MARCH 2004 NUMBER 715 - Part I

Solar-Geophysical Data prompt reports

Data for January and February 2004
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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Data for January and February 2004

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

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SOLAR-GEOPHYSICAL DATA

Number 715

(Issued in Two Parts)

Editor: Helen E. Coffey

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Solar-Terrestrial Physics Division

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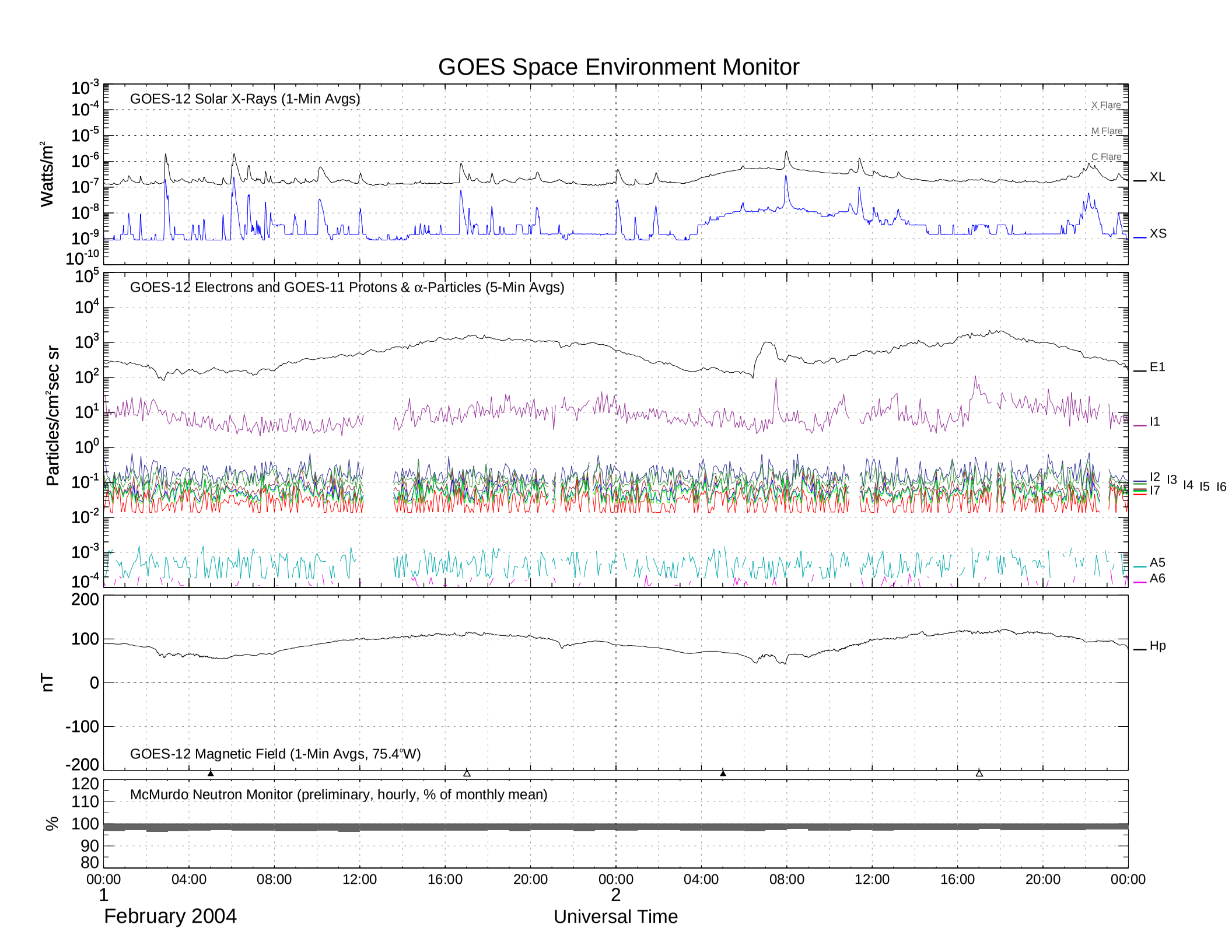
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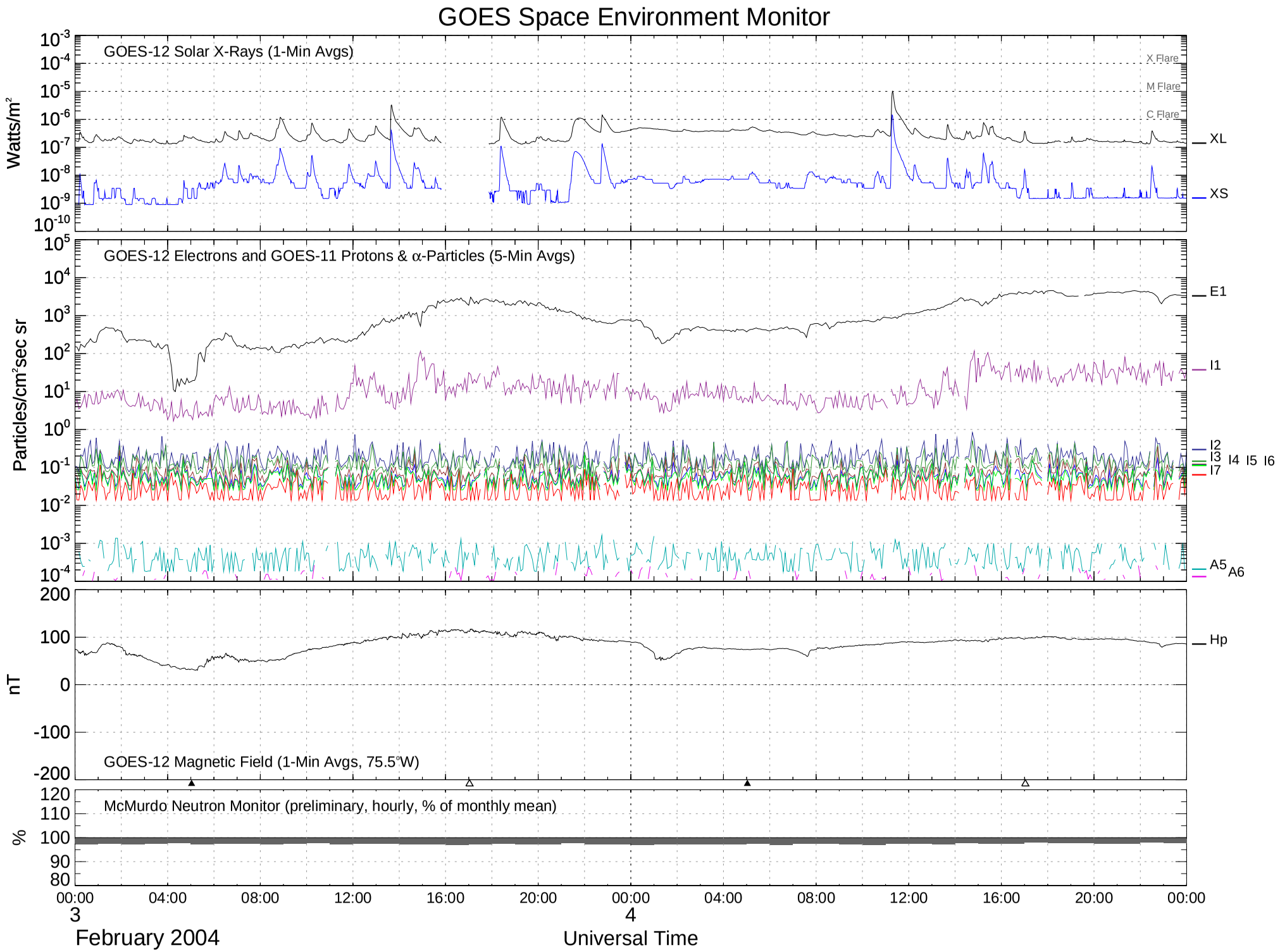
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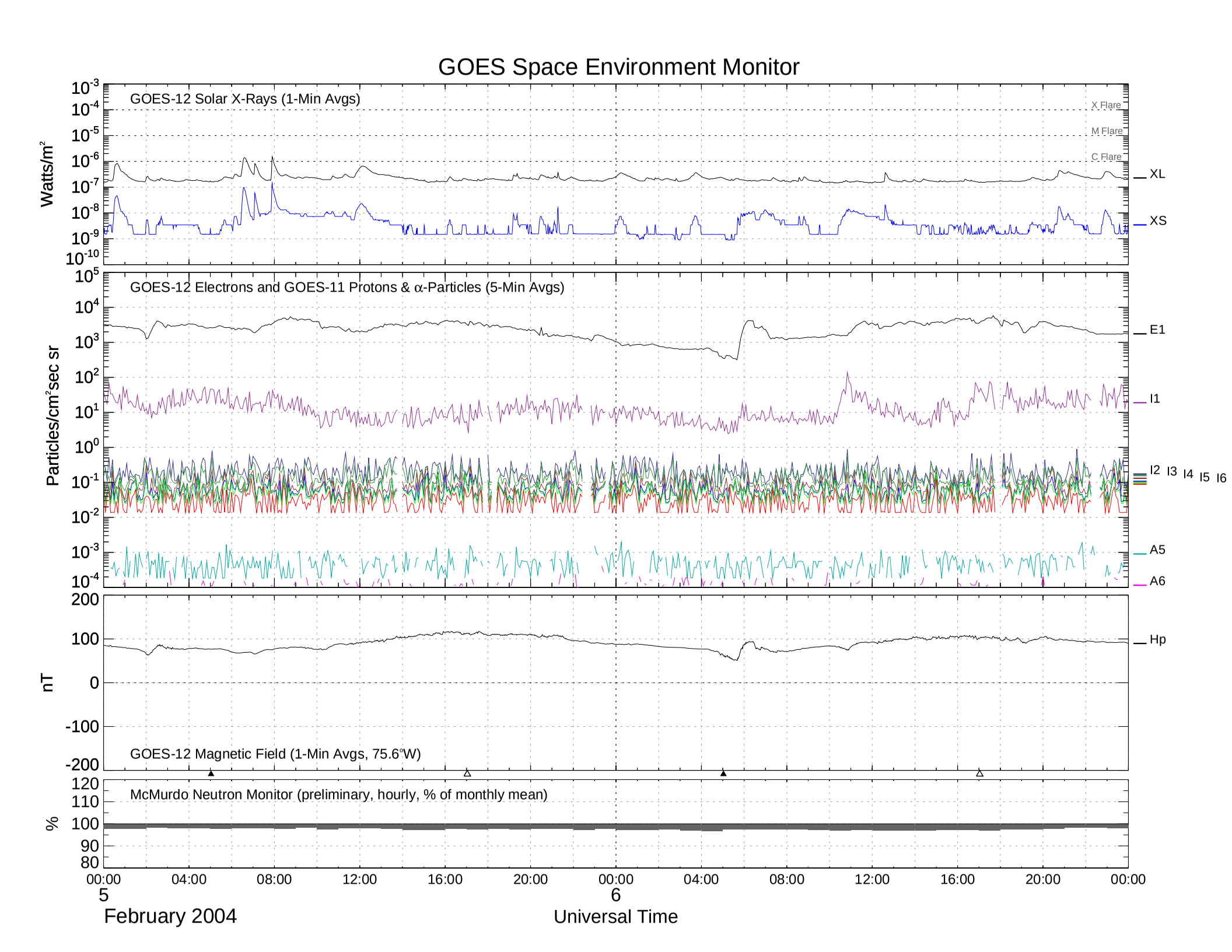
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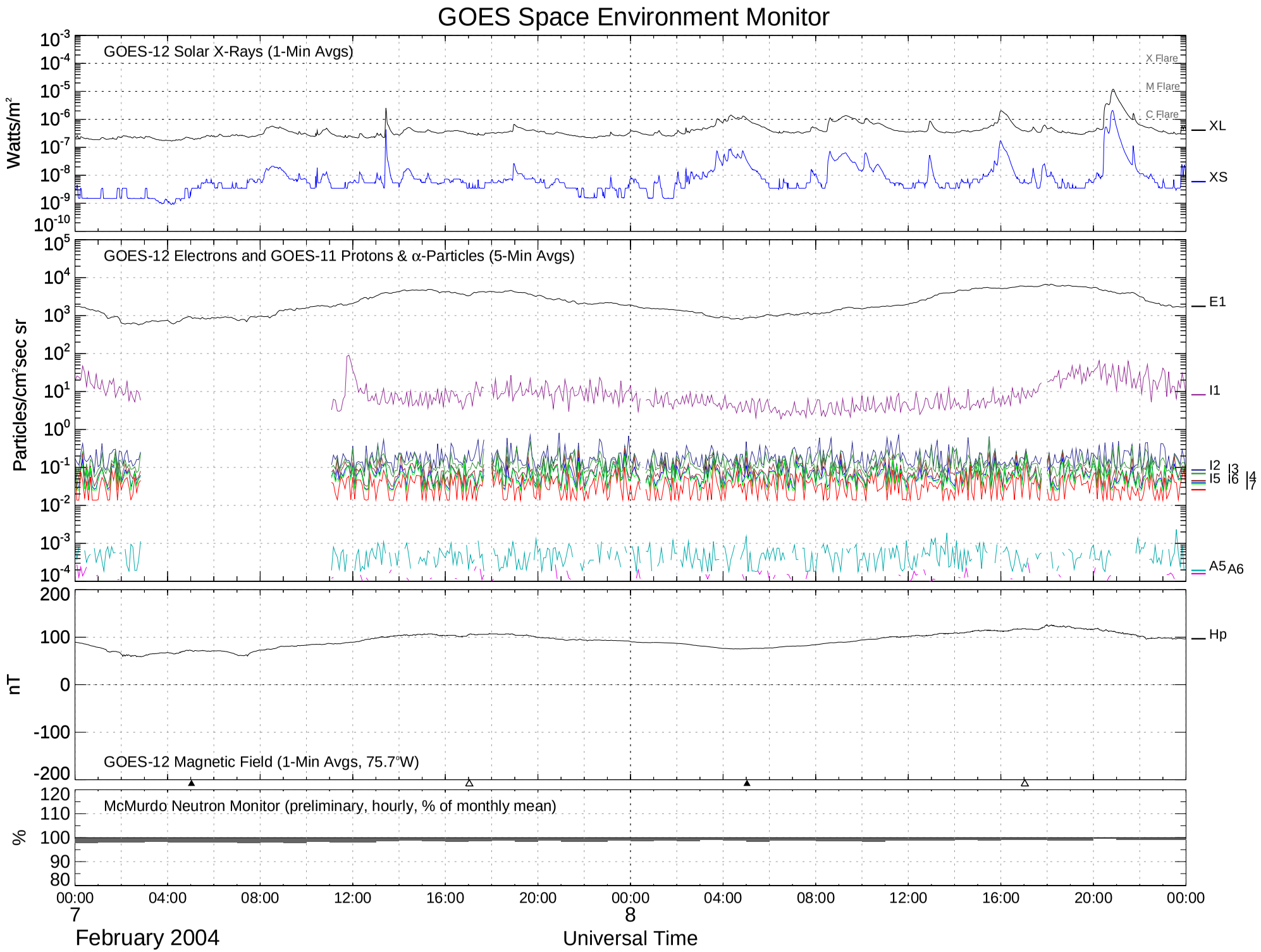
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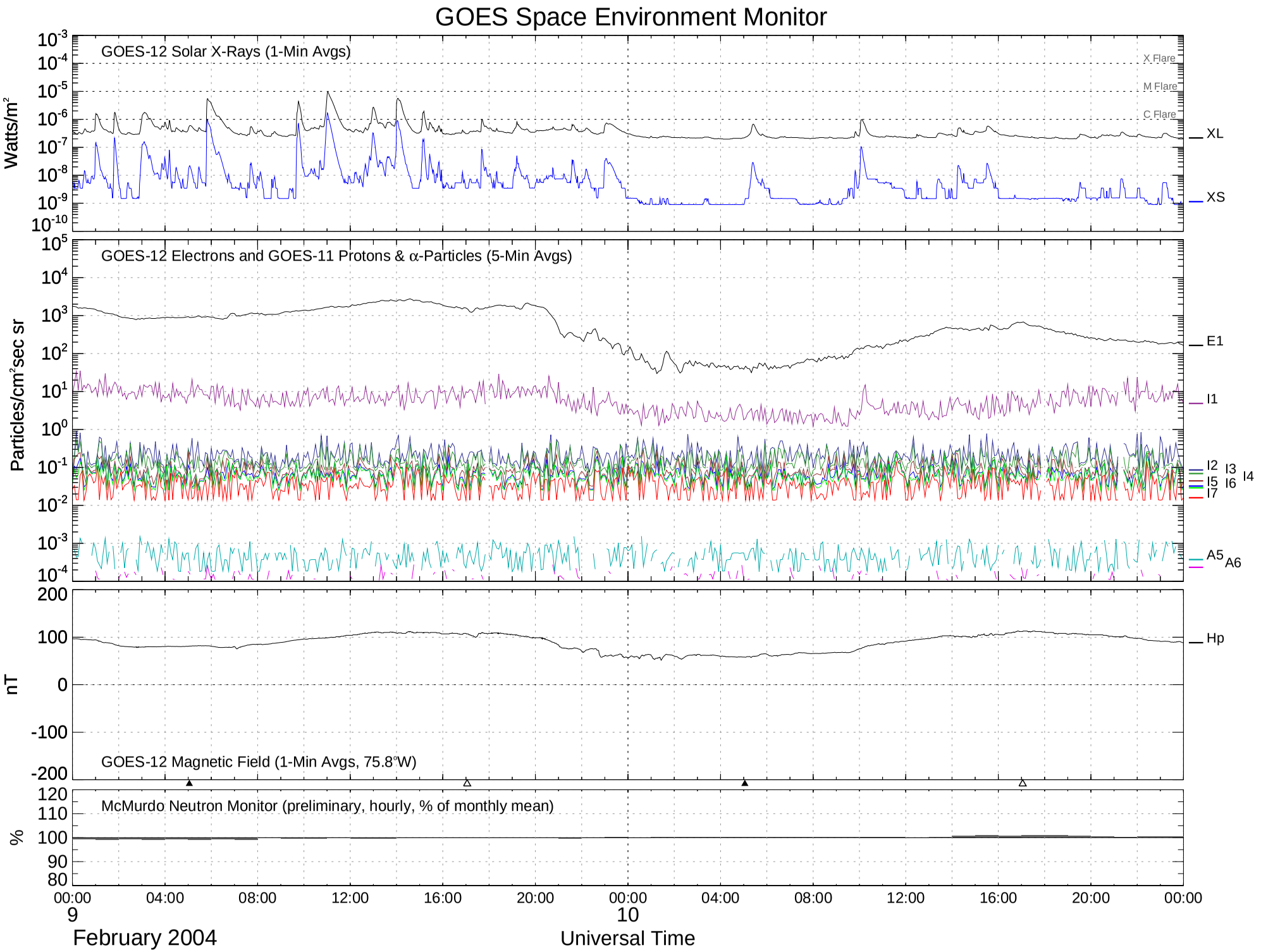
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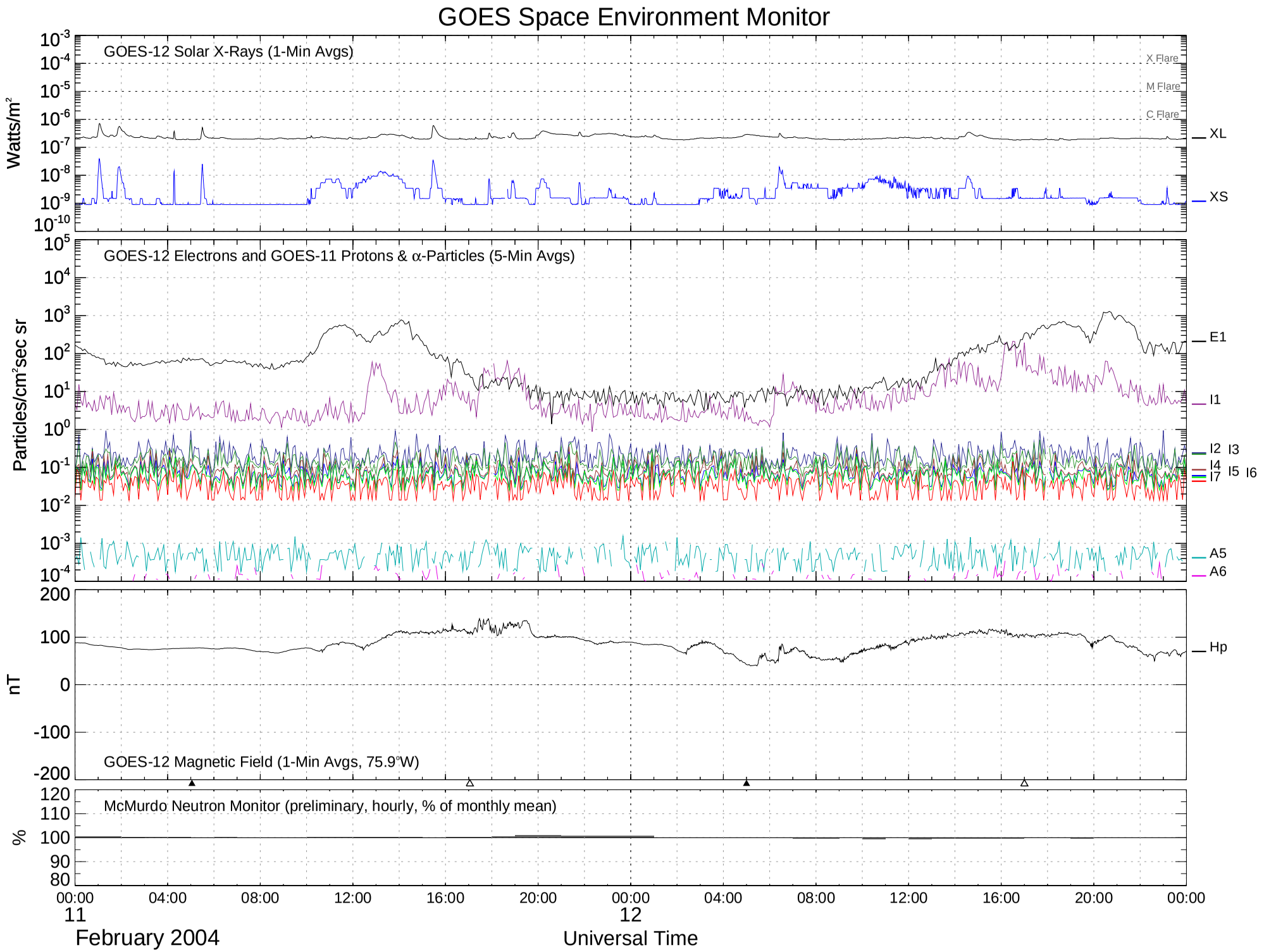
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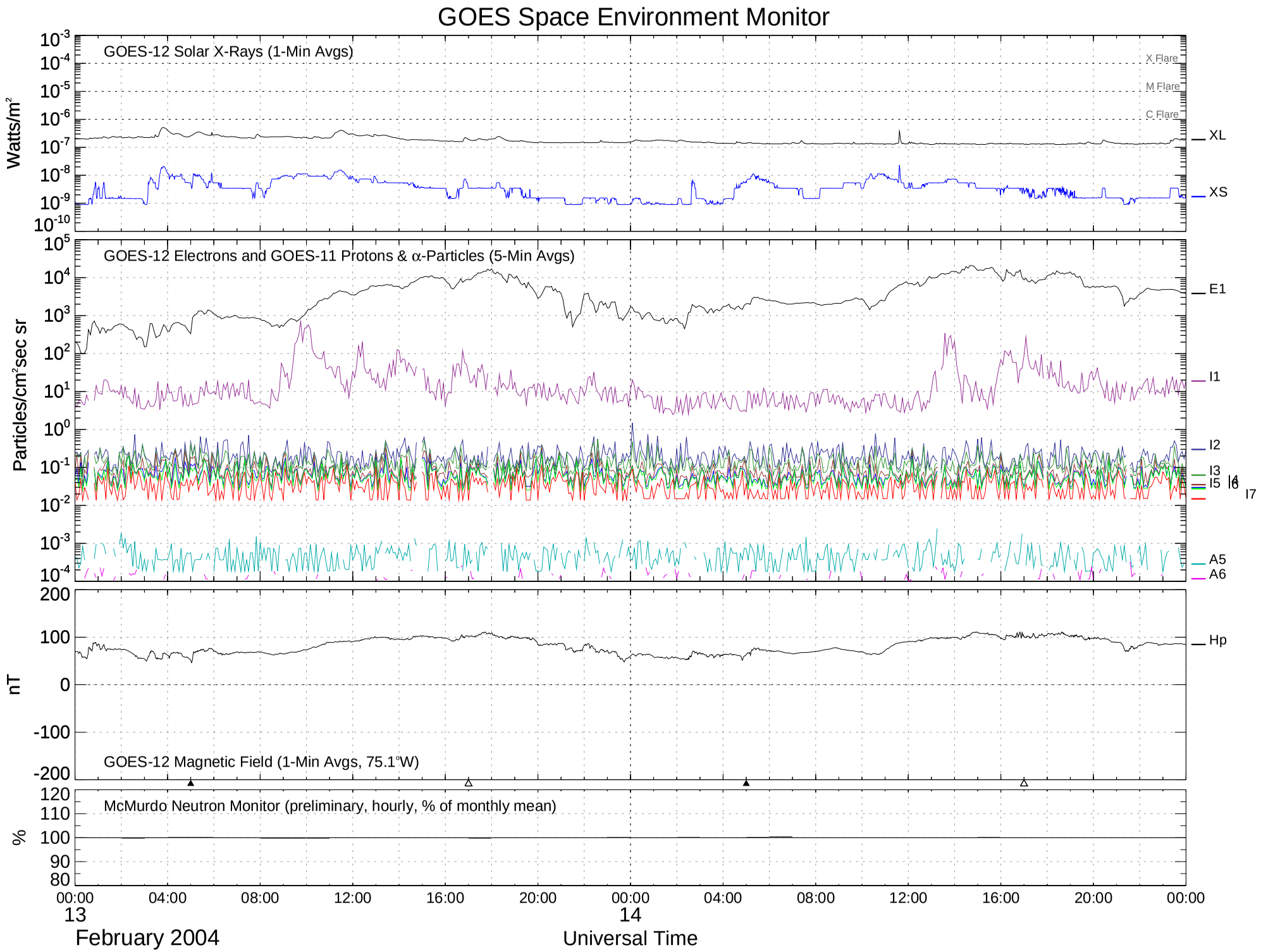
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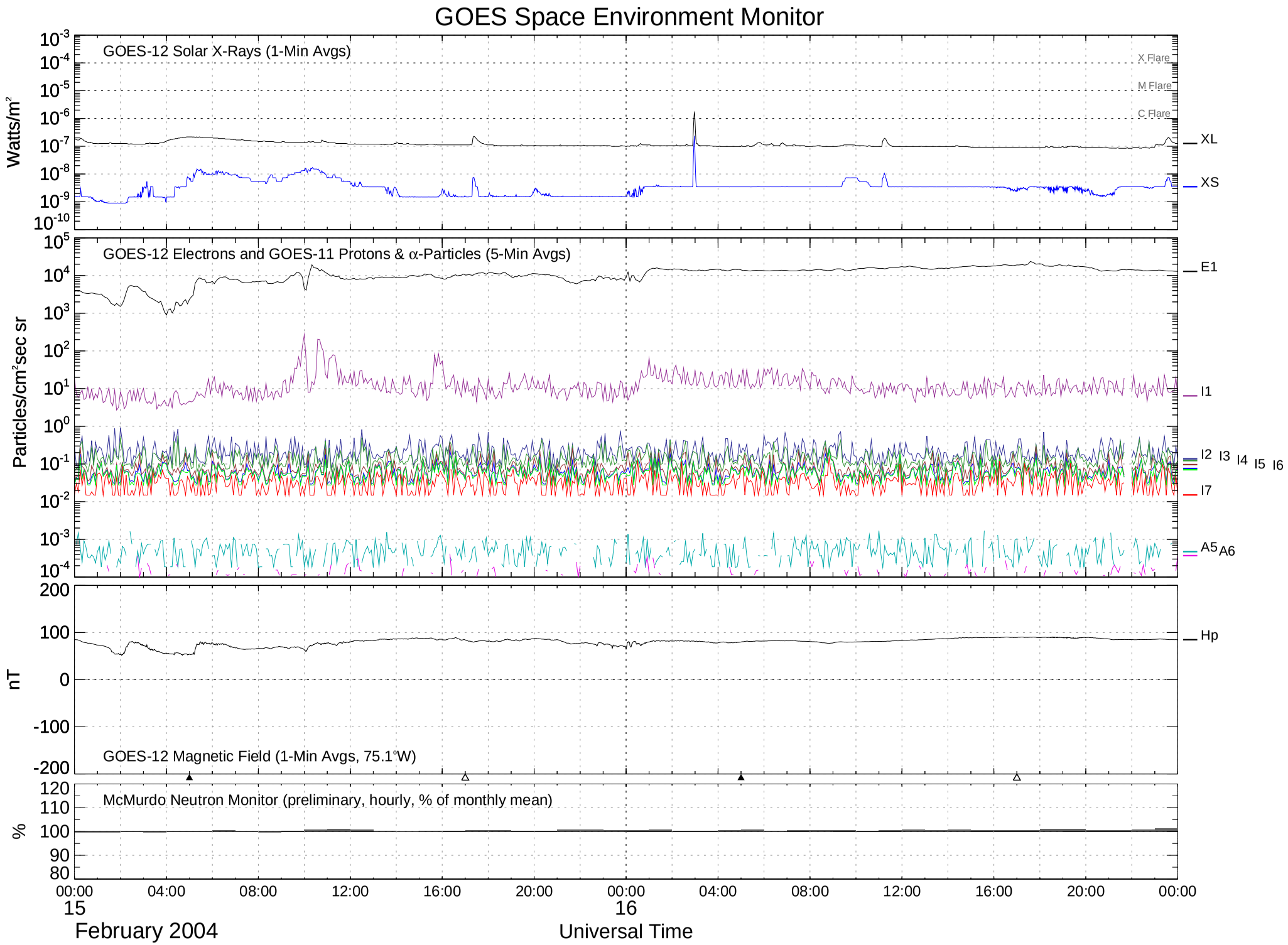
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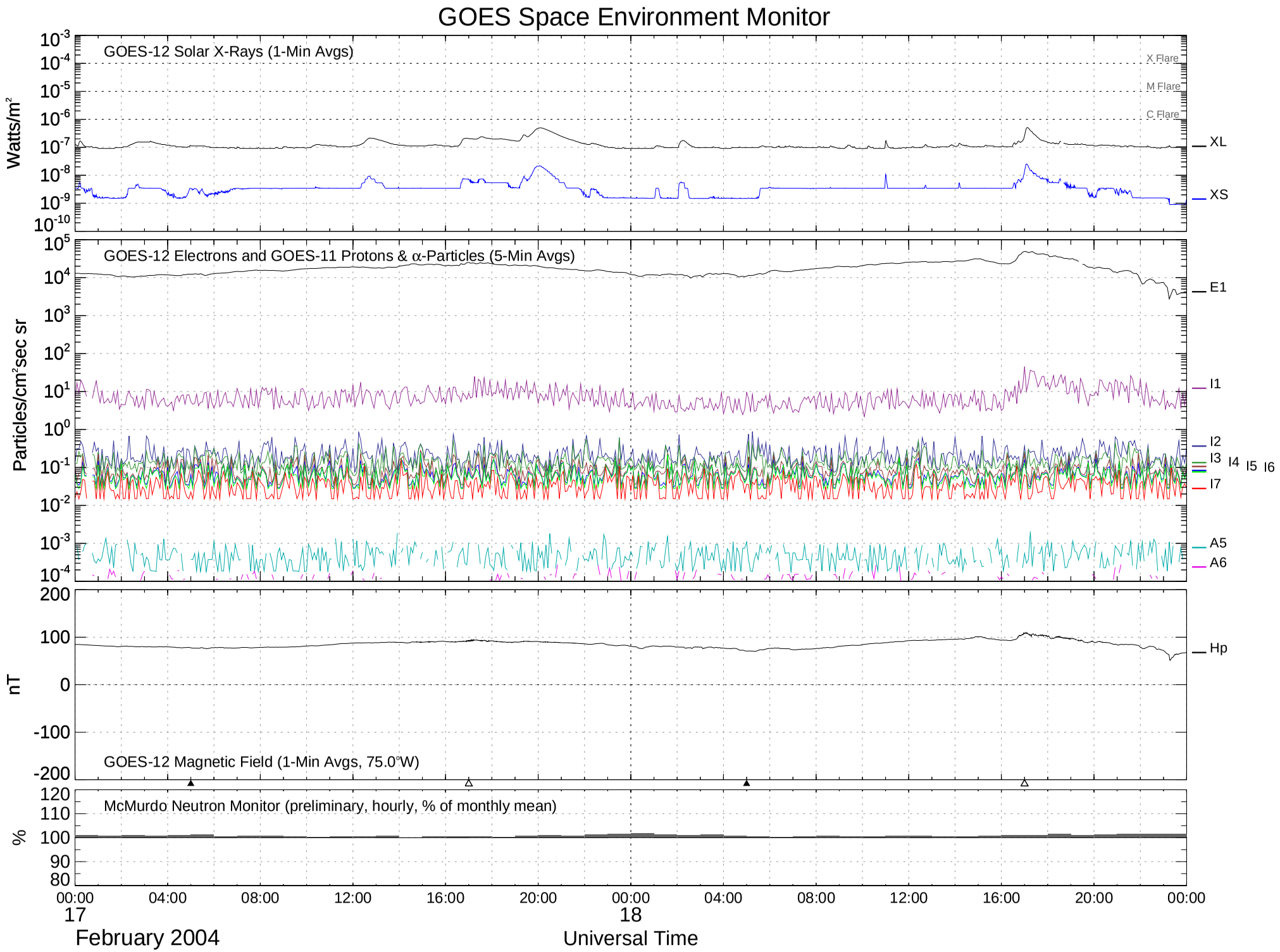
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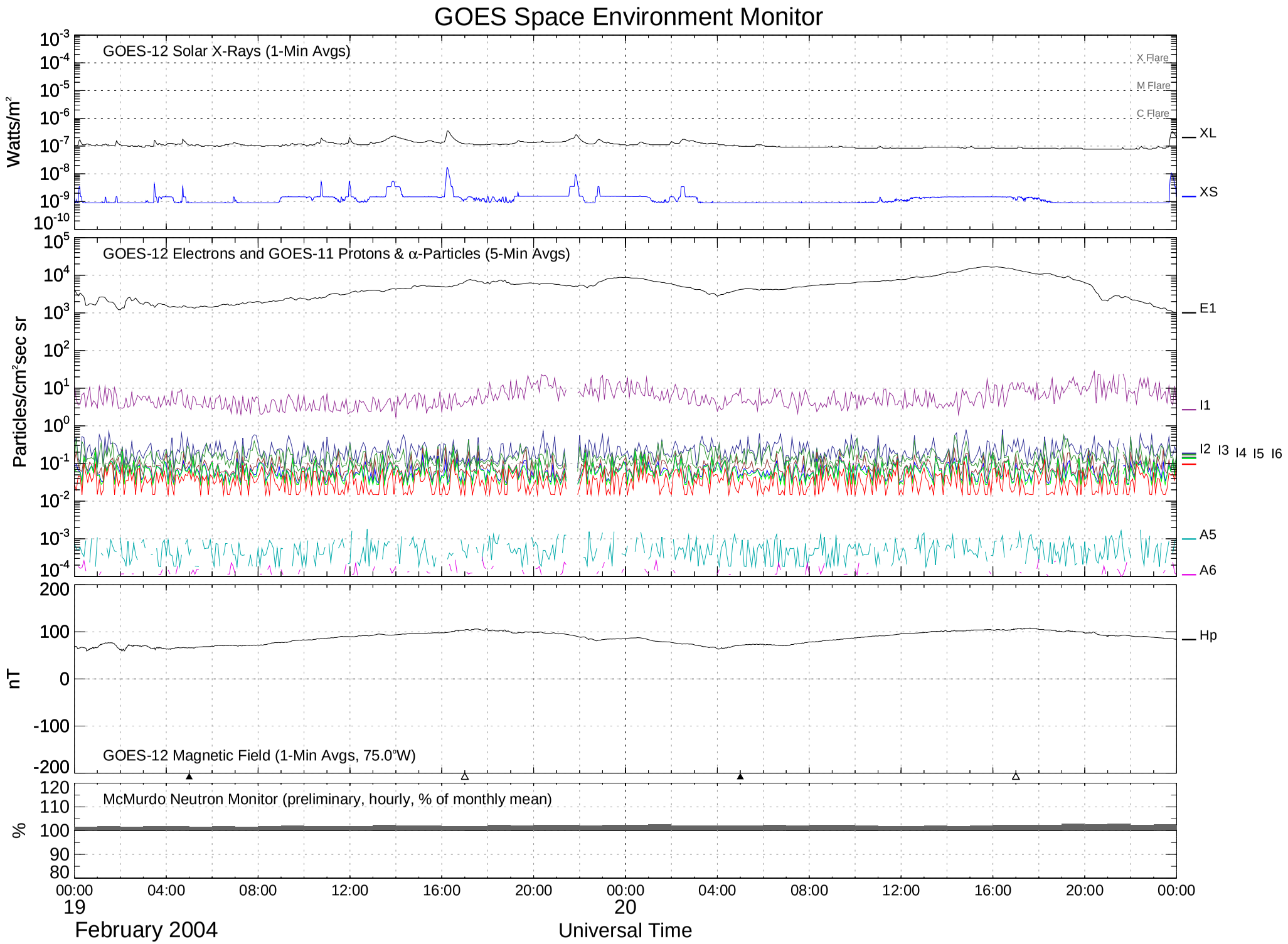
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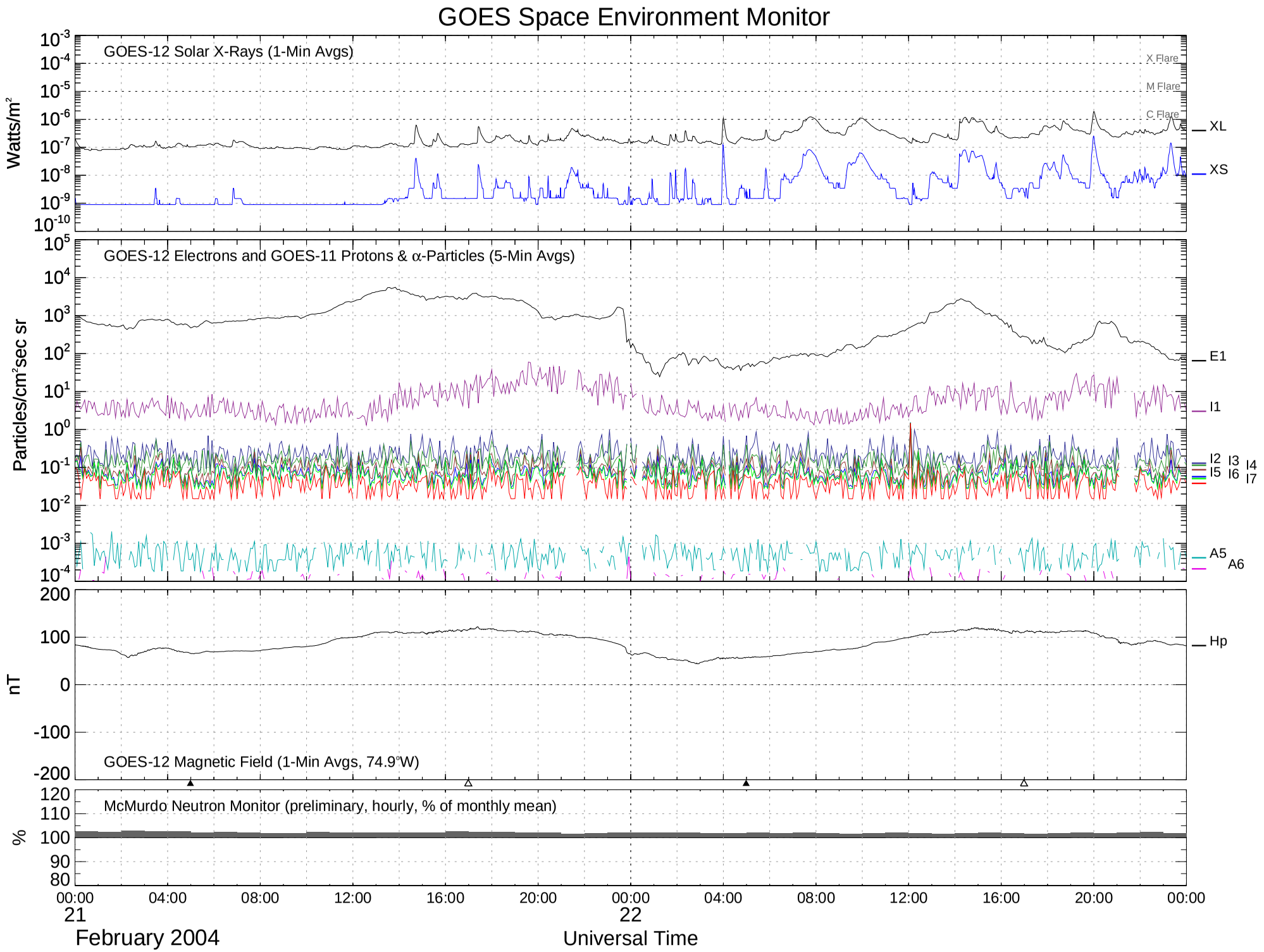
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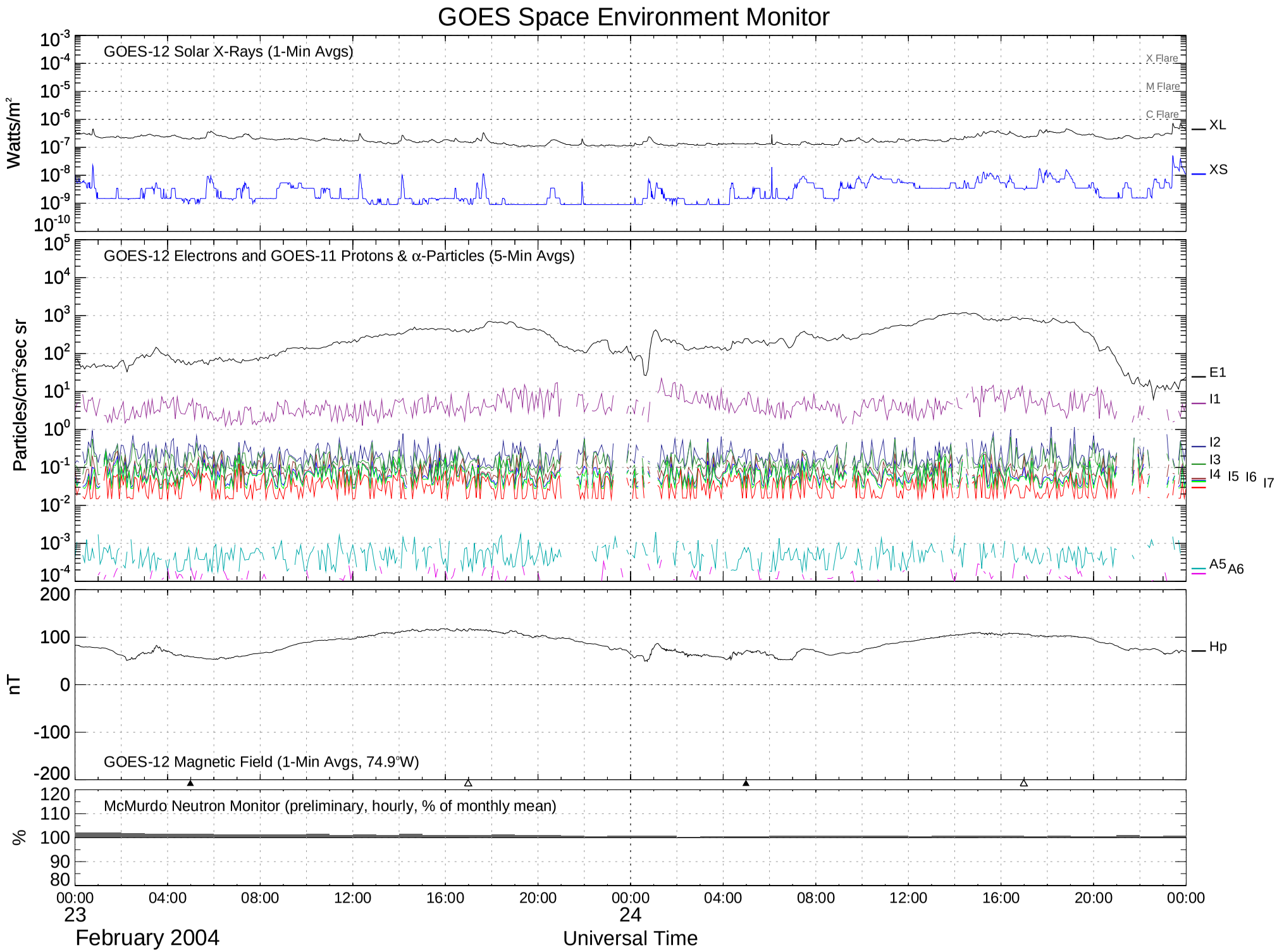
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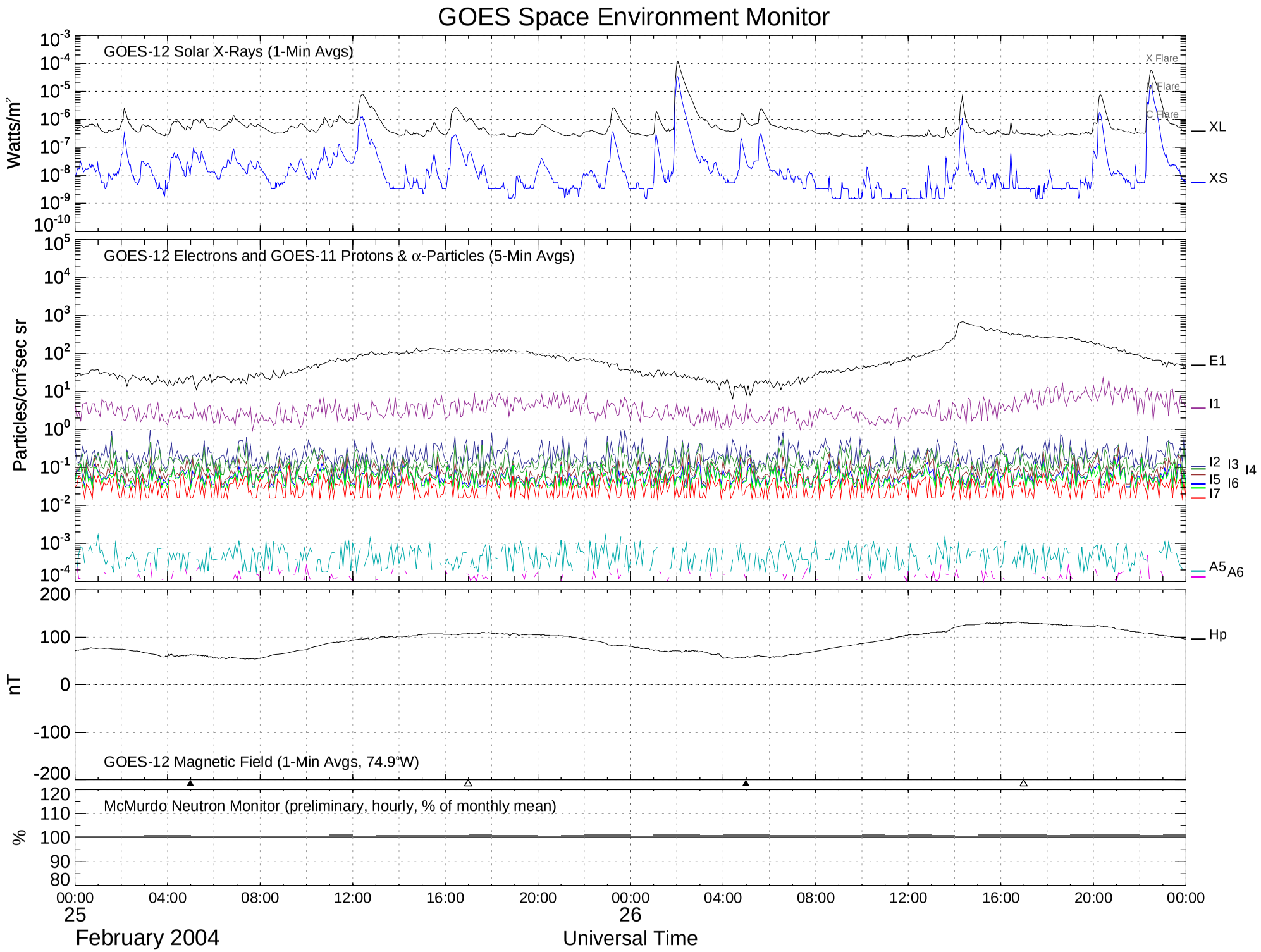
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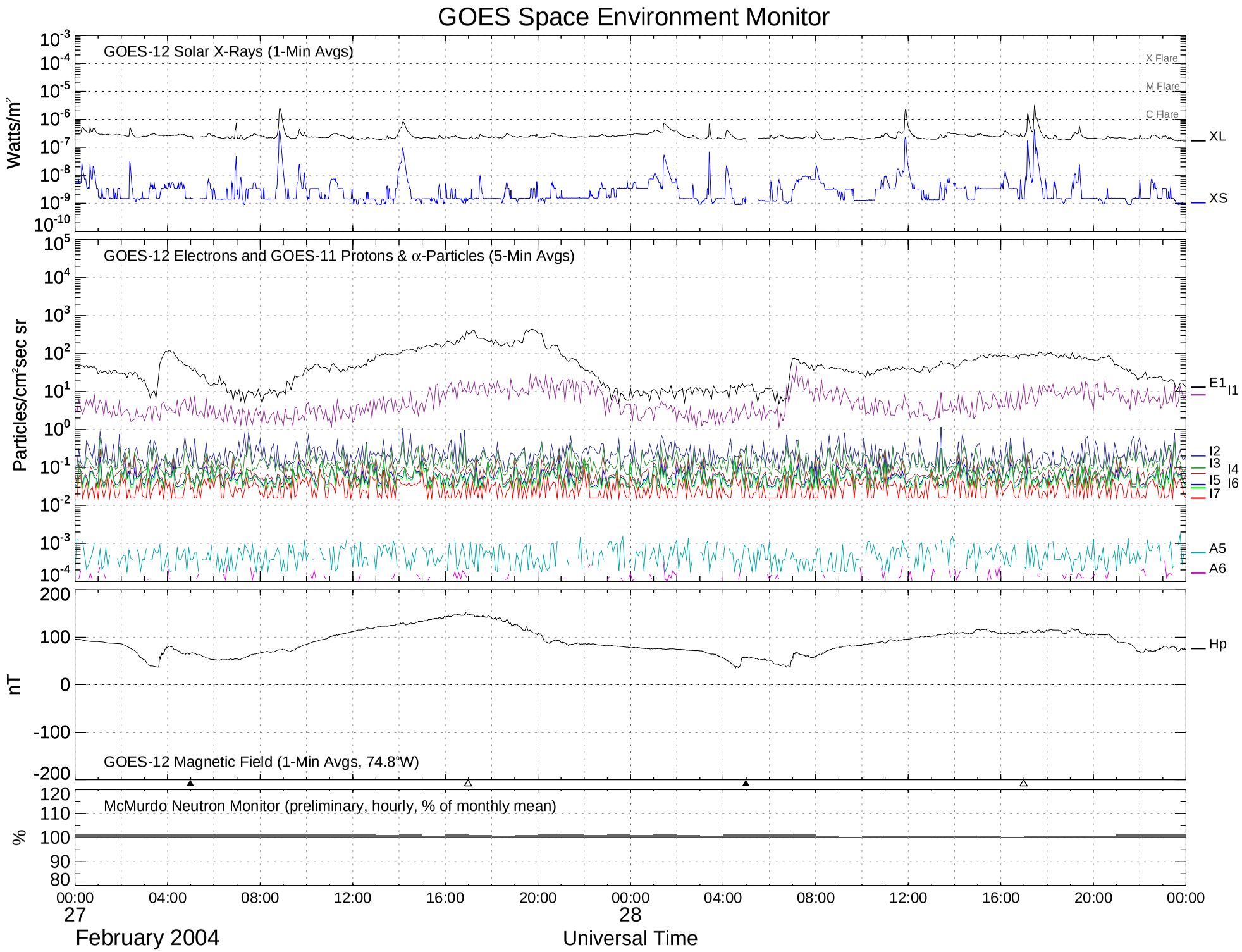
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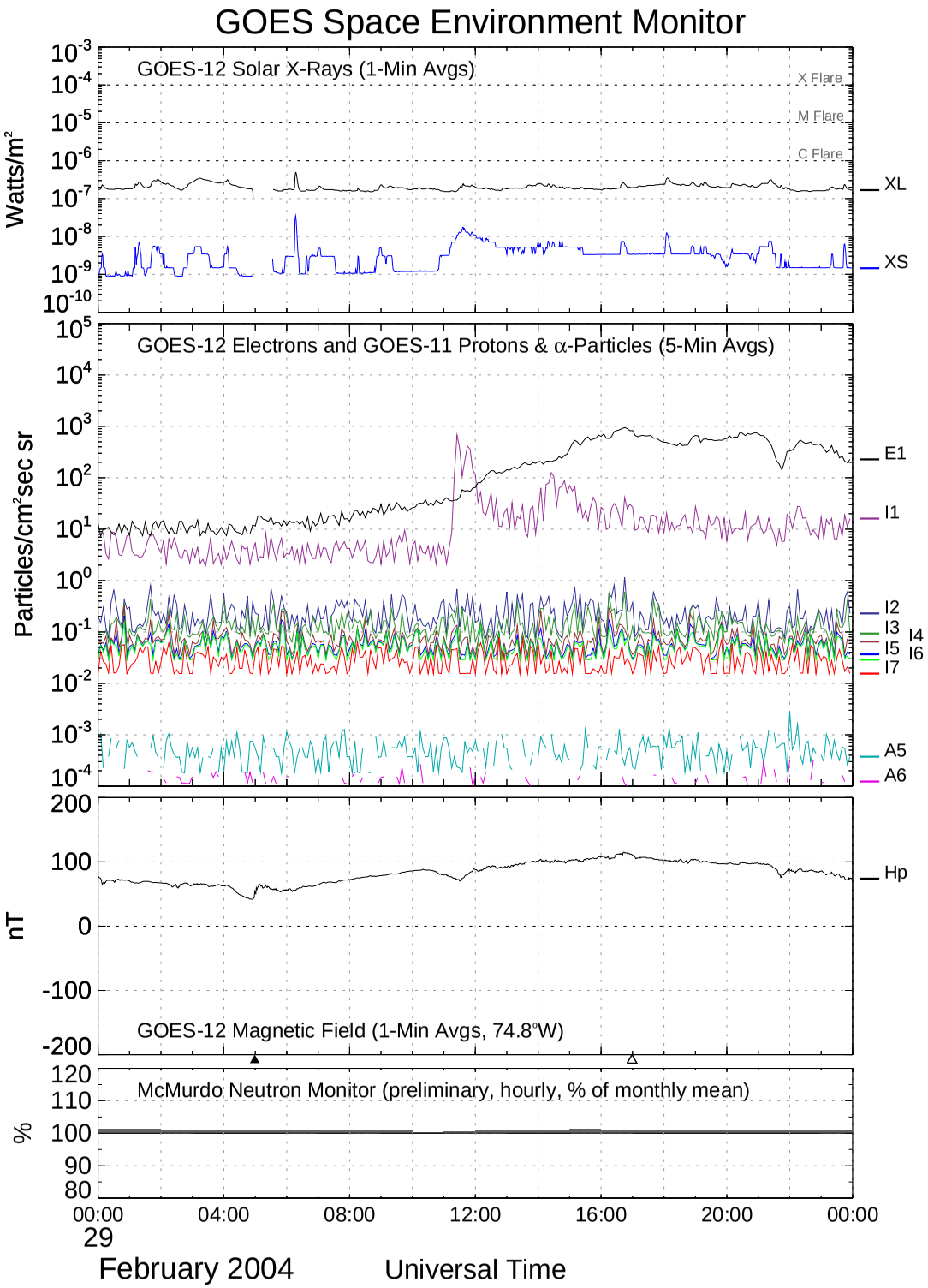
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00
04:00
08:00
12:00
16:00
20:00
00:00
04:00
08:00
12:00
16:00
20:00
00:00
27
28
February 2004
Universal Time


GOES Space Environment Monitor
GOES-12 Solar X-Rays (1-Min Avgs)
X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00
04:00
08:00
12:00
16:00
20:00
00:00
29
February 2004
Universal Time

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

FEBRUARY 2004

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)
032	01	31	49	94	10	546	S12	E41	0	0	0	01	Q	SOL: Eruptive
						547	S10	E01	0	0	0	01	Q	MAG: Active
						548	N06	E30	0	0	0	01	Q	PRO: Quiet
						549	N13	E70	0	0	0	01	E	
033	02	01	57	97	10	546	S12	E27	0	0	0	02	Q	SOL: Eruptive
						547	S10	W12	0	0	0	02	Q	MAG: Active
						548	N06	E17	0	0	0	02	Q	PRO: Quiet
						549	N14	E57	2	0	0	02	E	
034	03	02	106	102	28	546	S12	E15	0	0	0	03	Q	SOL: Eruptive
						547	S09	W27	0	0	0	03	E	MAG: Active
						549	N14	E41	0	0	0	03	E	PRO: Quiet
						550	S08	W14	0	0	0	03	Q	
						551	S06	E64	0	0	0	03	Q	
						552	S08	E18	0	0	0	03	Q	
035	04	03	103	99	15	546	S12	E02	0	0	0	04	Q	SOL: Eruptive
						547	S09	W40	0	0	0	04	E	MAG: Active
						549	N14	E30	0	0	0	04	E	PRO: Quiet
						550	S09	W26	0	0	0	04	Q	
						551	S05	E51	0	0	0	04	E	
						552	S07	E06	0	0	0	04	Q	
036	05	04	85	101	12	547	S08	W55	1	0	0	05	E	SOL: Eruptive
						549	N14	E17	0	0	0	05	Q	MAG: Active
						550	S09	W39	0	0	0	05	Q	PRO: Quiet
						551	S06	E39	0	0	0	05	Q	
						552	S08	W06	0	0	0	05	Q	
037	06	05	109	106	16	547	S08	W70	2	0	0	06	Q	SOL: Eruptive
						549	N14	E04	1	0	0	06	Q	MAG: Quiet
						551	S06	E26	0	0	0	06	Q	PRO: Quiet
						552	S08	W20	0	0	0	06	Q	
						553	S05	E01	0	0	0	06	Q	
038	07	06	98	107	19	547	S08	W83	0	0	0	07	Q	SOL: Eruptive
						549	N14	W09	0	0	0	07	Q	MAG: Active
						551	S06	E13	0	0	0	07	Q	PRO: Quiet
						552	S08	W33	0	0	0	07	Q	
						553	S05	W12	0	0	0	07	Q	
039	08	07	92	111	8	549	N14	W22	0	0	0	08	E	SOL: Eruptive
						551	S06	W00	0	0	0	08	Q	MAG: Quiet
						553	S04	W25	0	0	0	08	Q	PRO: Quiet
						554	S08	E76	0	0	0	08	Q	
040	09	08	74	116	6	549	N13	W36	0	0	0	09	Q	SOL: Active
						551	S06	W14	0	0	0	09	E	MAG: Quiet
						554	S08	E62	1	1	0	09	E	PRO: Quiet
041	10	09	81	118	6	549	N13	W49	0	0	0	10	Q	SOL: Active
						551	S06	W27	0	0	0	10	E	MAG: Quiet
						554	S08	E52	4	0	0	10	E	PRO: Quiet
						555	S14	E72	0	0	0	10	Q	
042	11	10	78	117	7	549	N13	W62	0	0	0	11	Q	SOL: Eruptive
						551	S08	W41	0	0	0	11	E	MAG: Quiet
						554	S10	E38	0	0	0	11	Q	PRO: Quiet
						555	S14	E58	0	0	0	11	Q	
043	12	11	91	114	23	549	N12	W79	0	0	0	12	Q	SOL: Eruptive
						551	S08	W55	0	0	0	12	Q	MAG: Quiet
						554	S09	E24	0	0	0	12	Q	PRO: Quiet
						555	S14	E45	0	0	0	12	Q	
						556	N16	E22	0	0	0	12	Q	

A L E R T P E R I O D S
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FEBRUARY 2004

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)
044	13	12	65	112	21	551	S08	W68	0	0	0	13	Q	SOL: Eruptive
						554	S10	E12	0	0	0	13	Q	MAG: Active
						555	S14	E32	0	0	0	13	Q	PRO: Quiet
						556	N16	E06	0	0	0	13	Q	
045	14	13	71	108	25	551	S07	W79	0	0	0	14	Q	SOL: Quiet
						554	S08	W01	0	0	0	14	Q	MAG: Active
						556	N16	W04	0	0	0	14	Q	PRO: Quiet
						557	S11	W32	0	0	0	14	Q	
						558	S15	E36	0	0	0	14	Q	
046	15	14	64	104	17	554	S09	W13	0	0	0	15	Q	SOL: Quiet
						556	N17	W19	0	0	0	15	Q	MAG: Active
						558	S16	E21	0	0	0	15	Q	PRO: Quiet
						559	N07	W42	0	0	0	15	Q	
047	16	15	75	102	23	554	S09	W28	0	0	0	16	Q	SOL: Quiet
						556	N16	W37	0	0	0	16	Q	MAG: Active
						558	S16	E07	0	0	0	16	Q	PRO: Quiet
						559	N08	W56	0	0	0	16	Q	
						560	S16	E30	0	0	0	16	Q	
						561	N02	E64	0	0	0	16	Q	
048	17	16	81	99	6	554	S08	W43	0	0	0	17	Q	SOL: Quiet
						555	S16	W22	0	0	0	17	Q	MAG: Quiet
						556	N15	W54	1	0	0	17	Q	PRO: Quiet
						558	S16	W06	0	0	0	17	Q	
						559	N07	W68	0	0	0	17	Q	
						560	S17	E17	0	0	0	17	Q	
						561	N02	E52	0	0	0	17	Q	
049	18	17	22	102	4	561	S08	W56	0	0	0	18	Q	SOL: Quiet
						561	N02	E39	0	0	0	18	Q	MAG: Quiet
									0	0	0	18		PRO: Quiet
050	19	18	23	98	9	561	S08	W69	0	0	0	19	Q	SOL: Quiet
						561	N02	E26	0	0	0	19	Q	MAG: Quiet
									0	0	0	19		PRO: Quiet
051	20	19	33	96	7	554	S08	W83	0	0	0	20	Q	SOL: Quiet
						561	N02	E12	0	0	0	20	Q	MAG: Quiet
						562	S11	E73	0	0	0	20	Q	PRO: Quiet
052	21	20	34	95	6	561	N02	W01	0	0	0	21	Q	SOL: Quiet
						562	S11	E59	0	0	0	21	Q	MAG: Quiet
						563	S21	E66	0	0	0	21	Q	PRO: Quiet
053	22	21	52	98	6	561	N02	W15	0	0	0	22	Q	SOL: Quiet
						562	S13	E45	0	0	0	22	Q	MAG: Quiet
						563	S24	E51	0	0	0	22	Q	PRO: Quiet
						564	N14	E42	0	0	0	22	Q	
054	23	22	58	104	11	561	N02	W30	0	0	0	23	Q	SOL: Eruptive
						562	S12	E29	0	0	0	23	Q	MAG: Quiet
						563	S23	E40	0	0	0	23	Q	PRO: Quiet
						564	N13	E26	10	0	0	23	Q	
055	24	23	68	104	11	562	S13	E13	0	0	0	24	Q	SOL: Eruptive
						563	S24	E26	0	0	0	24	Q	MAG: Quiet
						564	N13	E13	0	0	0	24	Q	PRO: Quiet
						565	S05	E35	0	0	0	24	Q	
056	25	24	85	106	11	563	S24	E13	0	0	0	25	Q	SOL: Eruptive
						564	N15	E00	2	0	0	25	Q	MAG: Quiet
						565	S04	E22	0	0	0	25	Q	PRO: Quiet
						566	N05	E21	0	0	0	25	Q	

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The International Space Environment Service

FEBRUARY 2004

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)
057	26	25	107	119	7	562	S12	W09	0	0	0	26	Q	SOL: Eruptive
						563	S23	E01	0	0	0	26	Q	MAG: Quiet
						564	N14	W14	8	0	0	26	E	PRO: Quiet
						565	S05	E07	1	0	0	26	Q	
						566	N05	E05	0	0	0	26	Q	
058	27	26	105	121	4	563	S23	W12	0	0	0	27	Q	SOL: Eruptive
						564	N14	W27	4	1	1	27	E	MAG: Quiet
						565	S05	W07	0	0	0	27	Q	PRO: Quiet
059	28	27	90	122	15	563	S23	W27	0	0	0	28	Q	SOL: Active
						564	N14	W42	0	0	0	28	E	MAG: Active
						565	S04	W21	0	0	0	28	Q	PRO: Quiet
						567	S13	E50	0	0	0	28	Q	
060	29	28	104	116	21	563	S23	W39	0	0	0	29	Q	SOL: Active
						564	N15	W54	0	0	0	29	E	MAG: Active
						565	S04	W33	0	0	0	29	Q	PRO: Quiet
						567	S13	E37	0	0	0	29	Q	
						568	S16	W20	0	0	0	29	Q	

(1) Region Forecast and Flare (SOL) Advice
- Q = Quiet (<50% probability of C-class flares)
- E = Eruptive (C-class flares expected, probability >=50%)
- A = Active (M-class flares expected, probability >=50%)
- M = Major (X-class flares expected, probability >=50%)
- P = Proton (Proton flares expected, probability >=50%)
- W = Warning (activity levels are expected to increase, but no numerical forecast given)
- / = No forecast available

Magnetic (MAG) Geoadvice

'Quiet'		
'Active'	conditions expected	(A>= 20 or K =4)
'Minor'	storm expected	(A>= 30 or K =5)
'Major'	storm expected	(A>= 50 or K>=6)
'Severe'	storm expected	(A>=100 or K>=7)
'IP'	magstorm in progress	(A>= 30 or K>=4)
'Warning'	(activity levels are expected to increase, but no numerical forecast given)	
'/'	no forecast available	

Proton (PRO) Geoadvice

'Quiet'		
'Proton'	event expected	(10pfu at > 10 MeV)
'Major'	proton event expected	(100pfu at >100 MeV)
'IP'	proton event in progress	(>10 MeV)
'Warning'	(activity levels are expected to increase, but no numerical forecast given)	
'/'	no forecast available	

STRATWARM ALERTS

STRATALERT BERLIN 01 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINUOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 02 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINUOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 03 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINUOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 04 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINUOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 05 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.

