AUGUST 2009 NUMBER 780 - Part I

Solar-Geophysical Data prompt reports

Data for June 2009 and July 2009
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

NGDC On-Line Addresses:
World-Wide Web: **http://www.ngdc.noaa.gov**
Anonymous FTP: **ftp.ngdc.noaa.gov**

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL GEOPHYSICAL DATA CENTER / BOULDER, COLORADO

U.S. DEPARTMENT OF COMMERCE
Gary Locke, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Dr. Jane Lubchenco, Under Secretary/Administrator

NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
Mary E. Kicza, Assistant Administrator

AUGUST 2009 NUMBER 780 - Part I

Solar-Geophysical Data prompt reports

Data for June 2009 and July 2009

International Standard Serial Number: 0038-0911
Library of Congress Catalog Number: 79-640375 //r81

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

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

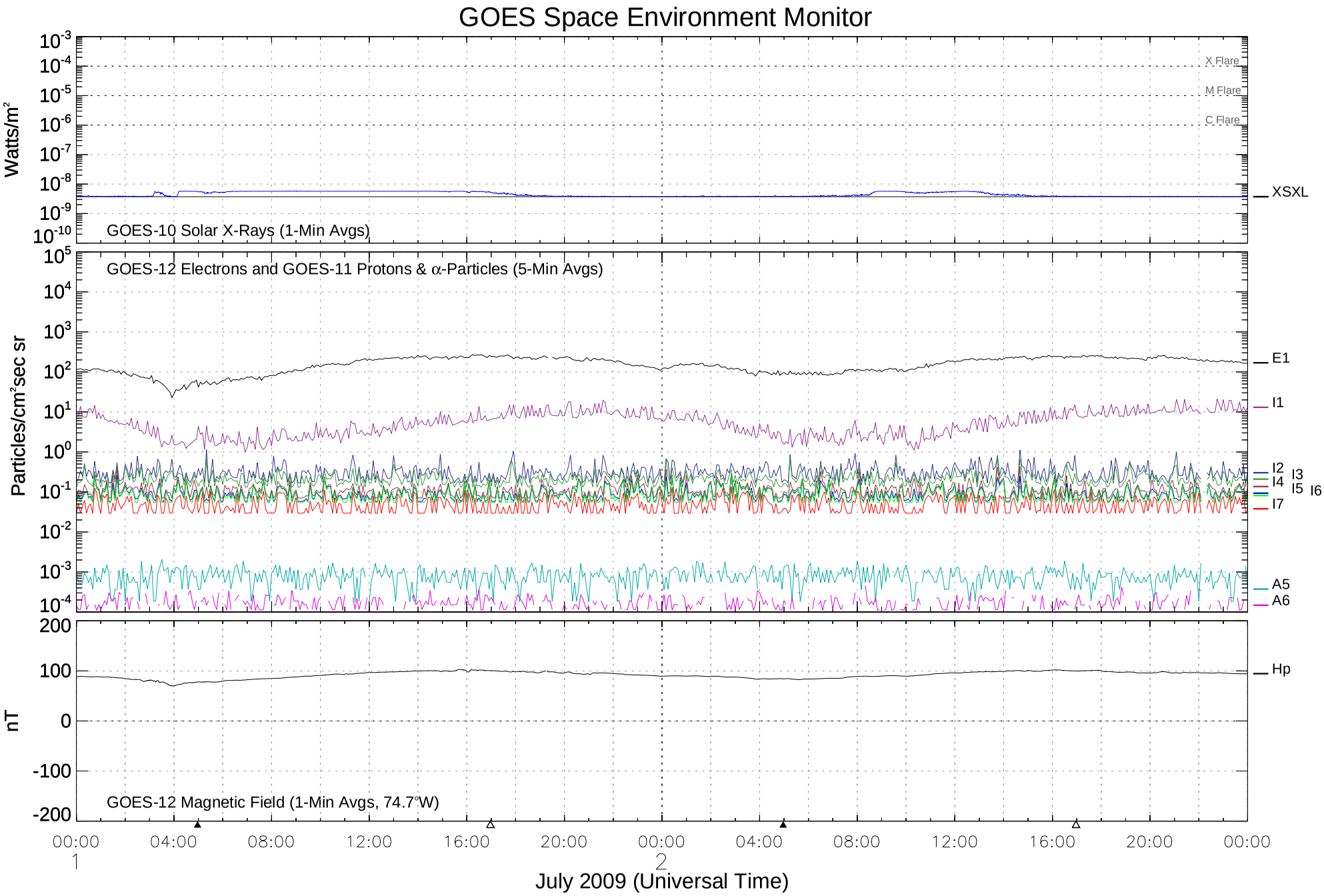
CODE	KIND OF OBSERVATION	DEC	JAN 09	FEB	MAR	APR	MAY	JUN	JUL
A.	**SOLAR AND INTERPLANETARY**								
A.1	Sunspot Drawings	774A 40	775A 38	776A 40	777A 40	778A 40	779A 40	780A 40	
A.2aa	International Sunspot Numbers	773A 24	774A 24	775A 20	776A 24	777A 23	778A 24	779A 23	780A 24
A.2c	American Sunspot Numbers	773A 24	774A 24	775A 20	776A 24	777A 23	778A 24	779A 23	780A 24
A.3a	Mt. Wilson Magnetograms	774A 40	775A 38	776A 40	777A 40	778A 40	779A 40	780A 40	
A.3b	Sunspot Mag Class and Regions	774A 77	775A 75	776A 73	777A 77	778A 75	779A 77	780A 75	
A.3c	Kitt Peak Magnetograms	774A 40	775A 38	776A 40	777A 40	778A 40	779A 40	780A 40	
A.3d	Mean Solar Mag Field (Stanford)	773A 30	774A 30	775A 28	776A 30	777A 29	778A 30	779A 29	780A 30
A.3e	Stanford Magnetograms	774A 40	775A 38	776A 40	777A 40	778A 40	779A 40	780A 40	
A.4	H-alpha Filtergrams	774A 40	775A 38	776A 40	777A 40	778A 40	779A 40	780A 40	
A.5d	PhotometricCa FaculaeSanFernando	Jan 92-Dec 96-631B 22; 1997-1998 663B 66							
A.6c	Stanford Solar Mag Field Map	774A 34	775A 32	776A 34	777A 34	778A 34	779A 34	780A 34	
A.6d	Kitt Peak Mag Field Synoptic Map	774A 39	775A 37	776A 39	777A 39	778A 39	779A 39	780A 39	
A.6f	Active Prominences and Filaments	778B 16	779B 17	780B 16					
A.6g	Sac Peak Coronal Line Maps	774A 37	775A 35	776A 37	777A 37	778A 37	779A 37	780A 37	
A.6h	Photometric WL SanFernando	Jul-Dec 96 630B 32; 1997-1998 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	774A 38	775A 36	776A 38	777A 38	778A 40	779A 40	780A 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)	778B 21	779B 22	780B 21					
A.8aa	2800 MHz- Solar Flux (Penticton)	773A 24	774A 24	775A 20	776A 24	777A 23	778A 24	779A 23	780A 24
A.8ac	2800 MHz Adj Solar Flux (Pent.)	773A 24	774A 24	775A 20	776A 24	777A 23	778A 24	779A 23	780A 24
A.8g	Adjusted Daily Solar Flux SGMR	773A 24	774A 24	775A 20	776A 24	777A 23	778A 24	779A 23	780A 24
A.10g	Nancay Radiohelio 150.9&327MHz	774A 83	775A 80	776A 78	777A 83	778A 80	779A 83	780A 82	
A.10h	Nobeyama Radioheliogr 17 GHz	774A 71	775A 69	776A 68	777A 71	778A 70	779A 71	780A 70	
A.11g	Solar X-ray GOES (graphs)	778B 9	779B 10	780B 10					
A.11g	Solar X-ray GOES (event table)	773A 28	774A 28	775A 26	776A 28	777A 27	778A 28	779A 27	780A 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	778B 17	779B 18	780B 17					
A.12g	Solar Particles (GOES)	773A 4	774A 4	775A 4	776A 4	777A 4	778A 4	779A 4	780A 4
A.12i	Solar Energetic Particles (ACE)	778B 20	779B 21	780B 20					
A.13g	Solar Plasma (ACE)	778B 19	779B 20	780B 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	778B 18	779B 19	780B 18					
C.	**SOLAR FLARE-ASSOCIATED EVENT**								
C.1a	H-alpha Flares	773A 27	774A 27	775A 25	776A 27	777A 26	778A 27	779A 26	780A 27
C.1ba	H-alpha Flare Groups	778B 4	779B 4	780B 4					
C.1d	Flare Patrol Observations	778B 6	779B 7	780B 7					
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	778B 8	779B 9	780B 9					
C.3	Radio Bursts Fixed Freq Selected	773A 29	774A 29	775A 27	776A 29	777A 28	778A 29	779A 28	780A 29
C.4	Radio Bursts Spectral	774A 79	775A 77	776A 75	777A 79	778A 77	779A 79	780A 78	
C.6	Sudden Ionospheric Disturbances	774A 78	775A 76	776A 74	777A 78	778A 76	779A 80	780A 79	
D.	**GEOMAGNETIC EVENTS**								
D.1a	Geomagnetic Indices	774A 88	775A 85	776A 83	777A 90	778A 87	779A 90	780A 89	
D.1ba	27-day Chart of Kp Indices	774A 90	775A 87	776A 85	777A 92	778A 89	779A 92	780A 91	
D.1cb	Monthly Mean aa Indices	774A 91	775A 89	776A 86	777A 93	778A 90	779A 93	780A 92	
D.1d	Principal Magnetic Storms	774A 95	775A 95	776A 90	777A 97	778A 94	779A 97	780A 96	
D.1f	Sudden Commencements	774A 96	775A 96	776A 91	777A 98	778A 95	779A 98	780A 97	
D.1g	Equatorial Indices Dst	774A 93	775A 93	776A 88	777A 95	778A 92	779A 95	780A 94	
D.1l	Polar Cap (PC) Index	774A 94	775A 94	776A 89	777A 96	778A 93	779A 96	780A 95	
F.	**COSMIC RAYS**								
F.1b	Cosmic Ray Neutron Cts (Climax)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1h	Cosmic Ray Neutron Cts (Thule)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1l	Cosmic Ray Neutron Cts (Kiel)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1n	Cosmic Ray Neutron Cts (Beijing)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1m	Cosmic Ray Neutron (Haleakala)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1o	Cosmic Ray Neutron (Moscow)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
F.1p	Cosmic Ray Neutron Cts (Calgary)	774A 85	775A 82	776A 80	777A 85	778A 82	779A 85	780A 84	
H.	**MISCELLANEOUS**								
H.60	ISES Alert Periods	773A 20	774A 20	775A 18	776A 20	777A 19	778A 20	779A 19	780A 20

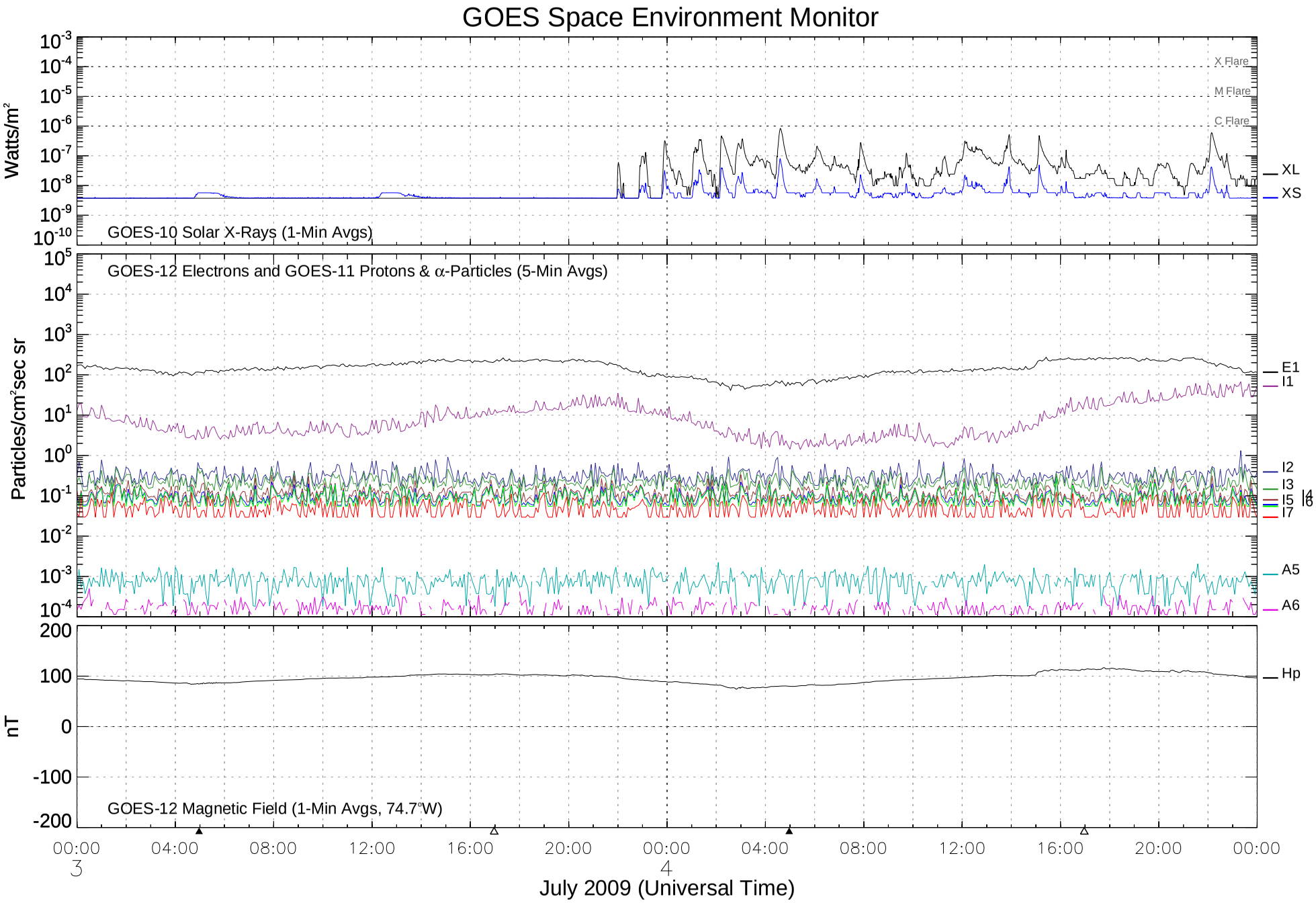
The entry "748A 48" under Oct, for example, means the sunspot drawings for Oct appear in SOLAR-GEOPHYSICAL DATA No 748, Part I, and that they begin on page 48, "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

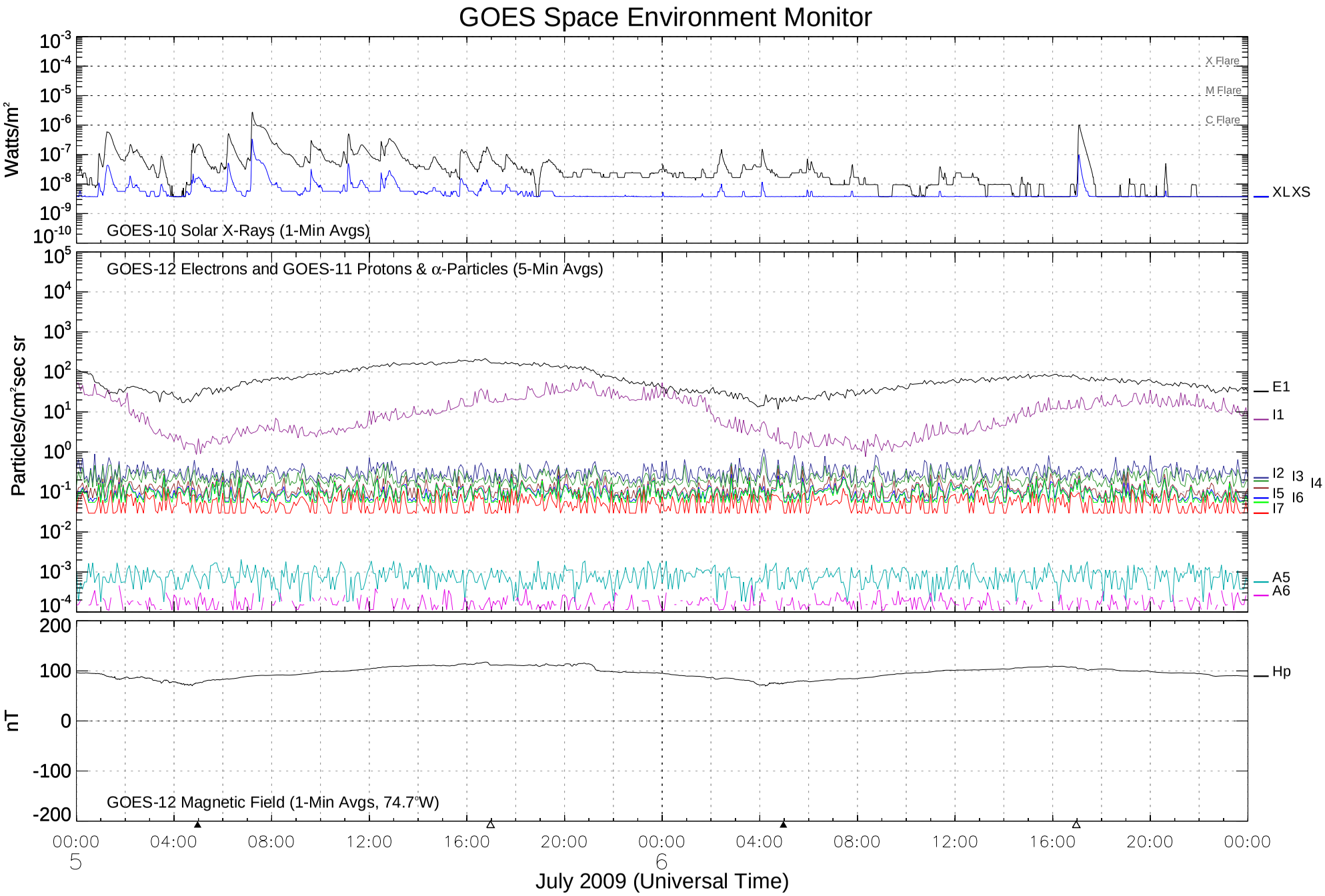
CONTENTS

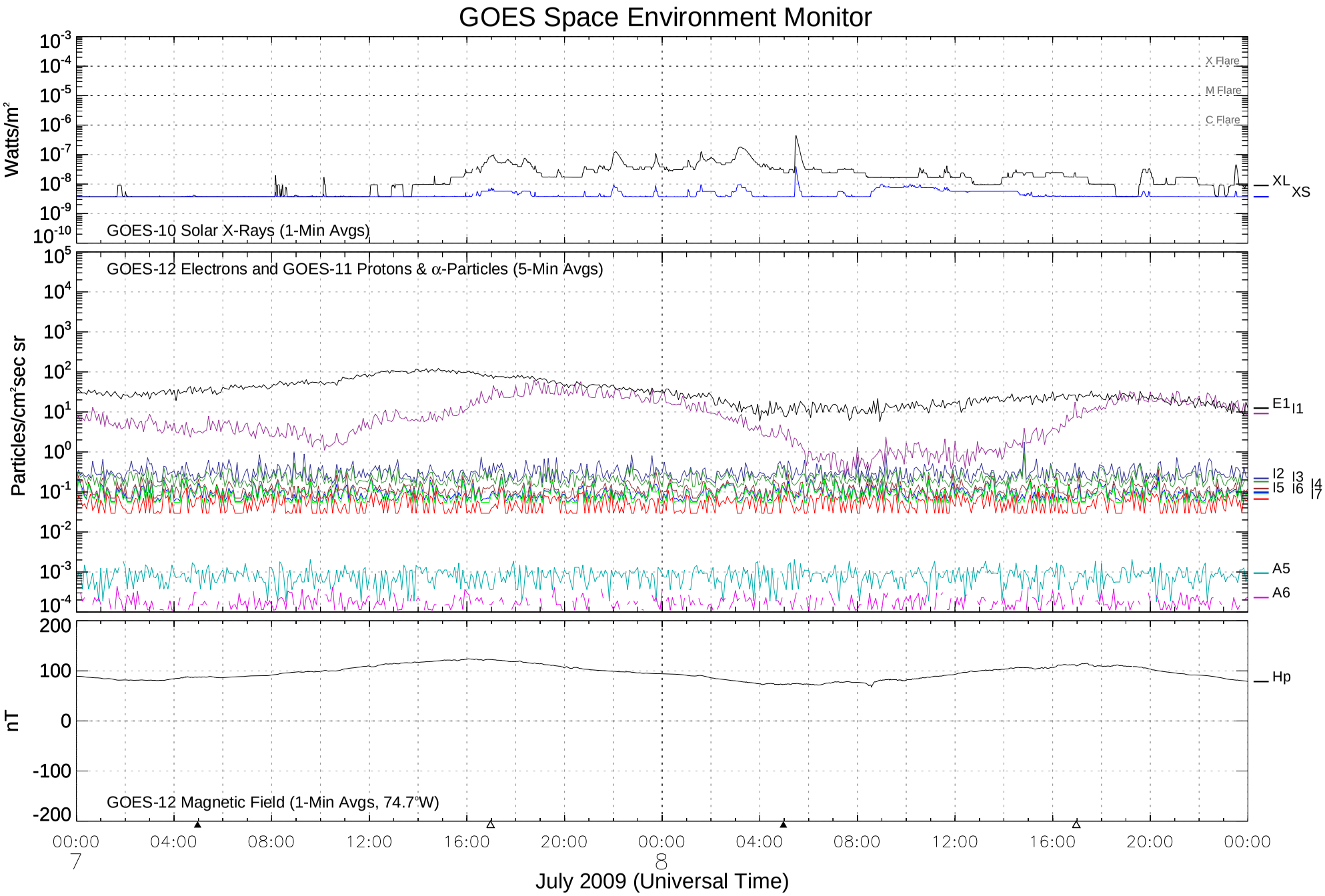
Prompt Reports Number 780 Part I

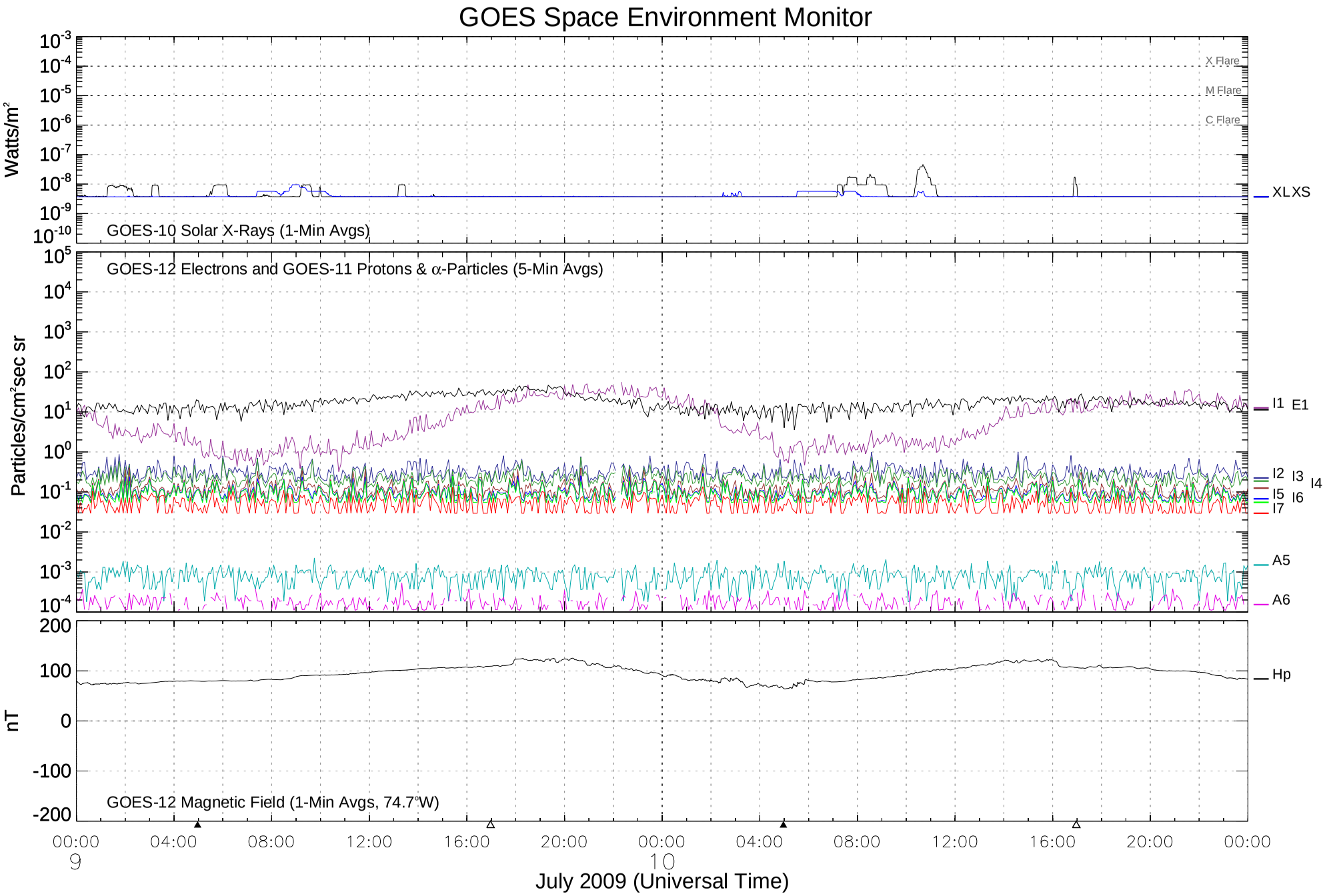
DATA FOR **JULY 2009**

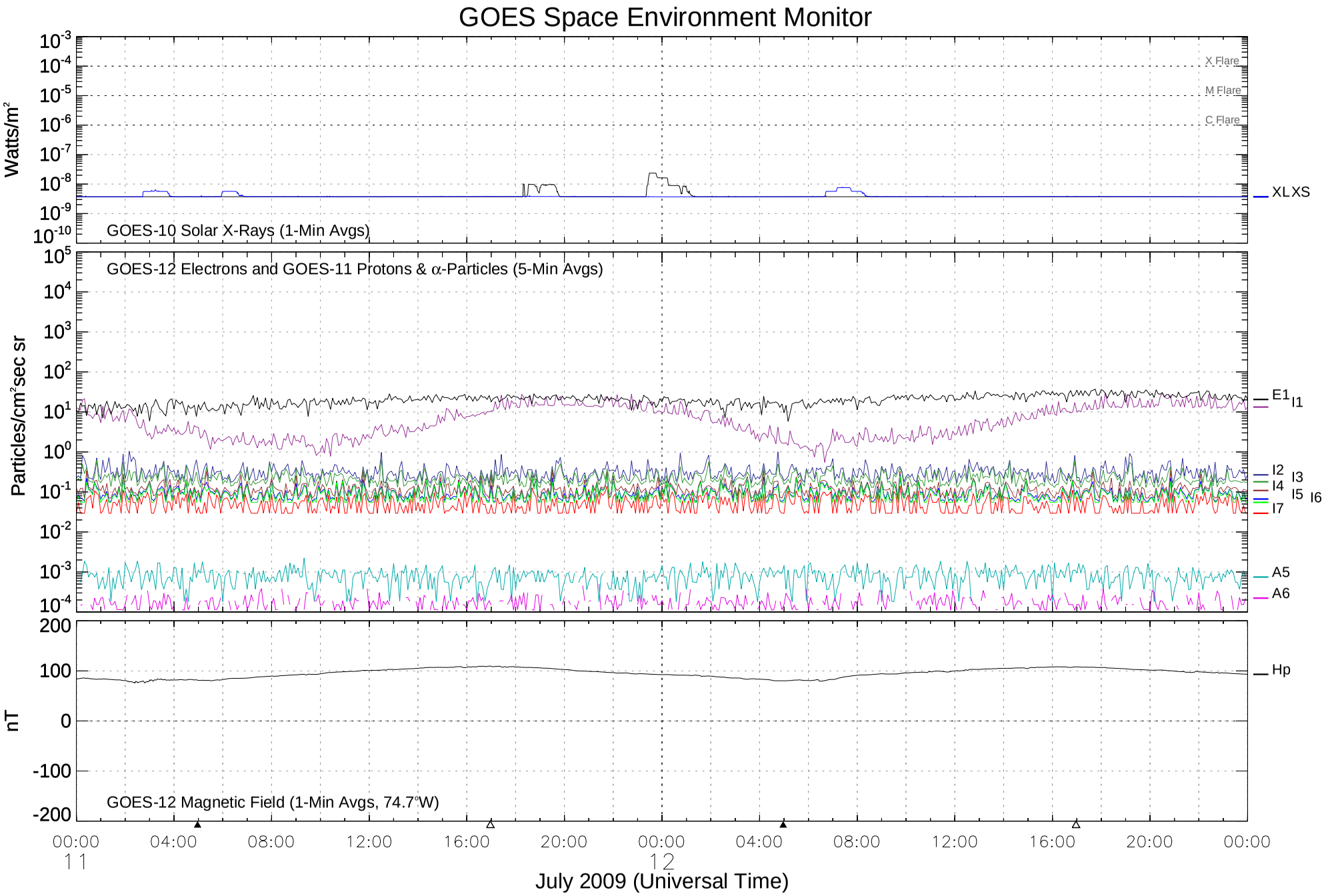

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XSXL
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
1
2
July 2009 (Universal Time)

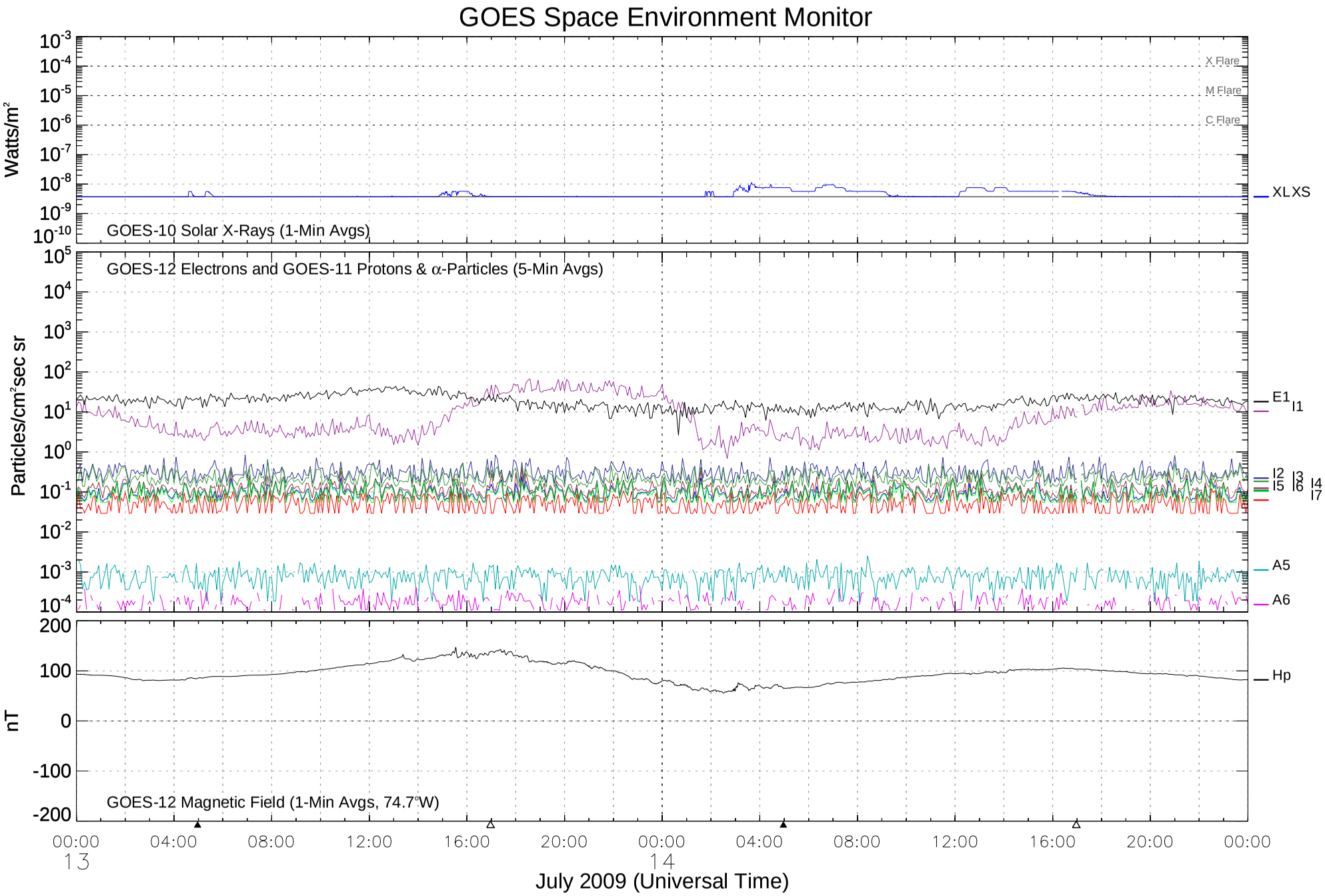

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL
XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
nT
Hp
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
3
4
July 2009 (Universal Time)

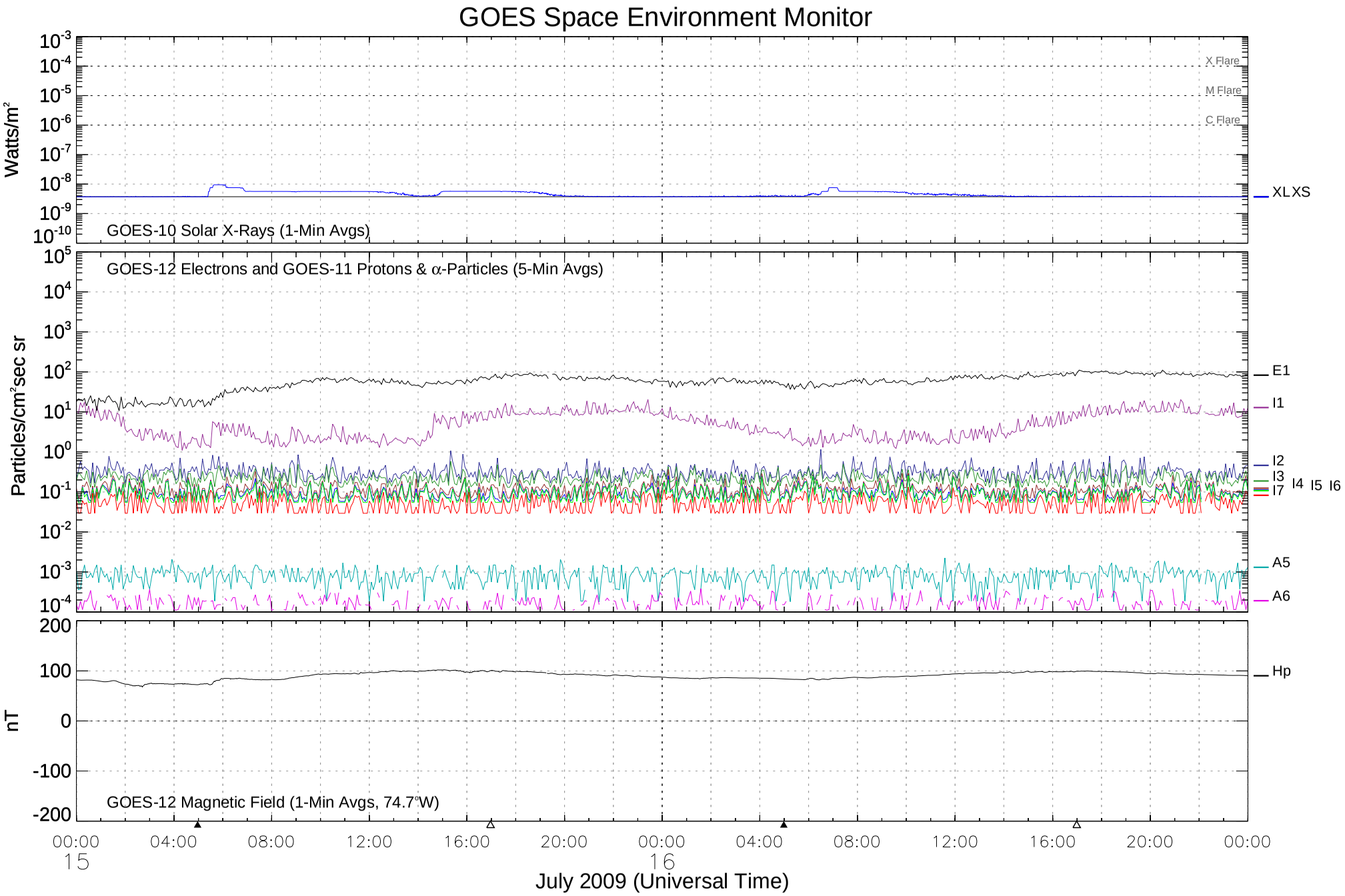

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2 I3 I4
I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
5
6
July 2009 (Universal Time)

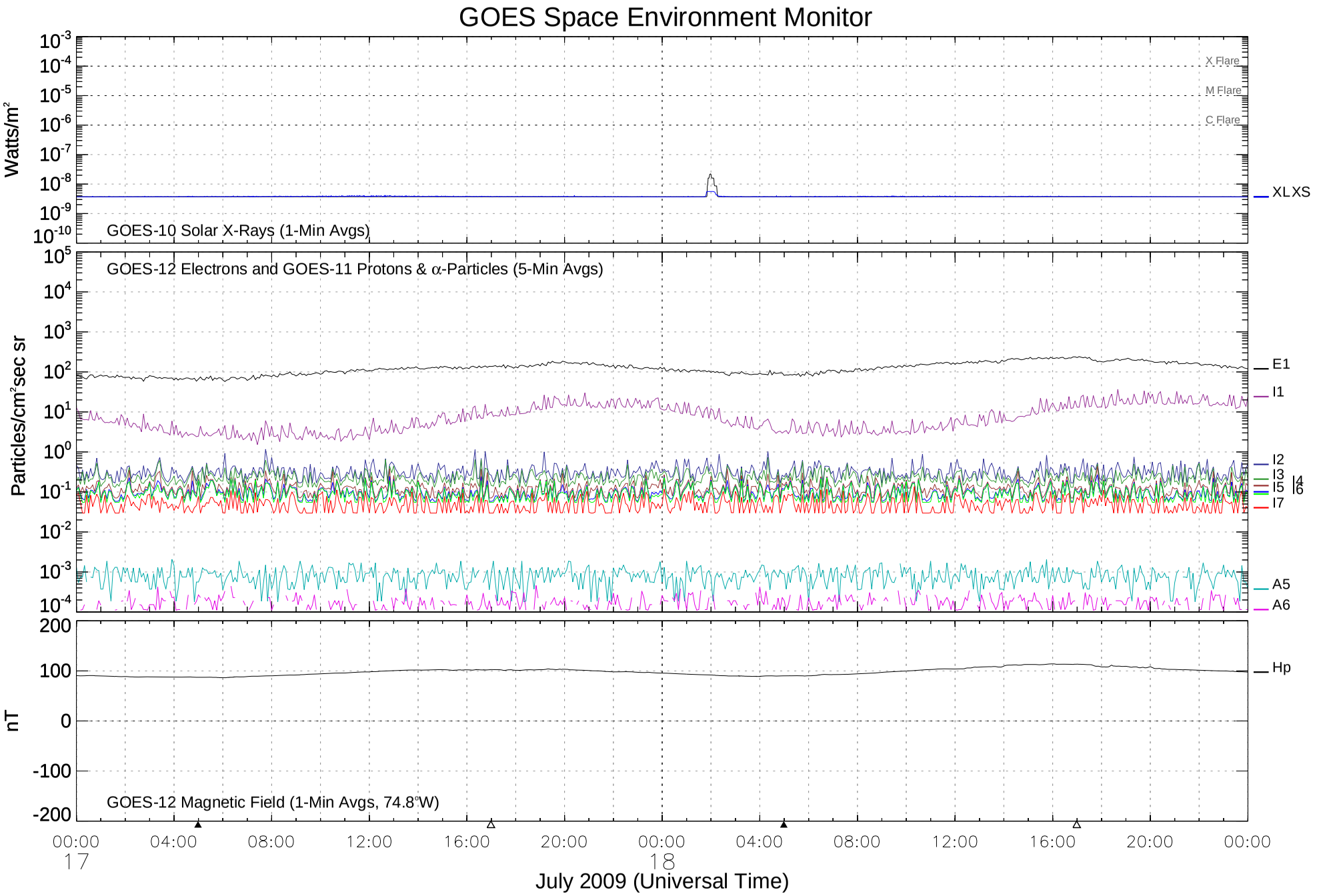

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL
XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
7
8
July 2009 (Universal Time)

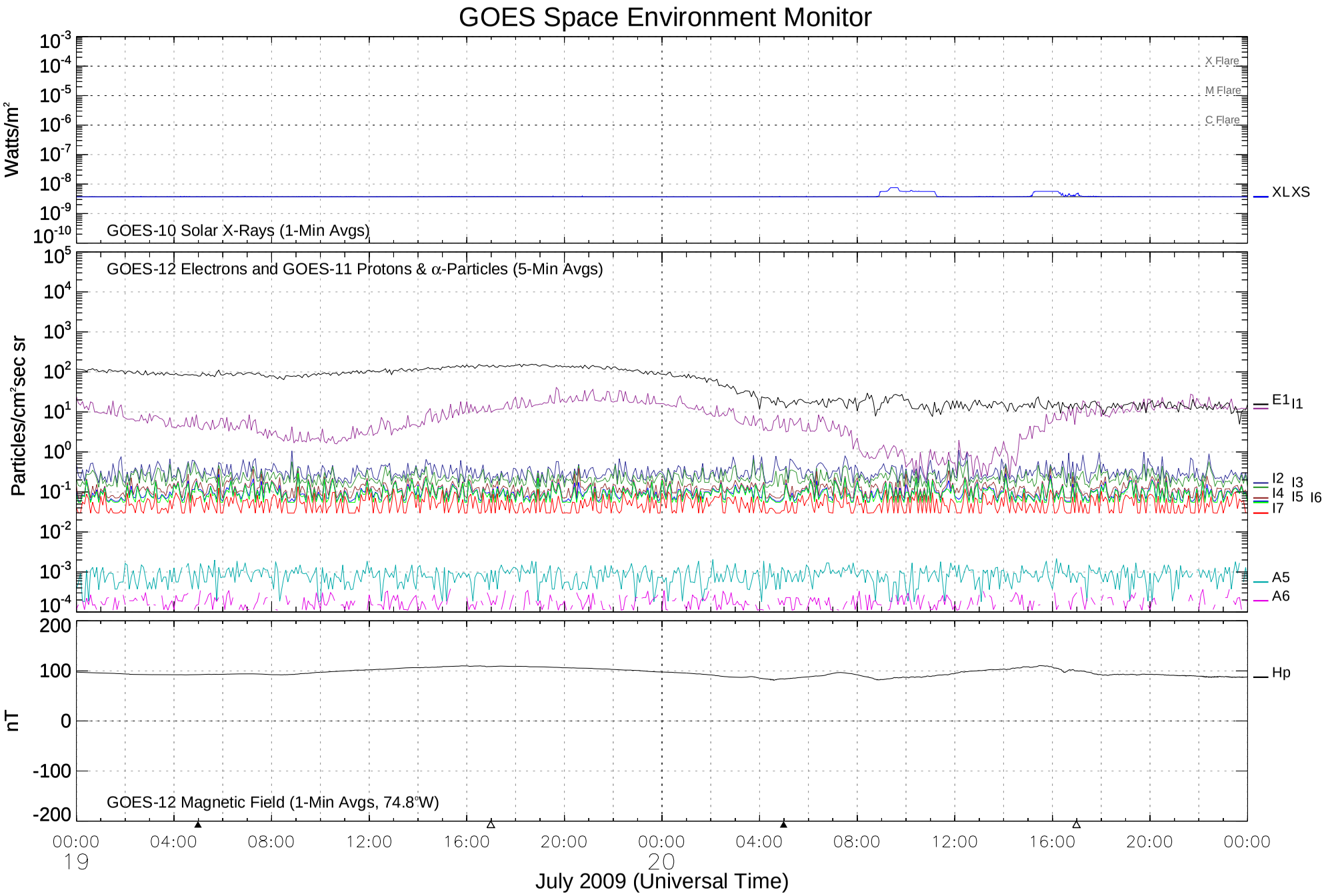

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1 E1
I2 I3 I4
I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
9
10
July 2009 (Universal Time)

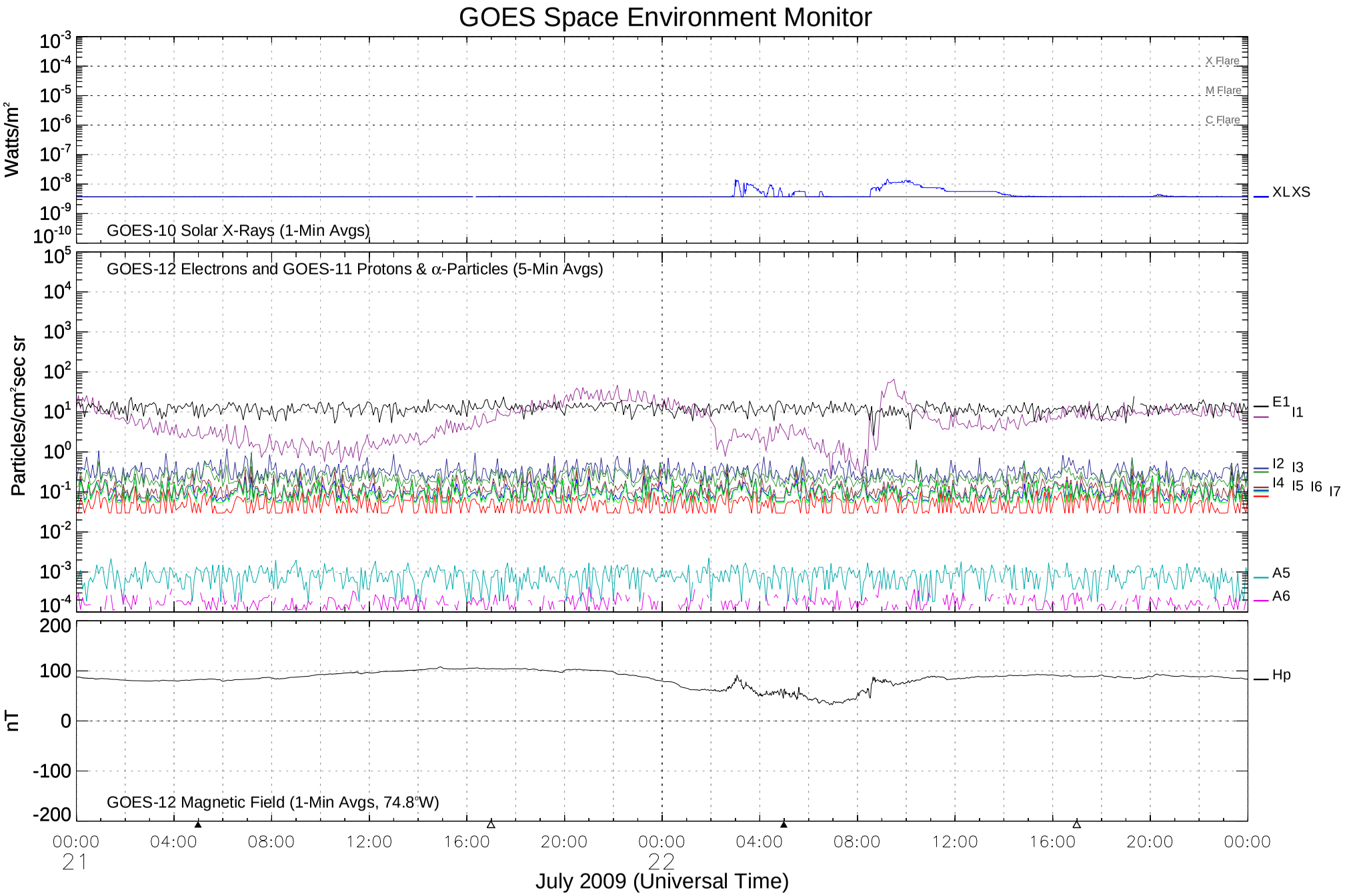

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00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

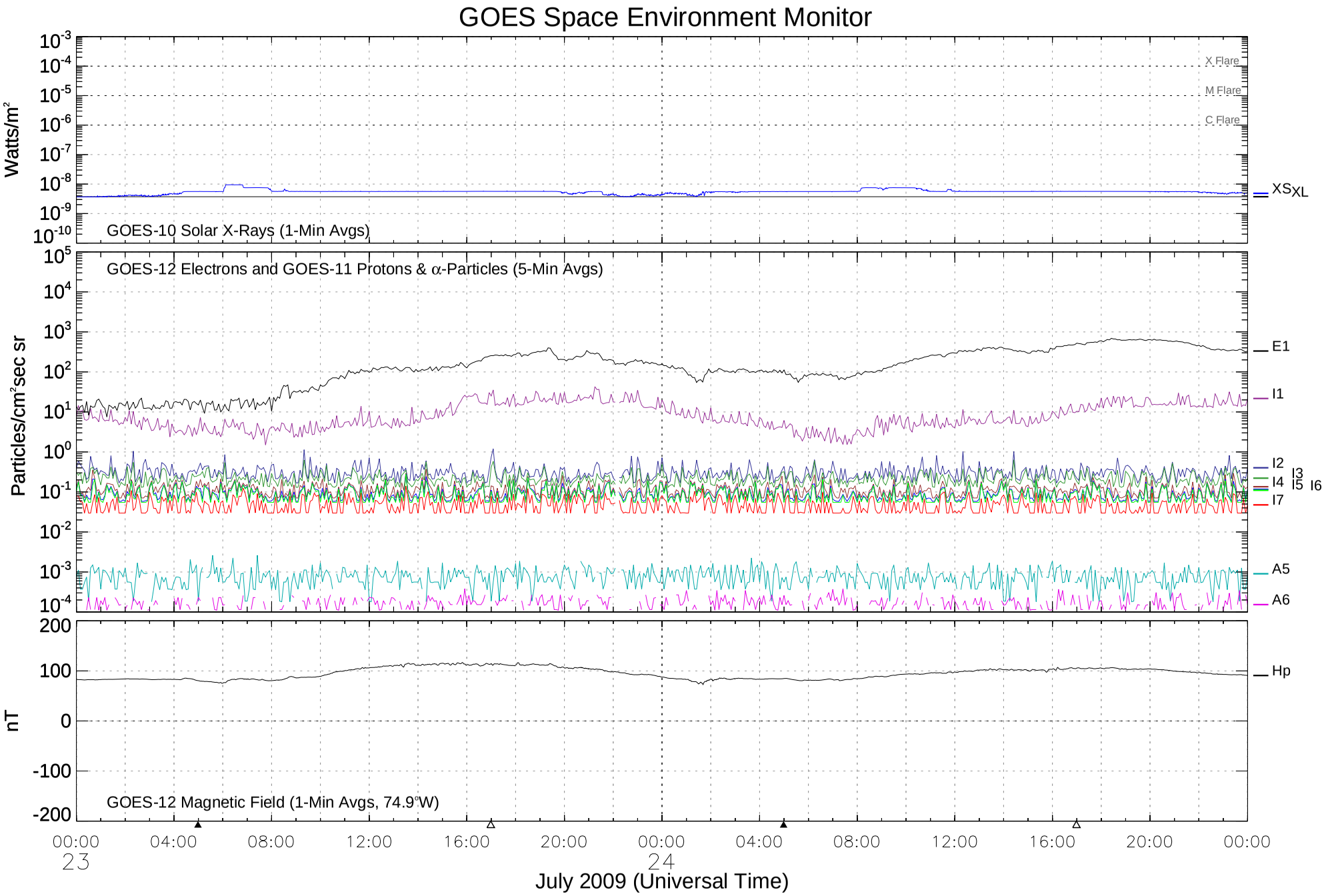

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
13
14
July 2009 (Universal Time)

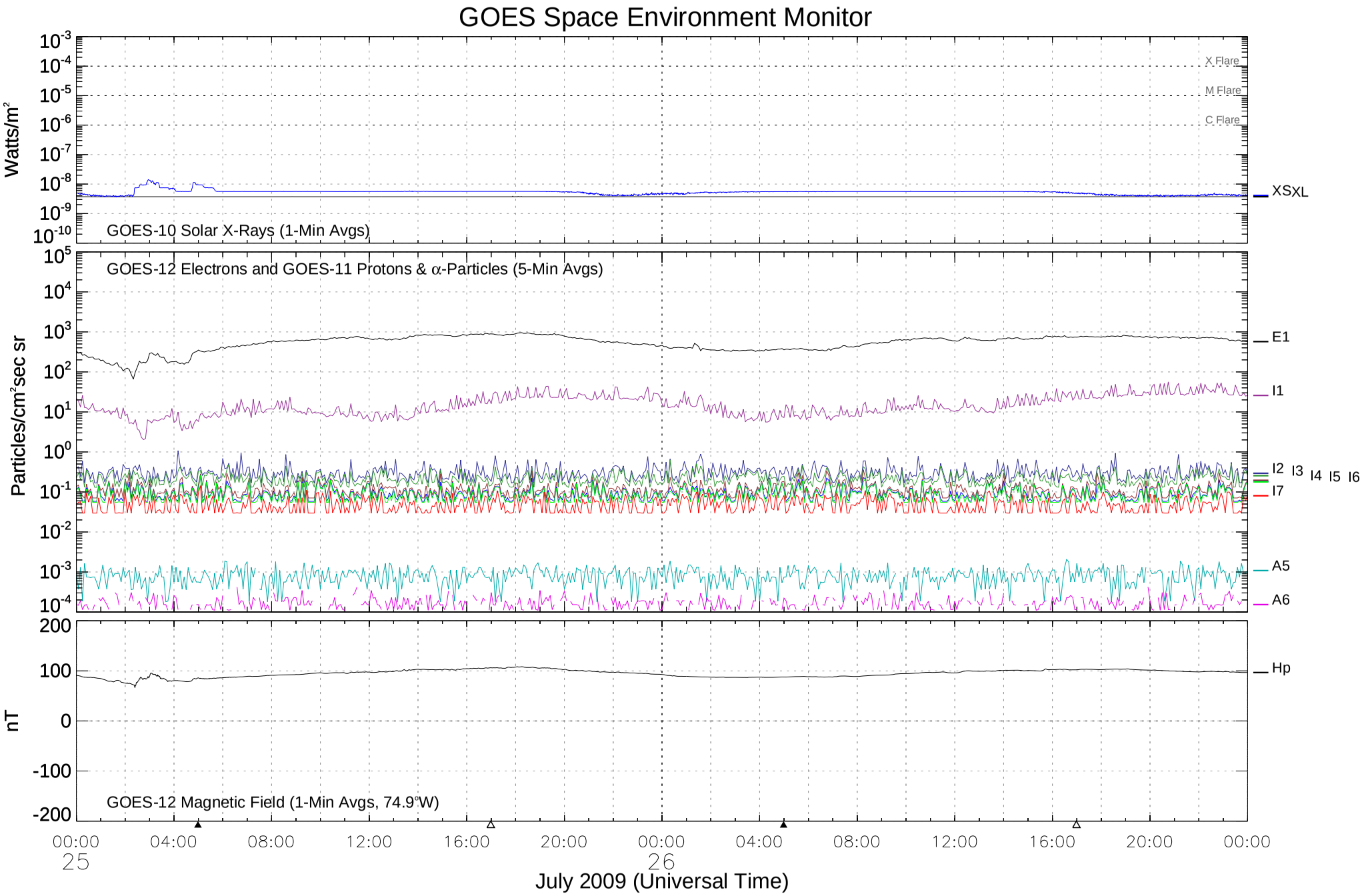

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4 I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.7°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
15
16
July 2009 (Universal Time)

