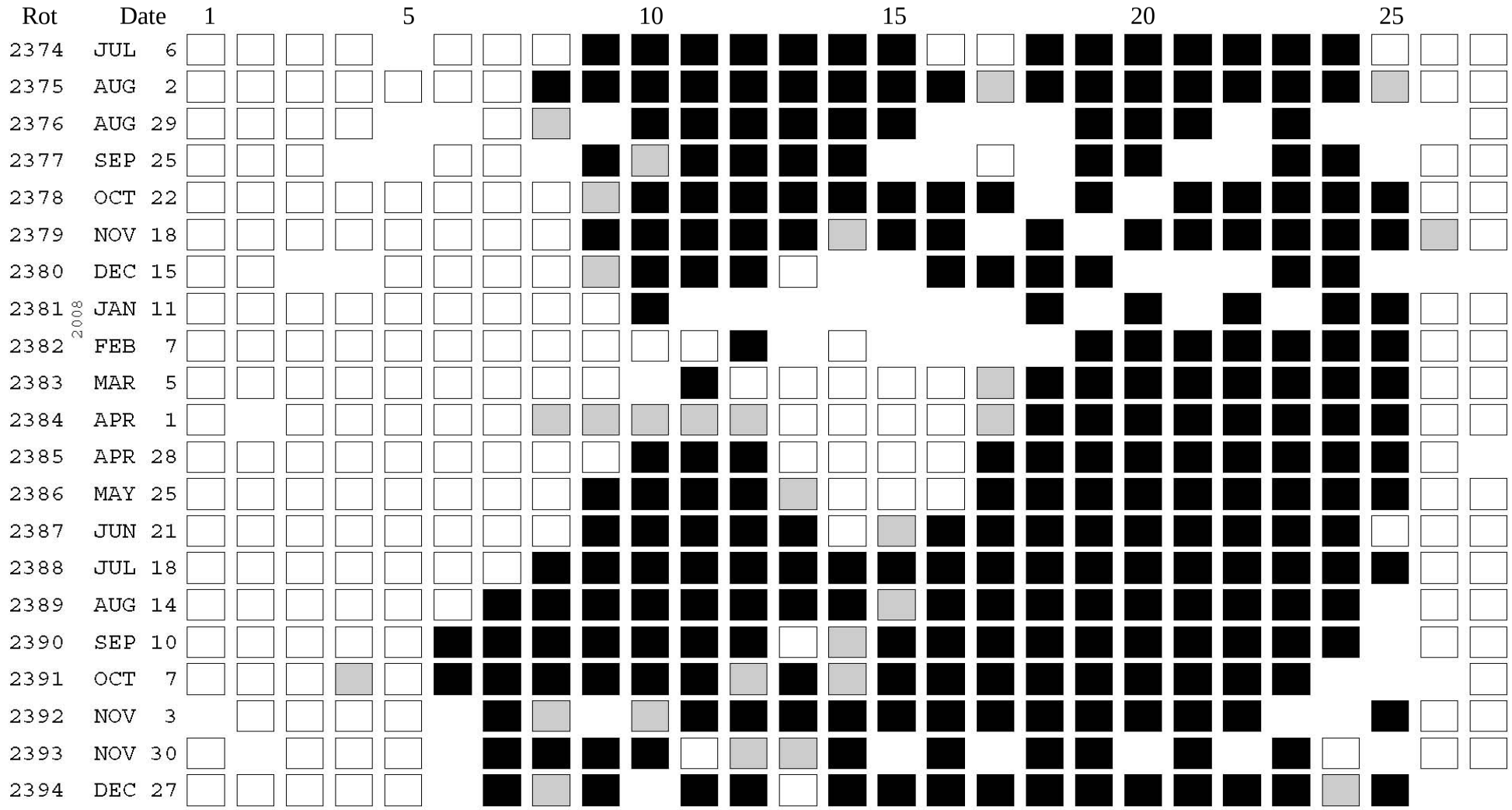
Explanation of Type Code:

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

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

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

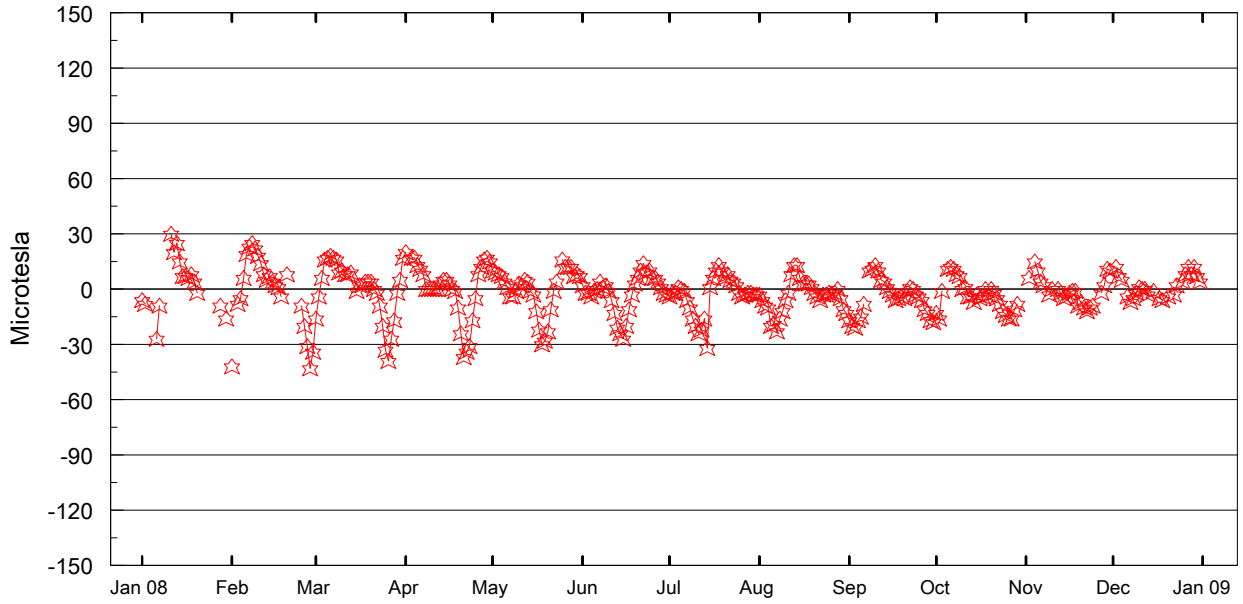
STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT = field < -2 microT; No box = no data available

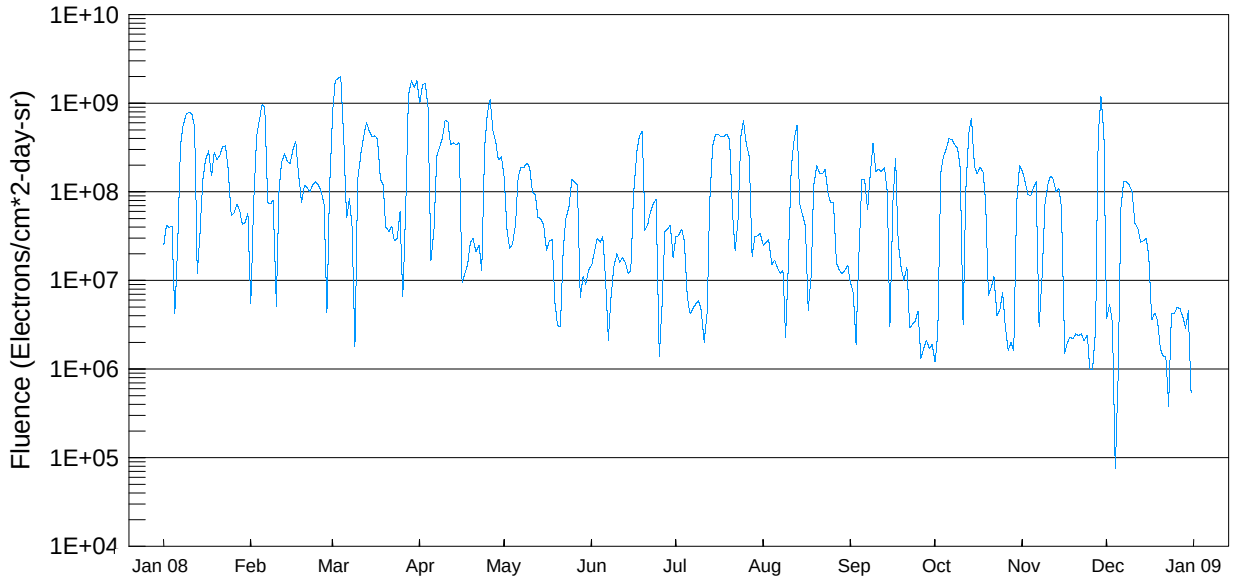
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



Day	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-6	-42	-16	20	10	2	-4	-3	-17	-13	---	---
2	-8	---	-4	---	9	-2	-2	-6	-20	-16	6	12
3	---	-8	6	17	8	-2	-2	-9	-21	-1	---	7
4	---	-5	16	17	7	-4	1	-10	-17	---	15	5
5	---	6	17	13	4	-1	0	-20	-15	11	10	---
6	-27	19	18	11	1	0	-1	-19	-8	12	4	-4
7	-9	23	17	8	-4	4	-6	-23	---	11	2	-7
8	---	25	16	0	-4	1	-10	-16	10	8	---	-5
9	---	22	9	0	-1	2	-16	-12	11	7	-3	-2
10	---	18	10	0	3	-1	-20	-6	13	0	0	1
11	30	14	8	0	2	-6	-24	-2	10	1	---	0
12	20	8	8	0	5	-13	-22	8	5	-4	0	0
13	25	5	9	3	4	-21	-16	13	4	-4	-2	-3
14	15	7	---	5	-1	-24	-32	13	1	-7	-5	---
15	7	4	-1	5	-3	-27	1	6	-1	-3	-4	-1
16	7	2	2	3	-12	-20	6	3	-3	-5	-2	---
17	6	1	2	0	-22	-11	10	3	-6	-4	-1	-5
18	8	-4	4	-1	-30	-3	13	3	-5	0	-1	-6
19	4	---	4	-10	-28	3	10	1	-4	-3	-9	---
20	-2	8	4	-24	-23	6	6	-2	-5	0	-7	-4
21	---	---	0	-37	-11	10	8	-4	-1	-2	-10	---
22	---	---	-2	-34	-1	14	5	-6	1	-5	-12	-3
23	---	---	-9	-31	4	9	4	-3	0	-8	-10	2
24	---	---	-20	-17	---	10	2	-3	-3	-12	-9	---
25	---	-9	-33	-5	16	6	-2	-2	-4	-14	---	4
26	---	-20	-39	8	12	6	-4	-3	-6	-16	---	8
27	---	-31	-27	12	12	4	-3	-2	-11	-16	-2	12
28	-9	-43	-17	16	12	1	-2	0	-13	-11	2	8
29	---	-34	-2	17	7	-2	-2	-5	-17	-8	11	12
30	-16		5	15	8	-3	-3	-11	-18	---	10	7
31	---		17		7		-3	-13		---		4

GOES Daily Electron Fluence
Jan 2008 - Dec 2008



Day	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	2.5E+07	5.5E+06	7.5E+08	1.0E+09	1.4E+08	1.5E+07	3.1E+07	2.5E+07	9.4E+06	1.2E+06	1.7E+08	3.7E+06
2	4.2E+07	8.0E+07	1.8E+09	1.6E+09	3.6E+07	2.1E+07	3.2E+07	2.7E+07	7.3E+06	2.5E+06	1.3E+08	5.4E+06
3	4.0E+07	4.1E+08	1.9E+09	1.7E+09	2.3E+07	3.0E+07	3.8E+07	2.9E+07	1.9E+06	1.6E+08	9.4E+07	3.3E+06
4	4.1E+07	6.5E+08	2.0E+09	8.9E+08	2.6E+07	2.7E+07	2.7E+07	1.5E+07	2.0E+07	2.5E+08	9.1E+07	7.5E+04
5	4.2E+06	9.7E+08	3.6E+08	1.7E+07	4.2E+07	3.1E+07	6.6E+06	1.7E+07	1.4E+08	3.0E+08	1.1E+08	6.5E+05
6	2.3E+07	9.1E+08	5.1E+07	3.6E+07	1.5E+08	1.1E+07	4.2E+06	1.4E+07	1.4E+08	4.0E+08	1.3E+08	6.3E+07
7	3.2E+08	7.6E+07	8.4E+07	2.5E+08	1.9E+08	2.1E+06	4.8E+06	1.2E+07	6.2E+07	3.9E+08	3.0E+06	1.3E+08
8	5.6E+08	7.3E+07	3.8E+07	3.2E+08	1.9E+08	6.7E+06	5.4E+06	1.3E+07	1.6E+08	3.4E+08	1.1E+07	1.3E+08
9	7.5E+08	8.1E+07	1.8E+06	4.0E+08	2.1E+08	1.5E+07	5.9E+06	2.3E+06	3.6E+08	3.1E+08	7.0E+07	1.2E+08
10	7.9E+08	5.0E+06	1.4E+08	6.4E+08	1.9E+08	2.0E+07	4.7E+06	1.8E+07	1.7E+08	1.8E+08	1.2E+08	1.0E+08
11	7.7E+08	1.1E+08	2.5E+08	6.2E+08	1.0E+08	1.6E+07	2.0E+06	1.9E+08	1.8E+08	3.2E+06	1.5E+08	4.4E+07
12	5.5E+08	2.2E+08	4.1E+08	3.4E+08	9.4E+07	1.8E+07	4.3E+06	4.0E+08	1.7E+08	1.1E+08	1.4E+08	3.9E+07
13	1.2E+07	2.7E+08	6.0E+08	3.6E+08	5.2E+07	1.6E+07	7.8E+07	5.7E+08	1.9E+08	4.5E+08	1.0E+08	2.7E+07
14	3.5E+07	2.2E+08	4.9E+08	3.4E+08	5.0E+07	1.2E+07	3.2E+08	7.2E+07	1.0E+08	6.8E+08	1.1E+08	2.8E+07
15	1.4E+08	2.1E+08	4.2E+08	3.6E+08	4.3E+07	1.3E+07	4.4E+08	5.4E+07	3.0E+06	1.9E+08	6.8E+07	3.0E+07
16	2.3E+08	3.0E+08	4.3E+08	9.4E+06	2.2E+07	9.6E+07	4.5E+08	4.1E+07	7.3E+07	1.6E+08	1.5E+06	1.9E+07
17	2.9E+08	3.7E+08	4.0E+08	1.2E+07	2.8E+07	2.7E+08	4.2E+08	4.5E+06	2.4E+08	1.9E+08	2.0E+06	3.6E+06
18	1.5E+08	1.5E+08	1.4E+08	1.5E+07	2.9E+07	4.3E+08	4.2E+08	1.1E+07	2.6E+07	1.7E+08	2.3E+06	4.3E+06
19	2.8E+08	7.6E+07	1.2E+08	2.7E+07	5.6E+06	4.8E+08	4.5E+08	1.2E+08	1.4E+07	8.0E+07	2.2E+06	3.6E+06
20	2.3E+08	1.2E+08	4.0E+07	3.0E+07	3.1E+06	3.7E+07	3.9E+08	2.0E+08	1.0E+07	6.7E+06	2.5E+06	1.7E+06
21	2.6E+08	1.1E+08	3.6E+07	2.1E+07	3.0E+06	4.3E+07	6.4E+07	1.6E+08	1.4E+07	8.4E+06	2.4E+06	1.4E+06
22	3.2E+08	1.0E+08	4.1E+07	2.5E+07	2.3E+07	6.0E+07	2.2E+07	1.6E+08	2.9E+06	1.1E+07	2.5E+06	1.4E+06
23	3.3E+08	1.2E+08	2.8E+07	1.3E+07	5.0E+07	7.3E+07	4.5E+07	1.8E+08	3.2E+06	4.0E+06	2.1E+06	3.8E+05
24	1.8E+08	1.3E+08	3.0E+07	3.0E+08	7.0E+07	8.3E+07	4.0E+08	9.6E+07	3.5E+06	4.7E+06	2.4E+06	4.2E+06
25	5.4E+07	1.2E+08	6.0E+07	7.8E+08	1.4E+08	1.4E+06	6.4E+08	7.5E+07	4.5E+06	7.3E+06	1.0E+06	4.2E+06
26	5.8E+07	1.0E+08	6.6E+06	1.1E+09	1.3E+08	4.8E+06	3.5E+08	7.7E+07	1.3E+06	3.1E+06	1.0E+06	5.0E+06
27	7.3E+07	7.1E+07	5.7E+07	5.0E+08	1.2E+08	3.6E+07	2.5E+08	1.6E+07	1.7E+06	1.6E+06	2.8E+06	4.8E+06
28	6.2E+07	4.4E+06	1.2E+09	3.7E+08	6.4E+06	3.8E+07	1.9E+07	1.3E+07	2.1E+06	2.0E+06	4.5E+08	3.9E+06
29	4.3E+07	1.1E+08	1.8E+09	2.3E+08	1.1E+07	4.2E+07	3.1E+07	1.2E+07	1.7E+06	1.6E+06	1.2E+09	2.9E+06
30	4.5E+07		1.5E+09	2.5E+08	9.1E+06	1.8E+07	3.2E+07	1.3E+07	1.9E+06	7.0E+07	4.5E+08	4.6E+06
31	5.7E+07		1.8E+09		1.3E+07		3.4E+07	1.5E+07		2.0E+08		5.4E+05

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 773 Part I

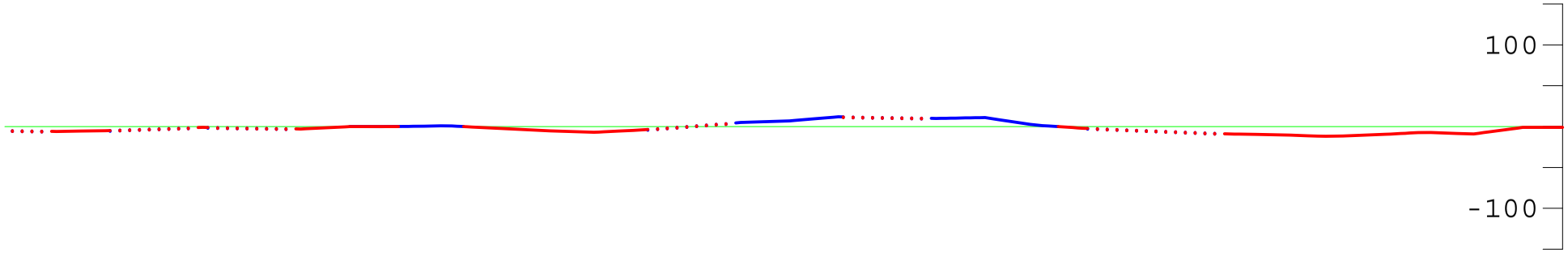
DATA FOR **NOVEMBER 2008**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

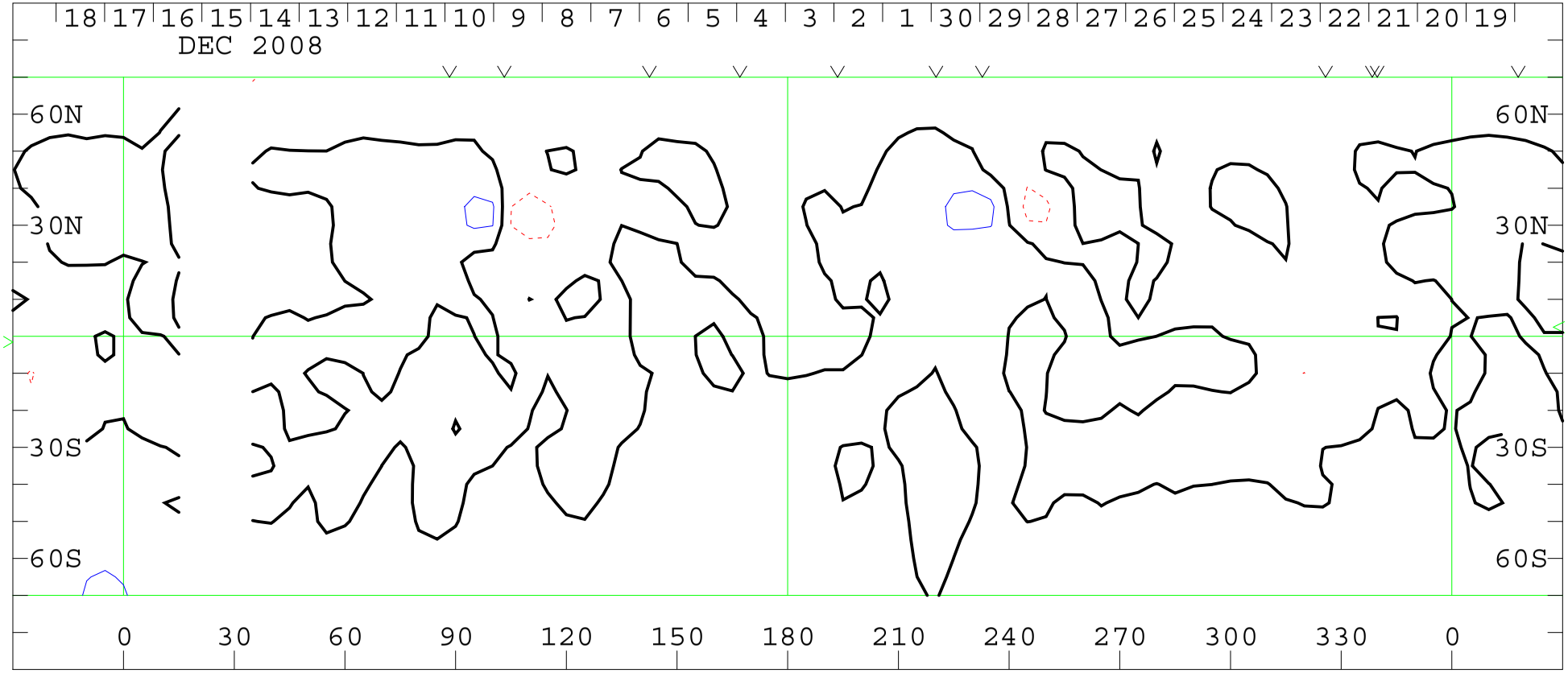
CARRINGTON ROTATION NUMBER 2077

(20 Nov 2008 - 17 Dec 2008)

WILCOX SOLAR OBSERVATORY



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



SOLAR MAGNETIC FIELD SYNOPTIC CHART

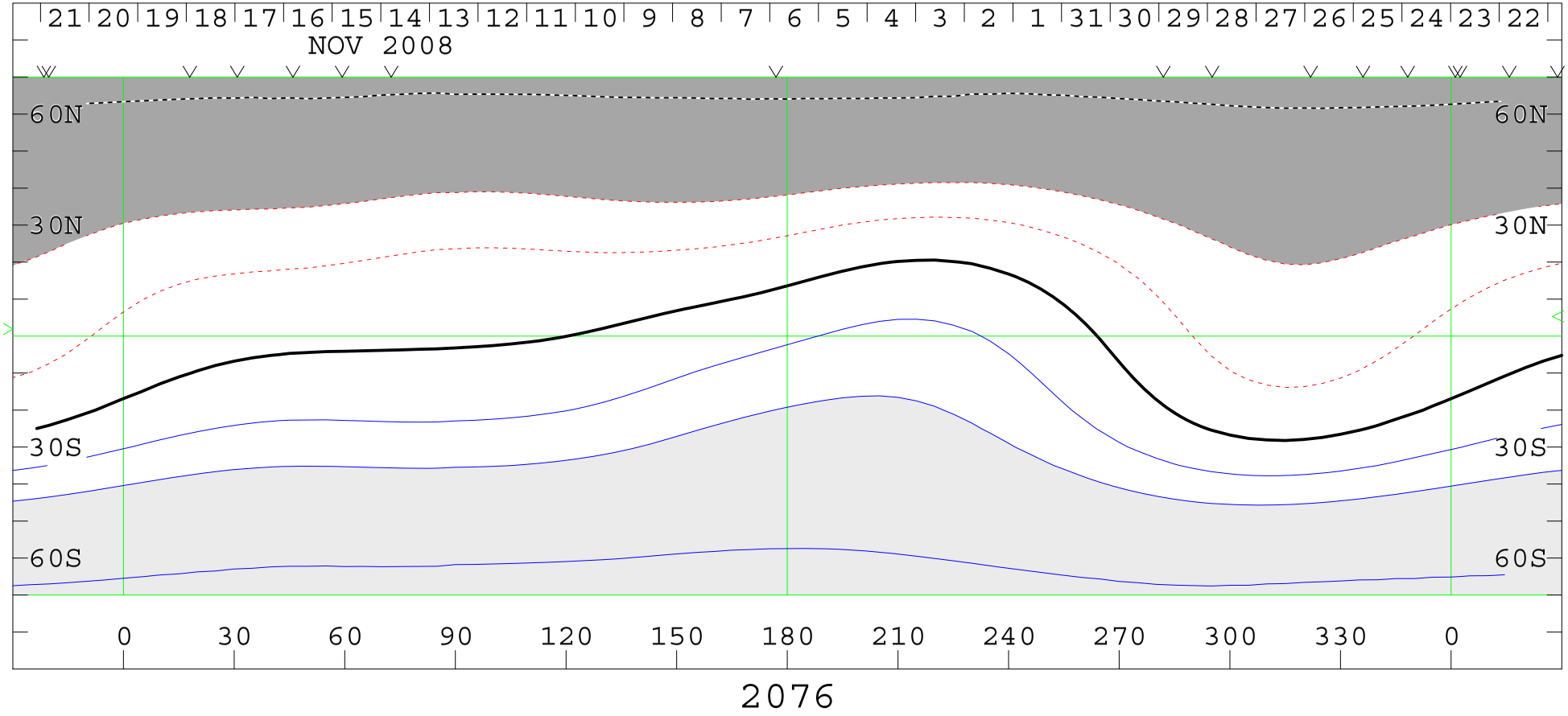
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2076

(23 Oct 2008 to 20 Nov 2008)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



SOLAR MAGNETIC FIELD SYNOPTIC CHART

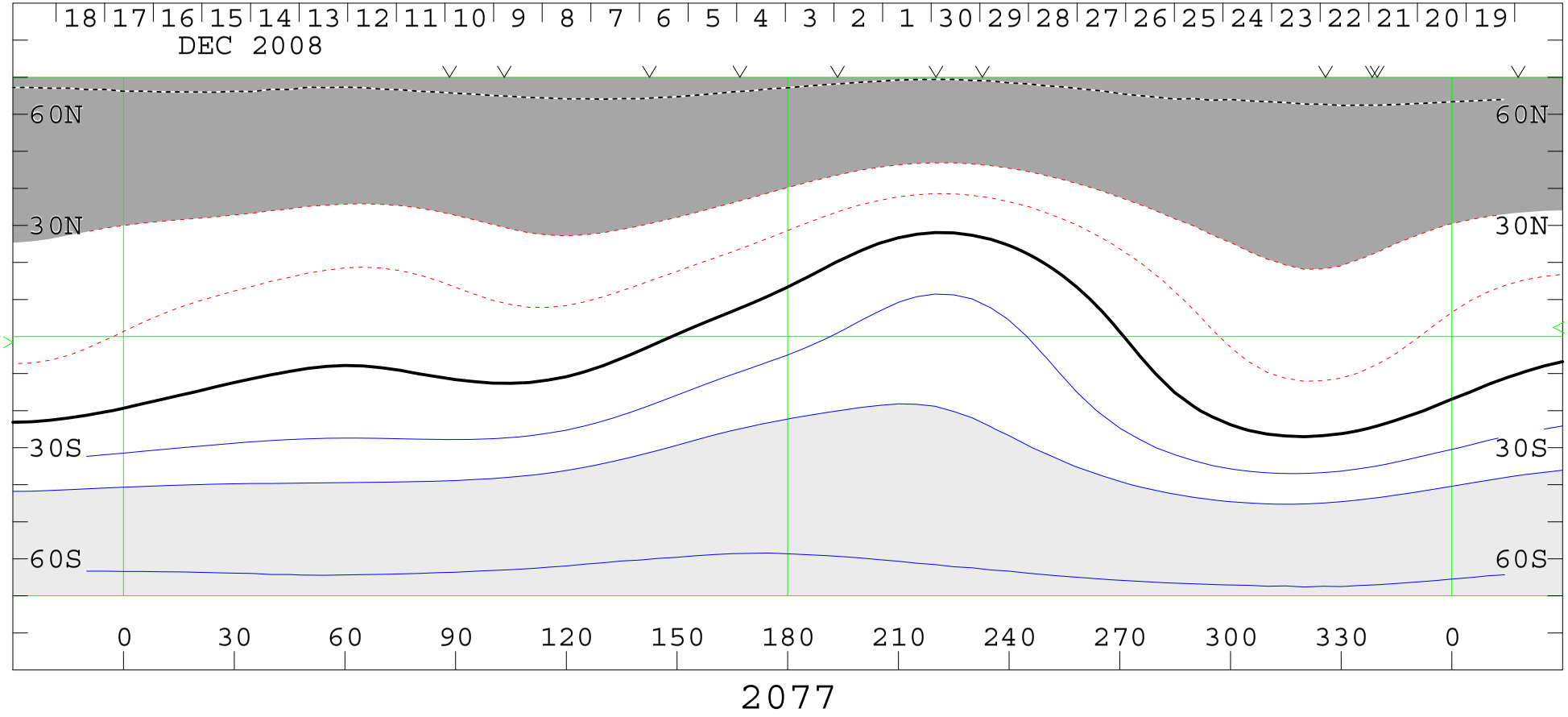
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2077

(20 Nov 2008 to 17 Dec 2008)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla

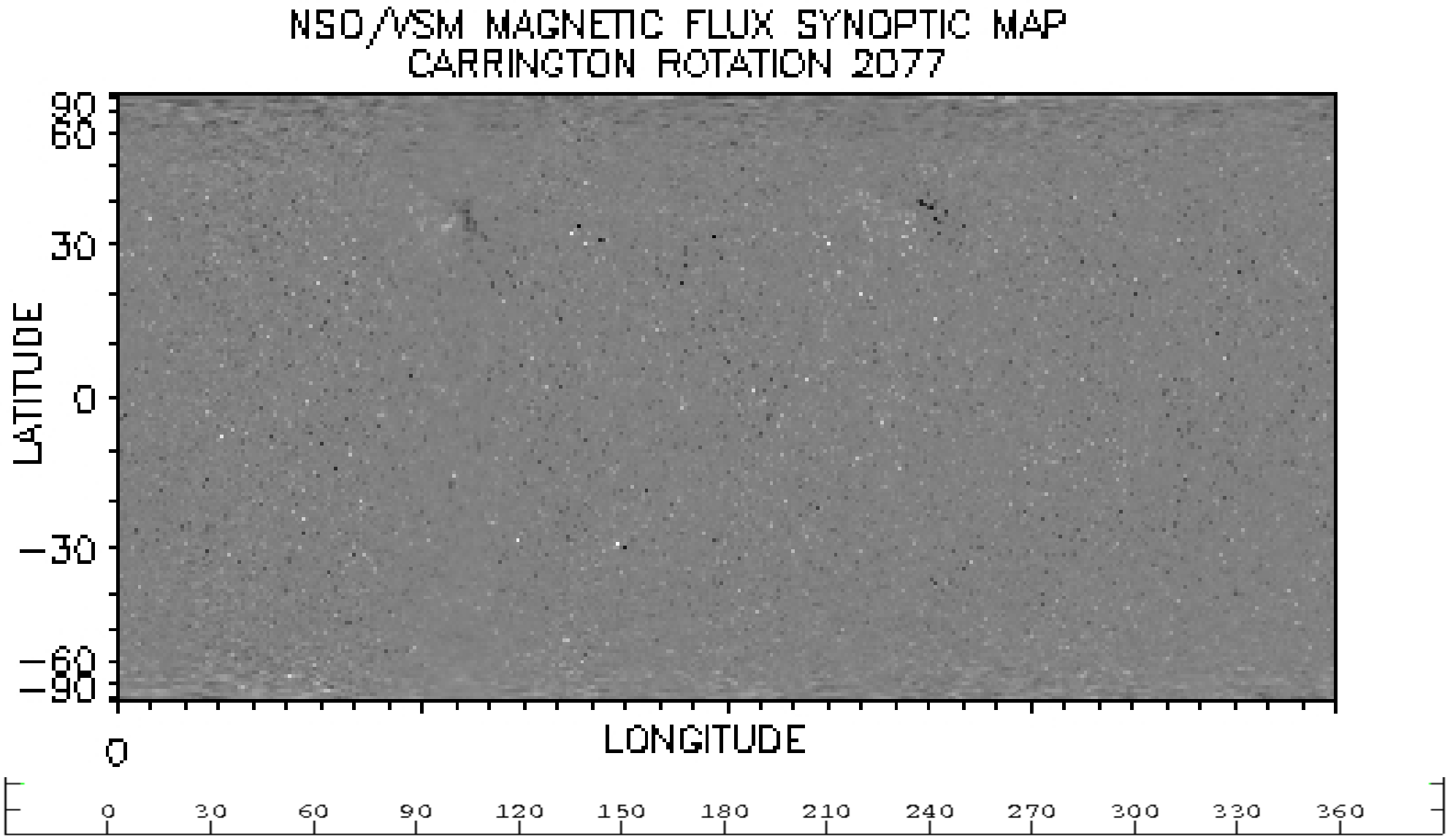


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2077

(20 Nov 2008 to 17 Dec 2008)

National Solar Observatory/Kitt Peak



Heliographic Longitude

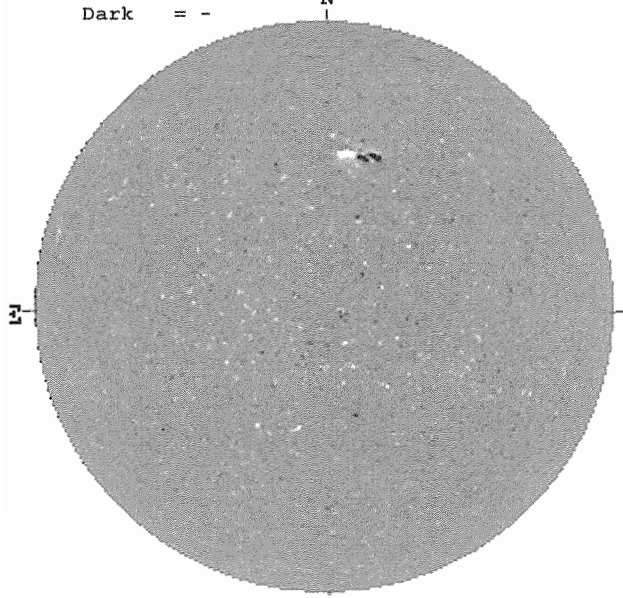
November 01, 2008 (P= 24.44, Bo= 4.35, Lo= 254.31)

Nov 08 42

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

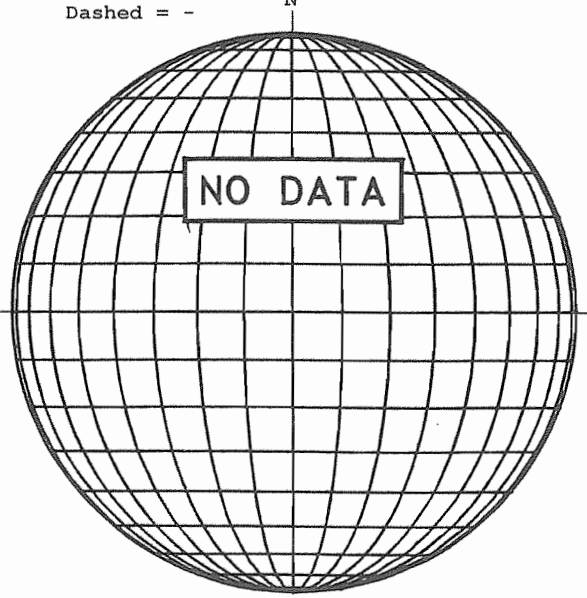
** 854.2NM **



2109 UT

STANFORD MAGNETOGRAM

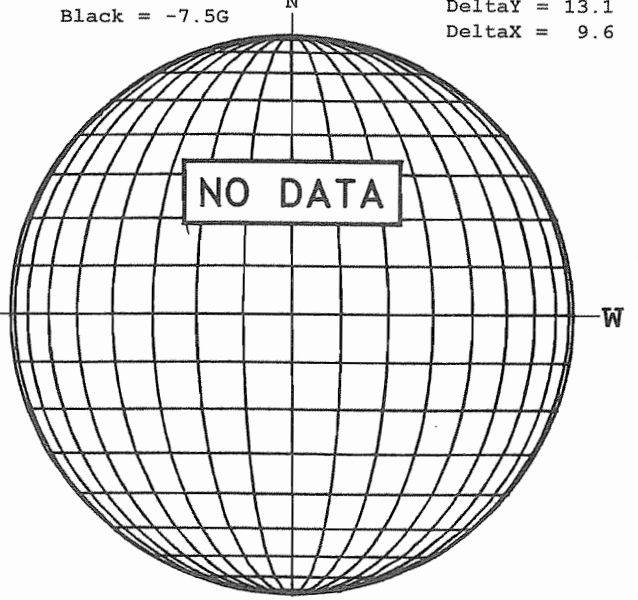
Solid = +
Dashed = -



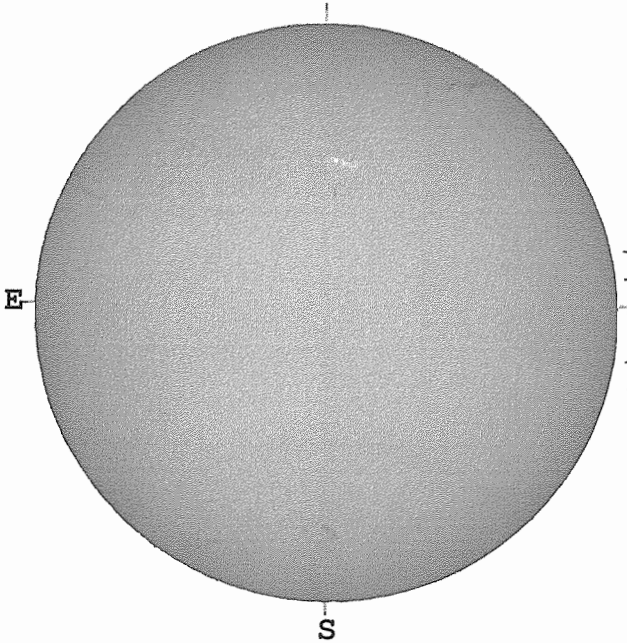
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

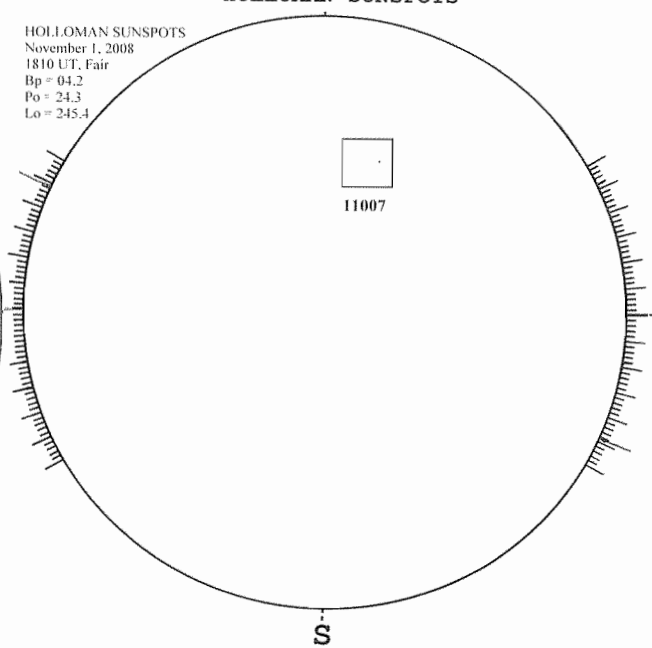


KANZELHOHE H-ALPHA



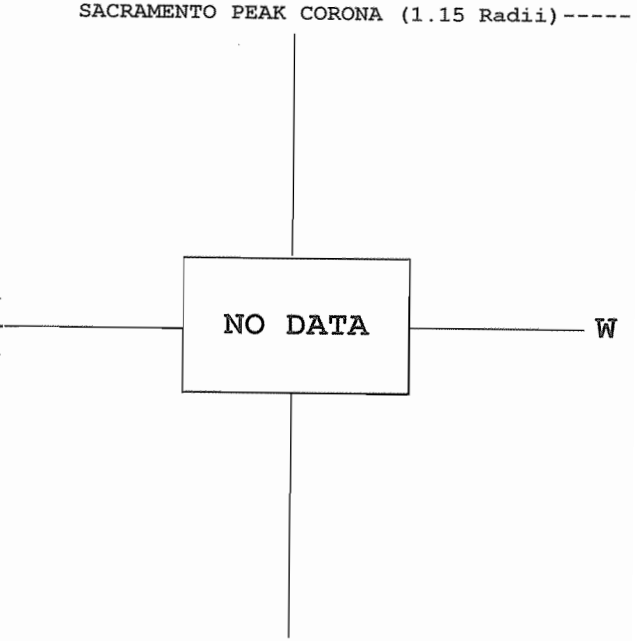
1240 UT

HOLLOMAN SUNSPOTS



1810 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

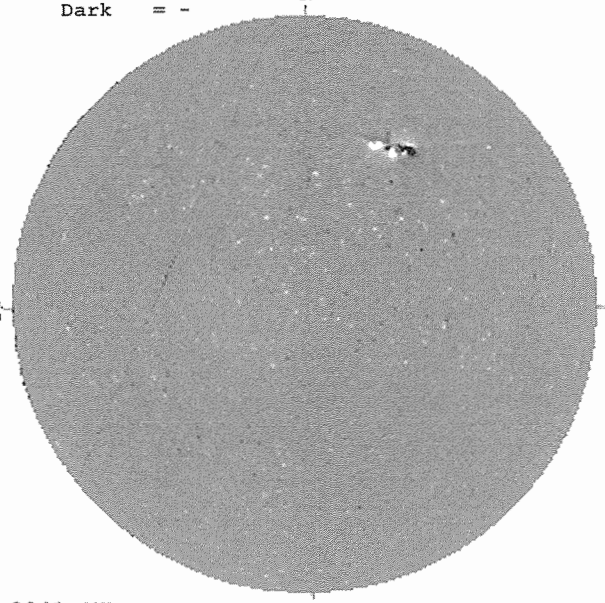


November 02, 2008 (P= 24.27, Bo= 4.25, Lo= 241.12)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

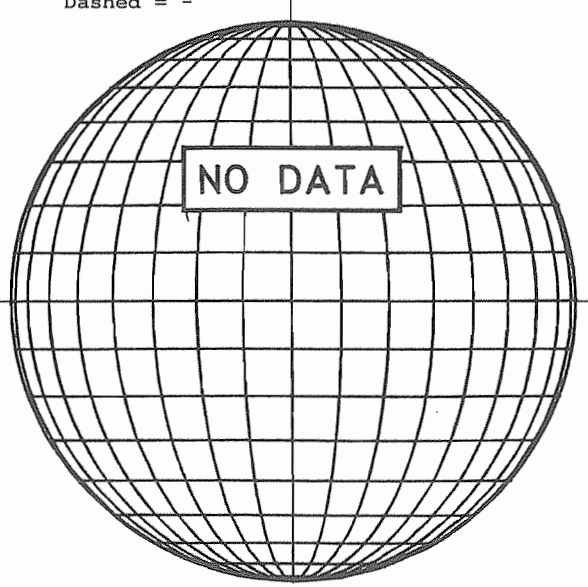
** 854.2NM **



2041 UT

STANFORD MAGNETOGRAM

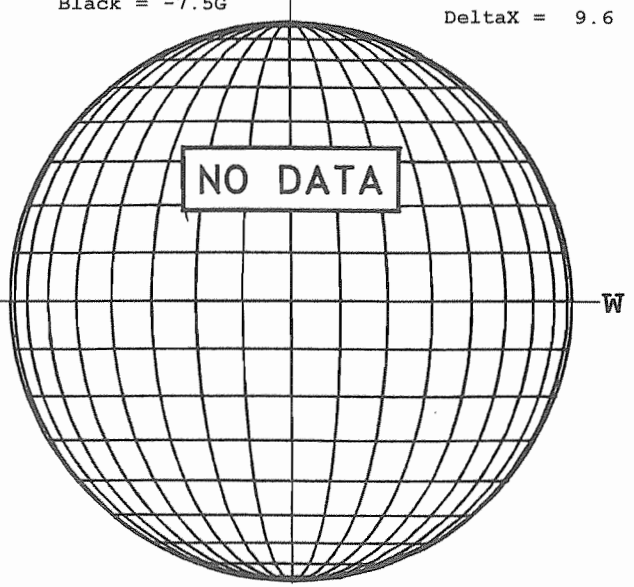
Solid = +
Dashed = -



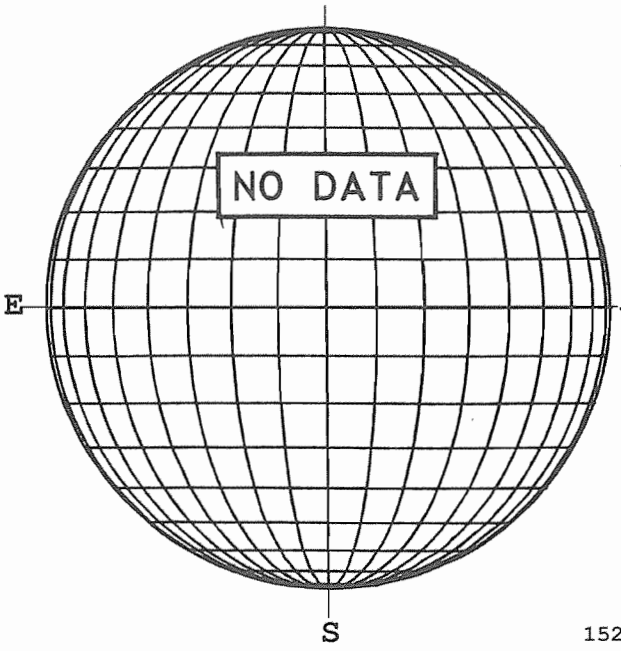
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

