



Solar-Geophysical Data prompt reports

Data for April and May 2003

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

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NATIONAL ENVIRONMENTAL SATELLITE,
DATA, AND INFORMATION SERVICE

NATIONAL GEOPHYSICAL
DATA CENTER

BOULDER,
COLORADO



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JUNE 2003 NUMBER 706 - Part I

Solar-Geophysical Data prompt reports

Data for April and May 2003

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NATIONAL GEOPHYSICAL DATA CENTER

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SOLAR-GEOPHYSICAL DATA

Number 706

(Issued in Two Parts)

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-- MONTHLY PLOTS	

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A.2c	American Sunspot Numbers	699A 27	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25
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A.6c	Stanford Solar Mag Field Synoptic Maps	700A 44	701A 42	702A 44	703A 38	704A 42	705A 40	706A 40	
A.6d	Kitt Peak Solar Mag Field Synoptic Map					704A 46	705A 42	706A 45	
A.6f	Active Prominences and Filaments	704B 48	705B 40	706B 23					
A.6g	Sac Peak Coronal Line Synoptic Maps	700A 46	701A 44	702A 46	703A 40	704A 46	-----	706A 42	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	700A 50	701A 48	702A 50	703A 44	704A 52	705A 43	706A 46	
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A.8g	Adjusted Daily Solar Fluxes (Sagamore)	699A 27	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25	706A 25
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The entry "700A 50" under Oct 02, for example, means that the sunspot drawings for Oct 02 appear in SOLAR-GEOPHYSICAL DATA No. 700, Part I, and that they begin on page 50. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

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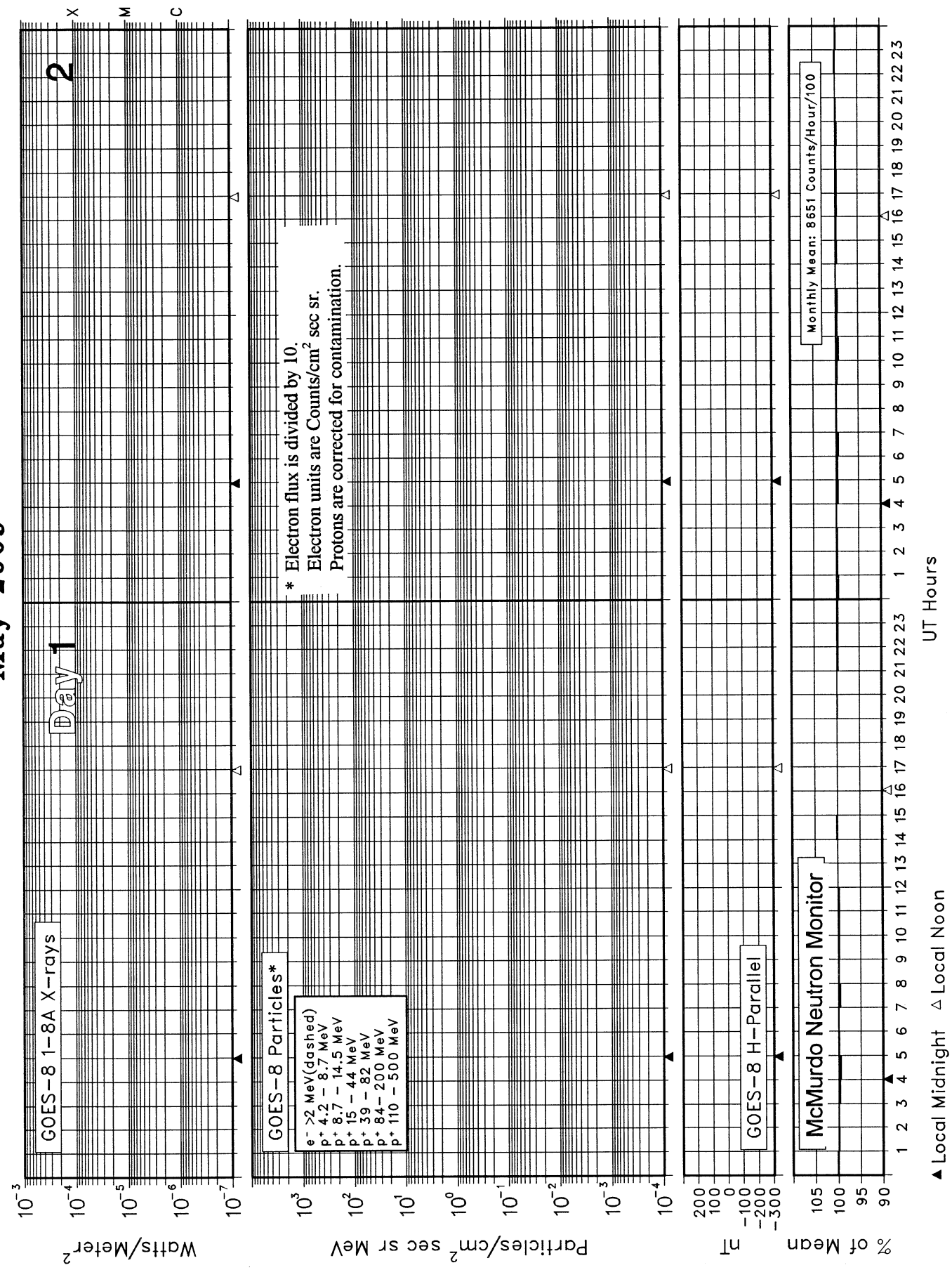
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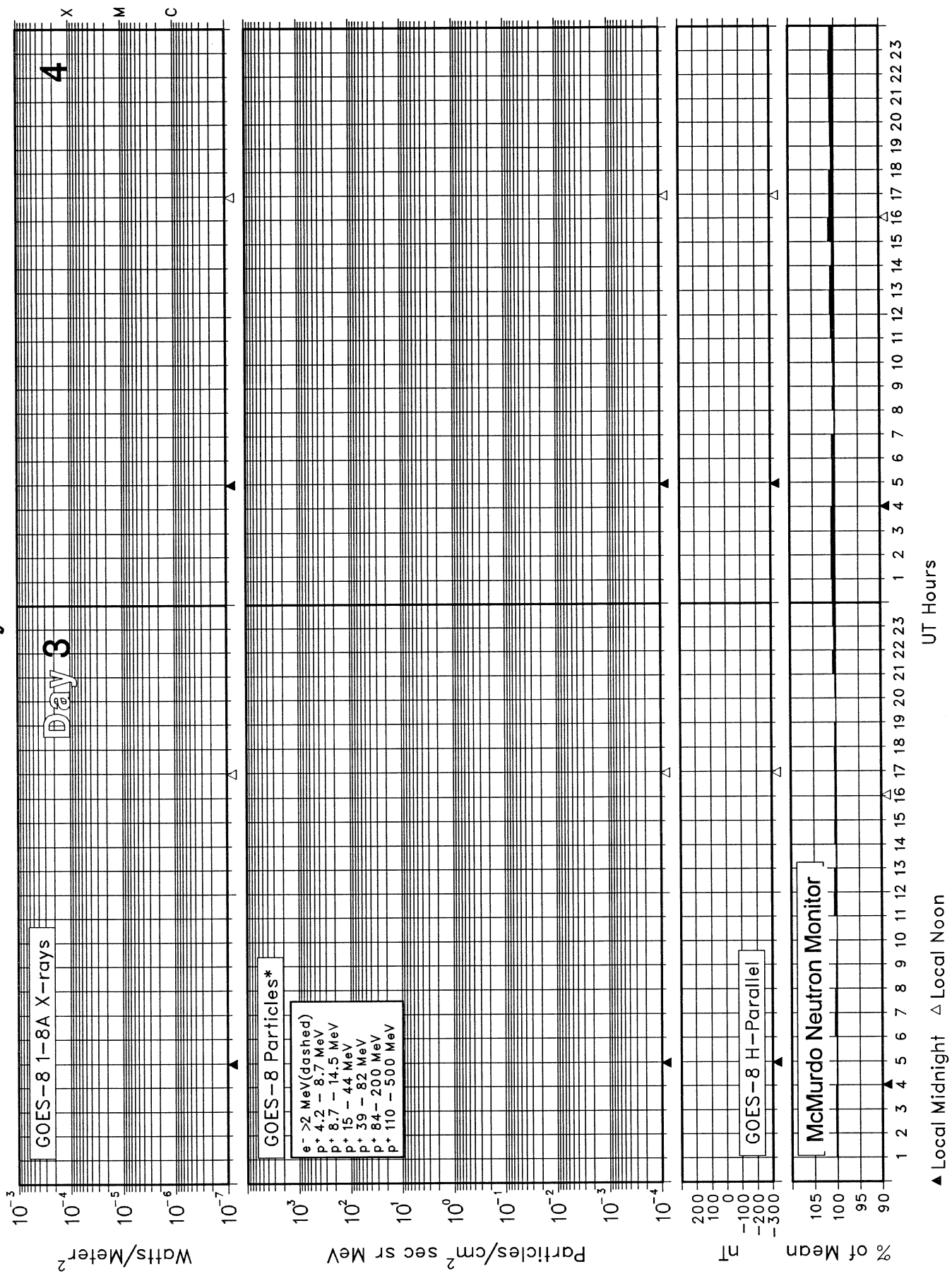
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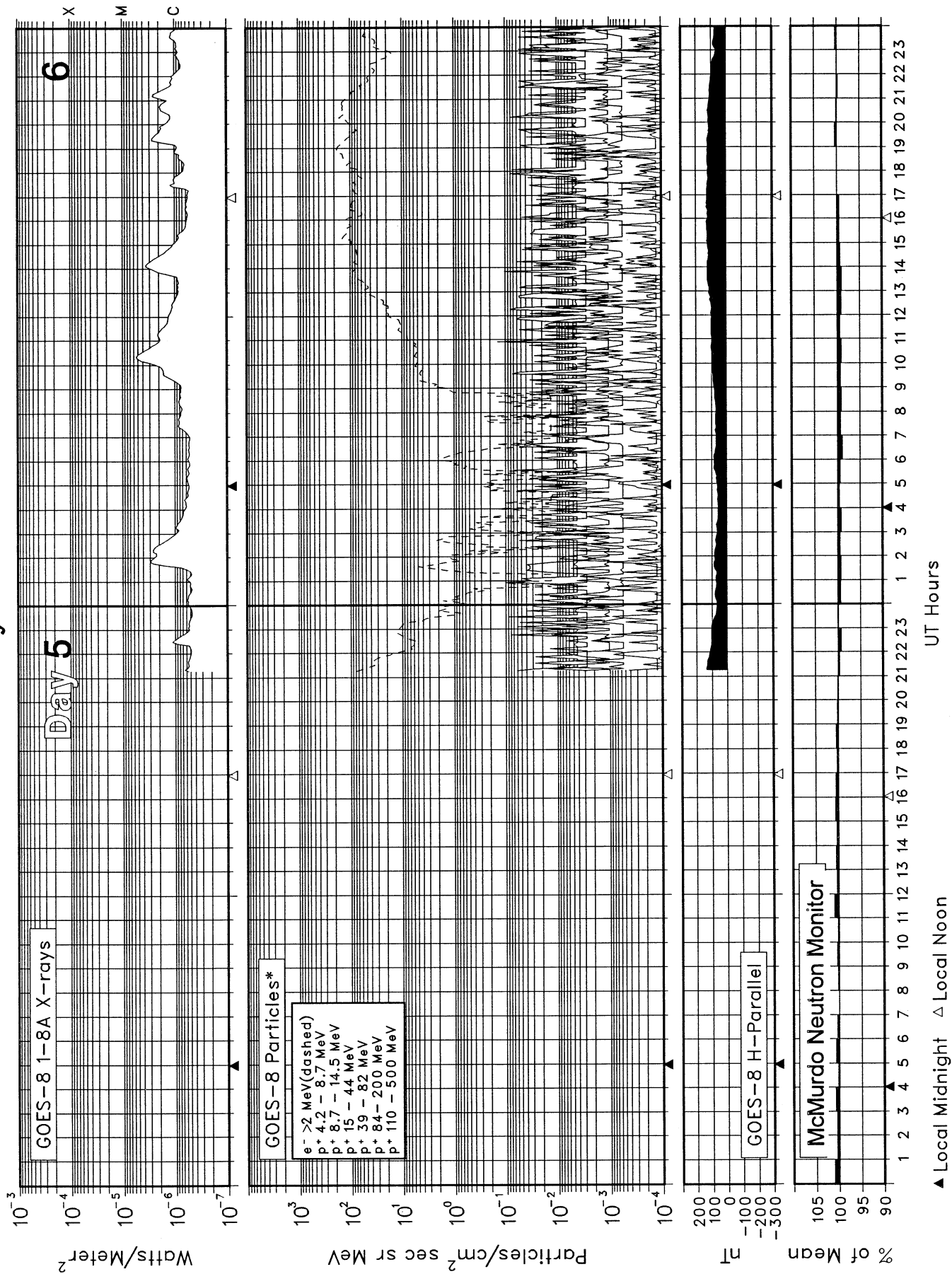


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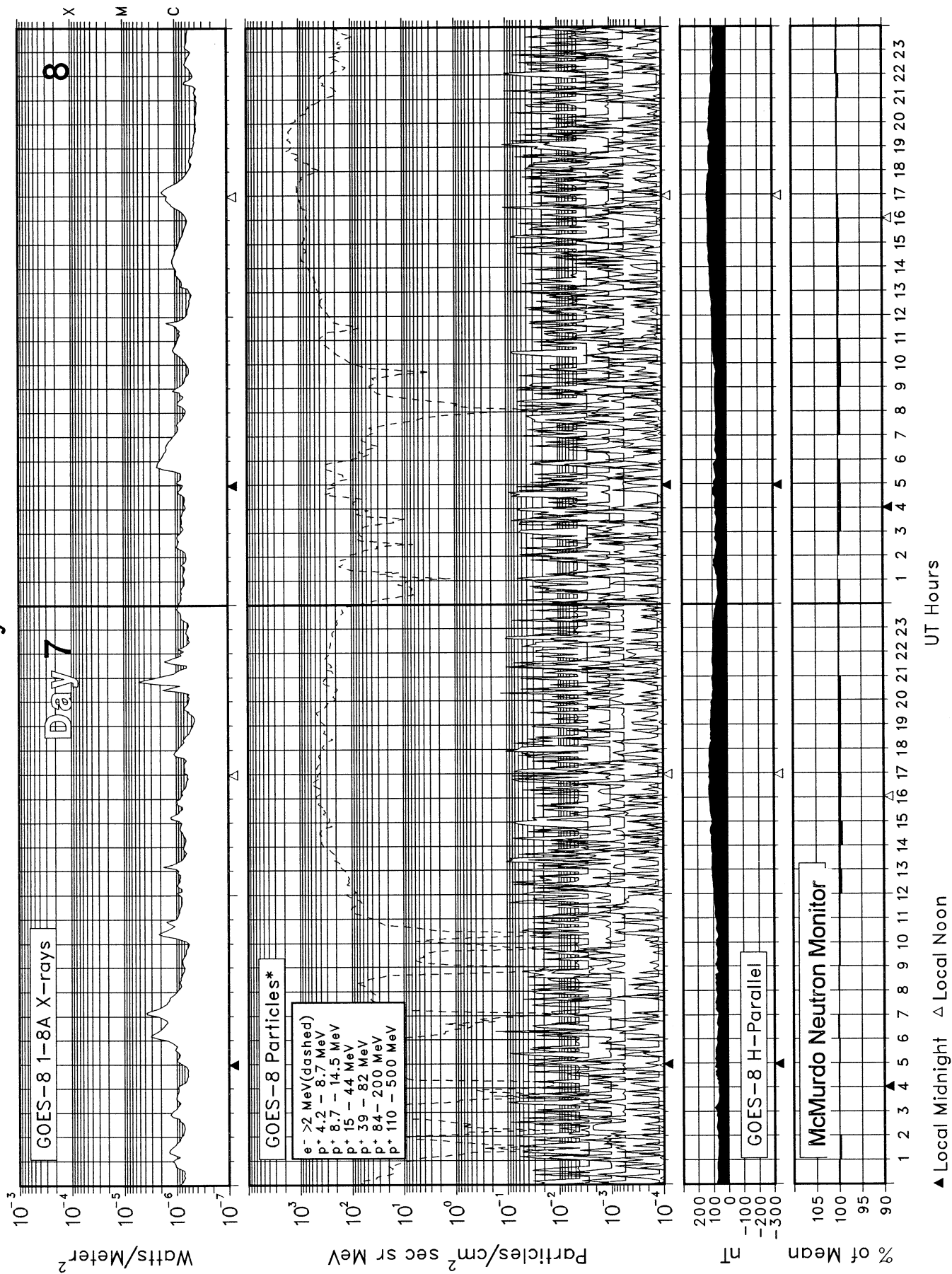


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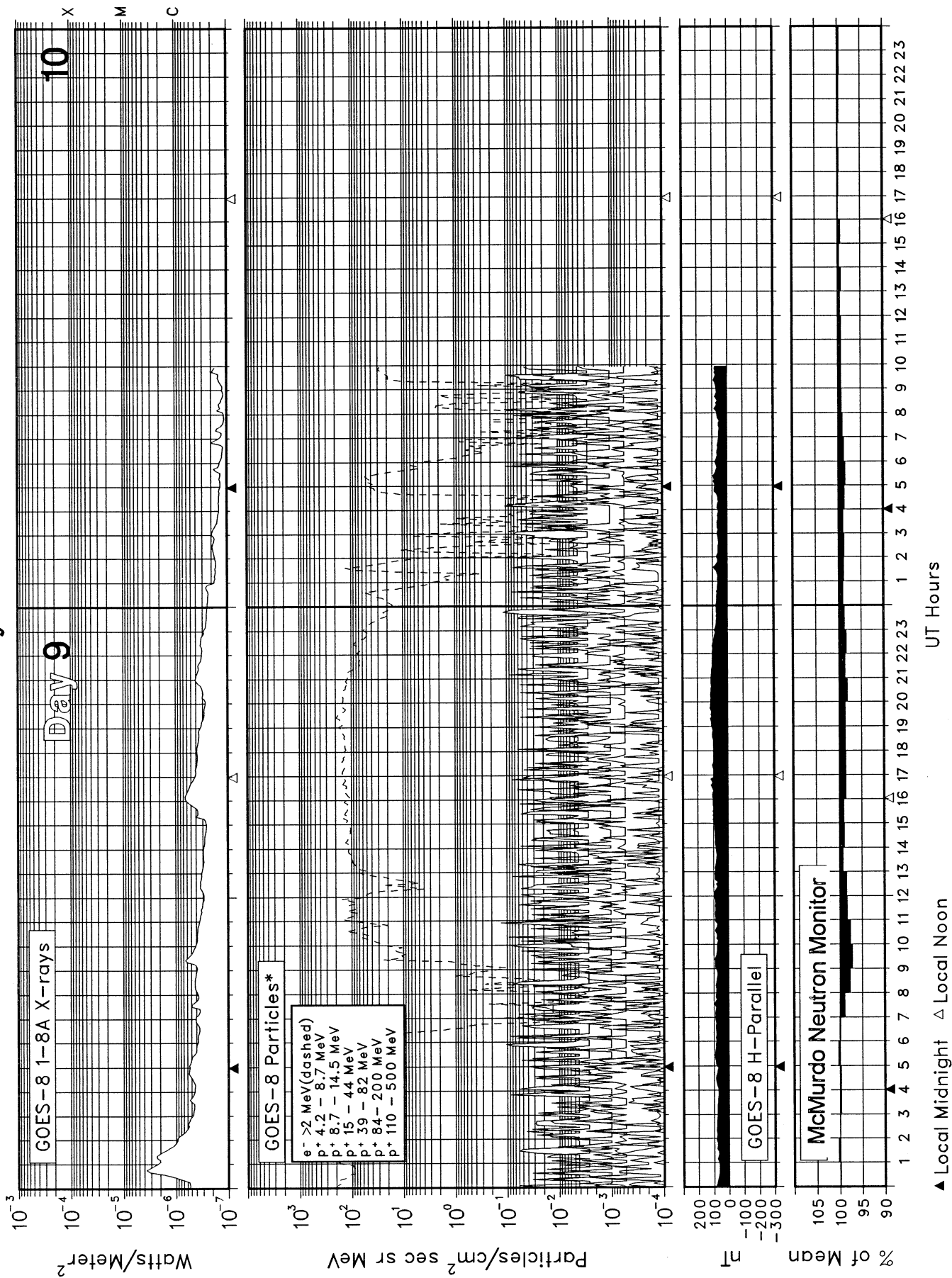
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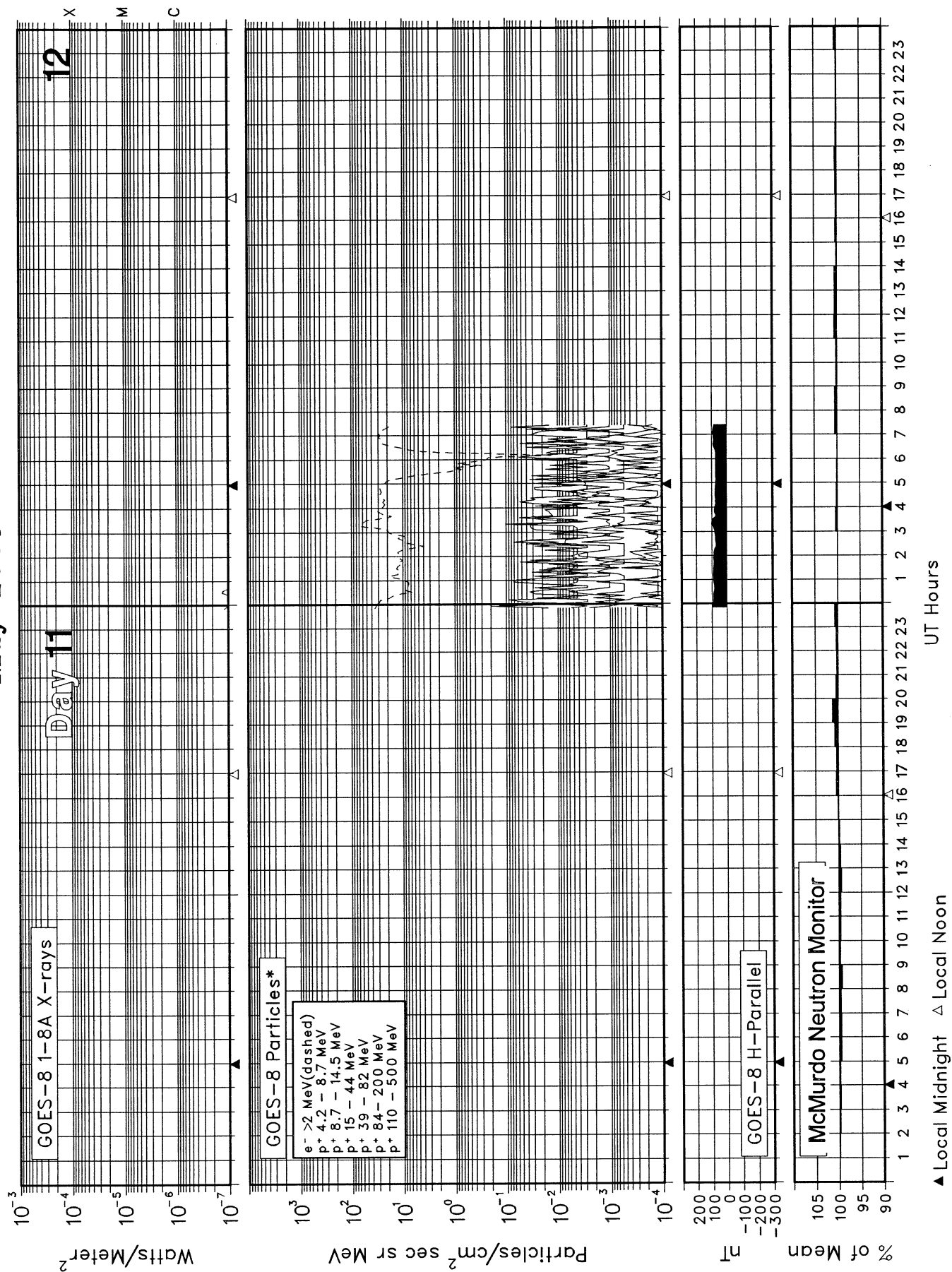
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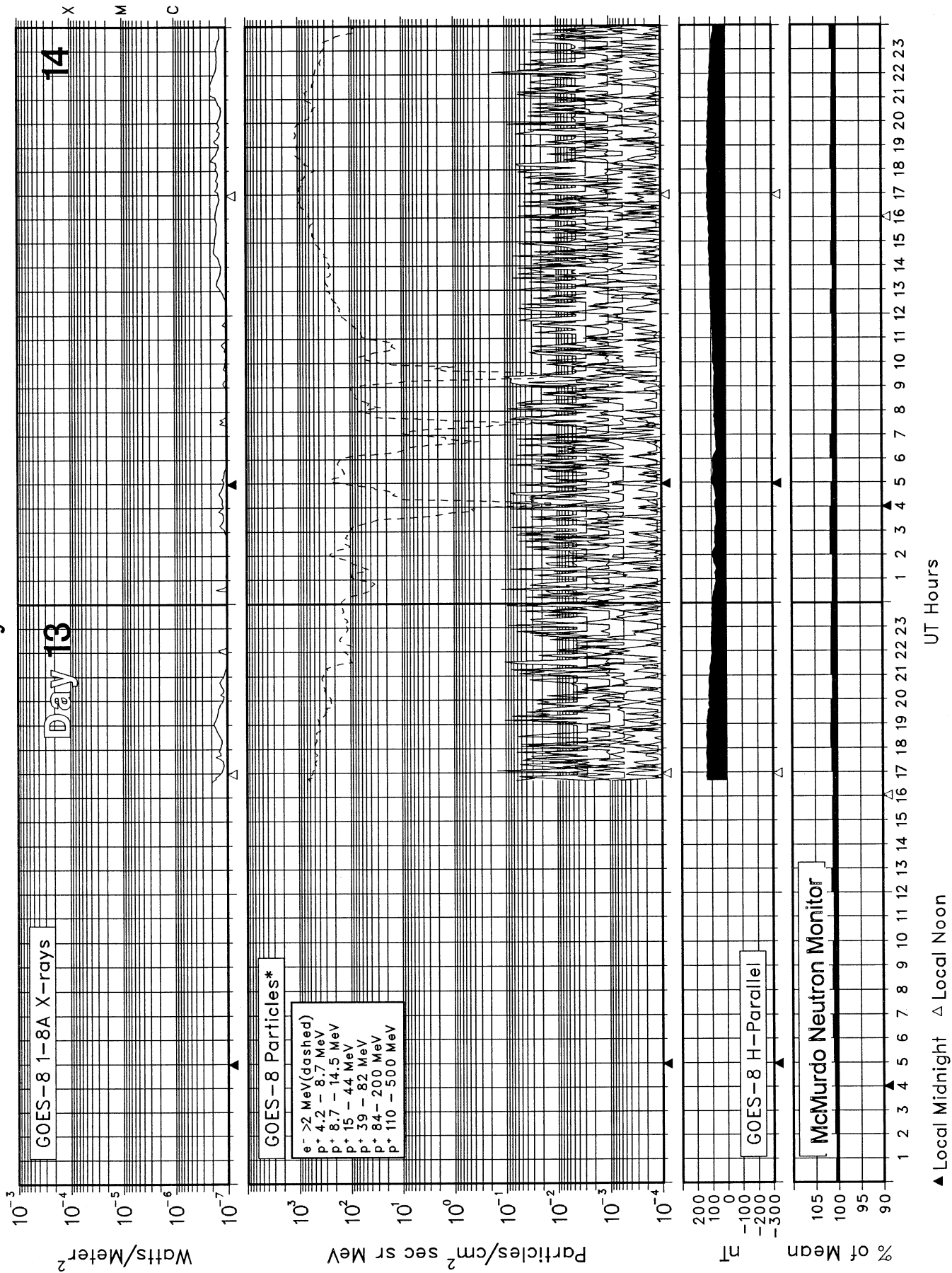


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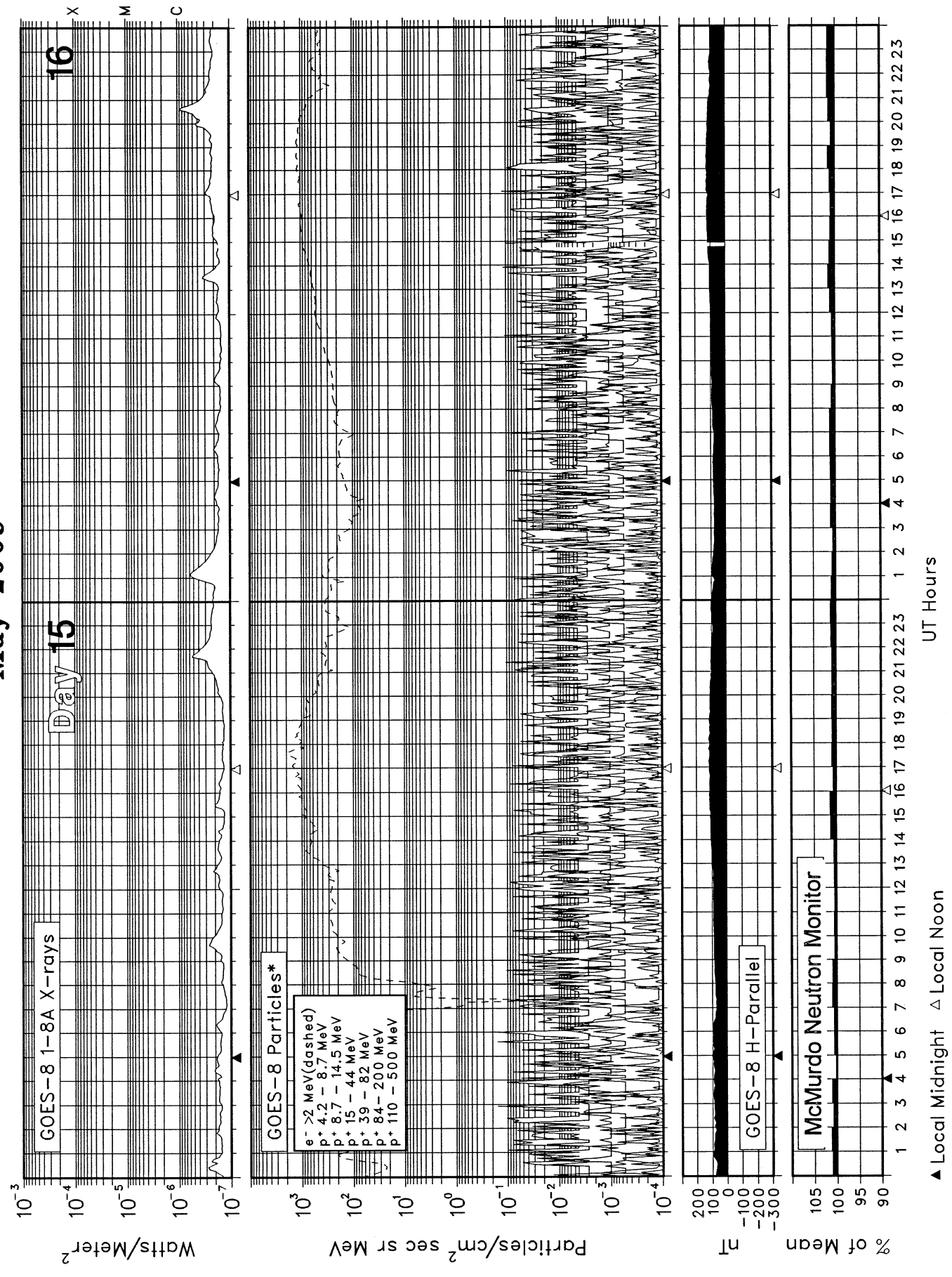