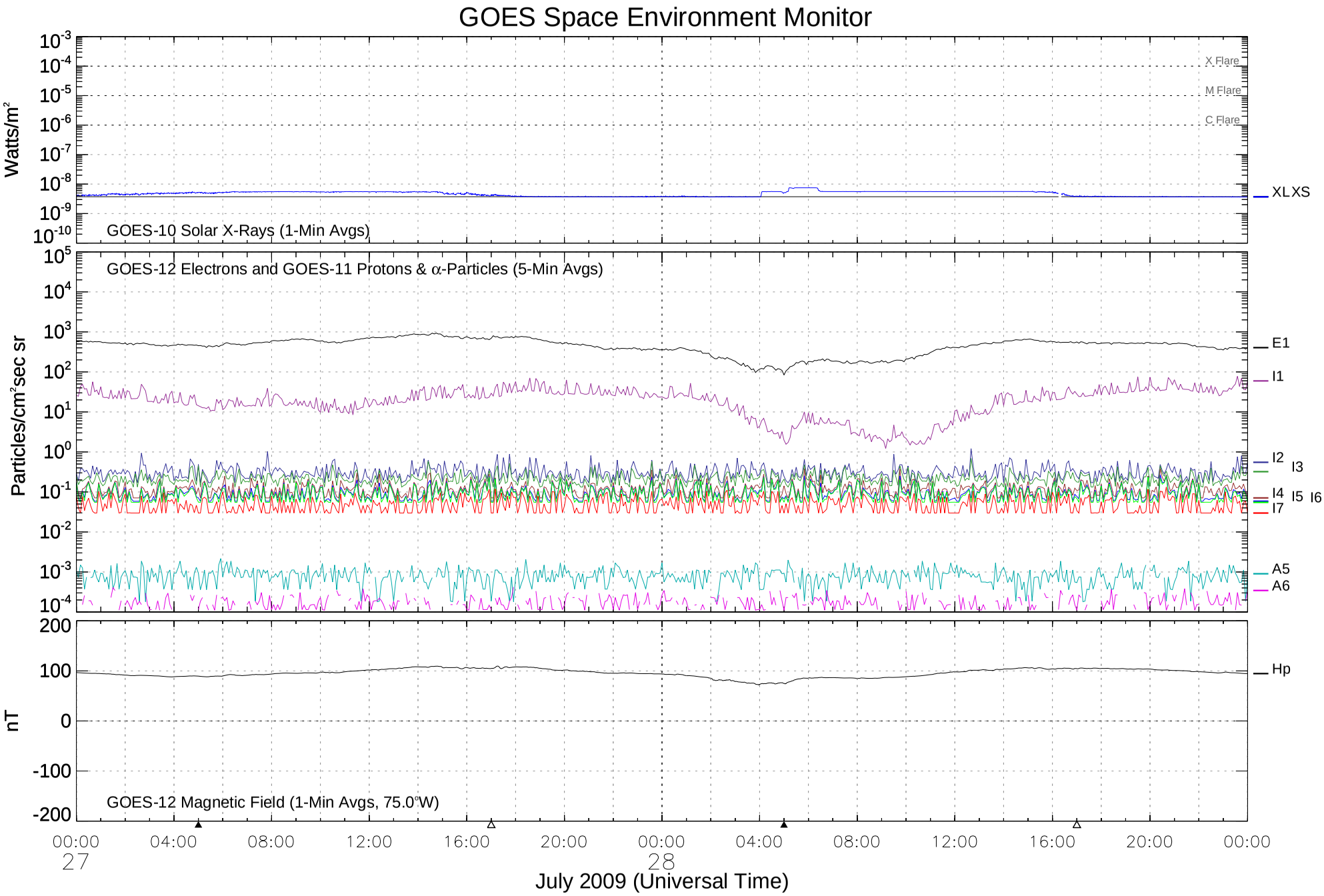

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
17
18
July 2009 (Universal Time)

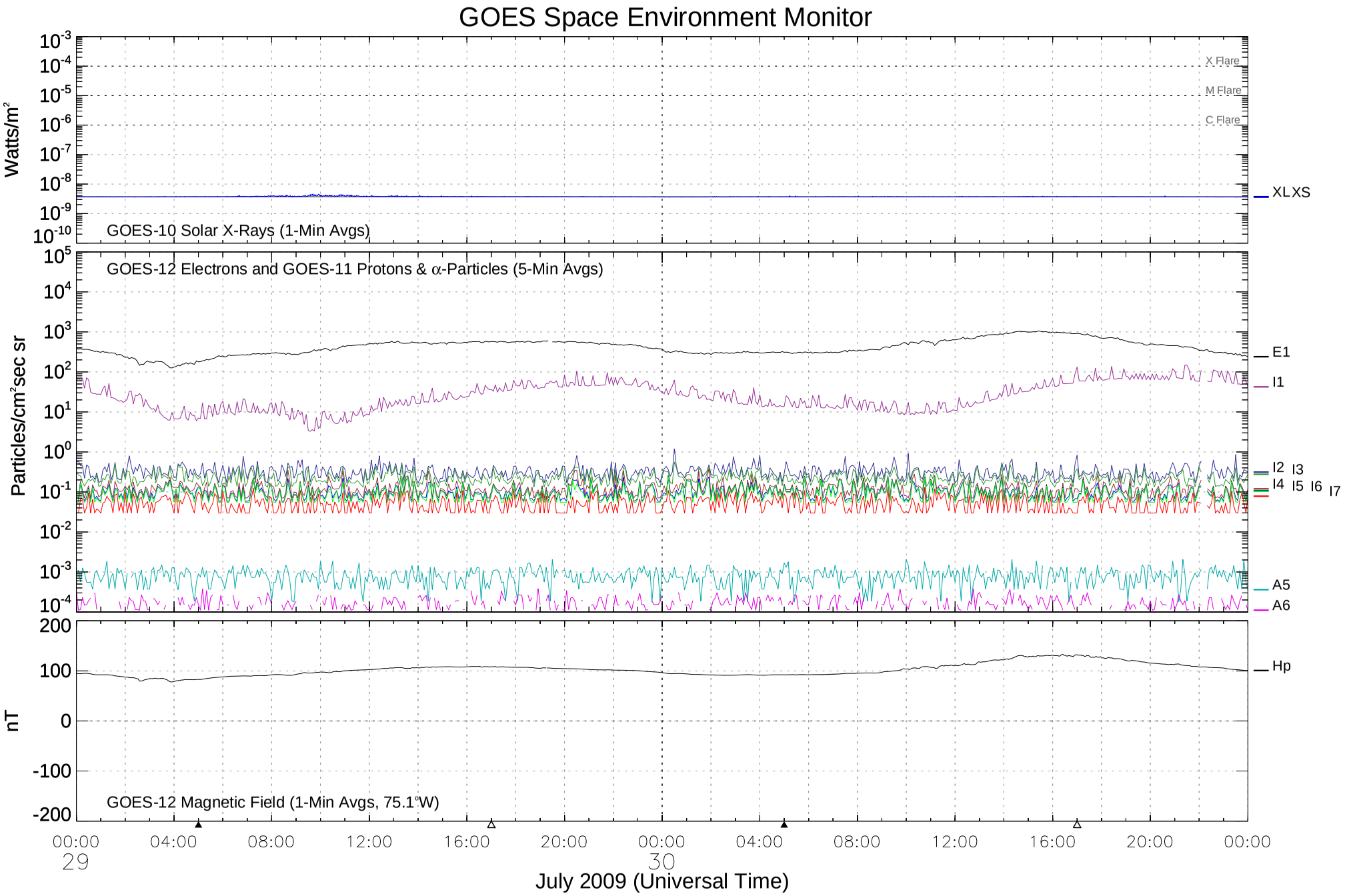

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1 I1
I2 I3
I4 I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
19
20
July 2009 (Universal Time)

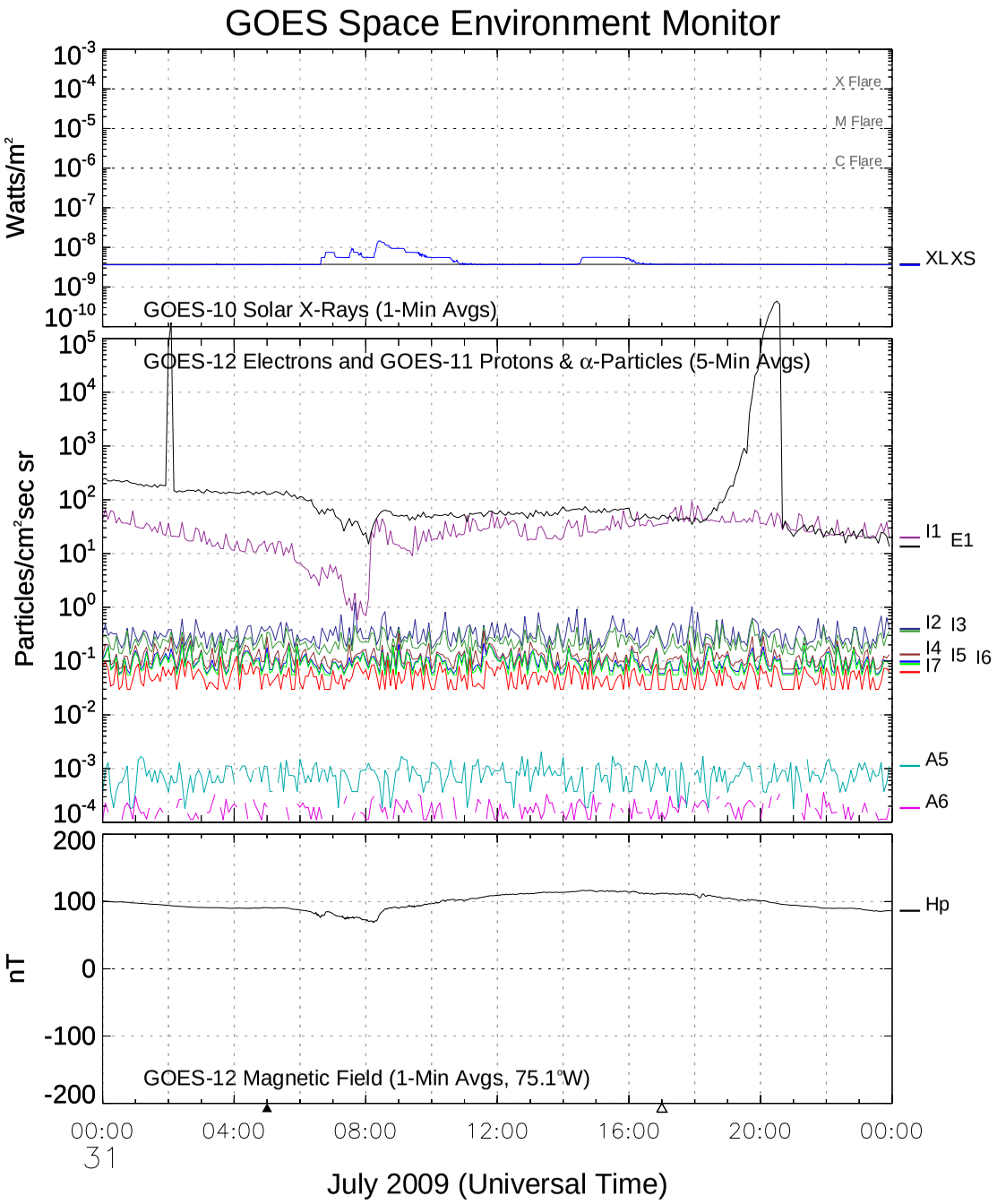

GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
21
22
July 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XS
XL
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)
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
23
24
July 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XS XL
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)
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
25
26
July 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 75.0°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
27
28
July 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2 I3
I4 I5 I6 I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 75.1°W)
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
July 2009 (Universal Time)


GOES Space Environment Monitor
Watts/m²
X Flare
M Flare
C Flare
XL XS
GOES-10 Solar X-Rays (1-Min Avgs)
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
I1 E1
I2 I3
I4 I5 I6
I7
A5
A6
nT
Hp
GOES-12 Magnetic Field (1-Min Avgs, 75.1°W)
00:00
04:00
08:00
12:00
16:00
20:00
00:00
31
July 2009 (Universal Time)

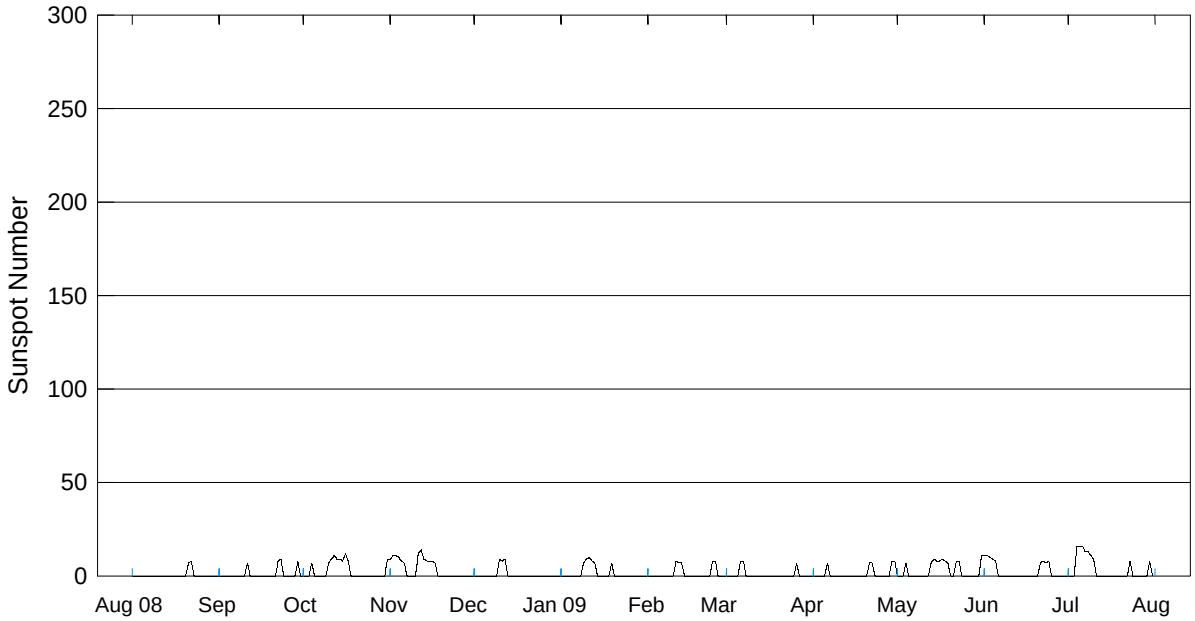
A L E R T P E R I O D S
The International Space Environment Service
JULY 2009

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
182	01	30	0	68	8				0	0	0	01		SOL: Quiet
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
183	02	01	0	68	5				0	0	0	02		SOL: Quiet
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
184	03	02	0	67	2				0	0	0	03		SOL: Quiet
									0	0	0	03		MAG: Quiet
									0	0	0	03		PRO: Quiet
185	04	03	17	67	2	11024	S25	E16	0	0	0	04	Q	SOL: Quiet
									0	0	0	04		MAG: Quiet
									0	0	0	04		PRO: Quiet
186	05	04	24	71	2	11024	S27	E02	3	0	0	05	Q	SOL: Quiet
									0	0	0	05		MAG: Quiet
									0	0	0	05		PRO: Quiet
187	06	05	26	72	4	11024	S27	W13	0	0	0	06	Q	SOL: Quiet
									0	0	0	06		MAG: Quiet
									0	0	0	06		PRO: Quiet
188	07	06	23	70	3	11024	S27	W26	1	0	0	07	Q	SOL: Eruptive
									0	0	0	07		MAG: Quiet
									0	0	0	07		PRO: Quiet
189	08	07	21	71	4	11024	S27	W39	1	0	0	08	Q	SOL: Eruptive
									0	0	0	08		MAG: Quiet
									0	0	0	08		PRO: Quiet
190	09	08	18	71	5	11024	S25	W52	0	0	0	09	Q	SOL: Quiet
									0	0	0	09		MAG: Quiet
									0	0	0	09		PRO: Quiet
191	10	09	15	69	5	11024	S09	W65	0	0	0	10	Q	SOL: Quiet
									0	0	0	10		MAG: Quiet
									0	0	0	10		PRO: Quiet
192	11	10	13	68	7	11024	S25	W79	0	0	0	11	Q	SOL: Quiet
									0	0	0	11		MAG: Quiet
									0	0	0	11		PRO: Quiet
193	12	11	0	68	2				0	0	0	12		SOL: Quiet
									0	0	0	12		MAG: Quiet
									0	0	0	12		PRO: Quiet
194	13	12	0	68	4				0	0	0	13		SOL: Quiet
									0	0	0	13		MAG: Quiet
									0	0	0	13		PRO: Quiet
195	14	13	0	67	8				0	0	0	14		SOL: Quiet
									0	0	0	14		MAG: Quiet
									0	0	0	14		PRO: Quiet
196	15	14	0	67	13				0	0	0	15		SOL: Quiet
									0	0	0	15		MAG: Quiet
									0	0	0	15		PRO: Quiet
197	16	15	0	67	5				0	0	0	16		SOL: Quiet
									0	0	0	16		MAG: Quiet
									0	0	0	16		PRO: Quiet
198	17	16	0	67	3				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
JULY 2009

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
199	18	17	0	66	1				0	0	0	18		SOL: Quiet
									0	0	0	18		MAG: Quiet
									0	0	0	18		PRO: Quiet
200	19	18	0	67	0				0	0	0	19		SOL: Quiet
									0	0	0	19		MAG: Quiet
									0	0	0	19		PRO: Quiet
201	20	19	0	68	1				0	0	0	20		SOL: Quiet
									0	0	0	20		MAG: Quiet
									0	0	0	20		PRO: Quiet
202	21	20	0	68	7				0	0	0	21		SOL: Quiet
									0	0	0	21		MAG: Quiet
									0	0	0	21		PRO: Quiet
203	22	21	0	68	5				0	0	0	22		SOL: Quiet
									0	0	0	22		MAG: Quiet
									0	0	0	22		PRO: Quiet
204	23	22	0	68	22				0	0	0	23		SOL: Quiet
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
205	24	23	0	68	9				0	0	0	24		SOL: Quiet
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
206	25	24	0	68	5				0	0	0	25		SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
207	26	25	0	69	7				0	0	0	26		SOL: Quiet
									0	0	0	26		MAG: Quiet
									0	0	0	26		PRO: Quiet
208	27	26	0	68	1				0	0	0	27		SOL: Quiet
									0	0	0	27		MAG: Quiet
									0	0	0	27		PRO: Quiet
209	28	27	0	68	3				0	0	0	28		SOL: Quiet
									0	0	0	28		MAG: Quiet
									0	0	0	28		PRO: Quiet
210	29	28	0	69	4				0	0	0	29		SOL: Quiet
									0	0	0	29		MAG: Quiet
									0	0	0	29		PRO: Quiet
211	30	29	0	68	1				0	0	0	30		SOL: Quiet
									0	0	0	30		MAG: Quiet
									0	0	0	30		PRO: Quiet
212	31	30	0	68	2				0	0	0	31		SOL: Quiet
									0	0	0	31		MAG: Quiet
									0	0	0	31		PRO: Quiet

International Relative Sunspot Numbers
Aug 2008 - Jul 2009

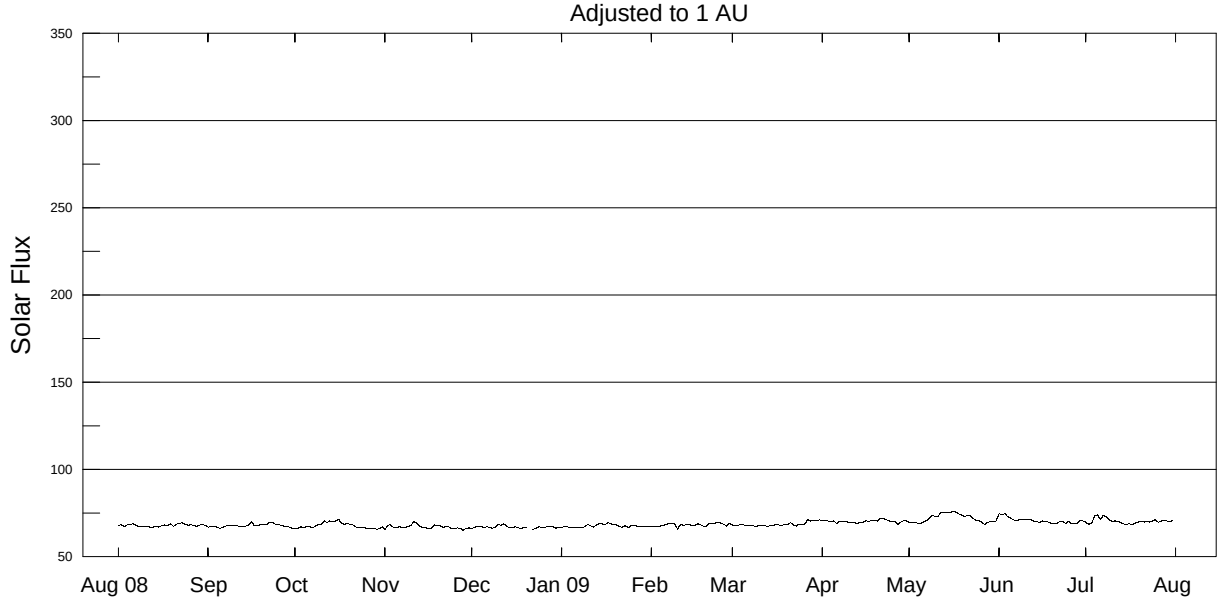


Day	Aug 08	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar	Apr*	May*	Jun*	Jul*
1	0	0	0	9	0	0	0	0	0	0	11	0
2	0	0	0	11	0	0	0	0	0	0	11	0
3	0	0	0	11	0	0	0	0	0	0	10	0
4	0	0	7	10	0	0	0	0	0	7	9	16
5	0	0	0	8	0	0	0	0	0	0	8	16
6	0	0	0	7	0	0	0	8	7	0	0	16
7	0	0	0	0	0	0	0	8	0	0	0	13
8	0	0	0	0	0	0	0	0	0	0	0	13
9	0	0	0	0	0	7	0	0	0	0	0	11
10	0	0	7	0	9	9	0	0	0	0	0	9
11	0	7	9	12	8	10	8	0	0	0	0	0
12	0	0	11	14	9	8	7	0	0	0	0	0
13	0	0	9	9	0	0	7	0	0	7	0	0
14	0	0	9	8	0	0	0	0	0	9	0	0
15	0	0	8	8	0	0	0	0	0	8	0	0
16	0	0	12	8	0	0	0	0	0	8	0	0
17	0	0	8	7	0	0	0	0	0	9	0	0
18	0	0	0	0	0	0	0	0	0	8	0	0
19	0	0	0	0	0	7	0	0	0	7	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	7	0	0	0	0	0	0	0	7	0	7	0
22	8	8	0	0	0	0	0	0	7	8	8	0
23	0	9	0	0	0	0	0	0	0	8	7	8
24	0	0	0	0	0	0	8	0	0	0	8	0
25	0	0	0	0	0	0	8	0	0	0	0	0
26	0	0	0	0	0	0	0	7	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	8	0	0	0	0		0	8	0	0	0
30	0	0	0	0	0	0		0	8	0	0	8
31	0		9		0	0		0		11		0
Mean	0.5	1.1	2.9	4.1	0.8	1.3	1.4	0.7	1.2	2.9	2.6	3.5

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Aug 2008 - Jul 2009

Adjusted to 1 AU



Day	Aug 08	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar	Apr	May	Jun	Jul
1	68.1	67.0	65.9	65.6	66.2	66.6	67.5	68.1	70.7	69.6	74.6	69.8
2	68.2	67.2	66.4	68.0	67.0	67.6	67.1	68.0	70.6	69.4	74.0	68.7
3	67.4	67.3	67.2	68.3	67.2	67.2	67.3	68.0	70.4	69.7	74.6	69.5
4	68.2	67.0	66.6	66.8	67.6	66.6	67.5	68.6	70.1	69.2	73.1	73.4
5	68.4	66.3	67.4	66.5	66.8	66.9	68.1	68.1	70.5	69.2	72.2	74.0
6	68.9	66.8	67.2	67.3	67.1	66.5	68.2	68.0	68.9	70.0	71.1	71.2
7	68.0	67.6	66.6	66.5	67.0	66.7	69.2	68.0	70.4	70.8	71.0	73.7
8	67.3	68.0	67.5	67.0	66.4	66.5	69.3	67.9	70.2	72.2	71.1	73.1
9	67.3	68.0	68.5	67.1	66.7	67.4	68.8	67.2	70.3	73.7	71.2	71.4
10	67.4	68.1	68.7	67.9	68.7	68.5	65.8	67.8	69.7	73.2	71.3	70.1
11	67.5	67.8	70.5	70.0	68.0	67.7	68.5	68.0	69.7	73.3	71.4	70.5
12	66.9	67.1	69.7	69.5	68.8	67.0	68.0	67.8	69.7	75.5	71.2	70.3
13	67.0	67.2	70.5	67.6	67.5	68.2	68.3	67.4	68.8	75.3	70.4	69.5
14	67.6	67.6	70.0	66.8	66.6	68.9	68.4	67.7	69.9	75.5	70.3	68.8
15	67.0	68.2	70.5	66.7	66.7	68.8	67.9	67.7	69.9	75.4	69.5	68.7
16	67.8	70.1	71.4	66.2	67.2	68.5	67.9	68.7	70.5	75.8	70.5	68.9
17	68.2	67.7	69.5	66.2	66.6	69.6	69.0	68.2	70.4	75.7	70.0	68.4
18	67.8	67.8	68.6	68.2	66.2	68.8	68.2	67.8	70.5	74.6	69.9	69.2
19	68.9	68.4	69.0	67.7	67.0	68.6	67.4	68.5	70.8	74.0	69.2	69.9
20	67.4	68.4	68.6	67.9	66.9	68.1	67.6	68.2	70.4	73.2	68.8	70.4
21	68.7	68.4	68.2	66.8	*	67.2	69.1	69.6	71.8	73.5	69.2	69.9
22	69.1	69.6	67.0	67.3	65.5	66.9	68.8	68.2	71.9	73.9	70.2	70.0
23	69.4	69.8	66.5	67.2	66.3	67.8	69.3	67.6	71.4	72.2	70.2	69.9
24	68.6	68.8	66.7	66.1	67.1	66.6	69.5	68.7	70.5	71.0	69.1	70.5
25	68.0	68.6	66.7	66.0	67.0	67.7	69.3	68.2	70.3	70.7	70.3	71.2
26	68.3	68.0	66.0	66.5	67.0	67.8	68.6	68.8	70.1	69.9	69.0	69.8
27	68.0	67.6	66.1	66.4	67.1	67.6	67.6	71.4	68.6	68.5	69.3	70.5
28	67.4	67.3	66.2	65.2	67.5	67.4	69.3	70.4	69.8	69.6	69.2	70.9
29	68.1	67.0	65.8	66.4	67.5	67.3		70.7	70.5	70.1	70.8	70.4
30	68.4	66.4	65.9	66.5	66.3	67.1		70.8	70.5	70.4	70.5	70.1
31	67.9		67.1		67.0	67.4		71.1		70.4		70.8
Mean	68.0	67.8	67.8	67.1	67.0	67.3	68.3	68.6	70.3	72.1	70.8	70.4

* = No data available.

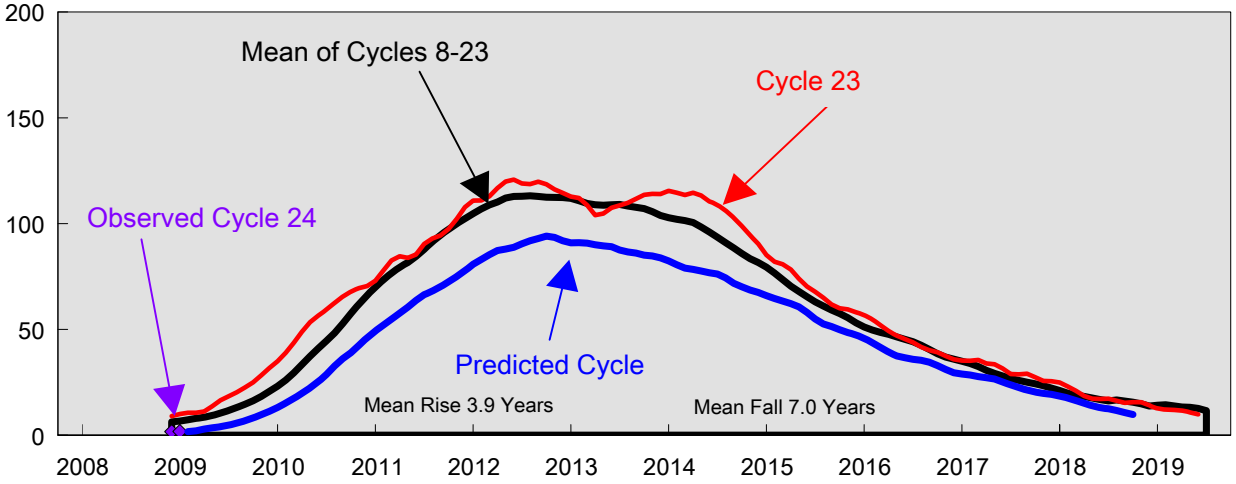
DAILY SOLAR INDICES
JULY 2009

	Day	Bartels	Sunspot		Obs Flux	-----Solar Flux Adjusted to 1 Astronomical Unit--------								
	of	Cycle	Numbers		Penticton	SGMR	SGMR	SGMR	Penticton	SGMR	SGMR	SGMR	SGMR	SGMR
Day	Year	Day	Int	Amer	(2800)	(15400)	(8800)	(4995)	(2800)	(2695)	(1415)	(610)	(410)	(245)
1	182	20	0	1	67.5	610	216	113	69.8	81	56	23	25	11
2	183	21	0	0	66.5	211	201	108	68.7	73	55	27	24	11
3	184	22	0	1	67.3	620	220	116	69.5	72	55	28	25	11
4	185	23	16	18	71.0	618	225	122	73.4	83	59	18	26	13
5	186	24	16	20	71.6	601	226	123	74.0	76	58	33	26	12
6	187	25	16	17	68.9	621	223	118	71.2	73	58	30	26	15
7	188	26	13	16	71.3	481	226	120	73.7	79	58	31	31	35
8	189	27	13	15	70.8	604	219	118	73.1	79	58	32	29	26
9	190	1	11	12	69.1	---	---	---	71.4	---	---	---	---	---
10	191	2	9	9	67.8	619	222	117	70.1	74	55	35	25	13
11	192	3	0	0	68.2	624	225	119	70.5	73	56	33	26	12
12	193	4	0	0	68.0	626	225	119	70.3	70	56	36	26	12
13	194	5	0	0	67.2	627	223	117	69.5	72	55	35	25	11
14	195	6	0	0	66.6	609	225	117	68.8	70	55	33	26	12
15	196	7	0	0	66.5	617	222	116	68.7	71	55	26	25	12
16	197	8	0	0	66.7	619	223	117	68.9	73	55	33	25	12
17	198	9	0	0	66.2	621	215	112	68.4	70	54	33	26	12
18	199	10	0	0	67.0	605	223	117	69.2	71	53	31	26	11
19	200	11	0	0	67.6	604	220	114	69.9	74	55	33	25	11
20	201	12	0	0	68.2	600	226	119	70.4	72	57	33	26	12
21	202	13	0	0	67.7	422	220	115	69.9	74	56	21	24	12
22	203	14	0	0	67.8	439	225	116	70.0	75	54	4	25	11
23	204	15	8	2	67.8	605	223	117	69.9	74	56	31	25	12
24	205	16	0	0	68.3	472	213	113	70.5	74	56	30	24	11
25	206	17	0	0	69.1	616	223	117	71.2	72	56	32	25	11
26	207	18	0	0	67.6	586	221	118	69.8	71	55	33	25	10
27	208	19	0	0	68.4	605	223	118	70.5	77	56	33	26	11
28	209	20	0	0	68.7	616	212	113	70.9	71	56	32	26	11
29	210	21	0	0	68.3	600	223	117	70.4	72	57	33	26	11
30	211	22	8	2	68.0	537	218	117	70.1	69	57	33	26	12
31	212	23	0	0	68.7	401	210	114	70.8	71	56	34	26	11
MEAN			3.5	3.6	68.2	567	220	116	70.4	73	55	29	25	12

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

Cycle 24 Smoothed Sunspot Numbers: Observed and Predicted

PRELIMINARY Based on December 2008 Smoothed Data



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	60	58	57	57	66
2004	53	49	47	46	46	42	40	39	38	36	35	35	42
2005	35	34	34	32	29	29	29	27	26	26	25	23	29
2006	21	19	17	17	17	16	15	16	16	14	13	13	16
2007	12	12	11	10	9	8	7	6	6	6	6	5	8
2008	4	4	3	3	4	3	3	3	2	2	2	1.7##	3
2009	2	2	2	3	4	4	5	6	7	8	10	11	5
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(10)	(12)	(14)	(7)
2010	13	15	17	20	23	25	29	33	36	39	43	46	28
	(17)	(19)	(21)	(24)	(27)	(30)	(33)	(37)	(40)	(44)	(48)	(52)	(33)

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

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

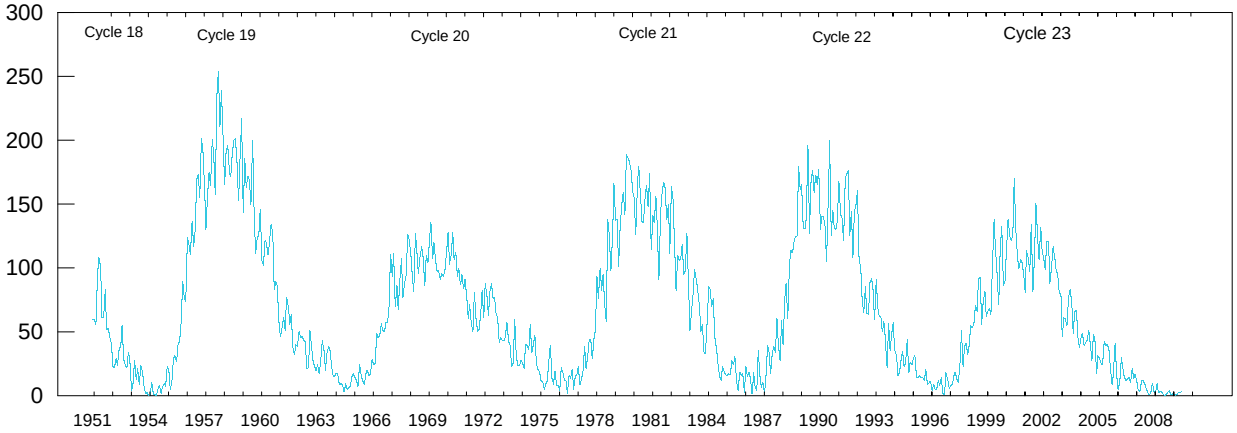
+ April 2000 marks Cycle 23 maximum. ## - Preliminary Cycle 24 Minumum

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

OBSERVED AND PREDICTED NUMBERS: For the end of Cycle 23, and the rise and decline of Cycle 24, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2008 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. See page 9 in the Jul 1987 supplement to Solar-Geophysical Data. Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the January 2010 prediction. There exists a 90% chance that in January 2010, the actual smoothed sunspot will fall somewhere between 0 and 30.

POINTS TO PONDER: The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 16 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on a PRELIMINARY minimum of December, 2008. This will be updated monthly until the actual minimun is reached.

Mean Monthly Sunspot Numbers
Jan 1951 - Jul 2009



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4	
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5	
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9	
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4	m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	122.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6	
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9	
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2	m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1	
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0	
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8	
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9	M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5	
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5	
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6	
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9	
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0	
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5	
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5	
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6	m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5	
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5	
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4	M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6	
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4	
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9	
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4	
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2	
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6	M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6	
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7	
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3	
1993	59.3	91.0	69.8	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6	
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9	
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.1	9.0	10.0	17.5	
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	0.9	17.9	13.3	8.6	m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5	
1998	31.9	40.3	54.8	53.4	56.3	70.7	66.6	92.2	92.9	55.5	74.0	81.9	64.3	
1999	62.0	66.3	68.8	63.7	106.4	137.7	113.5	93.7	71.5	116.7	133.2	84.6	93.2	
2000	90.1	112.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	99.4	106.8	104.4	119.6	M
2001	95.6	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.5	106.5	132.2	111.0	
2002	114.1	107.4	98.4	120.7	120.8	88.3	99.9	116.4	109.3	97.5	95.5	80.8	104.0	
2003	79.7	46.0	61.1	60.0	54.6	77.4	83.3	72.7	48.7	65.5	67.3	46.5	63.9	
2004	37.7	45.8	49.1	39.3	41.5	43.2	51.0	40.9	27.7	48.0	43.5	17.9	40.4	
2005	31.3	29.1	24.8	24.2	42.7	39.3	40.1	36.4	21.9	8.7	18.0	41.1	29.8	
2006	15.4	4.7	10.8	30.2	22.2	13.9	12.2	12.9	14.4	10.5	21.4	13.6	15.2	
2007	16.8	10.7	4.5	3.4	11.7	12.1	9.7	6.0	2.4	0.9	1.7	10.1	7.5	
2008	3.3	2.1	9.3	2.9	3.2	3.4	0.8	0.5	1.1	2.9	4.1	0.8	2.9	
2009	1.3	1.4	0.7	1.2	2.9	2.6	3.5						1.9	

Values are preliminary after Mar 09. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hà S O L A R F L A R E S
JULY 2009

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	04	0208	0212	0213	S27	E15	11024	07	5.2	5	SF		3	E		60		H
LEAR		0437	0438	0442	S26	E11	11024	07	5.0	5	SF		3	E		13		H
HOLL		1509	1511	1516D	S27	E06	11024	07	5.1	7D	SF		3	E		33		FS
LEAR	05	0711	0713	0721	S27	W02	11024	07	5.1	10	SF		3	E		30		
HOLL	06	1703	1704	1725	S25	W23	11024	07	4.9	22	SF		3	E		49		FH
HOLL	07	1707	1708	1710	S25	W37	11024	07	4.8	3	SF		3	E		16		H

"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
JULY 2009

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Xray	Total Integrated Flux(1)	Total Area(2)	Total(3) Intensity
GOES	03	2305	2308	2310		11024			5	B 1.3	2.8E-05		
GOES		2349	2354	2358		11024			9	B 3.2	1.1E-04		
GOES	04	0102	0119	0126		11024			24	B 3.6	3.0E-04		
GOES		0208	0213	0220	S27 E15	11024			12	B 4.7	2.2E-04		
GOES		0246	0304	0307					21	B 3.7	2.7E-04		
GOES		0429	0437	0442	S26 E11	11024			13	B 8.3	4.3E-04		
GOES		0600	0606	0613		11024			13	B 2.1	1.2E-04		
GOES		0748	0752	0756		11024			8	B 2.8	8.9E-05		
GOES		0941	0944	0946		11024			5	B 1.2	2.8E-05		
GOES		1159	1207	1214		11024			15	B 3.1	1.9E-04		
GOES		1231	1234	1238		11024			7	B 2.0	7.4E-05		
GOES		1340	1355	1357		11024			17	B 5.3	2.4E-04		
GOES		1503	1508	1512	S27 E06	11024			9	B 4.8	1.4E-04		
GOES		1611	1614	1616		11024			5	B 1.5	2.7E-05		
GOES		2201	2209	2215		11024			14	B 5.9	3.0E-04		
GOES	05	0053	0056	0100					7	B 1.1	3.5E-05		
GOES		0106	0115	0129					23	B 5.9	5.4E-04		
GOES		0208	0213	0217					9	B 2.2	9.5E-05		
GOES		0441	0447	0450					9	B 2.3	7.4E-05		
GOES		0451	0501	0508					17	B 2.2	2.0E-04		
GOES		0608	0614	0621					13	B 5.1	2.4E-04		
GOES		0707	0713	0718	S27 W02	11024			11	C 2.7	9.5E-04		
GOES		0934	0937	0950					16	B 3.0	1.9E-04		
GOES		1053	1057	1100					7	B 1.2	4.3E-05		
GOES		1105	1109	1113					8	B 5.0	1.7E-04		
GOES		1245	1250	1255					10	B 3.5	1.9E-04		
GOES		1542	1547	1604					22	B 1.4	1.5E-04		
GOES		1638	1649	1654					16	B 1.8	1.3E-04		
GOES		1734	1737	1746					12	B 1.0	6.0E-05		
GOES	06	0220	0226	0228					8	B 1.5	5.0E-05		
GOES		0402	0406	0409					7	B 1.5	4.3E-05		
GOES		1659	1705	1711	S25 W23	11024			12	C 1.0	4.0E-04		
GOES	07	2158	2206	2214					16	B 1.2	1.1E-04		
GOES		2341	2344	2347					6	B 1.0	3.0E-05		
GOES	08	0132	0136	0139					7	B 1.2	4.2E-05		
GOES		0524	0529	0535					11	B 4.4	1.7E-04		

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

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

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

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

Selected Fixed Frequency Events

JULY 2009

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks

NO REPORTS

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

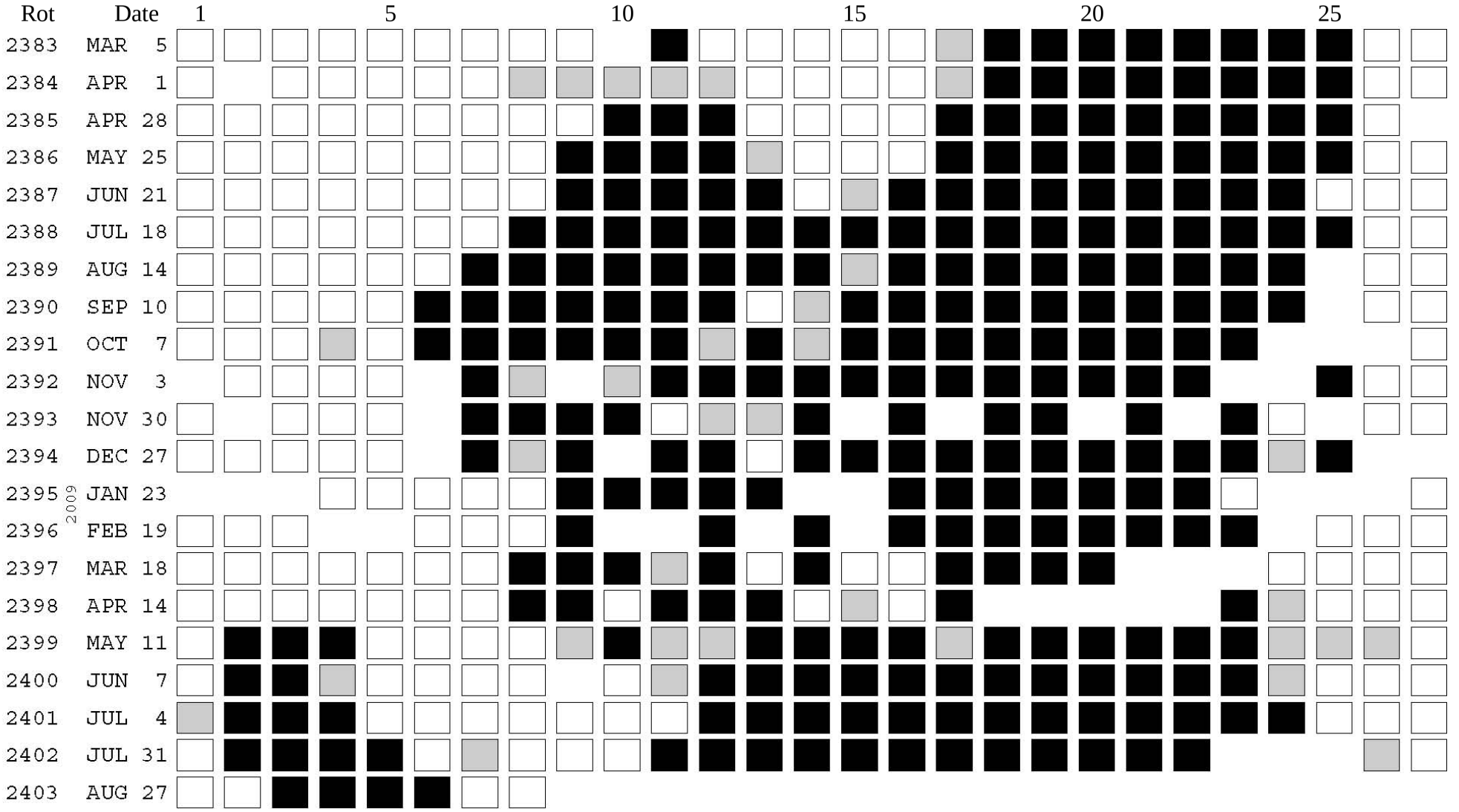
Explanation of Type Code:

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.

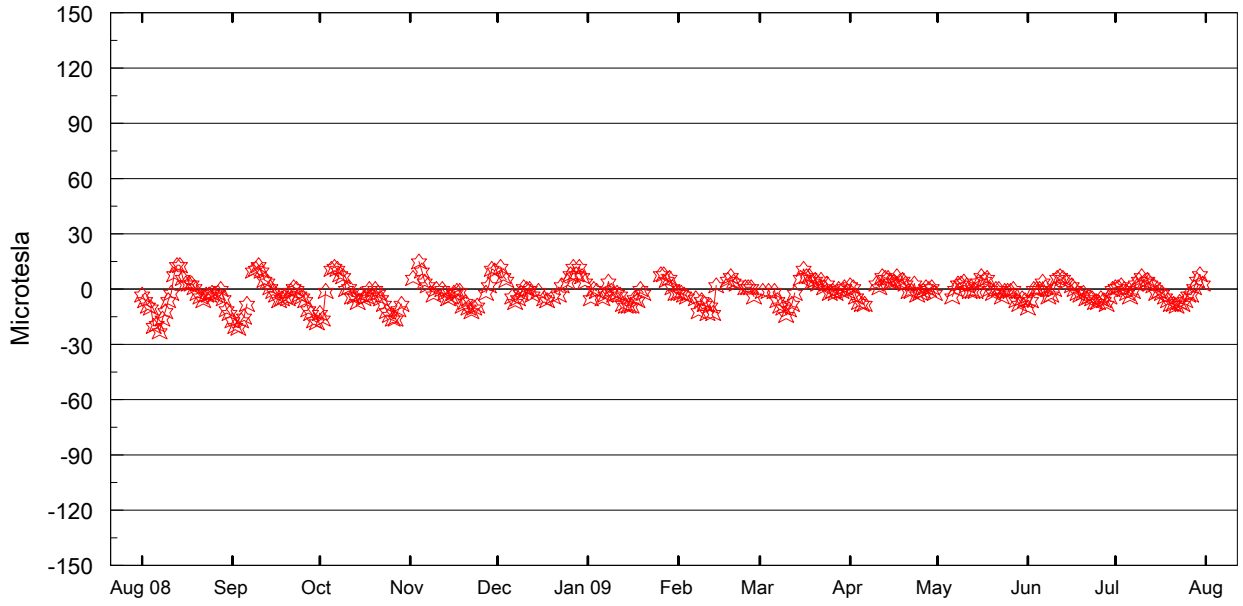
STANFORD MEAN SOLAR MAGNETIC FIELD



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

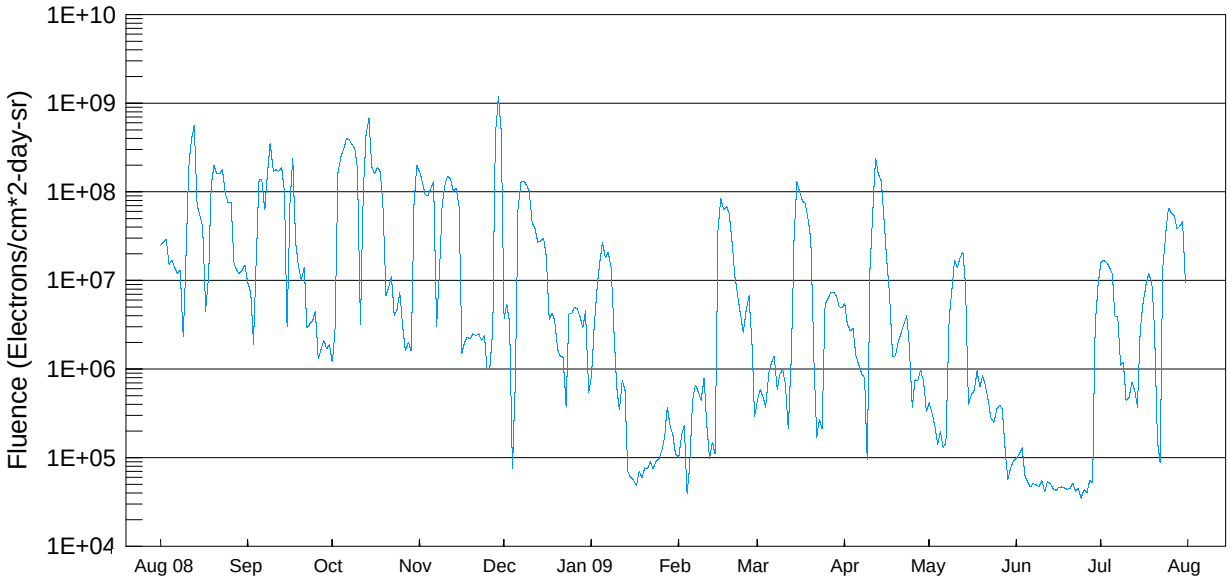
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



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

GOES Daily Electron Fluence
Aug 2008 - Jul 2009



Day	Aug 08	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar	Apr	May	Jun	Jul
1	2.5E+07	9.4E+06	1.2E+06	1.7E+08	3.7E+06	8.3E+05	1.0E+05	4.4E+05	5.5E+06	4.2E+05	9.9E+04	1.6E+07
2	2.7E+07	7.3E+06	2.5E+06	1.3E+08	5.4E+06	2.9E+06	1.8E+05	5.9E+05	3.2E+06	3.2E+05	1.1E+05	1.7E+07
3	2.9E+07	1.9E+06	1.6E+08	9.4E+07	3.3E+06	8.1E+06	2.3E+05	4.9E+05	2.7E+06	2.3E+05	1.3E+05	1.6E+07
4	1.5E+07	2.0E+07	2.5E+08	9.1E+07	7.5E+04	1.6E+07	3.9E+04	3.7E+05	2.9E+06	1.4E+05	6.3E+04	1.4E+07
5	1.7E+07	1.4E+08	3.0E+08	1.1E+08	6.5E+05	2.7E+07	8.6E+04	9.2E+05	1.4E+06	2.0E+05	5.3E+04	1.2E+07
6	1.4E+07	1.4E+08	4.0E+08	1.3E+08	6.3E+07	1.8E+07	4.5E+05	1.2E+06	1.1E+06	1.3E+05	4.7E+04	4.0E+06
7	1.2E+07	6.2E+07	3.9E+08	3.0E+06	1.3E+08	2.1E+07	6.6E+05	1.4E+06	8.8E+05	1.5E+05	5.1E+04	3.9E+06
8	1.3E+07	1.6E+08	3.4E+08	1.1E+07	1.3E+08	1.4E+07	5.6E+05	5.8E+05	8.0E+05	3.5E+06	5.0E+04	1.1E+06
9	2.3E+06	3.6E+08	3.1E+08	7.0E+07	1.2E+08	2.7E+06	4.4E+05	8.8E+05	9.5E+04	7.6E+06	4.7E+04	1.2E+06
10	1.8E+07	1.7E+08	1.8E+08	1.2E+08	1.0E+08	6.2E+05	7.9E+05	1.0E+06	1.3E+07	1.7E+07	5.6E+04	4.4E+05
11	1.9E+08	1.8E+08	3.2E+06	1.5E+08	4.4E+07	3.5E+05	2.4E+05	6.6E+05	6.4E+07	1.4E+07	4.1E+04	4.8E+05
12	4.0E+08	1.7E+08	1.1E+08	1.4E+08	3.9E+07	7.5E+05	9.7E+04	2.1E+05	2.4E+08	1.8E+07	5.4E+04	7.1E+05
13	5.7E+08	1.9E+08	4.5E+08	1.0E+08	2.7E+07	5.7E+05	1.5E+05	1.3E+06	1.6E+08	2.1E+07	5.1E+04	5.8E+05
14	7.2E+07	1.0E+08	6.8E+08	1.1E+08	2.8E+07	7.0E+04	1.1E+05	3.1E+07	1.3E+08	8.3E+06	4.5E+04	3.7E+05
15	5.4E+07	3.0E+06	1.9E+08	6.8E+07	3.0E+07	6.0E+04	3.6E+07	1.3E+08	4.4E+07	4.0E+05	4.3E+04	2.8E+06
16	4.1E+07	7.3E+07	1.6E+08	1.5E+06	1.9E+07	5.6E+04	8.5E+07	9.9E+07	1.6E+07	5.2E+05	4.6E+04	5.6E+06
17	4.5E+06	2.4E+08	1.9E+08	2.0E+06	3.6E+06	4.8E+04	6.3E+07	8.0E+07	6.2E+06	5.8E+05	4.7E+04	8.8E+06
18	1.1E+07	2.6E+07	1.7E+08	2.3E+06	4.3E+06	7.1E+04	6.9E+07	7.5E+07	1.4E+06	9.6E+05	4.6E+04	1.2E+07
19	1.2E+08	1.4E+07	8.0E+07	2.2E+06	3.6E+06	5.9E+04	5.6E+07	4.9E+07	1.4E+06	6.3E+05	4.4E+04	9.6E+06
20	2.0E+08	1.0E+07	6.7E+06	2.5E+06	1.7E+06	7.7E+04	2.7E+07	3.0E+07	2.0E+06	8.4E+05	4.5E+04	3.0E+06
21	1.6E+08	1.4E+07	8.4E+06	2.4E+06	1.4E+06	7.6E+04	1.1E+07	1.4E+06	2.5E+06	6.6E+05	5.2E+04	1.6E+05
22	1.6E+08	2.9E+06	1.1E+07	2.5E+06	1.4E+06	9.1E+04	6.8E+06	1.7E+05	3.2E+06	4.4E+05	4.2E+04	8.9E+04
23	1.8E+08	3.2E+06	4.0E+06	2.1E+06	3.8E+05	7.5E+04	4.2E+06	2.7E+05	4.0E+06	2.8E+05	4.5E+04	1.4E+07
24	9.6E+07	3.5E+06	4.7E+06	2.4E+06	4.2E+06	9.2E+04	2.6E+06	2.1E+05	1.7E+06	2.5E+05	3.5E+04	3.3E+07
25	7.5E+07	4.5E+06	7.3E+06	1.0E+06	4.2E+06	9.8E+04	4.7E+06	5.4E+06	3.7E+05	3.6E+05	4.4E+04	6.6E+07
26	7.7E+07	1.3E+06	3.1E+06	1.0E+06	5.0E+06	1.2E+05	6.8E+06	6.2E+06	7.6E+05	3.9E+05	4.0E+04	5.9E+07
27	1.6E+07	1.7E+06	1.6E+06	2.8E+06	4.8E+06	1.7E+05	2.0E+06	7.2E+06	7.4E+05	3.6E+05	5.6E+04	5.4E+07
28	1.3E+07	2.1E+06	2.0E+06	4.5E+08	3.9E+06	3.7E+05	2.9E+05	7.4E+06	9.8E+05	1.2E+05	5.2E+04	3.8E+07
29	1.2E+07	1.7E+06	1.6E+06	1.2E+09	2.9E+06	2.3E+05		6.8E+06	7.4E+05	5.7E+04	3.3E+06	4.1E+07
30	1.3E+07	1.9E+06	7.0E+07	4.5E+08	4.6E+06	1.8E+05		5.1E+06	3.3E+05	7.7E+04	8.7E+06	4.6E+07
31	1.5E+07		2.0E+08		5.4E+05	1.1E+05		4.9E+06		9.3E+04		9.3E+06

