OCTOBER 2004 NUMBER 722 - Part I

Solar-Geophysical Data prompt reports

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

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OCTOBER 2004 NUMBER 722 - Part I

Solar-Geophysical Data prompt reports

Data for August and September 2004

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NATIONAL GEOPHYSICAL DATA CENTER
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Boulder, Colorado

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SOLAR-GEOPHYSICAL DATA

Number 722

(Issued in Two Parts)

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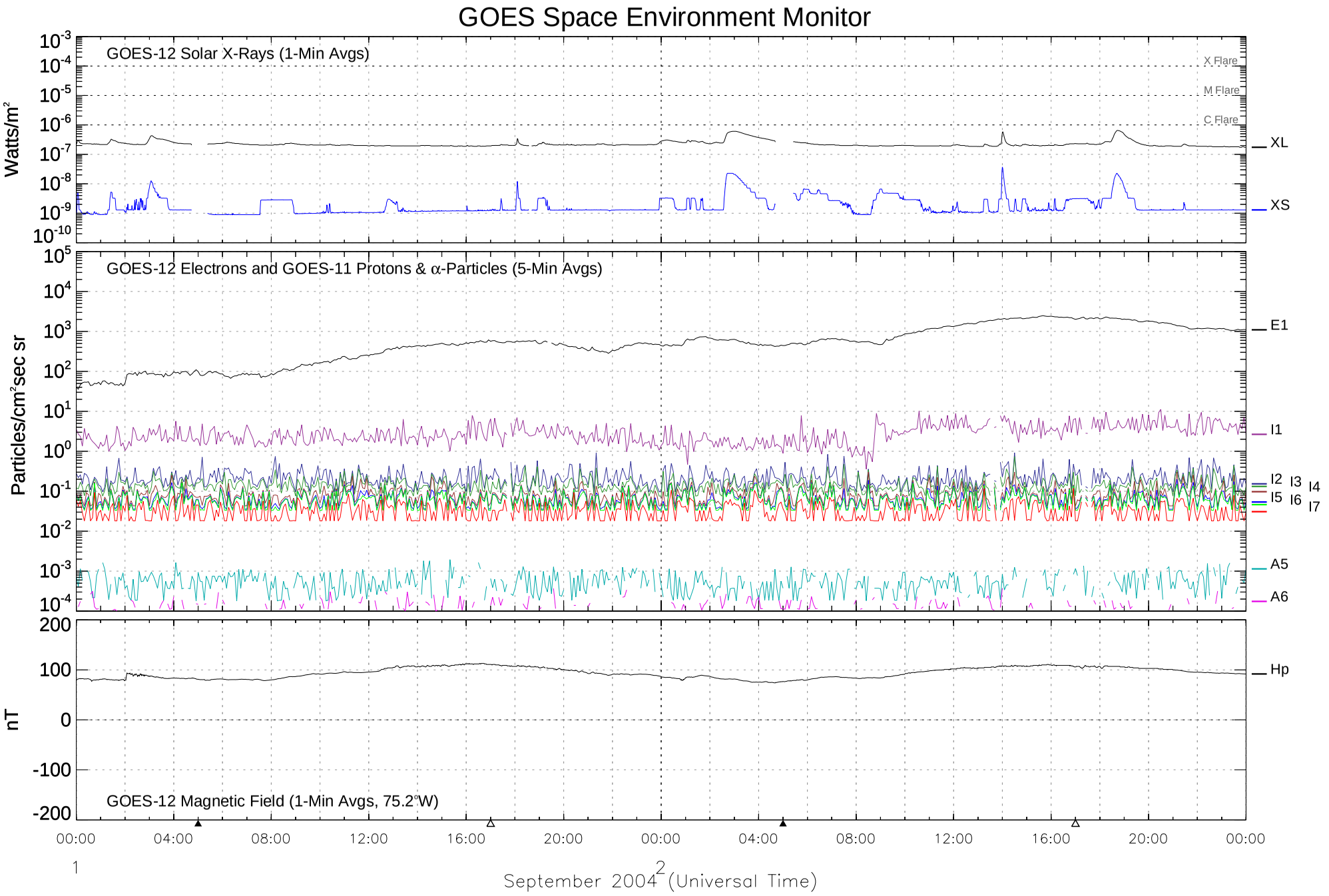
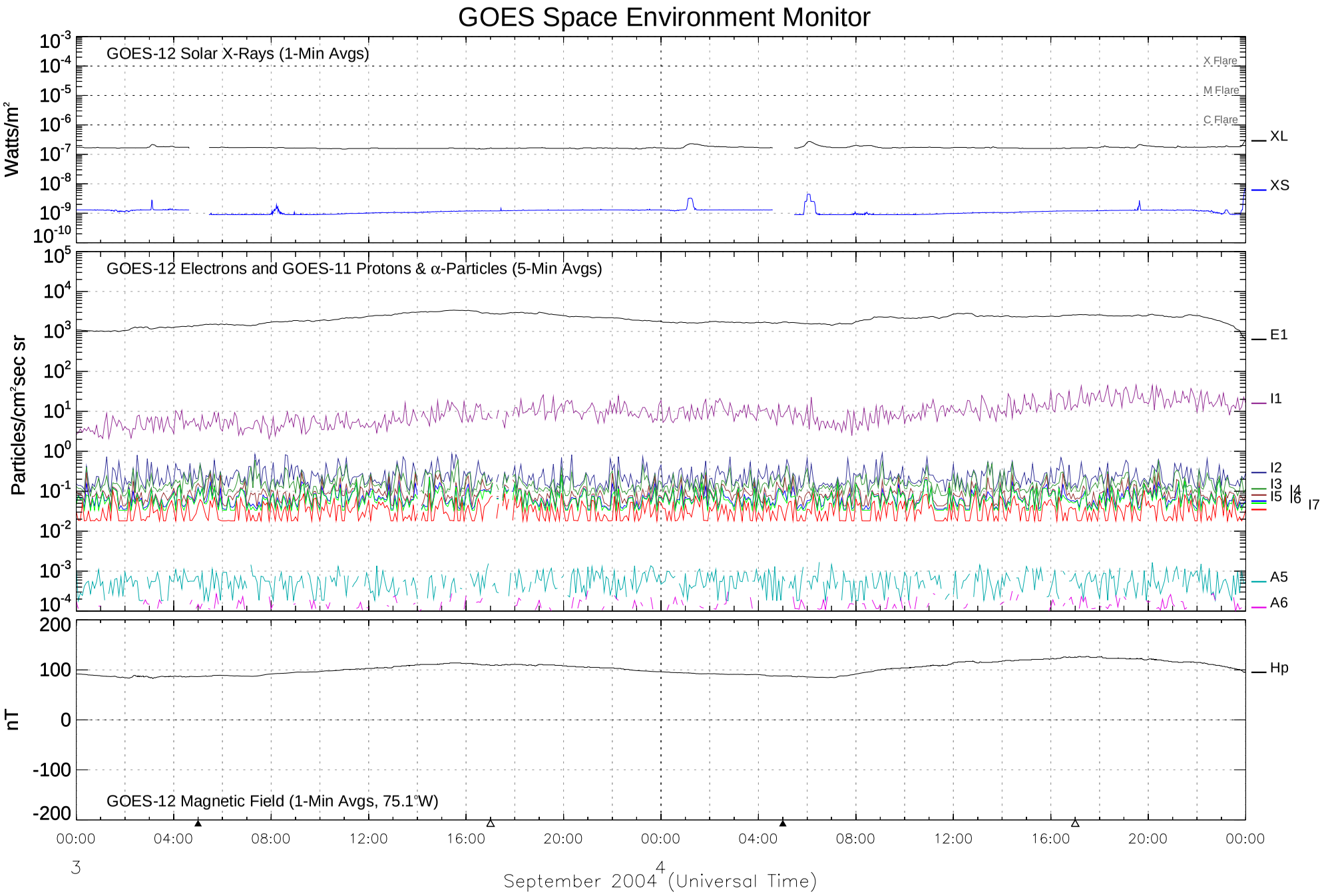

GOES Space Environment Monitor
GOES-12 Solar X-Rays (1-Min Avgs)
X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2 I3 I4
I5 I6 I7
A5
A6
Hp
nT
GOES-12 Magnetic Field (1-Min Avgs, 75.2°W)
00:00 04:00 08:00 12:00 16:00 20:00 00:00 04:00 08:00 12:00 16:00 20:00 00:00
1
2
September 2004 (Universal Time)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X Flare
M Flare
C Flare
Watts/m²
XL
XS
GOES-12 Electrons and GOES-11 Protons & α-Particles (5-Min Avgs)
Particles/cm²sec sr
E1
I1
I2
I3
I4
I5
I6
I7
A5
A6
Hp
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GOES-12 Magnetic Field (1-Min Avgs, 75.1°W)
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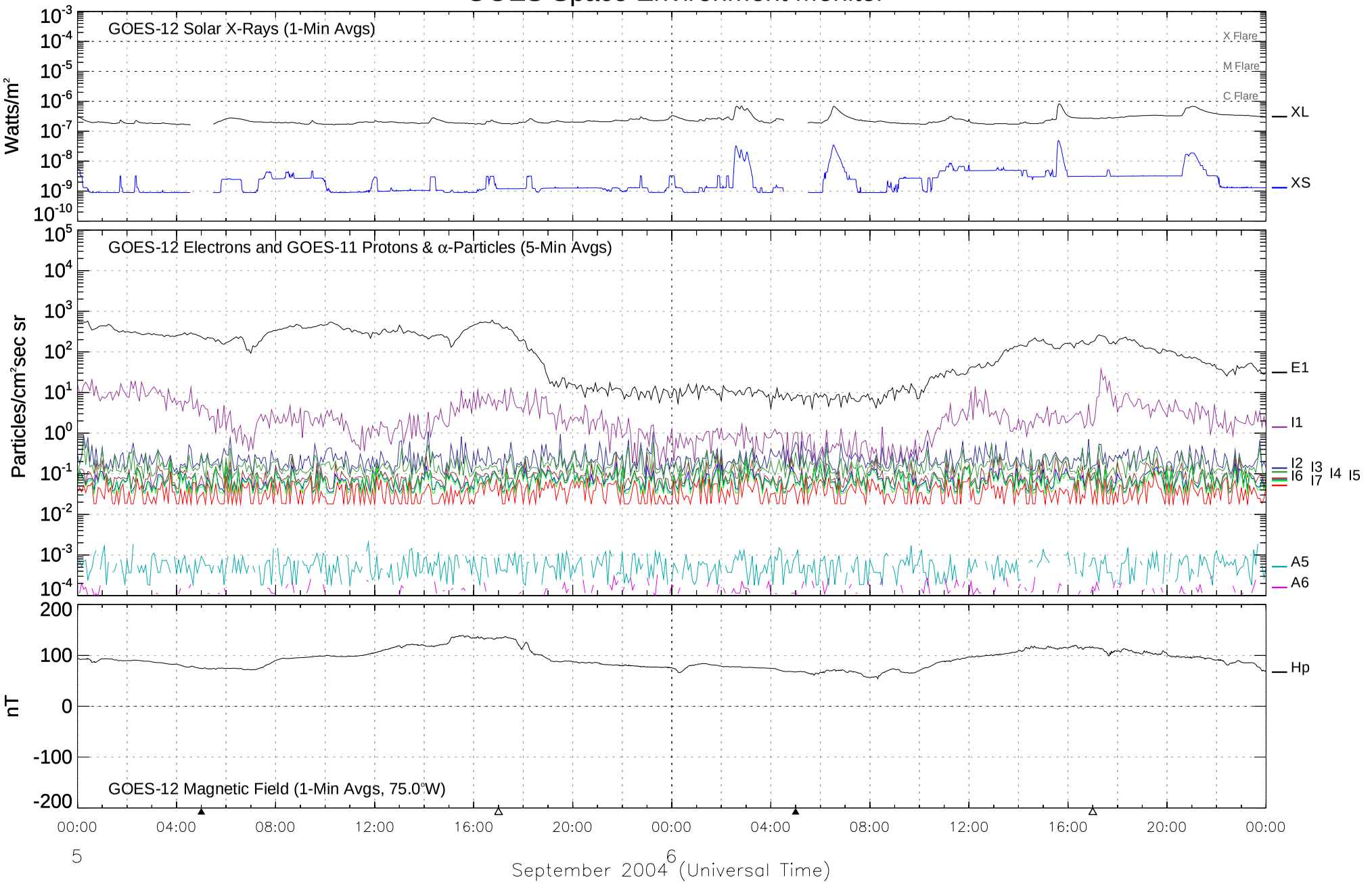
4
September 2004 (Universal Time)

GOES Space Environment Monitor



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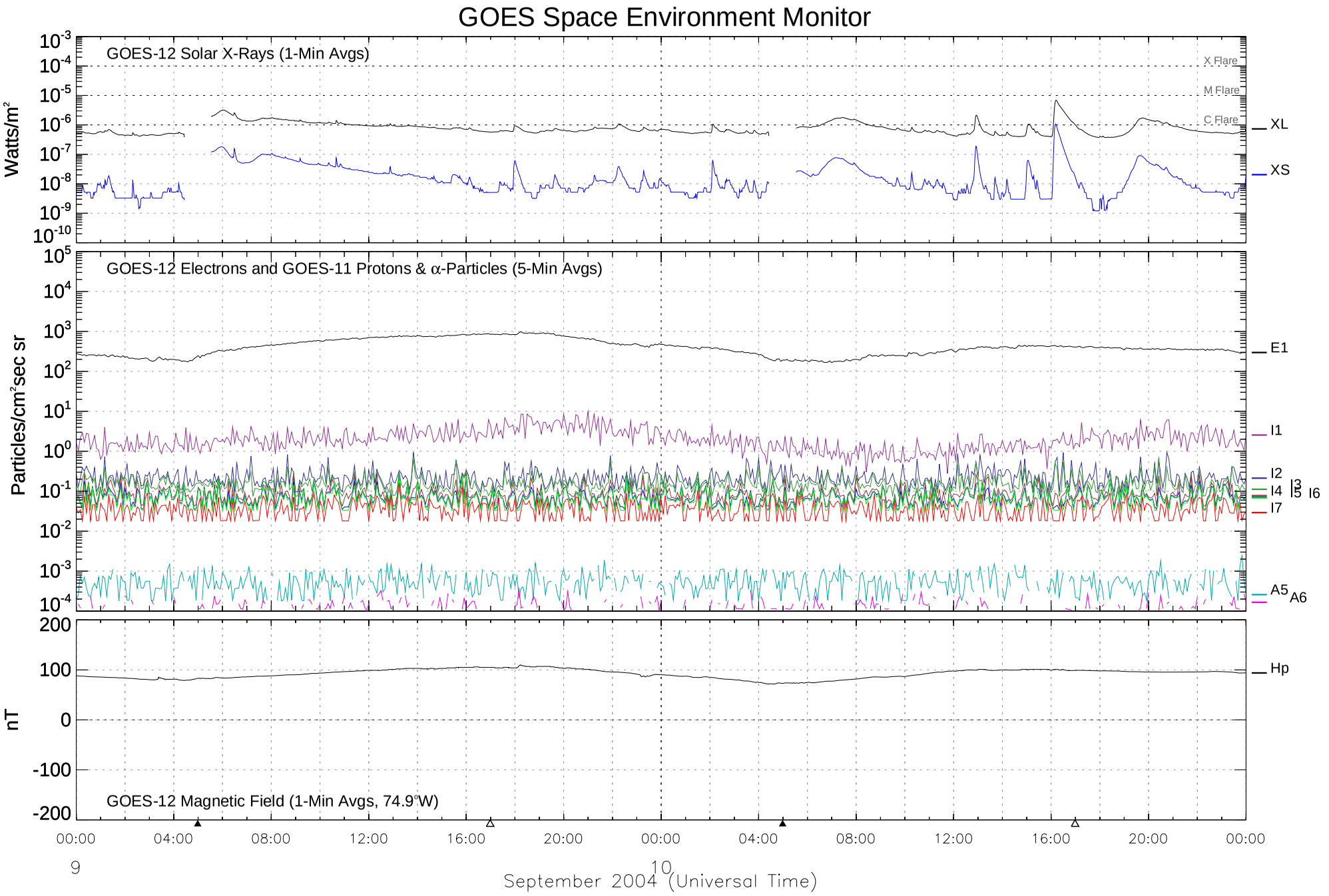
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Particles/cm²sec sr
E1
I1
I2
I4
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GOES-12 Magnetic Field (1-Min Avgs, 74.9°W)
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16:00
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08:00
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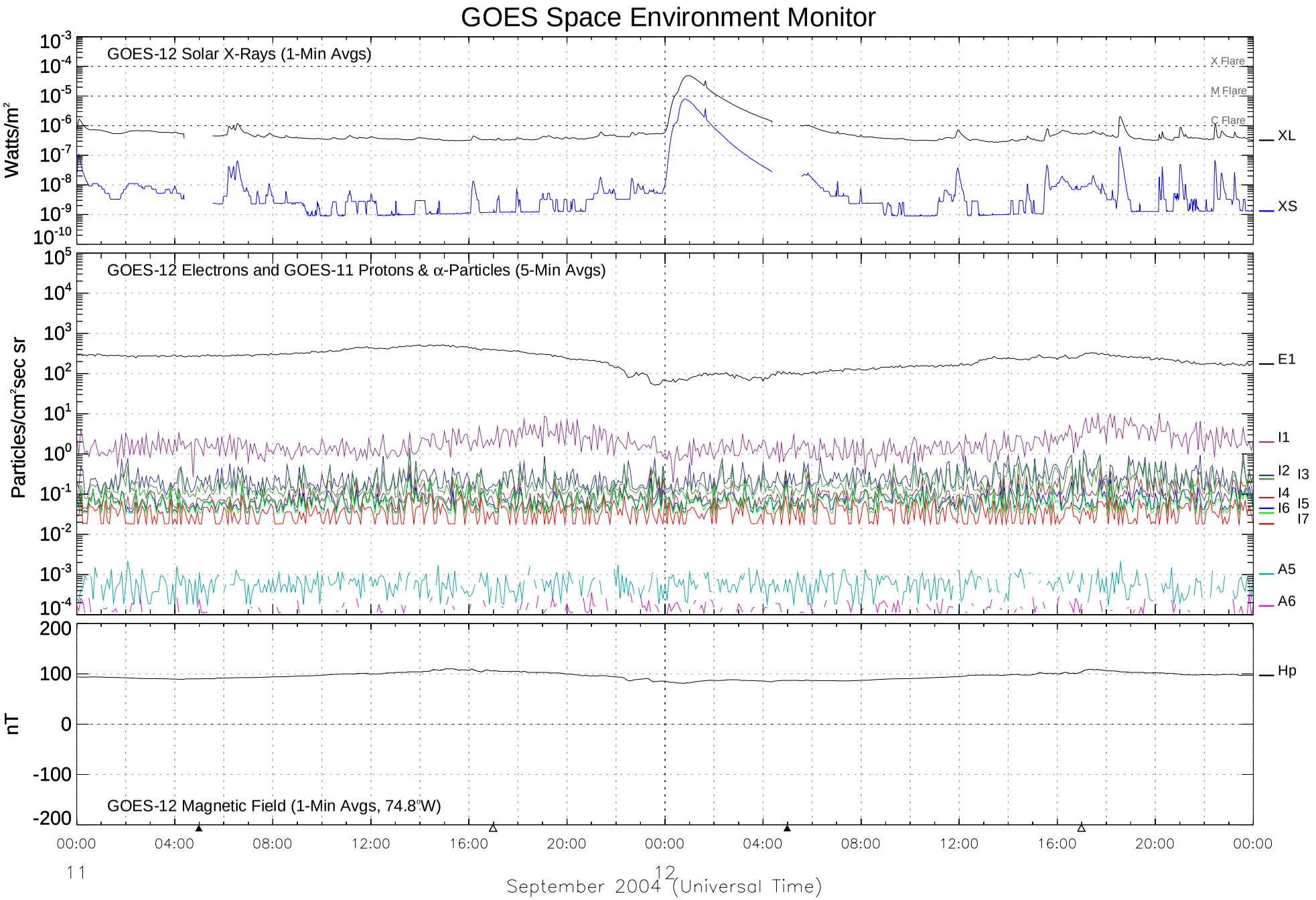
September 2004 (Universal Time)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E1
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GOES-12 Magnetic Field (1-Min Avgs, 74.8°W)
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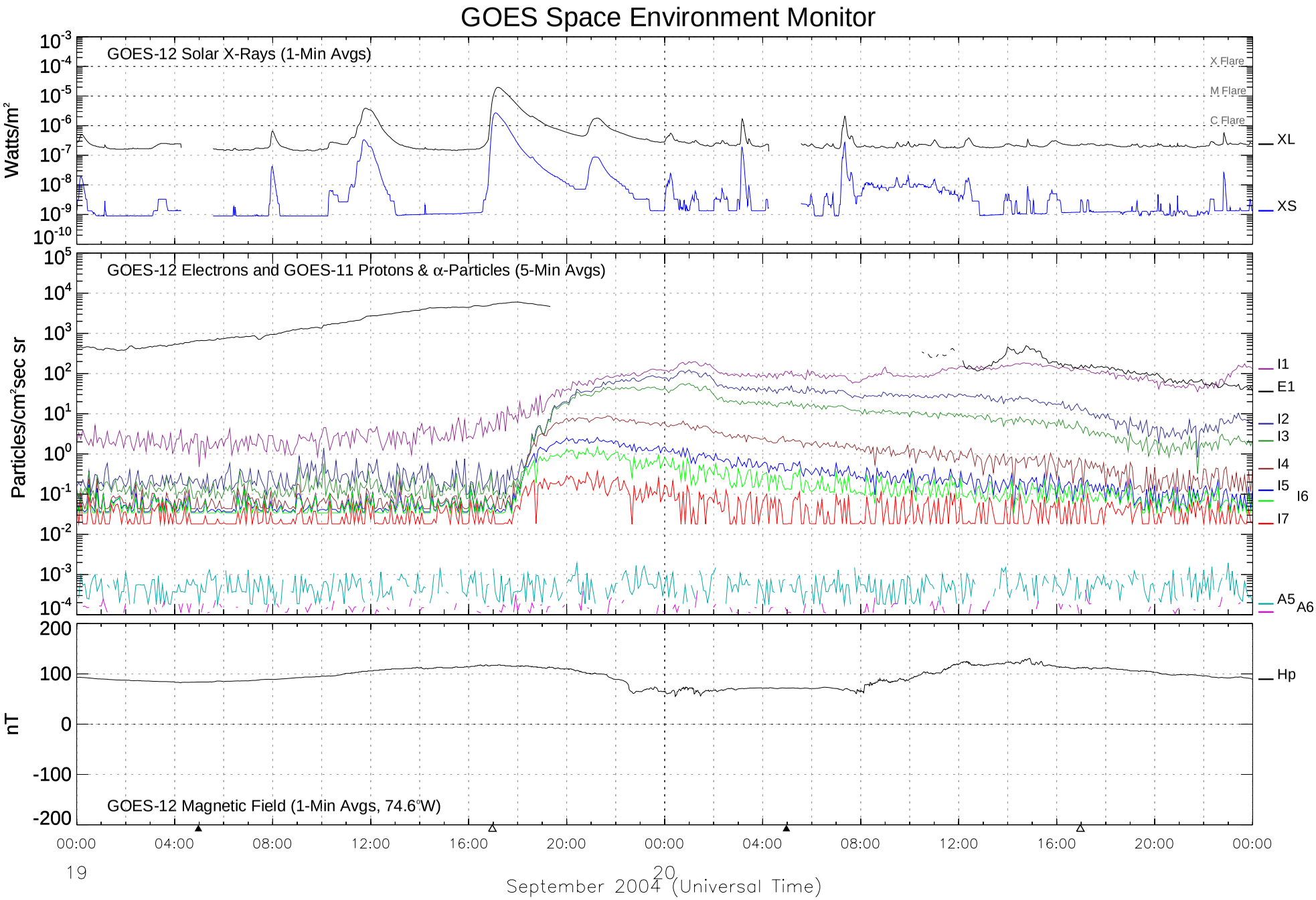
September 2004 (Universal Time)

GOES Space Environment Monitor

GOES Space Environment Monitor

GOES Space Environment Monitor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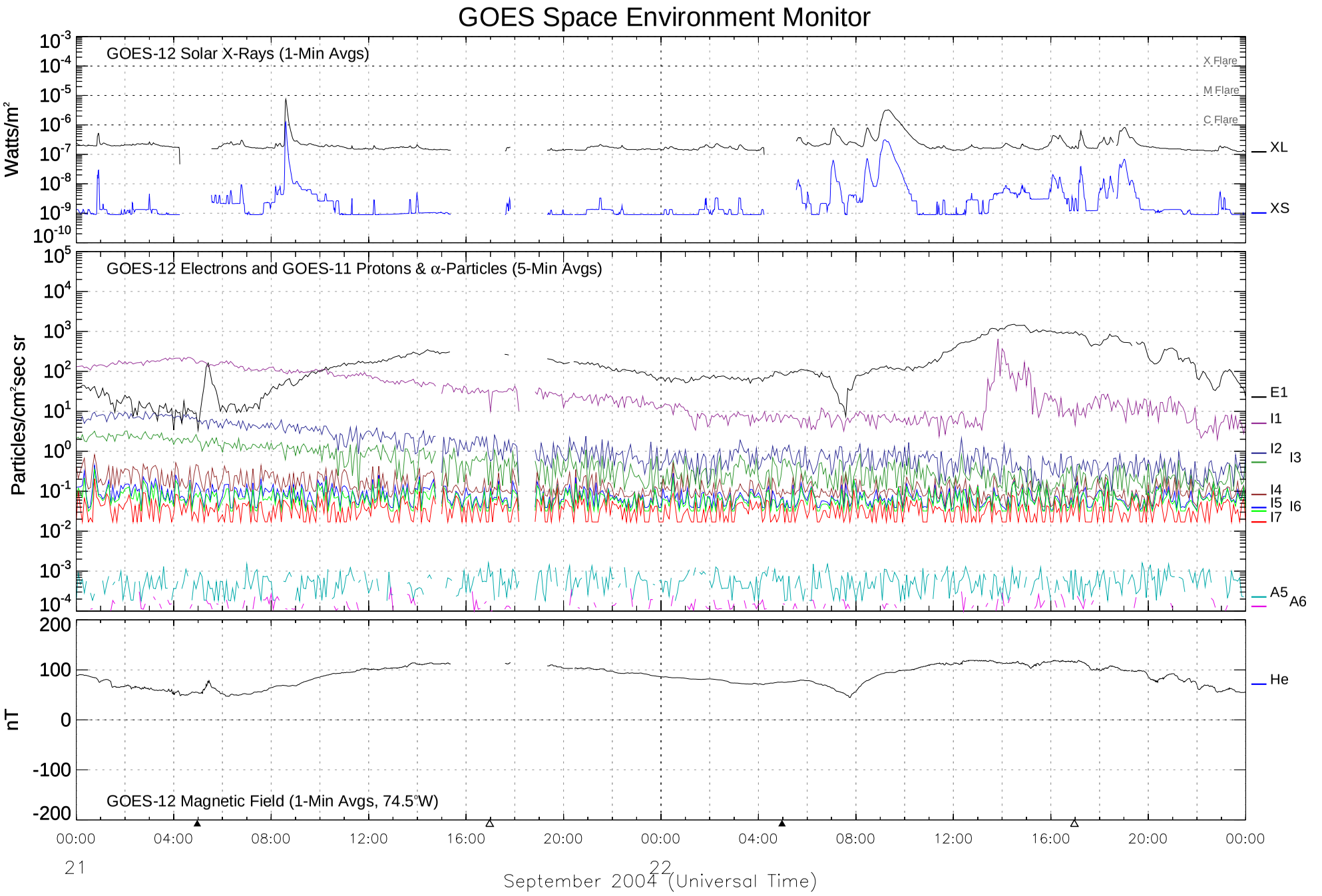
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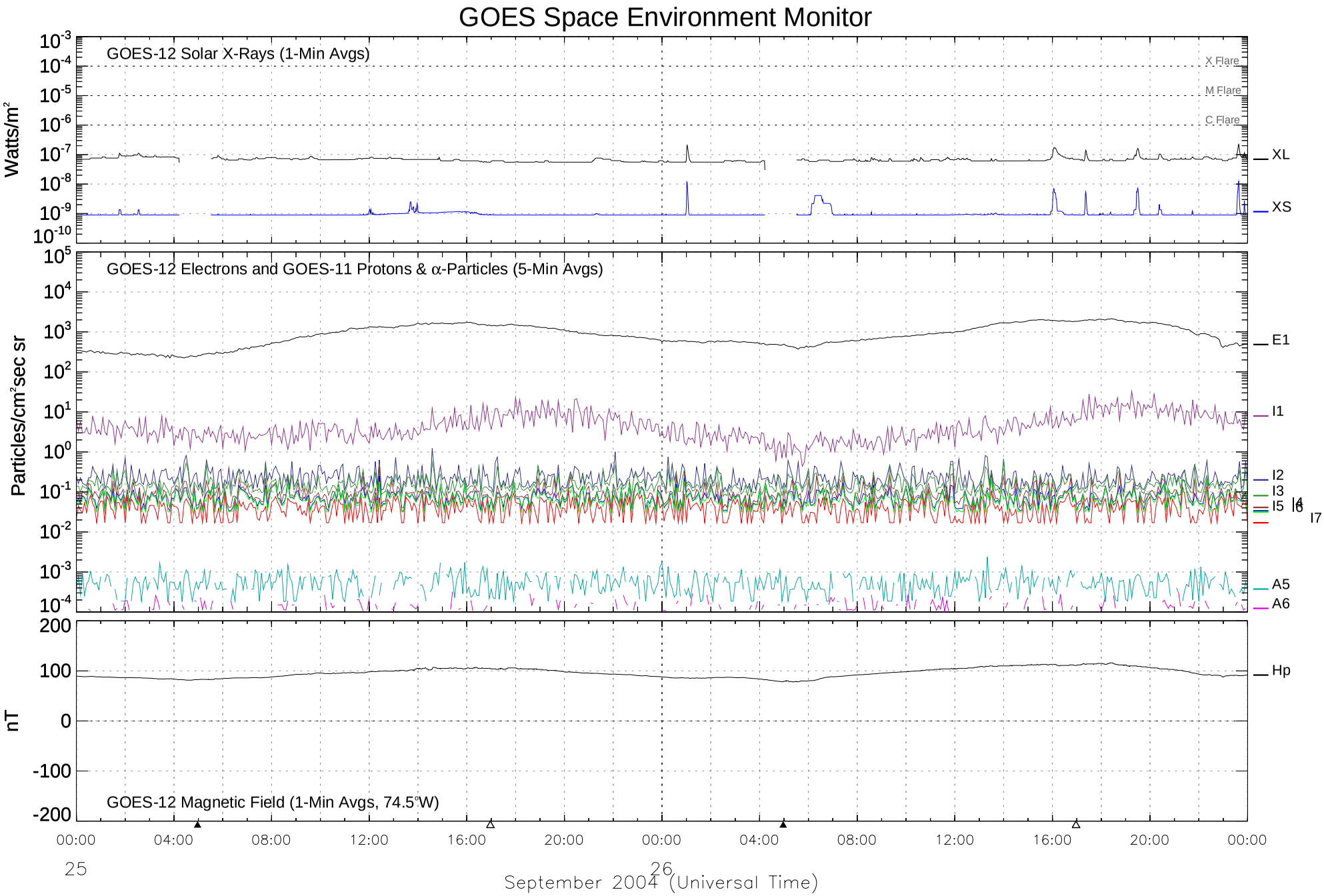
GOES Space Environment Monitor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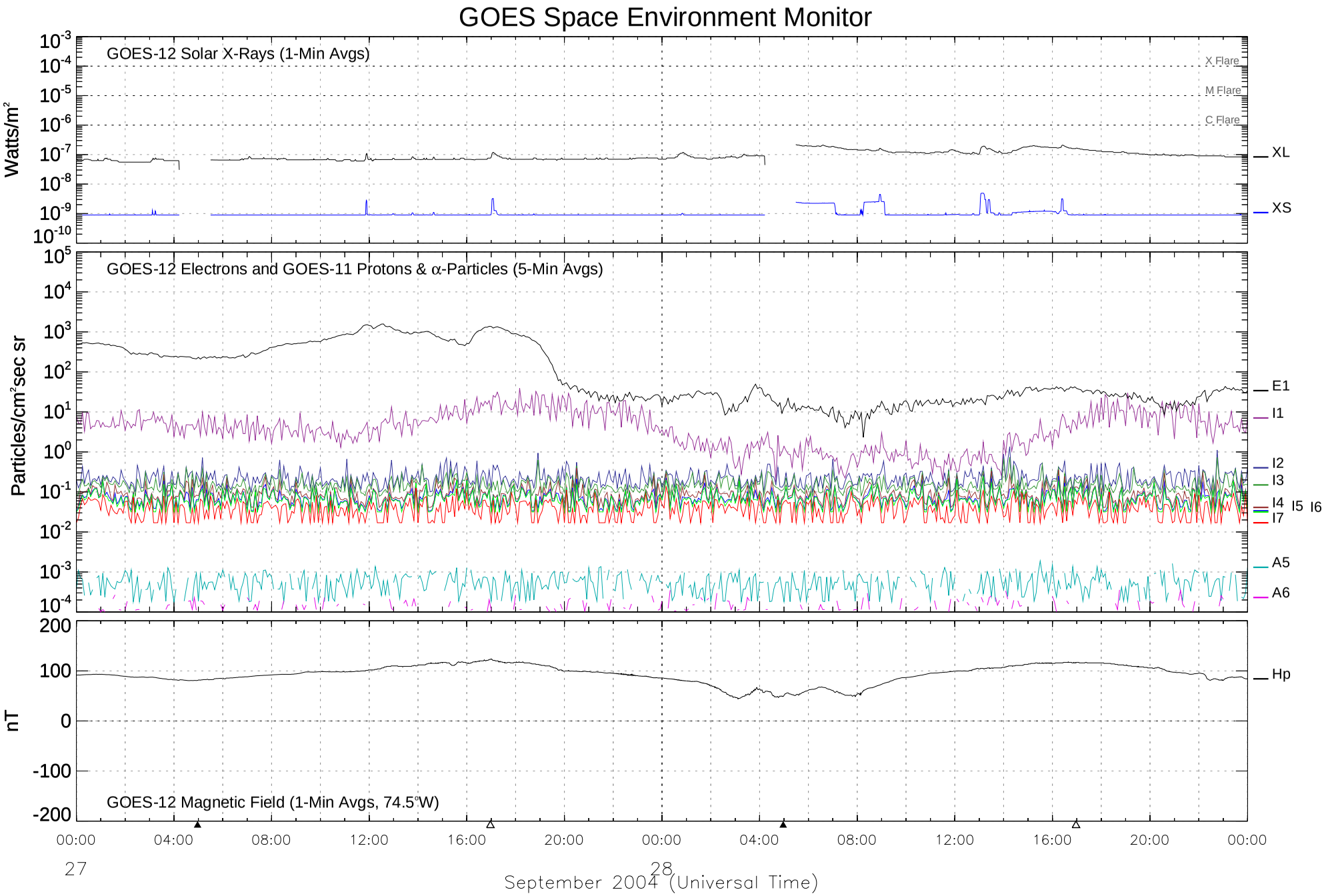
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I7
A5
A6
GOES-12 Magnetic Field (1-Min Avgs, 74.5°W)
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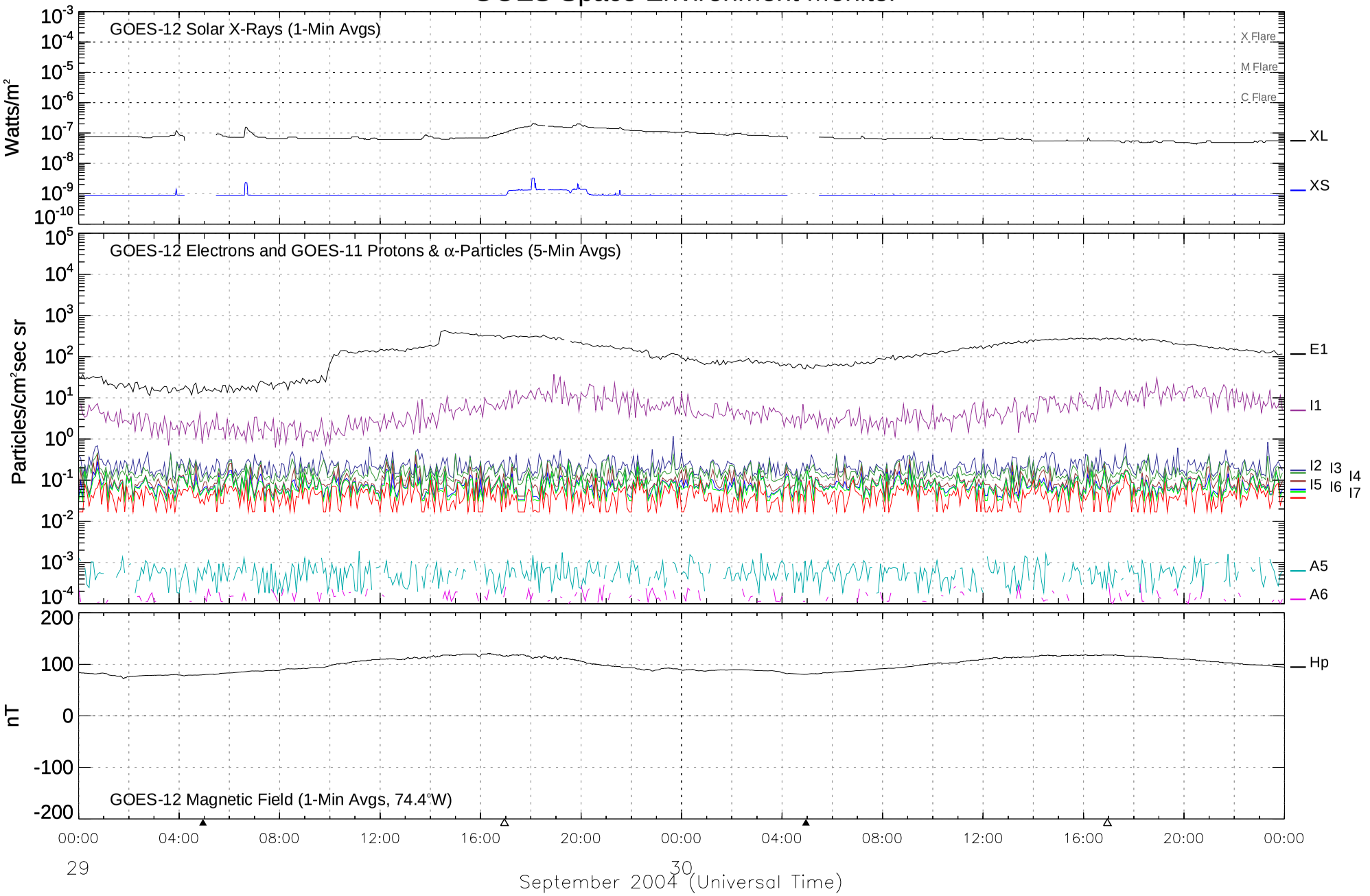
September 2004 (Universal Time)

GOES Space Environment Monitor



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

SEPTEMBER 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)
245	01	31	11	88	29	10663	N03	W88	0	1	0	01	Q	SOL: Eruptive
									0	0	0	01		MAG: Quiet
									0	0	0	01		PRO: Quiet
246	02	01	12	90	8	10667	S09	E76	0	0	0	02	Q	SOL: Eruptive
									0	0	0	02		MAG: Quiet
									0	0	0	02		PRO: Quiet
247	03	02	25	94	8	10667	N16	W22	0	0	0	03	Q	SOL: Eruptive
						10667	S10	E62	0	0	0	03	Q	MAG: Quiet
									0	0	0	03		PRO: Quiet
248	04	03	25	97	3	10668	S11	E48	0	0	0	04	Q	SOL: Eruptive
						10668	S11	W34	0	0	0	04	Q	MAG: Quiet
									0	0	0	04		PRO: Quiet
249	05	04	28	99	1	10668	S10	E36	0	0	0	05	Q	SOL: Eruptive
						10668	S10	W49	0	0	0	05	Q	MAG: Quiet
									0	0	0	05		PRO: Quiet
250	06	05	59	103	9	10667	S11	E23	0	0	0	06	Q	SOL: Eruptive
						10668	S11	W64	0	0	0	06	Q	MAG: Quiet
						10669	S06	E35	0	0	0	06	Q	PRO: Quiet
						10670	S14	E34	0	0	0	06	Q	
251	07	06	82	107	12	10667	S11	E09	0	0	0	07	Q	SOL: Eruptive
						10668	S10	W76	0	0	0	07	Q	MAG: Quiet
						10669	S07	E19	0	0	0	07	Q	PRO: Quiet
						10670	S13	E19	0	0	0	07	Q	
						10671	S10	W29	0	0	0	07	Q	
252	08	07	95	119	17	10667	S11	W04	0	0	0	08	Q	SOL: Eruptive
						10668	S09	W90	0	0	0	08	Q	MAG: Quiet
						10669	S06	E06	0	0	0	08	E	PRO: Quiet
						10670	S14	E04	0	0	0	08	Q	
						10671	S11	W42	1	0	0	08	Q	
253	09	08	85	125	10	10667	S11	W17	0	0	0	09	Q	SOL: Eruptive
						10669	S05	W09	2	0	0	09	Q	MAG: Quiet
						10670	S14	W07	0	0	0	09	Q	PRO: Quiet
						10671	S10	W55	0	0	0	09	E	
254	10	09	82	131	5	10667	S11	W32	0	0	0	10	Q	SOL: Eruptive
						10669	S06	W24	0	0	0	10	Q	MAG: Quiet
						10671	S09	W68	4	0	0	10	E	PRO: Quiet
						10672	N05	E73	0	0	0	10	E	
255	11	10	87	130	4	10667	S11	W45	0	0	0	11	Q	SOL: Eruptive
						10669	S06	W78	0	0	0	11	Q	MAG: Quiet
						10671	S09	W81	0	0	0	11	E	PRO: Quiet
						10672	N05	E60	0	0	0	11	Q	
256	12	11	87	116	2	10667	S11	W58	0	0	0	12	Q	SOL: Eruptive
						10669	S06	W51	0	0	0	12	Q	MAG: Quiet
						10671	S09	W94	0	0	0	12	Q	PRO: Quiet
						10672	N05	E47	0	0	0	12	E	
257	13	12	85	115	3	10667	S11	W72	1	1	0	13	Q	SOL: Eruptive
						10669	S06	W66	1	0	0	13	Q	MAG: Quiet
						10672	N05	E33	1	1	0	13	E	PRO: Quiet
258	14	13	65	118	8	10667	S10	W85	0	0	0	14	Q	SOL: Active
						10669	S04	W81	0	0	0	14	Q	MAG: Minor
						10672	N04	E22	0	0	0	14	Q	PRO: Proton
259	15	14	70	115	21	10672	S06	W95	0	0	0	15	Q	SOL: Active
						10672	N05	E10	1	1	0	15	E	MAG: Minor

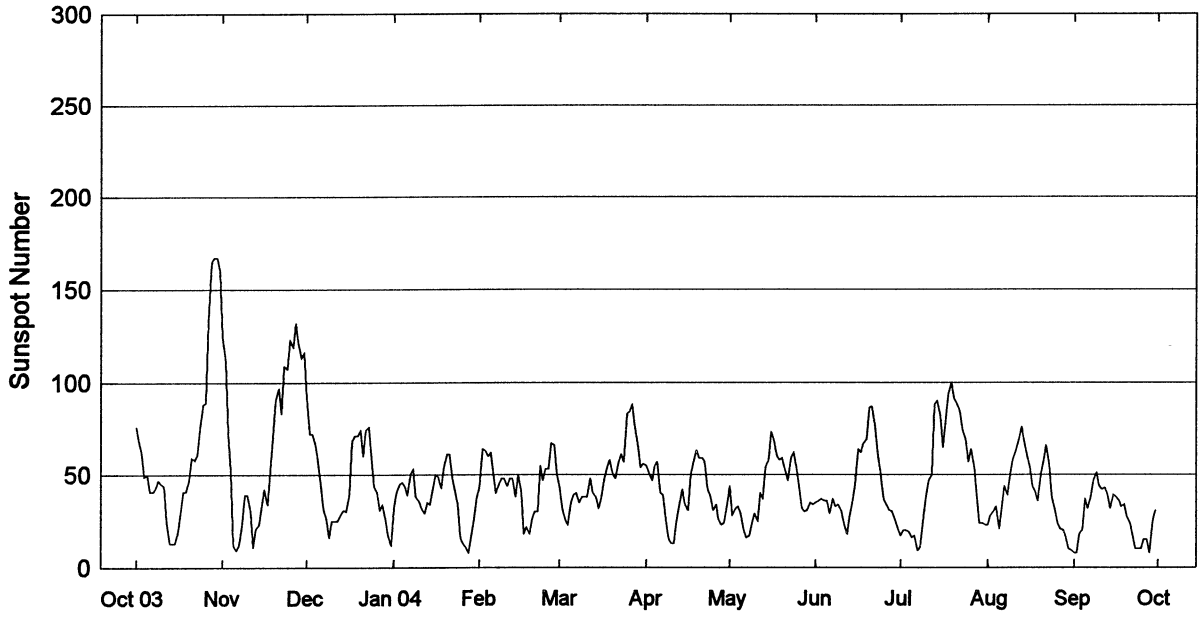
A L E R T P E R I O D S
The International Space Environment Service

SEPTEMBER 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)
									0	0	0	15		PRO: Proton
260	16	15	67	110	10	10673	N05	W03	1	0	0	16	E	SOL: Eruptive
						10673	S13	E72	0	0	0	16	Q	MAG: Active
									0	0	0	16		PRO: No Fcst
261	17	16	80	108	20	10673	N05	W17	2	0	0	17	E	SOL: Eruptive
						10673	S12	E61	0	0	0	17	E	MAG: Active
									0	0	0	17		PRO: Quiet
262	18	17	76	105	23	10673	N05	W29	0	0	0	18	E	SOL: Eruptive
						10673	S13	E51	0	0	0	18	E	MAG: Active
									0	0	0	18		PRO: Quiet
263	19	18	50	103	24	10673	N06	W45	0	0	0	19	Q	SOL: Eruptive
						10673	S13	E35	0	0	0	19	Q	MAG: Quiet
									0	0	0	19		PRO: Quiet
264	20	19	42	105	4	10673	N05	W58	0	1	0	20	Q	SOL: Eruptive
						10673	S13	E22	0	0	0	20	Q	MAG: Quiet
									0	0	0	20		PRO: IP
265	21	20	59	101	11	10672	N05	W71	0	0	0	21	E	SOL: Eruptive
						10673	S13	E09	0	0	0	21	Q	MAG: Quiet
						10674	S10	W23	0	0	0	21	Q	PRO: Quiet
266	22	21	33	95	10	10673	N04	W86	1	0	0	22	E	SOL: Eruptive
						10673	S13	W04	0	0	0	22	Q	MAG: Active
									0	0	0	22		PRO: Quiet
267	23	22	24	91	16	10673	S13	W17	1	0	0	23	Q	SOL: Eruptive
									0	0	0	23		MAG: Quiet
									0	0	0	23		PRO: Quiet
268	24	23	19	90	12	10673	S13	W31	0	0	0	24	Q	SOL: Eruptive
									0	0	0	24		MAG: Quiet
									0	0	0	24		PRO: Quiet
269	25	24	15	89	5	10673	S13	W44	0	0	0	25	Q	SOL: Quiet
									0	0	0	25		MAG: Quiet
									0	0	0	25		PRO: Quiet
270	26	25	24	90	6	10675	S13	W57	0	0	0	26	Q	SOL: Eruptive
						10675	S08	E75	0	0	0	26	Q	MAG: Quiet
									0	0	0	26		PRO: Quiet
271	27	26	22	90	4	10675	S14	W73	0	0	0	27	Q	SOL: Quiet
						10675	S08	E61	0	0	0	27	Q	MAG: Quiet
									0	0	0	27		PRO: Quiet
272	28	27	22	90	4	10675	S15	W88	0	0	0	28	Q	SOL: Quiet
						10675	S08	E48	0	0	0	28	Q	MAG: Quiet
									0	0	0	28		PRO: Quiet
273	29	28	22	90	12	10676	S08	E35	0	0	0	29	Q	SOL: Quiet
						10676	S11	E76	0	0	0	29	Q	MAG: Quiet
									0	0	0	29		PRO: Quiet
274	30	29	22	90	6	10676	S08	E22	0	0	0	30	Q	SOL: Quiet
						10676	S11	E64	0	0	0	30	Q	MAG: Quiet
									0	0	0	30		PRO: Quiet

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
Oct 2003- Sep 2004

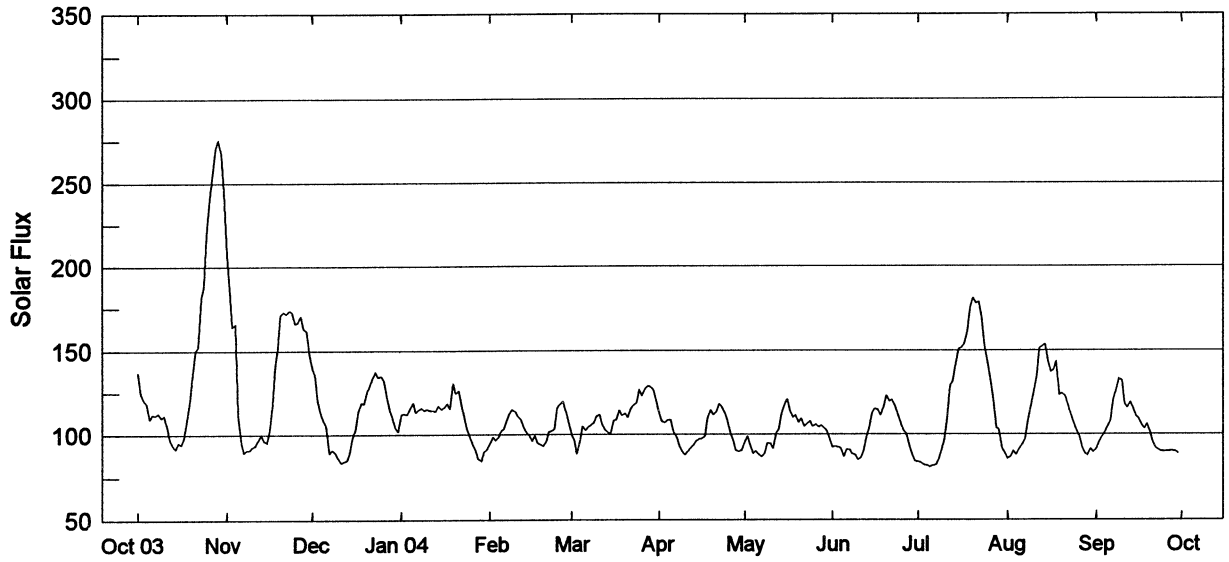


Day	Oct 03	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*
1	76	124	92	32	43	44	55	44	35	17	23	8
2	68	112	72	40	64	31	51	28	36	20	28	8
3	62	72	72	45	63	26	47	32	37	20	30	18
4	49	52	66	46	60	23	55	33	36	19	33	20
5	50	12	59	44	62	35	57	29	36	16	21	37
6	41	9	45	39	51	39	40	20	29	17	33	32
7	41	12	32	50	40	40	39	16	37	9	44	38
8	43	21	26	53	45	35	27	17	33	11	39	47
9	47	39	16	38	48	38	15	24	34	27	50	51
10	45	39	25	36	48	38	13	29	31	38	58	44
11	44	30	25	32	44	38	13	25	24	47	63	42
12	25	11	25	29	48	48	25	40	18	50	68	43
13	13	21	28	35	48	40	35	37	28	88	76	39
14	13	23	31	34	38	38	42	54	35	90	68	32
15	13	33	30	43	50	32	34	58	44	82	61	39
16	19	42	39	50	41	37	31	73	64	65	54	38
17	30	34	68	49	18	48	50	69	62	79	44	36
18	41	52	71	43	22	54	58	60	67	93	41	33
19	41	70	71	54	18	58	63	58	69	100	36	34
20	47	90	74	61	26	50	59	59	86	91	50	27
21	59	97	60	61	30	48	59	52	87	88	57	24
22	58	83	74	49	30	57	57	47	76	84	66	17
23	61	109	76	42	55	61	43	59	61	74	56	10
24	75	107	59	34	47	57	38	62	52	69	38	10
25	88	123	44	16	53	83	31	55	37	57	31	10
26	89	119	40	13	53	84	34	43	34	64	24	15
27	133	132	31	11	67	88	26	32	31	55	21	15
28	165	121	34	8	66	76	23	30	30	39	20	8
29	167	113	26	16	50	66	24	31	26	24	16	25
30	167	116	17	27		54	34	35	22	24	10	31
31	160		12	38		56		34		23	9	
Mean	65.5	67.3	46.5	37.7	45.8	49.1	39.3	41.5	43.2	51.0	40.9	27.7

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Oct 2003 - Sep 2004

Adjusted to 1 AU



Day	Oct 03	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	137.1	207.2	139.3	112.2	94.5	100.0	112.6	95.7	92.5	84.0	85.8	91.5
2	125.0	187.4	135.4	112.6	98.5	97.1	108.1	99.1	93.0	83.4	87.0	95.6
3	120.3	164.2	120.3	112.3	96.6	88.9	107.4	92.8	92.6	82.2	90.1	98.3
4	119.0	165.6#	112.5	115.5	98.6	95.9	109.0	88.9	92.0	82.1	87.9	100.9
5	109.6	112.1	108.5	119.0	102.5	105.0	108.9	90.1	87.0	80.9	91.5	104.8
6	112.0	96.1	105.7	113.4	103.7	102.9	101.6	88.0	91.0	81.6	93.6	108.2
7	111.8	89.4	89.3	114.9	108.1	104.6	98.4	86.8	91.2	81.9	97.3	120.7
8	113.1	91.0	90.9	116.1	113.1	106.3	93.8	88.9	88.6	84.6	107.7	126.3
9	110.5	91.2	89.4	114.4	114.7	107.2	90.3	95.0	87.9	89.6	117.0	132.8
10	111.4	92.8	86.5	115.3	113.5	111.1	88.1	94.8	85.0	96.4	124.7	131.8
11	105.4	93.7	83.4	114.6	111.2	111.7	90.0	92.0	86.5	107.9	134.3	117.9
12	97.4	96.7	84.5	114.4	109.3	106.2	91.8	100.9	90.7	129.2	151.1	116.0
13	94.0	100.0	85.0	114.1	105.1	102.6	93.6	103.0	98.2	131.6#	152.5	119.1
14	91.9	96.8	89.5	117.1	101.1	101.3	95.8	112.1	103.1	142.6	153.1	116.0
15	95.3	95.6	97.7	115.2	99.6	100.3	97.4	117.9	112.9	150.5	142.4	110.8
16	94.6	102.0	103.0	116.4	96.3	108.5	97.6	121.0	115.1	151.3	137.0	109.4
17	98.1	118.2	113.8	118.6	99.5	108.8	99.0	113.7	114.9	154.1	138.3	105.5
18	107.8	141.0	119.1	115.6	95.4	114.4	110.0	110.4	111.3	160.2	143.3	103.6
19	119.4	151.5	118.6	130.3	94.2	111.3	114.5	111.4	116.4	175.8	123.5	106.1
20	133.9	171.0	125.9	124.8	93.2	112.7	111.8	107.2	123.0	180.8	124.2	101.3
21	150.2	172.8	129.1	126.0	96.0	110.4	113.9	109.6	119.6	177.7	122.8	95.6
22	152.0#	171.9	133.2	117.9	101.7	115.6	118.4	105.0	120.5	178.4	117.8	92.0
23	181.3#	173.8	137.4	111.6	102.1	117.6	116.6	106.6	116.2	170.4	111.9	90.8
24	188.5	172.8	134.4	104.1	103.4	119.0	112.9	107.9	111.9	151.8	107.2	89.9
25	219.0	166.3	134.6	99.1	116.1	126.4	108.4	105.1	106.3	143.9*	102.5	89.9
26	240.6*	166.5	132.7	95.0	118.4	123.2	100.9	106.1	102.2	132.0	99.5	89.9
27	254.0	170.1	122.4#	90.8	119.8	127.2	96.4	104.6	100.4	121.8	92.3	90.2
28	270.9	163.2	115.1	85.9	113.6	128.6	90.7	105.2	92.4	103.8	88.9	90.2
29	275.4#	161.4	110.7	84.8	108.0	128.3	89.8	104.0	87.9	102.8	87.7	90.0
30	267.6	148.6	104.2	89.9		126.4	90.8	102.4	84.5	91.4	91.6	88.4
31	245.2		102.1	91.6		121.0		98.1		89.0	89.7	
Mean	150.1	137.7	111.4	110.4	104.4	111.0	101.9	102.1	100.5	122.4	112.7	104.1

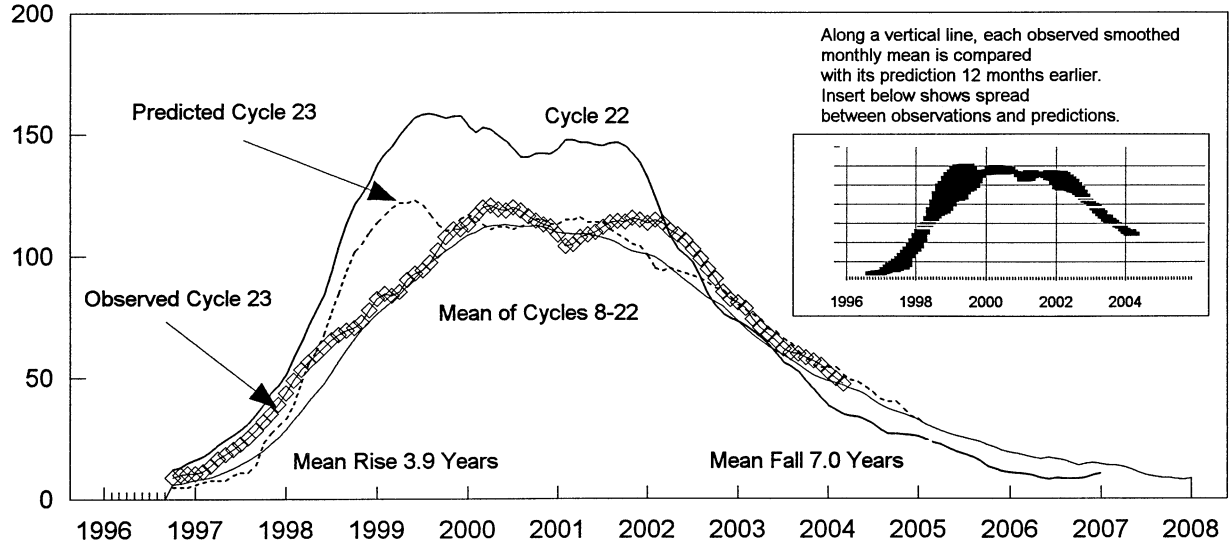
NOTE: # - 1700 or 1800UT reading, burst in progress at 2000UT. *-2300UT reading, burst in progress.

DAILY SOLAR INDICES
September 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	245	11	8	12	89.9	528	216	143	91.5	87	57	38	33	11
2	246	12	8	12	93.9	527	219	154	95.6	102	62	36	28	10
3	247	13	18	21	96.7	523	208	144	98.3	104	65	38	31	15
4	248	14	20	26	99.3	517	216	145	100.9	102	64	37	28	14
5	249	15	37	39	103.2	525	225	159	104.8	105	69	40	30	13
6	250	16	32	40	106.5	519	223	160	108.2	111	72	41	30	13
7	251	17	38	51	118.9	533	230	167	120.7	128	79	44	34	25
8	252	18	47	52	124.5	371	194	158	126.3	136	81	41	34	22
9	253	19	51	60	131.0	—	—	—	132.8	—	—	—	—	—
10	254	20	44	55	130.0	532	235	185	131.8	131	79	40	30	15
11	255	21	42	47	116.4	573	231	170	117.9	123	76	38	28	13
12	256	22	43	49	114.6	522	233	163	116.0	119	74	38	30	22
13	257	23	39	49	117.7	—	—	—	119.1	—	—	—	—	—
14	258	24	32	43	114.7	533	229	171	116.0	124	76	39	31	27
15	259	25	39	46	109.6	530	235	170	110.8	120	70	—	—	—
16	260	26	38	43	108.3	523	223	155	109.4	111	70	40	31	30
17	261	27	36	44	104.5	511	228	159	105.5	112	69	39	36	14
18	262	1	33	39	102.7	411	163	131	103.6	97	64	35	28	10
19	263	2	34	34	105.2	520	229	157	106.1	107	66	37	29	13
20	264	3	27	31	100.5	530	224	158	101.3	104	65	38	28	16
21	265	4	24	26	94.9	521	227	169	95.6	98	61	35	27	15
22	266	5	17	19	91.4	530	226	147	92.0	100	58	32	24	12
23	267	6	10	15	90.2	512	221	145	90.8	96	56	35	27	11
24	268	7	10	11	89.4	522	224	144	89.9	91	57	33	28	11
25	269	8	10	15	89.5	529	223	143	89.9	87	56	32	25	—
26	270	9	15	17	89.5	522	228	146	89.9	91	55	34	25	8
27	271	10	15	16	89.8	516	224	152	90.2	95	56	33	26	9
28	272	11	8	12	89.9	489	207	140	90.2	91	56	31	26	7
29	273	12	25	28	89.8	493	199	130	90.0	92	55	32	28	8
30	274	13	31	32	88.2	521	219	145	88.4	93	58	33	32	9
MEAN			27.7	32.8	103.0	514	220	154	104.1	106	65	37	29	14

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
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	81	79	74	70	68	65	62	60	60	58	57	57	66
2004	53	49	47	46	45	44	42	40	38	37	36	34	43
				(2)	(4)	(6)	(8)	(11)	(12)	(13)	(15)	(16)	(7)
2005	33	31	30	29	28	26	25	24	24	23	22	21	27
	(17)	(18)	(18)	(19)	(19)	(18)	(18)	(18)	(18)	(18)	(17)	(16)	(18)
2006	20	19	18	17	17	16	16	15	14	13	13	12	16
	(16)	(16)	(16)	(17)	(17)	(17)	(17)	(16)	(15)	(15)	(14)	(14)	(16)
2007	11	11	11	11	11	12	12	13	14	15	15	16	13
	(13)	(12)	(11)	(10)	(10)	(11)	(12)	(13)	(15)	(16)	(18)	(20)	(13)

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.**

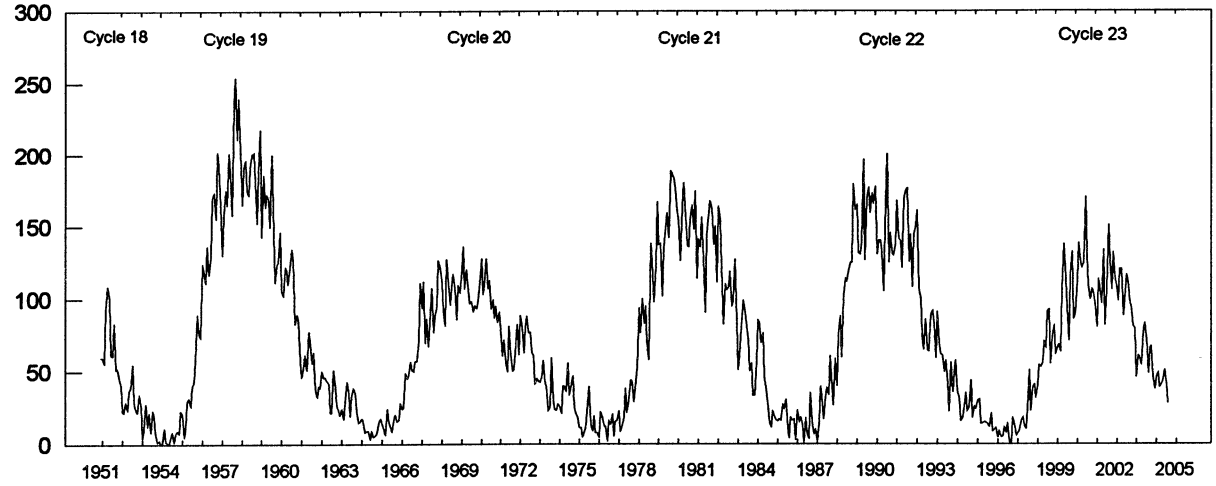
+ April 2000 marks Cycle 23 maximum.

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 March 2005 prediction. There exists a 90% chance that in March, the actual smoothed number will fall somewhere between 12 and 48.

