JULY 2004 NUMBER 719 - Part I

Solar-Geophysical Data prompt reports

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

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JULY 2004 NUMBER 719 - Part I

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Data for May and June 2004

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

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SOLAR-GEOPHYSICAL DATA

Number 719

(Issued in Two Parts)

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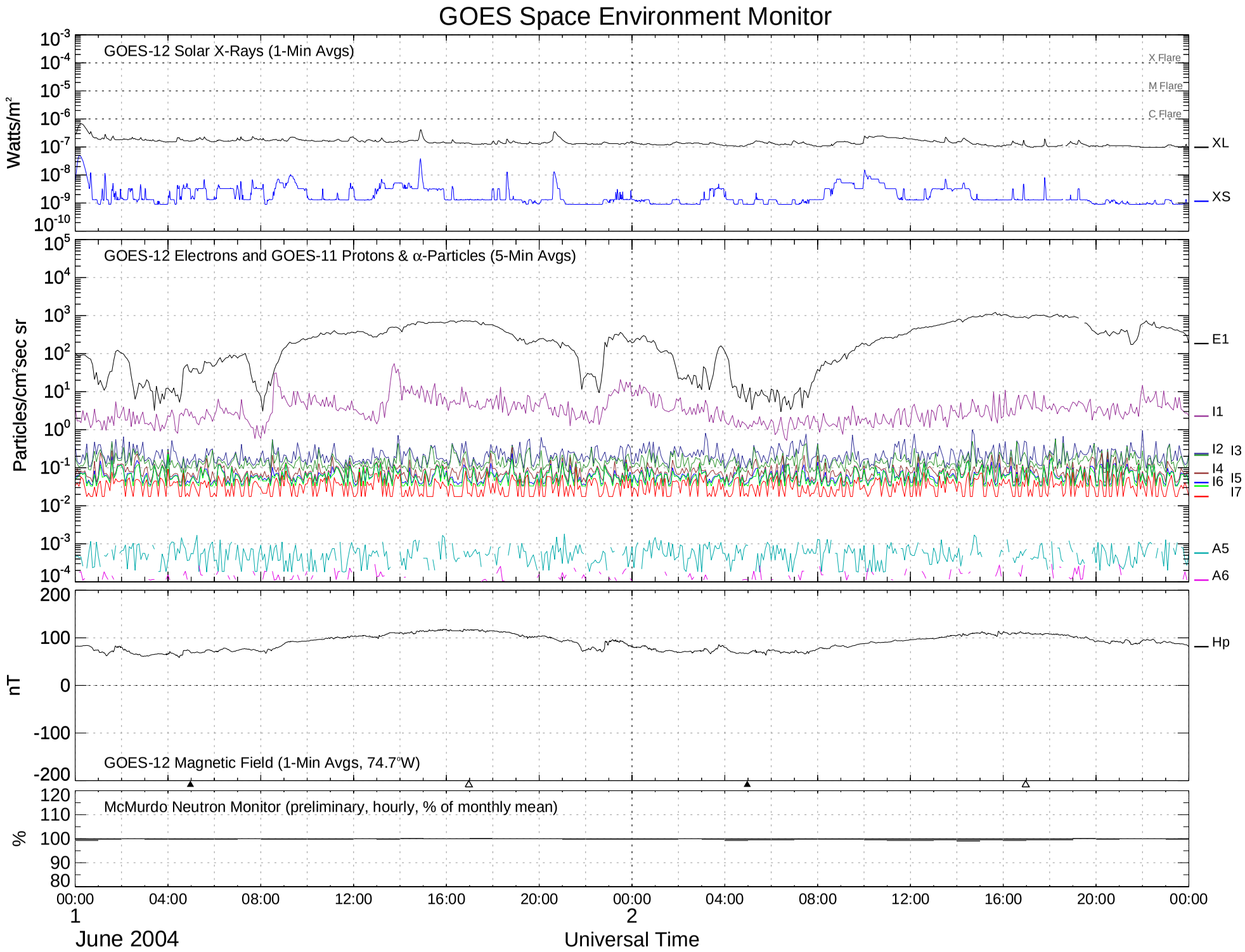
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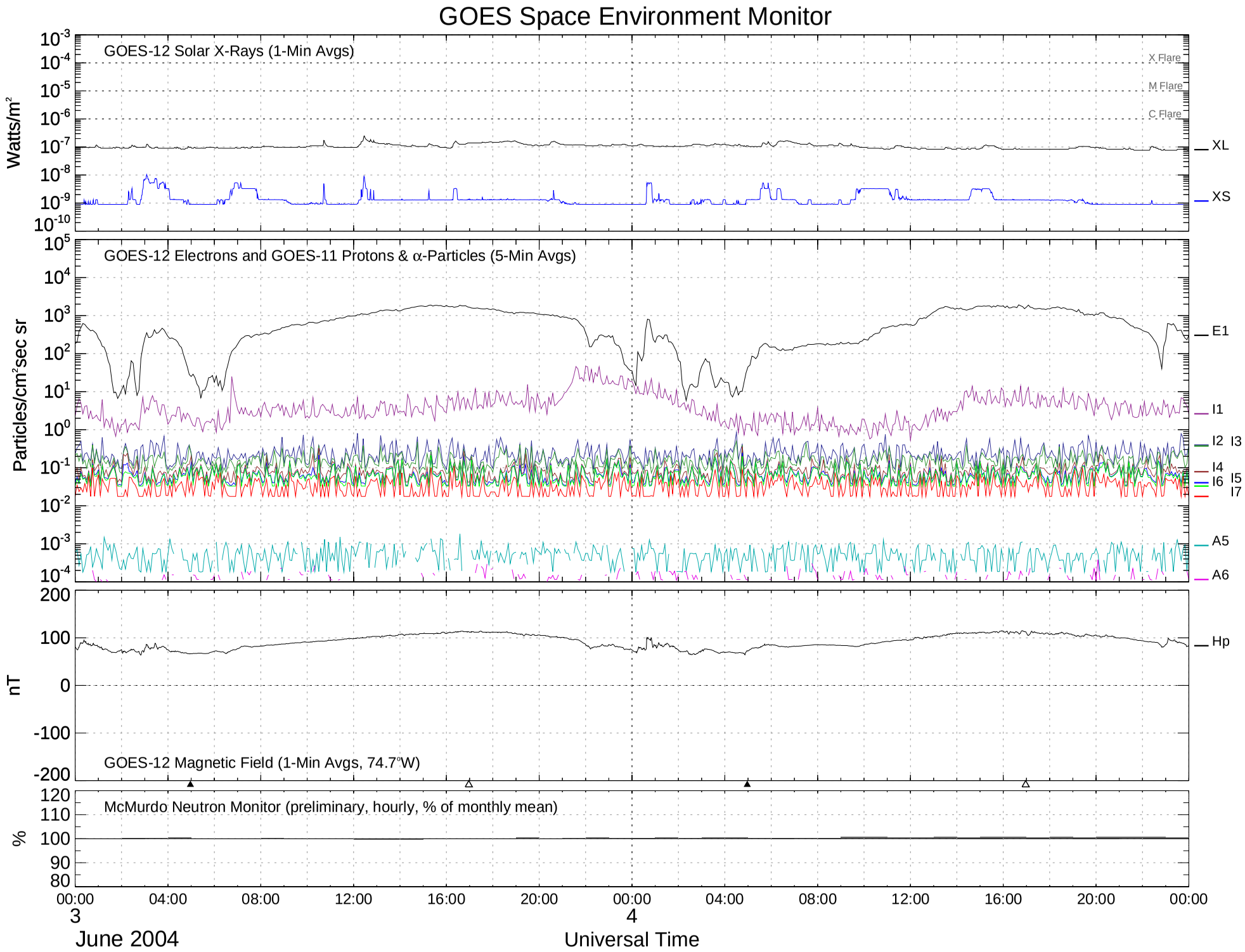
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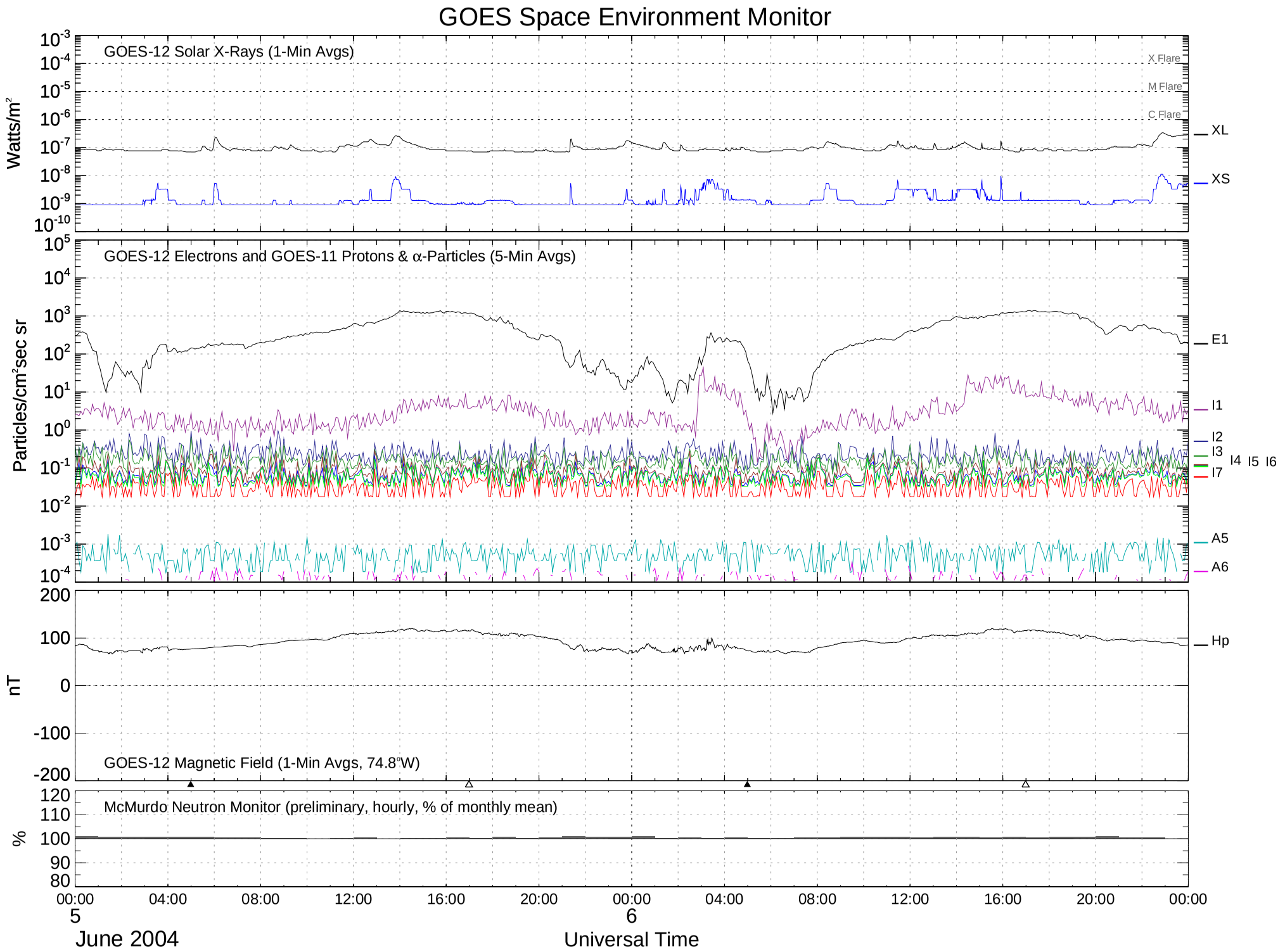
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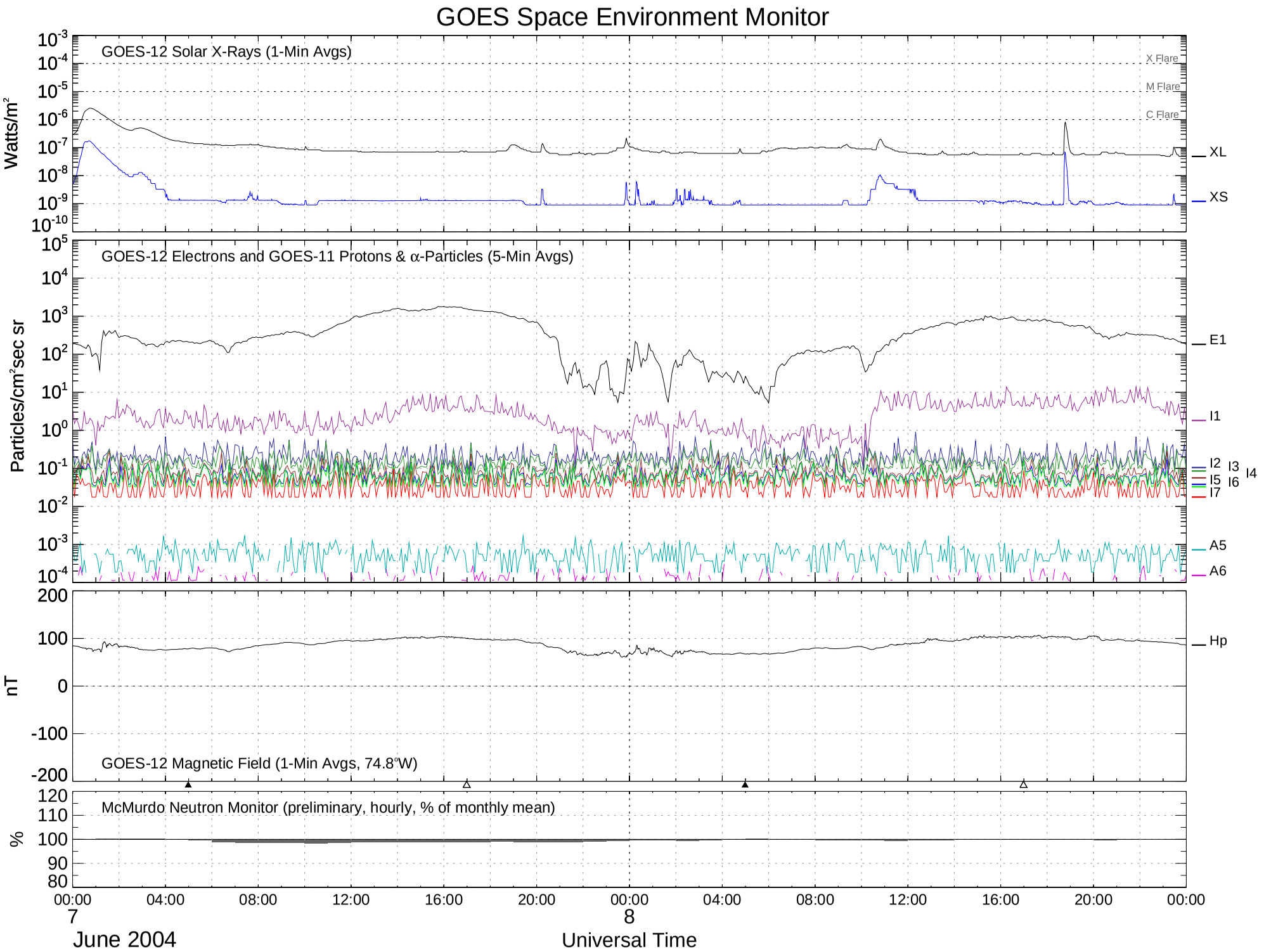
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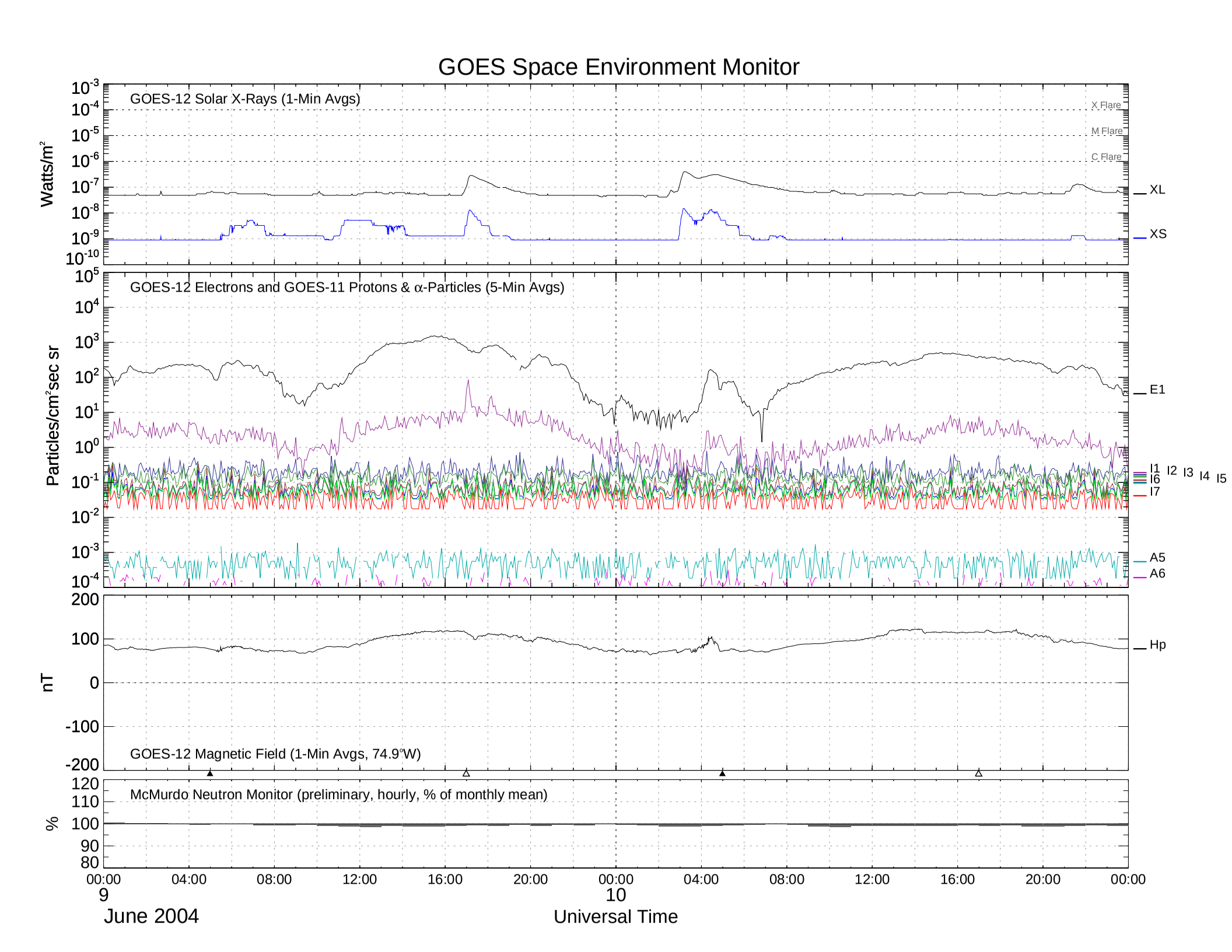
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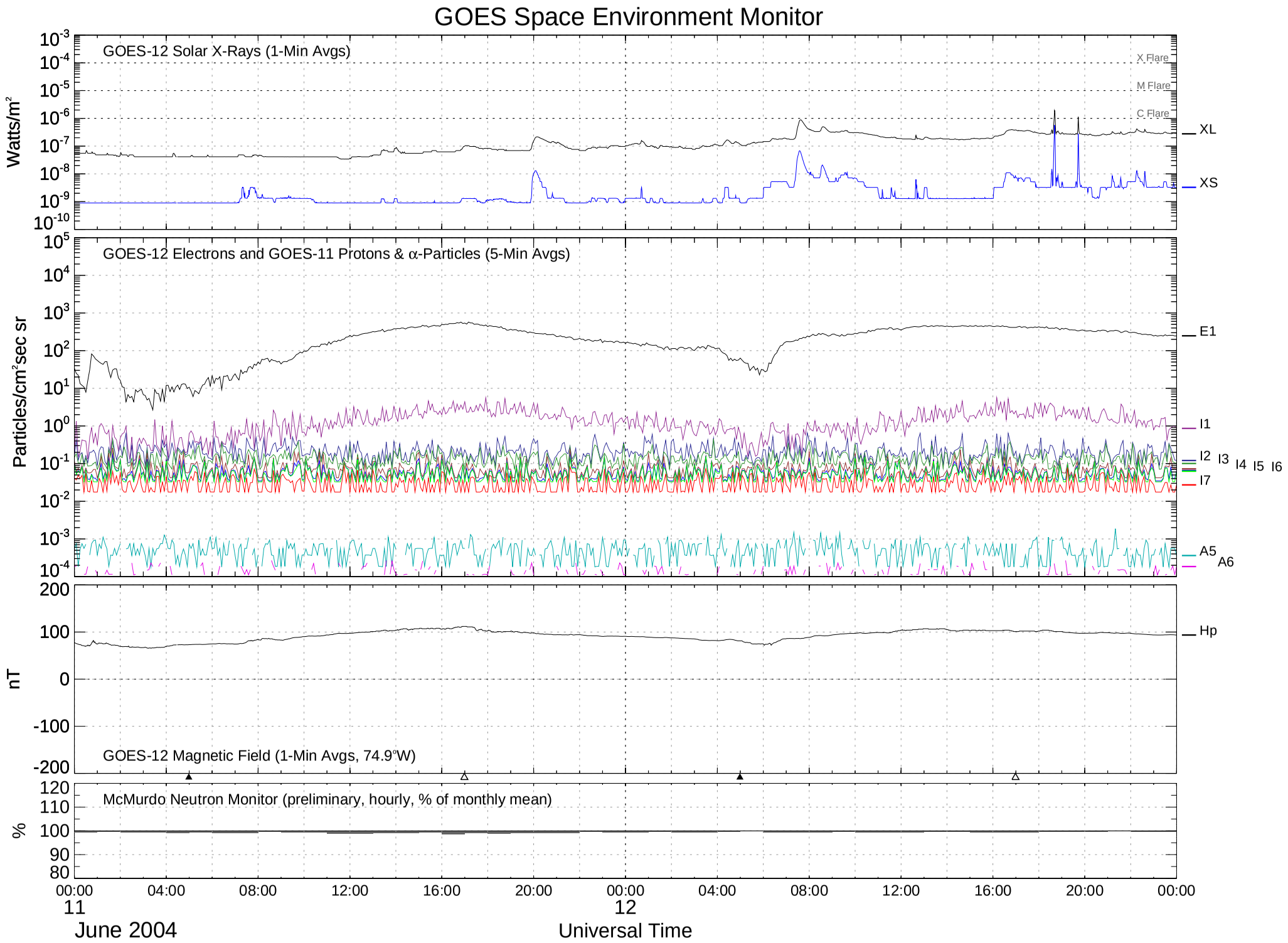
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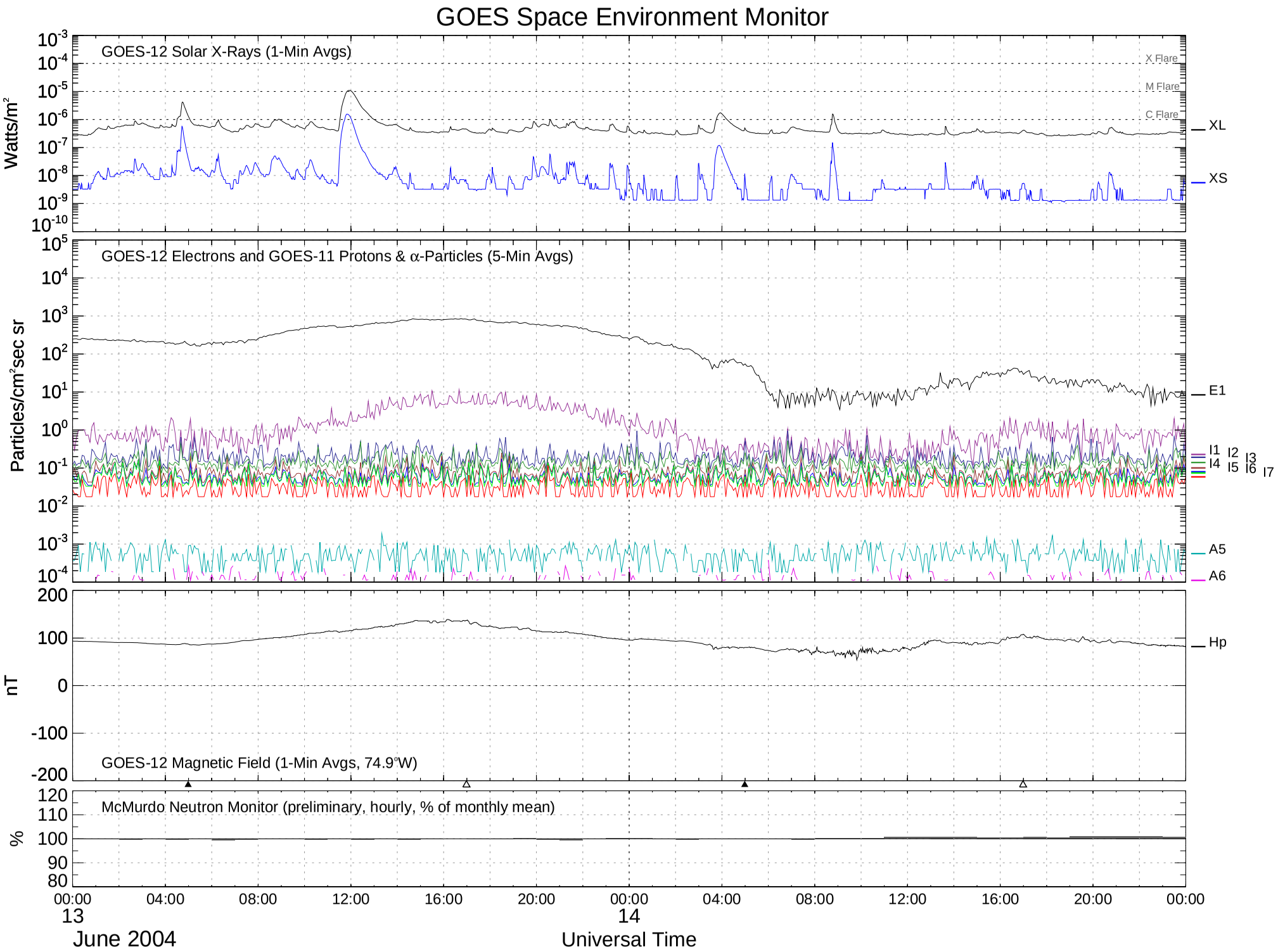
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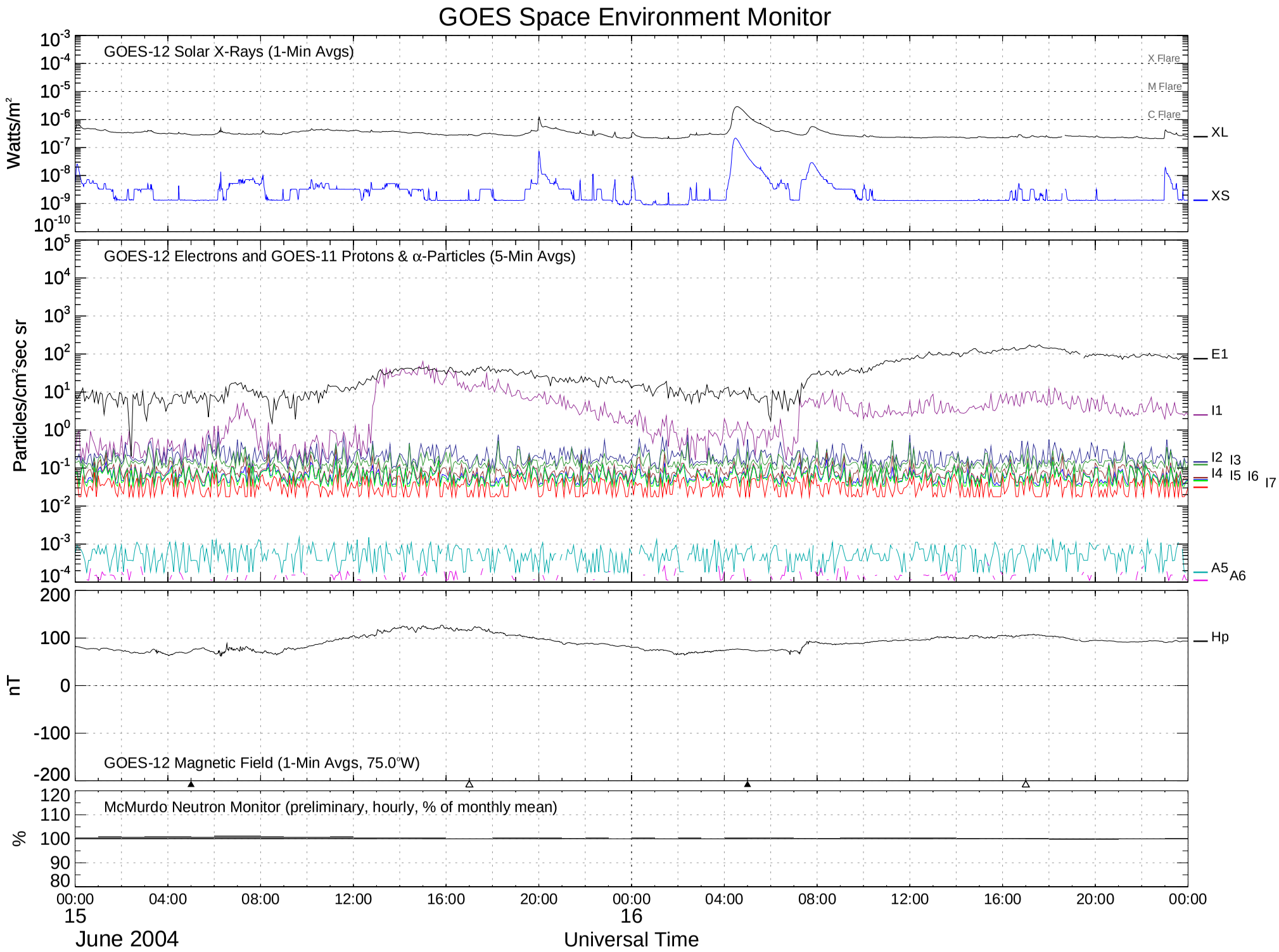
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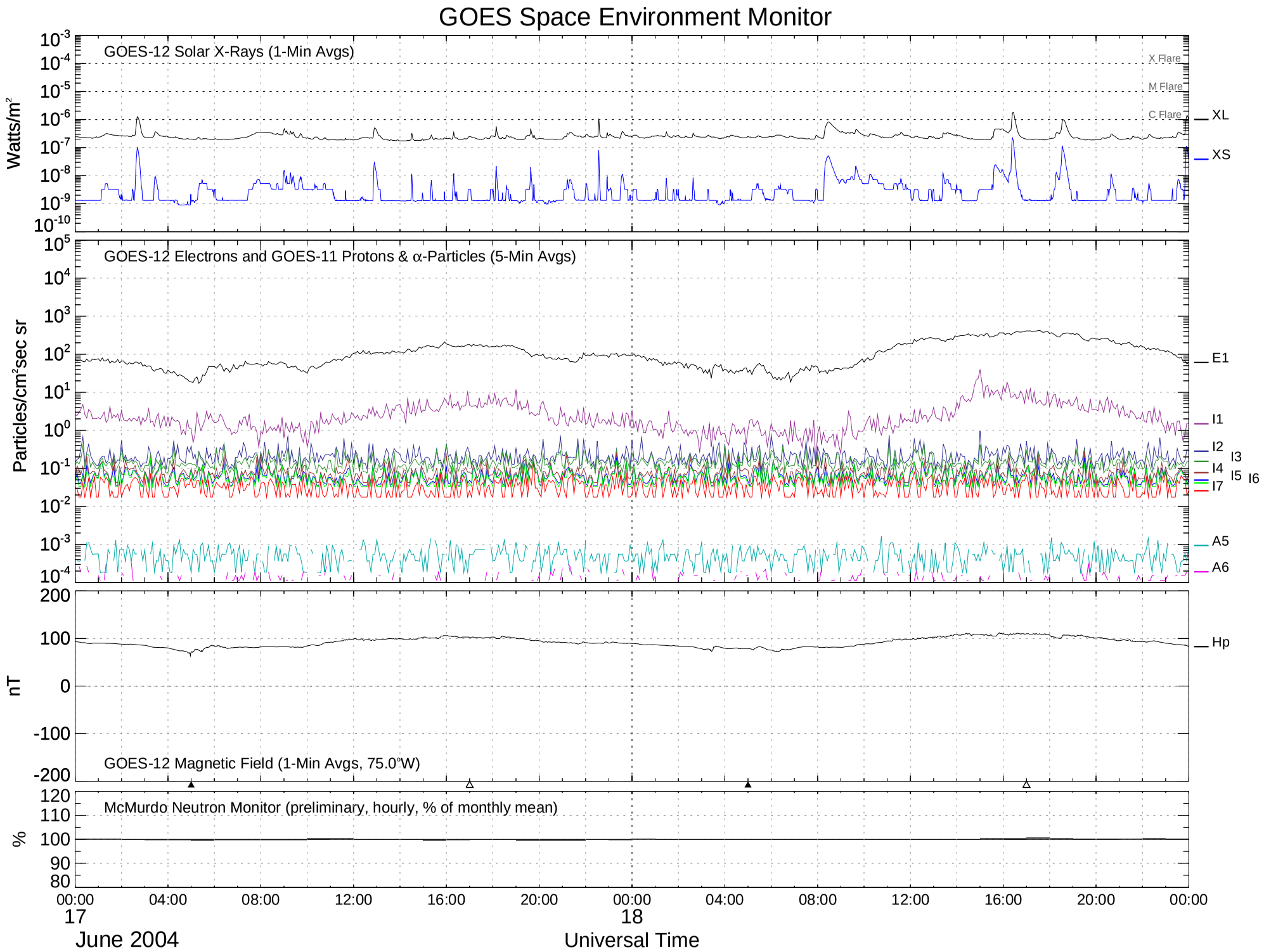
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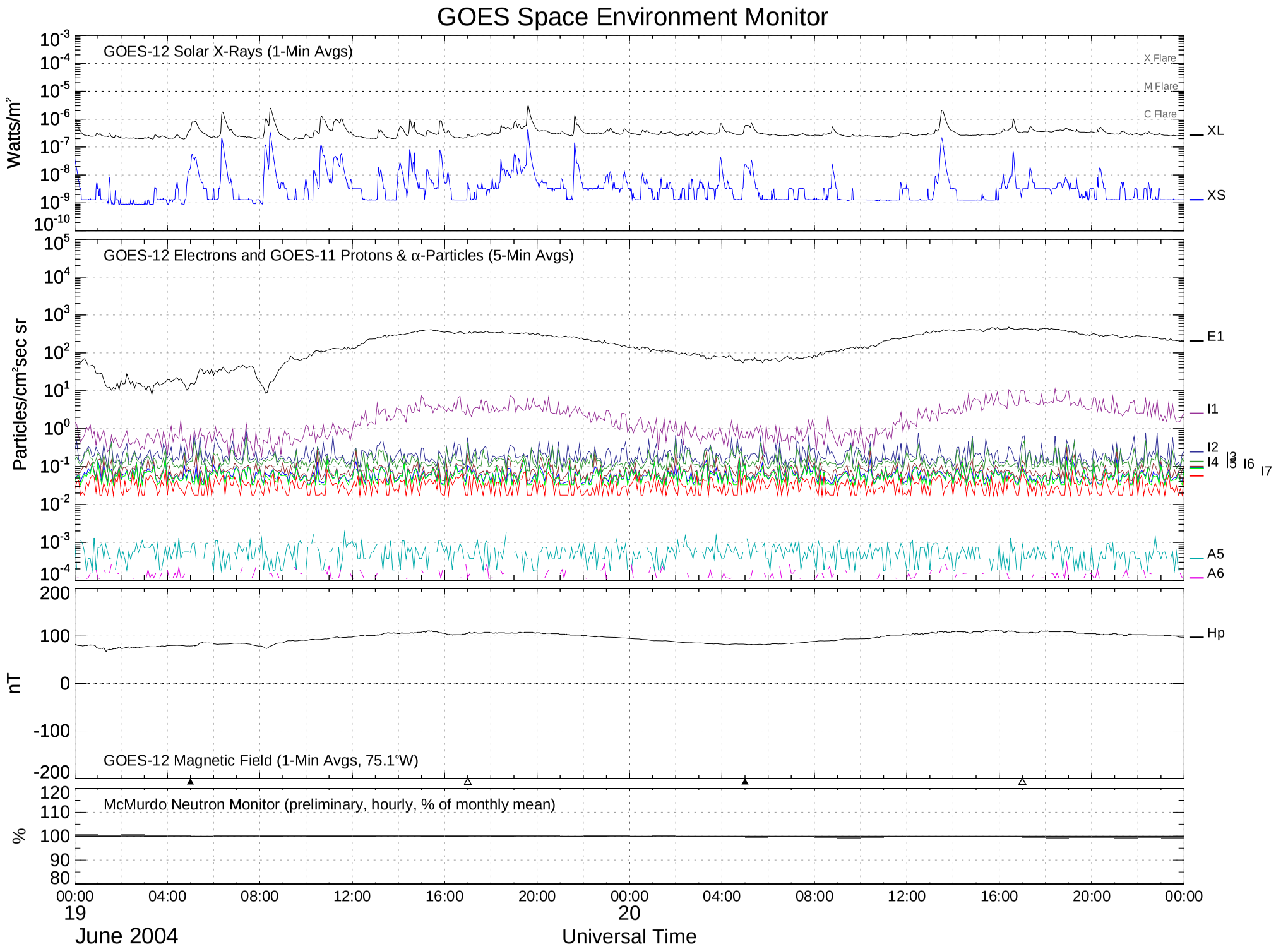
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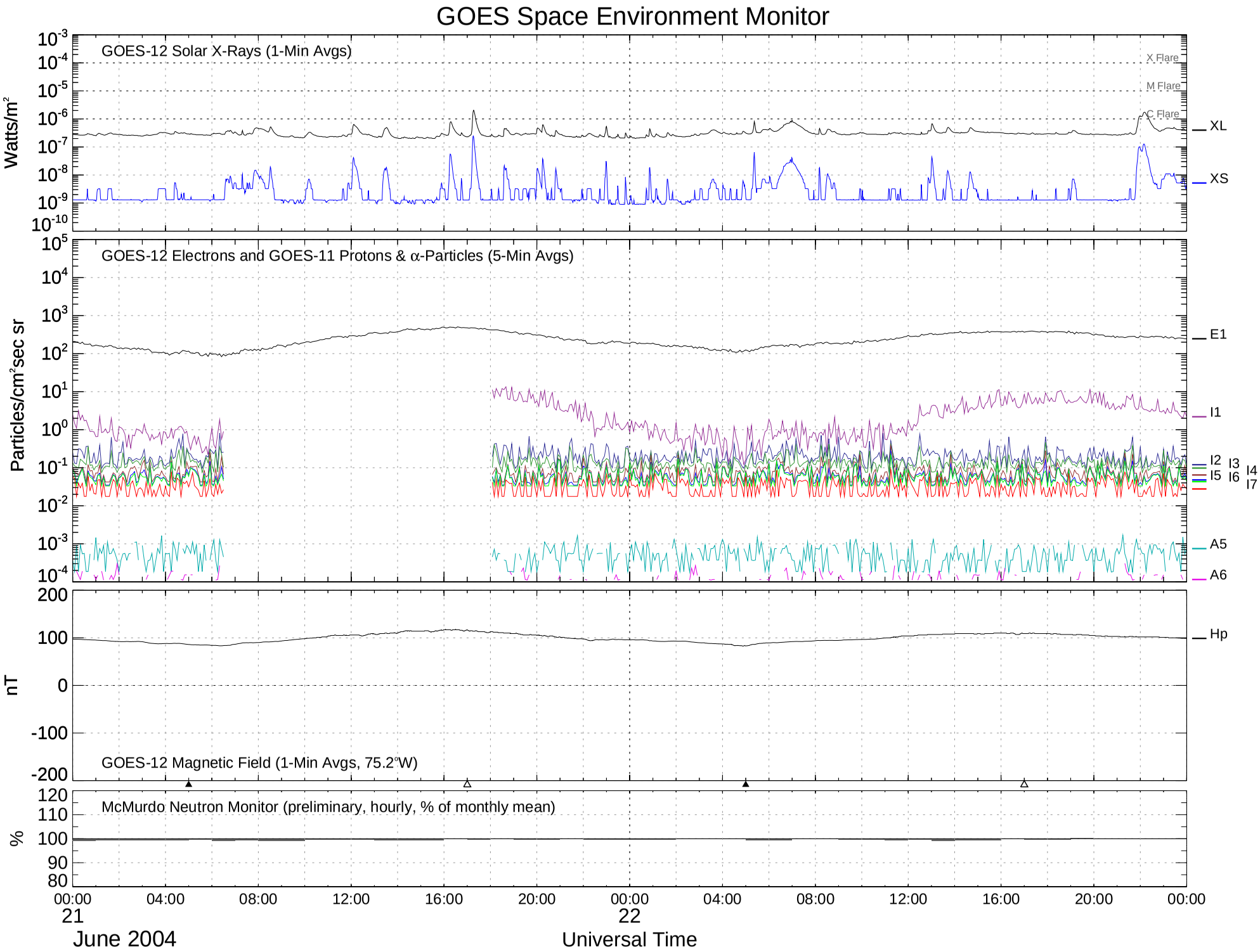
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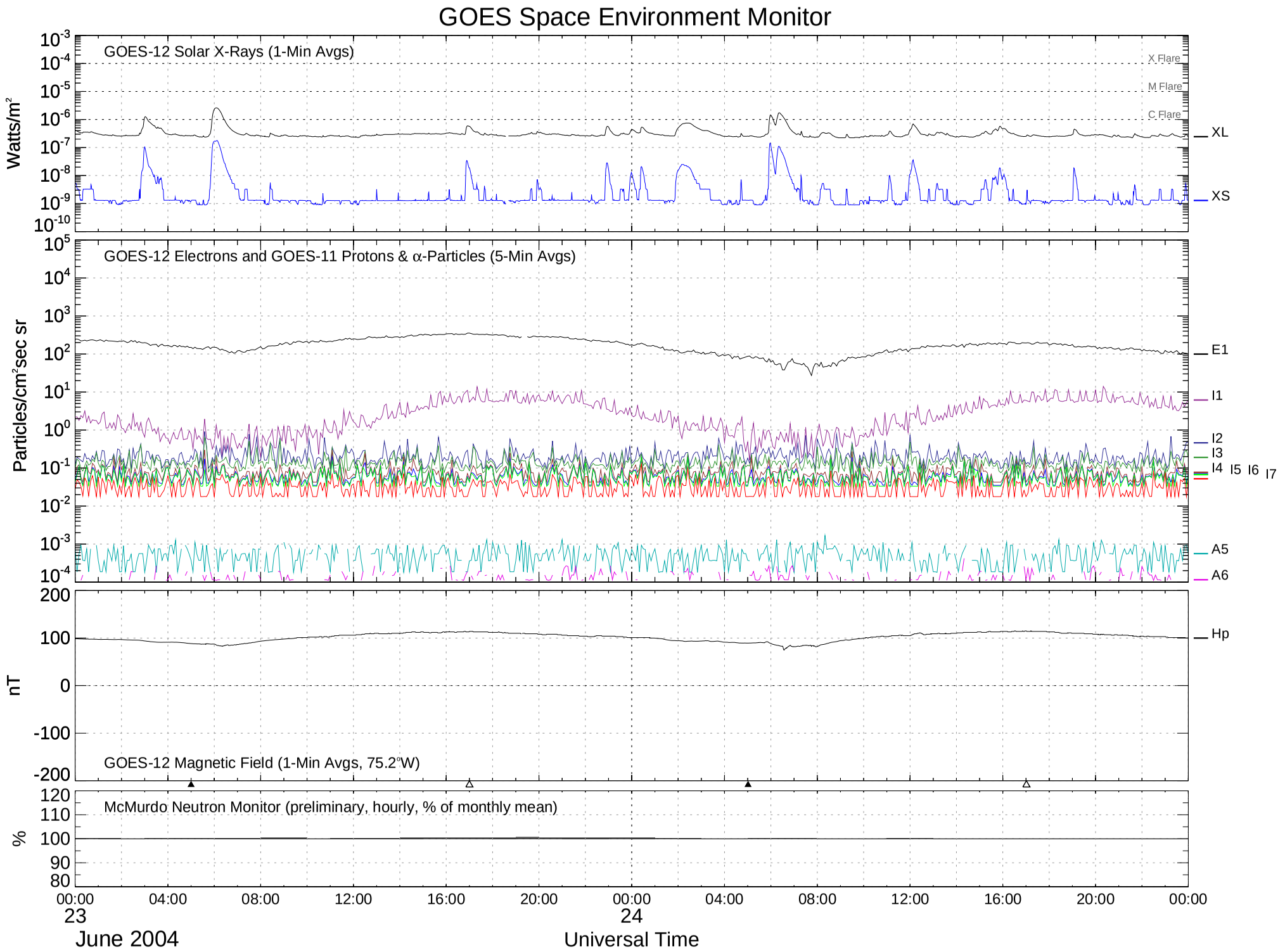
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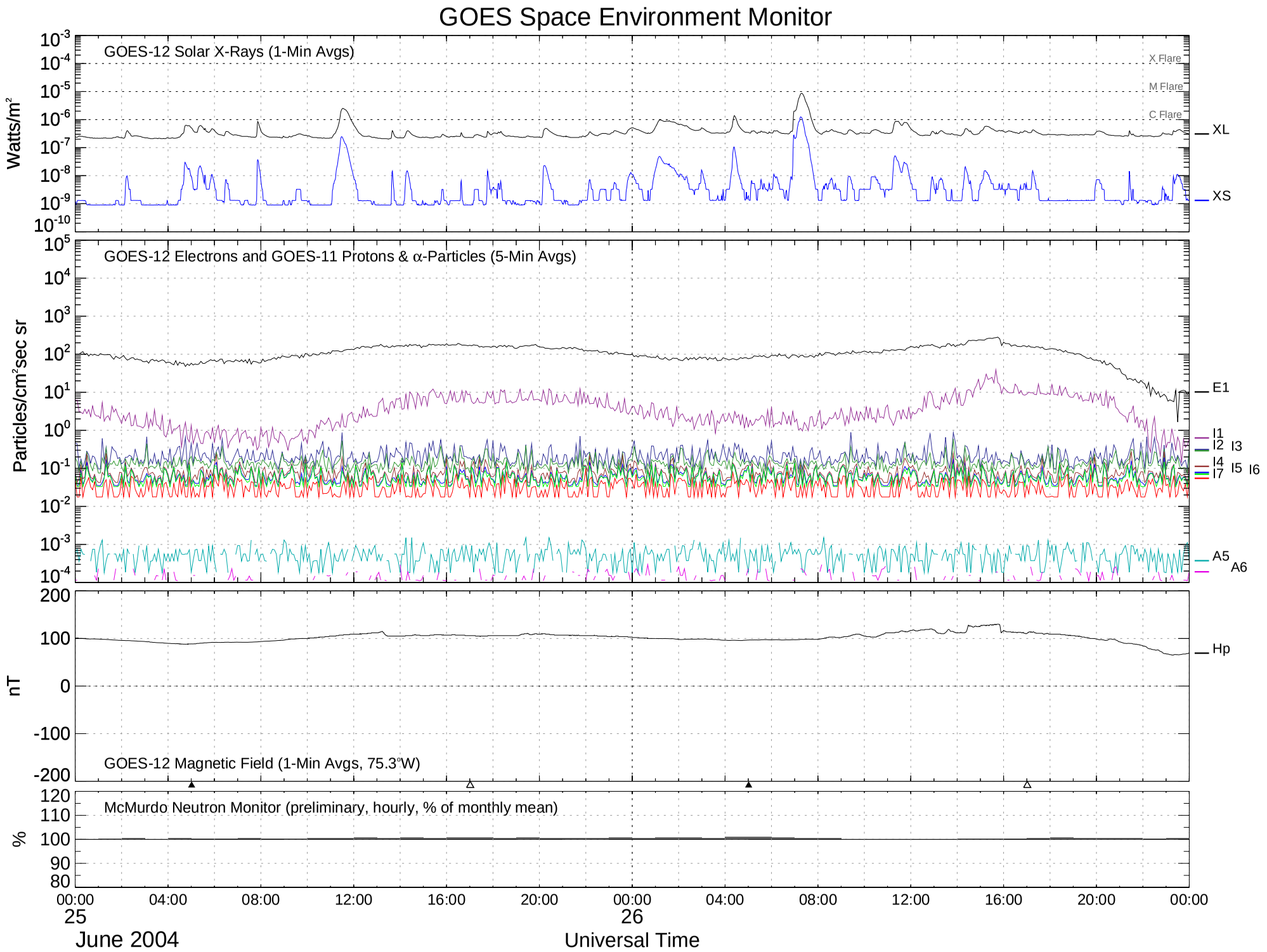
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McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
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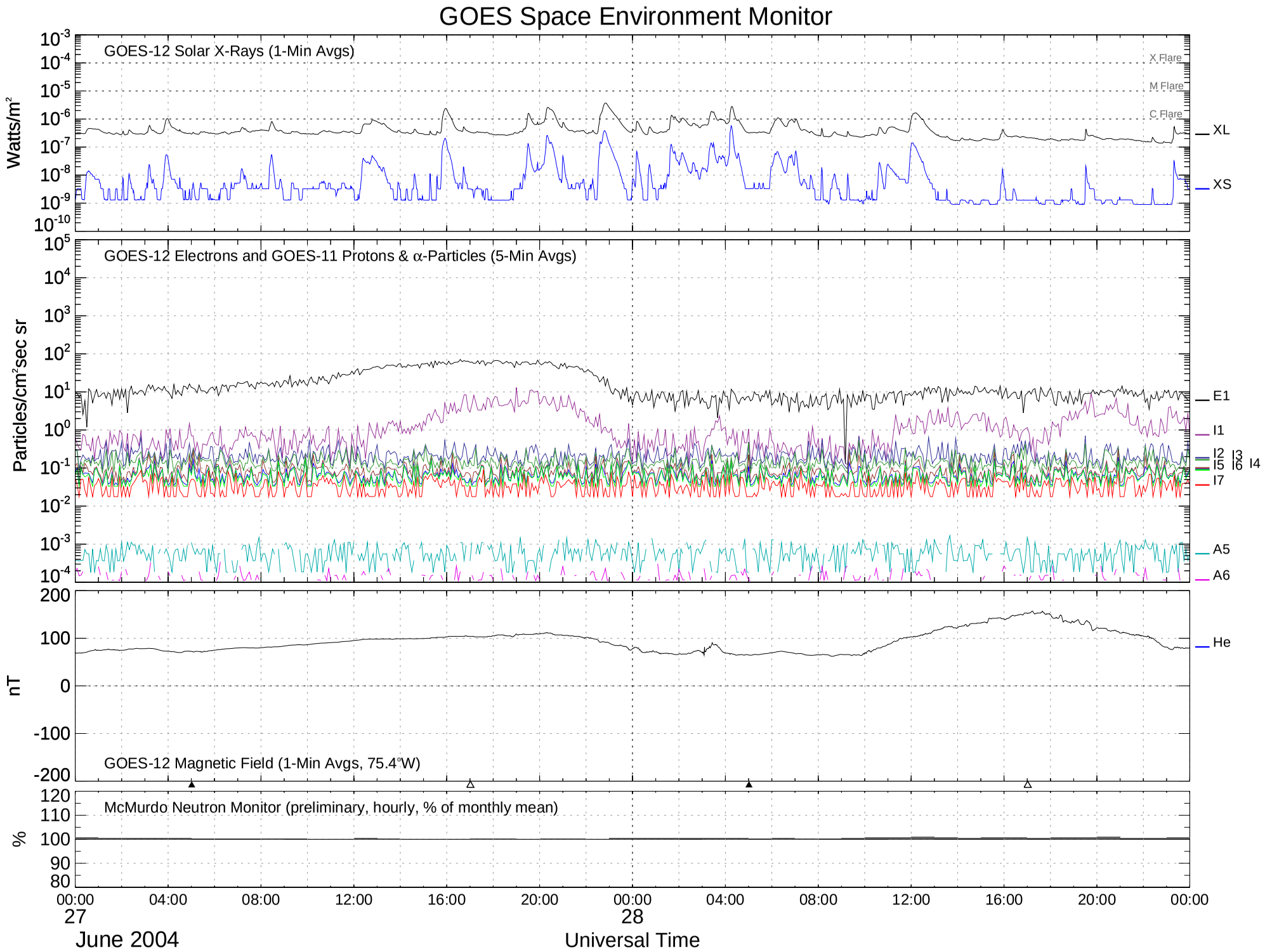
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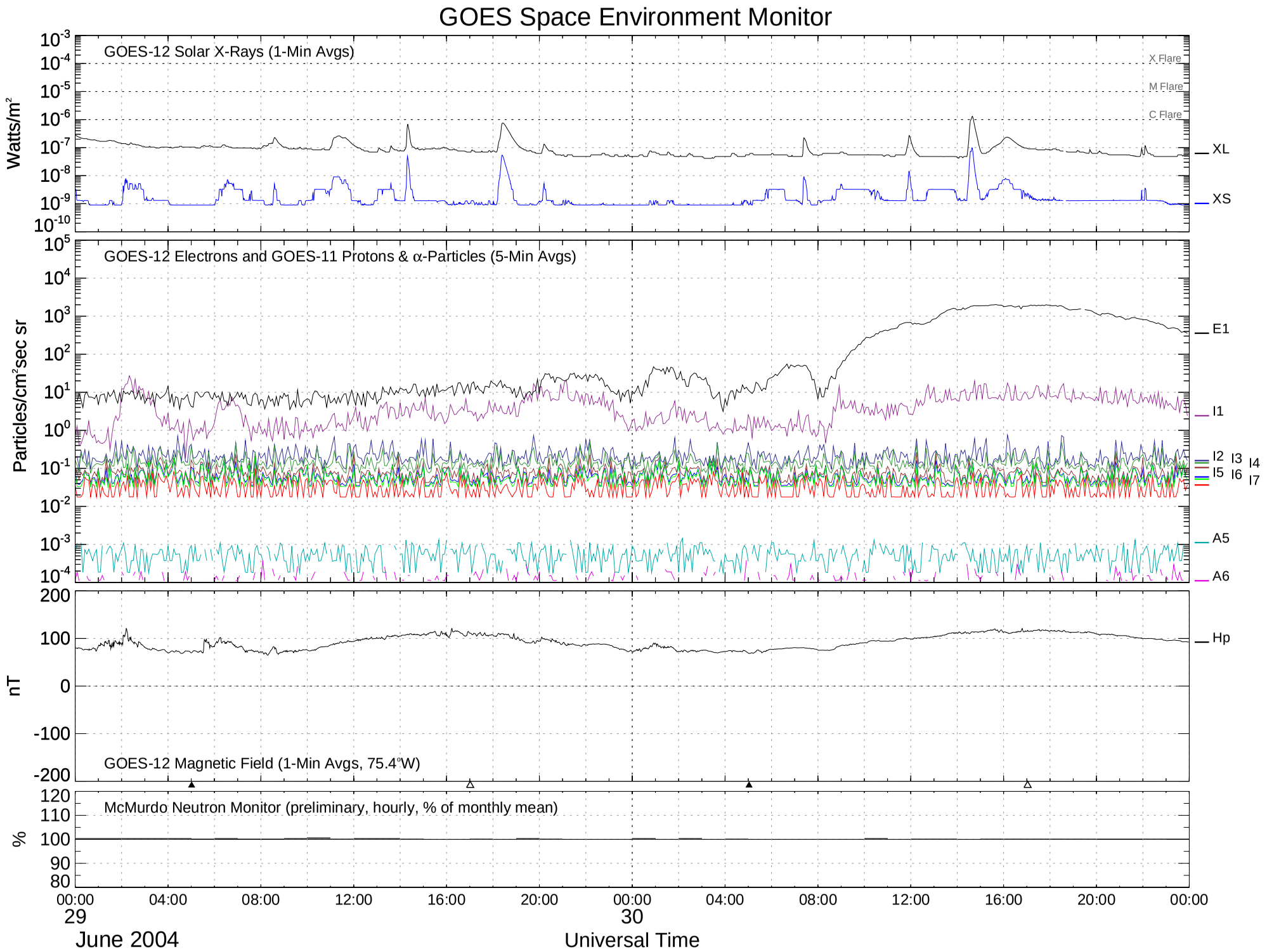
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.4°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
27
June 2004
28
Universal Time


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, 75.4°W)
McMurdo Neutron Monitor (preliminary, hourly, % of monthly mean)
%
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
29
30
June 2004
Universal Time

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

JUNE 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)
153	01	31	54	95	13	10618	S10	W83	1	0	0	01	E	SOL: Eruptive
						10621	S15	E38	0	0	0	01	E	MAG: Active
						10622	S12	E58	0	0	0	01	Q	PRO: Quiet
154	02	01	76	90	19	10618	S08	W89	0	0	0	02	Q	SOL: Quiet
						10621	S16	E25	0	0	0	02	Q	MAG: Active
						10622	S12	E46	0	0	0	02	Q	PRO: Quiet
						10623	N07	W23	0	0	0	02	Q	
						10624	S09	E64	0	0	0	02	Q	
155	03	02	63	90	18	10621	S14	E12	0	0	0	03	Q	SOL: Eruptive
						10622	S12	E32	0	0	0	03	Q	MAG: Active
						10623	N08	W35	0	0	0	03	Q	PRO: Quiet
						10624	S08	E51	0	0	0	03	Q	
156	04	03	77	90	11	10621	S14	W01	0	0	0	04	Q	SOL: Quiet
						10622	S09	E20	0	0	0	04	Q	MAG: Quiet
						10624	S07	E38	0	0	0	04	Q	PRO: Quiet
						10625	S12	W56	0	0	0	04	Q	
157	05	04	55	89	12	10621	S14	W15	0	0	0	05	Q	SOL: Quiet
						10624	S08	E24	0	0	0	05	Q	MAG: Quiet
						10625	S12	W69	0	0	0	05	Q	PRO: Quiet
158	06	05	59	85	10	10621	S14	W28	0	0	0	06	Q	SOL: Quiet
						10624	S08	E11	0	0	0	06	Q	MAG: Quiet
						10626	N05	W06	0	0	0	06	Q	PRO: Quiet
						10627	S08	E30	0	0	0	06	Q	
159	07	06	60	88	13	10621	S14	W41	0	0	0	07	Q	SOL: Eruptive
						10624	S08	W02	0	0	0	07	Q	MAG: Quiet
						10626	N05	W19	0	0	0	07	Q	PRO: Quiet
						10627	S08	E17	0	0	0	07	Q	
160	08	07	82	89	8	10621	S14	W57	1	0	0	08	Q	SOL: Eruptive
						10624	S08	W18	0	0	0	08	Q	MAG: Quiet
						10627	S08	E04	0	0	0	08	Q	PRO: Quiet
						10628	S09	E13	0	0	0	08	Q	
						10629	S04	E22	0	0	0	08	Q	
						10630	N13	E56	0	0	0	08	Q	
161	09	08	72	86	9	10621	S14	W70	1	0	0	09	Q	SOL: Eruptive
						10627	S08	W09	0	0	0	09	Q	MAG: Quiet
						10628	S09	E00	0	0	0	09	Q	PRO: Quiet
						10629	S04	E09	0	0	0	09	Q	
						10630	N13	E43	0	0	0	09	Q	
162	10	09	73	85	15	10622	S11	W59	0	0	0	10	Q	SOL: Quiet
						10627	S09	W22	0	0	0	10	Q	MAG: Active
						10628	S09	W11	0	0	0	10	Q	PRO: Quiet
						10629	S04	W03	0	0	0	10	Q	
						10631	S11	E42	0	0	0	10	Q	
163	11	10	50	83	9	10622	S11	W72	0	0	0	11	Q	SOL: Quiet
						10629	S05	W17	0	0	0	11	Q	MAG: Quiet
						10631	S10	E29	0	0	0	11	Q	PRO: Quiet
						10632	S12	E66	0	0	0	11	Q	
164	12	11	45	84	9	10622	S11	W86	0	0	0	12	Q	SOL: Quiet
						10631	S10	E15	0	0	0	12	Q	MAG: Quiet
						10632	S11	E53	0	0	0	12	Q	PRO: Quiet
165	13	12	28	88	7	10632	S10	E02	0	0	0	13	Q	SOL: Quiet
						10632	S11	E38	0	0	0	13	Q	MAG: Quiet
									0	0	0	13		PRO: Quiet
166	14	13	55	95	9	10631	S10	W10	0	0	0	14	Q	SOL: Eruptive

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

JUNE 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)
						10632	S11	E26	0	0	0	14	Q	MAG: Quiet
						10633	S05	E37	0	0	0	14	Q	PRO: Quiet
						10634	N12	E73	0	1	0	14	E	
167	15	14	77	100	14	10631	S13	W22	0	0	0	15	Q	SOL: Eruptive
						10632	S11	E13	0	0	0	15	Q	MAG: Quiet
						10633	S06	E24	0	0	0	15	Q	PRO: Quiet
						10634	N13	E60	0	0	0	15	E	
						10635	S08	E70	0	0	0	15	Q	
168	16	15	87	109	17	10631	S10	W38	0	0	0	16	Q	SOL: Eruptive
						10632	S12	E00	0	0	0	16	Q	MAG: Quiet
						10634	N11	E48	1	0	0	16	E	PRO: Quiet
						10635	S10	E65	0	0	0	16	E	
169	17	16	113	112	9	10631	S10	W53	0	0	0	17	Q	SOL: Eruptive
						10632	S12	W14	0	0	0	17	Q	MAG: Quiet
						10633	S07	W03	0	0	0	17	Q	PRO: Quiet
						10634	N12	E33	0	0	0	17	E	
						10635	S10	E51	0	0	0	17	Q	
170	18	17	106	111	9	10631	S10	W66	0	0	0	18	Q	SOL: Eruptive
						10632	S12	W27	0	0	0	18	Q	MAG: Quiet
						10633	S08	W15	0	0	0	18	Q	PRO: Quiet
						10634	N12	E20	2	0	0	18	E	
						10635	S11	E38	0	0	0	18	Q	
171	19	18	118	108	12	10631	S11	W81	0	0	0	19	Q	SOL: Eruptive
						10632	S12	W40	0	0	0	19	Q	MAG: Quiet
						10634	N12	E07	1	0	0	19	E	PRO: Quiet
						10635	S12	E25	0	0	0	19	E	
172	20	19	90	113	7	10632	S12	W52	0	0	0	20	Q	SOL: Eruptive
						10634	N12	W05	0	0	0	20	E	MAG: Quiet
						10635	S12	E12	5	0	0	20	E	PRO: Quiet
173	21	20	142	119	3	10632	S12	W65	0	0	0	21	Q	SOL: Eruptive
						10634	N12	W18	0	0	0	21	E	MAG: Quiet
						10635	S12	W01	2	0	0	21	E	PRO: Quiet
						10636	S10	E30	0	0	0	21	Q	
174	22	21	139	116	5	10632	S12	W78	0	0	0	22	Q	SOL: Eruptive
						10634	N12	W31	0	0	0	22	E	MAG: Quiet
						10635	S12	W14	3	0	0	22	E	PRO: Quiet
						10636	S10	E17	0	0	0	22	Q	
						10637	N08	E63	0	0	0	22	Q	
175	23	22	113	117	2	10632	S12	W91	0	0	0	23	Q	SOL: Eruptive
						10634	N12	W44	0	0	0	23	E	MAG: Quiet
						10635	S12	W27	2	0	0	23	E	PRO: Quiet
						10636	S10	E04	0	0	0	23	Q	
						10637	N08	E50	0	0	0	23	Q	
176	24	23	104	113	4	10634	N12	W59	0	0	0	24	Q	SOL: Eruptive
						10635	S12	W40	2	0	0	24	E	MAG: Quiet
						10636	S10	W11	0	0	0	24	Q	PRO: Quiet
						10637	N08	E37	0	0	0	24	Q	
177	25	24	94	108	5	10634	N12	W77	0	0	0	25	Q	SOL: Eruptive
						10635	S11	W53	2	0	0	25	E	MAG: Quiet
						10636	S10	W24	0	0	0	25	Q	PRO: Quiet
						10637	N08	E24	0	0	0	25	Q	
178	26	25	83	103	3	10634	N12	W88	0	0	0	26	Q	SOL: Eruptive
						10635	S11	W67	0	0	0	26	E	MAG: Quiet
						10636	S09	W36	0	0	0	26	Q	PRO: Quiet
						10637	N08	E11	1	0	0	26	Q	

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

JUNE 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)
179	27	26	64	99	10	10635	S11	W80	2	0	0	27	E	SOL: Eruptive
						10636	S16	W49	0	0	0	27	Q	MAG: Quiet
						10637	N09	W03	0	0	0	27	Q	PRO: Quiet
						10638	N07	E22	0	0	0	27	Q	
180	28	27	48	97	5	10635	S10	W90	0	0	0	28	Q	SOL: Quiet
						10637	N08	W16	1	0	0	28	Q	MAG: Quiet
						10640	S09	E68	0	0	0	28	Q	PRO: Quiet
181	29	28	45	89	16	10637	N09	W31	0	0	0	29	Q	SOL: Quiet
						10639	N13	E60	0	0	0	29	Q	MAG: Quiet
						10640	S07	E56	0	0	0	29	Q	PRO: Quiet
182	30	29	50	85	22	10637	N08	W45	0	0	0	30	Q	SOL: Quiet
						10639	N13	E46	0	0	0	30	Q	MAG: Quiet
						10640	S07	E41	0	0	0	30	Q	PRO: Quiet