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

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CONTINUOUSLY DISTURBED TEMPERATUR AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 06 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINUOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGOIN IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 07 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
CONTINOUSLY DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COOLING IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 08 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE; UNUSUALLY COOLING IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 09 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMEPRATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 10 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 11 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 12 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 13 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 14 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 15 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

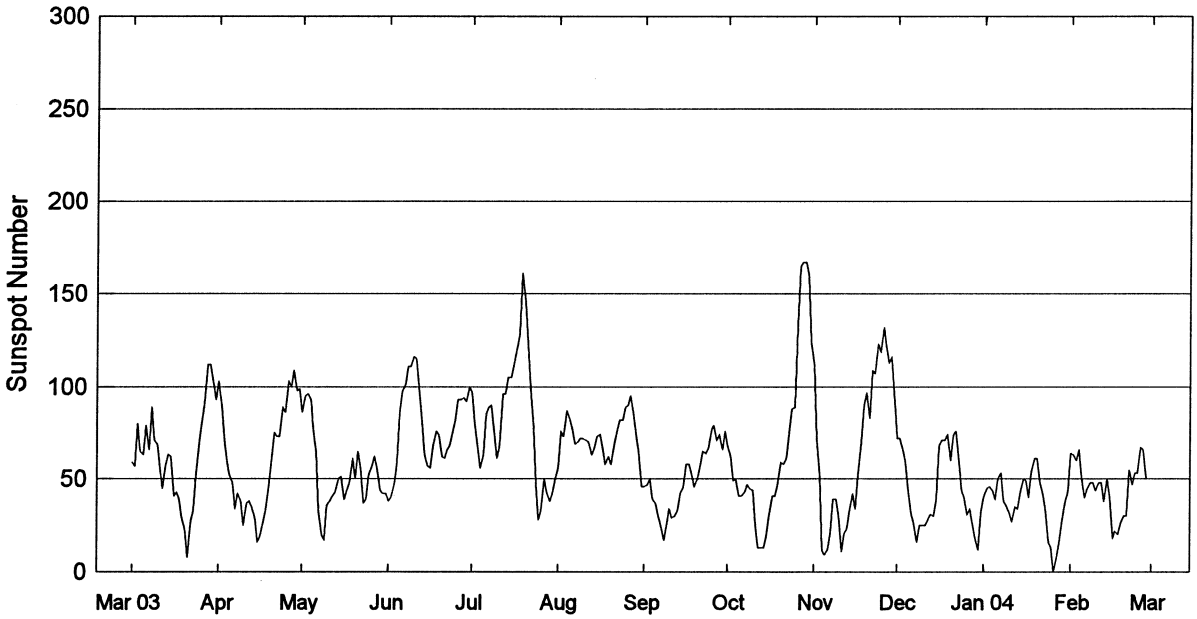
STRATALERT BERLIN 16 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 17 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
STILL DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 18 FEBRUARY 2004 1400 UTC STRATALERT EXISTS.
STILL DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE POLAR LOWER STRATOSPHERE, STILL UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 19 FEBRUARY 2004 1400 UTC STRATALERT NIL.
RETURN TO NORMAL TEMPERATURE AND CIRCULATION PATTERN IN THE LOWER STRATOSPHERE, FURTHER UNUSUALLY COLD POLAR REGION IN THE UPPER STRATOSPHERE

International Relative Sunspot Numbers
Mar 2003- Feb 2004

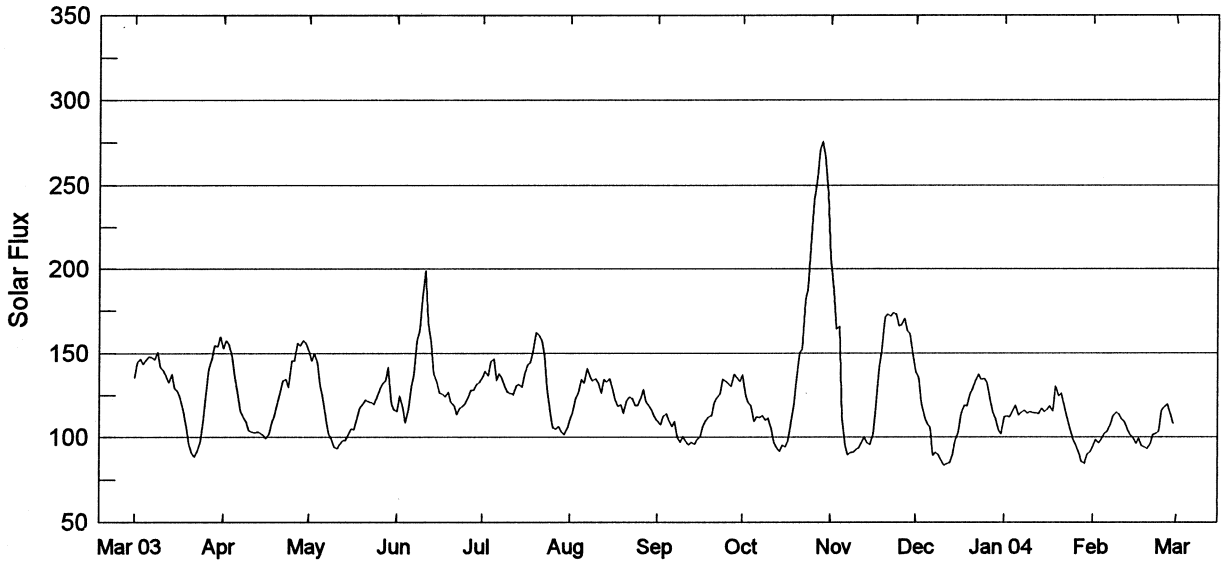


Day	Mar 03	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04*	Feb
1	48	93	99	42	100	49	46	76	124	92	32	43
2	59	103	86	38	97	56	46	68	112	72	40	64
3	57	90	95	40	80	76	47	62	72	72	45	63
4	80	72	96	47	67	73	50	49	52	66	46	60
5	65	60	93	59	56	87	39	50	12	59	44	66
6	63	52	78	86	63	83	37	41	9	45	39	51
7	79	48	65	98	85	78	30	41	12	32	50	40
8	66	34	33	101	89	69	25	43	21	26	53	45
9	89	42	20	111	90	70	17	47	39	16	38	48
10	71	38	17	111	74	72	25	45	39	25	36	48
11	69	25	36	116	61	72	34	44	30	25	32	44
12	56	37	38	115	68	71	29	25	11	25	27	48
13	45	38	41	96	96	70	30	13	21	28	35	48
14	58	35	43	81	96	63	33	13	23	31	34	38
15	63	29	50	63	105	67	42	13	33	30	43	50
16	62	16	51	57	105	73	46	19	42	39	50	41
17	41	19	39	56	112	74	58	30	34	68	49	18
18	43	27	44	68	121	67	58	41	52	71	40	22
19	39	34	48	76	128	58	52	41	70	71	54	20
20	29	45	61	74	161	62	46	47	90	74	61	26
21	23	58	50	62	146	58	50	59	97	60	61	30
22	8	75	65	61	123	69	57	58	83	74	49	30
23	27	73	57	66	100	76	65	61	109	76	42	55
24	33	73	37	68	78	82	64	75	107	59	34	47
25	52	89	39	76	47	82	67	88	123	44	16	53
26	70	86	52	82	28	89	77	89	119	40	13	53
27	81	103	57	93	33	90	79	133	132	31	0	67
28	91	100	62	93	50	95	71	165	121	34	8	66
29	112	109	56	94	43	85	74	167	113	26	16	50
30	112	98	44	92	38	74	66	167	116	17	27	
31	102		42		42	65		160		12	38	
Mean	61.1	60.0	54.6	77.4	83.3	72.7	48.7	65.5	67.3	46.5	37.2	46.0

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Mar 2003 - Feb 2004

Adjusted to 1 AU



Day	Mar 03	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb
1	135.6	152.8	151.0	115.5	135.6	110.6	110.1	137.1	207.2	139.3	112.2	94.5
2	144.7	157.3	145.3#	124.8	139.3	114.7	107.6	125.0	187.4	135.4	112.6	98.5
3	146.5	155.7	150.1	117.8	136.7	123.6	112.4	120.3	164.2	120.3	112.3	96.6
4	143.6	148.8#	144.4	108.7	144.8	126.0	114.1	119.0	165.6#	112.5	115.5	98.6
5	146.2	137.5	131.1	117.0	146.7	134.4	109.8	109.6	112.1	108.5	119.0	102.5
6	147.9	126.1	124.1	129.4	134.0	132.4	106.6	112.0	96.1	105.7	113.4	103.7
7	147.6	115.9	112.2	137.2	137.8	140.9	109.4	111.8	89.4	89.3	114.9	108.1
8	146.2	112.6	102.8	158.0	135.7	136.6	100.3	113.1	91.0	90.9	116.1	113.1
9	150.6	109.7	98.9	163.1	130.2	133.6	97.3	110.5	91.2	89.4	114.4	114.7
10	141.7	104.1	94.5	182.0	126.9	134.7	100.6	111.4	92.8	86.5	115.3	113.5
11	139.7	103.0	93.4	198.9	126.1	132.7	98.0	105.4	93.7	83.4	114.6	111.2
12	136.2	102.6	95.8	168.6	125.5	126.6	95.6	97.4	96.7	84.5	114.4	109.3
13	132.5	103.0	98.1	155.8	130.7	134.3	97.3	94.0	100.0	85.0	114.1	105.1
14	137.3	102.6	98.3	137.7	131.4	133.1	95.8	91.9	96.8	89.5	117.1	101.1
15	129.3	101.1	101.4	132.8	129.9	134.7	98.4	95.3	95.6	97.7	115.2	99.6
16	127.2	99.2	104.9	126.5	137.5	130.1	100.4	94.6	102.0	103.0	116.4	96.3
17	123.1#	101.8	104.7	125.8	143.2	122.3	107.0	98.1	118.2	113.8	118.6	99.5
18	117.3	108.7	111.5	124.3	144.3	118.7	110.2	107.8	141.0	119.1	115.6	95.4
19	107.2	113.1	117.4	126.8	150.8	119.5	112.1	119.4	151.5	118.6	130.3	94.2
20	96.6	119.7	120.0	120.8	162.4	114.5	112.9	133.9	171.0	125.9	124.8	93.2
21	90.3	127.0	122.2	118.8	160.7	122.0	120.9	150.2	172.8	129.1	126.0	96.0
22	88.3	133.8	121.3	113.9	157.4	123.7	123.5	152.0#	171.9	133.2	117.9	101.7
23	92.4	134.3	120.9	117.2	148.7	122.9	125.7	181.3#	173.8	137.4	111.6	102.1
24	97.3	129.8	119.8	118.3	129.2	119.0	134.3	188.5	172.8	134.4	104.1	103.4
25	108.2	145.3	124.3	120.2	115.1	119.0	133.4	219.0	166.3	134.6	99.1	116.1
26	126.6	145.5	128.4	122.9	105.9	123.4	131.8	240.6*	166.5	132.7	95.0	118.4
27	140.5	156.1	132.3	128.1	104.9	128.3	130.3	254.0	170.1	122.4#	90.8	119.8
28	146.4	154.3	133.7	128.1	106.6	121.1	137.6	270.9	163.2	115.1	85.9	113.6
29	154.6	157.4	141.6	131.6	103.0	118.7	135.6	275.4#	161.4	110.7	84.8	108.0
30	154.2	155.8	120.4	132.5	101.7	116.2	133.3	267.6	148.6	104.2	89.9	
31	159.8		116.3		105.2	111.8		245.2		102.1	91.6	
Mean	121.4	130.8	127.2	118.7	133.4	131.9	125.2	113.4	150.1	137.7	111.4	104.4

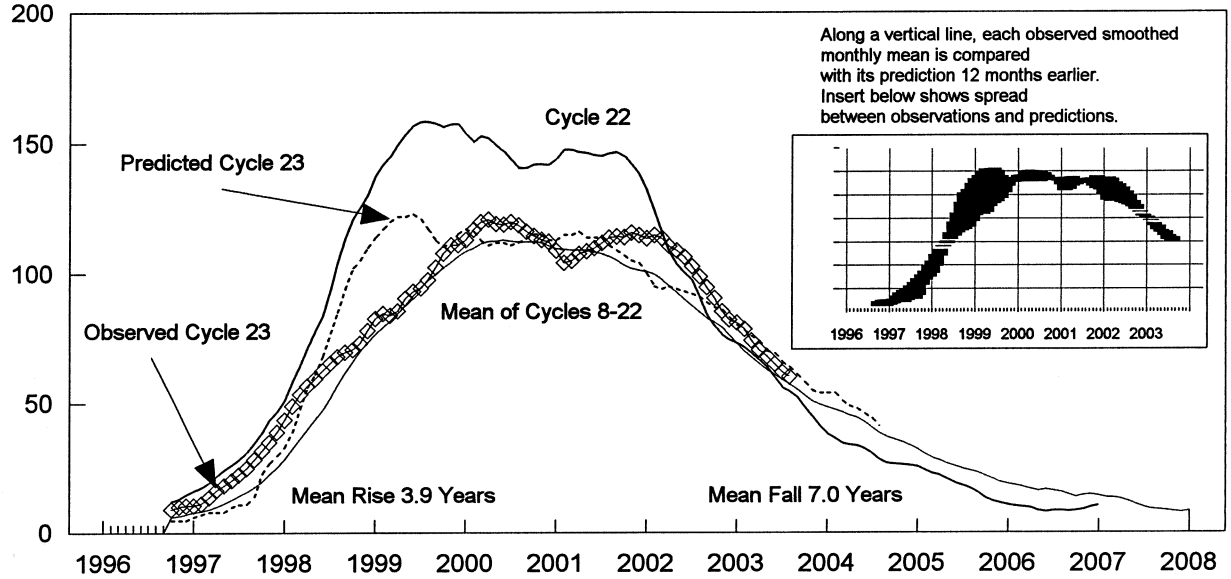
NOTE: # - 1700 or 1800UT reading, burst in progress at 2000UT. *-2300UT reading, burst in progress.

DAILY SOLAR INDICES
February 2004

	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	32	14	43	50	97.3	516	265	146	94.5	96	58	37	28	18
2	33	15	64	68	101.5	517	253	146	98.5	99	61	35	30	18
3	34	16	63	69	99.4	505	265	151	96.6	102	60	36	31	17
4	35	17	60	68	101.4	519	261	151	98.6	103	63	36	27	13
5	36	18	66	69	105.5	511	257	149	102.5	100	62	36	27	13
6	37	19	51	51	106.7	215	242	154	103.7	106	63	---	---	---
7	38	20	40	47	111.1	436	231	161	108.1	118	61	24	26	13
8	39	21	45	57	116.2	529	311	171	113.1	121	68	40	29	11
9	40	22	48	57	117.8	529	295	172	114.7	120	70	38	32	12
10	41	23	48	53	116.5	517	275	169	113.5	118	70	40	32	15
11	42	24	44	49	114.2	528	285	164	111.2	117	71	39	31	---
12	43	25	48	50	112.2	512	286	160	109.3	115	70	42	31	21
13	44	26	48	47	107.8	524	271	157	105.1	111	68	42	26	22
14	45	27	38	41	103.7	523	270	155	101.1	102	68	43	36	---
15	46	1	50	49	102.1	521	292	152	99.6	103	68	45	34	17
16	47	2	41	37	98.7	516	280	149	96.3	102	66	40	30	14
17	48	3	18	24	101.9	511	277	155	99.5	97	66	41	30	14
18	49	4	22	21	97.7	504	288	151	95.4	99	63	35	29	15
19	50	5	20	22	96.4	515	235	147	94.2	97	62	39	30	13
20	51	6	26	25	95.4	515	235	147	93.2	97	60	40	26	16
21	52	7	30	33	98.2	492	234	147	96.0	97	59	37	29	13
22	53	8	30	38	103.9	489	243	156	101.7	104	63	42	29	14
23	54	9	55	57	104.3	519	237	159	102.1	102	63	42	37	41
24	55	10	47	53	105.5	520	244	166	103.4	110	65	41	39	---
25	56	11	53	58	118.5	523	249	172	116.1	112	65	39	33	---
26	57	12	53	63	120.8	528	258	186	118.4	119	67	40	34	29
27	58	13	67	72	122.2	525	254	185	119.8	122	68	40	34	---
28	59	14	66	66	115.8	524	246	179	113.6	115	68	37	29	19
29	60	15	50	55	110.0	515	239	162	108.0	107	64	37	32	26
MEAN			46.0	50.0	107.0	503	261	159	104.4	107	65	39	31	18

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	58	56	54	53	65
									(4)	(8)	(10)	(12)	(3)
2004	52	51	49	48	47	46	44	41	39	38	37	36	44
	(13)	(14)	(15)	(16)	(16)	(17)	(18)	(19)	(2)	(21)	(21)	(22)	(16)

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

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

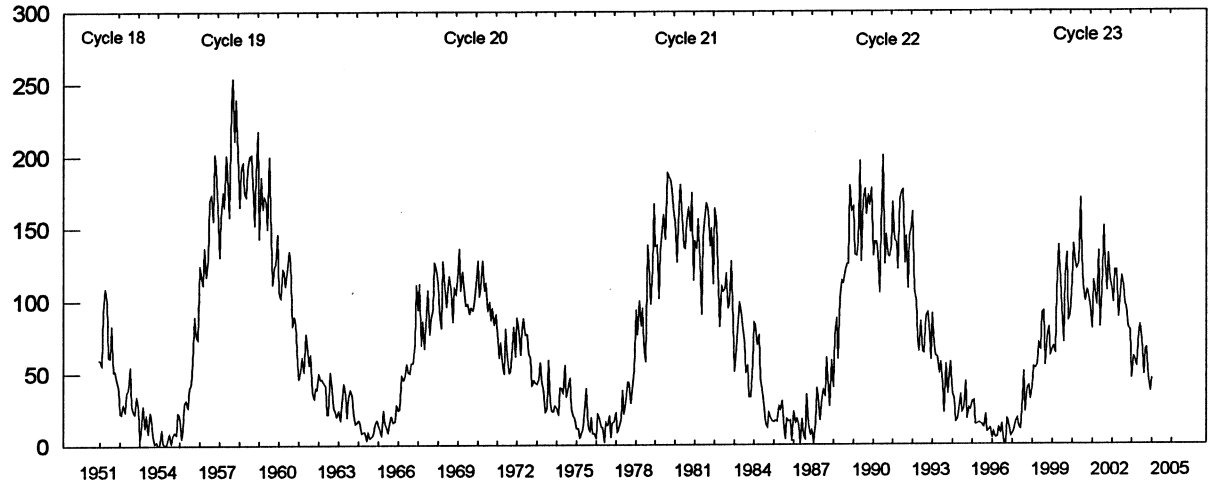
+ April 2000 marks Cycle 23 maximum.

Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2003 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 August 2004 prediction. There exists a 90% chance that in August, the actual smoothed number will fall somewhere between 22 and 60.

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

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

Mean Monthly Sunspot Numbers
Jan 1951 - Feb 2004



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	85.0	72.7	48.8	65.6	67.2	47.0	63.9	
2004	37.2	46.0											41.6	

Values are preliminary after December, 2003. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

FEBRUARY 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0107	0111	0116			10549			9		B 2.7						1.3E-04
GOES		0141	0144	0146						5		B 2.6						6.6E-05
GOES		0248	0254	0258	N08	E64	10549			10	SF	C 1.9						6.1E-04
LEAR		0252	0256	0302	N08	E64	10549	02	5.9	10	SF		3	E		51		
GOES		0438	0443	0446			10549			8		B 2.4						1.0E-04
GOES		0532	0536	0540			10549			8		B 2.3						9.0E-05
GOES		0556	0607	0612	N11	E70	10549			16	SF	C 1.9						1.0E-03
LEAR		0601	0605	0607	N11	E70	10549	02	6.5	6	SF		3	E		14		F
GOES		0643	0649	0652			10549			9		B 6.9						2.8E-04
GOES		0731	0735	0738			10549			7		B 4.1						1.2E-04
GOES		0746	0749	0751			10549			5		B 2.6						6.7E-05
GOES		0854	0858	0904			10547			10		B 2.2						1.2E-04
GOES		0924	0927	0930						6		B 2.0						6.2E-05
GOES		1000	1009	1020			10549			20		B 6.1						5.6E-04
GOES		1155	1202	1206			10549			11		B 3.5						1.7E-04
GOES		1638	1645	1650			10549			12		B 8.4						4.1E-04
GOES		1704	1707	1710			10549			6		B 3.2						9.8E-05
GOES		1806	1811	1815			10549			9		B 3.4						1.4E-04
GOES		2013	2019	2023			10549			10		B 3.8						2.0E-04
GOES		2359	2405	2412			10549			13		B 4.8						2.8E-04
GOES	02	0051	0054	0059			10549			8		B 2.0						8.3E-05
GOES		0144	0153	0157			10549			13		B 3.6						2.1E-04
GOES		0751	0759	0804			10547			13		C 2.5						1.3E-03
GOES		1118	1124	1129						11		C 1.3						6.2E-04
GOES		1201	1206	1211			10549			10		B 4.2						2.3E-04
GOES		1309	1314	1318			10547			9		B 3.8						1.9E-04
GOES		2151	2155	2159			10549			8		B 5.4						2.3E-04
GOES		2205	2209	2212			10549			7		B 8.6						3.2E-04
GOES	03	0009	0013	0018						9		B 3.4						1.5E-04
GOES		0047	0055	0103			10549			16		B 2.8						2.3E-04
GOES		0439	0443	0453			10551			14		B 2.6						2.0E-04
GOES		0624	0629	0634			10551			10		B 3.6						1.8E-04
GOES		0701	0706	0711			10549			10		B 3.9						1.9E-04
GOES		0838	0852	0902			10551			24		C 1.1						1.0E-03
GOES		1009	1014	1019			10549			10		B 7.3						3.3E-04
GOES		1144	1150	1157			10551			13		B 4.5						2.7E-04
GOES		1255	1259	1305			10551			10		B 5.7						2.8E-04
GOES		1336	1340	1345			10551			9		C 3.2						1.1E-03
GOES		1434	1439	1457			10551			23		B 5.0						6.1E-04
GOES		1531	1534	1538			10551			7		B 2.4						9.2E-05
GOES		1630	1635	1651						21		B 3.5						3.5E-04
GOES		1818	1825	1833			10551			15		C 1.2						7.1E-04
GOES		2125	2145	2210			10549			45		C 1.1						2.4E-03
GOES		2241	2246	2256			10551			15		C 1.4						9.0E-04
GOES	04	1112	1118	1122	S05	W48	10547			10	1F	C 9.9						3.2E-03
SVTO		1115	1119U	1138D	S05	W48	10547	01	31.9	23D	1F		3	E		111		
GOES		1211	1216	1223			10551			12		B 4.8						3.0E-04
GOES		1336	1341	1345			10551			9		B 6.4						2.5E-04
GOES		1424	1430	1441			10551			17		B 3.7						3.2E-04
GOES		1508	1514	1521			10551			13		B 7.6						4.3E-04
GOES		1528	1536	1540			10551			12		B 5.7						3.5E-04
GOES		1656	1700	1704			10551			8		B 3.7						1.4E-04
GOES		1859	1903	1905			10551			6		B 2.3						7.3E-05
GOES		2225	2231	2236			10549			11		B 3.8						1.9E-04
GOES	05	0026	0038	0047	S07	W55	10547			21	SF	B 8.3						7.8E-04
LEAR		0031	0032	0050	S07	W55	10547	01	31.9	19	SF		3	E		29		F
GOES		0158	0204	0208			10552			10		B 2.6						1.4E-04
GOES		0625	0636	0646	N11	E14	10549			21	SF	C 1.3						1.2E-03
LEAR		0631	0633	0646	N11	E14	10549	02	6.3	15	SF		3	E		38		F
GOES		0702	0706	0712			10549			10		B 8.2						3.8E-04
GOES		0749	0754	0759	S06	W60	10547			10	SF	C 1.5						5.3E-04
SVTO		0753	0757	0802	S04	W60	10547	01	31.8	9	SF		3	E		11		
LEAR		0753	0757	0804	S06	W60	10547	01	31.8	11	SF		3	E		17		
GOES		1146	1206	1227						41		B 6.5						1.3E-03

Hα SOLAR FLARES

FEBRUARY 2004

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
GOES	05	1909	1922	1925			10547			16		B 3.3						2.7E-04
GOES		2114	2117	2119			10551			5		B 3.7						9.2E-05
GOES	06	0327	0345	0355			10549			28		B 3.6						5.1E-04
GOES		0832	0835	0838			10551			6		B 2.3						7.7E-05
GOES		1233	1237	1243			10549			10		B 3.6						1.8E-04
GOES		2041	2048	2058			10549			17		B 4.4						4.1E-04
GOES		2243	2258	2315			10551			32		B 4.0						6.5E-04
GOES	07	0803	0831	0838			10554			35		B 5.7						9.7E-04
GOES		1046	1052	1055			10554			9		B 4.8						2.4E-04
GOES		1321	1326	1328			10554			7		C 2.5						4.6E-04
GOES		1854	1858	1910			10554			16		B 6.6						5.4E-04
GOES	08	0220	0224	0226			10551			6		B 4.8						1.4E-04
GOES		0340	0345	0355			10554			15		C 1.0						8.3E-04
GOES		0359	0403	0409			10554			10		C 1.0						5.4E-04
GOES		0411	0420	0430			10554			19		C 1.4						1.4E-03
GOES		0447	0452	0500			10553			13		C 1.3						9.4E-04
GOES		0828	0918	0949			10554			81		C 1.3						5.1E-03
GOES		1251	1256	1303			10554			12		B 8.6						5.2E-04
GOES		1552	1601	1617			10554			25		C 2.0						2.4E-03
GOES		2024	2051	2102	S08	E68	10554			38	SF	M 1.2						1.3E-02
HOLL		2028	2030	2042	S08	E70	10554	02	14.1	14	SF		3	E		25		
HOLL		2044	2053	2059	S08	E68	10554	02	14.0	15	SF		3	E		36		
GOES		2141	2144	2147	S07	E67	10554			6	SF	C 1.6						5.0E-04
HOLL		2143	2143	2147	S07	E67	10554	02	13.9	4	SF		3	E		12		F
GOES		2345	2356	0000	S07	E65	10554			15	SF	B 6.0						4.5E-04
HOLL		2347	2348	2356	S07	E65	10554	02	13.8	9	SF		3	E		11		
GOES	09	0056	0101	0110			10554			14		C 1.6						9.5E-04
GOES		0145	0150	0154			10554			9		C 1.7						6.5E-04
GOES		0254	0307	0318			10554			24		C 1.7						1.9E-03
GOES		0356	0400	0402			10554			6		B 7.8						2.4E-04
GOES		0407	0411	0414			10554			7		B 9.1						2.8E-04
GOES		0546	0550	0603	S12	E62	10554			17	SF	C 5.5						4.0E-03
LEAR		0549	0550	0556	S12	E62	10554	02	13.9	7	SF		3	E		21		F
LEAR		0557	0557	0602	S12	E63	10554	02	14.0	5	SF		3	E		14		F
LEAR		0602	0604	0609	S12	E62	10554	02	13.9	7	SF		3	E		14		F
GOES		0738	0743	0749			10554			11		B 5.5						3.0E-04
GOES		0938	0946	0951			10554			13		C 4.3						1.8E-03
GOES		1051	1102	1112			10554			21		C 9.6						6.4E-03
GOES		1247	1300	1306			10554			19		C 2.7						1.7E-03
GOES		1356	1403	1414			10554			18		C 5.6						4.2E-03
GOES		1503	1511	1514	S09	E57	10554			11	SF	C 1.9						8.0E-04
HOLL		1508	1508	1514	S09	E57	10554	02	13.9	6	SF		3	E		10		
GOES		1522	1526	1532			10554			10		B 7.7						3.8E-04
GOES		1546	1550	1553			10554			7		B 5.8						2.1E-04
GOES		1737	1742	1746			10554			9		B 9.9						3.9E-04
GOES		1908	1912	1915			10554			7		B 8.2						2.8E-04
GOES		2132	2135	2143			10554			11		B 6.4						3.8E-04
GOES		2256	2304	2328			10554			32		B 7.3						1.2E-03
GOES	10	0518	0525	0531			10555			13		B 6.7						4.4E-04
GOES		0946	0950	0953			10554			7		B 3.6						1.3E-04
GOES		0959	1005	1015			10554			16		B 9.7						6.9E-04
GOES		1412	1421	1426			10551			14		B 4.9						3.6E-04
GOES		1528	1533	1541						13		B 5.6						4.1E-04
GOES	11	0057	0104	0108			10549			11		B 7.1						3.4E-04
GOES		0148	0155	0202			10549			14		B 5.6						3.9E-04
GOES		0414	0417	0419			10549			5		B 3.7						8.9E-05
GOES		0525	0530	0533			10551			8		B 5.1						1.8E-04
GOES		1523	1529	1536			10551			13		B 6.0						3.6E-04
GOES		1749	1754	1757			10555			8		B 3.2						1.3E-04
GOES	14	1133	1137	1139						6		B 3.7						8.7E-05
GOES	15	1717	1723	1732						15		B 2.2						1.7E-04

Hα SOLAR FLARES

FEBRUARY 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	16	0253	0258	0300	N16	W43	10556			7	SF	C 1.6						3.5E-04
LEAR		0258	0258	0303	N16	W43	10556	02	12.9	5	SF		3	E		21		
GOES		1106	1115	1121			10556			15		B 1.9						1.5E-04
GOES	17	0008	0013	0019			10554			11		B 1.6						9.9E-05
GOES		1230	1243	1246			10554			16		B 2.1						1.8E-04
GOES		1934	2006	2047						73		B 4.9						1.7E-03
GOES	18	0058	0108	0110						12		B 1.1						7.5E-05
GOES		0202	0215	0219						17		B 1.7						1.5E-04
GOES		1057	1101	1104						7		B 1.7						5.8E-05
GOES		1658	1708	1720			10556			22		B 5.0						5.4E-04
GOES	19	0010	0014	0017			10562			7		B 1.6						6.4E-05
GOES		0147	0150	0154			10562			7		B 1.5						5.6E-05
GOES		0326	0330	0334			10562			8		B 1.6						6.7E-05
GOES		0440	0443	0448			10556			8		B 1.7						7.4E-05
GOES		1042	1046	1051			10556			9		B 1.9						9.3E-05
GOES		1155	1159	1203			10556			8		B 2.0						8.3E-05
GOES		1609	1616	1623			10556			14		B 3.5						2.5E-04
GOES	20	2339	2349	0000			10562			21		B 3.3						3.2E-04
GOES	21	0646	0651	0720						34		B 1.8						3.2E-04
GOES		1437	1444	1449			10564			12		B 6.2						2.9E-04
GOES		1525	1540	1546			10564			21		B 3.1						2.6E-04
GOES		1721	1726	1731			10562			10		B 5.5						2.3E-04
GOES		1933	1937	1939			10564			6		B 2.6						7.6E-05
GOES		2023	2026	2028			10564			5		B 2.7						6.4E-05
GOES		2352	2356	2358			10564			6		B 2.0						6.5E-05
GOES	22	0053	0056	0058			10564			5		B 2.5						6.6E-05
GOES		0138	0143	0148			10564			10		B 2.8						1.3E-04
GOES		0153	0156	0159			10564			6		B 2.9						8.2E-05
GOES		0217	0222	0225			10564			8		B 3.9						1.4E-04
GOES		0238	0241	0247			10564			9		B 2.5						1.2E-04
LEAR		0313	0315	0322	N12	E38	10564	02	25.0	9	SF		3	E		20		F
GOES		0354	0400	0403	N14	E38	10564			9	SF	C 1.1						3.3E-04
LEAR		0357	0359	0415	N14	E38	10564	02	25.0	18	SF		3	E		58		F
LEAR		0448	0448	0457	N14	E38	10564	02	25.1	9	SF		3	E		13		
GOES		0546	0551	0554	N14	E37	10564			8	SF	B 4.1						1.6E-04
LEAR		0548	0600	0609	N14	E37	10564	02	25.0	21	SF		3	E		27		
LEAR		0609	0610	0616	N14	E37	10564	02	25.0	7	SF		3	E		14		F
LEAR		0627	0630	0650	N14	E37	10564	02	25.1	23	SF		3	E		22		F
LEAR		0650	0654	0656	N14	E37	10564	02	25.1	6	SF		3	E		15		F
LEAR		0658	0731	0802	N12	E34	10564	02	24.8	64	SF		3	E		47		F
GOES		0724	0746	0803	N12	E34	10564			39	SF	C 1.2						2.4E-03
LEAR		0822	0822	0826	N14	E36	10564	02	25.1	4	SF		3	E		12		F
GOES		0913	0955	1019						66		C 1.1						3.0E-03
GOES		1208	1211	1218			10564			10		B 2.1						1.1E-04
GOES		1253	1303	1329			10564			36		B 3.1						5.9E-04
GOES		1407	1426	1516			10564			69		C 1.1						3.7E-03
GOES		1542	1547	1550			10564			8		B 5.7						2.4E-04
GOES		1835	1842	1854			10564			19		B 8.8						8.2E-04
HOLL		1915	1915	1917	N14	E28	10564	02	24.9	2	SF		3	E		25		
GOES		1951	2000	2006			10564			15		C 1.9						1.1E-03
GOES		2210	2213	2216						6		B 4.3						1.4E-04
GOES		2311	2321	2326			10564			15		C 1.2						8.4E-04
GOES		2341	2345	2348			10564			7		B 6.8						2.5E-04
GOES	23	0043	0047	0049			10564			6		B 4.5						1.4E-04
GOES		0540	0552	0601						21		B 3.7						4.2E-04
GOES		1214	1218	1223						9		B 3.0						1.4E-04
GOES		1404	1408	1414			10564			10		B 2.6						1.4E-04
GOES		1733	1739	1744						11		B 3.3						1.8E-04
GOES		2152	2155	2157			10564			5		B 1.9						5.2E-05
LEAR	24	0555	0557	0559	N16	E12	10564	02	25.1	4	SF		3	E		21		F

Hα SOLAR FLARES

FEBRUARY 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	24	2322	2326	2331	N13	E02	10564			9	SF	B 7.1						2.9E-04
LEAR		2325	2325	2330	N13	E02	10564	02	25.1	5	SF		3	E		15		F
GOES		2342	2346	2349			10564			7		B 7.1						2.6E-04
LEAR	25	0022	0038	0056	N16	E02	10564	02	25.2	34	SF		3	E		15		FH
LEAR		0058	0103	0106	N16	E02	10564	02	25.2	8	SF		3	E		29		F
GOES		0158	0208	0213	N16	E01	10564			15	SF	C 2.4						1.3E-03
LEAR		0205	0207	0219	N16	E01	10564	02	25.2	14	SF		3	E		92		FH
GOES		0249	0257	0319			10564			30		B 6.4						1.0E-03
GOES		0405	0426	0437	N13	W03	10564			32	SF	B 8.9						1.4E-03
LEAR		0426	0426	0430	N13	W03	10564	02	24.9	4	SF		3	E		16		FH
GOES		0448	0451	0457						9		B 5.8						2.9E-04
GOES		0503	0508	0522	N14	W03	10564			19	SF	B 9.8						1.0E-03
LEAR		0508	0514	0521	N14	W03	10564	02	25.0	13	SF		3	E		26		FH
GOES		0525	0529	0533	N14	W03	10564			8	SF	C 1.0						4.5E-04
LEAR		0526	0531	0535	N14	W03	10564	02	25.0	9	SF		3	E		26		FH
LEAR		0635	0637	0640	S05	E15	10565	02	26.4	5	SF		3	E		14		F
GOES		0646	0652	0656			10564			10		C 1.3						7.1E-04
GOES		1042	1047	1051			10564			9		C 1.1						5.3E-04
GOES		1107	1126	1136			10564			29		C 1.3						1.7E-03
GOES		1211	1225	1237			10564			26		C 8.0						8.5E-03
GOES		1414	1418	1423			10564			9		B 4.2						2.0E-04
GOES		1523	1531	1536			10564			13		B 7.8						4.9E-04
GOES		1611	1627	1642	N13	W09	10564			31	SF	C 2.6						3.7E-03
HOLL		1615	1615	1632	N13	W09	10564	02	25.0	17	SF		3	E		10		
GOES		2306	2315	2327	N14	W16	10564			21	SF	C 2.6						2.4E-03
HOLL		2309	2313	2337	N14	W16	10564	02	24.7	28	SF		3	E		40		
GOES	26	0059	0107	0115	N14	W14	10564			16	SF	C 1.8						1.2E-03
LEAR		0103	0106	0119	N14	W14	10564	02	25.0	16	SF		3	E		35		
GOES		0150	0203	0210	N14	W15	10564			20	2N	X 1.1						7.0E-02
LEAR		0154	0202	0244	N14	W15	10564	02	24.9	50	2N		3	E		336		F
GOES		0441	0449	0457	N14	W15	10564			16	SF	C 1.6						1.2E-03
LEAR		0445	0448	0500	N14	W15	10564	02	25.1	15	SF		3	E		29		
GOES		0530	0539	0548			10564			18		C 2.4						2.0E-03
GOES		1248	1252	1257			10564			9		B 4.2						1.9E-04
GOES		1334	1339	1342			10564			8		B 5.1						1.9E-04
GOES		1409	1420	1423			10564			14		C 6.5						2.5E-03
GOES		1621	1626	1628			10564			7		B 7.8						2.2E-04
GOES		1956	2018	2026	N14	W25	10564			30	SF	C 7.5						5.8E-03
HOLL		2012	2016	2037	N14	W25	10564	02	24.9	25	SF		3	E		48		F
GOES		2146	2149	2151						5		B 4.5						1.2E-04
GOES		2214	2230	2239	N14	W26	10564			25	1N	M 5.7						4.5E-02
HOLL		2217	2225	2306	N14	W26	10564	02	25.0	49	1N		3	E		149		F
GOES	27	0015	0018	0025			10564			10		B 5.1						2.7E-04
GOES		0220	0223	0227			10564			7		B 4.9						1.7E-04
GOES		0653	0658	0700						7		B 7.1						1.8E-04
GOES		0843	0851	0856			10564			13		C 2.5						1.1E-03
GOES		0938	0942	0945			10564			7		B 4.3						1.5E-04
GOES		1406	1410	1415			10564			9		B 8.0						3.9E-04
GOES	28	0123	0127	0138			10567			15		B 7.4						5.5E-04
GOES		0323	0324	0327			10564			4		B 6.6						1.2E-04
GOES		0404	0410	0419			10564			15		B 4.0						3.0E-04
GOES		0758	0803	0807			10564			9		B 3.6						1.7E-04
GOES		1129	1153	1157			10567			28		C 2.2						1.1E-03
GOES		1705	1710	1713			10567			8		C 1.6						4.6E-04
GOES		1723	1727	1730			10564			7		C 2.9						7.3E-04
GOES		1920	1924	1926			10567			6		B 5.4						1.6E-04
GOES	29	0614	0617	0620			10564			6		B 4.8						1.4E-04

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

FEBRUARY 2004

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
04	2695	SVTO	8	S	1114.0	1116.0	2.0	350.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1114.0	1115.0	3.0	220.0			QL=4 ST=2 TYP=3
26	8800	LEAR	49	GB	0154.0	0154.0	18.0	530.0			QL=4 ST=2 TYP=6
	8800	PALE	49	GB	0154.0	0155.0	21.0	560.0			QL=4 ST=2 TYP=6
	8800	SGMR	4	S/F	2011.0	2012.0	11.0	72.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2012.0	2012.0	1.0	69.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2218.0	2219.0	2.0	390.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	2224.0	2225.0	7.0	160.0			QL=4 ST=2 TYP=3

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

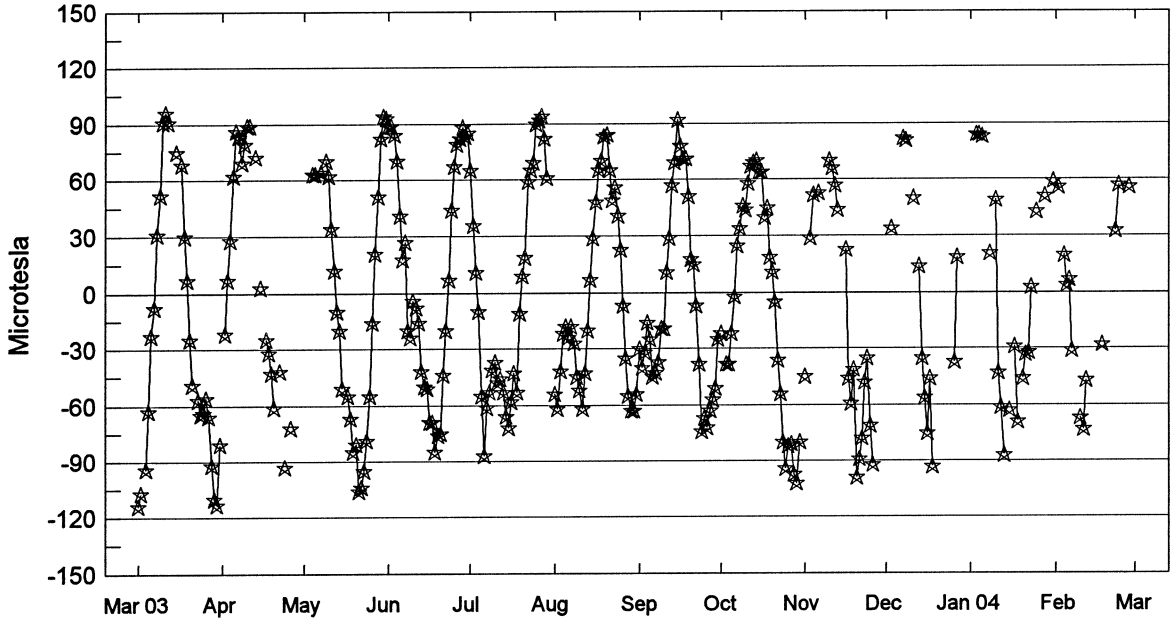
Explanation of Type Code:

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

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

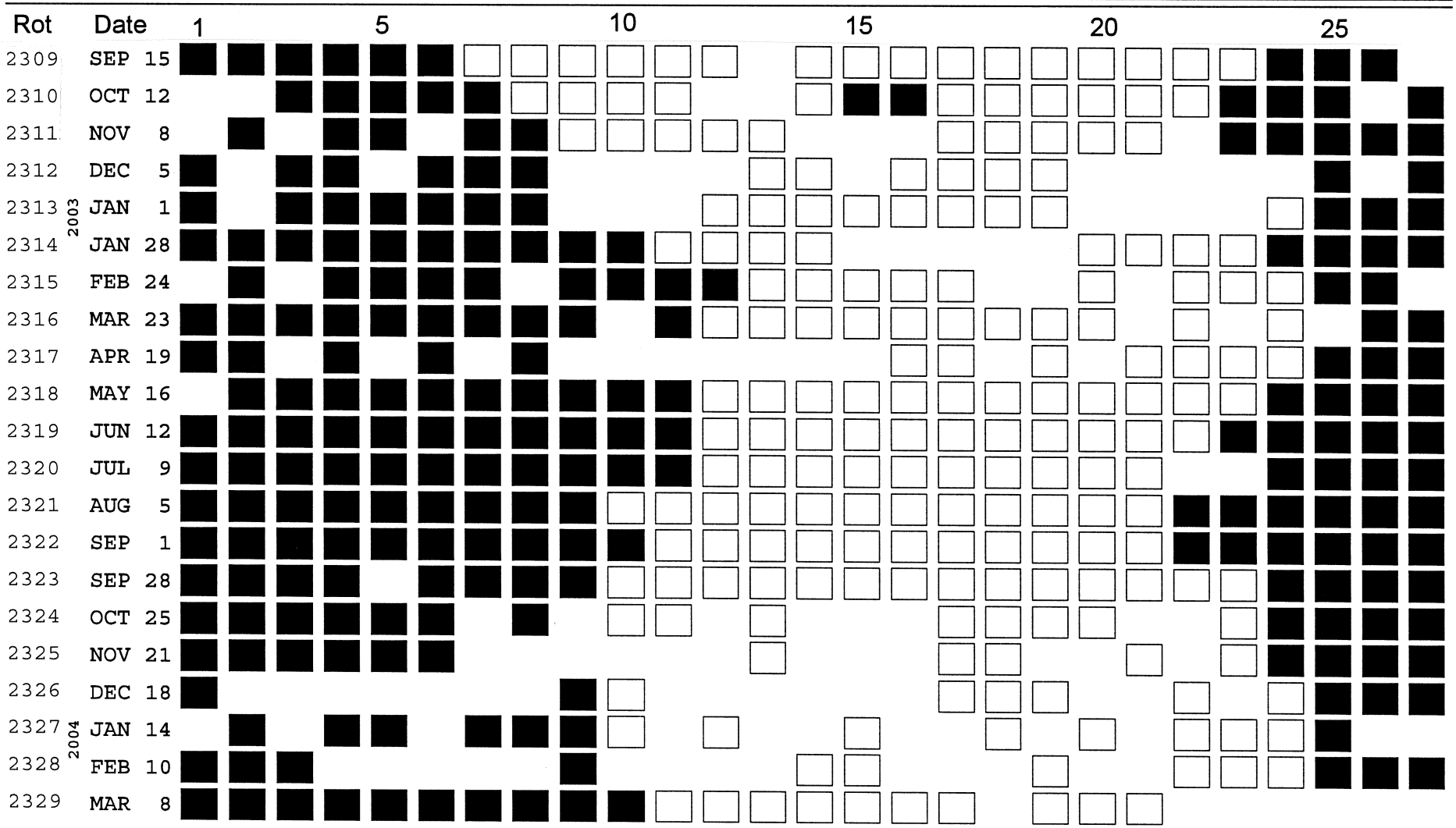
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; and Hiraiso, Japan 500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

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



Day	Mar 03	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb
1	-114	---	---	89	65	-54	-30	-22	-45	---	---	---
2	-107	-22	---	89	36	-62	-40	---	---	---	---	56
3	---	7	---	84	11	-42	-32	-38	29	34	84	---
4	-94	28	63	70	-10	-22	-16	-38	52	---	84	20
5	-63	62	63	41	-55	-18	-25	-22	---	---	83	4
6	-23	86	---	18	-87	-24	-45	-2	53	---	---	7
7	-8	83	64	27	-61	-18	-43	25	---	82	---	-31
8	31	69	---	-20	-53	-27	-37	34	---	81	21	---
9	52	79	70	-24	-41	-45	-19	46	---	---	---	---
10	91	89	62	-4	-37	-52	-19	44	70	---	49	-67
11	96	89	34	-8	-48	-62	11	58	66	50	-43	-73
12	91	---	12	-16	-46	-43	29	67	57	---	-61	-47
13	---	72	-10	-42	-53	-20	57	69	44	14	-87	---
14	---	---	-20	-50	-66	7	69	70	---	-35	---	---
15	75	3	-51	-51	-72	29	92	64	---	-56	-63	---
16	---	---	---	-69	-58	48	78	64	23	-75	---	---
17	68	-25	-55	-69	-43	65	71	40	-46	-46	-29	---
18	30	-32	-67	-85	-53	70	71	45	-59	-93	-69	-28
19	7	-43	-85	-76	-11	83	51	19	-41	---	---	---
20	-25	-61	-81	-75	9	84	18	11	-99	---	-46	---
21	-49	---	-106	-44	19	65	15	-5	-89	---	-33	---
22	---	-42	-104	-20	59	49	-7	-36	-78	---	-32	---
23	-57	---	-95	7	65	56	-38	-54	-48		3	33
24	-65	-93	-79	44	69	41	-74	-80	-35	---	---	57
25	-64	---	-55	67	90	23	-67	-94	-71	---	43	---
26	-56	-72	-16	79	92	-7	-72	-82	-92	-37	---	---
27	-66	---	21	82	94	-35	-63	-81	---	19	---	---
28	-92	---	51	88	82	-55	-57	-97	---	---	51	56
29	-110	---	82	83	61	-63	-51	-102	---	---	---	---
30	-113	---	94	85	---	-63	-25	-80		---	---	
31	-81		93		---	-54		---		---	59	

STANFORD MEAN SOLAR MAGNETIC FIELD

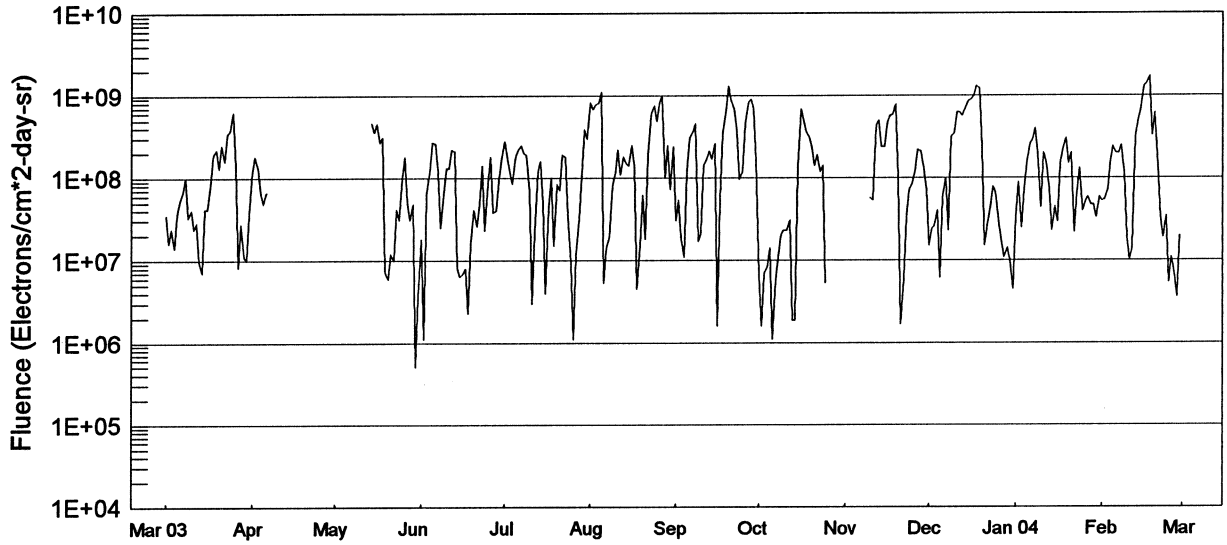


Mean Solar Magnetic Field Polarity: □ = field > 2 microT; ▒ = -2 microT ≤ field ≤ 2 microT

■ = 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.

GOES Daily Electron Fluence
Mar 2003 - Feb 2004



Day	Mar 03	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb
1	3.5E+07	4.5E+08	--	1.8E+07	2.8E+08	8.1E+08	3.0E+07	6.7E+06	-999	1.5E+07	3.3E+07	5.3E+07
2	1.6E+07	6.3E+08	sensor	1.1E+06	1.8E+08	6.8E+08	5.4E+07	1.6E+06	-999	2.4E+07	8.8E+07	5.5E+07
3	2.4E+07	3.0E+08	problems	6.5E+07	1.2E+08	7.7E+08	1.9E+07	6.9E+06	-999	2.6E+07	2.5E+07	7.1E+07
4	1.4E+07	1.4E+08	--	1.2E+08	8.5E+07	8.2E+08	1.1E+07	8.2E+06	-999	4.0E+07	7.2E+07	1.6E+08
5	3.6E+07	1.7E+08	--	2.7E+08	1.8E+08	1.1E+09	1.2E+08	1.4E+07	-999	6.2E+06	1.5E+08	2.4E+08
6	5.2E+07	1.6E+08	--	2.6E+08	2.2E+08	5.4E+06	3.0E+08	1.1E+06	-999	5.9E+07	2.6E+08	2.0E+08
7	6.8E+07	1.7E+08	sensor	1.2E+08	2.5E+08	1.4E+07	3.6E+08	5.7E+06	-999	1.0E+08	2.9E+08	2.0E+08
8	9.9E+07	--	problems	2.5E+07	2.0E+08	1.9E+07	4.5E+08	1.1E+07	-999	2.3E+07	4.0E+08	2.5E+08
9	3.3E+07	--	--	6.4E+07	1.9E+08	8.3E+07	1.7E+07	2.0E+07	-999	3.2E+08	2.0E+08	1.1E+08
10	4.0E+07	--	--	1.3E+08	7.0E+07	1.1E+08	2.1E+07	2.3E+07	5.6E+07	3.5E+08	4.4E+07	1.9E+07
11	2.4E+07	--	--	1.3E+08	3.0E+06	2.2E+08	1.4E+08	2.3E+07	5.4E+07	6.2E+08	2.0E+08	1.0E+07
12	2.8E+07	sensor	--	2.2E+08	2.1E+07	1.1E+08	1.7E+08	3.0E+07	4.4E+08	6.3E+08	1.6E+08	1.4E+07
13	9.7E+06	problems	--	2.1E+08	1.2E+08	1.8E+08	2.1E+08	1.9E+06	5.0E+08	5.7E+08	7.3E+07	3.2E+08
14	7.2E+06	--	4.6E+08	8.3E+06	1.6E+08	1.5E+08	1.7E+08	1.9E+06	2.4E+08	7.1E+08	2.3E+07	5.0E+08
15	4.2E+07	--	3.6E+08	6.4E+06	5.0E+07	1.4E+08	2.6E+08	1.3E+08	2.4E+08	8.4E+08	4.5E+07	6.7E+08
16	4.2E+07	--	4.5E+08	6.9E+06	4.0E+06	2.5E+08	1.6E+06	6.8E+08	4.6E+08	9.0E+08	2.9E+07	1.3E+09
17	8.4E+07	sensor	2.7E+08	8.0E+06	4.5E+07	1.4E+08	5.5E+07	5.0E+08	5.7E+08	1.0E+09	1.5E+08	1.4E+09
18	1.9E+08	problems	3.1E+08	2.3E+06	9.9E+07	4.5E+06	3.5E+08	3.6E+08	5.8E+08	1.3E+09	2.4E+08	1.7E+09
19	2.2E+08	--	7.4E+06	1.6E+07	1.5E+07	1.5E+07	6.5E+08	3.1E+08	7.7E+08	1.2E+09	3.0E+08	3.3E+08
20	1.3E+08	--	6.0E+06	4.1E+07	8.4E+07	6.2E+07	1.3E+09	2.3E+08	9.6E+07	2.3E+08	1.5E+08	6.1E+08
21	2.5E+08	--	1.2E+07	2.6E+07	7.1E+07	1.8E+07	8.7E+08	1.4E+08	1.7E+06	1.5E+07	2.0E+08	1.4E+08
22	1.6E+08	sensor	1.0E+07	4.9E+07	1.9E+08	1.9E+08	6.8E+08	1.9E+08	5.8E+06	2.9E+07	2.2E+07	3.3E+07
23	3.5E+08	problems	4.2E+07	1.4E+08	1.8E+08	6.0E+08	3.7E+08	1.2E+08	3.3E+07	4.4E+07	6.6E+07	1.9E+07
24	3.7E+08	--	3.1E+07	2.3E+07	3.5E+07	7.5E+08	9.7E+07	1.4E+08	7.1E+07	7.8E+07	1.3E+08	3.4E+07
25	6.3E+08	--	9.9E+07	8.7E+07	9.4E+06	4.9E+08	1.2E+08	5.3E+06	8.7E+07	6.5E+07	4.0E+07	5.5E+06
26	1.4E+08	--	1.8E+08	1.8E+08	1.1E+06	8.2E+08	4.5E+08	-999	1.2E+08	2.8E+07	5.1E+07	1.1E+07
27	8.3E+06	sensor	5.1E+07	3.8E+07	1.2E+07	1.0E+09	8.3E+08	-999	2.2E+08	1.7E+07	5.9E+07	7.7E+06
28	2.7E+07	problems	3.1E+07	4.0E+07	3.2E+07	1.0E+08	8.9E+08	-999	2.1E+08	1.1E+07	4.7E+07	3.6E+06
29	1.1E+07	--	4.8E+07	9.4E+07	1.1E+08	2.5E+08	7.0E+08	-999	1.4E+08	1.4E+07	4.7E+07	2.0E+07
30	1.0E+07	--	5.0E+05	1.7E+08	3.9E+08	7.2E+07	1.6E+08	-999	7.1E+07	1.0E+07	3.3E+07	
31	3.7E+07		3.6E+06		3.0E+08	2.4E+08		-999		4.5E+06	5.9E+07	

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '--' indicates data not available.

NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES12 is primary satellite as of 15 May 2003.

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CONTENTS

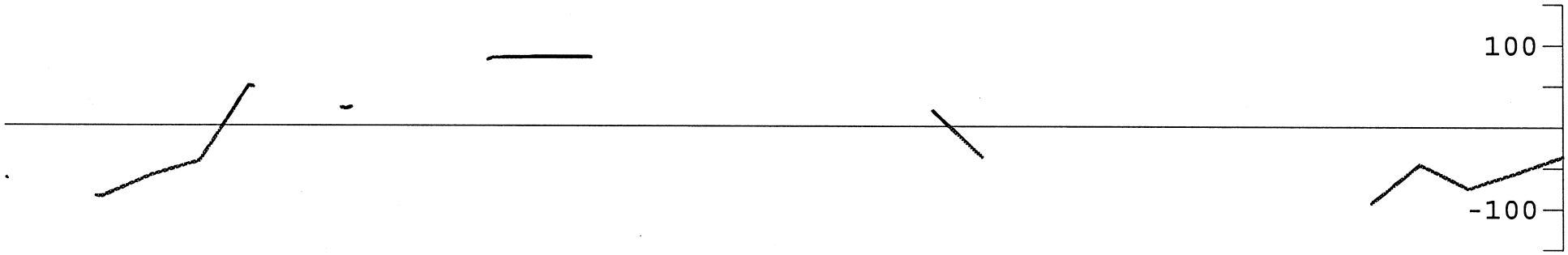
Prompt Reports Number 715 Part I

DATA FOR JANUARY 2004

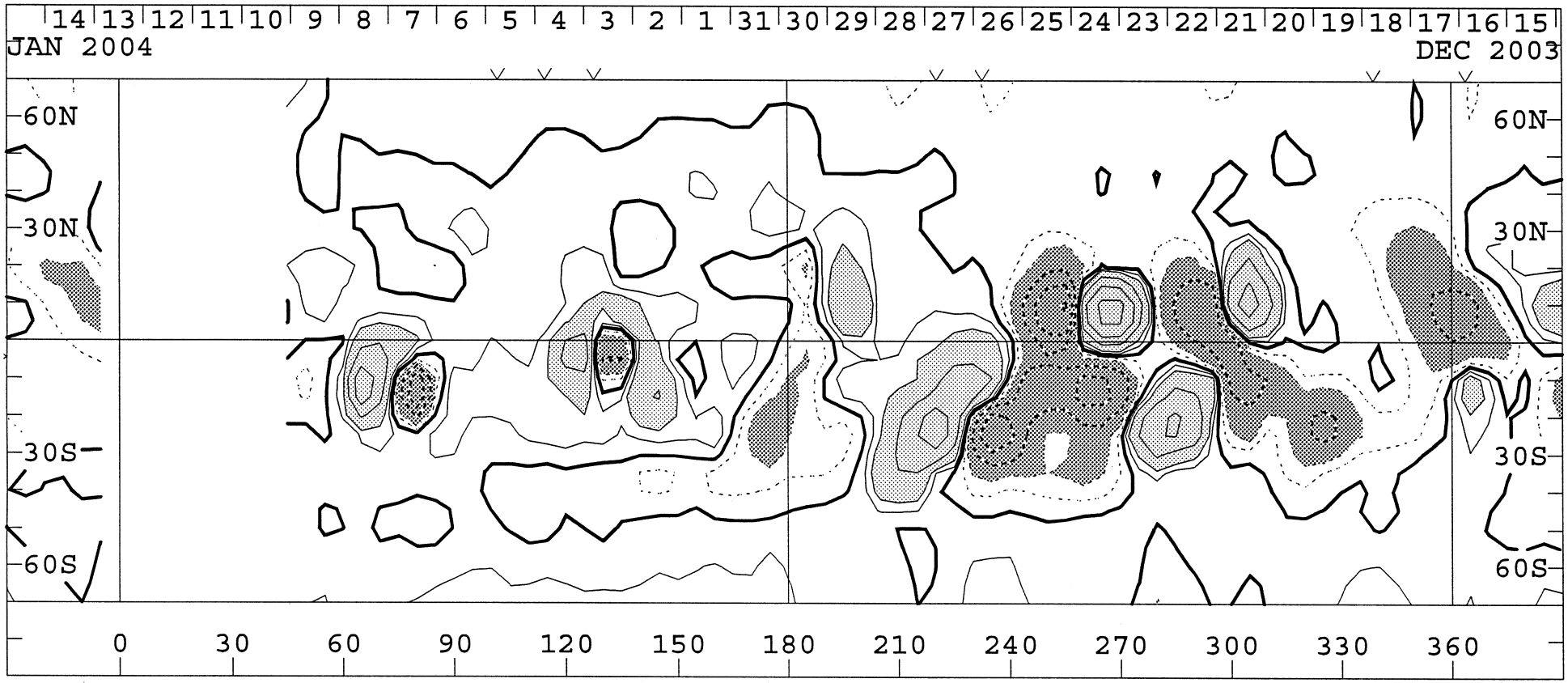
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2011
(17 December 2003 to 13 January 2004)

WILCOX SOLAR OBSERVATORY



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



Heliographic Longitude

2011

SOLAR MAGNETIC FIELD SYNOPTIC CHART

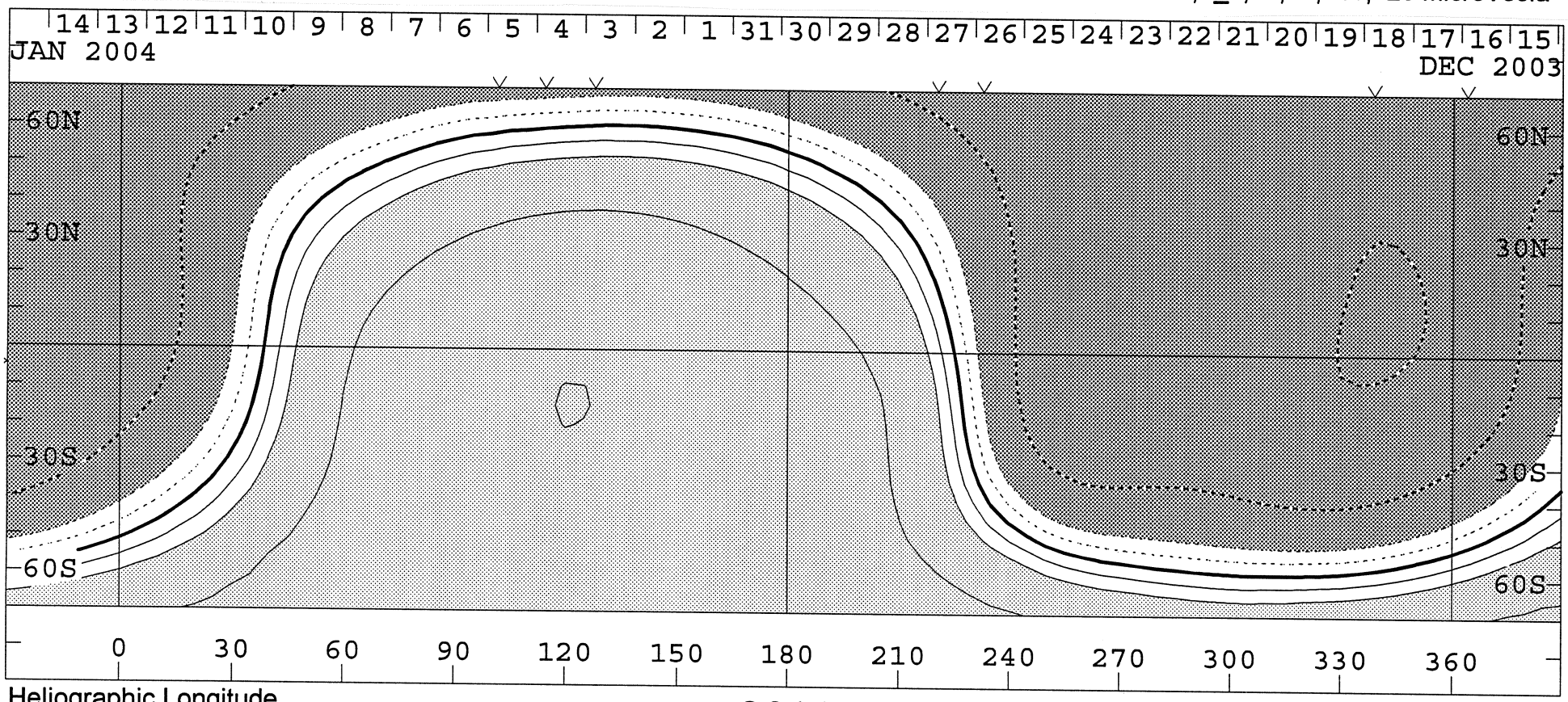
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2011

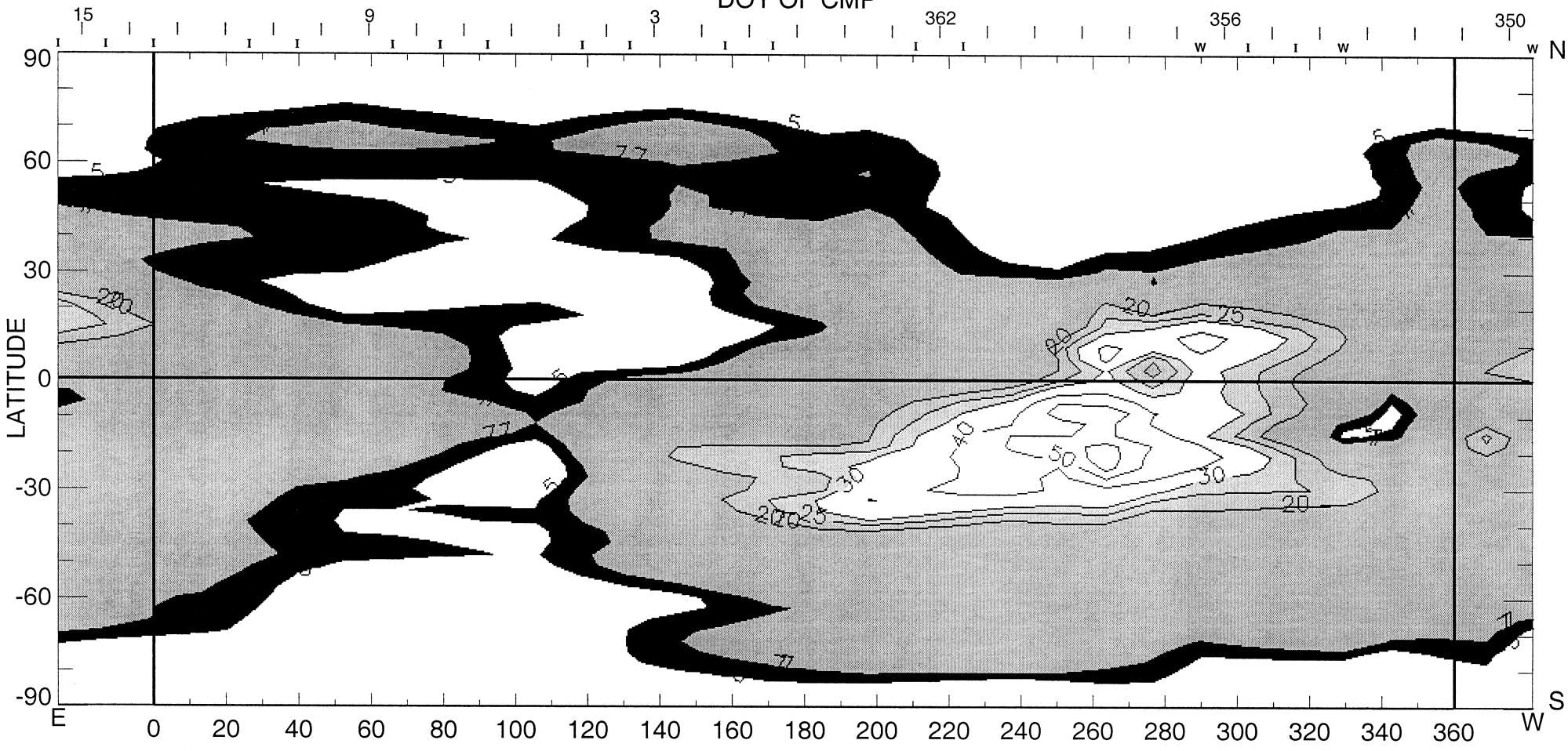
(17 December 2003 to 13 January 2004)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



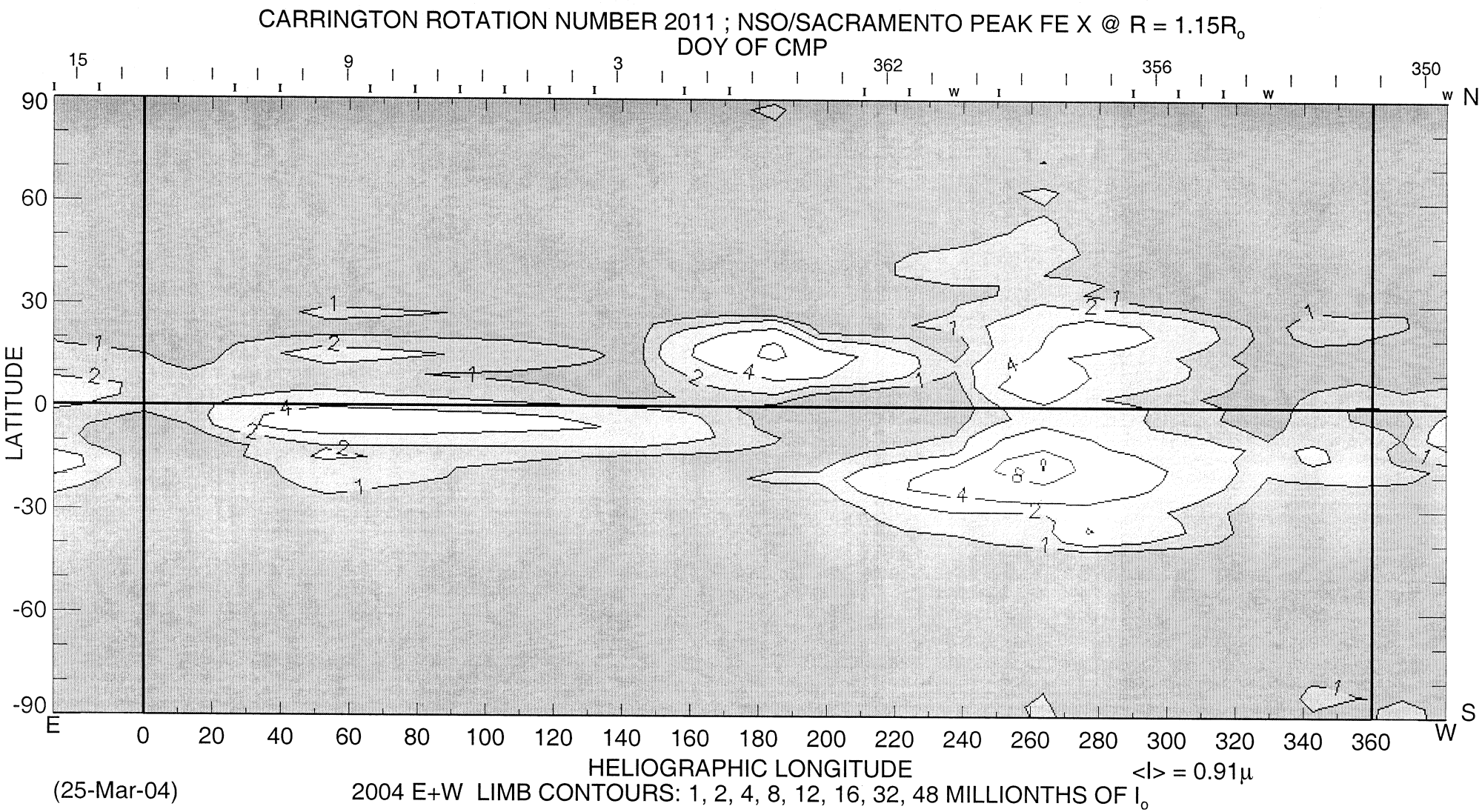
CARRINGTON ROTATION NUMBER 2011 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



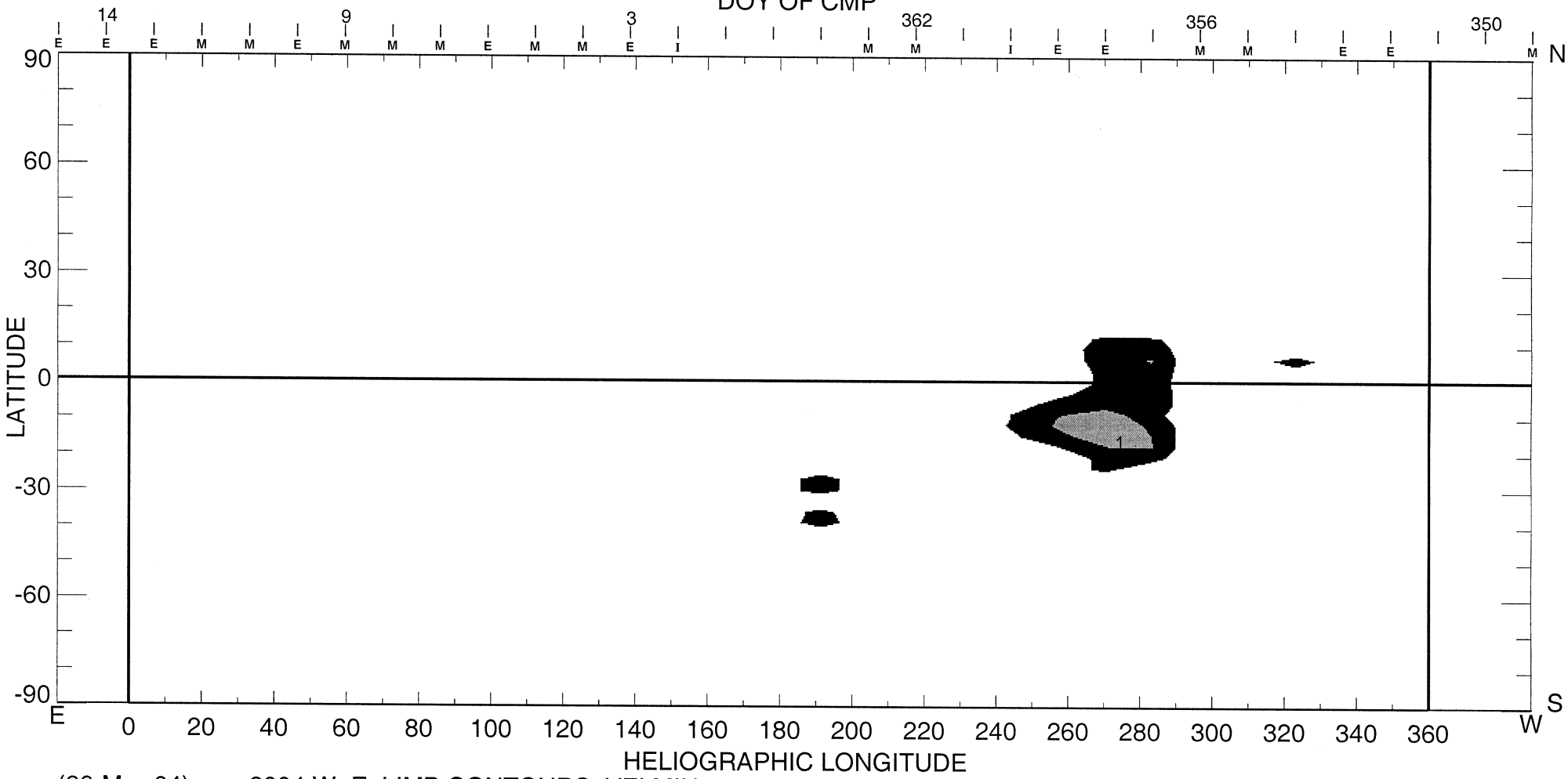
(25-Mar-04)