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May 2003



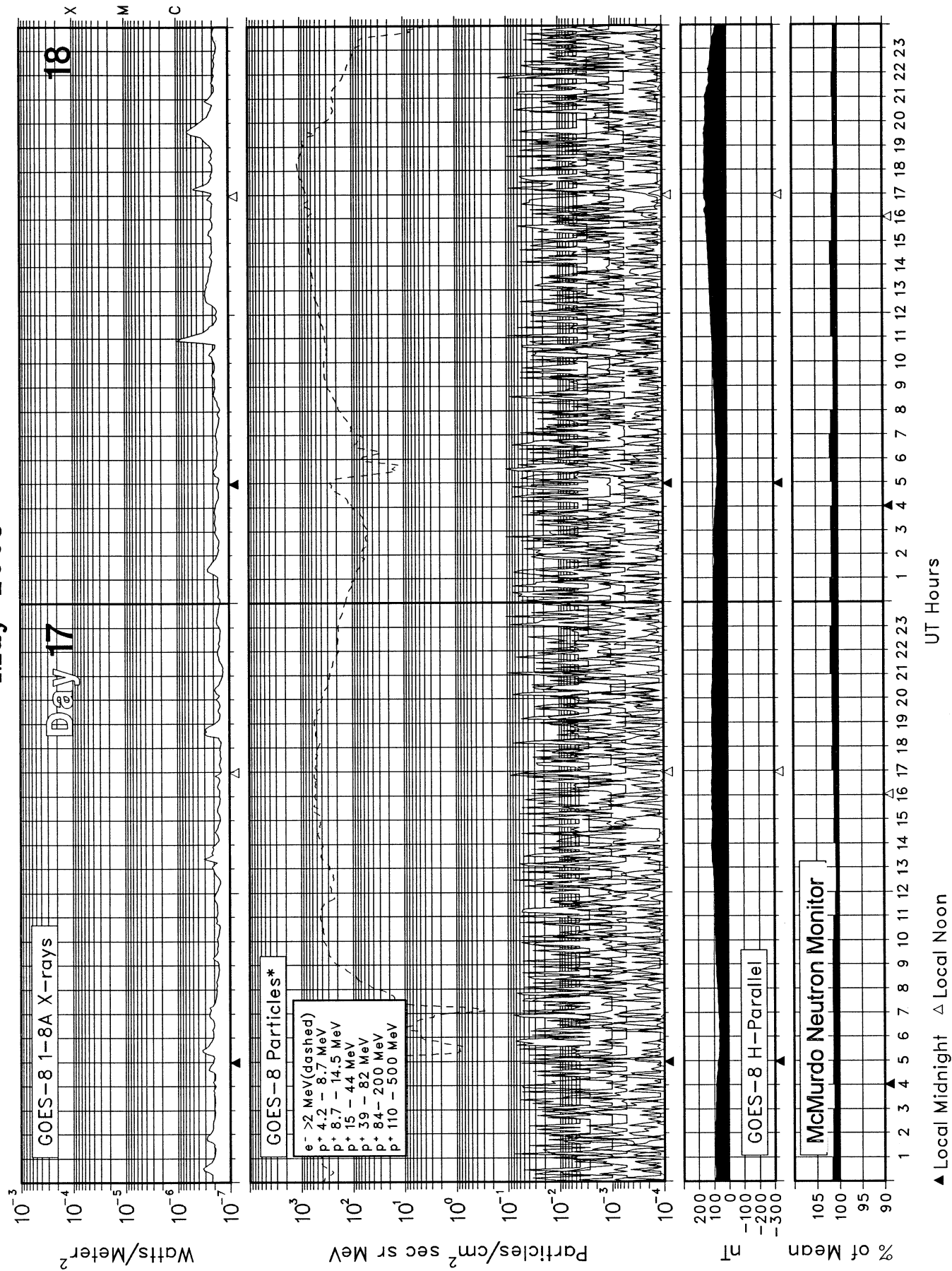
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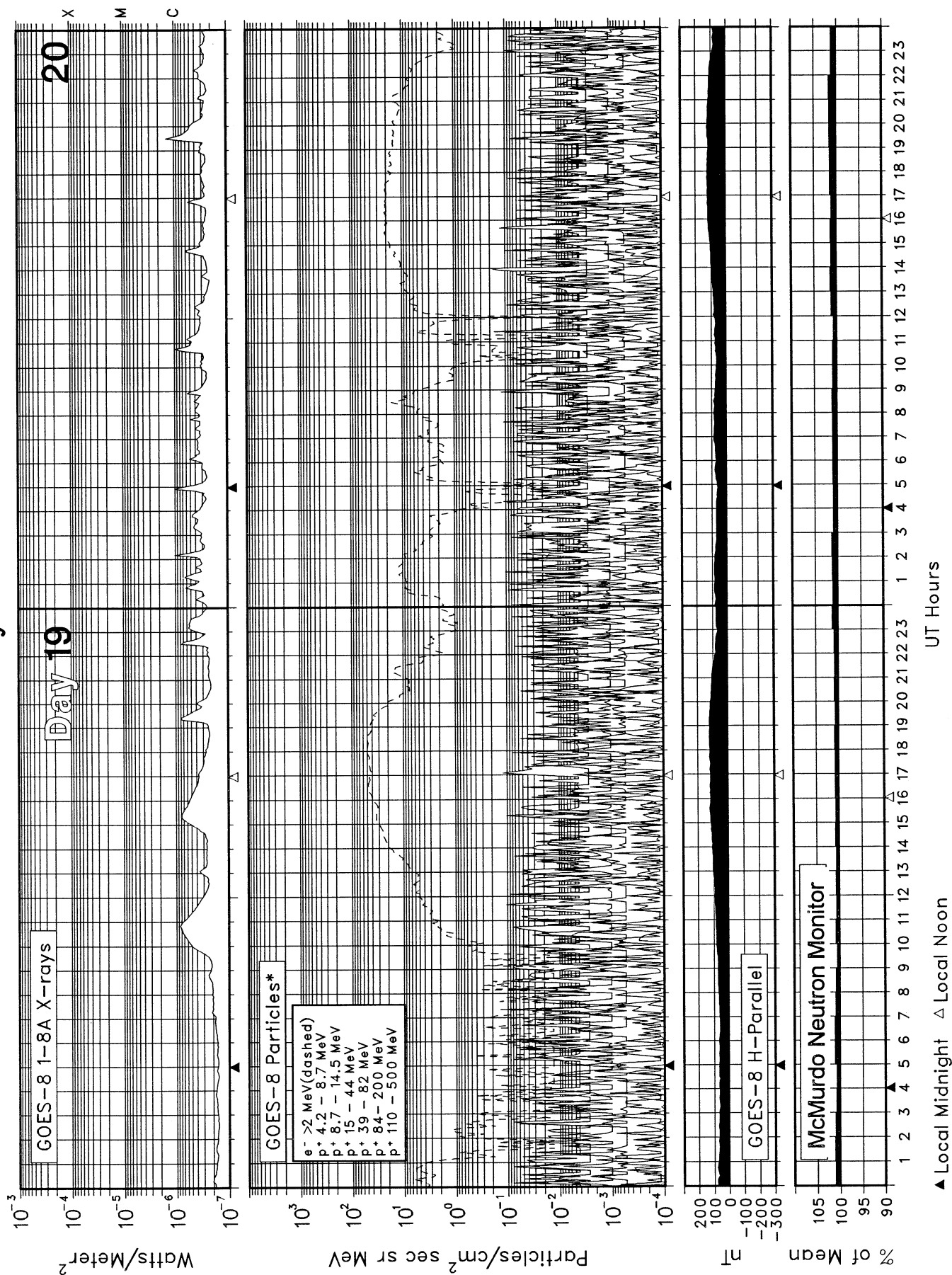
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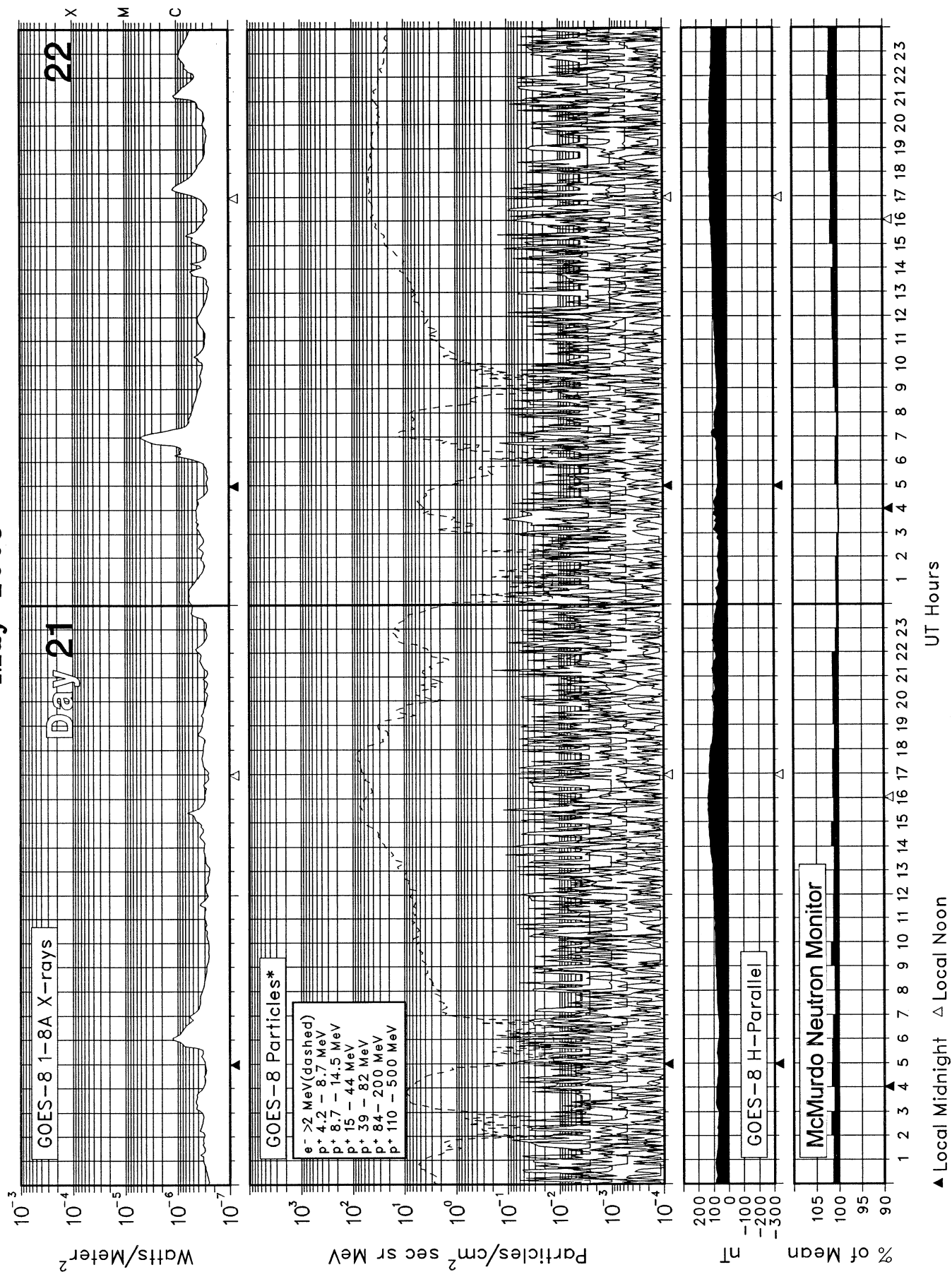
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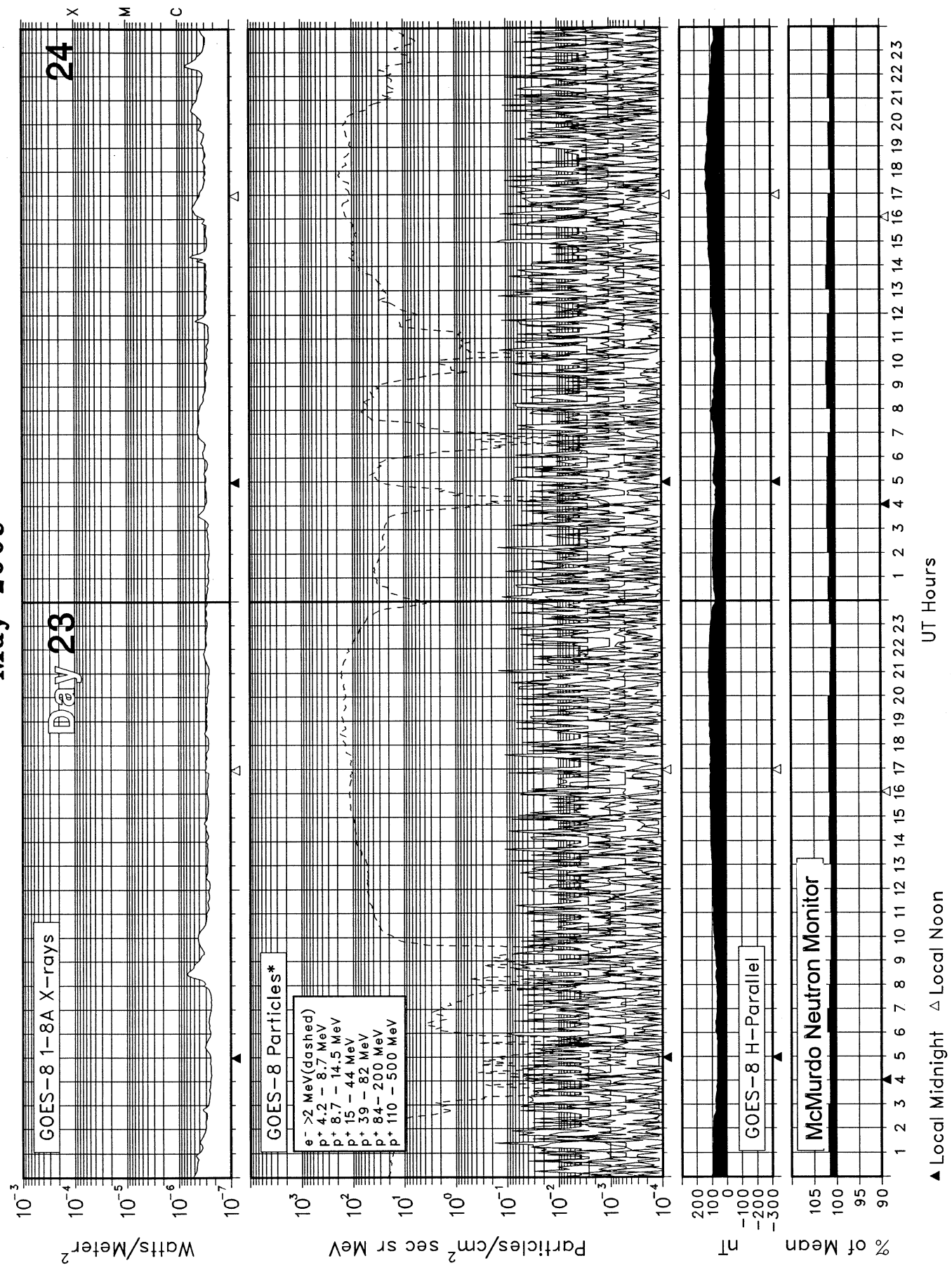
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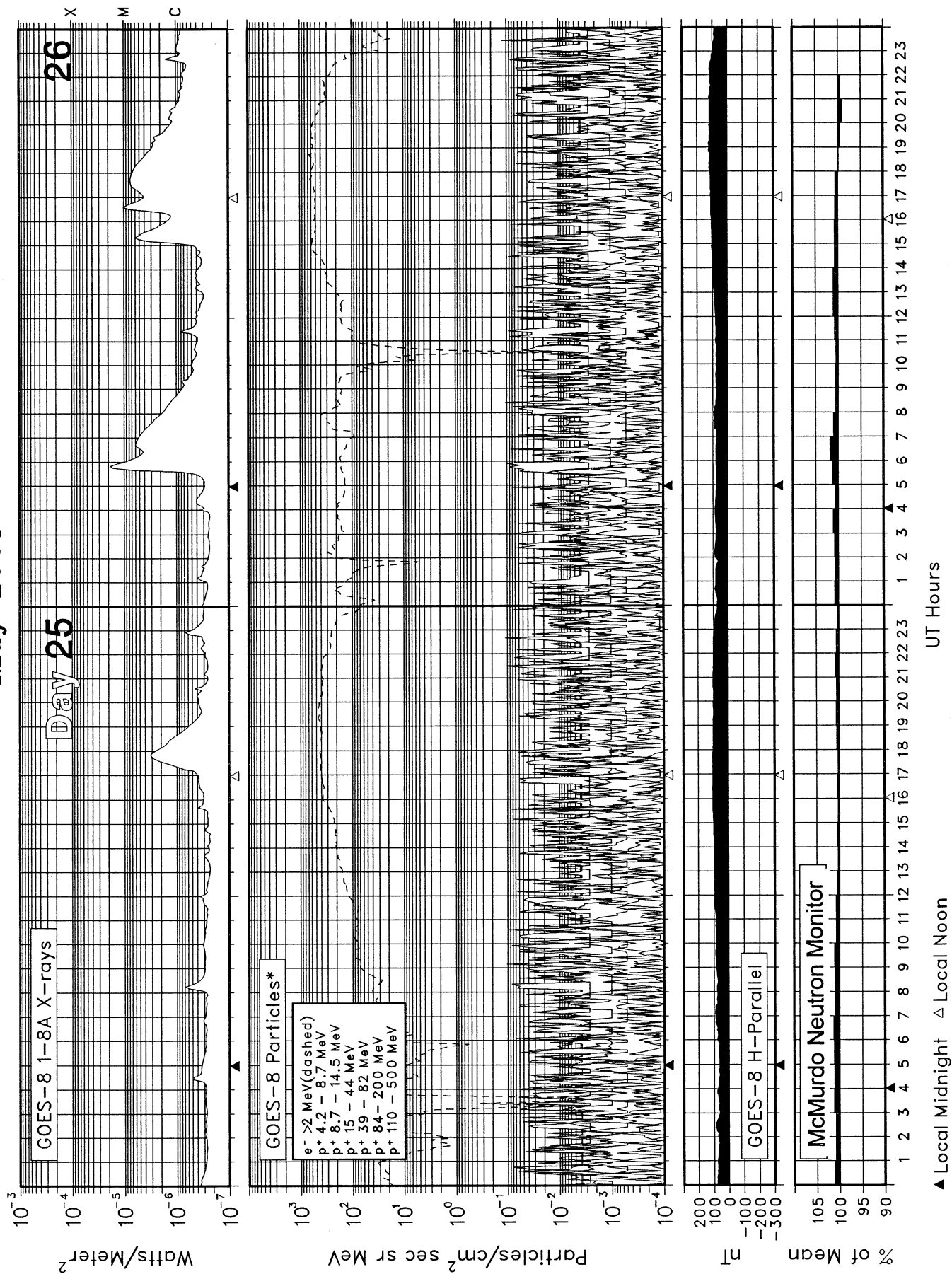


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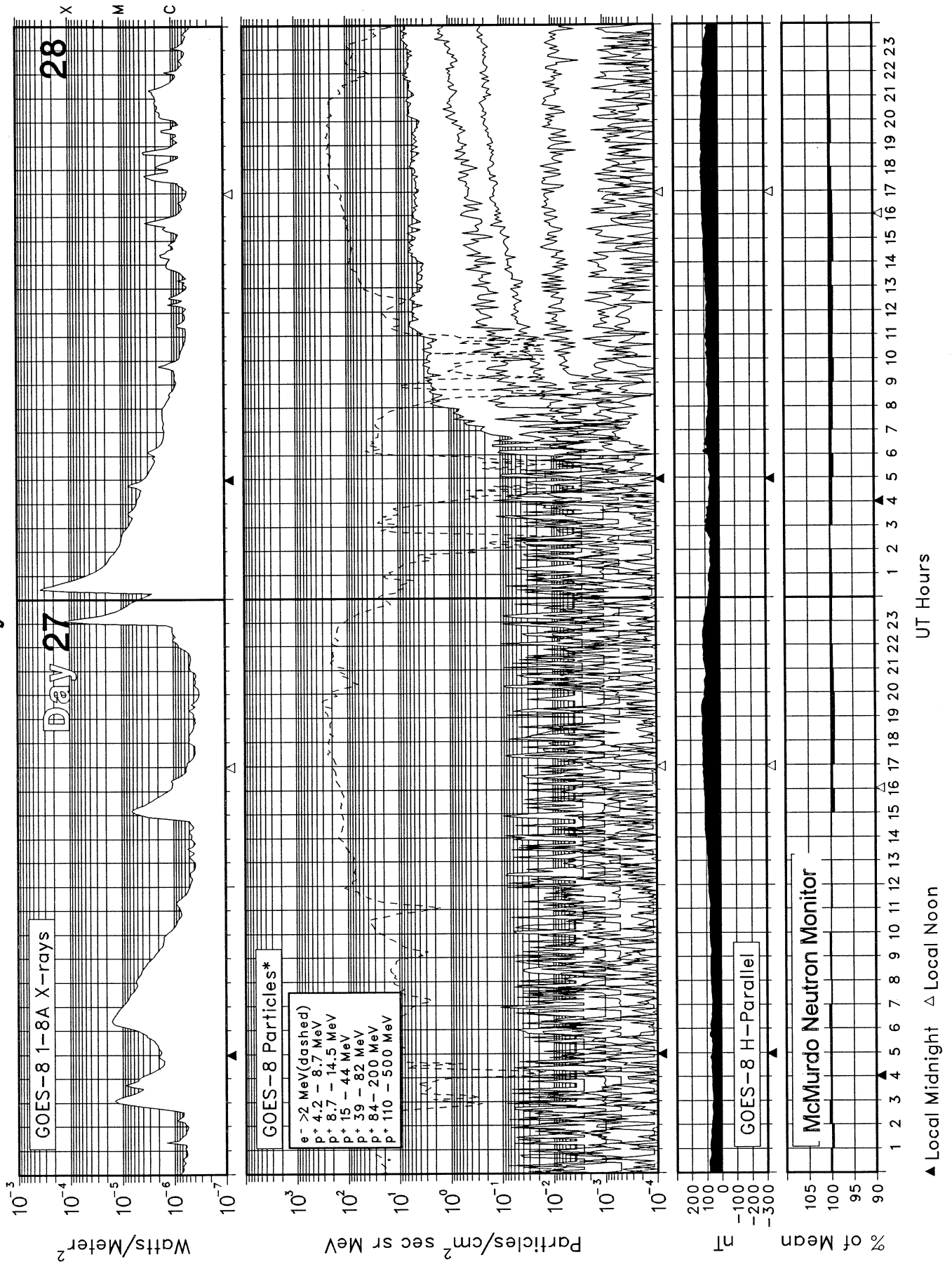


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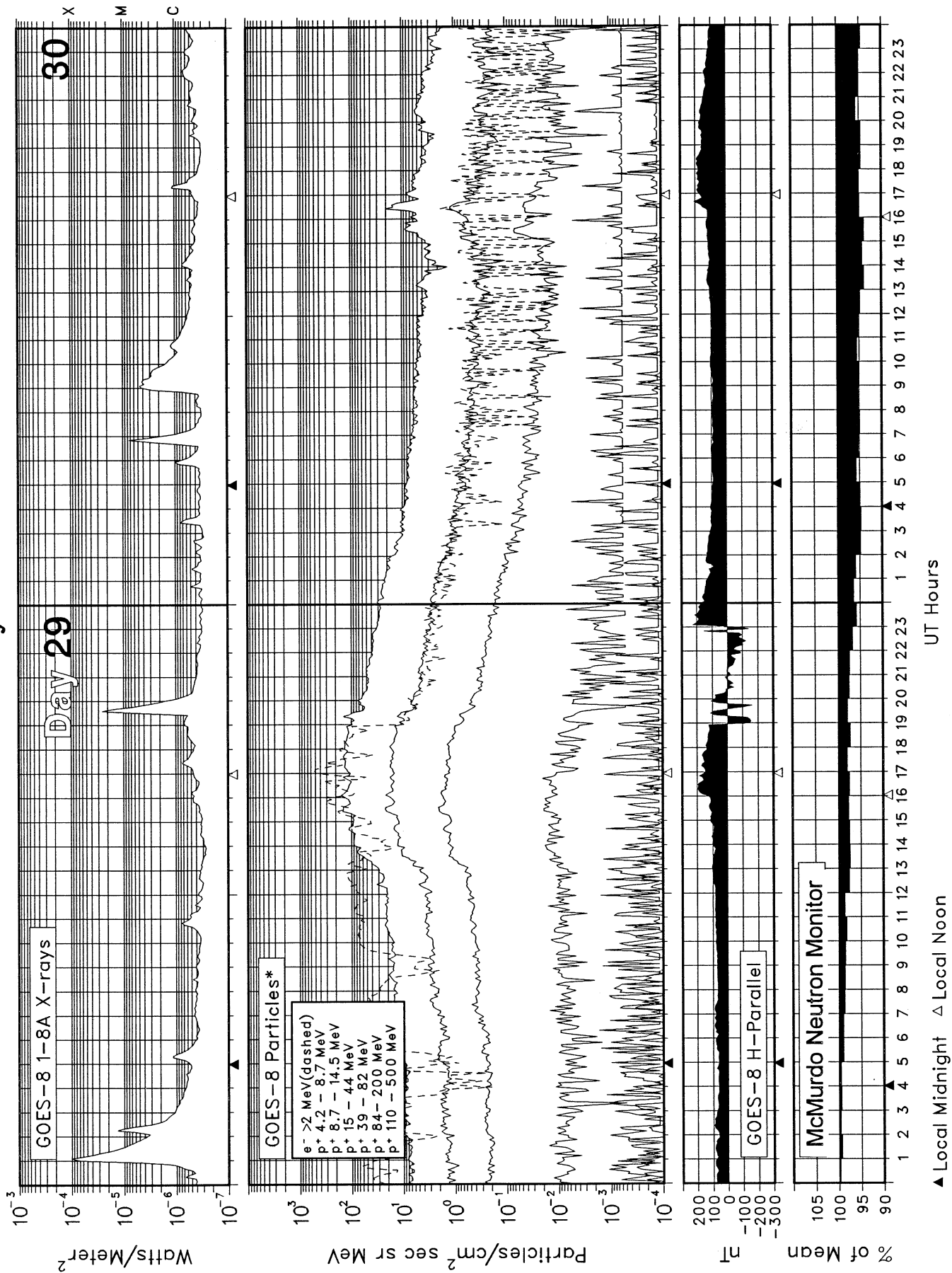
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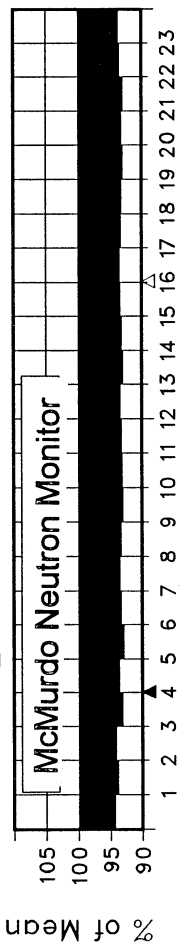
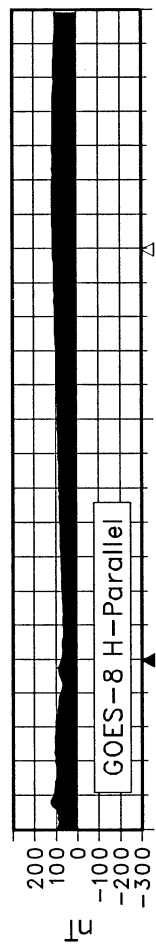
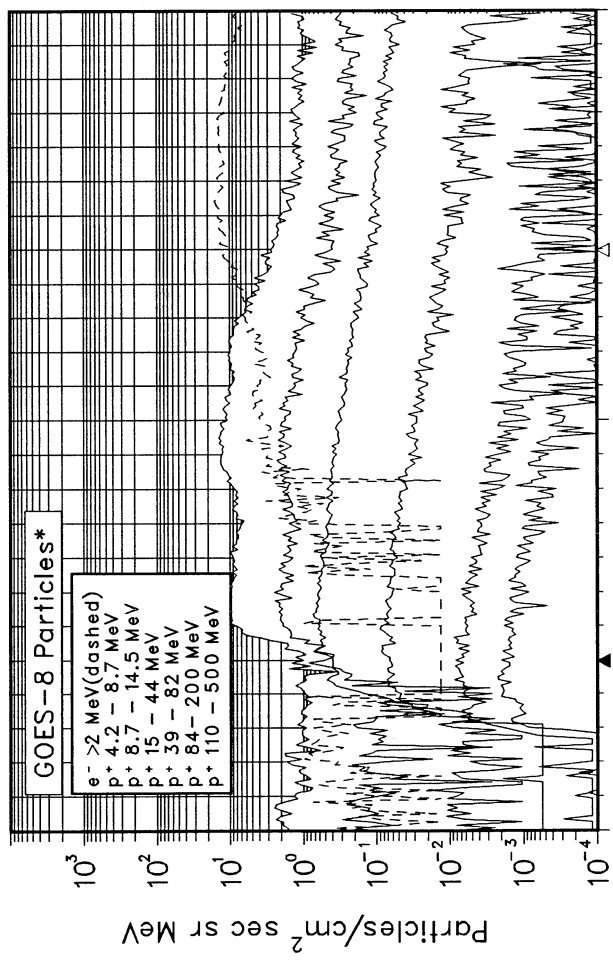
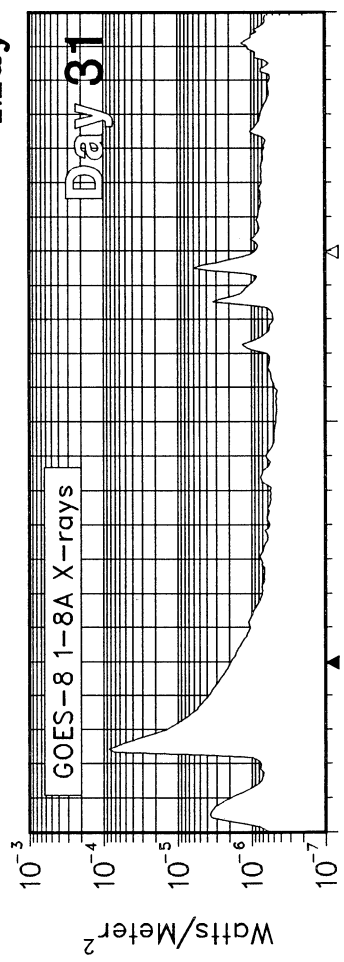
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May 2003



SOLAR-TERRESTRIAL ENVIRONMENT

May 2003



* Electron flux is divided by 10.
 Electron units are Counts/cm² sec sr.
 Protons are corrected for contamination.