(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

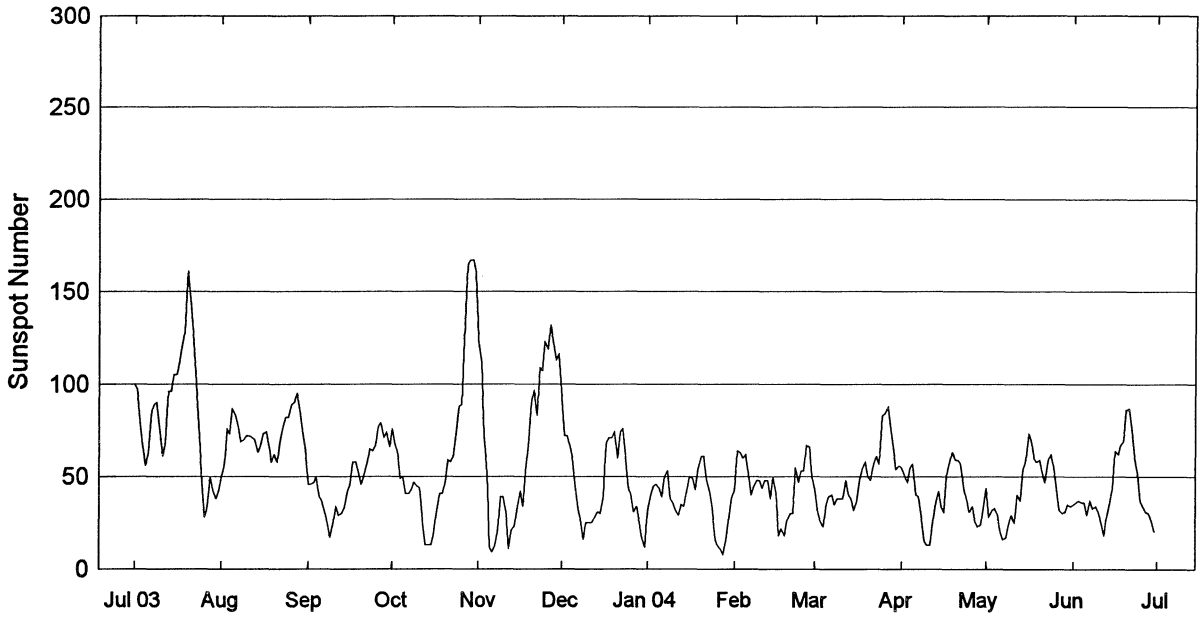
'Quiet'		
'Active'	conditions expected	(A>=20 or K=4)
'Minor'	storm expected	(A>=30 or K=5)
'Major'	storm expected	(A>=50 or K>=6)
'Severe'	storm expected	(A>=100 or K>=7)
'IP'	magstorm in progress	(A>=30 or K>=4)
'Warning'	(activity levels are expected to increase, but no numerical forecast given)	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

Proton (PRO) Geoadvice

'Quiet'		
'Proton'	event expected	(10pfu at >10MeV)
'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 - NONE

International Relative Sunspot Numbers
Jul 2003- Jun 2004

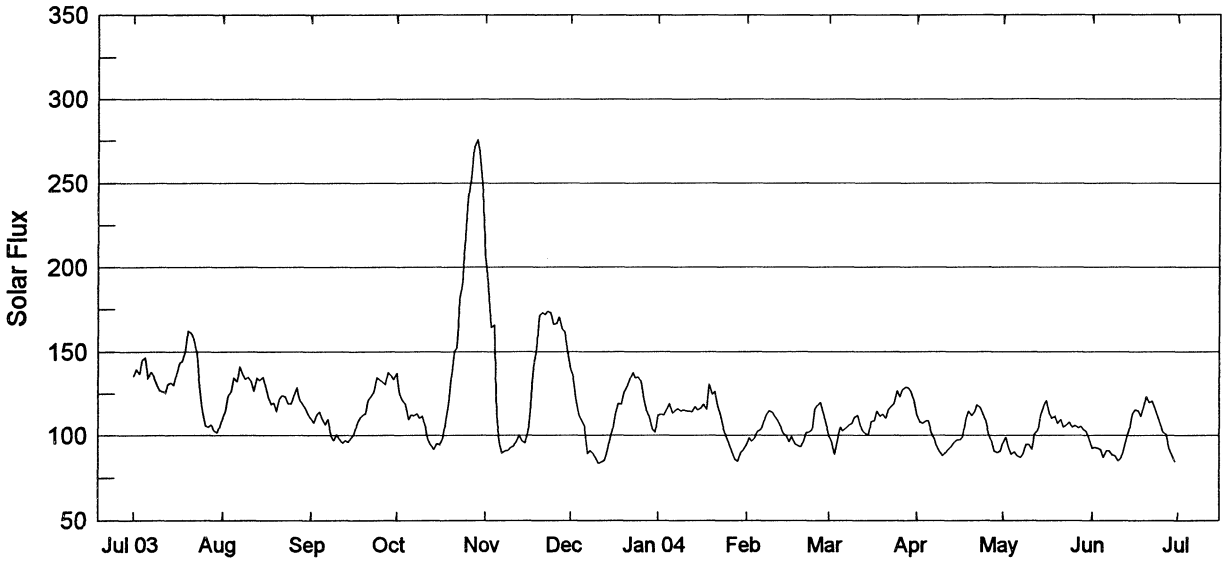


Day	Jul 03	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr*	May*	Jun*
1	100	49	46	76	124	92	32	43	44	55	44	35
2	97	56	46	68	112	72	40	64	31	51	28	36
3	80	76	47	62	72	72	45	63	26	47	32	37
4	67	73	50	49	52	66	46	60	23	55	33	36
5	56	87	39	50	12	59	44	62	35	57	29	36
6	63	83	37	41	9	45	39	51	39	40	20	29
7	85	78	30	41	12	32	50	40	40	39	16	37
8	89	69	25	43	21	26	53	45	35	27	17	33
9	90	70	17	47	39	16	38	48	38	15	24	34
10	74	72	25	45	39	25	36	48	38	13	29	31
11	61	72	34	44	30	25	32	44	38	13	25	26
12	68	71	29	25	11	25	29	48	48	25	40	18
13	96	70	30	13	21	28	35	48	40	35	37	28
14	96	63	33	13	23	31	34	38	38	42	54	35
15	105	67	42	13	33	30	43	50	32	34	58	44
16	105	73	46	19	42	39	50	41	37	31	73	64
17	112	74	58	30	34	68	49	18	48	50	69	62
18	121	67	58	41	52	71	43	22	54	58	60	67
19	128	58	52	41	70	71	54	18	58	63	58	69
20	161	62	46	47	90	74	61	26	50	59	59	86
21	146	58	50	59	97	60	61	30	48	59	52	87
22	123	69	57	58	83	74	49	30	57	57	47	76
23	100	76	65	61	109	76	42	55	61	43	59	61
24	78	82	64	75	107	59	34	47	57	38	62	52
25	47	82	67	88	123	44	16	53	83	31	55	37
26	28	89	77	89	119	40	13	53	84	34	43	34
27	33	90	79	133	132	31	11	67	88	26	32	31
28	50	95	71	165	121	34	8	66	76	23	30	30
29	43	85	74	167	113	26	16	50	66	24	31	26
30	38	74	66	167	116	17	27		54	34	35	20
31	42	65		160		12	38		56		34	
Mean	83.3	72.7	48.7	65.5	67.3	46.5	37.7	45.8	49.1	39.3	41.5	43.2

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Jul 2003 - Jun 2004

Adjusted to 1 AU



Day	Jul 03	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun
1	135.6	110.6	110.1	137.1	207.2	139.3	112.2	94.5	100.0	112.6	95.7	92.5
2	139.3	114.7	107.6	125.0	187.4	135.4	112.6	98.5	97.1	108.1	99.1	93.0
3	136.7	123.6	112.4	120.3	164.2	120.3	112.3	96.6	88.9	107.4	92.8	92.6
4	144.8	126.0	114.1	119.0	165.6#	112.5	115.5	98.6	95.9	109.0	88.9	92.0
5	146.7	134.4	109.8	109.6	112.1	108.5	119.0	102.5	105.0	108.9	90.1	87.0
6	134.0	132.4	106.6	112.0	96.1	105.7	113.4	103.7	102.9	101.6	88.0	91.0
7	137.8	140.9	109.4	111.8	89.4	89.3	114.9	108.1	104.6	98.4	86.8	91.2
8	135.7	136.6	100.3	113.1	91.0	90.9	116.1	113.1	106.3	93.8	88.9	88.6
9	130.2	133.6	97.3	110.5	91.2	89.4	114.4	114.7	107.2	90.3	95.0	87.9
10	126.9	134.7	100.6	111.4	92.8	86.5	115.3	113.5	111.1	88.1	94.8	85.0
11	126.1	132.7	98.0	105.4	93.7	83.4	114.6	111.2	111.7	90.0	92.0	86.5
12	125.5	126.6	95.6	97.4	96.7	84.5	114.4	109.3	106.2	91.8	100.9	90.7
13	130.7	134.3	97.3	94.0	100.0	85.0	114.1	105.1	102.6	93.6	103.0	98.2
14	131.4	133.1	95.8	91.9	96.8	89.5	117.1	101.1	101.3	95.8	112.1	103.1
15	129.9	134.7	98.4	95.3	95.6	97.7	115.2	99.6	100.3	97.4	117.9	112.9
16	137.5	130.1	100.4	94.6	102.0	103.0	116.4	96.3	108.5	97.6	121.0	115.1
17	143.2	122.3	107.0	98.1	118.2	113.8	118.6	99.5	108.8	99.0	113.7	114.9
18	144.3	118.7	110.2	107.8	141.0	119.1	115.6	95.4	114.4	110.0	110.4	111.3
19	150.8	119.5	112.1	119.4	151.5	118.6	130.3	94.2	111.3	114.5	111.4	116.4
20	162.4	114.5	112.9	133.9	171.0	125.9	124.8	93.2	112.7	111.8	107.2	123.0
21	160.7	122.0	120.9	150.2	172.8	129.1	126.0	96.0	110.4	113.9	109.6	119.6
22	157.4	123.7	123.5	152.0#	171.9	133.2	117.9	101.7	115.6	118.4	105.0	120.5
23	148.7	122.9	125.7	181.3#	173.8	137.4	111.6	102.1	117.6	116.6	106.6	116.2
24	129.2	119.0	134.3	188.5	172.8	134.4	104.1	103.4	119.0	112.9	107.9	111.9
25	115.1	119.0	133.4	219.0	166.3	134.6	99.1	116.1	126.4	108.4	105.1	106.3
26	105.9	123.4	131.8	240.6*	166.5	132.7	95.0	118.4	123.2	100.9	106.1	102.2
27	104.9	128.3	130.3	254.0	170.1	122.4#	90.8	119.8	127.2	96.4	104.6	100.4
28	106.6	121.1	137.6	270.9	163.2	115.1	85.9	113.6	128.6	90.7	105.2	92.4
29	103.0	118.7	135.6	275.4#	161.4	110.7	84.8	108.0	128.3	89.8	104.0	87.9
30	101.7	116.2	133.3	267.6	148.6	104.2	89.9		126.4	90.8	102.4	84.5
31	105.2	111.8		245.2		102.1	91.6		121.0		98.1	
Mean	131.9	125.2	113.4	150.1	137.7	111.4	110.4	104.4	111.0	101.9	102.1	100.5

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

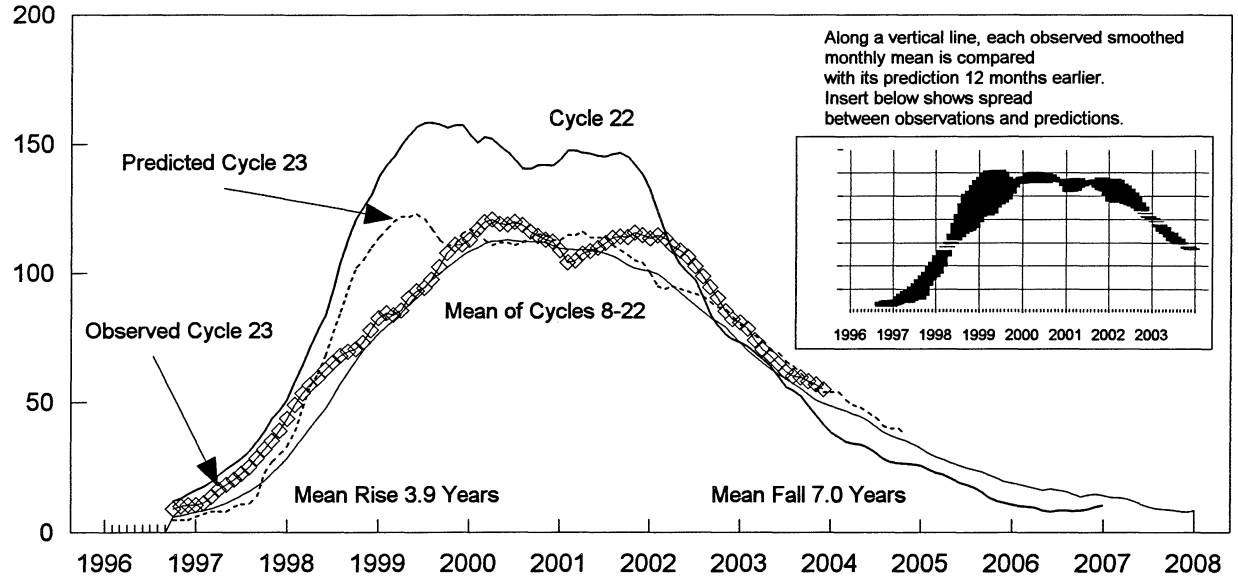
DAILY SOLAR INDICES

June 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	153	27	35	37	90.0	521	230	149	92.5	97	56	35	29	10
2	154	1	36	34	90.4	519	224	150	93.0	97	56	35	26	14
3	155	2	37	36	90.0	545	227	152	92.6	99	59	36	26	13
4	156	3	36	32	89.4	543	226	146	92.0	93	58	36	27	10
5	157	4	36	30	84.5	529	220	146	87.0	94	58	36	27	12
6	158	5	29	23	88.4	520	227	148	91.0	101	59	36	27	13
7	159	6	37	31	88.5	517	228	148	91.2	96	60	38	28	10
8	160	7	33	27	86.0	523	220	140	88.6	91	58	36	27	10
9	161	8	34	31	85.2	525	209	136	87.9	86	56	36	27	11
10	162	9	31	26	82.5	522	211	136	85.0	91	56	36	27	10
11	163	10	26	23	83.9	524	227	142	86.5	92	55	32	25	11
12	164	11	18	20	88.0	543	224	145	90.7	94	56	32	28	26
13	165	12	28	29	95.2	535	231	150	98.2	99	59	37	30	31
14	166	13	35	35	99.9	479	227	159	103.1	110	62	39	35	
15	167	14	44	50	109.4	535	224	162	112.9	114	67	38	36	17
16	168	15	64	66	111.5	533	237	167	115.1	120	69	40	36	31
17	169	16	62	63	111.3	511	237	165	114.9	120	68	38	37	44
18	170	17	67	70	107.8	477	236	177	111.3	118	68	37	38	
19	171	18	69	73	112.7	518	239	171	116.4	121	68	40	38	41
20	172	19	86	91	119.1	533	239	177	123.0	131	71	40	32	40
21	173	20	87	89	115.8	534	237	173	119.6	122	70	40	31	40
22	174	21	76	72	116.7	524	231	164	120.5	128	74	41	33	33
23	175	22	61	57	112.5	540	244	169	116.2	120	69	42	49	39
24	176	23	52	46	108.3	529	235	174	111.9	120	67	39	33	13
25	177	24	37	34	102.9	529	239	160	106.3	113	64	35	27	16
26	178	25	34	27	98.9	483	228	163	102.2	106	61	34	28	12
27	179	26	31	25	97.2	539	232	151	100.4	105	61	38	28	12
28	180	27	30	29	89.4	533	230	147	92.4	100	59	37	27	12
29	181	1	26	27	85.1	520	217	143	87.9	89	57	37	27	14
30	182	2	20	22	81.8	532	216	137	84.5	89	55	37	28	12
MEAN			43.2	41.9	97.4	523	228	154	100.5	105	61	37	30	19

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	60	58	57	57	66
2004	54	53	52	51	49	48	46	43	41	40	39	37	46
	(3)	(4)	(6)	(7)	(8)	(9)	(11)	(13)	(15)	(16)	(17)	(18)	(11)
2005	36	34	32	31	29	28	27	26	25	25	23	22	28
	(19)	(19)	(19)	(20)	(20)	(19)	(19)	(19)	(19)	(19)	(18)	(17)	(19)

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.**

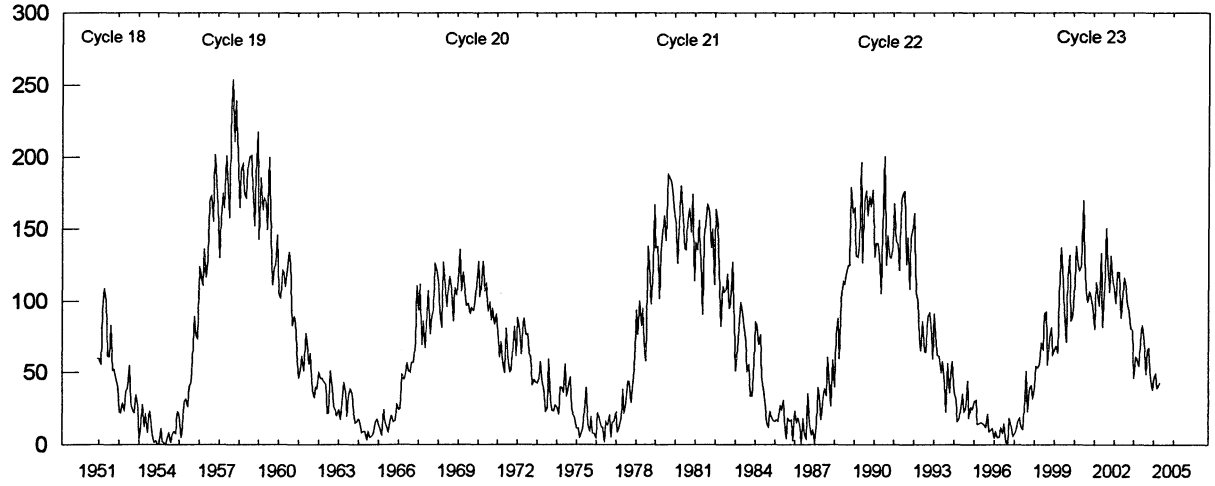
+ April 2000 marks Cycle 23 maximum.

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 Mar 2004 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the December 2004 prediction. There exists a 90% chance that in December, the actual smoothed number will fall somewhere between 19 and 55.

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 - Jun 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	83.3	72.7	48.7	65.5	67.3	46.5	63.9	
2004	37.7	45.8	49.1	39.3	41.5	43.2							42.8	

Values are preliminary after March, 2004. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

JUNE 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0114	0118	0120			10618			6		B 2.7						8.8E-05
GOES		0422	0425	0432						10		B 2.1						1.2E-04
GOES		1447	1454	1458			10618			11		B 4.1						2.1E-04
GOES		1833	1837	1841			10618			8		B 1.9						8.1E-05
GOES		2033	2039	2048			10621			15		B 3.5						2.6E-04
GOES	02	0957	1048	1206						129		B 2.4						1.7E-03
GOES		1327	1331	1336			10621			9		B 2.2						1.1E-04
GOES		1649	1653	1655			10621			6		B 1.7						5.2E-05
GOES		1744	1747	1750			10621			6		B 1.9						5.6E-05
GOES	03	1040	1043	1046						6		B 1.7						5.2E-05
GOES		1224	1228	1230			10621			6		B 2.4						7.9E-05
GOES	05	0555	0604	0612			10625			17		B 2.3						1.8E-04
GOES		1238	1244	1248						10		B 1.9						1.1E-04
GOES		1332	1350	1407						35		B 2.6						4.4E-04
GOES		2118	2123	2127			10627			9		B 2.0						8.0E-05
GOES	06	0117	0124	0131			10621			14		B 1.5						1.1E-04
GOES		0203	0207	0212			10621			9		B 1.2						5.7E-05
GOES		1125	1129	1132			10627			7		B 1.7						6.2E-05
GOES		1259	1303	1307			10627			8		B 1.3						5.8E-05
GOES		1502	1506	1508			10621			6		B 1.3						3.8E-05
GOES		1552	1555	1557			10621			5		B 1.6						3.8E-05
GOES		2226	2253	2314			10624			48		B 3.4						7.3E-04
GOES		2227	2445	2523	S18	W43	10621			176	SF	C 2.5						9.2E-03T
LEAR	07	0026	0041	0101	S18	W43	10621	06	3.7	35	SF		3	E		23		UF
GOES		0236	0255	0308						32		B 5.0						9.2E-04
GOES		2010	2015	2020			10621			10		B 1.3						6.9E-05
GOES		2348	2352	2354			10621			6		B 2.1						6.2E-05
GOES	08	1038	1049	1056			10621			18		B 2.0						1.7E-04
GOES		1841	1847	1851	S16	W66	10621			10	SF	B 8.0						2.8E-04
HOLL		1844	1847	1853	S16	W66	10621	06	3.8	9	SF		3	E		55		F
GOES		2325	2328	2331			10621			6		B 1.0						3.3E-05
GOES	09	1700	1714	1740			10621			40		B 2.8						5.7E-04
GOES	10	0256	0312	0341			10621			45		B 4.0						8.1E-04
GOES	11	1953	2011	2036						43		B 2.1						4.5E-04
GOES	12	0724	0738	0750						26		B 8.9						9.9E-04
GOES		1236	1239	1242						6		B 2.2						6.8E-05
GOES		1831	1834	1836						5		B 3.8						1.0E-04
GOES		1837	1841	1843						6		C 1.9						3.8E-04
GOES		1940	1943	1945						5		C 1.1						1.7E-04
GOES	13	0238	0242	0247			10634			9		B 8.9						4.3E-04
GOES		0427	0444	0452			10634			25		C 4.1						3.3E-03
GOES		1127	1156	1215			10634			48		M 1.0						2.0E-02
GOES		1615	1618	1620						5		B 5.1						1.4E-04
GOES		1949	1953	1959						10		B 8.5						4.5E-04
GOES		2032	2036	2039						7		B 9.9						3.7E-04
GOES		2307	2316	2322						15		B 6.9						5.5E-04
GOES		2352	2356	2401						9		B 5.8						2.7E-04
GOES	14	0256	0300	0304			10634			8		B 6.2						2.4E-04
GOES		0338	0356	0412						34		C 1.7						2.6E-03
GOES		0838	0846	0852			10634			14		C 1.5						8.1E-04
GOES		1335	1339	1342						7		B 5.7						1.9E-04
GOES	15	0001	0007	0014			10635			13		B 6.9						4.9E-04
GOES		1956	2001	2005	N10	E40	10634			9	1F	C 1.1						4.6E-04
HOLL		1958	2000	2007	N10	E40	10634	06	18.8	9	1F		3	E		115		FH
GOES		2359	2403	2409			10635			10		B 3.5						1.9E-04

Hα SOLAR FLARES

JUNE 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	16	0415	0434	0455						40		C 2.8						5.2E-03
GOES		2257	2302	2319			10635			22		B 4.2						4.6E-04
GOES	17	0234	0241	0248	N09	E24	10634			14	SF	C 1.2						7.1E-04
LEAR		0238	0241	0253	N09	E24	10634	06	18.9	15	SF		3	E		46		FE
GOES		0323	0328	0335						12		B 3.6						2.3E-04
GOES		0857	0901	0904			10635			7		B 4.7						1.7E-04
GOES		1249	1255	1301			10635			12		B 5.1						2.9E-04
GOES		1427	1431	1433						6		B 3.1						9.0E-05
GOES		1616	1619	1621						5		B 3.4						8.4E-05
GOES		1805	1809	1811						6		B 5.2						1.4E-04
GOES		1935	1938	1940	N12	E17	10634			5	SF	B 4.5						1.1E-04
HOLL		1938	1938	1944	N12	E17	10634	06	19.1	6	SF		3	E		41		FH
GOES		2230	2234	2236						6		C 1.0						2.0E-04
GOES		2253	2256	2258			10635			5		B 3.3						8.4E-05
GOES	18	0126	0129	0131						5		B 3.6						9.5E-05
GOES		0235	0238	0241			10635			6		B 3.2						1.0E-04
GOES		0815	0828	0844			10634			29		B 8.3						1.1E-03
GOES		1322	1336	1351			10635			29		B 3.3						5.4E-04
GOES		1534	1557	1610			10634			36		B 4.6						9.3E-04
GOES		1619	1626	1630			10635			11		C 1.8						8.5E-04
GOES		1828	1837	1843			10635			15		B 9.7						6.9E-04
GOES		2348	2356	2403	N13	E08	10634			15	SF	C 1.3						8.5E-04
HOLL		2352	2352	2403	N13	E08	10634	06	19.6	11	SF		3	E		35		F
LEAR		2352	2352	2409	N10	E06	10634	06	19.4	17	SF		3	E		24		F
GOES	19	0500	0513	0518			10635			18		B 8.3						7.9E-04
GOES		0616	0623	0630	S08	E17	10635			14	SF	C 1.8						9.7E-04
LEAR		0620	0625	0633	S08	E17	10635	06	20.5	13	SF		3	E		26		F
SVTO		0621	0624	0630	S11	E25	10635	06	21.1	9	SF		3	E		19		F
GOES		0808	0816	0823			10635			15		C 1.0						6.2E-04
GOES		0823	0828	0833	S11	E22				10	SF	C 2.4						1.1E-03
SVTO		0827	0827	0834	S11	E22	10635	06	21.0	7	SF		3	E		13		F
GOES		1017	1041	1052			10635			35		C 1.2						1.3E-03
GOES		1108	1132	1137			10635			29		C 1.0						1.4E-03
GOES		1304	1308	1320			10635			16		B 4.0						3.3E-04
GOES		1357	1405	1414			10635			17		B 5.4						4.6E-04
GOES		1425	1430	1434			10635			9		B 9.9						3.6E-04
GOES		1511	1517	1529			10635			18		B 3.9						3.8E-04
GOES		1543	1548	1555	S11	E19	10635			12	SF	B 8.8						4.7E-04
HOLL		1547	1547	1555	S11	E19	10635	06	21.1	8	SF		3	E		14		H
GOES		1823	1827	1839			10635			16		B 5.9						4.7E-04
GOES		1858	1904	1907	S11	E16	10635			9	SF	B 8.6						3.9E-04
HOLL		1901	1906	1908	S11	E16	10635	06	21.0	7	SF		3	E		11		F
GOES		1930	1937	1941	S11	E16	10635			11	SF	C 3.0						1.2E-03
HOLL		1933	1934	1942	S11	E16	10635	06	21.0	9	SF		3	E		33		F
HOLL		1945	1948	1955	S10	E19	10635	06	21.2	10	SF		3	E		18		F
GOES		2133	2138	2142			10635			9		C 1.3						4.5E-04
GOES	20	0352	0357	0403			10635			11		B 6.9						3.7E-04
GOES		0455	0517	0522			10635			27		B 7.1						9.2E-04
GOES		0843	0847	0851	S12	E07	10635			8	SF	B 5.2						2.1E-04
LEAR		0846	0846	0851	S12	E07	10635	06	20.9	5	SF		3	E		14		
GOES		1323	1332	1339	S08	E00	10635			16	SF	C 2.0						1.4E-03
HOLL		1326	1328	1347	S08	E00	10635	06	20.5	21	SF		3	E		55		
SVTO		1326	1329	1344	S11	E07	10635	06	21.1	18	SF		3	E		57		F
GOES		1632	1637	1640			10635			8		C 1.0						3.7E-04
GOES	21	0716	0719	0721						5		B 3.9						1.0E-04
GOES		1201	1207	1217			10635			16		B 6.4						5.0E-04
GOES		1321	1331	1337						16		B 4.9						4.0E-04
GOES		1611	1617	1623			10635			12		B 7.9						4.3E-04
GOES		1709	1716	1721	S12	W08	10635			12	SF	C 2.0						8.7E-04
HOLL		1714	1714	1726	S12	W08	10635	06	21.1	12	SF		3	E		31		F
GOES		1832	1840	1848			10635			16		B 4.5						3.8E-04
GOES		1958	2002	2009			10635			11		B 4.7						2.8E-04
GOES		2013	2016	2020	S11	W12	10635			7	SF	B 6.2						2.3E-04

Hα SOLAR FLARES

JUNE 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
HOLL	21	2014	2014	2019	S11	W12	10635	06	20.9	5	SF		3	E		11		F
GOES		2046	2050	2055			10635			9		B 3.8						1.8E-04
GOES		2254	2300	2302	S12	W08	10635			8	SF	B 5.4						1.9E-04
HOLL		2259	2301	2307	S12	W08	10635	06	21.3	8	SF		3	E		15		F
GOES		2347	2350	2353			10634			6		B 3.1						9.8E-05
GOES	22	0048	0052	0055			10635			7		B 4.4						1.5E-04
GOES		0518	0522	0525	S13	W15	10635			7	SF	B 8.1						2.4E-04
LEAR		0520E	0521	0526	S11	W17	10635	06	20.9	6D	SF		3	E		14		F
SVTO		0521	0521	0525	S13	W15	10635	06	21.1	4	SF		3	E		11		F
GOES		0619	0700	0729						70		B 8.9						2.5E-03
GOES		0807	0811	0813			10635			6		B 4.5						1.3E-04
GOES		0826	0833	0838						12		B 4.3						2.8E-04
GOES		1257	1302	1306			10635			9		B 6.7						3.0E-04
GOES		1335	1343	1347						12		B 5.0						3.0E-04
GOES		1431	1441	1445						14		B 4.8						3.4E-04
GOES		1859	1906	1910						11		B 3.9						2.4E-04
GOES		2148	2211	2222	S12	W24	10635			34	SF	C 1.7						2.4E-03
HOLL		2156	2211	2235	S12	W24	10635	06	21.1	39	SF		3	E		43		UF
GOES	23	0255	0301	0310	S11	W27	10635			15	SF	C 1.2						9.2E-04
LEAR		0258	0300	0310	S11	W27	10635	06	21.1	12	SF		3	E		17		FH
GOES		0549	0605	0621	S09	W21	10635			32	SF	C 2.5						3.6E-03
SVTO		0554	0556	0628	S09	W21	10635	06	21.7	34	SF		3	E		86		F
LEAR		0554	0602	0635	S09	W23	10635	06	21.5	41	SF		3	E		95		
GOES		1648	1656	1708			10635			20		B 5.9						6.1E-04
GOES		2250	2257	2304			10635			14		B 5.7						4.0E-04
GOES	24	0021	0026	0034			10635			13		B 5.3						3.7E-04
GOES		0552	0559	0608	S16	W39	10635			16	SF	C 1.4						1.0E-03
LEAR		0555	0557	0609	S16	W39	10635	06	21.3	14	SF		3	E		33		F
GOES		0612	0621	0634			10635			22		C 1.7						1.8E-03
LEAR		0615	0616	0647	S09	W36	10635	06	21.5	32	SF		3	E		50		UF
SVTO		0615	0619	0636	S10	W35	10635	06	21.6	21	SF		3	E		34		F
GOES		1901	1905	1913			10635			12		B 4.5						2.9E-04
GOES	25	0208	0215	0222			10637			14		B 4.0						2.9E-04
GOES		0439	0446	0503			10635			24		B 6.2						7.9E-04
GOES		0516	0524	0532			10635			16		B 6.1						5.3E-04
GOES		0747	0752	0757	N09	E18	10637			10	SF	B 8.5						3.5E-04
LEAR		0751	0752	0757	N09	E18	10637	06	26.7	6	SF		3	E		39		F
GOES		1118	1132	1148			10635			30		C 2.5						3.2E-03
GOES		1336	1340	1344			10635			8		B 4.0						1.6E-04
GOES		1743	1746	1752			10635			9		B 3.7						1.8E-04
GOES		2007	2017	2030			10635			23		B 4.8						5.7E-04
GOES	26	0417	0424	0430						13		C 1.3						8.3E-04
GOES		0653	0718	0729	S08	W77	10635			36	SF	C 8.6						1.0E-02
LEAR		0704	0710	0729	S08	W77	10635	06	20.5	25	SF		3	E		75		F
LEAR		0730	0731	0743	S08	W77	10635	06	20.5	13	SF		3	E		38		F
GOES		1112	1127	1155			10635			43		B 8.7						1.9E-03
GOES		2122	2126	2128			10635			6		B 3.9						1.2E-04
GOES		2316	2335	2345						29		B 4.5						7.1E-04
GOES	27	0216	0220	0226						10		B 4.1						2.3E-04
GOES		0307	0312	0316			10635			9		B 5.9						2.7E-04
GOES		0348	0358	0405			10635			17		C 1.0						8.2E-04
GOES		0820	0828	0833			10635			13		B 8.1						5.0E-04
GOES		1220	1249	1311			10635			51		B 9.4						2.2E-03
GOES		1544	1557	1608			10635			24		C 2.3						2.3E-03
GOES		1641	1644	1648			10635			7		B 5.2						2.0E-04
GOES		1924	1931	1938						14		C 1.6						9.7E-04
GOES		2013	2021	2037			10635			24		C 2.5						3.0E-03
GOES		2057	2101	2105			10635			8		B 7.6						3.1E-04
GOES		2229	2251	2306			10635			37		C 3.6						5.1E-03
GOES	28	0007	0012	0018			10635			11		B 8.3						4.4E-04
GOES		0039	0045	0051			10635			12		B 5.2						3.2E-04

Hα SOLAR FLARES

JUNE 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	28	0134	0141	0156			10635			22		C 1.3						1.4E-03
GOES		0315	0324	0335			10635			20		C 1.8						1.8E-03
GOES		0409	0417	0422			10635			13		C 2.8						1.6E-03
GOES		0556	0616	0629						33		C 1.1						1.6E-03
GOES		0805	0809	0812			10635			7		B 4.5						1.5E-04
GOES		0913	0916	0920			10635			7		B 3.5						1.3E-04
GOES		1033	1039	1045			10635			12		B 5.0						3.1E-04
GOES		1154	1212	1228			10635			34		C 1.6						2.6E-03
GOES		1553	1556	1600			10635			7		B 4.2						1.6E-04
GOES		1928	1932	1935			10639			7		B 4.3						1.4E-04
GOES		2221	2224	2228			10635			7		B 2.2						8.4E-05
GOES		2315	2320	2324			10639			9		B 5.3						2.0E-04
GOES	29	0831	0836	0841						10		B 2.2						1.2E-04
GOES		1102	1122	1146			10639			44		B 2.6						5.9E-04
GOES		1333	1337	1341						8		B 1.1						4.9E-05
GOES		1413	1420	1424			10639			11		B 6.7						2.5E-04
GOES		1810	1825	1840			10639			30		B 7.5						8.2E-04
GOES		2008	2012	2017			10639			9		B 1.3						6.3E-05
GOES	30	0719	0724	0731	S08	E40	10640			12	SF	B 2.2						1.1E-04
LEAR		0723	0723	0728	S08	E40	10640	07	3.3	5	SF		3	E		12		F
GOES		1148	1156	1201			10640			13		B 2.7						1.4E-04
GOES		1426	1439	1445	S10	E36	10640			19	SF	C 1.3						8.4E-04
HOLL		1431	1435	1448	S10	E36	10640	07	3.3	17	SF		3	E		59		FH
GOES		1525	1608	1634						69		B 2.3						6.7E-04
GOES		2203	2206	2210						7		B 1.1						3.9E-05

"Remarks"

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

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

NOTE: Beginning July 1997, the times of all GOES X-ray events are now included in this table.

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events

JUNE 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
02	8800	LEAR	8 S	0424.0	0424.0	U	52.0			QL=4 ST=2 TYP=3

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

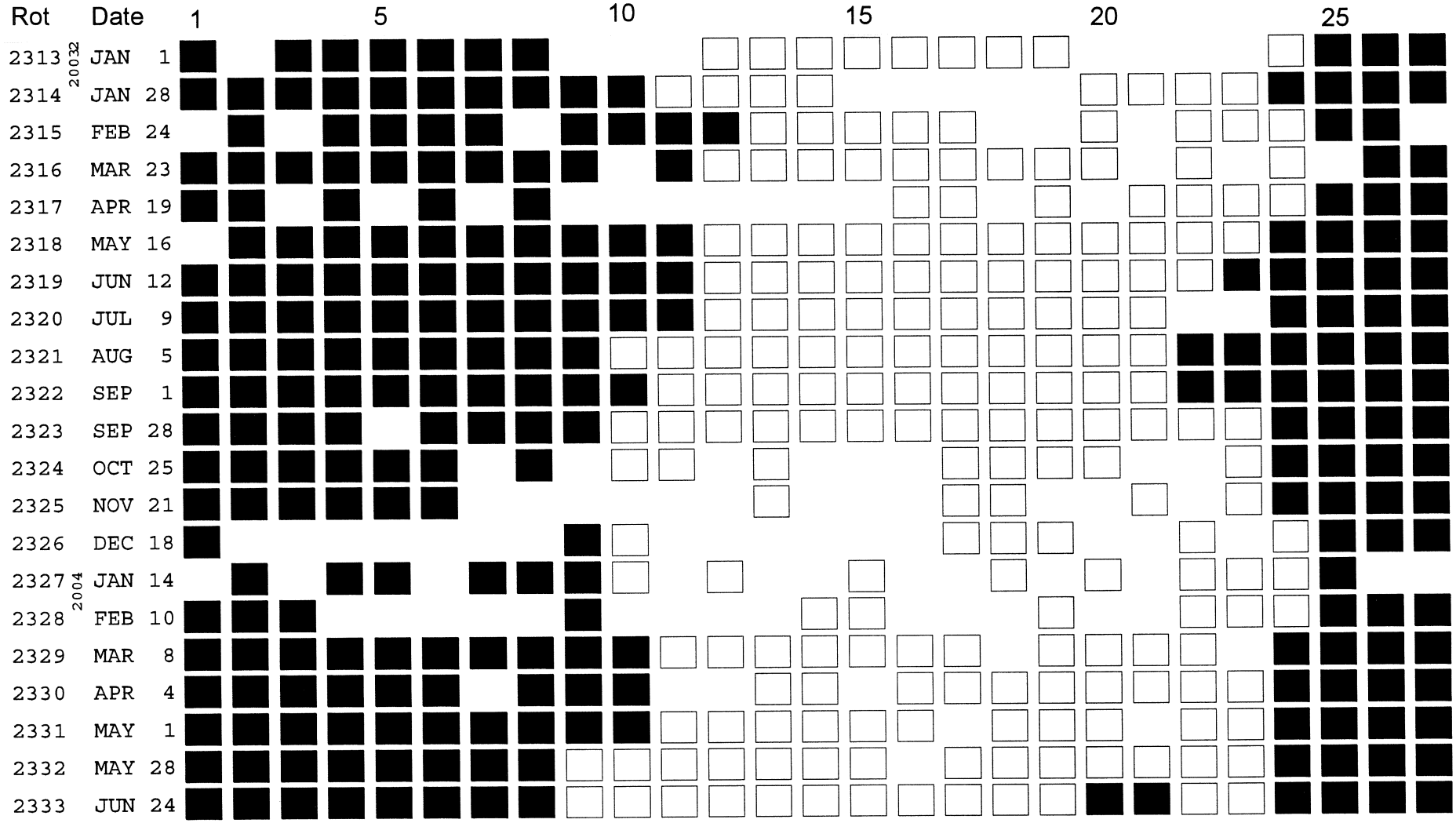
Explanation of Type Code:

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

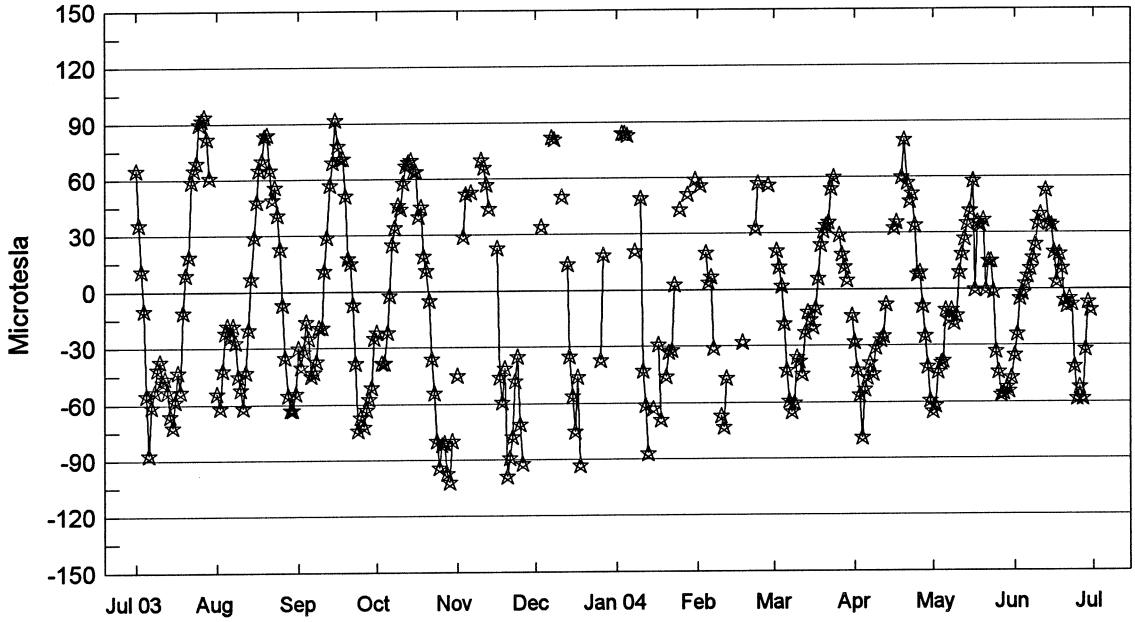


Mean Solar Magnetic Field Polarity: □ = field > 2 microT; ▒ = -2 microT ≤ field ≤ 2 microT

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

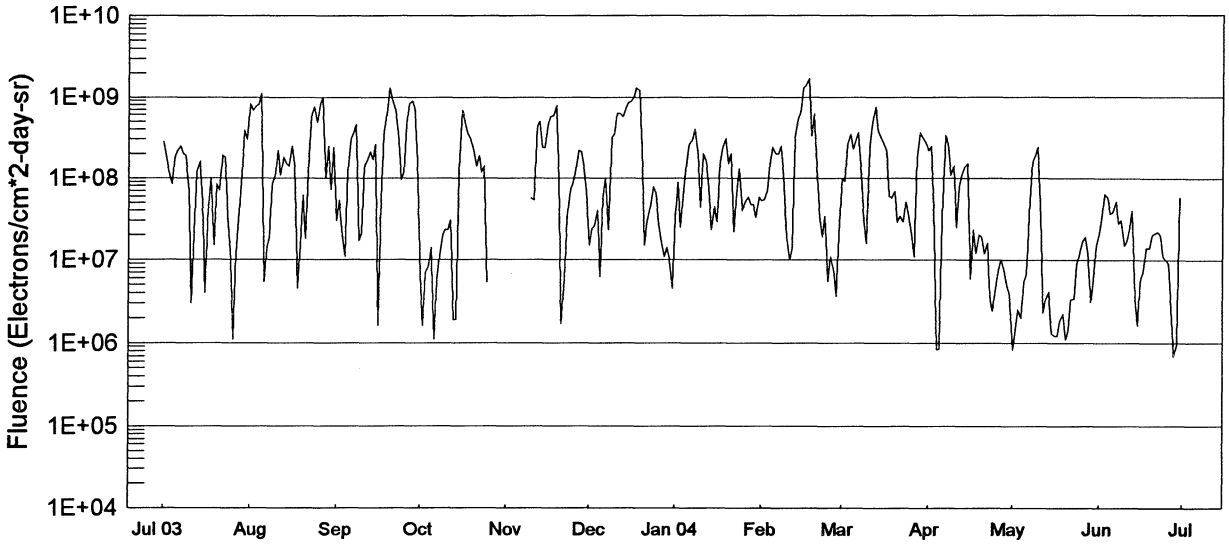
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



Day	Jul 03	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun
1	65	-54	-30	-22	-45	—	—	—	—	-28	-65	-35
2	36	-62	-40	—	—	—	—	56	21	-43	-62	-24
3	11	-42	-32	-38	29	34	84	—	12	-56	-44	-5
4	-10	-22	-16	-38	52	—	84	20	2	-79	-39	-2
5	-55	-18	-25	-22	—	—	83	4	-18	-53	-38	3
6	-87	-24	-45	-2	53	—	—	7	-43	-47	-11	7
7	-61	-18	-43	25	—	82	—	-31	-59	-39	-16	11
8	-53	-27	-37	34	—	81	21	—	-65	-45	-11	17
9	-41	-45	-19	46	—	—	—	—	-60	-31	-18	24
10	-37	-52	-19	44	70	—	49	-67	-36	—	-14	35
11	-48	-62	11	58	66	50	-43	-73	-38	-27	9	40
12	-46	-43	29	67	57	—	-61	-47	-45	-25	19	—
13	-53	-20	57	69	44	14	-87	—	-23	-8	27	53
14	-66	7	69	70	—	-35	—	—	-12	—	35	35
15	-72	29	92	64	—	-56	-63	—	-16	—	42	34
16	-58	48	78	64	23	-75	—	—	-20	33	58	20
17	-43	65	71	40	-46	-46	-29	—	-10	36	—	4
18	-53	70	71	45	-59	-93	-69	-28	6	—	36	19
19	-11	83	51	19	-41	—	—	—	24	60	34	11
20	9	84	18	11	-99	—	-46	—	31	80	37	-6
21	19	65	15	-5	-89	—	-33	—	34	57	—	-9
22	59	49	-7	-36	-78	—	-32	—	36	47	15	-5
23	65	56	-38	-54	-48		3	33	54	51	15	-8
24	69	41	-74	-80	-35	—	—	57	60	34	-1	-41
25	90	23	-67	-94	-71	—	43	—	—	8	-33	-58
26	92	-7	-72	-82	-92	-37	—	—	29	9	-44	-52
27	94	-35	-63	-81	—	19	—	—	19	-9	-56	-58
28	82	-55	-57	-97	—	—	51	56	12	-25	-55	-32
29	61	-63	-51	-102	—	—	—	—	5	-41	-52	-7
30	—	-63	-25	-80		—	—		—	-59	-54	-11
31	—	-54		—		—	59		-14		-47	

GOES Daily Electron Fluence
Jul 2003 - Jun 2004



Day	Jul 03	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun
1	2.8E+08	8.1E+08	3.0E+07	6.7E+06	-999	1.5E+07	3.3E+07	5.3E+07	9.9E+07	2.2E+08	8.3E+05	2.1E+07
2	1.8E+08	6.8E+08	5.4E+07	1.6E+06	-999	2.4E+07	8.8E+07	5.5E+07	9.2E+07	2.5E+08	1.4E+06	3.4E+07
3	1.2E+08	7.7E+08	1.9E+07	6.9E+06	-999	2.6E+07	2.5E+07	7.1E+07	2.6E+08	4.1E+07	2.5E+06	6.4E+07
4	8.5E+07	8.2E+08	1.1E+07	8.2E+06	-999	4.0E+07	7.2E+07	1.6E+08	3.4E+08	8.3E+05	2.0E+06	5.8E+07
5	1.8E+08	1.1E+09	1.2E+08	1.4E+07	-999	6.2E+06	1.5E+08	2.4E+08	2.3E+08	8.5E+05	5.4E+06	3.7E+07
6	2.2E+08	5.4E+06	3.0E+08	1.1E+06	-999	5.9E+07	2.6E+08	2.0E+08	2.9E+08	3.3E+07	6.6E+06	3.9E+07
7	2.5E+08	1.4E+07	3.6E+08	5.7E+06	-999	1.0E+08	2.9E+08	2.0E+08	3.6E+08	3.3E+08	5.2E+07	5.2E+07
8	2.0E+08	1.9E+07	4.5E+08	1.1E+07	-999	2.3E+07	4.0E+08	2.5E+08	1.1E+08	2.6E+08	1.6E+08	2.8E+07
9	1.9E+08	8.3E+07	1.7E+07	2.0E+07	-999	3.2E+08	2.0E+08	1.1E+08	3.1E+07	1.1E+08	1.9E+08	3.1E+07
10	7.0E+07	1.1E+08	2.1E+07	2.3E+07	5.6E+07	3.5E+08	4.4E+07	1.9E+07	1.6E+07	1.4E+08	2.4E+08	1.5E+07
11	3.0E+06	2.2E+08	1.4E+08	2.3E+07	5.4E+07	6.2E+08	2.0E+08	1.0E+07	2.5E+08	2.5E+07	3.4E+07	1.7E+07
12	2.1E+07	1.1E+08	1.7E+08	3.0E+07	4.4E+08	6.3E+08	1.6E+08	1.4E+07	4.7E+08	7.8E+07	2.3E+06	2.4E+07
13	1.2E+08	1.8E+08	2.1E+08	1.9E+06	5.0E+08	5.7E+08	7.3E+07	3.2E+08	7.4E+08	1.1E+08	3.3E+06	4.0E+07
14	1.6E+08	1.5E+08	1.7E+08	1.9E+06	2.4E+08	7.1E+08	2.3E+07	5.0E+08	3.8E+08	1.4E+08	4.1E+06	3.5E+06
15	5.0E+07	1.4E+08	2.6E+08	1.3E+08	2.4E+08	8.4E+08	4.5E+07	6.7E+08	3.2E+08	1.5E+08	1.3E+06	1.6E+06
16	4.0E+06	2.5E+08	1.6E+06	6.8E+08	4.6E+08	9.0E+08	2.9E+07	1.3E+09	2.6E+08	5.9E+06	1.2E+06	5.6E+06
17	4.5E+07	1.4E+08	5.5E+07	5.0E+08	5.7E+08	1.0E+09	1.5E+08	1.4E+09	2.2E+08	2.3E+07	1.2E+06	7.6E+06
18	9.9E+07	4.5E+06	3.5E+08	3.6E+08	5.8E+08	1.3E+09	2.4E+08	1.7E+09	6.0E+07	1.2E+07	1.8E+06	1.4E+07
19	1.5E+07	1.5E+07	6.5E+08	3.1E+08	7.7E+08	1.2E+09	3.0E+08	3.3E+08	5.7E+07	2.0E+07	2.2E+06	1.4E+07
20	8.4E+07	6.2E+07	1.3E+09	2.3E+08	9.6E+07	2.3E+08	1.5E+08	6.1E+08	6.9E+07	1.9E+07	1.1E+06	2.0E+07
21	7.1E+07	1.8E+07	8.7E+08	1.4E+08	1.7E+06	1.5E+07	2.0E+08	1.4E+08	2.9E+07	1.2E+07	1.4E+06	2.1E+07
22	1.9E+08	1.9E+08	6.8E+08	1.9E+08	5.8E+06	2.9E+07	2.2E+07	3.3E+07	3.4E+07	1.6E+07	3.3E+06	2.2E+07
23	1.8E+08	6.0E+08	3.7E+08	1.2E+08	3.3E+07	4.4E+07	6.6E+07	1.9E+07	2.9E+07	3.5E+06	3.4E+06	2.0E+07
24	3.5E+07	7.5E+08	9.7E+07	1.4E+08	7.1E+07	7.8E+07	1.3E+08	3.4E+07	5.1E+07	2.4E+06	8.9E+06	1.1E+07
25	9.4E+06	4.9E+08	1.2E+08	5.3E+06	8.7E+07	6.5E+07	4.0E+07	5.5E+06	3.7E+07	4.3E+06	1.2E+07	1.0E+07
26	1.1E+06	8.2E+08	4.5E+08	-999	1.2E+08	2.8E+07	5.1E+07	1.1E+07	2.0E+07	7.5E+06	1.7E+07	9.2E+06
27	1.2E+07	1.0E+09	8.3E+08	-999	2.2E+08	1.7E+07	5.9E+07	7.7E+06	1.1E+07	1.0E+07	1.9E+07	2.6E+06
28	3.2E+07	1.0E+08	8.9E+08	-999	2.1E+08	1.1E+07	4.7E+07	3.6E+06	1.8E+08	7.9E+06	1.2E+07	7.0E+05
29	1.1E+08	2.5E+08	7.0E+08	-999	1.4E+08	1.4E+07	4.7E+07	2.0E+07	3.6E+08	4.8E+06	3.1E+06	9.5E+05
30	3.9E+08	7.2E+07	1.6E+08	-999	7.1E+07	1.0E+07	3.3E+07		3.1E+08	3.8E+06	5.9E+06	6.0E+07
31	3.0E+08	2.4E+08		-999		4.5E+06	5.9E+07		2.7E+08		1.5E+07	

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

CONTENTS

Prompt Reports Number 719 Part I

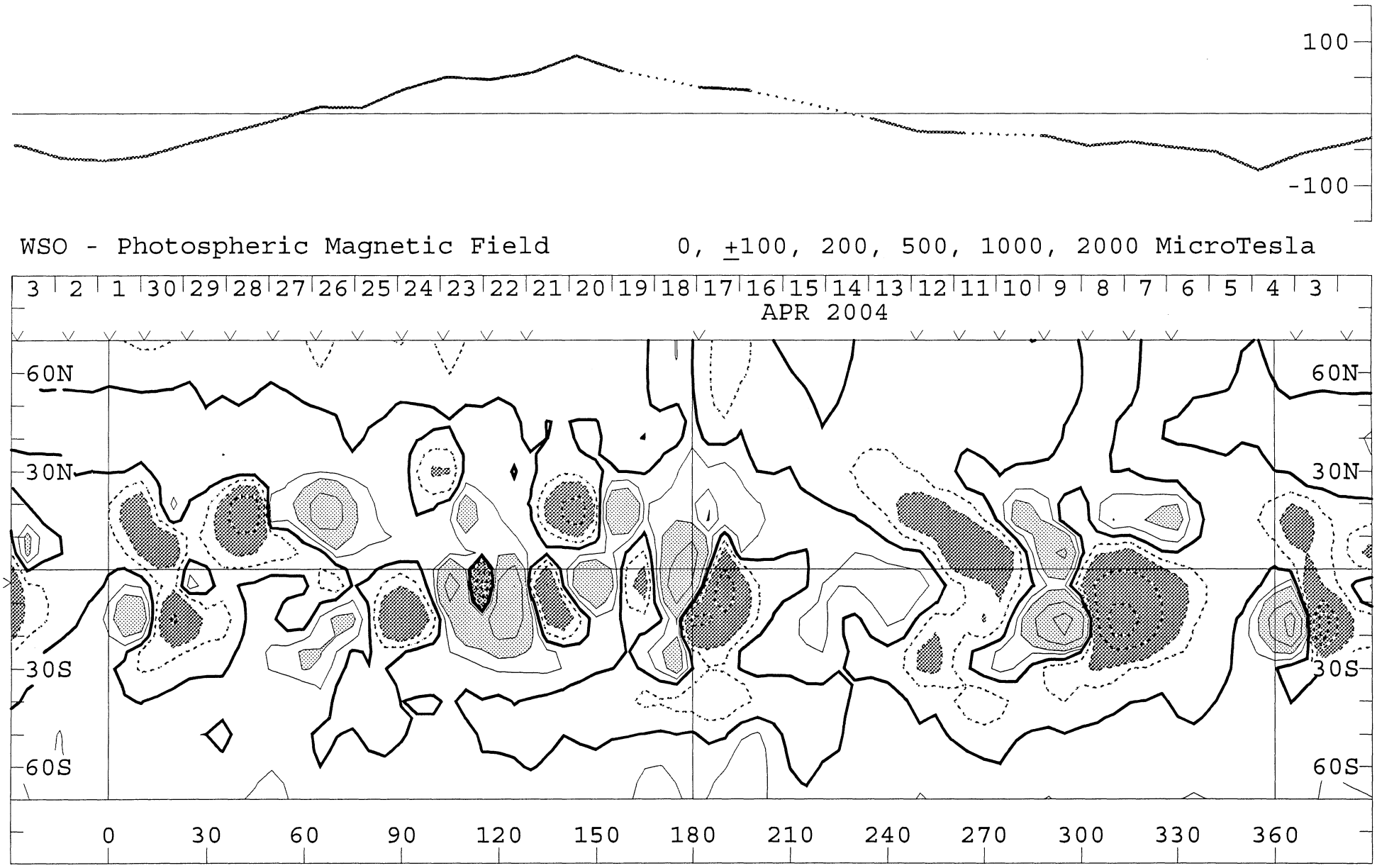
DATA FOR **MAY 2004**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2015

(4 April to 1 May 2004)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

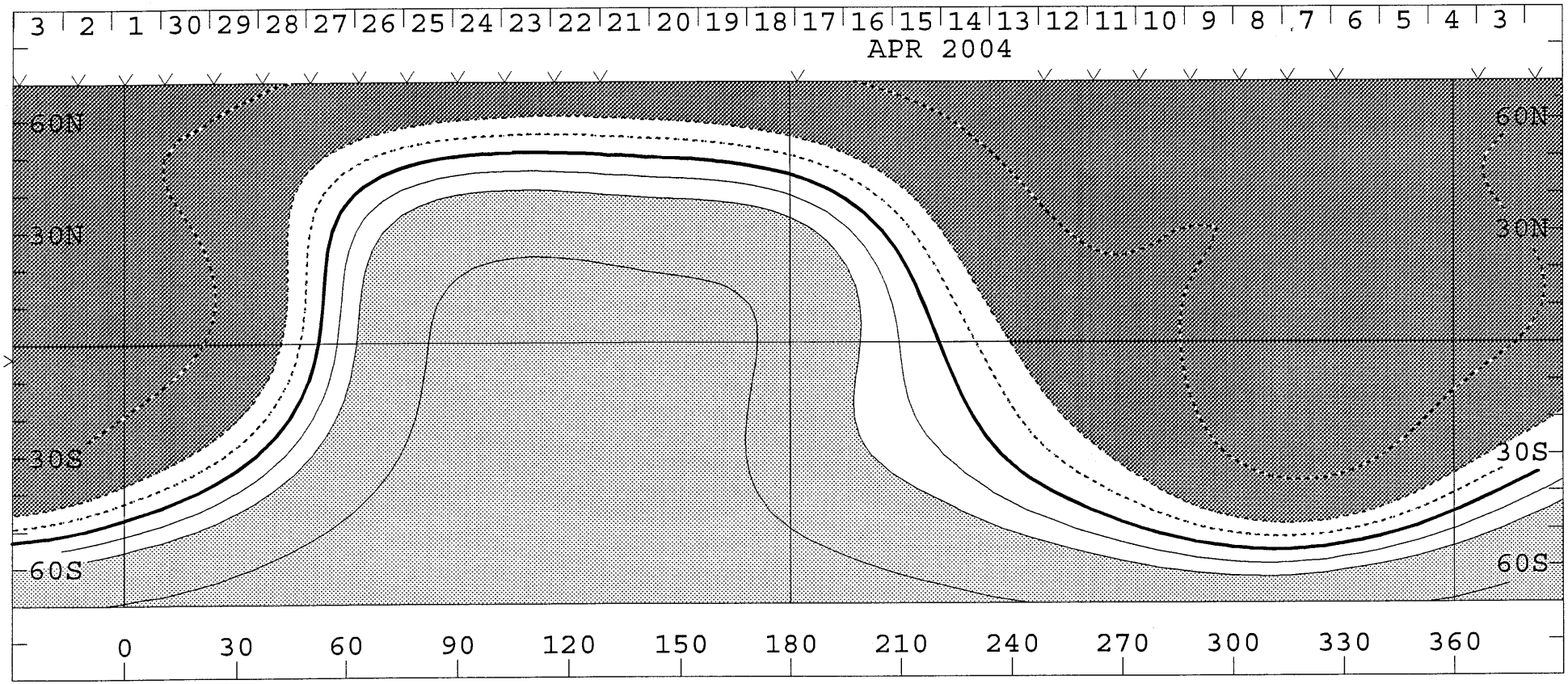
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2015

(4 April to 1 May 2004)

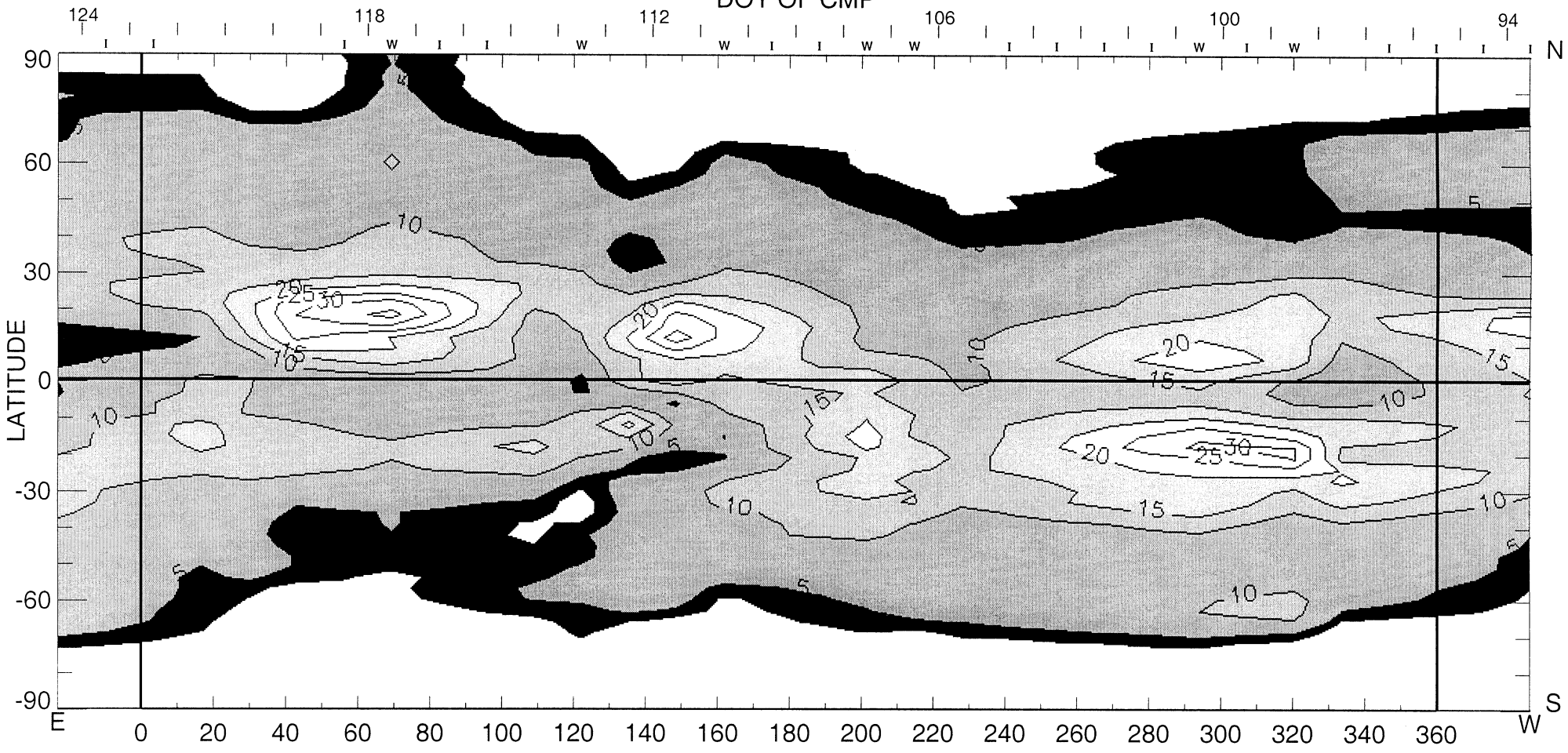
Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



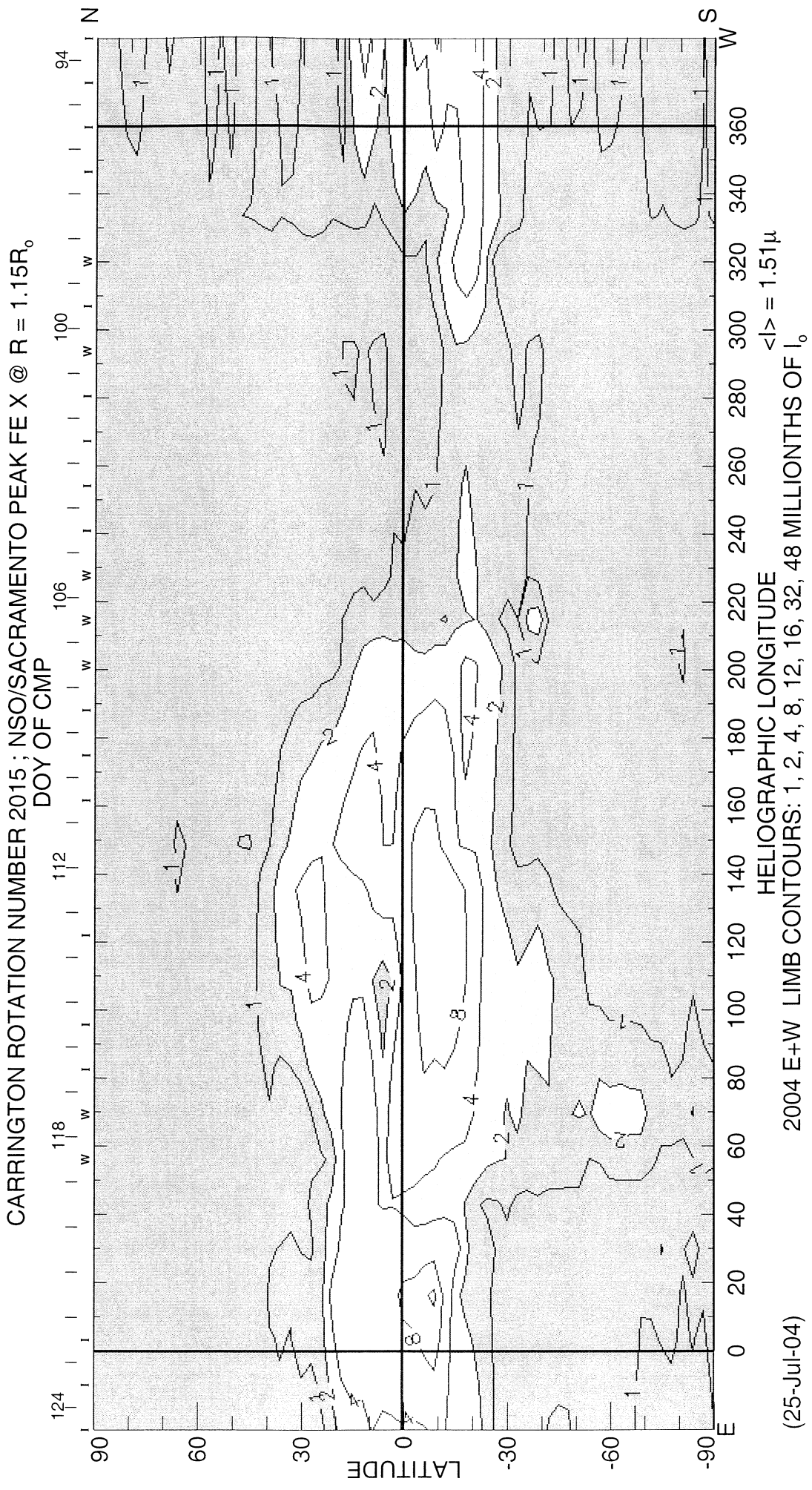
Heliographic Longitude

CARRINGTON ROTATION NUMBER 2015 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

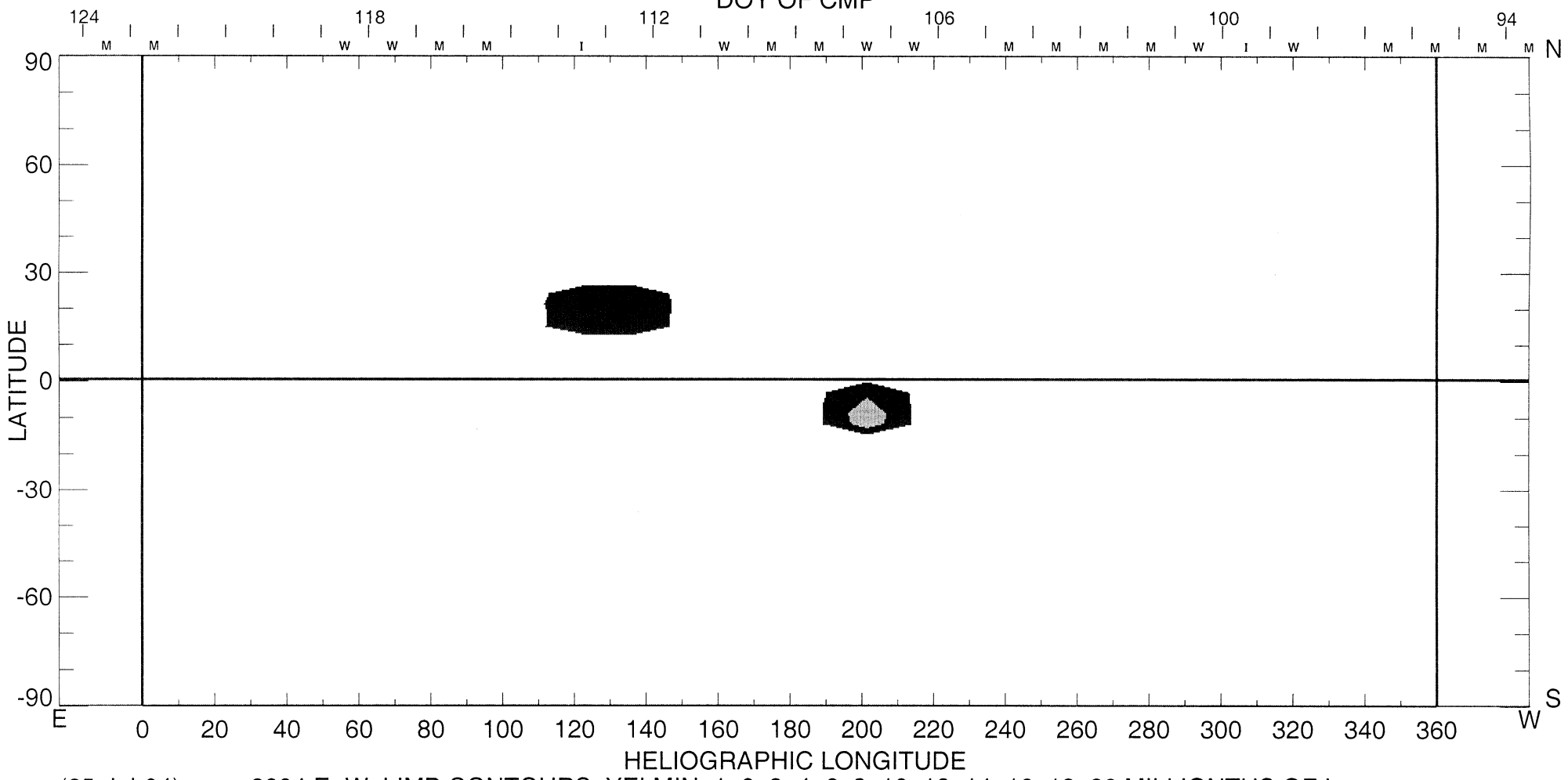


(02-Aug-04) 2004 E+W LIMB CONTOURS: 3, 5, 10, 15, 20, 25, 30, 35, 40, 100, 120 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK



CARRINGTON ROTATION NUMBER 2015 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



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

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2015

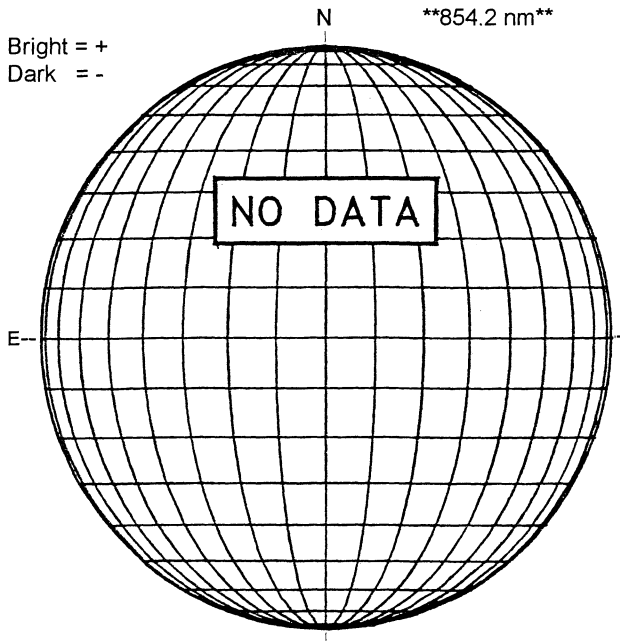
(4 April to 1 May 2004)

National Solar Observatory/Kitt Peak

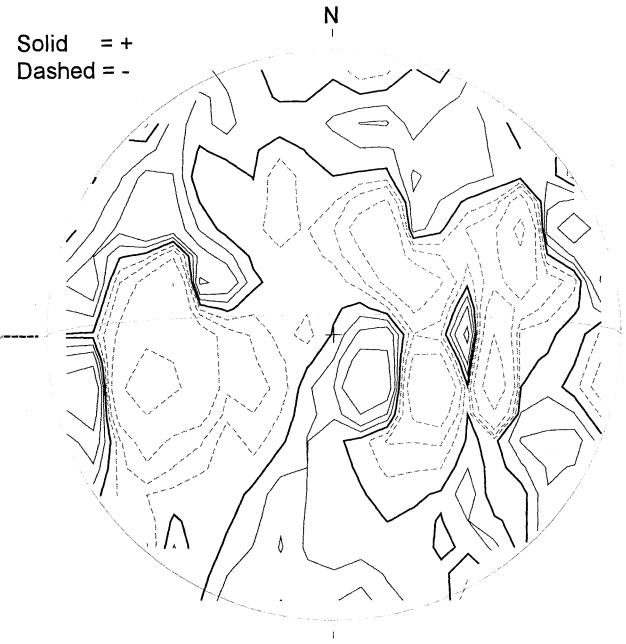
No chart is available for Carrington Rotations 2015 and 2016 because no SOLIS data are available.