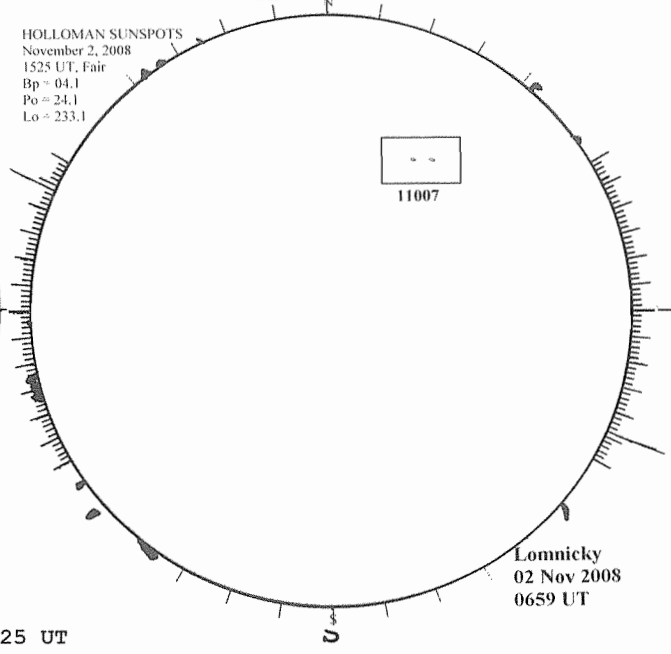
DeltaY = 13.1
DeltaX = 9.6



BIG BEAR H-ALPHA

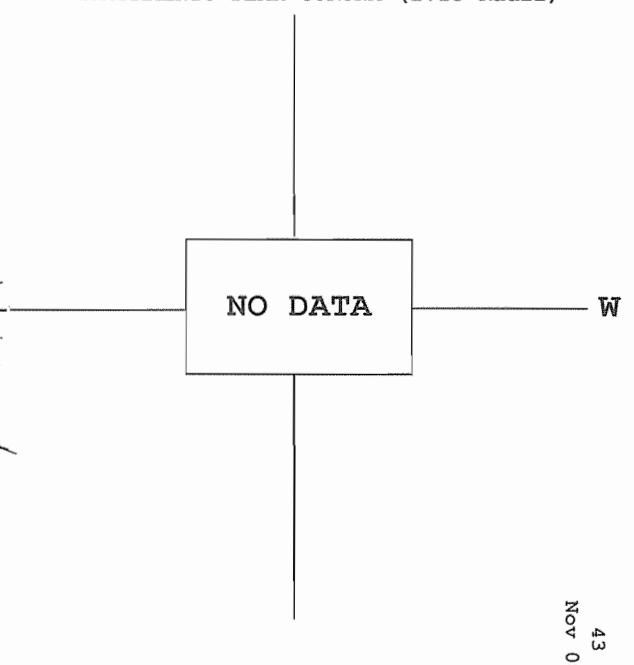


HOLLOMAN SUNSPOTS



1525 UT
0659 UT LOMN PROM

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



43
Nov 08

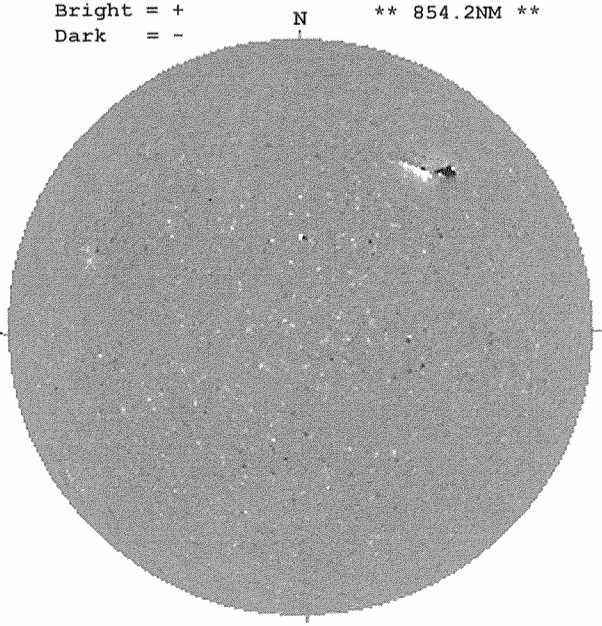
November 03, 2008 (P= 24.09, Bo= 4.15, Lo= 227.93)

Nov 08 44

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

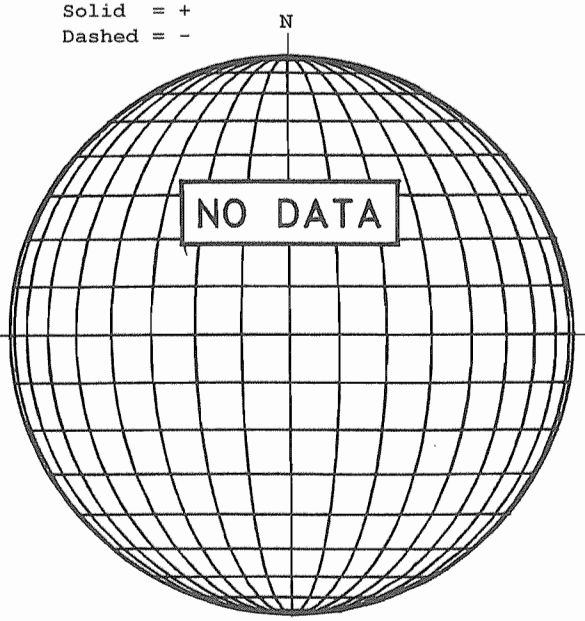
** 854.2NM **



1651 UT

STANFORD MAGNETOGRAM

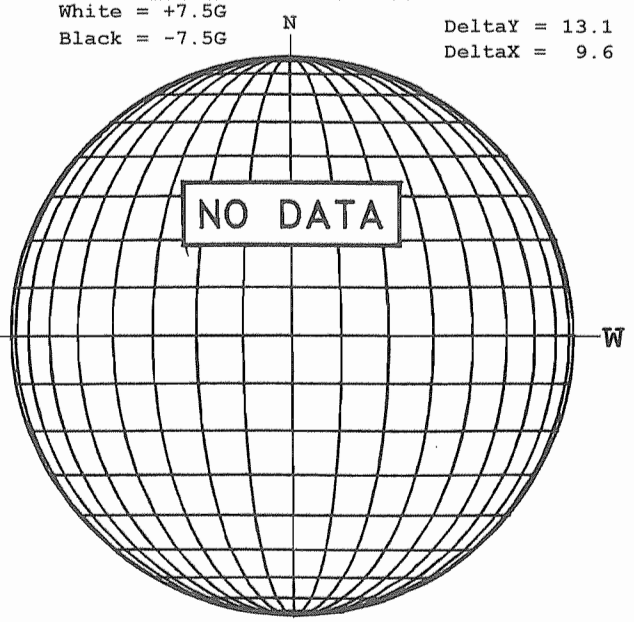
Solid = +
Dashed = -



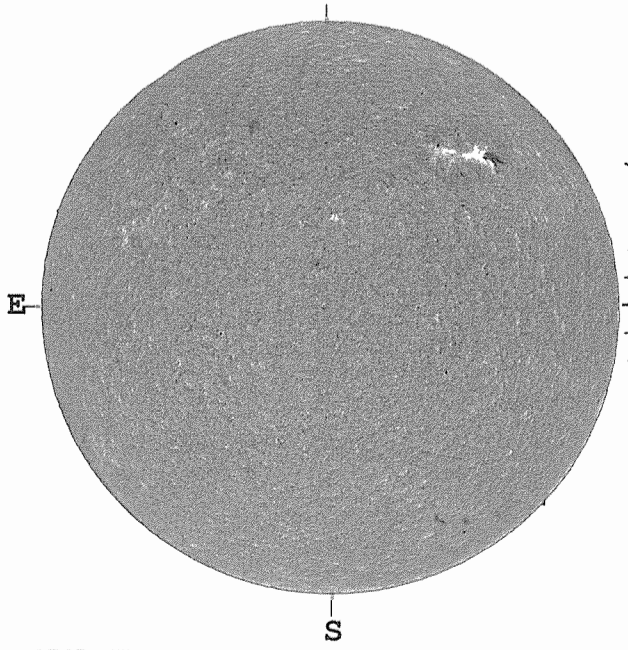
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

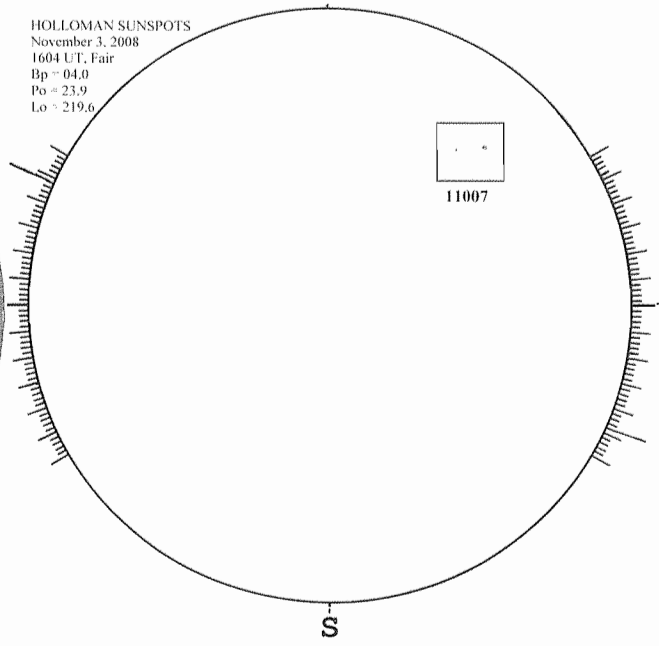


BIG BEAR H-ALPHA



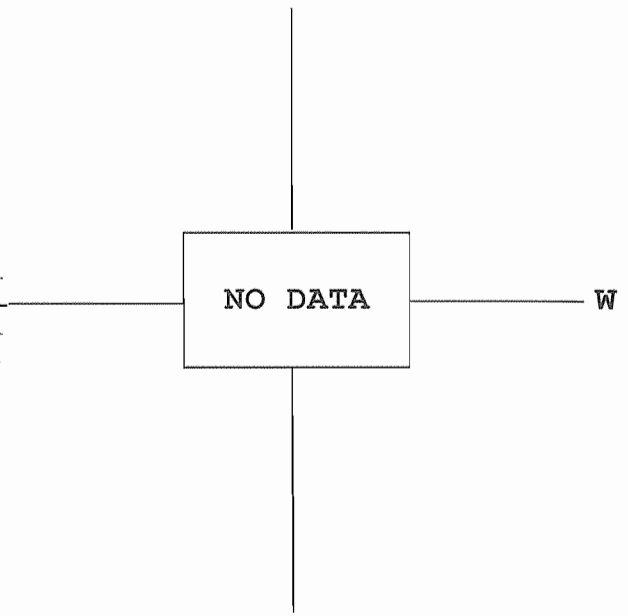
1745 UT

HOLLOMAN SUNSPOTS



1604 UT

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

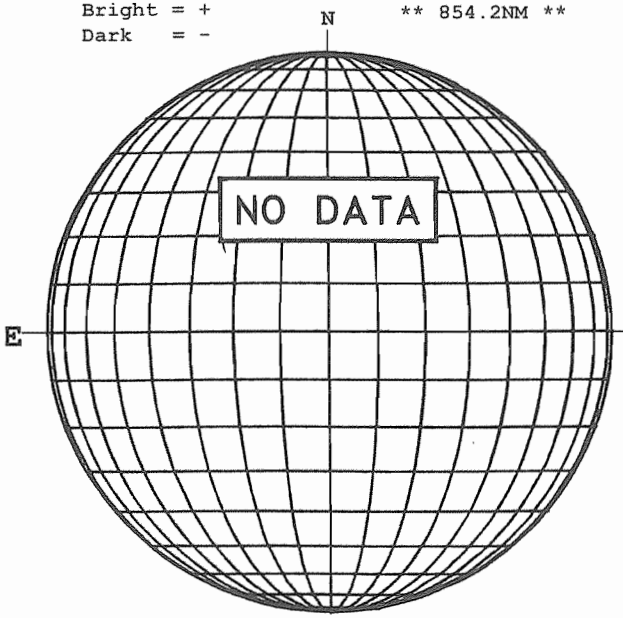


November 04, 2008 (P= 23.90, Bo= 4.04, Lo= 214.75)

KITT PEAK MAGNETOGRAM -- SOLIS

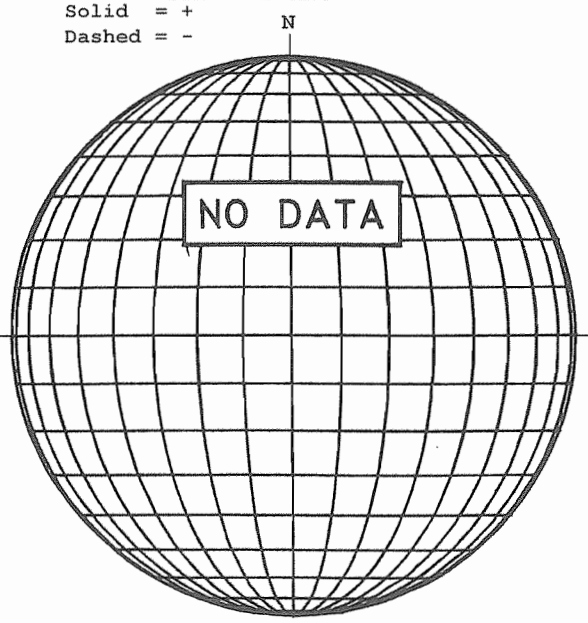
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

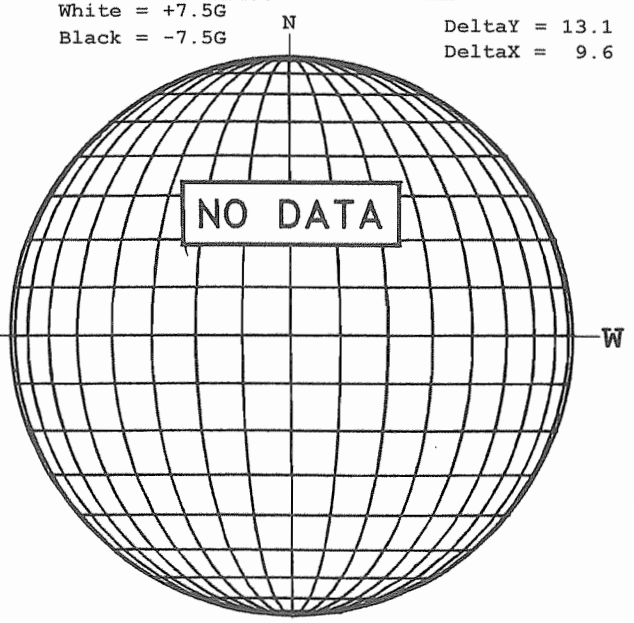
Solid = +
Dashed = -



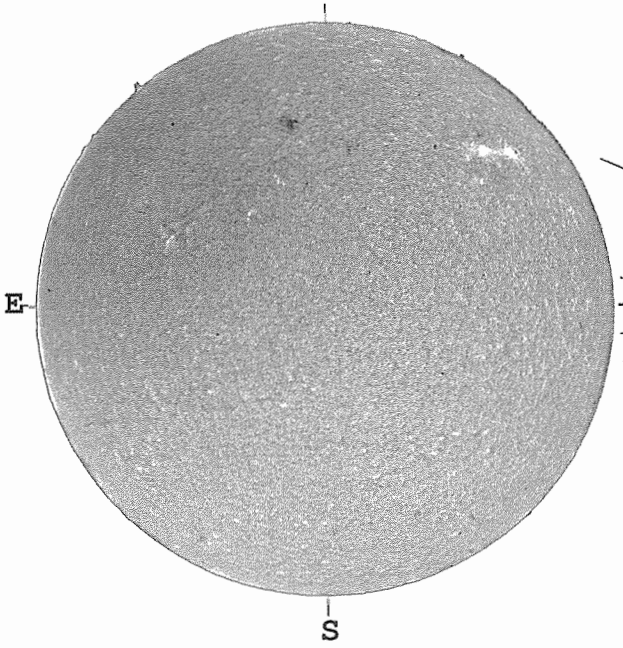
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

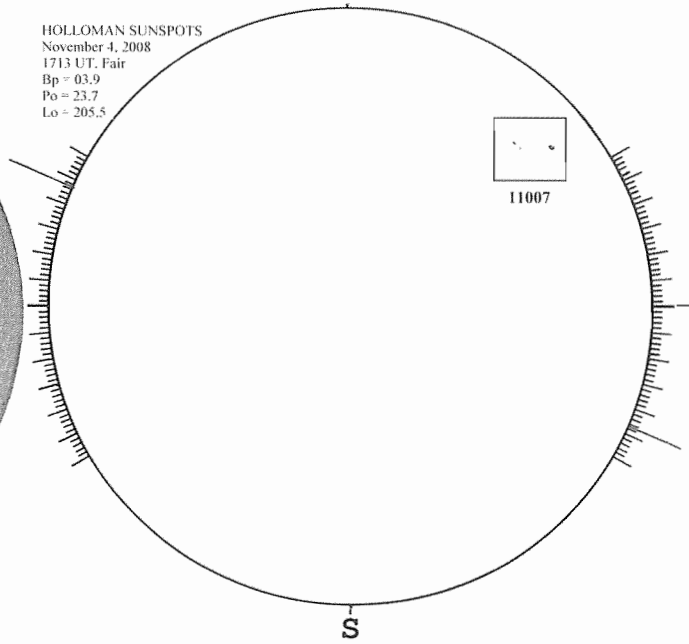


BIG BEAR H-ALPHA



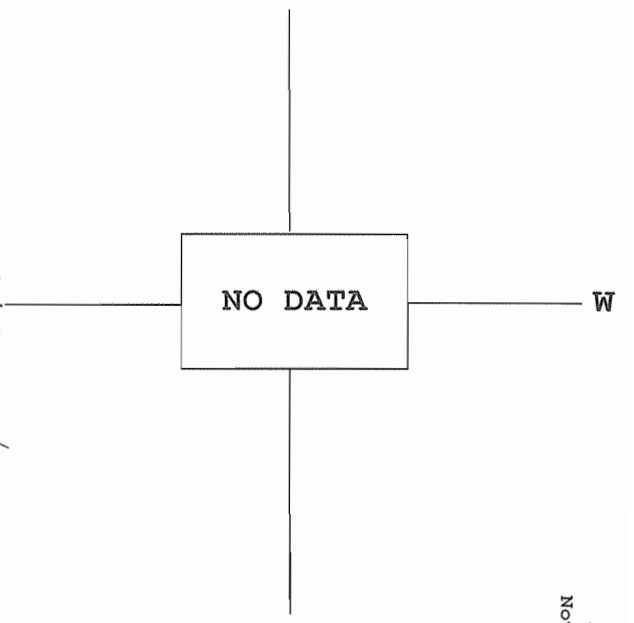
1847 UT

HOLLOMAN SUNSPOTS



1713 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



45
Nov 08

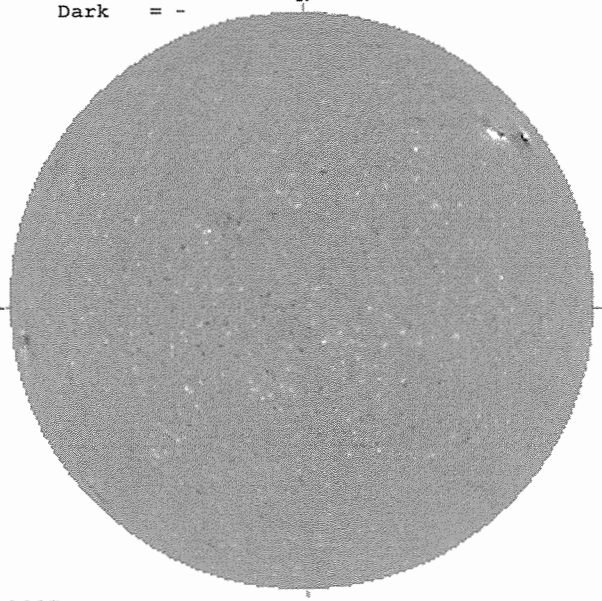
November 05, 2008 (P= 23.70, Bo= 3.94, Lo= 201.56)

Nov 08 46

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

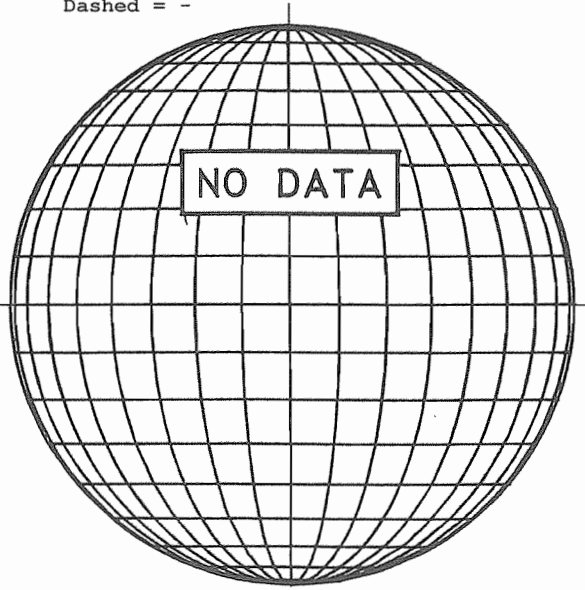
** 854.2NM **



2027 UT

STANFORD MAGNETOGRAM

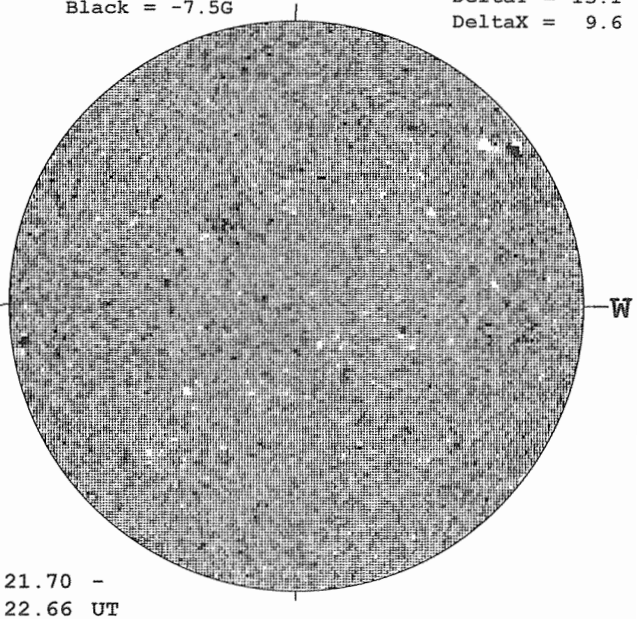
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

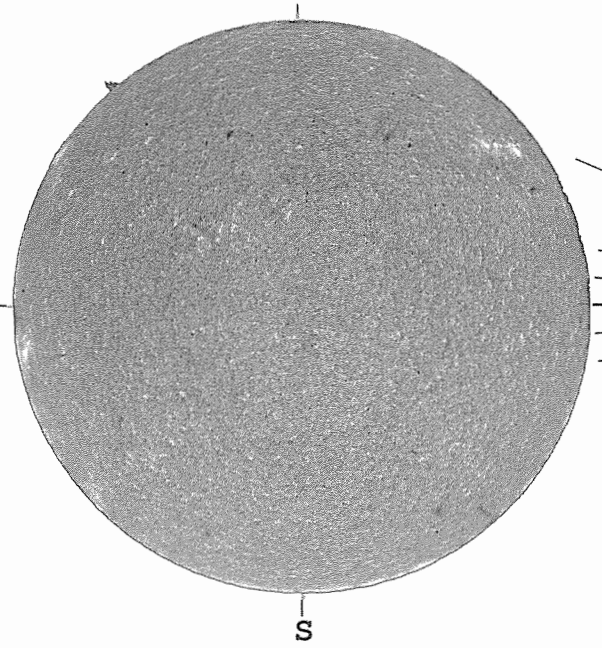
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



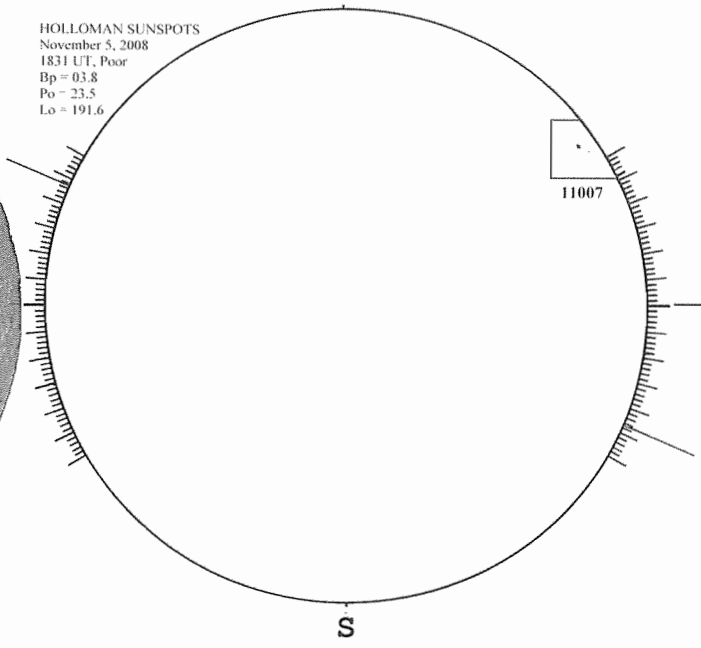
21.70 -
22.66 UT

BIG BEAR H-ALPHA



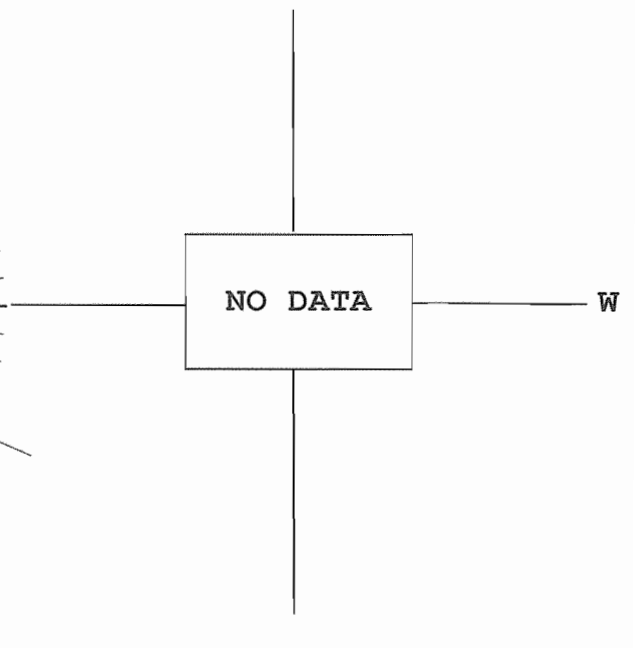
1728 UT

HOLLOMAN SUNSPOTS



1831 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

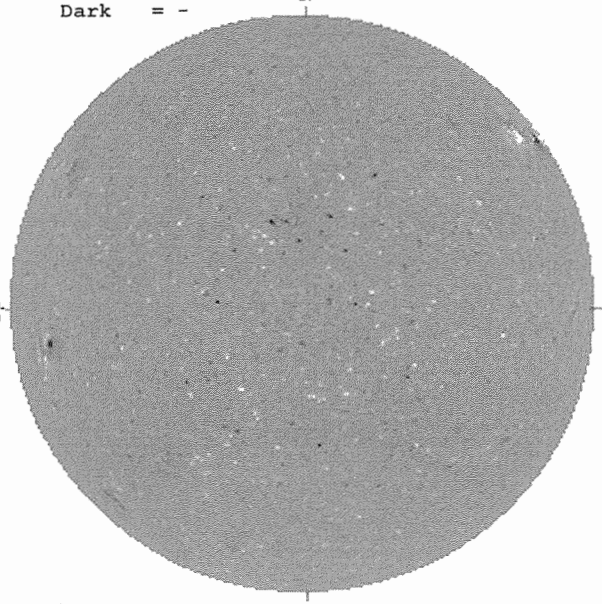


November 06, 2008 (P= 23.50, Bo= 3.83, Lo= 188.38)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

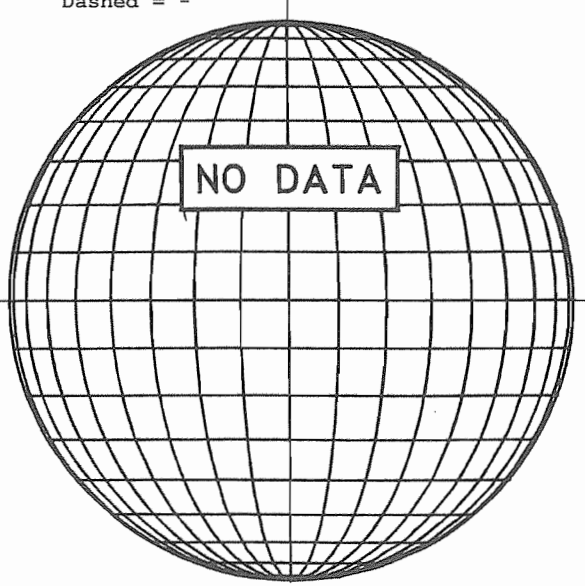
** 854.2NM **



1711 UT

STANFORD MAGNETOGRAM

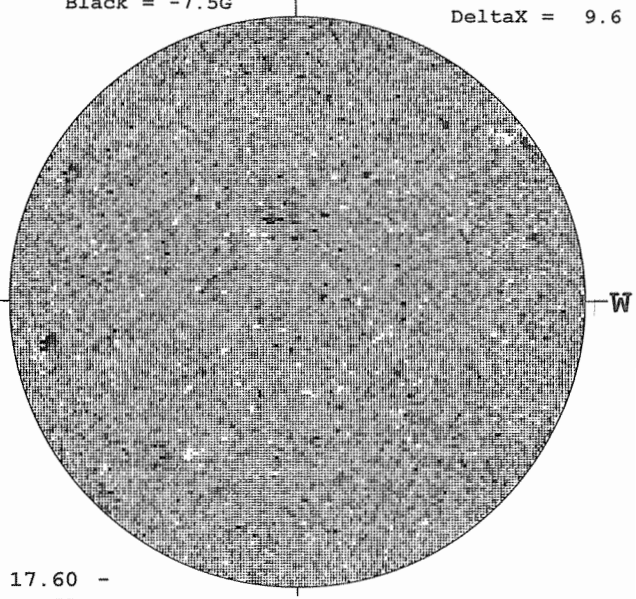
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

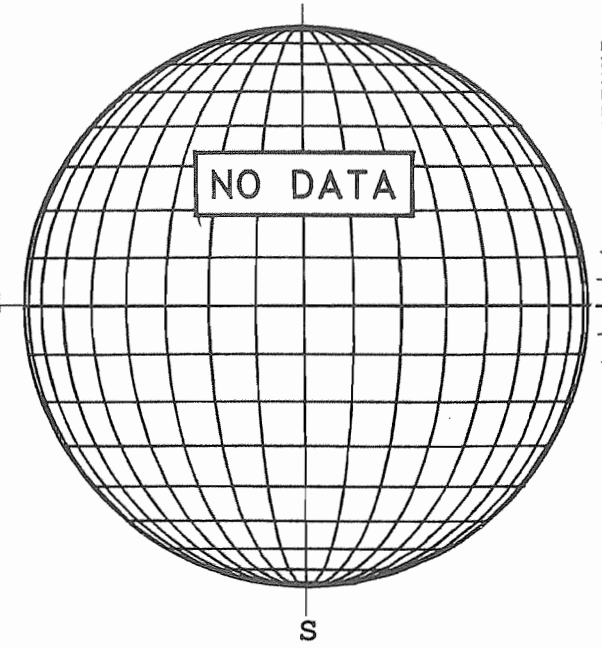
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



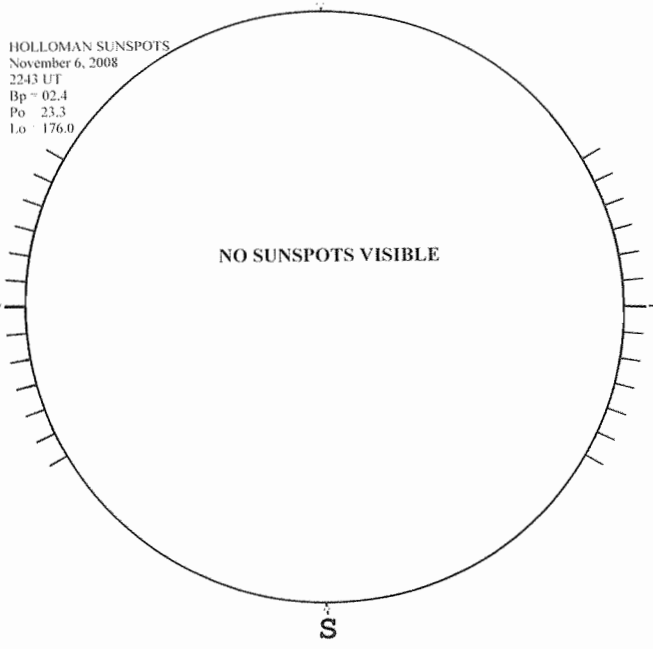
17.60 -
18.55 UT

BIG BEAR H-ALPHA

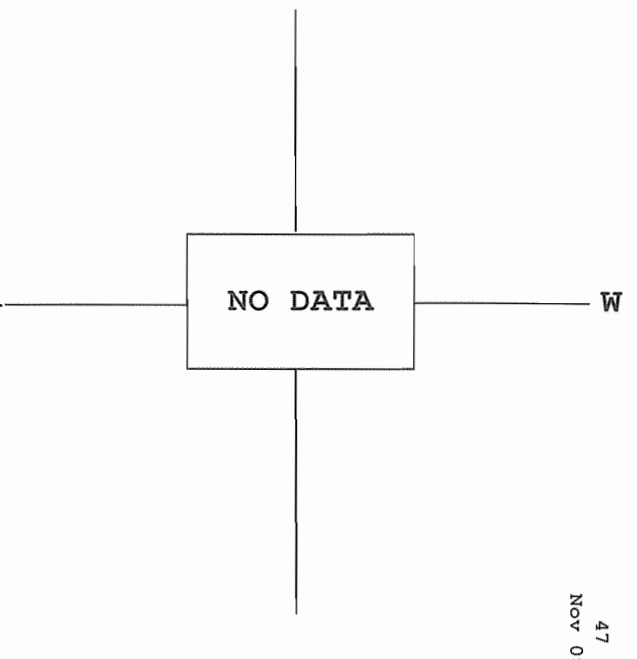


2243 UT

HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



47 Nov 08

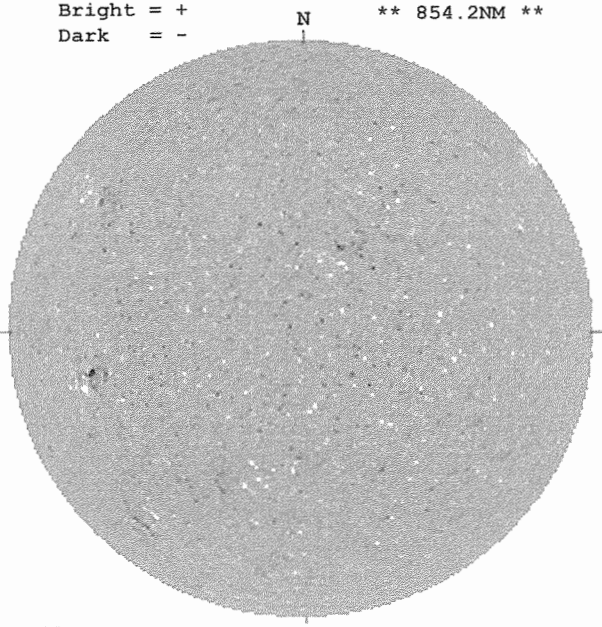
November 07, 2008 (P= 23.29, Bo= 3.72, Lo= 175.19)

Nov 08 48

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

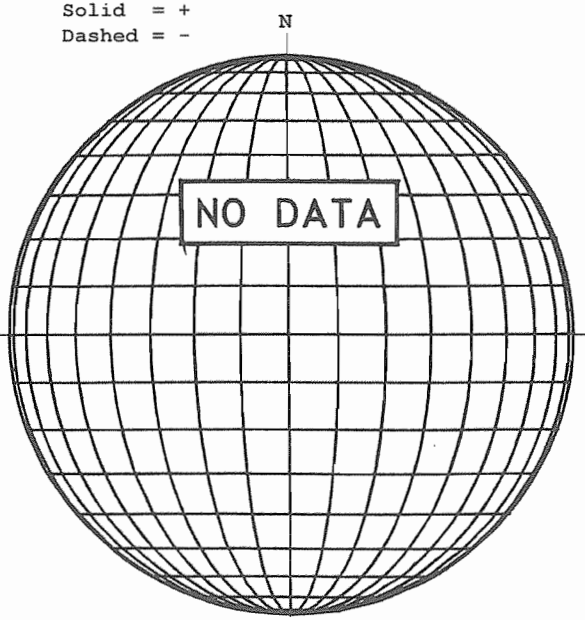
** 854.2NM **



1847 UT

STANFORD MAGNETOGRAM

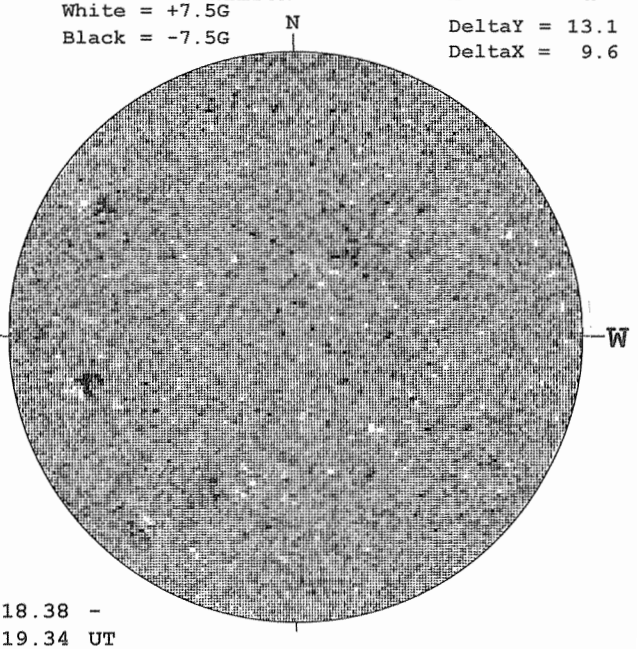
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

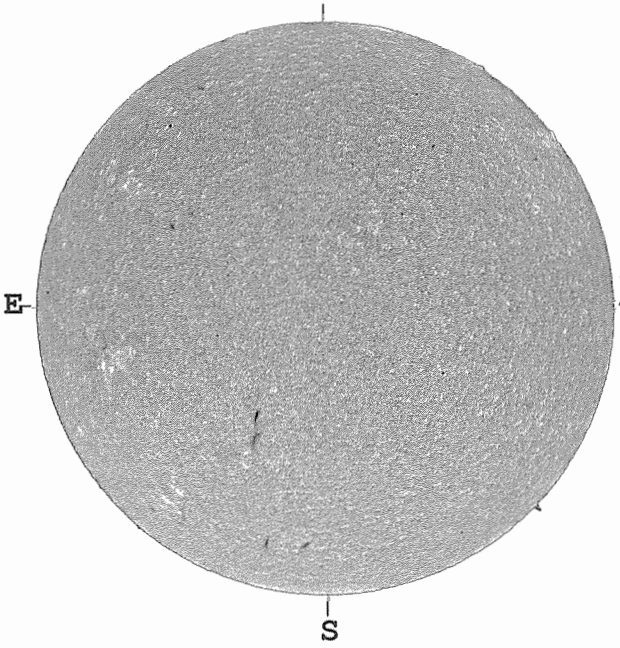
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



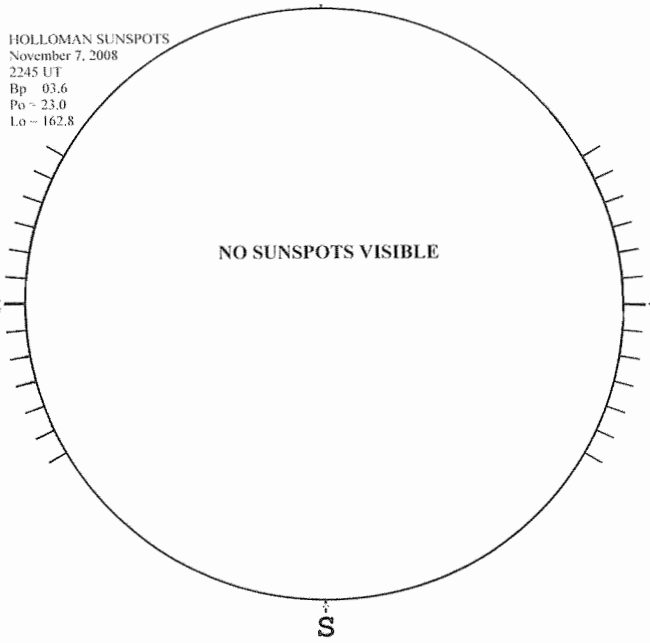
18.38 -
19.34 UT

BIG BEAR H-ALPHA



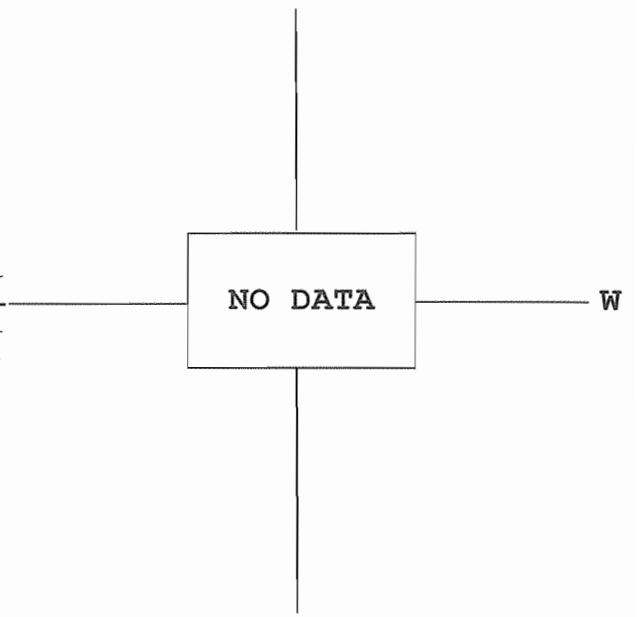
1737 UT

HOLLOMAN SUNSPOTS



2245 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

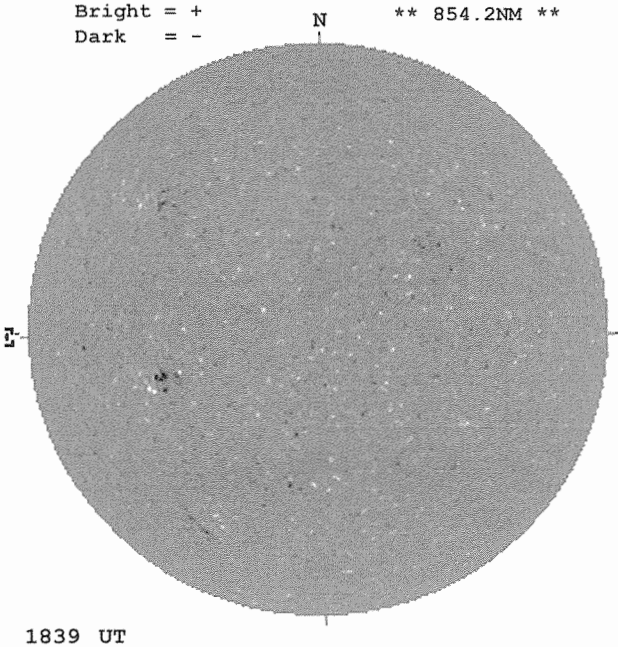


November 08, 2008 (P= 23.07, Bo= 3.61, Lo= 162.01)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