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

CONTENTS

Prompt Reports Number 780 Part I

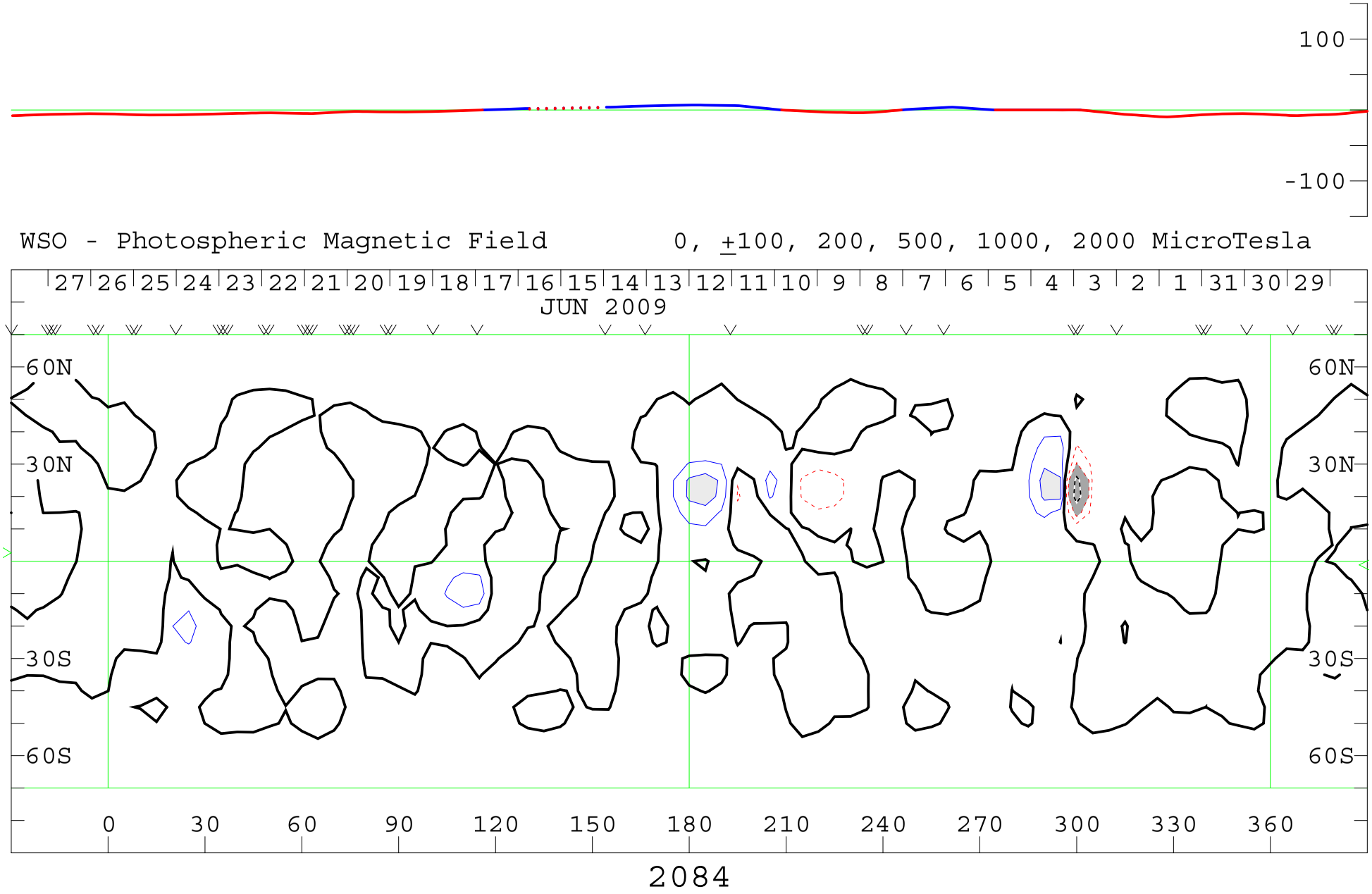
DATA FOR **JUNE 2009**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2084

(30 May 2009 to 26 Jun 2009)



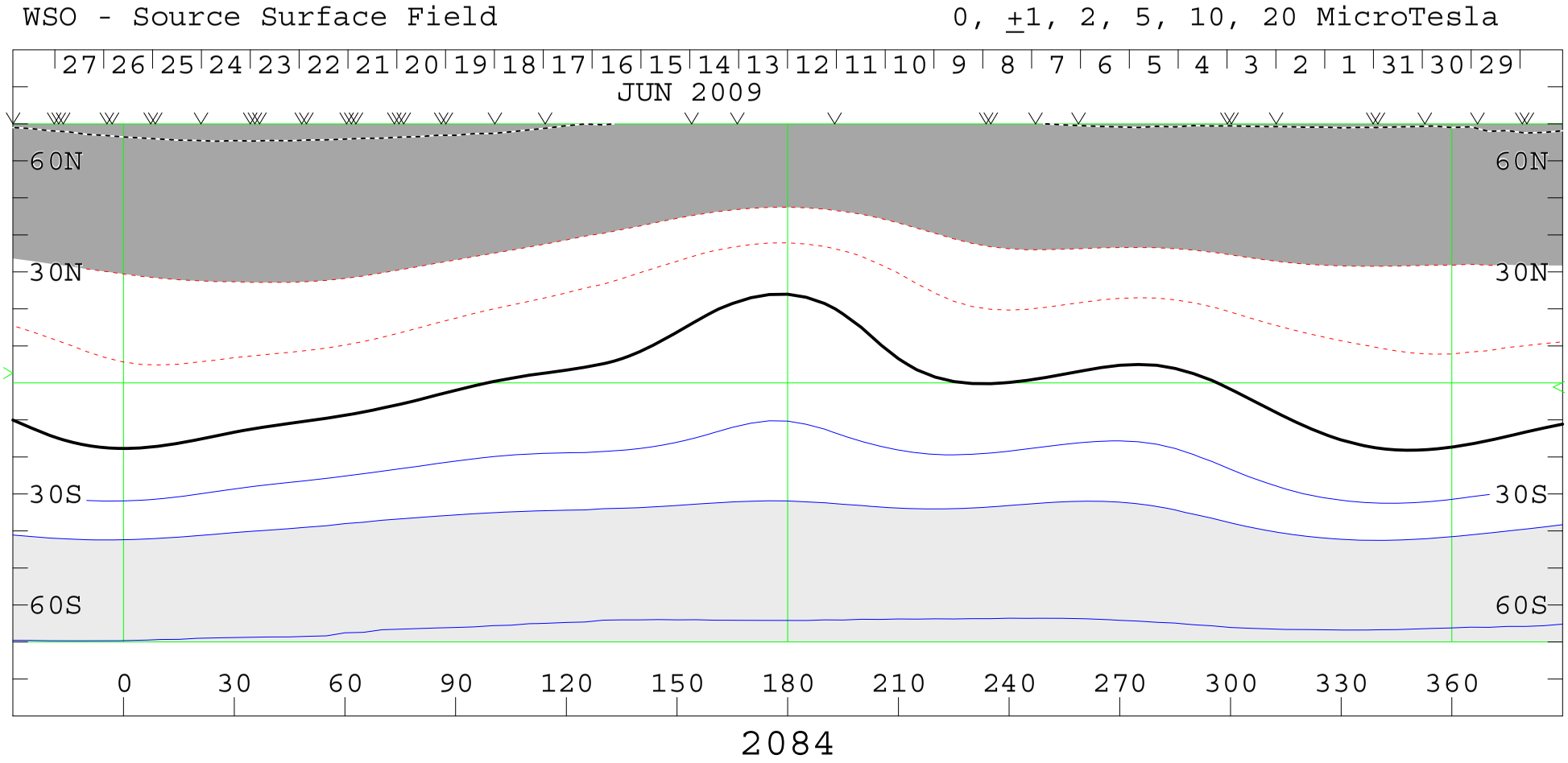
SOLAR MAGNETIC FIELD SYNOPTIC CHART

SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2084

(30 May 2009 to 26 Jun 2009)

Heliographic Longitude

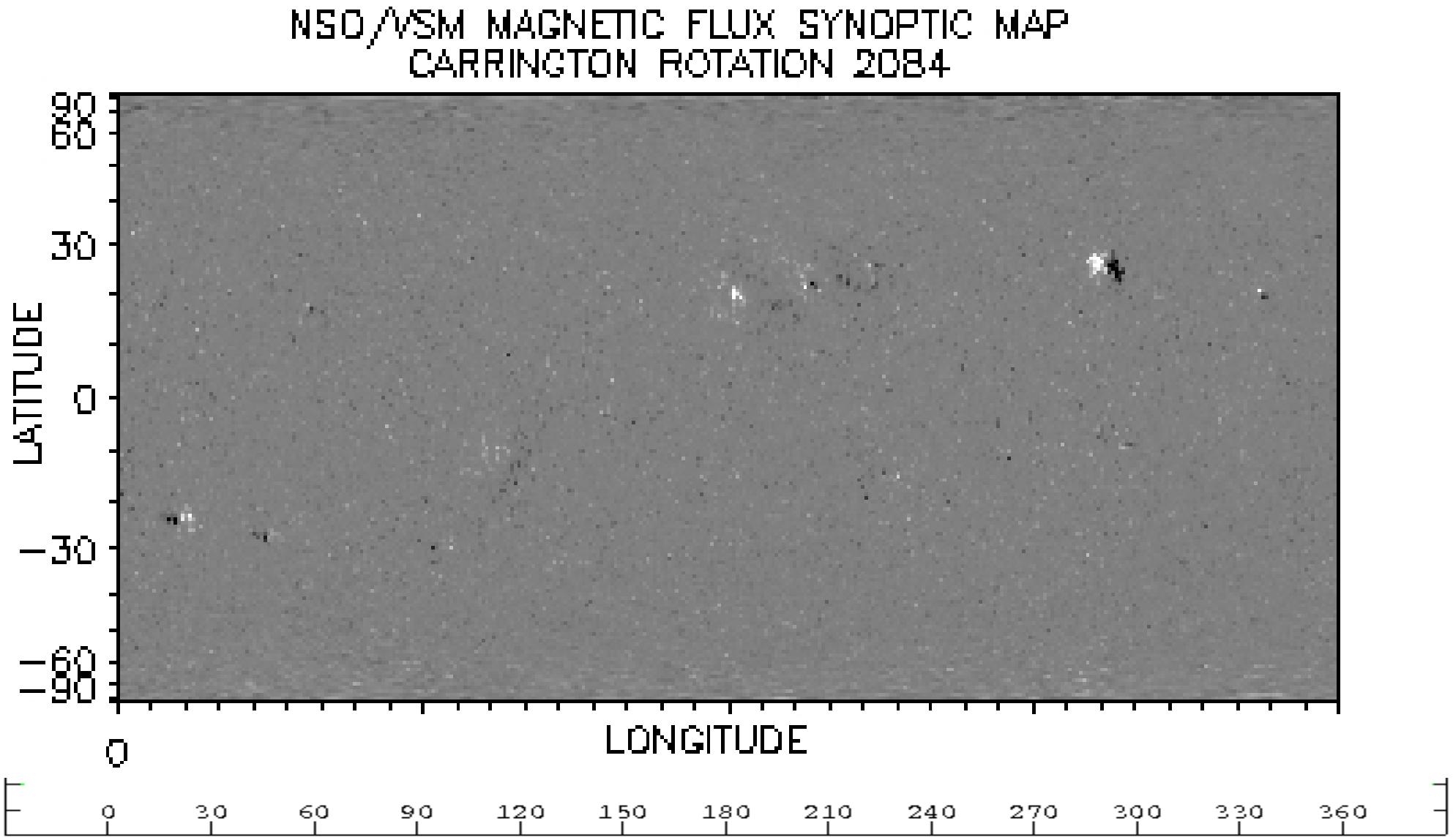


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2083

(30 May 2009 to 26 Jun 2009)

National Solar Observatory/Kitt Peak



Heliographic Longitude

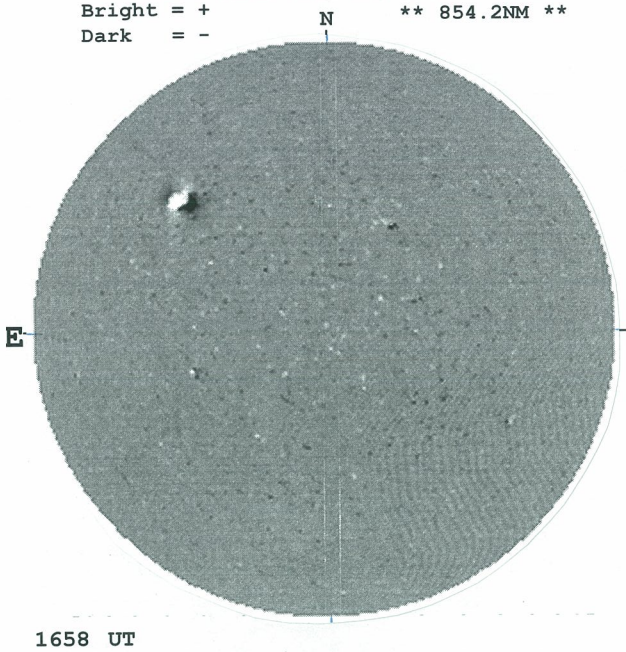
June 01, 2009 (P=-15.40, Bo=-0.66, Lo= 338.74)

Jun 09 40

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

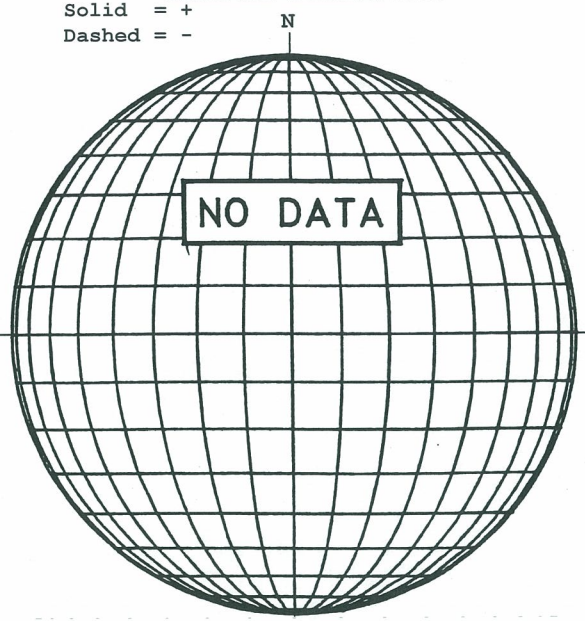
** 854.2NM **



1658 UT

STANFORD MAGNETOGRAM

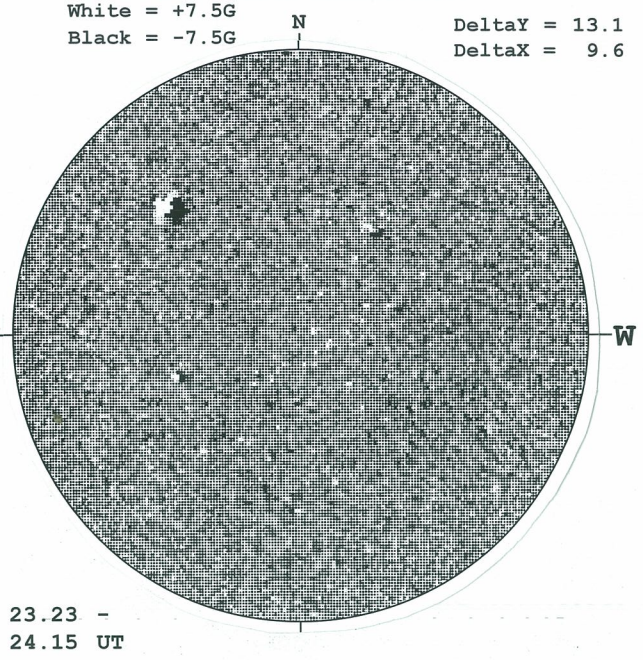
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

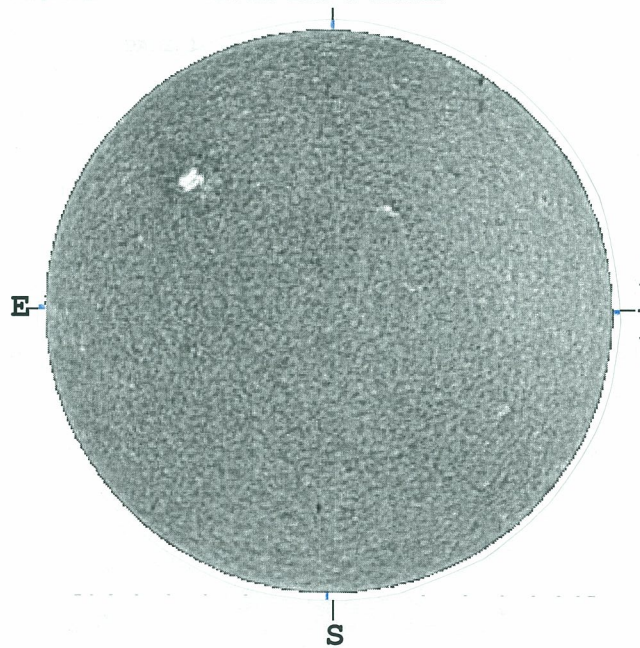
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



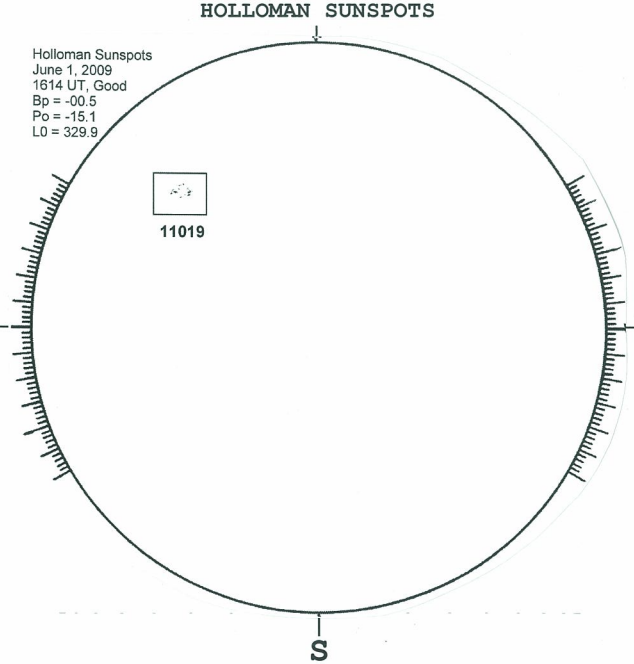
23.23 -
24.15 UT

MAUNA LOA H-ALPHA



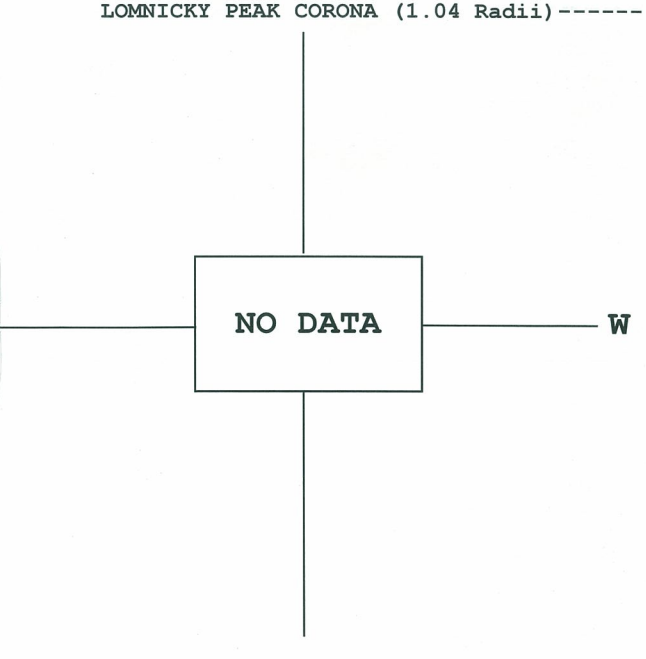
1729 UT

HOLLOMAN SUNSPOTS



1614 UT

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

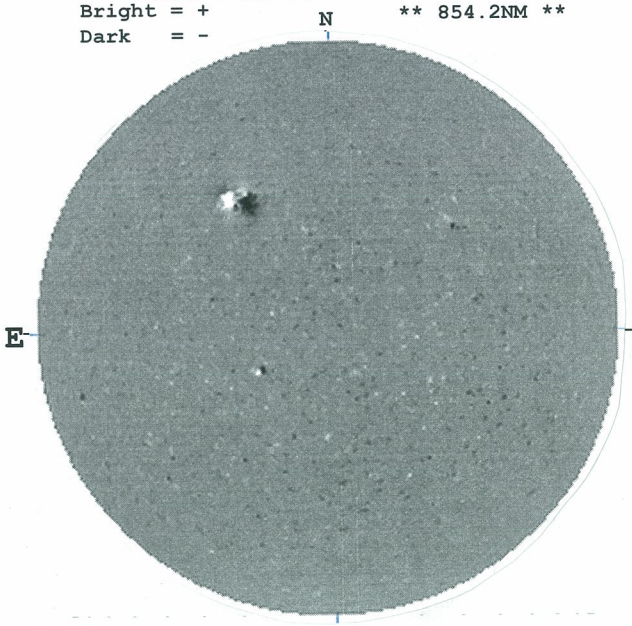


June 02, 2009 (P=-15.02, Bo=-0.54, Lo= 325.50)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

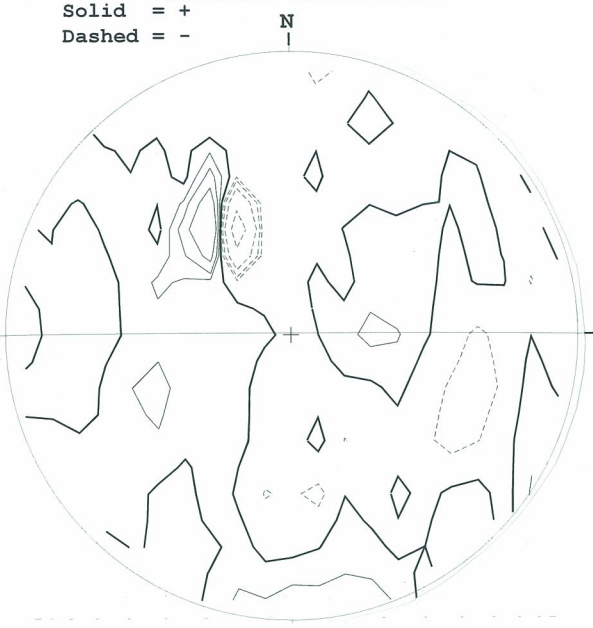
** 854.2NM **



1845 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

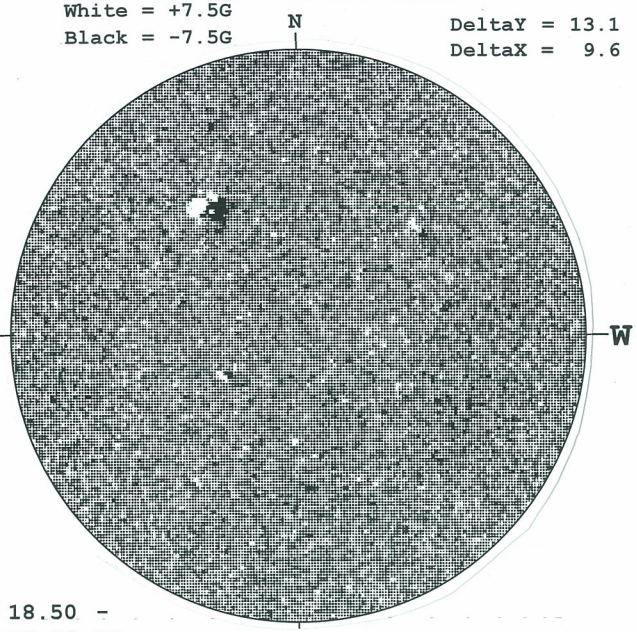


2350 UT

MT. WILSON MAGNETOGRAM

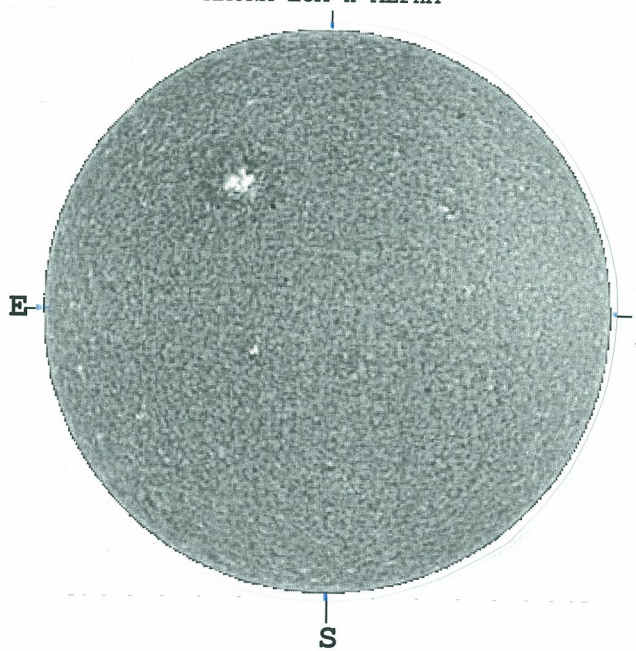
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



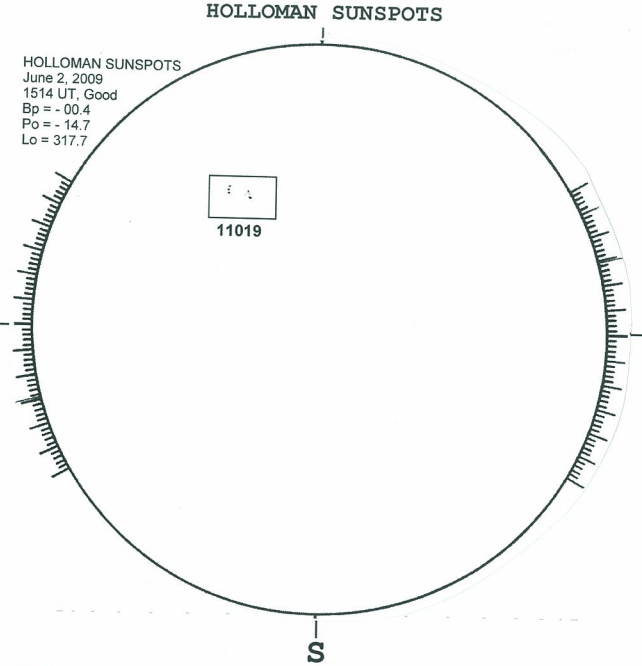
18.50 -
19.42 UT

MAUNA LOA H-ALPHA



1733 UT

HOLLOMAN SUNSPOTS



1514 UT

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

NO DATA

W

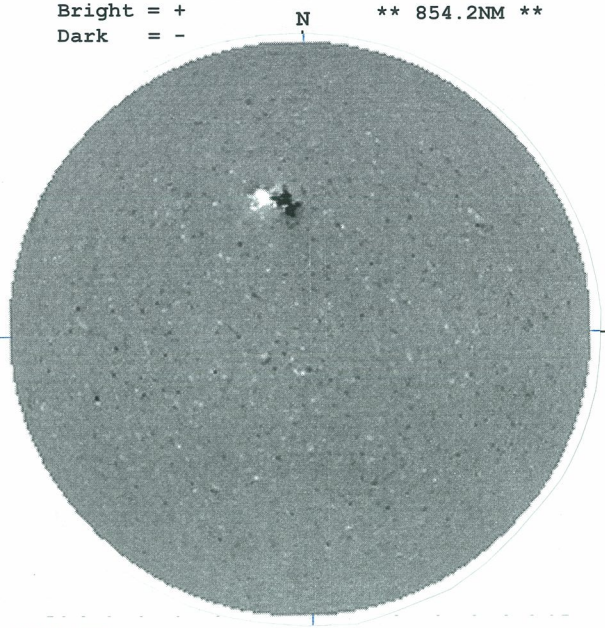
41
Jun 09

June 03, 2009 (P=-14.64, Bo=-0.42, Lo= 312.27)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

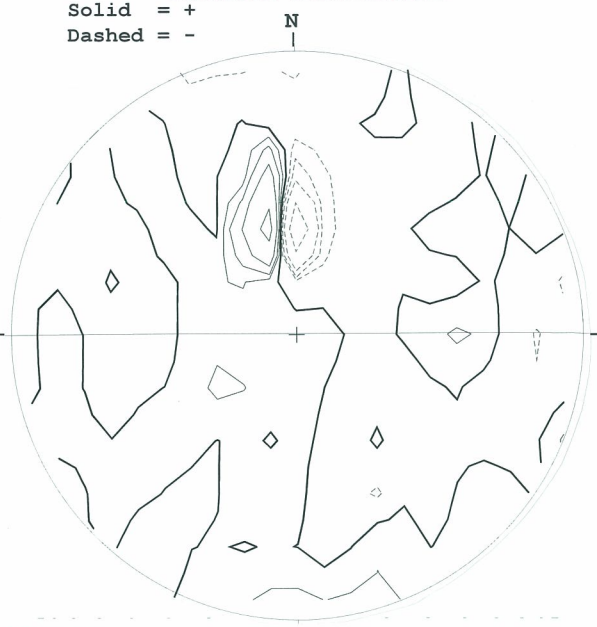
** 854.2NM **



2119 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

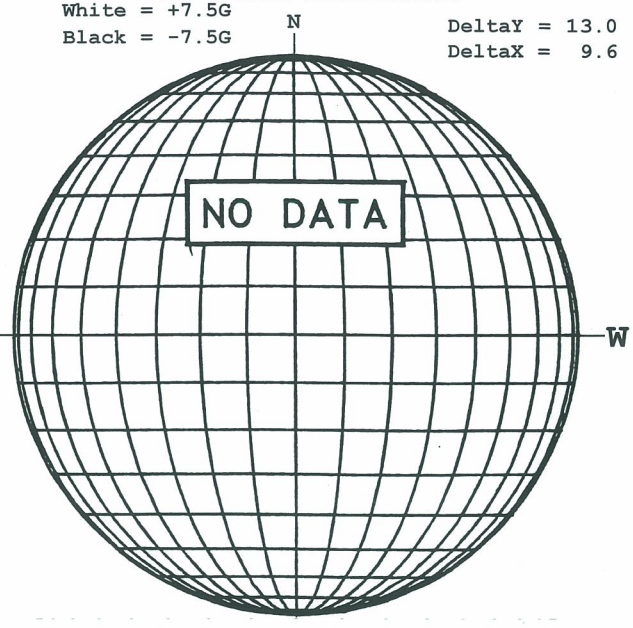


2348 UT

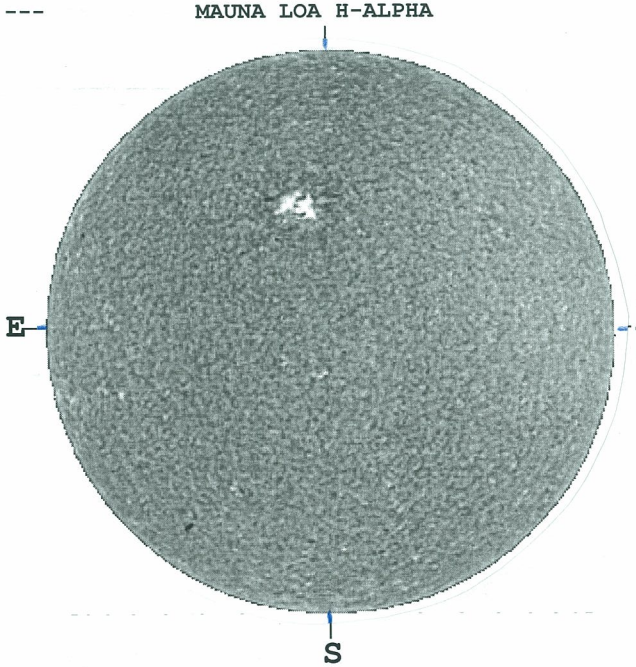
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6

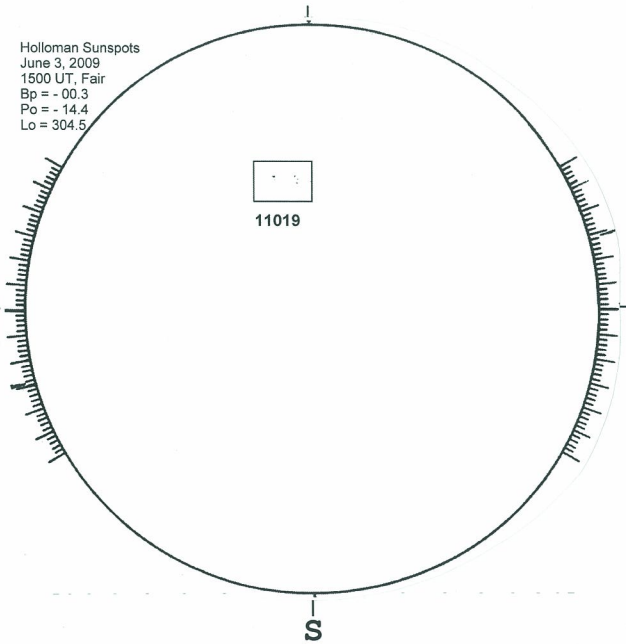


MAUNA LOA H-ALPHA



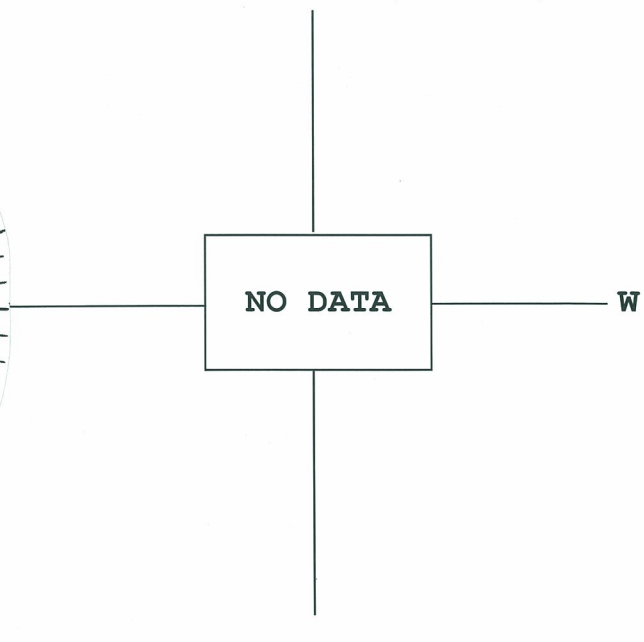
1729 UT

HOLLOMAN SUNSPOTS



1500 UT

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

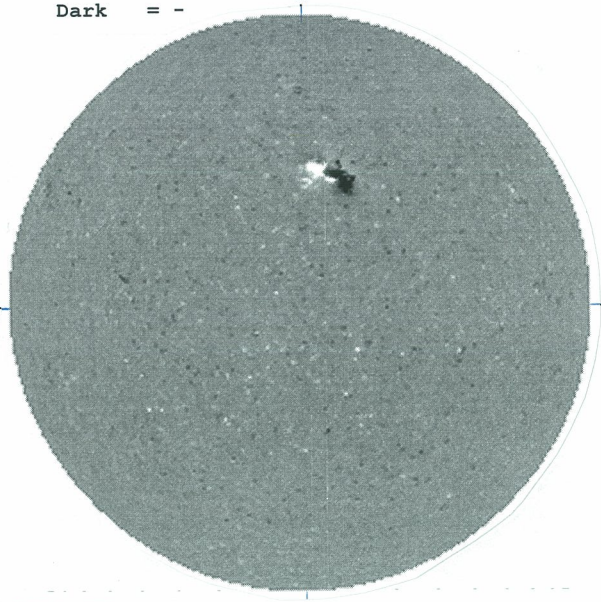


June 04, 2009 (P=-14.25, Bo=-0.30, Lo= 299.04)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

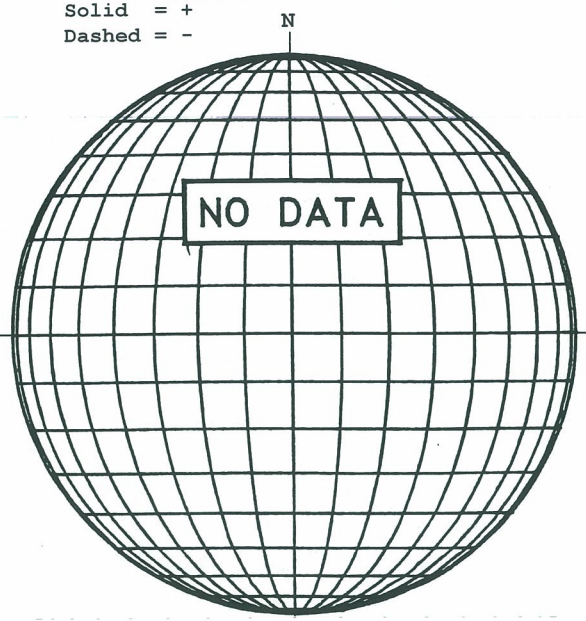
** 854.2NM **



1809 UT

STANFORD MAGNETOGRAM

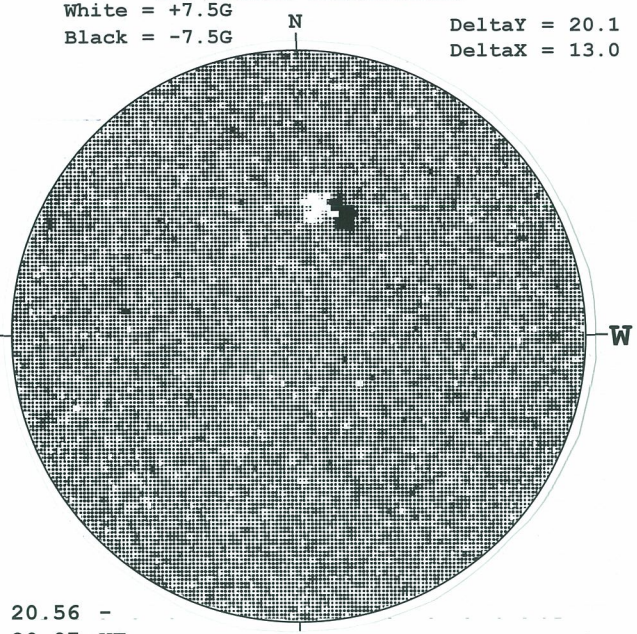
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

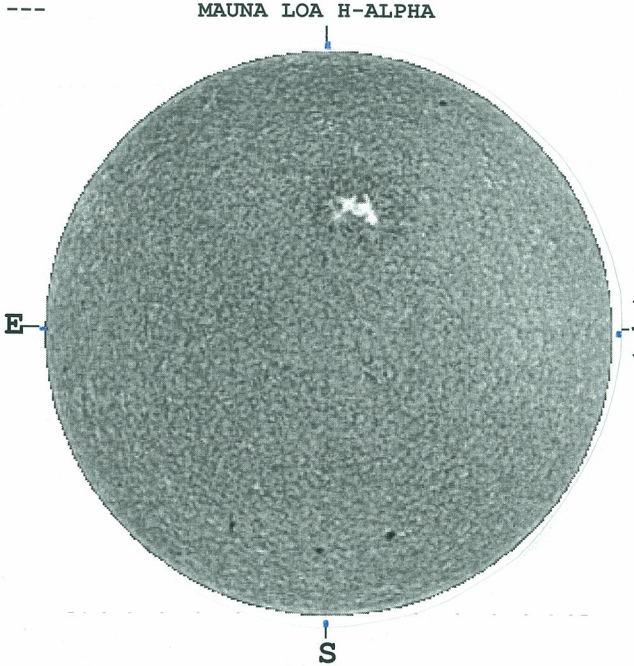
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 13.0



20.56 -
20.97 UT

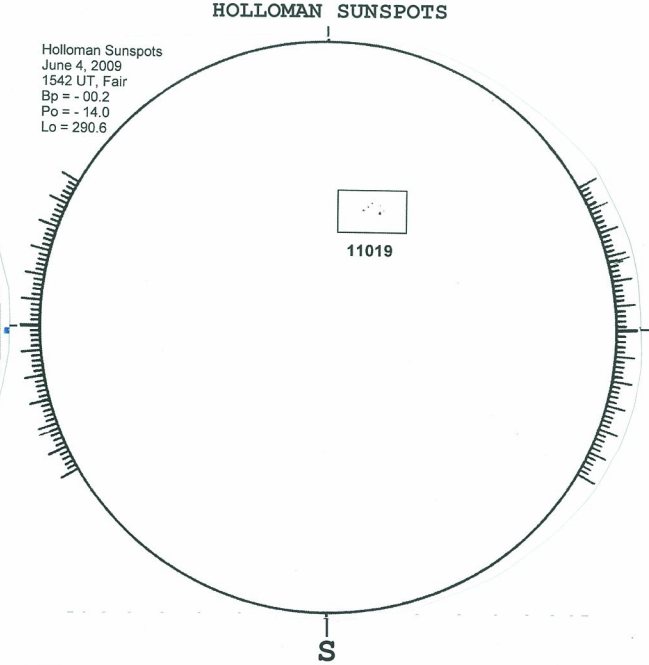
MAUNA LOA H-ALPHA



1730 UT

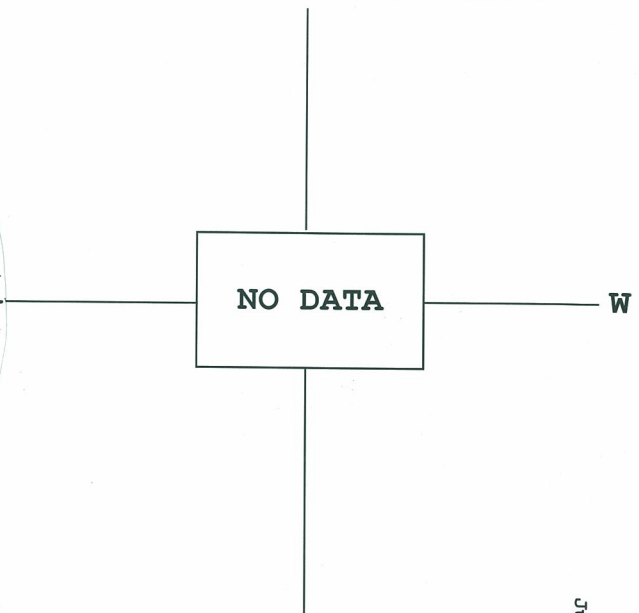
HOLLOMAN SUNSPOTS

Holloman Sunspots
June 4, 2009
1542 UT, Fair
Bp = - 00.2
Po = - 14.0
Lo = 290.6



1542 UT

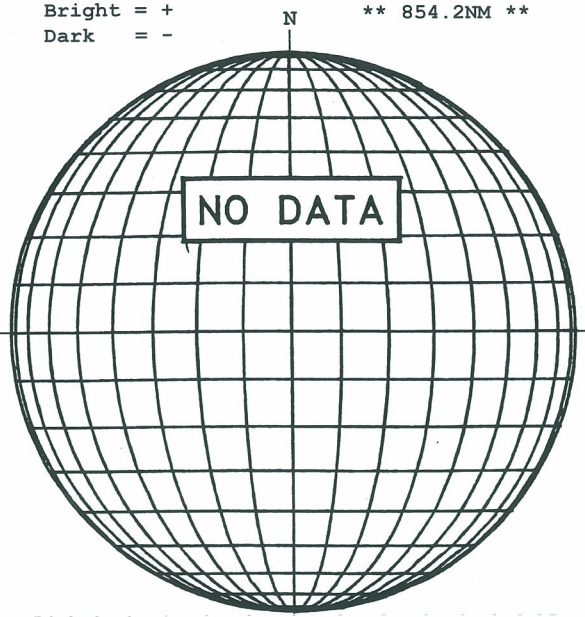
LOMNICKY PEAK CORONA (1.04 Radii)------



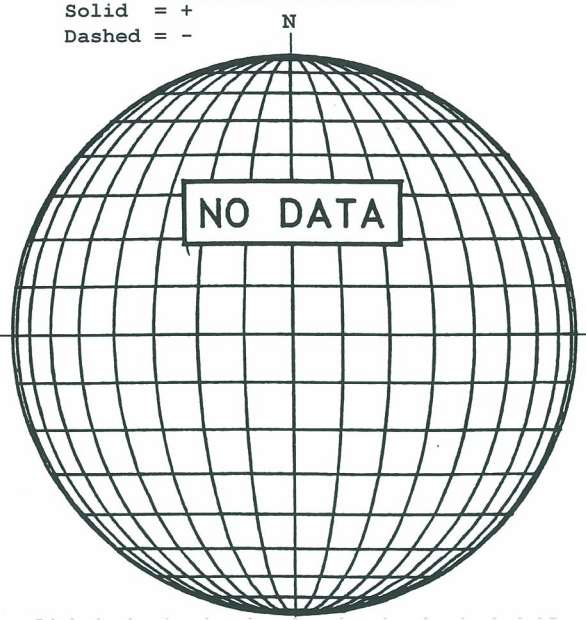
June 05, 2009 (P=-13.87, Bo=-0.18, Lo= 285.80)

Jun 09 44

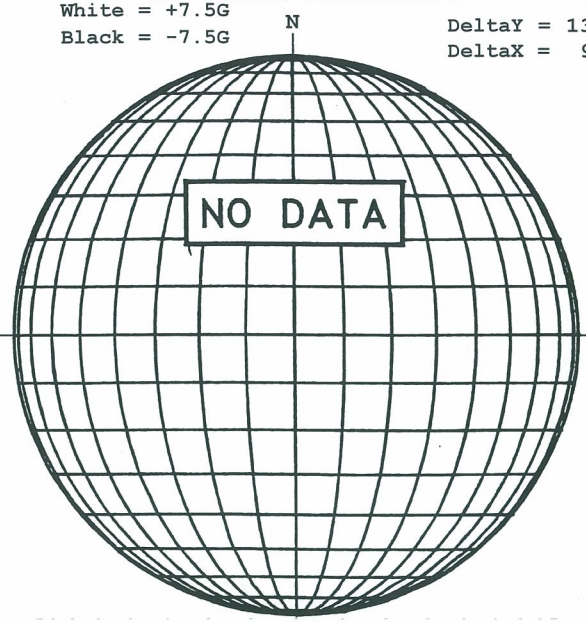
KITT PEAK MAGNETOGRAM -- SOLIS
Bright = +
Dark = -
** 854.2NM **



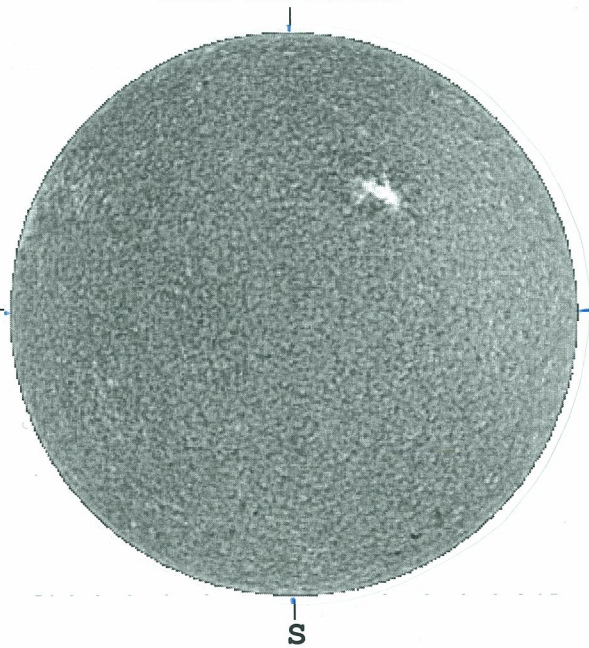
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



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

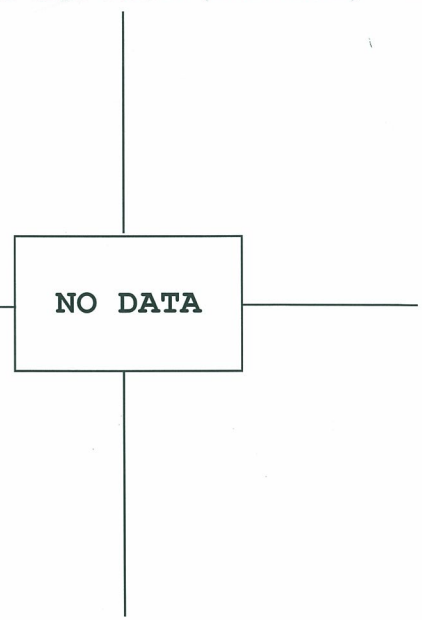


MAUNA LOA H-ALPHA



HOLLOMAN SUNSPOTS

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



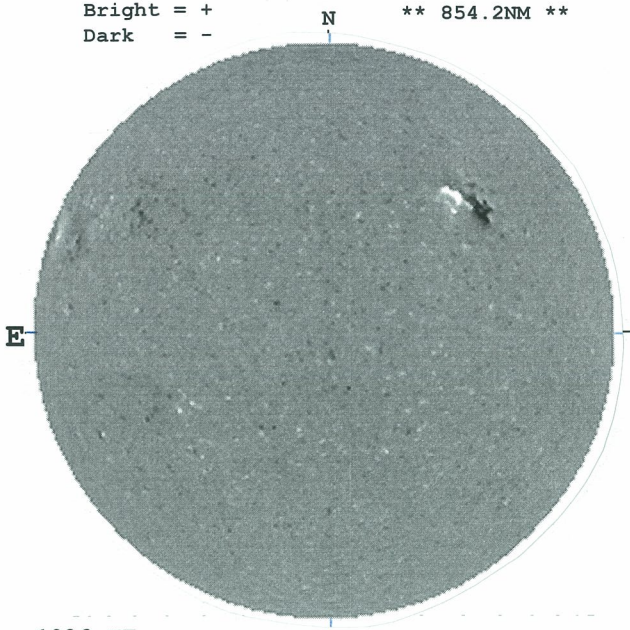
1730 UT

June 06, 2009 (P=-13.47, Bo=-0.06, Lo= 272.57)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

** 854.2NM **



1926 UT

STANFORD MAGNETOGRAM

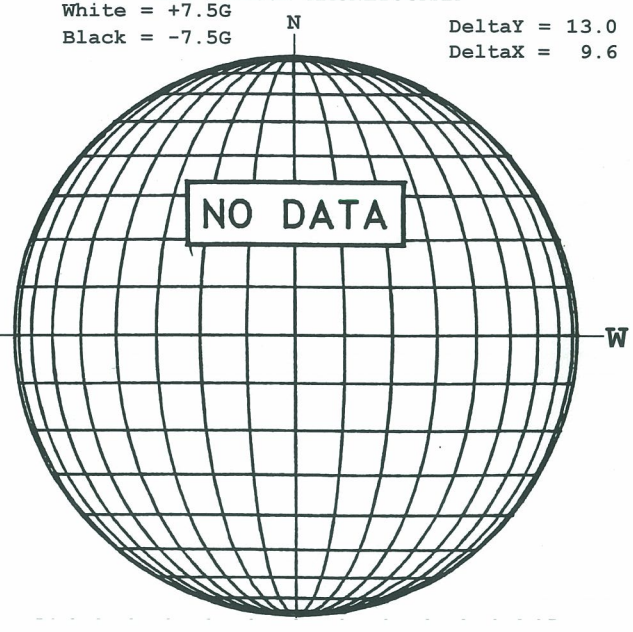
Solid = +
Dashed = -

07/0056 UT

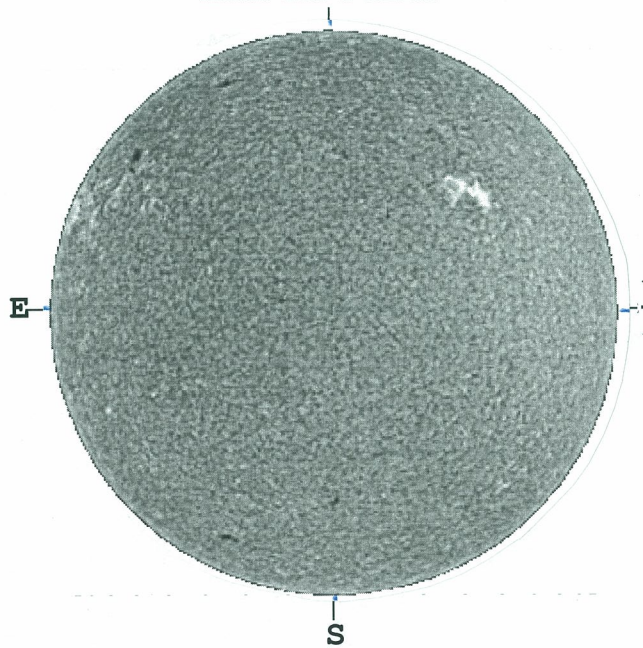
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6