MAY 1, 2004 (P= -24.09, Bo = -4.14, Lo = 9.72)

KITT PEAK MAGNETOGRAM--SOLIS

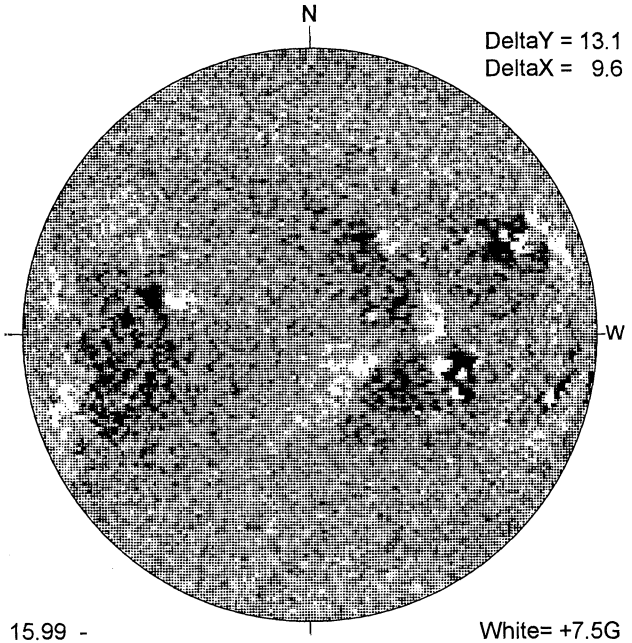


STANFORD MAGNETOGRAM



1717 UT

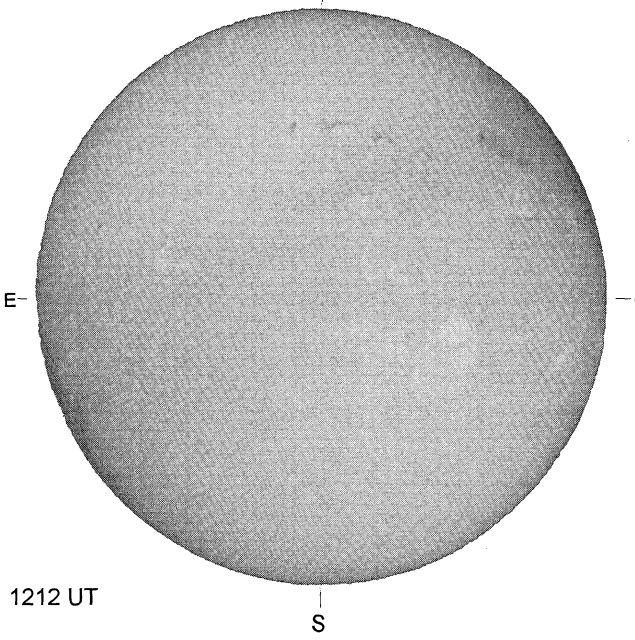
MT. WILSON MAGNETOGRAM



15.99 -
16.93 UT

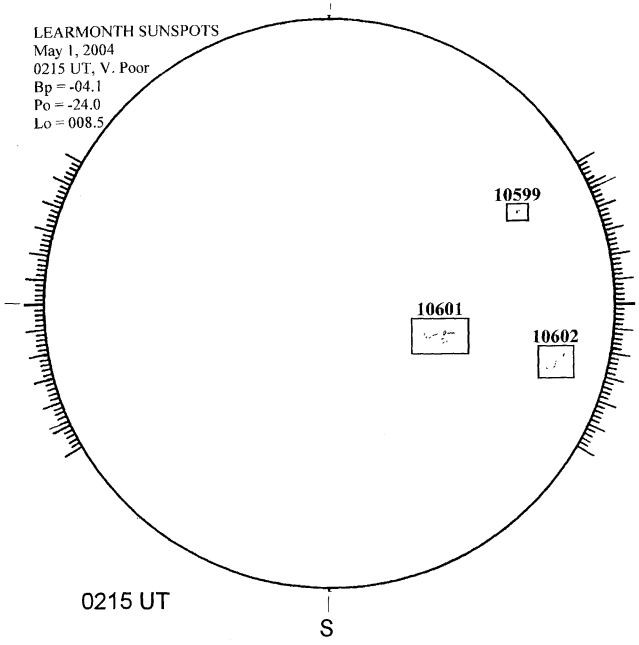
White= +7.5G
Black = -7.5G

MEUDON H-ALHPA



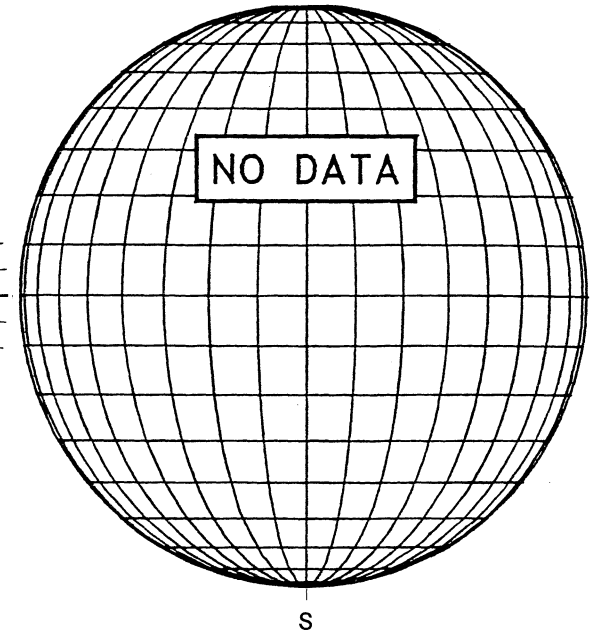
1212 UT

LEARMONTH SUNSPOTS



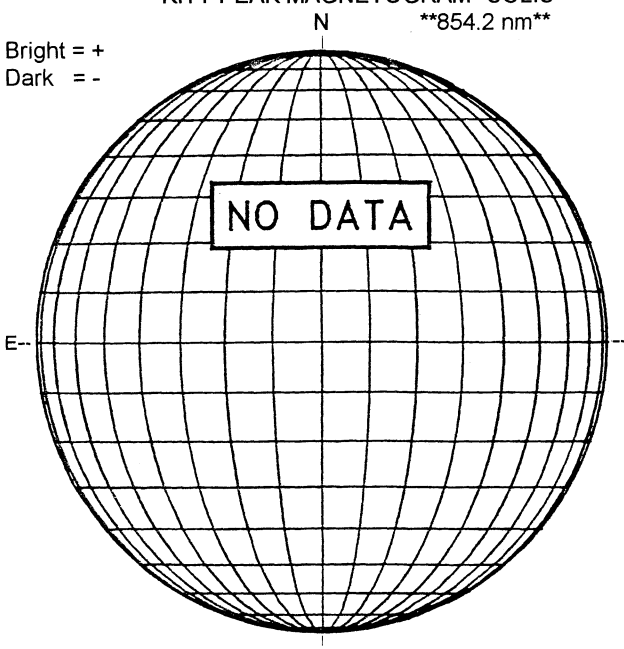
0215 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

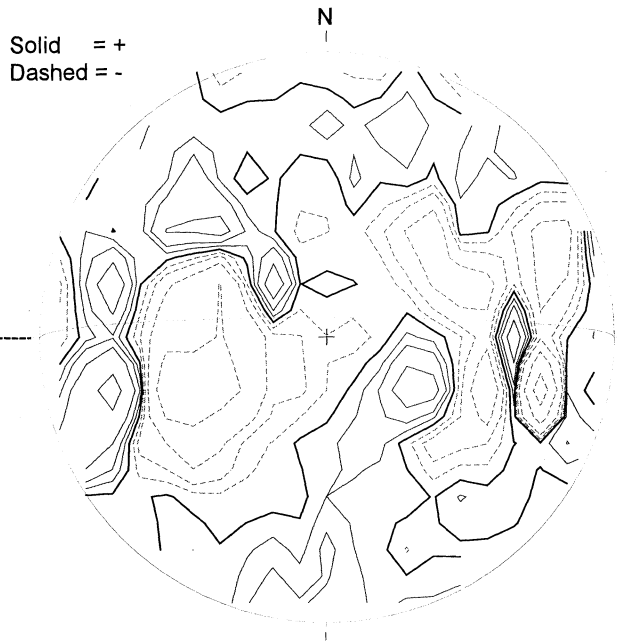


MAY 2, 2004 (P= -23.91, Bo = -4.04, Lo = 356.50)

KITT PEAK MAGNETOGRAM--SOLIS

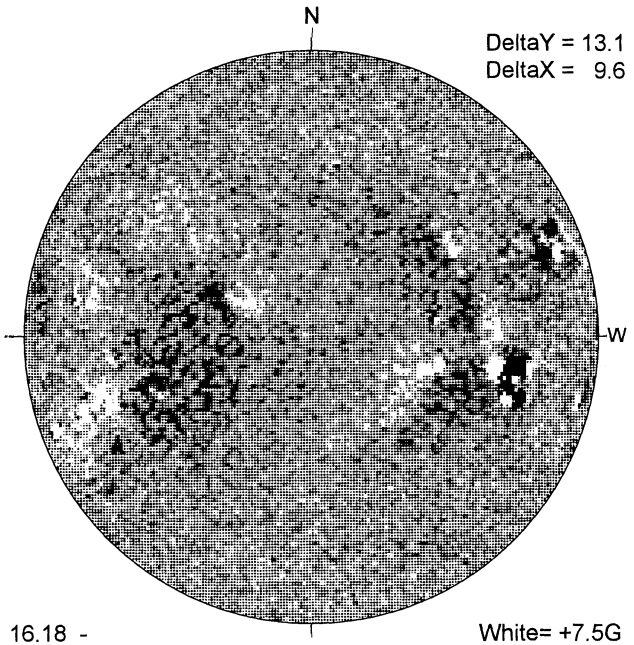


STANFORD MAGNETOGRAM



1632 UT

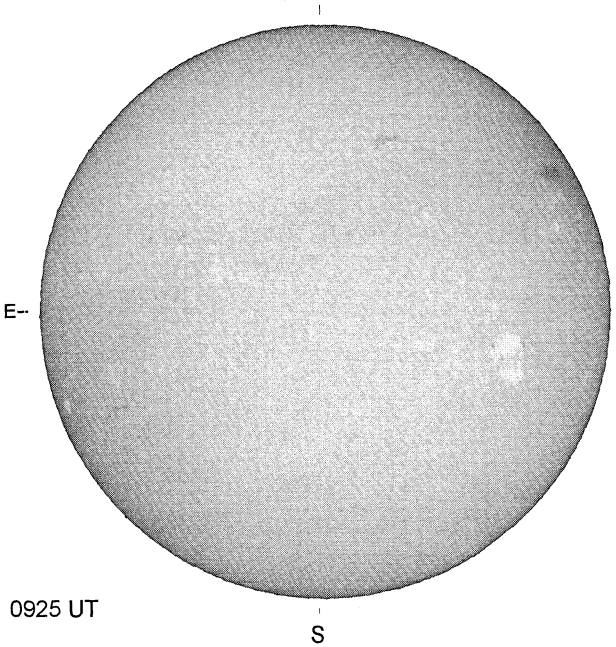
MT. WILSON MAGNETOGRAM



16.18 -
17.11 UT

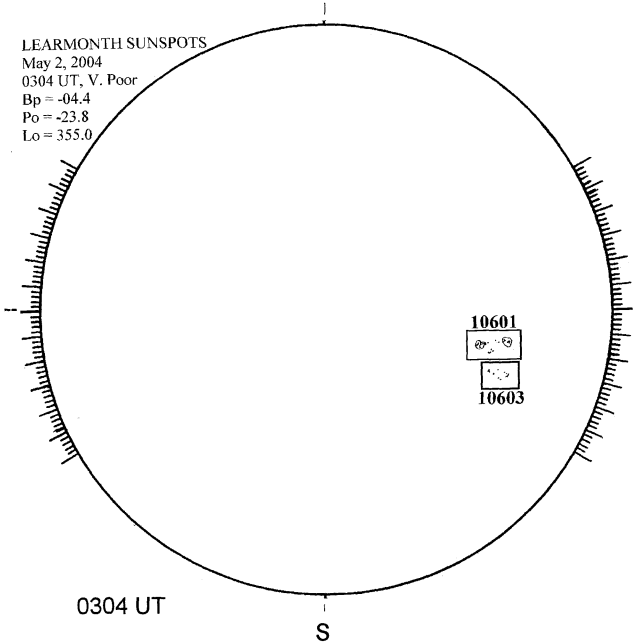
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



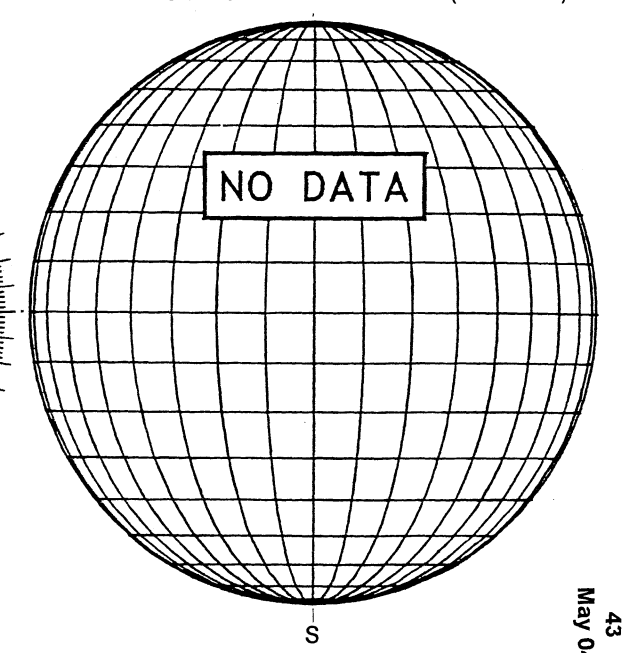
0925 UT

LEARMONTH SUNSPOTS



0304 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



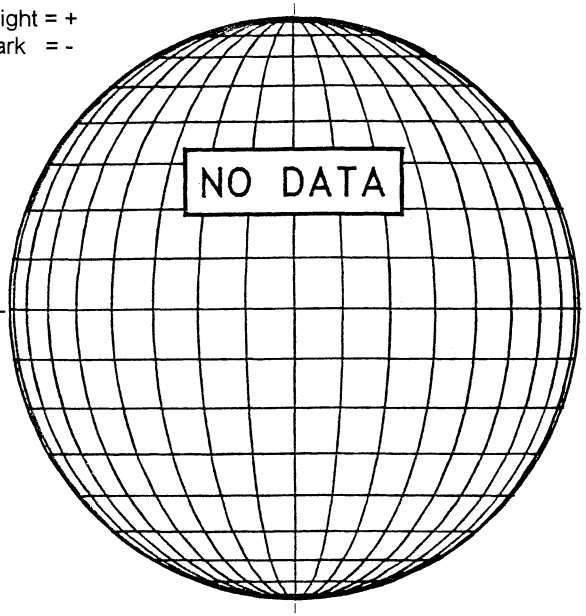
MAY 3, 2004 (P= -23.72, Bo = -3.93, Lo = 343.28)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

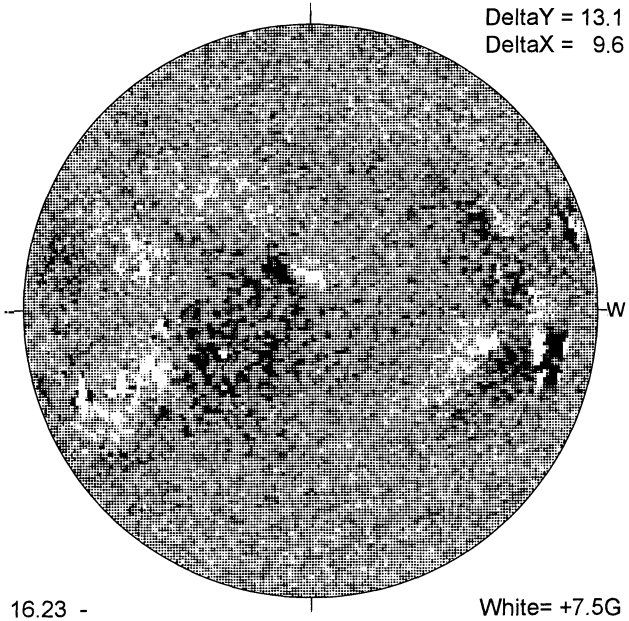
Solid = +
Dashed = -

2109 UT

MT. WILSON MAGNETOGRAM

N

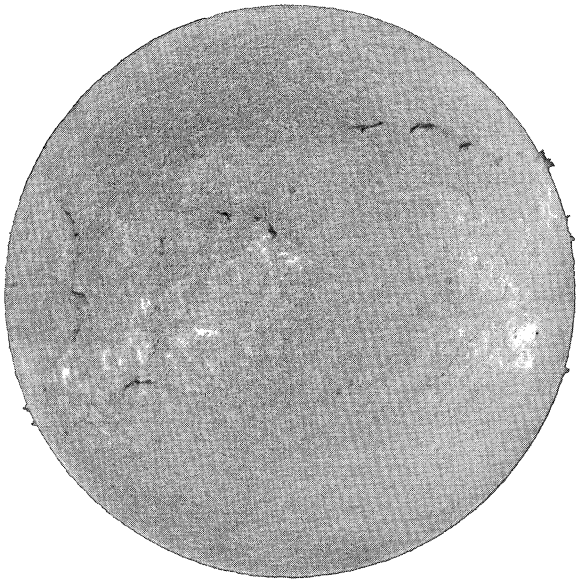
DeltaY = 13.1
DeltaX = 9.6



16.23 -
17.17 UT

White= +7.5G
Black = -7.5G

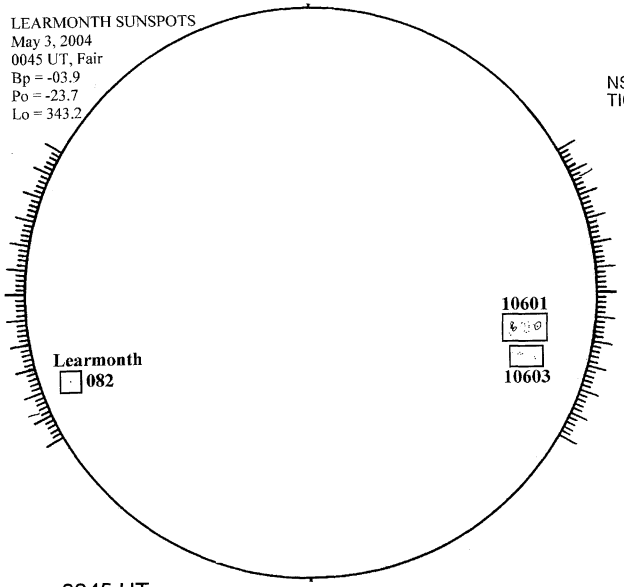
BIG BEAR H-ALPHA



1639 UT

S

LEARMONTH SUNSPOTS

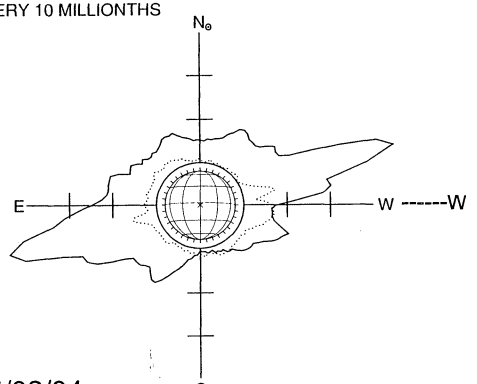


0045 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



05/03/04
(DOY 124)

FE XIV 18:05 UT 1.15 R
FE X 16:04 UT 1.15 R
CA XV 15:29 UT 1.15 R
NO CA XV ACTIVITY TODAY

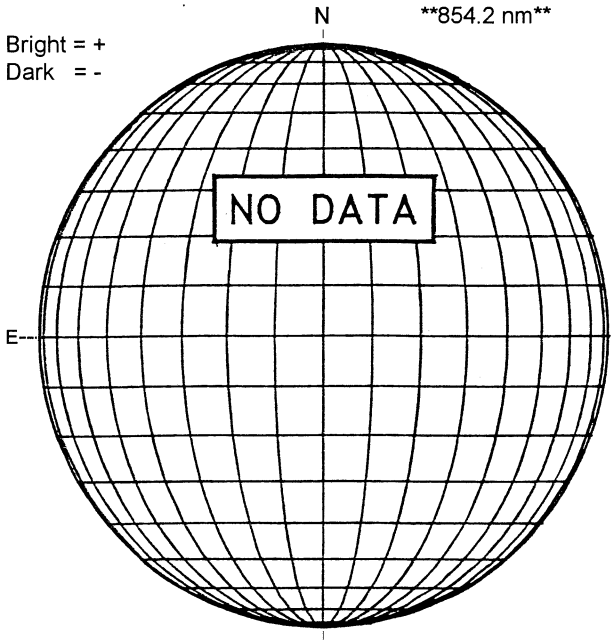
S

MAY 4, 2004 (P= -23.52, Bo = -3.83, Lo = 330.06)

KITT PEAK MAGNETOGRAM--SOLIS

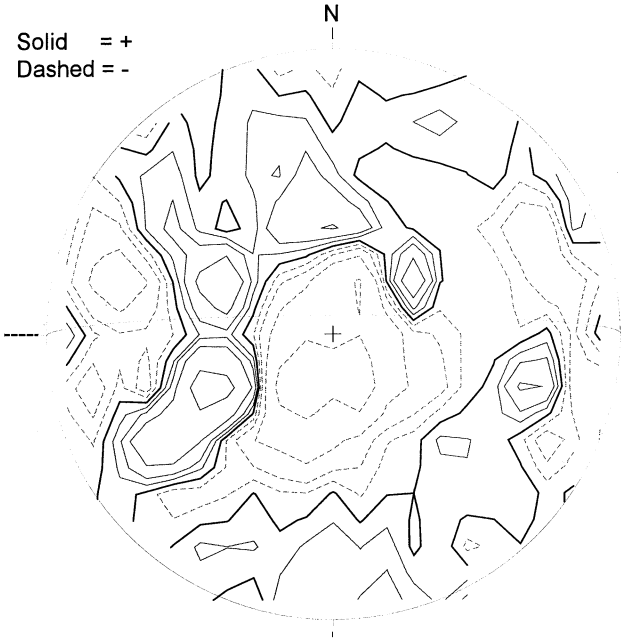
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

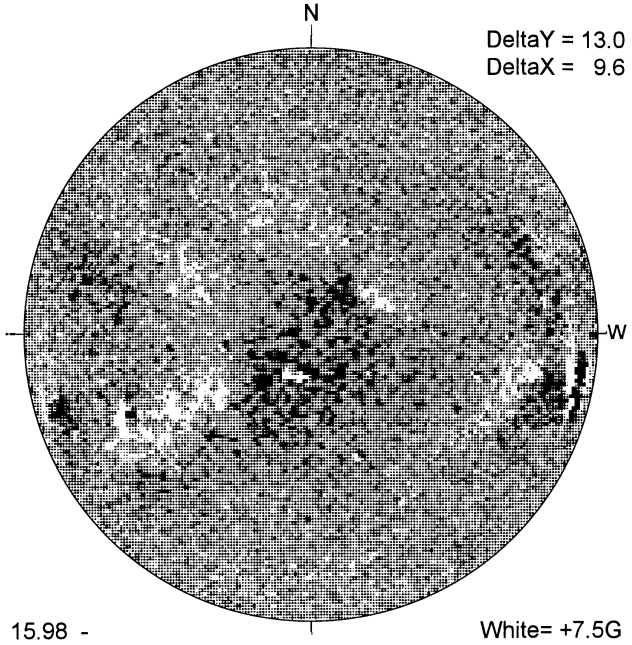
Solid = +
Dashed = -



1641 UT

MT. WILSON MAGNETOGRAM

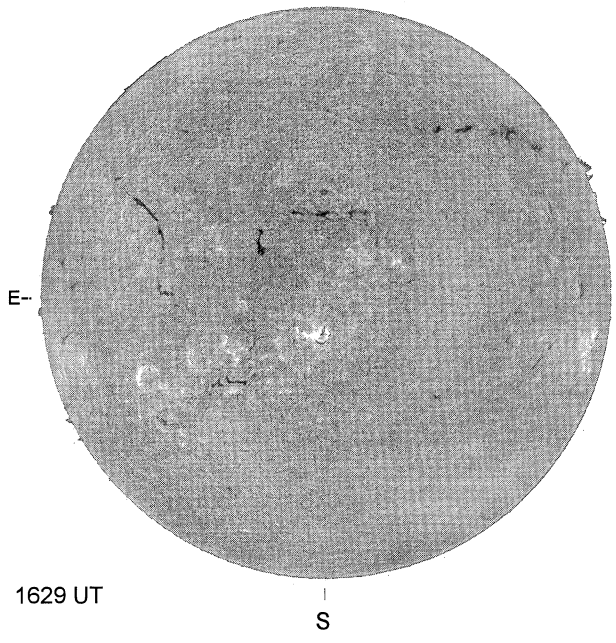
DeltaY = 13.0
DeltaX = 9.6



15.98 -
16.92 UT

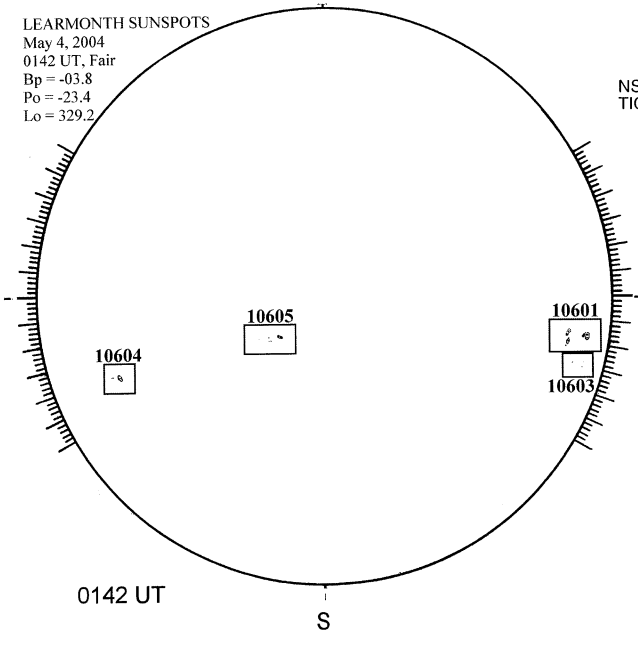
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



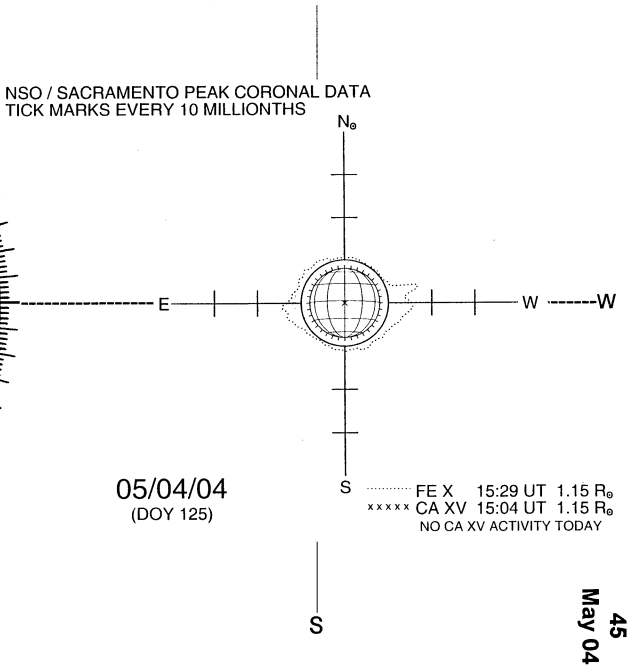
1629 UT

LEARMONTH SUNSPOTS



0142 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



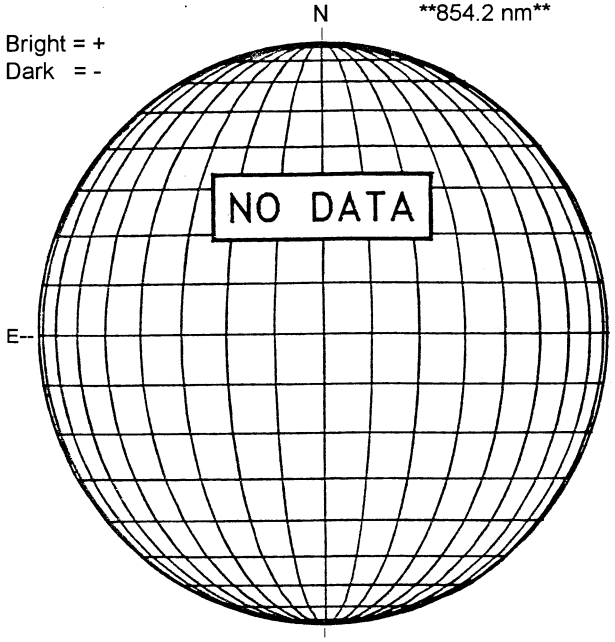
05/04/04
(DOY 125)

MAY 5, 2004 (P= -23.32, Bo = -3.73, Lo = 316.85)

KITT PEAK MAGNETOGRAM--SOLIS

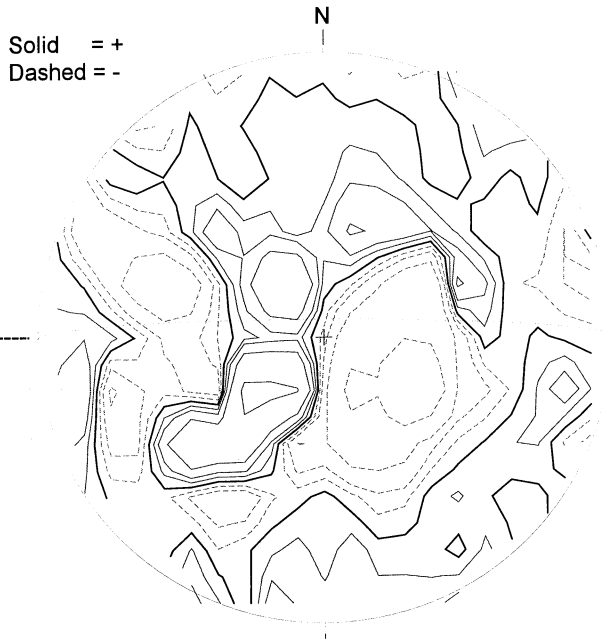
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

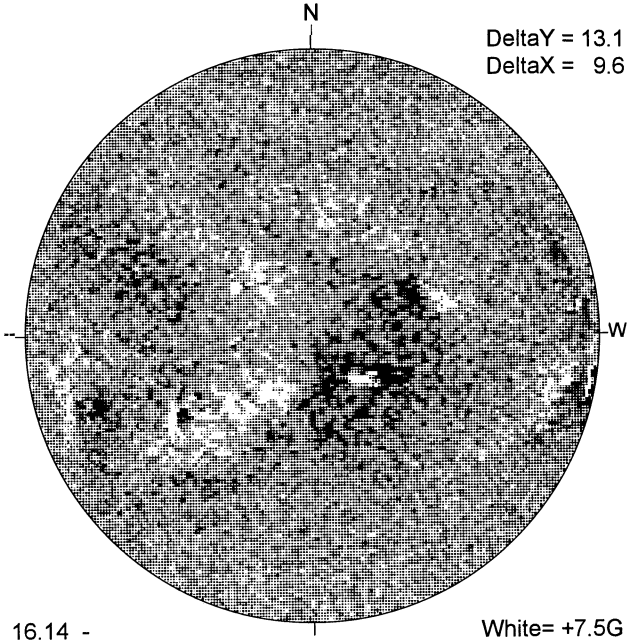
Solid = +
Dashed = -



1936 UT

MT. WILSON MAGNETOGRAM

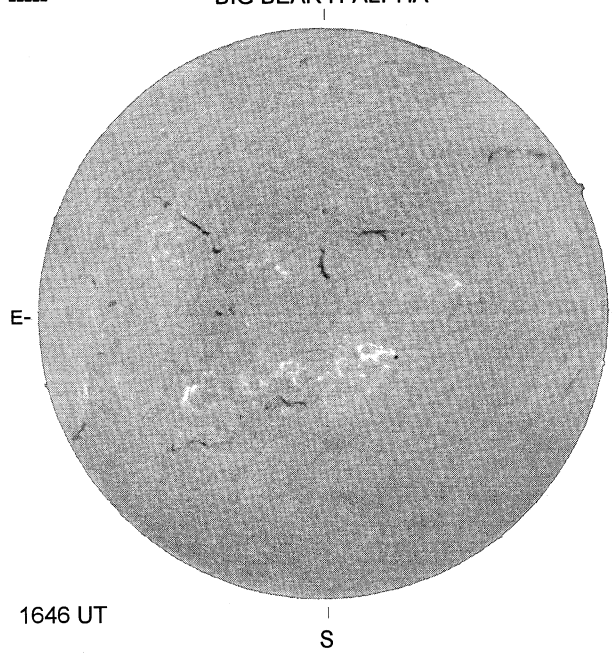
DeltaY = 13.1
DeltaX = 9.6



16.14 -
17.07 UT

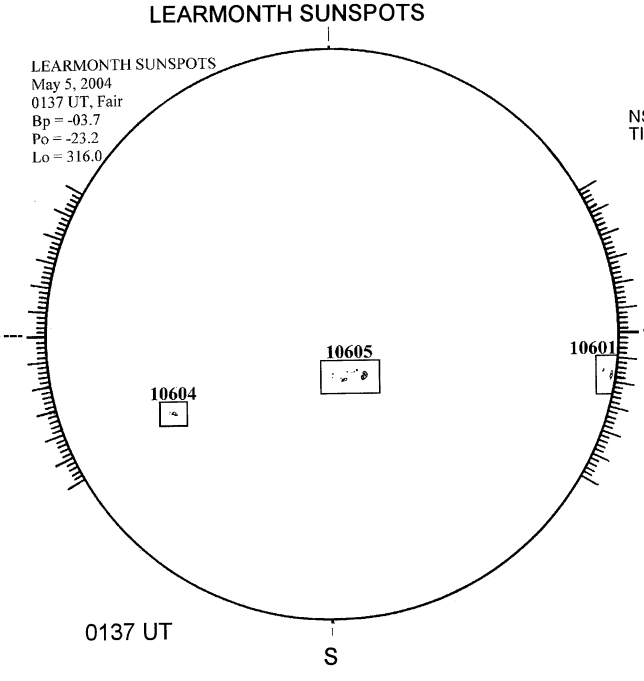
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1646 UT

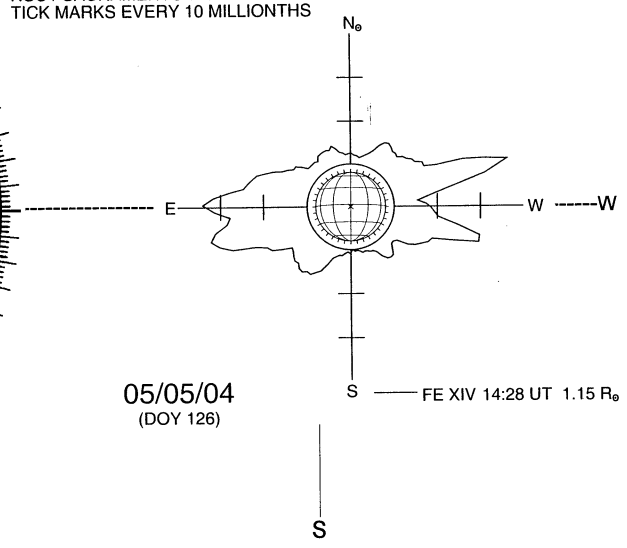
LEARMONTH SUNSPOTS



0137 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS

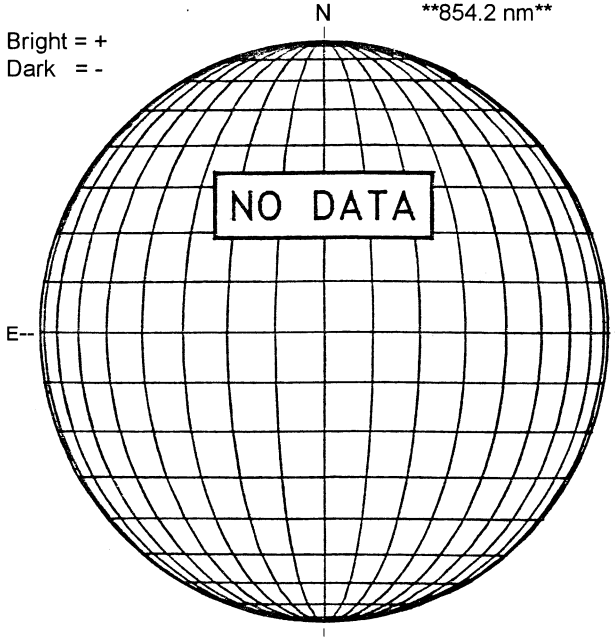


05/05/04
(DOY 126)

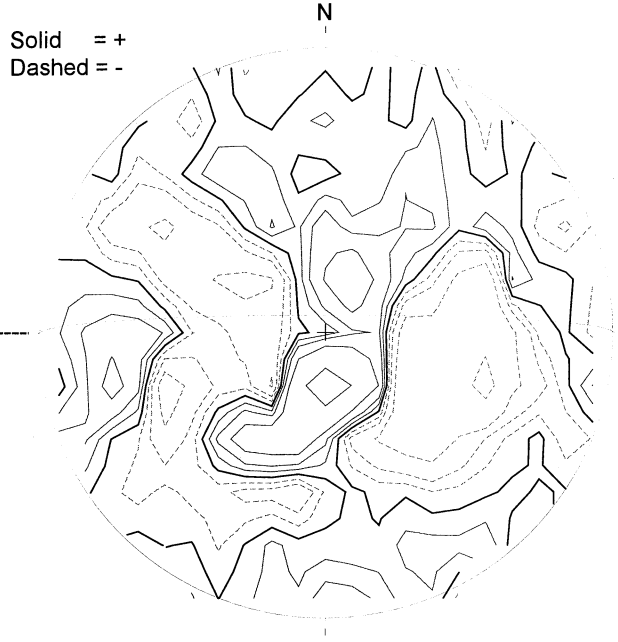
FE XIV 14:28 UT 1.15 R⊙

MAY 6, 2004 (P= -23.10, Bo = -3.62, Lo = 303.63)

KITT PEAK MAGNETOGRAM--SOLIS

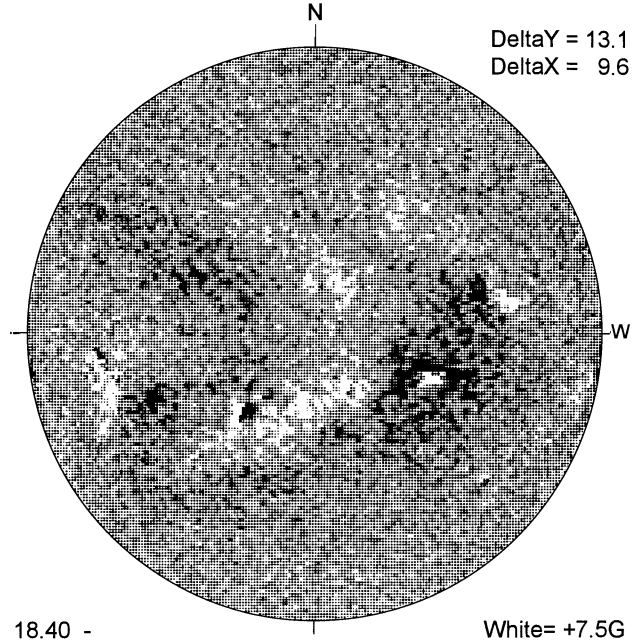


STANFORD MAGNETOGRAM



2057 UT

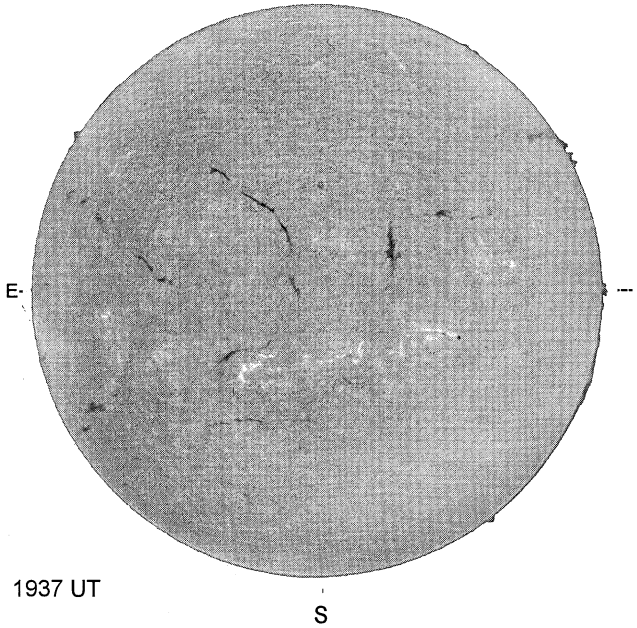
MT. WILSON MAGNETOGRAM



18.40 -
19.33 UT

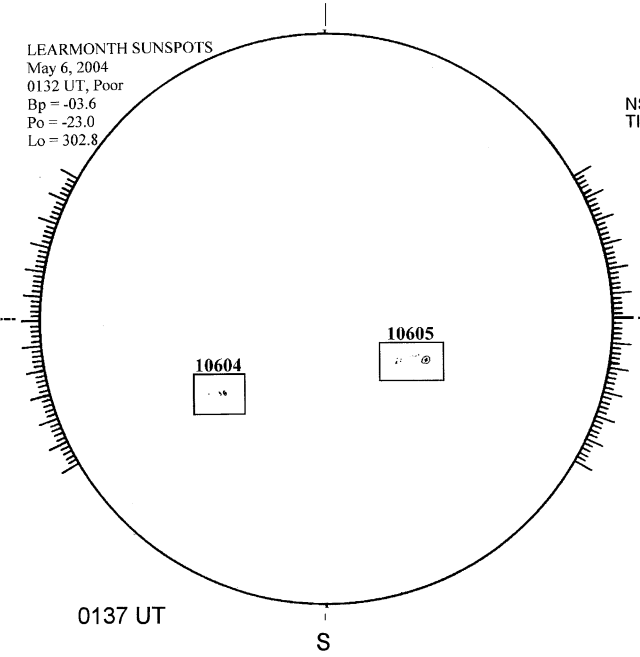
White= +7.5G
Black = -7.5G

BIG BEAR-ALPHA



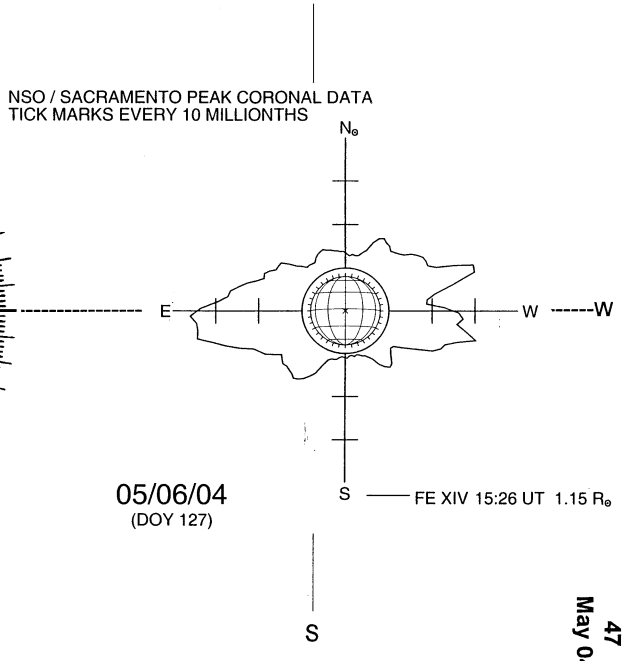
1937 UT

LEARMONTH SUNSPOTS



0137 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



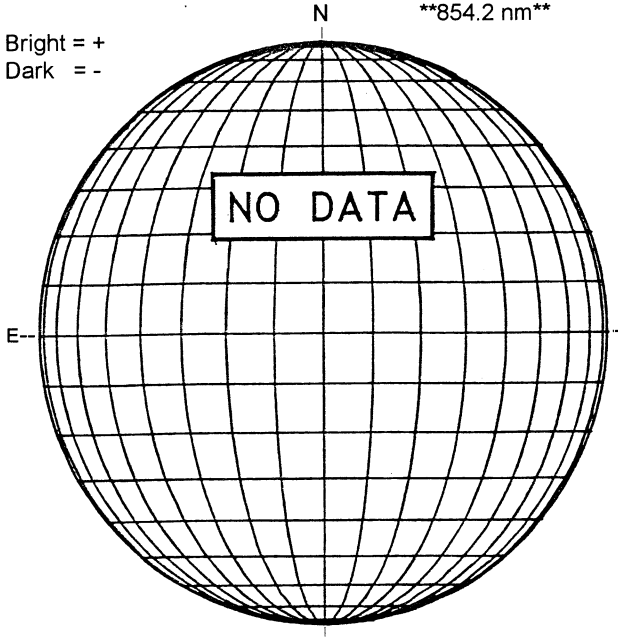
05/06/04
(DOY 127)

MAY 7, 2004 (P= -22.89, Bo = -3.51, Lo = 290.40)

KITT PEAK MAGNETOGRAM--SOLIS

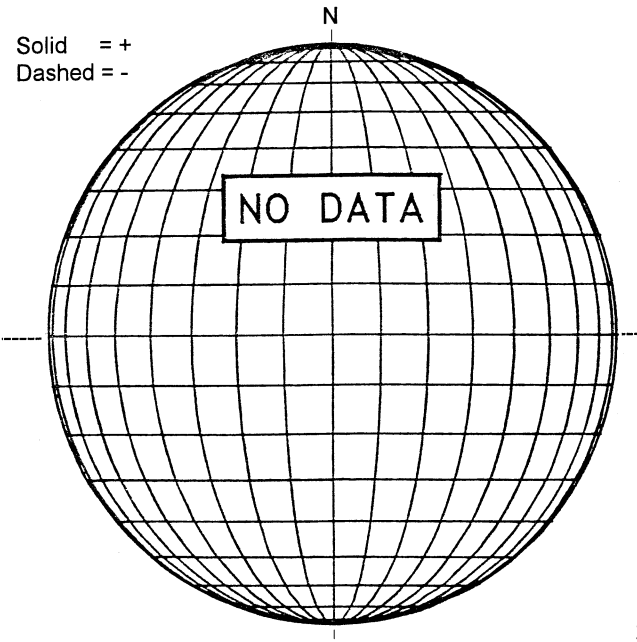
854.2 nm

Bright = +
Dark = -



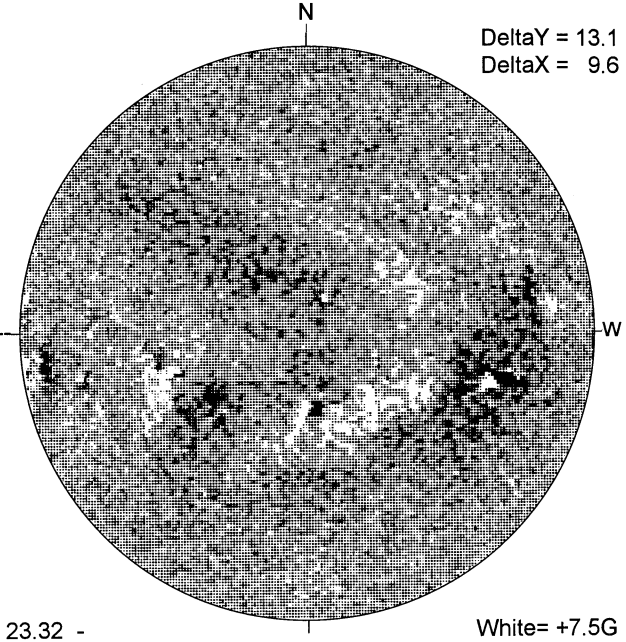
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

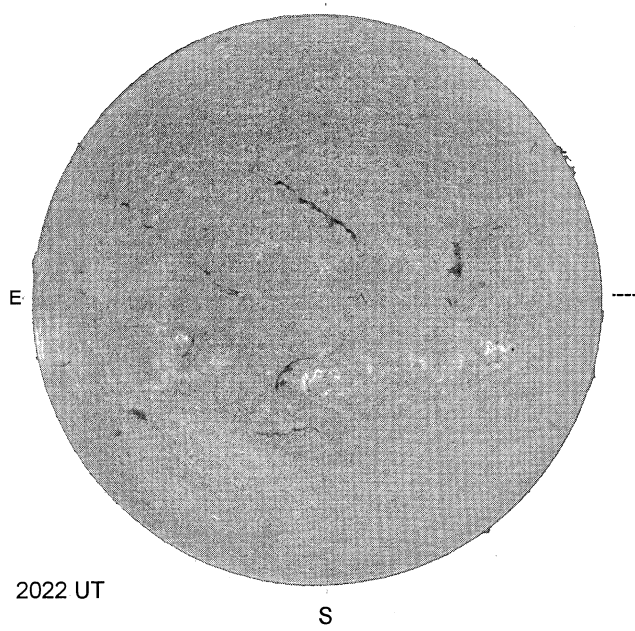
DeltaY = 13.1
DeltaX = 9.6



23.32 -
24.25 UT

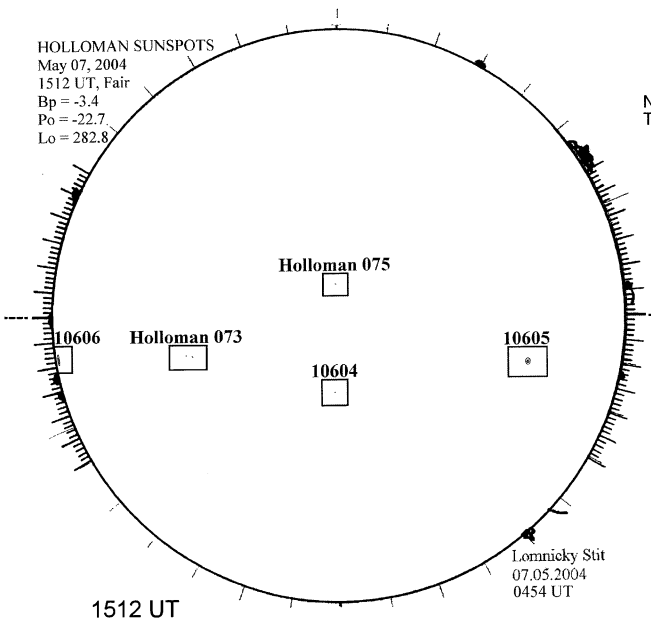
White= +7.5G
Black = -7.5G

----- BIG BEAR H-ALPHA



2022 UT

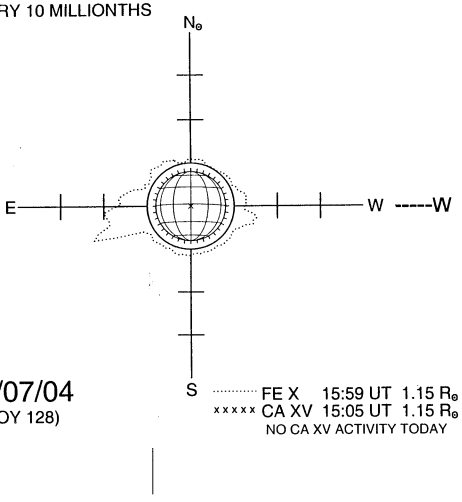
HOLLOMAN SUNSPOTS



1512 UT
0454 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



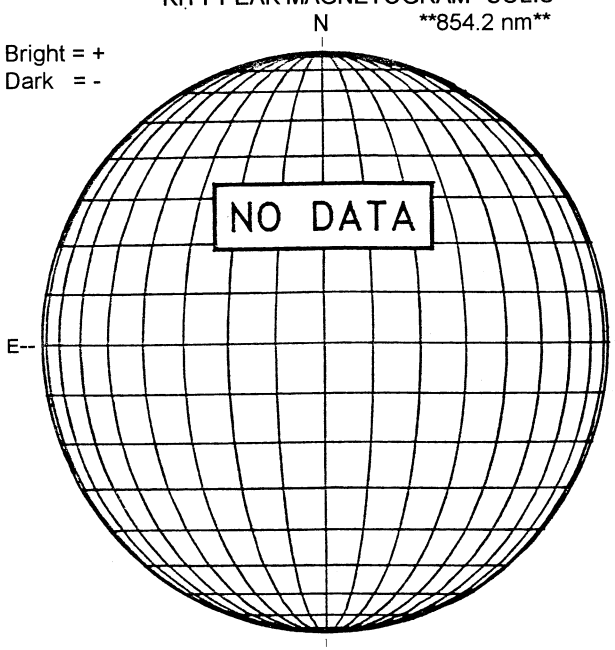
05/07/04
(DOY 128)

FE X 15:59 UT 1.15 R⊙
xxxxx CA XV 15:05 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

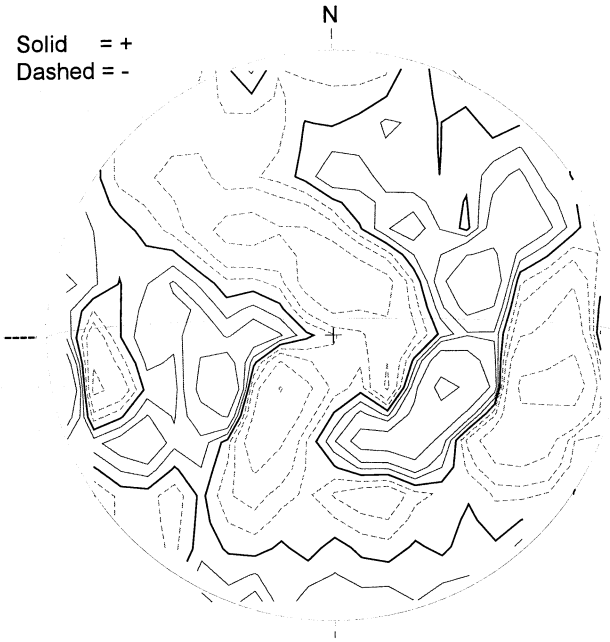
S

MAY 8, 2004 (P= -22.66, Bo = -3.41, Lo = 277.18)

KITT PEAK MAGNETOGRAM--SOLIS

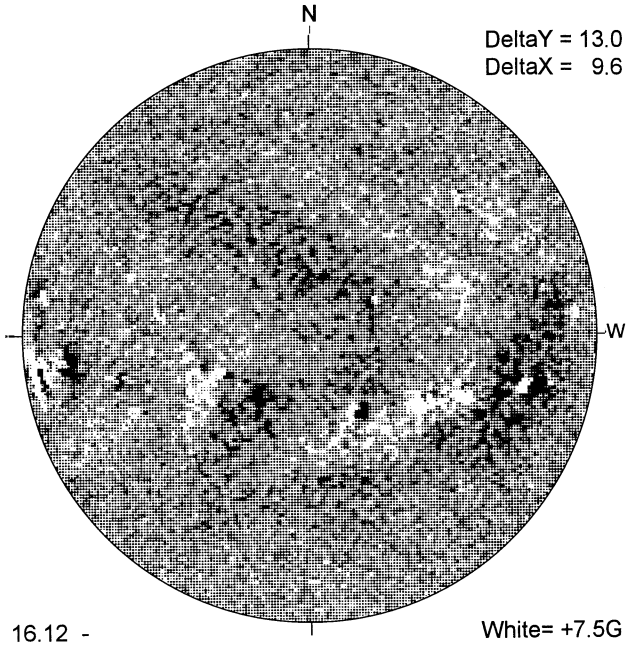


STANFORD MAGNETOGRAM



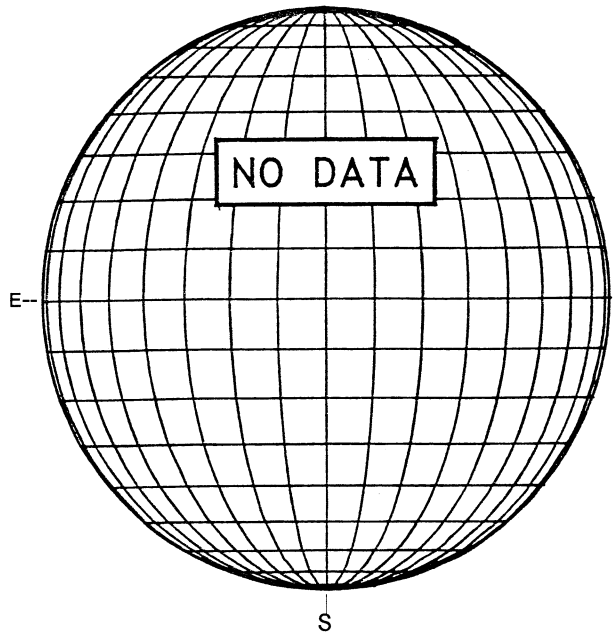
1609 UT

MT. WILSON MAGNETOGRAM

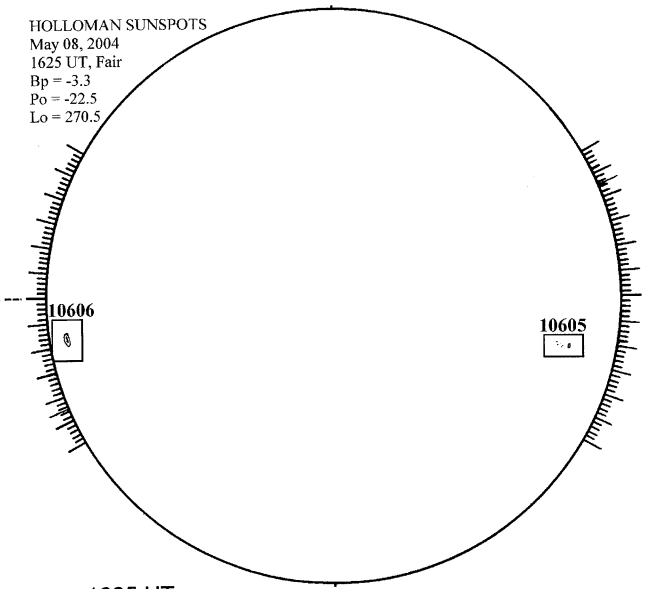


16.12 -
17.05 UT

BIG BEAR H-ALPHA

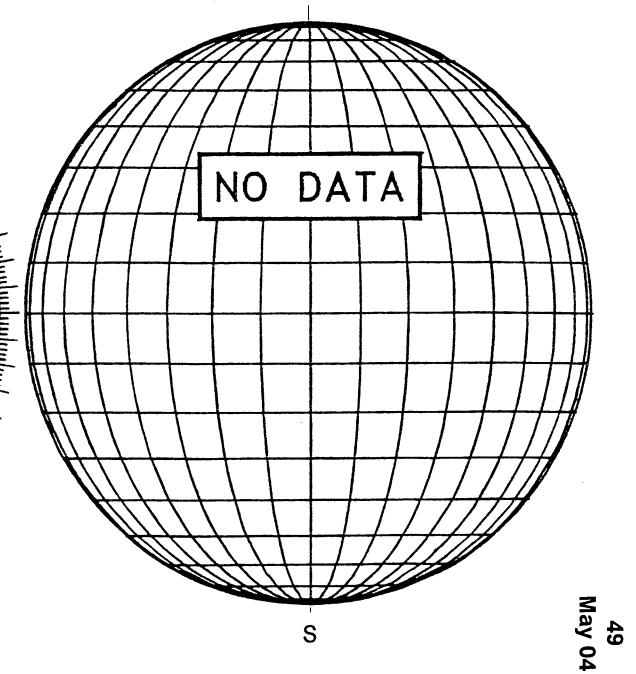


HOLLOMAN SUNSPOTS



1625 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

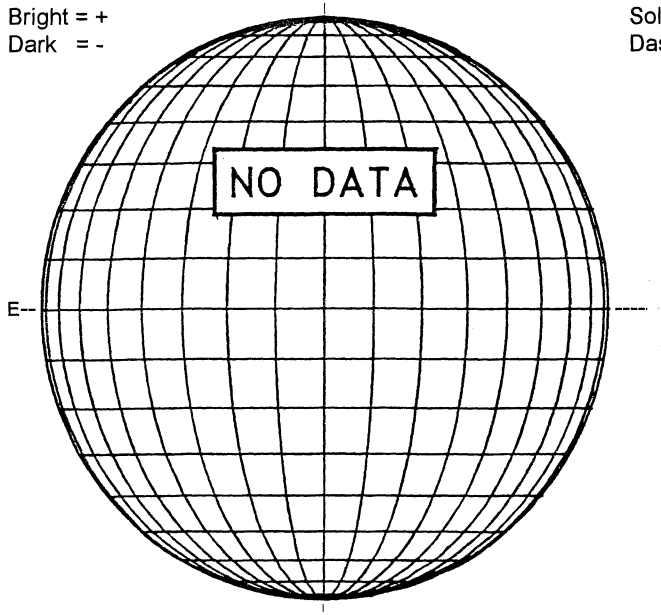


MAY 9, 2004 (P= -22.43, Bo = -3.30, Lo = 263.96)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