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 - Sep 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	51.0	40.9	27.7				41.8	

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

SEPTEMBER 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	01	1803	1806	1809						6		B 3.4						1.0E-04
GOES	02	0232	0256	0343						71		B 6.0						2.2E-03
GOES		1356	1401	1405						9		B 5.7						2.3E-04
GOES		1825	1843	1901						36		B 6.4						1.1E-03
GOES	06	0229	0249	0307			10667			38		B 6.9						1.3E-03
GOES		1530	1539	1549			10667			19		B 8.2						7.1E-04
GOES	07	0706	0738	0803			10669			57		C 1.1						3.1E-03
GOES		1340	1529	1643						183		C 2.8						1.7E-02
HOLL		1636	1636	1646	S10	W38	10671	09	4.8	10	SF		3	E		17		
GOES	08	0059	0110	0126						27		C 1.5						2.1E-03
GOES		0341	0349	0357	S06	E02	10669			16	SF	B 9.0						7.9E-04
LEAR		0345	0345	0349	S06	E02	10669	09	8.3	4	SF		3	E		12		UF
GOES		1453	1458	1505			10669			12		B 9.7						6.2E-04
GOES		1957	2002	2010	S05	W05	10669			13	SF	C 1.0						6.7E-04
HOLL		2001	2001	2005	S05	W05	10669	09	8.4	4	SF		3	E		12		
GOES		2205	2222	2247						42		C 1.2						2.3E-03
GOES	09	0450	0601	0640			10672			110		C 3.2						1.3E-02
SVTO		0627	0630	0636	S12	W57	10671	09	5.0	9	SF		3	E		67		F
LEAR		0629	0629	0633	S10	W60	10671	09	4.8	4	SF		3	E		19		
SVTO		0735	0736	0739	S11	W53	10671	09	5.3	4	SF		3	E		19		
SVTO		0801	0802	0805	S11	W53	10671	09	5.3	4	SF		3	E		17		
SVTO		1049	1050	1053	S13	W61	10671	09	4.8	4	SF		3	E		17		
GOES		1755	1800	1813			10671			18		B 9.3						9.1E-04
GOES		2159	2216	2226			10672			27		C 1.0						1.5E-03
GOES	10	0203	0207	0214			10672			11		C 1.0						5.8E-04
GOES		0630	0726	0746						76		C 1.7						6.7E-03
GOES		1249	1256	1302			10672			13		C 2.1						1.2E-03
GOES		1457	1505	1514			10672			17		C 1.0						8.9E-04
GOES		1602	1613	1626			10672			24		C 6.9						6.2E-03
GOES		1911	1945	2003						52		C 1.7						4.0E-03
GOES		2359	2406	2414						15		C 1.6						1.2E-03
GOES	11	0608	0613	0627			10672			19		B 9.5						9.4E-04
GOES		0629	0634	0639			10672			10		C 1.1						6.3E-04
GOES		1607	1612	1616			10672			9		B 4.5						2.3E-04
GOES	12	0004	0056	0133	N04	E42	10672			89	2N	M 4.8						1.5E-01
HOLL		0008	0035	0109D	N04	E42	10672	09	15.1	61D	2N		3	E		324		FH
LEAR		0011	0037	0201	S01	E47	10672	09	15.5	110	2F		3	E		316		ZU
GOES		0136	0139	0141	S14	W61	10667			5	SN	M 3.2						8.2E-03
LEAR		0137	0138	0145	S14	W61	10667	09	7.4	8	SN		3	E		76		
GOES		1149	1157	1201						12		B 7.1						4.1E-04
GOES		1528	1536	1540						12		B 7.9						4.4E-04
GOES		1828	1834	1842	S08	W64	10669			14	SF	C 2.0						1.2E-03
HOLL		1832	1832	1835	S08	W64	10669	09	8.0	3	SF		3	E		20		
GOES		2007	2010	2012						5		B 4.9						1.2E-04
GOES		2014	2017	2020						6		B 6.1						1.8E-04
GOES		2057	2102	2106			10672			9		B 8.8						3.8E-04
GOES		2222	2227	2230			10667			8		C 1.1						3.8E-04
GOES		2238	2243	2248			10669			10		B 6.6						3.4E-04
GOES		2311	2314	2317			10672			6		B 6.0						1.9E-04
GOES	13	0001	0008	0013			10669			12		C 1.0						5.3E-04
GOES		0205	0208	0214						9		B 3.9						2.0E-04
GOES		0339	0342	0344			10672			5		B 5.0						1.3E-04
GOES		0949	0952	0955						6		B 6.5						2.1E-04
GOES		1208	1211	1213			10667			5		B 6.5						1.7E-04
GOES		1334	1339	1342			10672			8		C 1.4						4.3E-04
GOES		2007	2011	2014			10672			7		C 1.4						5.3E-04
GOES		2214	2217	2219						5		B 9.9						2.6E-04
GOES		2336	2339	2344						8		B 6.2						2.6E-04
GOES	14	0549	0552	0554			10672			5		C 2.2						5.7E-04

Hα SOLAR FLARES

SEPTEMBER 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	14	0747	0930	1000	N04	E17	10672			133	1F	M 1.5						4.5E-02
SVTO		0854	0930	1131	N04	E17	10672	09	15.6	157	1F		3	E		164		FH
GOES		1354	1404	1418						24		C 2.3						2.6E-03
GOES		1647	1655	1725						38		C 1.8						3.0E-03
GOES		2139	2142	2201						22		B 5.7						6.8E-04
GOES	15	0742	0749	0802	N08	E08	10672			20	SF	C 2.7						2.3E-03
SVTO		0745	0746	0756	N08	E08	10672	09	15.9	11	SF		3	E		74		UF
LEAR		0746	0747	0754	N07	E08	10672	09	15.9	8	SF		3	E		19		F
GOES		1002	1009	1015			10673			13		B 5.1						3.4E-04
GOES		1521	1525	1530			10672			9		B 6.4						2.9E-04
GOES		1613	1621	1627			10672			14		B 6.1						4.4E-04
GOES		1651	1713	1723			10672			32		C 1.1						1.4E-03
GOES		1742	1751	1753			10672			11		C 1.1						5.4E-04
GOES		1830	1841	1853	N08	W01	10672			23	SF	B 9.7						6.4E-04
HOLL		1836	1838	1842	N08	W01	10672	09	15.7	6	SF		3	E		20		F
GOES		2010	2055	2150						100		C 1.3						5.9E-03
GOES	16	0026	0031	0036	N07	W05	10672			10	SF	B 8.7						3.9E-04
HOLL		0030	0030	0033	N08	W05	10672	09	15.6	3	SF		3	E		16		
LEAR		0030	0030	0033	N07	W05	10672	09	15.6	3	SF		3	E		16		F
GOES		0340	0346	0351	N05	W11	10672			11	SF	B 8.4						4.5E-04
LEAR		0344	0345	0350	N05	W11	10672	09	15.3	6	SF		3	E		18		F
GOES	17	0218	0223	0233			10673			15		B 3.1						2.5E-04
GOES	18	0218	0223	0244			10672			26		B 4.8						6.6E-04
GOES		0930	0938	0941			10673			11		B 4.8						2.5E-04
GOES		1106	1110	1114			10673			8		B 5.1						2.0E-04
GOES		1218	1223	1226			10673			8		B 6.2						2.3E-04
GOES		1352	1401	1408			10673			16		B 7.5						5.6E-04
GOES		1514	1520	1527			10672			13		B 7.5						4.4E-04
GOES		1603	1609	1615			10673			12		C 1.0						5.5E-04
GOES		2316	2323	2328			10672			12		B 7.1						3.6E-04
GOES	19	0006	0012	0019			10673			13		B 5.0						3.5E-04
GOES		0753	0759	0806			10672			13		B 6.6						3.9E-04
GOES		1016	1148	1213			10672			117		C 3.8						8.8E-03
GOES		1646	1712	1739			10672			53		M 1.9						3.9E-02
GOES		2052	2115	2132						40		C 1.9						3.7E-03
GOES	20	0303	0310	0315			10672			12		C 1.7						7.0E-04
GOES		0443	0447	0451						8		B 2.6						1.1E-04
GOES		0709	0721	0725			10672			16		C 2.1						1.0E-03
GOES		1445	1449	1452						7		B 3.4						1.1E-04
GOES		2246	2250	2253			10672			7		B 5.7						1.8E-04
GOES	21	0049	0055	0057			10672			8		B 5.2						1.8E-04
GOES		0808	0812	0815			10672			7		B 2.3						8.6E-05
GOES		0830	0836	0839	N06	W75	10672			9	SF	C 7.5						1.9E-03
LEAR		0835	0838	0841	N06	W75	10672	09	15.7	6	SF		3	E		25		
SVTO		0836E	0837U	0844D	N05	W73	10672	09	15.9	8D	1F		3	E		104		H
GOES	22	0655	0705	0712			10672			17		B 7.8						5.8E-04
GOES		0818	0829	0836			10672			18		B 7.9						6.0E-04
GOES		0854	0920	0936	S13	W08	10673			42	SF	C 3.2						5.7E-03
SVTO		0903	0907U	0925D	S13	W08	10673	09	21.8	22D	SF		2	E		42		F
GOES		1601	1606	1617			10673			16		B 4.4						3.8E-04
GOES		1707	1714	1719	N03	W86	10672			12	SF	B 6.2						2.7E-04
HOLL		1710	1715	1717	N03	W86	10672	09	16.3	7	SF		3	E		42		
HOLL		1718	1719	1722	N03	W90	10672	09	16.0	4	SF		3	E		33		
GOES		1823	1827	1831			10672			8		B 3.8						1.5E-04
GOES		1844	1901	1910			10672			26		B 8.2						9.7E-04
GOES	23	0528	0532	0535						7		B 2.6						9.1E-05
GOES		0624	0628	0633			10673			9		B 1.6						8.0E-05
GOES		0742	0800	0807						25		C 1.4						1.3E-03
GOES		0843	0905	0926						43		B 5.3						1.1E-03

Hα SOLAR FLARES

SEPTEMBER 2004

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
GOES	23	1212	1235	1245			10673			33	B	4.7						6.0E-04
GOES		1559	1603	1607			10673			8	B	2.4						8.7E-05
GOES	24	0235	0245	0306			10673			31	B	5.4						8.0E-04
GOES		0411	0427	0445						34	B	3.5						5.8E-04
GOES		0804	0807	0814			10673			10	B	1.3						7.6E-05
GOES		1339	1344	1351			10673			12	B	1.3						8.5E-05
GOES		1426	1432	1446			10673			20	B	1.3						1.4E-04
GOES		1557	1602	1611			10673			14	B	1.6						1.2E-04
GOES	25	0143	0146	0150			10673			7	B	1.1						4.2E-05
GOES		0545	0548	0550			10673			5	A	9.1						2.6E-05
GOES		0934	0938	0940			10673			6	A	8.7						3.1E-05
GOES	26	0058	0102	0105			10673			7	B	2.0						5.6E-05
GOES		1559	1604	1612						13	B	1.7						1.1E-04
GOES		1718	1722	1725			10673			7	B	1.4						4.5E-05
GOES		1925	1930	1933			10673			8	B	1.6						6.5E-05
GOES		2020	2023	2029						9	B	1.0						5.2E-05
GOES		2332	2338	2340			10673			8	B	2.1						7.2E-05
GOES		2349	2352	2354						5	B	1.1						2.8E-05
GOES	27	1150	1154	1156						6	B	1.0						3.3E-05
GOES		1700	1704	1712						12	B	1.1						7.3E-05
GOES	28	1301	1312	1320			10673			19	B	1.9						2.0E-04
GOES	29	0634	0640	0648			10675			14	B	1.5						1.1E-04

"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

SEPTEMBER 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
12	8800	LEAR	48	C	0023.0	0119.0	128.0	1400.0			QL=4 ST=2 TYP=8
	2695	LEAR	48	C	0026.0	0121.0	131.0	2400.0			QL=4 ST=2 TYP=8
	2695	PALE	48	C	0026.0	0121.0	140.0	2800.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	0029.0	0121.0	147.0	1700.0			QL=4 ST=2 TYP=8
14	2695	SVTO	4	S/F	0904.0	0922.0	26.0	120.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0911.0	0922.0	18.0	100.0			QL=4 ST=2 TYP=3
19	2695	PALE	48	C	1649.0	1657.0	38.0	530.0			QL=4 ST=2 TYP=8
	2695	SGMR	48	C	1650.0	1657.0	39.0	520.0			QL=4 ST=2 TYP=8
	8800	SGMR	4	S/F	1654.0	1658.0	25.0	170.0			QL=4 ST=2 TYP=3
	8800	PALE	48	C	1655.0	1657.0	19.0	170.0			QL=4 ST=2 TYP=8
21	2695	SVTO	8	S	0833.0	0834.0	1.0	36.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	0834.0	0834.0	1.0	37.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0907.0	0907.0	U	53.0			QL=4 ST=2 TYP=3
22	2695	SGMR	8	S	1509.0	1509.0	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

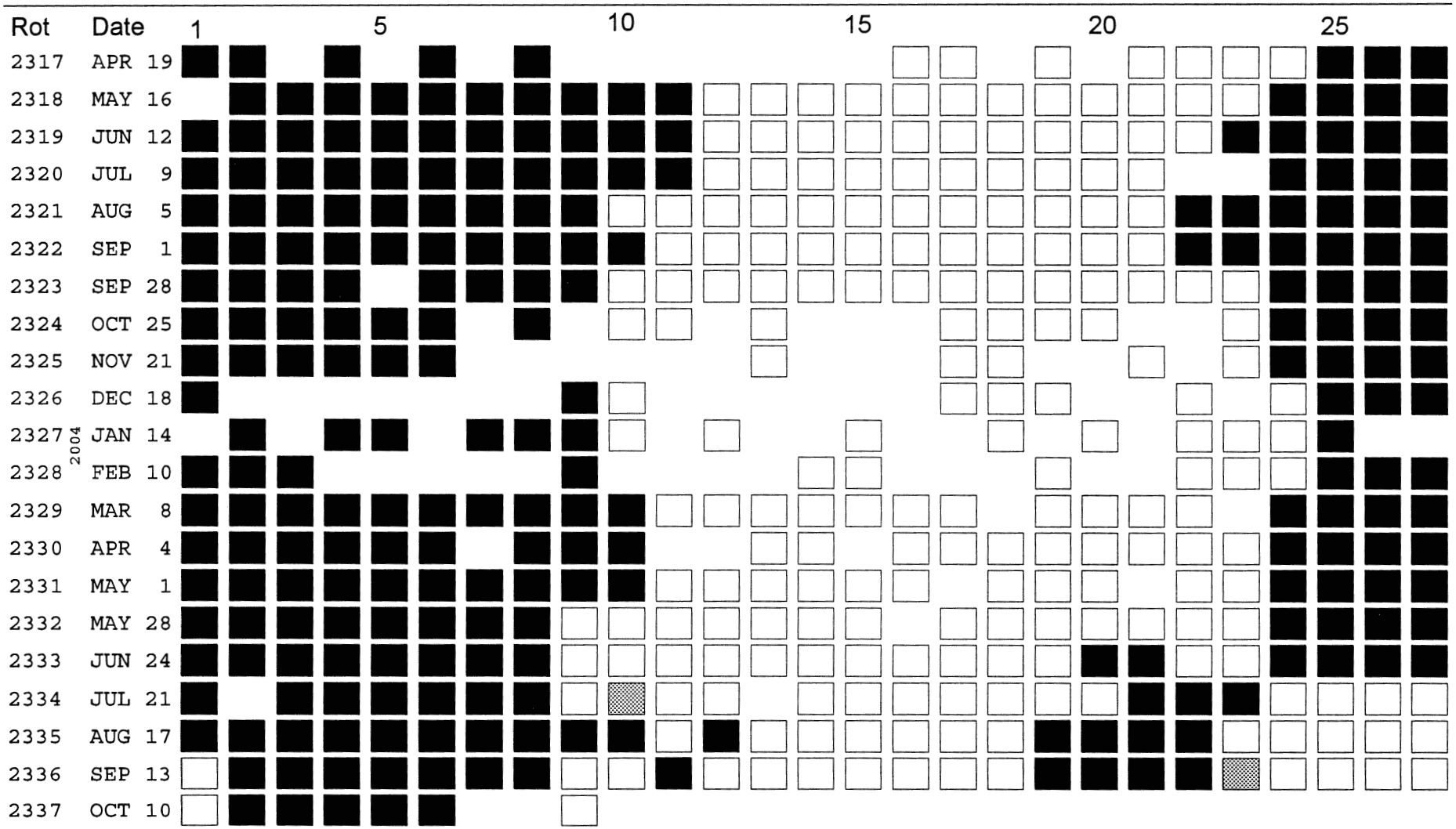
Explanation of Type Code:

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

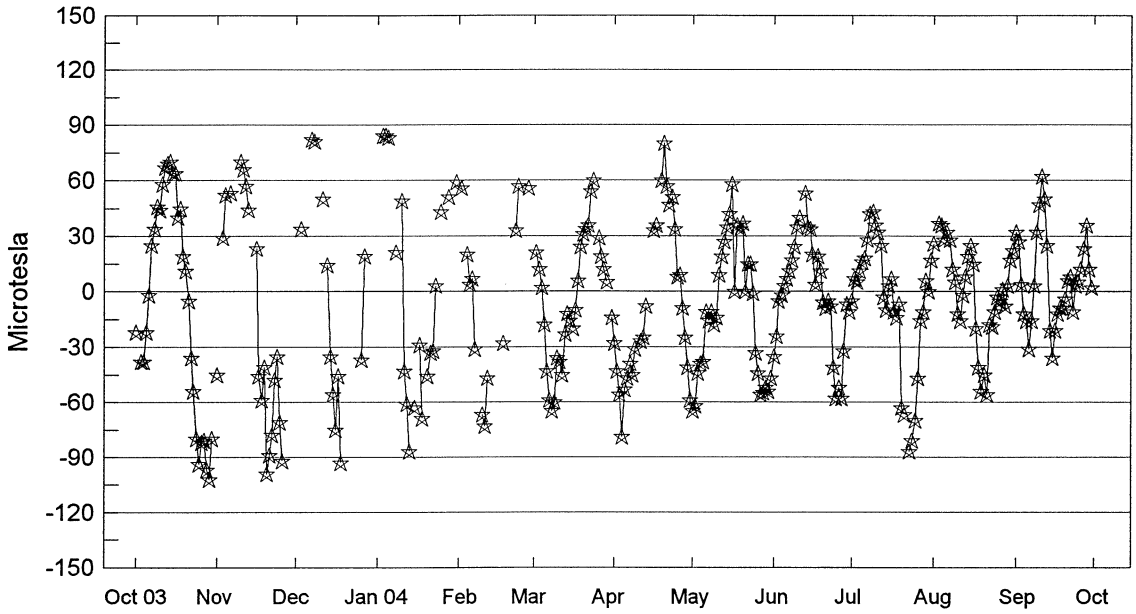


Mean Solar Magnetic Field Polarity: □ = field > 2 microT; ▒ = -2 microT ≤ field ≤ 2 microT

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

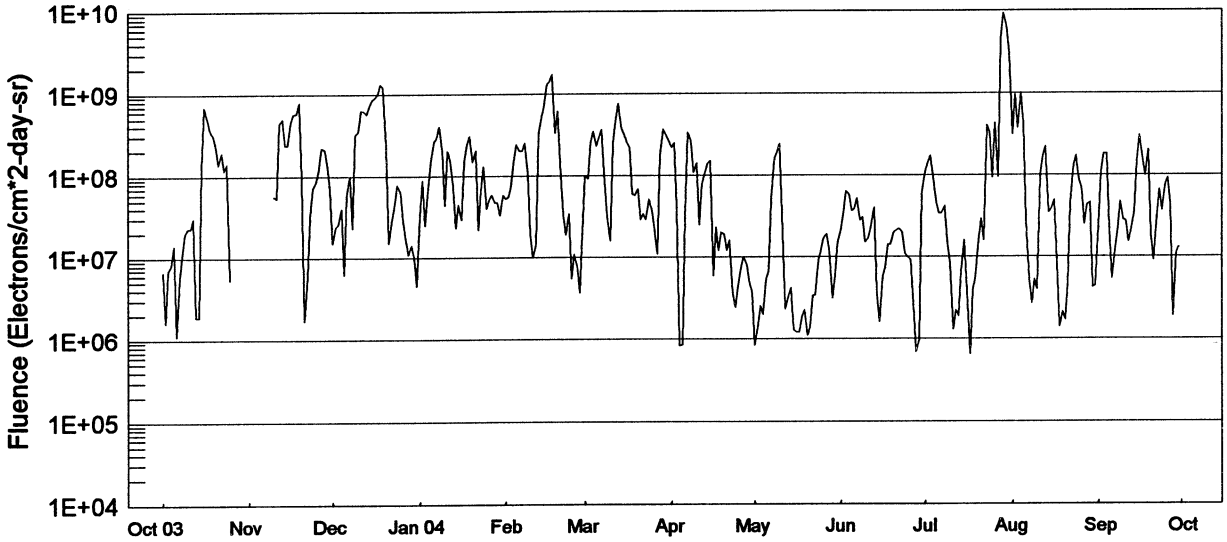
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five days earlier, to mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



Day	Oct 03	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	-22	-45	---	---	---	---	-28	-65	-35	-5	26	32
2	---	---	---	---	56	21	-43	-62	-24	7	---	27
3	-38	29	34	84	---	12	-56	-44	-5	5	37	4
4	-38	52	---	84	20	2	-79	-39	-2	11	36	-12
5	-22	---	---	83	4	-18	-53	-38	3	16	28	-16
6	-2	53	---	---	7	-43	-47	-11	7	18	32	-31
7	25	---	82	---	-31	-59	-39	-16	11	28	28	-16
8	34	---	81	21	---	-65	-45	-11	17	42	12	3
9	46	---	---	---	---	-60	-31	-18	24	43	5	32
10	44	70	---	49	-67	-36	---	-14	35	36	-12	47
11	58	66	50	-43	-73	-38	-27	9	40	32	-16	62
12	67	57	---	-61	-47	-45	-25	19	---	25	-2	50
13	69	44	14	-87	---	-23	-8	27	53	-3	8	25
14	70	---	-35	---	---	-12	---	35	35	-10	19	-21
15	64	---	-56	-63	---	-16	---	42	34	3	25	-36
16	64	23	-75	---	---	-20	33	58	20	7	15	-21
17	40	-46	-46	-29	---	-10	36	---	4	-11	-20	-12
18	45	-59	-93	-69	-28	6	---	36	19	-14	-41	-9
19	19	-41	---	---	---	24	60	34	11	-7	-54	-9
20	11	-99	---	-46	---	31	80	37	-6	-63	-45	-4
21	-5	-89	---	-33	---	34	57	---	-9	-67	-56	6
22	-36	-78	---	-32	---	36	47	15	-5	---	-18	8
23	-54	-48		3	33	54	51	15	-8	-87	-19	-11
24	-80	-35	---	---	57	60	34	-1	-41	-81	-11	3
25	-94	-71	---	43	---	---	8	-33	-58	-70	-3	5
26	-82	-92	-37	---	---	29	9	-44	-52	-47	-5	12
27	-81	---	19	---	---	19	-9	-56	-58	-16	1	23
28	-97	---	---	51	56	12	-25	-55	-32	-11	-8	36
29	-102	---	---	---	---	5	-41	-52	-7	6	3	12
30	-80		---	---		---	-59	-54	-11	0	17	2
31	---		---	59		-14		-47		17	22	

GOES Daily Electron Fluence
Oct 2003 - Sep 2004



Day	Oct 03	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	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	1.1E+08	3.1E+08	2.4E+07
2	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	1.4E+08	9.6E+08	1.1E+08
3	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	1.7E+08	3.7E+08	1.8E+08
4	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	1.0E+08	1.0E+09	1.8E+08
5	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	4.7E+07	4.1E+08	2.2E+07
6	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	3.4E+07	2.7E+07	5.4E+06
7	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	3.4E+07	5.1E+06	1.2E+07
8	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	4.2E+07	2.7E+06	2.1E+07
9	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	1.5E+07	5.3E+06	4.7E+07
10	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	8.4E+06	4.0E+06	2.8E+07
11	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	1.3E+06	1.0E+08	2.7E+07
12	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	2.2E+06	1.7E+08	1.5E+07
13	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	1.9E+06	2.2E+08	2.1E+07
14	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	6.6E+06	3.5E+07	3.5E+07
15	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	1.6E+07	3.8E+07	1.5E+08
16	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	3.8E+06	4.9E+07	3.0E+08
17	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	6.5E+05	8.4E+06	1.6E+08
18	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	4.0E+06	1.4E+06	9.8E+07
19	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	5.5E+06	2.1E+06	2.0E+08
20	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	1.6E+07	1.7E+06	1.8E+07
21	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	2.9E+07	4.6E+06	9.0E+06
22	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	1.6E+07	4.4E+07	3.0E+07
23	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	4.0E+08	1.3E+08	6.6E+07
24	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	3.3E+08	1.7E+08	3.7E+07
25	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	9.3E+07	9.2E+07	7.6E+07
26	-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	4.3E+08	6.8E+07	9.1E+07
27	-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	9.4E+07	2.5E+07	4.5E+07
28	-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	4.5E+09	4.3E+07	1.9E+06
29	-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	9.3E+09	4.6E+07	1.1E+07
30	-999	7.1E+07	1.0E+07	3.3E+07		3.1E+08	3.8E+06	5.9E+06	6.0E+07	6.4E+09	4.2E+06	1.3E+07
31	-999		4.5E+06	5.9E+07		2.7E+08		1.5E+07		3.0E+09	4.4E+06	

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

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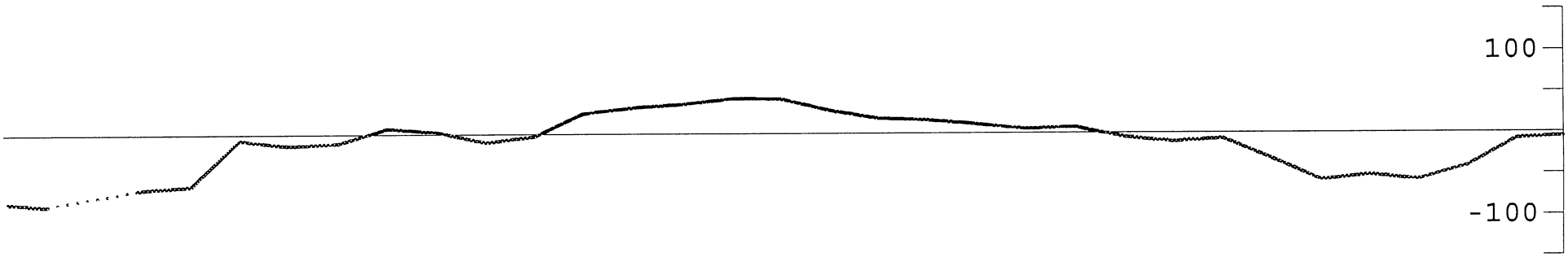
SOLAR MAGNETIC FIELD SYNOPTIC CHART

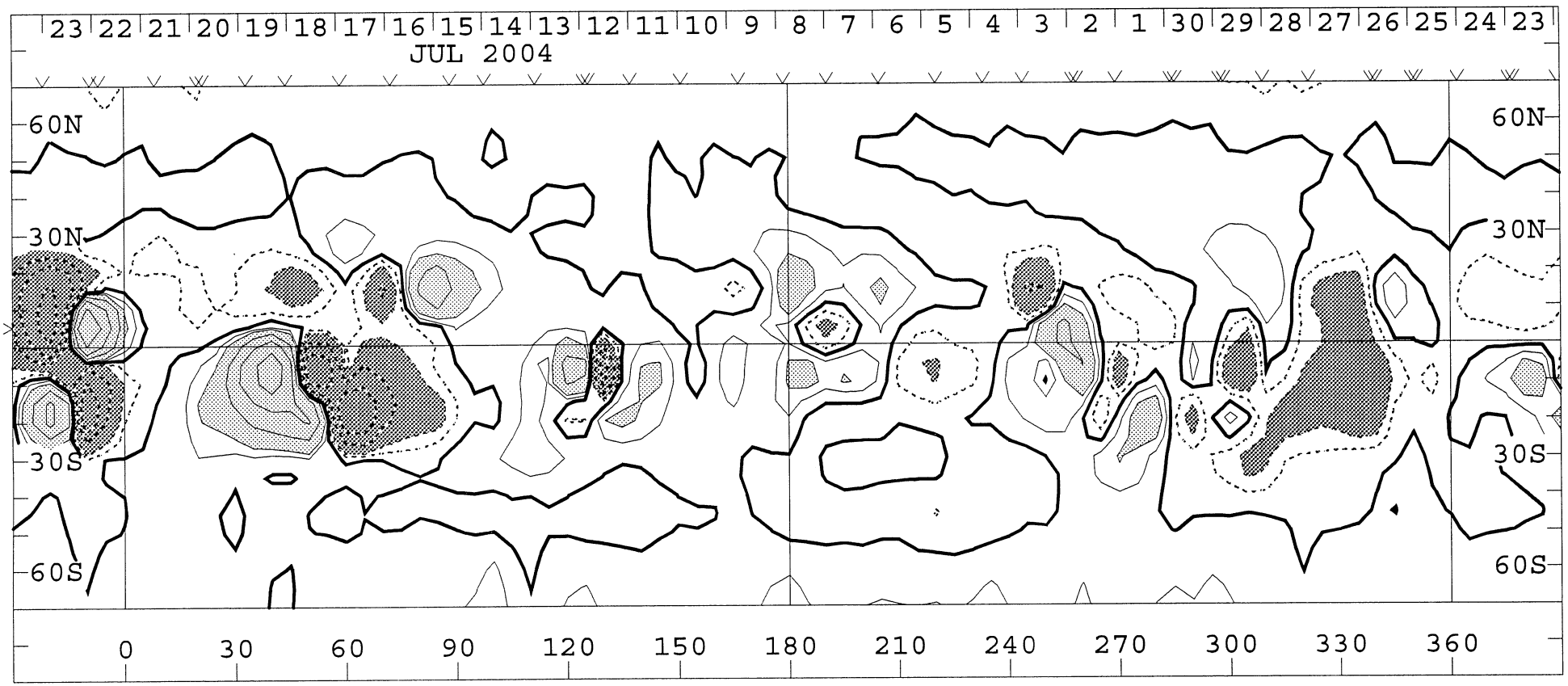
CARRINGTON ROTATION NUMBER 2018

(25 June to 22 July 2004)

WILCOX SOLAR OBSERVATORY



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



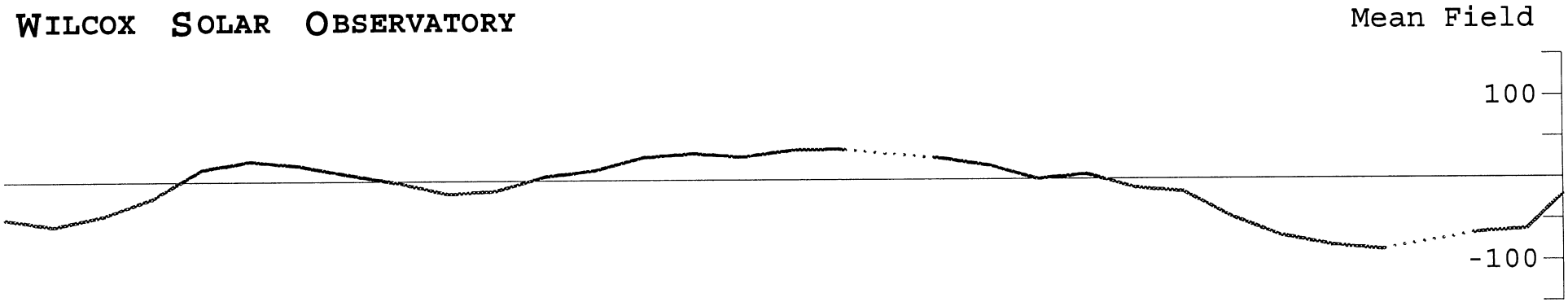
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

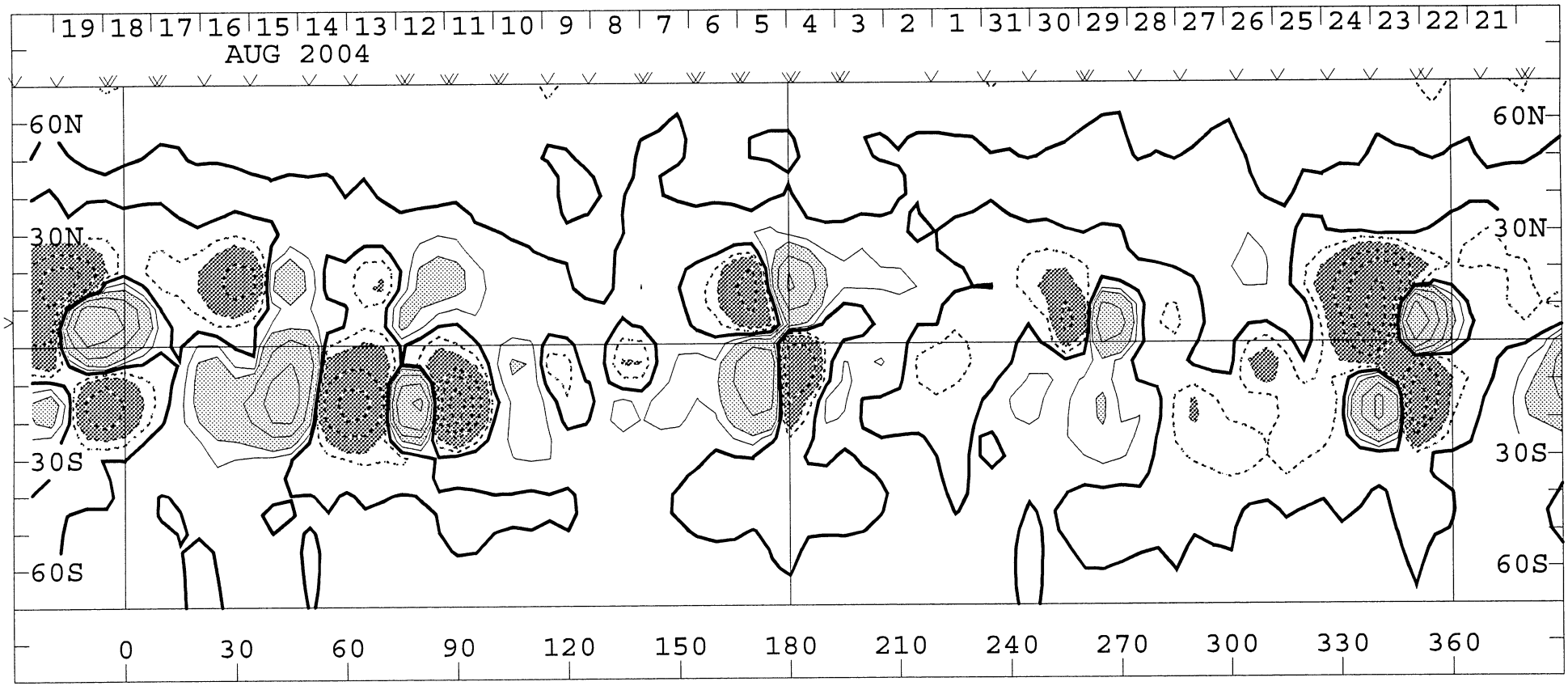
CARRINGTON ROTATION NUMBER 2019

(22 July to 18 August 2004)

WILCOX SOLAR OBSERVATORY



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



Heliographic Longitude

35
Aug 04

SOLAR MAGNETIC FIELD SYNOPTIC CHART

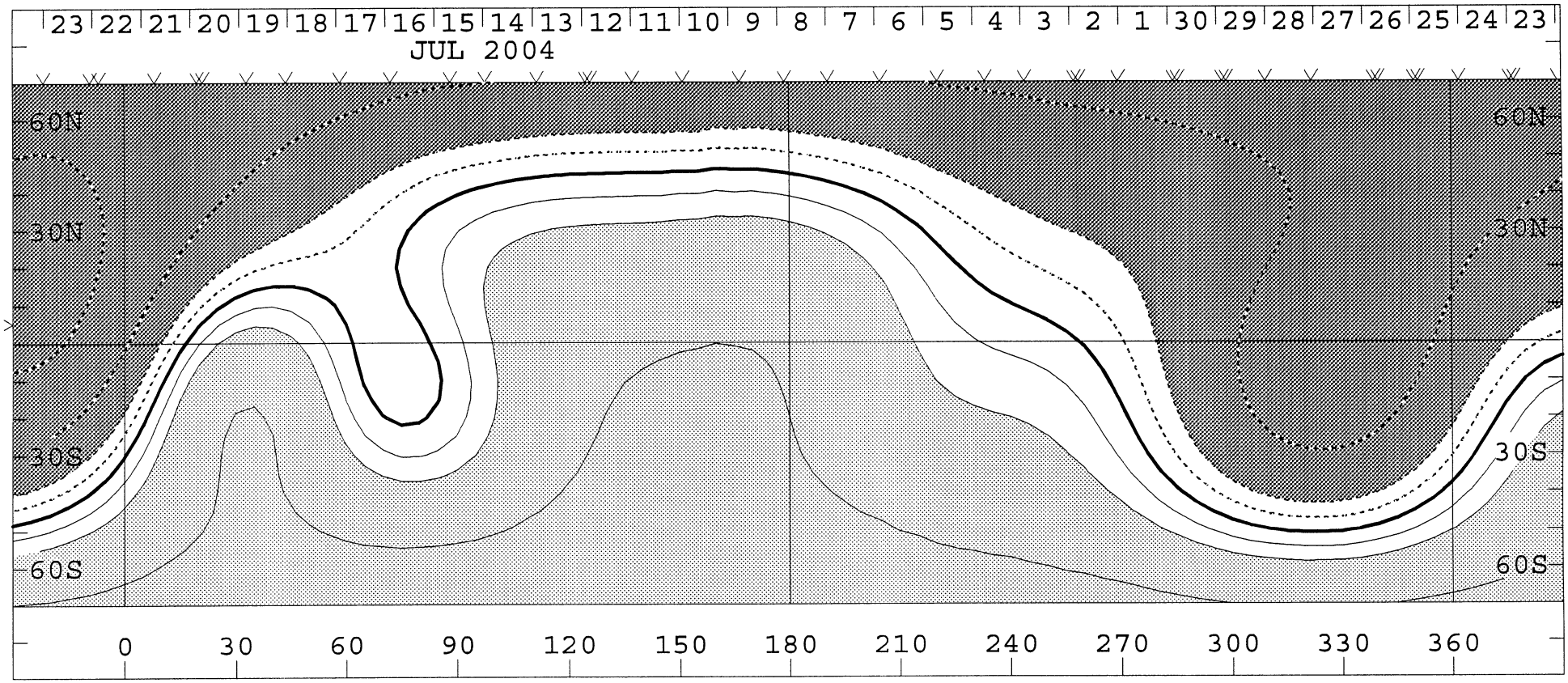
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2018

(25 June to 22 July 2004)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



SOLAR MAGNETIC FIELD SYNOPTIC CHART

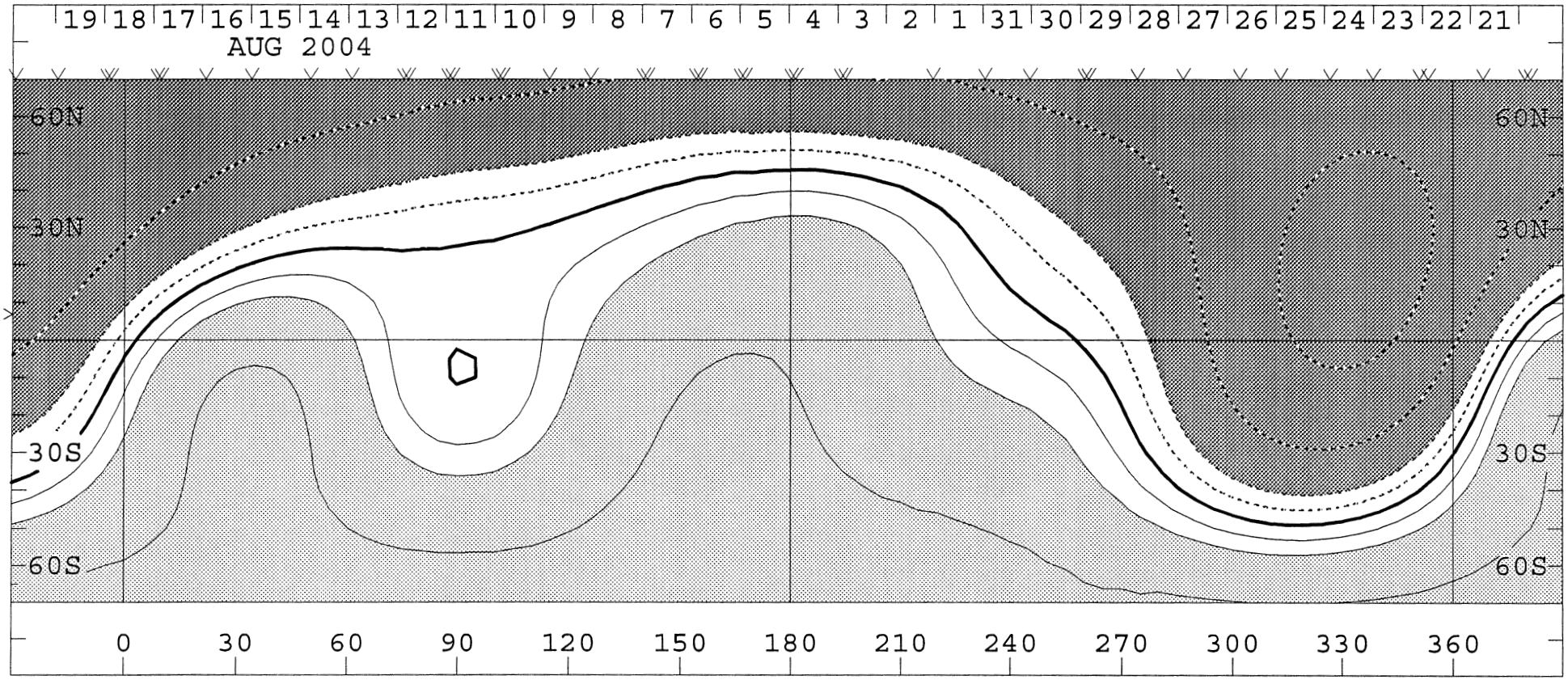
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2019

(22 July to 18 August 2004)

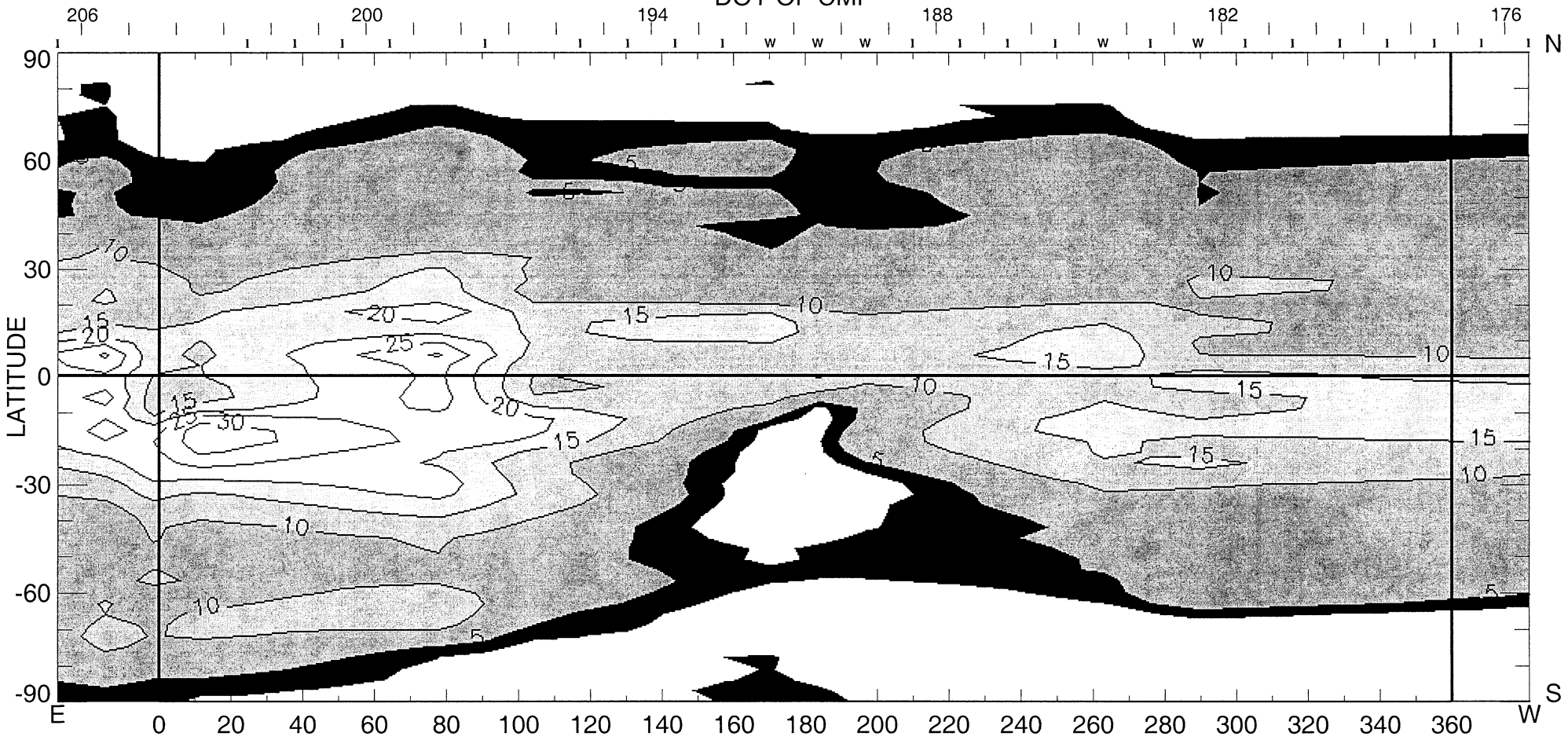
Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



37
Aug 04

CARRINGTON ROTATION NUMBER 2018 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

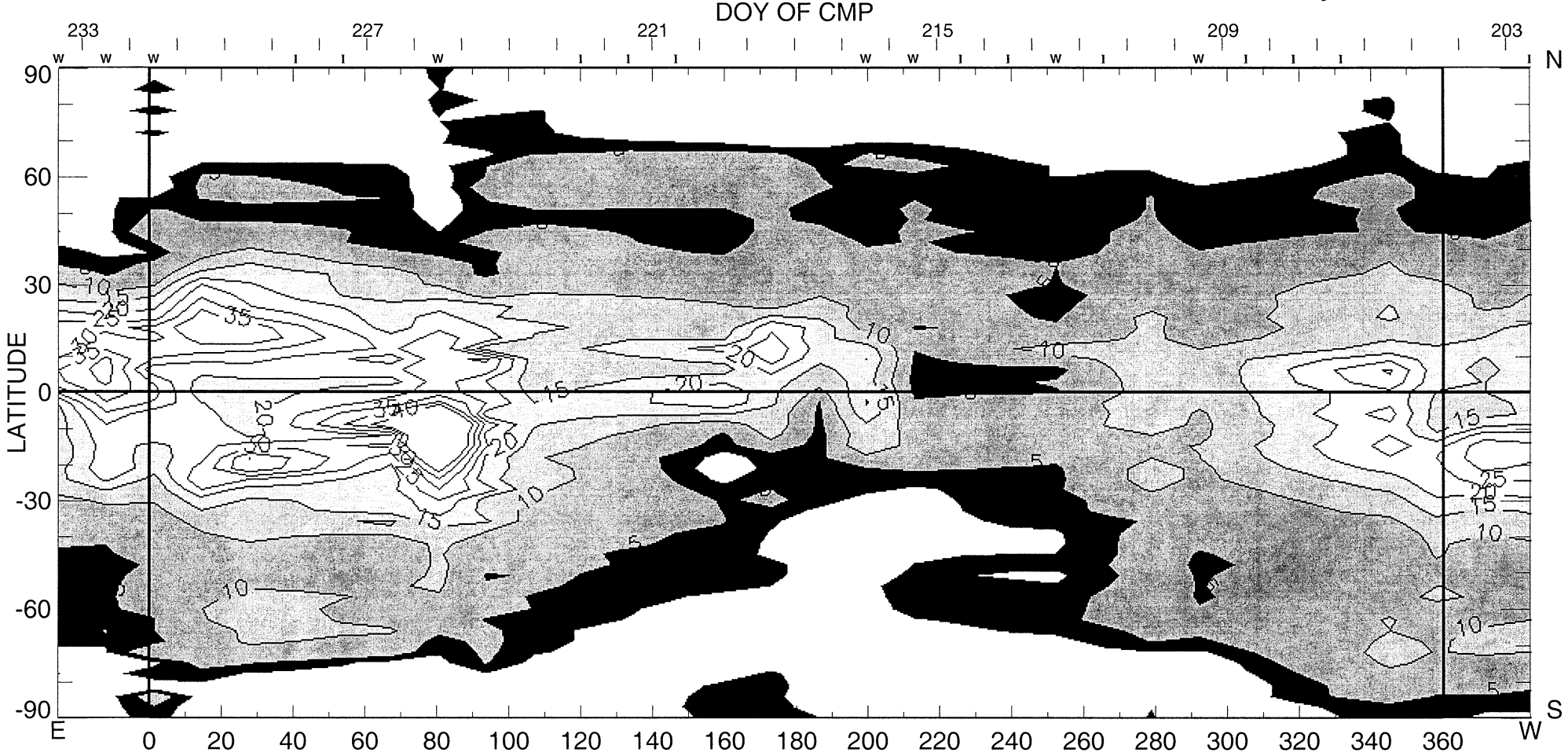


(09-Nov-04) 2004 E+W LIMB CONTOURS: 3, 5, 10, 15, 20, 25, 30, 35, 40, 100, 120 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

altrock Tue Nov 9 11:00:53 2004

CARRINGTON ROTATION NUMBER 2019 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

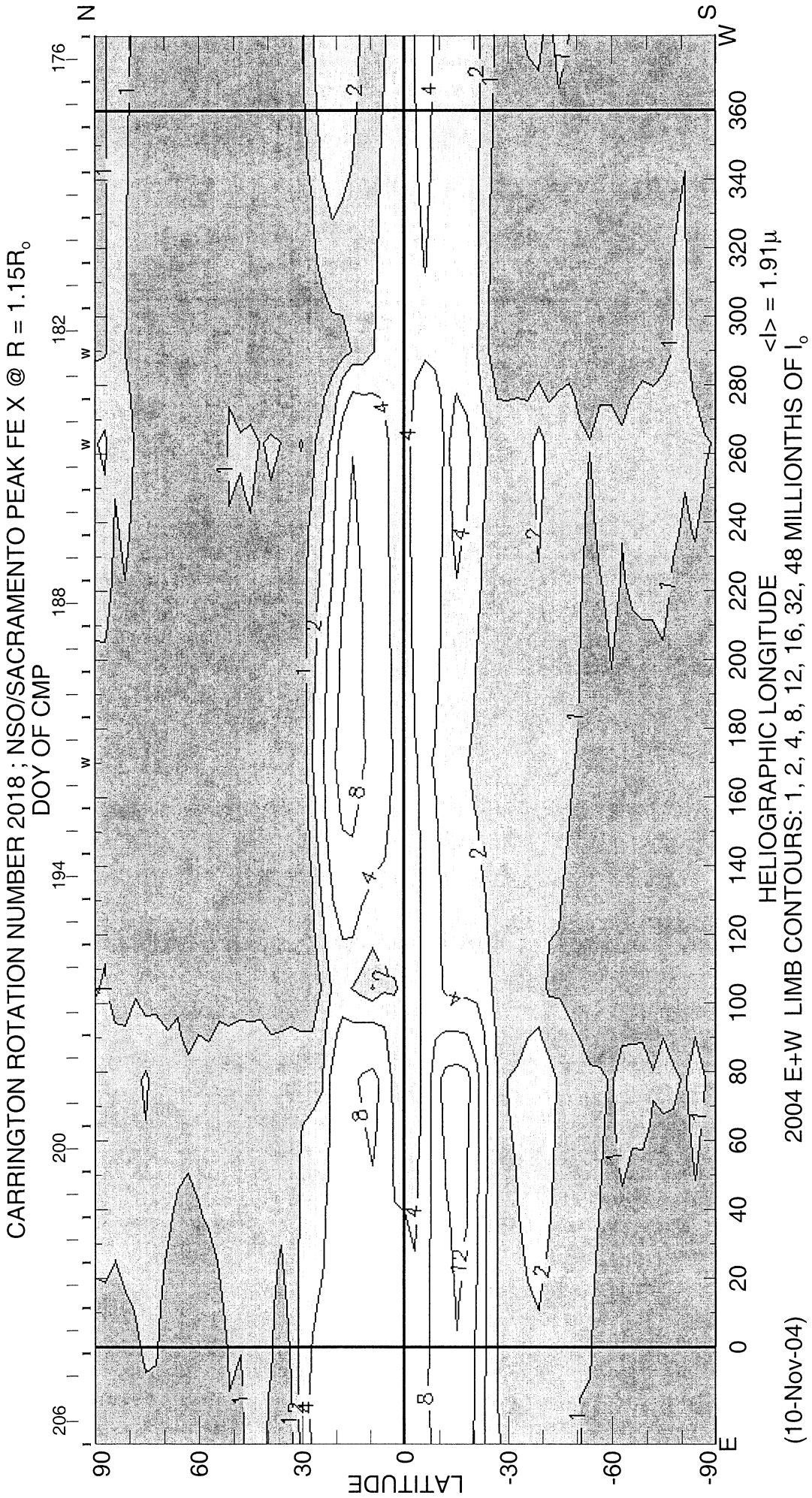


<I> = 8.29μ

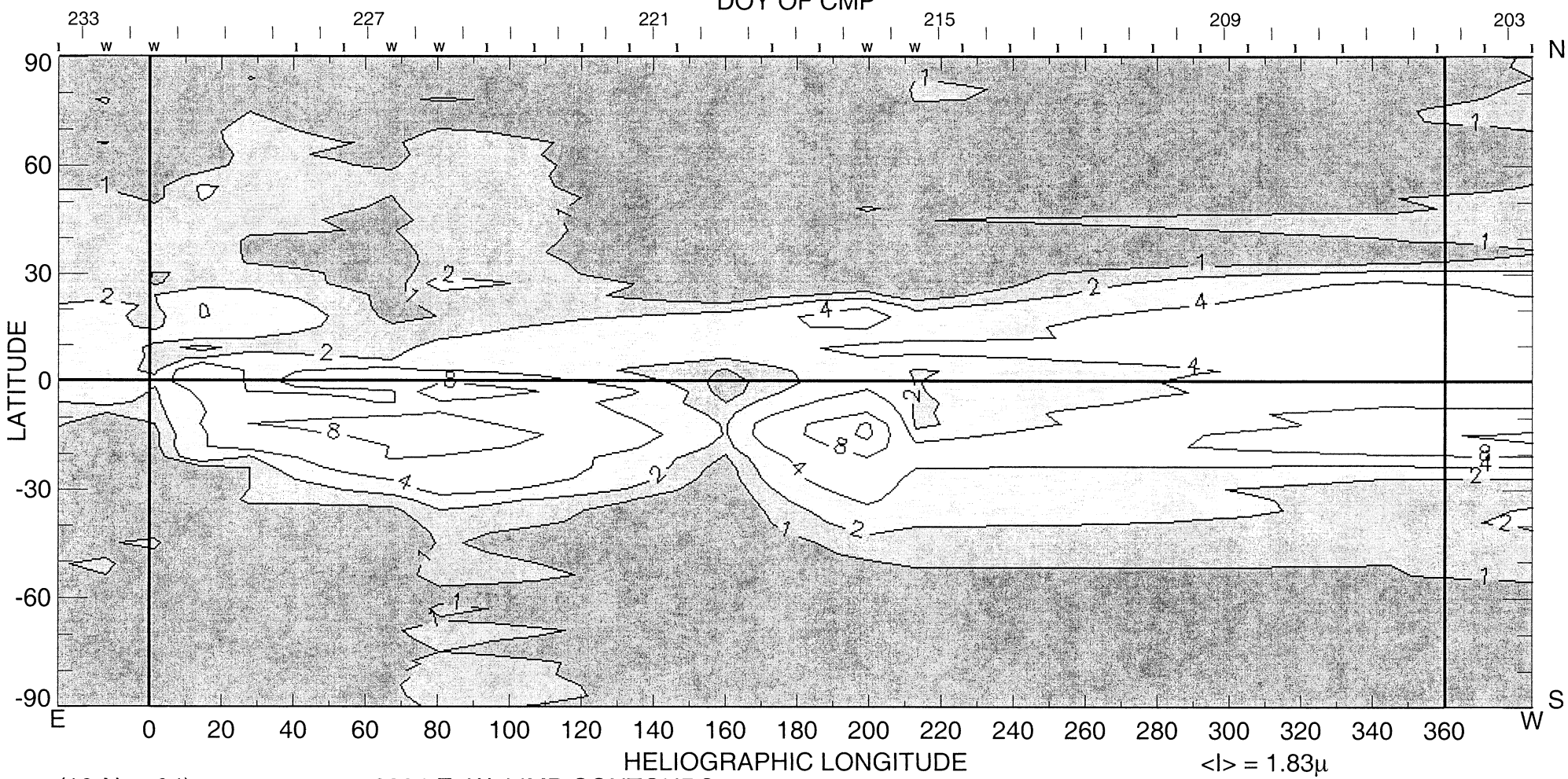
(09-Nov-04) 2004 E+W LIMB CONTOURS: 3, 5, 10, 15, 20, 25, 30, 35, 40, 100, 120 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

altrock Tue Nov 9 11:02:58 2004


CARRINGTON ROTATION NUMBER 2018 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R$_o$
DOY OF CMP
206 200 194 188 182 176
N
S
W
E
90 60 30 0 -30 -60 -90
LATITUDE
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360
HELIOGRAPHIC LONGITUDE
(10-Nov-04)
2004 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I$_o$
<I> = 1.91μ

CARRINGTON ROTATION NUMBER 2019 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o

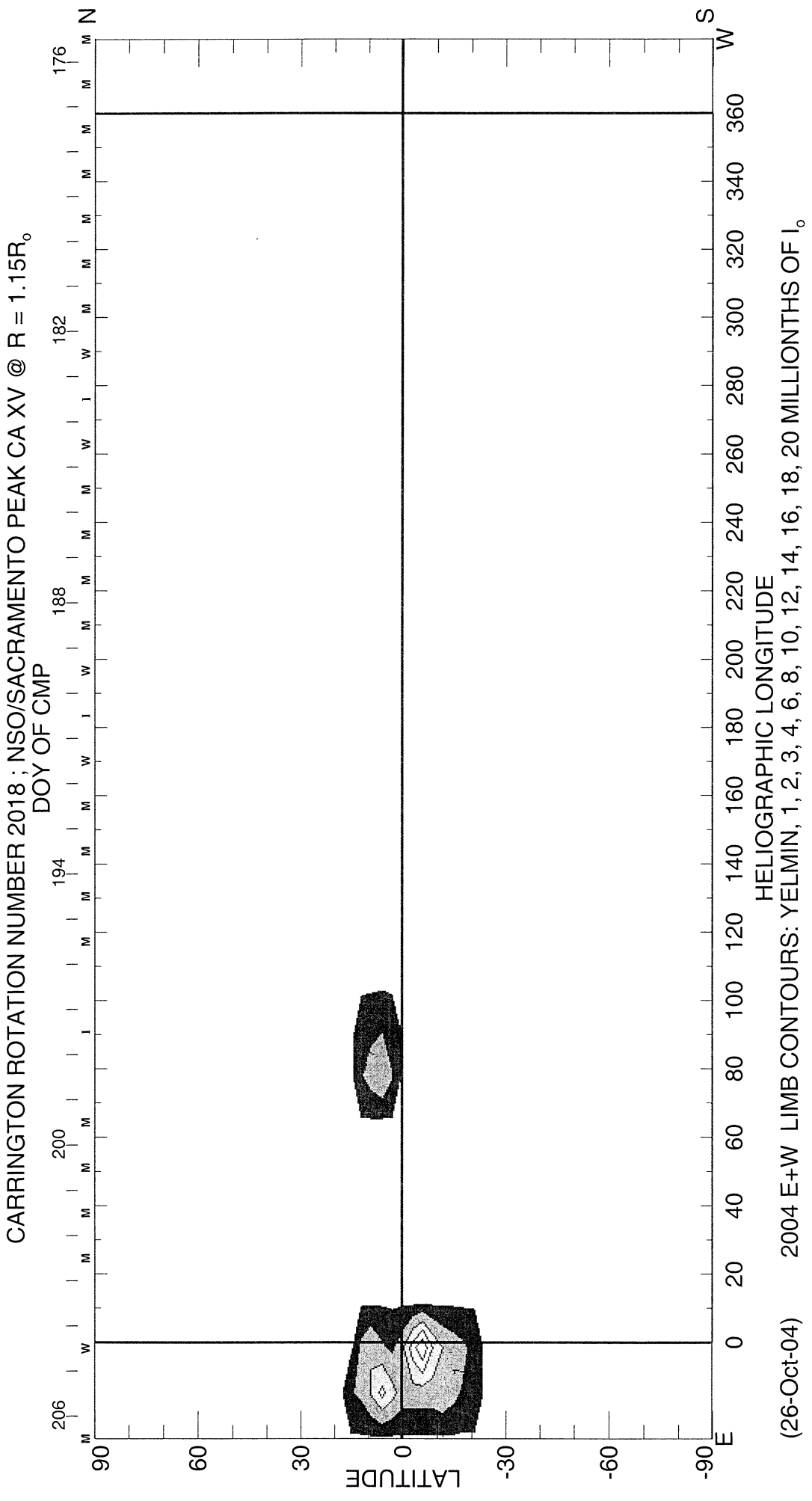


<I> = 1.83μ

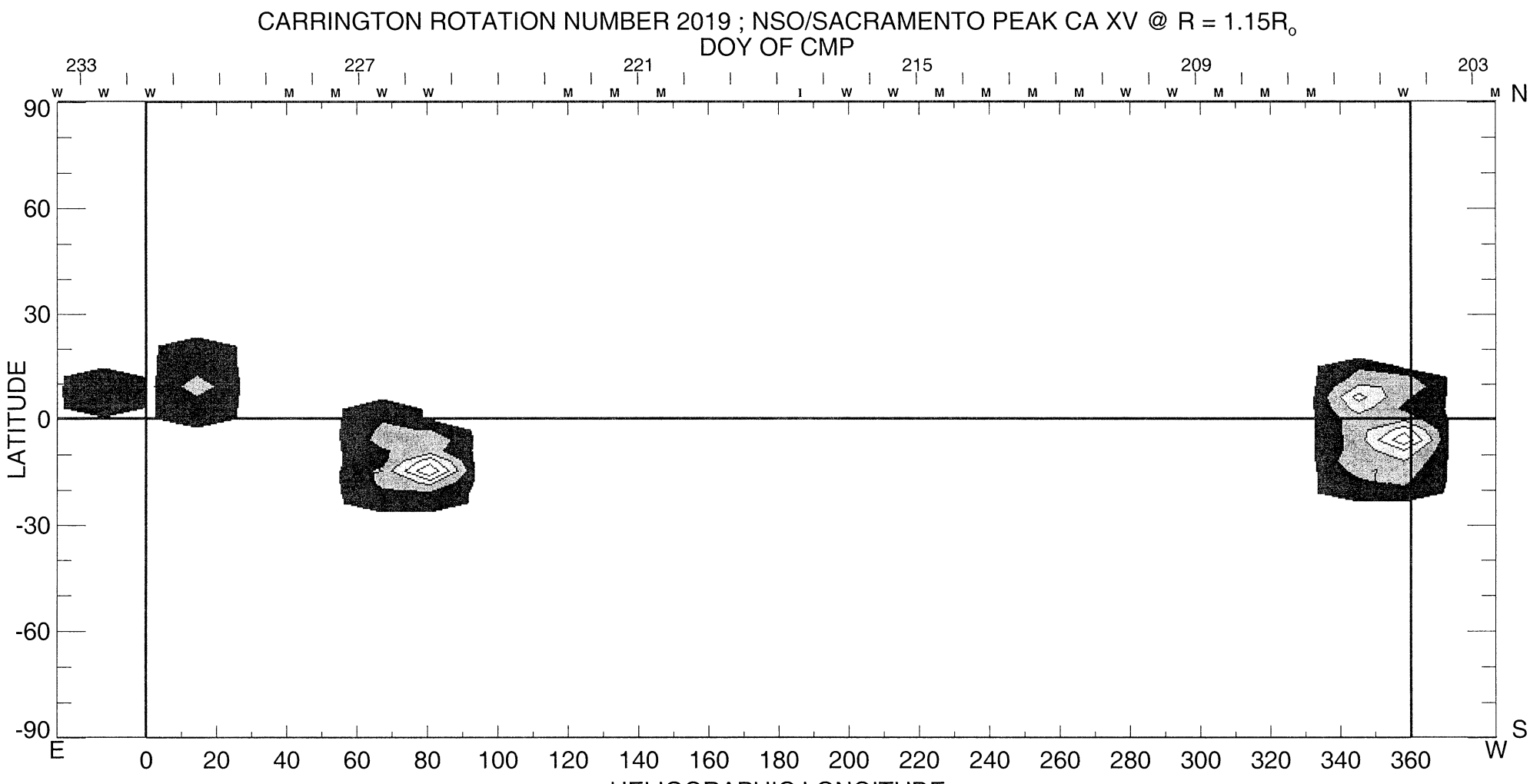
(10-Nov-04)

2004 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

altrock Wed Nov 10 11:27:43 2004



tex Tue Oct 26 14:47:10 2004



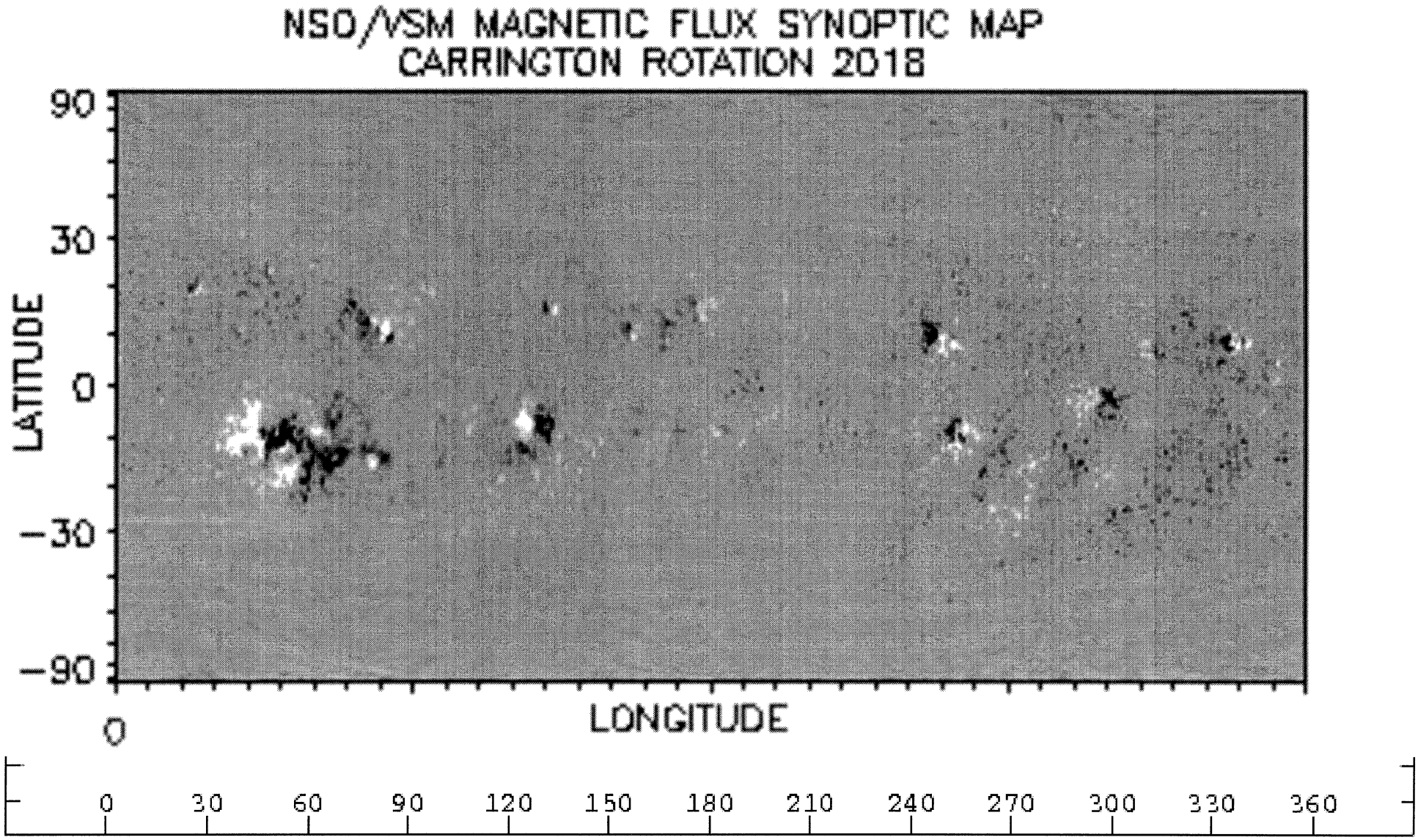
(26-Oct-04) 2004 E+W LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

tex Tue Oct 26 14:48:15 2004

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2018
(25 June to 22 July 2004)

National Solar Observatory/Kitt Peak



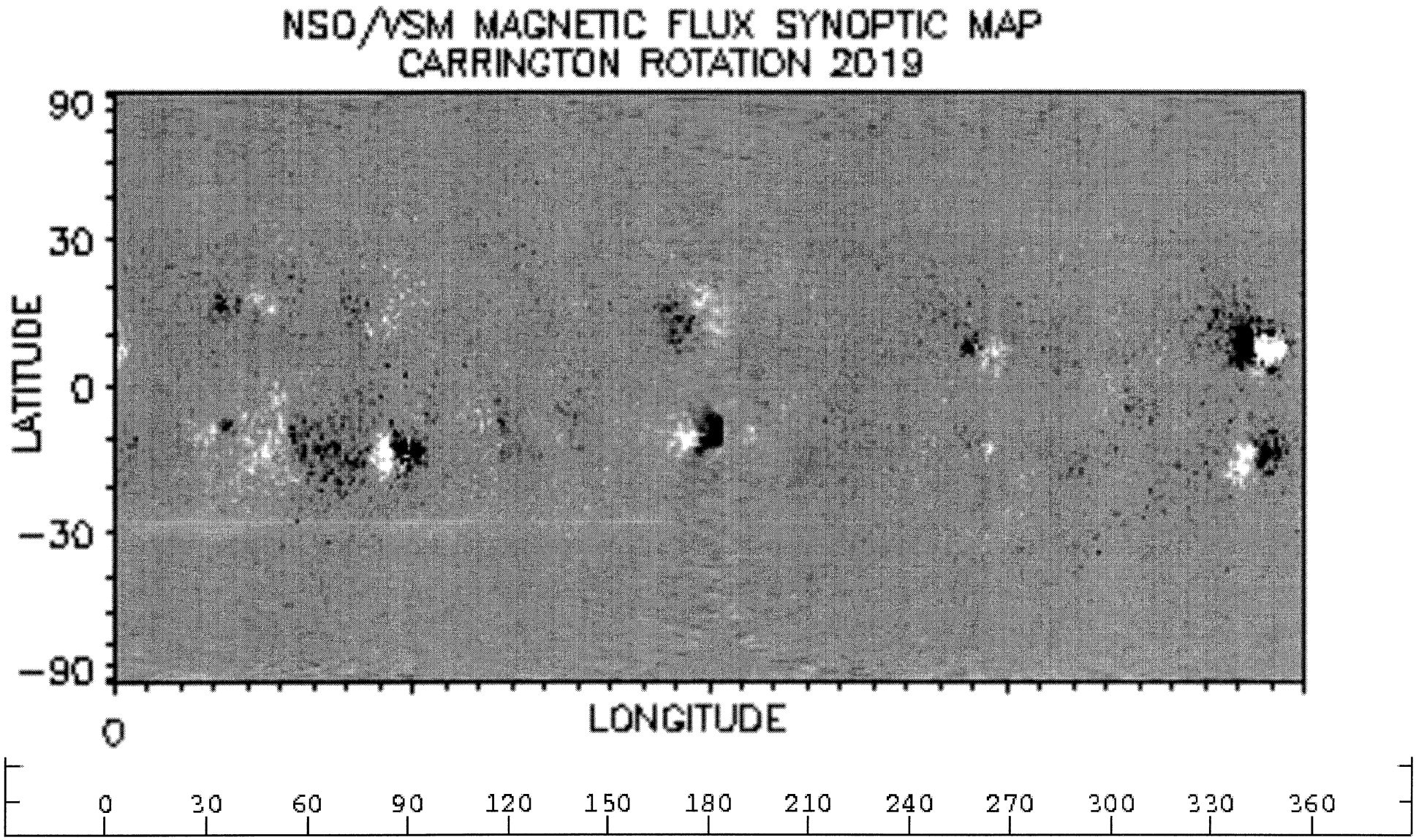
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 2019

(22 July to 18 August 2004)

National Solar Observatory/Kitt Peak



Heliographic Longitude

45
Aug 04

AUGUST 1, 2004 (P= 10.94, Bo = 5.81, Lo = 232.44)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -

N

E--

NO DATA

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

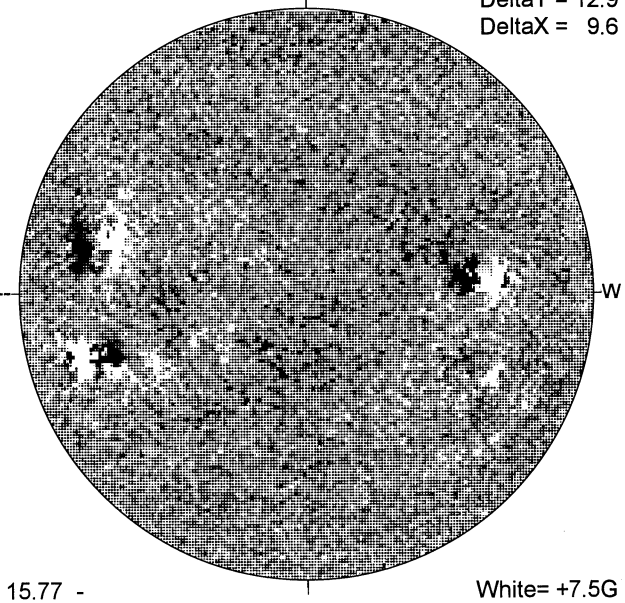
N

AUG 02
0046 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 12.9
DeltaX = 9.6

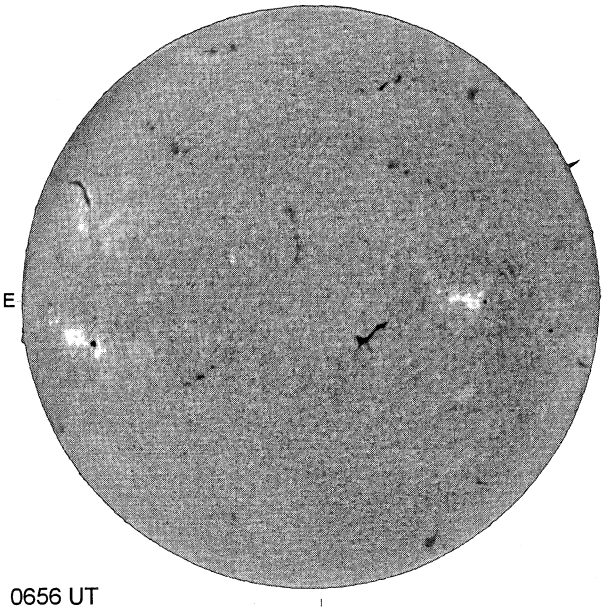


-W

15.77 -
16.70 UT

White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

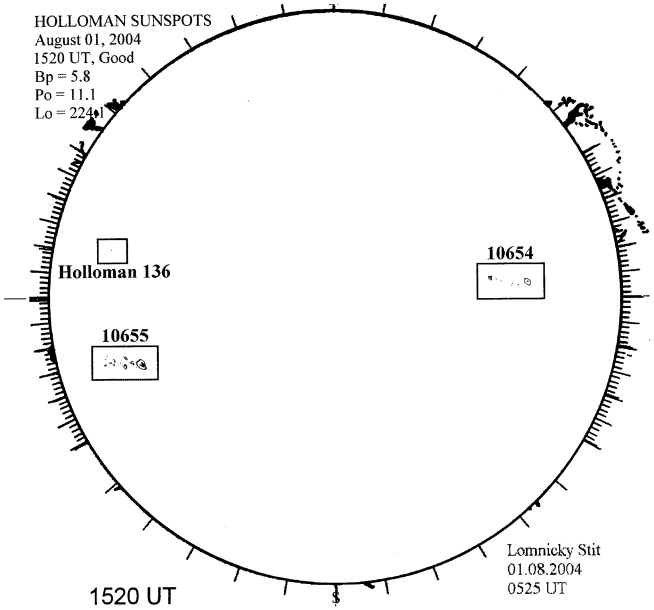


E

0656 UT

S

HOLLOMAN SUNSPOTS



1520 UT
0525 UT LOMN Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NO DATA

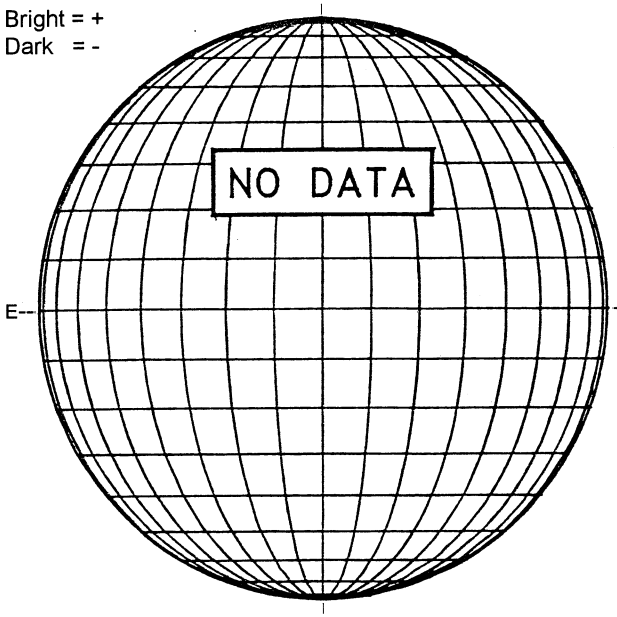
S

AUGUST 2, 2004 (P= 11.33, Bo = 5.88, Lo = 219.21)

KITT PEAK MAGNETOGRAM--SOLIS

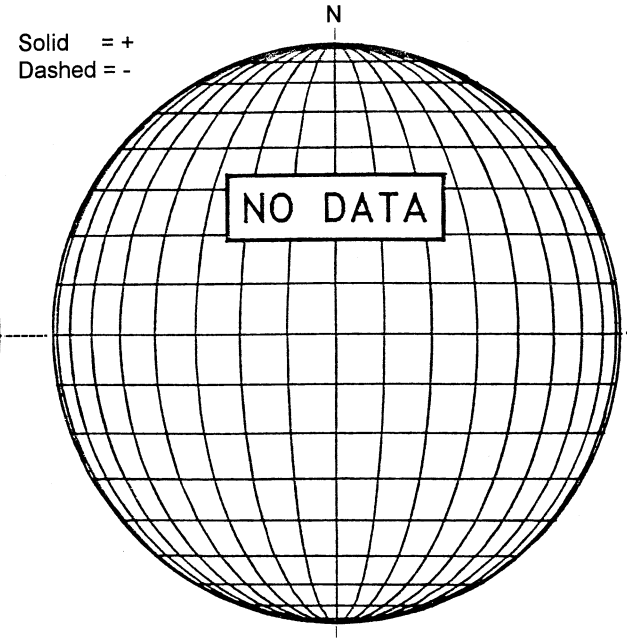
854.2 nm

Bright = +
Dark = -



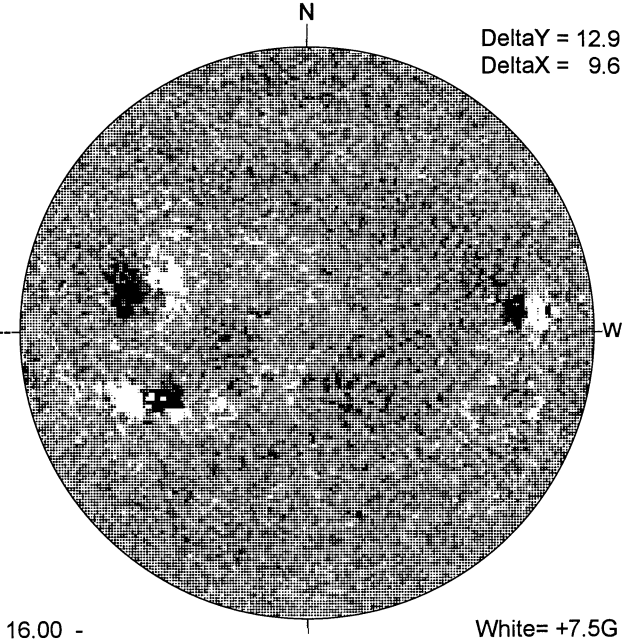
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