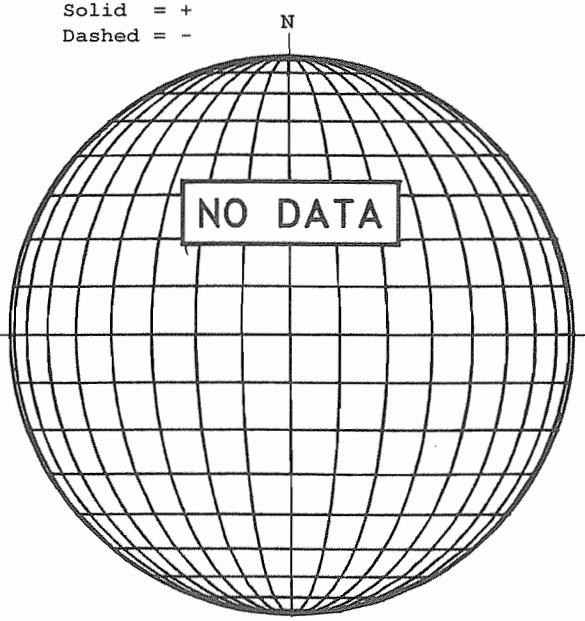
** 854.2NM **



1839 UT

STANFORD MAGNETOGRAM

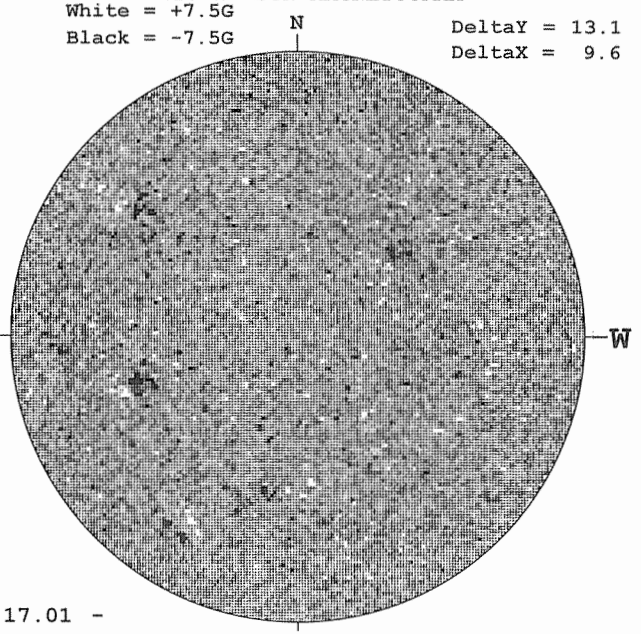
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

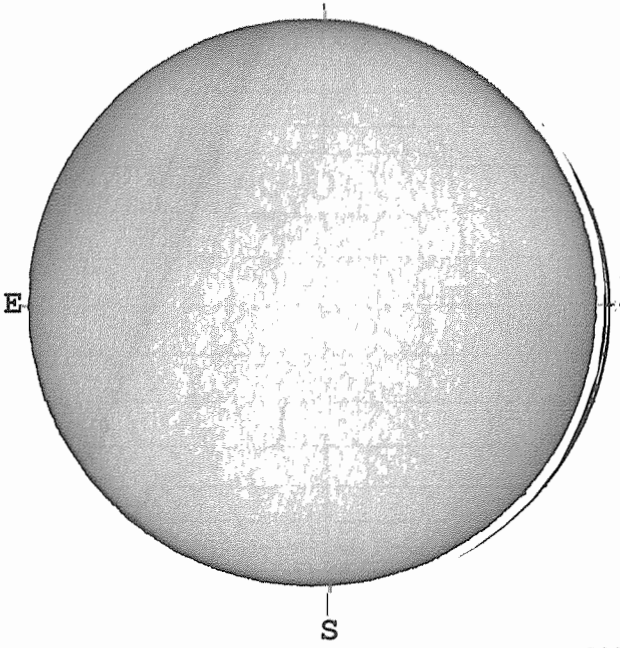
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



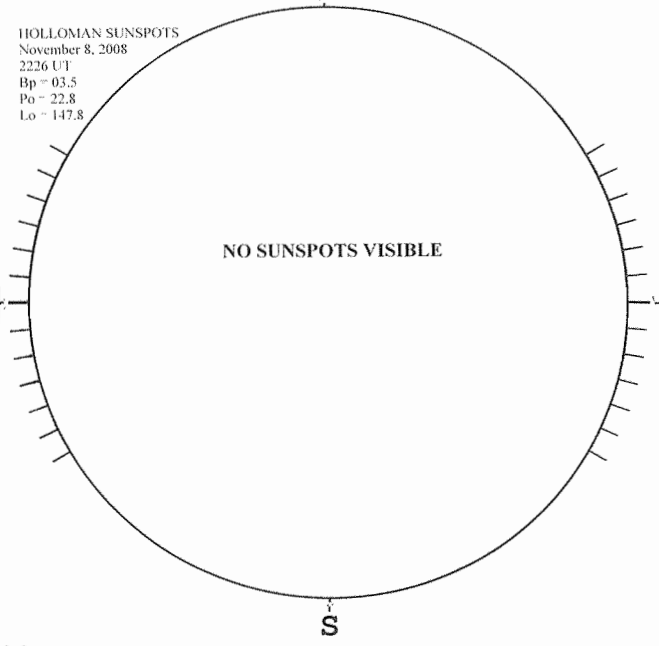
17.01 -
17.97 UT

MEUDON H-ALPHA



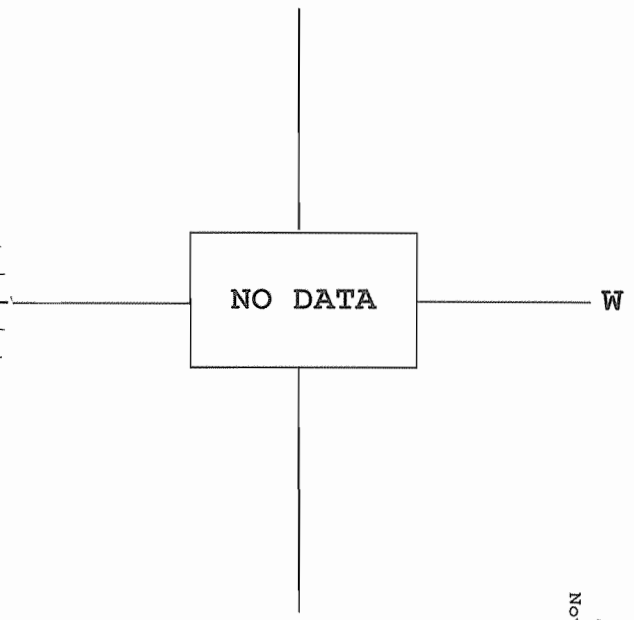
0822 UT

HOLLOMAN SUNSPOTS



2226 UT

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



Nov 08 49

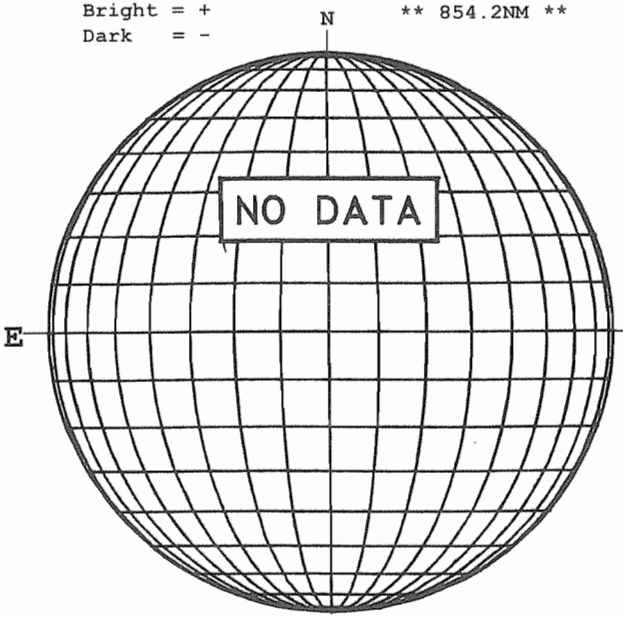
November 09, 2008 (P= 22.84, Bo= 3.50, Lo= 148.82)

Nov 08 50

KITT PEAK MAGNETOGRAM -- SOLIS

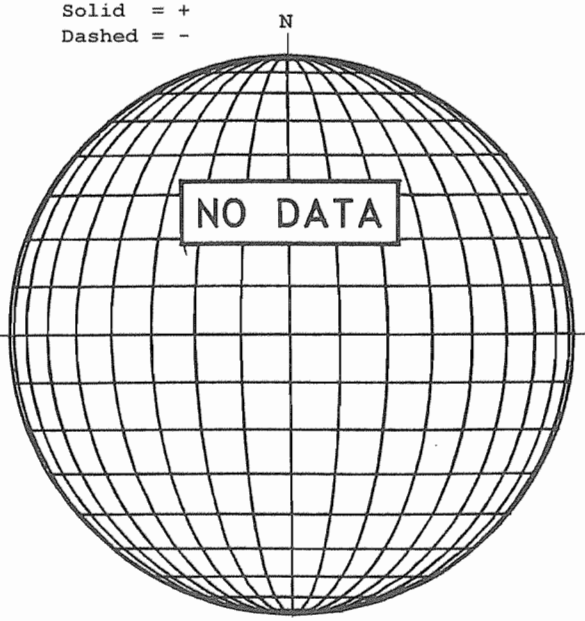
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

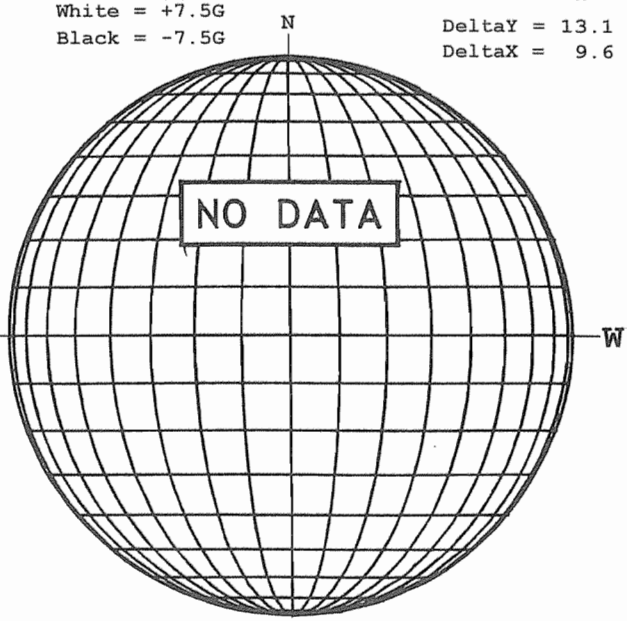
Solid = +
Dashed = -



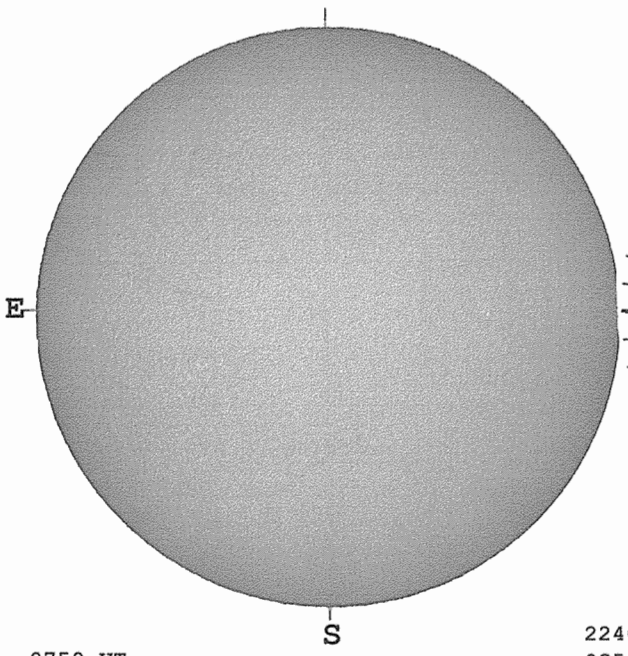
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

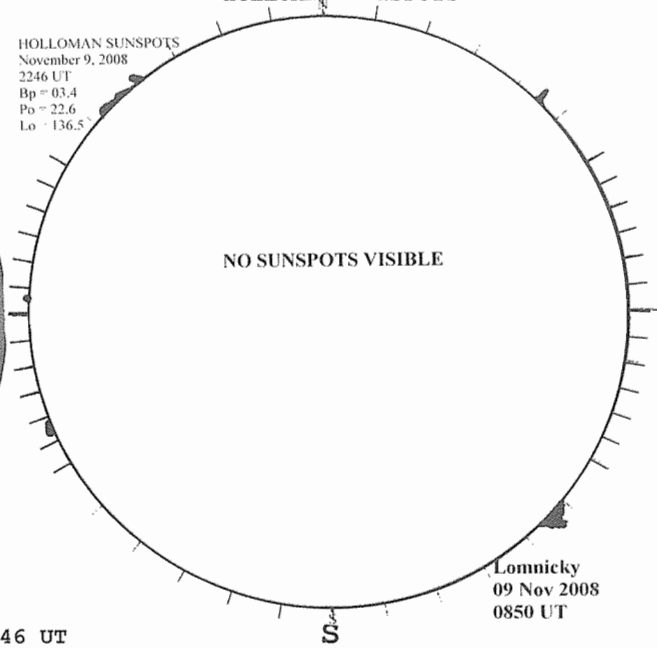


--- KANZELHOHE H-ALPHA



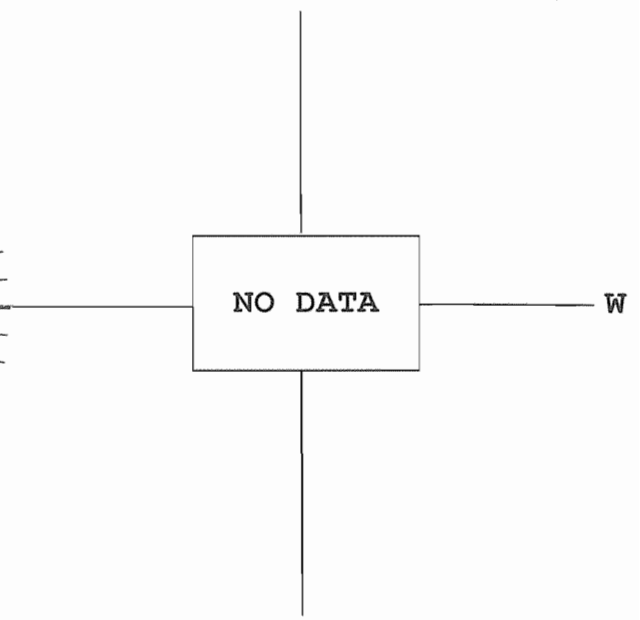
0750 UT

HOLLOMAN SUNSPOTS



2246 UT
0850 UT LOMN PROM

SACRAMENTO PEAK CORONA (1.15 Radii) ----

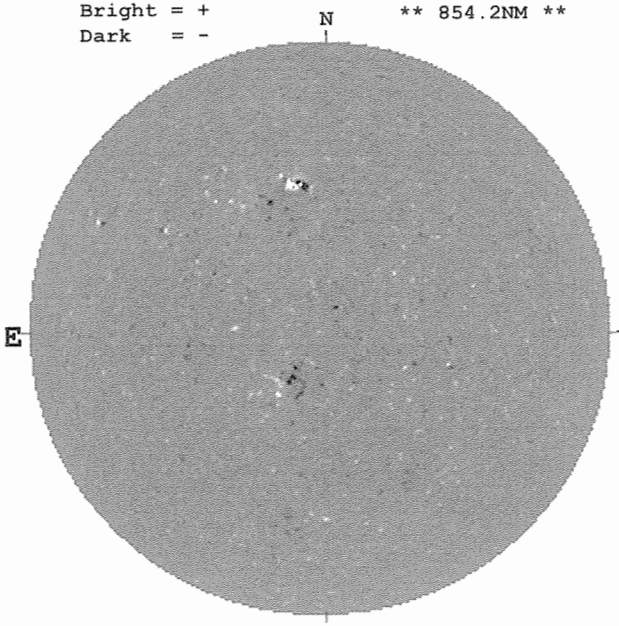


November 10, 2008 (P= 22.60, Bo= 3.39, Lo= 135.64)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

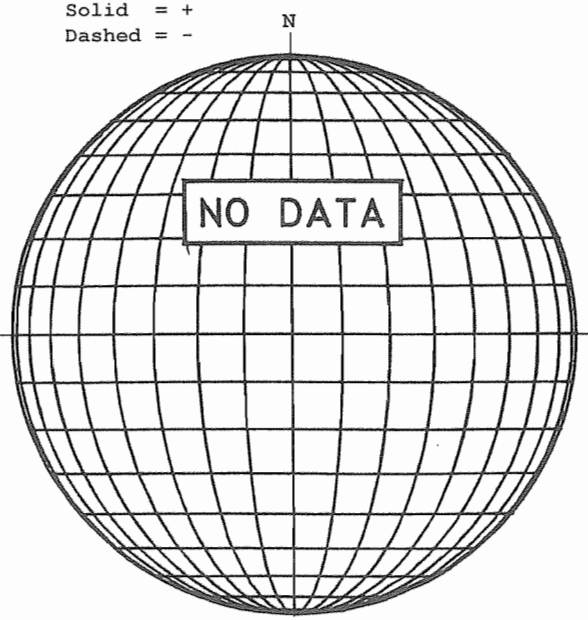
** 854.2NM **



1946 UT

STANFORD MAGNETOGRAM

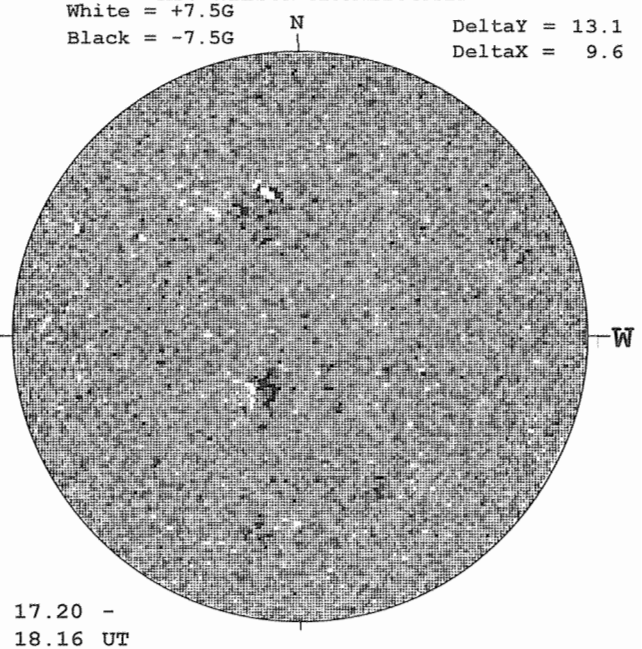
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

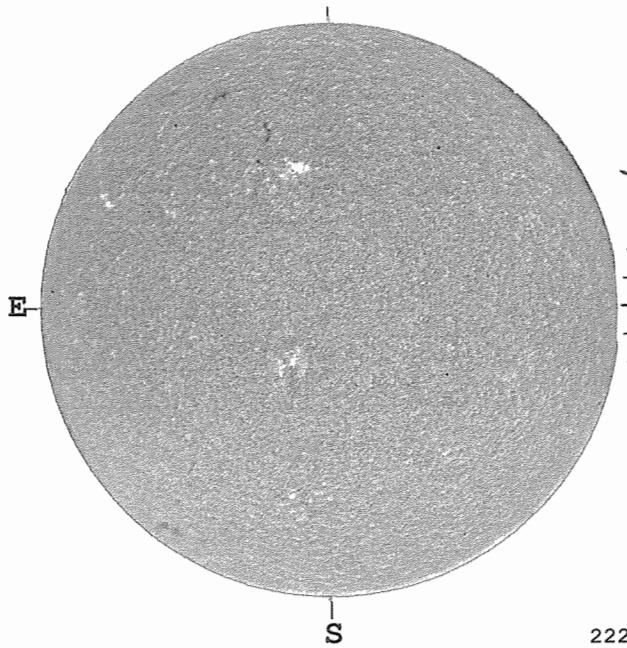
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



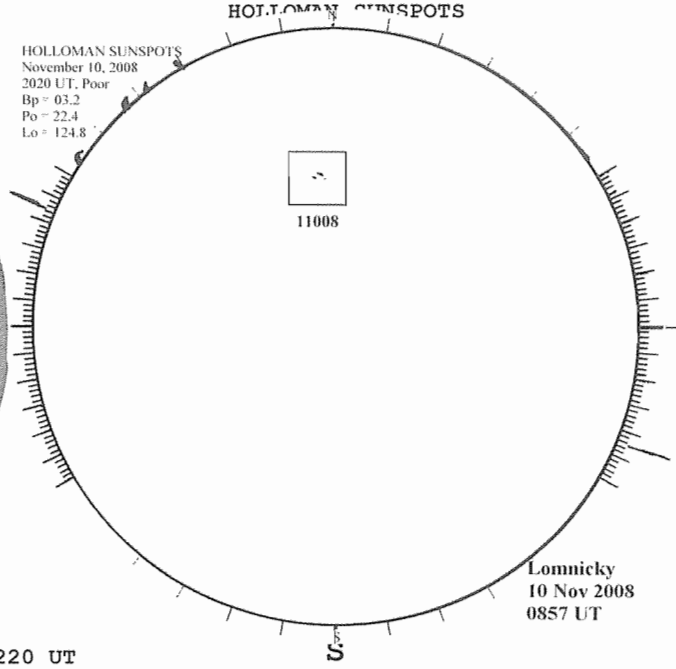
17.20 -
18.16 UT

BIG BEAR H-ALPHA



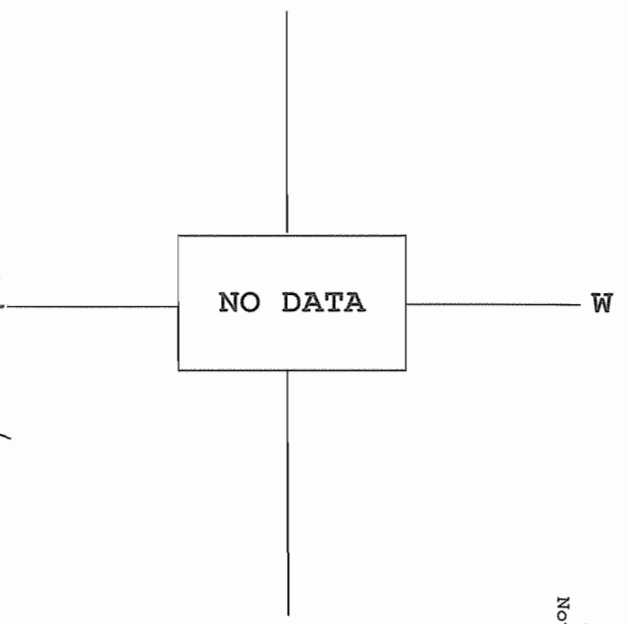
1713 UT

HOLLOMAN SUNSPOTS



2220 UT
0857 UT LOMN PROM

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

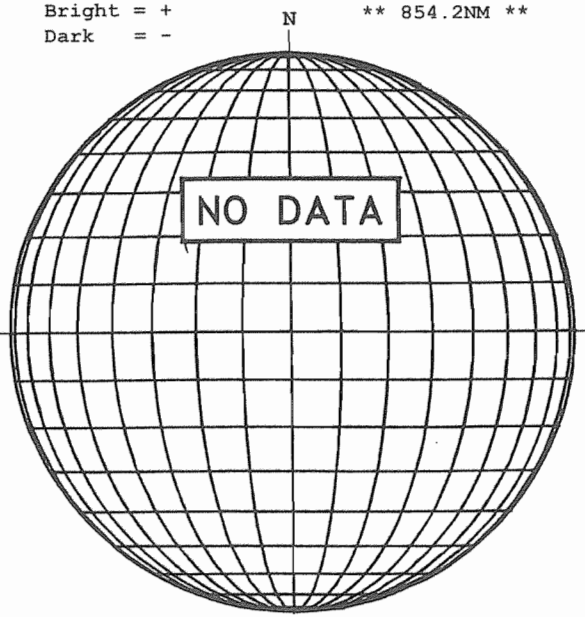


51
Nov 08

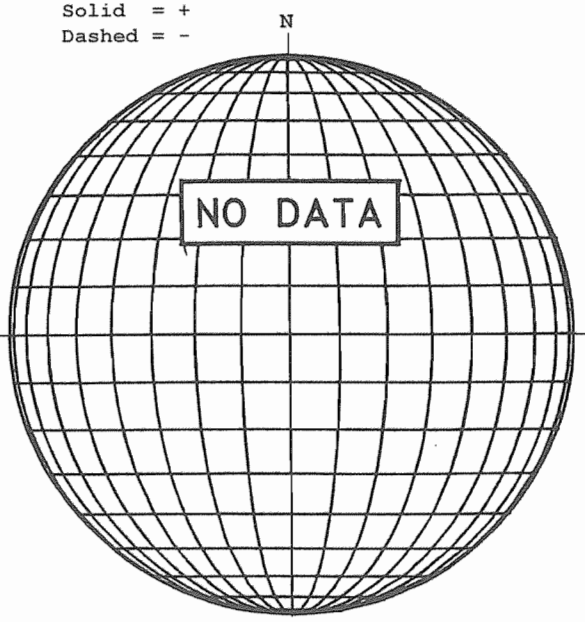
November 11, 2008 (P= 22.36, Bo= 3.28, Lo= 122.46)

Nov 08 52

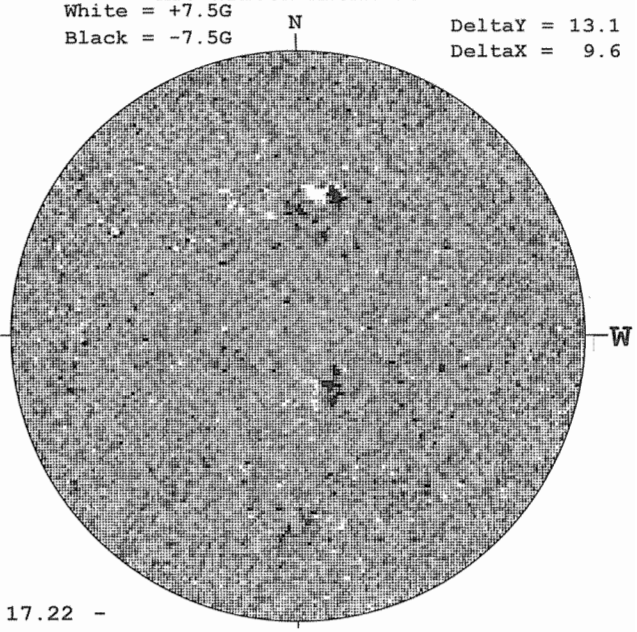
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



STANFORD MAGNETOGRAM
Solid = +
Dashed = -

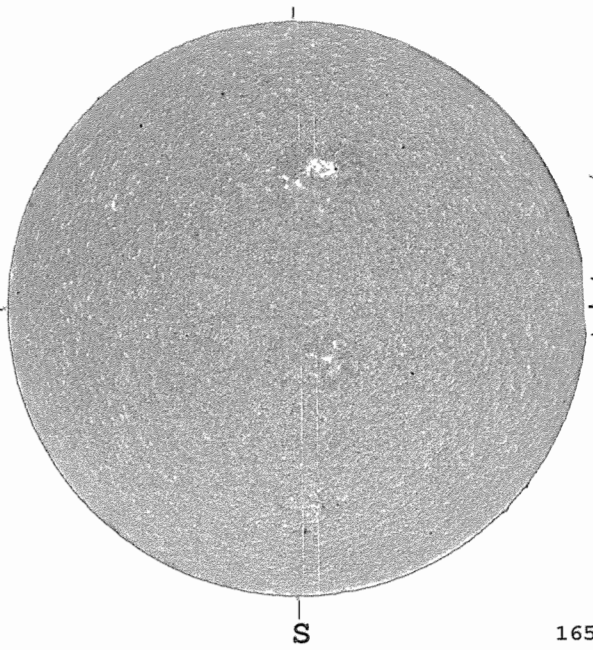


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



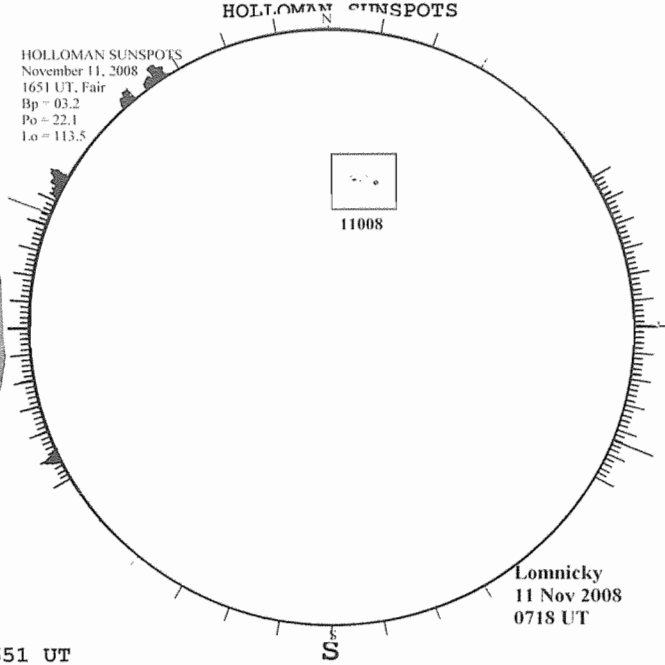
17.22 -
18.19 UT

BIG BEAR H-ALPHA



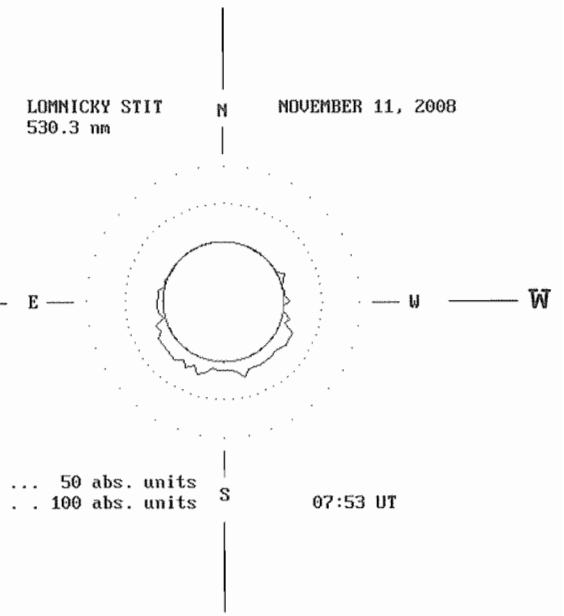
1713 UT

HOLLOMAN SUNSPOTS



1651 UT
0718 UT LOMN PROM

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

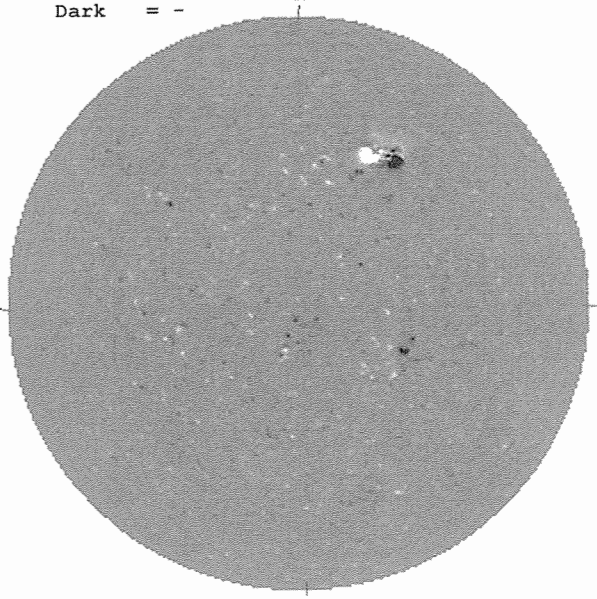


November 12, 2008 (P= 22.11, Bo= 3.16, Lo= 109.27)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

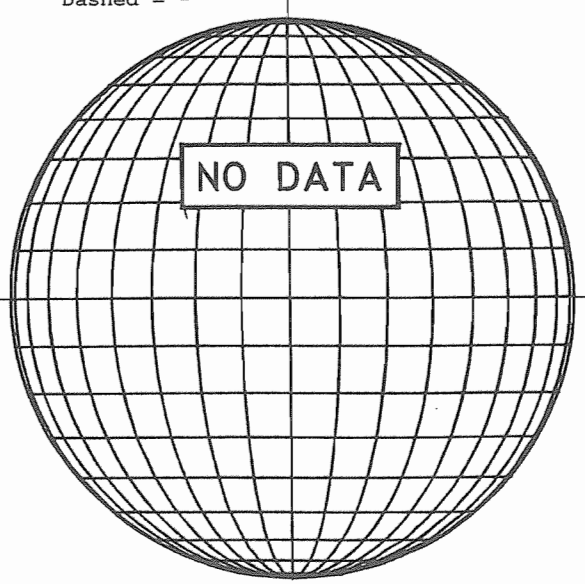
** 854.2NM **



1857 UT

STANFORD MAGNETOGRAM

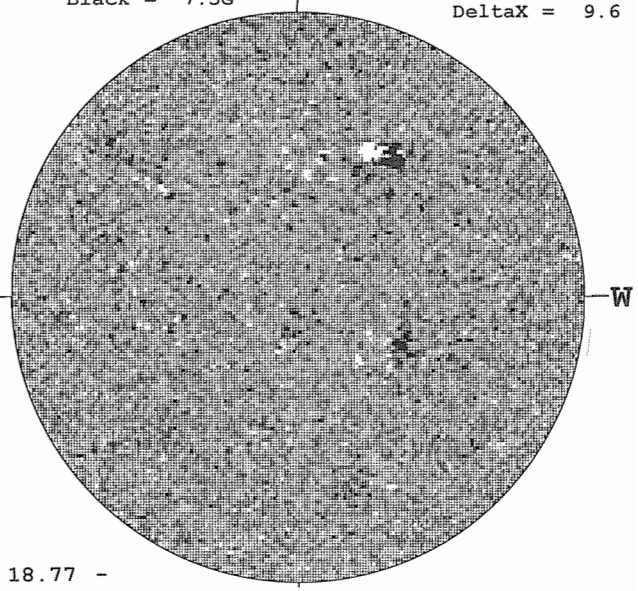
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

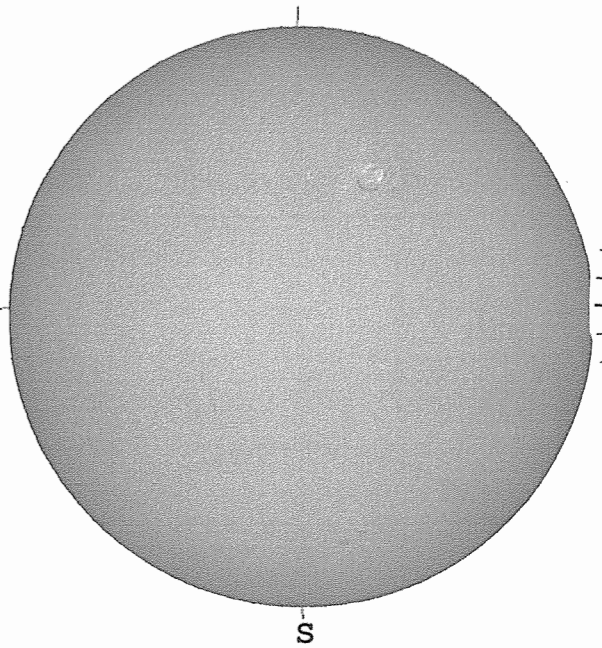
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



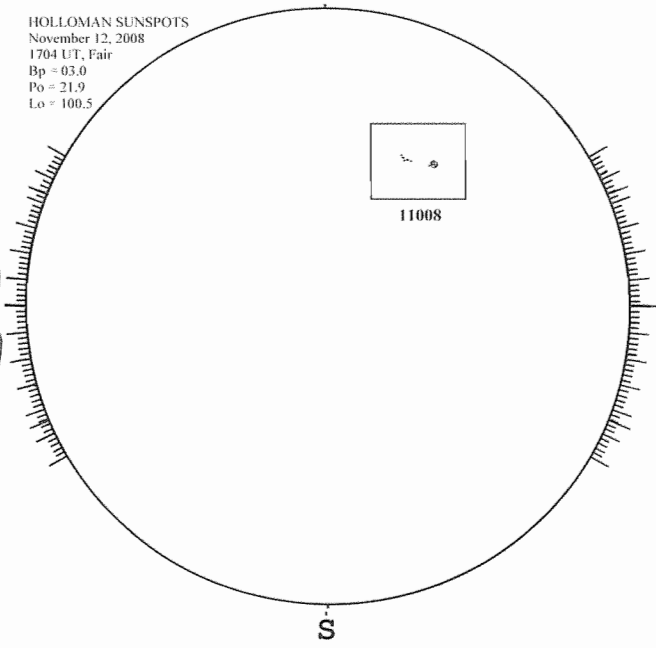
18.77 -
19.74 UT

KANZELHOHE H-ALPHA



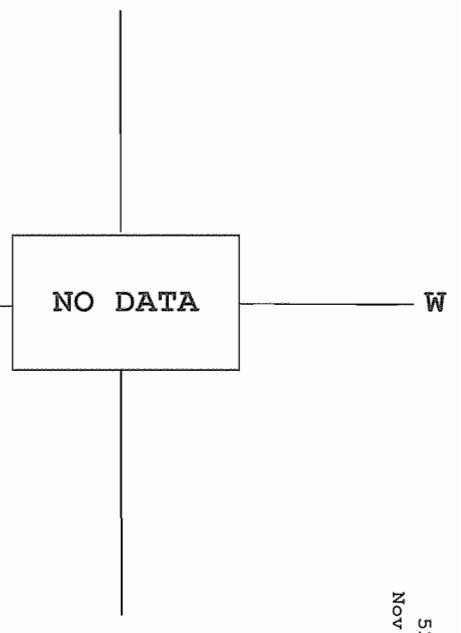
1110 UT

HOLLOMAN SUNSPOTS



1704 UT

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



53
Nov 08

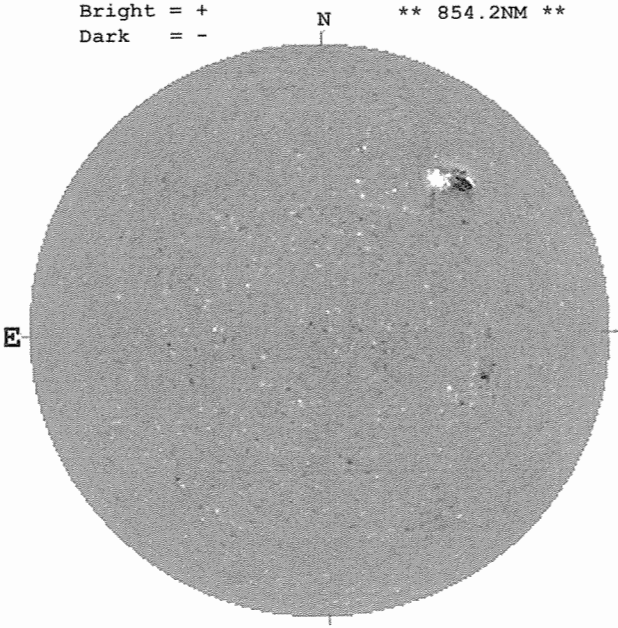
November 13, 2008 (P= 21.85, Bo= 3.05, Lo= 96.09)

Nov 08 54

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

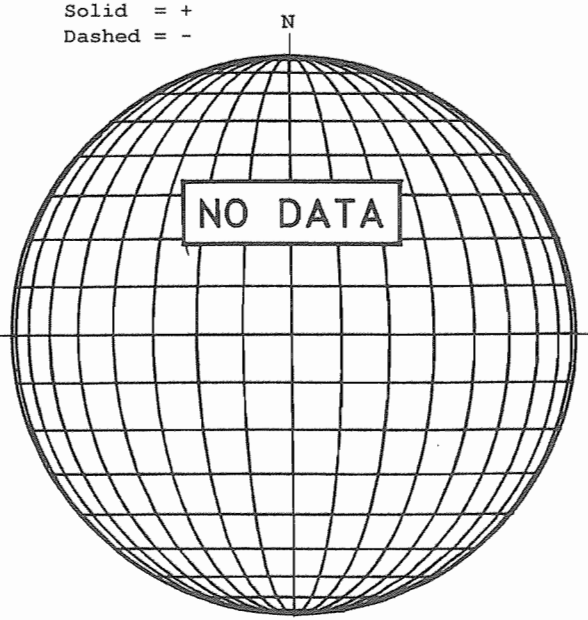
** 854.2NM **



1856 UT

STANFORD MAGNETOGRAM

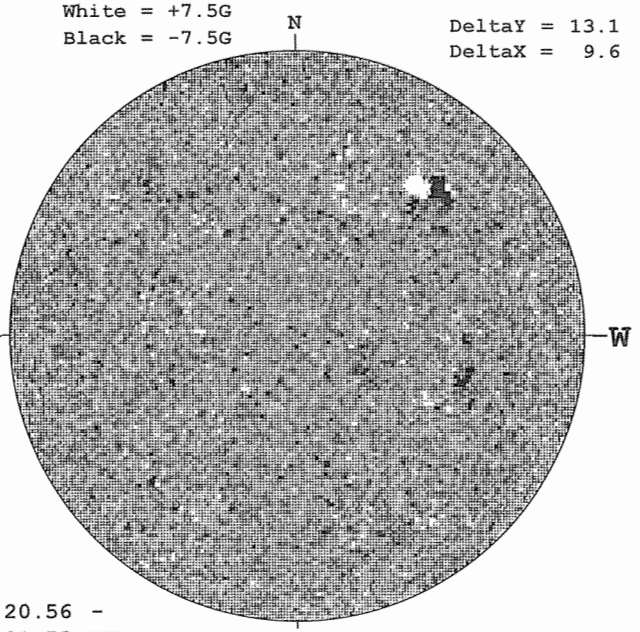
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

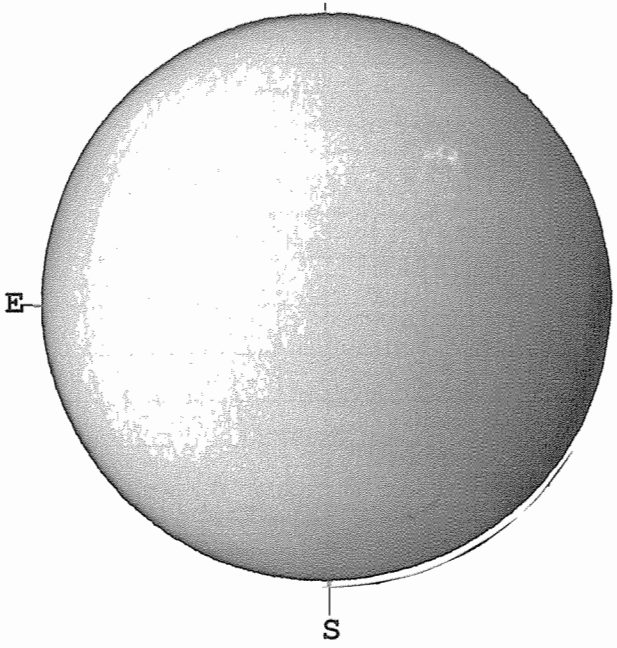
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