▲ Local Midnight △ Local Noon

UT Hours

20
May 03

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

MAY 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)	Geoadvise(1)
							Lat	Lon	Opt	M	X			
121	01	30	160	154	37	337	S16	W81	0	0	0	01	Q	SOL: Eruptive MAG: Active PRO: Quiet
						344	N15	W41	0	0	0	01	Q	
						345	S17	W06	0	0	0	01	Q	
						346	N16	W02	0	0	0	01	Q	
						348	S36	E11	0	0	0	01	Q	
						349	S13	E07	0	0	0	01	E	
						350	S12	W58	0	0	0	01	Q	
						351	N06	E76	0	0	0	01	Q	
122	02	01	171	149	34	337	S15	W92	0	0	0	02	Q	SOL: Eruptive MAG: Active PRO: Quiet
						344	N15	W54	0	0	0	02	Q	
						345	S17	W19	0	0	0	02	Q	
						346	N15	W15	0	0	0	02	Q	
						348	S34	W01	0	0	0	02	Q	
						349	S14	W06	7	0	0	02	E	
						350	S11	W70	0	0	0	02	Q	
						351	N08	E65	0	0	0	02	Q	
123	03	02	175	144	22	344	N15	W67	1	0	0	03	Q	SOL: Active MAG: Active PRO: Quiet
						345	S17	W34	4	1	0	03	Q	
						346	N15	W28	0	0	0	03	Q	
						348	S35	W13	0	0	0	03	Q	
						349	S13	W21	0	0	0	03	E	
						350	S11	W84	0	0	0	03	Q	
						351	N08	E51	0	0	0	03	Q	
						352	S25	E30	0	0	0	03	Q	
124	04	03	134	148	12	344	N16	W81	0	0	0	04	Q	SOL: Active MAG: Active PRO: Quiet
						345	S17	W46	1	0	0	04	Q	
						346	N14	W40	0	0	0	04	Q	
						348	S35	W27	1	0	0	04	Q	
						349	S14	W34	0	0	0	04	E	
						351	N08	E38	0	0	0	04	Q	
125	05	04	172	142	6	344	N14	W94	0	0	0	05	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						345	S17	W60	0	0	0	05	Q	
						346	N14	W54	0	0	0	05	Q	
						348	S35	W44	5	0	0	05	E	
						349	S15	W47	1	0	0	05	E	
						351	N08	E25	0	0	0	05	Q	
						353	S16	E33	0	0	0	05	Q	
						354	N19	E58	0	0	0	05	Q	
126	06	05	144	129	11	345	S17	W72	0	0	0	06	Q	SOL: Eruptive MAG: Active PRO: Quiet
						346	N14	W67	0	0	0	06	Q	
						348	S35	W55	1	0	0	06	E	
						349	S14	W60	2	0	0	06	E	
						351	N08	E12	0	0	0	06	Q	
						354	N19	E47	0	0	0	06	Q	
						355	N12	E45	0	0	0	06	Q	
127	07	06	117	122	23	345	S17	W86	0	0	0	07	Q	SOL: Eruptive MAG: Active PRO: Quiet
						346	N14	W77	0	0	0	07	Q	
						348	S34	W68	1	0	0	07	E	
						349	S15	W71	0	0	0	07	E	
						351	N08	W02	0	0	0	07	Q	
						354	N19	E33	0	0	0	07	Q	
						355	N12	E31	0	0	0	07	Q	
128	08	07	109	110	35	346	N13	W90	0	0	0	08	Q	SOL: Eruptive MAG: Active PRO: Quiet
						348	S34	W80	2	0	0	08	E	
						349	S14	W86	0	0	0	08	E	
						351	N08	W15	0	0	0	08	Q	
						353	S16	W09	0	0	0	08	Q	
						354	N19	E21	0	0	0	08	Q	
						355	N13	E17	0	0	0	08	Q	

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

MAY 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			
129	09	08	33	101	33	348	S36	W90	0	0	0	09	E	SOL: Eruptive
						351	N08	W27	0	0	0	09	Q	MAG: Active
						354	N19	E07	0	0	0	09	Q	PRO: Quiet
130	10	09	23	97	28	356	N10	W41	0	0	0	10	Q	SOL: Eruptive
						356	N15	E63	0	0	0	10	E	MAG: Active
									0	0	0	10		PRO: Quiet
131	11	10	22	93	31	356	N09	W55	0	0	0	11	Q	SOL: Eruptive
						356	N15	E47	0	0	0	11	Q	MAG: Active
									0	0	0	11		PRO: Quiet
132	12	11	47	92	27	351	N09	W67	0	0	0	12	Q	SOL: Eruptive
						354	N17	W32	0	0	0	12	Q	MAG: Active
						356	N16	E36	0	0	0	12	Q	PRO: Quiet
						357	S16	E70	0	0	0	12	Q	
133	13	12	66	94	21	351	N08	W82	0	0	0	13	Q	SOL: Eruptive
						356	N17	E22	0	0	0	13	Q	MAG: Minor
						357	S16	E56	0	0	0	13	Q	PRO: Quiet
						358	N10	E23	0	0	0	13	Q	
						359	S16	W18	0	0	0	13	Q	
134	14	13	59	96	28	356	N17	E09	0	0	0	14	Q	SOL: Quiet
						357	S16	E43	0	0	0	14	Q	MAG: Minor
						358	N09	E10	0	0	0	14	Q	PRO: Quiet
						359	S16	W32	0	0	0	14	Q	
135	15	14	75	96	30	356	N17	W04	0	0	0	15	Q	SOL: Eruptive
						357	S16	E30	0	0	0	15	Q	MAG: Minor
						358	N09	W03	0	0	0	15	Q	PRO: Quiet
						359	S17	W46	0	0	0	15	Q	
						360	S04	W20	0	0	0	15	Q	
136	16	15	97	99	22	356	N18	W17	0	0	0	16	Q	SOL: Quiet
						357	S17	E18	0	0	0	16	Q	MAG: Active
						358	N08	W17	0	0	0	16	Q	PRO: Quiet
						359	S10	W58	0	0	0	16	Q	
						360	S05	W34	0	0	0	16	Q	
						361	N09	E39	0	0	0	16	Q	
						362	S10	E77	0	0	0	16	Q	
137	17	16	97	103	9	356	N18	W29	1	0	0	17	Q	SOL: Quiet
						357	S17	E07	0	0	0	17	Q	MAG: Quiet
						358	N08	W30	0	0	0	17	Q	PRO: Quiet
						359	S14	W75	0	0	0	17	Q	
						361	N08	E25	0	0	0	17	Q	
						362	S11	E64	0	0	0	17	Q	
138	18	17	81	102	10	356	N18	W44	0	0	0	18	Q	SOL: Quiet
						357	S15	W06	1	0	0	18	Q	MAG: Quiet
						358	N08	W46	0	0	0	18	Q	PRO: Quiet
						361	N09	E10	0	0	0	18	Q	
						362	S11	E50	0	0	0	18	Q	
139	19	18	79	109	9	356	N17	W54	0	0	0	19	Q	SOL: Quiet
						357	S16	W20	1	0	0	19	Q	MAG: Quiet
						358	N10	W01	0	0	0	19	Q	PRO: Quiet
						361	S11	E37	0	0	0	19	Q	
						362	S08	W04	0	0	0	19	Q	
140	20	19	75	115	13	356	N18	W67	1	0	0	20	Q	SOL: Eruptive
						357	S16	W34	0	0	0	20	Q	MAG: Active
						362	S11	E23	0	0	0	20	Q	PRO: Quiet
						364	S26	W29	0	0	0	20	Q	

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May 03

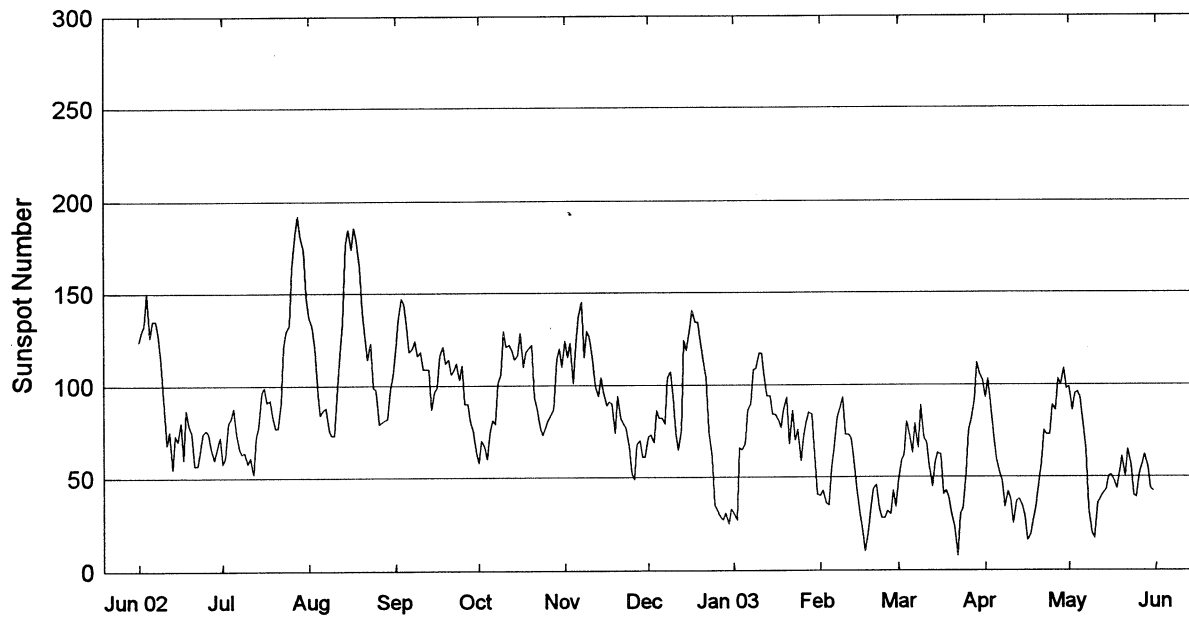
A L E R T P E R I O D S The International Space Environment Service

MAY 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			
141	21	20	77	117	13	357	S15	W48	0	0	0	21	Q	SOL: Eruptive
						362	S10	E10	1	0	0	21	Q	MAG: Quiet
						364	S24	W40	2	0	0	21	Q	PRO: Quiet
						365	S06	E68	0	0	0	21	Q	
142	22	21	79	119	19	357	S16	W61	0	0	0	22	Q	SOL: Eruptive
						362	S12	W03	0	0	0	22	Q	MAG: Active
						364	S26	W54	0	0	0	22	Q	PRO: Quiet
						365	S07	E52	0	0	0	22	Q	
143	23	22	110	118	26	357	S16	W73	0	0	0	23	Q	SOL: Eruptive
						362	S11	W15	2	0	0	23	Q	MAG: Active
						364	S26	W67	0	0	0	23	Q	PRO: Quiet
						365	S07	E38	0	0	0	23	Q	
						366	N11	E62	0	0	0	23	Q	
						367	S14	E69	0	0	0	23	Q	
144	24	23	87	118	15	362	S11	W30	1	0	0	24	Q	SOL: Eruptive
						365	S09	E25	0	0	0	24	Q	MAG: Active
						366	N10	E50	0	0	0	24	Q	PRO: Quiet
						367	S14	E55	0	0	0	24	Q	
						368	S32	E62	0	0	0	24	Q	
						369	N12	E08	0	0	0	24	Q	
145	25	24	84	117	21	370	N16	E53	0	0	0	24	Q	
						362	S10	W44	0	0	0	25	Q	SOL: Quiet
						365	S08	E11	0	0	0	25	Q	MAG: Active
						366	N11	E36	0	0	0	25	Q	PRO: Quiet
						367	S14	E42	0	0	0	25	Q	
						368	S33	E50	0	0	0	25	Q	
146	26	25	51	121	23	369	N12	W08	0	0	0	25	Q	
						370	N16	E38	0	0	0	25	Q	
						362	S10	W44	0	0	0	25	Q	SOL: Quiet
						365	S08	E11	0	0	0	25	Q	MAG: Active
						366	N11	E36	0	0	0	25	Q	PRO: Quiet
						367	S14	E42	0	0	0	25	Q	
147	27	26	65	125	17	368	S33	E50	0	0	0	25	Q	
						369	N12	W08	0	0	0	25	Q	
						370	N16	E38	0	0	0	25	Q	
						362	S10	W44	0	0	0	25	Q	SOL: Quiet
148	28	27	116	129	25	365	S08	E08	1	0	0	26	E	SOL: Eruptive
						367	S14	E29	1	0	0	26	Q	MAG: Active
						368	S33	E37	2	0	0	26	Q	PRO: Quiet
						365	S07	W06	3	2	0	27	E	SOL: Eruptive
149	29	28	116	130	34	367	S14	E17	0	0	0	27	Q	MAG: Active
						368	S32	E24	0	0	0	27	Q	PRO: Quiet
						370	N16	E13	0	0	0	27	Q	
						365	S07	W19	5	2	1	28	E	SOL: Active
150	30	29	98	138	76	367	S14	E04	0	0	0	28	Q	MAG: Active
						368	S32	E11	0	0	0	28	Q	PRO: Quiet
						371	S13	W10	1	0	0	28	Q	
						372	S14	W03	0	0	0	28	Q	
						373	N08	E81	0	0	0	28	Q	
151	31	30	62	117	40	365	S07	W32	14	0	0	29	P	SOL: Active
						367	S14	W09	0	0	0	29	Q	MAG: Active
						368	S32	W02	1	0	0	29	Q	PRO: Warning
						372	S14	W16	0	0	0	29	Q	
						373	N08	E66	3	0	0	29	Q	
						374	S22	W59	0	0	0	29	Q	
152	31	30	98	138	76	365	S07	W45	2	0	1	30	P	SOL: Major
						367	S14	W22	0	0	0	30	A	MAG: Major
						368	S32	W15	2	2	0	30	A	PRO: IP
						373	N08	E53	0	0	0	30	A	
153	31	30	62	117	40	374	S22	W72	0	0	0	30	A	
						365	S07	W59	7	0	0	31	A	SOL: Eruptive
						368	S32	W26	1	0	0	31	A	MAG: Active
154	31	30	62	117	40	373	N08	E41	1	0	0	31	A	PRO: Quiet
						373	N08	E41	1	0	0	31	A	

International Relative Sunspot Numbers Jun 2002 - May 2003

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May 03

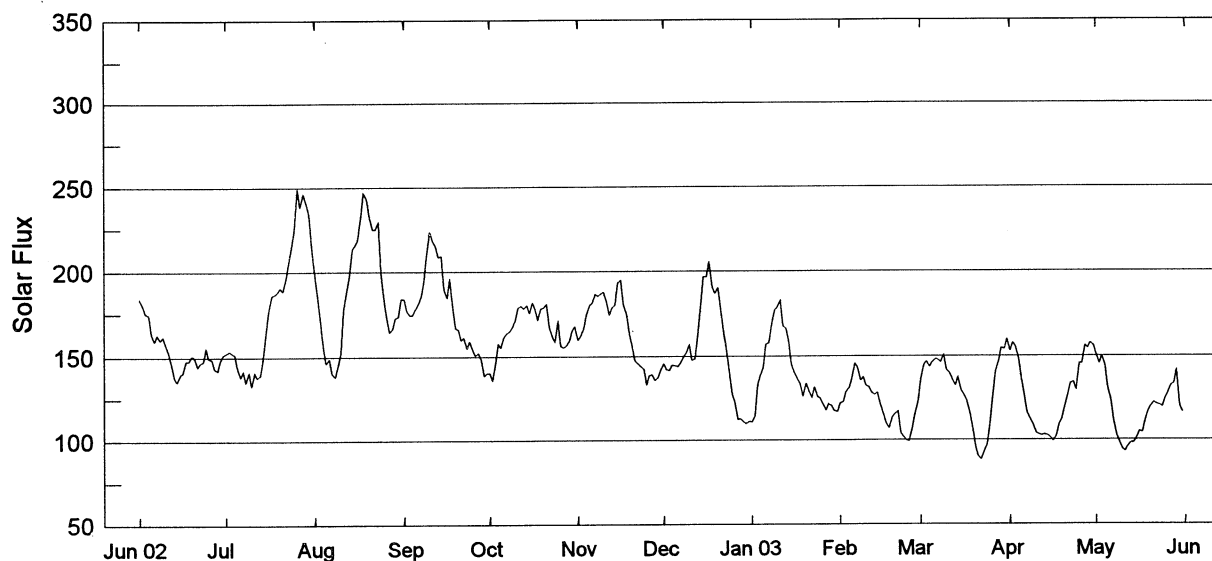


Day	Jun 02	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03*	Feb*	Mar*	Apr*	May*
1	124	58	137	120	58	124	72	31	40	48	93	99
2	129	61	132	136	70	115	66	27	43	59	103	86
3	133	80	121	147	67	123	64	66	36	62	90	95
4	150	82	95	144	60	107	80	65	35	80	72	96
5	126	88	84	132	76	122	82	68	54	72	60	93
6	135	75	87	118	81	137	82	86	68	63	52	78
7	135	66	88	120	79	145	79	90	82	79	48	65
8	127	63	76	124	101	115	98	108	87	66	34	33
9	113	64	73	116	106	129	107	109	93	89	42	20
10	88	58	73	118	129	126	94	117	73	71	38	17
11	68	61	99	109	121	114	74	117	73	69	25	36
12	75	52	117	109	122	100	65	104	71	56	37	38
13	55	72	134	109	119	94	75	94	59	45	38	41
14	73	78	177	87	114	104	124	94	45	58	35	43
15	70	96	185	97	116	102	119	84	31	63	29	50
16	80	99	174	99	128	89	129	84	22	62	16	51
17	60	91	186	116	110	91	140	81	10	41	19	48
18	87	92	179	121	118	83	134	77	20	43	27	44
19	79	83	164	112	120	74	134	87	33	39	34	54
20	74	77	140	114	122	94	124	93	44	29	45	61
21	57	77	127	106	93	82	112	68	46	23	58	50
22	57	91	114	108	88	79	104	86	34	8	75	65
23	65	121	123	112	77	77	75	70	28	30	73	57
24	74	129	99	103	73	67	57	76	28	33	73	40
25	76	133	98	111	77	56	35	59	32	52	89	39
26	74	164	79	90	81	49	32	72	30	75	86	52
27	66	182	80	90	84	68	29	80	43	81	103	57
28	60	192	81	80	87	70	27	85	34	91	100	62
29	66	181	82	76	114	61	31	84		112	109	56
30	72	174	97	64	120	61	29	62		106	98	44
31		148	106		110		33	41		102		42
Mean	88.3	99.6	116.4	109.6	97.5	95.5	80.8	79.5	46.2	61.5	60.0	55.2

* = Provisional.

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

Adjusted to 1 AU



Day	Jun 02	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May
1	183.9	152.3	198.3	183.8	140.1	159.7	145.5	111.2	122.1	135.6	152.8	151.0
2	180.0	153.5	185.7	176.9	136.0	162.1	142.0	114.4	123.0	144.7	157.3	145.3#
3	175.4	152.4#	172.7	174.4	146.1	166.5	141.8	133.1	128.7	146.5	155.7	150.1
4	174.7	151.3	155.3	174.2	157.6	174.4	144.5	138.2	131.0	143.6	148.8#	144.4
5	163.7	143.5	146.0	178.1	155.1	180.0	144.4	143.2	136.2	146.2	137.5	131.1
6	159.1	138.0	148.8	180.9	161.6	181.2	143.9	156.8	145.4	147.9	126.1	124.1
7	163.1	141.5	140.1	185.6	163.5	186.4	146.6	157.8	143.3	147.6	115.9	112.2
8	159.9	135.3	138.3	194.4	165.1	185.5	149.8	168.0	135.4	146.2	112.6	102.8
9	161.9	140.9	144.0	209.0	166.8	187.0	151.6	176.9	137.6	150.6	109.7	98.9
10	156.2	133.1	152.4	223.5	171.4	187.7	156.5	178.7	132.6	141.7	104.1	94.5
11	152.4	141.0	176.9	219.0	178.7	181.0	147.7	182.6	131.4	139.7	103.0	93.4
12	146.2	137.7	188.8	215.1	179.7	174.6	148.4	167.7	128.2	136.2	102.6	95.8
13	137.6	139.4	196.8	208.6	178.3	178.6	161.8	166.2	127.3	132.5	103.0	98.1
14	135.6	148.6	213.5	209.2	180.2	180.2	180.1	158.6	128.1	137.3	102.6	98.3
15	139.7	164.8#	215.7	189.9	175.7	193.2	196.6	145.0	120.6	129.3	101.1	101.4
16	141.0	177.2	219.1	184.5	181.4	194.8	196.5	139.9	115.7	127.2	99.2	104.9
17	147.5	185.9	232.3	195.9	177.7	180.5	205.8	137.1	109.4	123.1#	101.8	104.7
18	147.5	186.6	246.9	178.4	171.3	174.8	190.6	133.0	107.4	117.3	108.7	111.5
19	150.5	188.3	242.6	166.7	178.1	164.3	186.7	126.1	113.6	107.2	113.1	117.4
20	149.8	190.7	232.8	165.8	178.7	155.3	190.3	133.7	115.7	96.6	119.7	120.0
21	144.2	188.7	225.0	159.8	180.8	147.2	177.9	129.4	117.0	90.3	127.0	122.2
22	146.6	195.8	225.1	161.1	167.7	145.5	166.4	125.4	104.3	88.3	133.8	121.3
23	147.5	204.6	229.5	154.8	161.9	143.8	153.7	131.6	101.8	92.4	134.3	120.9
24	155.3	215.0	199.8	158.9	158.5	142.5	142.5	125.8	99.9	97.3	129.8	119.8
25	149.5	224.5	182.4	154.2	170.9	133.2	127.6	124.9	99.5	108.2	145.3	124.3
26	148.6	249.1	172.2	150.6	156.1	138.5	123.2	121.2	107.2	126.6	145.5	128.4
27	143.2	238.0	164.7	152.2	155.2	138.8	112.7	117.7	115.4	140.5	156.1	132.3
28	141.9	246.2	166.4	149.1	156.3	136.0	113.1	121.8	122.6	146.4	154.3	133.7
29	147.5	241.1	172.6	138.6	159.4	137.5	111.0	120.7		154.6	157.4	141.6
30	151.4	234.1	173.5#	140.1	165.3	142.1	110.1	117.6		154.2	155.8	120.4
31		214.8	183.7		167.7		111.3	116.9		159.8		116.3
Mean	153.4	179.2	188.4	177.8	165.9	165.1	152.3	139.4	121.4	130.8	127.2	118.7

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

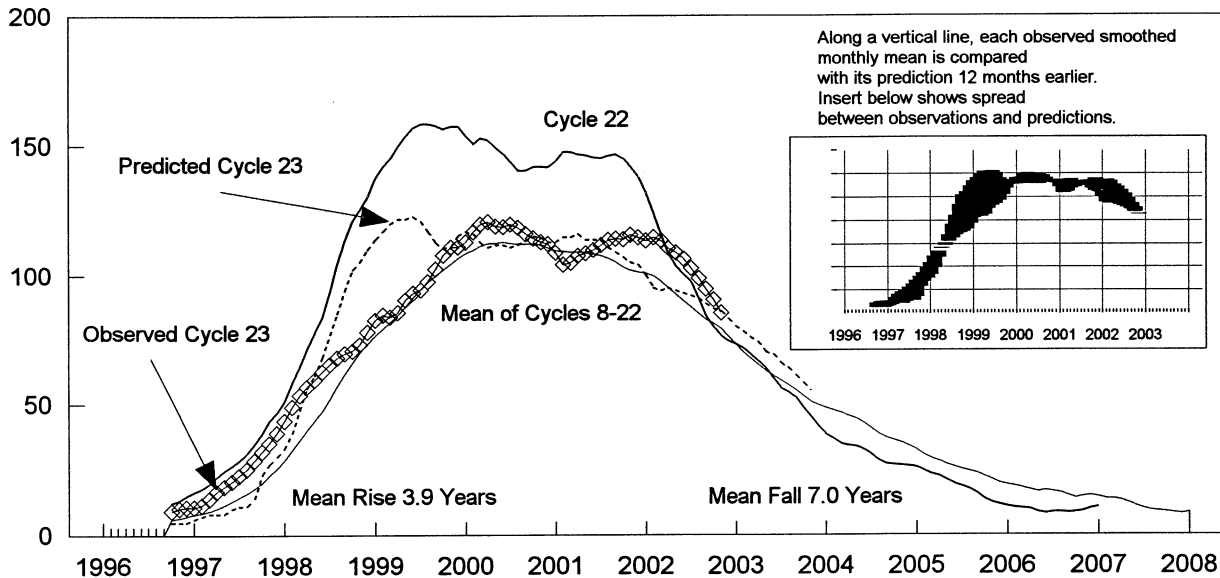
DAILY SOLAR INDICES
May 2003

Day	Day of Year	Bartels Cycle Day	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	121	8	99	105	148.7	550	279	208	151.0	145	97	50	50	31
2	122	9	86	93	143.0*	561	276	202	145.3*	135	82	48	42	29
3	123	10	95	94	147.7	574	273	201	150.1	143	84	44	32	11
4	124	11	96	98	142.0	565	289	208	144.4	135	80	45	42	20
5	125	12	93	94	128.8	571	285	201	131.1	126	76	40	29	18
6	126	13	78	77	122.0	547	274	181	124.1	118	72	36	32	51
7	127	14	65	55	110.2	568	265	173	112.2	113	69	---	---	---
8	128	15	33	31	100.9	513	263	161	102.8	106	65	37	30	16
9	129	16	20	21	97.1	517	249	145	98.9	94	62	38	29	29
10	130	17	17	19	92.7	556	249	145	94.5	91	60	36	25	10
11	131	18	36	30	91.5	550	240	139	93.4	89	59	33	26	11
12	132	19	38	41	93.9	532	252	145	95.8	90	60	35	23	14
13	133	20	41	43	96.1	536	246	142	98.1	89	61	35	28	11
14	134	21	43	44	96.3	548	250	144	98.3	91	64	39	26	11
15	135	22	50	47	99.2	555	248	147	101.4	95	67	37	27	9
16	136	23	51	47	102.6	562	251	148	104.9	100	68	38	28	10
17	137	24	48	39	102.4	---	---	---	104.7	---	---	---	---	---
18	138	25	44	42	109.0	---	---	---	111.5	---	---	---	---	---
19	139	26	54	58	114.7	570	241	154	117.4	109	79	40	29	12
20	140	27	61	58	117.1	570	261	176	120.0	109	80	43	30	11
21	141	1	50	55	119.3	548	262	169	122.2	115	81	48	31	12
22	142	2	65	60	118.4	552	263	165	121.3	114	82	44	30	12
23	143	3	57	51	117.9	493	270	170	120.9	116	82	43	30	12
24	144	4	40	34	116.8	534	268	168	119.8	115	81	43	30	9
25	145	5	39	42	121.1	556	259	167	124.3	118	83	43	30	11
26	146	6	52	57	125.1	481	241	174	128.4	137	95	40	46	---
27	147	7	57	58	128.8	565	269	187	132.3	127	87	64	---	---
28	148	8	62	63	130.2	523	281	189	133.7	124	83	47	47	---
29	149	9	56	60	137.8	565	276	182	141.6	120	81	44	32	17
30	150	10	44	47	117.2	560	275	185	120.4	117	79	42	33	16
31	151	11	42	42	113.1	574	272	172	116.3	106	74	41	29	17
MEAN			55.2	55.1	116.2	548	263	171	118.7	113	76	42	32	16

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

* - 1700UT Reading, burst in progress at 2000UT.

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	120.8+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	114	115	113	111	109	106	103	99	95	91	85	82	102
												(3)	
2003	78	75	73	71	68	65	63	61	59	57	55	54	65
	(5)	(5)	(6)	(8)	(9)	(10)	(10)	(11)	(12)	(14)	(16)	(17)	(10)
	Solar Cycle 22			Solar Cycle 23			Min, Max, and Prediction						

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

+ April 2000 marks Cycle 23 maximum.

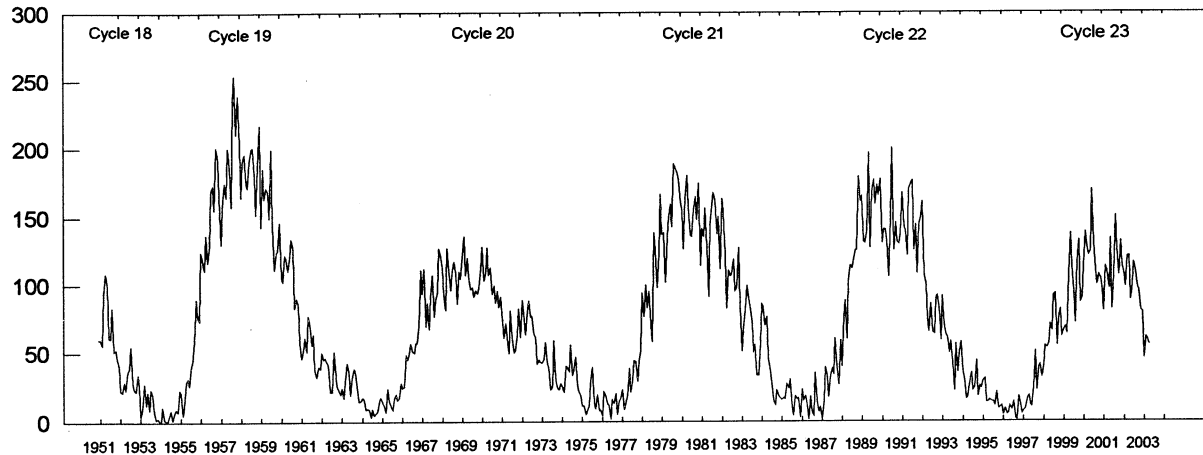
Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2002 and on provisional numbers 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 November 2003 prediction. There exists a 90% chance that in November 2003, the actual smoothed number will fall somewhere between 39 and 71.