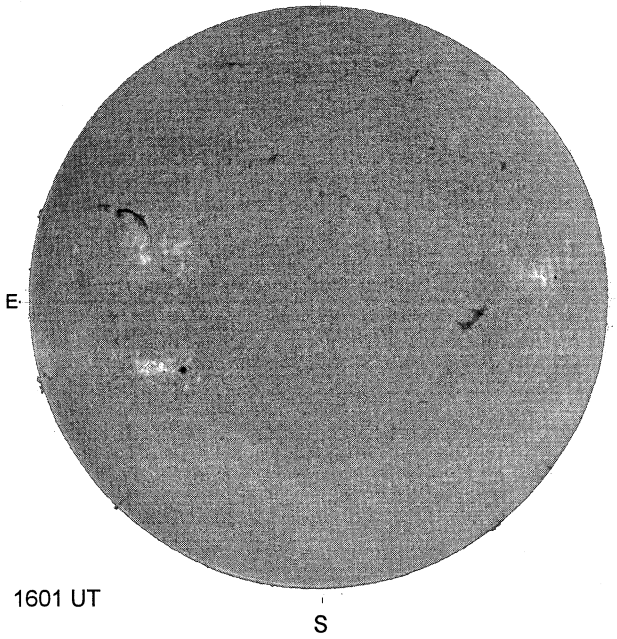
DeltaY = 12.9
DeltaX = 9.6



16.00 -
16.93 UT

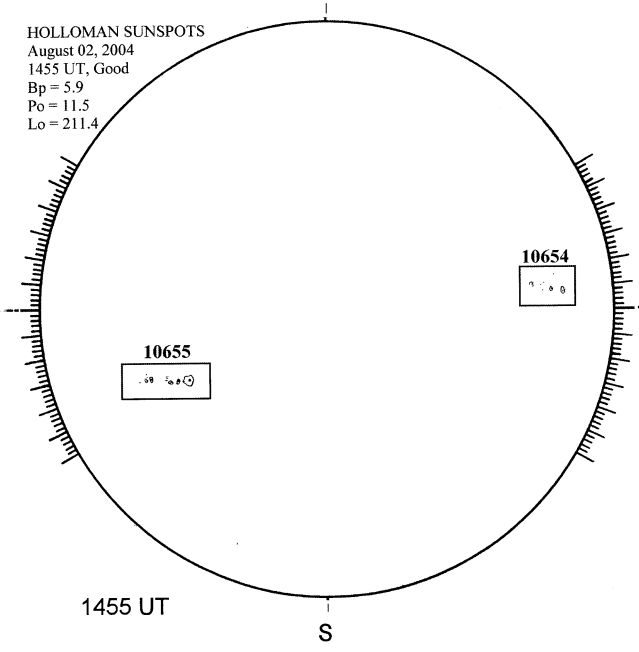
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



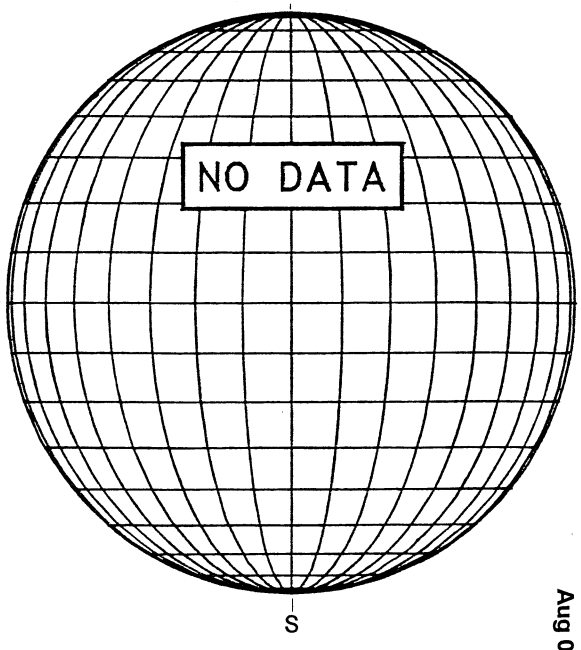
1601 UT

HOLLOMAN SUNSPOTS



1455 UT

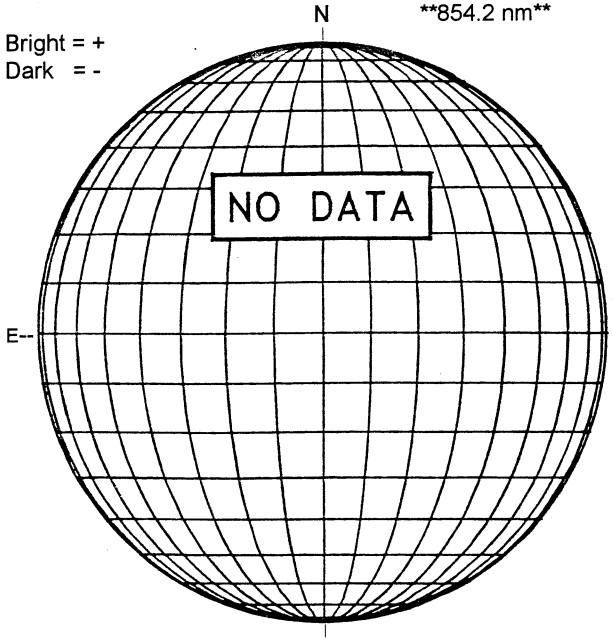
SACRAMENTO PEAK CORONA (1.15 Radii)----



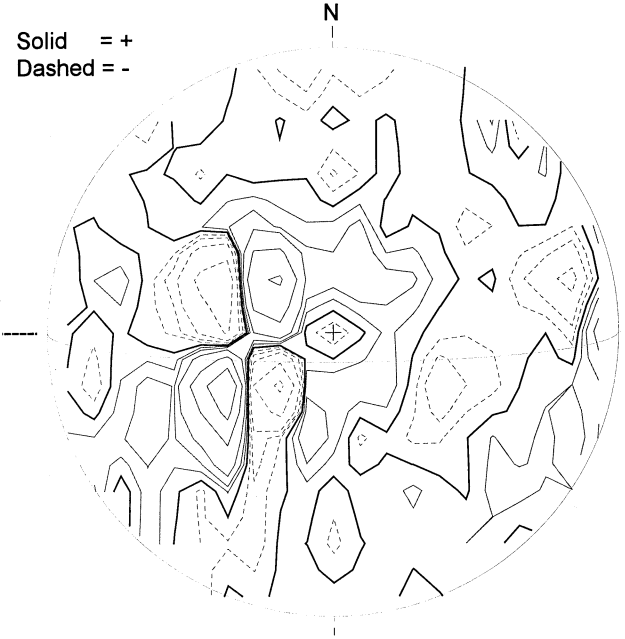
47
Aug 04

AUGUST 3, 2004 (P= 11.72, Bo = 5.95, Lo = 205.99)

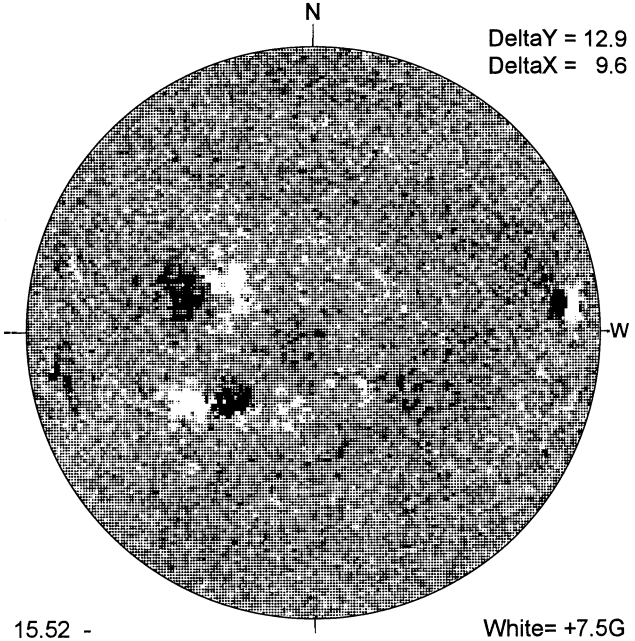
KITT PEAK MAGNETOGRAM--SOLIS



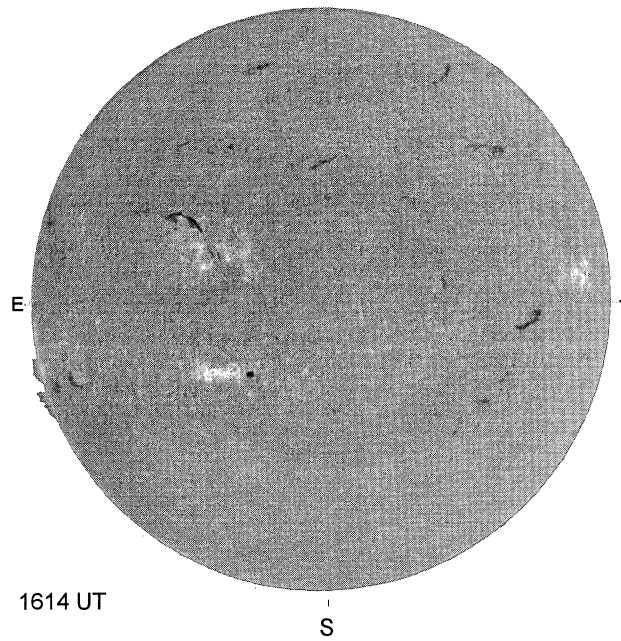
STANFORD MAGNETOGRAM



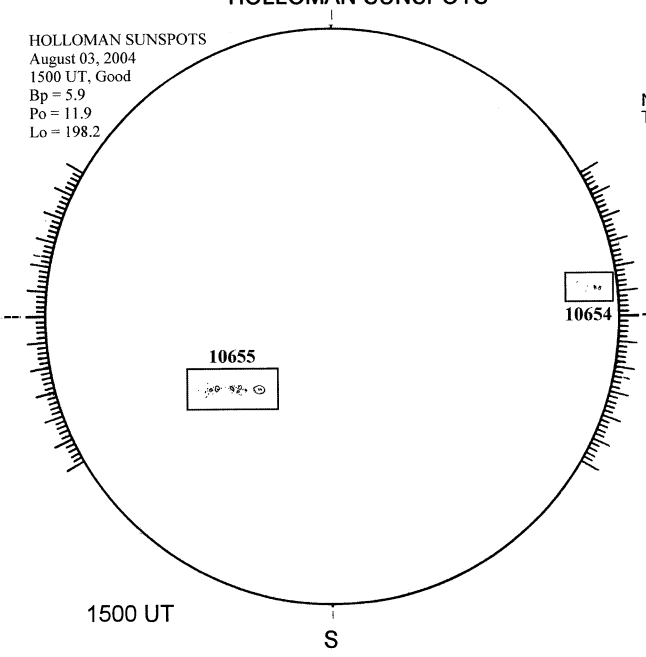
MT. WILSON MAGNETOGRAM



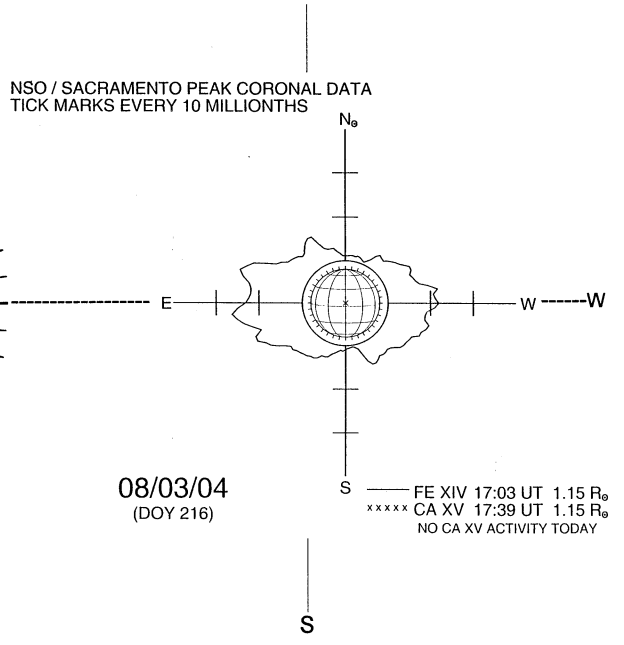
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

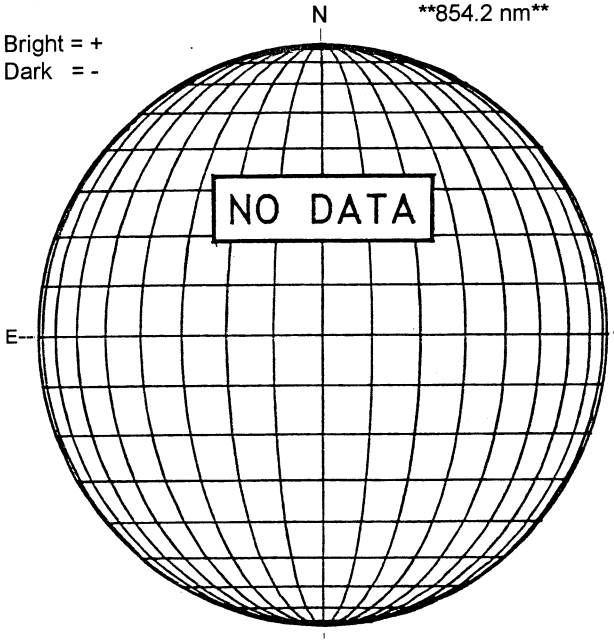


AUGUST 4, 2004 (P= 12.11, Bo = 6.02, Lo = 192.76)

KITT PEAK MAGNETOGRAM--SOLIS

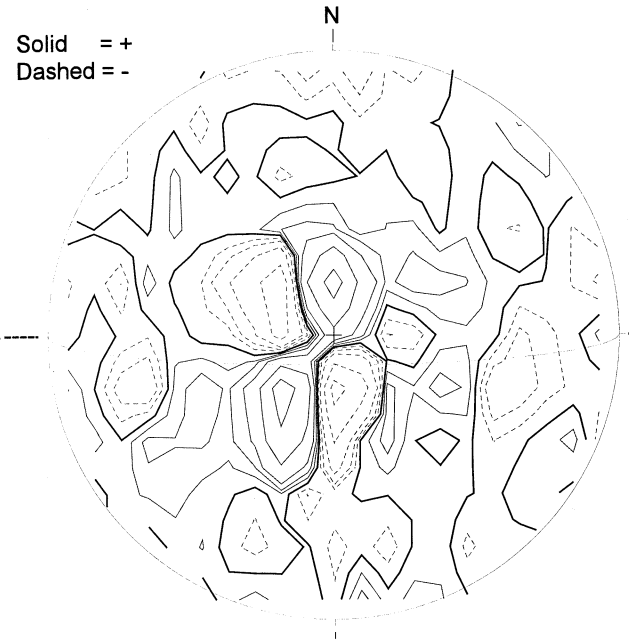
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

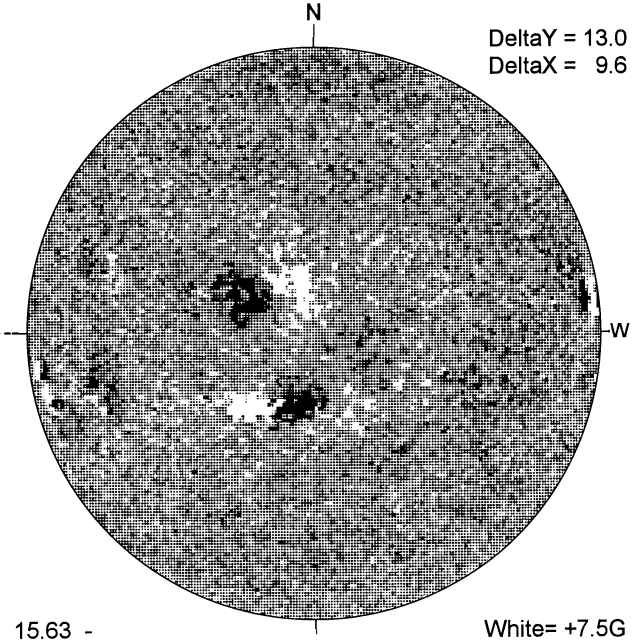
Solid = +
Dashed = -



2048 UT

MT. WILSON MAGNETOGRAM

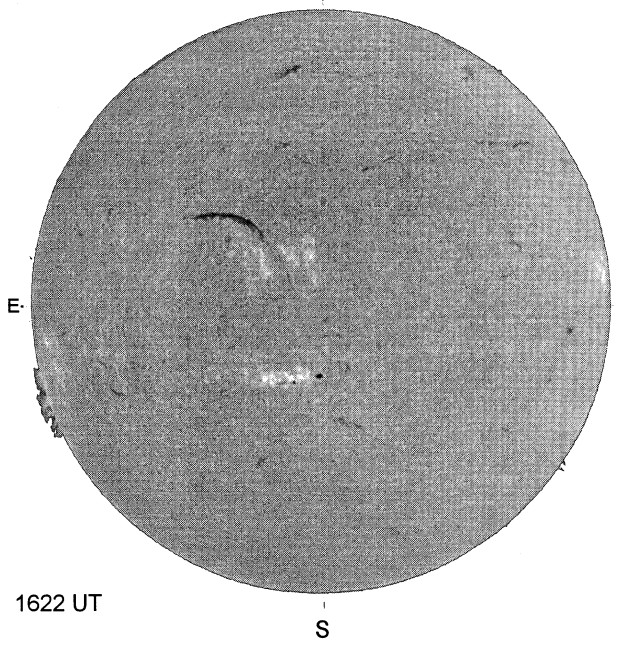
DeltaY = 13.0
DeltaX = 9.6



15.63 -
16.56 UT

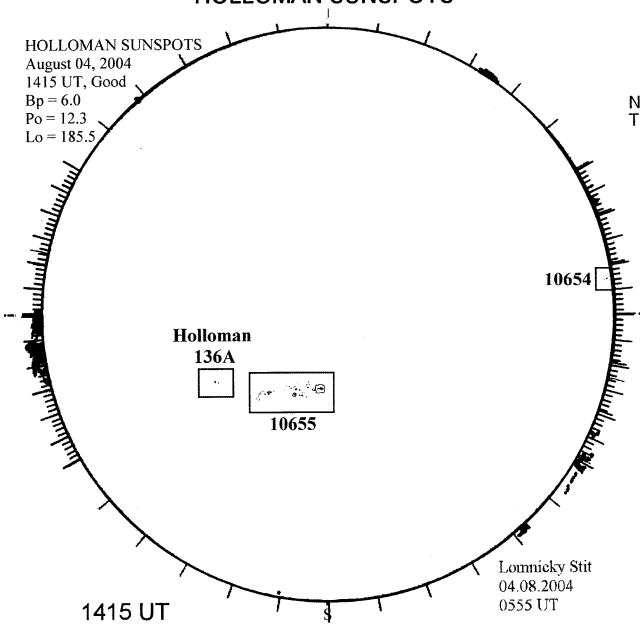
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1622 UT

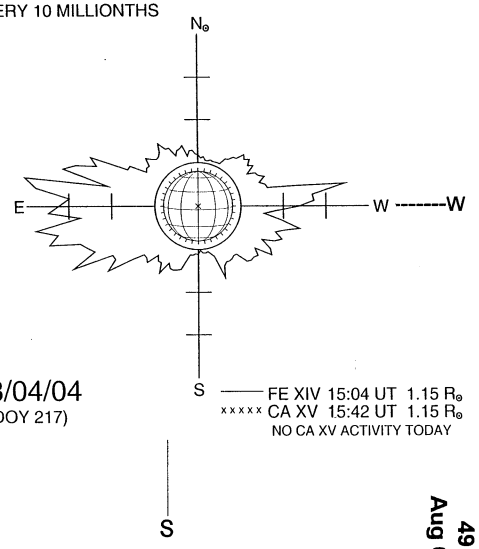
HOLLOMAN SUNSPOTS



1415 UT
0555 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS

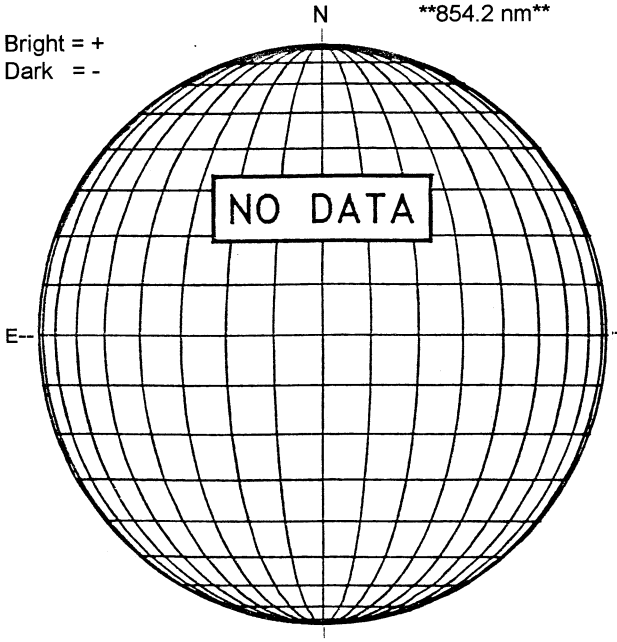


08/04/04
(DOY 217)

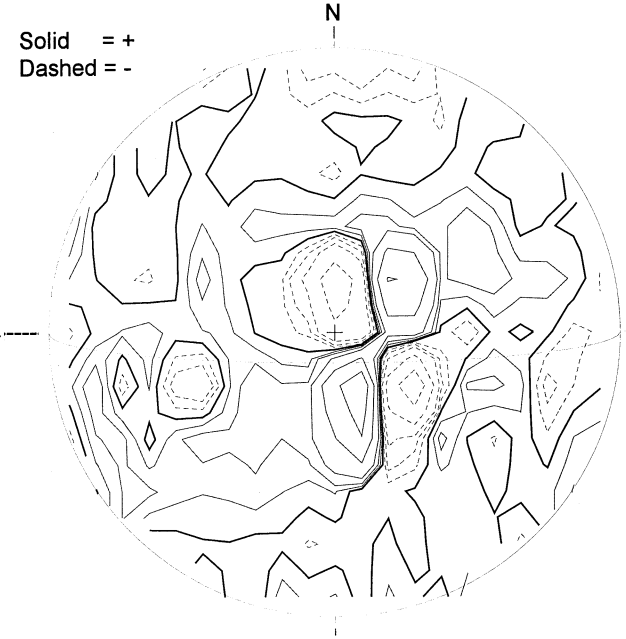
FE XIV 15:04 UT 1.15 R⊙
xxxxx CA XV 15:42 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

AUGUST 5, 2004 (P= 12.49, Bo = 6.08, Lo = 179.54)

KITT PEAK MAGNETOGRAM--SOLIS

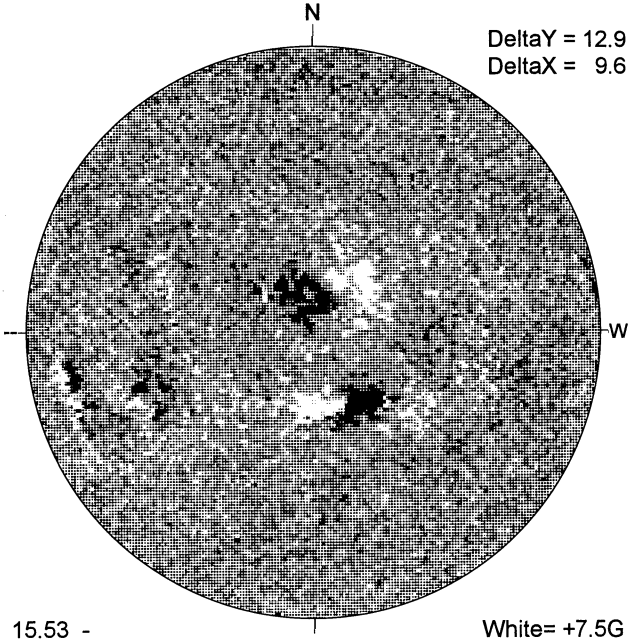


STANFORD MAGNETOGRAM



2136 UT

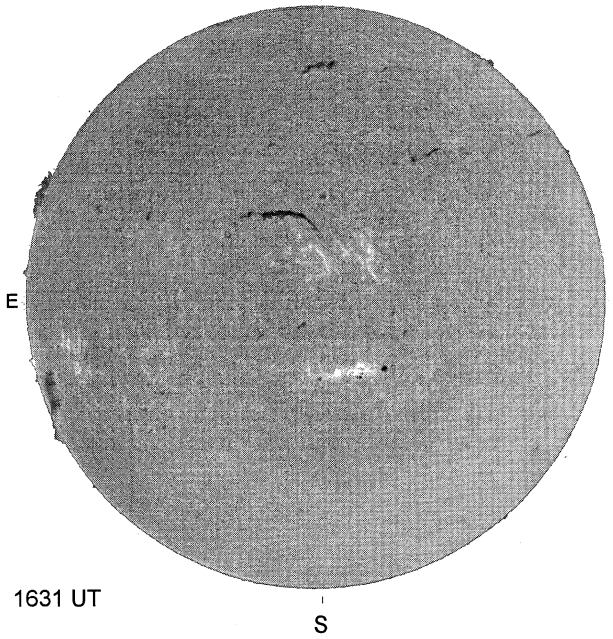
MT. WILSON MAGNETOGRAM



15.53 -
16.47 UT

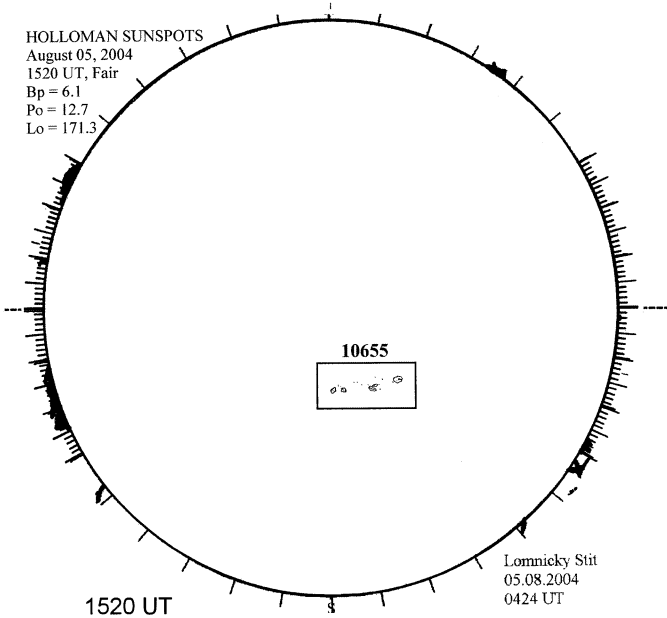
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



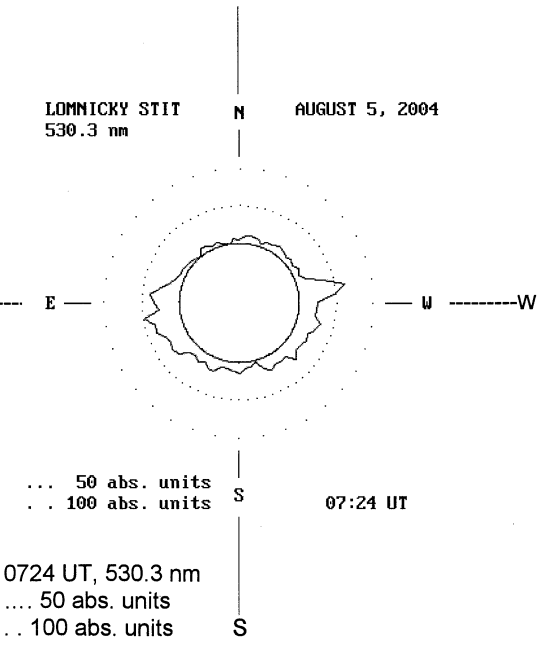
1631 UT

HOLLOMAN SUNSPOTS



1520 UT
0424 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



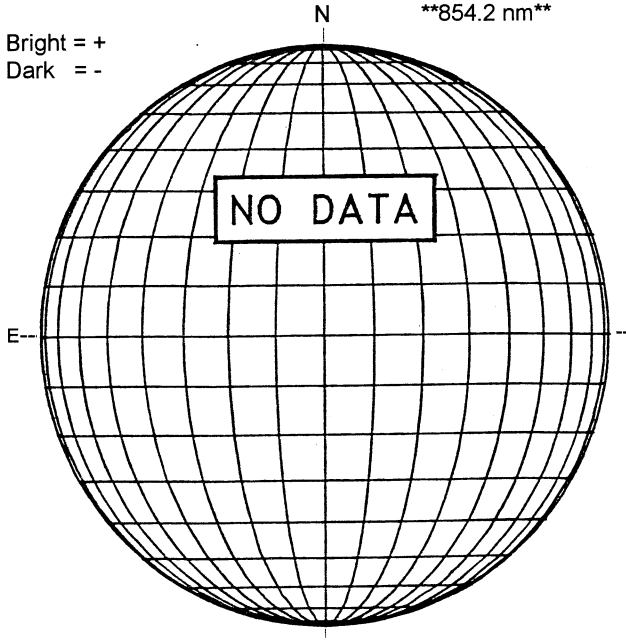
0724 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

AUGUST 6, 2004 (P= 12.87, Bo = 6.15, Lo = 166.31)

KITT PEAK MAGNETOGRAM--SOLIS

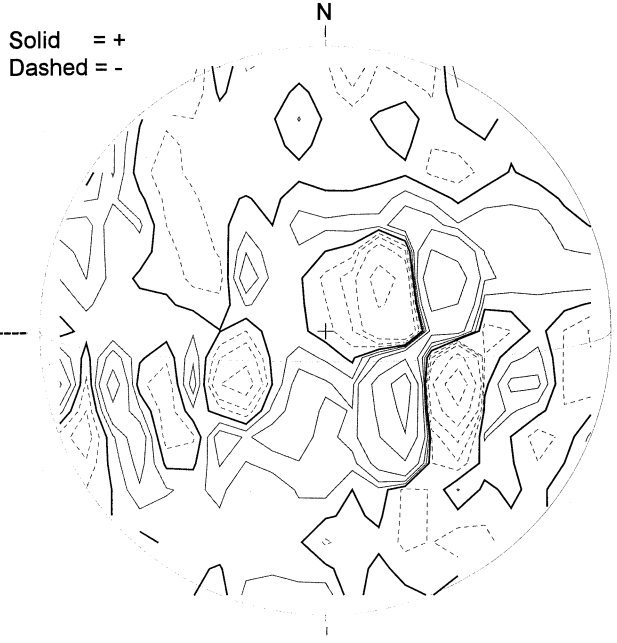
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

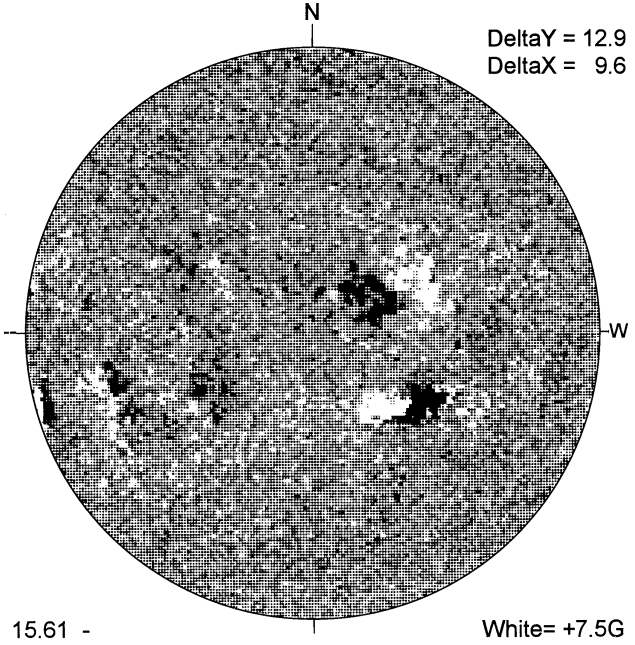
Solid = +
Dashed = -



1936 UT

MT. WILSON MAGNETOGRAM

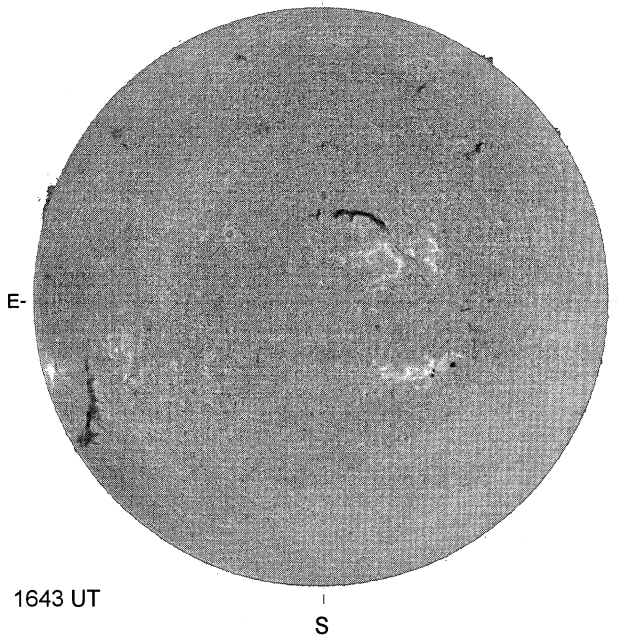
DeltaY = 12.9
DeltaX = 9.6



15.61 -
16.54 UT

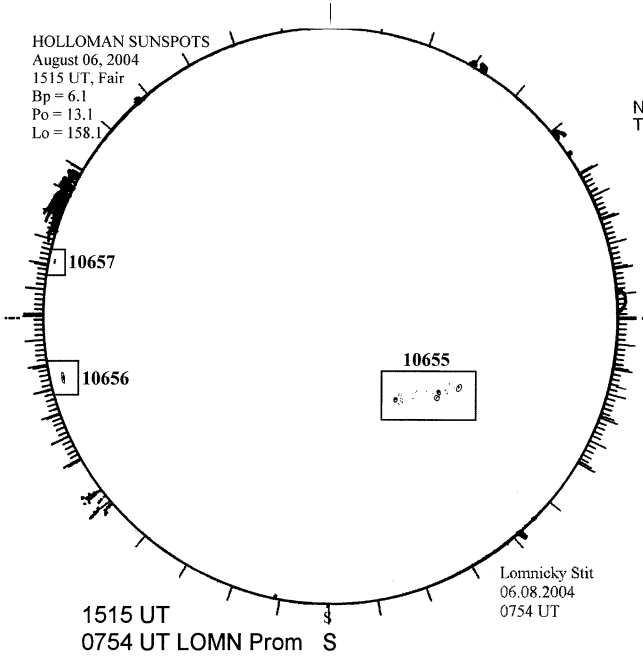
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



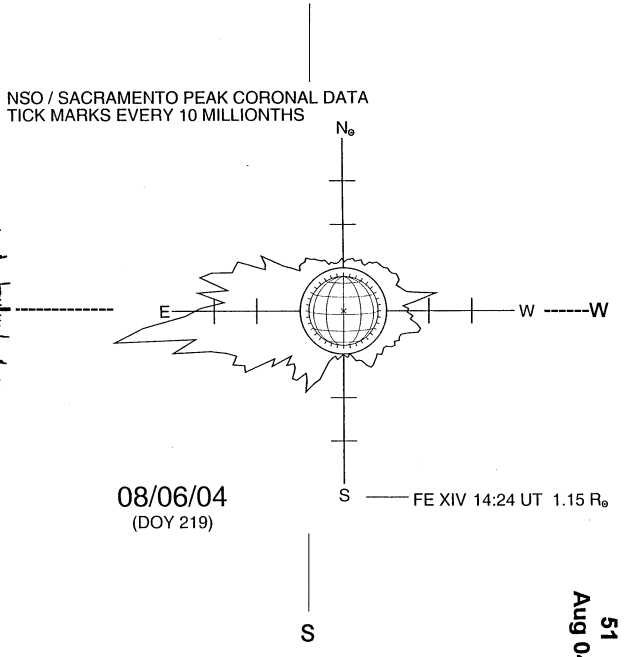
1643 UT

HOLLOMAN SUNSPOTS



1515 UT
0754 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



08/06/04
(DOY 219)

S

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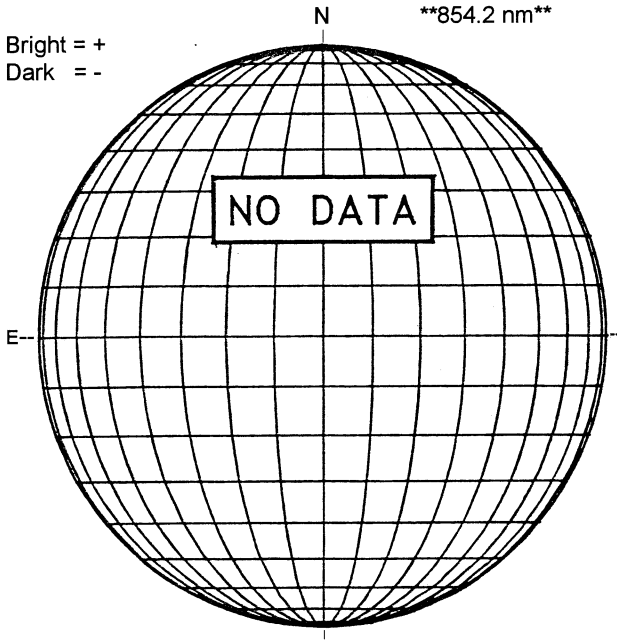
Aug 04

AUGUST 7, 2004 (P= 13.25, Bo = 6.21, Lo = 153.09)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -



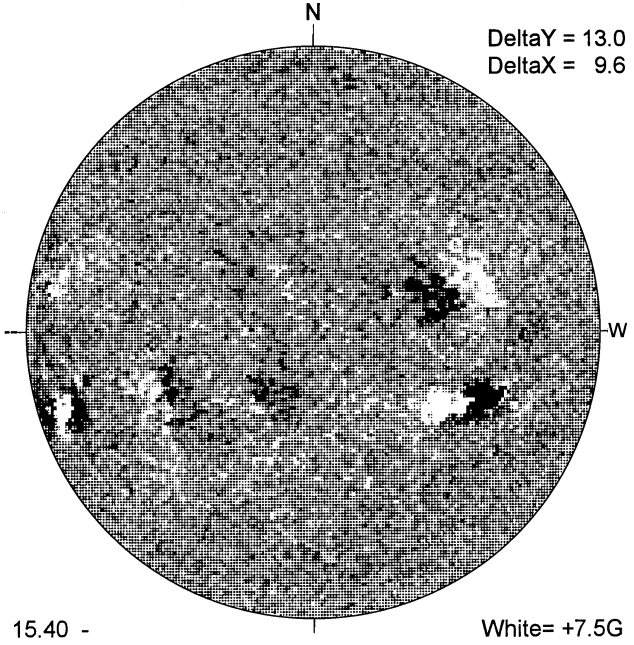
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2126 UT

MT. WILSON MAGNETOGRAM

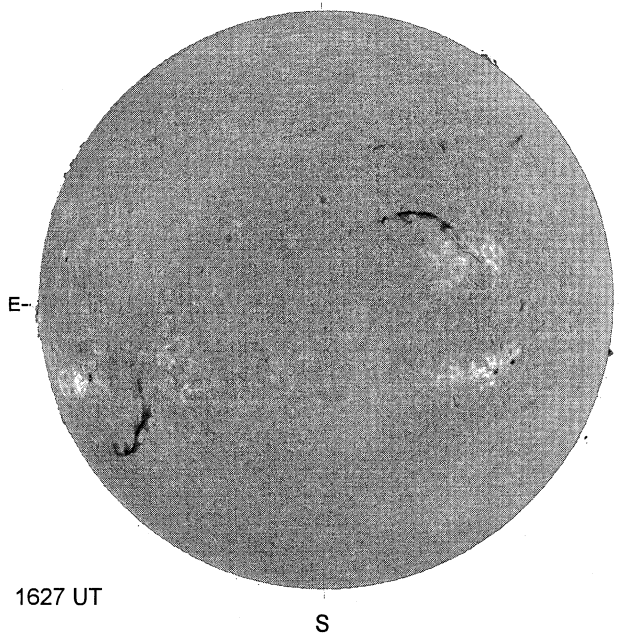
DeltaY = 13.0
DeltaX = 9.6



15.40 -
16.33 UT

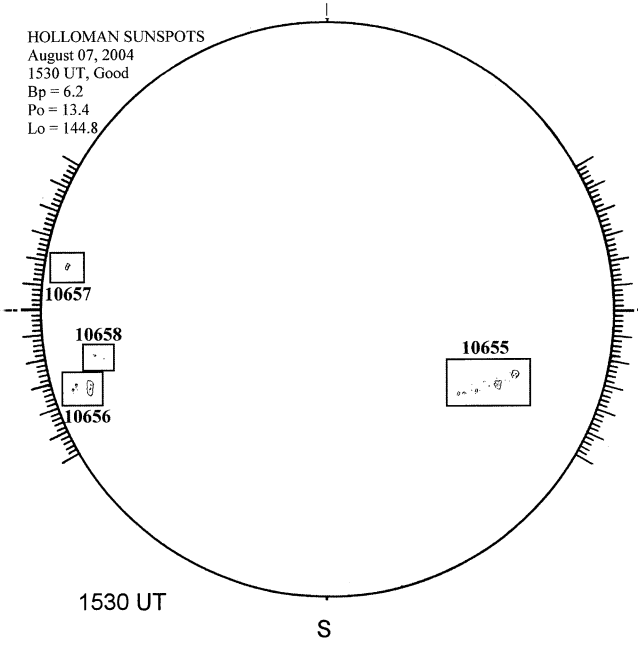
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



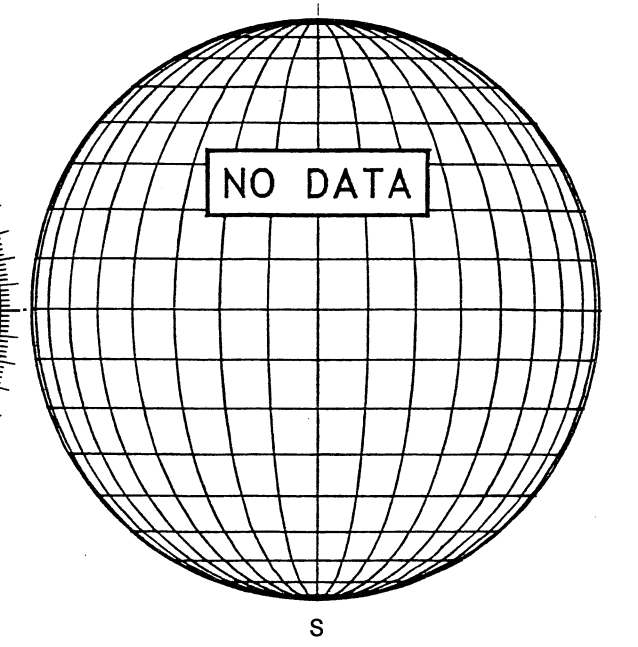
1627 UT

HOLLOMAN SUNSPOTS



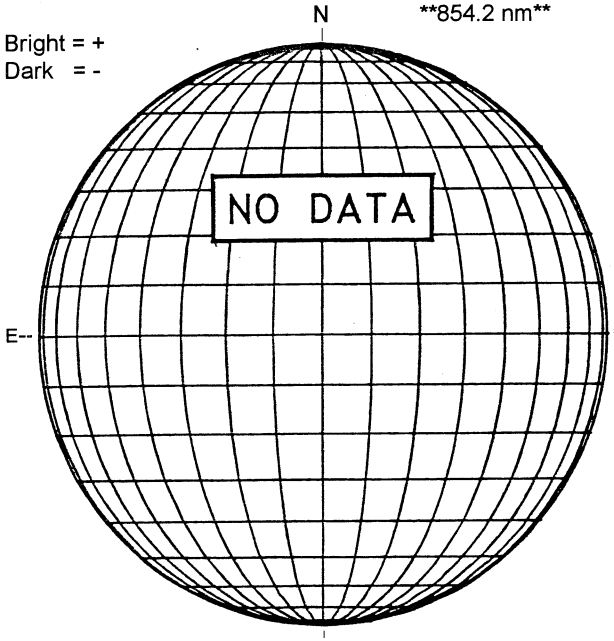
1530 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

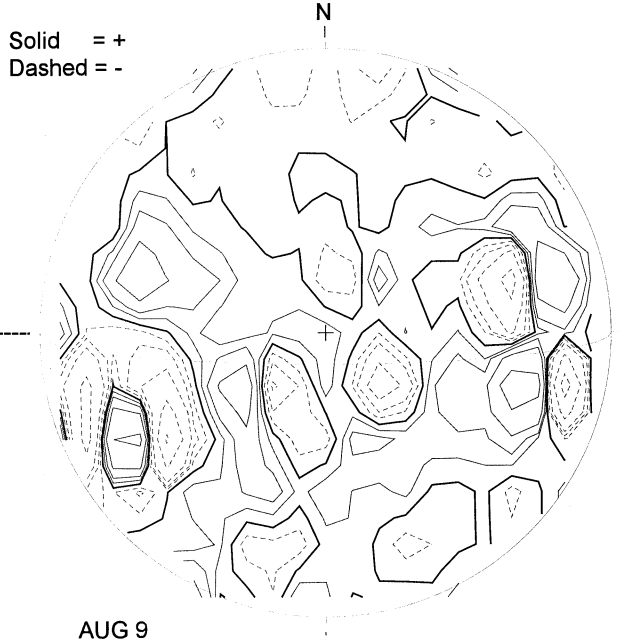


AUGUST 8, 2004 (P= 13.62, Bo = 6.27, Lo = 139.87)

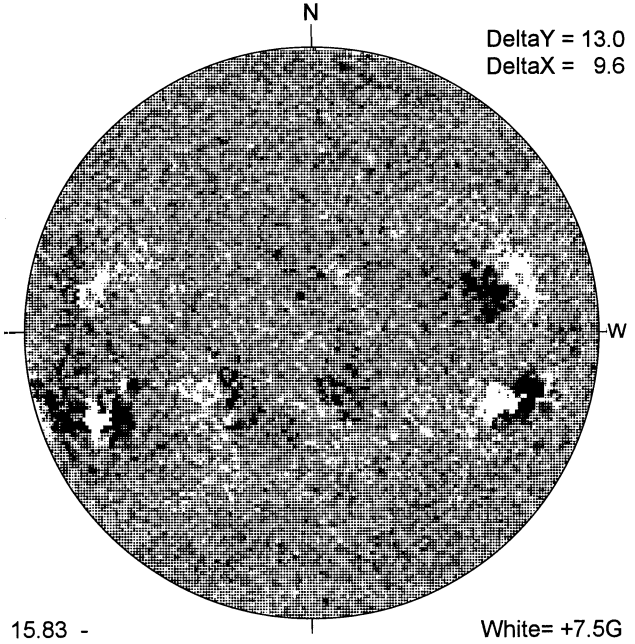
KITT PEAK MAGNETOGRAM--SOLIS



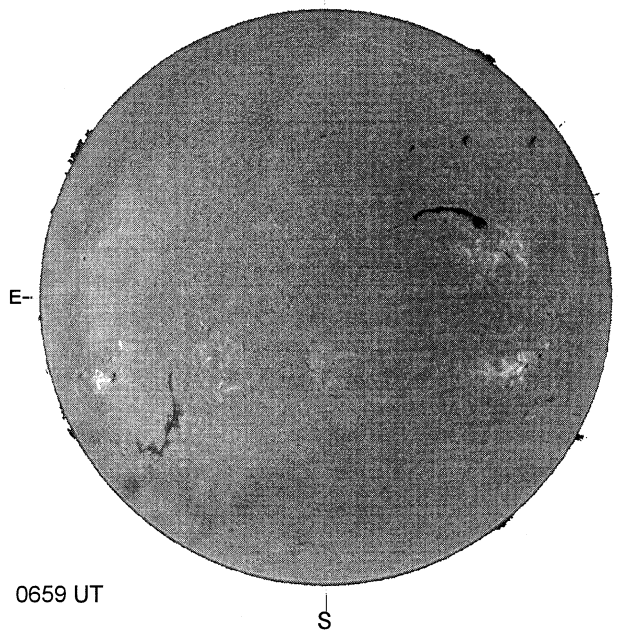
STANFORD MAGNETOGRAM



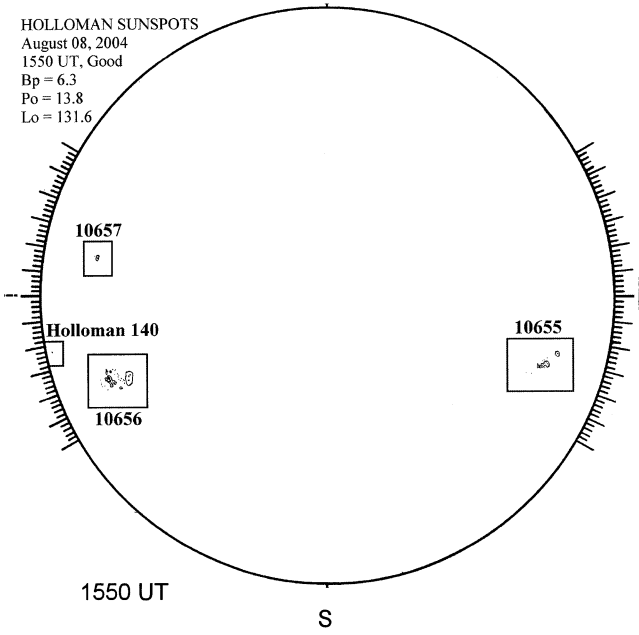
MT. WILSON MAGNETOGRAM



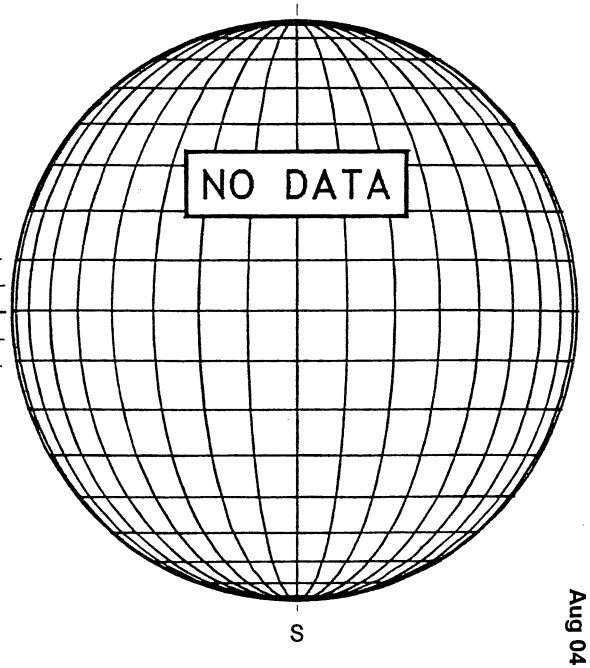
CATANIA H-ALPHA



HOLLOMAN SUNSPOTS



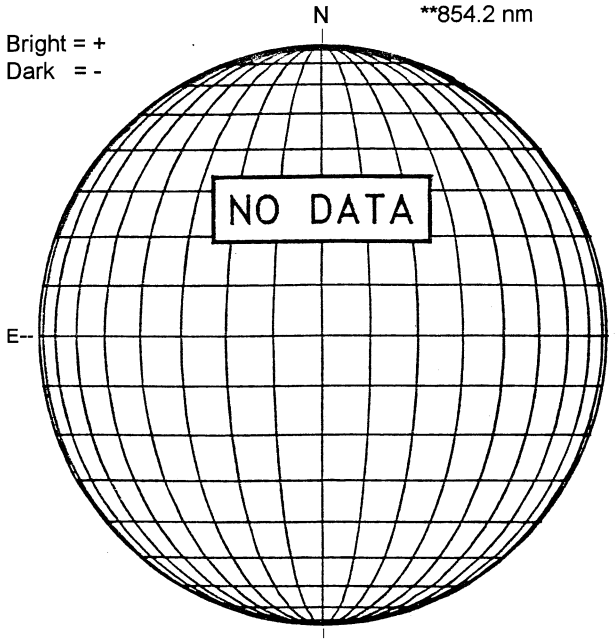
SACRAMENTO PEAK CORONA (1.15 Radii)----



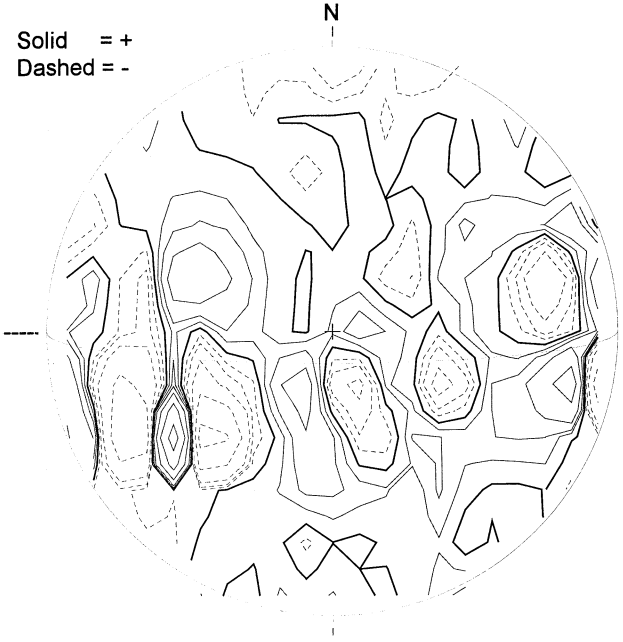
53
Aug 04

AUGUST 9, 2004 (P= 13.99, Bo = 6.33, Lo = 126.65)

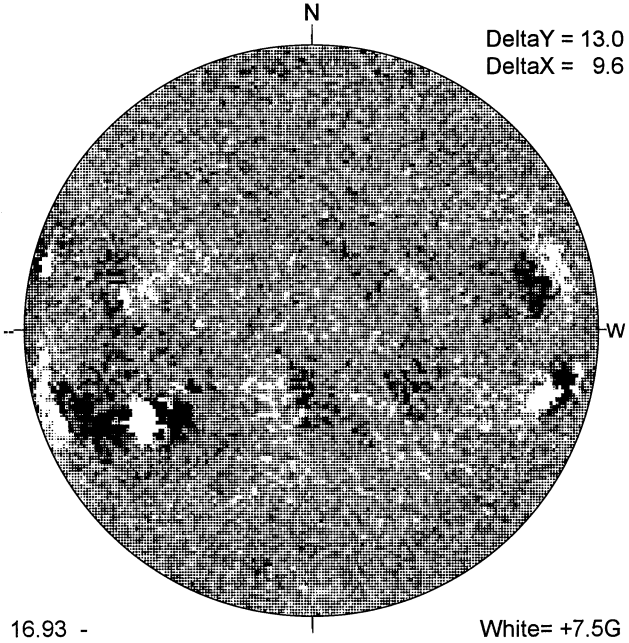
KITT PEAK MAGNETOGRAM--SOLIS



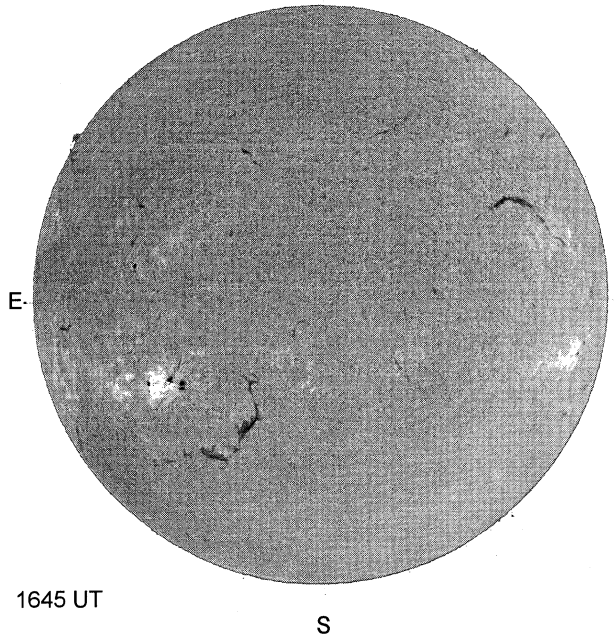
STANFORD MAGNETOGRAM



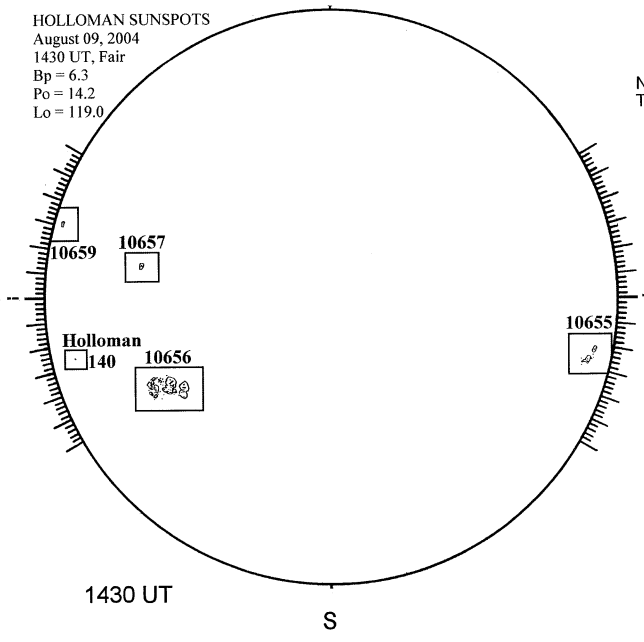
MT. WILSON MAGNETOGRAM



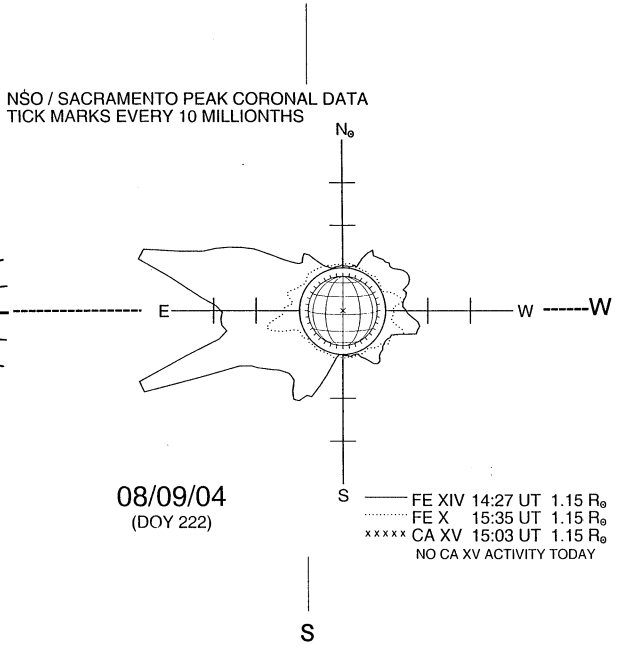
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS

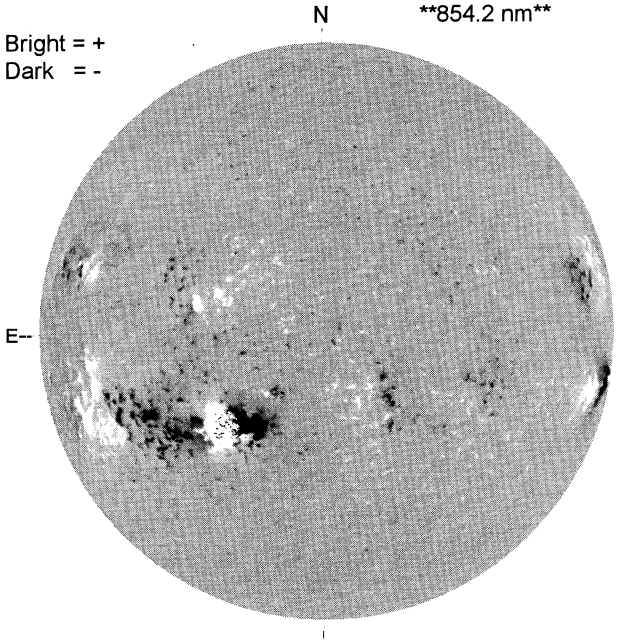


SACRAMENTO PEAK CORONA (1.15 Radii)----



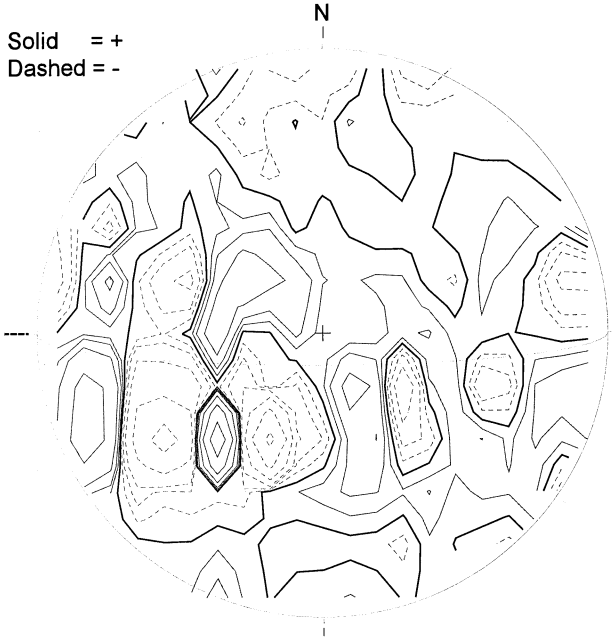
AUGUST 10, 2004 (P= 14.35, Bo = 6.39 Lo = 113.43)

KITT PEAK MAGNETOGRAM--SOLIS



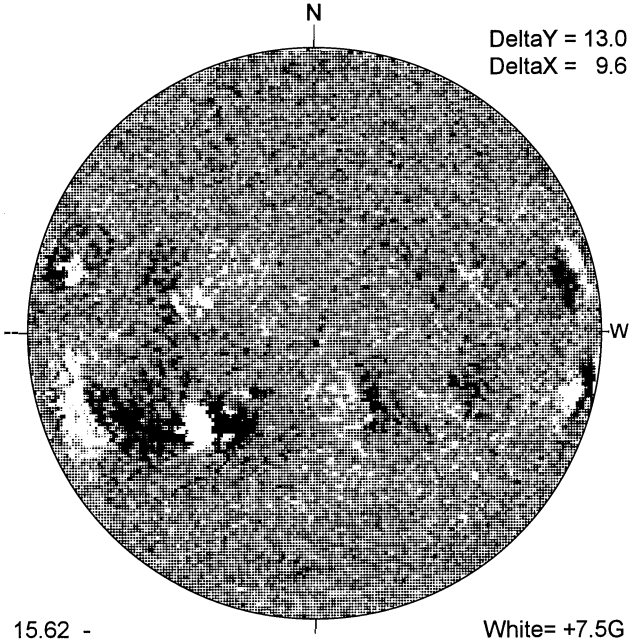
1738 UT

STANFORD MAGNETOGRAM



2226 UT

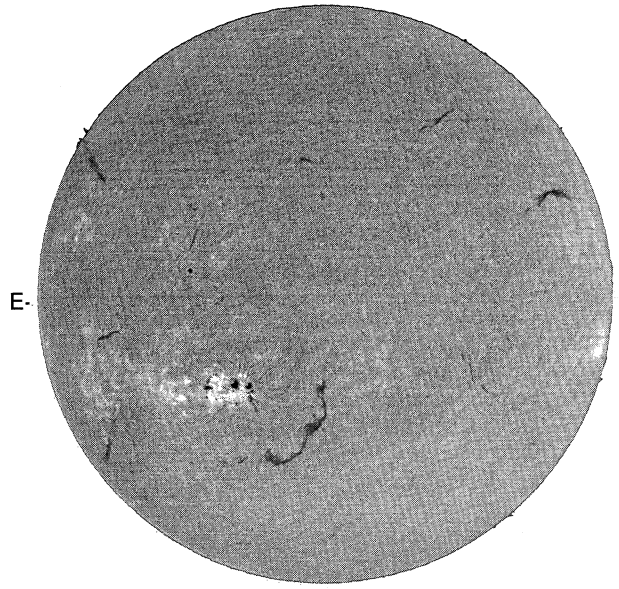
MT. WILSON MAGNETOGRAM



15.62 -
16.55 UT

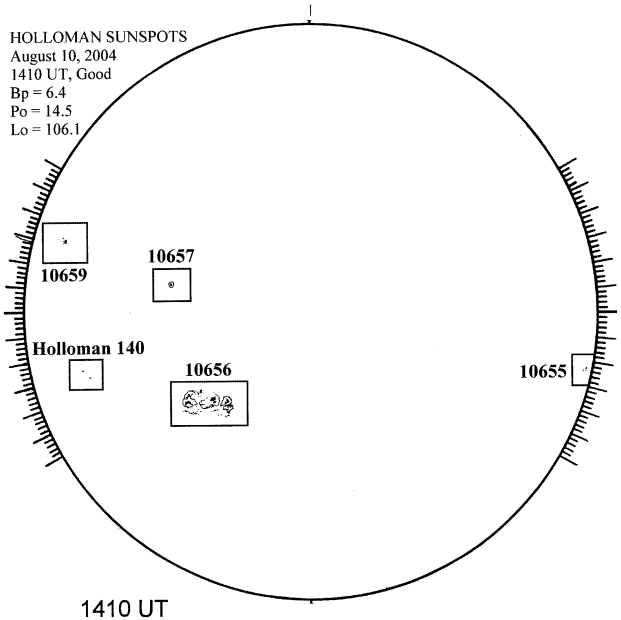
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



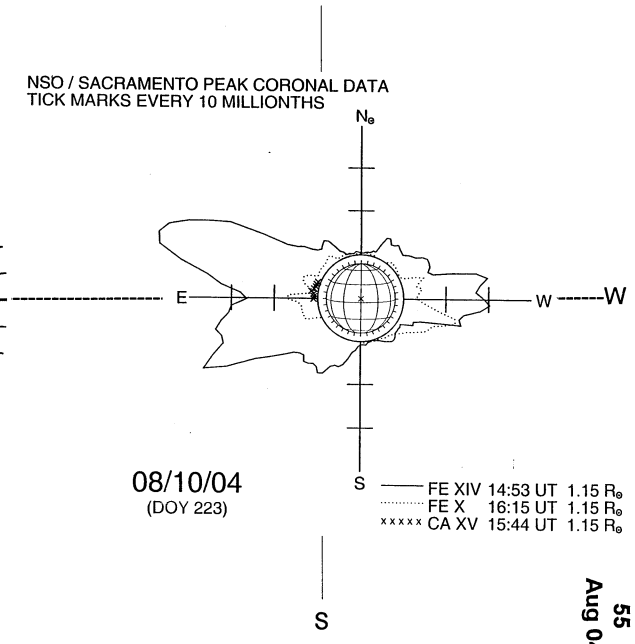
1611 UT

HOLLOMAN SUNSPOTS



1410 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



08/10/04
(DOY 223)

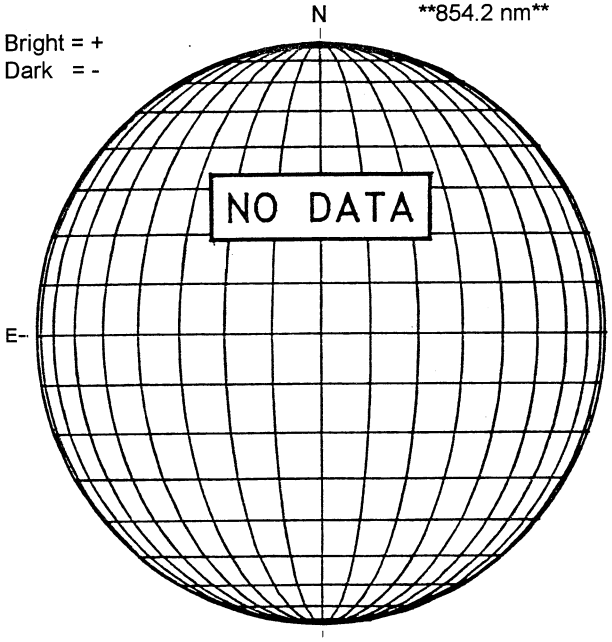
55
Aug 04

AUGUST 11, 2004 (P= 14.71, Bo = 6.45, Lo = 100.21)

KITT PEAK MAGNETOGRAM--SOLIS

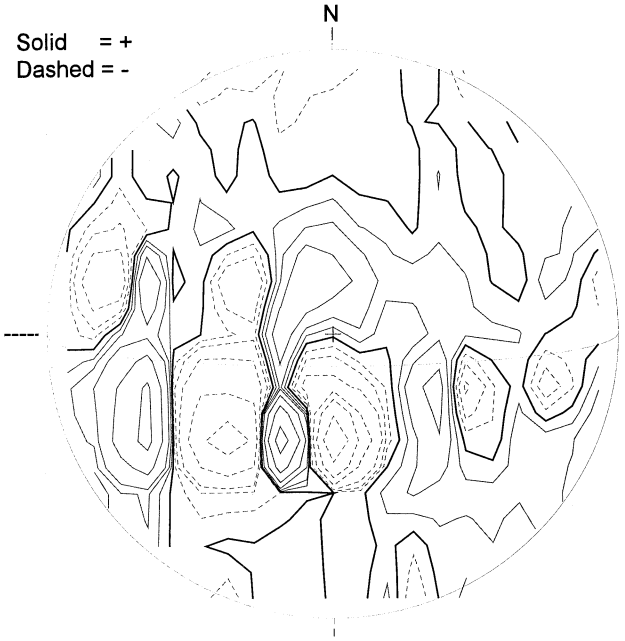
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

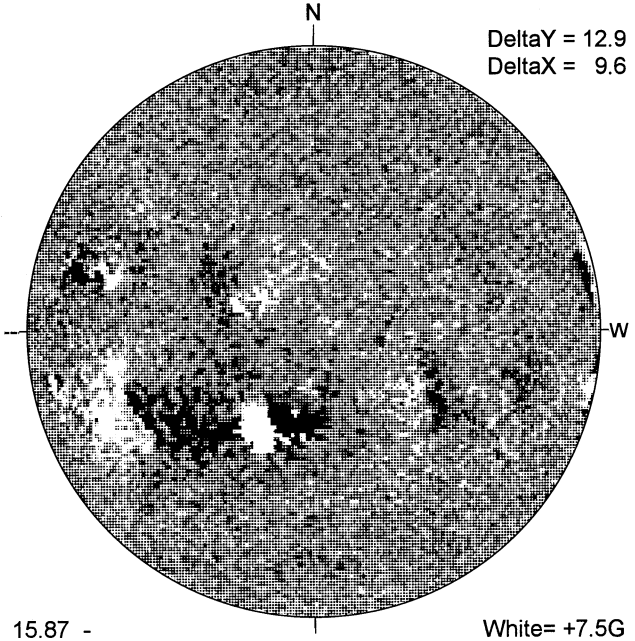
Solid = +
Dashed = -



2053 UT

MT. WILSON MAGNETOGRAM

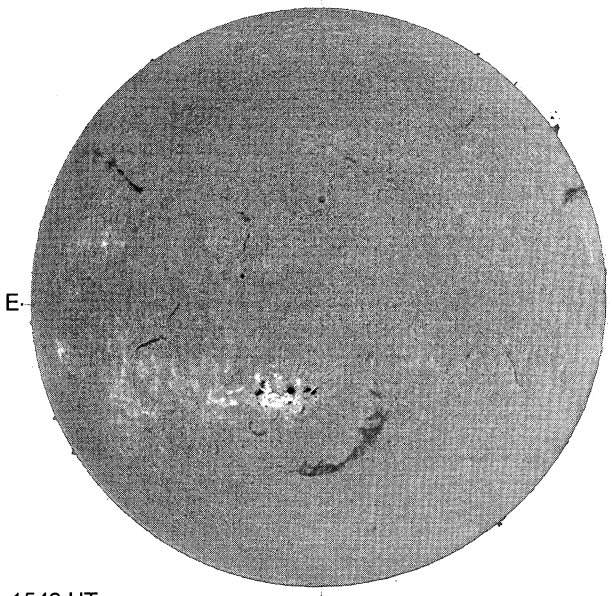
DeltaY = 12.9
DeltaX = 9.6



15.87 -
16.81 UT

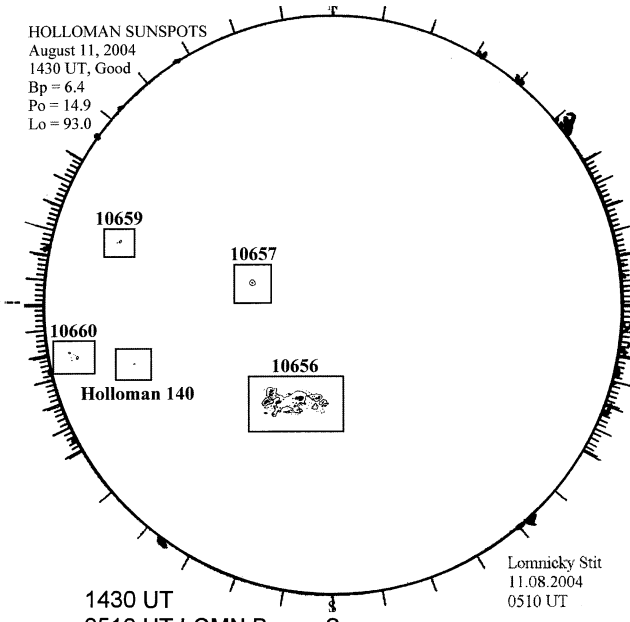
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