2004 E+W LIMB CONTOURS: 5, 7, 20, 25, 30, 40, 50, 60, 80, 100 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK



CARRINGTON ROTATION NUMBER 2011 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



(26-Mar-04) 2004 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

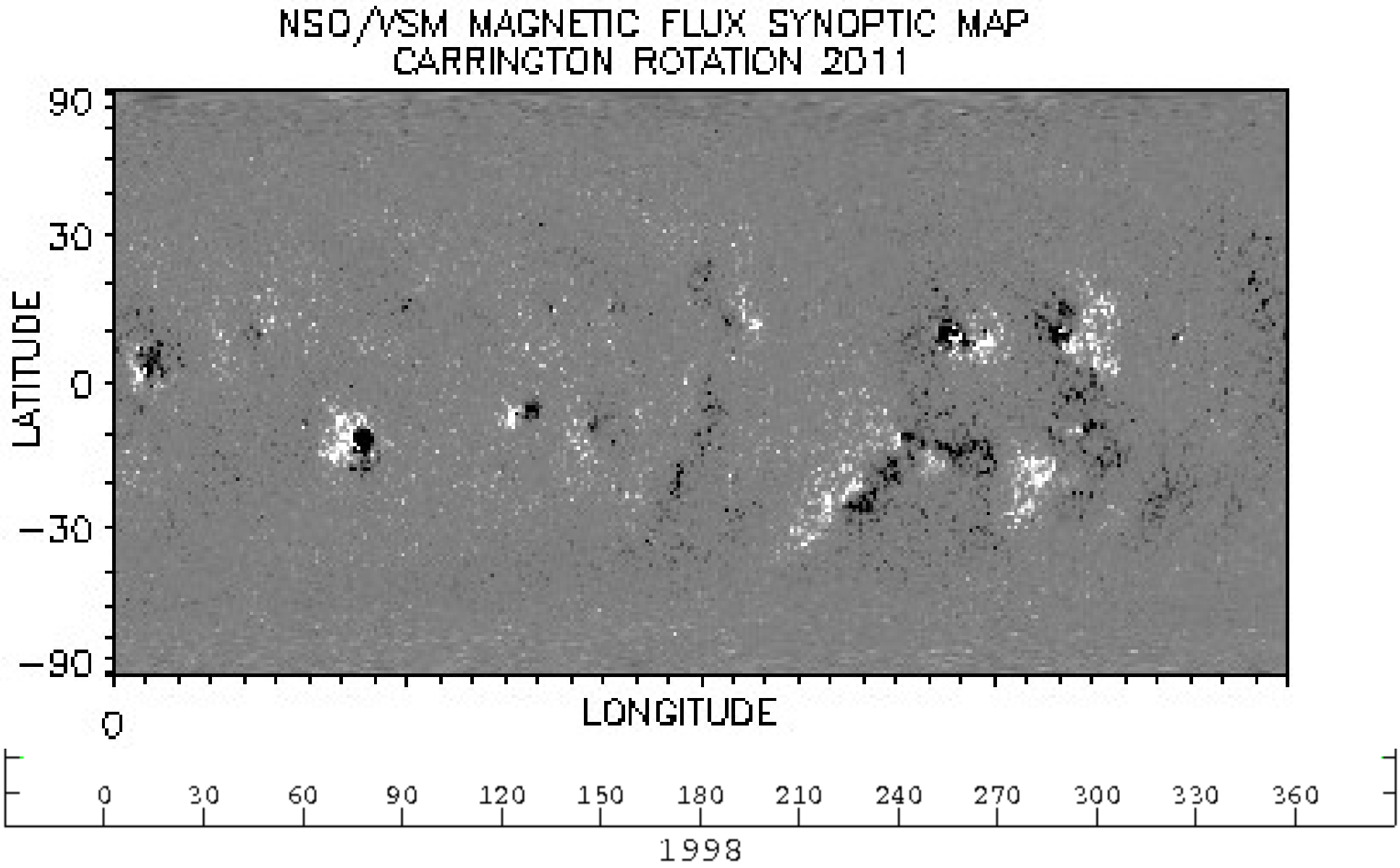
altrock Fri Mar 26 13:01:14 2004

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2011

(17 December 2003 to 13 January 2004)

National Solar Observatory/Kitt Peak



Heliographic Longitude

JANUARY 1, 2004 (P= 2.36, Bo = -2.95, Lo = 164.58)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -

NO DATA

E--

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =

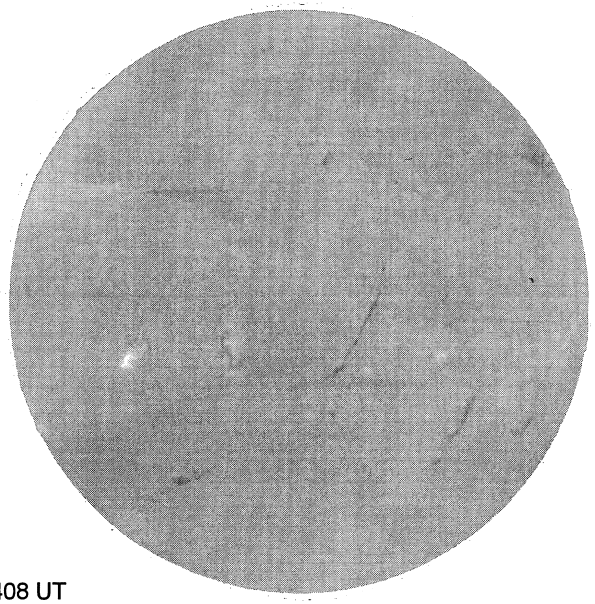
NO DATA

--W

White= +7.5G
Black = -7.5G

YNAO H-ALPHA

E—

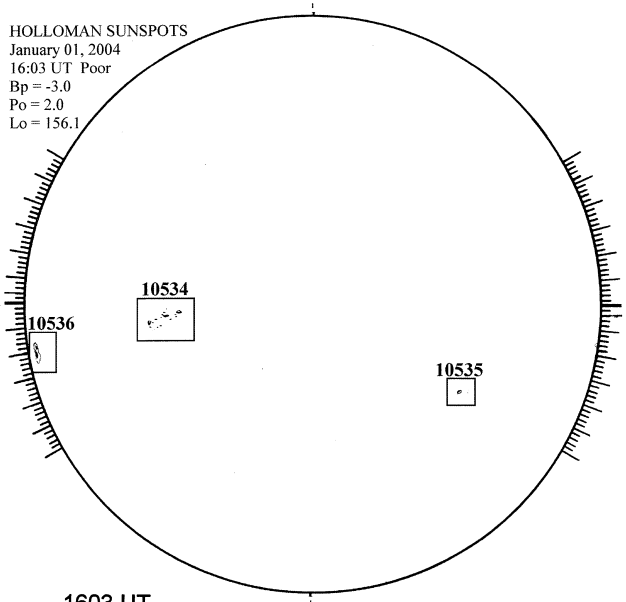


0408 UT

S

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
January 01, 2004
16:03 UT Poor
Bp = -3.0
Po = 2.0
Lo = 156.1



1603 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NO DATA

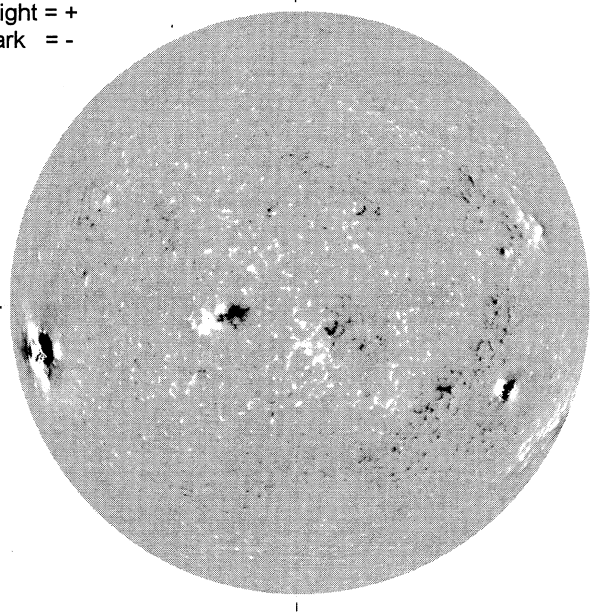
S

JANUARY 2, 2004 (P= 1.88, Bo = -3.07, Lo = 151.41)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



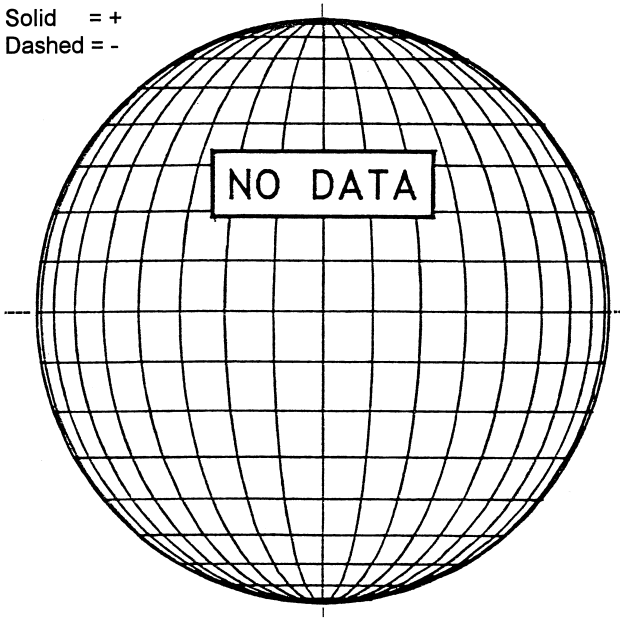
E--

1853 UT

STANFORD MAGNETOGRAM

N

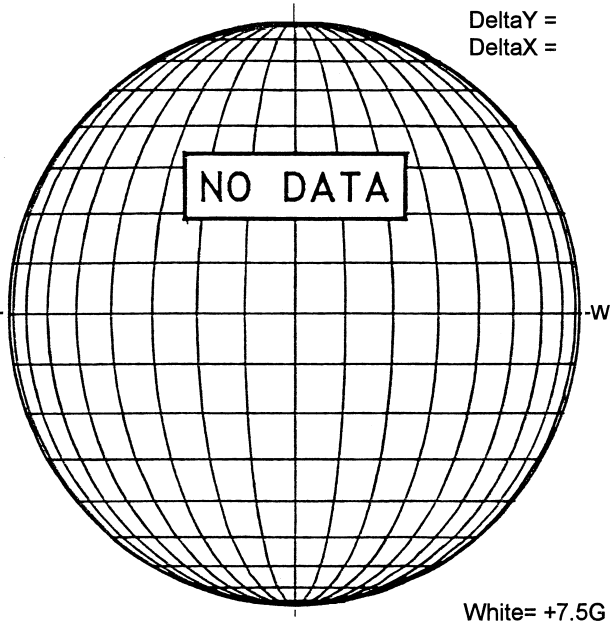
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

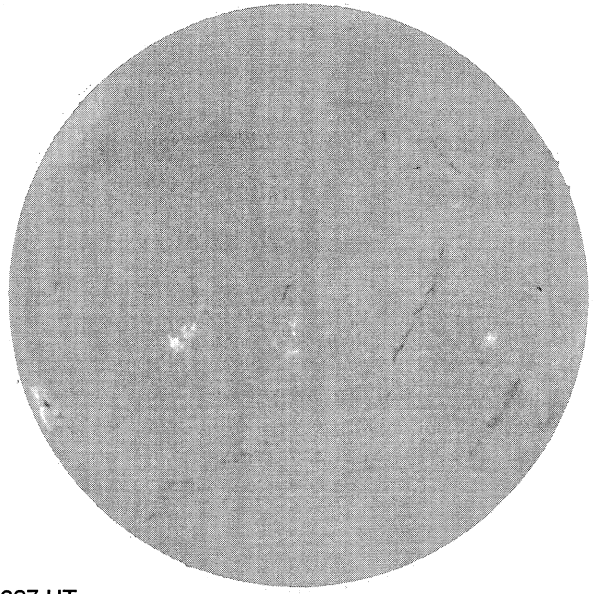
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

YNAO H-ALPHA

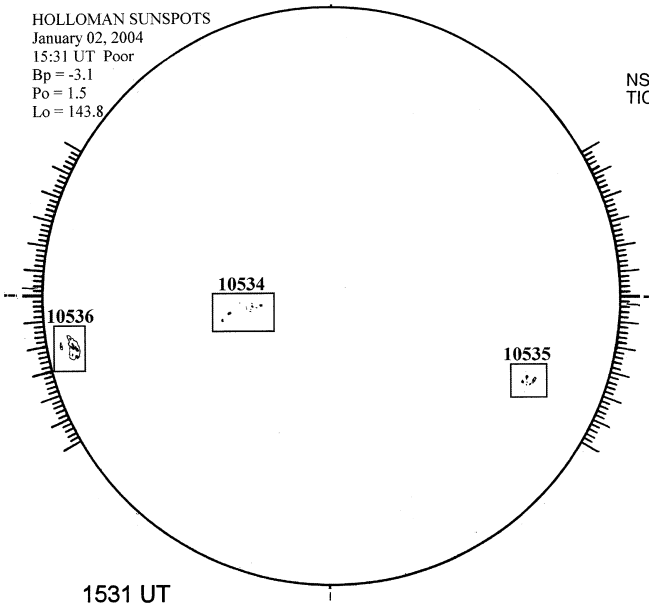


E-

0327 UT

S

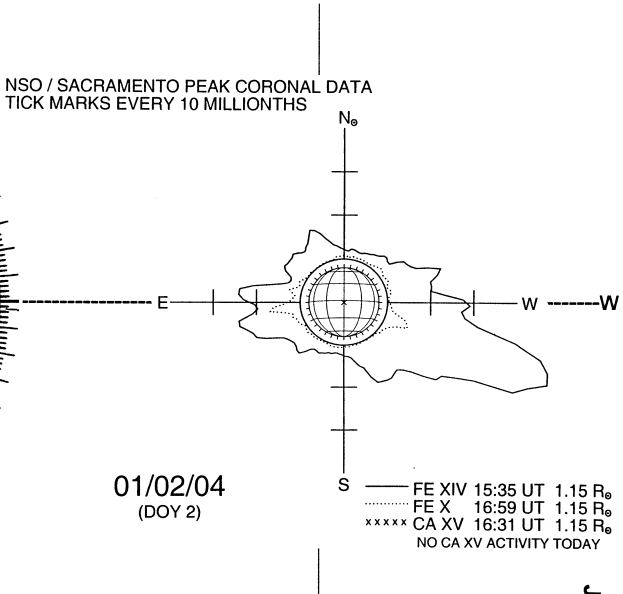
HOLLOMAN SUNSPOTS



1531 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



01/02/04
(DOY 2)

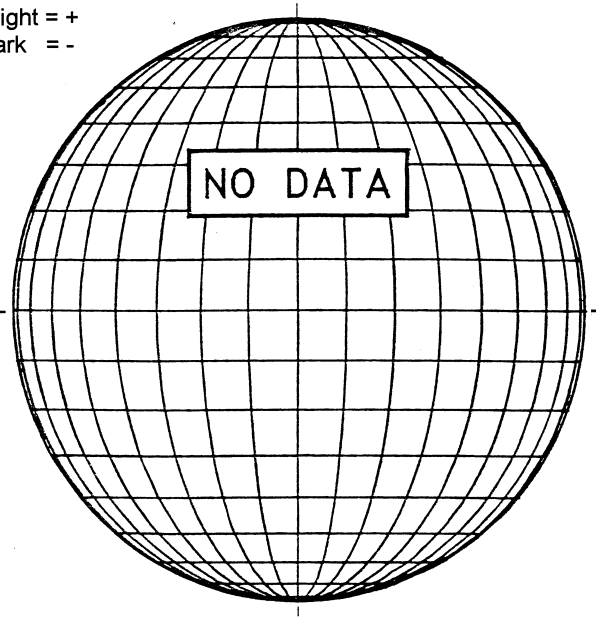
S

JANUARY 3, 2004 (P= 1.39, Bo = -3.19, Lo = 138.24)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

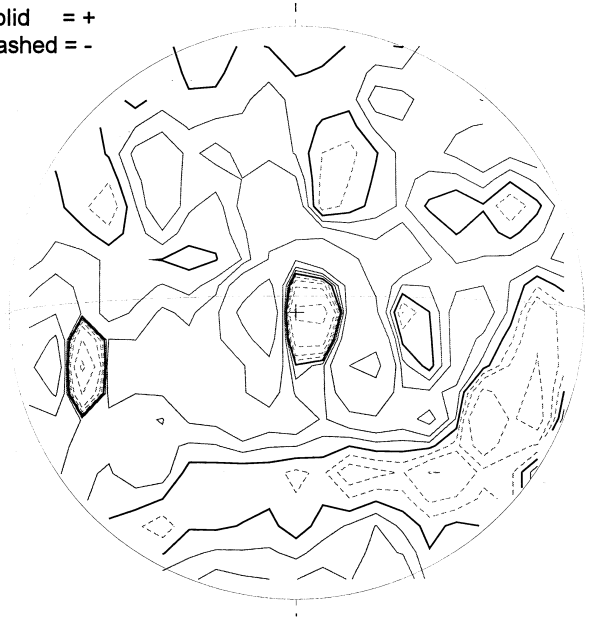
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

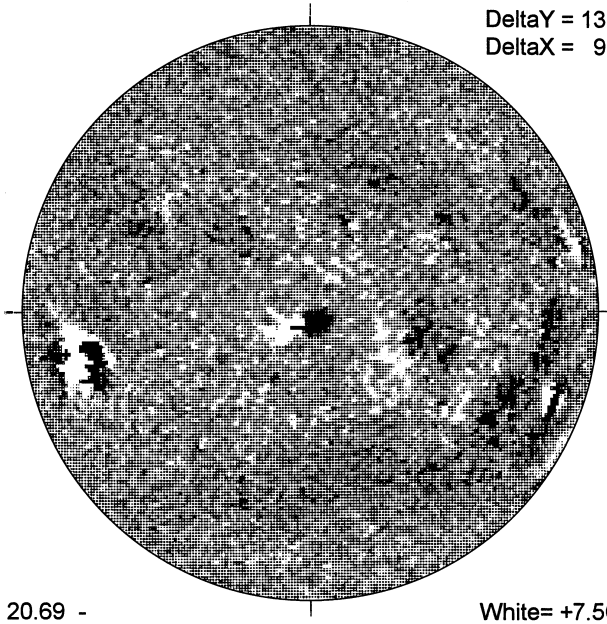


1904 UT

MT. WILSON MAGNETOGRAM

N

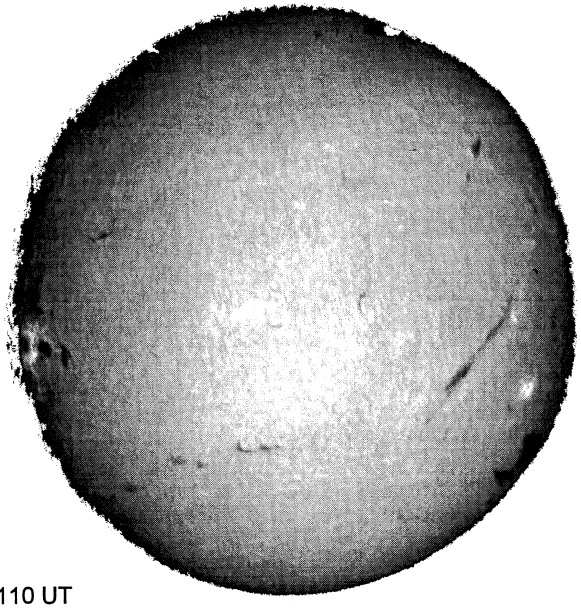
DeltaY = 13.0
DeltaX = 9.7



20.69 -
21.67 UT

White= +7.5G
Black = -7.5G

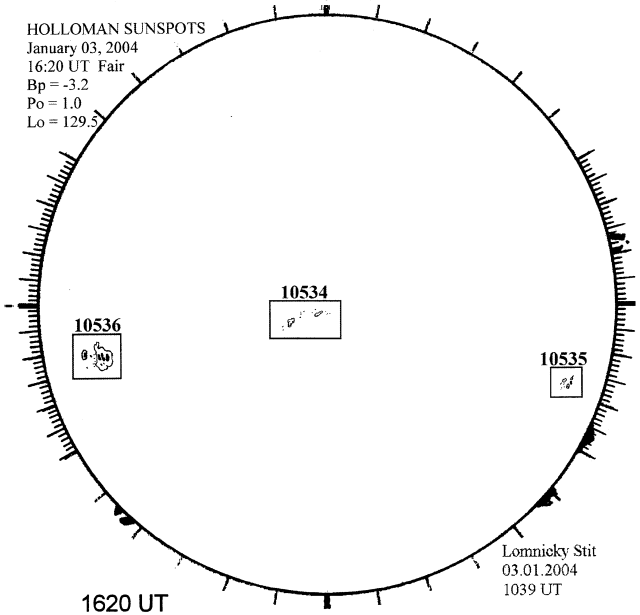
MEUDON H-ALPHA



1110 UT

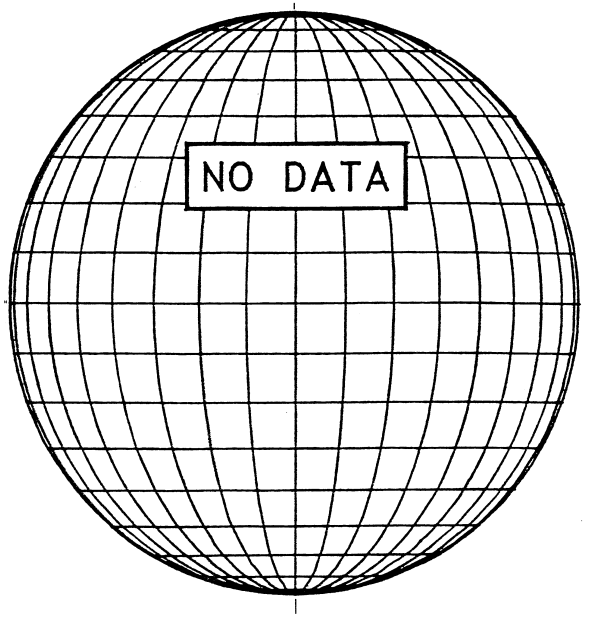
S

HOLLOMAN SUNSPOTS



1620 UT
1039 UT LOMN Prom S

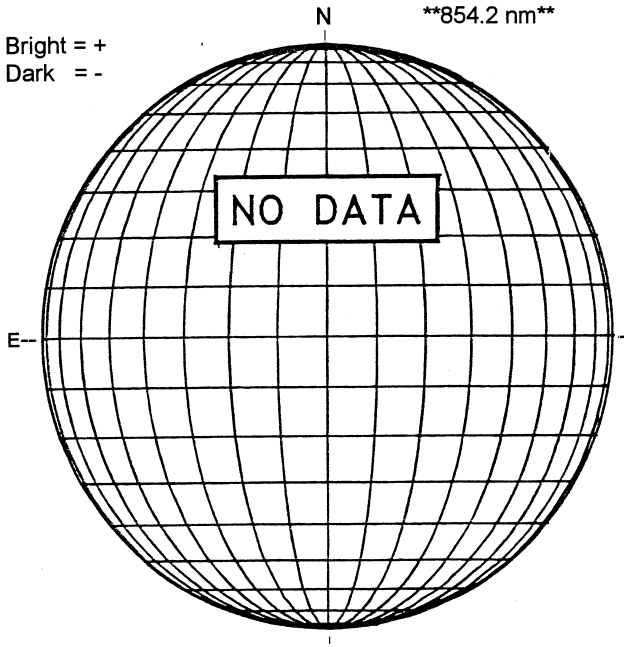
LOMNICKY PEAK CORONA (1.04 Radii)----



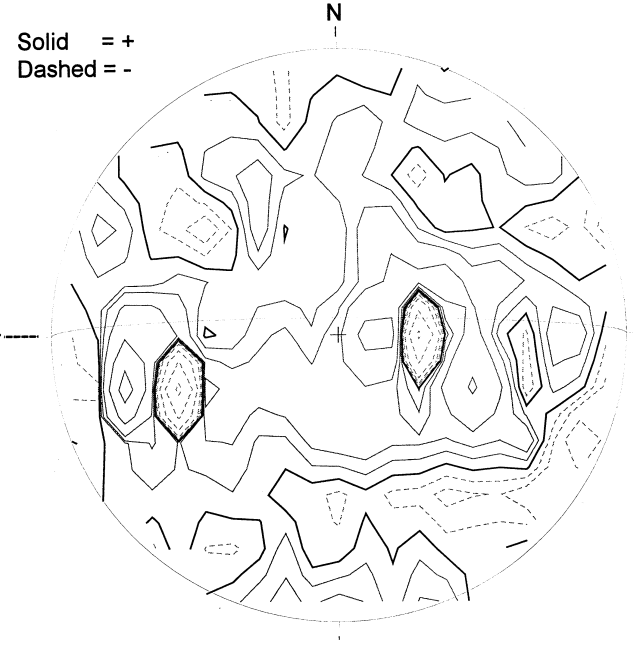
S

JANUARY 4, 2004 (P= 0.91, Bo = -3.30, Lo = 125.07)

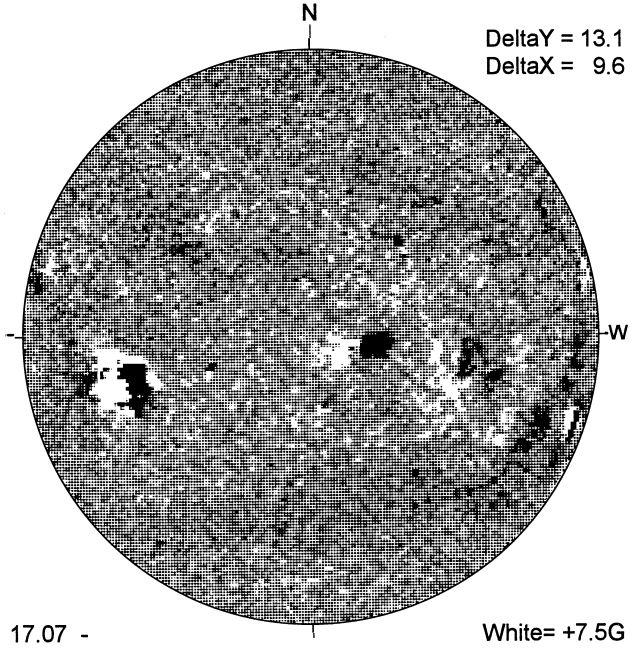
KITT PEAK MAGNETOGRAM--SOLIS



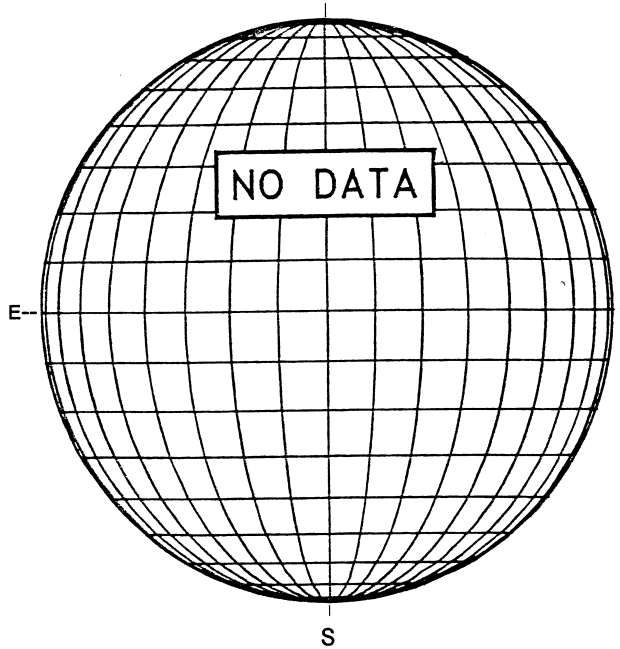
STANFORD MAGNETOGRAM



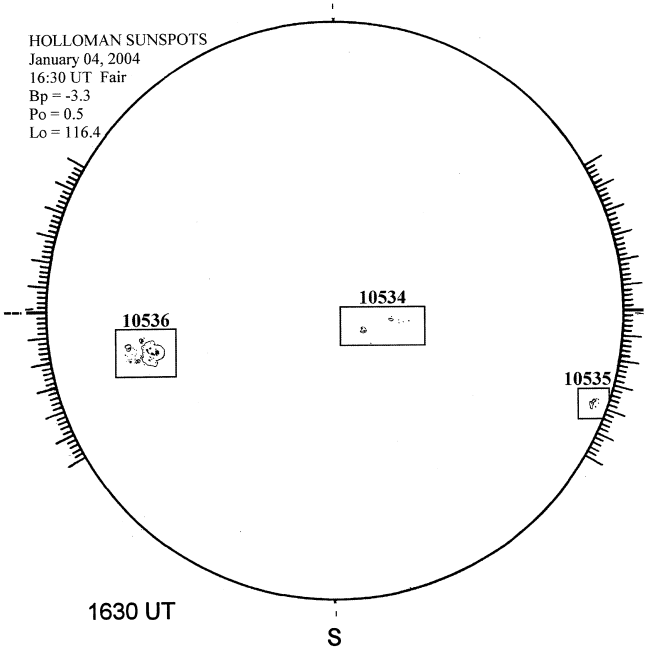
MT. WILSON MAGNETOGRAM



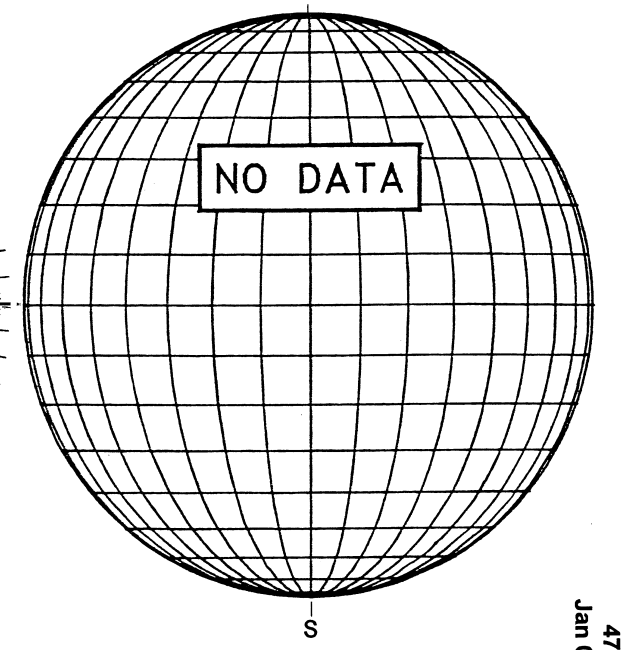
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOT

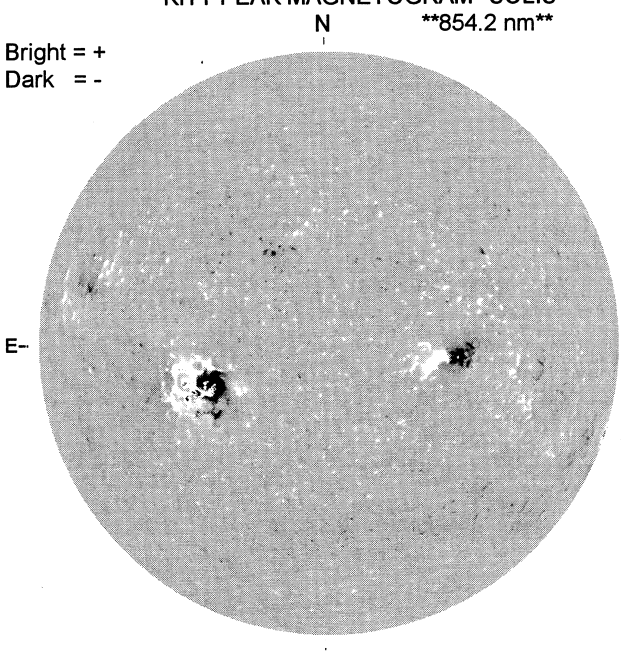


SACRAMENTO PEAK CORONA (1.15 Radii)----



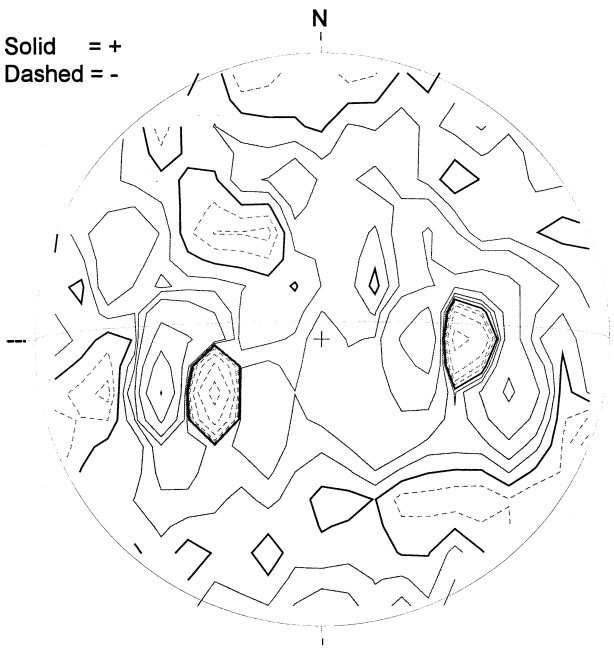
JANUARY 5, 2004 (P= 0.42, Bo = -3.42, Lo = 111.90)

KITT PEAK MAGNETOGRAM--SOLIS



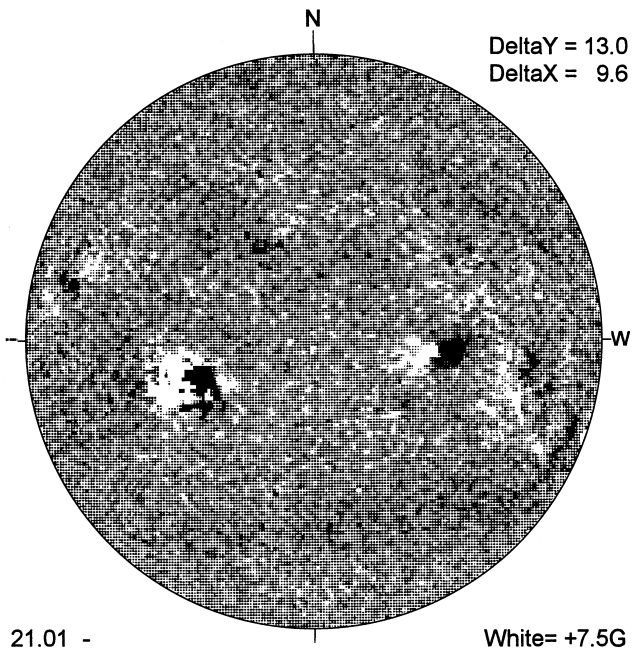
1840 UT

STANFORD MAGNETOGRAM



1824 UT

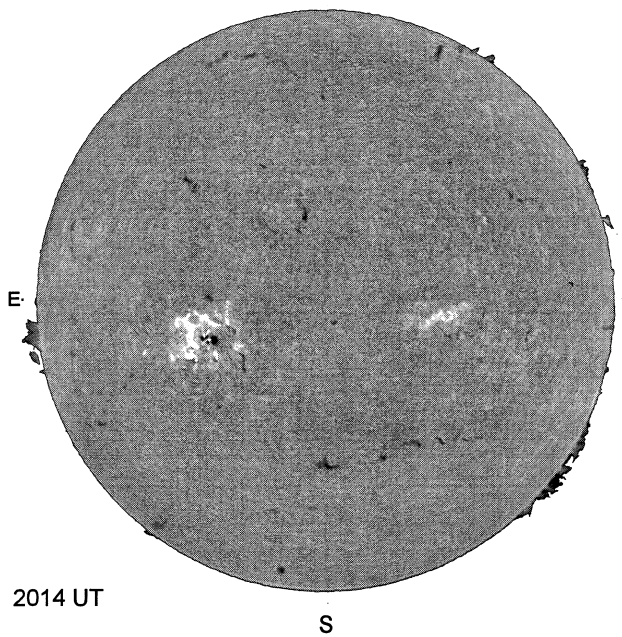
MT. WILSON MAGNETOGRAM



21.01 -
21.99 UT

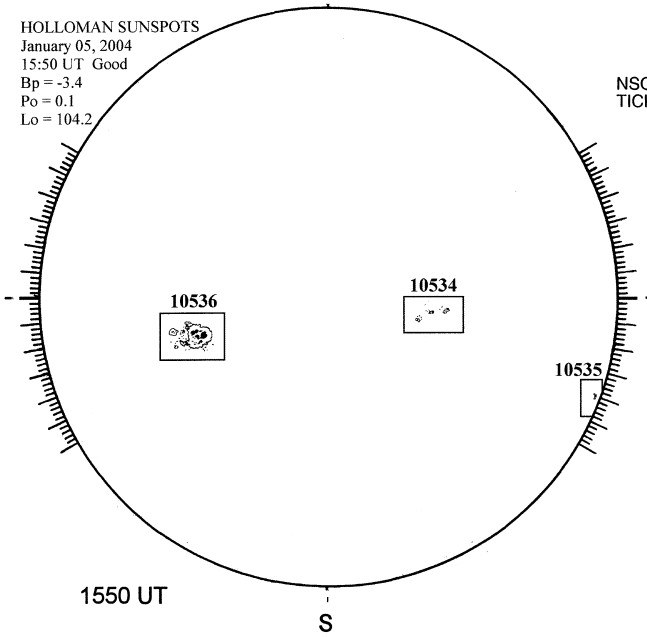
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



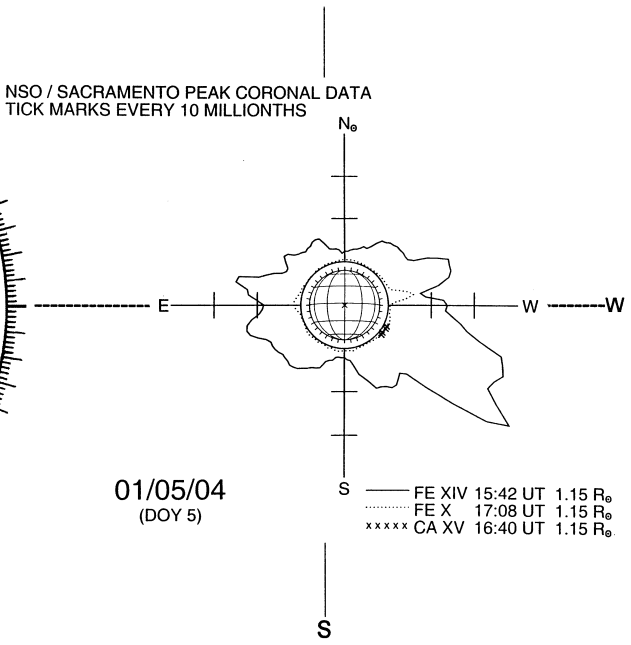
2014 UT

HOLLOMAN SUNSPOT



1550 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

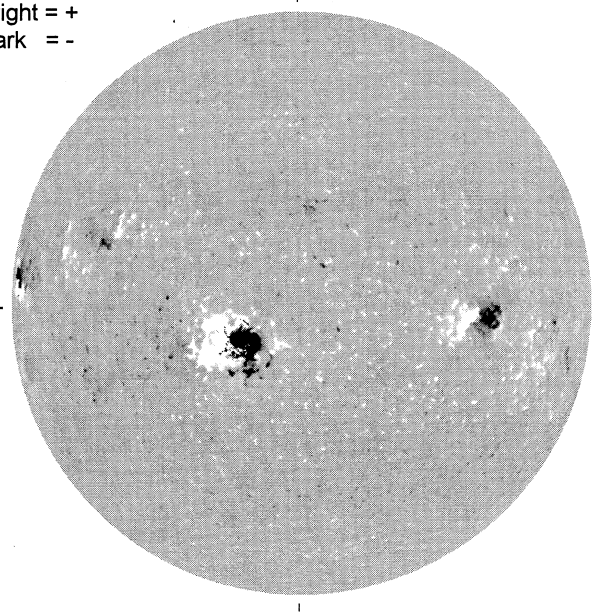


JANUARY 6, 2004 (P= -0.06, Bo = -3.53, Lo = 98.73)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



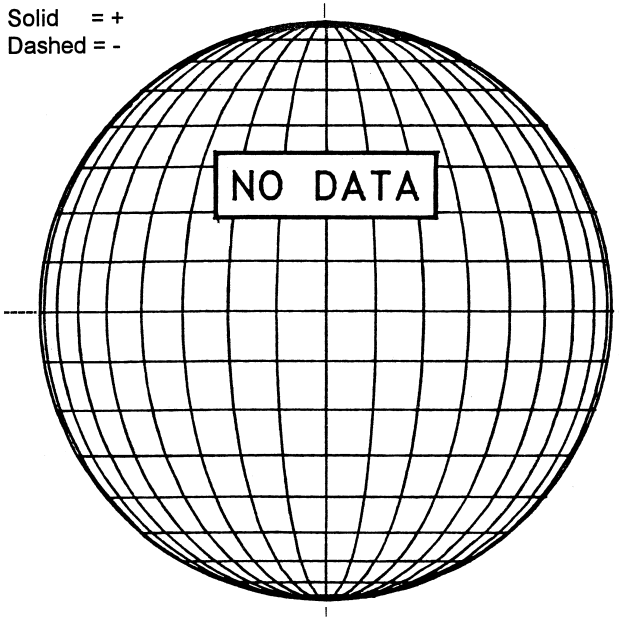
E--

1859 UT

STANFORD MAGNETOGRAM

N

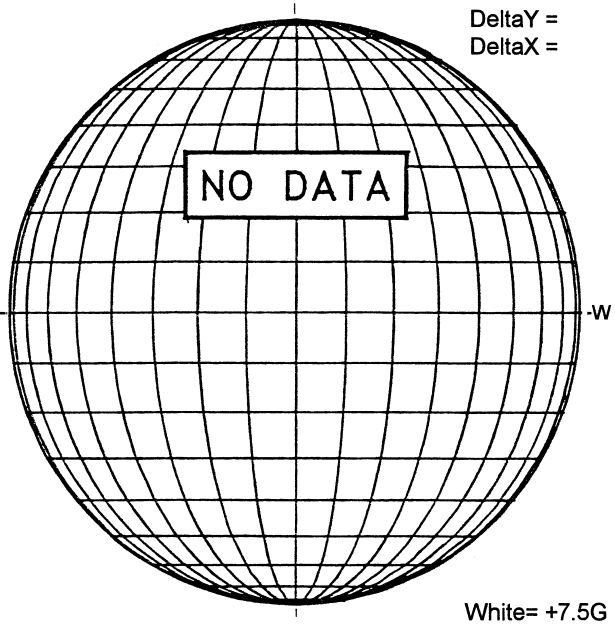
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

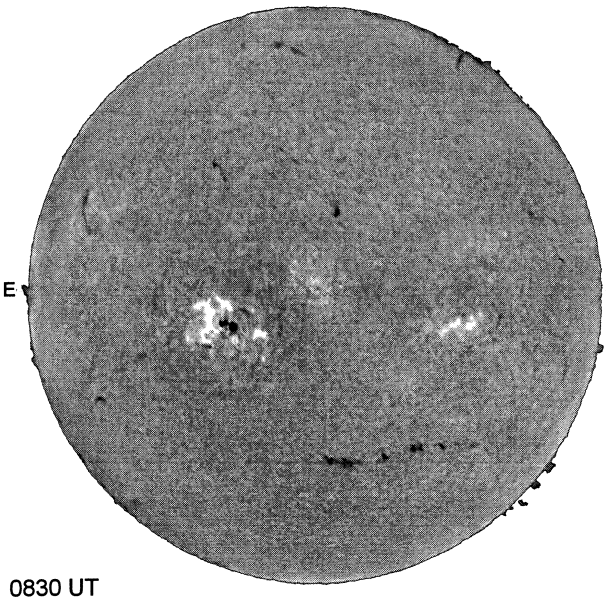
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

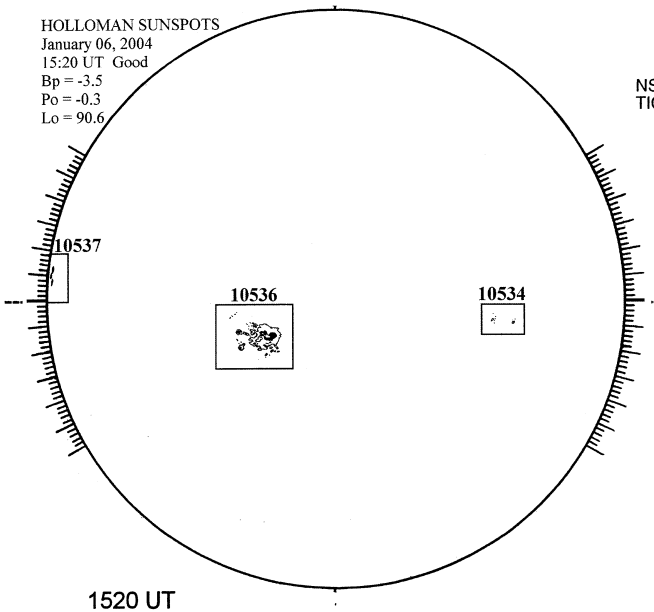


E

0830 UT

S

HOLLOMAN SUNSPOT

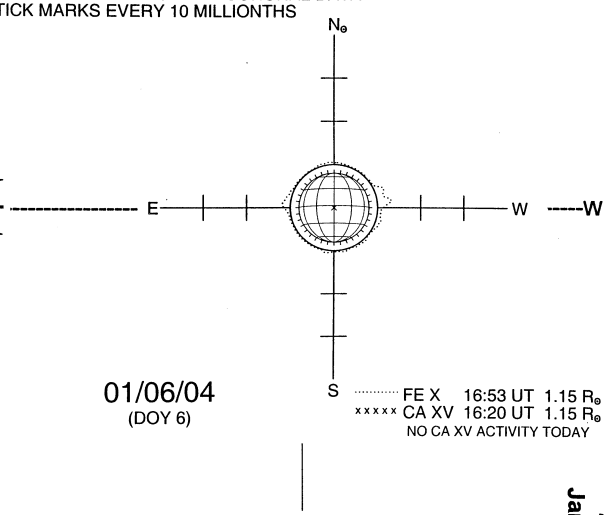


1520 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



01/06/04
(DOY 6)

FE X 16:53 UT 1.15 R⊙
CA XV 16:20 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

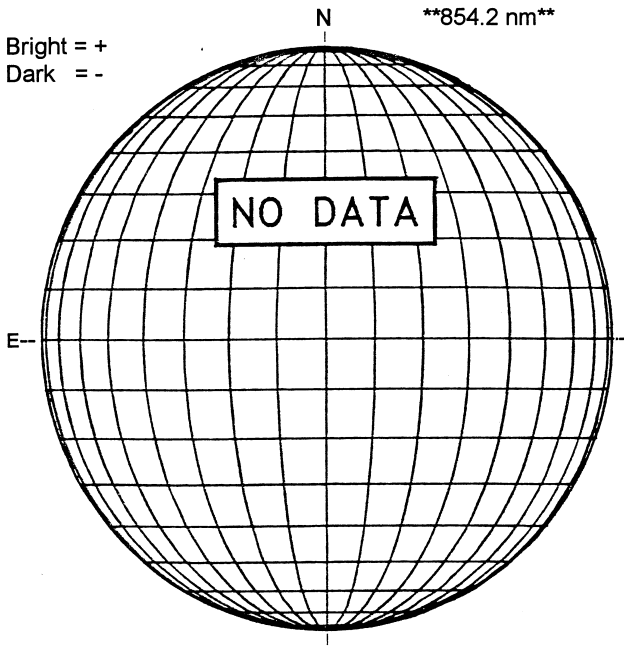
S

JANUARY 7, 2004 (P= -0.54, Bo = -3.64, Lo = 85.56)

KITT PEAK MAGNETOGRAM--SOLIS

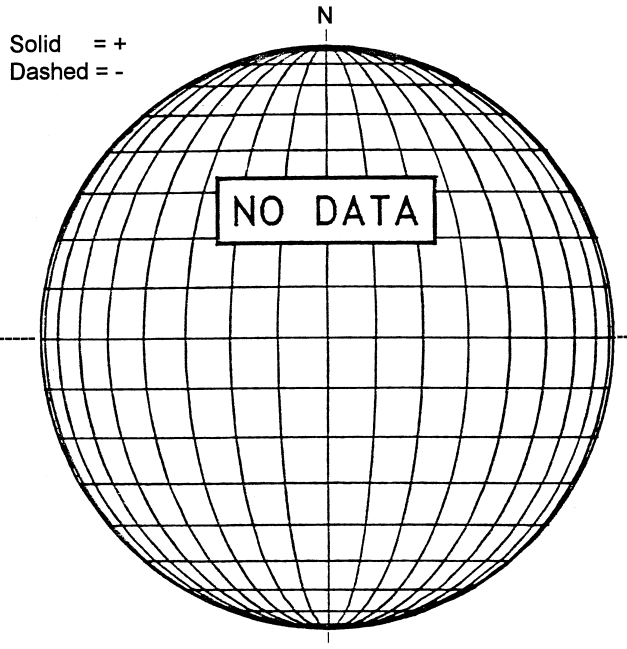
854.2 nm

Bright = +
Dark = -



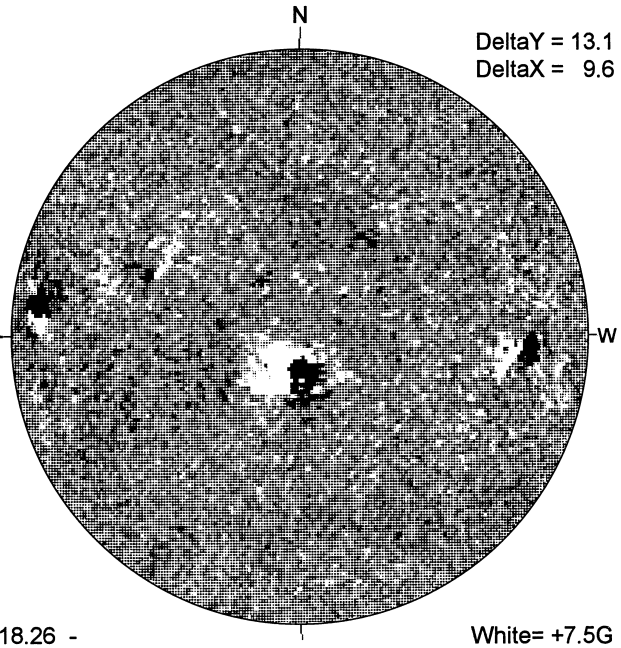
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

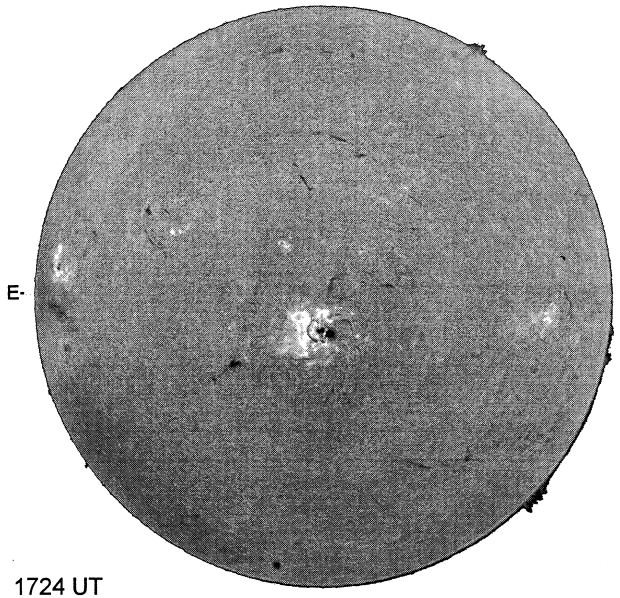
DeltaY = 13.1
DeltaX = 9.6



18.26 -
19.24 UT

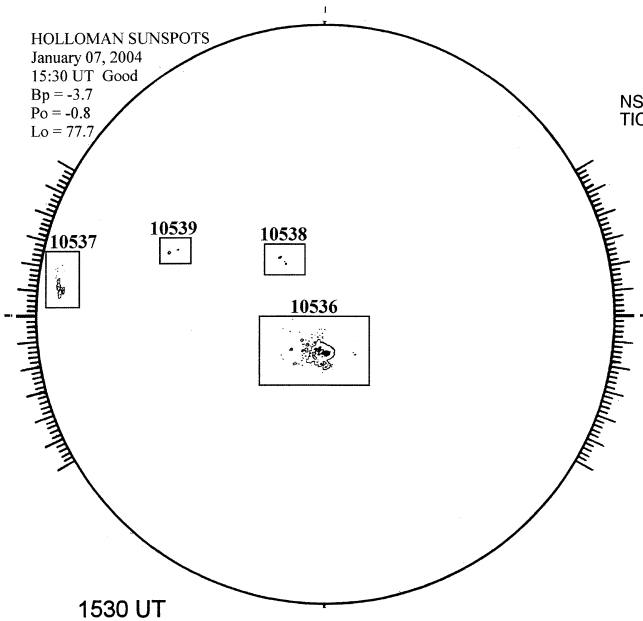
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



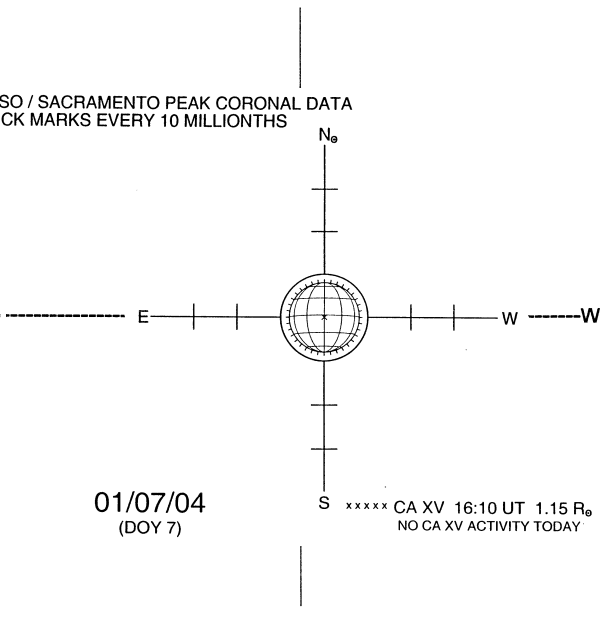
1724 UT

HOLLOMAN SUNSPOTS



1530 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

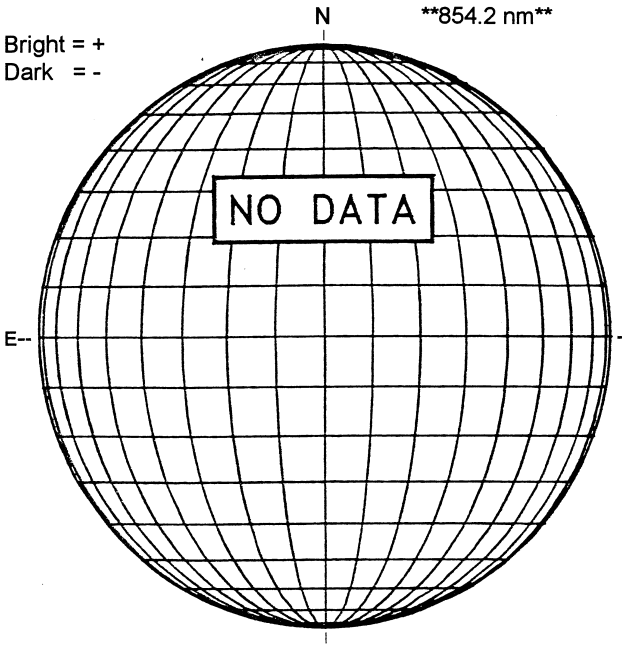


01/07/04
(DOY 7)

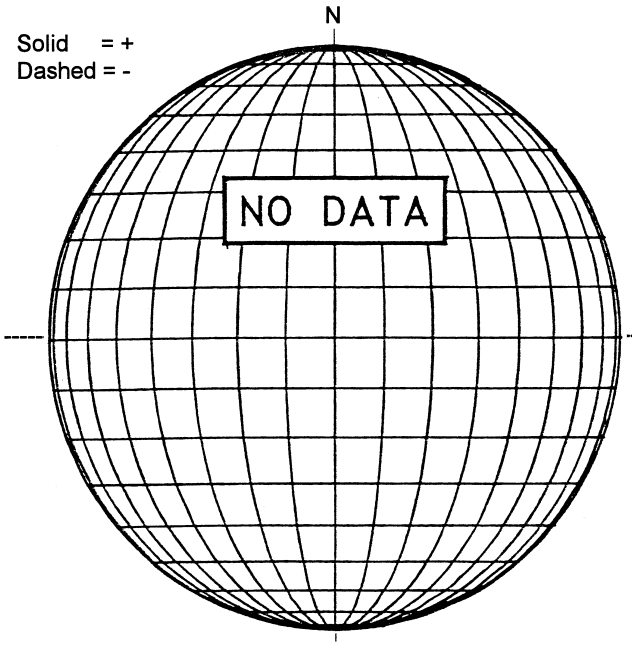
xxxxx CA XV 16:10 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

JANUARY 8, 2004 (P= -1.03, Bo = -3.75, Lo = 72.39)

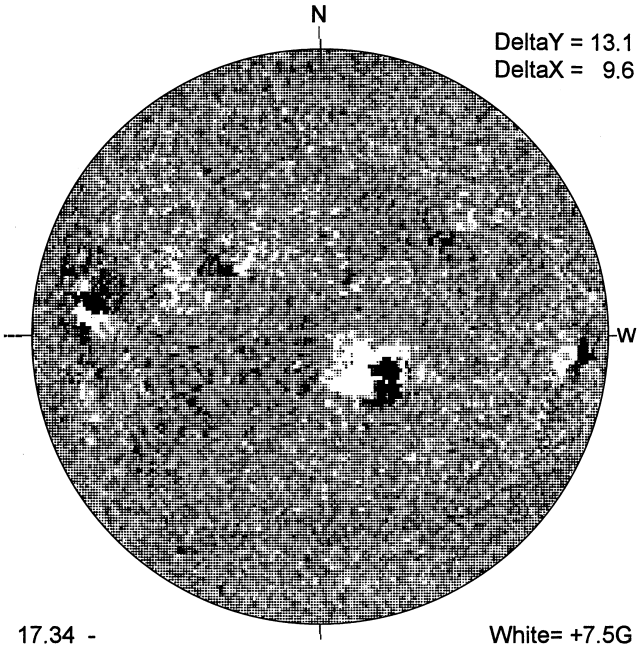
KITT PEAK MAGNETOGRAM--SOLIS



STANFORD MAGNETOGRAM



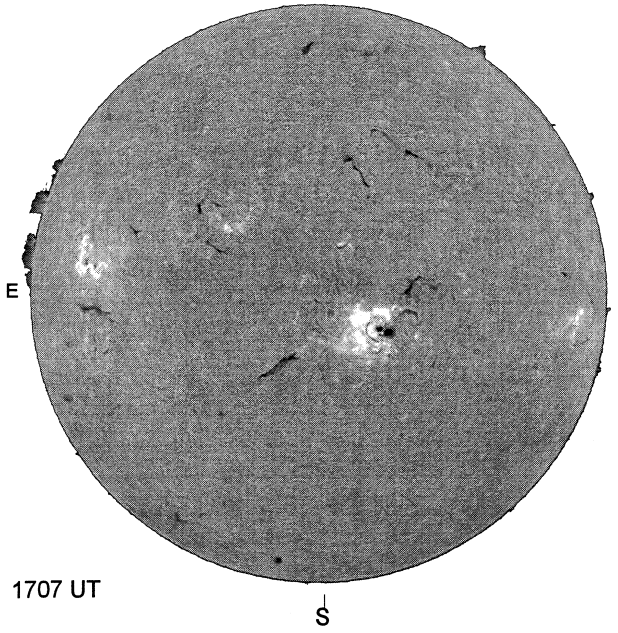
MT. WILSON MAGNETOGRAM



17.34 -
18.32 UT

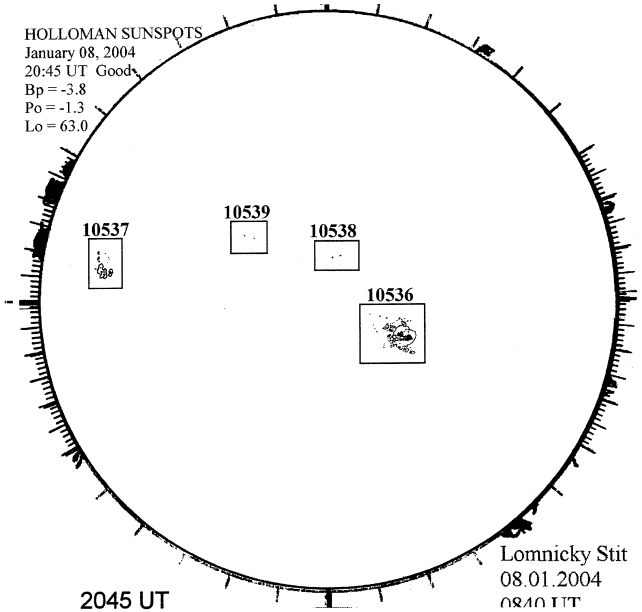
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



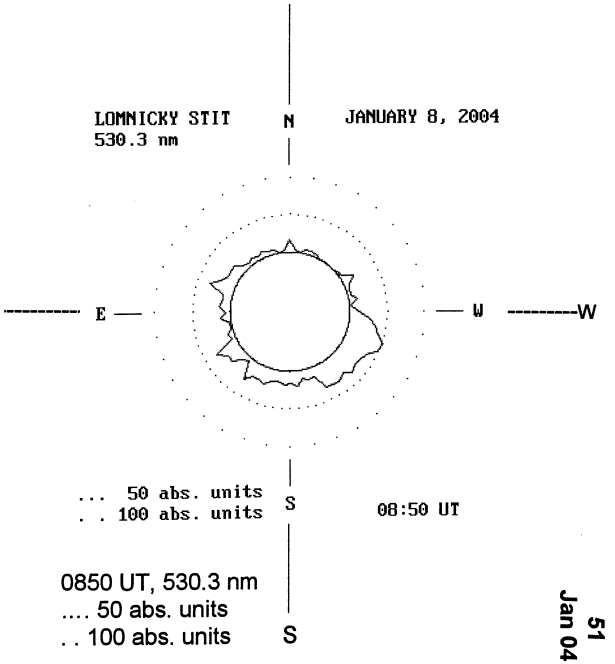
1707 UT

HOLLOMAN SUNSPOTS



2045 UT
0840 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



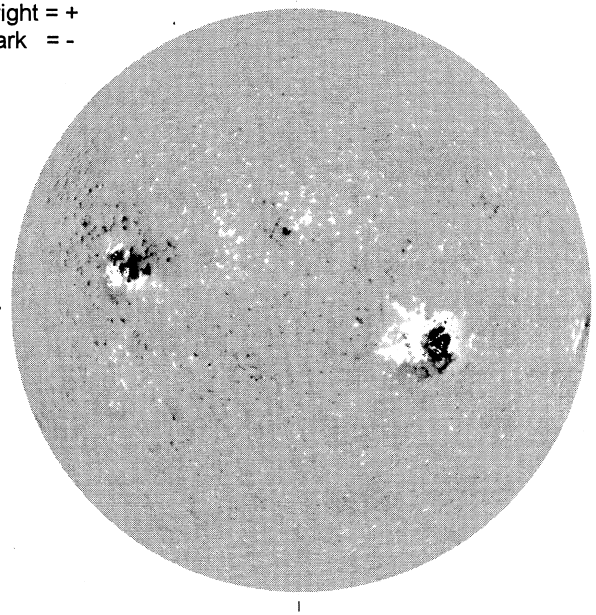
0850 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

JANUARY 9, 2004 (P= -1.51, Bo = -3.86, Lo = 59.22)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm

Bright = +
Dark = -



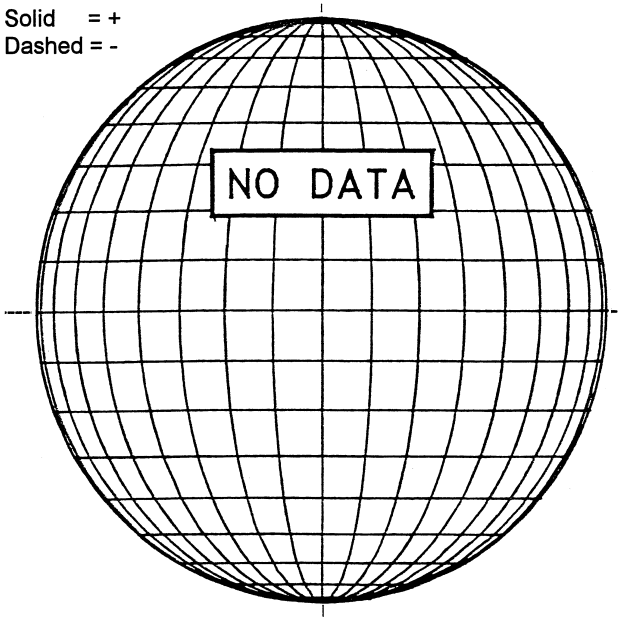
E-

2121 UT

STANFORD MAGNETOGRAM

N

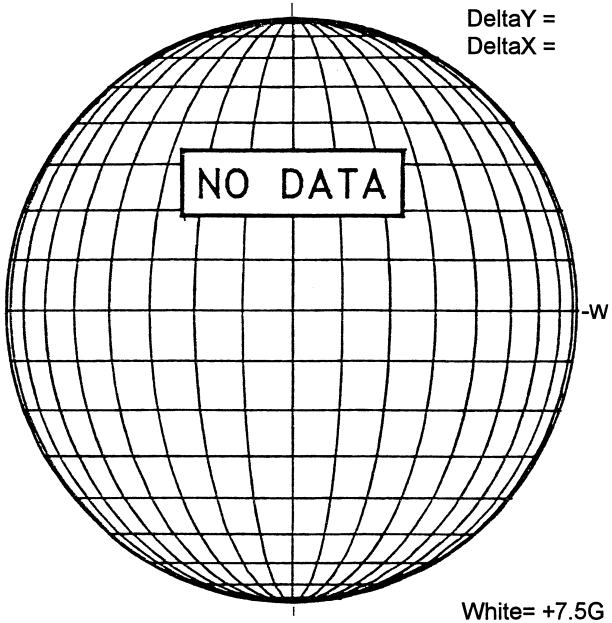
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

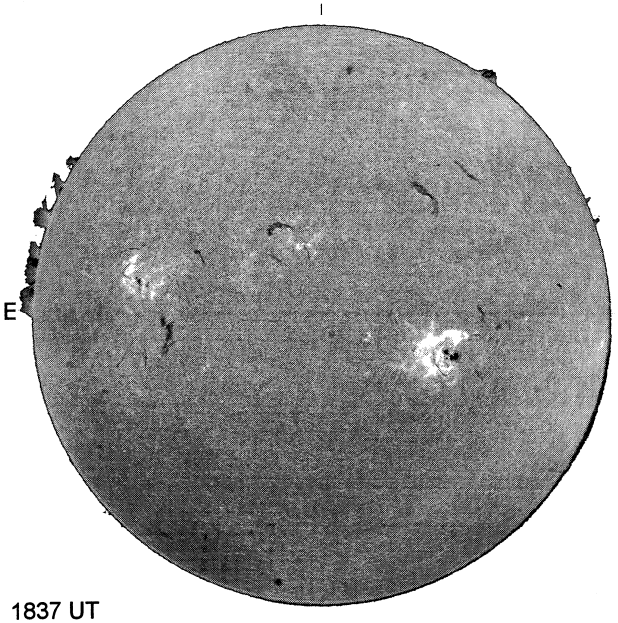
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

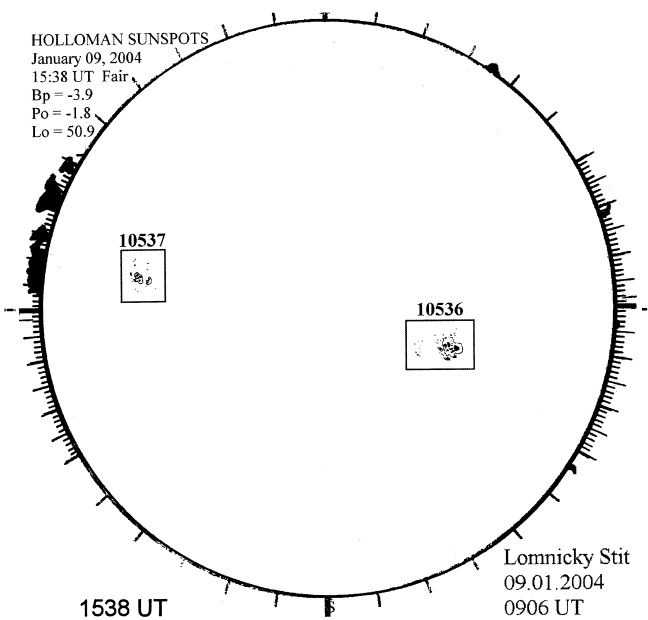


E

1837 UT

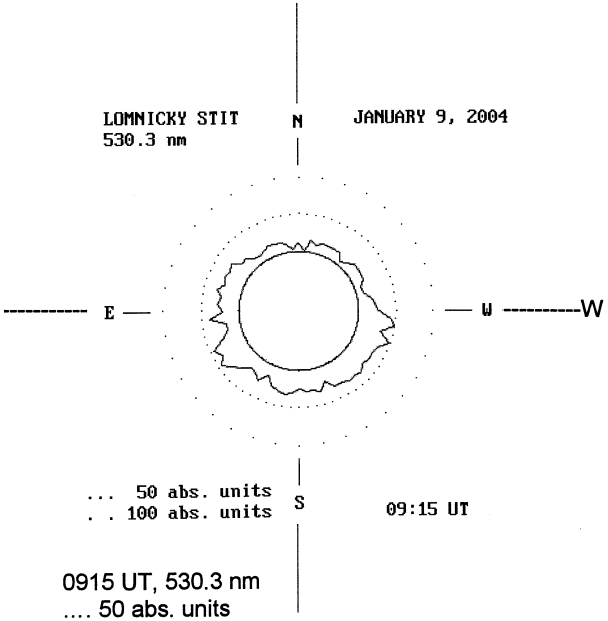
S

HOLLOMAN SUNSPOT



1538 UT
0906 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0915 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