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 - May 2003

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May 03



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								60.5

Values are preliminary after Dec 02. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Region	Mo	Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
													Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	01	0029	0111	0141						72	C 1.1					3.9E-03
GOES		0333	0338	0348			10349			15	B 9.3					7.5E-04
GOES		0357	0406	0411			10349			14	C 1.3					9.2E-04
GOES		0716	0817	0902						106	C 1.8					8.5E-03
GOES		0929	0944	1017						48	C 1.7					4.4E-03
GOES		1041	1044	1049			10349			8	C 1.5					6.3E-04
SVTO		1118	1122	1127	S12	E00	10349	05	1.5	9	SF	3	E		10	
SVTO		1131	1142	1205	S14	E03	10349	05	1.7	34	SF	3	E		85	F
GOES		1132	1143	1153	S14	E03	10349			21	SF C 5.3					4.6E-03
GOES		1234	1238	1240			10349			6	C 1.2					3.9E-04
GOES		1328	1333	1340			10337			12	C 1.7					9.3E-04
GOES		1356	1401	1404	S12	W02	10349			8	SF C 1.1					4.2E-04
SVTO		1359	1402	1406	S12	W01	10349	05	1.5	7	SF	3	E		20	
HOLL		1359	1402	1429	S12	W02	10349	05	1.4	30	SF	3	E		24	F
GOES		1405	1412	1419	S12	W03	10349			14	SF C 3.5					1.9E-03
SVTO		1410	1411	1421	S12	W03	10349	05	1.4	11	SF	3	E		62	F
GOES		1843	1847	1849	S14	W01	10349			6	SF C 1.8					4.4E-04
HOLL		1846	1846	1852	S14	W01	10349	05	1.7	6	SF	3	E		48	F
GOES		1915	1922	1930	S12	W03	10349			15	SF C 4.9					3.1E-03
HOLL		1917	1923	1936	S12	W03	10349	05	1.6	19	SF	3	E		56	F
GOES		2153	2206	2215	S12	W06	10349			22	SF C 2.2					2.3E-03
HOLL		2157	2158	2218	S12	W06	10349	05	1.5	21	SF	3	E		13	F
GOES		2300	2303	2307						7	C 1.4					5.4E-04
GOES	02	0247	0308	0344	S15	W22	10345			57	SF M 1.0					2.4E-02
LEAR		0253	0256	0329	S15	W22	10345	04	30.4	36	SF	3	E		96	F
GOES		0535	0625	0639	N14	W57	10344			64	SF C 2.0					5.2E-03
LEAR		0624	0624	0634	N14	W57	10344	04	28.0	10	SF	3	E		23	
GOES		1211	1248	1345						94	C 1.4					6.4E-03
HOLL		1640	1641	1653	S13	W29	10345	04	30.5	13	SF	3	E		17	
GOES		1745	1749	1753						8	B 6.6					2.8E-04
GOES		1804	1814	1932	S17	W30	10345			88	SF C 5.4					2.2E-02
HOLL		1807	1807	1840	S17	W30	10345	04	30.5	33	SF	3	E		23	
HOLL		1807	1810	1815	S20	W35	10347	04	30.1	8	SF	3	E		15	
HOLL		1824	1830	1837	S19	W35	10347	04	30.1	13	SF	3	E		37	F
HOLL		1841	1843	1846	S17	W31	10345	04	30.4	5	SF	3	E		11	
GOES	03	0948	0950	0953						5	C 1.4					2.8E-04
HOLL		1455	1507	1512	S33	W30		05	1.2	17	SF	3	E		13	
SVTO		1456	1458	1505	S32	W32	10348	05	1.1	9	SF	3	E		10	F
GOES		1826	1831	1836	S15	W45	10345			10	SF C 2.7					1.1E-03
HOLL		1833	1833	1839	S15	W45	10345	04	30.4	6	SF	3	E		60	F
GOES	04	0148	0301	0333			10349			105	C 1.8					8.3E-03
GOES		0624	0637	0648			10349			24	B 9.3					1.2E-03
GOES		0807	0812	0820	S14	W35	10349			13	SF C 1.4					9.5E-04
LEAR		0810	0810	0816	S14	W35	10349	05	1.7	6	SF	3	E		21	F
GOES		1344	1349	1355			10349			11	C 1.3					7.3E-04
GOES		1500	1505	1513			10349			13	C 1.2					8.3E-04
HOLL		1816	1817	1830	S32	W46	10348	05	1.1	14	SF	3	E		23	
HOLL		1857	1857	1908	S34	W36	10348	05	1.9	11	SF	3	E		21	
HOLL		1923	1926	1928	S33	W45	10348	05	1.2	5	SF	3	E		14	
HOLL		1932	1940	1951	S32	W46	10348	05	1.2	19	SF	3	E		37	
HOLL		2135	2135	2153	S32	W47	10348	05	1.2	18	SF	3	E		12	
GOES	05	0625	0628	0630	S14	W49	10349			5	SF C 2.0					3.6E-04
LEAR		0628	0629	0632	S13	W56	10349	05	1.0	4	SF	3	E		19	H
SVTO		0628	0629	0633	S14	W49	10349	05	1.6	5	SF	3	E		29	
HOLL		1258	1319	1332	S34	W49	10348	05	1.6	34	SF	3	E		34	FH
GOES		1654	1658	1716			10349			22	C 1.3					1.6E-03
GOES		2005	2010	2015	S14	W58	10349			10	SF C 1.6					7.5E-04
HOLL		2008	2009	2012	S14	W58	10349	05	1.4	4	SF	3	E		15	
GOES		2223	2230	2243			10349			20	C 1.1					1.2E-03
HOLL	06	0015	0016	0020	S32	W53	10348	05	1.8	5	SF	3	E		27	
GOES		0137	0148	0236			10349			59	C 3.2					8.7E-03
GOES		0906	1020	1043			10349			97	C 5.7					1.5E-02
GOES		1344	1410	1430			10349			46	C 3.7					7.6E-03

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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	06	1724	1729	1734			10349			10	C	1.3						6.9E-04
GOES		1913	1925	1950			10349			37	C	2.8						5.1E-03
GOES		2018	2047	2057			10348			39	C	2.0						3.8E-03
GOES		2104	2114	2124			10348			20	C	2.6						2.8E-03
GOES	07	0549	0612	0626			10349			37	C	3.2						4.6E-03
GOES		0702	0710	0716	S33	W78	10348			14	SF	C 4.2						3.0E-03
LEAR		0705	0710	0718	S36	W74	10348	05	1.3	13	SF		2	E		75		F
SVTO		0706	0707	0712	S33	W78	10348	05	1.1	6	SF		3	E		31		
GOES		1017	1027	1036						19	C	2.2						2.1E-03
GOES		1051	1054	1057						6	C	2.3						6.1E-04
GOES		1306	1312	1316			10349			10	C	1.8						9.0E-04
GOES		1551	1554	1556						5	C	1.2						3.1E-04
HOLL		1558	1559	1603	S37	W72	10348	05	1.9	5	SF		3	E		20		
GOES		2026	2032	2036			10348			10	C	2.0						9.0E-04
GOES		2044	2049	2058						14	C	5.9						3.4E-03
GOES		2133	2141	2149			10349			16	C	1.7						1.3E-03
GOES	08	0540	0547	0615			10348			35	C	2.3						4.3E-03
GOES		0854	0858	0901			10348			7	C	1.2						4.6E-04
GOES		1141	1146	1148			10349			7	C	1.9						6.1E-04
GOES		2137	2144	2151			10348			14	B	6.8						5.2E-04
GOES	09	0035	0048	0059			10349			24	C	3.8						4.4E-03
GOES		0729	0733	0742			10348			13	B	5.4						3.8E-04
GOES		1518	1610	1651			10354			93	B	6.6						2.9E-03
GOES	10	0540	0544	0550						10	B	1.9						1.0E-04
GOES		0647	0653	0658						11	B	2.3						1.3E-04
GOES		0944	0947	0952						8	B	2.3						9.5E-05
GOES	11	1351	1354	1358						7	B	1.2						4.7E-05
GOES	12	0029	0035	0037						8	B	1.7						6.8E-05
GOES		0606	0610	0612						6	B	1.2						3.9E-05
GOES		1735	1740	1745						10	B	2.3						1.1E-04
GOES		1853	1859	1901						8	B	3.3						9.8E-05
GOES		2136	2141	2143						7	B	4.2						1.2E-04
GOES	13	0134	0138	0141						7	B	2.7						8.6E-05
GOES		1602	1632	1644						42	B	2.7						5.2E-04
GOES	14	0032	0037	0040						8	B	1.9						7.1E-05
GOES		0728	0732	0737						9	B	1.6						7.3E-05
GOES	15	2136	2143	2152			10356			16	B	5.7						4.7E-04
HOLL	16	2036	2038	2047	N15	W29	10356	05	14.7	11	SF		3	E		16		
LEAR	17	0143	0147	0150	S16	E05	10357	05	17.4	7	SF		3	E		32		F
GOES		1319	1325	1329			10356			10	B	3.5						1.7E-04
GOES		1828	1835	1856			10357			28	B	3.2						4.6E-04
GOES	18	1049	1057	1108						19	B	9.8						7.9E-04
GOES		1711	1716	1724	S18	W16	10357			13	SF	B 5.3						3.2E-04
HOLL		1715	1715	1718	S18	W16	10357	05	17.5	3	SF		3	E		11		
GOES		1928	1939	1952						24	B	6.3						7.8E-04
GOES	19	0942	1052	1131						109	B	8.3						4.0E-03
GOES		1444	1525	1604						80	B	7.8						2.9E-03
GOES		1916	1924	1937	N19	W64	10356			21	SF	B 8.3						8.2E-04
HOLL		1924	1924	1926	N19	W64	10356	05	14.9	2	SF		3	E		20		
GOES		2226	2230	2240						14	B	9.4						5.2E-04
GOES		2301	2304	2309						8	B	6.1						2.3E-04
HOLL	20	0021	0025	0029	S25	W30	10364	05	17.7	8	SF		3	E		13		FH
LEAR		0022	0025	0028	S26	W30	10364	05	17.7	6	SF		3	E		15		FH
GOES		0046	0051	0057						11	B	6.5						3.7E-04

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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	20	0110	0115	0123							13	B	7.0						4.5E-04
GOES		0206	0211	0216				10364			10	C	1.1						4.6E-04
GOES		0450	0457	0502	S26	W33		10364			12	SF	C	1.0					5.4E-04
LEAR		0455	0457	0501	S26	W33		10364	05	17.6	6	SF			3	E	20		F
GOES		0605	0610	0616							11	B	5.6						3.0E-04
GOES		0747	0751	0755							8	B	5.3						2.1E-04
GOES		0854	0858	0902							8	B	6.8						2.6E-04
GOES		1039	1045	1051				10364			12	C	1.0						5.7E-04
GOES		1341	1344	1351							10	B	3.0						1.7E-04
GOES		1440	1450	1453							13	B	7.2						4.2E-04
GOES		1924	1931	1938	S13	E15		10362			14	SF	C	1.4					8.4E-04
HOLL		1928	1932	1947	S13	E15		10362	05	21.9	19	SF			3	E	24		
GOES		2110	2113	2116							6	B	4.3						1.3E-04
GOES	21	0542	0604	0621				10362			39	C	1.2						2.1E-03
GOES		1522	1526	1530							8	B	6.5						2.9E-04
GOES	22	0611	0617	0621				10362			10	C	1.1						5.6E-04
GOES		0642	0703	0712				10362			30	C	4.9						6.5E-03
GOES		1344	1356	1401	S10	W11		10362			17	SF	B	5.5					5.1E-04
HOLL		1347	1354	1403	S10	W11		10362	05	21.7	16	SF			3	E	14		F
GOES		1411	1416	1420							9	B	5.6						2.5E-04
GOES		1524	1528	1531							7	B	7.2						2.7E-04
GOES		1636	1723	1743				10362			67	C	1.1						2.6E-03
GOES		2107	2114	2130	S14	W11		10362			23	SF	C	1.1					1.3E-03
HOLL		2110	2113	2126	S14	W11		10362	05	22.0	16	SF			3	E	59		
GOES	23	0806	0830	0844	S10	W15		10362			38	SF	B	7.0					1.2E-03
LEAR		0825	0834	0843	S10	W15		10362	05	22.2	18	SF			3	E	17		
GOES	24	1144	1147	1150				10363			6	B	5.0						1.6E-04
GOES		1413	1417	1419				10368			6	B	4.9						1.5E-04
GOES		1424	1428	1432				10366			8	B	7.1						2.7E-04
GOES		2220	2229	2237				10366			17	B	7.1						6.5E-04
GOES	25	0424	0429	0435	N16	E40		10370			11	SF	B	5.1					3.2E-04
LEAR		0426	0427	0433	N16	E40		10370	05	28.2	7	SF			3	E	19		
GOES		0808	0816	0823	N11	E31		10366			15	SF	B	7.2					5.3E-04
LEAR		0810	0817	0833	N11	E31		10366	05	27.7	23	SF			3	E	39		
GOES		1540	1543	1545							5	B	5.2						1.2E-04
GOES		1715	1754	1812				10368			57	C	3.0						7.2E-03
HOLL		1716	1716	1721	S14	E35		10367	05	28.4	5	SF			3	E	10		F
HOLL		1732	1747	1812	S26	E43		10368	05	29.1	40	SF			3	E	33		F
GOES		2033	2036	2038				10365			5	B	5.2						1.3E-04
HOLL		2214	2214	2225	S07	E06		10365	05	26.4	11	SF			3	E	10		F
GOES		2248	2254	2302	S31	E39		10368			14	SF	B	7.5					4.9E-04
HOLL		2251	2251	2259	S31	E39		10368	05	29.0	8	SF			3	E	16		F
GOES	26	0357	0401	0406							9	B	3.5						1.7E-04
GOES		0534	0550	0602	S09	E12		10365			28	1F	M	1.9					1.9E-02
LEAR		0547	0552	0637	S09	E12		10365	05	27.1	50	1F			3	E	131		F
GOES		1124	1128	1131							7	C	1.0						3.3E-04
GOES		1451	1454	1457							6	B	4.8						1.5E-04
GOES		1503	1520	1539							36	C	5.9						8.6E-03
GOES		1622	1637	1651				10365			29	M	1.0						1.2E-02
GOES		1702	1744	1821	S05	W08		10365			79	1F	C	7.4					3.0E-02
HOLL		1734E	1739	1744	S05	W08		10365	05	26.1	100	1F			3	E	126		F
GOES		2240	2246	2253							13	C	1.5						9.8E-04
HOLL		2359	2401U	2402	S06	W08		10365	05	26.4	3	SF			3	E	16		F
GOES	27	0117	0122	0125							8	C	1.7						5.5E-04
GOES		0240	0306	0321	S07	W03		10365			41	1F	M	1.4					1.9E-02
LEAR		0243	0259	0327	S07	W03		10365	05	26.9	44	1F			3	E	125		U
GOES		0338	0346	0352	S07	W13		10365			14	SF	C	8.9					6.1E-03
LEAR		0340	0341	0412	S07	W13		10365	05	26.2	32	SF			3	E	34		HF
GOES		0506	0626	0716	S07	W14		10365			130	1F	M	1.6					6.1E-02
SVTO		0535E	0618U	0820D	S06	W11		10365	05	26.4	165D	1F			3	E	156		F
LEAR		0539	0617	0750	S07	W14		10365	05	26.2	131	1F			3	E	186		HF

H α SOLAR FLARES

MAY 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	27	1448	1512	1528	S06	W12	10365			40	SF	C 6.5						1.0E-02
SVTO		1454E	1507U	1528	S05	W13	10365	05	26.6	34D	1F		2	E		167		F
HOLL		1454	1517	1548	S06	W12	10365	05	26.7	54	SF		3	E		69		F
GOES		2256	2307	2313	S07	W17	10365			17	2B	X 1.3						7.1E-02
HOLL		2258	2431	2544D	S07	W17	10365	05	26.7	166D	2B		3	E		468		UHT
HOLL		2303	2304	2320	S12	W10	10371	05	27.2	17	SF		3	E		29		
LEAR		2345E	2424	2645	S06	W24	10365	05	26.2	180D	2B		3	E		410		FE
HOLL		2350	2351	2356	S32	E06	10368	05	28.5	6	SF		3	E		53		
GOES	28	0017	0027	0039						22		X 3.6						2.8E-01
GOES		0443	0447	0451						8		C 7.6						3.2E-03
GOES		0605	0609	0614						9		C 3.1						1.5E-03
GOES		0941	0945	0951	S05	W24	10365			10	SF	C 1.9						9.3E-04
SVTO		0944	0946	1003	S05	W24	10365	05	26.6	19	SF		3	E		38		F
SVTO		1028	1029	1032	S04	W25	10365	05	26.6	4	SF		3	E		16		
GOES		1124	1128	1134						10		B 9.1						4.7E-04
GOES		1216	1221	1224						8		C 1.3						4.8E-04
GOES		1233	1238	1243	S04	W27	10365			10	SF	C 1.3						6.2E-04
SVTO		1236	1237	1243	S04	W27	10365	05	26.5	7	SF		3	E		20		
HOLL		1319	1320	1326	S02	W26	10365	05	26.6	7	SF		3	E		19		
HOLL		1334	1424	1446	S01	W26	10365	05	26.6	72	SF		3	E		71		
GOES		1350	1355	1412						22		C 1.3						1.6E-03
GOES		1420	1424	1427	S05	W27	10365			7	SF	C 2.2						7.3E-04
SVTO		1423	1423	1427	S05	W27	10365	05	26.6	4	SF		3	E		30		F
HOLL		1448	1547	1629	S01	W27	10365	05	26.6	101	SF		3	E		81		
GOES		1522	1531	1535	S01	W27	10365			13	SF	C 1.5						9.9E-04
GOES		1537	1546	1551	S05	W29	10365			14	SF	C 3.5						2.1E-03
SVTO		1544	1545	1550	S05	W29	10365	05	26.5	6	SF		3	E		19		
HOLL		1636	1639	1645	S07	W33	10365	05	26.2	9	SF		3	E		15		
HOLL		1722	1845	2001	N00	W28	10365	05	26.6	159	1F		3	E		170		F
GOES		1731	1746	1752	N00	W28	10365			21	1F	C 3.5						3.3E-03
GOES		1800	1808	1815						15		C 2.0						1.5E-03
GOES		1841	1844	1846						5		C 4.4						1.2E-03
GOES		1934	1939	1942						8		C 1.9						7.4E-04
HOLL		2008	2015	2038	S07	W35	10365	05	26.2	30	SF		3	E		55		
GOES		2008	2123	2126	S07	W35	10365			78	SF	C 3.1						9.2E-03
HOLL		2030	2030	2036	S28	E00	10368	05	28.8	6	SF		3	E		18		
HOLL		2042	2050	2059	N00	W29	10365	05	26.7	17	SF		3	E		51		F
HOLL		2052	2057	2108	N11	E73	10373	06	3.4	16	SF		3	E		25		F
HOLL		2102	2131	2135	S01	W28	10365	05	26.8	33	SF		3	E		18		
HOLL		2109	2111	2117	N07	E58	10373	06	2.2	8	SF		3	E		18		
HOLL		2118	2119	2124	N07	E58	10373	06	2.2	6	SF		3	E		13		
GOES		2202	2206	2208	S07	W36	10365			6	SF	C 1.6						4.5E-04
HOLL		2205	2206	2211	S07	W36	10365	05	26.2	6	SF		3	E		58		
GOES		2302	2305	2310						8		C 1.0						4.1E-04
GOES	29	0019	0022	0026	S07	W37	10365			7	SF	B 7.9						2.7E-04
HOLL		0020	0022	0030	S07	W37	10365	05	26.2	10	SF		3	E		40		
LEAR		0020	0105	0223	S06	W37	10365	05	26.2	123	2B		4	E		548		UF
HOLL		0035	0107	0157D	S07	W38	10365	05	26.2	82D	2B		3	E		423		
GOES		0051	0105	0112	S06	W37	10365			21	2B	X 1.2						6.8E-02
GOES		0209	0218	0224	S37	E03	10368			15	1F	M 1.5						9.2E-03
LEAR		0210	0217	0239	S37	E03	10368	05	29.3	29	1F		4	E		109		FE
GOES		0513	0519	0525						12		C 1.2						8.0E-04
GOES		0830	0833	0835						5		B 5.8						1.5E-04
GOES		1045	1049	1056						11		B 7.9						4.9E-04
GOES		1928	1937	1943	S35	W13	10368			15	1N	M 2.8						1.4E-02
HOLL		1932	1939	2007	S35	W13	10368	05	28.8	35	1N		3	E		194		UH
GOES	30	0043	0047	0052	S36	W17	10368			9	SF	B 5.3						2.4E-04
HOLL		0045	0046	0057	S36	W17	10368	05	28.7	12	SF		3	E		64		F
GOES		0126	0129	0131	S06	W51	10365			5	SF	B 6.0						1.4E-04
LEAR		0128	0130	0138	S06	W51	10365	05	26.2	10	SF		3	E		46		F
GOES		0322	0327	0337	S07	W55	10365			15	SF	B 8.6						6.0E-04
LEAR		0327	0327	0343	S07	W55	10365	05	26.0	16	SF		3	E		18		F
GOES		0548	0557	0603	S05	W54	10365			15	SF	C 1.0						7.6E-04
LEAR		0552	0552	0606	S05	W54	10365	05	26.2	14	SF		3	E		27		F
GOES		0639	0650	0656	S05	W55	10365			17	1N	C 8.6						3.8E-03

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H α SOLAR FLARES

MAY 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	0642	0650	0715	S05	W55	10365	05	26.2	33	1N			3	E		113		F
SVTO		0653E	0653U	0707	S04	W50	10365	05	26.5	140	1F			3	E		54		
GOES		0849	0919	0946	N08	E55	10373			57	SF C 4.9								1.1E-02
LEAR		0852	0858	0858D	N08	E55	10373	06	3.5	60	SF			3	E		89		
SVTO		0853	0900	0929	N06	E47	10373	06	2.9	36	SF			3	E		63		F
GOES		1401	1412	1422						21	B 7.1								8.1E-04
HOLL		1450	1452	1458	S07	W59	10365	05	26.2	8	SF			3	E		12		
GOES		1717	1724	1726	S02	W54	10365			9	SF C 1.7								5.3E-04
HOLL		1719	1726	1748	S02	W54	10365	05	26.7	29	SF			3	E		70		F
HOLL		1931	1931	1934	S02	W54	10365	05	26.8	3	SF			3	E		19		
GOES	31	0021	0029	0051	N07	E30	10373			30	SF C 3.5								5.7E-03
LEAR		0024	0027	0041	N07	E30	10373	06	2.3	17	SF			3	E		30		
GOES		0213	0224	0240	S07	W65	10365			27	2B M 9.3								8.5E-02
LEAR		0218	0223	0338	S07	W65	10365	05	26.2	80	2B			4	E		512		U
GOES		1405	1416	1423	S05	W72	10365			18	SF C 1.3								1.2E-03
HOLL		1407	1408	1424	S05	W72	10365	05	26.2	17	SF			3	E		19		
GOES		1525	1533	1540	S07	W73	10365			15	SF C 3.5								2.2E-03
HOLL		1529	1529	1540	S07	W73	10365	05	26.2	11	SF			3	E		28		
GOES		1620	1632	1640						20	C 6.2								4.7E-03
GOES		2215	2218	2222						7	B 8.6								3.2E-04
HOLL		2321	2323	2326	S03	W73	10365	05	26.5	5	SF			3	E		23		F

"Remarks"

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

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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May 03

MAY 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)		
02	2695	PALE	4 S/F	0254.0	0256.0	3.0	37.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0256.0	0256.0	U	54.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	0256.0	0256.0	U	23.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	0413.0	0413.0	U	23.0			QL=4 ST=3 TYP=3
	2695	PALE	4 S/F	1807.0	1810.0	8.0	130.0			QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	1807.0	1809.0	9.0	130.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1807.0	1809.0	7.0	130.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1807.0	1810.0	6.0	130.0			QL=4 ST=2 TYP=3
06	2695	PALE	8 S	0138.0	0138.0	1.0	44.0			QL=4 ST=2 TYP=3
26	2695	SVTO	4 S/F	0539.0	0543.0	15.0	110.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0541.0	0542.0	4.0	91.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	0541.0	0542.0	13.0	71.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0542.0	0542.0	3.0	72.0			QL=4 ST=2 TYP=3
	2695	SGMR	48 C	1508.0	1512.0	11.0	77.0			QL=4 ST=2 TYP=8
	2695	SVTO	4 S/F	1508.0	1513.0	11.0	74.0			QL=4 ST=2 TYP=3
	8800	SGMR	46 C	1512.0	1512.0	9.0	31.0			QL=4 ST=2 TYP=8
	8800	SGMR	4 S/F	1521.0	1529.0	9.0	26.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1528.0	1529.0	2.0	36.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1630.0	1633.0	8.0	56.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1631.0	1632.0	13.0	24.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1633.0	1633.0	4.0	39.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1633.0	1633.0	6.0	66.0			QL=4 ST=2 TYP=3
27	2695	PALE	4 S/F	0253.0	0254.0	12.0	110.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0254.0	0254.0	9.0	98.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0254.0	0254.0	9.0	54.0			QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	0254.0	0303.0	9.0	52.0			QL=4 ST=2 TYP=3
	8800	SVTO	20 GRF	0600.0	0606.0	28.0	66.0			QL=4 ST=2 TYP=2
	2695	SVTO	4 S/F	0600.0	0605.0	25.0	160.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0603.0	0605.0	13.0	150.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1452.0	1455.0	7.0	38.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1501.0	1508.0	16.0	190.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1506.0	1508.0	8.0	200.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1506.0	1508.0	10.0	85.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1507.0	1508.0	4.0	73.0			QL=4 ST=2 TYP=3
	2695	PALE	48 C	2259.0	2307.0	17.0	910.0			QL=4 ST=2 TYP=8
	8800	PALE	48 C	2259.0	2305.0	28.0	2100.0			QL=4 ST=2 TYP=8
28	8800	LEAR	48 C	0019.0	0024.0	50.0	5300.0			QL=4 ST=2 TYP=8
	8800	PALE	48 C	0019.0	0024.0	87.0	5200.0			QL=4 ST=2 TYP=8
	2695	LEAR	48 C	0020.0	0022.0	23.0	1600.0			QL=4 ST=2 TYP=8
	2695	PALE	48 C	0021.0	0023.0	76.0	1700.0			QL=4 ST=2 TYP=8
	2695	PALE	4 S/F	0218.0	0222.0	7.0	100.0			QL=4 ST=2 TYP=3
	2695	LEAR	8 S	0221.0	0222.0	2.0	80.0			QL=4 ST=2 TYP=3
	8800	PALE	20 GRF	0228.0	0245.0	20.0	74.0			QL=4 ST=2 TYP=2
	8800	SGMR	4 S/F	1125.0	1125.0	5.0	55.0			QL=4 ST=2 TYP=3
29	8800	LEAR	48 C	0058.0	0104.0	79.0	3400.0			QL=4 ST=2 TYP=8
	2695	LEAR	48 C	0058.0	0105.0	75.0	730.0			QL=4 ST=2 TYP=8
	2695	PALE	48 C	0058.0	0105.0	75.0	810.0			QL=4 ST=2 TYP=8
	8800	PALE	48 C	0058.0	0105.0	79.0	3400.0			QL=4 ST=2 TYP=8
	2695	PALE	48 C	1931.0	1934.0	6.0	360.0			QL=4 ST=2 TYP=8
	8800	SGMR	49 GB	1931.0	1933.0	9.0	1200.0			QL=4 ST=2 TYP=6
	2695	SGMR	48 C	1931.0	1934.0	9.0	310.0			QL=4 ST=2 TYP=8
	8800	PALE	49 GB	1932.0	1933.0	4.0	1100.0			QL=4 ST=2 TYP=6
30	8800	LEAR	8 S	0642.0	0643.0	1.0	84.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0642.0	0643.0	1.0	68.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0649.0	0649.0	1.0	52.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0916.0	0916.0	2.0	51.0			QL=4 ST=2 TYP=3
31	8800	LEAR	49 GB	0216.0	0223.0	35.0	7900.0			QL=4 ST=2 TYP=6
	8800	PALE	49 GB	0216.0	0223.0	32.0	6000.0			QL=4 ST=2 TYP=6
	2695	PALE	49 GB	0216.0	0225.0	31.0	1500.0			QL=4 ST=2 TYP=6
	2695	LEAR	49 GB	0217.0	0225.0	18.0	1300.0			QL=4 ST=2 TYP=6
	8800	SGMR	4 S/F	1528.0	1529.0	3.0	88.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1529.0	1530.0	1.0	30.0			QL=4 ST=2 TYP=3

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May 03

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

Selected Fixed Frequency Events

MAY 2003

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m	Mean 2 Hz)		
31	8800 SVTO	8 S	1529.0	1530.0	1.0	73.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1530.0	1530.0	U	21.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1550.0	1550.0	1.0	29.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1551.0	1551.0	U	26.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

SGMR = Sagamore Hill

SVTO = San Vito

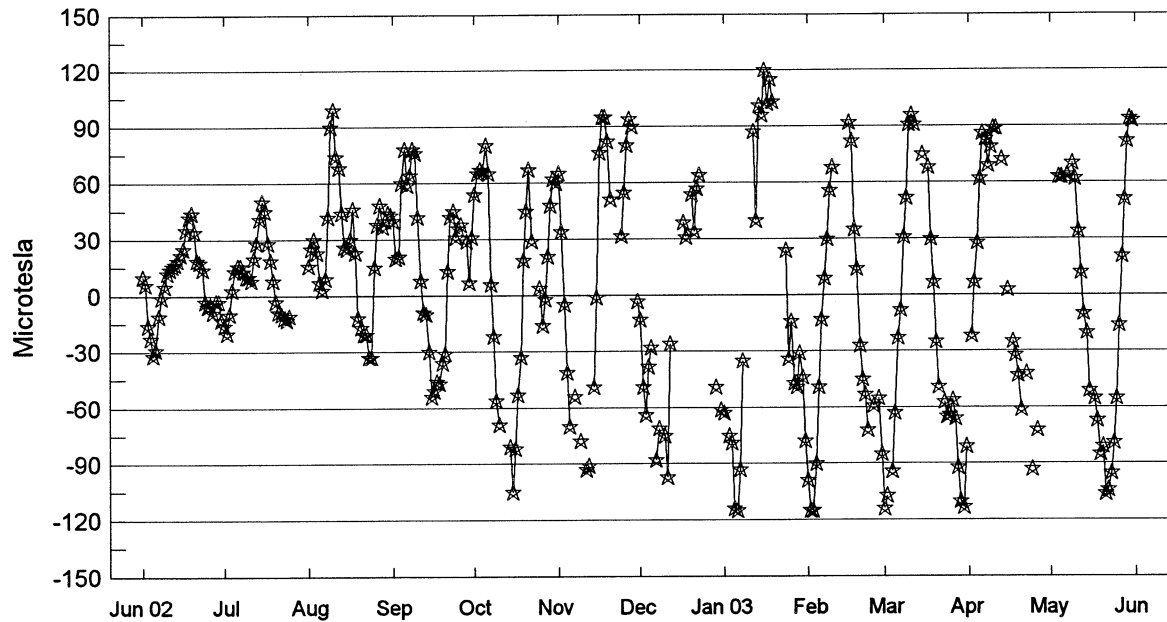
Explanation of Type Code:

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.