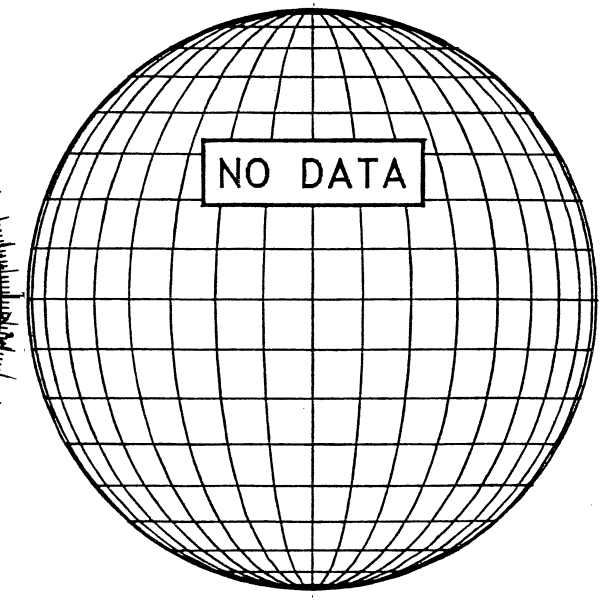
1546 UT

HOLLOMAN SUNSPOTS



1430 UT
0510 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)----

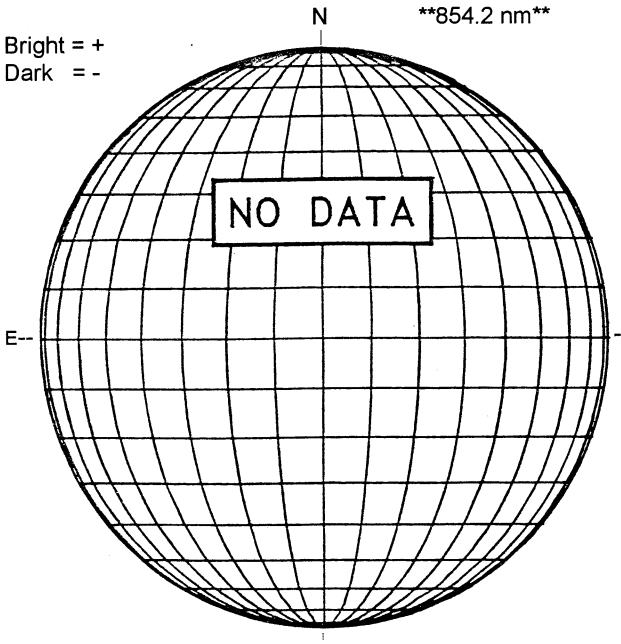


AUGUST 12, 2004 (P= 15.07, Bo = 6.50, Lo = 86.99)

KITT PEAK MAGNETOGRAM--SOLIS

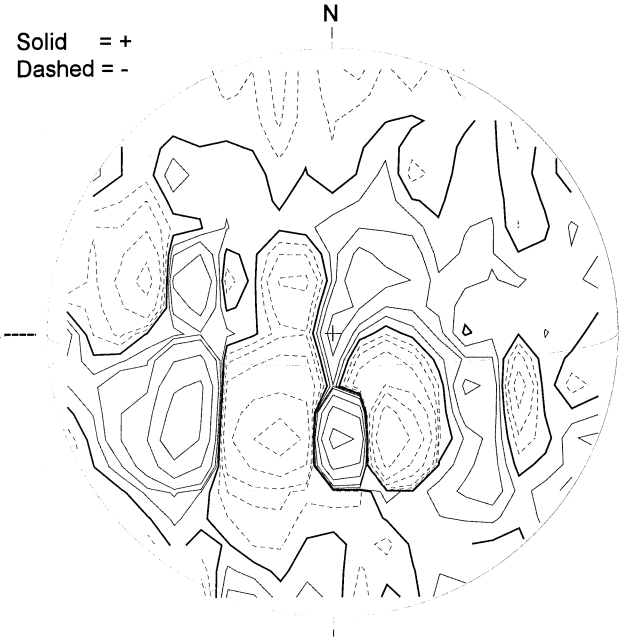
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

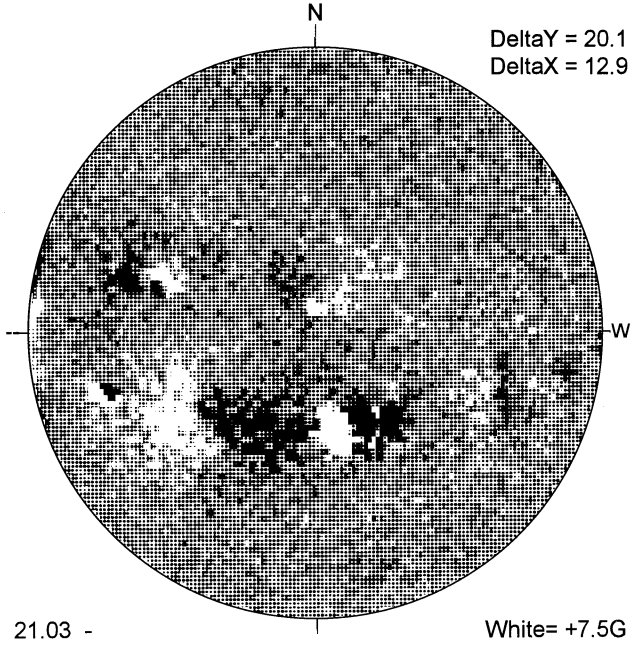
Solid = +
Dashed = -



1838 UT

MT. WILSON MAGNETOGRAM

DeltaY = 20.1
DeltaX = 12.9



21.03 -
21.44 UT

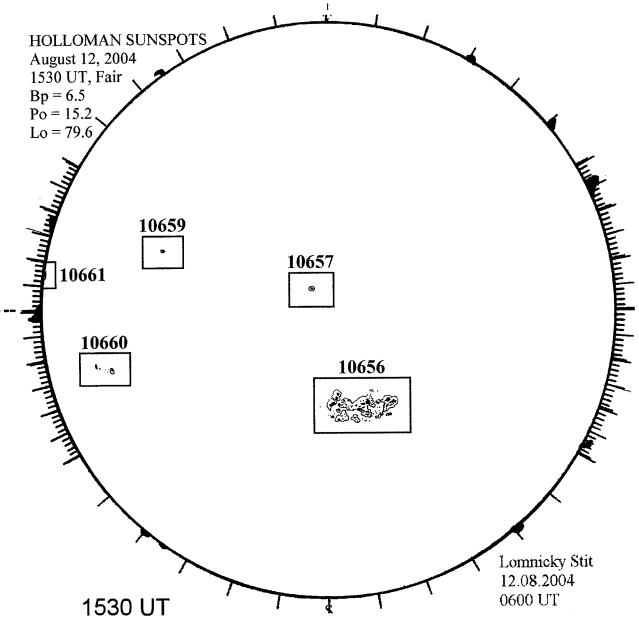
White= +7.5G
Black = -7.5G

---- BIG BEAR H-ALPHA

1614 UT

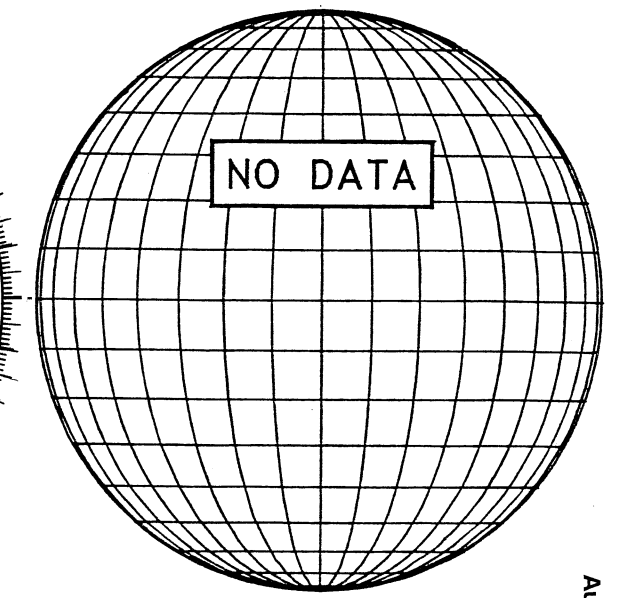
S

HOLLOMAN SUNSPOTS



1530 UT
0600 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



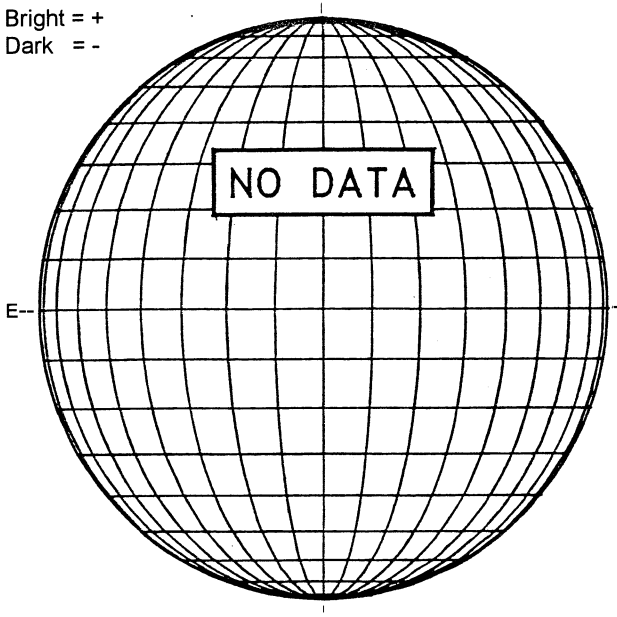
S

AUGUST 13, 2004 (P= 15.42, Bo = 6.56, Lo = 73.77)

KITT PEAK MAGNETOGRAM--SOLIS

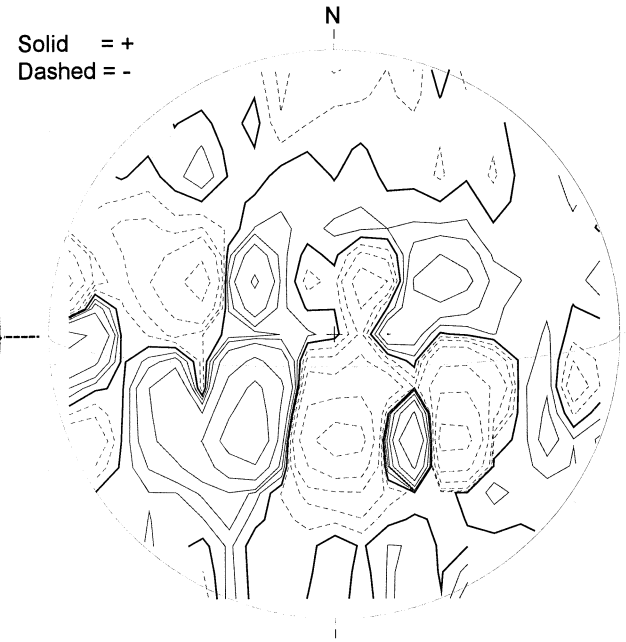
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

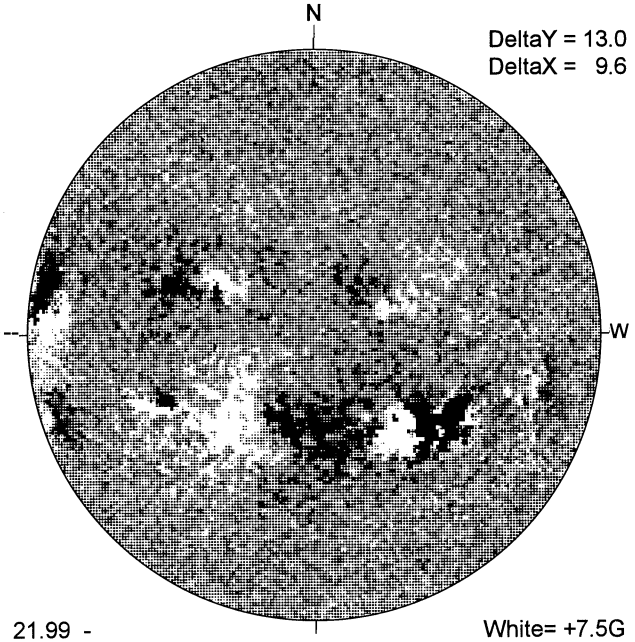
Solid = +
Dashed = -



2230 UT

MT. WILSON MAGNETOGRAM

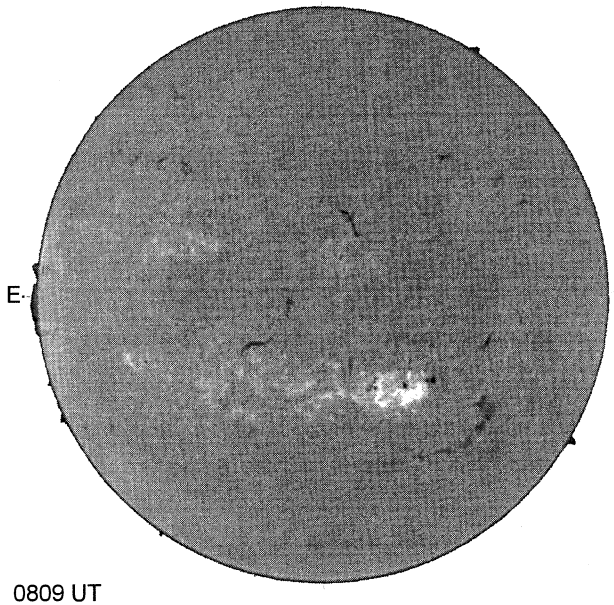
DeltaY = 13.0
DeltaX = 9.6



21.99 -
22.92 UT

White= +7.5G
Black = -7.5G

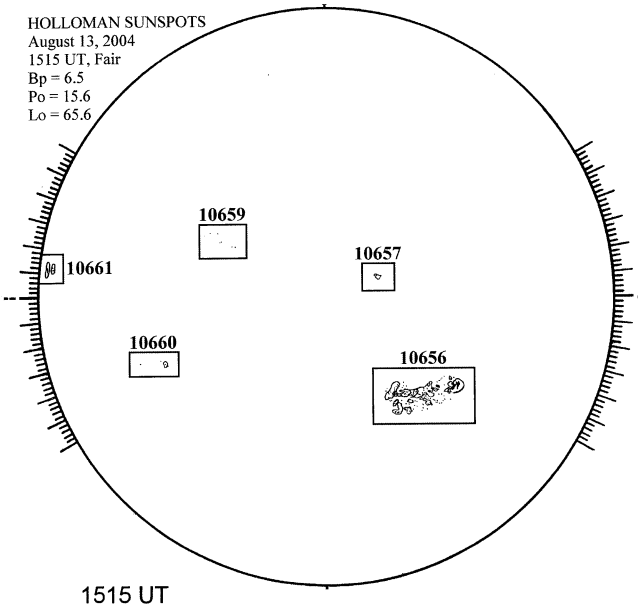
CATANIA H-ALPHA



0809 UT

S

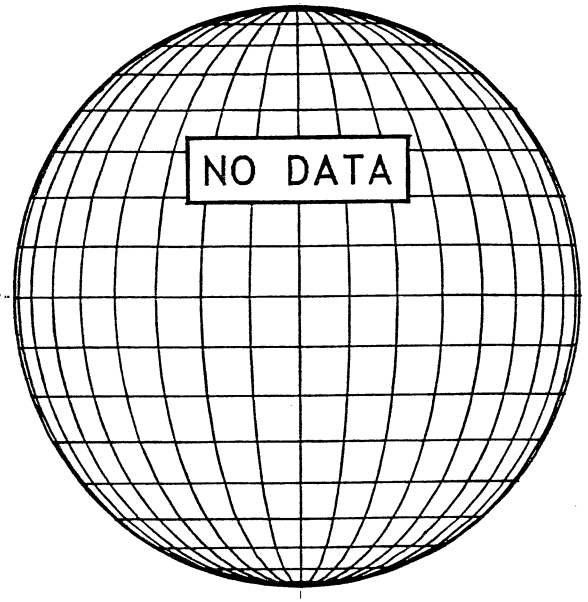
HOLLOMAN SUNSPOTS



1515 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

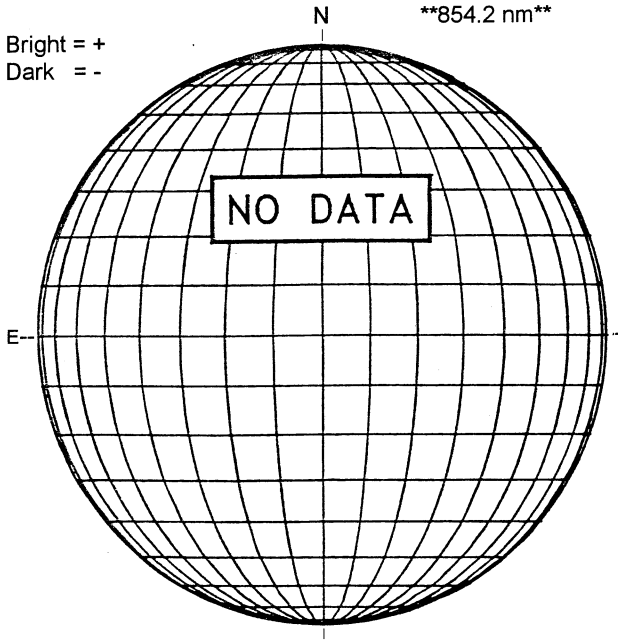


AUGUST 14, 2004 (P= 15.76, Bo = 6.61, Lo = 60.55)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

Bright = +
Dark = -



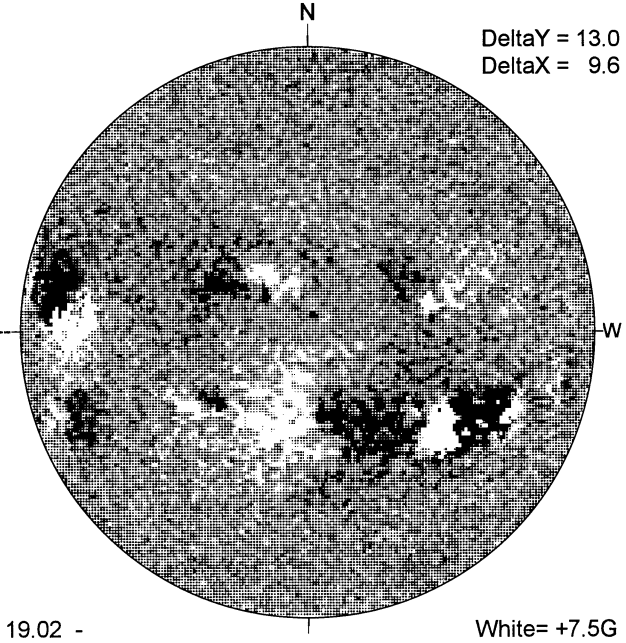
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

1837 UT

MT. WILSON MAGNETOGRAM

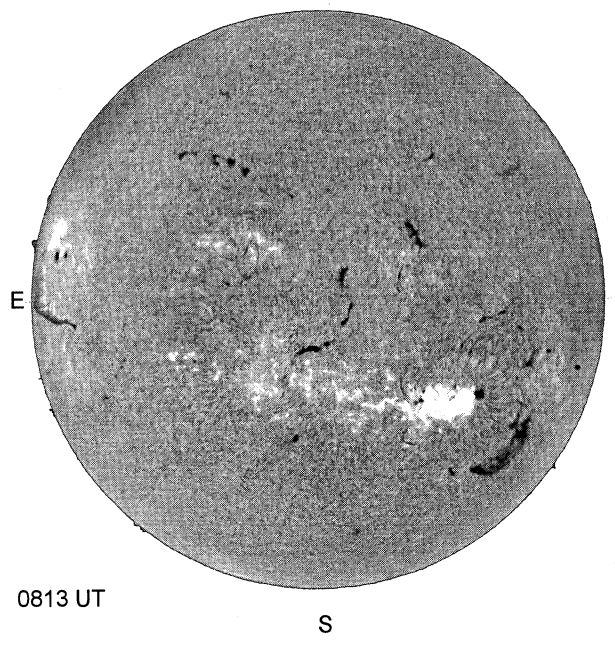
DeltaY = 13.0
DeltaX = 9.6



19.02 -
19.95 UT

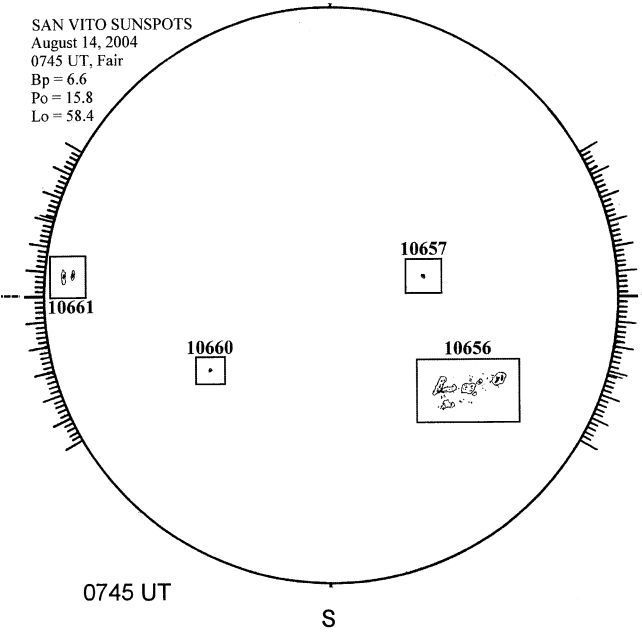
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



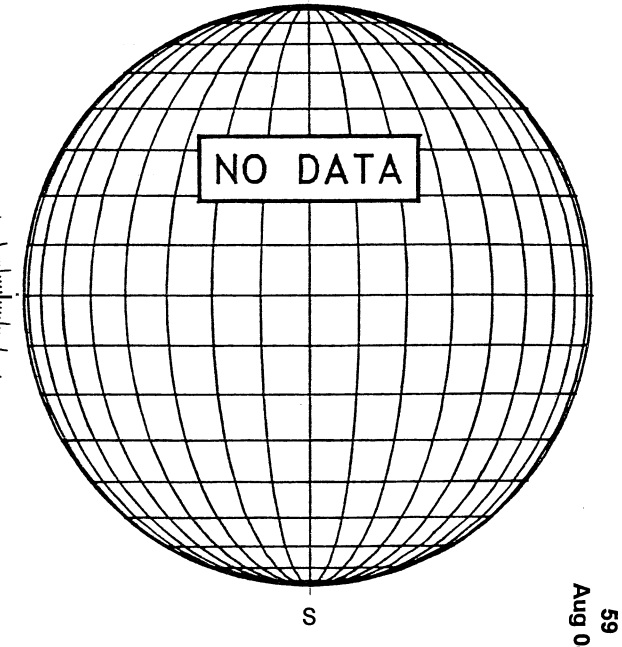
0813 UT

SAN VITO SUNSPOTS



0745 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

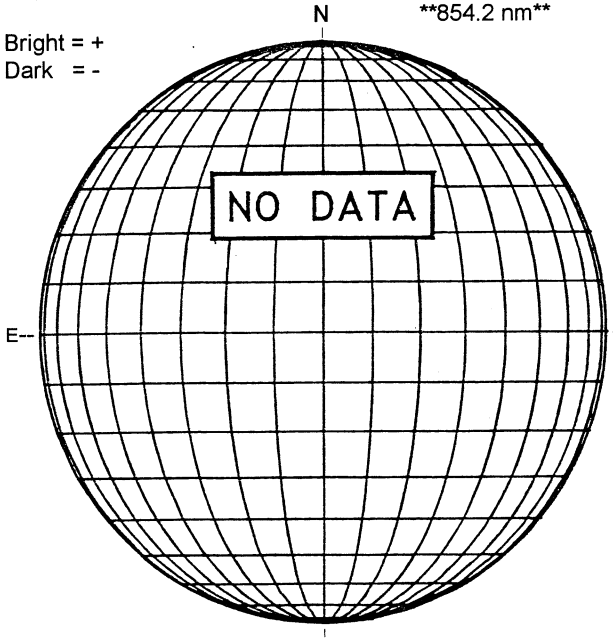


AUGUST 15, 2004 (P= 16.10, Bo = 6.66, Lo = 47.33)

KITT PEAK MAGNETOGRAM--SOLIS

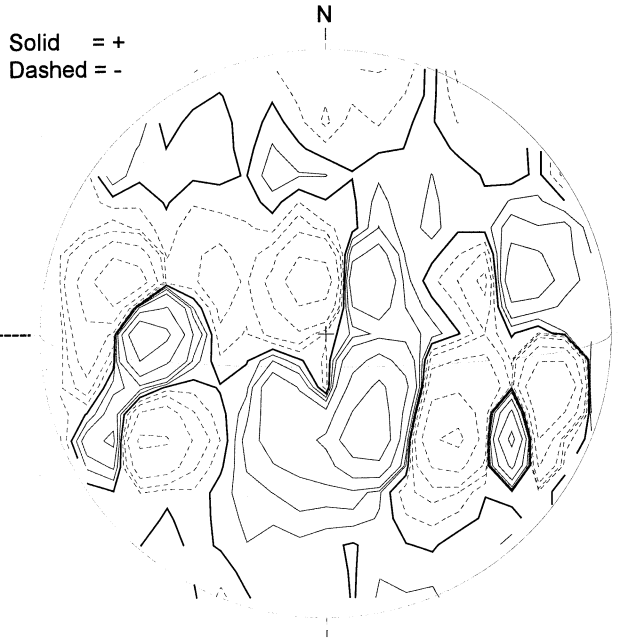
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

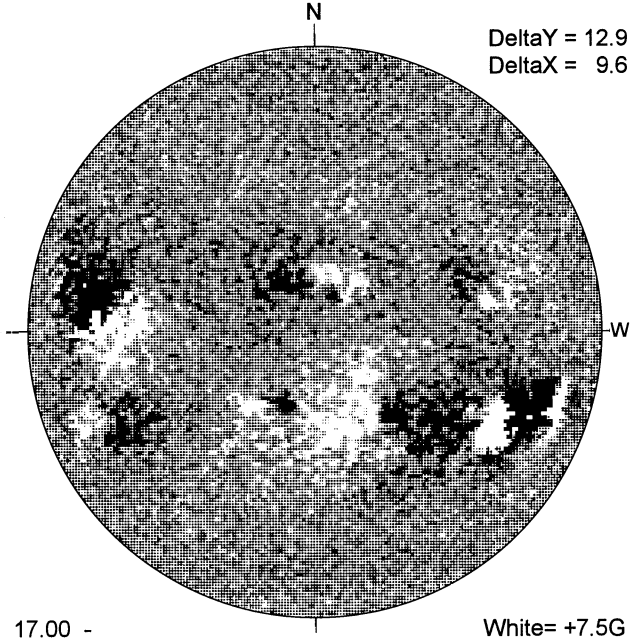
Solid = +
Dashed = -



2346 UT

MT. WILSON MAGNETOGRAM

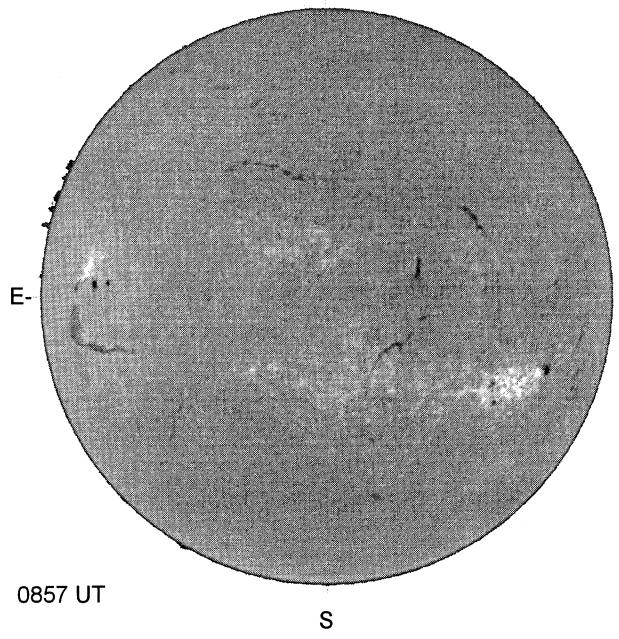
DeltaY = 12.9
DeltaX = 9.6



17.00 -
17.93 UT

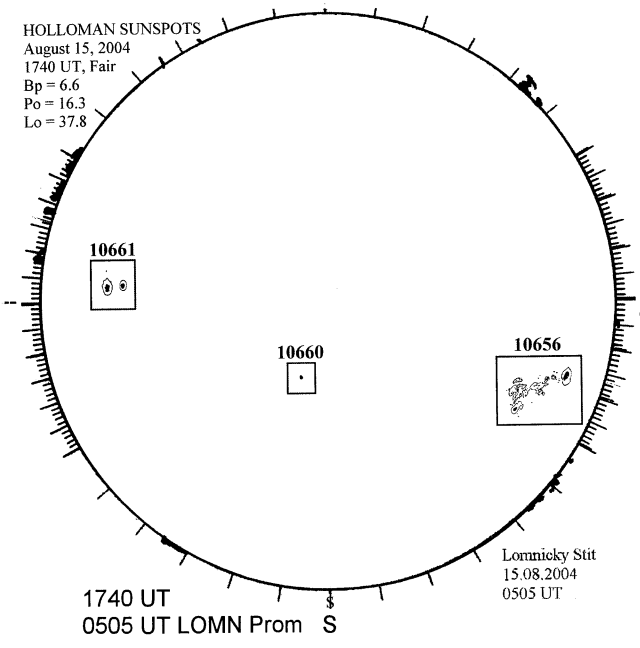
White= +7.5G
Black = -7.5G

CATANIA H-ALPHA



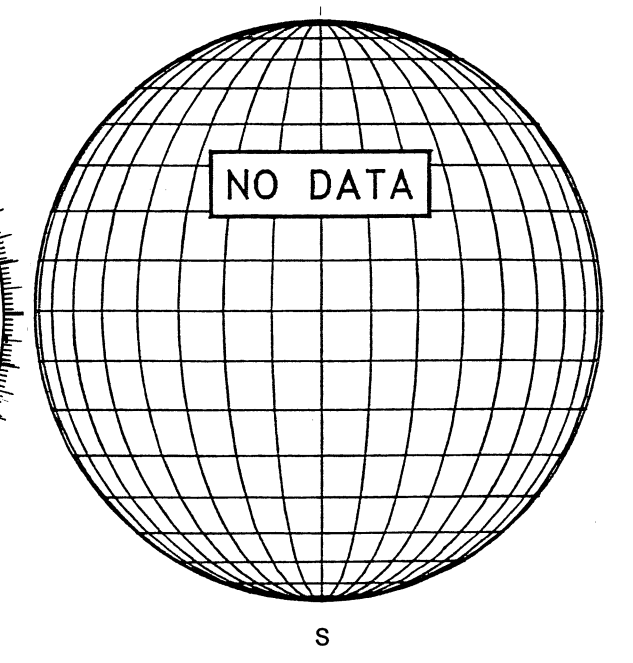
0857 UT

HOLLOMAN SUNSPOTS



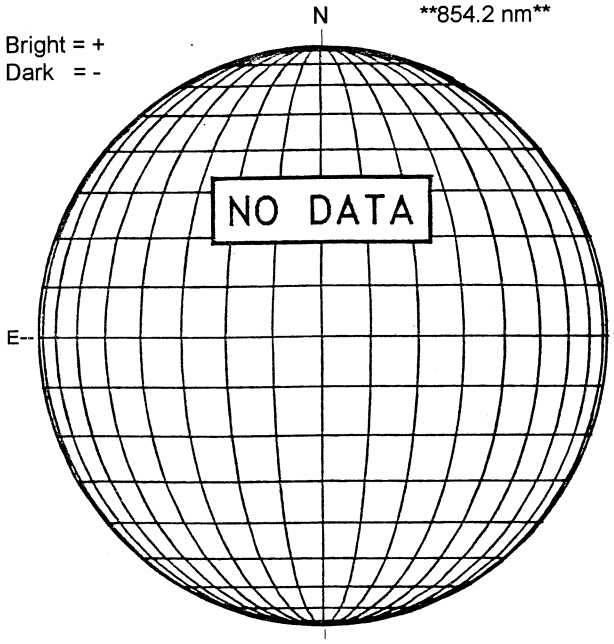
1740 UT
0505 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----

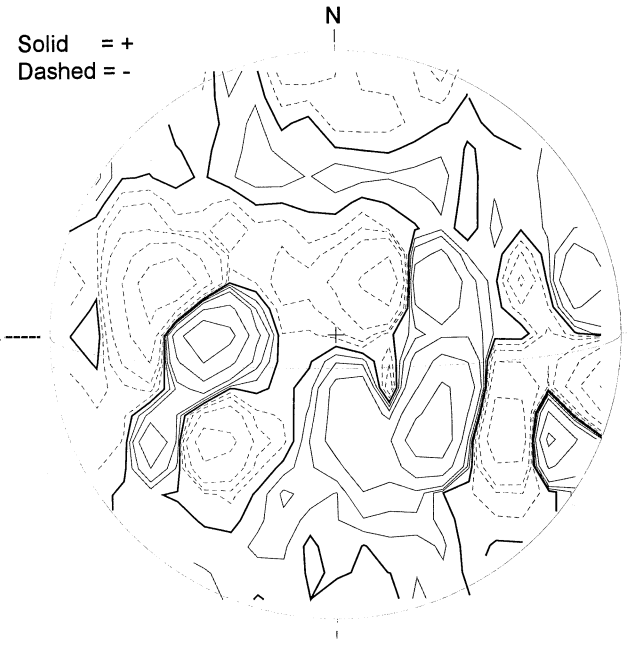


AUGUST 16, 2004 (P= 16.44, Bo = 6.70, Lo = 34.11)

KITT PEAK MAGNETOGRAM--SOLIS

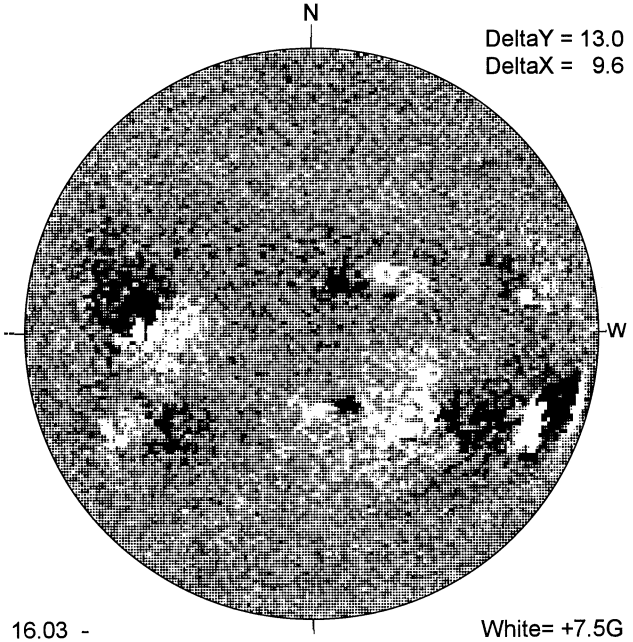


STANFORD MAGNETOGRAM



2214 UT

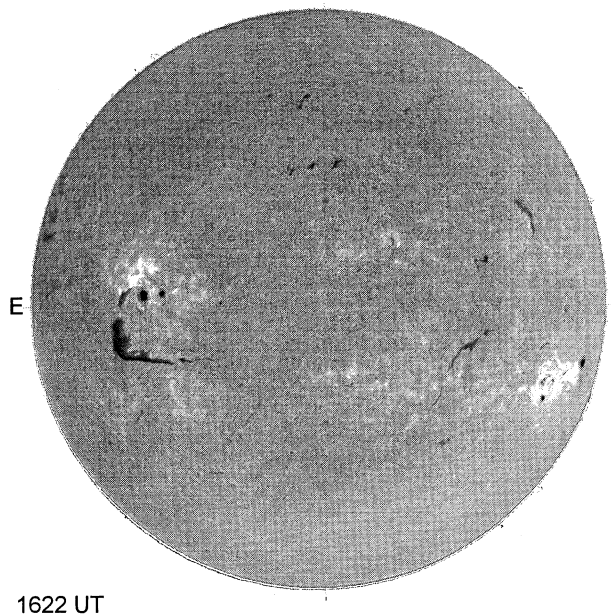
MT. WILSON MAGNETOGRAM



16.03 -
16.97 UT

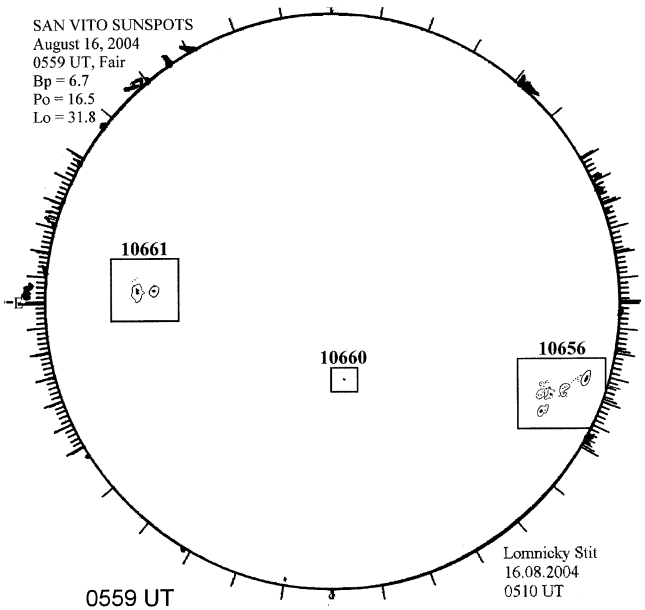
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



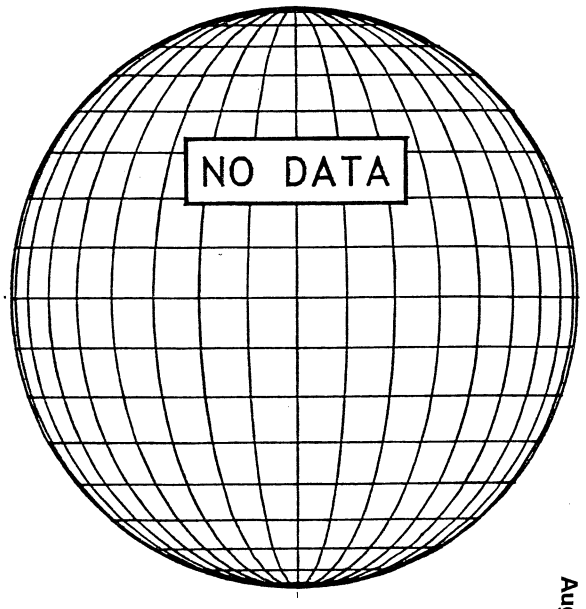
1622 UT

SAN VITO SUNSPOTS



0559 UT
0510 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



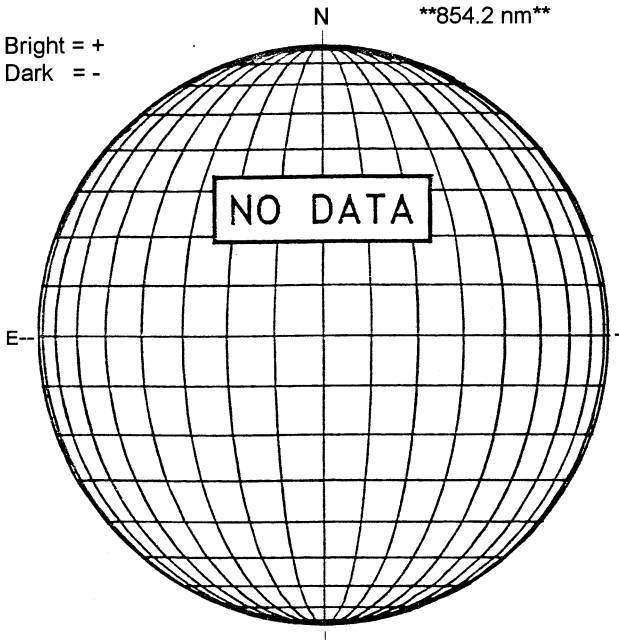
61
Aug 04

AUGUST 17, 2004 (P= 16.77, Bo = 6.75, Lo = 20.89)

KITT PEAK MAGNETOGRAM--SOLIS

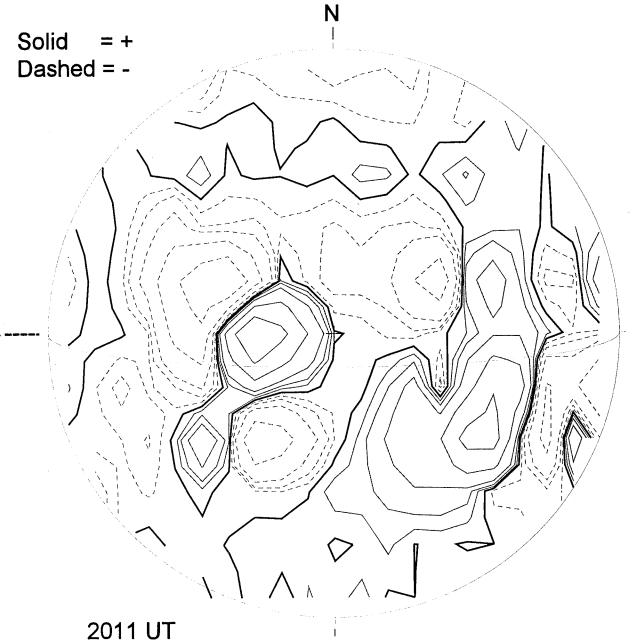
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

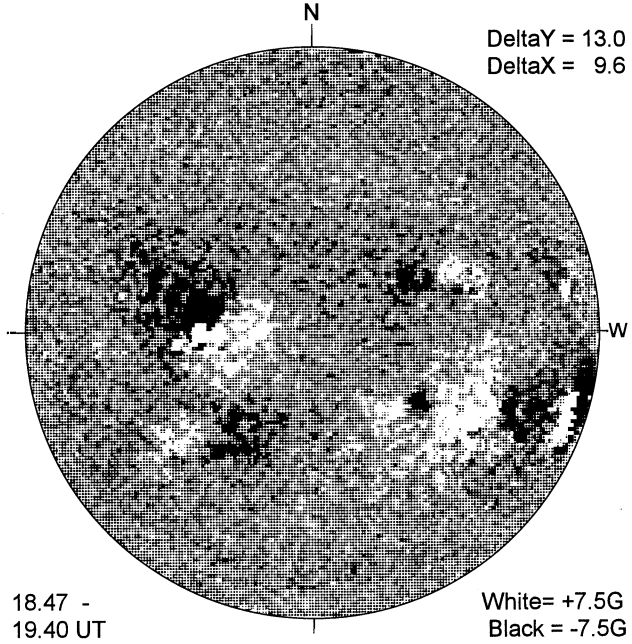
Solid = +
Dashed = -



2011 UT

MT. WILSON MAGNETOGRAM

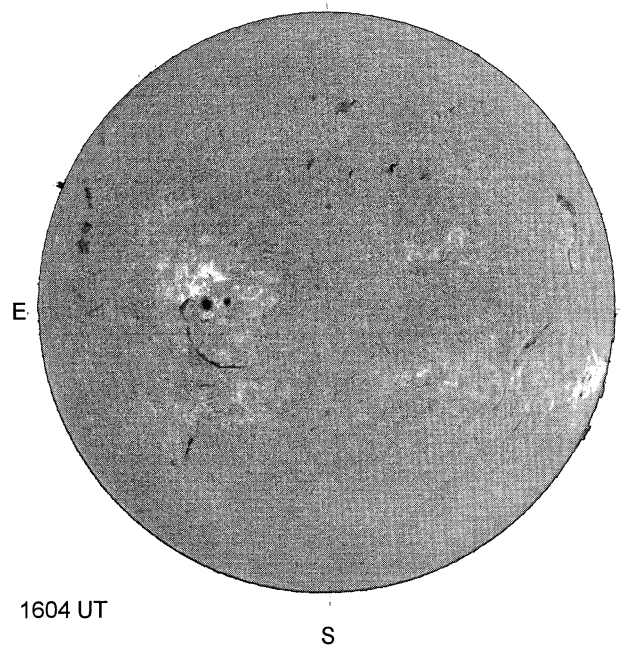
DeltaY = 13.0
DeltaX = 9.6



18.47 -
19.40 UT

White= +7.5G
Black = -7.5G

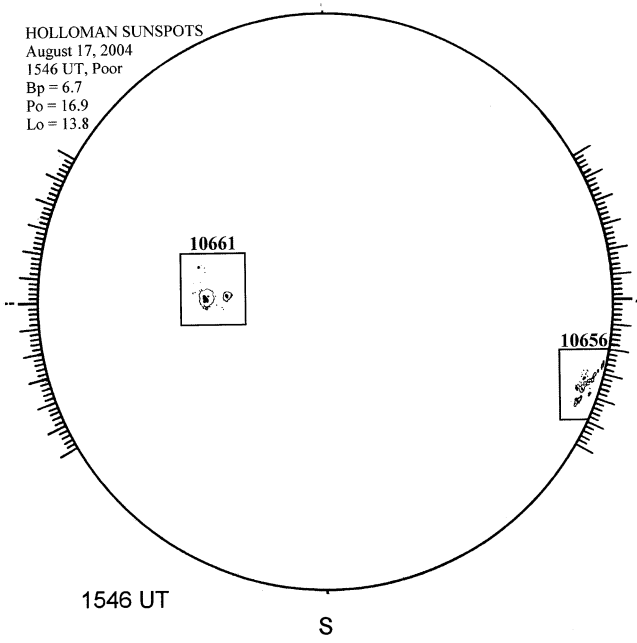
BIG BEAR H-ALPHA



1604 UT

S

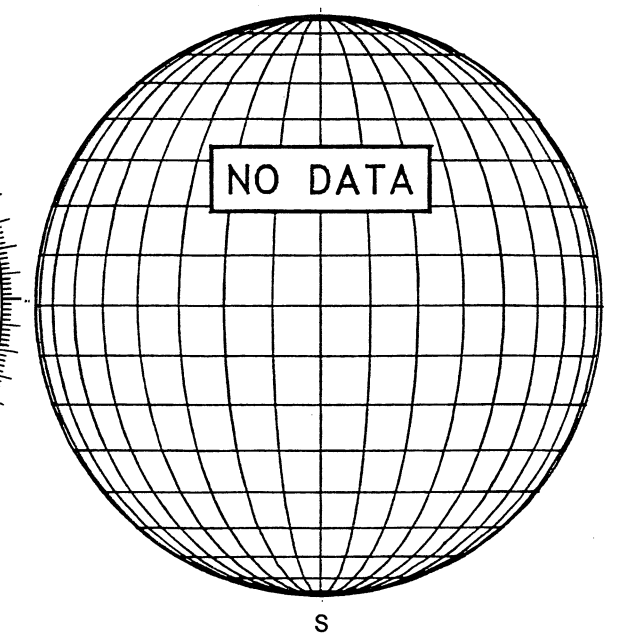
HOLLOMAN SUNSPOTS



1546 UT

S

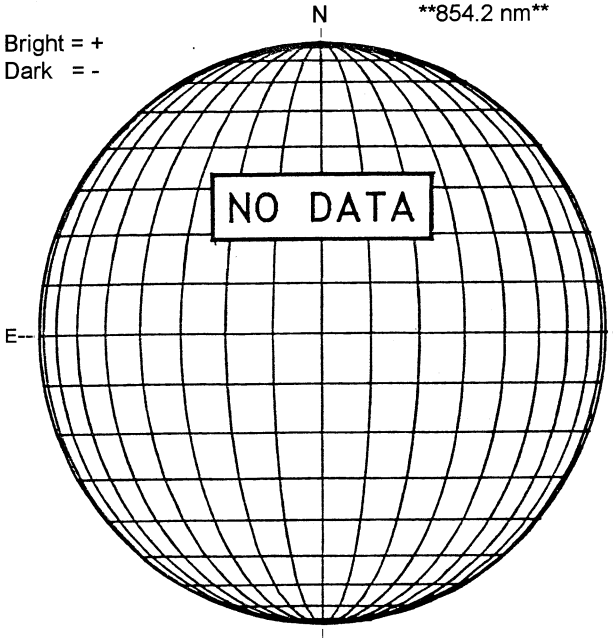
LOMNICKY PEAK CORONA (1.04 Radii)----



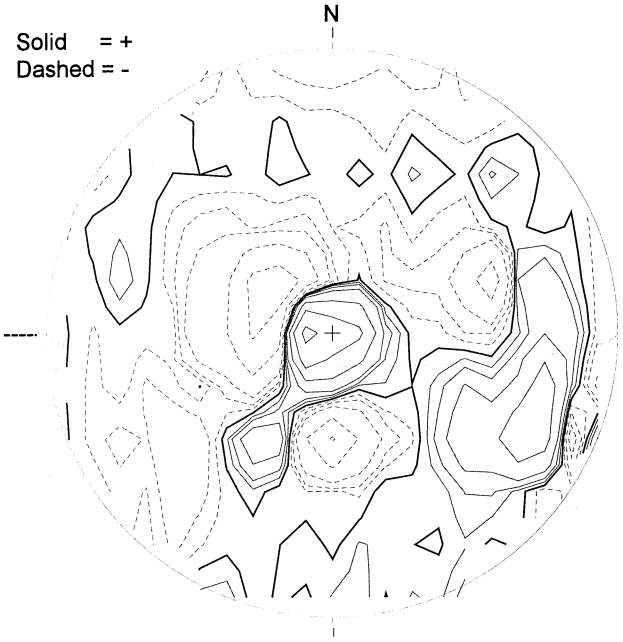
S

AUGUST 18, 2004 (P= 17.10, Bo = 6.79, Lo = 7.68)

KITT PEAK MAGNETOGRAM--SOLIS

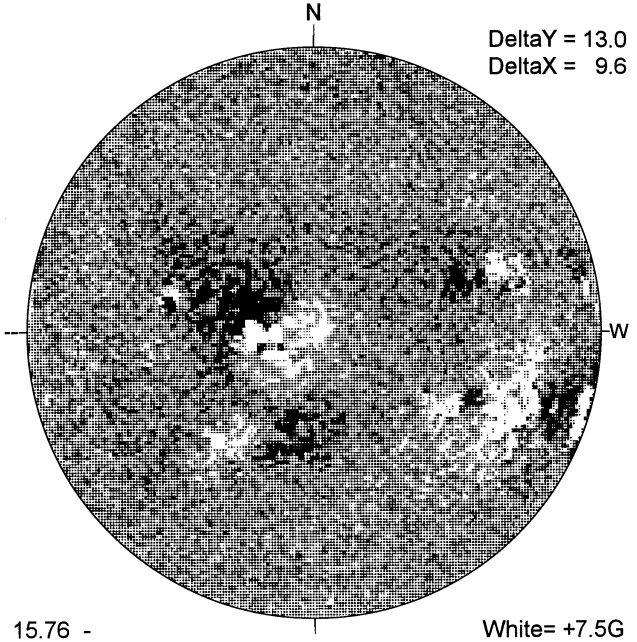


STANFORD MAGNETOGRAM



2239 UT

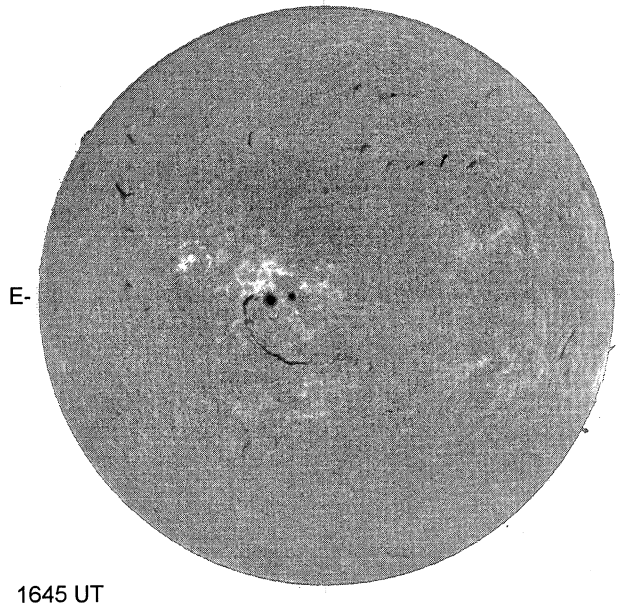
MT. WILSON MAGNETOGRAM



15.76 -
16.70 UT

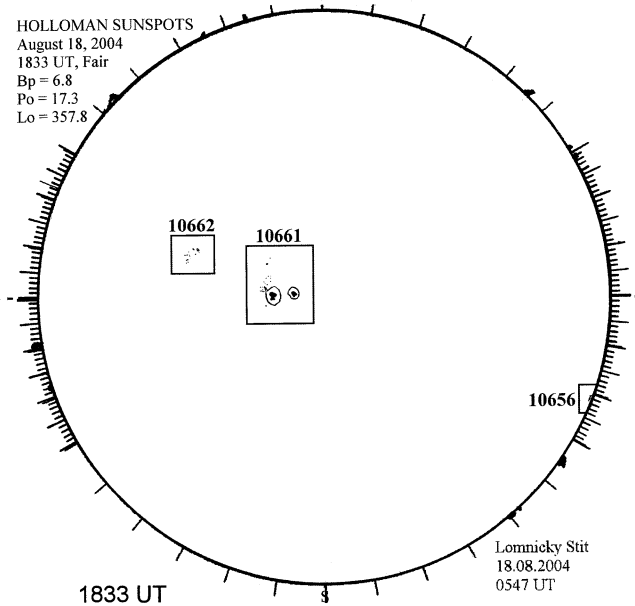
White= +7.5G
Black = -7.5G

----- BIG BEAR H-ALPHA



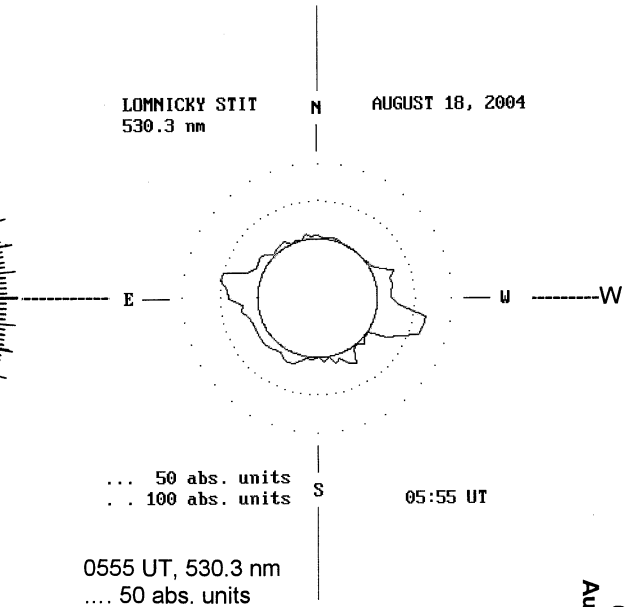
1645 UT

HOLLOMAN SUNSPOTS



1833 UT
0547 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)----



0555 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

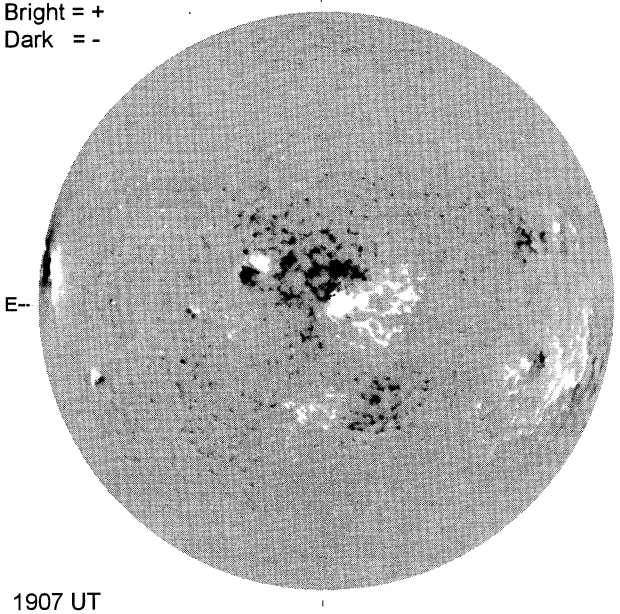
AUGUST 19, 2004 (P= 17.42, Bo = 6.84, Lo = 354.46)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -

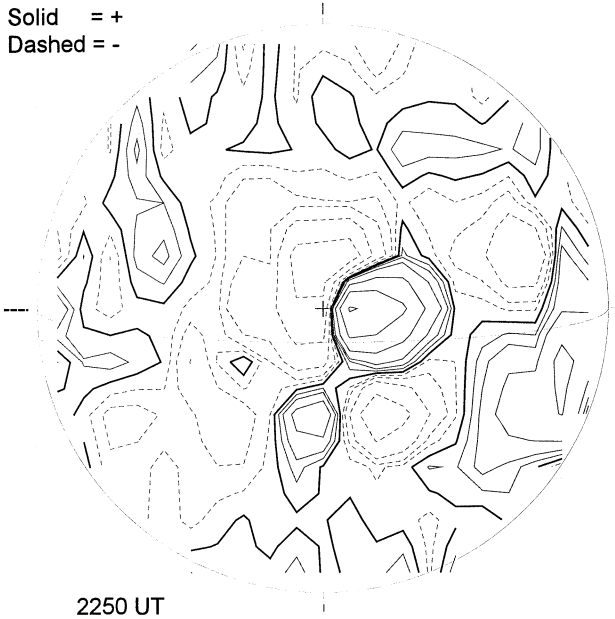


1907 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

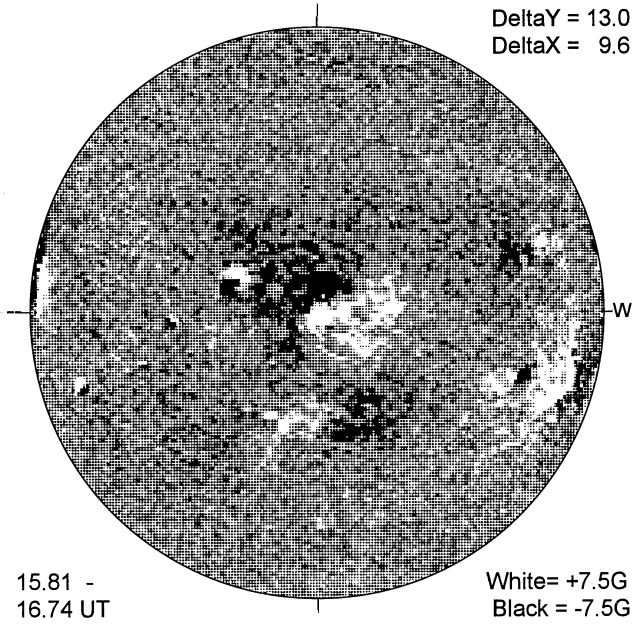


2250 UT

MT. WILSON MAGNETOGRAM

N

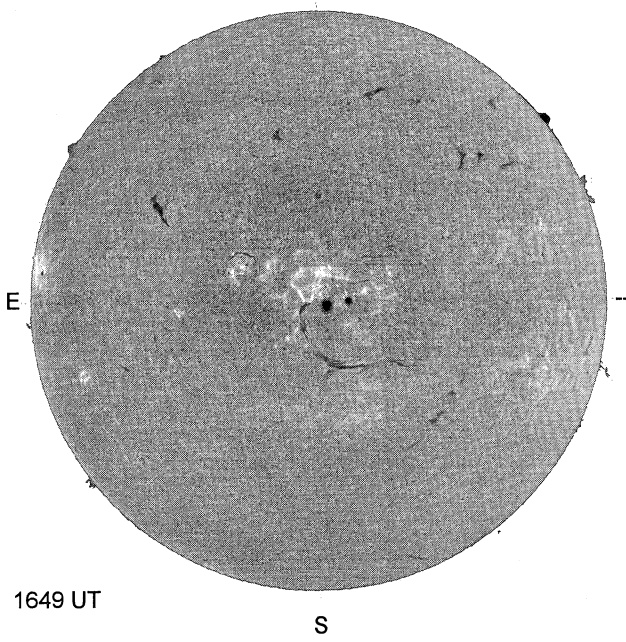
DeltaY = 13.0
DeltaX = 9.6



15.81 -
16.74 UT

White= +7.5G
Black = -7.5G

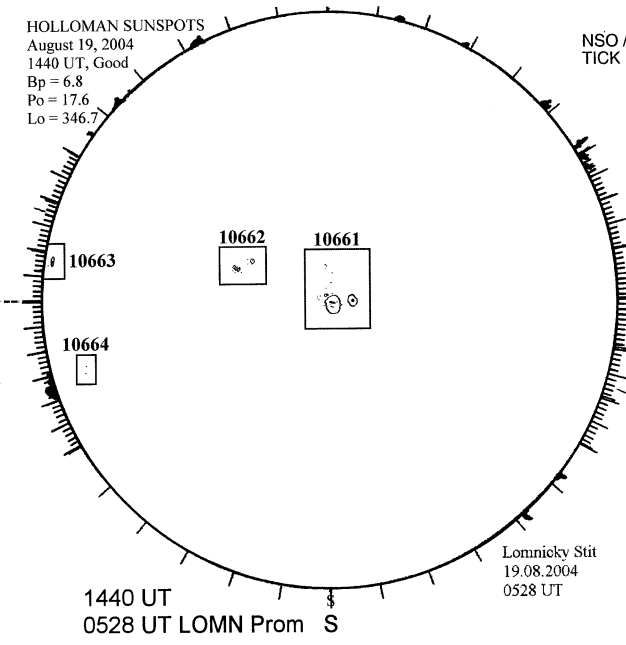
BIG BEAR H-ALPHA



1649 UT

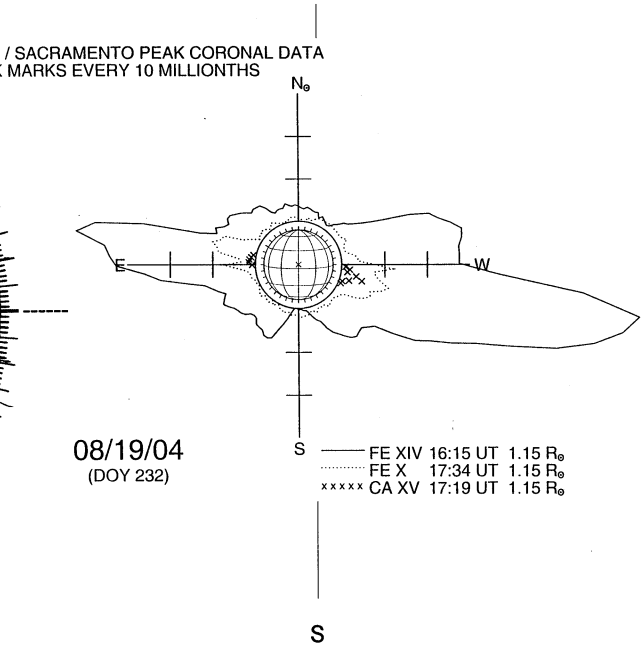
S

HOLLOMAN SUNSPOTS



1440 UT
0528 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



08/19/04
(DOY 232)

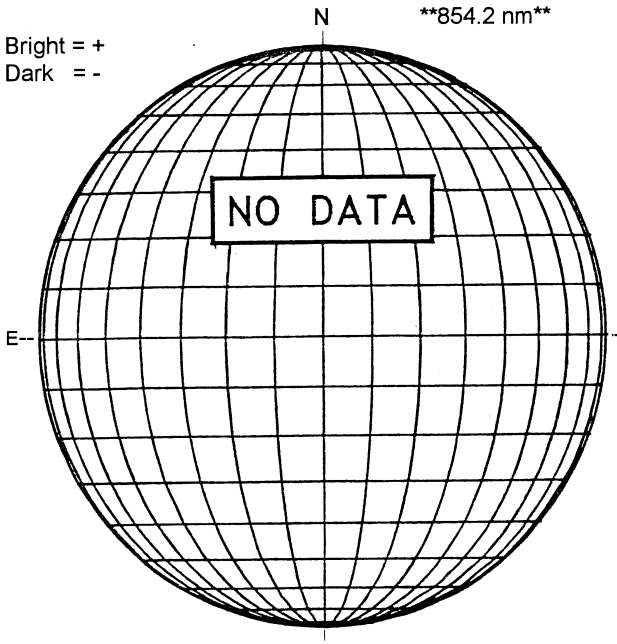
S

AUGUST 20, 2004 (P= 17.74, Bo = 6.88, Lo = 341.25)

KITT PEAK MAGNETOGRAM--SOLIS

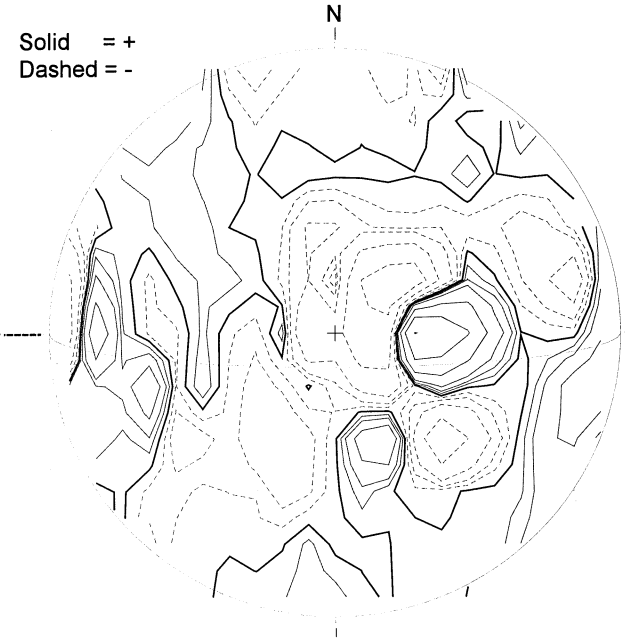
854.2 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

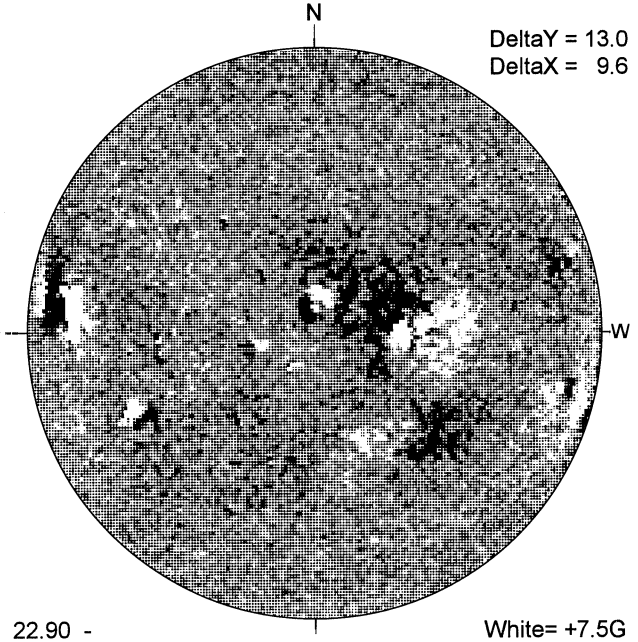
Solid = +
Dashed = -



1913 UT

MT. WILSON MAGNETOGRAM

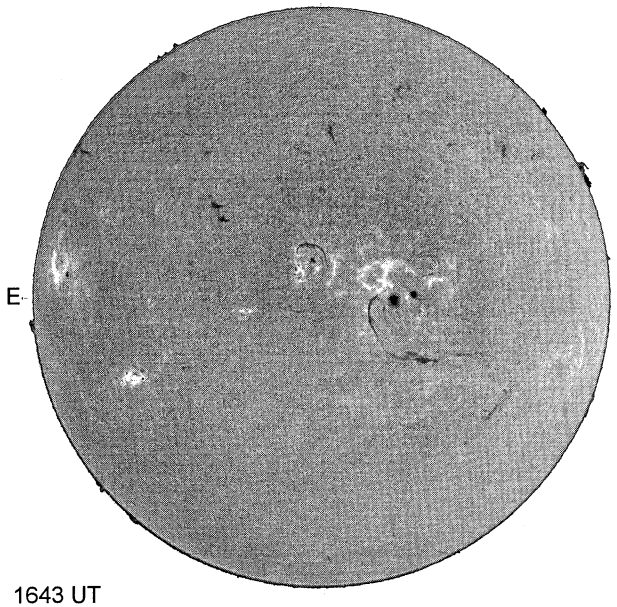
DeltaY = 13.0
DeltaX = 9.6



22.90 -
23.84 UT

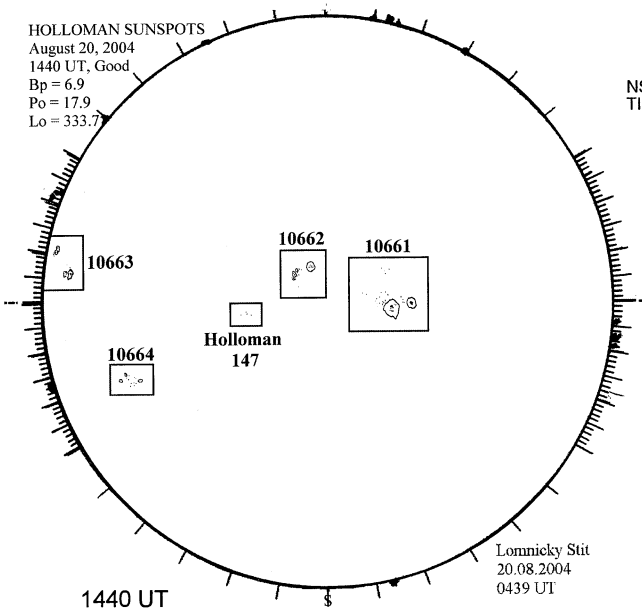
White= +7.5G
Black = -7.5G

---- BIG BEAR-ALPHA



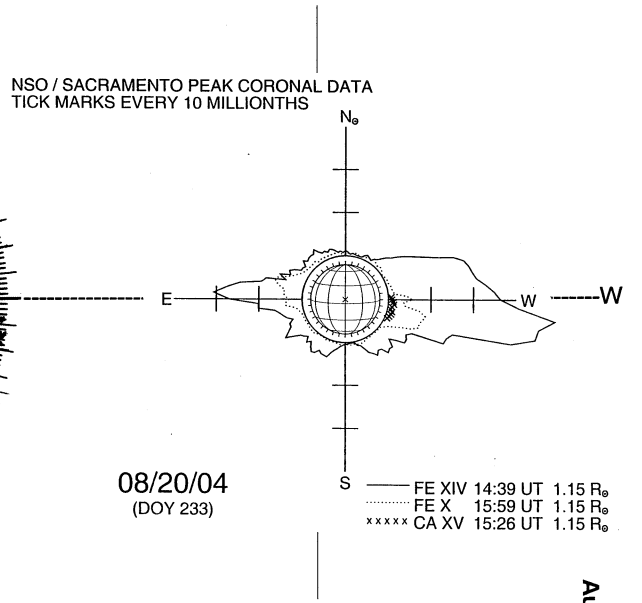
1643 UT

HOLLOMAN SUNSPOTS



1440 UT
0439 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

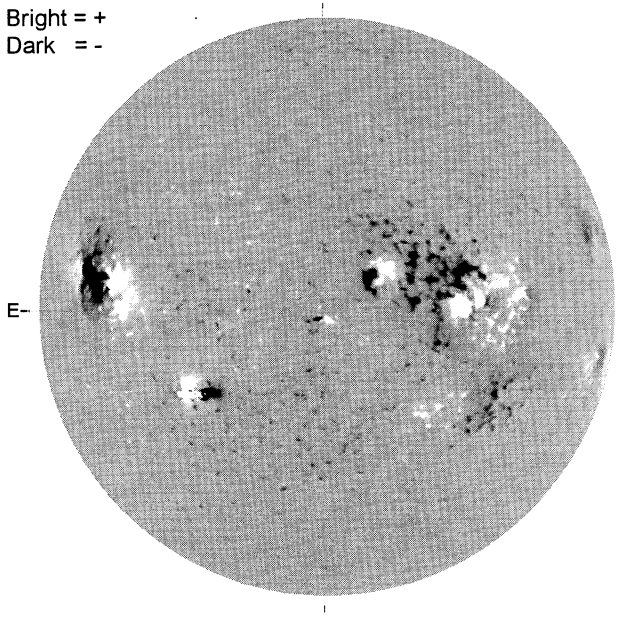


AUGUST 21, 2004 (P= 18.05, Bo = 6.91, Lo = 328.03)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