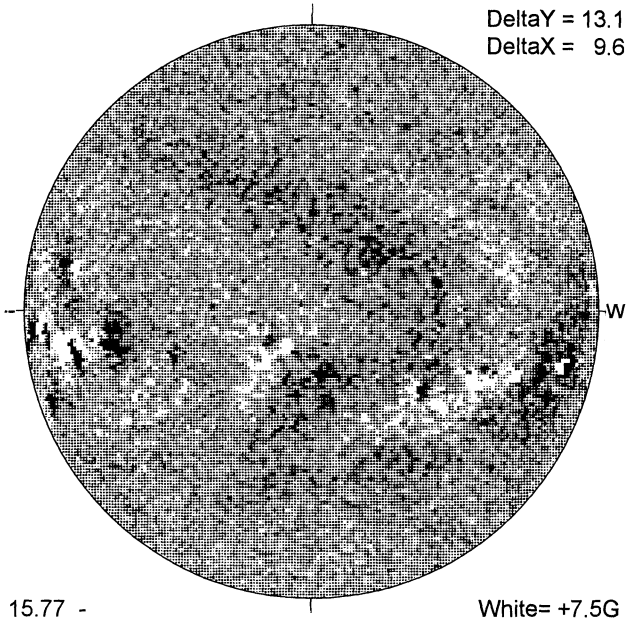
Solid = +
Dashed = -

2229 UT

MT. WILSON MAGNETOGRAM

N

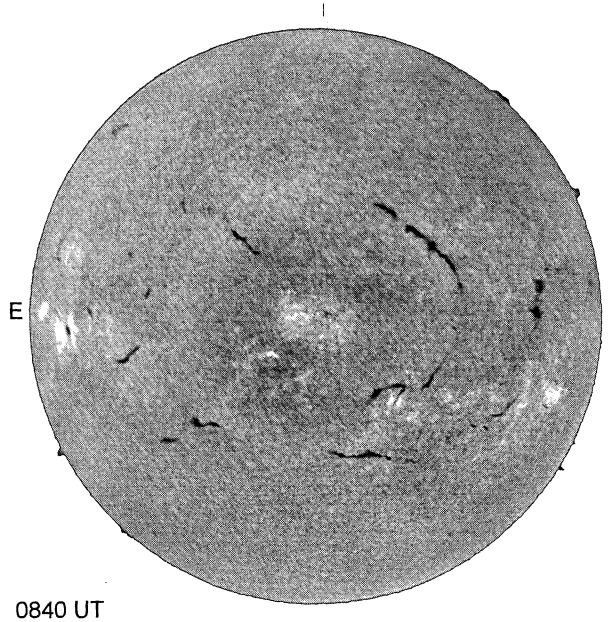
DeltaY = 13.1
DeltaX = 9.6



15.77 -
16.70 UT

White= +7.5G
Black = -7.5G

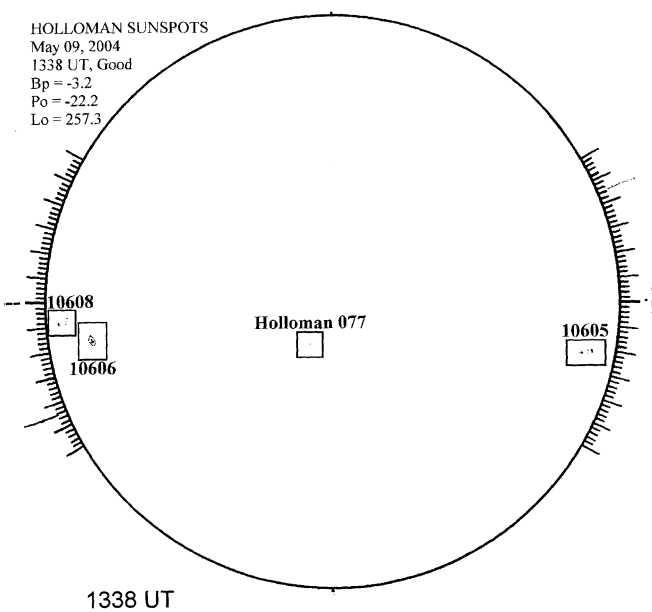
KANZELHOHE H-ALPHA



0840 UT

S

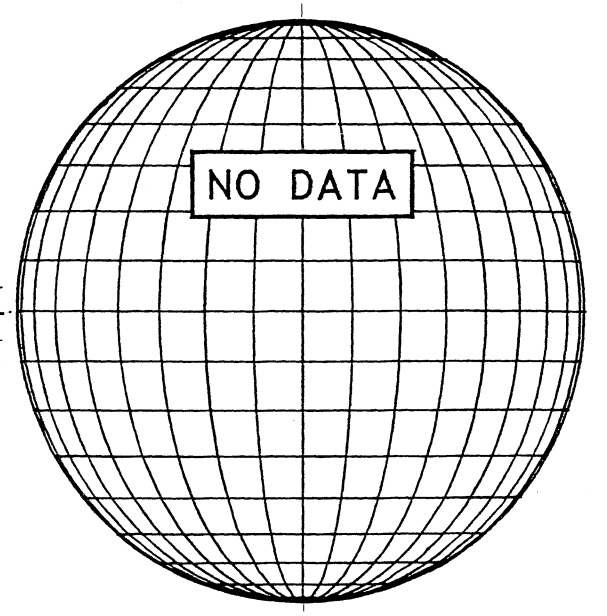
HOLLOMAN SUNSPOTS



1338 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



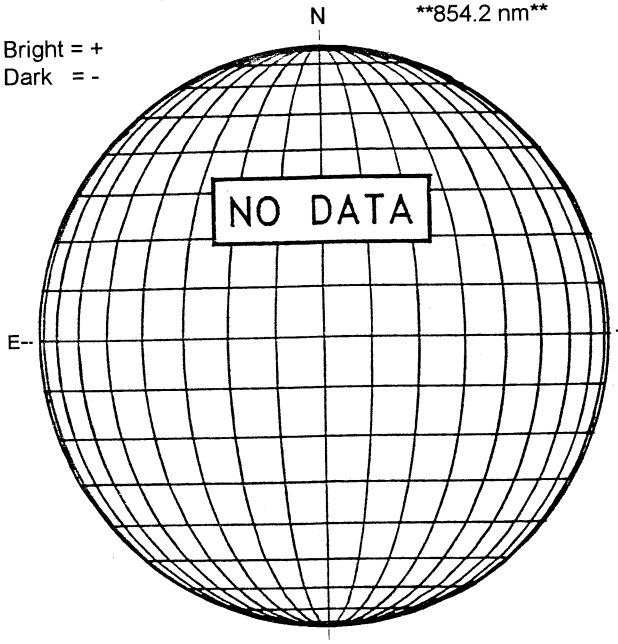
S

MAY 10, 2004 (P= -22.19, Bo = -3.19 Lo = 250.74)

KITT PEAK MAGNETOGRAM--SOLIS

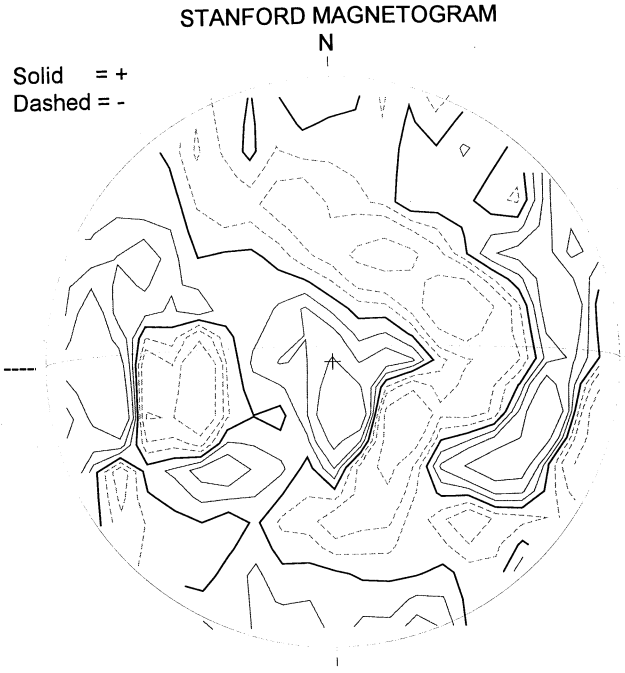
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

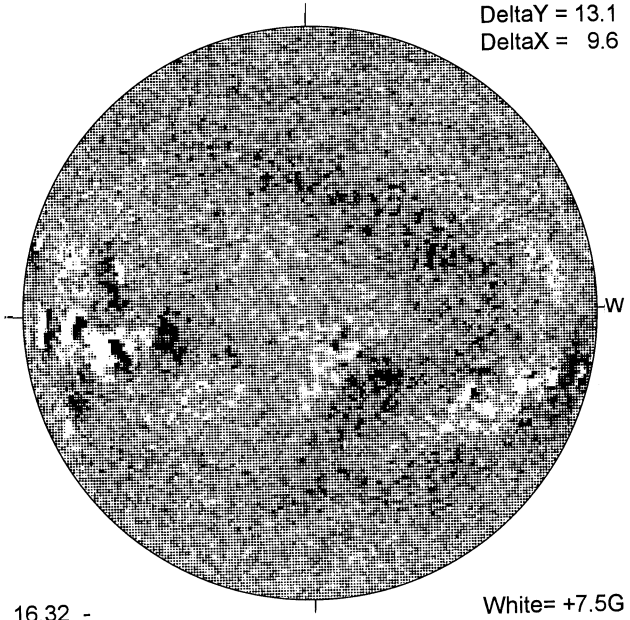
Solid = +
Dashed = -



1619 UT

MT. WILSON MAGNETOGRAM

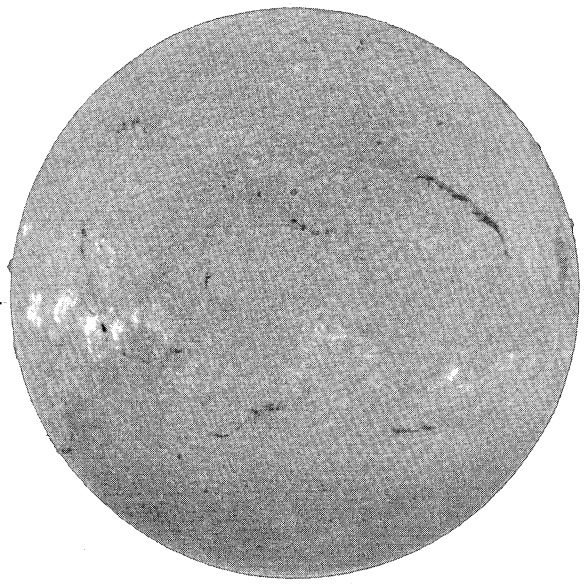
DeltaY = 13.1
DeltaX = 9.6



16.32 -
17.25 UT

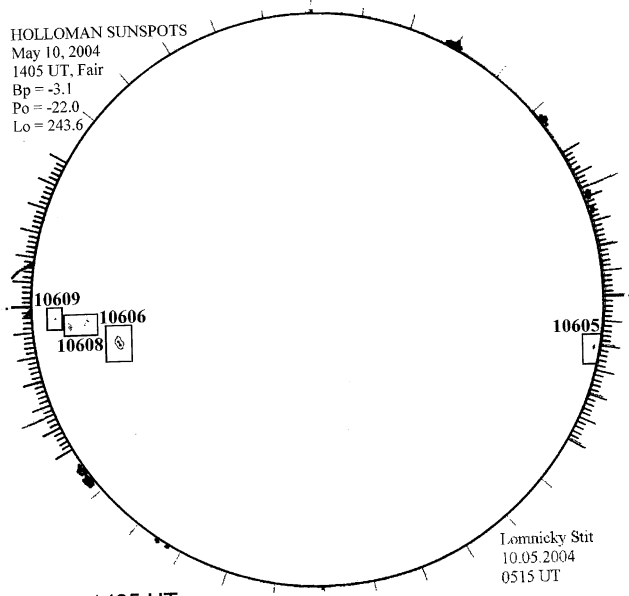
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



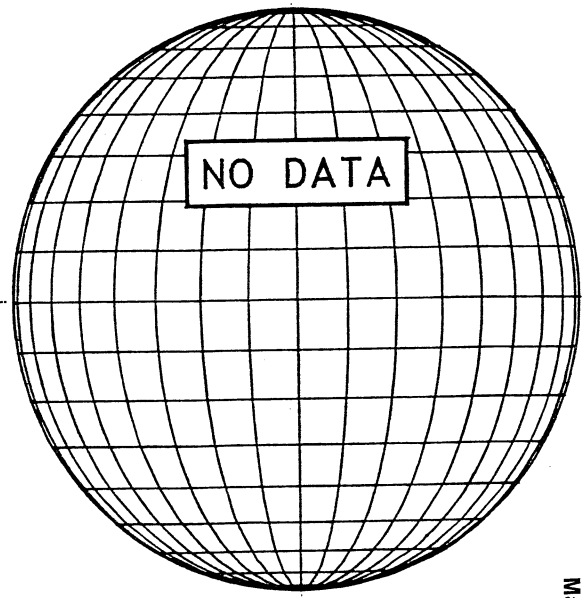
1646 UT

HOLLOMAN SUNSPOTS



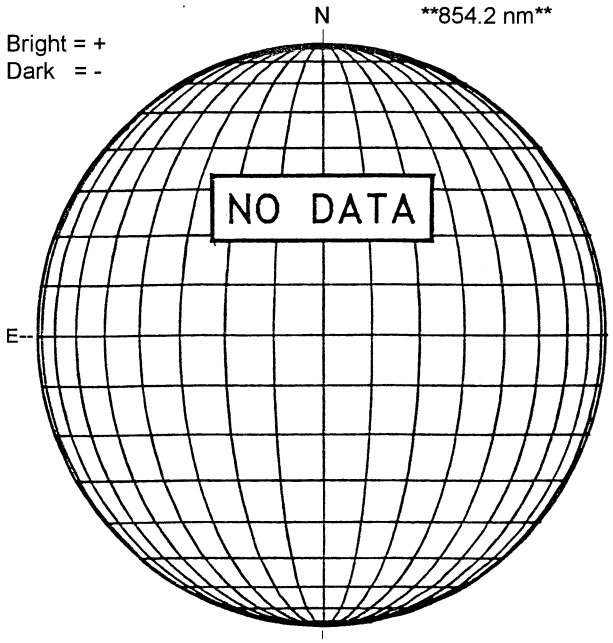
1405 UT
0515 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

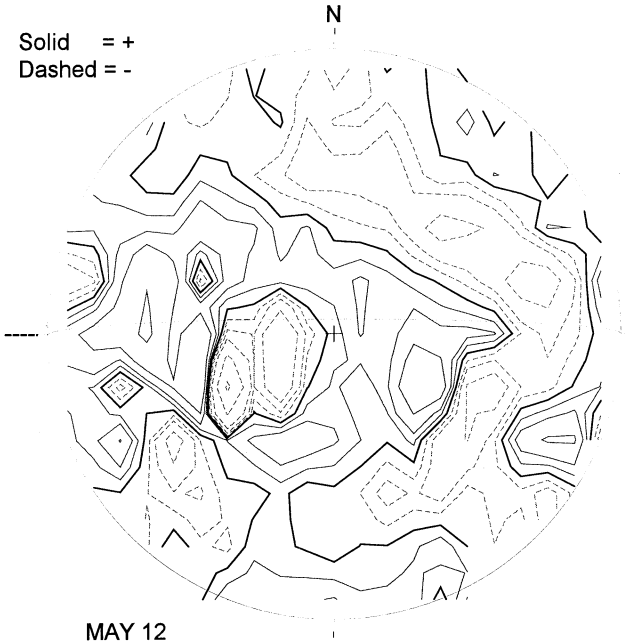


MAY 11, 2004 (P= -21.94, Bo = -3.08, Lo = 237.52)

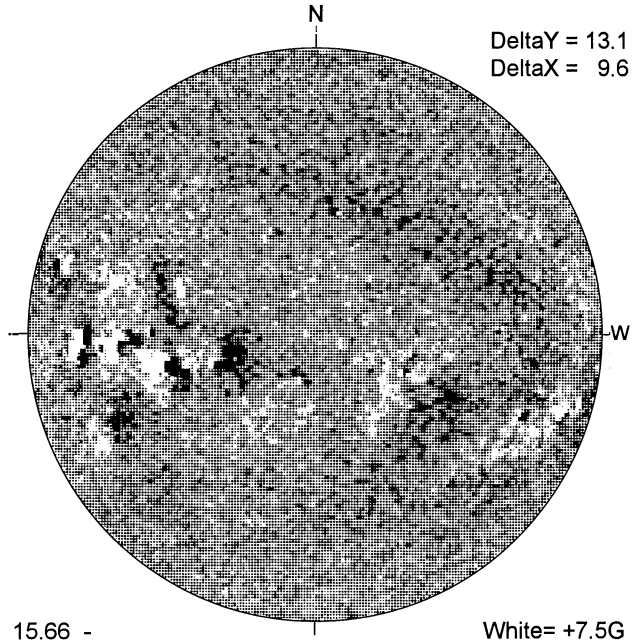
KITT PEAK MAGNETOGRAM--SOLIS



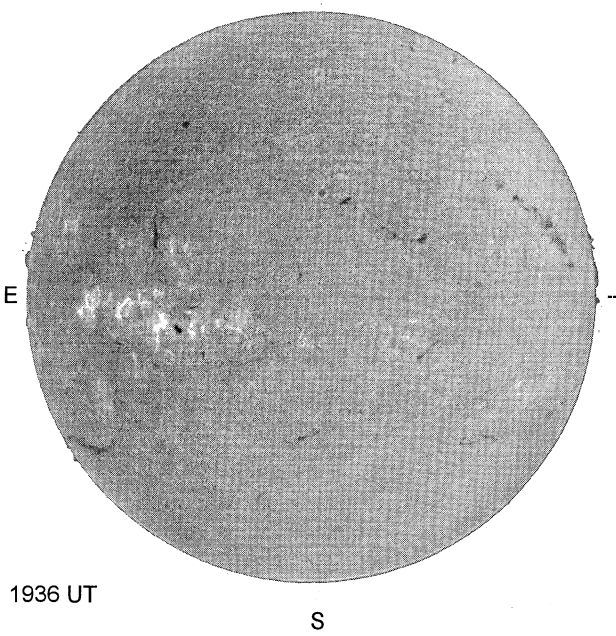
STANFORD MAGNETOGRAM



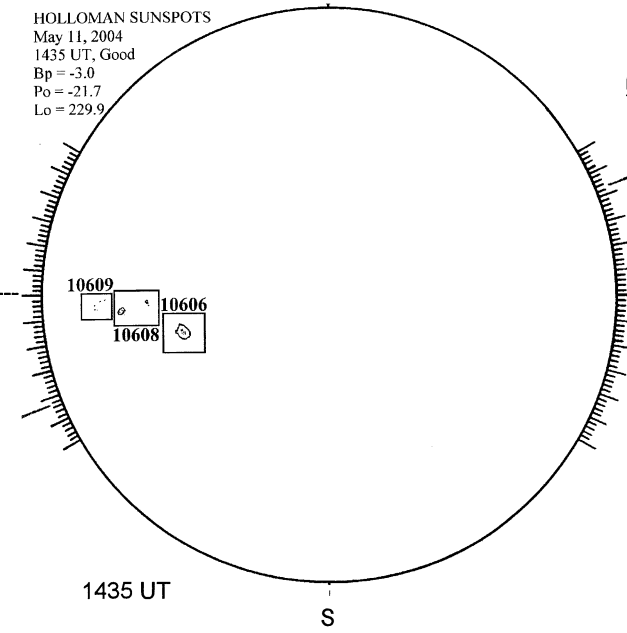
MT. WILSON MAGNETOGRAM



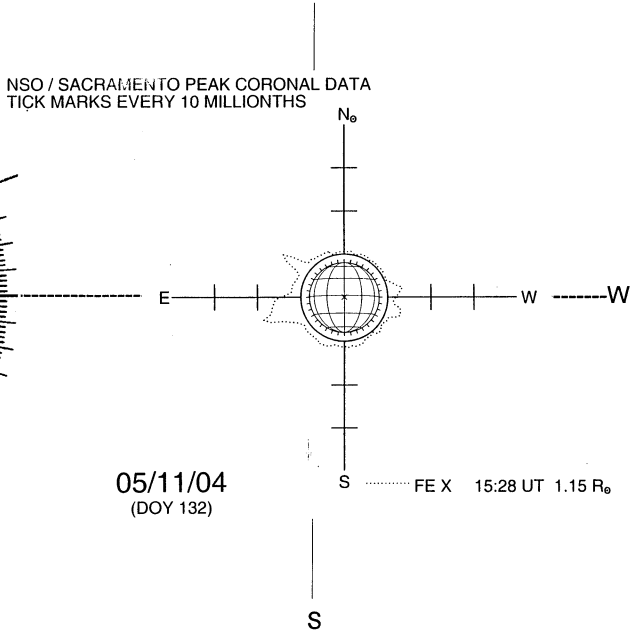
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 12, 2004 (P= -21.69, Bo = -2.97, Lo = 224.29)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -

N

E--

NO DATA

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

1938 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

N

-W

15.96 -
16.90 UT

White= +7.5G
Black = -7.5G

---- BIG BEAR H-ALPHA

E

1655 UT

S

HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
May 12, 2004
1415 UT, Good
Bp = -2.8
Po = -21.5
Lo = 216.4

10609
10610
10608
10606
Holloman 080

1415 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS

$N_\odot$

E

W -------W

S

05/12/04
(DOY 133)

FE X 17:23 UT 1.15 $R_\odot$
xxxxx CA XV 16:31 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

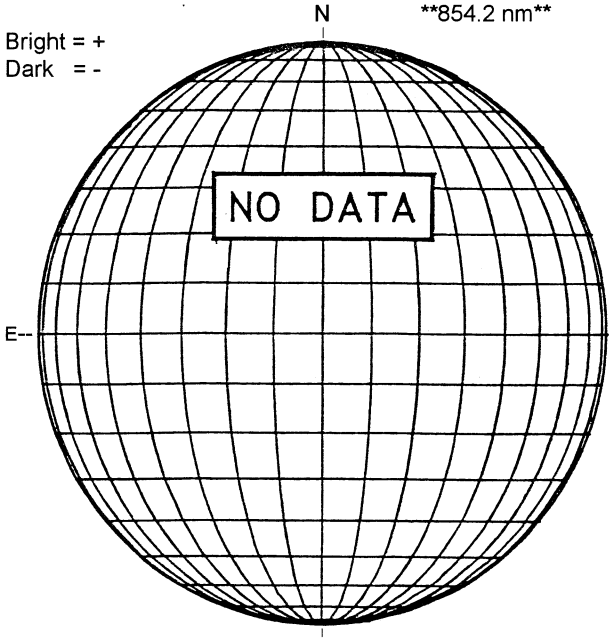
S

MAY 13, 2004 (P= -21.43, Bo = -2.86, Lo = 211.07)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -



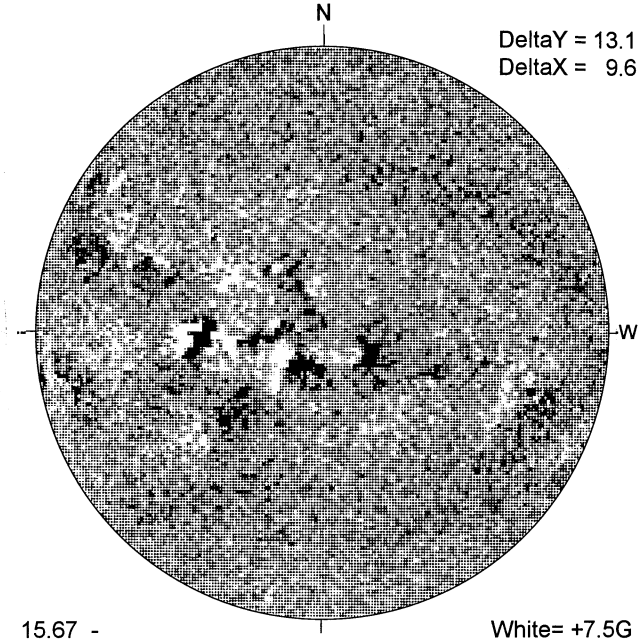
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2159 UT

MT. WILSON MAGNETOGRAM

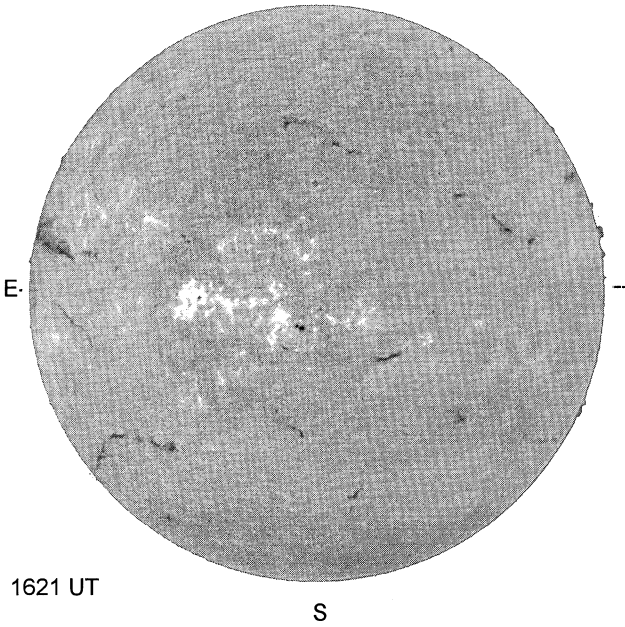
DeltaY = 13.1
DeltaX = 9.6



15.67 -
16.60 UT

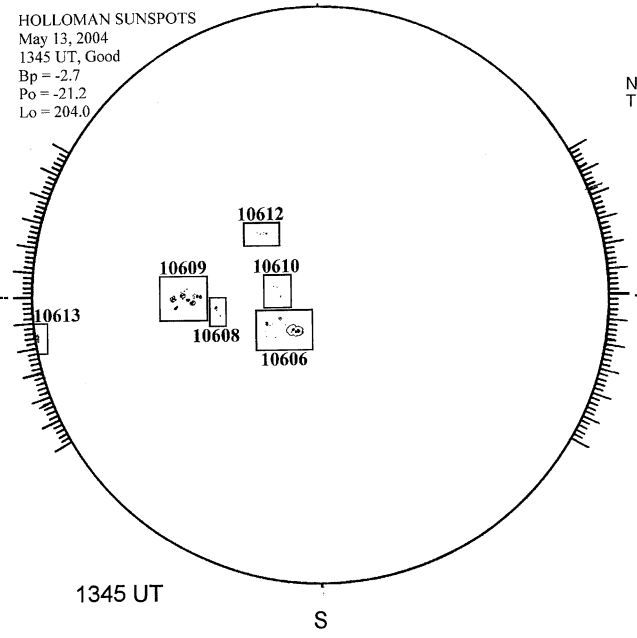
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



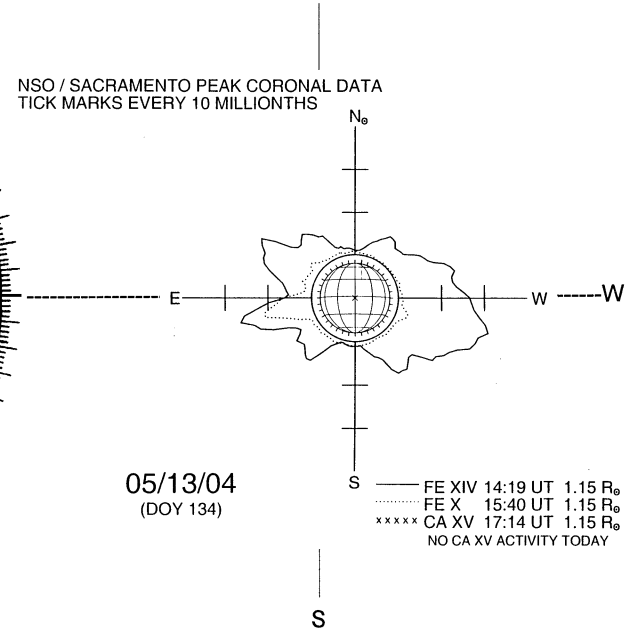
1621 UT

HOLLOMAN SUNSPOTS



1345 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

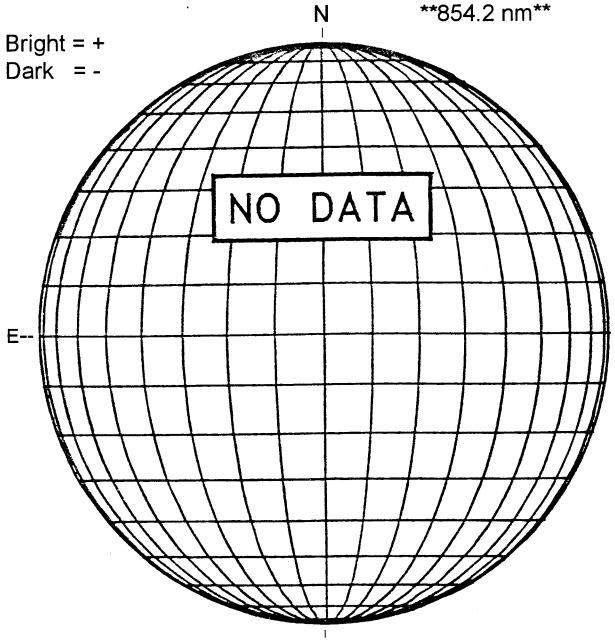


MAY 14, 2004 (P= -21.16, Bo = -2.74, Lo = 197.84)

KITT PEAK MAGNETOGRAM--SOLIS

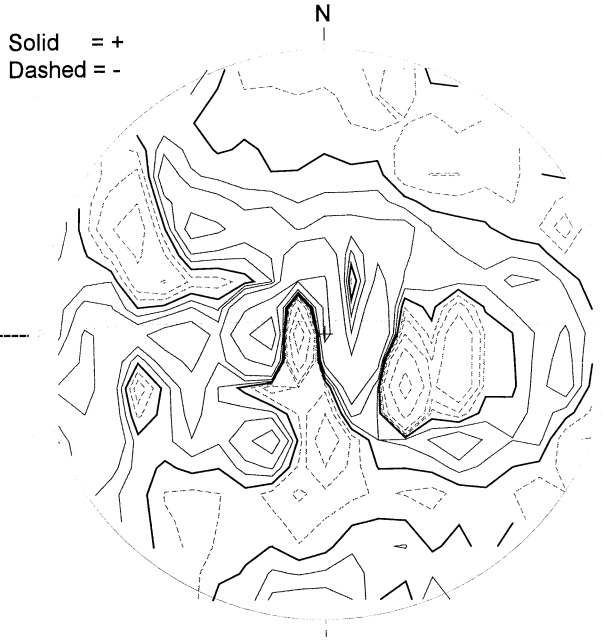
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

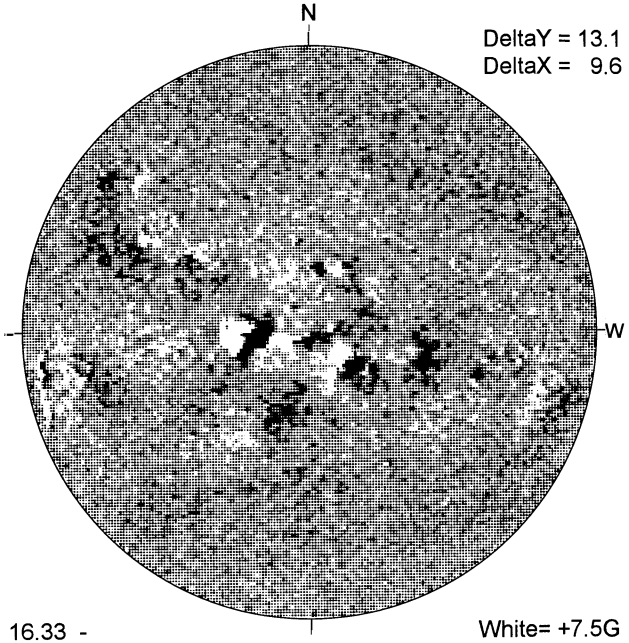
Solid = +
Dashed = -



2253 UT

MT. WILSON MAGNETOGRAM

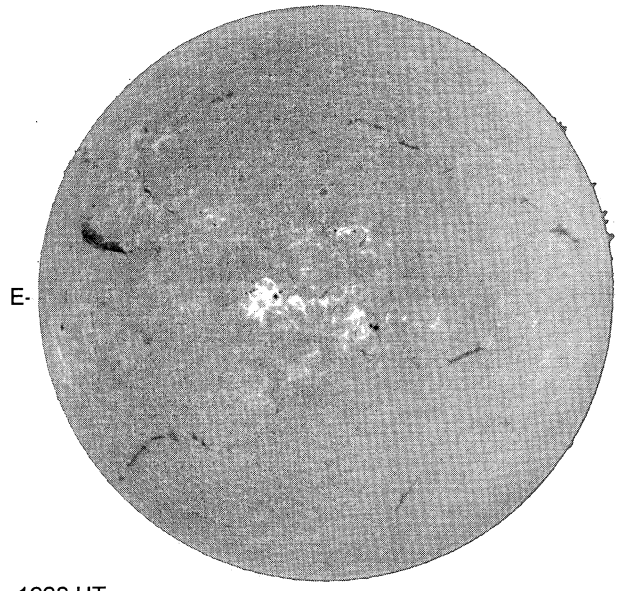
DeltaY = 13.1
DeltaX = 9.6



16.33 -
17.26 UT

White= +7.5G
Black = -7.5G

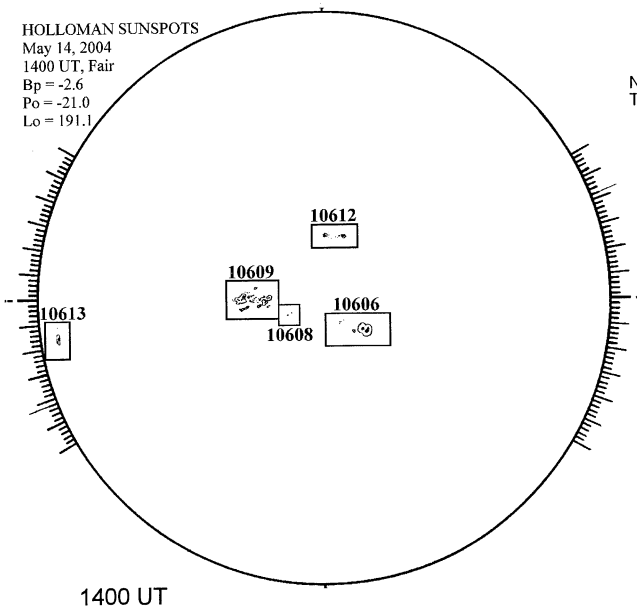
BIG BEAR H-ALPHA



1628 UT

S

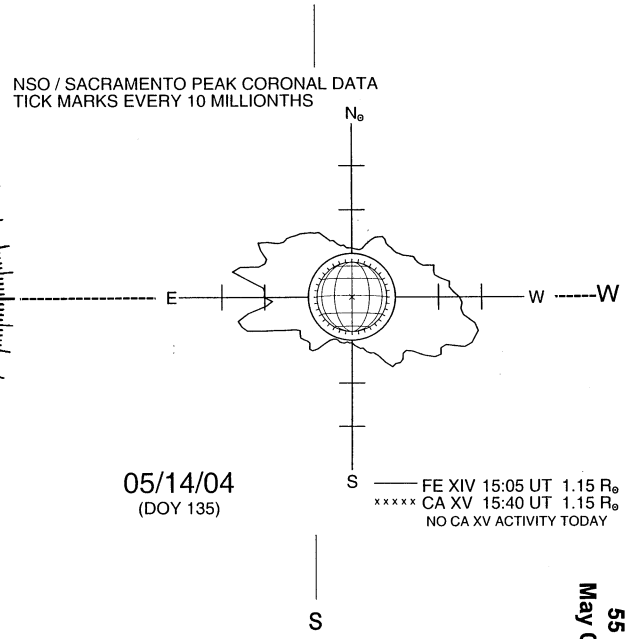
HOLLOMAN SUNSPOTS



1400 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

MAY 15, 2004 (P= -20.89, Bo = -2.63, Lo = 184.62)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -

N

E--

NO DATA

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

MAY 16
0125 UT

MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =

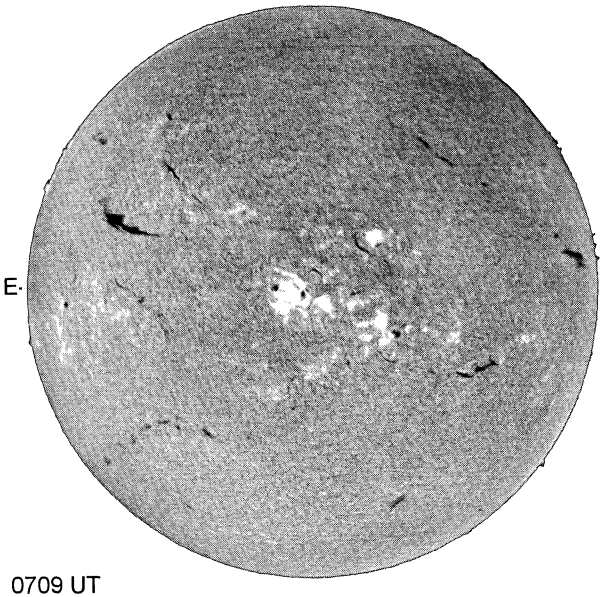
-W

NO DATA

White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

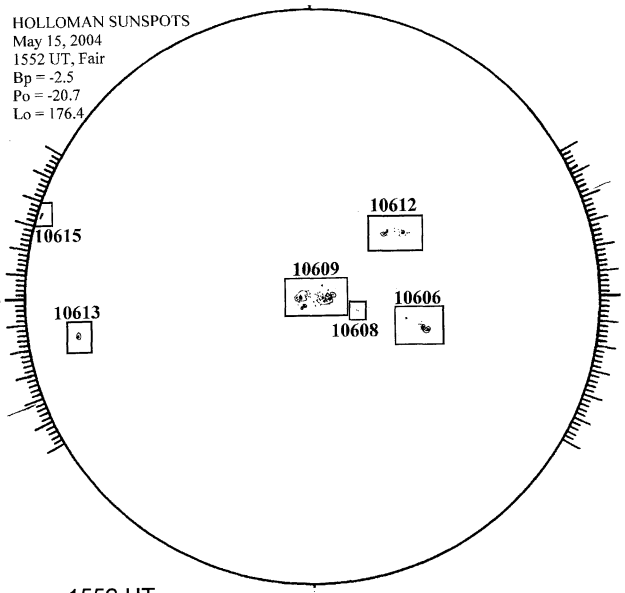
E-



0709 UT

S

HOLLOMAN SUNSPOTS



1552 UT

S

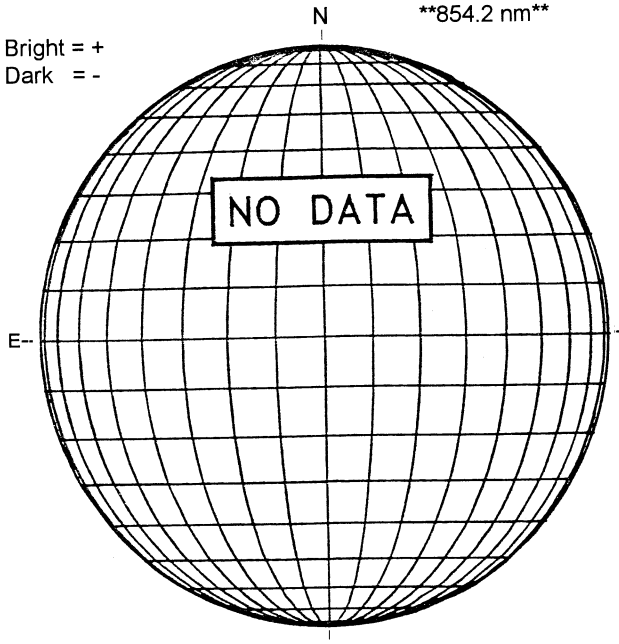
LOMNICKY PEAK CORONA (1.04 Radii)----

NO DATA

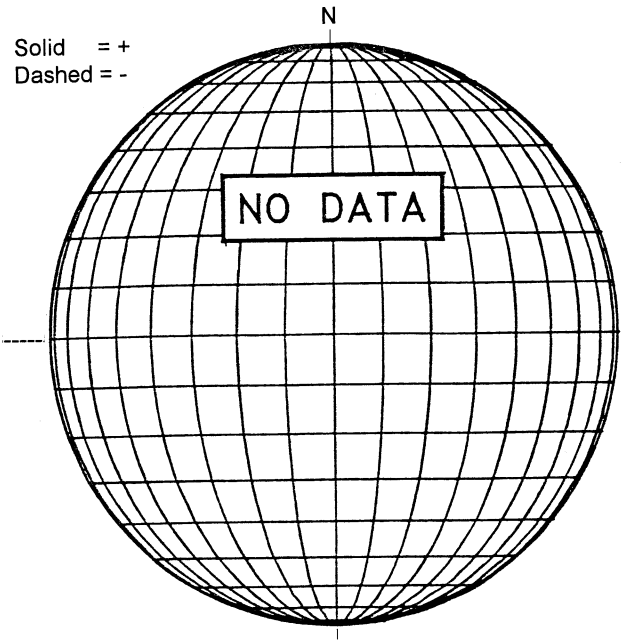
S

MAY 16, 2004 (P= -20.61, Bo = -2.52, Lo = 171.39)

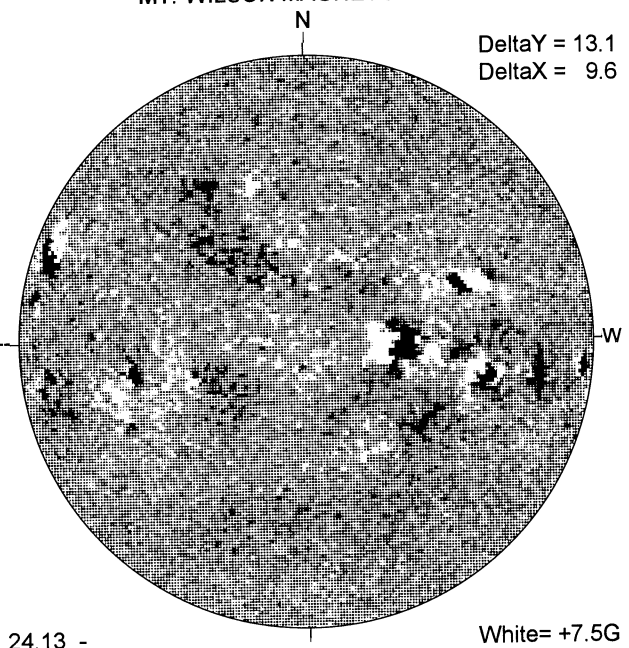
KITT PEAK MAGNETOGRAM--SOLIS
854.2 nm



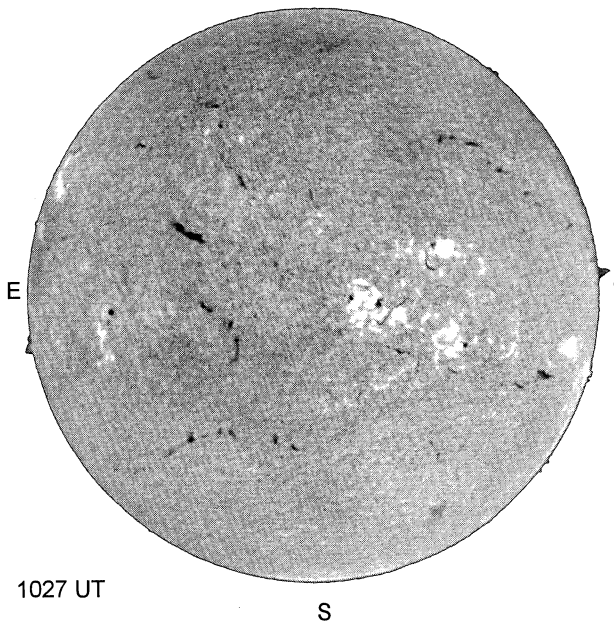
STANFORD MAGNETOGRAM



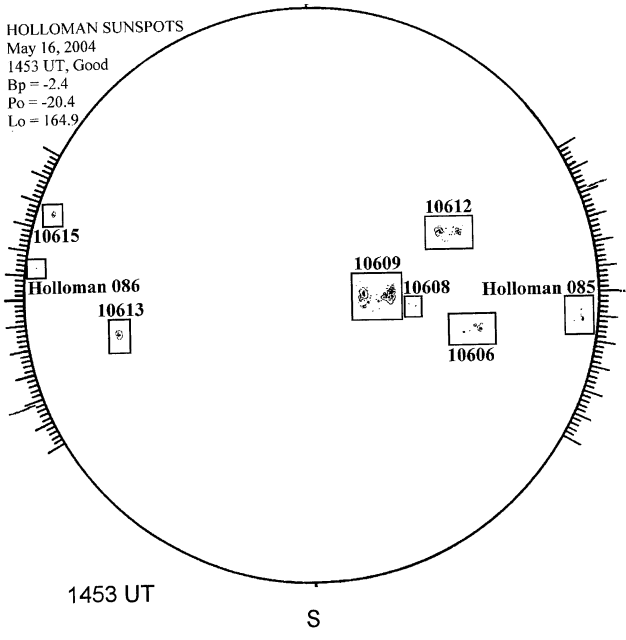
MT. WILSON MAGNETOGRAM



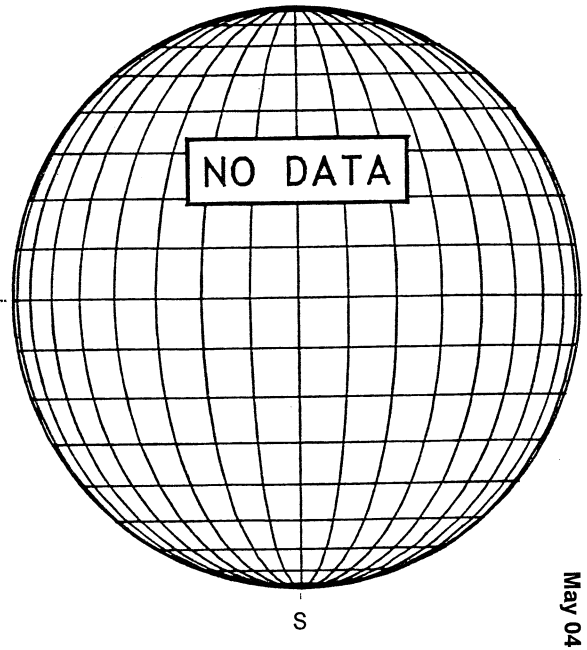
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----



MAY 17, 2004 (P= -20.33, Bo = -2.40, Lo = 158.16)

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 = 20.1
DeltaX = 13.0

-W

20.58 -
20.99 UT

White= +7.5G
Black = -7.5G

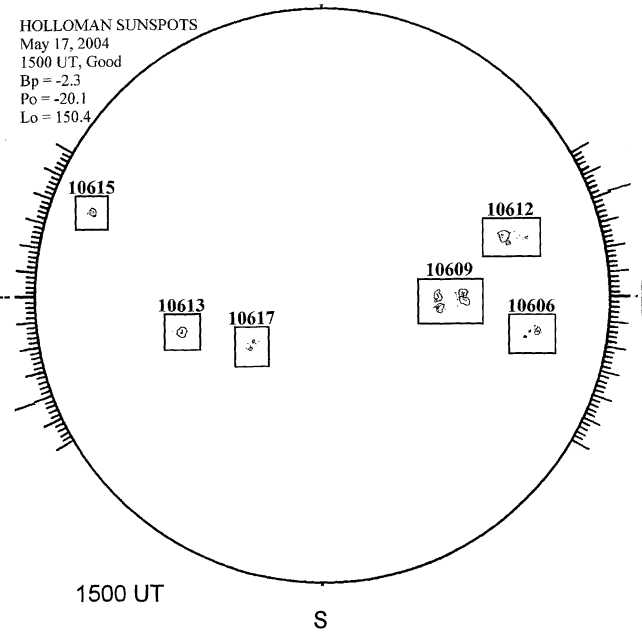
BIG BEAR H-ALPHA

E

2123 UT

S

HOLLOMAN SUNSPOTS



1500 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NO DATA

S

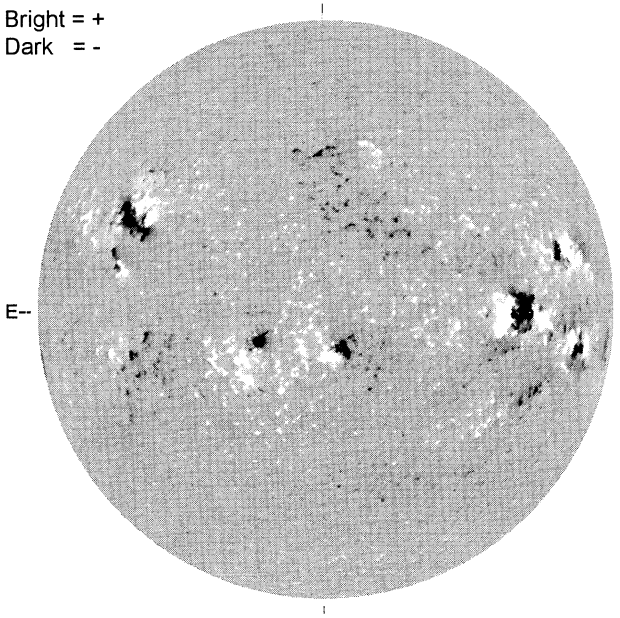
MAY 18, 2004 (P= -20.03, Bo = -2.29, Lo = 144.94)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



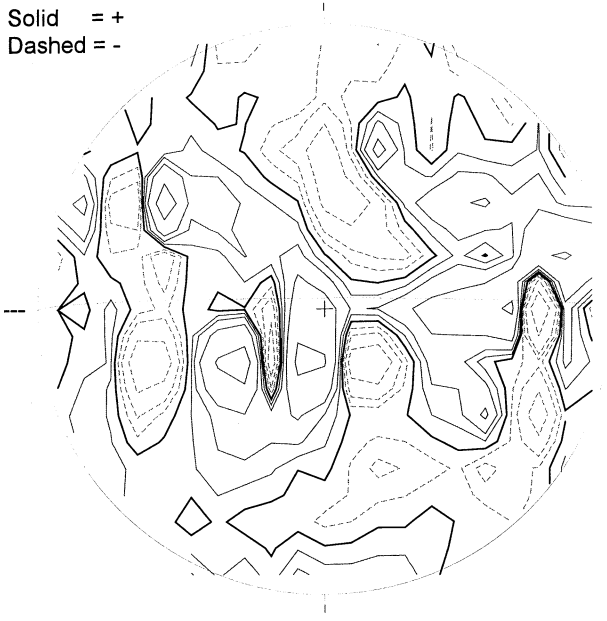
E--

1905 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

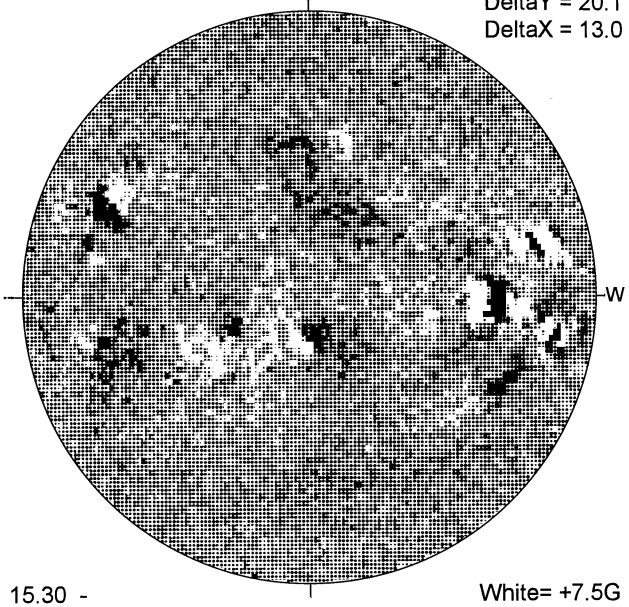


2055 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 20.1
DeltaX = 13.0

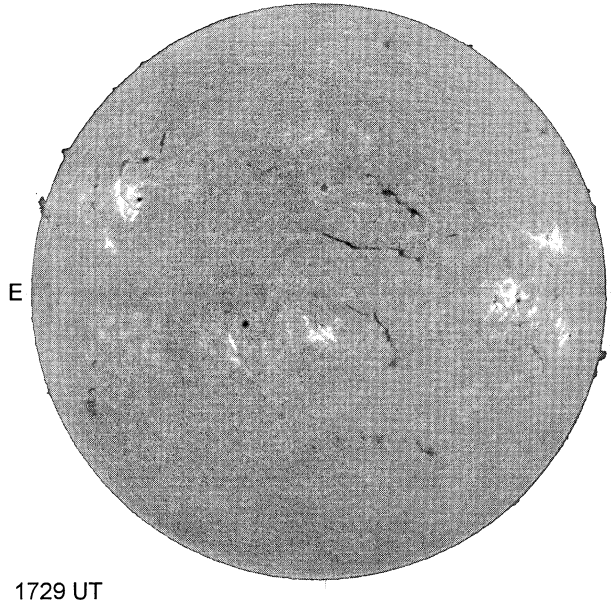


W

15.30 -
15.71 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

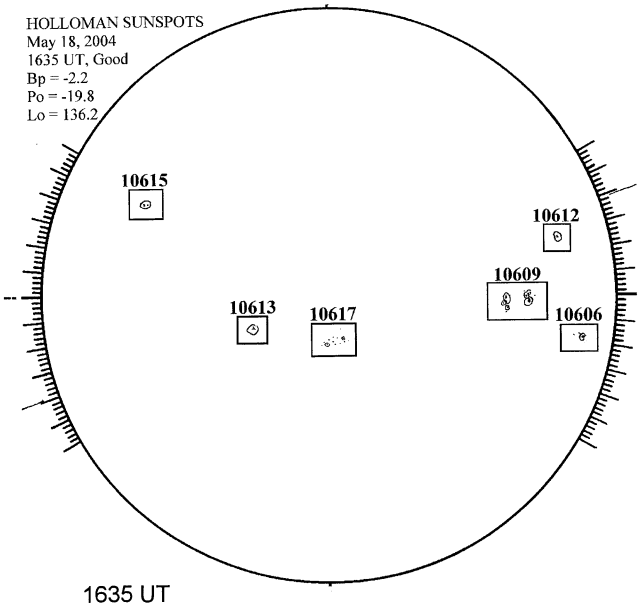


E

1729 UT

S

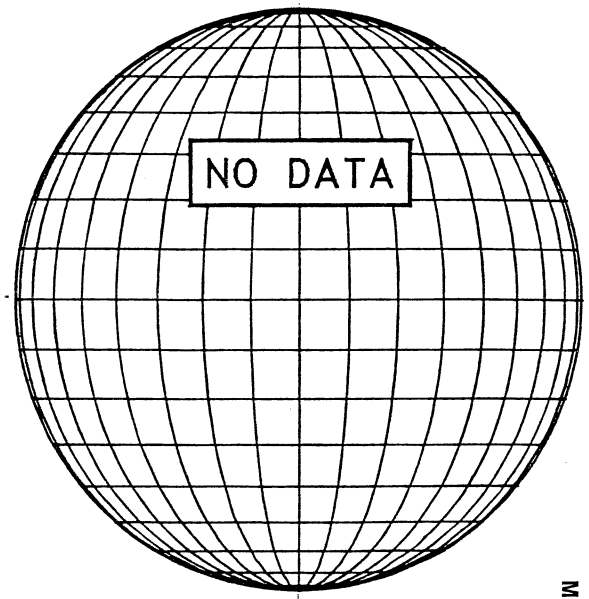
HOLLOMAN SUNSPOTS



1635 UT

S

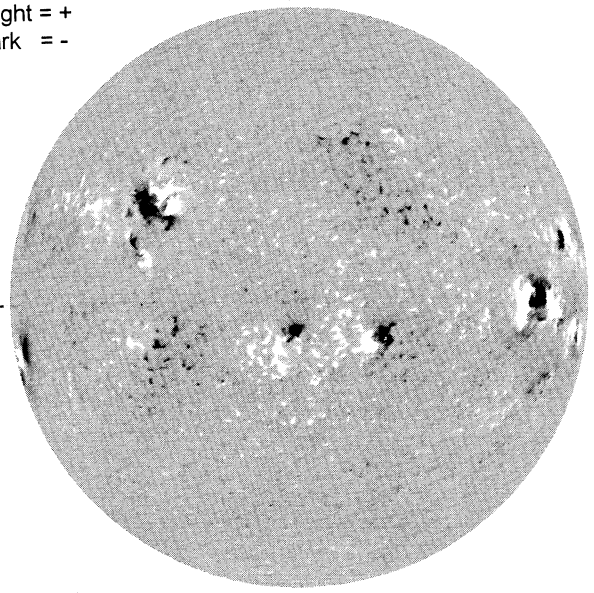
LOMNICKY PEAK CORONA (1.04 Radii)----



S

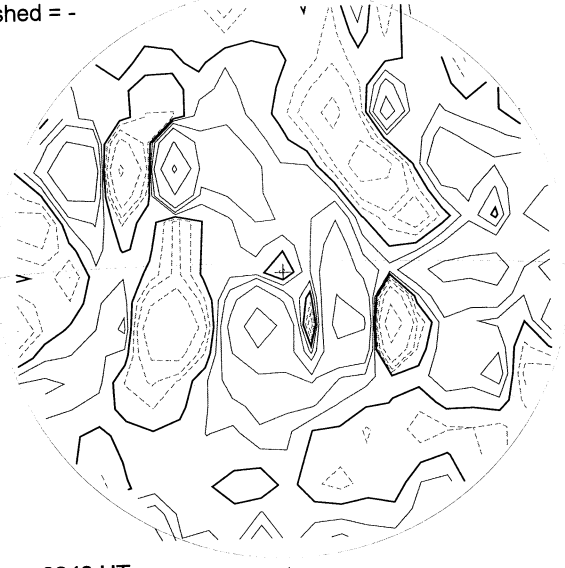
MAY 19, 2004 (P= -19.73, Bo = -2.17, Lo = 131.71)

KITT PEAK MAGNETOGRAM--SOLIS
N **854.2 nm**
Bright = +
Dark = -
E--



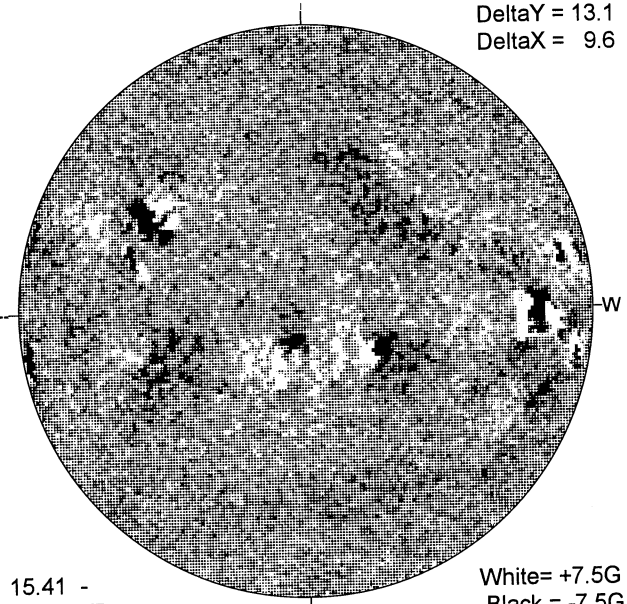
1830 UT

STANFORD MAGNETOGRAM
N
Solid = +
Dashed = -



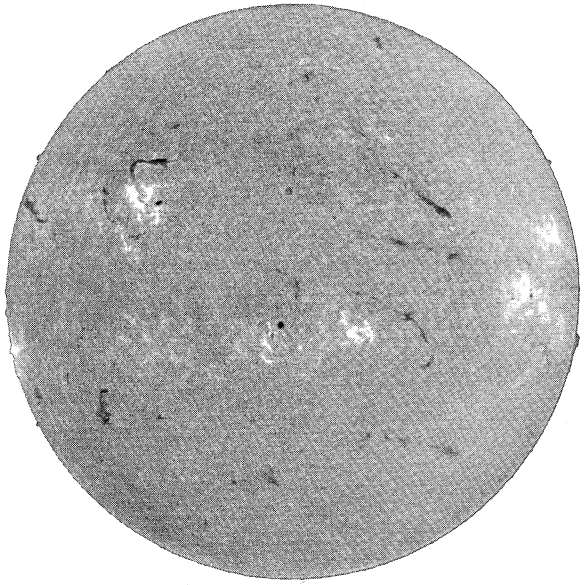
2240 UT

MT. WILSON MAGNETOGRAM
N
DeltaY = 13.1
DeltaX = 9.6



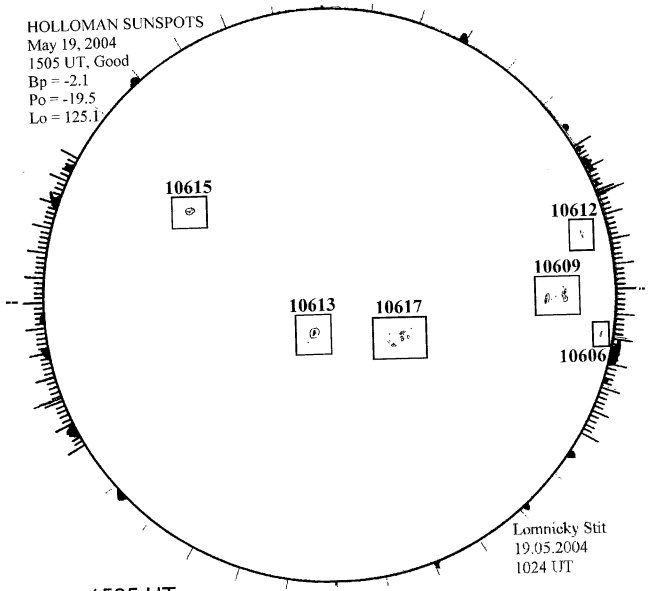
-W
15.41 -
16.34 UT
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



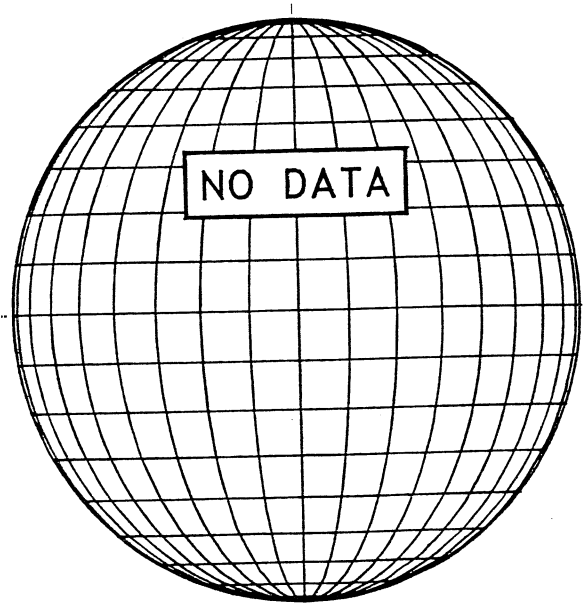
E-
1602 UT
S

HOLLOMAN SUNSPOTS



1505 UT
1024 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

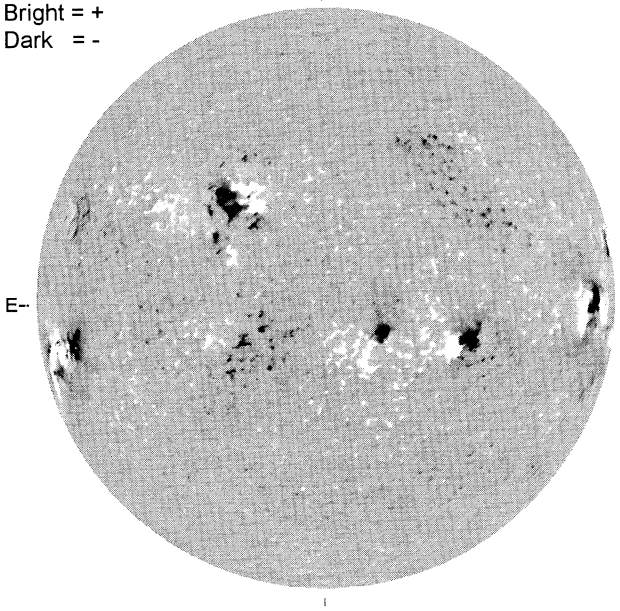
MAY 20, 2004 (P= -19.43, Bo = -2.05, Lo = 118.48)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



