



Solar-Geophysical Data prompt reports

Data for May and June 2003

Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE,
DATA, AND INFORMATION SERVICE

NATIONAL GEOPHYSICAL
DATA CENTER

BOULDER,
COLORADO



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JULY 2003 NUMBER 707 - Part I

Solar-Geophysical Data prompt reports

Data for May and June 2003

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NATIONAL GEOPHYSICAL DATA CENTER

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Boulder, Colorado

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SOLAR-GEOPHYSICAL DATA

Number 707

(Issued in Two Parts)

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ACE SOLAR WIND, INTERPLANETARY MAGNETIC FIELD AND PARTICLES	
-- MONTHLY PLOTS	

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CODE	KIND OF OBSERVATION	NOV 02	DEC	JAN 03	FEB	MAR	APR	MAY	JUN
A. SOLAR AND INTERPLANETARY									
A.1	Sunspot Drawings	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
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A.2c	American Sunspot Numbers	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25	707A 24
A.3a	Mt. Wilson Magnetograms	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
A.3b	Sunspot Mag Class and Regions	701A 86	702A 90	703A 84	704A 87	705A 77	706A 86	707A 89	
A.3c	Kitt Peak Magnetograms	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
A.3d	Mean Solar Magnetic Field (Stanford)	700A 39	701A 39	702A 39	703A 34	704A 38	705A 36	706A 36	707A 38
A.3e	Stanford Magnetograms	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
A.4	H-alpha Filtergrams	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
A.5d	Photometric Ca II Faculae (San Fernando)	Jan 92-Dec 96 - 631B 22; 1997-1998 in 663B 66							
A.6c	Stanford Solar Mag Field Synoptic Maps	701A 42	702A 44	703A 38	704A 42	705A 40	706A 40	707A 42	
A.6d	Kitt Peak Solar Mag Field Synoptic Map				704A 46	705A 42	706A 45	707A 47	
A.6f	Active Prominences and Filaments	705B 40	706B 33	707B 33					
A.6g	Sac Peak Coronal Line Synoptic Maps	701A 44	702A 46	703A 40	704A 46		706A 42	707A 44	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	707A 48	
A.7j	Coronal Hole Daily Maps (NSO/KP)	701A 78	702A 81	703A 75	704A 80	705A 74	706A 76	707A 79	
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A.7m	Coronal Mass Ejections (CSPSW)								
A.8aa	2800 MHz- Solar Flux (Penticton)	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25	707A 24
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25	707A 24
A.8g	Adjusted Daily Solar Fluxes (Sagamore)	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25	707A 24
A.10g	Nancay Radioheliograph -164&327 MHz	701A124	702A122	703A119	704A109	705A119	706A126	707A117	
A.10h	Nobeyama Radioheliograph -17 GHz	701A 81	702A 84	703A 79	704A 82	705A 77	706A 81	707A 83	
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A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
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C.1d	Flare Patrol Observations	705B 15	706B 13	707B 12					
C.1h	H-alpha Flare Index (ImpxDur)	Jan 76-Dec 85 in 639B 26; Jan 86-Oct 96 in 635B 24; Jan 96-Dec 98 in 665B 63							
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D.1cb	Monthly Mean aa Indices	701A138	702A135	703A132	704A119	705A130	706A140	707A130	
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F.1o	Cosmic Ray Neutron Cts (Moscow)	701A127	702A124	703A121	704A111	705A122	706A129	707A119	
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The entry "701A 48" under Nov 02, for example, means that the sunspot drawings for Nov 02 appear in SOLAR-GEOPHYSICAL DATA No. 701, Part I, and that they begin on page 48. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

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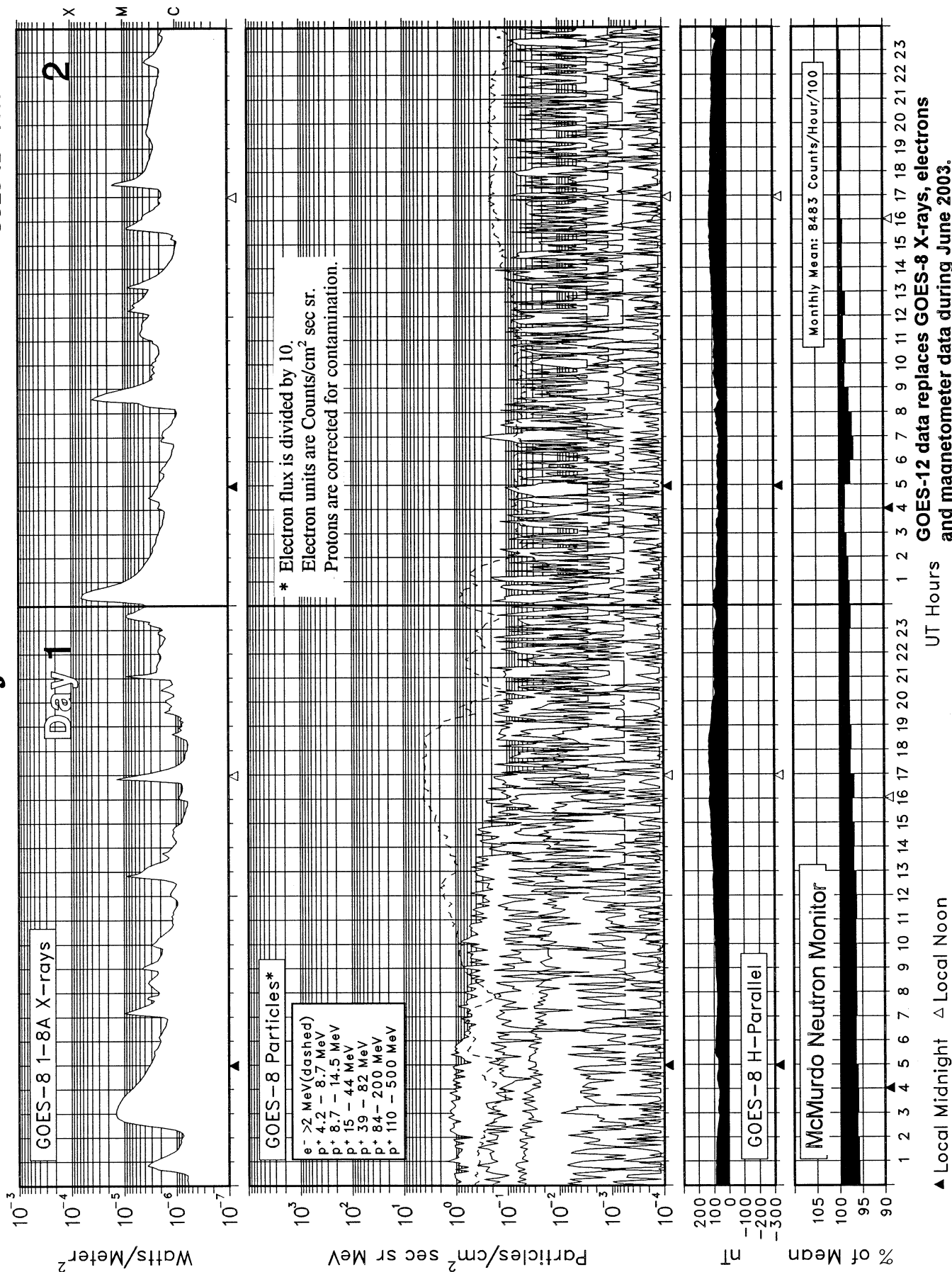
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SOLAR-TERRESTRIAL ENVIRONMENT

June 2003

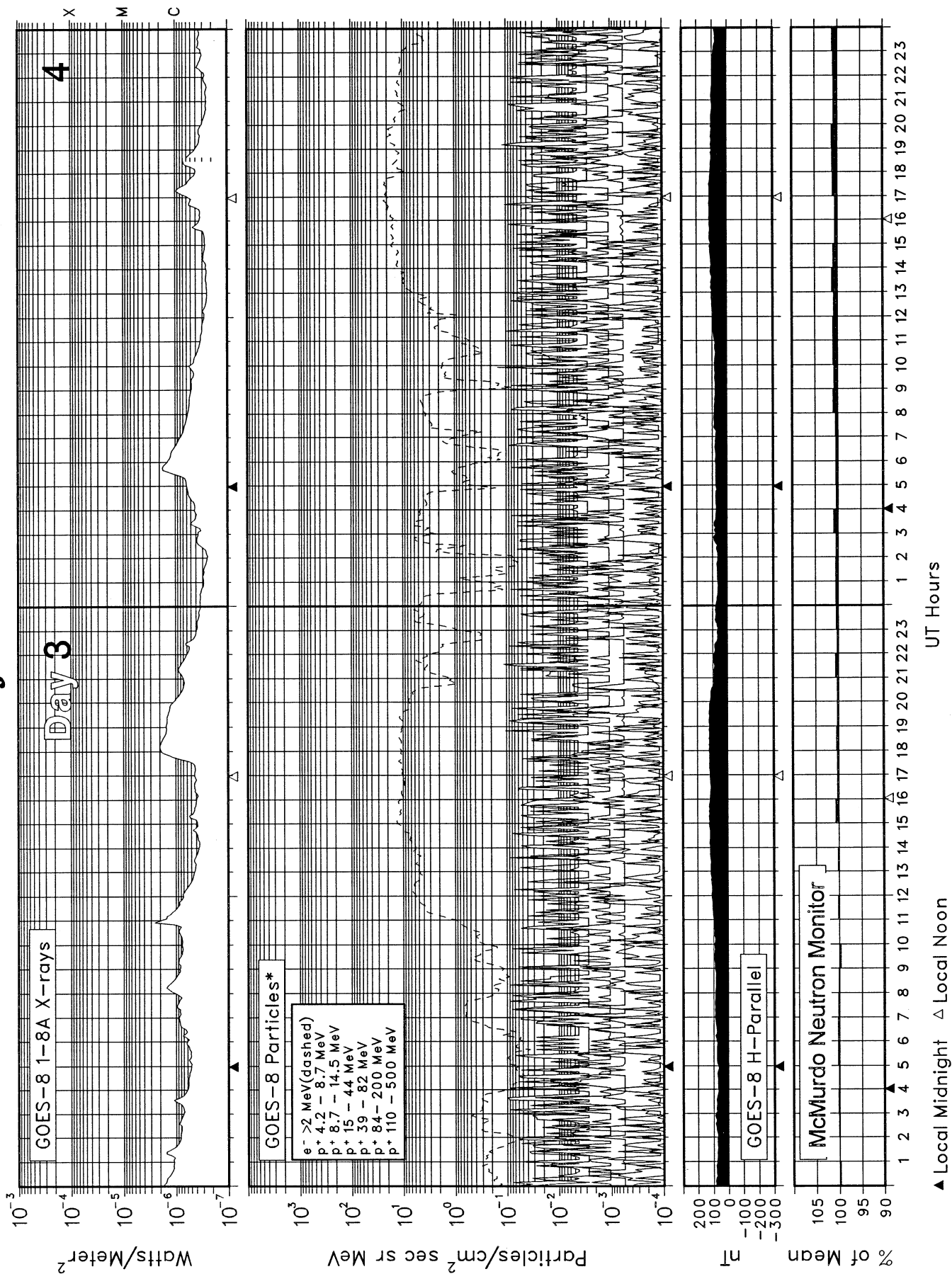
Satellite positions:
GOES-8 - 75W
GOES-11 - 113W
GOES-12 - 75W



SOLAR-TERRESTRIAL ENVIRONMENT

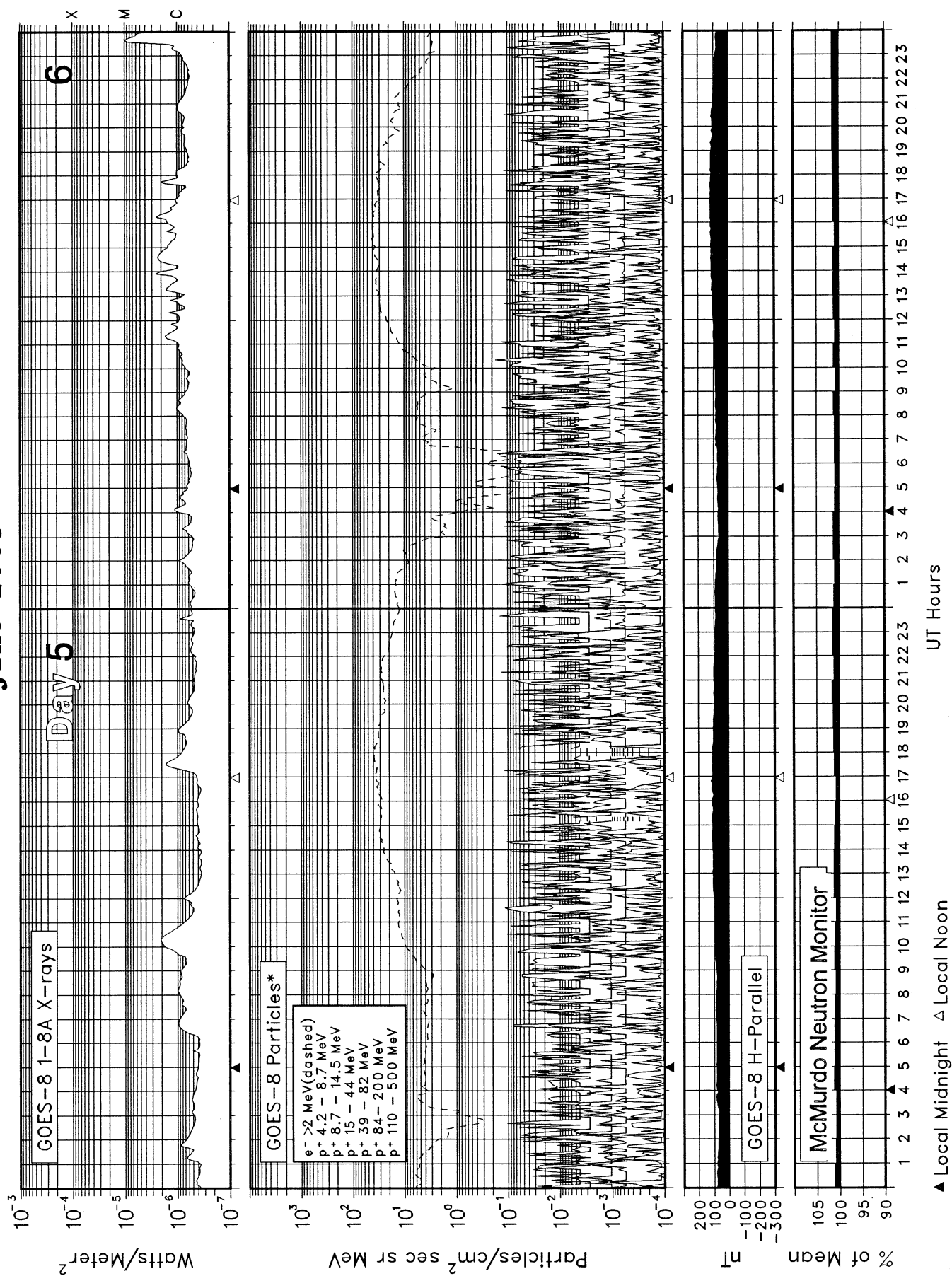
June 2003

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Jun 03



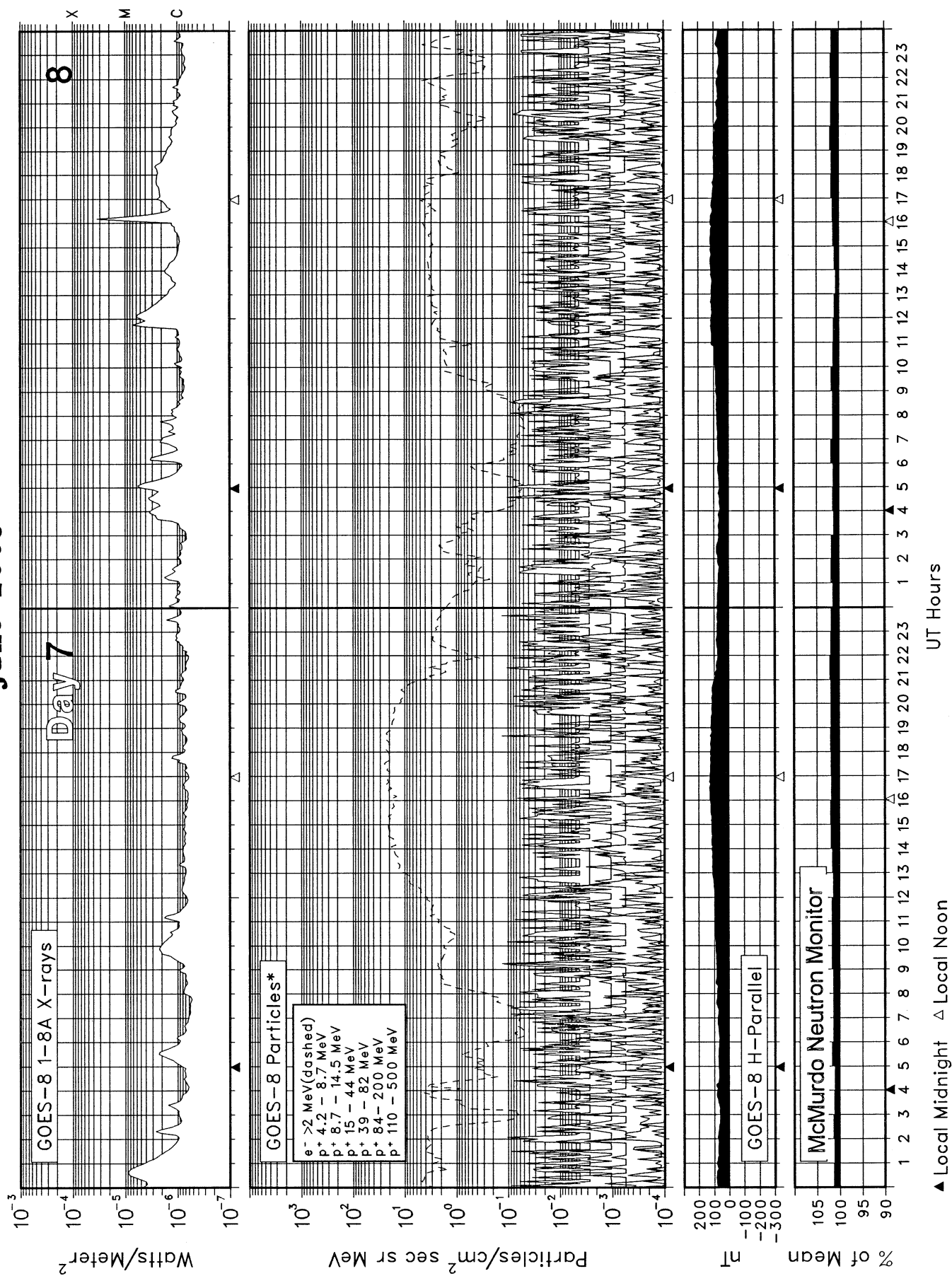
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June 2003



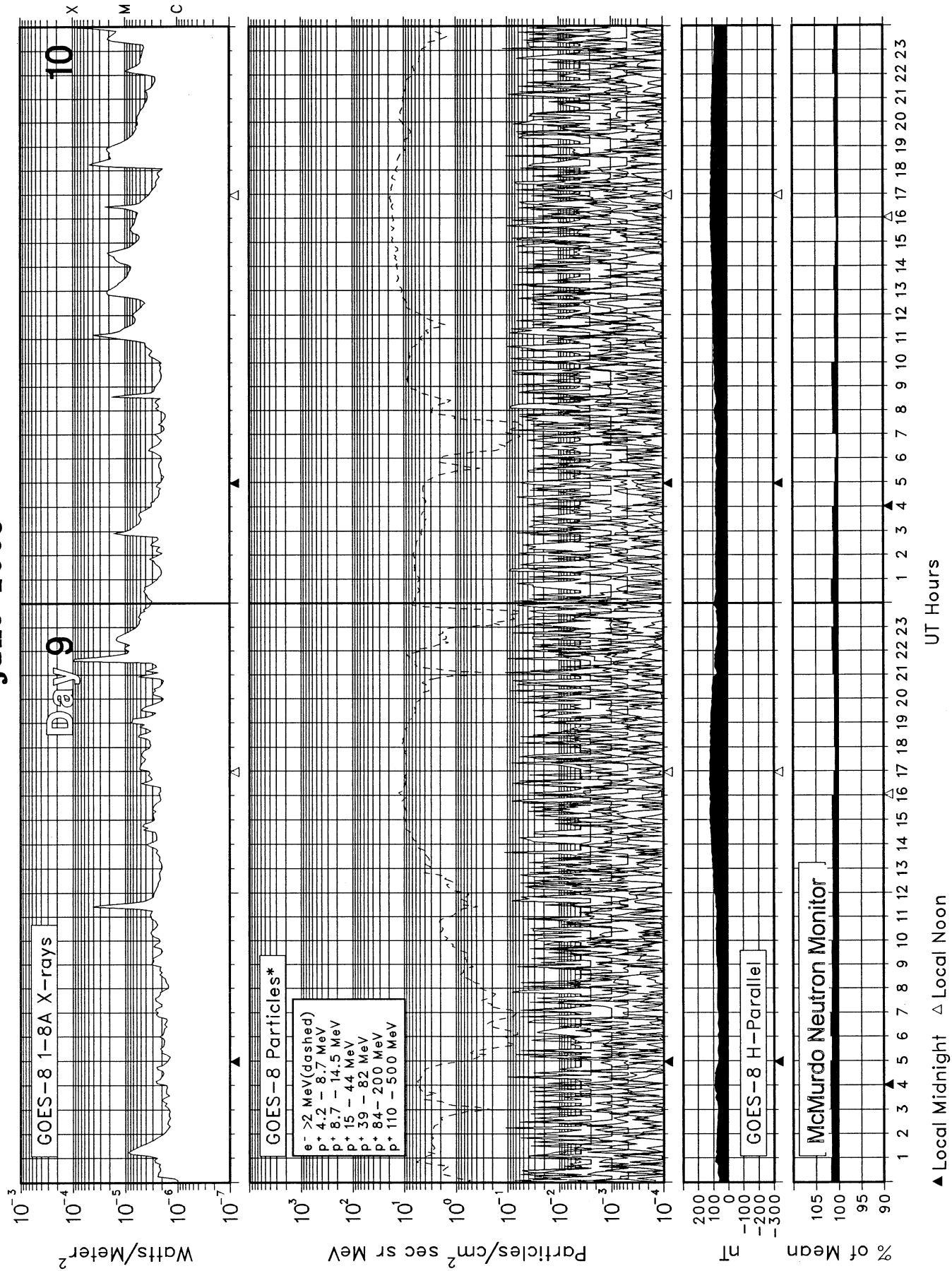
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June 2003



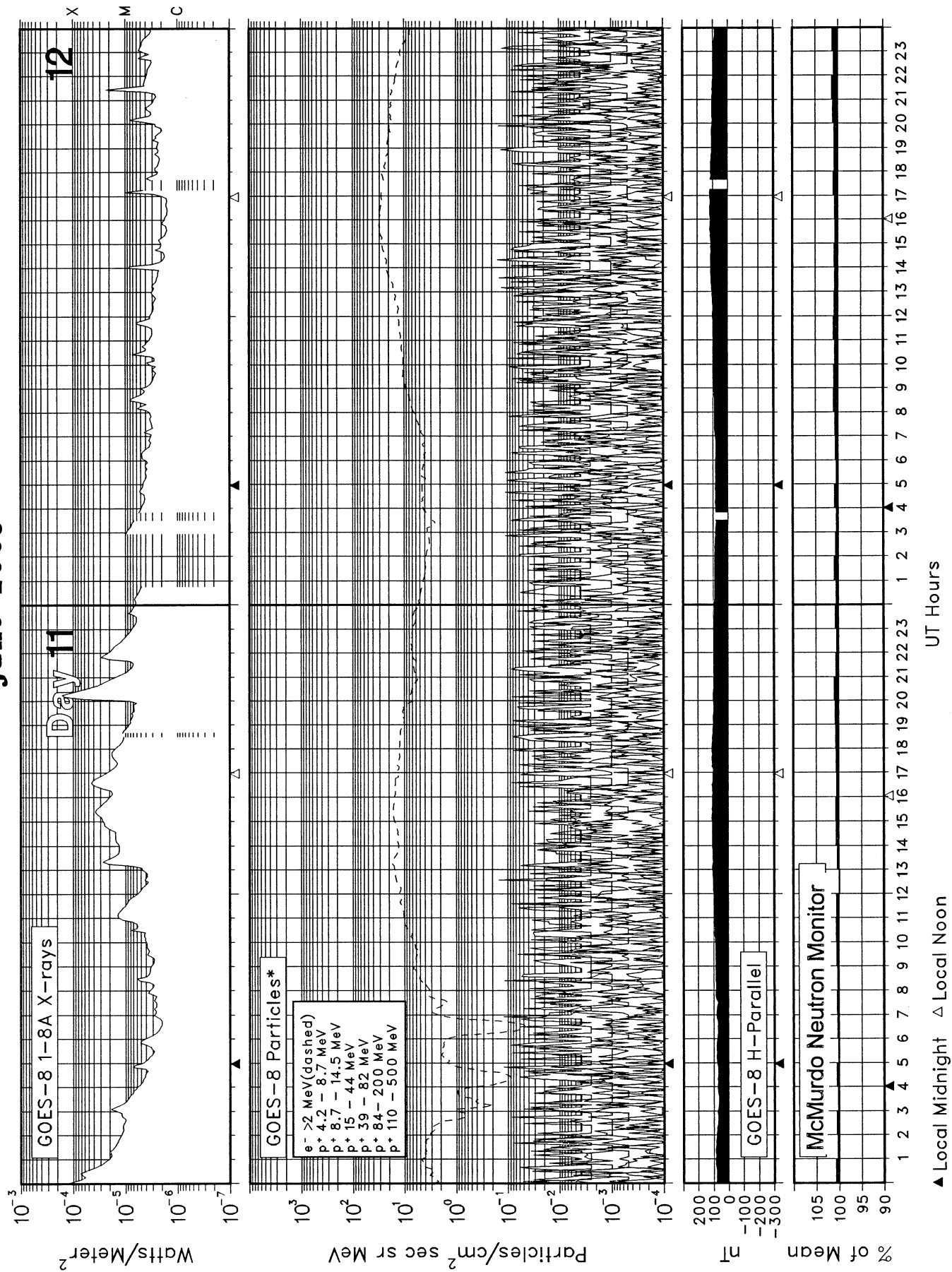
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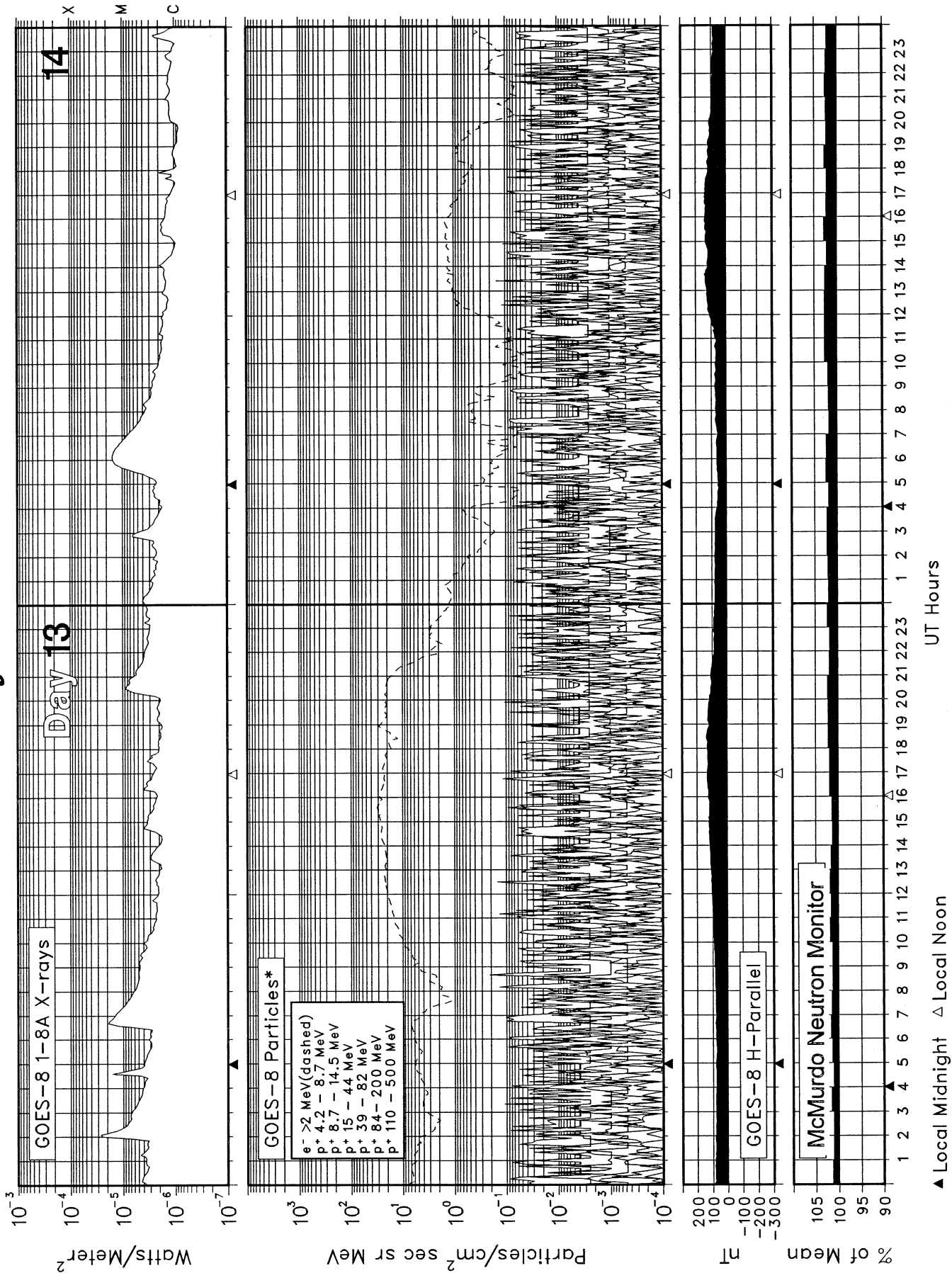
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June 2003



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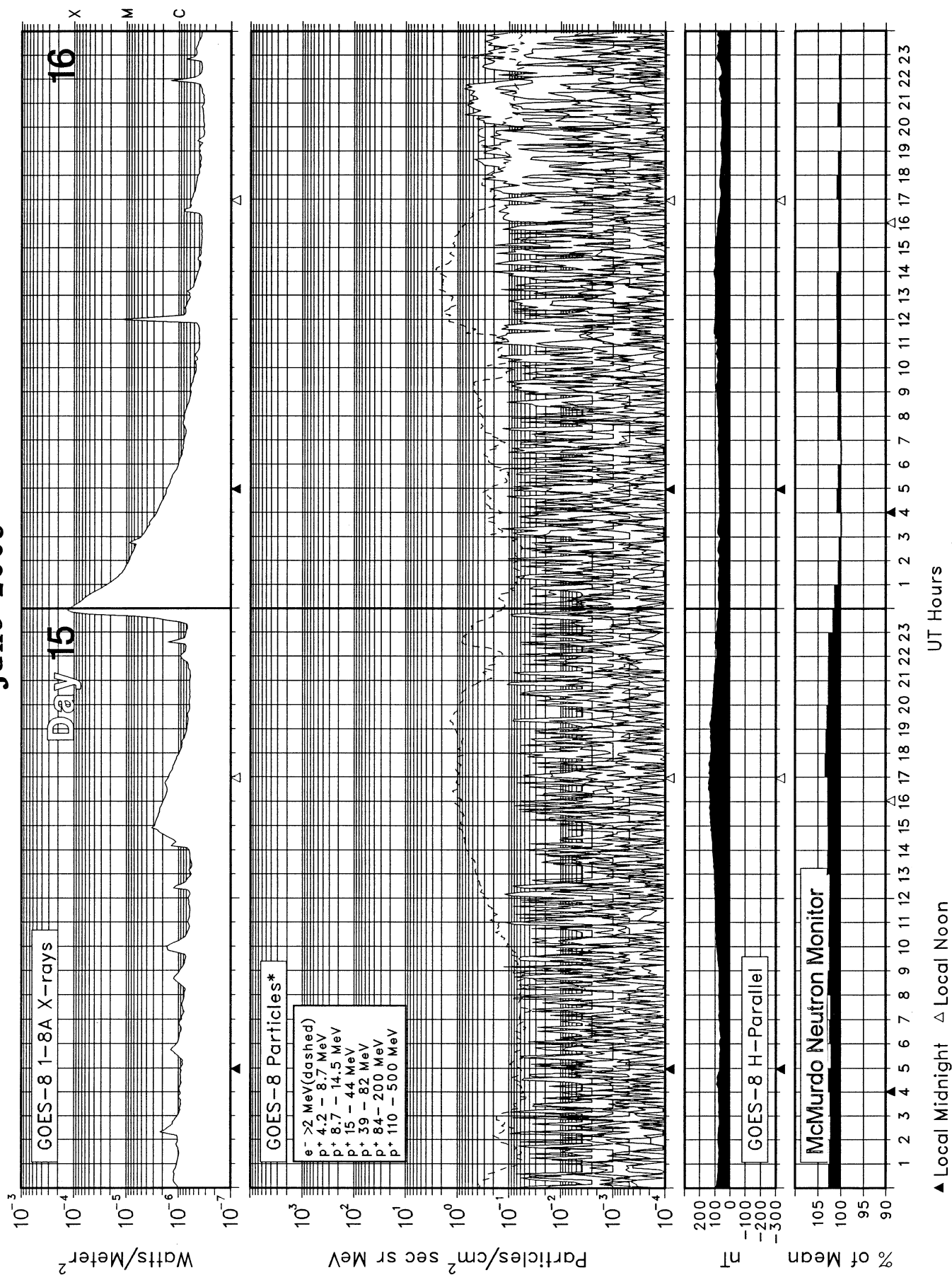
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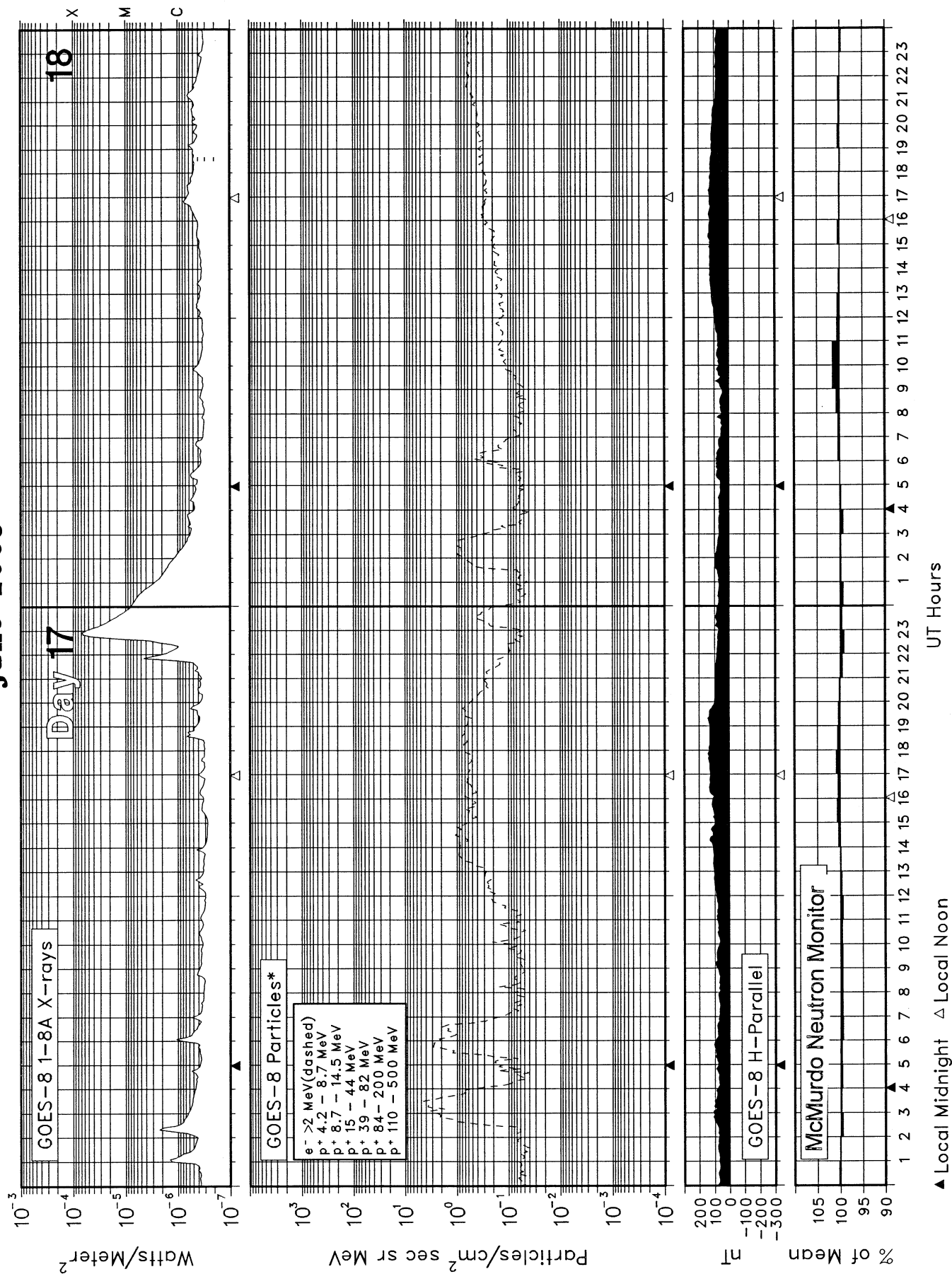
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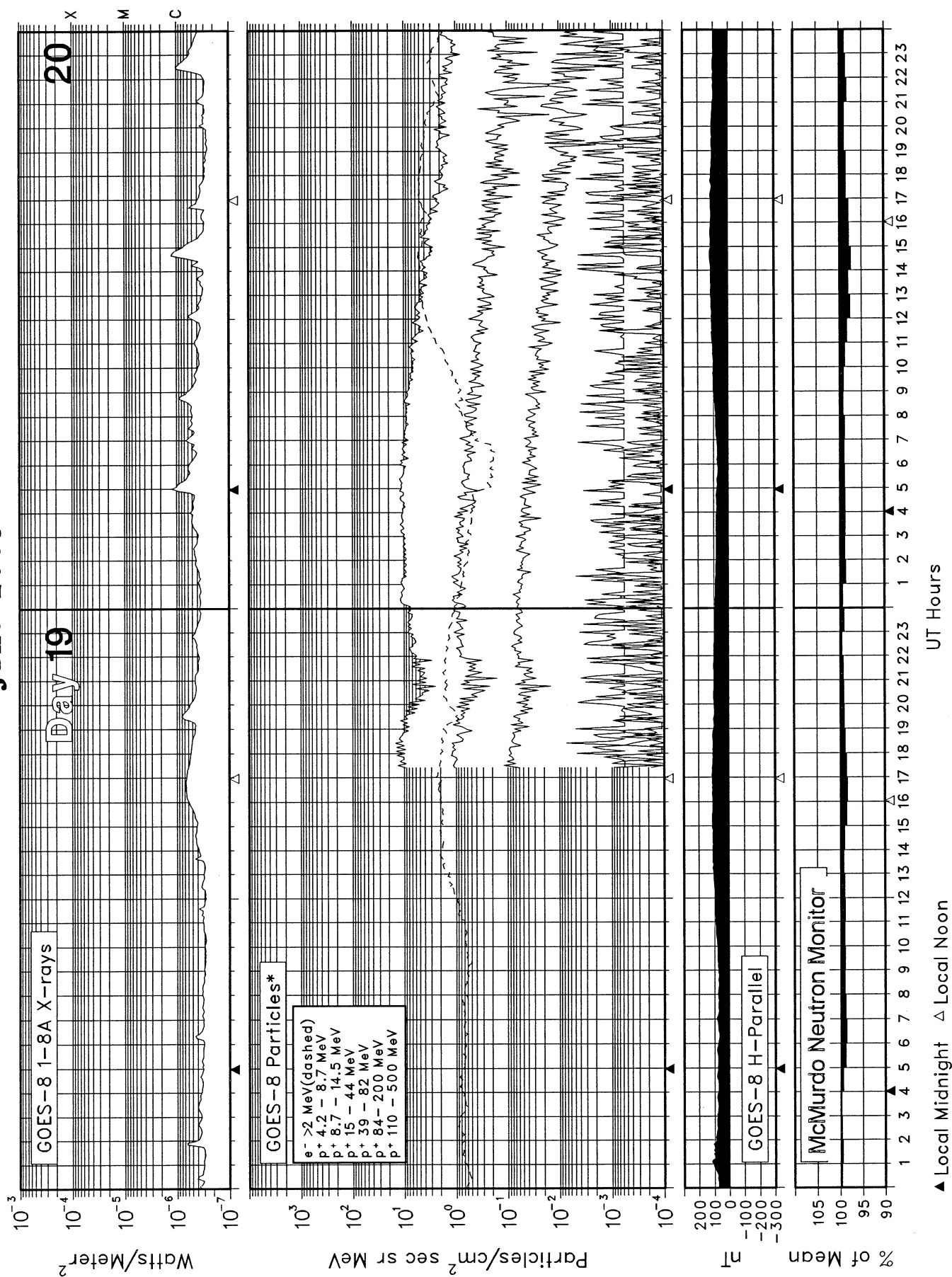
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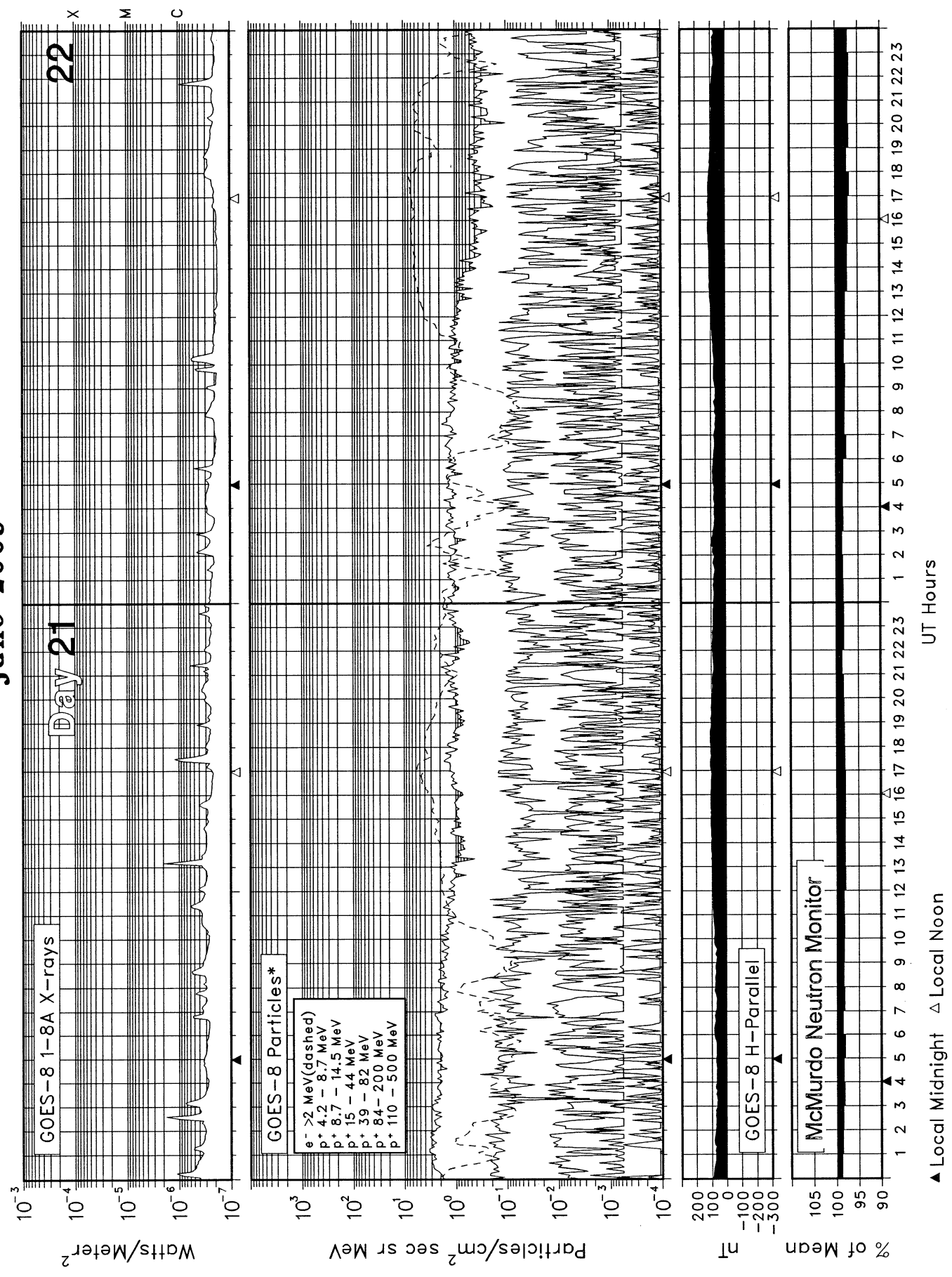
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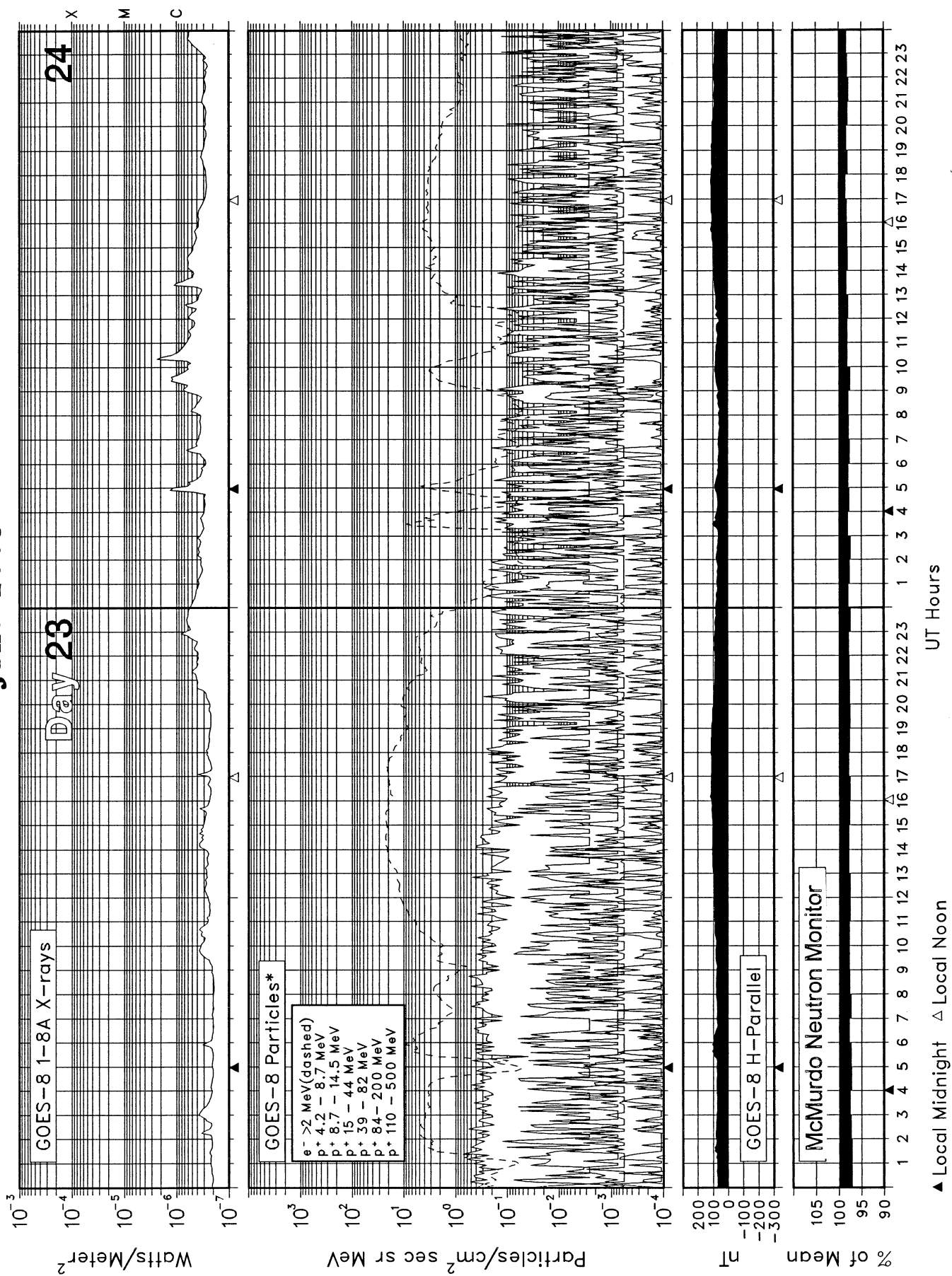
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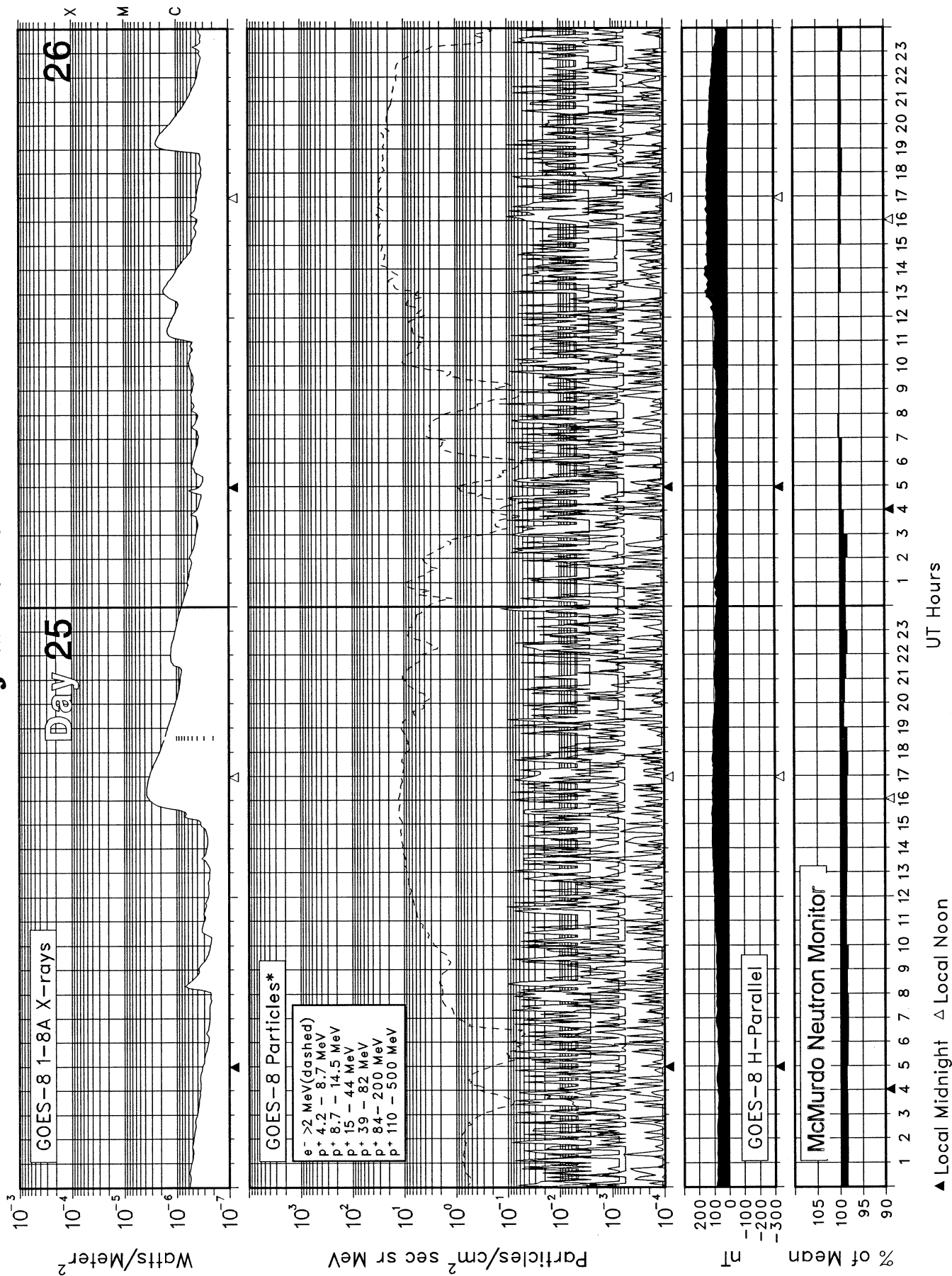
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June 2003



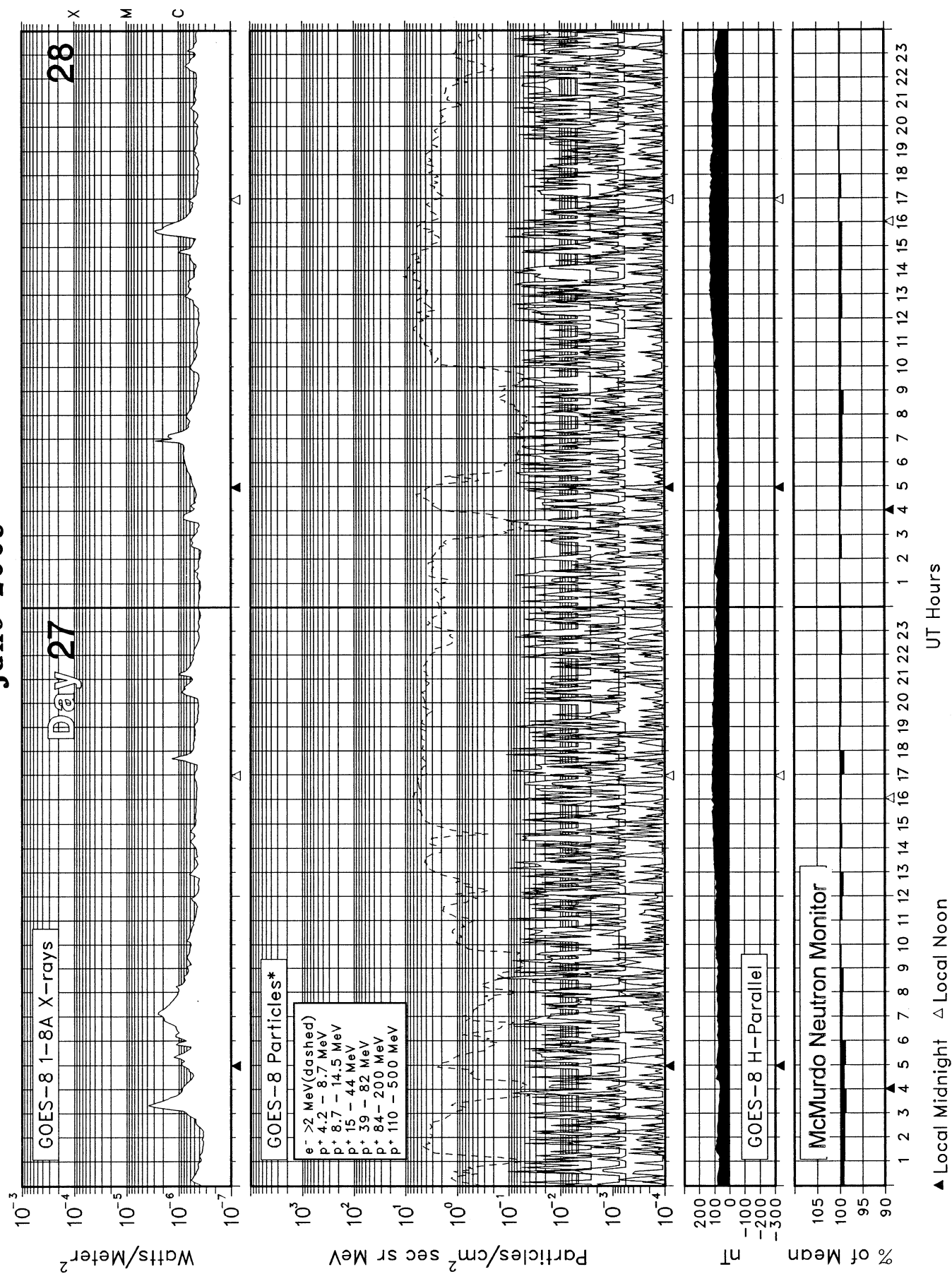
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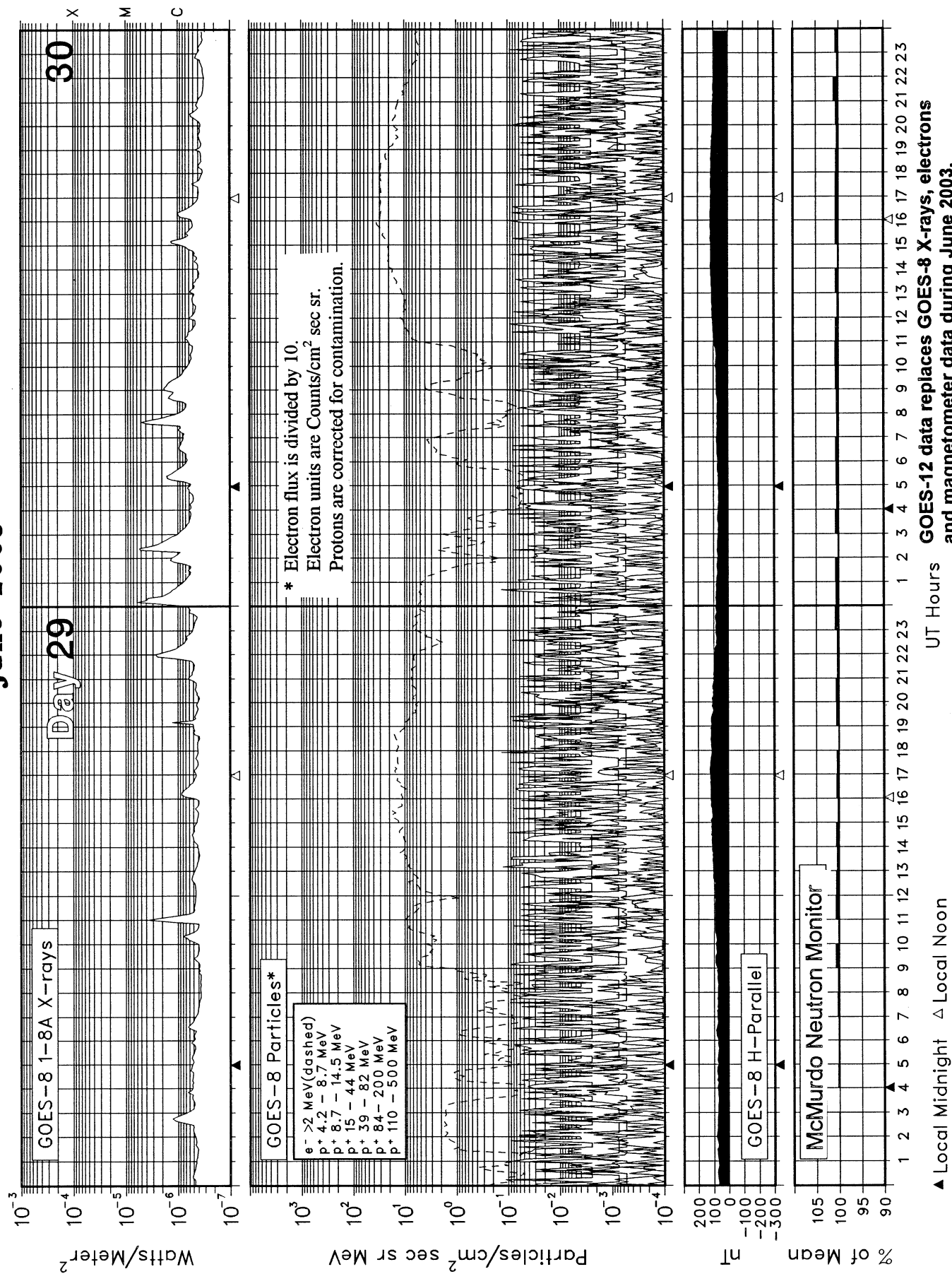
SOLAR-TERRESTRIAL ENVIRONMENT

June 2003



SOLAR-TERRESTRIAL ENVIRONMENT

June 2003



GOES-12 data replaces GOES-8 X-rays, electrons
and magnetometer data during June 2003.
GOES 11 data replaces GOES-8 protons after June 19, 2003.

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

JUNE 2003

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
152	01	31	57	113	20	365	S07	W72	4	1	0	01	A	SOL: Active
						368	S33	W38	0	0	0	01	A	MAG: Active
						373	N08	E28	1	0	0	01	A	PRO: Warning
153	02	01	66	112	18	365	S07	W84	1	1	0	02	A	SOL: Active
						368	S33	W51	1	0	0	02	A	MAG: Active
						373	N07	E15	0	0	0	02	A	PRO: Warning
						375	N11	E74	1	3	0	02	A	
154	03	02	61	121	26	368	S32	W63	0	0	0	03	A	SOL: Active
						373	N06	E00	1	0	0	03	A	MAG: Active
						375	N12	E64	14	1	0	03	A	PRO: Quiet
						376	S12	E13	0	0	0	03	A	
155	04	03	54	115	26	373	N07	W14	0	0	0	04	Q	SOL: Active
						375	N12	E50	3	0	0	04	E	MAG: Active
						376	S11	E00	0	0	0	04	Q	PRO: Quiet
156	05	04	74	106	19	373	N07	W28	0	0	0	05	Q	SOL: Eruptive
						375	N11	E39	0	0	0	05	E	MAG: Active
						376	S11	W14	0	0	0	05	Q	PRO: Quiet
						377	N04	E71	0	0	0	05	Q	
157	06	05	95	114	11	373	N07	W40	0	0	0	06	Q	SOL: Eruptive
						375	N12	E24	2	0	0	06	E	MAG: Active
						376	S11	W30	0	0	0	06	Q	PRO: Quiet
						377	N05	E57	0	0	0	06	E	
						378	N16	E69	0	0	0	06	Q	
158	07	06	98	126	12	373	N07	W52	0	0	0	07	Q	SOL: Eruptive
						375	N12	E09	6	1	0	07	E	MAG: Active
						376	S11	W44	0	0	0	07	Q	PRO: Quiet
						377	N04	E43	0	0	0	07	Q	
						378	N16	E57	1	0	0	07	Q	
						379	S19	W68	0	0	0	07	Q	
159	08	07	125	133	22	373	N08	W65	0	0	0	08	Q	SOL: Eruptive
						375	N12	W04	4	0	0	08	E	MAG: Active
						376	S14	W43	0	0	0	08	Q	PRO: Quiet
						377	N04	E29	0	0	0	08	Q	
						378	N17	E44	0	0	0	08	Q	
						380	S16	E68	0	0	0	08	Q	
160	09	08	167	153	22	373	N07	W78	0	0	0	09	Q	SOL: Eruptive
						375	N13	W18	8	0	0	09	E	MAG: Active
						376	S14	W57	0	0	0	09	Q	PRO: Quiet
						377	N04	E14	0	0	0	09	E	
						378	N16	E28	0	0	0	09	Q	
						380	S15	E56	11	1	0	09	E	
161	10	09	176	158	27	373	N04	W92	0	0	0	10	Q	SOL: Eruptive
						375	N12	W32	12	2	1	10	E	MAG: Active
						377	N04	E00	0	0	0	10	E	PRO: Quiet
						378	N16	E14	0	0	0	10	Q	
						380	S14	E41	4	0	0	10	E	
						381	S18	E19	0	0	0	10	Q	
162	11	10	207	177	29	375	N12	W46	17	8	1	11	A	SOL: Active
						377	N04	W14	0	0	0	11	A	MAG: Active
						378	N15	E00	0	0	0	11	A	PRO: Quiet
						380	S15	E29	3	0	0	11	A	
						381	S18	E07	1	0	0	11	A	
						382	S18	W16	0	0	0	11	A	
163	12	11	178	193	22	375	N12	W62	17	7	1	12	A	SOL: Active
						377	N03	W28	1	0	0	12	A	MAG: Active
						380	S15	E15	1	1	0	12	A	PRO: Quiet

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Jun 03

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

JUNE 2003

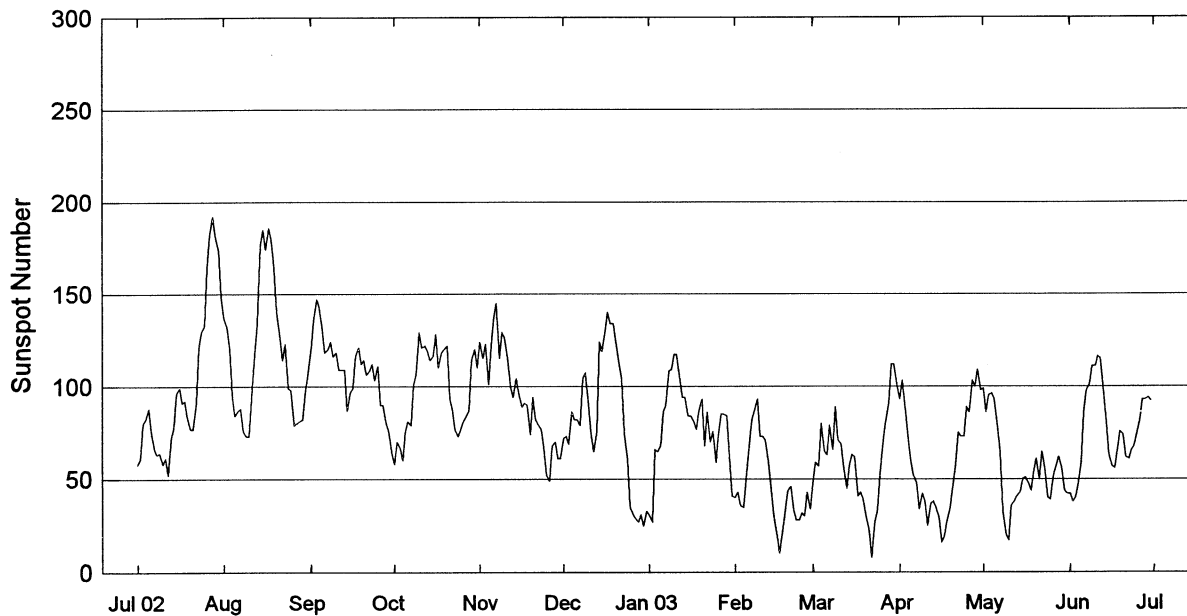
Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						381	S19	W06	1	0	0	12	A	
						382	S17	W30	0	0	0	12	A	
						383	N19	E22	0	0	0	12	A	
164	13	12	168	164	21	375	N11	W73	22	4	0	13	A	SOL: Major
						377	N03	W41	0	0	0	13	A	MAG: Active
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						382	S18	W45	0	0	0	13	A	
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						382	S18	W60	0	0	0	14	A	
						384	N15	W56	1	0	0	14	A	
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						382	S17	W76	0	0	0	15	Q	
						384	N15	W70	0	0	0	15	Q	
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						380	S17	W36	0	0	0	16	Q	PRO: Quiet
						381	S18	W61	0	0	0	16	Q	
						382	S17	W84	0	0	0	16	Q	
						384	N15	W82	0	0	0	16	Q	
						385	N30	E30	0	0	0	16	Q	
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						383	N20	W56	0	0	0	18	Q	MAG: Active
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170	19	18	99	120	45	380	S15	W77	0	0	0	19	Q	SOL: Active
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						385	N28	W09	0	0	0	19	Q	PRO: IP
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						387	N18	E62	5	0	0	19	E	
171	20	19	108	123	20	380	S15	W90	0	0	0	20	Q	SOL: Active
						385	N28	W22	0	0	0	20	Q	MAG: Active
						386	S07	E30	0	0	0	20	E	PRO: Quiet
						387	N18	E49	0	0	0	20	Q	
						388	S03	E08	0	0	0	20	Q	
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						386	S07	E17	1	0	0	21	E	MAG: Active
						387	N18	E36	0	0	0	21	E	PRO: Quiet
						388	S03	W06	1	0	0	21	Q	
						389	S12	E14	0	0	0	21	Q	
173	22	21	118	115	26	385	N28	W49	0	0	0	22	Q	SOL: Active
						386	S07	E04	1	0	0	22	E	MAG: Active
						387	N18	E23	0	0	0	22	Q	PRO: Quiet
						388	S03	W19	2	0	0	22	E	
						389	S12	E01	0	0	0	22	Q	

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

JUNE 2003

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
174	23	22	94	110	15	386	S06	W08	0	0	0	23	E	SOL: Eruptive
						387	N18	E10	0	0	0	23	Q	MAG: Quiet
						388	S02	W32	2	0	0	23	Q	PRO: Quiet
						390	N15	E76	0	0	0	23	Q	
175	24	23	104	114	22	386	S07	W22	1	0	0	24	Q	SOL: Eruptive
						387	N17	W03	0	0	0	24	Q	MAG: Active
						388	S01	W47	1	0	0	24	Q	PRO: Quiet
						390	N13	E64	0	0	0	24	Q	
						391	N15	E03	0	0	0	24	Q	
176	25	24	131	115	29	386	S06	W35	0	0	0	25	Q	SOL: Eruptive
						387	N19	W16	0	0	0	25	Q	MAG: Active
						388	S02	W57	0	0	0	25	Q	PRO: Quiet
						390	N13	E51	0	0	0	25	Q	
						391	N14	W09	7	0	0	25	Q	
						392	N07	E69	0	0	0	25	Q	
						393	S15	E72	0	0	0	25	Q	
177	26	25	115	116	18	386	S05	W48	0	0	0	26	Q	SOL: Eruptive
						387	N18	W29	0	0	0	26	Q	MAG: Active
						388	N02	W79	0	0	0	26	Q	PRO: Quiet
						390	N13	E37	0	0	0	26	Q	
						391	N14	W23	0	0	0	26	Q	
						392	N05	E57	0	0	0	26	Q	
						393	S18	E57	1	0	0	26	Q	
178	27	26	122	119	18	386	S06	W62	0	0	0	27	Q	SOL: Eruptive
						387	N19	W42	0	0	0	27	Q	MAG: Active
						390	N14	E23	0	0	0	27	Q	PRO: Quiet
						391	N14	W38	0	0	0	27	Q	
						392	N06	E43	0	0	0	27	Q	
						393	S18	E43	0	0	0	27	Q	
						394	N08	E22	0	0	0	27	Q	
						395	N10	E62	0	0	0	27	Q	
179	28	27	128	124	34	387	N18	W55	0	0	0	28	Q	SOL: Eruptive
						390	N14	E10	0	0	0	28	Q	MAG: Minor
						391	N14	W51	0	0	0	28	Q	PRO: Quiet
						392	N06	E30	0	0	0	28	Q	
						393	S17	E28	0	0	0	28	Q	
						394	N10	E09	0	0	0	28	Q	
						395	N10	E49	0	0	0	28	Q	
						396	S04	W12	0	0	0	28	Q	
						397	N09	E72	0	0	0	28	E	
180	29	28	151	124	33	387	N19	W70	0	0	0	29	Q	SOL: Eruptive
						390	N16	W03	0	0	0	29	Q	MAG: Minor
						391	N14	W64	0	0	0	29	Q	PRO: Quiet
						392	N10	E17	0	0	0	29	Q	
						393	S16	E13	0	0	0	29	Q	
						394	N10	W06	0	0	0	29	Q	
						395	N11	E36	0	0	0	29	Q	
						396	S04	W26	0	0	0	29	Q	
181	30	29	112	127	25	387	N16	W83	0	0	0	30	Q	SOL: Eruptive
						390	N16	W16	0	0	0	30	Q	MAG: Active
						392	N06	E04	0	0	0	30	Q	PRO: Quiet
						394	N10	W19	0	0	0	30	Q	
						395	N11	E23	0	0	0	30	Q	
						396	S04	W38	3	0	0	30	E	
						397	N12	E53	0	0	0	30	E	

International Relative Sunspot Numbers Jul 2002 - Jun 2003



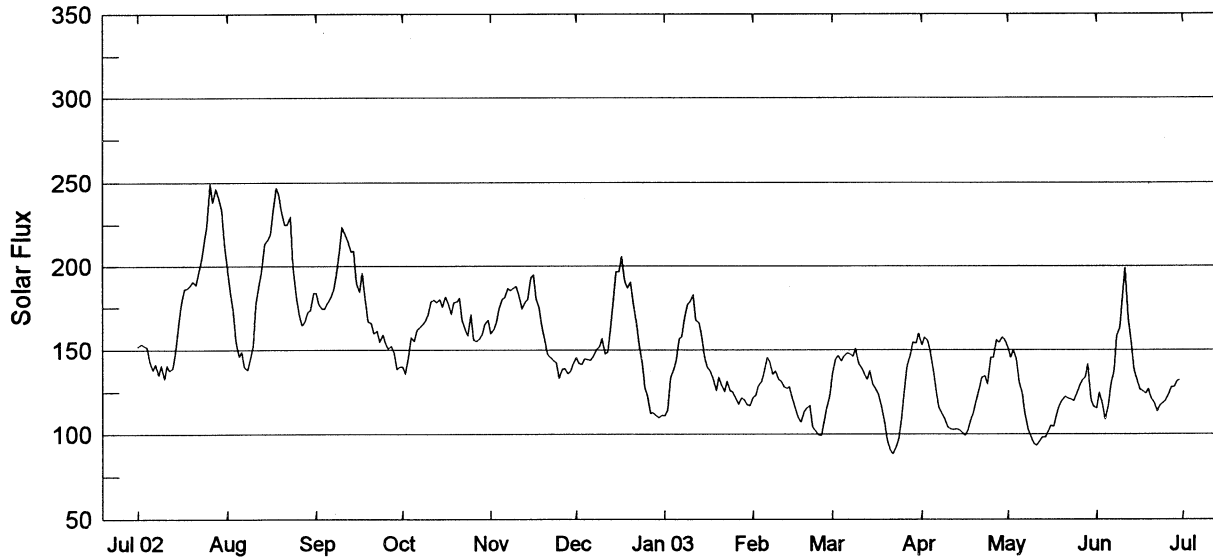
Day	Jul 02	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr*	May*	Jun*
1	58	137	120	58	124	72	31	40	48	93	99	42
2	61	132	136	70	115	66	27	43	59	103	86	38
3	80	121	147	67	123	64	66	36	57	90	95	40
4	82	95	144	60	107	80	65	35	80	72	96	47
5	88	84	132	76	122	82	68	50	65	60	93	59
6	75	87	118	81	137	82	86	68	63	52	78	86
7	66	88	120	79	145	79	90	82	79	48	65	98
8	63	76	124	101	115	98	108	87	66	34	33	101
9	64	73	116	106	129	107	109	93	89	42	20	111
10	58	73	118	129	126	94	117	73	71	38	17	111
11	61	99	109	121	114	74	117	73	69	25	36	116
12	52	117	109	122	100	65	104	71	56	37	38	115
13	72	134	109	119	94	75	94	59	45	38	41	96
14	78	177	87	114	104	124	94	45	58	35	43	81
15	96	185	97	116	102	119	84	31	63	29	50	63
16	99	174	99	128	89	129	84	20	62	16	51	57
17	91	186	116	110	91	140	81	10	41	19	48	56
18	92	179	121	118	83	134	77	20	43	27	44	68
19	83	164	112	120	74	134	87	33	39	34	54	76
20	77	140	114	122	94	124	93	44	29	45	61	74
21	77	127	106	93	82	112	68	46	23	58	50	62
22	91	114	108	88	79	104	86	34	8	75	65	61
23	121	123	112	77	77	75	70	28	27	73	57	66
24	129	99	103	73	67	57	76	28	33	73	40	68
25	133	98	111	77	56	35	59	32	52	89	39	76
26	164	79	90	81	49	32	72	30	70	86	52	82
27	182	80	90	84	68	29	85	43	81	103	57	93
28	192	81	80	87	70	27	85	34	91	100	62	93
29	181	82	76	114	61	31	84		112	109	56	94
30	174	97	64	120	61	29	62		112	98	44	92
31	148	106		110		33	41		102		42	
Mean	99.6	116.4	109.6	97.5	95.5	80.8	79.7	46.0	61.1	60.0	55.2	77.4

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux Jul 2002 - Jun 2003

23
Jun 03

Adjusted to 1 AU



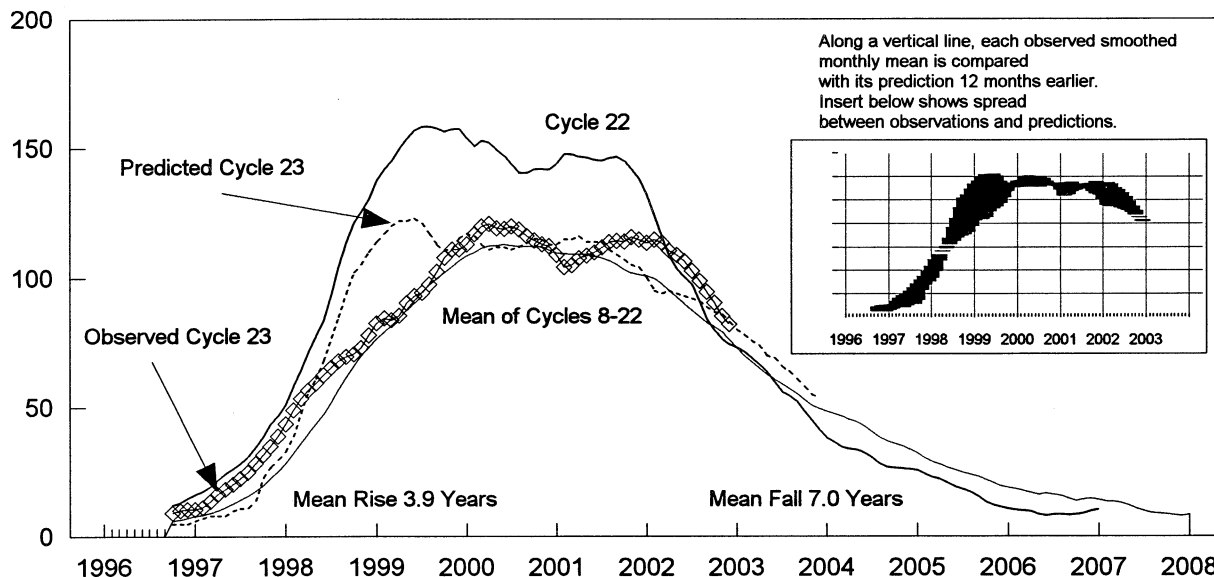
Day	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May	Jun
1	152.3	198.3	183.8	140.1	159.7	145.5	111.2	122.1	135.6	152.8	151.0	115.5
2	153.5	185.7	176.9	136.0	162.1	142.0	114.4	123.0	144.7	157.3	145.3#	124.8
3	152.4#	172.7	174.4	146.1	166.5	141.8	133.1	128.7	146.5	155.7	150.1	117.8
4	151.3	155.3	174.2	157.6	174.4	144.5	138.2	131.0	143.6	148.8#	144.4	108.7
5	143.5	146.0	178.1	155.1	180.0	144.4	143.2	136.2	146.2	137.5	131.1	117.0
6	138.0	148.8	180.9	161.6	181.2	143.9	156.8	145.4	147.9	126.1	124.1	129.4
7	141.5	140.1	185.6	163.5	186.4	146.6	157.8	143.3	147.6	115.9	112.2	137.2
8	135.3	138.3	194.4	165.1	185.5	149.8	168.0	135.4	146.2	112.6	102.8	158.0
9	140.9	144.0	209.0	166.8	187.0	151.6	176.9	137.6	150.6	109.7	98.9	163.1
10	133.1	152.4	223.5	171.4	187.7	156.5	178.7	132.6	141.7	104.1	94.5	182.0
11	141.0	176.9	219.0	178.7	181.0	147.7	182.6	131.4	139.7	103.0	93.4	198.9
12	137.7	188.8	215.1	179.7	174.6	148.4	167.7	128.2	136.2	102.6	95.8	168.6
13	139.4	196.8	208.6	178.3	178.6	161.8	166.2	127.3	132.5	103.0	98.1	155.8
14	148.6	213.5	209.2	180.2	180.2	180.1	158.6	128.1	137.3	102.6	98.3	137.7
15	164.8#	215.7	189.9	175.7	193.2	196.6	145.0	120.6	129.3	101.1	101.4	132.8
16	177.2	219.1	184.5	181.4	194.8	196.5	139.9	115.7	127.2	99.2	104.9	126.5
17	185.9	232.3	195.9	177.7	180.5	205.8	137.1	109.4	123.1#	101.8	104.7	125.8
18	186.6	246.9	178.4	171.3	174.8	190.6	133.0	107.4	117.3	108.7	111.5	124.3
19	188.3	242.6	166.7	178.1	164.3	186.7	126.1	113.6	107.2	113.1	117.4	126.8
20	190.7	232.8	165.8	178.7	155.3	190.3	133.7	115.7	96.6	119.7	120.0	120.8
21	188.7	225.0	159.8	180.8	147.2	177.9	129.4	117.0	90.3	127.0	122.2	118.8
22	195.8	225.1	161.1	167.7	145.5	166.4	125.4	104.3	88.3	133.8	121.3	113.9
23	204.6	229.5	154.8	161.9	143.8	153.7	131.6	101.8	92.4	134.3	120.9	117.2
24	215.0	199.8	158.9	158.5	142.5	142.5	125.8	99.9	97.3	129.8	119.8	118.3
25	224.5	182.4	154.2	170.9	133.2	127.6	124.9	99.5	108.2	145.3	124.3	120.2
26	249.1	172.2	150.6	156.1	138.5	123.2	121.2	107.2	126.6	145.5	128.4	122.9
27	238.0	164.7	152.2	155.2	138.8	112.7	117.7	115.4	140.5	156.1	132.3	128.1
28	246.2	166.4	149.1	156.3	136.0	113.1	121.8	122.6	146.4	154.3	133.7	128.1
29	241.1	172.6	138.6	159.4	137.5	111.0	120.7		154.6	157.4	141.6	131.6
30	234.1	173.5#	140.1	165.3	142.1	110.1	117.6		154.2	155.8	120.4	132.5
31	214.8	183.7		167.7		111.3	116.9		159.8		116.3	
Mean	179.2	188.4	177.8	165.9	165.1	152.3	139.4	121.4	130.8	127.2	118.7	133.4

NOTE: # 1700 or 1800UT reading - burst in progress (IP) at 2000UT.