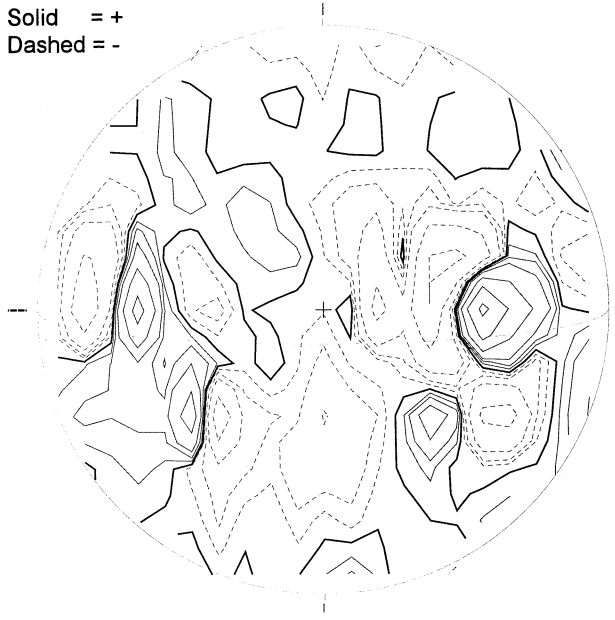
Bright = +
Dark = -



1744 UT

STANFORD MAGNETOGRAM

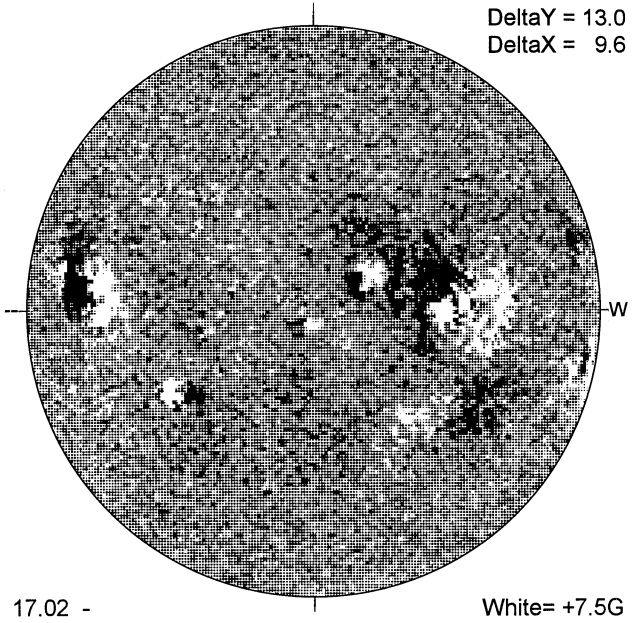
Solid = +
Dashed = -



2220 UT

MT. WILSON MAGNETOGRAM

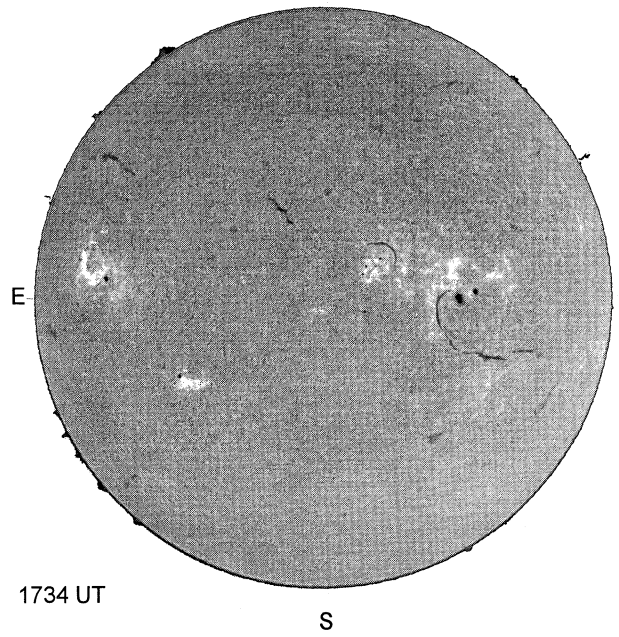
DeltaY = 13.0
DeltaX = 9.6



17.02 -
17.96 UT

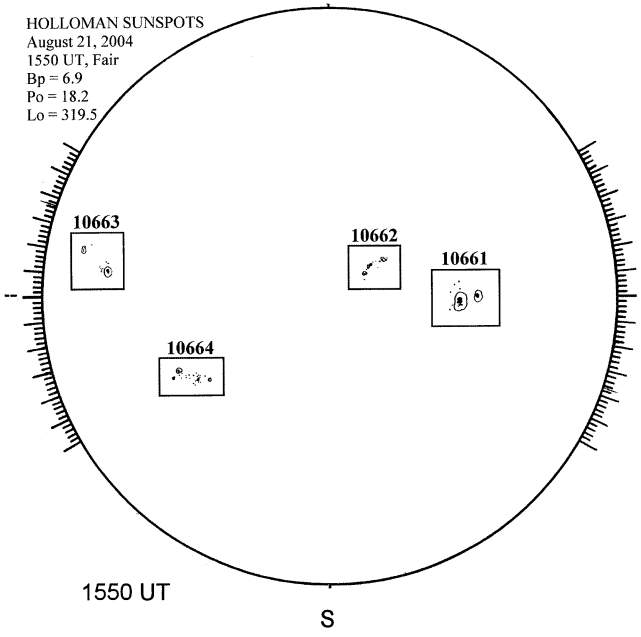
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



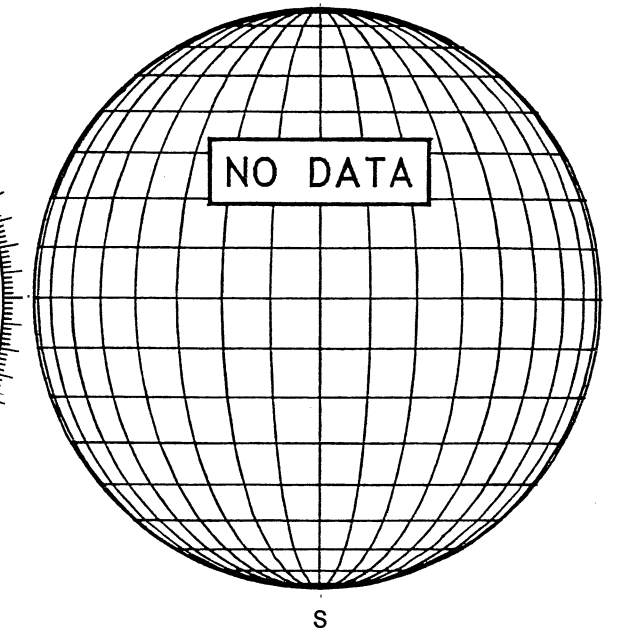
1734 UT

HOLLOMAN SUNSPOTS



1550 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

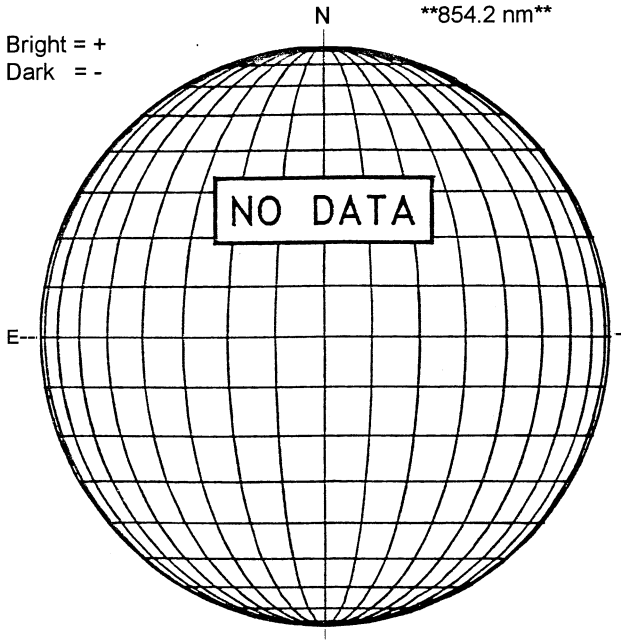


AUGUST 22, 2004 (P= 18.36, Bo = 6.95, Lo = 314.82)

KITT PEAK MAGNETOGRAM--SOLIS

854.2 nm

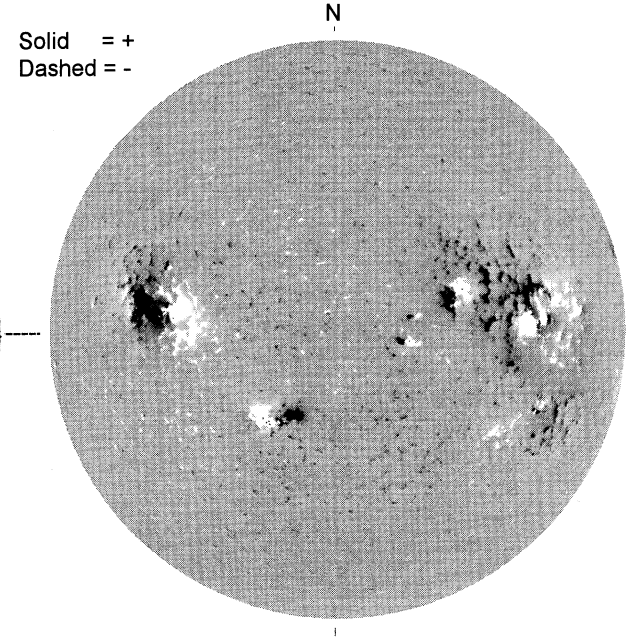
Bright = +
Dark = -



1911 UT

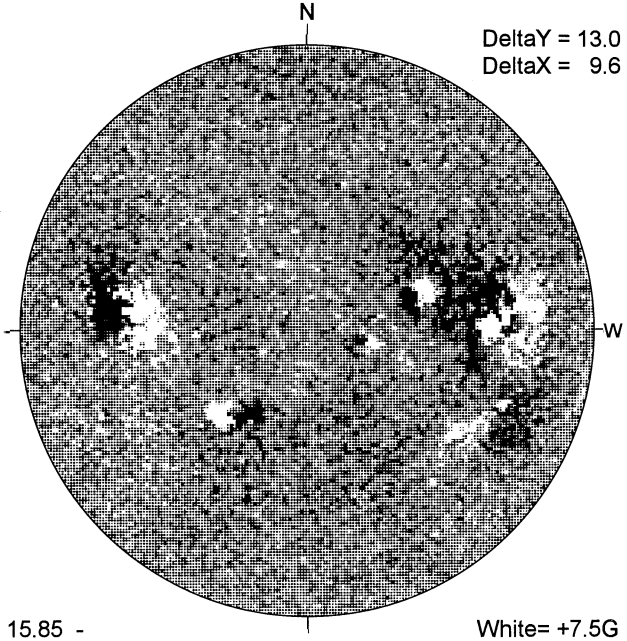
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

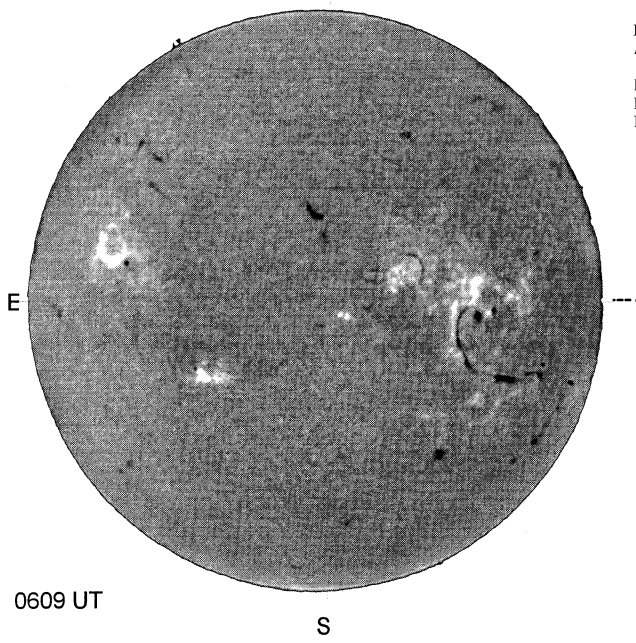
DeltaY = 13.0
DeltaX = 9.6



15.85 -
16.79 UT

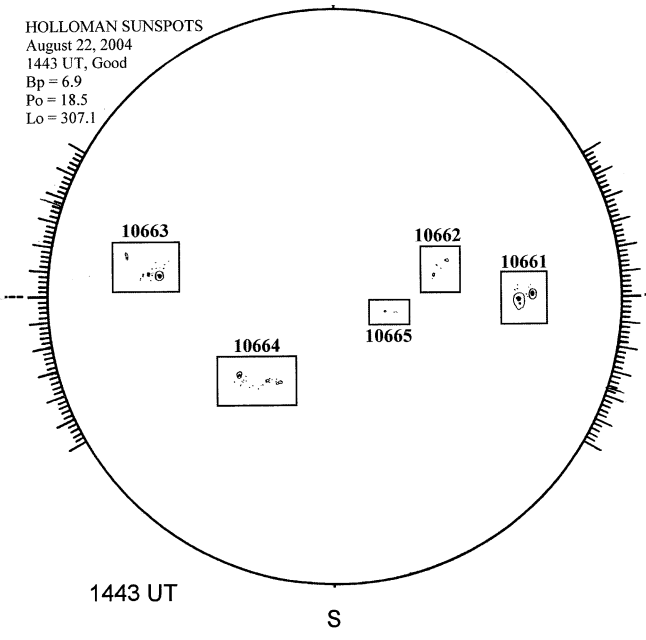
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



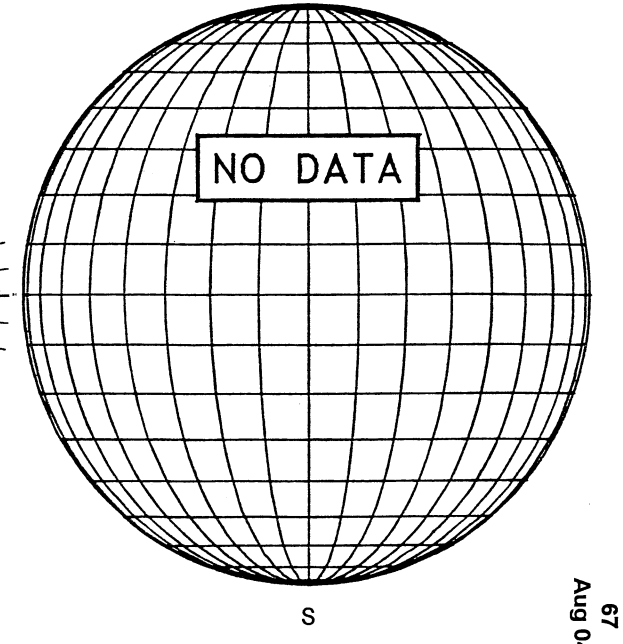
0609 UT

HOLLOMAN SUNSPOTS



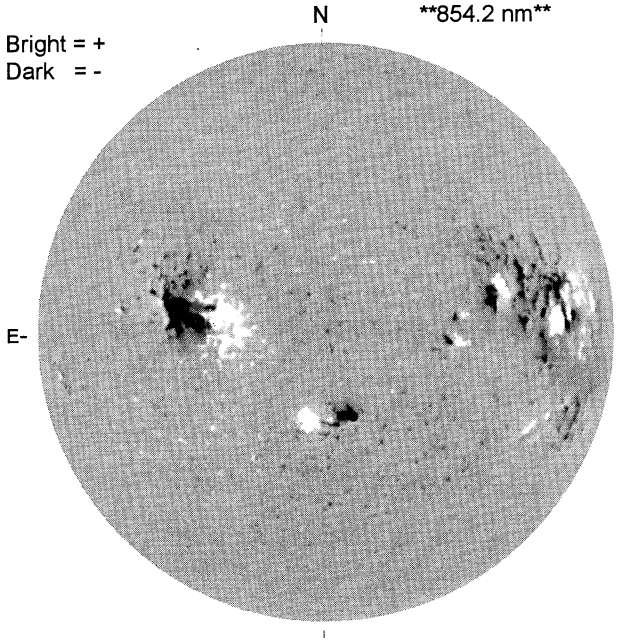
1443 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



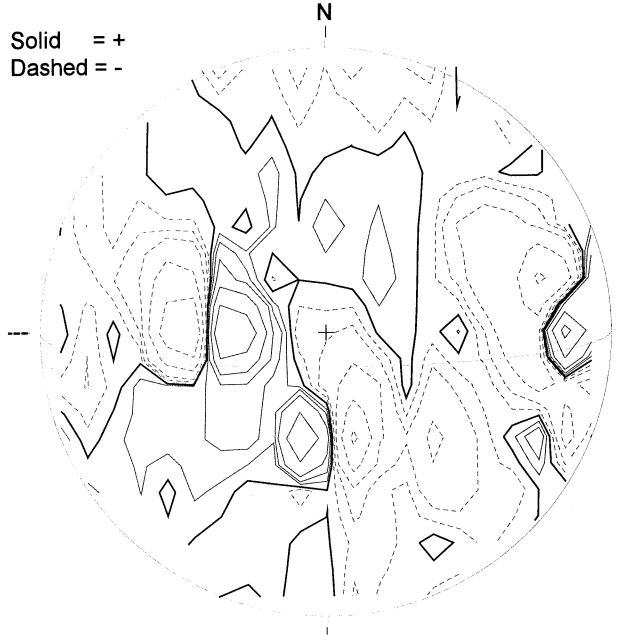
AUGUST 23, 2004 (P= 18.66, Bo = 6.98, Lo = 301.60)

KITT PEAK MAGNETOGRAM--SOLIS
854.2 nm



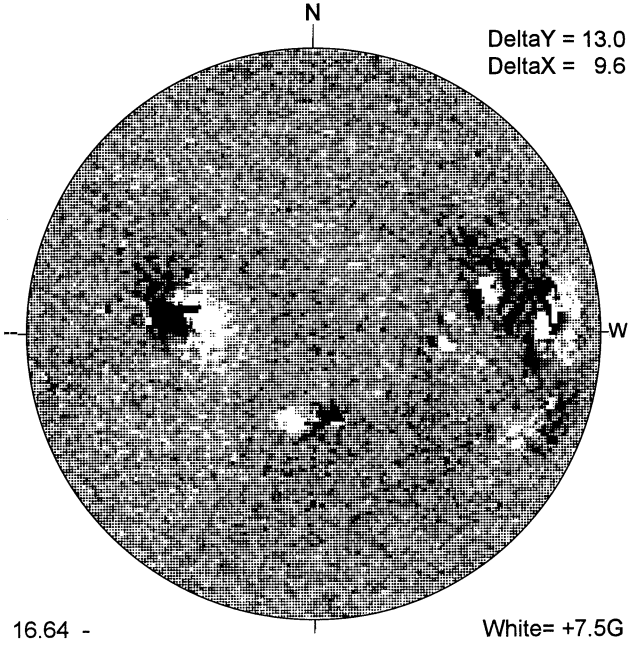
1737 UT

STANFORD MAGNETOGRAM



1927 UT

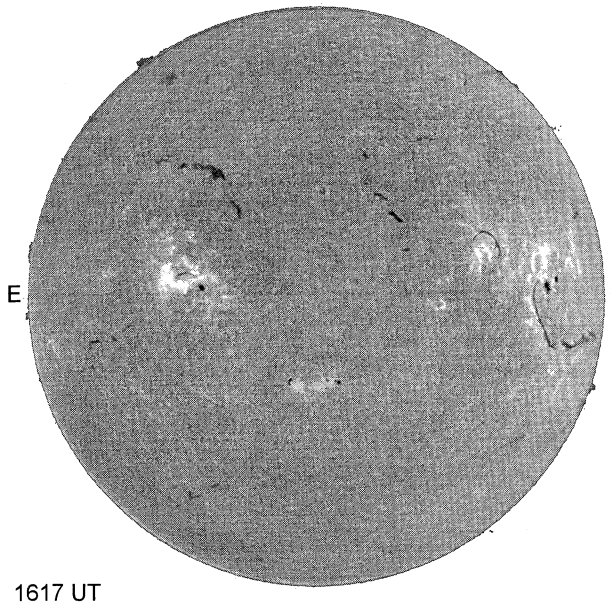
MT. WILSON MAGNETOGRAM



16.64 -
17.58 UT

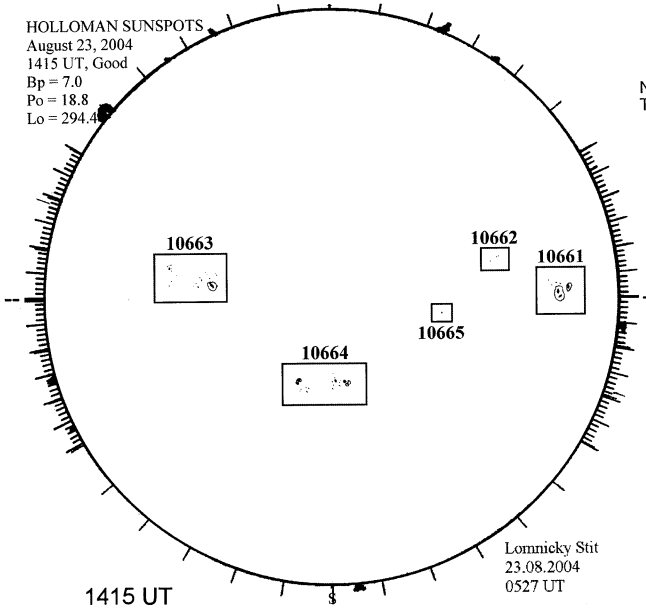
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



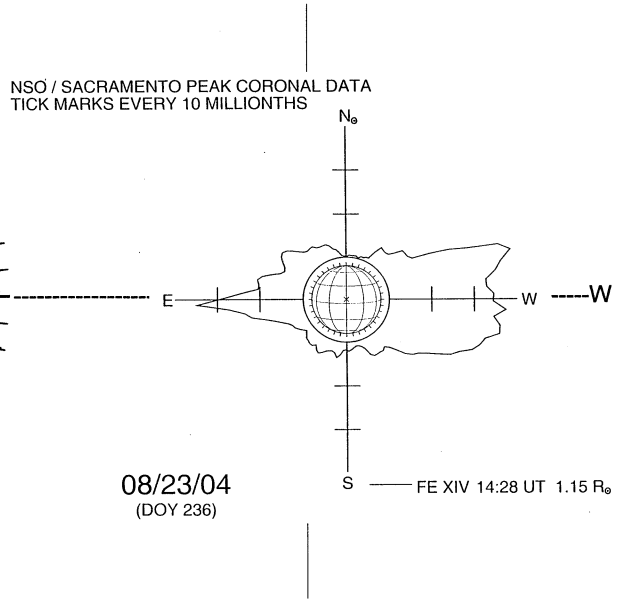
1617 UT

HOLLOMAN SUNSPOTS



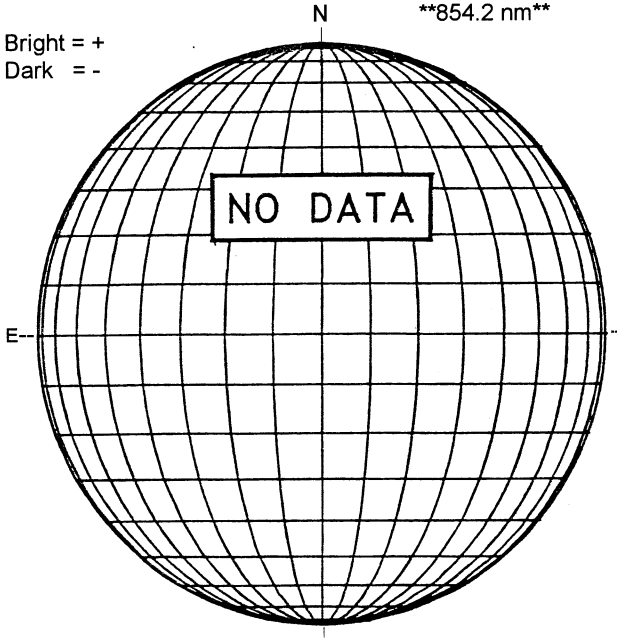
1415 UT
0527 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

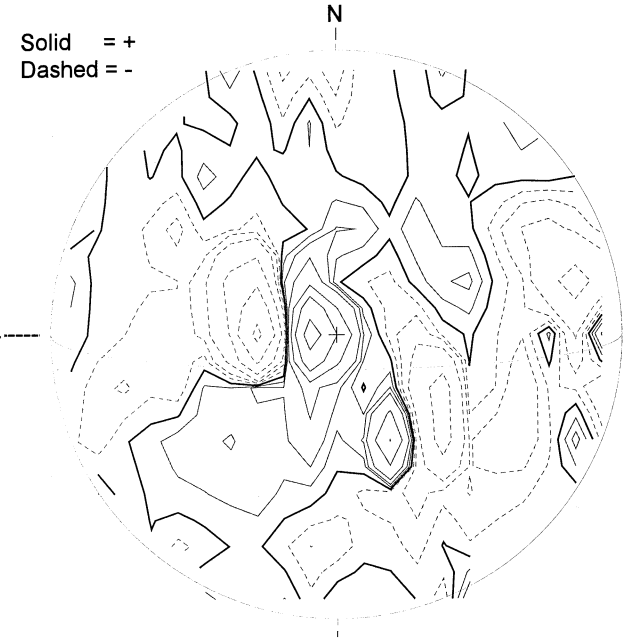


AUGUST 24, 2004 (P= 18.96, Bo = 7.02, Lo = 288.39)

KITT PEAK MAGNETOGRAM--SOLIS

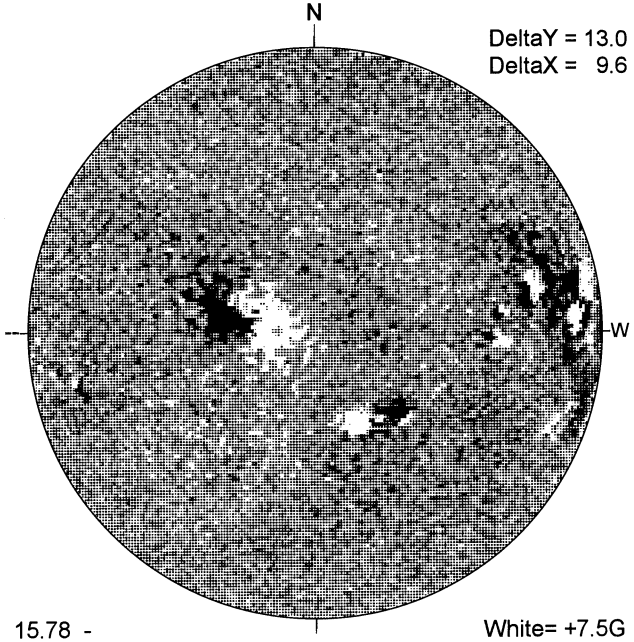


STANFORD MAGNETOGRAM



2253 UT

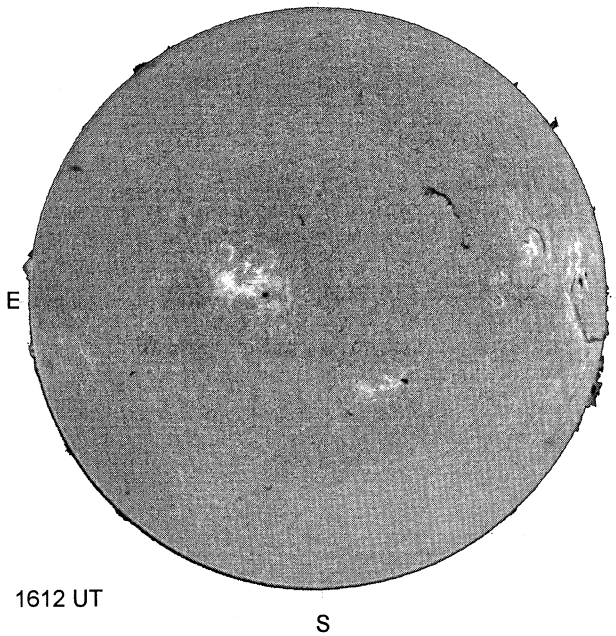
MT. WILSON MAGNETOGRAM



15.78 -
16.72 UT

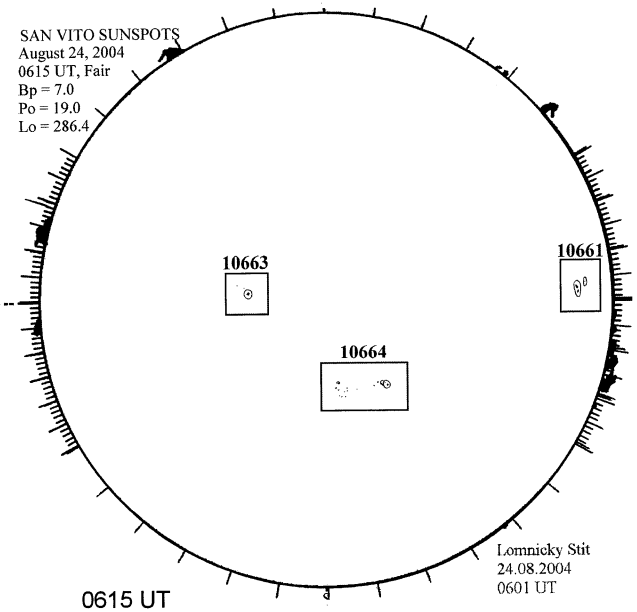
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



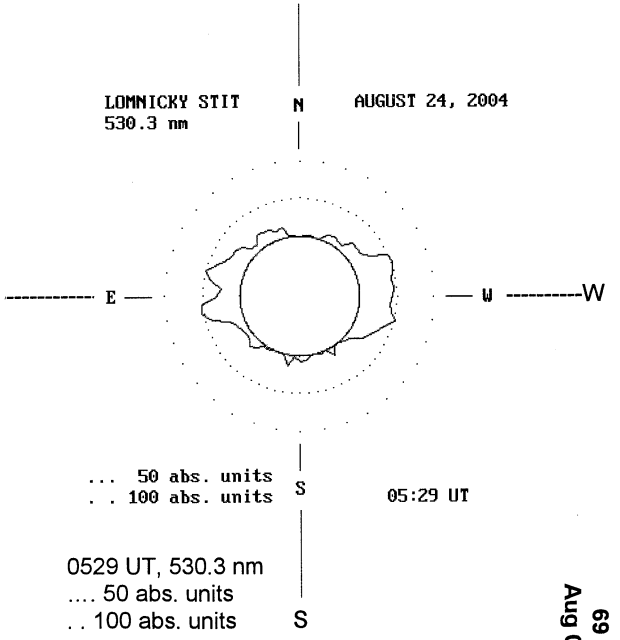
1612 UT

SAN VITO SUNSPOTS



0615 UT
0601 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0529 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

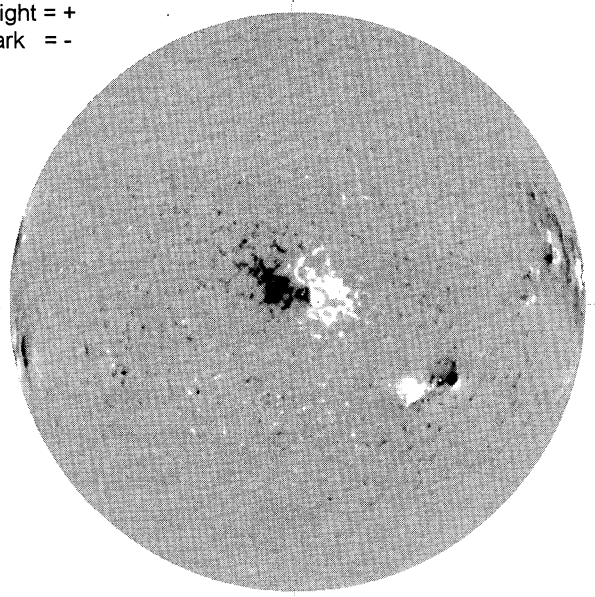
S

69
Aug 04

AUGUST 25, 2004 (P= 19.25, Bo = 7.05, Lo = 275.18)

KITT PEAK MAGNETOGRAM--SOLIS

N
854.2 nm
Bright = +
Dark = -
E-



1908 UT

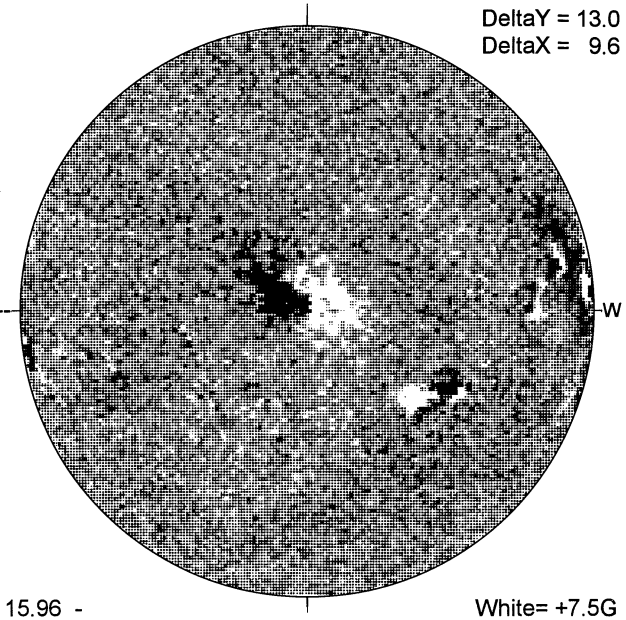
STANFORD MAGNETOGRAM

N
Solid = +
Dashed = -

2222 UT

MT. WILSON MAGNETOGRAM

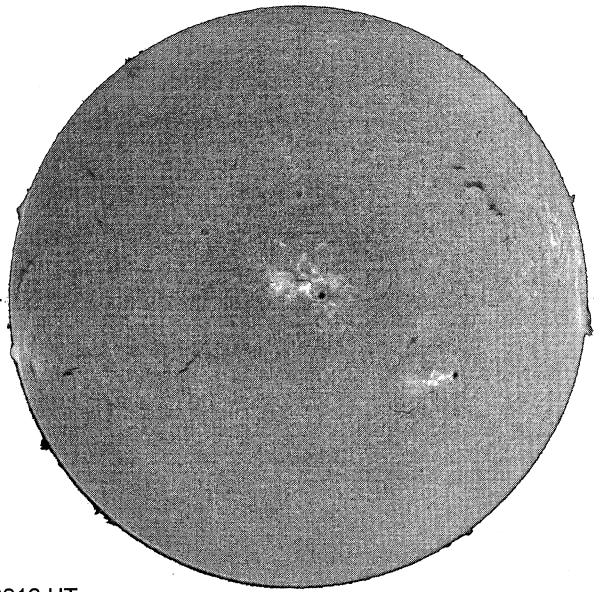
N
DeltaY = 13.0
DeltaX = 9.6
W



15.96 -
16.90 UT
White= +7.5G
Black = -7.5G

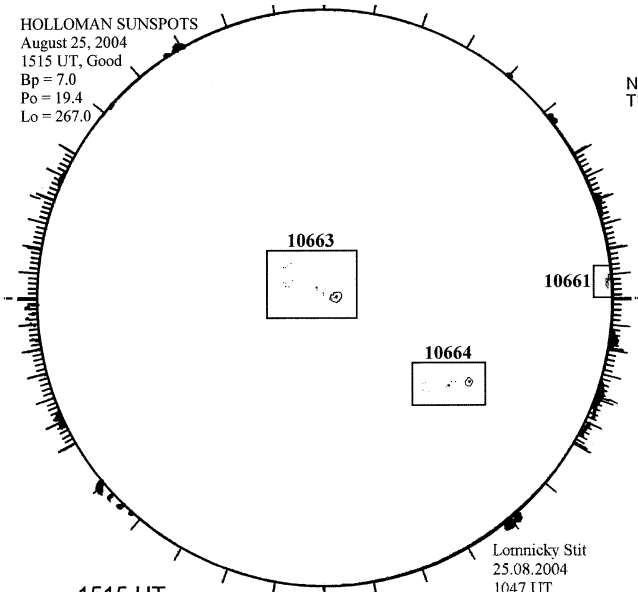
BIG BEAR H-ALPHA

E



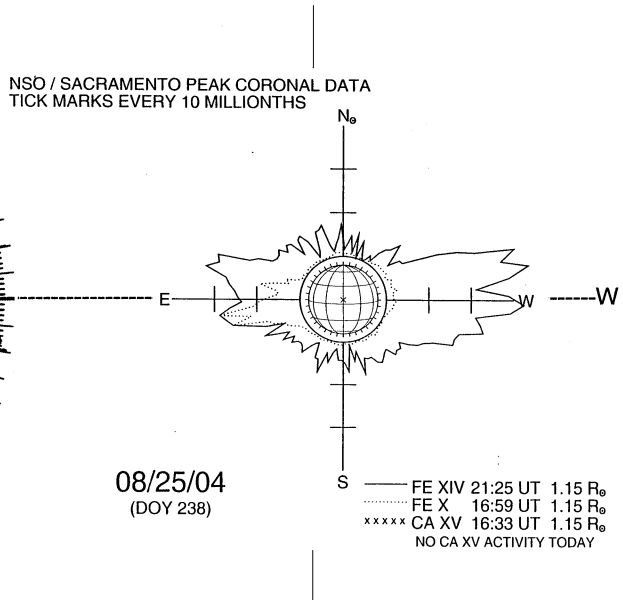
2012 UT
S

HOLLOMAN SUNSPOTS



1515 UT
1047 UT LOMN Prom
S

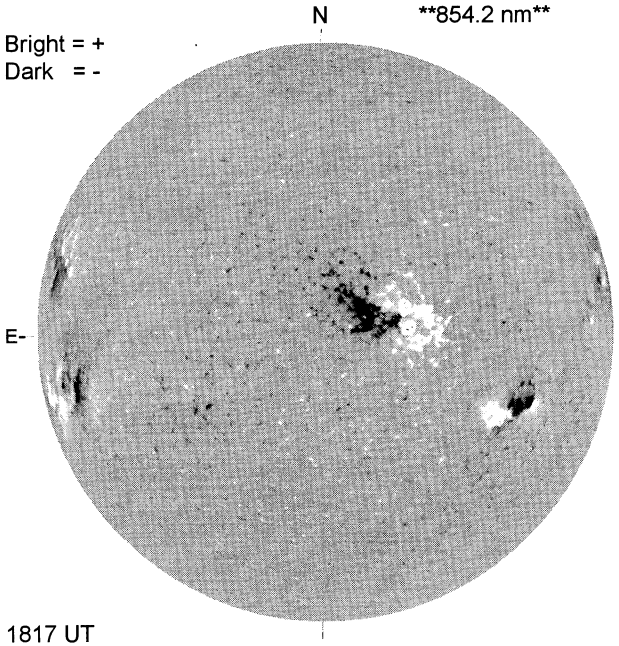
SACRAMENTO PEAK CORONA (1.15 Radii)



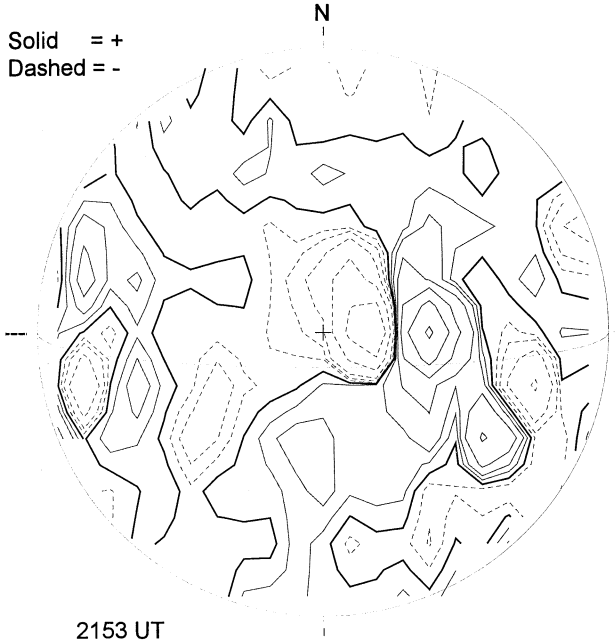
S

AUGUST 26, 2004 (P= 19.54, Bo = 7.07, Lo = 261.96)

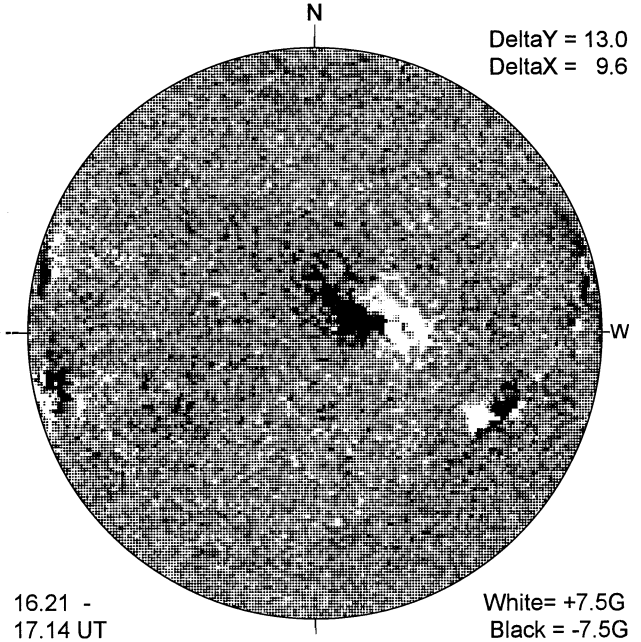
KITT PEAK MAGNETOGRAM--SOLIS



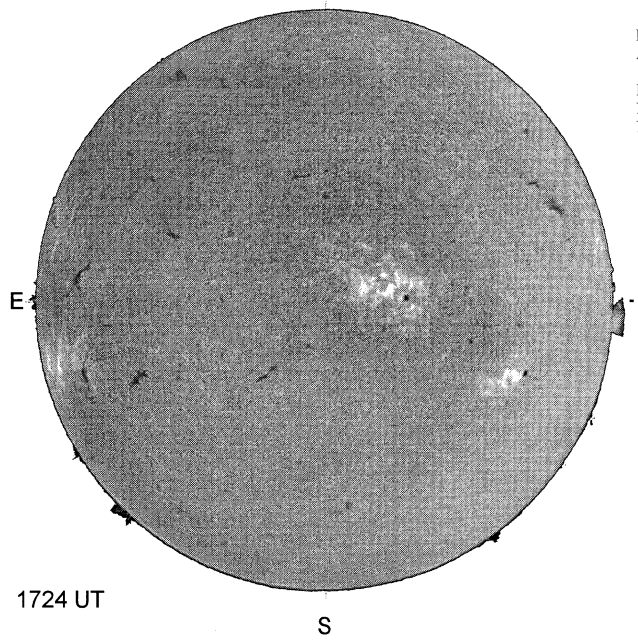
STANFORD MAGNETOGRAM



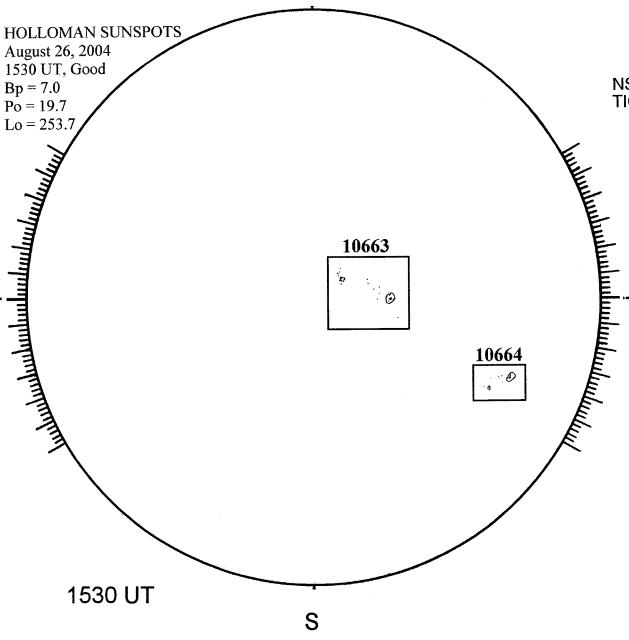
MT. WILSON MAGNETOGRAM



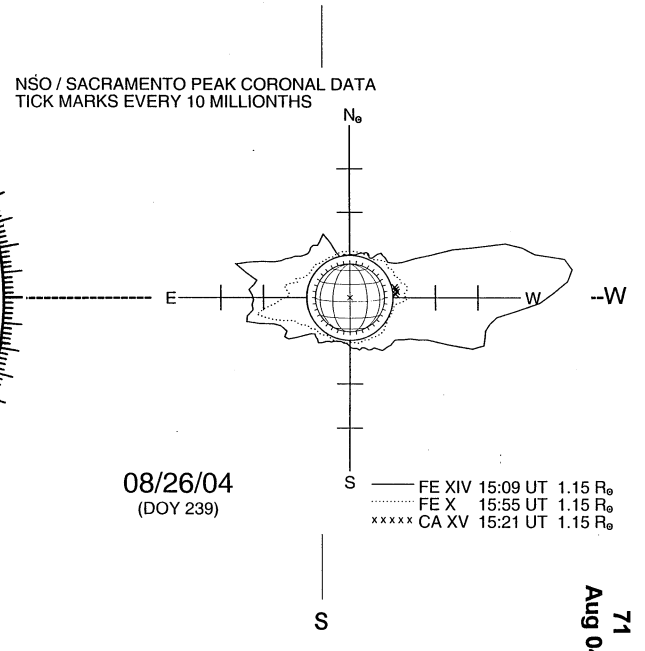
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



71
Aug 04

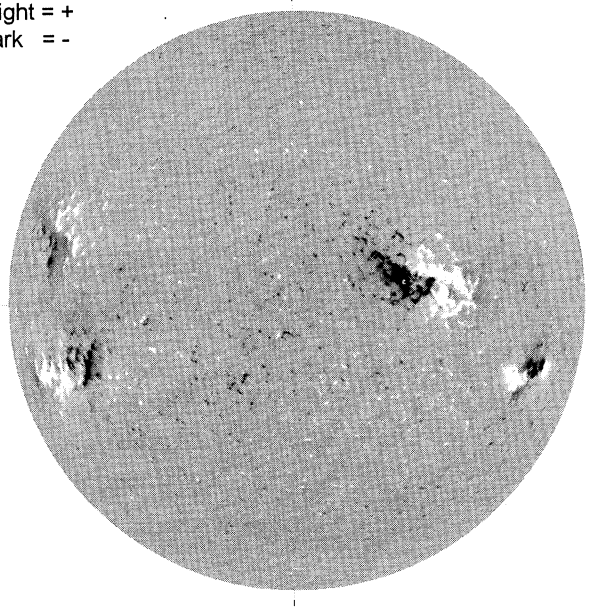
AUGUST 27, 2004 (P= 19.82, Bo = 7.10, Lo = 248.75)

KITT PEAK MAGNETOGRAM--SOLIS

N

854.2 nm

Bright = +
Dark = -



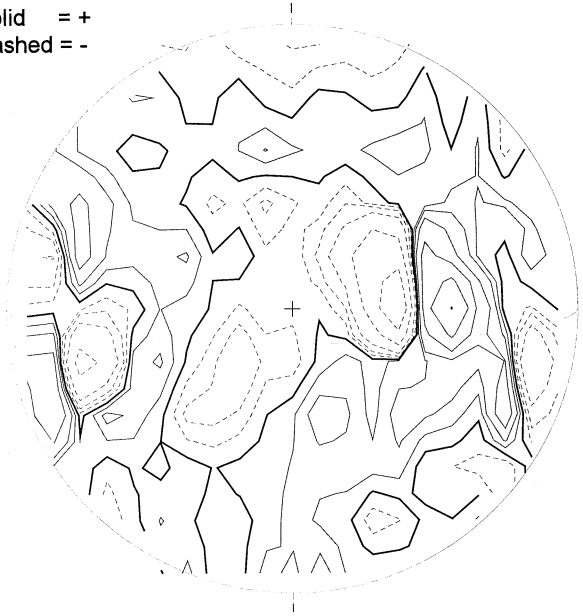
E--

1832 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

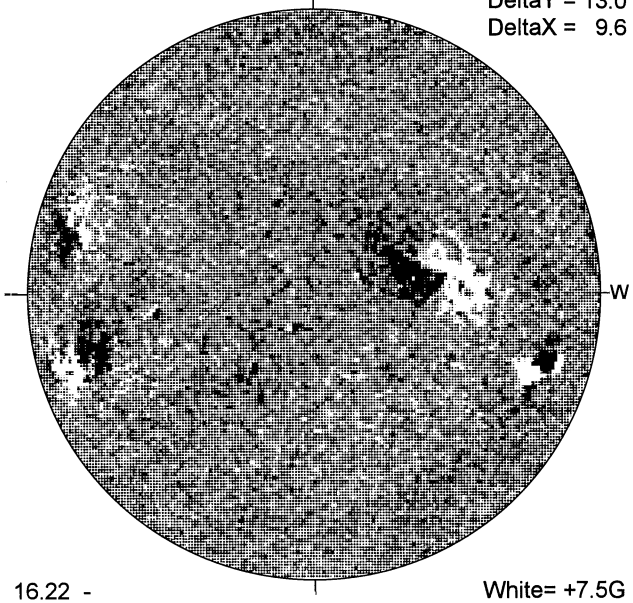


1913 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.0
DeltaX = 9.6

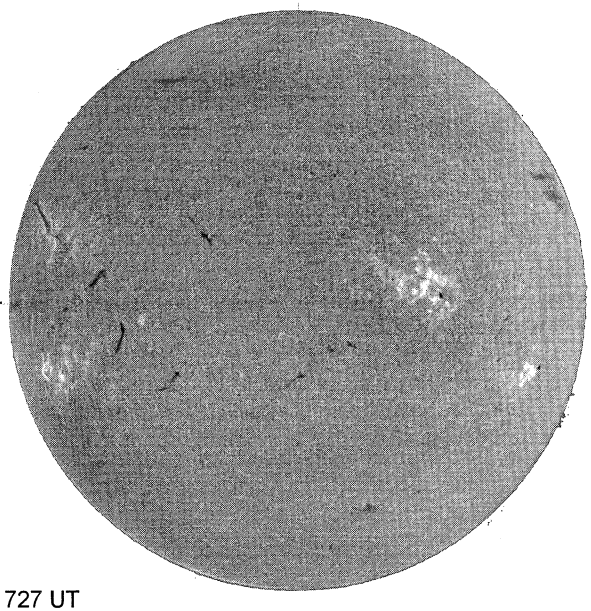


W

16.22 -
17.16 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



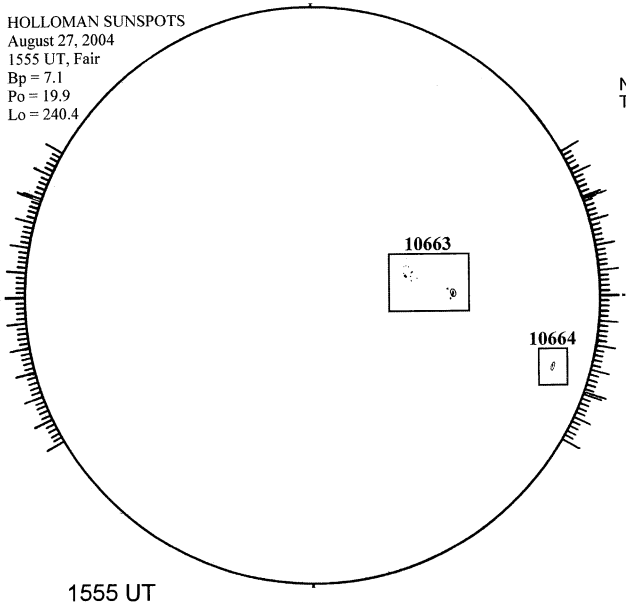
E

1727 UT

S

HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
August 27, 2004
1555 UT, Fair
Bp = 7.1
Po = 19.9
Lo = 240.4

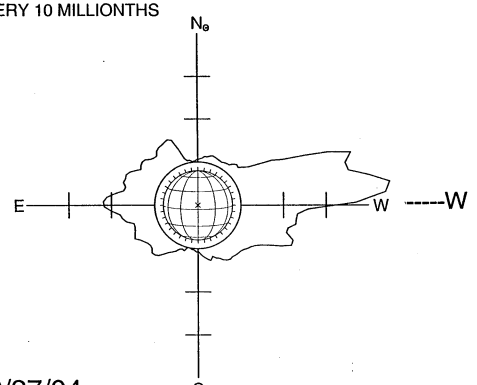


1555 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



-----W

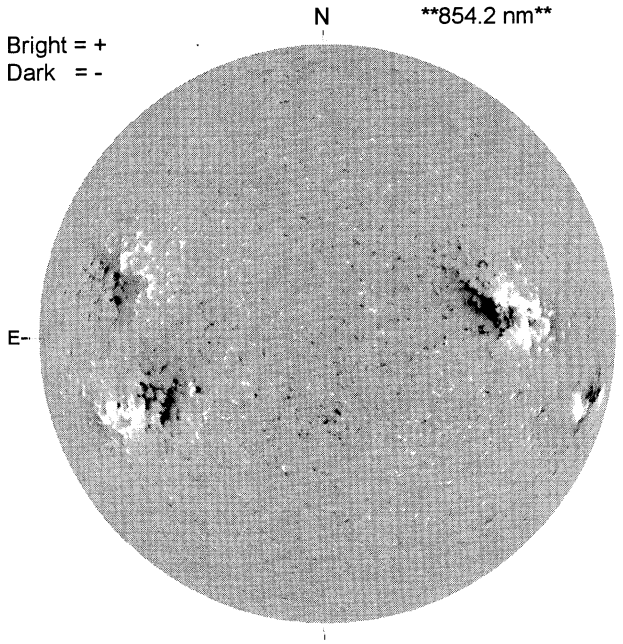
08/27/04
(DOY 240)

FE XIV 15:52 UT 1.15 Re
xxxxx CA XV 16:06 UT 1.15 Re
NO CA XV ACTIVITY TODAY

S

AUGUST 28, 2004 (P= 20.09, Bo = 7.12, Lo = 235.54)

KITT PEAK MAGNETOGRAM--SOLIS

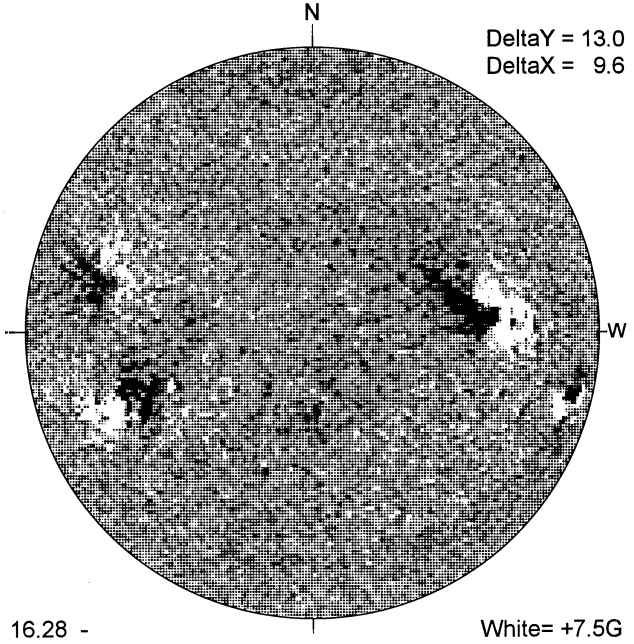


1755 UT

STANFORD MAGNETOGRAM

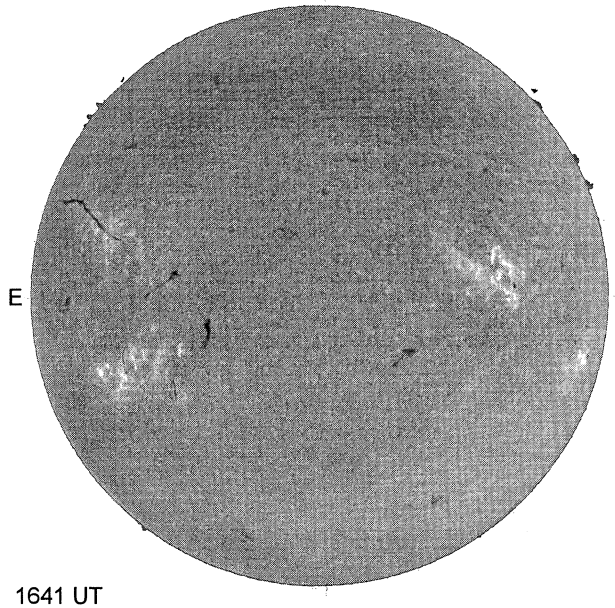
2113 UT

MT. WILSON MAGNETOGRAM



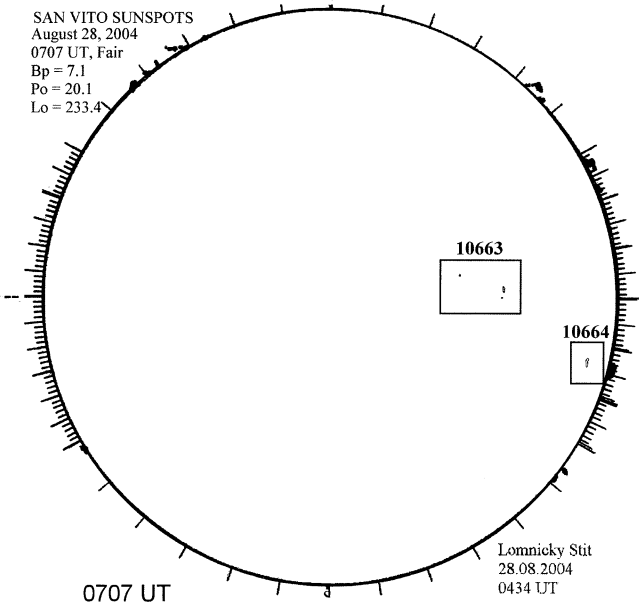
16.28 -
17.21 UT

BIG BEAR H-ALPHA



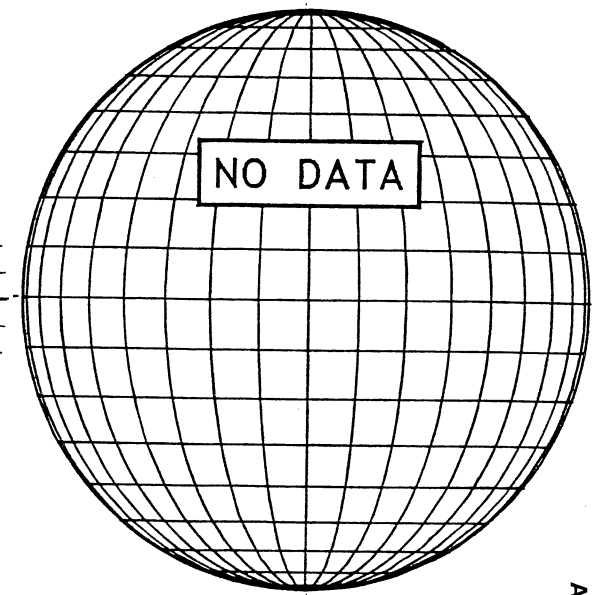
1641 UT

SAN VITO SUNSPOTS



0707 UT
0434 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



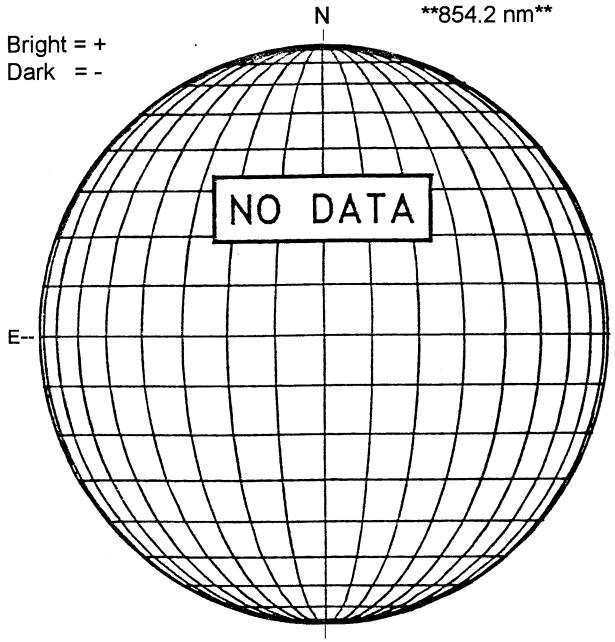
73
Aug 04

AUGUST 29, 2004 (P= 20.36, Bo = 7.15, Lo = 222.33)

KITT PEAK MAGNETOGRAM--SOLIS

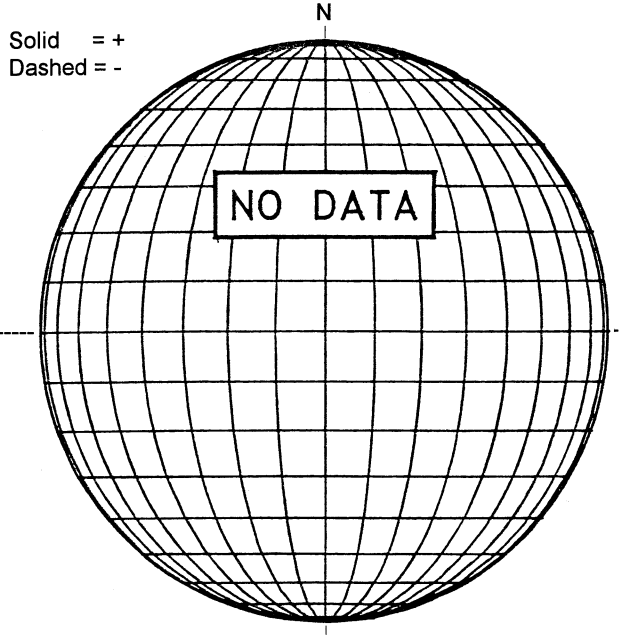
854.2 nm

Bright = +
Dark = -



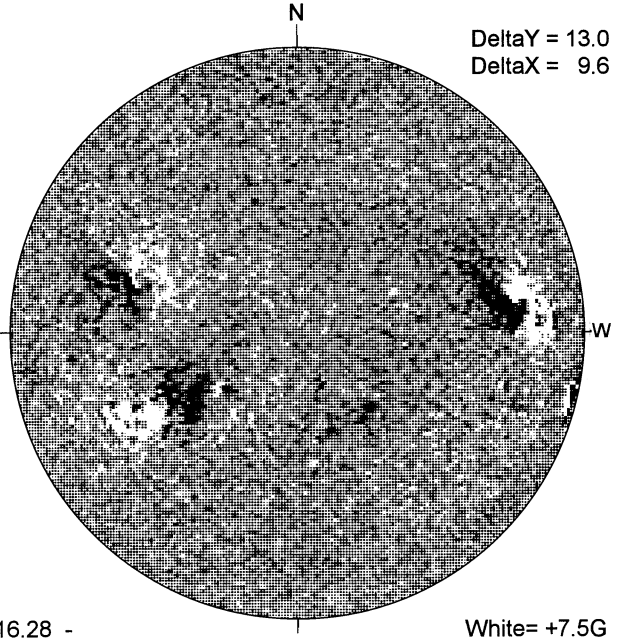
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

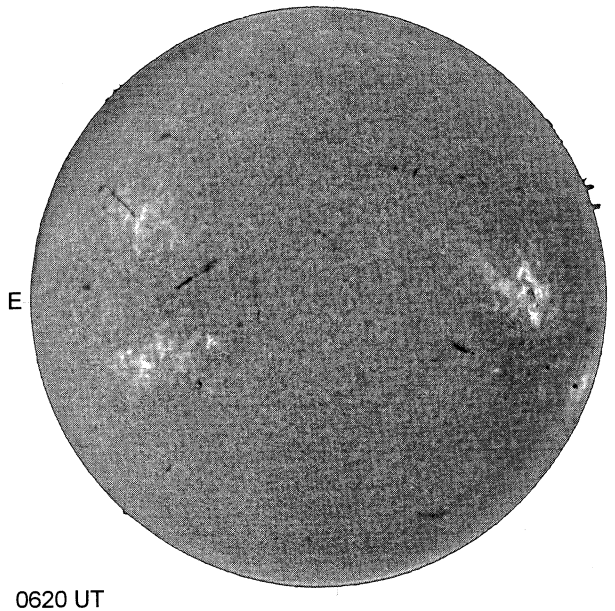
DeltaY = 13.0
DeltaX = 9.6



16.28 -
17.22 UT

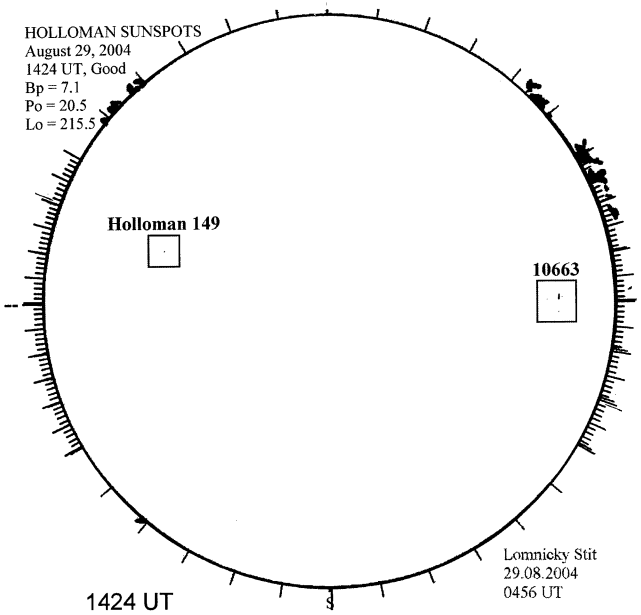
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



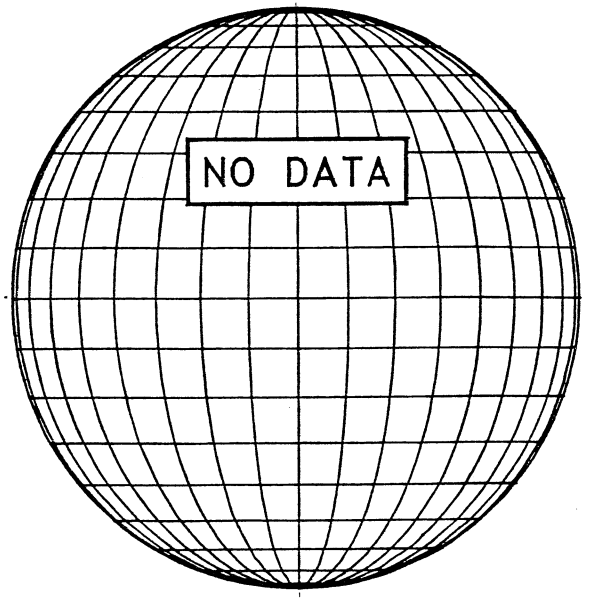
0620 UT

HOLLOMAN SUNSPOTS



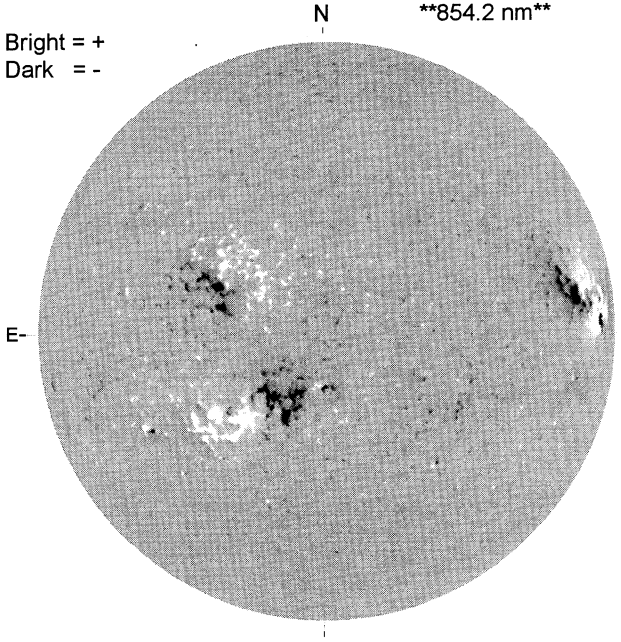
1424 UT
0456 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----



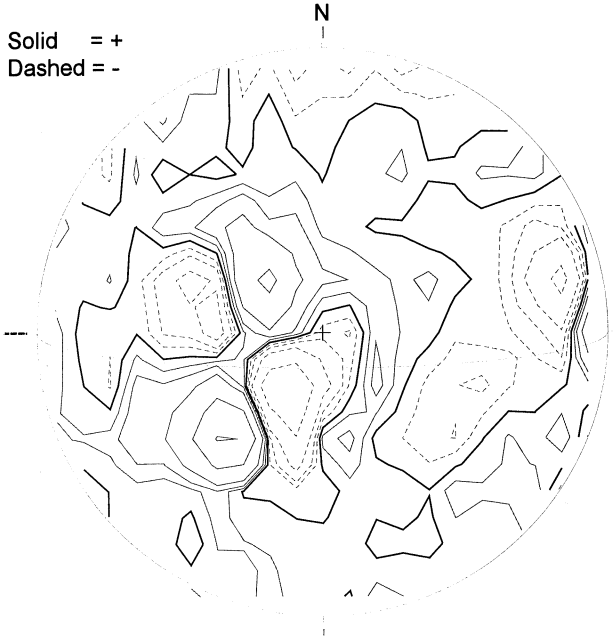
AUGUST 30, 2004 (P= 20.63, Bo = 7.17, Lo = 209.12)

KITT PEAK MAGNETOGRAM—SOLIS



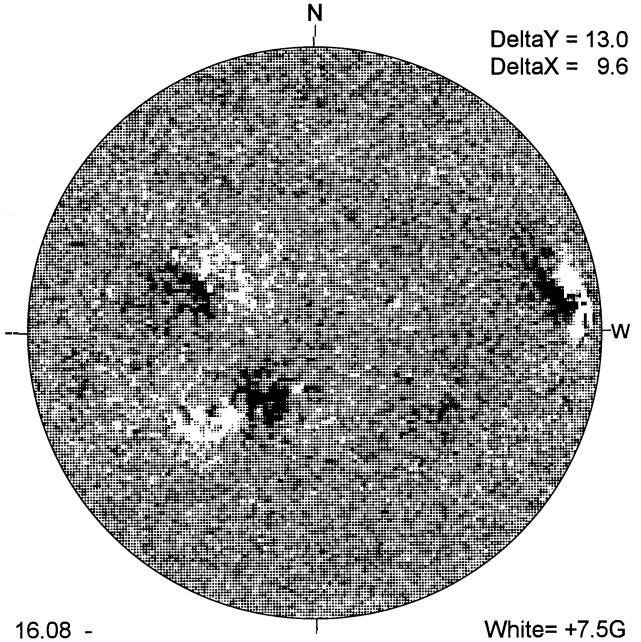
1739 UT

STANFORD MAGNETOGRAM



2133 UT

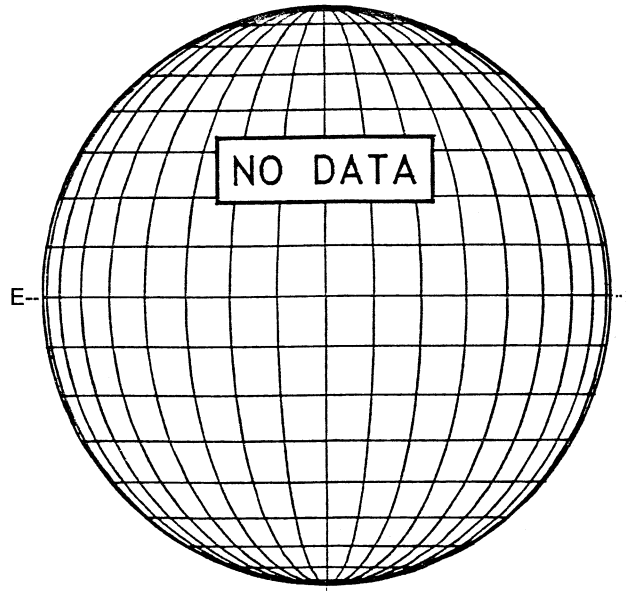
MT. WILSON MAGNETOGRAM



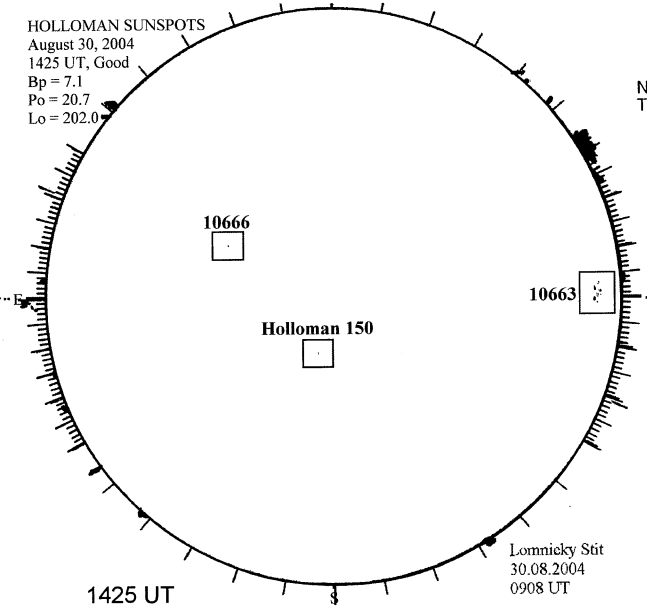
16.08 -
17.02 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