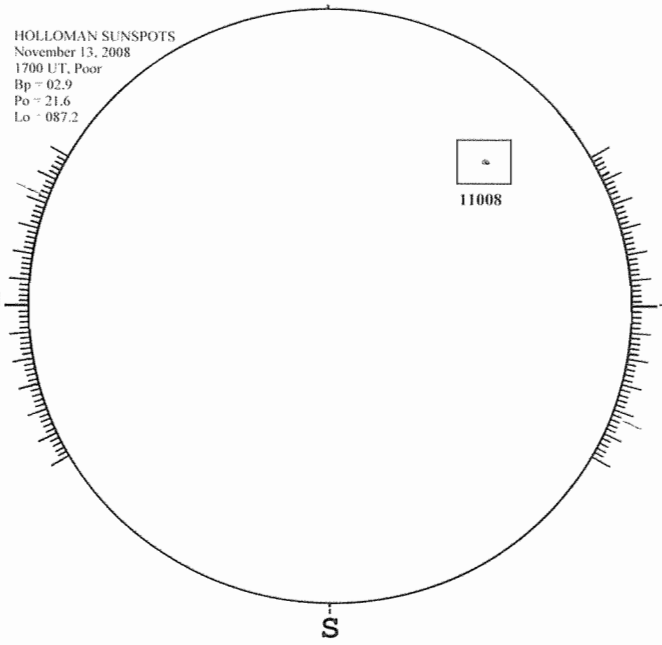
20.56 -
21.53 UT

--- MEUDON H-ALPHA



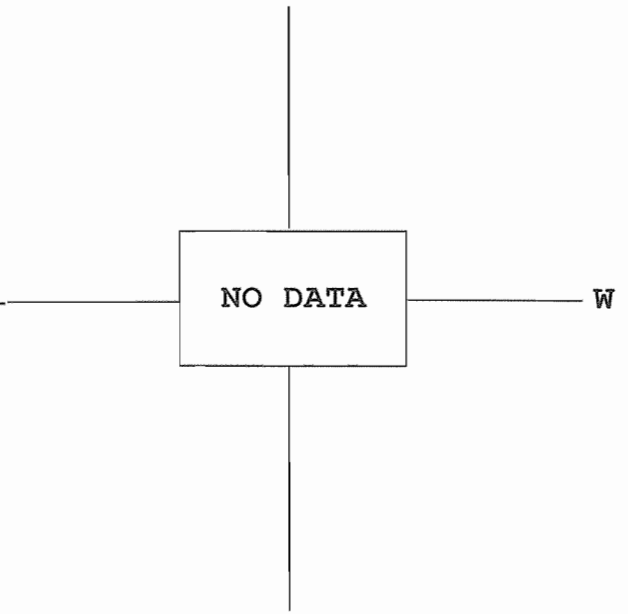
1234 UT

HOLLOMAN SUNSPOTS



1700 UT

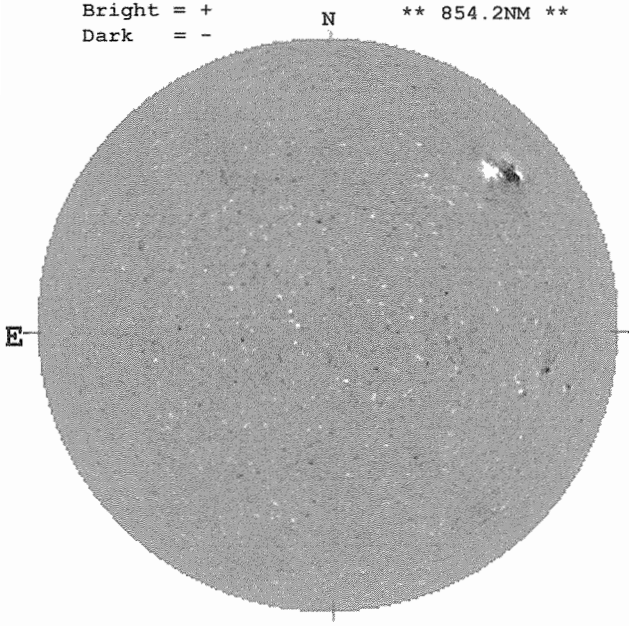
SACRAMENTO PEAK CORONA (1.15 Radii) ----



November 14, 2008 (P= 21.58, Bo= 2.93, Lo= 82.90)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -



** 854.2NM **

2009 UT

STANFORD MAGNETOGRAM

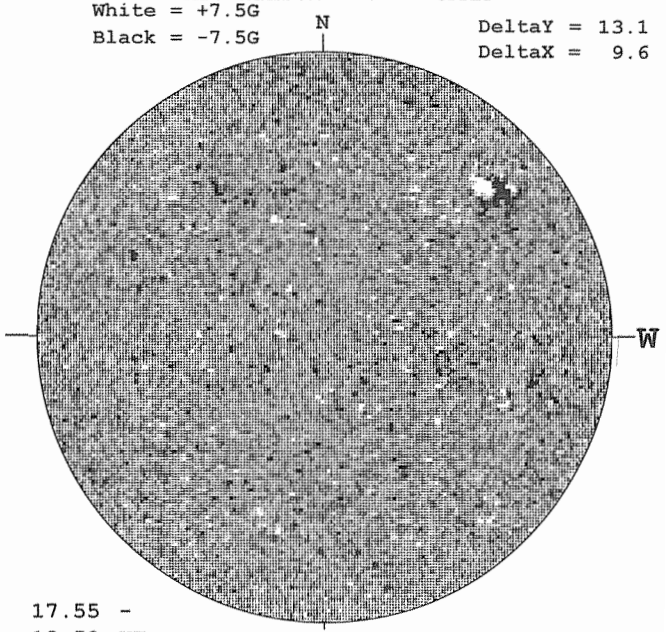
Solid = +
Dashed = -

1852 UT

MT. WILSON MAGNETOGRAM

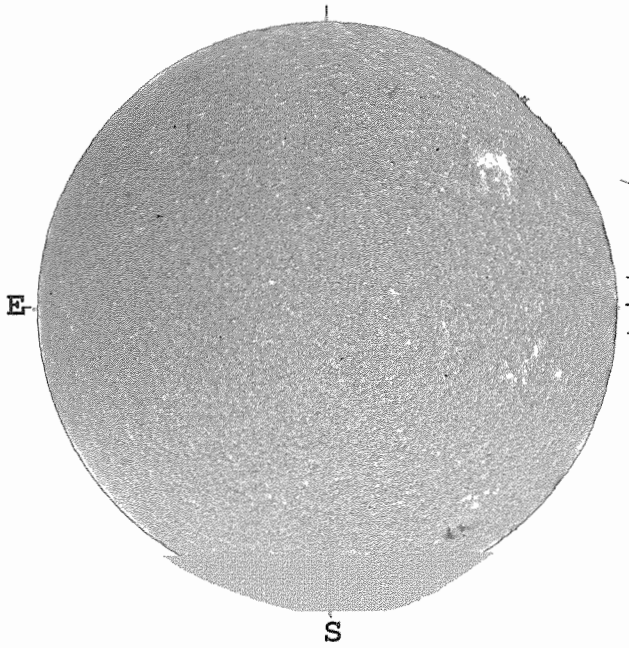
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



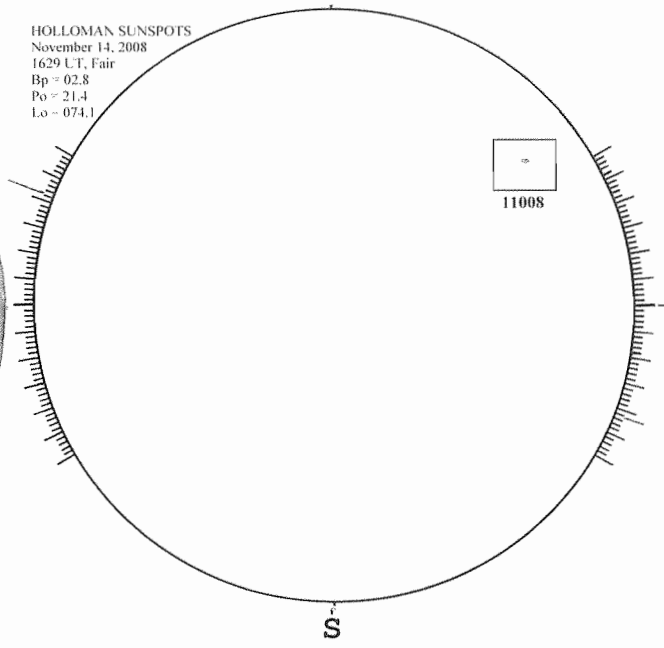
17.55 -
18.52 UT

BIG BEAR H-ALPHA



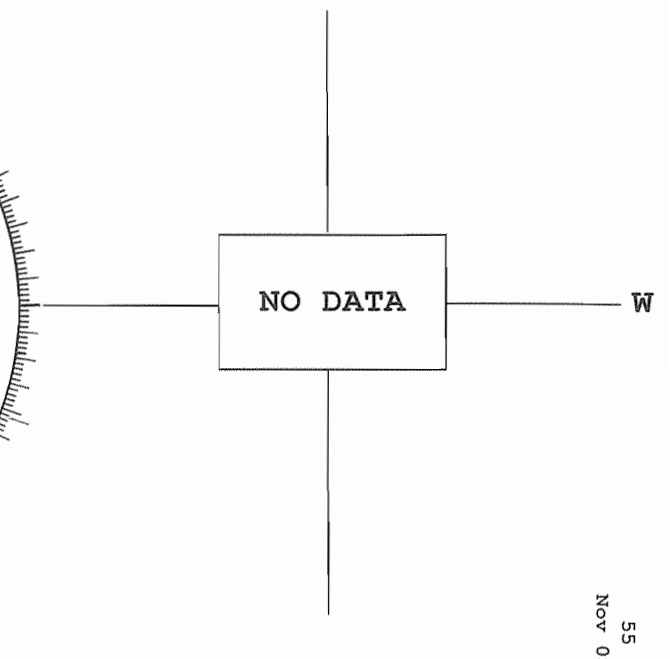
1654 UT

HOLLOMAN SUNSPOTS



1629 UT

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



55
Nov 08

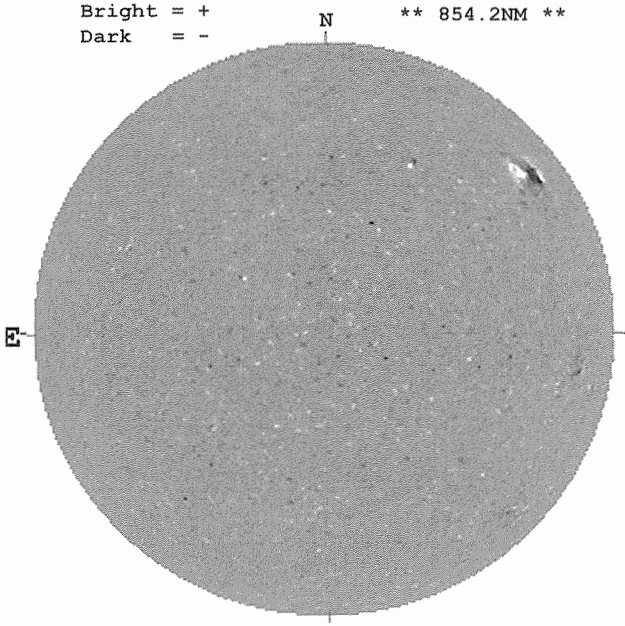
November 15, 2008 (P= 21.31, Bo= 2.81, Lo= 69.72)

Nov 08 56

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

** 854.2NM **



1748 UT

STANFORD MAGNETOGRAM

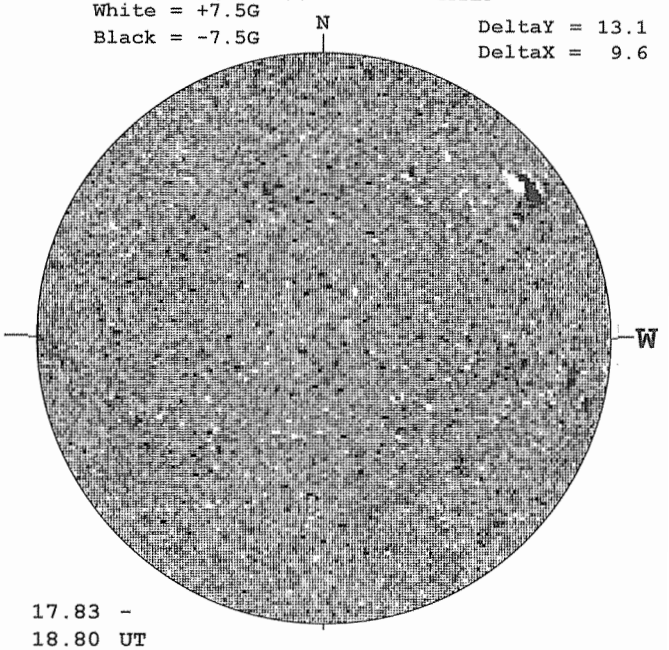
Solid = +
Dashed = -

1905 UT

MT. WILSON MAGNETOGRAM

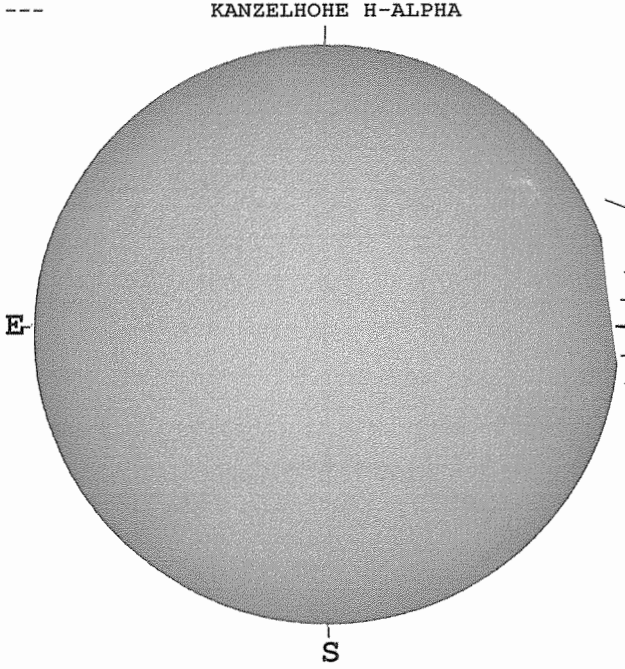
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



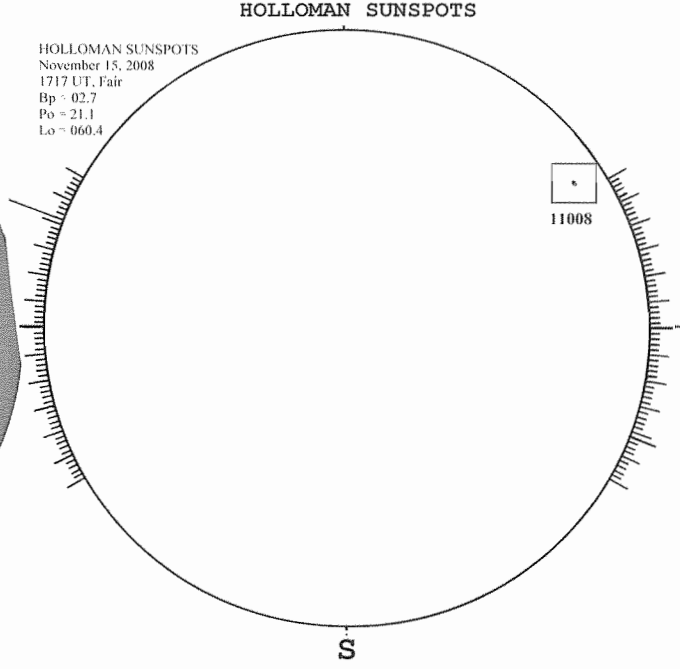
17.83 -
18.80 UT

KANZELHOHE H-ALPHA



1257 UT

HOLLOMAN SUNSPOTS



1717 UT

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

NO DATA

W

November 16, 2008 (P= 21.03, Bo= 2.70, Lo= 56.54)

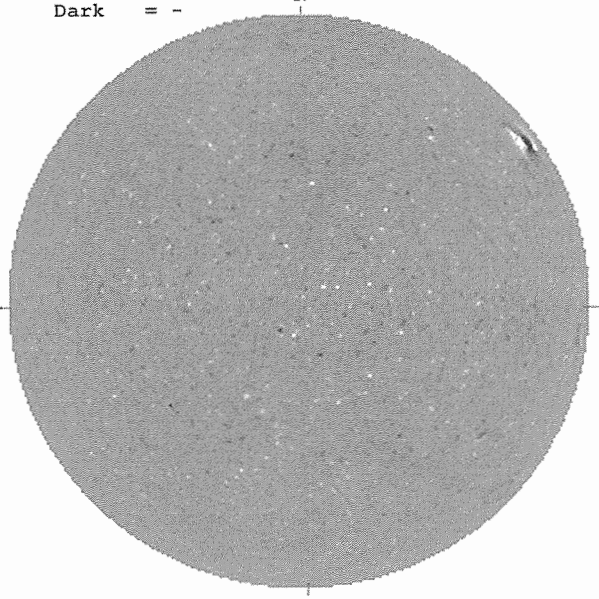
KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

N

** 854.2NM **

E



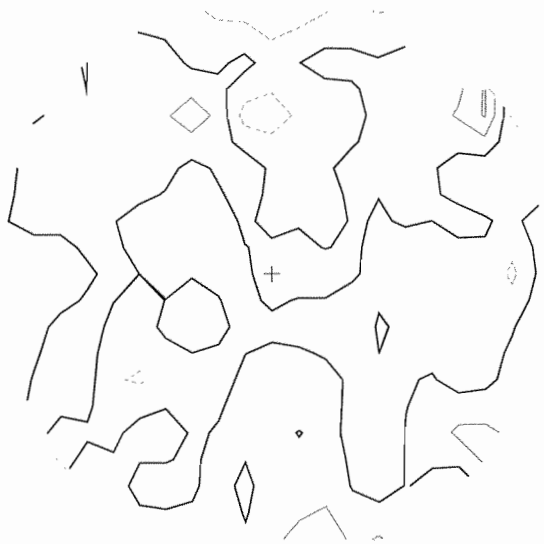
W

1730 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N



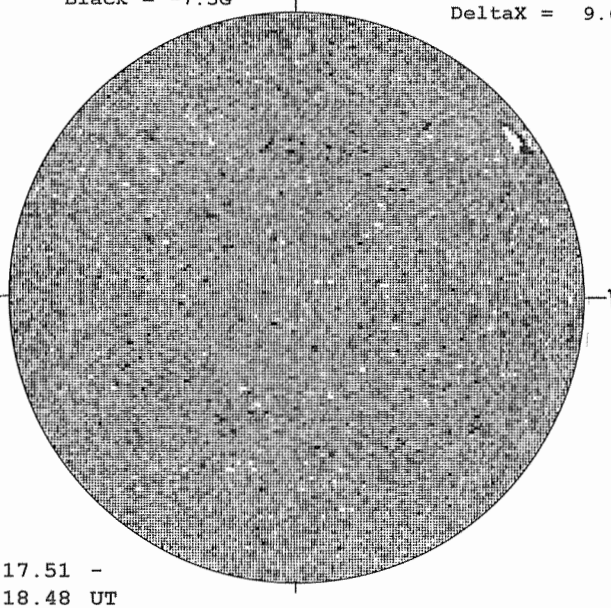
1923 UT

MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

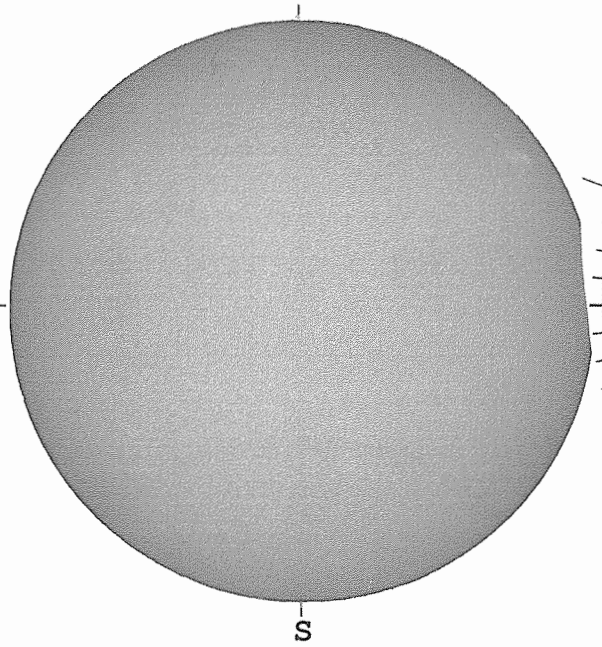
N

DeltaY = 13.1
DeltaX = 9.6



17.51 -
18.48 UT

KANZELHOHE H-ALPHA

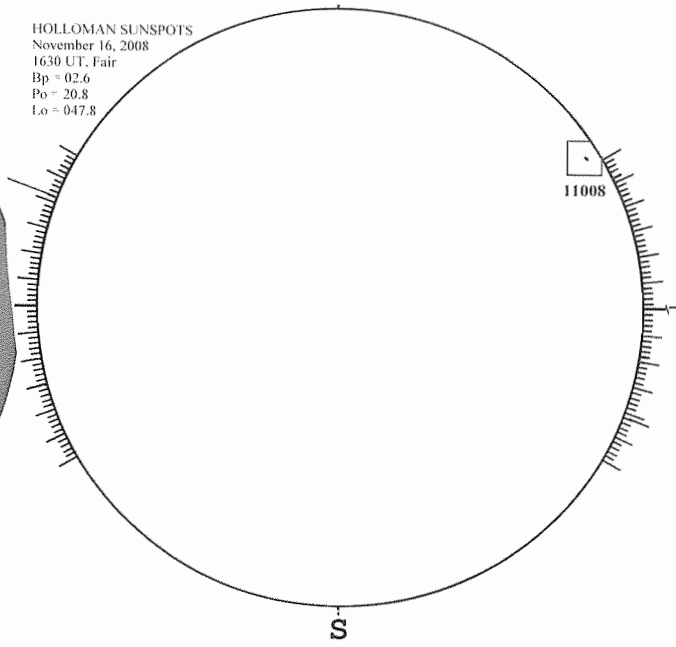


E

S

0806 UT

HOLLOMAN SUNSPOTS



S

1630 UT

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

NO DATA

W

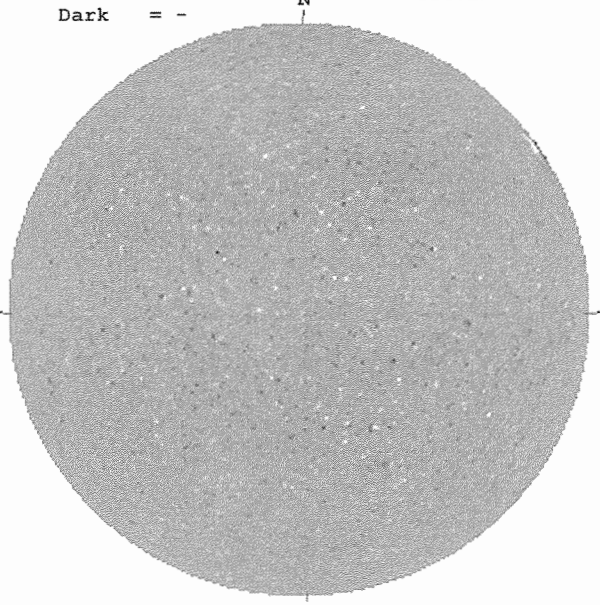
57
Nov 08

November 17, 2008 (P= 20.74, Bo= 2.58, Lo= 43.36)

Nov 08 58

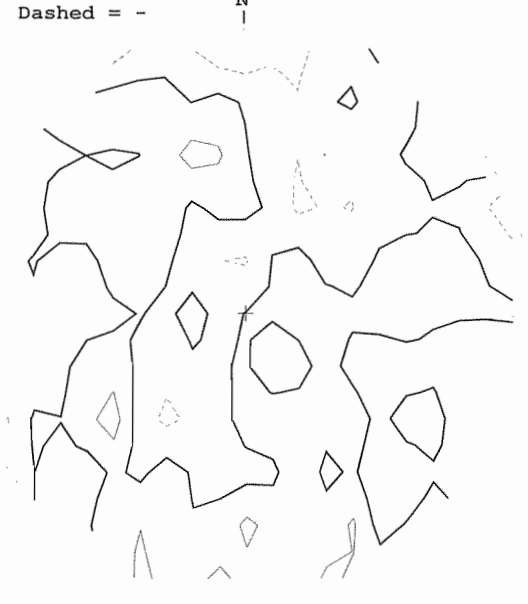
KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -



STANFORD MAGNETOGRAM

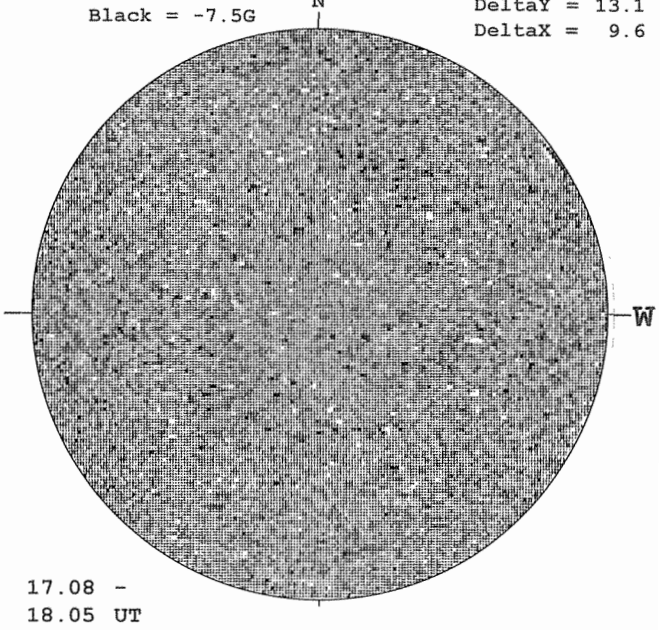
Solid = +
Dashed = -



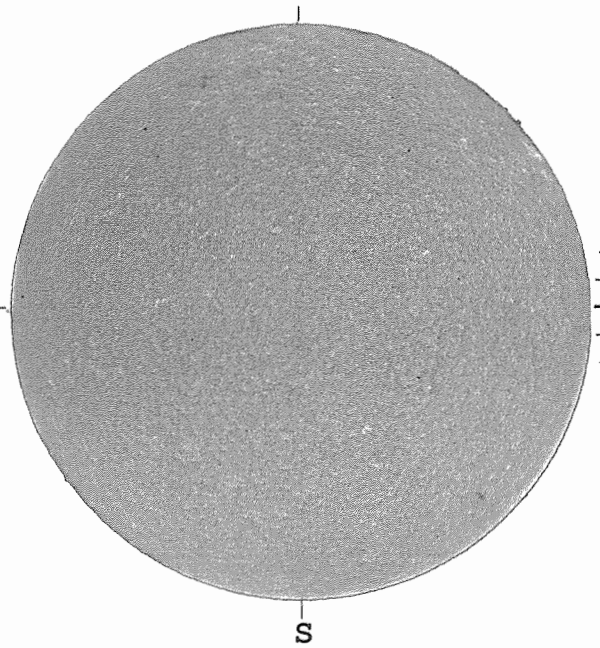
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

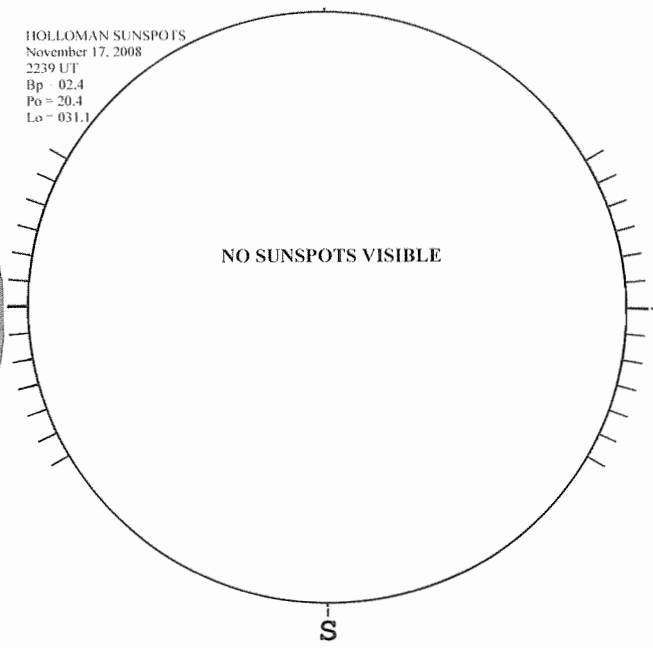
DeltaY = 13.1
DeltaX = 9.6



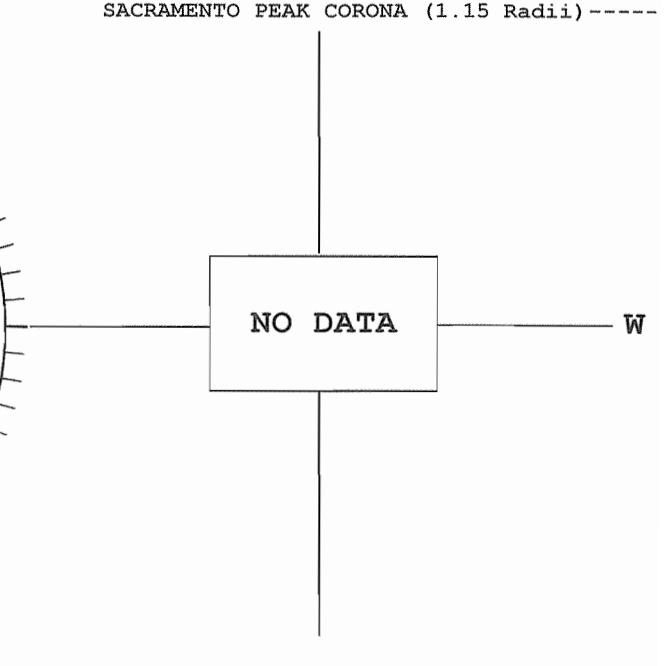
--- BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



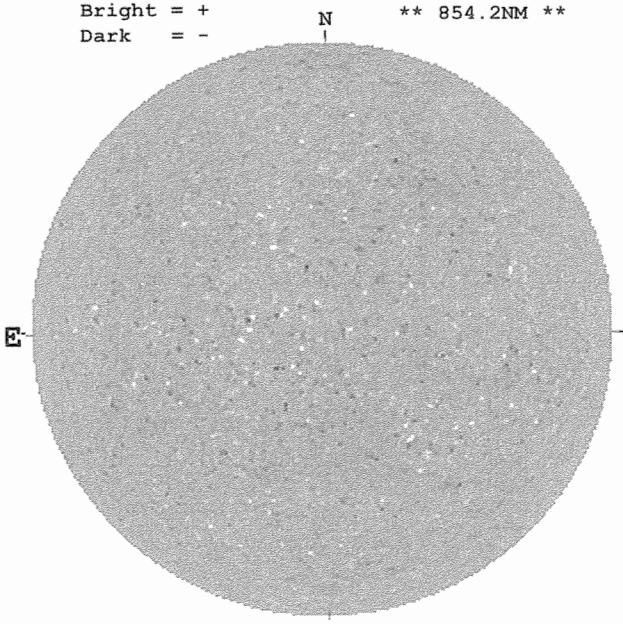
SACRAMENTO PEAK CORONA (1.15 Radii) -----



November 18, 2008 (P= 20.45, Bo= 2.46, Lo= 30.17)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -



** 854.2NM **

1849 UT

STANFORD MAGNETOGRAM

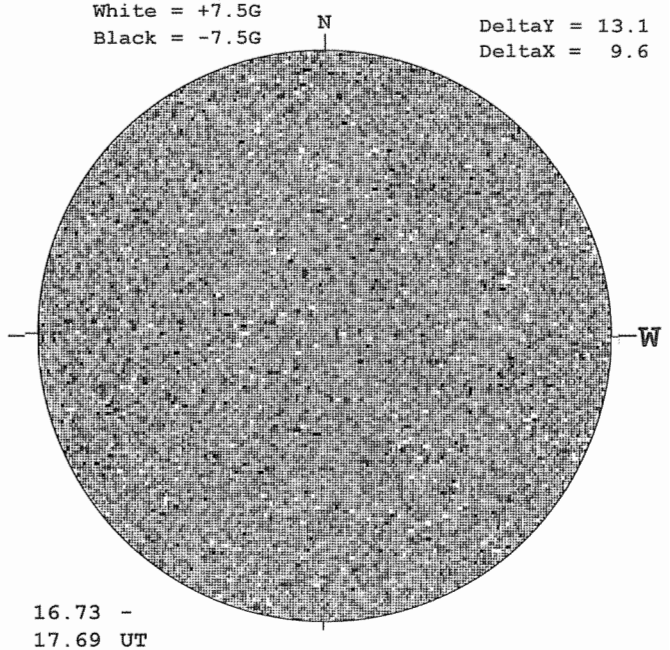
Solid = +
Dashed = -

2217 UT

MT. WILSON MAGNETOGRAM

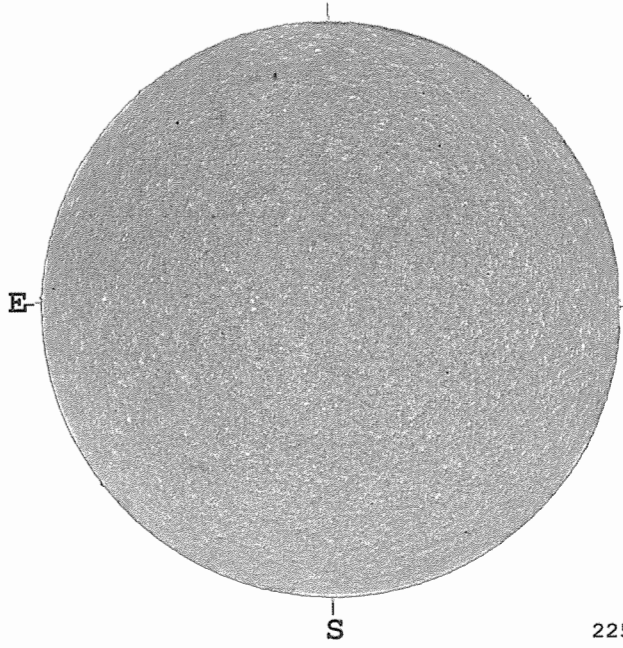
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



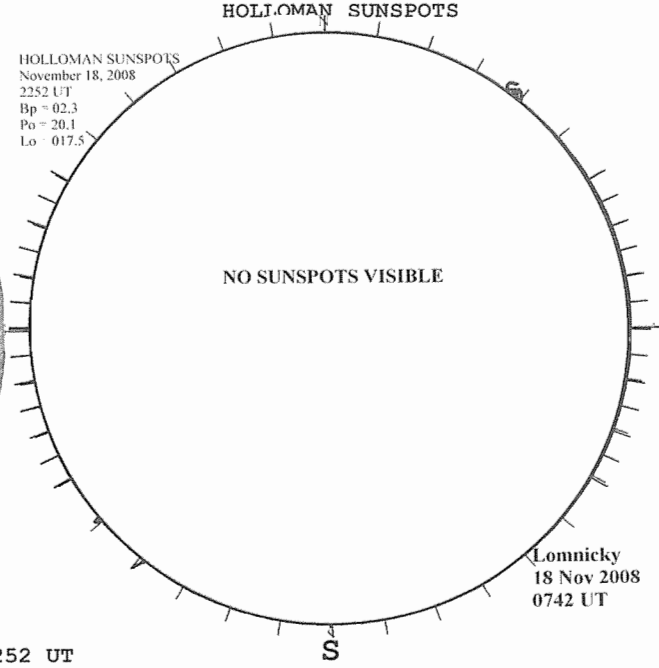
16.73 -
17.69 UT

BIG BEAR H-ALPHA



1727 UT

HOLLOMAN SUNSPOTS

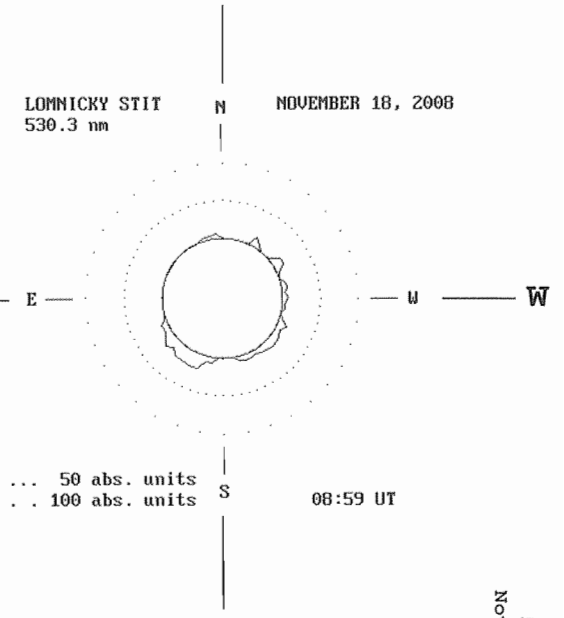


2252 UT
0742 UT LOMN PROM

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

LOMNICKY STIT
530.3 nm

NOVEMBER 18, 2008



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

08:59 UT

59
Nov 08

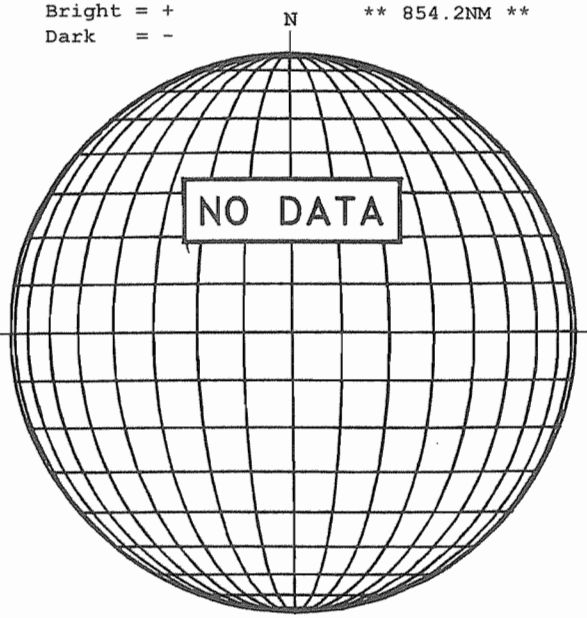
November 19, 2008 (P= 20.14, Bo= 2.34, Lo= 16.99)

Nov 08 60

KITT PEAK MAGNETOGRAM -- SOLIS

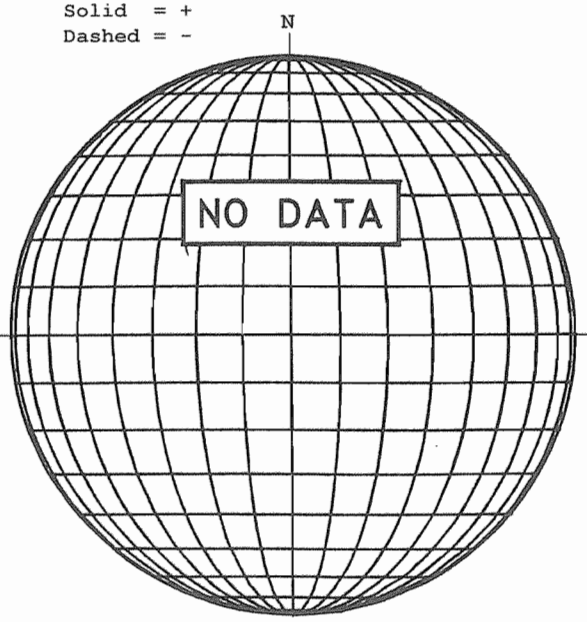
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

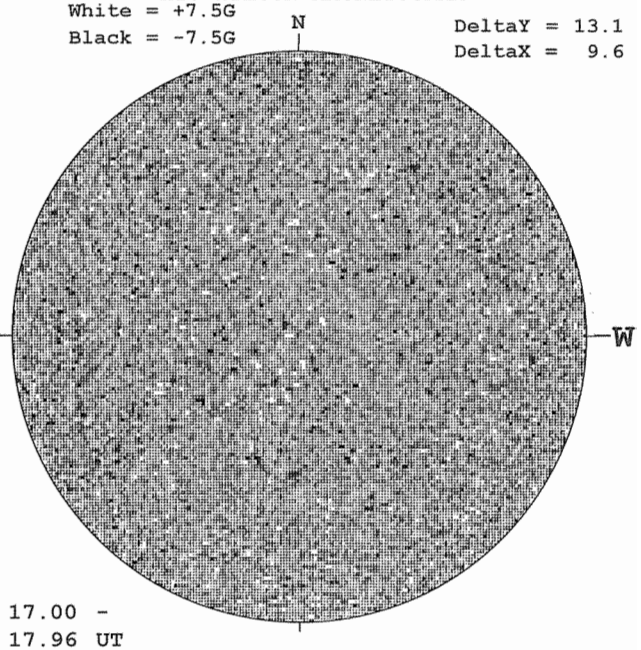
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

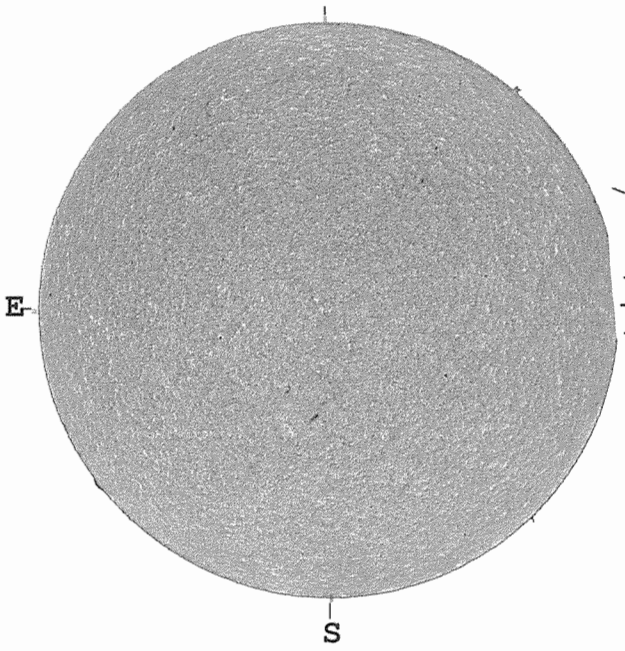
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