DAILY SOLAR INDICES
June 2003

Day	Day of Year	Bartels Cycle	Sunspot Numbers		Obs Flux		——Solar Flux Adjusted to 1 Astronomical Unit——							
			Int	Amer	Penticton (2800)	SGMR (15400)	SGMR (8800)	SGMR (4995)	Penticton (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	152	12	42	40	112.3	383	204	151	115.5	114	67	38	29	17
2	153	13	38	40	121.4	569	264	167	124.8	110	72	43	31	17
3	154	14	40	42	114.5	611	245	157	117.8	102	70	42	31	19
4	155	15	47	52	105.6	557	260	157	108.7	100	70	42	31	15
5	156	16	59	62	113.6	527	247	155	117.0	107	70	41	29	13
6	157	17	86	88	125.6	568	258	176	129.4	119	80	41	30	29
7	158	18	98	103	133.2	517	270	190	137.2	129	77	45	38	29
8	159	19	101	100	153.4	566	307	220	158.0	149	85	45	45	--
9	160	20	111	112	158.3	612	350	257	163.1	168	93	54	42	22
10	161	21	111	110	176.5	609	338	249	182.0	165	100	51	40	33
11	162	22	116	121	192.9	629	371	286	198.9	189	112	56	53	40
12	163	23	115	120	163.5	568	301	231	168.6	158	97	47	36	45
13	164	24	96	100	151.0	576	302	217	155.8	151	93	48	36	21
14	165	25	81	70	133.5	606	278	190	137.7	130	87	48	33	16
15	166	26	63	49	128.7	608	275	191	132.8	129	86	47	32	11
16	167	27	57	56	122.6	565	266	175	126.5	118	79	46	31	11
17	168	1	56	56	121.9	567	261	175	125.8	113	77	45	31	14
18	169	2	68	66	120.4	491	233	157	124.3	117	79	36	30	13
19	170	3	76	76	122.9	560	264	175	126.8	120	80	41	29	14
20	171	4	74	78	116.9	567	262	169	120.8	117	77	42	38	18
21	172	5	62	69	115.0	549	256	166	118.8	117	78	46	36	24
22	173	6	61	65	110.2	445	215	141	113.9	108	73	37	31	19
23	174	7	66	69	113.5	538	257	160	117.2	111	77	40	32	16
24	175	8	68	74	114.5	553	255	159	118.3	110	75	43	31	21
25	176	9	76	79	116.3	554	254	165	120.2	113	76	42	30	19
26	177	10	82	84	118.9	545	259	163	122.9	114	76	42	30	14
27	178	11	93	93	123.9	549	261	170	128.1	117	79	43	35	16
28	179	12	93	95	123.9	551	265	174	128.1	124	81	43	32	21
29	180	13	94	92	127.3	555	272	177	131.6	124	81	46	32	15
30	181	14	92	85	128.2	551	257	174	132.5	127	84	46	35	26
MEAN			77.4	78.2	129.3	554	270	183	133.4	125	81	44	33	23

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



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
2003	79 (2)	76 (3)	73 (5)	71 (6)	68 (8)	65 (9)	63 (10)	62 (11)	59 (13)	57 (14)	55 (16)	54 (18)	65 (10)
2004	53 (19)	52 (20)	51 (20)	49 (21)	48 (21)	47 (21)	44 (22)	42 (23)	40 (24)	39 (24)	38 (25)	36 (25)	45 (22)

Solar Cycle 22

Solar Cycle 23

Min, Max, and Predi

* May 1996 marks Cycle 22's mathematical minimum. ** October 1996 marks the consensus minimum

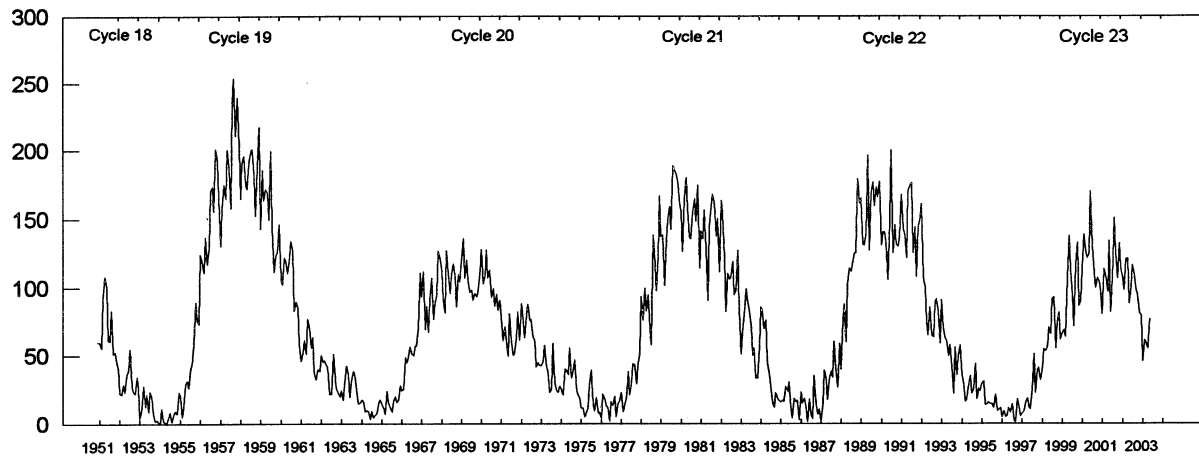
+ April 2000 marks Cycle 23 maximum.

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 2003 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the December 2003 prediction. There exists a 90% chance that in December 2003, the actual smoothed number will fall somewhere between 36 and 72.

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

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

Mean Monthly Sunspot Numbers Jan 1951 - Jun 2003



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	79.5	46.2	61.5	60.0	55.2	77.4							63.3

Values are preliminary after Mar 03. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

H α SOLAR FLARES

JUNE 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	01	0035	0051	0107	S34	W40	10368			32	SF	C 3.7						5.1E-03
HOLL		0048	0052	0109	S34	W40	10368	05	28.9	21	SF		3	E		43		FH
GOES		0223	0306	0400			10375			97		M 1.4						6.1E-02
GOES		0701	0711	0722			10375			21		M 1.0						8.3E-03
GOES		0746	0749	0751						5		C 4.6						1.2E-03
GOES		0857	0903	0910						13		C 5.0						3.1E-03
GOES		1239	1250	1256			10375			17		M 1.0						5.2E-03
HOLL		1345	1349	1351	N09	E90		06	8.3	6	SF		3	E		70		
GOES		1558	1602	1625						27		B 9.1						1.3E-03
GOES		1643	1652	1659	S08	W80	10365			16	SF	M 1.4						7.7E-03
HOLL		1658	1658	1704	S08	W80	10365	05	26.8	6	SF		3	E		28		
GOES		1838	1841	1845						7		C 1.2						4.7E-04
GOES		1927	1937	1943						16		C 1.7						1.3E-03
GOES		2026	2033	2037						11		C 2.0						1.1E-03
GOES		2058	2105	2110						12		M 1.0						4.4E-03
GOES		2323	2337	2348						25		C 9.1						1.1E-02
GOES	02	0007	0022	0043			10365			36		M 6.5						9.8E-02
LEAR		0022	0027	0031	S06	W90	10365	05	26.4	9	SF		2	E		20		
HOLL		0023	0024	0043	S06	W90	10365	05	26.4	20	SF		3	E		76		F
HOLL		0023	0028	0035	N09	E76	10375	06	7.7	12	SF		3	E		54		F
LEAR		0035	0040	0047	S07	W90	10365	05	26.4	12	SF		2	E		27		F
LEAR		0049	0053	0058	S06	W90	10365	05	26.4	9	SF		3	E		39		F
LEAR		0425	0426	0432	N12	E73	10375	06	7.7	7	SF		3	E		32		F
LEAR		0545	0553	0603	N11	E73	10375	06	7.7	18	SF		2	E		29		
GOES		0648	0654	0700						12		C 2.0						1.3E-03
GOES		0812	0837	0852	S07	W89	10365			40	SF	M 3.9						4.4E-02
SVTO		0841	0841	0844	S07	W89	10365	05	26.8	3	SF		3	E		13		
GOES		1210	1217	1239	N07	E73	10375			29	SF	C 8.0						1.1E-02
SVTO		1214	1215	1217	N07	E73	10375	06	8.0	3	SF		3	E		27		
SVTO		1227	1229	1231	N07	E71	10375	06	7.8	4	SF		3	E		12		
GOES		1313	1317	1322			10365			9		M 1.0						3.9E-03
HOLL		1516	1541	1612	N10	E71	10375	06	8.0	56	1F		3	E		160		F
GOES		1534	1544	1601	S10	W90	10365			27	SF	C 9.0						1.0E-02
HOLL		1538	1538	1542	S10	W90	10365	05	27.0	4	SF		3	E		40		F
HOLL		1631	1641	1651	N10	E70	10375	06	7.9	20	SF		3	E		75		
HOLL		1653	1654	1702	N10	E66	10375	06	7.7	9	SF		3	E		37		
GOES		1722	1733	1740	N10	E70	10375			18	SF	M 1.8						1.1E-02
HOLL		1723	1736	1751	N10	E70	10375	06	8.0	28	SF		3	E		94		F
HOLL		1925	1928	1931	N12	E78	10375	06	8.7	6	SF		3	E		14		
HOLL		2146	2147	2153	N09	E68	10375	06	8.0	7	SF		3	E		18		F
HOLL		2208	2216	2218	N10	E68	10375	06	8.0	10	SF		3	E		28		F
HOLL		2235	2237	2240	N09	E67	10375	06	8.0	5	SF		3	E		15		
HOLL		2304	2306	2308	N10	E67	10375	06	8.0	4	SF		3	E		17		
HOLL		2344	2347	2357	N04	E00	10373	06	3.0	13	SF		3	E		32		FS
HOLL	03	0053	0054	0058	N09	E64	10375	06	7.8	5	SF		3	E		17		
GOES		0119	0124	0129						10		C 1.7						8.9E-04
GOES		0331	0336	0340						9		C 1.1						5.6E-04
GOES		0759	0816	0822						23		C 1.5						1.8E-03
GOES		1051	1059	1102	N10	E61	10375			11	SF	C 2.9						1.4E-03
SVTO		1056	1056	1100	N10	E61	10375	06	8.0	4	SF		3	E		18		FH
GOES		1737	1810	1955			10375			138		C 2.0						1.3E-02
GOES		2226	2229	2231	N10	E54	10375			5	SF	B 7.3						2.0E-04
HOLL		2229	2229	2233	N10	E54	10375	06	8.0	4	SF		3	E		24		
GOES	04	0516	0545	0608			10375			52		C 1.8						4.0E-03
GOES	05	0140	0145	0200			10377			20		B 9.1						9.4E-04
GOES		0537	0541	0543						6		B 5.5						1.7E-04
GOES		0927	1019	1038						71		C 2.1						6.2E-03
GOES		1708	1734	1751	N11	E30	10375			43	SF	C 1.7						2.9E-03
HOLL		1729	1741	1747	N11	E30	10375	06	8.0	18	SF		3	E		11		F
HOLL		1848	1850	1902	N11	E30	10375	06	8.0	14	SF		3	E		12		
GOES		2333	2337	2340						7		C 1.0						3.4E-04
GOES	06	0359	0405	0417	N09	E30	10375			18	SF	C 1.1						1.1E-03
LEAR		0404	0407	0426	N09	E30	10375	06	8.4	22	SF		3	E		20		F

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Jun 03

H α SOLAR FLARES

JUNE 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region									Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	06	1147	1150	1154							7	C	1.4						5.1E-04
GOES		1219	1223	1225							6	C	1.6						4.9E-04
GOES		1249	1252	1255							6	C	1.5						4.6E-04
GOES		1309	1320	1335							26	C	1.5						2.1E-03
HOLL		1347	1359	1458	N11	E20	10375	06	8.1		71	1F		3	E		113		F
GOES		1352	1358	1402	N11	E20	10375				10	1F	C 2.8						1.3E-03
SVTO		1353	1357	1411	N14	E16	10375	06	7.8		18	1F		3	E		104		
GOES		1420	1435	1457							37	C	2.3						4.5E-03
HOLL		1504	1507	1527	N11	E19	10375	06	8.0		23	SF		3	E		18		
GOES		1538	1542	1546							8	C	1.6						6.8E-04
HOLL		1554	1608	1637	N10	E17	10375	06	7.9		43	SF		3	E		31		
GOES		1611	1618	1624	N10	E17	10375				13	SF	C 2.5						1.7E-03
GOES		1738	1744	1749	N17	E66	10378				11	SF	C 2.5						1.2E-03
HOLL		1740	1744	1756	N17	E66		06	11.7		16	SF		3	E		33		
HOLL		1925	1929	1929	N10	E15	10375	06	7.9		4	SF		3	E		12		
GOES		2331	2338	2358	N13	E17	10375				27	1F	M 1.0						1.2E-02
LEAR		2335E	2337U	2412	N13	E17	10375	06	8.3		37D	1F		3	E		158		F
GOES	07	0213	0219	0228	N08	E17	10375				15	SF	C 2.6						2.0E-03
LEAR		0218	0219	0224	N08	E17	10375	06	8.4		6	SF		3	E		27		
GOES		0322	0326	0328	N08	E17	10375				6	SF	C 1.6						5.3E-04
LEAR		0324	0325	0330	N08	E17	10375	06	8.4		6	SF		3	E		23		F
GOES		0506	0532	0548							42	C	2.3						4.1E-03
GOES		0758	0804	0825			10375				27	B	7.9						1.2E-03
GOES		0939	0942	1008			10375				29	C	2.3						3.7E-03
GOES		1036	1037	1038	N10	E08	10375				2	SF	C 1.5						1.7E-04
SVTO		1037	1037	1040	N10	E08	10375	06	8.0		3	SF		3	E		38		F
GOES		1105	1112	1119			10375				14	C	1.8						1.3E-03
GOES		1320	1323	1326			10375				6	C	1.1						3.4E-04
GOES		1732	1749	1754							22	C	1.4						1.4E-03
GOES		1959	2002	2006			10380				7	C	1.0						4.1E-04
HOLL		2034	2037	2054	N13	W04	10375	06	7.5		20	SF		3	E		33		
GOES		2327	2332	2336			10380				9	C	1.7						7.8E-04
GOES	08	0002	0007	0010			10380				8	C	1.5						6.4E-04
GOES		0109	0114	0124							15	C	1.8						1.4E-03
GOES		0337	0359	0414			10375				37	C	3.6						6.1E-03
GOES		0421	0435	0442	N12	W07	10375				21	1F	C 3.9						4.1E-03
SVTO		0437	0459	0529	N12	W07	10375	06	7.7		52	1F		3	E		125		F
GOES		0457	0506	0515	N12	W03	10375				18	SF	C 5.7						5.3E-03
LEAR		0500E	0500U	0514	N12	W03	10375	06	8.0		14D	SF		3	E		24		F
GOES		0606	0613	0623	N13	W10	10375				17	SF	C 3.5						2.7E-03
LEAR		0610	0611U	0626	S13	E49	10380	06	11.9		16	SF		3	E		55		F
SVTO		0619	0619	0623	N13	W10	10375	06	7.5		4	SF		3	E		13		
GOES		0652	0658	0710			10375				18	C	2.3						2.1E-03
GOES		0718	0721	0724			10375				6	C	1.6						4.9E-04
GOES		0741	0745	0750			10375				9	C	2.2						1.0E-03
GOES		1006	1010	1012			10375				6	C	1.3						4.3E-04
GOES		1137	1146	1156	S22	E63	10380				19	SF	C 7.5						5.5E-03
SVTO		1142	1146	1156	S22	E63	10380	06	13.3		14	SF		3	E		35		F
GOES		1158	1207	1216	S19	E63	10380				18	SF	C 6.0						5.8E-03
SVTO		1203	1212	1217	S19	E63	10380	06	13.3		14	SF		3	E		36		F
GOES		1335	1400	1423			10375				48	C	1.7						4.2E-03
HOLL		1337	1337	1347	S12	E57	10380	06	12.9		10	SF		3	E		13		
HOLL		1347	1403	1441	N12	W14	10375	06	7.5		54	SF		3	E		24		
HOLL		1530	1530	1547	S12	E57	10380	06	12.9		17	SF		3	E		11		
HOLL		1556	1612	1651	S19	E62	10380	06	13.4		55	2N		3	E		333		
GOES		1605	1611	1615	S19	E62	10380				10	2N	M 4.0						1.3E-02
HOLL		1659	1702	1704	N13	W15	10375	06	7.6		5	SF		3	E		19		H
HOLL		1706	1707	1721	S14	E53	10380	06	12.7		15	SF		3	E		18		
HOLL		1821	1822	1827	N13	W20	10375	06	7.2		6	SF		3	E		15		H
HOLL		1823	1825	1841	S19	E60	10380	06	13.3		18	SF		3	E		43		
HOLL		1850	1852	1858	N13	W18	10375	06	7.4		8	SF		3	E		16		H
HOLL		1908	1911	1917	S20	E59	10380	06	13.3		9	SF		3	E		15		
HOLL		1929	1929	1938	S20	E61	10380	06	13.5		9	SF		3	E		10		F
HOLL		2128	2130	2137	S17	E56	10380	06	13.2		9	SF		3	E		18		
HOLL		2137	2143	2156	N13	W13	10375	06	7.9		19	SF		3	E		38		
HOLL		2319	2319	2322	S17	E56	10380	06	13.2		3	SF		3	E		24		

H α S O L A R F L A R E S

JUNE 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF	CMP	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
							Region								Mo	Day	
GOES	08	2333	2338	2341			10375		8		C 1.3						5.1E-04
GOES	09	0012	0115	0134	S17	E49	10380		82	SF	C 8.8						1.9E-02
LEAR		0102E	0108U	0157D	S17	E49	10380	06	12.8	55D	SF		3	E		45	F
GOES		0404	0409	0416			10375		12		C 2.8						1.8E-03
LEAR		0601	0603	0608	N10	W16	10375	06	8.0	7	SF		3	E		13	
GOES		0646	0708	0714	N10	W17	10375		28	SF	C 3.0						4.0E-03
LEAR		0657	0658	0703	N10	W17	10375	06	8.0	6	SF		3	E		19	F
LEAR		0704	0732	0803	N10	W17	10375	06	8.0	59	SF		3	E		57	FH
GOES		0857	0902	0922			10375		25		C 3.3						4.4E-03
GOES		1016	1019	1021	N11	W29	10375		5	SF	C 4.0						1.0E-03
SVTO		1016	1020	1026	N11	W29	10375	06	7.2	10	SF		3	E		44	
SVTO		1057	1058	1102	N11	W29	10375	06	7.3	5	SF		3	E		24	
GOES		1121	1128	1133	N11	W29	10375		12	1N	M 4.7						2.0E-02
SVTO		1124E	1128U	1137D	N11	W29	10375	06	7.3	13D	1N		3	E		160	F
GOES		1433	1438	1440			10375		7		C 5.3						1.7E-03
GOES		1625	1629	1635			10375		10		C 5.9						2.6E-03
GOES		1702	1707	1727	N16	W25	10375		25	SF	C 5.4						7.3E-03
HOLL		1703	1725	1755	N16	W25	10375	06	7.8	52	SF		3	E		36	
HOLL		1756	1756	1847	N13	W24	10375	06	7.9	51	SF		3	E		15	
GOES		1858	1901	1906			10375		8		C 9.4						3.3E-03
GOES		1927	1932	1944			10380		17		C 5.0						4.4E-03
HOLL		1933	1934	1952	N12	W29	10375	06	7.6	19	SF		3	E		45	H
HOLL		1937	1939	1941	S20	E47	10380	06	13.4	4	SF		3	E		45	
HOLL		2006	2009	2042	S13	E41	10380	06	12.9	36	SF		3	E		71	F
GOES		2007	2025	2027	N13	W36	10375		20	SF	C 3.4						3.4E-03
HOLL		2008	2010	2015	N13	W36	10375	06	7.1	7	SF		3	E		21	
HOLL		2025	2029	2033	N13	W37	10375	06	7.0	8	SF		3	E		13	
HOLL		2043	2043	2048	S14	E40	10380	06	12.9	5	SF		3	E		12	
GOES		2053	2057	2101	N12	W38	10375		8	SF	C 7.1						2.3E-03
HOLL		2055	2058	2109	N12	W38	10375	06	7.0	14	SF		3	E		27	
GOES		2108	2112	2115			10375		7		C 4.8						1.5E-03
GOES		2131	2139	2143			10375		12		X 1.7						5.0E-02
GOES		2219	2231	2242			10375		23		M 1.4						1.8E-02
HOLL		2327	2329	2334	N13	W32	10375	06	7.6	7	SF		3	E		15	
LEAR	10	0024	0032	0043	N14	W45	10375	06	6.6	19	SF		3	E		12	F
LEAR		0039	0040	0114	S21	E49	10380	06	13.8	35	SF		3	E		37	F
LEAR		0132	0132	0154	S18	E50	10380	06	13.9	22	SF		3	E		14	
LEAR		0152	0153	0200	N13	W45	10375	06	6.7	8	SF		3	E		20	FH
GOES		0210	0214	0217	N14	W45	10375		7	SF	C 3.0						1.1E-03
LEAR		0212	0213	0223	N14	W45	10375	06	6.7	11	SF		3	E		26	FH
GOES		0222	0227	0236	N13	W45	10375		14	SF	C 3.3						2.5E-03
LEAR		0226	0227	0242	N13	W45	10375	06	6.7	16	SF		3	E		18	F
GOES		0248	0254	0301	N13	W41	10375		13	1N	M 2.0						9.4E-03
LEAR		0251	0254	0336	N13	W41	10375	06	7.0	45	1N		3	E		104	FE
LEAR		0337	0346	0353	N13	W41	10375	06	7.0	16	SF		3	E		79	F
SVTO		0618	0620	0627	N11	W44	10375	06	6.9	9	SF		3	E		16	F
SVTO		0653	0700	0702	N13	W30	10375	06	8.0	9	SF		3	E		12	
LEAR		0657	0657	0705	N15	W45	10375	06	6.9	8	SF		3	E		19	F
LEAR		0659	0701	0705	S21	E23	10381	06	12.0	6	SF		3	E		15	
SVTO		0758	0806	0817	N12	W45	10375	06	6.9	19	1F		3	E		121	F
SVTO		0826	0838	0848	N12	W44	10375	06	7.0	22	1N		3	E		104	
GOES		0834	0837	0840	N12	W44	10375		6	1N	M 2.7						6.2E-03
LEAR		0836	0838	0847	N15	W48	10375	06	6.7	11	SF		3	E		55	F
GOES		1055	1112	1115	N11	W45	10375		20	2N	M 5.1						2.5E-02
SVTO		1056	1111	1138	N11	W45	10375	06	7.1	42	2N		3	E		259	FH
SVTO		1239	1252	1345	N12	W43	10375	06	7.3	66	1F		3	E		114	F
GOES		1244	1300	1317	N12	W44	10375		33	1F	M 2.2						3.5E-02
GOES		1408	1436	1442	N10	W45	10375		34	SF	M 2.2						3.3E-02
SVTO		1410	1441	1447	N10	W45	10375	06	7.2	37	SF		3	E		26	
HOLL		1527	1528	1533	S12	E30	10380	06	12.9	6	SF		3	E		17	
HOLL		1616E	1631	1653	N12	W44	10375	06	7.2	37D	1F		3	E		167	FH
GOES		1620	1624	1627	N13	W36	10375		7	SF	M 1.0						3.4E-03
SVTO		1622	1629	1638	N13	W36	10375	06	8.0	16	SF		3	E		81	FH
GOES		1628	1630	1632			10375		4		M 3.9						5.9E-03
HOLL		1708	1710	1724	N12	W41	10375	06	7.6	16	SF		3	E		10	F
HOLL		1727	1906	1933	N14	W44	10375	06	7.4	126	SF		3	E		75	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	10	1808	1815	1826			10375			18	M 5.6							3.5E-02
HOLL		1952	1952	2009	N13	W38	10375	06	8.0	17	SF		3	E		19		
HOLL		2031	2031	2034	N14	W45	10375	06	7.4	3	SF		3	E		13		
GOES		2204	2213	2221	N14	W50	10375			17	2N M 1.0							8.2E-03
HOLL		2206	2404	2524	N14	W50	10375	06	7.1	198	2N		3	E		470		FT
GOES		2319	2402	2412	N10	W40	10375			53	2B X 1.3							1.3E-01
LEAR	11	0244	0302	0317	N14	W56	10375	06	6.9	33	SF		3	E		54		F
GOES		0301	0306	0313	N14	W56	10375			12	SF M 1.8							1.2E-02
GOES		0447	0453	0458	N10	W55	10375			11	SF C 8.1							4.3E-03
SVTO		0453	0507	0521	N10	W55	10375	06	7.1	28	SF		3	E		71		
SVTO		0717	0718	0721	N10	W59	10375	06	6.9	4	SF		3	E		35		
SVTO		0821	0829	0841	N09	W58	10375	06	7.0	20	1F		3	E		103		F
GOES		0822	0830	0832	N12	W60	10375			10	SF C 8.3							3.3E-03
LEAR		0825	0829	0839	N12	W60	10375	06	6.8	14	SF		3	E		54		F
SVTO		0931	0934	0939	N10	W60	10375	06	6.9	8	SF		3	E		43		
SVTO		0943	0945	0950	N10	W61	10375	06	6.8	7	SF		3	E		23		
SVTO		1018	1019	1026	N10	W63	10375	06	6.7	8	SF		3	E		58		
SVTO		1027	1033	1038	N09	W61	10375	06	6.8	11	SF		3	E		91		
GOES		1028	1033	1035	N09	W61	10375			7	SF M 1.1							2.9E-03
GOES		1051	1109	1132			10375			41	M 1.4							3.0E-02
GOES		1309	1321	1337	N11	W61	10375			28	1F M 2.7							3.2E-02
HOLL		1311	1453	1603	N14	W58	10375	06	7.2	172	1N		3	E		141		FH
SVTO		1314	1322	1342	N11	W61	10375	06	7.0	28	1F		3	E		116		F
SVTO		1347	1350	1356	N11	W67	10375	06	6.5	9	SF		3	E		21		
SVTO		1404	1404	1407	N09	W65	10375	06	6.7	3	SF		3	E		20		
SVTO		1413	1413	1421	N10	W65	10375	06	6.7	8	SF		3	E		31		F
GOES		1437	1527	1547	N10	W61	10375			70	SF M 3.7							1.2E-01
SVTO		1443	1451	1510	N12	W62	10375	06	6.9	27	SF		3	E		41		F
SVTO		1517	1522	1549	N10	W61	10375	06	7.0	32	SF		3	E		47		F
HOLL		1609	1635	1716	N12	W59	10375	06	7.2	67	1F		3	E		101		
SVTO		1612	1632	1706	N10	W63	10375	06	6.9	54	1F		3	E		123		F
GOES		1621	1636	1650	N12	W59	10375			29	1F M 4.5							6.6E-02
HOLL		1721	1747	1830	S16	E23	10380	06	13.5	69	1F		3	E		105		ZU
SVTO		1723E	1740U	1744D	S18	E22	10380	06	13.4	21D	SF		2	E		60		
GOES		1727	1743	1800	S16	E23	10380			33	1F M 1.8							3.4E-02
HOLL		1832	1835	1901	N13	W60	10375	06	7.2	29	SF		3	E		51		
HOLL		1943	1950	1955	N10	W64	10375	06	7.0	12	SF		3	E		63		F
GOES		2001	2014	2027	N14	W57	10375			26	1N X 1.6							1.6E-01
HOLL		2001	2023	2122	N14	W57	10375	06	7.5	81	1N		3	E		228		UF
HOLL		2108	2108	2117	S19	W05	10381	06	11.5	9	SF		3	E		22		
HOLL		2122	2123	2126	N14	W55	10375	06	7.7	4	SF		3	E		19		
GOES		2141	2151	2210	N15	W63	10375			29	SF M 2.9							3.7E-02
HOLL		2144	2144	2222	N15	W63	10375	06	7.1	38	SF		3	E		11		F
HOLL		2239	2242	2247	N05	W27	10377	06	9.9	8	SF		3	E		13		
HOLL		2337	2340	2420	N13	W65	10375	06	7.1	43	SF		3	E		38		
HOLL	12	0101	0122	0143D	N15	W65	10375	06	7.1	42D	1F		3	E		179		
LEAR		0101	0124	0331	N10	W54	10375	06	8.0	150	1N		2	E		239		FH
GOES		0104	0130	0152			10375			48	M 7.3							1.3E-01
SVTO		0441	0443	0451	N08	W69	10375	06	7.0	10	SF		3	E		64		F
LEAR		0443	0444	0447	N10	W55	10375	06	8.1	4	SF		3	E		23		F
SVTO		0529	0534	0539	N08	W69	10375	06	7.0	10	SF		3	E		22		
SVTO		0547	0623	0652	S16	E16	10380	06	13.4	65	SF		3	E		40		
SVTO		0651	0653	0657	N13	W57	10375	06	8.0	6	SF		3	E		20		
GOES		0710	0713	0715	N11	W77	10375			5	SF C 6.1							1.4E-03
LEAR		0713	0714	0718	N11	W77	10375	06	6.5	5	SF		3	E		45		
SVTO		0713	0714	0718	N08	W76	10375	06	6.6	5	SF		3	E		97		
SVTO		0806	0806	0809	N08	W74	10375	06	6.8	3	SF		3	E		29		
GOES		0809	0814	0816	N12	W78	10375			7	SF C 7.2							2.4E-03
LEAR		0812	0812	0817	N12	W78	10375	06	6.5	5	SF		3	E		26		F
SVTO		0812	0812	0817	N08	W76	10375	06	6.6	5	SF		3	E		31		F
SVTO		0814	0830	0921	S18	E15	10380	06	13.5	67	SF		3	E		77		F
LEAR		0815	0815	0820	S18	E21	10380	06	13.9	5	SF		3	E		15		F
GOES		0825	0833	0842	S20	E22	10380			17	SF C 8.4							7.3E-03
LEAR		0826	0829	0850	S20	E22	10380	06	14.0	24	SF		3	E		55		F
SVTO		0858	0859	0902	N07	W72	10375	06	7.0	4	SF		3	E		47		
SVTO		0947	0949	0958	S17	E14	10380	06	13.5	11	SF		3	E		18		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	12	1000	1004	1010						10		C 4.1						2.2E-03
GOES		1022	1027	1032	N09	W78	10375			10	SF	C 8.1						3.6E-03
SVTO		1025	1027	1031	N09	W78	10375	06	6.6	6	SF		3	E		99		F
GOES		1136	1147	1151						15		C 7.1						5.2E-03
GOES		1358	1403	1409	N10	W65	10375			11	SF	M 1.0						5.1E-03
HOLL		1401	1404	1411	N10	W65	10375	06	7.7	10	SF		3	E		58		H
SVTO		1403	1404	1407	N08	W80	10375	06	6.6	4	SF		3	E		30		
HOLL		1412	1414	1416	N11	W74	10375	06	7.0	4	SF		3	E		16		
HOLL		1416	1419	1421	N12	W72	10375	06	7.2	5	SF		3	E		12		
GOES		1443	1447	1449						6		C 2.9						8.9E-04
HOLL		1533	1537	1542	N15	W73	10375	06	7.1	9	SF		3	E		14		F
HOLL		1547	1549	1559	N14	W73	10375	06	7.1	12	SF		3	E		25		
HOLL		1700	1704	1721	N14	W73	10375	06	7.2	21	SF		3	E		30		H
GOES		1706	1712	1716	N14	W73	10375			10	SF	M 1.1						4.3E-03
HOLL		1722	1729	1751	N12	W85	10375	06	6.3	29	SF		3	E		54		FH
HOLL		1901	1902	1908	S19	E09	10380	06	13.5	7	SF		3	E		10		
GOES		1919	1922	1924	N15	W76	10375			5	SF	C 3.2						8.6E-04
HOLL		1920	1922	1931	N15	W76	10375	06	7.0	11	SF		3	E		85		
GOES		1955	1959	2002	N13	W77	10375			7	SF	C 3.2						1.2E-03
HOLL		1958	2007	2018	N13	W77	10375	06	7.0	20	SF		3	E		78		F
GOES		2005	2014	2018						13		C 8.5						5.1E-03
HOLL		2046	2047	2050	N13	W76	10375	06	7.1	4	SF		3	E		21		F
HOLL		2052	2055	2100	N13	W76	10375	06	7.1	8	SF		3	E		17		
GOES		2122	2127	2131			10375			9		M 2.6						9.5E-03
GOES		2244	2249	2252			10375			8		C 7.1						2.6E-03
HOLL		2303	2306	2312	N14	W90	10375	06	6.1	9	SF		3	E		32		
HOLL		2340	2346	2356	N13	W77	10375	06	7.2	16	SF		3	E		44		F
HOLL	13	0002	0004	0007	N12	W73	10375	06	7.5	5	SF		3	E		37		
HOLL		0008	0009	0036	S20	W01	10380	06	12.9	28	SF		3	E		17		
HOLL		0012	0016	0034	N12	W76	10375	06	7.3	22	SF		3	E		87		
HOLL		0101	0103	0107	N13	W81	10375	06	6.9	6	SF		3	E		42		F
HOLL		0114	0116	0122	S18	W23	10381	06	11.3	8	SF		3	E		24		
GOES		0154	0204	0213						19		M 3.1						2.2E-02
GOES		0431	0437	0443	N15	W78	10375			12	SF	M 1.7						8.4E-03
SVTO		0434	0442	0445	N15	W78	10375	06	7.3	11	SF		3	E		44		FH
LEAR		0521	0523	0531	N14	W80	10375	06	7.2	10	SF		3	E		71		
SVTO		0522	0522	0526	N18	W63	10375	06	8.4	4	SF		3	E		21		
SVTO		0528	0529	0531	N15	W78	10375	06	7.3	3	SF		3	E		16		
GOES		0628	0645	0719	N14	W81	10375			51	SF	M 1.8						4.2E-02
LEAR		0629	0638	0714	N14	W81	10375	06	7.1	45	SF		3	E		66		
SVTO		0632	0639	0702	N17	W78	10375	06	7.3	30	SF		3	E		34		F
LEAR		0700	0704	0717	N16	W52	10384	06	9.3	17	SF		3	E		29		
GOES		1618	1623	1630						12		C 4.4						2.7E-03
HOLL		1652	1656	1704	N05	W50	10377	06	10.0	12	SF		3	E		16		F
GOES		1730	1734	1736						6		C 4.6						1.3E-03
HOLL		1824	1824	1828	N13	W86	10375	06	7.3	4	SF		3	E		32		
GOES		2012	2034	2107						55		C 8.7						2.2E-02
HOLL	14	0003	0018	0024	S18	W16	10380	06	12.8	21	SF		3	E		10		
GOES		0249	0253	0259			10380			10		C 7.5						3.8E-03
GOES		0507	0609	0657						110		M 1.5						6.7E-02
GOES		1519	1533	1557						38		C 1.9						3.9E-03
GOES		1751	1756	1800	S20	W16	10380			9	SF	C 2.0						8.8E-04
HOLL		1754	1757	1810	S20	W16	10380	06	13.5	16	SF		3	E		27		F
GOES		2327	2340	2345			10375			18		C 3.0						2.2E-03
HOLL	15	0042	0045	0049	N02	W72	10377	06	9.6	7	SF		3	E		24		
GOES		0215	0220	0227			10375			12		C 2.3						1.4E-03
GOES		0523	0546	0555						32		C 1.4						2.2E-03
GOES		0819	0843	0858						39		C 1.2						2.4E-03
GOES		0945	0958	1010			10375			25		C 1.7						2.2E-03
GOES		1222	1228	1235			10375			13		C 1.3						8.6E-04
GOES		1407	1457	1558						111		C 3.3						1.4E-02
GOES		2235	2238	2241						6		C 2.1						5.9E-04
GOES		2325	2356	2425	S07	E80	10386			60	SF	X 1.3						2.4E-01
LEAR		2357	2427U	2427	S07	E80		06	22.0	30	SF		3	E		61		YF
LEAR	16	0002E	0002	0007	S17	W37	10380	06	13.2	5D	SF		3	E		15		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region									Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	16	0244	0248	0251			10386				7	M	1.0						3.6E-03
LEAR		0337	0337	0345	S12	W48	10380	06	12.5		8	SF		3	E		26		F
GOES		1152	1200	1204	S12	E83	10386				12	SF	M 1.7						4.9E-03
SVTO		1159	1200	1205	S12	E83			06	22.7	6	SF		3	E		88		H
GOES		1628	1634	1639	S10	E80	10386				11	SF	B 9.3						4.8E-04
HOLL		1631	1633	1635	S10	E80	10386	06	22.7		4	SF		3	E		39		F
GOES		1925	1928	1931							6	B	5.1						1.6E-04
GOES		2151	2156	2200			10380				9	C	1.6						5.9E-04
GOES		2247	2252	2256							9	B	8.2						3.3E-04
GOES	17	0057	0102	0114	S07	E66	10386				17	SF	C 1.5						1.2E-03
LEAR		0102	0102	0110	S07	E66	10386	06	22.0		8	SF		3	E		56		FH
GOES		0212	0222	0229			10386				17	C	2.4						1.7E-03
GOES		0558	0605	0610	S07	E63	10386				12	SF	C 1.1						6.5E-04
LEAR		0600	0602	0610	S07	E63	10386	06	22.0		10	SF		3	E		44		FH
SVTO		0603	0604	0608	S11	E72	10386	06	22.7		5	SF		3	E		25		
GOES		0656	0701	0705			10380				9	B	5.5						2.7E-04
GOES		1352	1356	1359			10386				7	B	4.8						1.8E-04
HOLL		1618	1627	1629	N19	E83			06	24.0	11	SF		3	E		16		
HOLL		1751	1756	1800	N19	E82			06	24.0	9	SF		3	E		19		
GOES		1830	1835	1851			10386				21	B	7.2						7.3E-04
GOES		2144	2153	2158	S07	E55	10386				14	1F	C 5.2						2.5E-03
HOLL		2147	2153	2209	S07	E55	10386	06	22.0		22	1F		3	E		150		F
GOES		2227	2255	2312			10386				45	M	6.8						9.6E-02
LEAR	18	0010	0013	0017	S09	E60	10386	06	22.5		7	SF		2	E		16		F
LEAR		0519	0522	0540	N16	E78			06	24.1	21	SF		3	E		67		
HOLL		1642	1643	1648	N17	E65			06	23.6	6	SF		3	E		27		
HOLL		1711	1721	1735	N18	E64			06	23.6	24	SF		3	E		24		F
HOLL		1909	1909	1918	N18	E66	10387	06	23.8		9	SF		3	E		12		
HOLL		1941	1942	1945	N18	E63	10387	06	23.6		4	SF		3	E		21		
GOES	19	0025	0028	0032			10388				7	B	4.8						1.8E-04
GOES		0148	0154	0158			10386				10	B	8.5						3.7E-04
GOES		1337	1340	1344			10386				7	B	4.9						1.8E-04
GOES		1917	1933	1946							29	B	8.1						1.2E-03
GOES		2246	2250	2252							6	B	5.2						1.8E-04
GOES	20	0453	0501	0516			10386				23	C	1.2						1.4E-03
GOES		0835	0847	0855			10386				20	B	9.0						9.3E-04
GOES		1154	1210	1216							22	B	5.9						6.7E-04
GOES		1413	1417	1421			10386				8	B	5.5						2.3E-04
GOES		1435	1441	1457			10386				22	C	1.2						1.4E-03
GOES		1638	1643	1648			10388				10	B	6.5						3.1E-04
GOES		2050	2104	2110	S02	W07	10388				20	SF	B 4.3						4.0E-04
HOLL		2103	2108	2117	S02	W07	10388	06	20.3		14	SF		3	E		11		
GOES		2221	2231	2245	S09	E17	10386				24	SF	C 1.0						1.3E-03
HOLL		2224	2225	2242	S09	E17	10386	06	22.2		18	SF		3	E		29		FH
GOES	21	0009	0014	0018			10386				9	C	1.7						5.5E-04
GOES		0230	0235	0239			10388				9	C	2.2						7.9E-04
GOES		0303	0309	0316			10386				13	B	8.3						5.4E-04
GOES		0644	0649	0653			10388				9	B	7.2						2.9E-04
GOES		0832	0842	0850			10388				18	B	5.6						5.4E-04
GOES		1307	1313	1315	S02	W16	10388				8	SF	C 2.5						7.1E-04
HOLL		1310	1313	1323	S02	W16	10388	06	20.3		13	SF		3	E		26		
GOES		1723	1730	1735	S07	E08	10386				12	SF	C 1.4						6.8E-04
HOLL		1725	1730	1739	S07	E08	10386	06	22.3		14	SF		3	E		33		F
GOES		1852	1856	1900							8	B	5.0						1.9E-04
GOES		2122	2126	2128							6	B	7.6						1.9E-04
GOES		2332	2335	2337	N00	W22	10388				5	SF	B 4.9						1.2E-04
HOLL		2334	2335	2343	N00	W22	10388	06	20.3		9	SF		3	E		14		FH
GOES	22	0205	0211	0219							14	B	4.6						3.2E-04
GOES		0251	0257	0301							10	B	4.7						2.3E-04
GOES		0536	0540	0544							8	B	6.3						2.0E-04
GOES		0900	0905	0908							8	B	3.2						1.4E-04
GOES		0945	0949	0951	N04	W28	10388				6	SF	C 1.0						2.0E-04

H α S O L A R F L A R E S

JUNE 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
SVTO	22	0948	0950	0954	N04	W28	10388	06	20.3	6	SF		3	E		42		
GOES		1003	1014	1024						21	B 6.8							5.7E-04
GOES		2142	2148	2151	N00	W34	10388			9	SF C 1.2							4.0E-04
HOLL		2147	2147	2154	N00	W34	10388	06	20.4	7	SF		3	E		13		
GOES	23	0213	0217	0223						10	B 3.6							1.9E-04
GOES		1537	1541	1543	S04	W19	10386			6	SF B 3.9							1.3E-04
HOLL		1540	1541	1546	S04	W19	10386	06	22.2	6	SF		3	E		18		FS
GOES		1702	1706	1709	N02	W45	10388			7	SF B 4.4							1.5E-04
HOLL		1705	1706	1711	N02	W45	10388	06	20.3	6	SF		3	E		27		F
GOES	24	0450	0457	0504	N13	E01	10391			14	SF C 1.5							8.8E-04
SVTO		0453	0456	0506	N16	E01	10391	06	24.3	13	SF		3	E		26		
LEAR		0453	0457	0506	N13	E01	10391	06	24.3	13	SF		3	E		26		
GOES		0629	0634	0640	N14	W01	10391			11	SF B 7.5							3.9E-04
SVTO		0633	0633	0636	N14	W01	10391	06	24.2	3	SF		3	E		19		
GOES		0811	0814	0816						5	B 6.5							1.7E-04
SVTO		0856	0857	0903	N14	W02	10391	06	24.2	7	SF		3	E		12		
GOES		0920	0936	0942	N14	W03	10391			22	SF C 1.3							1.5E-03
SVTO		0924	0925	0930	N14	W03	10391	06	24.2	6	SF		3	E		26		
GOES		1017	1024	1027	N14	W03	10391			10	SF C 2.8							1.2E-03
SVTO		1019	1025	1036	N14	W03	10391	06	24.2	17	SF		3	E		72		
SVTO		1130	1131	1135	N14	W04	10391	06	24.2	5	SF		3	E		13		
GOES		1229	1236	1240	N14	W04	10391			11	SF B 7.1							4.1E-04
SVTO		1231	1231	1235	N14	W04	10391	06	24.2	4	SF		3	E		20		
GOES		1322	1329	1332	N13	W07	10391			10	SF C 1.4							5.7E-04
HOLL		1324	1329	1345	N13	W07	10391	06	24.0	21	SF		3	E		37		
SVTO		1325	1326	1341	N14	W05	10391	06	24.2	16	SF		3	E		29		
GOES	25	0810	0821	0842						32	B 6.8							1.0E-03
GOES		1515	1632	1804						169	C 3.7							2.7E-02
HOLL		1518	1518	1525	S17	E62	10393	06	30.3	7	SF		3	E		12		FH
GOES		2132	2156	2332			10393			120	C 1.3							8.3E-03
GOES	26	0445	0450	0455						10	B 6.2							3.2E-04
GOES		1104	1130	1225						81	C 1.4							5.8E-03
GOES		1239	1316	1333						54	C 1.7							4.7E-03
GOES		1853	1919	2002						69	C 2.4							7.9E-03
GOES	27	0309	0321	0331						22	C 3.9							3.6E-03
GOES		0516	0520	0528						12	C 1.2							8.1E-04
GOES		0549	0553	0557						8	C 1.4							5.4E-04
GOES		1251	1255	1306						15	B 6.8							5.2E-04
GOES		1729	1743	1747						18	C 1.5							1.0E-03
GOES		2107	2113	2120						13	C 1.0							6.9E-04
GOES	28	0334	0340	0358						24	B 8.2							1.1E-03
GOES		0651	0656	0658						7	C 4.3							9.3E-04
GOES		1443	1449	1454						11	C 1.0							6.0E-04
GOES		1524	1540	1555						31	C 3.0							3.6E-03
GOES		2307	2311	2315						8	B 7.2							3.0E-04
GOES	29	0233	0247	0256						23	C 1.2							1.4E-03
GOES		1005	1022	1028						23	B 8.5							9.1E-04
GOES		1055	1101	1108						13	C 3.9							2.0E-03
GOES		1601	1616	1633	S04	W35	10396			32	SF B 8.5							1.4E-03
HOLL		1606	1606	1609	S04	W35	10396	06	27.0	3	SF		3	E		11		F
GOES		1910	1913	1915	S03	W43	10396			5	SF C 2.2							3.9E-04
HOLL		1912	1913	1919	S03	W43	10396	06	26.6	7	SF		3	E		23		
GOES		2147	2202	2210	S02	W45	10396			23	SF C 2.6							2.6E-03
HOLL		2150	2157	2213	S02	W45	10396	06	26.5	23	SF		3	E		52		FH
GOES	30	0003	0012	0018	S03	W48	10396			15	SF C 6.5							3.3E-03
HOLL		0007	0016	0030	S04	W42	10396	06	26.9	23	SF		3	E		62		
LEAR		0008	0013	0025	S03	W48	10396	06	26.4	17	SF		4	E		54		F
LEAR		0019	0021	0030	N10	E52	10397	07	3.9	11	SF		4	E		40		F
HOLL		0019	0023	0030	N12	E46	10397	07	3.5	11	SF		3	E		66		
GOES		0218	0224	0229	S03	W49	10396			11	SF C 8.0							3.2E-03

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Jun 03

H α SOLAR FLARES

JUNE 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region									Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	30	0220	0225	0250	S03	W49	10396	06	26.4	30	SF			4	E		66		F
GOES		0511	0525	0538	S04	W51	10396			27	SF	C 1.6							2.2E-03
LEAR		0513	0519	0522	S04	W51	10396	06	26.4	9	SF			3	E		23		F
GOES		0731	0740	0748	N04	E48	10397			17	1F	C 5.2							3.5E-03
LEAR		0735	0738	0759	N04	E48	10397	07	3.9	24	1F			2	E		151		F
SVTO		0735E	0738U	0802	N04	E40	10397	07	3.3	27D	1F			3	E		241		F
GOES		0900	0903	0908	S04	W47	10396			8	SF	C 2.2							9.0E-04
SVTO		0902	0904	0907	S04	W47	10396	06	26.9	5	SF			3	E		14		
GOES		1157	1200	1203						6		B 6.8							2.1E-04
HOLL		1501	1506	1525	N18	E60		07	5.2	24	SF			3	E		46		F
SVTO		1505	1511	1517D	N16	E59		07	5.1	12D	1F			3	E		104		
GOES		1608	1621	1630						22		C 1.0							1.2E-03
GOES		2247	2250	2303						16		B 5.0							4.2E-04

"Remarks"

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

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

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Jun 03

JUNE 2003

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22	Mean W/m 2 Hz)		
01	2695 LEAR	8 S	0246.0	0246.0	2.0	67.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	0246.0	0247.0	3.0	93.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	0253.0	0255.0	8.0	56.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1649.0	1649.0	1.0	49.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1649.0	1649.0	2.0	94.0			QL=2 ST=2 TYP=3
	8800 SGMR	8 S	1955.0	1956.0	1.0	58.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	2103.0	2103.0	1.0	26.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	2325.0	2325.0	2.0	72.0			QL=4 ST=2 TYP=3
02	8800 LEAR	48 C	0010.0	0015.0	26.0	1300.0			QL=4 ST=2 TYP=8
	2695 LEAR	49 GB	0010.0	0018.0	28.0	620.0			QL=4 ST=2 TYP=6
	2695 PALE	49 GB	0010.0	0019.0	29.0	690.0			QL=4 ST=2 TYP=6
	8800 PALE	49 GB	0010.0	0017.0	31.0	1600.0			QL=4 ST=2 TYP=6
	8800 SVTO	48 C	0828.0	0841.0	19.0	410.0			QL=4 ST=2 TYP=8
	2695 SVTO	48 C	0829.0	0841.0	15.0	200.0			QL=4 ST=2 TYP=8
	2695 LEAR	8 S	0841.0	0841.0	2.0	170.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0841.0	0841.0	2.0	240.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1315.0	1316.0	3.0	470.0			QL=4 ST=2 TYP=3
06	8800 SVTO	4 S/F	1315.0	1316.0	3.0	450.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1354.0	1354.0	U	39.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	2334.0	2335.0U	3.0	110.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	2335.0	2336.0	2.0	100.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	2335.0	2336.0U	1.0	88.0			QL=4 ST=2 TYP=3
07	2695 PALE	8 S	2335.0	2337.0U	2.0	110.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	0941.0	0942.0	2.0	190.0			QL=4 ST=2 TYP=3
08	8800 SVTO	8 S	0836.0	0836.0	1.0	47.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1608.0	1609.0	6.0	390.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1608.0	1609.0	4.0	350.0			QL=4 ST=2 TYP=3
09	8800 SGMR	4 S/F	0950.0	0952.0	7.0	68.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	0954.0	0956.0	3.0	39.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1123.0	1124.0	7.0	340.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1123.0	1124.0	3.0	300.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1124.0	1124.0	2.0	43.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1124.0	1124.0	1.0	46.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1626.0	1628.0	5.0	110.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1627.0	1628.0	1.0	70.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1628.0	1628.0	U	27.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1628.0	1628.0	U	24.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	1655.0	1705.0	12.0	100.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	1704.0	1705.0	3.0	150.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1704.0	1705.0	2.0	59.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1704.0	1705.0	2.0	110.0			QL=4 ST=2 TYP=3
	2695 PALE	8 S	1901.0	1901.0	U	53.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1901.0	1901.0	U	28.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	2111.0	2111.0	U	23.0			QL=4 ST=2 TYP=3
	8800 SGMR	48 C	2133.0	2136.0	12.0	670.0			QL=4 ST=3 TYP=8
	8800 PALE	49 GB	2134.0	2137.0	5.0	670.0			QL=4 ST=2 TYP=6
	2695 SGMR	4 S/F	2134.0	2136.0	11.0	280.0			QL=4 ST=3 TYP=3
	2695 PALE	4 S/F	2136.0	2137.0	6.0	310.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	2159.0	2222.0	28.0	210.0			QL=4 ST=3 TYP=3
	2695 SGMR	4 S/F	2159.0	2222.0	26.0	200.0			QL=4 ST=3 TYP=3
	2695 PALE	4 S/F	2220.0	2223.0	8.0	250.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	2222.0	2223.0	5.0	150.0			QL=4 ST=2 TYP=3
10	8800 LEAR	8 S	0252.0	0253.0	1.0	86.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	0253.0	0253.0	1.0	84.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0534.0	0534.0	9.0	35.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	0657.0	0657.0	U	21.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0802.0	0802.0	1.0	56.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0835.0	0835.0	2.0	460.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	0835.0	0835.0	3.0	400.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	0835.0	0836.0	2.0	110.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1057.0	1057.0	2.0	63.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1057.0	1057.0	2.0	42.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1057.0	1106.0	13.0	220.0			QL=4 ST=2 TYP=3

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Jun 03

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

Selected Fixed Frequency Events

JUNE 2003

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
10	2695 SVTO	4 S/F	1057.0	1057.0	10.0	50.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1105.0	1106.0	11.0	190.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1106.0	1113.0	10.0	75.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1246.0	1248.0	7.0	63.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1247.0	1248.0	2.0	54.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1620.0	1621.0	3.0	340.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1621.0	1621.0	1.0	55.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1621.0	1621.0	2.0	260.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1621.0	1621.0	1.0	38.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1630.0	1630.0	U	37.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1631.0	1631.0	U	26.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	2119.0	2119.0	1.0	49.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	2357.0	2358.0	14.0	230.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	2358.0	2358.0	1.0	68.0			QL=4 ST=2 TYP=3
11	8800 SGMR	20 GRF	1442.0	1525.0	59.0	37.0			QL=4 ST=2 TYP=2
	2695 SGMR	20 GRF	1451.0	1523.0	67.0	30.0			QL=4 ST=2 TYP=2
	8800 SGMR	4 S/F	1626.0	1628.0	5.0	110.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1626.0	1628.0	5.0	85.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1627.0	1627.0	3.0	81.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1627.0	1627.0	2.0	51.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	2005.0	2007.0	3.0	86.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	2005.0	2005.0	U	130.0			QL=4 ST=2 TYP=3
	8800 SGMR	48 C	2005.0	2005.0	4.0	140.0			QL=4 ST=2 TYP=8
	2695 SGMR	48 C	2005.0	2006.0	3.0	54.0			QL=4 ST=2 TYP=8
	8800 PALE	4 S/F	2357.0	2358.0	10.0	260.0			QL=4 ST=2 TYP=3
	2695 PALE	8 S	2358.0	2358.0	1.0	71.0			QL=4 ST=2 TYP=3
12	8800 LEAR	4 S/F	0123.0	0124.0	4.0	66.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0138.0	0138.0	1.0	76.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	0138.0	0138.0	1.0	62.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	1957.0	1957.0	U	65.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1957.0	1957.0	U	77.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	2123.0	2125.0	5.0	220.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	2124.0	2125.0	3.0	130.0			QL=4 ST=2 TYP=3
13	8800 LEAR	8 S	0113.0	0113.0	U	54.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0202.0	0202.0	U	75.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	0202.0	0202.0	U	67.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0434.0	0434.0	U	190.0			QL=4 ST=2 TYP=3
	2695 PALE	8 S	0434.0	0434.0	1.0	120.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	0434.0	0434.0	1.0	160.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	0434.0	0434.0	1.0	130.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	0434.0	0434.0	U	180.0			QL=4 ST=2 TYP=3
14	2695 SVTO	4 S/F	0532.0	0537.0	14.0	71.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	0533.0	0540.0	15.0	67.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	0536.0	0537.0	2.0	56.0			QL=4 ST=2 TYP=3
15	2695 PALE	49 GB	2341.0	2344.0	19.0	1200.0			QL=4 ST=1 TYP=6
	8800 PALE	49 GB	2341.0	2345.0	19.0	4300.0			QL=4 ST=1 TYP=6
	8800 LEAR	48 C	2342.0	2345.0	19.0	2500.0			QL=4 ST=2 TYP=8
	2695 LEAR	48 C	2342.0	2344.0	23.0	860.0			QL=4 ST=2 TYP=8
16	2695 PALE	48 C	2341.0	2344.0	45.0	1200.0			QL=4 ST=2 TYP=8
	8800 PALE	48 C	2341.0	2345.0	53.0	4300.0			QL=4 ST=2 TYP=8
17	8800 PALE	8 S	2148.0	2150.0	2.0	300.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	2148.0	2150.0	3.0	140.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	2149.0	2151.0	3.0	280.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	2149.0	2151.0	5.0	130.0			QL=4 ST=2 TYP=3
	8800 PALE	48 C	2239.0	2253.0	37.0	3400.0			QL=4 ST=2 TYP=8
	2695 PALE	48 C	2239.0	2254.0	43.0	2100.0			QL=4 ST=2 TYP=8
22	2695 SVTO	48 C	0336.0	0339.0	4.0	98.0			QL=4 ST=2 TYP=8
29	8800 SGMR	8 S	1058.0	1058.0	1.0	60.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1058.0	1058.0	2.0	77.0			QL=4 ST=2 TYP=3

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

Selected Fixed Frequency Events

37
Jun 03

JUNE 2003

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
30	2695 SVTO	4 S/F	0734.0	0735.0	6.0	41.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	0736.0	0736.0	2.0	21.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

SGMR = Sagamore Hill

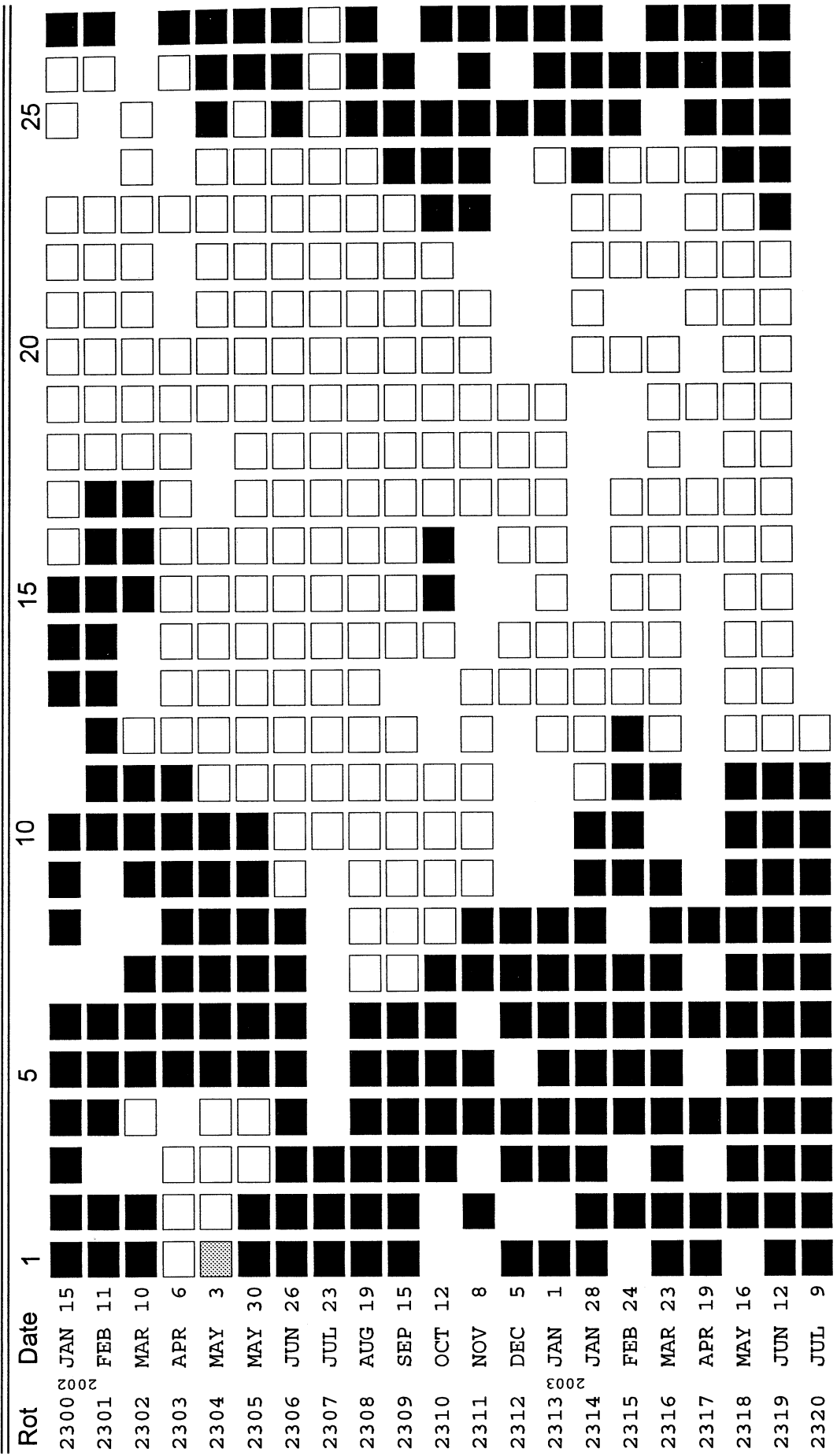
SVTO = San Vito

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 Precursor	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:

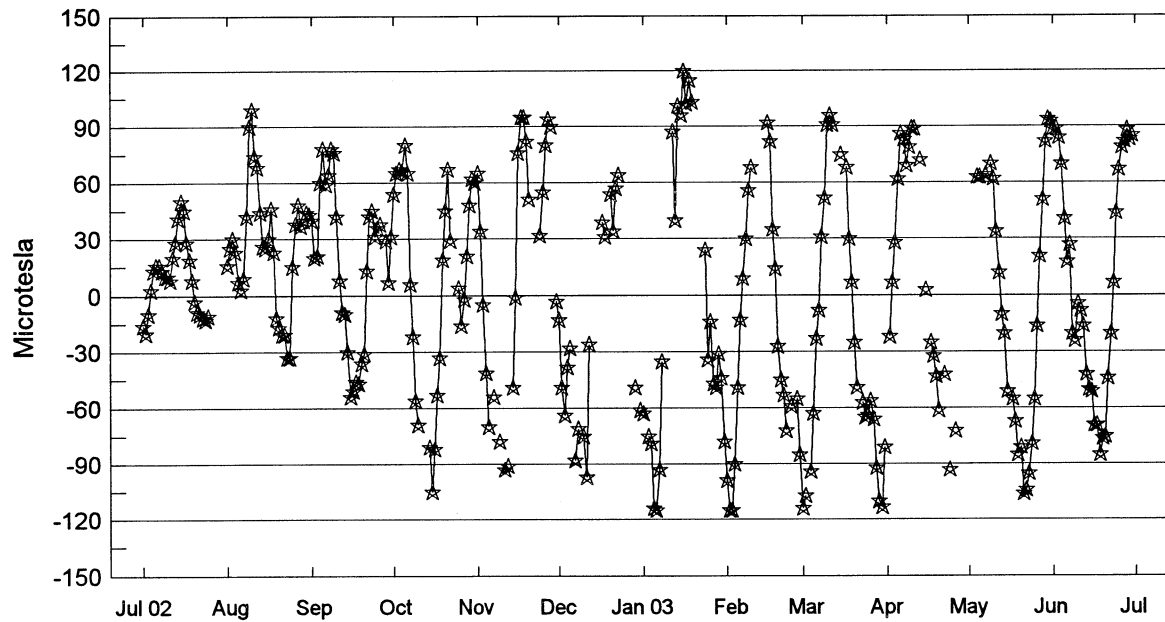
= field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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.

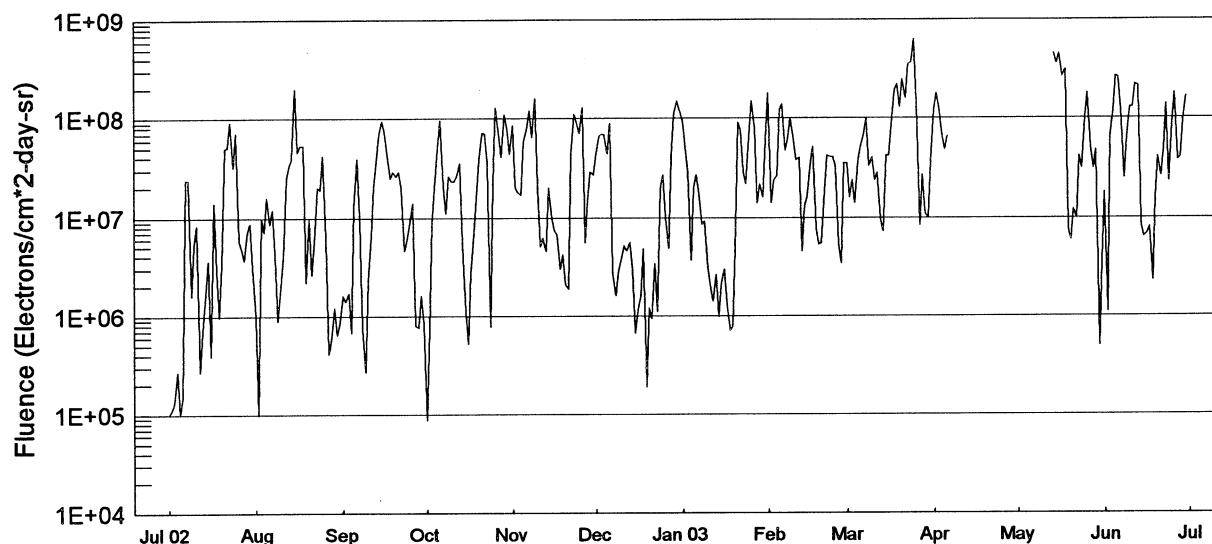
Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

39
Jun 03



Day	Jul 02	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May	Jun
1	-16	16	40	54	65	-13	-63	-99	-114	—	—	89
2	-20	25	20	65	34	-49	—	-115	-107	-22	—	89
3	-10	30	21	67	-5	-64	-75	-115	—	7	—	84
4	3	23	60	66	-41	-38	-79	-90	-94	28	63	70
5	13	7	78	80	-70	-28	-114	-49	-63	62	63	41
6	16	3	59	65	—	—	-115	-13	-23	86	—	18
7	16	9	64	6	-54	-88	-93	9	-8	83	64	27
8	13	42	78	-22	—	-71	-35	30	31	69	—	-20
9	10	90	76	-56	-78	—	—	56	52	79	70	-24
10	10	99	42	-69	—	-75	—	68	91	89	62	-4
11	8	74	8	—	-93	-97	—	—	96	89	34	-8
12	20	68	-9	—	-91	-26	87	—	91	—	12	-16
13	28	44	-10	—	—	—	40	—	—	72	-10	-42
14	41	26	-30	-81	-49	—	101	—	—	—	-20	-50
15	50	25	-54	-105	-1	—	96	—	75	3	-51	-51
16	45	30	-51	-82	76	—	120	92	—	—	—	-69
17	28	46	-46	-53	95	39	102	82	68	-25	-55	-69
18	19	23	-47	-33	95	31	115	35	30	-32	-67	-85
19	8	-12	-36	19	82	—	103	14	7	-43	-85	-76
20	-3	-17	-31	45	51	54	—	-27	-25	-61	-81	-75
21	-9	-21	13	67	—	34	—	-45	-49	—	-106	-44
22	-10	-21	42	29	—	57	—	-53	—	-42	-104	-20
23	-12	-33	45	—	—	64	—	-72	-57	—	-95	7
24	-13	-33	31	—	32	—	24	—	-65	-93	-79	44
25	-11	15	36	4	55	—	-34	-59	-64	—	-55	67
26	—	38	38	-16	80	—	-14	—	-56	-72	-16	79
27	—	48	—	-2	94	—	-47	-55	-66	—	21	82
28	—	37	29	21	90	—	-49	-85	-92	—	51	88
29	—	40	7	48	—	-49	-31	—	-110	—	82	83
30	—	44	31	62	-3	—	-44	—	-113	—	94	85
31	—	43	—	60	—	-61	-78	—	-81	—	93	—

GOES Daily Electron Fluence Jul 2002 - Jun 2003



Day	Jul 02	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May	Jun
1	1.0E+05	1.0E+06	1.6E+06	8.7E+04	8.5E+07	4.2E+07	9.5E+07	1.8E+08	3.5E+07	4.5E+08	--	1.8E+07
2	1.1E+05	9.8E+04	1.4E+06	7.4E+05	2.0E+07	6.7E+07	5.1E+07	1.4E+07	1.6E+07	6.3E+08	sensor	1.1E+06
3	1.3E+05	1.0E+07	1.7E+06	8.5E+06	1.8E+07	7.0E+07	2.9E+07	2.4E+07	2.4E+07	3.0E+08	problems	6.5E+07
4	2.7E+05	7.1E+06	6.8E+05	2.0E+07	1.7E+07	6.8E+07	3.7E+06	2.6E+07	1.4E+07	1.4E+08	--	1.2E+08
5	1.0E+05	1.6E+07	1.3E+07	5.1E+07	5.9E+07	4.4E+07	2.0E+07	1.2E+08	3.6E+07	1.7E+08	--	2.7E+08
6	1.5E+05	8.6E+06	3.9E+07	9.6E+07	7.8E+07	8.9E+07	2.7E+07	1.4E+08	5.2E+07	1.6E+08	--	2.6E+08
7	2.4E+07	1.2E+07	1.0E+07	2.1E+07	1.2E+08	2.7E+06	1.8E+07	4.7E+07	6.8E+07	1.7E+08	sensor	1.2E+08
8	2.4E+07	4.2E+06	7.5E+05	1.1E+07	6.5E+07	1.6E+06	8.6E+06	6.3E+07	9.9E+07	--	problems	2.5E+07
9	1.6E+06	8.8E+05	2.7E+05	2.6E+07	1.6E+08	2.8E+06	9.2E+06	1.0E+08	3.3E+07	--	--	6.4E+07
10	5.3E+06	2.0E+06	2.3E+06	2.3E+07	2.0E+07	3.9E+06	3.1E+06	6.1E+07	4.0E+07	--	--	1.3E+08
11	8.3E+06	4.0E+06	6.4E+06	2.3E+07	5.1E+06	5.2E+06	2.0E+06	3.8E+07	2.4E+07	--	--	1.3E+08
12	2.7E+05	2.5E+07	2.1E+07	2.6E+07	6.2E+06	4.6E+06	1.4E+06	4.0E+07	2.8E+07	sensor	--	2.2E+08
13	6.9E+05	3.3E+07	3.7E+07	3.5E+07	4.5E+06	5.6E+06	2.6E+06	4.5E+06	9.7E+06	problems	--	2.1E+08
14	1.4E+06	3.9E+07	6.8E+07	5.4E+06	2.0E+07	3.0E+06	9.8E+05	1.3E+07	7.2E+06	--	4.6E+08	8.3E+06
15	3.6E+06	2.0E+08	9.5E+07	1.1E+06	1.0E+07	6.7E+05	2.1E+06	1.6E+07	4.2E+07	--	3.6E+08	6.4E+06
16	3.9E+05	4.6E+07	7.2E+07	5.2E+05	7.3E+06	1.2E+06	3.0E+06	3.4E+07	4.2E+07	--	4.5E+08	6.9E+06
17	1.4E+07	5.3E+07	4.4E+07	2.7E+06	6.8E+06	1.6E+06	1.3E+06	5.2E+07	8.4E+07	sensor	2.7E+08	8.0E+06
18	2.9E+06	5.3E+07	2.5E+07	6.9E+06	3.0E+06	4.8E+06	7.1E+05	7.7E+06	1.9E+08	problems	3.1E+08	2.3E+06
19	9.8E+05	2.2E+06	2.9E+07	1.6E+07	4.2E+06	1.9E+05	7.7E+05	5.3E+06	2.2E+08	--	7.4E+06	1.6E+07
20	3.3E+06	9.7E+06	2.6E+07	3.8E+07	2.1E+06	1.2E+06	4.7E+06	5.5E+06	1.3E+08	--	6.0E+06	4.1E+07
21	5.0E+07	2.6E+06	2.9E+07	7.2E+07	1.9E+06	9.3E+05	9.1E+07	1.8E+07	2.5E+08	--	1.2E+07	2.6E+07
22	5.1E+07	5.7E+06	2.0E+07	7.1E+07	4.3E+07	3.4E+06	7.6E+07	4.2E+07	1.6E+08	sensor	1.0E+07	4.9E+07
23	9.2E+07	2.0E+07	4.6E+06	3.7E+07	1.1E+08	1.1E+06	2.9E+07	4.1E+07	3.5E+08	problems	4.2E+07	1.4E+08
24	3.2E+07	1.9E+07	6.0E+06	7.7E+05	9.1E+07	2.0E+07	2.2E+07	4.1E+07	3.7E+08	--	3.1E+07	2.3E+07
25	7.2E+07	4.2E+07	8.4E+06	2.2E+07	7.1E+07	2.7E+07	6.5E+07	3.3E+07	6.3E+08	--	9.9E+07	8.7E+07
26	5.8E+06	6.2E+06	1.4E+07	1.3E+08	1.3E+08	1.0E+07	1.5E+08	5.2E+06	1.4E+08	--	1.8E+08	1.8E+08
27	4.8E+06	4.1E+05	8.0E+05	6.9E+07	5.6E+06	4.9E+06	8.1E+07	3.4E+06	8.3E+06	sensor	5.1E+07	3.8E+07
28	3.7E+06	5.7E+05	7.6E+05	4.1E+07	1.5E+07	4.1E+07	1.4E+07	3.5E+07	2.7E+07	problems	3.1E+07	4.0E+07
29	7.2E+06	1.2E+06	1.6E+06	1.1E+08	2.9E+07	1.1E+08	2.2E+07		1.1E+07	--	4.8E+07	9.4E+07
30	8.7E+06	6.4E+05	8.5E+05	8.0E+07	2.7E+07	1.5E+08	1.6E+07		1.0E+07	--	5.0E+05	1.7E+08
31	3.1E+06	8.3E+05		4.4E+07		1.2E+08	6.1E+07		3.7E+07		3.6E+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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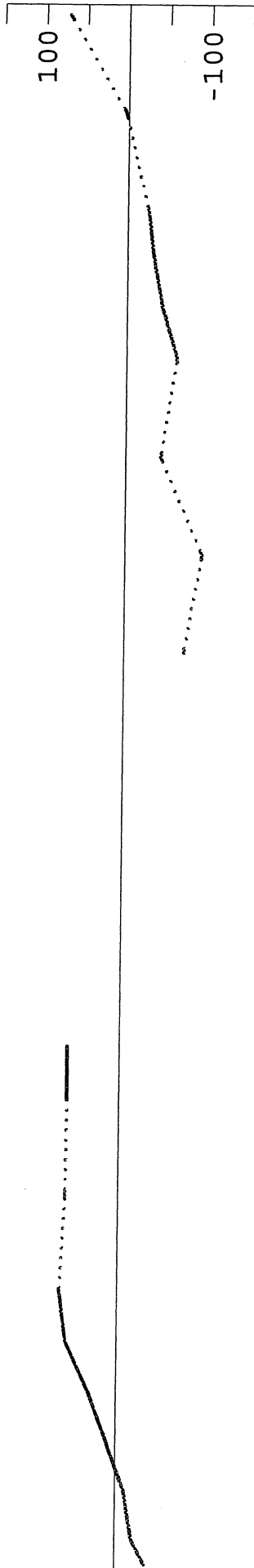
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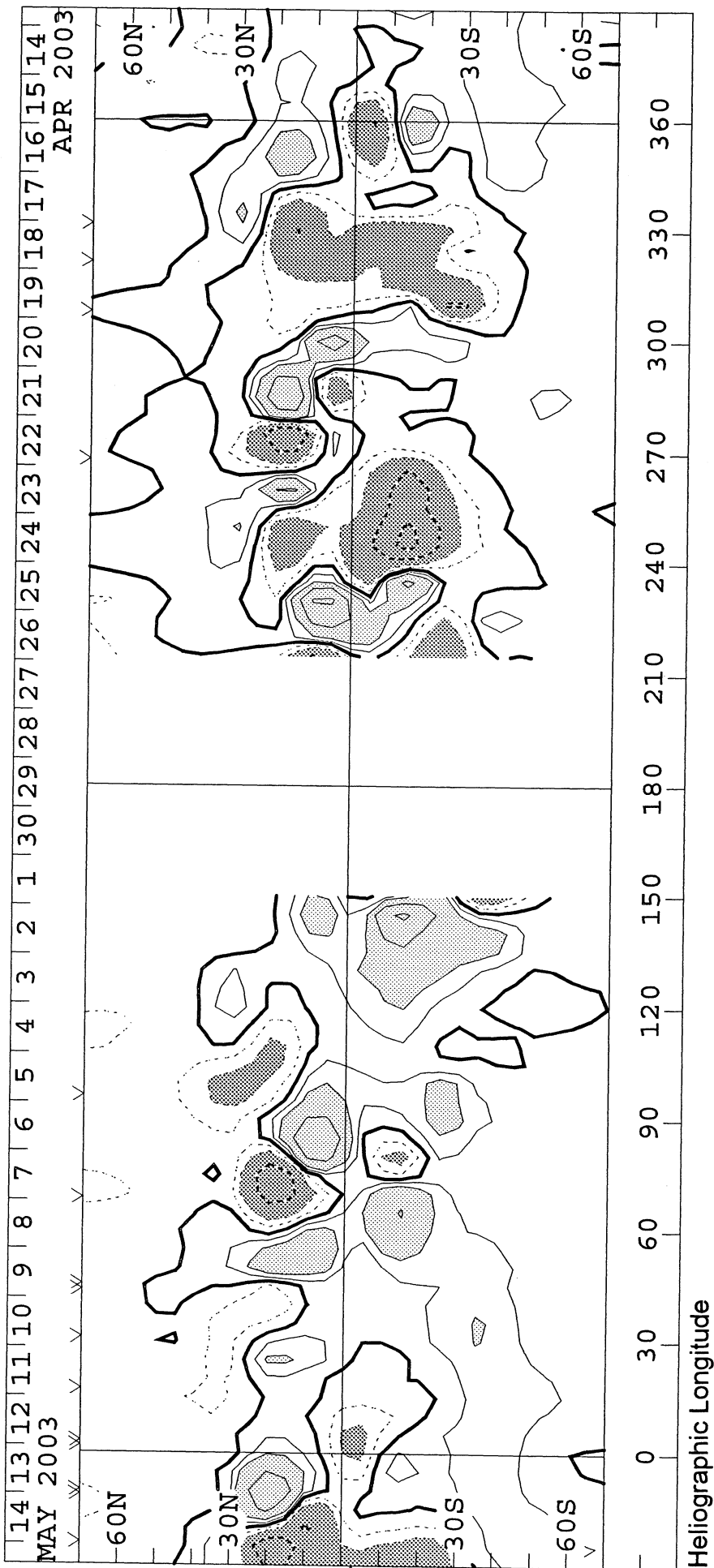
SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 2002
(15 April to 13 May 2003)

WILCOX SOLAR OBSERVATORY

Mean Field



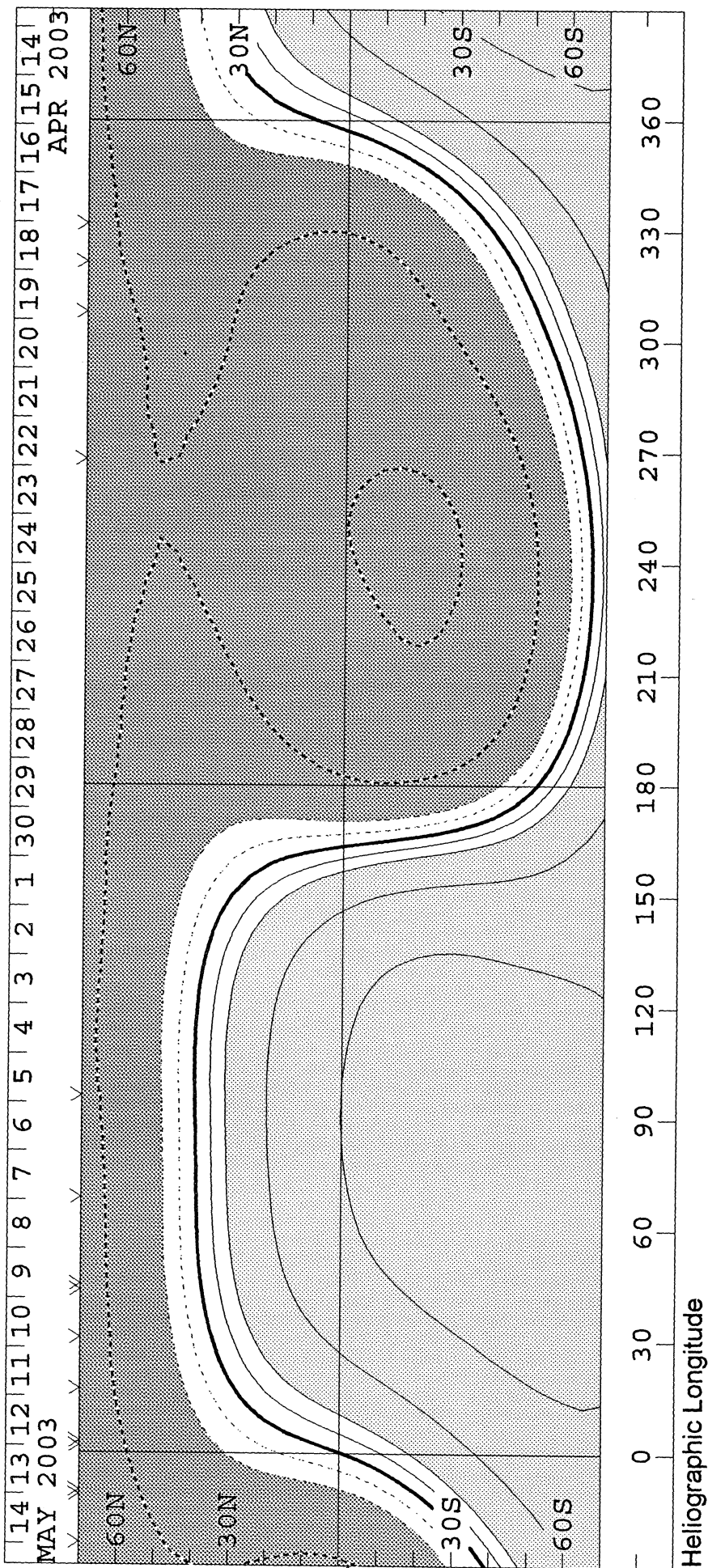
WSO - Photospheric Magnetic Field 0, +100, 200, 500, 1000, 2000 MicroTesla