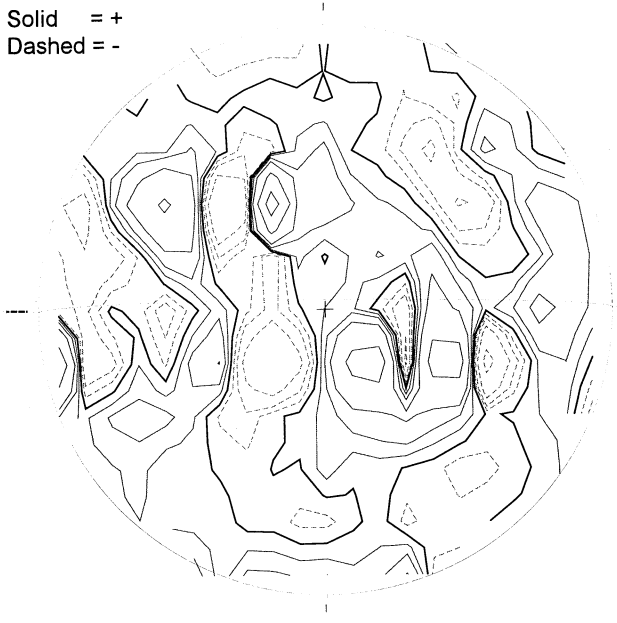
E--

1716 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

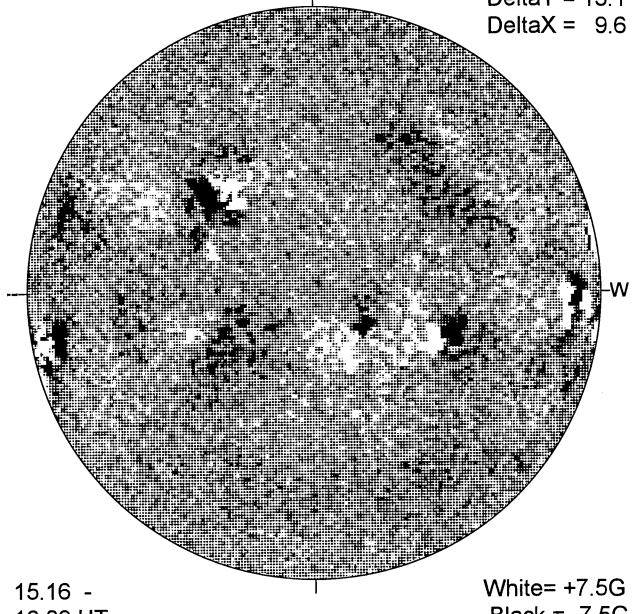


2150 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

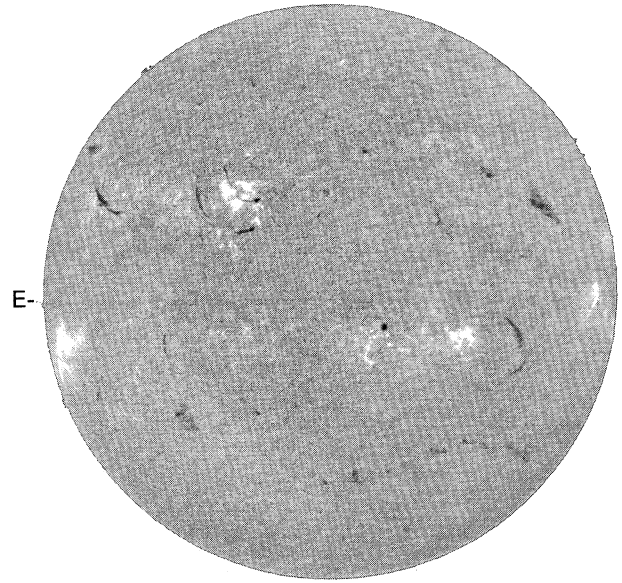


W

15.16 -
16.09 UT

White= +7.5G
Black = -7.5G

---- BIG BEAR H-ALPHA

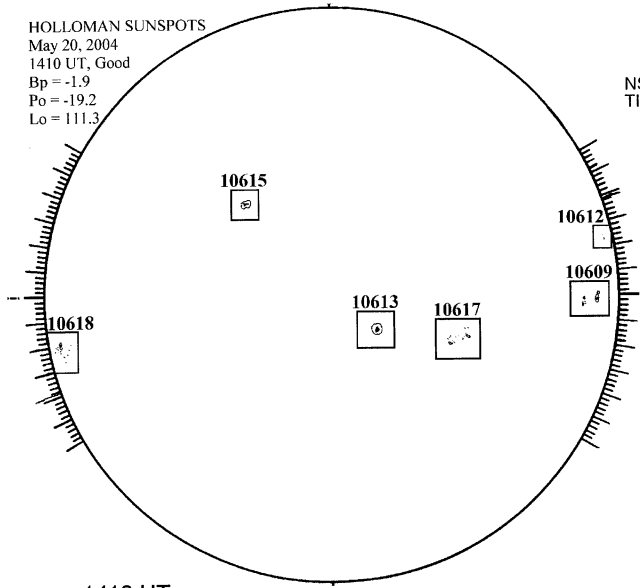


E-

1635 UT

S

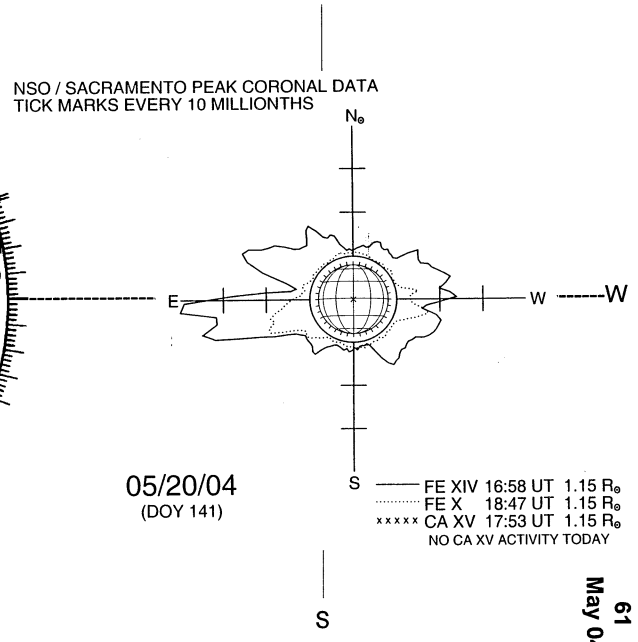
HOLLOMAN SUNSPOTS



1410 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

61
May 04

MAY 21, 2004 (P= -19.12, Bo = -1.94, Lo = 105.25)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -

N

NO DATA

E--

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

NO DATA

MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

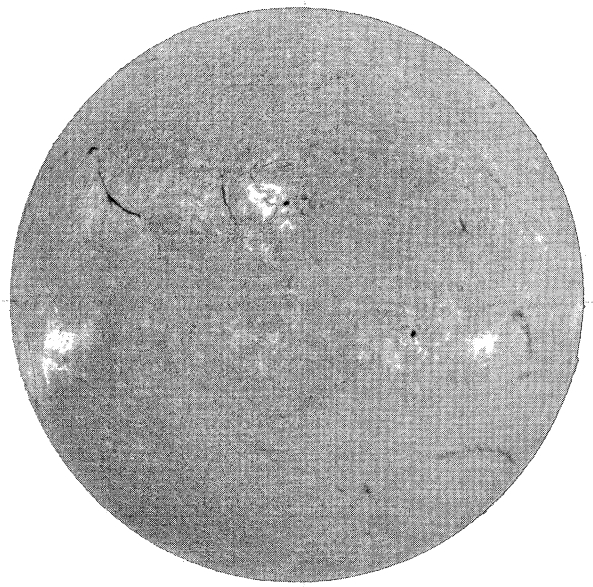
N

NO DATA

-W

White= +7.5G
Black = -7.5G

----- BIG BEAR H-ALPHA

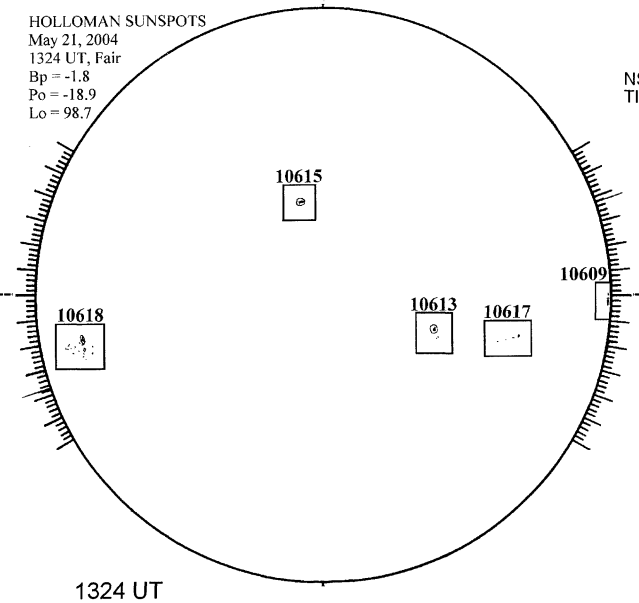


E

1636 UT

S

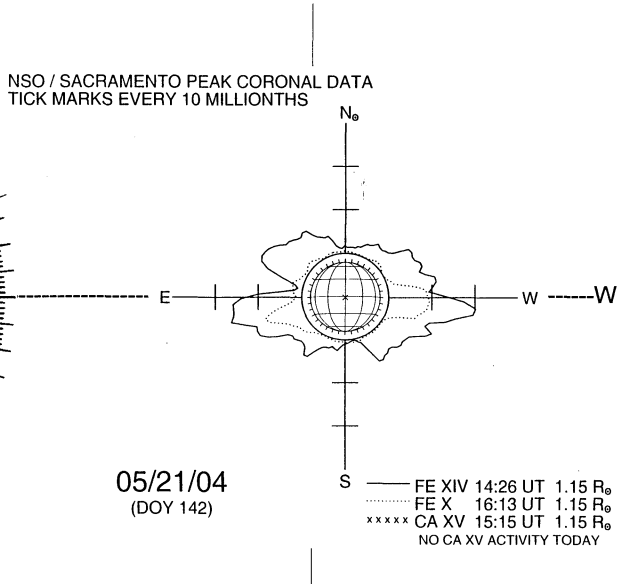
HOLLOMAN SUNSPOTS



1324 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



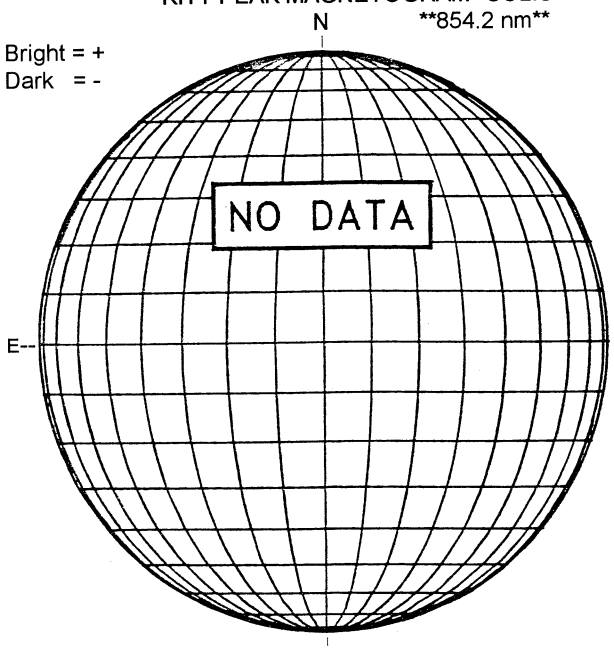
S

MAY 22, 2004 (P= -18.80, Bo = -1.82, Lo = 92.02)

KITT PEAK MAGNETOGRAM--SOLIS

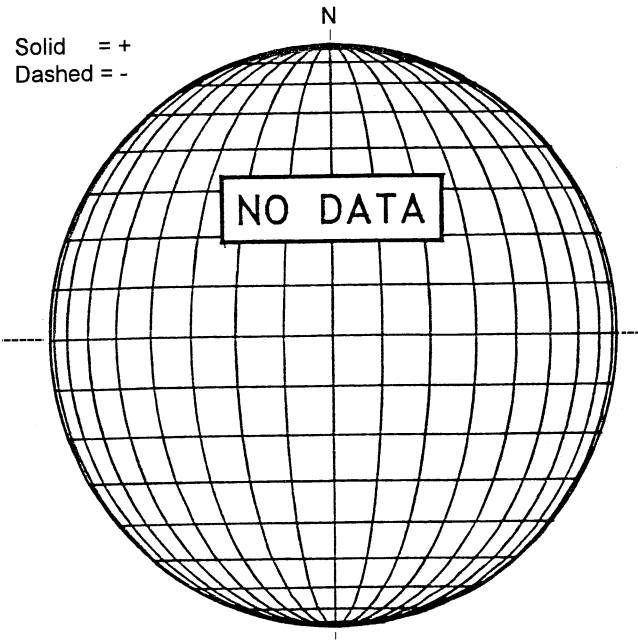
854.2 nm

Bright = +
Dark = -



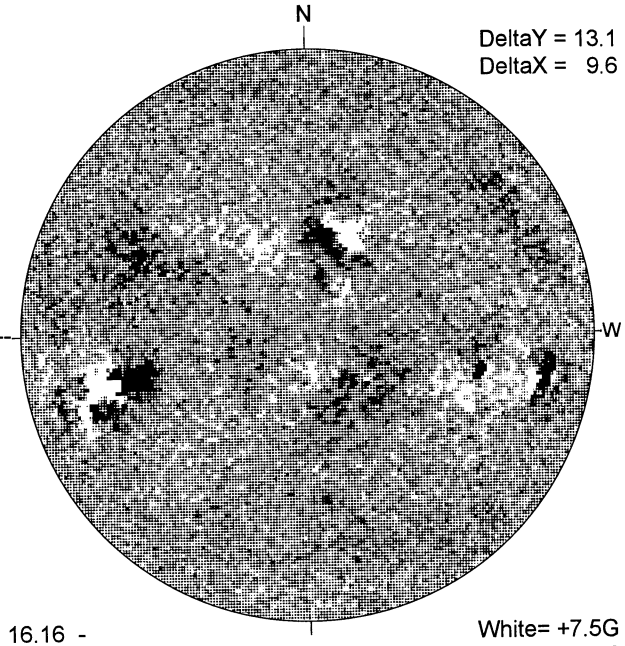
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

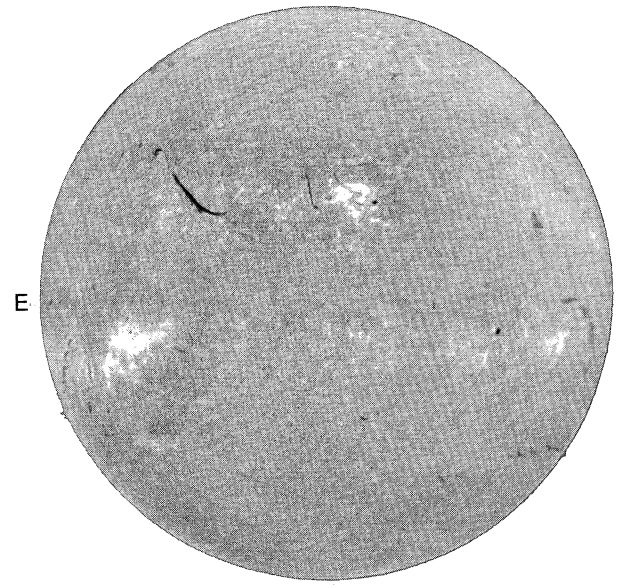
DeltaY = 13.1
DeltaX = 9.6



16.16 -
17.08 UT

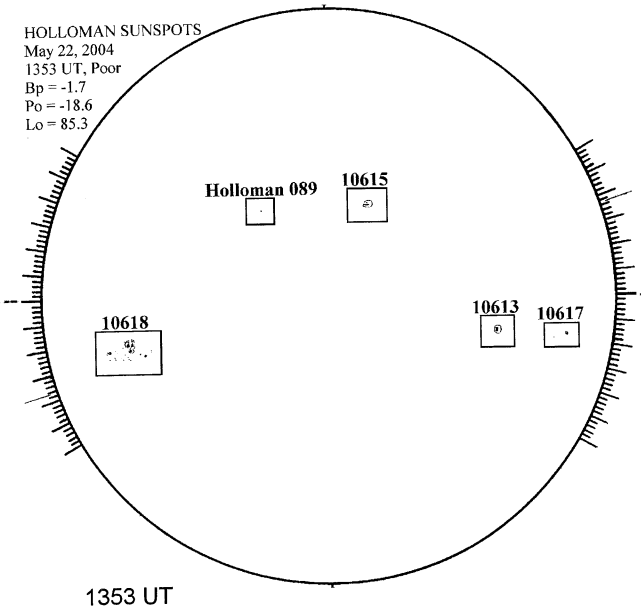
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



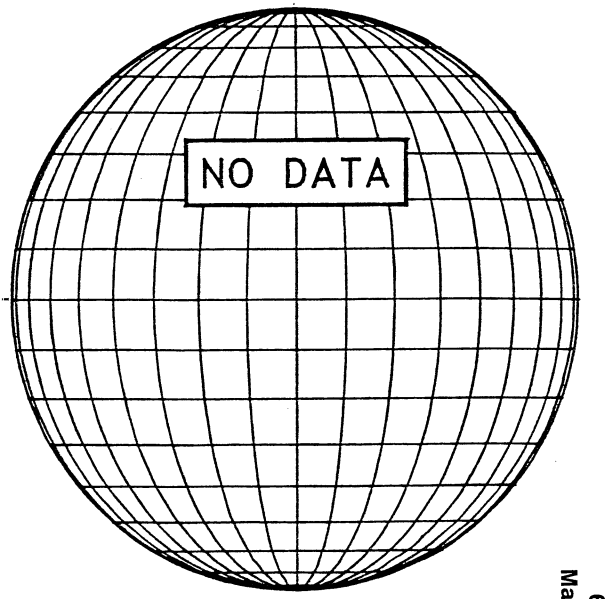
1608 UT

HOLLOMAN SUNSPOTS



1353 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

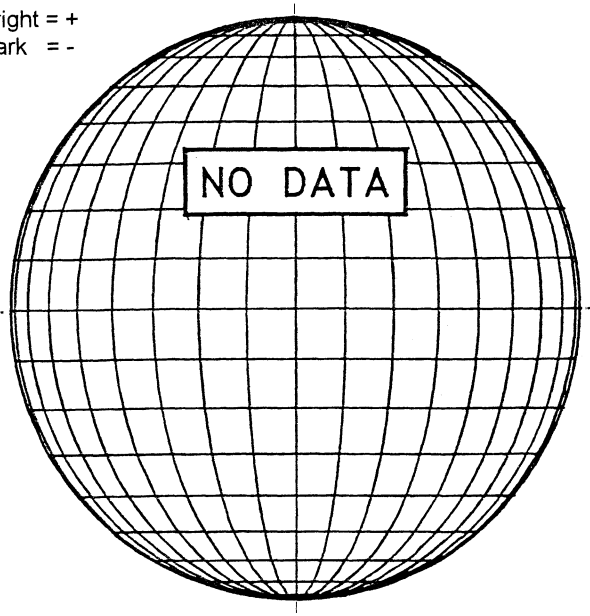


MAY 23, 2004 (P= -18.48, Bo = -1.70, Lo = 78.80)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

Bright = +
Dark = -



E--

STANFORD MAGNETOGRAM

N

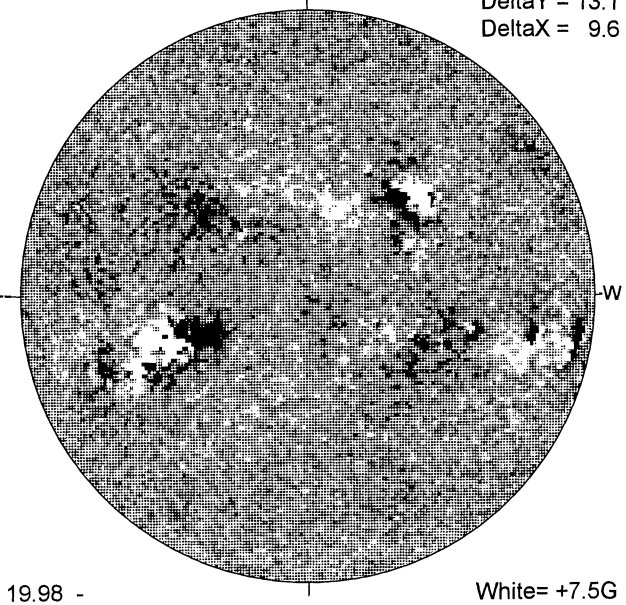
Solid = +
Dashed = -

1947 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

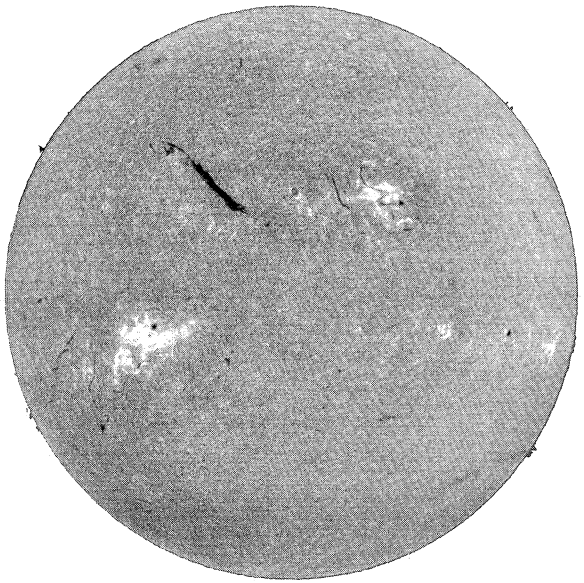


-W

19.98 -
20.93 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

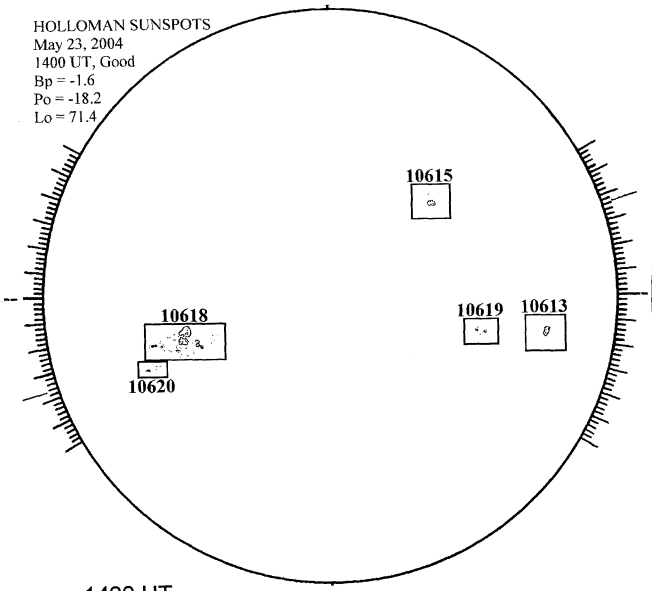


E

1627 UT

S

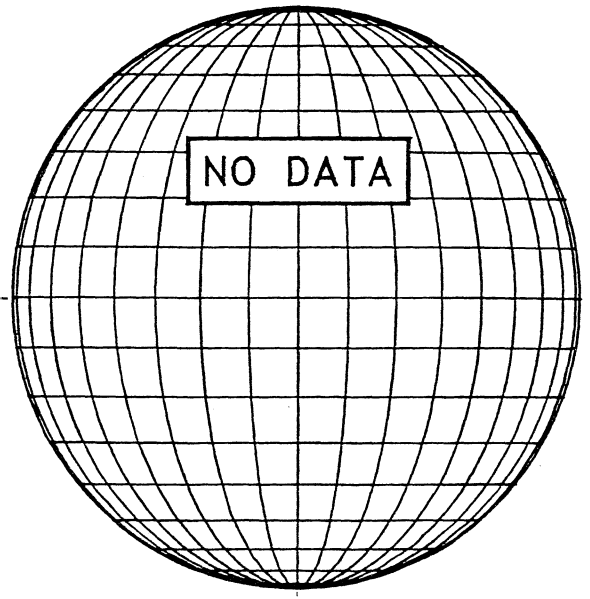
HOLLOMAN SUNSPOTS



1400 UT

S

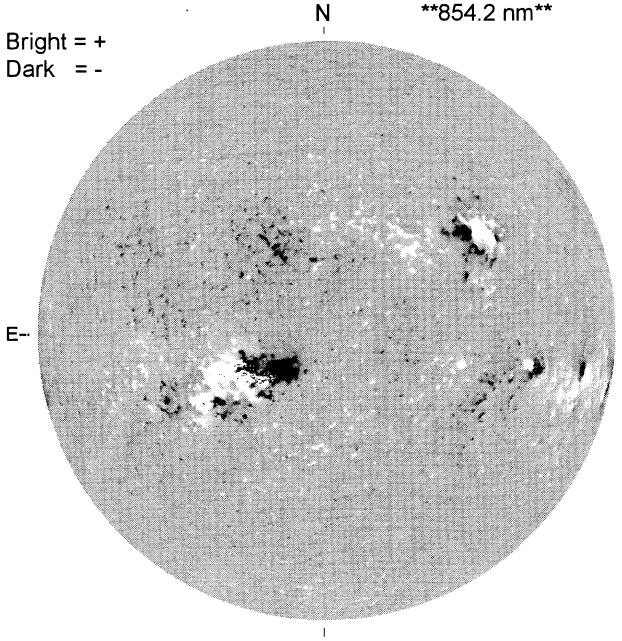
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

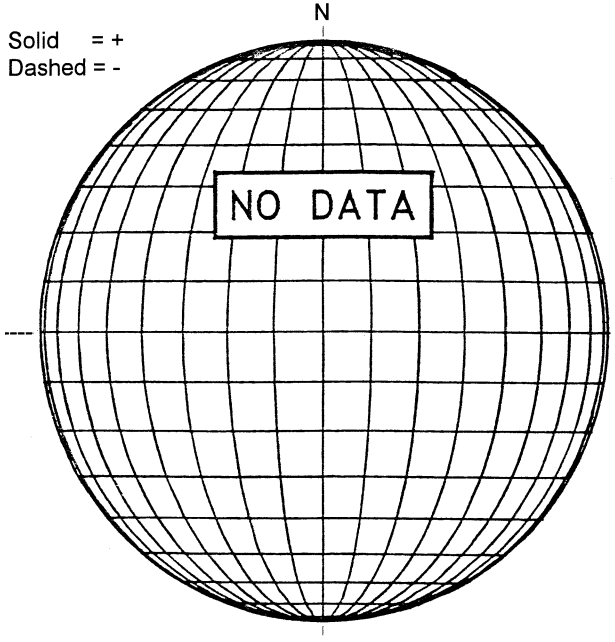
MAY 24, 2004 (P= -18.15, Bo = -1.58, Lo = 65.57)

KITT PEAK MAGNETOGRAM--SOLIS

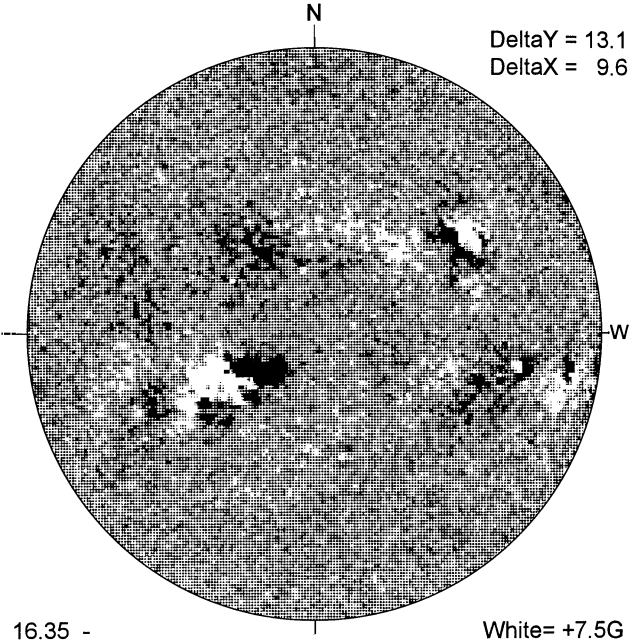


1629 UT

STANFORD MAGNETOGRAM



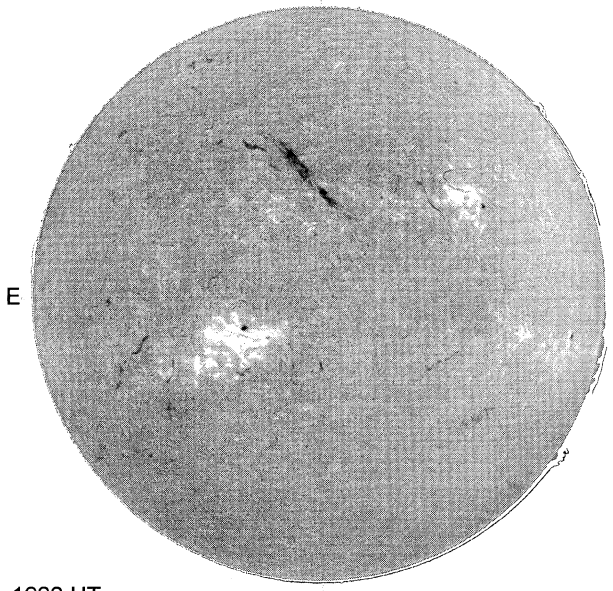
MT. WILSON MAGNETOGRAM



16.35 - 17.27 UT

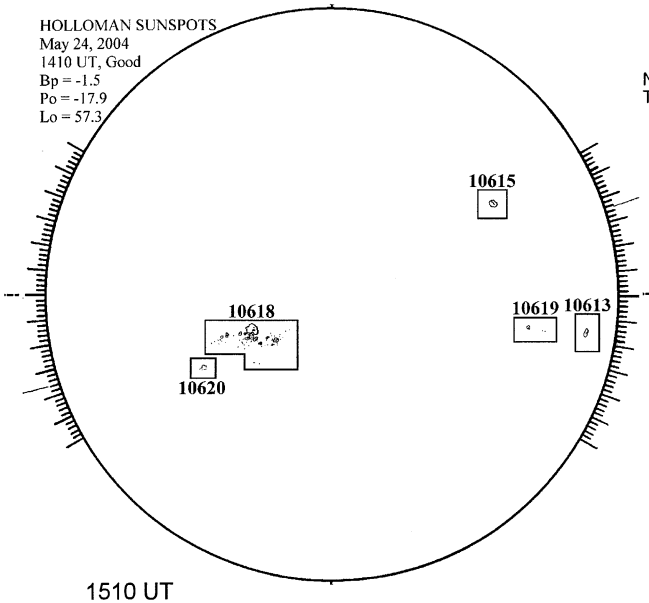
White= +7.5G
Black = -7.5G

----- BIG BEAR H-ALPHA



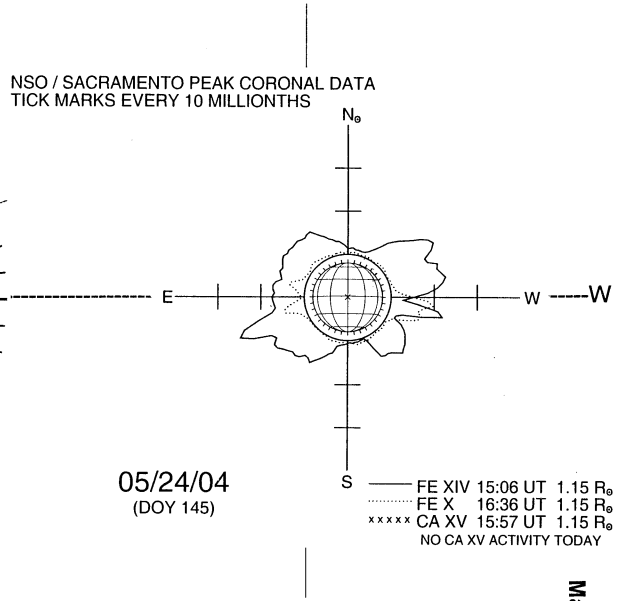
1633 UT

HOLLOMAN SUNSPOTS



1510 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

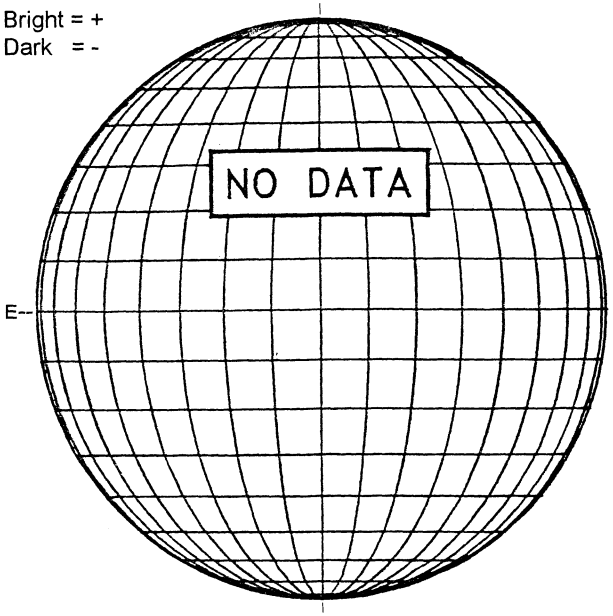


MAY 25, 2004 (P= -17.81, Bo = -1.47, Lo = 52.33)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -



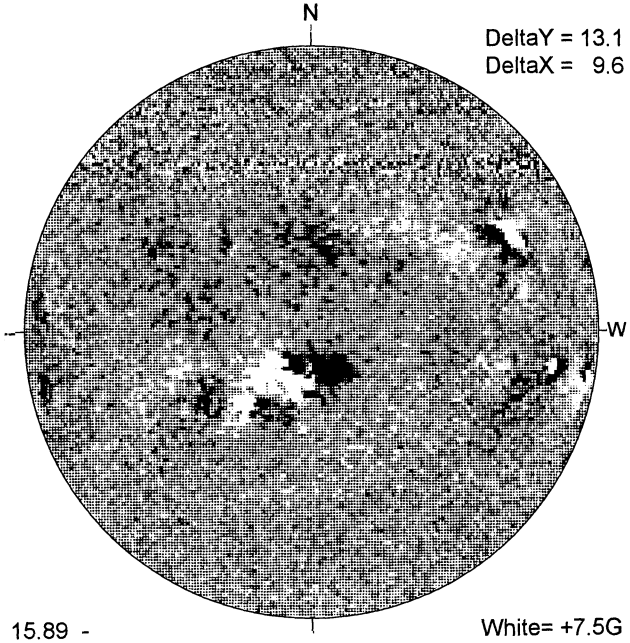
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2115 UT

MT. WILSON MAGNETOGRAM

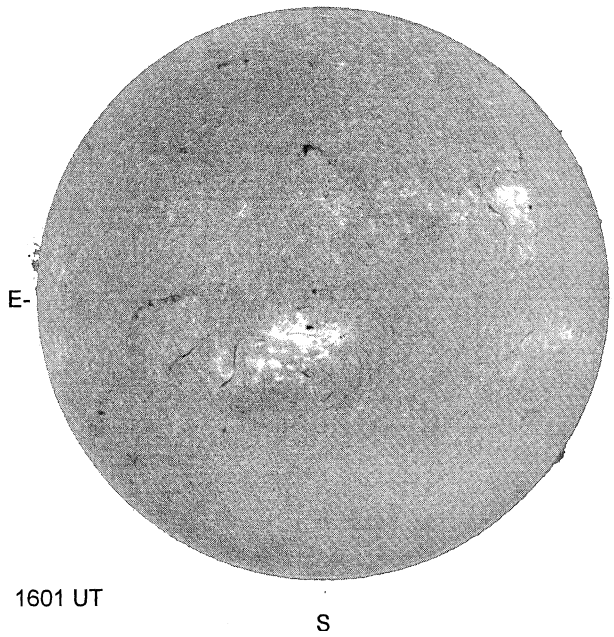
DeltaY = 13.1
DeltaX = 9.6



15.89 -
16.81 UT

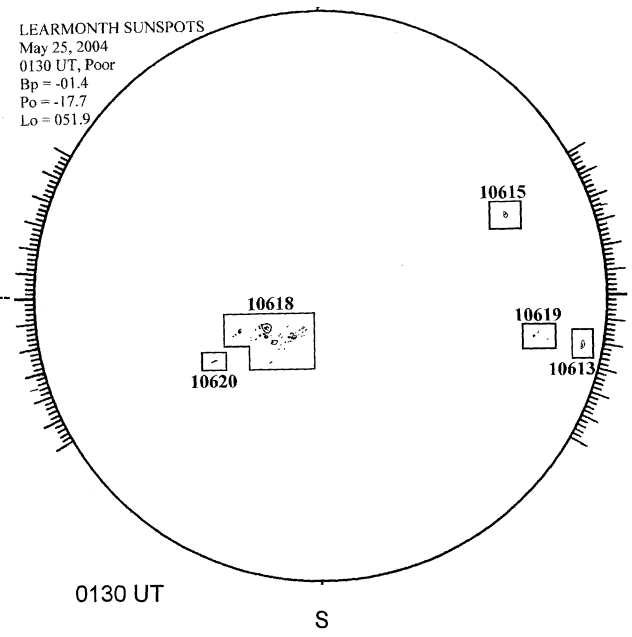
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



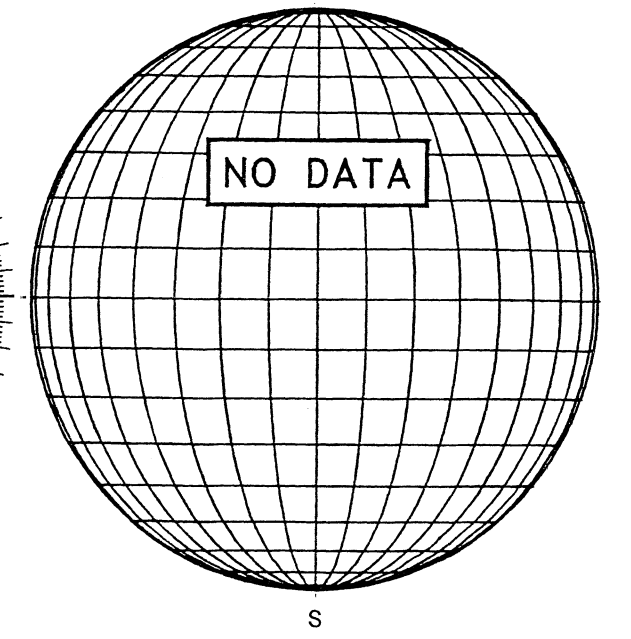
1601 UT

LEARMONTH SUNSPOTS



0130 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

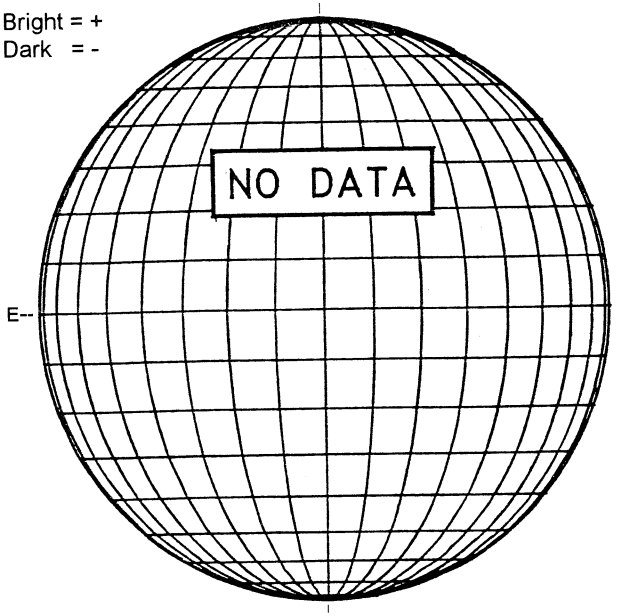


MAY 26, 2004 (P= -17.47, Bo = -1.35, Lo = 39.10)

KITT PEAK MAGNETOGRAM--SOLIS

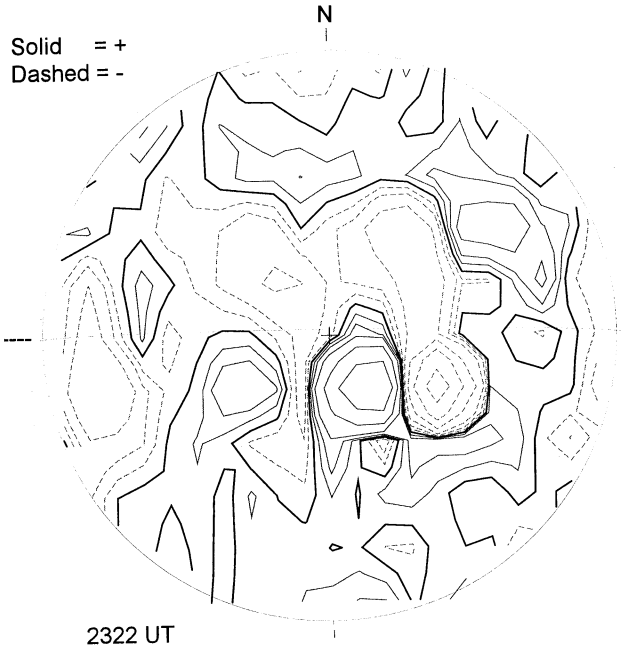
854.2 nm

Bright = +
Dark = -



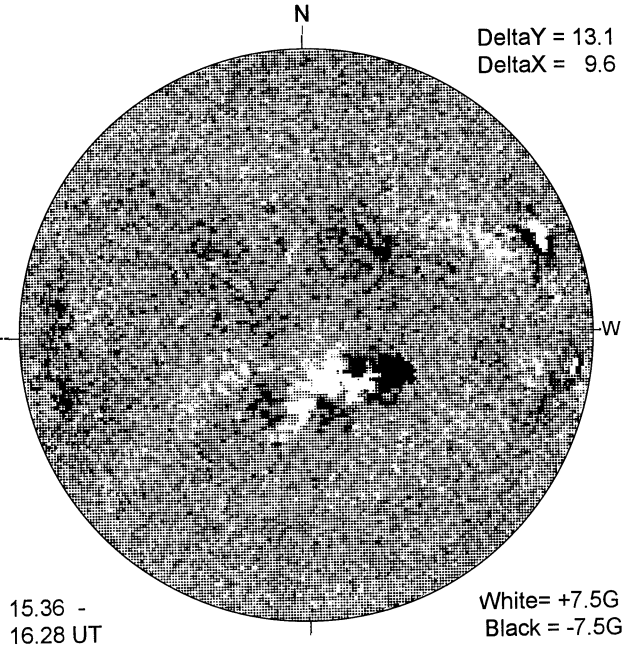
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



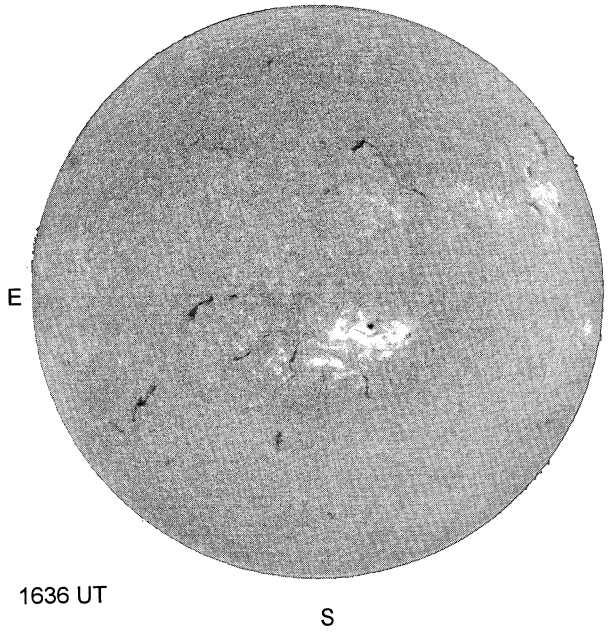
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

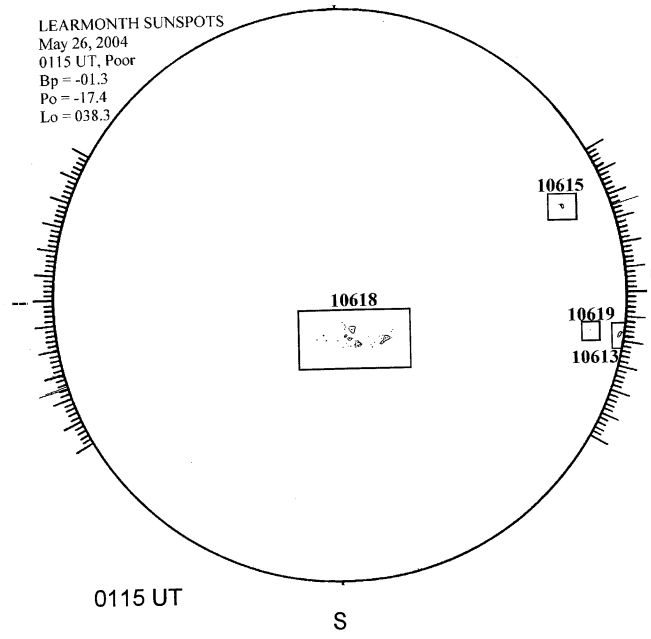


White= +7.5G
Black = -7.5G

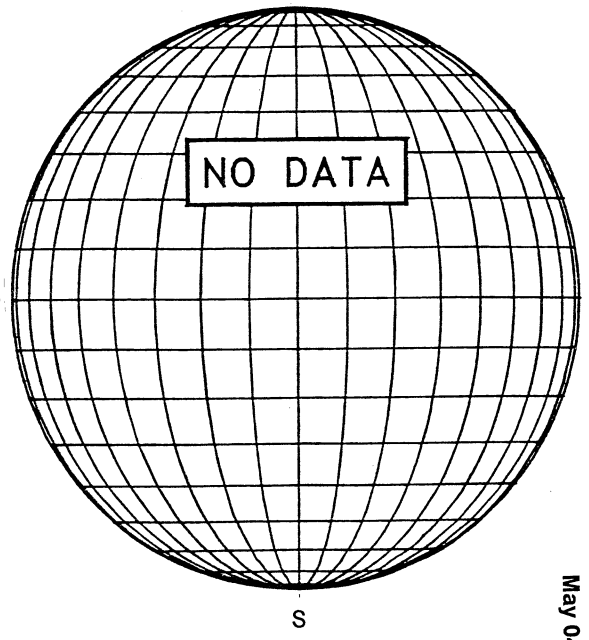
BIG BEAR H-ALPHA



LEARMONTH SUNSPOTS

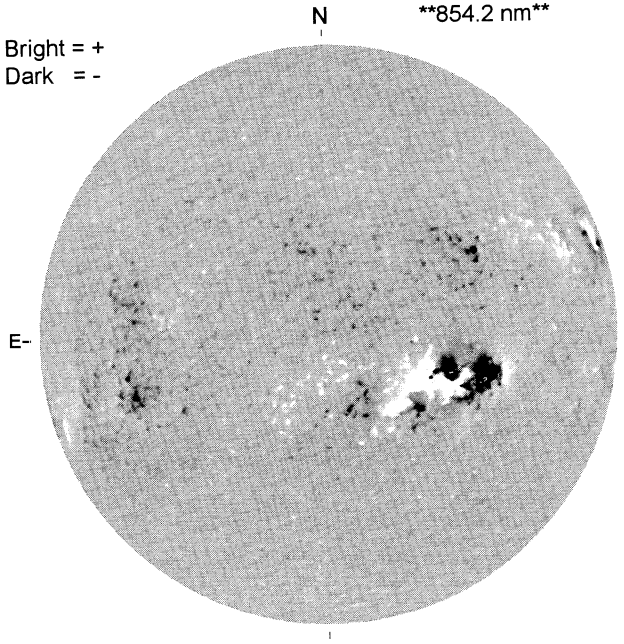


SACRAMENTO PEAK CORONA (1.15 Radii)----



MAY 27, 2004 (P= -17.13, Bo = -1.23, Lo = 25.87)

KITT PEAK MAGNETOGRAM--SOLIS

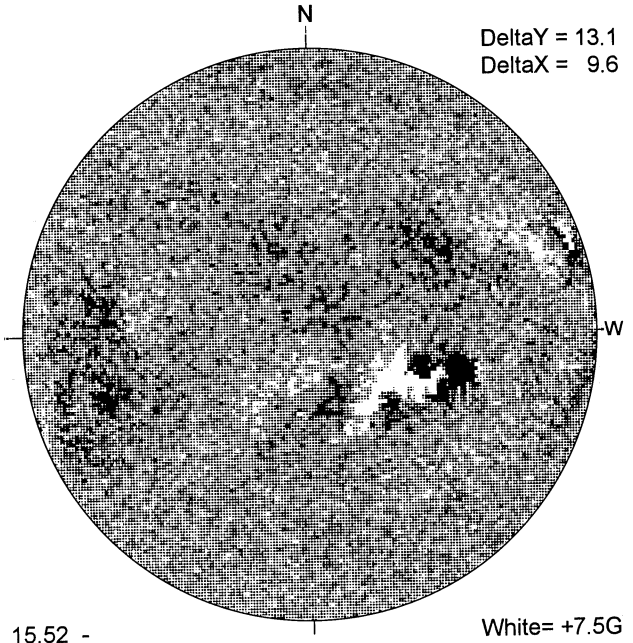


1901 UT

STANFORD MAGNETOGRAM

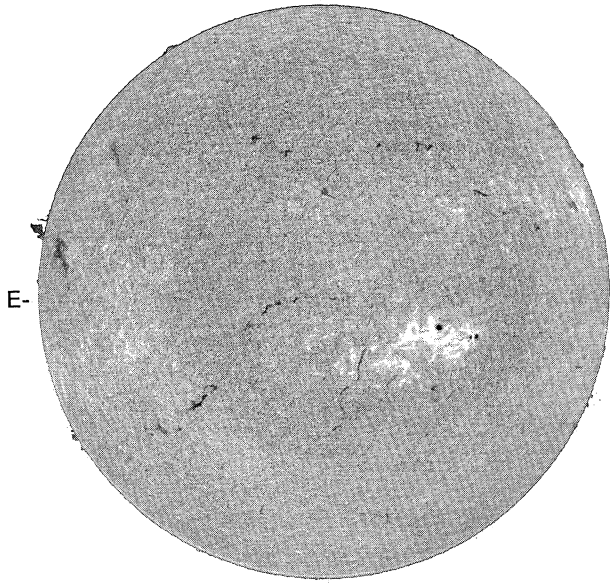
1804 UT

MT. WILSON MAGNETOGRAM



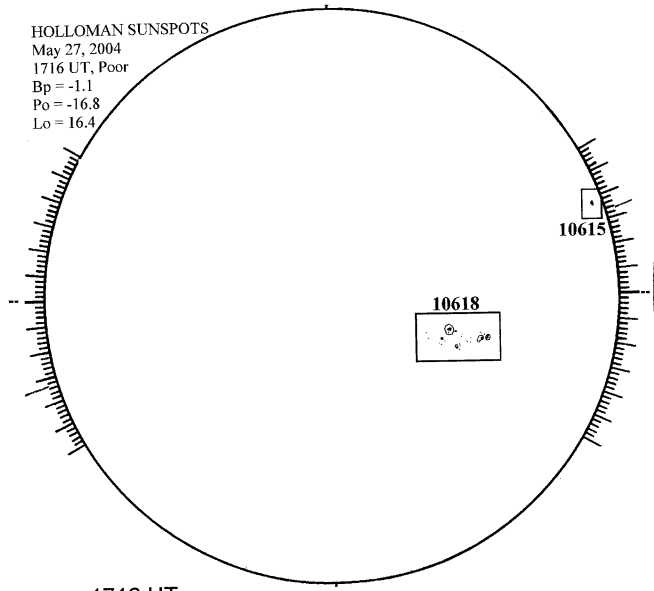
15.52 -
16.44 UT

BIG BEAR H-ALPHA



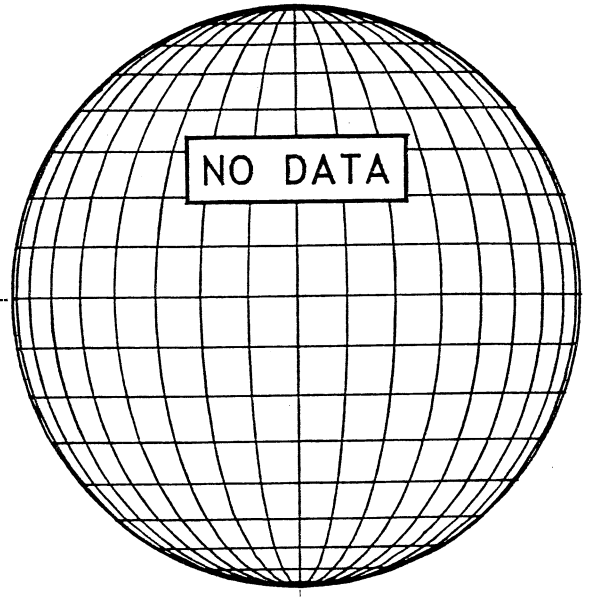
1627 UT

HOLLOMAN SUNSPOTS



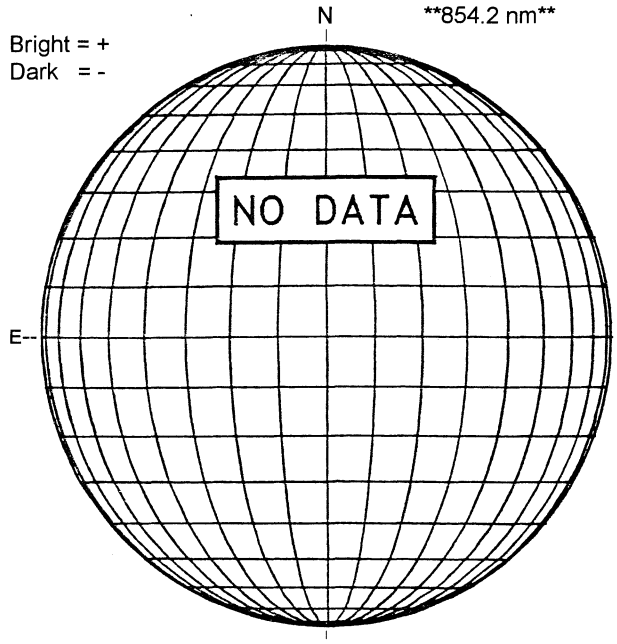
1716 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

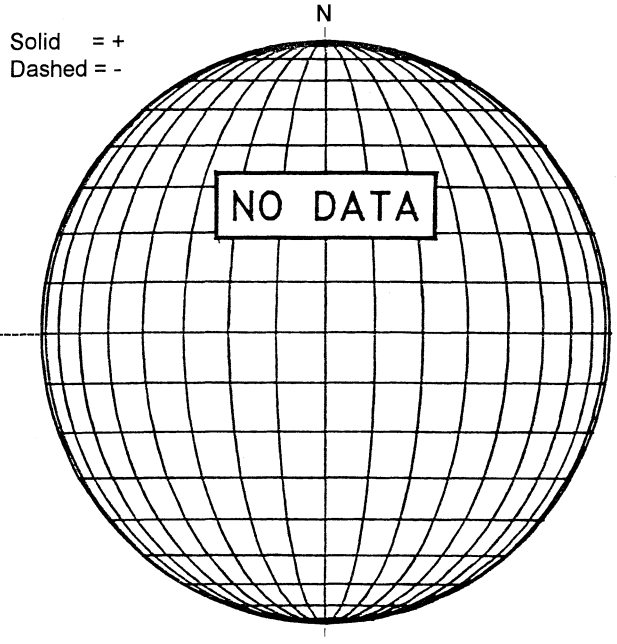


MAY 28, 2004 (P= -16.78, Bo = -1.11, Lo = 12.64)

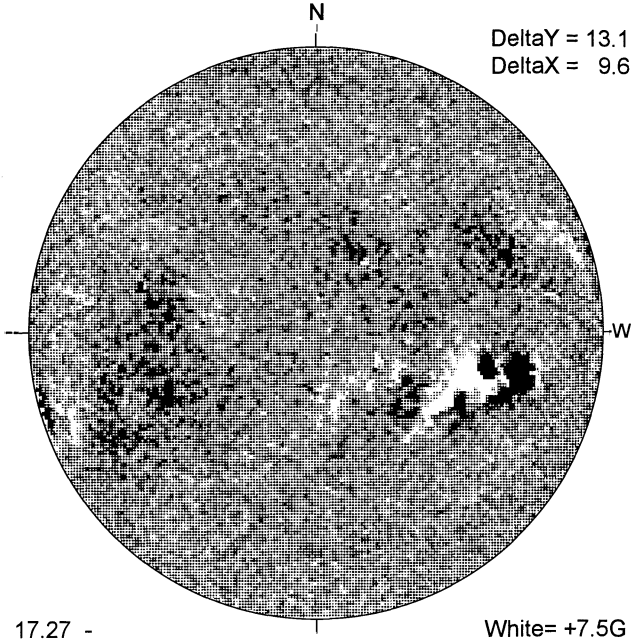
KITT PEAK MAGNETOGRAM--SOLIS



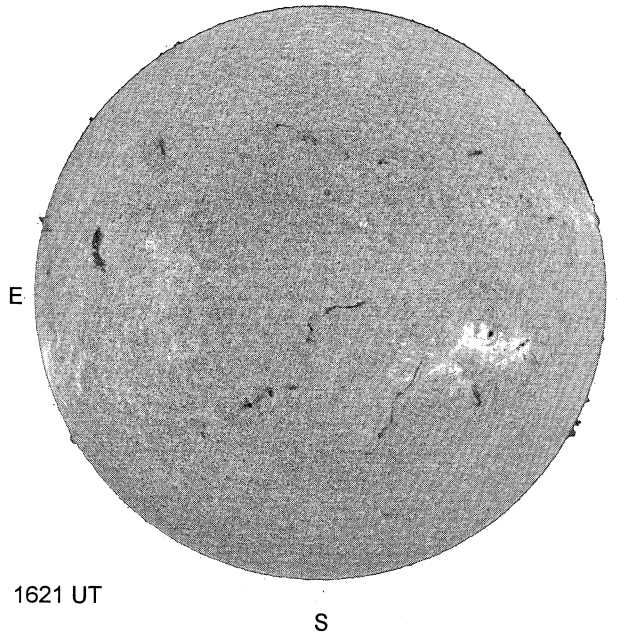
STANFORD MAGNETOGRAM



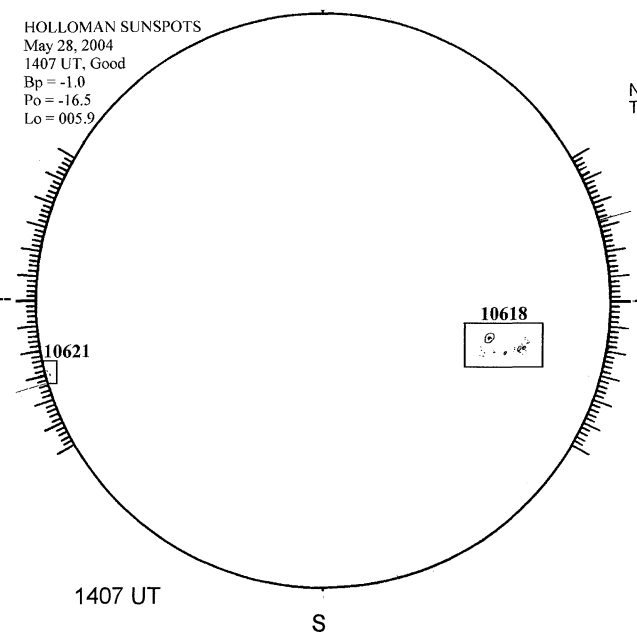
MT. WILSON MAGNETOGRAM



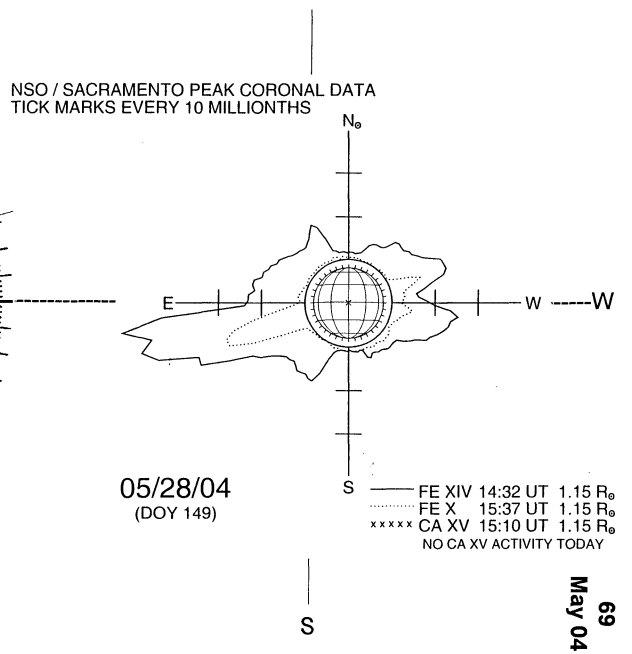
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



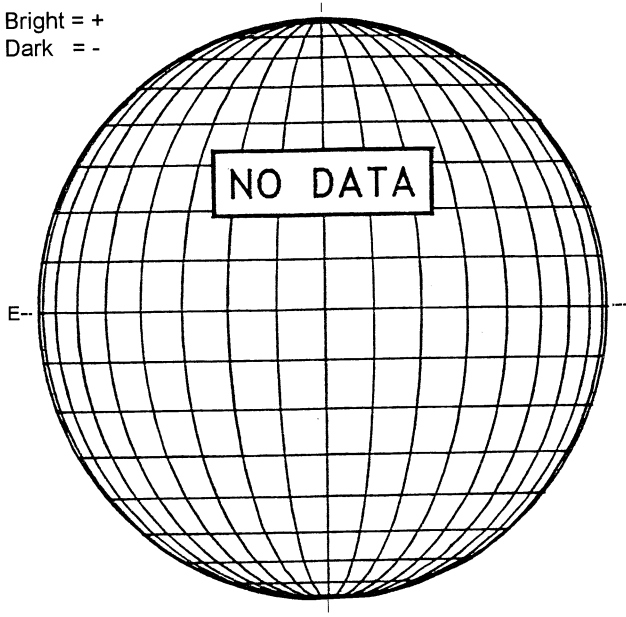
MAY 29, 2004 (P= -16.42, Bo = -0.99, Lo = 359.41)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