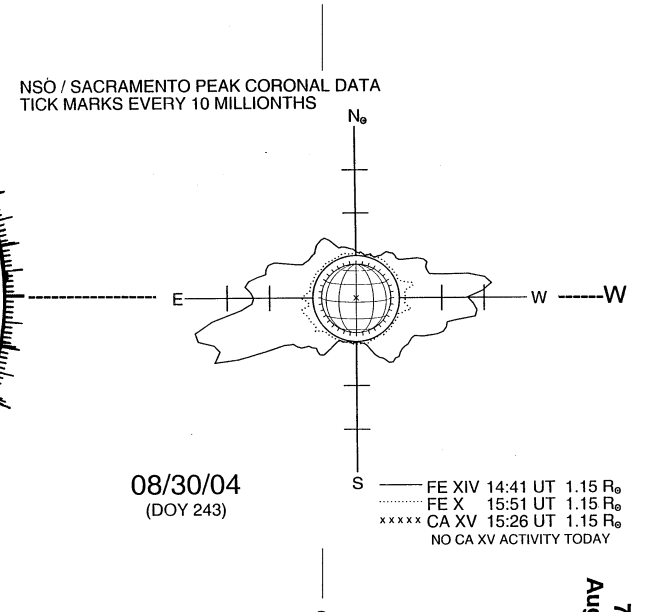


HOLLOMAN SUNSPOTS



1425 UT
0908 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

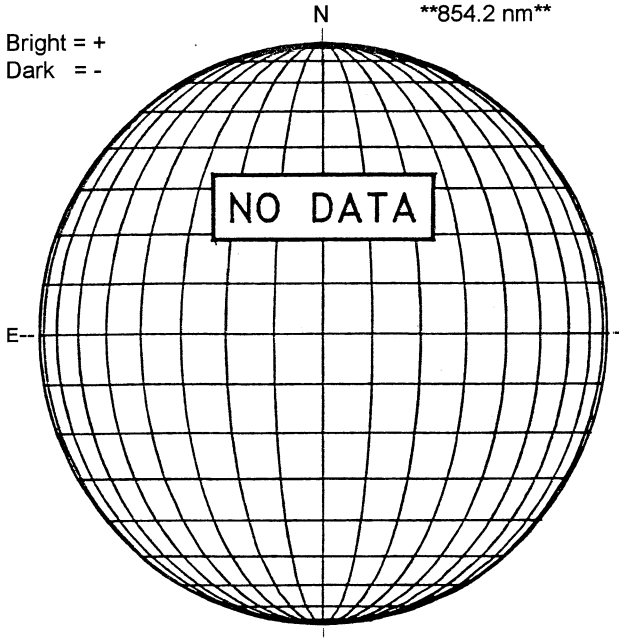


S

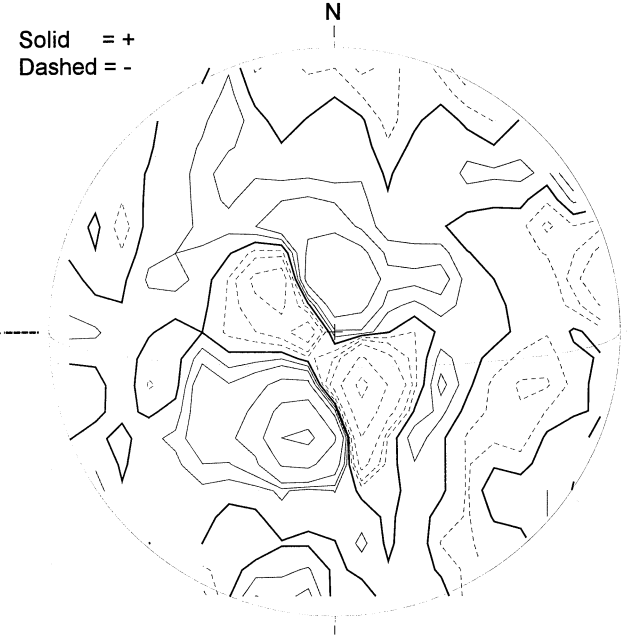
75
Aug 04

AUGUST 31, 2004 (P= 20.89, Bo = 7.18, Lo = 195.91)

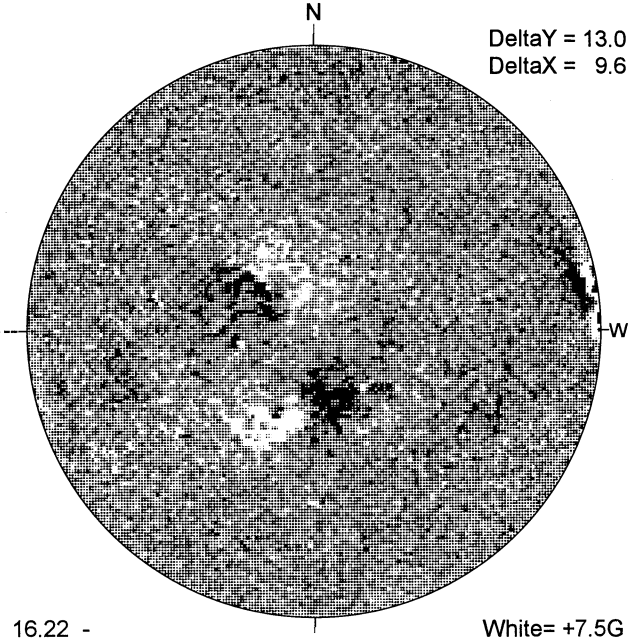
KITT PEAK MAGNETOGRAM--SOLIS



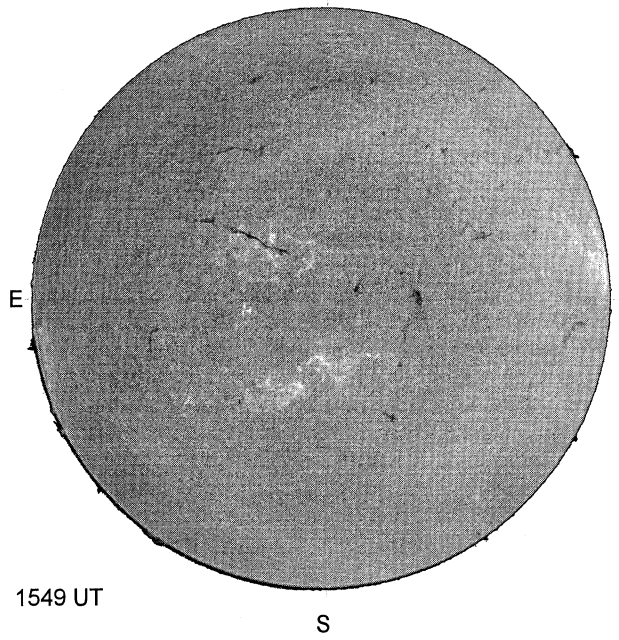
STANFORD MAGNETOGRAM



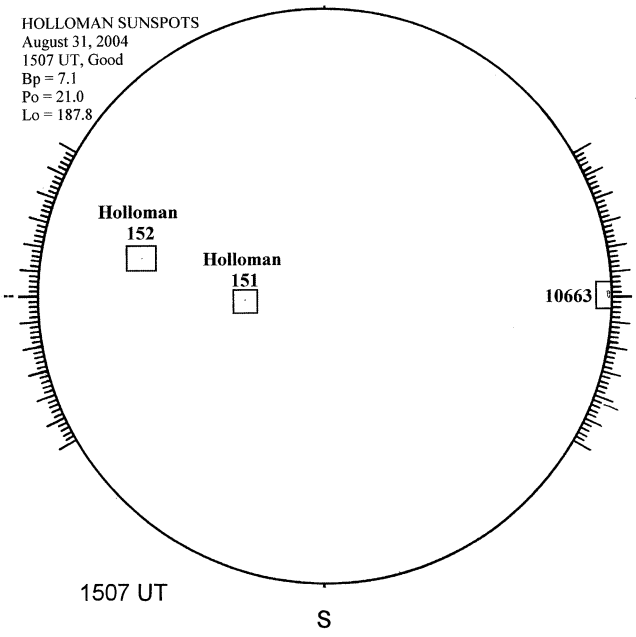
MT. WILSON MAGNETOGRAM



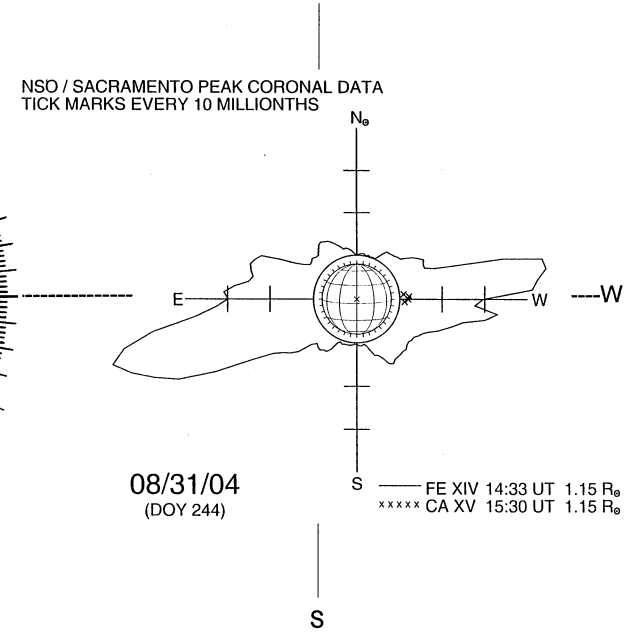
BIG BEAR H-ALPHA



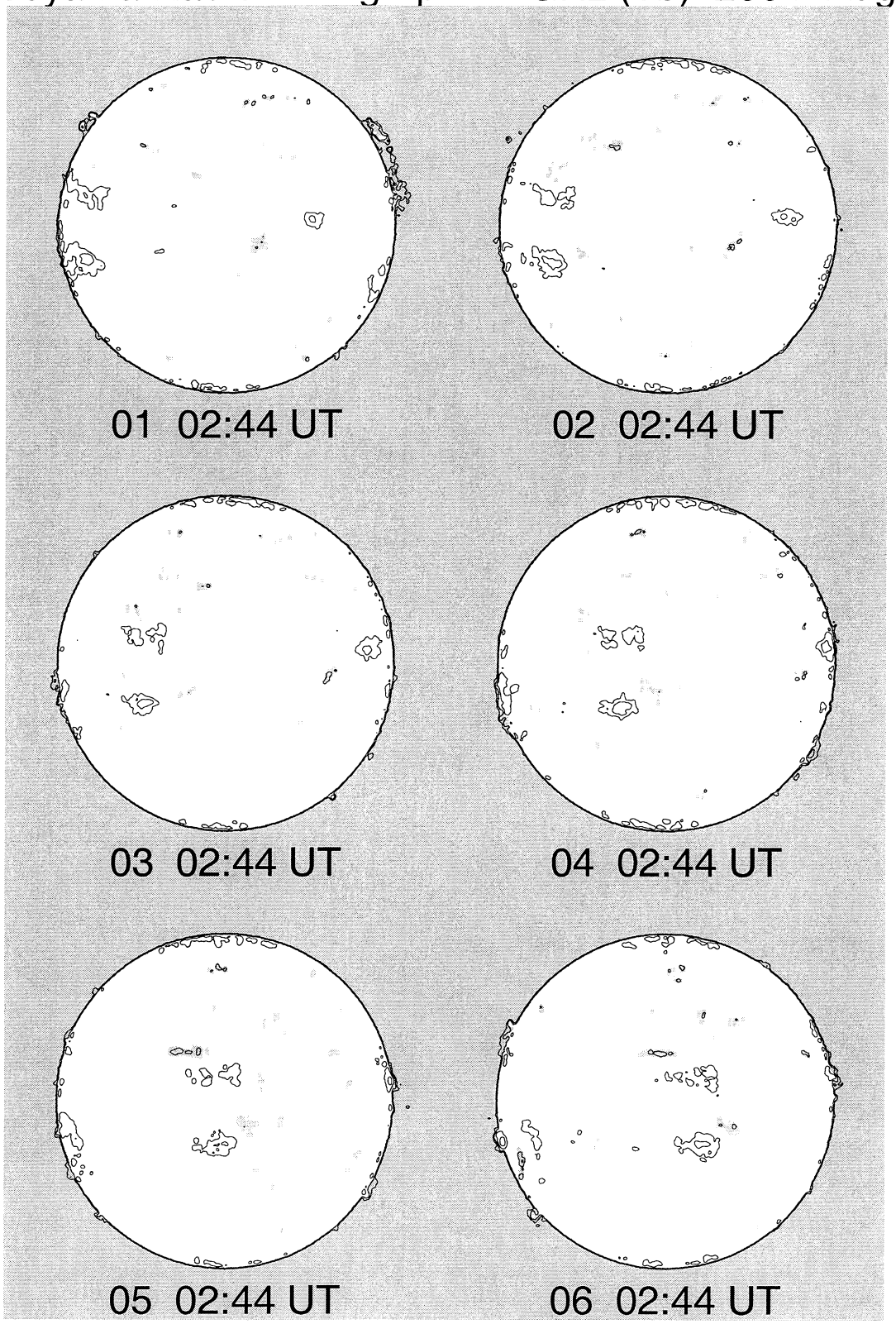
HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

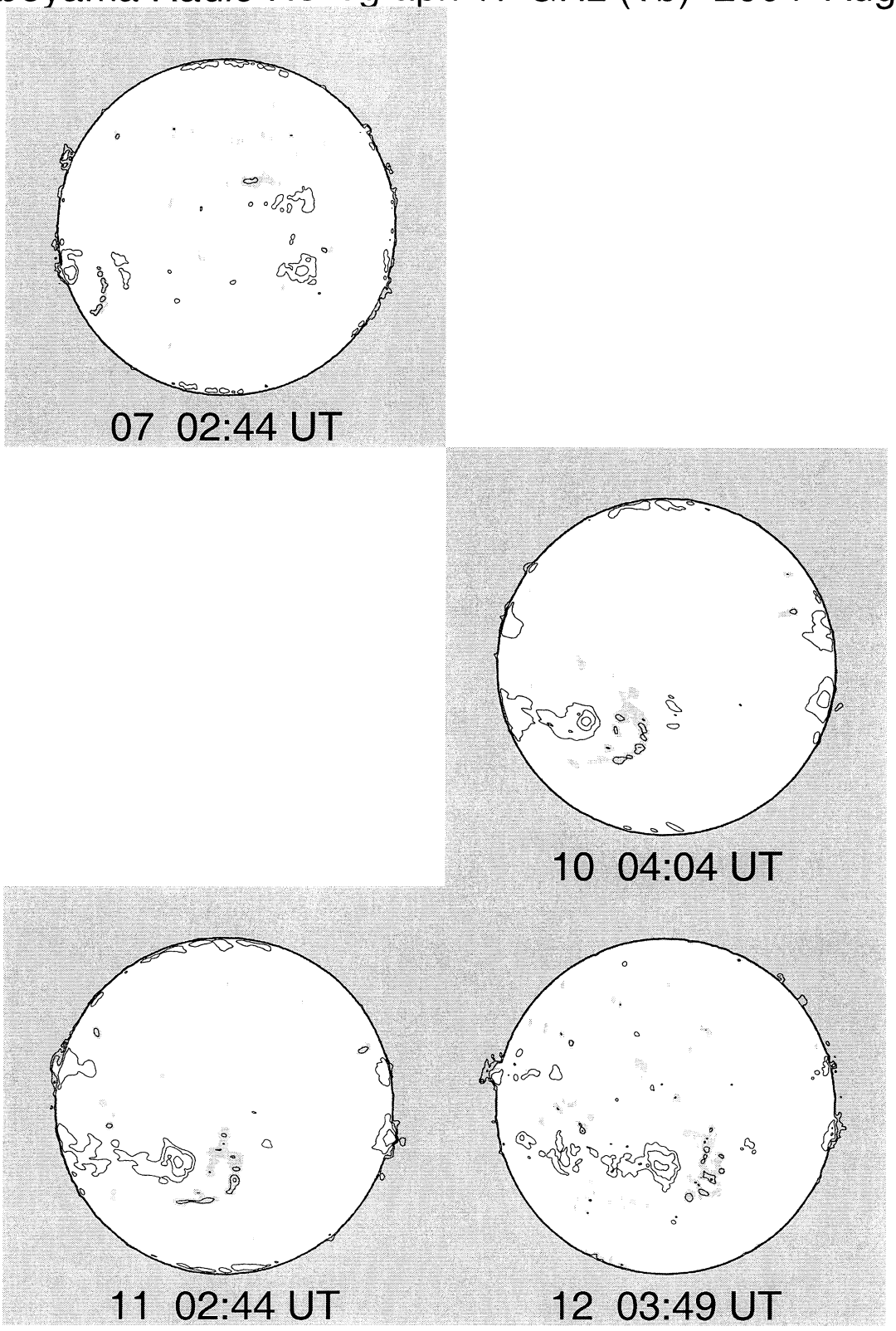


Nobeyama Radio Heliograph 17 GHz (Tb) 2004 August



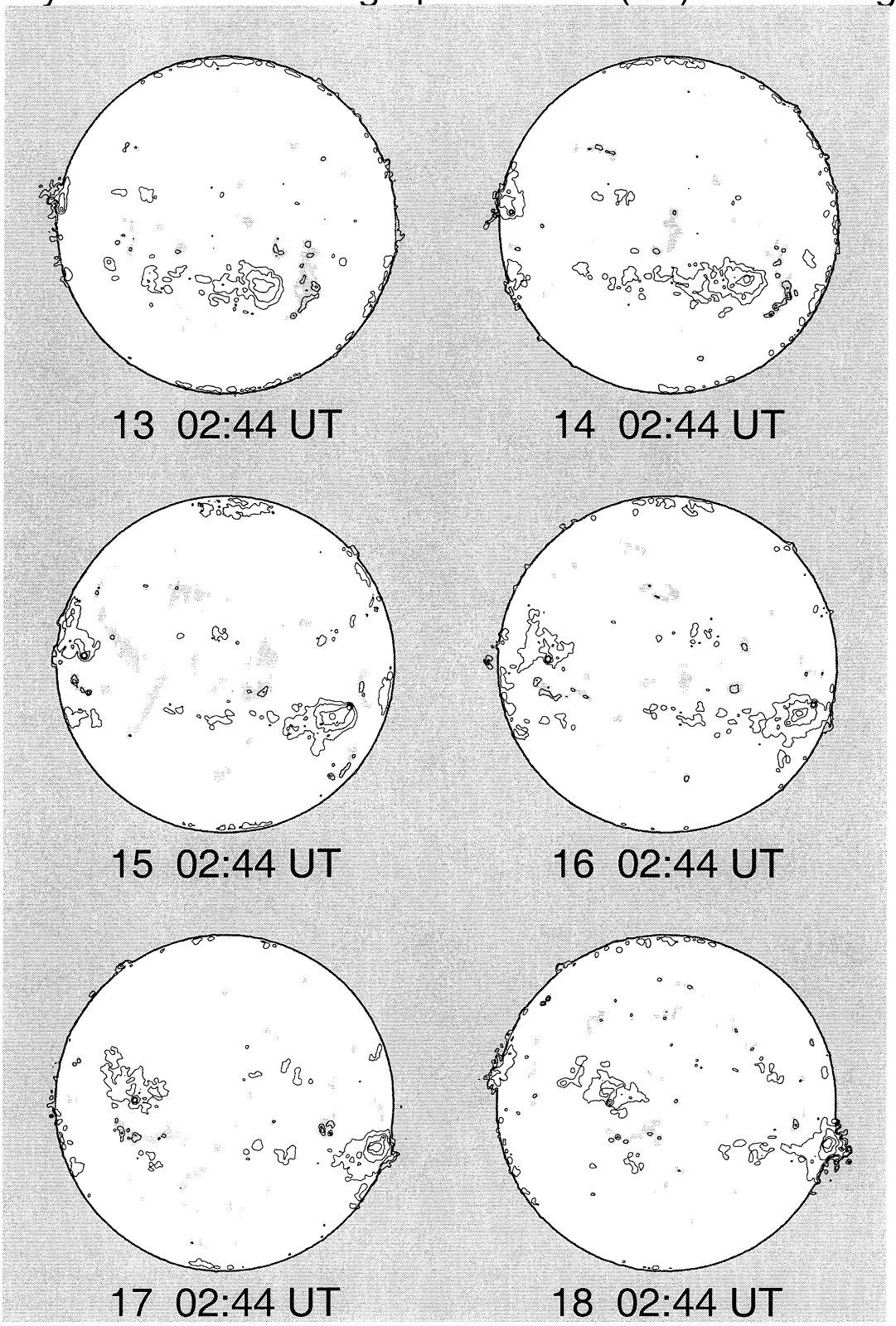
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 August



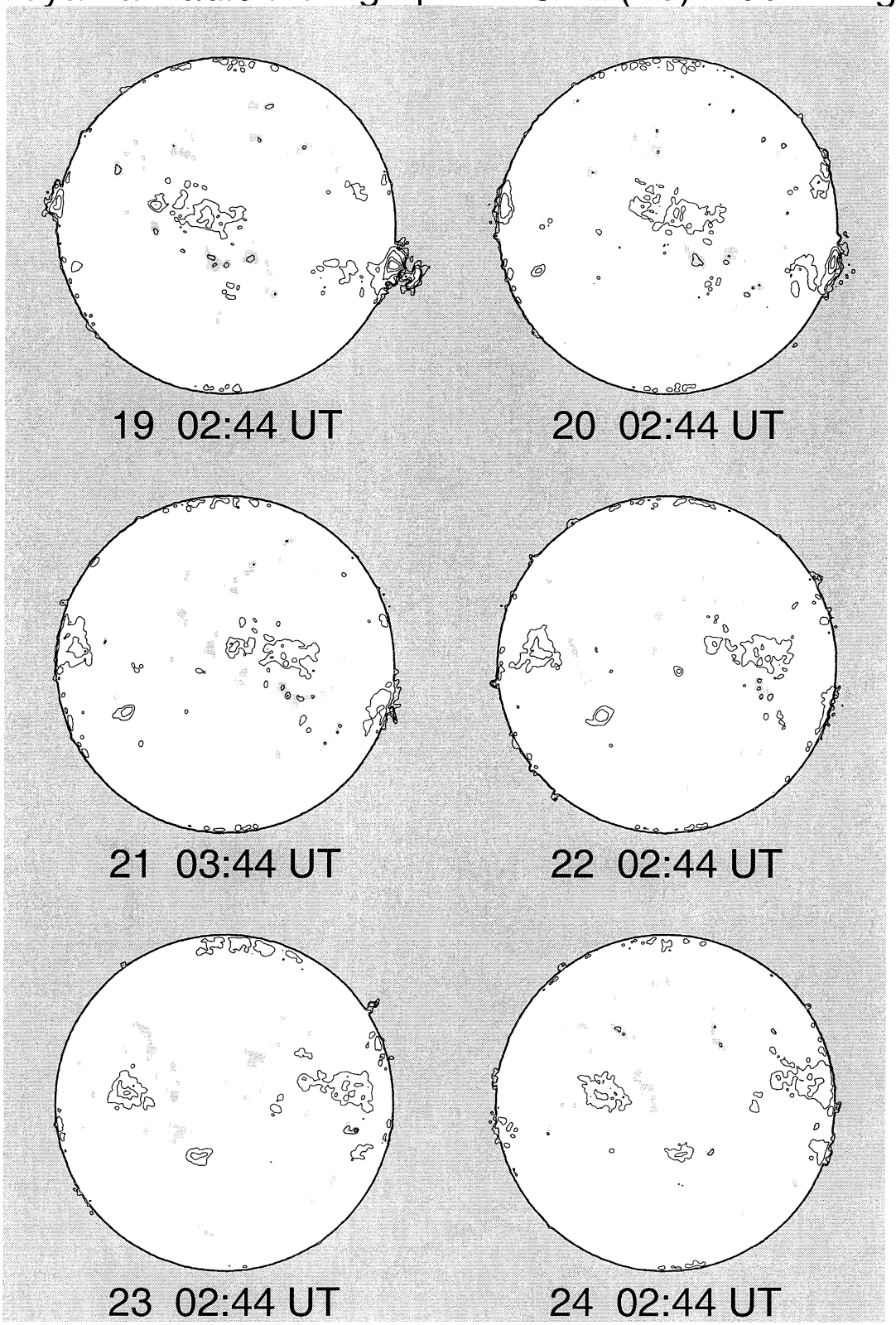
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 August



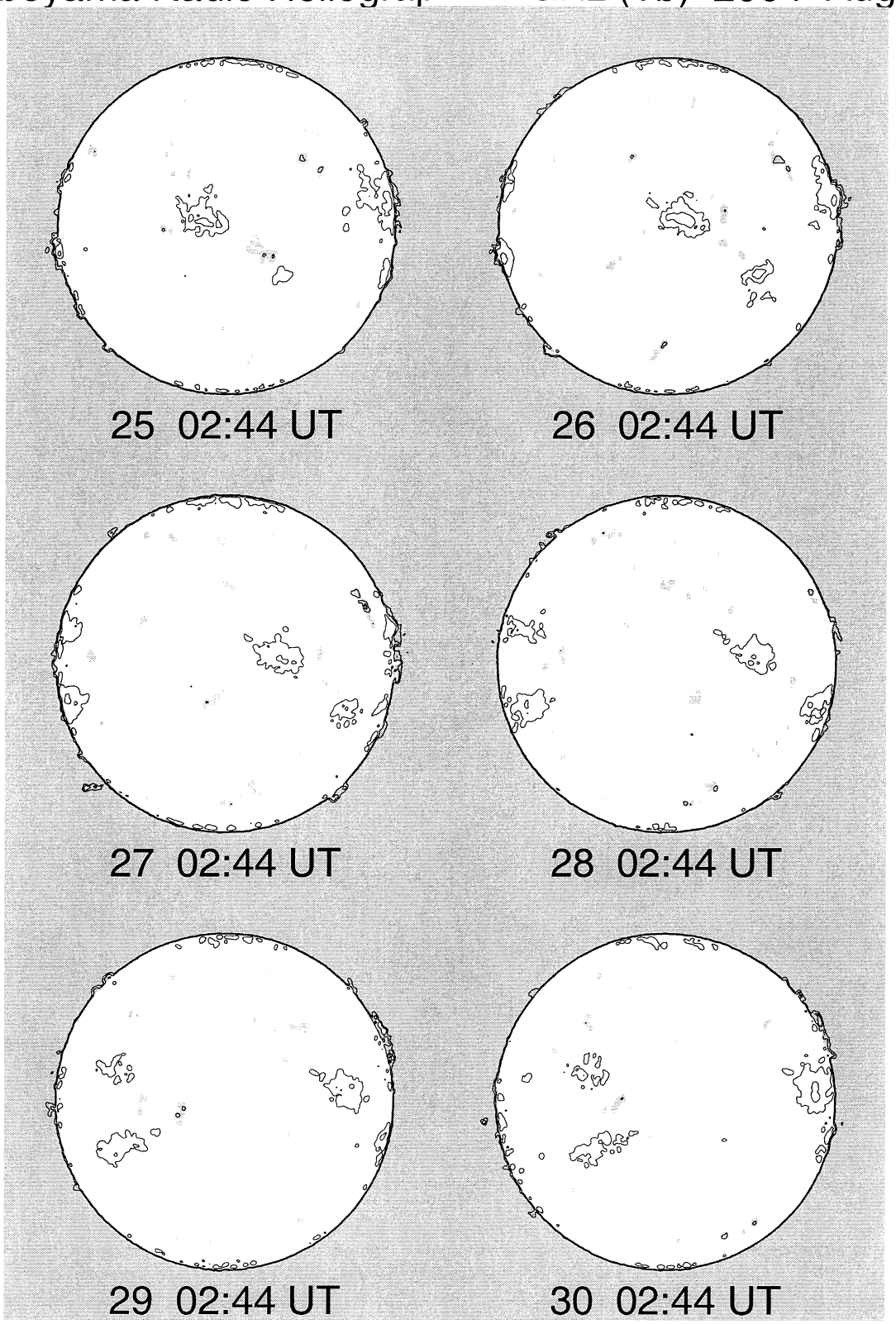
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 August



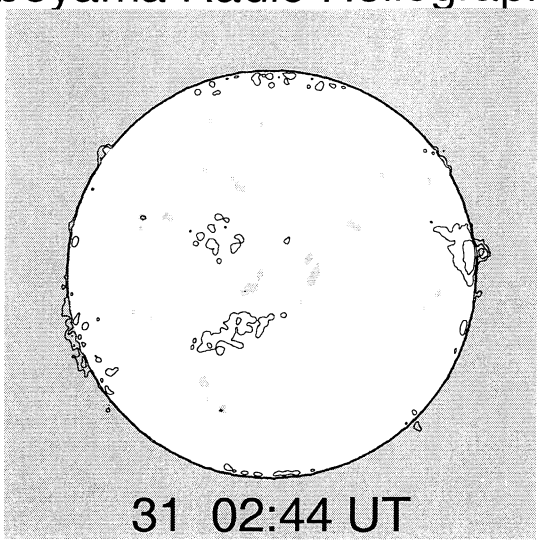
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2004 August



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 August



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)

AUGUST 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
10654C	32164	MWIL	08	03	1430	N16	E18	08	5.0	4	(AP)					
10655		LEAR	07	30	0311	S08	E80	08	5.1		A	HAX	120	1	2	3
10655		SVTO	07	30	0600	S09	E80	08	5.2		A	HSX	120	1	2	3
10655		KAND	07	30	0915	S09	E79	08	5.3			HA		1	2	3
10655		KAND	07	30	0915	S09	E79	08	5.3			HA		1	2	3
10655		HOLL	07	30	1345	S09	E77	08	5.3		B	CSO	90	5	8	4
10655	32163	MWIL	07	30	1430	S08	E71	08	4.9	5	(AP)					
10655		LEAR	07	31	0050	S09	E68	08	5.1		A	HAX	160	2	3	4
10655		SVTO	07	31	0600	S09	E66	08	5.2		B	CSO	90	4	6	3
10655		KAND	07	31	0815	S10	E63	08	5.1			CSO		2	4	4
10655		KAND	07	31	0815	S10	E63	08	5.1			CSO		2	4	4
10655	32163	MWIL	07	31	1415	S08	E60	08	5.1	5	(B)					
10655		HOLL	07	31	1415	S09	E63	08	5.3		B	DAO	200	6	11	4
10655		LEAR	08	01	0130	S10	E55	08	5.2		B	EAO	100	6	12	2
10655		VORO	08	01	0146	S09	E55	08	5.2			CAI	269	6	9	3
10655		SVTO	08	01	0632	S09	E54	08	5.3		B	CSO	220	9	12	3
10655	32163	MWIL	08	01	1415	S09	E47	08	5.1	5	(B)					
10655		HOLL	08	01	1520	S09	E48	08	5.2		BG	EAI	180	20	12	4
10655		LEAR	08	02	0100	S10	E42	08	5.2		B	EAO	120	10	12	2
10655		SVTO	08	02	0705	S09	E40	08	5.3		B	EAO	170	13	11	3
10655		KAND	08	02	1110	S09	E36	08	5.2			EAI		19	14	4
10655	32163	MWIL	08	02	1430	S09	E35	08	5.2	5	(B)					
10655		HOLL	08	02	1455	S09	E33	08	5.1		B	EAI	200	15	13	4
10655		VORO	08	02	2232	S09	E30	08	5.2			DHI	325	13	11	3
10655		LEAR	08	03	0130	S08	E28	08	5.2		B	EAO	180	23	14	3
10655		SVTO	08	03	0550	S09	E26	08	5.2		B	EAO	190	13	13	3
10655		KAND	08	03	1125	S09	E21	08	5.0			ESI		19	12	3
10655	32163	MWIL	08	03	1430	S09	E21	08	5.2	6	(BG)					
10655		HOLL	08	03	1500	S09	E19	08	5.0		BG	EAC	220	41	14	4
10655		LEAR	08	04	0150	S09	E15	08	5.2		BG	ESO	140	35	14	3
10655		VORO	08	04	0448	S09	E13	08	5.2			DHI	307	15	11	3
10655		SVTO	08	04	0551	S09	E13	08	5.2		B	ESO	220	20	15	3
10655		KAND	08	04	0835	S10	E11	08	5.2			ESO		26	14	4
10655		HOLL	08	04	1415	S09	E07	08	5.1		B	EAI	200	56	15	4
10655	32163	MWIL	08	04	1430	S09	E08	08	5.2	5	(BG)					
10655		VORO	08	04	2333	S09	E02	08	5.1			DSI	218	21	13	3
10655		LEAR	08	05	0030	S09	E03	08	5.2		B	EAO	150	33	15	3
10655		SVTO	08	05	0700	S09	W02	08	5.1		B	ESI	170	17	15	3
10655	32163	MWIL	08	05	1430	S09	W06	08	5.1	6	(B)					
10655		KAND	08	05	1435	S10	W07	08	5.1			EAI		14	15	4
10655		VORO	08	05	2159	S08	W10	08	5.2			DSI	298	20	13	3
10655		LEAR	08	06	0100	S09	W14	08	5.0		B	EAO	140	20	15	2
10655		KAND	08	06	0920	S10	W17	08	5.1			FAC		19	16	3
10655		SVTO	08	06	1245	S09	W18	08	5.2		B	ESI	210	17	15	2
10655	32163	MWIL	08	06	1445	S10	W20	08	5.1	5	(BG)					
10655		HOLL	08	06	1515	S10	W21	08	5.0		B	EAI	150	21	15	3
10655		VORO	08	06	2314	S08	W24	08	5.2			DSI	278	18	14	3
10655		LEAR	08	07	0143	S10	W26	08	5.1		B	FSI	200	27	16	2
10655		SVTO	08	07	0750	S11	W30	08	5.1		B	FSI	250	12	16	3
10655		KAND	08	07	0900	S10	W31	08	5.0			EAC		27	14	3
10655	32163	MWIL	08	07	1430	S10	W34	08	5.0	5	(B)					
10655		HOLL	08	07	1530	S10	W35	08	5.0		B	EAI	240	28	14	4
10655		VORO	08	08	0020	S09	W39	08	5.1			DAI	294	16	14	3
10655		LEAR	08	08	0042	S10	W40	08	5.0		B	CAI	170	17	15	3
10655		SVTO	08	08	0538	S10	W42	08	5.1		B	FSI	130	11	16	3
10655		KAND	08	08	1150	S09	W52	08	4.6			DAO		9	10	3
10655	32163	MWIL	08	08	1430	S10	W48	08	5.0	5	(B)					
10655		HOLL	08	08	1550	S09	W52	08	4.7		B	EAO	140	16	11	4
10655		VORO	08	08	2157	S09	W52	08	5.0			DAI	250	12	14	3
10655		LEAR	08	09	0046	S09	W57	08	4.7		B	CAO	110	10	6	3
10655		SVTO	08	09	0605	S09	W58	08	4.9		B	EAO	150	7	11	3
10655		KAND	08	09	0720	S09	W62	08	4.6			DAO		7	5	3
10655	32163	MWIL	08	09	1430	S08	W66	08	4.6	5	(BP)					
10655		HOLL	08	09	1430	S09	W67	08	4.6		B	DAO	160	11	8	3
10655		VORO	08	09	2211	S08	W66	08	5.0			DAI	138	7	14	3
10655		LEAR	08	10	0100	S09	W70	08	4.8		B	CAO	100	4	8	3
10655		SVTO	08	10	0614	S11	W77	08	4.5		B	DSO	120	2	6	3
10655		KAND	08	10	1155	S10	W78	08	4.6			HA		2	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10655		HOLL	08 10 1410	S10 W77	08 4.8		B	BXO	10	4	3	4
10655	32163	MWIL	08 10 1430	S08 W78	08 4.7	4	(AP)					
10654A	32166	MWIL	08 05 1430	N10 W05	08 5.2	4	(BF)					
10655A		HOLL	08 01 1520	N13 E53	08 5.6		A	AXX	10	1	1	4
10654D	32167	MWIL	08 05 1430	N13 E10	08 6.3	4	(B)					
10655B		KAND	08 04 0835	S08 E27	08 6.4			AX		1	-	4
10655B		HOLL	08 04 1415	S08 E23	08 6.3		A	AXX	10	2	2	4
10655B	32165	MWIL	08 04 1430	S07 E24	08 6.4	4	(AP)					
10658		LEAR	08 07 0143	S07 E63	08 11.8		B	BXO	10	2	2	2
10658		SVTO	08 07 0750	S06 E60	08 11.8		A	HSX	20	1	1	3
10658		KAND	08 07 0900	S06 E56	08 11.6			BXO		3	4	3
10658	32170	MWIL	08 07 1430	S05 E55	08 11.7	4	(BF)					
10658		HOLL	08 07 1530	S05 E53	08 11.6		B	CSO	20	2	3	4
10658		VORO	08 08 0020	S05 E50	08 11.7			AXX	6	1		3
10658		LEAR	08 08 0042	S05 E50	08 11.8		A	AXX	10	1	1	3
10656		VORO	08 05 2159	S11 E80	08 11.9			HAX	141	1		3
10656		LEAR	08 06 0100	S11 E79	08 12.0		A	AXX	50	1	3	2
10656		KAND	08 06 0920	S13 E79	08 12.3			HA		2	3	3
10656		SVTO	08 06 1245	S12 E77	08 12.3		A	HSX	40	1	3	2
10656	32168	MWIL	08 06 1445	S12 E72	08 12.0	4	(AP)					
10656		HOLL	08 06 1515	S11 E73	08 12.1		A	HKX	30	1	1	3
10656		VORO	08 06 2314	S13 E72	08 12.4			DKO	337	5	9	3
10656		LEAR	08 07 0143	S13 E70	08 12.3		B	CAO	180	7	6	2
10656		SVTO	08 07 0750	S13 E65	08 12.2		B	DSO	200	4	8	3
10656		KAND	08 07 0900	S12 E63	08 12.1			CAO		6	10	3
10656	32168	MWIL	08 07 1430	S12 E61	08 12.2	5	(B)					
10656		HOLL	08 07 1530	S12 E62	08 12.3		B	EKI	320	10	11	4
10656		VORO	08 08 0020	S13 E57	08 12.3			DKI	346	9	9	3
10656		LEAR	08 08 0042	S12 E57	08 12.3		B	DAO	270	11	10	3
10656		SVTO	08 08 0538	S12 E55	08 12.4		B	ESO	220	6	11	3
10656		KAND	08 08 1150	S14 E50	08 12.3			EAI		13	11	3
10656	32168	MWIL	08 08 1430	S12 E48	08 12.2	5	(B)					
10656		HOLL	08 08 1550	S12 E49	08 12.3		BG	EKI	360	38	11	4
10656		VORO	08 08 2157	S12 E44	08 12.2			DKI	506	31	8	3
10656		LEAR	08 09 0046	S12 E43	08 12.3		BG	DAC	370	28	10	3
10656		SVTO	08 09 0605	S12 E40	08 12.3		B	DAC	420	14	9	3
10656		KAND	08 09 0720	S13 E40	08 12.3			DAC		24	10	3
10656		HOLL	08 09 1430	S12 E37	08 12.4		B	EKC	660	61	11	3
10656	32168	MWIL	08 09 1430	S13 E36	08 12.3	5	(D)					
10656		VORO	08 09 2211	S12 E30	08 12.2			DKI	975	56	8	3
10656		LEAR	08 10 0100	S12 E30	08 12.3		BGD	EKO	430	37	11	3
10656		SVTO	08 10 0614	S12 E27	08 12.3		B	EKC	670	31	13	3
10656		KAND	08 10 1155	S14 E23	08 12.2			EKC		38	12	3
10656		HOLL	08 10 1410	S12 E23	08 12.3		BG	EKC	920	56	12	4
10656	32168	MWIL	08 10 1430	S12 E22	08 12.3	5	(D)					
10656		VORO	08 10 2135	S13 E17	08 12.2			EKO	1163	31	10	3
10656		LEAR	08 11 0112	S13 E15	08 12.2		BG	EKC	1030	95	14	3
10656		SVTO	08 11 0610	S13 E13	08 12.2		B	EKC	900	54	14	4
10656		KAND	08 11 1130	S14 E09	08 12.1			EKC		44	14	3
10656		HOLL	08 11 1430	S13 E08	08 12.2		BG	EKC	1050	63	13	4
10656	32168	MWIL	08 11 1430	S13 E08	08 12.2	5	(D)					
10656		LEAR	08 12 0110	S13 E02	08 12.2		BGD	EKC	1100	84	14	3
10656		KAND	08 12 0707	S14 W02	08 12.1			EKC		53	14	4
10656		SVTO	08 12 0720	S13 E02	08 12.4		BGD	FKC	1350	80	17	3
10656	32168	MWIL	08 12 1430	S13 W07	08 12.1	5	(BG)					
10656		HOLL	08 12 1530	S13 W07	08 12.1		BG	FKC	1520	85	16	3
10656		LEAR	08 13 0402	S13 W14	08 12.1		BG	EKC	1130	76	15	4
10656		SVTO	08 13 0626	S13 W15	08 12.1		BG	FKC	1170	71	17	3
10656		KAND	08 13 0721	S13 W15	08 12.2			EKC		49	15	4
10656		HOLL	08 13 1515	S14 W20	08 12.1		BGD	FKC	1360	0	16	3
10656	32168	MWIL	08 13 1530	S12 W20	08 12.1	5	(BG)					
10656		VORO	08 13 2152	S11 W24	08 12.1			EKI	1587	84	13	3
10656		LEAR	08 14 0025	S13 W27	08 12.0		BG	FKC	1250	67	17	3

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10656		KAND	08 14 0742	S14 W28	08 12.2			FKC		51	17	4
10656		SVTO	08 14 0745	S16 W30	08 12.0		BG	FKC	1140	64	17	3
10656	32168	MWIL	08 14 1430	S12 W34	08 12.0	5	(BG)					
10656		VORO	08 14 2331	S11 W38	08 12.1			EKI	2044	55	14	3
10656		LEAR	08 15 0105	S13 W40	08 12.0		BG	FHC	1100	57	19	1
10656		SVTO	08 15 0550	S14 W42	08 12.1		B	FHC	1340	49	22	3
10656		HOLL	08 15 1740	S13 W47	08 12.2		BG	FKC	1310	54	24	3
10656		VORO	08 15 2240	S11 W51	08 12.1			EKI	2014	49	17	3
10656		LEAR	08 16 0045	S13 W53	08 12.0		BG	FKI	1000	33	18	1
10656		SVTO	08 16 0559	S14 W56	08 12.0		BG	FHC	1330	27	22	3
10656		KAND	08 16 0630	S14 W53	08 12.3			FKC		33	18	2
10656	32168	MWIL	08 16 1445	S12 W59	08 12.2	6	(BG)					
10656		VORO	08 16 2141	S13 W61	08 12.3			FKI	1480	35	14	3
10656		LEAR	08 17 0045	S13 W66	08 12.0		BD	FKI	800	21	21	3
10656		SVTO	08 17 0617	S13 W69	08 12.0		BG	FAC	1050	17	22	3
10656		KAND	08 17 0944	S14 W68	08 12.3			FKC		12	20	1
10656	32168	MWIL	08 17 1445	S13 W72	08 12.2	5	(BG)					
10656		HOLL	08 17 1546	S16 W71	08 12.3		BGD	FKC	960	26	20	2
10656		LEAR	08 18 0110	S15 W79	08 12.1		B	EAO	480	12	14	2
10656		VORO	08 18 0111	S14 W75	08 12.4			DKI	851	23	6	3
10656		SVTO	08 18 0708	S15 W85	08 11.9		B	FAC	130	4	16	3
10656		KAND	08 18 1207	S15 W79	08 12.5			DAO		3	10	3
10656	32168	MWIL	08 18 1430	S15 W85	08 12.2	5	(B)					
10656		HOLL	08 18 1833	S16 W85	08 12.3		A	HAX	50	1	1	3
10657		SVTO	08 06 1245	N10 E88	08 13.1		A	HSX	30	1	2	2
10657	32169	MWIL	08 06 1445	N11 E80	08 12.6	4	(AP)					
10657		HOLL	08 06 1515	N12 E80	08 12.7		A	HAX	120	1	2	3
10657		VORO	08 06 2314	N11 E77	08 12.8			HAX	99	1		3
10657		LEAR	08 07 0143	N10 E76	08 12.8		A	HAX	60	1	3	2
10657		SVTO	08 07 0750	N11 E74	08 12.9		A	HSX	60	1	2	3
10657		KAND	08 07 0900	N11 E76	08 13.1			HA		2	1	3
10657	32169	MWIL	08 07 1430	N11 E69	08 12.8	5	(AP)					
10657		HOLL	08 07 1530	N11 E69	08 12.8		A	HAX	50	1	2	4
10657		VORO	08 08 0020	N11 E63	08 12.7			HAX	130	1		3
10657		LEAR	08 08 0042	N11 E63	08 12.8		A	HAX	60	1	2	3
10657		SVTO	08 08 0538	N12 E61	08 12.8		A	HSX	40	1	2	3
10657		KAND	08 08 1150	N10 E57	08 12.8			HS		1	1	3
10657	32169	MWIL	08 08 1430	N11 E56	08 12.8	5	(AP)					
10657		HOLL	08 08 1550	N11 E55	08 12.8		A	HAX	30	2	2	4
10657		VORO	08 08 2157	N11 E51	08 12.7			HAX	62	1		3
10657		LEAR	08 09 0046	N11 E50	08 12.8		A	HAX	40	1	2	3
10657		SVTO	08 09 0605	N12 E47	08 12.8		A	HSX	30	1	2	3
10657		KAND	08 09 0720	N10 E48	08 12.9			HS		1	1	3
10657		HOLL	08 09 1430	N11 E42	08 12.8		A	HAX	50	1	2	3
10657	32169	MWIL	08 09 1430	N11 E43	08 12.8	4	(AP)					
10657		VORO	08 09 2211	N11 E37	08 12.7			HAX	59	1		3
10657		LEAR	08 10 0100	N11 E37	08 12.8		A	HSX	30	1	2	3
10657		SVTO	08 10 0614	N12 E34	08 12.8		A	HSX	20	1	2	3
10657		KAND	08 10 1155	N10 E31	08 12.8			HA		1	1	3
10657		HOLL	08 10 1410	N11 E30	08 12.8		A	HSX	40	1	2	4
10657	32169	MWIL	08 10 1430	N11 E29	08 12.8	5	(AP)					
10657		VORO	08 10 2135	N11 E25	08 12.8			HAX	33	1		3
10657		LEAR	08 11 0112	N10 E23	08 12.8		A	HSX	90	1	2	3
10657		SVTO	08 11 0610	N11 E22	08 12.9		A	HSX	60	1	2	4
10657		KAND	08 11 1130	N10 E18	08 12.8			HS		1	2	3
10657		HOLL	08 11 1430	N10 E16	08 12.8		A	HSX	40	1	2	4
10657	32169	MWIL	08 11 1430	N11 E16	08 12.8	5	(AP)					
10657		LEAR	08 12 0110	N10 E10	08 12.8		A	HSX	20	1	2	3
10657		KAND	08 12 0707	N10 E08	08 12.9			HS		1	1	4
10657		SVTO	08 12 0720	N11 E07	08 12.8		A	HSX	20	1	1	3
10657	32169	MWIL	08 12 1430	N12 E03	08 12.8	5	(AP)					
10657		HOLL	08 12 1530	N10 E03	08 12.9		A	HSX	40	1	2	3
10657		LEAR	08 13 0402	N11 W05	08 12.8		A	HSX	40	1	2	4
10657		SVTO	08 13 0626	N11 W06	08 12.8		A	HSX	20	1	2	3
10657		KAND	08 13 0721	N10 W06	08 12.8			HS		1	1	4
10657		HOLL	08 13 1515	N10 W11	08 12.8		A	HAX	40	2	1	3
10657	32169	MWIL	08 13 1530	N11 W10	08 12.9	4	(AP)					
10657		VORO	08 13 2152	N11 W14	08 12.8			HAX	39	1		3

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10657		LEAR	08	14	0025	N11	W16	08	12.8		A	HSX	20	2	1	3
10657		KAND	08	14	0742	N10	W19	08	12.9			HA		1	1	4
10657		SVTO	08	14	0745	N10	W20	08	12.8		A	HSX	20	1	2	3
10657	32169	MWIL	08	14	1430	N11	W23	08	12.9	4	(AP)					
10657		VORO	08	14	2331	N11	W27	08	12.9			HRX	18	2		3
10657		LEAR	08	15	0105	N11	W29	08	12.9		A	HSX	10	1	1	1
10657		SVTO	08	15	0550	N10	W32	08	12.8		A	HSX	20	1	2	3
10657B	32173	MWIL	08	11	1430	S15	E34	08	14.2	4	(AP)					
10657A	32171	MWIL	08	08	1430	S10	E79	08	14.5	4	AP					
10657A		HOLL	08	08	1550	S10	E79	08	14.6		A	AXX	20	1	1	4
10657A	32171	MWIL	08	09	1430	S10	E64	08	14.4	4	(AP)					
10657A		HOLL	08	09	1430	S10	E68	08	14.7		A	AXX	20	1	1	3
10657A		VORO	08	09	2211	S09	E59	08	14.3			AXX	16	1		3
10657A		LEAR	08	10	0100	S10	E59	08	14.5		A	AXX	20	1	1	3
10657A		HOLL	08	10	1410	S08	E52	08	14.5		B	BXO	10	2	4	4
10657A	32171	MWIL	08	10	1430	S09	E52	08	14.5	4	(AP)					
10657A		VORO	08	10	2135	S09	E46	08	14.3			AXX	4	1		3
10657A		LEAR	08	11	0112	S09	E45	08	14.4		B	BXO	10	2	3	3
10657A	32171	MWIL	08	11	1430	S07	E44	08	14.9	4	(AP)					
10657A		HOLL	08	11	1430	S08	E44	08	14.9		A	AXX	10	1	1	4
10659		KAND	08	09	0720	N16	E83	08	15.6			HA		1	1	3
10659	32172	MWIL	08	09	1430	N16	E77	08	15.4	4	(AP)					
10659		HOLL	08	09	1430	N17	E79	08	15.6		A	HAX	60	3	2	3
10659		VORO	08	09	2211	N17	E72	08	15.4			HAX	59	3		3
10659		LEAR	08	10	0100	N17	E70	08	15.4		A	HAX	30	1	2	3
10659		SVTO	08	10	0614	N18	E69	08	15.5		A	HSX	50	1	2	3
10659		KAND	08	10	1155	N16	E65	08	15.4			HA		1	2	3
10659		HOLL	08	10	1410	N17	E65	08	15.5		B	CRO	20	5	6	4
10659	32172	MWIL	08	10	1430	N17	E63	08	15.4	4	(AP)					
10659		VORO	08	10	2135	N17	E59	08	15.4			HAX	35	2		3
10659		LEAR	08	11	0112	N17	E57	08	15.4		B	CAO	30	3	2	3
10659		SVTO	08	11	0610	N18	E56	08	15.5		A	HSX	80	2	2	4
10659		KAND	08	11	1130	N16	E52	08	15.4			HA		3	2	3
10659	32172	MWIL	08	11	1430	N17	E50	08	15.4	4	(AP)					
10659		HOLL	08	11	1430	N17	E51	08	15.5		B	CRO	20	2	2	4
10659		LEAR	08	12	0110	N17	E43	08	15.3		B	CAO	40	2	2	3
10659		KAND	08	12	0707	N16	E41	08	15.4			HA		1	1	4
10659		SVTO	08	12	0720	N19	E42	08	15.5		A	HSX	20	1	1	3
10659	32172	MWIL	08	12	1430	N17	E37	08	15.4	3	(AP)					
10659		HOLL	08	12	1530	N17	E38	08	15.5		A	HAX	20	1	2	3
10659		LEAR	08	13	0402	N17	E29	08	15.4		A	AXX	10	1	1	4
10659		SVTO	08	13	0626	N17	E28	08	15.4		A	HSX	20	1	1	3
10659		HOLL	08	13	1515	N16	E21	08	15.2		B	BXO	10	6	6	3
10659	32172	MWIL	08	13	1530	N17	E23	08	15.4	4	(AP)					
10659	32172	MWIL	08	16	1445	N16	W12	08	15.7	4	(BP)					
10660		LEAR	08	11	0112	S08	E74	08	16.6		B	BXO	30	3	4	3
10660		SVTO	08	11	0610	S07	E72	08	16.6		B	CSO	20	2	5	4
10660	32174	MWIL	08	11	1430	S07	E65	08	16.5	4	(B)					
10660		HOLL	08	11	1430	S08	E65	08	16.5		B	DRO	20	6	5	4
10660		LEAR	08	12	0110	S08	E59	08	16.5		B	DAO	40	3	5	3
10660		KAND	08	12	0707	S08	E56	08	16.5			EAO		4	7	4
10660		SVTO	08	12	0720	S06	E57	08	16.6		B	DSO	40	3	5	3
10660	32174	MWIL	08	12	1430	S08	E51	08	16.4	4	(B)					
10660		HOLL	08	12	1530	S08	E53	08	16.6		B	DRO	60	6	7	3
10660		LEAR	08	13	0402	S08	E44	08	16.5		B	CAO	50	2	7	4
10660		SVTO	08	13	0626	S08	E44	08	16.6		B	CSO	30	2	7	3
10660		KAND	08	13	0721	S09	E40	08	16.3			HA		1	2	4
10660		HOLL	08	13	1515	S08	E36	08	16.3		B	CAO	60	3	6	3
10660	32174	MWIL	08	13	1530	S08	E35	08	16.3	4	(BP)					
10660		VORO	08	13	2152	S08	E30	08	16.2			HRX	23	1		3
10660		LEAR	08	14	0025	S08	E29	08	16.2		A	HSX	40	1	2	3
10660		KAND	08	14	0742	S09	E26	08	16.3			HS		1	1	4
10660		SVTO	08	14	0745	S09	E25	08	16.2		A	HSX	20	1	2	3
10660	32174	MWIL	08	14	1430	S08	E21	08	16.2	4	(AP)					
10660		VORO	08	14	2331	S08	E15	08	16.1			HRX	18	1		3

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

AUGUST 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
10660		LEAR	08	15	0105	S08	E13	08	16.0		A	HSX	10	1	1	1
10660		SVTO	08	15	0550	S09	E12	08	16.1		A	HSX	20	1	2	3
10660		HOLL	08	15	1740	S08	E06	08	16.2		A	HAX	10	1	1	3
10660		VORO	08	15	2240	S08	E02	08	16.1			HRX	11	1		3
10660		LEAR	08	16	0045	S08	E01	08	16.1		A	HSX	10	1	1	1
10660		SVTO	08	16	0559	S08	W02	08	16.1		A	HRX	10	1	1	3
10660		KAND	08	16	0630	S09	W02	08	16.1			AX		2	1	2
10660	32174	MWIL	08	16	1445	S08	W07	08	16.1	4	(AP)					
10660		VORO	08	16	2141	S08	W11	08	16.1			AXX	5	1		3
10660		LEAR	08	17	0045	S08	W12	08	16.1		A	AXX	10	1	1	3
10660A	32176	MWIL	08	14	1430	N17	E22	08	16.3	3	(AF)					
10660B		VORO	08	18	0111	N05	E10	08	18.8			ARX	9	3		3
10661	32175	MWIL	08	12	1430	N07	E88	08	19.2	4	AP					
10661		HOLL	08	12	1530	N08	E88	08	19.2		A	HSX	80	1	4	3
10661		LEAR	08	13	0402	N07	E80	08	19.2		B	DAO	480	2	10	4
10661		SVTO	08	13	0626	N07	E85	08	19.6		B	DSO	210	2	7	3
10661		KAND	08	13	0721	N06	E84	08	19.6			DAO		2	10	4
10661		HOLL	08	13	1515	N08	E75	08	19.2		B	DKO	30	4	8	3
10661	32175	MWIL	08	13	1530	N06	E75	08	19.2	4	(AP)					
10661		VORO	08	13	2152	N07	E71	08	19.2			DAO	538	3	4	3
10661		LEAR	08	14	0025	N07	E70	08	19.3		B	DAO	340	2	5	3
10661		KAND	08	14	0742	N05	E69	08	19.5			DHO		2	9	4
10661		SVTO	08	14	0745	N06	E68	08	19.4		B	DSO	260	2	9	3
10661	32175	MWIL	08	14	1430	N07	E64	08	19.4	5	(BP)					
10661		VORO	08	14	2331	N07	E57	08	19.2			DHO	543	2	4	3
10661		LEAR	08	15	0105	N07	E58	08	19.4		B	DKO	300	2	8	1
10661		SVTO	08	15	0550	N07	E55	08	19.4		B	DHO	350	2	8	3
10661		HOLL	08	15	1740	N08	E49	08	19.4		B	DKO	450	3	8	3
10661		VORO	08	15	2240	N07	E45	08	19.3			DKO	620	4	4	3
10661		LEAR	08	16	0045	N07	E45	08	19.4		B	DKO	230	2	9	1
10661		SVTO	08	16	0559	N08	E42	08	19.4		B	DKO	550	5	9	3
10661		KAND	08	16	0630	N07	E44	08	19.6			DKO		9	9	2
10661	32175	MWIL	08	16	1445	N08	E38	08	19.5	6	(D)					
10661		VORO	08	16	2141	N07	E32	08	19.3			DKI	694	10	4	3
10661		LEAR	08	17	0045	N08	E32	08	19.4		BD	DKO	420	9	9	3
10661		SVTO	08	17	0617	N10	E29	08	19.4		B	DKO	470	7	10	3
10661		KAND	08	17	0944	N05	E27	08	19.4			DKO		8	8	1
10661	32175	MWIL	08	17	1445	N08	E25	08	19.5	5	(D)					
10661		HOLL	08	17	1546	N09	E24	08	19.4		BGD	EHC	540	20	12	2
10661		LEAR	08	18	0110	N09	E18	08	19.4		B	CHO	450	13	7	2
10661		VORO	08	18	0111	N07	E17	08	19.3			DKO	637	10	4	3
10661		SVTO	08	18	0708	N09	E15	08	19.4		B	EKO	630	6	11	3
10661		KAND	08	18	1207	N05	E13	08	19.5			DKO		9	9	3
10661	32175	MWIL	08	18	1430	N08	E12	08	19.5	6	(BG)					
10661		HOLL	08	18	1833	N11	E10	08	19.5		BG	DKI	520	21	10	3
10661		VORO	08	18	2128	N07	E06	08	19.3			DKO	644	20	4	3
10661		LEAR	08	19	0127	N09	E05	08	19.4		BG	CHO	570	18	8	4
10661		SVTO	08	19	0608	N09	E04	08	19.5		B	EKO	540	11	13	3
10661		KAND	08	19	0754	N05	E03	08	19.5			DKO		14	9	4
10661		HOLL	08	19	1440	N08	E00	08	19.6		BG	EKI	420	20	11	4
10661	32175	MWIL	08	19	1445	N07	W02	08	19.5	6	(BG)					
10661		VORO	08	19	2212	N07	W07	08	19.4			DHO	599	6	4	3
10661		LEAR	08	20	0030	N07	W08	08	19.4		B	CKO	490	8	8	3
10661		SVTO	08	20	0627	N08	W12	08	19.4		B	EHO	520	4	11	3
10661		KAND	08	20	0647	N05	W10	08	19.5			DKO		6	7	4
10661		HOLL	08	20	1440	N08	W13	08	19.6		B	EKO	420	32	11	4
10661	32175	MWIL	08	20	1500	N07	W15	08	19.5	5	(BP)					
10661		VORO	08	20	2144	N07	W19	08	19.5			DHO	599	9	4	3
10661		LEAR	08	21	0100	N07	W22	08	19.4		B	CKO	410	8	8	2
10661		KAND	08	21	0812	N06	W25	08	19.5			DKO		8	6	5
10661		SVTO	08	21	0812	N07	W25	08	19.5		B	DKO	470	7	9	3
10661	32175	MWIL	08	21	1430	N07	W28	08	19.5	5	(BP)					
10661		HOLL	08	21	1550	N06	W28	08	19.6		B	DKO	450	11	8	3
10661		VORO	08	21	2159	N07	W32	08	19.5			DKO	591	6	4	3
10661		LEAR	08	22	0025	N07	W35	08	19.4		B	CKO	450	5	7	3
10661		SVTO	08	22	0656	N06	W37	08	19.5		B	DKO	490	5	9	3

SUNSPOT GROUPS
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AUGUST 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
10661		KAND	08 22	0702	N06 W37	08 19.5			EKO		5	8	4
10661	32175	MWIL	08 22	1430	N08 W41	08 19.5	6	(BG)					
10661		HOLL	08 22	1443	N06 W42	08 19.5		B	DKI	370	10	6	4
10661		LEAR	08 23	0015	N07 W47	08 19.5		B	CKO	400	4	6	3
10661		VORO	08 23	0147	N07 W47	08 19.5			HKX	587	4	4	3
10661		SVTO	08 23	0705	N08 W51	08 19.5		B	DKO	530	6	8	3
10661		HOLL	08 23	1415	N06 W55	08 19.5		B	DKO	320	8	8	4
10661	32175	MWIL	08 23	1515	N07 W55	08 19.5	5	(AP)					
10661		LEAR	08 24	0441	N06 W63	08 19.5		A	HAX	320	3	7	2
10661		SVTO	08 24	0615	N06 W64	08 19.5		B	DHO	570	3	7	3
10661		KAND	08 24	0637	N05 W65	08 19.4			DKO		2	7	4
10661	32175	MWIL	08 24	1430	N06 W68	08 19.5	5	(BG)					
10661		VORO	08 24	2353	N07 W72	08 19.6			HKX	577	4	3	3
10661		LEAR	08 25	0037	N06 W72	08 19.6		A	HAX	280	4	7	3
10661		SVTO	08 25	0715	N05 W79	08 19.4		B	DHO	300	2	5	3
10661		KAND	08 25	1023	N05 W80	08 19.4			DAO		2	5	5
10661	32175	MWIL	08 25	1430	N07 W80	08 19.6	4	(AP)					
10661		HOLL	08 25	1515	N06 W81	08 19.6		B	DAO	90	3	8	4
10661		VORO	08 25	2218	N07 W82	08 19.8			HKX	561	3		4
10661		LEAR	08 26	0016	N07 W87	08 19.5		A	AXX	60	1	6	3
10661A		VORO	08 15	2240	N13 E48	08 19.6			ARX	9	3		3
10661A		VORO	08 16	2141	N12 E35	08 19.5			ARX	10	3		3
10661A		VORO	08 18	0111	N13 E21	08 19.6			ARX	15	6		3
10661A		VORO	08 18	2128	N13 E10	08 19.6			ARX	12	3		3
10661A		VORO	08 19	2212	N14 W03	08 19.7			ARX	15	2		3
10662		LEAR	08 18	0110	N12 E39	08 21.0		B	BXO	10	4	2	2
10662		VORO	08 18	0111	N13 E38	08 20.9			ARX	28	5		3
10662		SVTO	08 18	0708	N12 E37	08 21.1		B	CRO	20	3	3	3
10662		KAND	08 18	1207	N12 E34	08 21.1			BXO		6	3	3
10662	32177	MWIL	08 18	1430	N13 E32	08 21.0	4	(B)					
10662		HOLL	08 18	1833	N15 E29	08 21.0		B	CAO	40	14	4	3
10662		VORO	08 18	2128	N13 E27	08 20.9			BRI	39	11	3	3
10662		LEAR	08 19	0127	N13 E24	08 20.9		BG	CAO	40	13	4	4
10662		SVTO	08 19	0608	N13 E23	08 21.0		B	CSO	30	6	5	3
10662		KAND	08 19	0754	N13 E23	08 21.1			BXO		4	4	4
10662		HOLL	08 19	1440	N13 E19	08 21.0		B	DAI	60	12	5	4
10662	32177	MWIL	08 19	1445	N13 E18	08 21.0	4	(B)					
10662		VORO	08 19	2212	N14 E14	08 21.0			CRI	66	15	4	3
10662		LEAR	08 20	0030	N13 E13	08 21.0		B	CAO	80	15	5	3
10662		SVTO	08 20	0627	N14 E08	08 20.9		B	DAO	110	7	6	3
10662		KAND	08 20	0647	N13 E09	08 21.0			CAI		11	5	4
10662		HOLL	08 20	1440	N13 E05	08 21.0		B	DAI	140	17	6	4
10662	32177	MWIL	08 20	1500	N14 E04	08 20.9	5	(BP)					
10662		VORO	08 20	2144	N13 E01	08 21.0			DAI	109	13	4	3
10662		LEAR	08 21	0100	N12 W02	08 20.9		B	DAO	100	11	5	2
10662		KAND	08 21	0812	N13 W05	08 21.0			DAO		8	6	5
10662		SVTO	08 21	0812	N14 W05	08 21.0		B	DAO	100	9	7	3
10662	32177	MWIL	08 21	1430	N14 W09	08 20.9	5	(B)					
10662		HOLL	08 21	1550	N13 W09	08 21.0		B	DAC	120	13	7	3
10662		VORO	08 21	2159	N14 W12	08 21.0			CRI	61	10	4	3
10662		LEAR	08 22	0025	N12 W14	08 21.0		B	DAO	60	6	5	3
10662		SVTO	08 22	0656	N14 W18	08 20.9		B	DAO	70	7	5	3
10662		KAND	08 22	0702	N13 W18	08 20.9			CAO		8	6	4
10662	32177	MWIL	08 22	1430	N14 W22	08 20.9	5	(B)					
10662		HOLL	08 22	1443	N13 W22	08 20.9		B	DAI	30	5	6	4
10662		LEAR	08 23	0015	N13 W27	08 21.0		B	CSO	30	3	3	3
10662		VORO	08 23	0147	N13 W27	08 21.0			CAO	38	5	3	3
10662		SVTO	08 23	0705	N15 W33	08 20.8		A	HRX		1		3
10662		HOLL	08 23	1415	N13 W36	08 20.9		B	BXO	10	3	3	4
10662	32177	MWIL	08 23	1515	N16 W38	08 20.7	4	(AP)					
10665		KAND	08 20	0647	N03 E20	08 21.8			AX		1		4
10665		HOLL	08 20	1440	N05 E16	08 21.8		B	BXO	10	4	3	4
10665		VORO	08 20	2144	N04 E10	08 21.6			AXX	3	1		3
10665		KAND	08 21	0702	N04 E06	08 21.7			BXO		3	3	4
10665		LEAR	08 22	0025	N05 W02	08 21.9		B	BXO	10	2	1	3
10665		SVTO	08 22	0656	N04 W05	08 21.9		A	AXX	10	1	1	3

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AUGUST 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
10665	32180	MWIL	08	22	1430	N05 W11	08	21.8	4	(B)					
10665	32181	MWIL	08	22	1430	N09 W13	08	21.6	4	(BP)					
10665		HOLL	08	22	1443	N04 W11	08	21.8		B	CAO	10	4	4	4
10665		LEAR	08	23	0015	N05 W15	08	21.9		B	BXO	10	2	2	3
10665		LEAR	08	23	0015	N09 W19	08	21.6		B	BXO	10	2	1	3
10665		VORO	08	23	0147	N05 W16	08	21.9			HRX	25	1		3
10665		SVTO	08	23	0705	N05 W19	08	21.9		A	HSX		1		3
10665		HOLL	08	23	1415	N04 W22	08	21.9		A	AXX		1	1	4
10665	32180	MWIL	08	23	1515	N05 W24	08	21.8	4	(AF)					
10665	32182	MWIL	08	24	1430	N10 W41	08	21.5	4	(AP)					
10664		HOLL	08	19	1440	S11 E61	08	24.2		B	BXO	20	2	2	4
10664		LEAR	08	20	0030	S11 E53	08	24.0		A	AXX		1		3
10664		SVTO	08	20	0627	S11 E49	08	23.9		B	BXO	10	2	4	3
10664		KAND	08	20	0647	S13 E50	08	24.0			BXO		2	2	4
10664		HOLL	08	20	1440	S11 E45	08	24.0		B	DAO	70	15	7	4
10664	32179	MWIL	08	20	1500	S10 E43	08	23.8	4	(B)					
10664		VORO	08	20	2144	S11 E39	08	23.8			BXI	80	10	7	3
10664		LEAR	08	21	0100	S11 E37	08	23.8		B	DAO	70	16	8	2
10664		SVTO	08	21	0812	S10 E34	08	23.9		B	DSO	90	15	9	3
10664		KAND	08	21	0812	S11 E35	08	24.0			CAI		17	9	5
10664	32179	MWIL	08	21	1430	S10 E29	08	23.8	5	(B)					
10664		HOLL	08	21	1550	S10 E29	08	23.8		B	DAC	110	25	10	3
10664		VORO	08	21	2159	S09 E24	08	23.7			DAI	155	17	7	3
10664		LEAR	08	22	0025	S11 E24	08	23.8		B	DAO	110	26	9	3
10664		SVTO	08	22	0656	S10 E21	08	23.9		B	DSO	110	17	10	3
10664		KAND	08	22	0702	S11 E20	08	23.8			DSO		15	10	4
10664	32179	MWIL	08	22	1430	S10 E16	08	23.8	5	(B)					
10664		HOLL	08	22	1443	S10 E16	08	23.8		B	EAC	90	22	11	4
10664		LEAR	08	23	0015	S11 E10	08	23.8		B	ESO	110	18	11	3
10664		VORO	08	23	0147	S09 E09	08	23.7			DAI	192	9	9	3
10664		SVTO	08	23	0705	S11 E06	08	23.7		B	ESO	160	14	12	3
10664		HOLL	08	23	1415	S10 E02	08	23.7		B	EAO	100	18	12	4
10664	32179	MWIL	08	23	1515	S10 E02	08	23.8	5	(B)					
10664		LEAR	08	24	0441	S11 W06	08	23.7		BG	EAO	120	21	11	2
10664		SVTO	08	24	0615	S11 W07	08	23.7		B	ESO	150	15	12	3
10664		KAND	08	24	0637	S11 W08	08	23.7			CAO		15	11	4
10664	32179	MWIL	08	24	1430	S10 W13	08	23.6	5	(BG)					
10664		VORO	08	24	2247	S10 W16	08	23.7			CSO	202	7	10	2
10664		LEAR	08	25	0037	S10 W17	08	23.7		B	CSO	120	18	11	3
10664		SVTO	08	25	0715	S10 W22	08	23.6		B	ESO	140	4	13	3
10664		KAND	08	25	1023	S11 W25	08	23.5			CSO		7	12	5
10664	32179	MWIL	08	25	1430	S10 W26	08	23.6	5	(BP)					
10664		HOLL	08	25	1515	S11 W26	08	23.7		B	ESO	70	10	12	4
10664		VORO	08	25	2353	S10 W30	08	23.7			CSI	143	9	9	3
10664		LEAR	08	26	0016	S10 W32	08	23.6		B	CAO	120	9	11	3
10664		KAND	08	26	0703	S11 W40	08	23.3			CAO		7	8	5
10664		SVTO	08	26	0710	S11 W36	08	23.6		B	DSO	120	7	7	3
10664	32179	MWIL	08	26	1430	S10 W40	08	23.6	5	(BP)					
10664		HOLL	08	26	1530	S11 W42	08	23.5		B	DAO	120	8	9	4
10664		LEAR	08	27	0020	S10 W45	08	23.6		B	CAO	100	2	7	3
10664		VORO	08	27	0244	S10 W47	08	23.6			CAO	132	7	6	4
10664		SVTO	08	27	0616	S10 W53	08	23.3		A	HSX	100	1	3	3
10664		KAND	08	27	0658	S12 W54	08	23.2			HS		1	2	4
10664	32179	MWIL	08	27	1430	S10 W57	08	23.3	5	(AP)					
10664		HOLL	08	27	1555	S10 W58	08	23.3		A	HSX	80	1	2	3
10664		VORO	08	27	2226	S10 W61	08	23.3			HAX	150	2		3
10664		TACH	08	28	0607	S10 W65	08	23.4			HSX	76	1	2	4
10664		SVTO	08	28	0707	S10 W67	08	23.3		A	HSX	100	1	2	3
10664	32179	MWIL	08	28	1430	S10 W70	08	23.3	4	(AP)					
10664		VORO	08	28	2237	S09 W75	08	23.3			HAX	205	1		2
10664		SVTO	08	29	0745	S11 W80	08	23.3		A	HSX	60	1	3	3
10664		TACH	08	29	0806	S09 W78	08	23.5			HSX	83	1	3	3
10664	32179	MWIL	08	29	1430	S10 W85	08	23.2	4	AP					
10664A	32184	MWIL	08	26	1430	N03 W17	08	25.3	4	(AP)					
10663		SVTO	08	19	0608	N07 E86	08	25.7		A	HSX	90	1	5	3
10663		KAND	08	19	0754	N07 E87	08	25.8			HA		1	4	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)
AUGUST 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
10663		HOLL	08 19 1440	N09 E89	08 26.3		A	HAX	120	2	3	4
10663	32178	MWIL	08 19 1445	N08 E79	08 25.5	5	(AP)					
10663		VORO	08 19 2212	N08 E73	08 25.4			HAX	168	3		3
10663		LEAR	08 20 0030	N11 E77	08 25.8		B	DAO	180	3	10	3
10663		SVTO	08 20 0627	N10 E75	08 25.9		B	DSO	170	3	13	3
10663		KAND	08 20 0647	N07 E70	08 25.5			CSO		2	4	4
10663		HOLL	08 20 1440	N10 E73	08 26.1		B	DAI	200	13	8	4
10663	32178	MWIL	08 20 1500	N10 E69	08 25.8	5	(B)					
10663		VORO	08 20 2144	N08 E60	08 25.4			HAX	175	6		3
10663		LEAR	08 21 0100	N10 E65	08 25.9		B	EAO	140	5	11	2
10663		KAND	08 21 0812	N10 E62	08 26.0			EAO		8	15	5
10663		SVTO	08 21 0812	N11 E61	08 25.9		B	ESO	230	8	12	3
10663	32178	MWIL	08 21 1430	N10 E56	08 25.8	5	(B)					
10663		HOLL	08 21 1550	N11 E55	08 25.8		B	FAI	210	13	16	3
10663		VORO	08 21 2159	N09 E47	08 25.4			HHX	169	5		3
10663		LEAR	08 22 0025	N10 E52	08 25.9		B	EAO	140	10	11	3
10663		SVTO	08 22 0656	N12 E48	08 25.9		B	ESO	200	9	13	3
10663		KAND	08 22 0702	N13 E49	08 26.0			ESO		10	14	4
10663	32178	MWIL	08 22 1430	N10 E44	08 25.9	5	(BP)					
10663		HOLL	08 22 1443	N11 E43	08 25.8		B	ESC	190	20	12	4
10663		LEAR	08 23 0015	N10 E39	08 25.9		B	DSO	160	14	13	3
10663		VORO	08 23 0147	N09 E33	08 25.5			HHX	226	11		3
10663		SVTO	08 23 0705	N10 E35	08 25.9		B	ESO	170	11	12	3
10663		HOLL	08 23 1415	N11 E31	08 25.9		BG	ESO	150	20	13	4
10663	32178	MWIL	08 23 1515	N10 E29	08 25.8	5	(BP)					
10663		LEAR	08 24 0441	N10 E22	08 25.8		BG	CSO	100	5	11	2
10663		SVTO	08 24 0615	N09 E17	08 25.5		B	CSO	100	3	5	3
10663		KAND	08 24 0637	N08 E12	08 25.2			CSO		2	4	4
10663	32178	MWIL	08 24 1430	N09 E15	08 25.7	5	(B)					
10663		VORO	08 24 2353	N08 E07	08 25.5			HHX	166	3		3
10663		LEAR	08 25 0037	N09 E10	08 25.8		B	CSO	150	25	11	3
10663		SVTO	08 25 0715	N08 E04	08 25.6		B	CSO	120	5	5	3
10663		KAND	08 25 1023	N07 E01	08 25.5			HS		1	2	5
10663	32178	MWIL	08 25 1430	N07 W00	08 25.6	5	(BP)					
10663		HOLL	08 25 1515	N09 E02	08 25.8		B	EAO	150	17	11	4
10663		VORO	08 25 2218	N08 W05	08 25.5			HAX	182	9		4
10663		LEAR	08 26 0016	N09 W03	08 25.8		B	CAO	130	12	12	3
10663		KAND	08 26 0703	N07 W11	08 25.5			HA		1	3	5
10663		SVTO	08 26 0710	N07 W11	08 25.5		A	HSX	100	1	3	3
10663	32178	MWIL	08 26 1430	N07 W13	08 25.6	5	(BP)					
10663		HOLL	08 26 1530	N09 W12	08 25.7		B	EAO	120	19	12	4
10663		LEAR	08 27 0020	N09 W15	08 25.9		B	EAO	100	5	11	3
10663		VORO	08 27 0244	N08 W22	08 25.5			HAX	129	7		4
10663		SVTO	08 27 0616	N09 W18	08 25.9		B	ESO	70	7	13	3
10663		KAND	08 27 0658	N07 W24	08 25.5			CSO		2	2	4
10663		KAND	08 27 0658	N11 W14	08 26.2			CAO		4	2	4
10663	32178	MWIL	08 27 1430	N08 W25	08 25.7	5	(B)					
10663		HOLL	08 27 1555	N09 W24	08 25.9		B	EAO	70	12	13	3
10663		VORO	08 27 2226	N08 W33	08 25.5			HAX	93	4		3
10663		TACH	08 28 0607	N06 W38	08 25.4			HR	77	3	3	4
10663		SVTO	08 28 0707	N09 W33	08 25.8		B	ESO	60	5	12	3
10663	32178	MWIL	08 28 1430	N08 W38	08 25.7	5	(BP)					
10663		VORO	08 28 2237	N08 W46	08 25.5			HAX	51	1		2
10663		SVTO	08 29 0745	N07 W52	08 25.4		A	HSX	50	1	1	3
10663		TACH	08 29 0806	N08 W51	08 25.5			HSX	133	1	2	3
10663		HOLL	08 29 1424	N04 W53	08 25.6		B	CAO	40	4	6	4
10663	32178	MWIL	08 29 1430	N07 W55	08 25.5	5	(AP)					
10663		TACH	08 30 0450	N07 W65	08 25.3			AR	61	4	2	4
10663		SVTO	08 30 0759	N05 W66	08 25.4		B	DSO	90	4	5	3
10663		HOLL	08 30 1425	N04 W68	08 25.5		B	DAO	170	12	6	4
10663	32178	MWIL	08 30 1430	N06 W69	08 25.4	4	(G)					
10663		VORO	08 31 0145	N06 W74	08 25.5			CRO	29	2	1	3
10663		TACH	08 31 0637	N06 W76	08 25.6			HSX	62	1	2	3
10663		SVTO	08 31 0700	N04 W80	08 25.3		B	CSO	60	2	3	3
10663		LEAR	08 31 0740	N03 W78	08 25.5		A	HAX	30	1	2	3
10663		KAND	08 31 0742	N04 W78	08 25.5			HA		1	3	4
10663	32178	MWIL	08 31 1430	N05 W85	08 25.2	4	G					
10663		HOLL	08 31 1507	N03 W85	08 25.3		A	HAX	60	1	3	4
10663B		VORO	08 19 2212	N12 E83	08 26.2			HAX	64	3		3