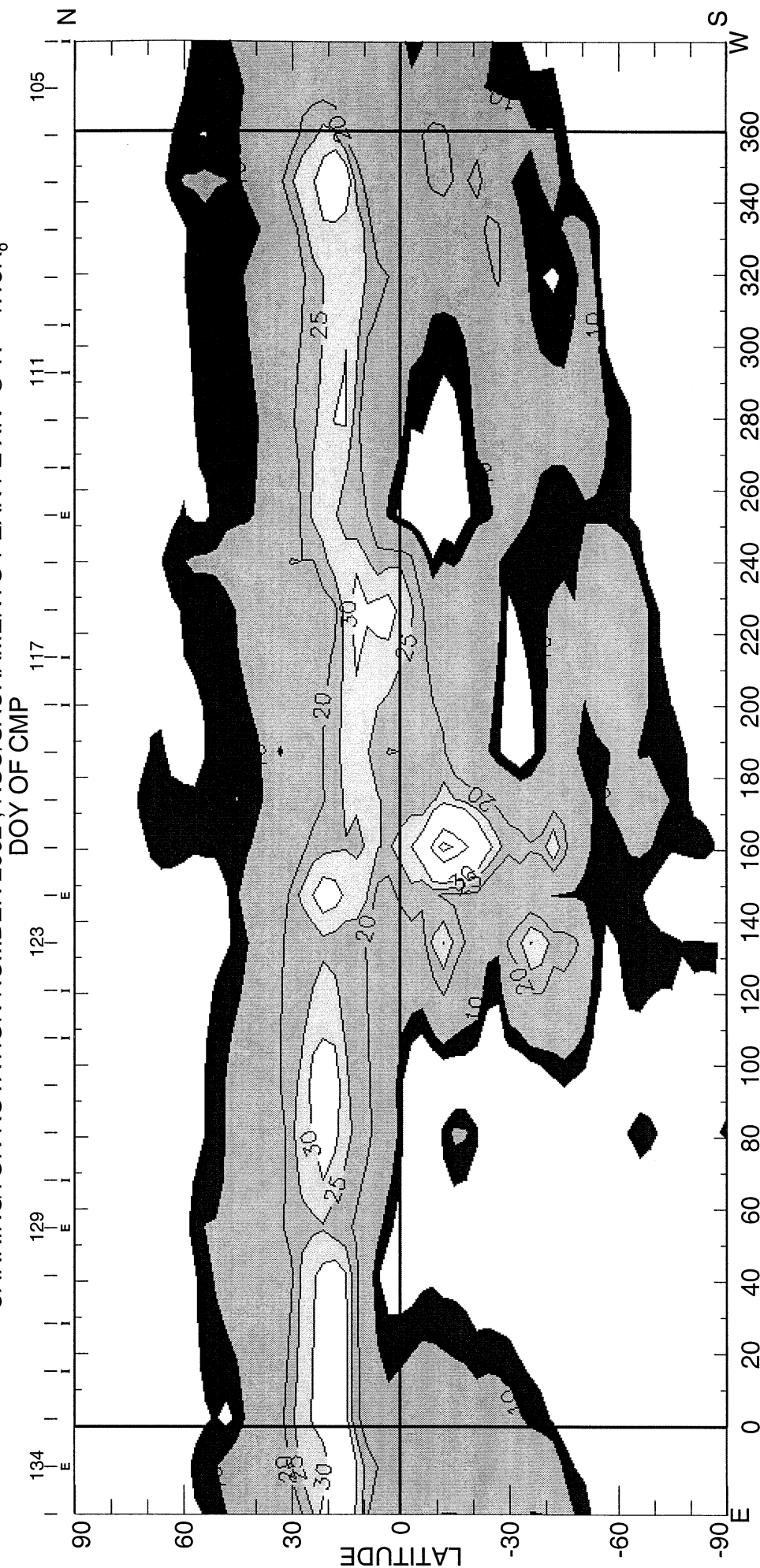
SOLAR MAGNETIC FIELD SYNOPTIC CHART **SOURCE SURFACE FIELD** CARRINGTON ROTATION NUMBER 2002 (15 April to 13 May 2003)

Wilcox Solar Observatory

0, +1, 2, 5, 10, 20 microTesla

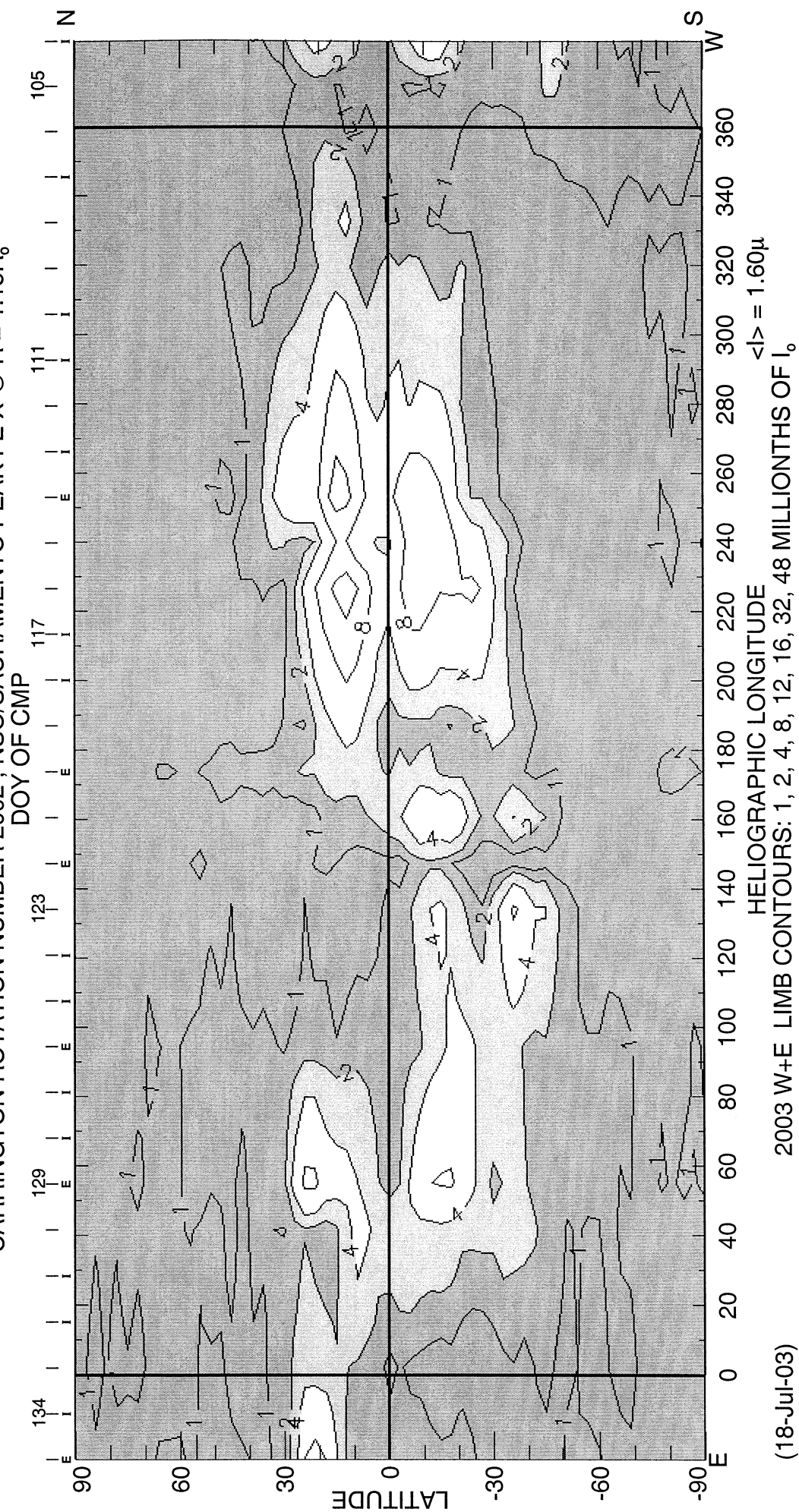


CARRINGTON ROTATION NUMBER 2002 ; NSO/SACRAMENTO PEAK FE XIV @ $R = 1.15R_{\odot}$

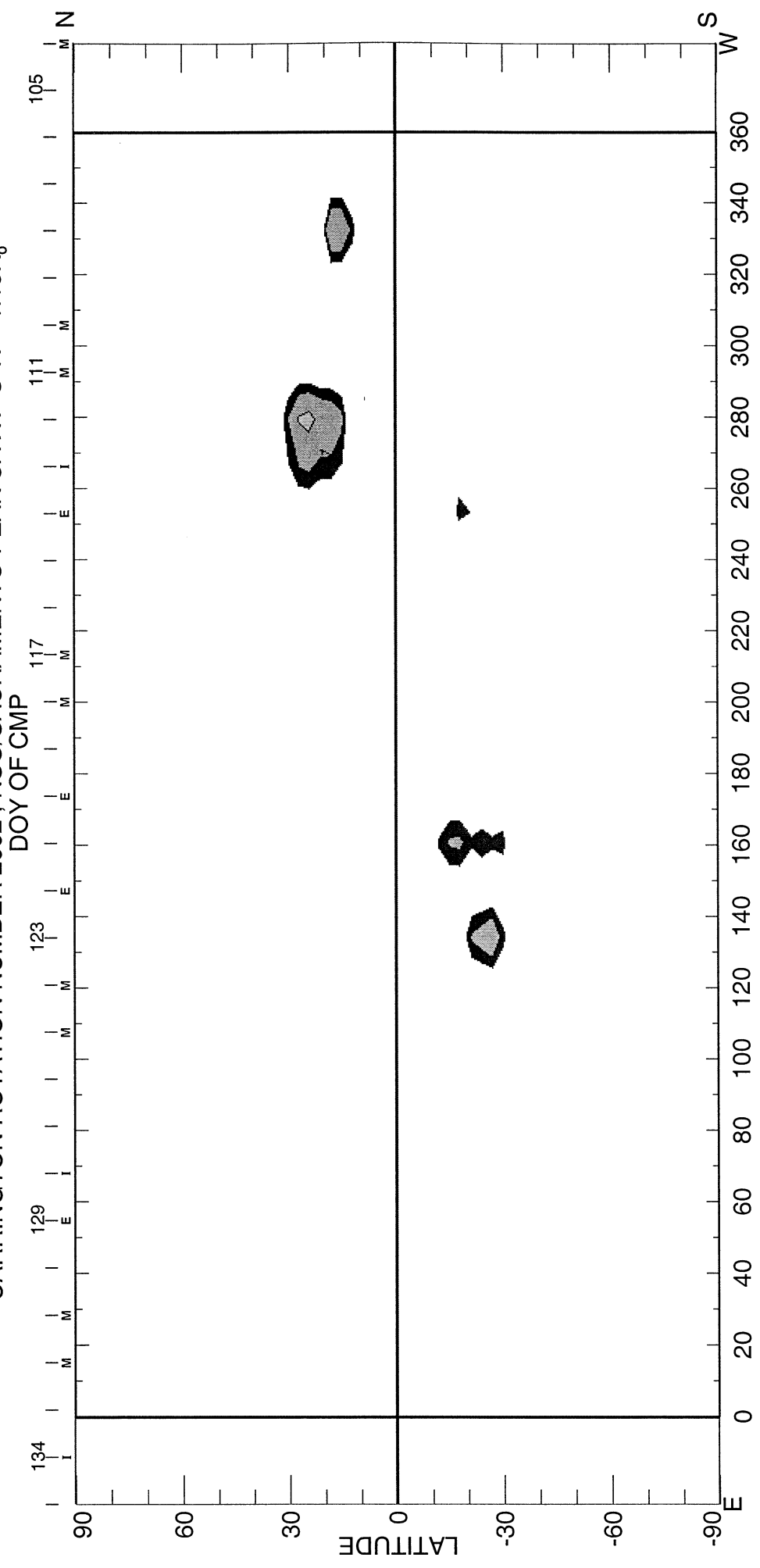


(22-Jul-03) 2003 W+E LIMB CONTOURS: 7, 10, 20, 25, 30, 50, 60, 80, 100, 120, 140 MILLIONTHS OF $I_{\odot}$
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 2002 ; NSO/SACRAMENTO PEAK FE X @ $R = 1.15R_{\odot}$



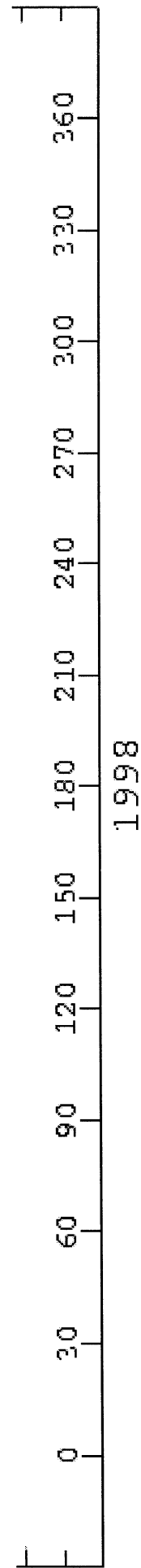
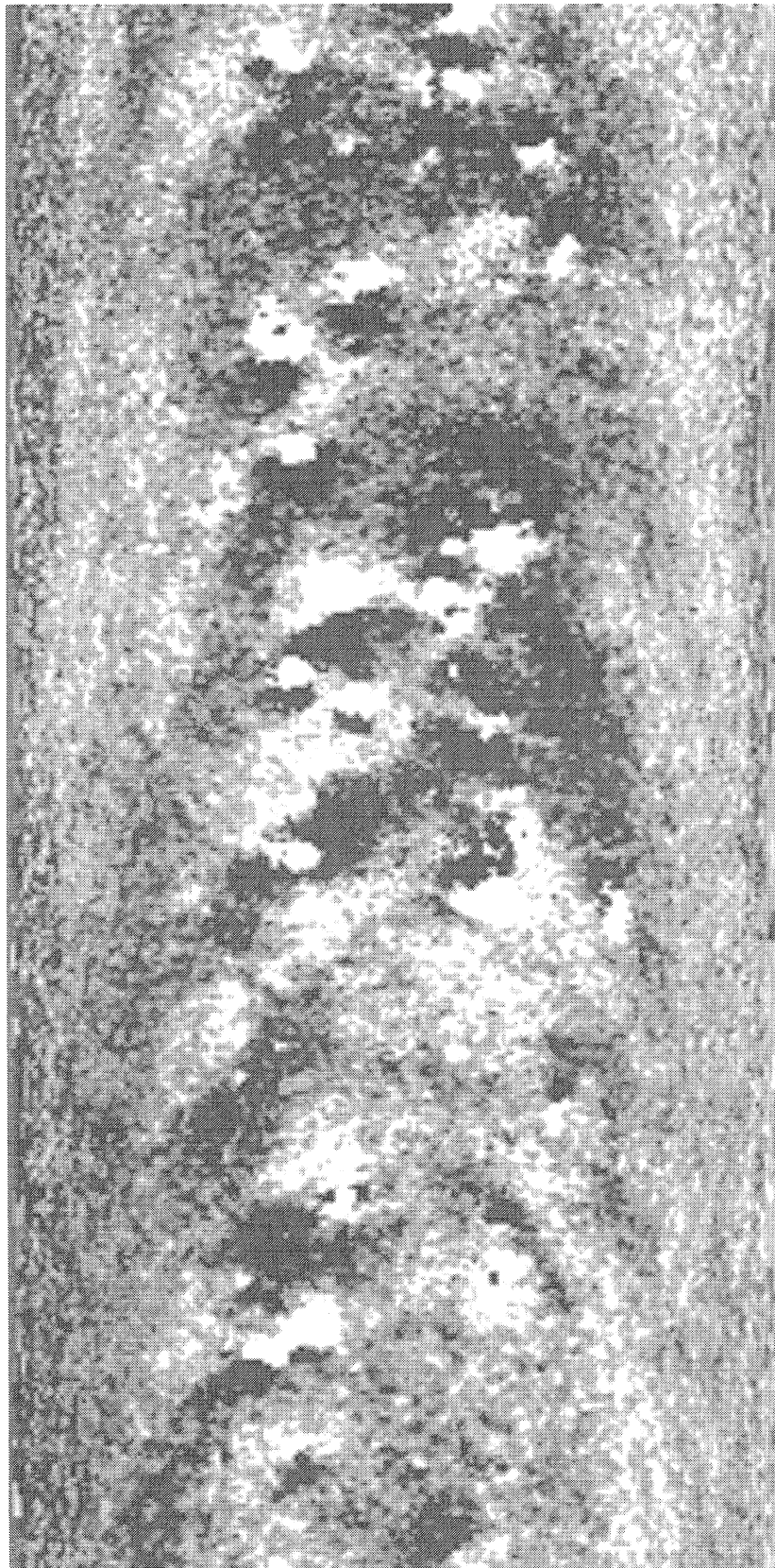
CARRINGTON ROTATION NUMBER 2002 : NSO/SACRAMENTO PEAK CA XV @ $R = 1.15R_{\odot}$



2003 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_0

SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 2002
(15 April to 13 May 2003)

National Solar Observatory/Kitt Peak



Heliographic Longitude

48
May 03

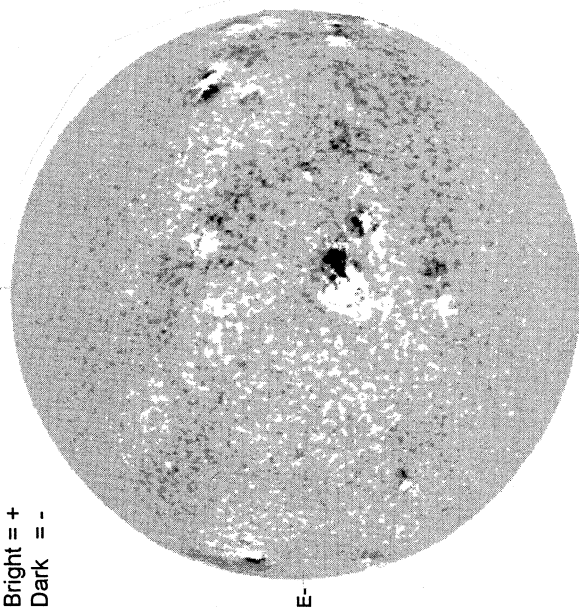
MAY 1, 2003 (P= -24.22, Bo = -4.21, Lo = 160.49)

KITT PEAK MAGNETOGRAM

868.8 nm

N

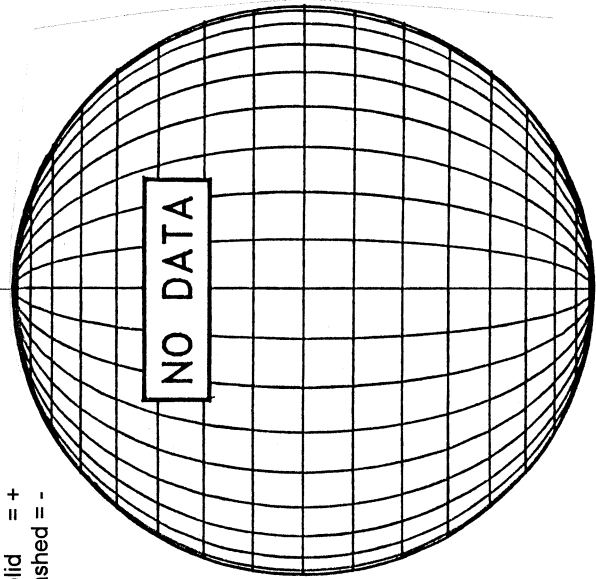
Bright = +
Dark = -



1559 UT

STANFORD MAGNETOGRAM

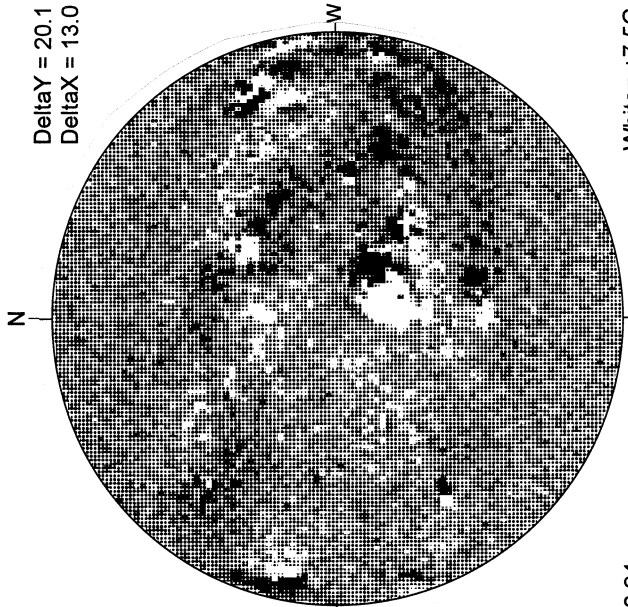
Solid = +
Dashed = -



23.94 -
24.35 UT

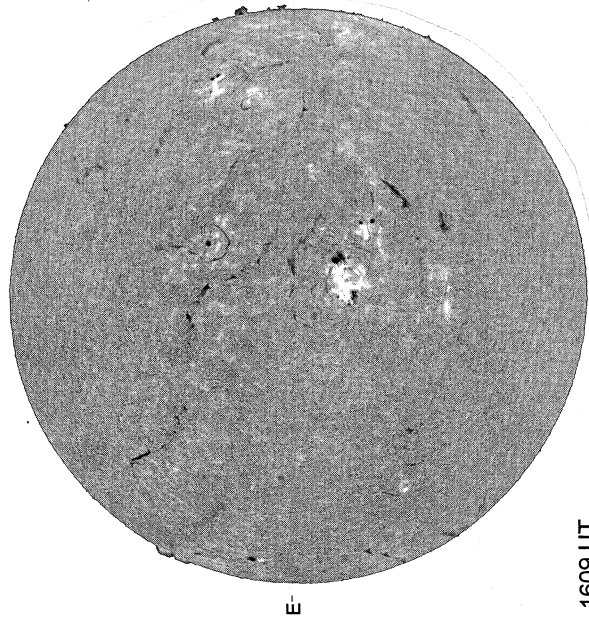
MT. WILSON MAGNETOGRAM

DeltaY = 20.1
DeltaX = 13.0



White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

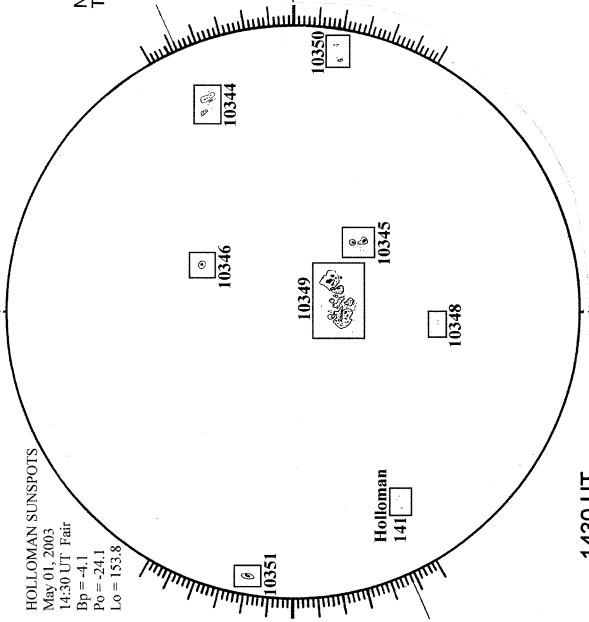


1609 UT

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS

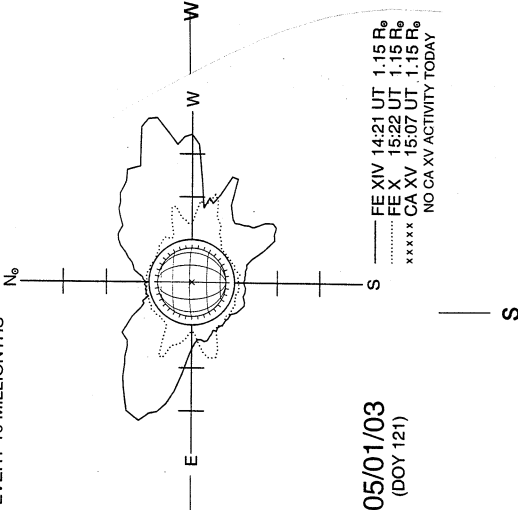
May 01, 2003
14:30 UT Fair
Bp = -4.1
Po = -24.1
Lo = 153.8



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



05/01/03
(DOY 121)

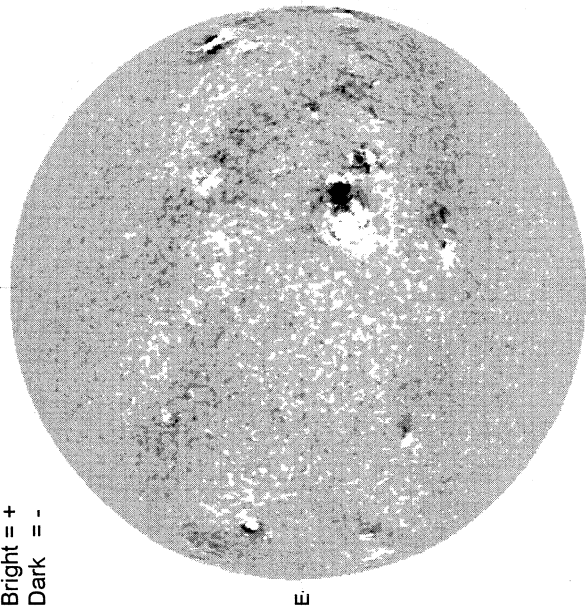
FE XIV 14:21 UT 1.15 R_o
FE X 15:22 UT 1.15 R_o
CA XV 15:07 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 2, 2003 (P= -24.05, Bo = -4.11, Lo = 147.27)

KITT PEAK MAGNETOGRAM

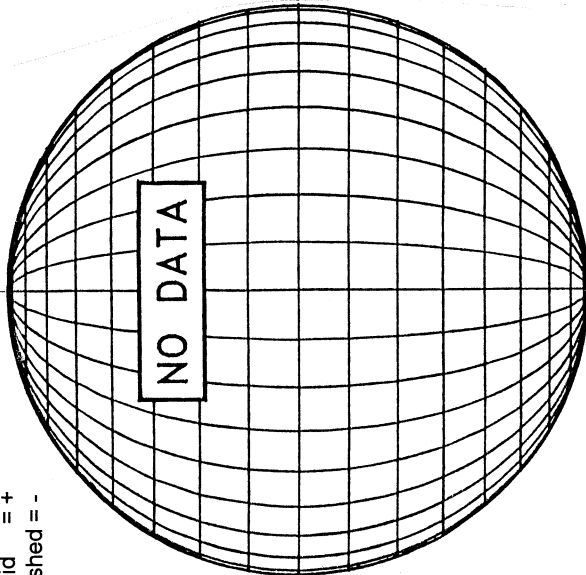
868.8 nm

Bright = +
Dark = -



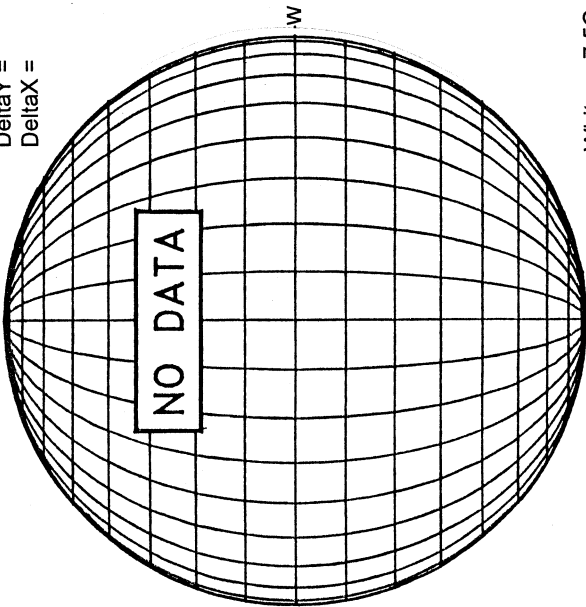
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

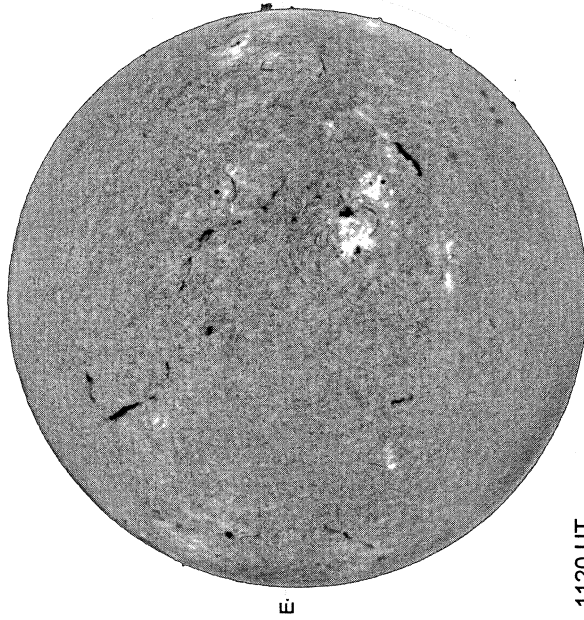
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

1552 UT

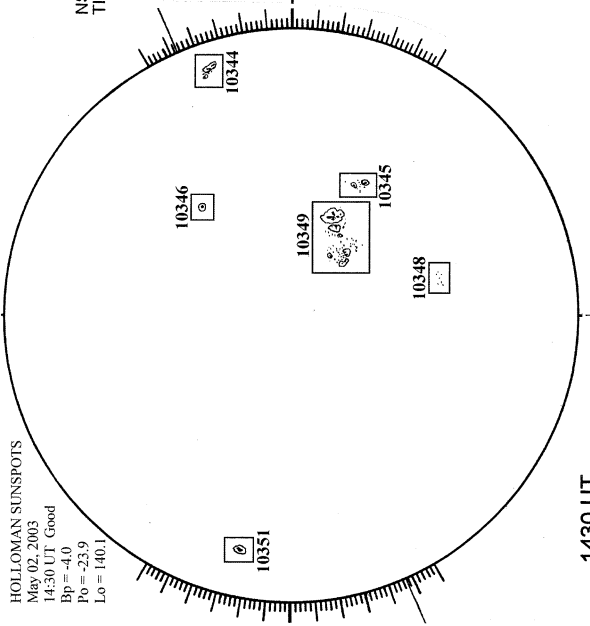
KANZELHOHE H-ALPHA



1120 UT

HOLLOMAN SUNSPOT

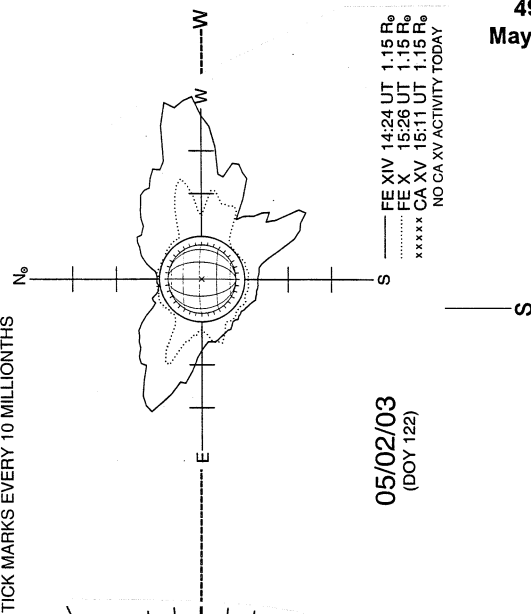
HOLLOMAN SUNSPOTS
May 02 2003
14:30 UT Good
Bp = 4.0
P0 = -23.9
Lo = 140.1



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



05/02/03
(DOY 122)

FE XIV 14:24 UT 1.15 R_o
FE X 15:26 UT 1.15 R_o
XXXX CA XV 15:11 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 3, 2003 (P = -23.86, Bo = -4.01, Lo = 134.06)

KITT PEAK MAGNETOGRAM

868.8 nm

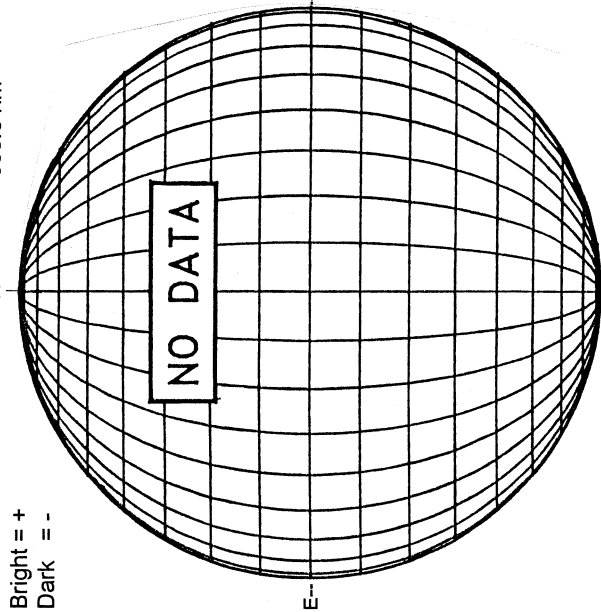
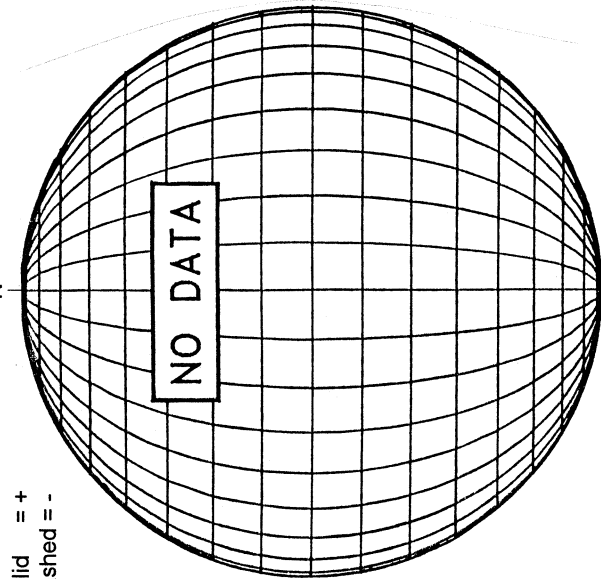
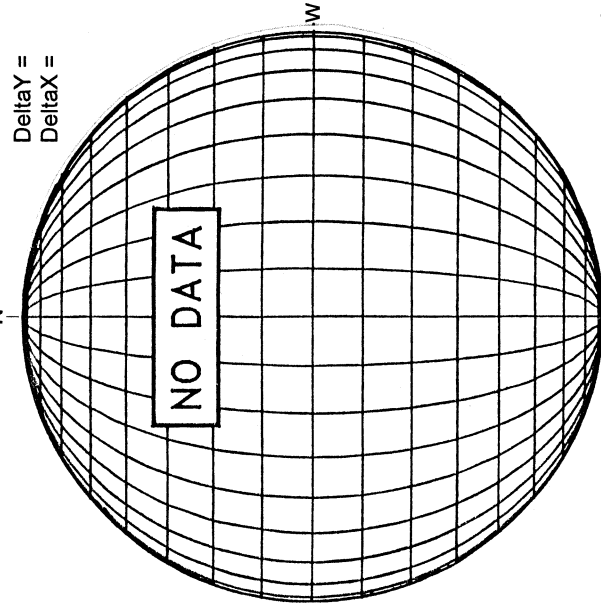
Bright = +
Dark = -

Solid = +
Dashed = -

STANFORD MAGNETOGRAM

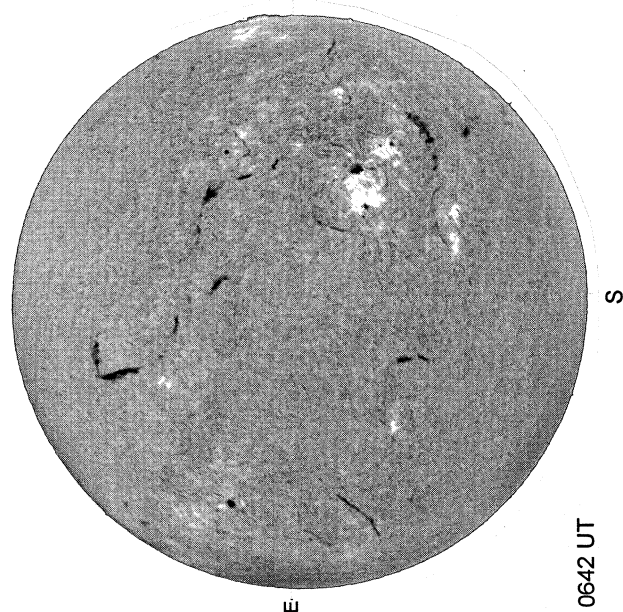
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

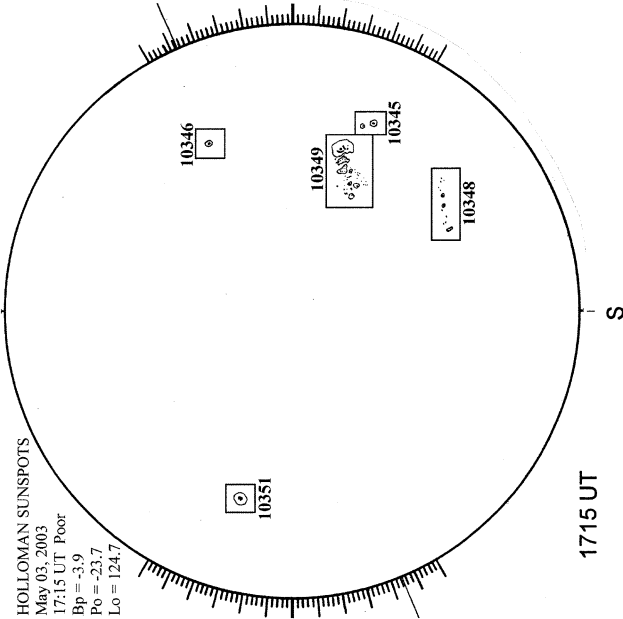


White = +7.5G
Black = -7.5G

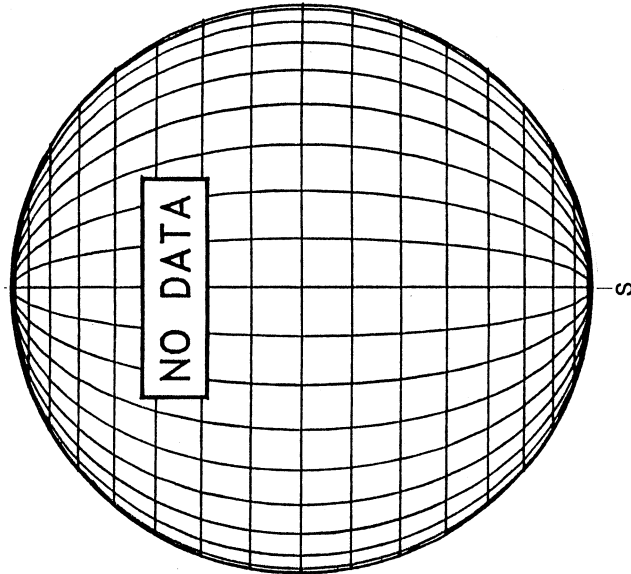
KANZELHOHE H-ALPHA



HOLLOMAN SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

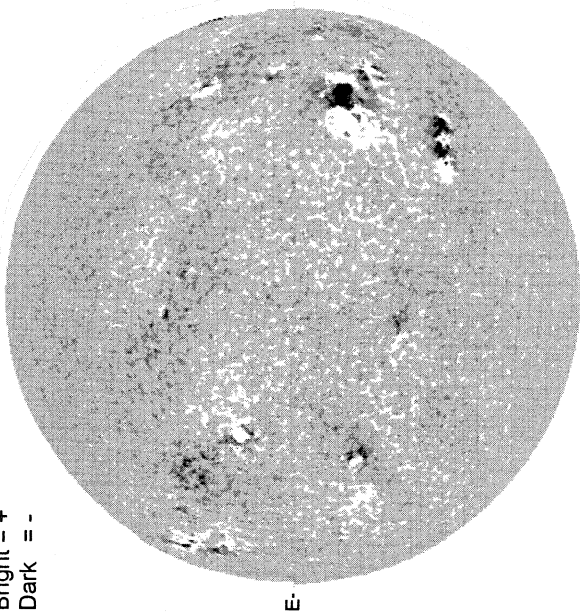


MAY 4, 2003 (P = -23.67, Bo = -3.91, Lo = 120.84)

KITT PEAK MAGNETOGRAM

868.8 nm

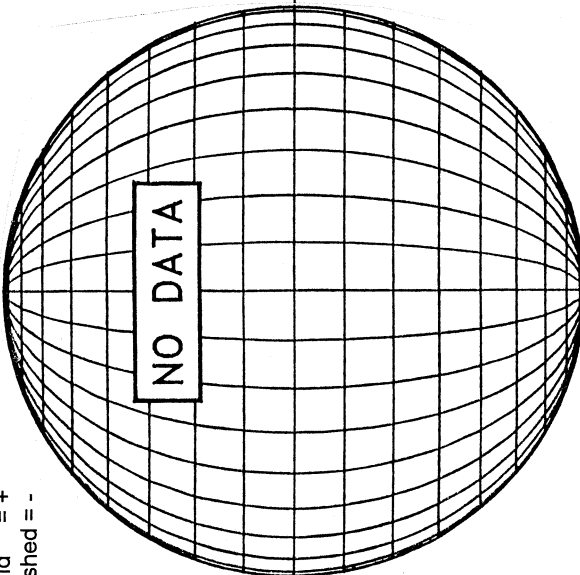
Bright = +
Dark = -



1459 UT

STANFORD MAGNETOGRAM

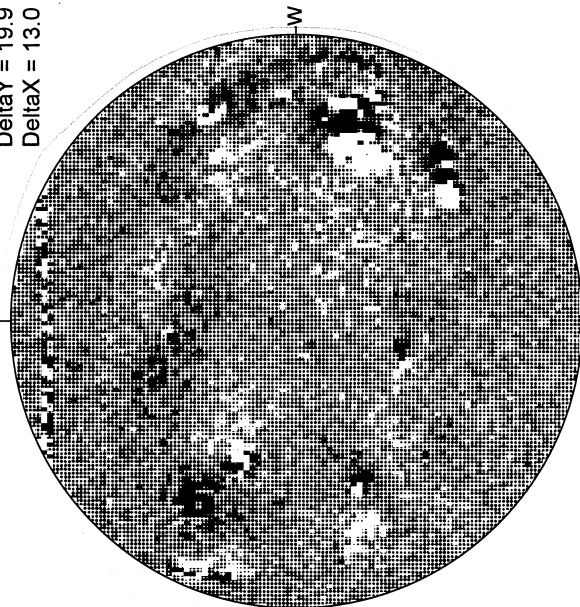
Solid = +
Dashed = -



15.15 -
15.56 UT

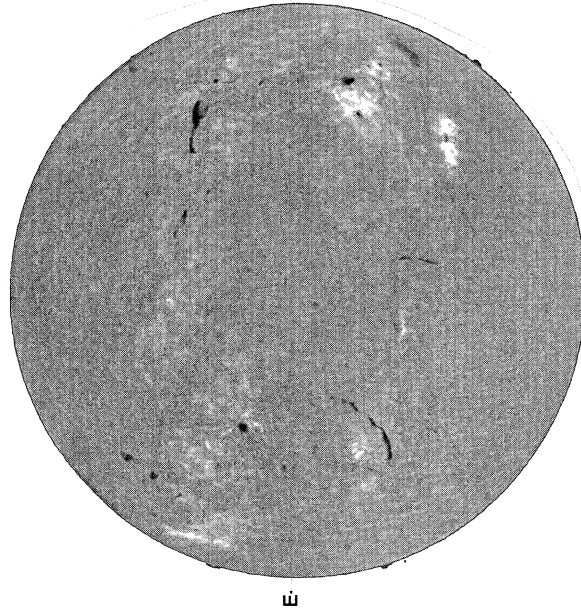
MT. WILSON MAGNETOGRAM

DeltaY = 19.9
DeltaX = 13.0



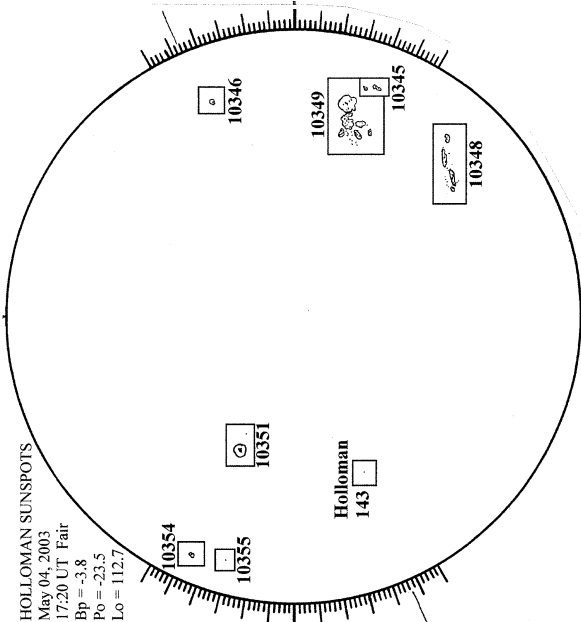
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



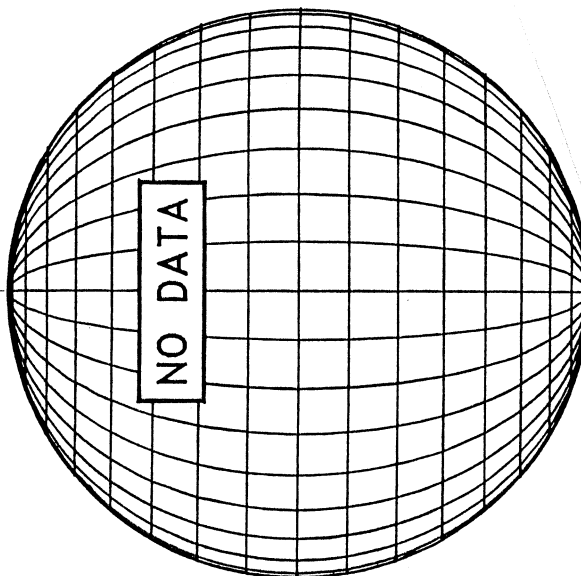
1548 UT

HOLLOMAN SUNSPOT



1720 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



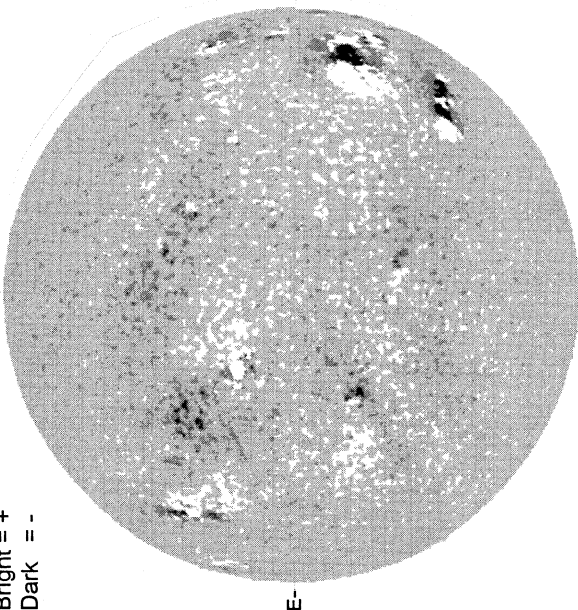
51
May 03

52
May 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1629 UT

STANFORD MAGNETOGRAM

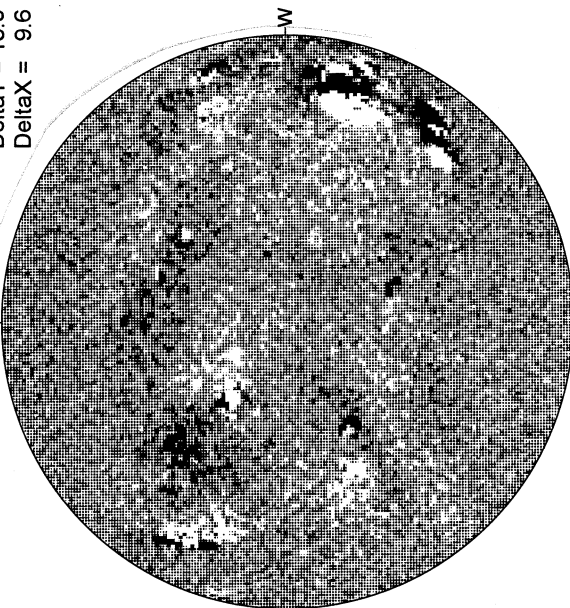
Solid = +
Dashed = -



2033 UT

MT. WILSON MAGNETOGRAM

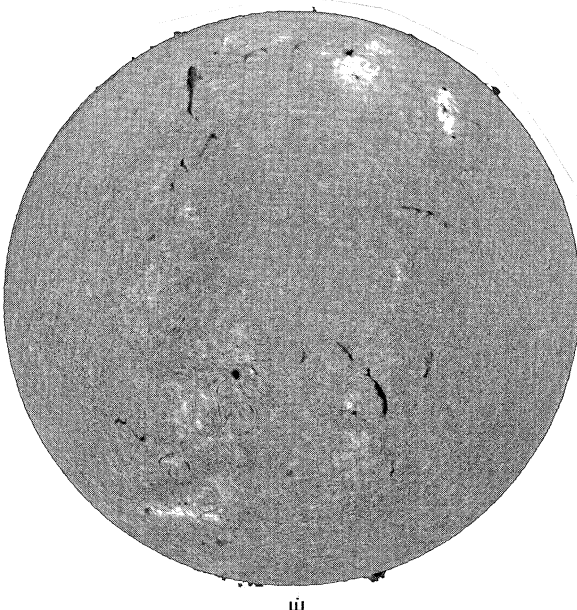
DeltaY = 13.0
DeltaX = 9.6



15.23 -
16.16 UT

White = +7.5G
Black = -7.5G

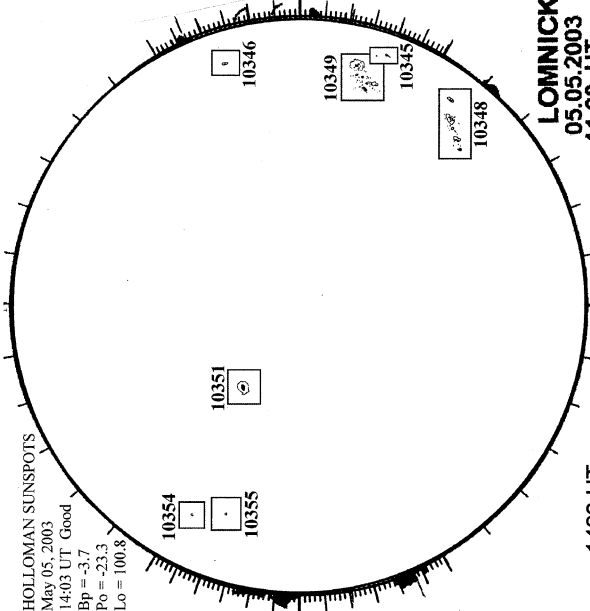
BIG BEAR H-ALPHA



1547 UT

HOLLOMAN SUNSPOTS

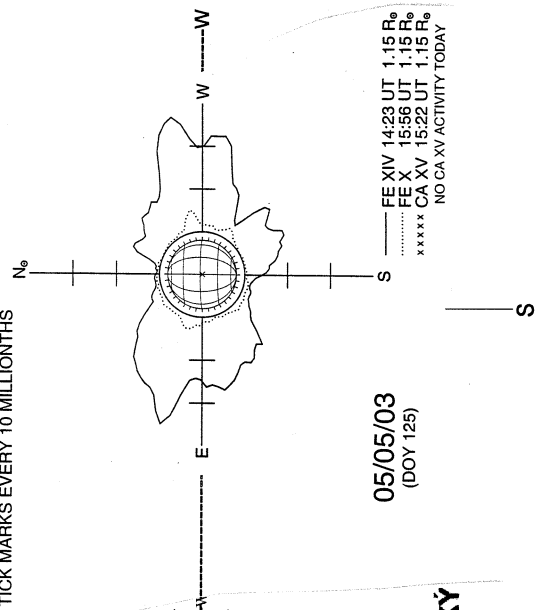
May 05, 2003
14:03 UT Good
Bp = -3.7
Po = -23.3
Lo = 100.8



1403 UT
1120 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS

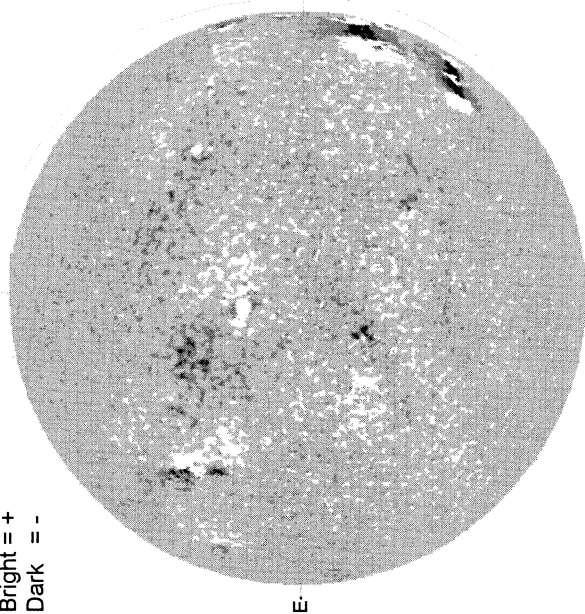


MAY 6, 2003 (P= -23.26, Bo = -3.70, Lo = 94.40)

KITT PEAK MAGNETOGRAM

868.8 nm

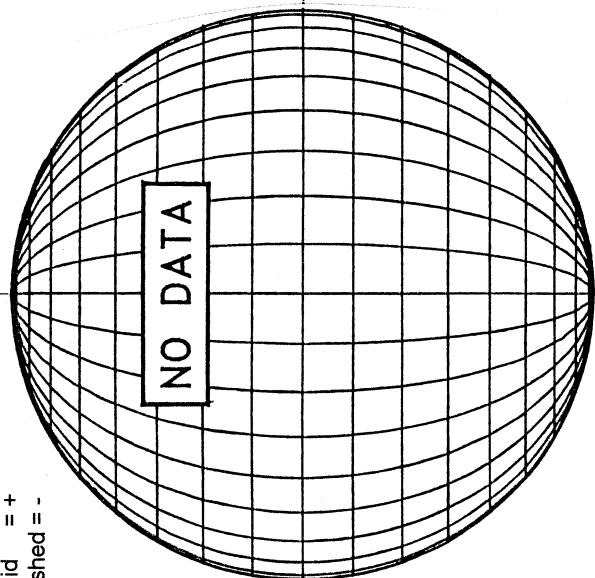
Bright = +
Dark = -



1603 UT

STANFORD MAGNETOGRAM

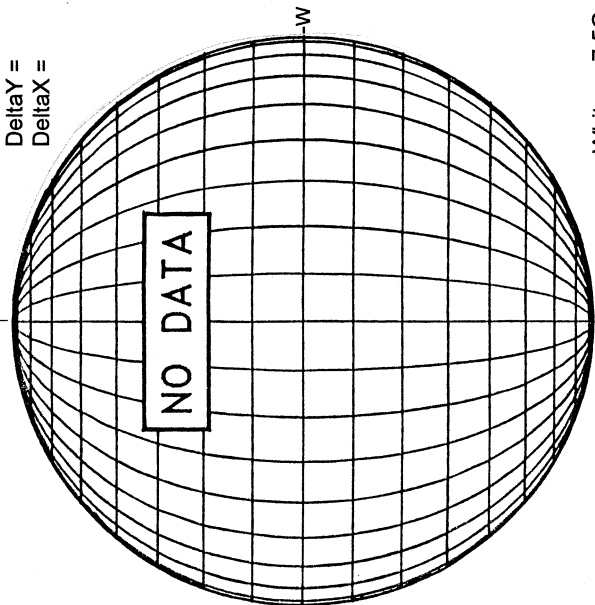
Solid = +
Dashed = -



White= +7.5G
Black = -7.5G

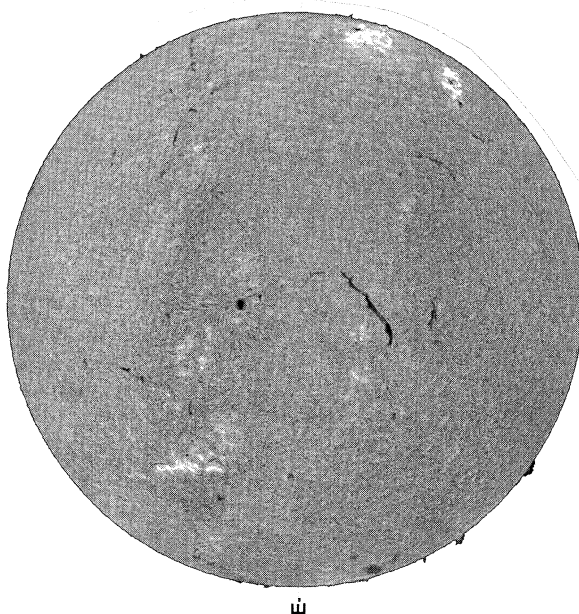
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



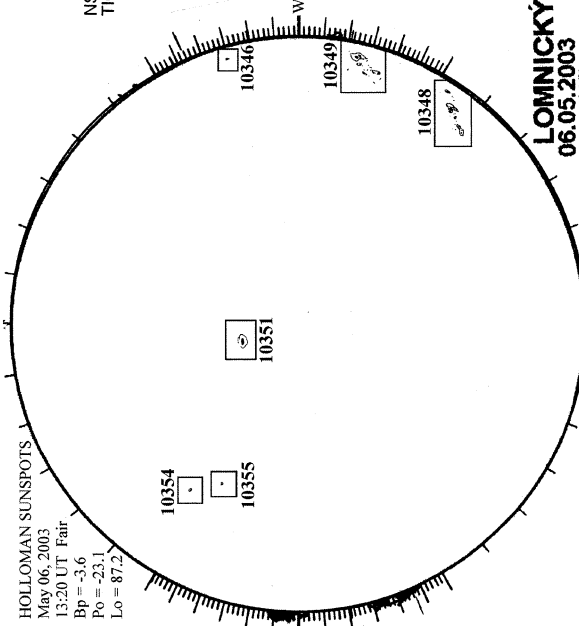
NO DATA

BIG BEAR H-ALPHA



1755 UT

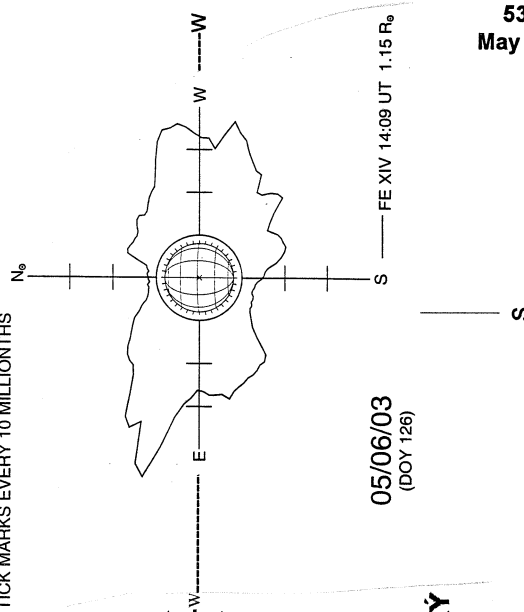
HOLLOMAN SUNSPOT



1320 UT
0515 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



05/06/03
(DOY 126)

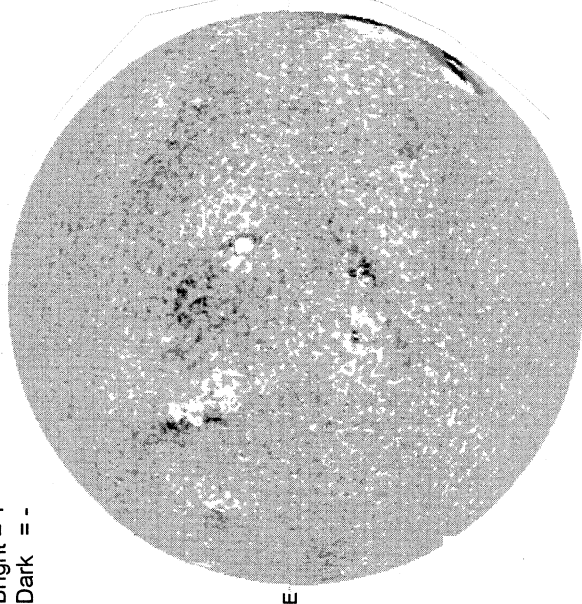
53
May 03

MAY 7, 2003 (P = -23.05, Bo = -3.59, Lo = 81.18)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1513 UT

STANFORD MAGNETOGRAM

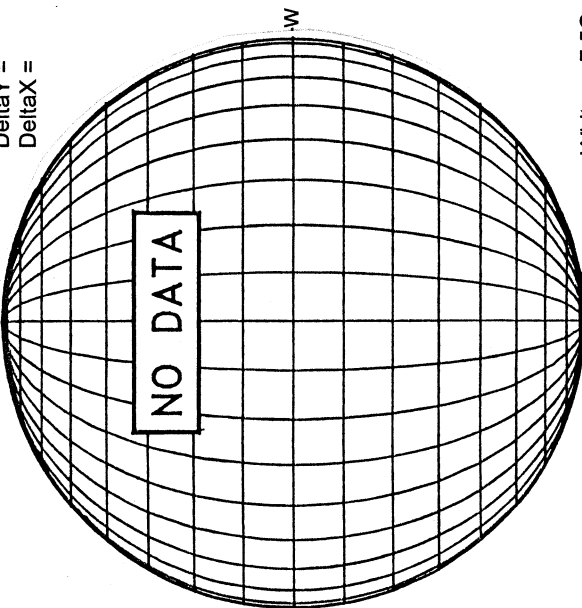
Solid = +
Dashed = -



2227 UT

MT. WILSON MAGNETOGRAM

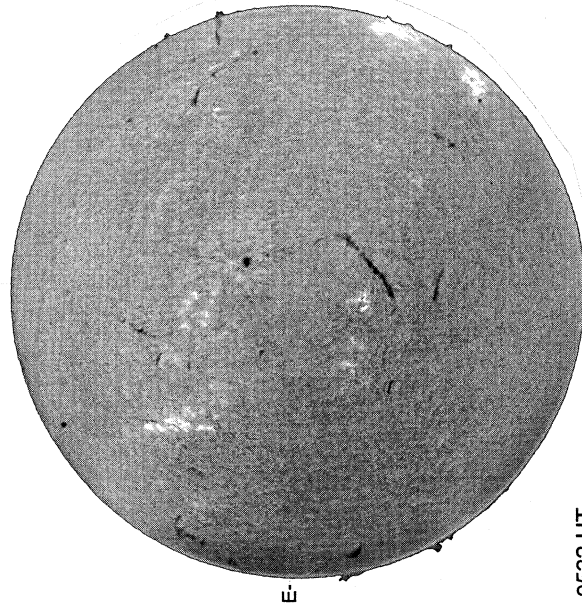
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

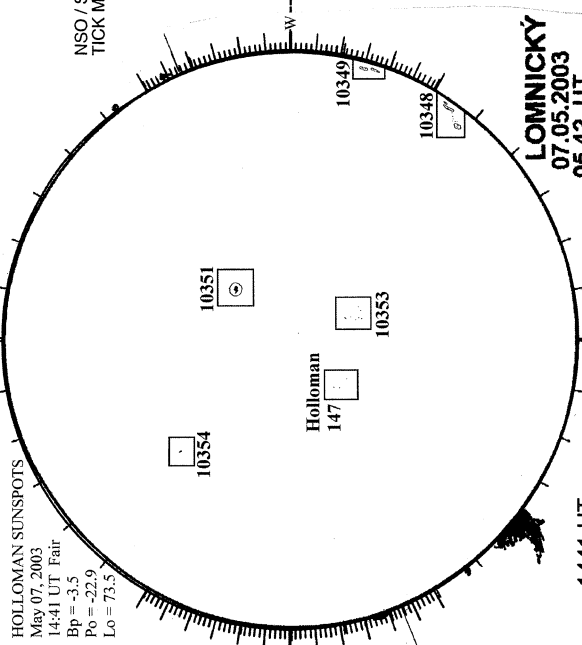
NO DATA

KANZELHOHE H-ALPHA



0532 UT

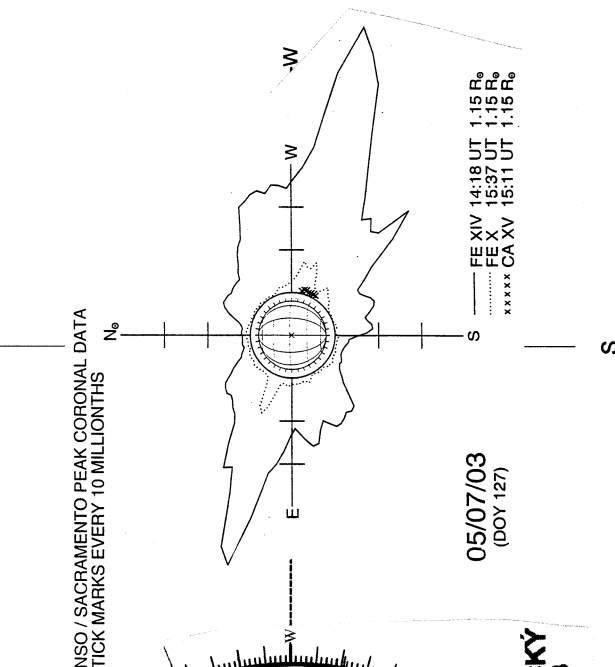
HOLLOMAN SUNSPOTS



1441 UT

0542 UT LOMN Prom S

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



05/07/03
(DOY 127)

FE XIV 14:18 UT 1.15 R_o
FE X 15:37 UT 1.15 R_o
XXXX CA XV 15:11 UT 1.15 R_o

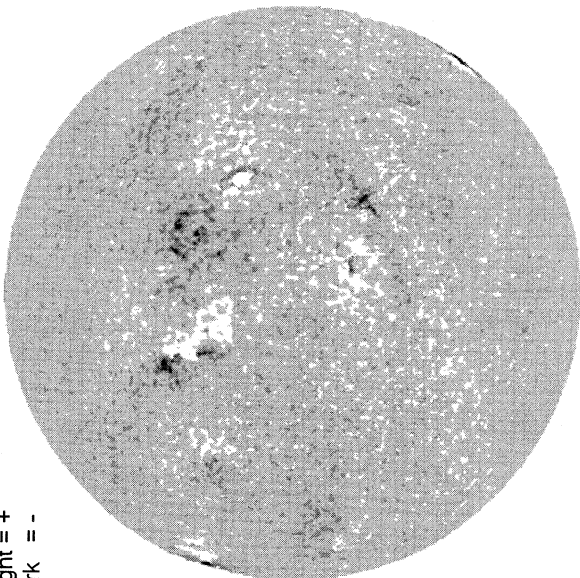
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS

MAY 8, 2003 (P= -22.83, Bo = -3.49, Lo = 67.96)

KITT PEAK MAGNETOGRAM

868.8 nm

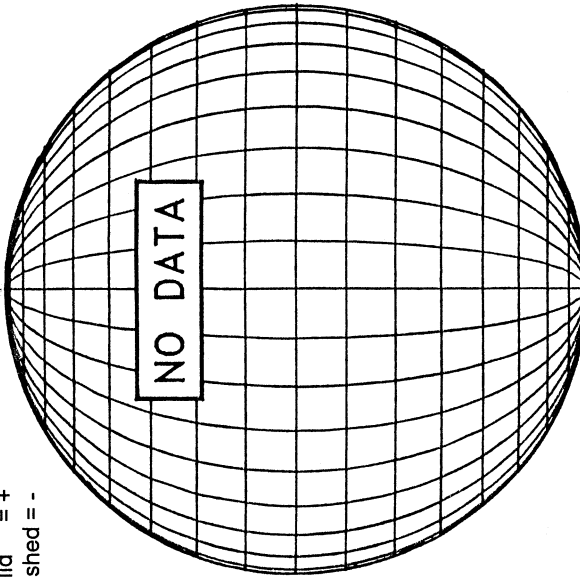
Bright = +
Dark = -



1532 UT

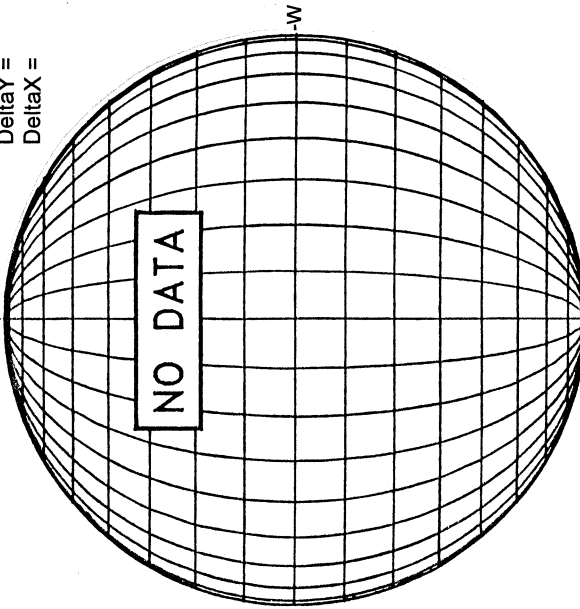
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



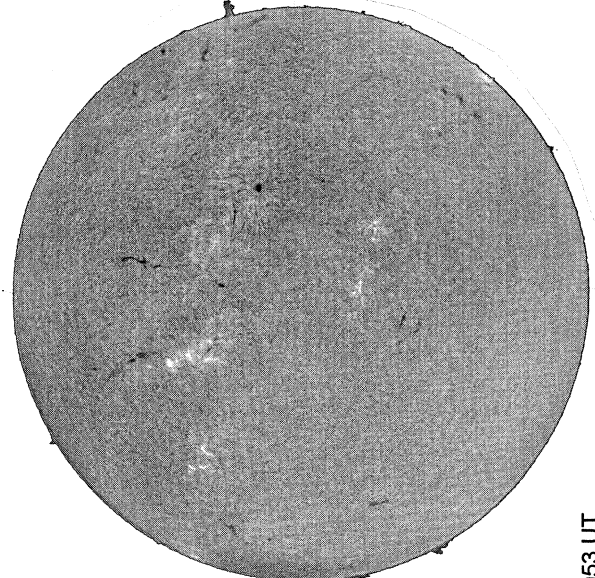
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



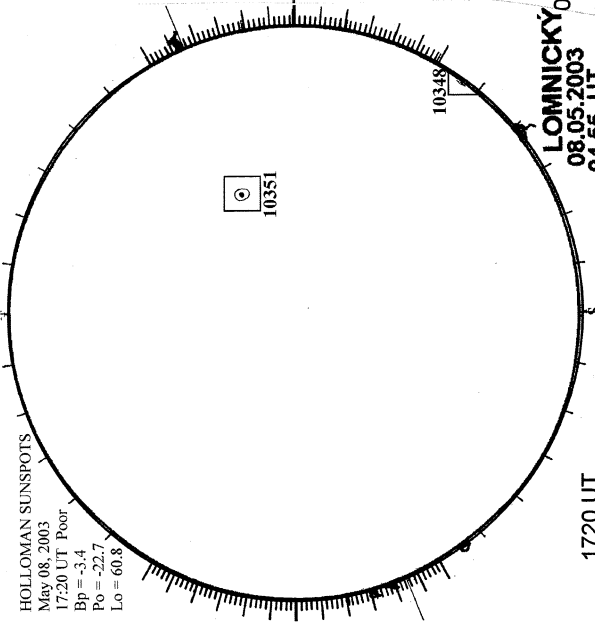
White = +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

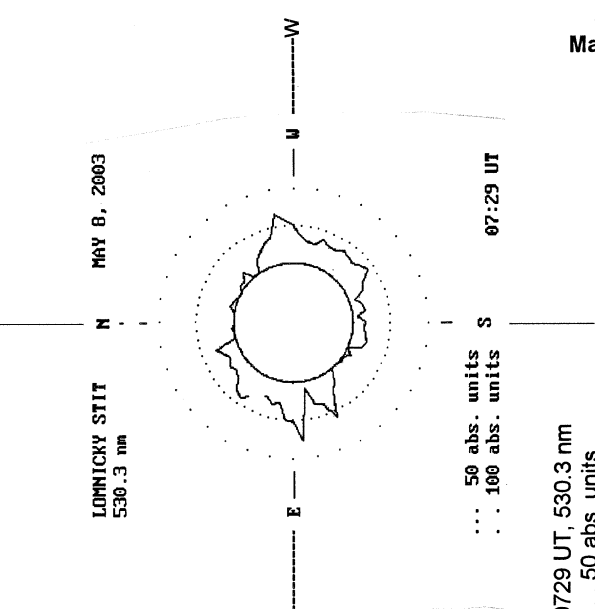


1053 UT

HOLLOMAN SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)----



55
May 03

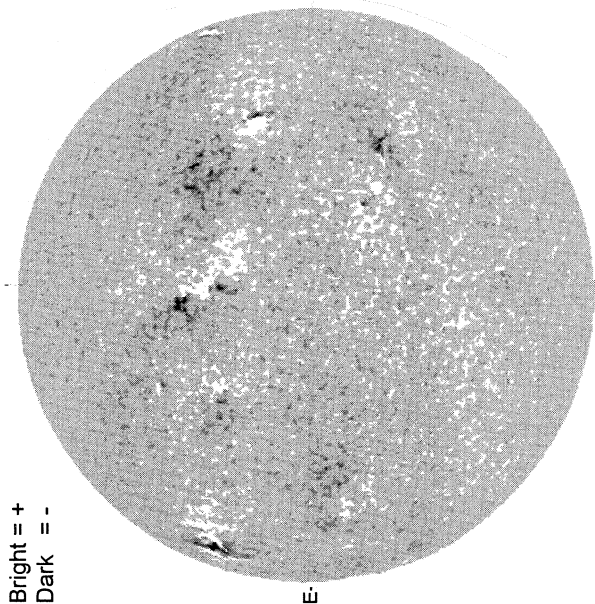
56
May 03

MAY 9, 2003 (P= -22.60, Bo = -3.38, Lo = 54.74)

KITT PEAK MAGNETOGRAM

**868.8 nm

Bright = +
Dark = -



1627 UT

STANFORD MAGNETOGRAM

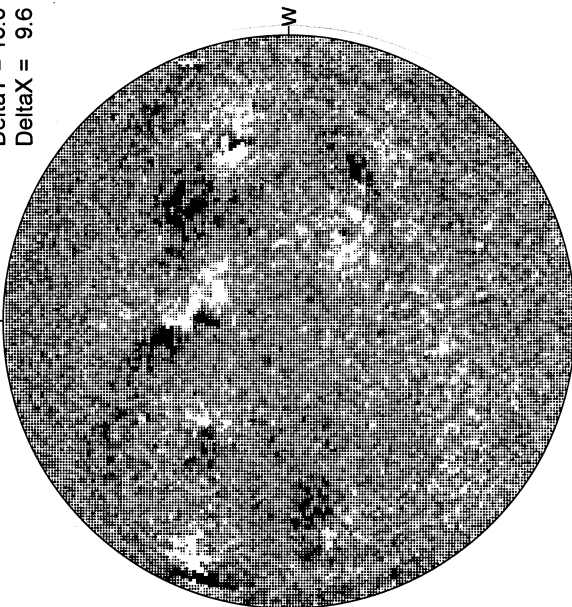
Solid = +
Dashed = -



1941 UT

MT. WILSON MAGNETOGRAM

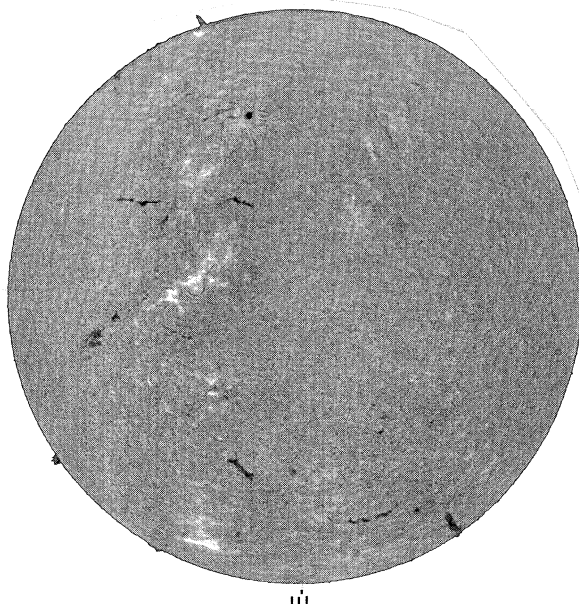
DeltaY = 13.0
DeltaX = 9.6



15.62 -
16.56 UT

White = +7.5G
Black = -7.5G

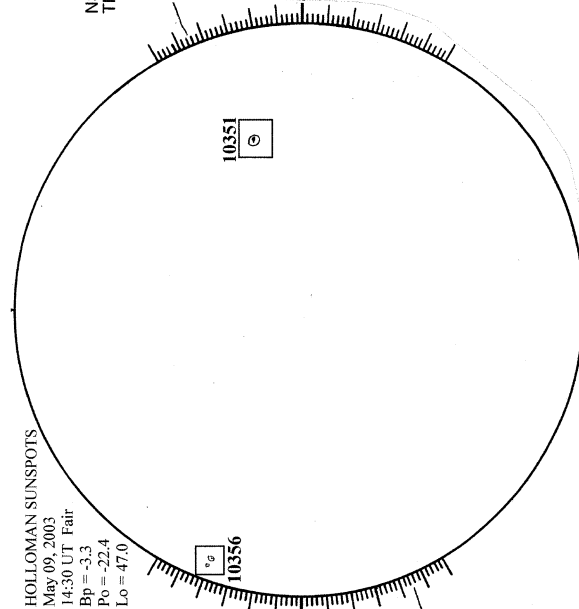
BIG BEAR H-ALPHA



2013 UT

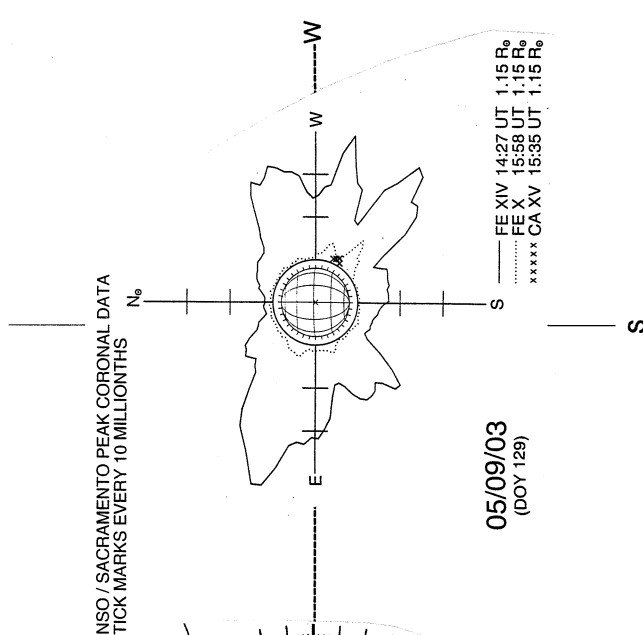
HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
May 09, 2003
14:30 UT Fair
Bp = -3.3
Po = -22.4
Lo = 47.0



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

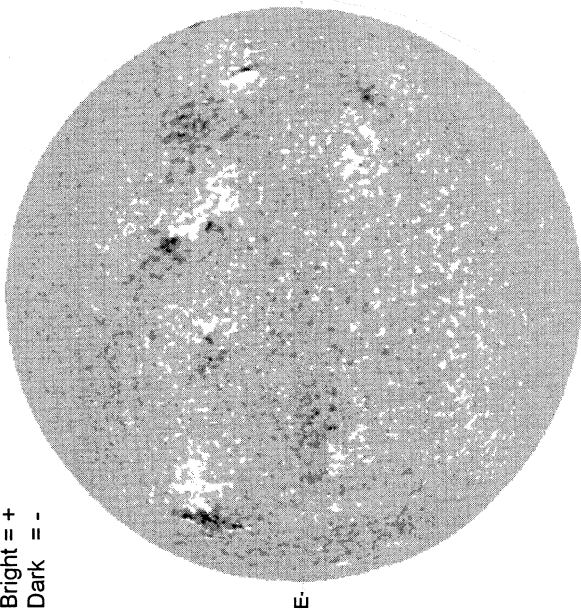


MAY 10, 2003 (P= -22.37, Bo = -3.27 Lo = 41.52)