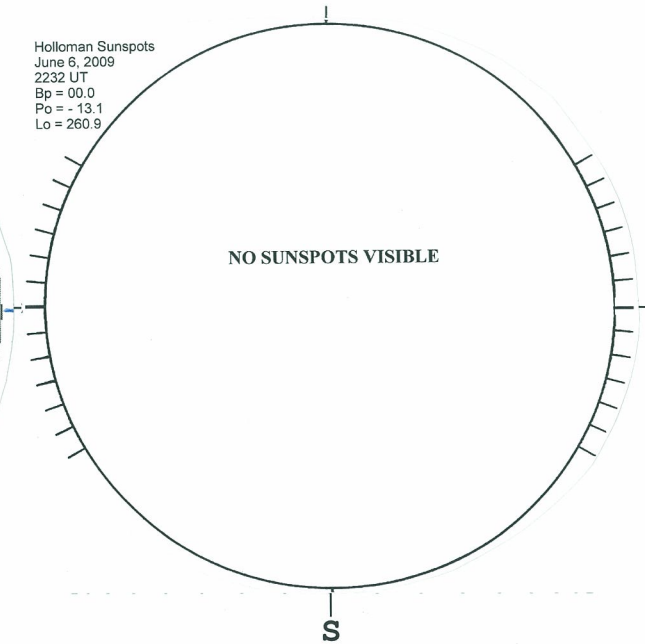
MAUNA LOA H-ALPHA



1722 UT

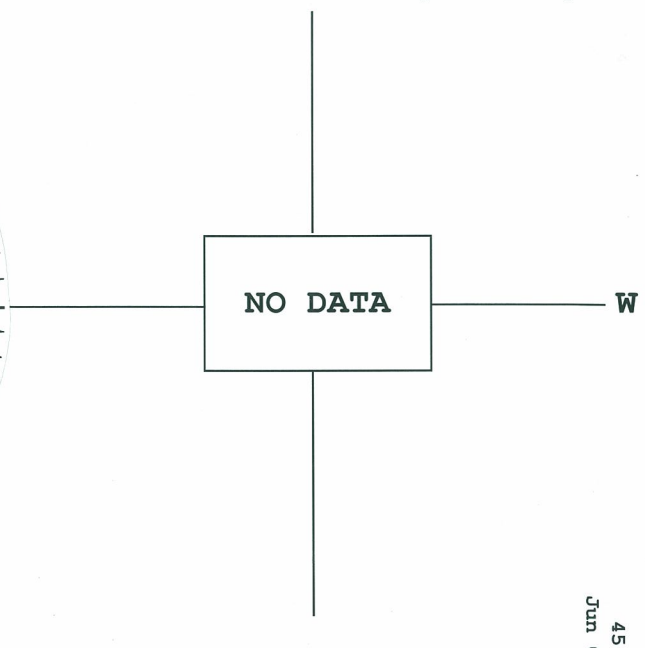
HOLLOMAN SUNSPOTS

Holloman Sunspots
June 6, 2009
2232 UT
Bp = 00.0
Po = - 13.1
Lo = 260.9



2232 UT

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



45
Jun 09

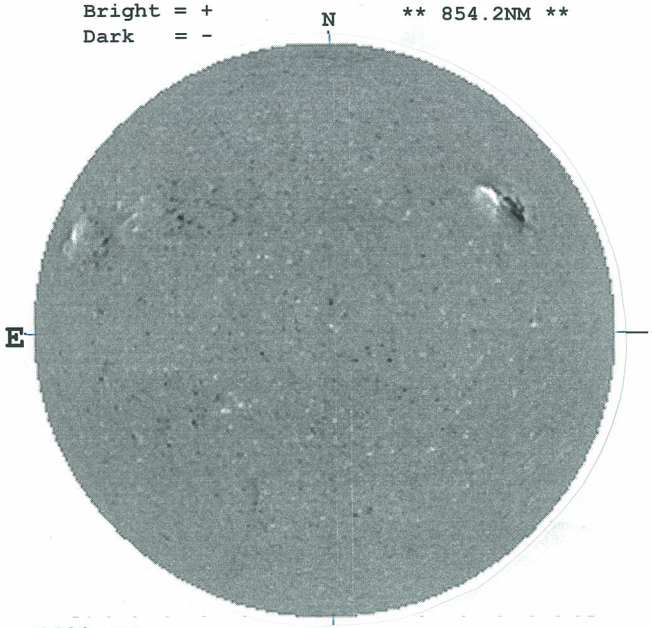
June 07, 2009 (P=-13.07, Bo= 0.06, Lo= 259.33)

46 Jun 09

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

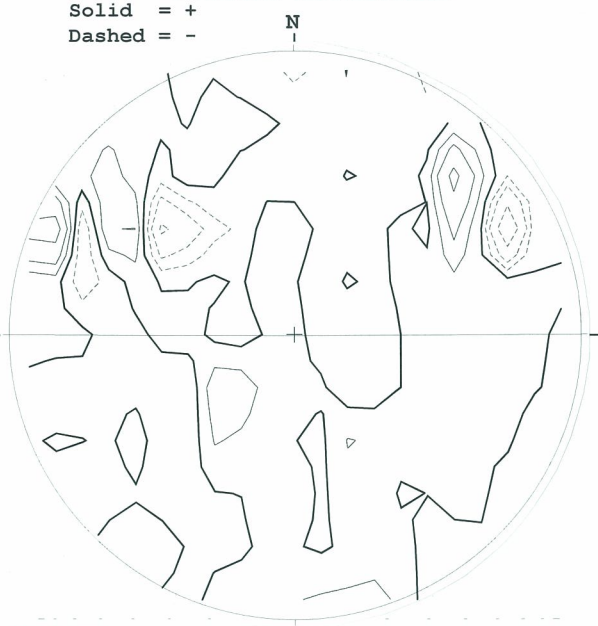
** 854.2NM **



1429 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

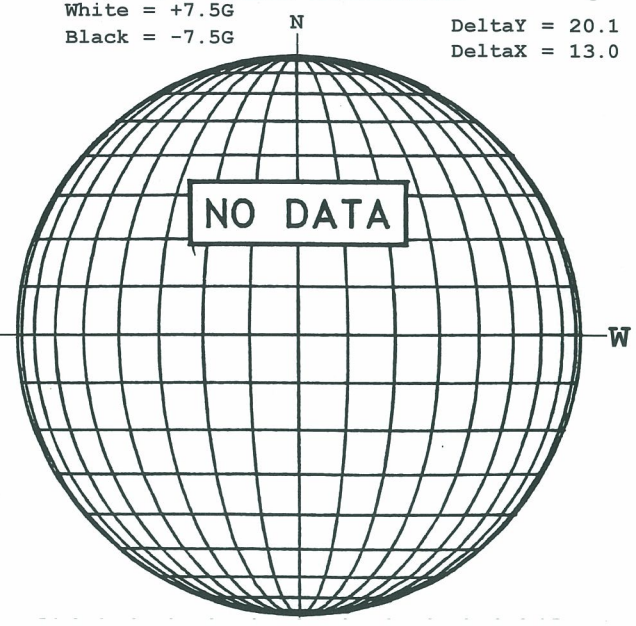


2206 UT

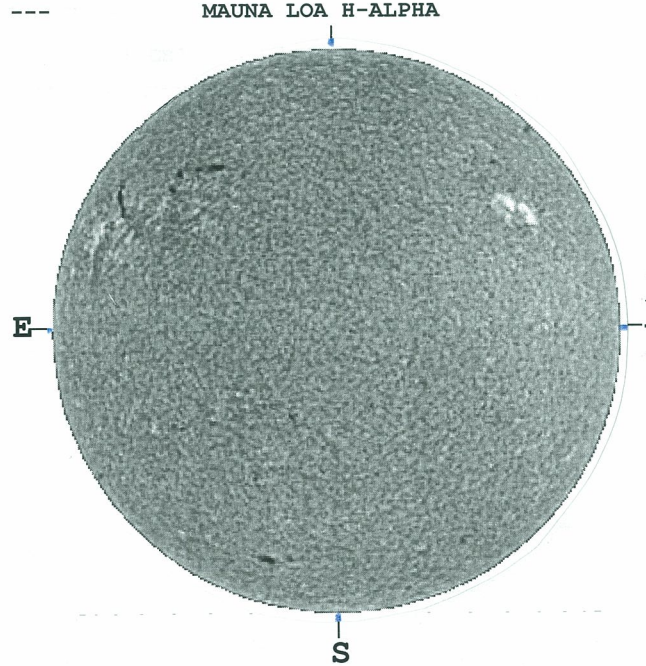
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 13.0



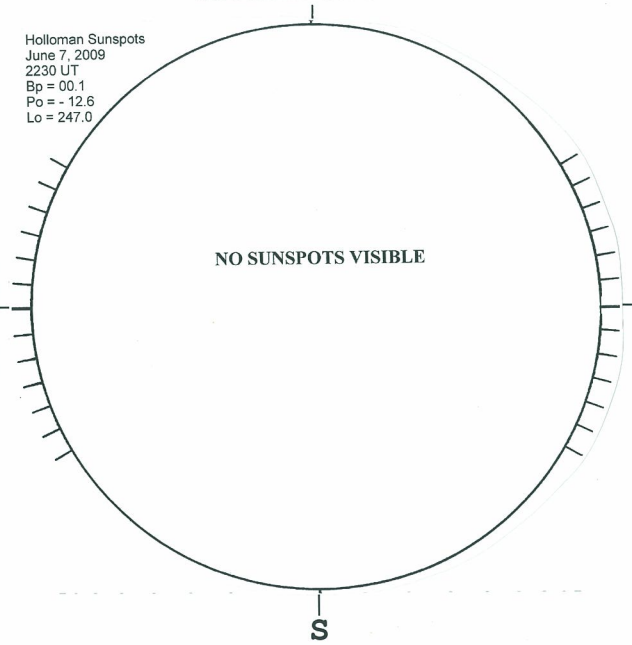
MAUNA LOA H-ALPHA



1732 UT

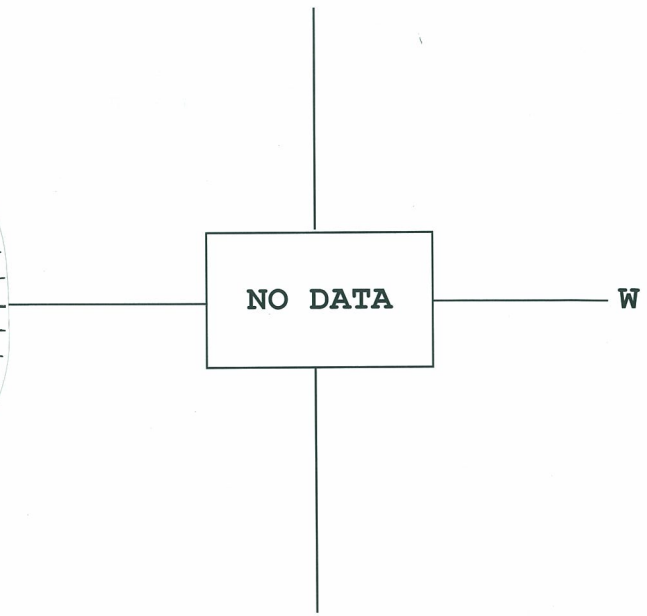
HOLLOMAN SUNSPOTS

Holloman Sunspots
June 7, 2009
2230 UT
Bp = 00.1
Po = - 12.6
Lo = 247.0



2230 UT

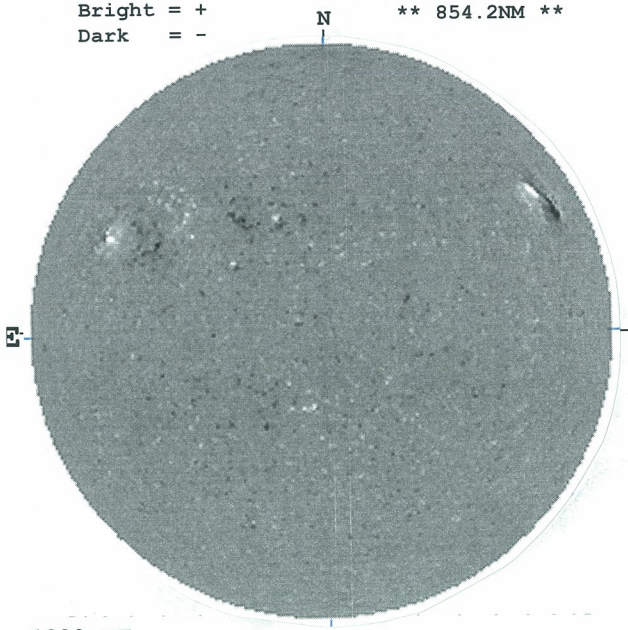
LOMNICKY PEAK CORONA (1.04 Radii)------



June 08, 2009 (P=-12.67, Bo= 0.19, Lo= 246.09)

KITT PEAK MAGNETOGRAM -- SOLIS

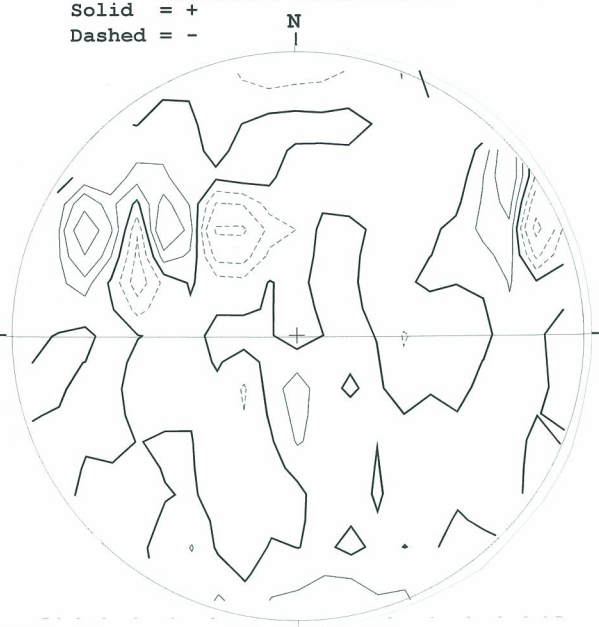
Bright = +
Dark = -



1920 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

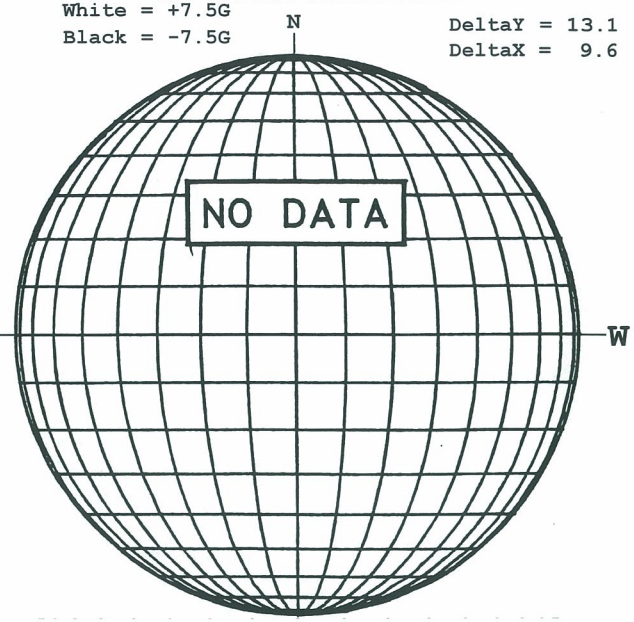


2221 UT

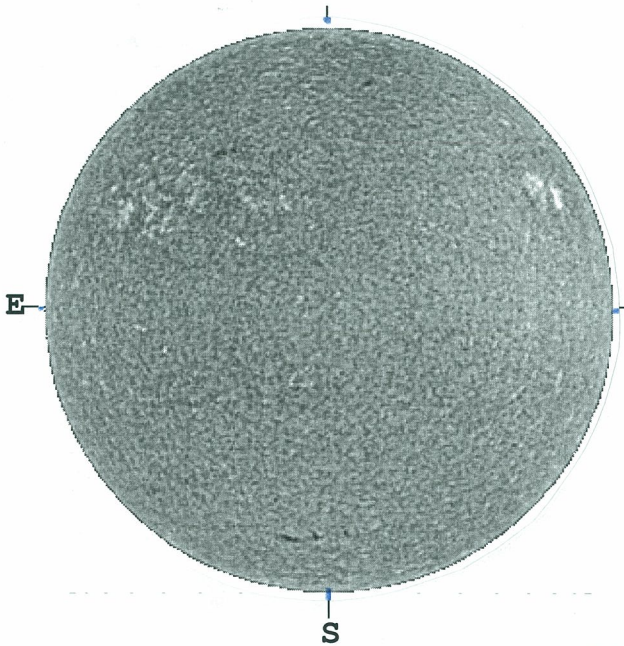
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

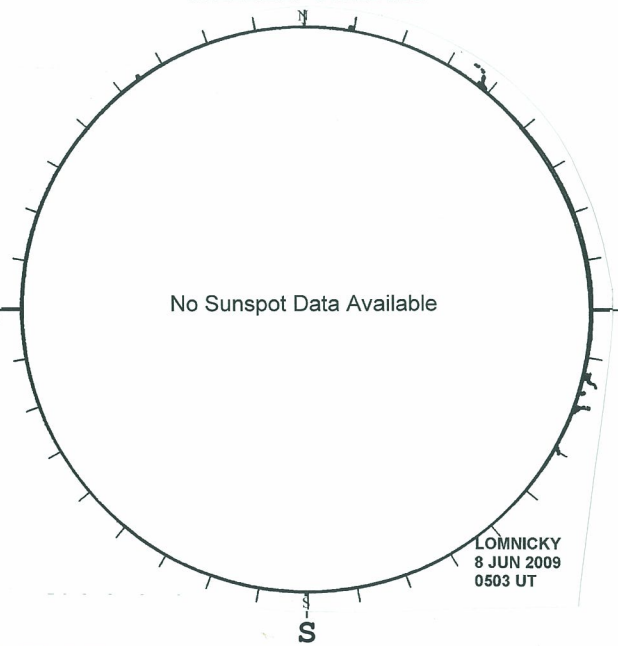


MAUNA LOA H-ALPHA



1719 UT

HOLLOMAN SUNSPOTS

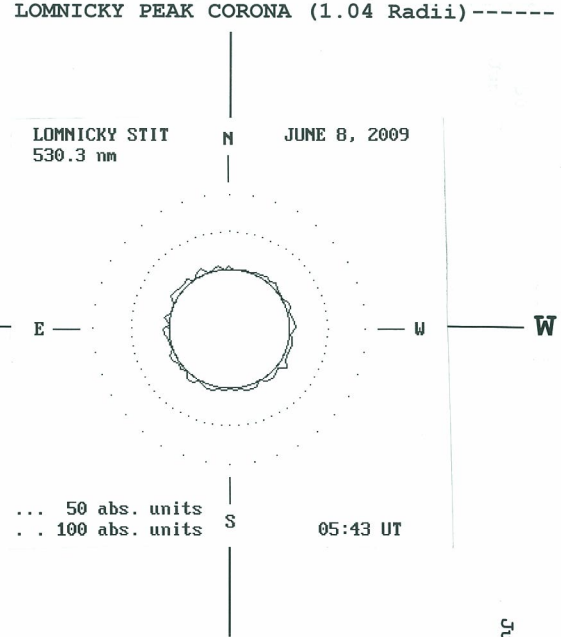


0503 UT LOMN PROM

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

LOMNICKY STIT
530.3 nm

JUNE 8, 2009



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

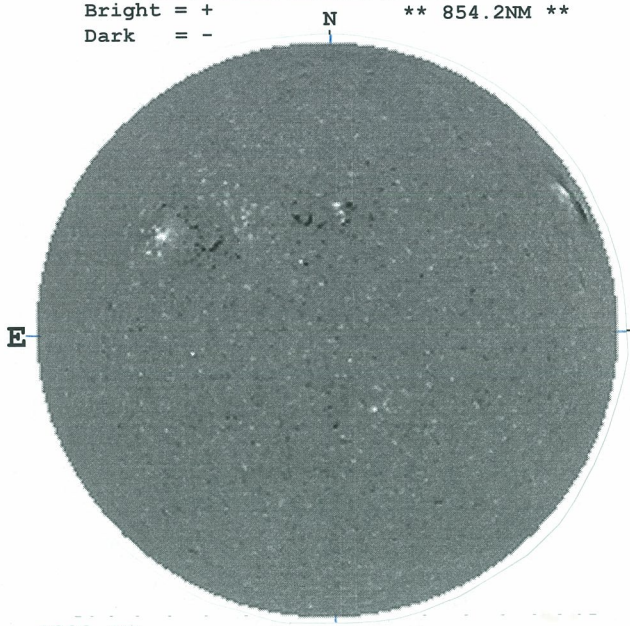
05:43 UT

47
Jun 09

Jun 09, 2009 (P=-22.47, Bo=-3.33, Lo= 282.99)

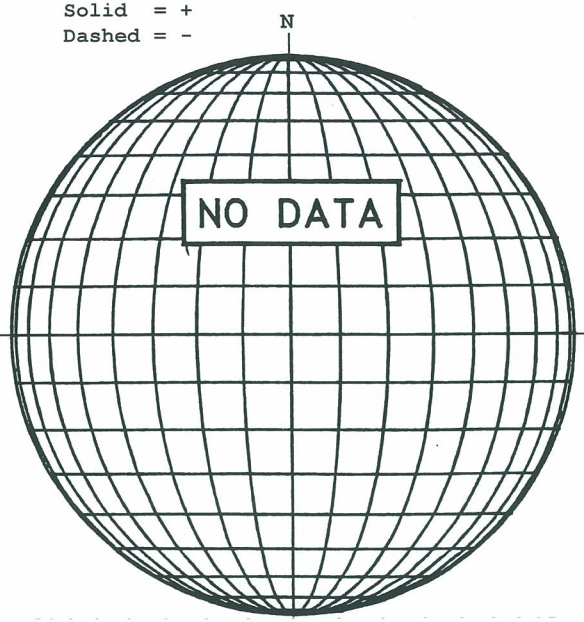
Jun 09 48

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

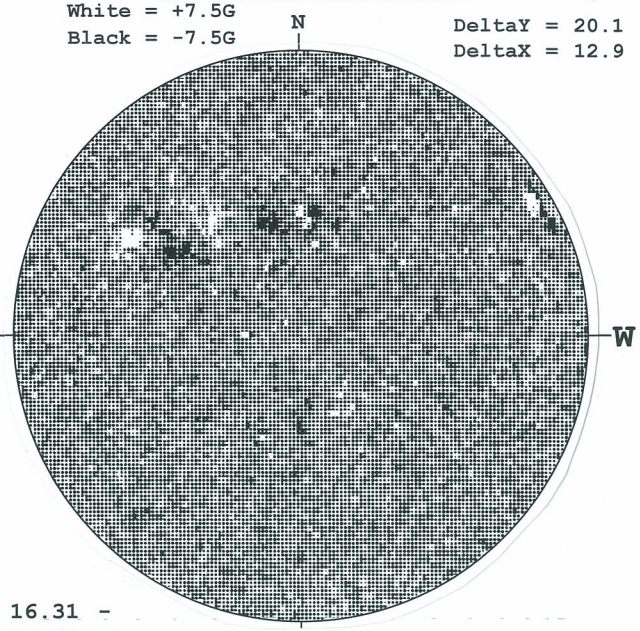


1820 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

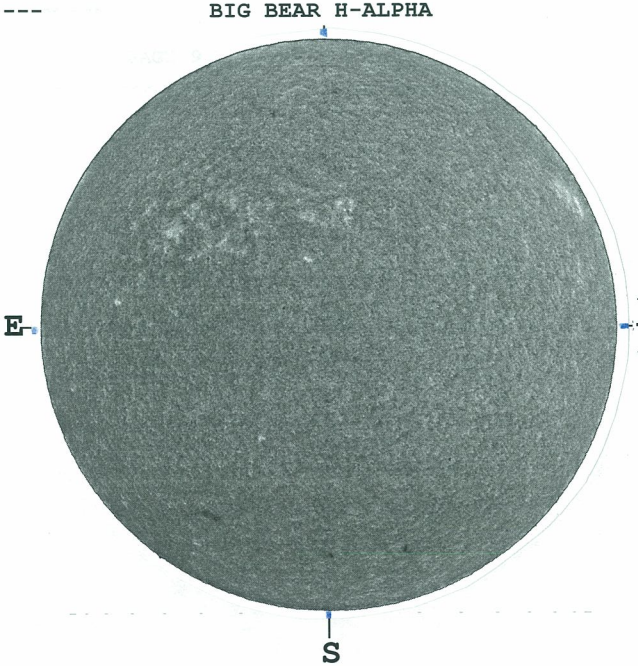


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 20.1
DeltaX = 12.9



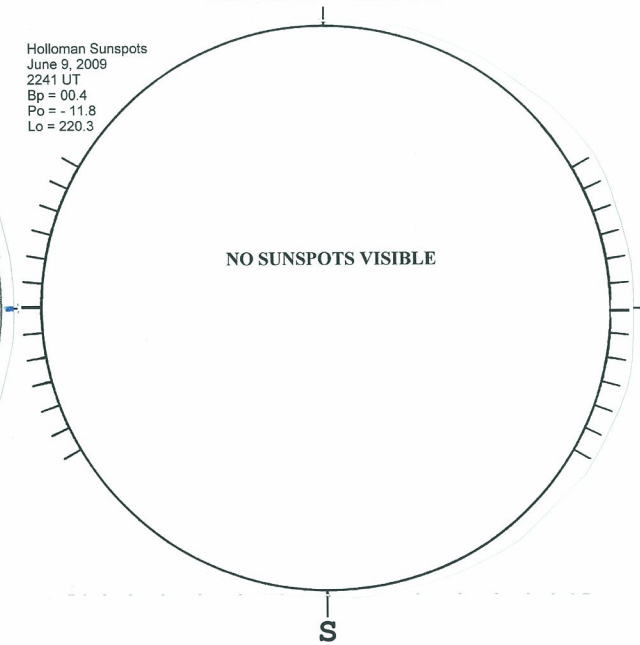
16.31 -
16.72 UT

BIG BEAR H-ALPHA



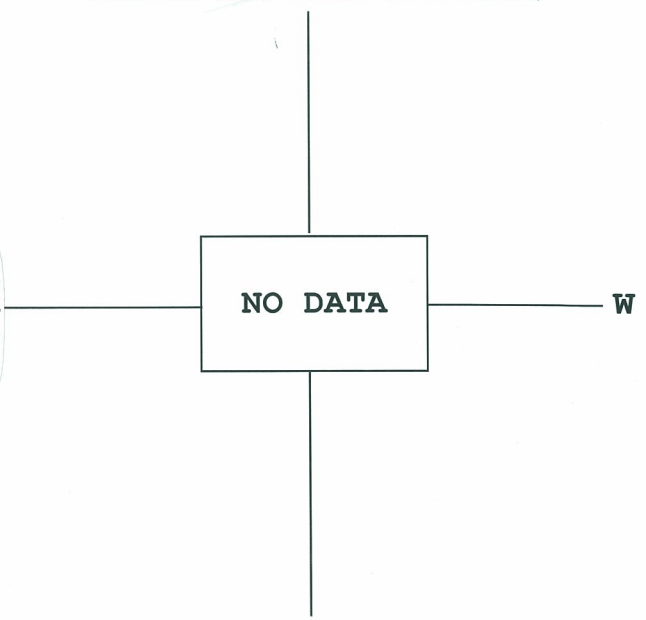
1948 UT

HOLLOMAN SUNSPOTS



2241 UT

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

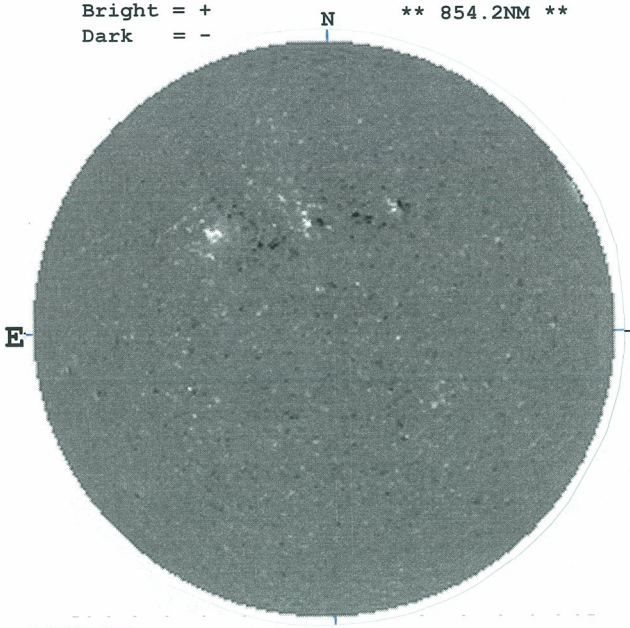


June 10, 2009 (P=-11.86, Bo= 0.43, Lo= 219.62)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

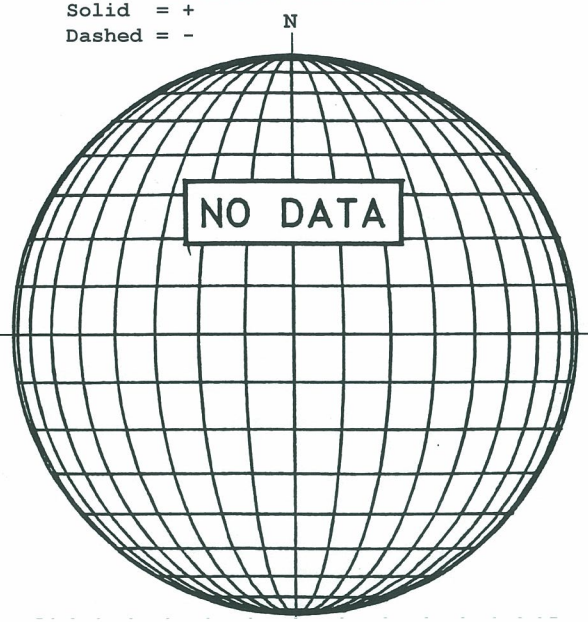
** 854.2NM **



1844 UT

STANFORD MAGNETOGRAM

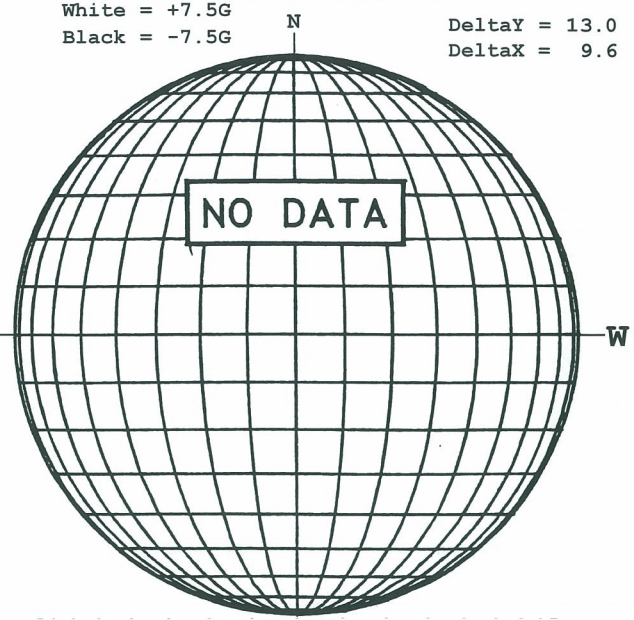
Solid = +
Dashed = -



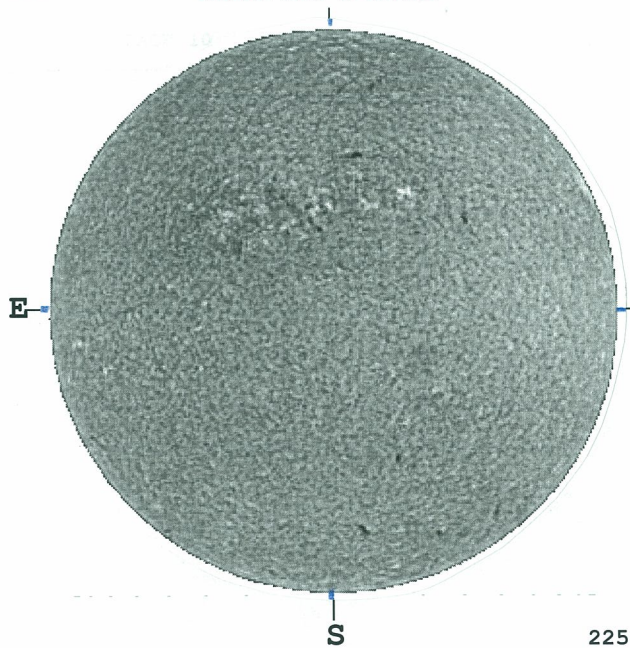
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.0
DeltaX = 9.6

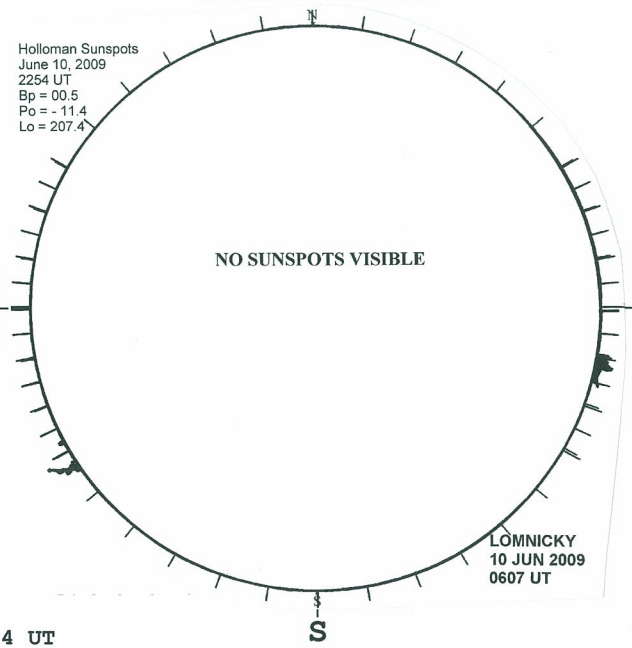


MAUNA LOA H-ALPHA



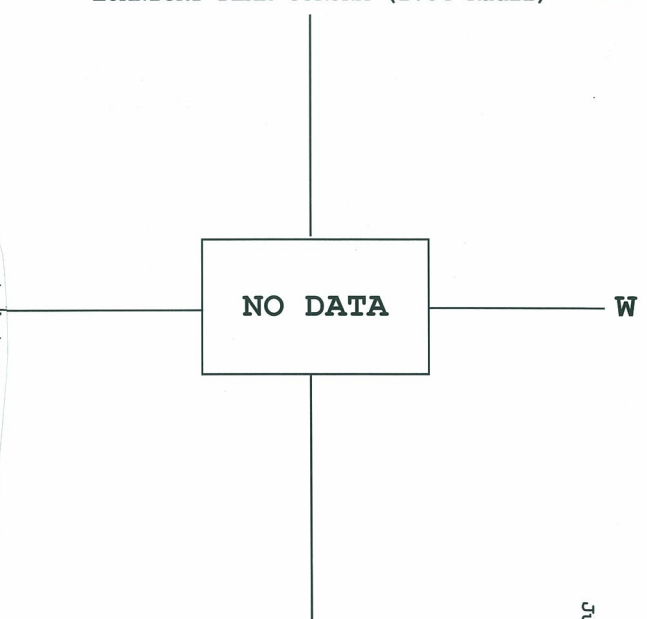
1746 UT

HOLLOMAN SUNSPOTS



2254 UT
0607 UT LOMN PROM

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



49
Jun 09

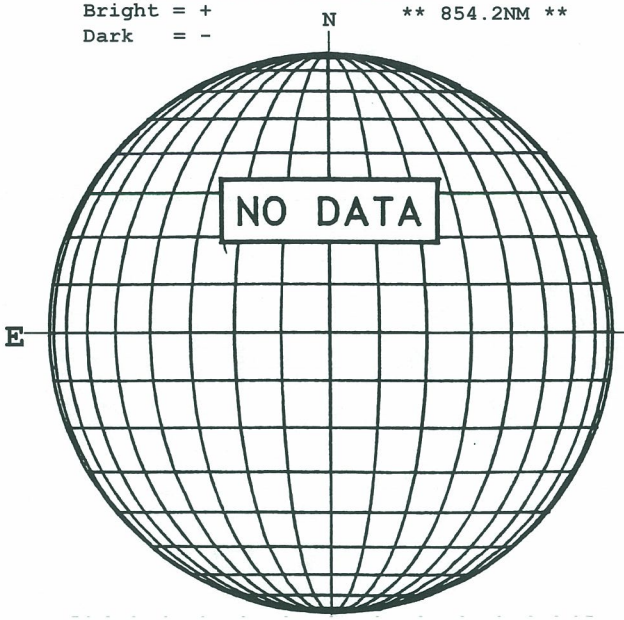
June 11, 2009 (P=-11.44, Bo= 0.55, Lo= 206.39)

Jun 09 50

KITT PEAK MAGNETOGRAM -- SOLIS

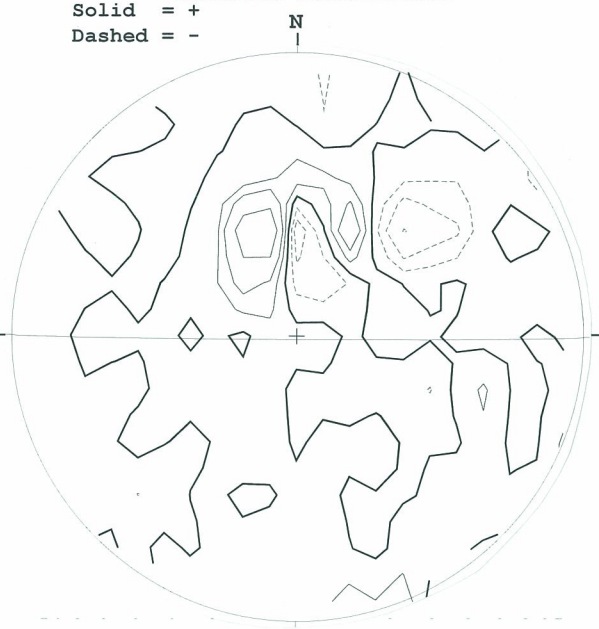
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

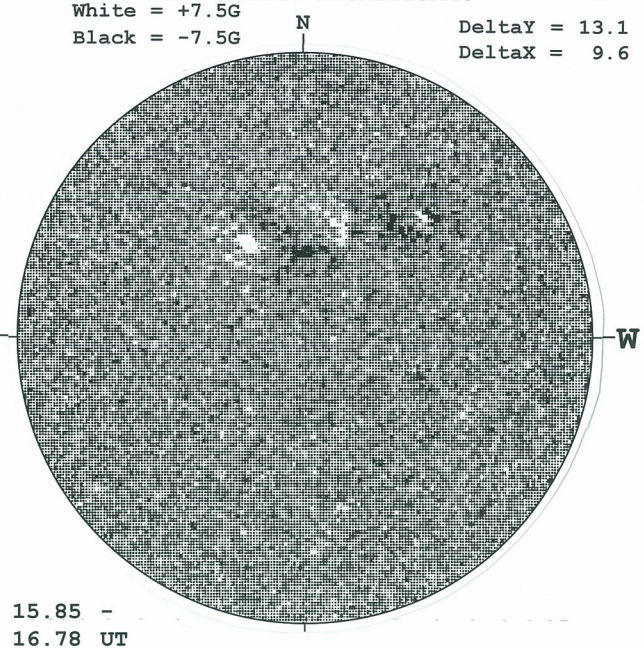


12/0048 UT

MT. WILSON MAGNETOGRAM

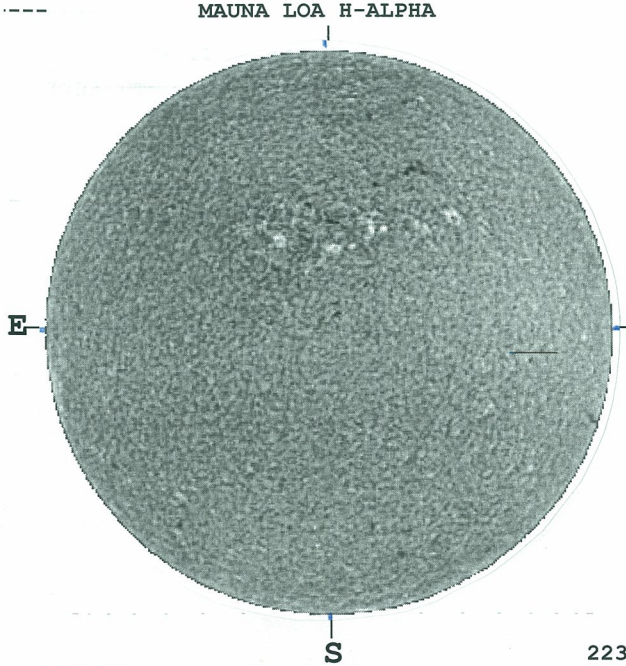
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



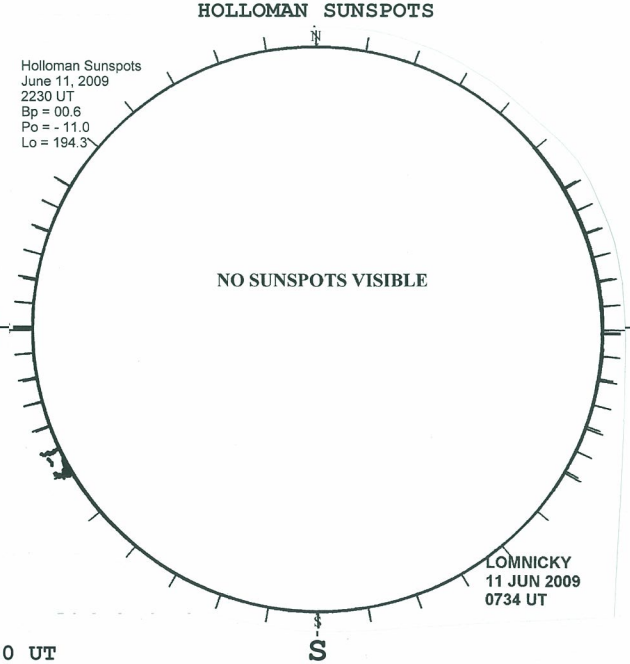
15.85 -
16.78 UT

MAUNA LOA H-ALPHA



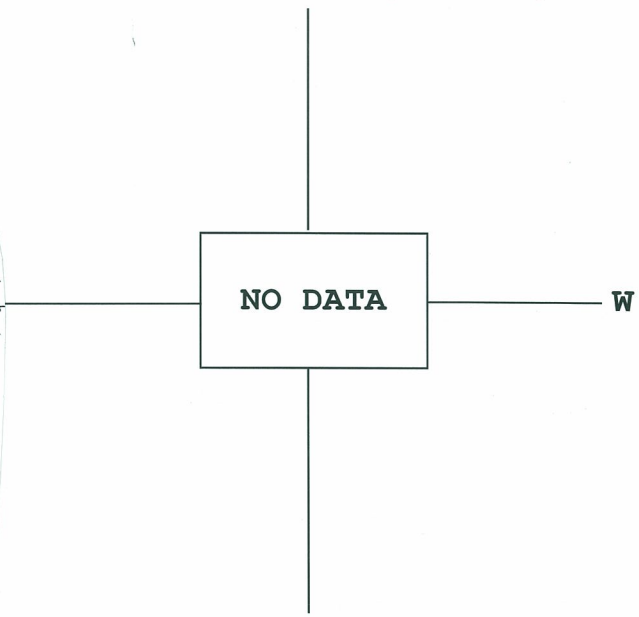
1718 UT

HOLLOMAN SUNSPOTS



2230 UT
0734 UT LOMN PROM

LOMNICKY PEAK CORONA (1.04 Radii)

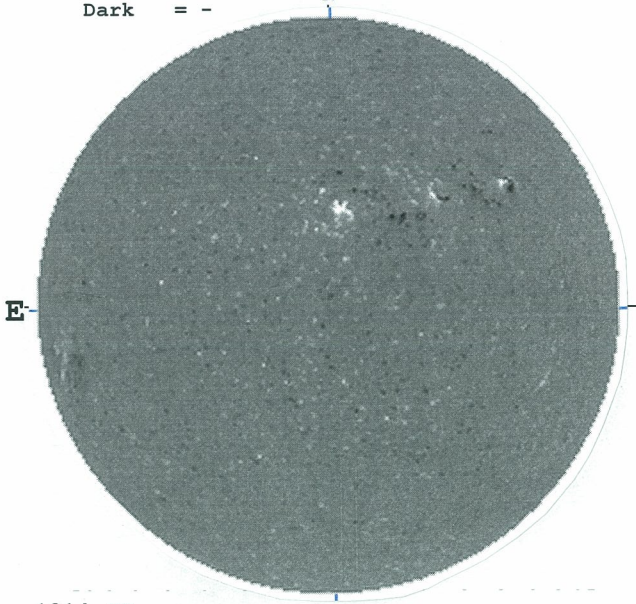


June 12, 2009 (P=-11.03, Bo= 0.67, Lo= 193.15)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

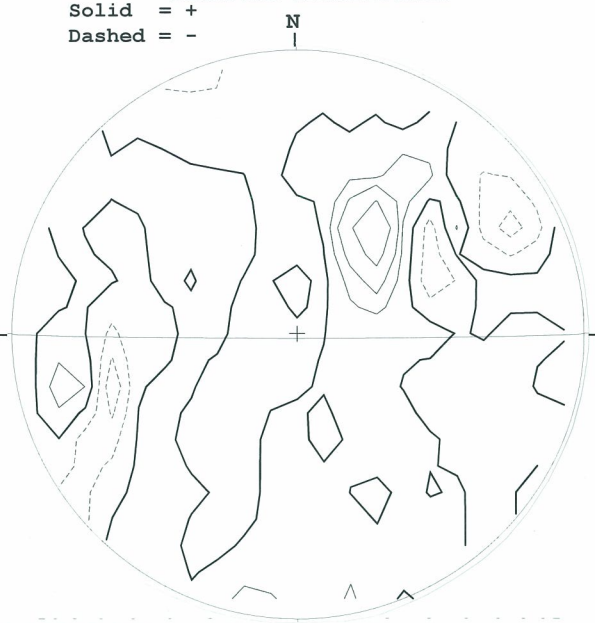
** 854.2NM **



1814 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

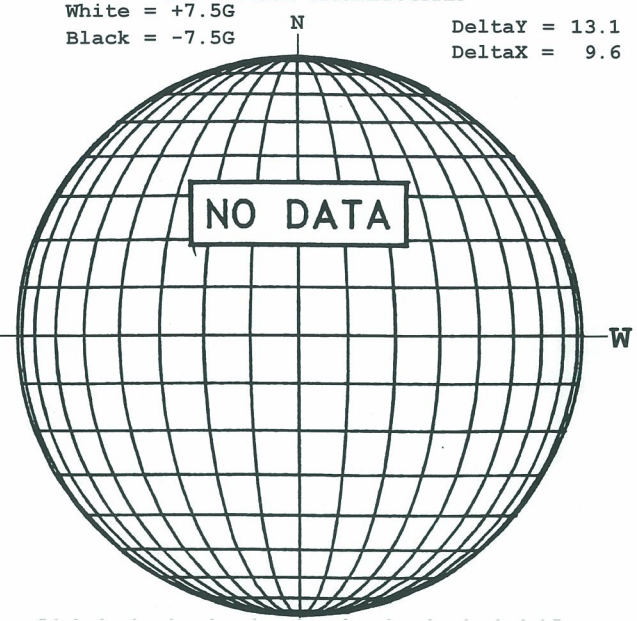


13/0037 UT

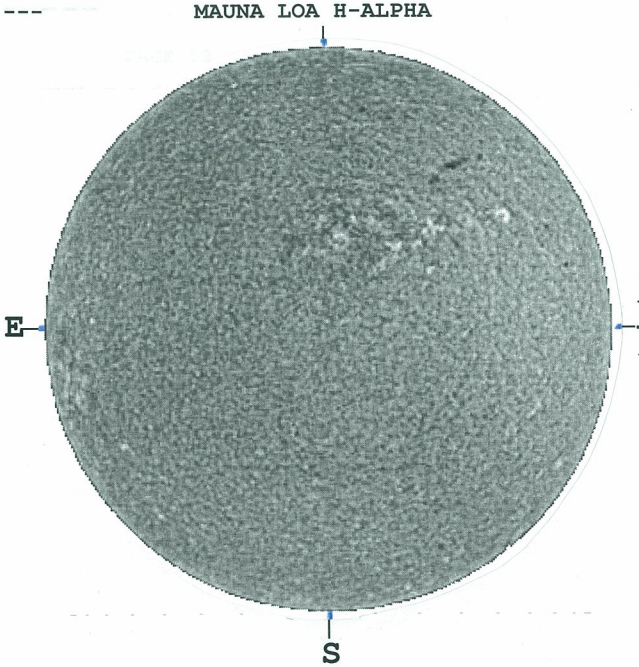
MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6

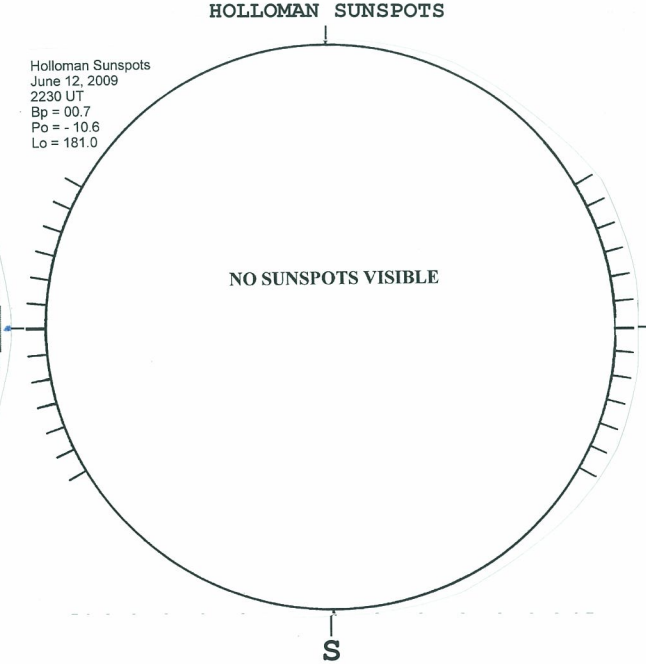


MAUNA LOA H-ALPHA



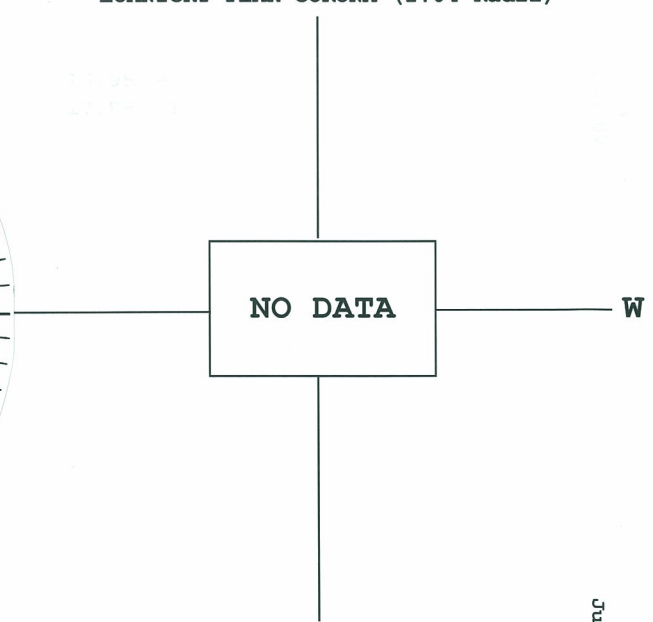
1737 UT

HOLLOMAN SUNSPOTS



2230 UT

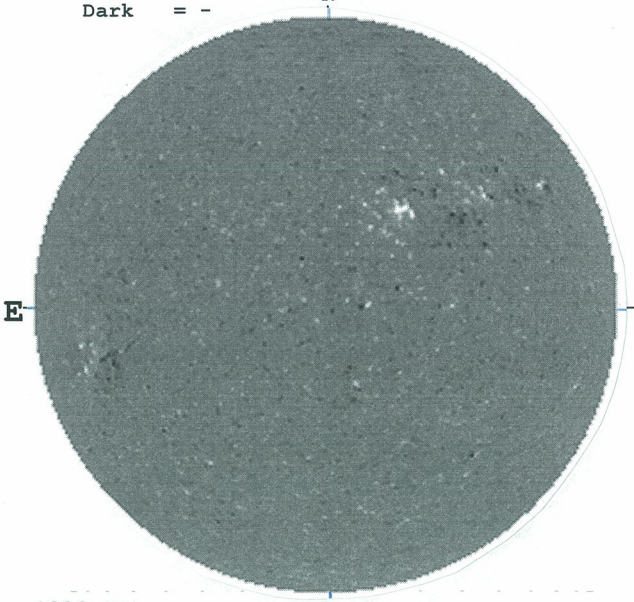
LOMNICKY PEAK CORONA (1.04 Radii)------



51
Jun 09

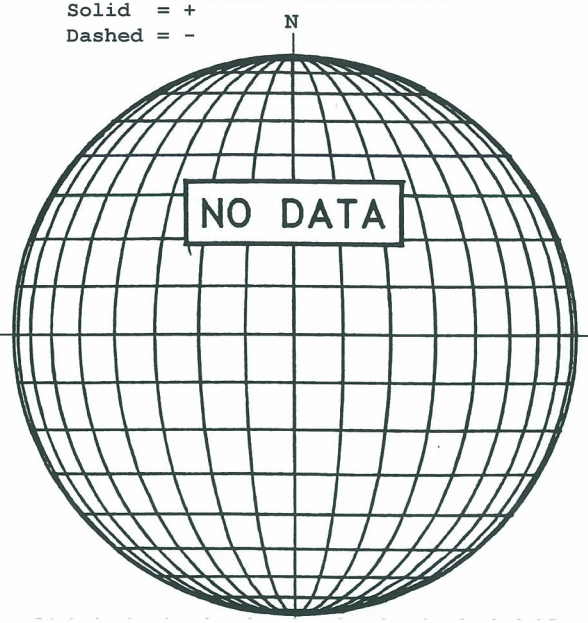
June 13, 2009 (P=-10.61, Bo= 0.79, Lo= 179.91)

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

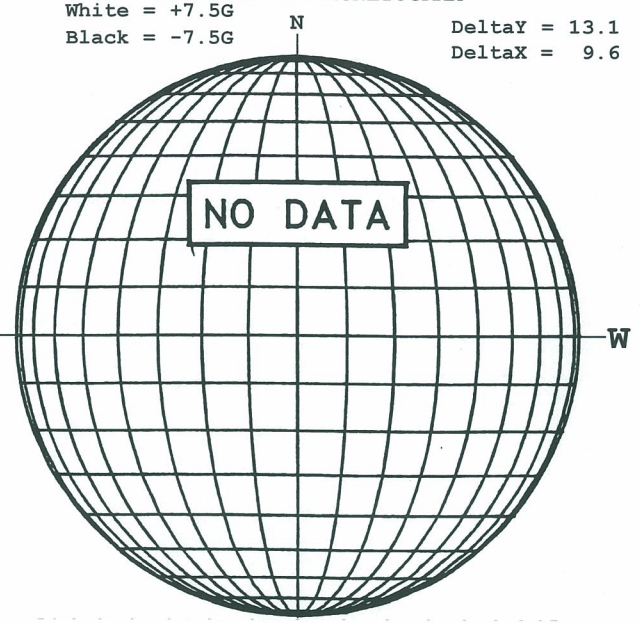


1829 UT

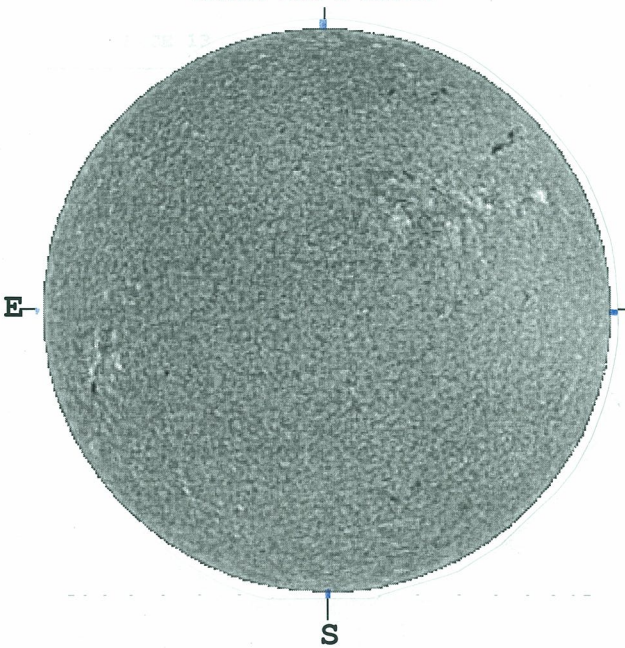
STANFORD MAGNETOGRAM
Solid = +
Dashed = -