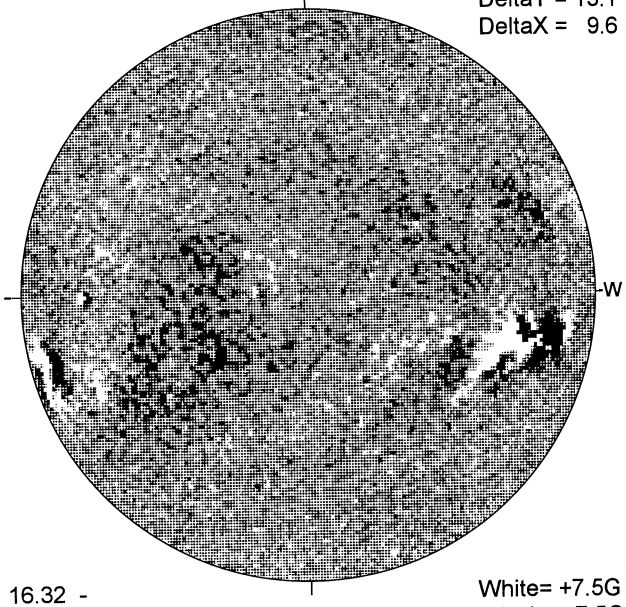
Solid = +
Dashed = -

1642 UT

MT. WILSON MAGNETOGRAM

N

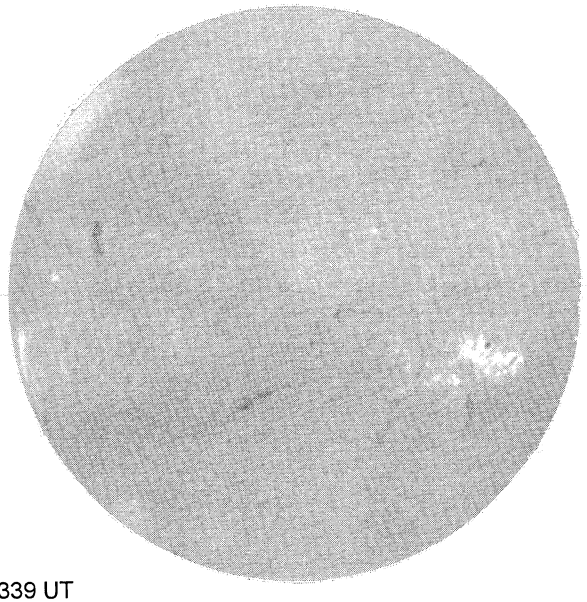
DeltaY = 13.1
DeltaX = 9.6



16.32 -
17.24 UT

White= +7.5G
Black = -7.5G

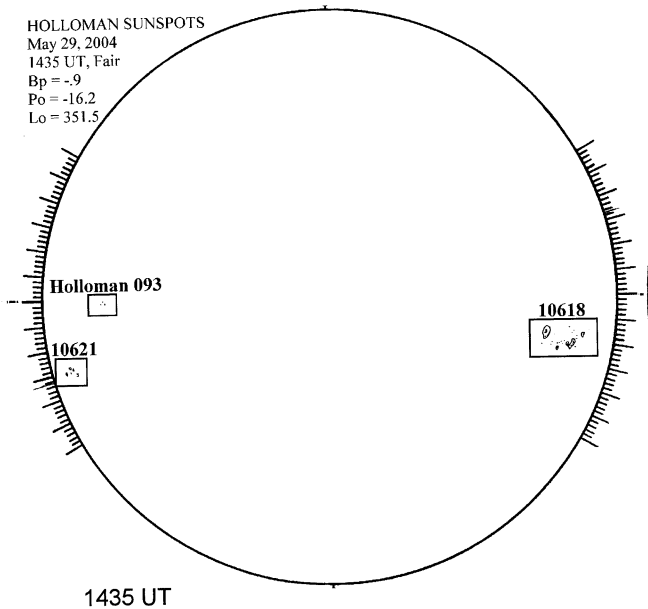
YUNNAN H-ALPHA



0339 UT

S

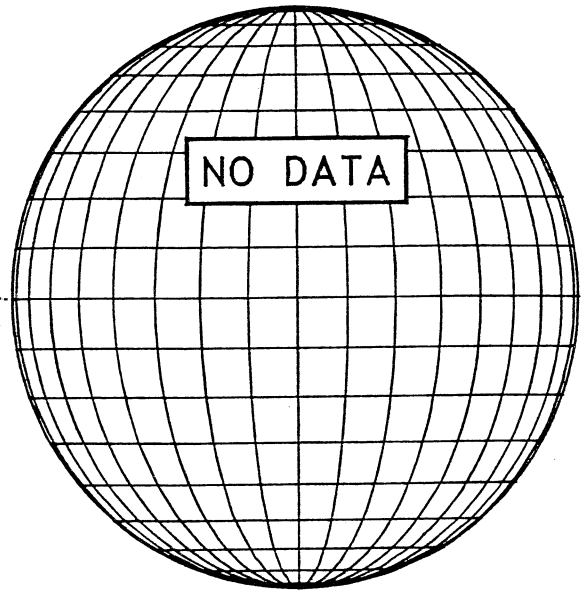
HOLLOMAN SUNSPOTS



1435 UT

S

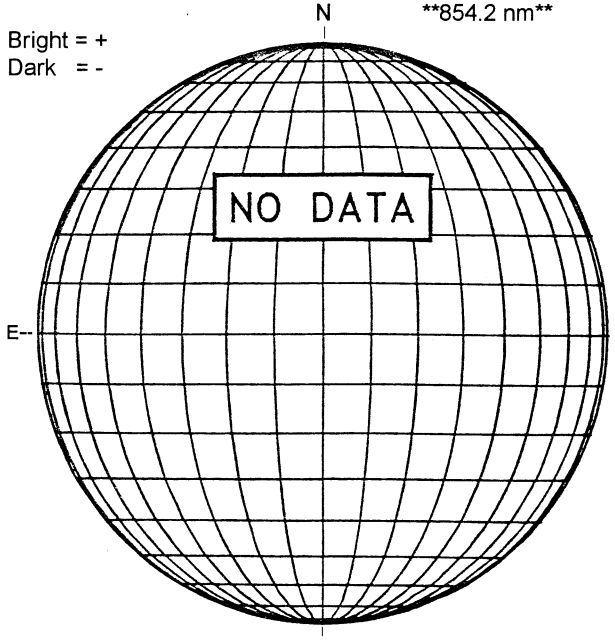
SACRAMENTO PEAK CORONA (1.15 Radii)----



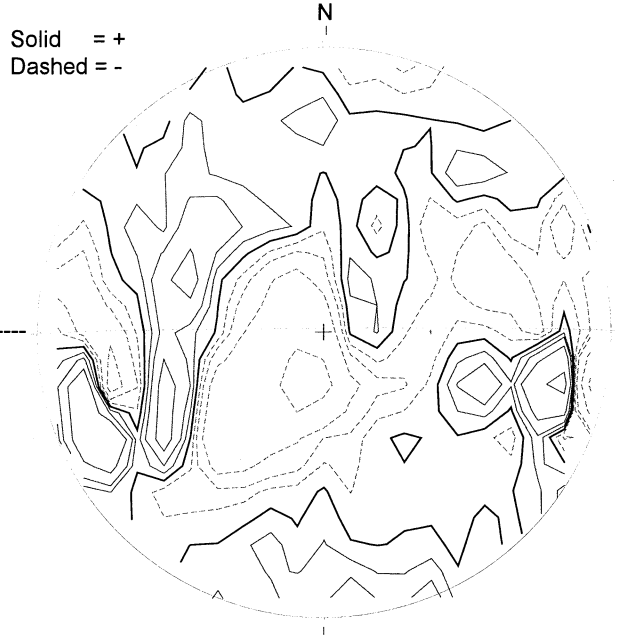
S

MAY 30, 2004 (P= -16.06, Bo = -0.87, Lo = 346.17)

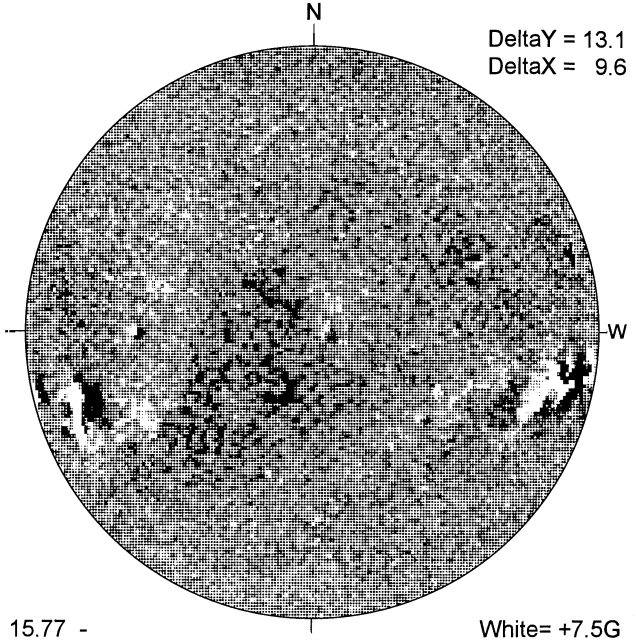
KITT PEAK MAGNETOGRAM—SOLIS



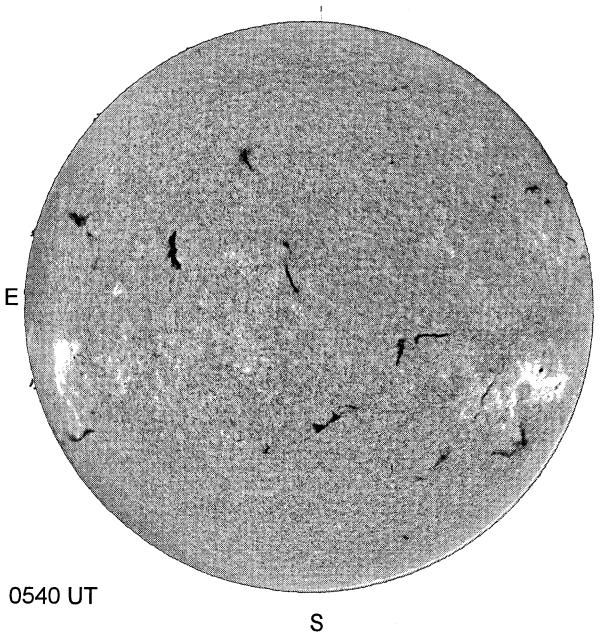
STANFORD MAGNETOGRAM



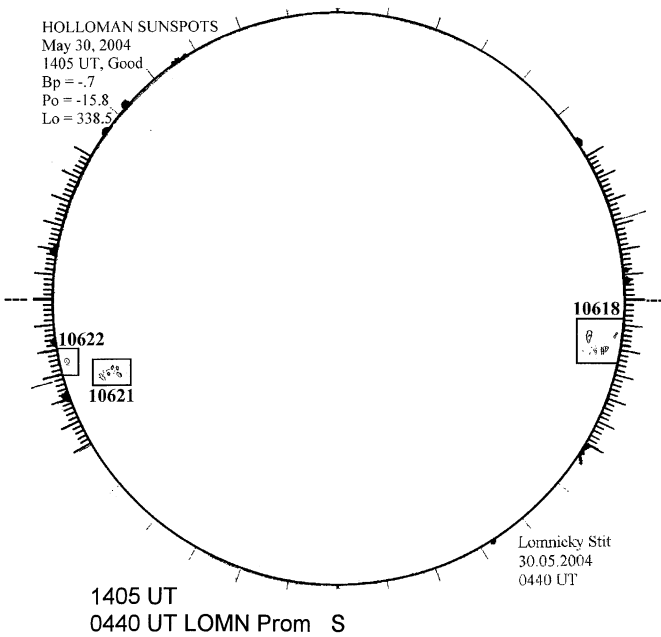
MT. WILSON MAGNETOGRAM



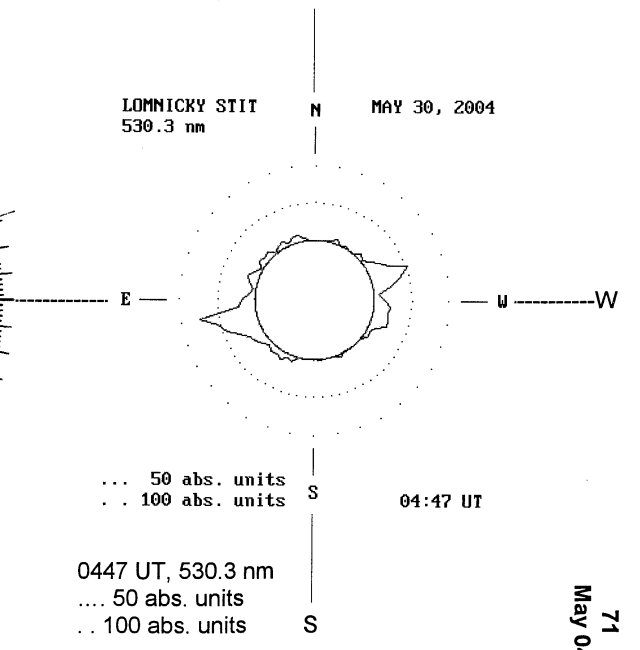
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOTS



LOMNICKY PEAK CORONA (1.04 Radii)----

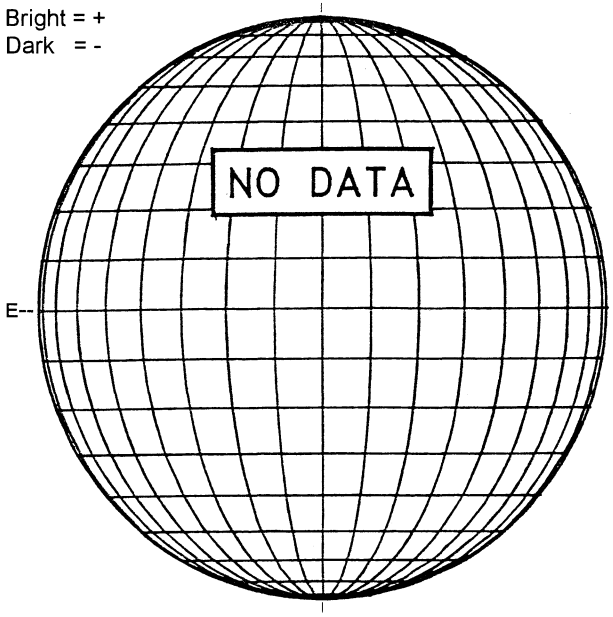


MAY 31, 2004 (P= -15.69, Bo = -0.75, Lo = 332.94)

KITT PEAK MAGNETOGRAM--SOLIS

N **854.2 nm**

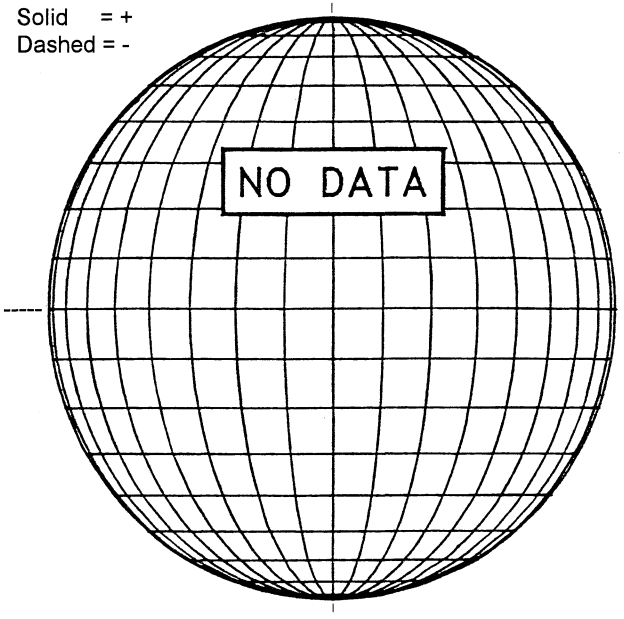
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

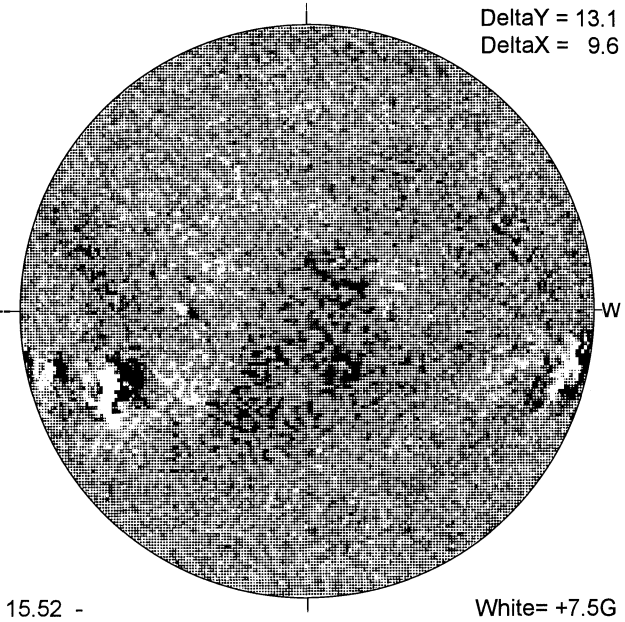
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

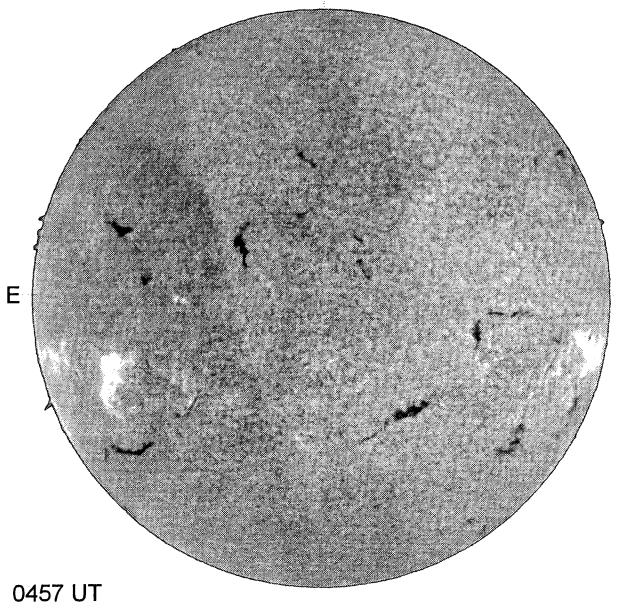
DeltaY = 13.1
DeltaX = 9.6



15.52 -
16.45 UT

White= +7.5G
Black = -7.5G

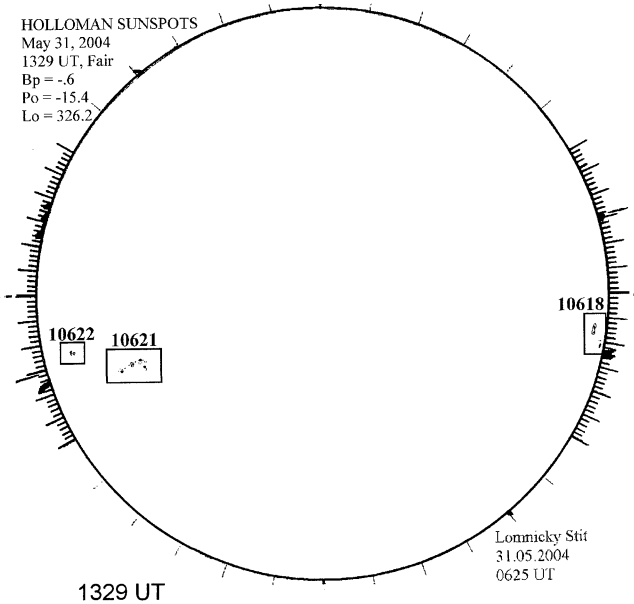
HUAIROU H-ALPHA



0457 UT

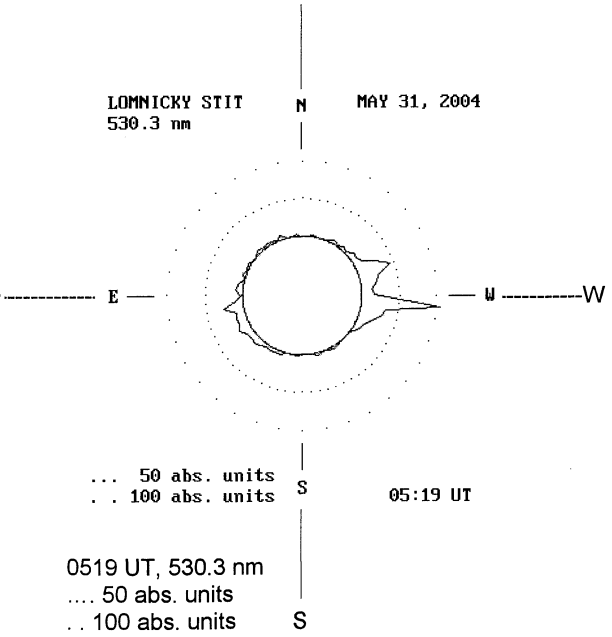
S

HOLLOMAN SUNSPOTS



1329 UT
0625 UT LOMN Prom S

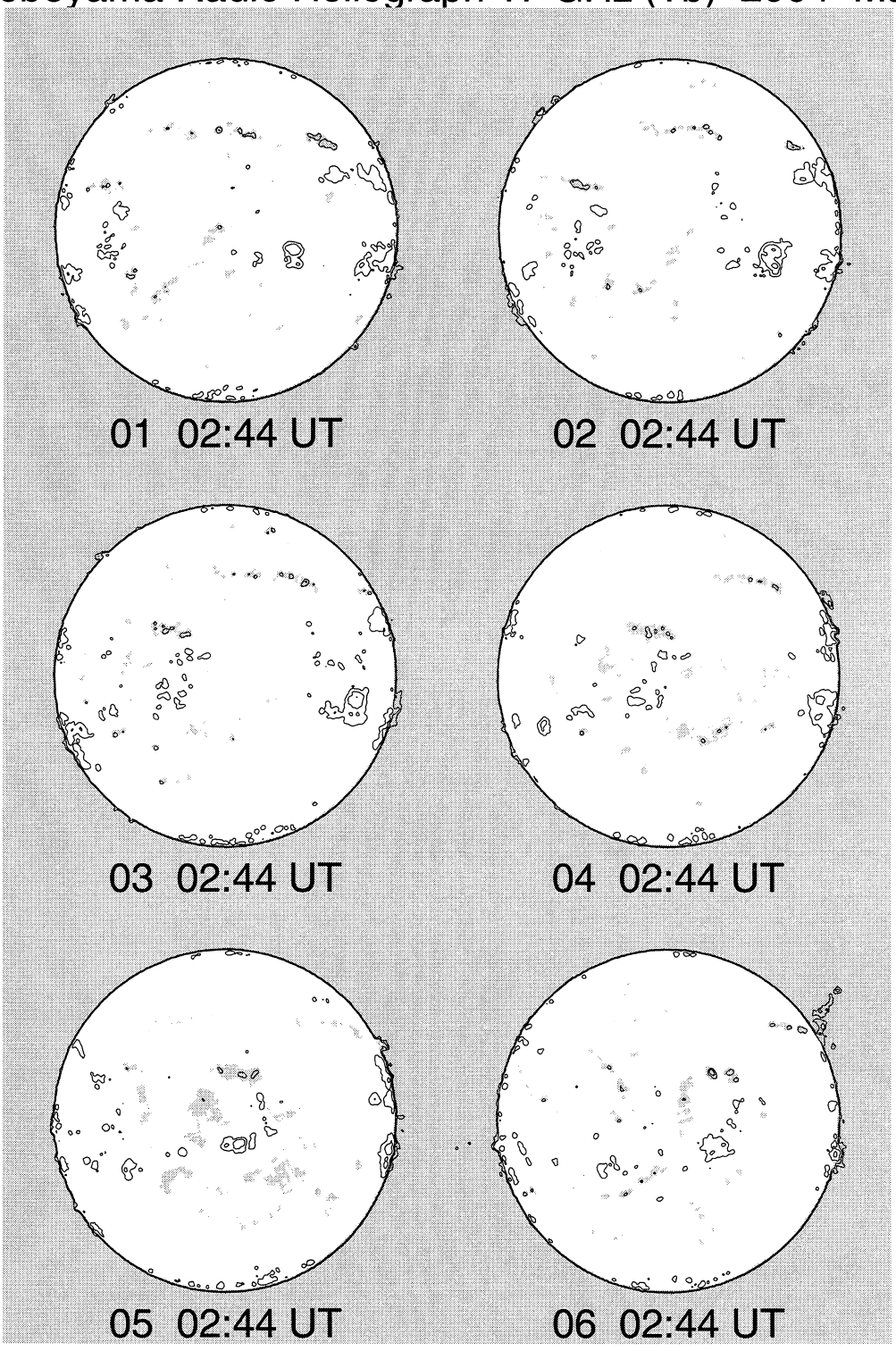
LOMNICKY PEAK CORONA (1.04 Radii)----



0519 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

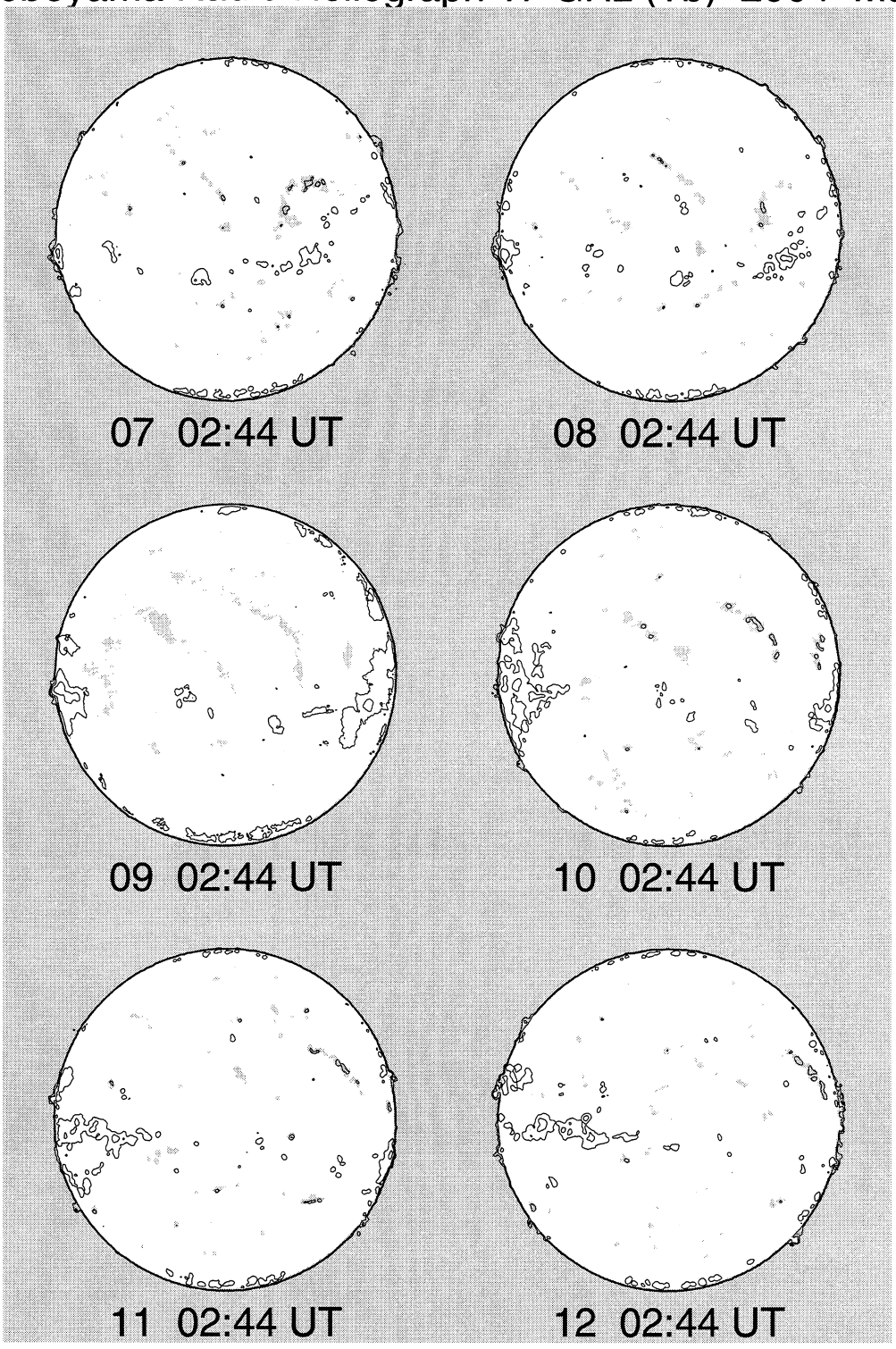
S

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 May



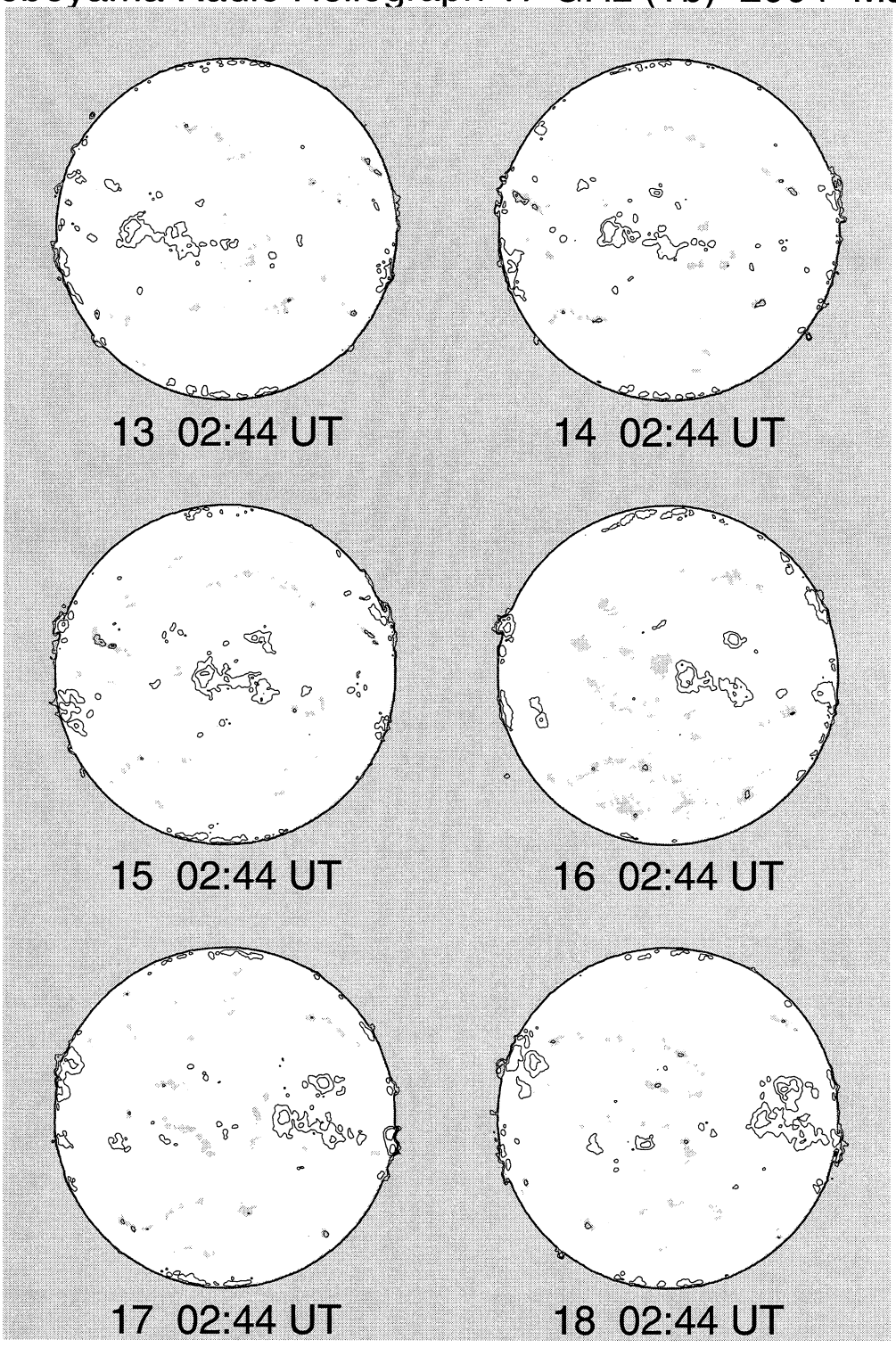
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 May



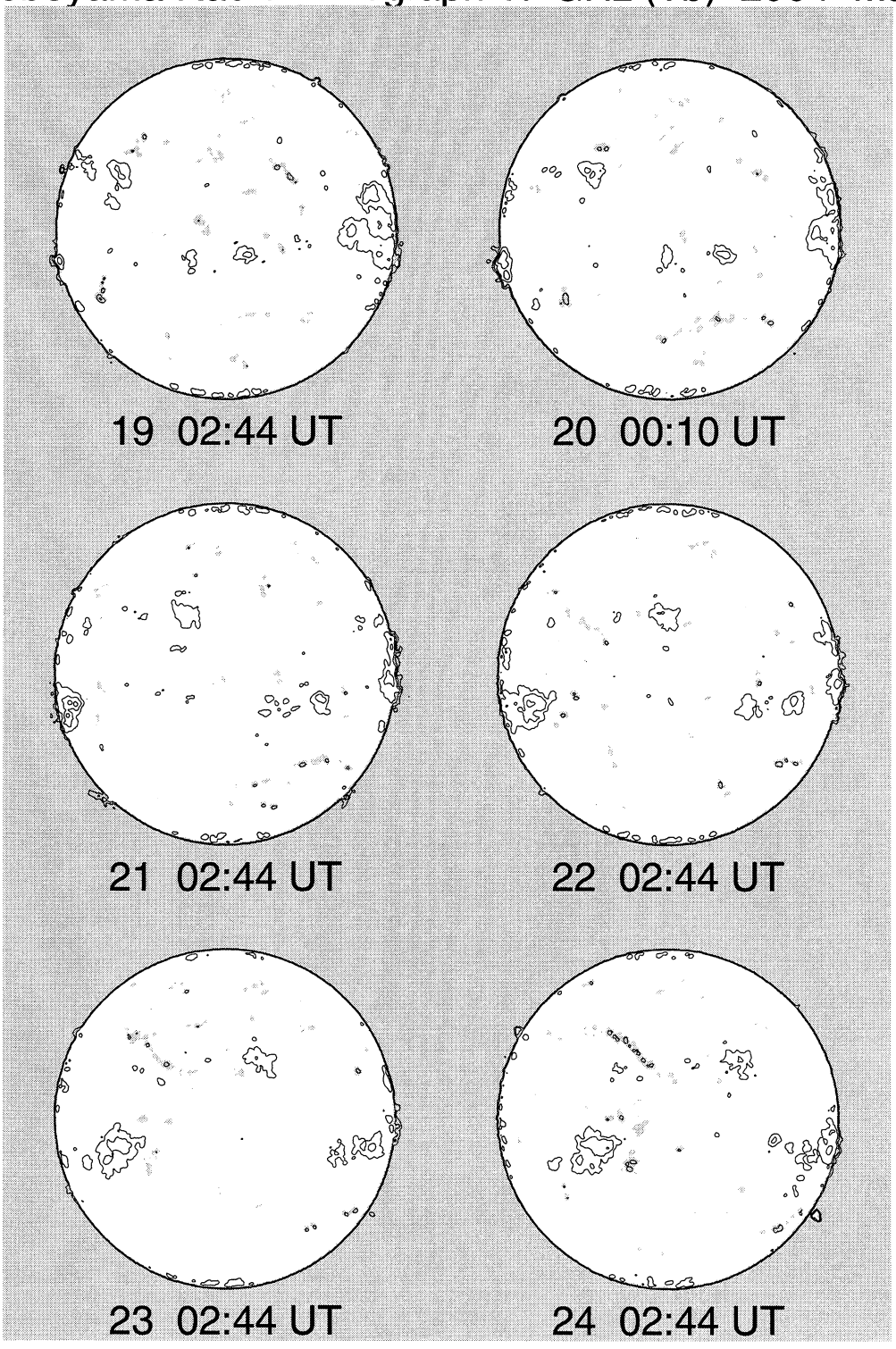
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 May



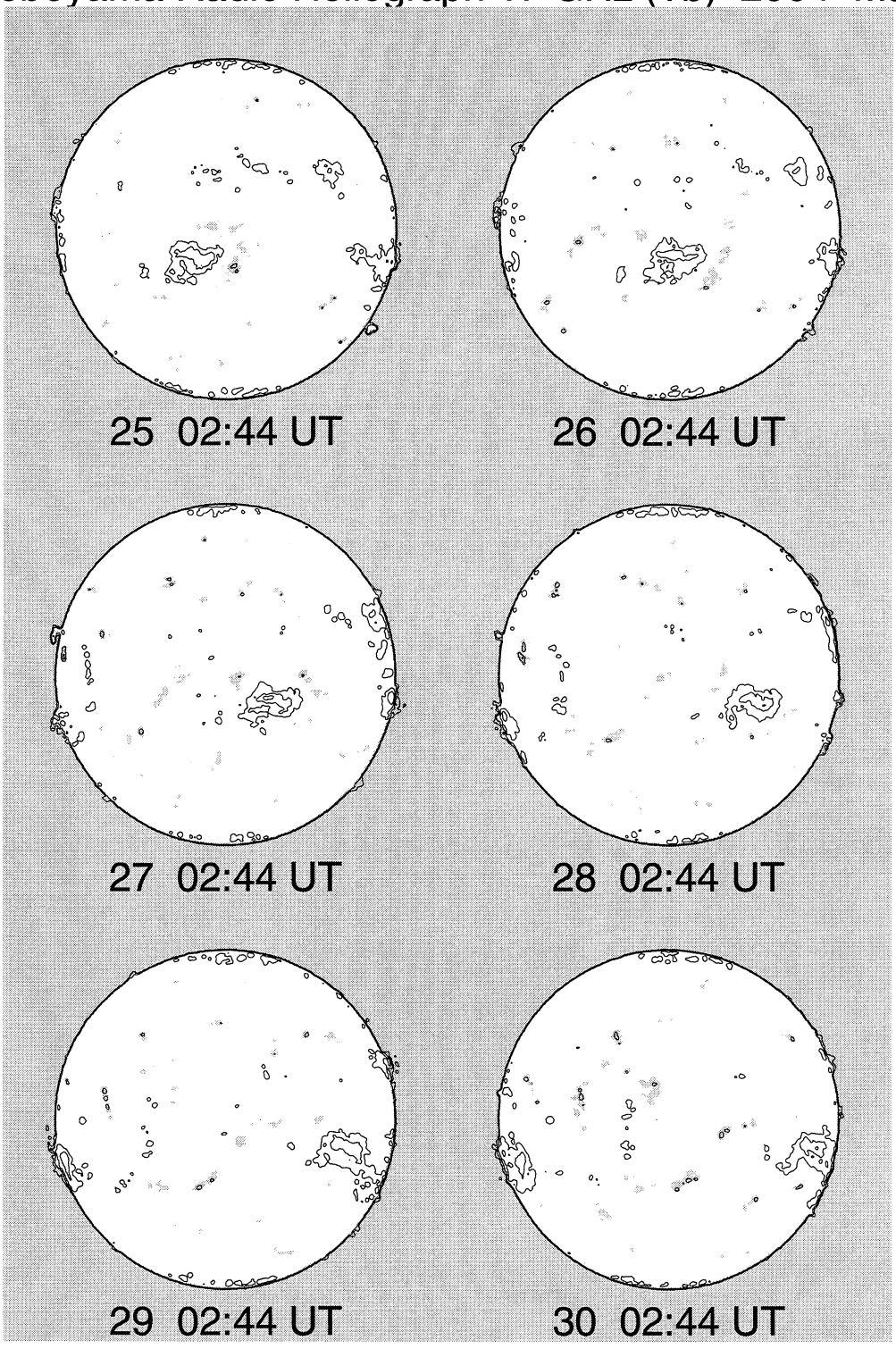
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 May



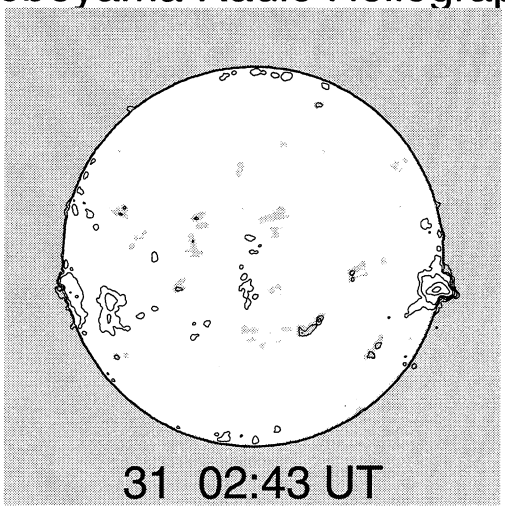
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 May



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 May



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

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

MAY 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
10601A		KAND	05	04	0610	N01	W07	05	3.7			AX		1		3
10605		VORO	05	03	2229	S12	E13	05	4.9			BRI	10	4	4	3
10605		LEAR	05	04	0142	S12	E11	05	4.9		BG	CSO	30	6	5	3
10605		KAND	05	04	0610	S13	E08	05	4.9			BXO		8	4	3
10605		SVTO	05	04	1105	S12	E04	05	4.8		B	DAO	60	7	6	2
10605	32078	MWIL	05	04	1430	S12	E03	05	4.8	5	(BP)					
10605		VORO	05	04	2308	S11	W02	05	4.8			CRI	61	13	6	3
10605		LEAR	05	05	0137	S12	W04	05	4.8		B	DAO	80	13	8	3
10605		KAND	05	05	0755	S13	W08	05	4.7			DAO		11	8	3
10605		SVTO	05	05	1245	S12	W10	05	4.8		B	DSO	130	10	9	2
10605	32078	MWIL	05	05	1430	S12	W11	05	4.8	5	(B)					
10605		VORO	05	06	0104	S12	W17	05	4.8			DAI	106	7	6	3
10605		LEAR	05	06	0137	S12	W17	05	4.8		B	CAO	80	12	8	2
10605		SVTO	05	06	0700	S11	W22	05	4.6		B	DSO	60	6	8	3
10605		KAND	05	06	0805	S13	W23	05	4.6			CSO		8	8	3
10605	32078	MWIL	05	06	1430	S12	W25	05	4.7	4	(B)					
10605		VORO	05	06	2231	S12	W29	05	4.7			CAI	66	4	7	3
10605		LEAR	05	07	0015	S12	W30	05	4.7		B	CSO	60	11	7	3
10605		SVTO	05	07	0746	S11	W38	05	4.5		A	HSX	50	1	2	3
10605		KAND	05	07	1105	S13	W38	05	4.6			CSO		2	8	4
10605		HOLL	05	07	1512	S12	W42	05	4.5		B	HSX	50	1	1	3
10605	32078	MWIL	05	07	1900	S12	W45	05	4.4	5	(AP)					
10605		LEAR	05	08	0028	S12	W45	05	4.6		B	CSO	100	5	6	3
10605		SVTO	05	08	0759	S12	W52	05	4.4		A	HSX	30	1	2	2
10605		KAND	05	08	0825	S11	W52	05	4.4			HS		1	2	3
10605	32078	MWIL	05	08	1430	S11	W55	05	4.5	5	(BG)					
10605		HOLL	05	08	1625	S12	W55	05	4.5		B	CSO	50	5	5	3
10605		VORO	05	08	2215	S11	W59	05	4.5			HRX	64	3		2
10605		LEAR	05	09	0058	S11	W59	05	4.6		B	CSI	80	10	6	3
10605		KAND	05	09	0655	S13	W63	05	4.5			CSO		3	6	3
10605		SVTO	05	09	1146	S12	W65	05	4.6		B	DSO	70	4	6	3
10605		HOLL	05	09	1338	S11	W64	05	4.7		B	DAO	70	5	4	4
10605	32078	MWIL	05	09	1430	S12	W66	05	4.6	4	(B)					
10605		KAND	05	10	1120	S12	W80	05	4.4			AX		2	1	4
10605		HOLL	05	10	1405	S11	W79	05	4.6		A	HSX	60	1	2	3
10605	32078	MWIL	05	10	1430	S12	W80	05	4.6	4	(AF)					
10605B	32080	MWIL	05	06	1430	S16	W07	05	6.1	4	(AF)					
10604	32076	MWIL	05	02	1430	S19	E70	05	7.9	4	(AP)					
10604		LEAR	05	03	0045	S19	E63	05	7.8		A	AXX	20	1	1	3
10604		SVTO	05	03	0655	S19	E61	05	7.9		A	HSX	40	1	1	3
10604		KAND	05	03	1110	S21	E59	05	8.0			CRO		3	3	3
10604	32076	MWIL	05	03	1430	S19	E57	05	7.9	5	(B)					
10604		VORO	05	03	2229	S20	E52	05	7.9			DRI	42	6	4	3
10604		LEAR	05	04	0142	S19	E50	05	7.9		B	CSO	50	5	3	3
10604		KAND	05	04	0610	S19	E48	05	7.9			CAO		4	3	3
10604		SVTO	05	04	1105	S20	E46	05	8.0		B	DSO	50	5	4	2
10604	32076	MWIL	05	04	1430	S19	E43	05	7.9	5	(B)					
10604		VORO	05	04	2308	S18	E37	05	7.8			HRX	23	3		3
10604		LEAR	05	05	0137	S19	E35	05	7.7		B	CSO	40	4	2	3
10604		KAND	05	05	0755	S20	E33	05	7.8			AX		2	1	3
10604		SVTO	05	05	1245	S19	E29	05	7.7		B	DSO	30	2	2	2
10604	32079	MWIL	05	05	1430	S16	E27	05	7.6	3	(AF)					
10604	32076	MWIL	05	05	1430	S19	E30	05	7.9	4	(AP)					
10604		VORO	05	06	0104	S18	E23	05	7.8			AXX	23	2	1	3
10604		LEAR	05	06	0137	S19	E23	05	7.8		B	CAO	40	3	5	2
10604		SVTO	05	06	0700	S19	E19	05	7.7		B	DSO	30	2	2	3
10604		KAND	05	06	0805	S20	E19	05	7.8			CRO		2	2	3
10604	32076	MWIL	05	06	1430	S20	E18	05	8.0	4	(BP)					
10604		VORO	05	06	2231	S18	E11	05	7.8			BRO	7	2	1	3
10604		LEAR	05	07	0015	S19	E11	05	7.8		B	BXX	10	2	2	3
10604		KAND	05	07	1105	S20	E04	05	7.8			HR		1	1	4
10604		HOLL	05	07	1512	S18	E01	05	7.7		A	AXX		1		3
10604	32076	MWIL	05	07	1900	S20	W01	05	7.7	4	(AP)					
10604		LEAR	05	08	0028	S18	W03	05	7.8		A	AXX	10	1	1	3
10605A		HOLL	05	07	1512	N03	E01	05	7.7		A	AXX		1		3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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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
10604A		HOLL	05	07	1512	S11	E32	05	10.0		A	AXX		2	1	3
10604A	32081	MWIL	05	07	1900	S12	E29	05	10.0	4	(AP)					
10604A		LEAR	05	08	0028	S10	E27	05	10.0		B	BXO	20	5	3	3
10604A	32081	MWIL	05	08	1430	S11	E18	05	9.9	3	(AP)					
10604A		LEAR	05	09	0058	S11	E12	05	9.9		B	BXO	10	3	2	3
10604A		HOLL	05	09	1338	S11	E04	05	9.9		A	AXX		1	1	4
10604A	32081	MWIL	05	09	1430	S11	E04	05	9.9	4	(B)					
10604A		KAND	05	10	1120	S11	W06	05	10.0			AX		1		4
10614		LEAR	05	12	0157	S12	W02	05	11.9		B	CSO	20	2	1	4
10614		KAND	05	12	0610	S12	W05	05	11.9			BXO		2	1	4
10614		HOLL	05	12	1415	S11	W10	05	11.8		A	HSX	10	1	1	4
10614	32086	MWIL	05	12	1430	S11	W10	05	11.8	4	(AP)					
10614		VORO	05	13	0135	S10	W16	05	11.9			AXX	4	1		3
10614	32091	MWIL	05	15	1445	S08	W54	05	11.6	4	(B)					
10614		KAND	05	16	1225	S07	W69	05	11.3			CAO		2	2	4
10614	32091	MWIL	05	16	1445	S07	W70	05	11.4	4	(B)					
10614		HOLL	05	16	1453	S05	W71	05	11.3		B	CAO	70	6	5	4
10614		LEAR	05	17	0100	S08	W77	05	11.3		B	CAO	30	3	3	3
10614		LEAR	05	18	0034	S10	W85	05	11.6		B	CAO	80	3	3	3
10604C	32083	MWIL	05	09	1430	S07	E40	05	12.6	4	(AF)					
10610		LEAR	05	12	0157	S02	E30	05	14.3		B	BXO	20	6	2	4
10610		KAND	05	12	0610	S02	E27	05	14.3			BXO		4	2	4
10610		HOLL	05	12	1415	S03	E24	05	14.4		A	AXX	10	5	2	4
10610		LEAR	05	13	0045	S01	E15	05	14.1		A	AXX	10	1	1	1
10610		HOLL	05	13	1345	S01	E09	05	14.2		B	BXO	10	3	2	4
10610	32088	MWIL	05	13	1445	N01	E03	05	13.8	4	(AP)					
10610		VORO	05	13	2206	N01	W01	05	13.8			AXX	6	1		3
10610		LEAR	05	14	0020	N01	W02	05	13.9		A	AXX	10	1	1	3
10610		KAND	05	15	1125	S03	W22	05	13.8			AX		1		3
10610		SVTO	05	19	0550	S07	W71	05	13.9		A	HAX	100	1	4	3
10610		SVTO	05	20	0740	S10	W88	05	13.7		A	HSX	60	1	2	3
10606		HOLL	05	07	1512	S09	E85	05	14.0		A	HSX	120	1	2	3
10606	32082	MWIL	05	07	1900	S09	E82	05	13.9	5	(AP)					
10606		LEAR	05	08	0028	S08	E78	05	13.9		A	HAX	180	2	6	3
10606		SVTO	05	08	0759	S09	E75	05	14.0		A	HSX	220	1	5	2
10606		KAND	05	08	0825	S09	E74	05	13.9			HA		2	3	3
10606	32082	MWIL	05	08	1430	S08	E71	05	13.9	5	(AP)					
10606		HOLL	05	08	1625	S09	E70	05	13.9		A	HKX	260	1	3	3
10606		VORO	05	08	2215	S09	E67	05	13.9			HKX	250	1		2
10606		LEAR	05	09	0058	S08	E64	05	13.8		B	CAO	220	3	4	3
10606		KAND	05	09	0655	S10	E64	05	14.1			HS		1	3	3
10606		SVTO	05	09	1146	S09	E60	05	14.0		A	HSX	110	1	3	3
10606		HOLL	05	09	1338	S08	E59	05	14.0		A	HSX	150	2	2	4
10606	32082	MWIL	05	09	1430	S08	E58	05	13.9	5	(BP)					
10606		VORO	05	09	2351	S09	E52	05	13.9			HKX	243	1		2
10606		KAND	05	10	1120	S09	E46	05	13.9			CAO		3	3	4
10606		HOLL	05	10	1405	S09	E45	05	14.0		A	HKX	140	3	2	3
10606	32082	MWIL	05	10	1430	S09	E45	05	14.0	5	(BP)					
10606		VORO	05	10	2314	S09	E40	05	14.0			HKX	300	1		2
10606		LEAR	05	11	0143	S09	E38	05	13.9		A	HAX	240	6	3	3
10606	32082	MWIL	05	11	1430	S09	E32	05	14.0	5	(BP)					
10606		HOLL	05	11	1435	S10	E32	05	14.0		A	HKX	220	6	4	4
10606		LEAR	05	12	0157	S10	E25	05	13.9		A	HAX	220	5	3	4
10606		KAND	05	12	0610	S10	E22	05	13.9			CAO		4	5	4
10606		HOLL	05	12	1415	S09	E18	05	13.9		A	HKX	150	7	6	4
10606	32082	MWIL	05	12	1430	S08	E19	05	14.0	5	(BP)					
10606		LEAR	05	13	0045	S09	E12	05	13.9		A	HHX	200	2	3	1
10606		VORO	05	13	0135	S09	E12	05	14.0			HKX	262	2		3
10606		KAND	05	13	0915	S11	E07	05	13.9			HK		2	4	2
10606		HOLL	05	13	1345	S09	E07	05	14.1		B	CKO	230	14	8	4
10606	32082	MWIL	05	13	1445	S08	E06	05	14.1	5	(B)					
10606		VORO	05	13	2206	S09	E01	05	14.0			HKX	238	2		3
10606		LEAR	05	14	0020	S10	W01	05	13.9		A	HHX	200	2	3	3
10606		KAND	05	14	0840	S11	W06	05	13.9			CKO		6	4	3
10606		HOLL	05	14	1400	S09	W07	05	14.0		B	CKO	240	9	7	3

S U N S P O T G R O U P S
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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
10606	32082	MWIL	05 14 1430	S09 W08	05 14.0	5	(BP)					
10606		LEAR	05 15 0734	S10 W17	05 14.0		B	CAO	160	8	5	3
10606		KAND	05 15 1125	S09 W19	05 14.0			CAO		6	6	3
10606	32082	MWIL	05 15 1445	S09 W21	05 14.0	5	(BP)					
10606		HOLL	05 15 1552	S08 W21	05 14.1		B	DAO	90	7	6	2
10606		VORO	05 15 2302	S09 W27	05 13.9			HAX	138	2		3
10606		LEAR	05 16 0107	S10 W28	05 13.9		A	HAX	80	3	3	1
10606		KAND	05 16 1225	S11 W35	05 13.9			HA		2	2	4
10606	32082	MWIL	05 16 1445	S09 W35	05 14.0	5	(BP)					
10606		HOLL	05 16 1453	S08 W34	05 14.1		B	DAO	70	4	6	4
10606		LEAR	05 17 0100	S09 W42	05 13.9		B	CAO	60	3	3	3
10606		KAND	05 17 0810	S10 W46	05 13.9			CSO		4	6	4
10606		HOLL	05 17 1500	S08 W48	05 14.0		B	DAO	60	9	3	4
10606	32082	MWIL	05 17 1700	S09 W50	05 13.9	5	(BP)					
10606		VORO	05 17 2205	S09 W52	05 14.0			HAX	82	3		3
10606		LEAR	05 18 0034	S10 W55	05 13.9		B	CAO	80	3	3	3
10606	32082	MWIL	05 18 1400	S09 W62	05 13.9	5	(AP)					
10606		HOLL	05 18 1635	S09 W63	05 14.0		A	HAX	80	3	1	4
10606		LEAR	05 19 0030	S10 W65	05 14.1		B	CAO	30	2	2	2
10606		VORO	05 19 0123	S09 W67	05 14.0			HAX	94	1		3
10606		KAND	05 19 0805	S11 W71	05 14.0			HS		1	2	2
10606	32082	MWIL	05 19 1400	S09 W75	05 13.9	4	(AP)					
10606		HOLL	05 19 1505	S09 W75	05 14.0		A	HAX	30	1	1	4
10606		LEAR	05 20 0030	S10 W77	05 14.2		B	CAO	60	2	3	3
10612		HOLL	05 13 1345	N10 E12	05 14.5		B	BXO	10	5	3	4
10612	32089	MWIL	05 13 1445	N10 E11	05 14.4	4	(B)					
10612		VORO	05 13 2206	N10 E06	05 14.4			AXX	11	2	3	3
10612		LEAR	05 14 0020	N09 E05	05 14.4		B	BXO	20	4	3	3
10612		KAND	05 14 0840	N09 E00	05 14.4			DAO		4	5	3
10612		HOLL	05 14 1400	N10 W03	05 14.3		B	DAO	50	11	6	3
10612	32089	MWIL	05 14 1430	N10 W03	05 14.4	5	(B)					
10612		LEAR	05 15 0734	N10 W13	05 14.3		BG	DAO	120	21	6	3
10612		KAND	05 15 1125	N09 W14	05 14.4			DAO		11	6	3
10612	32089	MWIL	05 15 1445	N10 W16	05 14.4	5	(B)					
10612		HOLL	05 15 1552	N10 W16	05 14.4		B	DSI	60	12	7	2
10612		VORO	05 15 2302	N10 W20	05 14.4			DAI	159	6	4	3
10612		LEAR	05 16 0107	N10 W23	05 14.3		B	DAO	90	11	7	1
10612		KAND	05 16 1225	N08 W28	05 14.4			DAO		10	7	4
10612	32089	MWIL	05 16 1445	N10 W29	05 14.4	5	(B)					
10612		HOLL	05 16 1453	N11 W29	05 14.4		B	DAI	160	17	7	4
10612		LEAR	05 17 0100	N10 W35	05 14.4		B	DAI	120	17	7	3
10612		KAND	05 17 0810	N09 W39	05 14.4			CAO		8	8	4
10612		HOLL	05 17 1500	N10 W41	05 14.5		B	DAO	190	12	7	4
10612	32089	MWIL	05 17 1700	N10 W44	05 14.4	5	(BF)					
10612		VORO	05 17 2205	N10 W46	05 14.5			CAI	188	12	7	3
10612		LEAR	05 18 0034	N08 W48	05 14.4		B	CAO	110	7	8	3
10612	32089	MWIL	05 18 1400	N10 W59	05 14.1	5	(BF)					
10612		HOLL	05 18 1635	N11 W55	05 14.5		A	HAX	100	1	2	4
10612		LEAR	05 19 0030	N09 W59	05 14.6		B	CAO	40	2	2	2
10612		VORO	05 19 0123	N11 W57	05 14.8			HAX	126	3		3
10612		SVTO	05 19 0550	N13 W61	05 14.6		A	HAX	70	3	4	3
10612	32089	MWIL	05 19 1400	N10 W69	05 14.4	4	(BF)					
10612		HOLL	05 19 1505	N10 W65	05 14.7		B	DAI	50	4	2	4
10612		LEAR	05 20 0030	N09 W73	05 14.5		B	CAO	60	4	4	3
10612		KAND	05 20 0635	N09 W75	05 14.6			BXO		2	1	3
10612		SVTO	05 20 0740	N11 W78	05 14.4		A	AXX	30	3	2	3
10612	32089	MWIL	05 20 1400	N10 W79	05 14.6	3	(AF)					
10612		HOLL	05 20 1410	N11 W76	05 14.9		B	BXX	10	2	2	4
10608		SVTO	05 09 1146	S05 E76	05 15.2		A	HRX	30	1	1	3
10608		HOLL	05 09 1338	S04 E71	05 14.9		B	CSO	40	6	8	4
10608	32084	MWIL	05 09 1430	S04 E70	05 14.8	4	(B)					
10608		VORO	05 09 2351	S04 E66	05 14.9			CAO	49	5	4	2
10608		KAND	05 10 1120	S04 E60	05 14.9			CAO		6	8	4
10608		HOLL	05 10 1405	S04 E57	05 14.8		B	DSO	60	10	8	3
10608	32084	MWIL	05 10 1430	S04 E57	05 14.9	5	(B)					
10608		VORO	05 10 2314	S04 E52	05 14.8			CRI	50	4	7	2
10608		LEAR	05 11 0143	S04 E50	05 14.8		B	CRO	50	7	8	3

SUNSPOT GROUPS
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10608	32084	MWIL	05 11 1430	S04 E44	05 14.9	4	(AP)					
10608		HOLL	05 11 1435	S05 E43	05 14.8		B	DAO	50	4	8	4
10608		LEAR	05 12 0157	S04 E37	05 14.8		B	CRO	30	4	9	4
10608		KAND	05 12 0610	S06 E39	05 15.2			AX		3	2	4
10608		HOLL	05 12 1415	S05 E33	05 15.1		A	HAX	20	4	3	4
10608	32084	MWIL	05 12 1430	S01 E33	05 15.1	4	(B)					
10608	32087	MWIL	05 12 1430	S05 E34	05 15.1	5	(AF)					
10608		LEAR	05 13 0045	S04 E28	05 15.1		B	CAO	20	3	2	1
10608		VORO	05 13 0135	S04 E27	05 15.1			AXX	16	1		3
10608		KAND	05 13 0915	S05 E23	05 15.1			AX		1		2
10608		HOLL	05 13 1345	S06 E21	05 15.1		B	CRO	20	3	2	4
10608	32087	MWIL	05 13 1445	S05 E20	05 15.1	4	(BF)					
10608		LEAR	05 14 0020	S05 E15	05 15.1		B	BXO	10	2	2	3
10608		HOLL	05 14 1400	S06 E08	05 15.2		B	BXO	10	2	2	3
10608	32087	MWIL	05 14 1430	S05 E06	05 15.0	4	(BF)					
10608	32087	MWIL	05 15 1445	S05 W08	05 15.0	4	(BF)					
10608		HOLL	05 15 1552	S06 W09	05 15.0		A	AXX		1	1	2
10608	32087	MWIL	05 16 1445	S04 W22	05 15.0	4	(AF)					
10608		HOLL	05 16 1453	S04 W21	05 15.0		A	AXX	10	2	2	4
10609		KAND	05 10 1120	S03 E68	05 15.5			AX		1		4
10609		HOLL	05 10 1405	S03 E68	05 15.7		A	AXX		1	1	3
10609	32085	MWIL	05 10 1430	S02 E67	05 15.6	4	(AP)					
10609		LEAR	05 11 0143	S03 E59	05 15.5		B	BXO	10	5	2	3
10609	32085	MWIL	05 11 1430	S02 E54	05 15.6	4	(B)					
10609		HOLL	05 11 1435	S04 E53	05 15.6		B	BXO	20	5	4	4
10609		LEAR	05 12 0157	S03 E47	05 15.6		B	BXO	40	13	4	4
10609		KAND	05 12 0610	S03 E46	05 15.7			BXO		8	4	4
10609		HOLL	05 12 1415	S04 E41	05 15.6		B	DAO	30	16	5	4
10609	32085	MWIL	05 12 1430	S02 E40	05 15.6	4	(B)					
10609		LEAR	05 13 0045	S03 E37	05 15.8		B	DSO	100	12	6	1
10609		VORO	05 13 0135	S02 E34	05 15.6			DAI	178	10	6	3
10609		KAND	05 13 0915	S03 E30	05 15.6			DAO		8	7	2
10609		HOLL	05 13 1345	S03 E28	05 15.7		BG	DAC	180	24	7	4
10609	32085	MWIL	05 13 1445	S03 E27	05 15.6	5	(B)					
10609		VORO	05 13 2206	S02 E23	05 15.6			DAI	308	12	6	3
10609		LEAR	05 14 0020	S04 E23	05 15.7		B	DSO	160	16	9	3
10609		KAND	05 14 0840	S04 E17	05 15.6			DAI		19	8	3
10609		HOLL	05 14 1400	S03 E14	05 15.6		BG	DAC	300	40	8	3
10609	32085	MWIL	05 14 1430	S03 E14	05 15.6	5	(B)					
10609		LEAR	05 15 0734	S03 E04	05 15.6		BG	DKO	540	42	8	3
10609		KAND	05 15 1125	S03 E02	05 15.6			DKO		39	9	3
10609	32085	MWIL	05 15 1445	S03 W00	05 15.6	5	(B)					
10609		HOLL	05 15 1552	S03 W01	05 15.6		BG	DKC	440	35	8	2
10609		VORO	05 15 2302	S03 W04	05 15.7			DAI	596	14	5	3
10609		LEAR	05 16 0107	S03 W06	05 15.6		BG	DKO	370	23	8	1
10609		KAND	05 16 1225	S04 W12	05 15.6			DAO		14	9	4
10609	32085	MWIL	05 16 1445	S03 W13	05 15.6	5	(B)					
10609		HOLL	05 16 1453	S03 W14	05 15.6		BG	DKC	420	38	8	4
10609		LEAR	05 17 0100	S03 W19	05 15.6		BG	DKI	280	25	8	3
10609		KAND	05 17 0810	S03 W23	05 15.6			DKO		16	8	4
10609		HOLL	05 17 1500	S03 W27	05 15.6		BG	EAI	350	26	13	4
10609	32085	MWIL	05 17 1700	S03 W27	05 15.7	5	(B)					
10609		VORO	05 17 2205	S02 W29	05 15.7			DKI	510	11	6	3
10609		LEAR	05 18 0034	S03 W33	05 15.5		BG	DAI	250	15	8	3
10609	32085	MWIL	05 18 1400	S03 W39	05 15.7	5	(BG)					
10609		HOLL	05 18 1635	S03 W42	05 15.5		BG	DAI	280	11	8	4
10609		LEAR	05 19 0030	S04 W46	05 15.6		BG	DAO	150	7	8	2
10609		VORO	05 19 0123	S02 W44	05 15.8			DAI	348	15	6	3
10609		SVTO	05 19 0550	S03 W48	05 15.6		B	DAO	210	8	9	3
10609		KAND	05 19 0805	S04 W48	05 15.7			DSO		8	6	2
10609	32085	MWIL	05 19 1400	S02 W53	05 15.6	5	(B)					
10609		HOLL	05 19 1505	S04 W54	05 15.6		BG	DKI	220	12	8	4
10609		LEAR	05 20 0030	S04 W59	05 15.6		B	DAO	150	8	9	3
10609		KAND	05 20 0635	S03 W63	05 15.6			DSO		6	8	2
10609		SVTO	05 20 0740	S03 W61	05 15.8		B	DAO	240	9	9	3
10609	32085	MWIL	05 20 1400	S03 W67	05 15.6	4	(B)					
10609		HOLL	05 20 1410	S03 W65	05 15.7		BG	DAO	100	8	9	4
10609		LEAR	05 21 0356	S03 W76	05 15.5		B	CAO	120	5	3	3

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

MAY 2004

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10609		SVTO	05	21	0610	S02	W79	05	15.3		B	CSO	90	3	7	3
10609		KAND	05	21	0630	S03	W78	05	15.4			CAO		2	10	4
10609		HOLL	05	21	1324	S01	W85	05	15.2		B	CAO	70	2	2	3
10617		HOLL	05	17	1500	S12	E15	05	18.7		B	DSO	30	9	3	4
10617	32094	MWIL	05	17	1700	S10	E14	05	18.8	5	(B)					
10617		VORO	05	17	2205	S10	E11	05	18.7			CAI	46	5	1	3
10617		LEAR	05	18	0034	S10	E09	05	18.7		B	DAO	40	5	4	3
10617	32094	MWIL	05	18	1400	S10	E01	05	18.6	4	(B)					
10617		HOLL	05	18	1635	S11	W01	05	18.6		B	DSO	30	12	4	4
10617		LEAR	05	19	0030	S10	W06	05	18.6		B	CAO	40	8	5	2
10617		VORO	05	19	0123	S10	W05	05	18.7			CAI	43	10	3	3
10617		SVTO	05	19	0550	S10	W10	05	18.5		B	DAO	40	7	5	3
10617		KAND	05	19	0805	S12	W10	05	18.6			DSO		11	5	2
10617	32094	MWIL	05	19	1400	S10	W13	05	18.6	4	(B)					
10617		HOLL	05	19	1505	S11	W15	05	18.5		B	DAI	60	14	7	4
10617		LEAR	05	20	0030	S10	W19	05	18.6		B	CAO	70	12	7	3
10617		KAND	05	20	0635	S11	W23	05	18.5			DAO		12	5	3
10617		SVTO	05	20	0740	S10	W24	05	18.5		B	DAO	50	10	6	3
10617	32094	MWIL	05	20	1400	S10	W27	05	18.5	5	(B)					
10617		HOLL	05	20	1410	S10	W27	05	18.6		B	DAI	40	16	6	4
10617		LEAR	05	21	0356	S12	W35	05	18.5		B	CSO	40	7	6	3
10617		SVTO	05	21	0610	S11	W37	05	18.5		B	DSO	40	6	6	3
10617		KAND	05	21	0630	S11	W37	05	18.5			CSO		6	7	4
10617		HOLL	05	21	1324	S11	W42	05	18.4		B	BXO	20	5	7	3
10617		LEAR	05	22	0014	S11	W46	05	18.5		B	BXO	40	10	7	3
10617		KAND	05	22	0632	S11	W54	05	18.2			BXO		2	3	3
10617		SVTO	05	22	1224	S10	W55	05	18.4		B	CRO	30	2	4	2
10617		HOLL	05	22	1353	S09	W55	05	18.4		B	CSO	40	2	4	2
10617	32094	MWIL	05	22	2000	S09	W60	05	18.3	4	(AP)					
10617		LEAR	05	23	0035	S11	W63	05	18.3		A	AXX	10	2	2	4
10617A	32095	MWIL	05	19	1400	S15	W05	05	19.2	3	(AF)					
10613		HOLL	05	13	1345	S08	E88	05	20.2		A	HSX	30	2	5	4
10613	32090	MWIL	05	13	1445	S08	E84	05	19.9	5	(AP)					
10613		VORO	05	13	2206	S08	E78	05	19.8			HAX	131	1		3
10613		LEAR	05	14	0020	S08	E75	05	19.6		A	HAX	60	1	2	3
10613		KAND	05	14	0840	S09	E75	05	20.0			HS		1	3	3
10613		HOLL	05	14	1400	S08	E70	05	19.8		A	HSX	40	1	3	3
10613	32090	MWIL	05	14	1430	S08	E70	05	19.8	5	(AP)					
10613		LEAR	05	15	0734	S07	E60	05	19.8		A	HSX	80	1	2	3
10613		KAND	05	15	1125	S09	E59	05	19.9			HA		2	2	3
10613	32090	MWIL	05	15	1445	S08	E56	05	19.8	5	(AP)					
10613		HOLL	05	15	1552	S09	E56	05	19.9		A	HSX	70	1	2	2
10613		VORO	05	15	2302	S07	E51	05	19.8			HKX	175	1		3
10613		LEAR	05	16	0107	S08	E51	05	19.9		A	HSX	80	1	2	1
10613		KAND	05	16	1225	S10	E44	05	19.8			HS		1	2	4
10613	32090	MWIL	05	16	1445	S08	E43	05	19.8	5	(AP)					
10613		HOLL	05	16	1453	S08	E42	05	19.8		A	HSX	80	2	2	4
10613		LEAR	05	17	0100	S08	E37	05	19.8		A	HSX	100	1	2	3
10613		KAND	05	17	0810	S10	E33	05	19.8			HS		1	2	4
10613		HOLL	05	17	1500	S09	E29	05	19.8		A	HAX	110	2	2	4
10613	32090	MWIL	05	17	1700	S08	E28	05	19.8	5	(AP)					
10613		VORO	05	17	2205	S08	E26	05	19.9			HSX	150	1		3
10613		LEAR	05	18	0034	S08	E24	05	19.8		A	HAX	110	2	2	3
10613	32090	MWIL	05	18	1400	S08	E16	05	19.8	5	(AP)					
10613		HOLL	05	18	1635	S09	E16	05	19.9		A	HKX	110	2	2	4
10613		LEAR	05	19	0030	S09	E11	05	19.8		A	HAX	60	1	2	2
10613		VORO	05	19	0123	S08	E11	05	19.9			HSX	150	1		3
10613		SVTO	05	19	0550	S09	E08	05	19.8		A	HAX	80	1	3	3
10613		KAND	05	19	0805	S10	E07	05	19.9			HS		1	2	2
10613	32090	MWIL	05	19	1400	S08	E04	05	19.9	5	(AP)					
10613		HOLL	05	19	1505	S09	E03	05	19.8		B	CKO	120	2	3	4
10613		LEAR	05	20	0030	S08	W02	05	19.9		A	HSX	80	2	2	3
10613		KAND	05	20	0635	S10	W06	05	19.8			HS		1	2	3
10613		SVTO	05	20	0740	S09	W07	05	19.8		A	HSX	110	1	2	3
10613	32090	MWIL	05	20	1400	S08	W10	05	19.8	5	(AP)					
10613		HOLL	05	20	1410	S09	W09	05	19.9		A	HKX	150	1	2	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 2004