KITT PEAK MAGNETOGRAM

868.8 nm

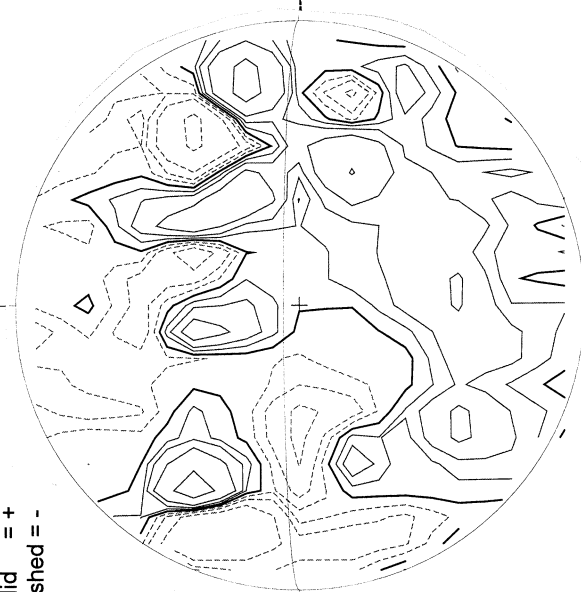
Bright = +
Dark = -



1607 UT

STANFORD MAGNETOGRAM

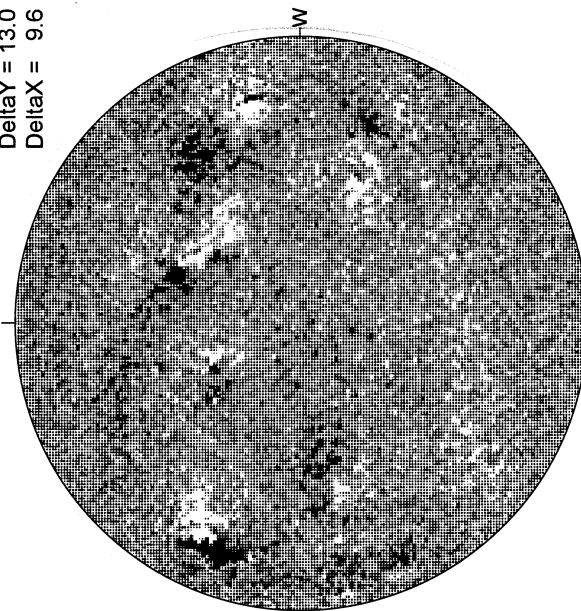
Solid = +
Dashed = -



1909 UT

MT. WILSON MAGNETOGRAM

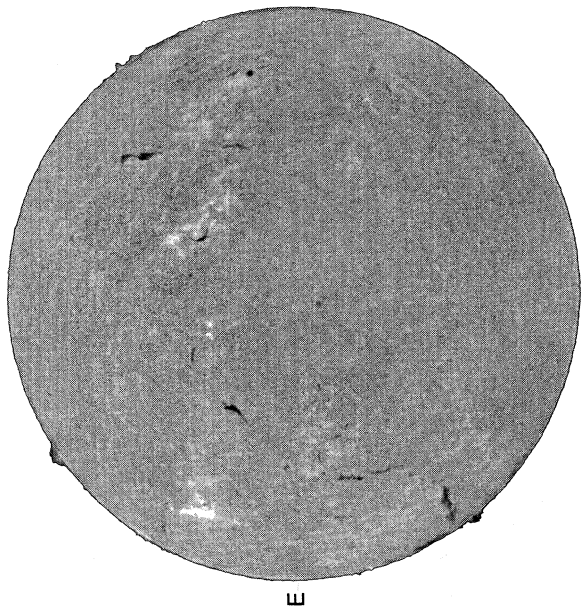
DeltaY = 13.0
DeltaX = 9.6



15.99 -
16.92 UT

White = +7.5G
Black = -7.5G

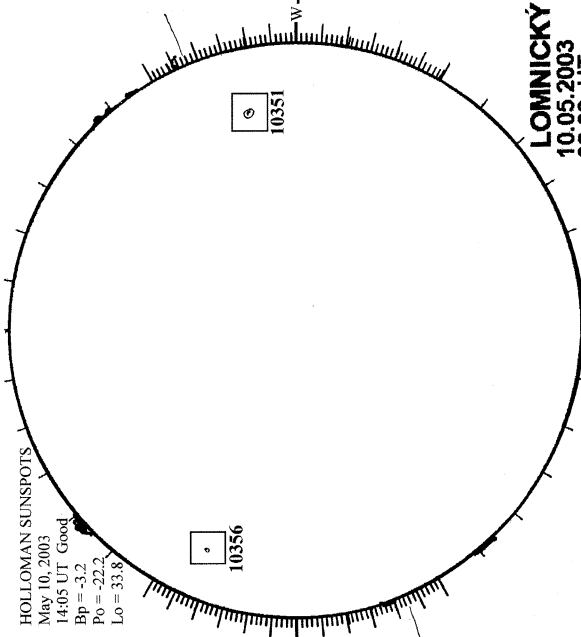
BIG BEAR H-ALPHA



1707 UT

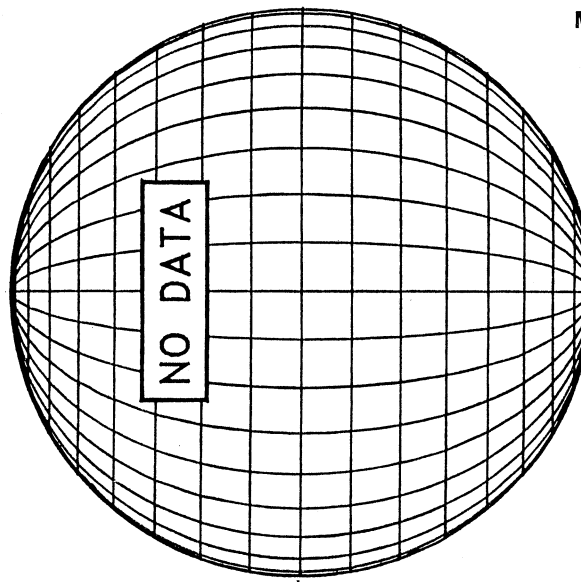
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
May 10, 2003
14:05 UT Good
Bp = -3.2
Po = -22.2
Lo = 33.8



1405 UT
0803 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



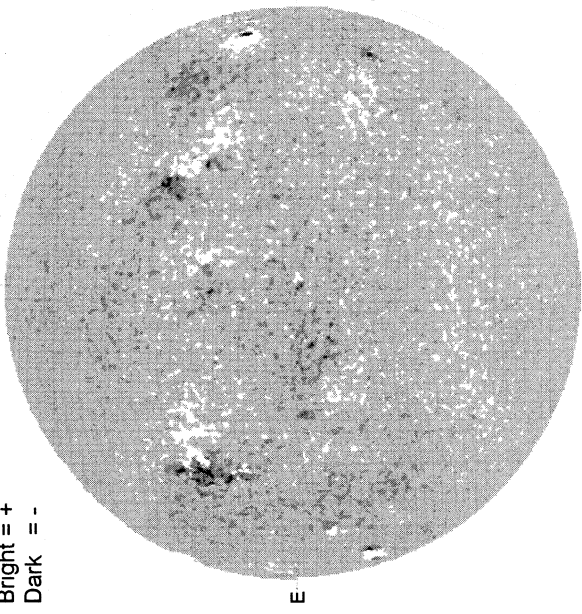
57
May 03

58
May 03

KITT PEAK MAGNETOGRAM

868.8 nm

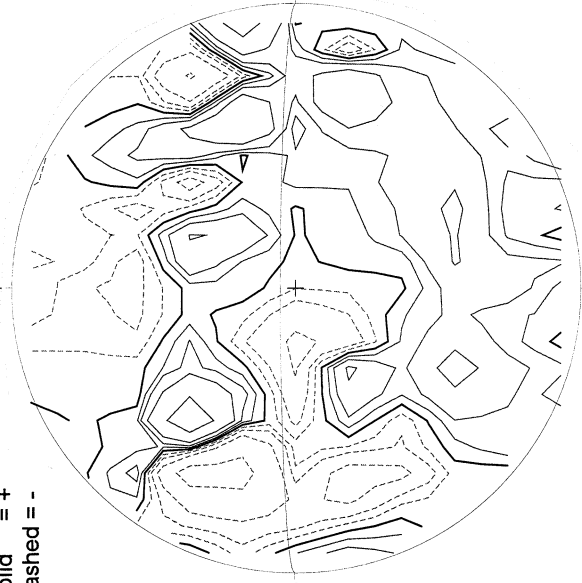
Bright = +
Dark = -



1657 UT

STANFORD MAGNETOGRAM

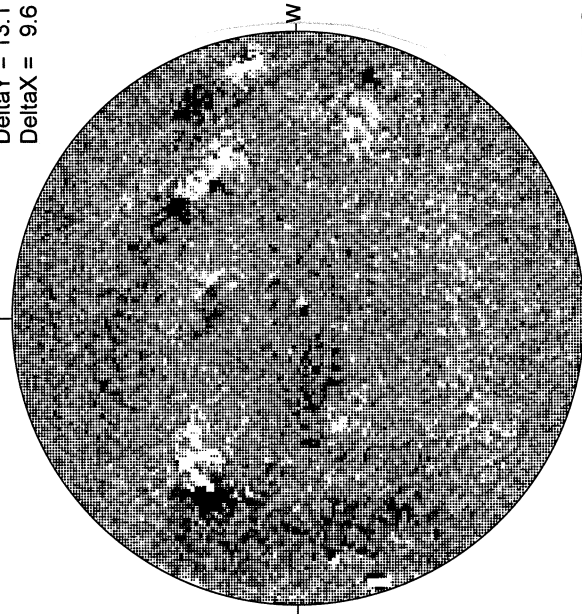
Solid = +
Dashed = -



2006 UT

MT. WILSON MAGNETOGRAM

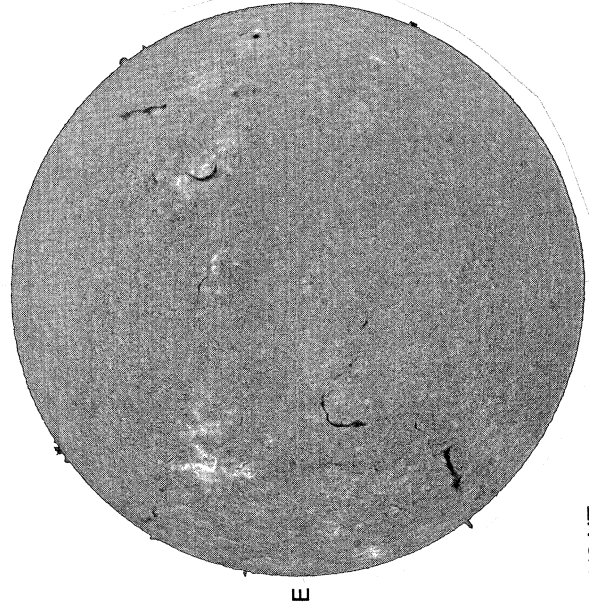
DeltaY = 13.1
DeltaX = 9.6



18.38 -
19.31 UT

White = +7.5G
Black = -7.5G

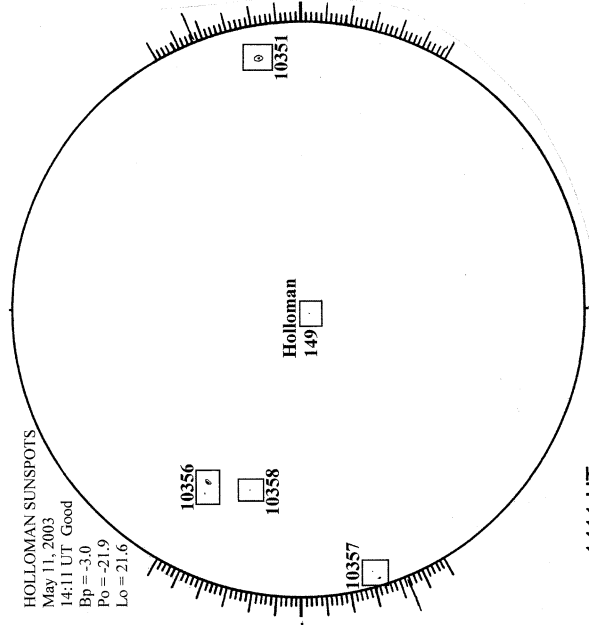
BIG BEAR H-ALPHA



1548 UT

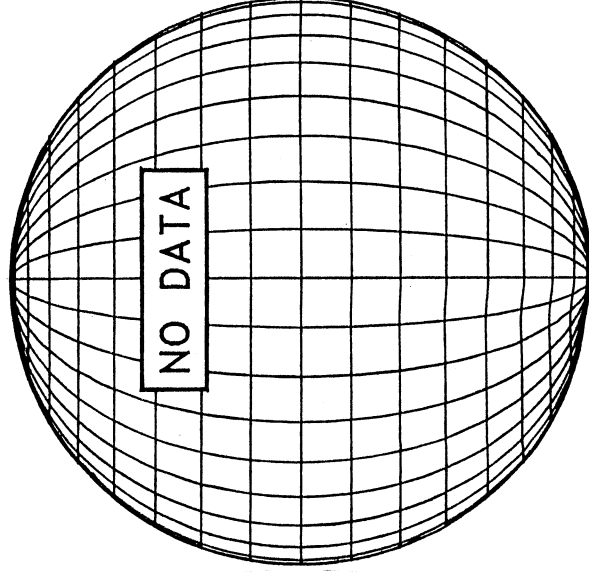
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
May 11, 2003
14:11 UT Good
Bp = -3.0
Po = -21.9
Lo = 21.6



1411 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



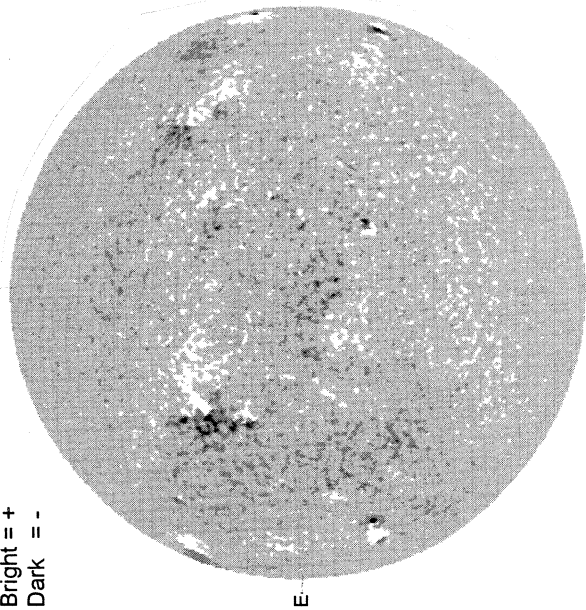
S

MAY 12, 2003 (P= -21.88 Bo = -3.05 Lo = 15.07)

KITT PEAK MAGNETOGRAM

868.8 nm

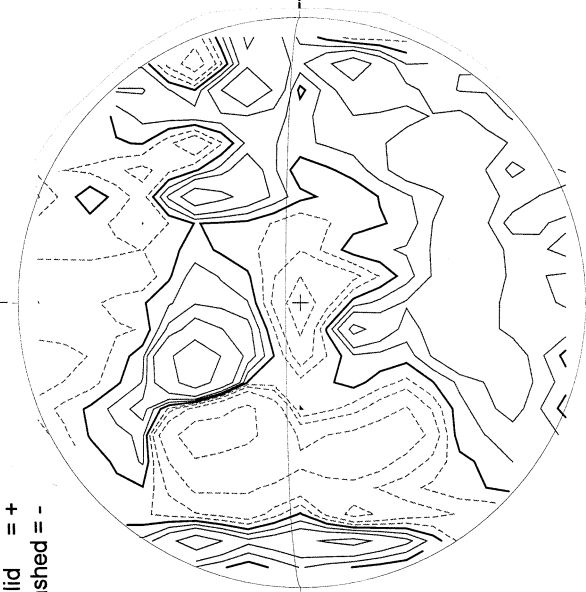
Bright = +
Dark = -



1628 UT

STANFORD MAGNETOGRAM

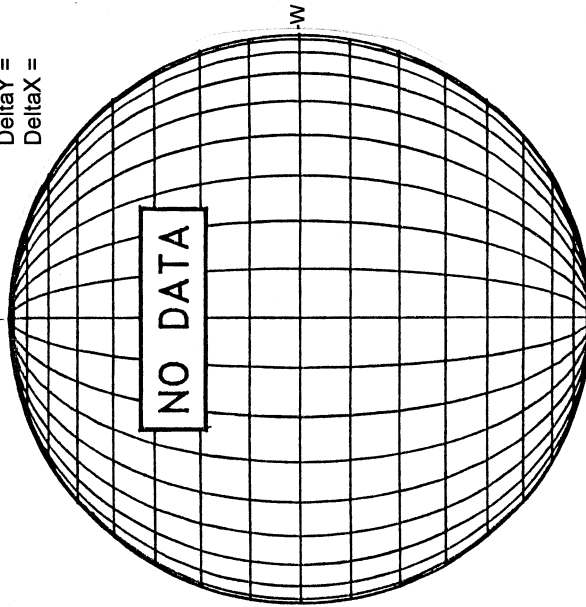
Solid = +
Dashed = -



2138 UT

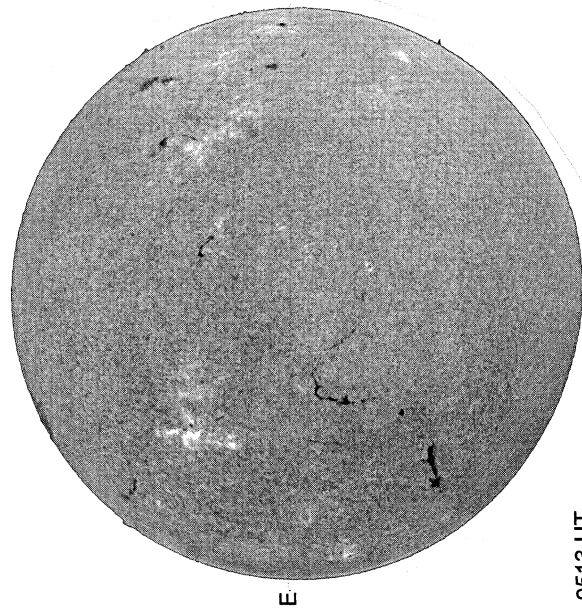
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



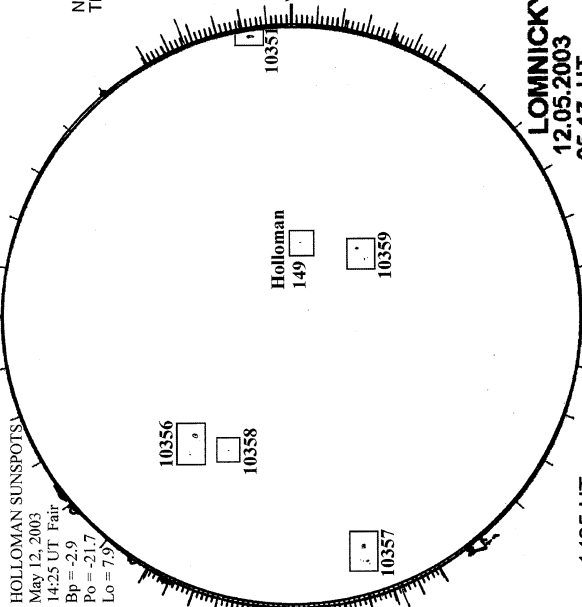
White = +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



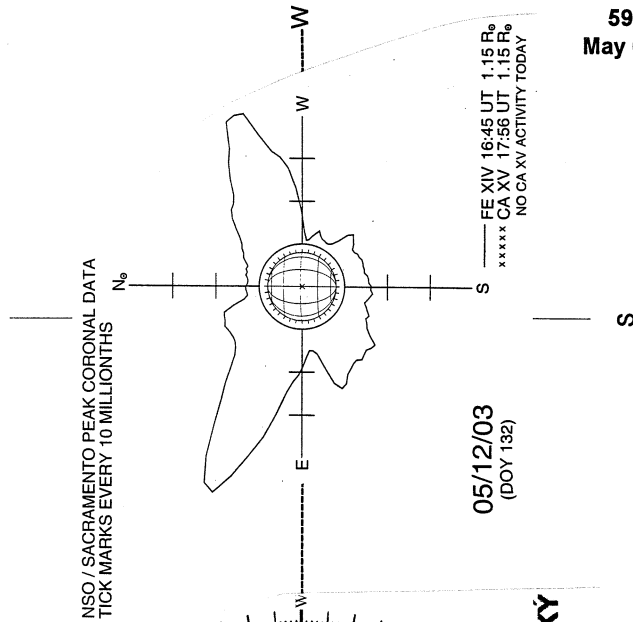
0513 UT

HOLLOMAN SUNSPOTS



1425 UT
0517 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/12/03
(DOY 132)

59
May 03

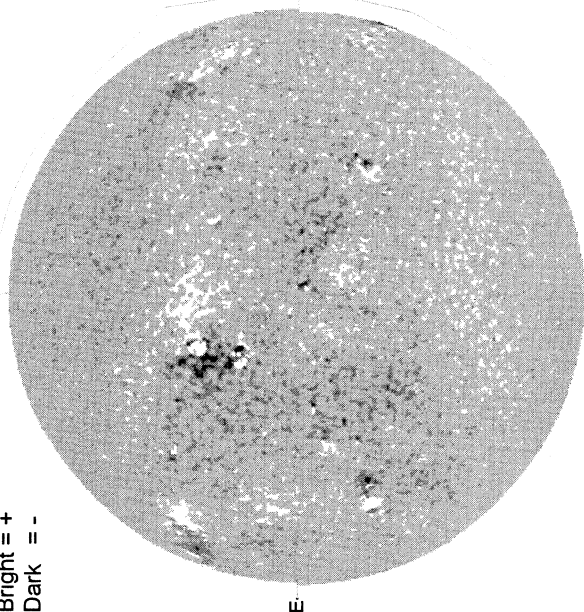
MAY 13, 2003 (P= -21.63, Bo = -2.94, Lo = 1.85)

60
May 03

KITT PEAK MAGNETOGRAM

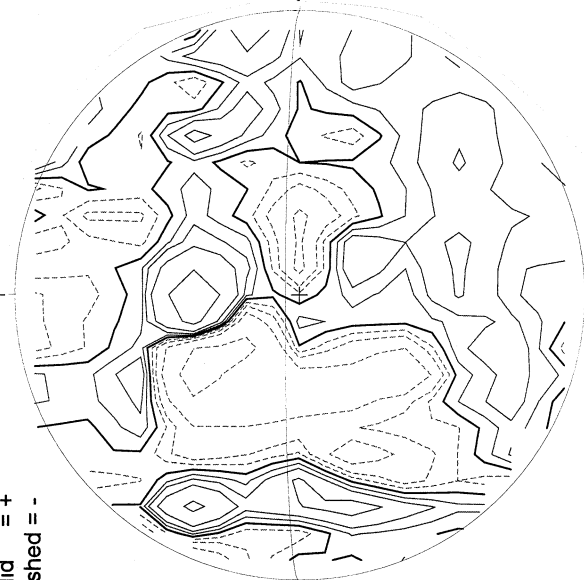
868.8 nm

Bright = +
Dark = -



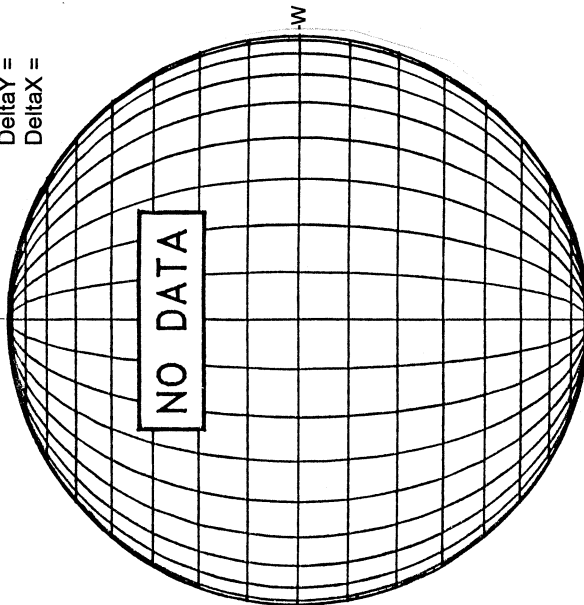
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

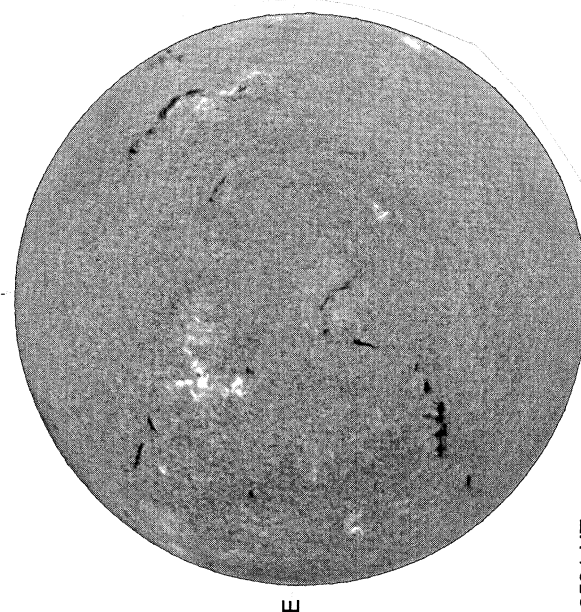


White= +7.5G
Black = -7.5G

1658 UT

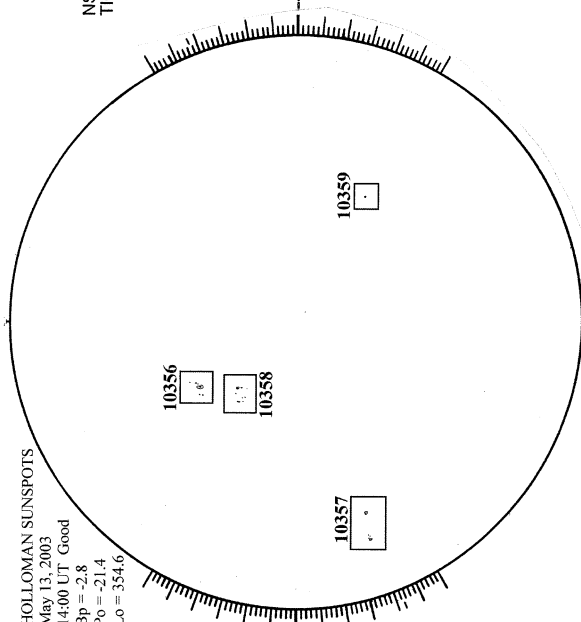
2147 UT

KANZELHOHE H-ALPHA



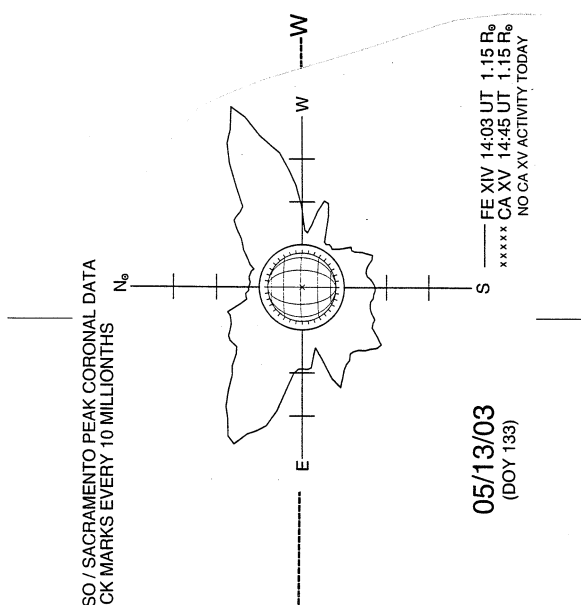
0531 UT

HOLLOMAN SUNSPOTS



1400 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/13/03
(DOY 133)

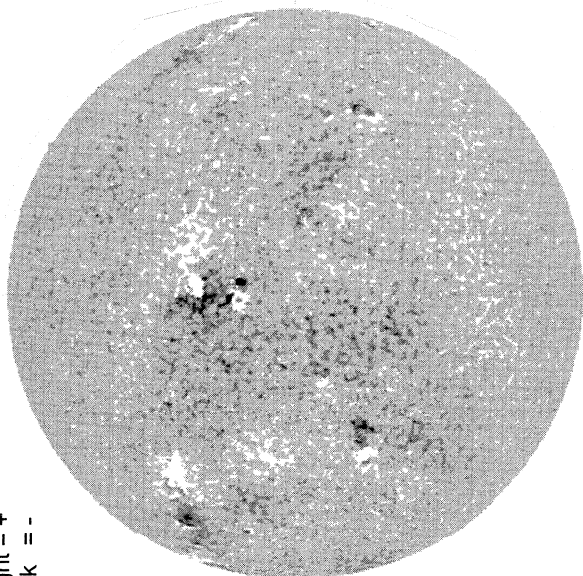
FE XIV 14:03 UT 1.15 R_o
CA XV 14:45 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 14, 2003 (P= -21.37, Bo = -2.83, Lo = 348.62)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1701 UT

STANFORD MAGNETOGRAM

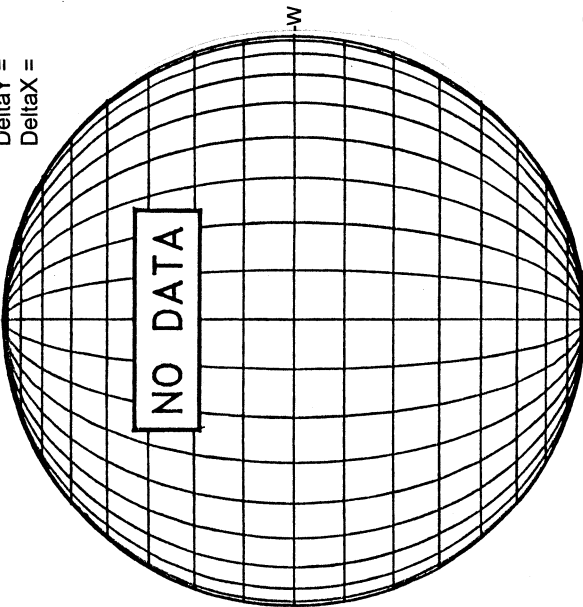
Solid = +
Dashed = -



2306 UT

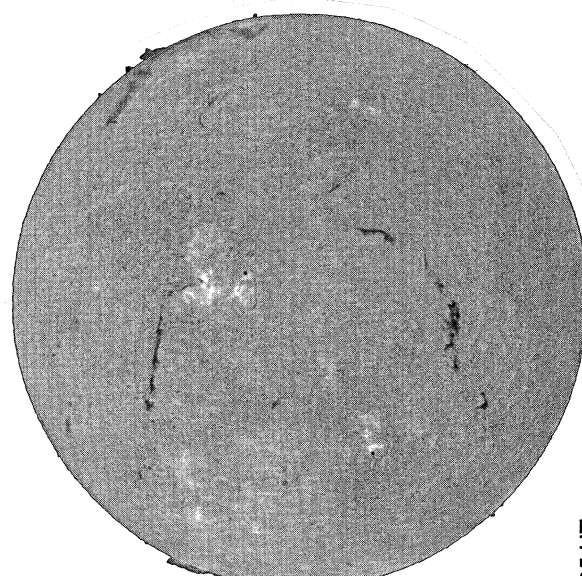
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



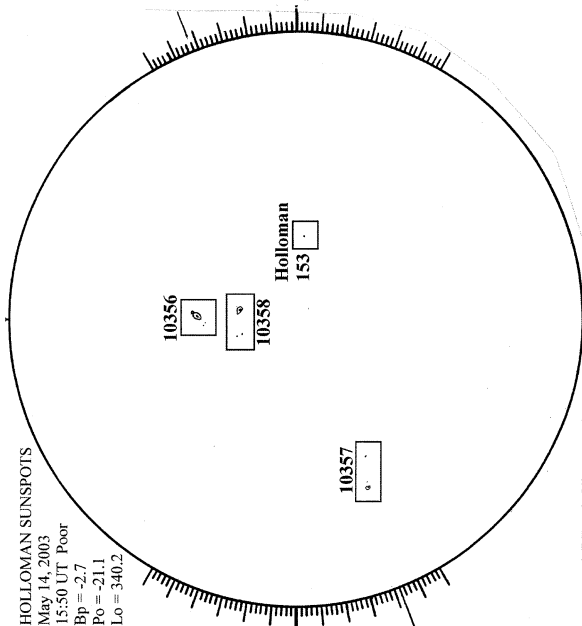
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



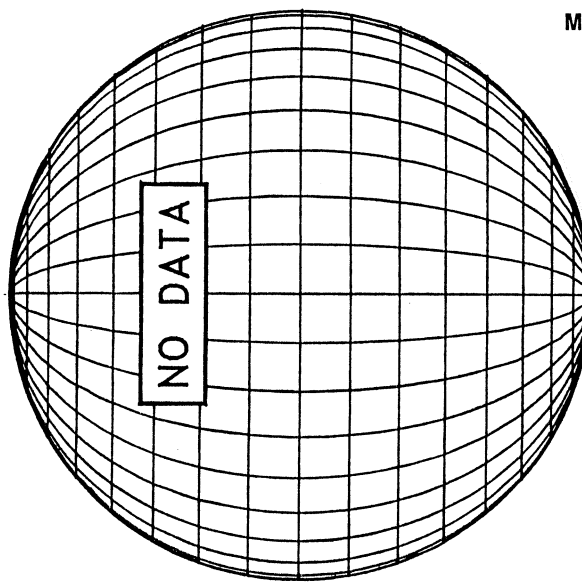
2235 UT

HOLLOMAN SUNSPOTS



1550 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



61
May 03

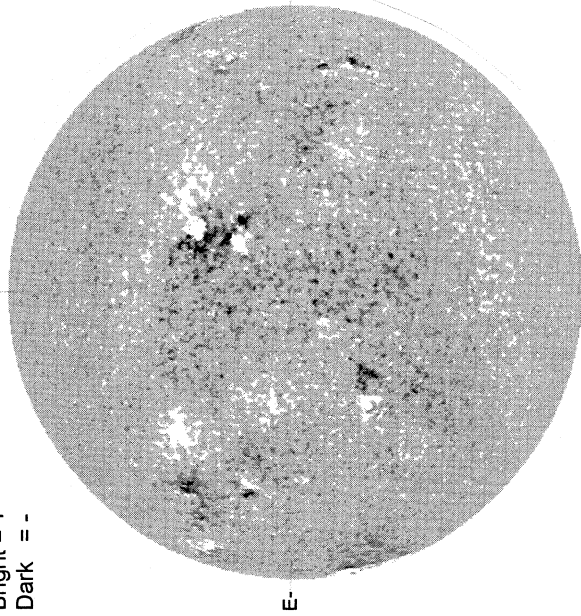
62
May 03

MAY 15, 2003 (P= -21.10, Bo = -2.71, Lo = 335.40)

KITT PEAK MAGNETOGRAM

868.8 nm

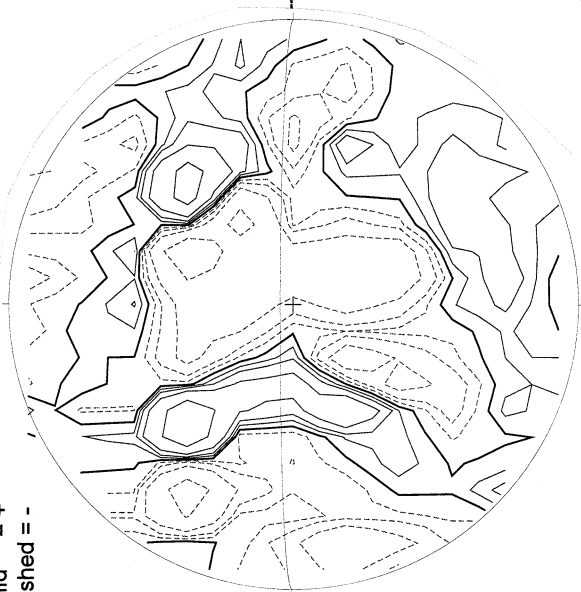
Bright = +
Dark = -



1510 UT

STANFORD MAGNETOGRAM

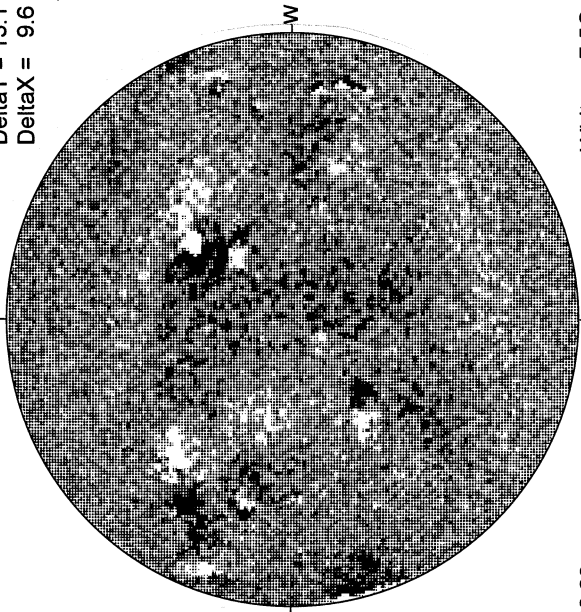
Solid = +
Dashed = -



2304 UT

MT. WILSON MAGNETOGRAM

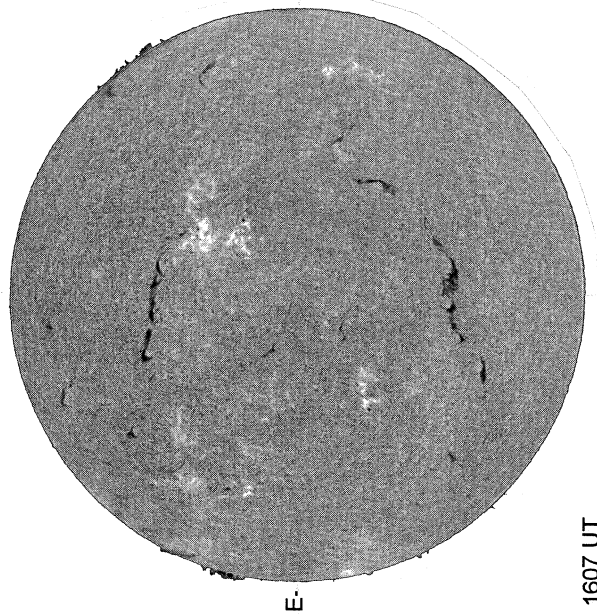
DeltaY = 13.1
DeltaX = 9.6



20.29 -
21.22 UT

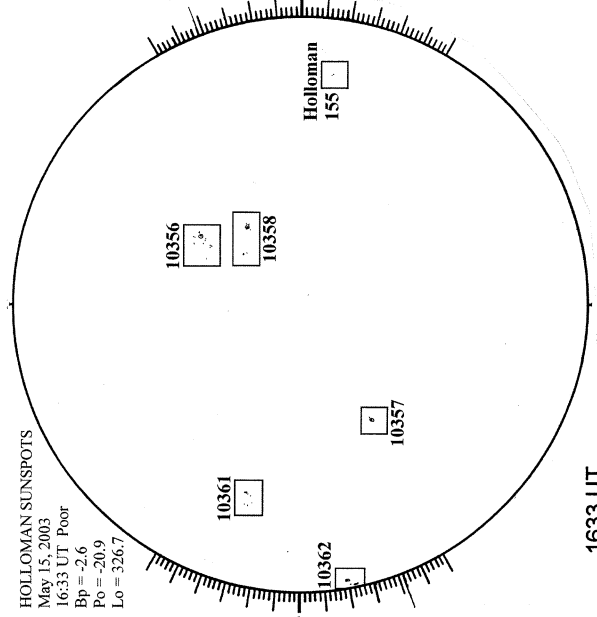
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1607 UT

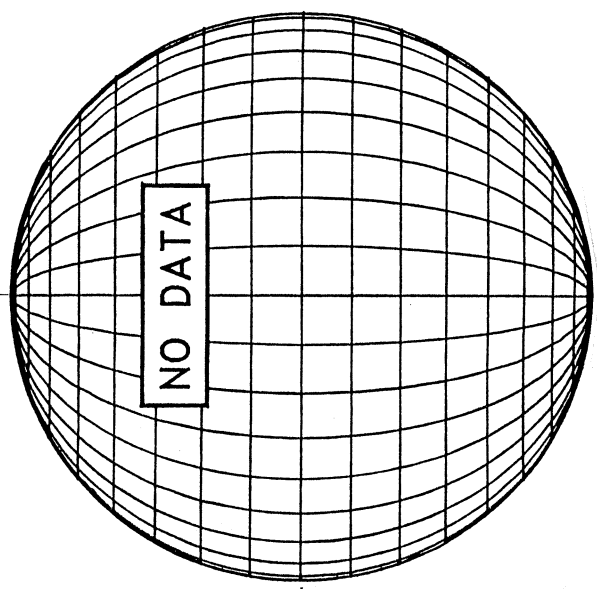
HOLLOMAN SUNSPOT



1633 UT

HOLLOMAN SUNSPOTS
May 15, 2003
16:33 UT Poor
Bp = -2.6
Po = -20.9
Lo = 326.7

LOMNICKY PEAK CORONA (1.04 Radii)----



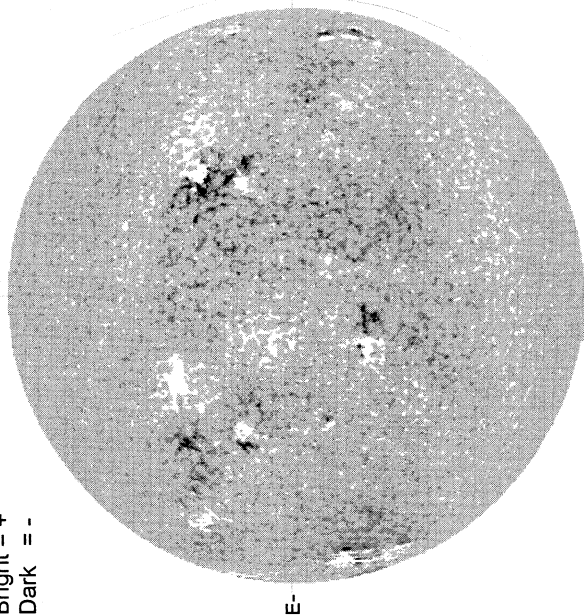
S

MAY 16, 2003 (P = -20.82, Bo = -2.60, Lo = 322.17)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



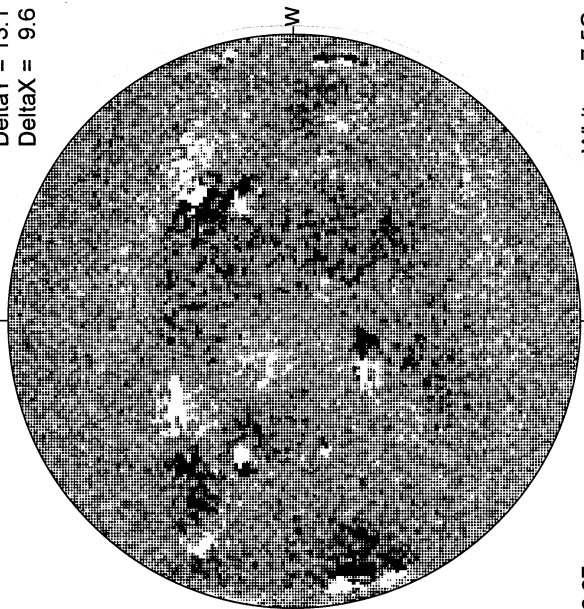
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

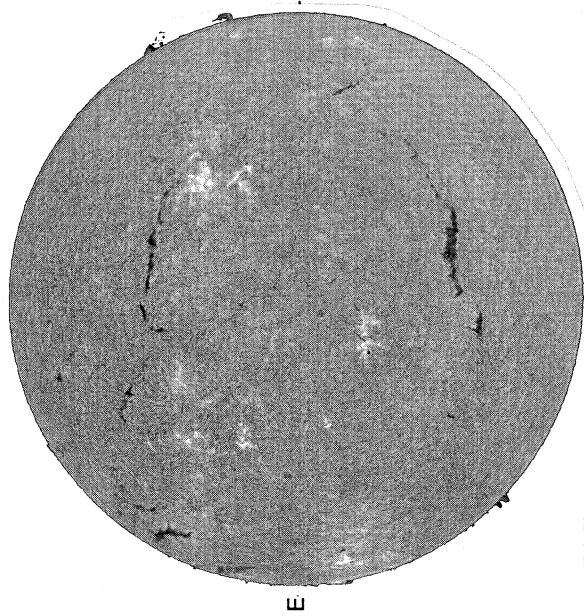
DeltaY = 13.1
DeltaX = 9.6



16.97 -
17.90 UT

White = +7.5G
Black = -7.5G

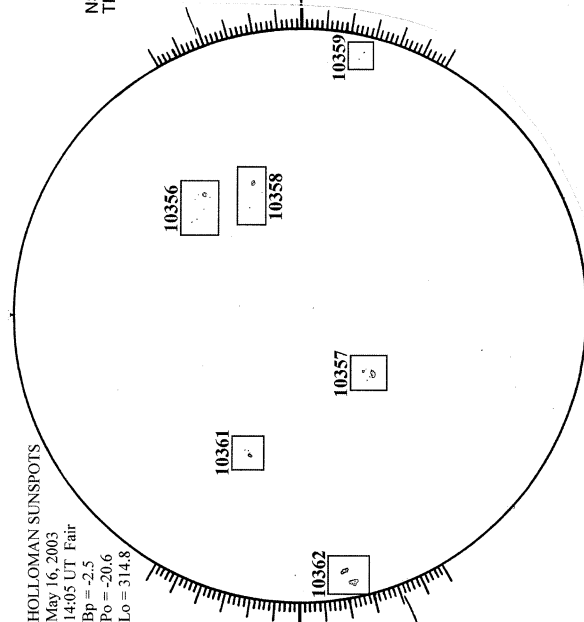
BIG BEAR H-ALPHA



1615 UT

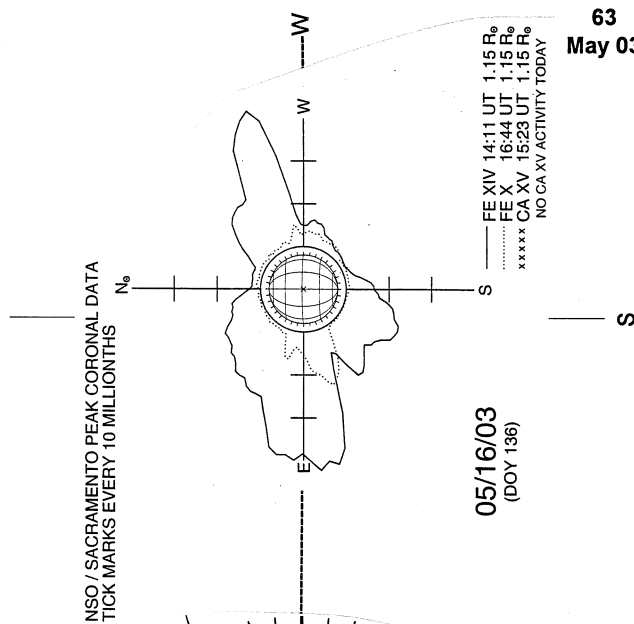
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
May 16, 2003
14:05 UT Fair
Bp = -2.5
Po = -20.6
Lo = 314.8



1405 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



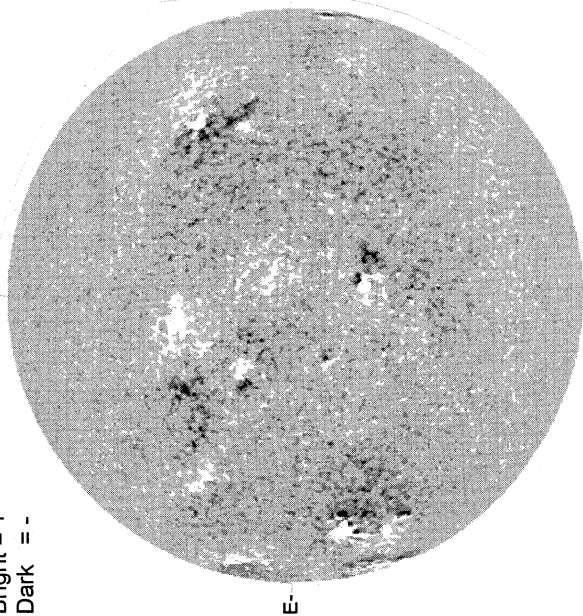
63
May 03

64
May 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1455 UT

STANFORD MAGNETOGRAM

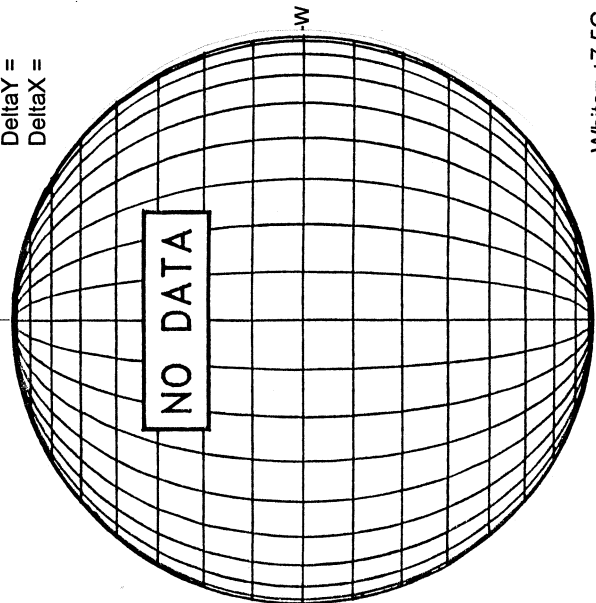
Solid = +
Dashed = -



2116 UT

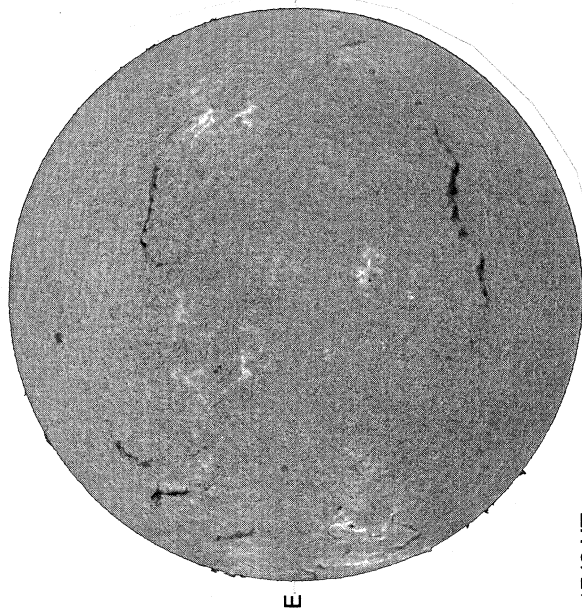
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



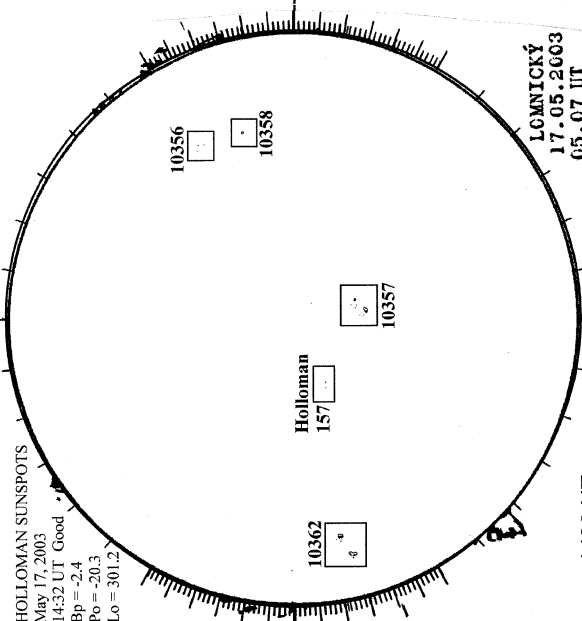
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



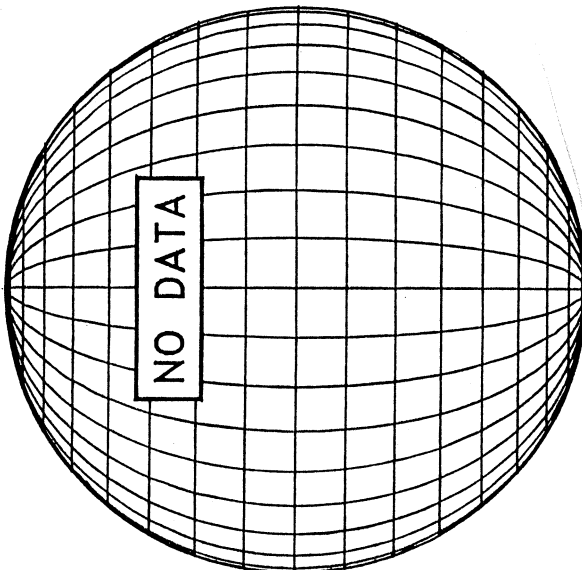
1742 UT

HOLLOMAN SUNSPOT



1432 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

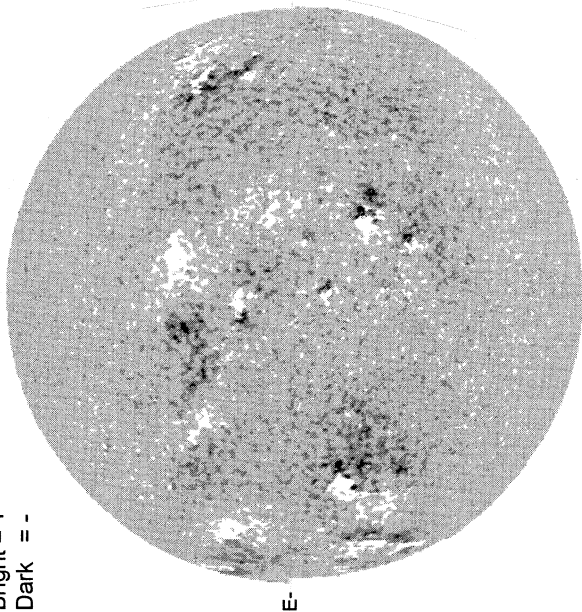


1742 UT

MAY 18, 2003 (P= -20.26, Bo = -2.37, Lo = 295.72)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1504 UT

STANFORD MAGNETOGRAM

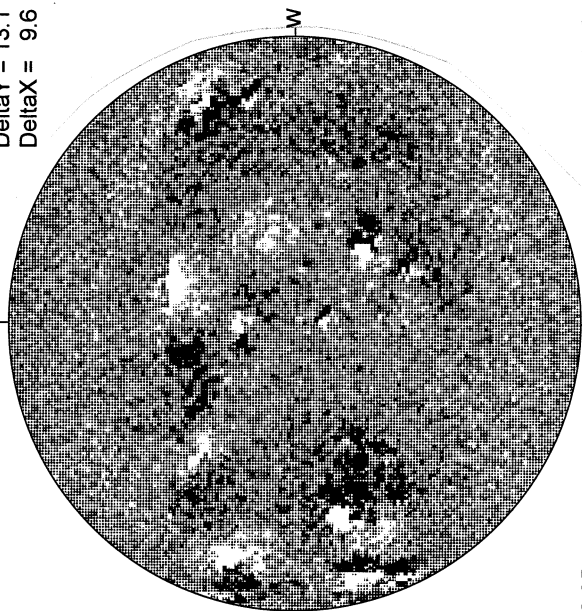
Solid = +
Dashed = -



2156 UT

MT. WILSON MAGNETOGRAM

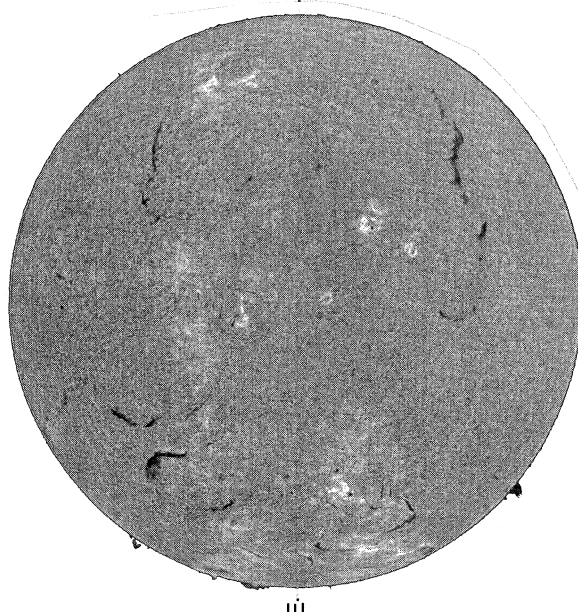
DeltaY = 13.1
DeltaX = 9.6



16.85 -
17.78 UT

White = +7.5G
Black = -7.5G

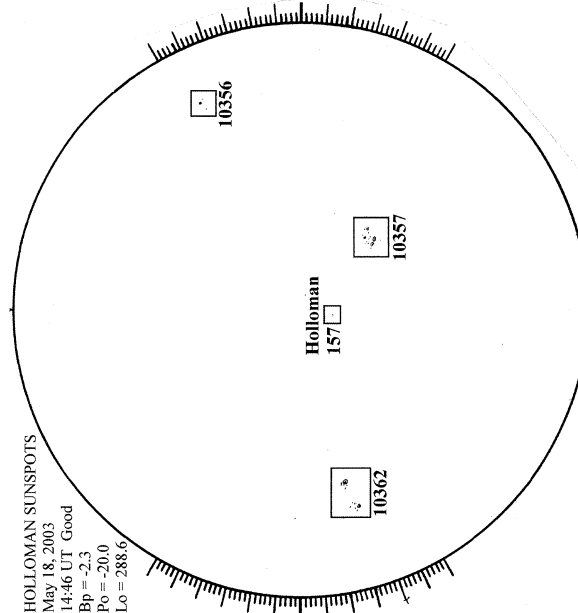
BIG BEAR H-ALPHA



1548 UT

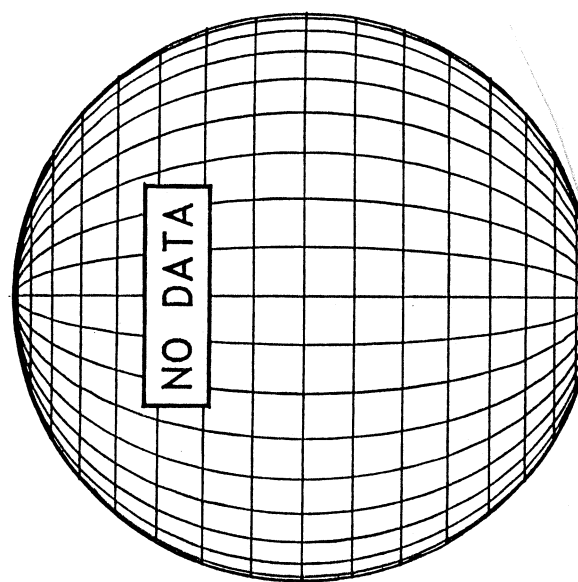
HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
May 18, 2003
14:46 UT Good
Bp = -2.3
Po = -20.0
Lo = 288.6



1446 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



65
May 03

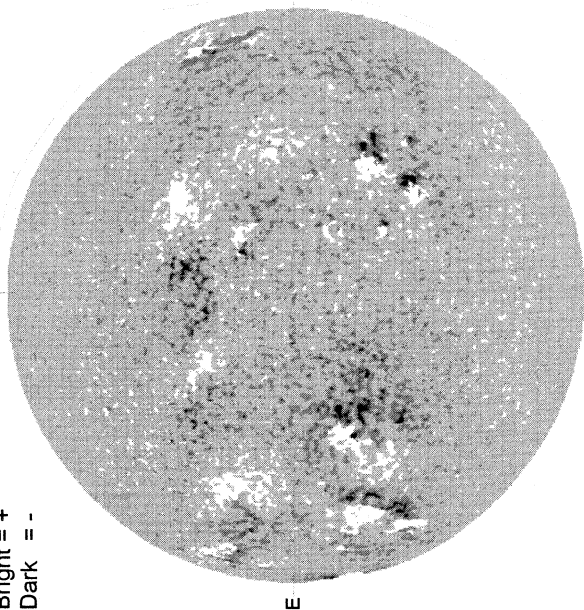
MAY 19, 2003 (P= -19.96, Bo = -2.26, Lo = 282.49)

66
May 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1545 UT

STANFORD MAGNETOGRAM

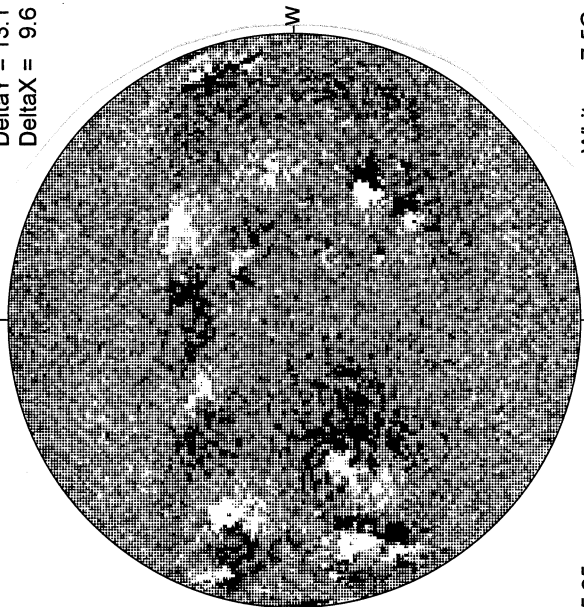
Solid = +
Dashed = -



2153 UT

MT. WILSON MAGNETOGRAM

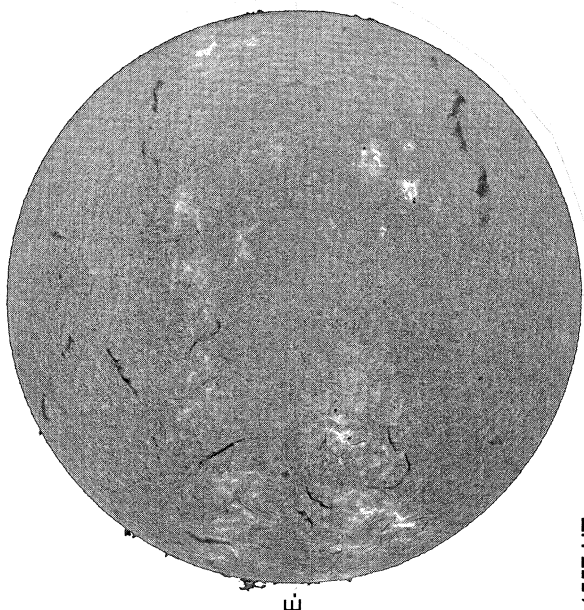
DeltaY = 13.1
DeltaX = 9.6



15.95 -
16.88 UT

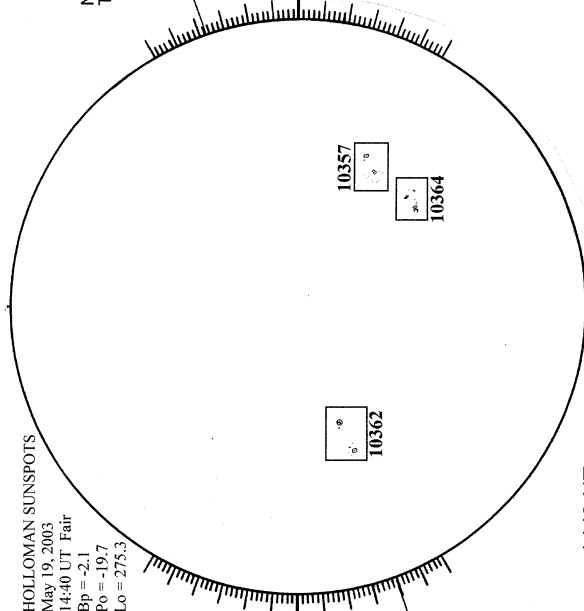
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



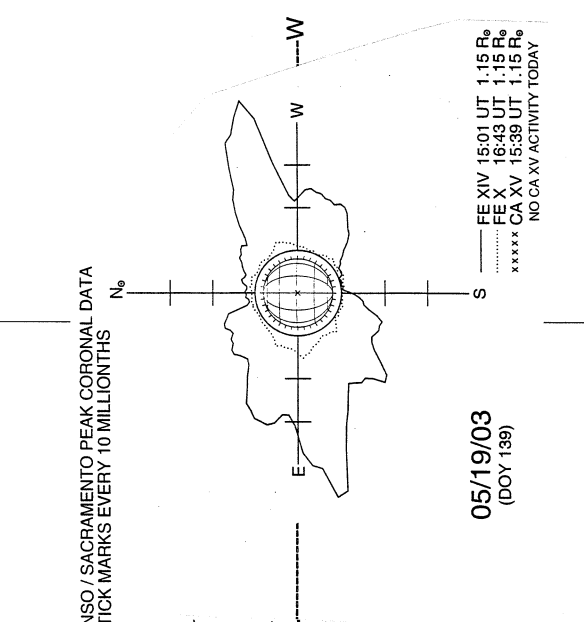
1557 UT

HOLLOMAN SUNSPOT



1440 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/19/03
(DOY 139)

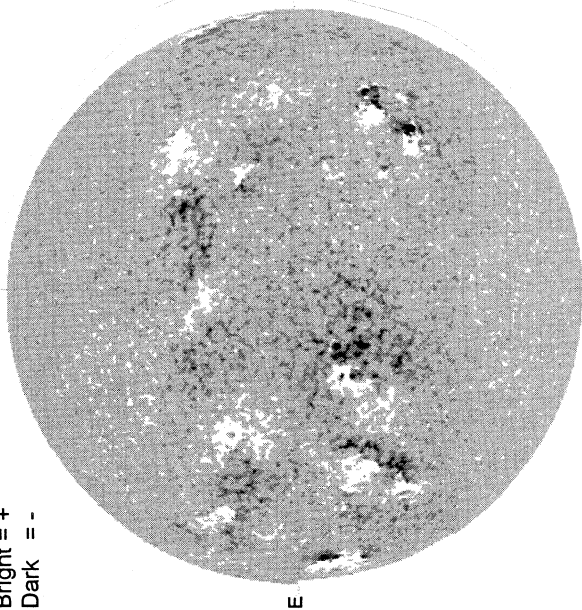
FE XIV 15:01 UT 1.15 R_o
FE X 16:43 UT 1.15 R_o
CA XV 15:39 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 20, 2003 (P = -19.66, Bo = -2.14, Lo = 269.26)

KITT PEAK MAGNETOGRAM

868.8 nm

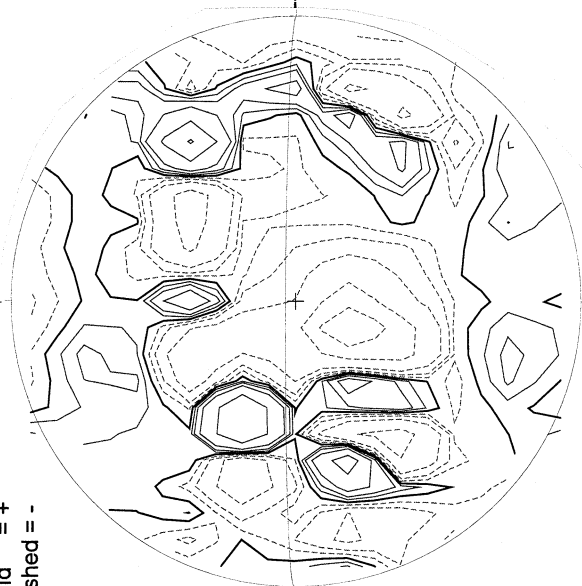
Bright = +
Dark = -



1605 UT

STANFORD MAGNETOGRAM

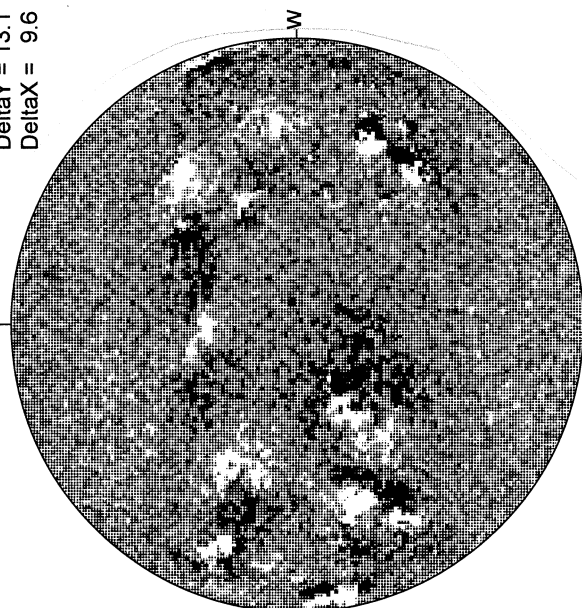
Solid = +
Dashed = -



2158 UT

MT. WILSON MAGNETOGRAM

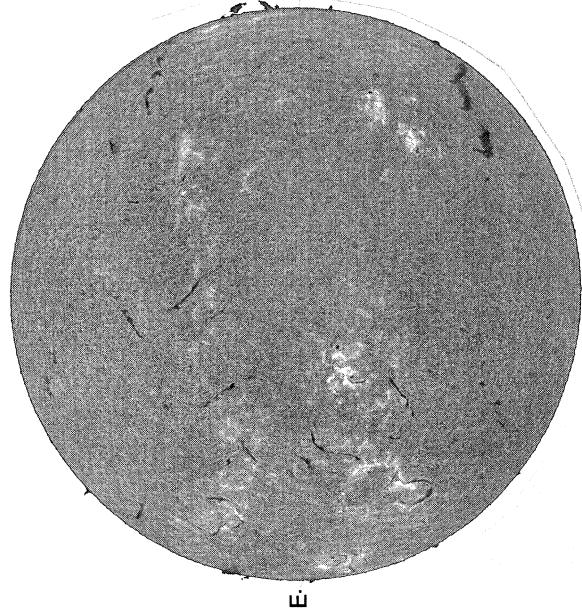
DeltaY = 13.1
DeltaX = 9.6



16.10 -
17.03 UT

White = +7.5G
Black = -7.5G

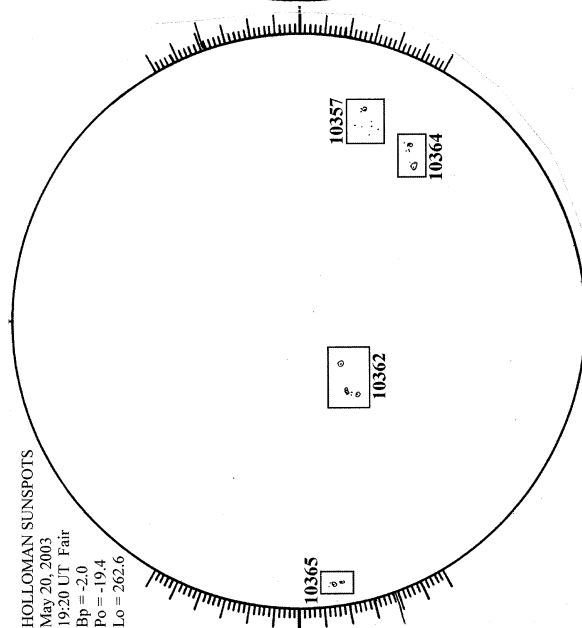
BIG BEAR H-ALPHA



1540 UT

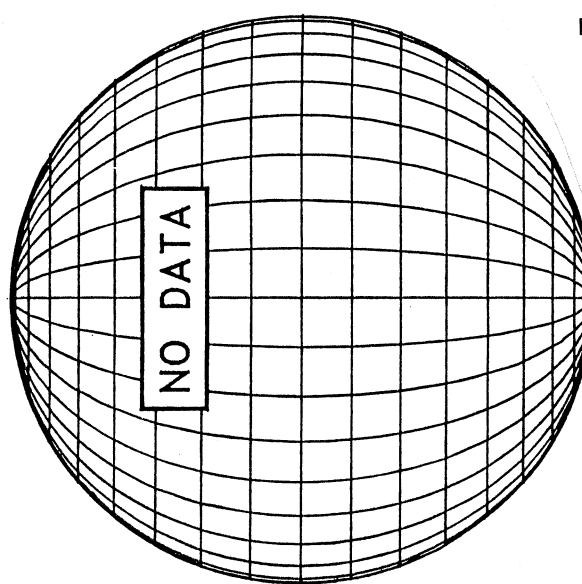
HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
May 20, 2003
19:20 UT Fair
Bp = -2.0
Po = -19.4
Lo = 262.6



1920 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



67
May 03

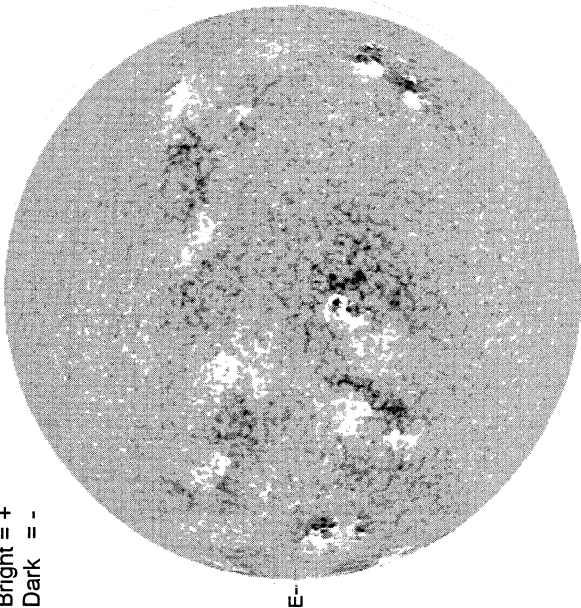
MAY 21, 2003 (P= -19.36, Bo = -2.02, Lo = 256.03)

68
May 03

KITT PEAK MAGNETOGRAM

868.8 nm

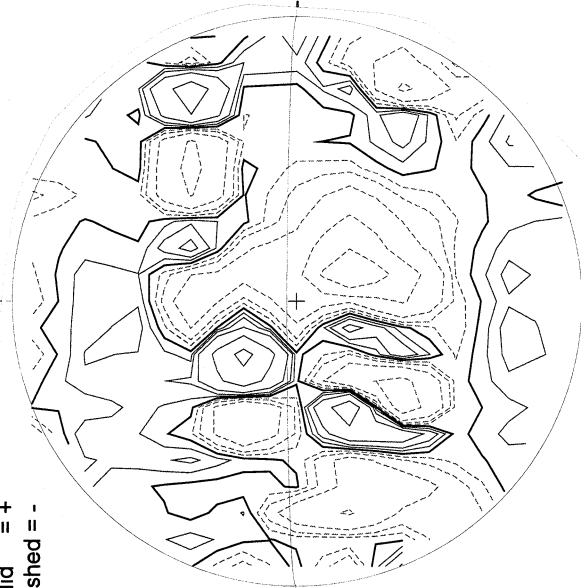
Bright = +
Dark = -



1543 UT

STANFORD MAGNETOGRAM

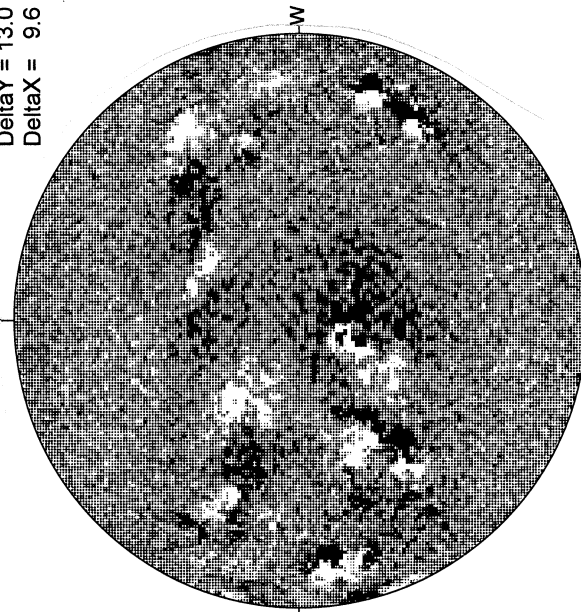
Solid = +
Dashed = -



2137 UT

MT. WILSON MAGNETOGRAM

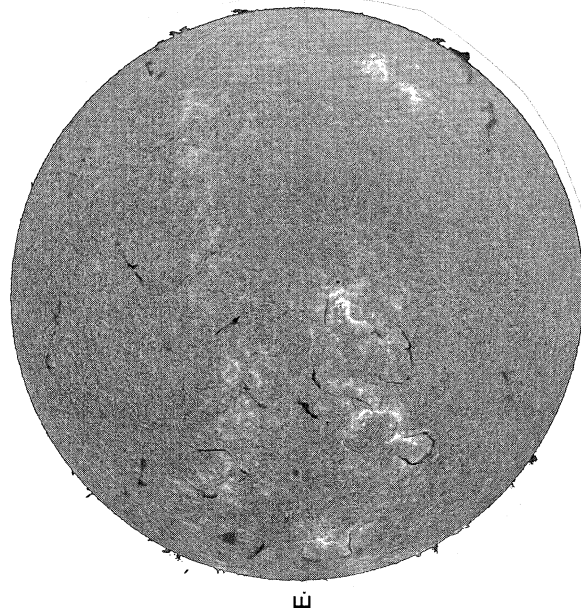
DeltaY = 13.0
DeltaX = 9.6



15.65 -
16.59 UT

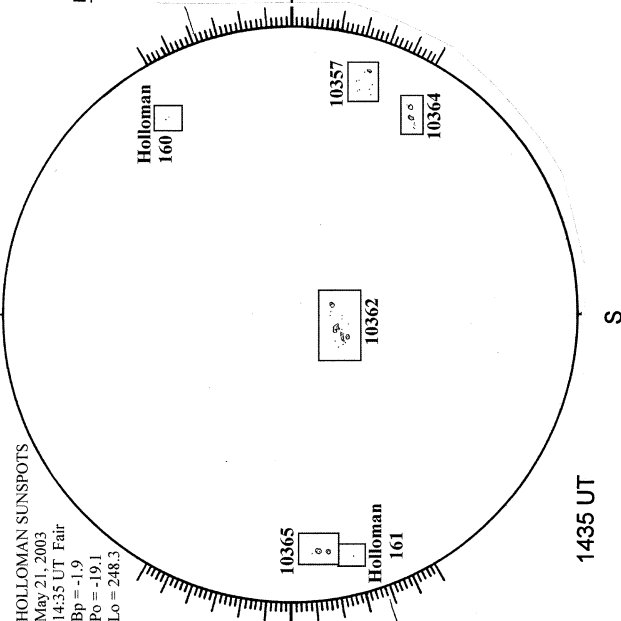
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



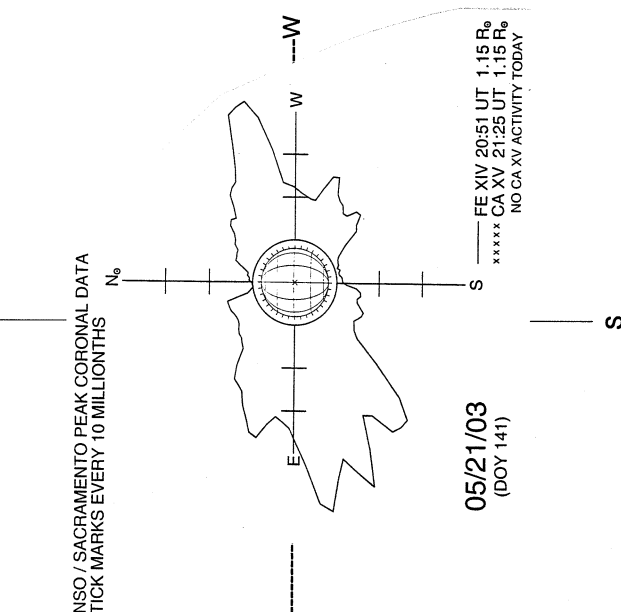
1538 UT

HOLLOMAN SUNSPOT



1435 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/21/03
(DOY 141)

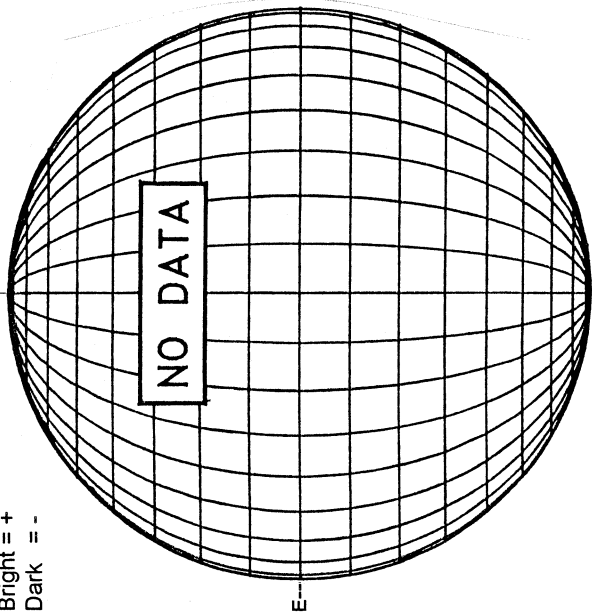
FE XIV 20:51 UT 1.15 R_o
CA XV 21:25 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 22, 2003 (P= -19.04, Bo = -1.91, Lo = 242.80)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



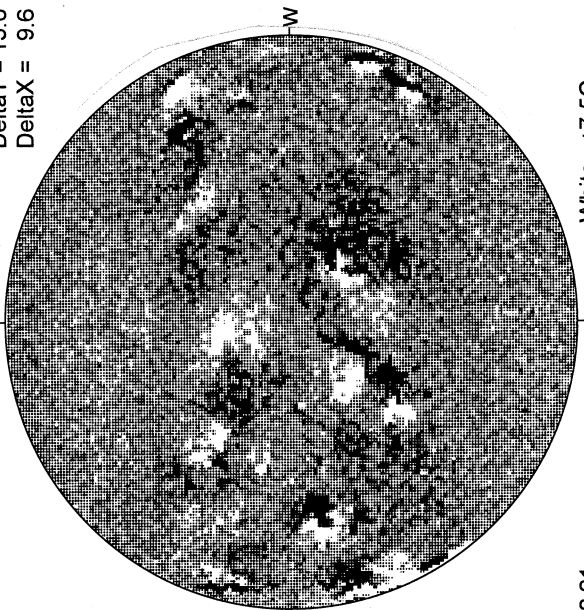
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