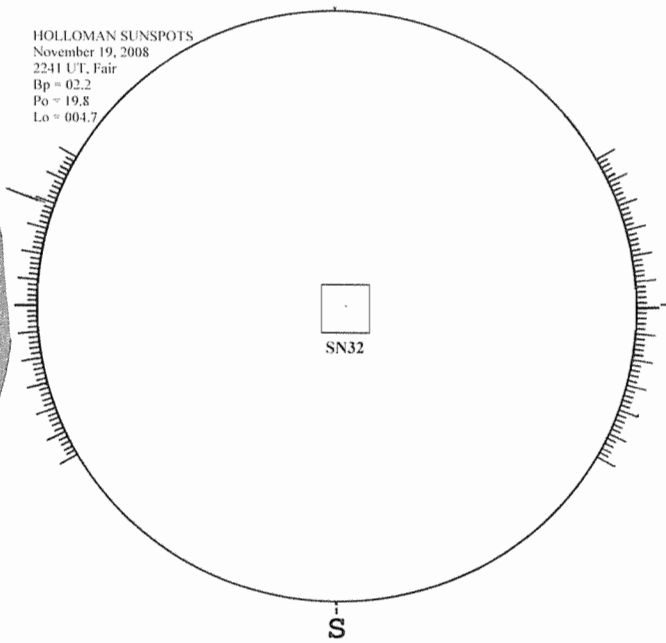
17.00 -
17.96 UT

BIG BEAR H-ALPHA



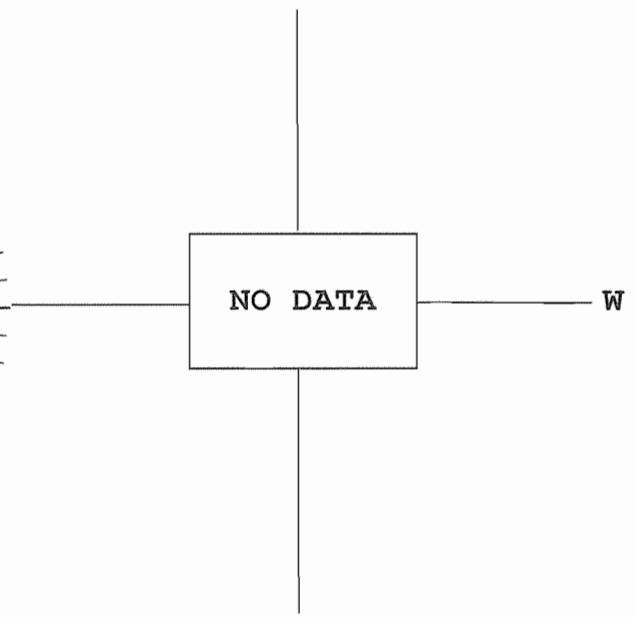
1801 UT

HOLLOMAN SUNSPOTS



2241 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

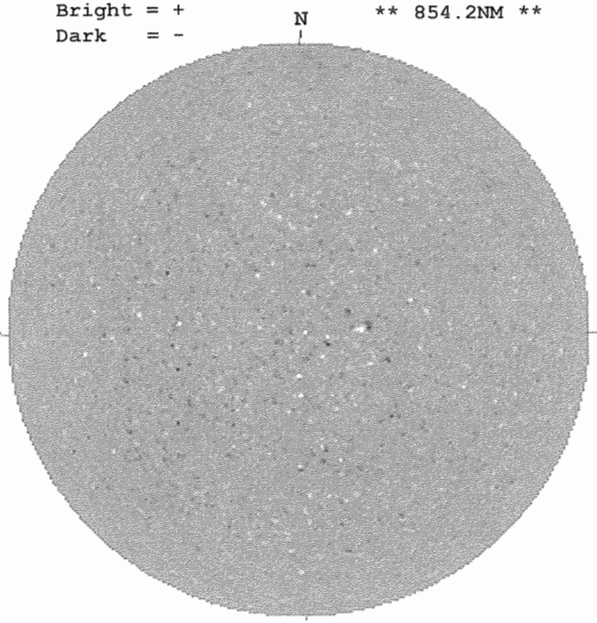


November 20, 2008 (P= 19.83, Bo= 2.22, Lo= 3.81)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

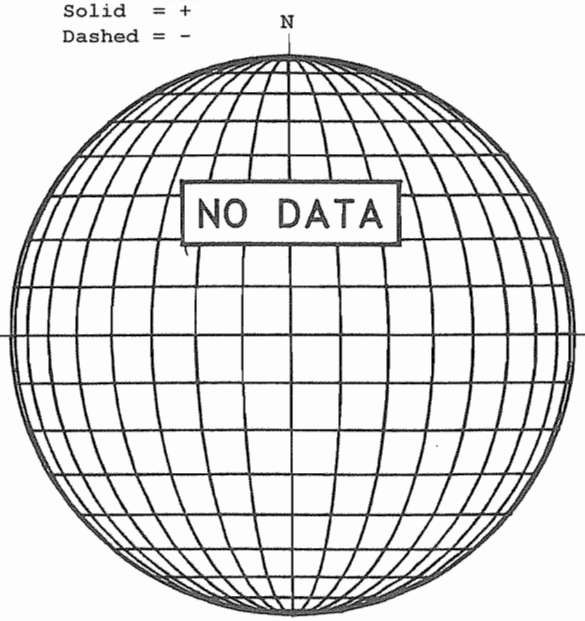
** 854.2NM **



1753UT

STANFORD MAGNETOGRAM

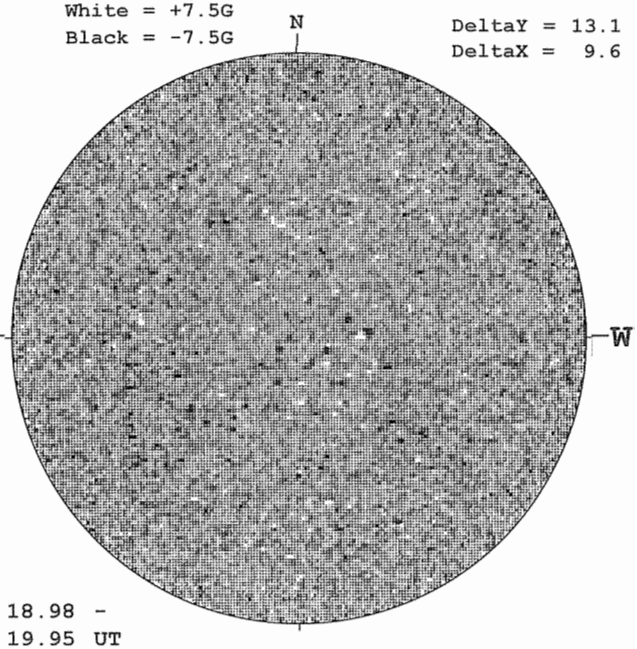
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

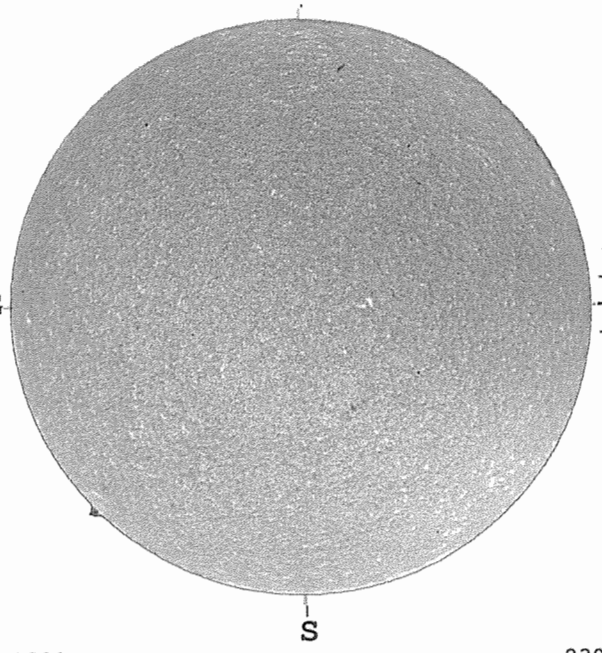
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



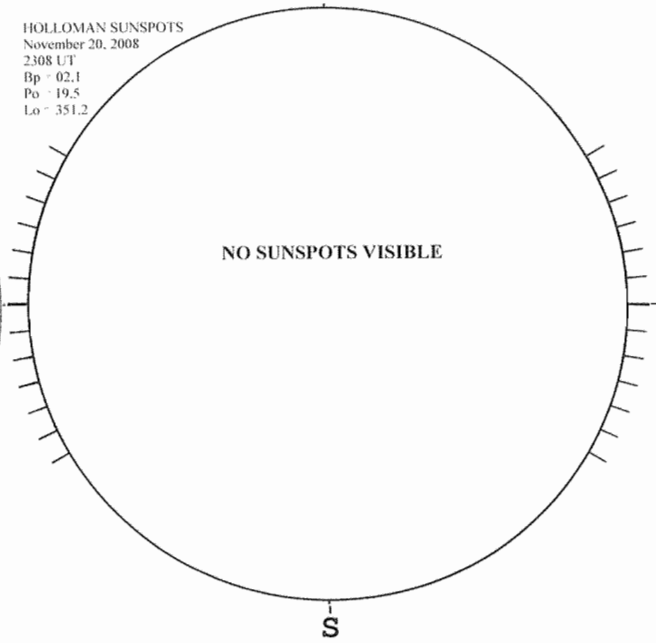
18.98 -
19.95 UT

BIG BEAR H-ALPHA



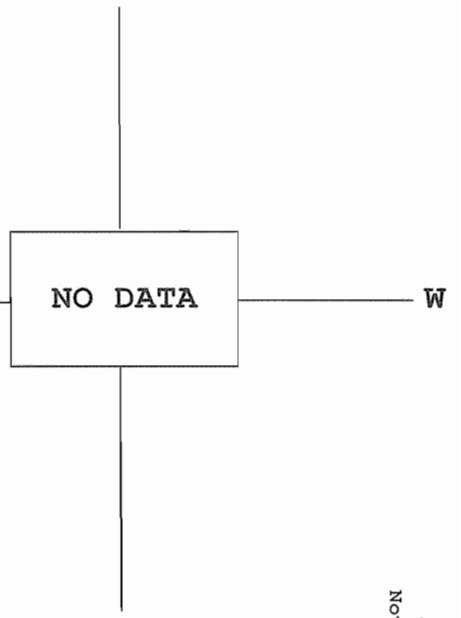
1839 UT

HOLLOMAN SUNSPOTS



2308 UT

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



61
Nov 08

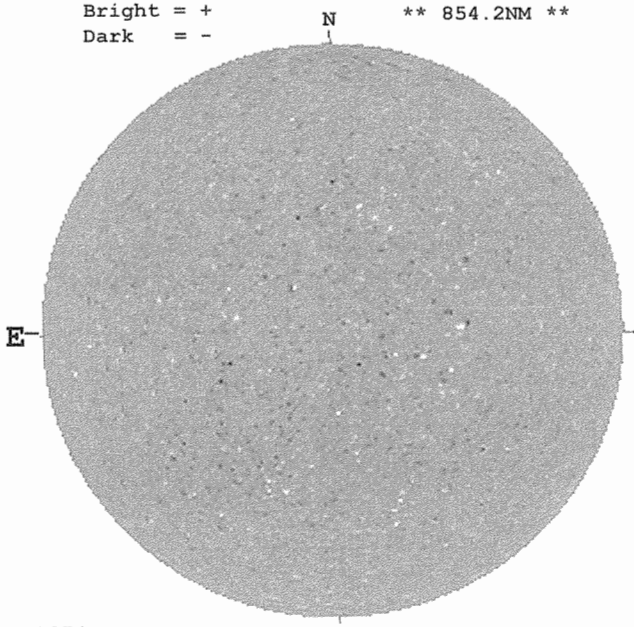
November 21, 2008 (P= 19.52, Bo= 2.10, Lo= 350.63)

Nov 08 62

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

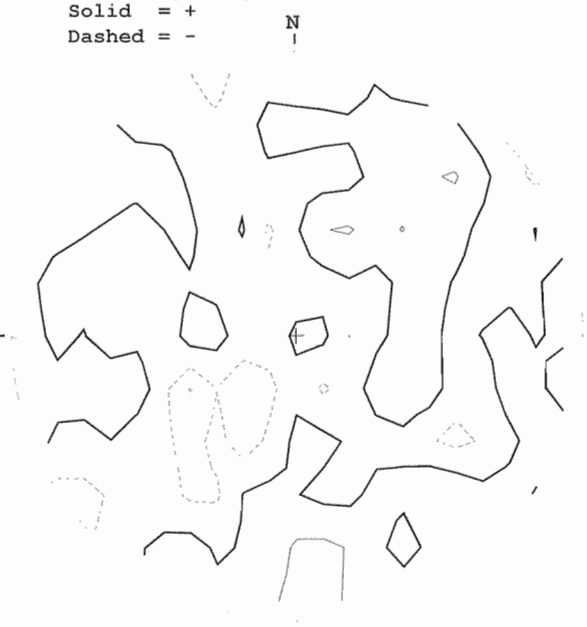
** 854.2NM **



1851 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

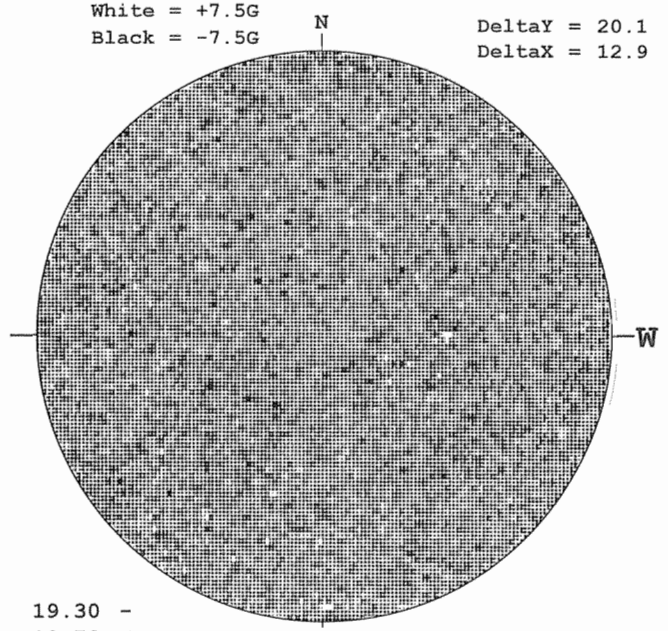


1953 UT

MT. WILSON MAGNETOGRAM

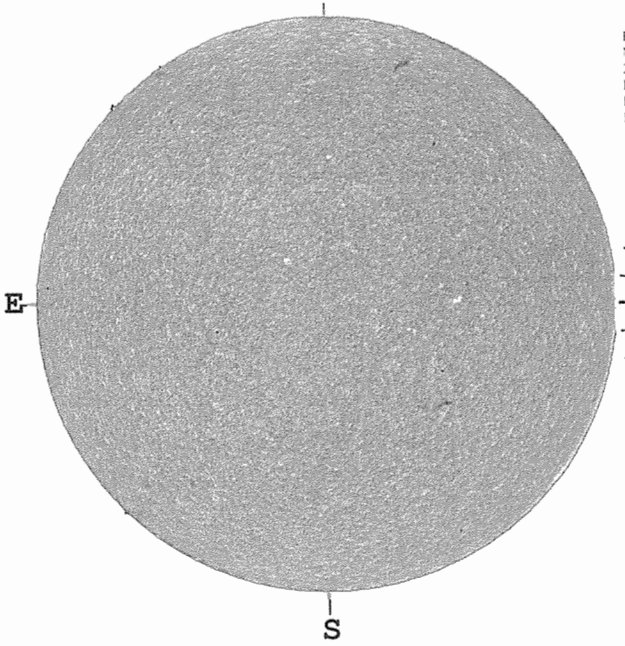
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 12.9



19.30 -
19.73 UT

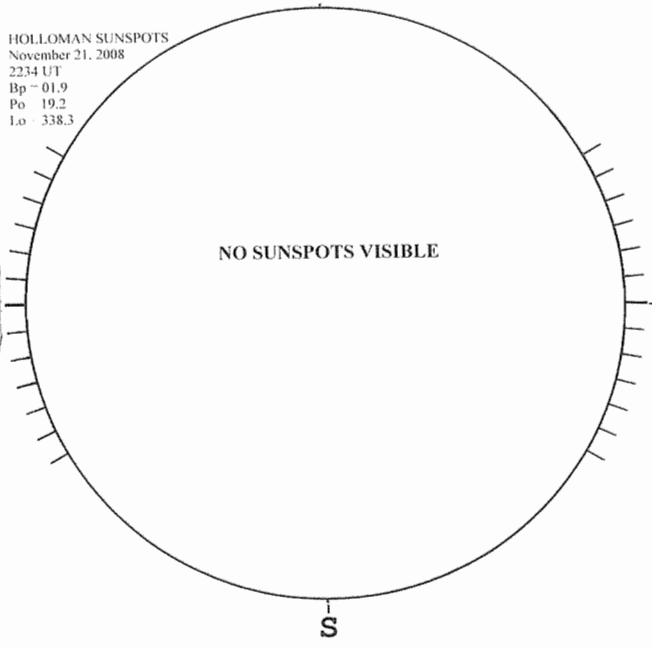
BIG BEAR H-ALPHA



1925 UT

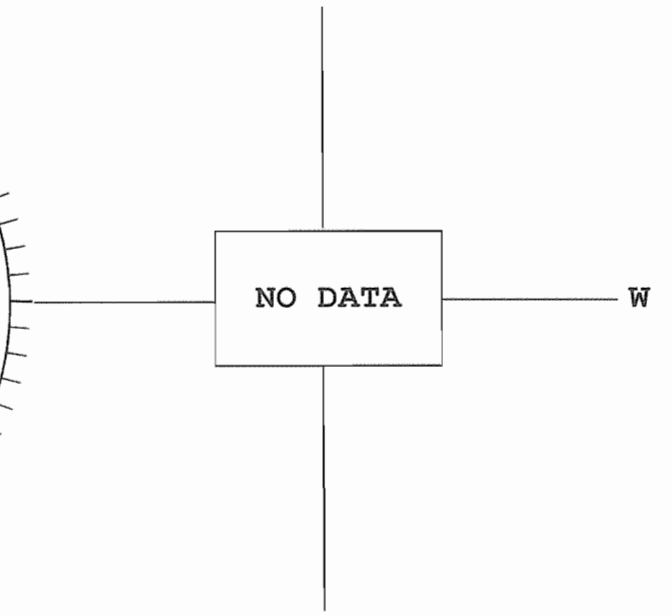
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
November 21, 2008
2234 UT
Bp = 01.9
Po = 19.2
Lo = 338.3



2234 UT

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



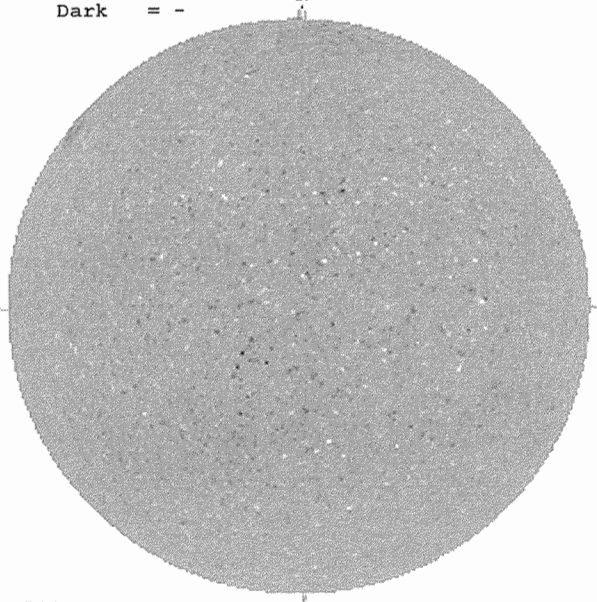
November 22, 2008 (P= 19.19, Bo= 1.97, Lo= 337.45)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

N

** 854.2NM **



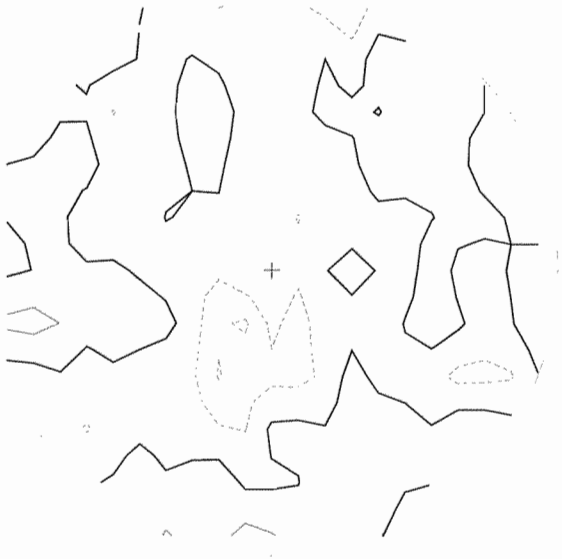
E

1711 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N



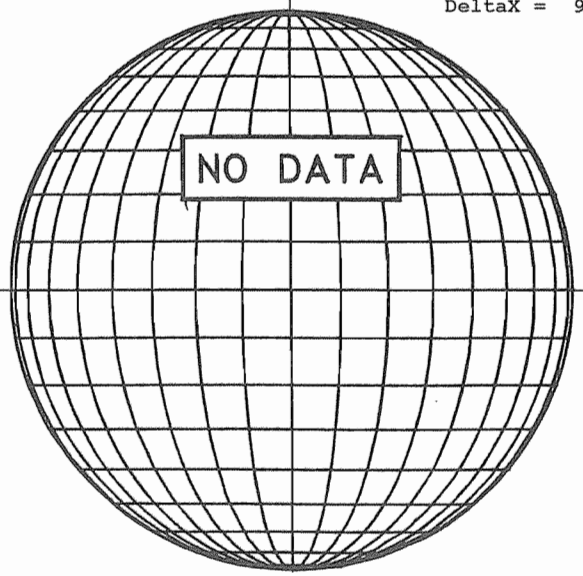
2122 UT

MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

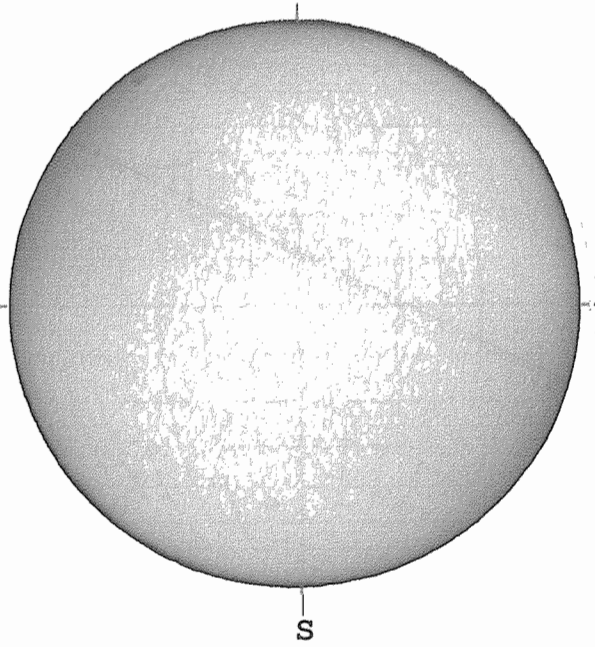
N

DeltaY = 13.1
DeltaX = 9.6



W

MEUDON H-ALPHA

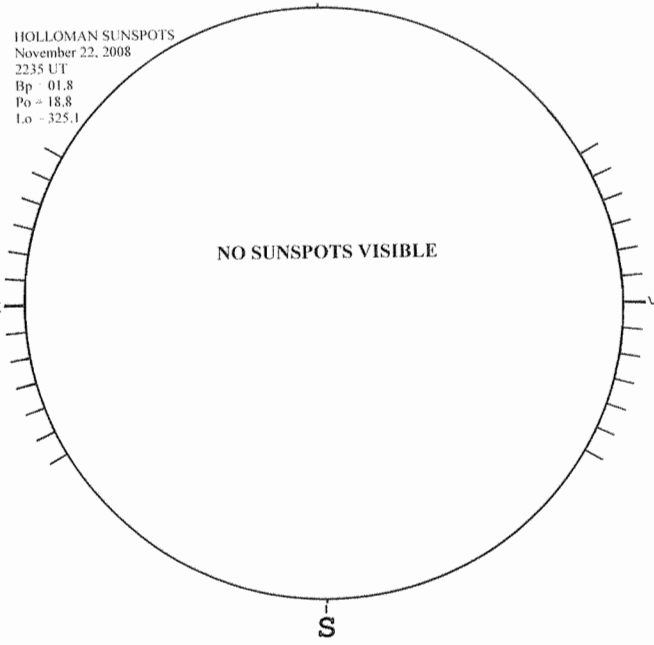


E

S

1418 UT

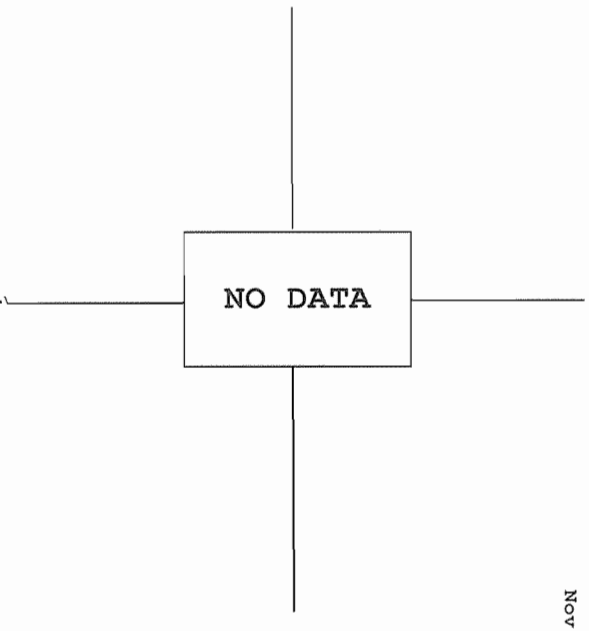
HOLLOMAN SUNSPOTS



S

2235 UT

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



W

Nov 08 63

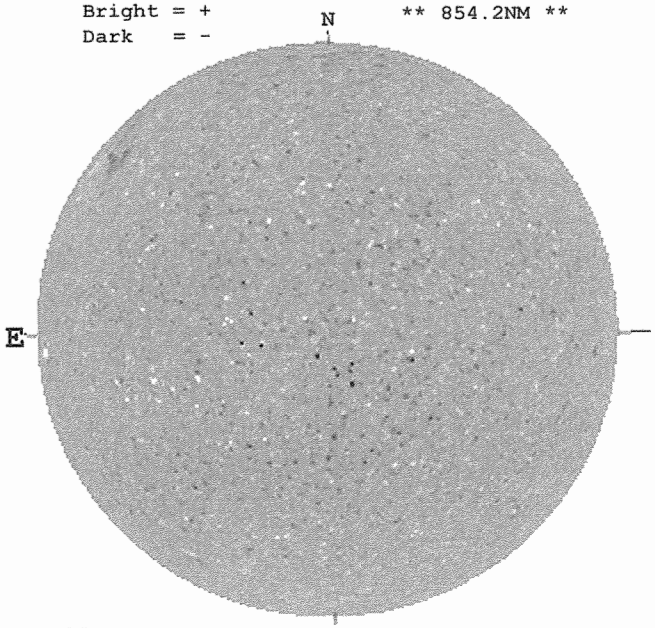
November 23, 2008 (P= 18.86, Bo= 1.85, Lo= 324.27)

Nov 08 64

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

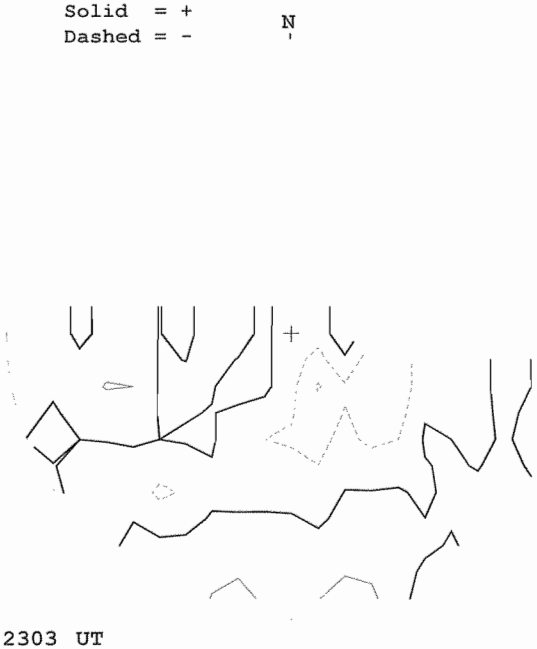
** 854.2NM **



1728 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

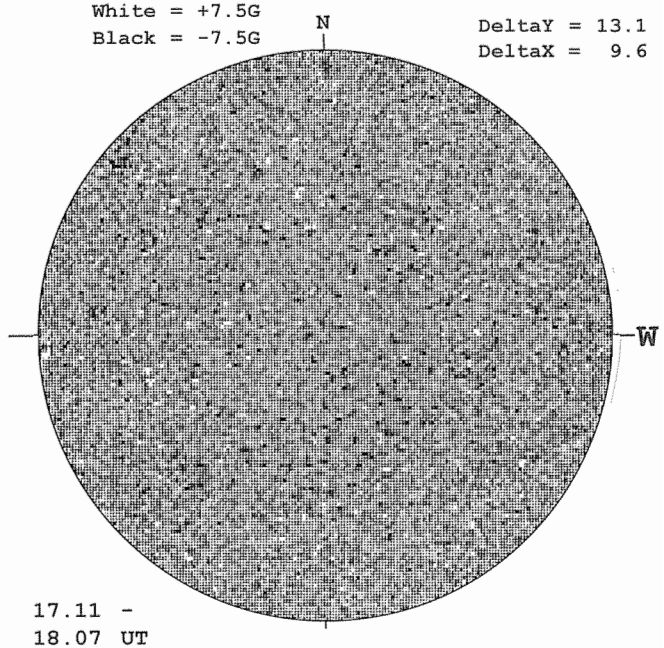


2303 UT

MT. WILSON MAGNETOGRAM

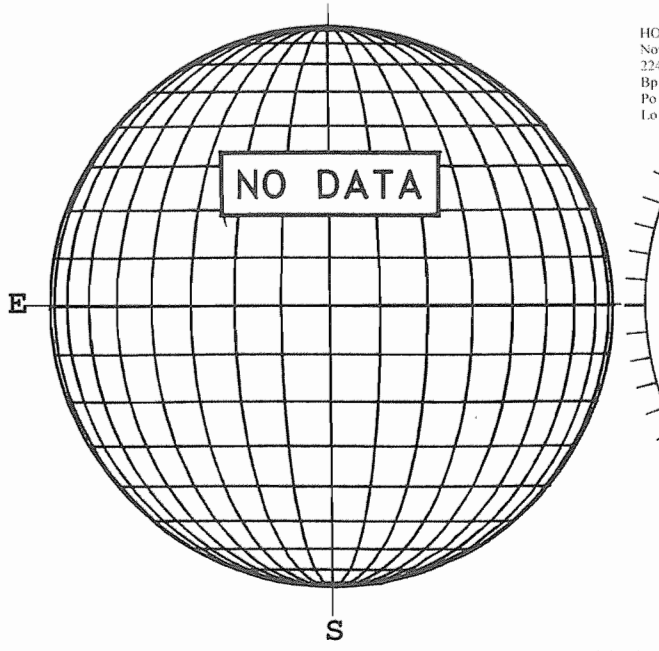
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

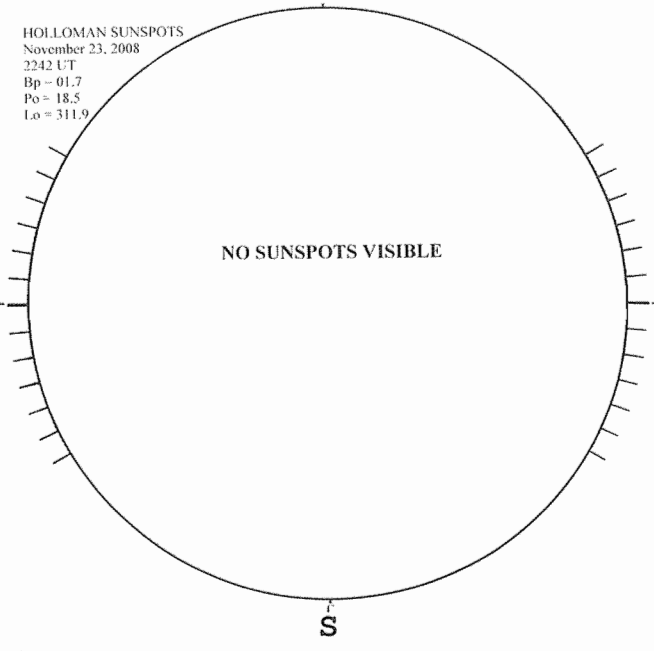


17.11 -
18.07 UT

BIG BEAR H-ALPHA

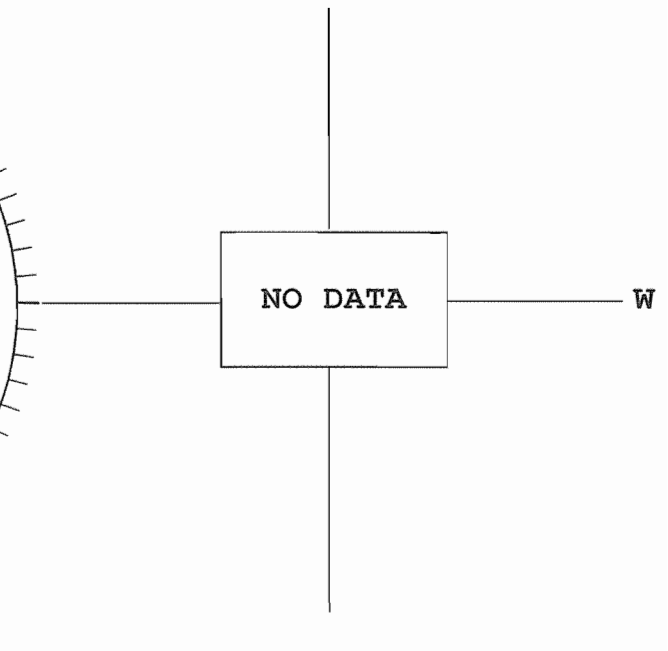


HOLLOMAN SUNSPOTS



2242 UT

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

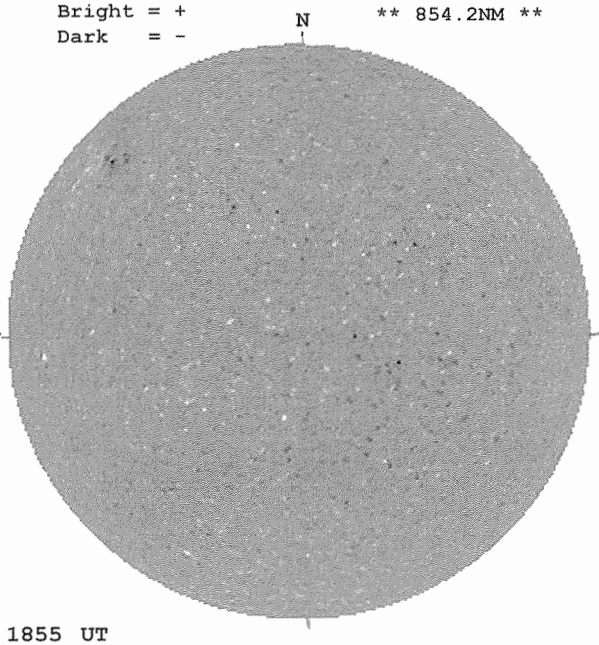


November 24, 2008 (P= 18.52, Bo= 1.73, Lo= 311.09)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

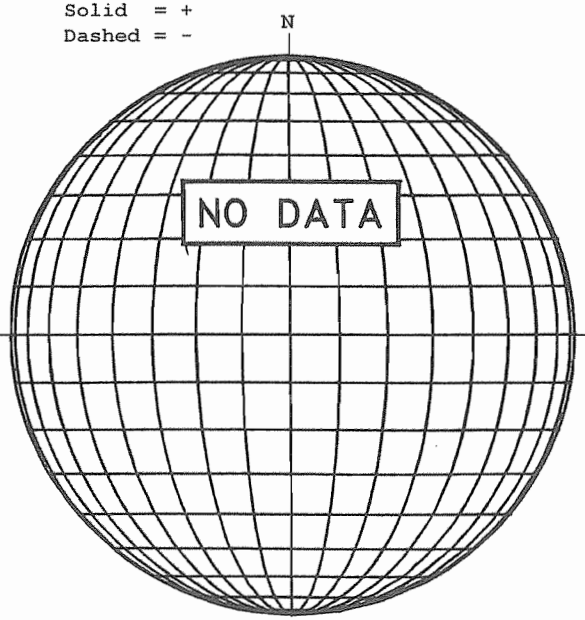
** 854.2NM **



1855 UT

STANFORD MAGNETOGRAM

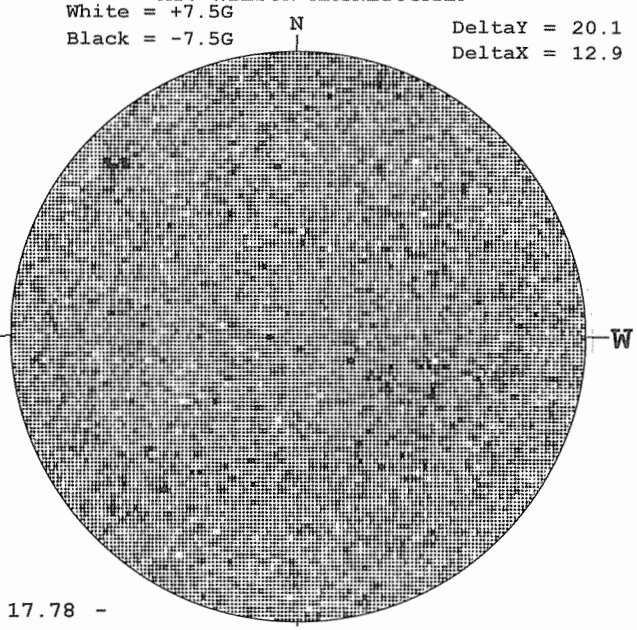
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

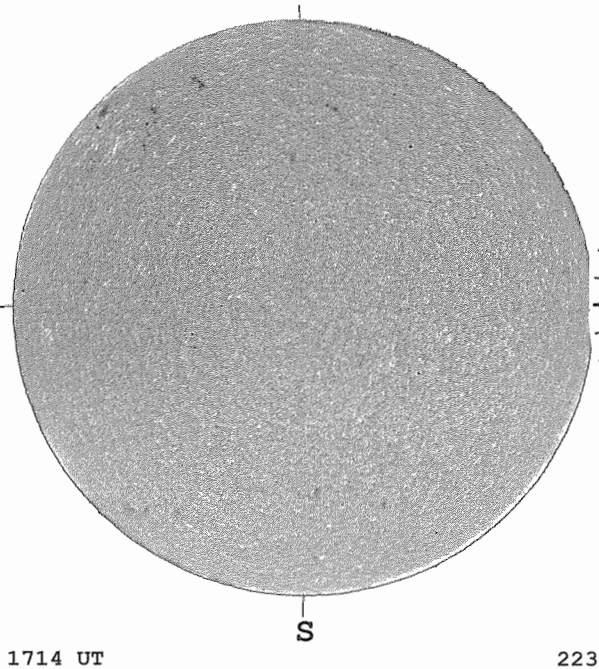
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 12.9



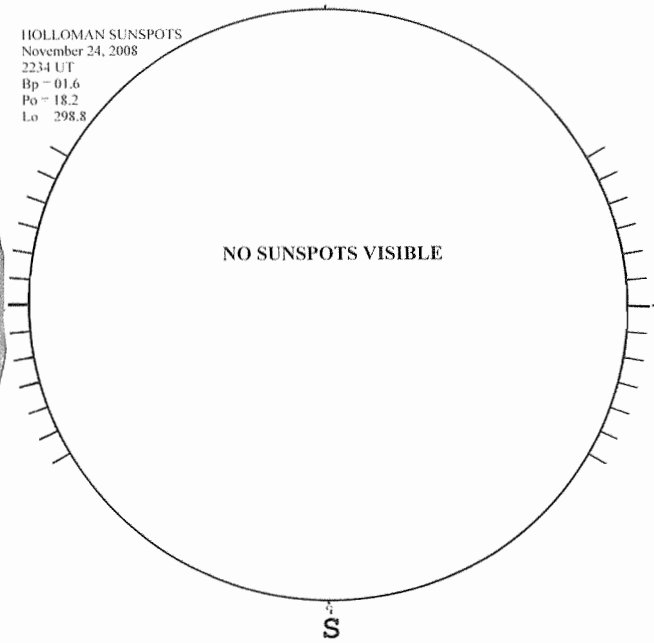
17.78 -
18.21 UT

BIG BEAR H-ALPHA



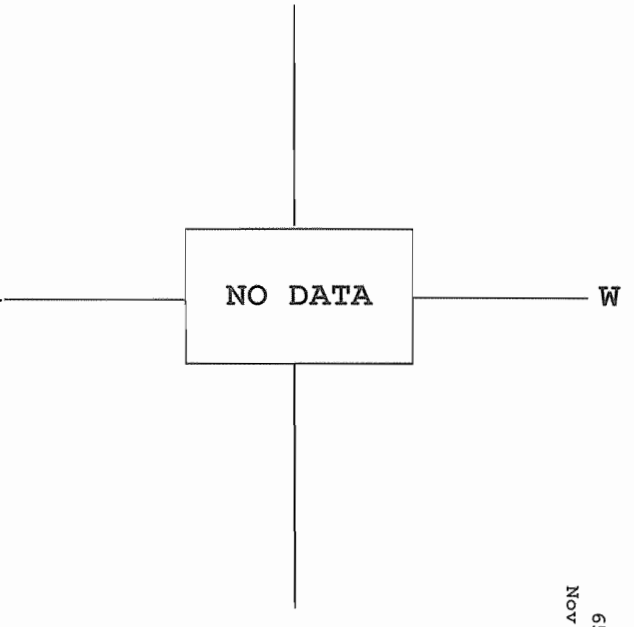
1714 UT

HOLLOMAN SUNSPOTS



2234 UT

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



Nov 08 65

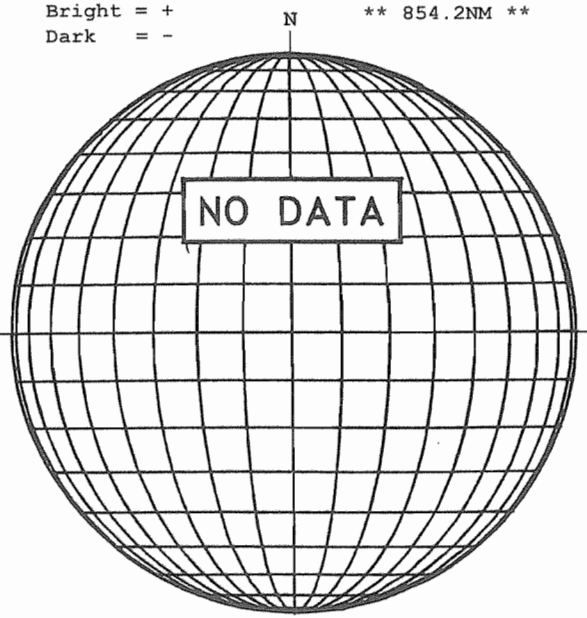
November 25, 2008 (P= 18.18, Bo= 1.60, Lo= 297.91)

80 Nov 99

KITT PEAK MAGNETOGRAM -- SOLIS

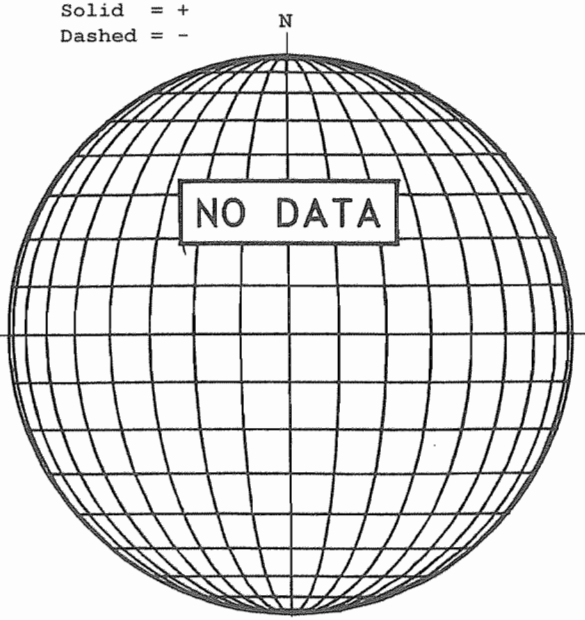
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

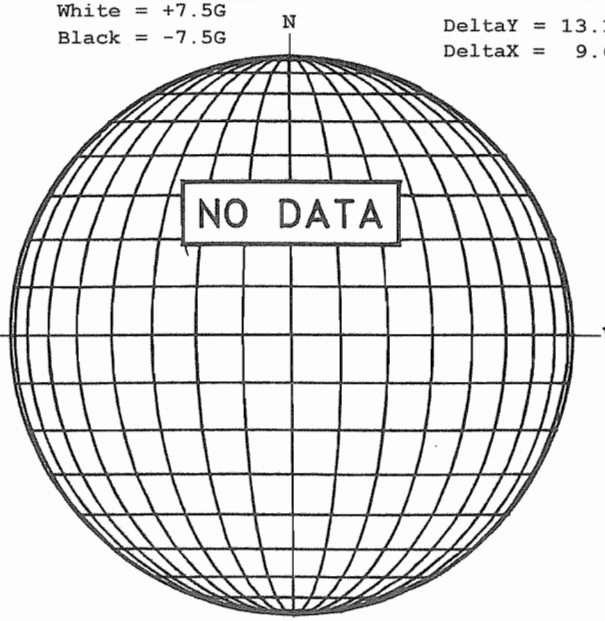
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