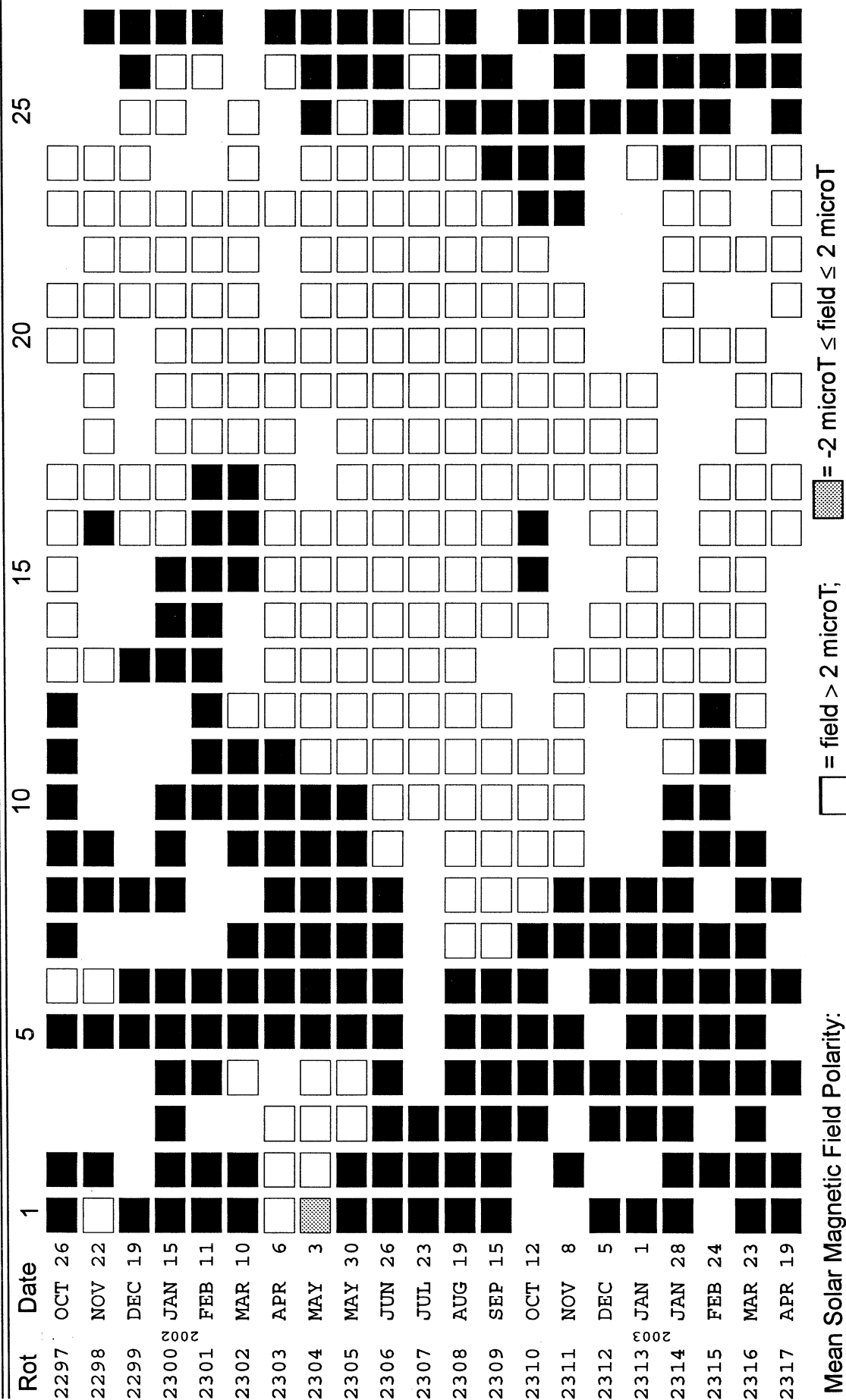
Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

35
May 03



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

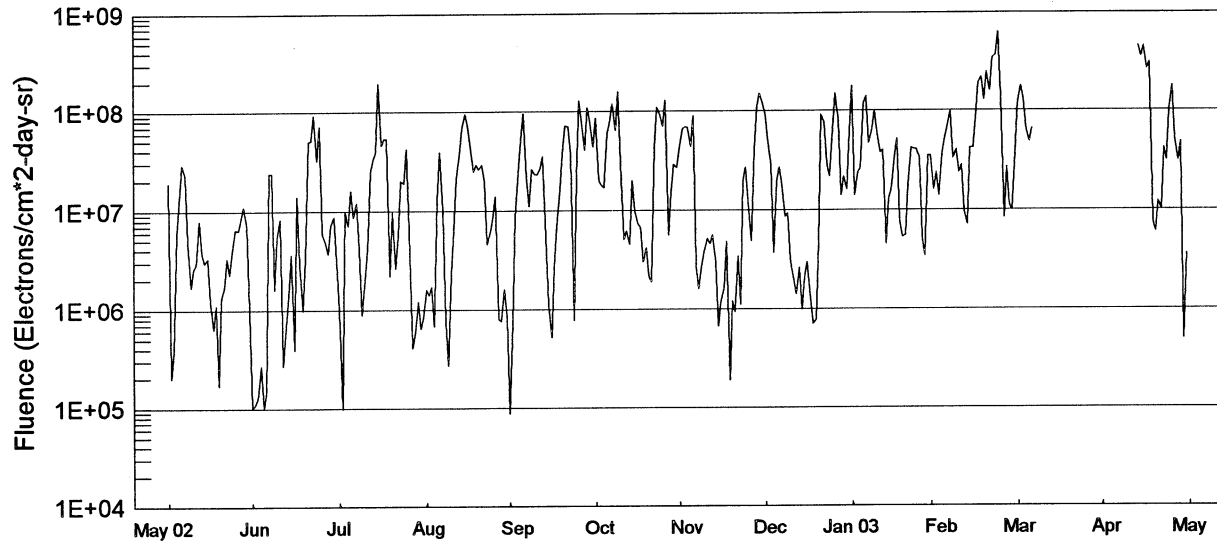
STANFORD MEAN SOLAR MAGNETIC FIELD



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

GOES Daily Electron Fluence Jun 2002 - May 2003

37
May 03



Day	Jun 02	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr	May
1	1.9E+07	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	--
2	2.0E+05	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
3	3.8E+05	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
4	5.9E+06	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	--
5	1.3E+07	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	--
6	2.9E+07	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	--
7	2.3E+07	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
8	4.8E+06	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
9	1.7E+06	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	--	--
10	2.6E+06	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	--	--
11	2.9E+06	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	--	--
12	8.0E+06	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	--
13	3.7E+06	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	--
14	3.0E+06	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
15	3.3E+06	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
16	1.2E+06	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
17	6.4E+05	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
18	1.1E+06	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
19	1.7E+05	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
20	1.3E+06	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
21	1.7E+06	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
22	3.3E+06	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
23	2.3E+06	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
24	4.3E+06	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
25	6.5E+06	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
26	6.4E+06	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
27	8.3E+06	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
28	1.1E+07	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
29	7.3E+06	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
30	1.0E+06	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
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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Number 706 Part I

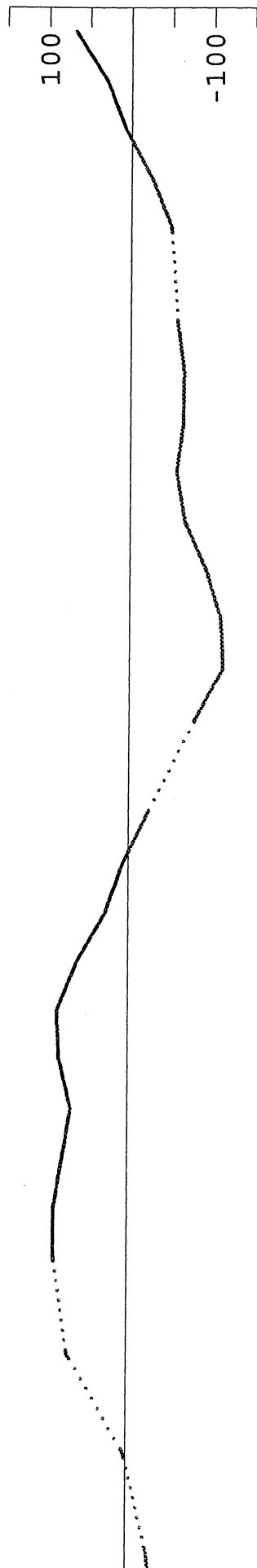
DATA FOR APRIL 2003

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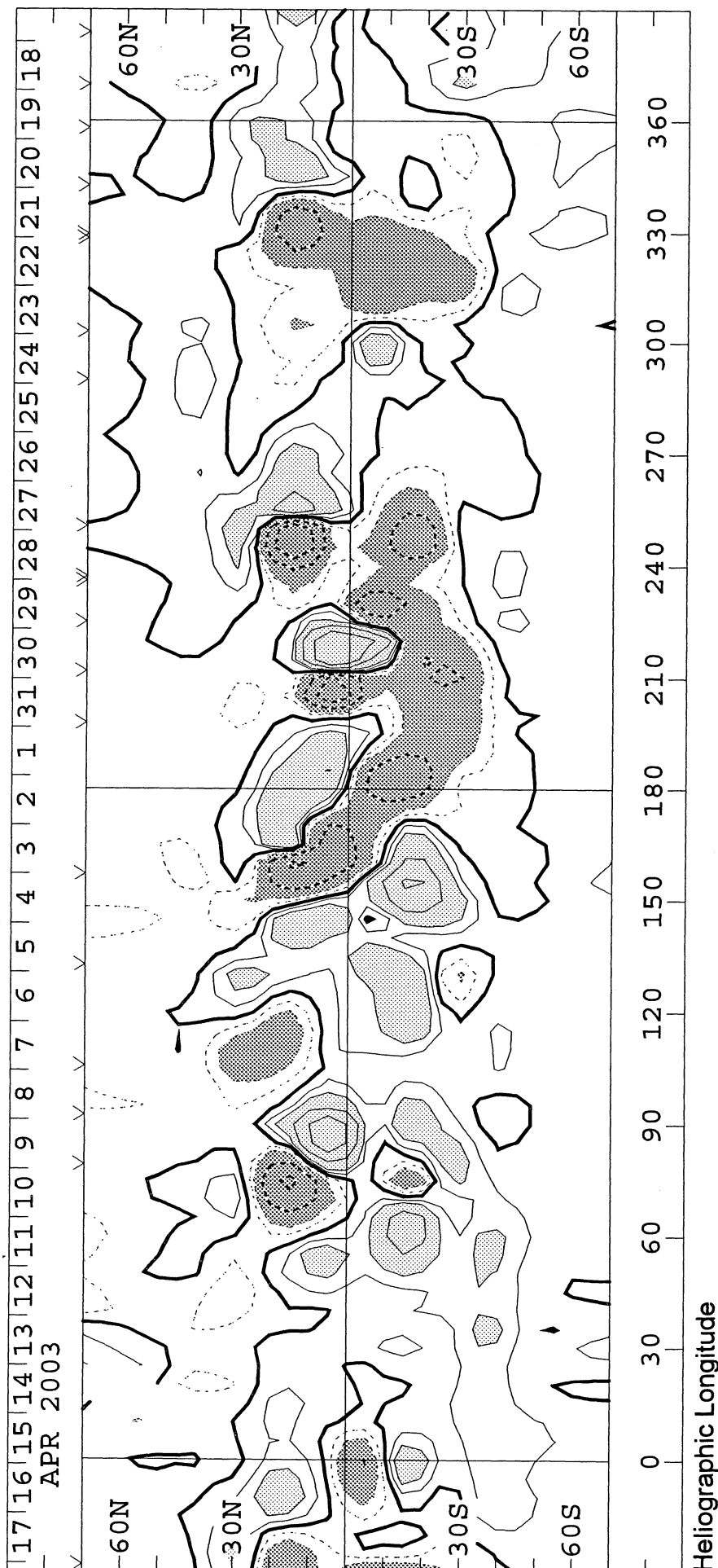
SOLAR MAGNETIC FIELD SYNOPTIC CHART CARRINGTON ROTATION NUMBER 2001 (19 March to 15 April 2003)

WILCOX SOLAR OBSERVATORY

Mean Field



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



SOLAR MAGNETIC FIELD SYNOPSIS CHART

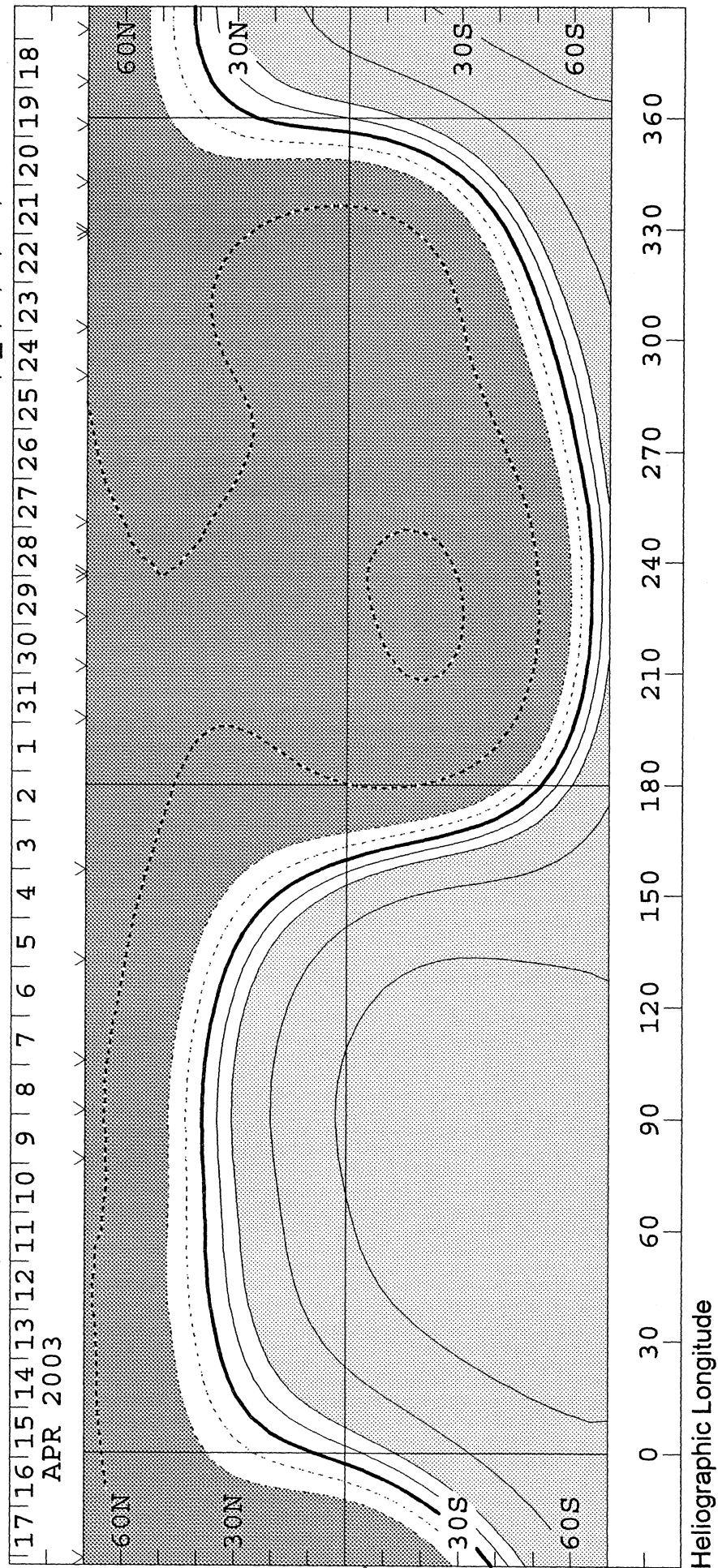
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 2001

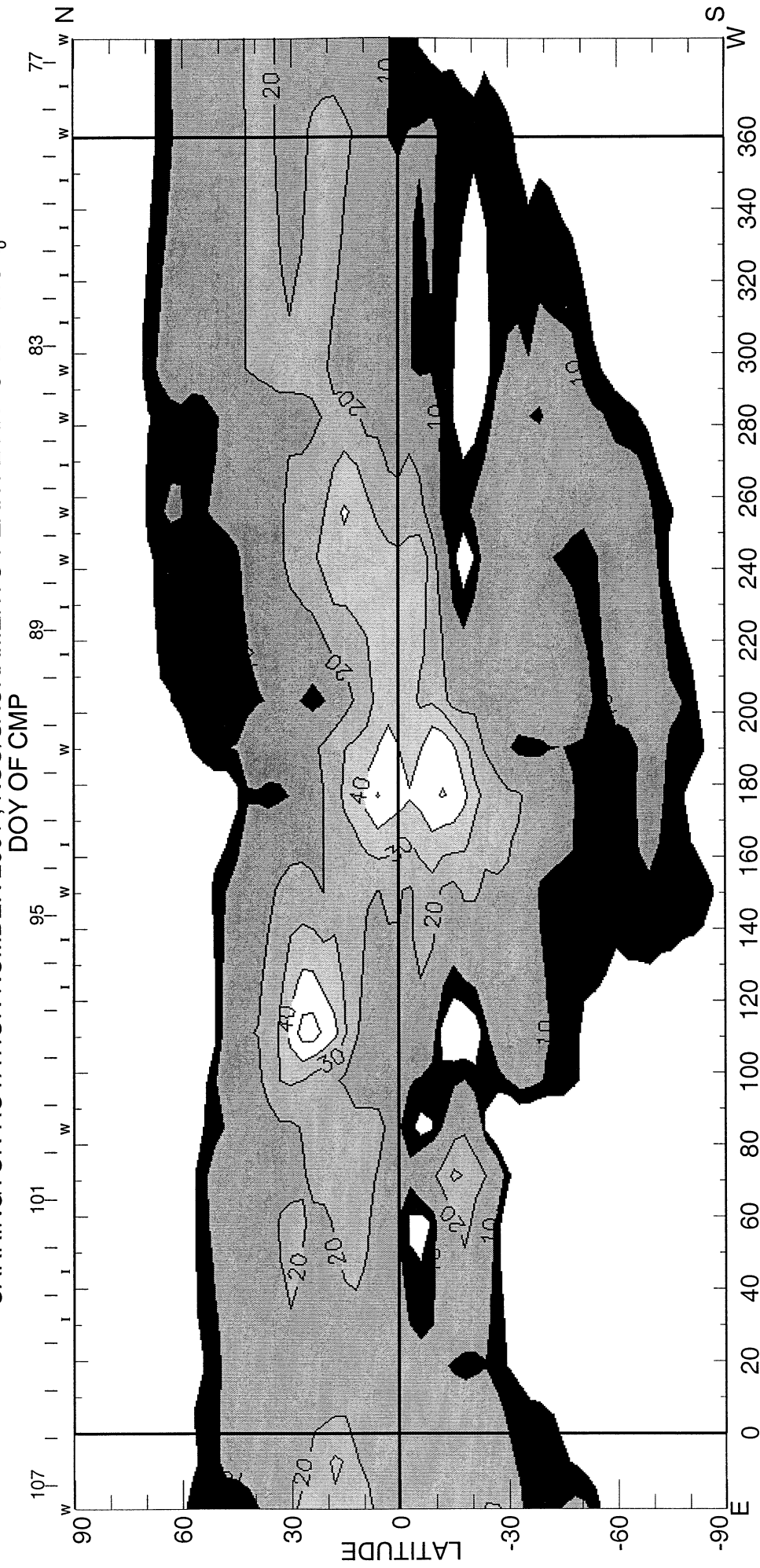
(19 March to 15 April 2003)

Wilcox Solar Observatory

0, ± 1 , 2, 5, 10, 20 microTesla

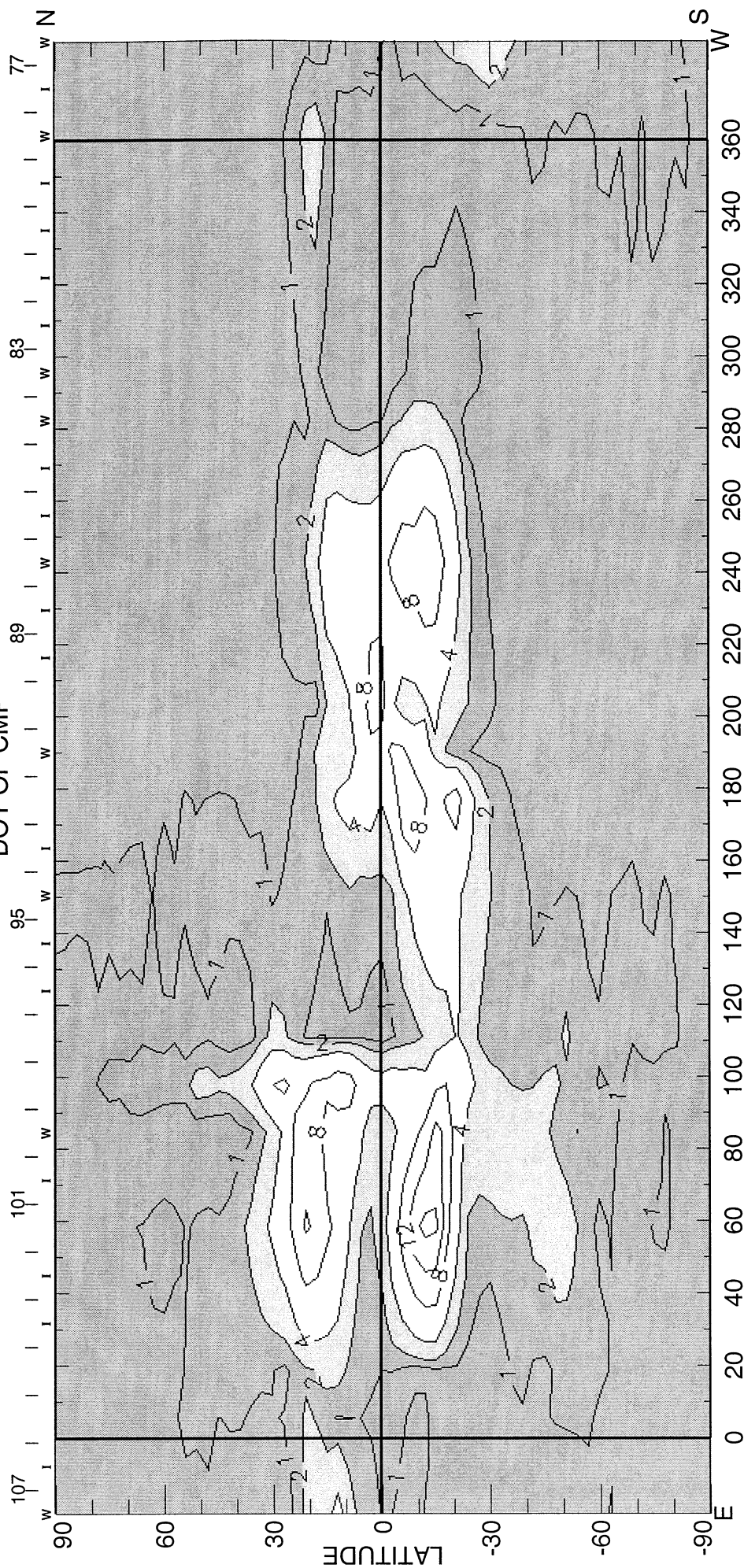


CARRINGTON ROTATION NUMBER 2001 ; NSO/SACRAMENTO PEAK FE XIV @ $R = 1.15R_{\odot}$



(03-Jul-03) 2003 E+W LIMB CONTOURS: 7, 10, 20, 30, 40, 50, 60, 80, 120, 140, 160 MILLIONTHS OF $I_{\odot}$
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK
 $\langle I \rangle = 11.02 \mu$

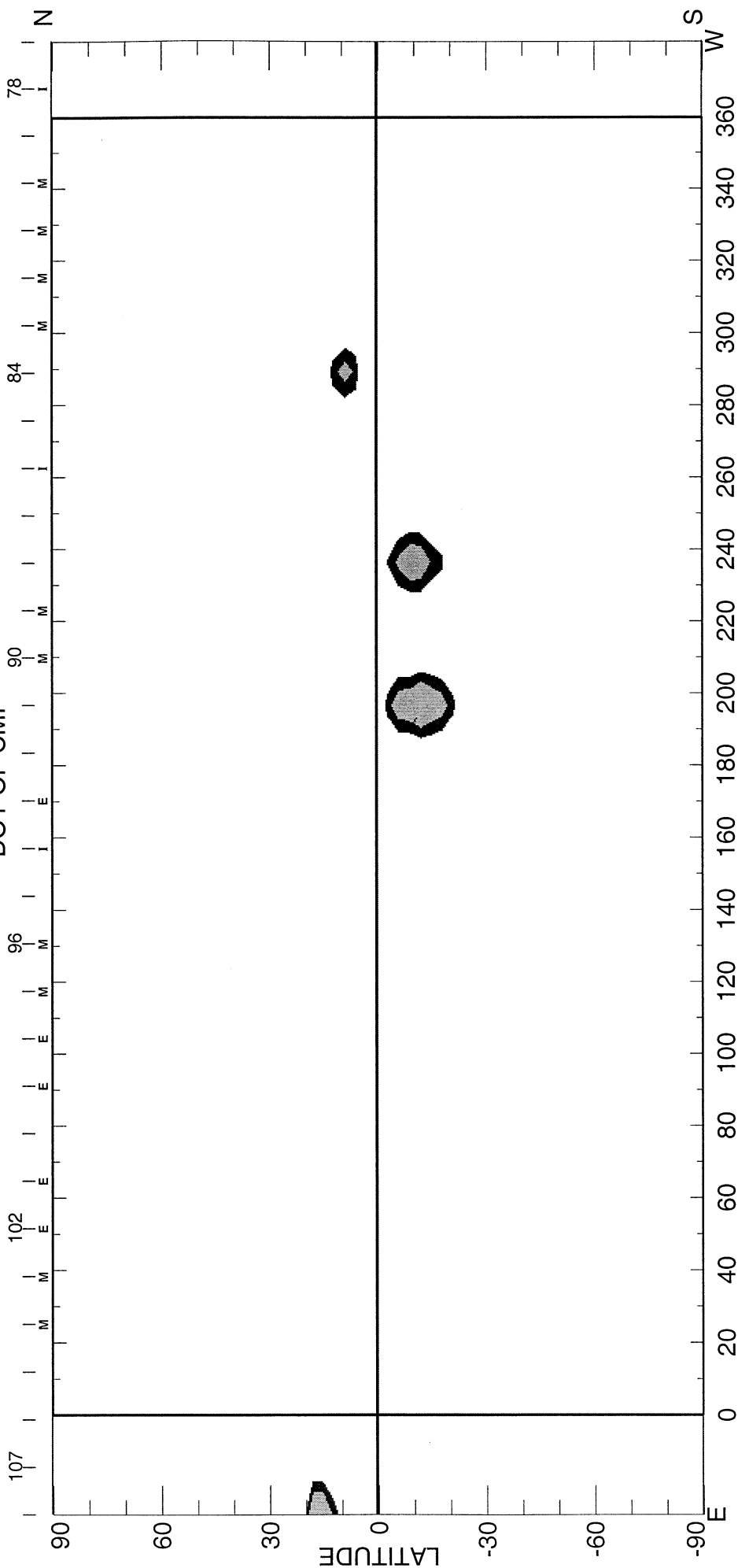
CARRINGTON ROTATION NUMBER 2001 ; NSO/SACRAMENTO PEAK FEX @ $R = 1.15R_{\odot}$
DOY OF CMP



2003 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF $I_{\odot}$
 $\langle I \rangle = 1.51 \mu$

(30-May-03)

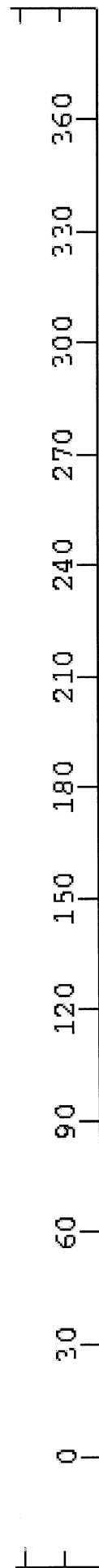
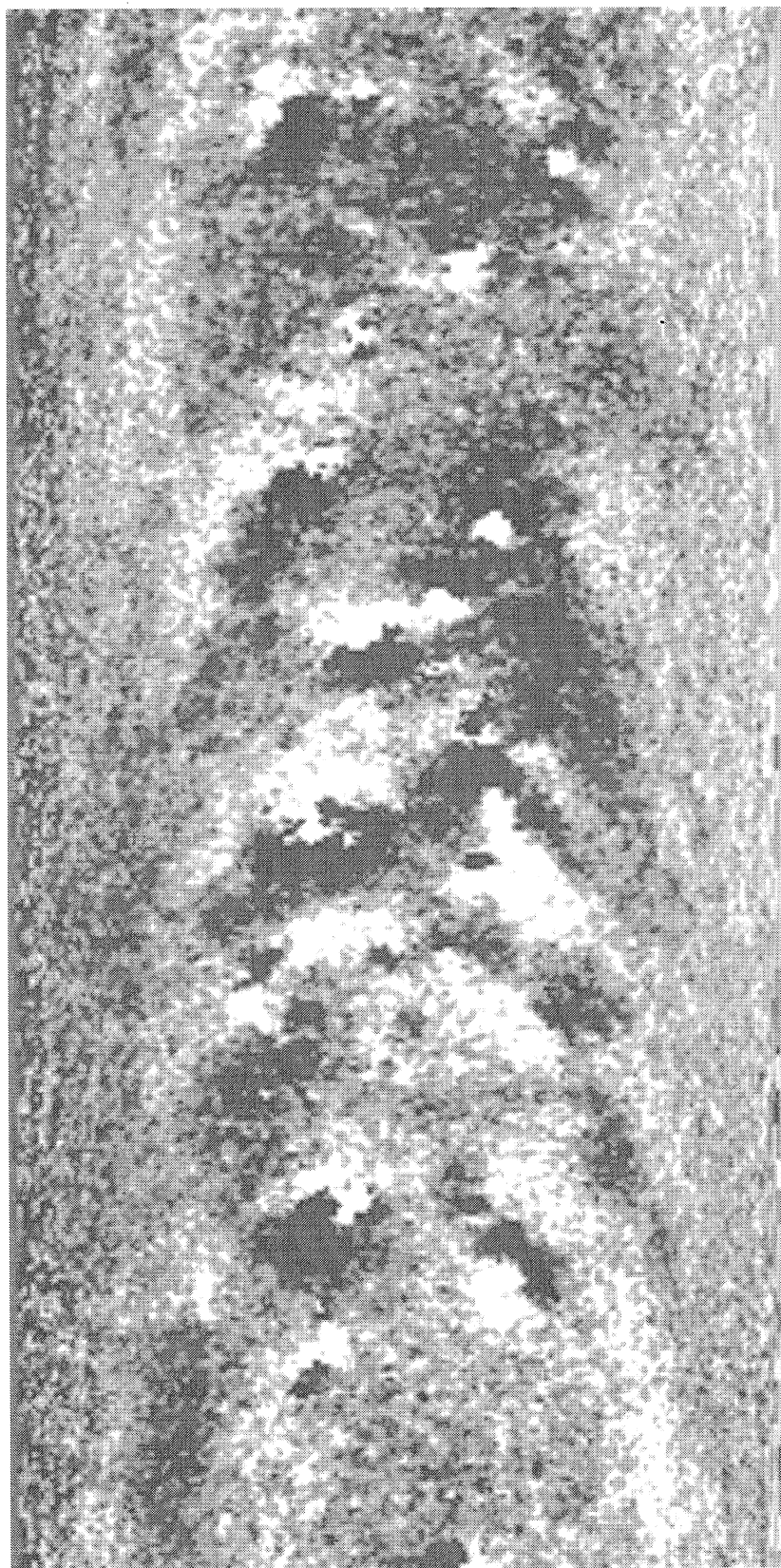
CARRINGTON ROTATION NUMBER 2001 ; NSO/SACRAMENTO PEAK CA XV @ $R = 1.15R_{\odot}$
DOY OF CMP



(30-May-03) 2003 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 2001
(19 March to 15 April 2003)

National Solar Observatory/Kitt Peak



Heliographic Longitude

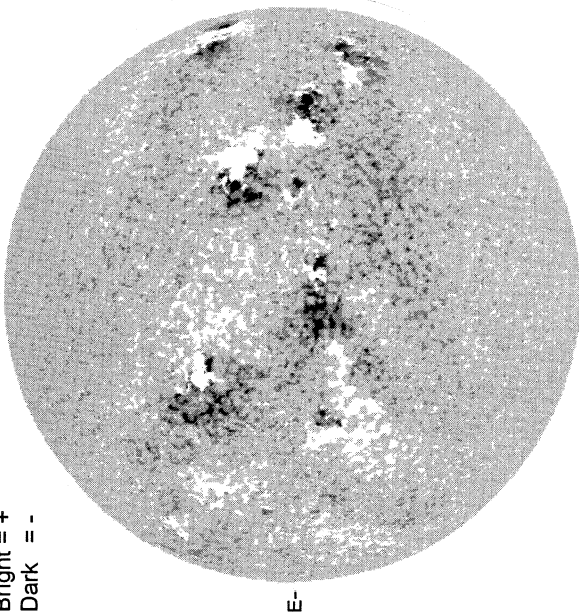
APRIL 1, 2003 (P= -26.15, Bo = -6.57, Lo = 196.62)