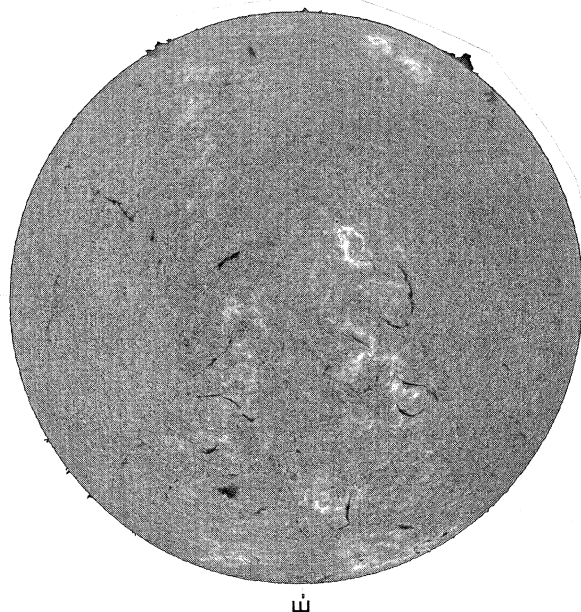
DeltaY = 13.0
DeltaX = 9.6



18.21 -
19.15 UT

White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

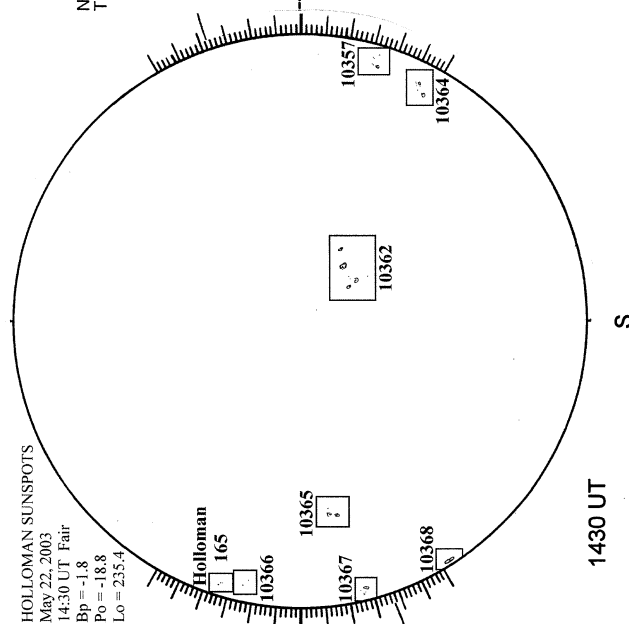


1548 UT

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS

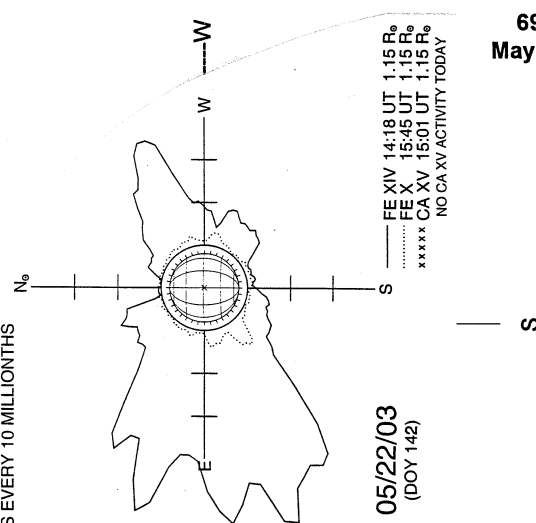
May 22, 2003
14:30 UT Fair
Bp = -1.8
Po = -18.8
Lo = 235.4



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



05/22/03
(DOY 142)

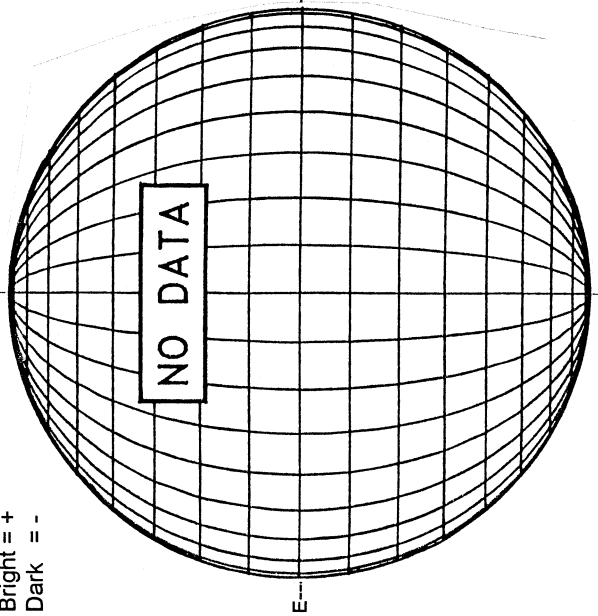
FE XIV 14:18 UT 1.15 R_o
FE X 15:45 UT 1.15 R_o
CA XV 15:01 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

MAY 23, 2003 (P= -18.72, Bo = -1.79, Lo = 229.58)

KITT PEAK MAGNETOGRAM

****868.8 nm****

Bright = +
Dark = -



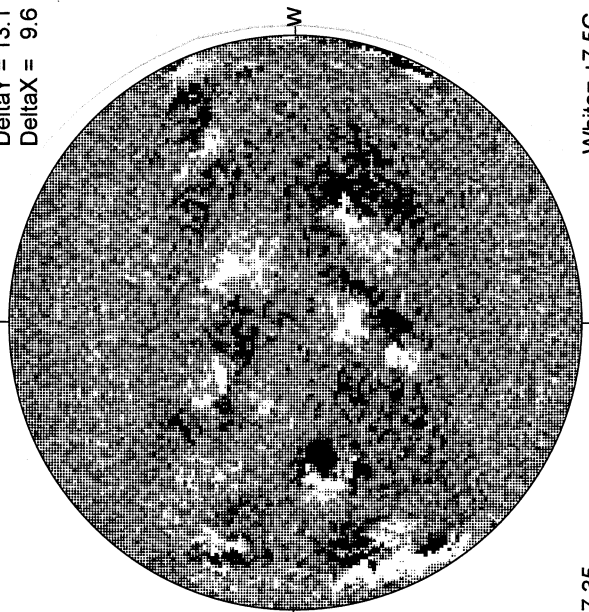
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

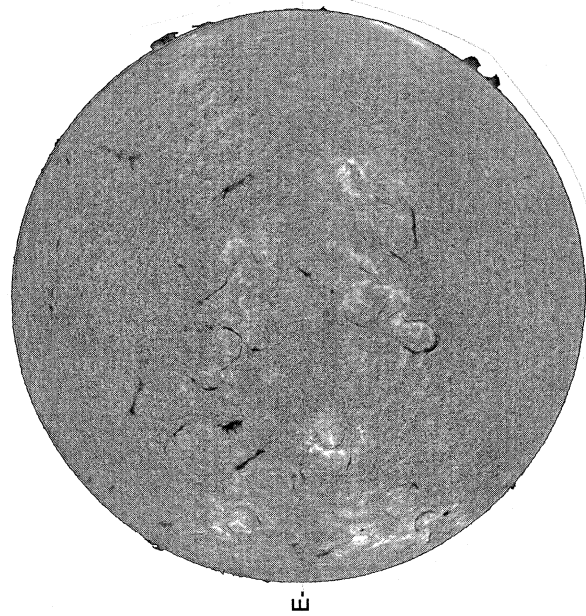
DeltaY = 13.1
DeltaX = 9.6



17.35 -
18.28 UT

White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

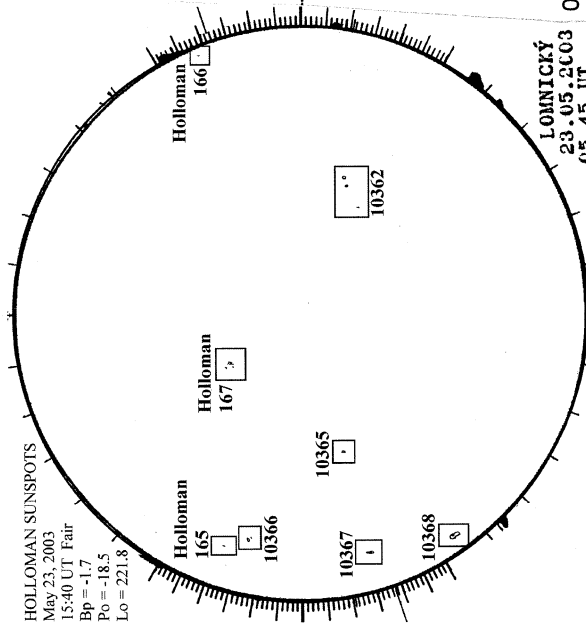


1744 UT

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS

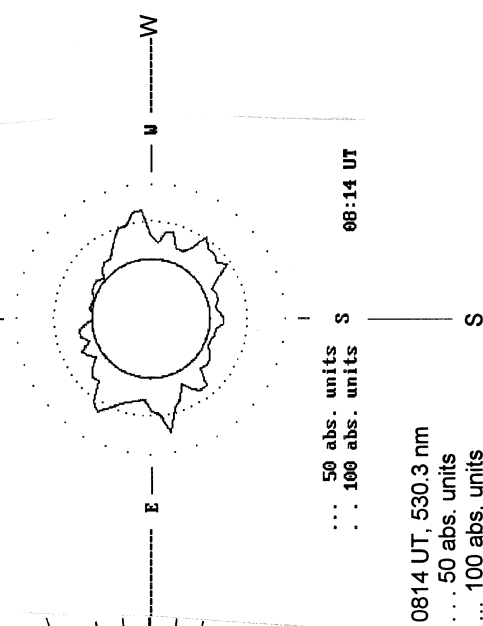
May 23, 2003
15:40 UT Fair
Bp = -1.7
Po = -18.5
Lo = 221.8



1540 UT
0545 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

LOMNICKY STIT N MAY 23, 2003
530.3 nm

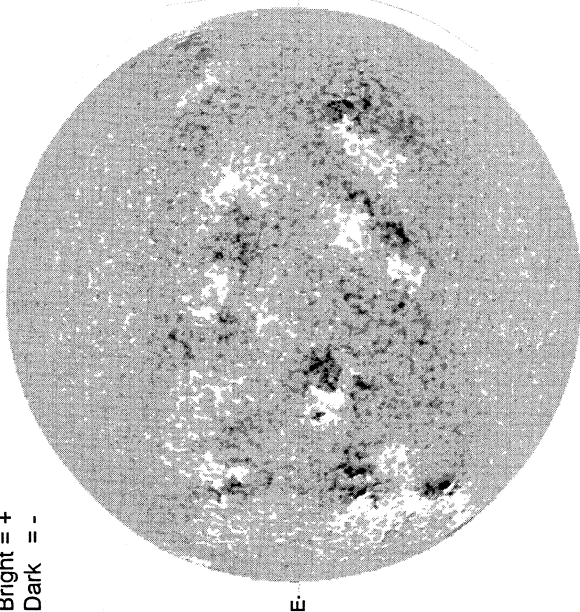


0814 UT, 530.3 nm
... 50 abs. units
... 100 abs. units

MAY 24, 2003 (P= -18.40, Bo = -1.67, Lo = 216.35)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1553 UT

STANFORD MAGNETOGRAM

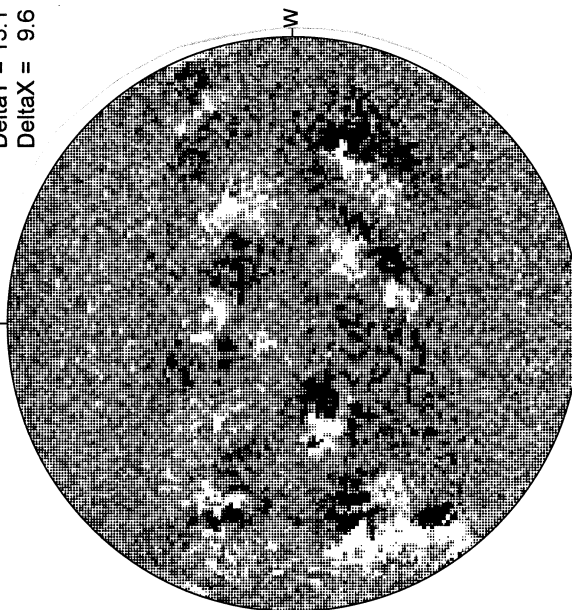
Solid = +
Dashed = -



1847 UT

MT. WILSON MAGNETOGRAM

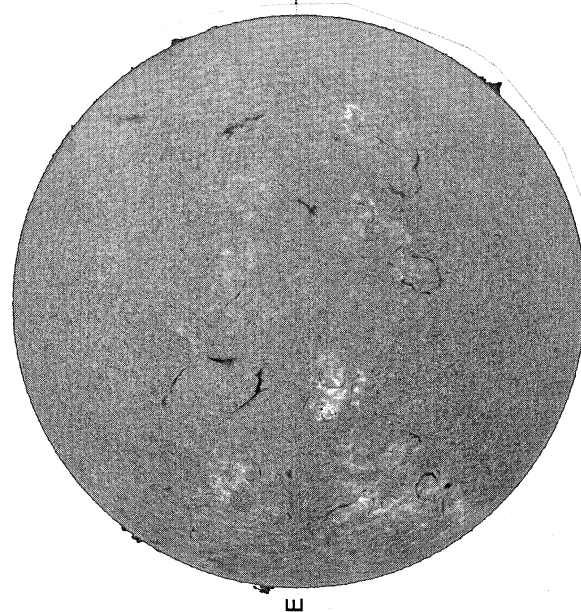
DeltaY = 13.1
DeltaX = 9.6



17.58 -
18.51 UT

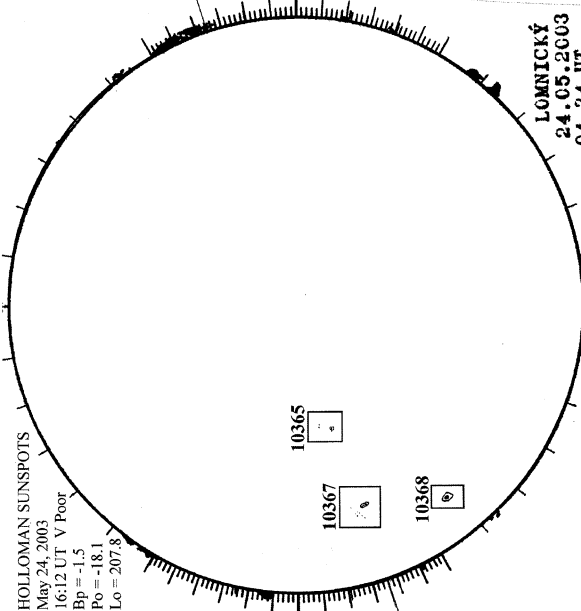
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



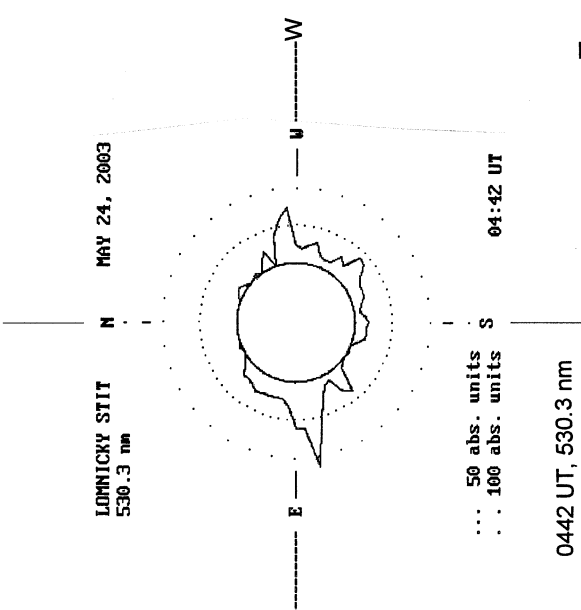
2034 UT

HOLLOMAN SUNSPOT



1612 UT
0434 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0442 UT, 530.3 nm
... 50 abs. units
... 100 abs. units

04:42 UT

72
May 03

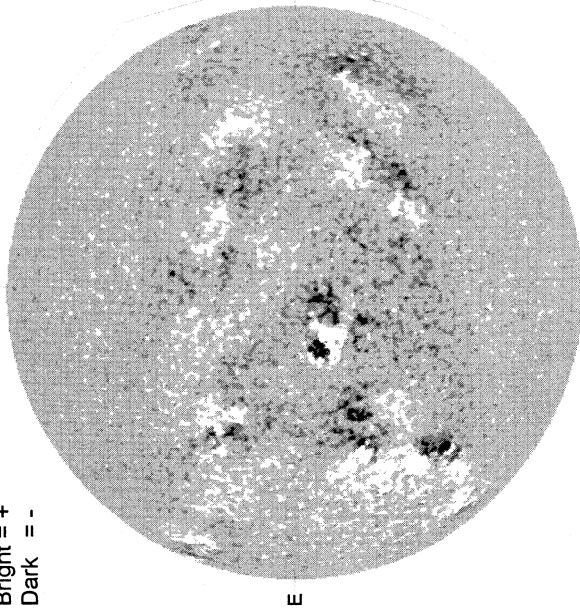
MAY 25, 2003 (P= -18.07, Bo = -1.55, Lo = 203.12)

KITT PEAK MAGNETOGRAM

868.8 nm

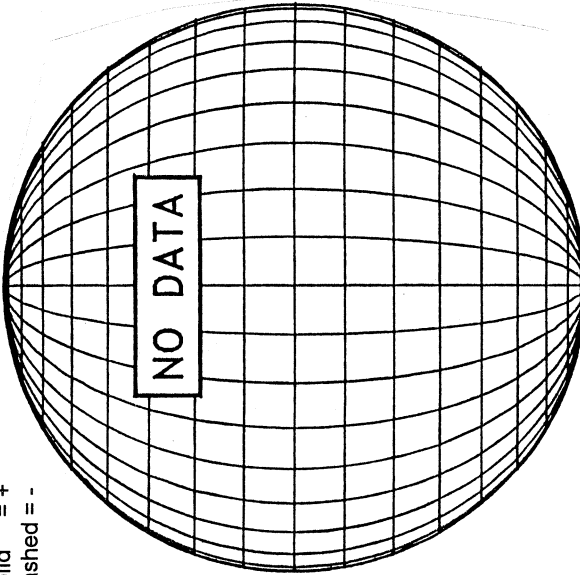
Bright = +
Dark = -

Solid = +
Dashed = -



1545 UT

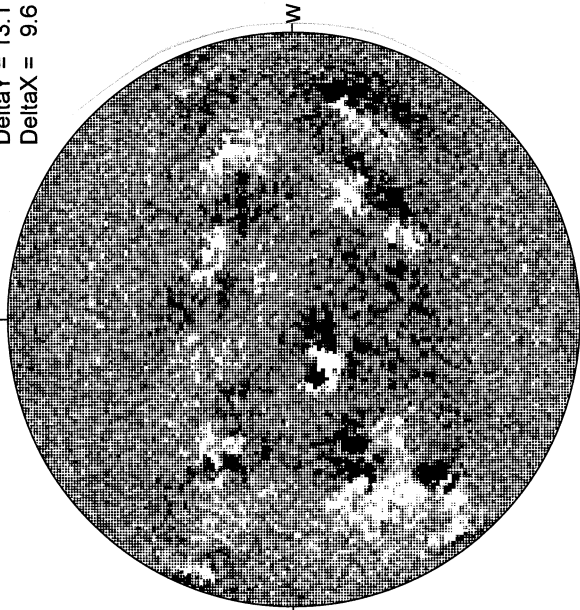
STANFORD MAGNETOGRAM



16.09 -
17.02 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



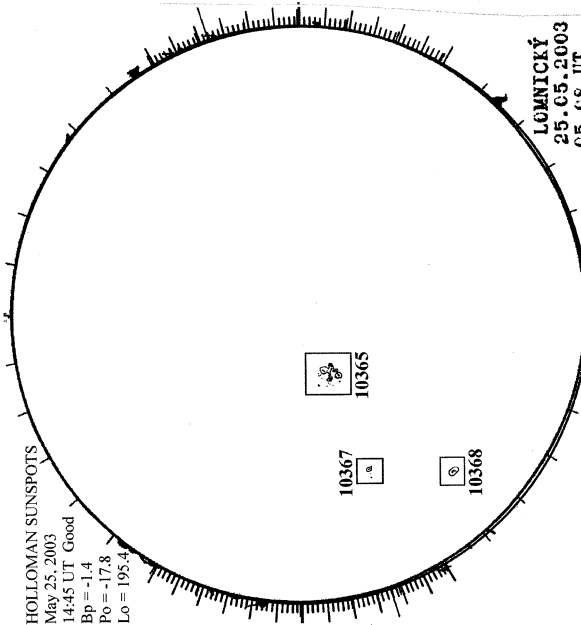
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



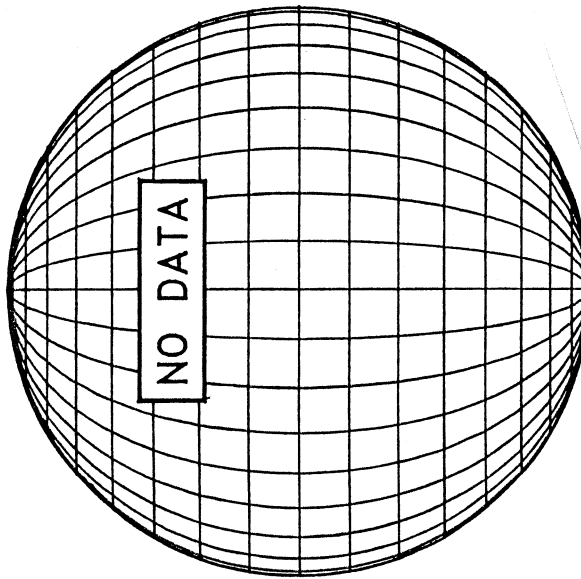
1557 UT

HOLLOMAN SUNSPOT



1445 UT
0508 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



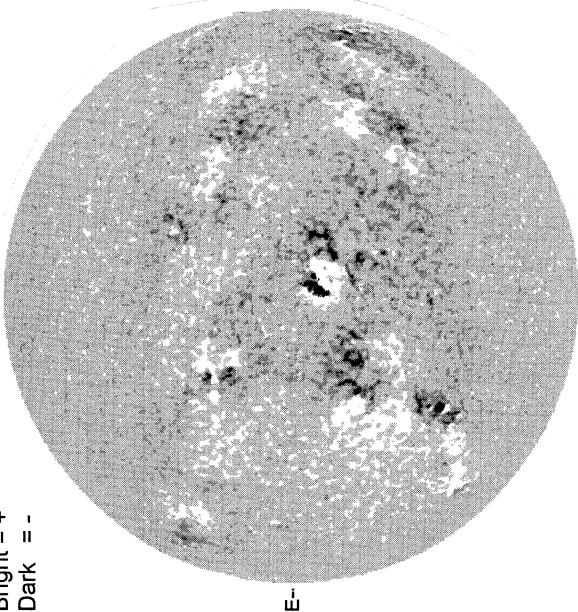
S

MAY 26, 2003 (P= -17.73, Bo = -1.43, Lo = 189.88)

KITT PEAK MAGNETOGRAM

868.8 nm

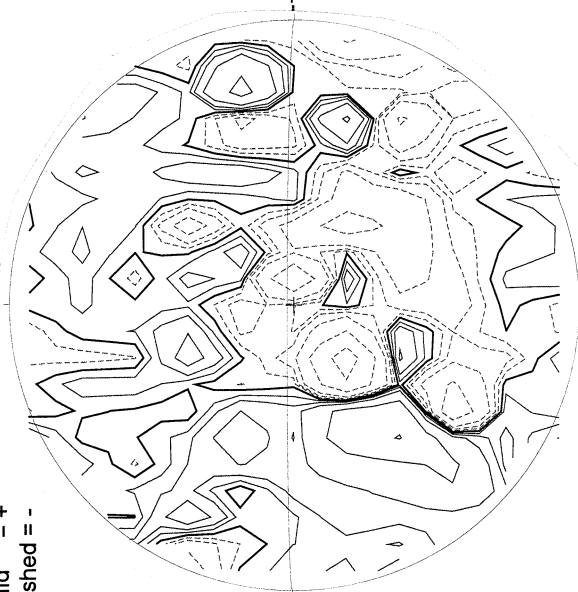
Bright = +
Dark = -



1550 UT

STANFORD MAGNETOGRAM

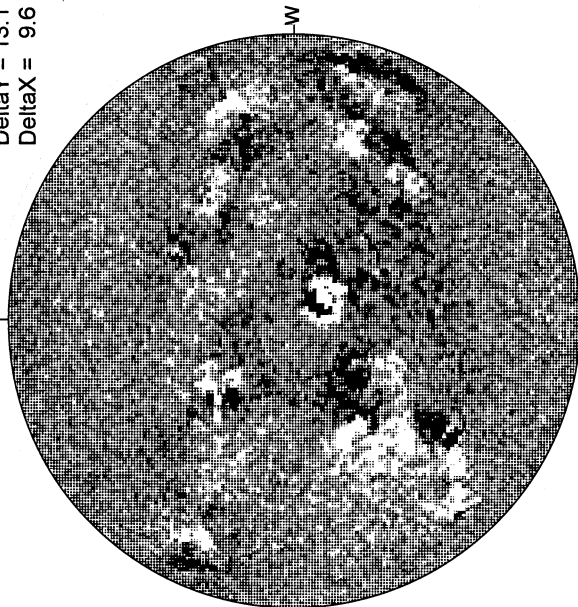
Solid = +
Dashed = -



1923 UT

MT. WILSON MAGNETOGRAM

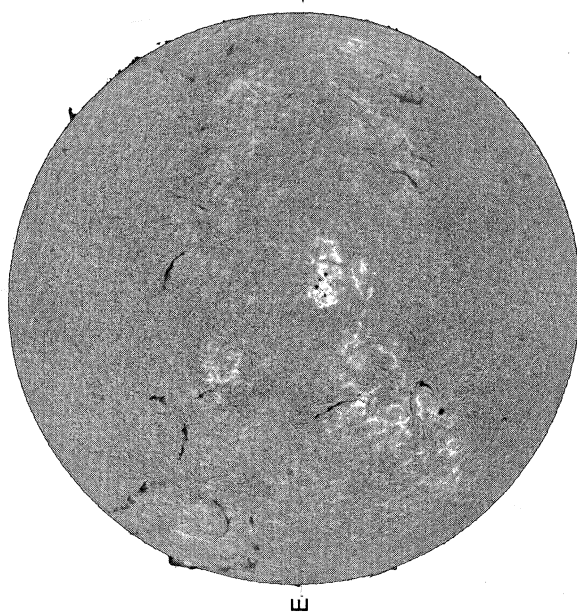
DeltaY = 13.1
DeltaX = 9.6



18.09 -
19.01 UT

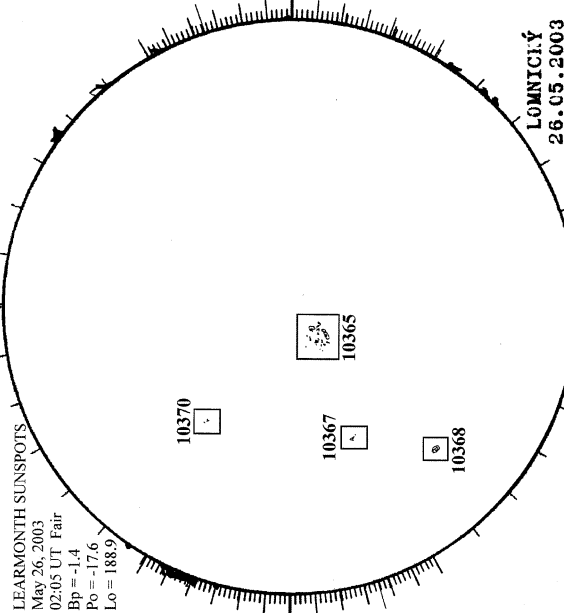
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



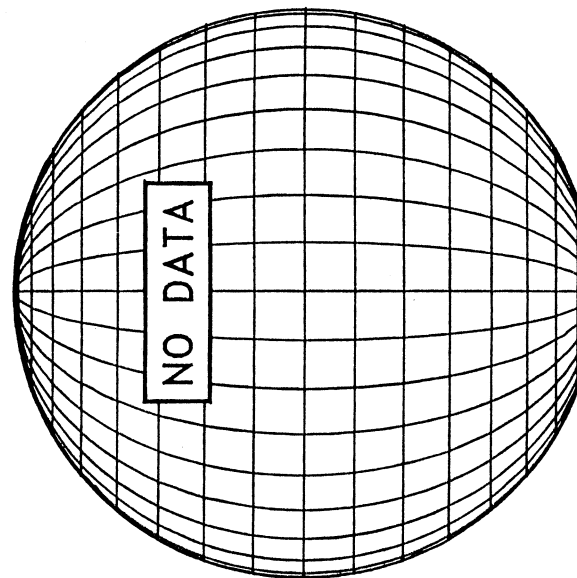
1605 UT

SUNSPOT



0625 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



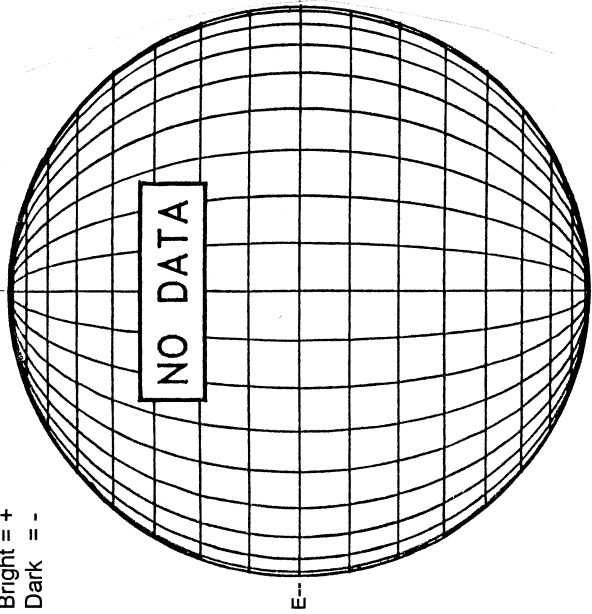
73
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MAY 27, 2003 (P= -17.39, Bo = -1.32, Lo = 176.65)

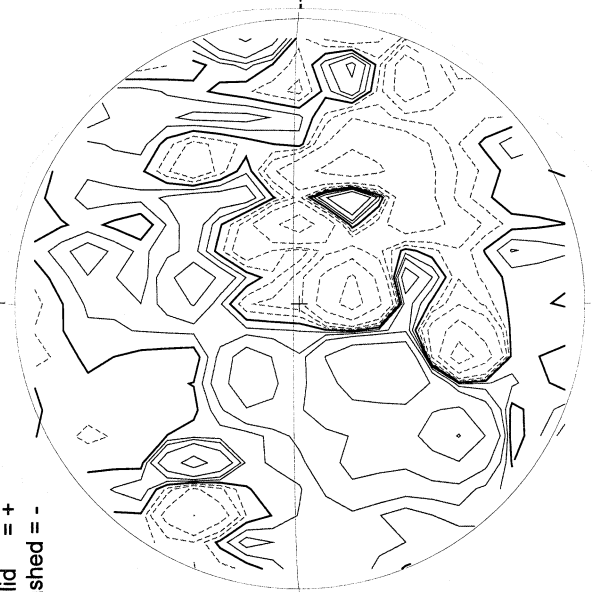
KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



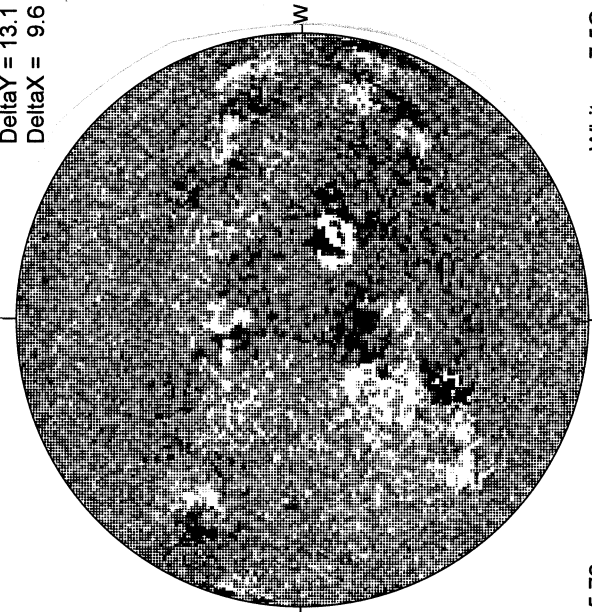
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



15.72 -
16.65 UT

White= +7.5G
Black = -7.5G

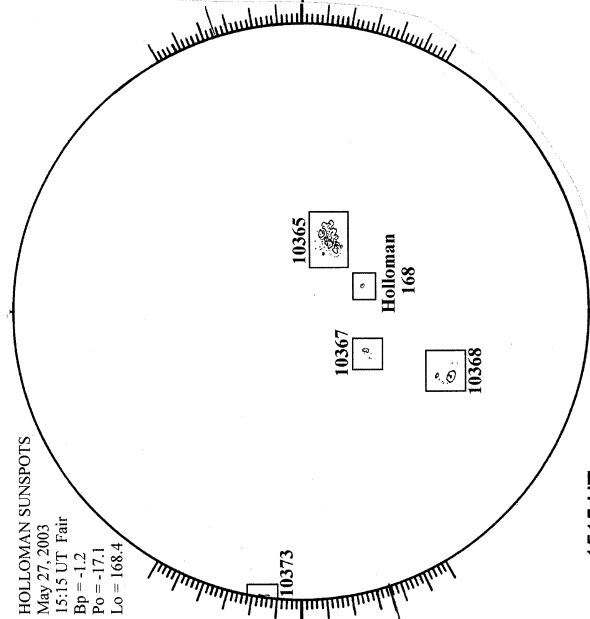
BIG BEAR H-ALPHA



1657 UT

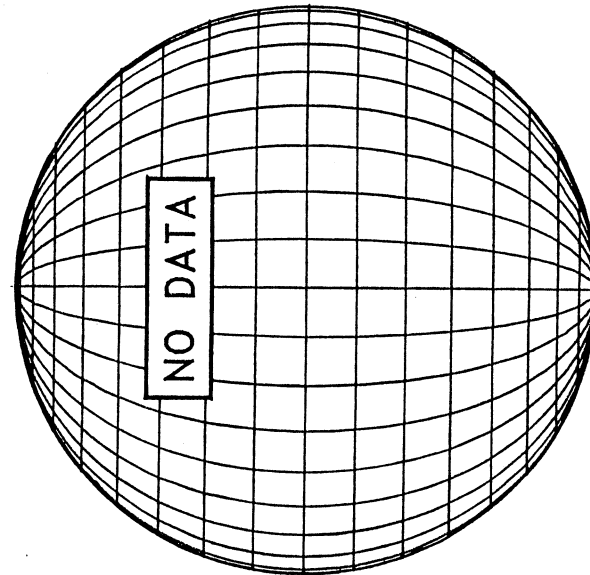
HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
May 27, 2003
15:15 UT Fair
Bp = -1.2
Po = -17.1
Lo = 168.4



1515 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



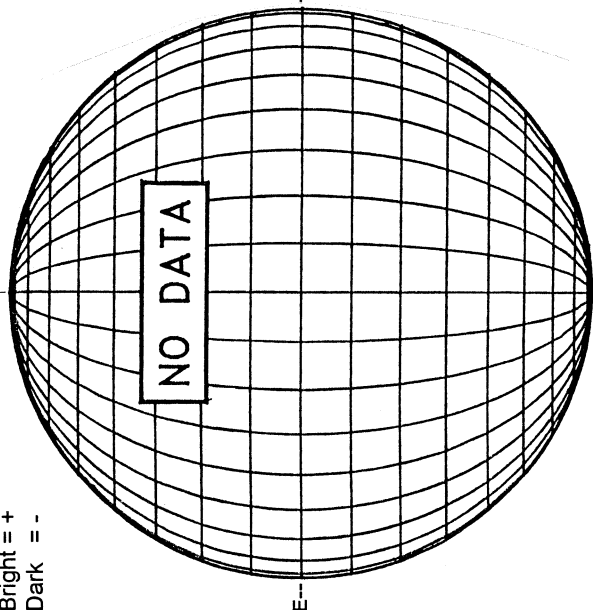
S

MAY 28, 2003 (P= -17.04, Bo = -1.20, Lo = 163.42)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



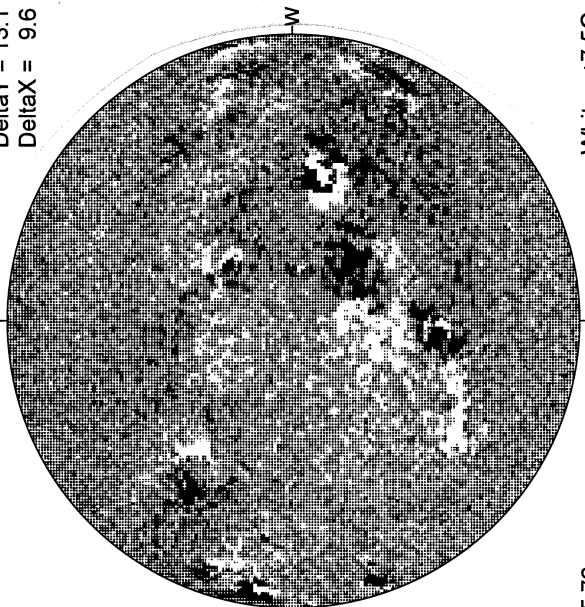
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

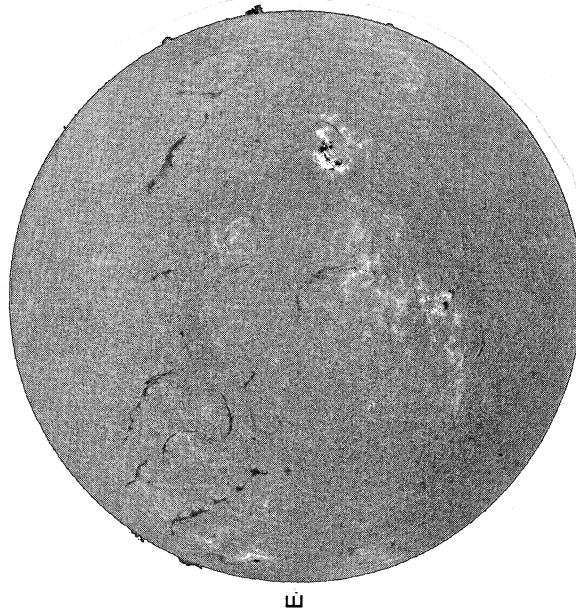
DeltaY = 13.1
DeltaX = 9.6



15.72 -
16.65 UT

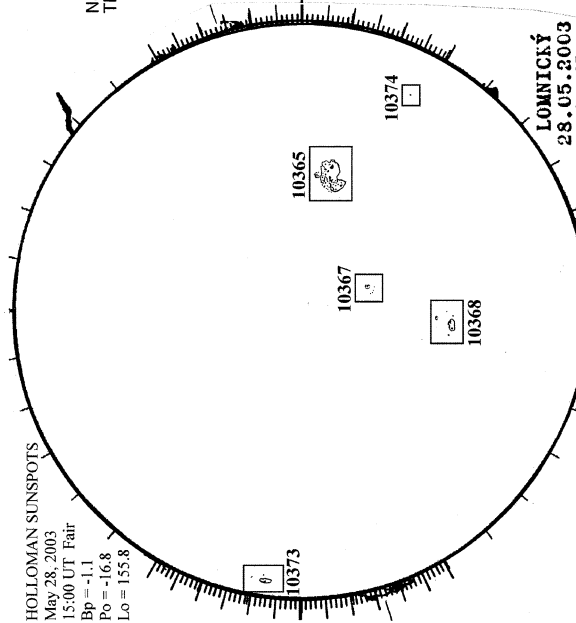
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



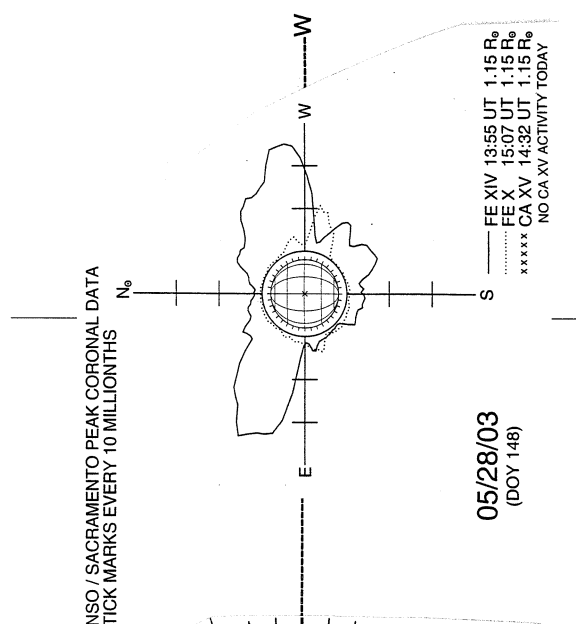
1824 UT

HOLLOMAN SUNSPOT



1500 UT
0439 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



05/28/03
(DOY 148)

LOMNICKÝ
28.05.2003
04.39 UT

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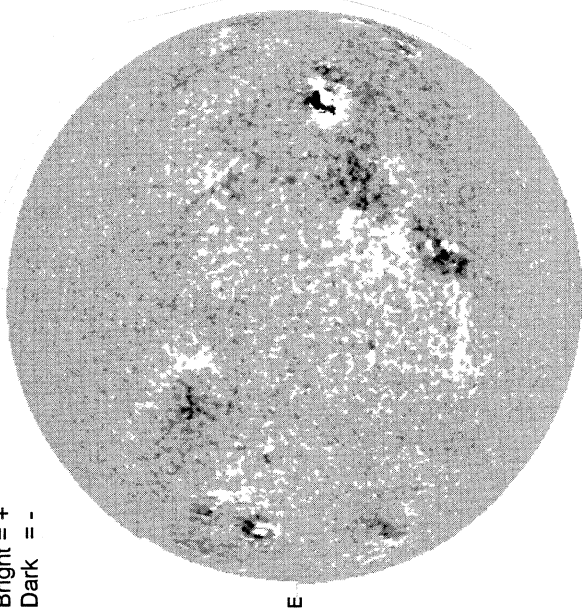
MAY 29, 2003 (P= -16.69, Bo = -1.08, Lo = 150.19)

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May 03

KITT PEAK MAGNETOGRAM

868.8 nm

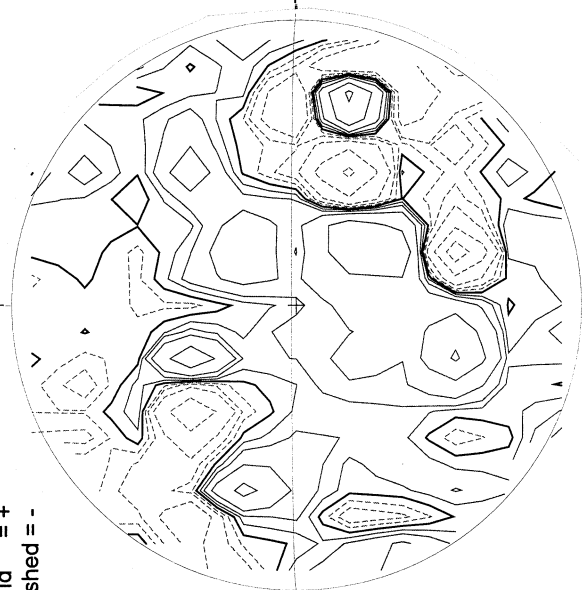
Bright = +
Dark = -



1611 UT

STANFORD MAGNETOGRAM

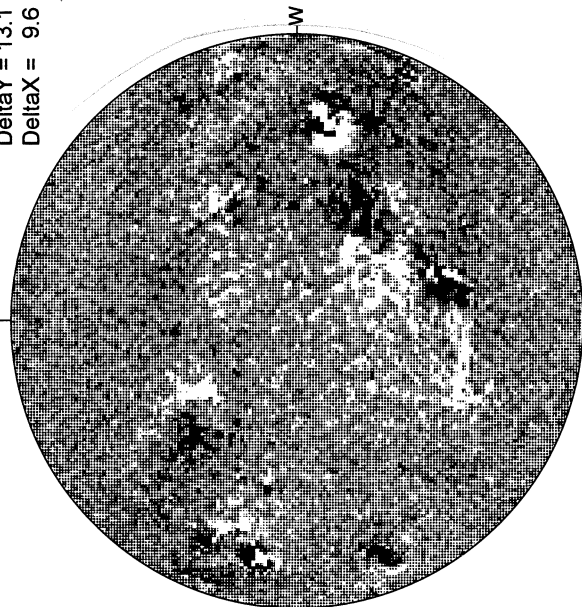
Solid = +
Dashed = -



2134 UT

MT. WILSON MAGNETOGRAM

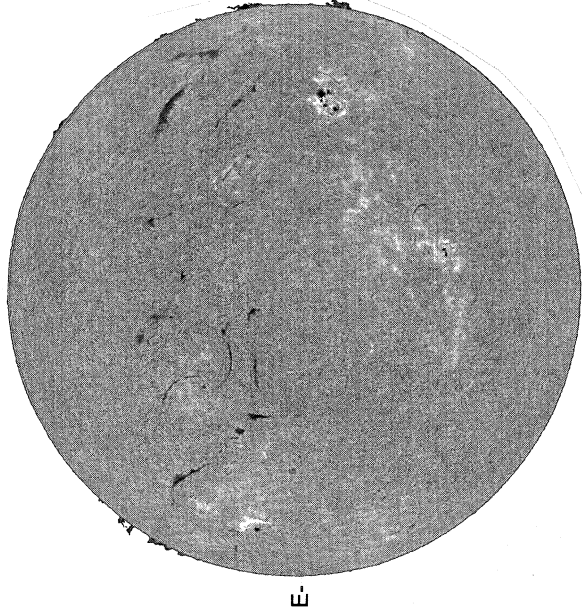
DeltaY = 13.1
DeltaX = 9.6



15.92 -
16.85 UT

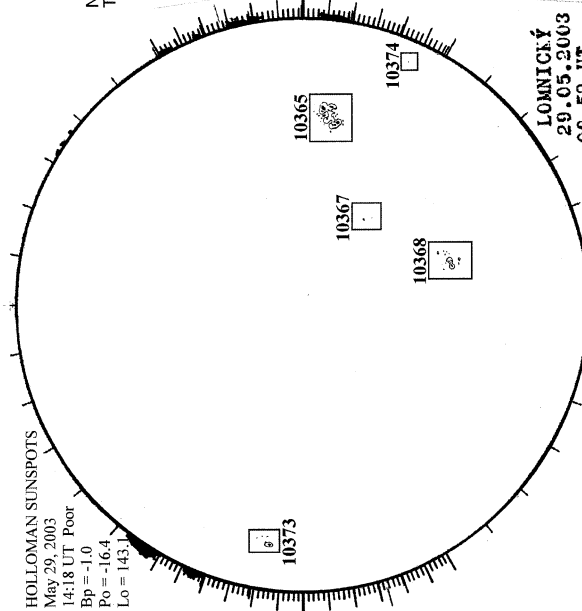
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



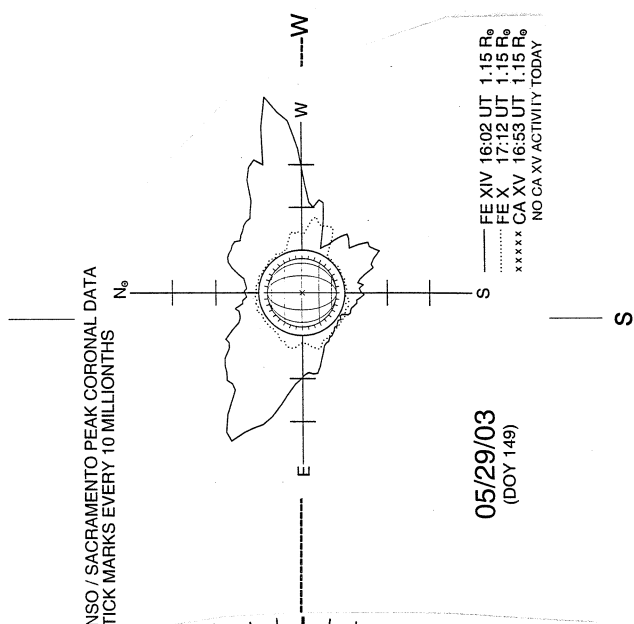
1535 UT

HOLLOMAN SUNSPOT

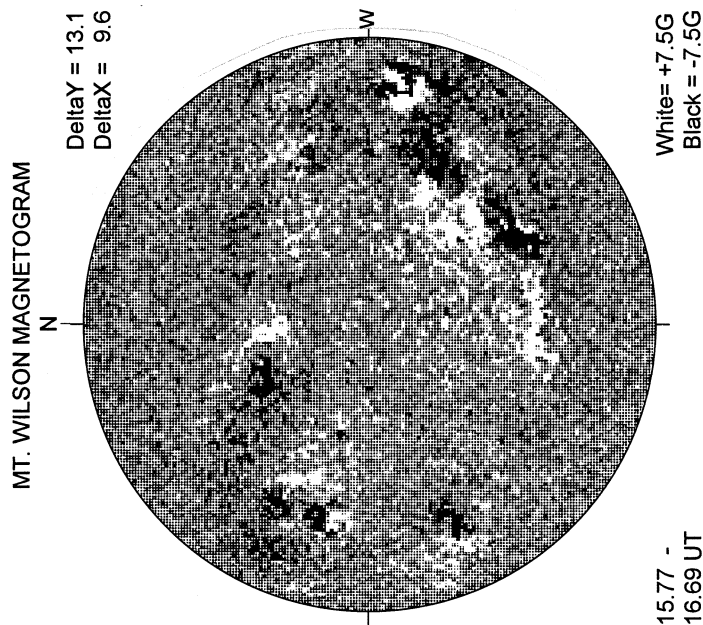
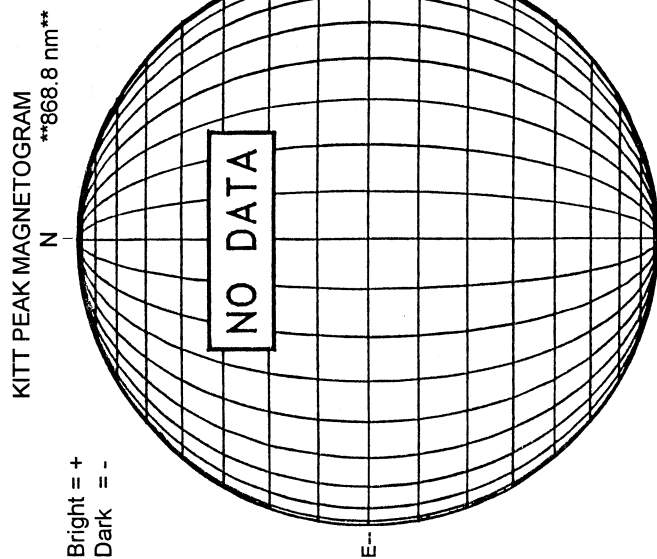


1418 UT
0852 UT LOMN Prom S

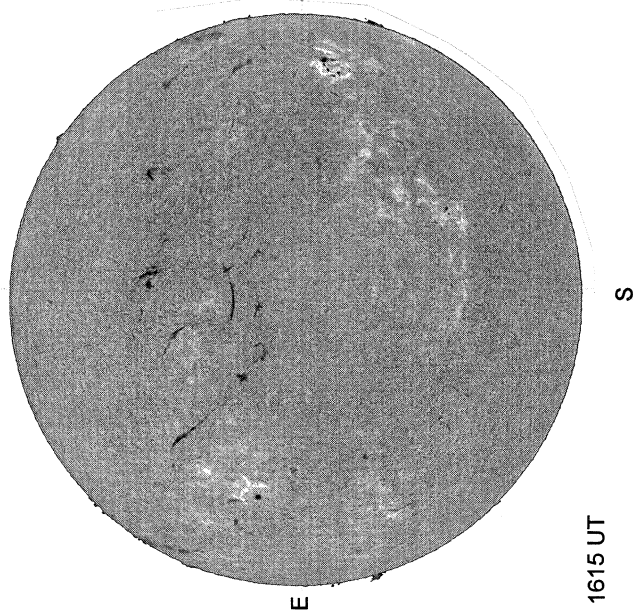
SACRAMENTO PEAK CORONA (1.15 Radii)----



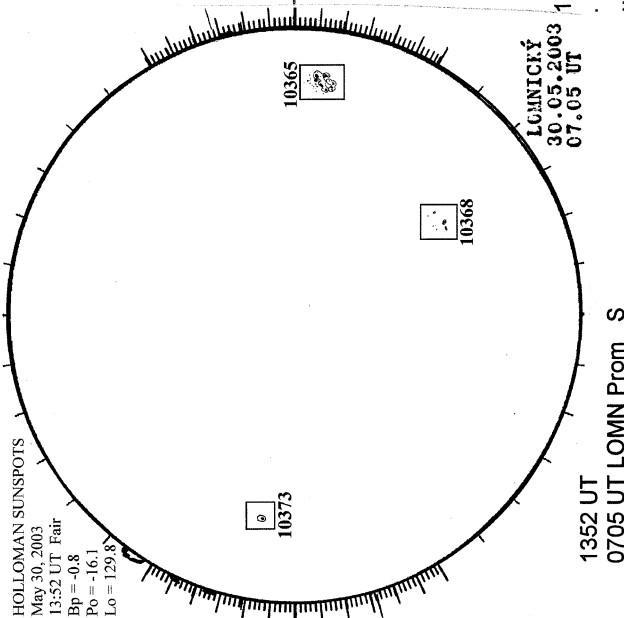
MAY 30, 2003 (P= -16.33, Bo = -0.96, Lo = 136.96)



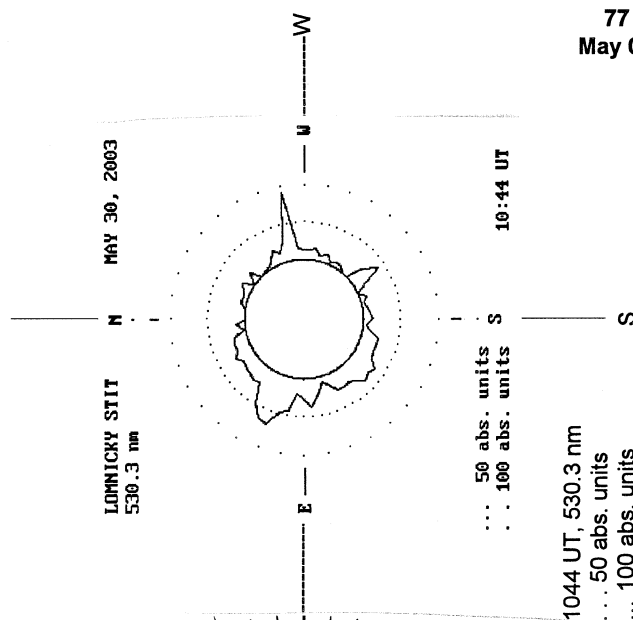
BIG BEAR H-ALPHA



HOLLOMAN SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)----

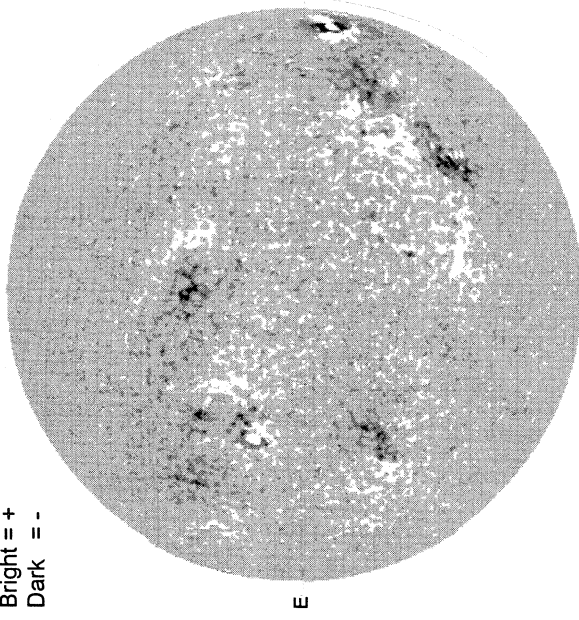


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MAY 31, 2003 (P= -15.97, Bo = -0.84, Lo = 123.73)

KITT PEAK MAGNETOGRAM
N
868.8 nm

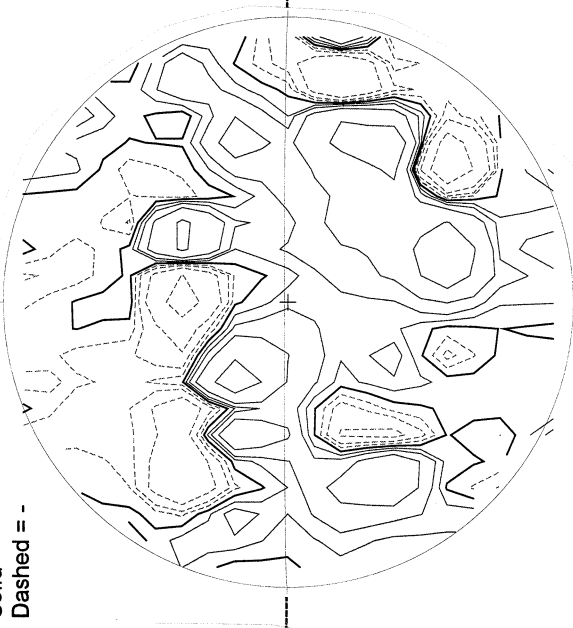
Bright = +
Dark = -



1627 UT

STANFORD MAGNETOGRAM
N

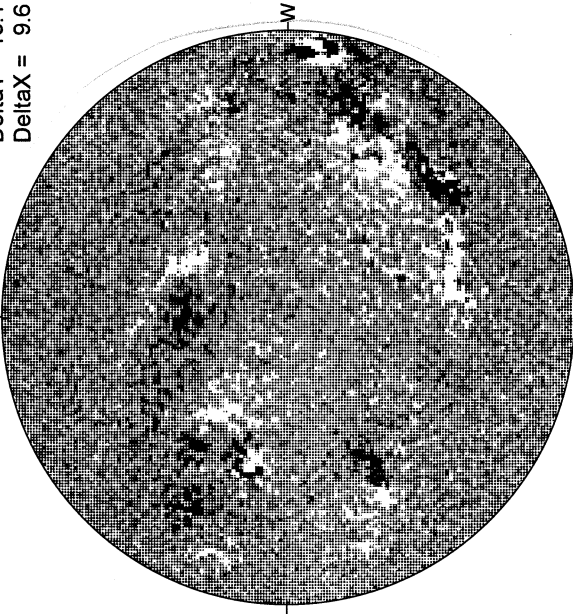
Solid = +
Dashed = -



2032 UT

MT. WILSON MAGNETOGRAM
N

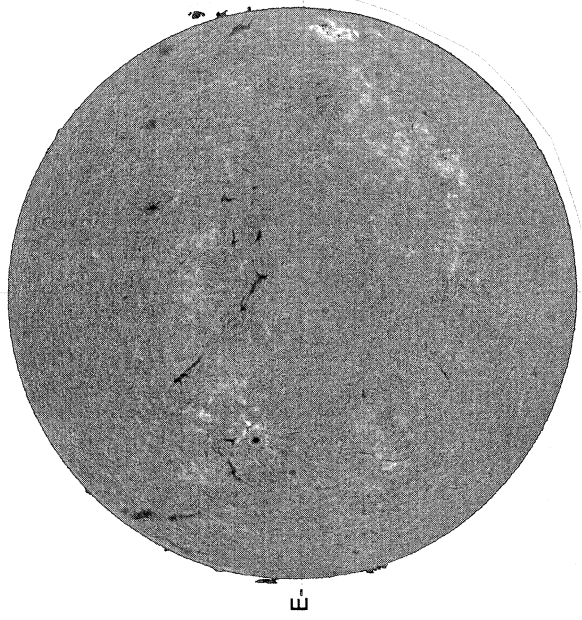
DeltaY = 13.1
DeltaX = 9.6



15.53 -
16.45 UT

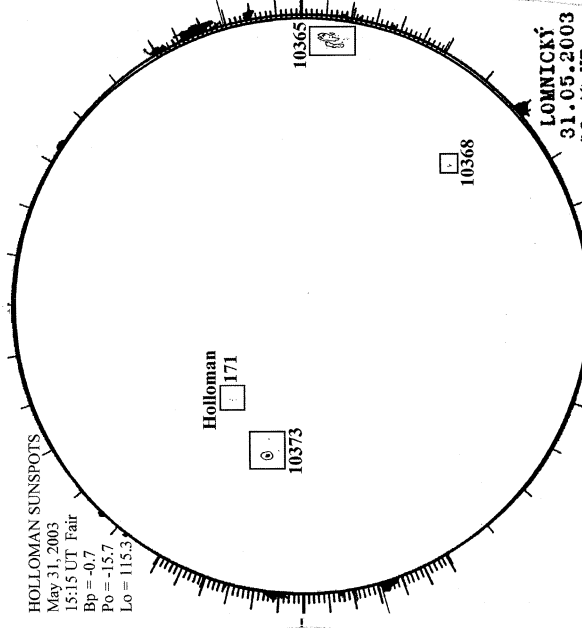
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



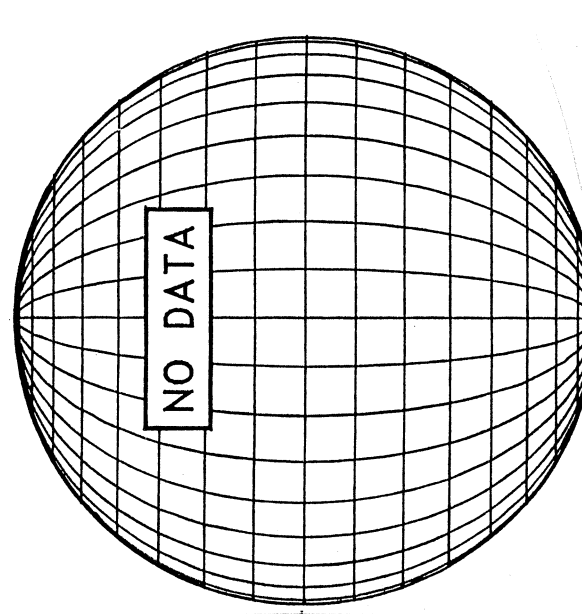
1539 UT

HOLLOMAN SUNSPOT



1515 UT
0640 UT LOMN Prom S

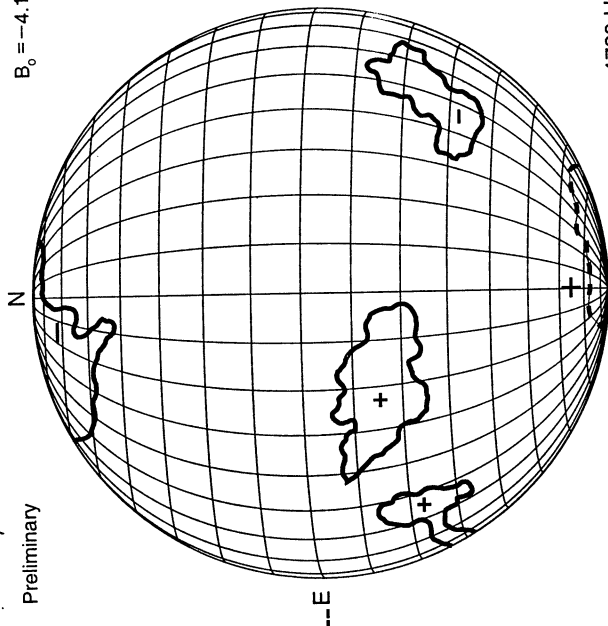
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

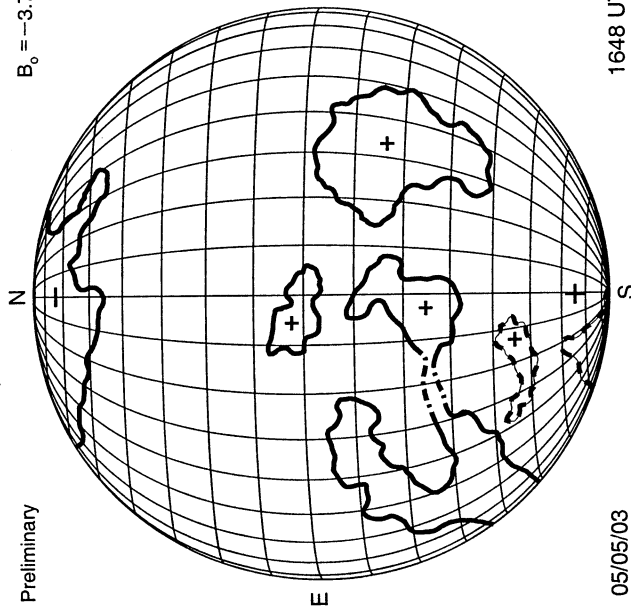
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm May 2003

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -4.1$



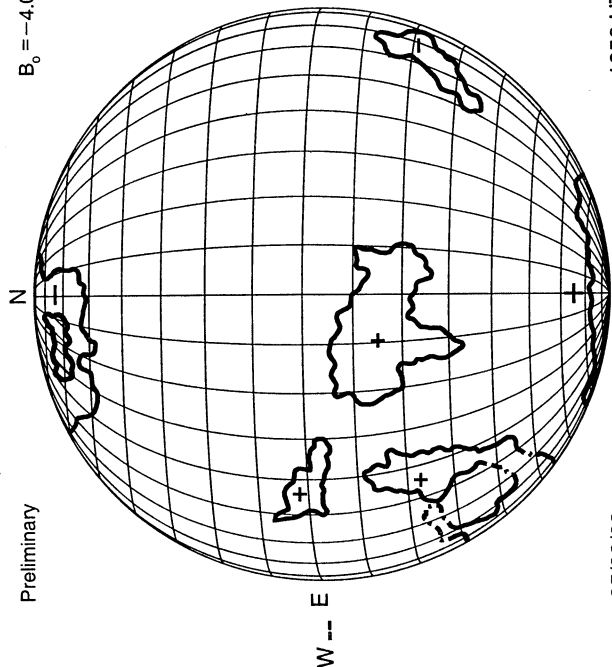
05/01/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -3.7$



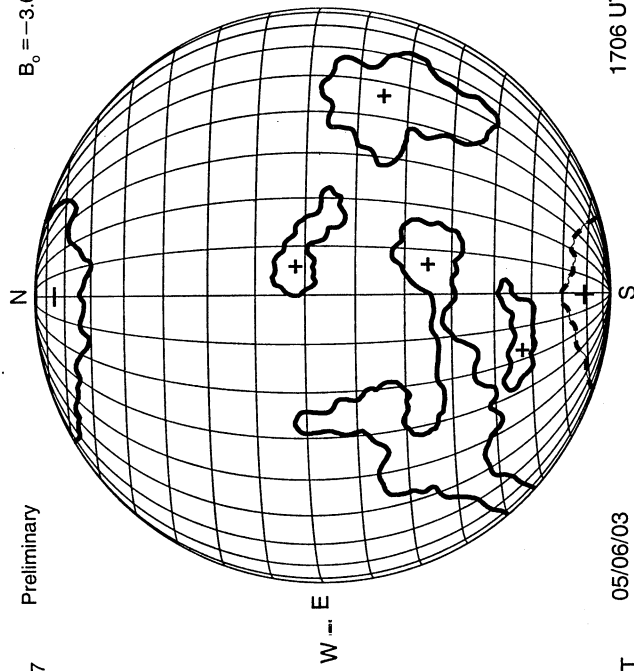
05/05/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -4.0$



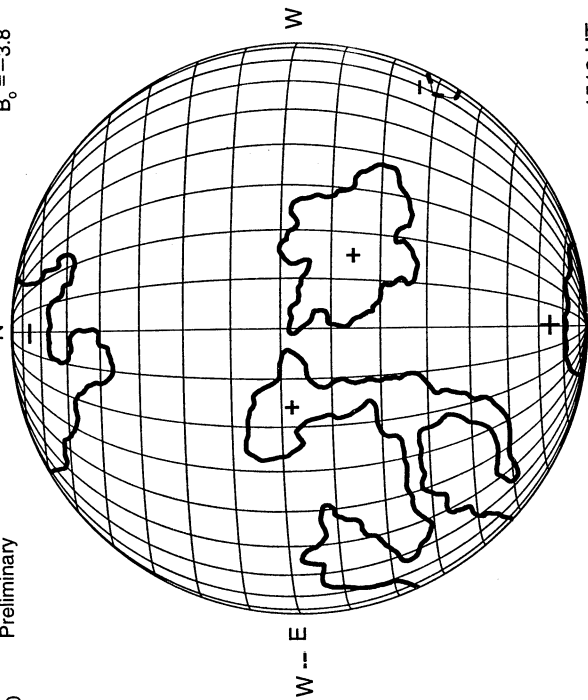
05/02/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -3.6$



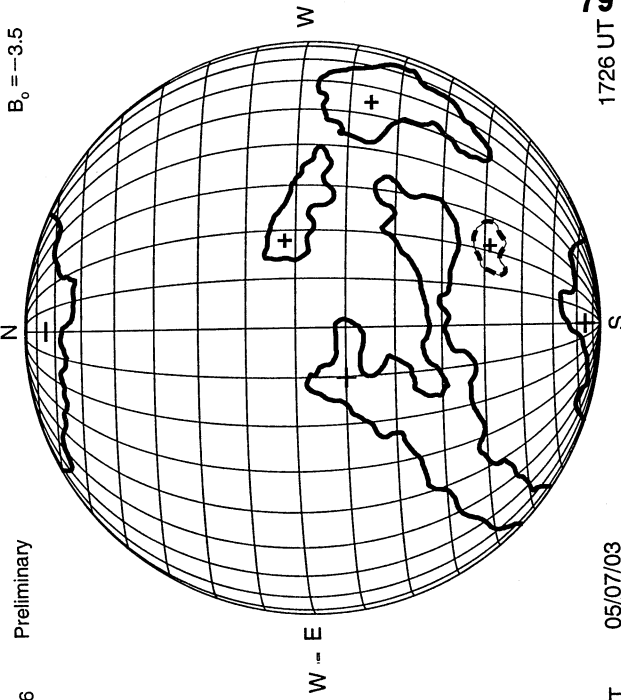
05/06/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -3.8$



05/04/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -3.5$

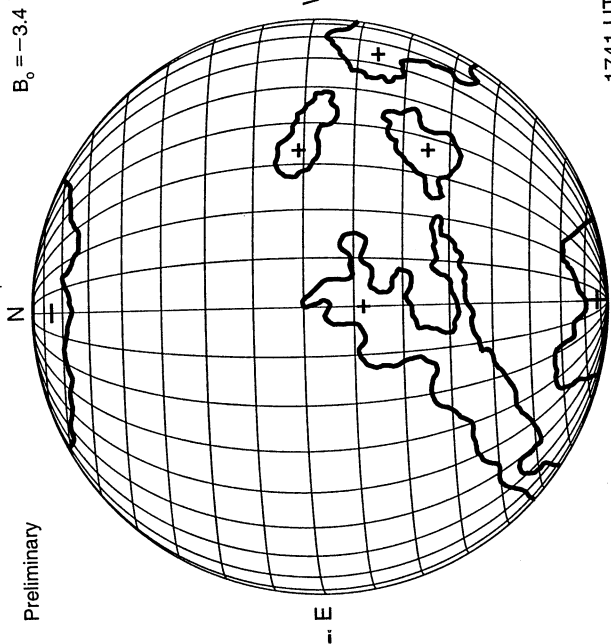


05/07/03

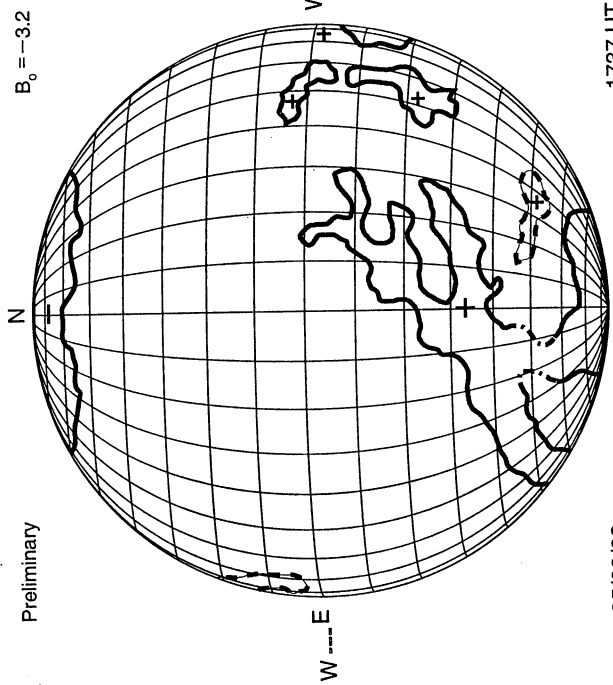
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May 03

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm May 2003

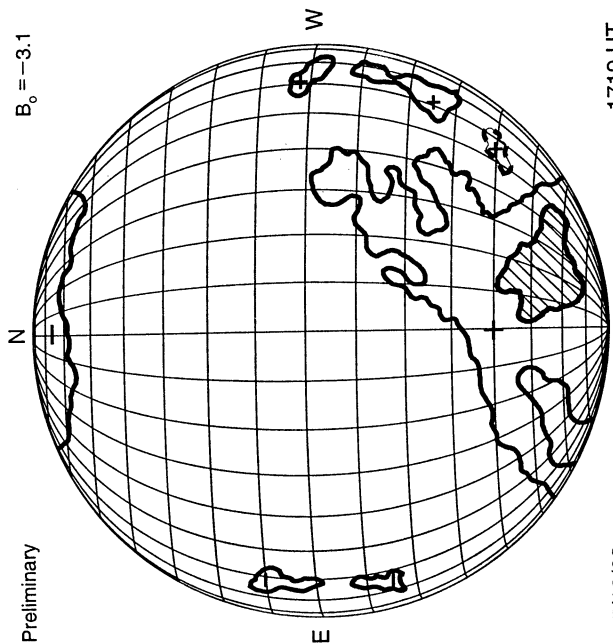
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



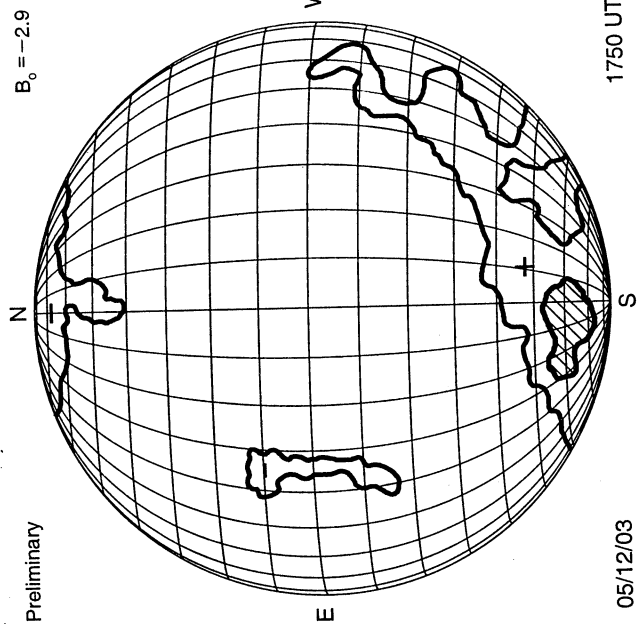
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



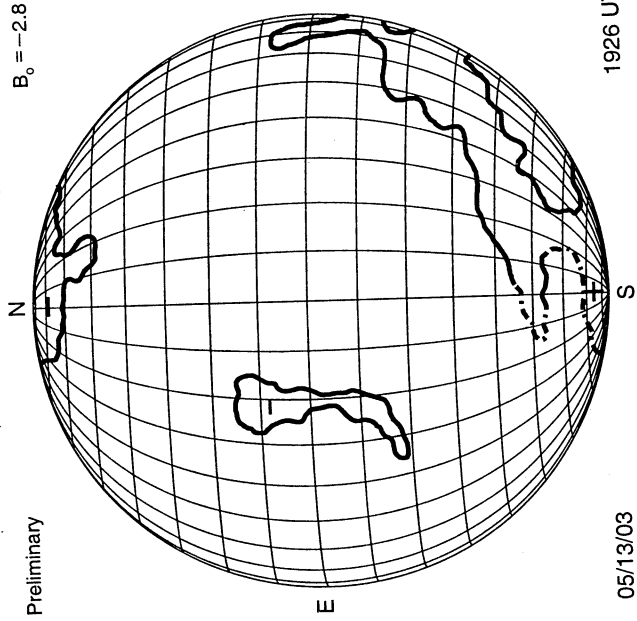
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



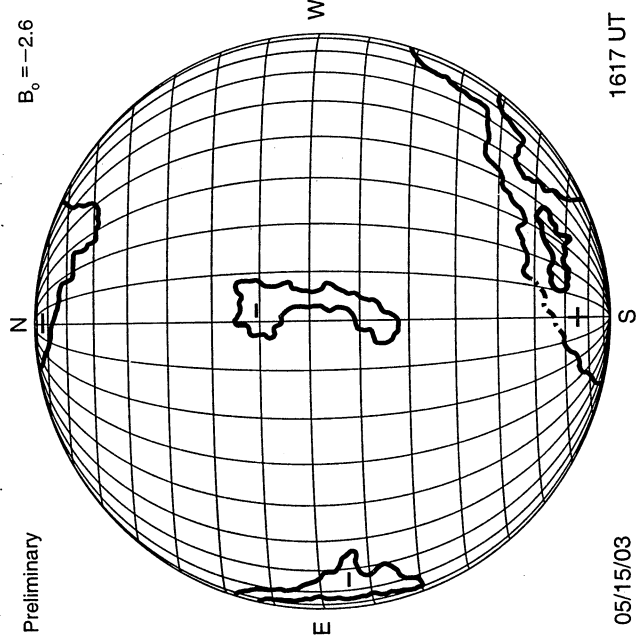
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

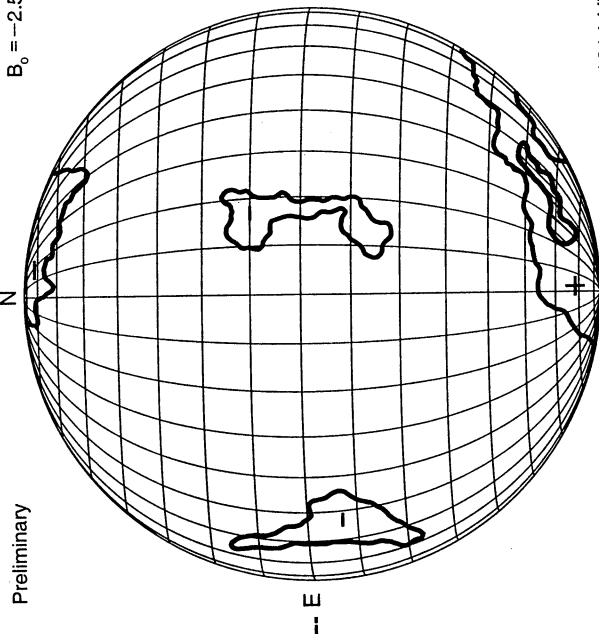


NSO/KP CORONAL HOLE MAP: HE I 1083 nm

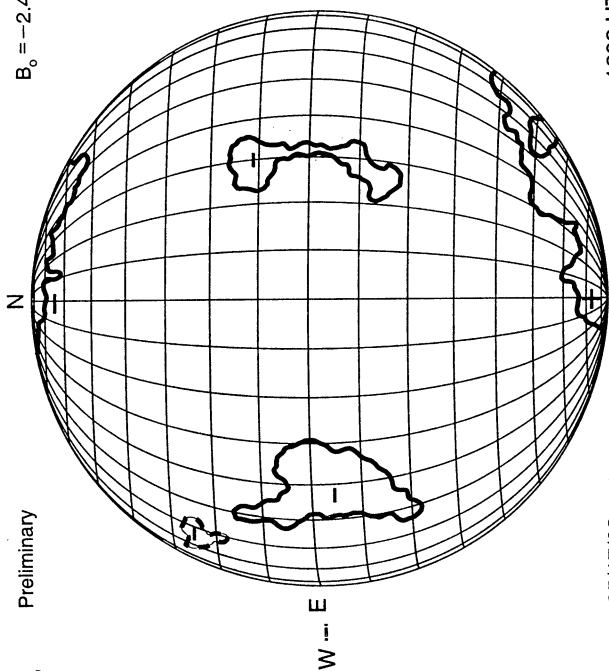


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm May 2003

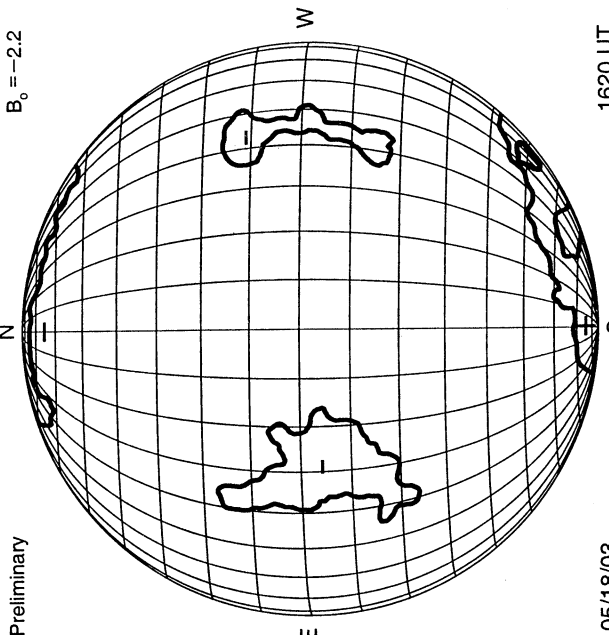
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



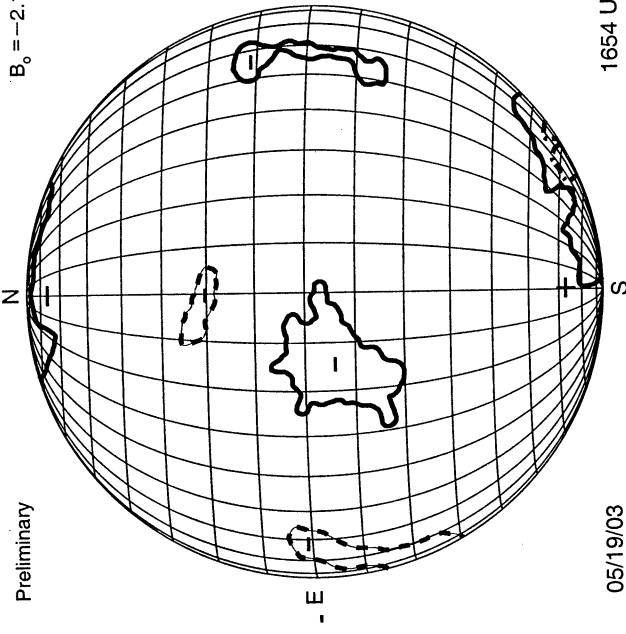
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