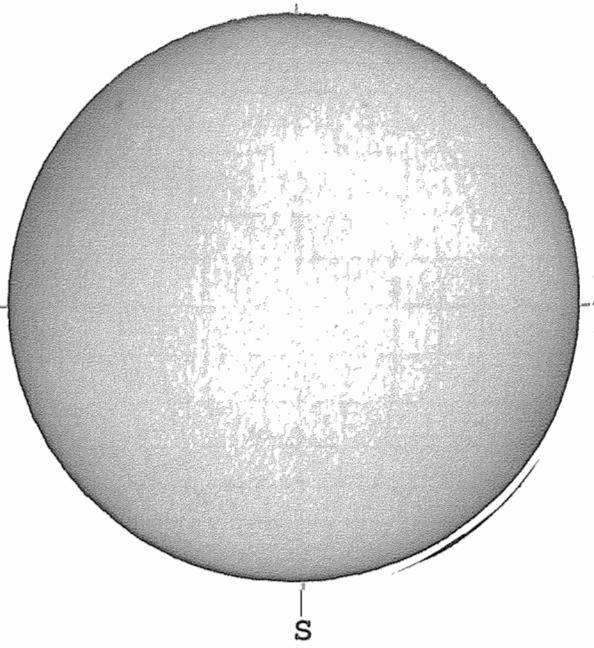
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



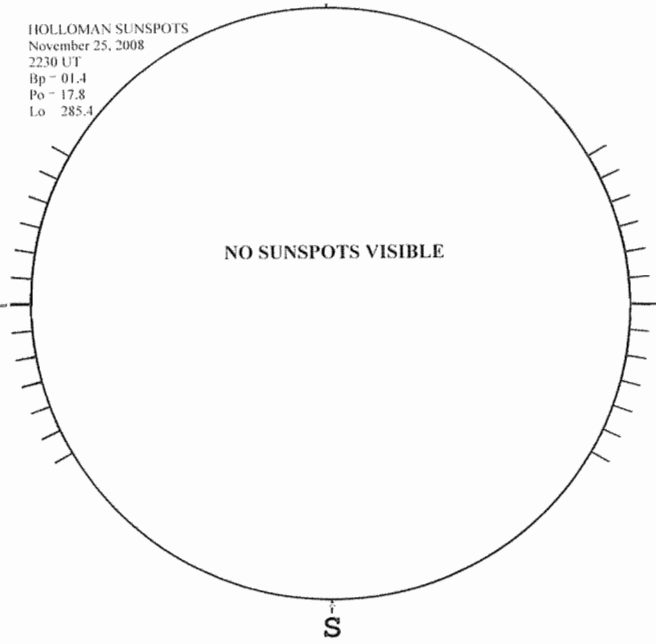
E W

--- MEUDON H-ALPHA



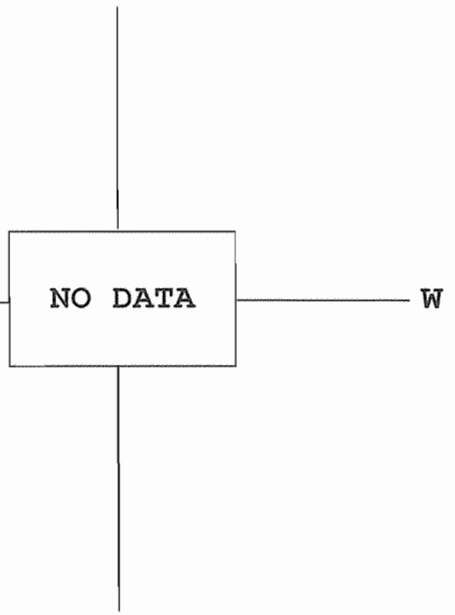
1413 UT

HOLLOMAN SUNSPOTS



2230 UT

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

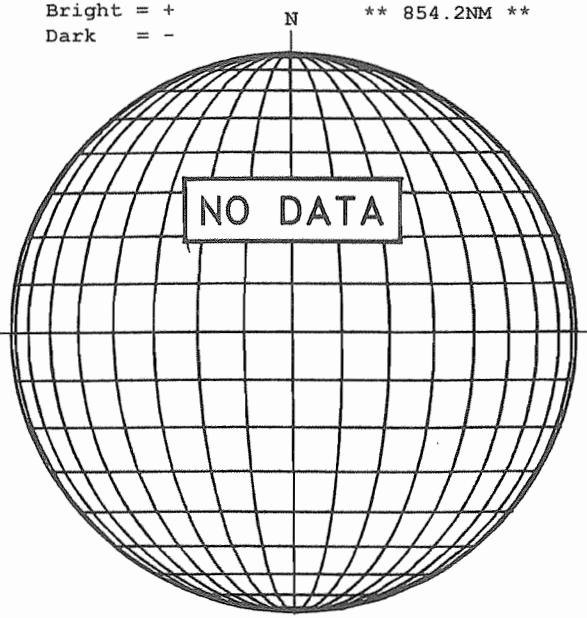


November 26, 2008 (P= 17.82, Bo= 1.48, Lo= 284.73)

KITT PEAK MAGNETOGRAM -- SOLIS

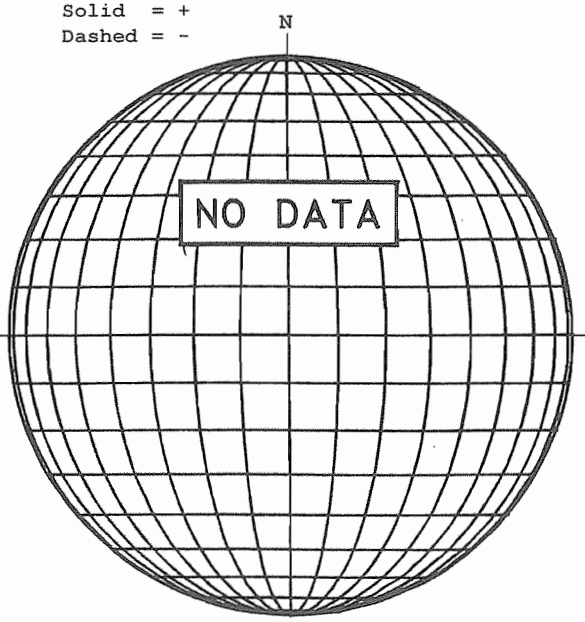
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

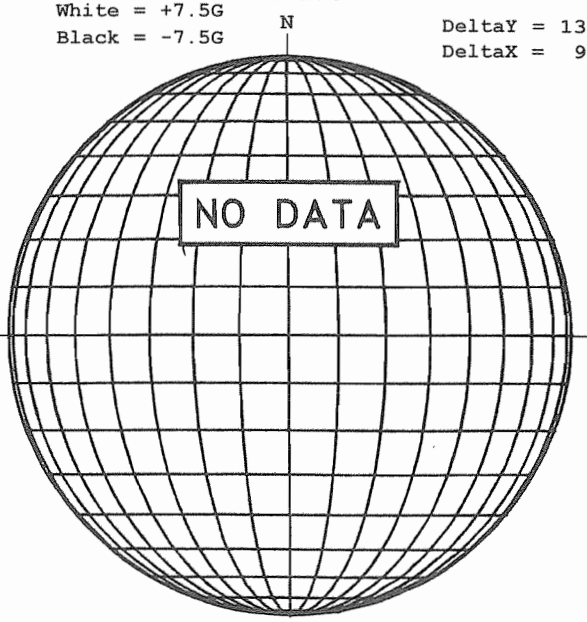
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

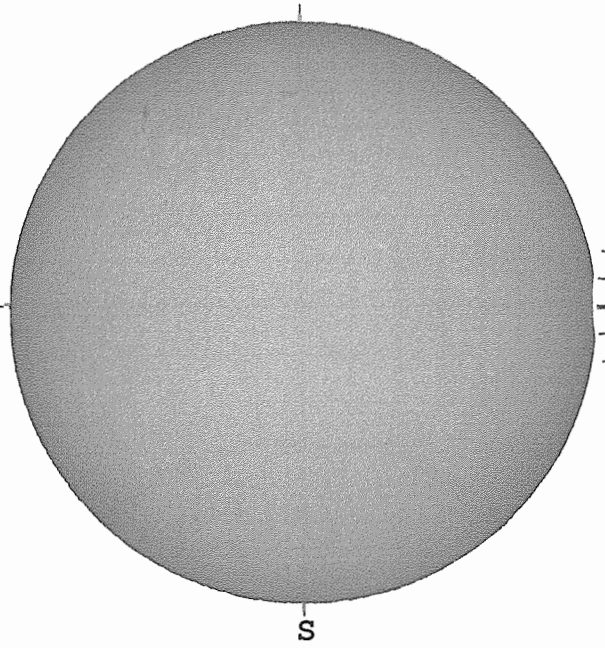
DeltaY = 13.1
DeltaX = 9.6



E

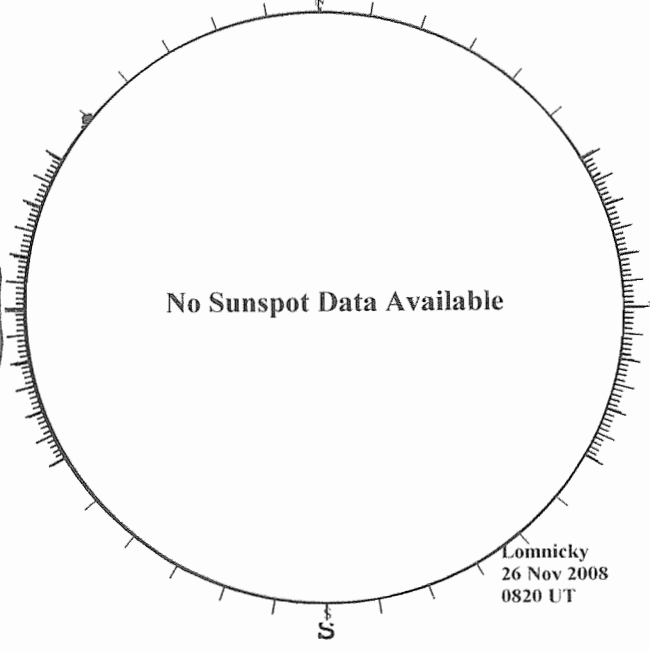
W

KANZELHOHE H-ALPHA



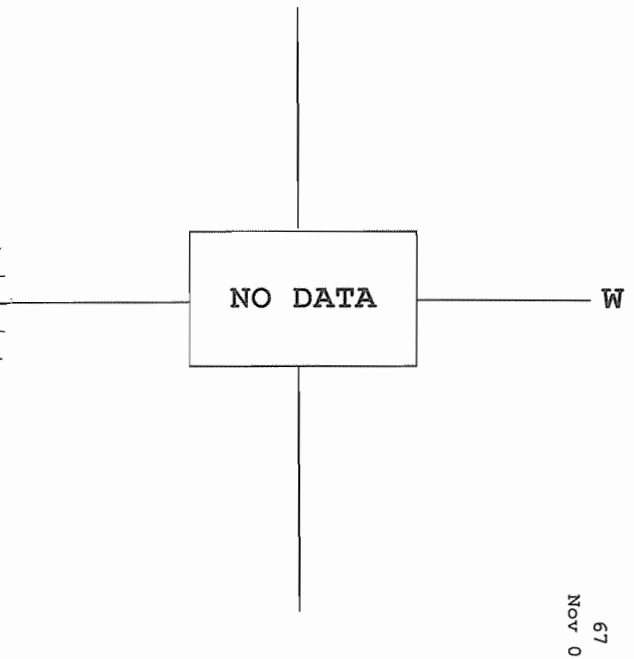
0848 UT

HOLLOMAN SUNSPOTS



0820 UT LOMN PROM

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

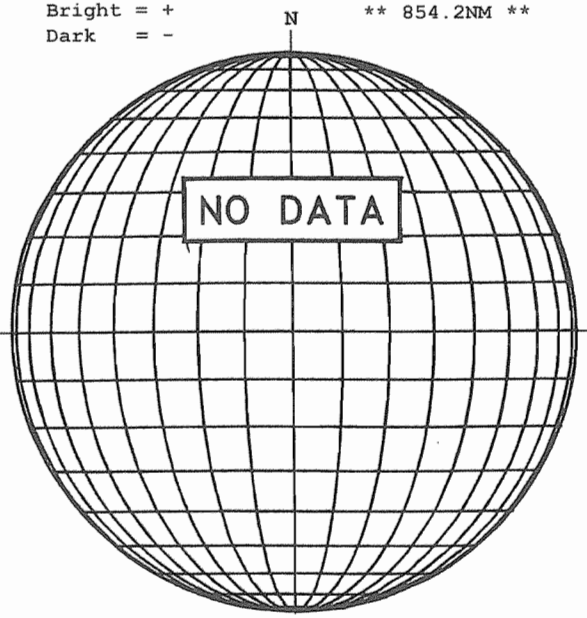


67
Nov 08

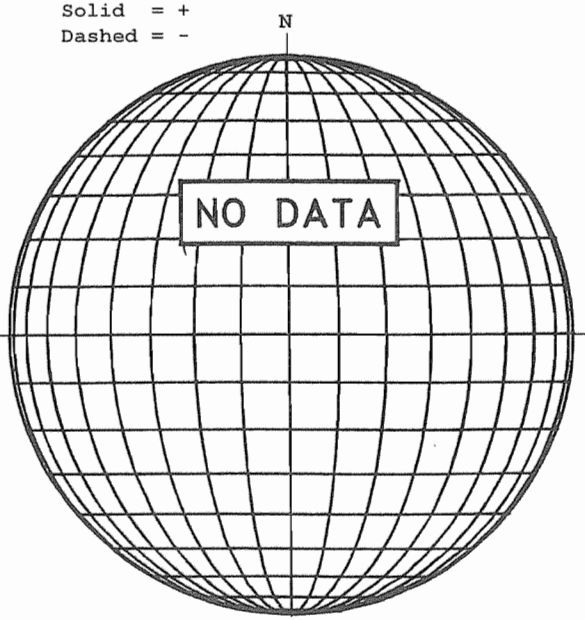
November 27, 2008 (P= 17.47, Bo= 1.35, Lo= 271.55)

Nov 08 68

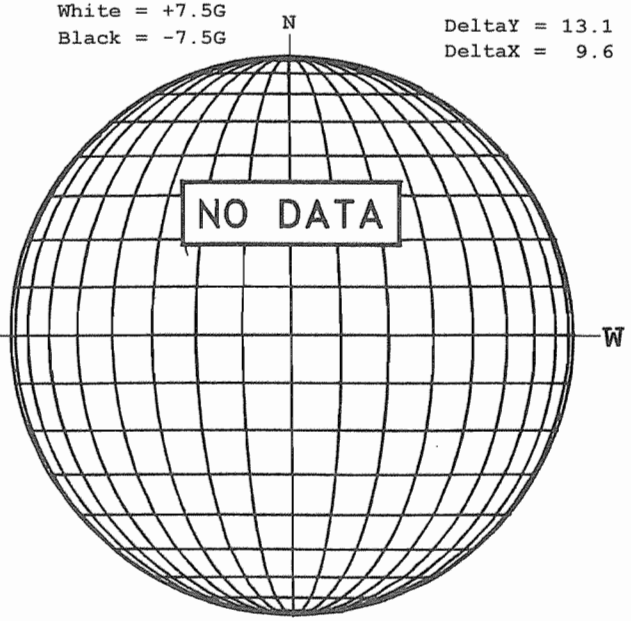
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



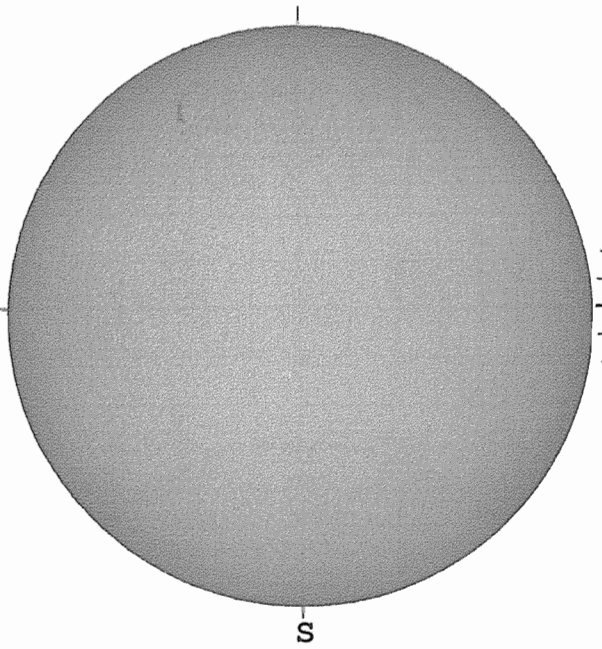
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



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

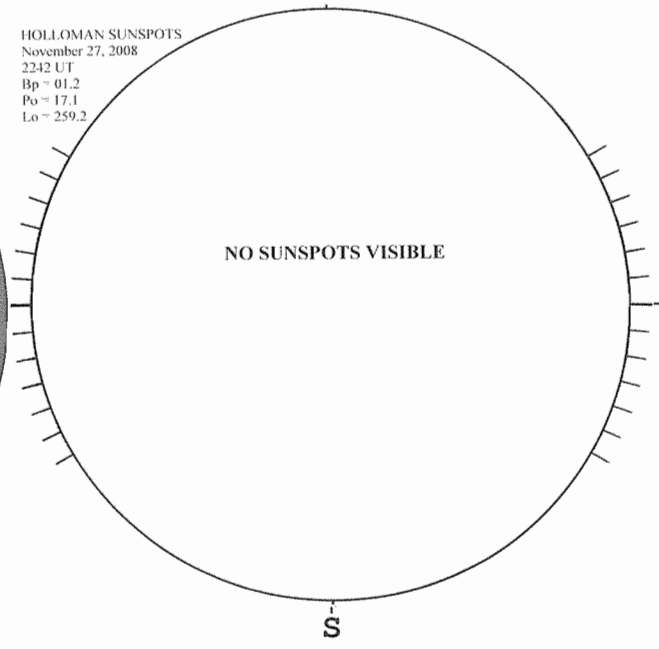


KANZELHOHE H-ALPHA



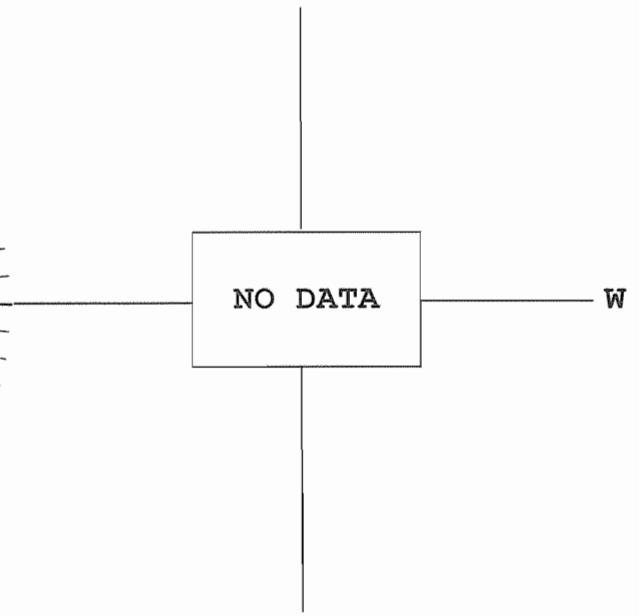
0925 UT

HOLLOMAN SUNSPOTS



2242 UT

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

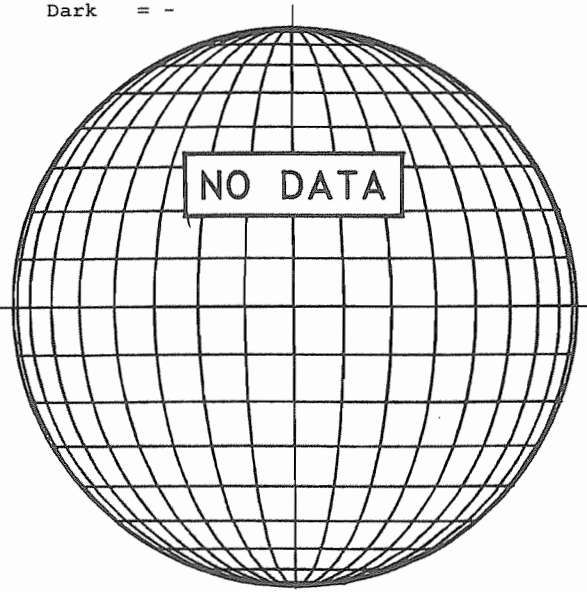


November 28, 2008 (P= 17.10, Bo= 1.23, Lo= 258.37)

KITT PEAK MAGNETOGRAM -- SOLIS

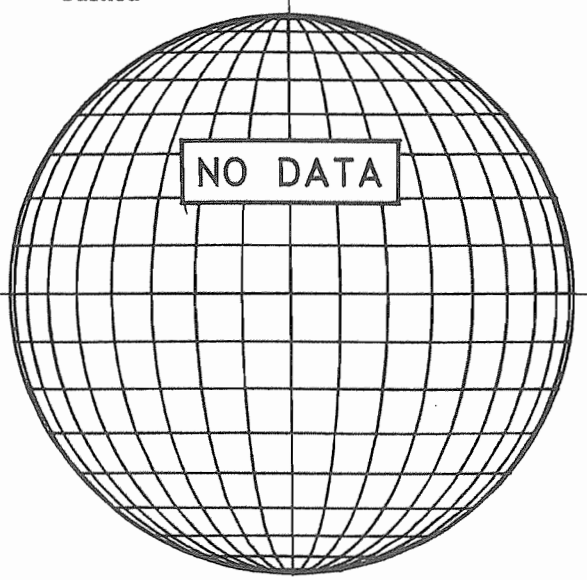
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

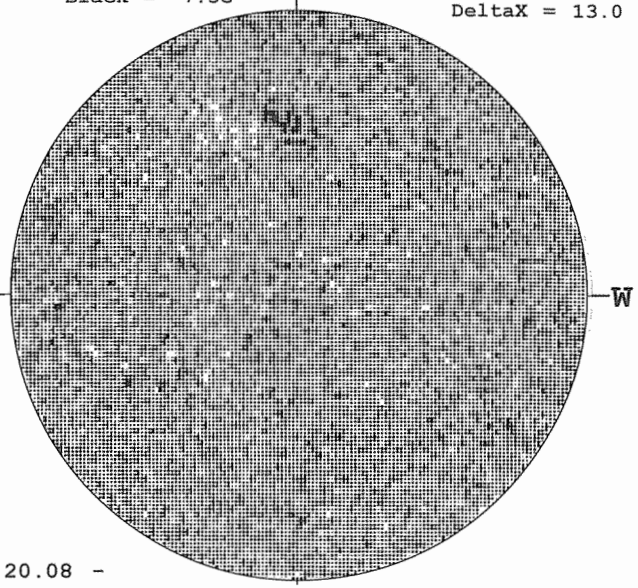
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

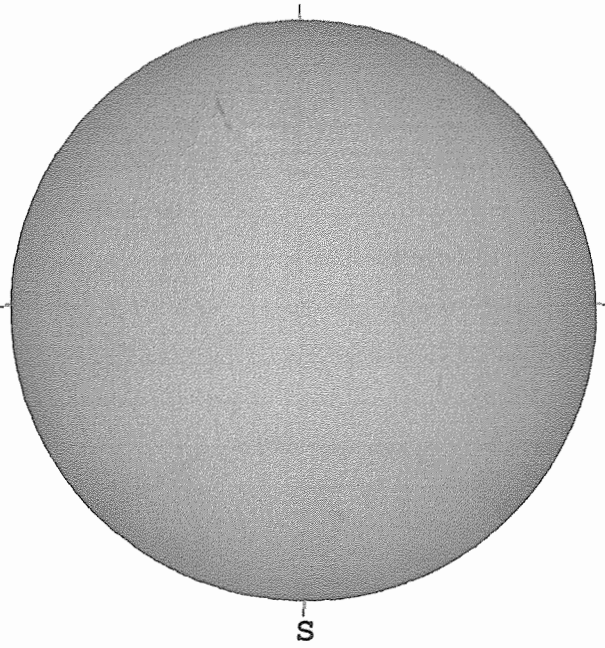
White = +7.5G
Black = -7.5G

DeltaY = 20.2
DeltaX = 13.0



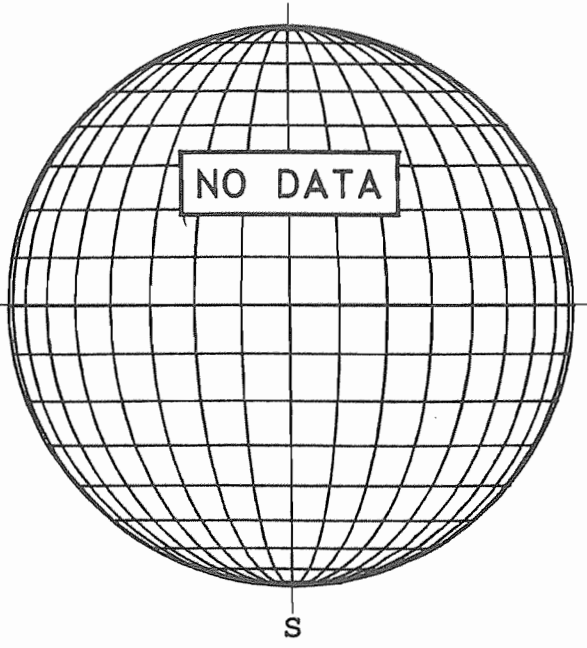
20.08 -
20.51 UT

KANZELHOHE H-ALPHA



0824 UT

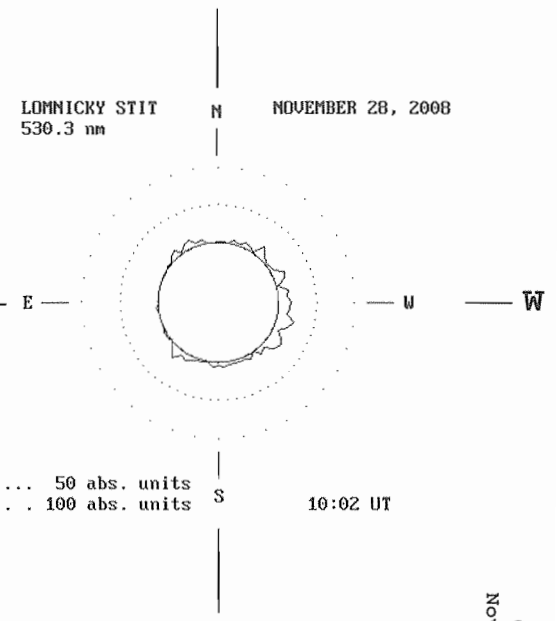
HOLLOMAN SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)

LOMNICKY STIT
530.3 nm

NOVEMBER 28, 2008



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

10:02 UT

69
Nov 08

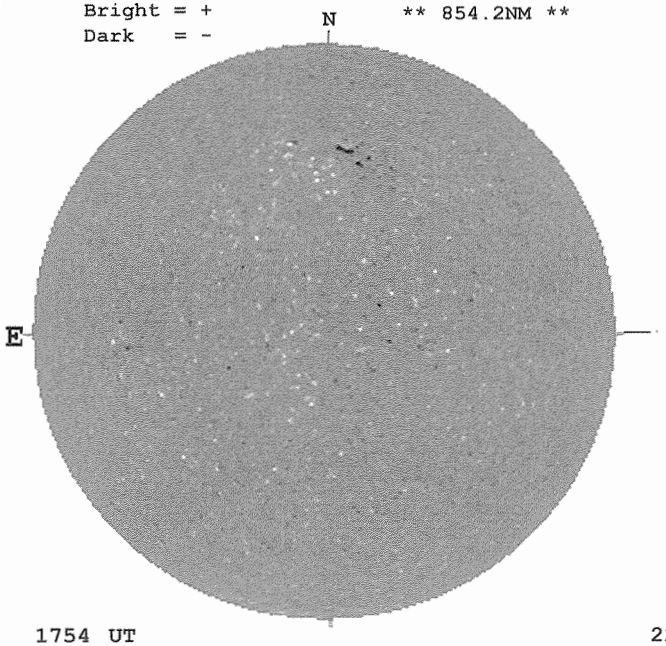
November 29, 2008 (P= 16.73, Bo= 1.10, Lo= 245.19)

Nov 08 70

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

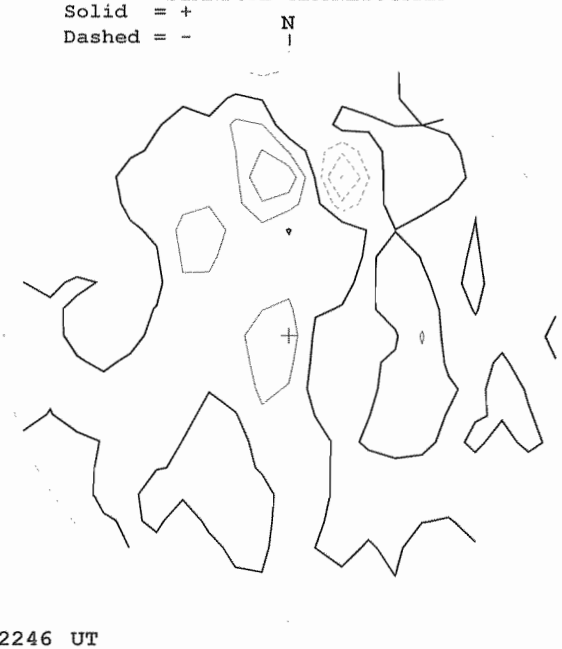
** 854.2NM **



1754 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

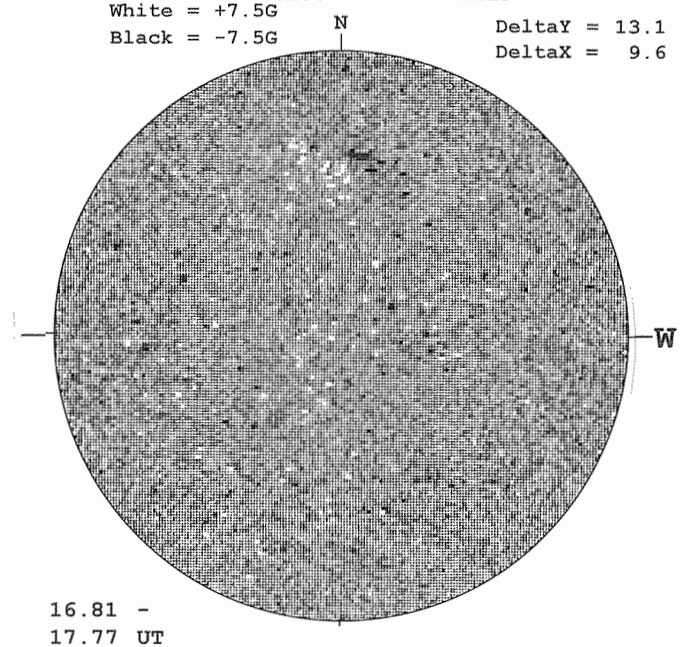


2246 UT

MT. WILSON MAGNETOGRAM

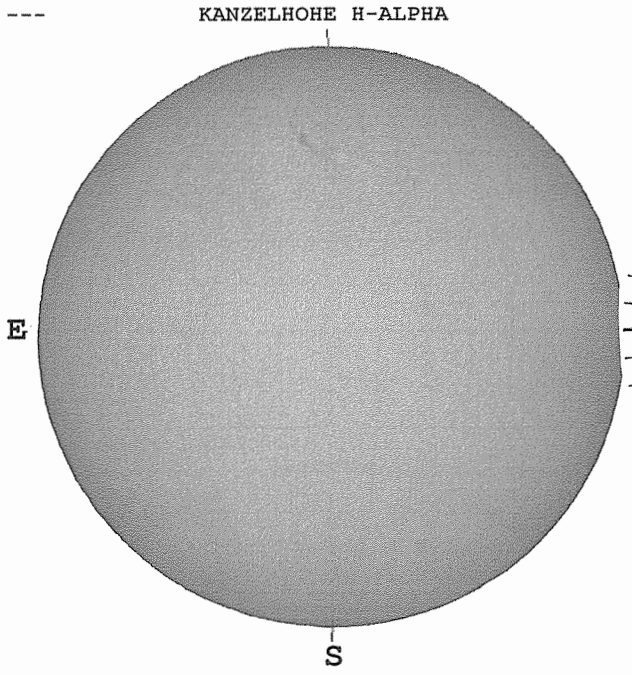
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



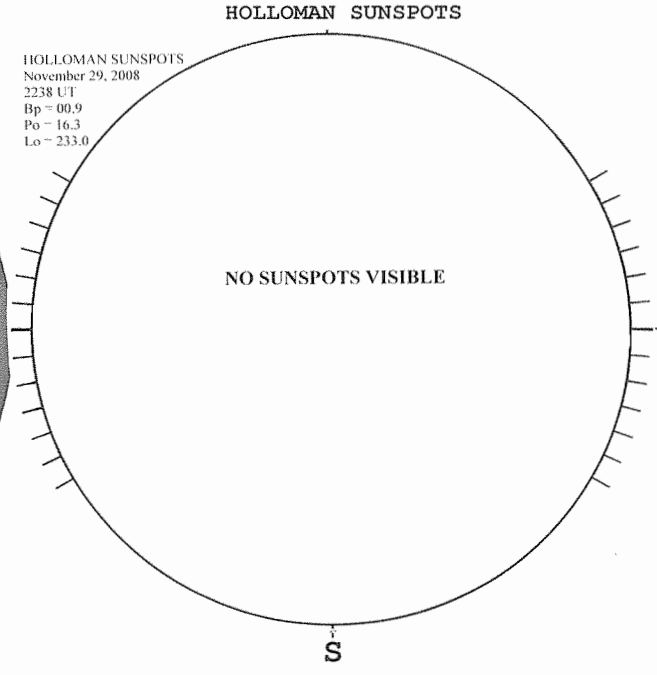
16.81 -
17.77 UT

KANZELHOHE H-ALPHA



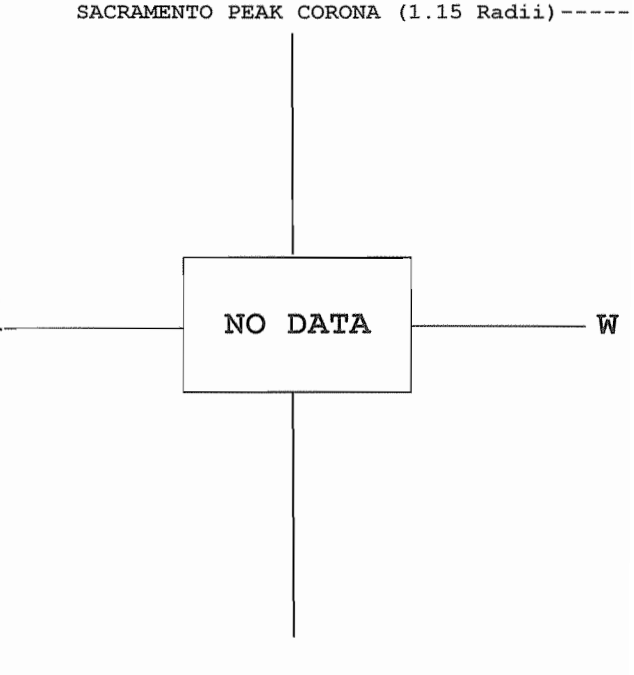
1318 UT

HOLLOMAN SUNSPOTS



2239 UT

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

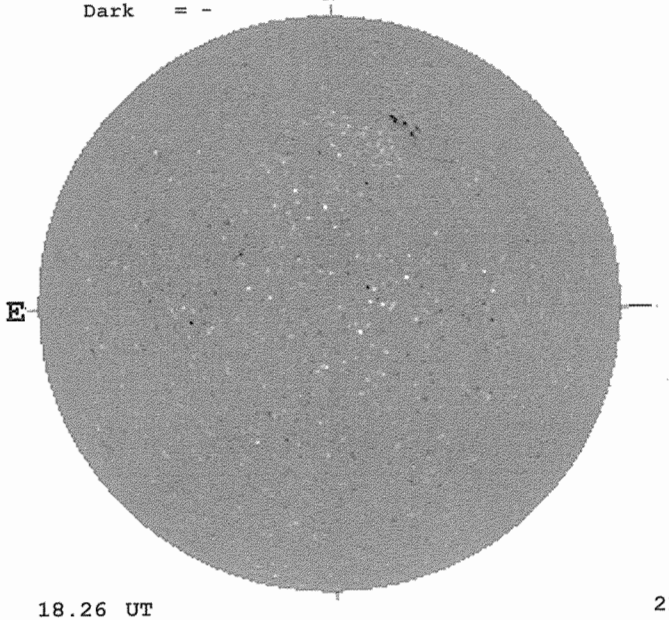


November 30, 2008 (P= 16.35, Bo= 0.97, Lo= 232.01)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

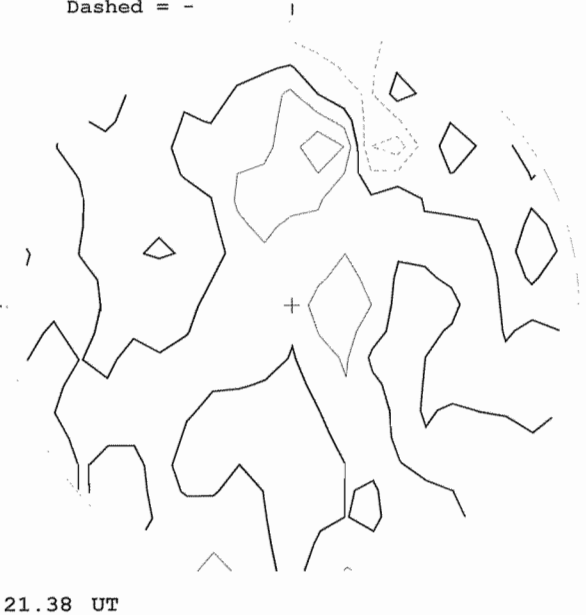
** 854.2NM **



18.26 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

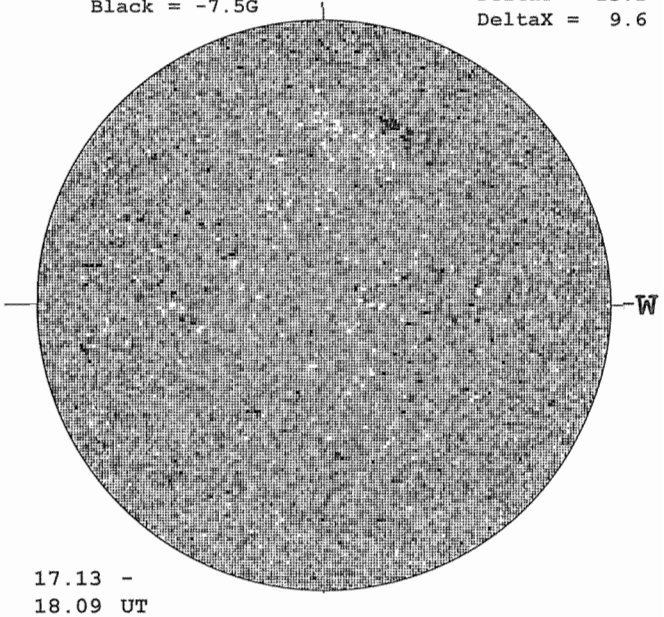


21.38 UT

MT. WILSON MAGNETOGRAM

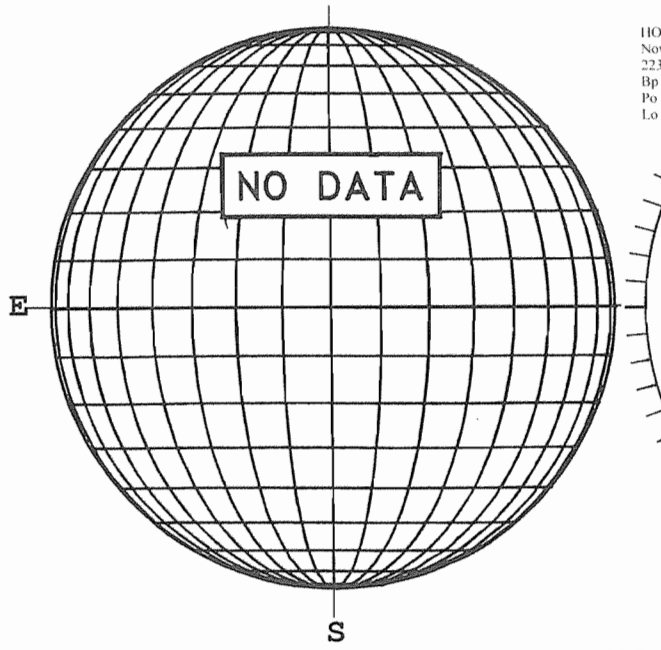
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



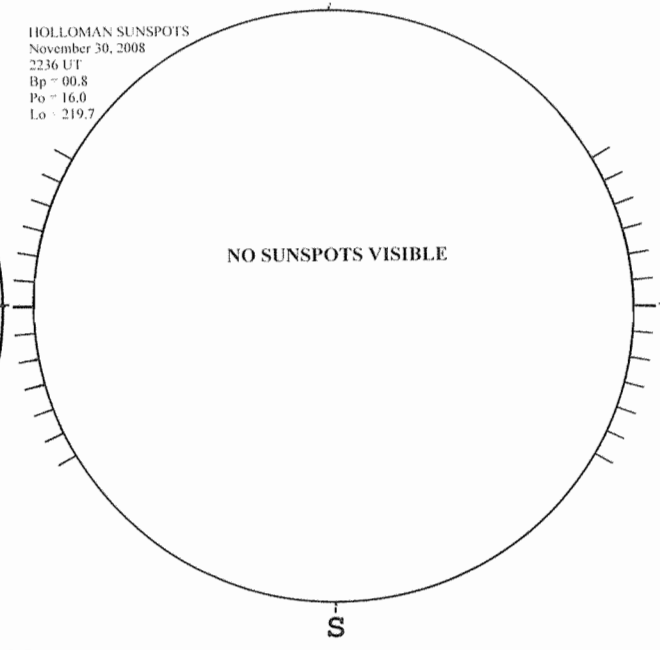
17.13 -
18.09 UT

BIG BEAR H-ALPHA

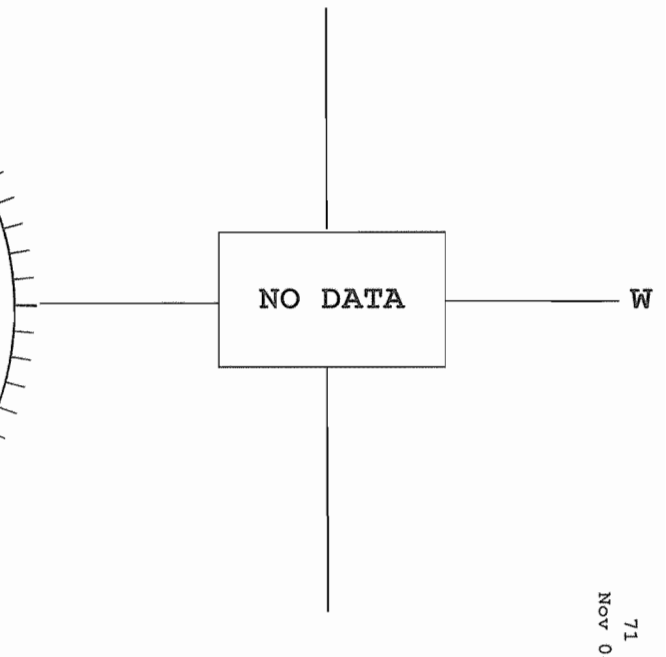


2236 UT

HOLLOMAN SUNSPOTS

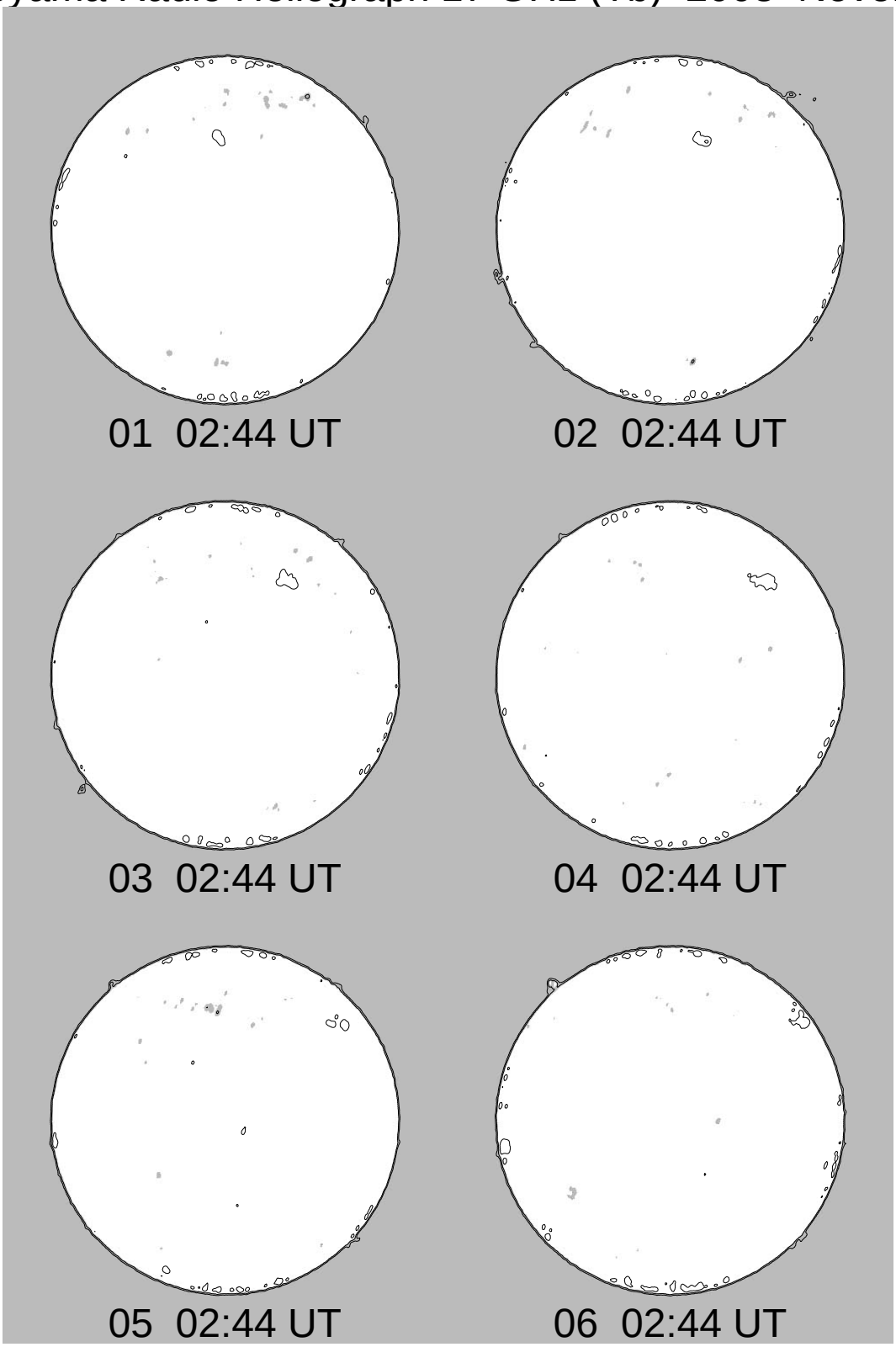


SACRAMENTO PEAK CORONA (1.15 Radii)