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



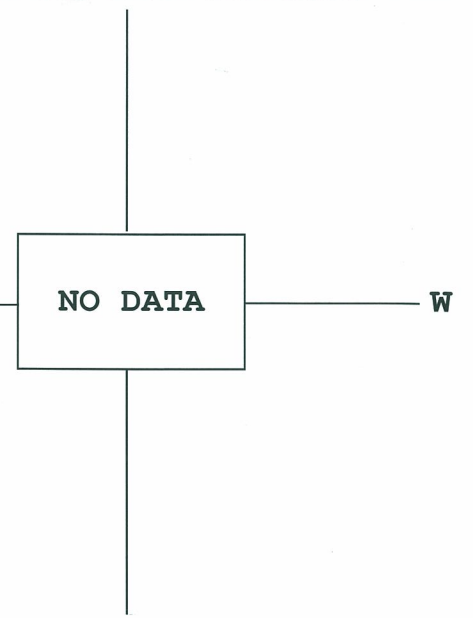
MAUNA LOA H-ALPHA



1800 UT

HOLLOMAN SUNSPOTS

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

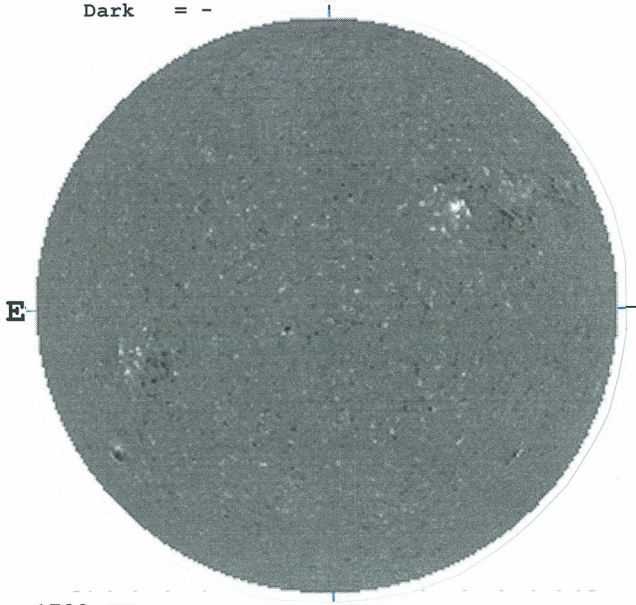


June 14, 2009 (P=-10.18, Bo= 0.91, Lo= 166.68)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

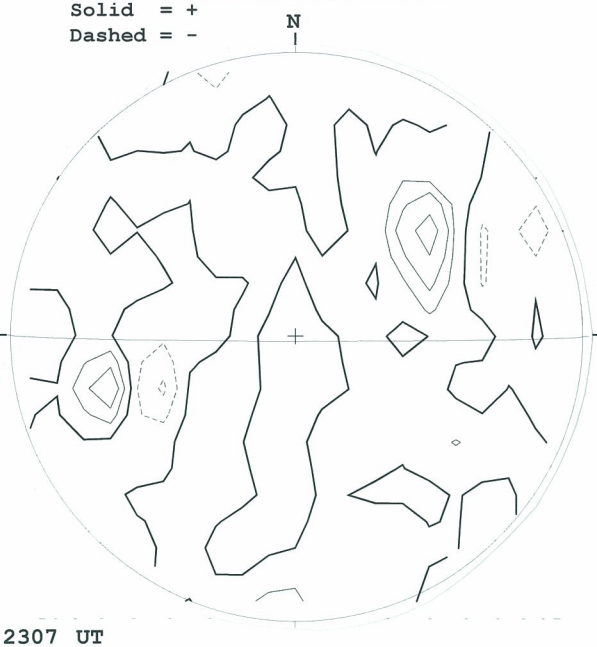
** 854.2NM **



1730 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

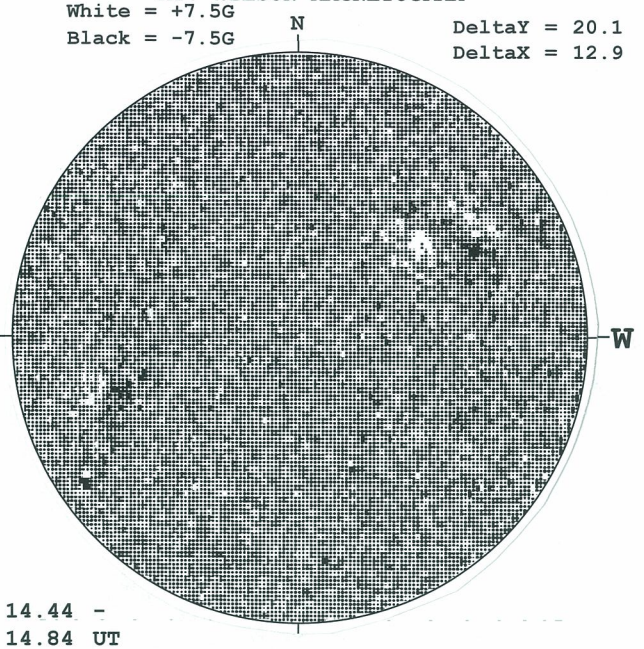


2307 UT

MT. WILSON MAGNETOGRAM

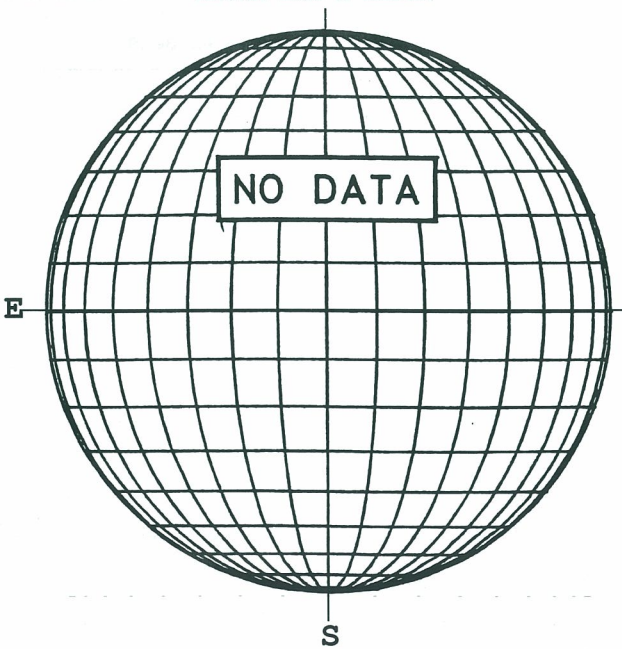
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 12.9

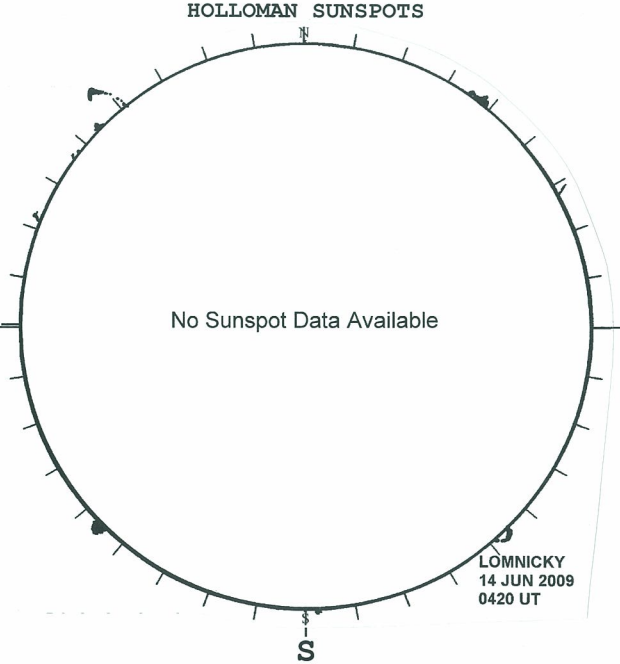


14.44 -
14.84 UT

MAUNA LOA H-ALPHA



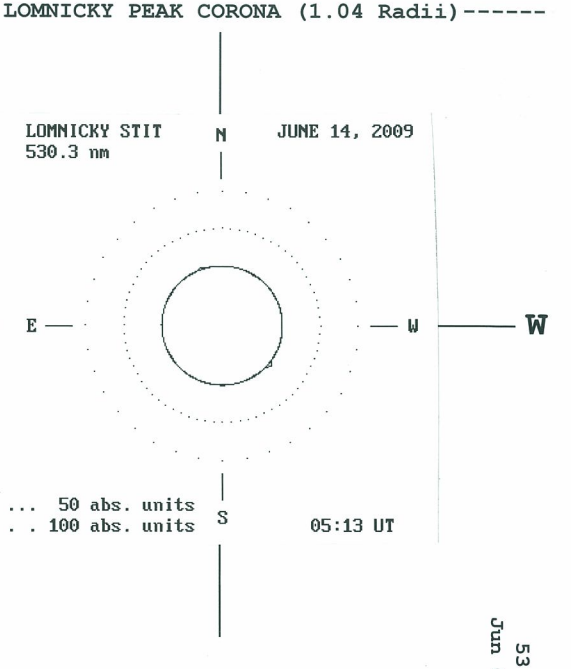
HOLLOMAN SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)

LOMNICKY STIT
530.3 nm

JUNE 14, 2009



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

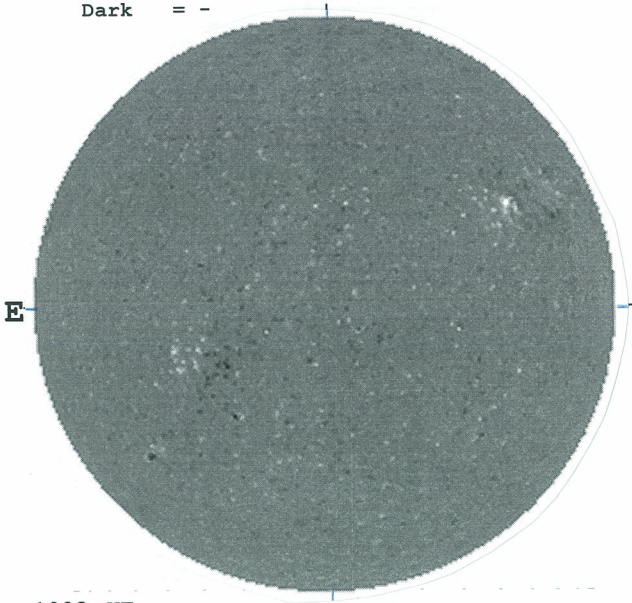
05:13 UT

0420 UT LOMN PROM

53
Jun 09

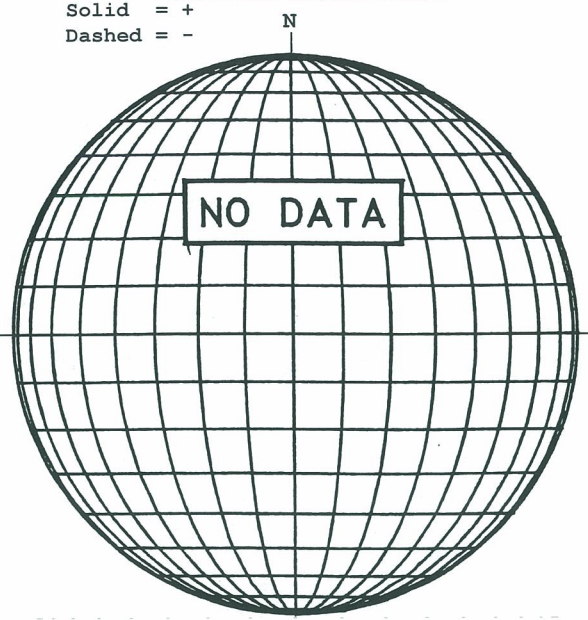
June 15, 2009 (P= -9.76, Bo= 1.03, Lo= 153.44)

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

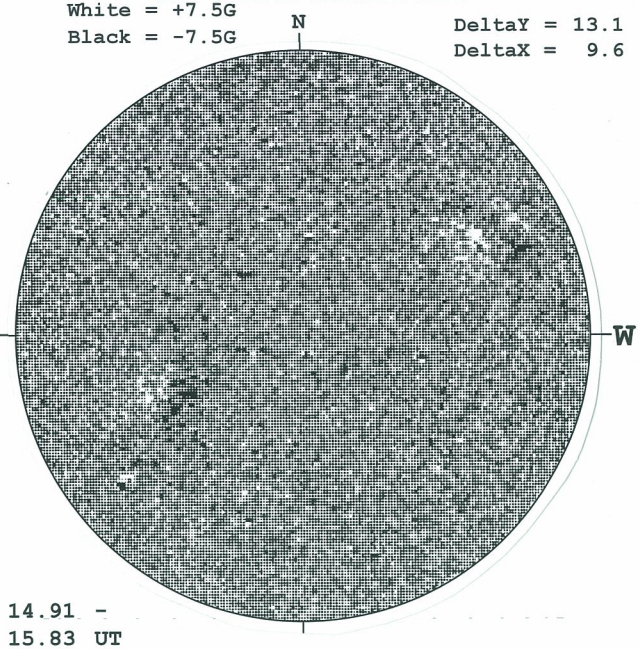


1908 UT

STANFORD MAGNETOGRAM
Solid = +
Dashed = -

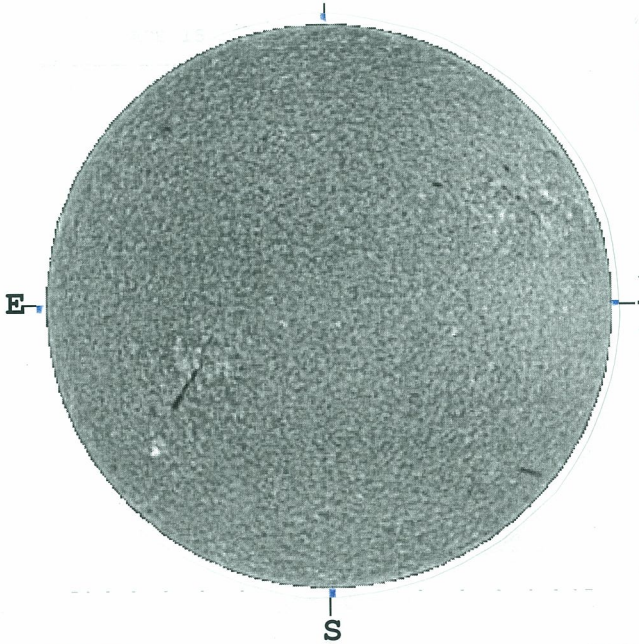


MT. WILSON MAGNETOGRAM
White = +7.5G
Black = -7.5G
DeltaY = 13.1
DeltaX = 9.6



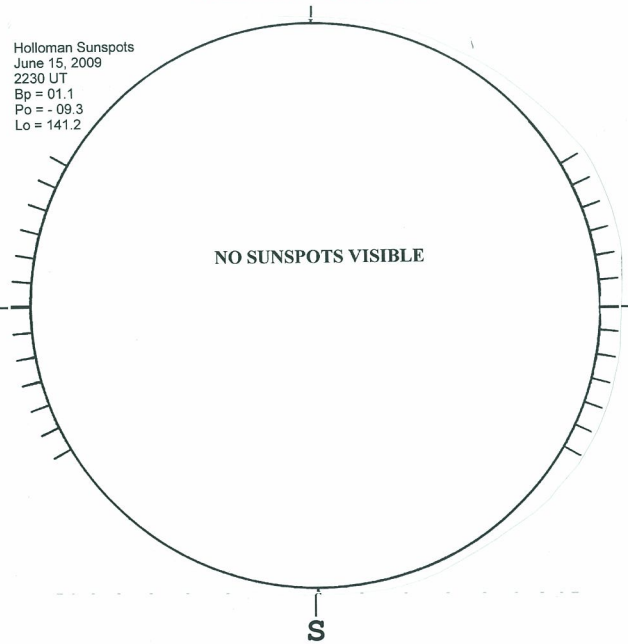
14.91 -
15.83 UT

MAUNA LOA H-ALPHA



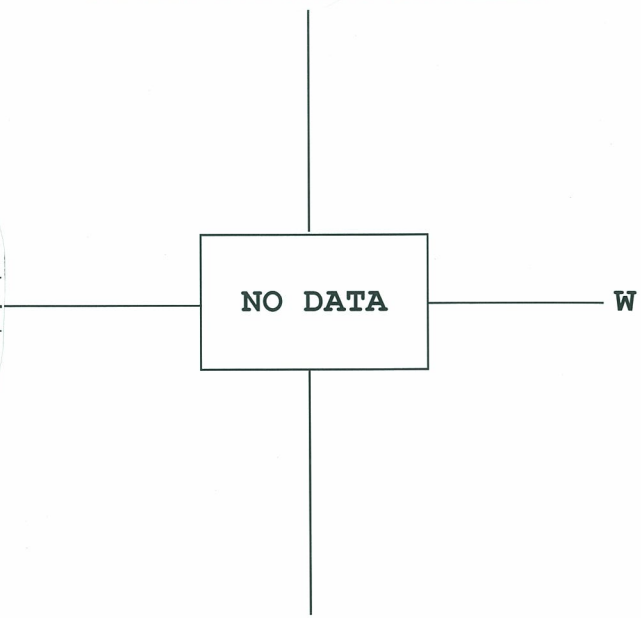
1721 UT

HOLLOMAN SUNSPOTS



2230 UT

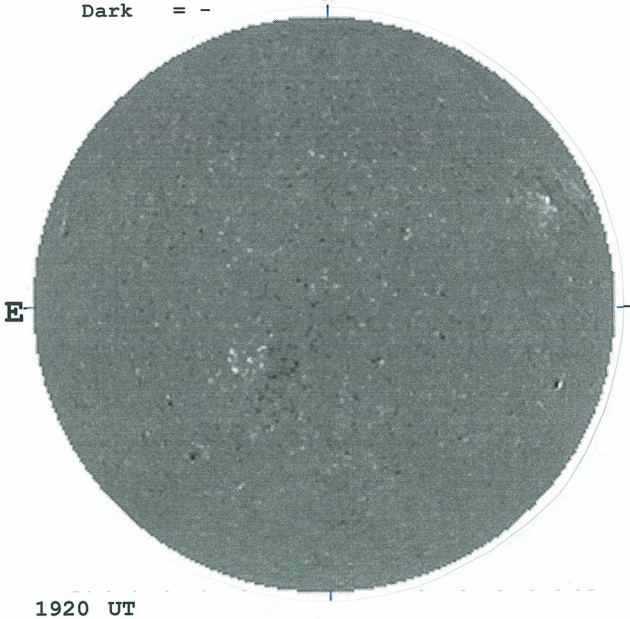
LOMNICKY PEAK CORONA (1.04 Radii)------



June 16, 2009 (P= -9.33, Bo= 1.15, Lo= 140.20)

KITT PEAK MAGNETOGRAM -- SOLIS

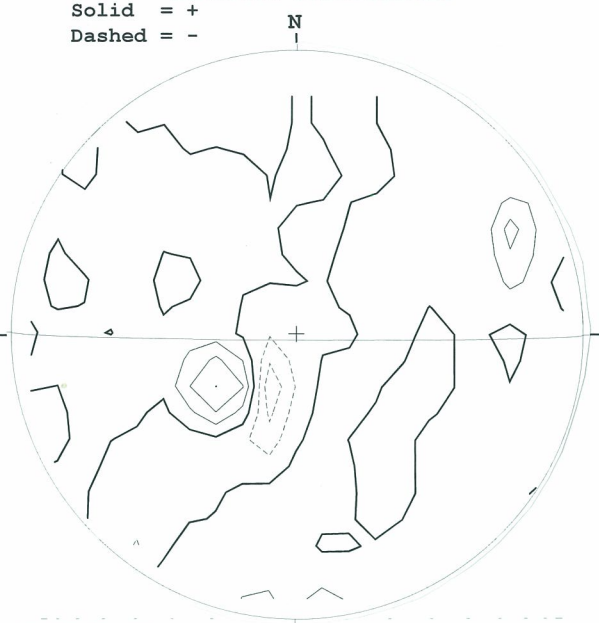
Bright = +
Dark = -



1920 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

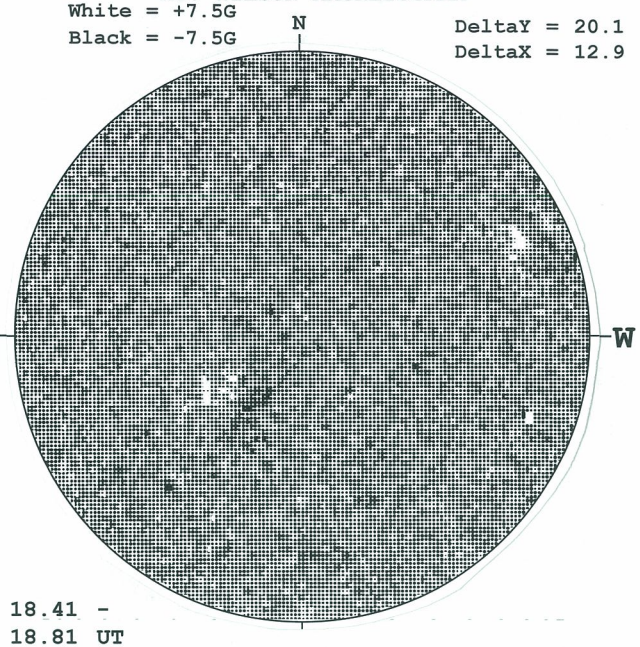


17/0045 UT

MT. WILSON MAGNETOGRAM

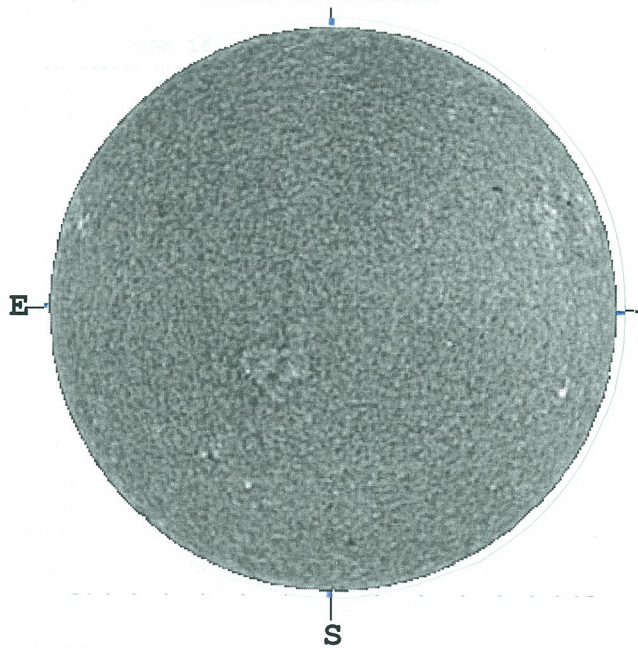
White = +7.5G
Black = -7.5G

DeltaY = 20.1
DeltaX = 12.9



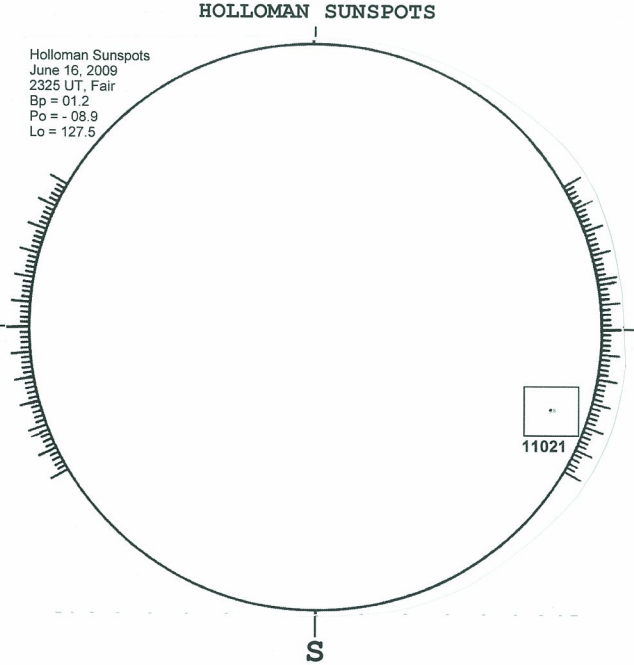
18.41 -
18.81 UT

MAUNA LOA H-ALPHA



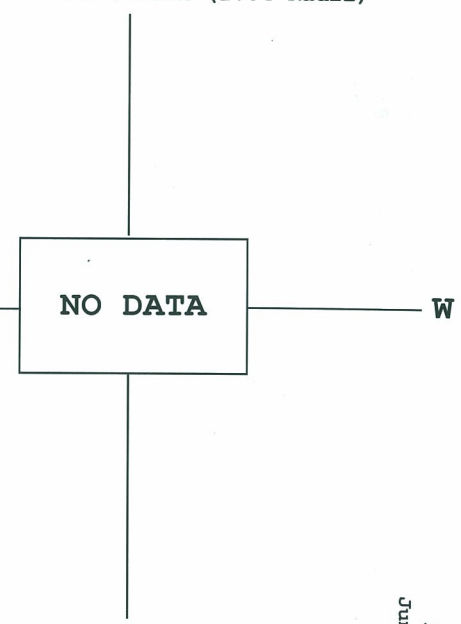
2031 UT

HOLLOMAN SUNSPOTS



2325 UT

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



55
Jun 09

June 17, 2009 (P= -8.89, Bo= 1.26, Lo= 126.97)

Jun 09 56

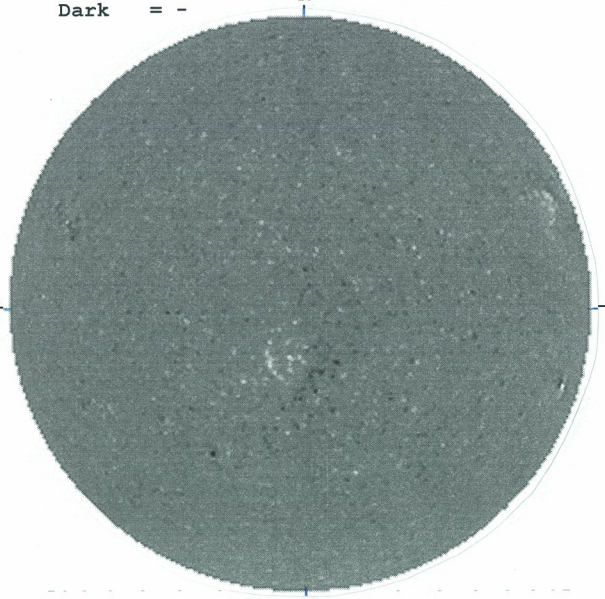
KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

N

** 854.2NM **

E

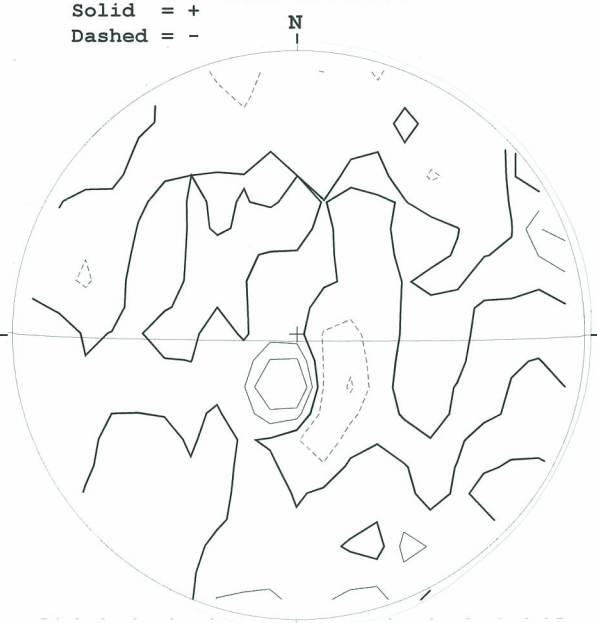


1748 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N



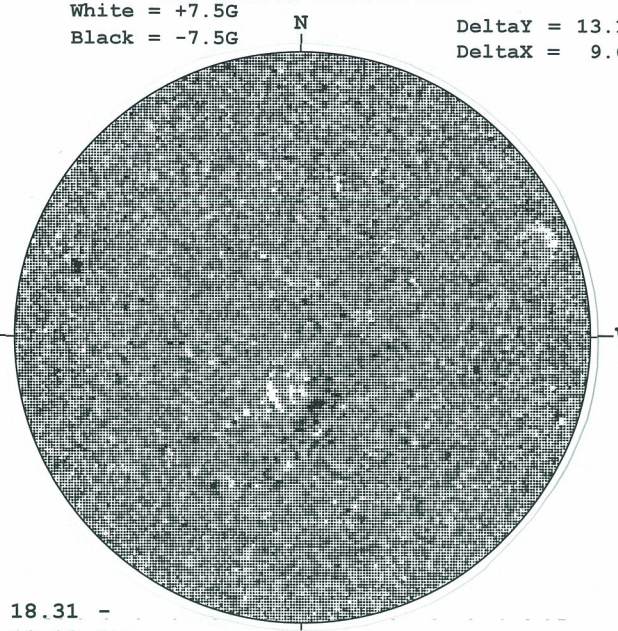
2304 UT

MT. WILSON MAGNETOGRAM

White = +7.5G
Black = -7.5G

N

DeltaY = 13.1
DeltaX = 9.6



W

18.31 -
19.23 UT

MAUNA LOA H-ALPHA

NO DATA

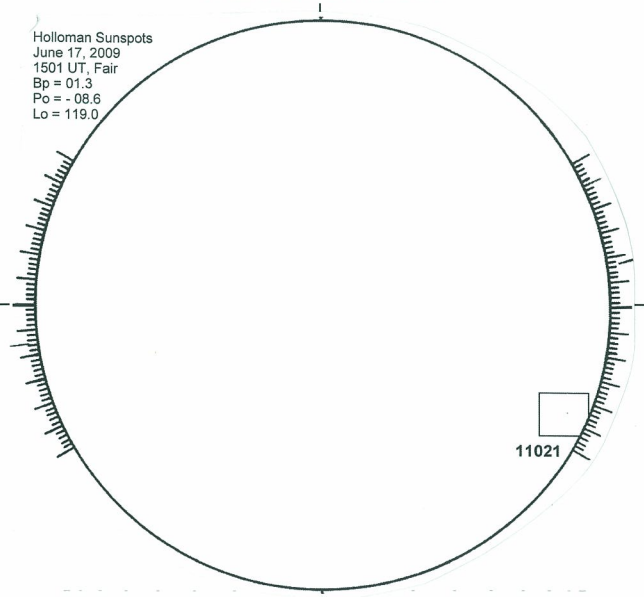
E

S

1501 UT

HOLLOMAN SUNSPOTS

Holloman Sunspots
June 17, 2009
1501 UT, Fair
Bp = 01.3
Po = - 08.6
Lo = 119.0



S

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

NO DATA

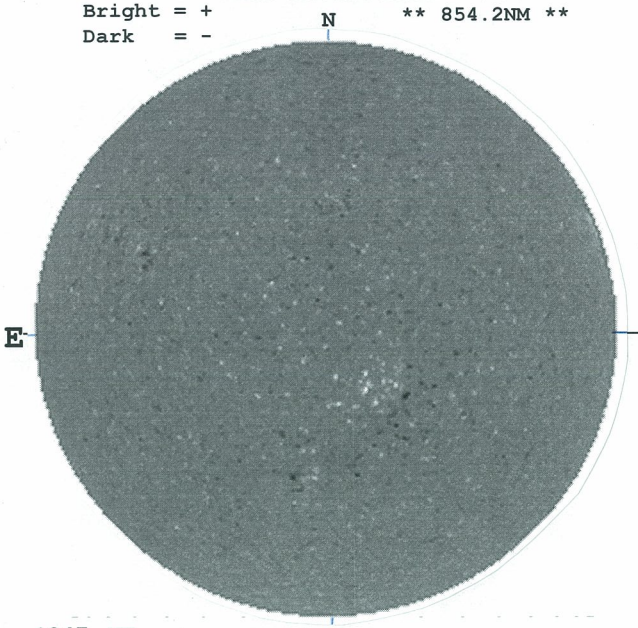
W

June 18, 2009 (P= -8.46, Bo= 1.38, Lo= 113.73)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

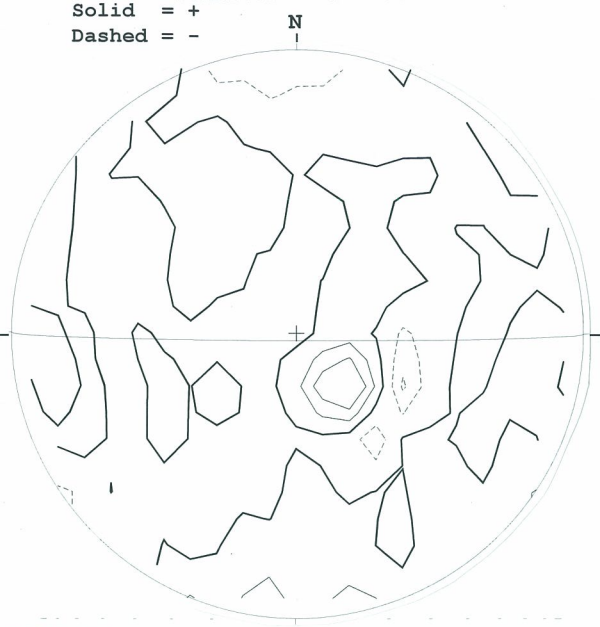
** 854.2NM **



1847 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

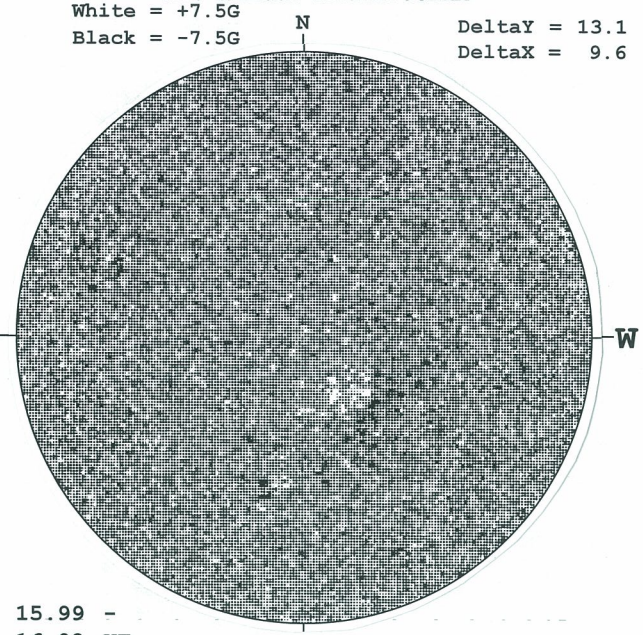


2346 UT

MT. WILSON MAGNETOGRAM

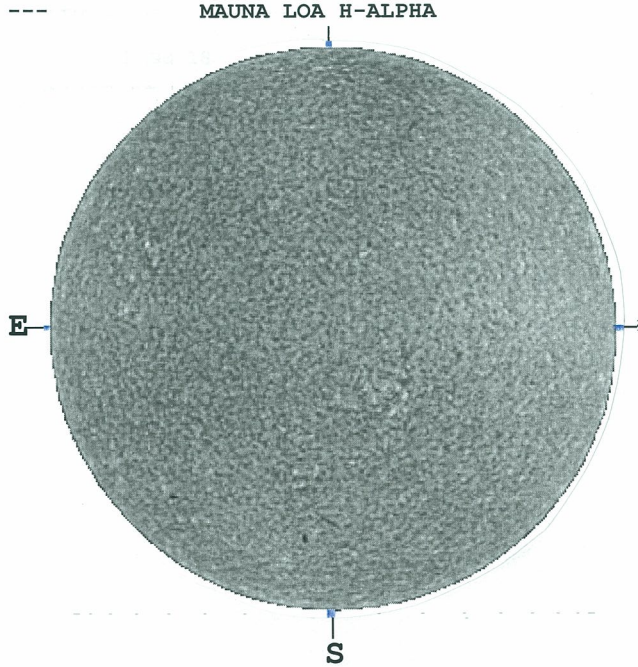
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



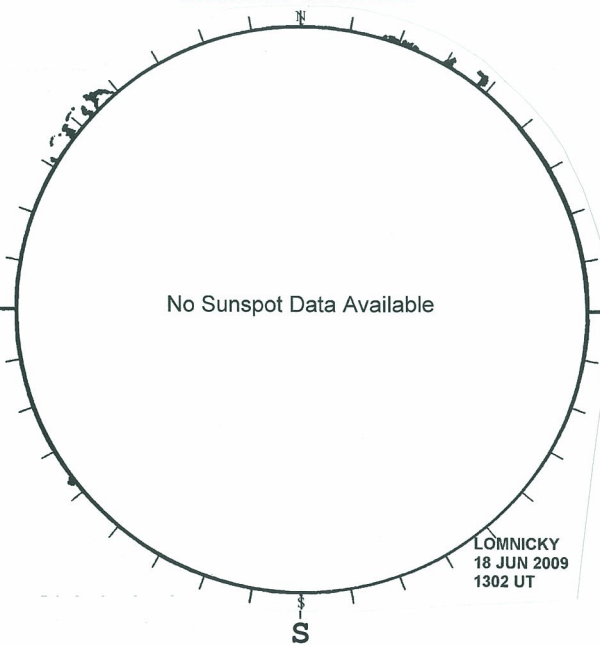
15.99 -
16.92 UT

MAUNA LOA H-ALPHA



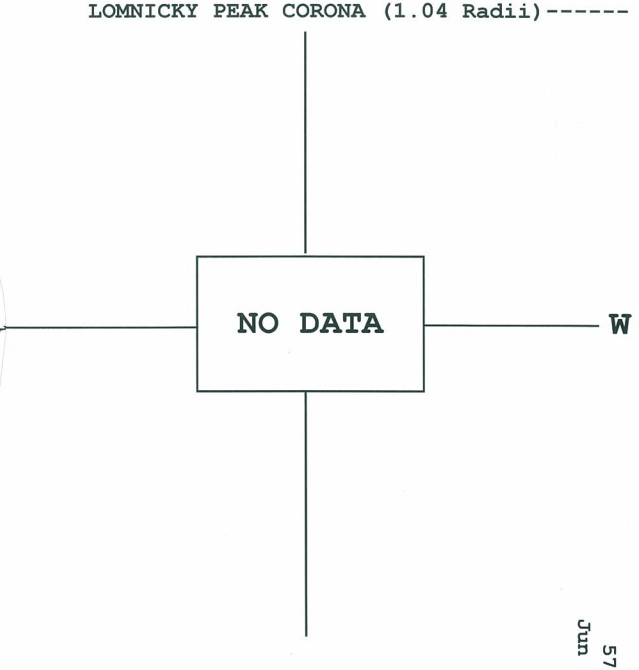
1730 UT

HOLLOMAN SUNSPOTS



1302 UT LOMN PROM

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



57
Jun 09

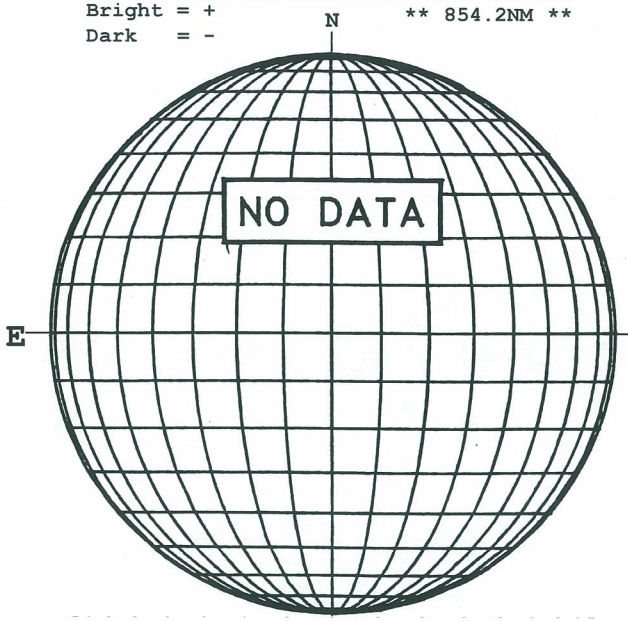
June 19, 2009 (P= -8.02, Bo= 1.50, Lo= 100.49)

Jun 09 58

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

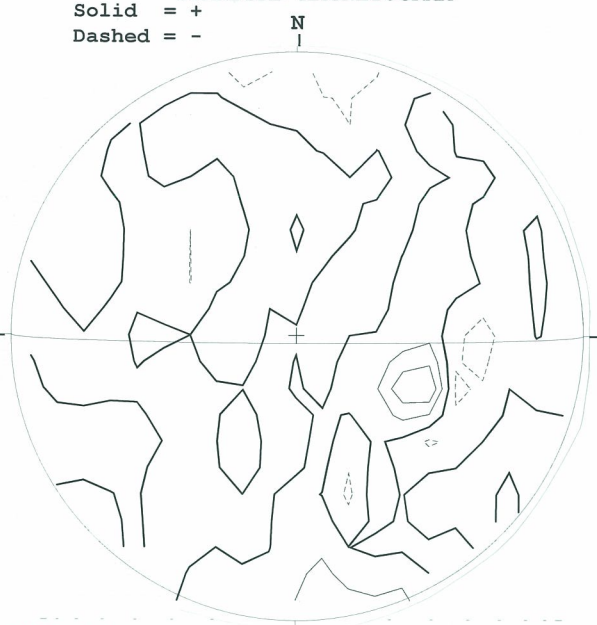
** 854.2NM **



2352 UT

STANFORD MAGNETOGRAM

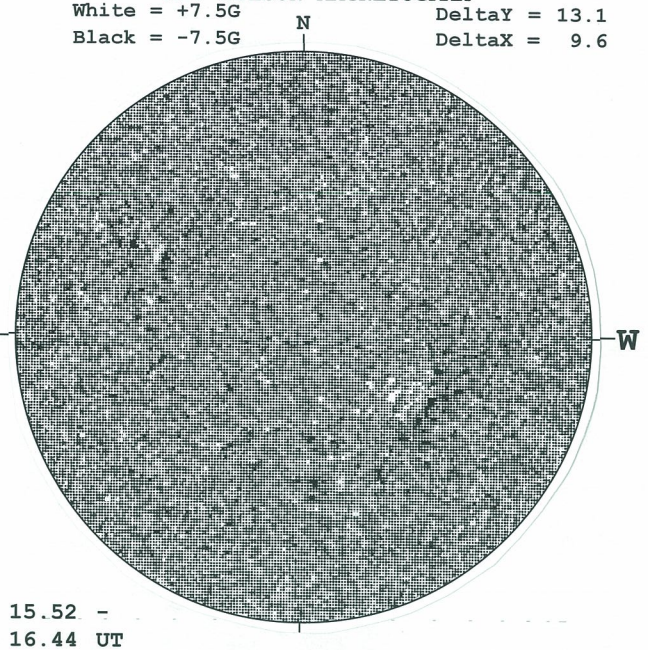
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

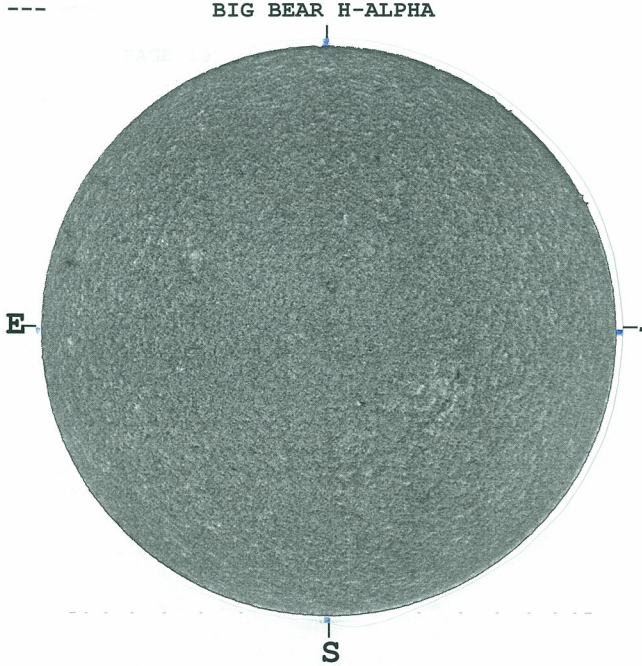
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



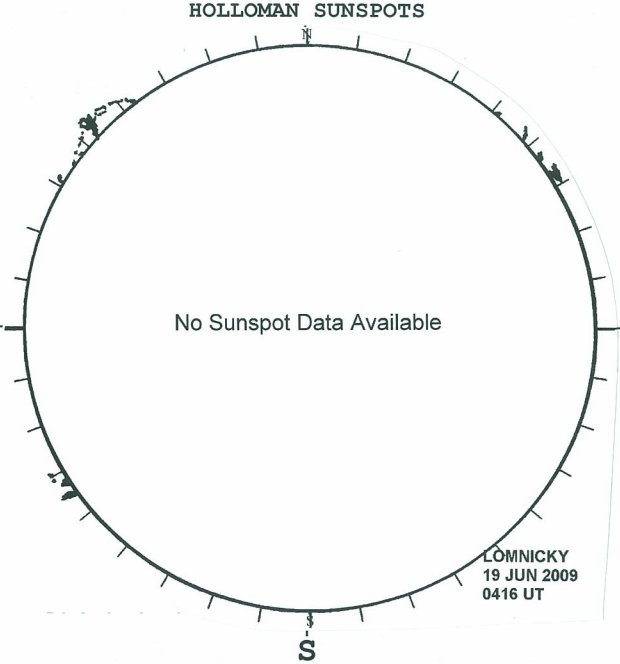
15.52 -
16.44 UT

BIG BEAR H-ALPHA



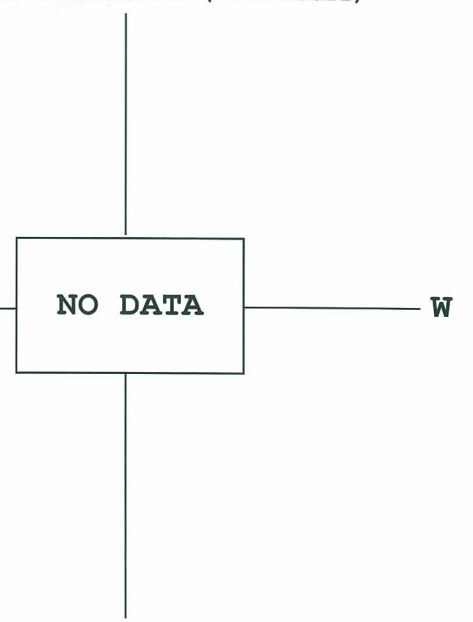
1538 UT

HOLLOMAN SUNSPOTS



0416 UT LOMN PROM

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

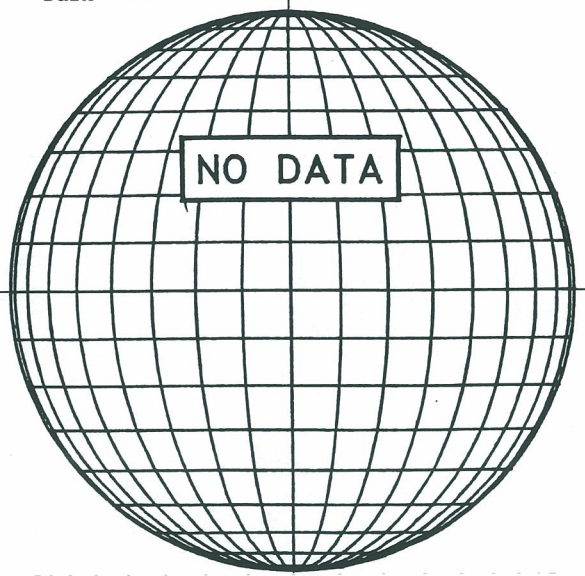


June 20, 2009 (P= -7.58, Bo= 1.62, Lo= 87.26)

KITT PEAK MAGNETOGRAM -- SOLIS

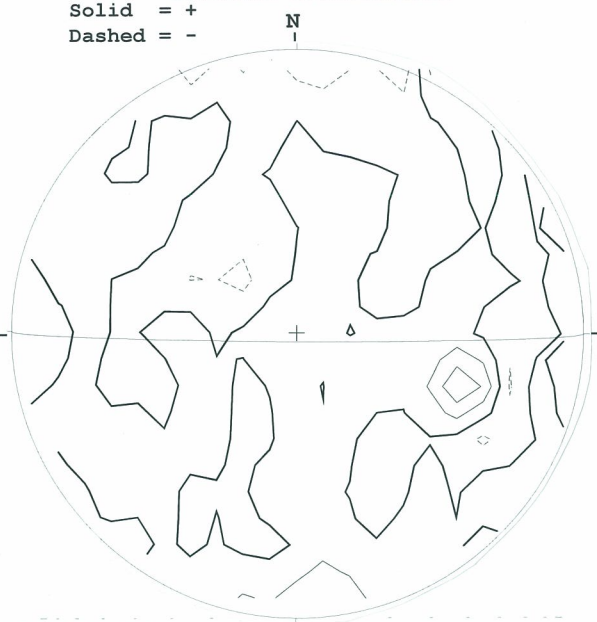
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

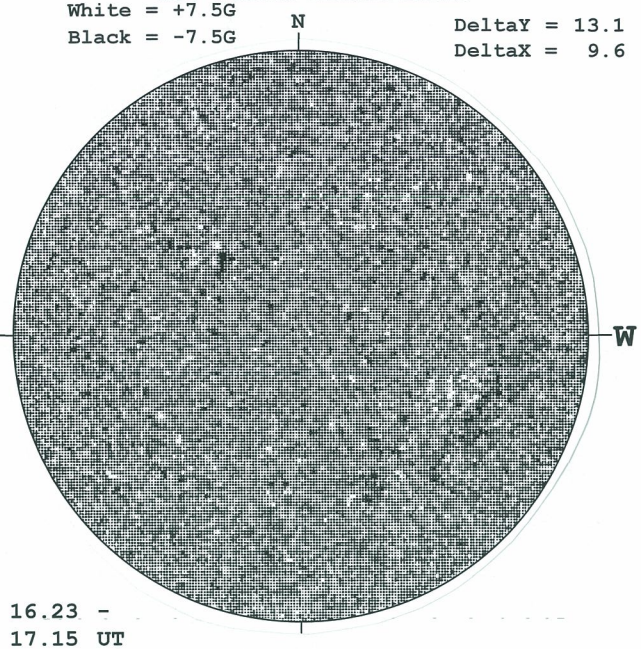


21/0111 UT

MT. WILSON MAGNETOGRAM

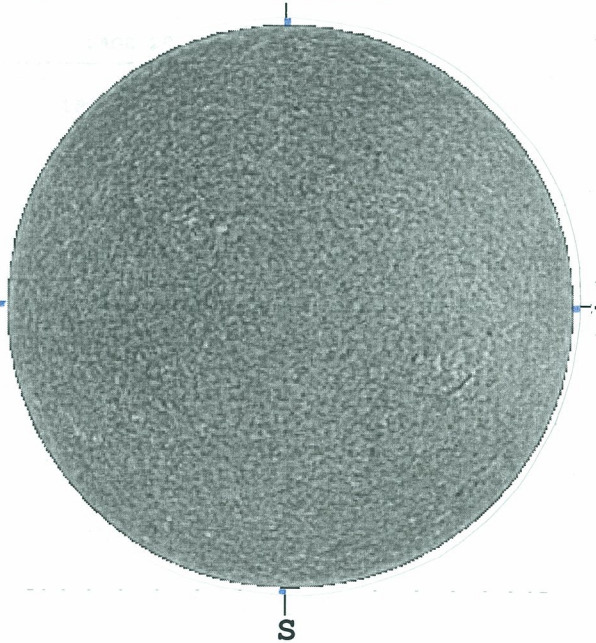
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



16.23 -
17.15 UT

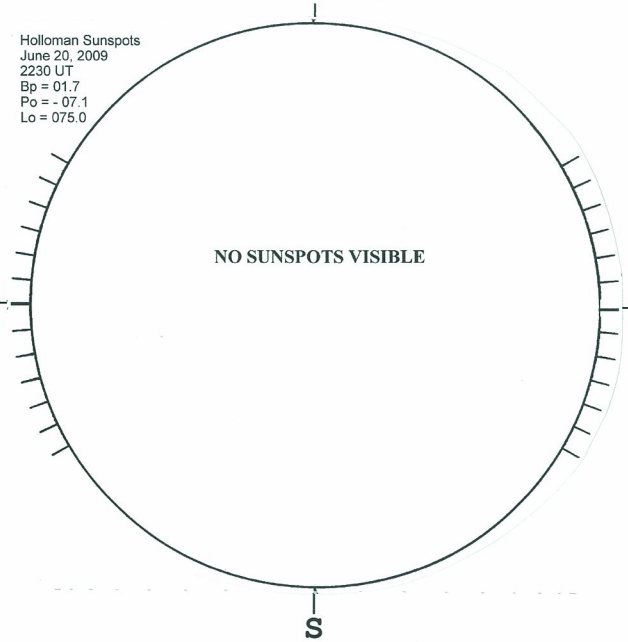
MAUNA LOA H-ALPHA



1724 UT

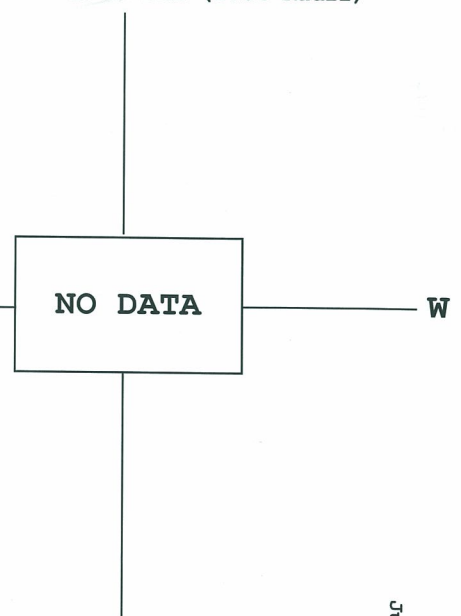
HOLLOMAN SUNSPOTS

Holloman Sunspots
June 20, 2009
2230 UT
Bp = 01.7
Po = - 07.1
Lo = 075.0



2230 UT

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



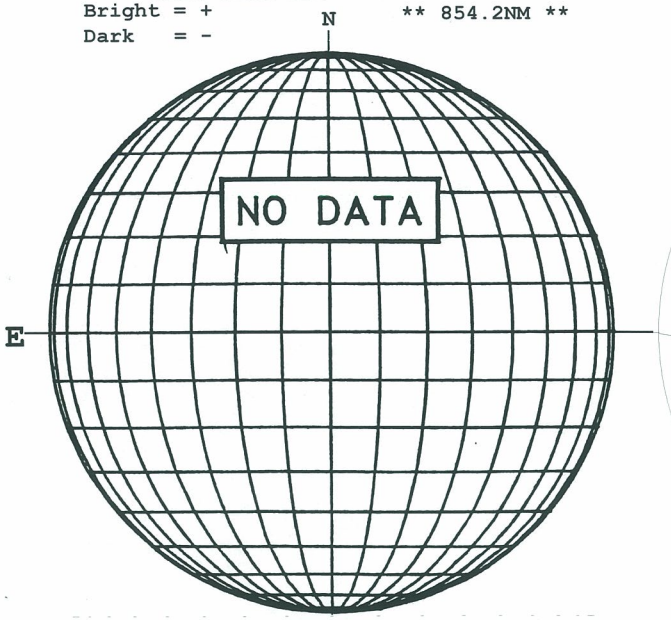
June 21, 2009 (P= -7.14, Bo= 1.74, Lo= 74.02)