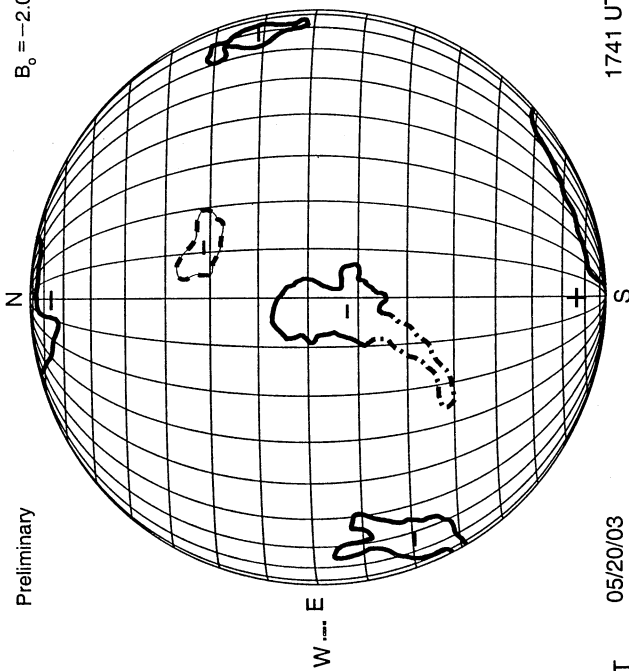
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



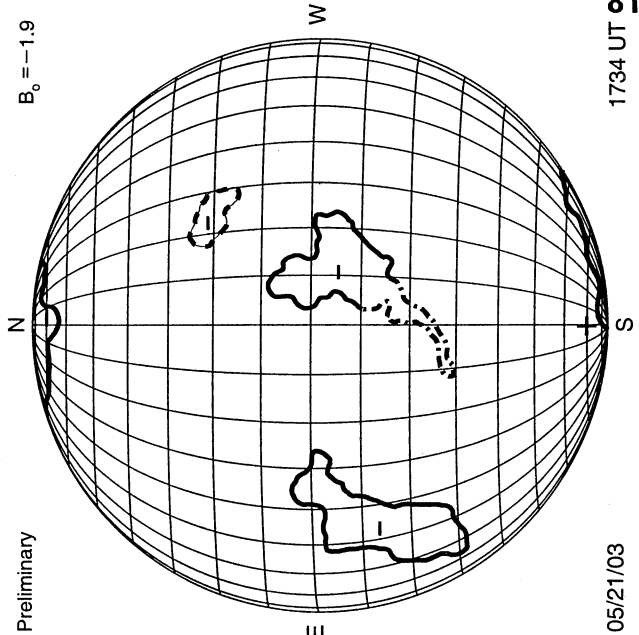
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

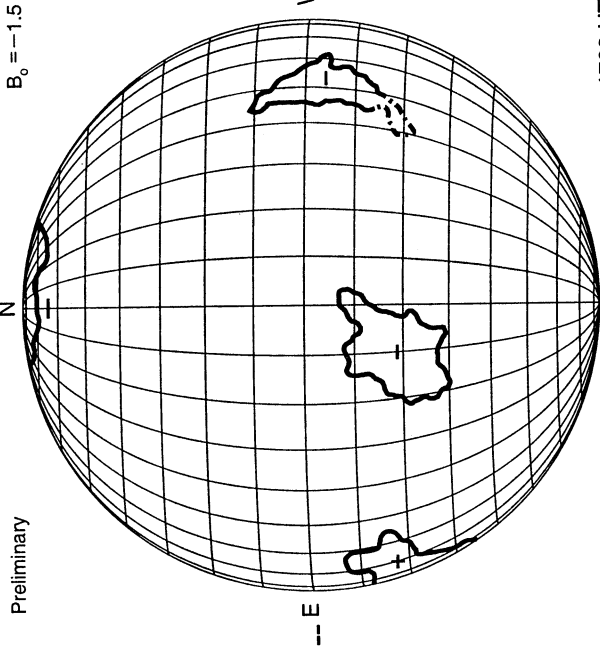


NSO/KP CORONAL HOLE MAP: HE I 1083 nm

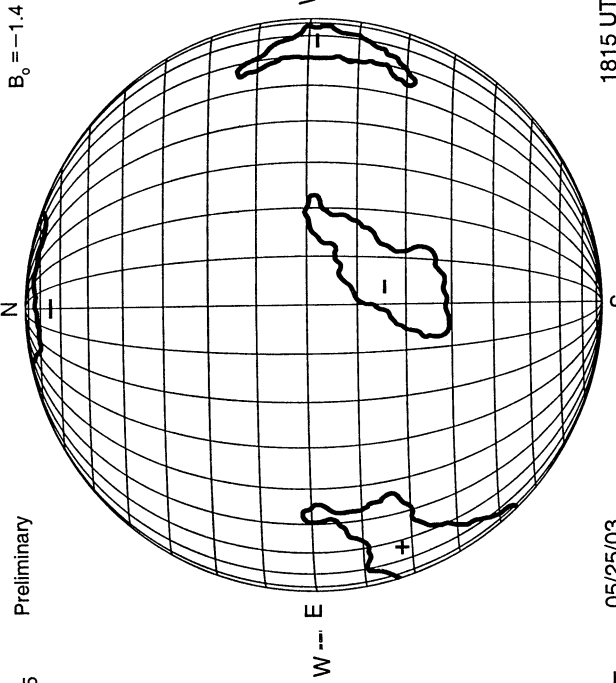


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm May 2003

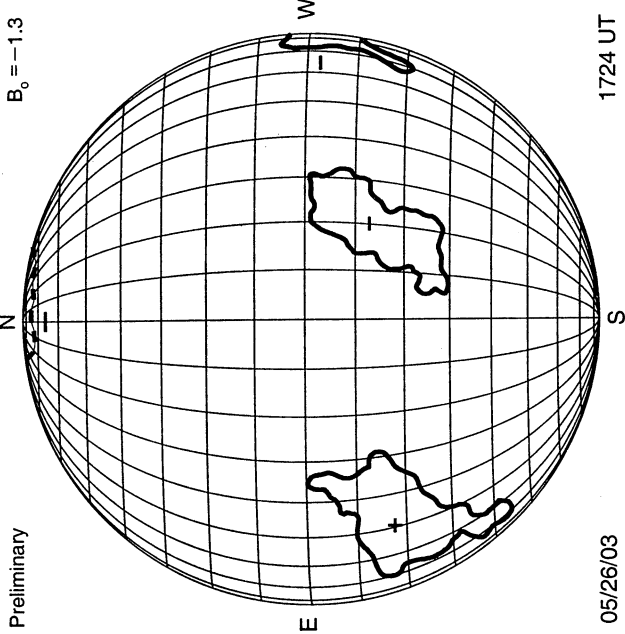
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



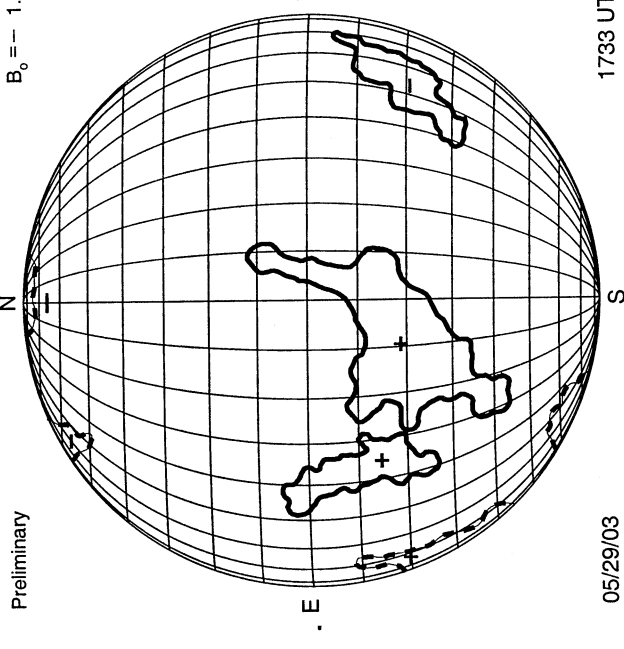
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



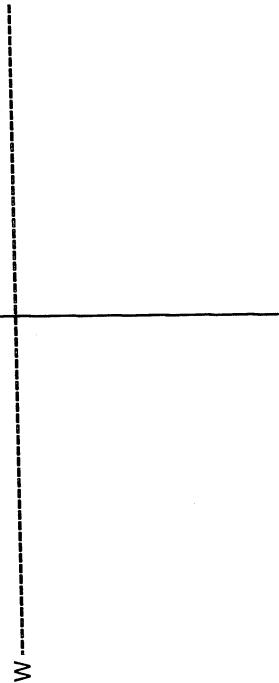
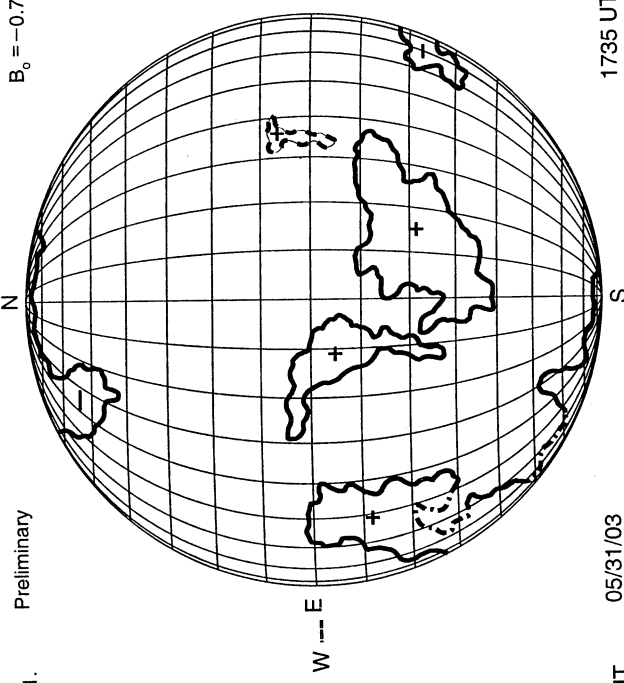
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



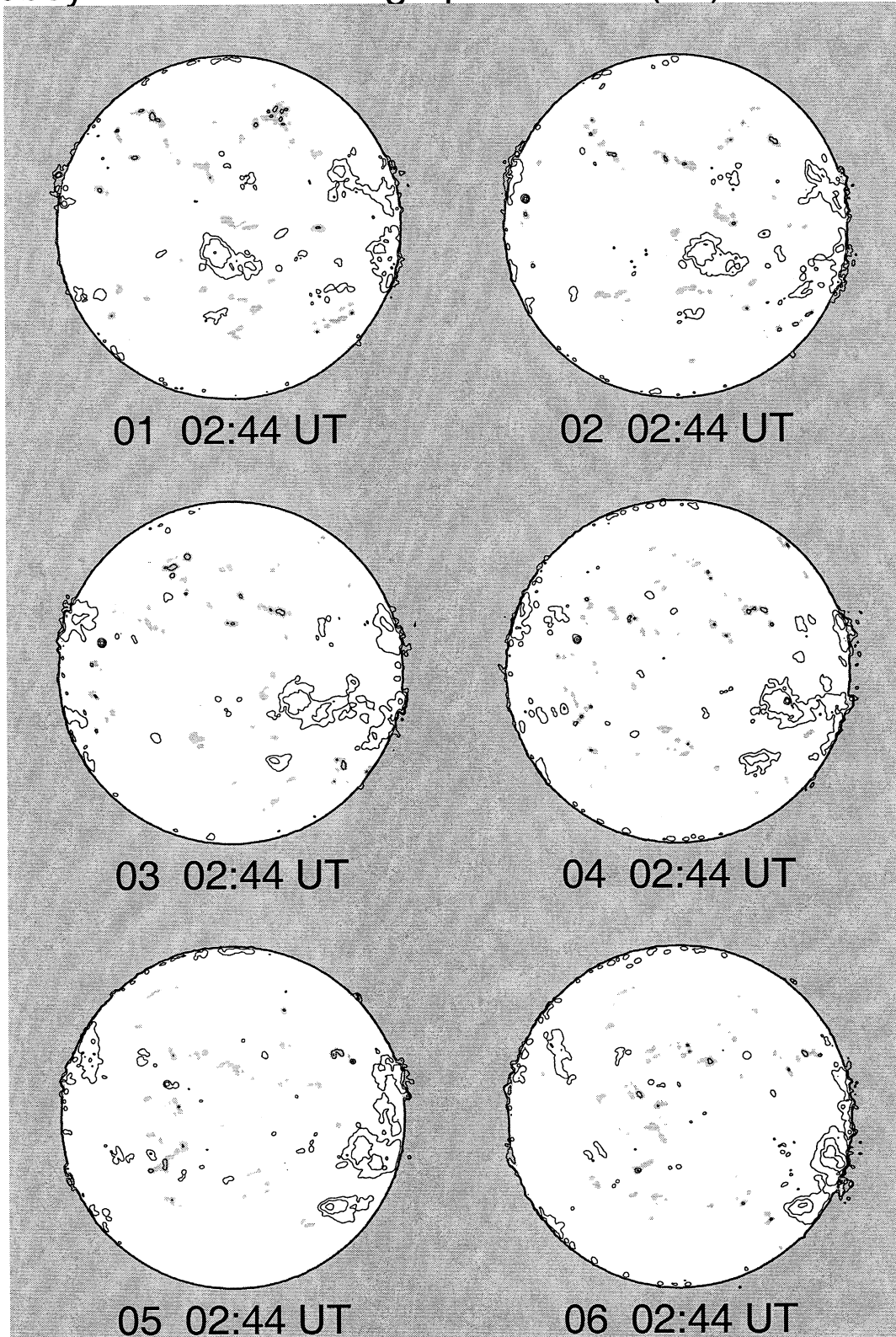
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

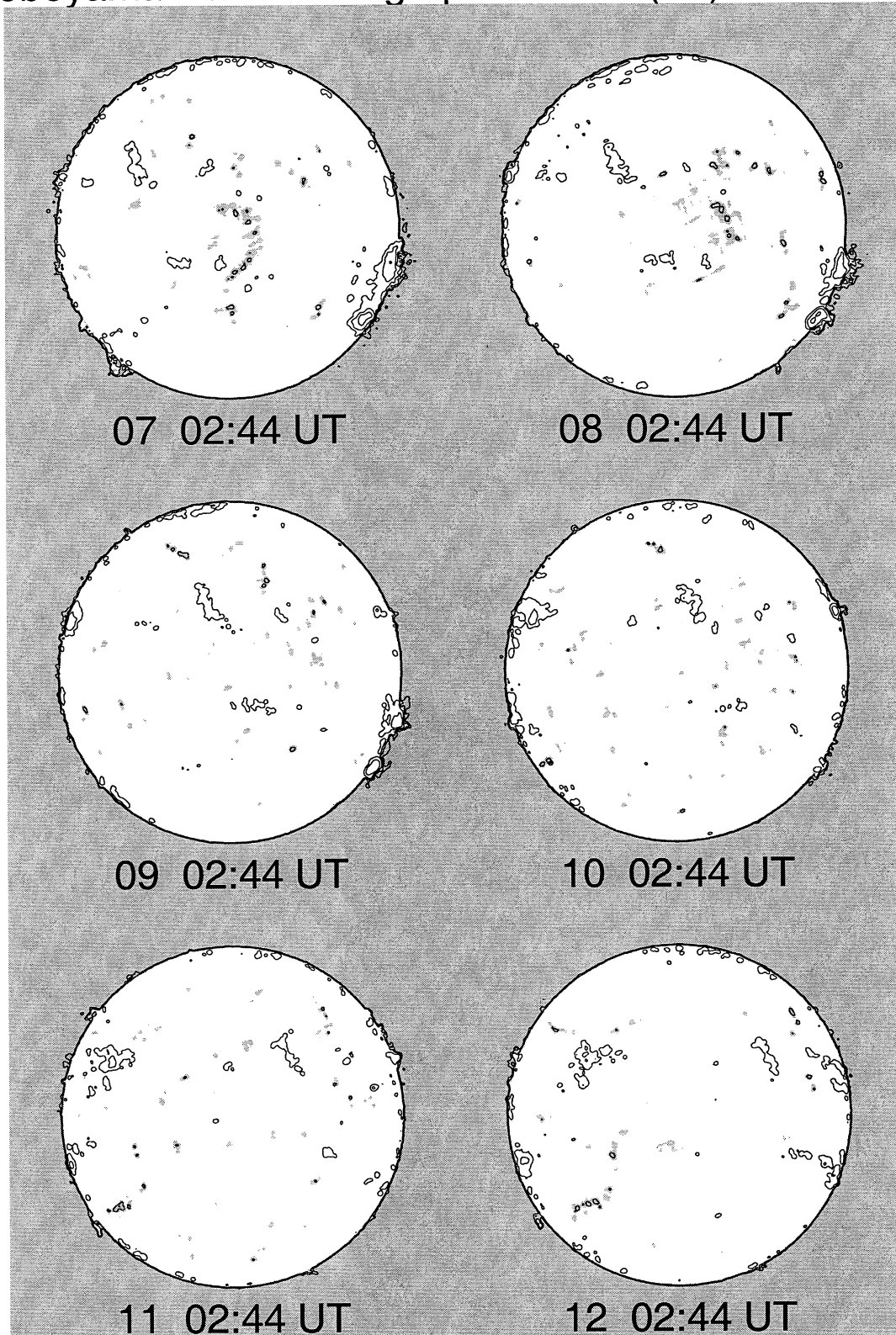


Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



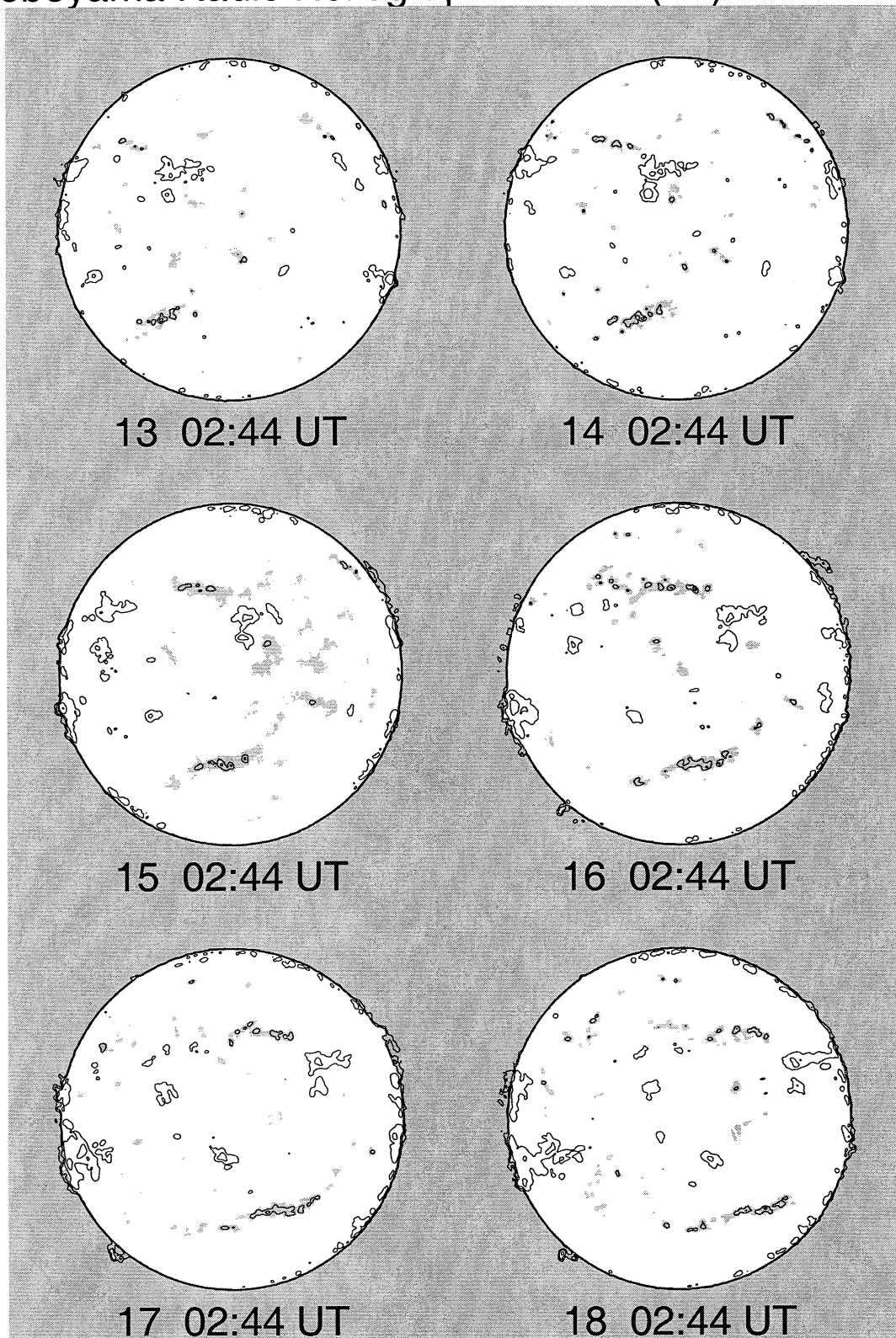
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



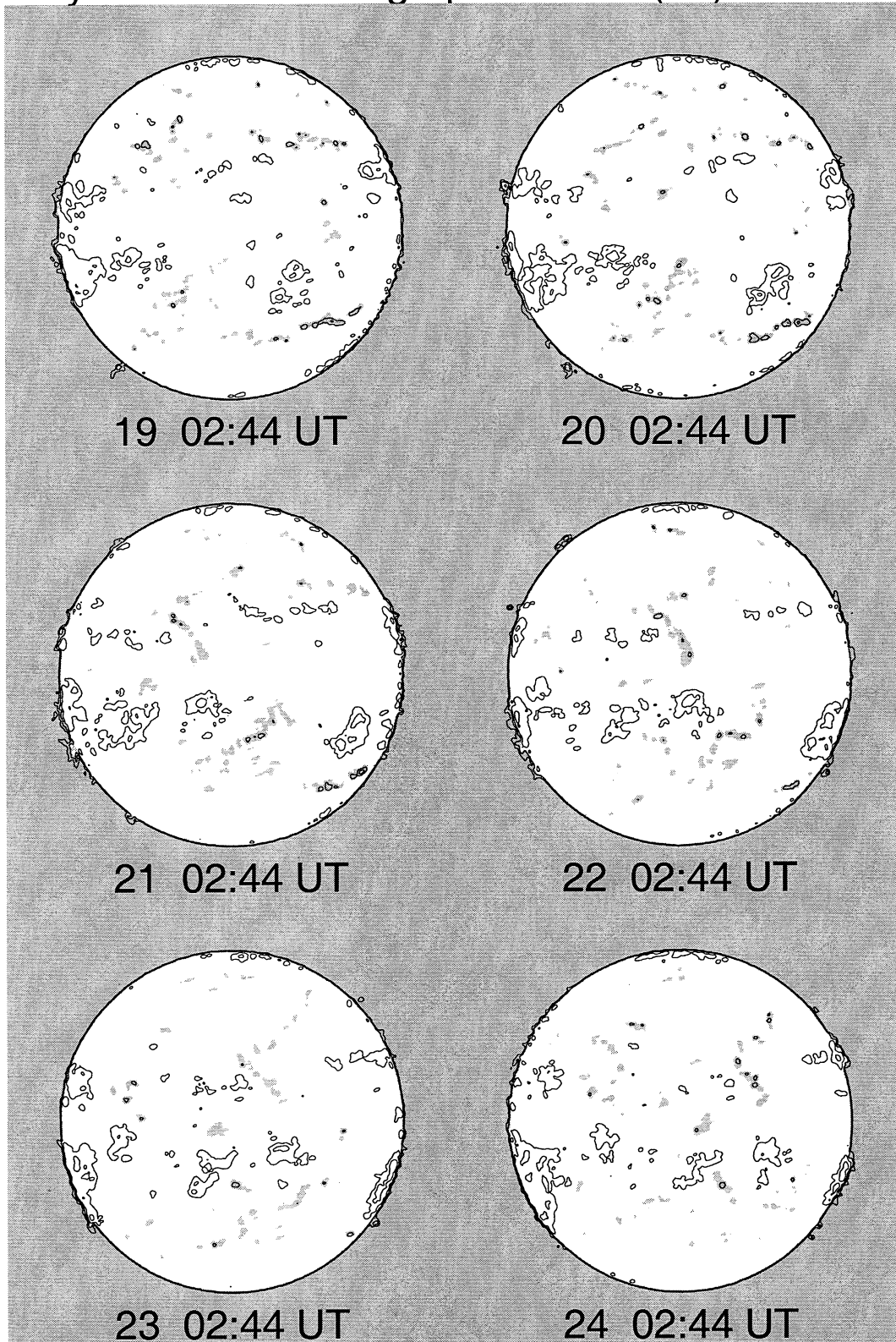
Contour Levels $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$
Grey level $T_b \leq 9,500 \text{ K}$

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



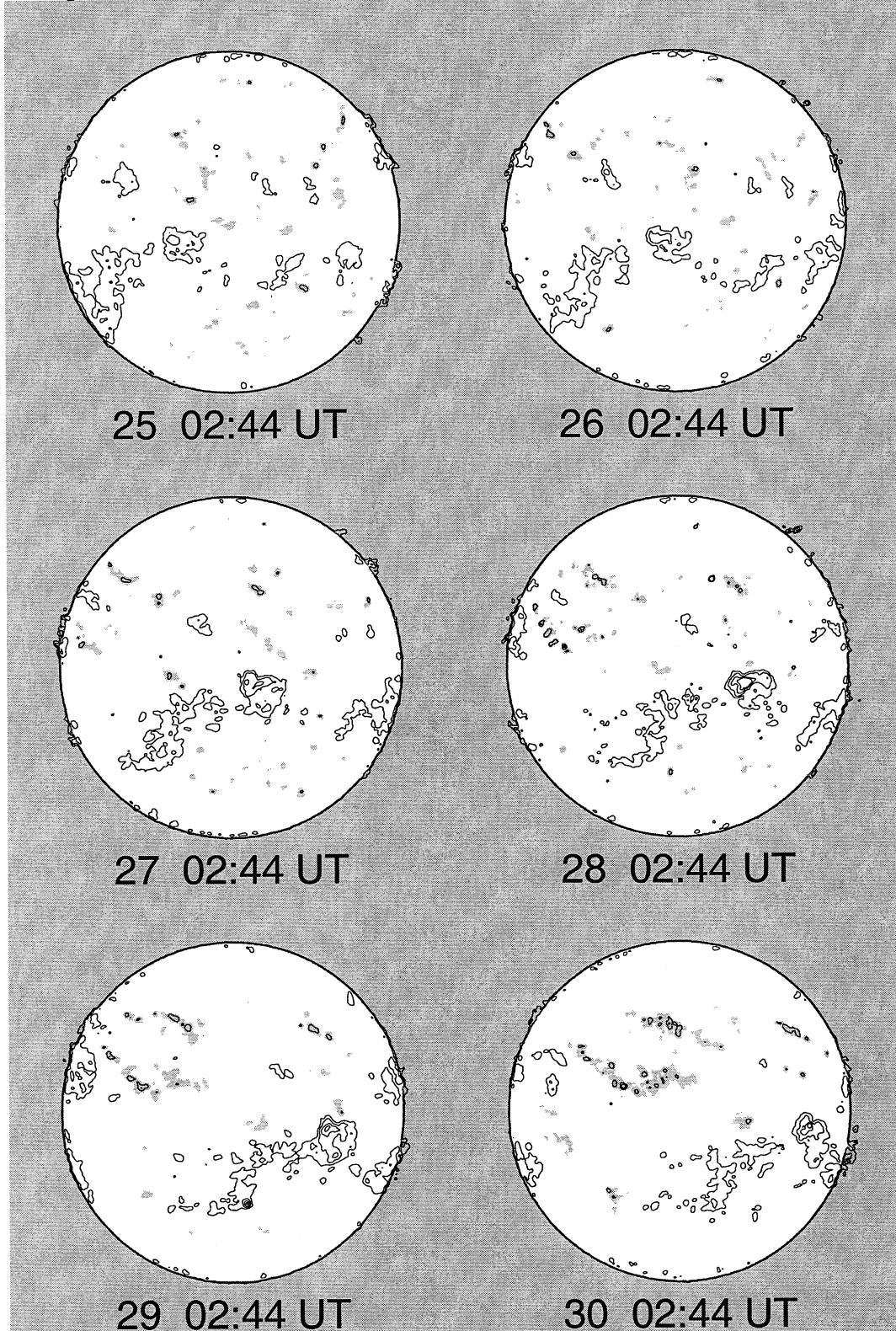
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

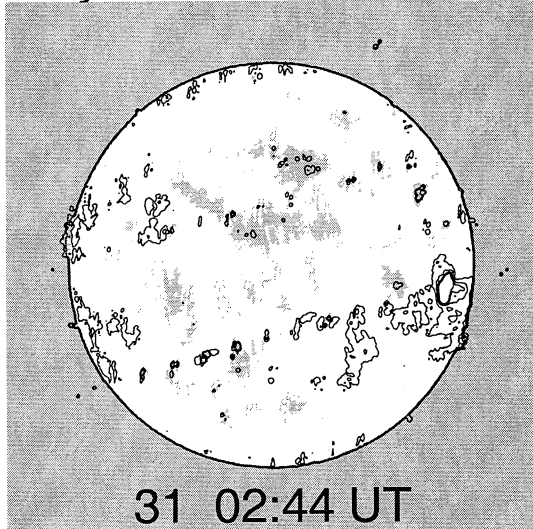
Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

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May 03

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 May



Contour Levels $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$
Grey level $T_b \leq 9,500 \text{ K}$

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

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May 03

MAY 2003

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10349		VORO	04	25	2309	S13 E71	05	1.3			ARX	4	1		3
10349		LEAR	04	26	0025	S12 E71	05	1.4		A	HRX	10	2	1	2
10349		RAMY	04	26	1206	S14 E67	05	1.6		B	CSO	30	11	5	4
10349		HOLL	04	26	1525	S14 E63	05	1.4		B	BXO	50	14	10	2
10349		VORO	04	26	2250	S14 E59	05	1.4			DAI	97	11	5	3
10349		LEAR	04	27	0050	S12 E59	05	1.5		B	DAO	80	8	6	4
10349		TACH	04	27	0429	S13 E60	05	1.7			BRI	10	6	3	3
10349		KAND	04	27	0715	S13 E55	05	1.4			DSI		12	8	4
10349		RAMY	04	27	1221	S14 E53	05	1.5		B	DAO	170	19	6	3
10349	31706	MWIL	04	27	1430	S13 E51	05	1.4	5	(B)					
10349		HOLL	04	27	1725	S13 E48	05	1.3		B	DAO	190	22	8	2
10349		VORO	04	27	2226	S14 E45	05	1.3			DAI	393	21	6	3
10349		LEAR	04	28	0035	S13 E45	05	1.4		B	DAO	360	21	9	3
10349		TACH	04	28	0419	S13 E43	05	1.4			DAI	165	9	7	3
10349		RAMY	04	28	1145	S14 E38	05	1.4		B	DKI	390	31	9	3
10349	31706	MWIL	04	28	1430	S13 E38	05	1.5	5	(B)					
10349		HOLL	04	28	1530	S13 E37	05	1.4		BG	DKI	420	34	9	4
10349		LEAR	04	29	0355	S12 E31	05	1.5		BG	DKC	490	48	10	3
10349		KAND	04	29	0725	S13 E29	05	1.5			DKI		41	10	5
10349		RAMY	04	29	1228	S14 E25	05	1.4		BG	DKC	520	40	10	3
10349		VORO	04	29	2304	S13 E20	05	1.5			DKI	1051	51	8	3
10349		KAND	04	30	0740	S13 E15	05	1.4			EKI		29	11	4
10349		SVTO	04	30	0950	S11 E15	05	1.5		B	EKO	880	21	13	3
10349		RAMY	04	30	1220	S14 E12	05	1.4		BGD	EKI	590	45	12	2
10349		HOLL	04	30	1421	S13 E12	05	1.5		BG	EKC	720	62	12	4
10349		VORO	04	30	2232	S13 E07	05	1.5			DKC	1355	46	8	3
10349		LEAR	05	01	0105	S13 E06	05	1.5		BG	EKI	950	55	12	4
10349		SVTO	05	01	0740	S14 E02	05	1.5		BG	EKC	1020	38	13	3
10349		KAND	05	01	1040	S12 E00	05	1.4			EKC		32	12	3
10349		HOLL	05	01	1430	S14 W03	05	1.4		BG	EKC	1150	64	12	2
10349	31706	MWIL	05	01	1445	S14 W02	05	1.5	6	(B)					
10349		LEAR	05	02	0045	S13 W08	05	1.4		BG	EKC	1200	74	13	4
10349		VORO	05	02	0624	S13 W11	05	1.4			DKC	1443	34	10	3
10349		SVTO	05	02	0731	S13 W13	05	1.3		BG	EKC	970	29	15	3
10349		KAND	05	02	0815	S14 W11	05	1.5			EKC		38	12	3
10349	31706	MWIL	05	02	1430	S14 W16	05	1.4	5	(B)					
10349		HOLL	05	02	1430	S14 W17	05	1.3		BG	EKI	780	61	14	3
10349		LEAR	05	03	0145	S14 W21	05	1.5		BG	EKC	930	72	13	3
10349		VORO	05	03	0503	S13 W23	05	1.5			DKI	1304	52	10	3
10349		TACH	05	03	0556	S13 W24	05	1.4			DAI	641	16	8	3
10349		KAND	05	03	0612	S13 W25	05	1.4			EKC		37	15	4
10349		SVTO	05	03	0825	S13 W27	05	1.3		BG	EKC	670	36	14	3
10349		HOLL	05	03	1715	S14 W31	05	1.4		BD	FKI	860	47	16	2
10349		VORO	05	04	0008	S14 W33	05	1.5			DKI	1367	23	10	2
10349		LEAR	05	04	0100	S15 W36	05	1.3		BG	EKC	960	86	15	3
10349		KAND	05	04	0600	S14 W39	05	1.3			EKC		38	13	4
10349		TACH	05	04	0707	S13 W40	05	1.3			EAI	942	16	10	3
10349		SVTO	05	04	0725	S14 W38	05	1.4		BG	FKC	860	28	16	3
10349		HOLL	05	04	1720	S15 W42	05	1.5		BG	EKC	1260	48	14	3
10349		LEAR	05	05	0032	S15 W47	05	1.5		BG	EKI	990	43	14	4
10349		SVTO	05	05	0645	S13 W51	05	1.4		BG	FKC	770	37	16	3
10349		KAND	05	05	0900	S14 W55	05	1.2			EKI		21	12	4
10349		HOLL	05	05	1403	S15 W57	05	1.3		BG	FKC	440	40	18	4
10349		LEAR	05	06	0110	S15 W61	05	1.4		BG	FKC	770	46	16	2
10349		SVTO	05	06	0510	S14 W65	05	1.3		B	EKI	640	10	14	3
10349		TACH	05	06	0534	S13 W65	05	1.3			DAI	590	10	9	3
10349		KAND	05	06	0845	S15 W68	05	1.2			EKO		12	13	4
10349		HOLL	05	06	1320	S16 W67	05	1.5		BG	FKC	470	22	18	3
10349	31706	MWIL	05	06	1530	S14 W71	05	1.3	5	(B)					
10349		LEAR	05	07	0030	S15 W74	05	1.4		BG	FKI	450	28	16	3
10349		SVTO	05	07	0452	S13 W76	05	1.5		B	DSI	480	7	10	3
10349		KAND	05	07	0500	S14 W78	05	1.3			DAO		10	10	3
10349		TACH	05	07	0557	S15 W76	05	1.5			DAI	595	8	9	3
10349		HOLL	05	07	1441	S16 W80	05	1.5		BG	EKO	90	4	14	2
10348		RAMY	04	26	1206	S36 E64	05	1.6		B	CSO	30	5	7	4
10348		HOLL	04	26	1525	S35 E62	05	1.6		B	BXO	10	3	3	2
10348		VORO	04	26	2250	S34 E56	05	1.4			ARX	12	6		3
10348		LEAR	04	27	0050	S34 E58	05	1.6		B	BXO	30	4	6	4

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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
10348		TACH	04 27 0429	S32 E52	05 1.3			BRO	7	3	6	3
10348		KAND	04 27 0715	S34 E56	05 1.8			CRO		7	8	4
10348		RAMY	04 27 1221	S35 E50	05 1.5		B	DSO	40	9	5	3
10348	31704	MWIL	04 27 1430	S35 E50	05 1.6	4	(B)					
10348		HOLL	04 27 1725	S35 E50	05 1.7		B	CSO	30	11	6	2
10348		VORO	04 27 2226	S34 E45	05 1.5			CAI	67	9	6	3
10348		LEAR	04 28 0035	S34 E45	05 1.6		B	DSO	50	11	7	3
10348		TACH	04 28 0419	S33 E42	05 1.5			BXO	8	2	6	3
10348		RAMY	04 28 1145	S36 E37	05 1.4		B	DRO	20	8	6	3
10348	31704	MWIL	04 28 1430	S34 E38	05 1.6	5	(B)					
10348		HOLL	04 28 1530	S33 E38	05 1.7		B	CSO	20	7	7	4
10348		LEAR	04 29 0355	S34 E31	05 1.6		B	DSO	50	11	8	3
10348		KAND	04 29 0725	S35 E29	05 1.6			BXO		7	8	5
10348		RAMY	04 29 1228	S36 E23	05 1.4		B	DSO	40	8	10	3
10348		VORO	04 29 2304	S34 E19	05 1.5			BXO	11	4	9	3
10348		KAND	04 30 0740	S35 E11	05 1.2			BXO		4	11	4
10348		RAMY	04 30 1220	S33 E07	05 1.1		A	HAX	10	2	2	2
10348		RAMY	04 30 1220	S35 E15	05 1.7		B	DAO	10	5	3	2
10348		HOLL	04 30 1421	S36 E17	05 2.0		B	CSO	30	5	5	4
10348		VORO	04 30 2232	S34 E10	05 1.7			AXX	3	2		3
10348		LEAR	05 01 0105	S34 E11	05 1.9		A	AXX	10	2	1	4
10348		HOLL	05 01 1430	S34 E03	05 1.8		B	BXO	10	2	1	2
10348		LEAR	05 02 0045	S35 W01	05 1.9		A	AXX	10	4	2	4
10348		VORO	05 02 0624	S34 W05	05 1.9			AXX	5	3		3
10348		HOLL	05 02 1430	S35 W08	05 2.0		B	BXO	10	7	4	3
10348	31704	MWIL	05 02 1430	S35 W09	05 1.9	4	(BG)					
10348		LEAR	05 03 0145	S35 W14	05 1.9		B	CSO	30	10	6	3
10348		VORO	05 03 0503	S35 W17	05 1.8			CRI	37	10	5	3
10348		TACH	05 03 0556	S34 W18	05 1.8			BXI	8	4	4	3
10348		KAND	05 03 0612	S36 W17	05 1.9			CAO		11	11	4
10348		SVTO	05 03 0825	S35 W19	05 1.8		B	BXO	20	7	7	3
10348		HOLL	05 03 1715	S35 W27	05 1.5		B	EAO	80	13	15	2
10348		VORO	05 04 0008	S35 W31	05 1.5			DAI	258	6	14	2
10348		LEAR	05 04 0100	S35 W31	05 1.6		BG	FAI	160	34	16	3
10348		KAND	05 04 0600	S35 W35	05 1.4			EAI		25	15	3
10348		TACH	05 04 0707	S32 W34	05 1.6			FAI	167	9	17	3
10348		SVTO	05 04 0725	S34 W36	05 1.4		B	EAO	230	11	15	3
10348		HOLL	05 04 1720	S35 W41	05 1.4		BG	FKI	370	25	16	3
10348		LEAR	05 05 0032	S36 W42	05 1.6		BG	FKI	330	35	16	4
10348		SVTO	05 05 0645	S34 W49	05 1.4		BG	FAI	370	16	18	3
10348		KAND	05 05 0900	S36 W47	05 1.6			FAC		14	18	4
10348		HOLL	05 05 1403	S34 W49	05 1.7		BG	FAC	310	26	17	4
10348		LEAR	05 06 0110	S35 W56	05 1.6		BG	FKI	710	31	21	2
10348		SVTO	05 06 0510	S33 W60	05 1.4		B	FAI	560	9	18	3
10348		TACH	05 06 0534	S33 W60	05 1.5			ESI	523	6	16	3
10348		KAND	05 06 0845	S35 W61	05 1.5			FAC		10	22	4
10348	31704	HOLL	05 06 1320	S34 W62	05 1.6		BG	FKC	470	19	18	3
10348		MWIL	05 06 1530	S35 W64	05 1.5	4	(BG)					
10348		LEAR	05 07 0030	S35 W69	05 1.5		BG	FAI	410	23	21	3
10348		SVTO	05 07 0452	S32 W68	05 1.8		B	FAI	520	10	19	3
10348		KAND	05 07 0500	S35 W73	05 1.4			FAO		6	23	3
10348		TACH	05 07 0557	S34 W72	05 1.5			FAI	644	11	18	3
10348		HOLL	05 07 1441	S35 W75	05 1.6		BG	FKO	290	11	17	2
10348		VORO	05 07 2157	S35 W77	05 1.7			DAI	431	11	9	3
10348		SVTO	05 08 0441	S36 W75	05 2.2		A	HSX	90	1	3	3
10348		TACH	05 08 0557	S38 W77	05 2.0			HSX	58	1	2	4
10348		KAND	05 08 0750	S36 W81	05 1.8			HA		2	5	4
10348		HOLL	05 08 1720	S36 W83	05 2.0		A	HSX	60	1	2	2
10348A		LEAR	05 01 0105	N10 E16	05 2.2		A	AXX	10	3	2	4
10352		RAMY	04 30 1220	S26 E61	05 5.2		A	HRX	10	1	1	2
10352		HOLL	04 30 1421	S24 E60	05 5.2		B	CSO	20	2	3	4
10352		VORO	04 30 2232	S25 E55	05 5.2			BXI	22	4	3	3
10352		LEAR	05 01 0105	S23 E55	05 5.3		B	BXO	20	3	5	4
10352		HOLL	05 01 1430	S25 E47	05 5.2		B	BXO	10	3	3	2
10352	31707	MWIL	05 01 1445	S25 E48	05 5.3	4	(BP)					
10352		LEAR	05 02 0045	S25 E42	05 5.3		B	BXO	20	4	5	4
10351		RAMY	04 30 1220	N05 E84	05 6.8		A	HSX	30	1	2	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10351		HOLL	04 30 1421	N07	E80	05 6.6		A	HKX		1	1	4
10351		VORO	04 30 2232	N07	E78	05 6.8			HKX	386	1		3
10351		LEAR	05 01 0105	N09	E77	05 6.8		A	HAX	80	1	2	4
10351		SVTO	05 01 0740	N08	E74	05 6.9		A	HKX	240	1	4	3
10351		KAND	05 01 1040	N09	E73	05 6.9			HS		1	3	3
10351		HOLL	05 01 1430	N08	E68	05 6.7		A	HSX	170	1	3	2
10351	31708	MWIL	05 01 1445	N08	E69	05 6.8	5	(AP)					
10351		LEAR	05 02 0045	N08	E64	05 6.8		A	HSX	200	1	3	4
10351		VORO	05 02 0624	N07	E60	05 6.8			HKX	377	1		3
10351		SVTO	05 02 0731	N07	E59	05 6.7		A	HSX	150	1	4	3
10351		KAND	05 02 0815	N08	E61	05 6.9			HS		1	3	3
10351		HOLL	05 02 1430	N08	E56	05 6.8		A	HSX	180	1	4	3
10351	31708	MWIL	05 02 1430	N08	E56	05 6.8	5	(AP)					
10351		LEAR	05 03 0145	N09	E50	05 6.8		A	HKX	230	2	3	3
10351		VORO	05 03 0503	N07	E48	05 6.8			HHX	305	2		3
10351		TACH	05 03 0556	N08	E47	05 6.8			HSX	188	1	2	3
10351		KAND	05 03 0612	N08	E49	05 6.9			HA		1	3	4
10351		SVTO	05 03 0825	N07	E46	05 6.8		A	HAX	240	1	3	3
10351		HOLL	05 03 1715	N08	E41	05 6.8		A	HSX	270	1	2	2
10351		VORO	05 04 0008	N07	E38	05 6.8			HHX	277	1		2
10351		LEAR	05 04 0100	N09	E37	05 6.8		A	HHX	210	1	3	3
10351		KAND	05 04 0600	N08	E35	05 6.9			ESO		2	3	3
10351		TACH	05 04 0707	N08	E32	05 6.7			HSX	182	1	3	3
10351		SVTO	05 04 0725	N07	E34	05 6.8		A	HSX	240	1	4	3
10351		HOLL	05 04 1720	N08	E28	05 6.8		A	HHX	220	2	5	3
10351		LEAR	05 05 0032	N09	E24	05 6.8		A	HHX	190	2	3	4
10351		SVTO	05 05 0645	N08	E22	05 6.9		A	HSX	200	1	3	3
10351		KAND	05 05 0900	N08	E20	05 6.9			HS		1	4	4
10351		HOLL	05 05 1403	N08	E17	05 6.8		A	HSX	150	1	3	4
10351		LEAR	05 06 0110	N08	E11	05 6.9		A	HKX	220	1	3	2
10351		SVTO	05 06 0510	N07	E08	05 6.8		A	HSX	200	1	3	3
10351		TACH	05 06 0534	N09	E08	05 6.8			HSX	258	1	3	3
10351		KAND	05 06 0845	N08	E07	05 6.9			HH		1	3	4
10351		HOLL	05 06 1320	N08	E03	05 6.8		A	HAX	160	1	3	3
10351	31708	MWIL	05 06 1530	N07	E03	05 6.9	6	(AP)					
10351		LEAR	05 07 0030	N08	W03	05 6.8		A	HSX	200	1	3	3
10351		SVTO	05 07 0452	N08	W04	05 6.9		A	HSX	200	1	4	3
10351		KAND	05 07 0500	N07	W05	05 6.8			HA		1	2	3
10351		TACH	05 07 0557	N08	W05	05 6.9			HSX	154	1	2	3
10351		HOLL	05 07 1441	N08	W11	05 6.8		A	HHX	200	1	3	2
10351		VORO	05 07 2157	N08	W14	05 6.9			HHX	232	1		3
10351		SVTO	05 08 0441	N08	W17	05 6.9		A	HSX	180	1	4	3
10351		TACH	05 08 0557	N08	W17	05 7.0			CAO	189	3	2	4
10351		KAND	05 08 0750	N08	W20	05 6.8			CAO		2	5	4
10351		HOLL	05 08 1720	N08	W25	05 6.8		A	HSX	220	1	2	2
10351		VORO	05 08 2310	N08	W28	05 6.9			HHX	238	1		3
10351		KAND	05 09 0655	N08	W32	05 6.9			HS		1	3	3
10351		SVTO	05 09 0840	N11	W33	05 6.9		A	HSX	240	1	3	3
10351		HOLL	05 09 1430	N08	W36	05 6.9		A	HSX	180	1	3	3
10351	31708	MWIL	05 09 2000	N08	W40	05 6.8	5	(AP)					
10351		VORO	05 09 2324	N08	W41	05 6.9			HHX	210	1		3
10351		TACH	05 10 0819	N08	W46	05 6.9			HSX	111	1	2	3
10351		SVTO	05 10 0850	N12	W48	05 6.7		A	HSX	150	1	2	2
10351		KAND	05 10 1045	N08	W48	05 6.8			HS		1	3	3
10351		HOLL	05 10 1405	N08	W50	05 6.8		A	HSX	150	1	2	4
10351	31708	MWIL	05 10 1430	N08	W49	05 6.9	5	(AP)					
10351		VORO	05 11 0109	N08	W55	05 6.9			HHX	210	1		3
10351		LEAR	05 11 0310	N08	W57	05 6.8		A	HAX	160	2	2	3
10351		SVTO	05 11 0505	N12	W57	05 6.9		A	HSX	140	1	3	3
10351		KAND	05 11 0600	N09	W59	05 6.8			HA		1	3	3
10351		TACH	05 11 0705	N08	W58	05 6.9			HSX	146	1	2	2
10351		HOLL	05 11 1411	N07	W62	05 6.9		A	HSX	200	1	2	4
10351	31708	MWIL	05 11 2000	N08	W67	05 6.8	5	(AP)					
10351		VORO	05 12 0453	N08	W70	05 6.9			HKX	238	1		2
10351		SVTO	05 12 0522	N08	W74	05 6.7		A	HSX	220	1	4	3
10351		TACH	05 12 0655	N08	W73	05 6.8			HSX	175	1	2	3
10351		HOLL	05 12 1425	N08	W76	05 6.9		A	HSX	110	1	2	3
10351	31708	MWIL	05 12 1500	N08	W77	05 6.8	5	(AP)					
10351		KAND	05 13 0700	N08	W84	05 7.0			HS		1	2	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
10353		VORO	05 04 0008	S16	E45	05 7.4			AXX	10	2		2
10353		LEAR	05 04 0100	S15	E45	05 7.4		A	HAX	20	2	2	3
10353		KAND	05 04 0600	S16	E43	05 7.5			AX		2	1	3
10353		HOLL	05 04 1720	S17	E35	05 7.4		A	AXX	10	1	1	3
10353		LEAR	05 07 0030	S16	E04	05 7.3		B	BXO	10	5	3	3
10353		KAND	05 07 0500	S18	E00	05 7.2			BXO		4	4	3
10353		HOLL	05 07 1441	S16	W06	05 7.1		B	BXO	10	7	5	2
10353		VORO	05 07 2157	S17	W11	05 7.1			ARX	6	3		3
10353		KAND	05 08 0750	S17	W16	05 7.1			AX		1		4
10353	31714	MWIL	05 12 1500	S18	W70	05 7.3	4	(B)					
10353A		KAND	05 07 0500	S14	E14	05 8.3			BXO		2	3	3
10353A		HOLL	05 07 1441	S14	E09	05 8.3		B	BXO		3	4	2
10353A		LEAR	05 11 0310	S15	W35	05 8.5		B	BXO	10	3	3	3
10355		KAND	05 04 0600	N13	E71	05 9.6			AX		1		3
10355		HOLL	05 04 1720	N12	E60	05 9.2		A	AXX	10	1	1	3
10355		LEAR	05 05 0032	N13	E58	05 9.4		B	BXO	20	4	2	4
10355		SVTO	05 05 0645	N11	E53	05 9.3		A	HRX	10	1	1	3
10355		KAND	05 05 0900	N12	E52	05 9.3			AX		1		4
10355		HOLL	05 05 1403	N12	E49	05 9.3		A	HSX	20	1	1	4
10355		LEAR	05 06 0110	N13	E44	05 9.4		A	HRX	20	1	1	2
10355		SVTO	05 06 0510	N11	E40	05 9.2		A	HRX	10	1	1	3
10355		TACH	05 06 0534	N13	E37	05 9.0			HXX	30	1	1	3
10355		KAND	05 06 0845	N13	E37	05 9.1			AX		1		4
10355		HOLL	05 06 1320	N12	E36	05 9.3		A	HSX	10	1	1	3
10355	31709	MWIL	05 06 1530	N12	E34	05 9.2	3	(AP)					
10355		LEAR	05 07 0030	N13	E29	05 9.2		A	HRX	10	1	1	3
10354		VORO	05 04 0008	N19	E71	05 9.4			HAX	41	1		2
10354		LEAR	05 04 0100	N21	E70	05 9.4		A	HAX	30	1	1	3
10354		KAND	05 04 0600	N20	E72	05 9.7			AX		1	1	3
10354		TACH	05 04 0707	N19	E65	05 9.2			HSX	66	1	1	3
10354		SVTO	05 04 0725	N18	E68	05 9.5		A	HSX	50	1	1	3
10354		HOLL	05 04 1720	N19	E61	05 9.4		A	HSX	50	1	2	3
10354		LEAR	05 05 0032	N20	E59	05 9.5		A	HSX	30	1	1	4
10354		SVTO	05 05 0645	N18	E56	05 9.5		A	HSX	20	1	1	3
10354		KAND	05 05 0900	N20	E55	05 9.6			HA		2	1	4
10354		HOLL	05 05 1403	N19	E51	05 9.5		A	HSX	20	1	1	4
10354		LEAR	05 06 0110	N19	E45	05 9.5		A	HSX	30	1	2	2
10354		SVTO	05 06 0510	N18	E44	05 9.6		A	HSX	30	1	1	3
10354		TACH	05 06 0534	N20	E42	05 9.4			AXX	4	1	1	3
10354		KAND	05 06 0845	N19	E41	05 9.5			HS		1	1	4
10354		HOLL	05 06 1320	N19	E38	05 9.4		A	HSX	20	1	1	3
10354	31710	MWIL	05 06 1530	N19	E37	05 9.5	4	(AP)					
10354		LEAR	05 07 0030	N19	E32	05 9.5		A	HSX	30	1	1	3
10354		SVTO	05 07 0452	N18	E32	05 9.6		A	HSX	20	1	1	3
10354		KAND	05 07 0500	N18	E29	05 9.4			HS		1	1	3
10354		TACH	05 07 0557	N19	E29	05 9.5			HSX	37	1	1	3
10354		HOLL	05 07 1441	N19	E24	05 9.4		A	AXX		1	1	2
10354		VORO	05 07 2157	N19	E20	05 9.4			HRX	14	2		3
10354		SVTO	05 08 0441	N19	E17	05 9.5		A	HSX	20	1	1	3
10354		KAND	05 08 0750	N20	E17	05 9.6			BXO		4	4	4
10354		VORO	05 08 2310	N18	E07	05 9.5			AXX	1	2		3
10354		LEAR	05 11 0310	N17	W21	05 9.5		A	AXX		1		3
10354E		TACH	05 08 0557	S14	E17	05 9.5			BXO	9	2	2	4
10354C		TACH	05 07 0557	N48	E42	05 10.8			HSX	111	1	2	3
10354A		VORO	05 11 0109	S04	E07	05 11.6			ARX	4	1		3
10354A		LEAR	05 11 0310	S04	E06	05 11.6		B	CRO	10	2	3	3
10354A		SVTO	05 11 0505	S04	E05	05 11.6		B	CSO	20	2	3	3
10354A		KAND	05 11 0600	S03	E04	05 11.5			BXO		2	2	3
10354A		TACH	05 11 0705	S03	E03	05 11.5			AXX	1	1	1	2
10354A		HOLL	05 11 1411	S05	E01	05 11.7		A	AXX		1	1	4
10354A		HOLL	05 12 1425	S04	W14	05 11.5		A	AXX		1	1	3
10354A	31716	MWIL	05 15 1630	S07	W54	05 11.6	4	(AP)					
10354A		HOLL	05 15 1633	S08	W54	05 11.6		B	BXO	10	2	1	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10354A	31716	MWIL	05	16	1445	S13	W70	05	11.3	4	(AP)					
10354A		LEAR	05	17	0015	S07	W69	05	11.8		B	CRO	30	3	3	4
10359	31715	TACH	05	12	0655	S17	W07	05	11.7	4		BRO	5	3	1	3
10359		HOLL	05	12	1425	S16	W13	05	11.6		B	CSO	20	3	4	3
10359		MWIL	05	12	1500	S17	W13	05	11.6		(B)					
10359		SVTO	05	13	0546	S16	W23	05	11.5		A	HSX	10	1	1	3
10359		KAND	05	13	0700	S16	W22	05	11.6			AX		1		3
10359		LEAR	05	13	0815	S18	W23	05	11.6		B	CRO	20	4	4	2
10359		HOLL	05	13	1400	S16	W27	05	11.5		A	AXX	10	1		4
10359		LEAR	05	14	0026	S17	W34	05	11.4		B	BXO	20	5	3	3
10359		LEAR	05	15	0013	S12	W45	05	11.6		A	HSX	20	2	1	3
10359		HOLL	05	16	1405	S14	W70	05	11.3		A	AXX	20	2	2	3
10354B		VORO	05	13	2241	S04	W05	05	13.6			AXX	6	1		3
10354B		LEAR	05	14	0026	S04	W07	05	13.5		A	AXX	10	2	1	3
10354B		SVTO	05	14	0758	S05	W12	05	13.4		A	AXX		1		3
10354B		KAND	05	14	1145	S04	W13	05	13.5			AX		1		3
10354B		HOLL	05	14	1550	S04	W17	05	13.4		A	AXX		1	1	2
10354B		VORO	05	14	2239	S04	W19	05	13.5			AXX	2	1		3
10354B		LEAR	05	15	0013	S05	W21	05	13.4		A	HSX	10	1		3
10354B		SVTO	05	15	0512	S05	W24	05	13.4		A	AXX		1		3
10356	31711	VORO	05	08	2310	N17	E73	05	14.5	5		HAX	70	1		3
10356		KAND	05	09	0655	N17	E75	05	15.0			CSO		2	6	3
10356		SVTO	05	09	0840	N13	E71	05	14.7		B	DSO	80	2	6	3
10356		HOLL	05	09	1430	N17	E68	05	14.8		B	DSO	140	2	6	3
10356		MWIL	05	09	2000	N17	E64	05	14.7		(BP)					
10356		VORO	05	09	2324	N17	E62	05	14.7			HAX	92	4	4	3
10356		TACH	05	10	0819	N16	E54	05	14.4			HXX	46	2	1	3
10356		SVTO	05	10	0850	N13	E56	05	14.6		A	HSX	30	1	1	2
10356		KAND	05	10	1045	N17	E56	05	14.7			HS		1	2	3
10356		HOLL	05	10	1405	N16	E52	05	14.5		A	HSX	30	1	1	4
10356	31711	MWIL	05	10	1430	N17	E52	05	14.5	4	(BP)					
10356		VORO	05	11	0109	N16	E47	05	14.6			HAX	47	2		3
10356		LEAR	05	11	0310	N17	E46	05	14.6		B	CAO	50	3	4	3
10356		SVTO	05	11	0505	N13	E46	05	14.7		A	HSX	60	1	2	3
10356		KAND	05	11	0600	N17	E46	05	14.7			HS		1	1	3
10356		TACH	05	11	0705	N16	E42	05	14.5			HSX	29	1	1	2
10356		HOLL	05	11	1411	N17	E41	05	14.7		B	CSO	60	2	5	4
10356		MWIL	05	11	2000	N17	E37	05	14.6		(BP)					
10356		VORO	05	12	0453	N17	E31	05	14.5			HAX	77	1		2
10356		SVTO	05	12	0522	N17	E32	05	14.6		A	HSX	50	1	2	3
10356	31711	TACH	05	12	0655	N17	E30	05	14.6	5		HSX	67	1	1	3
10356		HOLL	05	12	1425	N17	E27	05	14.6		B	CSO	50	4	7	3
10356		MWIL	05	12	1500	N17	E28	05	14.7		(BP)					
10356		SVTO	05	13	0546	N17	E19	05	14.7		B	CSO	40	4	4	3
10356		KAND	05	13	0700	N17	E20	05	14.8			CSO		5	5	3
10356		LEAR	05	13	0815	N18	E18	05	14.7		B	CAO	90	11	5	2
10356		HOLL	05	13	1400	N17	E14	05	14.6		B	CAO	60	6	4	4
10356		VORO	05	13	2241	N17	E09	05	14.6			HAX	98	9		3
10356		LEAR	05	14	0026	N17	E08	05	14.6		B	CAO	80	7	5	3
10356		SVTO	05	14	0758	N17	E03	05	14.5		B	DRO	40	6	4	3
10356	31711	KAND	05	14	1145	N17	E03	05	14.7	4		CAO		7	4	3
10356		HOLL	05	14	1550	N19	E01	05	14.7		B	CAO	60	6	3	2
10356		VORO	05	14	2239	N17	W03	05	14.7			HAX	69	9		3
10356		LEAR	05	15	0013	N17	W04	05	14.7		B	DAO	80	12	6	3
10356		SVTO	05	15	0512	N18	W08	05	14.6		B	DSO	40	3	3	3
10356		TACH	05	15	0637	N18	W08	05	14.7			AR	23	4	3	2
10356		KAND	05	15	0650	N17	W05	05	14.9			CAO		6	5	3
10356		MWIL	05	15	1630	N17	W13	05	14.7		(BG)					
10356		HOLL	05	15	1633	N18	W12	05	14.8		B	CAO	40	12	6	2
10356		VORO	05	15	2225	N18	W17	05	14.6			HAX	45	10		3
10356	31711	LEAR	05	16	0612	N17	W19	05	14.8	4	B	DAO	50	14	6	2
10356		TACH	05	16	0635	N18	W20	05	14.7			BRI	18	5	3	3
10356		KAND	05	16	0650	N17	W20	05	14.8			CRO		3	3	2
10356		HOLL	05	16	1405	N18	W25	05	14.7		B	CSO	20	8	7	3
10356		MWIL	05	16	1445	N17	W25	05	14.7		(BP)					
10356		VORO	05	16	2308	N18	W30	05	14.7			AXX	9	3	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10356	31711	LEAR	05 17	0015	N18	W31	05 14.6		B	BXO	10	4	3	4
10356		MWIL	05 17	1645	N17	W42	05 14.5	4	(AP)					
10356	31711	VORO	05 18	0054	N17	W42	05 14.8			BXI	17	4	4	2
10356		LEAR	05 18	0055	N16	W44	05 14.7		B	BXO	10	4	2	3
10356	31711	TACH	05 18	0707	N18	W46	05 14.8			AXX	16	1	1	2
10356		MWIL	05 18	1445	N18	W50	05 14.8	5	(B)					
10356	31711	HOLL	05 18	1446	N18	W48	05 15.0		B	CSO	20	3	4	4
10356		LEAR	05 19	0136	N18	W55	05 14.9		B	BXO	20	2	3	3
10356	31711	VORO	05 19	0224	N19	W57	05 14.7			HRX	14	1		3
10356		MWIL	05 19	1430	N18	W63	05 14.8	4	(AP)					
10358	31712	LEAR	05 11	0310	N08	E47	05 14.6		A	AXX		1		3
10358		KAND	05 11	0600	N08	E46	05 14.7			AX		1		3
10358	31712	HOLL	05 11	1411	N08	E39	05 14.5		A	AXX		1	1	4
10358		MWIL	05 11	2000	N09	E36	05 14.5	3	(AP)					
10358	31712	TACH	05 12	0655	N10	E32	05 14.7			BXO	6	2	2	3
10358		HOLL	05 12	1425	N10	E28	05 14.7		A	AXX		1	1	3
10358	31712	MWIL	05 12	1500	N10	E28	05 14.7	4	(B)					
10358		SVTO	05 13	0546	N08	E18	05 14.6		B	CRO	10	2	2	3
10358	31712	KAND	05 13	0700	N09	E18	05 14.6			AX		2	1	3
10358		LEAR	05 13	0815	N11	E19	05 14.8		B	CRO	30	8	4	2
10358	31712	HOLL	05 13	1400	N08	E15	05 14.7		B	DSO	50	8	4	4
10358		VORO	05 13	2241	N09	E10	05 14.7			DAO	101	10	4	3
10358	31712	LEAR	05 14	0026	N09	E09	05 14.7		B	DAO	100	13	5	3
10358		SVTO	05 14	0758	N09	E05	05 14.7		B	DSO	80	8	6	3
10358	31712	KAND	05 14	1145	N09	E04	05 14.8			DSO		5	6	3
10358		HOLL	05 14	1550	N08	E01	05 14.7		B	CAO	40	3	6	2
10358	31712	VORO	05 14	2239	N09	W02	05 14.8			CAI	91	9	6	3
10358		LEAR	05 15	0013	N09	W04	05 14.7		B	DAO	100	12	7	3
10358	31712	SVTO	05 15	0512	N08	W07	05 14.7		B	DSO	50	3	7	3
10358		TACH	05 15	0637	N09	W07	05 14.7			CSO	33	3	6	2
10358	31712	KAND	05 15	0650	N08	W07	05 14.7			CAO		6	7	3
10358		MWIL	05 15	1630	N08	W13	05 14.7	5	(BG)					
10358	31712	HOLL	05 15	1633	N08	W13	05 14.7		B	CAO	40	6	7	2
10358		VORO	05 15	2225	N09	W15	05 14.8			CAO	41	9	6	3
10358	31712	LEAR	05 16	0612	N08	W20	05 14.7		B	DAO	50	4	7	2
10358		TACH	05 16	0635	N09	W20	05 14.8			BRO	13	3	1	3
10358	31712	KAND	05 16	0655	N07	W23	05 14.6			HS		1	1	2
10358		HOLL	05 16	1405	N08	W27	05 14.6		B	CSO	20	3	7	3
10358	31712	MWIL	05 16	1445	N08	W27	05 14.6	4	(BG)					
10358		VORO	05 16	2308	N08	W32	05 14.6			ARX	12	2		3
10358	31722	LEAR	05 17	0015	N08	W33	05 14.5		A	HRX	10	3	1	4
10358		KAND	05 17	0825	N08	W37	05 14.6			AX		1		3
10358A	31722	TACH	05 19	0815	S25	W29	05 17.1			AXX	12	1	1	3
10358A		MWIL	05 19	1430	S24	W35	05 16.9	4	(B)					
10358A	31722	LEAR	05 20	0052	S22	W38	05 17.1		B	BXO	10	3	3	2
10358A		VORO	05 20	0426	S23	W41	05 17.0			AXX	8	1		3
10358A	31722	TACH	05 20	0607	S24	W42	05 17.0			AXX	2	1	1	4
10358A		SVTO	05 20	0720	S22	W43	05 17.0		A	AXX		1		3
10357	31713	LEAR	05 11	0310	S16	E82	05 17.3		B	CAO	30	3	10	3
10357		SVTO	05 11	0505	S21	E78	05 17.2		A	AXX		1		3
10357	31713	KAND	05 11	0600	S16	E86	05 17.8			BXO		2	7	3
10357		HOLL	05 11	1411	S16	E75	05 17.3		B	CSO	40	3	9	4
10357	31713	MWIL	05 11	2000	S16	E71	05 17.2	4	(B)					
10357		VORO	05 12	0453	S16	E66	05 17.2			DAO	84	2	7	2
10357	31713	SVTO	05 12	0522	S17	E67	05 17.3		B	DSO	70	4	8	3
10357		TACH	05 12	0655	S16	E64	05 17.1			DAI	137	4	6	3
10357	31713	HOLL	05 12	1425	S16	E60	05 17.1		B	ESO	60	7	11	3
10357		MWIL	05 12	1500	S16	E61	05 17.2	5	(B)					
10357	31713	SVTO	05 13	0546	S17	E54	05 17.3		B	DSO	60	2	10	3
10357		KAND	05 13	0700	S16	E54	05 17.4			DSO		2	10	3
10357	31713	LEAR	05 13	0815	S14	E52	05 17.3		B	ESO	90	3	10	2
10357		HOLL	05 13	1400	S17	E47	05 17.1		B	DSO	80	5	10	4
10357	31713	VORO	05 13	2241	S16	E43	05 17.2			DAO	57	7	8	3
10357		LEAR	05 14	0026	S15	E42	05 17.2		B	DAO	60	5	10	3
10357	31713	SVTO	05 14	0758	S16	E39	05 17.3		B	DSO	40	3	9	3
10357		KAND	05 14	1145	S16	E36	05 17.2			DSO		4	9	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time			CMP		Max	Mag	Spot	Corrected Area	Spot	Long. Extent	Qual		
			Mo	Day	(UT)	Lat	CMD	Mo	Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	
10357	31713	HOLL	05	14	1550	S16	E34	05	17.2		B	CSO	30	3	9	2
10357		VORO	05	14	2239	S16	E31	05	17.3			CAO	43	3	8	3
10357		LEAR	05	15	0013	S17	E30	05	17.3		B	DAO	50	4	8	3
10357		SVTO	05	15	0512	S15	E27	05	17.3		B	DSO	30	3	8	3
10357		TACH	05	15	0637	S17	E30	05	17.5			HA	31	3	2	2
10357		KAND	05	15	0650	S17	E27	05	17.3			CSO		3	8	3
10357		MWIL	05	15	1630	S17	E22	05	17.3	4	(BF)					
10357		HOLL	05	15	1633	S17	E24	05	17.5		B	CSO	20	2	1	2
10357		VORO	05	15	2225	S17	E21	05	17.5			HSX	29	2		3
10357		LEAR	05	16	0612	S18	E18	05	17.6		A	HAX	50	3	2	2
10357	31713	TACH	05	16	0635	S17	E17	05	17.6			AR	17	2	1	3
10357		KAND	05	16	0655	S18	E17	05	17.6			HA		1	1	2
10357		HOLL	05	16	1405	S16	E11	05	17.4		B	DAO	50	4	3	3
10357		MWIL	05	16	1445	S17	E12	05	17.5	5	(BG)					
10357		VORO	05	16	2308	S16	E07	05	17.5			CAO	39	9	1	3
10357		LEAR	05	17	0015	S15	E07	05	17.5		B	DAO	50	11	4	4
10357		TACH	05	17	0550	S16	E03	05	17.5			CAI	32	5	2	3
10357		KAND	05	17	0825	S16	E02	05	17.5			CAO		10	4	3
10357		MWIL	05	17	1645	S16	W03	05	17.5	5	(BF)					
10357		VORO	05	18	0054	S15	W08	05	17.4			CAI	42	8	3	2
10357	31713	LEAR	05	18	0055	S16	W07	05	17.5		B	CAO	40	12	5	3
10357		TACH	05	18	0707	S16	W11	05	17.5			CAO	79	4	3	2
10357		KAND	05	18	1027	S17	W11	05	17.6			DAO		7	4	3
10357		MWIL	05	18	1445	S16	W15	05	17.5	5	(BG)					
10357		HOLL	05	18	1446	S16	W15	05	17.5		B	DSI	60	15	5	4
10357		LEAR	05	19	0136	S16	W20	05	17.5		B	DAO	60	21	6	3
10357		VORO	05	19	0224	S15	W22	05	17.4			DAI	105	21	4	3
10357		KAND	05	19	0610	S16	W25	05	17.4			DSO		7	6	3
10357		TACH	05	19	0815	S18	W26	05	17.4			DAI	180	7	4	3
10357		MWIL	05	19	1430	S17	W29	05	17.4	5	(B)					
10357	31713	HOLL	05	19	1440	S16	W32	05	17.2		B	CSO	50	14	8	3
10357		LEAR	05	20	0052	S16	W35	05	17.4		B	CAO	90	14	8	2
10357		VORO	05	20	0426	S15	W36	05	17.4			DAI	66	13	7	3
10357		TACH	05	20	0607	S16	W38	05	17.4			DSO	102	3	7	4
10357		SVTO	05	20	0720	S14	W38	05	17.4		B	CSO	40	8	8	3
10357		KAND	05	20	1115	S17	W42	05	17.3			CSO		9	9	3
10357		MWIL	05	20	1445	S17	W43	05	17.3	4	(BG)					
10357		HOLL	05	20	1920	S15	W47	05	17.2		B	CSO	40	8	9	3
10357		VORO	05	20	2216	S16	W46	05	17.4			DAI	44	8	6	3
10357		LEAR	05	21	0002	S17	W47	05	17.4		B	DAO	70	13	9	2
10357	31713	TACH	05	21	0617	S15	W50	05	17.5			CSI	36	3	9	3
10357		KAND	05	21	0900	S16	W54	05	17.3			BXO		3	8	2
10357		SVTO	05	21	1012	S15	W55	05	17.3		B	CSO	30	3	8	2
10357		HOLL	05	21	1435	S17	W57	05	17.3		B	CAO	30	9	9	3
10357		MWIL	05	21	1445	S16	W57	05	17.3	5	(B)					
10357		VORO	05	21	2156	S16	W61	05	17.3			CRI	67	15	8	2
10357		LEAR	05	22	0045	S16	W61	05	17.4		B	BXO	60	9	7	4
10357		TACH	05	22	0711	S16	W68	05	17.1			AR	24	2	1	4
10357		MWIL	05	22	1430	S16	W68	05	17.4	4	(B)					
10357		HOLL	05	22	1430	S17	W69	05	17.4		B	CSO	60	6	8	3
10357	31713	MWIL	05	23	1430	S17	W86	05	17.1	4	B					
10364	31721	MWIL	05	18	1445	S26	W10	05	17.8	4	(B)					
10364	31721	LEAR	05	19	0136	S26	W16	05	17.8		B	CSO	20	4	4	3
10364		VORO	05	19	0224	S25	W17	05	17.8			BRI	25	11	4	3
10364		KAND	05	19	0610	S26	W19	05	17.8			CSO		7	4	3
10364		TACH	05	19	0815	S27	W20	05	17.8			DAO	123	3	5	3
10364		MWIL	05	19	1430	S25	W24	05	17.7	5	(B)					
10364		HOLL	05	19	1440	S25	W25	05	17.7		B	CSO	50	9	6	3
10364		LEAR	05	20	0052	S26	W28	05	17.9		B	DAO	140	17	6	2
10364		VORO	05	20	0426	S25	W30	05	17.9			DAI	214	13	5	3
10364		TACH	05	20	0607	S25	W30	05	17.9			DAI	190	8	4	4
10364		SVTO	05	20	0720	S23	W32	05	17.8		B	DSO	110	12	7	3
10364	31721	KAND	05	20	1115	S26	W34	05	17.8			DAO		14	8	3
10364		MWIL	05	20	1445	S26	W37	05	17.7	5	(B)					
10364		HOLL	05	20	1920	S25	W38	05	17.9		B	DSO	70	8	8	3
10364		VORO	05	20	2216	S26	W39	05	17.9			DAI	128	7	6	3
10364		LEAR	05	21	0002	S26	W40	05	17.9		B	DAO	100	11	7	2
10364		TACH	05	21	0617	S25	W44	05	17.8			DAI	128	7	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10364		KAND	05 21 0900	S27 W46	05 17.8			CSO		6	7	2
10364		SVTO	05 21 1012	S26 W47	05 17.8		B	DSO	60	4	7	2
10364		HOLL	05 21 1435	S25 W51	05 17.6		B	DAO	60	9	7	3
10364	31721	MWIL	05 21 1445	S26 W49	05 17.8	4	(B)					
10364		VORO	05 21 2156	S25 W54	05 17.7			DRI	92	9	4	2
10364		LEAR	05 22 0045	S26 W53	05 17.9		B	DAO	90	9	8	4
10364		TACH	05 22 0711	S25 W60	05 17.6			BXO	32	2	4	4
10364		KAND	05 22 1110	S26 W60	05 17.8			CRO		4	4	4
10364		HOLL	05 22 1430	S25 W65	05 17.6		B	DSO	50	9	8	3
10364	31721	MWIL	05 22 1430	S26 W64	05 17.6	4	(B)					
10364	31721	MWIL	05 23 1430	S25 W77	05 17.6	3	(B)					
10364A		HOLL	05 21 1435	N24 W48	05 17.9		A	AXX	10	2	2	3
10364A		HOLL	05 23 1540	N22 W75	05 17.9		A	AXX		1		3
10364C	31720	MWIL	05 18 1445	N12 W10	05 17.9	4	(AP)					
10364B	31719	MWIL	05 17 1645	S08 E12	05 18.6	4	(BF)					
10364B		VORO	05 18 0054	S08 E09	05 18.7			AXX	9	0		2
10364B		LEAR	05 18 0055	S08 E09	05 18.7		A	AXX		1		3
10364B	31719	MWIL	05 18 1445	S08 E02	05 18.8	4	(AF)					
10364B		HOLL	05 18 1446	S08 E01	05 18.7		A	AXX		1	1	4
10361		LEAR	05 15 0013	N08 E52	05 18.9		A	HRX	10	2	1	3
10361		SVTO	05 15 0512	N10 E48	05 18.8		A	HRX	20	1	1	3
10361		KAND	05 15 0650	N08 E50	05 19.0			AX		3	1	3
10361	31717	MWIL	05 15 1630	N07 E44	05 19.0	4	(B)					
10361		HOLL	05 15 1633	N09 E43	05 18.9		B	CAO	20	6	4	2
10361		VORO	05 15 2225	N08 E40	05 18.9			BXI	33	5	4	3
10361		LEAR	05 16 0612	N08 E36	05 18.9		B	DRO	50	9	4	2
10361		HOLL	05 16 1405	N08 E29	05 18.8		A	HSX	20	7	2	3
10361	31717	MWIL	05 16 1445	N08 E31	05 18.9	4	(B)					
10361		VORO	05 16 2308	N07 E26	05 18.9			BXO	5	2	5	3
10361		LEAR	05 17 0015	N09 E23	05 18.7		A	AXX	10	3	2	4
10361		KAND	05 17 0825	N09 E20	05 18.8			BXO		2	5	3
10361		LEAR	05 18 0055	N10 E13	05 19.0		A	AXX		1		3
10361A		LEAR	05 17 0015	N22 E28	05 19.2		A	AXX	10	1	1	4
10361A		LEAR	05 20 0052	N21 W12	05 19.1		B	BXO	10	4	5	2
10361A		VORO	05 20 0426	N20 W17	05 18.9			AXX	7	1		3
10361A		VORO	05 20 0426	N23 W10	05 19.4			AXX	8	1		3
10361B	31724	MWIL	05 21 1445	S17 W08	05 21.0	4	(AP)					
10362	31718	MWIL	05 15 1630	S12 E80	05 21.7	4	(B)					
10362		HOLL	05 15 1633	S10 E81	05 21.8		B	DAO	70	3	10	2
10362		VORO	05 15 2225	S12 E77	05 21.7			DAI	197	8	7	3
10362		LEAR	05 16 0612	S10 E75	05 21.9		B	EAO	260	13	11	2
10362		TACH	05 16 0635	S12 E74	05 21.8			DAO	166	3	9	3
10362		KAND	05 16 0655	S11 E75	05 21.9			DAO		4	10	2
10362		HOLL	05 16 1405	S11 E68	05 21.7		B	DAO	220	9	9	3
10362	31718	MWIL	05 16 1445	S12 E69	05 21.8	5	(B)					
10362		VORO	05 16 2308	S11 E63	05 21.7			DAO	217	7	7	3
10362		LEAR	05 17 0015	S11 E63	05 21.7		B	DAO	210	10	10	4
10362		TACH	05 17 0550	S11 E59	05 21.7			BRI	38	6	3	3
10362		KAND	05 17 0825	S11 E59	05 21.8			DAO		8	9	3
10362	31718	MWIL	05 17 1645	S12 E55	05 21.8	5	(B)					
10362		VORO	05 18 0054	S11 E49	05 21.7			DAO	204	7	7	2
10362		LEAR	05 18 0055	S10 E49	05 21.7		BD	DAO	130	6	9	3
10362		TACH	05 18 0707	S12 E45	05 21.7			DSI	238	4	8	2
10362		KAND	05 18 1027	S11 E45	05 21.8			DAO		4	10	3
10362	31718	MWIL	05 18 1445	S11 E42	05 21.8	5	(BG)					
10362		HOLL	05 18 1446	S12 E42	05 21.8		B	DSO	90	13	8	4
10362		LEAR	05 19 0136	S11 E36	05 21.8		B	DAO	70	8	9	3
10362		VORO	05 19 0224	S11 E34	05 21.6			DKI	155	10	7	3
10362		KAND	05 19 0610	S10 E33	05 21.7			DSO		4	10	3
10362		TACH	05 19 0815	S12 E33	05 21.8			DAO	158	4	7	3
10362	31718	MWIL	05 19 1430	S11 E29	05 21.8	5	(BG)					
10362		HOLL	05 19 1440	S11 E27	05 21.6		B	CSO	70	8	8	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat CMD		CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10362		LEAR	05 20	0052	S12 E23	05 21.8			G	DSO	120	19	7	2
10362		VORO	05 20	0426	S11 E20	05 21.7				DSI	121	11	7	3
10362		TACH	05 20	0607	S10 E19	05 21.7				DSI	111	6	6	4
10362		SVTO	05 20	0720	S08 E19	05 21.7			B	DSO	90	10	8	3
10362		KAND	05 20	1115	S11 E18	05 21.8				DAO		15	8	3
10362	31718	MWIL	05 20	1445	S11 E15	05 21.7	5		(BG)					
10362		HOLL	05 20	1920	S11 E12	05 21.7			B	DSO	80	6	8	3
10362		VORO	05 20	2216	S11 E11	05 21.7				DAI	116	12	6	3
10362		LEAR	05 21	0002	S12 E10	05 21.7			BG	DAO	110	24	7	2
10362		TACH	05 21	0617	S12 E06	05 21.7				DSI	203	8	7	3
10362		KAND	05 21	0900	S11 E05	05 21.7				DSO		7	8	2
10362		SVTO	05 21	1012	S12 E04	05 21.7			B	DAO	110	9	9	2
10362		HOLL	05 21	1435	S11 E01	05 21.7			B	DAI	100	23	9	3
10362	31718	MWIL	05 21	1445	S11 E02	05 21.8	5		(BG)					
10362		VORO	05 21	2156	S11 W03	05 21.7				DAI	80	17	6	2
10362		LEAR	05 22	0045	S11 W03	05 21.8			BG	DSO	100	18	8	4
10362		TACH	05 22	0711	S10 W07	05 21.8				DAI	109	6	7	4
10362		KAND	05 22	1110	S11 W10	05 21.7				DAO		10	9	4
10362		HOLL	05 22	1430	S11 W10	05 21.8			B	DAI	100	10	8	3
10362	31718	MWIL	05 22	1430	S11 W11	05 21.8	4		(BP)					
10362		LEAR	05 23	0109	S11 W17	05 21.8			BG	DAO	80	12	7	3
10362		SVTO	05 23	0623	S11 W21	05 21.7			B	DAO	40	6	8	3
10362		KAND	05 23	0740	S11 W20	05 21.8				CRO		5	7	3
10362	31718	MWIL	05 23	1430	S11 W25	05 21.7	4		(AP)					
10362		HOLL	05 23	1540	S11 W26	05 21.7			B	DAO	20	3	7	3
10362		LEAR	05 24	0115	S11 W30	05 21.8			BG	CRO	40	4	7	3
10362		TACH	05 24	0533	S10 W36	05 21.5				BXO	15	2	2	3
10362		SVTO	05 24	0730	S09 W38	05 21.5			A	HRX	10	2	2	2
10362	31718	MWIL	05 24	1430	S11 W39	05 21.7	4		(AP)					
10362B	31733	MWIL	05 24	1430	N13 W21	05 23.0	3		(AP)					
10362A		LEAR	05 24	0115	S22 W05	05 23.7			A	AXX	10	1	1	3
10369		LEAR	05 23	0109	N13 E18	05 24.4			B	CRO	20	4	2	3
10369	31730	MWIL	05 23	1430	N13 E11	05 24.4	3		(AP)					
10369		HOLL	05 23	1540	N11 E13	05 24.6			B	CAO	20	4	3	3
10369		LEAR	05 24	0115	N12 E04	05 24.3			A	AXX	10	1	1	3
10369		TACH	05 24	0533	N13 E03	05 24.4				AXX	8	1	1	3
10374	31740	MWIL	05 28	1445	S22 W53	05 24.5	4		(B)					
10374		HOLL	05 28	1500	S22 W55	05 24.4			A	AXX	10	1	1	3
10374		LEAR	05 29	0015	S23 W59	05 24.5			A	AXX	10	1	1	4
10374		HOLL	05 29	1418	S22 W67	05 24.4			A	AXX		1	1	2
10374	31740	MWIL	05 29	1445	S23 W67	05 24.4	4		(AP)					
10365	31723	MWIL	05 19	1430	S06 E85	05 26.0	5		BP					
10365		LEAR	05 20	0052	S06 E80	05 26.0			B	CSO	200	5	3	2
10365		VORO	05 20	0426	S06 E76	05 25.9				DAI	81	4	1	3
10365		TACH	05 20	0607	S05 E76	05 25.9				CAI	120	5	3	4
10365		SVTO	05 20	0720	S05 E76	05 26.0			B	DSO	90	4	5	3
10365		KAND	05 20	1115	S07 E74	05 26.0				CSO		5	4	3
10365	31723	MWIL	05 20	1445	S07 E70	05 25.8	5		(BP)					
10365		HOLL	05 20	1920	S09 E68	05 25.9			B	DSO	100	4	6	3
10365		VORO	05 20	2216	S06 E66	05 25.9				HAX	56	5	1	3
10365		LEAR	05 21	0002	S06 E63	05 25.7			B	DAO	90	6	4	2
10365		TACH	05 21	0617	S08 E62	05 25.9				CSO	91	3	1	3
10365		KAND	05 21	0900	S07 E60	05 25.9				CAO		5	1	2
10365		SVTO	05 21	1012	S08 E58	05 25.8			B	DAO	50	2	3	2
10365		HOLL	05 21	1435	S07 E58	05 25.9			B	DSO	100	5	3	3
10365	31723	MWIL	05 21	1445	S07 E57	05 25.9	5		(AP)					
10365		VORO	05 21	2156	S08 E52	05 25.8				DAC	35	6	0	2
10365		LEAR	05 22	0045	S07 E51	05 25.8			B	CSO	40	4	3	4
10365		TACH	05 22	0711	S06 E48	05 25.9				CSO	52	2	1	4
10365		KAND	05 22	0740	S09 E44	05 25.6				HR		1	1	3
10365	31723	MWIL	05 22	1430	S07 E43	05 25.8	4		(B)					
10365		HOLL	05 22	1430	S08 E42	05 25.7			B	DSO	30	4	3	3
10365		LEAR	05 23	0109	S08 E37	05 25.8			B	CSO	30	3	1	3
10365		SVTO	05 23	0623	S09 E35	05 25.9			A	HRX	10	1		3