S

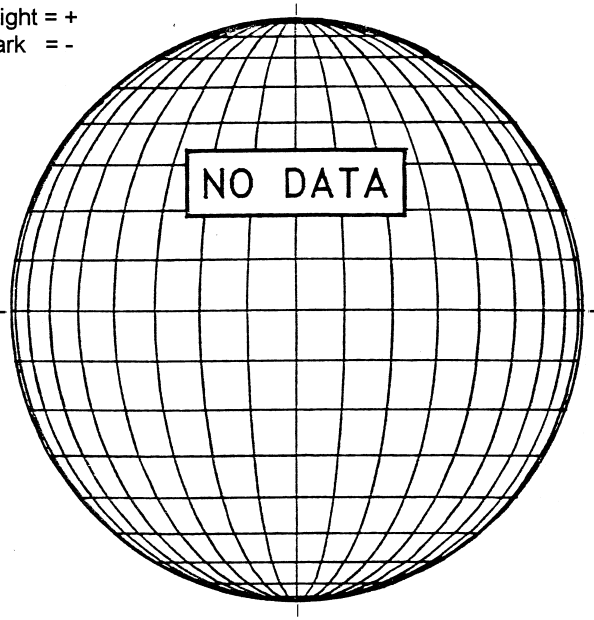
JANUARY 10, 2004 (P= -1.99, Bo = -3.97 Lo = 46.05)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -

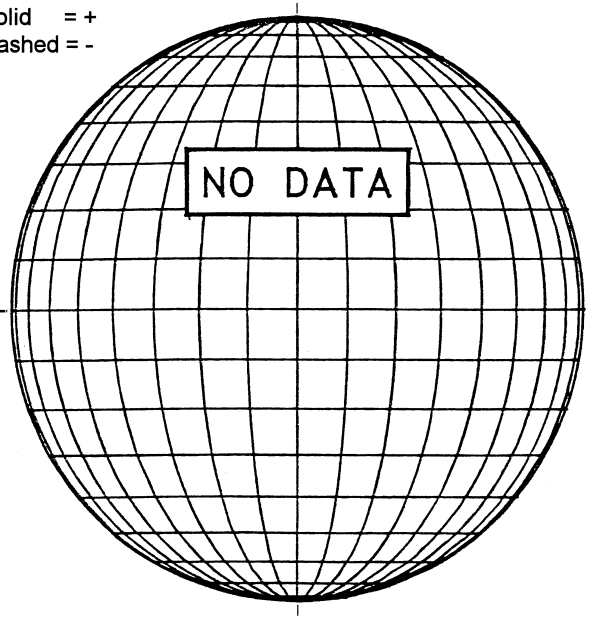


E--

STANFORD MAGNETOGRAM

N

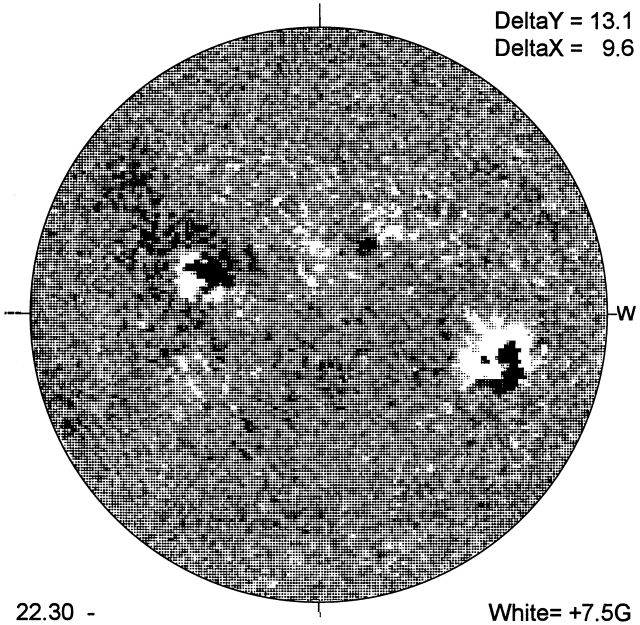
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

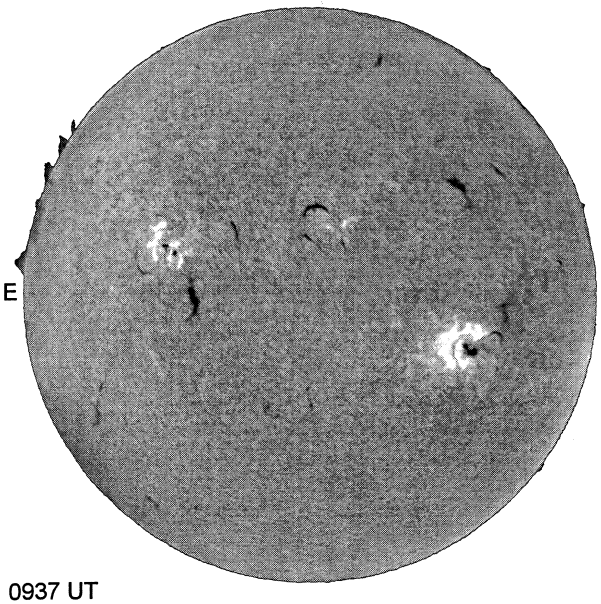


-W

22.30 -
23.28 UT

White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

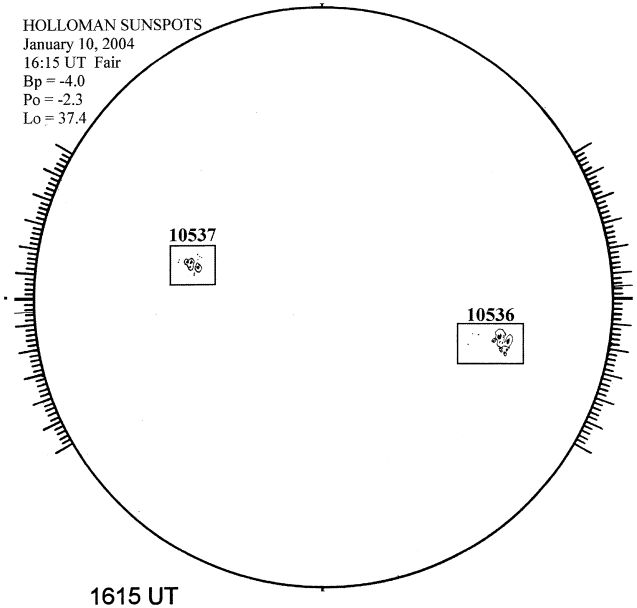


E

0937 UT

S

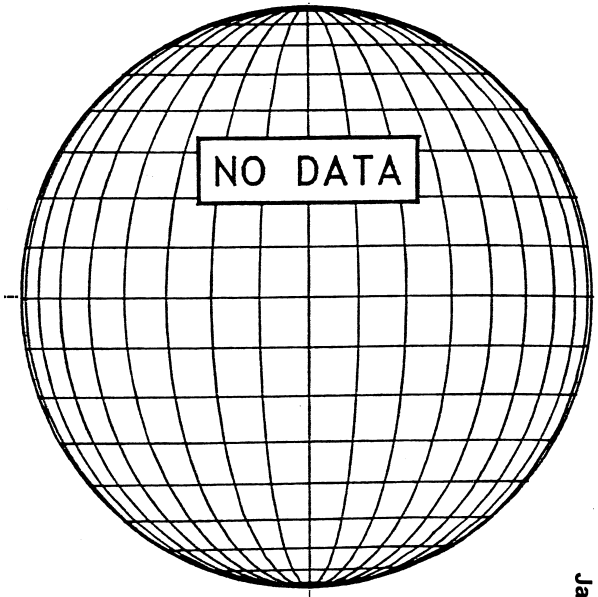
HOLLOMAN SUNSPOTS



1615 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

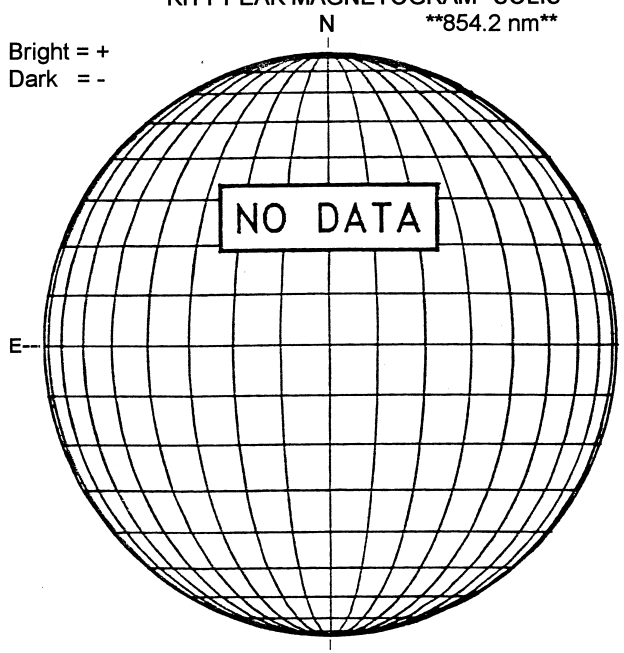


S

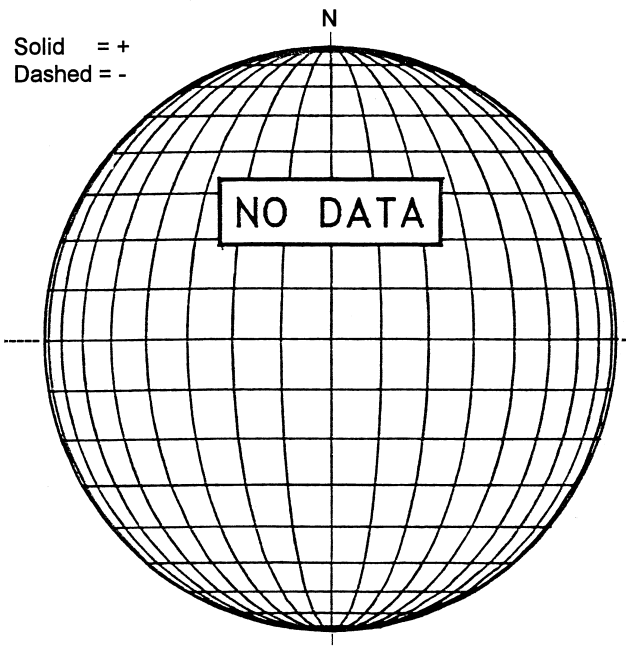
53
Jan 04

JANUARY 11, 2004 (P= -2.47, Bo = -4.08, Lo = 32.88)

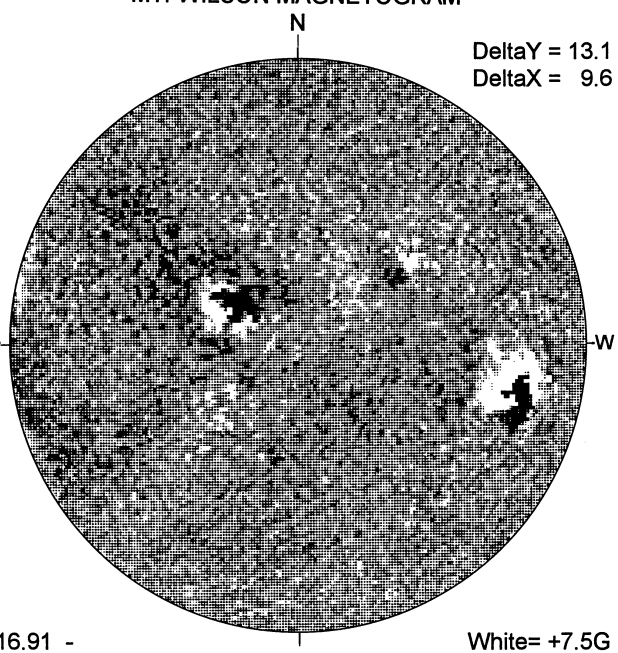
KITT PEAK MAGNETOGRAM--SOLIS



STANFORD MAGNETOGRAM



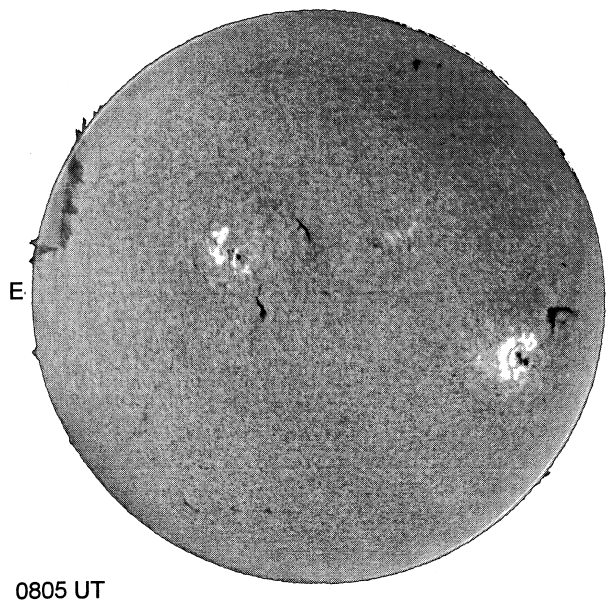
MT. WILSON MAGNETOGRAM



16.91 -
17.89 UT

White= +7.5G
Black = -7.5G

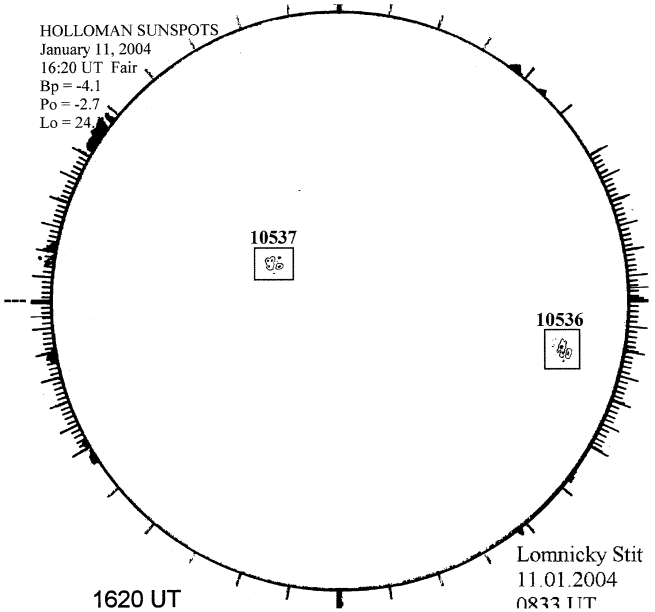
KANZELHOHE-ALPHA



0805 UT

S

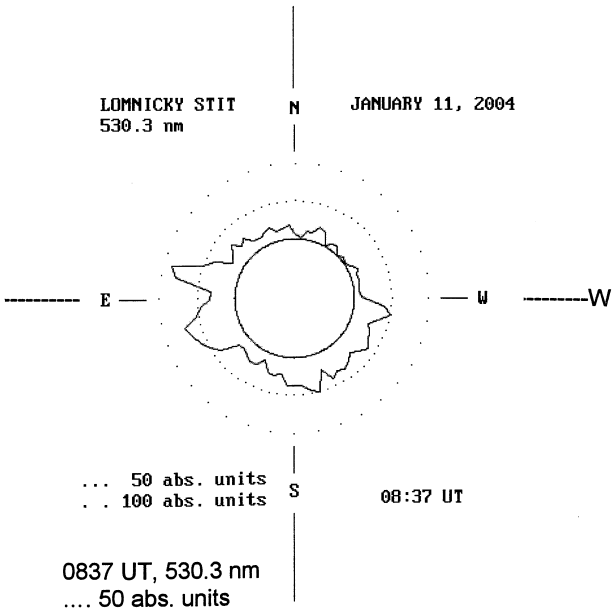
HOLLOMAN SUNSPOTS



1620 UT
0833 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



0837 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

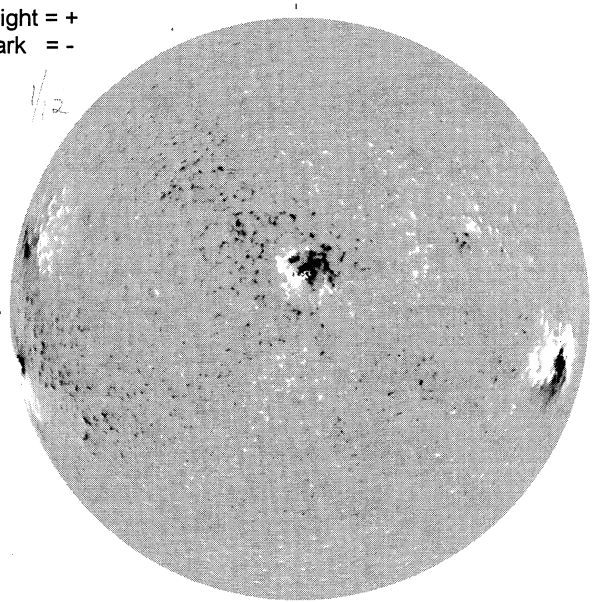
S

JANUARY 12, 2004 (P= -2.94, Bo = -4.18, Lo = 19.71)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



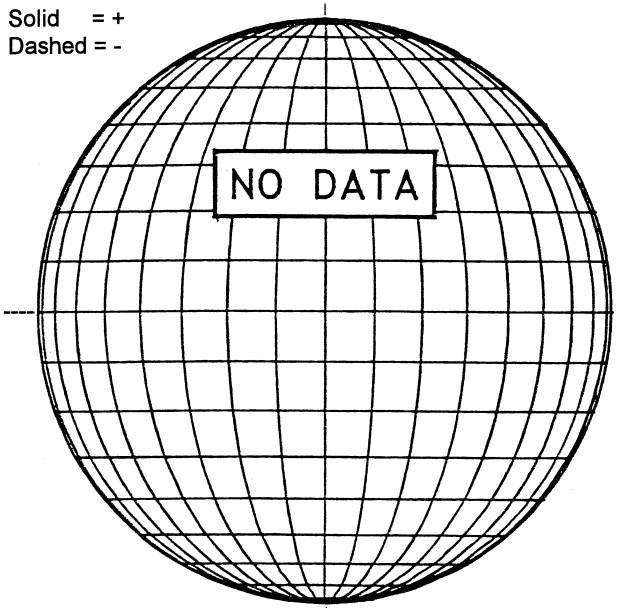
E--

1930 UT

STANFORD MAGNETOGRAM

N

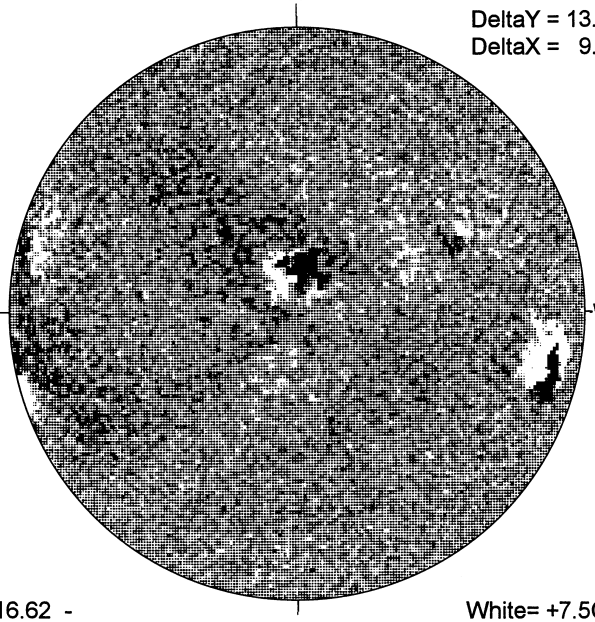
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

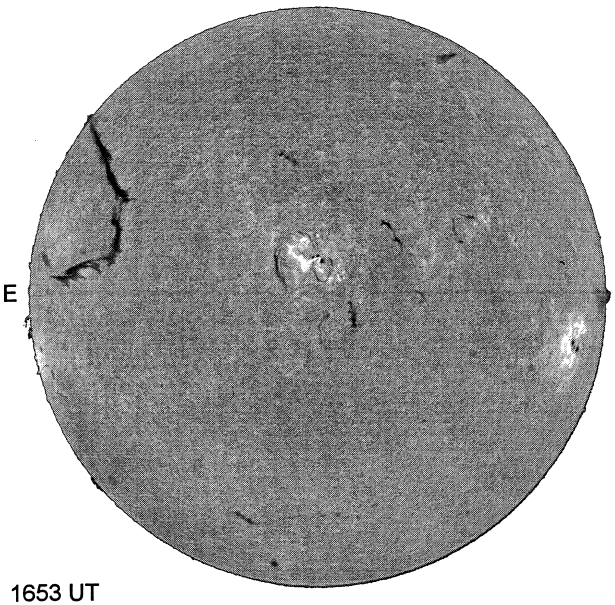


-W

16.62 -
17.59 UT

White= +7.5G
Black = -7.5G

---- BIG BEAR H-ALPHA

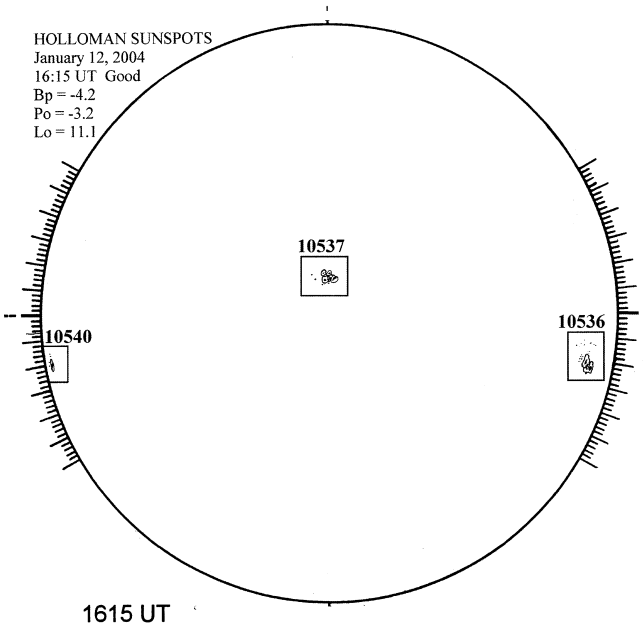


E

1653 UT

S

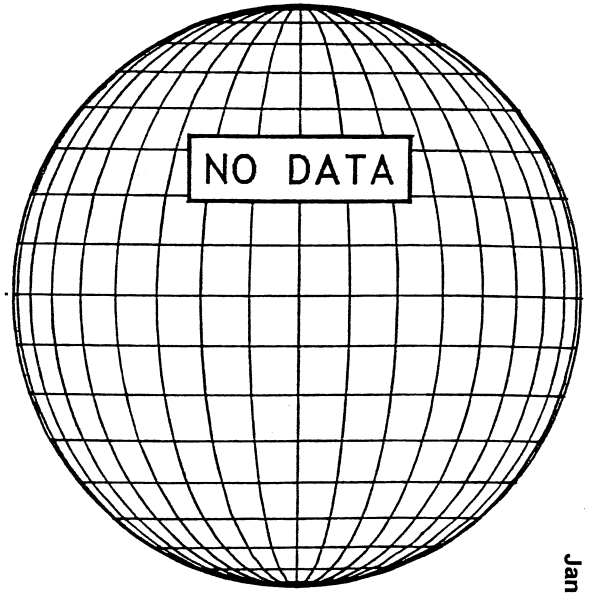
HOLLOMAN SUNSPOTS



1615 UT

S

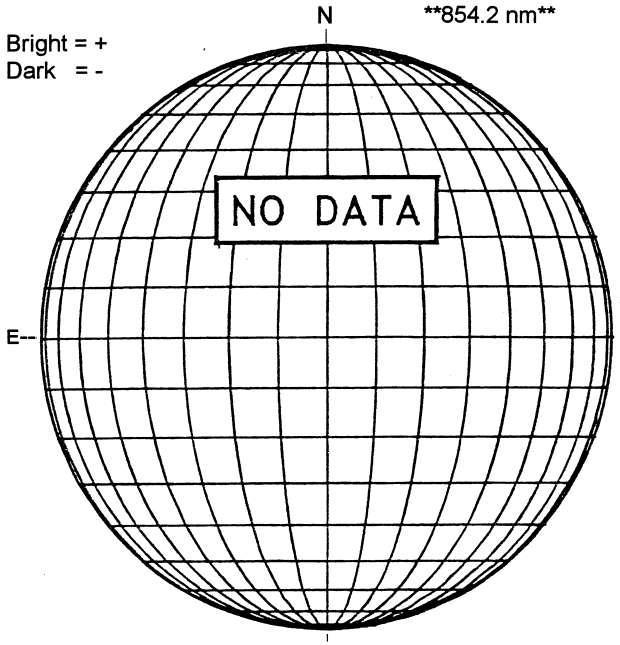
LOMNICKY PEAK CORONA (1.04 Radii)----



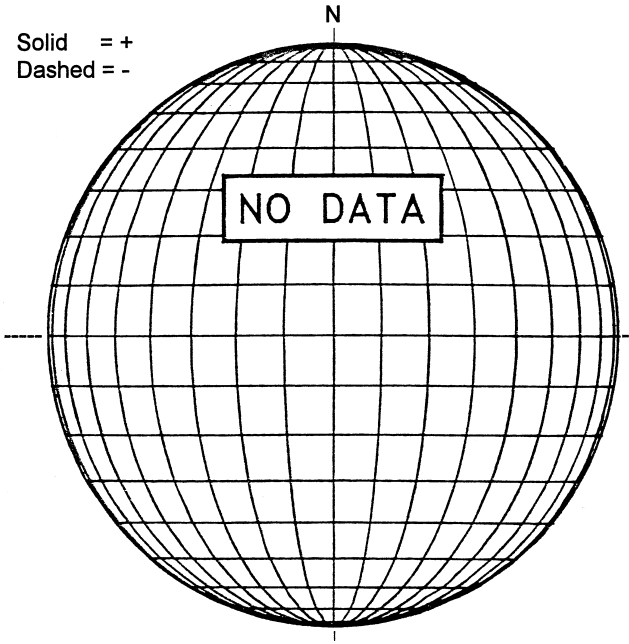
S

JANUARY 13, 2004 (P= -3.42, Bo = -4.29, Lo = 6.55)

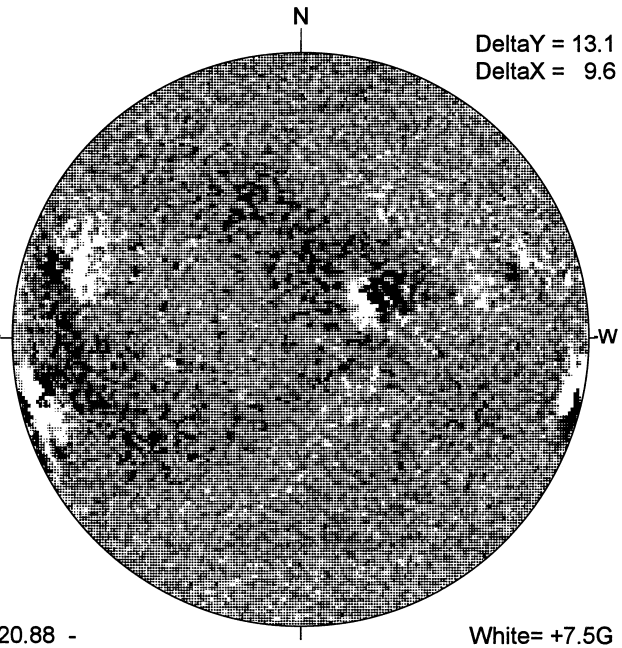
KITT PEAK MAGNETOGRAM--SOLIS



STANFORD MAGNETOGRAM



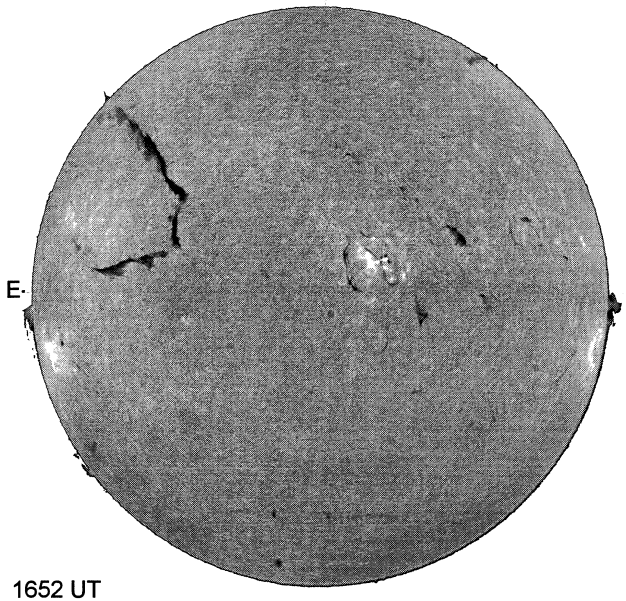
MT. WILSON MAGNETOGRAM



20.88 -
21.86 UT

White= +7.5G
Black = -7.5G

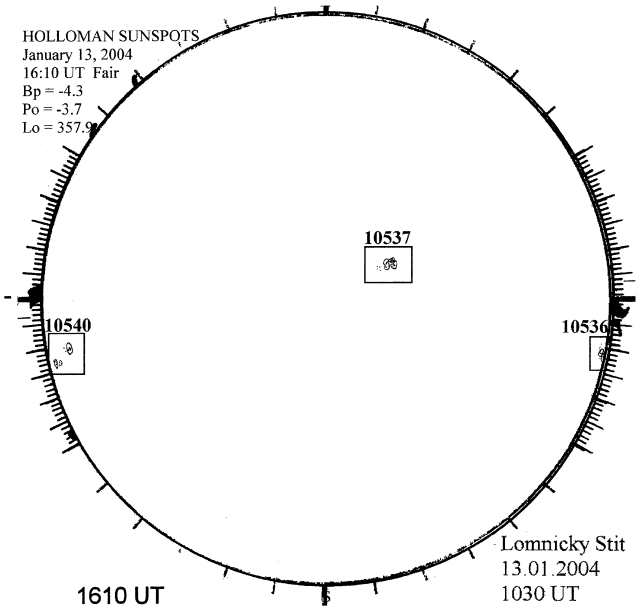
BIG BEAR H-ALPHA



1652 UT

S

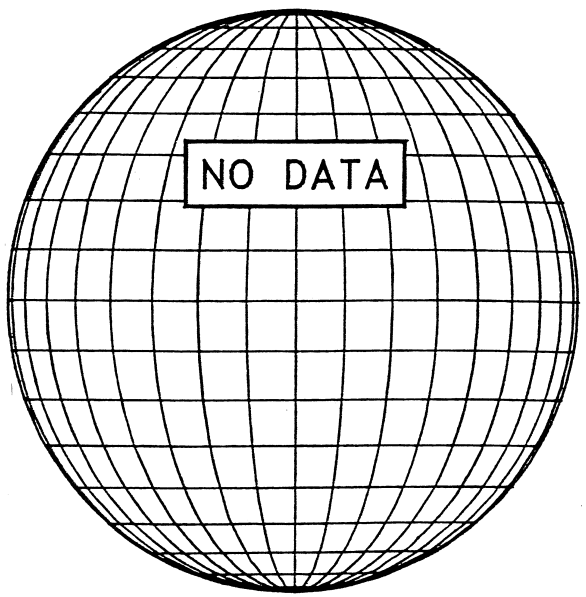
HOLLOMAN SUNSPOT



1610 UT
1030 UT LOMN Prom

S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

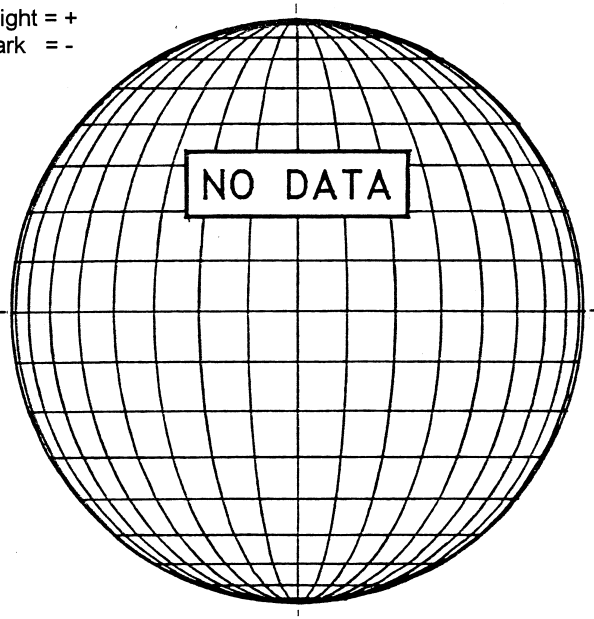
JANUARY 14, 2004 (P= -3.89, Bo = -4.39, Lo = 353.38)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

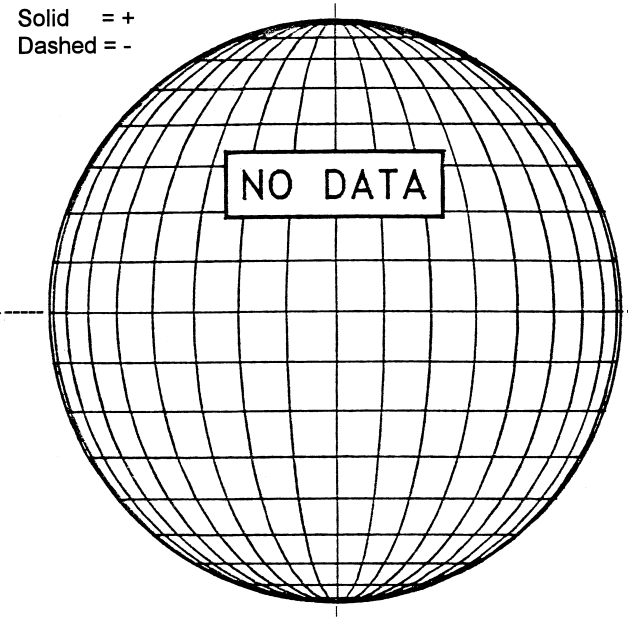
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

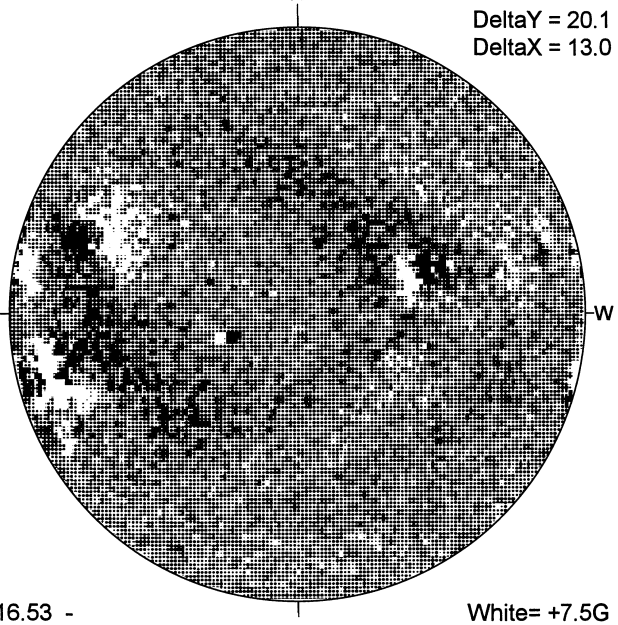
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

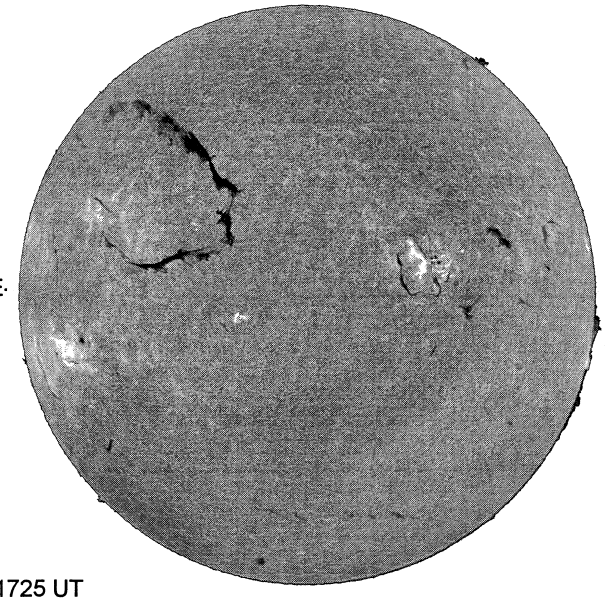
DeltaY = 20.1
DeltaX = 13.0



16.53 -
16.96 UT

White= +7.5G
Black = -7.5G

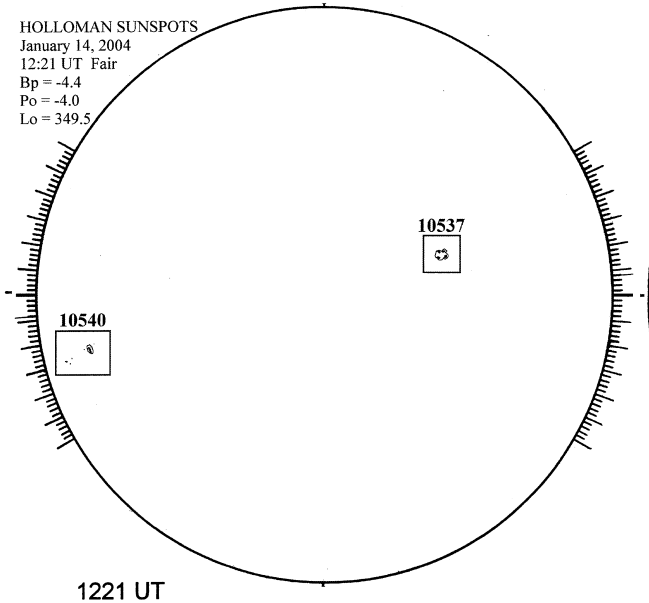
BIG BEAR H-ALPHA



1725 UT

S

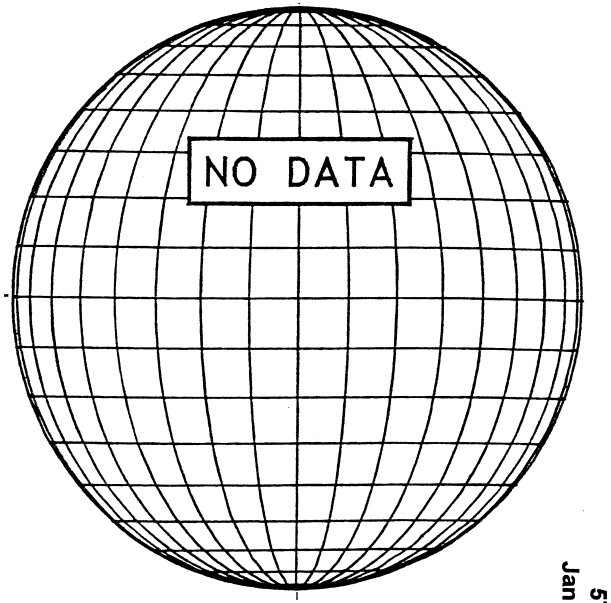
SAN VITO SUNSPOT



1221 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

57
Jan 04

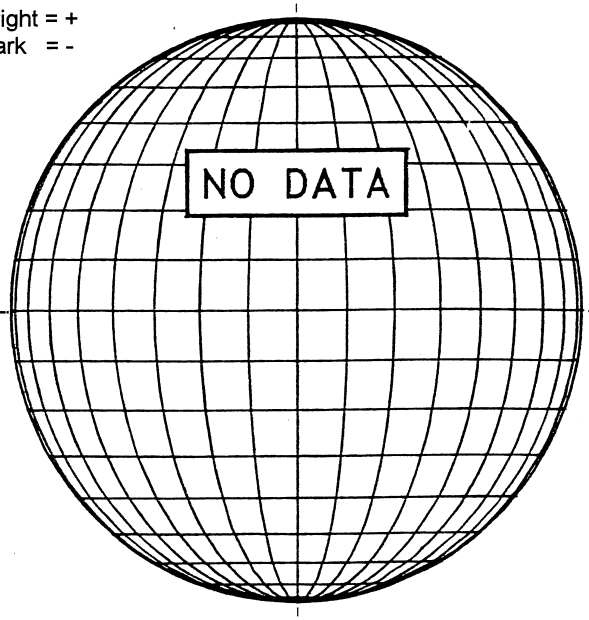
JANUARY 15, 2004 (P= -4.36, Bo = -4.49, Lo = 340.21)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -

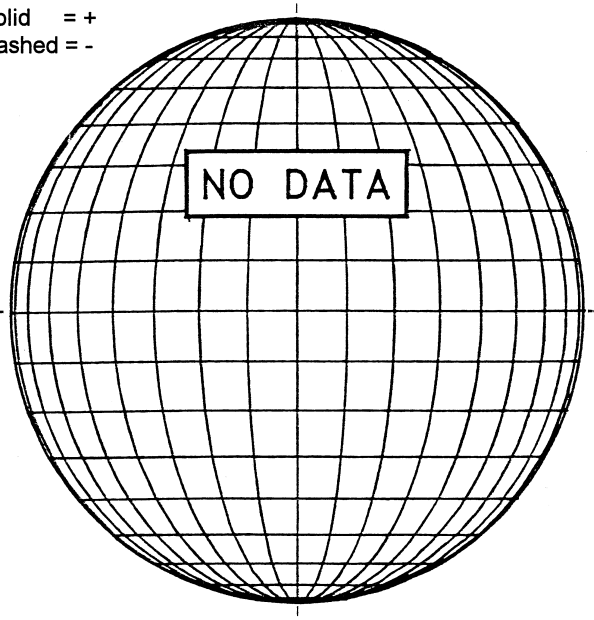


E

STANFORD MAGNETOGRAM

N

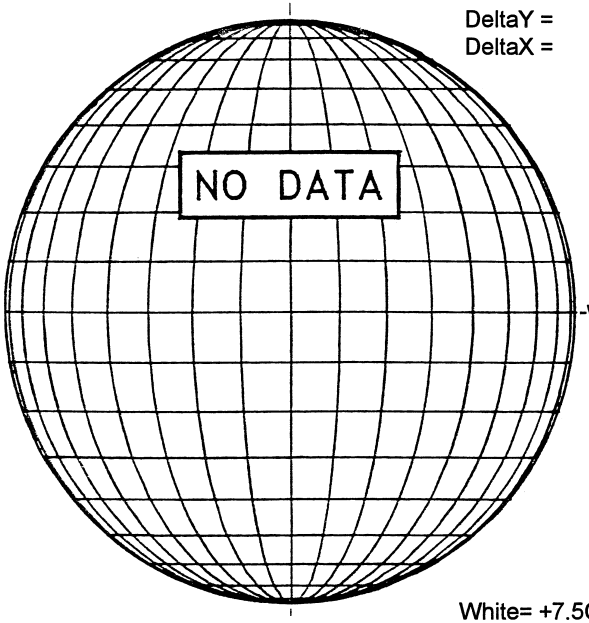
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

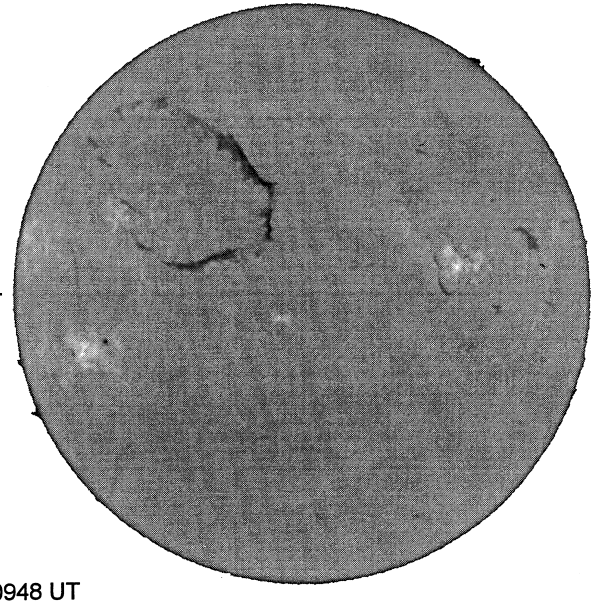
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

CATANIA H-ALPHA

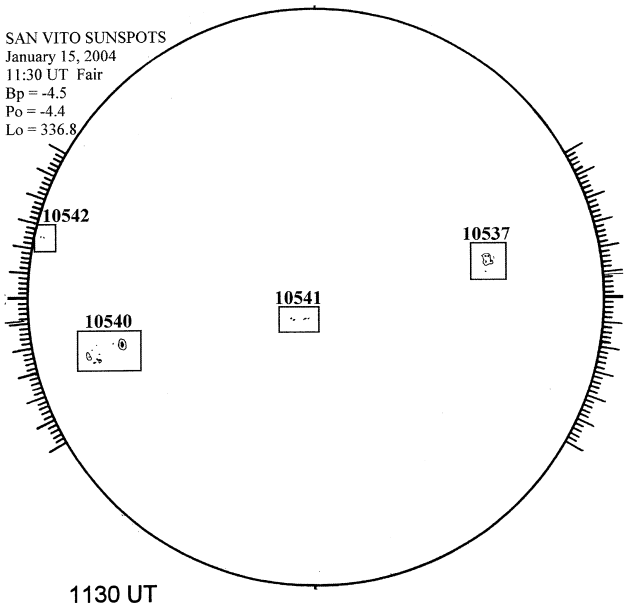


E

0948 UT

S

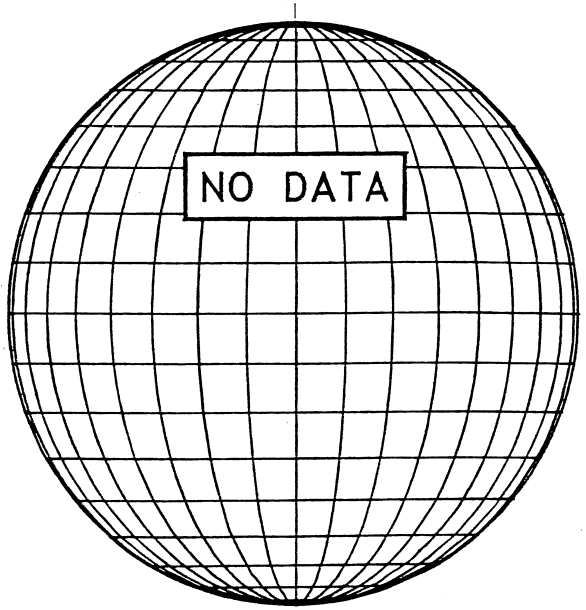
SAN VITO SUNSPOT



1130 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



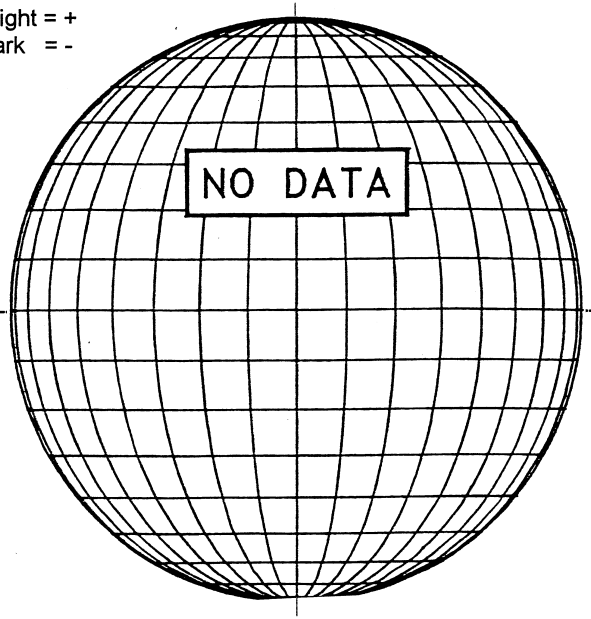
S

JANUARY 16, 2004 (P= -4.83, Bo = -4.59, Lo = 327.04)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

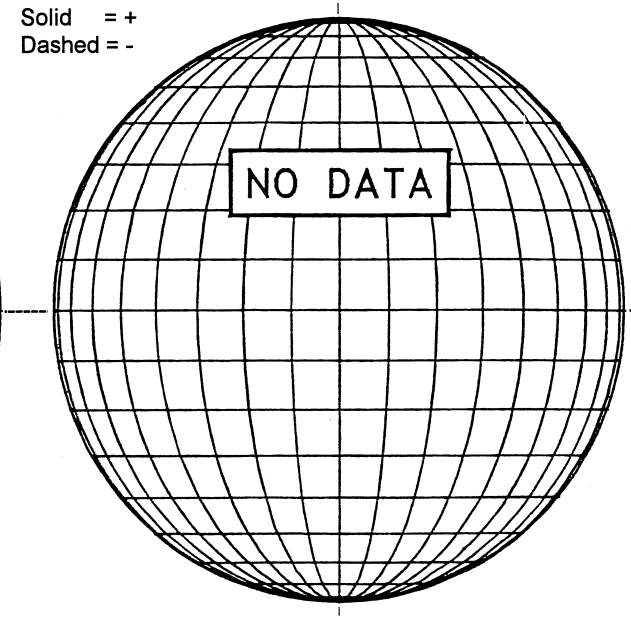
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

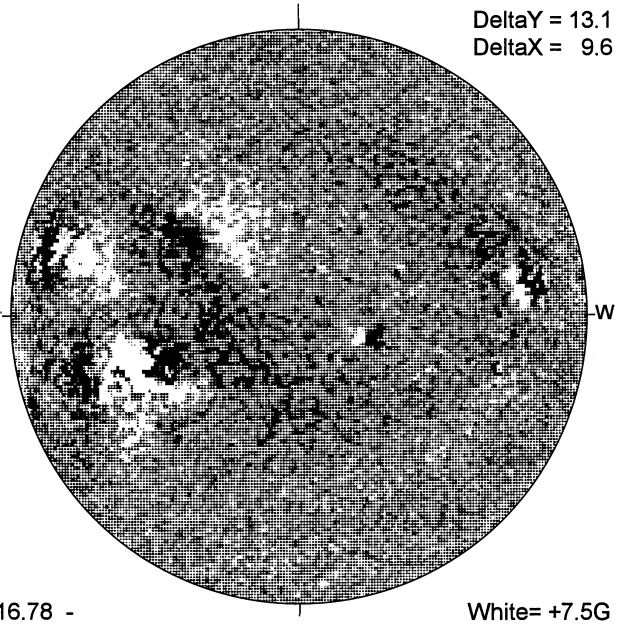
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

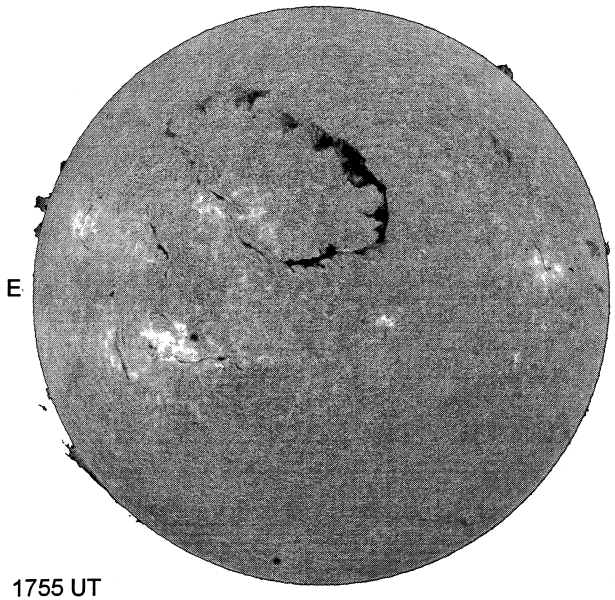
DeltaY = 13.1
DeltaX = 9.6



16.78 -
17.76 UT

White= +7.5G
Black = -7.5G

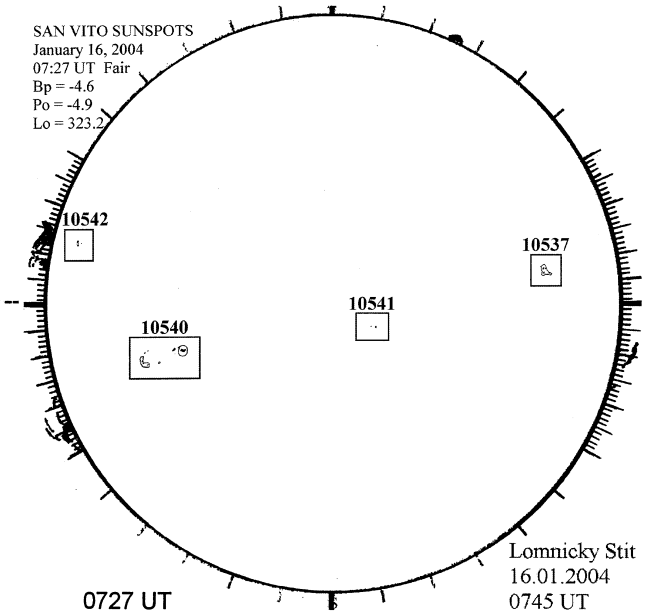
----- BIG BEAR H-ALPHA



1755 UT

S

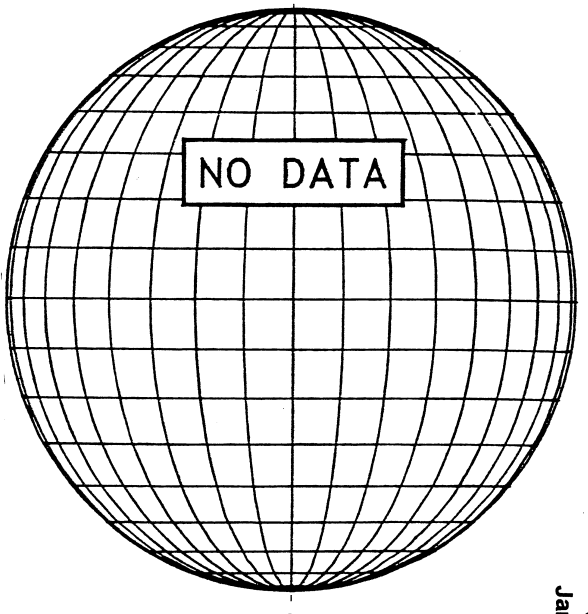
SAN VITO SUNSPOT



0727 UT
0745 UT LOMN Prom S

Lomnicky Stit
16.01.2004
0745 UT

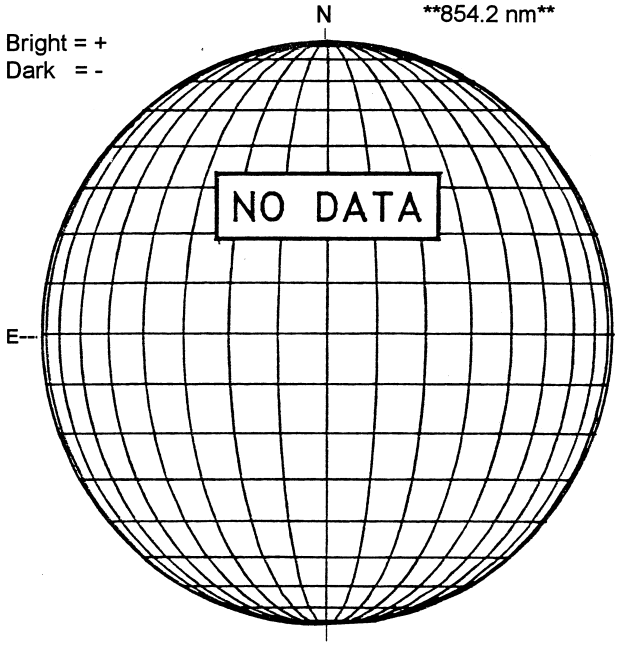
SACRAMENTO PEAK CORONA (1.15 Radii)----



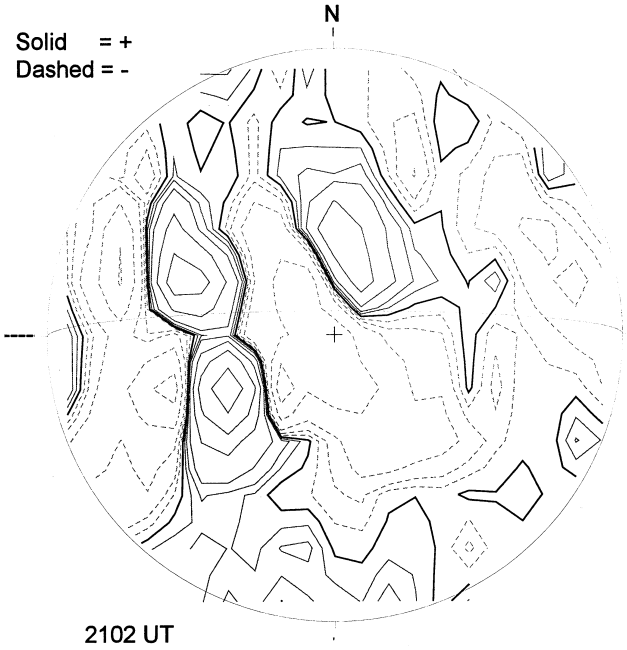
S

JANUARY 17, 2004 (P= -5.30, Bo = -4.69, Lo = 313.88)

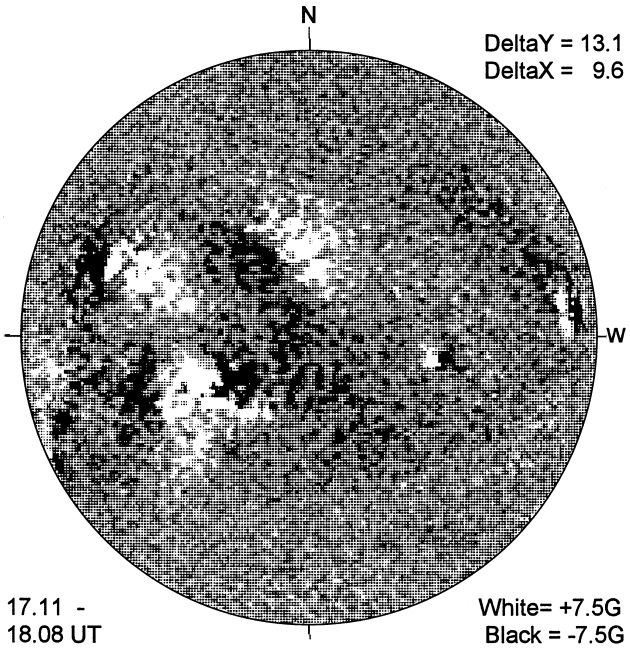
KITT PEAK MAGNETOGRAM--SOLIS



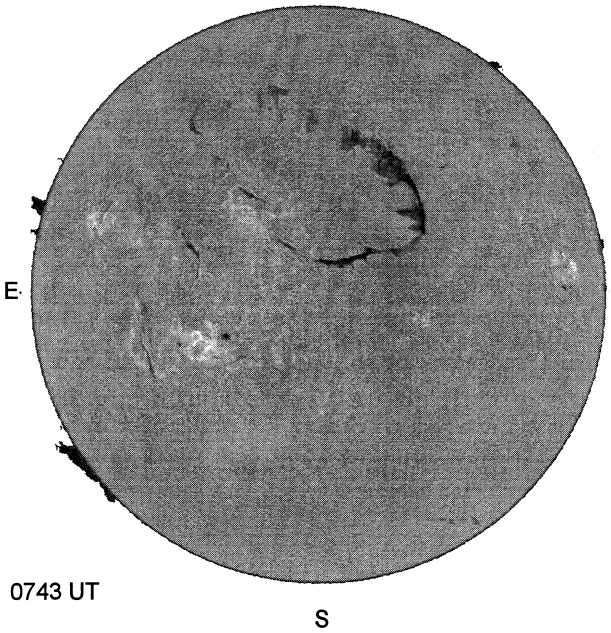
STANFORD MAGNETOGRAM



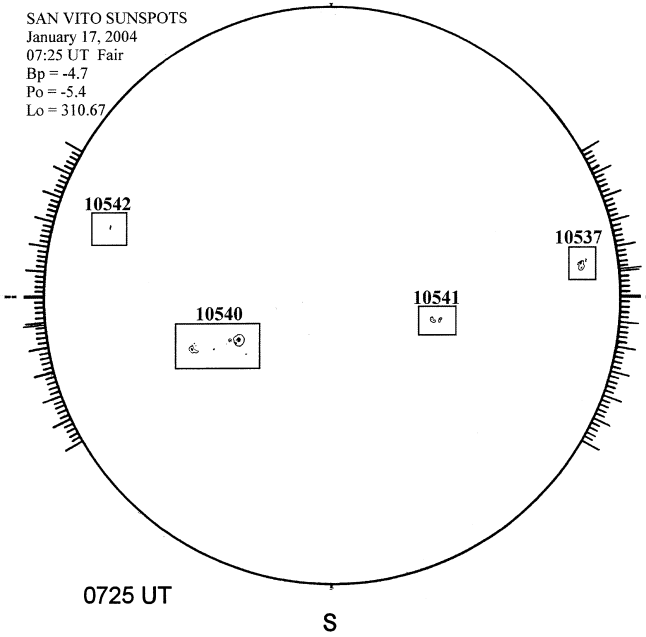
MT. WILSON MAGNETOGRAM



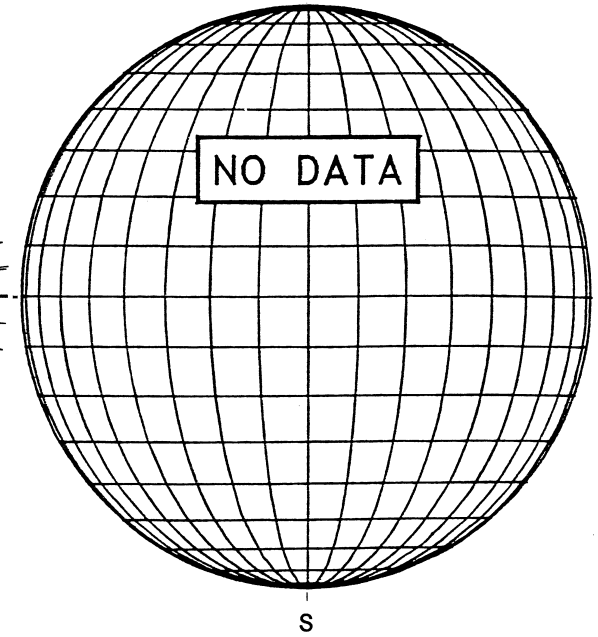
CATANIA H-ALPHA



SAN VITO SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

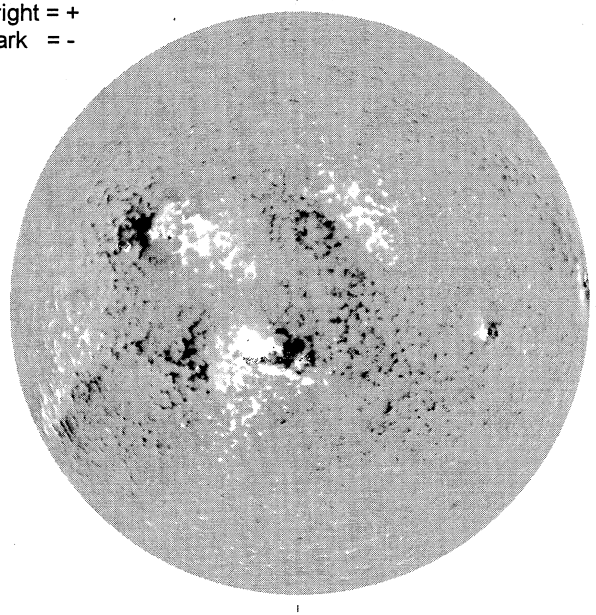


JANUARY 18, 2004 (P= -5.76, Bo = -4.79, Lo = 300.71)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



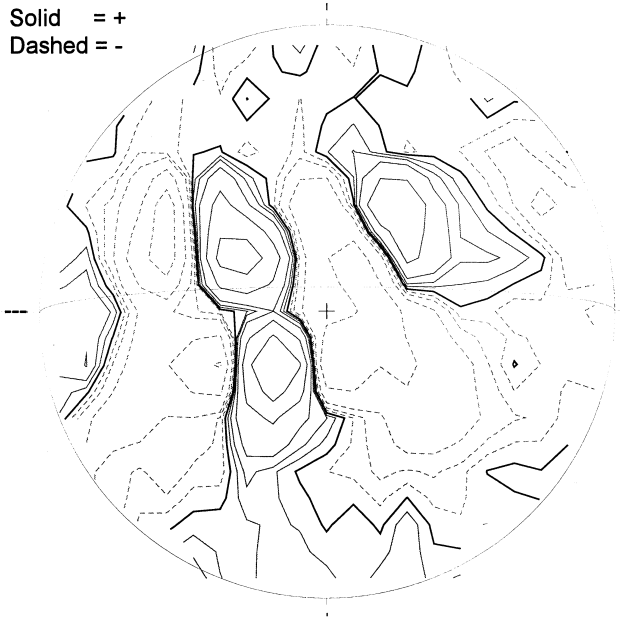
E-

1844 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

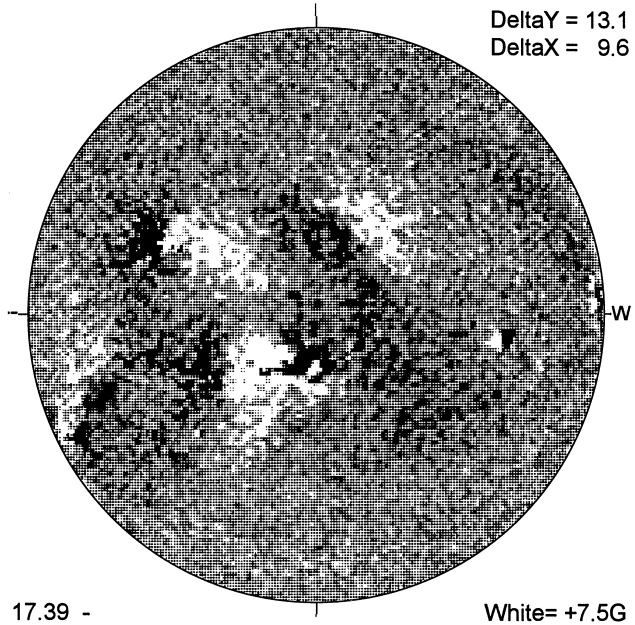


2105 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

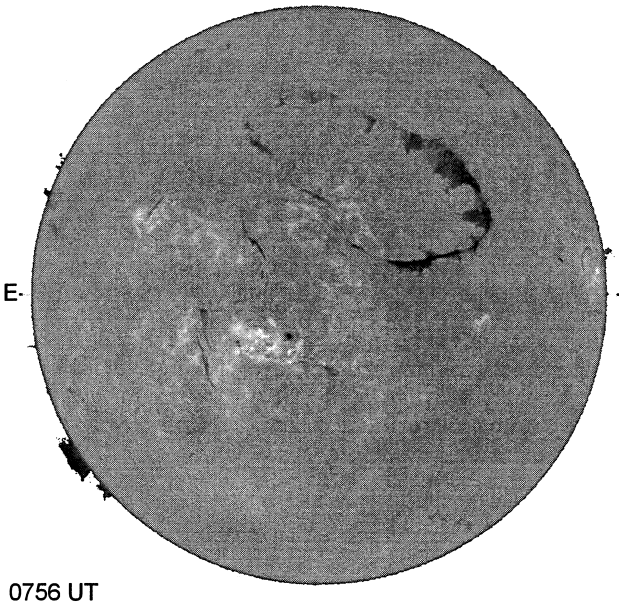


-W

17.39 -
18.37 UT

White= +7.5G
Black = -7.5G

CATANIA H-ALPHA

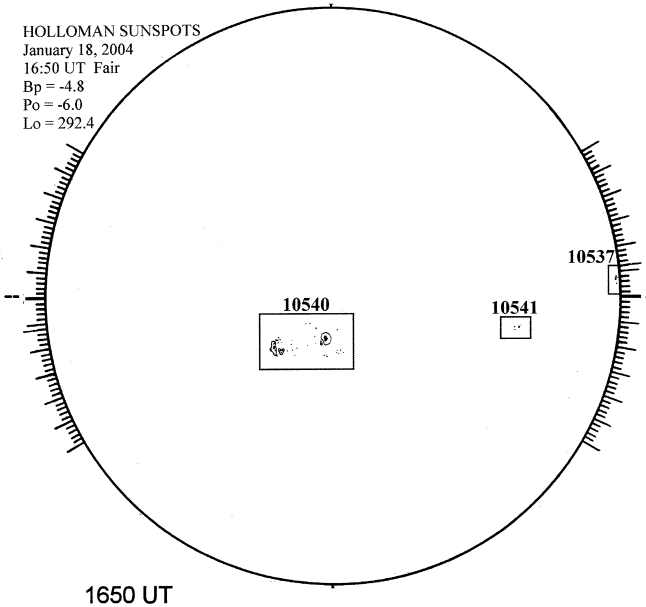


E-

0756 UT

S

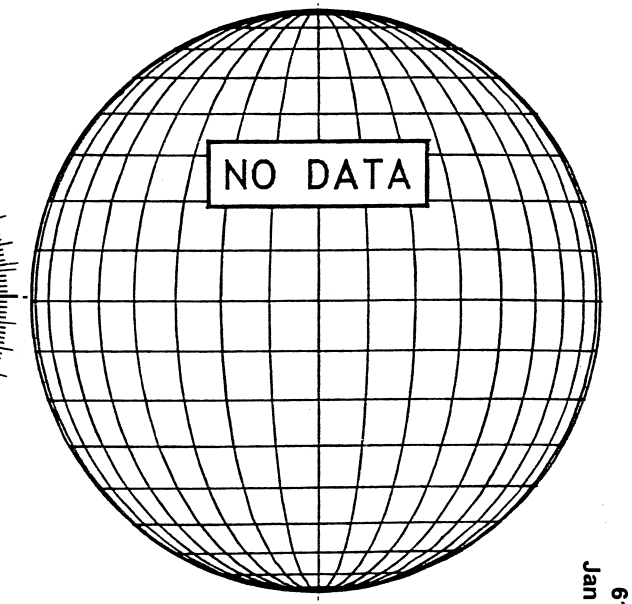
HOLLOMAN SUNSPOT



1650 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



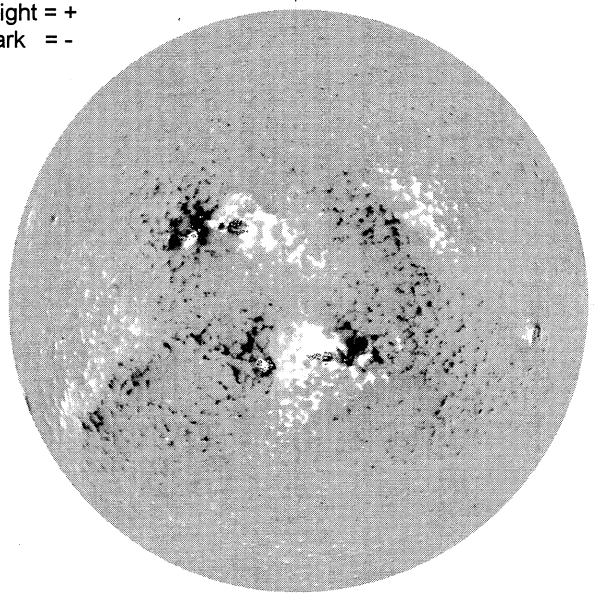
S

JANUARY 19, 2004 (P= -6.23, Bo = -4.88, Lo = 287.54)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