Jun 09

KITT PEAK MAGNETOGRAM -- SOLIS

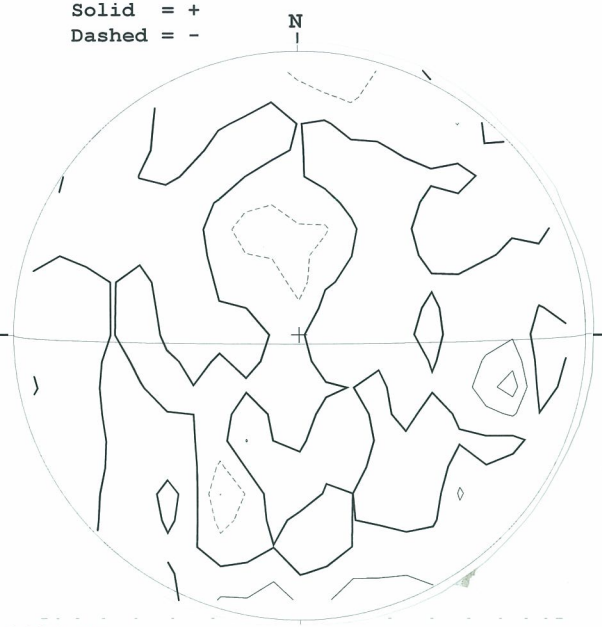
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

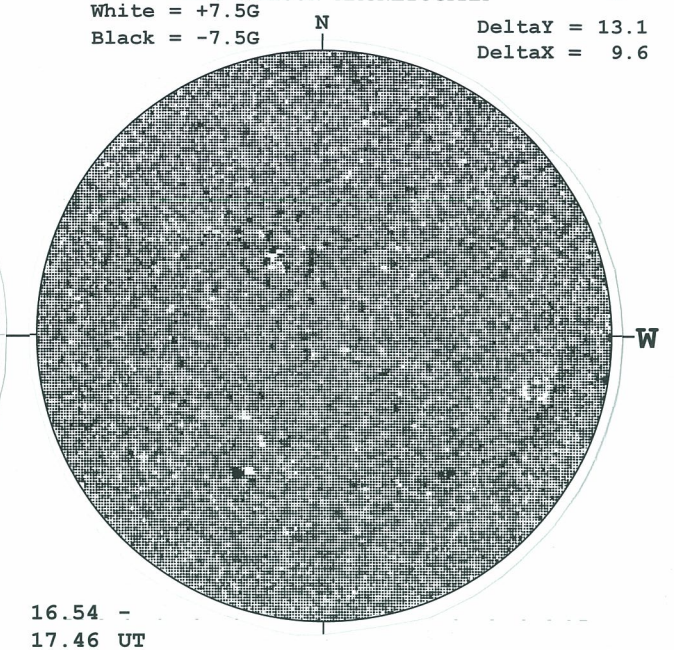


2004 UT

MT. WILSON MAGNETOGRAM

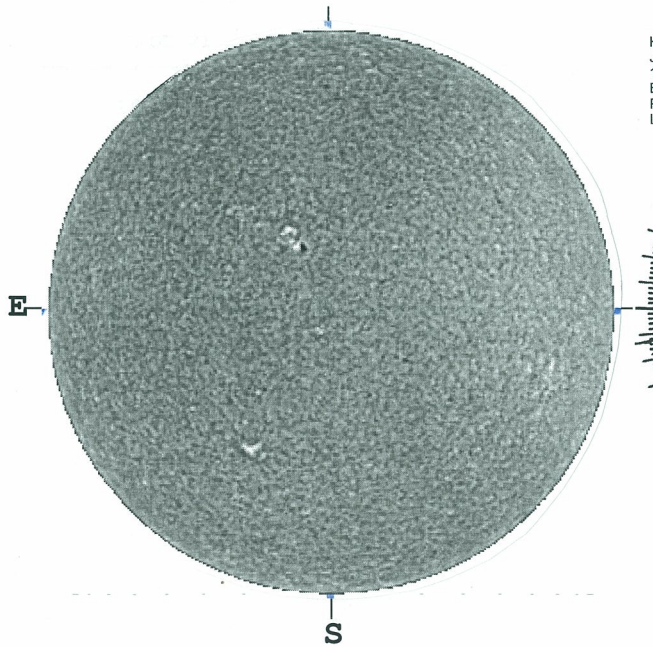
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



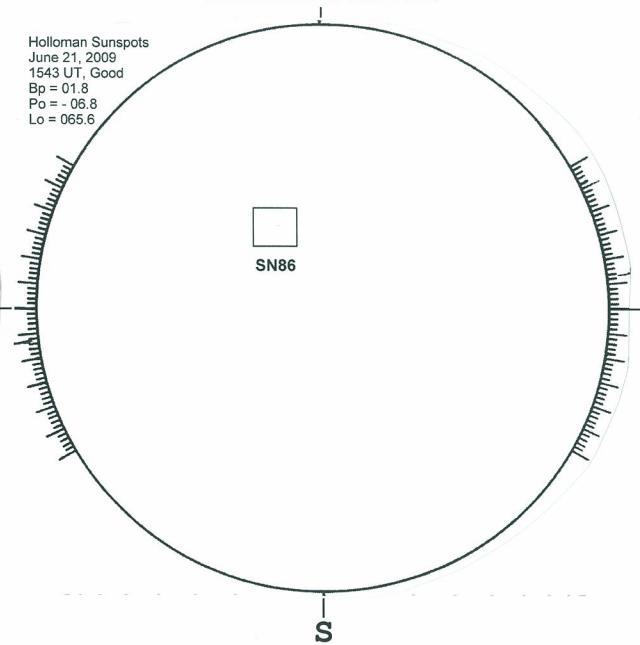
16.54 -
17.46 UT

MAUNA LOA H-ALPHA



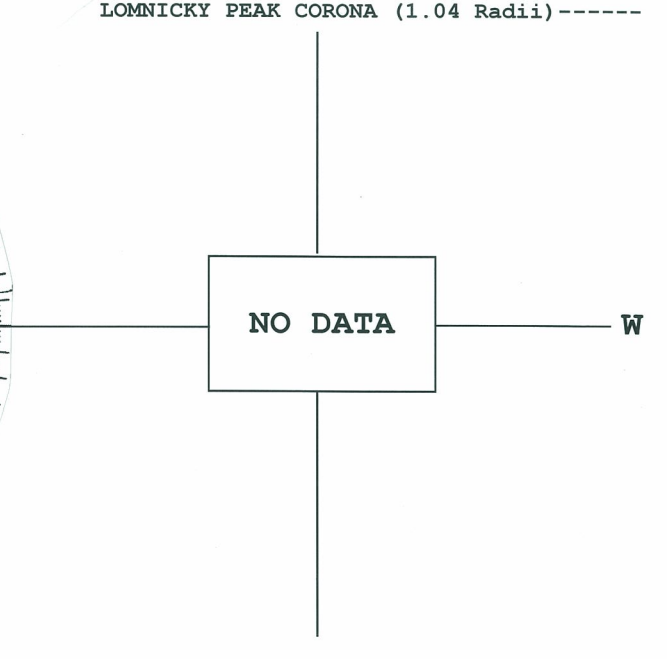
1730 UT

HOLLOMAN SUNSPOTS



1543 UT

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

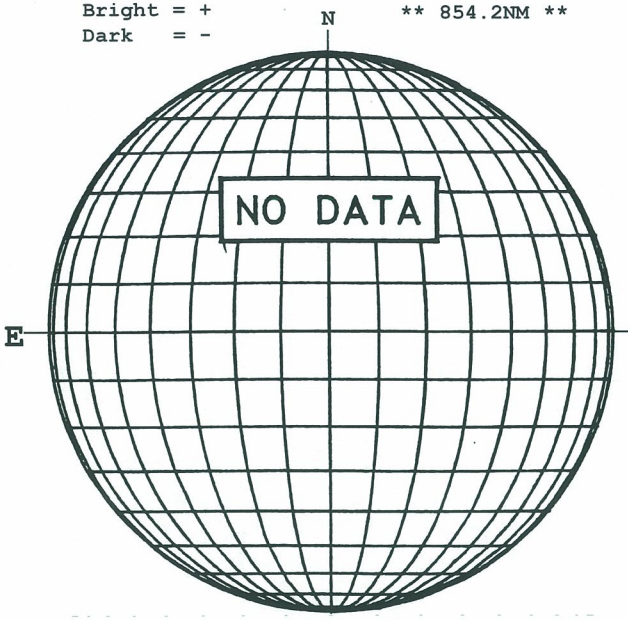


June 22, 2009 (P= -6.70, Bo= 1.85, Lo= 60.78)

KITT PEAK MAGNETOGRAM -- SOLIS

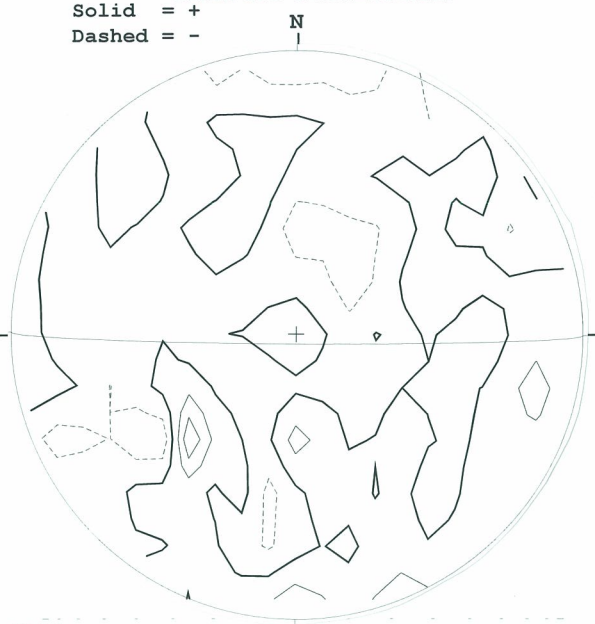
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

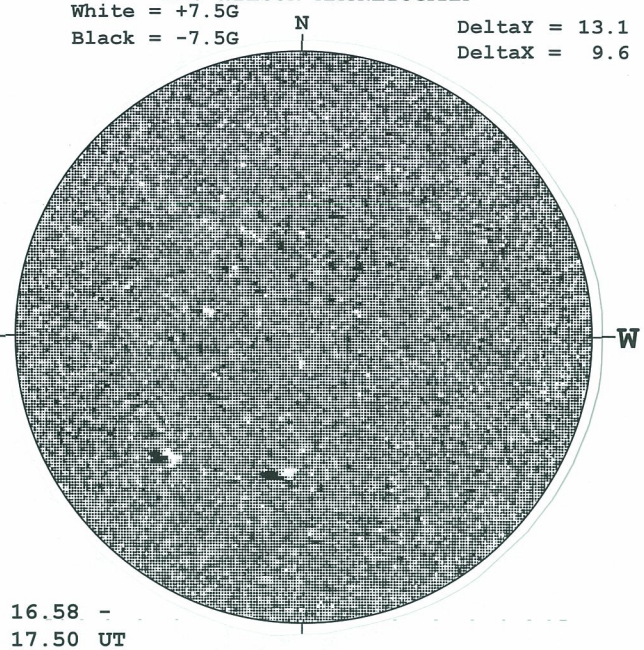


2024 UT

MT. WILSON MAGNETOGRAM

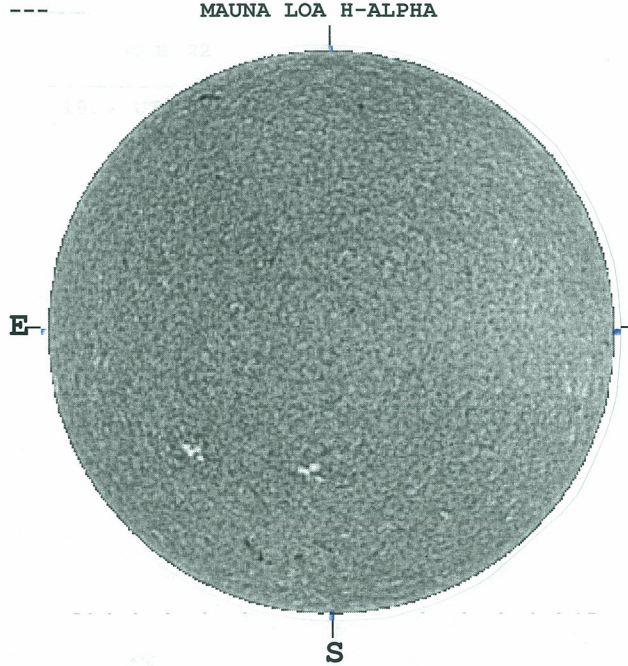
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



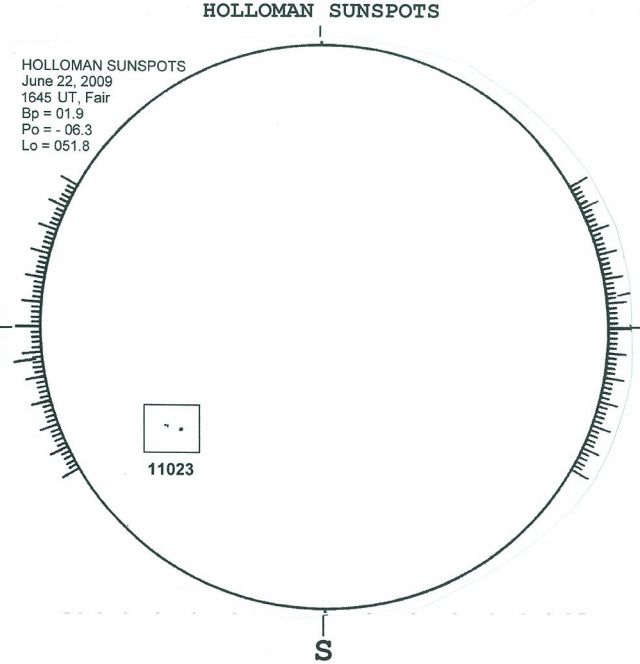
16.58 -
17.50 UT

MAUNA LOA H-ALPHA



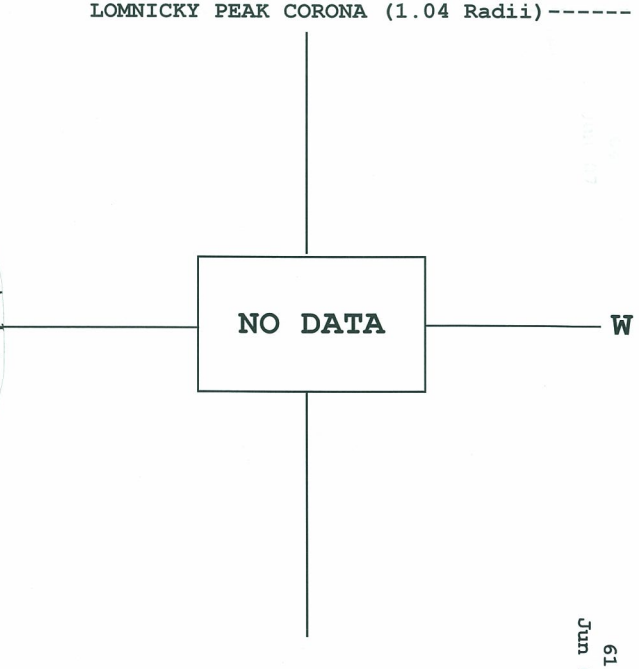
1719 UT

HOLLOMAN SUNSPOTS



1645 UT

LOMNICKY PEAK CORONA (1.04 Radii)



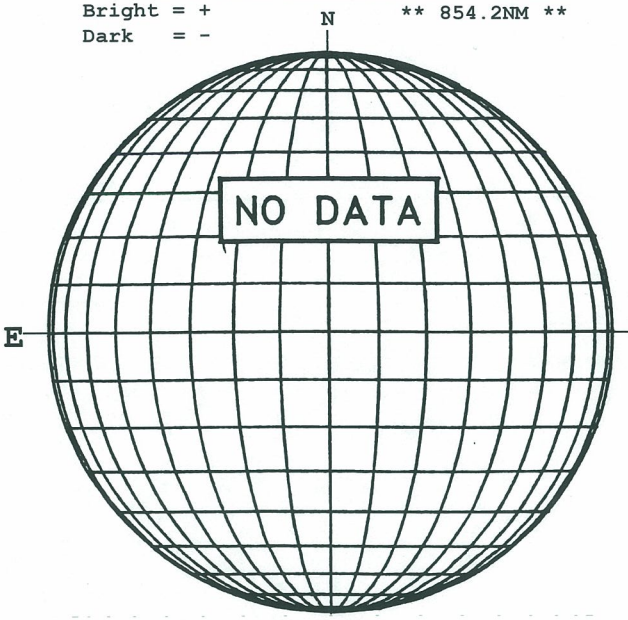
June 23, 2009 (P= -6.25, Bo= 1.97, Lo= 47.55)

Jun 09 62

KITT PEAK MAGNETOGRAM -- SOLIS

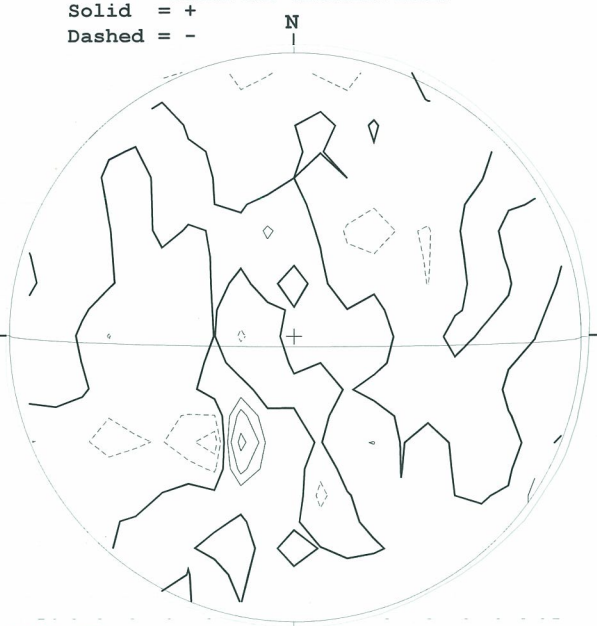
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

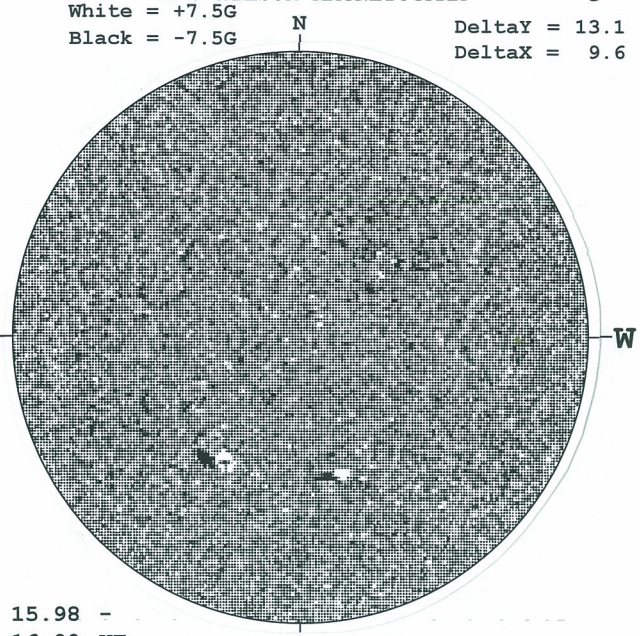


1926 UT

MT. WILSON MAGNETOGRAM

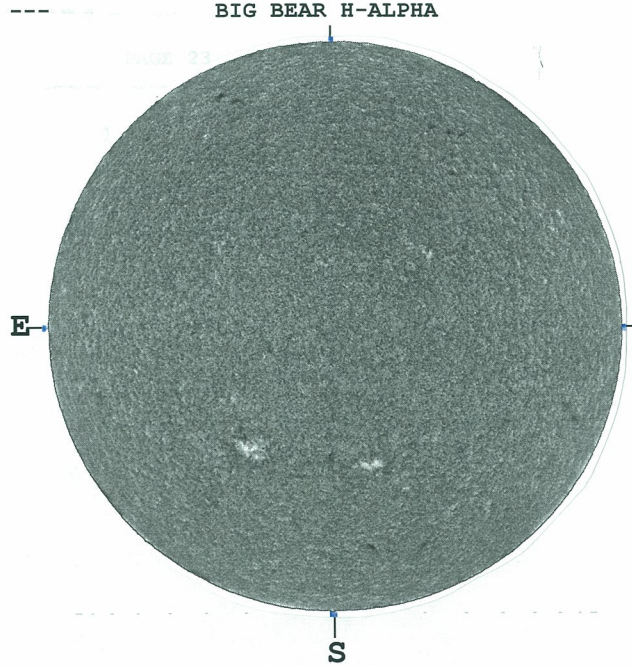
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



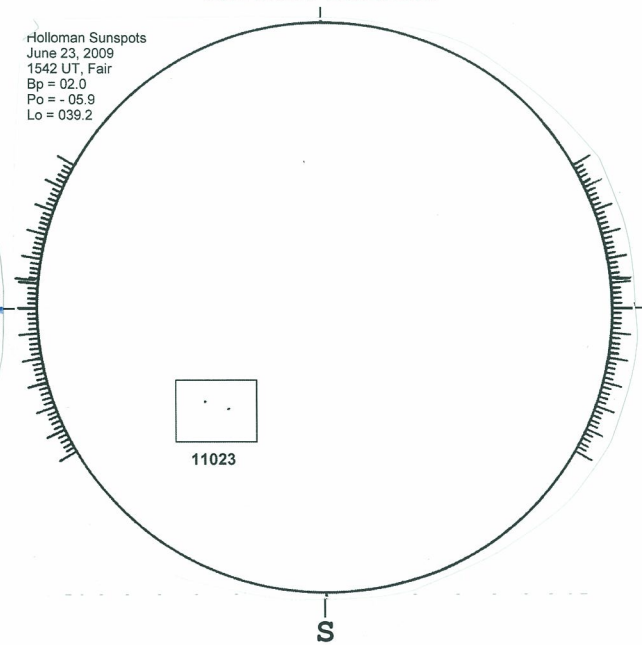
15.98 -
16.90 UT

BIG BEAR H-ALPHA



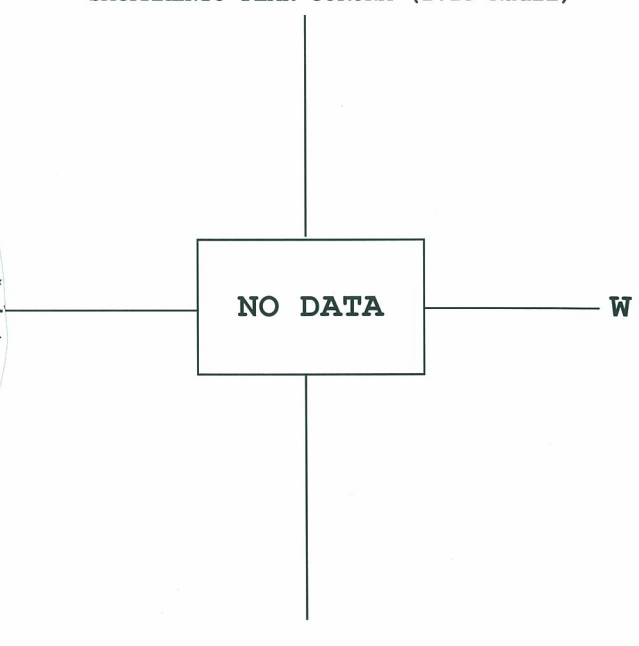
1553 UT

HOLLOMAN SUNSPOTS



1542 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

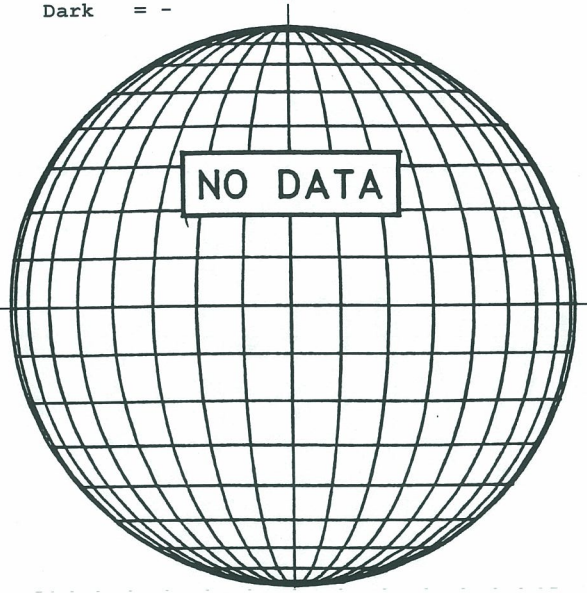


June 24, 2009 (P= -5.81, Bo= 2.08, Lo= 34.31)

KITT PEAK MAGNETOGRAM -- SOLIS

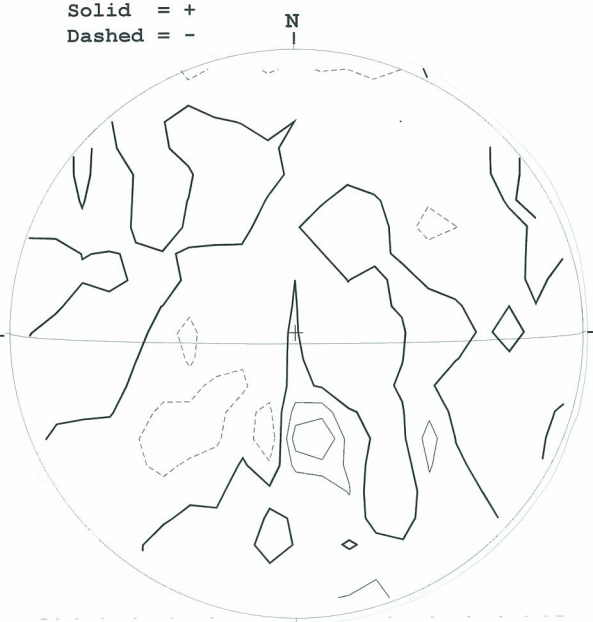
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

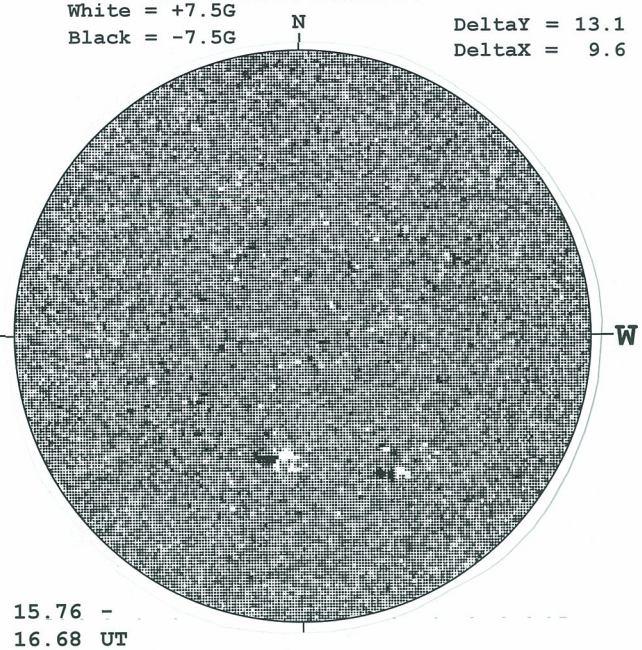


25/0012 UT

MT. WILSON MAGNETOGRAM

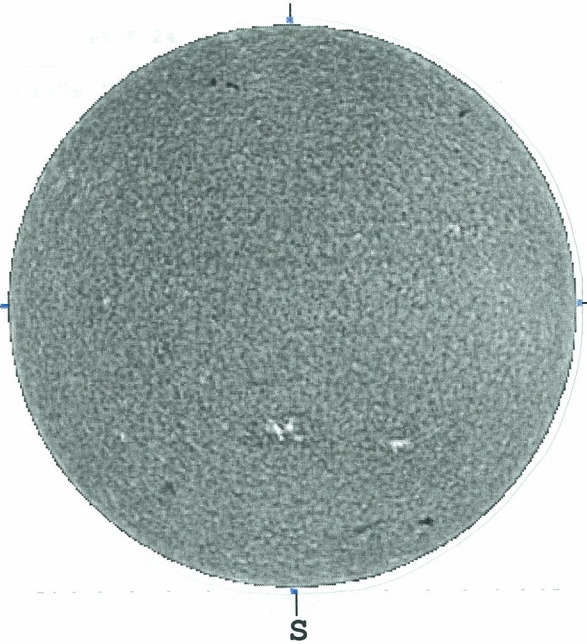
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



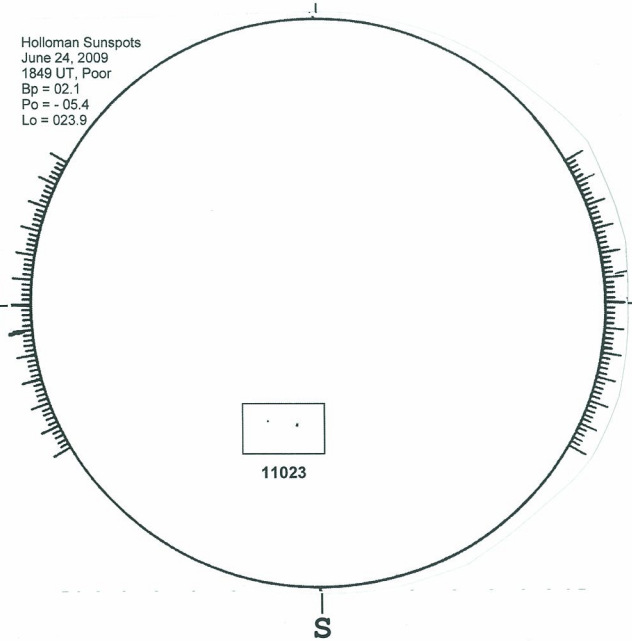
15.76 -
16.68 UT

MAUNA LOA H-ALPHA



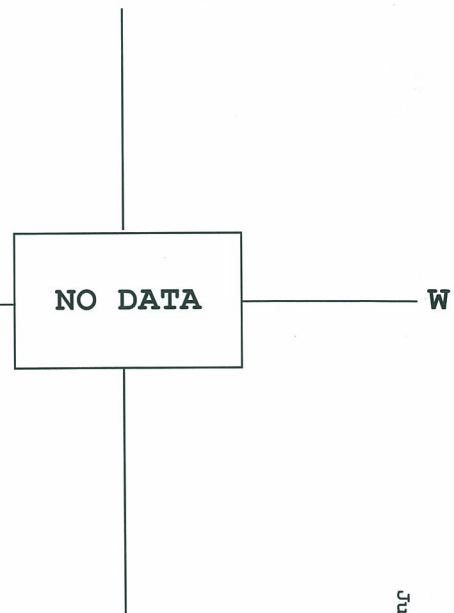
2203 UT

HOLLOMAN SUNSPOTS



1849 UT

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



63
Jun 09

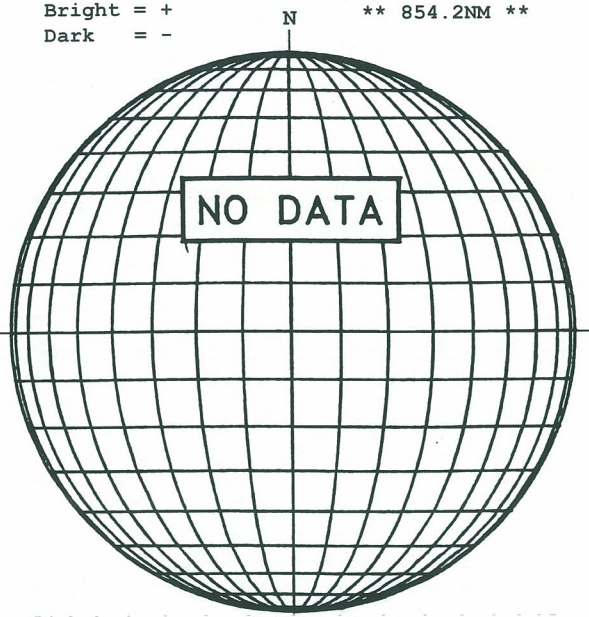
June 25, 2009 (P= -5.36, Bo= 2.20, Lo= 21.07)

Jun 09 64

KITT PEAK MAGNETOGRAM -- SOLIS

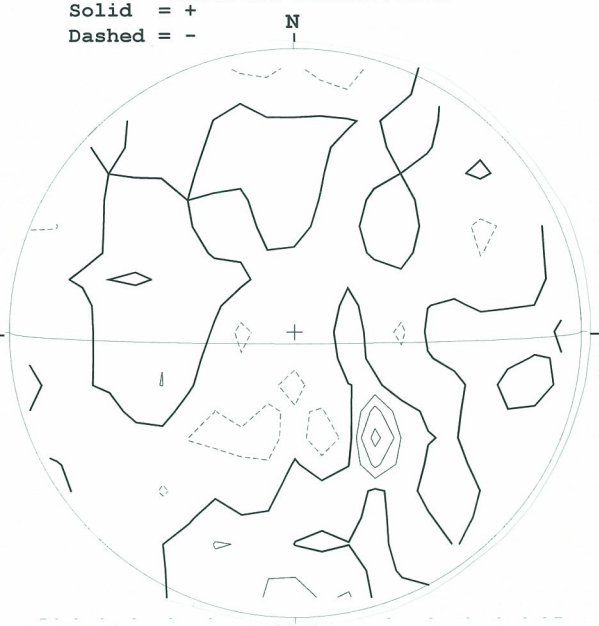
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

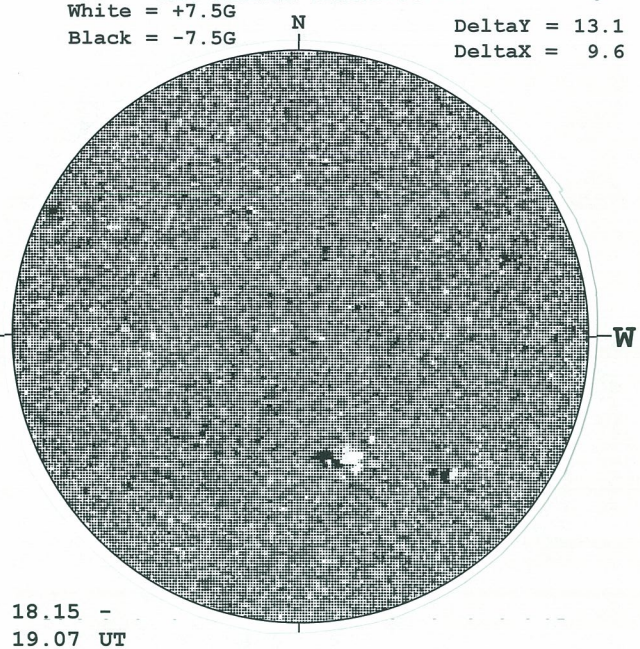


26/0053 UT

MT. WILSON MAGNETOGRAM

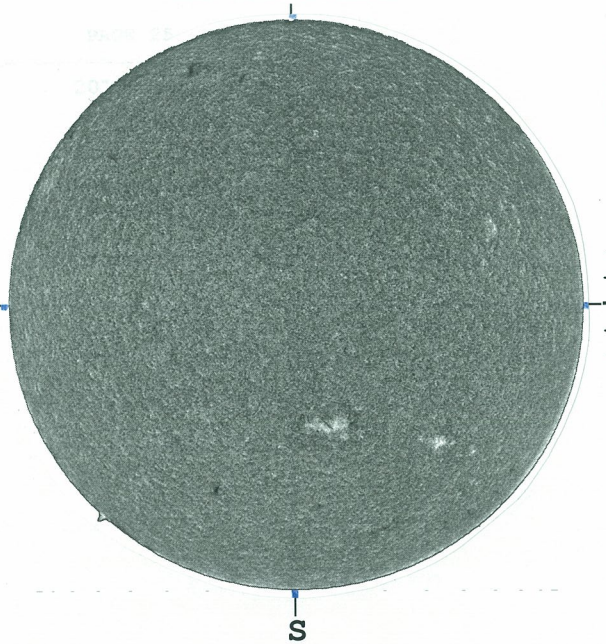
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



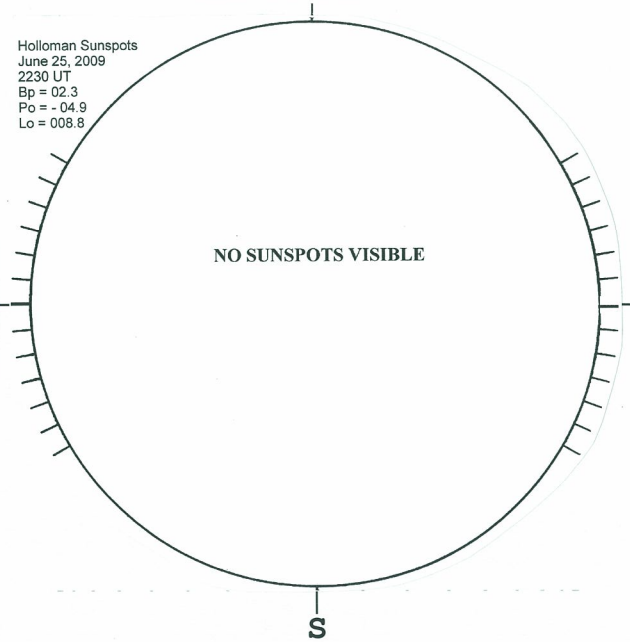
18.15 -
19.07 UT

--- BIG BEAR H-ALPHA



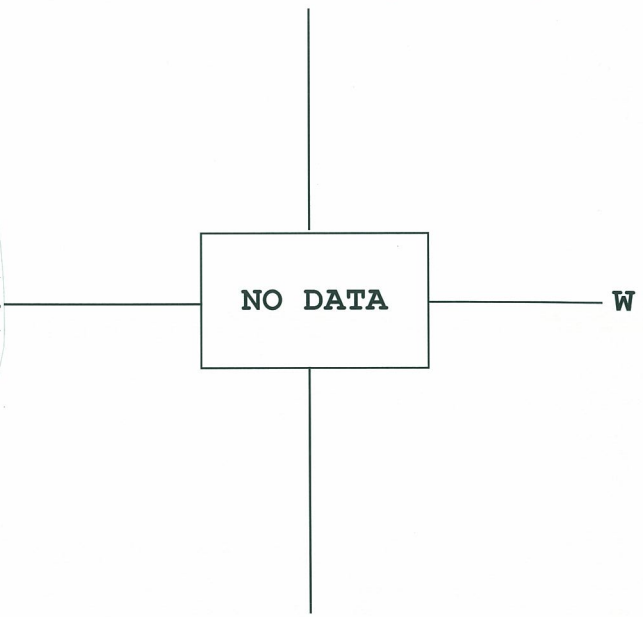
1535 UT

HOLLOMAN SUNSPOTS



2230 UT

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

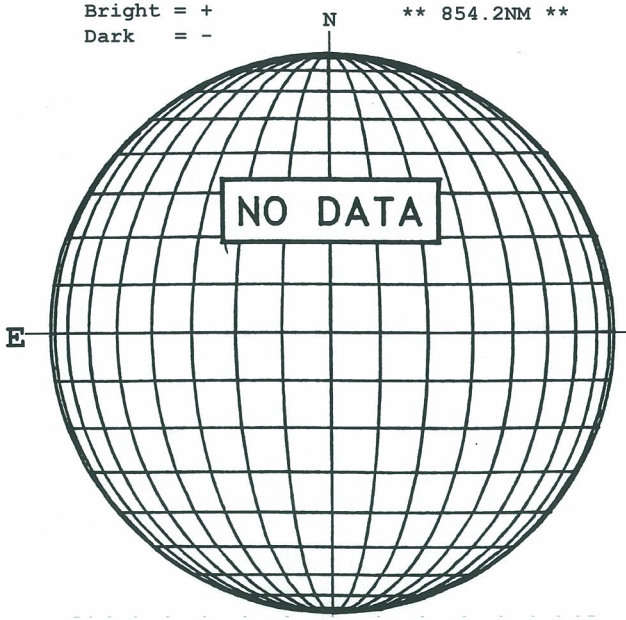


June 26, 2009 (P= -4.91, Bo= 2.31, Lo= 7.84)

KITT PEAK MAGNETOGRAM -- SOLIS

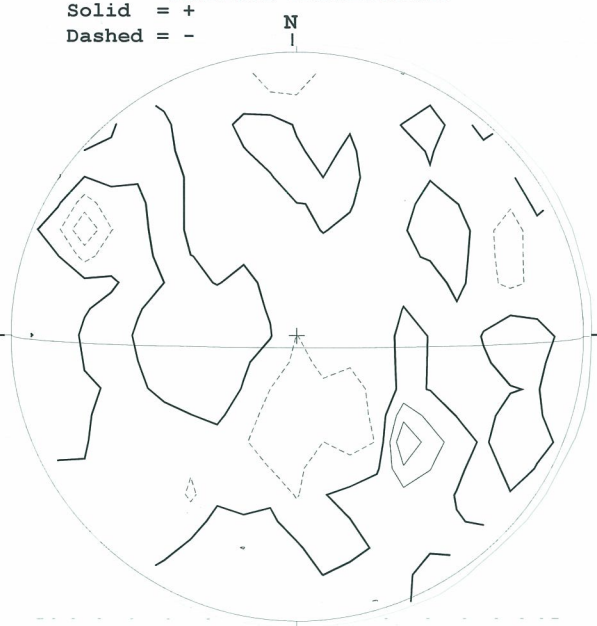
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

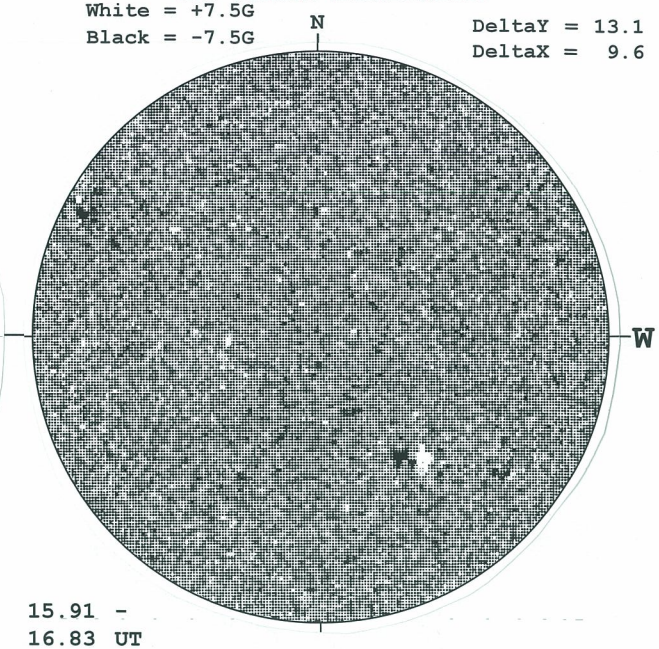


1955 UT

MT. WILSON MAGNETOGRAM

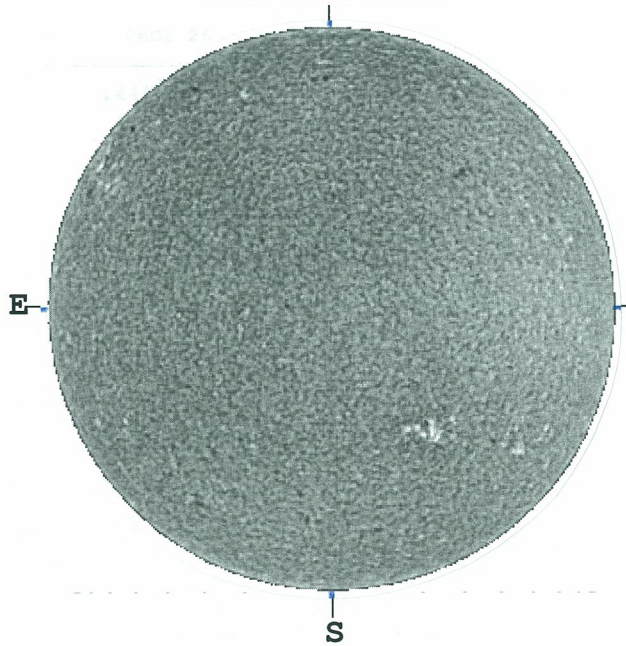
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



15.91 -
16.83 UT

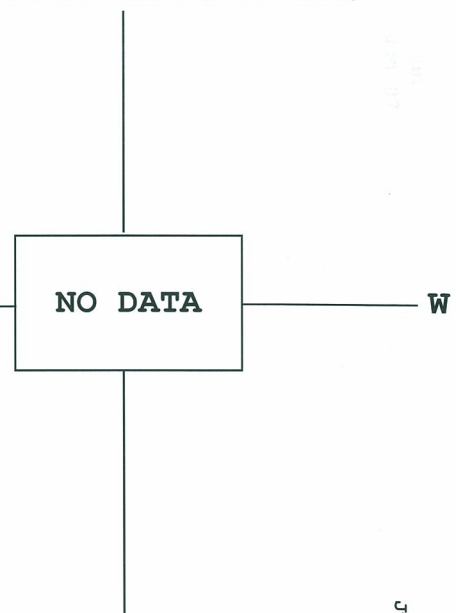
MAUNA LOA H-ALPHA



1722 UT

HOLLOMAN SUNSPOTS

LOMNICKY PEAK CORONA (1.04 Radii)



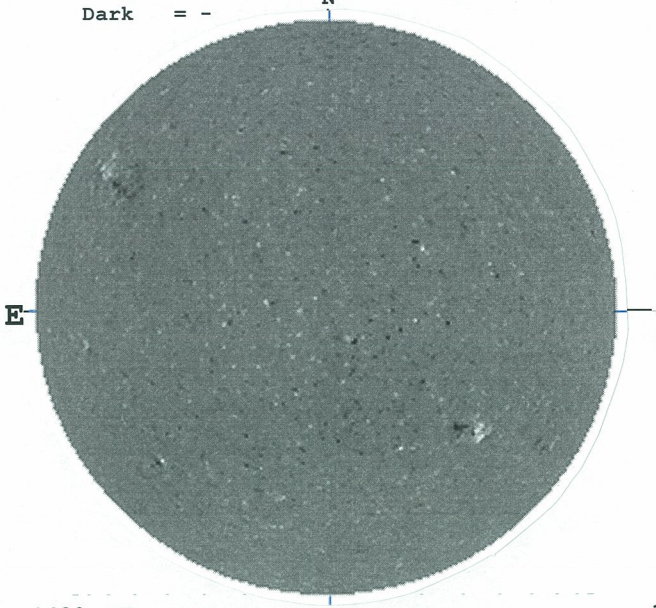
65
Jun 09

June 27, 2009 (P= -4.46, Bo= 2.43, Lo= 354.60)

Jun 09 66

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -



** 854.2NM **

1439 UT

STANFORD MAGNETOGRAM

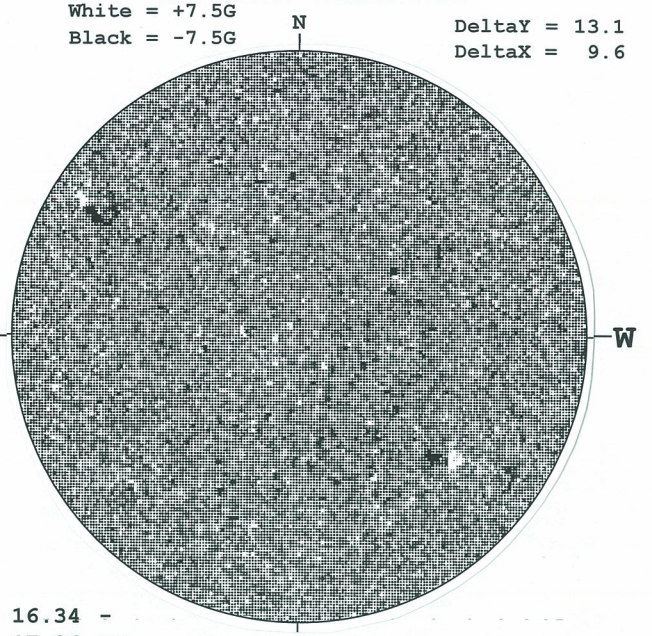
Solid = +
Dashed = -

1954 UT

MT. WILSON MAGNETOGRAM

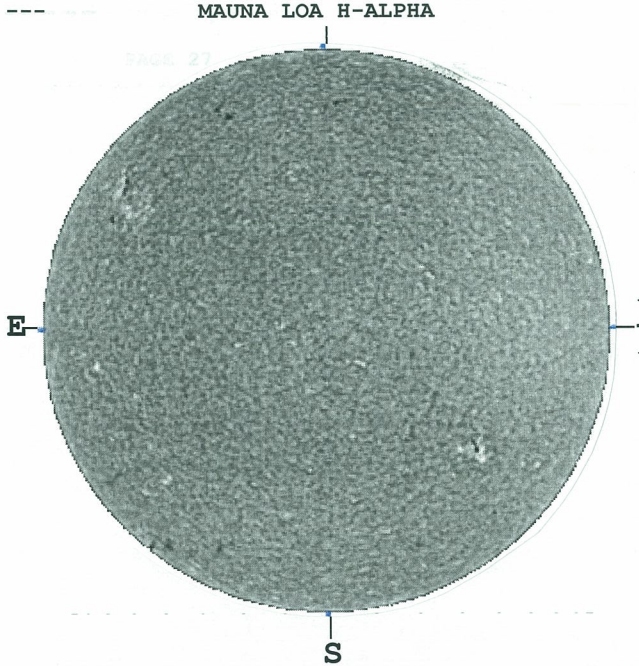
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



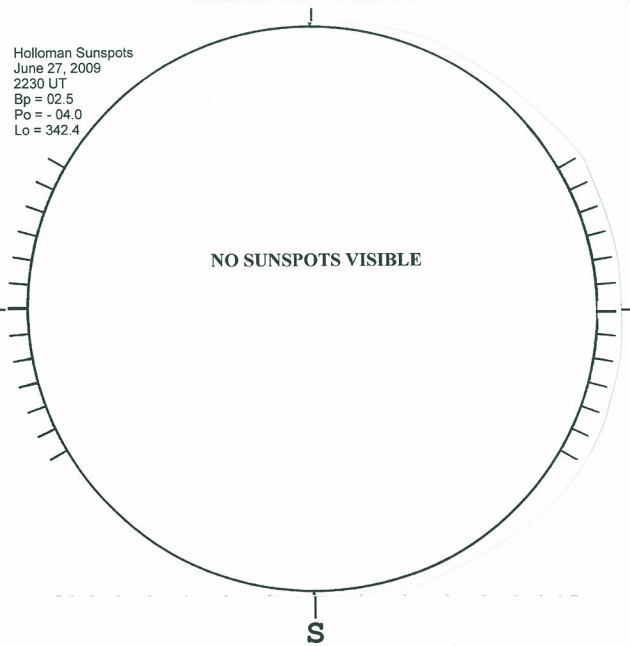
16.34 -
17.26 UT

MAUNA LOA H-ALPHA



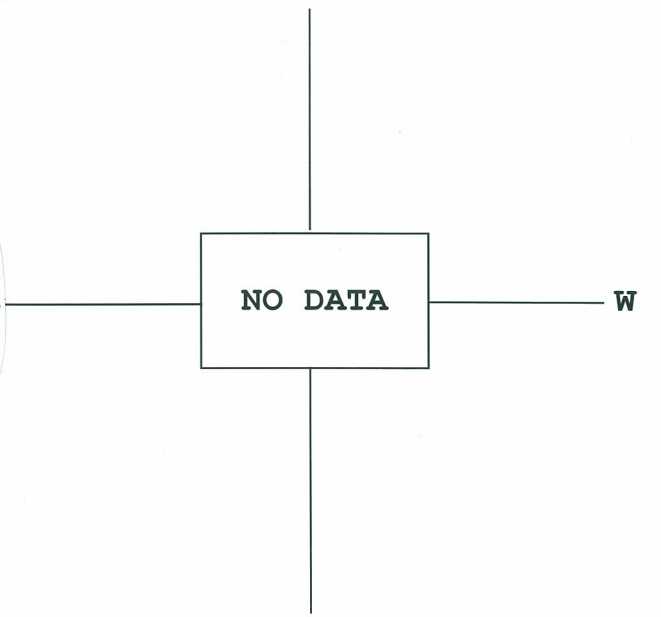
1829 UT

HOLLOMAN SUNSPOTS



2230 UT

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

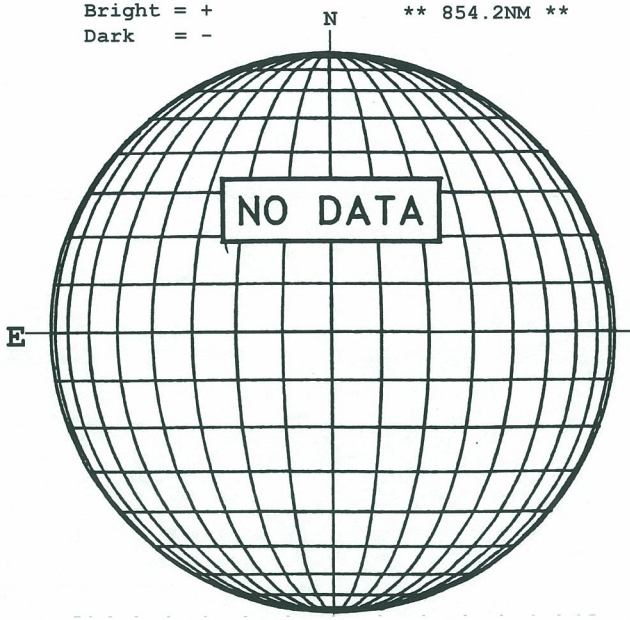


June 28, 2009 (P= -4.01, Bo= 2.54, Lo= 341.36)

KITT PEAK MAGNETOGRAM -- SOLIS

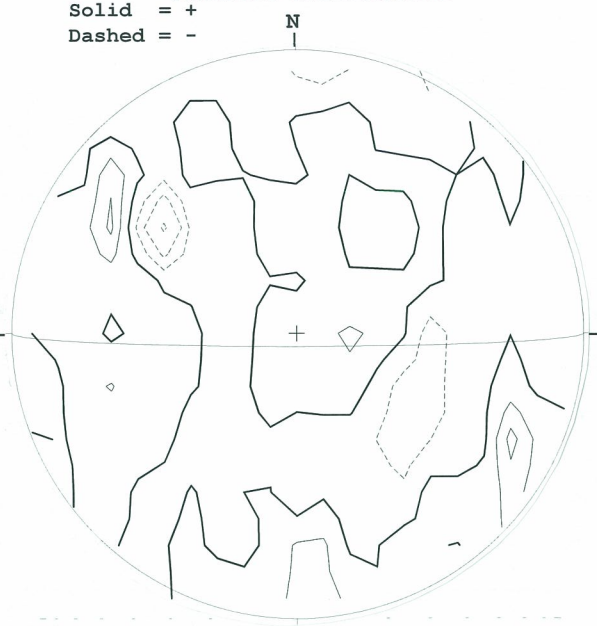
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