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10365	31723	MWIL	05 23 1430	S08 E30	05 25.8	4	(AP)					
10365		HOLL	05 23 1540	S10 E29	05 25.8		A	HSX	10	1	1	3
10365		LEAR	05 24 0115	S08 E23	05 25.8		B	BXO	20	5	3	3
10365	31734	MWIL	05 24 1430	S08 E27	05 26.6	4	(BF)					
10365		HOLL	05 24 1612	S08 E25	05 26.5		B	CSO	30	4	4	1
10365		LEAR	05 25 0050	S06 E21	05 26.6		B	DAO	80	16	5	3
10365		VORO	05 25 0216	S07 E19	05 26.5			DAI	151	22	1	2
10365		SVTO	05 25 0735	S07 E17	05 26.6		B	DAO	160	6	6	3
10365		KAND	05 25 1308	S08 E13	05 26.5			DAI		19	6	4
10365	31735	MWIL	05 25 1430	S05 E02	05 25.7	3	(AP)					
10365	31731	MWIL	05 25 1430	S06 E13	05 26.6	5	(BG)					
10365		HOLL	05 25 1445	S07 E12	05 26.5		B	DAI	200	18	6	4
10365		VORO	05 25 2219	S07 E07	05 26.4			DAC	385	25	1	3
10365		LEAR	05 26 0205	S06 E06	05 26.5		B	DAI	190	21	6	3
10365		KAND	05 26 0640	S06 E03	05 26.5			DKO		13	6	3
10365		SVTO	05 26 0700	S06 E03	05 26.5		B	DAI	230	14	7	3
10365	31731	MWIL	05 26 1430	S06 W02	05 26.4	5	(D)					
10365		VORO	05 26 2334	S07 W06	05 26.5			DAC	738	42	6	3
10365		VORO	05 26 2334	S08 W16	05 25.8			AXX	8	2		3
10365		LEAR	05 27 0158	S07 W07	05 26.5		BG	DAI	350	34	7	3
10365		SVTO	05 27 0655	S06 W11	05 26.5		B	DKC	500	26	7	2
10365		KAND	05 27 1337	S07 W14	05 26.5			CKO		21	8	3
10365	31731	MWIL	05 27 1430	S07 W15	05 26.5	5	(D)					
10365		HOLL	05 27 1515	S07 W14	05 26.6		BG	DKC	380	50	8	3
10365		VORO	05 27 2155	S06 W18	05 26.6			DKC	765	19	6	2
10365		LEAR	05 28 0024	S07 W21	05 26.4		GD	DKI	700	41	7	3
10365		TACH	05 28 0552	S07 W22	05 26.6			HK	1087	29	6	3
10365		SVTO	05 28 0905	S07 W25	05 26.5		B	DKI	1000	16	9	3
10365		KAND	05 28 1025	S07 W25	05 26.6			CKO		21	8	3
10365	31731	MWIL	05 28 1445	S07 W28	05 26.5	5	(D)					
10365		HOLL	05 28 1500	S08 W28	05 26.5		BGD	DKC	830	39	7	3
10365		VORO	05 28 2304	S07 W32	05 26.6			DKC	1021	14	6	2
10365		LEAR	05 29 0015	S07 W33	05 26.5		GD	DKI	840	48	7	4
10365		SVTO	05 29 0448	S06 W36	05 26.5		GD	DKI	980	14	9	3
10365		KAND	05 29 0745	S07 W38	05 26.5			HK		23	9	4
10365		HOLL	05 29 1418	S06 W43	05 26.4		BGD	DKC	790	26	8	2
10365	31731	MWIL	05 29 1445	S07 W41	05 26.5	5	(D)					
10365		LEAR	05 30 0230	S07 W47	05 26.6		BGD	DKC	780	22	6	3
10365		VORO	05 30 0300	S06 W48	05 26.5			DAC	902	16	5	2
10365		SVTO	05 30 0523	S07 W49	05 26.5		BG	DKI	900	24	10	3
10365		TACH	05 30 0718	S07 W51	05 26.5			DAI	855	12	5	4
10365		HOLL	05 30 1352	S07 W56	05 26.4		BGD	DKC	730	28	8	3
10365	31731	MWIL	05 30 1445	S07 W55	05 26.5	5	(D)					
10365		VORO	05 30 2141	S07 W58	05 26.5			DKC	1120	18	5	3
10365		LEAR	05 31 0152	S07 W60	05 26.6		BGD	DKC	350	29	6	5
10365		SVTO	05 31 0622	S07 W65	05 26.4		BG	DKI	670	12	10	3
10365		KAND	05 31 1240	S07 W68	05 26.4			CKO		13	7	4
10365	31731	MWIL	05 31 1430	S07 W68	05 26.5	5	(D)					
10365		HOLL	05 31 1515	S06 W65	05 26.8		BGD	DKI	820	21	12	2
10365		VORO	05 31 2301	S07 W72	05 26.6			DKC	846	24	5	2
10365		LEAR	06 01 0025	S07 W74	05 26.6		BGD	DKC	510	21	6	3
10365		KAND	06 01 0845	S08 W78	05 26.6			DKO		9	8	3
10365	31731	MWIL	06 01 1430	S07 W83	05 26.5	4	(B)					
10365		HOLL	06 01 1450	S05 W77	05 26.9		BGD	DKC	350	7	11	2
10365		LEAR	06 02 0103	S07 W88	05 26.5		A	AXX	40	3	3	3
10374A		HOLL	05 21 1435	S15 E60	05 26.1		A	AXX	10	1	1	3
10374A	31725	MWIL	05 21 1445	S13 E59	05 26.1	4	(AP)					
10374A		VORO	05 21 2156	S14 E55	05 26.1			AXX	1	1		2
10374A		LEAR	05 22 0045	S13 E54	05 26.1		A	AXX	10	1	1	4
10372	31731	MWIL	05 23 1430	S12 E53	05 27.6	3	(AP)					
10372	31732	MWIL	05 23 1430	S16 E54	05 27.7	3	(AP)					
10372	31731	MWIL	05 24 1430	S11 E40	05 27.6	3	(AP)					
10372	31737	MWIL	05 26 1430	S14 E09	05 27.3	3	(AP)					
10372	31738	MWIL	05 26 1430	S15 E15	05 27.7	3	(AP)					
10372		VORO	05 26 2334	S14 E07	05 27.5			BXO	29	6	6	3
10372		LEAR	05 27 0158	S13 E02	05 27.2		A	AXX	10	1		3
10372		LEAR	05 27 0158	S13 E09	05 27.8		B	BXO	20	4	2	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10372		SVTO	05 27	0655	S13	W01	05 27.2		A	AXX		2		2
10372		SVTO	05 27	0655	S15	E05	05 27.7		A	HRX	10	2	1	2
10372	31737	MWIL	05 27	1430	S13	W05	05 27.2	4	(AP)					
10372	31738	MWIL	05 27	1430	S14	E02	05 27.7	4	(AP)					
10372		HOLL	05 27	1515	S12	W05	05 27.2		A	HSX	20	1	1	3
10372		LEAR	05 28	0024	S13	W05	05 27.6		B	BXO	10	3	4	3
10366		LEAR	05 22	0045	N11	E73	05 27.5		A	AXX	20	2	1	4
10366		KAND	05 22	1110	N10	E69	05 27.6			AX		1	1	4
10366	31728	MWIL	05 22	1430	N10	E67	05 27.6	4	(AP)					
10366		HOLL	05 22	1430	N10	E68	05 27.7		A	AXX	30	2	2	3
10366		LEAR	05 23	0109	N11	E61	05 27.6		B	BXO	20	2	3	3
10366		SVTO	05 23	0623	N11	E60	05 27.8		B	BXO	20	2	3	3
10366		KAND	05 23	0740	N11	E60	05 27.8			AX		3	3	3
10366	31728	MWIL	05 23	1430	N10	E54	05 27.7	4	(BP)					
10366		HOLL	05 23	1540	N09	E53	05 27.6		A	HSX	20	2	2	3
10366		LEAR	05 24	0115	N11	E48	05 27.7		A	AXX	10	1	1	3
10370		HOLL	05 22	1430	N15	E73	05 28.1		A	AXX	30	3	2	3
10370	31729	MWIL	05 22	1430	N16	E72	05 28.1	3	(B)					
10370		LEAR	05 23	0109	N17	E65	05 28.0		A	HSX	30	1	1	3
10370		SVTO	05 23	0623	N15	E62	05 27.9		A	AXX	10	1		3
10370		KAND	05 23	0740	N16	E63	05 28.1			AX		2	2	3
10370	31729	MWIL	05 23	1430	N16	E57	05 27.9	3	(B)					
10370		HOLL	05 23	1540	N15	E57	05 28.0		A	AXX	10	1	1	3
10370		LEAR	05 24	0115	N16	E50	05 27.8		A	AXX	10	1	1	3
10370	31736	MWIL	05 25	1430	N16	E32	05 28.0	3	(B)					
10370		VORO	05 25	2219	N15	E26	05 27.9			AXX	20	3	1	2
10370		LEAR	05 26	0205	N17	E25	05 28.0		B	CAO	20	3	2	3
10370		KAND	05 26	0640	N15	E23	05 28.0			AX		2	1	3
10370		SVTO	05 26	0700	N15	E22	05 27.9		A	HRX	10	1	1	3
10370	31736	MWIL	05 26	1430	N16	E17	05 27.9	4	(BG)					
10370		VORO	05 26	2334	N16	E12	05 27.9			AXX	7	2	2	3
10367	31726	MWIL	05 21	1445	S14	E85	05 28.0	4	AP					
10367		VORO	05 21	2156	S14	E80	05 27.9			HAX	45	1		2
10367		LEAR	05 22	0045	S13	E80	05 28.1		A	HSX	50	1	2	4
10367		TACH	05 22	0711	S12	E79	05 28.2			HSX	160	1	2	3
10367		KAND	05 22	1110	S13	E75	05 28.1			HA		1	2	4
10367	31726	MWIL	05 22	1430	S14	E72	05 28.0	4	(AP)					
10367		HOLL	05 22	1430	S15	E75	05 28.3		B	CAO	60	5	5	3
10367		LEAR	05 23	0109	S13	E67	05 28.1		A	HSX	30	1	1	3
10367		SVTO	05 23	0623	S14	E65	05 28.2		A	HSX	20	1	1	3
10367		KAND	05 23	0740	S13	E66	05 28.3			CSO		2	4	3
10367	31726	MWIL	05 23	1430	S14	E60	05 28.1	4	(AP)					
10367		HOLL	05 23	1540	S15	E59	05 28.1		A	HSX	40	1	1	3
10367		LEAR	05 24	0115	S13	E54	05 28.1		A	HSX	70	1	2	3
10367		TACH	05 24	0533	S13	E53	05 28.2			HSX	134	1	1	3
10367		SVTO	05 24	0730	S15	E52	05 28.2		A	HSX	60	1	2	2
10367	31726	MWIL	05 24	1430	S14	E47	05 28.1	4	(BP)					
10367		HOLL	05 24	1612	S14	E46	05 28.1		B	CSO	60	7	4	1
10367		LEAR	05 25	0050	S13	E41	05 28.1		B	CAO	40	3	3	3
10367		VORO	05 25	0216	S14	E40	05 28.1			HAX	59	7		2
10367		SVTO	05 25	0735	S15	E38	05 28.2		A	HSX	50	1	2	3
10367		KAND	05 25	1308	S14	E35	05 28.2			CAO		3	1	4
10367	31726	MWIL	05 25	1430	S14	E34	05 28.2	4	(BP)					
10367		HOLL	05 25	1445	S14	E34	05 28.2		B	CSI	40	4	3	4
10367		VORO	05 25	2219	S14	E29	05 28.1			HAX	66	1		3
10367		LEAR	05 26	0205	S13	E28	05 28.2		B	CAO	40	3	2	3
10367		KAND	05 26	0640	S13	E26	05 28.2			CSO		4	3	3
10367		SVTO	05 26	0700	S14	E26	05 28.2		B	CSO	60	3	4	3
10367	31726	MWIL	05 26	1430	S14	E22	05 28.3	4	(AP)					
10367		VORO	05 26	2334	S14	E16	05 28.2			HAX	44	2		3
10367		LEAR	05 27	0158	S13	E16	05 28.3		B	CAO	30	4	3	3
10367		SVTO	05 27	0655	S15	E13	05 28.3		B	CRO	30	4	3	2
10367		KAND	05 27	1337	S14	E09	05 28.2			CAO		5	2	3
10367	31726	MWIL	05 27	1430	S14	E10	05 28.3	4	(B)					
10367		HOLL	05 27	1515	S13	E08	05 28.2		A	HAX	30	5	3	3
10367		VORO	05 27	2155	S14	E06	05 28.4			AXX	10	3	2	2

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(Ordered by Central Meridian Passage Date)

MAY 2003

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
10367		LEAR	05 28 0024	S13 E04	05 28.3		B	CRO	20	3	2	3
10367		TACH	05 28 0552	S14 E01	05 28.3			AR	3	2	1	3
10367		SVTO	05 28 0905	S15 W02	05 28.2		B	CSO	20	5	2	3
10367		KAND	05 28 1025	S14 W01	05 28.3			CAO		5	2	3
10367	31726	MWIL	05 28 1445	S14 W04	05 28.3	4	(B)					
10367		HOLL	05 28 1500	S15 W05	05 28.2		A	HSX	20	5	2	3
10367		VORO	05 28 2304	S14 W09	05 28.3			AXX	7	1		2
10367		LEAR	05 29 0015	S12 W09	05 28.3		B	CRO	10	4	5	4
10367		SVTO	05 29 0448	S14 W13	05 28.2		A	HSX	20	1	1	3
10367		KAND	05 29 0745	S14 W13	05 28.3			AX		1		4
10367		HOLL	05 29 1418	S14 W18	05 28.2		A	HAX	10	2	2	2
10367	31726	MWIL	05 29 1445	S13 W15	05 28.5	4	(B)					
10367		VORO	05 30 0300	S13 W25	05 28.2			AXX	2	2		2
10368		KAND	05 22 1110	S31 E85	05 29.2			HA		1	3	4
10368	31727	MWIL	05 22 1430	S32 E79	05 28.8	5	(AP)					
10368		HOLL	05 22 1430	S32 E81	05 29.0		A	HAX	180	1	2	3
10368		LEAR	05 23 0109	S31 E72	05 28.7		A	HAX	150	1	2	3
10368		SVTO	05 23 0623	S32 E72	05 29.0		A	HSX	180	1	5	3
10368		KAND	05 23 0740	S32 E75	05 29.2			HS		1	3	3
10368	31727	MWIL	05 23 1430	S32 E66	05 28.8	5	(AP)					
10368		HOLL	05 23 1540	S33 E67	05 29.0		A	HAX	170	1	2	3
10368		LEAR	05 24 0115	S31 E61	05 28.9		A	HSX	180	1	2	3
10368		TACH	05 24 0533	S31 E59	05 28.9			HSX	277	1	2	3
10368		SVTO	05 24 0730	S34 E59	05 29.0		A	HSX	160	1	3	2
10368	31727	MWIL	05 24 1430	S33 E54	05 28.9	5	(AP)					
10368		HOLL	05 24 1612	S38 E54	05 29.0		A	HAX	180	1	2	1
10368		LEAR	05 25 0050	S30 E47	05 28.7		A	HSX	140	1	2	3
10368		VORO	05 25 0216	S32 E47	05 28.8			HAX	213	1		2
10368		SVTO	05 25 0735	S33 E46	05 29.0		A	HAX	170	1	3	3
10368		KAND	05 25 1308	S33 E43	05 29.0			HA		2	2	4
10368	31727	MWIL	05 25 1430	S32 E40	05 28.8	5	(AP)					
10368		HOLL	05 25 1445	S32 E40	05 28.8		A	HAX	100	2	2	4
10368		VORO	05 25 2219	S32 E36	05 28.8			HHX	176	1		3
10368		LEAR	05 26 0205	S31 E36	05 28.9		A	HAX	100	1	3	3
10368		KAND	05 26 0640	S32 E33	05 28.9			HS		1	2	3
10368		SVTO	05 26 0700	S33 E32	05 28.8		A	HSX	130	1	3	3
10368	31727	MWIL	05 26 1430	S32 E28	05 28.8	5	(BP)					
10368		VORO	05 26 2334	S32 E24	05 28.9			HHX	181	1		3
10368		LEAR	05 27 0158	S31 E23	05 28.9		A	HSX	100	2	4	3
10368		SVTO	05 27 0655	S33 E20	05 28.9		B	CSO	60	4	4	2
10368		KAND	05 27 1337	S32 E17	05 28.9			CSO		4	3	3
10368	31727	MWIL	05 27 1430	S32 E16	05 28.9	5	(BG)					
10368		HOLL	05 27 1515	S31 E16	05 28.9		B	DAO	120	10	6	3
10368		VORO	05 27 2155	S30 E13	05 28.9			CSO	175	4	1	2
10368		LEAR	05 28 0024	S31 E11	05 28.9		B	CSO	130	6	4	3
10368		TACH	05 28 0552	S31 E08	05 28.9			CAI	139	5	4	3
10368		SVTO	05 28 0905	S32 E06	05 28.8		B	CSO	130	6	7	3
10368		KAND	05 28 1025	S32 E06	05 28.9			CAO		8	6	3
10368	31727	MWIL	05 28 1445	S31 E03	05 28.8	5	(BG)					
10368		HOLL	05 28 1500	S32 E02	05 28.8		B	DAO	90	6	5	3
10368		VORO	05 28 2304	S31 W02	05 28.8			CAO	116	5	2	2
10368		LEAR	05 29 0015	S28 W02	05 28.8		A	AXX	10	2	1	4
10368		LEAR	05 29 0015	S32 W01	05 28.9		B	CAO	110	13	4	4
10368		SVTO	05 29 0448	S29 W06	05 28.7		A	AXX	10	2	1	3
10368		SVTO	05 29 0448	S33 W05	05 28.8		B	CAO	110	5	4	3
10368		KAND	05 29 0745	S33 W04	05 29.0			CAO		9	5	4
10368		HOLL	05 29 1418	S32 W11	05 28.7		B	DAO	140	15	6	2
10368	31727	MWIL	05 29 1445	S32 W10	05 28.8	4	(BG)					
10368		LEAR	05 30 0230	S31 W13	05 29.1		B	DAO	80	5	3	3
10368		VORO	05 30 0300	S32 W15	05 28.9			DAI	61	9	2	2
10368		SVTO	05 30 0523	S33 W16	05 28.9		B	DAO	50	5	4	3
10368		TACH	05 30 0718	S31 W17	05 29.0			CAO	46	3	1	4
10368		HOLL	05 30 1352	S31 W23	05 28.8		B	DAO	60	7	6	3
10368	31727	MWIL	05 30 1445	S31 W22	05 28.9	5	(BG)					
10368		VORO	05 30 2141	S32 W24	05 29.0			HAX	45	4	1	3
10368		LEAR	05 31 0152	S32 W26	05 29.0		B	CAO	20	5	3	5
10368		SVTO	05 31 0622	S34 W29	05 28.9		B	CRO	10	2	3	3
10368		KAND	05 31 1240	S33 W31	05 29.1			CAO		3	3	4

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10368	31727	MWIL	05 31	1430	S32	W33	05 29.0	4	(B)					
10368		HOLL	05 31	1515	S32	W35	05 28.9		B	BXO	10	2	1	2
10368		VORO	05 31	2301	S32	W38	05 28.9			AXX	12	2		2
10368		LEAR	06 01	0025	S32	W39	05 29.0		A	HRX	10	2	1	3
10368		KAND	06 01	0845	S32	W43	05 29.1			HS		1	1	3
10368	31727	MWIL	06 01	1430	S33	W47	05 29.0	4	(AP)					
10368		HOLL	06 01	1450	S32	W46	05 29.1		A	AXX		1	1	2
10368		VORO	06 02	0025	S32	W51	05 29.1			AXX	4	2		3
10368		LEAR	06 02	0103	S32	W52	05 29.0		A	AXX	10	1	1	3
10368		KAND	06 02	0830	S33	W56	05 29.0			AX		1		4
10368	31727	MWIL	06 02	1430	S33	W59	05 29.0	4	(AP)					
10368		HOLL	06 02	1505	S31	W59	05 29.1		A	AXX		1	1	3
10368A		LEAR	05 29	0015	S15	E20	05 30.5		A	AXX	10	1	1	4
10368B		LEAR	05 31	0152	N20	W03	05 30.8		A	AXX	10	3	2	5
10368F	31741	MWIL	05 30	1445	S36	E02	05 30.8	4	(AF)					
10368F	31743	MWIL	05 31	1430	S38	W04	05 31.3	4	(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

MAY 2003

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
01	0930	0943	1010	1	1		1				0929	C1.7	
01	1140	1143	1235	2+	5	1	2	1		5	1132	C5.3	10349
01	1358	1401	1406D	1-	1					1	1356	C1.1	10349
01	1408	1415	1451	1+	5		1			9	1405	C3.5	10349
01	1846	1848	1902	1-	1					1	1843	C1.8	10349
01	1916	1922	1959	2-	3					4	1915	C4.9	10349
02	0256	0308	0349	2-	5					2	0247	M1.0	10345
02	1230	1246	1342	1	1		1				1211	C1.4	
02	1806	1824	2004	3+	3					6	1804	C5.4	10345
03	0949	0951	0959	1-	1					1	0948	C1.4	
03	1828	1832	1902	2-	3					3	1826	C2.7	10345
04	0807	0813	0828	1-	3					2	0807	C1.4	10349
04	1218	1247U	1310	1	1		1				No flare		
04	1344	1349	1405	1	5					3	1344	C1.3	10349
04	1501	1508	1517	1-	5					2	1500	C1.2	10349
05	1012	1018	1052	1	1		1				No flare		
05	1554	1603	1640	1	1		1				No flare		
06	0924	1000	1000	1	1		1				0906	C5.7	10349
06	1005	1013	1050	2	5	1	2	1		4	0906	C5.7	10349
06	1340	1405	1444	1	5	1	2			9	1344	C3.7	10349
06	1914	1921	2011	2	3					4	1913	C2.8	10349
07	0602	0615	0641	1+	3		1			3	0549	C3.2	10349
07	0703	0710	0750	2-	3					4	0702	C4.2	10348
07	1017	1028	1102	2-	3					4	1017	C2.2	
07	1054	1057	1111	1-	3					3	1051	C2.3	
07	1308	1313	1338	1	3					3	1306	C1.8	10349
07	1619	1627U	1646	1	1		1				No flare		
07	2030	2032	2047	1-	1					1	2026	C2.0	10348
07	2045	2049	2126	2	3					2	2044	C5.9	
07	2135	2139	2207	1+	1					1	2133	C1.7	10349
08	0540	0558	0656	2-	3		1			2	0540	C2.3	10348
09	0828	0834	0900	2	1		1				No flare		
10	1329	1332	1403	2	5		1	1			No flare		
12	0749	0807	0903	2	1		1				No flare		
13	0719	0732	0800	2	5		1	1			No flare		
20	1441	1451	1511	1+	1					1	1440	B7.2	
20	1655	1659	1714	1	1		1				*		
20	1926	1931	1959	2	1					1	1924	C1.4	10362
21	1525	1535	1555	1+	1					1	1522	B6.5	
22	0631	0701	0813	2	3		1			2	0642	C4.9	10362
22	1428	1509	1604	1	1		1				*		
22	1520	1532	1558	2	1					1	1524	B7.2	
22	1652	1720	1825	3	1					1	1636	C1.1	10362
24	1414	1418	1440	1+	3					2	1413	B4.9	10368
24	1425	1430	1456	1	5		1			1	1424	B7.1	10366
24	1511	1526	1556	1	1		1				No flare		
24	1640	1650U	1713	1	1		1				No flare		
25	1658	1709	1806	1	1		1				1715	C3.0	10368
25	1717	1749	1902	3	1					1	1715	C3.0	10368
26	0538	0546	0611	3	5		2	1		1	0534	M1.9	10365
26	1506	1519	1615	3	5	1		1		8	1503	C5.9	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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MAY 2003

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
26	1626	1637	1709	2	5					9	1622	M1.0	10365
26	1705	1728	1939	2	5		1			1	1702	C7.4	10365
27	0332	0349	0431	2+	1					1	0338	C8.9	10365
27	0555	0609	0640	3	5	1	2	1		3	0506	M1.6	10365
27	1455	1514	1548	2	5	1	2	1		7	1448	C6.5	10365
27	2300	2307	2354	2	3					3	2256	X1.3	10365
28	0018	0025	0222	3	1					1	0017	X3.6	
28	0600	0610	0720	2+	1					1	0605	C3.1	
28	1355	1405	1443	1	1		1				1350	C1.3	
28	1420	1425	1444	1	5					4	1420	C2.2	10365
28	1535	1549	1612	1+	5		1			5	1537	C3.5	10365
28	1728	1732	1740D	1-	1					1	1731	C3.5	10365
28	1733	1742	1813	2-	3					5	1731	C3.5	10365
28	1803	1806	1825	1	3					2	1800	C2.0	
28	1838	1847	1922	2	3					6	1841	C4.4	
28	1935	1939	1959	1	3					3	1934	C1.9	
29	0057	0105	0145	2	5					3	0051	X1.2	10365
29	0213	0220	0248	1+	5					2	0209	M1.5	10368
29	0604	0606	0700	1	1		1				No flare		
29	0804	0810	0817	1	1		1				No flare		
29	0855	0906	0919	1	1		1				No flare		
29	1128	1140	1150	1	1		1				No flare		
29	1444	1453	1511	1	1		1				No flare		
29	1704	1717	1743	1	1		1				No flare		
29	1929	1936	2028	2	3					5	1928	M2.8	10368
30	0644	0654	0732	3	5	1	2	1		5	0639	C8.6	10365
30	0852	0906	1043	2-	3		1			1	0849	C4.9	10373
30	0906	0921	0956	2-	1					2	0849	C4.9	10373
30	1614	1622	1646	1	1		1				No flare		
30	1704	1720	1755	1+	5		1			1	1717	C1.7	10365
31	0215	0225	0321	2+	5					2	0213	M9.3	10365
31	1344	1400	1442	1	1		1				1405	C1.3	10365
31	1408	1418	1435	1+	1					2	1405	C1.3	10365
31	1527	1534	1609	2	5	1	1	1		8	1525	C3.5	10365
31	1628	1633	1655	2-	5	1	1	1		6	1620	C6.2	

* = no flare patrol.

OBSERVATORIES REPORTING FOR MAY 2003

Alberta, Canada	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Athens, Greece	SES	Perth, Australia	SES
Banning, California, USA	SES	Sofia, Bulgaria	SES
Bedford, Massachusetts, USA	SES	Sussex, United Kingdom	SES
Brookline, Massachusetts, USA	SES	Torrington, Connecticut, USA	SES
Edenvale, Rep of S. Africa	SES	Tucson, Arizona, USA	SES
Houston, Texas, USA	SES	Udine City, Italy	SES
Isola del Gran Sasso, Italy	SES	Upice, Czech Republic	SEA
Marlborough, Massachusetts, USA	SES	Villiersdorp, South Africa	SES
Milan, Italy	SES		

Observations are not necessarily continuous.

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May 03

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

MAY 2003

OBSERVATION			Sta	EVENT		Spectral Class	Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day	End (UT)	(UT)		Start (UT)	End (UT)				Lower (MHz)	Upper (MHz)	
01	0348	1835	POTS	0359 U	1818 U	I	S,N,DC	2	200U	400	100-200MHz No Data
			LEAR	0419.0	0504.0	III	N	1	25	94	
	0000	0720	CULG	0419.0	0420.0	III	G	1	35	90	
	0000	0926	HIRA	0419.0	0419.5	III	B	1	25X	90	
			SVTO	0426.0	0507.0	III	N	1	25	81	
			CULG	0432.0	0505.0	III	N	1	23	140	
	0452	1707	ONDR								
			POTS	0548.9	0550.0	DCIM		2	230	500	
	0555	1205	IZMI	0555.0E	1205.0D	I	S	1	110	270X	
			CULG	0630.0	0720.0	III	N	1	40	130	
			LEAR	0650.0	0712.0	III	N	1	25	98	
			IZMI	0650.6	0650.8	III	G	1	45	95	
			LEAR	0655.0	0919.0	CONT		1	123	180	
			SVTO	0701.0	0702.0	III		1	25	54	
			SVTO	0721.0	1034.0	CONT		1	113	180	
			IZMI	0752.6	1132.0U	III	N	1	25U	95U	
			IZMI	0836.4	0844.8	III	GG	2	25X	95	
			POTS	0841.0	0843.0	III	G	2	40X	85U	
			SVTO	0841.0	0843.0	III		2	25	78	
			HIRA	0842.0	0843.0	III	G	1	50	90	
			SVTO	0923.0	0923.0	III		1	25	59	
			POTS	0923.4	0923.6	III	B	2	40X	85U	
			IZMI	1027.0	1027.3	III	G	1	110	215	
			SVTO	1059.0	1059.0	III		1	25	49	
			SVTO	1127.0	1131.0	III		1	25	84	
			IZMI	1127.2	1127.4	III	G	2	25X	95	
			POTS	1127.2	1131.0	III	G	2	40X	85U	
			IZMI	1130.7	1131.0	III	G	2	25X	155	
			IZMI	1149.3	1149.4	III	B	1	45	85	
			POTS	1149.3	1149.5	III	B	2	40X	230	
			POTS	1204.0	1204.3	III	B	1	40X	55	
			SGMR	1204.0	1204.0	III		1	30	40	
			SVTO	1204.0	1204.0	III		2	25	43	
			IZMI	1204.1	1204.4	III	B	2	25X	45	
			HOLL	1258.0	1258.0	III		1	25	70	
			SGMR	1258.0	1313.0	III	N	1	30	80	
			SVTO	1258.0	1343.0	III	N	2	25	84	
			POTS	1258.7	1259.0	III	B	2	40X	80	
			HOLL	1313.0	1313.0	III		1	25	118	
			POTS	1313.3	1313.6	III	B	2	40X	85U	
			SVTO	1550.0	1551.0	III		1	68	158	
			POTS	1550.4	1550.9	III	G	2	65	370	
	2040	2400	CULG								
			PALE	2147.0	2148.0	III		1	25	62	
	1944	2400	HIRA	2148.0	2148.5	III	B	1	25X	60	
02	0000	0720	CULG								
	0000	0915	HIRA								
	0348	1836	POTS	0348 E	1821 U	I	S,N,DC	2	200U	460	100-200MHz No Data
	0451	1708	ONDR								
	0554	1205	IZMI	0554.0E	1205.0D	I	N	2	190	270X	
			POTS	0741.3	0742.6	DCIM		2	260	610	
			POTS	0749.7	0749.9	III	G	2	200U	250	
			IZMI	0749.8	0750.0	III	G	2	110	250	
			SVTO	0823.0	0826.0	III		1	25	81	
			IZMI	0823.2	0826.3	III	G	2	30	65	
			POTS	0823.3	0826.9	III	G	2	40X	80	
			POTS	0848.6	0848.9	DCIM		2	340	510	
			IZMI	0930.4	0930.5	III	B	2	110	170	
			SVTO	1054.0	1054.0	III		1	41	180	
			IZMI	1054.1	1054.4	III	G,C	2	40	270X	
			POTS	1054.1	1054.5	III	B	2	40X	280	
			POTS	1118.9	1119.8	DCIM		2	320	520	
			SGMR	1205.0	1206.0	III		1	30	60	
			SVTO	1205.0	1208.0	III		1	25	81	
			IZMI	1205.5	1205.7D	III	G	2	40U	95	
			POTS	1205.5	1207.6	III	G,RS	2	40X	85U	
			POTS	1506.7	1506.9	DCIM		2	230	590	
			POTS	1518.3	1525.8	DCIM		2	210	560	

OBSERVATION			EVENT				FREQUENCY		Remarks		
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)		Lower (MHz)	Upper (MHz)
02			POTS	1539.2	1539.9	DCIM		2	200U	510	
			HOLL	1613.0	1614.0	III		1	25	46	
			SVTO	1613.0	1614.0	III		1	25	55	
			POTS	1639.3	1640.0	DCIM		3	200	800X	
			POTS	1811.2	1816.7	III	GG	3	200U	450U	
			HOLL	1938.0	1938.0	III		1	25	75	
	2040	2400	CULG								
			HOLL	2227.0	2227.0	III		1	25	174	
03	0000	0720	CULG								
			LEAR	0341.0	0344.0	III		1	25	180	
	0347	1836	POTS	0359 U	1555 U	I	S,N,DC	2	200U	420	100-200MHz No Data
	0449	1709	ONDR								
			POTS	0538.1	0538.9	DCIM		1	320	470	
			POTS	0759.2	0801.1	DCIM		1	260	440	
	0606	1200	IZMI	0850.4	0850.4	III	B	1	110	150	
			POTS	0922.6	0922.8	III	B	2	40X	50	
			IZMI	1035.0	1200.0D	I	N	1	220	270X	
			POTS	1430.2	1432.5	III	GG	2	200U	520	
			SVTO	1458.0	1458.0	III		1	25U	82U	
			POTS	1555 U	0000	I	S,N	1	200U	360	
			POTS	1641.3	1642.7	DCIM		2	220	350	
			HOLL	1743.0	1744.0	III		1	25	180	
			HOLL	2303.0	2304.0	III		1	25	86	
			PALE	2303.0	2304.0	V		1	25	77	
	2040	2400	CULG	2304.0	2304.0	III	B	1	20	40U	
04			PALE	0022.0	0023.0	V		1	25	75	
			LEAR	0129.0	0130.0	III		1	25	180	
			PALE	0129.0	0131.0	III		2	25	180	
	0000	0720	CULG	0130.0	0130.0	III	B	2	18	90	
	0346	1719	POTS	0427	0639 U	I	S,N	2	200U	430	100-200MHz No Data
			POTS	0559.9	0601.0	III	G	2	200U	360	
			POTS	0709.8	0734	I	S,N,DC	1	200U	380	
			POTS	0737.7	0738.7	DCIM		2	310	420	
	0448	1711	ONDR	0809.0	0811.1	DCIM		1	2752	4500X	
			POTS	0841.7	0847.1	I	S,N	1	290	380	
			POTS	0856.2	1025	I	S,N	1	200U	390	
			LEAR	0859.0	0859.0	III		1	25	180	
			SVTO	0859.0	0859.0	III		1	25U	126U	
			POTS	0859.3	0859.6	III	G	2	40X	370	
	0600	1200	IZMI	0859.3	0859.6	III	G	2	40	170	
			POTS	0908.8	0909.5	DCIM		2	220	440	
			POTS	1050	1234	I	S,N	2	200U	380	
			POTS	1128.3	1128.7	III	G	1	40X	80	
			POTS	1201.7	1202.0	III	G	2	200U	320	
			POTS	1309	1438	I	S,N	2	200U	400	
			SVTO	1343.0	1343.0	III		1	25	136	
			POTS	1343.3	1343.5	III	B	2	40X	85U	
			POTS	1459	1719 U	I	S,N,DC	2	200U	460	
			ONDR	1501.2	1502.4						

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

MAY 2003

OBSERVATION			EVENT				FREQUENCY			Remarks	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)
05			IZMI	1158.4	1159.1	III	G	2	25X	95	100-200MHz No Data
			POTS	1217.8	1220.6	III	G,N	1	40X	55	
			SVTO	1256.0	1414.0	CONT		1	115	180	
			SVTO	1444.0	1447.0	III		1	25	86	
			HOLL	1447.0	1447.0	III		1	25	86	
			HOLL	1615.0	1616.0	III		1	25	90	
			SVTO	1615.0	1616.0	III		1	25	82	
	2040	2400	CULG	2318.0	2325.0	III	GG	1	20	180	
06	0000	0720	CULG	0121.0	0159.0	III	N	1	27	57	
			CULG	0304.0	0304.0	III	G	1	20	150	
	0344	1840	POTS	0423 U	1827 U	I	S,N	2	200U	410	
	0555	1215	IZMI	0555.0E	1215.0D	I	N	1	120U	270X	
			SVTO	0643.0	0704.0	III	N	1	30	171	
			IZMI	0643.4	0643.7	III	G	1	45	90	
			POTS	0643.6	0654.1	III	GG,N	2	40X	350	
			CULG	0644.0	0654.0	III	G	1	30	230	
			LEAR	0649.0	0654.0	III		1	25	180	
			IZMI	0649.1	0650.9	III	GG	2	40	270X	
			IZMI	0653.9	0654.2	III	G	1	45	240	
			SVTO	0852.0	0853.0	III		1	28U	138U	
			IZMI	0853.0	0853.7	III	G	1	40	160	
			POTS	0853.0	0853.9	III	G	2	40X	380	
			POTS	0930.2	0935.4	III	G,N	2	40X	340	
			SVTO	0933.0	0935.0	III		1	25	138	
			IZMI	0933.5	0935.4	III	GG	2	15X	155	
	0445	1713	ONDR	1003.2	1027.5	DCIM	G	1	2000X	4500X	
			SVTO	1044.0	1045.0	III		1	25	48	
			IZMI	1044.2	1048.9	III	GG	1	40	165	
			POTS	1044.2	1045.5	III	G	2	40X	270	
			IZMI	1111.5	1112.1	III	G	1	45	155	
			POTS	1111.6	1112.1	III	G	2	40X	250	
			SVTO	1606.0	1726.0	CONT		1	121	150	
			HOLL	1732.0	1733.0	III		1	25	142	
			SGMR	1732.0	1733.0	III		2	30	55	
			POTS	1818.2	1819.2	DCIM		2	330	400U	
			HOLL	1919.0	1920.0	III		1	25	180	
			SGMR	1920.0	1920.0	III		2	30	50	
	2040	2400	CULG	2230.0	2231.0	III	G	1	23	350	
			LEAR	2335.0	0916.0	CONT		1	84	180	
07	0343	1840	POTS	0406.8	0407.9	III	G	1	200U	340	100-200MHz No Data
			POTS	0408	1828 U	I	S,N,DC	2	200U	380	
			POTS	0415.6	0417.1	III	G	1	200U	340	
	0443	1715	ONDR								
			POTS	0519.7	0544.3	III	GG,N	2	40X	440	
			LEAR	0536.0	0539.0	III		1	25	180	
			SVTO	0536.0	0539.0	III		1	25	180	
	0000	0720	CULG	0537.0	0540.0	III	G	1	27	180	
	0606	1202	IZMI	0606.0E	1202.0D	I	S	2	130	270X	
			POTS	0630.2	0633.6	III	GG	2	200U	390	
			IZMI	0630.7	0631.2	III	G,C	1	200	270X	
			POTS	0650.6	0652.0	DCIM	RS	2	230	440	
			LEAR	0706.0	0708.0	III		1	25	125	
			CULG	0708.0	0708.0	III	B	1	40	160	
			LEAR	0755.0	0757.0	III		1	25	180	
			POTS	0755.2	0755.5	DCIM		2	260	580	
			IZMI	0755.9	0757.4	III	G	2	40X	270X	
			SVTO	0757.0	0757.0	III		1	25	180	
			POTS	0757.1	0757.4	III	B	2	40X	450	
			SVTO	0859.0	0000.0	CONT		1	113	180	
			SVTO	0859.0	1727.0	CONT		1	25	180	
			POTS	0919.7	0920.7	III	G	2	40X	450	
			POTS	0927.8	0929.4	DCIM		2	220	500	
			IZMI	1002.5	1002.8	III	G	1	220	270X	
			IZMI	1114.1	1114.7	III	G	2	45	95	
			POTS	1114.1	1114.8	III	G	2	40X	85U	
			POTS	1134.2	1134.4	III	B	1	40X	60	
			POTS	1136.1	1137.5	III	GG	2	200U	410	

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

Spectral Observations

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MAY 2003

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
07		IZMI	1136.4	1136.9	III	GG	2	200	270X	
		POTS	1157.5	1206.1	III	G,N	2	40X	320	
		IZMI	1157.6	1200.9	III	G	2	95	150	
		SVTO	1549.0	1727.0	III	N	1	25	180	
		HOLL	1605.0	1605.0	III		1	25	58	
		SGMR	1605.0	1605.0	III		1	30	55	
		HOLL	2104.0	2106.0	III		1	25	155	
	2040 2400	CULG	2104.0	2107.0	III	G	1	25	180	
		CULG	2132.0	2132.0	III	B	1	100	180	
		CULG	2229.0	2230.0	III	G	1	100	180	
		CULG	2328.0	2333.0	III	G	1	65	180	
08	0000 0720	CULG	0154.0	0154.0	III	B	1	20	180	
	0343 1841	POTS	0401 U	1816 U	I	S,N	2	200U	300	100-200MHz No Data
	0442 1716	ONDR								
	0555 1200	IZMI	0555.0E	0850.0U	I	NG,C	1	180	270	
		POTS	0616.2	0617.2	DCIM		2	270	500	
		POTS	0853.7	0854.5	DCIM		1	340	450	
		POTS	1421.2	1422.1	III	G	2	200U	460	
		POTS	1516.2	1516.4	DCIM		2	280	420	
		HOLL	1825.0	1825.0	III		1	25	45	
		HOLL	2018.0	2018.0	III		1	25	80	
	2040 2400	CULG								
09		LEAR	0029.0	0032.0	III		1	25	155	
		PALE	0029.0	0032.0	III		1	25	86	
		HOLL	0030.0	0032.0	III		1	25	148	
	0000 0720	CULG	0030.0	0033.0	III	G	2	18	180	
		CULG	0314.0	0315.0	III	G	1	30	160	
	0342 1841	POTS	0412	1812 U	I	S,N	1	200U	360	100-200MHz No Data
	0440 1717	ONDR								
		POTS	0622.1	0624.1	III	G	2	200U	500	
	0605 1200	IZMI	0622.4	0622.5	III	G	1	140	270X	
		CULG	0625.0	0625.0	III	G	1	30	170	
		IZMI	0625.0	0625.3	III	G	1	45	95	
		CULG	0636.0	0636.0	III	B	1	40	160	
		IZMI	0636.0	0636.3	III	G	1	45	065	
		SVTO	0636.0	0723.0	III	N	1	30	147	
		CULG	0645.0	0646.0	III	G	1	30	90	
		IZMI	0645.1	0645.1	III	B	1	45	95	
		LEAR	0656.0	0658.0	III		1	54	146	
		IZMI	0656.9	0658.9	III	GG	2	45	180	
		CULG	0657.0	0700.0	III	G	1	27	180	
		IZMI	0713.0	0750.0U	I	N	1	180	270	
		POTS	0944.9	0945.1	III	G	1	200U	420	
		SVTO	1130.0	1133.0	V		1	25	83	
		IZMI	1130.4	1130.7	III	G	2	25X	155	
		POTS	1130.4	1133.3	III	G,N	3	40X	85U	
		IZMI	1130.5	1131.0	V		2	25X	65	
		HOLL	1319.0	1319.0	III		1	25	52	
		SVTO	1319.0	1329.0	III		1	25	52	
		POTS	1319.1	1319.6	III	B	1	40X	55	
		HOLL	2226.0	2226.0	III		1	25	87	
		SGMR	2226.0	2226.0	III		1	30	60	
	2040 2400	CULG	2226.0	2226.0	III	B	1	20	180	
		CULG	2316.0	2317.0	III	G	1	27	180	
10	0000 0710	CULG	0053.0	0053.0	III	B	1	70	180	
		CULG	0156.0	0156.0	III	B	1	35	70	
		CULG	0209.0	0209.0	III	G	1	40	90	
		CULG	0255.0	0258.0	III	G	1	30	90	
	0341 1842	POTS	0427	0753	I	S,N	1	200U	320	100-200MHz No Data
	0439 1718	ONDR								
		CULG	0645.0	0658.0	III	GG	1	30	180	
		SVTO	0647.0	0655.0	III		1	25U	126U	
	0605 1200	IZMI	0647.9	0658.1	III	N	2	35	190	
		POTS	0648.1	0657.8	III	G,N	1	40X	280	
		LEAR	0649.0	0656.0	III		1	104U	180U	
		IZMI	0735.6	0736.1	III	G	1	45	65	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
10			IZMI	0910.3	0910.4	III	G	1	45X	85	
			POTS	1004	1238	I	S,N	1	200U	280	
			POTS	1214.7	1215.2	DCIM		1	310	420	
			POTS	1246.8	1247.2	III	G	2	70	300	
			POTS	1356.7	1811 U	I	S,N	1	200U	250	
			POTS	1640.9	1641.7	III	G	1	40X	85	
			HOLL	1749.0	1749.0	III		1	25	113	
	2040	2400	CULG	2116.0	2116.0	III	B	1	60	180	
11	0000	0710	CULG	0137.0	0137.0	III	B	1	23	60	
	0438	1720	ONDR								
	0645	1200	IZMI								
	0341	1843	POTS	1129.5	1132.2	DCIM		2	300	640	100-200MHz No Data
			POTS	1210.3	1210.7	III	G	2	40X	85U	
			POTS	1309.3	1310.2	III	G	2	200U	310	
			POTS	1326.0	1329.5	III	GG	1	200U	400	
			POTS	1351.6	1354.5	III	GG	2	200U	340	
			POTS	1459.1	1500.9	III	G,N	2	200U	390	
			HOLL	1650.0	1655.0	III		1	25	180	
			SVTO	1650.0	1655.0	III		1	25	180	
			POTS	1650.1	1655.2	III	GG	2	40X	400	
			SGMR	1651.0	1655.0	III		2	30	80	
			POTS	1825.2	1825.8	DCIM		2	210	450	
	2040	2400	CULG	2123.0	2146.0	III	N	1	25	180	
			HOLL	2144.0	2145.0	III		1	25	180	
	1933	2400	HIRA	2144.0	2145.5	III	G	1	80	170	
			CULG	2240.0	2240.0	III	B	1	20	45	
			HOLL	2240.0	2240.0	III		1	25	55	
			PALE	2240.0	2240.0	V		1	25	57	
			HIRA	2240.5	2241.0	III	B	1	25X	40	
			CULG	2251.0	2251.0	III	B	1	20	40	
			PALE	2251.0	0114.0	III	N	1	25	180	
			CULG	2259.0	2308.0	III	G	3	18X	180	
			HOLL	2259.0	2307.0	III		1	25	180	
			HIRA	2304.0	2304.5	III	B	1	25X	70	
12			HOLL	0021.0	0021.0	III		1	25	115	
	0000	0710	CULG	0021.0	0043.0	III	N	1	20	150	
	0000	0935	HIRA	0021.0	0021.5	III	B	1	25X	110	
			LEAR	0028.0	0033.0	III		1	25	180	
			CULG	0030.0	0033.0	III	G	2	18	180	
			HOLL	0030.0	0033.0	III		1	25	180	
			HIRA	0030.5	0033.5	III	G	1	25X	200	
	0341	1844	POTS	0422.8	0423.0	DCIM		1	240	410	100-200MHz No Data
			POTS	0431.3	0431.6	DCIM		1	320	400	
	0436	1721	ONDR								
			POTS	0501	0527	I	S,N	1	200U	400	
			CULG	0540.0	0540.0	III	B	1	27	160	
			HIRA	0540.0	0540.5	III	B	1	90	140	
			LEAR	0547.0	0835.0	III	N	1	25	180	
			CULG	0554.0	0618.0	III	N	1	27	180	
	0555	1200	IZMI	0554.2	0602.0	III	GG	1	25X	85	
			POTS	0559.0	0614.8	III	GG,N	2	40X	500	
			IZMI	0603.8	0609.5	III	GG,C	2	45	270X	
			IZMI	0613.6	0617.2	III	GG,C	1	75	190	
			POTS	0745.7	0745.8	DCIM	RS	1	260	440	
			IZMI	1106.8	1106.9	III	B	1	110U	155	
			POTS	1126.8	1136.4	III	GG	3	40X	320	
			IZMI	1126.9	1136.8	III	GG,C	2	25X	270X	
			SVTO	1127.0	1134.0	III		2	25	180	
			SGMR	1130.0	1134.0	III		2	30	80	
			POTS	1130.1	1131.0	V	G	3	45	60	
			IZMI	1157.3	1159.5	III	GG,RS	1	110U	180	
			POTS	1217	1258	I	S,N	1	200U	280	
			POTS	1335.4	1335.6	DCIM		1	330	410	
			POTS	1457	1523	I	S,N	1	200U	370	
			POTS	1552.9	1553.3	DCIM		1	260	420	
			POTS	1602	1606	I	S	1	200U	290	
			HOLL	1602.0	1604.0	III		1	25	136	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
12			SGMR	1602.0	1604.0	V		2	30	55	
			SVTO	1602.0	1603.0	V		1	25U	83U	
			POTS	1602.5	1603.4	III	G	1	40X	80	
			POTS	1648	1759 U	I	S,N	1	200U	380	
			HOLL	1704.0	1849.0	III	N	1	25	162	
			SVTO	1704.0	1732.0	III	N	1	25	151	
			PALE	1724.0	2022.0	III	N	1	25	180	
			HOLL	2320.0	2320.0	III		1	25	55	
			PALE	2320.0	2321.0	III		1	25	65	
	1932	2400	HIRA	2320.5	2321.0	III	B	1	25X	50	
	2040	2400	CULG	2321.0	2321.0	III	B	2	18	60	
13			HOLL	0012.0	0014.0	III		1	25	141	
	0000	0710	CULG	0012.0	0014.0	III	G	3	18	160	
	0000	0935	HIRA	0012.5	0013.0	III	B	1	60	120	
			CULG	0251.0	0252.0	III	G	1	20	180	
			HIRA	0251.0	0251.5	III	B	1	30	50	
	0435	1722	ONDR								
	0340	1844	POTS	0526.4	0536	I	S,N	1	210	320	100-200MHz No Data
			POTS	0528.1	0528.3	DCIM		1	230	400	
			POTS	0626	0643	I	S,N	1	200U	280	
			POTS	0645.9	0647.2	III	GG	2	200U	650	
			CULG	0646.0	0647.0	III	G	1	70	180	
			HIRA	0646.0	0647.5	III	G	2	110	400	
			SVTO	0646.0	0646.0	III		1	118U	180U	
	0555	1202	IZMI	0646.0	0647.2	III	G,U	2	90U	270X	
			POTS	0809	0824	I	S,N	1	200U	310	
			HIRA	0814.0	0814.5	III	B	1	40	100	
			LEAR	0814.0	0814.0	III		1	25	119	
			POTS	0814.0	0814.9	III	G	2	40X	85U	
			SVTO	0814.0	0814.0	III		1	25U	83U	
			IZMI	0814.2	0814.5	III	G	1	25X	45U	
			SVTO	1005.0	1006.0	III		1	25	73	
			POTS	1005.1	1006.1	III	G	2	40X	80	
			POTS	1158	1231	I	S,N	1	200U	290	
			SVTO	1302.0	1303.0	III		1	25	73	
			POTS	1343	1622 U	I	S,N	1	200U	360	
			POTS	1655.0	1655.6	DCIM		1	220	360	
			POTS	1741	1757	I	S,N	1	200U	360	
	1931	2400	HIRA								
	2040	2400	CULG								
14			HOLL	0038.0	0039.0	III		1	25	94	
	0000	0710	CULG	0039.0	0039.0	III	B	3	18	140	
	0000	0936	HIRA	0039.0	0039.5	III	B	2	25X	80	
			CULG	0054.0	0054.0	III	B	1	18	45	
			CULG	0329.0	0329.0	III	G	1	30	180	
	0339	1201	POTS	0423	0507	I	S,N	1	200U	340	100-200MHz No Data
	0434	1723	ONDR								
			POTS	0619	0855	I	S,N	1	200U	300	
			HIRA	0724.0	0725.0	III	B	1	80	200	
			POTS	0724.0	0724.8	III	GG	2	200U	370	
			SVTO	0724.0	0724.0	III		1	113	180	
	0622	1200	IZMI	0724.1	0724.8	III	GG,C	2	90U	260	
			POTS	0920	1029	I	S,N	1	200U	330	
			SVTO	0935.0	0936.0	III		1	50	180	
			IZMI	0935.3	0936.0	III	GG,C	2	45	260	
			POTS	0935.3	0936.1	III	G	2	40X	270	
			IZMI	0942.5	0943.7	III	GG	1	90	170	
			IZMI	1000.7	1001.1	UNCLF		1	110U	170	
			POTS	1058	1234	I	S,N	1	200U	330	
			IZMI	1153.5	1154.2	CONT		1	80	160	
	1202	1845									See Note 2
	2040	2400	CULG	2117.0	2123.0	III	G	1	30	180	
			PALE	2153.0	2154.0	III		1	100	180	
	1930	2400	HIRA	2153.5	2156.5	III	G	2	90	230	
			CULG	2154.0	2156.0	III	G	1	57U	180	
15	0000	0937	HIRA								

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
15	0000 0710	CULG	0104.0	0104.0	III	G	1	60	140	
	0433 1724	ONDR								
		CULG	0554.0	0604.0	III	G	1	57U	160	
	0555 1200	IZMI	0557.1	0557.4	III	G,C	1	90	170	
		IZMI	1055.2	1056.8	III	G	2	45	95	
	1929 2400	HIRA								
16	2050 2400	CULG	2141.0	2141.0	III	B	1	40	140	
	0000 0938	HIRA								
	0000 0710	CULG	0103.0	0104.0	III	G	1	25	57	
	0432 1726	ONDR								
		CULG	0604.0	0604.0	III	B	1	57	150	
	0600 1200	IZMI	0642.7	0643.5	III	G	1	45	90	
		CULG	0643.0	0644.0	III	G	1	40U	150	
		IZMI	1102.7	1102.8	III	B	1	25X	65	
	0339 1846	POTS	1102.7	1102.9	III	B	2	40X	75	See Note 2
		POTS	1319.0	1324.1	III	G	2	40X	85U	
		HOLL	1419.0	1715.0	III	N	1	25	82	
		POTS	1419.5	1436.3	III	G,N	2	40X	85U	
		SGMR	1430.0	1436.0	III		1	30	60	
		POTS	1459.7	1502.1	III	GG	2	200U	400X	
		SGMR	1536.0	1539.0	III		2	30	60	
		POTS	1536.4	1538.8	III	G	2	40X	85U	
		SGMR	1619.0	1621.0	III		1	30	60	
		POTS	1619.2	1620.2	III	G	2	40X	85U	
	1928 2400	HIRA								
	2050 2400	CULG								
17	0000 0710	CULG	0022.0	0022.0	III	B	1	20	90	
		CULG	0110.0	0114.0	III	G	1	35	180	
		LEAR	0111.0	0121.0	III		1	25	180	
		CULG	0121.0	0121.0	III	G	1	30	180	
		CULG	0136.0	0137.0	III	G	1	30	150	
		LEAR	0136.0	0137.0	III		1	53	127	
	0000 0939	HIRA	0136.5	0137.0	III	B	1	60	110	
		CULG	0211.0	0251.0	III	N	1	25	150	
		HIRA	0211.0	0211.5	III	B	1	50	110	
		LEAR	0211.0	0211.0	III		1	55	138	
		LEAR	0229.0	0229.0	III		1	48	134	
		HIRA	0229.5	0230.0	III	B	1	50	130	
		CULG	0419.0	0421.0	III	G	1	57	170	
		CULG	0427.0	0428.0	III	G	1	35	160	
	0431 1727	ONDR								
		CULG	0511.0	0511.0	III	B	1	35U	150	
		CULG	0541.0	0544.0	III	G	1	30	180	
	0338 1846	POTS	0542.5	0543.3	III	G	1	40X	240	See Note 2
	0600 1200	IZMI	0712.6	0713.1	III	G	1	45	100	
		POTS	1202.3	1205.4	III	G	3	40X	240	
		POTS	1800.7	1802.1	DCIM		1	230	380	
	1927 2400	HIRA								
	2050 2400	CULG								
18	0000 0940	HIRA								
	0000 0710	CULG	0038.0	0038.0	III	G	1	60	140	
		CULG	0257.0	0257.0	III	B	1	30	70	
	0429 1728	ONDR								
	0337 1847	POTS	0828.1	0829.9	III	G	2	40X	400X	See Note 2
	0555 1214	IZMI	0828.1	0829.9	III	G,HARM	2	45	260	
		IZMI	0931.5	0931.7	III	G	2	45	190U	
		POTS	0931.5	0931.8	III	B	2	40X	270	
		IZMI	1006.9	1007.0	III	G	1	60	155	
		POTS	1206.3	1206.8	III	G	2	40X	400X	
		POTS	1402.6	1404.3	III	G	2	40X	320	
		POTS	1515.2	1516.2	III	G	1	200U	340	
	1926 2400	HIRA								
	2050 2400	CULG								
19	0000 0710	CULG								
	0000 0941	HIRA								

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
19	0428	1729	ONDR								
	0337	1848	POTS	0747.3	0747.7	DCIM	U	1	200U	340	See Note 2
			POTS	1030	1053	I	S,N,C	1	200U	330	
			SVTO	1032.0	1057.0	III	N	1	25	147	
			POTS	1032.7	1058.3	III	GG,N	2	40X	250	
	0606	1200	IZMI	1032.7	1101.0U	III	S,C	2	40	140	
			IZMI	1045.7	1047.6	III	G	2	40	120	
			POTS	1046	1102	DCIM		2	310	400X	
			POTS	1114.8	1116.3	DCIM		1	230	390	
			SVTO	1449.0	1502.0	III	N	1	25U	120U	
			POTS	1450.0	1450.3	III	B	2	40X	85U	
			POTS	1521	0000	I	S,N	1	220	370	
	1925	2400	HIRA								
20	0000	0710	CULG	0105.0	0110.0	III	G	1	23	180	See Note 2
			LEAR	0106.0	0115.0	III		1	25	180	
	0000	0942	HIRA	0106.5	0114.5	III	G	1	25X	200	
			CULG	0112.0	0115.0	III	G	2	20	180	
			PALE	0112.0	0114.0	III		1	25	165	
			HOLL	0113.0	0114.0	III		1	25	169	
			LEAR	0133.0	0134.0	III		1	25	180	
			CULG	0134.0	0135.0	III	G	1	30	170	
			HIRA	0134.0	0135.0	III	G	1	60	120	
	0427	1730	ONDR								
			CULG	0608.0	0612.0	III	G	3	23	180	
			LEAR	0608.0	0611.0	V		1	25	180	
			SVTO	0608.0	0611.0	III		2	25	153	
	0600	1200	IZMI	0608.4	0609.2	III	G,C	2	25X	270	
			HIRA	0608.5	0611.0	III	G	2	25X	220	
	0336	1848	POTS	0608.5	0610.8	III	GG	3	40X	400X	
			IZMI	0609.2	0909.8	CONT		2	30	90	
			IZMI	0610.4	0611.2	III	G	2	25X	210	
			IZMI	0611.5	0612.0	III	G	1	40U	155	
			IZMI	1026.8	1027.1	III	G	1	55	90	
			POTS	1033.7	1033.9	III	B	1	40X	70	
			IZMI	1127.0	1127.1	III	B	1	45	65	
			SGMR	1202.0	1203.0	III		1	30	65	
			POTS	1319.8	1320.2	III	G	1	40X	65	
			POTS	1548 U	1640 U	I	S,N	1	250	370	
			POTS	1710 U	1808 U	I	S,N	1	210	330	
			POTS	1710.5	1711.2	DCIM		2	200	320	
			HOLL	1802.0	1807.0	III		1	25	172	
			PALE	1802.0	1804.0	III		1	25	90	
			SGMR	1802.0	1803.0	III		1	30	65	
	1925	2400	HIRA								
	2050	2400	CULG	2356.0	2356.0	III	B	1	50U	130	
21	0000	0710	CULG								See Note 2
	0000	0942	HIRA								
	0426	1731	ONDR								
	0336	1848	POTS	0617	0624	I	S,N	1	250	330	
	0600	1200	IZMI	0633.1	0633.6	III	G	1	75	95	
			IZMI	0637.7	0637.8	CONT		1	75	95	
			POTS	0823.0	0823.3	DCIM	U	1	230	310	
			IZMI	0823.1	0823.6	CONT		1	75	95	
			IZMI	0829.4	0829.5	III	B	2	45	150	
			POTS	1039.8	1040.5	DCIM		1	200U	320	
			SVTO	1242.0	1257.0	III	N	2	25	180	
			POTS	1242.9	1255.2	III	GG,U	2	40X	400X	
			HOLL	1243.0	1246.0	III		1	25	180	
			SGMR	1243.0	1247.0	III		1	30	80	
			HOLL	1642.0	1642.0	III		1	25	68	
			HOLL	1851.0	1852.0	III		1	25	129	
			PALE	1851.0	1851.0	III		1	25	61	
			SGMR	1851.0	1852.0	III		2	30	65	
			PALE	1923.0	1924.0	III		1	25	75	
			SGMR	1923.0	1924.0	III		2	30	70	
	2050	2400	CULG	2059.0	2059.0	III	B	1	50U	130	
			CULG	2248.0	2248.0	III	B	1	30	60	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
21		CULG	2334.0	2334.0	III	B	1	50U	90	
		HOLL	2334.0	2341.0	III		1	25	98	
		CULG	2341.0	2341.0	III	G	1	40	180	
		LEAR	2341.0	2341.0	III		1	25	180	
	1925 2400	HIRA	2341.0	2341.5	III	B	1	30	140	
22		LEAR	0052.0	0058.0	III		1	25	180	
	0000 0710	CULG	0052.0	0058.0	III	G	1	35U	180	
		HOLL	0053.0	0058.0	III		1	25	120	
		PALE	0053.0	0058.0	III		1	25	60	
	0000 0943	HIRA	0053.5	0054.0	III	B	1	30	160	
	0426 1732	ONDR								
	0336 1849	POTS	0649.0	0650.1	DCIM		1	260	390	See Note 2
		POTS	0658.2	0702.8	DCIM	RS,U	2	280	400X	
		POTS	0726.5	0728.0	III	G	2	40X	290	
	0555 1204	IZMI	0726.8	0728.0	III	G	2	40	270X	
		IZMI	0814.5	0815.7	III	G	1	45	65	
		IZMI	0846.8	0854.0	III	GG	2	25	175	
		POTS	0850.4	0854.6	III	GG	2	40X	380	
		SVTO	0952.0	0953.0	III		1	25	57	
		POTS	0952.6	0953.1	III	G,RS	2	40X	85U	
		IZMI	0952.7	0953.1	III	G	2	25X	85	
		POTS	1139.0	1141.5	DCIM		2	230	400X	
		SVTO	1139.0	1140.0	III		1	25U	83U	
		IZMI	1139.8	1146.8	III	GG	2	40	165	
		POTS	1139.8	1146.8	III	GG	2	40X	270	
		POTS	1145.5	1201	I	S,N,DC	1	200U	280	
		SVTO	1303.0	1303.0	III		1	25	66	
		POTS	1303.2	1303.6	III	G	2	40X	75	
		POTS	1410.6	1415.4	DCIM		1	200U	360	
		HOLL	1708.0	1830.0	III	N	1	25	82	
		SVTO	1708.0	1709.0	III		1	52	62	
		POTS	1711	1721	I	S,N	1	200U	330	
		POTS	1711.6	1712.0	III	G	2	200U	250	
		POTS	1800.8	1801.7	DCIM		1	210	320	
		PALE	1857.0	1858.0	III		1	25	132	
		SGMR	1858.0	1947.0	III	N	1	30	45	
	2050 2400	CULG								
		HOLL	2115.0	2118.0	III		1	25	78	
		PALE	2116.0	2118.0	III		1	25	73	
	1925 2400	SGMR	2118.0	2118.0	III		1	30	50	
		HIRA	2118.5	2119.0	III	B	1	25X	100	
		LEAR	2341.0	2341.0	III		1	25	180	
23	0425 1733	ONDR								
	0336 1849	POTS	0630.6	0633.0	DCIM		1	200	400X	See Note 2
	0000 0710	CULG	0632.0	0633.0	III	G	1	110	180	
		LEAR	0810.0	0909.0	III	N	1	25	120	
		SVTO	0816.0	0910.0	III	N	1	25U	85U	
		POTS	0816.1	0826.5	III	GG	2	40X	380	
	0609 1200	IZMI	0816.1	0827.8	III	S,C	2	25X	170	
		HIRA	0818.5	0820.0	III	G	1	40	200	
	0000 0944	IZMI	0829.1	0839.3	III	GG	2	30	95	
		POTS	0832	0844	III	GG	2	40X	85U	
		HOLL	1358.0	1400.0	III		1	25	151	
		SVTO	1358.0	1400.0	III		1	25	180	
		POTS	1358.8	1400.3	III	G,U	2	40X	390	
		POTS	1721.5	1722.3	III	GG	2	200U	400X	
	1924 2400	HIRA								
	2050 2400	CULG								
24	0000 0710	CULG								
	0000 0933	HIRA								
	0424 1734	ONDR								
	0600 1200	IZMI								
	0336 1849	POTS	1229.6	1232.2	DCIM		1	200	360	See Note 2
	1924 2400	HIRA								
	2050 2400	CULG								

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
25	0000	0710	CULG								
	0000	0849	HIRA								
	0336	1849	POTS	0419.6	0419.8	DCIM		2	210	400X	See Note 2
	0423	1152	ONDR								
			POTS	0933.8	0937.5	III	GG	1	40X	85U	
	0550	1200	IZMI	0933.9	0940.3	III	GG	1	50	65	
			POTS	0936.0	0937.2	I	S,N	1	260	320	
			IZMI	1011.8	1012.6	III	G	2	160	270X	
			POTS	1011.8	1012.9	DCIM	U	2	200U	400X	
			POTS	1106.4	1107.2	III	G	2	40X	250	
			IZMI	1106.7	1107.1	III	G	1	50U	165	
	2050	2400	CULG								
26	0000	0710	CULG	0538.0	0603.0	IV		1	300	1300	
			LEAR	0539.0	0546.0	III		1	25	180	
			CULG	0540.0	0547.0	III	G	1	25	150	
			SVTO	0542.0	0546.0	III		1	25	180	
	0055	0946	HIRA	0542.0	0547.0	III	G	1	30	200	
	0643	1200	IZMI	0543.3	0543.5	III	G,FS	2	40	65	
			IZMI	0546.0	0546.6	III	G	1	30	95	
			LEAR	0552.0	0908.0	CONT		1	57U	180U	
			IZMI	0558.0	1200.00	I	S	2	45U	160	
			IZMI	0559.1	0559.3	III	G	1	130	270X	
			IZMI	0606.0U	1143.0U	III	N	2	45	95	
			SVTO	0606.0	0000.0	CONT		1	58	180	
			SVTO	0606.0	1134.0	CONT		1	25	180	
			IZMI	0606.7	0609.2	III	G	1	50	270X	
			IZMI	0612.4	0615.7	III	G	2	55	160	
			CULG	0613.0U	0710.00	CONT		1	30U	160	
			IZMI	0624.0U	0633.2	III	G,C	1	25X	270X	
			CULG	0628.0	0630.0	III	G	1	30	90	
			CULG	0657.0	0657.0	III	B	1	25	40	
			IZMI	0657.0	0657.2	III	G	1	25X	65	
			LEAR	0657.0	0659.0	III		1	25	50	
			SVTO	0657.0	0658.0	III		1	25	54	
			IZMI	0709.2	0709.7	III	G	2	45	90	
			IZMI	0714.2	0715.1	III	G	2	45	175	
			IZMI	0719.6	0722.5	III	GG	2	45	90	
			IZMI	0743.6	0744.8	III	GG	2	45	95	
			IZMI	0824.2	0824.9	III	G	2	25X	95	
			IZMI	1048.9	1053.2	III	GG	1	25X	80U	
			SGMR	1244.0	1244.0	III		1	30	60	
			SVTO	1244.0	1244.0	III		1	25	180	
			SVTO	1308.0	1744.0	III	N	1	25	180	
			HOLL	1435.0	1435.0	III		1	25	78	
			SGMR	1435.0	1435.0	III		1	30	55	
	0422	1737	ONDR	1508.3	1529.5	DCIM	G	2	800X	1550	
			SVTO	1511.0	1513.0	III		1	25	153	
			SVTO	1618.0	0000.0	CONT		1	109	180	
			SVTO	1618.0	0000.0	CONT		2	109	180	
			SVTO	1618.0	1744.0	CONT		2	63	180	
			ONDR	1628.0	1721.3	DCIM	GG	2	800X	2000X	
			HOLL	1655.0	0136.0	CONT		1	39	177	
			HOLL	1703.0	1705.0	III		1	25	92	
			SGMR	1703.0	1705.0	III		2	30	70	
			PALE	1810.0	0450.0	CONT		1	25	180	
			HOLL	1910.0	1912.0	III		1	25	71	
			SGMR	1910.0	1911.0	III		2	30	70	
			HOLL	2042.0	0026.0	III	N	1	25	155	
	2050	2400	CULG	2050.0E	2400.00	III	S,C	1	20	180	
	1923	2400	HIRA	2238.5	2242.5	III	G	1	25X	170	
			PALE	2239.0	2242.0	III		1	25	154	
27	0000	0710	CULG	0000.0E	0430.00	III	S,C	1	20	180	
			CULG	0120.0	0122.0	III	G	2	40U	180	
			HOLL	0120.0	0120.0	III		1	25	180	
	0000	0947	HIRA	0120.0	0121.0	III	B	1	50	160	
			LEAR	0215.0	0216.0	III		2	25	180	
			HIRA	0215.5	0217.0	III	G	1	25X	110	

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OBSERVATION			EVENT				FREQUENCY			Remarks	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)
27			LEAR	0249.0	0310.0	III	N	2	25	180	
			PALE	0252.0	0257.0	III		2	25	180	
			HIRA	0252.5	0307.0	III	G	3	25X	220	
			CULG	0253.0	0307.0	III	GG	3	18X	850	
			SVTO	0346.0	1745.0	CONT		2	25	180	
			CULG	0430.0E	0710.0D	III	S,C	2	20	180	
	0421	1737	ONDR	0543.5	0638.0	DCIM	GG,SP	2	800X	2000X	
			IZMI	0550.0E	1104.0U	III	S	1	25X	270X	
	0550	1200	IZMI	0550.0E	1200.0D	I	S,C	2	45U	270X	
			IZMI	0558.9	0608.3	III	GG	2	25X	95	
			LEAR	0600.0	0632.0	III	N	2	25	180	
			SVTO	0600.0	0000.0	III		2	25	180	
			SVTO	0600.0	0632.0	III		2	25	180	
			SVTO	0600.0	0632.0	III	N	2	25	180	
			HIRA	0602.5	0625.5	III	G	2	25X	500	
			CULG	0611.0	0625.0	III	GG	3	23U	850	
			IZMI	0611.3	0624.5	III	GG,C	2	25X	270X	
			IZMI	0642.0	0642.9	III	GG	2	160	270X	
			ONDR	0642.3	0649.2	DCIM	GG	2	800X	1653	
			CULG	0643.0	0643.0	III	G	1	23	1200	
			IZMI	0646.4	0647.4	III	G	2	25X	175	
			ONDR	0800.4	0810.5	DCIM	GG	2	800X	1939	
			IZMI	0800.8	0803.7	III	GG	2	25X	270X	
			IZMI	0930.8	0931.8	III	G,C	2	25X	190	
			IZMI	0939.6	0943.0	III	GG	2	25X	95	
			IZMI	1104.0U	1200.0D	III	S	2	25X	270X	
			SGMR	1104.0	0000.0	CONT		2	30	80	
			SGMR	1104.0	0000.0	III	N	2	30	80	
			SGMR	1104.0	2345.0	CONT		2	30	80	
			IZMI	1155.4	1156.4	III	GG,C	2	25X	240	
			HOLL	1226.0	2311.0	CONT		2	25	180	
			HOLL	1232.0	0145.0	III	N	2	25	180	
			ONDR	1452.3	1518.4	DCIM	GG	2	800X	2000X	
			ONDR	1452.5	1458.4	DCIM	G	1	2000X	4500X	
			SVTO	1504.0	1516.0	III	N	2	25	180	
			PALE	1622.0	0450.0	CONT		1	25	180	
	1922	2056	HIRA								
	2050	2400	CULG	2050.0E	2400.0D	III	S,C	2	20U	280	
			CULG	2300.0	2307.0	III	GG	3	20	1400	
			PALE	2300.0	2306.0	III		2	25	180	
			CULG	2301.0	2317.0	IV	FS	2	200	1400	
			CULG	2302.0	2310.0	II	FN	3	50U	300	FLA ESS 900
			CULG	2306.0	2310.0	II	SH	3	100	180	
			PALE	2306.0	2316.0	II		3	25	180	ESS 0607
			PALE	2306.0	2316.0	II		3	25	180	ESS 0619
			CULG	2309.0	2310.0	III	G	3	30	170	
			HOLL	2310.0	0000.0	II		1	46	157	ESS 0656
			HOLL	2310.0	2318.0	II		1	35	180	ESS 0546
			CULG	2311.0	2316.0	II	FN	3	50U	100	
			CULG	2311.0	2316.0	II	SH	3	100	200	ESS 650
			HOLL	2311.0	0145.0	IV		2	25	180	
			LEAR	2337.0	0907.0	CONT		1	25	180	
28	0000	0700	CULG	0000.0E	0700.0D	III	S,C	1	20U	180	
			CULG	0022.0	0027.0	III	G	3	18X	1800X	
			CULG	0022.0	0241.0	IV	FS	3	40U	1600	
			PALE	0022.0	0026.0	III		3	25	180	
			PALE	0026.0	0033.0	II		3	25	180	ESS 0392
			PALE	0033.0	0228.0	IV		2	65	180	
			LEAR	0042.0	0228.0	IV		3	73	180	
			SVTO	0350.0	0000.0	CONT		1	55	180	
			SVTO	0350.0	1746.0	CONT		1	25	180	
			SVTO	0432.0	1604.0	III	N	1	25	180	
			IZMI	0600.0E	1200.0D	I	S,C	2	45U	270X	
	0600	1200	IZMI	0600.0E	1200.0D	III	N	2	25X	95U	
			IZMI	0614.3	0614.4	III	G	2	145	205	
			IZMI	0732.4	0740.3	III	GG	2	40	95	
			IZMI	0743.8	0750.0	III	GG	2	40	160	
			IZMI	0753.8	0754.3	III	G	2	35	140	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
28	0420 1738	IZMI	0755.7	0758.2	III	GG,C	2	25X	270	
		LEAR	0756.0	0758.0	III		2	25	180	
		SVTO	0756.0	0758.0	V		2	25	180	
		IZMI	0800.5	0801.3	III	G	2	45	270	
		ONDR	0808.2	0809.3	DCIM	GG,SP	2	800X	2000X	
		IZMI	0808.5	0810.4	III	GG	2	30	260	
		IZMI	0815.7	0816.8	III	G	2	45	160	
		IZMI	0831.7	0837.1	III	GG	2	45	210	
		IZMI	0923.5	0924.8	III	GG	2	25X	210	
		IZMI	0925.8	1017.0U	III	S	2	25X	270X	
		IZMI	0935.1	0941.9	III	G	2	25X	240	
		IZMI	1037.5	1037.8	III	G	2	25X	60	
		IZMI	1148.5	1150.4	III	GG	2	30	270X	
		HOLL	1309.0	2040.0	CONT		1	83	180	
		HOLL	1331.0	1334.0	III		1	25	49	
		HOLL	1412.0	1413.0	III		1	25	111	
		SGMR	1412.0	1413.0	III		1	30	55	
		SGMR	1704.0	1707.0	III		1	30	50	
		SGMR	1952.0	1958.0	III		1	30	80	
	2050 2400	CULG	2050.0E	2400.0D	III	N	1	23	180	
		LEAR	2338.0	0907.0	CONT		1	74	180	
29	0000 0700	CULG	0000.0E	0700.0D	III	N	1	25U	180	
		CULG	0058.0	0213.0	IV	FS	2	40U	1800X	
		CULG	0100.0	0106.0	III	G	3	18X	1000	
		LEAR	0100.0	0106.0	III		2	25	180	
		PALE	0100.0	0106.0	III		2	25	180	
		HOLL	0101.0	0000.0	II		1	25	180	ESS 1441
		CULG	0106.0	0111.0	II	FN	3	30	90	
		CULG	0106.0	0111.0	II	SH	3	50	170	FLA 2B ESS 800
		LEAR	0106.0	0116.0	II		2	25	180	ESS 0955
		PALE	0106.0	0116.0	II		2	25	180	ESS 1386
		CULG	0108.0	0111.0	III	G	3	18	90	
		LEAR	0112.0	0907.0	IV		1	25	180	
		CULG	0113.0	0116.0	UNCLF		2	40	120	
		PALE	0116.0	0221.0	IV		1	25	180	
		LEAR	0212.0	0215.0	III		2	25	180	
		PALE	0212.0	0215.0	III		2	25	180	
		CULG	0213.0	0216.0	III	G	3	30	300	
		CULG	0235.0	0236.0	III	G	2	50U	180	
		LEAR	0235.0	0236.0	III		1	25	180	
	0420 1739	ONDR								
		SVTO	0426.0	0725.0	III	N	1	25	180	
		SVTO	0544.0	1204.0	IV		1	25U	180U	
		IZMI	0600.0E	0720.0U	III	S	2	45U	270X	
		IZMI	0600.0E	1200.0D	III	N	2	25	95U	
	0600 1200	IZMI	0600.0E	1200.0D	I	S,C	2	45	270X	
		IZMI	0658.1	0701.6	III	G	2	25X	95	
		IZMI	0846.4	0847.7	III	G	1	55	175	
		HOLL	1505.0	1505.0	III		1	25	121	
		SVTO	1505.0	1505.0	III		1	36	79	
		HOLL	1705.0	1705.0	III		1	25	73	
		HOLL	1914.0	2145.0	IV		1	25	180	
		SGMR	1914.0	2044.0	III	N	3	30	80	
		HOLL	1935.0	2100.0	III	N	1	25	180	
		SGMR	1939.0	1947.0	II		3	45	80	ESS 0430
		HOLL	1942.0	1946.0	II		1	41	180	ESS 0406
		SGMR	1948.0	2040.0	IV		3	30	80	
	2100 2400	CULG	2100.0E	2313.0	III	N	1	25	180	
		PALE	2341.0	0450.0	III	N	1	25	180	
30	0000 0700 0147 0556	LEAR	0412.0	0413.0	V		2	25	180	
		SVTO	0412.0	0413.0	V		2	25	180	
		CULG	0412.0	0413.0	III	G	2	18	200	
		HIRA	0412.0	0414.5	III	G	3	25X	230	
		LEAR	0450.0	0451.0	III		1	108	180	
		CULG	0451.0	0451.0	III	G	1	120	240	
		HIRA	0451.0	0451.5	III	B	2	110	220	
		SVTO	0451.0	0451.0	III		1	125U	180U	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
30	0600 1200	CULG	0520.0	0635.0	III	N	1	30U	160	
		LEAR	0523.0	0645.0	CONT		1	64	180	
		CULG	0554.0	0557.0	III	G	1	230	470	
		IZMI	0600.0E	1200.0D	I	N	2	80U	270X	
		IZMI	0632.2	0632.8	III	G	2	145	270X	
		LEAR	0720.0	0721.0	III		1	25	43	
		LEAR	0720.0	0721.0	III		1	43	180	
		SVTO	0720.0	0721.0	III		1	25	44	
		IZMI	0737.4	0739.8	III	G	2	145	270X	
		LEAR	0755.0	0756.0	III		1	25	135	
	0419 1740	SVTO	0755.0	0756.0	III		1	25U	83U	
		IZMI	0755.3	0756.4	III	G,C,FS	2	25X	160U	
		ONDR	0851.5	0854.4	DCIM	G	1	800X	1695	
		IZMI	1036.5	1036.8	III	B	1	25	40	
		HOLL	1944.0	1945.0	III		1	25	162	
		PALE	1944.0	1945.0	III		1	25	160	
		SGMR	1944.0	1945.0	III		1	30	65	
	2100 2400	CULG	2149.0	2219.0	III	N	1	25	180	
		HOLL	2218.0	2219.0	III		1	25	56	
		LEAR	2338.0	0000.0	CONT		1	77	180	
		LEAR	2338.0	0419.0	CONT		1	66	180	
		CULG	2357.0	2400.0D	III	N	1	50	180	
31	0000 0700	CULG	0000.0E	0117.0	III	N	1	23	180	
		HOLL	0003.0	0115.0	III	N	1	25	134	
		LEAR	0004.0	0419.0	III	N	1	25	113	
		PALE	0005.0	0000.0	III	N	1	25	180	
		PALE	0005.0	0000.0	III	N	1	25U	180U	
		CULG	0218.0	0254.0	IV		2	35U	1800X	
		CULG	0219.0	0220.0	III	G	1	30U	90	
		CULG	0220.0	0221.0	III	G	2	350	1000	
		LEAR	0220.0	0227.0	V		3	25	180	
		PALE	0220.0	0000.0	II		1	25	180	ESS 0410
		CULG	0221.0	0223.0	III	G	3	18X	300	
		CULG	0223.0	0230.0	II	FM	3	30	90	
		CULG	0223.0	0235.0	II	SH	3	35	180	ESS 800
		LEAR	0223.0	0000.0	II		3	75	180	ESS 0502
		LEAR	0223.0	0243.0	II		3	25	180	ESS 0650
		CULG	0225.0	0228.0	III	G	2	30	170	
		PALE	0226.0	0000.0	II		1	25	180	ESS 0410
		CULG	0231.0	0232.0	III	G	2	50U	180	
		CULG	0247.0	0402.0	III	S,C	1	23	180	
		SVTO	0340.0	0340.0	III		1	25	74	
	0419 1741	ONDR								
	0605 1200	IZMI	0832.0	0832.3	III	B	2	40	90	
		HOLL	1527.0	1542.0	III		1	25	180	
		SGMR	1527.0	1542.0	III		1	30	60	
		SVTO	1527.0	1531.0	III		1	25	83	
		SVTO	1542.0	1543.0	III		1	25	74	
		HOLL	2004.0	2004.0	III		1	25	56	
	2100 2400	CULG	2107.0	2339.0	III	N	1	20	180	
		HOLL	2249.0	0022.0	III	N	1	25	167	
		CULG	2319.0	2320.0	III	G	2	18	200	
		LEAR	2343.0	0220.0	III	N	1	25	180	