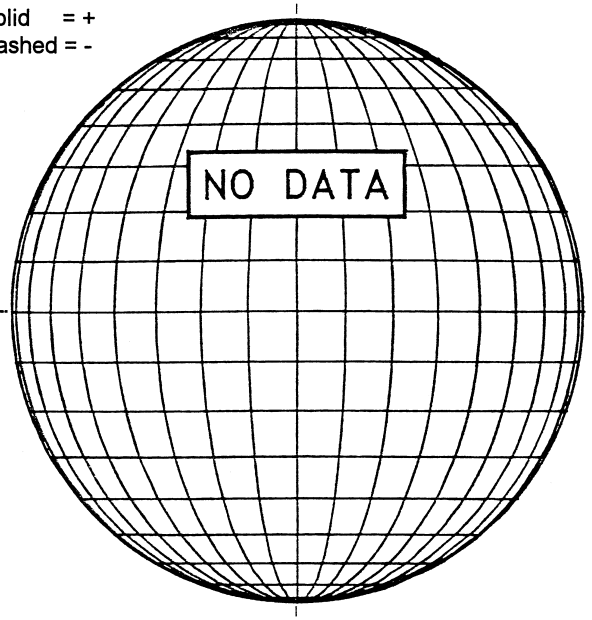
E-

1904 UT

STANFORD MAGNETOGRAM

N

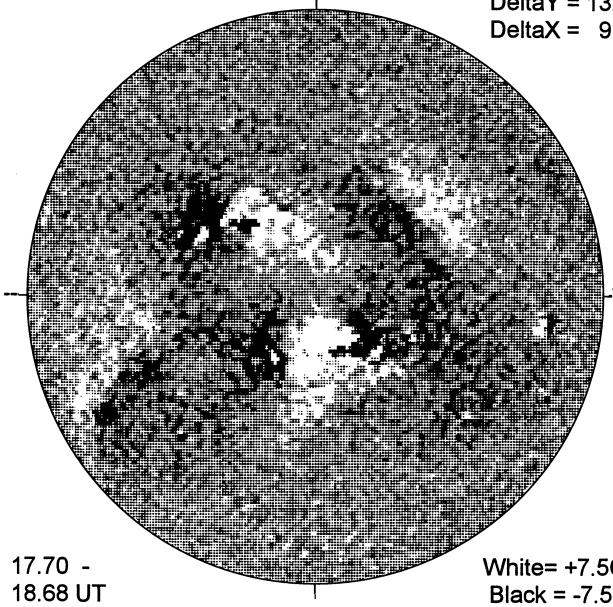
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

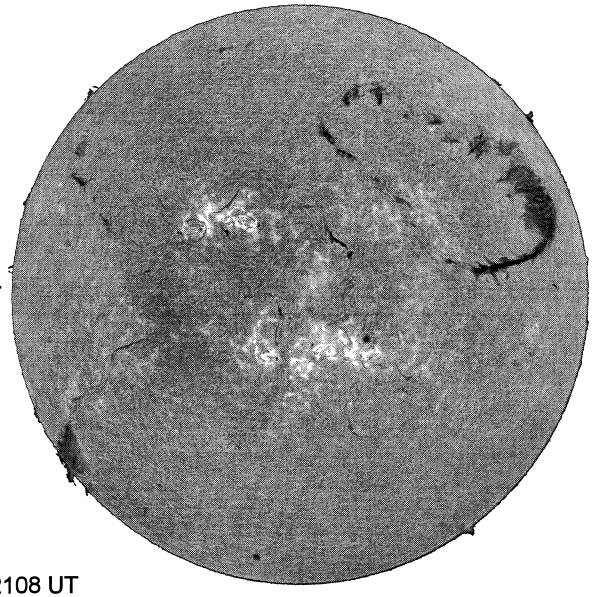


-W

17.70 -
18.68 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

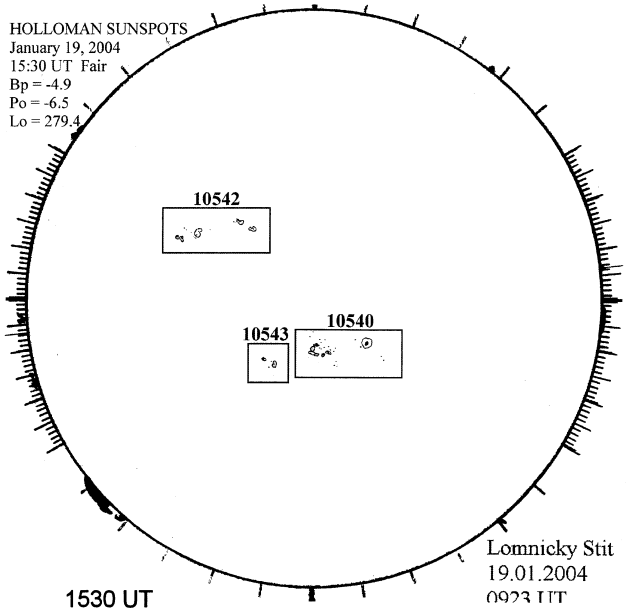


E-

2108 UT

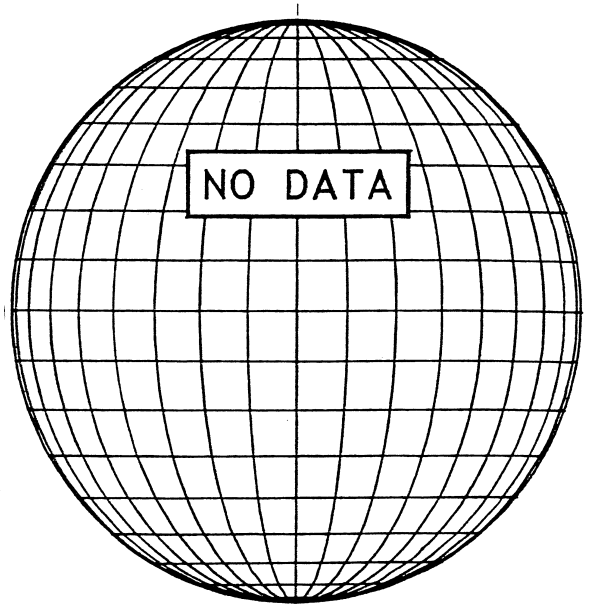
S

HOLLOMAN SUNSPOT



1530 UT
0923 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)



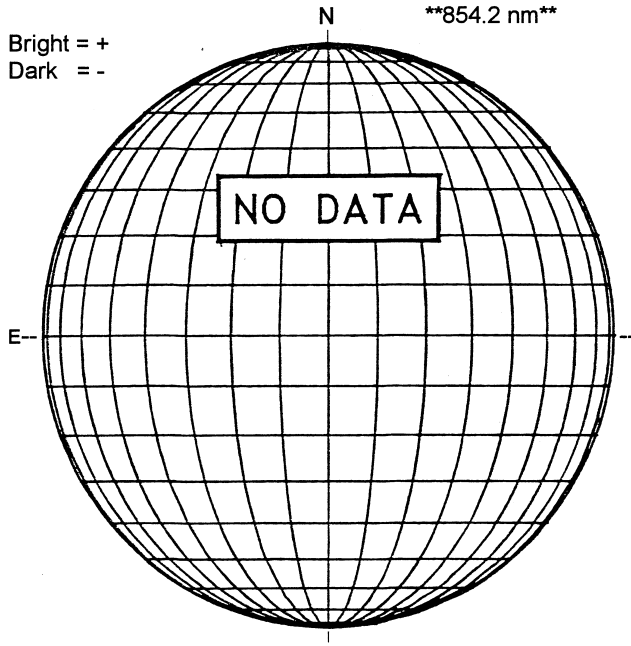
S

JANUARY 20, 2004 (P= -6.68, Bo = -4.98, Lo = 274.37)

KITT PEAK MAGNETOGRAM--SOLIS

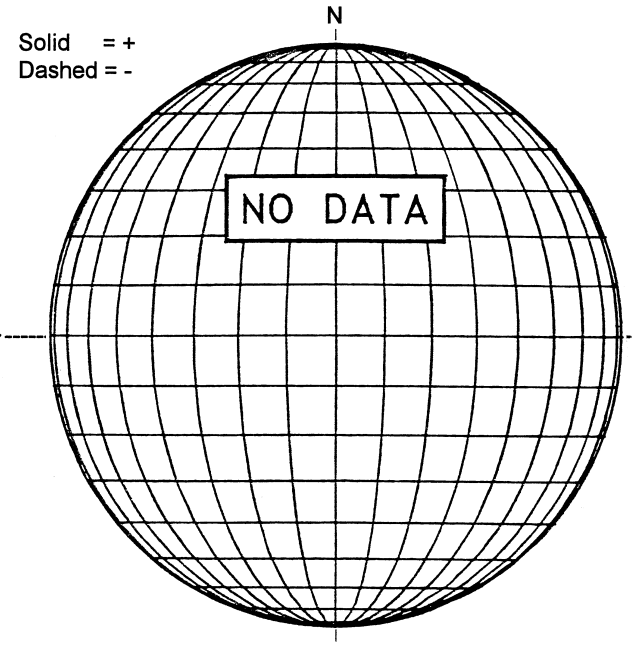
854.2 nm

Bright = +
Dark = -



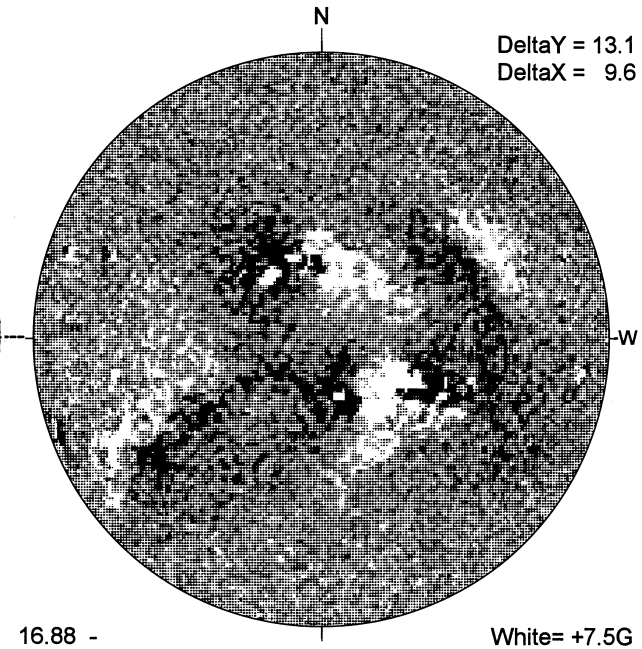
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

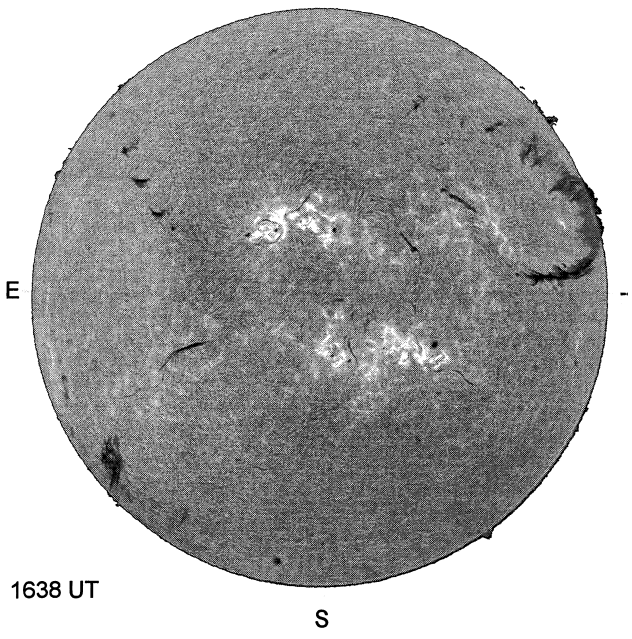
DeltaY = 13.1
DeltaX = 9.6



16.88 -
17.86 UT

White= +7.5G
Black = -7.5G

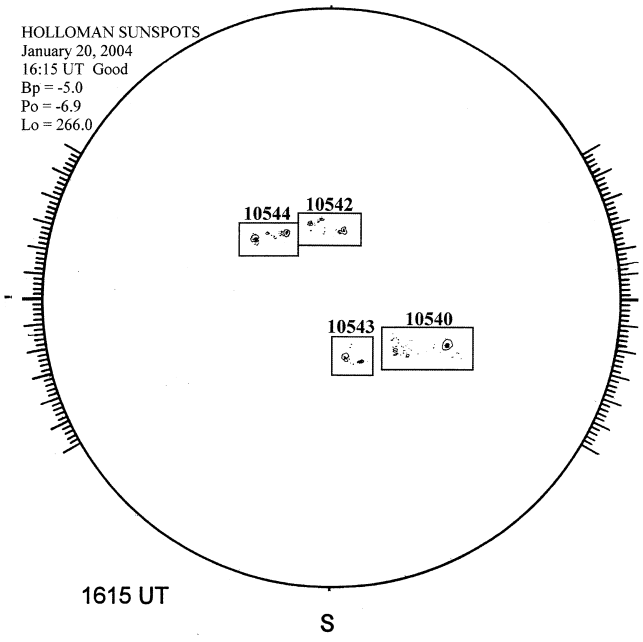
---- BIG BEAR H-ALPHA



1638 UT

S

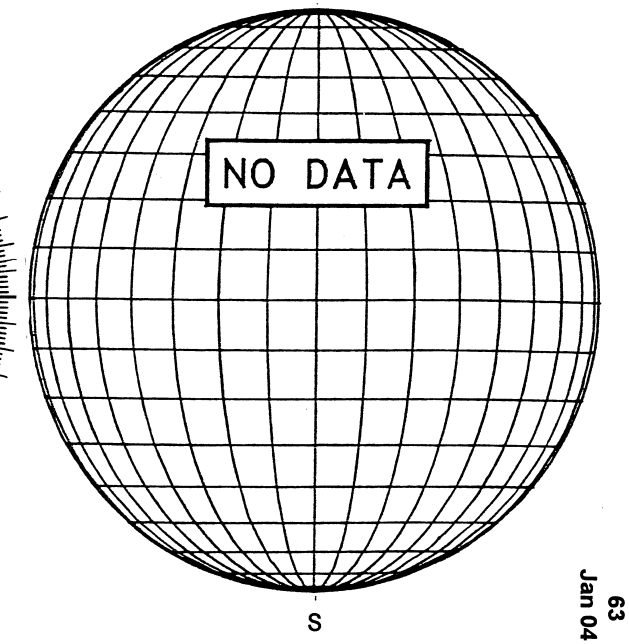
HOLLOMAN SUNSPOT



1615 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

63
Jan 04

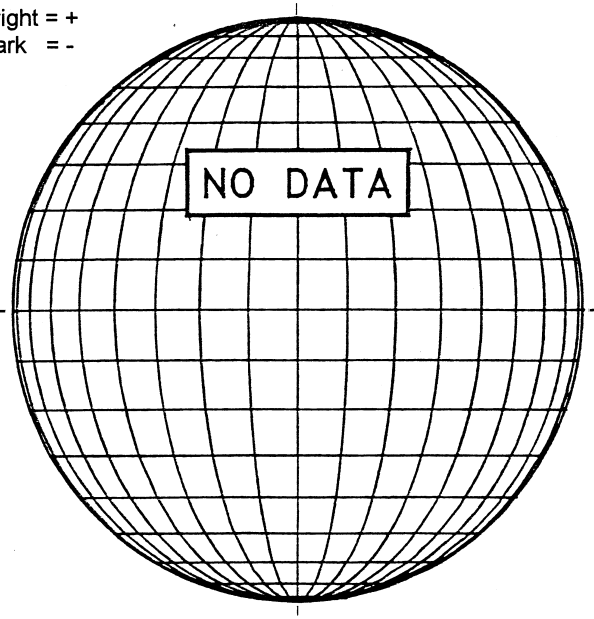
JANUARY 21, 2004 (P= -7.14, Bo = -5.07, Lo = 261.21)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



E--

STANFORD MAGNETOGRAM

N

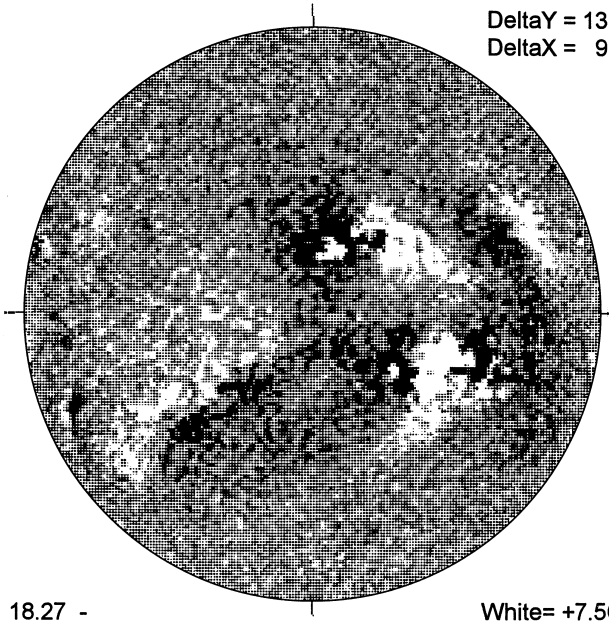
Solid = +
Dashed = -

2119 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.7

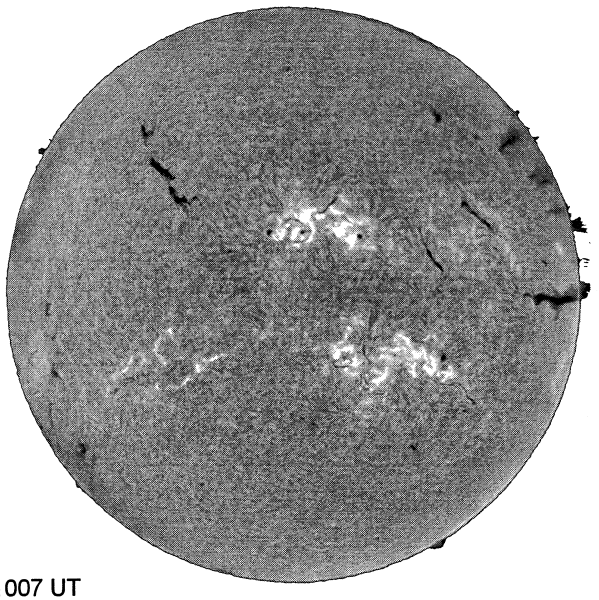


-W

18.27 -
19.25 UT

White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

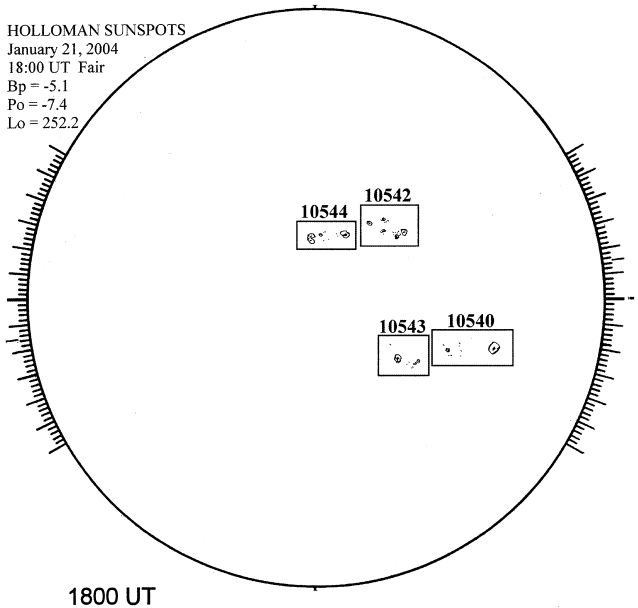


E

1007 UT

S

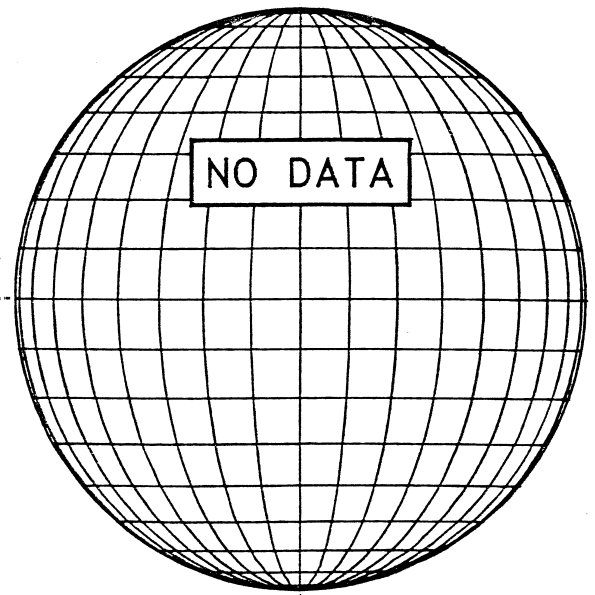
HOLLOMAN SUNSPOT



1800 UT

S

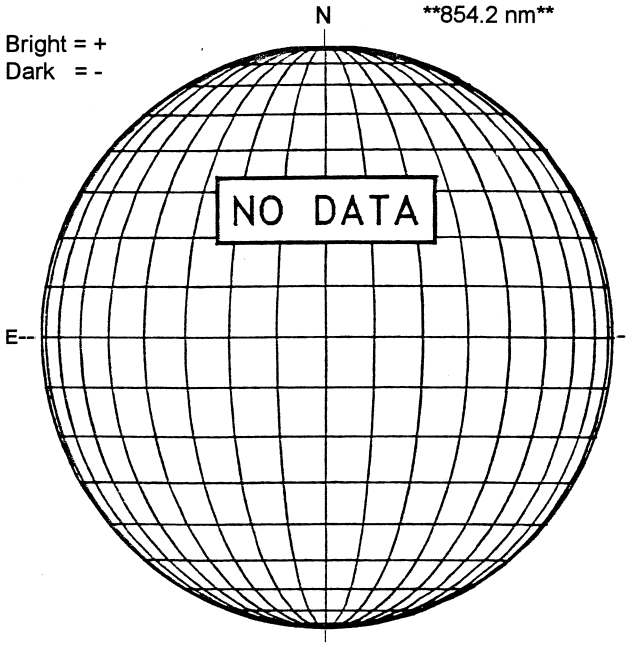
LOMNICKY PEAK CORONA (1.04 Radii)----



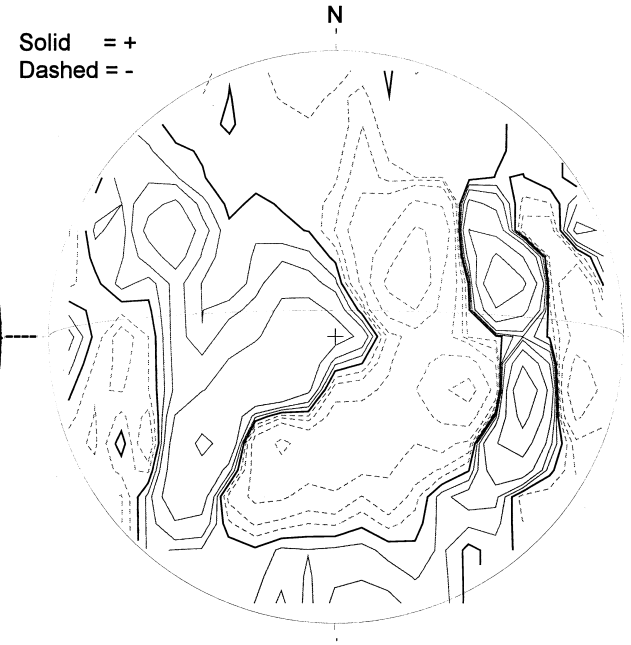
S

JANUARY 22, 2004 (P= -7.59, Bo = -5.16, Lo = 248.04)

KITT PEAK MAGNETOGRAM--SOLIS

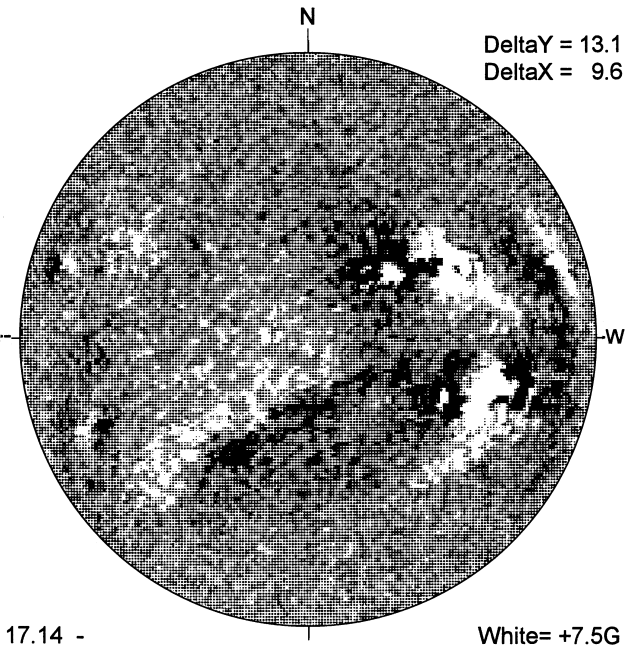


STANFORD MAGNETOGRAM



2110 UT

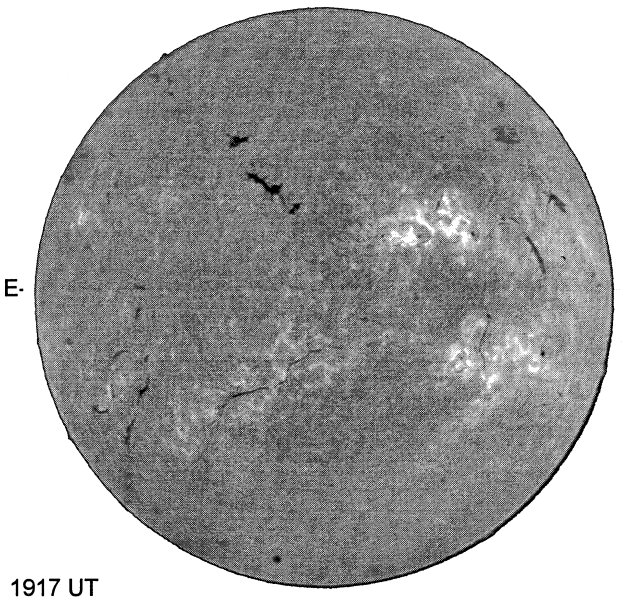
MT. WILSON MAGNETOGRAM



17.14 -
18.12 UT

White= +7.5G
Black = -7.5G

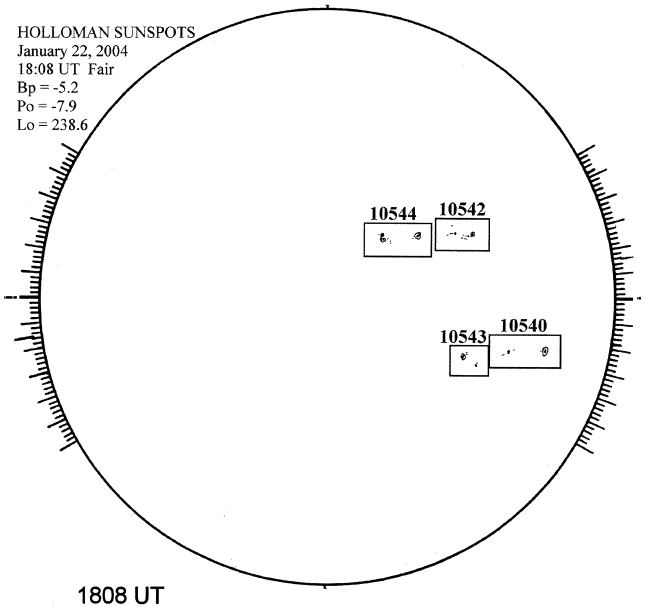
----- BIG BEAR H-ALPHA



1917 UT

S

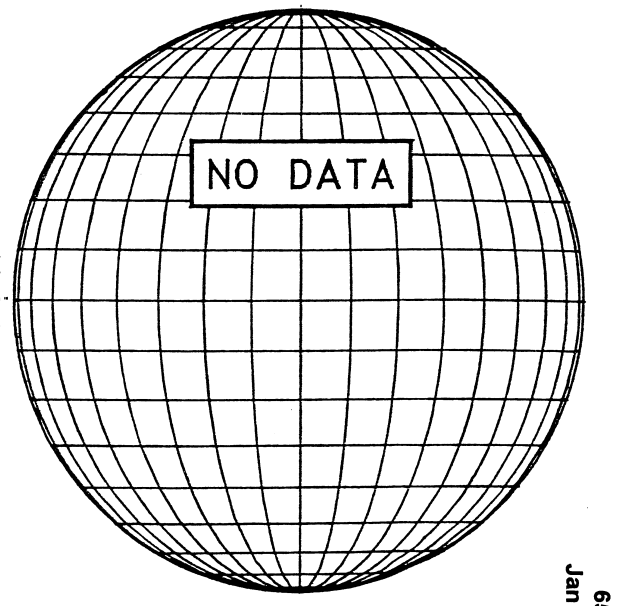
HOLLOMAN SUNSPOT



1808 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



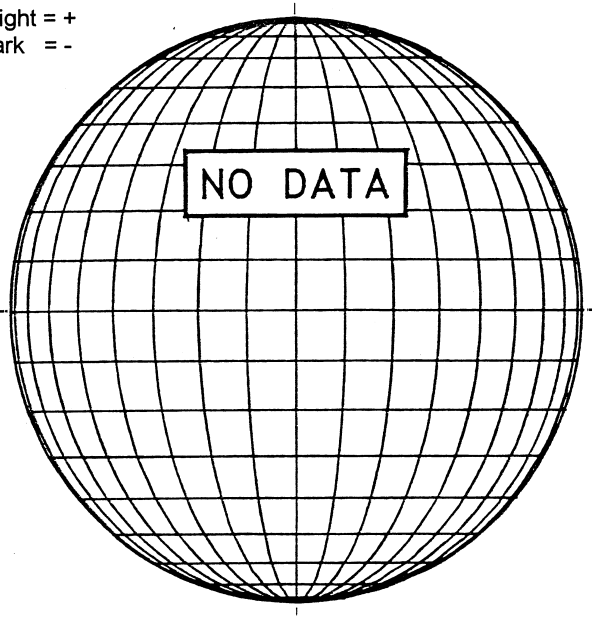
S

JANUARY 23, 2004 (P= -8.04, Bo = -5.25, Lo = 234.88)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

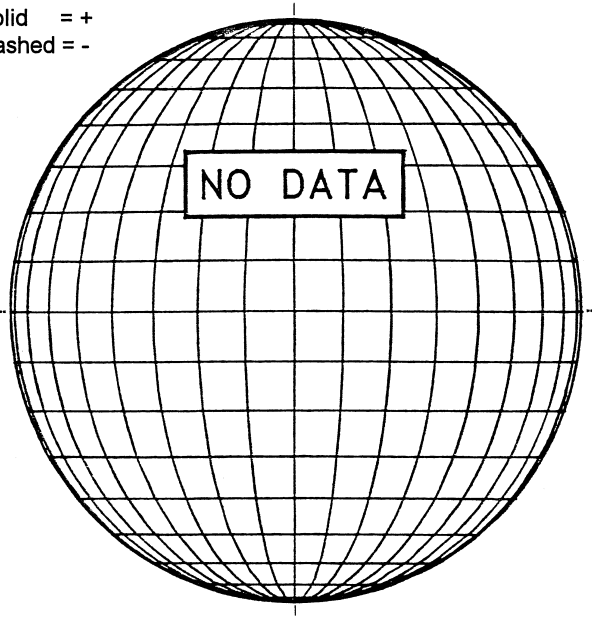
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

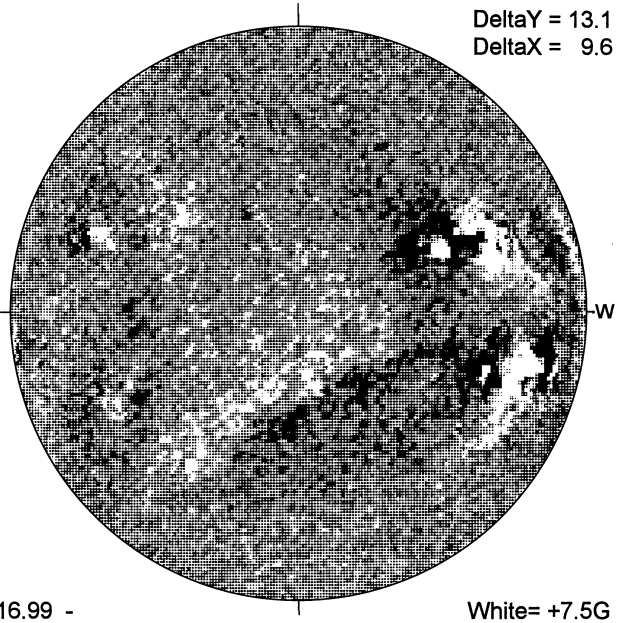
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

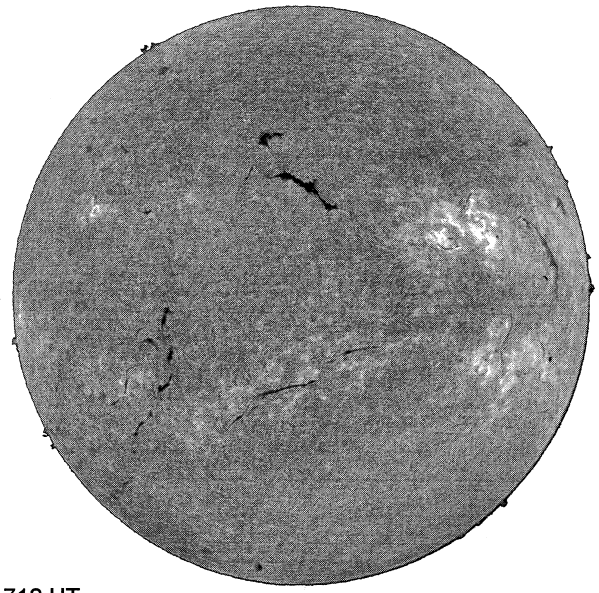
DeltaY = 13.1
DeltaX = 9.6



16.99 -
17.96 UT

White= +7.5G
Black = -7.5G

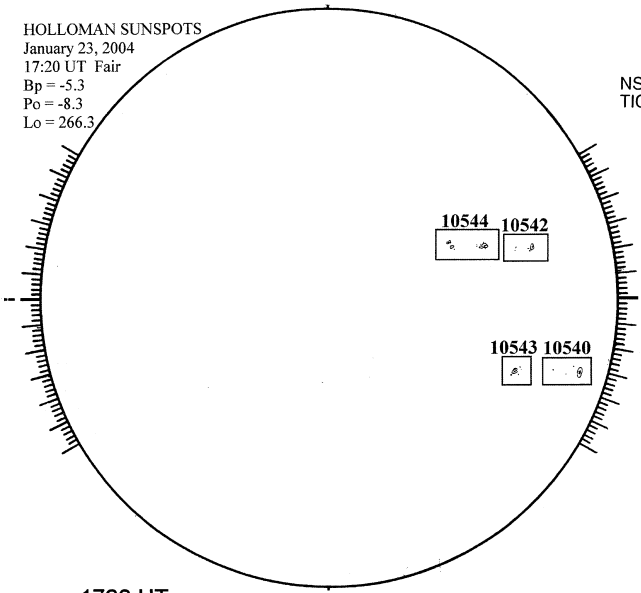
BIG BEAR H-ALPHA



1718 UT

S

HOLLOMAN SUNSPOT

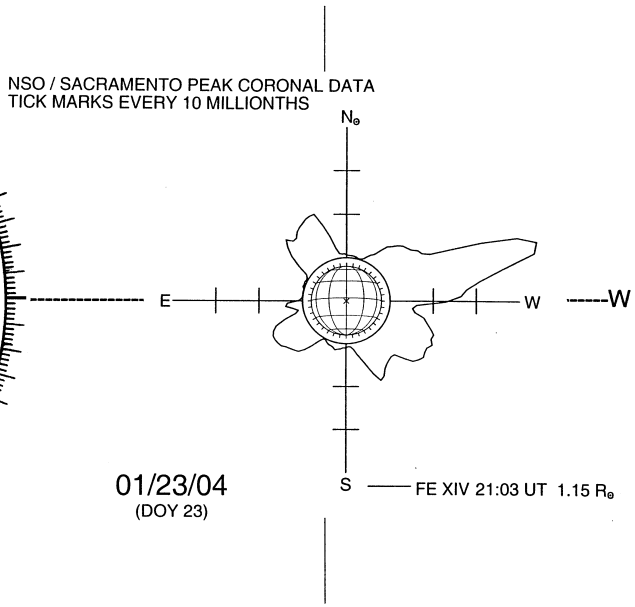


1720 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



01/23/04
(DOY 23)

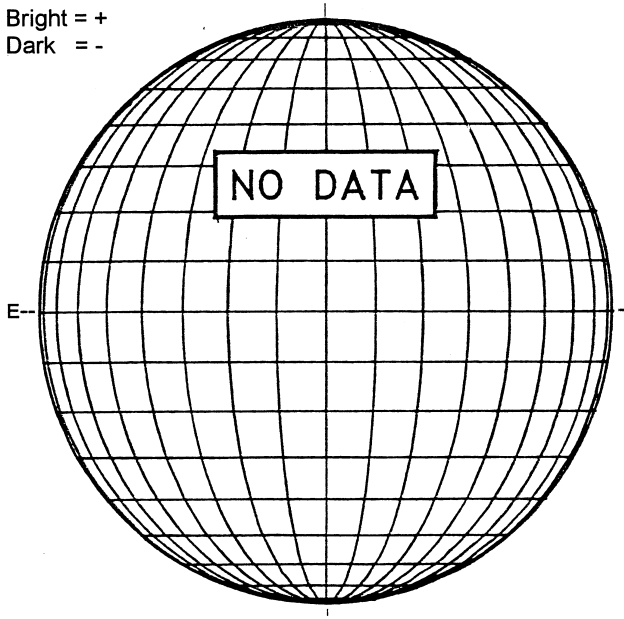
S

JANUARY 24, 2004 (P= -8.49, Bo = -5.34, Lo = 221.71)

KITT PEAK MAGNETOGRAM--SOLIS

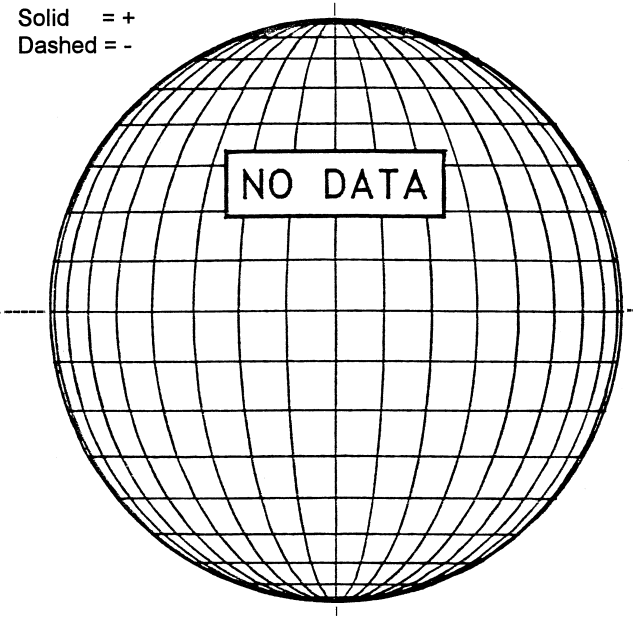
854.2 nm

Bright = +
Dark = -



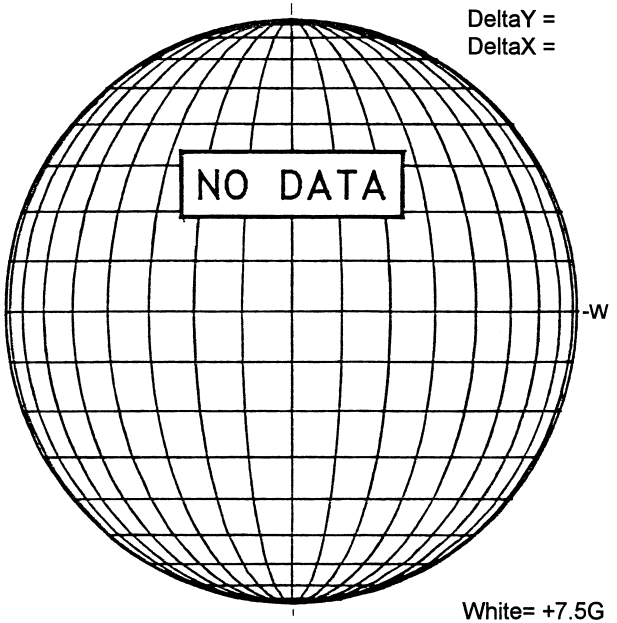
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



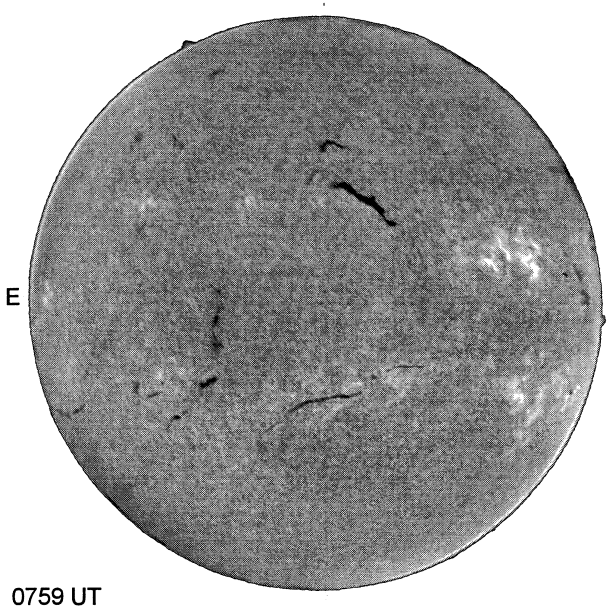
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

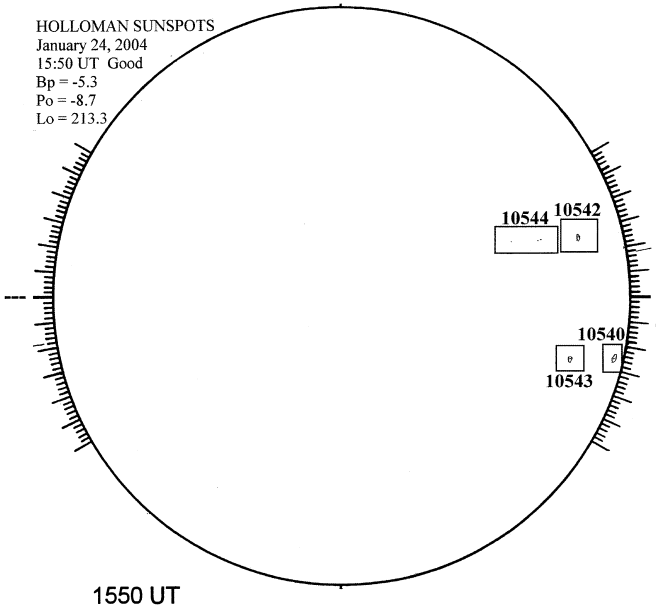
KANZELHOHE H-ALPHA



0759 UT

S

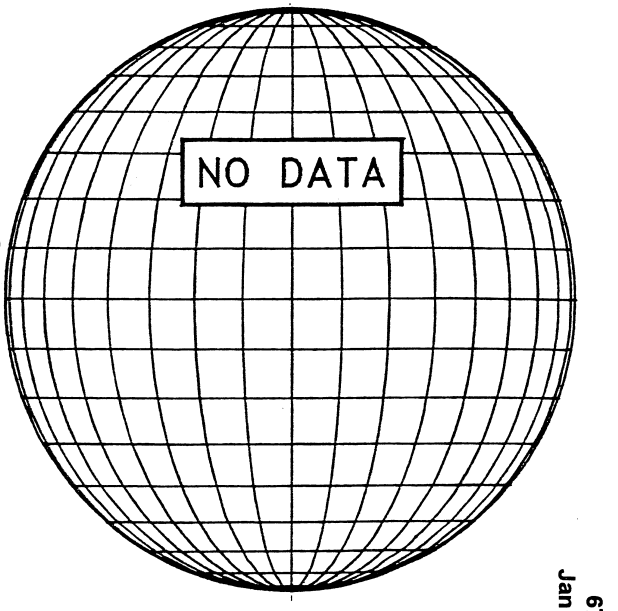
HOLLOMAN SUNSPOT



1550 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



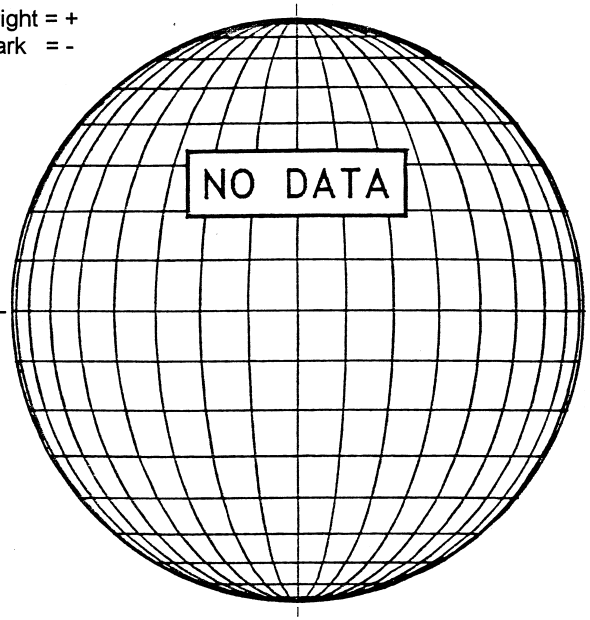
S

JANUARY 25, 2004 (P= -8.93, Bo = -5.43, Lo = 208.54)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

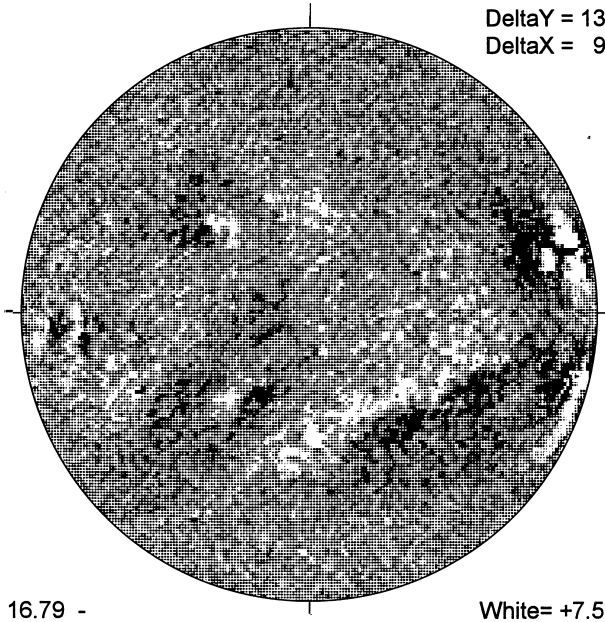
Solid = +
Dashed = -

1947 UT

MT. WILSON MAGNETOGRAM

N

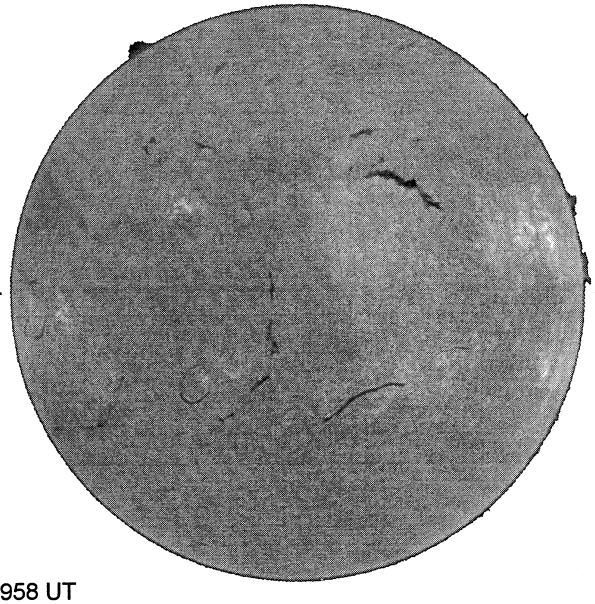
DeltaY = 13.1
DeltaX = 9.6



16.79 -
17.77 UT

White= +7.5G
Black = -7.5G

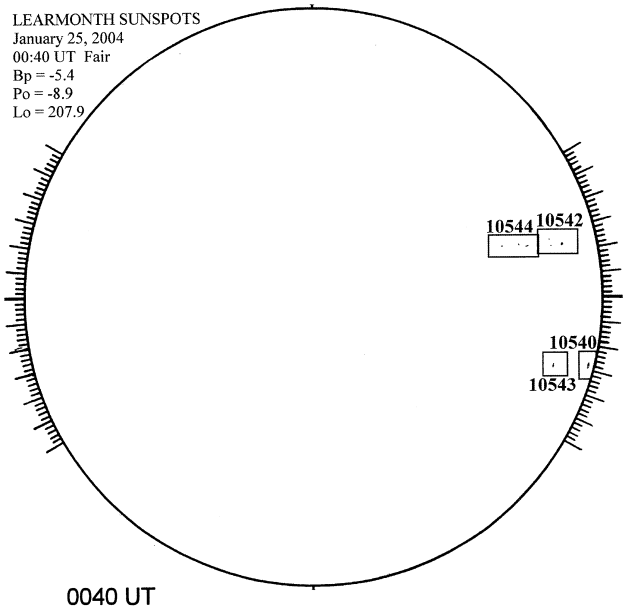
CATANIA H-ALPHA



0958 UT

S

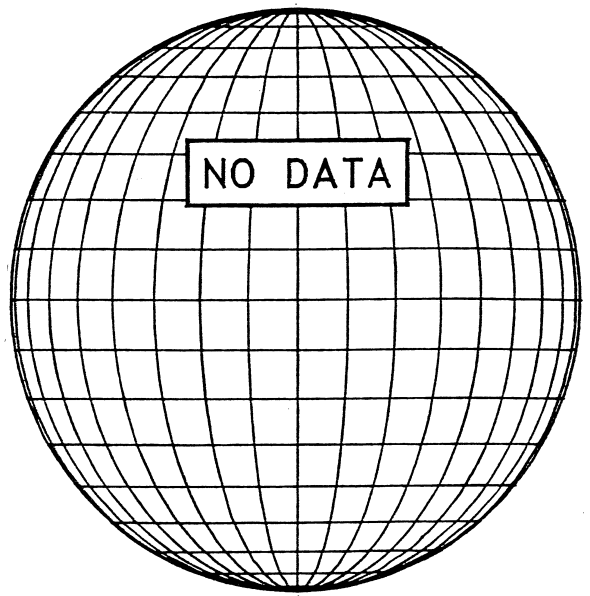
LEARMONTH SUNSPOT



0040 UT

S

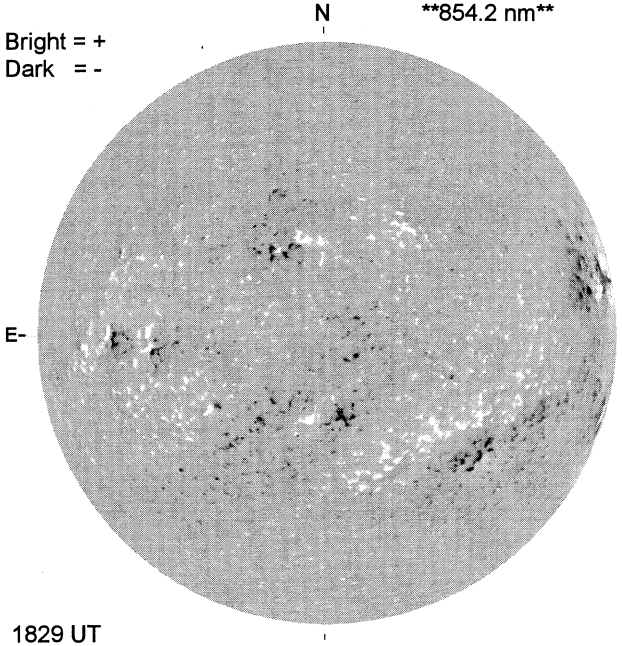
LOMNICKY PEAK CORONA (1.04 Radii)----



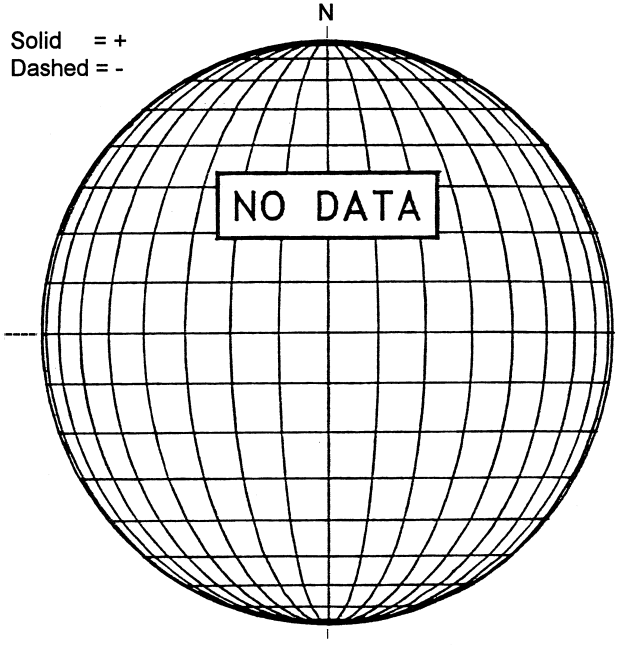
S

JANUARY 26, 2004 (P= -9.37, Bo = -5.51, Lo = 195.38)

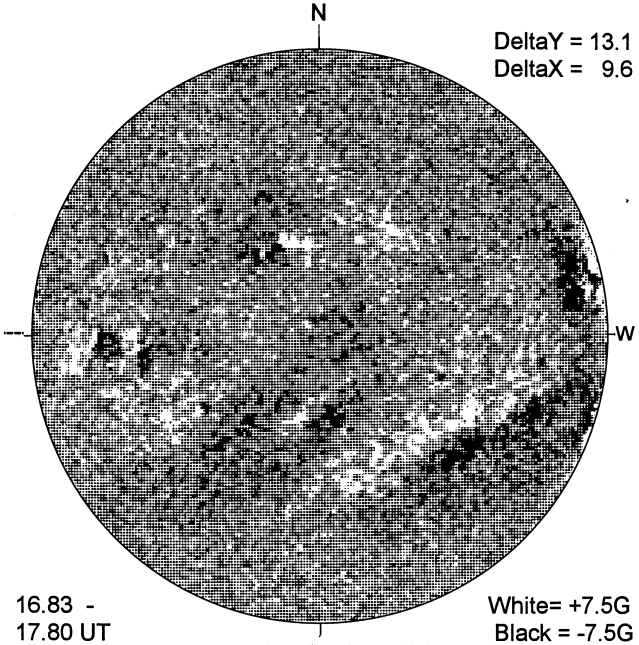
KITT PEAK MAGNETOGRAM--SOLIS



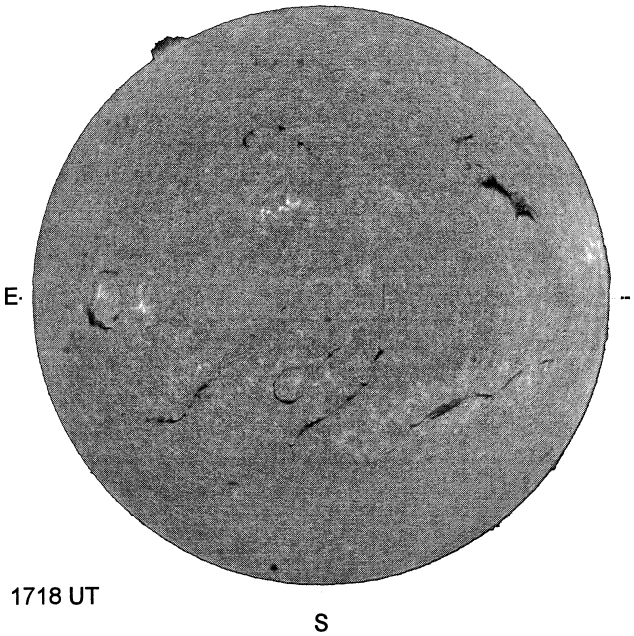
STANFORD MAGNETOGRAM



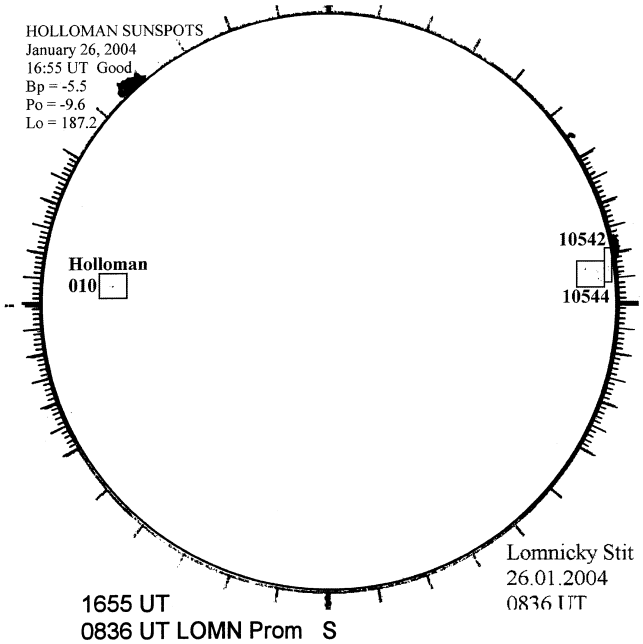
MT. WILSON MAGNETOGRAM



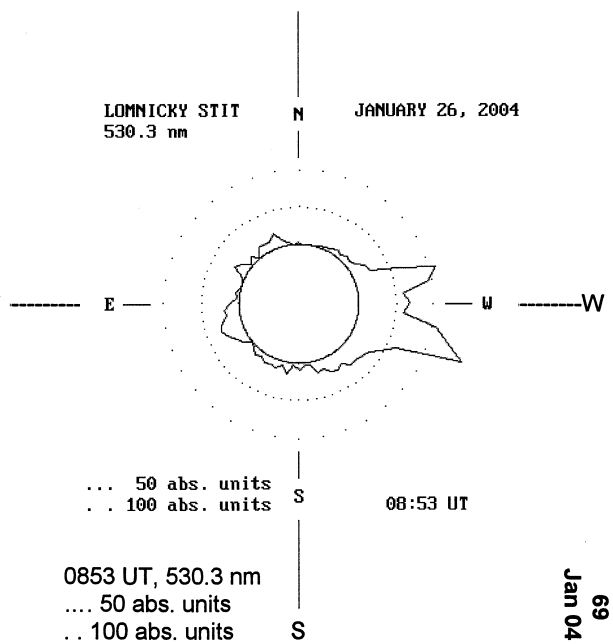
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)----



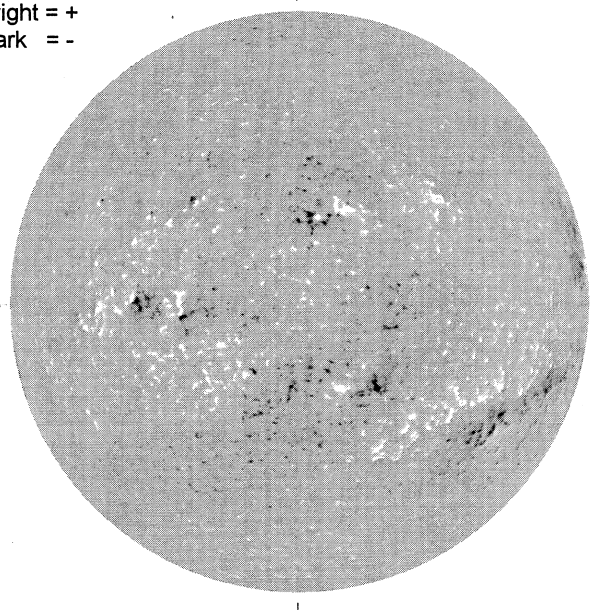
69
Jan 04

JANUARY 27, 2004 (P= -9.80, Bo = -5.59, Lo = 182.21)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -

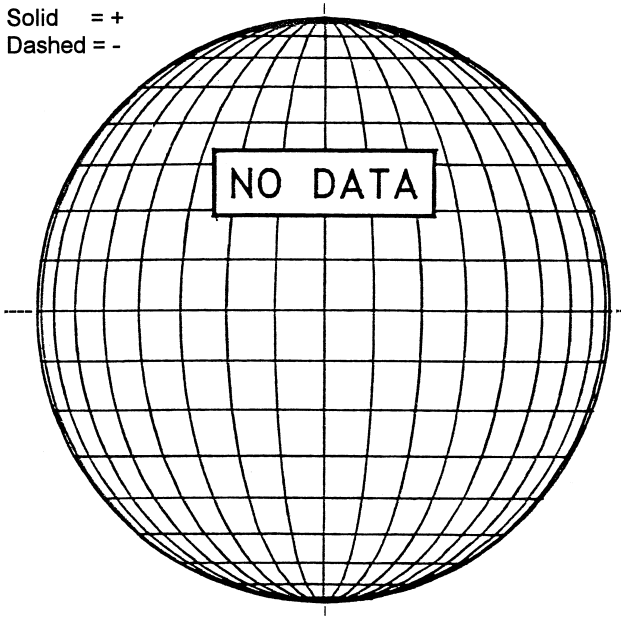


1912 UT

STANFORD MAGNETOGRAM

N

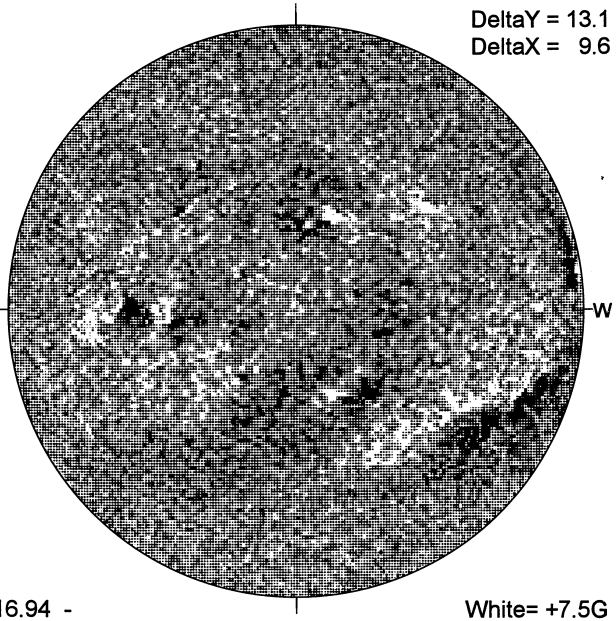
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

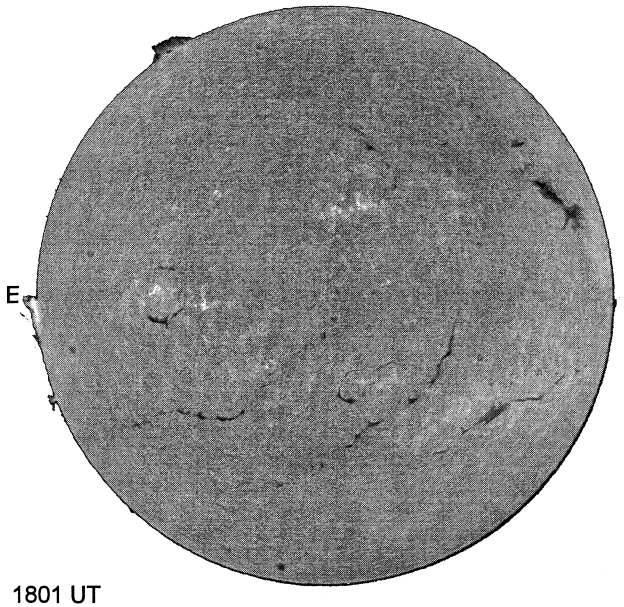
DeltaY = 13.1
DeltaX = 9.6



16.94 -
17.91 UT

White= +7.5G
Black = -7.5G

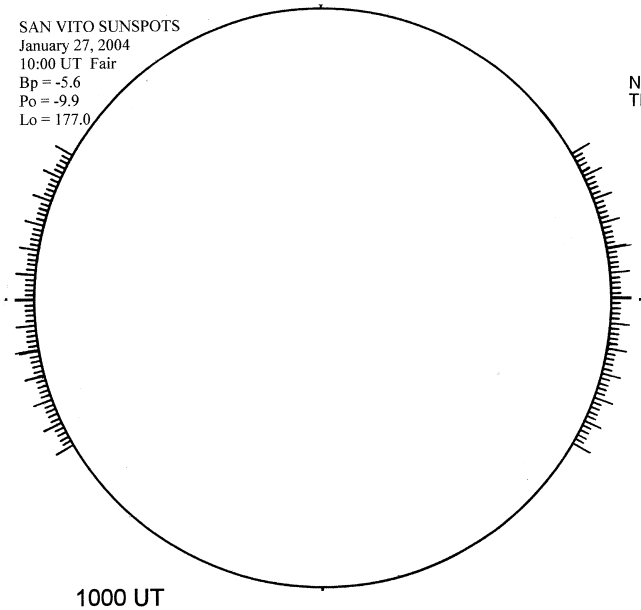
BIG BEAR H-ALPHA



1801 UT

S

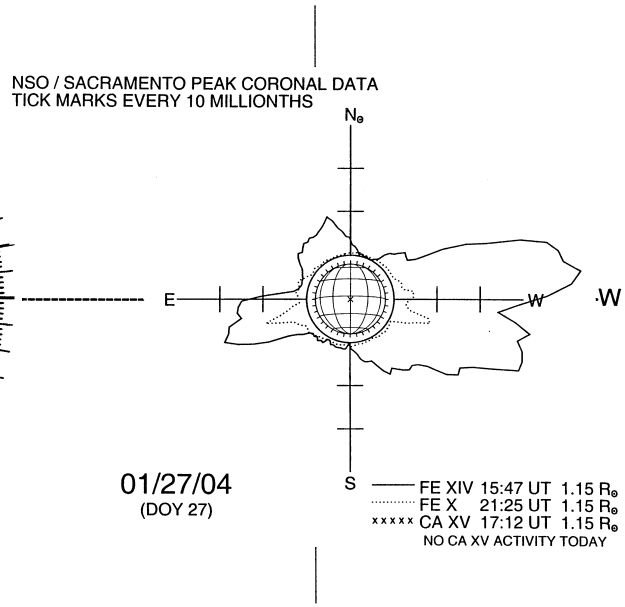
SAN VITO SUNSPOT



1000 UT

S

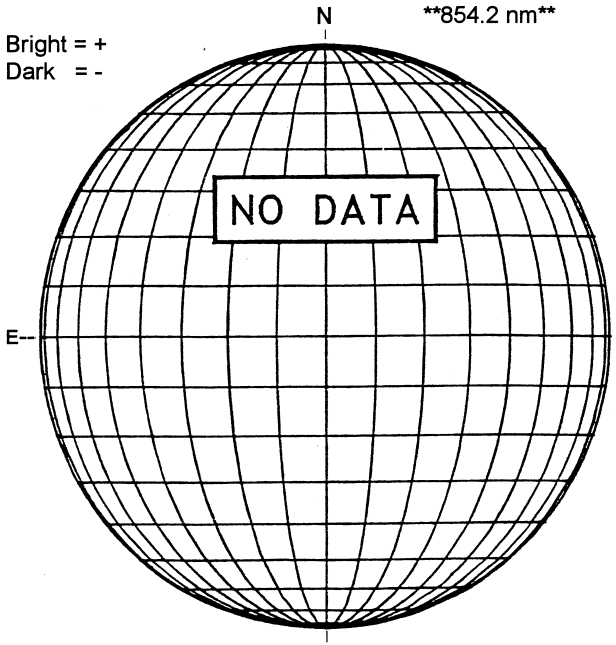
SACRAMENTO PEAK CORONA (1.15 Radii)



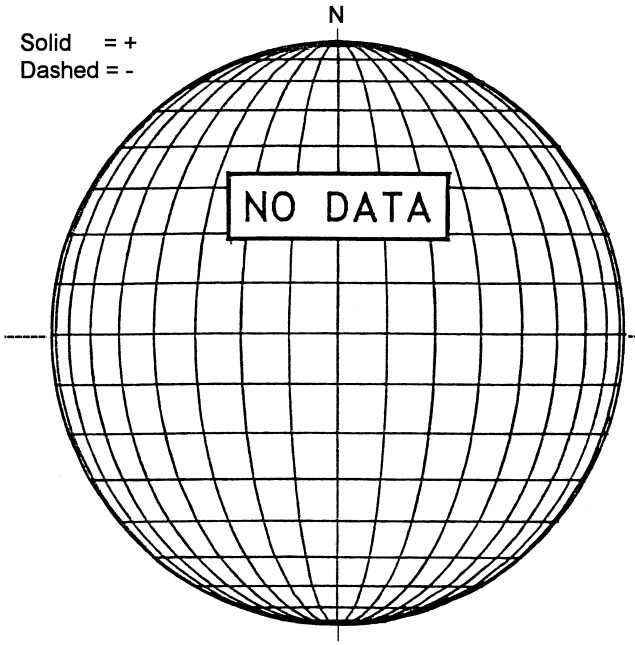
S

JANUARY 28, 2004 (P= -10.23, Bo = -5.68, Lo = 169.04)