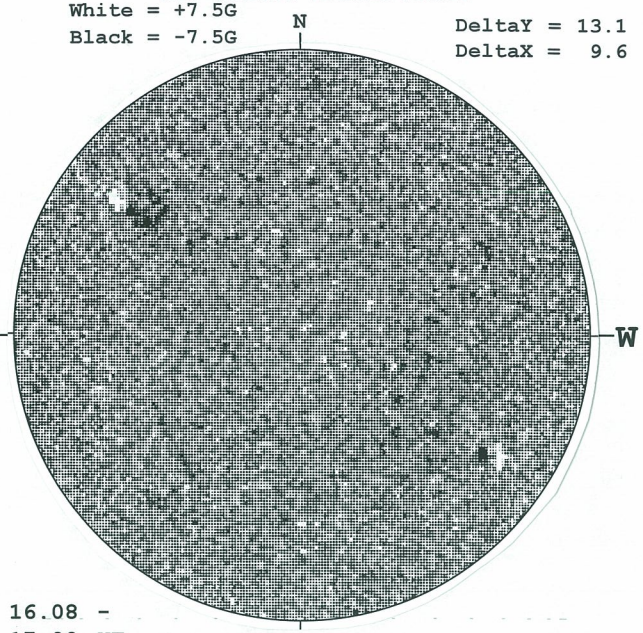


2034 UT

MT. WILSON MAGNETOGRAM

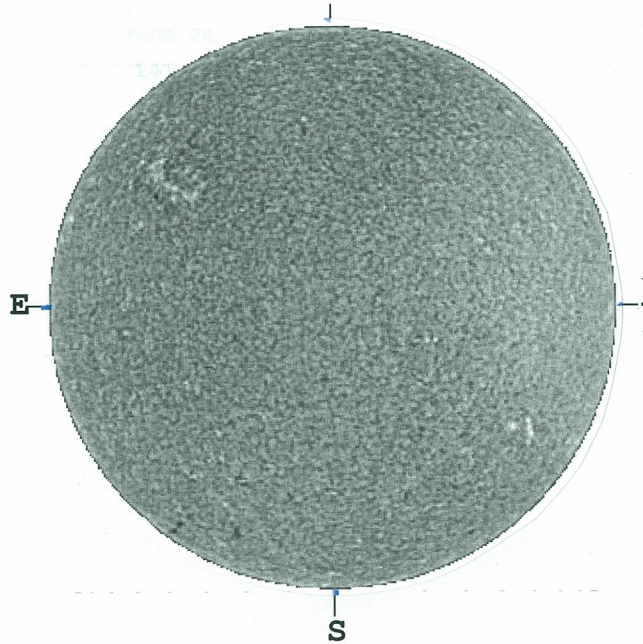
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



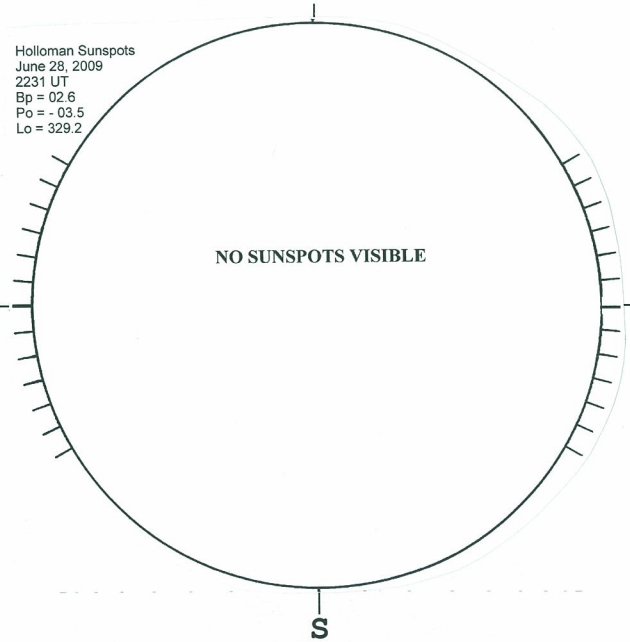
16.08 -
17.00 UT

MAUNA LOA H-ALPHA



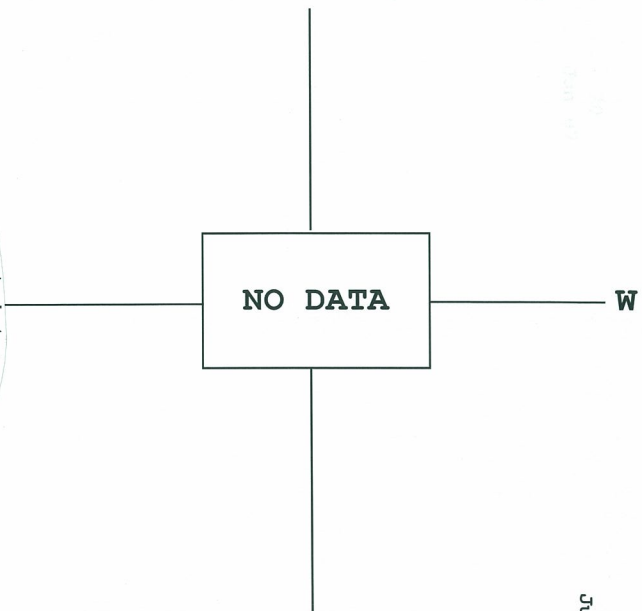
1735 UT

HOLLOMAN SUNSPOTS



2231 UT

LOMNICKY PEAK CORONA (1.04 Radii)



67
Jun 09

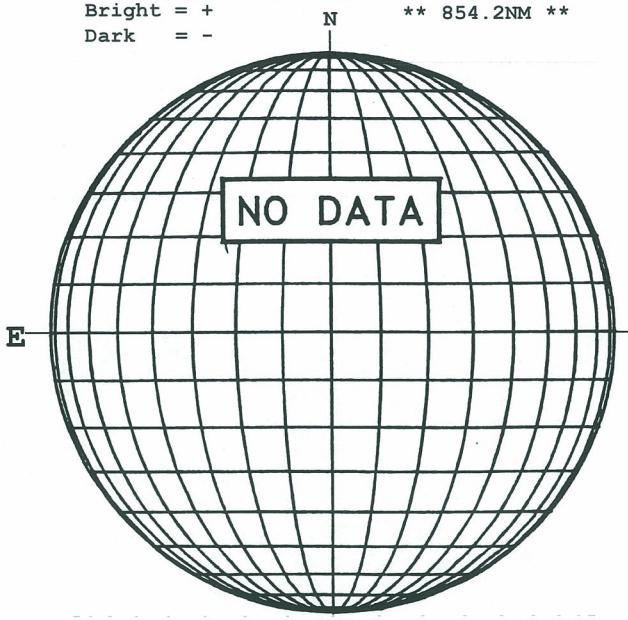
June 29, 2009 (P= -3.55, Bo= 2.65, Lo= 328.13)

Jun 09 68

KITT PEAK MAGNETOGRAM -- SOLIS

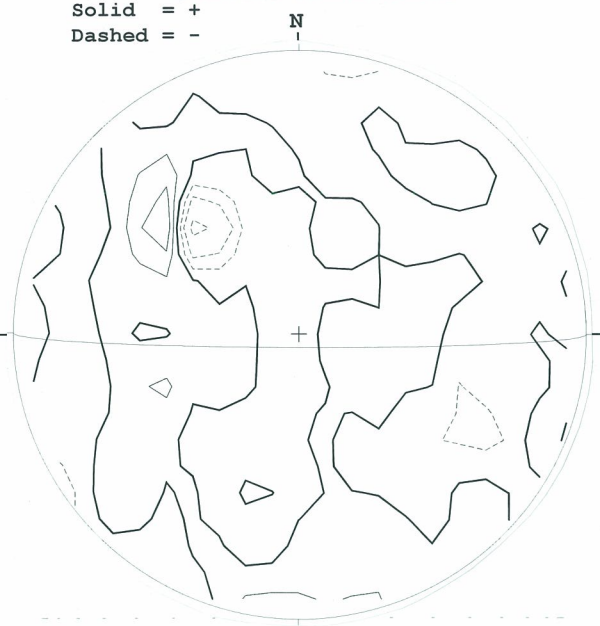
Bright = +
Dark = -

** 854.2NM **



STANFORD MAGNETOGRAM

Solid = +
Dashed = -

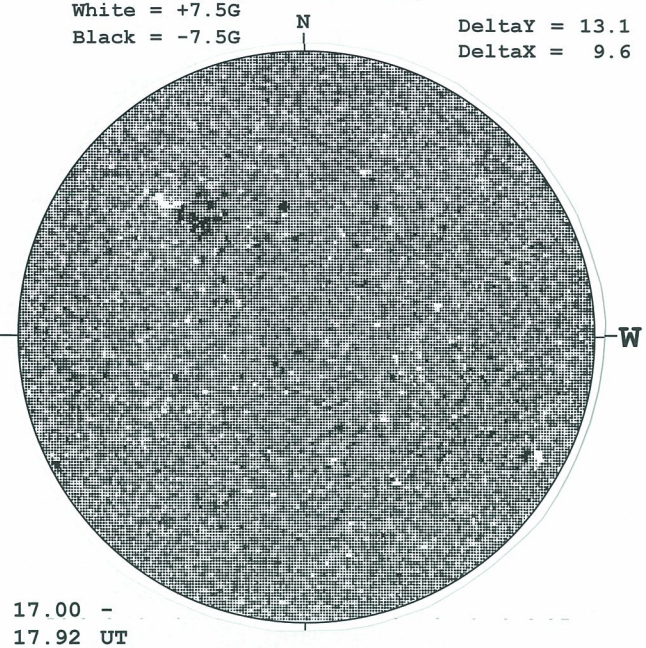


1821 UT

MT. WILSON MAGNETOGRAM

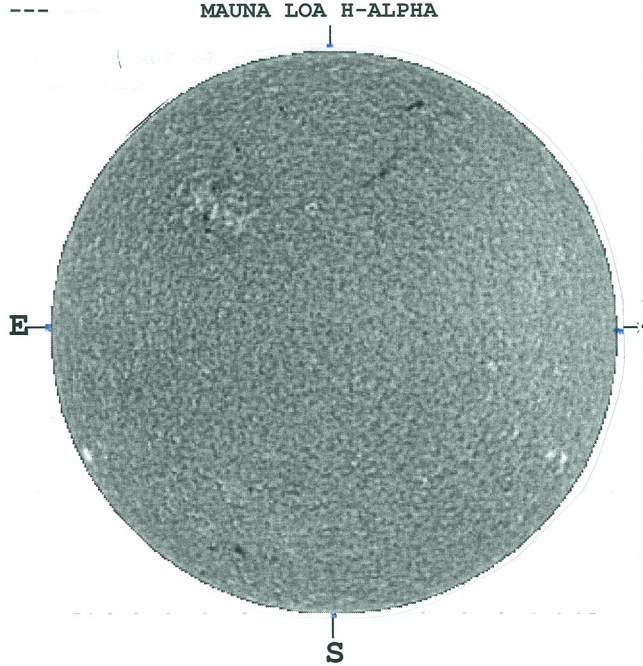
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



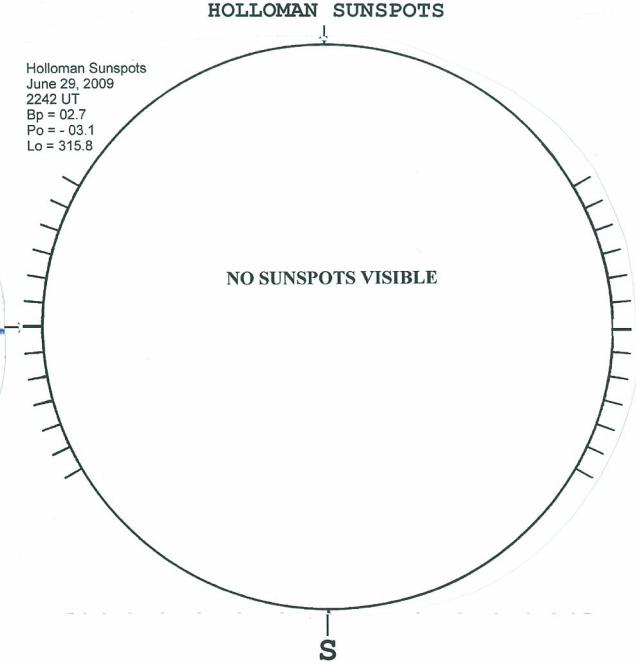
17.00 -
17.92 UT

--- MAUNA LOA H-ALPHA



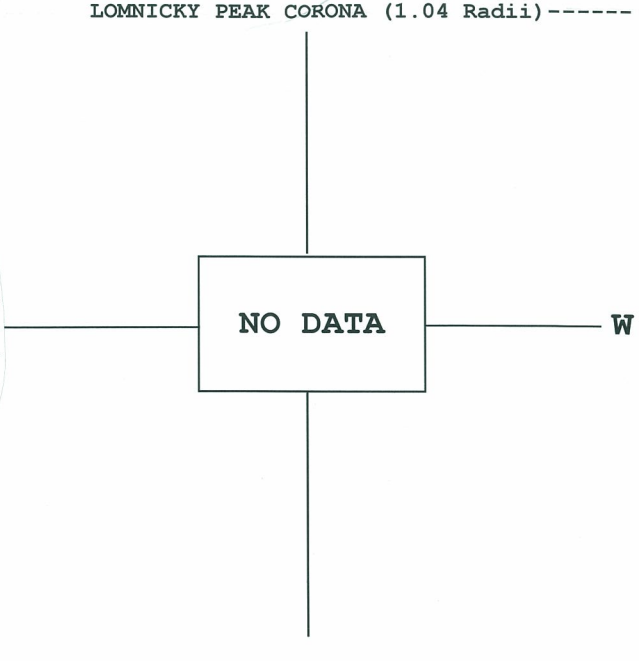
1720 UT

HOLLOMAN SUNSPOTS



2242 UT

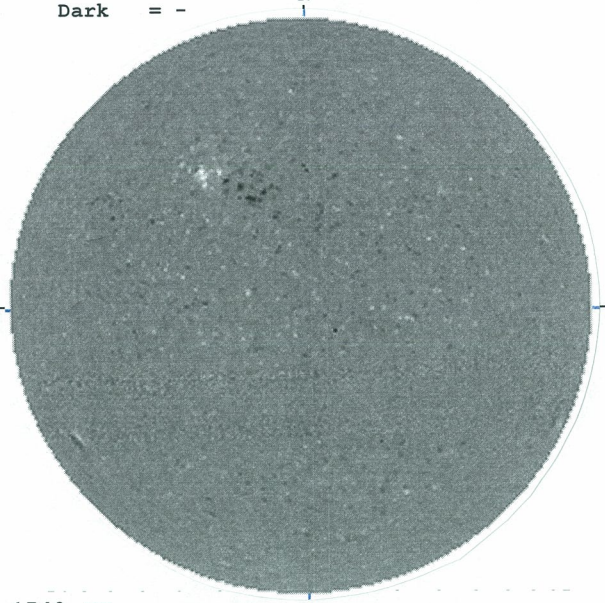
LOMNICKY PEAK CORONA (1.04 Radii)------



June 30, 2009 (P= -3.10, Bo= 2.77, Lo= 314.89)

KITT PEAK MAGNETOGRAM -- SOLIS

Bright = +
Dark = -

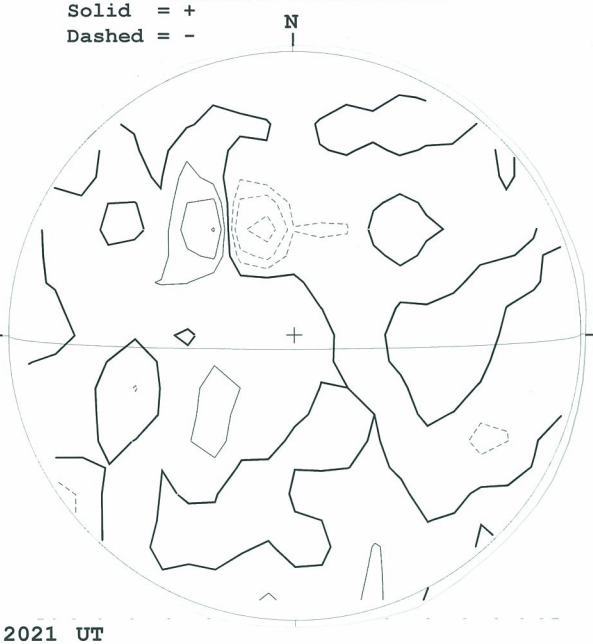


** 854.2NM **

1540 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

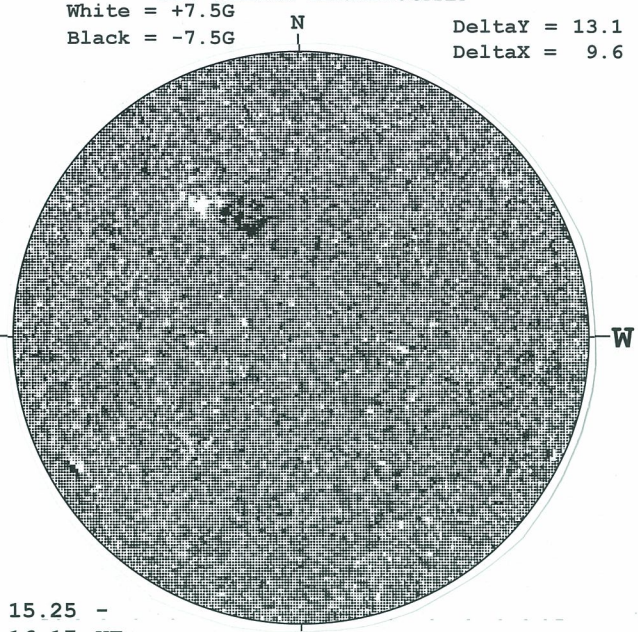


2021 UT

MT. WILSON MAGNETOGRAM

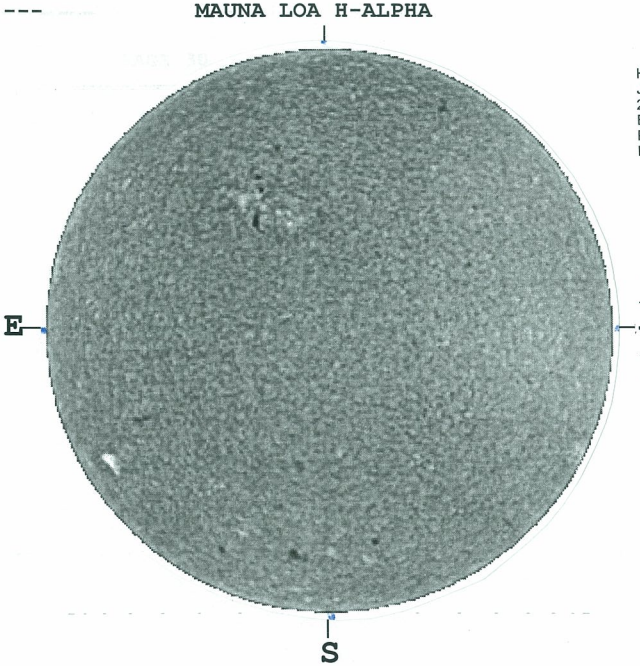
White = +7.5G
Black = -7.5G

DeltaY = 13.1
DeltaX = 9.6



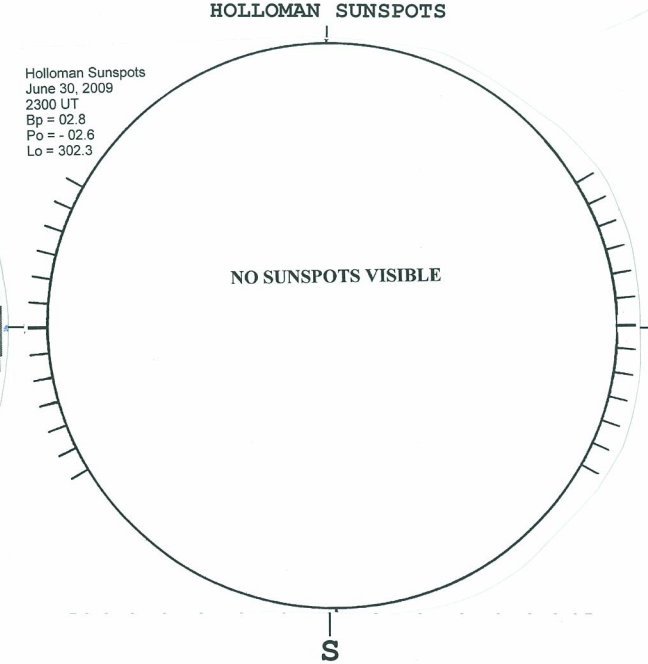
15.25 -
16.17 UT

MAUNA LOA H-ALPHA



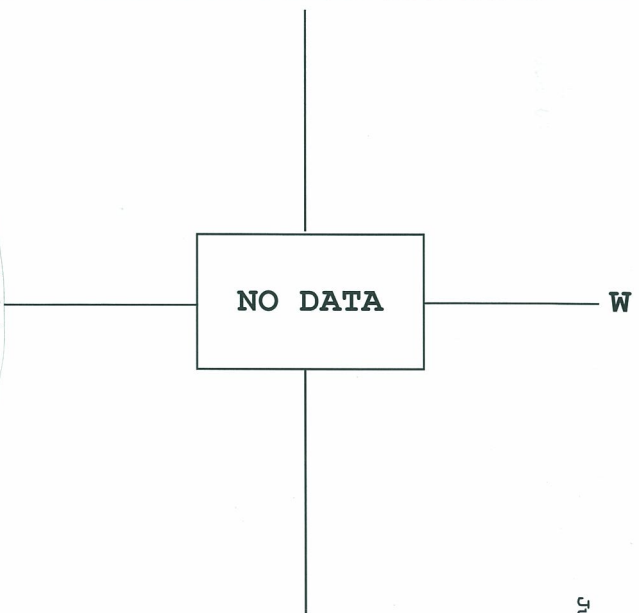
1846 UT

HOLLOMAN SUNSPOTS



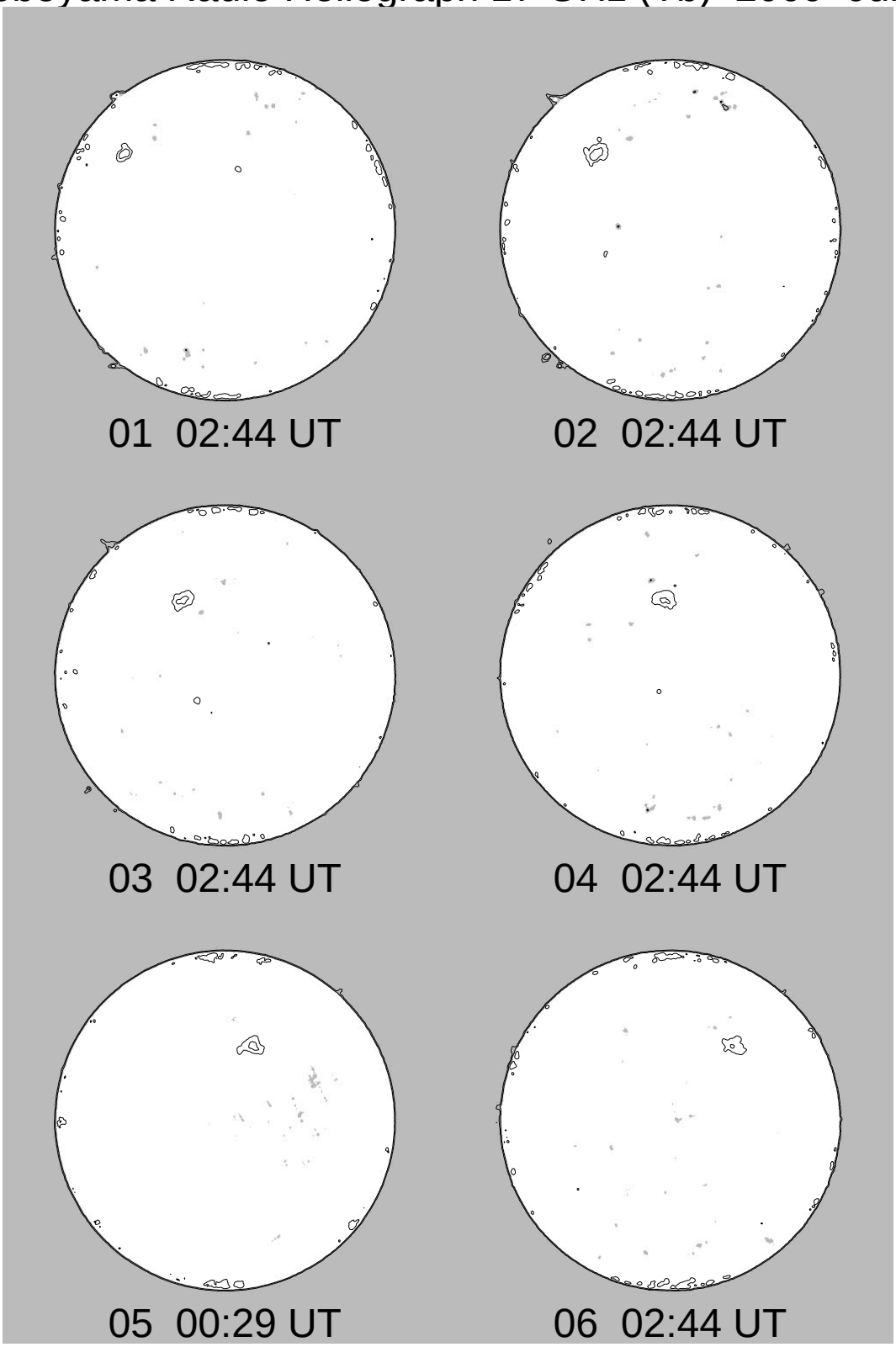
2300 UT

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



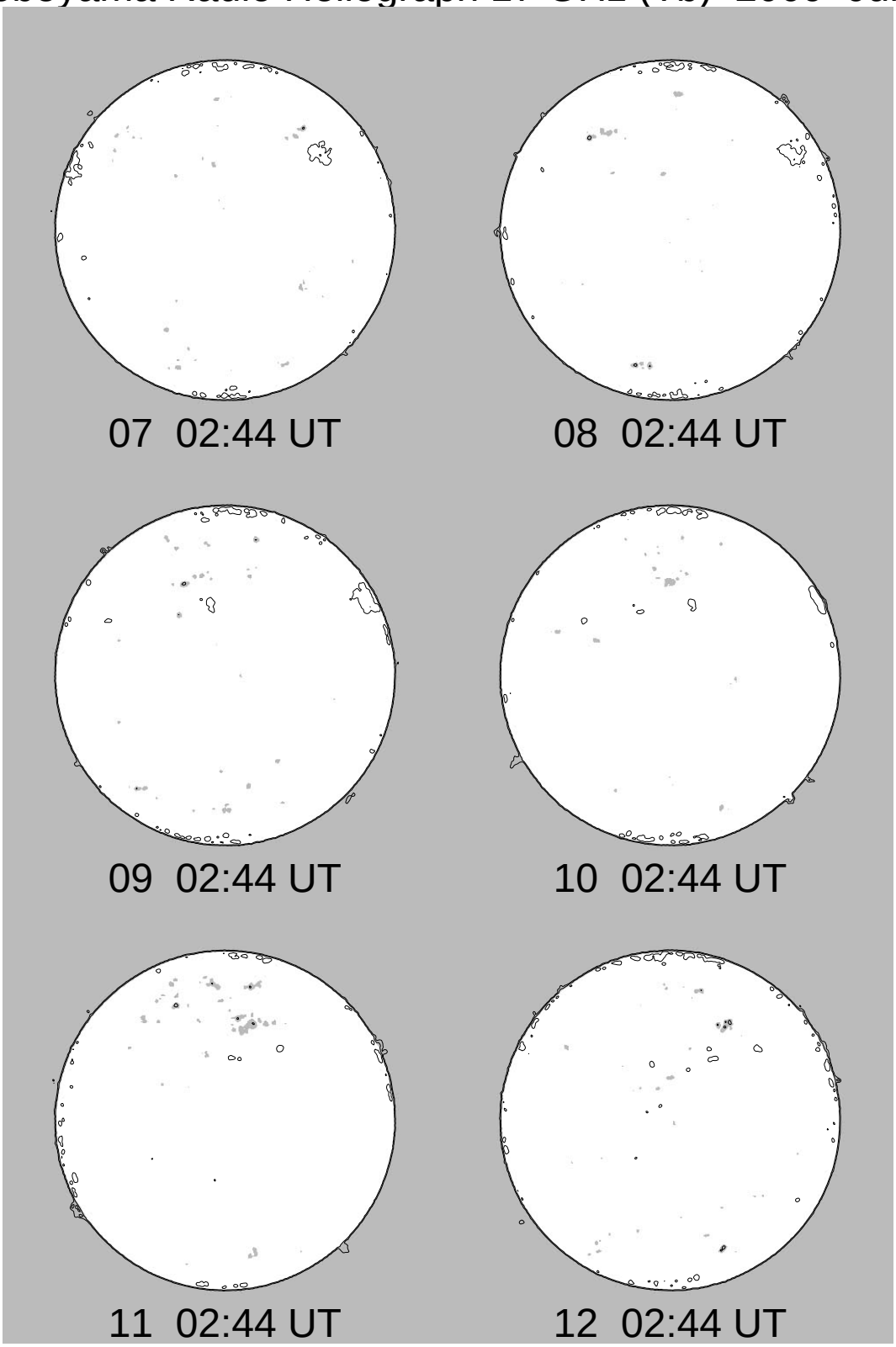
69
Jun 09

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 June



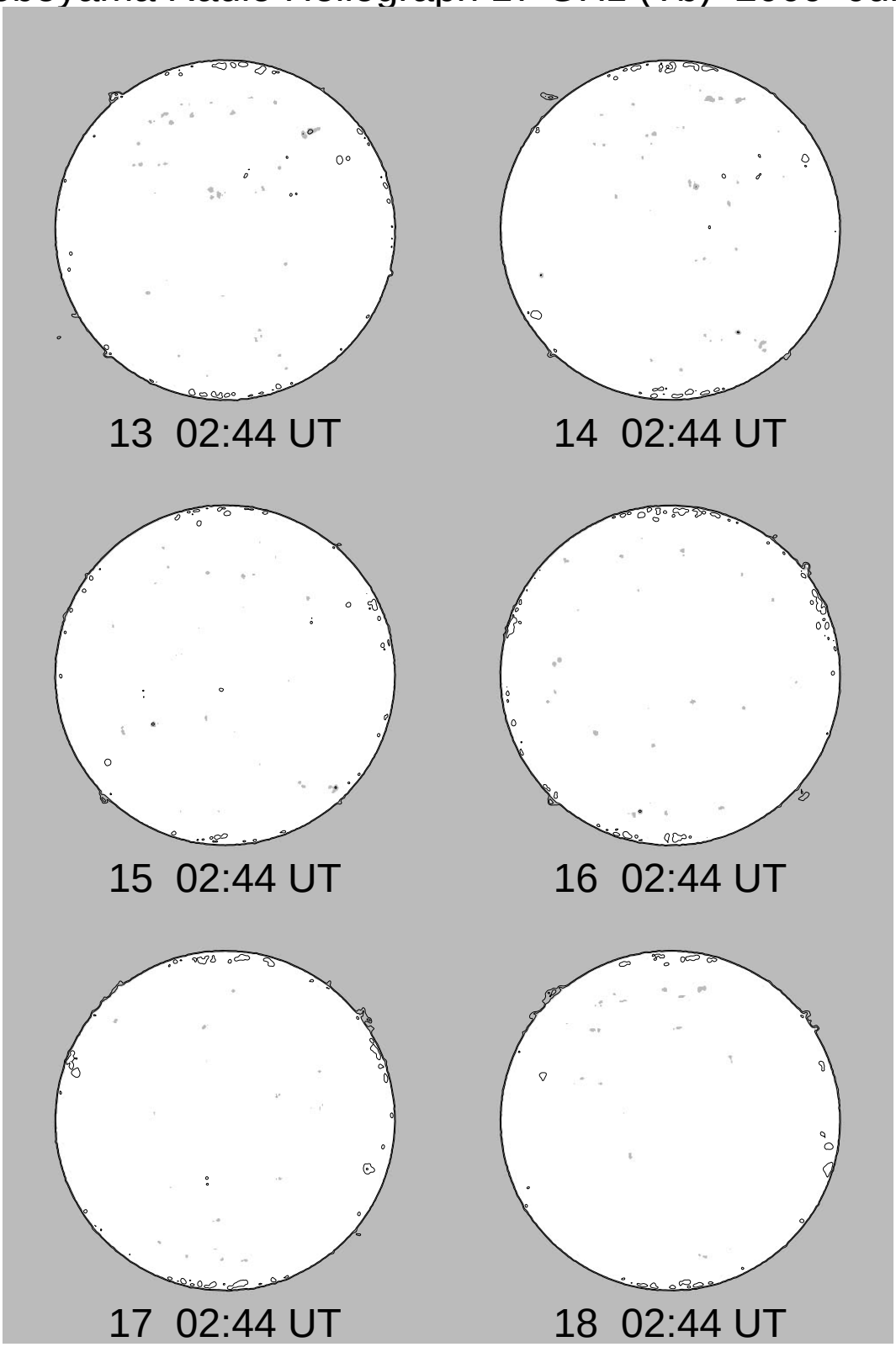
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 June



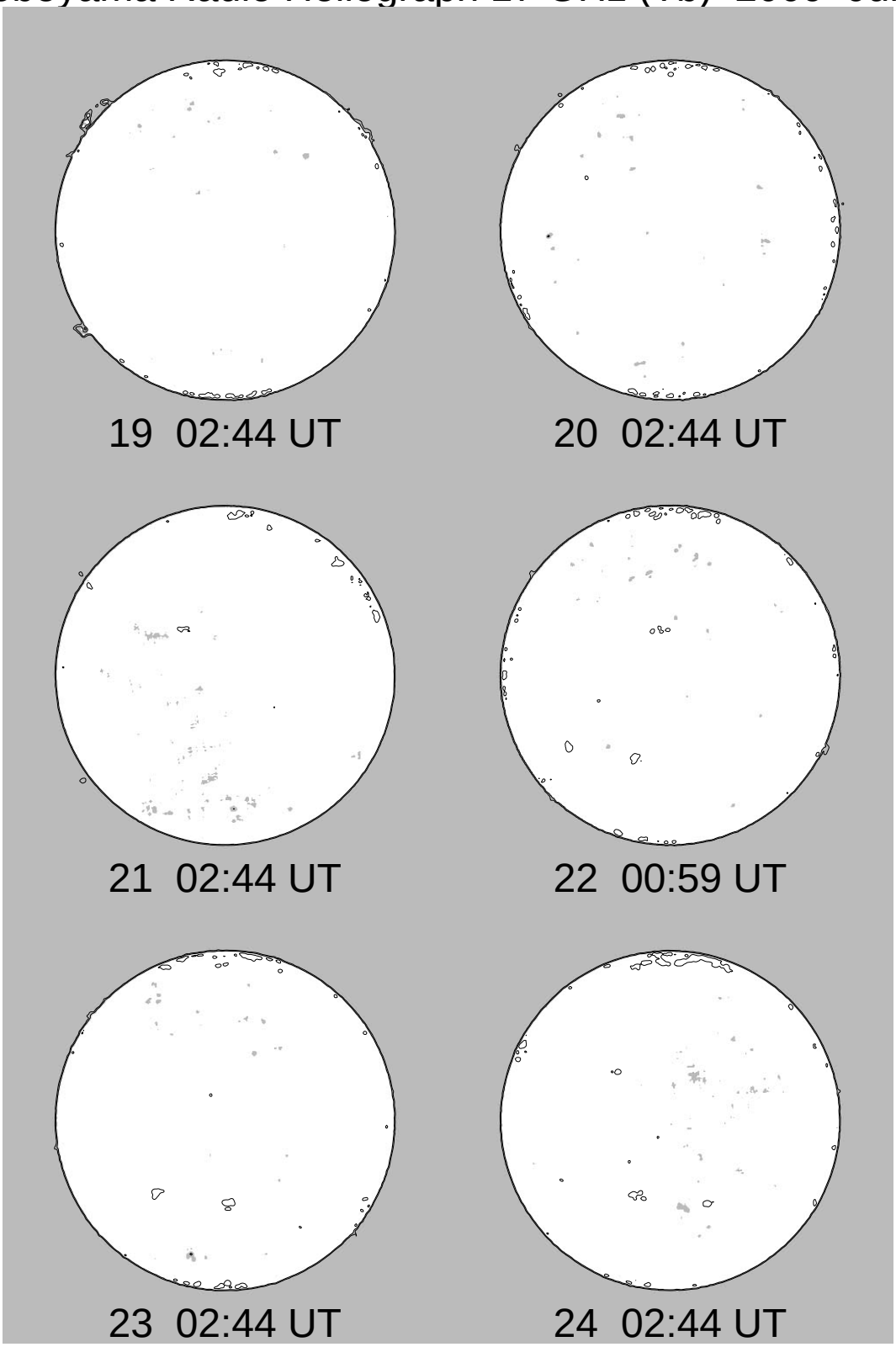
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 June



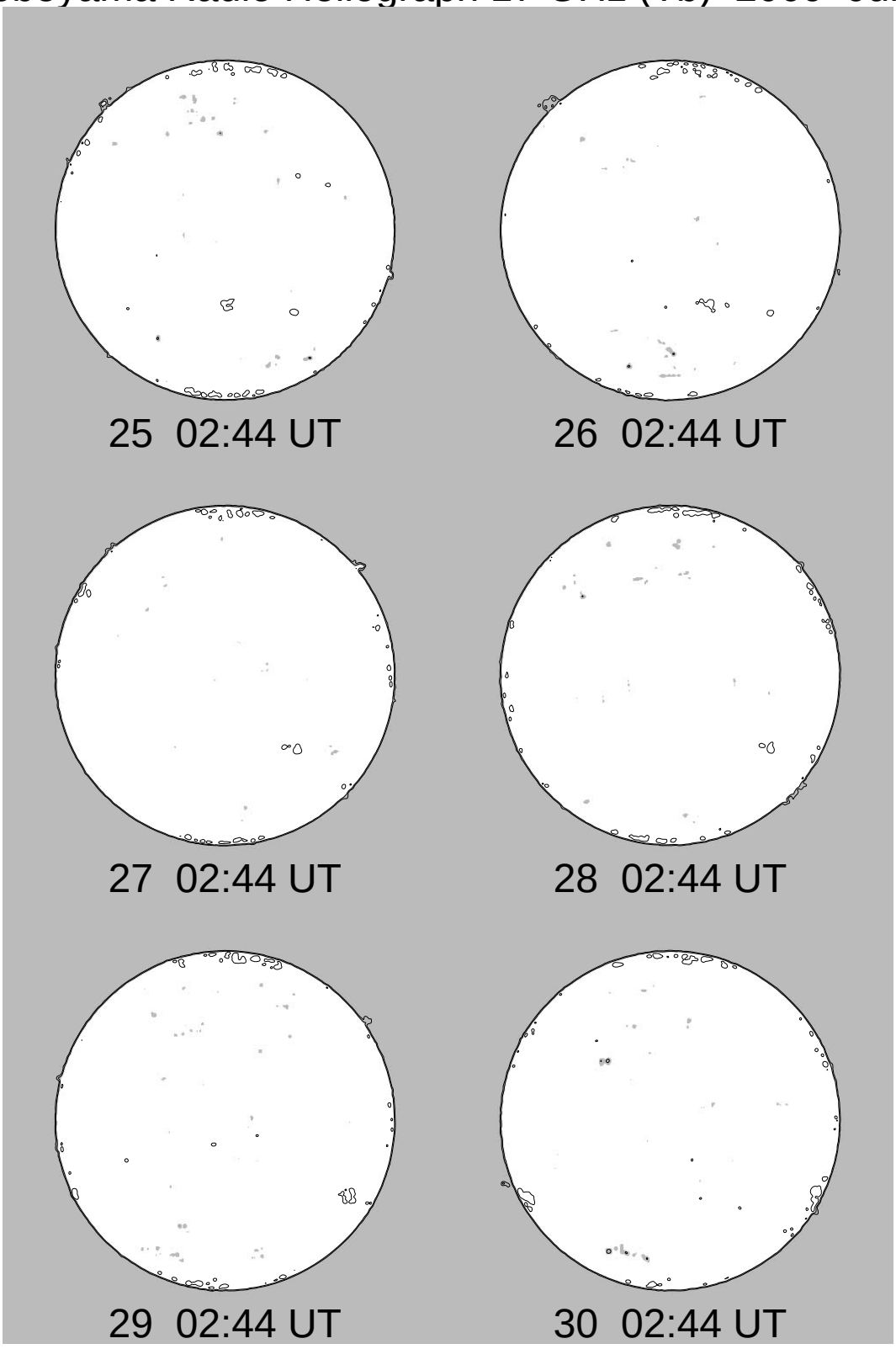
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 June



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

Nobeyama Radio Heliograph 17 GHz (Tb) 2009 June



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)

JUNE 2009

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
11019		PURP	06	01	0057	N26	E43	06	4.4			DSI	28	11	5	3
11019		VORO	06	01	0356	N26	E41	06	4.3			DAI	53	6	4	3
11019		KAND	06	01	0745	N23	E39	06	4.3			CRI		12	5	3
11019		LEAR	06	01	0840	N27	E36	06	4.2		B	BXO	60	11	5	3
11019		SVTO	06	01	0957	N27	E38	06	4.4		B	BXO	60	11	5	2
11019		HOLL	06	01	1614	N29	E33	06	4.3		B	CRO	100	13	8	4
11019		VORO	06	02	0438	N26	E27	06	4.3			DAI	39	5	5	3
11019		SVTO	06	02	0510	N27	E28	06	4.4		B	BXO	70	10	5	2
11019		KAND	06	02	0750	N25	E26	06	4.3			DAO		9	6	4
11019		HOLL	06	02	1514	N28	E18	06	4.0		B	BXO	50	8	7	4
11019		PURP	06	03	0037	N26	E17	06	4.3			DSO	31	8	6	3
11019		VORO	06	03	0344	N26	E14	06	4.2			DAI	34	9	5	3
11019		SVTO	06	03	0435	N26	E15	06	4.3		B	BXO	70	6	7	2
11019		KAND	06	03	0600	N25	E14	06	4.3			CAO		11	6	4
11019		TACH	06	03	0701	N23	E14	06	4.4			BRI	25	5	5	3
11019		LEAR	06	03	0902	N25	E12	06	4.3		B	BXO	30	7	7	1
11019		HOLL	06	03	1500	N27	E06	06	4.1		B	BXO	30	8	6	3
11019		PURP	06	04	0046	N25	E01	06	4.1			DSO	16	7	7	3
11019		LEAR	06	04	0250	N25	E03	06	4.3		B	BXO	40	10	8	2
11019		VORO	06	04	0426	N24	W02	06	4.0			BRO	21	4	2	3
11019		SVTO	06	04	0545	N23	W03	06	4.0		B	BXO	30	4	3	3
11019		KAND	06	04	1040	N25	W02	06	4.3			CRO		9	8	3
11019		HOLL	06	04	1542	N25	W05	06	4.3		B	BXO	40	7	6	3
11019		PURP	06	05	0042	N25	W13	06	4.0			CRI	14	8	7	4
11019		VORO	06	05	0531	N24	W16	06	4.0			AXX	1	1		3
11019		KAND	06	05	0620	N23	W15	06	4.1			BXO		5	5	5
11019		SVTO	06	05	0930	N24	W16	06	4.1		B	BXO	30	3	3	3
11019		PURP	06	06	0105	N25	W27	06	3.9			BXI	3	4	8	2
11019		HOLL	05	31	1602	N27	E45	06	4.2		B	BXO	30	5	4	3
11020		KAND	06	08	0620	N21	E17	06	9.6			BXO		2	1	4
11020		LEAR	06	08	0722	N23	E16	06	9.5		B	BXO	20	2	3	3
11020		SVTO	06	08	0930	N22	E14	06	9.5		B	BXO	20	2	2	3
11020		LEAR	06	09	0422	N24	E05	06	9.6		B	BXO	20	2	3	3
11020		SVTO	06	12	1110	N25	W39	06	9.4		A	HRX	30	2	2	3
11021		HOLL	06	16	2325	S15	W59	06	12.5		A	HSX	10	1	2	3
11021		PURP	06	17	0050	S16	W61	06	12.4			HRX	9	1	1	4
11021		VORO	06	17	0119	S17	W58	06	12.6			HAX	7	1		3
11021		LEAR	06	17	0135	S14	W60	06	12.5		A	AXX	20	1	1	3
11021		TACH	06	17	0542	S15	W60	06	12.7			AXX	5	1	1	3
11021		KAND	06	17	0735	S15	W62	06	12.6			AX		1		4
11021		SVTO	06	17	1305	S16	W65	06	12.6		A	AXX	110	1		3
11021		HOLL	06	17	1501	S17	W65	06	12.7		A	AXX	10	1	1	3
11021		PURP	06	18	0110	S16	W75	06	12.4			AXX	8	1	1	4
11021A		PURP	06	18	0110	S15	W19	06	16.6			AXX	2	1	1	4
11021B		HOLL	06	21	1543	N18	E09	06	22.3		A	AXX	10	1	1	4
11022		LEAR	06	21	0630	S27	E23	06	23.1		B	BXO	20	2	2	3
11022		SVTO	06	21	1140	S27	E21	06	23.1		B	BXO	10	2	3	3
11022		LEAR	06	22	0105	S27	E12	06	23.0		A	AXX	10	1	1	2
11022		PURP	06	22	0122	S26	E12	06	23.0			AXX	2	1	1	4
11022		SVTO	06	22	0430	S26	E11	06	23.0		A	AXX	20	2	2	3
11023		LEAR	06	22	0105	S23	E39	06	25.0		A	AXX	10	1	1	2
11023		SVTO	06	22	0430	S23	E39	06	25.2		B	CSO	40	2	4	3
11023		TACH	06	22	0437	S22	E38	06	25.1			BRO	12	4	3	3
11023		HOLL	06	22	1645	S20	E33	06	25.2		B	DSO	50	3	5	3
11023		PURP	06	23	0126	S23	E27	06	25.1			DSO	23	6	7	4
11023		TACH	06	23	0406	S23	E25	06	25.1			BXO	21	2	4	3
11023		VORO	06	23	0439	S22	E25	06	25.1			BRO	24	2	5	3
11023		KAND	06	23	0730	S24	E24	06	25.2			BXO		2	6	5
11023		SVTO	06	23	0830	S24	E23	06	25.1		B	CSO	30	2	6	2
11023		HOLL	06	23	1542	S25	E25	06	25.6		B	BXO	30	2	7	3
11023		VORO	06	23	2246	S22	E15	06	25.1			DAI	37	4	6	3
11023		PURP	06	24	0044	S23	E14	06	25.1			DSI	17	7	7	4
11023		LEAR	06	24	0205	S23	E13	06	25.1		B	CSO	40	4	7	2

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

(Ordered by Central Meridian Passage Date)

JUNE 2009

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
11023		KAND	06 24 0700	S25 E10	06 25.1			BXO		4	7	4
11023		TACH	06 24 1017	S22 E10	06 25.2			BRO	15	3	6	3
11023		SVTO	06 24 1055	S24 E08	06 25.1		B	CSO	40	4	7	2
11023		HOLL	06 24 1849	S23 E08	06 25.4		B	BXO	40	2	8	2
11023		VORO	06 24 2227	S23 W01	06 24.8			AXX	5	1		3
11023		PURP	06 25 0035	S23 W01	06 24.9			CRI	9	7	7	4
11023		LEAR	06 25 0234	S23 W03	06 24.9		B	BXO	10	1	1	3
11023		KAND	06 25 0555	S23 W06	06 24.8			AX		1		5

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES
JUNE 2009

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0504	0537	0547	1	1						No Flare		
10	0606	0640	0653	1	1						No Flare		
14	0647	0714	0738	1	1						No Flare		
14	0820	0857	0905	1	1						No Flare		

OBSERVATORIES REPORTING FOR JUNE 2009

Upice, Czech Republic	SEA

Observations are not necessarily continuous.
* = No Flare Patrol

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

Spectral Observations

JUN 2009

OBSERVATION			EVENT				FREQUENCY		
Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
01 0000	0710	CULG								
0000	0956	HIRA								
0459	1743	ONDR								
1914	2400	HIRA								
2050	2400	CULG								
02 0000	0710	CULG								
0000	0956	HIRA								
0430	1810	BLEN								
0459	1743	ONDR								
1914	2400	HIRA								
2050	2400	CULG								
03 0000	0710	CULG								
0000	0957	HIRA								
0430	1810	BLEN								
0459	1744	ONDR								
1914	2037	HIRA								
2050	2400	CULG								
04 0000	0710	CULG								
0121	0958	HIRA								
0430	1810	BLEN								
0459	1732	ONDR								
1914	2400	HIRA								
2050	2400	CULG								
05 0000	0710	CULG								
0000	0958	HIRA								
0430	1810	BLEN								
0459	1746	ONDR								
1914	2400	HIRA								
2050	2400	CULG								
06 0000	0710	CULG								
0000	0959	HIRA								
0430	1810	BLEN								
0459	1747	ONDR								
1913	2400	HIRA								
2050	2400	CULG								
07 0000	0710	CULG								
0000	0938	HIRA								
0430	1810	BLEN								
0459	1747	ONDR								
2050	2400	CULG								
08 0000	0710	CULG								
0430	1815	BLEN								
0436	1000	HIRA								
0459	1748	ONDR								
1913	2400	HIRA								
2050	2400	CULG								
09 0000	0710	CULG								
0000	1001	HIRA								
0420	1815	BLEN								
0459	1748	ONDR								
1913	2400	HIRA								
2050	2400	CULG								
10 0000	0710	CULG								
0000	1001	HIRA								
0420	1815	BLEN								
0459	1749	ONDR								
1913	2400	HIRA								
2050	2400	CULG								
11 0000	0710	CULG								

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

Spectral Observations

JUN 2009

OBSERVATION			EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
11	0000	1002	HIRA								
	0420	1815	BLEN								
	0459	1750	ONDR								
	1913	2400	HIRA								
	2050	2400	CULG								
12	0000	0710	CULG								
	0000	1002	HIRA								
	0420	1815	BLEN								
	0459	1750	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
13	0000	0710	CULG								
	0000	1003	HIRA								
	0420	1815	BLEN								
	0459	1751	ONDR								
	1913	2400	HIRA								
14	0000	1003	HIRA								
	0420	1815	BLEN								
	0459	0459	ONDR								
	1913	2400	HIRA								
	2230	2400	CULG								
15	0000	0710	CULG								
	0000	1004	HIRA								
	0420	1815	BLEN								
	0459	1752	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
16	0000	0710	CULG								
	0000	1004	HIRA								
	0420	1815	BLEN								
	0459	1752	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
17	0000	0710	CULG								
	0000	1004	HIRA								
	0420	1815	BLEN								
	0459	1752	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
18	0000	0710	CULG								
	0000	1004	HIRA								
	0420	1815	BLEN								
	0459	1753	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
19	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1753	ONDR								
	1913	2400	HIRA								
	2100	2400	CULG								
20	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1753	ONDR								
	1914	2400	HIRA								
	2100	2400	CULG								
21	0000	0710	CULG								
	0000	1005	HIRA								

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

Spectral Observations

JUN 2009

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
21	0420	1815	BLEN								
	0459	1753	ONDR								
	1914	2400	HIRA								
	2100	2400	CULG								
22	0000	0710	CULG								
	0000	1006	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
			SGMR	2041.0	2043.0	III		1	30	54	
			PALE	2042.0	2043.0	III		1	25U	115U	
	1914	2400	HIRA	2042.0	2045.5	III	G	1	50	410	
	2100	2400	CULG								
23	0000	1006	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	0000	0710	CULG	0623.0	0624.0	III	G	1	35	100	
			SGMR	1031.0	1036.0	III		1	30	180	
	1914	2400	HIRA								
	2100	2400	CULG								
24	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1915	2400	HIRA								
	2100	2400	CULG								
25	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1915	2400	HIRA								
	2100	2400	CULG								
26	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1915	2400	HIRA								
	2100	2400	CULG								
27	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1915	2400	HIRA								
	2100	2400	CULG								
28	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1916	2400	HIRA								
	2100	2400	CULG								
29	0000	0710	CULG								
	0000	1005	HIRA								
	0420	1815	BLEN								
	0459	1754	ONDR								
	1916	2400	HIRA								
	2100	2400	CULG								
30	0000	0710	CULG								
	0000	1005	HIRA								
	0430	1815	BLEN								
	0459	1754	ONDR								
	1916	2400	HIRA								

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

Spectral Observations

JUN 2009

OBSERVATION			EVENT				FREQUENCY			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	Remarks
30	2100	2400	CULG								

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

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

SOLAR RADIO NOISE STORM AT 150.9 MHZ

FROM NANÇAY RADIOHELIOGRAPH

JUNE 2009

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/06/09	-0.83	+0.43	I	8H18 E	15H19 D
03/06/09	-0.37	+0.62	I	10H17	15H19 D
22/06/09	-0.51	-0.71	I	8H22 E	12H05

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

JUNE 2009

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/06/09	-0.61	+0.57	I	8H18 E	15H19 D

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst

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

**** no flux measurements available

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

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

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

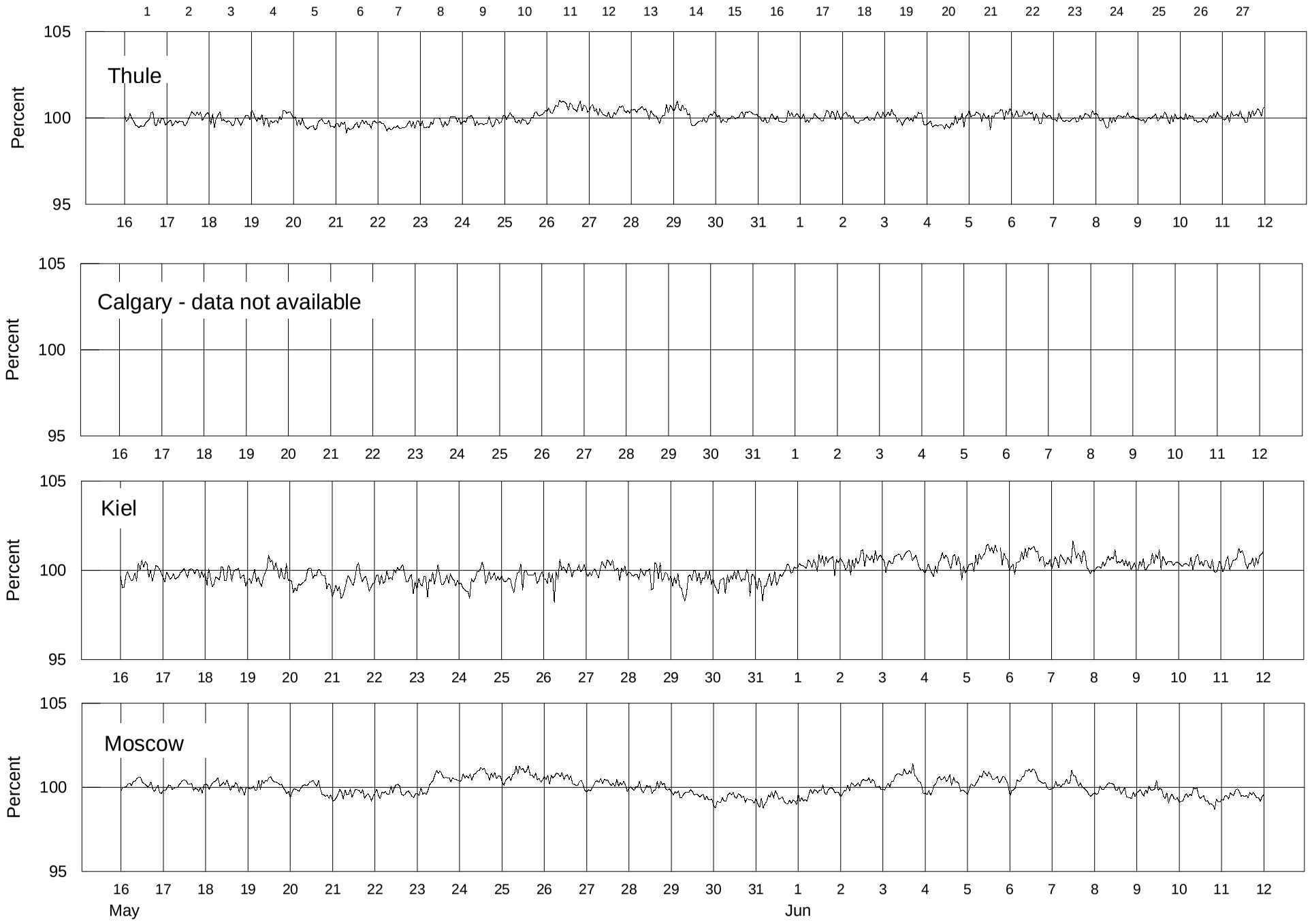
COSMIC RAY INDICES
(Neutron Monitor)
JUNE 2009