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

NOTE 2: 100-200MHz and 400-800MHz No Data

SOLAR RADIO NOISE STORM AT 164 MHZ**FROM NANÇAY RADIOHELIOGRAPH**

MAY 2003

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/05/03	-0.11	-0.23	I	8H18 E	15H18 D
01/05/03	+0.17	-0.03	I	8H18 E	15H18 D
01/03/03	+0.98	+0.68	III	9H20	15H18 D
02/05/03	+0.29	-0.36	I	8H18 E	15H18 D
02/05/03	+0.62	+0.03	I	8H18 E	15H18 D
04/05/03	-0.79	-0.22	I	8H18 E	15H18 D
05/05/03	-0.50	-0.11	III	8H17 E	15H17 D
05/05/03	+1.22	+0.06	II	11H23	15H17 D
06/05/03	+0.23	+0.03	III	8H26 E	15H17 D
07/05/03	+0.23	+0.03	IV	9H01 E	15H18 D
07/05/03	+1.07	-0.71	I	9H01 E	15H18 D
08/05/03	+0.45	+0.03	III	8H17 E	15H17 D
09/05/03	+0.81	-0.20	I	8H38 E	15H18 D
09/05/03	+1.13	-0.79	I	8H38 E	15H18 D
13/05/03	-0.90	-0.28	I	8H17 E	11H27
14/05/03	+0.11	+0.16	I	8H17 E	15H17 D
14/05/03	+0.33	-1.24	I	8H17 E	15H17 D
26/05/03	-0.17	+0.08	III	8H59 E	14H57 D
27/05/03	-0.14	+0.20	V	8H41 E	15H17 D
27/05/03	-0.03	-0.02	V	8H41 E	15H17 D
28/05/03	+0.42	+0.09	IV	8H18 E	15H18 D
29/05/03	+0.81	-0.11	III	8H18 E	15H18 D
30/05/03	+1.04	-0.08	III	8H19 E	15H19 D
31/05/03	+1.21	+0.09	II	8H18 E	15H18 D
31/05/03	+1.32	+0.40	I	8H18 E	11H06

¹ POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT² IMP1: FLUX < 5 SFU IMP2: 5 < FLUX < 20 SFU IMP3: 20 < FLUX < 100 SFU
IMP4: 100 < FLUX < 300 SFU IMP5 > 300 SFU³ E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS

D NOISE STORM IN PROGRESS AT THE END OF THE NANÇAY OBSERVATIONS

**SOLAR RADIO NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH
MAY 2003**

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/05/03	-0.08	-0.26	II	8H18 E	15H18 D
01/05/03	+0.20	-0.06	III	8H18 E	15H18 D
01/05/03	+0.87	+0.54	I	8H18 E	15H18 D
02/05/03	+0.19	-0.26	I	8H18 E	15H18 D
02/05/03	+0.43	+0.00	III	8H18 E	15H18 D
03/05/03	+0.67	-0.05	I	8H18 E	15H18 D
03/05/03	+1.12	+0.50	I	8H18 E	15H18 D
04/05/03	+0.84	+0.09	I	8H18 E	15H18 D
05/05/03	+1.04	+0.08	II	8H17 E	15H17 D
05/05/03	+0.88	-0.67	I	8H17 E	15H17 D
06/05/03	-0.28	-0.02	I	8H26 E	15H17 D
06/05/03	+1.21	-0.03	I	8H26 E	15H17 D
07/05/03	+0.26	+0.09	I	9H01 E	15H18 D
07/05/03	+1.04	-0.68	I	9H01 E	15H18 D
08/05/03	+0.36	+0.06	I	8H17 E	15H17 D
08/05/03	+1.05	-0.70	I	8H17 E	15H17 D
09/05/03	+0.57	+0.08	I	8H38 E	15H18 D
09/05/03	+0.99	-0.76	I	8H38 E	15H18 D
12/05/03	-0.99	-0.28	I	8H17 E	15H17 D
13/05/03	-0.87	-0.33	I	8H17 E	15H17 D
14/05/03	-0.02	+0.16	I	8H17 E	15H17 D
19/05/03	+0.31	-0.36	I	9H34	15H17 D
20/05/03	+0.48	-0.39	I	8H17 E	15H17 D
20/05/03	+0.79	-0.20	I	8H17 E	15H17 D
26/05/03	-0.12	-0.06	II	8H59 E	14H57 D
27/05/03	+0.22	-0.06	III	8H41 E	15H17 D
28/05/03	+0.39	-0.02	III	8H18 E	15H18 D
29/05/03	+0.74	-0.11	II	8H18 E	15H18 D
30/05/03	+0.98	+0.06	II	8H19 E	15H19 D
31/05/03	+1.02	+0.06	I	8H18 E	15H18 D

18 MAY: NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst.

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

**** No flux measurements available.

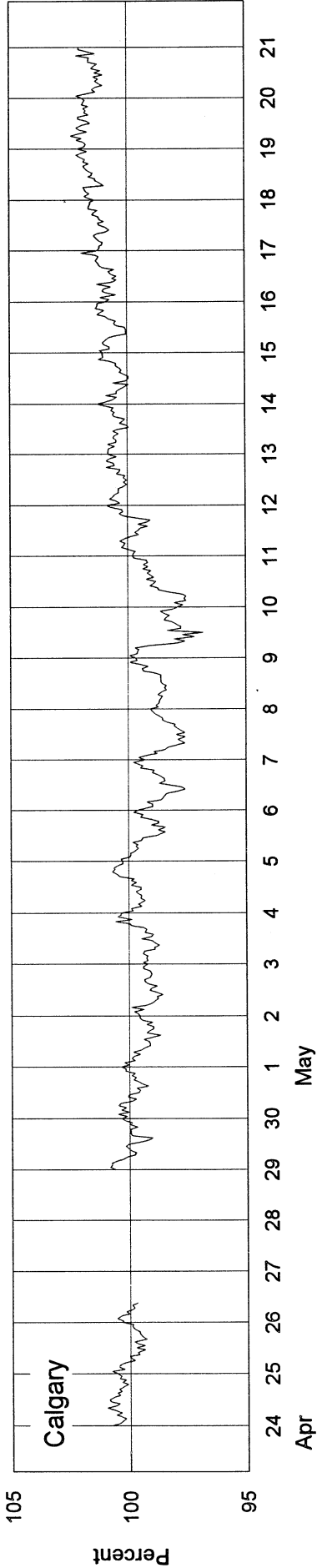
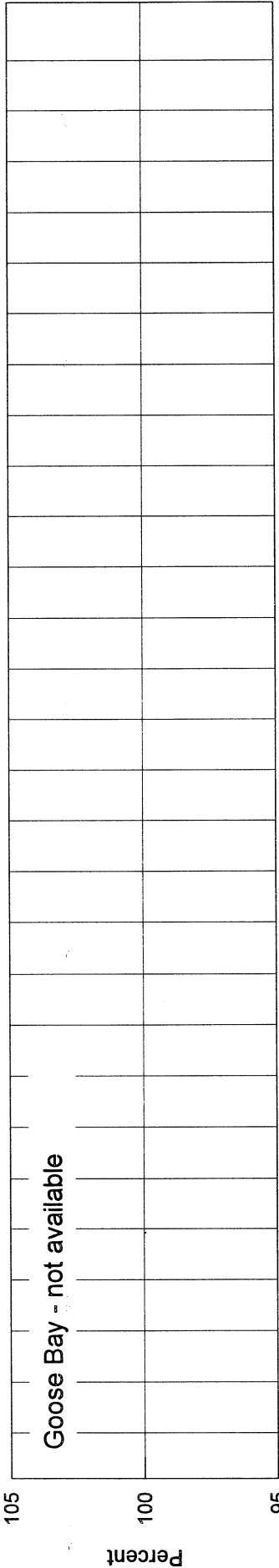
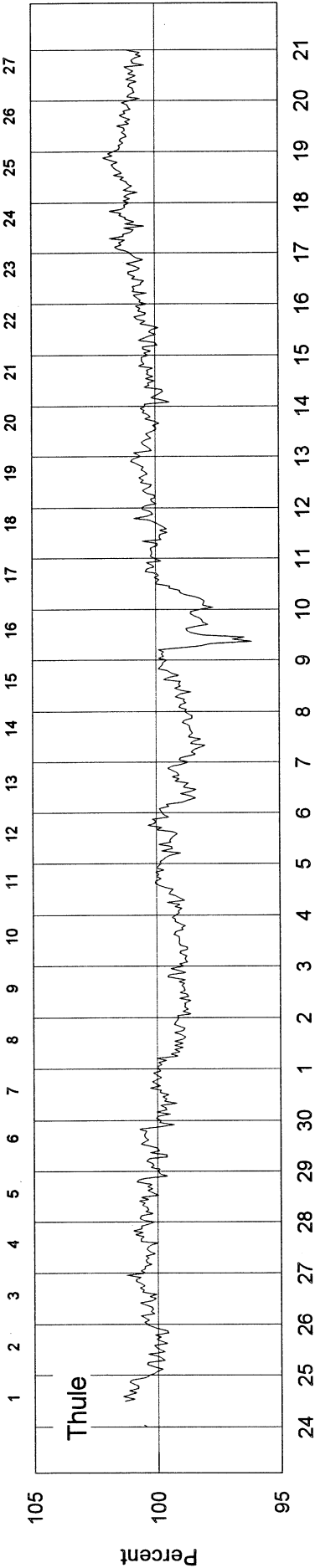
COSMIC RAY INDICES (Neutron Monitor)

May 2003

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	3948.4	3469.5	5533.0	8212.7	3665.4	1911.5	3449.7
2	3935.1	3460.8	5518.8	8198.2	3642.3	1898.3	3451.1
3	3936.7	3469.0	5523.2	8221.2	3657.4	1903.1	3460.3
4	3956.8	3486.2	5561.1	8288.1	3688.6	1909.7	3477.5
5	3961.2	3467.5	5542.2	8248.7	3664.5	1893.3	3454.7
6	3940.4	3446.7	5511.7	8196.4	3657.2	1891.2	3451.4
7	3920.2	3432.0	5507.2	8189.5	3661.8	1904.5	3456.2
8	3943.5	3449.5	5515.8	8228.4	3659.5	1912.0	3453.8
9	3915.1	3435.0	5486.0	8159.5	3633.6	1902.7	3438.3
10	3948.0	3442.5	5523.7	8223.5	3645.3	1913.1	3455.6
11	3978.0	3484.5	5543.1	8234.4	3673.7	1914.3	3458.6
12	3992.1	3505.0	5580.7	8278.3(23)	3680.6	1919.0	3471.3
13	3988.0	3507.8	5605.0	8293.0	3695.6	1919.1	3479.4
14	3983.0	3507.0	5601.0	8294.0	3691.8	1921.5	3472.0
15	3990.0	3516.7	5607.3	8338.5	3709.2	1920.9	3472.1
16	4004.5	3522.2	5623.0	8364.2	3715.0	1923.2	3469.9
17	4024.5	3532.3	5630.1	8363.4	3723.9	1929.8	3480.2
18	4029.6	3546.7	5630.0	8359.3	3719.0	1925.8	3485.8
19	4025.2	3555.0	5623.2	8356.0	3716.0	1922.8	3481.1
20	4009.8	3541.3	5618.5	8339.4	3705.5	1915.2	3470.8
21	4011.9	3539.3	5630.2	8347.2	3720.0	1906.3	3470.3
22	3986.7	3525.7	5598.5	8315.8	3721.8	1901.9	3475.5
23	4010.6	3533.0	5609.3	8350.5	3723.6	1910.7	3478.8
24	4028.1	3532.5	5619.8	8338.4	3726.9	1912.8	3476.4
25	4004.9	3501.7	5586.0	8303.3	3706.8	1907.3	3472.9
26	3997.0	3496.5	5583.6	8281.5	3702.0	1903.0	3472.8
27	3987.9	3461.0	5566.4	8272.4	3664.7	1887.4	3457.0
28	3953.1	3444.2	5506.7	8185.7	3628.2	1883.8	3445.2
29	3917.0	3412.0	5470.6	8158.2	3596.6	1882.3	3439.5
30	3698.2	3235.0	5204.7	7734.7	3428.0	1823.8	3369.5
31	3679.7	3204.7	5182.8	7703.7	3369.5	1811.0	3330.0
Mean	3958.0	3473.0	5543.3	8238.0	3664.3	1902.6	3457.4

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

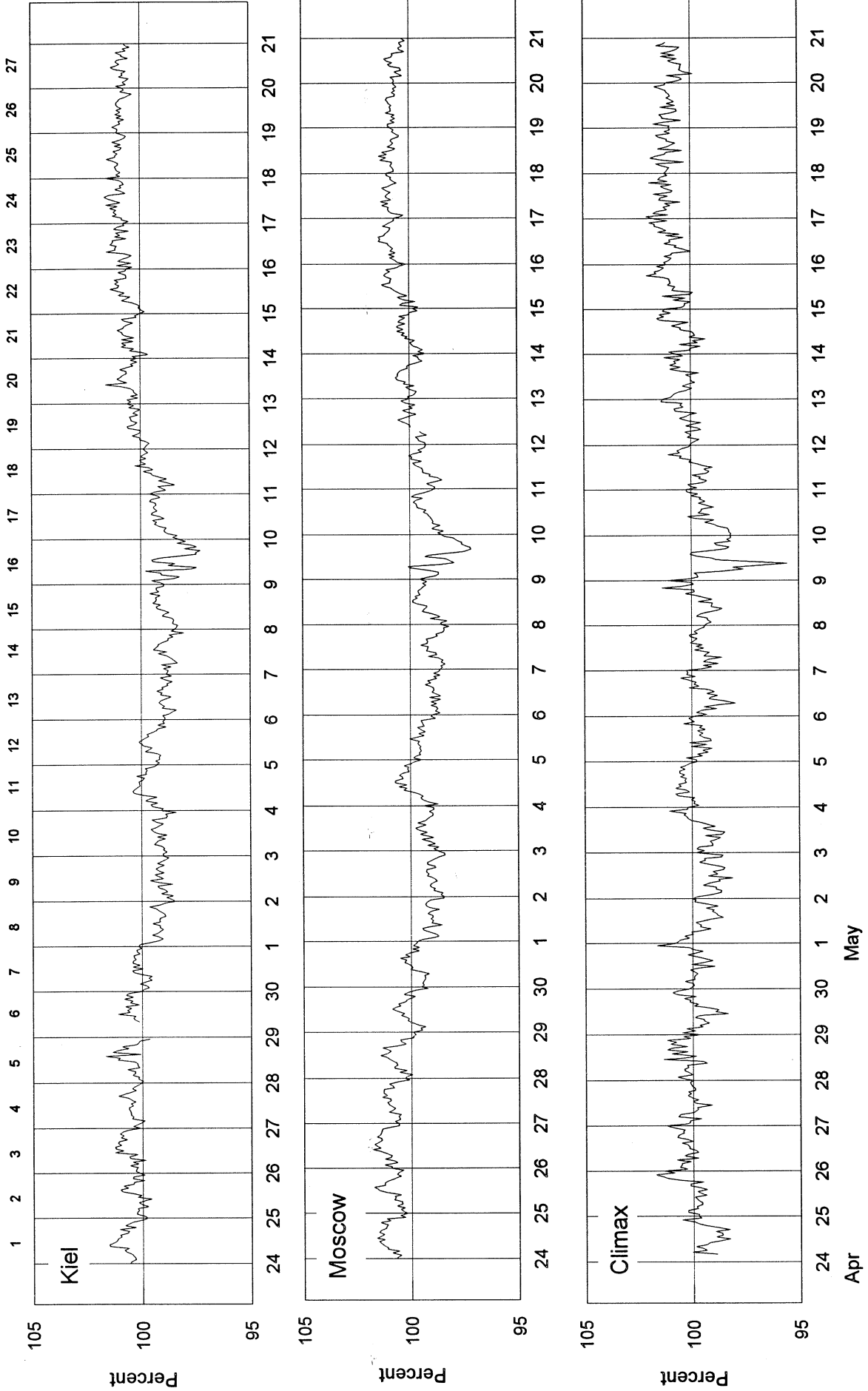
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2317 - Beginning 24 Apr 2003



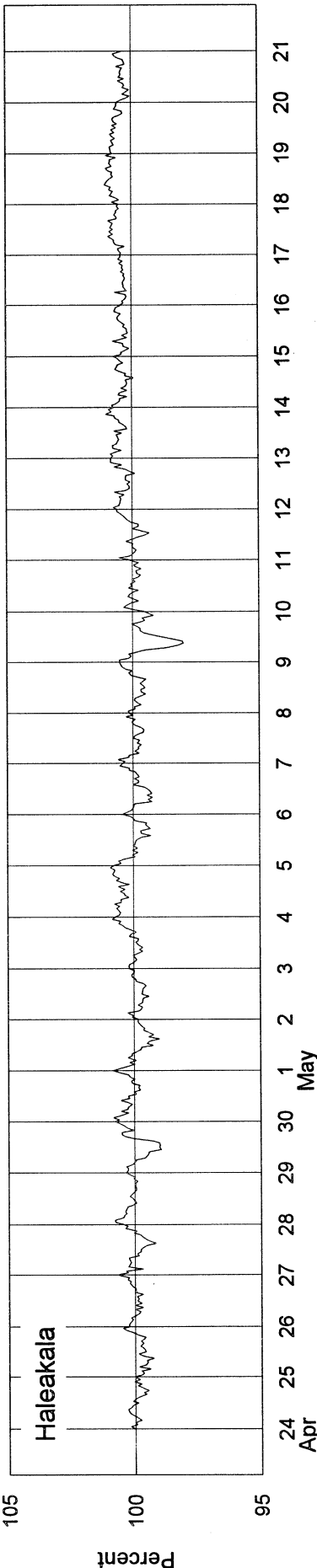
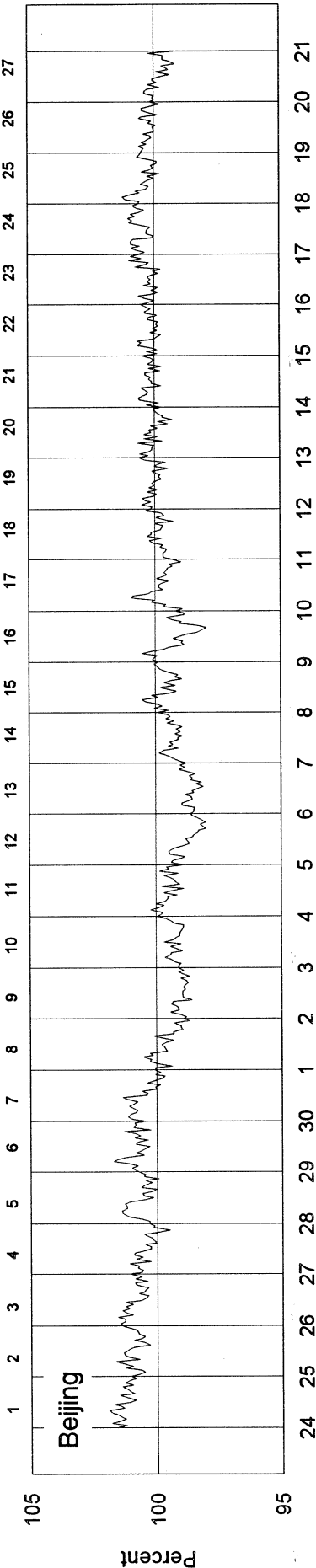
COSMIC RAY INDICES

(Neutron Monitor)

Bartels Rotation 2317 - Beginning 24 Apr 2003



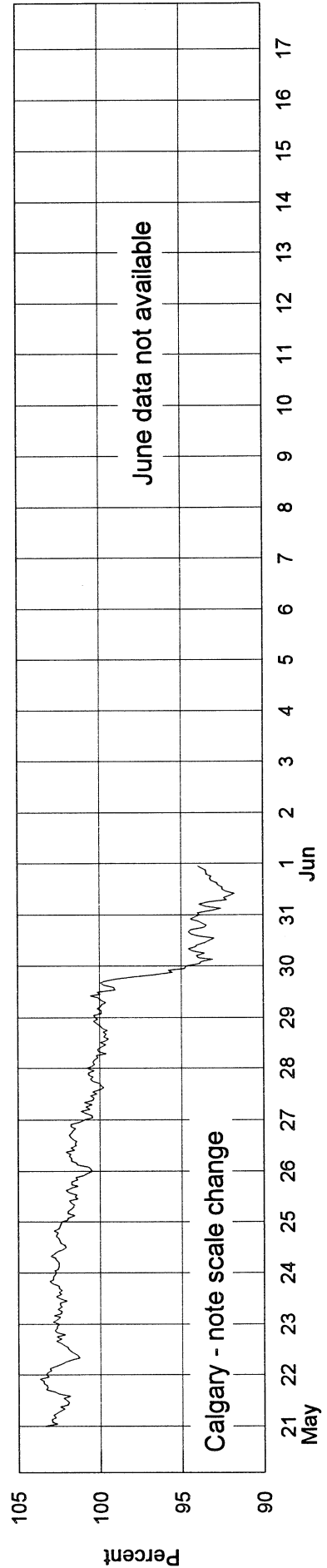
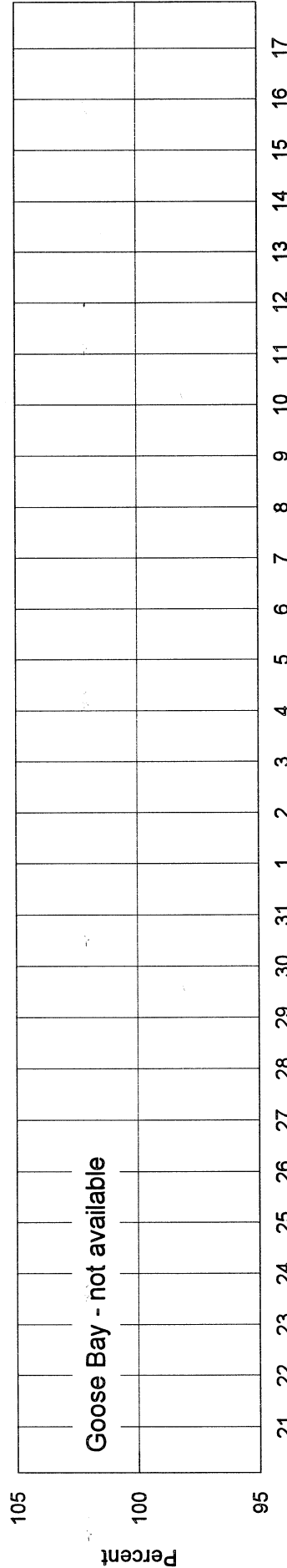
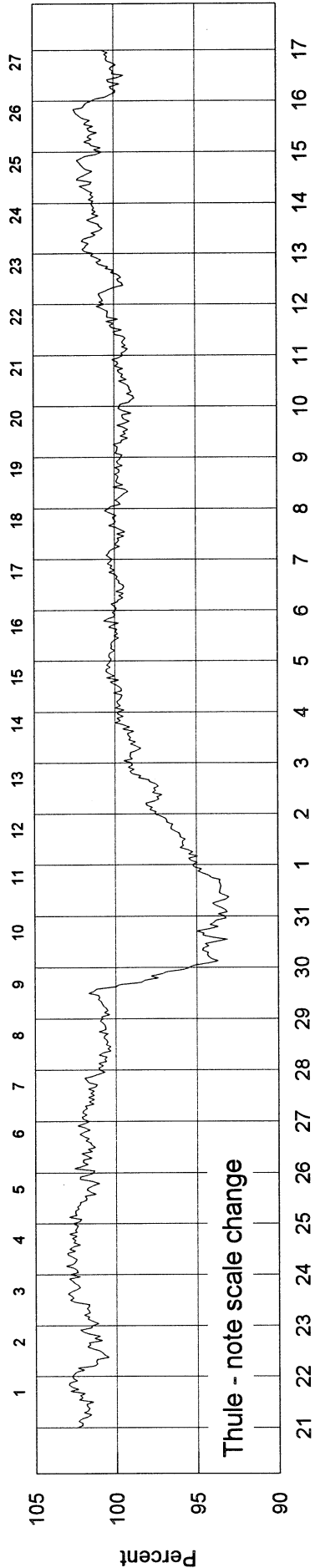
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2317 - Beginning 24 Apr 2003



COSMIC RAY INDICES

(Neutron Monitor)

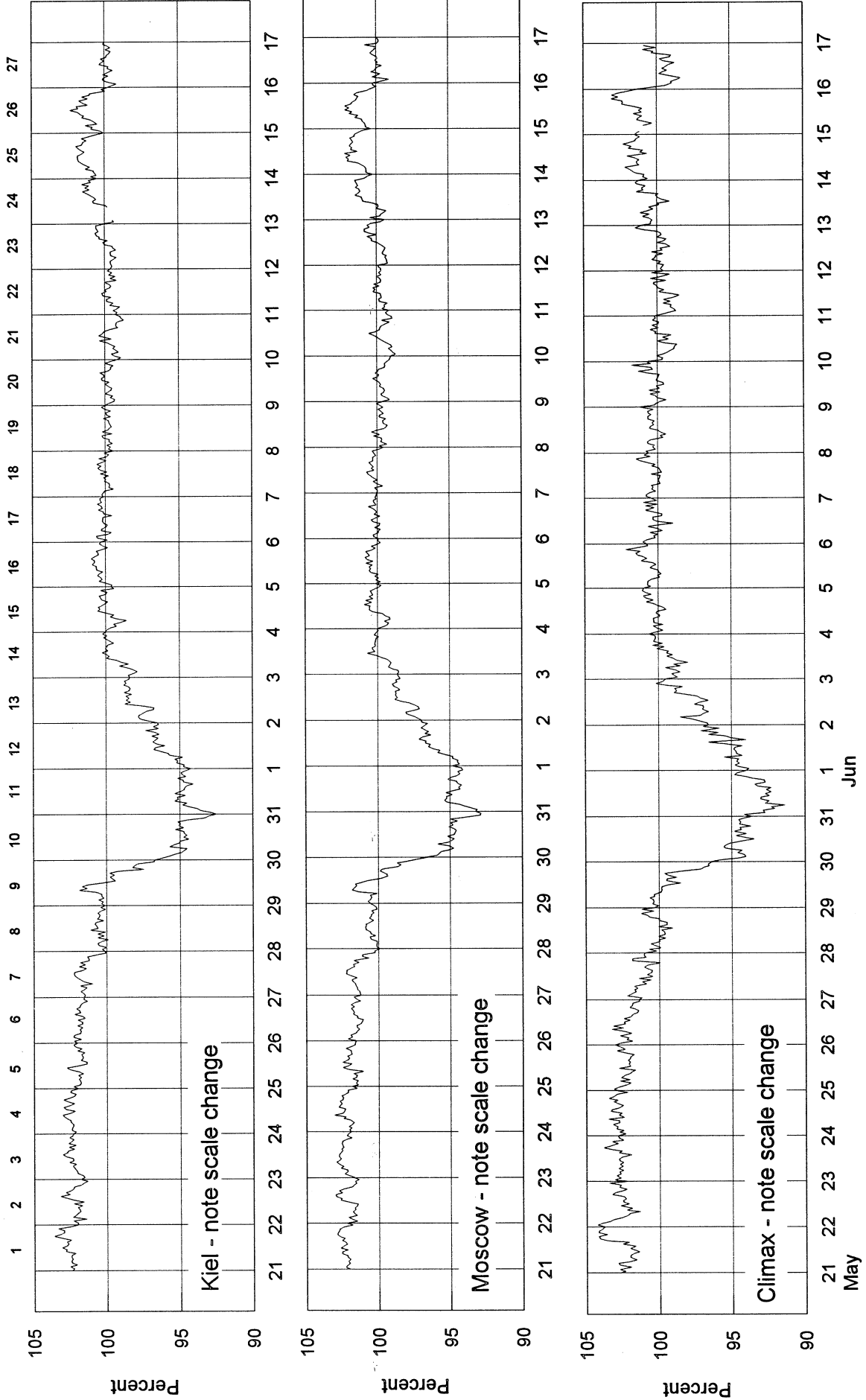
Bartels Rotation 2318 - Beginning 21 May 2003



COSMIC RAY INDICES

(Neutron Monitor)

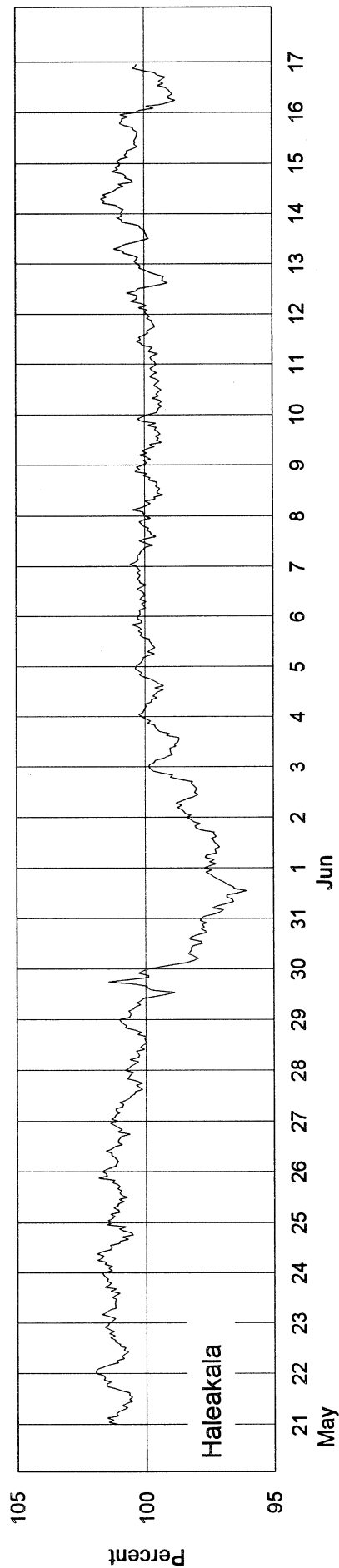
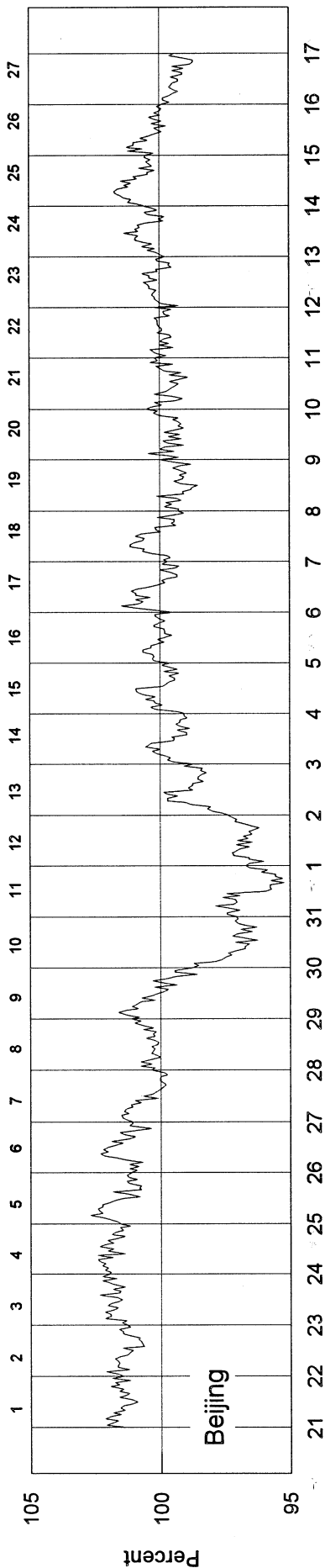
Bartels Rotation 2318 - Beginning 21 May 2003



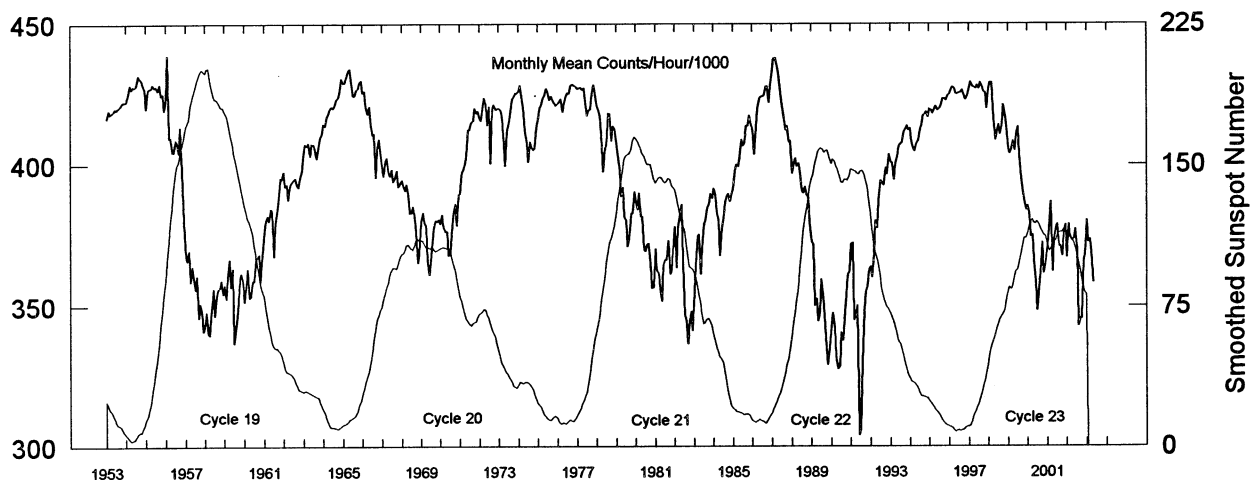
COSMIC RAY INDICES

(Neutron Monitor)

Bartels Rotation 2318 - Beginning 21 May 2003



Climax Neutron Monitor Pressure-Corrected Values Jan 1953 - May 2003



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1953	4165	4193	4182	4188	4190	4200	4197	4205	4208	4216	4225	4226	4200
1954	4225	4247	4285	4269	4280	4277	4284	4318	4308	4303	4286	4269	4279
1955	4200	4267	4272	4273	4287	4278	4279	4263	4286	4245	4252	4193	4258
1956	4234	4388	4097	4097	4049	4045	4088	4083	4044	4134	3980	3799	4087
1957	3677	3660	3695	3585	3640	3603	3557	3606	3458	3509	3484	3410	3574
1958	3435	3479	3400	3396	3490	3560	3467	3537	3561	3564	3589	3542	3502
1959	3573	3526	3606	3664	3567	3633	3367	3420	3484	3597	3615	3587	3553
1960	3516	3573	3631	3532	3534	3589	3587	3670	3670	3682	3586	3681	3604
1961	3761	3801	3819	3800	3843	3838	3675	3784	3834	3870	3955	3950	3828
1962	3977	3922	3931	3878	3927	3940	3950	3954	3924	3919	3963	3971	3938
1963	4049	4073	4065	4077	4033	4075	4072	4060	4024	4066	4094	4111	4067
1964	4144	4139	4168	4181	4198	4208	4202	4213	4232	4240	4254	4307	4207
1965	4294	4290	4314	4335	4340	4288	4247	4246	4267	4271	4294	4300	4291
1966	4258	4262	4211	4180	4207	4146	4108	4112	3956	4055	4091	4053	4137
1967	3991	3960	4014	4025	3974	3960	3985	3939	3955	3980	3922	3933	3970
1968	3946	3925	3909	3932	3895	3830	3830	3853	3817	3761	3652	3685	3836
1969	3801	3831	3798	3782	3656	3609	3652	3730	3781	3803	3798	3807	3754
1970	3792	3824	3781	3765	3765	3679	3684	3755	3832	3862	3786	3895	3785
1971	3898	3975	3981	4003	4032	4124	4124	4152	4156	4200	4184	4192	4085
1972	4162	4157	4209	4237	4215	4141	4207	4005	4198	4214	4198	4198	4178
1973	4200	4193	4173	4075	3997	4119	4150	4180	4235	4240	4255	4253	4173
1974	4261	4283	4237	4207	4121	4077	4009	4083	4061	4054	4058	4140	4133
1975	4155	4206	4210	4239	4244	4271	4262	4231	4243	4231	4218	4213	4227
1976	4216	4223	4236	4188	4218	4244	4254	4253	4283	4287	4285	4280	4247
1977	4268	4272	4274	4267	4272	4231	4175	4193	4197	4245	4284	4260	4245
1978	4213	4198	4173	4107	3976	4058	4068	4183	4180	4085	4139	4128	4126
1979	4071	4034	3983	3888	3920	3814	3806	3710	3745	3829	3829	3905	3878
1980	3873	3842	3900	3819	3817	3697	3692	3719	3723	3647	3564	3564	3738
1981	3703	3623	3616	3561	3518	3643	3663	3662	3732	3613	3624	3726	3640
1982	3780	3634	3778	3819	3860	3650	3463	3456	3364	3444	3482	3413	3595
1983	3550	3643	3744	3753	3613	3700	3789	3798	3845	3860	3897	3881	3756
1984	3915	3896	3830	3806	3677	3773	3813	3865	3891	3897	3871	3890	3844
1985	3919	3985	4002	3995	4026	4088	4066	4075	4139	4139	4174	4141	4062
1986	4128	4036	4098	4199	4232	4242	4243	4244	4277	4280	4221	4277	4206
1987	4331	4376	4378	4346	4323	4254	4216	4170	4123	4139	4080	4084	4235
1988	3970	3997	4024	3995	4005	3981	3906	3899	3923	3893	3886	3798	3940
1989	3731	3717	3500	3527	3446	3478	3594	3535	3467	3347	3291	3349	3499
1990	3432	3476	3424	3317	3275	3283	3406	3377	3450	3540	3608	3620	3434
1991	3719	3725	3451	3470	3501	3041	3062	3293	3482	3550	3570	3628	3458
1992	3639	3600	3684	3803	3776	3876	3945	3939	3928	3989	3966	4036	3848
1993	4011	4007	3947	4003	4028	4061	4075	4076	4113	4122	4138	4122	4059
1994	4130	4079	4058	4048	4076	4085	4117	4140	4173	4179	4187	4168	4120
1995	4198	4194	4180	4199	4208	4193	4198	4209	4235	4236	4228	4246	4210
1996	4249	4266	4276	4269	4252	4250	4254	4256	4264	4243	4231	4242	4254
1997	4273	4293	4278	4274	4268	4281	4268	4290	4278	4260	4255	4199	4268
1998	4270	4290	4291	4160	4087	4116	4142	4107	4141	4212	4175	4133	4177
1999	4056	4040	4057	4083	4050	4106	4133	4031	3953	3899	3870	3840	4010
2000	3855	3822	3748	3752	3656	3583	3485	3562	3617	3725	3615	3651	3673
2001	3713	3812	3869	3622	3734	3779	3791	3713	3713	3675	3761	3787	3747
2002	3670	3790	3745	3733	3739	3771	3702	3429	3456	3454	3659	3680	3652
2003	3804	3727	3736	3685	3580								3706

Multiply table entries by 100 to obtain hourly counting rate. Climax, Colorado: N39, W106, Alt=3400 m, Cutoff Rigidity=2.99GV (1980).

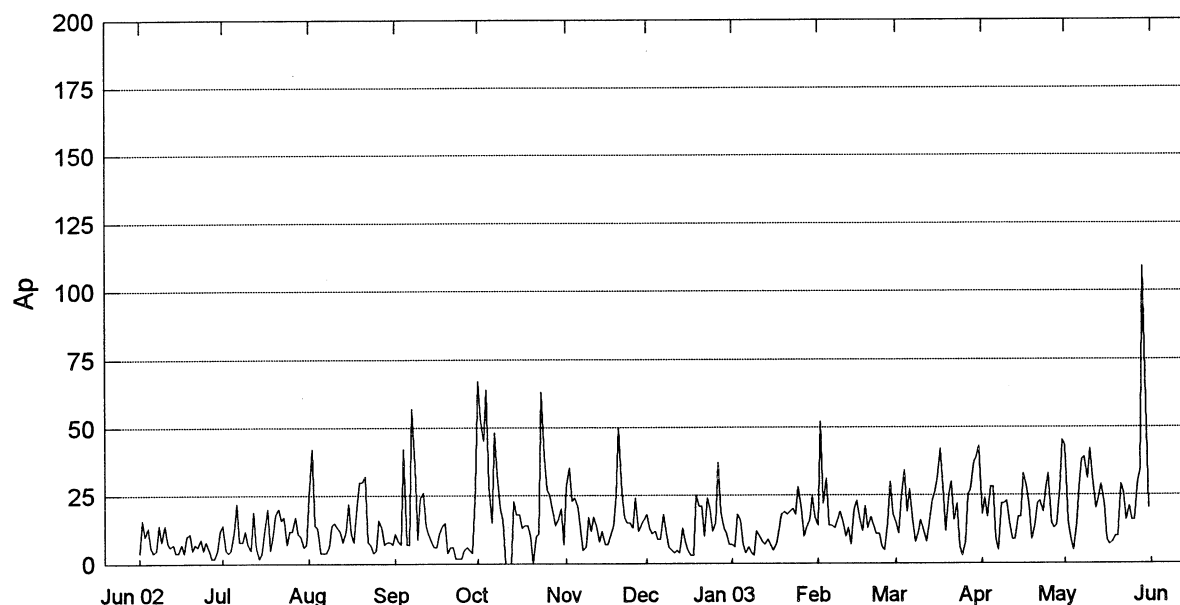
NOTE: Data may differ from previously reported values due to subsequent cleanup of data and slight changes in the averaging algorithm. See <http://astro.uchicago.edu/home/web/pyle/neutron.html> for latest changes. Sunspot numbers are preliminary after September, 2002..

Geomagnetic Activity Indices

May 2003

		Kp Three-Hourly Indices								Kn Three-Hourly Indices												aa Provisional				
Day		1	2	3	4	5	6	7	8	Sum	Ap	Cp	1	2	3	4	5	6	7	8	Am	N	S	M		
1	D3	7-	5+	5-	4+	5-	4	4-	3	36+	43	1.5	6o	5-	4o	4o	5-	3+	3o	3o	62	66	62	80	47	
2	Q10A	3	5	3-	3-	3	2	1+	2+	22	15	0.9	3o	4+	2+	3o	2+	2+	1+	3-	26	25	29	32	22	
3	Q5A	2	3	2	3	2+	2	1+	2+	18	9	0.5	2o	3-	2+	3o	2+	2o	1+	2+	19	21	24	28	17	
4	Q1	2	2	1+	1	2	1+	2-	1	12-	5	0.2	2+	1+	1+	2o	2-	1+	1+	1+	11	11	11	12	10	
5	Q8A	1+	2+	2-	2-	2+	4+	4	4-	21+	14	0.8	1+	2o	2o	2o	2+	3+	3+	3+	23	26	23	15	35	
6		3+	2+	3-	3+	5+	5-	5-	4+	31-	28	1.2	3+	3-	3-	3+	4+	4o	4o	4+	44	46	53	28	72	
7	D5	5	5	6-	5-	4+	4	4	3+	36	38	1.4	5-	4o	5-	4+	4-	4-	4-	3-	54	66	57	77	45	
8	D4	4+	5-	4	4+	5-	5	6-	4	37-	39	1.4	4o	4+	4o	4o	4-	4+	5-	4-	58	69	62	65	66	
9		4	4+	5	5-	5+	4-	2	3+	32+	31	1.3	4o	4o	5-	5-	4o	3o	2o	3o	50	50	61	70	41	
10		7-	6+	5+	3+	1+	3+	4-	3-	33-	42	1.5	6-	5o	5o	4o	2-	3-	3+	3o	60	53	44	73	24	
11		5-	2+	6-	5-	5	4-	3-	3	32-	31	1.3	5o	3o	5+	5-	4+	4-	3+	3+	62	706	56	389	374	
12		3+	4-	3+	3	3+	3+	4+	3	27+	20	1.0	3o	3+	4-	3o	3+	3o	4-	3o	36	42	39	34	48	
13		4	3-	3+	5-	4-	4-	4	4	30	24	1.2	3+	3-	3+	4o	4-	3o	3+	4o	40	43	39	37	45	
14		4+	4+	4	3-	4-	5	5-	3+	32	29	1.3	4o	4o	4o	3o	3+	4o	4-	3o	45	50	41	40	51	
15		3+	4-	4-	3	4+	4+	3+	3+	29	22	1.1	3o	4-	4-	3o	3+	3o	3-	4-	36	42	37	34	45	
16	Q4A	3+	2-	2-	1	2-	2-	2+	3	16+	9	0.5	3o	2+	2+	1+	2-	2-	2+	3-	18	19	12	15	16	
17	Q2A	3-	2+	2+	1+	2-	1	1+	1-	13+	7	0.3	2+	3o	3-	2o	2+	1+	1+	1-	16	15	15	17	13	
18	Q3A	1	1+	1	0+	1	3-	4-	3	14	8	0.5	2-	2-	1+	1+	1o	2+	3o	3o	16	23	12	7	28	
19	Q7A	3	2+	2	1+	2-	2+	3-	3+	19-	10	0.6	3o	2+	2o	2-	2o	2o	2+	3+	20	26	17	16	27	
20	Q6A	3	2-	2+	3-	3	1+	2-	3-	18+	10	0.6	3o	2+	3-	3-	3-	1+	2+	3-	21	21	21	21	21	
21		3	3+	2-	1+	3-	5-	5+	6	28	29	1.3	3+	3+	2+	2-	3-	4o	4+	5-	40	56	34	21	68	
22		5+	4+	4-	2+	4	4	4	2+	30	26	1.2	5-	4o	4-	3-	4-	3+	4-	2+	44	53	44	52	45	
23	Q9A	2+	4	3+	4-	2+	3+	2+	3-	24	16	0.9	2+	4-	3+	4-	3-	3+	2+	3-	30	29	32	34	28	
24		3-	4-	4	3-	3+	4-	4+	4-	28	21	1.1	3-	4-	4o	3o	3o	3o	4-	4-	38	43	44	38	49	
25		4+	4-	3+	2+	2-	3	3-	3+	24+	16	0.9	4-	4o	3-	3o	2-	3-	2o	3+	30	34	27	33	28	
26		4+	3-	4-	2+	2+	2+	3-	4	24+	16	0.9	4o	3-	4-	2+	2+	2-	2+	3+	29	41	21	35	27	
27		4	4-	3-	3+	4	3	6-	5	31+	30	1.3	4o	4-	3o	4-	3+	3-	5-	4+	48	52	51	37	66	
28		6-	4	5-	4+	4	4	4	4	35-	34	1.3	6-	4-	4o	4+	4-	4-	4-	4-	58	54	46	58	42	
29	D1	4	4-	4-	3	7	8-	8+	8+	46-	109	1.9	4o	3+	4-	3o	5+	5+	7o	8o	133	124	119	42	202	
30	D2	7+	5+	4	3	4-	6	5	6-	40	59	1.7	7o	4+	4-	3+	4-	5o	4o	4+	82	101	48	79	70	
31		5+	5+	2+	1	3-	2+	2-	1+	22	20	1.0	5o	5+	3+	1+	2+	2-	1+	1+	37	28	49	61	17	
Mean											26	1.05									41.5	65.6	39.8	52.7		
		Kn Three-Hourly Indices								Ks Three-Hourly Indices												Prov				
Day		1	2	3	4	5	6	7	8	An	1	2	3	4	5	6	7	8	As	Sa	Ri	Ra	Rs	IMF		
1		6-	5-	4o	4o	5-	3+	3o	3-	62	6o	5-	4o	4o	4+	3o	3-	3o	62	151.0	99	105	101			
2		2+	4o	2+	3-	2+	2o	1+	2+	23	3+	4+	3-	3o	2+	3-	1+	3o	30	145.3*	86	93	95			
3		2o	3-	2+	3o	2+	2o	2-	2+	18	2+	3-	2+	3+	2+	2o	1+	2+	19	150.1	95	94	100			
4		2o	1+	1+	2+	2-	2o	2-	2o	13	2+	1+	1o	2-	1+	1o	1-	1-	9	144.4	96	98	94			
5		1+	2+	2o	2+	3-	4-	4-	4-	28	1o	2o	2o	1+	2-	3o	3o	3o	18	131.1	93	94	80			
6		4-	3-	3-	4-	5-	4o	4-	4o	46	3+	3-	2+	3o	4o	4o	4o	5-	43	124.1	78	77	72			
7		4+	4+	5-	5-	4-	4-	4-	3o	57	5o	4-	4+	4+	4-	3+	3+	3-	52	112.2	65	55	59			
8		4o	4+	4o	4+	4o	4+	5-	4-	60	4o	4+	4-	4o	3+	4+	5-	4-	57	102.8	33	31	49			
9		4-	4o	5-	5o	4+	3+	2+	3o	53	4+	4o	4+	4+	4o	3-	2-	3o	47	98.9	20	21	45			
10		6-	5o	5o	4+	2o	3-	3+	3-	59	6-	5+	5+	4-	1+	2+	3+	3+	61	94.5	17	19	40			
11		5o	3+	6-	5o	5-	4+	4o	4o	75	5o	2+	5-	4+	4o	3o	2+	3-	49	93.4	36	30	39			
12		3o	3+	4-	3+	3+	3o	4-	3o	37	3-	3+	4-	3o	3+	3o	4-	3o	34	95.8	38	41	41			
13		3+	3-	3o	4o	4-	3+	4-	4-	41	3+	3-	3+	4o	3+	3-	3o	4+	39	98.1	41	43	44			
14		4o	4+	4o	3+	3+	4o	4-	3+	48	4o	4-	4o	3o	3+	4-	4-	3-	42	98.3	43	44	44			
15		3o	4-	4-	3o	3+	3+	3-	3-	34	3o	4-	3+	3+	4-	3o	3-	4+	38	101.4	50	47	48			
16		3-	2+	2+	2-	2o	2-	2+	2+	18	3+	2o	2+	1+	1+	1+	2+	3o	18	104.9	51	47	51			
17		2o	3-	3-	2o	2+	2-	2-	1+	16	3-	3o	3o	2o	2+	1o	1o	0o	16	104.7	48	39	51			
18		1+	2o	2-	1+	2-	3o	3o	3o	18	2o	1+	1-	1-	0+	1+	3o	3-	13	111.5	44	42	58			
19		3-	2+	2+	2-	2+	2+	2+	3+	20	3o	3-	2o	2-	2-	1+	2o	3+	19	117.4	54	58	65			
20		3-	2+	3-	3-	3o	2o	2+	3-	23	3o	2+	2+	3-	3-	1-	2o	3o	20	120.0	61	58	68			
21		3+	3+	2o	2o	3o	4+	4+	4+	41	3o	3o	2+	1+	2+	4o	4+	5-	38	122.2	50	55	70			
22		4+	4o	4-	3o	4-	3+	3+	2+	42	5+	4o	4-	3-	4-	3o	4-	2o	46	121.3	65	60	69			
23		2+	3+	3+	4-	3o	3o	3-	3-	31	2+	4-	3+	4-	2+	4-	2o	2+	29	120.9	57	51	69			
24		3-	4-	4-	3o	3o	3o	4-	3+	37	3-	4-	4o	3-	3o	3o	4-	4o	40	119.8	40	34	67			
25		4o	4-	3-	3o	2-	3-	2+	3+	31	4-	4o	3-	3-	1+	2+	2-	3+	29	124.3	39	42	72			
26		4-	3-	4-	3-	3-	2+	3o	4o	31	4+	2+	4-	2+	2-	1o	2-	3o	26	128.4	52	57	77			
27		4o	3+	3o	4-	4-	3+	4+	4+	47	4o	4-	3-	4-	3o	2+	5o	5-	48	132.3	57	58	81			
28		5o	4o	4o	5-	4-	4-	4-	3+	58	6-	3+	4-	4o	3+	3+	3+	4o	57	133.7	62	63	82			
29		4o	4-	3+	3o	5+	6-	8-	8-	142	4o	3+	4-	3o	5+	5o	7-	8o	124	141.6	56	60	91			
30		7o	5-	4o	4-	4+	5+	4+	5-	95	7-	4o	3o	3-	3o	4+	3+	4o	69	120.4	44	47	68			
31		5-	5o	3o	2o	3-	2o	1+	1+	35	6-	5+	4-	1-	2-	2-	1o	1o	40	116.3	42	42	64			
Mean											43.2									39.7	118.7	55.2	55.1	66.2		

Daily Average Indices Ap Jun 2002 - May 2003

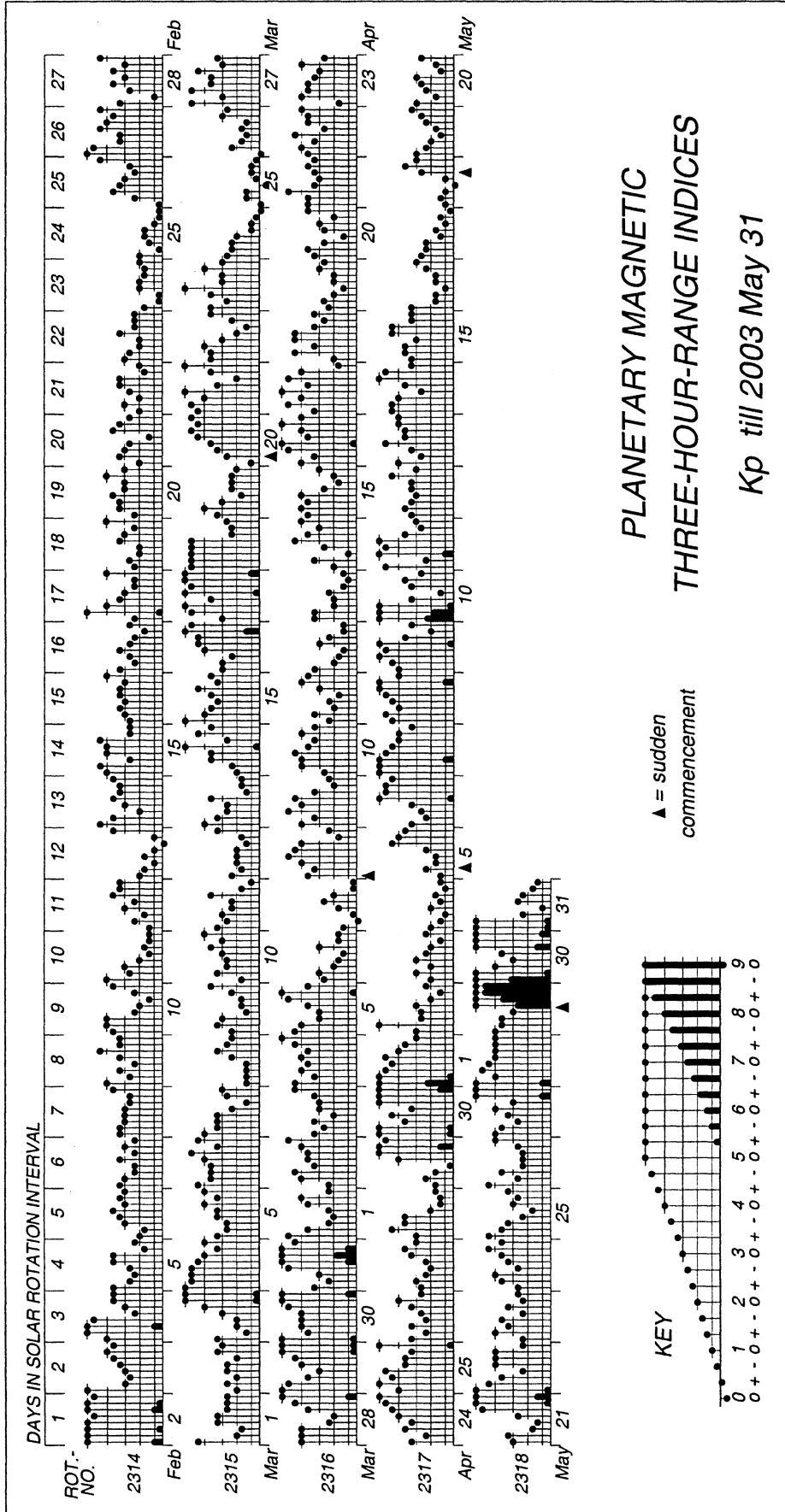


Day	Jun 02	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May
1	4	14	25	11	67	7	18	7	14	15	18	43
2	16	5	42	8	53	28	13	6	52	11	24	15
3	10	4	14	7	45	35	11	18	22	24	17	9
4	13	5	13	42	64	23	12	16	31	34	28	5
5	6	12	4	7	28	24	9	7	14	19	28	14
6	4	22	4	7	15	21	9	4	14	27	9	28
7	5	8	4	57	48	13	18	6	13	15	5	38
8	14	8	6	36	33	5	12	4	16	8	22	39
9	8	12	14	9	20	6	6	3	19	11	22	31
10	14	7	15	24	16	17	5	12	16	16	23	42
11	8	5	13	26	6	12	4	10	10	12	14	31
12	6	19	12	14	6	17	5	8	13	8	9	20
13	7	6	8	11	5	13	4	7	7	14	9	24
14	4	2	12	8	23	8	13	9	20	23	17	29
15	4	4	22	6	18	12	8	7	23	26	17	22
16	7	12	11	6	18	7	5	5	17	31	33	9
17	4	20	8	11	13	7	3	7	12	42	28	7
18	10	5	21	14	14	10	3	12	21	28	21	8
19	11	10	30	15	14	14	25	18	13	12	9	10
20	5	18	30	4	10	25	21	19	17	25	14	10
21	7	20	32	6	8	50	21	18	14	30	22	29
22	6	16	8	6	10	26	10	19	11	16	23	26
23	9	17	7	2	11	17	24	20	11	22	19	16
24	5	7	4	2	63	15	20	18	6	6	27	21
25	8	12	5	2	39	15	12	28	5	3	33	16
26	5	12	16	5	27	13	15	20	15	8	15	16
27	2	17	13	6	25	24	37	10	30	25	13	30
28	2	11	7	5	19	12	19	13	18	27	14	34
29	5	10	8	4	14	14	13	16		37	27	109
30	12	6	8	28	16	16	11	25		39	45	59
31		7	7		20		7	17		43		20
Mean	7	11	14	13	25	17	13	13	17	21	20	26

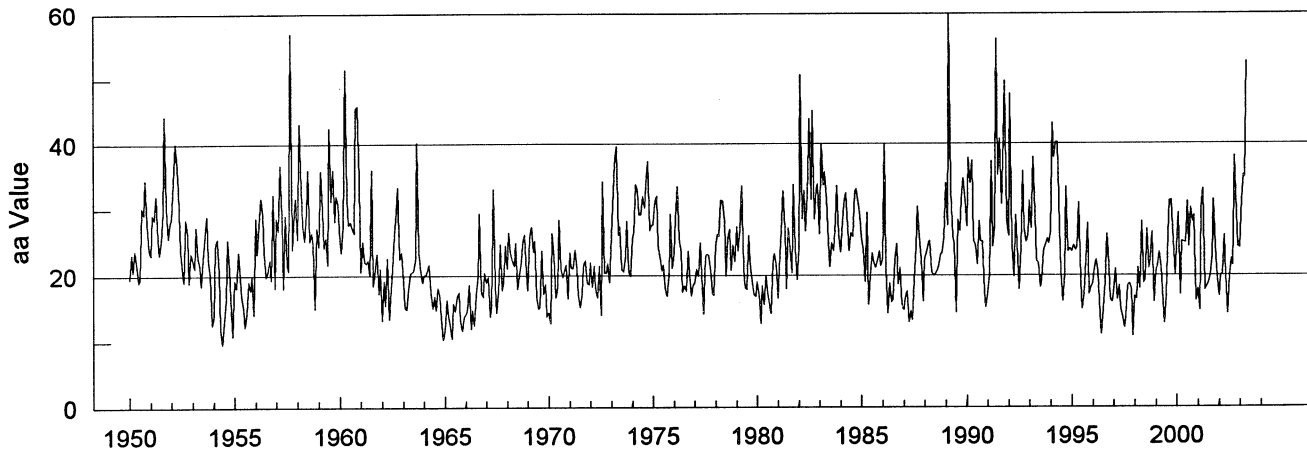
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentrum Potsdam

Kp through May 31, 2003



Monthly Mean aa Index Jan 1950 - May 2003



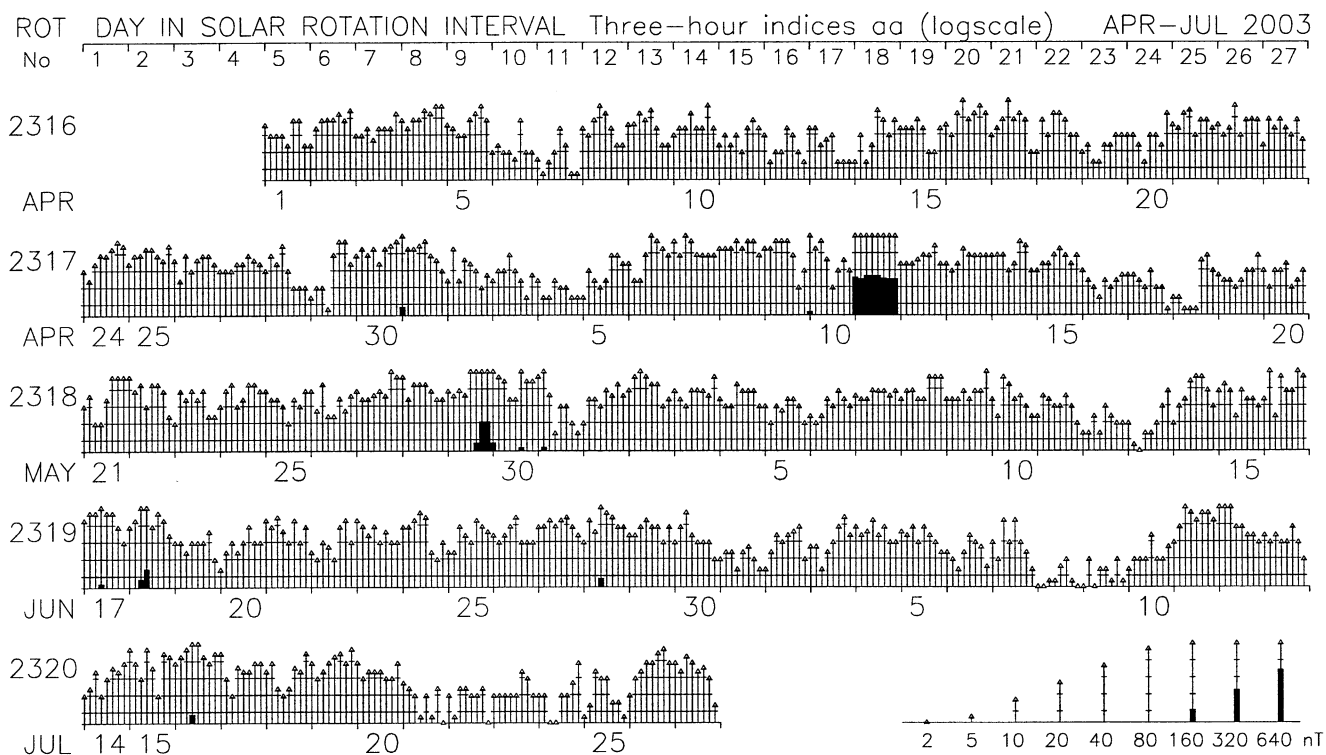
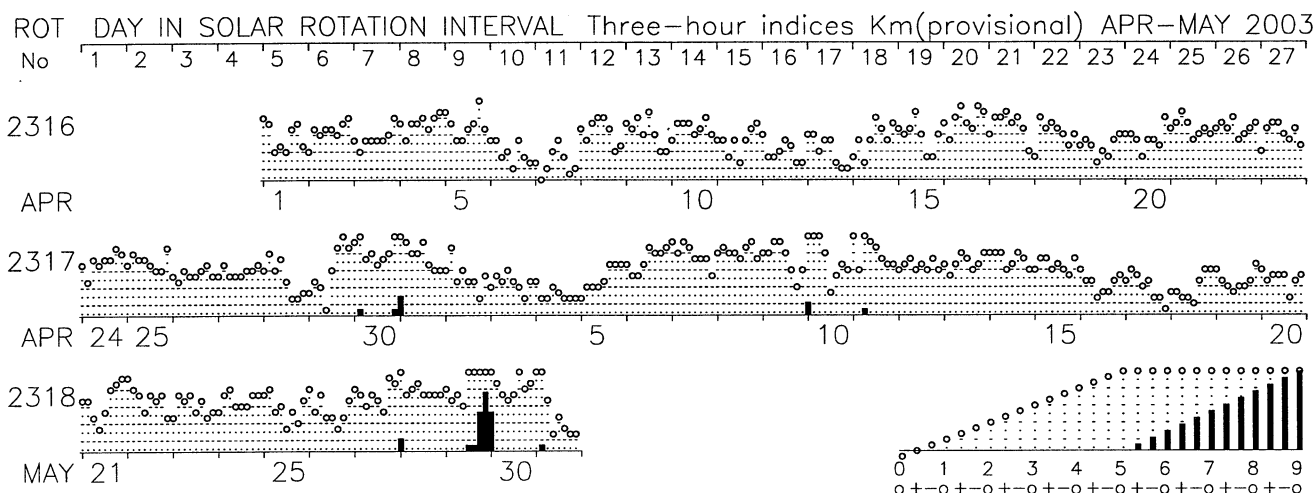
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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								35.7

PLANETARY GEOMAGNETIC ACTIVITY

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

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

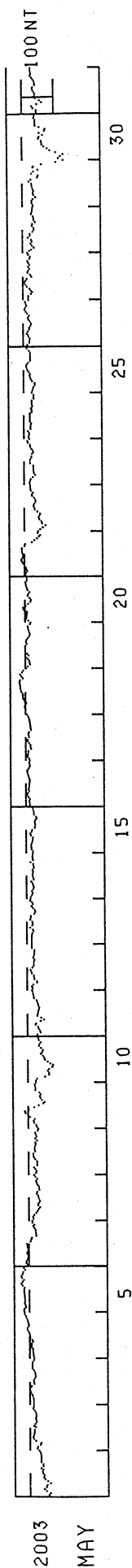
CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX – FRANCE



HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

MAY 2003

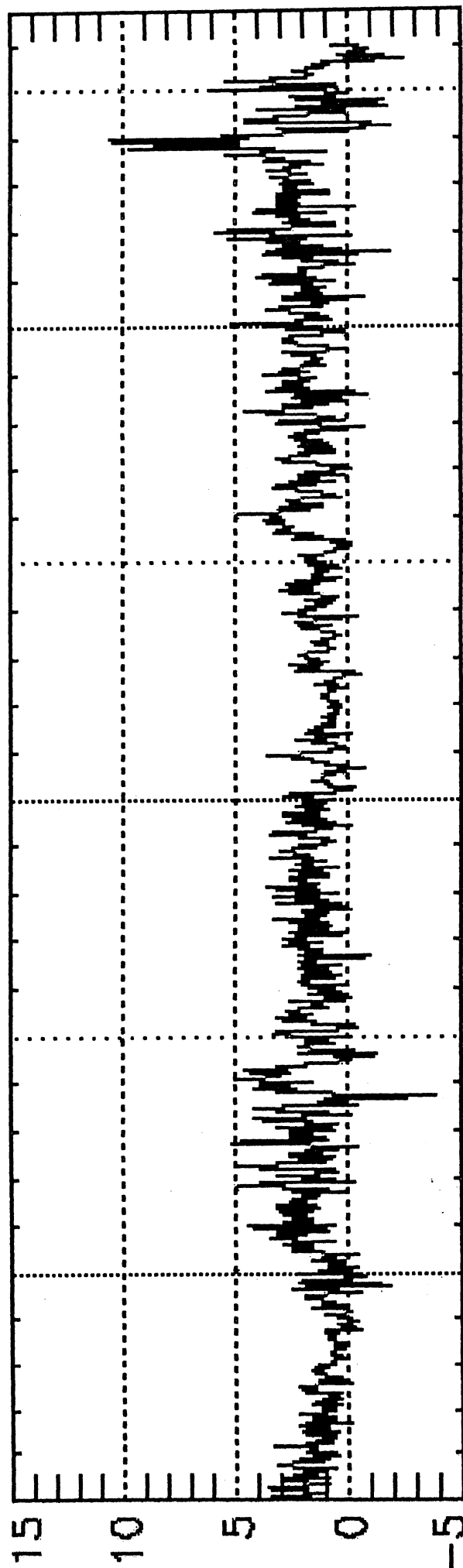
DAY	UNIT=NT		U. T.																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	-61	-64	-51	-46	-51	-53	-64	-56	-48	-43	-45	-41	-40	-42	-36	-42	-42	-36	-35	-35	-34	-34	-33	-29		
2	-23	-24	-32	-34	-18	-11	-9	-11	-13	-13	-14	-18	-12	-16	-20	-21	-18	-20	-21	-17	-14	-9	-33	-12		
3	-12	-11	-12	-9	-8	-4	-2	0	-4	-6	-13	-11	-11	-15	-17	-5	-16	-11	-8	-7	-8	-7	-11	-14		
4	-11	-12	-10	-9	-9	-5	-5	6	-9	-8	-2	-1	2	4	8	7	4	3	6	7	9	12	15			
5	17	16	11	13	15	13	14	16	15	16	19	17	16	23	26	22	17	24	27	22	21	14	19	12		
6	6	9	9	6	3	4	7	5	3	5	8	7	4	-6	-8	-22	-22	-21	-19	-16	-11	-15	-9	-9		
7	-13	-11	-15	-22	-26	-30	-35	-29	-31	-35	-32	-31	-28	-24	-27	-32	-33	-30	-26	-24	-23	-26	-20	-15		
8	-23	-24	-19	-16	-26	-27	-27	-21	-15	-13	-14	-20	-17	-18	-20	-22	-20	-26	-21	-25	-19	-28	-30	-30		
9	-27	-25	-17	-16	-19	-6	2	9	11	-2	-17	-32	-48	-51	-43	-40	-38	-39	-34	-23	-22	-22	-20	-24		
10	-24	-29	-53	-67	-66	-62	-67	-77	-80	-70	-62	-53	-52	-48	-42	-46	-48	-42	-34	-38	-41	-36	-32	-29		
11	-30	-41	-40	-36	-32	-25	-26	-41	-51	-44	-31	-32	-33	-35	-37	-35	-32	-31	-28	-19	-17	-18	-16	-14		
12	-15	-13	-17	-30	-30	-23	-21	-19	-14	-11	-9	-15	-21	-20	-20	-22	-17	-20	-23	-23	-22	-14	-13	-14		
13	-14	-14	-13	-13	-14	-16	-19	-18	-10	-16	-18	-16	-10	-11	-12	-22	-26	-24	-18	-14	-16	-16	-10	-11		
14	-12	-15	-17	-16	-19	-23	-20	-18	-14	-23	-20	-17	-17	-19	-17	-23	-23	-20	-11	-19	-17	-17	-18	-20		
15	-21	-16	-13	-14	-16	-18	-21	-19	-13	-11	-15	-18	-26	-29	-28	-26	-29	-33	-31	-25	-24	-22	-19	-11		
16	-12	-11	-10	-12	-8	-3	-6	-10	-8	-9	-9	-10	-12	-12	-9	-7	-6	-3	-3	-7	-12	-12	-10	-12		
17	-10	-5	-6	-7	-8	-15	-14	-14	-9	-5	-5	13	16	17	17	15	13	-13	-13	12	10	-8	-4	-4		
18	0	1	2	3	0	-1	3	8	9	9	9	9	16	17	17	17	20	17	10	13	17	11	7	-1		
19	-8	-13	-12	-12	-7	-2	-9	-5	0	0	2	1	-4	-1	-4	-8	-12	-13	-12	-9	-7	-8	-14	-16		
20	-10	-3	-4	-6	-6	-5	5	8	-1	-10	-16	-17	-14	-8	-10	-14	-8	-6	-4	-1	-1	-6	-6	-2		
21	-2	-3	-7	-6	-4	2	5	10	12	8	6	7	10	9	9	1	-1	-23	-31	-39	-45	-49	-41	-44		
22	-50	-58	-67	-57	-54	-48	-46	-48	-49	-42	-33	-30	-29	-31	-36	-36	-31	-25	-22	-26	-21	-18	-17	-17		
23	-15	-17	-19	-27	-34	-31	-28	-29	-28	-28	-17	-18	-18	-22	-23	-25	-29	-26	-23	-18	-17	-12	-10	-15		
24	-13	-15	-15	-12	-21	-20	-21	-22	-17	-17	-17	-17	-18	-24	-25	-22	-26	-24	-25	-25	-30	-31	-31	-25		
25	-27	-28	-30	-36	-34	-26	-23	-19	-18	-20	-16	-12	-10	-8	-9	-14	-19	-20	-20	-20	-16	-10	-10	-8		
26	-11	-17	-18	-20	-16	-13	-10	-14	-17	-18	-22	-24	-19	-15	-14	-17	-12	-8	-3	-6	-9	-7	-6	-15		
27	-15	-16	-24	-29	-24	-20	-11	-7	-4	-7	-12	-26	-22	-14	-16	-19	-16	-19	-16	-13	-19	-23	-15	-13		
28	-19	-26	-35	-29	-25	-28	-26	-16	-22	-23	-31	-35	-36	-28	-31	-40	-36	-35	-33	-26	-29	-31	-31	-31		
29	-32	-28	-29	-33	-42	-36	-33	-35	-33	-30	-29	-29	-19	-26	-47	-50	-28	-36	-49	-32	-34	-61	-108	-130		
30	-116	-122	-131	-107	-88	-80	-69	-63	-62	-61	-52	-53	-64	-54	-71	-73	-54	-41	-42	-41	-42	-38	-39	-48		
31	-46	-45	-34	-31	-48	-62	-55	-44	-39	-41	-39	-36	-33	-36	-41	-42	-39	-34	-30	-27	-28	-27	-27	-27		



WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Qaanaq (Thule), THL

2003-05-01



5-01 5-06 5-11 5-16 5-21 5-26 5-31

Date, mm-dd

Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

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

MAY 2003

Sta	Geomag Lat	Commencement		Type	SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End	
		Day	Time (UT)		D (Min)	H (Gamma)	Z (Gamma)		D K (Min)	H (Gamma)	Z (Gamma)	Day	Hour (UT)
UJJ	13.6N	05	0500	..	..	..	..		-	6	86	33	08 21
NGP	11.3N	05	0500	..	..	..	..		-	7	116	43	08 21
ABG	09.4N	05	0500	..	..	..	..	01(1) 06(6,7) 08(4,6,7)	5	7	100	45	08 21
HYB	07.6N	05	0400	..				06(7) 08(6,7)	5	7	124	33	08 23
PND	02.0N	05	0500	..	..	..	..		-	6	136	81	08 21
TIR	00.7S	05	0500	..	..	..	..		-	6	205	80	08 21
GNA	43.0S	05	1200	..	..	..	..	06(5,6,7) 07(3,4,5) 08(4,6,7) 09(5) 10(1,3) 11(4,5)	5	19	142	121	12 03
CAN	43.6S	06	0600	..	..	..	..	06(5,6) 07(3,4) 08(4) 09(3,4)	5	20	132	46	09 18
KRC	16.4N	09	0724	SC	38	77	..	09(3)	7	8	218	--	10 04
UJJ	13.6N	09	0518	SC*	--	25	- 6		-	4	161	32	10 19
NGP	11.3N	09	0518	SC*	0.3	25	- 3		-	5	204	23	10 19
ABG	09.4N	09	0518	SC*	- 0.1	11	- 2	09(4)	6	5	191	50	10 19
HYB	07.6N	09	0520	SC	- 0.1	18	- 2	09(3)	6	5	203	20	11 03
PND	02.0N	09	0518	SC*	- 0.1	13	13		-	5	192	101	10 19
TIR	00.7S	09	0518	SC*	- 0.5	30	33		-	5	221	130	10 19
CAN	43.6S	10	1500	..	..	..	..	10(3) 11(3,4,5)	5	14	88	38	11 21
UJJ	13.6N	11	0600	..	..	..	..		-	6	94	29	15 18
NGP	11.3N	11	0600	..	..	..	..		-	6	111	39	15 18
ABG	09.4N	11	0600	..	..	..	..	11(3,4) 14(2,6)	6	7	105	51	15 18
HYB	07.6N	11	0500	..	..	..	..	11(3) 14(6)	5	6	111	31	15 24
PND	02.0N	11	0600	..	..	..	..		-	5	128	90	15 18
TIR	00.7S	11	0600	..	..	..	..		-	5	183	108	15 18
UJJ	13.6N	21	0700	..	..	..	..		-	6	92	32	22 21
NGP	11.3N	21	0700	..	..	..	..		-	6	131	29	22 21
ABG	09.4N	21	0700	..	..	..	..	21(6) 22(1)	6	6	117	82	22 21
HYB	07.6N	21	0500	..	..	..	..	21(6)	5	6	124	32	25 19
PND	02.0N	21	0700	..	..	..	..		-	6	131	62	22 21
TIR	00.7S	21	0700	..	..	..	..		-	7	173	69	22 21
HYB	07.6N	26	1200	..	..	..	..	27(4,7) 28(1,5)	4	8	130	30	28 22
UJJ	13.6N	27	0600	..	..	..	..		-	-	--	--	28 20
NGP	11.3N	27	0600	..	..	..	..		-	8	121	38	28 20
ABG	09.4N	27	0600	..	..	..	..	27(4) 28(1,4)	6	8	119	61	28 20
PND	02.0N	27	0600	..	..	..	..		-	7	125	67	28 20
TIR	00.7S	27	0600	..	..	..	..		-	6	177	79	28 20
GNA	43.0S	27	1000	..	..	..	..	06(6,7,8)	6	39	186	215	31 09
CAN	43.6S	27	1500	..	..	..	..	29(7,8)	7	40	321	89	31 18
KRC	16.4N	29	1220	SC	23	48	18	29(7)	7	15	220	47	31 06
UJJ	13.6N	29	1224	SC	--	--	--		-	-	--	--	31 18
NGP	11.3N	29	1224	SC	--	29	- 4		-	11	182	37	31 18
ABG	09.4N	29	1224	SC	- 0.3	13	- 4	29(7,8) 30(6)	6	11	169	64	31 18
HYB	07.6N	29	1243	SC	- 0.5	18	- 2	29(5,7,8) 30(6)	6	10	180	34	31 10
PND	02.0N	29	1224	SC	- 0.1	18	15		-	-	171	109	31 18
TIR	00.7S	29	1224	SC	- 0.3	15	19		-	8	253	129	31 18

Stations:

ABG = ALIBAG
AMS = MARTIN DE VIVIES
ANN = ANNAMALAINAGAR
BJI = BEIJING
CAN = CANNBERRA
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)

May 2003

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
05	0504	C: BDV GCK SPT* GUI	04	1150-1212	GUI
			18	1625-1649	GUI
29	1224	A: NUR NAG MMB* EBR* COI SPT KAK HTY KNY GUI*	27	2300-2330	MMB+ KAK+ KNY+
		B: SOD* NGK* VAL BDV* HRB GCK*			

REPORTING OBSERVATORIES (up to the 1st of July 2003):

SOD NUR NGK VAL BDV CLF HRB NAG GCK MMB EBR COI SPT KAK HTY KNY GUI HYB GNA CNB

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

Note that we have included data of the Antarctic Station LIVINGSTONE (62° 39' 44" S, 60°23' 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.