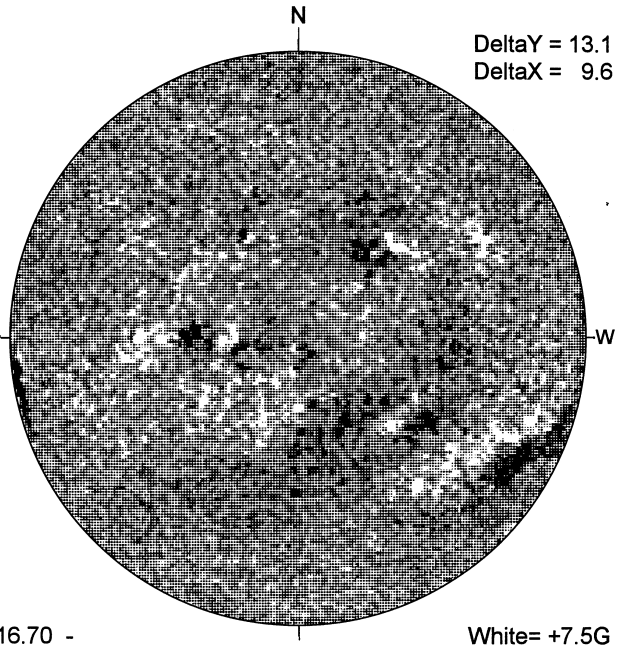
KITT PEAK MAGNETOGRAM--SOLIS



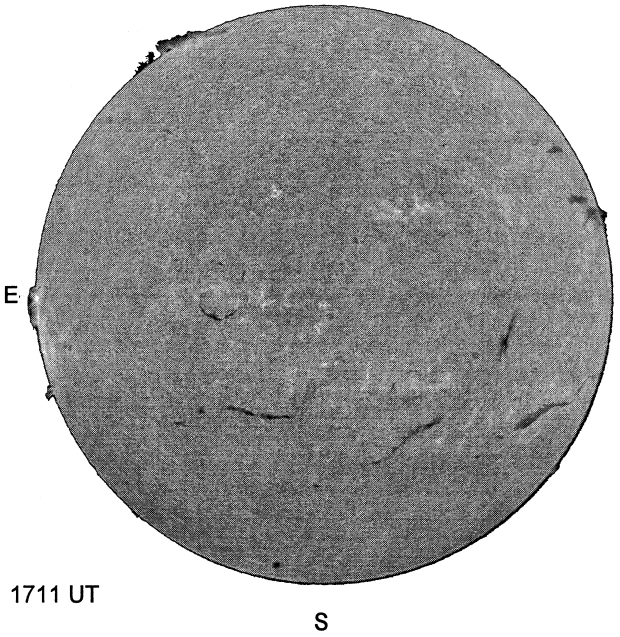
STANFORD MAGNETOGRAM



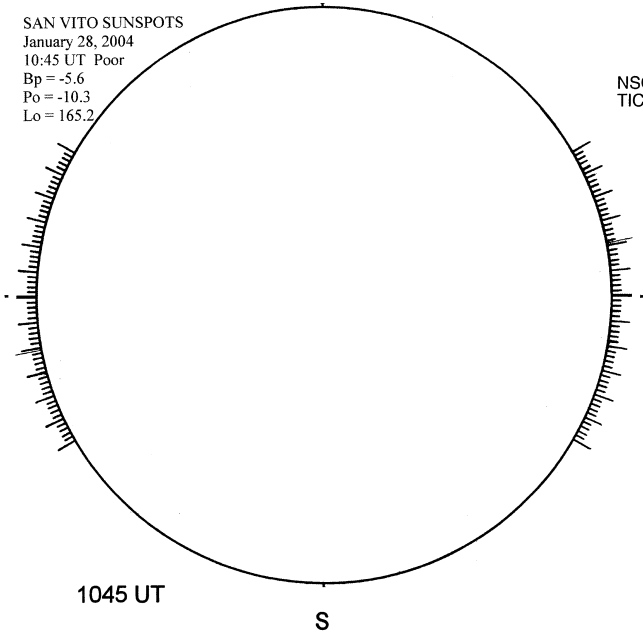
MT. WILSON MAGNETOGRAM



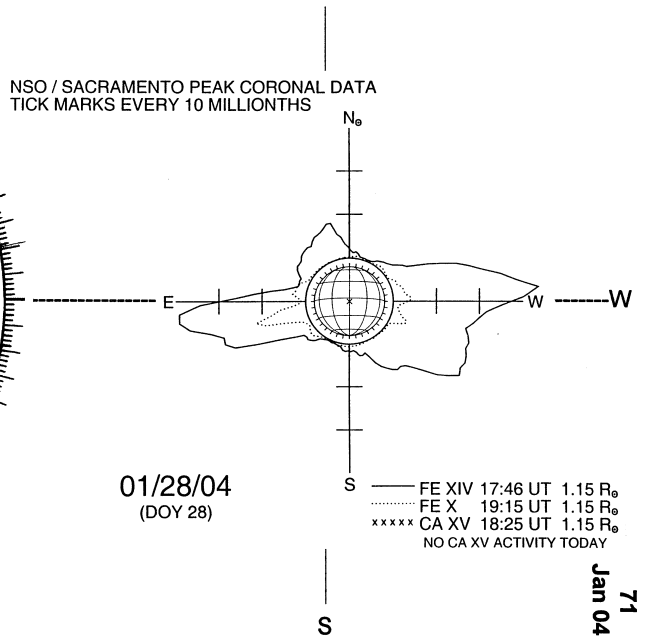
BIG BEAR H-ALPHA



SAN VITO SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



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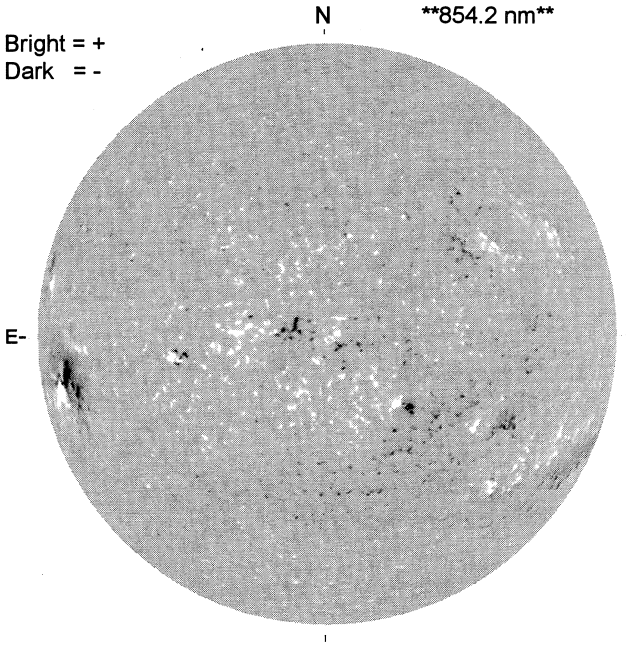
Jan 04

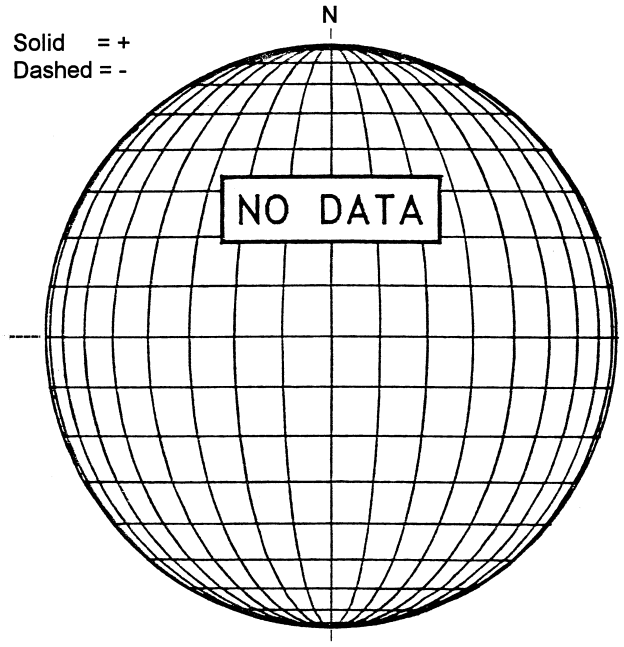
JANUARY 29, 2004 (P= -10.66, Bo = -5.75, Lo = 155.88)

KITT PEAK MAGNETOGRAM--SOLIS

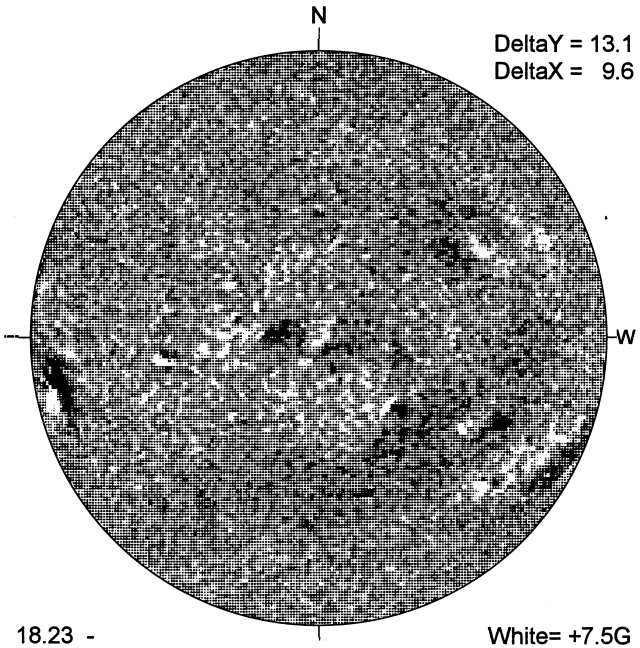


1843 UT

STANFORD MAGNETOGRAM



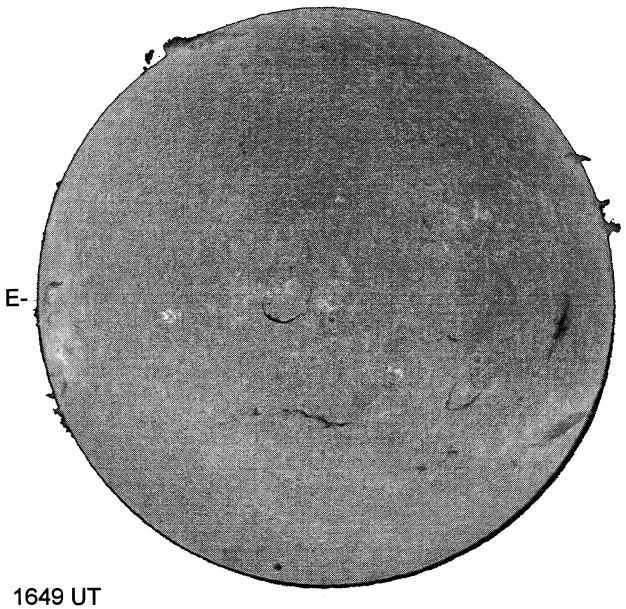
MT. WILSON MAGNETOGRAM



18.23 -
19.21 UT

White= +7.5G
Black = -7.5G

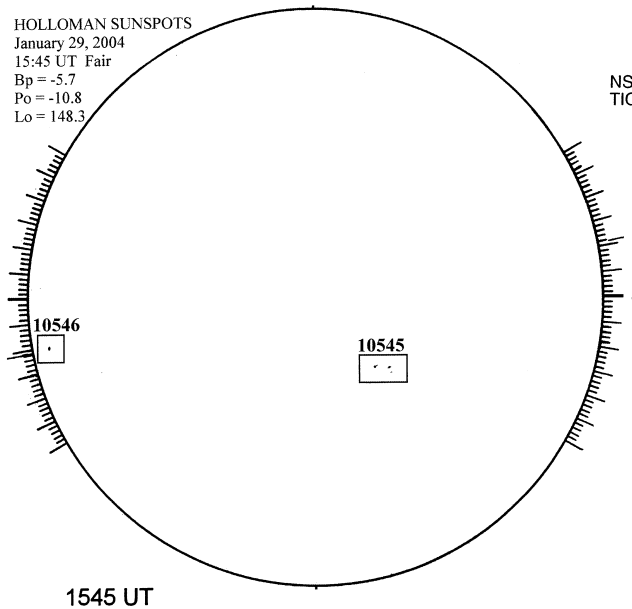
BIG BEAR H-ALPHA



1649 UT

S

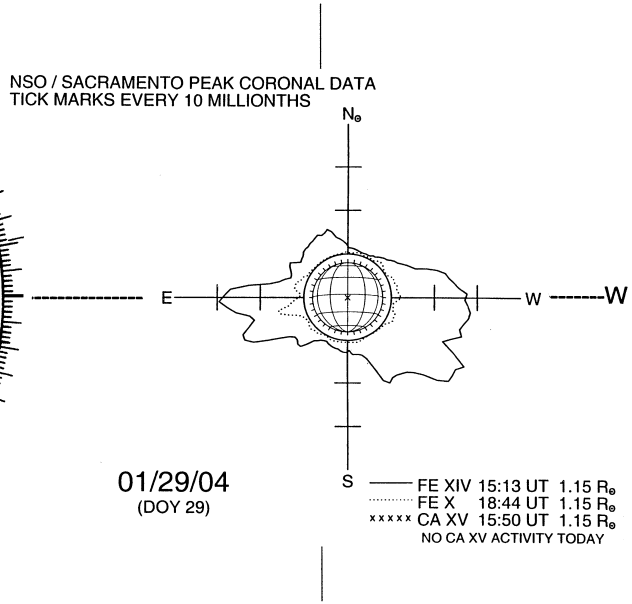
HOLLOMAN SUNSPOT



1545 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)



01/29/04
(DOY 29)

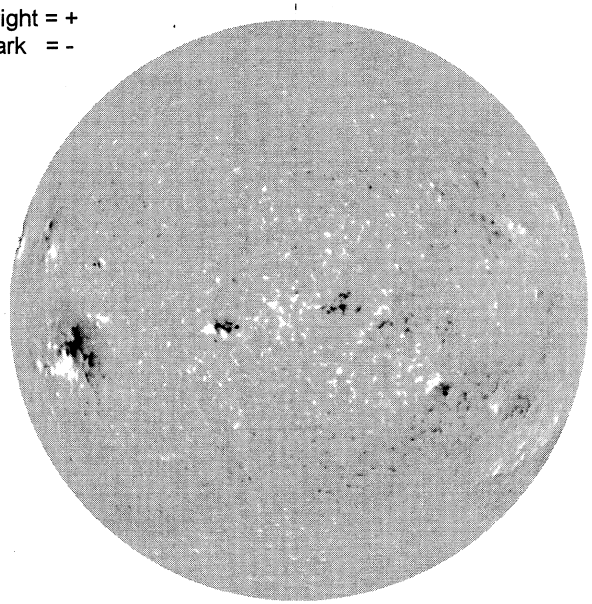
S

JANUARY 30, 2004 (P= -11.08, Bo = -5.83, Lo = 142.71)

KITT PEAK MAGNETOGRAM—SOLIS

N **854.2 nm**

Bright = +
Dark = -



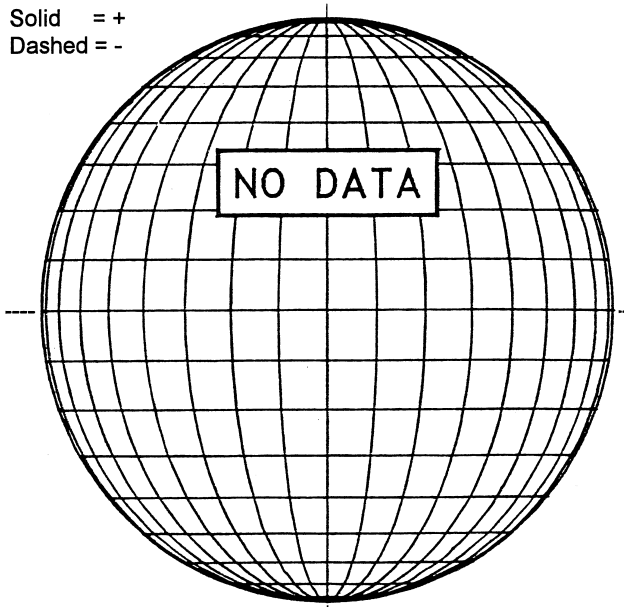
E-

2142 UT

STANFORD MAGNETOGRAM

N

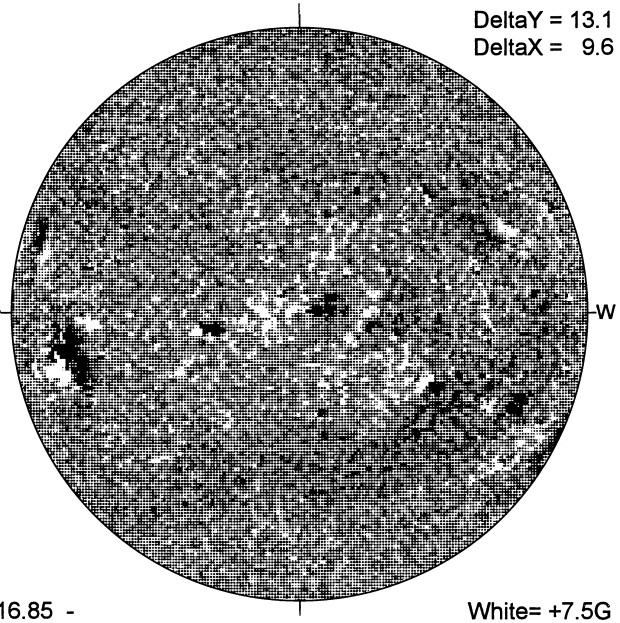
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

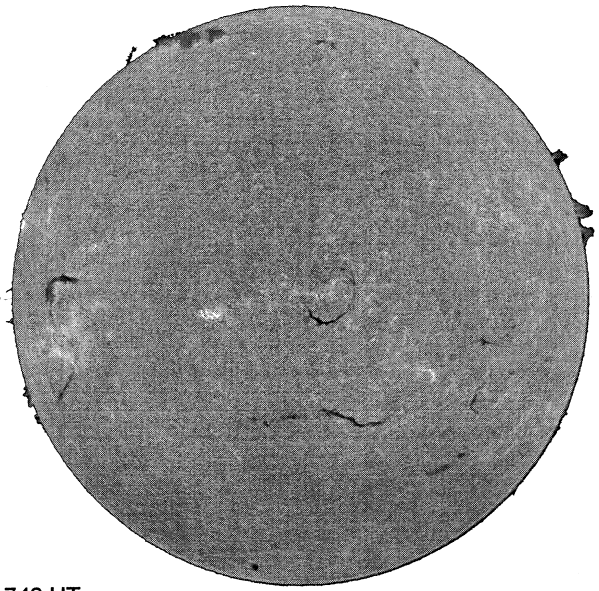


-W

16.85 -
17.83 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

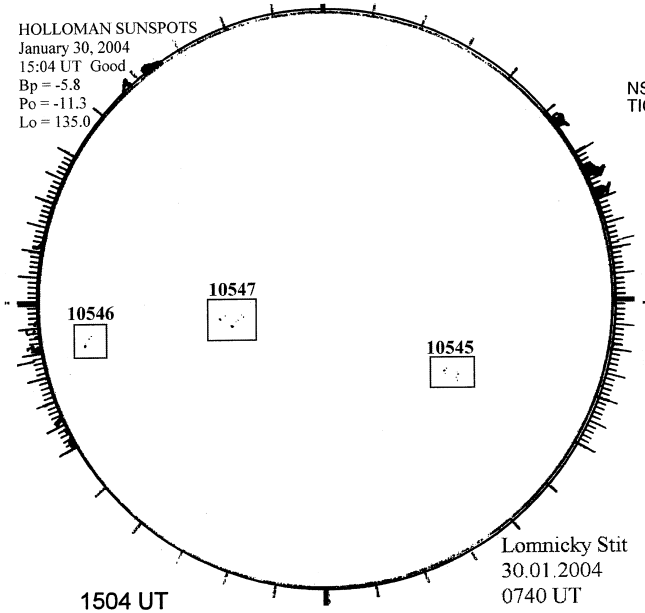


E

1740 UT

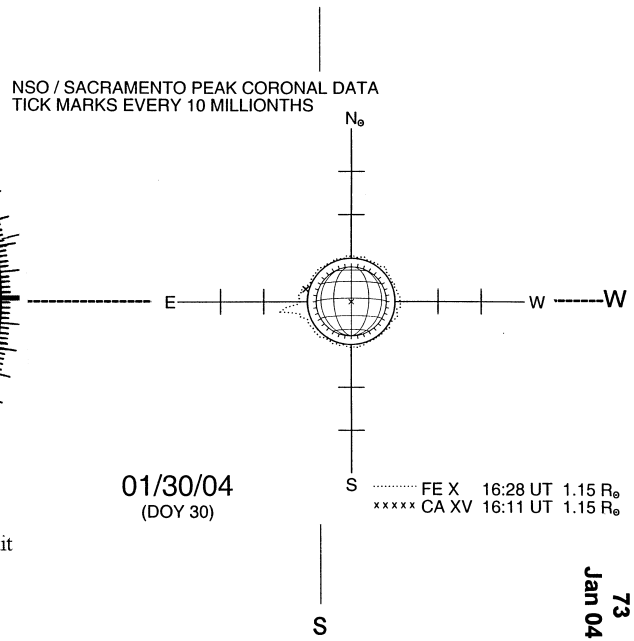
S

HOLLOMAN SUNSPOT



1504 UT
0740 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

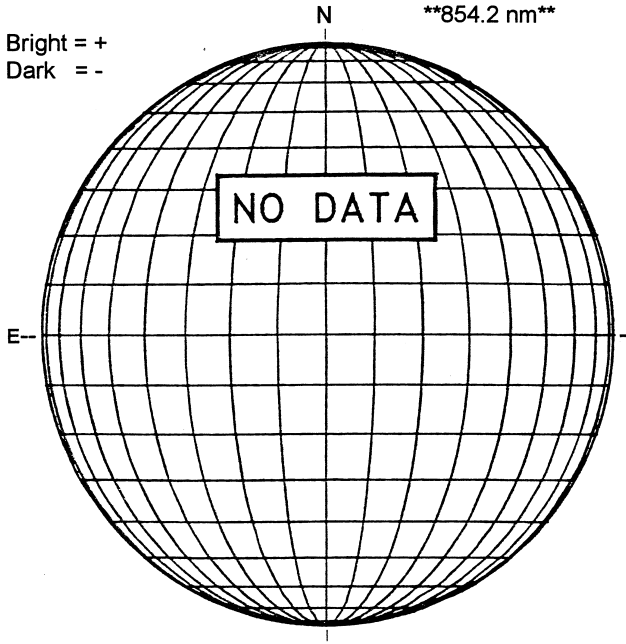


S

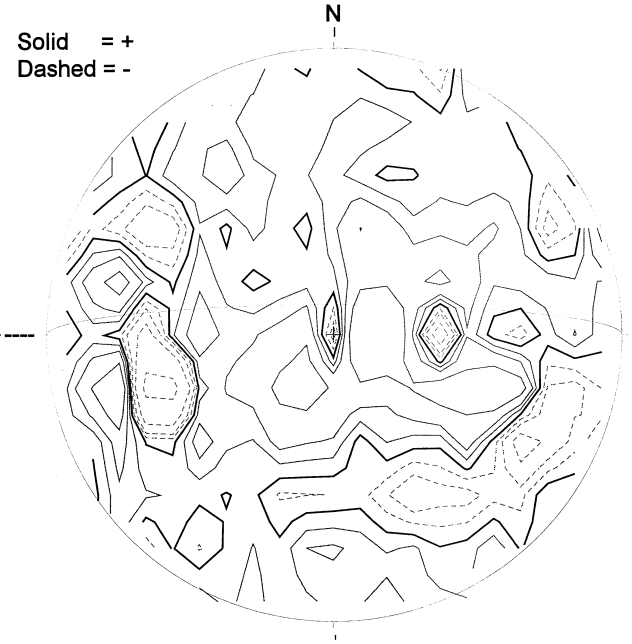
73
Jan 04

JANUARY 31, 2004 (P= -11.50, Bo = -5.91, Lo = 129.55)

KITT PEAK MAGNETOGRAM--SOLIS

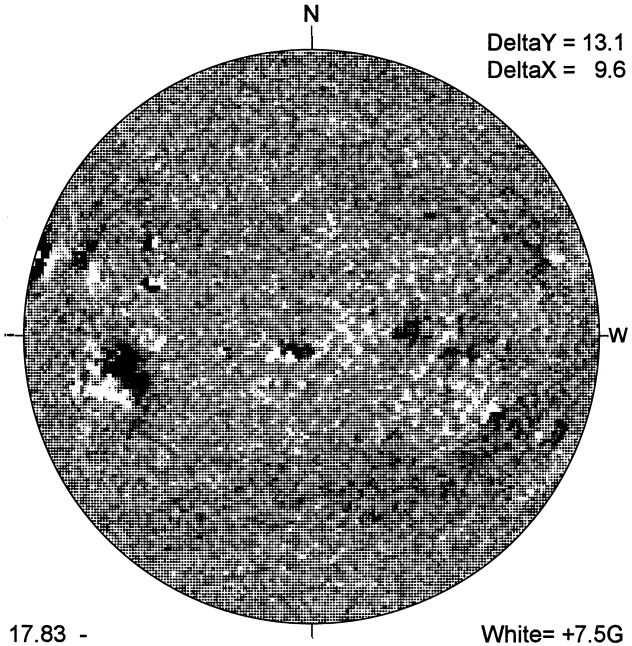


STANFORD MAGNETOGRAM



1905 UT

MT. WILSON MAGNETOGRAM



17.83 -
18.80 UT

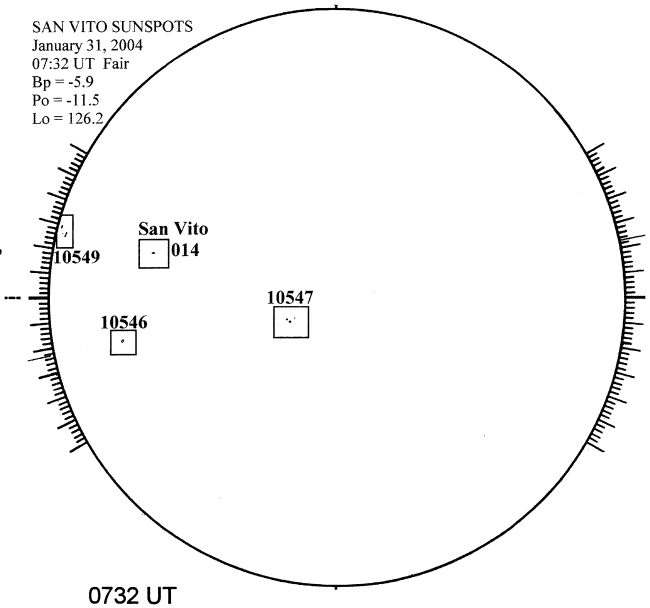
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

0806 UT

S

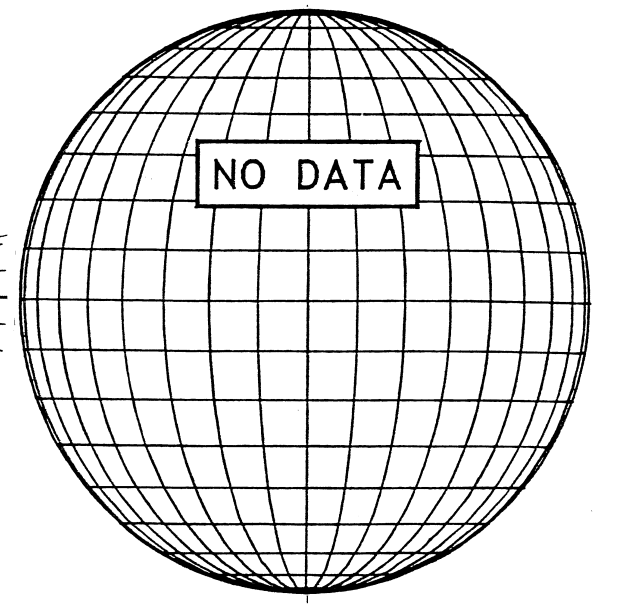
SAN VITO SUNSPOT



0732 UT

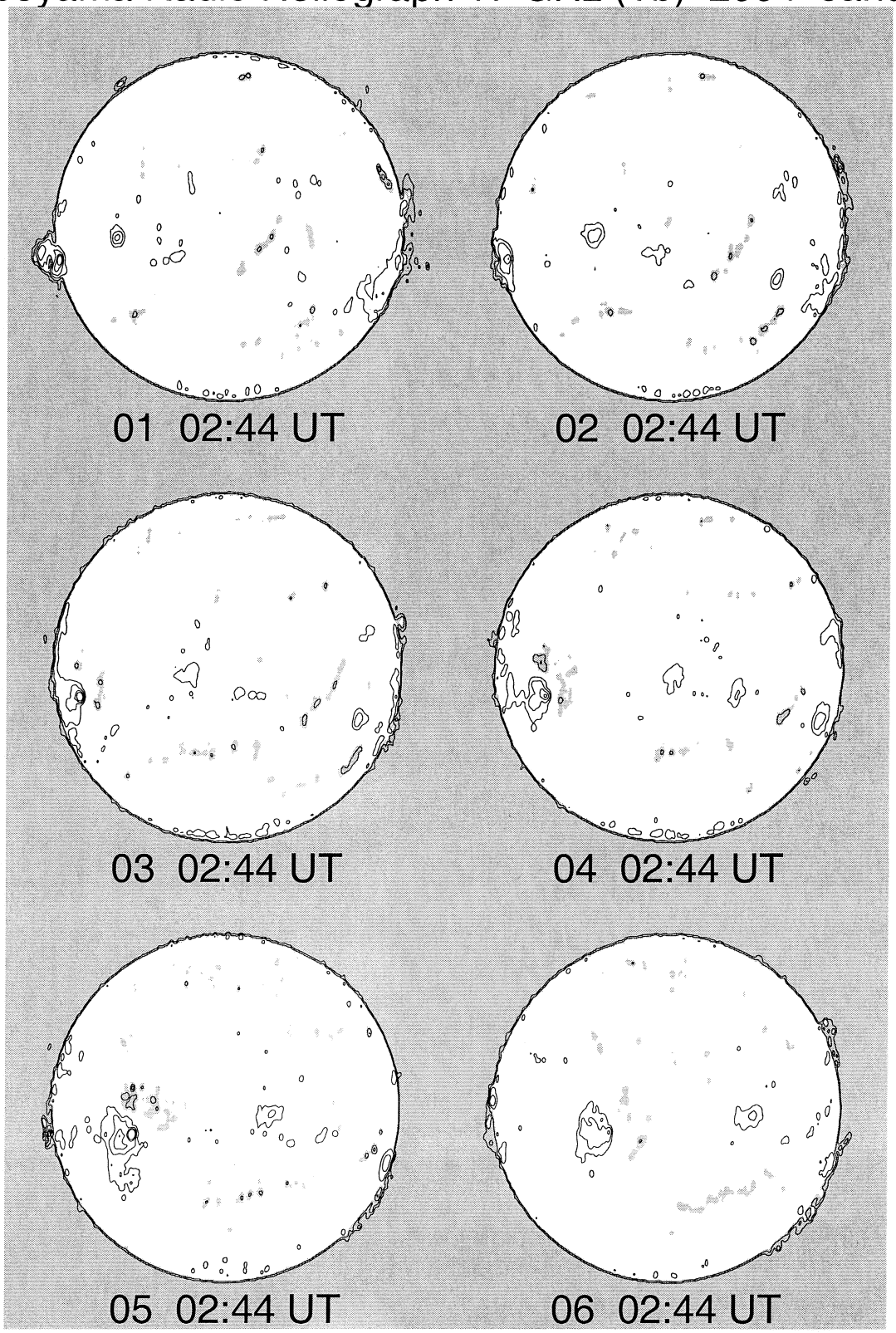
S

SACRAMENTO PEAK CORONA (1.15 Radii)----



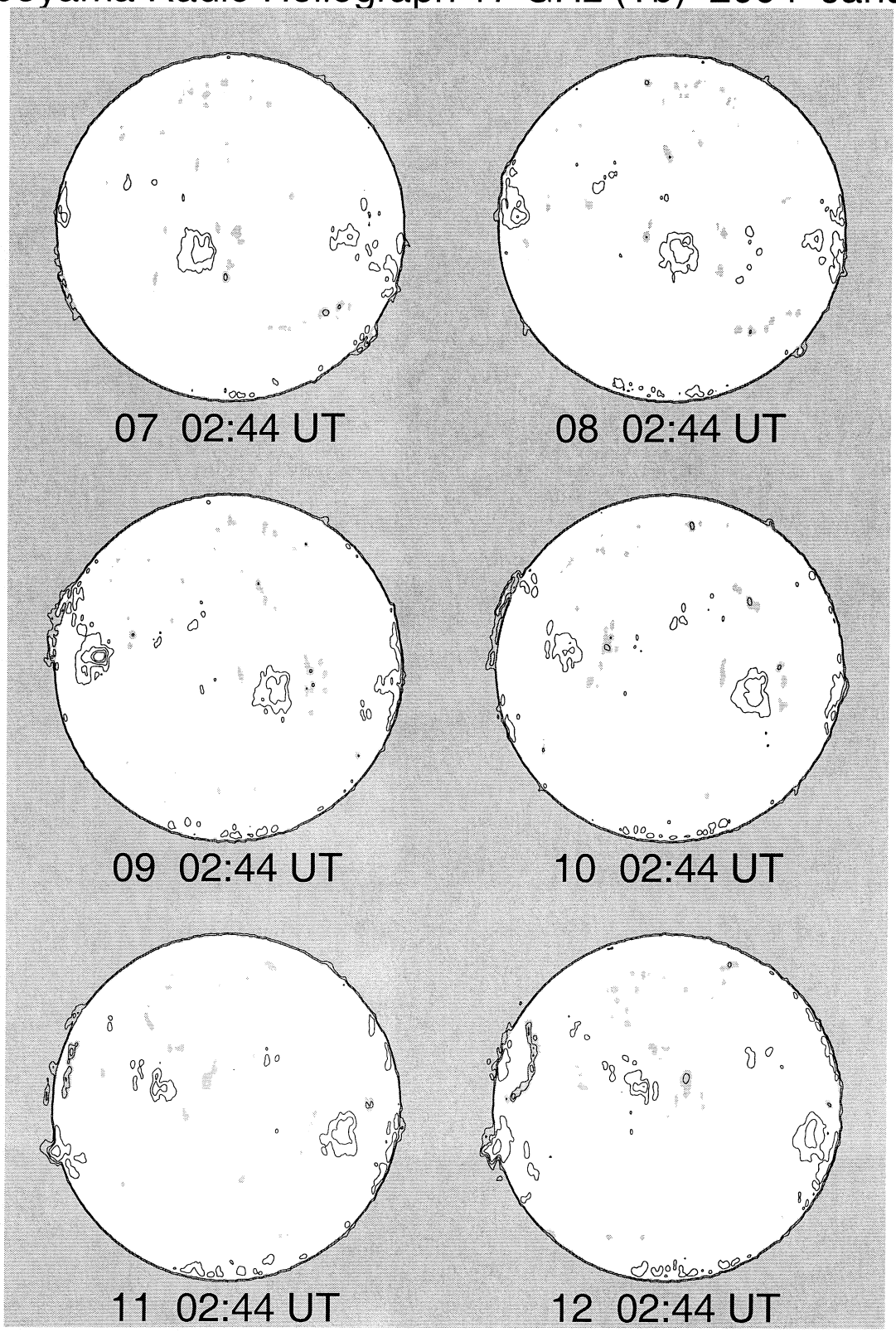
S

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 January



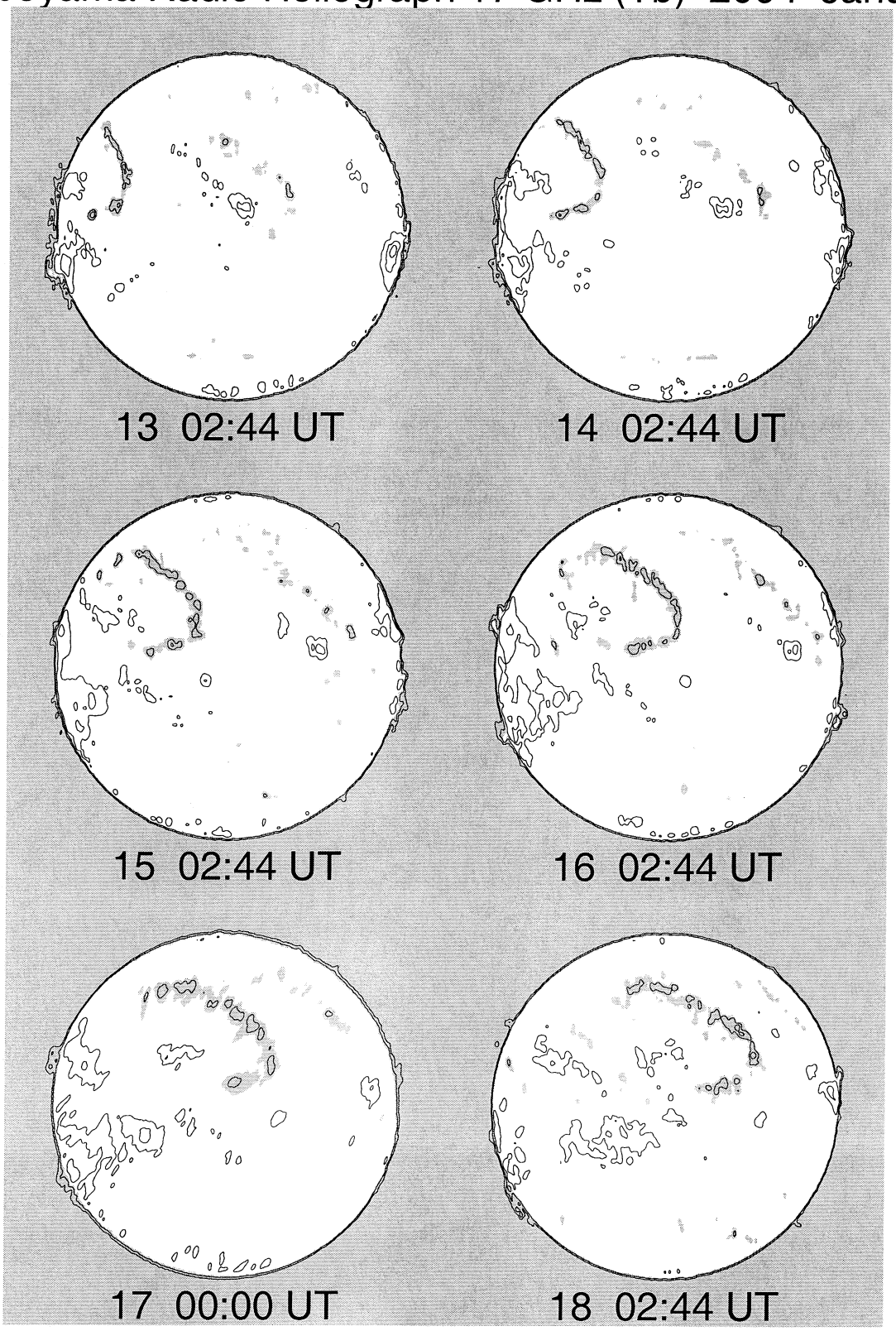
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 January



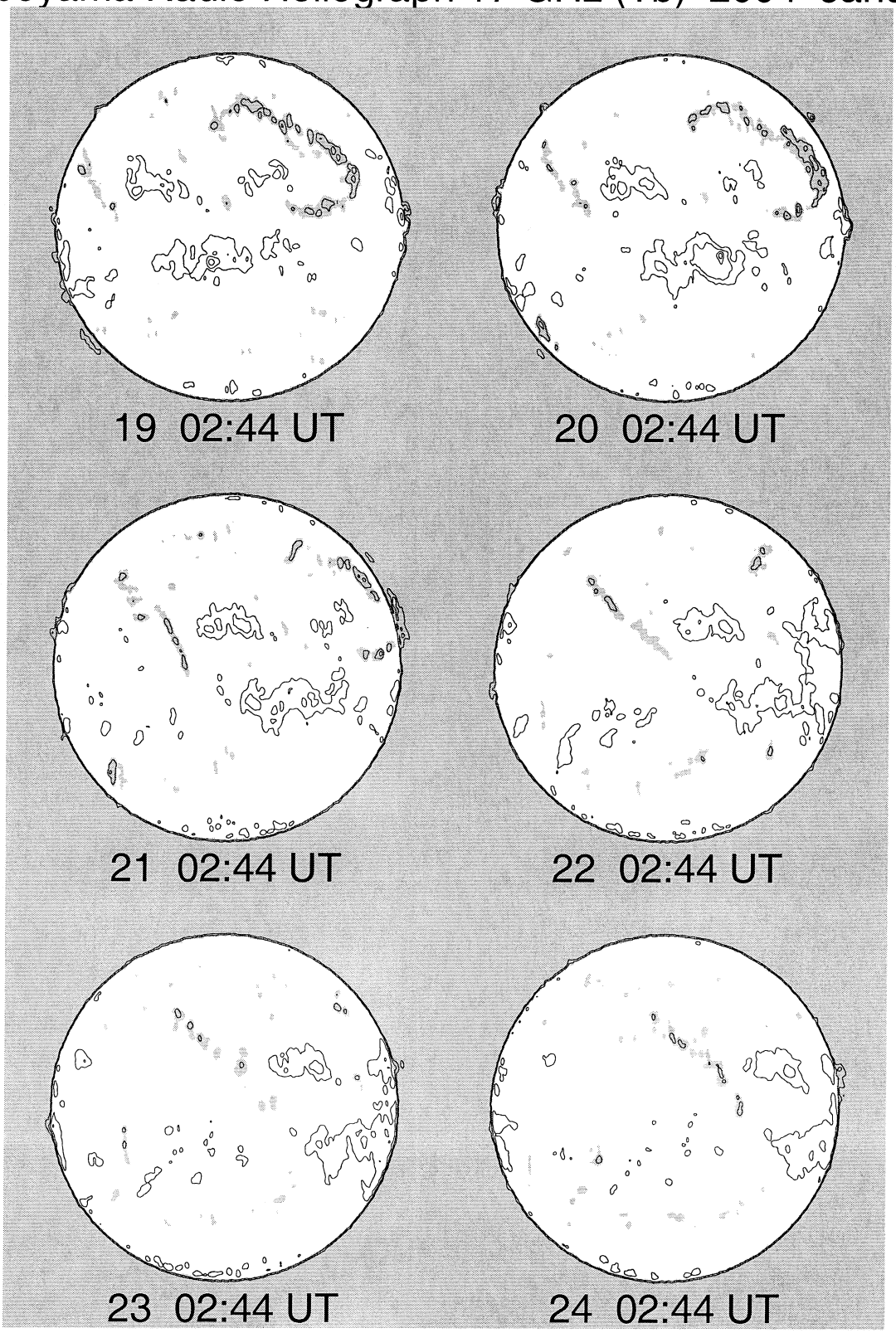
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 January



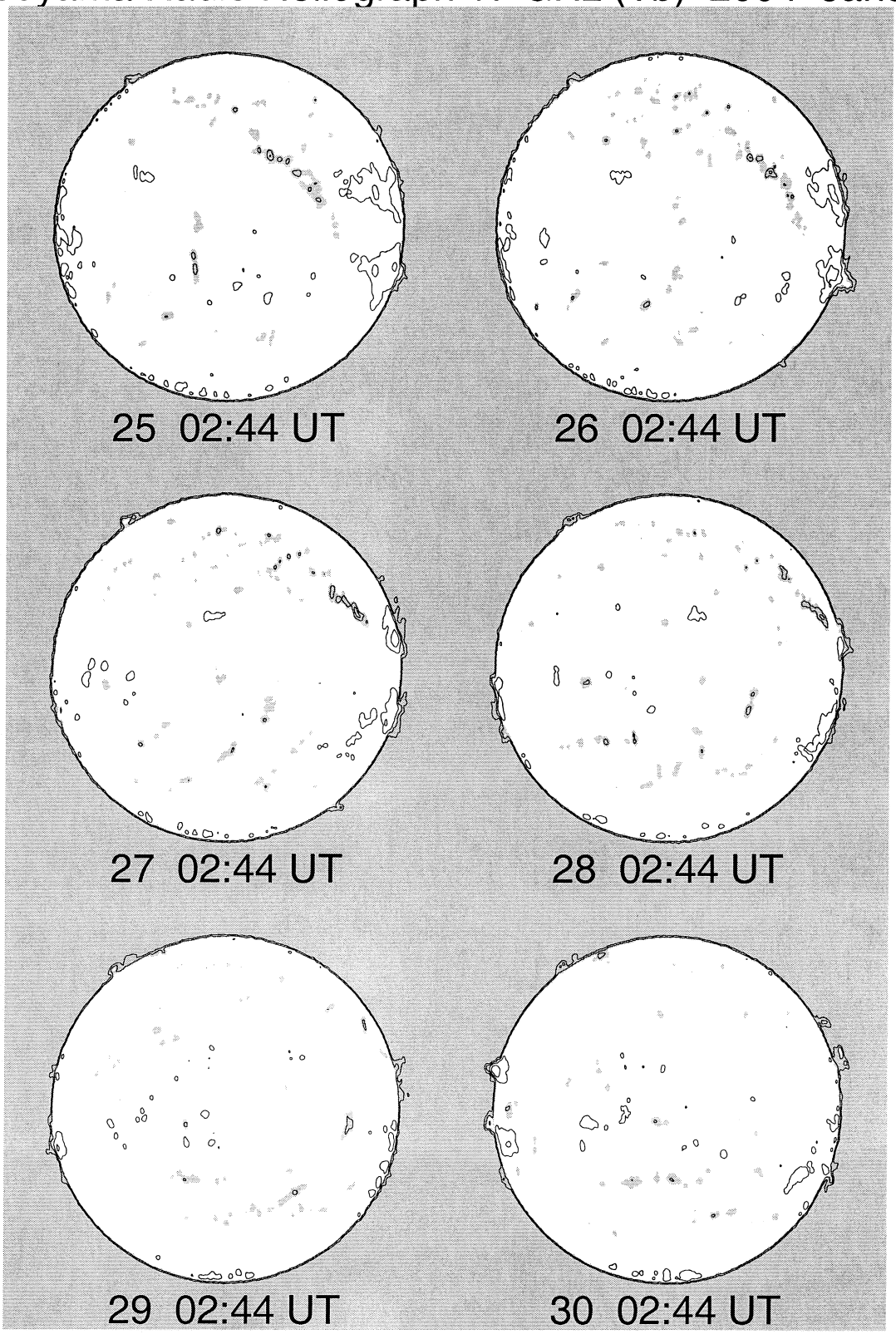
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 January



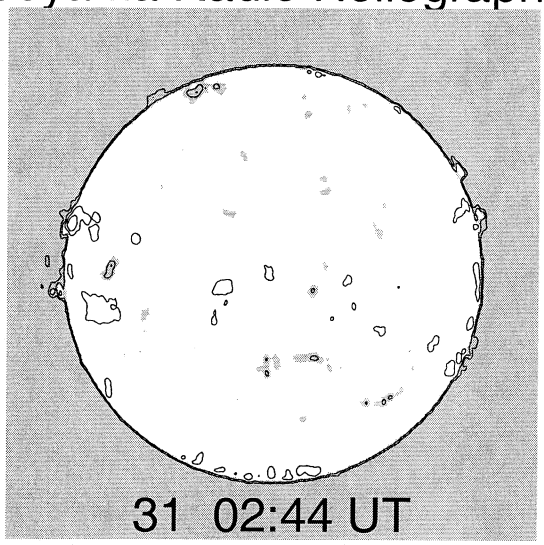
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 January



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) 2004 January



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

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2004

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
10533		HOLL	12	28	1524	N16	E58	01	2.0		B	DSO	40	2	3	2
10533	31982	MWIL	12	28	1545	N15	E56	01	1.9	4	(BF)					
10533		LEAR	12	29	0002	N16	E50	01	1.8		A	HSX	20	1		2
10533		HOLL	12	29	1547	N16	E42	01	1.8		A	AXX		1	1	3
10534		HOLL	12	29	1547	S05	E75	01	4.3		A	AXX		1	1	3
10534		HOLL	12	30	1635	S05	E56	01	3.9		A	AXX	10	1	1	3
10534	31983	MWIL	12	30	2000	S05	E55	01	3.9	4	(AP)					
10534		VORO	12	31	0050	S05	E51	01	3.8			AXX	3	2	2	3
10534		LEAR	12	31	0202	S05	E52	01	4.0		B	BXO	10	2	3	2
10534		KAND	12	31	0845	S07	E49	01	4.0			BXO		3	4	2
10534	31983	MWIL	12	31	1600	S06	E45	01	4.0	4	(B)					
10534		LEAR	01	01	0050	S06	E40	01	4.0		B	DSO	50	12	7	3
10534		SVTO	01	01	0926	S05	E35	01	4.0		B	DSO	80	11	7	3
10534		KAND	01	01	1000	S06	E35	01	4.0			DSI		17	7	4
10534		HOLL	01	01	1603	S06	E32	01	4.1		B	DAI	110	17	9	2
10534	31983	MWIL	01	01	2100	S06	E30	01	4.1	4	(B)					
10534		VORO	01	02	0031	S06	E26	01	4.0			DRI	109	16	8	3
10534		LEAR	01	02	0131	S06	E27	01	4.1		B	DSI	150	14	8	3
10534		SVTO	01	02	0734	S06	E23	01	4.0		B	DSO	70	12	9	3
10534		KAND	01	02	1205	S05	E20	01	4.0			BXO		19	8	3
10534		HOLL	01	02	1531	S07	E19	01	4.1		B	DSI	60	11	9	2
10534		LEAR	01	03	0005	S05	E15	01	4.1		B	DSO	120	11	9	3
10534		VORO	01	03	0055	S06	E12	01	3.9			DAI	68	8	9	3
10534		TACH	01	03	0615	S09	E10	01	4.0			CAI	59	17	9	2
10534		HOLL	01	03	1620	S05	E05	01	4.0		B	DAO	100	19	10	3
10534		LEAR	01	04	0010	S05	E01	01	4.1		B	DAO	110	20	10	3
10534		VORO	01	04	0123	S05	W03	01	3.8			DAI	66	9	8	3
10534		TACH	01	04	0723	S06	W06	01	3.8			CAI	30	7	8	3
10534		SVTO	01	04	1220	S05	W08	01	3.9		B	CSO	30	12	10	3
10534	31983	MWIL	01	04	1600	S06	W09	01	4.0	4	(B)					
10534		HOLL	01	04	1630	S05	W10	01	3.9		B	EAO	60	11	11	3
10534		VORO	01	05	0035	S06	W14	01	4.0			DAO	39	8	6	3
10534		SVTO	01	05	0735	S07	W17	01	4.0		B	DSO	40	7	7	3
10534		HOLL	01	05	1150	S05	W22	01	3.8		B	EAC	100	17	8	4
10534	31983	MWIL	01	05	2100	S05	W25	01	4.0	4	(B)					
10534		VORO	01	06	0116	S06	W28	01	3.9			CAO	31	7	4	3
10534		TACH	01	06	0653	S05	W33	01	3.8			AXX	15	1	1	2
10534		SVTO	01	06	0845	S08	W33	01	3.9		B	CSO	20	6	6	3
10534		HOLL	01	06	1520	S07	W36	01	3.9		B	DRO	20	10	6	4
10534	31983	MWIL	01	06	1600	S06	W37	01	3.9	4	(B)					
10534		VORO	01	07	0513	S06	W47	01	3.7			AXX	4	2		2
10534	31983	MWIL	01	07	1600	S06	W51	01	3.8	4	(BF)					
10536		SVTO	01	01	0926	S11	E80	01	7.4		A	HAX	240	1	6	3
10536		KAND	01	01	1000	S11	E84	01	7.7			HK		1	5	4
10536		HOLL	01	01	1603	S11	E78	01	7.5		A	HKX	450	2	4	2
10536	31985	MWIL	01	01	2100	S11	E79	01	7.8	5	(AP)					
10536		LEAR	01	02	0131	S11	E74	01	7.6		B	DHO	810	2	10	3
10536		SVTO	01	02	0734	S12	E73	01	7.8		B	EKO	730	2	11	3
10536		KAND	01	02	1205	S10	E71	01	7.8			CKO		9	12	3
10536		HOLL	01	02	1531	S11	E68	01	7.8		B	EKO	750	7	12	2
10536		LEAR	01	03	0005	S11	E65	01	7.9		B	EHO	960	10	10	3
10536		VORO	01	03	0055	S11	E65	01	7.9			HKX	1304	12	6	3
10536		TACH	01	03	0615	S10	E62	01	7.9			DAI	1337	10	8	2
10536		HOLL	01	03	1620	S12	E53	01	7.7		B	EKI	850	13	12	3
10536		LEAR	01	04	0010	S10	E50	01	7.8		B	DKO	1000	29	9	3
10536		VORO	01	04	0123	S10	E51	01	7.9			HKX	1332	11	6	3
10536		TACH	01	04	0723	S11	E48	01	7.9			DAI	1175	12	7	3
10536		SVTO	01	04	1220	S08	E44	01	7.8		B	EKC	1120	18	11	3
10536	31985	MWIL	01	04	1600	S11	E41	01	7.7	6	(B)					
10536		HOLL	01	04	1630	S11	E42	01	7.8		B	EKI	90	39	12	3
10536		VORO	01	05	0035	S10	E37	01	7.8			EHI	1161	23	8	3
10536		SVTO	01	05	0735	S07	E33	01	7.8		B	EKI	980	20	11	3
10536		HOLL	01	05	1150	S11	E27	01	7.5		BG	EKC	960	42	11	4
10536	31985	MWIL	01	05	2100	S11	E25	01	7.7	6	(D)					
10536		VORO	01	06	0116	S10	E23	01	7.8			EKI	1165	35	7	3
10536		TACH	01	06	0653	S11	E21	01	7.9			DAI	929	21	6	2
10536		SVTO	01	06	0845	S08	E20	01	7.9		B	DKI	970	19	10	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2004

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
10536		HOLL	01 06 1520	S11 E15	01 7.8		BGD	EKC	980	46	12	4
10536	31985	MWIL	01 06 1600	S11 E14	01 7.7	6	(D)					
10536		VORO	01 07 0513	S11 E08	01 7.8			EHI	1207	18	7	2
10536		SVTO	01 07 0846	S11 E06	01 7.8		B	EKI	780	19	11	3
10536		HOLL	01 07 1530	S12 W02	01 7.5		BG	EKC	820	52	16	4
10536	31985	MWIL	01 07 1600	S11 E01	01 7.7	5	(D)					
10536		VORO	01 08 0036	S11 W02	01 7.9			EHI	976	27	7	2
10536		LEAR	01 08 0335	S10 W05	01 7.8		BGD	DKC	730	72	9	2
10536		SVTO	01 08 0835	S11 W08	01 7.7		B	DKI	800	20	10	3
10536	31985	MWIL	01 08 1545	S11 W13	01 7.7	5	(D)					
10536		HOLL	01 08 2045	S11 W15	01 7.7		BGD	EKC	790	50	10	4
10536		VORO	01 09 0022	S11 W18	01 7.7			HKX	922	38		3
10536		LEAR	01 09 0312	S11 W17	01 7.8		BGD	DKO	660	47	8	3
10536		TACH	01 09 0659	S11 W18	01 7.9			CAI	821	16	6	3
10536		HOLL	01 09 1538	S12 W24	01 7.8		BG	EKC	530	51	12	3
10536	31985	MWIL	01 09 1600	S11 W26	01 7.7	5	(BG)					
10536		LEAR	01 10 0022	S12 W27	01 8.0		BGD	EKO	740	38	12	4
10536		VORO	01 10 0303	S11 W29	01 7.9			EHI	671	18	9	2
10536		SVTO	01 10 0740	S11 W35	01 7.7		B	DKO	530	10	7	3
10536	31985	MWIL	01 10 1545	S11 W38	01 7.8	5	(BP)					
10536		HOLL	01 10 1615	S11 W37	01 7.9		BG	EKO	450	12	11	3
10536		LEAR	01 11 0040	S10 W42	01 7.9		BG	EKC	460	33	12	3
10536		VORO	01 11 0053	S11 W41	01 7.9			EHI	618	27	10	2
10536		SVTO	01 11 0915	S15 W49	01 7.7		BGD	CKC	480	11	6	3
10536	31985	MWIL	01 11 1530	S11 W52	01 7.7	5	(BG)					
10536		HOLL	01 11 1620	S13 W51	01 7.8		BG	DKI	360	9	9	3
10536		LEAR	01 12 0018	S11 W57	01 7.7		BG	DAC	340	18	7	2
10536		VORO	01 12 0344	S11 W59	01 7.7			HKX	537	9		2
10536		TACH	01 12 0505	S10 W58	01 7.8			HA	380	9	6	3
10536	31985	MWIL	01 12 1530	S11 W66	01 7.7	4	(BP)					
10536		HOLL	01 12 1615	S12 W61	01 8.1		BG	EKI	210	29	11	4
10536		LEAR	01 13 0015	S09 W69	01 7.8		BG	DAO	340	5	7	4
10536		VORO	01 13 0019	S11 W70	01 7.7			HKX	507	7		3
10536		SVTO	01 13 0900	S09 W77	01 7.6		B	EKI	140	5	12	3
10536	31985	MWIL	01 13 1530	S11 W78	01 7.8	5	(BP)					
10536		HOLL	01 13 1610	S13 W80	01 7.6		B	DAO	240	6	8	3
10536		VORO	01 14 0023	S11 W83	01 7.8			HKX	244	2		3
10536		LEAR	01 14 0100	S12 W82	01 7.9		BG	CAO	90	2	3	3
10538		HOLL	01 07 1530	N07 E08	01 8.2		B	CRO	10	3	3	4
10538	31987	MWIL	01 07 1600	N07 E08	01 8.3	4	(B)					
10538		HOLL	01 08 2045	N05 W03	01 8.6		B	BXO	10	2	2	4
10538		VORO	01 14 0023	N12 W71	01 8.7			AXX	6	1		3
10538		LEAR	01 14 0100	N10 W72	01 8.6		B	BXO	30	2	4	3
10539		HOLL	01 07 1530	N09 E33	01 10.1		B	CRO	10	2	4	4
10539	31988	MWIL	01 07 1600	N09 E32	01 10.1	4	(B)					
10539		VORO	01 08 0036	N09 E26	01 10.0			BRX	9	2	2	2
10539		LEAR	01 08 0335	N08 E27	01 10.2		B	BXO	10	2	3	2
10539	31988	MWIL	01 08 1545	N09 E18	01 10.0	4	(B)					
10539		HOLL	01 08 2045	N09 E16	01 10.1		B	BXO	10	2	3	4
10539A		VORO	01 13 0019	S30 W12	01 12.1			AXX	7	3		3
10537		HOLL	01 06 1520	N04 E80	01 12.6		A	HAX	60	6	7	4
10537	31986	MWIL	01 06 1600	N04 E85	01 13.0	5	G					
10537		VORO	01 07 0513	N03 E73	01 12.7			DRO	133	5	3	2
10537		SVTO	01 07 0846	N04 E72	01 12.7		B	CSO	280	6	9	3
10537		HOLL	01 07 1530	N05 E67	01 12.6		B	CSO	120	13	6	4
10537	31986	MWIL	01 07 1600	N04 E68	01 12.7	5	(G)					
10537		VORO	01 08 0036	N03 E62	01 12.6			DAO	423	12	4	2
10537		LEAR	01 08 0335	N05 E62	01 12.8		B	DAO	310	21	7	2
10537		SVTO	01 08 0835	N03 E58	01 12.7		B	DAO	190	7	8	3
10537	31986	MWIL	01 08 1545	N04 E54	01 12.7	5	(G)					
10537		HOLL	01 08 2045	N04 E50	01 12.6		B	CAO	180	28	7	4
10537		VORO	01 09 0022	N04 E49	01 12.7			DAI	348	13	3	3
10537		LEAR	01 09 0312	N06 E48	01 12.7		BGD	CAO	330	15	7	3
10537		TACH	01 09 0659	N05 E46	01 12.7			CAI	183	8	4	3
10537		HOLL	01 09 1538	N04 E41	01 12.7		B	DKI	200	22	7	3

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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
10537	31986	MWIL	01 09 1600	N04 E42	01 12.8	5	(G)					
10537		LEAR	01 10 0022	N06 E35	01 12.6		BGD	DAO	250	16	8	4
10537		VORO	01 10 0303	N03 E33	01 12.6			DSO	241	9	3	2
10537		SVTO	01 10 0740	N04 E32	01 12.7		B	DAO	170	7	6	3
10537	31986	MWIL	01 10 1545	N04 E28	01 12.7	5	(G)					
10537		HOLL	01 10 1615	N03 E27	01 12.7		B	DKI	190	12	6	3
10537		LEAR	01 11 0040	N05 E22	01 12.7		BGD	DKC	170	19	4	3
10537		VORO	01 11 0053	N03 E21	01 12.6			DHI	330	7	2	2
10537		SVTO	01 11 0915	N05 E17	01 12.6		B	DKO	210	8	5	3
10537	31986	MWIL	01 11 1530	N04 E14	01 12.7	5	(BG)					
10537		HOLL	01 11 1620	N04 E13	01 12.6		B	DKI	210	7	4	3
10537		LEAR	01 12 0018	N04 E09	01 12.7		BGD	DAC	180	11	4	2
10537		VORO	01 12 0344	N04 E07	01 12.7			DSC	261	12	2	2
10537		TACH	01 12 0505	N07 E06	01 12.7			CAI	311	8	1	3
10537	31986	MWIL	01 12 1530	N04 E01	01 12.7	5	(D)					
10537		HOLL	01 12 1615	N04 E01	01 12.7		B	DKI	240	19	6	4
10537		LEAR	01 13 0015	N03 W04	01 12.7		BGD	DSO	190	12	5	4
10537		VORO	01 13 0019	N03 W03	01 12.8			DKI	308	10	4	3
10537		SVTO	01 13 0900	N04 W09	01 12.7		B	CKI	130	6	5	3
10537	31986	MWIL	01 13 1530	N04 W12	01 12.7	5	(D)					
10537		HOLL	01 13 1610	N03 W12	01 12.8		B	DAI	120	11	5	3
10537		VORO	01 14 0023	N03 W15	01 12.9			DKC	268	12	5	3
10537		LEAR	01 14 0100	N04 W18	01 12.7		BGD	DSO	190	10	4	3
10537		SVTO	01 14 1221	N05 W24	01 12.7		A	HKC	180	4	3	3
10537	31986	MWIL	01 14 1530	N03 W25	01 12.8	5	(D)					
10537		VORO	01 15 0000	N03 W30	01 12.7			DKC	251	19	2	3
10537		LEAR	01 15 0032	N04 W31	01 12.7		BGD	CAC	160	16	4	3
10537		KAND	01 15 0843	N03 W34	01 12.8			HK		4	4	3
10537		SVTO	01 15 1130	N03 W37	01 12.7		B	CKC	190	7	5	3
10537	31986	MWIL	01 15 1600	N04 W40	01 12.7	5	D *					
10537		LEAR	01 16 0013	N03 W45	01 12.6		BD	DAC	170	14	5	2
10537		VORO	01 16 0014	N03 W43	01 12.8			DAC	220	8	1	2
10537		SVTO	01 16 0727	N04 W48	01 12.7		A	HAC	150	4	4	3
10537		VORO	01 17 0015	N03 W57	01 12.7			DAI	165	13	2	3
10537		LEAR	01 17 0025	N05 W56	01 12.8		B	CAO	110	10	4	2
10537		SVTO	01 17 0725	N04 W61	01 12.7		B	DAO	170	3	5	3
10537		KAND	01 17 0850	N02 W61	01 12.8			CSO		7	6	2
10537	31986	MWIL	01 17 2100	N04 W70	01 12.6	4	(AP)					
10537		VORO	01 18 0015	N04 W69	01 12.8			HAX	133	3		3
10537		LEAR	01 18 0100	N04 W70	01 12.8		B	CAO	150	3	3	3
10537		TACH	01 18 0619	N04 W73	01 12.8			AR	10	2	2	3
10537		KAND	01 18 0720	N02 W74	01 12.8			DSO		2	3	2
10537		SVTO	01 18 1022	N04 W75	01 12.8		B	CSO	90	4	4	2
10537	31986	MWIL	01 18 1600	N04 W78	01 12.8	4	(AF)					
10537		HOLL	01 18 1650	N04 W81	01 12.6		B	CAO	30	3	5	3
10541	31990	MWIL	01 14 1530	S09 E15	01 15.8	4	(B)					
10541		VORO	01 15 0000	S09 E08	01 15.6			ARX	10	6		3
10541		LEAR	01 15 0032	S09 E08	01 15.6		B	BXO	20	5	5	3
10541		KAND	01 15 0843	S09 E05	01 15.7			AX		1		3
10541		SVTO	01 15 1130	S09 E03	01 15.7		B	DSO	40	4	4	3
10541	31990	MWIL	01 15 1600	S08 W00	01 15.7	4	B					
10541		LEAR	01 16 0013	S09 W06	01 15.5		B	BXO	10	4	5	2
10541		VORO	01 16 0014	S09 W03	01 15.8			AXX	3	1		2
10541		SVTO	01 16 0727	S09 W08	01 15.7		A	HRX	10	2	2	3
10541		VORO	01 17 0015	S09 W17	01 15.7			DRC	64	5	2	3
10541		LEAR	01 17 0025	S09 W18	01 15.7		B	DAI	60	6	3	2
10541		SVTO	01 17 0725	S09 W22	01 15.6		B	DAO	60	3	3	3
10541		KAND	01 17 0850	S11 W22	01 15.7			CSO		4	3	2
10541	31990	MWIL	01 17 2100	S09 W30	01 15.6	4	(B)					
10541		VORO	01 18 0015	S09 W31	01 15.7			BRO	28	6	1	3
10541		LEAR	01 18 0100	S09 W31	01 15.7		B	DAI	35	2	3	3
10541		TACH	01 18 0619	S09 W34	01 15.7			AR	9	2	1	3
10541		KAND	01 18 0720	S10 W35	01 15.7			DSO		3	2	2
10541		SVTO	01 18 1022	S09 W38	01 15.6		A	HSX	33	3	3	2
10541	31990	MWIL	01 18 1600	S09 W40	01 15.7	4	(B)					
10541		HOLL	01 18 1650	S10 W41	01 15.6		B	BXO	10	3	2	3
10541		LEAR	01 19 0045	S09 W46	01 15.6		A	AXX	10	1	1	3
10541		VORO	01 19 1222	S09 W46	01 16.1			AXX	5	1		2

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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
10541A	31991	MWIL	01	15	1600	N05 E10	01	16.4	3	B					
10540	31989	MWIL	01	12	1530	S12 E81	01	18.7	5	(AP)					
10540		HOLL	01	12	1615	S11 E80	01	18.7		A	HHX	60	6	6	4
10540		LEAR	01	13	0015	S07 E77	01	18.8		B	CAO	210	2	5	4
10540		VORO	01	13	0019	S12 E75	01	18.7			HKX	262	1		3
10540		SVTO	01	13	0900	S15 E74	01	19.0		B	FSO	270	3	16	3
10540	31989	MWIL	01	13	1530	S12 E72	01	19.1	5	(B)					
10540		HOLL	01	13	1610	S12 E72	01	19.1		B	EAI	520	10	14	3
10540		VORO	01	14	0023	S13 E67	01	19.1			DHI	458	12	10	3
10540		LEAR	01	14	0100	S13 E68	01	19.2		B	DSO	390	8	8	3
10540		SVTO	01	14	1221	S14 E60	01	19.0		B	ESO	180	6	14	3
10540	31989	MWIL	01	14	1530	S13 E59	01	19.1	5	(B)					
10540		VORO	01	15	0000	S13 E54	01	19.1			EAI	386	10	11	3
10540		LEAR	01	15	0032	S12 E55	01	19.2		B	ESO	320	11	13	3
10540		KAND	01	15	0843	S14 E52	01	19.3			ESO		4	14	3
10540		SVTO	01	15	1130	S14 E48	01	19.1		B	ESO	270	8	14	3
10540	31989	MWIL	01	15	1600	S13 E45	01	19.1	5	B					
10540		LEAR	01	16	0013	S12 E40	01	19.0		B	EAI	410	20	12	2
10540		VORO	01	16	0014	S13 E41	01	19.1			EKI	494	7	11	2
10540		SVTO	01	16	0727	S14 E38	01	19.2		B	EAO	310	8	14	3
10540		VORO	01	17	0015	S13 E28	01	19.1			EKI	433	12	11	3
10540		LEAR	01	17	0025	S14 E27	01	19.0		B	ESO	350	17	12	2
10540		SVTO	01	17	0725	S14 E24	01	19.1		B	ESO	350	9	14	3
10540		KAND	01	17	0850	S15 E25	01	19.3			ESI		22	15	2
10540	31989	MWIL	01	17	2100	S14 E17	01	19.1	5	(B)					
10540		VORO	01	18	0015	S13 E15	01	19.1			EKI	386	33	11	3
10540		LEAR	01	18	0100	S14 E15	01	19.2		B	ESO	40	23	13	3
10540		TACH	01	18	0619	S14 E11	01	19.1			CAI	199	8	10	3
10540		KAND	01	18	0720	S15 E11	01	19.1			EKO		18	15	2
10540		SVTO	01	18	1022	S14 E10	01	19.2		B	EAO	50	17	15	2
10540	31989	MWIL	01	18	1600	S14 E07	01	19.2	5	(D)					
10540		HOLL	01	18	1650	S14 E05	01	19.1		B	FKO	330	36	16	3
10540		LEAR	01	19	0045	S14 E01	01	19.1		BGD	FKO	330	33	16	3
10540		VORO	01	19	1222	S14 E01	01	19.6			EKI	400	15	11	2
10540		KAND	01	19	1235	S15 W04	01	19.2			ESO		19	13	4
10540		HOLL	01	19	1530	S14 W06	01	19.2		BGD	FKO	270	26	16	3
10540		LEAR	01	20	0028	S14 W10	01	19.3		BGD	FAO	210	32	17	3
10540		KAND	01	20	0825	S15 W16	01	19.1			ESO		19	14	3
10540		SVTO	01	20	0830	S14 W15	01	19.2		B	ESI	230	13	14	3
10540		VORO	01	20	1520	S14 W13	01	19.6			EKI	164	6	11	1
10540	31989	MWIL	01	20	1530	S14 W19	01	19.2	5	(BG)					
10540		HOLL	01	20	1615	S14 W18	01	19.3		BG	FHI	220	31	17	4
10540		LEAR	01	21	0035	S14 W25	01	19.1		BG	ESO	240	22	11	3
10540		TACH	01	21	0538	S14 W26	01	19.3			CSI	148	5	10	4
10540		HOLL	01	21	1650	S14 W34	01	19.1		B	EKO	190	10	14	3
10540	31989	MWIL	01	21	1730	S14 W33	01	19.2	5	(BG)					
10540		LEAR	01	22	0025	S15 W35	01	19.4		BG	CSO	120	6	11	2
10540	31989	MWIL	01	22	1600	S14 W46	01	19.2	4	(B)					
10540		HOLL	01	22	1808	S13 W47	01	19.2		B	ESO	90	4	12	3
10540		LEAR	01	23	0035	S15 W48	01	19.4		BG	CSO	150	2	11	2
10540		TACH	01	23	0657	S16 W54	01	19.2			CSO	198	2	11	4
10540		SVTO	01	23	1050	S13 W62	01	18.8		A	HSX	120	1	2	3
10540	31989	MWIL	01	23	1530	S14 W59	01	19.2	5	(B)					
10540		HOLL	01	23	1720	S17 W63	01	18.9		B	CSO	60	4	14	3
10540		LEAR	01	24	0035	S15 W67	01	18.9		A	HSX	170	1	3	3
10540		SVTO	01	24	1426	S13 W76	01	18.9		A	HSX	120	1	4	2
10540		VORO	01	24	1509	S15 W71	01	19.2			HAX	130	1		1
10540		HOLL	01	24	1550	S13 W78	01	18.8		A	HAX	60	1	2	4
10540		LEAR	01	25	0040	S15 W79	01	19.0		A	HSX	60	1	1	3
10540		VORO	01	25	1114	S14 W82	01	19.3			HAX	68	1		1
10543		KAND	01	19	1235	S18 E11	01	20.4			BXO		3	3	4
10543		HOLL	01	19	1530	S18 E09	01	20.3		BG	CAI	70	5	4	3
10543		LEAR	01	20	0028	S17 E04	01	20.3		B	DAO	80	6	4	3
10543		KAND	01	20	0825	S17 E00	01	20.3			DSO		7	5	3
10543		SVTO	01	20	0830	S17 W01	01	20.3		B	DSO	80	3	5	3
10543		VORO	01	20	1520	S17 E01	01	20.7			DAI	76	2	3	1
10543	31995	MWIL	01	20	1530	S17 W04	01	20.3	5	(BG)					