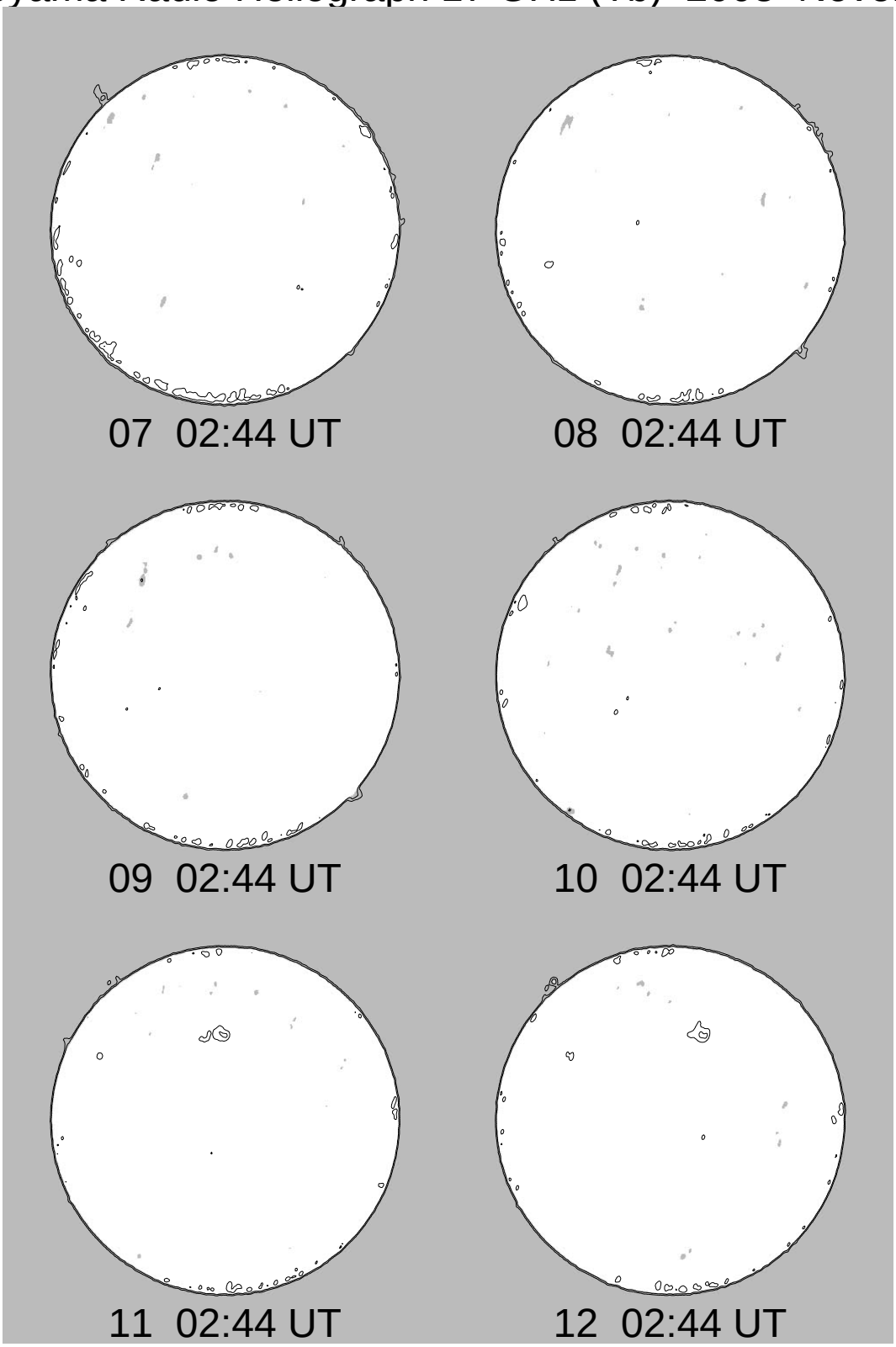
71
Nov 08

Nobeyama Radio Heliograph 17 GHz (Tb) 2008 November



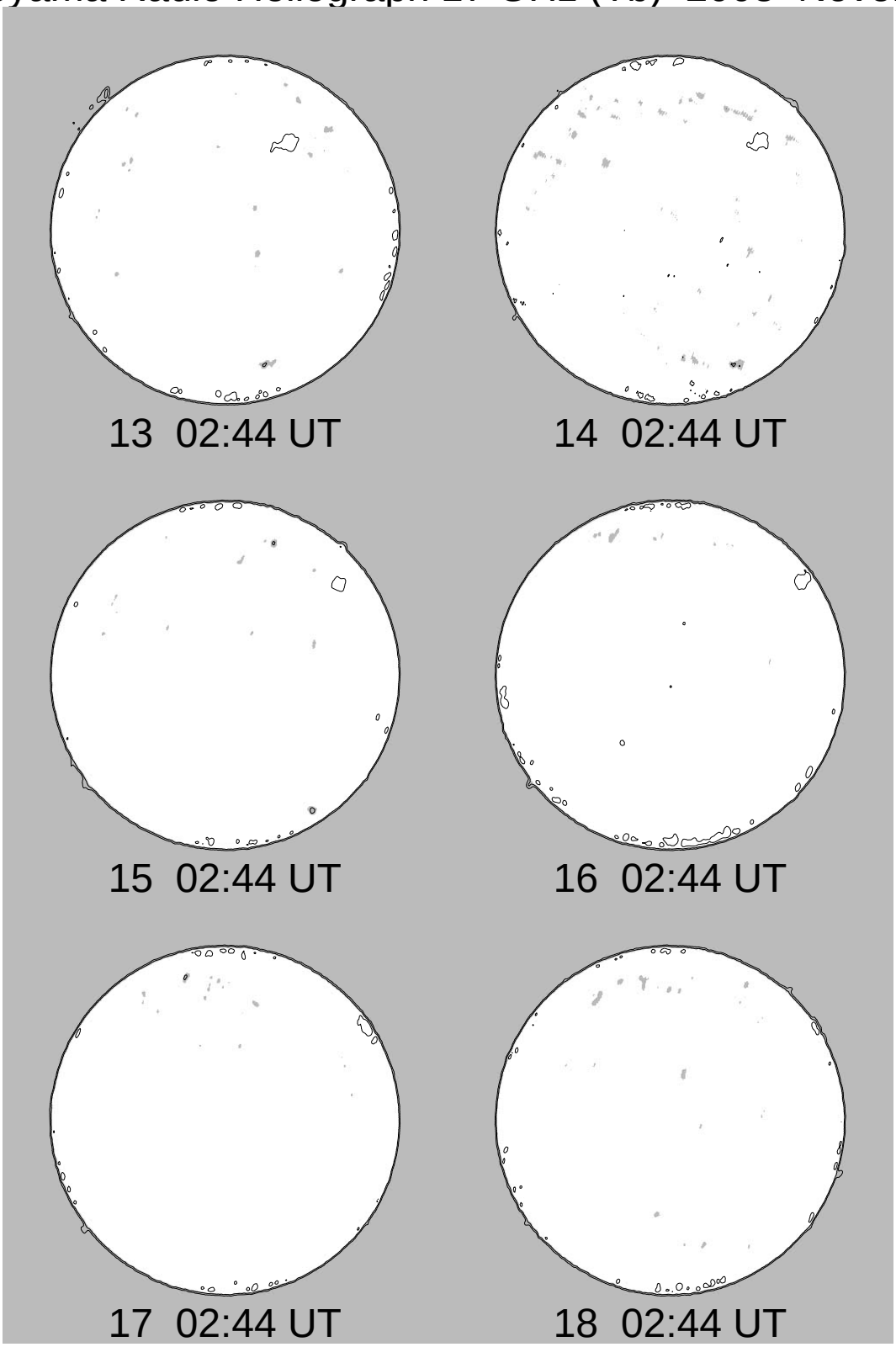
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2008 November



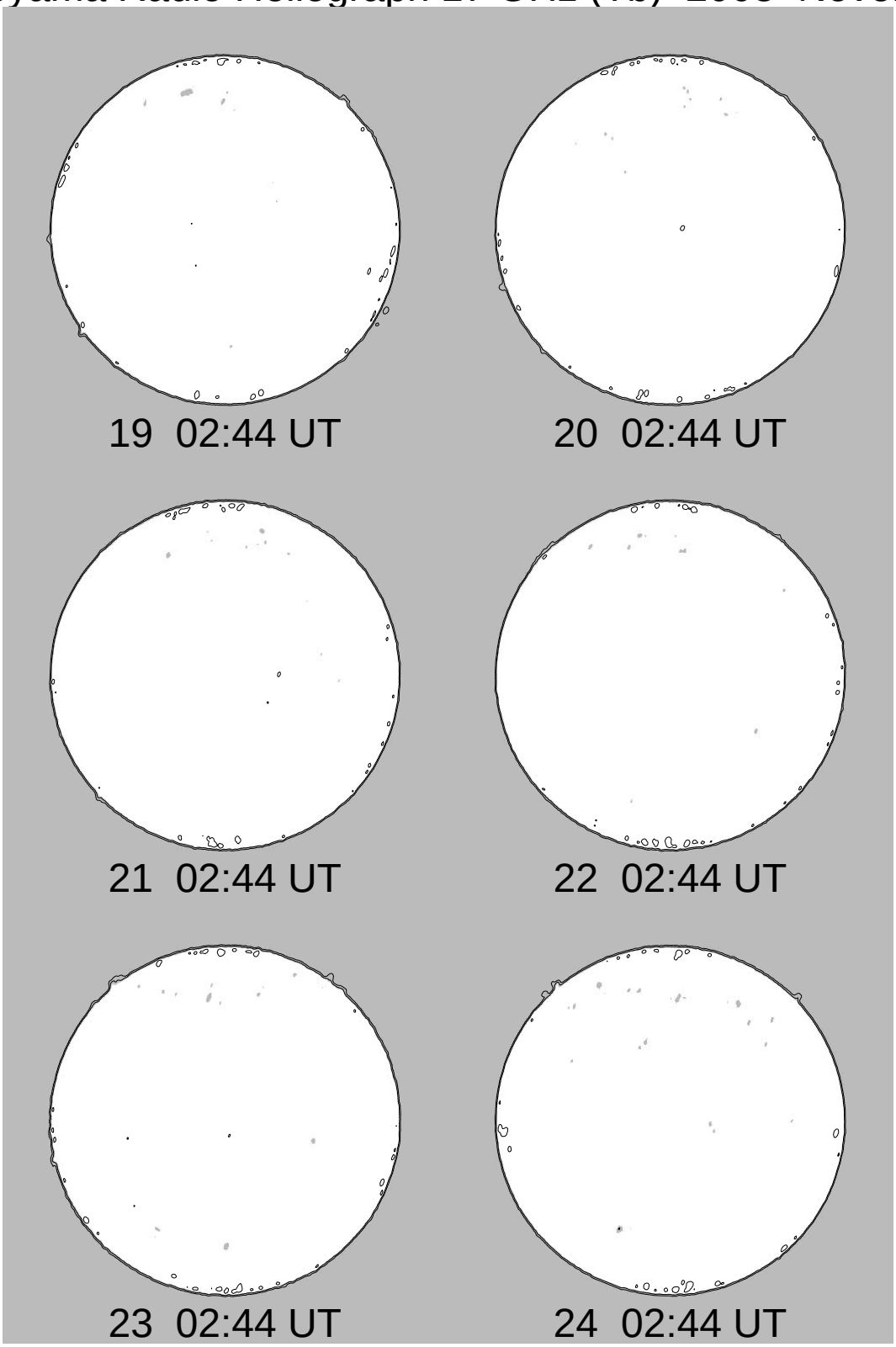
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2008 November



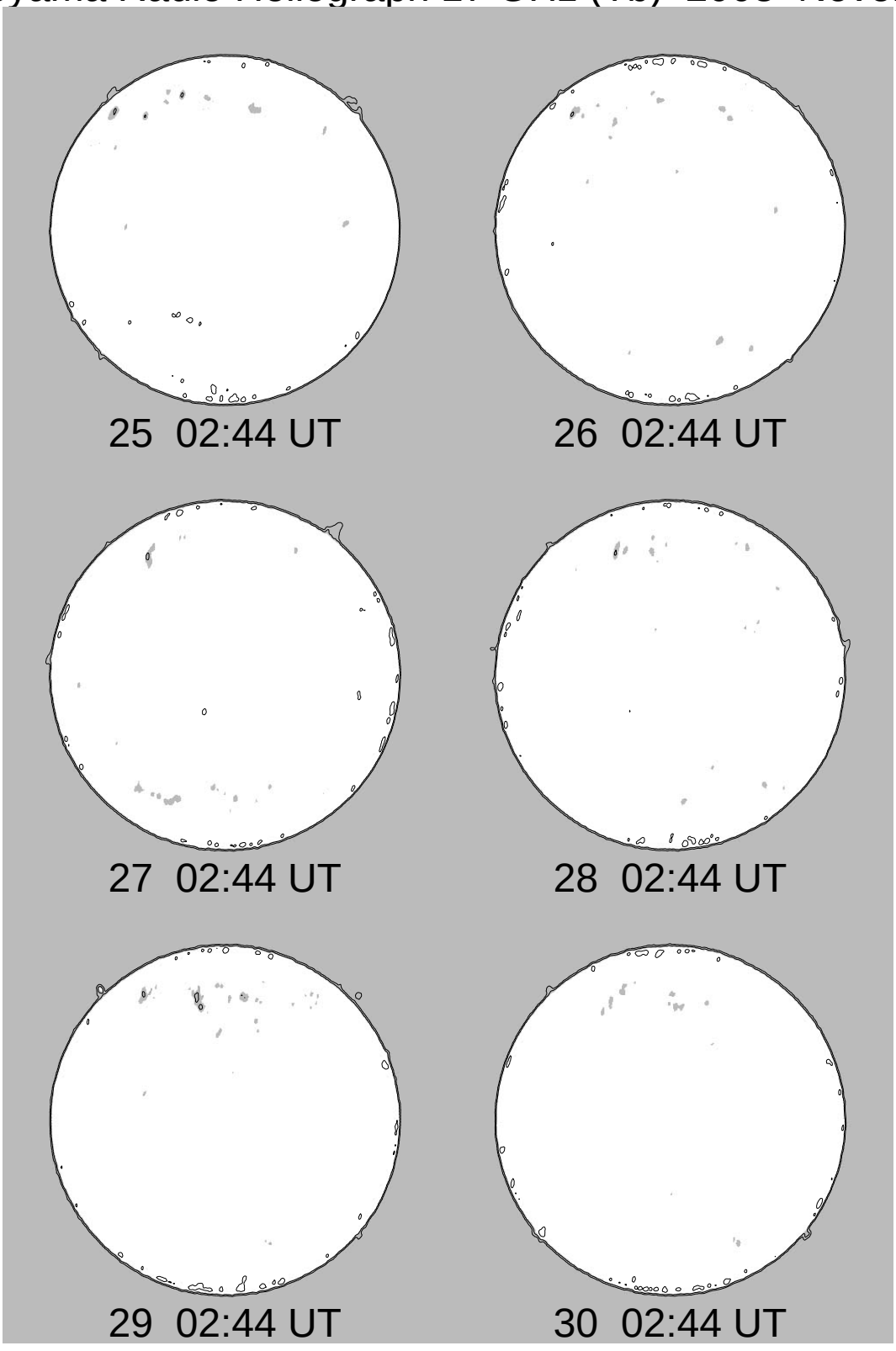
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2008 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) 2008 November



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

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

(Ordered by Central Meridian Passage Date)

NOVEMBER 2008

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
11007		HOLL	10	30	1758	N35	E18	11	1.2		B	BXO	20	3	4	3
11007		LEAR	10	31	0107	N34	E15	11	1.2		B	BXO	20	7	3	3
11007		SVTO	10	31	0745	N35	E13	11	1.4		B	DSO	30	5	4	3
11007		KAND	10	31	0855	N35	E13	11	1.4			CAO		5	5	4
11007		HOLL	10	31	1630	N35	E05	11	1.1		B	BXO	60	9	7	3
11007		VORO	10	31	0049	N35	E15	11	1.2			CAO	17	3	3	3
11007		KAND	10	31	0855	N35	E13	11	1.4			CAO		5	5	4
11007		LEAR	11	01	0006	N35	E03	11	1.2		B	BXO	20	6	7	3
11007		VORO	11	01	0029	N35	E03	11	1.3			CAI	16	6	6	3
11007		KAND	11	01	1205	N36	W03	11	1.3			BXO		4	5	3
11007		HOLL	11	01	1810	N35	W10	10	31.9		B	BXO	30	3	6	3
11007		VORO	11	02	0015	N35	W13	11	1.0			CAI	29	6	4	3
11007		LEAR	11	02	0047	N35	W11	11	1.1		BG	BXI	40	6	8	3
11007		SVTO	11	02	0745	N35	W17	11	1.0		B	BXI	80	7	6	3
11007		KAND	11	02	0940	N35	W17	11	1.0			DAI		7	9	4
11007		HOLL	11	02	1525	N34	W23	10	31.8		B	DSO	50	8	6	3
11007		VORO	11	03	0133	N35	W26	11	1.0			DAO	100	4	6	3
11007		LEAR	11	03	0222	N35	W26	11	1.0		BG	DRO	90	7	8	2
11007		LEAR	11	03	0222	N35	W26	11	1.0		BG	DRO	60	9	8	2
11007		TACH	11	03	0520	N37	W24	11	1.3			AXX	16	1	1	4
11007		TACH	11	03	0520	N37	W29	10	31.9			AR	20	2	2	4
11007		KAND	11	03	0750	N35	W30	10	31.9			DSO		9	9	2
11007		SVTO	11	03	0940	N36	W31	10	31.9		B	DSO	80	7	8	3
11007		HOLL	11	03	1604	N35	W35	10	31.9		B	DSI	70	8	9	3
11007		VORO	11	04	0022	N36	W39	10	31.9			DAO	34	3	9	3
11007		LEAR	11	04	0121	N36	W40	10	31.8		B	CSO	60	4	11	3
11007		TACH	11	04	0546	N35	W46	10	31.6			AXX	16	1	1	3
11007		TACH	11	04	0546	N36	W37	11	1.3			AXX	7	1	1	3
11007		KAND	11	04	0830	N37	W05	11	3.9			CAO		2	11	3
11007		SVTO	11	04	0837	N36	W45	10	31.7		B	CSO	40	3	12	2
11007		HOLL	11	04	1713	N35	W48	10	31.9		B	CAO	80	5	12	3
11007		VORO	11	05	0057	N36	W59	10	31.3			HAX	20	1		3
11007		LEAR	11	05	0137	N35	W59	10	31.3		A	HSX	30	1	1	3
11007		SVTO	11	05	0715	N35	W65	10	31.1		A	AXX	20	1	1	2
11007		KAND	11	05	0840	N35	W68	10	31.0			HS		1	2	4
11007		HOLL	11	05	1831	N35	W70	10	31.2		B	CAO	30	1	3	2
11007		HOLL	11	05	1831	N35	W70	10	31.2		B	CAO	30	1	3	3
11007		LEAR	11	06	0123	N35	W72	10	31.3		A	AXX	30	1	1	3
11007		VORO	11	06	0202	N34	W72	10	31.3			HAX	28	1		3
11007		KAND	11	06	0945	N37	W81	10	31.0			AX		1	1	3
11008		HOLL	11	10	2020	N33	E03	11	11.1		B	DSO	40	6	3	2
11008		VORO	11	10	2358	N33	E03	11	11.2			CAI	38	5	4	3
11008		LEAR	11	11	0003	N33	E04	11	11.3		B	BXO	50	7	5	3
11008		SVTO	11	11	0715	N33	E03	11	11.5		B	BXO	80	7	6	3
11008		KAND	11	11	0725	N33	W02	11	11.1			CAO		16	6	5
11008		HOLL	11	11	1651	N33	W06	11	11.2		B	DSO	90	9	7	3
11008		LEAR	11	12	0145	N33	W12	11	11.1		B	DSO	70	13	7	3
11008		VORO	11	12	0211	N33	W11	11	11.2			DAI	83	7	7	3
11008		TACH	11	12	0606	N33	W12	11	11.3			BRI	28	6	5	3
11008		KAND	11	12	0830	N33	W14	11	11.2			CAO		18	8	3
11008		SVTO	11	12	1110	N34	W17	11	11.1		B	CSO	70	10	9	3
11008		HOLL	11	12	1704	N33	W20	11	11.1		B	CSO	100	9	9	3
11008		HOLL	11	12	1704	N33	W20	11	11.1		B	DSO	100	9	9	3
11008		LEAR	11	13	0144	N33	W24	11	11.2		B	CAO	80	6	8	3
11008		TACH	11	13	0630	N33	W25	11	11.3			CSI	43	3	7	4
11008		HOLL	11	13	1700	N32	W38	11	10.7		A	HSX	60	1	2	2
11008		LEAR	11	14	0124	N33	W41	11	10.8		B	CRO	30	2	1	3
11008		VORO	11	14	0506	N33	W42	11	10.9			HAX	31	1		3
11008		TACH	11	14	0717	N32	W44	11	10.8			HSX	39	1	2	3
11008		KAND	11	14	0815	N33	W40	11	11.2			CRO		2	8	2
11008		SVTO	11	14	1045	N33	W46	11	10.8		A	HSX	30	1	2	2
11008		LEAR	11	15	0143	N33	W54	11	10.8		A	AXX	30	1	1	3
11008		HOLL	11	15	1717	N32	W62	11	10.8		A	HSX	60	1	2	3
11008		LEAR	11	16	0145	N33	W66	11	10.8		A	AXX	20	1	1	3
11008		VORO	11	16	0255	N32	W66	11	10.9			AXX	5	1		3
11008		TACH	11	16	0639	N30	W67	11	11.0			AXX	14	1	1	2
11008		SVTO	11	16	1210	N33	W72	11	10.8		A	HSX	40	1	2	2
11008		HOLL	11	16	1630	N32	W73	11	10.9		A	HSX	60	1	2	3

S U N S P O T G R O U P S
(Ordered by Central Meridian Passage Date)
NOVEMBER 2008

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
11008		LEAR	11 17 0032	N33 W79	11 10.7		A	AXX	50	1	2	3
11008		VORO	11 17 0047	N32 W77	11 10.9			HAX	16	1		3
11008A		HOLL	11 19 2241	N03 W02	11 19.8		A	AXX	10	1	1	3

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES
NOVEMBER 2008

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
02	1147	1200	1245	1	1						No Flare		
03	1119	1122	1146	1	1						1115	C 1.6	
17	1038	1044	1105	1	1						No Flare		

OBSERVATORIES REPORTING FOR NOVEMBER 2008

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 2008

OBSERVATION			EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
01	0000	0747	HIRA								
	0000	0800	CULG								
	0711	1407	ONDR								
	0720	1505	BLEN								
	2000	2400	CULG								
	2055	2400	HIRA								
02	0000	0746	HIRA								
	0000	0800	CULG								
	0713	1417	ONDR								
	0720	1505	BLEN								
			SGMR	2015.0	2015.0	III		1	111U	180U	
	2000	2400	CULG	2015.0	2016.0	III	G	1	18	330	
	2056	2400	HIRA	2139.0	2220.0	IV		1	200	480	
			LEAR	2233.0	2235.0	III		1	25	175	
			CULG	2234.0	2236.0	III	G	1	18	90	
			PALE	2234.0	2234.0	III		1	29	160	
			HIRA	2234.5	2235.0	III	B	2	50	220	
			LEAR	2302.0	2303.0	III		1	40	147	
			PALE	2302.0	2303.0	III		1	48	155	
			HIRA	2302.5	2303.0	III	B	1	50	140	
			CULG	2303.0	2303.0	III	B	1	35	100	
			LEAR	2315.0	2320.0	III		1	25	180	
			PALE	2315.0	2318.0	III	N	1	25	154	
			HIRA	2315.5	2318.0	III	G	1	50	220	
			CULG	2316.0	2319.0	III	G	1	18X	100	
			CULG	2356.0	2356.0	III	B	1	18	90	
03			LEAR	0024.0	0025.0	III		1	25	180	
			PALE	0025.0	0025.0	III		1	25	178	
	0000	0745	HIRA	0025.0	0025.5	III	B	1	25X	150	
	0000	0800	CULG	0025.0	0025.0	III	G	1	18X	160	
			CULG	0030.0	0030.0	III	B	1	18	90	
			HIRA	0030.0	0030.5	III	B	1	50	90	
			LEAR	0030.0	0110.0	III	N	2	25	180	
			CULG	0046.0	0106.0	III	N	1	18	90	
			HIRA	0102.0	0103.5	III	G	2	25X	160	
			CULG	0103.0	0103.0	III	B	2	18X	130	
			CULG	0436.0	0439.0	III	G	1	20	80	
	0715	1415	ONDR								
	0720	1505	BLEN								
			LEAR	0807.0	0808.0	III		1	35	106	
			SVTO	0807.0	0808.0	III		1	25	85	
			LEAR	0829.0	0829.0	III		1	25	110	
			SVTO	0829.0	0829.0	III		1	27	85	
			SVTO	1456.0	1531.0	III	N	2	25	120	
			SGMR	1459.0	1459.0	III		1	30	148	
			SGMR	1459.0	1535.0	III	N	1	30	148	
			SGMR	1651.0	1740.0	III	N	1	30	125	
			SGMR	1922.0	1922.0	III		1	30U	80U	
			PALE	1958.0	1959.0	V		1	25	53	
			SGMR	1958.0	1959.0	III		1	30	121	
			LEAR	2154.0	2155.0	III		1	25	54	
			PALE	2154.0	2155.0	III		1	25	54	
	2057	2400	HIRA	2154.5	2155.0	III	B	1	25X	80	
	2000	2400	CULG	2155.0	2155.0	III	B	1	18X	80	
			CULG	2246.0	2248.0	III	G	3	18X	130	
			CULG	2246.0	2248.0	V		1	20	45	
			HIRA	2246.0	2249.0	III	G	1	25X	120	
			LEAR	2246.0	2248.0	V		1	25	180	
			PALE	2246.0	2247.0	V		1	25U	100U	
			CULG	2248.0	2253.0	III	GG	1	18	130	
			LEAR	2251.0	2253.0	III		1	25	180	
			PALE	2252.0	2253.0	III		1	25U	58U	
			CULG	2253.0	2257.0	III	G	1	50	90	
04			LEAR	0033.0	0035.0	III		1	25	106	
			PALE	0034.0	0035.0	III		1	25U	54U	
	0000	0744	HIRA	0034.0	0034.5	III	B	1	25X	70	

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

Spectral Observations

NOVEMBER 2008

OBSERVATION			EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
04	0000	0800	CULG	0034.0	0036.0	III	G	2	18X	120	
			LEAR	0310.0	0336.0	III	N	1	25	180	
			CULG	0311.0	0311.0	III	B	1	20	70	
			CULG	0322.0	0328.0	III	GG	1	18	120	
			HIRA	0322.5	0328.0	III	G	1	25X	130	
			LEAR	0324.0	0327.0	III		1	25	160	
			CULG	0331.0	0336.0	III	G	1	30	90	
			HIRA	0540.0	0541.5	III	B	1	25X	200	
			LEAR	0540.0	0541.0	III		1	25	180	
			CULG	0541.0	0542.0	III	G	1	18X	130	
			SVTO	0541.0	0541.0	III		1	31	42	
			LEAR	0656.0	0656.0	III		1	25	128	
			CULG	0657.0	0657.0	III	B	1	20	160	
			HIRA	0657.0	0657.5	III	B	1	25X	100	
			SVTO	0657.0	0657.0	III		1	25	144	
	0718	1413	ONDR								
	0730	1500	BLEN								
			SVTO	1026.0	1026.0	III		1	25	77	
			SGMR	1301.0	1309.0	III		1	30	45	
			SVTO	1302.0	1309.0	III		1	25	35	
	2059	2400	HIRA								
	2000	2400	CULG	2059.0	2059.0	III	B	1	20	80	
05	0000	0743	HIRA								
	0000	0800	CULG								
	0720	1411	ONDR								
	0735	1500	BLEN								
			SGMR	1253.0	1255.0	III		1	25	160	
			SVTO	1253.0	1255.0	III		1	25	150	
	2000	2400	CULG								
	2059	2400	HIRA								
06	0000	0742	HIRA								
	0000	0800	CULG								
	0722	1409	ONDR								
	0735	1500	BLEN								
	2000	2400	CULG								
	2100	2400	HIRA								
07	0000	0741	HIRA								
	0000	0800	CULG								
	0724	1407	ONDR								
	0735	1500	BLEN								
	2000	2400	CULG								
	2101	2400	HIRA								
08	0000	0740	HIRA								
	0000	0800	CULG								
	0726	1405	ONDR								
	0740	1500	BLEN								
	2000	2400	CULG								
	2102	2400	HIRA								
09	0000	0739	HIRA								
	0000	0800	CULG								
	0728	1403	ONDR								
	0740	1500	BLEN								
	2000	2400	CULG								
	2103	2400	HIRA								
10	0000	0738	HIRA								
	0000	0800	CULG								
	0730	1401	ONDR								
	0750	1500	BLEN								
	2000	2400	CULG								
	2104	2400	HIRA								
11	0000	0737	HIRA								
	0000	0800	CULG								

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

Spectral Observations

NOVEMBER 2008

OBSERVATION				EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
11	0732	1359	ONDR								
	0750	1500	BLEN								
	2000	2400	CULG								
	2105	2400	HIRA								
12	0000	0737	HIRA								
	0000	0800	CULG								
	0735	1357	ONDR								
	0755	1500	BLEN								
	2000	2400	CULG								
	2106	2400	HIRA								
13	0000	0736	HIRA								
	0000	0800	CULG								
	0737	1355	ONDR								
	0755	1455	BLEN								
	2000	2400	CULG								
	2107	2400	HIRA								
14	0000	0735	HIRA								
	0000	0800	CULG								
	0739	1354	ONDR								
	0800	1455	BLEN								
	2000	2400	CULG								
	2108	2400	HIRA								
15	0000	0734	HIRA								
	0000	0800	CULG								
	0741	1352	ONDR								
	0800	1455	BLEN								
	2000	2400	CULG								
	2109	2400	HIRA								
16	0000	0733	HIRA								
	0000	0800	CULG								
	0743	1350	ONDR								
	0800	1455	BLEN								
	2000	2400	CULG								
	2110	2400	HIRA								
17	0000	0730	HIRA								
	0000	0800	CULG								
	0745	1348	ONDR								
	0800	1455	BLEN								
	2000	2400	CULG								
18	0000	0800	CULG								
	0747	1347	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2113	2400	HIRA								
19	0000	0732	HIRA								
	0000	0800	CULG								
	0750	1345	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2114	2400	HIRA								
20	0000	0732	HIRA								
	0000	0800	CULG								
	0752	1344	ONDR								
	0800	1450	BLEN								
	2000	2400	CULG								
	2115	2400	HIRA								
21	0000	0732	HIRA								
	0000	0800	CULG								
	0754	1342	ONDR								

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

Spectral Observations

NOVEMBER 2008

OBSERVATION			EVENT				FREQUENCY		
Start	End		Start	End	Spectral	Event	Int	Lower	Upper	Remarks
Day (UT)	(UT)	Sta	(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)	
21 0800	1450	BLEN								
2000	2400	CULG								
2116	2400	HIRA								
22 0000	0731	HIRA								
0000	0800	CULG								
0756	1340	ONDR								
0805	1450	BLEN								
2000	2400	CULG								
2117	2400	HIRA								
23 0000	0800	CULG								
0100	0731	HIRA								
0758	1339	ONDR								
0810	1450	BLEN								
2000	2400	CULG								
2118	2400	HIRA								
24 0000	0730	HIRA								
0000	0800	CULG								
0800	1337	ONDR								
0815	1450	BLEN								
2000	2400	CULG								
2118	2400	HIRA								
25 0000	0730	HIRA								
0000	0800	CULG								
0802	1322	ONDR								
0815	1450	BLEN								
2000	2400	CULG								
2119	2400	HIRA								
26 0000	0730	HIRA								
0000	0800	CULG								
0804	1335	ONDR								
0815	1445	BLEN								
2000	2400	CULG								
2120	2400	HIRA								
27 0000	0729	HIRA								
0000	0800	CULG								
0806	1333	ONDR								
0815	1450	BLEN								
2000	2400	CULG								
2121	2400	HIRA								
28 0000	0729	HIRA								
0000	0800	CULG								
0808	1332	ONDR								
0820	1450	BLEN								
2000	2400	CULG								
2122	2400	HIRA								
29 0000	0729	HIRA								
0000	0800	CULG								
0810	1331	ONDR								
0820	1440	BLEN								
2123	2400	HIRA								
30 0000	0729	HIRA								
0812	1316	ONDR								
0825	1440	BLEN								
2110	2400	CULG								
2124	2400	HIRA								

SOLAR RADIO NOISE STORM AT 150.9 MHZ

FROM NANÇAY RADIOHELIOGRAPH

NOVEMBER 2008

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
02/11/08	+0.47	+0.38	I	11H59	13H59 D
03/11/08	+0.68	+0.69	I	8H50 E	15H05 D
04/11/08	+0.87	+0.41	I	10H03 E	15H05 D
11/11/08	+0.06	+0.54	I	8H05 E	15H05 D
12/11/08	+0.41	+0.63	I	8H05 E	11H59
12/11/08	+0.11	+0.64	I	12H19	15H05 D
15/11/08	+1.06	+0.58	I	8H05 E	12H50

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

NOVEMBER 2008

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
02/11/08	+0.40	+0.45	I	8H04 E	13H59 D
03/11/08	+0.63	+0.51	I	8H50 E	15H05 D
04/11/08	+0.77	+0.45	I	11H04	15H05 D
11/11/08	-0.02	+0.46	I	8H05 E	15H05 D
11/11/08	+0.18	+0.51	I	11H09	15H05 D
12/11/08	+0.40	+0.54	I	8H05	15H05

[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

OTHERS DAYS: NO DETECTABLE NOISE STORM

- For the days marked by an asterisk, intense ionospheric gravity waves are observed

during the whole day. Without a mode detailed analysis leading to increase uncertainties in the deviation , the positions which are indicated are estimated within 0.2 R

** Following a large burst

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

**** no flux measurements available

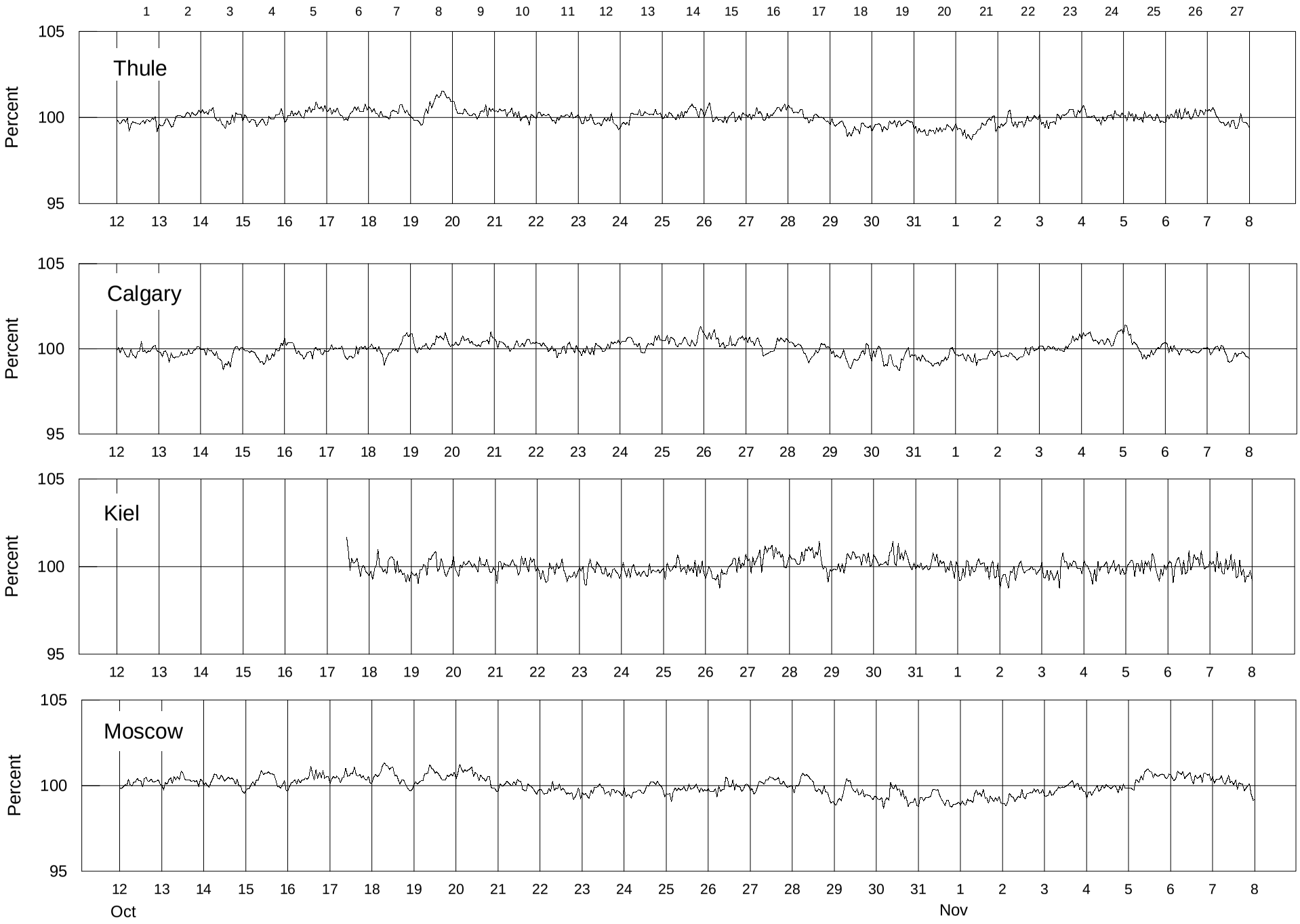
COSMIC RAY INDICES
(Neutron Monitor)
NOVEMBER 2008

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	4608.5	4030.7	6371.5	9479.8		2090.8	
2	4627.7	4038.3	6357.8	9496.2		2094.1	
3	4638.2	4057.3	6369.2	9535.6		2094.8	
4	4642.3	4075.5	6372.2	9534.0		2097.3	
5	4638.0	4056.7	6378.5	9597.0		2095.8	
6	4646.2	4048.0	6388.3	9604.6		2094.6	
7	4632.1	4040.7	6374.9	9564.1	data	2098.4	data
8	4608.6	4019.7	6355.7	9517.9	not	2102.1	not
9	4624.4	4035.3	6374.0	9539.4(23)	available	2102.4	available
10	4636.9	4054.2	6390.9	9537.3		2103.6	
11	4636.3	4059.2	6409.6	9541.6		2104.9(16)	
12	4647.9	4051.0	6427.4	9566.1		2109.0	
13	4652.0	4064.2	6412.4	9555.2		2111.1	
14	4654.6	4063.8	6372.0	9586.9		2110.8	
15	4665.7	4059.7	6378.7	9637.0		2119.0	
16	4655.0	4036.7	6401.4	9651.8		2122.5	
17	4649.5	4021.3	6419.9	9672.5(23)		2132.4	
18	4653.4	4032.7	6419.4	9666.5		2122.0	
19	4657.5	4043.8	6415.9	9707.6		2116.5	
20	4668.8	4048.8	6449.2	9765.9		2106.8	
21	4672.2	4056.5	6479.8	9773.7		2101.4	
22	4683.4	4064.2	6504.1	9751.0		2096.1	
23	4670.5	4072.2	6521.0	9781.1		2098.1	
24	4671.7	4070.2	6515.2	9736.5		2103.4	
25	4648.7	4051.0	6462.2	9621.3		2100.4	
26	4630.3	4045.0	6403.8	9586.0		2103.3	
27	4635.0	4045.0	6381.0	9544.5		2102.2	
28	4627.2	4038.0	6412.3	9502.4		2103.8	
29	4639.0	4058.7	6458.8	9486.3		2103.8	
30	4645.7	4066.7	6480.0	9505.4		2100.5	
31							
Mean	4645.0	4050.2	6415.2	9601.5		2104.7	