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10613		LEAR	05	21	0356	S09	W17	05	19.9		B	CSO	130	3	2	3
10613		SVTO	05	21	0610	S09	W19	05	19.8		B	CSO	100	2	3	3
10613		KAND	05	21	0630	S09	W19	05	19.8			CSO		3	2	4
10613		HOLL	05	21	1324	S09	W24	05	19.7		B	CSO	80	3	3	3
10613		LEAR	05	22	0014	S09	W29	05	19.8		A	HSX	130	2	2	3
10613		KAND	05	22	0632	S10	W33	05	19.8			HA		2	2	3
10613		SVTO	05	22	1224	S09	W36	05	19.8		A	HSX	130	2	2	2
10613		HOLL	05	22	1353	S08	W37	05	19.8		A	HSX	80	1	2	2
10613	32090	MWIL	05	22	2000	S08	W40	05	19.8	5	(AP)					
10613		LEAR	05	23	0035	S10	W42	05	19.9		A	HAX	80	2	2	4
10613		SVTO	05	23	0705	S09	W46	05	19.8		A	HSX	80	1	3	3
10613		KAND	05	23	1050	S10	W48	05	19.8			HS		1	2	3
10613		HOLL	05	23	1400	S09	W50	05	19.8		A	HAX	90	3	2	4
10613	32090	MWIL	05	23	1600	S08	W50	05	19.9	5	(AP)					
10613		VORO	05	24	0004	S08	W55	05	19.9			HAX	135	1		3
10613		LEAR	05	24	0100	S11	W55	05	19.9		A	HAX	70	2	2	3
10613		KAND	05	24	0650	S09	W60	05	19.8			HS		1	2	3
10613		SVTO	05	24	1200	S09	W62	05	19.8		A	HSX	40	1	2	3
10613		HOLL	05	24	1510	S08	W63	05	19.9		A	HAX	60	1	2	4
10613	32090	MWIL	05	24	1515	S09	W64	05	19.8	5	(AP)					
10613		VORO	05	24	2242	S09	W67	05	19.9			HAX	108	1		3
10613		LEAR	05	25	0130	S11	W68	05	19.9		A	HAX	90	1	2	2
10613		SVTO	05	25	0530	S08	W74	05	19.7		A	HSX	80	1	3	3
10613		KAND	05	25	0815	S10	W74	05	19.8			HS		1	2	3
10613	32090	MWIL	05	25	1430	S09	W77	05	19.8	5	(AP)					
10613		LEAR	05	26	0115	S09	W79	05	20.1		A	HSX	60	3	2	2
10613		SVTO	05	26	0510	S08	W88	05	19.6		A	HSX	90	1	3	3
10619		KAND	05	23	1050	S11	W32	05	21.0			AX		2	1	3
10619		HOLL	05	23	1400	S09	W32	05	21.2		B	DSO	20	6	2	4
10619	32097	MWIL	05	23	1600	S08	W33	05	21.2	4	(B)					
10619		VORO	05	24	0004	S08	W38	05	21.1			CRI	37	5	4	3
10619		LEAR	05	24	0100	S09	W38	05	21.2		B	CSO	30	4	4	3
10619		KAND	05	24	0650	S09	W43	05	21.0			BXO		3	5	3
10619		SVTO	05	24	1200	S07	W45	05	21.1		B	CSO	30	3	5	3
10619		HOLL	05	24	1510	S08	W47	05	21.1		B	CSO	20	3	5	4
10619	32097	MWIL	05	24	1515	S08	W45	05	21.3	4	(B)					
10619		VORO	05	24	2242	S08	W50	05	21.2			BRI	29	4	5	3
10619		LEAR	05	25	0130	S09	W50	05	21.3		B	CAO	30	3	5	2
10619		SVTO	05	25	0530	S07	W53	05	21.2		A	HRX	20	1	1	3
10619		KAND	05	25	0815	S10	W60	05	20.8			BXO		3	7	3
10619	32097	MWIL	05	25	1430	S08	W59	05	21.2	4	(BF)					
10619		LEAR	05	26	0115	S08	W62	05	21.4		B	BXO	20	2	1	2
10619		SVTO	05	26	0510	S08	W66	05	21.3		A	AXX		1		3
10619		KAND	05	26	0745	S09	W68	05	21.2			BXO		3	6	2
10619	32097	MWIL	05	26	1430	S08	W72	05	21.2	4	(B)					
10615		HOLL	05	15	1552	N17	E79	05	21.7		A	HAX	60	1	1	2
10615		VORO	05	15	2302	N18	E77	05	21.8			HAX	120	1		3
10615		LEAR	05	16	0107	N19	E77	05	21.9		A	HAX	30	1	3	1
10615		KAND	05	16	1225	N16	E69	05	21.7			HA		1	1	4
10615	32092	MWIL	05	16	1445	N17	E70	05	21.9	4	(AP)					
10615		HOLL	05	16	1453	N17	E69	05	21.9		A	HSX	70	2	2	4
10615		LEAR	05	17	0100	N17	E62	05	21.7		A	HAX	110	3	3	3
10615		KAND	05	17	0810	N17	E60	05	21.9			HS		1	2	4
10615		HOLL	05	17	1500	N16	E55	05	21.8		A	HSX	140	9	3	4
10615	32092	MWIL	05	17	1700	N17	E55	05	21.9	5	(AP)					
10615		VORO	05	17	2205	N17	E52	05	21.9			HAX	138	2		3
10615		LEAR	05	18	0034	N18	E49	05	21.7		A	HAX	110	2	2	3
10615	32092	MWIL	05	18	1400	N18	E45	05	22.0	5	(BP)					
10615		HOLL	05	18	1635	N17	E42	05	21.9		A	HHX	130	3	3	4
10615		LEAR	05	19	0030	N18	E37	05	21.8		A	HAX	50	1	2	2
10615		VORO	05	19	0123	N17	E37	05	21.9			HAX	124	2		3
10615		VORO	05	19	0123	N19	E44	05	22.4			AXX	3	1		3
10615		SVTO	05	19	0550	N15	E35	05	21.9		A	HAX	90	2	3	3
10615		KAND	05	19	0805	N16	E33	05	21.8			HA		3	2	2
10615	32092	MWIL	05	19	1400	N17	E30	05	21.9	5	(AP)					
10615		HOLL	05	19	1505	N16	E30	05	21.9		A	HKX	100	2	2	4
10615		LEAR	05	20	0030	N18	E28	05	22.1		B	CKO	80	3	9	3

SUNSPOT GROUPS
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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
10615		KAND	05	20	0635	N16	E21	05	21.9			HA		3	2	3
10615		SVTO	05	20	0740	N18	E21	05	21.9		A	HSX	80	6	2	3
10615	32092	MWIL	05	20	1400	N18	E18	05	21.9	5	(AP)					
10615		HOLL	05	20	1410	N17	E18	05	21.9		A	HAX	100	3	2	4
10615		LEAR	05	21	0356	N18	E10	05	21.9		B	CAO	110	4	3	3
10615		SVTO	05	21	0610	N17	E08	05	21.9		A	HSX	100	1	3	3
10615		KAND	05	21	0630	N16	E09	05	21.9			HS		1	2	4
10615		HOLL	05	21	1324	N17	E05	05	21.9		A	HSX	80	1	2	3
10615		LEAR	05	22	0014	N18	E00	05	22.0		B	CSO	120	9	7	3
10615		KAND	05	22	0632	N16	W06	05	21.8			HA		2	2	3
10615		SVTO	05	22	1224	N18	W08	05	21.9		A	HSX	100	1	2	2
10615		HOLL	05	22	1353	N18	W08	05	22.0		A	HSX	80	2	2	2
10615	32092	MWIL	05	22	2000	N17	W13	05	21.8	5	(AP)					
10615		LEAR	05	23	0035	N17	W16	05	21.8		B	CAO	110	9	3	4
10615		SVTO	05	23	0705	N18	W18	05	21.9		B	CSO	60	3	4	2
10615		KAND	05	23	1050	N16	W19	05	22.0			CSO		4	9	3
10615		HOLL	05	23	1400	N17	W22	05	21.9		A	HAX	40	5	3	4
10615	32092	MWIL	05	23	1600	N17	W22	05	22.0	5	(BP)					
10615		VORO	05	24	0004	N17	W28	05	21.9			HAX	102	1		3
10615		LEAR	05	24	0100	N17	W29	05	21.8		A	CAO	80	5	2	3
10615		KAND	05	24	0650	N16	W32	05	21.8			HS		1	2	3
10615		SVTO	05	24	1200	N17	W35	05	21.8		A	HSX	40	1	3	3
10615		HOLL	05	24	1510	N16	W36	05	21.9		A	HSX	60	2	3	4
10615	32092	MWIL	05	24	1515	N17	W36	05	21.9	5	(AP)					
10615		VORO	05	24	2242	N17	W40	05	21.9			HAX	106	1		3
10615		LEAR	05	25	0130	N17	W42	05	21.9		A	HAX	20	1	2	2
10615		SVTO	05	25	0530	N18	W45	05	21.8		A	HSX	60	1	2	3
10615		KAND	05	25	0745	N16	W45	05	21.9			HS		1	2	3
10615	32092	MWIL	05	25	1430	N17	W49	05	21.9	5	(AP)					
10615		LEAR	05	26	0115	N17	W55	05	21.9		B	CSO	40	2	2	2
10615		SVTO	05	26	0510	N18	W57	05	21.9		A	HSX	70	1	2	3
10615		KAND	05	26	0745	N16	W59	05	21.8			HS		1	2	2
10615	32092	MWIL	05	26	1430	N17	W62	05	21.9	5	(AP)					
10615		VORO	05	26	2210	N17	W66	05	21.9			HAX	113	1		3
10615		LEAR	05	27	0100	N17	W68	05	21.9		A	HAX	70	2	2	3
10615		SVTO	05	27	0715	N17	W73	05	21.7		A	HSX	60	1	3	3
10615	32092	MWIL	05	27	1430	N17	W75	05	21.9	5	(AP)					
10615		HOLL	05	27	1716	N17	W73	05	22.2		A	HSX	60	1	2	2
10615		LEAR	05	28	0036	N17	W78	05	22.1		A	HAX	60	1	2	3
10616	32093	MWIL	05	16	1445	N07	E77	05	22.4	4	(AP)					
10616		HOLL	05	16	1453	N08	E76	05	22.3		A	AXX		1	1	4
10616		LEAR	05	17	0100	N07	E68	05	22.1		A	AXX	10	1	1	3
10616A		HOLL	05	22	1353	N17	E13	05	23.6		A	AXX		1	1	2
10618A		VORO	05	26	2210	S03	W24	05	25.1			AXX	8	4		3
10618		LEAR	05	20	0030	S09	E79	05	26.0		B	BXO	30	5	2	3
10618		KAND	05	20	0635	S12	E77	05	26.1			BXO		3	1	3
10618		SVTO	05	20	0740	S09	E79	05	26.2		B	CSO	40	4	10	3
10618	32096	MWIL	05	20	1400	S10	E74	05	26.1	4	(B)					
10618		HOLL	05	20	1410	S11	E73	05	26.1		B	CAO	30	13	13	4
10618		LEAR	05	21	0356	S08	E66	05	26.1		BG	CAI	190	18	12	3
10618		SVTO	05	21	0610	S11	E65	05	26.1		B	ESO	130	11	12	3
10618		KAND	05	21	0630	S11	E62	05	25.9			EAI		13	12	4
10618		HOLL	05	21	1324	S12	E60	05	26.1		B	CAI	130	23	12	3
10618		LEAR	05	22	0014	S09	E53	05	26.0		G	FAC	320	38	16	3
10618		KAND	05	22	0632	S11	E51	05	26.1			DKO		13	13	3
10618		SVTO	05	22	1224	S11	E48	05	26.1		B	ESO	400	21	12	2
10618		HOLL	05	22	1353	S12	E45	05	26.0		BGD	EKI	200	26	13	2
10618	32096	MWIL	05	22	2000	S10	E41	05	25.9	4	(B)					
10618		LEAR	05	23	0035	S08	E38	05	25.9		BGD	FAC	410	43	16	4
10618		SVTO	05	23	0705	S11	E35	05	25.9		B	ESI	240	21	16	3
10618		KAND	05	23	1050	S10	E34	05	26.0			FKO		20	21	3
10618		HOLL	05	23	1400	S11	E31	05	25.9		B	FKI	300	61	16	4
10618	32096	MWIL	05	23	1600	S11	E31	05	26.0	5	(BG)					
10618		VORO	05	24	0004	S10	E26	05	25.9			EAI	405	38	12	3
10618		LEAR	05	24	0100	S09	E26	05	26.0		BGD	FAC	470	55	17	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
10618		KAND	05 24 0650	S10 E22	05 25.9			FKI		28	20	3
10618		KAND	05 24 0650	S15 E19	05 25.7			BXO		3	2	3
10618		SVTO	05 24 1200	S12 E18	05 25.8		B	EKI	200	21	15	3
10618		HOLL	05 24 1510	S11 E17	05 25.9		BG	FKI	360	59	18	4
10618	32096	MWIL	05 24 1515	S10 E16	05 25.8	5	(BG)					
10618	32099	MWIL	05 24 1515	S16 E16	05 25.8	4	(AF)					
10618		VORO	05 24 2242	S09 E13	05 25.9			EAI	442	38	12	3
10618		VORO	05 24 2242	S15 E11	05 25.8			AXX	4	1		3
10618		LEAR	05 25 0130	S09 E10	05 25.8		BGD	FHO	310	44	16	2
10618		SVTO	05 25 0530	S11 E08	05 25.8		BG	ESI	310	27	15	3
10618	32096	MWIL	05 25 1430	S09 E03	05 25.8	5	(BG)					
10618	32099	MWIL	05 25 1430	S14 E01	05 25.7	4	(AP)					
10618		LEAR	05 26 0115	S09 W03	05 25.8		BGD	FAI	240	34	16	2
10618		SVTO	05 26 0510	S10 W05	05 25.8		BG	FSI	300	29	17	3
10618		KAND	05 26 0745	S11 W10	05 25.6			EAC		17	12	2
10618	32096	MWIL	05 26 1430	S09 W10	05 25.8	5	(D)					
10618		VORO	05 26 2210	S09 W15	05 25.8			EKI	362	45	14	3
10618		LEAR	05 27 0100	S10 W17	05 25.8		BG	FAI	340	44	16	3
10618		SVTO	05 27 0715	S09 W23	05 25.6		B	EAI	280	22	13	3
10618	32096	MWIL	05 27 1430	S09 W25	05 25.7	5	(BG)					
10618		HOLL	05 27 1716	S09 W27	05 25.7		BG	FSC	270	29	16	2
10618		LEAR	05 28 0036	S10 W29	05 25.8		G	FAC	420	56	16	3
10618		KAND	05 28 0655	S10 W35	05 25.6			FAI		25	16	3
10618		SVTO	05 28 0740	S10 W37	05 25.5		BG	EAI	310	14	13	3
10618		HOLL	05 28 1407	S11 W40	05 25.6		BG	EAC	230	25	13	4
10618	32096	MWIL	05 28 1430	S10 W39	05 25.7	5	(BG)					
10618		LEAR	05 29 0122	S11 W47	05 25.5		G	EAC	450	36	15	3
10618		HOLL	05 29 1435	S09 W56	05 25.4		G	FKC	490	28	16	3
10618	32096	MWIL	05 29 1445	S10 W55	05 25.5	5	(BG)					
10618		LEAR	05 30 0100	S10 W58	05 25.7		G	FAC	420	22	20	3
10618		SVTO	05 30 1127	S08 W67	05 25.4		B	FSO	330	8	18	3
10618		HOLL	05 30 1405	S10 W68	05 25.5		BG	FAC	330	20	19	4
10618	32096	MWIL	05 30 1445	S10 W68	05 25.5	5	(BG)					
10618		VORO	05 30 2159	S10 W71	05 25.6			EKI	371	4	9	3
10618		LEAR	05 31 0124	S11 W73	05 25.6		BG	CAO	330	6	13	3
10618		SVTO	05 31 0655	S10 W75	05 25.6		B	FSO	240	5	18	3
10618		HOLL	05 31 1329	S09 W76	05 25.8		B	FAO	310	4	16	3
10618	32096	MWIL	05 31 1445	S08 W78	05 25.8	4	(AP)					
10618		VORO	05 31 2206	S09 W80	05 25.9			HAX	209	1		3
10618		LEAR	06 01 0025	S09 W81	05 26.0		A	HRX	30	1	2	3
10618		SVTO	06 01 0552	S07 W86	05 25.9		A	HSX	30	1	2	3
10620		LEAR	05 23 0035	S14 E46	05 26.5		B	BXO	10	4	3	4
10620		SVTO	05 23 0705	S16 E44	05 26.6		B	BXO	10	4	5	3
10620		KAND	05 23 1050	S16 E41	05 26.6			BXO		4	4	3
10620		HOLL	05 23 1400	S15 E39	05 26.5		B	CSO	20	5	3	4
10620	32098	MWIL	05 23 1600	S17 E39	05 26.6	3	(B)					
10620		VORO	05 24 0004	S15 E34	05 26.6			DRO	39	3	3	3
10620		LEAR	05 24 0100	S14 E34	05 26.6		B	BXO	20	6	4	3
10620		KAND	05 24 0650	S16 E32	05 26.7			AX		2	2	3
10620		SVTO	05 24 1200	S17 E29	05 26.7		B	BXO	20	3	3	3
10620		HOLL	05 24 1510	S15 E28	05 26.7		A	HAX	50	2	2	4
10620	32098	MWIL	05 24 1515	S16 E26	05 26.6	4	(BF)					
10620		VORO	05 24 2242	S15 E23	05 26.7			HRX	23	2		3
10620		LEAR	05 25 0130	S13 E22	05 26.7		B	CXO	10	2	1	2
10620		SVTO	05 25 0530	S16 E20	05 26.7		B	CRO	10	2	2	3
10620		KAND	05 25 0815	S17 E18	05 26.7			AX		2	1	3
10620	32098	MWIL	05 25 1430	S14 E10	05 26.3	4	(BG)					
10620	32098	MWIL	05 26 1430	S15 W01	05 26.5	4	(BF)					
10620B	32100	MWIL	05 28 1430	N14 W08	05 28.0	4	(AF)					
10620C		KAND	06 02 1040	S12 W49	05 29.8			AX		1		3
10625		LEAR	06 03 0104	S12 W43	05 30.9		A	AXX	10	2	1	3
10625	32107	MWIL	06 03 1430	S12 W51	05 30.9	4	(B)					
10625		HOLL	06 03 1434	S11 W52	05 30.8		A	HSX	20	1	1	3
10625		VORO	06 03 2248	S12 W55	05 30.9			AXX	10	3	3	3
10625		LEAR	06 04 0048	S13 W55	05 31.0		B	CAO	30	3	4	3

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

MAY 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
10625		HOLL	06 04 1414	S12 W65	05 30.8		A	AXX	10	2	1	4
10623		KAND	06 01 1155	N07 W16	05 31.3			AX		1		3
10623		HOLL	06 01 1330	N07 W18	05 31.2		B	CAO	20	4	3	3
10623	32104	MWIL	06 01 1430	N08 W16	05 31.4	4	(B)					
10623		VORO	06 01 2144	N08 W23	05 31.2			BRO	17	2	2	3
10623		LEAR	06 02 0030	N08 W24	05 31.2		B	DAO	20	2	4	3
10623		HOLL	06 02 1345	N08 W29	05 31.4		A	HXX		1	1	3
10623	32104	MWIL	06 02 1430	N08 W30	05 31.3	4	(BF)					

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

MAY 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	0437	0447	0455	1-	1					1	0431	B8.9	10601
01	1046	1053	1104	2-	5	1		1			No flare		
01	1348	1359	1451	2	5		1			4	1343	C2.8	10601
01	1531	1534	1552	3-	5	1	1	1		9	1526	C9.5	10601
02	0333	0343	0409	2	1					1	0325	C5.4	10601
02	0533	0536	0619	1	3					2	0531	C1.3	10601
02	0825	0835	0911	2	3					2	0822	C1.4	10601
02	1024	1034	1100	1	1		1				No flare		
02	1111	1115	1200	3	5	1	1	1		7	1106	C8.3	10601
02	1509	1600	1638	3-	5					2	1507	C2.6	10601
02	1717	1721	1735U	1-	1					1	1715	C1.1	10601
03	0909	0912	0923	1	1		1				No flare		
03	1341	1346	1404	1	1					1	1340	C1.0	10601
03	1605	1614	1635	1	1		1				No flare		
04	1100	1112	1206	1	1		1				No flare		
04	1617	1623	1659	1	1		1				1558	B2.8	10601
04	1703	1705	1728	1	1		1				1653	B2.3	10605
05	1019	1028	1127	1	1		1				*		
05	1136	1144U	1201	1	1		1				1146	B5.4	10605
06	0623	0637	0654	1	1		1				No flare		
06	0838	0844	0914	1	1		1				No flare		
06	0928	1000U	1027	1	1		1				No flare		
07	0741	0819	0855	1	1		1				No flare		
07	0900	0918	0955	1	1		1				No flare		
07	1001	1024	1038	1-	1	1					0956	B7.3	
07	1334	1409	1501	1	1		1				1337	C1.0	10605
07	1536	1618	1657	1	1		1				No flare		
08	0911	0927	1023	2	1		1				No flare		
08	1425	1430	1447	1	1					1	No flare		
09	1638	1650	1721	1	1		1				1617	B3.4	10608
10	0815	0834	0900	1	1		1				*		
11	1428	1437	1524	1	1		1				No flare		
12	1301	1307	1343	1	1		1				No flare		
12	1532	1543	1606	1-	5		1			1	1537	C1.3	10609
13	0734	0743	0832	1+	3		1			3	0729	C1.7	10609
13	0926	0935	1000	2	1					1	0930	C1.3	10609
13	1330	1336	1355	3-	5	1	1	1		10	1324	C7.7	10609
13	1504	1530	1556	1	1		1				No flare		
14	1118	1122	1132	1	1		1				1118	B3.3	10609
15	1441	1449	1537	2	5		1	1		8	1434	C2.2	10609
16	1533	1550	1620	1	1		1				1531	B5.2	10607
17	0619	0712	0814	2	1		1				0708	B8.1	10614
17	0900	0915	0950	1	1		1				*		
18	0819	0833	0851	1-	3	1	1			3	0812	C3.2	10615
18	1130	1150	1215	1	1		1				*		
18	1551	1604	1644	2	5		1			7	1550	C1.6	10615
19	1841	1846	1915	2-	3					4	1841	C1.1	
19	1940	1951	2023	2	3					4	1929	C2.2	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 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
20	0804	0820	0850	1	1		1				No flare		
20	1032	1055	1155	2	1		1				No flare		
20	1716	1721	1748	1+	5					6	1714	C3.7	10618
21	0546	0554	0644	1+	3		1			2	0546	C2.0	10618
21	1617	1623	1652	1	3					4	1616	C2.0	10617
21	2214	2221	2234U	1	1					1	2213	C1.2	10615
21	2340	2353	0000	1	5					2	2335	M2.6	10618
22	0703	0713	0753	1+	3		1			4	0702	C2.2	10618
22	1151	1158	1223	2-	3					2	1145	C1.4	10618
22	1227	1232	1252	1	3					2	1223	C1.5	10618
22	1256	1304	1333	1+	5		1			5	1255	C2.0	10618
22	1543	1608	1652	1	1		1				1608		10618
22	1717	1733	1809	2+	1					1	1720	C1.0	10618
23	1039	1054	1116	2	1		1				*		
23	1437	1459	1543	2	5		1			6	1437	C2.9	10618
23	1614	1648	1730	1	1		1				No flare		
23	1735	1741	1817	2-	3					6	1735	C2.0	10618
23	1946	1955	2028	2-	3					2	1944	C1.4	10618
24	1035	1045	1100	1	1		1				*		
24	1100	1106	1146	2+	5	1	1	1		7	1053	C4.6	10618
25	1251	1302	1344	1	1		1				*		
25	1838	1846	1858	1	1					1	1843	B3.8	10618
26	1234	1243	1254	1	3					2	No flare		
27	1633	1643	1721	1	1		1				*		
28	1009	1013	1038	3-	5	1	1	1		7	1003	C4.1	10618
28	1212	1214	1258	2-	5		1	1		2	1209	C2.2	10618
28	2042	2045	2107	1	1					1	2041	C2.1	10618
28	2108	2110	2138	1+	1					1	2105	B8.9	
29	0741	0756	0934	1	1		1				0817	B3.4	
30	1917	1929	2001	2-	3					2	1915	C1.2	10618
31	0013	0026	0117	2+	3					2	0007	C6.5	10618
31	0848	0902	0931	1	3	1				1	0847	C1.0	10618
31	1032	1041	1207	2+	5		1	1		4	1030	C3.8	10618

* = no flare patrol.

OBSERVATORIES REPORTING FOR MAY 2004

Athens, Greece	SES	Nerja, Spain	SES
Bedford, Massachusetts, USA	SES	Palo Alto, California, USA	SES
Bern, Switzerland	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Brookline, Massachusetts, USA	SES	Perth, Australia	SES
Calcutta, India	SES	Sofia, Bulgaria	SES
Cambridge, England, UK	SES	Sussex, United Kingdom	SES
Edenvale, Rep of S. Africa	SES	Torrington, Connecticut, USA	SES
Houston, Texas, USA	SES	Tucson, Arizona, USA	SES
Isola del Gran Sasso, Italy	SES	Upice, Czech Republic	SEA
Marlborough, Massachusetts, USA	SES	Villiersdorp, South Africa	SES
Milan, Italy	SES		

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

MAY 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	0000	0926	HIRA								
	0451	1708	ONDR								
			IZMI	0635.0U	1200.0D	I	N	1	130	270X	
	0600	1200	IZMI	0635.3	0635.3	III	B	1	130	170	
	0000	0720	CULG	0649.0	0654.0	III	G	1	100	180	
			IZMI	0649.5	0657.4	III	N	1	130	170	
			SVTO	1433.0	1434.0	III		1	25	126	
			SVTO	1534.0	1703.0	CONT		1	25	180	
			HOLL	1807.0	1814.0	III		1	25	180	
			PALE	1807.0	1810.0	III		1	25	180	
			PALE	1813.0	1814.0	III		2	25	180	
			HOLL	1927.0	1927.0	III		1	25	138	
			PALE	1949.0	1950.0	III		1	25	81	
			HOLL	1950.0	1950.0	III		1	25	180	
	1942	2400	HIRA	1950.0	1950.5	III	B	1	25X	140	
			HOLL	2011.0	2012.0	III		1	25	144	
			HIRA	2011.5	2012.0	III	B	1	25X	130	
	2040	2400	CULG	2040.0E	2134.0	I	S	1	120	180	
			CULG	2113.0	2113.0	III	B	1	25	140	
02			PALE	0115.0	0115.0	III		1	25	84	
	0000	0720	CULG	0115.0	0116.0	III	G	1	23	160	
	0000	0927	HIRA	0115.5	0116.0	III	B	1	25X	120	
			CULG	0357.0	0720.0D	I	S	1	80	160	
	0449	1709	ONDR								
	0555	1220	IZMI	0555.0E	1200.0D	I	NG	2	110U	270X	
			SVTO	1457.0	1457.0	III		1	25	68	
			HOLL	2018.0	2018.0	III		1	25	59	
	1941	2400	HIRA	2018.0	2018.5	III	B	1	25X	70	
	2040	2400	CULG	2053.0	2053.0	III	B	1	23	120	
			CULG	2301.0	2301.0	III	B	1	35	80	
			CULG	2309.0	2309.0	III	B	1	27	150	
			CULG	2330.0	2400.0D	I	S	1	110	180	
03	0000	0720	CULG	0000.0E	0534.0	I	S	1	80	180	
			CULG	0014.0	0146.0	III	N	1	30	180	
			CULG	0249.0	0249.0	III	B	1	20	70	
			PALE	0415.0	0415.0	III		1	25	62	
			SVTO	0415.0	0415.0	III		1	25	71	
	0000	0928	HIRA	0415.5	0416.0	III	B	2	25X	110	
			CULG	0416.0	0416.0	III	B	3	20	180	
			SVTO	0450.0	0450.0	III		1	25U	72U	
			HIRA	0450.5	0451.0	III	B	1	25X	100	
			CULG	0451.0	0451.0	III	B	1	20	90	
	0608	1200	IZMI	0608.0E	1200.0D	I	N	2	110U	270X	
			CULG	0645.0	0654.0	I	S	1	130	180	
			SVTO	0954.0	1050.0	CONT		1	113	180	
			SVTO	1025.0	1026.0	III		1	25	131	
			IZMI	1025.7	1026.7	III	G	2	30	135	
			IZMI	1029.4	1029.5	III	B	1	45	90	
	0448	1710	ONDR	1341.5	1343.4	DCIM	GG	3	800X	1259	
	2040	2400	CULG	2045.0	2045.0	III	B	1	27	57	
			CULG	2102.0	2102.0	III	B	3	23	100	
			PALE	2102.0	2102.0	III		1	25	60	
	1940	2400	HIRA	2102.0	2102.5	III	B	1	25X	50	
			CULG	2246.0	2246.0	III	B	1	30	80	
			CULG	2308.0	2308.0	III	B	1	20	90	
04	0000	0929	HIRA								
	0000	0720	CULG	0149.0	0150.0	III	G	1	18	100	
			CULG	0401.0	0401.0	III	B	1	120	250	
			LEAR	0401.0	0401.0	III		1	91	180	
	0446	1712	ONDR								
	0555	1200	IZMI	0900.7	0900.8	III	B	1	50	75	
			SVTO	0920.0	0920.0	III		1	25	79	
			IZMI	0920.4	0920.5	III	G	1	45	170	
			IZMI	1043.0	1043.2	III	G	1	130	165	
			SVTO	1104.0	1105.0	III		1	25	77	
			SVTO	1124.0	1125.0	III		1	25	83	

SOLAR RADIO EMISSION
Spectral Observations

MAY 2004

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
04			IZMI	1124.2	1125.2	III	G	2	25X	165	
			SVTO	1323.0	1323.0	III		1	25U	153U	
			SVTO	1335.0	1335.0	III		1	25U	70U	
			HOLL	1420.0	1421.0	III		1	25	115	
			SVTO	1420.0	1421.0	III		1	25	126	
			SVTO	1606.0	1606.0	III		1	25	180	
			HOLL	1630.0	1631.0	III		1	25	87	
			SVTO	1630.0	1630.0	III		1	25	83	
			HOLL	1730.0	1730.0	III		1	25	63	
	2040	2400	CULG	2040.0E	2400.0D	I	S,C	1	60	160	
			CULG	2104.0	2400.0D	III	N	1	27	160	
			CULG	2152.0	2153.0	III	G	3	20	180	
			PALE	2152.0	2258.0	III	N	1	25	87	
	1939	2400	HIRA	2152.0	2154.5	III	G	1	25X	140	
			HOLL	2153.0	2206.0	III		1	25	180	
			CULG	2200.0	2200.0	III	B	3	20	140	
			HOLL	2204.0	2222.0	III		1	25	180	
			CULG	2205.0	2206.0	III	G	2	23	180	
			LEAR	2318.0	0744.0	III	N	1	25	180	
05			CULG	0000.0	0027.0	III	GG	2	20	180	
			CULG	0000.0E	0407.0	III	N	1	25	180	
	0000	0720	CULG	0000.0E	0527.0	I	S,C	1	50	180	
	0000	0930	HIRA	0018.0	0019.0	III	G	1	60	200	
			LEAR	0228.0	0742.0	CONT		1	70	180	
			CULG	0348.0	0351.0	III	G	2	18	200	
			HIRA	0348.0	0350.5	III	G	1	25X	210	
	0445	1713	ONDR								
			CULG	0528.0	0616.0	III	N	1	27	160	
	0600	1200	IZMI	0707.8	0707.9	III	B	1	45	85	
			IZMI	0749.1	0749.2	III	B	1	45	85	
	1938	2400	HIRA								
			HOLL	1950.0	2015.0	III	N	1	25	118	
			PALE	1950.0	2327.0	III	N	1	25	60	
	2040	2400	CULG	2040.0E	2300.0	I	S,C	1	60	160	
			CULG	2106.0	2106.0	III	B	1	23	60	
			CULG	2142.0	2204.0	III	N	1	20	90	
06	0000	0931	HIRA								
	0000	0720	CULG	0033.0	0054.0	I	S	1	110	180	
			CULG	0215.0	0235.0	I	S	1	100	170	
			CULG	0241.0	0241.0	III	B	1	20	90	
			CULG	0354.0	0417.0	III	N	1	20	160	
	0444	1714	ONDR								
			CULG	0518.0	0539.0	III	N	1	23	160	
			SVTO	0935.0	0937.0	III		1	25	87	
	0555	1200	IZMI	0935.8	0937.1	III	GG	2	40	260	
			IZMI	1006.9	1007.0	III	G	2	50U	130	
			HOLL	1700.0	1700.0	III		1	25	71	
	1937	2400	HIRA								
	2040	2400	CULG								
07			LEAR	0057.0	0916.0	III	N	1	66	108	
	0000	0720	CULG	0412.0	0412.0	III	B	1	20	260	
	0000	0932	HIRA	0412.0	0412.5	III	B	1	80	210	
	0442	1715	ONDR								
			CULG	0544.0	0547.0	III	G	1	20	180	
			SVTO	1002.0	1006.0	III		1	25	180	
	0600	1200	IZMI	1002.5	1002.8	III	B	1	400	90	
			IZMI	1004.6	1005.7	III	GG,C,FS	2	25X	250	
			SVTO	1021.0	1029.0	II		1	25	62	ESS 0739
			IZMI	1021.2	1027.5	II		1	35	60	
			IZMI	1022.0U	1035.0U	I	N	1	45U	95U	
			IZMI	1029.2	1034.0	II	HARM,FS	2	25X	80	
			SVTO	1030.0	1031.0	III		1	25	83	
			HOLL	1340.0	1340.0	III		1	25	62	
			SVTO	1340.0	1340.0	III		1	25	84	
			HOLL	1343.0	1404.0	III	N	1	25	114	
			HOLL	1343.0	1425.0	III	N	1	25	114	

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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
Day 07		SVTO	1343.0	1430.0	III	N	1	25	180	
2040	2400	CULG	2148.0	2149.0	III	G	1	20	80	
		CULG	2155.0	2155.0	III	G	1	20	50	
		CULG	2218.0	2223.0	III	N	1	20	150	
		HOLL	2243.0	0001.0	III	N	1	25	180	
		CULG	2329.0	2331.0	III	G	3	18X	180	
		LEAR	2329.0	2330.0	III		1	25	148	
		PALE	2329.0	2330.0	III		1	25	87	
1936	2400	HIRA	2329.5	2330.5	III	G	1	25X	110	
Day 08		HIRA								
0000	0710	CULG	0029.0	0103.0	III	N	1	20	180	
		LEAR	0054.0	0057.0	III		1	25	153	
		PALE	0054.0	0059.0	III		1	25	83	
		CULG	0055.0	0057.0	III	G	3	18X	200	
		HOLL	0055.0	0057.0	III		1	25	180	
0000	0932	HIRA	0055.5	0057.0	III	G	1	30	120	
		CULG	0129.0	0129.0	III	B	2	20	90	
		LEAR	0129.0	0129.0	III		1	25	61	
		LEAR	0156.0	0158.0	III		1	25	127	
		CULG	0157.0	0200.0	III	G	1	20	230	
		CULG	0218.0	0218.0	III	B	1	23	120	
		LEAR	0220.0	0221.0	III		1	25	180	
		PALE	0220.0	0221.0	III		1	25	157	
		HIRA	0220.5	0221.5	III	G	2	25X	310	
		CULG	0221.0	0222.0	III	G	3	18X	300	
		CULG	0300.0	0300.0	III	B	1	20	70	
		CULG	0332.0	0334.0	III	G	1	30	90	
		CULG	0403.0	0403.0	III	B	1	35	90	
0441	1717	ONDR								
		CULG	0442.0	0442.0	III	B	1	27	180	
		LEAR	0447.0	0457.0	III		1	25	180	
		SVTO	0447.0	0457.0	III		1	25	180	
		HIRA	0447.5	0458.0	III	G	2	25X	220	
		CULG	0448.0	0500.0	III	GG	3	18X	200	
		CULG	0615.0	0618.0	III	G	1	27	180	
		CULG	0651.0	0652.0	III	G	1	100	180	
0550	1200	IZMI	0651.4	0652.3	III	G	1	110	165	
		SVTO	1010.0	1014.0	III		1	25	169	
		IZMI	1010.5	1014.9	III	GG	2	25X	270X	
		IZMI	1028.3	1036.8	III	GG	2	25X	270X	
		SVTO	1029.0	1033.0	III		1	25	180	
		HOLL	1829.0	1829.0	III		1	25	55	
		PALE	1829.0	1829.0	III		1	25	90	
1935	2103	HIRA								
2050	2400	CULG	2108.0	2108.0	III	B	2	20	100	
		CULG	2112.0	2112.0	III	B	1	30	90	
		CULG	2136.0	2234.0	III	N	1	23	180	
		CULG	2153.0	2156.0	III	G	3	18	220	
		HOLL	2153.0	2156.0	III		1	25	129	
		PALE	2153.0	2159.0	III		1	25	90	
		CULG	2219.0	2223.0	III	G	2	23	150	
		HOLL	2219.0	0034.0	III	N	1	25	180	
		CULG	2232.0	2237.0	III	G	3	20	200	
		CULG	2246.0	2246.0	III	B	3	18X	45	
		CULG	2318.0	2347.0	III	N	1	23	160	
		CULG	2328.0	2329.0	III	G	3	18	200	
		LEAR	2328.0	0116.0	III	N	2	25	180	
		PALE	2328.0	2329.0	III		2	25	180	
		CULG	2334.0	2335.0	III	G	3	18	200	
		CULG	2350.0	2352.0	III	G	3	18	150	
Day 09 0000	0710	CULG	0002.0	0004.0	III	G	1	30	200	
		CULG	0113.0	0113.0	III	B	1	50	100	
		HOLL	0115.0	0116.0	III		1	25	86	
		CULG	0116.0	0116.0	III	G	3	18	230	
		CULG	0129.0	0129.0	III	B	1	130	350	
		CULG	0208.0	0210.0	III	G	1	35	90	
0440	1718	ONDR								

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Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
09			CULG	0459.0	0459.0	III	G	1	70	150	
			CULG	0524.0	0525.0	III	G	2	20	100	
			HIRA	0524.0	0524.5	III	B	1	25X	50	
			SVTO	0524.0	0524.0	III		1	25	60	
			CULG	0543.0	0543.0	III	B	2	27	70	
			SVTO	0543.0	0543.0	III		1	25	52	
			LEAR	0752.0	0753.0	III		1	25	88	
			SVTO	0752.0	0755.0	III		1	25	67	
	0555	1200	IZMI	0752.5	0755.2	III	G	2	25X	70U	
			HIRA	0753.0	0753.5	III	B	1	30	80	
			IZMI	0816.4	0816.5	III	B	1	45	65	
			HOLL	1647.0	1648.0	III		1	25	87	
			SVTO	1647.0	1647.0	III		1	25	130	
			HOLL	1703.0	1704.0	III		1	25	133	
			PALE	1703.0	1704.0	III		1	25	86	
			SVTO	1703.0	1704.0	III		1	25	139	
			HOLL	1709.0	1709.0	III		1	25	82	
			HOLL	1728.0	1729.0	III		1	25	85	
			HOLL	1734.0	1735.0	III		1	25	153	
			PALE	1734.0	1735.0	III		1	25	119	
			HOLL	1806.0	1806.0	III		1	25	116	
	1934	2400	HIRA								
	2050	2400	CULG	2050.0E	2400.0D	I	S	1	110	180	
			PALE	2219.0	0401.0	III	N	1	25	180	
10	0000	0710	CULG	0000.0E	0007.0	I	S	1	110	180	
			CULG	0005.0	0005.0	III	B	1	20	90	
			CULG	0133.0	0151.0	III	N	1	27	150	
			CULG	0315.0	0315.0	III	B	1	50	180	
	0000	0934	HIRA	0315.0	0315.5	III	B	1	50	130	
			CULG	0321.0	0321.0	III	B	1	35	140	
			HIRA	0321.0	0321.5	III	B	1	50	100	
			CULG	0357.0	0357.0	III	B	1	20	280	
			CULG	0422.0	0425.0	III	G	3	18X	200	
			LEAR	0422.0	0424.0	III		1	25	180	
			PALE	0422.0	0425.0	III		1	25	180	
			SVTO	0422.0	0424.0	III		1	25	180	
			HIRA	0422.5	0424.5	III	G	2	25X	390	
	0438	1719	ONDR								
	0602	1012	IZMI	0742.7	0742.9	III	G,UARM	1	115	270X	
			IZMI	0745.2	0748.2	III	GG,U	2	120	270X	
			IZMI	0921.6	0923.6	III	G,C	2	120	270X	
			IZMI	1008.8	1009.0	III	G	1	120	260	
	1054	1200	IZMI	1115.6	1116.2	III	G,C	2	110	270X	
	1933	2400	HIRA								
	2050	2400	CULG	2341.0	2343.0	III	G	1	30	150	
			LEAR	2342.0	2342.0	III		1	59	94	
11	0000	0935	HIRA								
	0437	1720	ONDR								
	0000	0710	CULG	0531.0	0533.0	III	G	1	20	80	
	0629	1215	IZMI								
			CULG	0655.0	0655.0	III	B	1	30	150	
	1932	2400	HIRA								
	2050	2400	CULG	2212.0	2212.0	III	B	1	20	70	
			CULG	2309.0	2309.0	III	B	1	20	100	
			CULG	2346.0	2347.0	III	G	1	20	60	
12	0000	0710	CULG								
	0000	0936	HIRA								
	0555	1200	IZMI								
			HOLL	1448.0	1525.0	III	N	1	25	119	
			SVTO	1448.0	1525.0	III	N	1	25	87	
	0436	1722	ONDR	1542.4	1547.1	DCIM	GG,SP	2	800X	2000X	
			SVTO	1543.0	1547.0	III		1	25	79	
			HOLL	1544.0	1547.0	III		1	25	120	
			HOLL	1656.0	1830.0	III	N	1	25	73	
	1931	2400	HIRA								
	2050	2400	CULG								

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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
13	0000	0937	HIRA								
			LEAR	0024.0	0912.0	III	N	1	25	109	
	0000	0710	CULG	0030.0	0139.0	I	S	1	100	130	
			CULG	0124.0	0156.0	III	N	1	30	90	
			CULG	0232.0	0232.0	III	B	1	20	70	
			CULG	0328.0	0329.0	III	G	1	25	120	
			LEAR	0401.0	0109.0			/	249	6106	
	0434	1723	ONDR								
			CULG	0556.0	0710.0D	I	S	1	100	180	
	0600	1200	IZMI	0635.0U	1200.0D	I	N	2	50U	270U	
			IZMI	0750.2	0750.4	III	B	1	45	125	
			SVTO	0839.0	0845.0	III		1	25U	58U	
			IZMI	0839.3	0840.0	III	G	1	45	85	
			IZMI	0843.9	0845.0	III	G	1	45	85	
			IZMI	0952.4	0957.1	III	GG	2	30	180	
			SVTO	0954.0	0956.0	III		1	25	147	
			IZMI	1003.7	1008.8	III	N	1	50U	80U	
			SVTO	1025.0	1025.0	III		1	25	63	
			IZMI	1025.2	1025.4	III	B	2	25X	70U	
			SVTO	1251.0	1537.0	III	N	1	25U	134U	
			HOLL	1327.0	1537.0	III	N	1	30	155	
			HOLL	1954.0	1954.0	III		1	25	53	
			PALE	1954.0	1954.0	III		1	25	56	
	1930	2400	HIRA	1954.5	1955.0	III	B	1	25X	50	
	2050	2400	CULG	2050.0E	2230.0	I	S	1	100	180	
			LEAR	2322.0	0911.0	CONT		1	74	180	
			CULG	2329.0	2400.0D	III	S	1	45	180	
14	0000	0710	CULG	0000.0	0215.0	III	S	1	20	180	
			CULG	0023.0	0023.0	III	B	2	20	90	
			HOLL	0023.0	0023.0	III		1	25	63	
			LEAR	0023.0	0023.0	III		1	25	82	
			PALE	0023.0	0023.0	III		1	25	80	
	0000	0938	HIRA	0023.5	0024.0	III	B	1	25X	50	
	0433	1724	ONDR								
	0600	1200	IZMI	0600.0E	1200.0D	I	N	2	110U	270X	
			CULG	0603.0	0710.0D	I	S	1	110	180	
			IZMI	1030.0	1030.7	I	GG,DC	2	210	240	
	1929	2400	HIRA								
	2050	2400	CULG	2050.0E	2400.0D	I	S	1	120	180	
			CULG	2126.0	2126.0	III	B	1	20	75	
			CULG	2213.0	2213.0	III	B	1	27	80	
			CULG	2230.0	2251.0	III	N	1	20	180	
15	0000	0710	CULG	0000.0E	0333.0	I	S	1	100	180	
			CULG	0004.0	0004.0	III	B	1	20	75	
			CULG	0039.0	0254.0	III	N	1	20	90	
	0432	1725	ONDR								
			CULG	0432.0	0433.0	III	G	1	18	100	
			LEAR	0432.0	0433.0	III		1	25	106	
	0000	0938	HIRA	0432.5	0433.0	III	B	1	30	110	
			LEAR	0438.0	0911.0	CONT		1	122	180	
			SVTO	0528.0	0800.0	CONT		1	73	180	
			CULG	0538.0	0710.0D	III	N	1	20	90	
			CULG	0540.0	0710.0D	I	S	1	110	200	
	0555	1205	IZMI	0555.0E	1200.0D	I	N	2	110U	270X	
			IZMI	0735.7	0737.2	III	G	2	110	270X	
			SVTO	1120.0	1120.0	III		1	25U	90U	
			SVTO	1340.0	1344.0	III		1	25	143	
			HOLL	1341.0	1408.0	III	N	1	25	90	
			HOLL	1341.0	1835.0	III	N	1	25	90	
			SVTO	1348.0	1548.0	III	N	1	25	85	
			HOLL	1445.0	1734.0	III	N	1	25	90	
			PALE	1808.0	1818.0	III		1	25	65	
			PALE	1925.0	0333.0	III	N	1	25	65	
	1928	2400	HIRA								
			CULG	2050.0E	2400.0D	III	S	1	20	100	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	1	60	180	

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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
16			CULG	0000.0E	0710.0D	III	N	1	20	90	
	0000	0710	CULG	0000.0E	0710.0D	I	S,C	1	70	180	
			LEAR	0353.0	0910.0	CONT		1	25	180	
	0431	1726	ONDR								
			SVTO	0511.0	0511.0	III		1	25	124	
	0000	0939	HIRA	0511.5	0512.0	III	B	1	25X	50	
	0600	1200	IZMI	0600.0E	1200.0D	I	S	2	110U	270X	
			SVTO	0610.0	0931.0	CONT		1	119	180	
			SVTO	0640.0	0640.0	III		1	25	41	
			HIRA	0644.0	0644.5	III	B	1	210	380	
			SVTO	0726.0	0825.0	III	N	1	25	51	
			SVTO	1341.0	1736.0	CONT		1	110	180	
			HOLL	1604.0	1604.0	III		1	25	85	
			HOLL	2121.0	2121.0	III		1	25	88	
			PALE	2121.0	2121.0	III		1	25	71	
	1928	2400	HIRA	2121.0	2122.0	III	B	1	25X	120	
	2050	2400	CULG	2121.0	2122.0	III	G	3	20	160	
			CULG	2123.0	2400.0D	III	N	1	20	140	
			LEAR	2331.0	0438.0	III	N	1	75	107	
17	0000	0940	HIRA								
	0000	0710	CULG	0204.0	0319.0	III	N	1	30	100	
	0430	1727	ONDR								
			CULG	0438.0	0438.0	III	B	1	18	130	
			CULG	0503.0	0554.0	III	N	1	25	90	
	0600	0659	IZMI	0600.0E	1200.0D	I	N	1	155	270X	
			CULG	0638.0	0638.0	III	B	1	27	100	
			CULG	0658.0	0658.0	III	B	1	30	100	
	0707	1200	IZMI	0707.0E	1200.0D	I	N	1	130	270X	
	2050	2400	CULG	2102.0	2104.0	III	G	2	20	180	
			CULG	2130.0	2158.0	III	N	1	20	90	
			CULG	2237.0	2238.0	III	G	3	18X	150	
			HOLL	2237.0	2237.0	III		1	25	114	
			PALE	2237.0	2237.0	III		1	25	57	
	1927	2400	HIRA	2237.0	2237.5	III	B	1	25X	110	
			CULG	2356.0	2356.0	III	B	1	23	80	
18			LEAR	0158.0	0207.0	III		1	25	180	
	0000	0700	CULG	0158.0	0158.0	III	B	1	20	180	
	0000	0941	HIRA	0158.0	0158.5	III	B	2	50	130	
			CULG	0207.0	0208.0	III	G	3	18X	130	
			HIRA	0207.5	0208.0	III	B	1	25X	100	
			PALE	0212.0	0212.0	III		1	25	70	
			CULG	0228.0	0228.0	III	B	1	35	100	
			CULG	0503.0	0503.0	III	B	1	20	80	
			CULG	0525.0	0525.0	III	B	1	20	130	
			LEAR	0543.0	0544.0	III		1	25	53	
			SVTO	0543.0	0544.0	III		1	25	55	
			CULG	0544.0	0544.0	III	B	3	20	90	
	0555	1200	IZMI	0811.7	0811.8	III	B	1	45	90	
	0429	1729	ONDR	0813.3	0823.4	DCIM	GG,SP	2	800X	2000X	
			LEAR	0815.0	0820.0	III		1	48	174	
			SVTO	0815.0	0820.0	III		1	25	147	
			IZMI	0815.2	0815.7	III	GG	2	25X	95	
			HIRA	0815.5	0820.0	III	G	1	50	230	
			IZMI	0815.7	0820.7	III	GG,FS	2	25X	270X	
			IZMI	0816.2	0822.0U	CONT		1	45U	270X	
			IZMI	0816.5	0820.5	II	G	1	45U	85	
			IZMI	0821.0U	0950.0U	III	N	1	25X	95U	
			IZMI	0823.0	0823.4	III	G,RS	2	50	65	
			SVTO	1008.0	1008.0	III		1	25	49	
			SVTO	1155.0	1155.0	III		1	25	141	
			IZMI	1155.6	1155.8	III	G	2	25X	180	
			SVTO	1206.0	1207.0	III		1	25	41	
			SVTO	1238.0	1238.0	III		1	25	60	
			HOLL	1420.0	1420.0	III		1	25	61	
			SVTO	1420.0	1420.0	III		1	25	63	
			HOLL	1616.0	1617.0	III		1	25	81	
			SVTO	1616.0	1617.0	III		1	25U	67U	

SOLAR RADIO EMISSION
Spectral Observations

MAY 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
18			HOLL	1730.0	1730.0	III		1	25	58	
			HOLL	1759.0	1800.0	III		1	25	86	
			PALE	1800.0	1800.0	III		1	25	180	
			HOLL	1858.0	1858.0	III		1	25	64	
	1926	2400	HIRA								
	2100	2400	CULG	2100.0E	2339.0	III	N	1	23	180	
			HOLL	2121.0	2122.0	III		1	25	69	
19	0000	0942	HIRA	0118.5	0119.0	III	B	1	25X	310	
	0000	0700	CULG	0359.0	0411.0	III	G	1	23	140	
	0428	1730	ONDR								
			CULG	0540.0	0552.0	III	G	1	25	90	
	0600	1200	IZMI	0804.7	0805.0	III	G	1	35	85	
			PALE	1855.0	0304.0	III	N	1	25	65	
	1926	2400	HIRA								
	2100	2400	CULG	2236.0	2236.0	III	B	1	27	90	
20	0000	0700	CULG								
	0000	0943	HIRA								
	0427	1731	ONDR								
	0602	1200	IZMI								
	1925	2400	HIRA								
	2100	2400	CULG	2136.0	2136.0	III	B	1	23	80	
			CULG	2240.0	2245.0	III	G	1	25	180	
21	0000	0700	CULG	0003.0	0412.0	III	N	1	27	180	
			HOLL	0057.0	0058.0	III		1	25	180	
			LEAR	0057.0	0058.0	III		1	25	180	
			PALE	0057.0	0058.0	III		1	25	180	
	0000	0944	HIRA	0057.5	0058.0	III	B	2	25X	130	
			CULG	0058.0	0058.0	III	G	3	18	200	
	0551	1732	ONDR								
			CULG	0612.0	0651.0	III	N	1	27	180	
	0555	1200	IZMI	0637.2	0637.4	III	BG	1	50	85	
			SVTO	1022.0	1023.0	III		1	25	170	
			IZMI	1022.5	1023.6	III	GG	2	25X	270	
			IZMI	1035.7	1037.7	III	G	2	40	215	
			SVTO	1036.0	1037.0	III		1	25	158	
			IZMI	1154.0	1154.3	UNCLF		1	130	165	
			SVTO	1207.0	1207.0	III		1	25	138	
			HOLL	1500.0	1501.0	III		1	25	87	
			SVTO	1500.0	1501.0	III		1	25	141	
	1925	2400	HIRA								
	2100	2400	CULG	2138.0	2138.0	III	G	1	27	120	
			CULG	2226.0	2226.0	III	B	1	27	80	
			LEAR	2326.0	2332.0	III		1	25	115	
			CULG	2327.0	2327.0	III	B	1	20	130	
			CULG	2333.0	2333.0	III	B	1	27	180	
22	0000	0700	CULG	0050.0	0050.0	III	B	1	45	85	
			CULG	0059.0	0137.0	I	S	1	120	180	
			CULG	0338.0	0545.0	I	S	1	110	180	
			LEAR	0358.0	0703.0	CONT		1	128	180	
			CULG	0409.0	0409.0	III	G	1	45	90	
	0425	1733	ONDR								
			CULG	0549.0	0646.0	III	N	1	20	100	
			LEAR	0554.0	0554.0	III		1	25	162	
			CULG	0555.0	0555.0	III	B	2	20	130	
	0600	1200	IZMI	0600.0E	0750.0U	I	N	1	120	270X	
			CULG	0613.0	0613.0	III	B	2	20	180	
			LEAR	0613.0	0613.0	III		1	25	151	
			SVTO	0613.0	0613.0	III		1	25U	147U	
			IZMI	0613.4	0613.6	III	G	2	45	150	
	0000	0944	HIRA	0613.5	0614.0	III	B	1	25X	100	
			CULG	0618.0	0700.0D	I	S	1	130	180	
			IZMI	0651.8	0651.9	III	B	1	45	65	
			IZMI	0855.9	0856.0	III	B	1	45	95	
			IZMI	1030.0U	1200.0D	I	S	2	50U	270X	
			IZMI	1107.0U	1200.0D	III	N	2	45	170	

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

Spectral Observations

MAY 2004

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
22			IZMI	1110.9	1119.7	III	GG	2	25X	265	
			SVTO	1114.0	1540.0	CONT		1	74	172	
			SVTO	1116.0	1118.0	III		1	25	175	
			SVTO	1140.0	1142.0	III		1	25	149	
			HOLL	1504.0	1505.0	III		1	25	87	
			SVTO	1504.0	1505.0	III		1	25	82	
	1924	2400	HIRA								
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	120	180	
			CULG	2213.0	2225.0	III	G	1	23	80	
23	0000	0700	CULG	0000.0E	0407.0	I	S	1	100	180	
			CULG	0056.0	0312.0	III	N	1	27	180	
	0424	1734	ONDR								
			CULG	0507.0	0536.0	III	N	1	20	180	
			CULG	0517.0	0518.0	III	G	3	18	200	
			LEAR	0517.0	0517.0	III		1	25	180	
			SVTO	0517.0	0518.0	III		1	25	156	
	0000	0945	HIRA	0517.5	0518.0	III	B	1	30	200	
			LEAR	0524.0	0618.0	III	N	1	25	106	
			SVTO	0533.0	0534.0	III		1	25	80	
	0600	1205	IZMI	0600.0E	1205.0D	I	N	1	110U	270X	
			CULG	0615.0	0619.0	III	G	3	23	90	
			SVTO	0615.0	0618.0	III		1	25	125	
			IZMI	0615.8	0616.7	III	G	1	25X	260	
			HIRA	0616.0	0618.5	III	G	1	25X	230	
			IZMI	0617.9	0618.3	III	G,FS	1	25X	190	
			IZMI	0713.4	0713.5	III	B	2	45	90	
			HOLL	1512.0	1514.0	III		1	25	120	
			SVTO	1512.0	1514.0	III		1	25	139	
			HOLL	1817.0	1818.0	III		1	25	130	
			PALE	1817.0	1818.0	III		1	25	59	
	1924	2400	HIRA								
	2100	2400	CULG	2229.0	2230.0	III	G	1	20	40	
			LEAR	2306.0	0053.0	III	N	1	51	116	
			PALE	2312.0	0104.0	III	N	1	25	75	
24	0000	0700	CULG	0054.0	0323.0	I	S,C	1	60	160	
			LEAR	0057.0	0407.0	CONT		1	25	180	
			CULG	0058.0	0332.0	III	N	1	20	180	
	0423	1735	ONDR								
			CULG	0434.0	0434.0	III	B	1	20	57	
	0555	1200	IZMI	0555.0E	0935.0	I	N	1	130	270X	
			CULG	0623.0	0624.0	III	G	1	20	140	
	0000	0946	HIRA	0623.5	0624.0	III	B	1	50	110	
			IZMI	0623.6	0623.8	III	G	1	45	140	
			IZMI	0717.7	0717.7	III	B	1	45	85	
			IZMI	0935.0	1200.0D	I	N	2	130U	270X	
			SVTO	1048.0	1048.0	III		1	25	79	
			IZMI	1048.4	1048.6	III	G,FS	2	40	90	
			IZMI	1146.2	1146.4	III	B	1	45	85	
			PALE	1833.0	0347.0	III	N	1	25	180	
	1923	2400	HIRA								
	2100	2400	CULG	2201.0	2201.0	III	B	1	25	70	
			CULG	2232.0	2233.0	III	G	1	20	80	
25	0000	0947	HIRA								
	0000	0700	CULG	0042.0	0042.0	III	B	1	20	70	
			CULG	0053.0	0053.0	III	B	1	20	75	
	0422	1736	ONDR								
	0600	1200	IZMI								
			CULG	0648.0	0648.0	III	B	1	25	120	
	1922	2400	HIRA								
	2100	2400	CULG								
26	0000	0947	HIRA								
	0421	1737	ONDR								
	0000	0700	CULG	0453.0	0453.0	III	B	1	27	90	
	0555	1200	IZMI								
	1922	2400	HIRA								

SOLAR RADIO EMISSION
Spectral Observations

MAY 2004

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
26	2100	2400	CULG	2216.0	2216.0	III	B	1	20	70	
27	0000	0700	CULG	0048.0	0050.0	III	G	1	23	550	
	0000	0948	HIRA	0049.0	0049.5	III	B	1	340	500	
	0421	1738	ONDR								
	0555	1200	IZMI								
	1921	2400	HIRA								
	2100	2400	CULG	2141.0	2141.0	III	B	1	25	70	
28			LEAR	0456.0	0457.0	III		1	86	180	
			SVTO	0456.0	0710.0	III	N	1	25	167	
	0000	0948	HIRA	0456.5	0457.0	III	B	2	100	260	
	0000	0700	CULG	0457.0	0504.0	III	G	1	25	180	
			LEAR	0503.0	0627.0	III	N	1	25	180	
			CULG	0521.0	0611.0	III	N	1	23	57	
	0600	0634	IZMI	0627.5	0627.6	III	B	1	110	160	
			LEAR	0709.0	0712.0	III		1	53	180	
	0641	1200	IZMI	0709.0	0710.0	III	G,FS	2	45	160	
			HIRA	0709.5	0710.0	III	B	1	50	130	
			SVTO	0711.0	0712.0	III		2	65	180	
			HIRA	0711.5	0712.0	III	B	3	90	230	
			IZMI	0711.8	0712.6	III	G	2	55	270X	
			IZMI	0745.5	0745.9	III	G	1	90	210U	
			LEAR	0749.0	0751.0	III		1	135	180	
			SVTO	0749.0	0751.0	III		1	116	180	
			HIRA	0749.5	0752.0	III	G	1	110	300	
			IZMI	0749.8	0750.3	III	G	2	115	210	
			IZMI	0751.3	0751.8	III	G,RS	2	130	270X	
			HIRA	0813.0	0816.0	III	G	2	110	340	
			IZMI	0813.0	0814.1	III	GG	2	110	270X	
			LEAR	0813.0	0816.0	III		1	104	180	
			SVTO	0813.0	0816.0	III		1	118U	180U	
			IZMI	0815.4	0816.1	III	G	2	110U	250	
			HIRA	0855.0	0859.0	III	G	1	100	230	
			LEAR	0855.0	0858.0	III		1	117	180	
			SVTO	0855.0	0942.0	III	N	1	33	180	
			IZMI	0855.1	0855.8	III	G	1	115	265	
			IZMI	0858.1	0858.8	III	GG	1	120	270X	
			IZMI	0905.7	0908.1	III	GG	2	100U	270X	
			HIRA	0907.5	0910.0	III	G	2	100	190	
			IZMI	0909.6	0910.2	III	G	2	110U	205	
			IZMI	0930.6	0933.3	III	GG,FS	2	45	215	
			SVTO	1006.0	1008.0	III		2	25	180	
			IZMI	1006.2	1009.5	III	GG,C	2	80	270X	
			IZMI	1010.9	1012.8	III	G	2	80	270X	
			SVTO	1011.0	1012.0	III		1	112U	180U	
			IZMI	1117.5	1120.3	III	GG	2	110U	270X	
			SVTO	1119.0	1120.0	III		1	149	180	
			IZMI	1122.3	1125.6	III	GG	2	110U	270X	
	0420	1739	ONDR	1212.0	1212.1	DCIM	G	2	800X	1100	
			HOLL	1737.0	1738.0	III		1	25	82	
			PALE	1737.0	1737.0	III		1	25	60	
			SVTO	1737.0	1737.0	III		1	26	51	
			HOLL	2258.0	2300.0	III		1	25	73	
	1921	2400	HIRA	2346.0	2349.5	III	G	1	60	600	
	2100	2400	CULG	2346.0	2350.0	III	G	1	40	550	
29	0000	0700	CULG	0010.0	0050.0	I	S	1	110	170	
			CULG	0247.0	0249.0	III	G	1	57	270	
			LEAR	0247.0	0248.0	III		1	127	180	
	0000	0949	HIRA	0247.5	0248.0	III	B	1	120	300	
			CULG	0301.0	0330.0	I	S	1	100	160	
	0420	1740	ONDR								
	0623	1200	IZMI	0726.6	0726.7	III	B	1	45	85	
			HIRA	0815.5	0816.0	III	G	2	100	230	
			IZMI	0815.8	0820.9	III	GG	2	25X	215	
			LEAR	0818.0	0820.0	III		1	25	180	
			IZMI	0826.0	0826.0	III	B	1	45	55	
	1920	2400	HIRA								