Day	THULE Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4714.0		6514.6	9727.8		2076.5	
2	4712.2		6524.5	9771.9		2077.8	
3	4711.5		6526.7	9810.5		2074.7	
4	4697.2		6507.6	9775.5		2069.2	
5	4719.5		6538.3(23)	9803.7		2076.8	
6	4717.4		6531.4	9800.4		2068.5	
7	4711.0	data	6525.1	9773.2	data	2064.6	data
8	4709.4	not	6514.3	9742.5	not	2063.1	not
9	4710.5	available	6516.5	9728.8	available	2068.6	available
10	4711.3		6511.0	9696.8		2071.2	
11	4718.2		6522.8	9712.7		2069.5	
12	4727.7		6517.7	9750.0		2072.5	
13	4728.1		6496.2	9747.7		2067.8	
14	4701.6		6476.5	9706.7		2068.1	
15	4731.0		6504.1	9753.5		2066.6	
16	4724.8		6513.3	9749.3		2061.2	
17	4717.5		6483.0	9757.7		2061.1	
18	4722.4		6494.7	9787.5		2052.1	
19	4724.4		6502.5	9756.1		2058.2	
20	4726.7		6501.6	9727.5		2061.2	
21	4720.6		6499.3	9693.0		2068.5	
22	4697.2		6486.1	9676.7		2069.4	
23	4712.8		6478.7	9687.1		2069.5	
24	4710.4		6490.0	9694.3		2092.8	
25	4685.2		6472.4	9670.4		2131.0	
26	4687.0		6463.8	9652.6		2074.4	
27	4695.5		6470.6	9660.3		2132.0	
28	4690.9		6458.9	9647.4		2068.0	
29	4689.0		6463.1	9657.7		2077.6	
30	4694.3		6453.9	9673.9		2064.5	
Mean	4710.0		6498.6	9726.4		2073.2	

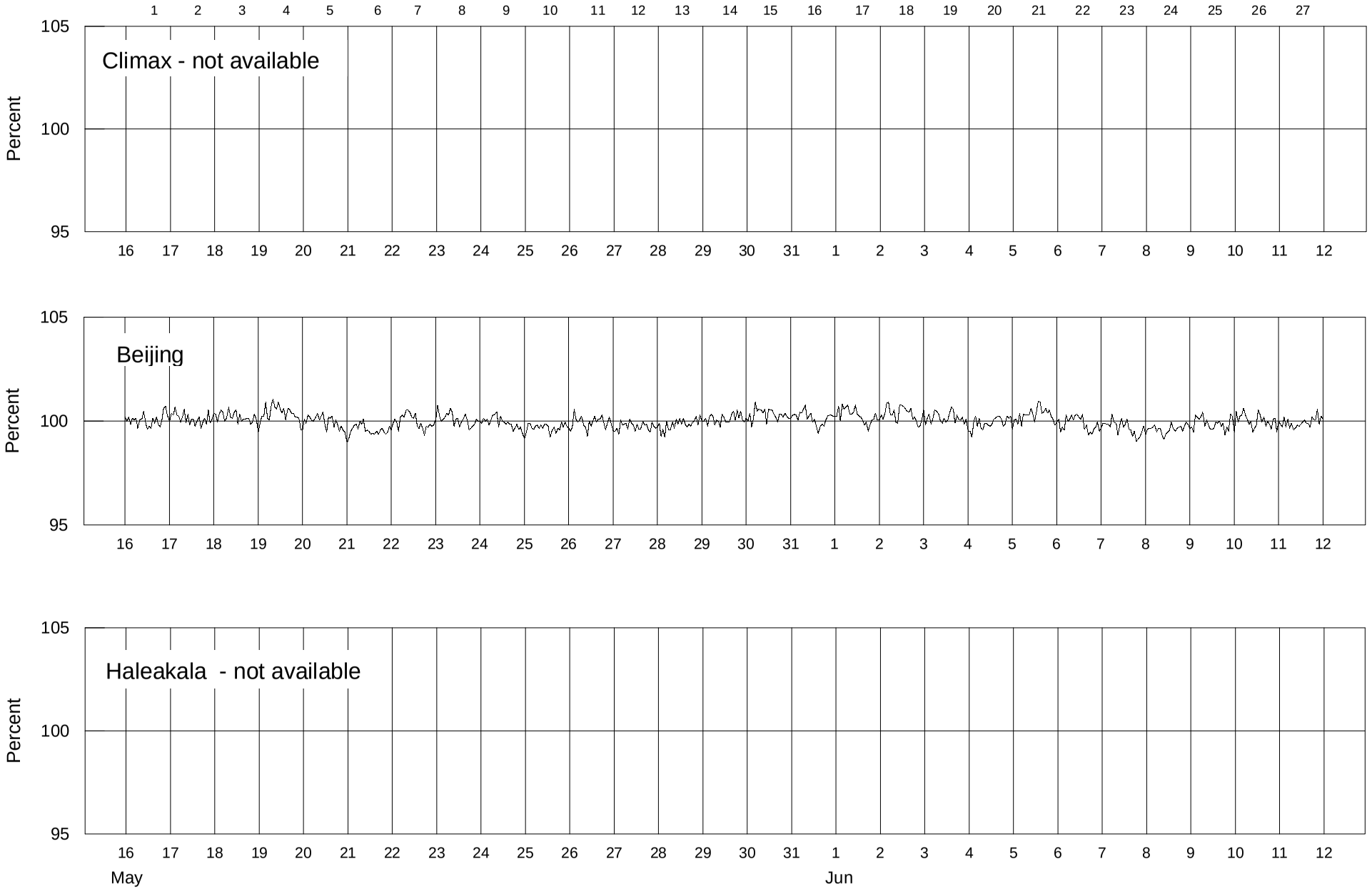
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2399 - Beginning 16 May 2009

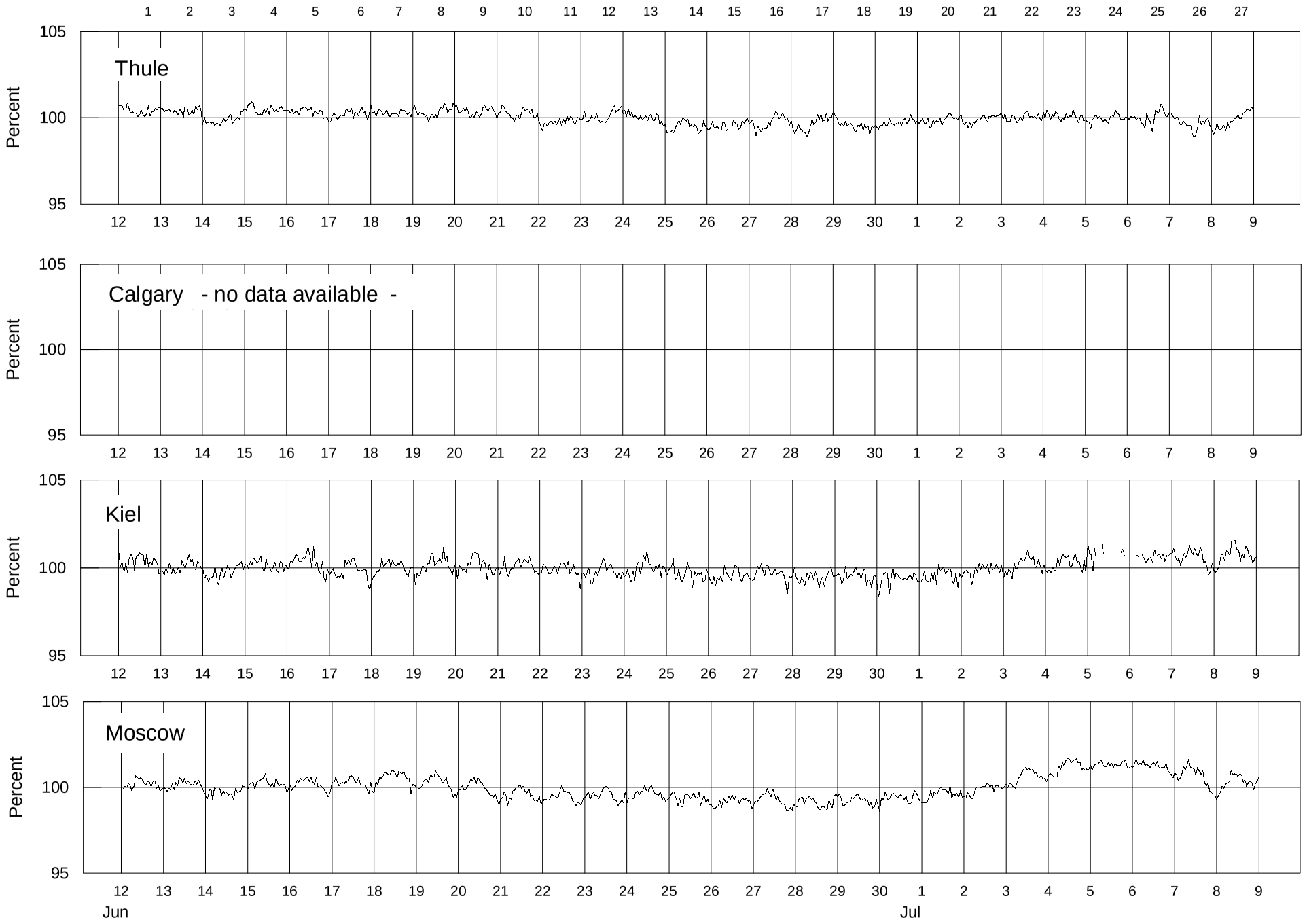


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2399 - Beginning 16 May 2009

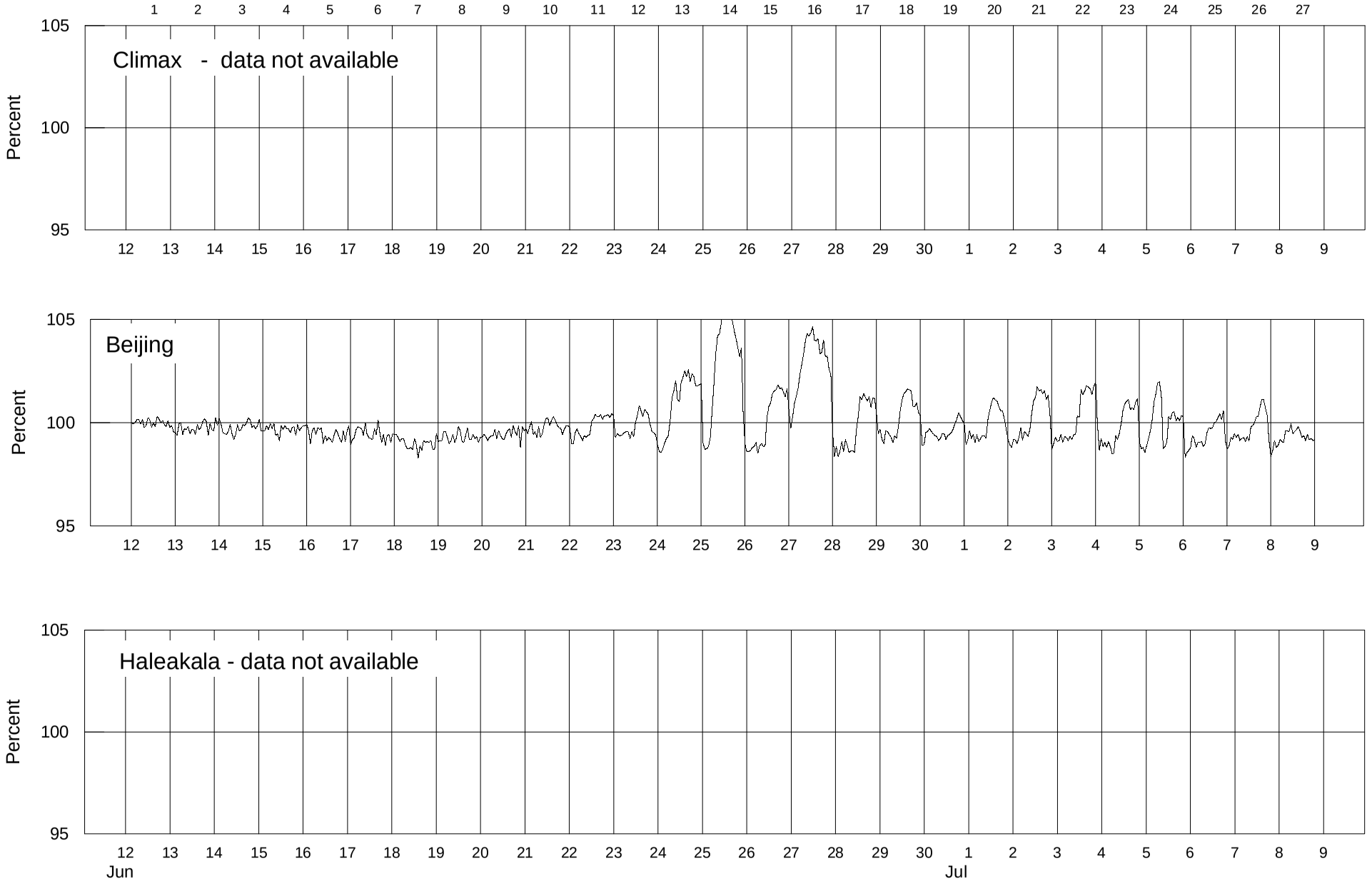


COSMIC RAY INDICES
(Neutron Monitor)

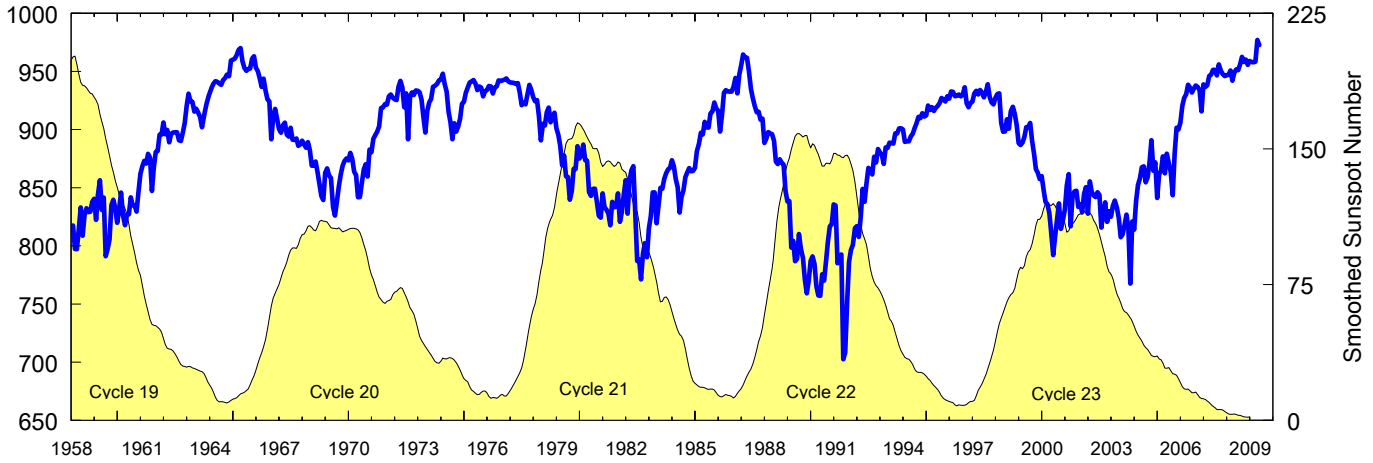
Bartels Rotation 2400 - Beginning 12 Jun 2009



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2400 - Beginning 12 Jun 2009



Moscow Neutron Monitor Pressure-Corrected Values
Jan 1958 - Jun 2009



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	8171*	8175*	7973*	7971*	8145*	8330*	8087*	8266*	8324*	8291*	8294*	8378*	8200*
1959	8405	8223	8443	8565	8309	8416	7911	7972	8054	8351	8397	8325	8281
1960	8199	8313	8459	8264*	8178*	8272*	8272*	8417	8348	8348	8295	8464	8319*
1961	8619	8682	8731*	8708*	8791*	8759*	8472	8676	8808	8816	8957	8956	8748*
1962	9061	8959	8996	8891	8964*	8974	8977	8977	8908	8902	8973	9056	8940*
1963	9201	9308	9243	9239	9154	9180	9147	9109	9020	9110	9194	9259	9180
1964	9321	9353	9395	9416	9410	9396	9384	9425	9442	9473	9458	9594	9422
1965	9602	9608	9642	9685	9701	9586	9530	9505	9520	9525	9608	9630	9595
1966	9531	9502	9439	9367	9438	9336	9261	9242*	8916	9105*	9178	9094	9284*
1967	9006	8973	9038	9059	8956	8940	9015	8913	8911	8924	8860	8873	8956
1968	8904	8875*	8844*	8892*	8825*	8690*	8689	8725	8635*	8533*	8428	8394	8703*
1969	8628	8666	8606	8584	8334	8261	8378	8510	8612	8689	8731	8751	8562
1970	8735	8799	8749	8639	8608	8418	8420	8540	8656	8702	8596	8827	8641
1971	8805	8921	8952	8982	9028	9185	9190	9219	9215	9285	9302	9276	9113
1972	9260	9254	9367	9419	9364	9192	9311	8916	9275	9319	9298	9336	9275
1973	9333	9321	9258	9107	8975	9160	9233	9263	9368	9376	9392	9423	9267
1974	9431	9481	9390	9327	9153	9062	8916	9054	8983	9027	9092	9222	9178
1975	9238	9317	9361	9405	9415	9425	9395	9339	9370	9361	9285*	9330	9353*
1976	9339	9375	9370	9310	9363	9371	9423	9418	9423	9428	9440	9415	9380
1977	9405	9404	9401	9392	9399	9318	9209	9236	9216	9302	9384*	9341	9334*
1978	9279	9243	9254	9113	8907	9050	9035	9149	9189	9062	9118	9145	9216
1979	9012	8955	8860	8693	8778	8599	8592	8396	8470	8662	8661	8857	8740
1980	8752	8776	8871	8737	8732	8463	8430	8490	8491	8379	8259	8242	8552
1981	8451	8330	8311	8277	8176	8379	8332	8338	8452	8206	8289	8439	8332
1982	8565	8277	8565	8649	8686	8279	7870	7882	7712	7931	8023	7902	8195
1983	8150	8253	8460	8460	8194	8343	8498	8492	8575	8625	8658	8670	8448
1984	8736	8686	8574	8505	8286	8421	8476	8590	8632	8669	8641	8644	8575
1985	8671	8813	8878	8973	8958	9066	9018	9017	9140	9155	9233	9183	9009
1986	9162	8982	9125	9316	9339	9328	9326	9327	9368	9444	9312	9472	9292
1987	9553	9646	9619	9618	9505	9349	9268	9202	9149	9153	9085	9094	9353
1988	8885	8922	8979	8968	8961	8904	8724	8704	8745	8716	8699	8474	8807
1989	8381	8385	7985	8043	7868	7888	8102	7977	7897	7709	7592	7701	7961
1990	7871	7910	7846	7652	7574	7569	7755	7701	7864	8037	8168	8185	7844
1991	8356	8347	7850	7915	7926	7025	7082	7510	7863	7964	8008	8153	7833
1992	8169	8078	8247	8490	8378	8535	8670	8649	8614	8767	8717	8833	8512
1993	8804	8784	8705	8846	8842	8888	8884	8880	8968	8968	9010	9011	8882
1994	9001	8895	8899	8898	8942	8963	9013	9055	9110	9098	9141	9112	9011
1995	9122	9206	9169	9193	9159	9186	9203	9228	9272	9257	9241	9286	9210
1996	9266	9328	9324	9287	9291	9302	9295	9302	9364	9226	9192	9227	9284
1997	9240	9311	9334	9302	9340	9318	9277	9322	9390	9281	9233	9217	9297
1998	9273	9306	9312	9057	8981	8983	9088	9007	9157	9196	9133	9036	9127
1999	8883	8867	8887	8937	9021	9018	9058	8904	8794	8660	8627	8574	8853
2000	8600	8481	8377	8358	8283	8107	7921	8081	8224	8365	8146	8215	8263
2001	8314	8521	8617	8168	8428	8468	8473	8334	8359	8289	8447	8505	8410
2002	8277	8555	8462	8434	8420	8462	8438	8157	8289	8374	8207	8297	8364
2003	8251	8344	8398	8329	8238	8075	8099	8178	8268	8150	7675	8209	8185
2004	8139	8385	8525	8580	8676	8684	8546	8589	8715	8909	8646	8718	8593
2005	8411	8614	8649	8770	8624	8792	8707	8632	8436	8793	9015	9001	8704
2006	9061	9204	9273	9303	9385	9361	9318	9353	9379	9367	9339	9156	9292
2007	9389	9367	9381	9461	9473	9513	9514	9465	9561	9506	9477	9460	9464
2008	9467	9472	9508	9420	9490	9518	9512	9560	9625	9581	9602	9556	9526
2009	9590	9581	9578	9584	9771	9726							9638

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

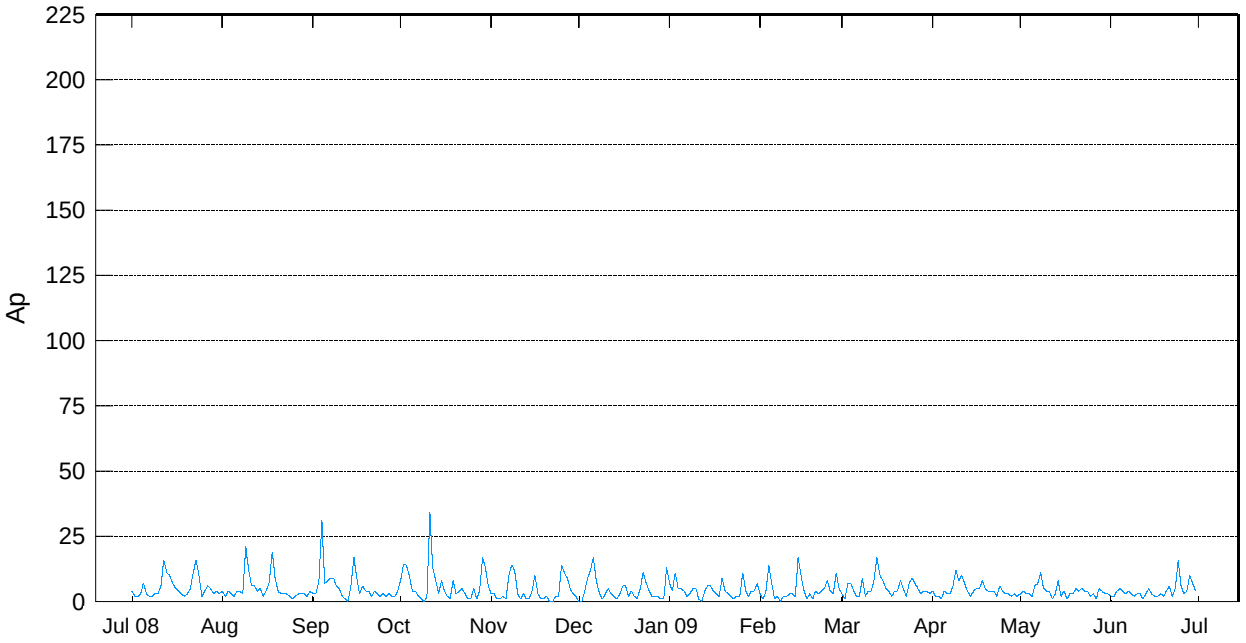
Geomagnetic Activity Indices

JUNE 2009

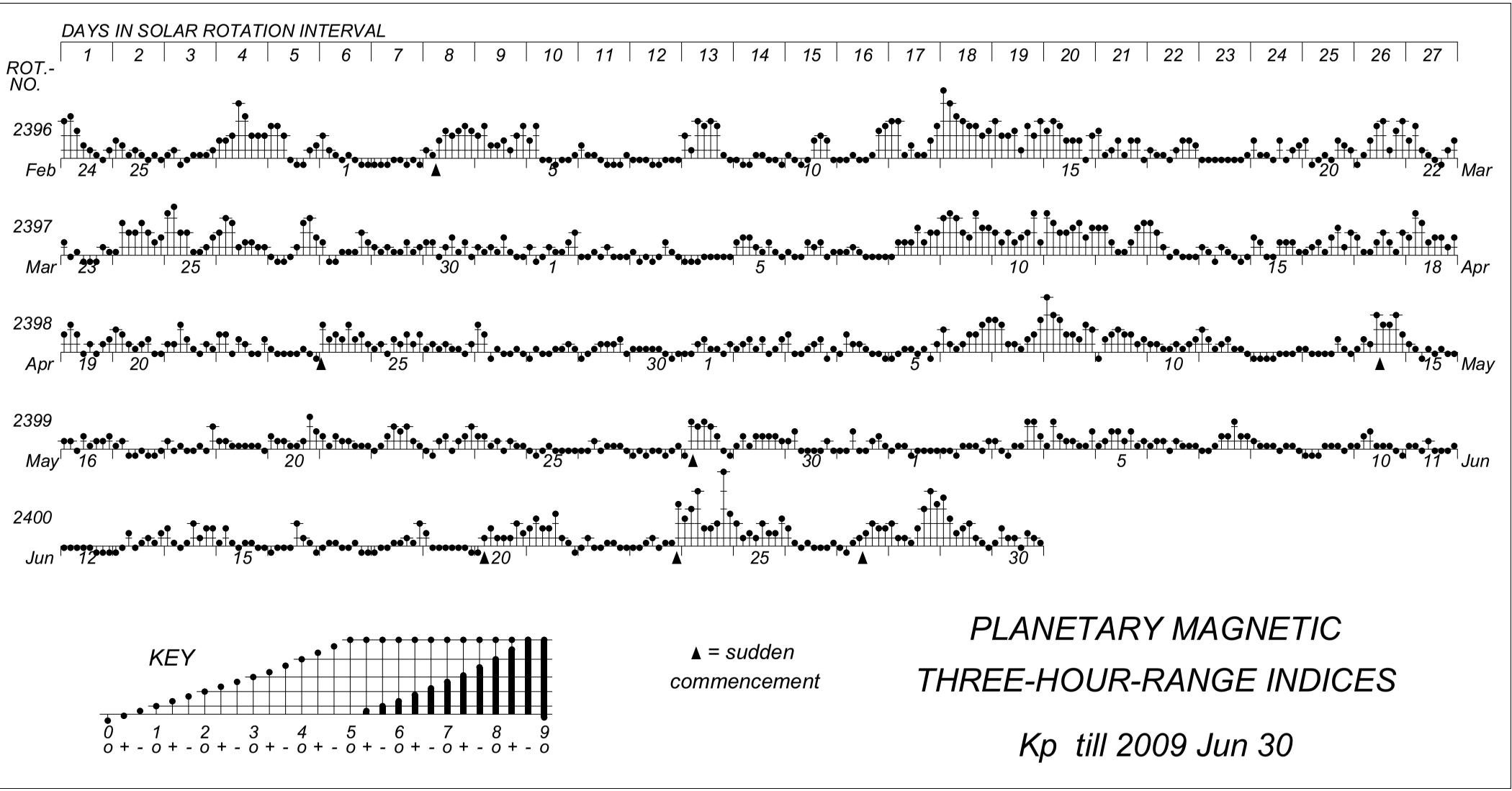
Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1	Q2	0+	1-	1-	0	0+	0+	0+	0+	3	2	0.0	0+	1-	0+	0o	0+	0o	0+	0+	2	6	2	4	4	CC
2	Q7	0+	0+	0	1-	1-	1-	0+	1	4	2	0.0	0+	0o	0o	1-	0+	0+	0+	1o	3	5	3	2	6	CC
3		1	0+	0	1-	1-	2+	2+	1+	9-	4	0.2	1o	0o	0o	1-	0+	2o	2o	2-	7	11	6	4	13	CC
4		1-	2+	1+	1	1	1-	1-	2-	9+	5	0.2	1-	3-	1+	1o	1o	1o	0+	2o	10	12	8	10	10	CC
5		1-	1	2-	2-	1	2-	1-	1	9+	4	0.2	1o	1o	2-	2+	1+	1+	0+	1o	9	9	8	8	9	CC
6		1-	1	1	0+	1	1-	1-	1-	6	3	0.1	1-	1+	1+	0+	1-	0o	1-	0+	5	6	6	6	6	CC
7		0+	0+	1-	1+	1+	2+	1+	1+	9	4	0.2	0+	0+	1o	1+	1o	2-	1+	1+	7	13	6	8	12	CC
8	Q9	1	1-	1-	1-	0+	1-	1-	0+	5	3	0.1	1+	1o	0+	0+	0+	0+	0+	0o	4	6	3	4	4	CC
9	Q4	0	0	0	1-	1-	1-	0+	1-	3	2	0.0	0o	0o	0o	1-	1-	1-	0o	0+	2	5	5	3	7	CC
10		1-	1+	2-	1-	1-	1-	0+	0	6	3	0.1	1-	1o	2-	0+	1-	0+	0o	0o	5	9	5	9	5	CC
11	Q8	1-	1-	0+	1	0+	0+	0+	1-	4+	3	0.0	1-	0+	0o	0+	0o	0+	0+	0+	2	6	2	4	4	CC
12	Q1	0+	0+	0+	0+	0+	0	0	0	2-	1	0.0	0o	0o	0+	0+	0o	0o	0o	0o	1	3	2	3	2	CC
13		0	0+	1+	0+	1-	1	1-	1+	6-	3	0.1	0o	0o	1+	0+	1-	1-	0+	1o	4	8	5	5	8	CC
14		2-	1-	0+	1-	2	1	2-	2-	10-	5	0.2	2-	0+	0+	1o	1+	1-	1+	2-	7	12	8	9	11	CC
15		1-	2-	1-	0+	1-	1-	0+	0+	5+	3	0.1	1o	2-	1o	0+	0+	1-	0o	0+	5	8	6	9	5	CC
16		0	0+	0+	0+	2	1	1-	0	5-	2	0.0	0o	0o	0o	1-	2-	1-	1-	0o	3	9	4	3	10	CC
17	Q3	0+	1-	1-	0+	0+	1-	0	0	3	2	0.0	0+	1-	0+	0+	0o	0+	0o	0o	2	7	2	5	5	CC
18		0	0+	0+	1-	1-	1	1-	2	6-	3	0.1	0+	0o	0+	1-	0+	1-	0+	1+	3	8	3	4	7	CC
19	Q6	1+	0+	0+	0+	0+	0+	0+	0	3+	2	0.0	1o	0+	0+	0+	0+	0+	0o	0o	3	6	2	4	4	CC
20		0	1	2-	1	1	1	2	1+	9	4	0.1	0o	1o	2-	1o	1-	1o	1+	1+	7	10	6	9	8	CC
21	D4*	2-	2+	2-	2-	3-	1	1-	0	12-	6	0.3	2-	3-	2o	1+	2+	1o	0+	0o	11	17	10	16	11	KC
22	Q5	0+	1	0+	0+	1-	1-	0+	0+	4	2	0.0	0+	1+	0+	0+	0+	0+	0+	0o	3	7	2	4	5	CC
23		0+	0+	1-	1	0+	1-	1-	3+	7+	5	0.2	0+	0+	1-	1+	0+	0+	0+	3-	6	10	5	4	11	C
24	D1*	2+	3	4	2-	2-	2	5	3-	22+	16	0.9	2+	3+	4-	2o	2-	2o	4-	3-	27	36	28	34	30	
25	D5*	2	1	1+	1	2	1+	1+	2+	12+	6	0.3	2+	2-	1+	2-	2+	1+	2-	3o	14	15	14	10	19	
26	Q10	2-	1-	0+	1-	0+	0+	0+	1-	5	3	0.1	2o	1+	1-	1-	0+	0o	0+	1-	5	7	5	7	5	CC
27		0+	0	1-	1	1+	2	2-	2-	9-	4	0.1	0+	0o	1-	1o	1+	2o	1+	1+	7	11	7	4	14	CC
28	D2*	2	1	1	1-	2-	3	4	3+	17-	10	0.6	2+	1+	1o	1o	2-	3-	4-	3o	19	21	24	10	35	
29	D3*	4-	2+	1+	2-	2	1	1-	0+	13	7	0.4	3+	3o	2-	2-	2o	1+	0+	0+	15	17	14	17	14	
30		1-	2-	1	1	0+	1+	1	1-	8-	4	0.1	1-	2o	1o	1+	0o	2-	1+	1-	8	8	9	9	8	CC
Mean											4	0.16									6.9	10.5	7.0	8.6		

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	1-	1o	1-	0+	0+	0+	0+	1-	4	0o	0+	0o	0o	0o	0o	0o	0o	0	74.6	11	15	19		
2	1-	0+	0o	1o	1-	1o	1o	2-	5	0+	0o	0o	0+	0o	0o	0o	0o	1	74.0	11	15	18		
3	1o	0+	0o	1o	1-	2+	2+	2-	9	1o	0o	0o	0o	0o	1+	1+	1+	4	74.6	10	14	19		
4	1o	2+	2-	1+	1+	1+	1-	2-	10	0+	3o	1o	1-	1-	1-	0o	2+	9	73.1	9	11	17		
5	1o	1+	2o	2+	1+	1+	1-	1+	10	1+	1-	1+	2+	1+	1o	0+	1o	8	72.2	8	3	16		
6	1-	1+	1+	0+	1o	0+	1-	1-	5	1-	1o	1+	0+	1-	0o	0+	0+	4	71.1	0	0	15		
7	0+	1-	1o	2-	2-	2+	1+	2-	9	0+	0+	1+	1o	1-	1-	1o	1o	5	71.0	0	0	15		
8	1o	1o	1-	1-	0+	1o	0+	0+	4	1+	1-	0+	0o	0o	0o	0o	0o	3	71.1	0	2	15		
9	0o	0o	0o	1o	1-	1o	0+	1o	4	0o	0o	0o	0+	0+	0+	0o	0o	1	71.2	0	1	15		
10	1o	1+	2o	1-	1+	1o	0+	0+	7	0+	0+	1+	0+	0+	0o	0o	0o	3	71.3	0	0	15		
11	1-	0+	0o	1o	0o	1-	1-	1-	4	0+	0+	0o	0o	0o	0o	0o	0o	1	71.4	0	0	15		
12	0+	0o	0+	0+	0+	0o	0o	0o	2	0o	0o	0o	0o	0o	0o	0o	0o	0	71.2	0	0	15		
13	0o	0+	2-	1-	1o	1+	1-	1+	6	0o	0o	1o	0o	0+	0+	0o	1-	2	70.4	0	0	14		
14	2+	0+	0+	1+	2o	1+	2-	2+	10	1o	0o	0+	1-	1o	0+	1+	1o	5	70.3	0	0	14		
15	1o	2-	1+	1-	1o	1+	0+	1-	7	1-	1+	1o	0o	0o	0o	0o	0o	2	69.5	0	0	13		
16	0o	0o	0o	1o	2+	1+	1+	0o	6	0o	0o	0o	0o	1o	0+	0o	0o	1	70.5	0	0	14		
17	1-	1-	1-	0+	0+	1o	0o	0+	4	0o	0+	0o	0o	0o	0o	0o	0o	1	70.0	0	2	14		
18	0+	0+	0+	1o	0+	1+	1o	2o	6	0o	0o	0o	0+	0o	0o	0o	1-	1	69.9	0	0	13		
19	2-	0+	0+	1-	1-	0+	0+	0+	4	0+	0o	0o	0o	0o	0o	0o	0o	1	69.2	0	0	13		
20	0o	1+	2+	2-	1+	1+	2+	2-	11	0o	1o	1+	1-	0o	0+	0o	0+	3	68.8	0	0	12		
21	2+	3-	2+	2o	3o	1+	1-	0+	15	1+	2+	2o	1-	2-	0+	0+	0o	8	69.2	7	2	13		
22	0+	2-	0+	1-	1-	1-	0+	0+	4	0+	1o	0o	0o	0o	0o	0o	0o	2	70.2	8	10	14		
23	0+	0+	1o	2-	1-	1-	1-	3+	9	0o	0o	0o	1-	0o	0o	0o	2o	3	70.2	7	9	14		
24	3-	4-	4o	3-	2o	3-	4o	3-	34	2+	3o	3o	2-	1-	1+	3o	2+	20	69.1	8	9	13		
25	2+	2-	1+	2o	3-	1+	2-	2+	14	2+	1+	1+	1o	2o	1o	1+	3+	14	70.3	0	2	14		
26	2-	1+	1+	1-	0+	0+	1-	1+	6	2+	1o	0o	0+	0o	0o	0o	0+	4	69.0	0	0	13		
27	0+	0o	1o	1+	2o	2+	2-	2-	10	0+	0o	0o	1-	0+	1+	1o	1o	4	69.3	0	0	13		
28	2o	2-	1+	1+	2o	3o	4-	3o	21	2+	1+	1-	1-	1o	2+	4o	3o	18	69.2	0	0	13		
29	3+	3-	2-	2o	2+	1+	1-	0+	15	4-	3+	2-	2-	2-	1+	0o	0o	16	70.8	0	0	14		
30	1-	2o	1o	1+	0+	2-	1+	1-	8	0+	2+	1o	1o	0o	2-	1+	0+	7	70.5	0	0	14		
Mean									8.8									5.0	70.8	2.6	3.2	14.5		

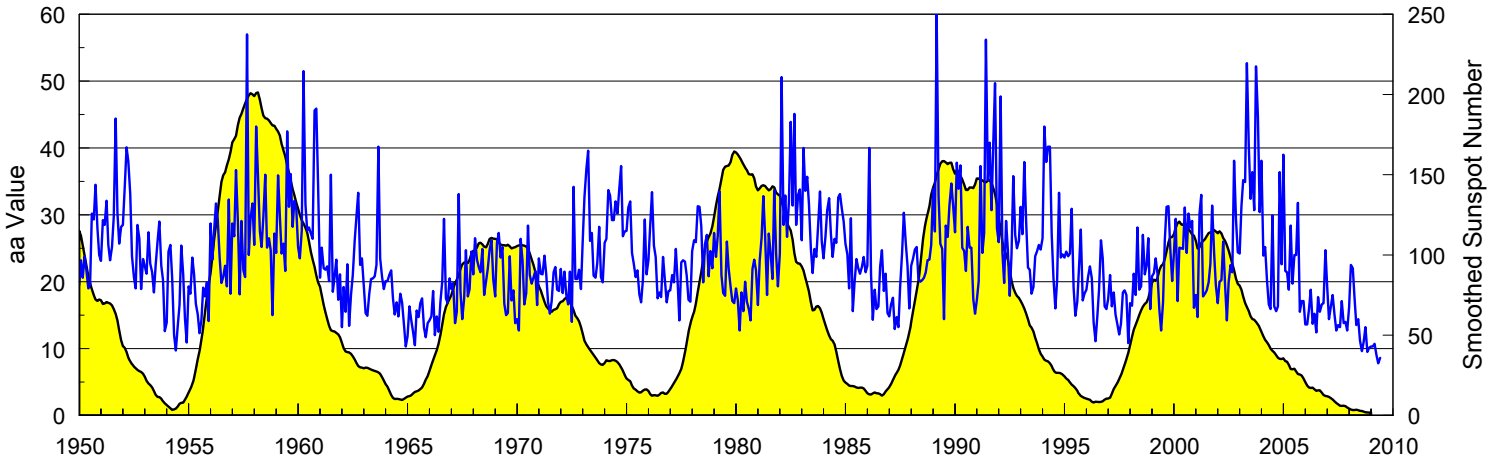
Daily Average Indices Ap
May 2008 - Jun 2009



Day	Jul 08	Aug	Sep	Oct	Nov	Dec	Jan 09	Feb	Mar	Apr	May	Jun
1	4	4	3	8	3	0	7	3	3	4	3	2
2	2	2	3	14	3	0	4	1	1	2	4	2
3	2	4	8	14	1	4	11	4	7	2	3	4
4	3	3	31	10	1	9	5	14	7	1	3	5
5	7	2	7	4	2	12	5	7	4	4	2	4
6	3	4	8	4	1	17	4	1	2	3	6	3
7	2	4	9	2	10	8	2	2	2	3	7	4
8	2	3	9	1	14	3	3	0	9	6	11	3
9	3	21	6	0	12	1	5	2	2	12	5	2
10	3	12	5	2	3	3	5	2	4	8	4	3
11	6	6	2	34	1	5	1	3	4	10	4	3
12	16	6	1	13	3	3	0	3	8	7	1	1
13	11	4	0	8	1	2	4	2	17	4	3	3
14	10	5	6	3	1	1	6	17	10	2	8	5
15	7	2	17	8	4	3	6	10	8	4	2	3
16	5	4	9	4	10	6	4	4	5	5	4	2
17	4	7	3	2	3	6	3	1	4	5	1	2
18	3	19	6	1	1	2	2	3	2	8	3	3
19	2	9	4	8	1	4	9	1	4	5	3	2
20	3	4	4	3	2	2	4	4	4	4	5	4
21	5	3	2	4	0	1	3	3	8	4	4	6
22	11	3	4	5	0	5	2	4	5	4	5	2
23	16	3	3	3	2	11	1	5	2	2	4	5
24	10	2	2	1	2	7	2	8	7	6	4	16
25	2	1	3	1	14	4	2	4	9	4	2	6
26	4	2	2	5	11	2	11	3	7	3	3	3
27	6	3	3	1	9	2	4	11	5	3	1	4
28	5	3	2	4	5	2	2	5	3	2	5	10
29	3	3	2	17	3	1	4		4	3	4	7
30	4	2	4	13	2	1	4		4	2	3	4
31	3	4		6		13	7		3		3	
Mean	5	5	6	7	4	4	4	5	5	4	4	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.
2396
Feb 24 25 1 5 10 15 20 22 Mar
2397
Mar 23 25 30 1 5 10 15 18 Apr
2398
Apr 19 20 25 30 1 5 10 15 May
2399
May 16 20 25 30 1 5 10 11 Jun
2400
Jun 12 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 2009 Jun 30

Monthly Mean aa Index Jan 1950 - June 2009



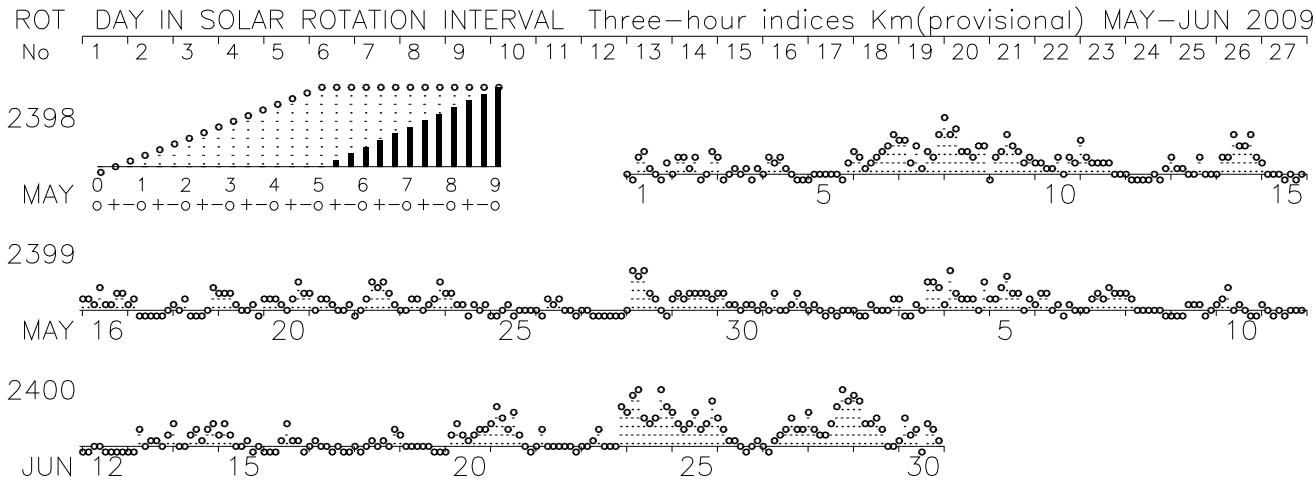
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1	18.8	19.3	27.0	21.1	22.4	26.5	15.9	21.0
1999	20.8	21.3	23.5	21.3	15.8	12.7	16.9	26.2	31.2	31.3	25.1	20.1	22.2
2000	24.2	29.4	17.1	25.1	25.0	24.9	31.1	24.3	30.2	28.1	29.1	16.1	25.4
2001	18.0	14.7	30.2	33.0	17.8	18.2	18.7	19.9	22.7	31.4	24.4	19.5	22.4
2002	16.8	20.0	20.2	26.0	19.9	14.2	19.9	22.5	21.4	38.1	29.3	24.4	22.7
2003	24.2	31.3	35.2	34.9	52.7	40.2	32.4	36.4	30.7	52.2	44.7	30.4	37.1
2004	38.1	23.9	25.2	20.1	16.6	15.9	29.9	16.3	15.6	16.3	36.4	22.6	23.1
2005	39.0	21.6	21.4	18.8	28.4	19.7	24.0	24.0	31.8	15.5	17.1	17.1	23.2
2006	13.6	13.6	15.8	18.8	13.7	15.2	12.4	17.7	15.5	16.6	16.8	24.7	16.2
2007	19.2	14.4	16.3	18.0	15.0	12.7	13.5	13.2	17.1	13.8	14.0	12.7	15.0
2008	16.2	22.5	22.0	17.5	13.5	14.4	11.2	9.6	11.0	13.2	9.5	10.1	14.2
2009	10.3	10.3	10.7	9.0	7.8	8.6							9.5

PLANETARY GEOMAGNETIC ACTIVITY

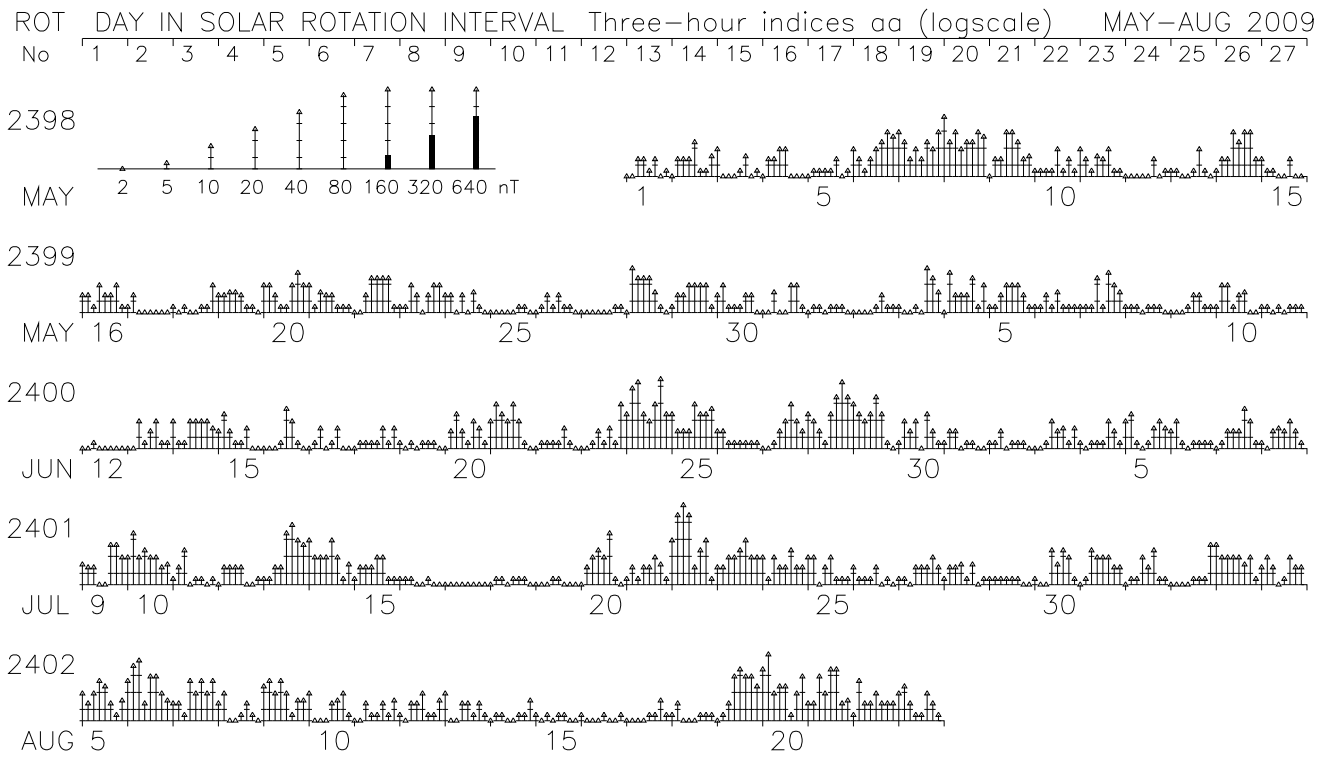
3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

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.

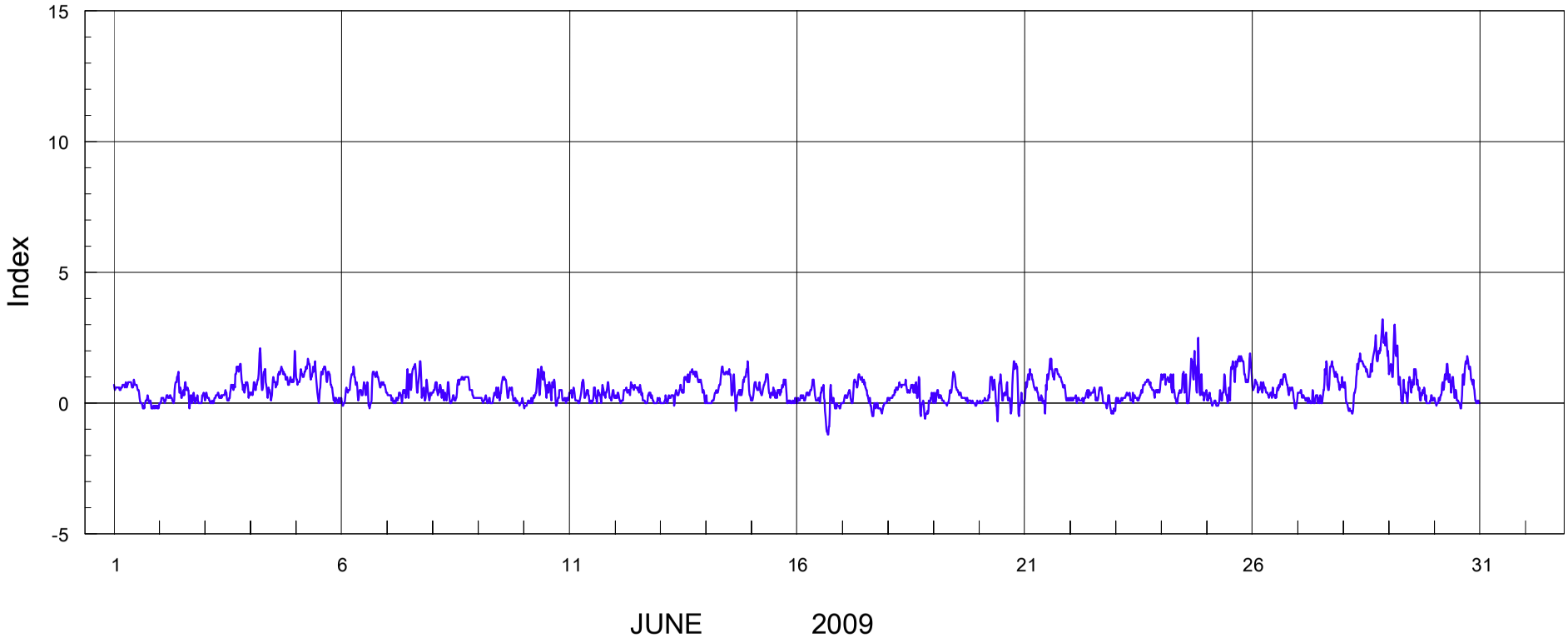


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

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

JUNE 2009

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Hour Day	End Hour (UT)
HYB	07.6N	20	0452	SC	- 0.2	11	1	21(2,3,5)	3	6	74	17	22	04
GNA	43.0S	20	0451	SC	7.7	6.2	7.1		-	--	--	---	--	--
CAN	43.6S	20	0451	SC	3.2	9.8	1.5		-	--	---	---	--	--
JAI	17.4N	23	2200	..	..	..	..		-	7	112	36	24	23
NGP	11.3N	23	2200	..	..	..	..		-	5	119	20	24	23
ABG	09.4N	23	2200	..	..	..	..	24(2,3,7)	5	6	122	37	24	23
VSK	08.3N	23	2200	..	..	..	..			5	120	23	24	23
HYB	07.6N	23	0800	..	..	..	..	24(2,3,7)	5	6	122	29	26	06
PND	02.0N	23	2200	..	..	..	..		-	4	120	49	24	23
TIR	00.6S	23	2200	..	..	..	..		-	4	146	91	24	23
JAI	17.4N	27	1200	..	..	..	..		-	6	76	44	29	20
NGP	11.3N	27	1200	..	..	..	..		-	5	79	31	29	20
ABG	09.4N	27	1200	..	..	..	..	28(7),29(3,4)	4	5	73	39	29	20
VSK	08.3N	27	1200	..	..	..	..			5	81	29	29	20
HYB	07.6N	27	0600	..	..	..	..	28(7)	4	5	77	27	29	20
PND	02.0N	27	1200	..	..	..	..		-	-	76	34	29	20
TIR	00.6S	27	1200	..	..	..	..		-	4	101	46	29	20

Stations:

ABG = ALIBAG
CAN = CANBERRA
GNA = GNANGARA
HYB = HYDERABAD
JAI = JAIPUR
NGP = NAGPUR
PND = PONDICHERRY
TIR = TIRUNELVELI
VSK = VISAKHAPATNAM

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

JUNE 2009

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
20	0451	A: GNA* CNB*	06	0648-0701	NAG
		B: GUI			
		C: NGK* BDV* NAG* SPT HYB			

REPORTING OBSERVATORIES (up to 03-08-2009):
SOD LER ESK NGK VAL HAD DOU BDV HRB NAG GCK MMB EBR SPT KAK KNY GUI HYB GNA CNB

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

Note that we have included data of the Antartic Station LIVINGSTONE (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.