46
Apr 03

KITT PEAK MAGNETOGRAM

868.8 nm

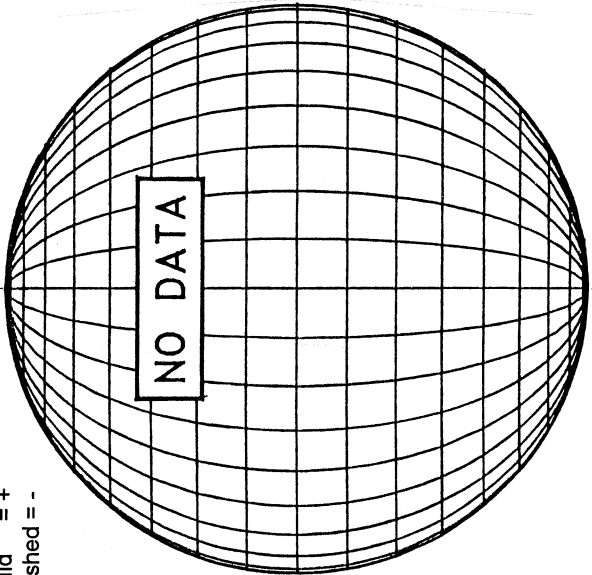
Bright = +
Dark = -



1614 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

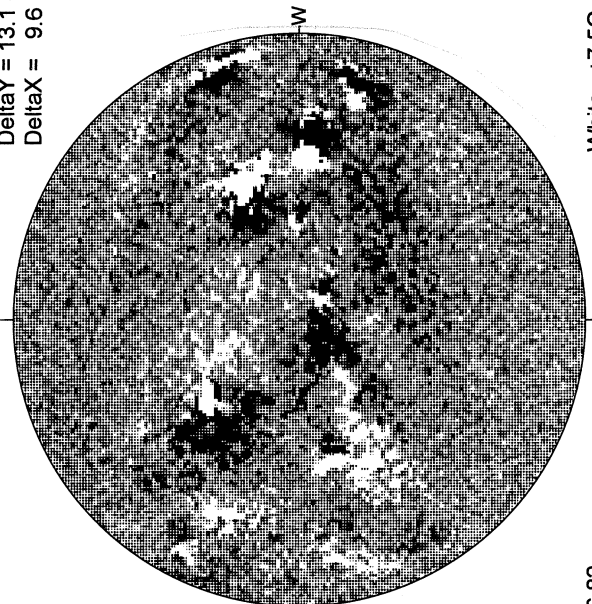


NO DATA

16.82 -
17.77 UT

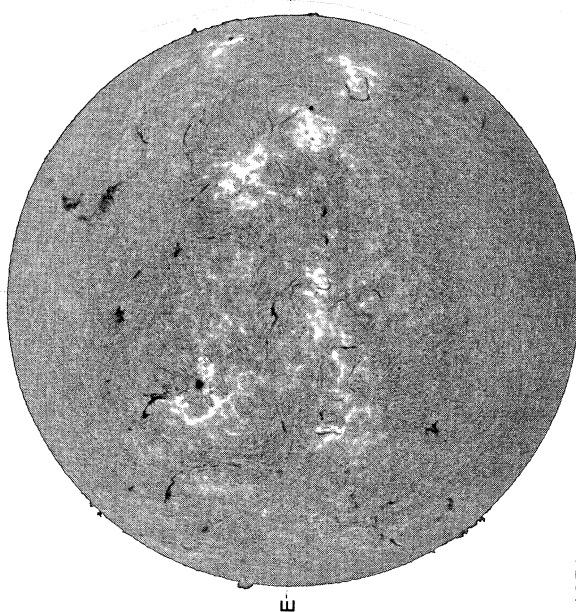
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



White= +7.5G
Black = -7.5G

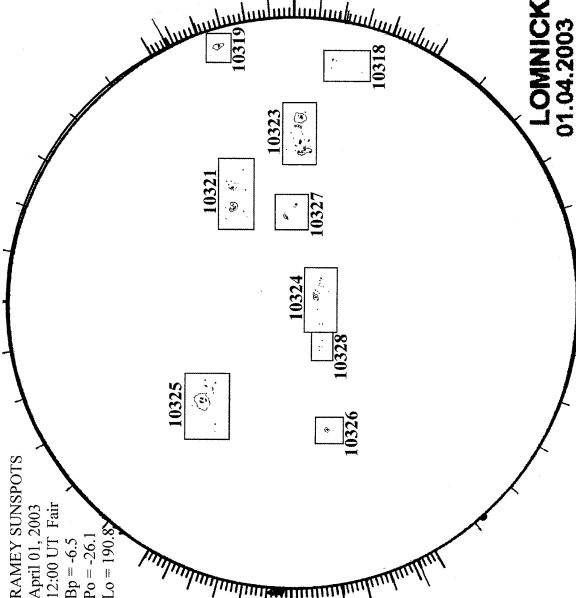
BIG BEAR H-ALPHA



1651 UT

RAMEY SUNSPOT

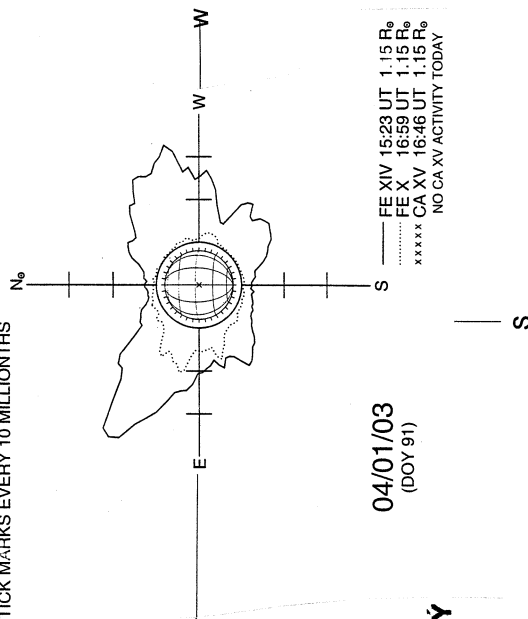
RAMEY SUNSPOTS
April 01, 2003
12:00 UT Fair
Bp = -6.5
Po = -26.1
Lo = 190.8



1200 UT
0859 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



04/01/03
(DOY 91)

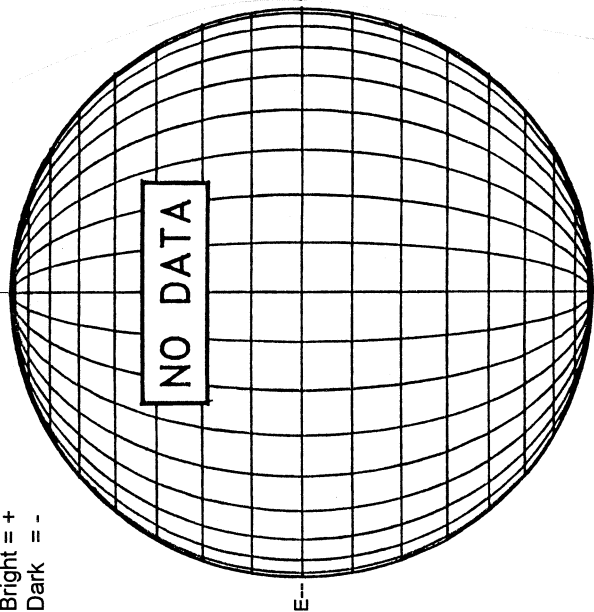
EE XIV 15:23 UT 1.15 R_o
EE X 18:59 UT 1.15 R_o
XXXX CA XV 16:46 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

APRIL 2, 2003 (P = -26.19, Bo = -6.51, Lo = 183.43)

KITT PEAK MAGNETOGRAM

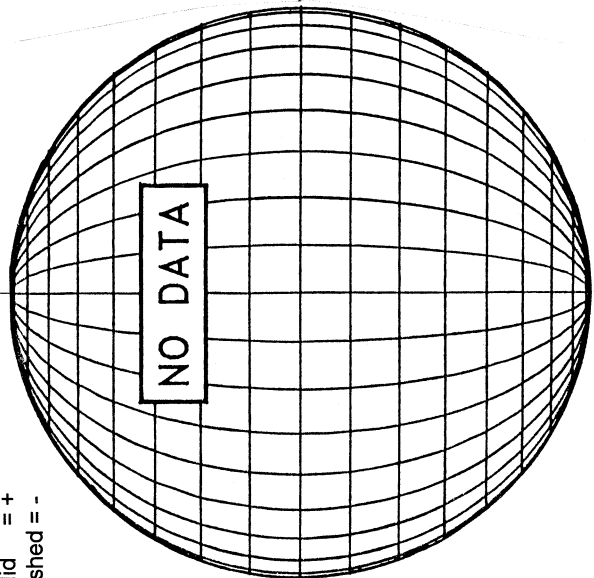
868.8 nm

Bright = +
Dark = -



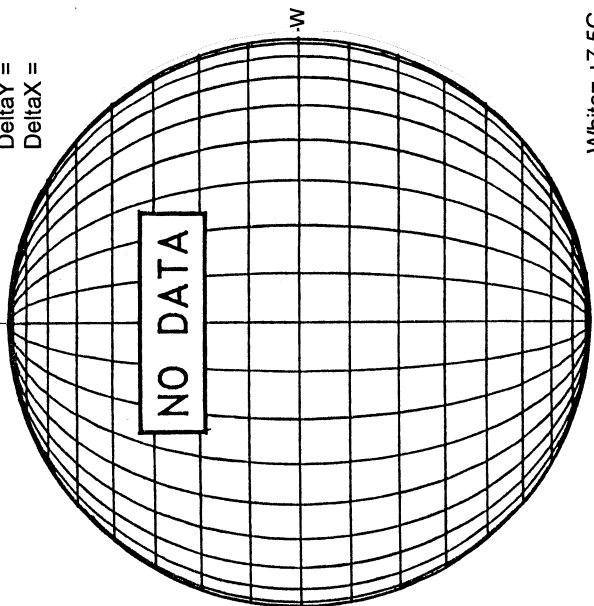
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



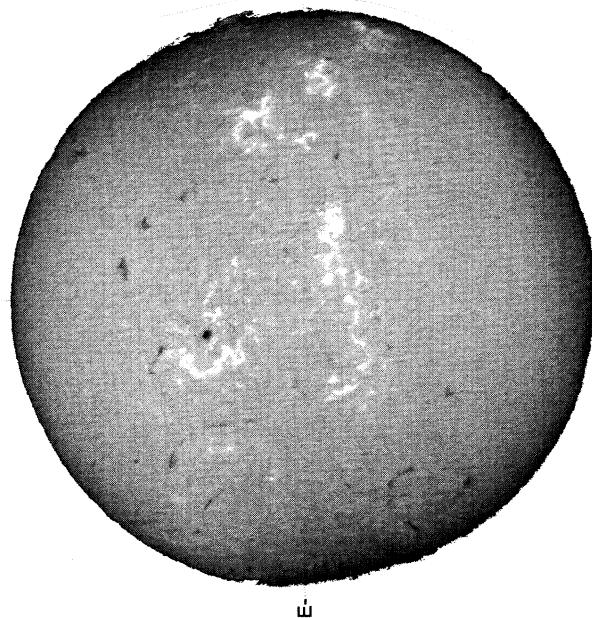
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



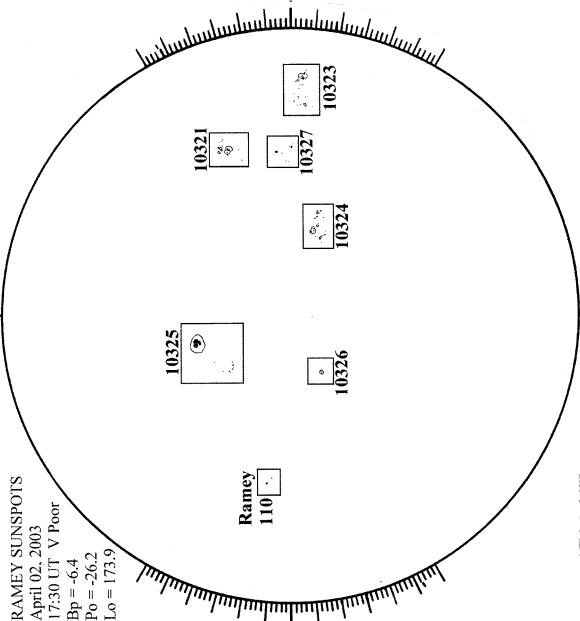
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



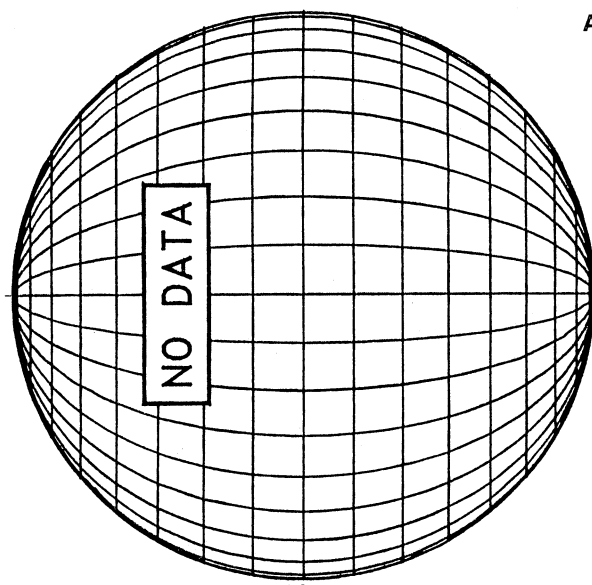
1252 UT

RAMEY SUNSPOT



1730 UT

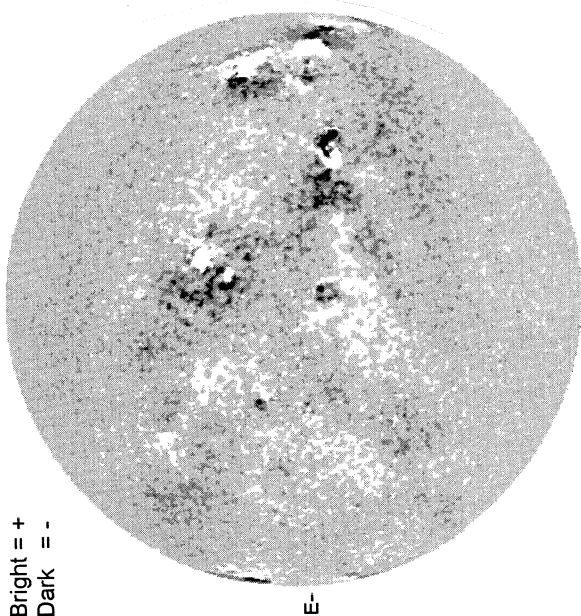
LOMNICKY PEAK CORONA (1.04 Radii)----



APRIL 3, 2003 (P= -26.23, Bo = -6.46, Lo = 170.24)

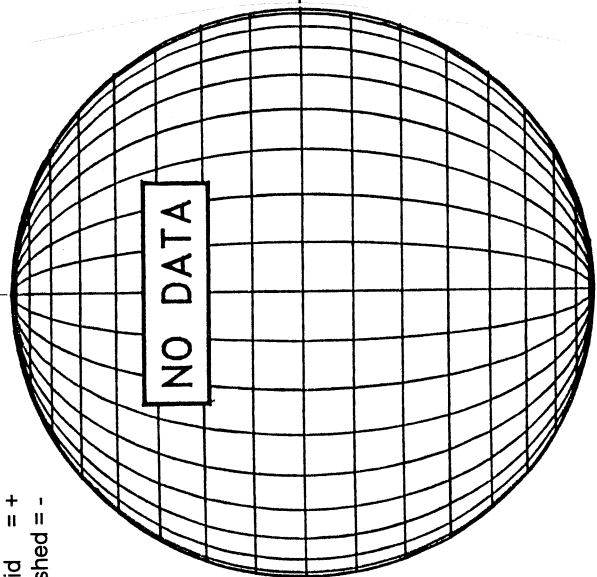
KITT PEAK MAGNETOGRAM

868.8 nm



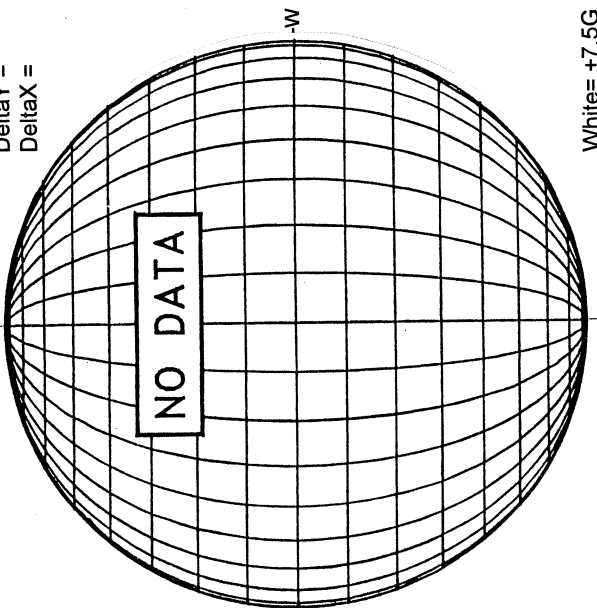
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



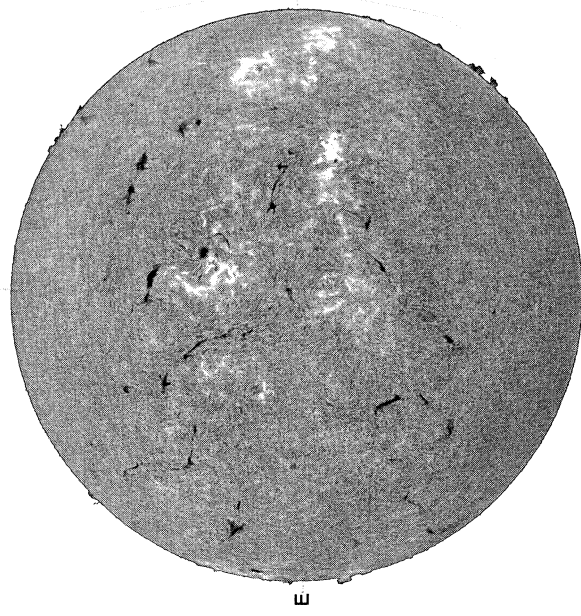
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

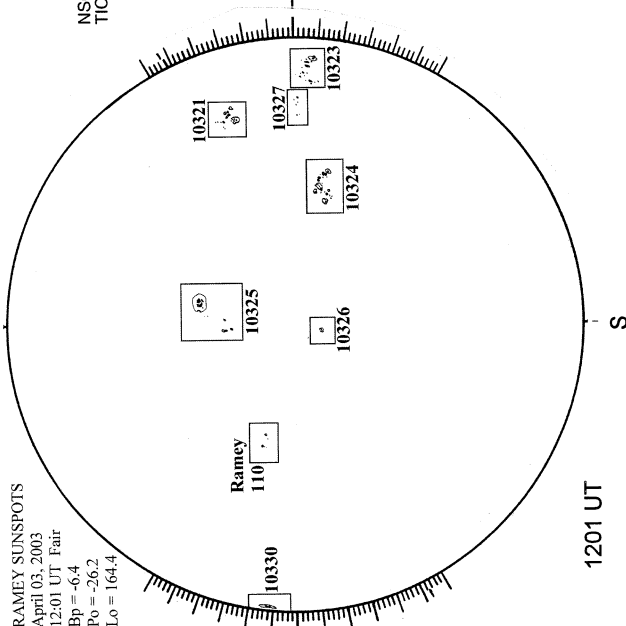
BIG BEAR H-ALPHA



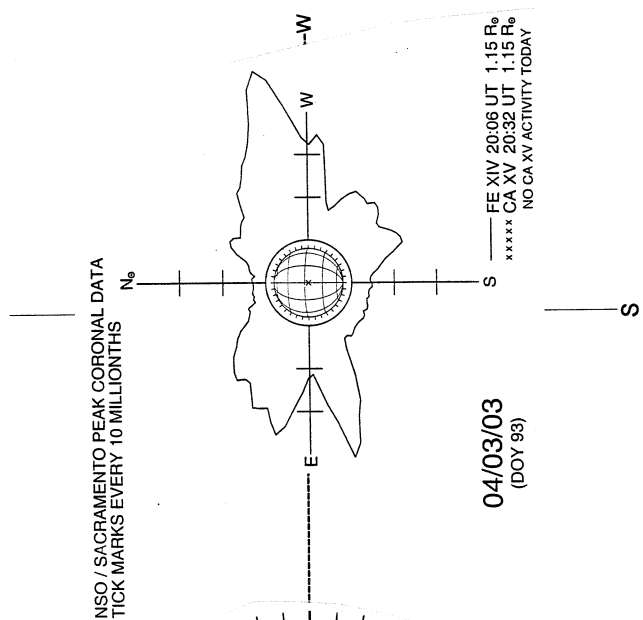
RAMEY SUNSPOT

RAMEY SUNSPOTS

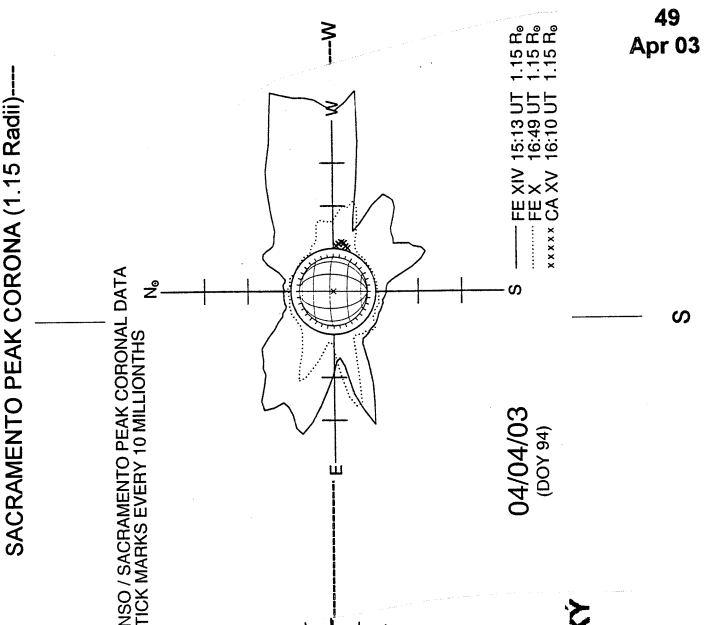
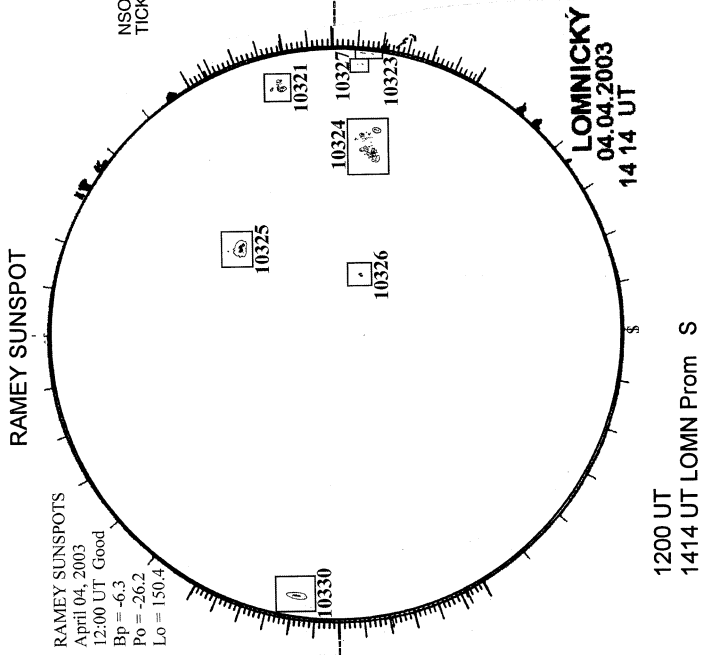
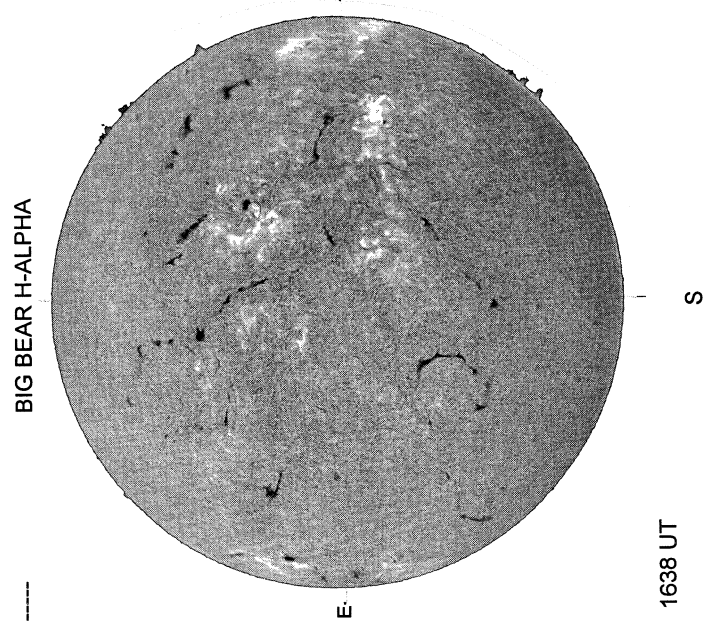
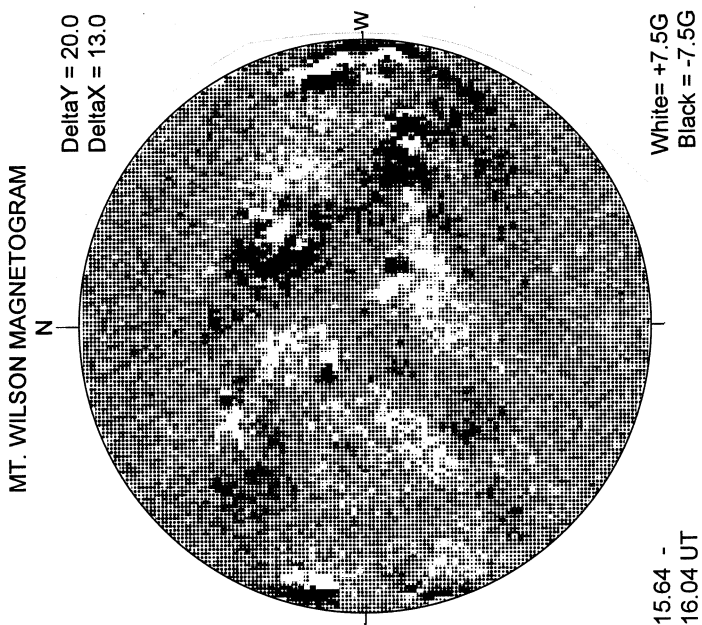
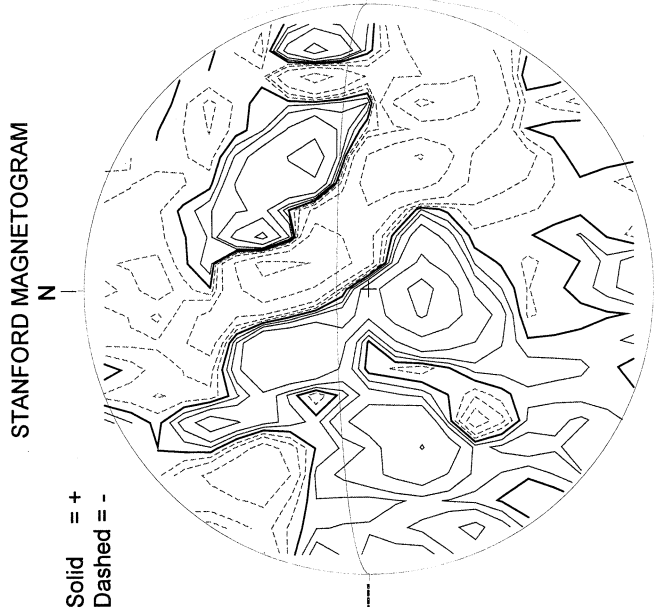
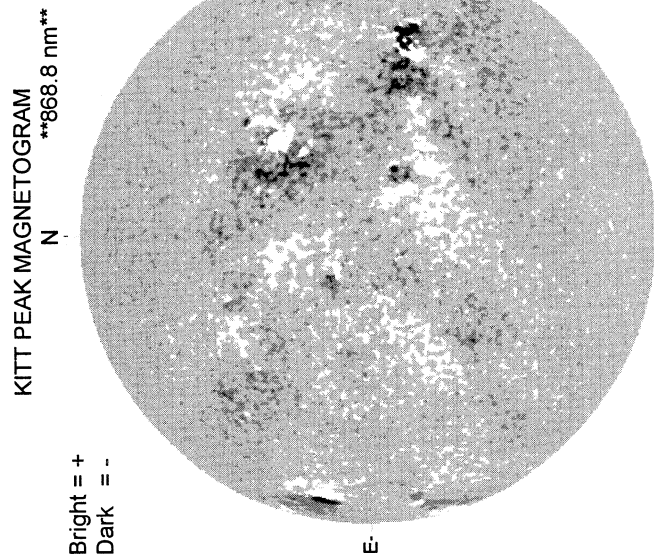
April 03, 2003
12:01 UT Fair
Bp = -6.4
Po = -26.2
Lo = 164.4



SACRAMENTO PEAK CORONA (1.15 Radii)----



APRIL 4, 2003 (P = -26.25, Bo = -6.40, Lo = 157.03)

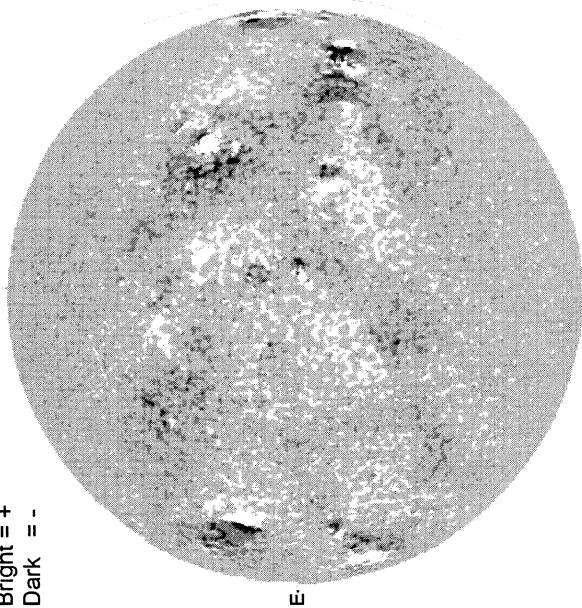


50
Apr 03

APRIL 5, 2003 (P= -26.27, Bo = -6.34, Lo = 143.84)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1604 UT