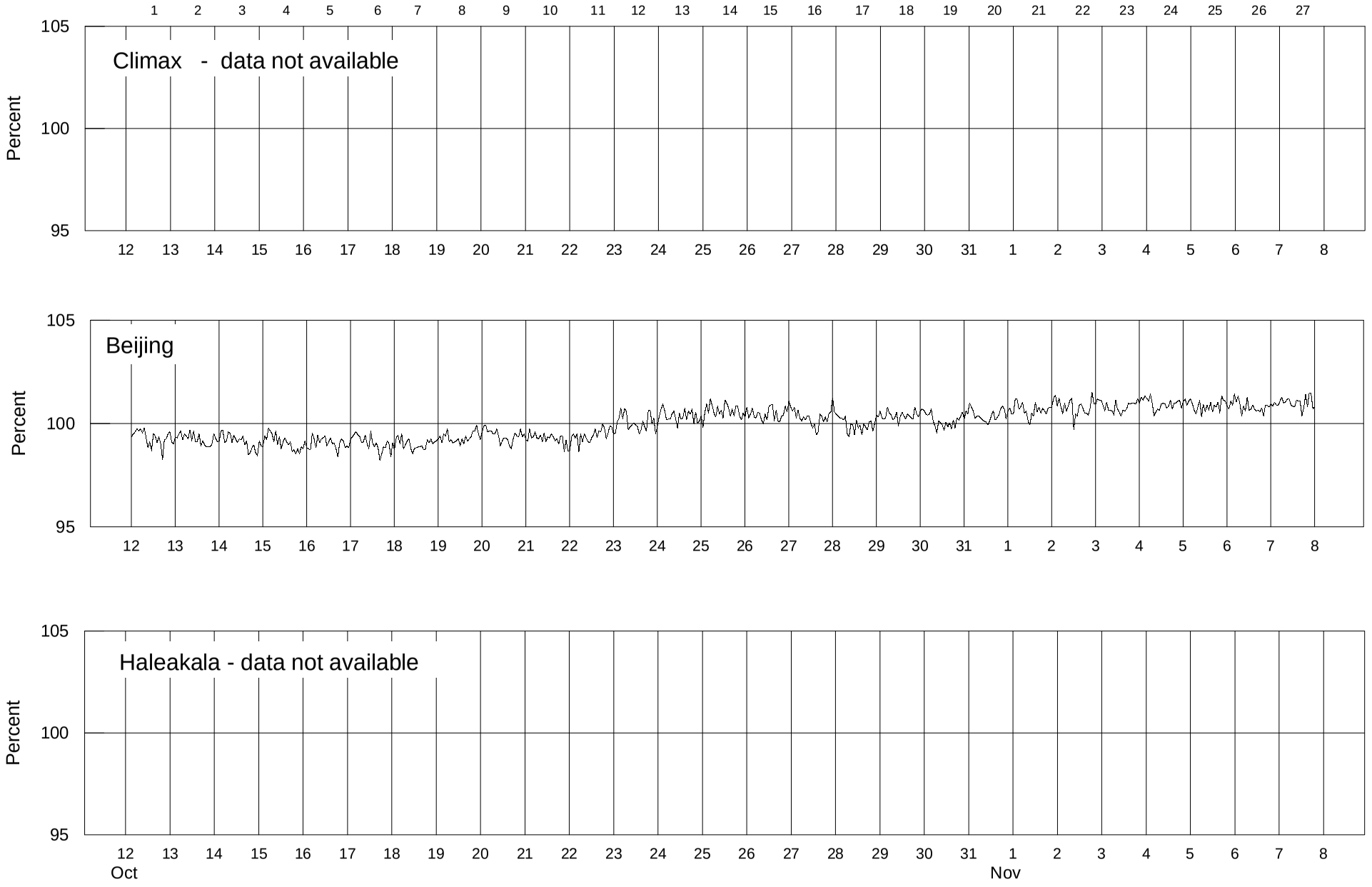
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2391 - Beginning 12 Oct 2008

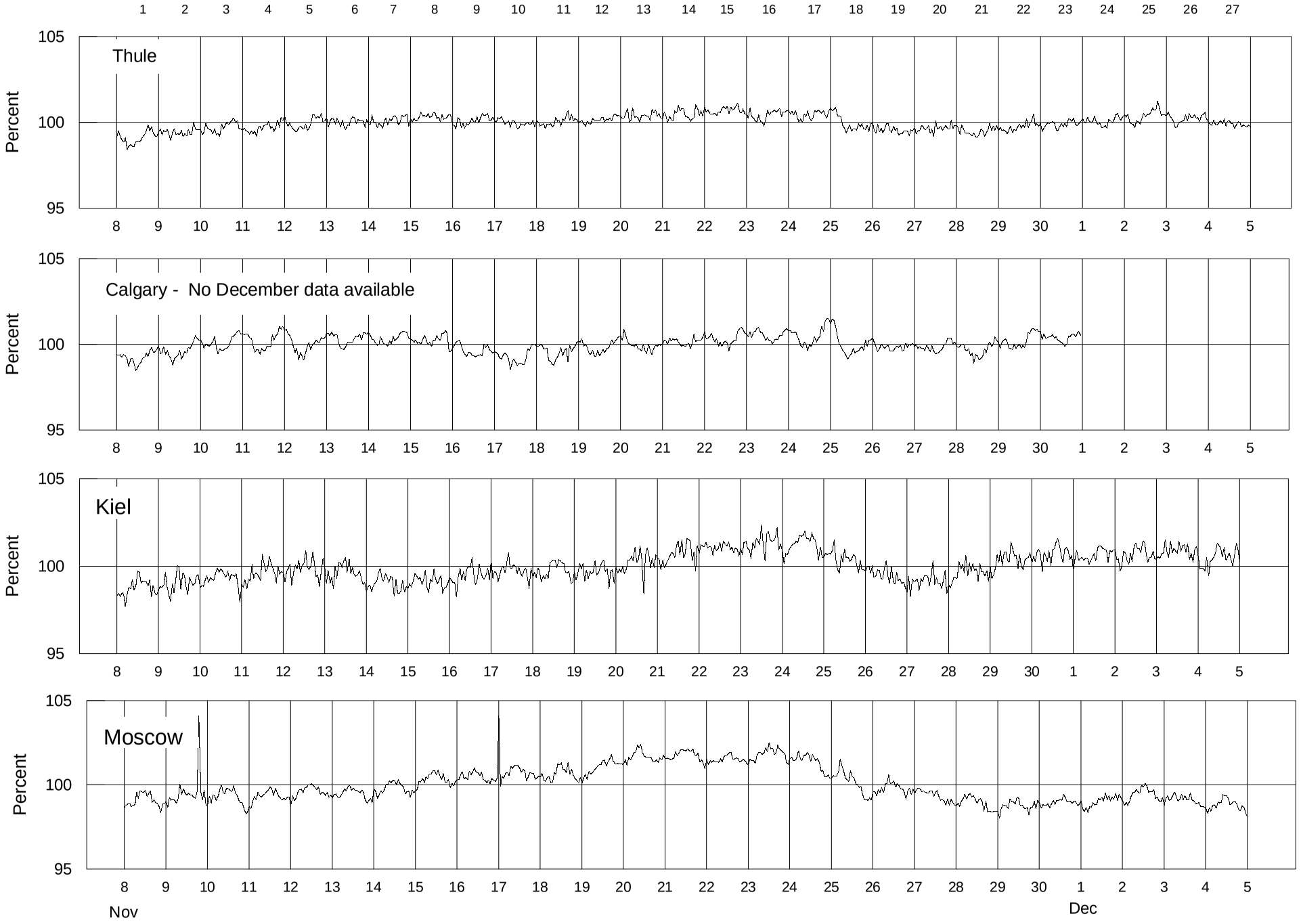


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2391 - Beginning 12 Oct 2008

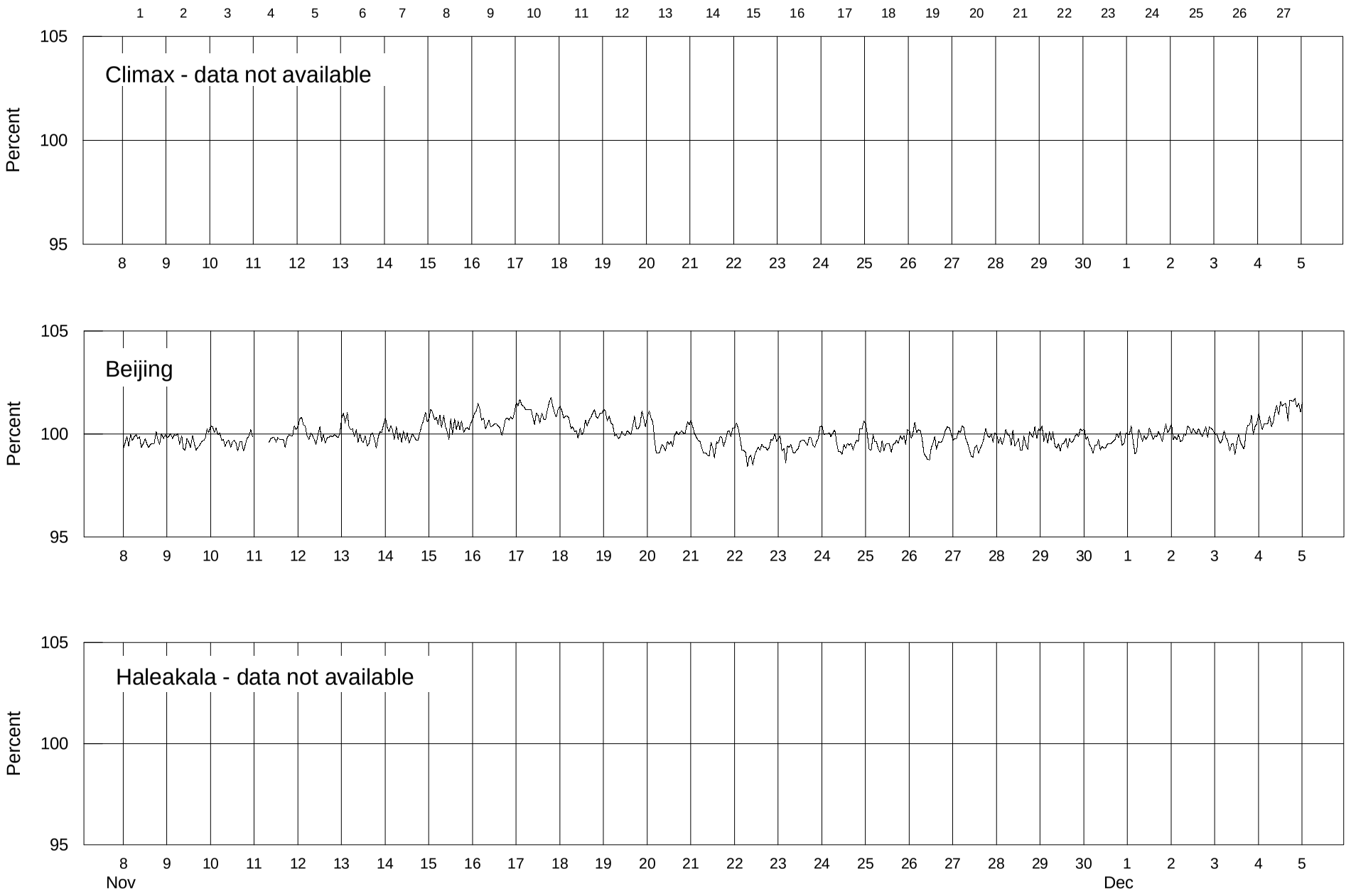


COSMIC RAY INDICES
(Neutron Monitor)

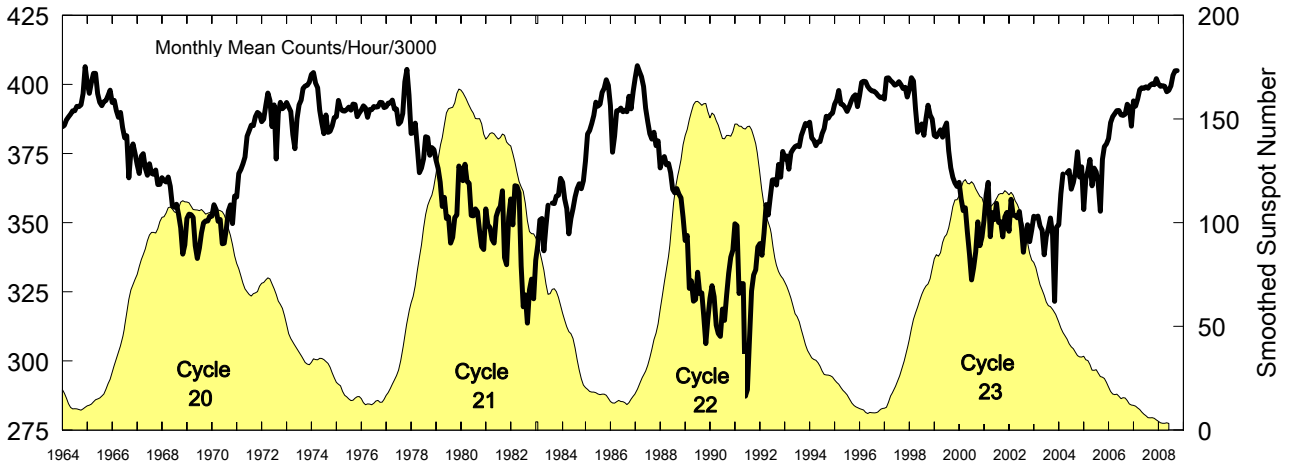
Bartels Rotation 2392 - Beginning 8 Nov 2008



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2392 - Beginning 8 Nov 2008



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Nov 2008



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

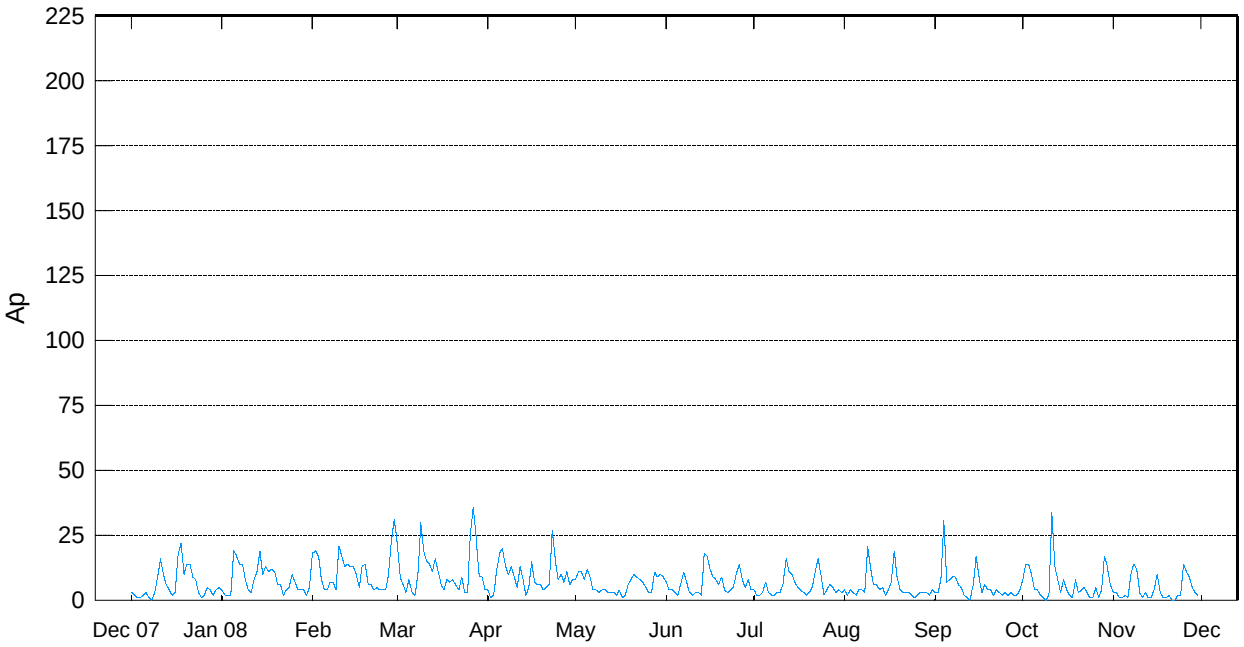
Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

Geomagnetic Activity Indices
NOVEMBER 2008

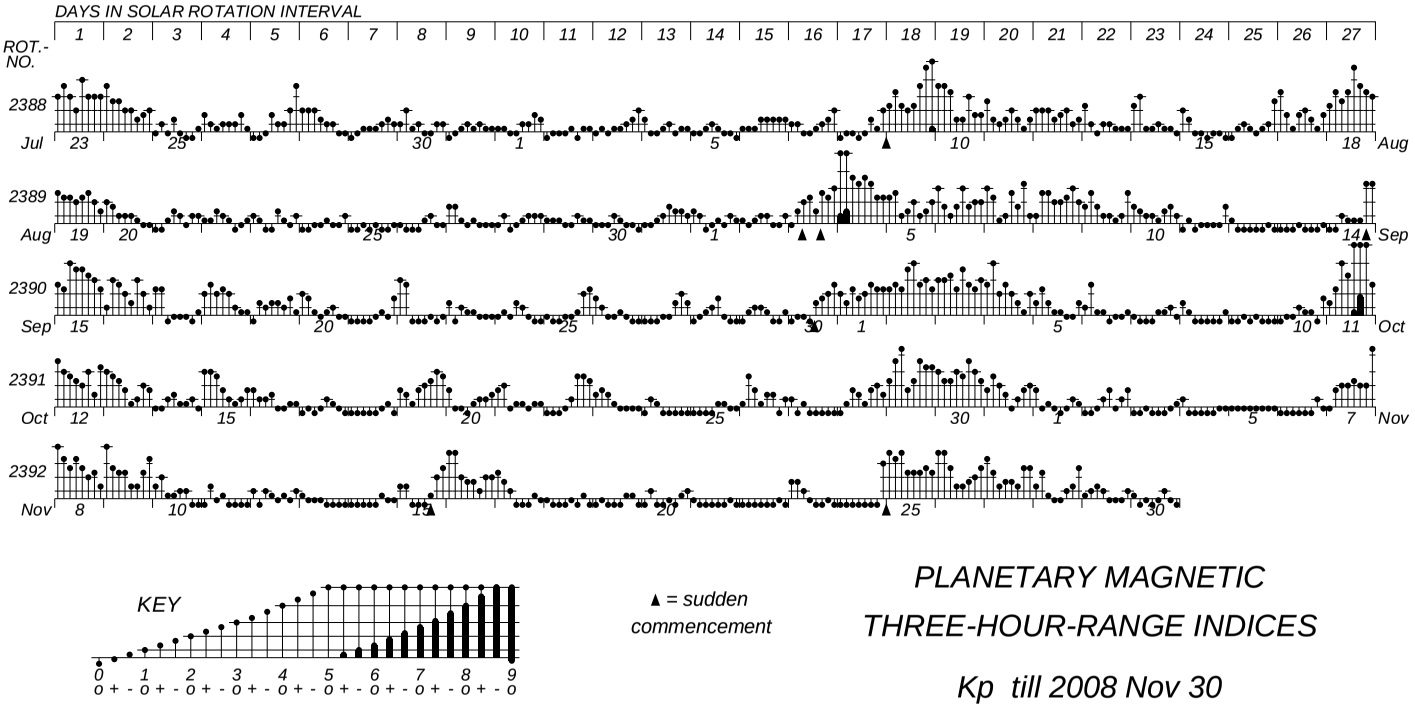
Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		2-	0+	1-	0+	0	0+	1	1-	5	3	0.0	1o	0o	1o	1-	0o	1-	1o	1-	4	6	6	7	6	CC
2		0	0	0+	1	2-	0+	1	2-	6	3	0.1	0o	0+	1-	2o	2-	0o	1o	2-	7	8	10	6	11	CC
3	Q3	0	0	0+	0	0	0	0+	1-	1+	1	0.0	0+	0+	0o	0+	0o	1-	1-	1-	3	4	5	3	6	CC
4	Q10	1	0	0	0	0	0	0+	0+	2-	1	0.0	1-	0o	0o	0o	0o	0o	0o	0+	1	3	5	4	4	CC
5	Q7	0+	0+	0+	0+	0+	0+	0+	0+	3-	2	0.0	0o	0o	0+	0o	0+	0o	0o	0o	1	3	4	3	4	CC
6	Q9	0	0	0	0	0	0	1	0+	1+	1	0.0	0o	0o	0o	0o	0o	0+	1+	1-	2	4	3	2	4	CC
7		0+	2-	2	2	2+	2	2	4+	17-	10	0.5	0o	2-	3-	2+	2+	2-	2+	4-	19	24	21	14	31	
8	D2*	4	3+	3-	3+	3-	2	2+	1+	22-	14	0.8	3+	3o	3o	4-	3-	2o	2+	1+	25	26	24	33	17	
9	D3*	4	3-	2+	2+	1+	1+	2+	3+	20-	12	0.7	4-	2+	2o	2+	1o	2-	2+	3-	19	27	16	23	20	
10		1+	2	1-	1-	1	1	0	0	7-	3	0.1	1o	1+	0+	1-	1o	1+	0+	0+	5	5	8	6	7	CK
11		0	1+	0+	1-	0	0	0	0	2+	1	0.0	0o	1-	0+	1-	0o	0+	0o	0+	2	4	3	4	3	CC
12		1	0	1	1-	0+	1-	0+	1	5	3	0.0	1-	0o	1o	1o	1-	1-	1-	1+	5	7	6	6	8	CC
13	Q6	1-	0+	0+	0+	0	0	0	0	2-	1	0.0	0+	0+	0o	0o	0+	0o	0o	0+	2	4	5	4	4	CC
14	Q4	0	0	0	0	0	1-	0+	0+	1+	1	0.0	0o	0o	0o	0+	0o	1o	1-	1o	3	4	5	2	7	CC
15		1+	1+	0	0	0	1-	2	3-	8	4	0.1	1+	1o	0o	0o	0+	1o	2o	3-	8	9	11	7	13	CK
16	D5*	4-	4-	2	2-	2-	1	2	2	18-	10	0.6	3o	3o	2o	2-	2o	1-	2-	2-	17	19	20	22	16	
17		2+	2-	1	0	0	0	1-	0+	6	3	0.1	1+	1+	1-	0o	0o	0+	1-	0o	4	9	5	10	4	CC
18	Q5	0+	0	0	0	0+	0	1-	0	1+	1	0.0	0+	0o	0o	0o	0+	0o	1o	0+	2	3	4	2	4	CC
19	Q8	0	0+	0	0	0	1-	1-	0	2-	1	0.0	0o	0+	0o	0o	0+	1o	1-	0o	2	4	5	3	7	CC
20		0	1	0	0	0+	0	1-	1	3	2	0.0	0o	1-	0o	0+	0+	0o	1o	1-	3	6	4	3	7	CC
21	Q2	0+	0	0	0	0	0	0+	0	1-	0	0.0	0+	0o	0o	1-	0o	0o	0o	0+	1	3	2	2	3	CC
22	Q1	0	0	0	0	0	0	0+	0	0+	0	0.0	0+	0+	0o	0+	0o	0o	0+	1-	2	3	5	2	5	CC
23		2-	2-	1	0+	0	0	0+	0	5	2	0.0	1+	1o	1-	1-	0o	0o	0+	0o	4	6	6	9	3	CC
24		0	0	0	0	0	0	0	3	3	2	0.0	0o	0o	0o	0o	0o	0o	0+	3+	6	7	7	3	10	KK
25	D1*	4-	3+	4-	2+	2+	2+	3-	2+	23-	14	0.8	3o	3o	3o	2+	3-	2+	3-	2+	24	29	26	33	22	
26	D4*	4-	4-	3-	1+	1+	2-	2	3-	19	11	0.7	3o	3o	3-	1+	2-	2+	2+	2+	20	24	25	31	18	
27		3+	2+	1+	2-	2-	1+	3-	3-	17	9	0.5	3-	2o	1o	2-	2o	2o	2+	2+	15	23	15	18	20	
28		1+	2+	1-	0+	0+	1	1+	3-	10	5	0.2	1o	2-	1-	1-	1o	1o	2-	2+	9	12	9	8	13	CK
29		1-	1	1+	1	0+	0+	0+	1	6	3	0.1	1-	1o	1o	1+	0+	1o	1-	1o	6	9	10	11	8	CC
30		1-	0	0+	0	0+	1	0+	0	3-	2	0.0	1-	0o	0+	0+	0+	1+	0+	0o	3	4	5	4	5	CC
Mean											4	0.18									7.5	10.1	9.3	9.5	

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	1o	0+	1-	0+	0+	1-	1-	1-	4	1o	0o	1+	1o	0o	0+	1o	1o	5	65.6	9	4	9	
2	0o	0o	1-	2-	1+	0+	1-	1+	5	0+	1-	1o	2+	2-	0o	1o	2-	8	68.0	11	11	11	
3	0o	0o	0+	0o	0+	1-	0o	1-	2	0+	0+	0o	1-	0o	1-	1o	1o	3	68.3	11	11	12	
4	0+	0o	0o	0o	0o	0o	0o	0o	1	1o	0o	0o	0o	0o	0o	0+	0+	2	66.8	10	10	10	
5	0o	0o	0o	0o	0+	0o	0o	0o	1	0o	0o	0+	0o	0o	0o	0o	0o	1	66.5	8	7	10	
6	0o	0o	0o	0o	0o	0+	1+	1-	2	0o	0o	0o	0o	0o	0+	2-	0+	2	67.3	7	4	11	
7	0o	1+	2+	2o	2+	2-	2+	4-	18	0o	2o	3-	3-	2+	2-	2+	4-	20	66.5	0	1	10	
8	3+	3-	3o	4-	3o	2+	2+	1+	27	3+	3o	3-	3+	2+	2-	2+	2-	23	67.0	0	0	10	
9	4-	3-	2+	3-	1+	2o	2+	3-	22	3+	2-	2-	2o	1o	1+	2o	2o	16	67.1	0	0	10	
10	1-	1+	0+	1o	1+	1+	0o	0o	5	1o	1+	0+	1-	1-	1+	1-	1-	6	67.9	0	3	11	
11	0o	1-	0o	1-	0o	1-	0o	0o	2	0o	1-	0+	1-	0o	0o	0+	1-	2	70.0	12	13	14	
12	0+	0o	1+	1o	1-	1-	0+	1o	5	1o	0+	1-	1-	0+	0+	1o	1+	5	69.5	14	14	13	
13	0o	0+	0o	0o	0+	0o	0o	0o	1	1-	0+	0o	0o	0o	0o	0o	1-	2	67.6	9	10	11	
14	0o	0o	0o	0o	0+	1o	0+	0+	2	0o	0o	0+	1-	0o	1o	1o	2-	4	66.8	8	7	10	
15	1o	1o	0o	0o	0+	1+	2-	2+	7	2o	1+	0+	0o	0o	1o	2+	3o	10	66.7	8	6	10	
16	3o	3+	2-	1+	2+	1-	1+	2-	16	3+	3o	2+	2o	2o	1-	2o	2-	18	66.2	8	5	9	
17	1+	1+	1-	0o	0+	0o	0+	0o	4	1+	1o	0+	0o	0o	0+	1o	0o	4	66.2	7	1	9	
18	0o	0o	0o	0o	0+	0o	1-	0o	1	1-	0o	0+	0o	0+	0o	1+	1-	3	68.2	0	0	12	
19	0o	0o	0o	0o	0+	1o	1-	0o	2	0+	1-	0+	0+	0+	1-	1-	0+	3	67.7	0	0	11	
20	0o	1-	0o	0o	0+	0o	1o	1-	3	0+	1-	0o	1-	0+	0o	1o	1-	3	67.9	0	1	11	
21	0+	0o	0o	0o	0o	0o	0o	0o	1	0+	0+	0+	1o	0o	0o	0o	1-	2	66.8	0	0	10	
22	0o	0o	0o	0o	0+	0+	0o	0o	1	0+	0+	0o	1-	0o	0o	1o	1+	3	67.3	0	0	11	
23	1o	1o	1-	0+	0o	0o	0+	0o	3	2-	1o	1o	1o	0o	0+	0o	0o	5	67.2	0	0	11	
24	0o	0o	0o	0o	0o	0o	0o	3-	3	0+	0+	0o	0o	0o	0o	0+	4o	8	66.1	0	0	9	
25	3o	3-	3-	2+	3-	2+	3-	2+	22	3o	3+	3o	2+	3o	2+	3-	2o	25	66.0	0	0	9	
26	3o	3o	2+	1+	1+	2o	2o	2+	19	3+	3-	3-	1o	2-	2+	3-	2+	20	66.5	0	0	10	
27	3-	2o	1o	2-	2o	2+	2+	3-	16	2o	2-	1+	1+	2-	2-	2+	2-	13	66.4	0	0	10	
28	1-	2o	1-	1-	1-	1-	1+	2+	8	1+	1+	1o	1o	1o	1o	2-	2+	10	65.2	0	0	8	
29	0o	1-	1o	1+	0+	1+	0+	1o	5	1o	1o	1o	1o	0+	1o	1-	1+	6	66.4	0	0	10	
30	0+	0o	0o	0o	1-	1+	0o	0o	2	1-	0o	0+	0+	0+	1o	0+	0o	3	66.5	0	0	10	
Mean									7.0									7.8	67.1	4.1	3.6	10.5	

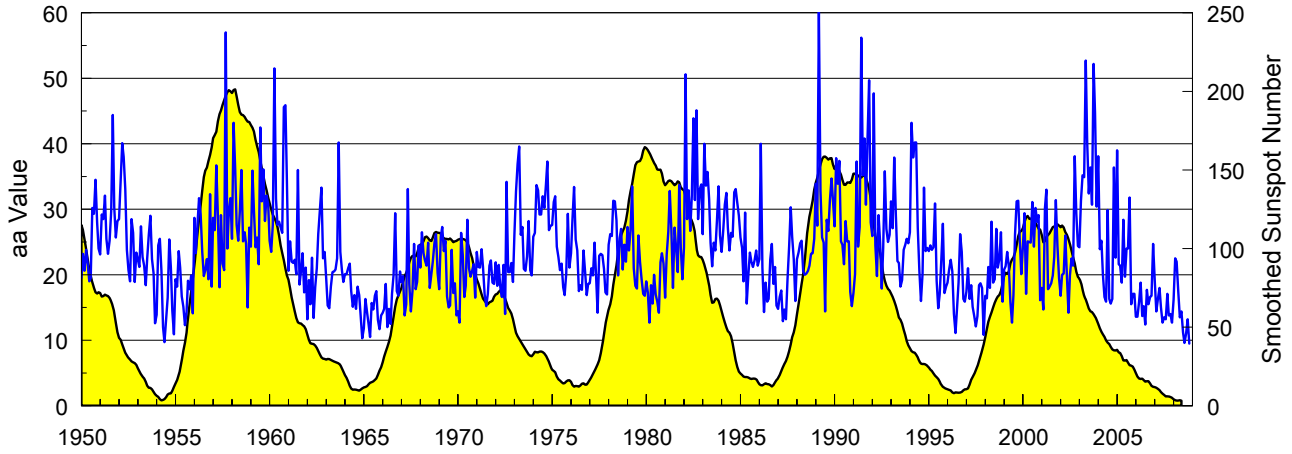
Daily Average Indices Ap
Dec 2007 - Nov 2008



Day	Dec 07	Jan 08	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	3	4	18	22	4	8	7	4	4	3	8	3
2	2	2	19	9	1	11	4	2	2	3	14	3
3	1	2	17	6	2	11	4	2	4	8	14	1
4	1	2	8	3	11	8	3	3	3	31	10	1
5	2	19	4	8	18	12	2	7	2	7	4	2
6	3	17	4	3	20	9	6	3	4	8	4	1
7	1	14	7	2	13	4	11	2	4	9	2	10
8	0	14	7	10	10	4	7	2	3	9	1	14
9	3	8	4	30	13	3	3	3	21	6	0	12
10	9	4	21	19	9	4	2	3	12	5	2	3
11	16	3	17	15	5	4	3	6	6	2	34	1
12	10	8	13	14	13	3	3	16	6	1	13	3
13	6	11	14	11	8	3	2	11	4	0	8	1
14	4	19	13	16	2	3	18	10	5	6	3	1
15	2	10	13	11	5	2	17	7	2	17	8	4
16	3	13	10	6	15	4	12	5	4	9	4	10
17	18	11	5	4	7	1	9	4	7	3	2	3
18	22	12	13	8	6	2	8	3	19	6	1	1
19	10	11	14	7	6	6	6	2	9	4	8	1
20	14	6	6	8	4	8	9	3	4	4	3	2
21	14	6	6	6	5	10	4	5	3	2	4	0
22	9	2	4	4	6	9	3	11	3	4	5	0
23	8	4	5	9	27	8	4	16	3	3	3	2
24	3	5	4	3	16	7	5	10	2	2	1	2
25	1	10	4	3	8	5	10	2	1	3	1	14
26	2	7	4	26	10	3	14	4	2	2	5	11
27	5	4	10	36	7	3	8	6	3	3	1	9
28	4	4	23	24	11	11	5	5	3	2	4	5
29	2	4	31	9	6	9	8	3	3	2	17	3
30	4	2		9	8	10	4	4	2	4	13	2
31	5	5		4		9		3	4		6	
Mean	6	8	11	11	9	6	7	5	5	6	7	4


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NO.
2388
Jul 23 25 30 1 5 10 15 18 Aug
2389
Aug 19 20 25 30 1 5 10 14 Sep
2390
Sep 15 20 25 30 1 5 10 11 Oct
2391
Oct 12 15 20 25 30 1 5 7 Nov
2392
Nov 8 10 15 20 25 30
KEY
0 1 2 3 4 5 6 7 8 9
o + - o + - o + - o + - o + - o + - o + - o + - o
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp till 2008 Nov 30

Monthly Mean aa Index Jan 1950 - Nov 2008



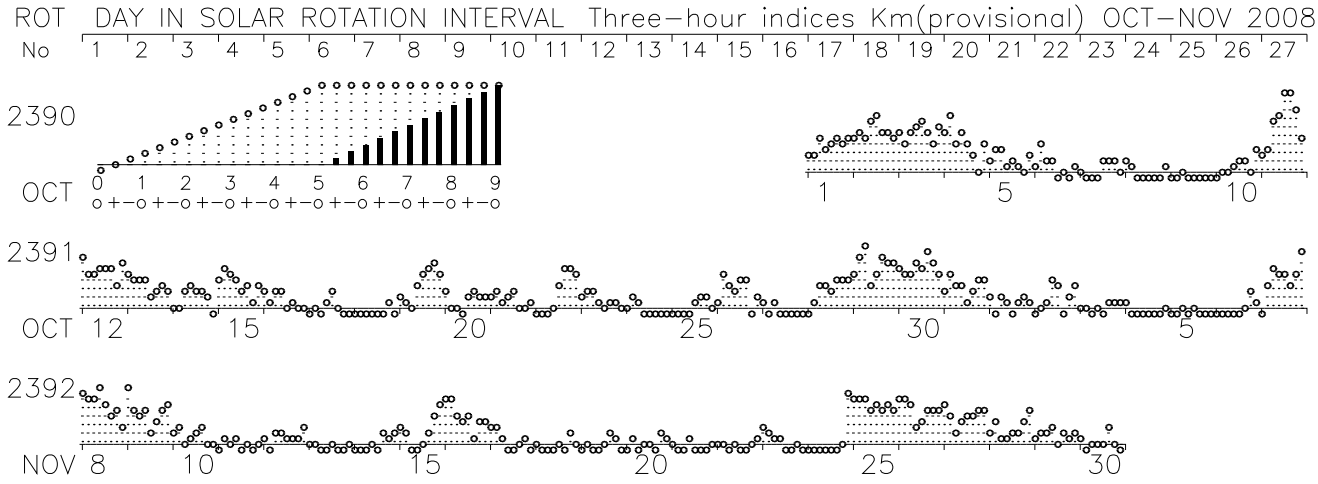
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1	18.8	19.3	27.0	21.1	22.4	26.5	15.9	21.0
1999	20.8	21.3	23.5	21.3	15.8	12.7	16.9	26.2	31.2	31.3	25.1	20.1	22.2
2000	24.2	29.4	17.1	25.1	25.0	24.9	31.1	24.3	30.2	28.1	29.1	16.1	25.4
2001	18.0	14.7	30.2	33.0	17.8	18.2	18.7	19.9	22.7	31.4	24.4	19.5	22.4
2002	16.8	20.0	20.2	26.0	19.9	14.2	19.9	22.5	21.4	38.1	29.3	24.4	22.7
2003	24.2	31.3	35.2	34.9	52.7	40.2	32.4	36.4	30.7	52.2	44.7	30.4	37.1
2004	38.1	23.9	25.2	20.1	16.6	15.9	29.9	16.3	15.6	16.3	36.4	22.6	23.1
2005	39.0	21.6	21.4	18.8	28.4	19.7	24.0	24.0	31.8	15.5	17.1	17.1	23.2
2006	13.6	13.6	15.8	18.8	13.7	15.2	12.4	17.7	15.5	16.6	16.8	24.7	16.2
2007	19.2	14.4	16.3	18.0	15.0	12.7	13.5	13.2	17.1	13.8	14.0	12.7	15.0
2008	16.2	22.5	22.0	17.5	13.5	14.4	11.2	9.6	11.0	13.2	9.5		14.6

PLANETARY GEOMAGNETIC ACTIVITY

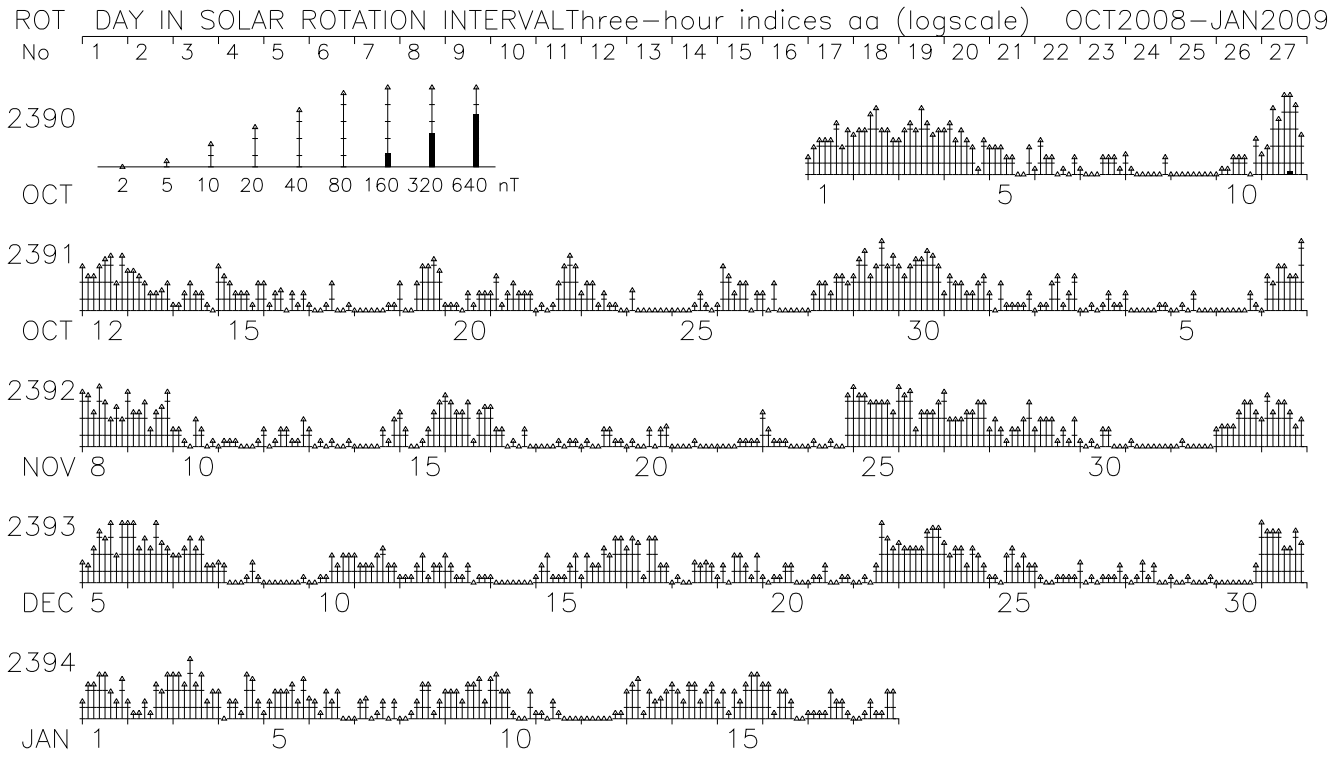
3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

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.

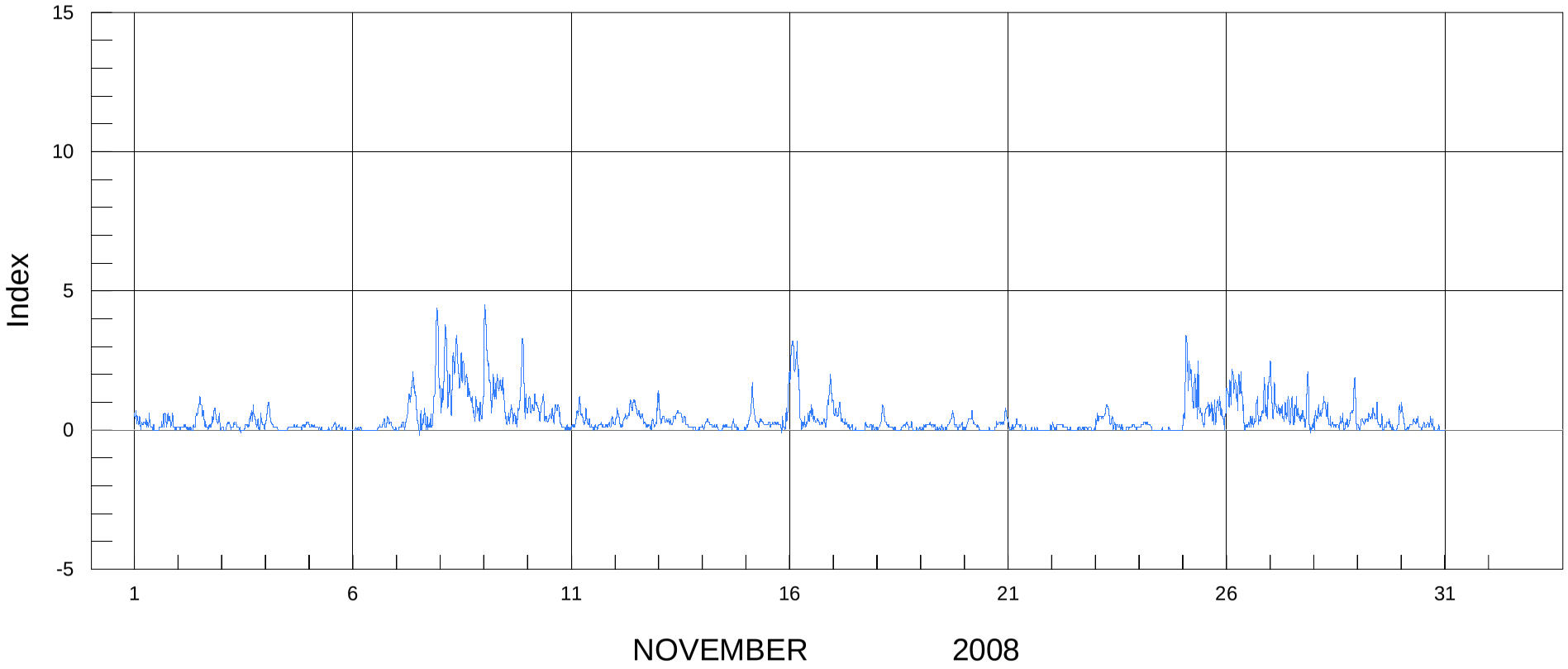


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

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 2008

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Hour Day	End Hour (UT)
JAI	17.4N	07	0230	..	..	..	..		-	3	78	20	09	24
NGP	11.3N	07	0230	..	..	..	..		-	3	94	25	09	24
ABG	09.4N	07	0230	..	..	..	..	7(4,5,8)	4	3	91	26	09	24
HYB	07.6N	07	0300	..	..	..	..	7(8)	4	3	103	11	10	01
PND	02.0N	07	0230	..	..	..	..		-	3	99	44	09	24
TIR	00.6S	07	0230	..	..	..	..		-	3	111	46	09	24
HYB	07.6N	15	1624	SC	- 0.3	9	..	15(8)	3	3	50	07	16	23
GNA	43.0S	15	1625	SC	3.7	7.5	4.0		-	--	--	---	--	--
JAI	17.4N	24	2351	SC	- 0.8	23	- 5		-	3	89	13	26	21
NGP	11.3N	24	2351	SC	- 0.3	26	- 2		-	3	103	14	26	21
ABG	09.4N	24	2351	SC	- 0.6	24	- 6	25(2)	5	3	98	19	26	21
HYB	07.6N	24	2352	SC	- 0.6	27	..	25(1)	4	4	78	27	27	23
PND	02.0N	24	2351	SC	- 0.4	22	19		-	4	108	42	26	21
TIR	00.6S	24	2351	SC	- 0.3	16	21		-	4	118	53	26	21
GNA	43.0S	24	2352	SC	3.7	7.5	4.0		-	--	--	---	--	--
CAN	43.6S	24	2351	SC	1.1	8.1	1.4		-	--	---	---	--	--

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

NOVEMBER 2008

Storm Sudden Commencements (SSC) Day	Time	Quality: Station Group*	Solar Flare Effects (sfe) Day	Begin-End	Station(s)
07	0353	B: LER* ESK HAD* C: BDV GCK	NONE		
15	1625	A: LER* ESK* HAD* B: NUR* GUI GNA C: SOD NGK* DOU BDV* GCK HYB LIV*			
24	2351	A: SOD* NUR* ESK* HAD* CLF SPT* HYB GNA* CNB* B: VAL DOU BDV* EBR* LIV* C: NGK* GCK*			

REPORTING OBSERVATORIES (up to 31-12-2008):
SOD NUR LER ESK NGK VAL HAD DOU BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY GUI HYB GNA CNB LIV

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

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

Criterion on Provisional SSC data

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