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

AUGUST 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
10663B		VORO	08 20 2144	N12 E70	08 26.2			HAX	106	5		3
10663B		VORO	08 21 2159	N12 E57	08 26.2			HAX	80	2		3
10663B		VORO	08 23 0147	N12 E43	08 26.3			HAX	96	4		3
10663B		VORO	08 24 2353	N10 E18	08 26.3			AXX	6	3		3
10663B		VORO	08 25 2218	N14 E05	08 26.3			AXX	6	6		4
10663B		VORO	08 27 0244	N11 W12	08 26.2			ARX	28	6		4
10663B		VORO	08 27 2226	N11 W22	08 26.3			ARX	14	3		3
10663B		TACH	08 28 0607	N10 W27	08 26.2			AXX	17	1	1	4
10663B		VORO	08 28 2237	N11 W36	08 26.2			AXX	11	1		2
10663B		VORO	08 31 0145	N10 W64	08 26.3			AXX	2	1		3
10663E		VORO	08 23 2147	N19 E36	08 26.6			AXX	3	1		3
10663E		VORO	08 31 0145	N14 W57	08 26.8			AXX	4	1		3
10663C	32183	MWIL	08 25 1430	S11 E25	08 27.5	4	(AF)					
10663D		HOLL	09 01 1445	S20 W68	08 27.5		A	AXX	20	2	1	4
10663A	32185	MWIL	08 28 1430	S05 E28	08 30.7	4	(AP)					
10663A		HOLL	08 30 1425	S04 E03	08 30.8		A	AXX		1	1	4
10663A	32185	MWIL	08 30 1430	S05 E03	08 30.8	3	(AP)					

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

AUGUST 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	1010	1015	1020	1-	1					1	1020	B1.5	
03	0602	0617	0710	1	1		1				0604	B1.9	10655
03	0819	0906	1052U	1	1		1				0814	B9.1	10655
03	1621	1632	1711	1	1		1				No flare		
04	0554	0557	0606	1	1		1				No flare		
04	1722	1737	1757	1	1		1				No flare		
05	0541	0634U	0640D	1	1		1				No flare		
05	1703	1730	1809	1	1		1				No flare		
06	0627	0706	0723	2	1		1				*		
06	1320	1332	1403	1	1		1				No flare		
08	1415	1420	1450	2	1					1	1426	B5.7	10656
08	1700	1707	1736	1+	5					3	1659	C2.7	10656
08	1716	1725	1812	2-	5					2	1659	C2.7	10656
09	0727	0735	0745	1+	3					2	0726	C2.4	10656
09	0806	0819	0841	2	5	1		1		3	0756	C4.8	10656
09	0830	0840	0845	1-	1					1	0832	C1.1	10656
09	1104	1134	1203	2	5	1	1	1		4	1101	C1.7	10656
09	1327	1337	1353	3-	5	1		1		3	1322	C3.3	10656
09	1459	1507	1539	1	1		1				1518	C1.1	10656
09	1546	1552	1607	1-	5		1			1	1536	C1.9	10656
09	1637	1645	1657	1	1		1				No flare		
09	1659	1708	1729	1	1		1				No flare		
10	1147	1154	1157	1-	1					1	*		
10	1231	1235	1252	2	5	1		1			*		
10	1430	1448	1545	3-	5					4	*		
10	1730	1737	1755	1	1		1				1725	C1.0	10656
10	1738	1756	1804	1+	1					1	1735	C1.2	
11	0820	0825	0830	1-	1					1	0823	C1.3	10656
11	0849	0854	0911	1	5					4	0849	C2.9	10656
11	1014	1020	1043	2	5	1		1		2	1009	C4.2	10656
11	1137	1144	1215	3	5			1		9	1135	C7.6	10656
11	1403	1410	1415	1-	1					1	1406	C1.8	10656
11	1533	1536	1540	1-	1					1	1535	C1.8	10656
11	1612	1621	1638	2-	5			1		1	1612	C2.8	10656
11	1746	1751	1759	1-	1					1	1747	C1.7	10656
12	0443	0450	0450U	1+	1					1	0438	M1.2	10656
12	0501	0509	0625	1+	5					2	0438	M1.2	10656
12	0631	0635	0655	1	1					1	0619	C2.2	10656
12	0934	0939	1010	3-	5	1		1		3	0931	C4.0	10656
12	1131	1141	1211	2	5	1		1		5	1127	C4.9	10656
12	1257	1301	1315	1-	5					5	1257	C2.1	10656
12	1616	1621	1621U	2	5			1		6	1611	C6.5	10656
12	1814	1822	1841	1+	1					1	No flare		
12	1853	1900	1914	1-	5					2	1853	C4.4	10656
13	0640	0644	0702	1+	5	1		1			0636	M1.2	10656
13	0721	0727	0807	3-	5	1		1		5	0722		10656
13	0936	0938	0956	2-	5	1		1		5	0936	C2.4	10656
13	1206	1212	1249	3	5	1		1		9	1202	M1.1	10656
13	1323	1327	1339	1-	5					2	1326		10656
13	1514	1519	1543	2+	5	1		1		11	1510	C8.6	10656
13	1655	1700	1705	1-	1					1	1655	C2.3	10656
13	1724	1739	1803	2	5					2	No flare		
13	1807	1814	1901	2	5					5	1807	X1.0	10656
13	1954	2001	2022	1	3					2	No flare		

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 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
14	0413	0415	0500	2+	1					1	0410	M2.4	10656
14	0542	0552	0611	3	5	1	1	1		5	0536	M7.4	10656
14	0632	0658	0748	1	1		1				No flare		
14	0755	0806	0831	3	5	1	2	1		4	0751	M2.3	10656
14	0926	0929	0950	3-	5	1	2	1		6	0923	C8.1	10656
14	0954	1000	1105	3	5	1	2	1		6	0952	M3.2	10656
14	1142	1203	1219	1+	3		1			1	1201	C7.4	10656
14	1203	1214	1310	3	5	1	2	1		9	1201	C7.4	10656
14	1336	1342	1442	3	5	1	2	1		13	1331	M5.6	10656
14	1515	1524	1553	1+	5		1			10	1515	C5.9	10656
14	1630	1640	1711	2-	5					7	1629	C5.2	10656
14	1733	1744	1805	2-	3					3	*		
14	1809	1819	1908	2	5					6	1809	M1.3	10656
14	2012	2019	2109	2	5					5	2009	M1.3	10656
15	0500	0505	0538	2	1					1	0445	M1.2	10656
15	0553	0601	0641	1+	5					4	0554	M1.2	10656
15	1125	1131	1226	3	5	1	1	1		14	1123	M2.6	10656
15	1237	1241	1314	3	5	1	1	1		13	1234	M9.4	10656
15	1638	1646	1651	2	5			1		6	1642	C2.9	10656
15	1719	1723	1734	1-	1					1	1716	C1.4	10656
15	1801	1804	1837	2	1					1	1759	C1.6	10656
15	1841	1845	1931	2	5					5	1837	M1.2	10656
15	2039	2045	2123	2	3					4	2037	C4.9	10656
16	1013	1033	1124	3	5	1		1		6	1010	C8.0	10656
16	1334	1358	1459	3	5	1	1	1		6	1330	C9.0	10656
16	1737	1744	1747	1-	5					2	1744	C1.9	10656
16	1949	1955	2049D	2+	1					1	1949	C2.8	10656
16	2049	2056	2137U	2+	1					1	2046	C6.2	10656
17	0501	0507	0639	2	1					1	0459	M1.1	10656
17	0626	0636	0644	2-	5	1		1			0629		10656
17	0737	0740	0754	2+	5	1	2	1		2	0735	C5.2	10656
17	0836	0842	0921	2	5	1	1	1		2	0832	C4.9	10656
17	0855	0859	0910	1-	1					1	No flare		
17	0955	1000	1033	2	5	1		1		3	0952	C4.1	10656
17	1029	1053	1238	3+	1					1	1044	C1.8	10661
17	1328	1334	1412	3-	5	1	1	1		8	1319	C8.8	10656
17	1708	1720	1752	1	1		1				No flare		
17	1801	1807	1902	2+	3					4	1800	C7.2	10656
17	1923	1933	2029	2+	3					4	1926	M2.4	10656
17	1949	1952	2023	2	1					1	*		
17	2115	2122	2207	2	3					5	2112	M1.8	10656
17	2210	2213	2218	1-	1					1	2212	M1.3	10656
17	2214	2230	2254	2	1					1	2212	M1.3	10656
18	0711	0713	0727	2	1			1			0714		10656
18	0750	0751	0751U	2-	5	1		1			No flare		
18	0803	0820	0828	2	5	1		1			No flare		
18	0841	0859	1006	2+	5	1		1		1	No flare		
18	1042	1048	1116	2	5	1		1		4	1040	C3.2	10661
18	1353	1358	1414	2+	5	1		1		9	1348	C4.0	10656
18	1624	1628	1647	2-	5		1	1		6	1621	C7.2	10656
18	1734	1745	1745U	3	5	1	1	1		7	1729	X1.8	10656
19	0635	0645	0645U	1-	1	1					0635	M3.0	10656
19	0652	0709	0814	3	5	1	1	1		4	0635	M3.0	10656
19	1145	1153	1210	2	5	1		1		1	No flare		
19	1231	1240	1244	2+	5		1	1		7	1228	C3.0	10656
19	1301	1308	1315	2-	5		1	1		7	1250	C4.2	10656
19	1334	1344	1446	3-	5	1	1	1		10	1329	M2.1	10656
20	1350	1402U	1442	1	1		1				No flare		

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES
AUGUST 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
21	1507	1517	1551	1	1		1				No flare		
24	1336	1400	1456	2+	1					1	1330	B7.6	
26	0211	0217	0229	1	1					1	0208	C1.8	10663
28	0651	0715	0810	2	1		1				No flare		
28	0920	0930	0954	1	1		1				0915	B1.8	
28	1239	1307	1354	1	1		1				1243	B1.5	
31	0533	0542	0722	2+	1					1	0524	M1.4	10663

* = no flare patrol.

OBSERVATORIES REPORTING FOR AUGUST 2004

Alberta, Canada	SES	Marlborough, Massachusetts, USA	SES
Athens, Greece	SES	Nerja, Spain	SES
Bedford, Massachusetts, USA	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Bern, Switzerland	SES	Sofia, Bulgaria	SES
Brookline, Massachusetts, USA	SES	Sussex, United Kingdom	SES
Calcutta, India	SES	Torrington, Connecticut, USA	SES
Cambridge, England, UK	SES	Udine City, Italy	SES
Edenvale, Rep of S. Africa	SES	Upice, Czech Republic	SEA
Houston, Texas, USA	SES	Villiersdorp, South Africa	SES
Isola del Gran Sasso, Italy	SES		

Observations are not necessarily continuous.

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

Spectral Observations

AUGUST 2004

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01	0000	0720	CULG	0000.0E	0258.0	I	S	1	60	180	
			PALE	0006.0	0344.0	III	N	1	25	180	
			CULG	0007.0	0010.0	III	G	3	18X	200	
	0000	0944	HIRA	0007.0	0009.0	III	G	1	25X	210	
			CULG	0034.0	0035.0	III	G	2	25	160	
			CULG	0040.0	0040.0	III	B	1	40	160	
			HIRA	0129.5	0130.0	III	B	1	100	140	
			CULG	0130.0	0132.0	III	G	1	40	200	
			HIRA	0158.5	0201.0	III	G	1	25X	120	
			CULG	0159.0	0201.0	III	G	2	18	200	
			CULG	0218.0	0322.0	III	N	1	25	180	
			CULG	0303.0	0303.0	III	B	2	18	150	
			HIRA	0303.0	0303.5	III	B	1	25X	110	
			CULG	0359.0	0720.0D	I	S	1	120	180	
	0447	1729	ONDR								
			CULG	0529.0	0615.0	III	N	1	23	180	
			LEAR	0529.0	0748.0	III	N	1	25	154	
	0550	1200	IZMI	0550.0E	1200.0D	I	N	2	50U	270X	
	0510	1750	BLEN	0553.6	0554.4	III	GG,RS	1	480	2000	
			IZMI	0600.6	0601.4	III	G	1	50	180	
			IZMI	0608.3	0809.7	I	GG	2	135	190	
			IZMI	0613.1	0616.1	I	GG	2	120	175	
			IZMI	0615.2	0615.7	III	G	2	50U	165	
			LEAR	0900.0	0905.0	III		1	25	180	
			SVTO	0901.0	0907.0	III		1	25	84	
			HIRA	0901.5	0904.0	III	G	1	30	130	
			IZMI	0901.5	0905.9	III	GG,FS	2	25X	160	
			IZMI	1112.7	1120.0	III	N	1	45	95	
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	80	180	
			CULG	2107.0	2109.0	III	G	1	70	200	
	1943	2400	HIRA	2107.0	2108.5	III	G	1	100	210	
			CULG	2116.0	2121.0	III	G	2	20	200	
			HIRA	2116.0	2116.5	III	B	1	50	130	
			PALE	2116.0	2120.0	III		1	25	150	
			CULG	2131.0	2132.0	III	G	1	25	90	
02	0000	0943	HIRA								
	0000	0720	CULG	0000.0E	0039.0	I	S	1	110	170	
			CULG	0351.0	0720.0D	I	S	1	80	180	
	0448	1728	ONDR								
	0510	1750	BLEN								
	0602	1200	IZMI								
			SVTO	1606.0	1742.0	CONT		1	75	180	
	1944	2400	HIRA								
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	100	180	
			CULG	2213.0	2213.0	III	B	1	25	130	
			PALE	2238.0	2239.0	III		1	25	71	
			LEAR	2334.0	0923.0	CONT		1	120	180	
03	0000	0942	HIRA								
	0000	0720	CULG	0000.0E	0057.0	I	S	1	120	180	
			CULG	0135.0	0720.0D	I	S	1	110	170	
	0449	1726	ONDR								
			CULG	0458.0	0458.0	III	B	1	50	90	
	0510	1705	BLEN								
	0602	1200	IZMI	0602.0E	1200.0D	I	N	1	110U	180	
			PALE	1853.0	1854.0	III		1	25	125	
			PALE	1936.0	1939.0	III		1	25	180	
	2100	2400	CULG	2158.0	2158.0	III	B	1	27	140	
			CULG	2209.0	2212.0	III	G	2	20	200	
	1945	2400	HIRA	2209.0	2212.0	III	G	1	25X	210	
			LEAR	2341.0	0745.0	III	N	1	25	180	
			HIRA	2350.5	2351.0	III	B	1	100	130	
			CULG	2351.0	2353.0	III	G	1	100	180	
04	0000	0700	CULG	0030.0	0031.0	III	G	1	120	200	
	0000	0941	HIRA	0030.0	0030.5	III	B	1	110	190	
			CULG	0040.0	0041.0	III	G	1	35	75	
			CULG	0047.0	0057.0	III	GG	1	27	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
04			PALE	0055.0	0055.0	III		1	79U	180U	
			HIRA	0055.5	0056.0	III	B	1	110	230	
			CULG	0056.0	0056.0	III	B	2	60	200	
			CULG	0122.0	0122.0	III	B	1	30	170	
			CULG	0215.0	0215.0	III	B	1	110	190	
			HIRA	0215.0	0215.5	III	B	1	120	210	
			CULG	0238.0	0238.0	III	B	2	27	200	
			HIRA	0238.0	0238.5	III	B	1	90	180	
			LEAR	0348.0	0352.0	III		2	25	180	
			HIRA	0348.5	0354.0	III	G	3	25X	350	
			CULG	0349.0	0354.0	III	GG	3	18X	300	
			PALE	0349.0	0352.0	III		1	25	180	
			CULG	0422.0	0424.0	III	G	2	20	100	
			HIRA	0422.5	0424.5	III	G	1	25X	100	
	0450	1725	ONDR								
			LEAR	0458.0	0459.0	III		2	25	180	
			SVTO	0458.0	0510.0	III	N	2	25	180	
			CULG	0459.0	0510.0	III	GG	3	18X	350	
			HIRA	0459.0	0459.5	III	B	3	25X	320	
			LEAR	0504.0	0505.0	III		1	25	180	
			HIRA	0504.5	0510.0	III	G	3	25X	320	
			LEAR	0509.0	0510.0	III		2	25	180	
			CULG	0518.0	0551.0	III	N	1	20	180	
	0550	1200	IZMI	0550.0E	1200.0D	I	N	1	110U	270X	
			IZMI	0614.1	0614.4	III	G	1	120	250	
			IZMI	0742.5	0742.6	III	B	2	135	180	
			SVTO	0745.0	0746.0	III		1	25	180	
			HIRA	0745.5	0746.0	III	B	2	50	200	
			IZMI	0745.6	0746.0	III	G,C	2	25X	250	
			HIRA	0835.0	0836.5	III	G	2	100	260	
			IZMI	0835.2	0835.4	III	G	3	110U	270X	
	0515	1705	BLEN	0835.3	0836.5	III	GG	2	140	350	
			IZMI	0835.7	0836.5	III	GG	2	25X	270X	
			LEAR	0836.0	0836.0	III		1	25	180	
			SVTO	0836.0	0836.0	III		1	25	180	
			IZMI	0852.5	0853.5	III	G,RS	2	200	270X	
			IZMI	1035.5	1035.6	III	B	1	45	95	
			IZMI	1041.0	1041.3	III	B	1	25X	65	
			SVTO	1041.0	1041.0	III		1	25	50	
	1946	2400	HIRA								
			CULG	2100.0E	2400.0D	III	N	1	27	100	
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	120	180	
05			CULG	0000.0E	0720.0D	III	N	1	20	180	
	0000	0720	CULG	0000.0E	0215.0	I	S	1	120	180	
			LEAR	0114.0	0924.0	CONT		1	120	180	
			CULG	0342.0	0720.0D	I	S	1	120	180	
	0452	1723	ONDR								
			IZMI	0550.0E	1200.0D	III	N	1	45U	95U	
	0550	1200	IZMI	0550.0E	1200.0D	I	S	1	110U	270X	
			IZMI	0600.8	0603.6	III	G	1	45	85	
			SVTO	0602.0	1739.0	CONT		1	120	170	
			IZMI	0632.4	0632.6	III	B	1	50U	140	
			SVTO	0723.0	0723.0	III		1	25	64	
	0000	0940	HIRA	0723.5	0724.0	III	B	1	40	80	
			IZMI	0723.6	0724.4	III	G	2	25X	85	
			IZMI	0752.7	0754.2	III	GG	1	45	95	
			SVTO	0753.0	0753.0	III		1	25U	56U	
			IZMI	0805.5	0805.6	III	B	1	40	95	
			IZMI	0923.3	0924.2	III	GG	1	45	90	
			IZMI	1022.4	1023.2	III	G	1	45	85	
			CULG	2100.0E	2400.0D	III	N	1	20	100	
	2100	2400	CULG	2100.0E	2400.0D	I	S	1	100	180	
			PALE	2159.0	2159.0	III		1	25	146	
	1947	2400	HIRA	2159.5	2200.0	III	B	1	25X	50	
			CULG	2200.0	2200.0	III	B	2	18	90	
			LEAR	2333.0	0925.0	CONT		1	81	180	
06	0000	0939	HIRA								

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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
06			CULG	0000.0E	0720.0D	III	N	1	20	100	
	0000	0720	CULG	0000.0E	0720.0D	I	S	1	100	180	
			LEAR	0126.0	0127.0	III		1	25	45	
			LEAR	0156.0	0339.0	III	N	1	25	74	
	0453	1722	ONDR								
	0515	1745	BLEN								
	0600	1200	IZMI	0600.0E	1200.0D	I	N	1	110U	180U	
			IZMI	0622.5	0623.7	III	G	1	30	120	
			CULG	0623.0	0624.0	III	G	2	20	140	
			IZMI	0645.0U	1200.0D	III	N	1	25X	95U	
			IZMI	0935.4	0937.1	III		1	25X	70U	
			IZMI	1007.3	1007.6	III	G	2	50	240	
			PALE	2053.0	2053.0	III		1	25	75	
	1948	2400	HIRA	2053.5	2054.0	III	B	1	25X	210	
	2100	2400	CULG	2100.0E	2310.0	III	N	1	18	180	
			CULG	2343.0	2343.0	III	B	1	27	80	
07	0000	0720	CULG	0047.0	0720.0D	III	N	1	27	180	
	0454	1720	ONDR								
			CULG	0504.0	0720.0D	I	S	1	100	180	
			LEAR	0506.0	0508.0	III		1	76	180	
			SVTO	0506.0	0507.0	III		1	50	180	
	0000	0938	HIRA	0507.5	0508.0	III	B	2	110	200	
	0515	1745	BLEN								
			IZMI	0600.0E	0820.0U	III	N	1	25X	95U	
	0600	1200	IZMI	0600.0E	0820.0U	I	N	1	110U	180U	
			LEAR	0746.0	0747.0	III		1	77	180	
			IZMI	0746.9	0748.0	III	G	1	50	190	
			IZMI	0804.8	0806.5	III	G	1	45	65	
			LEAR	0808.0	0808.0	III		1	25	89	
			SVTO	0808.0	0808.0	III		1	25	84	
			IZMI	0808.2	0808.4	III	B	2	25X	90	
			SVTO	0850.0	0852.0	III		1	25	64	
			SVTO	1006.0	1007.0	III		1	32U	180U	
			IZMI	1006.2	1007.1	III	G,C	2	40	205	
			SVTO	1040.0	1040.0	III		1	25	61	
			SVTO	1121.0	1128.0	III		1	25	52	
			SVTO	1157.0	1157.0	III		1	25	50	
			SVTO	1242.0	1242.0	III		1	25	46	
			SVTO	1303.0	1304.0	III		1	25	40	
			SVTO	1352.0	1352.0	III		1	25	61	
			SVTO	1409.0	1548.0	III	N	1	25	85	
	1949	2400	HIRA								
	2100	2400	CULG	2100.0E	2400.0D	III	S,C	1	20	100	
08	0000	0937	HIRA								
	0000	0720	CULG	0000.0E	0720.0D	III	S,C	1	18	150	
			LEAR	0011.0	0011.0	III		1	25	89	
			LEAR	0233.0	0307.0	III	N	1	25	88	
			LEAR	0309.0	0403.0	III	N	1	25	66	
			CULG	0406.0	0720.0	I	S,C	1	100	180	
	0455	1719	ONDR								
	0515	1745	BLEN								
			IZMI	0551.0E	1200.0D	III	N	1	25X	95U	
	0551	1200	IZMI	0551.0E	1200.0D	I	S	1	110U	190U	
			LEAR	0601.0	0926.0	III	N	1	25	180	
			SVTO	0612.0	0913.0	III	N	1	25	145	
			IZMI	0612.9	0618.6	III	G	1	25X	85	
			IZMI	0631.4	0633.6	III	G	1	40	135	
			IZMI	0637.7	0639.7	III	G	1	25X	95	
			IZMI	0701.3	0710.5	III	GG	1	25X	120	
			IZMI	1002.5	1009.7	III	GG	1	40	95	
			IZMI	1129.5	1129.6	III	B	1	45	65	
			SVTO	1218.0	1222.0	III		1	25	54	
			SVTO	1406.0	1406.0	III		1	36U	55U	
			SVTO	1458.0	1458.0	III		1	28U	58U	
			SVTO	1522.0	1524.0	III		1	25	75	
	1950	2400	HIRA								
			CULG	2100.0E	2400.0D	III	S,C	1	20	100	

SOLAR RADIO EMISSION
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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
08	2100	2400	CULG	2100.0E	2400.0D	I	S,C	1	100	180	
			LEAR	2340.0	0926.0	CONT		1	94	180	
			LEAR	2340.0	0926.0	III	N	1	25	147	
09			CULG	0000.0E	0720.0D	III	S,C	1	18	180	
	0000	0720	CULG	0000.0E	0720.0D	I	S,C	1	100	180	
			PALE	0041.0	0041.0	III		1	25	65	
	0000	0936	HIRA	0041.0	0041.5	III	B	1	25X	80	
			HIRA	0145.5	0146.0	III	B	1	25X	50	
			CULG	0146.0	0146.0	III	B	3	18	80	
			SVTO	0414.0	1734.0	CONT		1	97	180	
	0457	1717	ONDR								
			SVTO	0502.0	1734.0	III	N	1	25	180	
	0515	1745	BLEN								
			IZMI	0600.0E	1200.0D	I	S,C	2	50U	270X	
	0600	1200	IZMI	0600.0E	1200.0D	III	S	2	25X	150U	
			CULG	0620.0	0633.0	III	G	3	18	140	
			IZMI	0624.6	0624.7	III	G,C	3	130	270	
			IZMI	0703.3	0706.8	III	GG	2	25X	270X	
			IZMI	0824.0	0824.2	III	G	2	40	190	
			IZMI	0835.7	0838.1	III	G	2	25X	95	
			IZMI	0921.4	0927.5	III	GG	2	25X	270X	
			IZMI	0926.0	0927.6	I	GG,DC,HARM	2	180	270X	
			IZMI	1028.2	1032.7	III	GG	2	25X	95	
			IZMI	1102.4	1103.9	III	G,C	3	35	270X	
			IZMI	1107.4	1110.3	III	G	2	25X	270X	
	1950	2400	HIRA								
			CULG	2100.0E	2400.0D	III	S,C	1	18	180	
	2100	2400	CULG	2100.0E	2400.0D	I	S,C	1	100	180	
			LEAR	2333.0	0926.0	CONT		1	71	180	
			LEAR	2333.0	0926.0	III	N	1	25	171	
10			CULG	0000.0E	0720.0D	III	S,C	1	18	180	
	0000	0720	CULG	0000.0E	0720.0D	I	S,C	1	60	180	
			CULG	0139.0	0139.0	III	B	3	18X	130	
	0000	0935	HIRA	0139.0	0143.0	III	G	1	25X	100	
			SVTO	0415.0	1733.0	CONT		1	25	180	
	0458	1716	ONDR								
	0600	1200	IZMI	0550.0E	1200.0D	III	N	2	25X	95U	
			IZMI	0600.0E	1200.0D	I	S,C	2	60U	270X	
			SVTO	0619.0	1733.0	III	N	1	25	180	
			IZMI	0653.6	0655.6	III	GG	2	25X	85	
			CULG	0654.0	0656.0	III	G	2	20	90	
			IZMI	0900.7	0904.2	III	GG	2	25X	95	
			IZMI	0915.1	0926.5	III	GG	2	45	180	
			IZMI	0943.9	0946.6	III	G	2	25X	135	
			IZMI	0954.1	0954.3	III	B	2	50	145	
			IZMI	1008.2	1010.4	III	G	2	25X	95	
			IZMI	1021.5	1023.3	III	GG	2	25X	175	
			IZMI	1037.1	1037.4	III	B	2	25X	130	
			SVTO	1103.0	1104.0	III		2	25	180	
			IZMI	1103.1	1104.3	III	GG,C	2	25X	160	
			IZMI	1112.9	1114.0	III	G,C	2	25X	140	
			IZMI	1126.2	1126.7	III	G	2	50	130	
	0520	1750	BLEN	1419.6	1420.6	III	GG	2	180	400	
			BLEN	1435.4	1440.5	III	GG,RS	2	180	500	
			BLEN	1446.1	1447.9	III	G, U	2	180	500	
			BLEN	1646.7	1652.4	III	GG	3	180	1000	
			CULG	2050.0E	2400.0D	III	S,C	1	20	180	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	1	110	180	
			PALE	2111.0	2113.0	III		1	25	70	
			CULG	2125.0	2131.0	III	G	3	18	100	
			CULG	2152.0	2158.0	III	GG	3	18X	500	
			PALE	2152.0	2154.0	III		2	25	180	
	1951	2400	HIRA	2152.0	2158.5	III	G	3	25X	400	
			HIRA	2207.5	2208.0	III	B	1	25X	170	
			CULG	2208.0	2208.0	III	B	3	18	200	
			LEAR	2325.0	0926.0	CONT		1	72	180	
			LEAR	2325.0	0926.0	III	N	1	25	180	

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OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
10		CULG	2334.0	2334.0	III	B	2	18	180	
		HIRA	2334.0	2334.5	III	B	1	25X	110	
		HIRA	2341.5	2342.0	III	B	1	25X	80	
		CULG	2342.0	2342.0	III	B	2	18	180	
		LEAR	2351.0	2353.0	III		2	25	153	
		HIRA	2351.5	2354.0	III	G	2	25X	320	
		CULG	2352.0	2354.0	III	G	3	18X	300	
		PALE	2352.0	2353.0	III		2	25	166	
11		CULG	0000.0E	0720.0D	III	S,C	1	20	180	
0000	0720	CULG	0000.0E	0720.0D	I	S	1	110	180	
		CULG	0128.0	0130.0	III	G	3	25	150	
0000	0934	HIRA	0128.0	0129.5	III	G	1	30	120	
		CULG	0141.0	0142.0	III	G	3	25	170	
		HIRA	0141.0	0142.0	III	G	1	30	110	
		CULG	0251.0	0251.0	III	B	2	18	100	
		CULG	0327.0	0328.0	III	G	3	18X	140	
		HIRA	0327.0	0327.5	III	B	1	25X	100	
		CULG	0330.0	0330.0	III	B	2	20	180	
		HIRA	0330.0	0330.5	III	B	1	25X	180	
		CULG	0343.0	0344.0	III	G	3	18X	260	
		HIRA	0343.0	0344.0	III	B	3	25X	250	
		HIRA	0349.0	0350.0	III	B	2	30	270	
		CULG	0350.0	0350.0	III	B	2	20	300	
		SVTO	0416.0	0621.0	CONT		1	121	180	
		CULG	0421.0	0422.0	III	G	3	18X	320	
		LEAR	0421.0	0422.0	III		2	25	180	
		SVTO	0421.0	0422.0	III		2	25	180	
		HIRA	0421.5	0422.5	III	G	3	25X	230	
		CULG	0431.0	0459.0	III	N	3	18	200	
		SVTO	0438.0	1732.0	III	N	2	25	180	
		HIRA	0439.0	0439.5	III	B	1	25X	110	
		HIRA	0451.0	0452.5	III	G	2	25X	190	
		HIRA	0554.5	0555.0	III	B	1	30	100	
		CULG	0555.0	0557.0	III	G	2	20	100	
		IZMI	0608.0E	1200.0D	III	N	1	25X	95U	
0608	1200	IZMI	0608.0E	1200.0D	I	N	2	50U	270X	
		IZMI	0650.2	0650.3	III	G	1	110	175	
		CULG	0651.0	0651.0	III	B	3	18	100	
		IZMI	0651.4	0651.6	III	B	2	25X	85	
		HIRA	0651.5	0652.0	III	B	1	25X	50	
		CULG	0713.0	0717.0	III	G	3	20	300	
		HIRA	0713.0	0717.0	III	G	1	25X	290	
		SVTO	0713.0	0717.0	III		2	25	180	
		IZMI	0713.1	0717.2	III	GG	2	25X	270X	
		HIRA	0723.0	0723.5	III	B	1	25X	200	
		SVTO	0723.0	0723.0	III		2	25	180	
		IZMI	0723.1	0724.8	III	GG	2	25X	270X	
		IZMI	0730.6	0732.6	III	G,C	2	25X	170	
		IZMI	0754.5	0754.7	III	G	2	25X	140	
		IZMI	0818.2	0818.3	III	B	2	25X	85	
		IZMI	0824.4	0824.5	III	G	2	25X	85	
		IZMI	0842.2	0845.1	III	G	1	25X	90	
		IZMI	0921.2	0921.5	III	B	2	25X	125	
		IZMI	0942.6	0945.3	III	G	2	25X	150	
		IZMI	0955.9	0956.3	III	G	2	25X	170	
		IZMI	1000.9	1001.6	III	G,C	2	25X	95	
		SVTO	1009.0	1732.0	CONT		1	25	180	
		IZMI	1017.1	1017.6	III	G,FS	2	25X	155	
		IZMI	1020.1	1024.5	III	GG	2	25X	240	
		IZMI	1028.4	1028.5	III	G	2	25X	70U	
		SVTO	1106.0	1109.0	III		3	25	180	
		IZMI	1106.2	1108.2	III	GG,C	2	25X	270X	
0459	1714	ONDR	1106.3	1107.5	DCIM	GG	3	800X	1597	
0520	1750	BLEN	1106.6	1108.1	DCIM	P,C	3	100X	4000X	
		IZMI	1108.4	1109.1	III	GG	2	25X	175	
		BLEN	1213.1	1213.2	III		2	150	600	
		BLEN	1246.9	1249.3	DCIM	P,C	3	130	4000X	
		SVTO	1247.0	1250.0	III		3	25	180	

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11			ONDR	1247.3	1249.2	DCIM	GG,SP	3	800X	2000X	
			ONDR	1259.2	1300.3	DCIM	G	2	800X	1550	
			PALE	1729.0	0448.0	III	N	1	25	94	
			CULG	2050.0E	2400.0D	III	S,C	1	20	130	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	1	100	180	
			CULG	2207.0	2207.0	III	B	3	18	280	
	1952	2400	HIRA	2207.0	2208.0	III	B	1	25X	100	
			CULG	2250.0	2250.0	III	B	3	18X	180	
			HIRA	2250.0	2251.0	III	B	1	25X	100	
			LEAR	2333.0	0927.0	CONT		1	113	180	
			LEAR	2333.0	0927.0	III	N	1	74	113	
12			CULG	0000.0E	0720.0D	III	S,C	1	18	130	
	0000	0720	CULG	0000.0E	0720.0D	I	S,C	1	100	180	
			CULG	0012.0	0012.0	III	B	2	35	120	
	0000	0933	HIRA	0012.0	0012.5	III	B	1	40	100	
			SVTO	0450.0	1110.0	CONT		1	75	180	
			LEAR	0545.0	0547.0	V		2	25	180	
			SVTO	0545.0	0547.0	V		3	25	180	
			HIRA	0545.5	0547.5	III	B	3	25X	300	
	0520	1750	BLEN	0545.6	0546.5	DCIM	P,C	2	100X	4000X	
			CULG	0546.0	0546.0	III	G	3	18	300	
			CULG	0546.0	0549.0	V		3	18	90	
			IZMI	0603.0E	1200.0D	III	N	2	25X	95U	
	0603	1200	IZMI	0603.0E	1200.0D	I	S,C	2	50U	270X	
			SVTO	0618.0	1110.0	III	N	2	25	83	
			CULG	0712.0	0713.0	III	G	3	20	90	
			HIRA	0712.0	0713.0	III	B	1	25X	80	
			IZMI	0712.0	0713.0	III	G,U	2	25X	85	
			LEAR	0712.0	0712.0	V		1	25	91	
			IZMI	0740.8	0746.3	III	GG	2	45	90	
			IZMI	0855.6	0855.8	III	B	2	40	90	
			IZMI	0931.2	0932.9	III	G	2	25X	90	
			IZMI	1059.3	1059.8	III	B	2	45	95	
	0500	1713	ONDR	1227.2	1228.5	DCIM	G	1	1231	1841	
			SVTO	1405.0	1731.0	CONT		1	39	180	
			SVTO	1405.0	1731.0	III	N	1	25	85	
			PALE	2030.0	2030.0	III		1	25	143	
	1953	2400	HIRA	2030.0	2030.5	III	B	1	25X	130	
			CULG	2050.0E	2400.0D	III	S,C	1	20	130	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	2	60	180	
			PALE	2150.0	2151.0	III		1	25	121	
			HIRA	2150.5	2151.0	III	B	1	25X	120	
			PALE	2243.0	0448.0	CONT		1	55	180	
			HIRA	2246.0	2248.5	III	G	1	130	400	
			CULG	2251.0	2251.0	III	G	3	18X	180	
			LEAR	2332.0	0927.0	CONT		1	49	180	
			LEAR	2349.0	0927.0	III	N	1	25	70	
13			CULG	0000.0E	0720.0D	III	S,C	1	20	130	
	0000	0720	CULG	0000.0E	0720.0D	I	S,C	2	40	180	
			CULG	0024.0	0024.0	III	B	2	18	100	
	0000	0932	HIRA	0024.0	0024.5	III	B	1	25X	110	
			PALE	0034.0	0448.0	III	N	1	25	90	
			CULG	0053.0	0053.0	III	B	3	18X	80	
			HIRA	0053.0	0054.0	III	B	1	25X	130	
			LEAR	0053.0	0053.0	V		1	25	75	
			CULG	0059.0	0100.0	III	G	2	18	90	
			HIRA	0059.5	0100.0	III	B	1	25X	110	
			HIRA	0245.5	0246.5	III	G	1	25X	110	
			CULG	0246.0	0246.0	III	G	3	18X	150	
			SVTO	0418.0	1729.0	CONT		1	25	180	
	0502	1711	ONDR								
			IZMI	0600.0E	1200.0D	III	N	2	25X	95U	
	0600	1200	IZMI	0600.0E	1200.0D	I	S,C	2	45U	270X	
			IZMI	0651.4	0652.2	III	G	2	25X	180	
	0525	1740	BLEN	0939.5	0954.0	III	G, U, C	2	130	4000X	
			SVTO	0951.0	0952.0	III		2	25	180	
			SVTO	1014.0	1729.0	III	N	2	25	180	

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13			IZMI	1014.2	1014.8	III	G	2	25X	205	
			IZMI	1017.6	1020.0	III	GG,C	2	25X	250	
			IZMI	1020.3	1021.1	III	G	2	25X	270X	
			IZMI	1020.3	1021.4	V		2	25X	90	
			IZMI	1030.5	1032.1	III	GG	2	25X	180	
			BLEN	1031.1	1032.0	III	G	2	130	800	
			IZMI	1033.2	1034.0	III	G	2	25X	160	
			IZMI	1048.5	1049.0	III	G,FS	2	25X	240	
			IZMI	1053.8	1056.8	III	G	2	25X	270X	
			IZMI	1100.6	1102.0	III	GG	2	25X	85	
			IZMI	1111.2	1112.4	III	G,C	2	25X	95	
			IZMI	1145.3	1145.8	III	G,C	2	25X	175	
			IZMI	1146.3	1146.7	III	G,C	2	25X	180	
			BLEN	1204.6	1209.3	III	GG,RS	2	130	4000X	
			BLEN	1514.0	1515.5	DCIM	C	2	1600	4000X	
			PALE	1950.0	0447.0	CONT		1	110	180	
			PALE	1950.0	2025.0	CONT		1	110	180	
	1954	2400	HIRA	2020.0	2021.0	III	G	2	25X	220	
			PALE	2021.0	2021.0	III		1	25	180	
			CULG	2050.0E	2400.0D	III	S,C	1	27	100	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	2	40	180	
			CULG	2151.0	2151.0	III	B	2	20	110	
			HIRA	2212.5	2214.5	III	G	2	25X	200	
			CULG	2213.0	2215.0	III	G	3	18	200	
			PALE	2213.0	2213.0	III		1	25	180	
			LEAR	2333.0	0928.0	CONT		1	42	180	
			LEAR	2333.0	0928.0	III	N	1	25	180	
14			CULG	0000.0E	0302.0	III	S,C	1	23	180	
	0000	0720	CULG	0000.0E	0720.0D	I	S,C	1	40	160	
			CULG	0108.0	0108.0	III	B	1	27	90	
			PALE	0108.0	0447.0	III	N	1	25	140	
			CULG	0125.0	0125.0	III	B	2	23	170	
			CULG	0302.0	0720.0D	III	S,C	2	20	180	
			CULG	0339.0	0340.0	III	G	3	18	200	
			SVTO	0419.0	1556.0	CONT		1	25	180	
			CULG	0420.0	0420.0	III	B	3	18	200	
			SVTO	0513.0	1502.0	III	N	1	25	180	
	0000	0931	HIRA	0513.5	0515.0	III	G	2	25X	210	
			CULG	0514.0	0515.0	III	G	3	18X	200	
	0525	1740	BLEN	0539.3	0545.6	DCIM	C	3	1540	4000X	
			CULG	0542.0	0546.0	III	G	3	18	180	
			IZMI	0601.0E	1200.0D	III	N	2	25X	95U	
	0601	1200	IZMI	0601.0E	1200.0D	I	S,C	2	40U	270X	
			IZMI	0616.7	0620.8	III	GG	2	25X	270X	
			BLEN	0620.4	0628.7	III	GG	2	130	1200	
			HIRA	0620.5	0621.0	III	B	1	25X	170	
			CULG	0621.0	0621.0	III	B	3	20	180	
	0503	1709	ONDR	0628.0	0633.5	DCIM	G	2	800X	2000X	
			CULG	0629.0	0629.0	III	B	3	20	180	
			LEAR	0632.0	0635.0	V		2	25	180	
			SVTO	0632.0	0634.0	III		3	25	180	
			IZMI	0632.2	0634.4	III	GG	2	25X	270X	
			BLEN	0632.9	0634.3	DCIM	P,C	3	100X	4000X	
			CULG	0633.0	0635.0	III	G	3	18X	900	
			HIRA	0633.0	0634.5	III	G	3	25X	310	
			IZMI	0633.2	0634.5	V		2	25X	95U	
			IZMI	0813.9	0817.2	III	GG	2	25X	270X	
			HIRA	0815.0	0817.0	III	G	3	25X	500	
			LEAR	0815.0	0817.0	V		3	25	180	
			SVTO	0815.0	0820.0	V		3	25	180	
			BLEN	0815.2	0817.5	DCIM	P,C	3	100X	4000X	
			IZMI	0815.2	0817.2	V		3	25X	160	
			ONDR	0815.2	0817.1	DCIM	G	1	800X	2000X	
			IZMI	0828.2	0828.8	III	GG	2	25X	260	
			ONDR	0835.3	0836.3	DCIM	G	2	800X	917	
			IZMI	0943.7	0944.4	III	G	2	25X	270X	
			BLEN	1006.4	1010.5	DCIM	C	2	1800	4000X	
			ONDR	1047.0	1049.1	DCIM	G	2	959	1962	

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14		IZMI	1056.5	1108.6	III	GG	2	25X	130U	
		IZMI	1109.0	1110.9	III	G	2	25X	185	
		ONDR	1114.1	1117.0	DCIM	G	2	1156	1789	
		BLEN	1204.0	1204.9	DCIM	S	2	2100	2900	
		BLEN	1340.2	1347.0	DCIM	C	3	1400	4000X	
		BLEN	1539.2	1544.9	DCIM	P,F	3	250	1000	
		ONDR	1542.5	1544.5	DCIM	GG	2	800X	1077	
		SVTO	1628.0	1628.0	III		1	25	123	
		ONDR	1646.2	1646.3	DCIM	GG	2	1142	1780	
		SVTO	1649.0	1728.0	CONT		1	113	161	
		PALE	1744.0	1747.0	III		1	25	180	
		PALE	1825.0	0446.0	III	N	1	25	138	
		PALE	1925.0	1928.0	III		1	25	180	
	1955 2400	HIRA	2046.0	2049.5	III	G	1	30	420	
		CULG	2050.0E	2344.0	IV		1	500	1200	
		CULG	2050.0E	2400.0D	III	S,C	3	18	180	
	2050 2400	CULG	2050.0E	2400.0D	I	S,C	1	40	200	
		HIRA	2101.0	2104.5	III	G	1	30	70	
		HIRA	2117.0	2117.5	III	B	1	50	140	
		HIRA	2120.0	2121.5	III	G	1	25X	50	
		HIRA	2139.0	2139.5	III	B	1	25X	50	
		LEAR	2253.0	0928.0	CONT		1	25	180	
		HIRA	2255.0	2255.5	III	B	1	25X	120	
		LEAR	2255.0	2255.0	III		1	25	99	
		PALE	2255.0	2255.0	III		1	25	180	
		CULG	2320.0	2321.0	III	G	3	18X	500	
		HIRA	2320.0	2321.0	III	B	3	25X	420	
		LEAR	2320.0	2321.0	III		3	25	180	
		PALE	2320.0	2321.0	III		3	25	180	
		CULG	2345.0	2346.0	III	G	1	50	280	
		HIRA	2345.0	2346.0	III	G	1	50	290	
15		CULG	0000.0E	0720.0D	I	S,C	1	40	180	
	0000 0720	CULG	0000.0E	0302.0	III	S,C	2	20	180	
	0000 0930	HIRA	0009.5	0010.0	III	B	2	50	240	
		CULG	0010.0	0010.0	III	B	3	40	170	
		CULG	0016.0	0017.0	III	G	3	18X	950	
		LEAR	0016.0	0016.0	III		2	25	161	
		HIRA	0016.5	0017.0	III	B	1	25X	130	
		CULG	0235.0	0236.0	III	G	2	18	180	
		HIRA	0235.5	0236.0	III	B	1	25X	50	
		CULG	0302.0	0720.0D	III	S,C	1	20	180	
		CULG	0329.0	0330.0	III	G	3	18X	1000	
		LEAR	0329.0	0331.0	III		3	25	180	
		PALE	0329.0	0331.0	III		1	25	180	
		HIRA	0329.5	0331.5	III	B	3	25X	900	
		CULG	0330.0	0332.0	V		3	18X	180	
		SVTO	0426.0	1727.0	CONT		1	25	180	
		SVTO	0454.0	0455.0	III		1	52	180	
		CULG	0455.0	0455.0	III	B	3	50	200	
		HIRA	0455.0	0455.5	III	B	2	50	220	
		SVTO	0516.0	0938.0	III	N	2	25	180	
		CULG	0548.0	0548.0	III	B	3	20	80	
	0605 1200	IZMI	0605.0E	1200.0D	I	S	2	45	270X	
	0625 1707	ONDR								
		IZMI	0648.6	0651.9	III	GG	2	45	270X	
	0530 1735	BLEN	0648.6	0650.3	III	GG	2	100X	360	
		LEAR	0649.0	0650.0	III		1	50	180	
		HIRA	0649.5	0650.5	III	G	1	50	320	
		CULG	0650.0	0650.0	III	G	2	45	320	
		IZMI	0701.8	0702.0	III	G	2	60	270	
		IZMI	0728.9	0729.1	III	G	1	40	85	
		BLEN	0815.5	0822.4	III	GG	2	100X	400	
		IZMI	0815.5	0818.0	III	GG,C	2	25X	160	
		LEAR	0817.0	0818.0	III		1	25	180	
		HIRA	0819.0	0820.5	III	G	1	30	180	
		LEAR	0819.0	0820.0	III		1	25	180	
		IZMI	0819.2	0821.2	III	GG,C,FS	2	25X	270X	
		IZMI	0848.9	0849.2	III	G	1	45	85	

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15		IZMI	1024.3	1035.1	III	N	2	25X	270U	
		SVTO	1028.0	1032.0	III		1	25	54	
		SVTO	1048.0	1111.0	III	N	2	25	180	
		IZMI	1049.0	1049.0	III	B	2	200	270X	
		BLEN	1100.6	1137.5	DCIM	C	2	100X	4000X	
		IZMI	1101.7	1102.2	III	G,C	2	25X	230	
		IZMI	1105.3	1114.7	III	N	1	45	95	
		IZMI	1109.2	1110.2	III	GG,C	3	25X	270X	
		IZMI	1110.2	1111.3	III	GG	2	25X	270X	
		BLEN	1237.2	1243.4	DCIM	C,S	2	800	4000X	
		SVTO	1249.0	1258.0	III		1	25	44	
		SVTO	1337.0	1338.0	III		1	25	126	
		SVTO	1436.0	1437.0	III		1	25	68	
		SVTO	1453.0	1727.0	III	N	2	25	180	
		PALE	1624.0	1624.0	III		1	25	180	
		BLEN	1624.1	1624.7	III	G,S	2	100X	800	
		PALE	1752.0	1752.0	III		1	25	66	
		PALE	1845.0	1849.0	III		2	25	180	
		PALE	1911.0	0142.0	III	N	1	25	180	
2050	2400	CULG	2050.0E	2215.0	I	S	1	60	130	
1956	2400	HIRA	2100.5	2101.5	III	B	1	110	310	
		CULG	2101.0	2101.0	III	B	1	45	320	
		CULG	2108.0	2218.0	III	N	1	20	180	
		PALE	2127.0	2128.0	III		2	25	180	
		HIRA	2127.5	2129.0	III	G	2	30	400	
		CULG	2128.0	2129.0	III	G	3	20	500	
		CULG	2148.0	2149.0	III	G	3	20	300	
		PALE	2148.0	2148.0	III		1	25	180	
		HIRA	2148.5	2149.0	III	B	3	30	310	
		PALE	2154.0	2157.0	III		2	25	180	
		HIRA	2154.5	2157.0	III	G	3	25	500	
		CULG	2155.0	2157.0	III	G	3	20	300	
		HIRA	2212.5	2213.5	III	G	2	30	410	
		CULG	2213.0	2214.0	III	G	3	20	650	
		CULG	2237.0	2239.0	III	G	3	18	180	
		HIRA	2237.0	2237.5	III	G	1	25X	140	
		CULG	2248.0	2249.0	III	G	3	30	280	
		HIRA	2248.0	2248.5	III	B	3	30	310	
		CULG	2257.0	2301.0	III	G	3	18	330	
		HIRA	2257.0	2304.0	III	G	3	30	500	
		CULG	2302.0	2304.0	III	G	3	27	460	
		CULG	2334.0	2337.0	III	G	2	27	180	
		LEAR	2334.0	0025.0	III	N	1	25	180	
		HIRA	2336.0	2336.5	III	B	1	50	170	
		LEAR	2341.0	2341.0	III		2	25	180	
		PALE	2341.0	2341.0	III		2	25	180	
		HIRA	2341.5	2342.0	III	B	3	40	520	
		CULG	2342.0	2342.0	III	B	3	27	500	
		CULG	2348.0	2348.0	III	B	1	23	120	
		HIRA	2348.0	2348.5	III	B	1	40	80	
16	0000	0643	HIRA	0004.5	0005.0	III	B	1	50	80	
	0000	0720	CULG	0005.0	0005.0	III	B	2	23	160	
			CULG	0023.0	0029.0	III	G	1	20	180	
			CULG	0141.0	0142.0	III	G	1	27	180	
			CULG	0215.0	0217.0	III	G	2	60	190	
			HIRA	0215.0	0217.0	III	G	1	60	220	
			LEAR	0215.0	0827.0	III	N	1	25	180	
			CULG	0226.0	0228.0	III	G	1	30	180	
			HIRA	0227.5	0228.0	III	B	1	110	210	
			CULG	0311.0	0316.0	III	G	1	30	240	
			HIRA	0311.0	0312.0	III	G	1	60	240	
			CULG	0323.0	0323.0	III	B	1	30	90	
			HIRA	0323.0	0323.5	III	B	1	140	220	
			CULG	0342.0	0343.0	III	G	2	25	280	
			CULG	0408.0	0408.0	III	G	1	60	180	
			CULG	0414.0	0416.0	III	G	3	18X	300	
			HIRA	0414.0	0414.5	III	B	3	60	300	
			PALE	0415.0	0416.0	III		1	25	180	

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OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
16		HIRA	0415.5	0416.5	III	B	2	25X	210	
		CULG	0447.0	0450.0	III	G	1	23	180	
		SVTO	0457.0	0458.0	III		2	25	180	
		HIRA	0457.5	0458.0	III	B	2	25X	210	
		CULG	0458.0	0458.0	III	B	3	18X	180	
		CULG	0554.0	0554.0	III	B	2	18	75	
0555	1706	ONDR								
0600	1200	IZMI	0610.2	0611.6	III	G	1	135	200	
		IZMI	0615.2	0615.3	III	G	1	125	170	
		SVTO	0634.0	0840.0	III	N	1	25	180	
		CULG	0646.0	0646.0	III	B	2	23	140	
		IZMI	0646.0	0646.2	III	G,FS	2	35	140	
		IZMI	0654.8	0655.1	III	G,C,FS	2	25X	135	
		CULG	0655.0	0655.0	III	B	2	23	180	
		IZMI	0725.5	0725.7	III	G	1	40	85	
		IZMI	0742.0	0745.4	III	GG	2	60	270X	
		SVTO	0937.0	0938.0	III		1	76	180	
		IZMI	0937.4	0938.1	III	G,FS	2	65	270X	
0530	1730	BLEN	0937.4	0939.4	III	G,S	2	100X	800	
		SVTO	1223.0	1228.0	III		1	25	48	
		SVTO	1419.0	1419.0	III		1	50	180	
		SVTO	1559.0	1602.0	III		1	75	180	
		SVTO	1628.0	1632.0	III		2	67	180	
		BLEN	1631.7	1632.1	III	G,S	2	130	800	
2050	2400	CULG	2130.0	2130.0	III	B	1	27	80	
		CULG	2144.0	2144.0	III	B	1	27	80	
		CULG	2150.0	2151.0	III	G	2	35	410	
		PALE	2150.0	2150.0	III		1	25	180	
1957	2400	HIRA	2150.0	2151.0	III	B	1	50	230	
		CULG	2350.0	2351.0	III	G	1	40	500	
		HIRA	2350.0	2351.0	III	B	1	110	400	
		LEAR	2350.0	2351.0	III		1	75	180	
17	0000	0720	CULG	0010.0	0012.0	III	G	1	27	180	
		CULG	0016.0	0016.0	III	B	3	60	300	
		LEAR	0016.0	0016.0	III		1	25	180	
		PALE	0016.0	0016.0	III		1	65	180	
0000	0927	HIRA	0016.0	0016.5	III	B	3	60	310	
		LEAR	0029.0	0029.0	III		1	77	180	
		HIRA	0029.5	0030.0	III	B	1	110	210	
		CULG	0030.0	0030.0	III	B	1	60	180	
		CULG	0140.0	0140.0	III	B	1	100	200	
		CULG	0318.0	0422.0	III	N	1	20	180	
		HIRA	0318.0	0318.5	III	B	1	25X	70	
		LEAR	0318.0	0318.0	III		1	25	94	
		LEAR	0354.0	0355.0	III		1	74	180	
		HIRA	0354.5	0355.5	III	G	1	90	300	
		LEAR	0508.0	0928.0	CONT		1	75	180	
		SVTO	0508.0	1512.0	CONT		1	25	180	
		CULG	0510.0	0720.0D	III	S,C	1	27	180	
0530	1730	BLEN								
		IZMI	0604.0E	1200.0D	III	N	1	25X	160U	
0604	1200	IZMI	0604.0E	1200.0D	I	NG	1	45	180	
		CULG	0616.0	0618.0	III	G	3	18	90	
		HIRA	0616.0	0618.0	III	G	1	25X	90	
		SVTO	0616.0	0618.0	III		1	25	81	
		LEAR	0617.0	0618.0	III		1	25	50	
		LEAR	0638.0	0639.0	III		1	25	44	
		SVTO	0638.0	0639.0	III		1	25	50	
		IZMI	0638.4	0638.8	III	G	1	25X	160	
		HIRA	0638.5	0639.0	III	B	1	25X	40	
		CULG	0639.0	0640.0	III	G	3	18	180	
		SVTO	0702.0	0729.0	III	N	1	25	80	
		IZMI	0702.2	0704.5	III	GG	1	25X	175	
		IZMI	0707.4	0909.8	III	GG	1	90	190	
		IZMI	0746.7	0747.4	III	GG	1	200	270X	
		SVTO	0811.0	0811.0	III		1	25	50	
0507	1704	ONDR	0836.1	0837.1	DCIM	G	2	852	1573	
		IZMI	0907.6	0909.5	III	GG	1	200	270X	

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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
17			SVTO	0932.0	0933.0	III		1	114	180	
			IZMI	0932.6	0933.6	III	GG	2	80	270X	
			SVTO	0956.0	1002.0	III		1	112	180	
			IZMI	0956.8	0957.3	III	G	2	55	180	
			IZMI	1002.0	1002.1	III	G,RS	1	130	175	
			SVTO	1031.0	1032.0	III		1	111	180	
			IZMI	1031.9	1033.7	III	GG	2	55	270X	
			IZMI	1045.4	1046.9	III	GG,C,FS	2	55	270X	
			IZMI	1108.3	1108.8	III	GG,HARM	2	50	190U	
			SGMR	1156.0	1157.0	III		1	25U	54U	
			SVTO	1156.0	1157.0	III		2	25	180	
			IZMI	1156.8	1157.4	III	G	2	25X	160	
			IZMI	1156.9	1157.6	V		2	25X	40	
			SVTO	1317.0	1318.0	III		1	25	44	
			SVTO	1339.0	1341.0	III		1	76	180	
			SGMR	1512.0	1512.0	III		1	25U	65U	
			SVTO	1512.0	1512.0	III		1	25	81	
			SGMR	1641.0	1647.0	III		1	25U	55U	
			PALE	1929.0	2255.0	CONT		1	98U	180U	
	1957	2400	HIRA	2055.5	2056.0	III	B	1	100	130	
	2050	2400	CULG	2056.0	2056.0	III	B	1	100	170	
			CULG	2143.0	2146.0	III	G	1	23	500	
			HIRA	2143.5	2145.5	III	G	1	90	200	
			LEAR	2329.0	2330.0	III		1	76	165	
			CULG	2330.0	2331.0	III	G	1	60	360	
			HIRA	2330.0	2330.5	III	B	1	60	150	
18	0000	0720	CULG	0126.0	0126.0	III	B	1	20	50	
			CULG	0210.0	0210.0	III	B	1	20	50	
			CULG	0223.0	0223.0	III	B	1	20	90	
			CULG	0343.0	0343.0	III	B	1	20	80	
	0000	0925	HIRA	0343.0	0343.5	III	B	1	30	50	
			CULG	0352.0	0354.0	III	G	1	20	60	
			CULG	0409.0	0514.0	I	S	1	100	160	
			SVTO	0427.0	1723.0	CONT		1	98	180	
			CULG	0529.0	0530.0	III	G	3	20	180	
			HIRA	0529.0	0530.0	III	G	1	25X	130	
			LEAR	0529.0	0529.0	III		1	25	135	
			SVTO	0529.0	0534.0	III		1	25	104	
			CULG	0534.0	0535.0	III	G	3	20	130	
			SVTO	0649.0	0650.0	III		1	25	75	
			HIRA	0649.5	0650.0	III	B	1	30	100	
			CULG	0650.0	0650.0	III	B	1	25	120	
	0715	1203	IZMI	0715.0E	1203.0D	I	S	1	110U	180U	
			IZMI	0728.1	0728.6	III	G	1	55	270X	
			IZMI	0732.0	0733.0	III	GG,FS,C	1	25X	270X	
			LEAR	0732.0	0733.0	III		1	25	122	
			SVTO	0732.0	0733.0	III		1	25	118	
			HIRA	0732.5	0733.0	III	B	1	30	140	
			IZMI	0917.0	0917.1	III	B	2	50	150	
			SVTO	1032.0	1037.0	III		1	25	180	
			IZMI	1035.5	1038.2	III	GG	2	25X	270X	
	0530	1725	BLEN	1035.5	1047.5	DCIM	P,C	3	130	4000X	
			ONDR	1041.0	1044.5	DCIM	G	2	800X	2000X	
			SVTO	1041.0	1044.0	V		2	25	180	
			IZMI	1041.2	1044.1	III	GG,C	2	25X	270X	
	0508	1702	ONDR	1041.2	1043.0	DCIM	G	2	2000X	4500X	
			SVTO	1044.0	1059.0	II		2	25	180	ESS 0679
			SVTO	1044.0	1059.0	II		2	25	180	ESS 1414
			BLEN	1044.2	1050.6	II		3	100X	300	
			IZMI	1044.3	1101.8	II	G,HARM	2	25X	270X	
			IZMI	1045.6	1048.1	III	GG,P	2	25X	60U	
			SVTO	1500.0	1500.0	III		1	25	83	
			PALE	1809.0	1943.0	IV		1	25	95	
			CULG	2050.0E	2132.0	III	N	1	30	160	
	2050	2400	CULG	2050.0E	2342.0	I	S	1	50	100	
			PALE	2129.0	2129.0	III		1	25	180	
	1958	2400	HIRA	2129.5	2130.0	III	B	1	30	140	
			CULG	2130.0	2130.0	III	B	2	25	150	

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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
18			LEAR	2327.0	0211.0	CONT		1	54	180	
			CULG	2341.0	2341.0	III	B	1	57	180	
19	0000	0720	CULG	0018.0	0018.0	III	B	1	30	140	
	0000	0924	HIRA	0135.5	0136.0	III	B	1	120	230	
			CULG	0136.0	0139.0	III	G	1	120	400	
			CULG	0205.0	0225.0	III	GG	1	20	230	
			CULG	0452.0	0502.0	III	G	1	20	80	
	0510	1701	ONDR								
			CULG	0559.0	0600.0	III	G	1	20	60	
	0600	1200	IZMI	0600.8	0600.8	UNCLF		1	55	65	
			CULG	0635.0	0651.0	III	G	1	20	90	
	0530	0930	BLEN	0653.5	0657.7	DCIM	C	2	2200	4000X	
			IZMI	1036.2	1036.4	III	B	2	50	175	
			IZMI	1132.8	1133.0	III	G	1	80	180	
			IZMI	1135.1	1136.2	III	G	1	80	150	
			IZMI	1139.5	1139.6	III	G	2	60	160	
			SVTO	1146.0	1147.0	III		1	25	82	
			IZMI	1146.6	1146.9	III	G	1	40	120	
			SVTO	1303.0	1305.0	III		1	75	180	
			SVTO	1310.0	1310.0	III		1	75	150	
			SVTO	1559.0	1600.0	III		1	25	151	
			PALE	2113.0	2115.0	III		1	25	70	
	2050	2400	CULG	2113.0	2115.0	III	G	2	20	100	
	1959	2400	HIRA	2115.0	2115.5	III	B	1	50	100	
			CULG	2130.0	2235.0	III	N	1	20	90	
			CULG	2252.0	2254.0	III	G	3	18	180	
			HIRA	2252.0	2253.5	III	G	1	25X	120	
			PALE	2252.0	2253.0	III		1	25	90	
			CULG	2317.0	2317.0	III	B	1	20	100	
			HIRA	2317.0	2317.5	III	B	1	25X	100	
			PALE	2317.0	2317.0	III		1	25	63	
			CULG	2350.0	2350.0	III	B	1	20	90	
20	0000	0720	CULG	0047.0	0047.0	III	B	1	27	45	
			CULG	0158.0	0211.0	III	G	1	23	80	
			CULG	0250.0	0255.0	III	G	1	27	90	
			CULG	0300.0	0301.0	III	G	2	18	180	
			LEAR	0300.0	0301.0	III		1	25	119	
			PALE	0300.0	0301.0	III		1	25	83	
	0000	0923	HIRA	0300.0	0301.0	III	G	1	50	110	
			CULG	0436.0	0439.0	III	G	1	20	90	
			LEAR	0438.0	0438.0	III		1	25	105	
	0511	1659	ONDR								
			CULG	0523.0	0526.0	III	G	1	23	200	
			SVTO	0610.0	0613.0	III		1	25	75	
	0600	1200	IZMI	0610.7	0613.5	III	GG	2	45	125	
			CULG	0611.0	0614.0	III	G	1	20	180	
			LEAR	0611.0	0614.0	III		1	25	111	
			CULG	0635.0	0705.0	III	N	1	20	120	
			IZMI	0651.1	0652.2	III	G	1	45	85	
			LEAR	0704.0	0704.0	III		1	25	108	
			SVTO	0704.0	0704.0	III		1	25	75	
			IZMI	0704.3	0704.4	III	B	1	25X	130	
			IZMI	0723.7	0724.7	III	GG,C	2	25X	270X	
			CULG	0724.0	0725.0	III	G	2	23	200	
			HIRA	0724.0	0724.5	III	B	1	100	200	
			LEAR	0724.0	0725.0	III		1	25	180	
			SVTO	0724.0	0724.0	III		1	25	155	
			HIRA	0753.0	0753.5	III	B	1	60	130	
			SVTO	0753.0	0753.0	III		1	25	141	
			IZMI	0753.1	0753.5	III	G	2	25X	155	
			IZMI	0814.4	0814.7	III	G	1	115	155	
			HIRA	0817.0	0818.0	III	B	1	40	220	
			LEAR	0817.0	0818.0	III		1	25	180	
			SVTO	0817.0	0817.0	III		1	25	180	
			IZMI	0817.2	0818.0	III	GG	2	25X	210	
			IZMI	0829.7	0834.7	III	GG	1	45	65	
			IZMI	0847.5	0848.3	III	GG,U	2	110	270X	

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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
20			SVTO	0914.0	1121.0	III	N	2	25	180	
			IZMI	0920.9	0926.3	III	GG,HARM	2	25	150	
			IZMI	0938.3	0946.0	III	GG	1	25X	85	
			IZMI	0959.6	0959.9	III	B	1	50	85	
			IZMI	1023.3	1023.6	III	G	1	120	270X	
			IZMI	1039.5	1046.3	III	GG,C	2	25X	270X	
			SGMR	1040.0	1040.0	III		1	25	54	
			IZMI	1111.3	1118.9	III	GG,U	1	110U	270X	
			IZMI	1117.6	1117.7	III	G,C	2	110U	270X	
	1215	1715	BLEN								
			SGMR	1253.0	1254.0	III		1	25U	48U	
			SVTO	1253.0	1254.0	III		1	25	141	
			SGMR	1341.0	1349.0	V		1	25U	146U	
			SVTO	1341.0	1342.0	III		1	25	83	
			SVTO	1347.0	1350.0	V		3	25	180	
			SGMR	1350.0	1350.0	III		1	25U	66U	
			SVTO	1456.0	1457.0	III		1	25	82	
			SGMR	1457.0	1457.0	III		1	25U	66U	
			SVTO	1523.0	1531.0	III		1	25	142	
			SGMR	1524.0	1531.0	III		1	25U	53U	
	2000	2400	HIRA								
	2050	2400	CULG	2050.0E	2310.0	III	N	1	20	180	
			CULG	2201.0	2201.0	III	B	2	23	45	
			CULG	2221.0	2221.0	III	B	2	23	45	
			CULG	2254.0	2300.0	III	G	2	18	140	
			PALE	2258.0	0140.0	III	N	1	25	72	
			CULG	2320.0	2320.0	III	B	3	18	90	
			LEAR	2331.0	0930.0	III	N	1	25	155	
21	0000	0730	CULG	0023.0	0215.0	III	N	1	27	80	
			CULG	0230.0	0233.0	III	G	2	20	200	
			PALE	0230.0	0239.0	III		1	25	65	
	0000	0921	HIRA	0230.5	0233.0	III	G	1	25X	170	
			CULG	0237.0	0730.0D	III	N	1	20	180	
			CULG	0239.0	0239.0	III	B	2	18	90	
	0512	1657	ONDR								
	0535	1715	BLEN								
	0618	1200	IZMI	0618.0E	0825.0U	I	N	1	110	170	
			IZMI	0621.3	0622.9	III	GG	1	150	270	
			IZMI	0624.0U	1200.0D	III	N	1	25X	140U	
			SVTO	0819.0	0820.0	III		2	25	82	
			IZMI	0819.2	0822.4	I	GG	2	95	155	
			IZMI	0819.9	0820.1	III	G	2	25X	150	
			HIRA	0820.0	0820.5	III	B	1	25X	120	
			IZMI	1104.1	1105.7	III	GG	1	50	85	
			IZMI	1154.9	1155.2	III	G	2	200	270X	
			SVTO	1159.0	1159.0	III		1	25	81	
	2000	2400	HIRA								
	2050	2400	CULG	2057.0	2221.0	III	N	1	23	90	
22	0000	0730	CULG	0033.0	0231.0	III	N	1	23	90	
			CULG	0212.0	0215.0	III	G	3	20	160	
			LEAR	0212.0	0214.0	III		1	25	145	
			PALE	0212.0	0214.0	III		1	25	90	
	0000	0920	HIRA	0212.0	0215.0	III	G	1	25X	130	
			LEAR	0350.0	0350.0	III		1	25	92	
			CULG	0351.0	0351.0	III	B	1	20	100	
			CULG	0447.0	0447.0	III	B	1	23	180	
			CULG	0449.0	0449.0	III	B	3	18X	200	
			LEAR	0449.0	0449.0	III		1	25	180	
			SVTO	0449.0	0449.0	III		1	25	121	
			HIRA	0449.5	0450.0	III	B	1	25X	200	
			CULG	0453.0	0453.0	III	B	1	30	180	
	0514	1655	ONDR								
	0535	1715	BLEN								
			LEAR	0605.0	0605.0	III		1	25	44	
			SVTO	0605.0	0605.0	III		1	25	52	
			CULG	0606.0	0606.0	III	B	2	20	80	
			CULG	0628.0	0708.0	III	N	1	25	90	