STANFORD MAGNETOGRAM

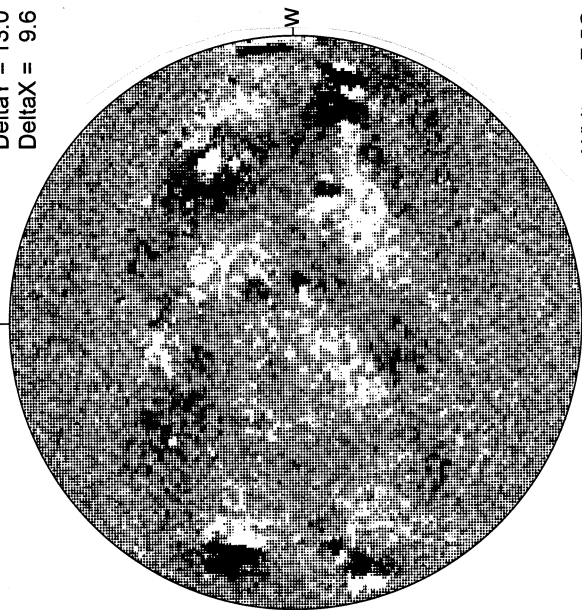
Solid = +
Dashed = -



2008 UT

MT. WILSON MAGNETOGRAM

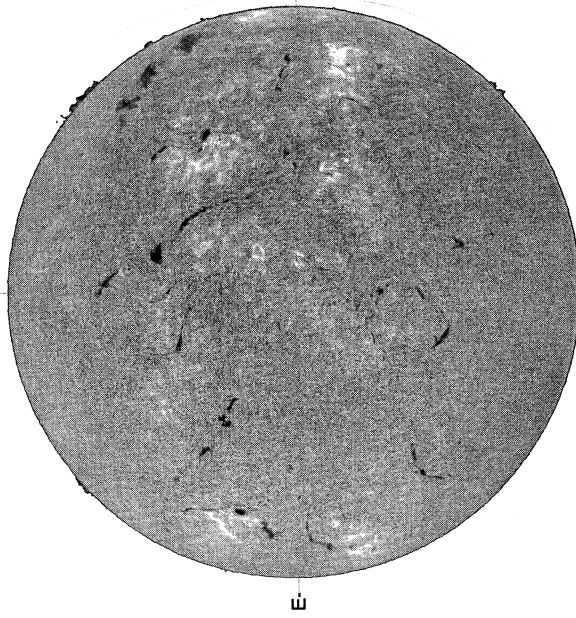
DeltaY = 13.0
DeltaX = 9.6



20.05 -
21.00 UT

White= +7.5G
Black = -7.5G

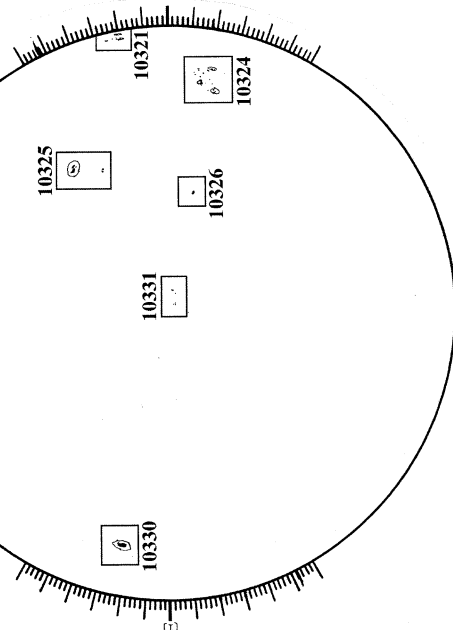
BIG BEAR H-ALPHA



1825 UT

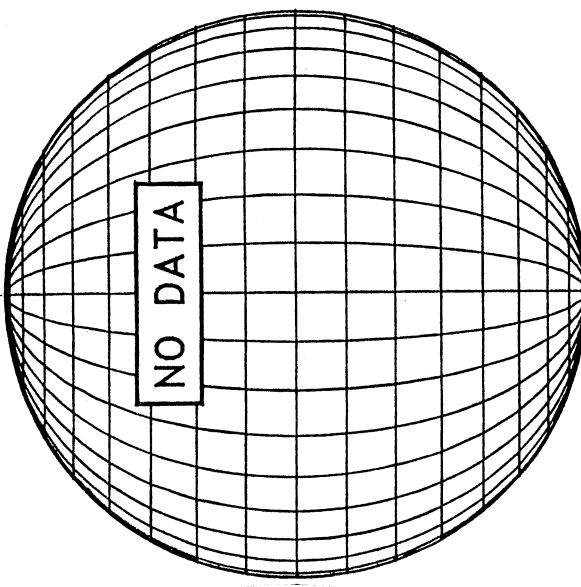
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 05, 2003
12:20 UT Fair
Bp = -6.3
Po = -26.2
Lo = 137.2



1220 UT

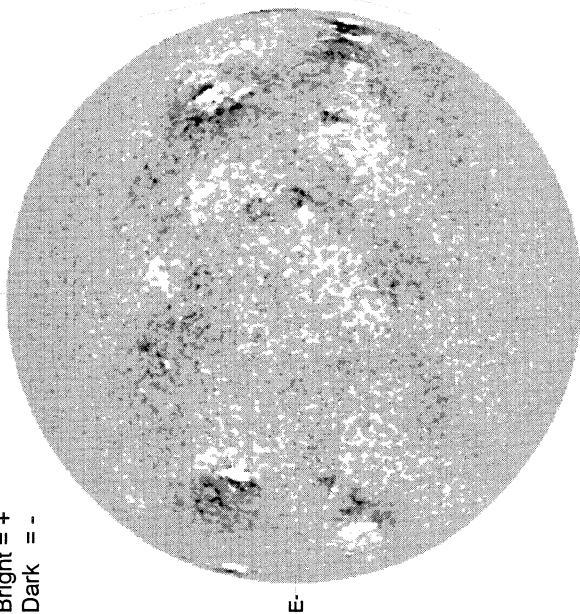
LOMNICKY PEAK CORONA (1.04 Radii)----



APRIL 6, 2003 (P= -26.29, Bo = -6.28, Lo = 130.64)

KITT PEAK MAGNETOGRAM
868.8 nm

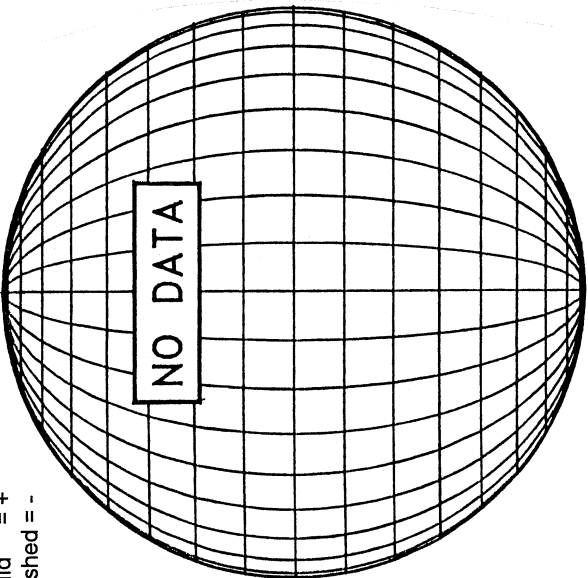
Bright = +
Dark = -



1559 UT

STANFORD MAGNETOGRAM

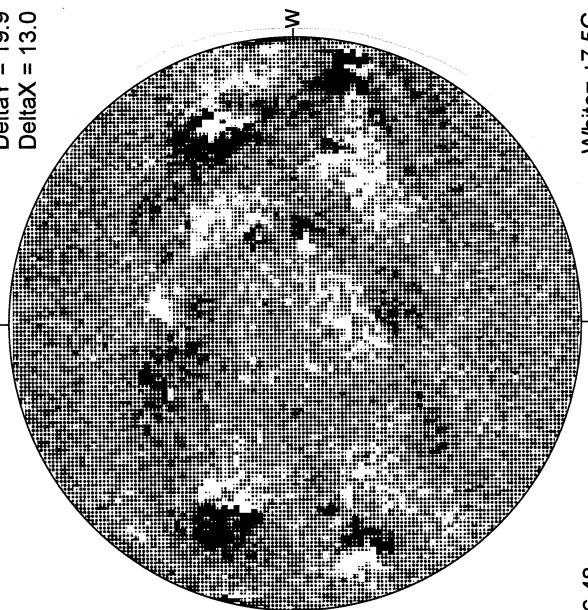
Solid = +
Dashed = -



16.48 -
16.90 UT

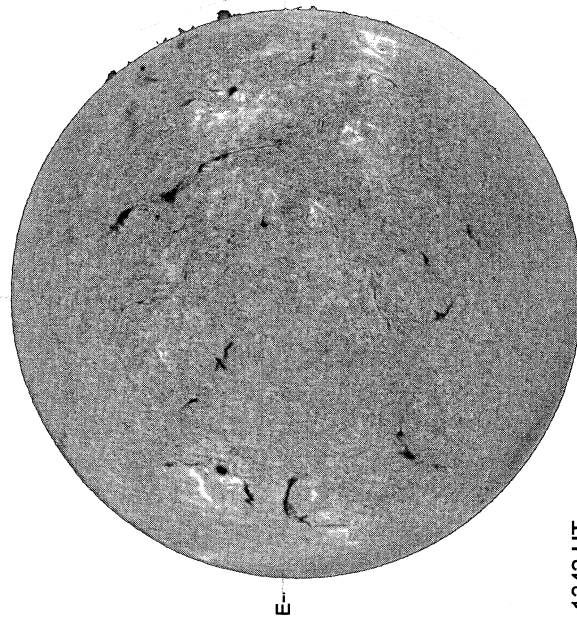
MT. WILSON MAGNETOGRAM

DeltaY = 19.9
DeltaX = 13.0



White= +7.5G
Black = -7.5G

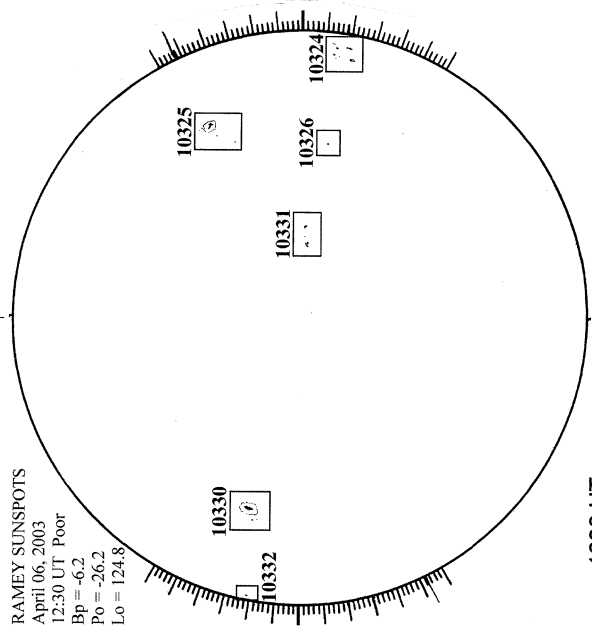
KANZELHOHE H-ALPHA



1343 UT

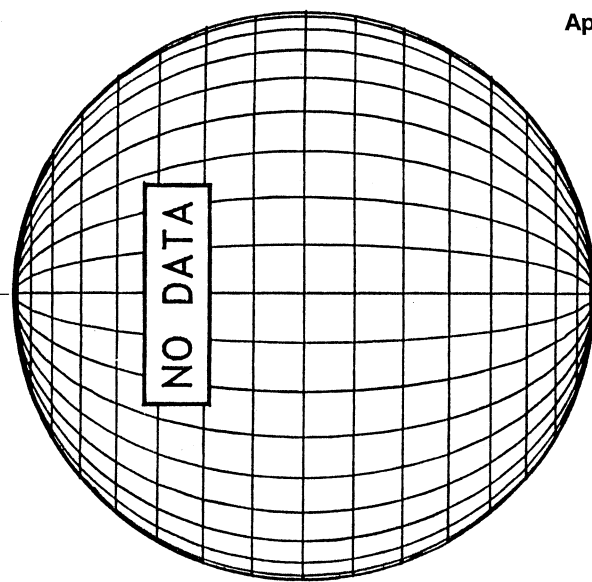
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 06, 2003
12:30 UT Poor
Bp = -6.2
Po = -26.2
Lo = 124.8



1230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



51
Apr 03

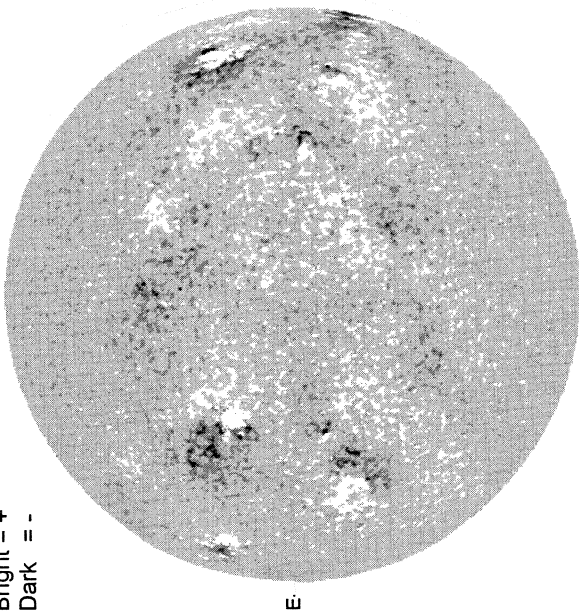
APRIL 7, 2003 (P= -26.29, Bo = -6.21, Lo = 117.45)

52
Apr 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1550 UT

STANFORD MAGNETOGRAM

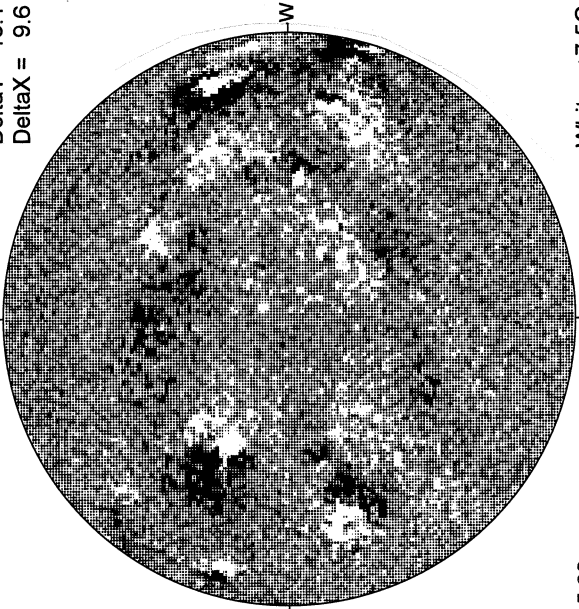
Solid = +
Dashed = -



2118 UT

MT. WILSON MAGNETOGRAM

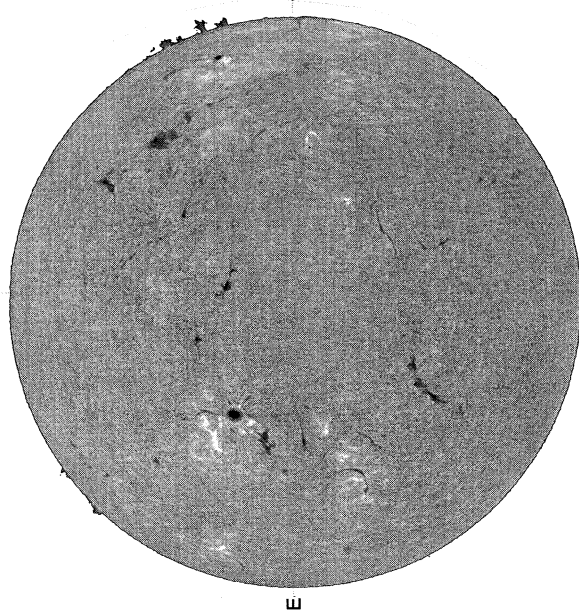
DeltaY = 13.1
DeltaX = 9.6



15.60 -
16.55 UT

White = +7.5G
Black = -7.5G

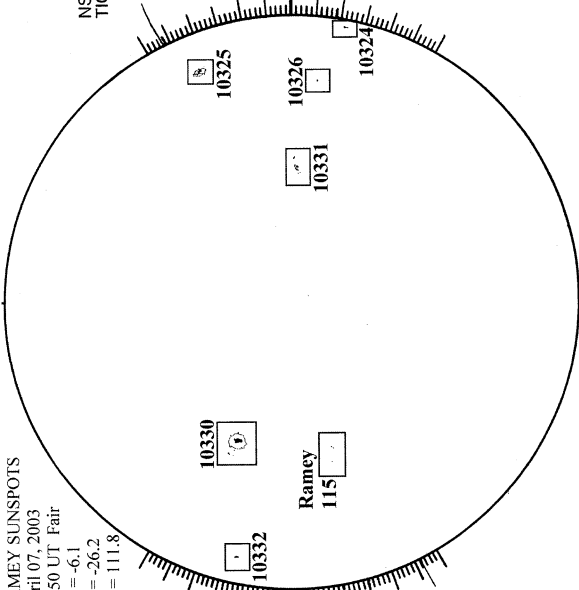
BIG BEAR H-ALPHA



2119 UT

RAMEY SUNSPOTS

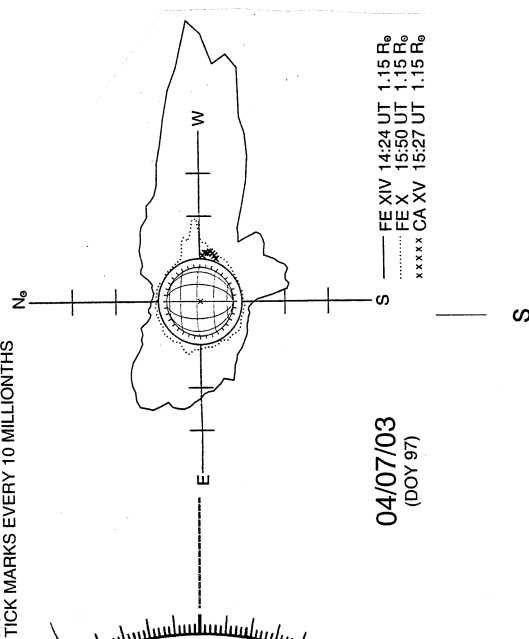
RAMEY SUNSPOTS
April 07, 2003
11:50 UT Fair
Bp = -6.1
Po = -26.2
Lo = 111.8



1150 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



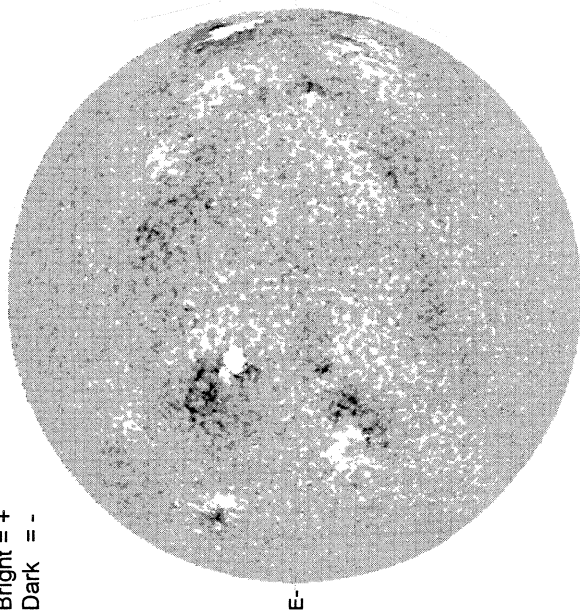
04/07/03
(DOY 97)

— FE XIV 14:24 UT 1.15 R₀
..... FE X 15:50 UT 1.15 R₀
xxxxx CA XV 15:27 UT 1.15 R₀

APRIL 8, 2003 (P = -26.29, Bo = -6.15, Lo = 104.25)

KITT PEAK MAGNETOGRAM
868.8 nm

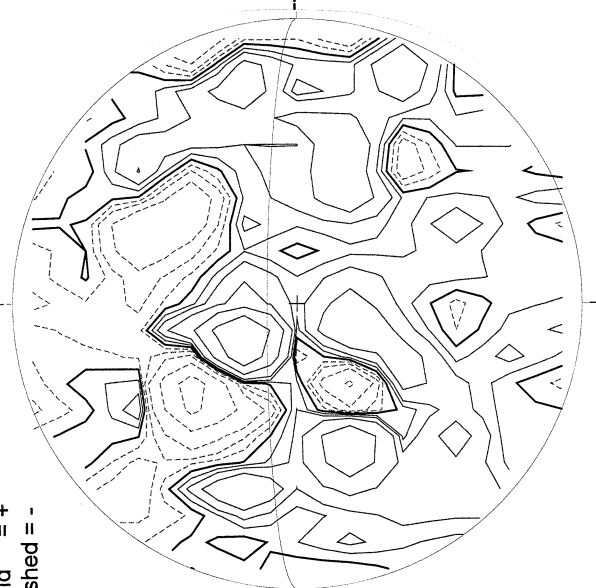
Bright = +
Dark = -



1542 UT

STANFORD MAGNETOGRAM

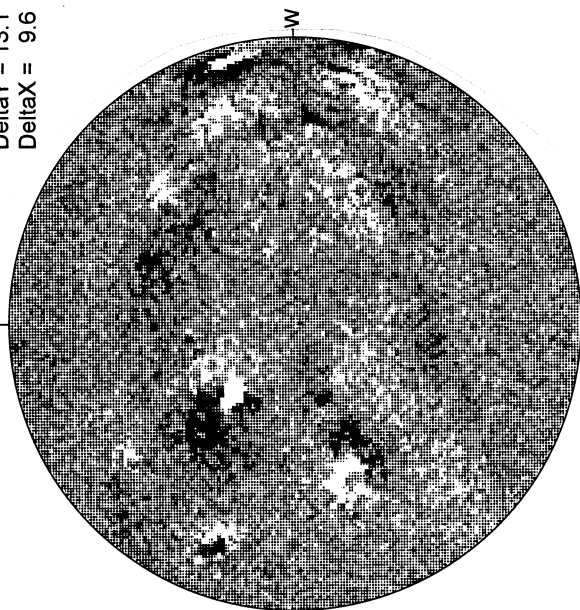
Solid = +
Dashed = -



2114 UT

MT. WILSON MAGNETOGRAM

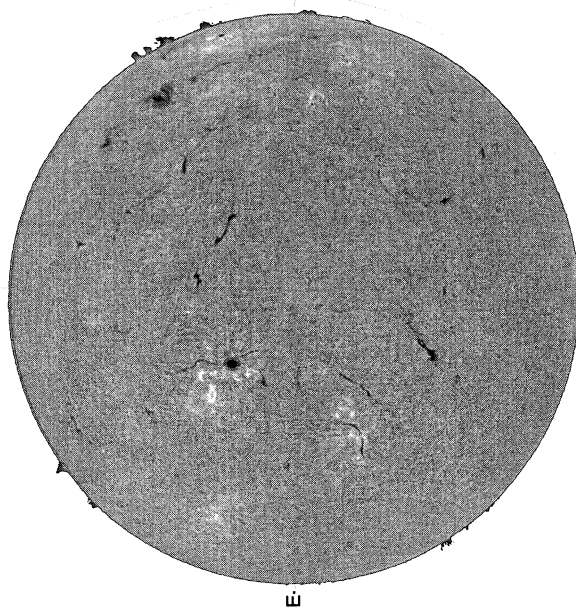
DeltaY = 13.1
DeltaX = 9.6



15.35 -
16.30 UT

White = +7.5G
Black = -7.5G

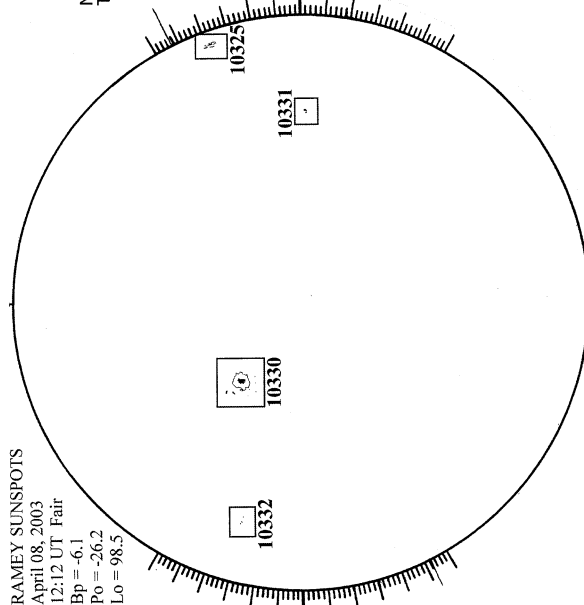
BIG BEAR H-ALPHA



1607 UT

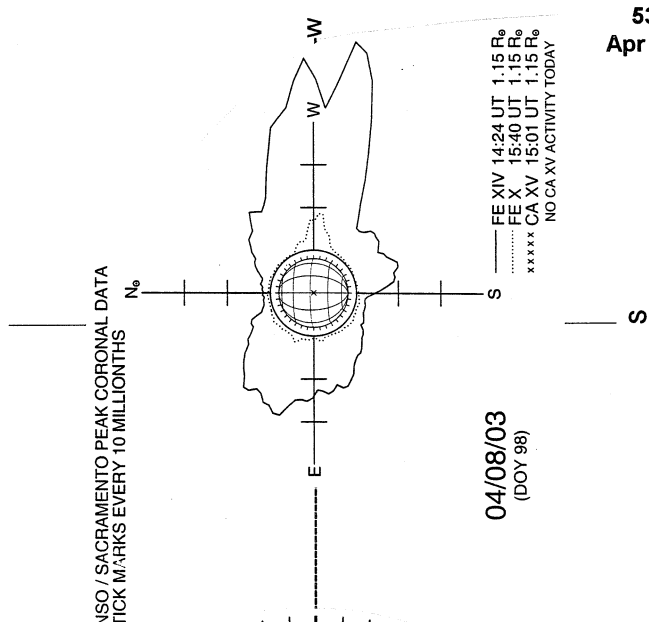
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 08, 2003
12:12 UT Fair
Bp = -6.1
Po = -26.2
Lo = 98.5



1212 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



04/08/03
(DOY 98)

FE XIV 14:24 UT 1.15 R_o
FE X 15:40 UT 1.15 R_o
CA XV 15:01 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

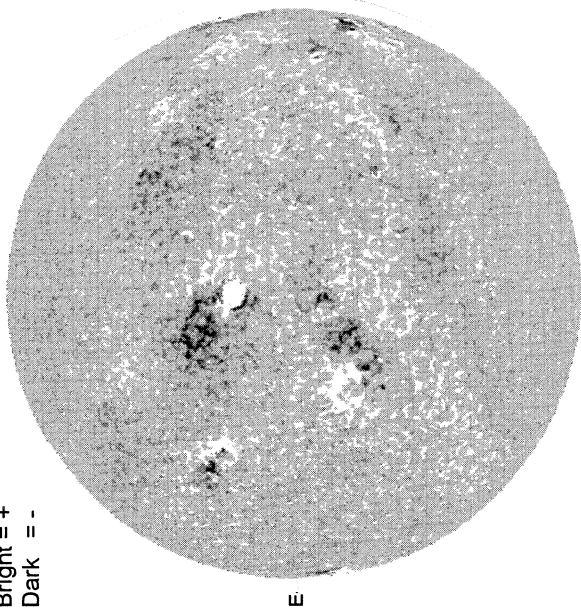
APRIL 9, 2003 (P= -26.28, Bo = -6.08, Lo = 91.05)

54
Apr 03

KITT PEAK MAGNETOGRAM

**868.8 nm

Bright = +
Dark = -



1620 UT

STANFORD MAGNETOGRAM

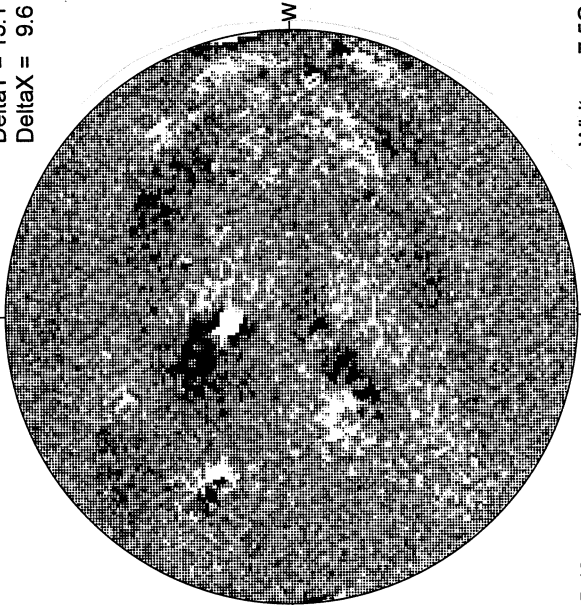
Solid = +
Dashed = -



2126 UT

MT. WILSON MAGNETOGRAM

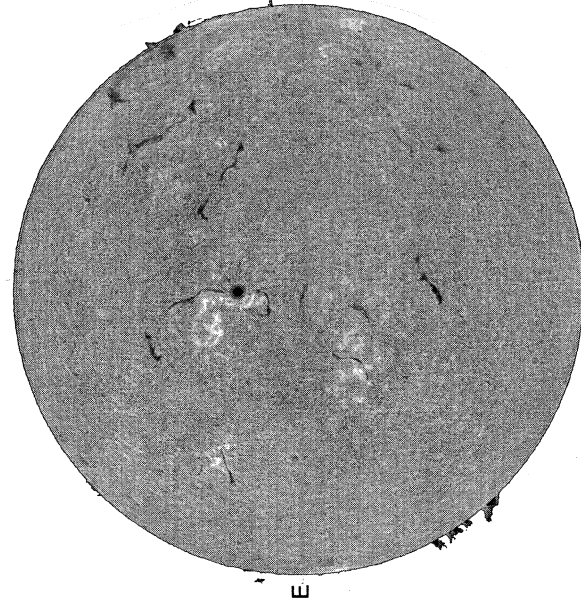
DeltaY = 13.1
DeltaX = 9.6



15.49 -
16.43 UT

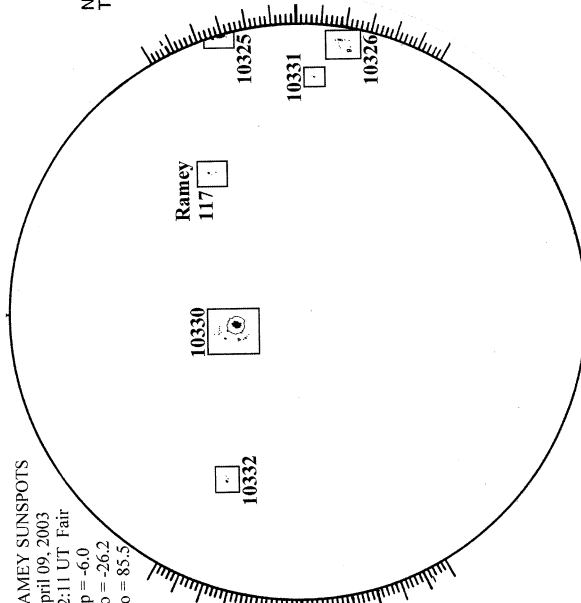
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1548 UT

RAMEY SUNSPOT

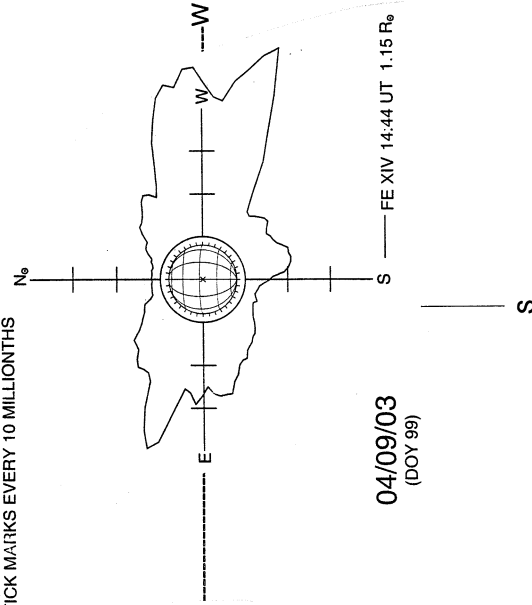


1211 UT

RAMEY SUNSPOTS
April 09, 2003
12:11 UT Fair
Bp = -6.0
Po = -26.2
Lo = 85.5

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

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



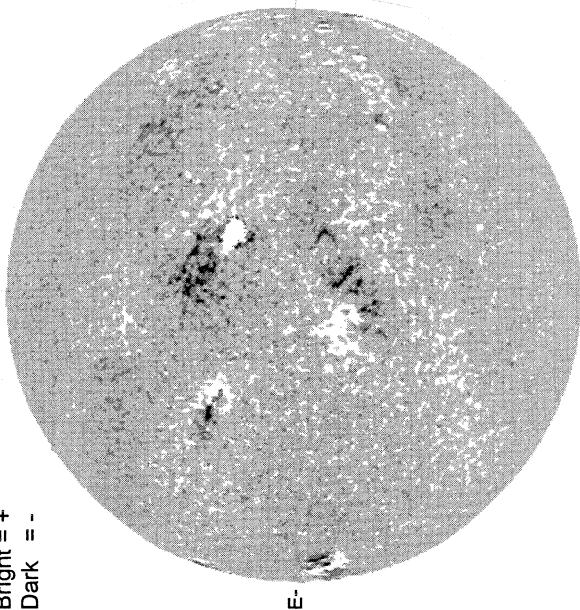
04/09/03
(DOY 99)

FE XIV 14:44 UT 1.15 R_o

APRIL 10, 2003 (P= -26.26, Bo = -6.01 Lo = 77.85)