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10543		HOLL	01	20	1615	S17	W05	01	20.3		BG	DAO	90	9	6	4
10543		LEAR	01	21	0035	S16	W09	01	20.3		B	DSO	110	6	5	3
10543		TACH	01	21	0538	S17	W12	01	20.3			CSO	73	4	4	4
10543		HOLL	01	21	1650	S16	W20	01	20.2		BG	DAI	80	13	7	3
10543	31995	MWIL	01	21	1730	S17	W18	01	20.4	4	(BG)					
10543		LEAR	01	22	0025	S17	W22	01	20.3		BG	DSO	90	7	5	2
10543	31995	MWIL	01	22	1600	S17	W31	01	20.3	4	(B)					
10543		HOLL	01	22	1808	S17	W32	01	20.3		B	DSO	60	6	4	3
10543		LEAR	01	23	0035	S18	W34	01	20.4		B	CSO	70	4	4	2
10543		TACH	01	23	0657	S19	W38	01	20.4			CSO	64	3	4	4
10543		SVTO	01	23	1050	S16	W38	01	20.6		B	CSO	20	2	3	3
10543	31995	MWIL	01	23	1530	S17	W43	01	20.4	4	(B)					
10543		HOLL	01	23	1720	S18	W43	01	20.4		B	CAO	40	7	4	3
10543		LEAR	01	24	0035	S17	W47	01	20.4		A	HSX	50	2	2	3
10543		SVTO	01	24	1426	S15	W54	01	20.5		A	HSX	30	1	2	2
10543		VORO	01	24	1509	S17	W49	01	20.9			AXX	22	1		1
10543		HOLL	01	24	1550	S15	W55	01	20.5		A	HAX	60	1	2	4
10543		LEAR	01	25	0040	S16	W60	01	20.5		A	HSX	20	1	1	3
10543		VORO	01	25	1114	S16	W60	01	20.9			ARX	28	1		1
10543	31995	MWIL	01	25	1530	S16	W68	01	20.5	4	(AF)					
10543		LEAR	01	26	0040	S17	W77	01	20.2		A	AXX	30	1	1	3
10543		VORO	01	26	1040	S16	W74	01	20.8			HRX	16	2		3
10542		SVTO	01	15	1130	N11	E74	01	21.0		A	HRX	30	2	3	3
10542	31992	MWIL	01	15	1600	N11	E70	01	20.9	4	AP					
10542		LEAR	01	16	0013	N12	E65	01	20.9		B	BXO	80	2	3	2
10542		VORO	01	16	0014	N11	E67	01	21.0			HRX	52	3		2
10542		SVTO	01	16	0727	N10	E64	01	21.1		B	CSO	40	2	3	3
10542		VORO	01	17	0015	N11	E54	01	21.1			HRX	25	1		3
10542		LEAR	01	17	0025	N10	E55	01	21.2		A	HAX	40	1	2	2
10542		SVTO	01	17	0725	N11	E52	01	21.2		A	HSX	30	1	1	3
10542		KAND	01	17	0850	N10	E51	01	21.2			AX		2		2
10542		VORO	01	18	0015	N11	E41	01	21.1			AXX	3	2		3
10542		VORO	01	18	1215	N10	E31	01	20.8			AXX	3	1		3
10542	31993	MWIL	01	18	1600	N11	E23	01	20.4	4	(AP)					
10542		LEAR	01	19	0045	N08	E27	01	21.0		B	BXO	20	8	13	3
10542		VORO	01	19	1222	N09	E21	01	21.1			AXX	3	1		2
10542		KAND	01	19	1235	N10	E15	01	20.6			DAO		8	5	4
10542		HOLL	01	19	1530	N09	E19	01	21.1		BG	FAO	200	14	17	3
10542		LEAR	01	20	0028	N10	E09	01	20.7		B	DAO	110	14	7	3
10542		KAND	01	20	0825	N09	E05	01	20.7			DAO		11	7	3
10542		SVTO	01	20	0830	N09	E05	01	20.7		BG	DSI	110	9	8	3
10542		VORO	01	20	1520	N09	E07	01	21.2			DAI	84	3	7	1
10542	31993	MWIL	01	20	1530	N10	E01	01	20.7	5	(BG)					
10542		HOLL	01	20	1615	N09	E02	01	20.8		BG	DAC	140	21	8	4
10542		LEAR	01	21	0035	N10	W04	01	20.7		B	ESO	150	13	11	3
10542		TACH	01	21	0538	N10	W06	01	20.8			BRI	61	8	7	4
10542		HOLL	01	21	1650	N09	W15	01	20.6		B	DAI	110	21	9	3
10542	31993	MWIL	01	21	1730	N10	W13	01	20.7	5	(B)					
10542		LEAR	01	22	0025	N09	W18	01	20.7		BG	DSO	140	10	7	2
10542	31993	MWIL	01	22	1600	N10	W27	01	20.6	4	(B)					
10542		HOLL	01	22	1808	N09	W28	01	20.6		B	DSI	50	16	8	3
10542		LEAR	01	23	0035	N08	W33	01	20.5		B	CSO	60	11	6	2
10542		TACH	01	23	0657	N07	W35	01	20.7			BRO	21	4	5	4
10542		SVTO	01	23	1050	N09	W38	01	20.6		B	DSO	50	4	5	3
10542	31993	MWIL	01	23	1530	N10	W40	01	20.6	4	(B)					
10542		HOLL	01	23	1720	N08	W44	01	20.4		B	CSO	20	6	7	3
10542		LEAR	01	24	0035	N08	W46	01	20.6		B	CSO	50	8	5	3
10542		SVTO	01	24	1426	N10	W56	01	20.4		A	HSX	40	1	2	2
10542		VORO	01	24	1509	N07	W51	01	20.8			AXX	23	1		1
10542		HOLL	01	24	1550	N09	W57	01	20.4		A	HAX	20	1	1	4
10542		LEAR	01	25	0040	N09	W59	01	20.6		A	CSO	40	3	4	3
10542		VORO	01	25	1114	N08	W61	01	20.9			AXX	23	1		1
10542	31993	MWIL	01	25	1530	N08	W67	01	20.6	4	(AP)					
10542		VORO	01	26	1040	N09	W73	01	21.0			HAX	29	1		3
10542		HOLL	01	26	1600	N06	W78	01	20.8		A	AXX	10	2	2	4
10544	31994	MWIL	01	18	1600	N08	E40	01	21.7	3	(AF)					
10544		VORO	01	19	1222	N08	E33	01	22.0			BRO	33	3	4	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2004

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
10544		KAND	01 19 1235	N09 E27	01 21.5			CAO		9	6	4
10544		LEAR	01 20 0028	N08 E20	01 21.5		B	DAO	120	17	8	3
10544		KAND	01 20 0825	N08 E17	01 21.6			DAO		12	8	3
10544		SVTO	01 20 0830	N07 E17	01 21.6		BG	DSI	140	10	7	3
10544		VORO	01 20 1520	N08 E18	01 22.0			DAI	166	3	5	1
10544	31994	MWIL	01 20 1530	N08 E13	01 21.6	5	(BG)					
10544		HOLL	01 20 1615	N08 E13	01 21.6		BG	DAC	160	19	8	4
10544		LEAR	01 21 0035	N09 E08	01 21.6		B	DSO	160	11	8	3
10544		TACH	01 21 0538	N08 E04	01 21.5			DAI	104	7	6	4
10544		HOLL	01 21 1650	N07 W04	01 21.4		B	DAO	130	14	9	3
10544	31994	MWIL	01 21 1730	N08 W01	01 21.6	5	(B)					
10544		LEAR	01 22 0025	N08 W06	01 21.6		BG	DSO	150	9	8	2
10544	31994	MWIL	01 22 1600	N08 W13	01 21.7	5	(B)					
10544		HOLL	01 22 1808	N08 W16	01 21.5		B	CSO	100	11	9	3
10544		LEAR	01 23 0035	N07 W20	01 21.5		B	DAO	130	8	10	2
10544		TACH	01 23 0657	N07 W21	01 21.7			CSI	83	6	7	4
10544		SVTO	01 23 1050	N08 W24	01 21.6		B	DAO	90	5	9	3
10544	31994	MWIL	01 23 1530	N07 W26	01 21.7	5	(B)					
10544		HOLL	01 23 1720	N07 W29	01 21.5		BG	EAO	80	12	11	3
10544		LEAR	01 24 0035	N07 W33	01 21.5		B	CSO	90	5	9	3
10544		SVTO	01 24 1426	N08 W39	01 21.7		B	DSO	40	3	8	2
10544		VORO	01 24 1509	N06 W35	01 22.0			BRO	18	2	7	1
10544		HOLL	01 24 1550	N08 W41	01 21.6		B	BXO	20	3	6	4
10544		LEAR	01 25 0040	N08 W45	01 21.6		B	BXO	30	3	6	3
10544		VORO	01 25 1114	N06 W45	01 22.1			BXO	10	2	7	1
10544		HOLL	01 26 1600	N03 W72	01 21.3		B	BXX	10	5	3	4
10545		LEAR	01 26 0040	S19 E35	01 28.7		A	AXX	10	2	2	3
10545		VORO	01 26 1040	S20 E34	01 29.0			BXO	10	2	2	3
10545		SVTO	01 26 1156	S21 E27	01 28.6		A	AXX		1		3
10545		LEAR	01 28 0128	S19 E06	01 28.5		A	AXX	10	1	1	3
10545		LEAR	01 29 0030	S22 W01	01 28.9		A	AXX	20	4	2	3
10545		SVTO	01 29 0920	S19 W12	01 28.5		A	AXX	10	2	3	3
10545		HOLL	01 29 1545	S20 W14	01 28.6		B	DSO	20	4	5	3
10545	31996	MWIL	01 29 1630	S20 W15	01 28.5	4	(B)					
10545		LEAR	01 30 0035	S20 W19	01 28.6		B	DSO	60	5	5	3
10545		SVTO	01 30 0715	S19 W24	01 28.5		B	CSO	20	2	4	3
10545		TACH	01 30 0817	S19 W25	01 28.4			BRO	5	3	4	3
10545		VORO	01 30 1015	S19 W19	01 29.0			CAO	26	5	3	3
10545		HOLL	01 30 1504	S20 W27	01 28.6		B	DSO	30	6	6	4
10545	31996	MWIL	01 30 1600	S20 W28	01 28.5	4	(B)					
10545		VORO	01 31 1016	S19 W33	01 28.9			BXO	15	4	3	3
10545A		HOLL	01 26 1600	S01 E49	01 30.3		B	BXX	10	2	2	4

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth
MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey
SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 2004

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	0320	0323	0343	1	1					1	0316	C6.4	10528
01	0539	0543	0605	1+	1					1	0535	C2.5	10534
01	0653	0655	0707	1-	1					1	0604	C8.0	
02	0944	0947	1003	1	1					1	0941	B8.7	10536
03	1809	1811	1823	1-	1					1	1808	C1.1	10536
03	1939	1959	2034	2+	1					1	2008	B4.9	10536
04	0945	0955	1054	2-	3		1			2	0942	C2.8	10536
04	1508	1523	1545	1+	5		1			2	1507	C3.5	10536
04	1552	1558	1614	1	3					2	1552	C3.7	10536
04	1816	1819	1834	1-	3					2	1741	C3.8	10536
04	2025D	2032D	2048U	1	1					1	2025	C1.5	10536
05	0007D	0013D	0027D	1	1					1	0006	C7.5	10536
05	1158	1353	1436	1	1		1				No flare		
06	0618	0629	0724	2-	3		1			2	0613	M5.8	10537
06	0715	0720	0740	1+	1					1	0713	C2.5	
06	0849	0904	0929	2	1		1				No flare		
07	0353	0403	0502	2+	1					1	0343	M4.5	10537
07	0840	0845	0911	1	3					2	0824	C2.9	10536
07	0936	0953	1020	1	1		1				No flare		
07	1018	1024	1056	3	5	1	2	1		5	1014	M8.3	10537
07	1325	1330	1335	1-	1					1	1332	B4.4	10536
07	1743	1750	1824	2	1					1	1749	B9.6	10537
08	0456	0506	0601	2+	1					1	0453	M1.3	10537
08	1724	1734	1816	2+	1					1	1719	C1.1	10537
09	0118	0124	0131	1-	1					1	0113	M1.1	10537
09	0134	0142	0224	2+	1					1	0133	M3.2	10537
09	1103	1123	1220	1	1		1				1208	B8.9	10536
09	1308	1344	1445	1	1		1				1344	B8.9	10536
10	0328	0334	0401	2	1					1	0324	C1.9	10536
10	0420	0426	0459	2	3					2	0412	C7.3	10536
10	0510	0515	0547	2	3					2	0505	C7.7	10536
10	0950	1005	1021	1	1		1				0957	B9.3	10537
10	1920	1931	2018	2+	1					1	1922	B7.2	10537
11	0720	0722	0753	2	1					1	0717	C1.6	10536
11	0808	0817	0831	1	1		1				No flare		
11	1340	1353	1411	1	1		1				No flare		
11	2149D	2158D	2215U	1+	1					1	2206	B6.7	10536
12	0830	0834	0858	1	3		1			1	0834	C1.8	10536
12	0909	0932	0951	1	1		1				No flare		
12	1052	1053	1105	1-	1					1	1055	B9.4	10537
15	0624	0631	0702	2	3					2	0620	C3.2	10540
16	1300	1328	1402	1	1		1				*		
17	0344	0400	0417	2	1					1	0335	C1.6	10540
17	0759	0803	0826	1+	1					1	0751	C1.0	10540
17	0915	0918	0927	1-	1					1	0911	C1.4	10540
17	0943	0946	0955	1-	1					1	0935	C1.2	10537
17	1744	1754	1834	2	3					4	1735	M5.0	10540
18	0013	0017	0035	1	1					1	0007	M1.4	10540
18	0853	0911	0954	1	1		1				No flare		
18	1317	1335	1414	1	1		1				1344	C1.4	10537

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 2004

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
19	0527	0532	0607	2	3					3	0525	M1.0	10540
19	1026	1040	1103	1	1		1				*		
19	1232	1241	1314	3-	5	1	2	1		4	1230	M1.0	10540
19	1426	1434	1508	1	5		1			1	1425	C3.4	10543
19	1958	2003	2057	2+	3					6	1954	C8.2	10540
20	0735	0741	0828	2-	3		1			6	0729	M6.1	10540
21	0720	0751	0918	1	1		1				No flare		
21	0941	1000	1012	1	1		1				No flare		
23	0852	0858	1002	1	1		1				*		
26	0608	0611	0626	1-	1					1	0602	C1.6	10542
26	0957	1010	1038	1	1		1				No flare		
26	1114	1121	1154	1	1		1				*		
26	1202	1218	1402	1	1		1				1155	B8.3	10540
30	1605	1608	1635	1+	1					1	1601	C2.1	
31	0613	0621	0655	2-	3					2	0607	C4.1	10549

* = no flare patrol.

OBSERVATORIES REPORTING FOR JANUARY 2004

Alberta, Canada	SES	Marlborough, Massachusetts, USA	SES
Bedford, Massachusetts, USA	SES	Neerpelt, Belgium	SES
Bern, Switzerland	SES	Palo Alto, California, USA	SES
Brookline, Massachusetts, USA	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Calcutta, India	SES	Sofia, Bulgaria	SES
Edenvale, Rep of S. Africa	SES	Torrington, Connecticut, USA	SES
Houston, Texas, USA	SES	Upice, Czech Republic	SEA
Isola del Gran Sasso, Italy	SES	Villiersdorp, South Africa	SES
Kirksville, Mississippi, USA	SES		

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2004

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
01			CULG	0000.0E	0800.0D	I	S	1	60	180	
	0000	0800	CULG	0000.0E	0800.0D	III	S,C	1	18	180	
			PALE	0018.0	0019.0	III		1	25	51	
	0000	0733	HIRA	0018.5	0019.0	III	B	1	30	50	
			LEAR	0110.0	1030.0	III	N	1	25	180	
			CULG	0111.0	0112.0	III	G	2	20	200	
			HIRA	0120.0	0121.0	III	G	1	25X	50	
			PALE	0120.0	0121.0	III		1	25	52	
			CULG	0318.0	0322.0	III	G	3	18X	300	
			LEAR	0318.0	0321.0	III		2	25	180	
			HIRA	0319.0	0320.5	III	G	2	25X	80	
			PALE	0319.0	0320.0	III		2	25	180	
			CULG	0647.0	0648.0	III	G	1	40	280	
	0702	1200	IZMI	0702.0E	1200.0D	I	S,C	2	50	270X	
			IZMI	0705.5	0705.8	I	GG	3	160	200	
			IZMI	0720.7	0721.9	III	G	1	50	160	
			IZMI	0728.4	0730.3	III	G	1	50	85	
			SVTO	0820.0	1441.0	CONT		1	75	180	
	0839	1332	ONDR								
			IZMI	0853.4	0854.1	III	G	1	50	240	
			SVTO	0907.0	0907.0	III		1	25	45	
			IZMI	0911.2	0911.3	III	B	2	45	145	
	0850	1440	BLEN	0951.6	0956.8	III	GG,U,S	2	100X	1000	
			IZMI	0952.6	0953.1	III	G	1	50	200	
			IZMI	1109.9	1110.3	III	G	2	210	270X	
			IZMI	1111.9	1112.2	III	G	2	210	270X	
			BLEN	1156.6	1158.5	III	GG	2	230	1900	
			IZMI	1156.6	1158.9	III	GG	2	200	270X	
			BLEN	1336.7	1337.2	III	GG,S	2	130	800	
			HOLL	1700.0	1701.0	III		1	25	127	
	2000	2400	CULG	2000.0E	2400.0D	III	N	1	20	180	
			CULG	2009.0	2013.0	III	G	3	18	180	
			CULG	2101.0	2400.0D	I	S	1	100	250	
	2148	2400	HIRA								
			CULG	2216.0	2217.0	III	G	1	70	300	
			PALE	2217.0	0342.0	CONT		1	50	180	
			LEAR	2220.0	1030.0	CONT		1	39	180	
			CULG	2235.0	2242.0	III	G	3	20	1300	
			HOLL	2235.0	2240.0	III		1	25	180	
02	0000	0734	HIRA								
			CULG	0000.0E	0800.0D	I	S	1	130	260	
	0000	0800	CULG	0000.0E	0800.0D	III	N	1	20	180	
			CULG	0035.0	0035.0	III	B	3	57	250	
			CULG	0100.0	0100.0	III	B	2	100	180	
			LEAR	0309.0	1030.0	III	N	1	25	180	
			CULG	0347.0	0347.0	III	G	2	50	260	
			SVTO	0636.0	1507.0	CONT		1	133	180	
			CULG	0638.0	0640.0	III	G	3	45	200	
	0650	1200	IZMI	0650.0E	1200.0D	I	S	2	110	270X	
			IZMI	0714.2	0714.4	III	G	2	80	160	
			IZMI	0727.4	0727.8	III	G	1	55	140	
			SVTO	0735.0	0735.0	III		1	57	167	
			IZMI	0735.5	0735.9	III	G,C	2	50	165	
			CULG	0736.0	0736.0	III	B	3	27	160	
			IZMI	0816.0	1200.0D	III	N	1	45U	95U	
	0850	1440	BLEN								
			IZMI	0853.5	0853.7	III	B	2	50	165	
			SVTO	0905.0	1507.0	III	N	1	25	180	
			IZMI	0906.0	0908.9	III	GG	2	45	180	
			IZMI	0913.7	0918.3	III	G,C	2	50	270X	
			IZMI	0926.2	0928.5	III	G	2	50	160	
	0839	1333	ONDR	0927.3	0928.2	DCIM	G,W	1	800X	1583	
			ONDR	0952.2	0954.2	DCIM	G	1	800X	1212	
			IZMI	1019.1	1019.2	III	G	1	55	160	
			IZMI	1026.6	1026.8	III	G,C	2	40	95	
			IZMI	1030.8	1031.0	III	B	1	60	170	
			IZMI	1121.6	1123.8	III	G	2	55	170	
			IZMI	1128.2	1128.5	III	G	2	45	160	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2004

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
02			ONDR	1157.0	1208.1	DCIM	G	1	800X	1925	
			HOLL	1609.0	1611.0	III		1	25	180	
			CULG	2000.0E	2213.0	III	N	1	20	180	
	2000	2400	CULG	2000.0E	2400.0D	I	S,C	1	80	180	
			CULG	2025.0	2027.0	III	G	2	25	200	
	2148	2400	HIRA								
			LEAR	2221.0	0505.0	CONT		1	77	180	
03	0000	0800	CULG	0000.0E	0800.0D	I	S,C	1	60	180	
			CULG	0016.0	0016.0	III	B	1	25	100	
			CULG	0059.0	0103.0	III	G	3	18	90	
			LEAR	0059.0	0103.0	III		1	25	75	
			PALE	0059.0	0103.0	III		1	25	65	
	0000	0735	HIRA	0059.5	0103.0	III	G	1	25X	50	
			CULG	0556.0	0556.0	III	B	3	27	140	
			CULG	0607.0	0607.0	III	B	1	30	90	
			IZMI	0700.0U	1200.0U	III	N	1	45	95	
	0700	1200	IZMI	0700.0E	1200.0D	I	N	1	110	270X	
	0838	1335	ONDR								
			IZMI	0934.5	0934.7	III	G	2	50	155	
	0850	1440	BLEN	1138.7	1140.5	III	GG,S	1	220	4000X	
	2000	2400	CULG	2000.0E	2400.0D	I	S	1	60	170	
			CULG	2017.0	2018.0	III	G	3	18	50	
			CULG	2018.0	2400.0D	III	N	1	20	150	
	2148	2400	HIRA								
			LEAR	2220.0	0626.0	CONT		1	49	180	
04	0000	0736	HIRA								
			CULG	0000.0E	0800.0D	III	N	1	20	120	
	0000	0800	CULG	0000.0E	0800.0D	I	S	1	60	180	
			LEAR	0108.0	0109.0	III		1	25	59	
			LEAR	0143.0	0234.0	III	N	1	25	92	
	0702	1200	IZMI	0702.0E	1200.0D	I	S	1	50	210	
	0838	1336	ONDR								
	0850	1445	BLEN								
			IZMI	0901.0	0901.1	III	B	2	45	65	
			IZMI	0944.0	0947.2	III	G	1	50	90	
			IZMI	1052.5	1052.9	III	G	2	45	70	
			IZMI	1122.7	1122.8	III	G	1	50	160	
			SGMR	1340.0	1341.0	III		1	30	45	
			SVTO	1340.0	1340.0	III		1	25	44	
			HOLL	1456.0	1457.0	III		1	25	46	
			HOLL	1847.0	1849.0	III		1	25	109	
			PALE	1847.0	1849.0	III		1	29	48	
			CULG	2000.0E	2400.0D	III	N	1	20	100	
	2000	2400	CULG	2000.0E	2400.0D	I	S	1	100	180	
			HOLL	2237.0	2243.0	III		1	25	54	
			LEAR	2237.0	2238.0	V		1	25	66	
			PALE	2237.0	2239.0	III		1	25	47	
	2148	2400	HIRA	2237.5	2242.5	III	G	1	25X	50	
			CULG	2238.0	2239.0	III	G	3	18	150	
			LEAR	2238.0	2238.0	III		1	25	102	
			LEAR	2242.0	2243.0	III		1	25	45	
05	0000	0800	CULG	0000.0E	0153.0	I	S	1	70	170	
			CULG	0153.0	0242.0	I	S,C	2	60	180	
			CULG	0242.0	0345.0U	I	S,C	3	30	180	
			CULG	0307.0	0424.0	IV	FS	1	20U	1300	
			CULG	0320.0	0322.0	III	G	1	30	1800	
			CULG	0322.0	0325.0	III	G	3	18X	45	
			LEAR	0322.0	0323.0	III		2	25	57	
	0000	0737	HIRA	0322.5	0323.5	III	B	2	25X	40	
			HIRA	0327.0	0444.0	IV		1	25X	200	
			LEAR	0328.0	0507.0	IV		2	25	180	
			CULG	0330.0	0340.0	III	GG	2	20	900	
			CULG	0349.0	0800.0D	III	S,C	3	18X	230	
			LEAR	0507.0	0507.0	CONT		1	72	180	
			IZMI	0650.0E	1200.0D	III	N	1	25X	270U	
	0650	1200	IZMI	0650.0E	1200.0D	I	S,C	2	30	270X	

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05			SVTO	0702.0	1510.0	CONT		1	54	180	
	0837	1338	ONDR								
	0850	1450	BLEN								
			SVTO	0906.0	0910.0	III		1	25	43	
			SVTO	1002.0	1002.0	III		1	25	43	
			IZMI	1002.1	1002.6	III	G	2	25X	95U	
			SVTO	1018.0	1021.0	III		1	25	39	
			IZMI	1031.6	1036.2	I	GG,DC	2	140	250	
			IZMI	1149.2	1153.0	III	G	2	150	270X	
	2000	2400	CULG	2000.0E	2400.0D	I	S,C	1	60	180	
			CULG	2017.0	2022.0	III	G	1	60	650	
			CULG	2023.0	2023.0	III	G	1	20	180	
			CULG	2107.0	2110.0	III	G	1	23	120	
			CULG	2115.0	2117.0	III	G	1	20	120	
			HOLL	2149.0	2348.0	CONT		1	75	180	
			CULG	2206.0	2206.0	III	B	3	20	170	
			HOLL	2206.0	2206.0	III		1	25	90	
	2148	2400	HIRA	2206.0	2207.0	III	B	1	25X	110	
			CULG	2250.0	2251.0	III	G	1	23	100	
			CULG	2350.0	2350.0	III	B	1	20	40	
06	0000	0800	CULG	0000.0E	0800.0D	I	S,C	1	60	180	
			CULG	0023.0	0800.0D	III	N	1	20	100	
			LEAR	0038.0	0041.0	V		1	25	86	
			CULG	0039.0	0042.0	III	G	3	18	140	
			PALE	0039.0	0041.0	III		1	25	46	
	0000	0738	HIRA	0039.0	0041.5	III	G	1	25X	50	
			LEAR	0140.0	0140.0	III		1	25	63	
			PALE	0140.0	0140.0	III		1	25	44	
			HIRA	0140.5	0141.0	III	B	1	25X	50	
			LEAR	0249.0	0249.0	III		1	25	47	
			LEAR	0438.0	0439.0	V		1	25	119	
			HIRA	0438.5	0439.5	III	B	3	25X	110	
			CULG	0439.0	0439.0	III	B	3	23	150	
			CULG	0546.0	0546.0	III	B	2	18	140	
			CULG	0620.0	0644.0	CONT		1	18	35	
			CULG	0622.0	0627.0	III	G	3	18X	650	
			HIRA	0622.0	0626.5	III	G	3	25X	270	
			LEAR	0622.0	0638.0	V		2	25	180	
			CULG	0626.0	0635.0	III	GG	2	20	100	
			IZMI	0700.0E	1200.0D	III	N	1	45U	95U	
	0700	1200	IZMI	0700.0E	1200.0D	I	N	2	50	270	
			CULG	0743.0	0743.0	III	B	3	18	40	
			IZMI	0826.4	0827.2	III	G	1	55	140	
	0836	1339	ONDR								
			IZMI	0837.0	0845.4	I	GG	2	50	85	
			IZMI	0844.2	0844.3	III	B	2	40	85	
			IZMI	0851.8	0859.2	III	GG	1	155	270X	
	0850	1450	BLEN	0900.2	0907.3	DCIM	P	1	150	400	
			IZMI	1041.1	1041.1	III	B	2	225	270X	
	2000	2400	CULG	2000.0E	2400.0D	I	S,C	1	60	180	
			CULG	2030.0	2030.0	III	G	1	120	180	
			CULG	2226.0	2301.0	III	N	1	20	180	
			LEAR	2233.0	1033.0	CONT		1	48	180	
	2149	2400	HIRA	2234.0	2238.5	III	G	1	25X	210	
			CULG	2350.0	2400.0D	III	N	1	45	180	
07			CULG	0000.0E	0030.0	III	N	1	25	160	
	0000	0800	CULG	0000.0E	0800.0D	I	S,C	1	50	180	
			CULG	0040.0	0800.0D	III	S,C	1	20	170	
			LEAR	0150.0	0153.0	III	N	1	25	44	
			CULG	0354.0	0405.0	CONT		3	200	1400	
			CULG	0356.0	0359.0	III	G	3	18X	300	
			LEAR	0356.0	0401.0	V		2	25	180	
	0000	0739	HIRA	0356.0	0400.0	III	G	3	25X	240	
			CULG	0357.0	0400.0	V		3	18	100	
			CULG	0358.0	0421.0	II	FN	3	18X	230	ESS 700
			HIRA	0358.0	0422.0	II		2	25X	220	
			LEAR	0405.0	0426.0	II		1	25	104	ESS 0756

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07			CULG	0406.0	0430.0U	II	SH	3	18X	110	
	0703	1200	IZMI	0703.0E	1050.0U	I	N	1	45	160	
			IZMI	0736.0	1058.0U	III	N	1	45	150U	
	0836	1341	ONDR	1016.0	1039.1	DCIM	GG	3	2000X	4500X	
			ONDR	1016.4	1039.4	DCIM	GG	2	800X	2000X	
			IZMI	1017.9	1024.9	III	GG	2	30	170	
			LEAR	1018.0	1024.0	V		2	25	180	
	0850	1450	BLEN	1018.5	1032.5	DCIM	P	3	100X	4000X	
			IZMI	1019.9	1023.9	III	GG,C	2	25X	270X	
			SVTO	1020.0	1026.0	V		2	25	180	
			IZMI	1022.3	1027.7	II	G,FS	1	25X	85	
			IZMI	1031.0	1043.3	II	G	2	25X	85	
			SVTO	1032.0	1043.0	II		1	25U	71U	ESS 0843
			SVTO	1104.0	1105.0	III		1	116	180	
			IZMI	1104.9	1105.4	III	G,C	2	115	270X	
			HOLL	1715.0	1945.0	CONT		1	75	86	
	2000	2400	CULG	2000.0E	2345.0	III	S,C	1	50	230	
			HOLL	2111.0	2350.0	CONT		1	54	108	
	2149	2400	HIRA								
			LEAR	2218.0	0234.0	CONT		1	72	180	
08	0000	0800	CULG	0440.0	0800.0D	III	S,C	2	18	180	
			CULG	0455.0	0458.0	III	G	3	18X	300	
	0000	0740	HIRA	0455.0	0504.0	III	G	2	25X	300	
			CULG	0547.0	0548.0	III	G	3	18X	100	
			HIRA	0547.0	0547.5	III	B	1	30	100	
			LEAR	0547.0	0549.0	III		1	25	107	
			CULG	0652.0	0753.0	I	S	1	120	200	
	0653	1200	IZMI	0653.0E	1010.0U	I	N	2	55	270X	
			LEAR	0739.0	0805.0	CONT		1	119	180	
			IZMI	0817.9	0829.2	III	GG	2	40	70U	
			LEAR	0823.0	0827.0	III		1	25	79	
			SVTO	0823.0	0826.0	III		1	25	74	
			IZMI	0924.5	0924.5	III	G	2	185	270X	
			IZMI	1015.5	1015.7	III	G	2	30	175	
	0835	1342	ONDR	1026.5	1028.4	DCIM	GG	2	1339	2000X	
	0850	1450	BLEN	1026.9	1032.3	III	GG,RS	2	200	2300	
			IZMI	1027.8	1030.6	III	GG	2	170	270X	
			IZMI	1031.1	1038.4	III	GG	1	185	270X	
			IZMI	1035.0	1036.1	III	GG	2	25X	180	
			SVTO	1035.0	1036.0	III		1	25	180	
			IZMI	1047.7	1047.8	III	B,FS	2	180	270	
			IZMI	1057.9	1058.8	III	GG,FS	2	25X	175	
			IZMI	1159.5	1159.6	III	G	2	45	190	
			SVTO	1343.0	1344.0	III		1	25	45	
			HOLL	1638.0	1642.0	III		1	25	180	
			HOLL	1719.0	1719.0	III		1	25	76	
	2000	2400	CULG	2000.0E	2400.0D	I	S	1	100	180	
			CULG	2050.0	2245.0	III	N	1	50U	100	
	2149	2400	HIRA								
			LEAR	2225.0	1032.0	CONT		1	69	180	
09	0000	0800	CULG	0000.0E	0800.0D	I	S	1	60	180	
			CULG	0138.0	0203.0	III	GG	3	18X	880	
			LEAR	0138.0	0228.0	III	N	1	25	180	
	0000	0740	HIRA	0140.0	0202.5	III	G	2	25X	160	
			PALE	0141.0	0144.0	III		1	25	49	
			PALE	0153.0	0159.0	III		1	25	87	
			CULG	0203.0	0800.0D	III	S,C	1	18	180	
			CULG	0402.0	0402.0	III	G	2	20	130	
			CULG	0427.0	0429.0	III	G	1	18	170	
			CULG	0444.0	0447.0	III	G	3	18X	200	
			HIRA	0444.0	0449.0	III	G	1	25X	200	
			LEAR	0444.0	0618.0	III	N	1	25	180	
			CULG	0448.0	0456.0	III	G	2	20	160	
			HIRA	0455.5	0456.0	III	B	1	50	120	
			CULG	0505.0	0515.0	III	GG	3	18	180	
			HIRA	0505.0	0527.0	III	G	2	25X	180	
			CULG	0524.0	0527.0	III	G	3	20	110	

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09		CULG	0553.0	0553.0	III	B	3	18X	150	
		HIRA	0553.0	0553.5	III	B	3	30	120	
		CULG	0618.0	0618.0	III	B	3	18X	70	
		CULG	0700.0	0701.0	III	G	3	18X	200	
		HIRA	0700.0	0701.0	III	B	2	30	210	
		IZMI	0700.0	0701.8	III	GG	2	30	265	
		IZMI	0700.0E	1200.0D	III	N	1	25X	95U	
		LEAR	0700.0	0701.0	III		1	25	180	
		SVTO	0700.0	1135.0	III	N	1	25	162	
	0700 1200	IZMI	0700.0E	1200.0D	I	S	2	80	270X	
		CULG	0720.0	0720.0	III	B	3	23	130	
		LEAR	0720.0	0720.0	III		1	25	180	
		IZMI	0720.2	0720.5	III	G	2	45	135	
		IZMI	0729.2	0729.3	III	B	1	50	95	
		CULG	0740.0	0754.0	III	GG	3	18	160	
		IZMI	0740.0	0744.0	III	GG	2	40	170	
		LEAR	0740.0	0755.0	III	N	1	25	180	
		IZMI	0746.3	0754.3	III	GG	2	25X	165	
		IZMI	0830.9	0832.8	III	GG	1	35	190	
	0834 1344	ONDR								
	0850 1450	BLEN								
		IZMI	0902.6	0913.1	III	GG,C	2	25X	95	
		LEAR	0904.0	1032.0	III	N	1	25	180	
		IZMI	0944.2	0944.4	III	B,U	2	200	270	
		IZMI	0953.9	0955.3	III	G,FS	1	45	85	
		IZMI	0958.7	0959.7	III	G	1	40	215	
		IZMI	1005.6	1006.3	III	G	2	25X	240	
		IZMI	1021.0	1024.7	III	G	2	50	175	
		IZMI	1033.4	1033.6	III	G	1	45	140	
		IZMI	1053.8	1058.2	III	GG	2	40	120	
		IZMI	1104.5	1104.6	III	B	2	40	135	
		IZMI	1123.7	1128.0	III	GG,C	2	25X	150	
		IZMI	1131.5	1135.2	III	GG	2	25X	130	
		SVTO	1210.0	1514.0	III	N	1	25	174	
		HOLL	1544.0	1546.0	III		1	25	180	
		HOLL	1657.0	2352.0	III	N	1	25	158	
		PALE	1823.0	1827.0	III		1	25	180	
		SGMR	1823.0	2005.0	III	N	2	30	70	
		PALE	1845.0	1850.0	III		1	25	180	
		PALE	2008.0	2009.0	III		1	25	123	
	2000 2400	CULG	2008.0	2015.0	III	GG	1	18	160	
		CULG	2045.0	2118.0	III	N	1	20	180	
		PALE	2045.0	2047.0	III		1	25	61	
		CULG	2052.0	2053.0	III	G	2	18X	300	
		PALE	2052.0	2053.0	III		1	25	60	
		CULG	2125.0	2127.0	III	G	3	18X	180	
		CULG	2125.0	2400.0D	I	S	1	60	180	
		CULG	2153.0	2155.0	III	G	1	18	180	
		CULG	2203.0	2206.0	III	G	3	18X	300	
	2148 2400	HIRA	2203.0	2206.5	III	G	2	25X	200	
		LEAR	2223.0	1005.0	CONT		1	63	180	
		CULG	2227.0	2236.0	III	GG	3	18X	360	
		LEAR	2227.0	2234.0	III		1	25	180	
		HIRA	2227.5	2234.5	III	G	3	25X	220	
		LEAR	2252.0	2252.0	III		1	25	112	
		HIRA	2252.5	2253.0	III	B	1	25X	80	
		CULG	2253.0	2253.0	III	B	3	18X	150	
		CULG	2309.0	2349.0	III	N	1	20	180	
		LEAR	2319.0	1005.0	III	N	1	25	180	
		HIRA	2319.5	2320.0	III	B	1	30	120	
		CULG	2320.0	2320.0	III	G	2	18X	160	
		CULG	2320.0	2331.0	III	G	3	18X	130	
		HIRA	2329.5	2331.0	III	G	1	25X	110	
10	0000 0800	CULG	0000.0E	0800.0D	I	S	1	100	180	
		CULG	0413.0	0422.0	III	GG	3	18X	230	
		LEAR	0413.0	0421.0	III		2	25	180	
	0000 0741	HIRA	0413.0	0428.5	III	G	3	25X	300	
		CULG	0557.0	0557.0	III	B	1	23	180	

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10		CULG	0606.0	0608.0	III	G	3	18X	180	
		LEAR	0606.0	0608.0	III		1	25	180	
		HIRA	0606.5	0608.0	III	G	1	25X	110	
		CULG	0626.0	0626.0	III	B	1	30	180	
		CULG	0657.0	0800.0D	III	N	1	20	100	
0658	1200	IZMI	0658.0E	1200.0D	I	N	2	110	270X	
		IZMI	0715.0	1200.0D	III	N	1	25X	95	
		SVTO	0719.0	0721.0	III		1	28U	82U	
		HIRA	0719.5	0720.0	III	B	1	30	110	
		IZMI	0719.8	0721.6	III	GG	2	25X	150	
		CULG	0720.0	0722.0	III	G	3	18	180	
		SVTO	0805.0	1515.0	III	N	1	25	180	
		IZMI	0808.4	0808.7	III	G,C	2	45	160	
		IZMI	0827.7	0828.1	III	G,C,FS	2	40	145	
0833	1346	ONDR								
0845	1450	BLEN								
		IZMI	0856.1	0857.2	III	G,C	2	50	160	
		IZMI	1004.0	1016.4	III	GG	2	30	95	
		IZMI	1037.2	1037.8	III	G,FS	1	50	150	
2000	2400	CULG	2000.0E	2400.0D	III	S,C	1	57X	100	
		CULG	2016.0	2400.0D	I	S	1	100	230	
		HOLL	2136.0	2142.0	III		1	25	131	
		CULG	2140.0	2143.0	III	G	3	18X	180	
		CULG	2206.0	2206.0	III	G	1	120	800	
2148	2400	HIRA	2208.5	2209.5	III	G	1	120	500	
		CULG	2345.0	2345.0	III	B	2	18X	180	
11		CULG	0000.0E	0702.0	I	S	1	70	180	
0000	0800	CULG	0000.0E	0144.0	III	S,C	1	57U	100	
		CULG	0033.0	0035.0	III	G	3	18X	200	
		LEAR	0033.0	0033.0	III		1	25	180	
0000	0742	HIRA	0033.0	0033.5	III	B	1	25X	200	
		LEAR	0034.0	0034.0	III		1	25	63	
		LEAR	0037.0	0055.0	III	N	1	25	100	
		CULG	0051.0	0051.0	III	B	3	18X	180	
		LEAR	0051.0	0051.0	III		1	25	159	
		CULG	0139.0	0139.0	III	B	2	18	100	
		LEAR	0257.0	0258.0	III		1	25	75	
		CULG	0258.0	0300.0	III	G	2	20	100	
		HIRA	0259.0	0300.0	III	G	2	40	280	
		LEAR	0259.0	0259.0	III		1	25	103	
		CULG	0336.0	0336.0	III	B	2	20	180	
		LEAR	0336.0	0336.0	III		1	25	180	
		LEAR	0348.0	0350.0	III	N	1	25	70	
		LEAR	0408.0	0924.0	CONT		1	68	180	
		LEAR	0408.0	0932.0	CONT		1	68	180	
		CULG	0418.0	0420.0	III	G	2	18	200	
		LEAR	0418.0	0418.0	III		1	25	157	
		HIRA	0418.5	0419.0	III	B	1	30	200	
		LEAR	0421.0	0422.0	III		1	25	69	
		LEAR	0422.0	0422.0	III		1	25	71	
		LEAR	0501.0	0502.0	III		1	25	180	
		HIRA	0501.5	0502.0	III	B	1	40	200	
		CULG	0502.0	0502.0	III	B	1	20	250	
		LEAR	0539.0	0539.0	III		1	25	57	
		CULG	0556.0	0556.0	III	B	1	65	180	
0650	1202	IZMI	0650.0E	1202.0D	I	S	1	50	270X	
0832	1348	ONDR								
		SVTO	0839.0	0839.0	III		1	25	42	
		IZMI	0839.3	0839.4	III	B	1	40	85	
		SVTO	0846.0	0847.0	III		1	25	33	
		IZMI	0846.8	0847.0	III	B	1	25X	40	
		SVTO	0910.0	0911.0	III		1	25	40	
0845	1450	BLEN	0936.2	0945.5	III	GG,S	2	140	420	
		IZMI	0936.5	0937.1	III	GG	2	25X	270X	
		LEAR	0937.0	0937.0	III		1	25	180	
		SVTO	0937.0	0937.0	III		1	25	39	
		IZMI	0944.5	0944.8	III	G	1	150	270X	
		IZMI	1002.0	1003.2	III	GG	2	180	270X	

S O L A R R A D I O E M I S S I O N
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OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
11			LEAR	1006.0	1007.0	III		1	25	104	
			SVTO	1006.0	1006.0	III		1	25	82	
			IZMI	1006.5	1006.8	III	B	2	25X	260	
			IZMI	1033.0U	1200.0D	III	N	2	25X	270X	
			IZMI	1122.5	1123.2	III	GG,C	2	25X	270X	
	2000	2400	CULG	2014.0	2016.0	III	G	2	20	180	
			PALE	2048.0	0348.0	III	N	1	25	180	
			CULG	2056.0	2057.0	III	G	1	20	160	
			CULG	2107.0	2108.0	III	G	1	90	260	
			CULG	2139.0	2312.0	I	S	1	60	180	
			CULG	2200.0	2316.0	III	S	2	18	180	
			LEAR	2240.0	2306.0	III	N	1	25	180	
			HOLL	2253.0	2254.0	III		1	25	180	
	2148	2400	HIRA	2253.0	2256.0	III	G	1	25X	250	
			CULG	2316.0	2347.0	III	N	1	23	170	
12			LEAR	0109.0	0110.0	III		1	25	62	
	0000	0800	CULG	0110.0	0110.0	III	B	1	23	180	
			LEAR	0134.0	0135.0	III		1	25	180	
	0000	0743	HIRA	0134.5	0135.0	III	G	1	25X	210	
			CULG	0135.0	0135.0	III	B	3	20	180	
			LEAR	0345.0	0355.0	III	N	1	25	180	
			HIRA	0345.5	0346.0	III	B	1	90	320	
			CULG	0346.0	0347.0	III	G	2	20	380	
			CULG	0350.0	0351.0	III	G	1	18	170	
			HIRA	0404.0	0441.0	III	G	1	40	170	
			CULG	0440.0	0441.0	III	G	2	20	180	
			LEAR	0440.0	0440.0	III		1	25	159	
			CULG	0551.0	0600.0	III	G	3	18	100	
			LEAR	0551.0	0559.0	III	N	1	25	129	
	0700	1200	IZMI	0700.0E	1200.0D	I	SG	1	110	190	
			IZMI	0731.2	0735.5	III	GG	1	45	95	
	0831	1350	ONDR								
	0845	1500	BLEN								
			IZMI	1011.7	1011.8	III	B	1	180	270X	
			HOLL	1458.0	1535.0	III	N	1	25	85	
			SVTO	1458.0	1459.0	III		1	28	43	
			SGMR	1513.0	1513.0	III		1	30	45	
			SVTO	1513.0	1513.0	III		1	26	48	
			HOLL	1924.0	1925.0	III		1	25	83	
			PALE	1925.0	1925.0	III		1	25	123	
			HOLL	2208.0	2210.0	III		1	25	91	
	2000	2400	CULG	2209.0	2215.0	III	G	3	18	150	
	2148	2400	HIRA	2209.0	2212.0	III	G	1	25X	80	
			LEAR	2212.0	2222.0	II		1	58	180	ESS 0547
			LEAR	2212.0	2222.0	II		1	81	180	ESS 0547
			HIRA	2212.5	2219.5	II		1	100	230	
			CULG	2213.0	2220.0	II	FN	2	57	130	
			CULG	2213.0	2222.0	II	SH	2	57	260	ESS 600
			PALE	2215.0	0320.0	III	N	1	25	180	
			CULG	2335.0	2338.0	III	G	1	20	100	
			LEAR	2335.0	2337.0	III		1	25	71	
13			LEAR	0007.0	0242.0	III	N	1	25	180	
	0000	0800	CULG	0007.0	0008.0	III	G	1	23	200	
	0000	0744	HIRA	0007.5	0008.0	III	B	1	80	210	
			HIRA	0017.5	0020.0	III	G	1	25X	70	
			CULG	0018.0	0020.0	III	G	3	18	100	
			HIRA	0020.5	0021.5	III	B	1	40	80	
			CULG	0035.0	0039.0	III	G	3	20	120	
			HIRA	0038.0	0038.5	III	B	2	25X	100	
			CULG	0105.0	0211.0	III	N	1	20	180	
			CULG	0120.0	0122.0	III	G	3	18X	100	
			CULG	0133.0	0133.0	III	B	2	20	100	
			PALE	0241.0	0242.0	III		1	65	180	
			HIRA	0241.5	0442.5	III	G	2	30	400	
			CULG	0242.0	0244.0	III	G	2	18	280	
			CULG	0733.0	0800.0D	III	N	1	25	80	
	0830	1351	ONDR								

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OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
13	0845	1500	BLEN								
	0700	1200	IZMI	1019.8	1020.2	III	G,U	2	45	160	
			SVTO	1226.0	1226.0	III		1	25	67	
			HOLL	1502.0	1503.0	III		1	25	180	
			SGMR	1502.0	1503.0	III		1	30	80	
			SVTO	1502.0	1503.0	III		1	25	161	
			HOLL	2035.0	2035.0	III		1	25	47	
			PALE	2035.0	2035.0	III		1	25	52	
	2000	2400	CULG	2036.0	2036.0	III	B	3	20	90	
			CULG	2047.0	2048.0	III	G	2	25	180	
			CULG	2113.0	2113.0	III	B	1	45	180	
			CULG	2126.0	2130.0	III	G	1	25	200	
			CULG	2151.0	2151.0	III	B	1	30	180	
			CULG	2215.0	2215.0	III	B	2	20	90	
			CULG	2228.0	2228.0	III	B	1	20	180	
			CULG	2343.0	2343.0	III	B	3	18	200	
			LEAR	2343.0	2343.0	III		1	25	94	
	2148	2400	HIRA	2343.0	2343.5	III	B	1	25X	50	
			CULG	2354.0	2355.0	III	G	1	100	260	
14	0000	0800	CULG	0203.0	0203.0	III	B	1	20	90	
			CULG	0353.0	0355.0	III	G	1	20	180	
			LEAR	0353.0	0354.0	III		1	25	156	
			LEAR	0725.0	0732.0	III		1	25	180	
			SVTO	0725.0	0726.0	III		1	58	139	
	0000	0745	HIRA	0725.5	0726.0	III	B	1	50	130	
	0655	1200	IZMI	0725.6	0726.1	III	G,U	2	40	150	
			CULG	0726.0	0726.0	III	G	3	30	160	
			IZMI	0731.3	0732.1	III	G,U	2	50	145	
			CULG	0732.0	0732.0	III	B	1	35	160	
	0829	1353	ONDR								
			SVTO	0844.0	0845.0	III		1	25	144	
			IZMI	0844.9	0845.6	III	G,U	2	35	205	
	0845	1500	BLEN								
			LEAR	0845.0	0845.0	III		1	25	180	
			IZMI	1013.6	1015.4	III	G	1	110	215	
			IZMI	1020.4	1020.8	III	G	1	50	170	
			HOLL	1839.0	1839.0	III		1	31	175	
	2000	2400	CULG	2039.0	2039.0	III	B	1	45	170	
			CULG	2050.0	2205.0	III	G	1	20	170	
	2148	2400	HIRA								
			CULG	2201.0	2202.0	III	G	1	130	450	
			CULG	2244.0	2245.0	III	G	1	150	300	
			CULG	2336.0	2340.0	III	G	1	100	360	
15	0000	0800	CULG	0453.0	0500.0	III	G	3	18X	200	
			LEAR	0454.0	0457.0	V		1	25	180	
	0000	0746	HIRA	0454.0	0458.0	III	G	2	25X	180	
			CULG	0455.0	0456.0	V		3	18X	45	
			CULG	0722.0	0726.0	III	G	3	18X	200	
			LEAR	0722.0	0725.0	V		1	25	180	
			SVTO	0723.0	0724.0	III		1	25	175	
			HIRA	0723.5	0725.0	III	G	2	30	210	
	0814	1200	IZMI	0821.7	0822.2	III	G	1	45	90	
	0827	1355	ONDR								
			IZMI	0841.3	0847.1	III	GG	2	45	175	
			LEAR	0844.0	0845.0	III		1	25	180	
			SVTO	0844.0	0845.0	III		1	25	161	
	0845	1500	BLEN								
			IZMI	0851.3	0859.2	III	GG	1	45	145	
			LEAR	0903.0	0904.0	III		1	25	117	
			SVTO	0903.0	0904.0	III		1	25	59	
			IZMI	0903.8	0904.1	III	G	2	25X	85	
			LEAR	0927.0	0929.0	III		1	25	180	
			SVTO	0927.0	0928.0	III		1	25	139	
			IZMI	0927.8	0928.4	III	G,C	2	25X	175	
			IZMI	0931.5	0931.6	III	B	1	55	65	
			IZMI	1002.6	1002.7	III	G	1	125	270	
			HOLL	1955.0	1957.0	III		1	25	180	

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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
15			SGMR	1955.0	1957.0	III		2	30	50	
	2000	2400	CULG	2000.0E	2001.0	III	G	3	20	50	
			CULG	2018.0	2019.0	III	G	2	27	140	
			CULG	2123.0	2123.0	III	B	2	23	120	
			LEAR	2351.0	2351.0	III		1	25	124	
	2148	2400	HIRA	2351.5	2352.0	III	B	1	50	230	
			CULG	2352.0	2352.0	III	B	2	30	180	
16	0000	0800	CULG	0041.0	0044.0	III	G	1	50U	180	
			PALE	0114.0	0120.0	III		1	25	180	
			CULG	0115.0	0140.0	III	GG	3	18X	200	
			LEAR	0115.0	0118.0	V		2	25	180	
	0000	0747	HIRA	0115.0	0130.0	III	G	2	25X	210	
			CULG	0117.0	0119.0	V		3	18X	100	
			LEAR	0119.0	0132.0	III	N	1	25	180	
			LEAR	0127.0	0127.0	V		1	25	180	
			CULG	0151.0	0151.0	III	B	3	20	50	
			LEAR	0151.0	0151.0	V		1	25	49	
			LEAR	0240.0	0243.0	V		2	25	166	
			PALE	0240.0	0242.0	III		1	25	90	
			HIRA	0240.5	0242.5	III	G	2	25X	200	
			CULG	0241.0	0243.0	III	G	3	18X	180	
			CULG	0241.0	0244.0	V		3	18X	50	
			LEAR	0406.0	0417.0	III	N	1	25	159	
			CULG	0407.0	0428.0	III	S	2	20	200	
			HIRA	0435.0	0445.0	III	G	1	25X	180	
			LEAR	0435.0	0657.0	III	N	1	25	175	
			SVTO	0634.0	0654.0	III	N	1	25	64	
			CULG	0646.0	0658.0	III	G	3	18	40	
	0650	1200	IZMI	0651.2	0654.7	III	GG	2	25X	95	
			HIRA	0651.5	0654.0	III	G	2	40	70	
			IZMI	0700.7	0701.7	III	GG	1	50	70	
			IZMI	0717.0	0727.6	III	GG	1	45	85	
	0826	1358	ONDR								
	0845	1500	BLEN								
			IZMI	1116.7	1116.7	III	B	1	125	215	
			SVTO	1315.0	1316.0	III		1	25	41	
			HOLL	1628.0	1633.0	III		1	25	180	
			SGMR	1628.0	1633.0	III		1	30	50	
			HOLL	1701.0	1702.0	III		1	25	180	
			SGMR	1701.0	1701.0	III		1	30	50	
			HOLL	1805.0	1806.0	III		1	25	117	
			PALE	1805.0	1806.0	III		1	25	44	
			SGMR	1805.0	1806.0	III		1	30	40	
	2000	2400	CULG	2052.0	2215.0	III	N	1	30	150	
			CULG	2253.0	2253.0	III	B	3	20	100	
			LEAR	2253.0	2253.0	III		1	25	100	
	2147	2400	HIRA	2253.0	2253.5	III	B	1	25X	80	
			CULG	2321.0	2323.0	III	G	3	18X	180	
			HIRA	2321.0	2322.0	III	B	1	25X	140	
			LEAR	2321.0	2322.0	V		1	25	162	
			PALE	2321.0	2321.0	III		1	25	95	
			LEAR	2341.0	2341.0	III		1	25	104	
			HIRA	2341.5	2342.0	III	B	1	25X	110	
			CULG	2342.0	2342.0	III	B	2	20	100	
17			LEAR	0030.0	0031.0	III		1	25	80	
	0000	0748	HIRA	0031.0	0031.5	III	B	1	25X	70	
	0000	0800	CULG	0031.0	0031.0	III	B	3	20	90	
			LEAR	0106.0	0107.0	III		1	25	134	
			CULG	0107.0	0109.0	III	G	2	20	150	
			CULG	0123.0	0126.0	III	G	3	18X	190	
			LEAR	0123.0	0155.0	III	N	1	25	180	
			PALE	0123.0	0124.0	III		1	25	180	
			HIRA	0123.5	0124.0	III	B	3	25X	200	
			CULG	0131.0	0132.0	III	G	2	20	140	
			CULG	0136.0	0137.0	III	G	2	23	90	
			CULG	0304.0	0305.0	III	G	3	20	160	
			HIRA	0304.0	0305.0	III	B	2	25X	120	

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OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
17		LEAR	0304.0	0454.0	III	N	1	25	180	
		PALE	0304.0	0304.0	III		1	25	180	
		CULG	0309.0	0310.0	III	G	2	18X	200	
		HIRA	0309.0	0310.0	III	G	2	50	190	
		CULG	0318.0	0349.0	III	N	1	20	200	
		CULG	0330.0	0332.0	III	G	3	18X	180	
		HIRA	0330.5	0331.0	III	B	1	30	120	
		HIRA	0336.0	0336.5	III	B	2	110	230	
		HIRA	0351.5	0352.0	III	B	1	25X	240	
		CULG	0352.0	0352.0	III	G	3	18	180	
		CULG	0420.0	0431.0	III	G	3	18X	150	
		HIRA	0420.5	0421.5	III	G	1	30	70	
		HIRA	0427.0	0428.0	III	B	2	25X	100	
		CULG	0453.0	0455.0	III	G	1	27	90	
		CULG	0517.0	0517.0	III	B	2	18	80	
		CULG	0618.0	0623.0	III	G	2	18	130	
		HIRA	0618.0	0618.5	III	B	1	50	110	
		LEAR	0618.0	0623.0	III		1	25	119	
0655	1200	IZMI	0711.8	0714.2	III	GG	1	45	90	
		IZMI	0730.3	0730.4	III	B	1	50	65	
		CULG	0755.0	0756.0	III	G	2	20	140	
		LEAR	0755.0	0755.0	III		1	25	132	
		SVTO	0755.0	0755.0	III		1	29	130	
		IZMI	0755.1	0755.5	III	G,C	2	45	130	
		LEAR	0824.0	0828.0	V		2	25	180	
		SVTO	0824.0	0826.0	V		2	25	180	
		IZMI	0824.2	0825.1	III	GG,C	2	25X	270X	
		IZMI	0824.4U	0826.3	V		2	25X	65	
		IZMI	0825.8	0828.5	III	GG	2	30	270X	
		IZMI	0829.8	0830.4	III	G	2	45	215	
		LEAR	0837.0	0839.0	III		1	25	96	
		SVTO	0837.0	0839.0	III		1	25	79	
		IZMI	0837.5	0839.5	III	G,U	2	30	95	
0825	1359	ONDR	0913.0	0913.5	DCIM	G	2	2000X	4168	
		ONDR	0913.1	0916.5	DCIM	G	1	800X	2000X	
0845	1500	BLEN	0913.1	0919.9	III	GG,RS	2	300	4000X	
		LEAR	0918.0	0919.0	III		1	25	161	
		SVTO	0918.0	0919.0	III		1	25	143	
		IZMI	0918.2	0918.5	III	G,C	2	25X	270X	
		IZMI	0935.9	0938.2	III	GG,C	2	25X	165	
		LEAR	0936.0	0948.0	III	N	1	25	180	
		SVTO	0936.0	0939.0	V		2	25	138	
		IZMI	0936.7	0938.8	V		2	25X	70	
		SVTO	0939.0	0945.0	III		1	28U	180U	
		IZMI	0939.4	0942.4	III	GG	2	25X	205	
		IZMI	0942.6	0948.5	III	GG	1	45	150	
		SVTO	1151.0	1152.0	III		1	28U	67U	
		IZMI	1151.8	1152.2	III	B	2	25X	65	
		BLEN	1244.6	1250.2	III	GG	2	320	800	
		SVTO	1422.0	1424.0	III		1	30	43	
		HOLL	1618.0	1621.0	III		1	25	142	
		HOLL	1746.0	1748.0	III		2	25	180	
		PALE	1746.0	1753.0	II		3	25	180	ESS 0033
		SGMR	1746.0	1758.0	II		2	30	80	ESS 0650
		HOLL	1747.0	1759.0	II		2	29	180	ESS 0784
2000	2400	CULG	2020.0	2020.0	III	B	1	23	90	
		CULG	2043.0	2043.0	III	B	2	20	130	
2147	2400	HIRA								
		CULG	2204.0	2205.0	III	G	1	23	90	
		CULG	2227.0	2227.0	III	B	3	20	140	
		CULG	2348.0	2348.0	III	B	1	50	160	
18		LEAR	0013.0	0015.0	V		3	25	180	
		PALE	0013.0	0015.0	V		3	25	180	
0000	0800	CULG	0013.0	0015.0	III	G	3	18X	800	
0000	0749	HIRA	0013.5	0016.0	III	G	3	25X	820	
		CULG	0015.0	0017.0	V		3	18X	120	
		CULG	0016.0	0030.0	II	FN	3	35	230	
		CULG	0016.0	0030.0	II	SH	3	65	440	ESS 600

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OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
18		HIRA	0016.0	0024.0	II		3	80	430	
		LEAR	0016.0	0028.0	II		2	37	180	ESS 0843
		PALE	0016.0	0020.0	II		2	25	180	ESS 1098
		CULG	0030.0	0153.0	I	S	1	100	180	
		LEAR	0047.0	0047.0	III		1	25	132	
		PALE	0047.0	0047.0	III		1	25	88	
		HIRA	0047.5	0048.0	III	B	1	25X	110	
		CULG	0048.0	0048.0	III	B	3	18	140	
		LEAR	0113.0	0115.0	III		2	25	180	
		PALE	0113.0	0115.0	III		1	25	180	
		HIRA	0113.5	0115.5	III	G	3	25X	220	
		CULG	0114.0	0116.0	III	G	3	18X	220	
		LEAR	0210.0	0220.0	III		1	25	104	
		CULG	0211.0	0220.0	III	G	1	25	170	
		LEAR	0240.0	0241.0	III		1	25	123	
		CULG	0241.0	0241.0	III	B	3	18X	160	
		HIRA	0241.0	0241.5	III	B	1	25X	120	
		LEAR	0259.0	0502.0	III	N	1	25	180	
		HIRA	0259.5	0303.0	III	G	2	25X	210	
		CULG	0300.0	0303.0	III	G	3	18X	230	
		CULG	0309.0	0309.0	III	B	1	20	60	
		CULG	0342.0	0343.0	III	G	1	25	180	
		HIRA	0342.0	0342.5	III	B	1	50	130	
		HIRA	0408.5	0409.0	III	B	1	40	140	
		CULG	0409.0	0410.0	III	G	1	30	180	
		HIRA	0426.5	0429.0	III	G	1	25X	200	
		CULG	0427.0	0429.0	III	G	2	18	180	
		CULG	0543.0	0544.0	III	G	1	50	90	
		CULG	0547.0	0547.0	III	B	1	50	180	
		HIRA	0547.0	0547.5	III	B	1	90	180	
		LEAR	0547.0	0547.0	III		1	64	180	
		CULG	0559.0	0559.0	III	B	1	40	70	
	0709 1200	IZMI	0746.6	0746.8	III	B	1	45	90	
		CULG	0747.0	0747.0	III	B	1	23	80	
		IZMI	0755.9	0756.0	III	B,FS	1	50	85	
		IZMI	0800.6	0807.9	III	GG	1	45	90	
	0823 1401	ONDR								
		IZMI	0913.9	0915.0	III	G	2	35	270X	
		LEAR	0914.0	0914.0	III		1	25	180	
		SVTO	0914.0	0914.0	III		1	25	153	
		IZMI	0940.2	0940.2	III	G	1	140	240	
		IZMI	0945.6	0945.8	III	G	1	45	90	
		IZMI	0949.4	0949.7	III	G	1	80	250	
		IZMI	1008.1	1008.1	III	B	1	200	270X	
		IZMI	1015.4	1015.5	III	B	1	110	170	
		SVTO	1018.0	1524.0	III	N	1	25	180	
		IZMI	1035.1	1038.2	III	GG	2	25X	270X	
	0840 1510	BLEN	1035.1	1038.3	III	GG,RS	2	100X	2000	
		IZMI	1134.3	1134.8	III	G	2	25X	130	
		BLEN	1150.9	1154.8	III	GG,S	2	150	600	
		IZMI	1151.1	1152.2	III	GG,FS	2	50	270X	
		SVTO	1152.0	1152.0	III		1	51U	180U	
		IZMI	1154.0	1154.7	III	GG	2	110U	270X	
		BLEN	1352.6	1354.7	III	GG,C	2	100X	4000X	
		SVTO	1353.0	1354.0	III		1	75U	174U	
		HOLL	1928.0	2001.0	III	N	1	25	180	
	2000 2400	CULG	2038.0	2038.0	III	B	1	23	45	
		CULG	2142.0	2144.0	III	G	2	25	350	
		CULG	2203.0	2205.0	III	G	1	100	200	
	2146 2400	HIRA	2204.0	2204.5	III	B	1	110	230	
19	0000 0800	CULG	0318.0	0320.0	III	G	1	57	80	
		CULG	0447.0	0447.0	III	G	1	50	140	
		CULG	0503.0	0504.0	III	G	1	20	130	
		CULG	0528.0	0531.0	III	G	3	18X	320	
		LEAR	0528.0	0529.0	V		2	25	180	
	0000 0750	HIRA	0528.0	0533.0	III	G	3	25X	360	
		CULG	0532.0	0533.0	III	G	1	100	420	
		IZMI	0702.2	0702.6	III	G	1	40	100	

SOLAR RADIO EMISSION
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JANUARY 2004

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
19		IZMI	0714.7	0714.8	III	B	1	50	65	
		IZMI	0912.0	0950.0	I	N	1	120	190	
		SVTO	1233.0	1241.0	III		2	25	180	
0822	1403	ONDR	1233.0	1241.5	DCIM	GG	2	2000X	4500X	
0830	1515	BLEN	1233.1	1242.0	DCIM	S,C	3	100X	4000X	
		ONDR	1233.2	1241.5	DCIM	G	2	800X	2000X	
		PALE	1928.0	0216.0	III	N	1	25	180	
		PALE	1958.0	2001.0	III		1	25	180	
2000	2400	CULG	2000.0E	2001.0	III	G	3	20	130	
		CULG	2003.0	2014.0	II	FN	3	35	100	
		CULG	2003.0	2014.0	II	SH	3	70	180	ESS 450
		CULG	2004.0	2008.0	III	G	1	27	180	
		SGMR	2004.0	2006.0	III		1	63	80	
		CULG	2152.0	2152.0	III	G	1	35	280	
		CULG	2159.0	2159.0	III	B	3	18	180	
		HOLL	2159.0	2159.0	III		1	25	180	
		PALE	2159.0	2159.0	III		1	25	140	
2145	2400	HIRA	2159.5	2200.0	III	B	1	30	80	
		CULG	2238.0	2240.0	III	G	1	60	230	
		CULG	2321.0	2400.0D	III	N	1	20	180	
		LEAR	2326.0	2327.0	III		1	25	47	
		PALE	2326.0	0006.0	III	N	1	25	50	
		HIRA	2329.0	2329.5	III	B	1	25X	50	
		LEAR	2329.0	2329.0	III		1	25	46	
		CULG	2333.0	2400.0D	I	S	1	80	200	
		LEAR	2336.0	0509.0	CONT		1	75	180	
		LEAR	2343.0	2343.0	III		1	25	148	
20		CULG	0000.0E	0320.0	III	S,C	1	20	200	
0000	0800	CULG	0000.0E	0030.0	I	S	1	60	160	
		CULG	0043.0	0043.0	III	B	2	60	280	
		CULG	0704.0	0704.0	III	B	2	20	160	
0655	1200	IZMI	0704.0	0704.4	III	G	1	50	150	
		CULG	0708.0	0710.0	III	G	1	18	280	
		LEAR	0708.0	0708.0	III		1	126	180	
		SVTO	0708.0	0708.0	III		1	158	180	
		IZMI	0708.2	0708.5	III	G	2	130	270X	
		CULG	0733.0	0739.0	III	GG	3	18X	620	
		LEAR	0733.0	0738.0	III		2	25	180	
		SVTO	0733.0	0739.0	III		2	25	180	
		IZMI	0733.4	0736.4	III	GG,C	2	25X	270X	
0000	0751	HIRA	0733.5	0738.0	III	G	3	25X	500	
		IZMI	0734.7	0737.2	CONT	FS,DC	2	45U	270X	
		IZMI	0737.2	0737.8	III	G,C	3	25X	270X	
		IZMI	0737.5	0738.0	V		2	45	160	
		IZMI	0737.7	0739.4	II	G	2	35	270X	
		HIRA	0738.0	0746.0	II		3	40	320	
		CULG	0739.0	0750.0	II	FN	3	25	95	
		CULG	0739.0	0750.0	II	SH	3	50	180	ESS 550
		LEAR	0739.0	0756.0	II		1	25	180	ESS 0952
		IZMI	0739.3	0748.0U	I	N	1	180U	270X	
		IZMI	0739.4	0748.1	II	G,HARM	2	25X	200	
		CULG	0740.0	0758.0	III	N	1	20	180	
		SVTO	0740.0	0753.0	II		1	25	180	ESS 0620
		IZMI	0746.6	0754.6	II	G,HARM	2	25X	180	
		CULG	0748.0	0757.0	II	SH	3	35	100	ESS 850
		IZMI	0748.2	0748.6	III	G,C	2	150	210	
		CULG	0750.0	0756.0	II	FN	3	20	50	
		IZMI	0754.3	0755.1	III	G,C	2	110	270X	
0821	1406	ONDR								
0830	1515	BLEN								
		HOLL	1940.0	1941.0	III		1	25	180	
		PALE	1940.0	1941.0	III		1	25	180	
		SGMR	1940.0	1941.0	III		1	30	50	
2000	2400	CULG	2019.0	2019.0	III	B	1	27	90	
		CULG	2046.0	2046.0	III	B	1	20	100	
		CULG	2208.0	2222.0	III	N	1	23	180	
		HOLL	2208.0	2212.0	III		1	25	180	
		PALE	2208.0	2212.0	III		1	25	180	

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JANUARY 2004

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
20	2145	2400	HIRA	2208.5	2212.0	III	G	2	50	400	
			CULG	2209.0	2212.0	III	G	3	18X	850	
			LEAR	2308.0	2309.0	III		1	25	151	
			PALE	2308.0	2309.0	III		1	25	95	
			HIRA	2308.5	2309.5	III	B	1	25X	200	
			CULG	2309.0	2309.0	III	G	3	18	180	
			CULG	2328.0	2330.0	III	G	1	25	160	
21	0000	0752	HIRA								
	0000	0800	CULG	0007.0	0008.0	III	G	1	23	180	
			CULG	0237.0	0237.0	III	B	1	23	90	
	0744	1200	IZMI	0757.7	0757.9	III	G	1	25X	270X	
			CULG	0758.0	0758.0	III	B	1	23	90	
	0819	1408	ONDR								
	0830	1515	BLEN								
			LEAR	0903.0	0904.0	III		1	25	180	
			SVTO	0903.0	0904.0	III		1	25	151	
			IZMI	0903.1	0904.6	III	GG	2	25X	270X	
			IZMI	1009.3	1010.2	III	GG,FS	1	110	270	
			IZMI	1025.7	1026.2	I	GG,DC	1	200	270X	
	2000	2400	CULG								
	2145	2400	HIRA								
22	0000	0753	HIRA								
	0000	0800	CULG								
	0703	1200	IZMI	0701.2	0701.3	III	B	1	45	65	
			IZMI	0731.6	0731.7	III	G	1	45	85	
			IZMI	0815.0	1200.0D	I	N	1	120	270X	
	0817	1410	ONDR								
			IZMI	0828.9	1035.0U	III	N	1	45U	95U	
	0830	1515	BLEN								
	2000	2400	CULG	2000.0E	2400.0D	III	N	1	18	80	
			CULG	2055.0	2056.0	III	G	1	25	120	
			CULG	2107.0	2108.0	III	G	1	100	260	
	2144	2400	HIRA								
			CULG	2200.0	2400.0D	I	S	1	100	200	
23	0000	0754	HIRA								
			CULG	0000.0E	0800.0D	III	N	1	20	90	
	0000	0800	CULG	0000.0E	0800.0D	I	S	1	100	180	
			IZMI	0658.0E	1132.0U	III	N	1	12U	95U	
	0658	1200	IZMI	0658.0E	1200.0D	I	S,DC	2	110	270X	
			IZMI	0722.0	0722.9	III	GG,DC	1	30	85	
			LEAR	0739.0	1032.0	CONT		1	115U	180U	
	0814	1412	ONDR								
	0830	1515	BLEN								
	2000	2400	CULG								
	2144	2400	HIRA								
24	0000	0755	HIRA								
	0000	0800	CULG								
	0814	1414	ONDR								
			LEAR	0820.0	0832.0	III	N	1	25	180	
	0830	1515	BLEN								
			LEAR	0857.0	0910.0	III	N	1	25	180	
	0700	1200	IZMI	1007.2	1007.7	III	GG,C	1	130	270X	
	2000	2400	CULG								
	2143	2400	HIRA								
25	0000	0756	HIRA								
	0000	0800	CULG								
	0702	1200	IZMI								
	0813	1416	ONDR								
	0825	1520	BLEN								
	2000	2400	CULG								
	2143	2400	HIRA								
26	0000	0757	HIRA								
	0000	0800	CULG								