S O L A R R A D I O E M I S S I O N
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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
22	0604	1200	IZMI	0756.1	0756.6	III	G	1	55	150	
			SVTO	0946.0	0946.0	III		1	25	50	
			IZMI	0946.4	0946.8	III	G	1	25X	95	
			SGMR	1406.0	1406.0	III		1	25U	58U	
			SVTO	1406.0	1406.0	III		1	25	63	
			SGMR	1557.0	1557.0	III		1	25U	50U	
			SVTO	1557.0	1557.0	III		1	25	51	
	2050	2400	CULG	2216.0	2219.0	III	G	2	50	460	
	2001	2400	HIRA	2216.5	2219.5	III	G	2	60	500	
			PALE	2217.0	2219.0	III		1	70	180	
			CULG	2255.0	2255.0	III	B	1	23	80	
23	0000	0919	HIRA								
	0000	0730	CULG	0354.0	0354.0	III	B	1	23	80	
	0515	1653	ONDR								
	0540	1715	BLEN								
	0604	1200	IZMI								
			CULG	0622.0	0703.0	III	N	1	23	75	
	2002	2400	HIRA								
	2040	2400	CULG								
24	0000	0730	CULG								
	0000	0917	HIRA								
	0600	1200	IZMI	0620.0U	0655.0	I	N	1	200	270X	
			IZMI	0638.6	0638.9	III	G	2	180	270X	
			IZMI	0930.3	0930.6	CONT		1	55	65	
			IZMI	0958.8	0959.7	I	GG	1	110	270X	
			IZMI	1104.3	1106.0	I	GG	1	220	270X	
			IZMI	1109.1	1109.5	III	G	1	80	270X	
			IZMI	1156.3	1157.3	III	GG	2	80	270X	
			SGMR	1323.0	1405.0	III	N	1	25	76	
			SVTO	1323.0	1405.0	III	N	1	25	84	
	0516	1651	ONDR	1333.1	1337.1	DCIM	G	1	800X	1306	
	0540	1715	BLEN	1333.2	1337.2	DCIM	P	1	600	1200	
	2040	2400	CULG	2047.0	2122.0	III	N	1	18	180	
			PALE	2057.0	2102.0	III		1	25	87	
			SGMR	2057.0	2102.0	III		1	25	73	
	2003	2400	HIRA	2057.5	2103.0	III	G	1	25X	180	
			CULG	2058.0	2103.0	III	GG	2	18	180	
			CULG	2110.0	2134.0	II	SH	3	23	95	ESS 800
			CULG	2111.0	2122.0	II	FN	3	18X	45	
			HIRA	2111.0	2128.0	II		1	25X	100	
			PALE	2112.0	2124.0	II		1	25	107	ESS 0534
			CULG	2206.0	2207.0	III	G	1	23	90	
25	0000	0730	CULG	0357.0	0357.0	III	B	1	27	180	
	0000	0838	HIRA	0357.5	0358.0	III	B	1	50	120	
	0517	1650	ONDR								
	0540	1715	BLEN								
	0600	1200	IZMI	0833.5	0833.6	III	B	1	110	215	
			IZMI	0930.4	0930.6	III	G	1	210	270X	
			IZMI	1111.7	1111.8	III	B	1	110U	235	
			IZMI	1143.9	1144.8	III	GG	1	115	270U	
			IZMI	1153.0	1153.1	III	G	1	180	270X	
	2040	2400	CULG	2205.0	2206.0	III	G	1	20	90	
26	0026	0915	HIRA	0101.5	0102.0	III	G	1	110	270	
	0000	0730	CULG	0102.0	0102.0	III	G	1	100	280	
			CULG	0153.0	0153.0	III	G	1	27	80	
	0519	1648	ONDR								
	0540	1715	BLEN								
	0601	1200	IZMI	0601.0E	1200.0D	I	N	1	110U	210	
			IZMI	0622.8	0623.2	III	G	1	180	270X	
			SVTO	0844.0	0845.0	III		1	25	58	
	2004	2400	HIRA								
	2040	2400	CULG								
			LEAR	2321.0	0022.0	CONT		1	72	147	
27	0000	0914	HIRA								

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27	0000	0730	CULG	0152.0	0153.0	III	G	1	20	180	
	0520	1646	ONDR								
			CULG	0537.0	0539.0	III	G	2	20	130	
	0540	1715	BLEN								
	0607	1205	IZMI	0617.9	0618.1	III	B	1	45	85	
			CULG	0618.0	0618.0	III	B	1	23	75	
			CULG	0704.0	0704.0	III	B	1	30	90	
			PALE	2227.0	2227.0	III		1	30	165	
			SGMR	2227.0	2227.0	III		1	36	70	
	2005	2400	HIRA	2227.0	2227.5	III	B	1	40	130	
	2040	2400	CULG	2227.0	2227.0	III	B	2	25	170	
28	0000	0912	HIRA								
	0000	0730	CULG	0010.0	0010.0	III	B	1	23	180	
			CULG	0440.0	0440.0	III	B	1	20	70	
	0522	1644	ONDR								
	0545	1715	BLEN								
			CULG	0557.0	0557.0	III	B	2	20	45	
	0600	1200	IZMI	0840.8	0841.0	III	G,FS	2	40	95	
			SVTO	1029.0	1029.0	III		1	25	150	
			IZMI	1029.4	1029.9	III	G,C	2	40	165	
			SGMR	1246.0	1247.0	III		1	25	141	
			SVTO	1246.0	1247.0	III		1	25	150	
			SGMR	1330.0	1330.0	III		1	25	57	
			SVTO	1330.0	1330.0	III		1	25	56	
			SGMR	1657.0	1658.0	III		1	25	74	
			PALE	1906.0	1906.0	III		1	25	66	
			PALE	2011.0	2011.0	III		1	25	87	
	2006	2400	HIRA	2011.0	2011.5	III	B	1	80	130	
	2040	2400	CULG	2040.0E	2145.0	III	N	1	25	90	
29			LEAR	0108.0	0109.0	III		2	25	103	
			PALE	0108.0	0242.0	III	N	1	25	80	
	0000	0730	CULG	0109.0	0110.0	III	G	3	18	130	
	0000	0911	HIRA	0109.0	0110.0	III	B	1	25X	100	
			CULG	0115.0	0137.0	III	N	2	20	90	
			LEAR	0116.0	0124.0	III		1	25	56	
			HIRA	0116.5	0117.0	III	B	1	25X	50	
			HIRA	0121.5	0122.0	III	B	1	25X	50	
			CULG	0203.0	0203.0	III	B	1	25	140	
			CULG	0211.0	0211.0	III	B	1	18	80	
			CULG	0236.0	0237.0	III	G	2	20	70	
			CULG	0242.0	0243.0	III	B	1	25	90	
			CULG	0326.0	0340.0	III	G	1	23	90	
			LEAR	0326.0	0334.0	III		1	25	86	
			CULG	0334.0	0334.0	III	B	2	20	90	
			HIRA	0334.0	0334.5	III	B	1	25X	40	
			CULG	0406.0	0409.0	III	G	2	18	180	
			HIRA	0406.0	0407.0	III	G	1	25X	110	
			LEAR	0406.0	0408.0	III		1	25	106	
			CULG	0431.0	0431.0	III	B	1	23	80	
	0523	1642	ONDR								
	0545	1715	BLEN								
			SVTO	0620.0	0621.0	III		1	25	83	
			IZMI	0620.9	0621.2	III	G,C	2	45	155	
			CULG	0621.0	0621.0	III	B	2	20	150	
			HIRA	0621.0	0621.5	III	B	1	50	120	
			LEAR	0621.0	0621.0	III		1	25	120	
			SVTO	0757.0	0758.0	III		1	25	63	
			IZMI	0757.5	0759.1	III	G	1	45	215	
			HIRA	0758.5	0759.0	III	B	1	25X	50	
			IZMI	0904.2	0908.5	III	GG	1	45	95	
			IZMI	0944.7	0944.9	III	B	1	45	85	
			IZMI	0958.8	0958.9	III	B	1	50	85	
			SVTO	1628.0	1629.0	III		1	25	58	
			SGMR	1629.0	1629.0	III		1	25	58	
	2040	2400	CULG	2057.0	2057.0	III	B	1	20	90	
			CULG	2101.0	2101.0	III	B	1	35	90	
			CULG	2124.0	2215.0	III	N	1	25	90	

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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
29			CULG	2254.0	2257.0	III	G	1	23	150	
			LEAR	2347.0	2348.0	III		1	25	158	
	2007	2400	HIRA	2347.5	2348.0	III	B	1	25X	80	
			CULG	2348.0	2348.0	III	B	3	20	180	
30	0000	0730	CULG	0056.0	0236.0	III	N	1	20	80	
			CULG	0307.0	0311.0	III	G	2	27	330	
			LEAR	0307.0	0310.0	III		1	25	180	
	0000	0909	HIRA	0307.0	0310.5	III	G	2	30	320	
			CULG	0315.0	0323.0	II	FN	2	20	70	
			CULG	0315.0	0325.0	II	SH	3	40	140	FLA ESS 650
			HIRA	0315.0	0321.0	II		1	30	110	
			LEAR	0318.0	0322.0	II		1	25	120	ESS 0699
			CULG	0328.0	0333.0	UNCLF		2	27	50	
			CULG	0400.0	0400.0	III	B	2	20	75	
			HIRA	0400.0	0400.5	III	B	1	25X	50	
	0525	1640	ONDR								
	0545	1715	BLEN								
			CULG	0619.0	0730.0D	III	N	1	25	90	
	0602	1200	IZMI	0622.6	0623.8	III	G	1	115	160	
			IZMI	0732.6	0732.8	III	B	1	35	65	
			IZMI	0929.8	0929.9	III	G,HARM	1	25X	85	
			SVTO	0955.0	0957.0	III		1	25	147	
			IZMI	0955.1	0956.6	III	GG,C	1	25X	270X	
			IZMI	1033.9	1041.1	III	N	1	45	85	
			SGMR	1714.0	1714.0	III		1	25	50	
			PALE	1808.0	1809.0	III		1	25	155	
			SGMR	1808.0	1810.0	V		1	25	76	
			PALE	1948.0	1948.0	III		1	25	58	
			SGMR	1948.0	1948.0	III		1	25	57	
			PALE	2038.0	2038.0	III		1	25	72	
			SGMR	2038.0	2038.0	III		1	25	73	
	2008	2400	HIRA	2038.5	2039.0	III	B	1	30	80	
	2040	2400	CULG	2040.0E	2330.0	III	N	1	20	150	
			CULG	2249.0	2252.0	III	G	3	20	90	
			PALE	2249.0	2250.0	III		1	25	66	
			LEAR	2335.0	0049.0	CONT		1	75	91	
31	0000	0730	CULG	0011.0	0139.0	III	N	1	23	90	
			LEAR	0025.0	0025.0	III		1	25	39	
			CULG	0027.0	0032.0	III	G	3	18X	160	
			LEAR	0027.0	0027.0	III		1	25	48	
			LEAR	0029.0	0031.0	V		1	25	98	
			PALE	0029.0	0031.0	III		1	25	62	
	0000	0908	HIRA	0029.0	0031.0	III	G	1	25X	50	
			CULG	0044.0	0045.0	III	G	3	18	350	
			LEAR	0044.0	0044.0	III		1	25	180	
			PALE	0044.0	0044.0	III		1	25	58	
			HIRA	0044.5	0045.0	III	B	1	25X	40	
			LEAR	0055.0	0055.0	III		1	25	51	
			CULG	0243.0	0243.0	III	B	1	18	45	
			CULG	0302.0	0730.0D	III	N	1	20	90	
			LEAR	0323.0	0323.0	III		1	25	42	
			CULG	0426.0	0430.0	III	G	3	18X	200	
			HIRA	0426.0	0428.0	III	G	1	25X	200	
			LEAR	0426.0	0429.0	III		1	25	180	
			PALE	0426.0	0427.0	III		1	25	62	
	0526	1638	ONDR								
			CULG	0532.0	0535.0	III	G	1	23	180	
			CULG	0536.0	0539.0	III	G	1	100	180	
			CULG	0540.0	0542.0	III	G	1	25	180	
			LEAR	0540.0	0550.0	II		1	25	112	ESS 0699
			CULG	0541.0	0554.0	II	SH	2	35	100	ESS 650
			SVTO	0543.0	0548.0	II		1	43	74	ESS 0570
			CULG	0544.0	0549.0	II	FN	2	23	40	
			HIRA	0544.0	0547.0	II		1	50	80	
	0545	1710	BLEN								
			CULG	0547.0	0553.0	II	SH	1	57	85	ESS 400
			CULG	0547.0	0554.0	II	FN	2	27	40	

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Spectral Observations

AUGUST 2004

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
31		CULG	0556.0	0600.0	UNCLF		2	23	40	
		CULG	0617.0	0730.0D	III	N	1	20	90	
		CULG	0629.0	0630.0	III	G	3	18	75	
		LEAR	0629.0	0629.0	III		1	25	52	
		SVTO	0629.0	0629.0	III		1	25	52	
0601	1200	IZMI	0629.0	0630.9	III	G	1	45	65U	
		CULG	0633.0	0633.0	III	B	3	20	35	
		LEAR	0856.0	0857.0	III		1	25	87	
		SVTO	0856.0	0857.0	III		1	25	41	
		IZMI	0856.5	0857.2	III	G	1	25X	85	
		SVTO	1207.0	1208.0	III		1	25	82	
		SGMR	1306.0	1309.0	V		1	25	51	
		SVTO	1306.0	1309.0	V		2	25	41	
		SVTO	1335.0	1412.0	III	N	1	25	148	
		SGMR	1336.0	1412.0	III	N	1	25	139	
		SGMR	1623.0	1624.0	III		1	25	39	
		PALE	1825.0	1830.0	III		1	25	97	
		SGMR	1825.0	1830.0	III		1	25	144	
2009	2400	HIRA								
2040	2400	CULG	2050.0	2050.0	III	B	1	20	90	
		CULG	2115.0	2210.0	III	N	1	23	140	
		CULG	2312.0	2312.0	III	B	1	18	57	
		CULG	2339.0	2339.0	III	B	1	20	130	
		CULG	2350.0	2350.0	III	B	1	20	90	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

NOTE 1: Beginning June 26, 2001, the Bleien observatory changed to higher frequencies (1-4Ghz).

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

AUGUST 2004

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
	E-W	S-N		START(UT)	END(UT)
01/08/04	-1.04	-0.22	II	10H52 E	15H27 D
02/08/04	-0.85	-0.35	I	8H25 E	15H27 D
02/08/04	-0.44	-0.35	II	13H17	15H27 D
03/08/04	-0.68	-0.27	III	8H25 E	15H27 D
04/08/04	-0.26	-0.26	III	9H02 E	15H27 D
05/08/04	-1.34	-0.42	II	8H40 E	15H27 D
05/08/04	-0.03	-0.21	III	8H40 E	15H27 D
06/08/04	+0.18	-0.35	III	8H26 E	15H27 D
07/08/04	-0.93	-0.24	II	8H25 E	15H26 D
08/08/04	-0.70	-0.28	III	12H26 E	13H59 D
09/08/04	-0.62	-0.37	IV	8H40 E	15H27 D
10/08/04	-0.67	-0.29	I	8H44 E	15H26 D
10/08/04	-0.16	-0.44	III	8H44 E	15H26 D
11/08/04	-0.35	-0.17	III	9H25 E	15H26 D
11/08/04	+0.03	-0.33	III	9H25 E	15H26 D
12/08/04	+0.10	-0.41	IV	8H25 E	15H26 D
12/08/04	+0.51	-0.23	III	8H25 E	15H26 D
13/08/04	+0.40	-0.27	V	8H24 E	15H26 D
14/08/04	+0.72	-0.10	III	8H38 E	15H25 D
14/08/04	+0.76	-0.51	III	8H38 E	15H25 D
15/08/04	+1.25	-0.40	IV	8H32 E	15H24 D
17/08/04	+1.11	-0.92	I	8H24 E	15H25 D
18/08/04	-1.23	+0.52	I	9H16 E	15H06 D
18/08/04	+1.13	-0.94	I	9H16 E	15H06 D
19/08/04	-1.44	+0.50	I	8H30 E	14H21 D
21/08/04	+0.09	-0.13	I	8H58 E	12H56 D
22/08/04	+0.36	+0.00	I	8H24 E	12H56
26/08/04	+0.13	+0.00	I	8H21 E	15H22 D
26/08/04	+0.99	-0.54	I	8H21 E	15H22 D
30/08/04	-0.69	-0.24	I	8H20 E	15H22 D
30/08/04	+1.18	-0.21	I	8H20 E	15H22 D
30/08/04	+1.34	+0.21	I	8H20 E	15H22 D

[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

AUGUST 2004

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/08/04	-0.98	-0.19	I	10H52 E	15H27 D
01/08/04	-0.75	-0.26	I	10H52 E	15H27 D
01/08/04	+0.74	-0.01	I	12H55	15H27 D
02/08/04	-0.84	-0.15	I	8H25 E	15H27 D
02/08/04	-0.51	-0.21	I	8H25 E	15H27 D
03/08/04	-0.61	-0.25	I	8H25 E	15H27 D
03/08/04	-0.23	-0.25	I	8H25 E	15H27 D
04/08/04	-1.21	-0.33	I	9H02 E	15H27 D
04/08/04	-0.27	-0.22	II	9H02 E	15H27 D
05/08/04	-1.14	-0.42	I	8H40 E	15H27 D
05/08/04	-0.03	-0.25	I	8H40 E	15H27 D
06/08/04	-1.10	-0.37	I	8H26 E	15H27 D
06/08/04	+0.20	-0.20	I	8H26 E	15H27 D
07/08/04	-0.93	-0.26	I	8H25 E	15H26 D
07/08/04	-0.89	-0.03	I	8H25 E	15H26 D
08/08/04	-0.70	-0.26	I	12H26 E	15H26 D
09/08/04	-0.67	-0.39	II	8H40 E	15H27 D
10/08/04	-0.23	-0.39	II	8H44 E	15H26 D
11/08/04	-0.31	-0.26	II	9H25 E	15H26 D
11/08/04	-0.03	-0.42	III	9H25 E	15H26 D
12/08/04	+0.16	-0.34	II	8H25 E	15H26 D
13/08/04	+0.40	-0.29	III	8H24 E	15H26 D
14/08/04	+0.66	-0.24	III	8H38 E	15H25 D
15/08/04	+0.94	-0.21	I	8H32 E	15H24 D
15/08/04	+1.30	-0.44	I	8H32 E	11H00
16/08/04	+0.96	-0.48	I	8H33 E	15H25 D
18/08/04	-1.18	+0.46	I	9H16 E	15H06 D
21/08/04	-0.62	-0.27	I	8H58 E	12H56 D
22/08/04	-0.41	-0.31	I	8H24 E	13H49 D
23/08/04	-0.18	-0.31	I	8H22 E	15H24 D
24/08/04	+0.42	-0.32	I	8H22 E	15H23 D
24/08/04	+1.09	-0.21	I	8H22 E	15H23 D
26/08/04	+0.03	+0.11	I	8H21 E	15H22 D
26/08/04	+0.71	-0.59	I	12H17	15H22 D
26/08/04	+0.88	-0.49	I	8H21 E	15H22 D
30/08/04	+1.14	-0.24	I	8H20 E	15H22 D

27 AUGUST : 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

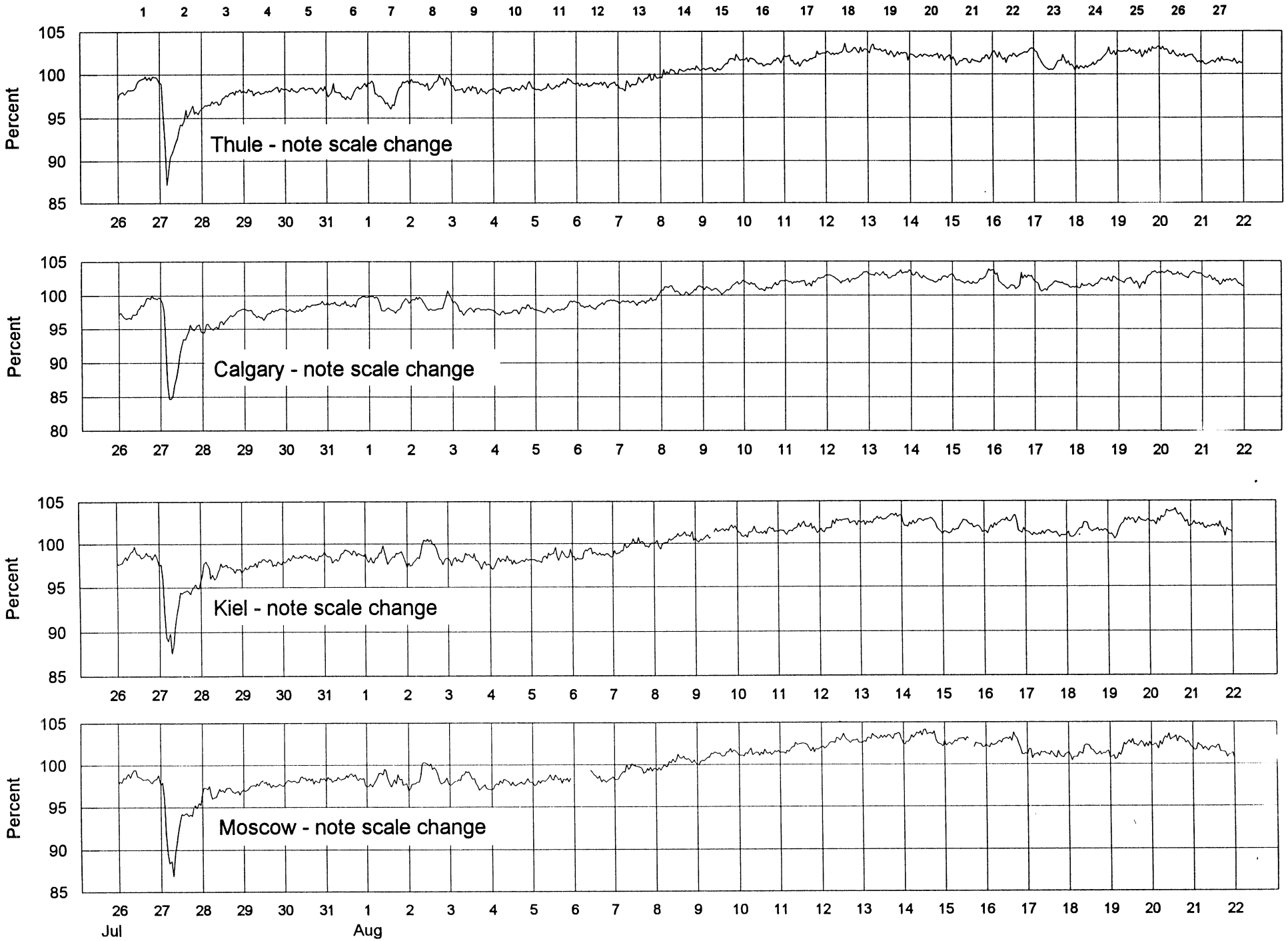
COSMIC RAY INDICES
(Neutron Monitor)
August 2004

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	4057.3	3541.7	5707.2	8319.5	3834.9	1904.2	3514.3
2	4107.4	3550.5	5725.8	8361.5	3829.0	1905.1	3503.1
3	4072.6	3518.3	5683.1	8305.5	3794.8	1901.1	3480.0
4	4078.9	3509.7	5672.2	8288.1	3780.0	1901.6	3476.6
5	4090.7	3521.5	5706.1	8320.0(23)	3801.6	1908.0	3497.9
6	4098.2	3543.2	5718.1	8343.1(14)	3828.0	1909.2	3513.5
7	4108.6	3560.2	5774.3	8416.2	3849.5	1911.0	3519.4
8	4161.3	3617.7	5822.8	8497.2	3903.6	1918.4	3533.1
9	4189.5	3630.2	5861.9(23)	8566.3	3931.4	1925.9	3552.9
10	4205.9	3644.0	5870.6	8590.5	3944.1	1929.8	3553.3
11	4219.9	3665.7	5893.4	8640.7	3962.7	1935.3	3563.1
12	4255.4	3684.7	5925.1	8705.3	3978.1	1948.5	3560.9
13	4252.1	3704.2	5959.2	8750.1	4008.4	1960.8	3565.8
14	4233.8	3686.7	5935.5	8748.7	3992.8	1953.5	3571.7
15	4213.9	3678.3	5899.3	8698.4(22)	3985.8	1947.4	3566.8
16	4240.0	3667.7	5919.8	8687.6	3986.6	1960.3	3565.8
17	4202.4	3643.3	5858.9	8576.6	3947.7	1954.6	3547.8
18	4208.1	3658.7	5879.7	8592.7	3959.0	1948.0	3543.0
19	4257.0	3677.2	5917.7	8641.9	3976.1	1948.8	3560.9
20	4242.2	3706.0	5970.8	8707.7	4026.2	1963.3	3583.0
21	4206.8	3671.5	5905.5	8622.5	3977.5	1958.1	3560.2
22	4202.6	3631.8	5886.5	8592.8	3959.1	1952.4	3551.1
23	4213.5	3639.8	5895.0	8600.2	3960.7	1946.6	3547.9
24	4242.7	3669.5	5928.8	8650.1	3990.5	1952.9	3554.1
25	4280.8	3696.3	5975.6	8730.4	4027.3	1969.8	3577.9
26	4274.5	3697.7	5972.3	8731.3	4034.1(32)	1964.0	3573.8
27	4282.0	3712.8	5953.5	8715.4	---	1960.1	3573.2
28	4276.0	3729.3	5957.7	8717.4	---	1968.6	3573.3
29	4286.7	3734.7	5981.4	8738.5	---	1972.1	3579.9
30	4276.1	3714.8	5965.6	8683.7	---	1978.7	3591.8
31	4264.6	3693.8	5970.4	8713.2	4028.1 (38)	1974.1	3585.3
Mean	4203.0	3645.2	5874.0	8588.8	3935.1	1943.0	3549.8

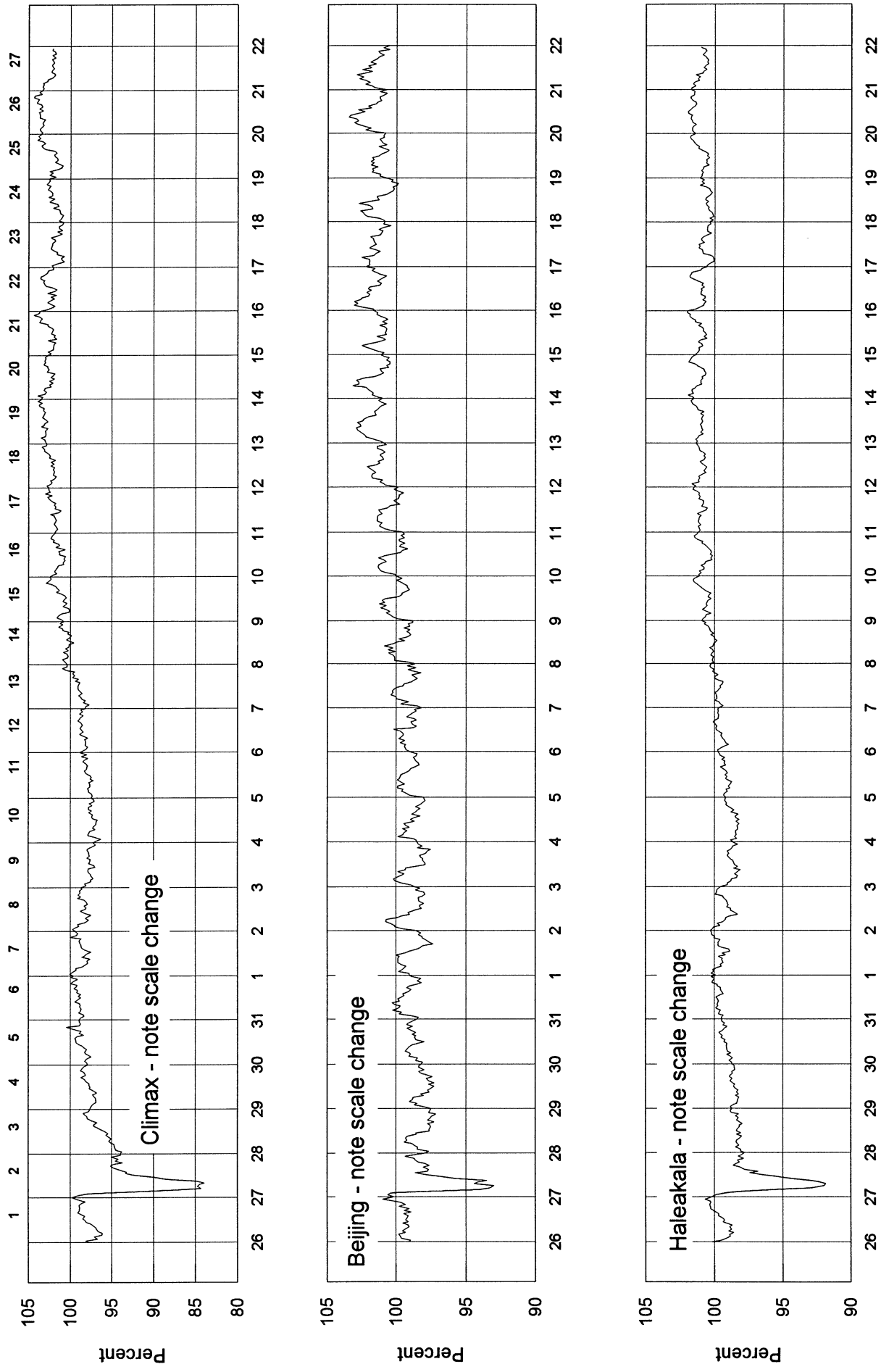
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2334 - Beginning 26 Jul 2004

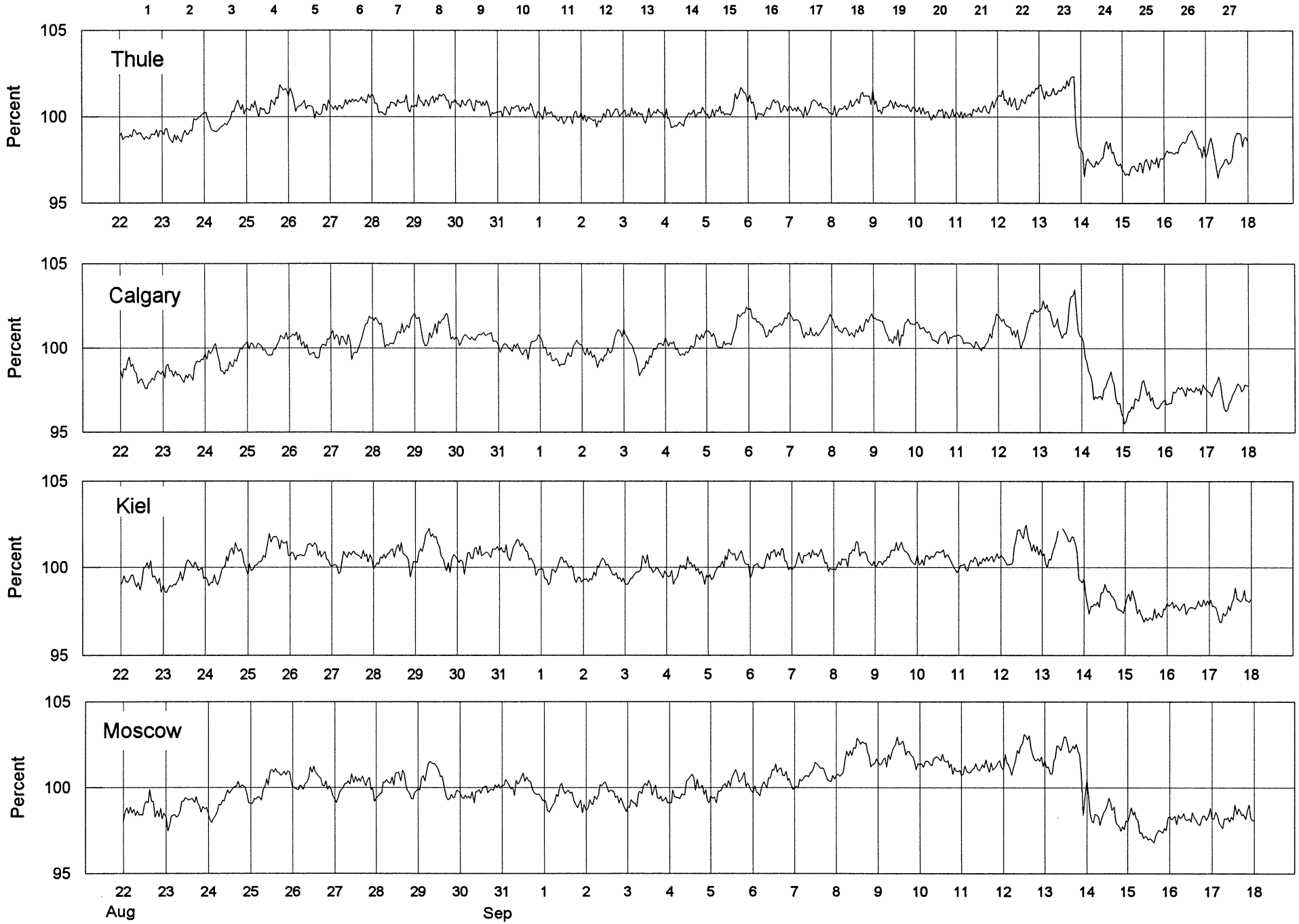


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2334 - Beginning 26 Jul 2004

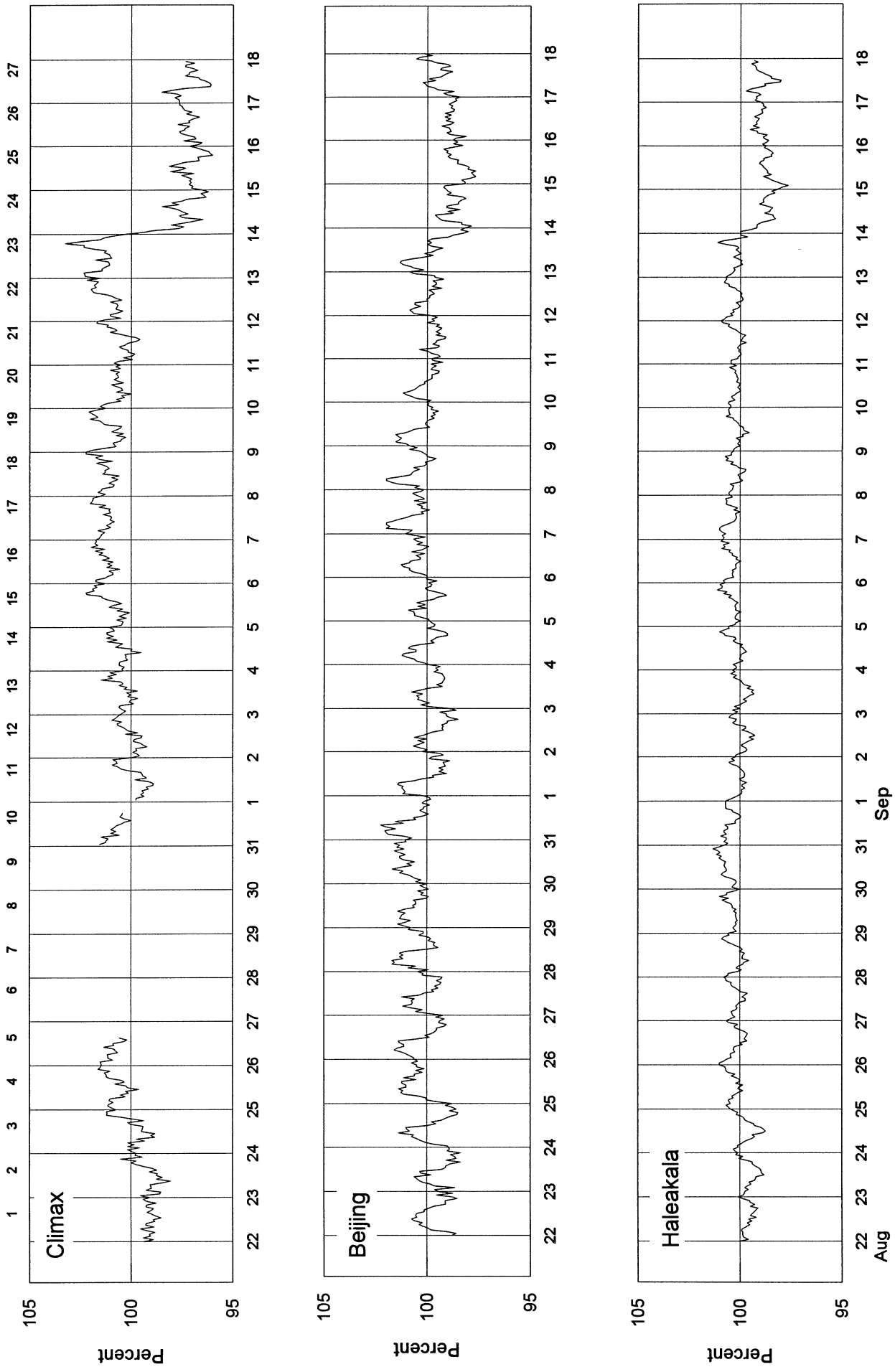


COSMIC RAY INDICES
(Neutron Monitor)

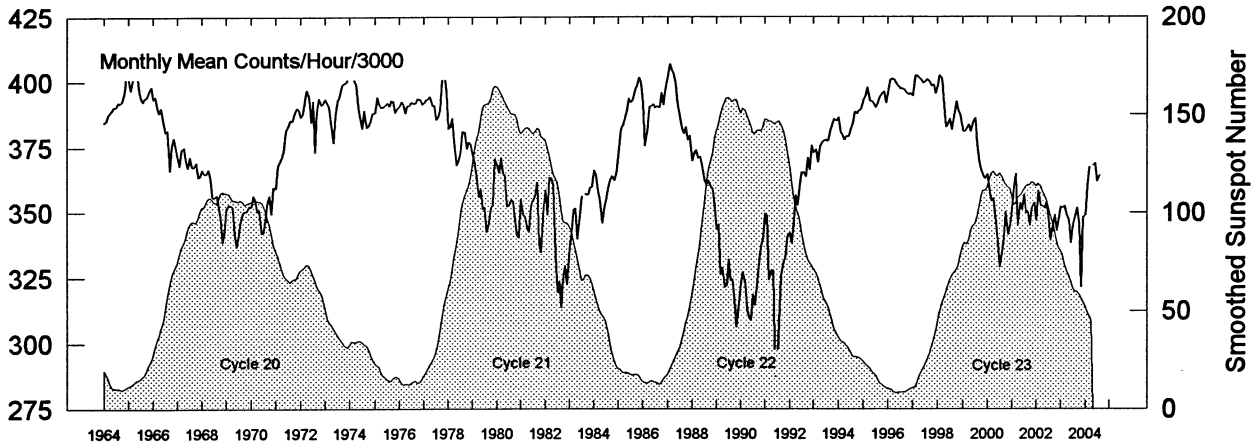
Bartels Rotation 2335 - Beginning 22 Aug 2004



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2335 - Beginning 22 Aug 2004



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Aug 2004



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1964	3847	3852	3872	3883	3892	3905	3905	3921	3920	3926	3966	4064	3913
1965	4006	3968	4007	4040	4040	3967	3935	3923	3938	3942	3960	3980	3976
1966	3935	3943	3906	3881	3899	3844	3807	3814	3663	3758	3785	3750	3832
1967	3710	3678	3741	3750	3697	3671	3713	3679	3675	3691	3638	3639	3690
1968	3663	3653	3647	3665	3632	3561	3556	3567	3529	3482	3386	3420	3563
1969	3515	3531	3529	3520	3417	3370	3408	3464	3500	3507	3506	3524	3483
1970	3523	3565	3548	3505	3512	3424	3426	3477	3543	3564	3497	3596	3515
1971	3593	3678	3693	3712	3737	3813	3832	3853	3851	3883	3899	3893	3786
1972	3865	3875	3924	3969	3942	3847	3926	3731	3895	3935	3912	3920	3895
1973	3935	3919	3903	3819	3768	3875	3926	3944	3986	3995	3997	4008	3923
1974	4036	4043	4005	3988	3906	3861	3822	3890	3827	3831	3850	3881	3912
1975	3883	3943	3914	3905	3904	3910	3918	3907	3929	3927	3884	3897	3910
1976	3908	3923	3915	3881	387	3909	3921	3918	3920	3936	3935	3916	3916
1977	3919	3933	3933	3943	3911	3911	3857	3865	3895	4010	4055	3961	3933
1978	3823	3826	3860	3773	3681	3697	3730	3811	3808	3744	3772	3764	3774
1979	3726	3696	3647	3559	3592	3516	3521	3427	3447	3519	3528	3705	3573
1980	3681	3652	3711	3649	3643	3527	3525	3550	3540	3471	3414	3403	3564
1981	3550	3491	3483	3440	3426	3522	3546	3560	3615	3374	3348	3520	3490
1982	3586	3492	3634	3632	3608	3344	3196	3239	3137	3257	3296	3225	3387
1983	3364	3421	3510	3515	3399	3487	3563	No Data	3571	3569	3597	3599	3509
1984	3661	3646	3586	3551	3460	3515	3551	3593	3623	3641	3623	3652	3592
1985	3723	3821	3834	3858	3888	3936	3921	3929	3971	3987	4017	3997	3907
1986	3923	3755	3814	3905	3906	3915	3902	3907	3902	3958	3912	3974	3898
1987	4025	4068	4047	4028	3993	3914	3866	3822	3802	3827	3779	3796	3914
1988	3698	3729	3739	3709	3714	3682	3621	3608	3624	3603	3590	3520	3653
1989	3436	3454	3263	3290	3216	3222	3321	3224	3246	3164	3063	3152	3254
1990	3227	3272	3232	3129	3099	3089	3188	3147	3237	3317	3375	3401	3226
1991	3496	3489	3244	3279	3280	2873	2896	3078	3253	3311	3330	3412	3245
1992	3425	3382	3463	3566	3528	3593	3655	3655	3636	3711	3665	3758	3586
1993	3730	3741	3693	3753	3765	3775	3780	3775	3815	3836	3859	3852	3781
1994	3864	3807	3798	3779	3793	3793	3822	3841	3885	3878	3891	3896	3837
1995	3929	3945	3919	3929	3927	3917	3902	3919	3940	3956	3963	3920	3931
1996	3960	4008	4012	4010	3993	3983	3976	3976	3970	3960	3953	3955	3980
1997	3947	4023	4024	4014	4007	3998	4001	4010	3999	3985	3990	3955	3996
1998	3982	4025	4013	3910	3827	3839	3857	3817	3876	3925	3890	3875	3903
1999	3816	3811	3823	3836	3810	3843	3861	3760	3699	3664	3644	3631	3767
2000	3646	3586	3544	3554	3465	3386	3293	3337	3395	3503	3417	3447	3464
2001	3510	3599	3646	3449	3537	3511	3570	3501	3504	3449	3521	3537	3528
2002	3469	3585	3527	3526	3517	3541	3479	3393	3455	3493	3431	3474	3491
2003	3523	3517	3524	3488	3473	3384	3450	3480	3517	3460	3216	3485	3460
2004	3492	3604	3676	---	3680	3689	3612	3645					3628

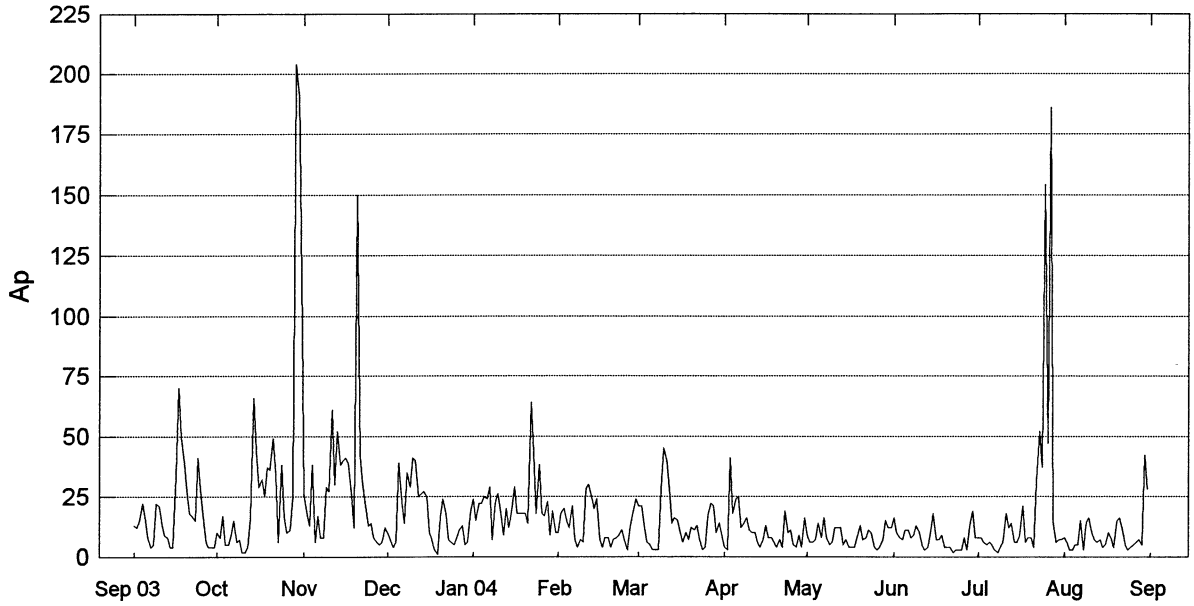
Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

Geomagnetic Activity Indices
August 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+	1	1	1+	1	2-	2	14	8	0.4	4-	3-	1o	0+	1-	0+	2-	2+	15	16	10	16	10	KK
2		1	1+	2+	2+	1	0+	1	3-	12	6	0.3	1o	1+	3-	2o	1-	1-	1o	3-	12	13	8	11	10	CC
3	Q4	2-	1+	1-	0+	1-	0	0	0+	5	3	0.0	2-	2-	0+	0+	0+	0o	0o	0o	4	5	3	5	3	CC
4	Q1	0	0+	1-	1-	1+	1-	0+	1-	5-	3	0.0	0o	0o	0+	1-	1+	1-	0o	0+	3	5	4	3	6	CC
5		0	1-	1-	1+	2	1+	2	3-	11-	5	0.2	0o	0+	1-	1+	2-	1+	1+	2+	8	10	9	7	12	CC
6		3-	1-	1-	0	1-	1-	2-	2+	9+	5	0.2	3o	1o	1-	0+	0+	0o	1+	2+	9	17	7	11	14	K
7		3-	3-	4	4-	4-	2	2-	3-	23	15	0.8	3-	3-	3+	3+	3+	2o	2-	3-	27	31	29	35	26	
8	Q2	1+	1	1	0+	1-	0+	1-	0+	6-	3	0.1	1+	1+	1o	0o	1-	0+	0+	0o	5	8	4	8	4	CK
9		2	2-	3+	2	1+	2+	4	4+	21	14	0.8	2-	2-	4-	2+	1+	3-	3+	4-	26	32	17	16	33	
10	D4*	4-	2-	2-	2	4-	3+	4	3+	23+	16	0.9	4-	1+	1+	2-	3o	3+	3+	3o	26	30	19	16	33	
11		2+	1+	2+	3+	2+	2+	3	2+	19+	10	0.6	2+	1+	2+	3o	3-	2+	2+	2+	20	25	15	19	21	
12		3	2	2-	2-	2-	1+	1+	2+	15	7	0.4	3+	2o	1+	1+	2-	1+	1o	2+	14	14	9	12	11	CK
13		2	2-	1	1-	1+	1+	2+	3-	13	6	0.3	2o	1+	1o	1o	1+	1+	2+	3-	12	15	10	7	18	KC
14		2	2-	2	3-	2-	1+	2	2-	15	7	0.4	2+	1+	2+	2+	1+	1o	1+	1+	13	15	11	15	11	CC
15	Q7	1-	1-	0+	1-	3-	0+	1-	1-	7-	4	0.1	1-	1-	0o	1-	2-	0+	0+	0o	4	6	4	4	5	CC
16	Q10	0+	1-	0+	1	2	2	2-	2	10	5	0.2	0o	1o	1-	1o	2o	2-	2-	2o	9	12	7	4	14	CC
17		3	1+	0+	1+	2+	2+	4-	3	17+	10	0.6	2+	1+	0+	1+	2o	3-	3o	2+	16	23	21	10	34	
18		2	2+	3	2-	2	2-	2-	3-	17	8	0.5	2o	2+	3+	2o	2-	2-	2-	3-	18	21	12	20	13	
19	Q6	1+	1-	0+	1	1	2-	1	2-	9-	4	0.1	2-	1-	0+	1-	1o	1+	1+	1+	7	10	7	7	10	C
20	D5*	3	3	2+	4-	3+	3+	2+	3	24	15	0.9	3o	2+	2+	4-	3o	3-	3-	3o	26	33	25	28	30	
21	D3*	3+	4-	4	3-	2-	2+	3	4-	24+	16	0.9	3+	3+	4-	3-	2+	2+	3o	3+	30	37	26	35	28	
22		3	2+	3-	3+	2+	3-	3-	2+	21+	12	0.7	3-	2+	3o	3+	2+	3o	2+	2+	24	28	24	28	24	
23	Q8	2	1+	1+	1	1	1+	1	1-	10-	5	0.2	2-	2-	1+	1+	1o	2-	1o	1o	10	10	8	9	8	CK
24	Q3	1+	0+	1-	1	1-	1	1-	0	6-	3	0.1	1+	0+	1-	1o	1o	1-	1-	0o	5	7	6	7	7	CC
25	Q5	0+	1+	1-	1+	1+	1+	1	1-	8	4	0.1	0o	1o	1o	1+	1o	1o	0+	1-	6	8	6	5	9	CC
26	Q9	1-	0+	1-	1-	1+	2-	2-	2+	9+	5	0.2	1o	1-	1o	1-	1+	2-	1+	2o	9	11	5	4	12	CC
27		2-	1	1	0+	1+	2-	3-	2	12-	6	0.3	2o	1-	1+	1-	1+	1+	2+	2+	11	11	7	4	14	CK
28		2-	2+	3+	2	1-	1	1+	1+	14-	7	0.4	2-	2+	3o	2+	0+	1+	1+	1+	13	15	15	21	9	K
29		2-	2-	0+	2-	1+	1+	1+	2-	11	5	0.2	2-	2-	0o	2-	2-	1+	1+	1+	10	13	10	9	14	C
30	D1	2+	2	3+	4	4	6-	5	7	33+	42	1.5	3-	2-	4-	4o	4o	5o	5-	6o	66	51	64	27	88	
31	D2	5+	5-	5	3	3+	3	3+	3-	30+	28	1.2	4+	4-	4o	3+	3-	3-	4-	3-	40	38	41	47	31	
Mean											9	0.44									16.1	18.5	14.2	16.3		

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+	2+	1+	1o	1+	1-	2-	2o	15	4o	3o	1o	0o	0o	0o	2-	2+	15	85.8	23	31	31	
2	1o	1+	3o	3-	1o	1o	1o	2+	14	1o	1+	2o	2-	0o	0+	1o	3o	11	87.0	28	34	32	
3	2-	2-	1-	1-	1-	0o	0o	0+	5	1+	2-	0+	0o	0o	0o	0o	0o	3	90.1	30	37	35	
4	0o	0+	1-	1o	2-	1+	0+	0+	5	0o	0o	0+	0+	1-	0+	0o	0o	1	87.9	33	32	33	
5	0o	1-	1-	2-	2+	2-	2-	3-	11	0o	0o	1-	1+	1+	1o	1+	2-	6	91.5	21	30	37	
6	3-	1o	1o	1-	1o	0+	2-	3-	10	3o	1o	1-	0o	0o	0o	1-	2o	8	93.6	33	40	39	
7	3o	3-	3+	3+	3+	2o	2o	3-	27	3-	3o	4-	3+	3+	2-	2-	3-	27	97.3	44	49	43	
8	2-	1+	1o	0+	1o	1-	1-	0+	6	1+	1+	1o	0o	0o	0o	0+	0o	4	107.7	39	47	54	
9	1+	2-	3+	3-	2-	3o	4o	4-	27	2-	2-	4o	2o	1o	3-	3o	4o	25	117.0	50	61	64	
10	4-	2-	2-	2+	3+	4-	3+	3+	30	3+	1o	1o	1+	3o	3-	3o	3-	21	124.7	58	67	73	
11	2+	2-	3-	3+	3-	3-	3-	2+	23	2+	1+	2o	3-	2+	2o	2o	3-	18	134.3	63	72	83	
12	3o	2o	1+	2-	2o	2-	1+	2+	16	3+	2-	1o	1-	1+	1+	1-	2o	12	151.1	68	81	101	
13	2o	1+	1+	1+	1+	1+	3-	3-	14	2-	1o	1o	0+	1+	1o	2-	3-	11	152.5	76	86	103	
14	2o	1+	3-	3-	2o	2-	2-	2-	15	2+	1+	2o	2o	1-	1-	1o	1o	10	153.1	68	84	103	
15	1o	1-	0o	1o	2+	0+	0+	0+	6	0+	1-	0o	0o	1o	0o	0+	0o	2	142.4	61	71	92	
16	0o	1o	1o	1+	2+	2o	2o	2+	11	0o	1o	0+	0+	2-	1o	1+	2-	6	137.0	54	68	86	
17	2+	1+	0+	2-	2+	3-	3o	3-	18	3-	1+	0+	1-	1+	3o	3-	2o	14	138.3	44	52	87	
18	2o	2+	3+	2+	2+	2+	2+	3o	21	2o	3-	3+	2o	1o	1-	1-	2+	15	143.3	41	47	93	
19	2o	1o	0+	1o	1+	2o	1+	2-	9	1+	1-	0+	0+	0+	1-	1o	1+	5	123.5	36	47	71	
20	3-	3-	2+	4-	3o	3o	3o	3o	29	3o	2o	2+	3o	3-	3-	2+	3-	23	124.2	50	61	72	
21	3+	3+	4o	3-	2+	3-	3o	3+	32	3o	3+	3o	2+	2+	2o	3o	3+	27	122.8	57	69	71	
22	3o	3-	3o	3+	3-	3+	2+	2+	27	3-	2o	3o	3+	2o	2+	2+	2o	21	117.8	66	75	65	
23	2o	2-	2-	1+	1o	2o	1+	1o	10	2-	2o	1+	1o	1-	2-	1o	1-	9	111.9	56	59	59	
24	1+	1-	1o	1+	1+	1o	1o	0+	7	1+	0+	0+	0+	1-	1-	0+	0o	3	107.2	38	45	54	
25	0o	1o	1+	2-	1+	1+	1-	1o	7	0o	1+	1-	1o	1-	1-	0o	0+	4	102.5	31	36	49	
26	1o	0+	1o	1-	2-	2o	2o	2+	10	1+	1-	1o	1-	1o	1o	1-	2o	7	99.5	24	29	45	
27	2-	1-	1+	1o	2-	2-	3-	2+	12	2+	1-	1+	1-	1o	1o	2+	2+	11	92.3	21	28	38	
28	1+	2+	3o	2+	1-	1+	1+	1+	14	2-	2+	3-	2+	0o	1+	2-	1o	13	88.9	20	27	34	
29	2-	2-	0+	2o	2o	2-	2-	2-	12	2o	2-	0o	2-	1-	1-	1+	1+	8	87.7	16	16	33	
30	2+	2-	4-	4o	4o	5o	5-	6o	66	3-	2o	3+	4o	4o	5-	5-	6+	66	91.6	10	17	37	
31	4+	4o	4+	3+	3-	3-	3+	3-	41	4+	4-	4o	3+	2o	3-	4-	2+	38	89.7	9	7	35	
Mean									17.7									14.3	112.7	40.9	48.5	59.7	

Daily Average Indices Ap
Sep 2003 - Aug 2004

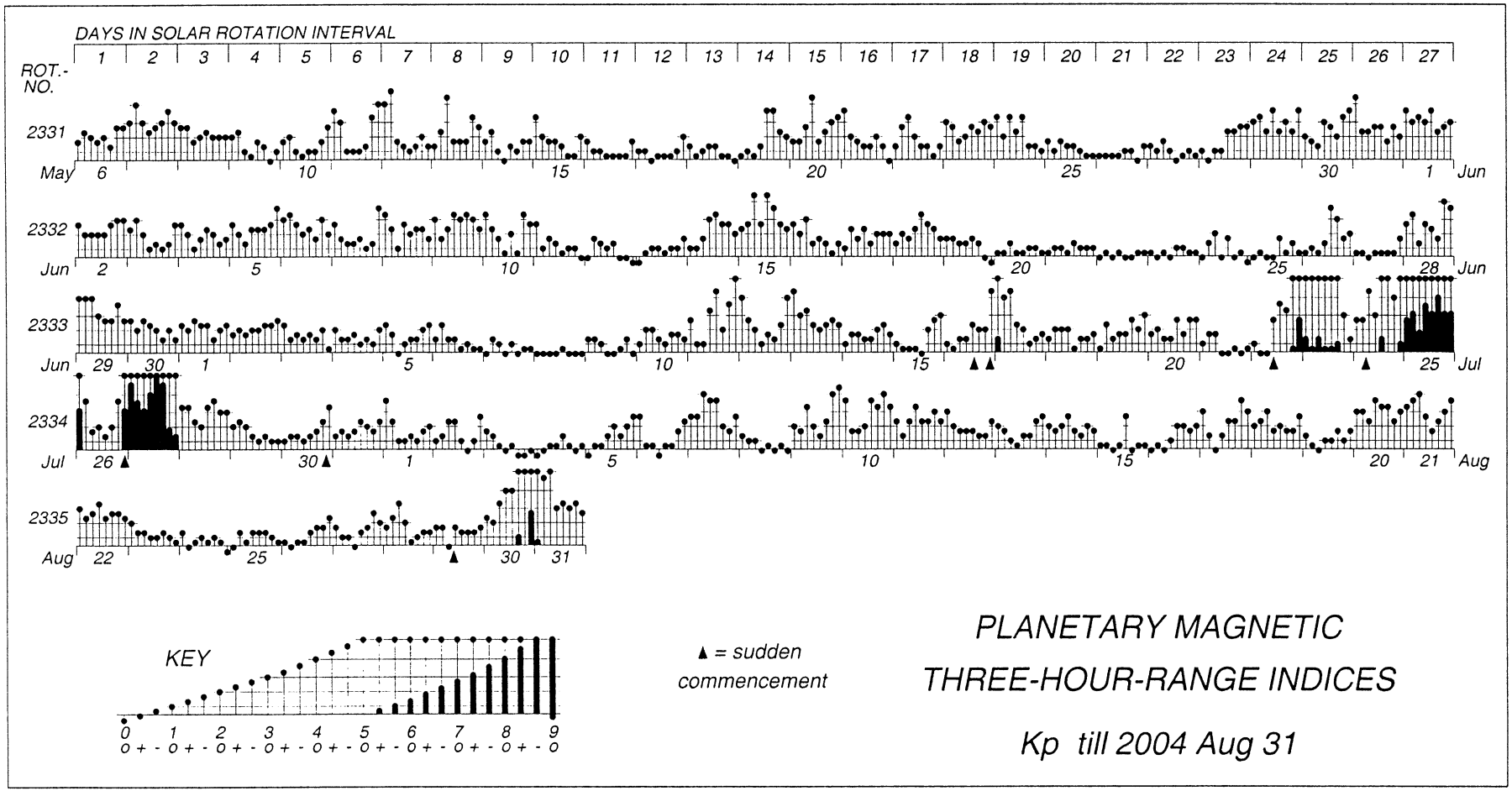


Day	Sep 03	Oct	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug
1	13	10	26	10	24	10	21	4	9	16	8	8
2	12	8	18	7	15	18	21	3	6	10	8	6
3	15	17	13	4	22	20	13	41	6	8	6	3
4	22	5	38	6	22	15	6	18	7	7	5	3
5	16	5	6	39	25	12	5	24	14	11	6	5
6	8	9	17	23	24	21	3	25	8	11	5	5
7	4	15	8	14	29	7	3	12	16	8	3	15
8	5	6	8	35	7	4	3	14	8	9	2	3
9	22	7	29	29	23	7	28	16	5	13	4	14
10	21	2	27	41	26	6	45	11	6	10	6	16
11	14	2	61	40	19	28	40	10	12	5	18	10
12	9	4	30	25	9	30	28	10	12	3	12	7
13	8	16	52	26	20	25	14	6	12	4	14	6
14	4	66	38	27	12	20	16	4	5	10	6	7
15	4	44	40	25	18	24	15	7	7	18	6	4
16	34	29	41	10	29	7	10	13	4	7	9	5
17	70	32	39	7	18	4	6	8	4	7	21	10
18	50	25	26	3	18	8	10	8	4	9	6	8
19	39	37	12	1	18	8	7	6	9	4	8	4
20	27	36	150	16	18	4	12	4	13	4	8	15
21	18	49	42	24	14	7	11	7	7	4	4	16
22	17	34	30	18	64	8	13	4	8	2	31	12
23	15	6	22	7	43	9	7	19	11	3	52	5
24	41	38	13	6	18	11	3	10	10	3	37	3
25	28	16	14	5	38	6	4	11	4	3	154	4
26	15	10	8	8	18	3	17	5	3	8	47	5
27	6	11	6	11	17	12	22	4	4	3	186	6
28	4	25	5	13	23	19	21	9	7	14	15	7
29	4	204	6	5	9	24	10	4	15	19	6	5
30	4	191	12	6	19		14	16	12	8	7	42
31		116		19	10		9		12		7	28
Mean	18	35	28	16	22	13	14	11	8	8	23	9

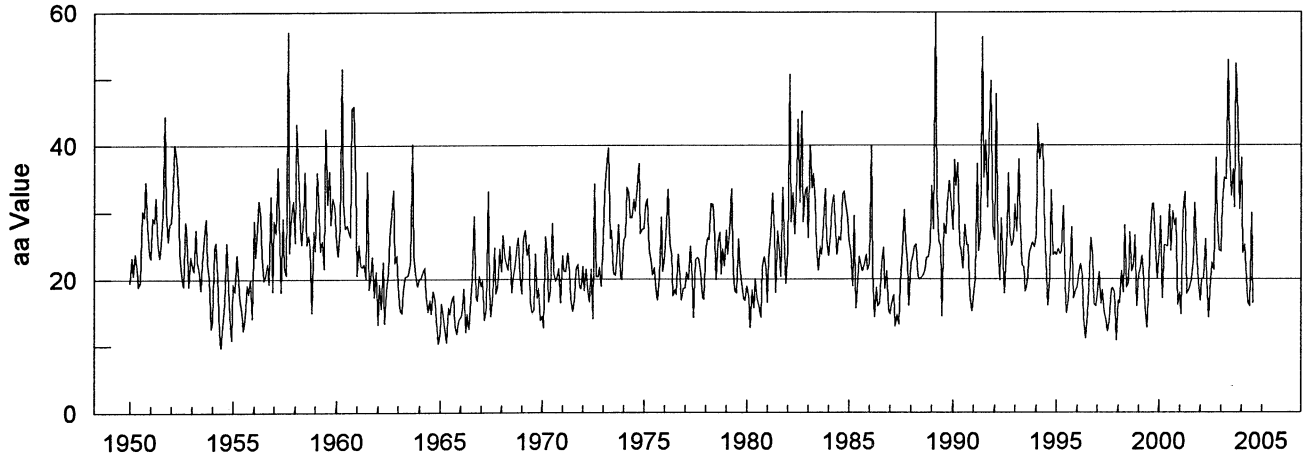
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through August 31, 2004



Monthly Mean aa Index Jan 1950 - Aug 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	15.9	29.9	16.3					23.3

PLANETARY GEOMAGNETIC ACTIVITY

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

ISGI PUBLICATION OFFICE - EMail : ISGI.PUBOFF@cetp.ipsl.fr
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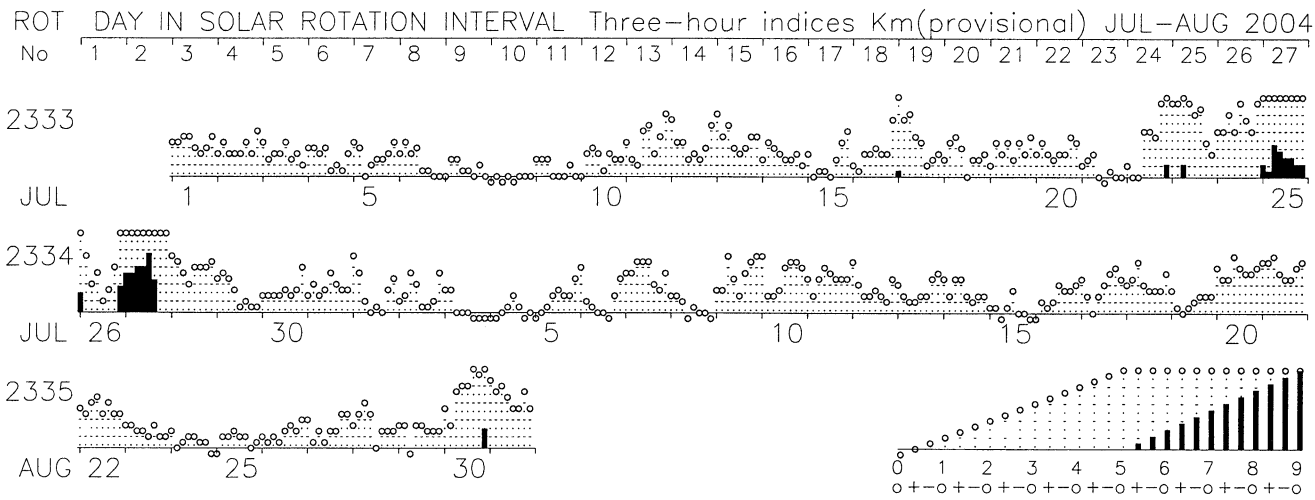
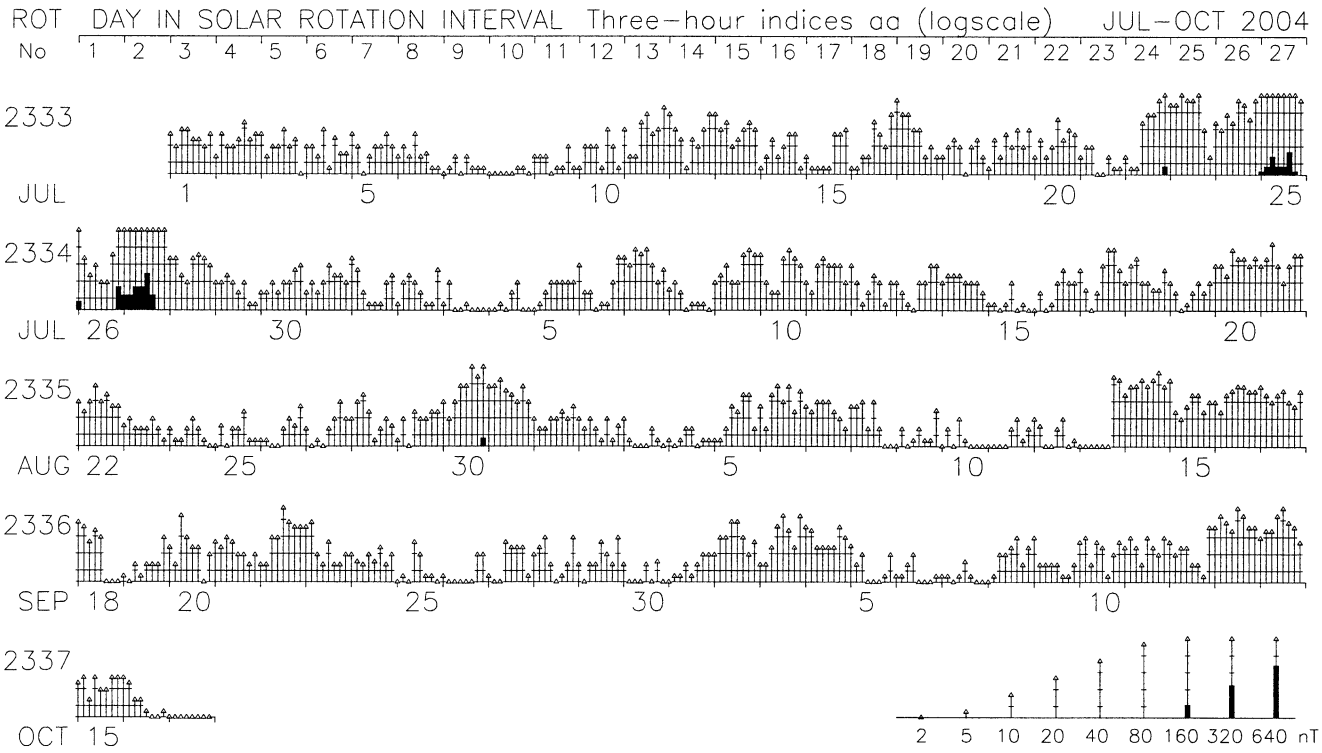


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.



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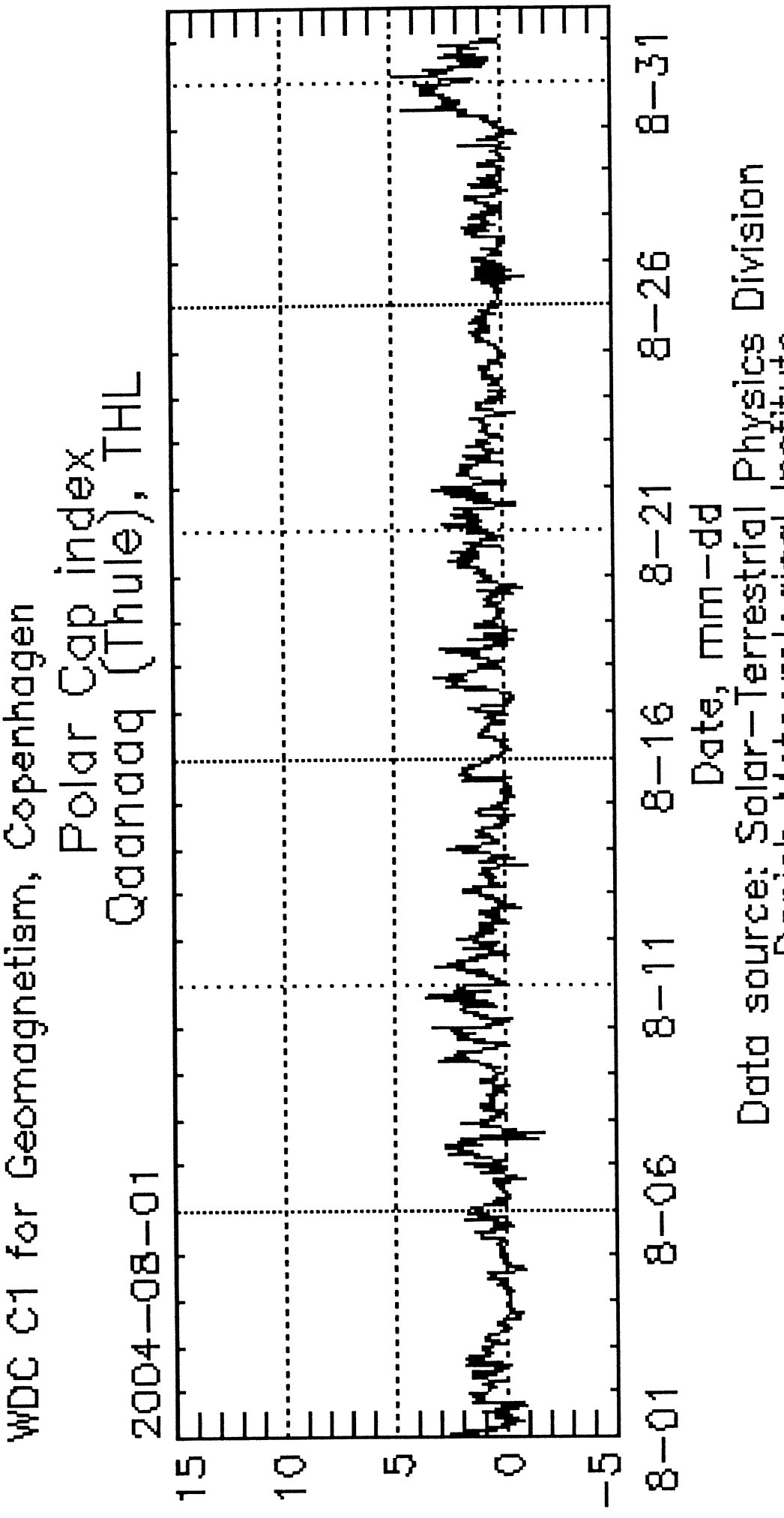
WDC C1 for Geomagnetism, Copenhagen
Polar Cap index
Qaanaaq (Thule), THL
2004-08-01
15
10
5
0
-5
8-01
8-06
8-11
8-16
8-21
8-26
8-31
Date, mm-dd
Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

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

AUGUST 2004

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
JAI	17.4N	07	0030	..	..	..	..		-	5	65	23	07	23
NGP	11.3N	07	0030	..	..	..	..		-	4	68	22	07	23
ABG	09.4N	07	0030	..	..	..	..	07(1,4,5)	4	4	67	35	07	23
PND	02.0N	07	0030	..	..	..	..		-	3	81	49	07	23
TIR	00.6S	07	0030	..	..	..	..		-	4	141	56	07	23
JAI	17.4N	09	0500	..	..	..	..		-	6	47	23	10	23
NGP	11.3N	09	0500	..	..	..	..		-	4	71	17	10	23
ABG	09.4N	09	0500	..	..	..	..	09(7)	5	5	74	36	10	23
PND	02.0N	09	0500	..	..	..	..		-	3	85	41	10	23
TIR	00.6S	09	0500	..	..	..	..		-	3	130	41	10	23
HYB	07.6S	09	0244	SC	- 0.2	5	- 1	09(7)	4	7	74	15	10	23
HYB	07.6S	20	0600	..	..	..	..	20(5)	4	5	81	26	22	24
JAI	17.4N	29	1004	SC	- 0.5	13	- 4		-	11	144	50	31	22
NGP	11.3N	29	1004	SC	- 0.2	12	- 8		-	9	156	42	31	22
ABG	09.4N	29	1004	SC	- 0.3	11	- 4	30(5,6,8)	5	9	154	50	31	22
PND	02.0N	29	1004	SC	- 0.1	11	12		-	5	193	93	31	22
TIR	00.6S	29	1004	SC	- 0.1	9	12		-	5	254	77	31	22
HYB	07.6S	29	1004	SC	- 0.2	9	- 1	30(6)	6	7	162	46	31	22
GNA	43.0S	29	1005	SC	0.9	11.1	3.4	30(8)	6	26	143	177	31	23
CAN	43.6S	29	1005	SC	0.6	13.7	3.5	30(6,7,8)	5	24	139	50	31	23

Stations:

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

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

August 2004

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
29	1005	B: LER* ESK* HAD* GNA CNB	04	1228-1240	NAG
		C: NGK* BDV* CLF GCK HTY* GUI	14	0540-0640	MMB+ KAK+ KNY+
			14	1127-1148	GUI
			14	1340-1357	LER ESK NGK+ HAD BDV+ EBR GUI
			15	1237-1254	LER ESK NGK+ HAD BDV+ EBR GUI
			19	1137-1211	NGK+

REPORTING OBSERVATORIES (up to the 4th of October 2004):
SOD 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.