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

MAY 2004

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
29 2100	2400	CULG								
		LEAR	2349.0	2349.0	III		1	66	180	
		PALE	2349.0	2349.0	III		1	25	180	
30 0000	0950	HIRA								
0000	0700	CULG	0344.0	0344.0	III	B	1	20	35	
0419	1741	ONDR								
0555	1200	IZMI								
		HOLL	1802.0	1803.0	III		1	25	62	
1920	2400	HIRA								
		HOLL	2019.0	2020.0	III		1	25	72	
2100	2400	CULG								
31 0000	0951	HIRA								
0000	0700	CULG	0014.0	0016.0	III	G	1	70	200	
0600	0813	IZMI								
0826	1200	IZMI								
		ONDR	1033.0	1036.5	DCIM	G	1	800X	2000X	
0418	1742	ONDR	1033.2	1034.4	DCIM	G	1	2000X	4500X	
		HOLL	1510.0	1510.0	III		1	25	83	
		SVTO	1510.0	1510.0	III		1	29	80	
		HOLL	1820.0	1820.0	III		1	25	138	
		PALE	1820.0	1820.0	III		1	25	153	
		HOLL	1921.0	1929.0	III		1	30	158	
1920	2400	HIRA	1923.5	1924.0	III	B	1	30	200	
		PALE	1928.0	1929.0	III		1	25	153	
		HIRA	1928.5	1930.0	III	G	1	30	120	
		HOLL	1959.0	2135.0	III	N	1	26	178	
		PALE	1959.0	2226.0	III	N	1	25	180	
		HIRA	2003.0	2010.0	III	G	3	30	400	
		HIRA	2018.5	2024.0	III	G	1	50	270	
		HIRA	2046.5	2047.0	III	B	1	90	220	
		HIRA	2050.5	2051.0	III	B	1	30	210	
		HIRA	2114.5	2115.5	III	G	1	90	220	
2100	2400	CULG	2115.0	2115.0	III	G	1	27	200	
		CULG	2257.0	2257.0	III	B	1	140	420	
		HIRA	2257.0	2257.5	III	B	1	200	320	
		CULG	2303.0	2400.0D	III	N	1	23	180	
		HOLL	2324.0	0146.0	III	N	1	25	180	
		PALE	2326.0	2328.0	III		1	25	88	
		CULG	2327.0	2328.0	III	G	2	20	180	
		HIRA	2327.0	2330.5	III	G	1	25X	300	
		LEAR	2330.0	0448.0	III	N	1	25	180	
		HIRA	2357.5	2358.0	III	B	3	25X	320	
		CULG	2358.0	2358.0	III	G	3	18X	300	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MAY 2004

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/05/04	+0.55	-0.27	I	8H18 E	15H18 D
02/05/04	+0.94	-0.29	III	8H18 E	15H10 D
03/05/04	+1.03	-0.23	III	9H06 E	15H18 D
05/05/04	+0.16	-0 .25	I	13H33	15H18 D
07/05/04	+0.72	-0.37	III	13H41	15H18 D
08/05/04	+0.94	-0.36	I	8H18 E	15H18 D
09/05/04	-1.31	-0.22	II	8H18 E	15H18 D
09/05/04	-1.09	-0.46	II	13H17	15H18 D
09/05/04	+1.25	-0.35	I	8H18 E	15H18 D
13/05/04	-0.89	-0.12	III	8H19 E	15H19 D
13/05/04	-0.06	-0.11	I	8H19 E	11H55
14/05/04	-0.34	+0.00	II	8H18 E	15H18 D
15/05/04	-0.15	+0.04	II	8H18 E	15H18 D
15/05/04	+0.43	-0.17	I	8H18 E	15H18 D
16/05/04	+0.11	+0.11	III	8H18 E	15H18 D
17/05/04	+0.63	+0.02	I	8H26 E	15H18 D
17/05/04	+1.31	-0.37	I	10H09	11H55
18/05/04	-0.73	+0.16	II	8H18 E	10H10
18/05/04	+0.79	+0.10	I	8H18 E	15H18 D
20/05/04	-0.14	+0.28	I	8H18 E	15H18 D
21/05/04	+0.08	+0.19	II	8H18 E	15H18 D
22/05/04	+0.16	+0.24	III	8H44 E	15H18 D
23/05/04	+0.43	+0.36	I	8H18 E	15H18 D
23/05/04	+0.87	+0.05	II	8H18 E	15H18 D
24/05/04	-0.16	_0.07	III	8H18 E	15H18 D
24/05/04	+0.82	+0.34	III	8H18 E	15H18 D
25/05/04	+0.24	-0.03	I	8H18 E	15H18 D
25/05/04	+0.93	+0.28	I	14H00	15H18 D
26/05/04	+0.56	-0.15	I	8H23 E	15H18 D

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

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

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

SOLAR RADIO NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MAY 2004

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY					
01/05/04	+0.55	-0.17	II	8H18 E	15H18 D
02/05/04	+0.87	-0.26	I	8H18 E	15H10 D
03/05/04	+1.02	-0.21	II	9H06 E	15H18 D
04/05/04	+1.08	-0.14	I	8H18 E	15H18 D
05/05/04	+0.14	-0.22	I	8H18 E	15H18 D
05/05/04	+1.15	-0.30	I	8H18 E	15H18 D
08/05/04	+0.91	-0.29	I	8H18 E	15H18 D
10/05/04	-0.72	-0.04	I	8H24 E	15H18 D
13/05/04	+0.01	-0.02	I	8H19 E	15H19 D
14/05/04	-0.36	+0.02	I	8H18 E	15H18 D
14/05/04	+0.32	-0.09	I	8H18 E	15H18 D
15/05/04	-0.12	+0.09	II	8H18 E	15H18 D
15/05/04	+0.42	-0.10	I	8H18 E	15H18 D
16/05/04	+0.11	+0.02	I	8H18 E	15H18 D
16/05/04	+0.27	-0.14	I	8H18 E	15H18 D
16/05/04	+0.34	+0.08	I	8H18 E	15H18 D
16/05/04	+0.52	+0.28	I	13H29	15H18 D
16/05/04	+0.68	-0.10	I	8H18 E	15H18 D
17/05/04	+0.35	+0.01	II	8H26 E	11H32
17/05/04	+0.55	+0.03	II	8H26 E	15H18 D
18/05/04	-0.66	+0.29	II	8H18 E	11H03
18/05/04	+0.77	+0.03	I	8H18 E	15H18 D
19/05/04	-0.48	+0.37	I	8H18 E	15H18 D
19/05/04	+0.95	+0.01	I	8H18 E	15H18 D
22/05/04	+0.18	+0.22	II	8H44 E	15H18 D
23/05/04	+0.44	+0.37	I	8H18 E	15H18 D
24/05/04	-0.15	-0.02	I	8H18 E	15H18 D
24/05/04	+0.68	+0.34	I	8H18 E	15H18 D
25/05/04	+0.18	-0.05	I	8H18 E	15H18 D
25/05/04	+0.86	+0.31	I	11H08	15H18 D
26/05/04	+0.49	-0.11	I	8H23 E	15H18 D
31/05/04	-0.86	-0.22	I	8H19 E	15H19 D

29 MAY: NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst

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

**** no flux measurements available

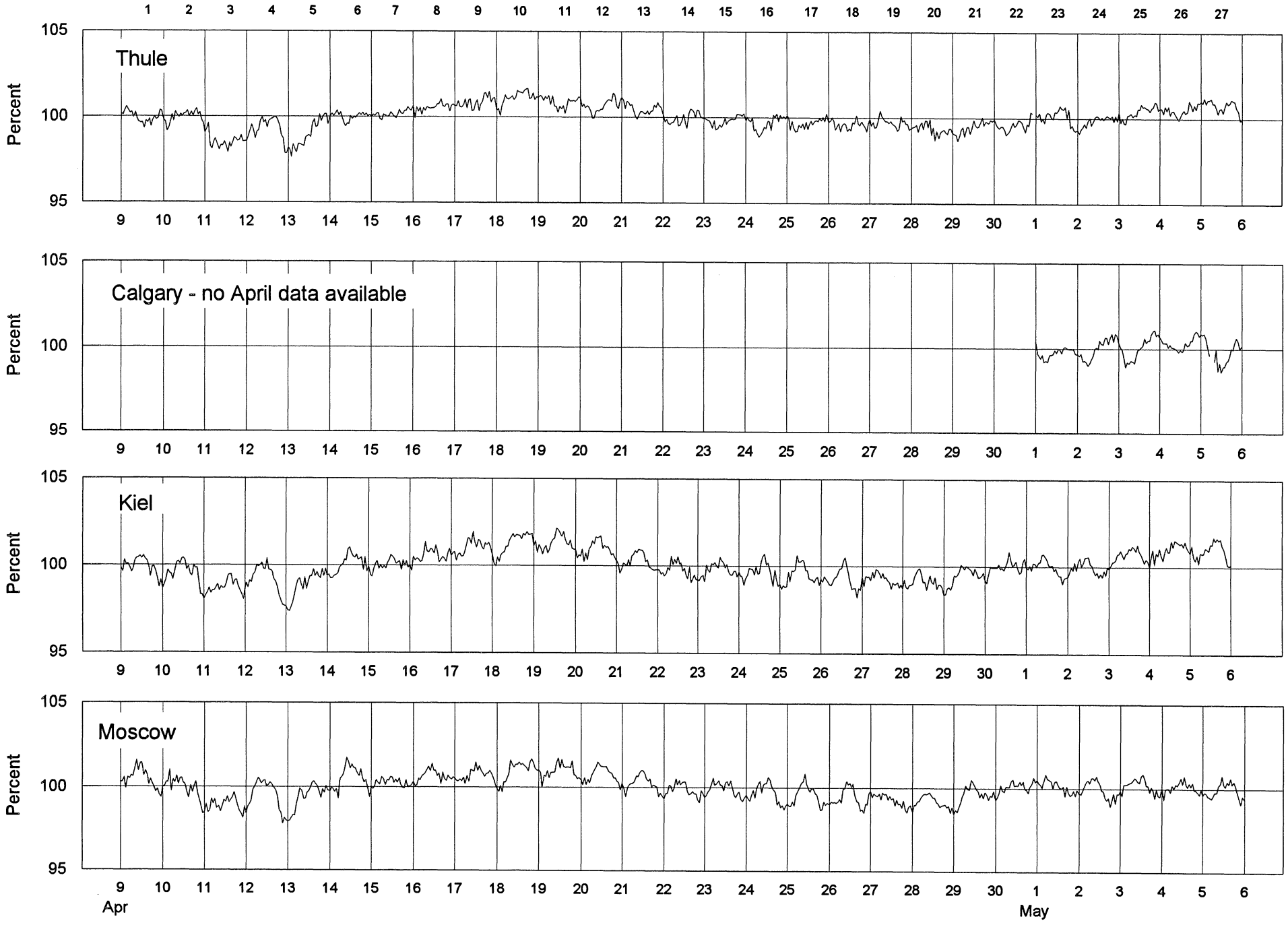
COSMIC RAY INDICES
(Neutron Monitor)
May 2004

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	4195.4	3663.7	5872.8	8602.3	3955.0	1985.3	3526.2
2	4184.2	3672.7	5871.5	8584.8	3952.8	1985.7	3531.6
3	4206.5	3674.7	5914.2	8606.5	3962.2	2000.6	3543.0
4	4211.1	3684.7	5933.4	8600.2	3974.1	1998.1	3544.4
5	4223.8	3666.5(22)	5931.8	8586.5	3984.0	1992.7	3540.0
6	4199.5	3658.3	5909.0	8610.0	3962.1	1981.8	3532.2
7	4209.0	3669.8	5907.4	8637.5	3960.6	1980.0	3526.5
8	4196.6	3673.8	5896.0	8630.9	3958.7	1970.7	3526.2
9	4207.1	3675.8	5889.2	8639.9	3963.5	1974.2	3523.2
10	4214.2	3674.2	5884.7	8641.4(23)	3965.2	1975.0	3525.9
11	4219.4	3640.2	5880.7	8649.2	3980.1	1970.4	3527.2
12	4217.8	3616.3	5878.8	8652.5	3984.5	1980.3	3529.3
13	4214.6	3685.0	5885.5	8686.5	3982.6	1978.0	3535.4
14	4223.0	3695.3	5895.6	8702.0	3987.7	1972.2	3538.9
15	4228.6	3698.8	5922.2	8728.2	3993.5	1978.2	3539.4
16	4251.5	3725.0	5927.2	8761.7	4026.0	1993.6	3535.5
17	4260.1	3731.7	5932.0	8765.3	4023.4	1990.8	3544.1
18	4267.2	3732.5	5935.3	8768.8	4023.2	1984.1	3544.6
19	4254.0	3720.3	5919.6(23)	8777.7	4015.2	1976.8	3536.0
20	4243.8	3687.0	5923.7	8787.5	3999.2	1977.6	3534.4
21	4243.2	3686.8	5930.8	8772.3	3995.0	1976.5	3538.2
22	4231.0	3689.0	5929.2	8733.9	4005.2	1970.0	3541.2
23	4235.3	3686.5	5929.7	8729.2	4019.4	1958.6	3543.0
24	4242.9	3697.3	5911.0	8691.0	4010.9	1950.0	3548.2
25	4233.3	3691.8	5909.3	8683.3	4008.1	1954.0	3546.6
26	4233.0	3688.3	5903.6(23)	8698.0(21)	4014.5(8)	1954.3	3551.3
27	4236.9	3676.7	5914.8	8674.3(20)	---	1951.8	3549.3
28	4228.7	3657.3	5905.4	8651.8	---	1953.0	3554.9
29	4241.0	3653.5	5913.8	8637.8	---	1955.3	3557.2
30	4225.7	3649.8	5893.1	8631.8	---	1954.3	3540.9
31	4215.0	3656.8(9)	5891.8	8638.2	---	1948.5	3541
Mean	4225.0	3680.0	5907.8	8676.2	3987.9	1973.3	3539

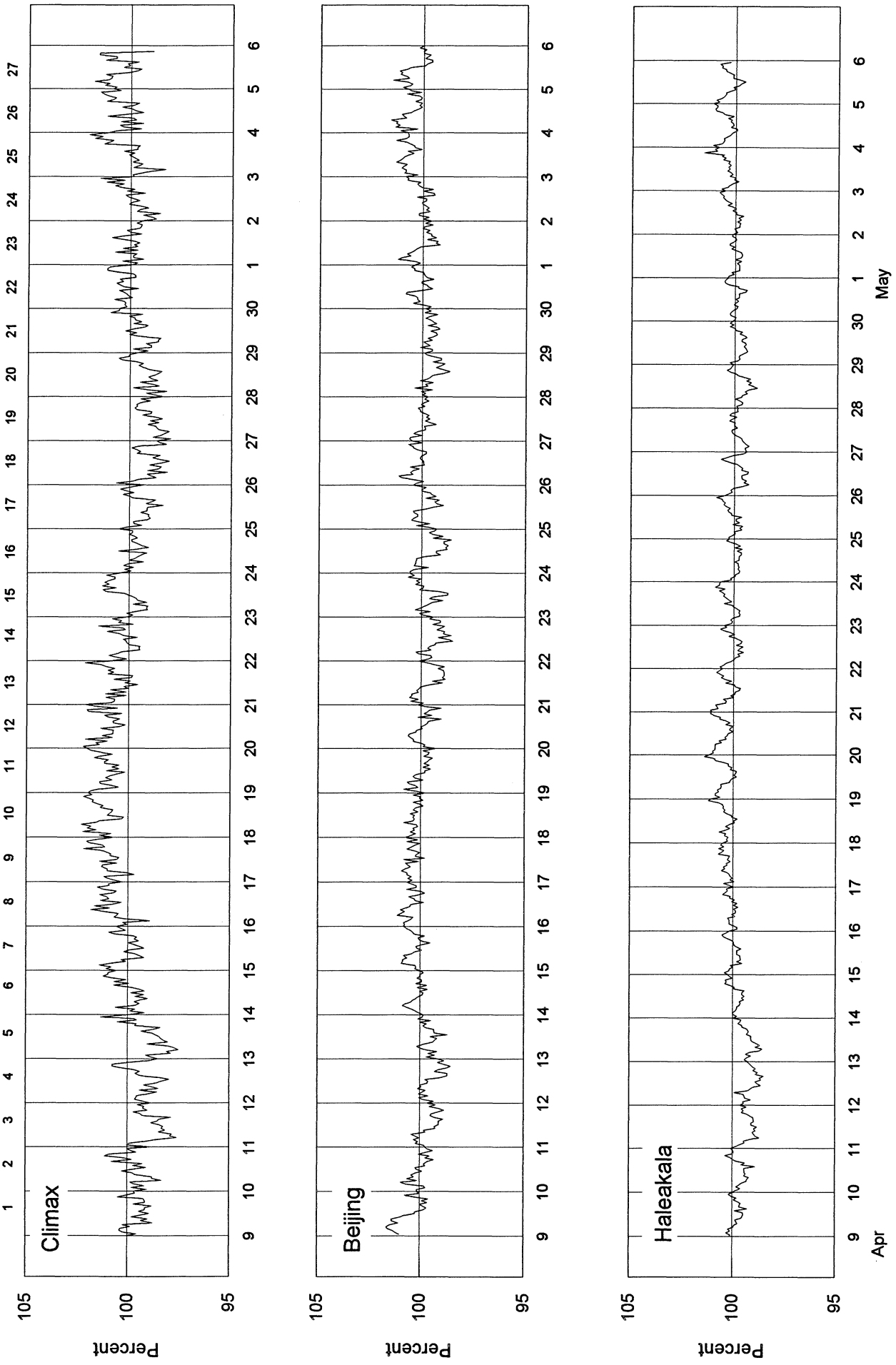
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2330 - Beginning 9 April 2004

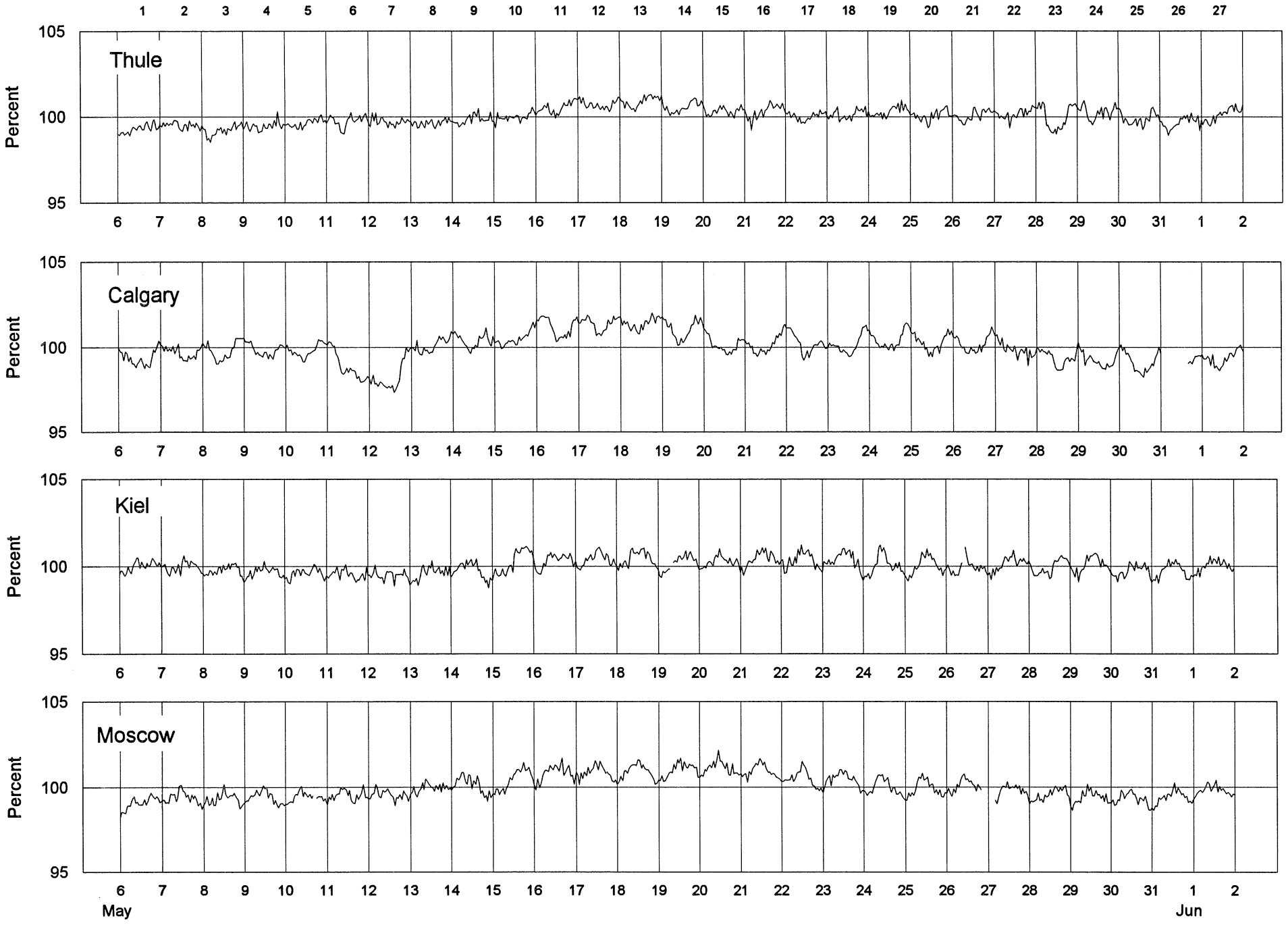


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2330 - Beginning 9 April 2004



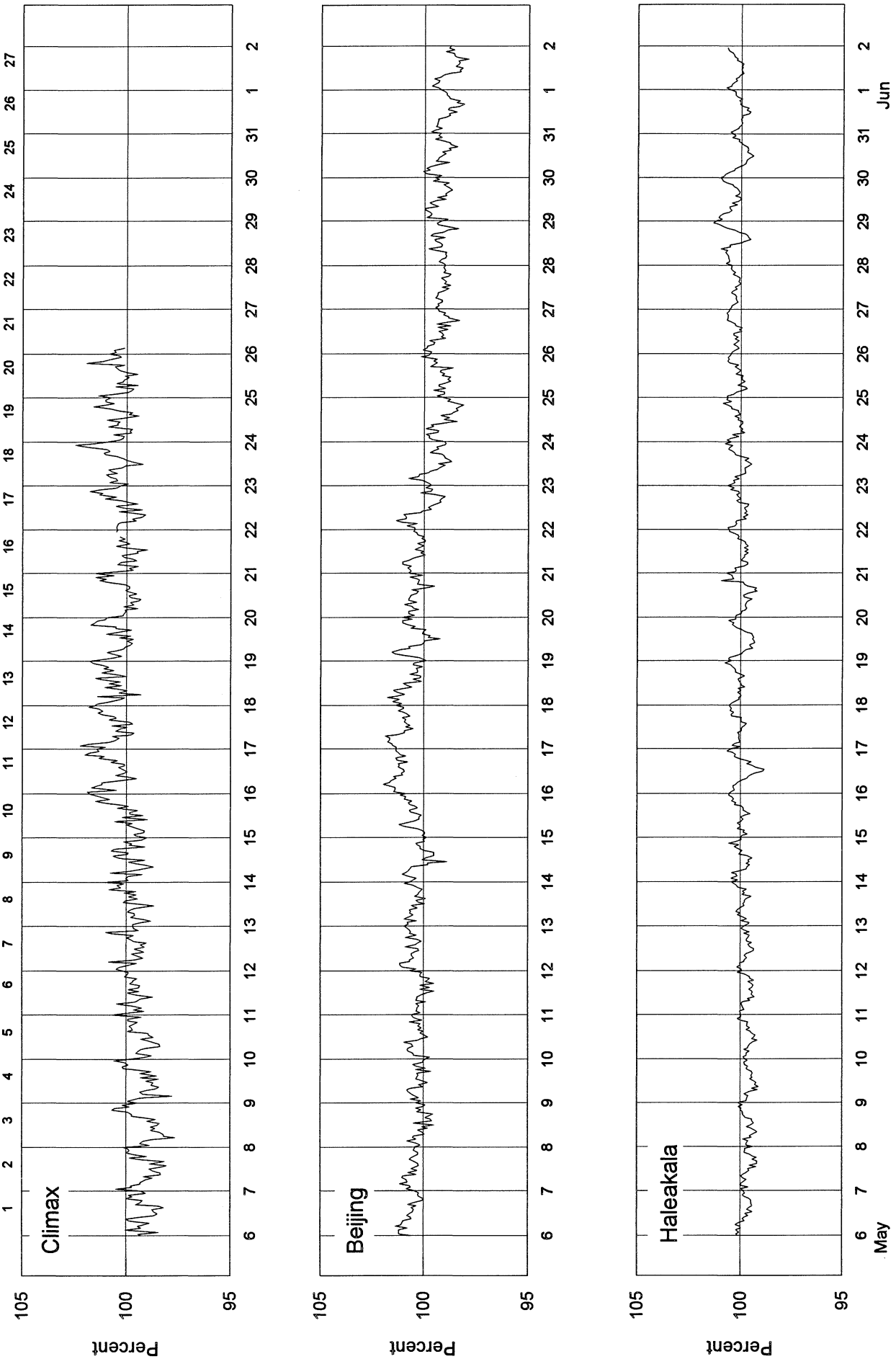
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2331 - Beginning 6 May 2004

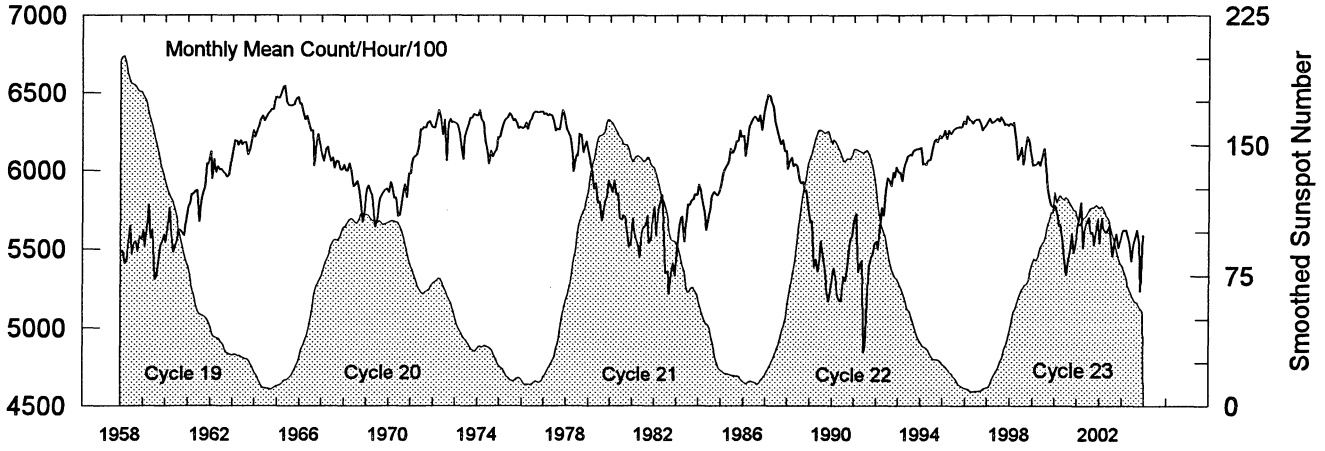


105
May 04

COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2331 - Beginning 6 May 2004



Kiel Neutron Monitor Pressure-Corrected Values
Jan 1958 - May 2004



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	5481	5488	5409	5417	5523	5651	5466	5538	5553	5485	5584	5561	5513
1959	5623	5515	5659	5783	5569	5625	5307	5328	5420	5518	5536	5593	5540
1960	5539	5628	5764	5596	5480	5509	5557	5628	5620	5607	5586	5692	5601
1961	5766	5793	5853	5856	5872	5874	5672	5804	5859	5898	6046	6041	5861
1962	6122	5949	6072	5989	6030	6010	6013	5991	5982	5963	5971	6052	6012
1963	6125	6197	6191	6163	6194	6168	6185	6182	6103	6133	6197	6260	6175
1964	6215	6253	6287	6331	6355	6321	6347	6366	6383	6399	6393	6475	6344
1965	6474	6469	6506	6542	6545	6451	6424	6420	6423	6424	6467	6475	6468
1966	6433	6432	6375	6330	6353	6300	6258	6258	6033	6168	6236	6172	6279
1967	6101	6061	6139	6155	6088	6061	6086	6016	6064	6063	6014	6009	6071
1968	6041	6011	6001	6048	5997	5901	5910	5937	5878	5805	5673	5739	5912
1969	5876	5909	5872	5845	5686	5640	5700	5812	5843	5864	5879	5887	5818
1970	5863	5928	5906	5830	5831	5716	5719	5803	5885	5915	5832	5985	5851
1971	5985	6081	6094	6103	6151	6268	6265	6286	6275	6314	6322	6288	6203
1972	6281	6278	6351	6387	6344	6232	6328	6065	6306	6334	6313	6318	6295
1973	6309	6298	6250	6155	6074	6220	6271	6296	6341	6340	6365	6360	6273
1974	6353	6391	6331	6308	6201	6139	6047	6132	6090	6113	6139	6215	6205
1975	6217	6267	6308	6334	6341	6370	6363	6320	6334	6313	6272	6286	6310
1976	6275	6281	6314	6269	6325	6331	6370	6380	6379	6375	6383	6380	6339
1977	6366	6371	6355	6366	6357	6322	6254	6272	6263	6317	6391	6355	6332
1978	6271	6242	6215	6113	5998	6101	6095	6241	6232	6117	6167	6193	6165
1979	6104	6063	6006	5883	5923	5794	5806	5682	5723	5820	5827	5942	5881
1980	5905	5862	5942	5850	5854	5702	5690	5717	5704	5611	5522	5528	5741
1981	5697	5600	5569	5517	5447	5600	5642	5650	5717	5539	5564	5702	5604
1982	5772	5586	5755	5799	5848	5582	5347	5362	5217	5349	5414	5329	5530
1983	5481	5606	5702	5711	5549	5659	5787	5785	5814	5820	5852	5849	5718
1984	5911	5880	5799	5740	5622	5706	5753	5837	5867	5856	5844	5864	5807
1985	5911	5986	6016	6038	6049	6142	6114	6135	6193	6192	6260	6220	6105
1986	6229	6093	6176	6280	6308	6336	6350	6331	6315	6356	6259	6359	6283
1987	6429	6489	6484	6443	6410	6319	6273	6217	6171	6198	6131	6131	6308
1988	6013	6064	6085	6030	6047	6033	5945	5922	5931	5880	5872	5761	5965
1989	5673	5678	5385	5441	5360	5407	5552	5460	5378	5228	5167	5241	5414
1990	5348	5381	5313	5197	5177	5173	5324	5297	5382	5471	5563	5584	5351
1991	5696	5726	5355	5405	5431	4841	4882	5162	5390	5443	5466	5540	5361
1992	5553	5500	5624	5766	5713	5869	5956	5942	5905	5994	5960	6024	5817
1993	5996	5992	5937	6026	6061	6094	6108	6099	6129	6137	6142	6141	6072
1994	6150	6042	6052	6067	6070	6068	6129	6189	6203	6183	6226	6209	6132
1995	6225	6260	6205	6260	6234	6250	6267	6279	6281	6285	6279	6319	6262
1996	6301	6354	6330	6324	6306	6325	6332	6331	6303	6262	6277	6294	6312
1997	6313	6337	6313	6314	6324	6336	6317	6347	6319	6295	6301	6289	6317
1998	6305	6293	6312	6177	6069	6101	6154	6042	6149	6220	6190	6124	6178
1999	6034	6040	6041	6062	6032	6100	6140	6023	5898	5805	5780	5765	5977
2000	5778	5729	5650	5661	5537	5441	5339	5425	5487	5602	5481	5542	5556
2001	5629	5736	5800	5509	5631	5678	5707	5602	5614	5527	5637	5694	5647
2002	5540	5701	5628	5613	5610	5651	5562	5455	5556	5599	5512	5558	5582
2003	5613	5624	5624	5588	5543	5428	5532	5582	5624	5544	5235	5595	5544
2003	5579	5730	5810	5854	5908								5776

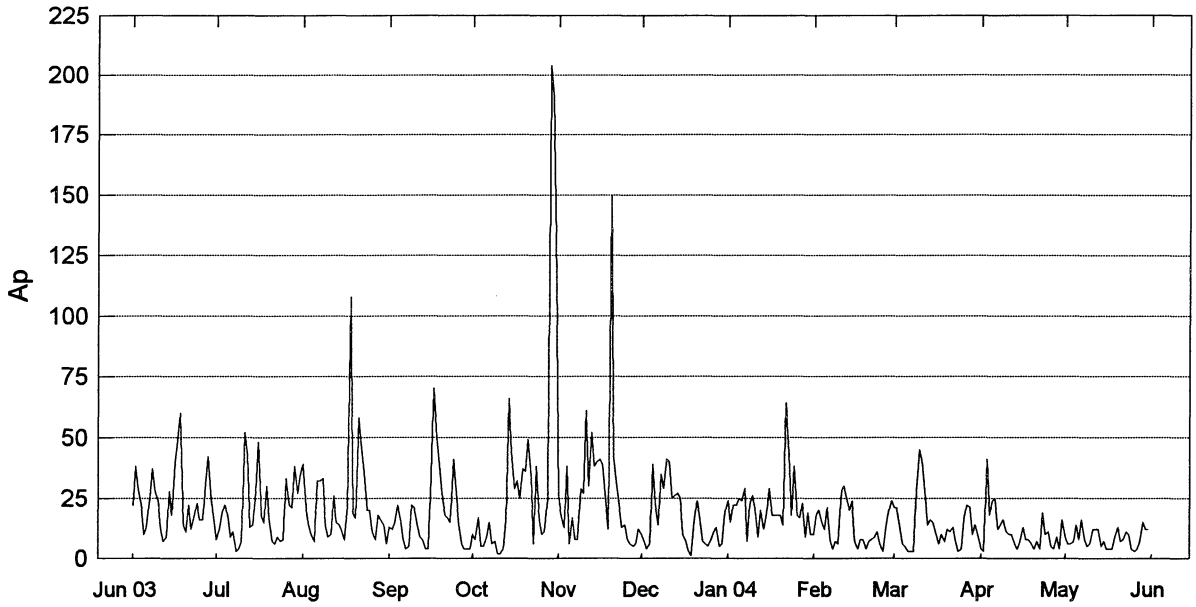
Multiply table entries by 100 to obtain hourly counting rate. Kiel, Germany: N54, E10, Alt= 54 m, Cutoff Rigidity= 2.32GV.

Geomagnetic Activity Indices
May 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		4-	2+	2+	2-	2	2	2-	2+	18	9	0.5	3+	3-	2+	3-	2-	2o	2o	3+	22	24	19	25	18	
2	Q10K	3	1-	1-	2+	1	1	2	1+	12	6	0.3	3o	1o	0+	2+	1+	1o	2o	1+	12	17	8	17	9	KK
3		1	2-	2	1+	1	2	2+	2+	14-	6	0.3	1o	2-	2+	2+	1o	2-	3-	3-	15	15	14	10	19	
4		2	2+	2	1	2-	1	2	3	15	7	0.4	2o	2+	3-	1+	2o	1+	2-	3o	17	17	19	17	19	
5	D3*	2+	3	3-	2+	3-	4	3+	3-	23	14	0.8	2o	3o	3o	3o	2o	4-	3-	3-	27	29	28	25	33	
6		2-	2+	2	2-	2	1+	3-	3-	16+	8	0.4	2o	2o	3-	2-	2-	1+	2+	3o	16	19	14	14	19	
7	D1*	3	4	3	2+	3-	3	4-	3	25-	16	0.9	3-	4-	3+	2+	3-	3-	3o	3o	30	31	29	30	30	
8		3-	3-	2-	2	2+	2	2	2	17+	8	0.5	3-	3-	2o	3-	3-	2-	2-	2o	18	20	18	18	20	
9	Q7	2	2+	1	1-	2-	1+	0+	1	10+	5	0.2	2-	2+	1+	1o	2o	2-	0o	1-	9	9	10	8	11	CK
10	Q9	2-	2	1	1-	1	1	2-	3-	12-	6	0.3	2-	2-	1+	1-	1-	1o	2-	2o	9	14	7	9	13	CK
11		4-	3	1	1	1	1+	3+	4	18+	12	0.7	3+	3-	1o	1+	1o	1+	3-	4o	21	27	15	19	24	
12		4	5-	2-	1+	1	1+	2	1+	17+	12	0.7	4-	4+	2+	1+	1o	1+	2o	2-	22	28	16	32	12	
13		1+	2+	4+	2-	2-	2-	3+	3-	19	12	0.7	2-	2+	4-	2o	2-	2o	4-	3-	23	25	23	25	23	
14	Q8	2-	2+	1	0+	1+	1	2-	2-	11	5	0.2	2-	2o	1+	0+	2-	1o	1o	1+	9	12	7	7	13	C
15		3+	2	2-	2-	1+	1-	1-	2	13+	7	0.3	3+	2-	2o	2-	1-	1+	1-	2o	13	13	9	12	9	CC
16	Q5	2-	1	1	1-	1-	1-	1-	2-	8	4	0.1	1+	1+	1+	1+	1-	1o	1-	1+	8	10	7	8	9	CC
17	Q3	1	1	0+	1-	1-	1-	1	2	7+	4	0.1	1-	1o	0+	1o	1-	1-	1o	2+	6	11	5	5	11	CC
18	Q2	1+	1-	1	1+	1+	1-	1-	0+	7+	4	0.1	1+	1o	1+	2o	1+	1-	1-	0+	7	9	6	8	7	CC
19		1-	1	1-	1+	4-	4-	2+	2	15+	9	0.5	1o	1+	1-	1o	3-	3o	2+	2o	14	24	14	7	32	
20	D4*	2-	2-	3-	4+	2-	2+	3	3+	21-	13	0.7	1+	2-	3o	4o	2o	2o	3-	3-	23	28	22	28	22	
21		4-	2	2-	1+	1+	2	1+	0+	14-	7	0.4	3+	2+	2+	2-	1+	2o	1+	0+	15	17	11	17	12	
22		1+	3-	3+	2	1+	1+	1-	1+	14	8	0.4	1o	3-	3+	2+	1+	1+	1-	1+	15	15	13	19	9	
23		3	3-	2-	2	3-	2+	3	3-	20	11	0.6	3o	3o	2o	2+	2+	2+	3-	2+	21	23	16	18	21	
24		3+	2	3+	2+	3+	1+	1+	1	18	10	0.6	3-	2o	3+	3-	3+	1+	1+	1+	21	24	20	25	19	
25	Q6	2-	1	2-	1+	1+	1	1-	1-	9+	4	0.2	2-	1o	2-	2-	1+	1o	1-	1-	8	8	7	9	6	CK
26	Q1	1-	1-	1-	1-	1	1	0+	1+	6+	3	0.1	1-	1-	1-	1-	1o	0+	0+	1o	4	7	5	4	7	CC
27	Q4	1+	1	2-	1	0+	1-	1	1-	8-	4	0.1	1+	1o	2-	1+	0+	0+	1-	1-	6	6	5	7	4	CC
28		1	0+	1	1	2+	2+	3-	3-	13+	7	0.4	1+	0+	1+	1+	2+	2+	3-	3-	15	14	15	5	24	
29	D2*	3	3+	2+	4-	2+	3	2+	4-	24-	15	0.8	3o	3o	3-	4-	2+	2+	2+	4-	28	38	22	32	27	
30		2	2-	1+	3	3-	2	3+	4-	20-	12	0.7	2+	2-	2-	3+	3-	2o	3o	3o	22	22	22	18	26	
31	D5*	4+	2+	2+	3-	3-	2-	3-	2	21-	12	0.7	4o	3-	2+	3o	3-	1+	3-	2o	25	25	20	25	20	
Mean											8	0.44									16.2	18.9	14.4		16.6	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	3+	2o	2+	2+	2o	2+	2+	2+	20	3+	3o	3-	3-	1+	2-	2-	4o	25	95.7	44	40	41		
2	3-	1-	1-	3-	1+	1+	2o	1+	12	3+	1+	0+	2-	1o	0+	2-	1+	11	99.1	28	33	45		
3	1o	1+	2+	2+	1+	2-	3-	3-	14	1o	2-	2+	2+	1-	1+	3-	3-	15	92.8	32	40	38		
4	2+	2+	3-	2-	2o	1+	2o	3-	17	2o	3-	3-	1+	2o	1o	2-	3+	17	88.9	33	37	34		
5	2o	3-	3o	3o	2o	4-	3o	3-	27	2o	3o	3o	3+	2+	4-	3-	2+	27	90.1	29	30	35		
6	2o	2+	3-	2-	2o	1+	3-	3-	17	2+	2o	3-	2-	1+	1o	2-	3+	16	88.0	20	24	33		
7	3-	3+	3o	3-	3o	3-	3+	3o	29	3-	4o	4-	2+	3-	3-	3-	3+	30	86.8	16	20	32		
8	3-	3-	2o	3o	3o	2-	2o	2o	20	2+	3-	2-	2+	2o	2o	2-	2+	17	88.9	17	21	34		
9	2o	3-	1+	1o	2o	2-	0o	1+	11	1+	2+	1o	1o	2o	1+	0o	0o	8	95.0	24	28	41		
10	2-	2-	1+	1o	1o	1+	2-	2+	11	1+	2-	1+	0+	0+	0+	2o	2-	8	94.8	29	31	40		
11	3o	3-	1o	2-	1+	2o	3o	4-	21	3+	3-	1o	1o	1-	1-	2+	4+	21	92.0	25	32	37		
12	3+	4o	2-	2-	1+	1+	2o	2-	21	4-	4+	3-	1o	1o	1o	2o	2-	22	100.9	40	43	47		
13	1+	2+	4-	2+	2-	2+	3+	3-	23	2-	2+	4-	2o	1+	2-	4o	3o	24	103.0	37	45	49		
14	2o	2+	1+	1-	2o	2-	2-	2o	12	1+	2o	1o	0+	1o	0+	0+	1o	7	112.1	54	62	59		
15	3-	2o	2-	2-	1+	2-	1o	2+	13	4-	1+	2o	2-	0+	1-	0+	2-	13	117.9	58	70	65		
16	2-	1+	1o	1+	1o	1+	1o	2-	9	1+	1o	1+	1o	1-	1-	0+	1+	7	121.0	73	82	69		
17	1o	1+	0+	1+	1o	1o	1o	2o	8	1-	1-	0o	1-	0+	0o	1-	2+	5	113.7	69	79	61		
18	2-	1-	2-	2+	2-	1+	1o	1-	10	1o	1o	1o	2-	0+	0o	0o	0o	5	110.4	60	73	57		
19	1o	1+	1-	1+	3o	4-	3-	2+	18	1-	1o	1-	1-	2-	3-	2+	1+	11	111.4	58	70	58		
20	2-	2-	3o	4o	2+	2+	3o	2+	25	1+	1+	3o	4-	2o	1+	2+	3-	20	107.2	59	63	54		
21	4-	2+	2+	2-	2-	2o	2-	0+	17	3+	2o	2+	1+	1+	2-	1o	0+	13	109.6	52	57	56		
22	1+	3-	4-	2+	2-	2-	1o	2-	18	1-	2+	3o	3-	1+	1+	0+	1o	13	105.0	47	54	51		
23	3o	3o	2-	3-	3-	3-	3o	3-	23	3o	3o	2+	2o	2-	2-	2+	2-	19	106.6	59	65	53		
24	3o	2o	4-	3-	4-	1+	1+	2-	24	3-	2-	3o	3o	3o	1+	1-	0+	17	107.9	62	74	55		
25	2-	1o	2o	2-	1+	1o	1o	1o	9	1+	1-	2-	2o	1o	1-	0+	0+	7	105.1	55	65	52		
26	1-	0+	0+	1+	1+	1o	1-	1+	6	0+	1-	1-	0+	0+	0o	0o	1-	3	106.1	43	48	53		
27	1+	1o	2o	2-	1-	1o	1o	1o	8	1o	1o	2-	1o	0o	0o	0o	0o	4	104.6	32	38	51		
28	1+	0+	1+	2-	3-	3-	3-	3o	17	1+	0+	1+	1o	2-	2o	3o	3-	13	105.2	30	33	52		
29	3-	3o	3o	4-	2+	3-	3-	3+	28	3o	3o	3-	3+	2+	2o	2o	4o	28	104.0	31	36	50		
30	2-	2-	2-	3+	3+	2+	3o	4-	25	2+	1+	2-	3o	2o	2-	3o	3-	19	102.4	35	41	49		
31	4-	3-	3-	3o	3o	1+	3-	2+	25	4o	3o	2+	3-	3-	1o	3-	1+	24	98.1	34	38	44		
Mean									17.4									15.1	102.1	41.5	47.4	48.3		

Daily Average Indices Ap
Jun 2003 - May 2004

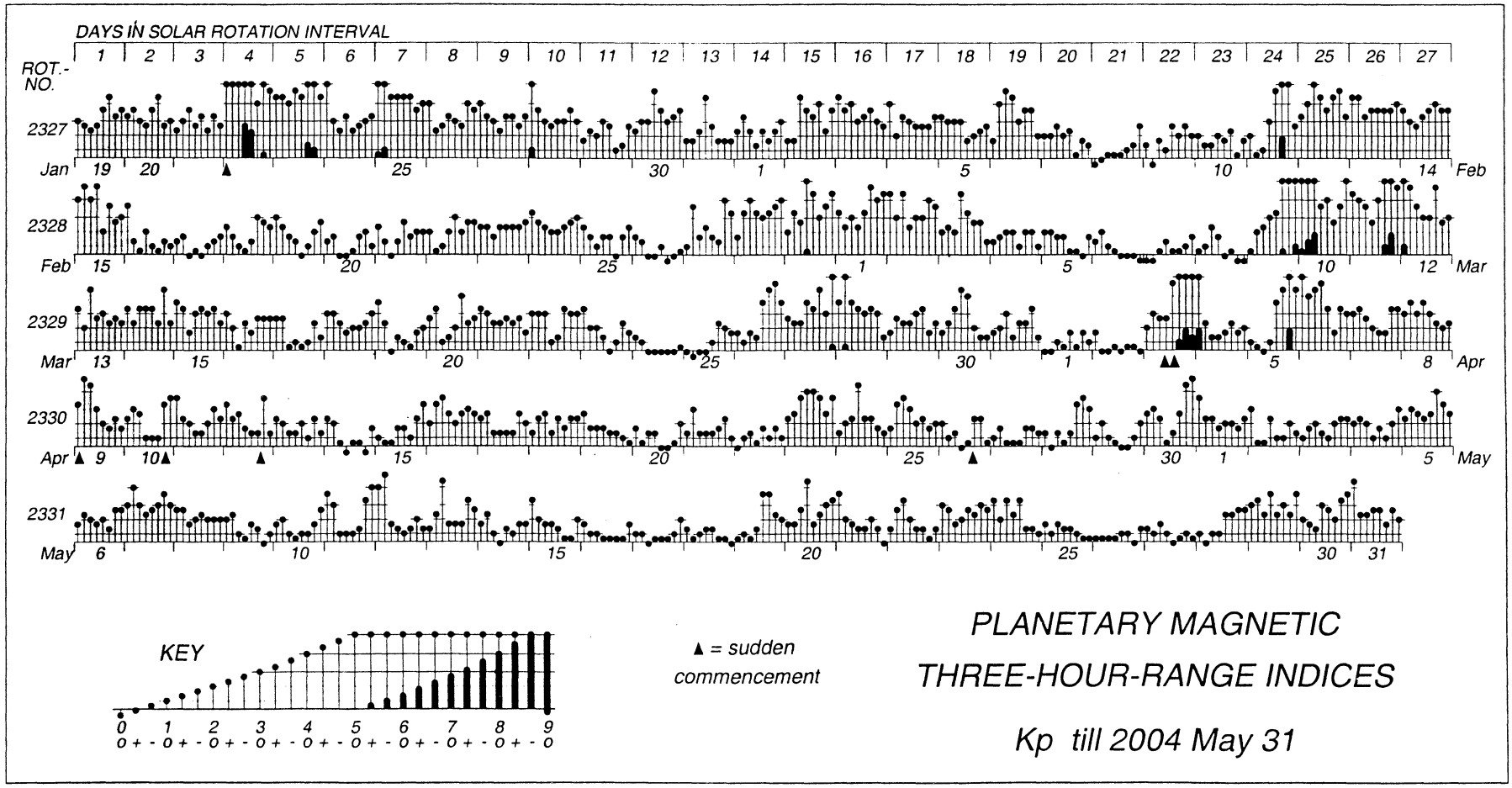


Day	Jun 03	Jul	Aug	Sep	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May
1	22	8	39	13	10	26	10	24	10	21	4	9
2	38	12	21	12	8	18	7	15	18	21	3	6
3	29	19	14	15	17	13	4	22	20	13	41	6
4	22	22	10	22	5	38	6	22	15	6	18	7
5	10	18	7	16	5	6	39	25	12	5	24	14
6	13	9	32	8	9	17	23	24	21	3	25	8
7	25	11	32	4	15	8	14	29	7	3	12	16
8	37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

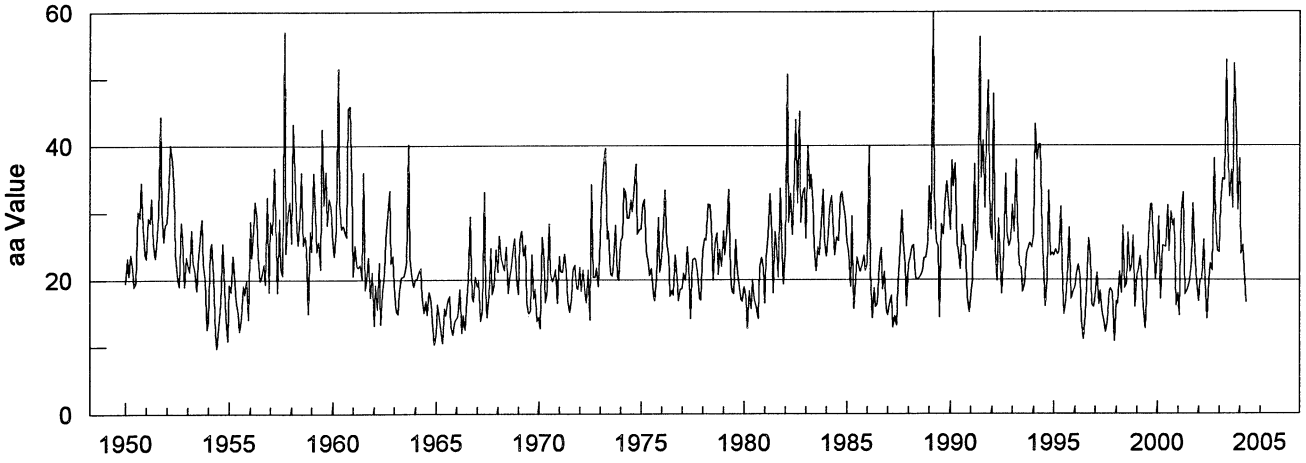
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through May 31, 2004



Monthly Mean aa Index Jan 1950 - May 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	23.9	25.2	20.1	16.6								24.8

PLANETARY GEOMAGNETIC ACTIVITY

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

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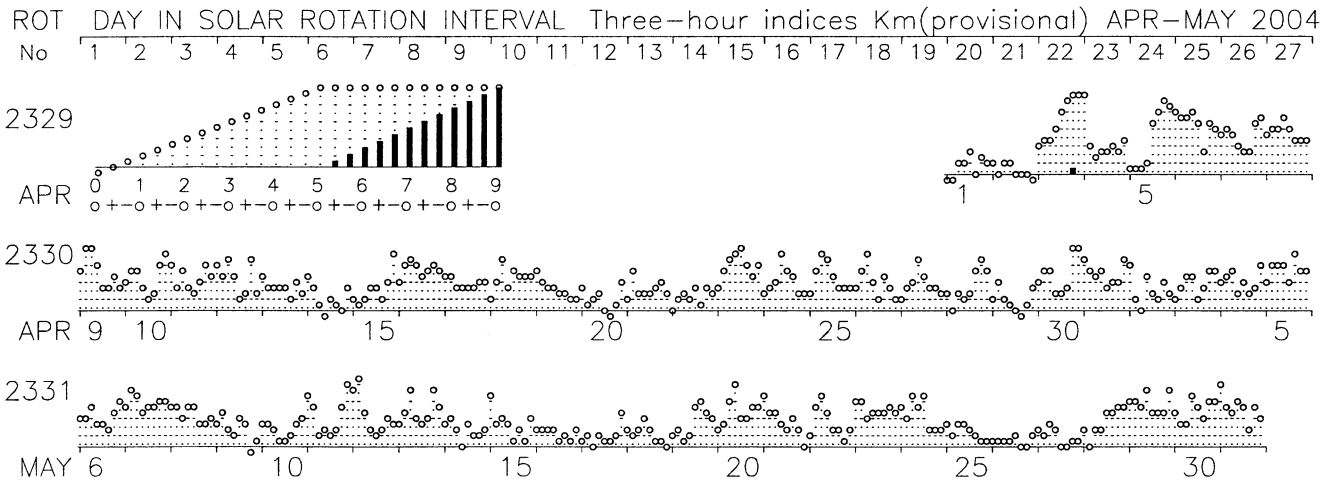
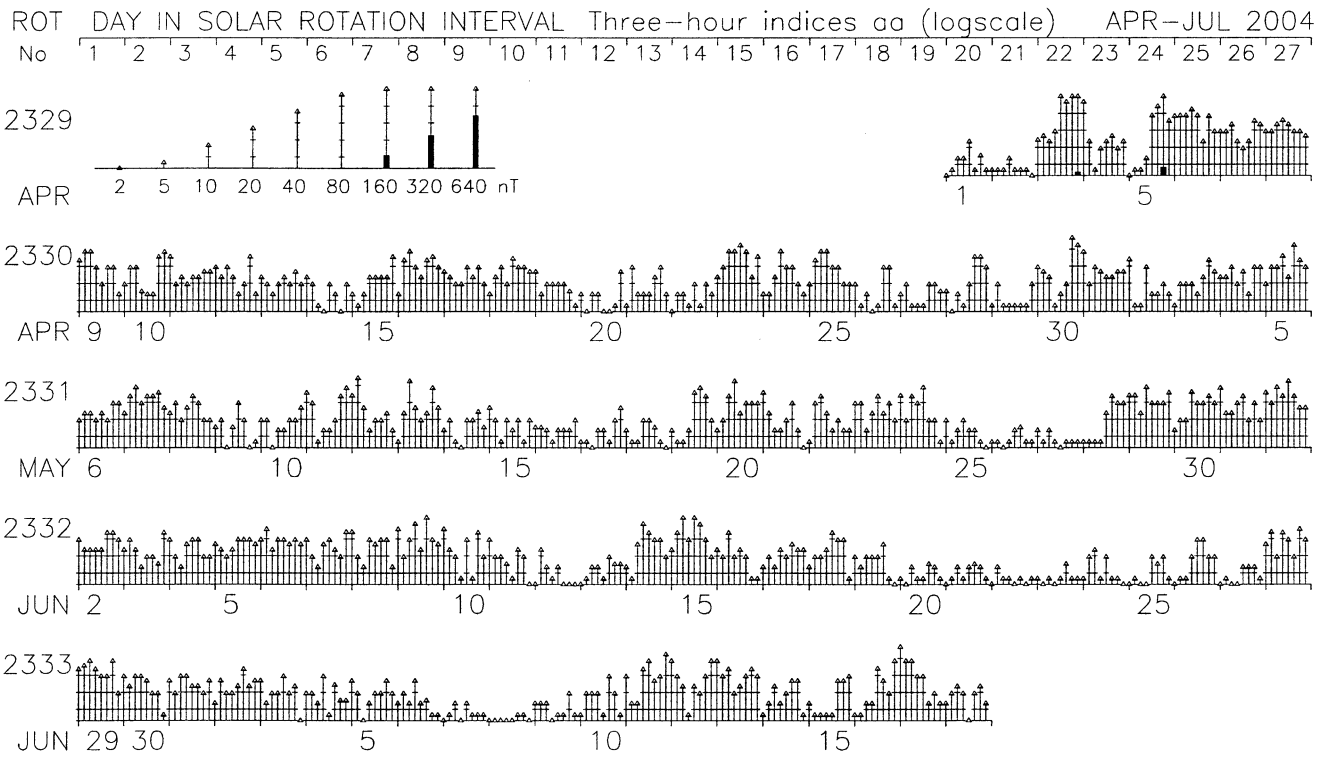


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.



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

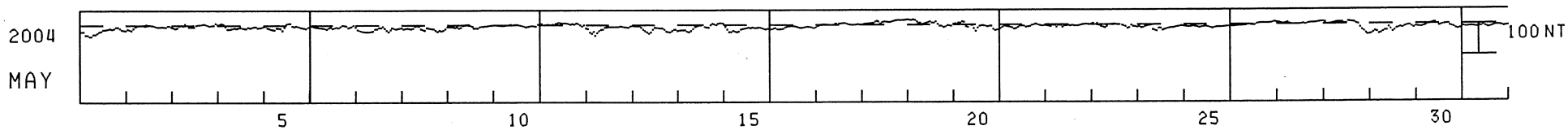
WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

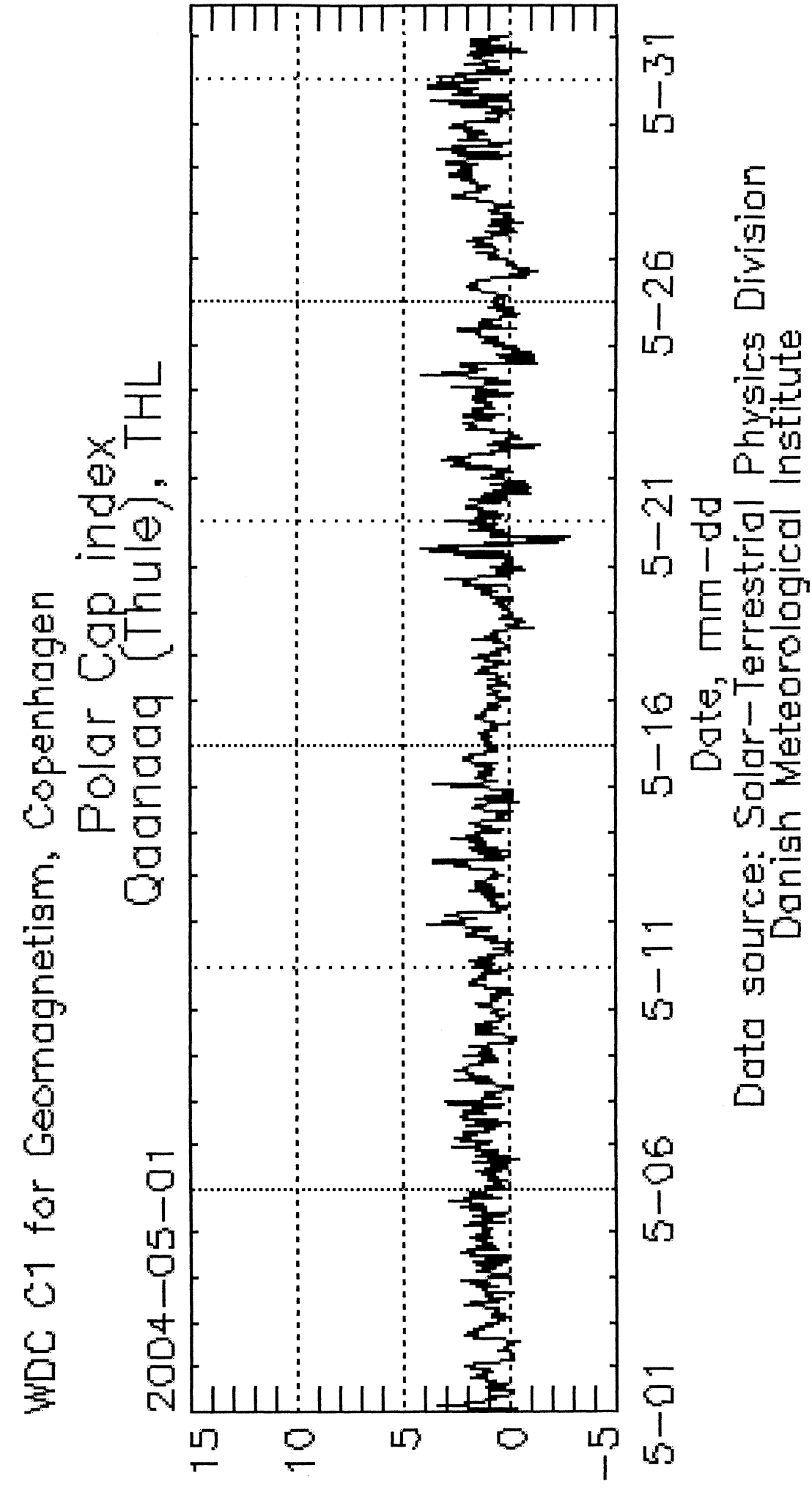
MAY 2004

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	-20	-21	-31	-31	-34	-34	-29	-29	-24	-21	-17	-14	-13	-11	-11	-9	-12	-10	-6	-6	-9	-14	-15	-15
2	-11	-14	-15	-9	-3	-1	2	2	2	-1	4	0	0	2	-2	-3	-5	-5	-3	-6	-6	-1	-2	-5
3	-8	-10	-7	-2	1	-1	6	2	-5	-6	-6	-5	0	4	3	3	5	3	1	-1	1	2	7	4
4	5	8	6	-3	-12	-11	-12	-10	-7	-10	-8	-6	-8	-9	-9	-6	-7	-5	-3	-4	-7	-7	-5	-3
5	-2	-7	-10	-11	-13	-13	-7	-7	-9	-15	-5	5	7	7	-1	-3	-2	-3	-6	-8	-7	-10	-5	-3
6	-2	-3	-6	-5	-7	-8	-7	-10	-11	-7	-5	-9	-8	-5	-7	-4	0	1	-1	-7	-6	-4	0	-5
7	-14	-15	-17	-20	-21	-20	-21	-21	-17	-11	-11	-8	-7	-4	-9	-15	-19	-14	-7	-9	-11	-10	-9	-8
8	-11	-10	-10	-9	-11	-9	-3	-1	-3	-11	-14	-15	-8	-10	-9	-11	-12	-16	-19	-16	-18	-16	-11	-6
9	-5	-6	-6	-7	-6	-10	-7	-2	2	4	3	-1	-4	-9	-9	-9	-5	-3	-4	-4	-1	-1	1	2
10	2	0	-2	-1	-2	-1	0	2	3	2	4	4	2	2	-1	-4	-5	-4	-3	-2	-3	-3	4	8
11	6	1	0	4	2	1	3	5	8	9	8	8	8	8	5	4	5	4	7	5	2	-3	0	-10
12	-12	-22	-27	-20	-32	-25	-17	-13	-13	-8	-6	-5	-6	-5	-5	-6	-5	-4	-6	-5	-8	-7	-3	-2
13	-3	-3	-4	-3	-7	-14	-17	-22	-27	-23	-13	-8	-8	-9	-9	-9	-13	-19	-23	-23	-18	-13	-13	-17
14	-15	-15	-16	-16	-20	-23	-18	-12	-5	-3	-1	2	1	-5	-8	-7	0	6	4	2	5	8	8	5
15	-5	-14	-22	-23	-18	-19	-23	-21	-14	-12	-12	-10	-8	-9	-8	-10	-9	-8	-8	-9	-11	-13	-12	-14
16	-13	-11	-9	-13	-14	-14	-12	-8	-5	-3	-3	-3	-4	-5	-7	-9	-9	-7	-6	-5	-5	-8	-10	-7
17	-3	-1	2	4	4	2	2	1	2	5	5	6	5	5	8	5	4	2	2	2	2	4	2	2
18	3	5	5	5	8	8	11	13	12	6	9	11	12	10	9	12	13	15	16	15	16	16	18	18
19	18	16	17	15	11	8	7	3	5	7	10	11	8	8	12	3	-3	-3	-8	-6	-2	-1	-3	3
20	5	4	8	8	11	9	-5	-8	2	-1	-12	-19	-9	-4	-2	-2	-3	-6	-3	-4	-13	-17	-15	-11
21	-12	-8	-4	-5	-6	-7	-9	-14	-11	-7	-4	-3	-4	-8	-6	-5	-2	1	3	1	-2	-4	-3	-1
22	-4	-4	-5	-2	-1	-8	-1	-1	-8	-3	-3	-2	-3	-2	-3	-4	-3	-1	0	2	3	3	2	4
23	5	0	5	-1	-6	-8	-9	-5	0	0	3	3	0	1	2	-2	-3	-5	-11	-9	-1	-5	-5	-8
24	-5	-10	-9	-5	-4	-3	-2	-15	-18	-19	-11	-11	-18	-15	-14	-12	-10	-9	-9	-8	-6	-6	-4	-5
25	-6	-8	-7	-6	-5	-6	-8	-10	-7	-8	-5	-5	-8	-10	-11	-10	-8	-7	-8	-8	-7	-6	-5	-5
26	-5	-5	-5	-4	-4	-3	-3	-3	-2	0	-1	-1	-1	3	5	6	5	5	5	5	5	8	9	8
27	7	5	3	4	6	7	4	1	0	1	1	1	2	3	2	4	5	5	6	6	7	8	10	9
28	7	2	2	3	4	6	7	7	8	8	4	3	9	9	7	7	4	2	-9	-17	-23	-29	-33	-32
29	-30	-27	-23	-25	-30	-29	-24	-19	-20	-10	-15	-24	-20	-13	-12	-9	-11	-7	-5	-3	-3	-7	-11	-7
30	-7	-10	-10	-7	-5	-2	0	3	6	5	0	-5	-4	-1	1	1	0	-5	-7	-9	-13	-16	-14	-11
31	-7	-10	-10	-8	-7	-8	-9	-9	-7	-8	-4	-8	-9	-11	-10	-7	-5	-4	-4	-4	-5	-8	-6	-5



Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for May 2004.


WDC C1 for Geomagnetism, Copenhagen
Polar Cap index
Qaanaaq (Thule), THL
2004-05-01
15
10
5
0
-5
5-01
5-06
5-11
5-16
5-21
5-26
5-31
Date, mm-dd
Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

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

MAY 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)
HYB	07.6N	05	0500	..	..	..	..	05(6)	4	2	69	29	06	24
JAI	17.4N	19	1430	..	..	..	..		-	6	78	24	20	22
NGP	11.3N	19	1430	..	..	..	..		-	5	89	14	20	22
ABG	09.4N	19	1430	..	..	..	..	20(4)	5	5	80	35	20	22
HYB	07.6N	19	1200	..	..	..	..	20(4)	5	5	96	27	21	21
PND	02.0N	19	1430	..	..	..	..		-	5	92	47	20	22
TIR	00.6S	19	1430	..	..	..	..		-	4	141	49	20	22
HYB	07.6N	29	0500	..	..	..	..	01(5)	4	7	97	23	02	24

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

Stations reporting no storms observed during the month: CAN GNA KRC

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

May 2004

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
	None		02	1117-1138	NAG GUI
			02	1123-1141	ESK NGK+ HAD BDV+
			05	1717-1728	GUI
			07	0415-0430	KAK+
			17	0415-0430	MMB+ KNY+
			28	1212-1230	BDV

REPORTING OBSERVATORIES (up to the 1st of July 2004):
SOD NUR LER ESK NGK VAL HAD BDV CLF HRB NAG GCK MMB EBR COI SPT KAK HTY KNY GUI GNA CNB

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

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

Criterion on Provisional SSC data

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