SOLAR RADIO EMISSION
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JANUARY 2004

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
26	0808	1200	IZMI								
	0813	1419	ONDR								
	0825	1520	BLEN								
	2000	2400	CULG								
	2142	2400	HIRA								
27	0000	0758	HIRA								
	0000	0800	CULG	0012.0	0012.0	III	B	1	18	90	
	0700	1200	IZMI								
	0809	1421	ONDR								
	0825	1520	BLEN								
	2000	2400	CULG								
	2141	2400	HIRA								
28	0000	0759	HIRA								
	0000	0800	CULG								
	0656	1200	IZMI								
	0807	1423	ONDR								
	0825	1520	BLEN								
	2000	2400	CULG								
	2140	2400	HIRA								
29	0000	0800	HIRA								
	0000	0800	CULG	0346.0	0346.0	III	B	2	23	80	
	0655	1200	IZMI								
	0745	1600	BLEN								
	0805	1425	ONDR								
	2000	2400	CULG								
	2140	2400	HIRA								
30	0000	0801	HIRA								
	0700	1200	IZMI								
	0000	0800	CULG	0751.0	0751.0	III	B	1	25	80	
	0804	1427	ONDR								
	0830	1330	BLEN								
	2000	2400	CULG	2159.0	2159.0	III	B	1	25	100	
			CULG	2247.0	2250.0	III	G	2	20	180	
			HOLL	2247.0	2249.0	III		1	25	138	
			LEAR	2247.0	2247.0	III		1	36	180	
			LEAR	2247.0	2248.0	III		1	36	180	
	2139	2400	HIRA	2247.0	2249.5	III	G	1	30	200	
			LEAR	2249.0	2249.0	III		1	41	144	
31	0000	0800	CULG	0028.0	0029.0	III	G	1	20	170	
			CULG	0105.0	0107.0	III	G	1	57	160	
			CULG	0139.0	0141.0	III	G	3	18X	180	
			LEAR	0139.0	0141.0	III		1	25	157	
	0000	0802	HIRA	0139.0	0140.0	III	G	1	60	160	
			CULG	0215.0	0216.0	III	G	2	20	180	
			HIRA	0215.0	0216.0	III	G	1	25X	290	
			LEAR	0215.0	0218.0	III		1	25	169	
			PALE	0215.0	0215.0	III		1	25	140	
			CULG	0507.0	0507.0	III	B	3	20	45	
			CULG	0508.0	0508.0	III	G	1	20	140	
			LEAR	0512.0	0513.0	III		1	25	143	
			HIRA	0512.5	0513.0	III	B	1	25X	100	
			CULG	0513.0	0513.0	III	B	2	20	160	
			CULG	0609.0	0613.0	III	G	2	20	180	
	0705	1202	IZMI								
			CULG	0714.0	0714.0	III	B	1	25	90	
	0802	1430	ONDR								
	0830	1520	BLEN								
			SVTO	1358.0	1358.0	III		1	112	180	
	2000	2400	CULG	2007.0	2009.0	III	G	1	40	180	
			CULG	2026.0	2026.0	III	B	2	23	150	
			HOLL	2026.0	2026.0	III		1	25	42	
	2139	2234	HIRA								
			CULG	2306.0	2306.0	III	B	1	18	180	
			CULG	2352.0	2352.0	III	G	1	60	160	

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Spectral Observations

JANUARY 2004

OBSERVATION Start Day (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
31		CULG	2352.0	2352.0	III	G	1	60	160	

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

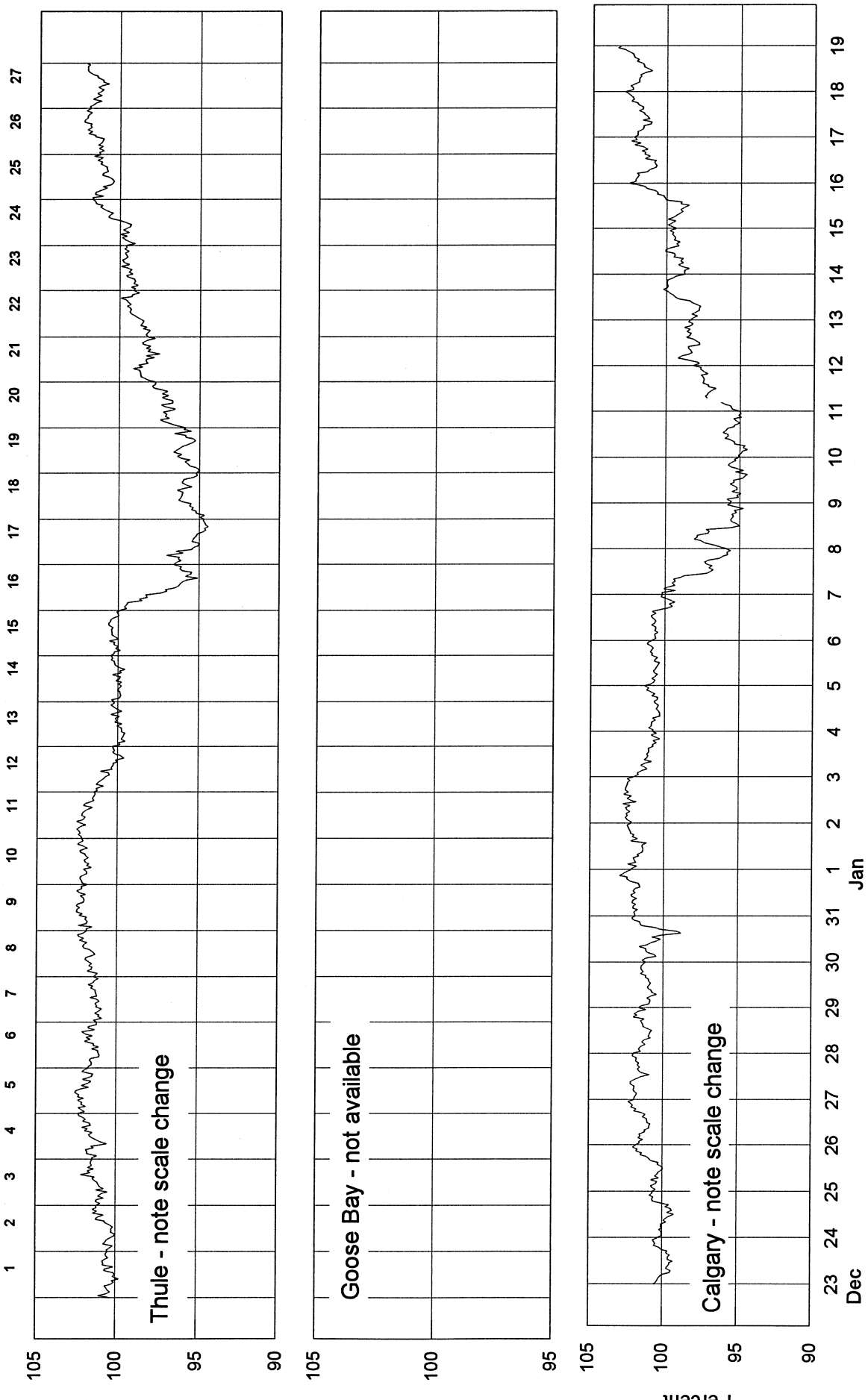
Stations Reporting:
CULG = Culgoora, IZMI = Izmiran, LEAR = Learmonth, ONDR = Ondrejov, BLEN = Bleien
PALE = Palehua, POTS = Potsdam, SGMR = Sagamore Hill, SVTO = San Vito

COSMIC RAY INDICES
(Neutron Monitor)
January 2004

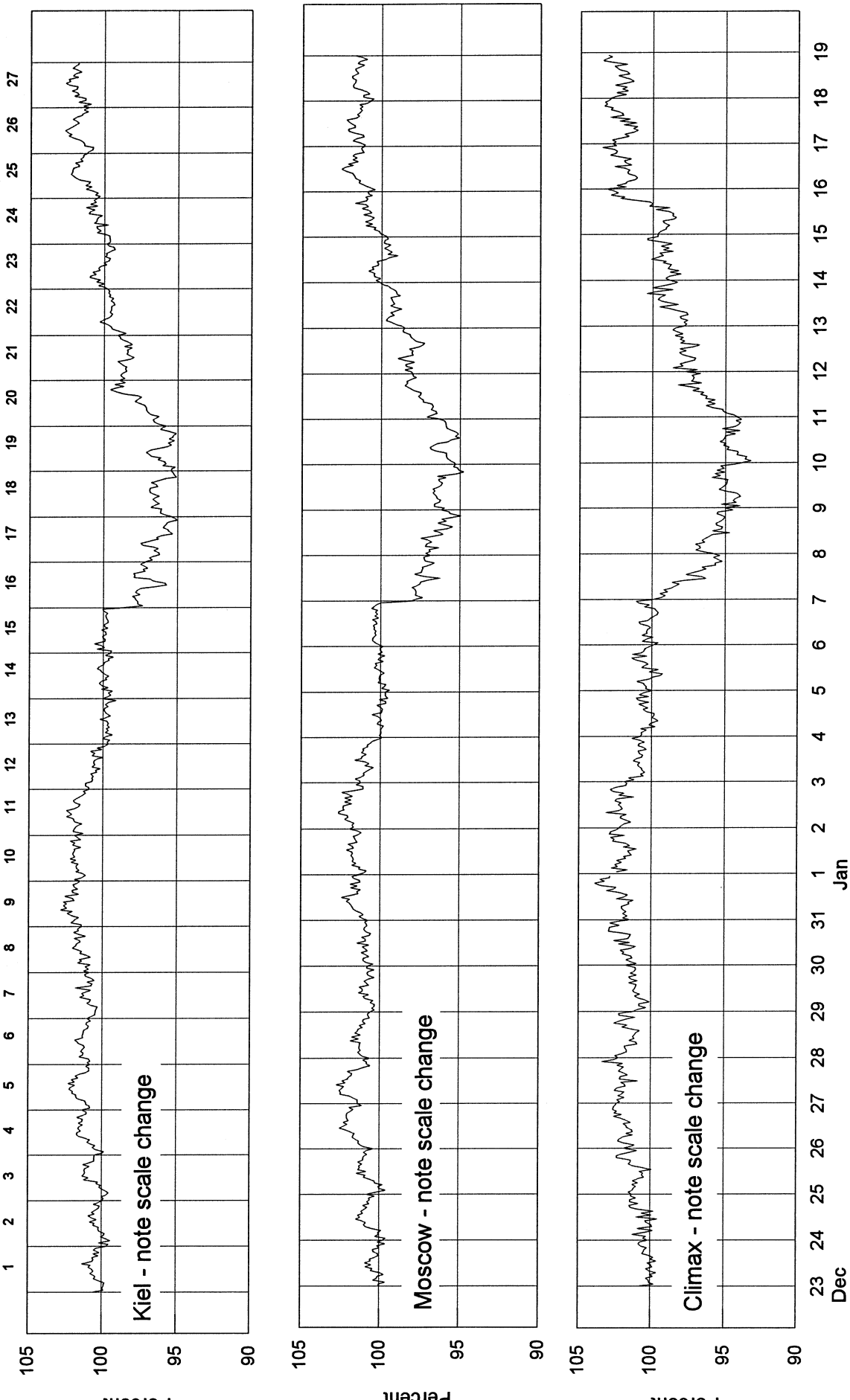
Day	THULE Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4059.0	3586.5	5720.4	8358.3	3818.8	2002.6	3452.2
2	4058.6	3604.3	5723.3	8391.1	3819.5	1995.8	3448.4
3	4001.0	3557.7	5655.0	8309.2	3772.9	1981.5	3399.5
4	3975.7	3542.8	5606.3	8226.5	3754.2	1971.0	3395.3
5	3978.3	3545.8	5614.5	8228.9	3755.0	1972.6	3414.8
6	3988.7	3533.5	5615.9	8256.2	3749.5	1974.7	3427.0
7	3868.3	3447.5	5474.7	8018.7	3644.5	1956.0	3376.9
8	3797.0	3385.5	5410.6	7932.8	3584.0	1932.9	3348.7
9	3804.7	3353.5	5409.6	7911.3	3548.9	1932.1	3366.0
10	3810.3	3353.7	5390.0	7888.8	3532.0	1941.5	3365.9
11	3861.4	3409.5(23)	5485.5	8020.3	3602.6	1957.3	3396.9
12	3911.8	3461.0	5540.4	8078.3	3660.2	1977.6	3412.2
13	3935.9	3483.0	5594.2	8168.4	3692.3	1985.7	3434.6
14	3954.9	3494.0	5626.7	8229.0	3710.3	1985.1	3424.5
15	3984.0	3513.7	5641.7	8288.2	3740.7	1992.4	3419.4
16	4019.7	3574.0	5701.0	8358.5	3819.9	2005.1	3445.8
17	4043.0	3582.8	5718.3	8357.1	3824.9	2001.3	3444.7
18	4037.5	3591.0	5725.3	8344.4	3827.2	2001.4	3454.7
19	4064.0	3616.5	5739.6	8386.5	3853.0	2005.8	3473.0
20	4073.0	3627.5	5767.0	8417.7	3876.8	2019.3	3491.9
21	4089.3	3635.2	5771.4	8437.2	3867.6	2029.6	3504.4
22	3873.5	3409.7	5475.0	7986.5	3618.5	1972.1	3391.8
23	3874.4	3398.0	5448.6	7908.5	3616.8	1960.5	3373.0
24	3876.7	3387.2	5432.0	7875.6	3601.4	1948.9	3367.1
25	3850.1	3375.0	5414.2	7834.7	3597.6	1950.0	3386.5
26	3838.6	3418.8	5450.1	7886.8	3623.4	1958.3	3401.0
27	3901.0	3472.0	5537.9	8003.9	3669.8	1973.9	3445.6
28	3938.4	3474.0	5575.9	8057.7	3680.8	1971.0	3452.0
29	3953.0	3485.2	5577.6	8048.5	3693.8	1974.6	3447.5
30	3946.9	3472.3	5564.9	8063.9	3690.1	1970.0	3442.9
31	3938.5	3474.2	5539.5	8039.9	3691.9	1958.9	3429.1
Mean	3945.0	3492.4	5578.9	8139.2	3707.3	1976.1	3420.4

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.

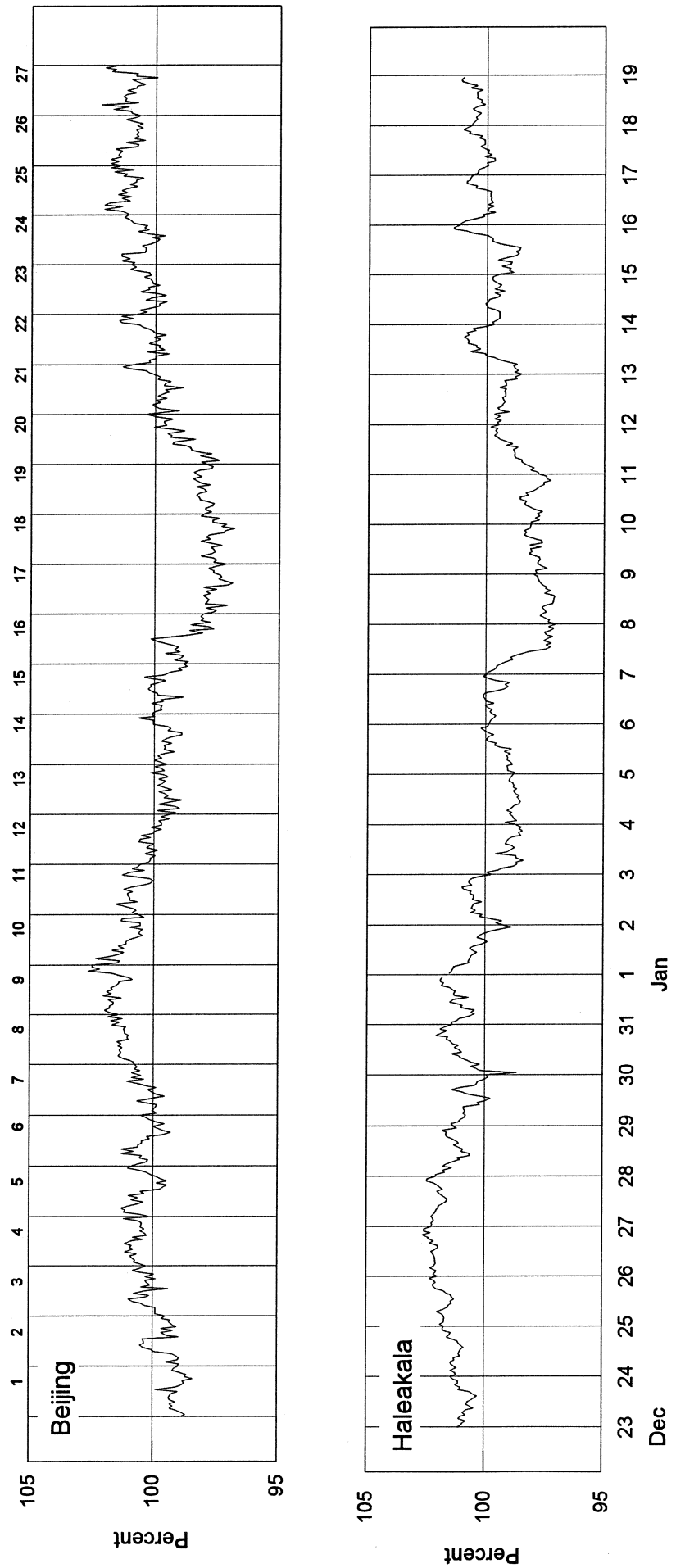
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2326 - Beginning 23 Dec 2003



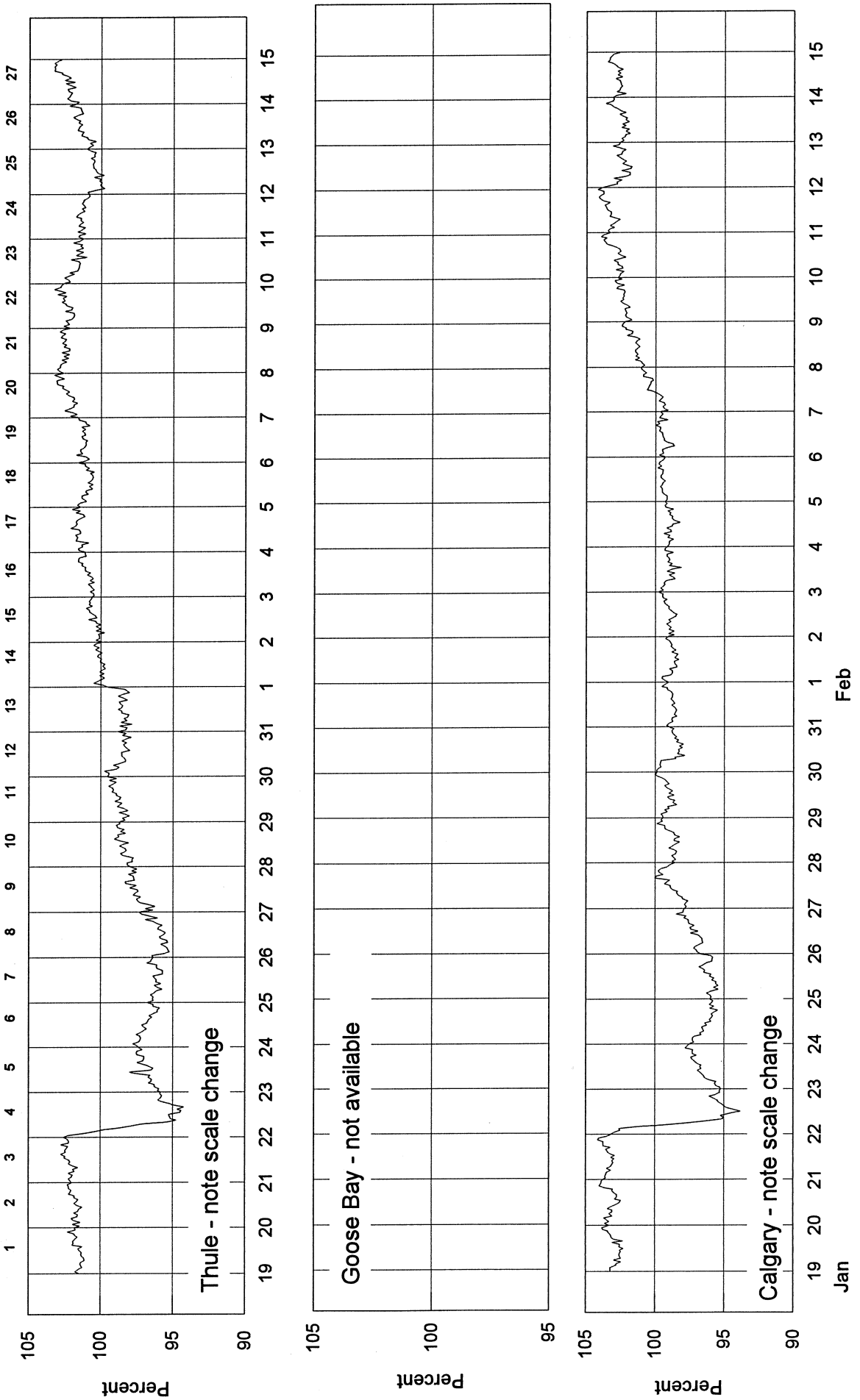
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2326 - Beginning 23 Dec 2003



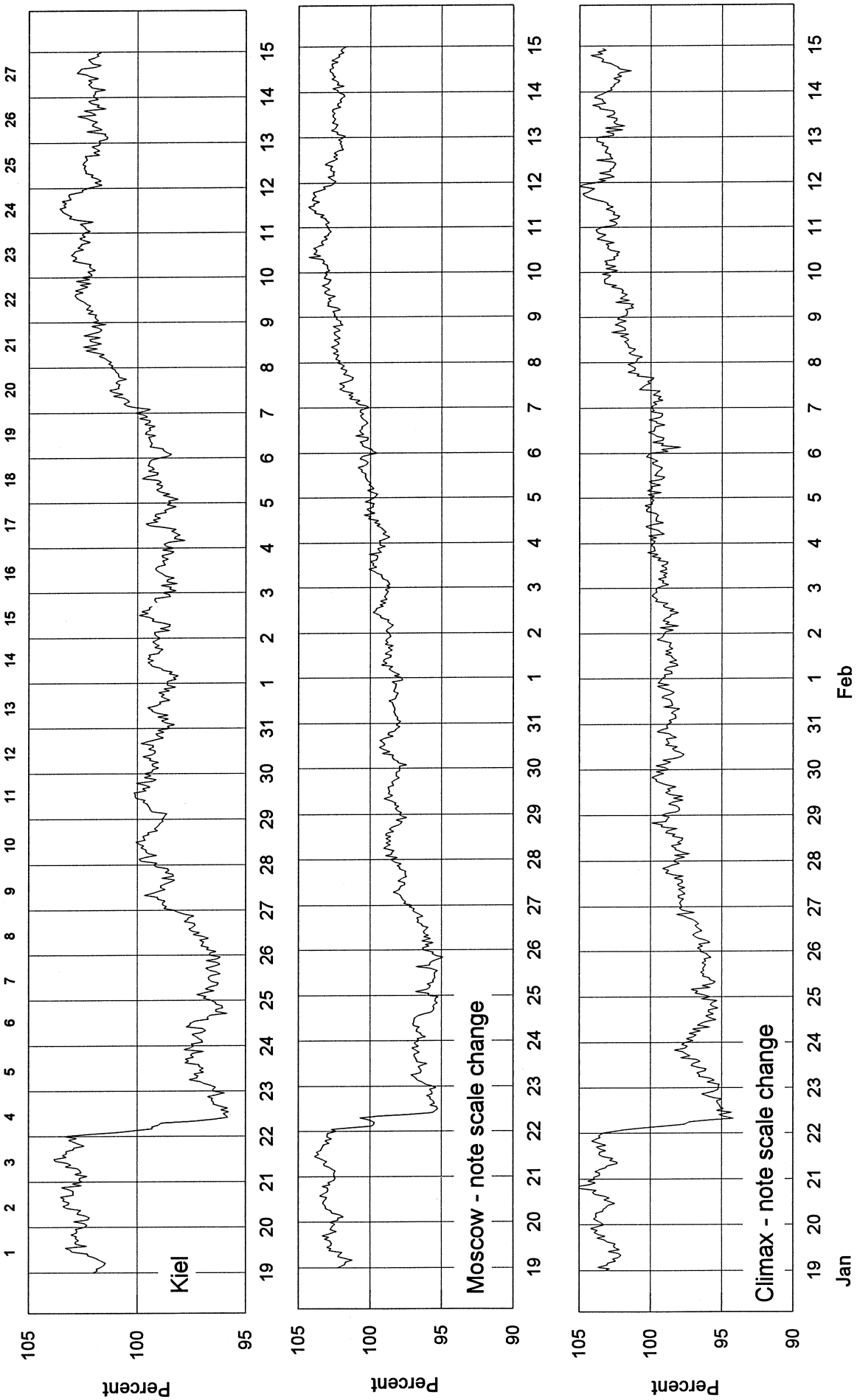
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2326 - Beginning 23 Dec 2003



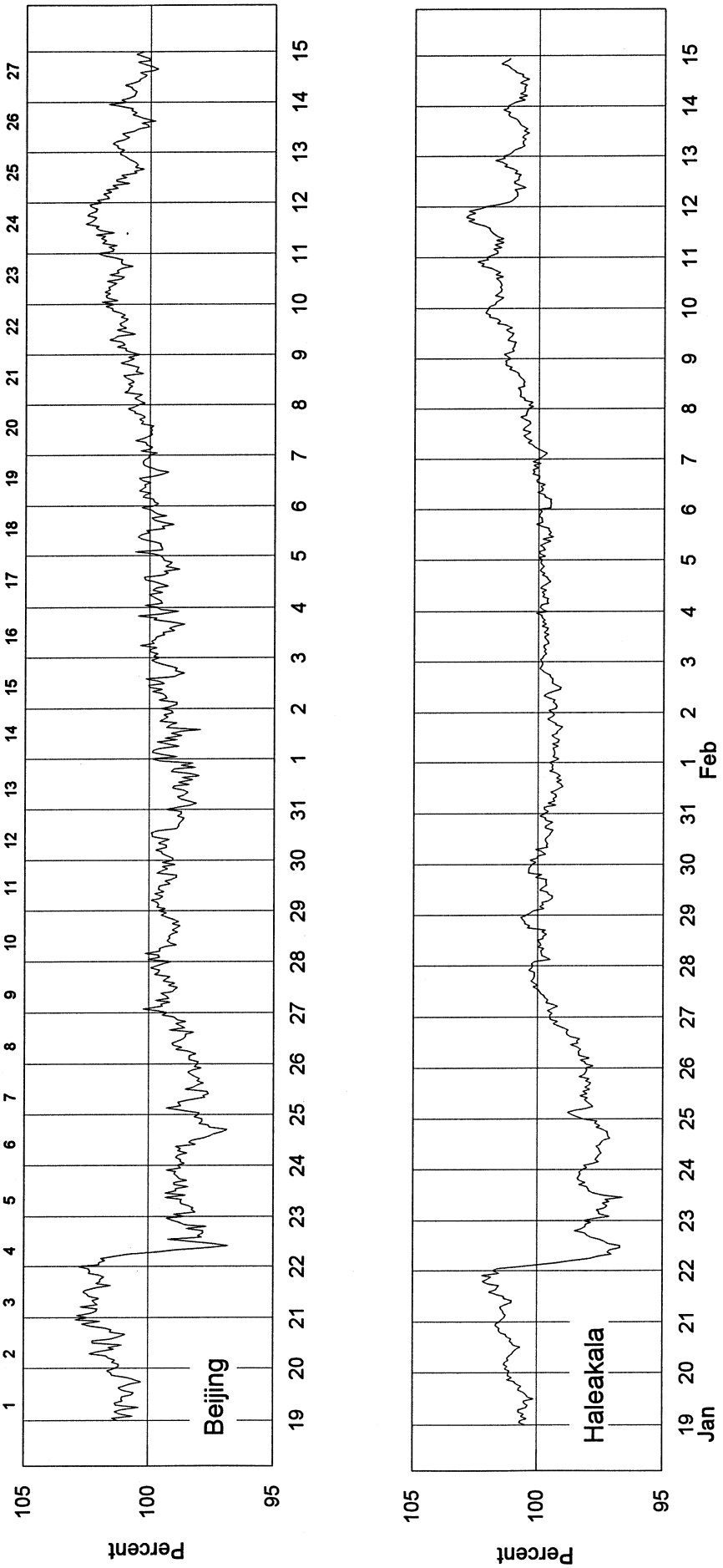
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2327 - Beginning 19 Jan 2004



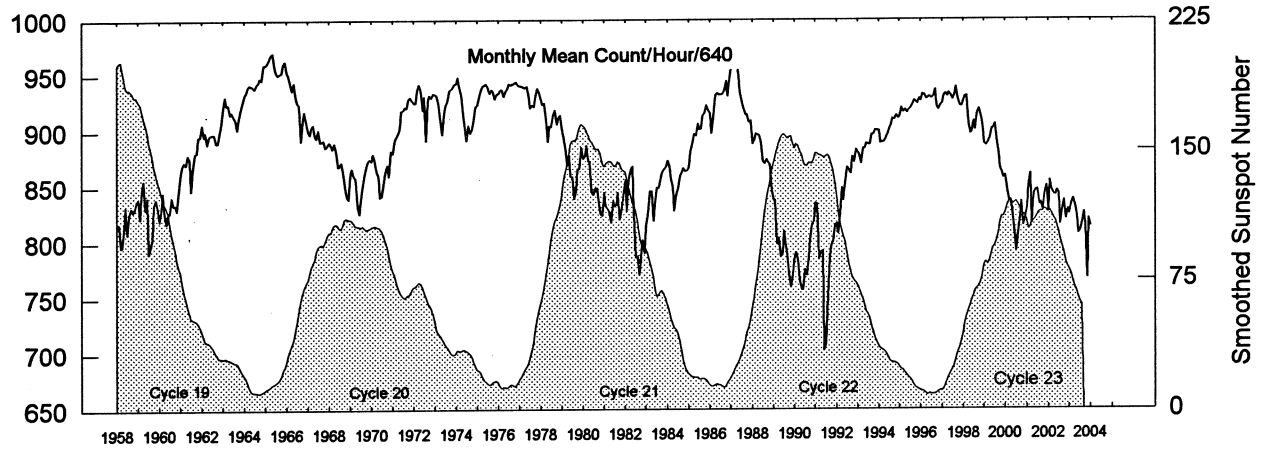
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2327 - Beginning 19 Jan 2004



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2327 - Beginning 19 Jan 2004



Moscow Neutron Monitor Pressure-Corrected Values
Jan 1958 - Jan 2004



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												8139

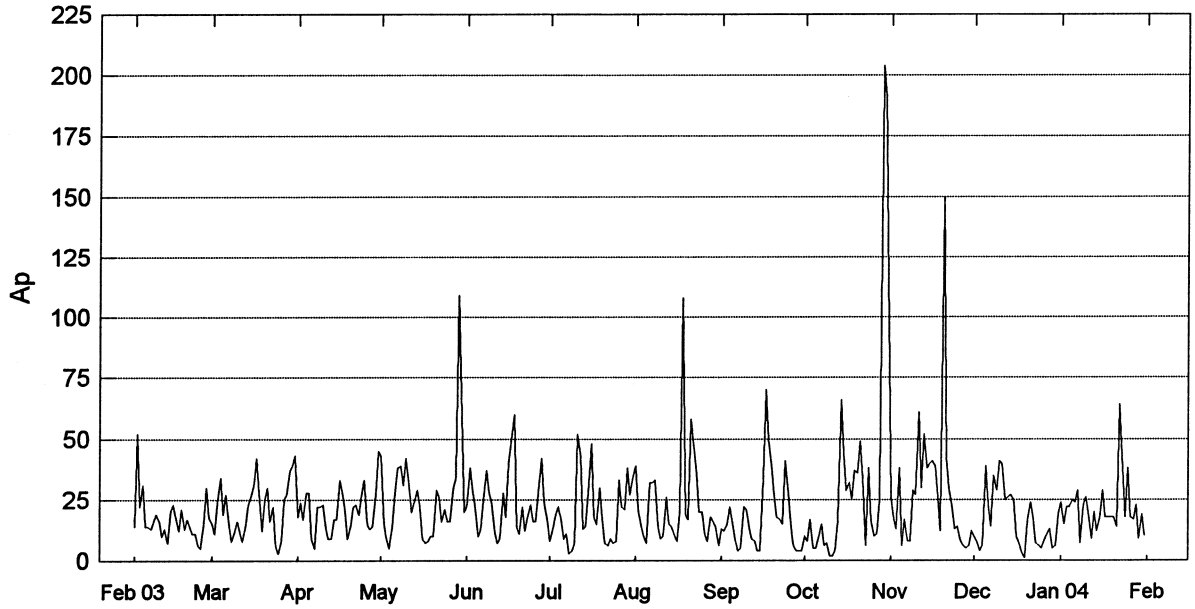
Multiply table entries by 64 to obtain hourly counting rate. Moscow, Russia: N55, E37, Alt= 200 m, Cutoff Rigidity= 2.42GV.
NOTE: * Indicates data have been restored using the corresponding data of other cosmic ray stations.

Geomagnetic Activity Indices
January 2004

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M
1		3+	4-	4	4-	5-	4-	4-	4-	30+	24	1.2	3+	3o	4-	4-	4+	4-	4o	3+	44	45	48	36	58
2	Q7A	4	3	2	2+	3	3	3+	3	24-	15	0.9	3+	2+	2o	3-	3o	3o	4-	3o	29	38	30	27	40
3		3-	3+	4	4+	3+	3	5-	3+	29-	22	1.1	2+	3-	4o	4+	3+	3+	4o	3o	41	40	37	37	40
4		3+	4-	4-	4-	4-	4+	4-	3	29	22	1.1	3o	3-	3+	4-	4+	4o	4-	3-	39	42	39	37	44
5		4	3+	3+	3	4	5-	4	4+	31-	25	1.2	4-	3o	3-	3o	4-	4+	4o	4o	43	62	36	33	65
6		4-	4-	4	2+	2-	2	3	6	26+	24	1.1	3o	3+	3+	2+	2-	3-	3o	5o	35	43	33	32	45
7	D4	4-	4+	5	4+	4+	4+	4-	3-	32+	29	1.3	3+	3+	4+	5-	4+	4o	4o	2+	53	52	49	56	46
8	Q1A	2-	0+	1-	2	2	1+	2	3+	13+	7	0.3	2-	1-	1-	3-	2+	1+	2+	3-	14	16	12	9	19
9		3	3+	5	3+	3+	4+	4-	3-	29-	23	1.1	2+	2+	4+	3+	4-	4+	4o	3-	40	42	35	37	40
10		3+	4+	5+	4-	4	4-	4	2	30+	26	1.2	3-	4-	5-	4-	4-	4-	4o	2o	45	40	41	40	41
11	Q10A	2	1+	3-	4-	5-	5-	3+	2	24+	19	1.0	1+	2-	3-	4-	4+	4+	3o	2-	33	36	27	20	42
12	Q3A	1+	2	0+	0+	2	3-	3+	4-	16-	9	0.5	1+	2-	1-	1o	3-	2+	3+	3+	19	23	17	8	33
13		3+	3-	2	2	4+	4+	4-	4	26+	20	1.0	3o	2+	2o	3-	5-	4+	4o	4-	40	43	37	17	63
14	Q5A	4	3-	2-	2	3	2+	2	3-	20+	12	0.7	4-	2o	2-	2+	3o	2-	3-	3-	23	26	22	22	26
15	Q8A	2+	3	1	2-	4	4	4	4	24	18	1.0	2+	2+	2-	2-	4-	4o	4-	4o	32	40	32	17	56
16	D5	5-	3+	2+	4+	4-	5-	5-	4+	32	29	1.3	4-	3o	2+	4o	3+	4o	5-	4o	47	57	39	33	63
17		3	3+	3	3+	3-	3	4	4	26+	18	1.0	3-	3-	3-	3+	3-	3o	4-	3o	29	40	28	26	42
18		2+	4-	4-	3-	3-	2-	4+	4+	25+	18	1.0	2o	3o	3o	2+	3-	2-	4o	4-	28	40	25	25	40
19		3	3-	2+	3-	4-	4+	3+	4-	26-	18	1.0	3-	2o	2+	3o	4-	4+	3o	3+	34	30	33	20	44
20		3+	4-	3	3-	4-	4+	3-	3	26+	18	1.0	3-	3-	3-	2+	4o	4o	3-	3-	31	38	31	26	44
21	Q6A	2+	3	4-	3-	3+	2+	3+	3-	23+	14	0.8	2o	2+	3+	3-	4-	2+	3+	3-	27	25	35	26	35
22	D1	5	5	5	7	7-	4	5+	5-	43-	64	1.7	5-	4o	4o	6o	7-	4o	5o	4o	96	97	106	98	105
23	D2	4+	4+	4	5-	4+	6	6-	4+	38-	43	1.5	3+	4-	3+	5-	4o	5o	5-	4-	59	62	69	54	77
24		5	3	2+	3+	2+	3-	3	3+	25	18	1.0	5-	2+	3-	3o	2+	3-	3o	3o	32	40	22	33	29
25	D3	5+	6-	4+	4+	4+	4+	4-	4	36	38	1.4	5-	4o	3+	4-	4+	4-	4o	4-	52	60	46	54	52
26		4	2+	3-	3+	3	3-	4	4-	26-	18	1.0	3o	2+	3-	3o	3+	3o	4o	3+	33	41	32	27	46
27	Q9A	4	3+	3	2+	3+	3+	3-	3+	25+	17	0.9	4-	3o	3-	3-	4-	4-	2+	3+	33	32	25	25	33
28		6-	4-	3	3-	3	3	4-	3	28-	23	1.1	5+	3o	3-	3o	3+	3+	3+	2+	40	48	28	45	31
29	Q2A	2-	2+	2	3	3-	1	1+	3-	17-	9	0.5	2-	2-	2-	3o	3-	1o	1+	3-	16	18	19	18	19
30		2+	3	3	5-	4-	3	3+	4-	27-	19	1.0	2o	3-	3o	4+	3+	3o	3o	3o	33	40	33	38	35
31	Q4A	2-	2-	2+	4+	3-	2-	2-	2-	18-	10	0.6	1+	1+	3-	4o	3-	2-	2o	2-	20	21	16	23	15
Mean											22	1.02									36.8	41.2	35.1		38.1

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	3o	3+	4o	4o	5-	4o	5-	3+	52	4-	2+	3+	3o	4o	3o	3+	3o	36	112.2	32	36	59	
2	4-	2+	2o	3-	4-	3+	3+	3o	30	3o	3-	2-	2+	3-	3-	4-	3+	28	112.6	40	46	60	
3	2-	2+	4o	5-	4-	3o	4+	3+	42	3o	3o	4o	4o	3o	3+	4-	3o	39	112.3	45	51	59	
4	3-	3-	4-	4o	4+	4+	3+	2+	43	3o	2+	3o	3o	4+	4o	4-	3-	36	115.5	46	48	63	
5	3+	3o	3-	3-	4o	4+	4o	4+	45	4-	3-	3o	3o	3+	4o	4o	4o	41	119.0	44	46	67	
6	3o	4-	4-	3-	2-	3-	3o	5+	38	3o	3o	3o	2o	2-	3-	3+	5-	33	113.4	39	43	60	
7	4-	4-	4+	5o	5-	5-	4o	3-	61	3o	3o	4+	5-	4o	3+	4-	2o	45	114.9	50	55	62	
8	1+	0+	0o	3-	2+	1+	2o	3o	14	2-	1+	1+	3-	2+	1+	3-	2+	15	116.1	53	46	63	
9	3-	3-	5-	3+	4-	5-	4o	3-	46	2+	2+	4-	3o	3o	4o	4o	3o	36	114.4	38	48	62	
10	3-	4o	5o	4-	3+	4-	4-	1+	45	3o	3+	4+	4o	4o	3+	4+	2+	45	115.3	36	41	63	
11	1o	1+	3-	4o	5o	5-	3o	2-	38	2o	2o	3o	3+	3+	4-	3o	2-	28	114.6	32	34	62	
12	1-	1+	0o	0+	3-	2+	3+	4-	17	2-	2o	1+	1+	2+	2+	3+	3+	21	114.4	27	32	62	
13	3o	2o	2+	2o	5-	5-	4-	3+	39	3-	3-	2o	3o	4+	4o	4o	4-	41	114.1	35	39	61	
14	3+	2+	1+	3-	3+	2o	3-	2+	23	4-	2-	2o	2o	3-	1+	3-	3o	23	117.1	34	36	64	
15	2o	2+	1o	1+	4-	4o	4o	4o	32	3-	3-	2o	2o	3+	4o	3+	4o	32	115.2	43	45	62	
16	3+	3-	2o	4o	3+	4+	5-	4o	45	4o	3o	3-	4-	3+	4o	5o	4-	48	116.4	50	52	64	
17	2+	3o	3-	3+	3o	3o	4o	3+	32	3-	3-	2o	3+	3-	3o	3+	3o	27	118.6	49	47	66	
18	2o	3o	3+	2o	3-	2-	4o	4-	29	2+	3o	2+	3-	3-	2o	4-	4-	27	115.6	40	48	63	
19	3-	2-	2o	3o	4o	5-	3+	3+	36	3-	2+	3-	3-	3+	4o	3o	3+	32	130.3	54	62	79	
20	3-	3-	3-	2o	4+	4+	2+	3-	32	3-	3o	2+	3-	3+	4o	3-	3-	30	124.8	61	60	73	
21	2o	2o	4-	3-	4-	2+	3+	2+	27	2o	2+	3-	3-	4-	3-	3+	3-	27	126.0	61	62	74	
22	5o	4-	4o	6o	7-	4o	5o	4o	96	5-	4o	4o	6+	6+	4o	5-	4o	95	117.9	49	54	65	
23	4-	4o	3o	5o	4o	5-	4+	3+	57	3+	3o	4-	4o	4o	5o	5+	4o	61	111.6	42	46	59	
24	4+	3-	2o	4-	2+	3-	3+	3o	31	5o	2+	3o	3-	2+	3-	3o	3o	33	104.1	34	40	50	
25	5-	4o	3+	4o	5-	4o	4o	3+	56	4+	4-	3o	4-	4o	3+	4-	4-	47	99.1	16	17	45	
26	3o	2o	3o	3o	4-	3o	4+	3+	34	3+	2+	2o	3-	3o	3-	4-	4-	30	95.0	13	6	41	
27	3+	3o	2+	3-	4o	4o	2+	3o	33	4o	3o	3o	3-	3o	3o	3-	3+	32	90.8	0	0	36	
28	5+	3+	3o	3-	3+	4-	3+	2+	42	5+	3o	3-	3+	3o	3o	3o	3-	38	85.9	8	4	31	
29	1+	2-	2-	3+	3o	1o	1+	3-	17	2o	2-	1+	3-	2+	1+	1+	3-	15	84.8	16	16	30	
30	2-	2+	3-	5-	4-	3+	3+	3o	35	2o	3-	3+	4o	3o	3-	3o	3o	31	89.9	27	25	35	
31	1+	1o	3-	4o	3o	2-	2-	1+	20	2-	1+	3-	4o	3-	2o	2o	2+	21	91.6	38	41	37	
Mean									38.3									35.3	110.4	37.2	39.4	57.2	

Daily Average Indices Ap
Feb 2003 - Jan 2004

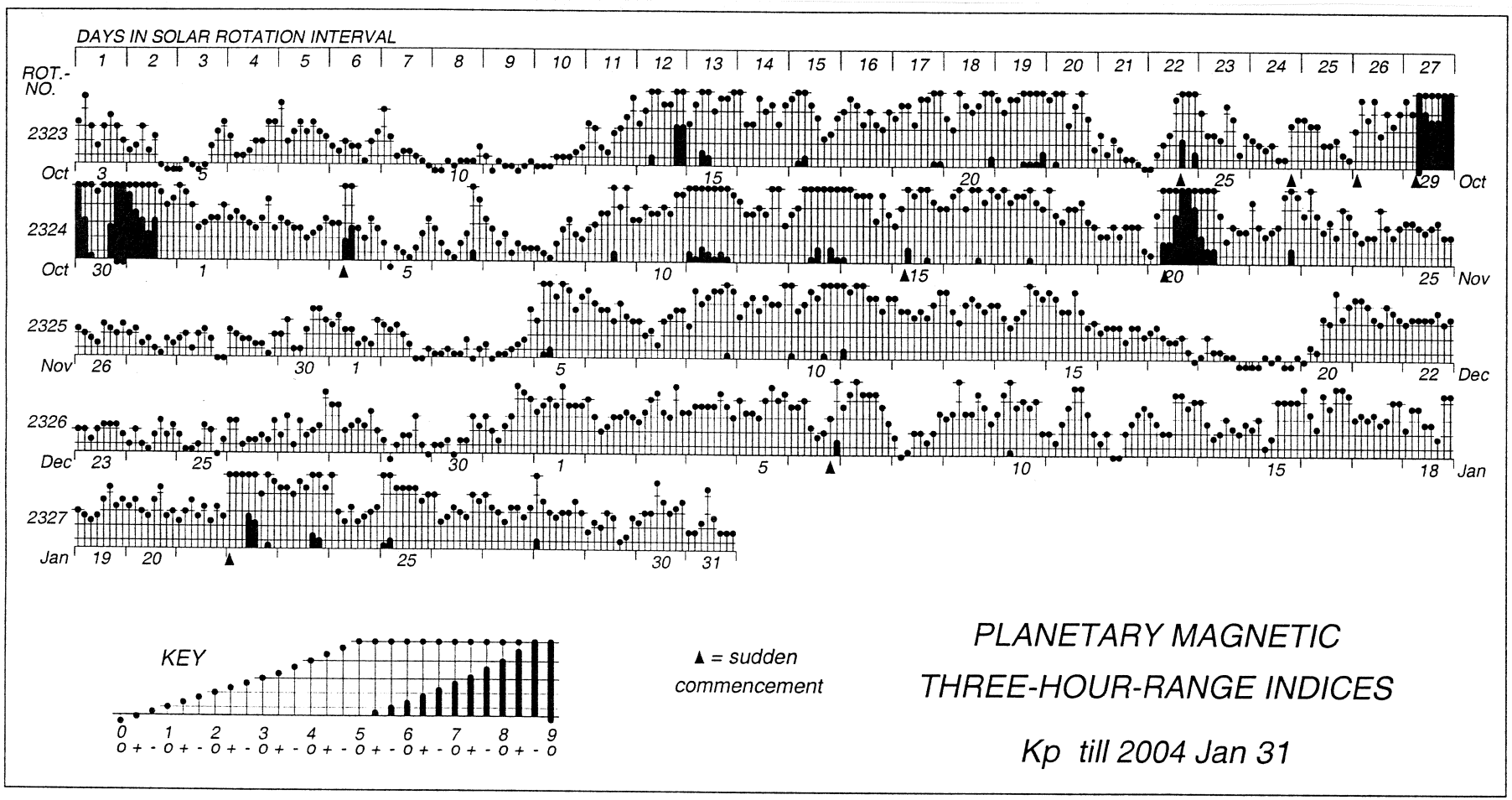


Day	Feb 03	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04
1	14	15	18	43	22	8	39	13	10	26	10	24
2	52	11	24	15	38	12	21	12	8	18	7	15
3	22	24	17	9	29	19	14	15	17	13	4	22
4	31	34	28	5	22	22	10	22	5	38	6	22
5	14	19	28	14	10	18	7	16	5	6	39	25
6	14	27	9	28	13	9	32	8	9	17	23	24
7	13	15	5	38	25	11	32	4	15	8	14	29
8	16	8	22	39	37	3	33	5	6	8	35	7
9	19	11	22	31	28	4	14	22	7	29	29	23
10	16	16	23	42	24	7	9	21	2	27	41	26
11	10	12	14	31	12	52	10	14	2	61	40	19
12	13	8	9	20	7	43	26	9	4	30	25	9
13	7	14	9	24	9	13	15	8	16	52	26	20
14	20	23	17	29	28	14	14	4	66	38	27	12
15	23	26	17	22	18	28	11	4	44	40	25	18
16	17	31	33	9	40	48	8	34	29	41	10	29
17	12	42	28	7	49	18	20	70	32	39	7	18
18	21	28	21	8	60	15	108	50	25	26	3	18
19	13	12	9	10	14	30	19	39	37	12	1	18
20	17	25	14	10	11	17	17	27	36	150	16	18
21	14	30	22	29	22	7	58	18	49	42	24	14
22	11	16	23	26	12	6	46	17	34	30	18	64
23	11	22	19	16	18	9	36	15	6	22	7	43
24	6	6	27	21	23	7	20	41	38	13	6	18
25	5	3	33	16	16	8	20	28	16	14	5	38
26	15	8	15	16	16	33	11	15	10	8	8	18
27	30	25	13	30	31	22	8	6	11	6	11	17
28	18	27	14	34	42	21	18	4	25	5	13	23
29		37	27	109	24	38	16	4	204	6	5	9
30		39	45	59	17	27	14	4	191	12	6	19
31		43		20		35	6		116		19	10
Mean	17	21	20	26	24	19	23	18	35	28	16	22

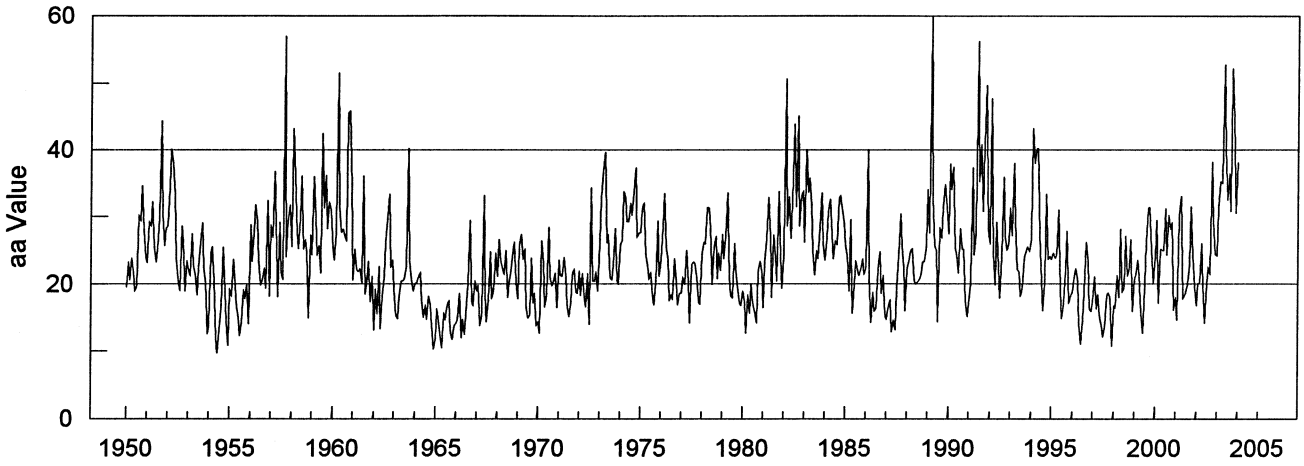
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through January 31, 2004



Monthly Mean aa Index Jan 1950 - Jan 2004

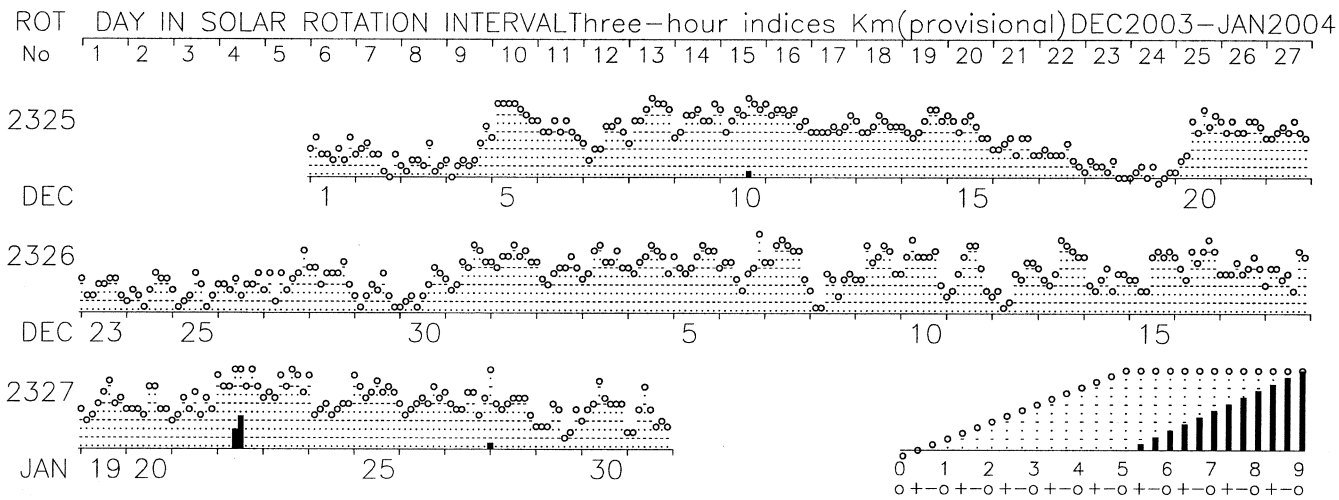


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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												38.1

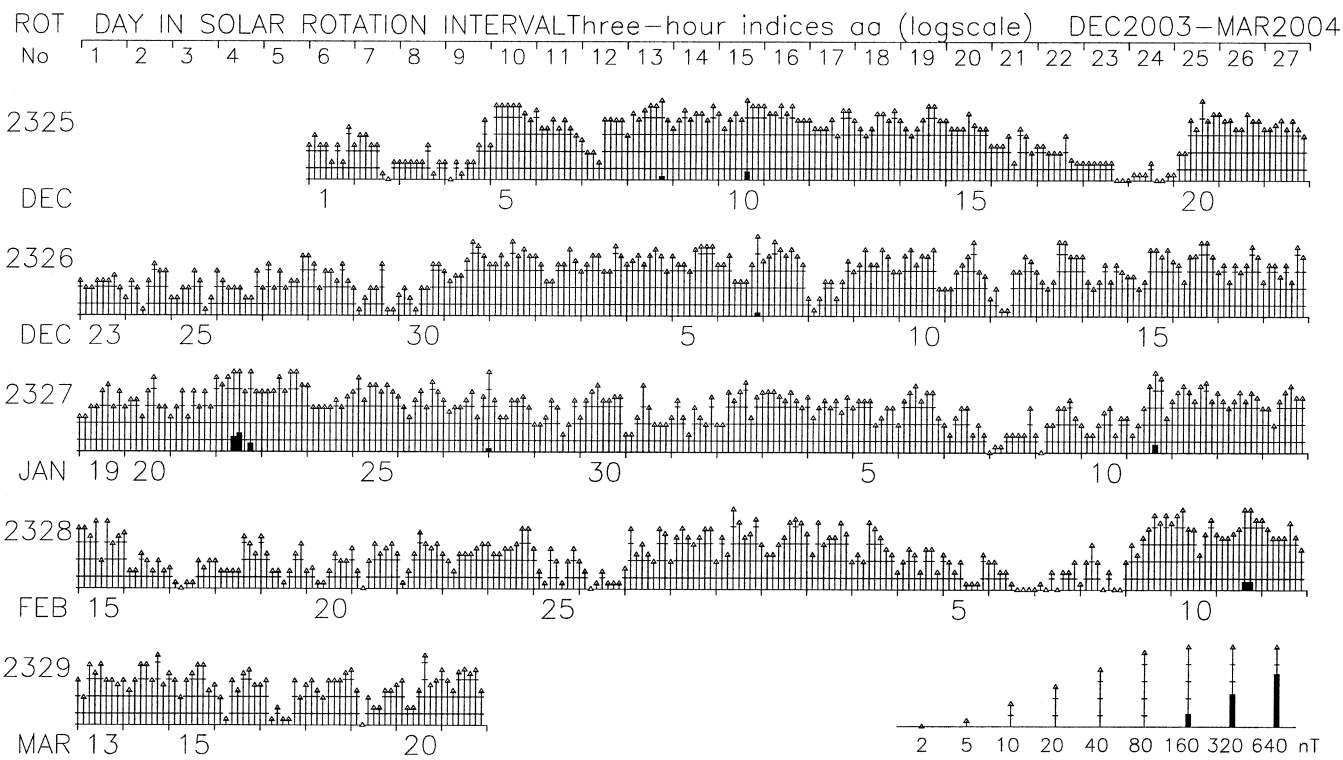
PLANETARY GEOMAGNETIC ACTIVITY

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.

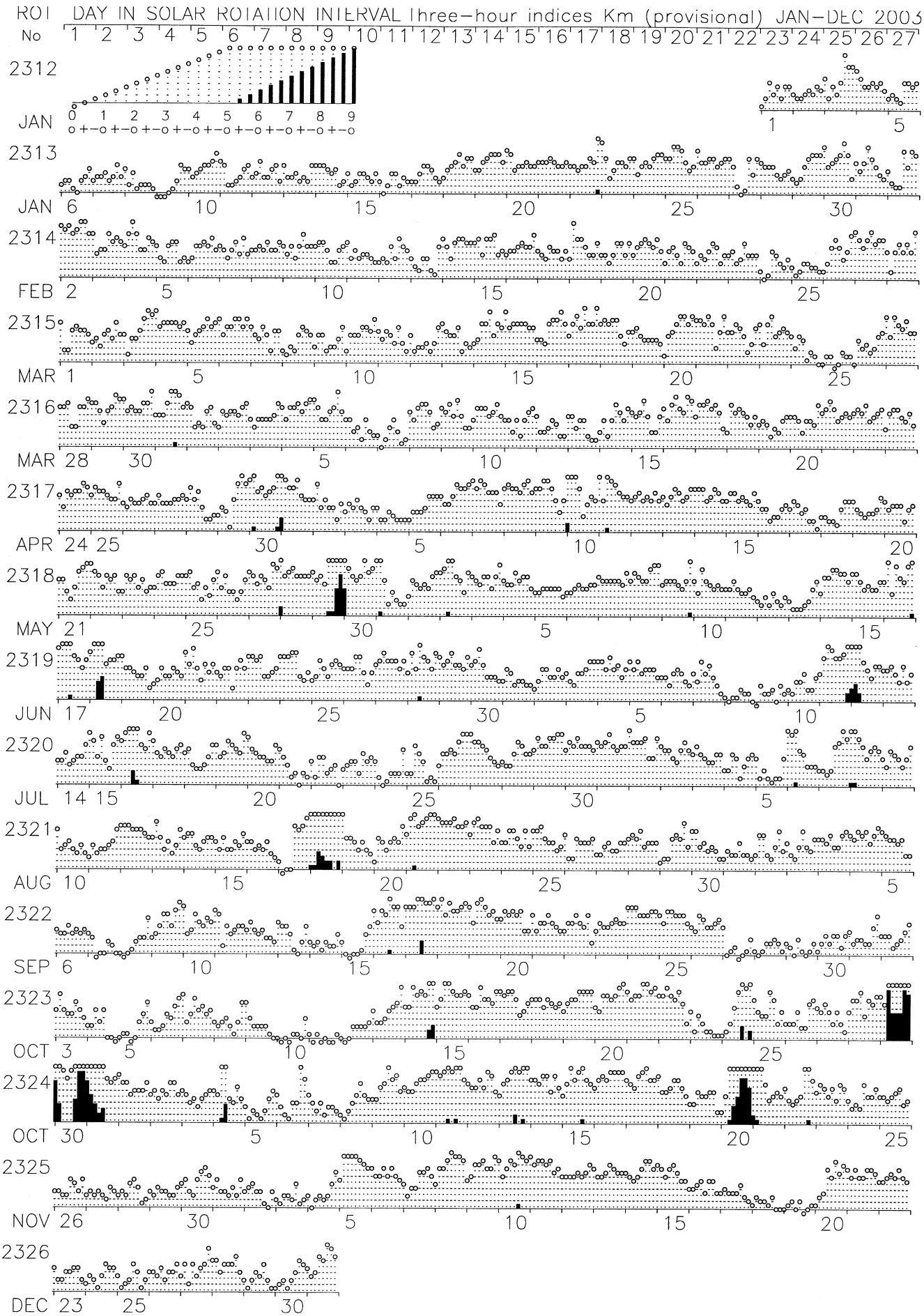


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

PLANETARY GEOMAGNETIC ACTIVITY - MUSICAL DIAGRAM OF aa 2003

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

PLANETARY GEOMAGNETIC ACTIVITY – MUSICAL DIAGRAM OF Km 2003



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

WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JANUARY 2004

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-31	-30	-34	-36	-36	-39	-41	-47	-43	-35	-30	-15	-11	-25	-28	-24	-21	-28	-23	-22	-22	-17	-25	-23
2	-20	-21	-22	-24	-19	-20	-21	-24	-26	-25	-19	-7	-4	-7	-13	-13	-9	-12	-10	-13	-18	-8	-11	-7
3	-7	-5	0	3	-9	-18	-14	-21	-25	-28	-37	-26	-17	-20	-27	-21	-21	-21	-17	-20	-14	-18	-22	-23
4	-22	-26	-26	-21	-21	-28	-31	-31	-38	-37	-36	-22	-17	-32	-14	-23	-30	-27	-25	-22	-22	-26	-30	-29
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23	-84	-78	-72	-75	-76	-75	-75	-70	-77	-75	-72	-60	-57	-60	-67	-69	-89	-78	-80	-82	-78	-78	-79	-67
24	-60	-49	-47	-37	-29	-27	-39	-43	-46	-51	-50	-52	-40	-39	-43	-36	-32	-38	-41	-42	-46	-49	-48	-47
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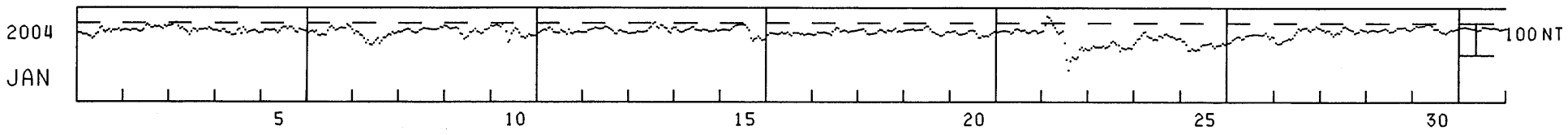
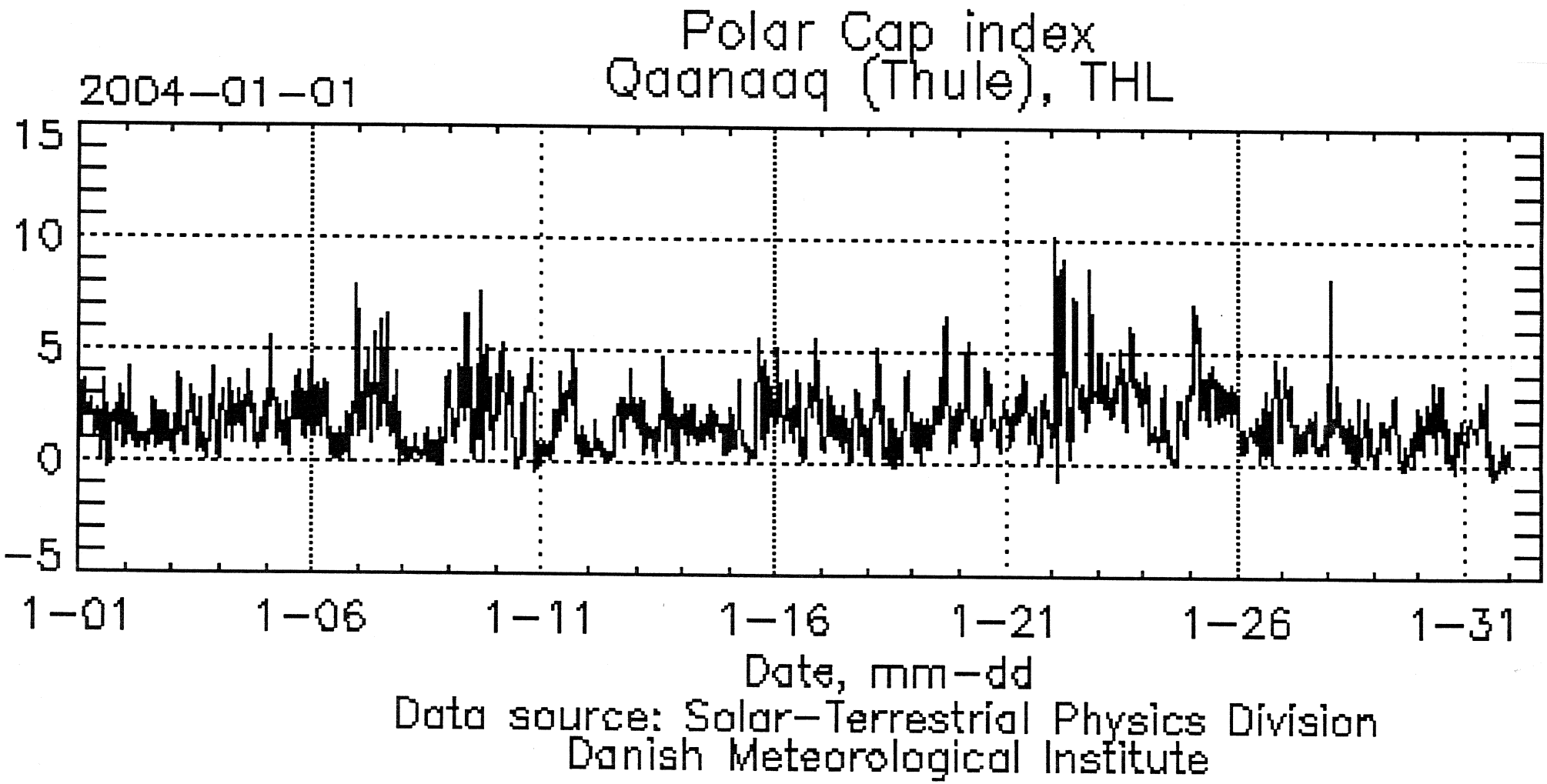


WDC C1 for Geomagnetism, Copenhagen



P R I N C I P A L M A G N E T I C S T O R M S

JANUARY 2004

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
JAI	17.4N	03	0200	..	..	..	..		-	5	75	25	06	07
NGP	11.3N	03	0200	..	..	..	..		-	4	78	22	06	07
ABG	09.4N	03	0200	..	..	..	..	01(5) 03(2) 04(5)	5	4	81	32	06	07
PND	02.0N	03	0200	..	..	..	..		-	3	89	65	06	07
TIR	00.6S	03	0200	..	..	..	..		-	3	148	66	06	07
JAI	17.4N	06	1950	SC	- 0.3	12	- 4		-	7	127	29	07	23
KRC	16.4N	06	1951	..	..	..	..	06(8) 07(3,6,7)	6	9	147	55	07	23
NGP	11.3N	06	1950	SC	--	16	- 2		-	5	131	17	07	23
ABG	09.4N	06	1950	SC	- 1.7	13	- 2	05(6,7) 06(8) 07(3)	5	5	122	33	07	23
PND	02.0N	06	1950	SC	- 0.1	10	9		-	4	122	61	07	23
TIR	00.6S	06	1950	SC	- 0.1	9	13		-	6	187	72	07	23
JAI	17.4N	09	0500	..	..	..	..		-	5	81	23	10	22
NGP	11.3N	09	0500	..	..	..	..		-	5	98	17	10	22
ABG	09.4N	09	0500	..	..	..	..	09(6,7) 10(3) 11(6) 13(5,6,7,8)	5	5	101	33	10	22
PND	02.0N	09	0500	..	..	..	..		-	5	114	50	10	22
TIR	00.6S	09	0500	..	..	..	..		-	5	185	63	10	22
JAI	17.4N	15	1200	..	..	..	..		-	3	83	11	17	02
NGP	11.3N	15	1200	..	..	..	..		-	3	84	15	17	02
ABG	09.4N	15	1200	..	..	..	..	15(3,5)16(4,7)20(5,6)	5	3	81	20	17	02
PND	02.0N	15	1200	..	..	..	..		-	2	83	60	17	02
TIR	00.6S	15	1200	..	..	..	..		-	3	100	72	17	02
GNA	43.0S	15	1200	..	..	..	..	15(6) 16(6,7)	5	19	64	106	18	12
JAI	17.4N	22	0137	SC	- 2.6	39	- 14		-	11	252	31	24	02
KRC	16.4N	22	0144	SC	- 52	71	..	22(4) 23(6,7)	8	13	275	--	24	01
NGP	11.3N	22	0137	SC	- 1.1	41	- 8		-	9	260	19	24	02
ABG	09.4N	22	0137	SC	- 1.6	37	- 21	22(4)	7	8	209	33	24	02
PND	02.0N	22	0137	SC	- 1.0	44	48		-	6	259	129	24	02
TIR	00.6S	22	0137	SC	- 1.5	38	50		-	8	291	144	24	02
GNA	43.0S	22	0136	..	7.7	13.9	28.5	22(5)	7	41	182	232	24	09
CAN	43.6S	22	0136		5.8	10.5	16.8	22(5)	7	26	219	78	24	03

Stations:

ABG = ALIBAG
AMS = MARTIN DE VIVIES
ANN = ANNAMALAINAGAR
BJI = BEIJING
CAN = CANBERRA
CMO = COLLEGE
CZT = PORT ALFRED
DRV = DUMONT D'URVILLE
ETT = ETAIYAPURAM
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KRC = KARACHI
NGP = NAGPUR
PAF = PORT AUX FRANCAIS
PMG = PORT MORESBY
PND = PONDICHERRY
SHL = SHILLONG
SIT = SITKA
TIR = TIRUNELVELI
UJJ = UJJAIN

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

January 2004

Storm Sudden Commencements (SSC) Day	Time	Quality: Station Group*	Solar Flare Effects (sfe) Day	Begin-End	Station(s)
06	1951	C: NGK* BDV* MMB* KAK KNY GUI	None		
22	0137	A: NGK* CLF NAG MMB* COI SPT KAK* GUI HYB B: NUR* BDV* HRB EBR* GNA CNB C: GCK			

REPORTING OBSERVATORIES (up to the 2nd of March 2004):
SOD NUR NGK VAL BDV CLF HRB NAG GCK MMB EBR COI 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.