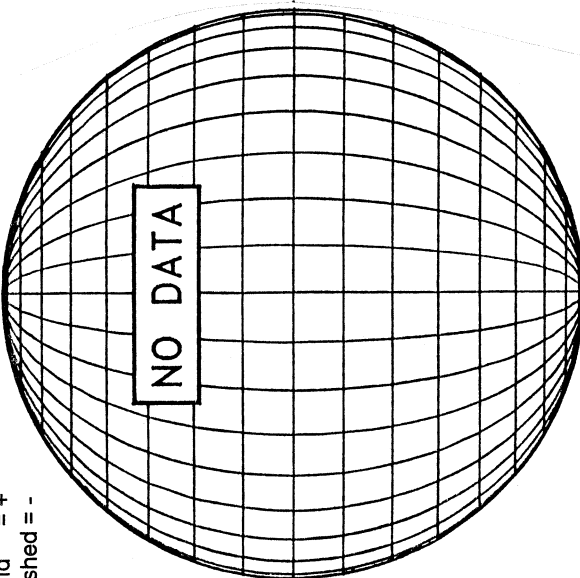
KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



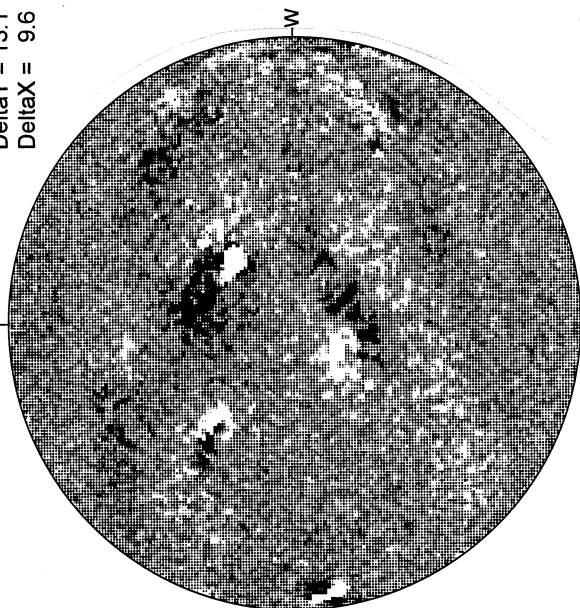
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



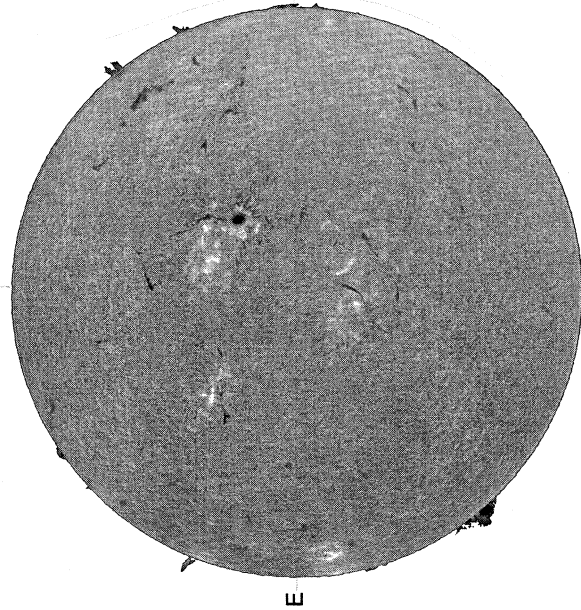
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

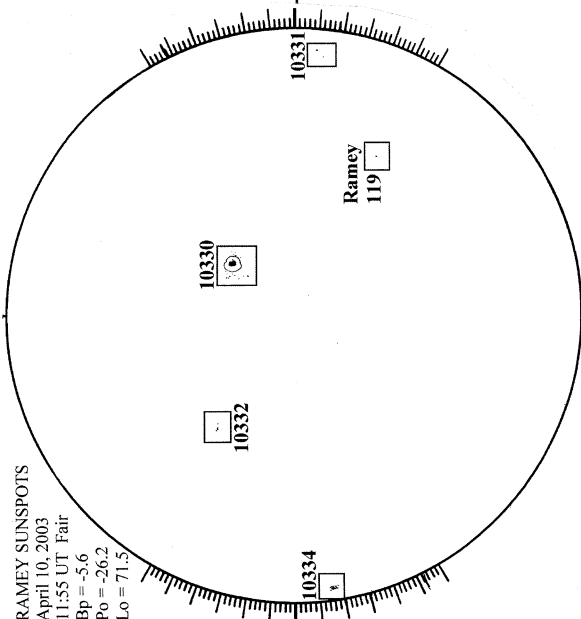


White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

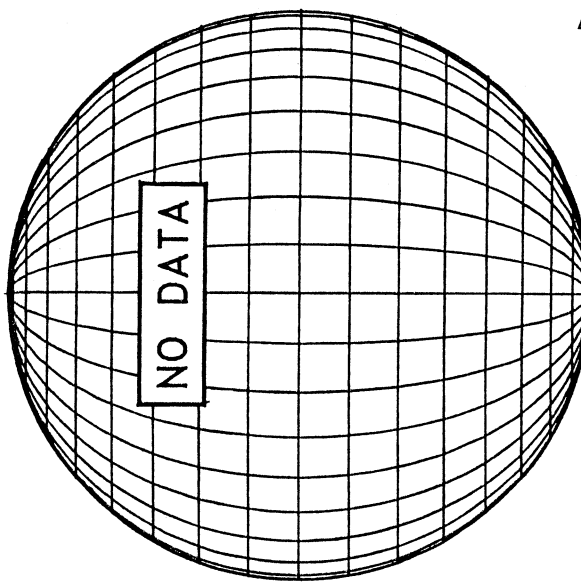


RAMEY SUNSPOTS



RAMEY SUNSPOTS
April 10, 2003
11:55 UT Fair
Bp = -5.6
Po = -26.2
Lo = 71.5

SACRAMENTO PEAK CORONA (1.15 Radii)----

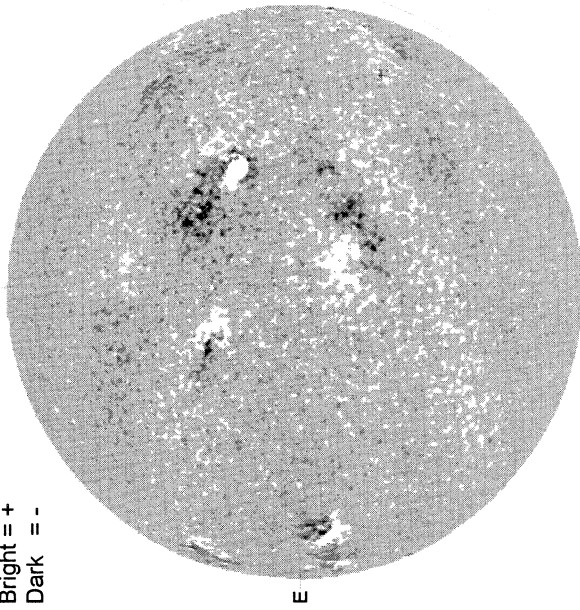


APRIL 11, 2003 (P = -26.24, Bo = -5.94, Lo = 64.65)

KITT PEAK MAGNETOGRAM

868.8 nm

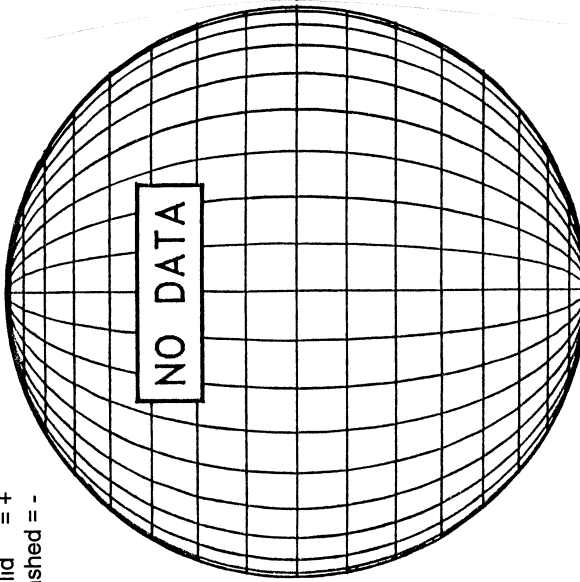
Bright = +
Dark = -



1548 UT

STANFORD MAGNETOGRAM

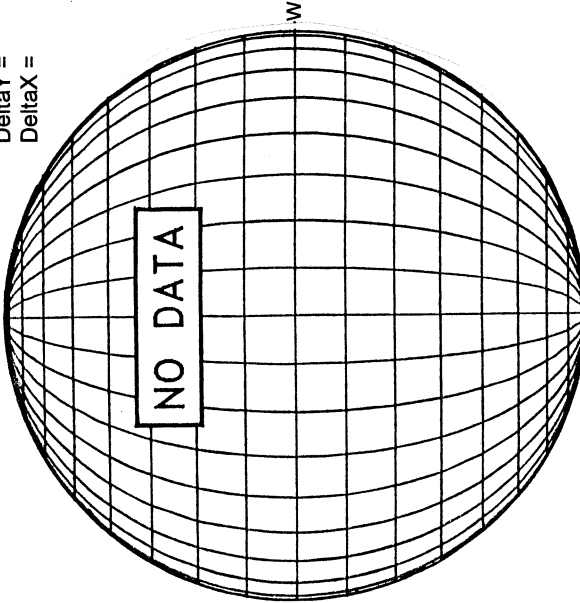
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

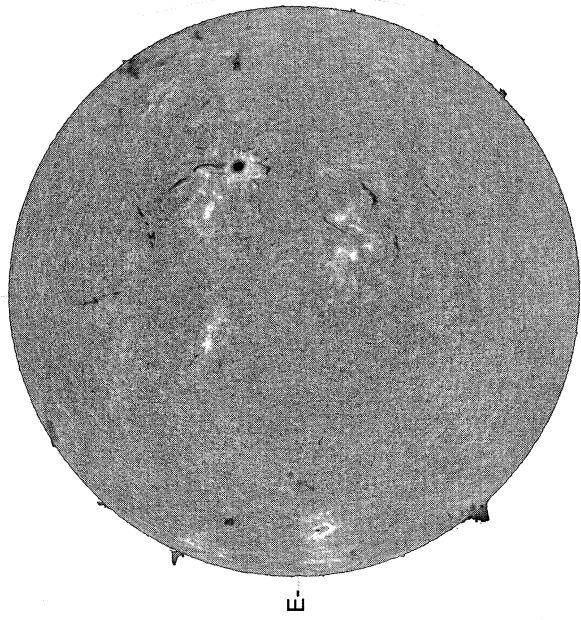
DeltaY =
DeltaX =



NO DATA

White = +7.5G
Black = -7.5G

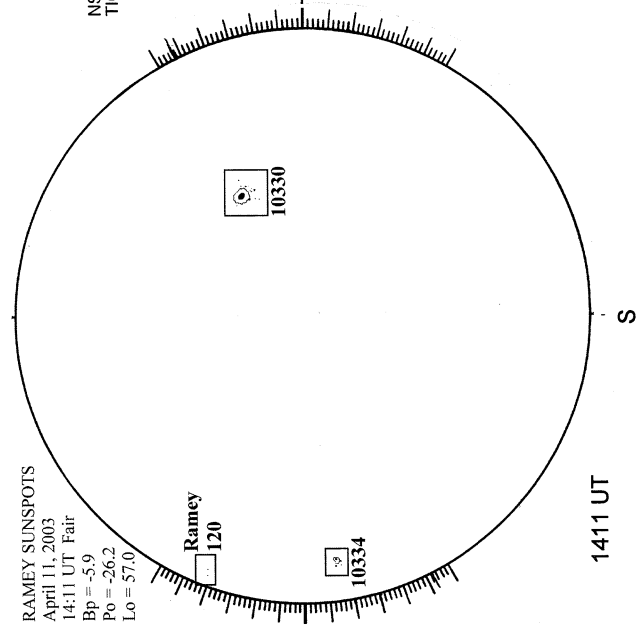
BIG BEAR H-ALPHA



1612 UT

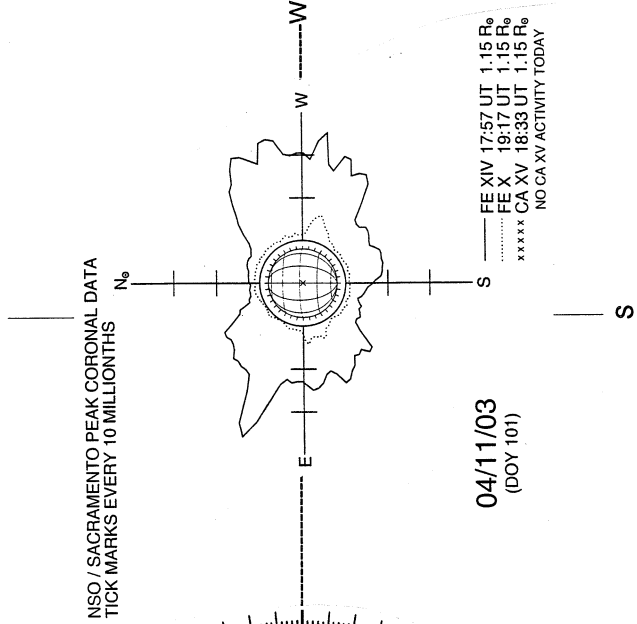
RAMEY SUNSPOTS

RAMEY SUNSPOTS
April 11, 2003
14:11 UT Fair
Bp = -5.9
Po = -26.2
Lo = 57.0



1411 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



04/11/03
(DOY 101)

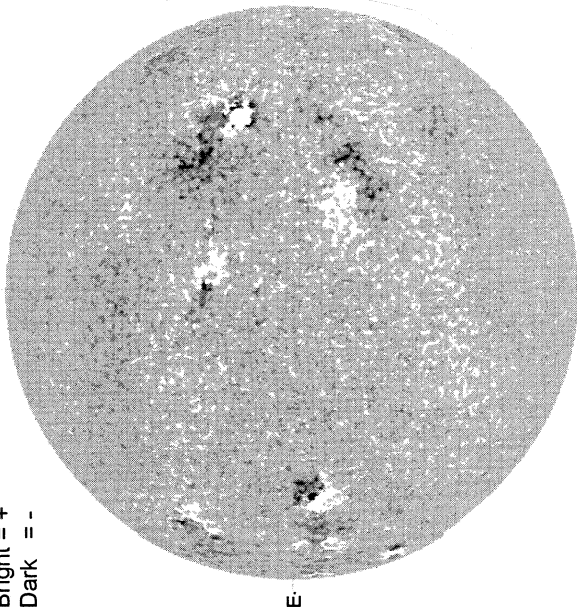
FE XIV 17:57 UT 1.15 R₀
FE X 19:17 UT 1.15 R₀
xxxxx CA XV 18:33 UT 1.15 R₀
NO CA XV ACTIVITY TODAY

APRIL 12, 2003 (P= -26.21 Bo = -5.87 Lo = 51.45)

KITT PEAK MAGNETOGRAM

868.8 nm

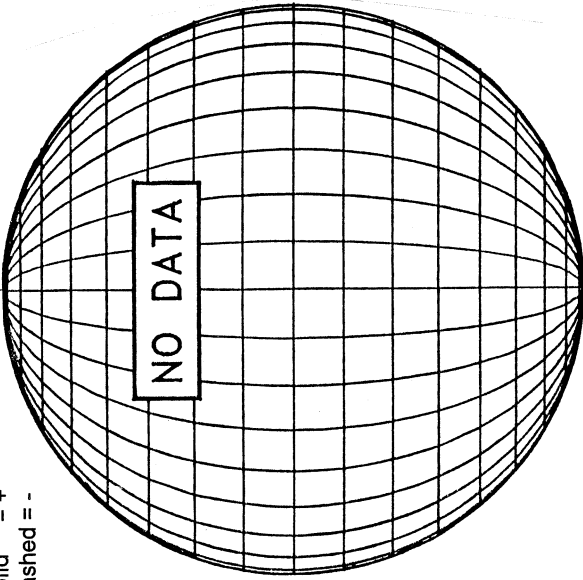
Bright = +
Dark = -



1428 UT

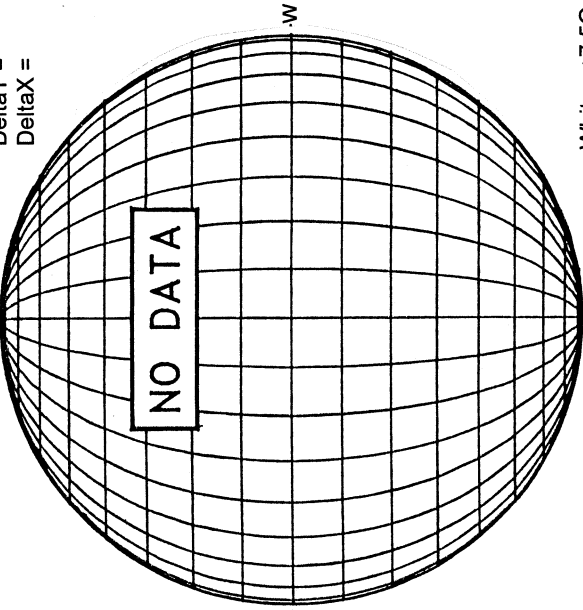
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



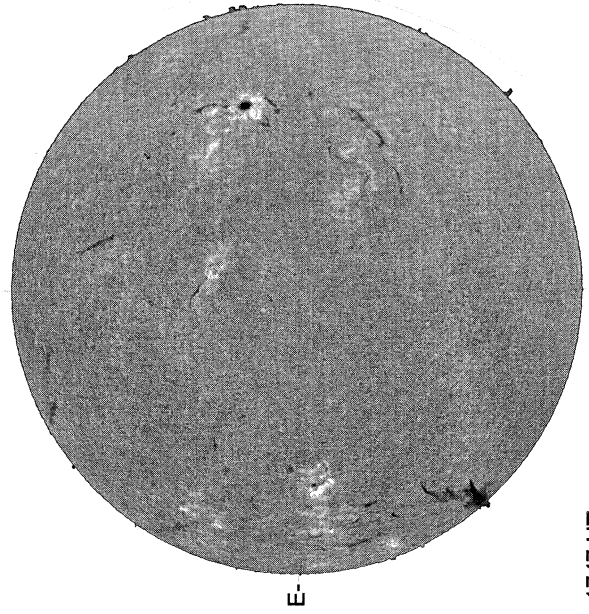
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

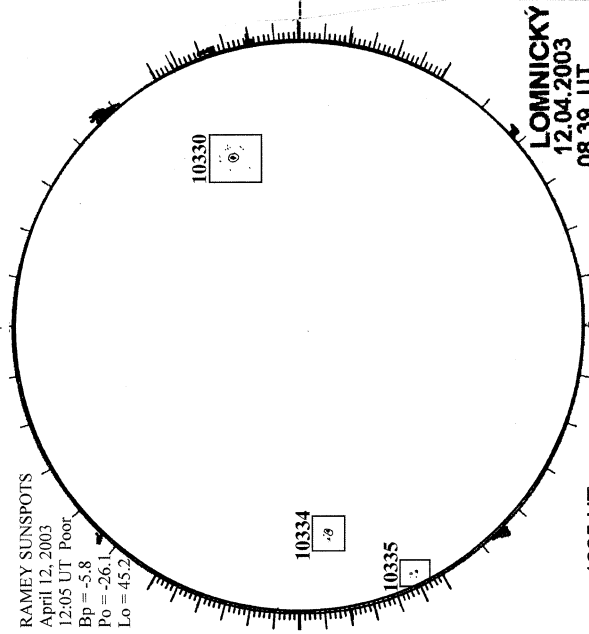
BIG BEAR H-ALPHA



1747 UT

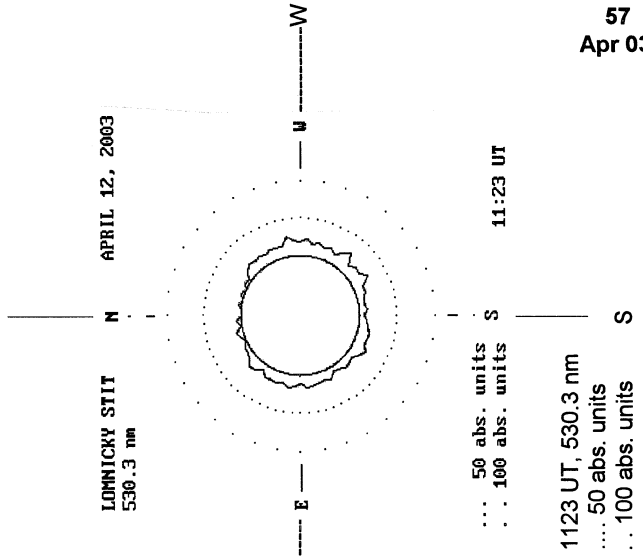
RAMEY SUNSPOTS

April 12, 2003
12:05 UT Poor
Bp = -5.8
Po = -26.1
Lo = 45.2



1205 UT
0839 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



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

1123 UT, 530.3 nm
... 50 abs. units
... 100 abs. units

58
Apr 03

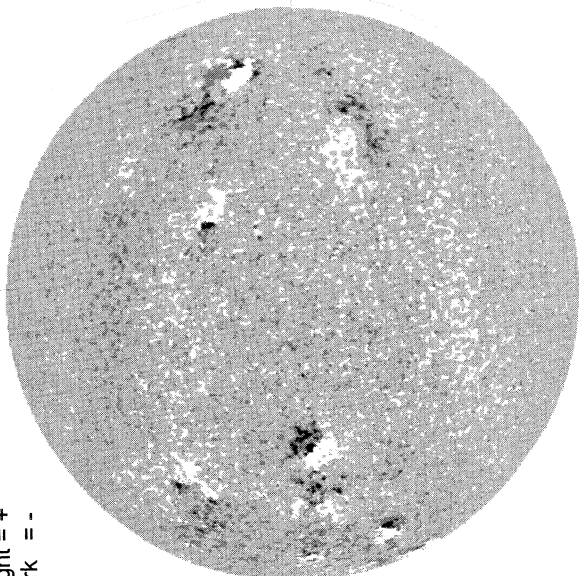
APRIL 13, 2003 (P = -26.17, Bo = -5.80, Lo = 38.25)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -

N

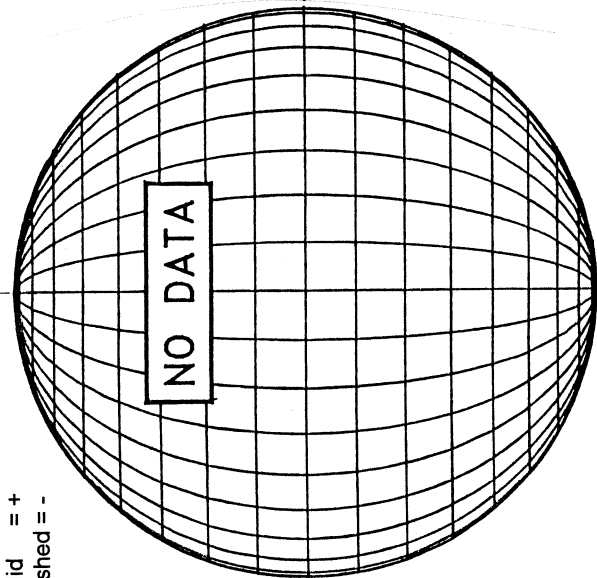


1414 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

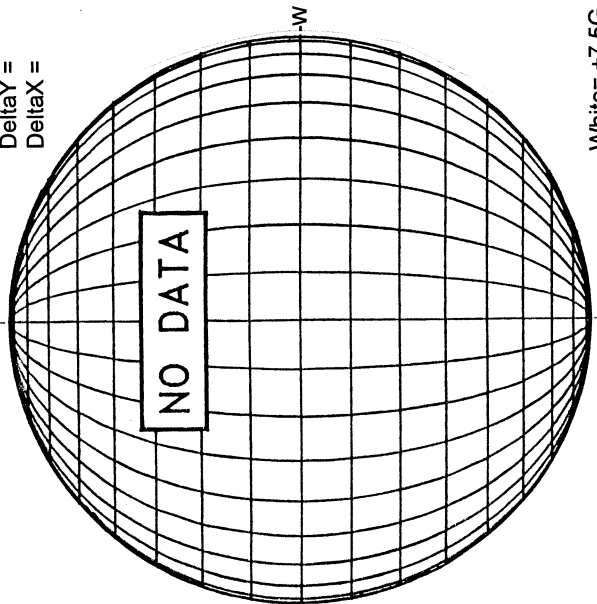


NO DATA

MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

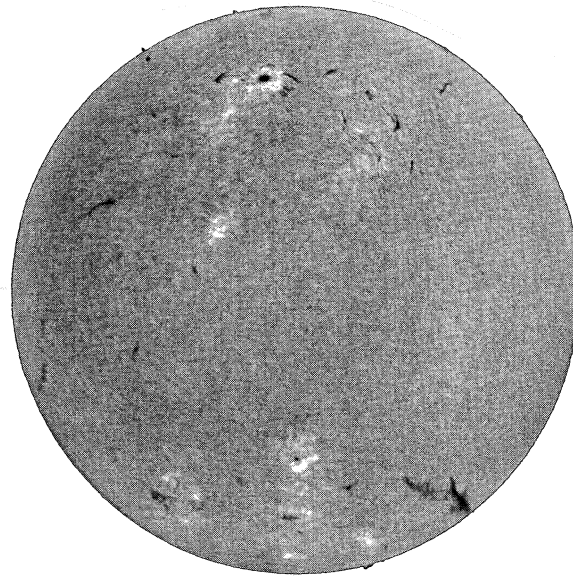
N



NO DATA

White = +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA

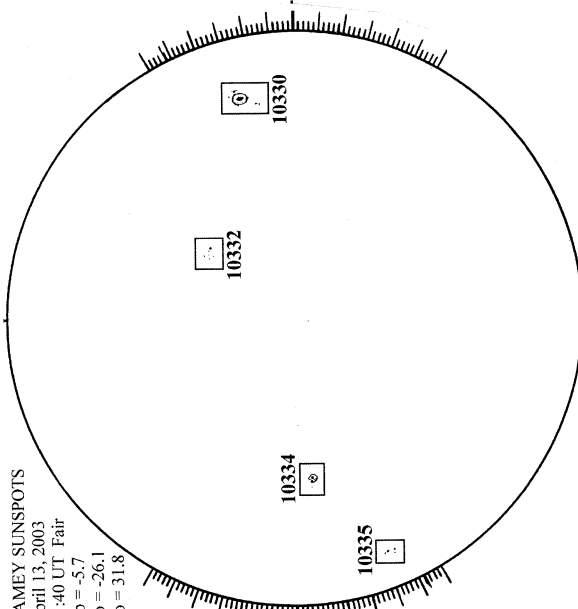


E

0659 UT

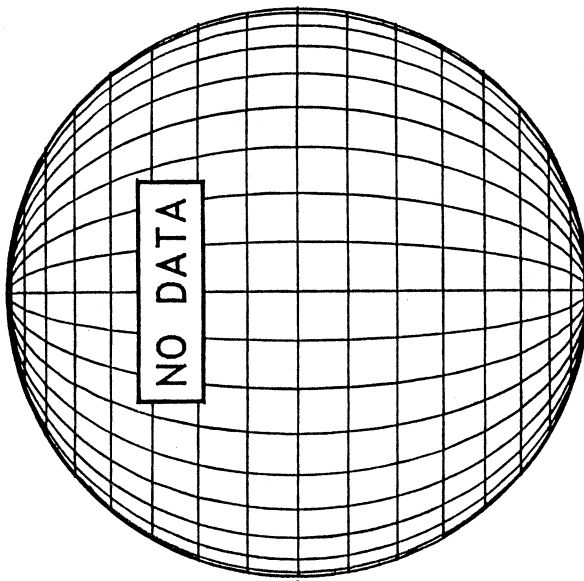
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 13, 2003
11:40 UT Fair
Bp = -5.7
Po = -26.1
Lo = 31.8



1140 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



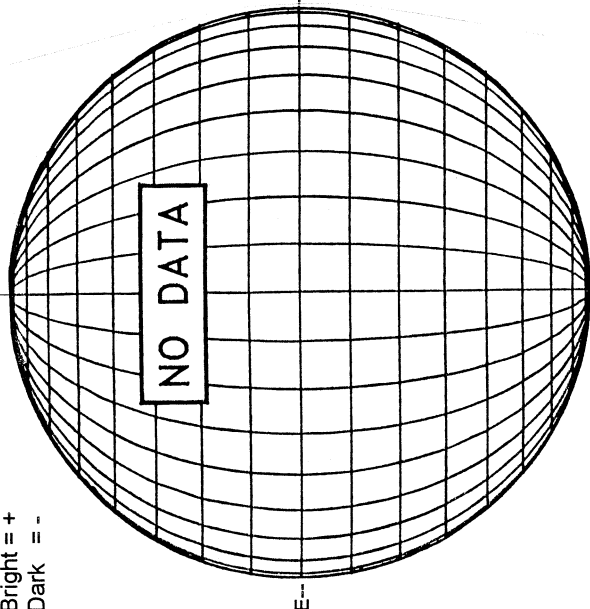
NO DATA

APRIL 14, 2003 (P= -26.13, Bo = -5.72, Lo = 25.05)

KITT PEAK MAGNETOGRAM

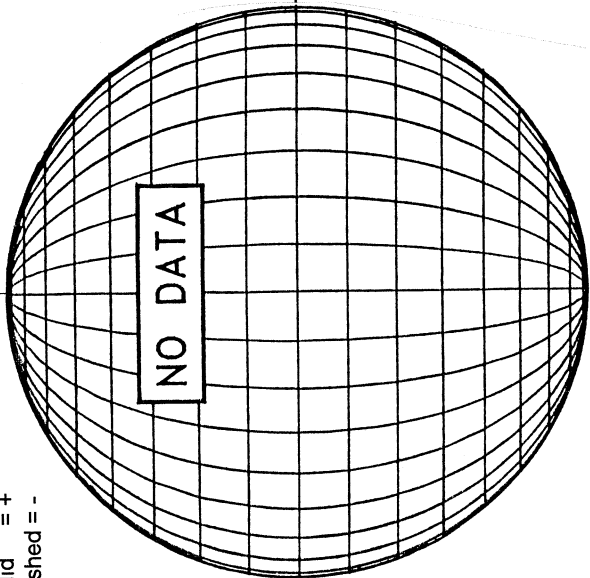
868.8 nm

Bright = +
Dark = -



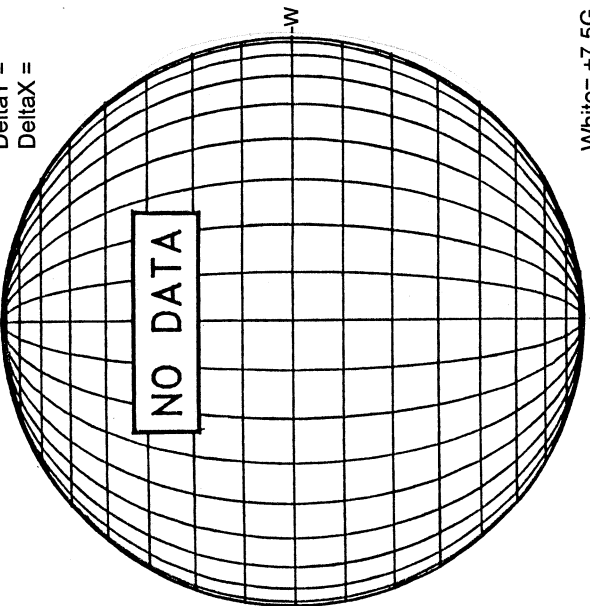
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



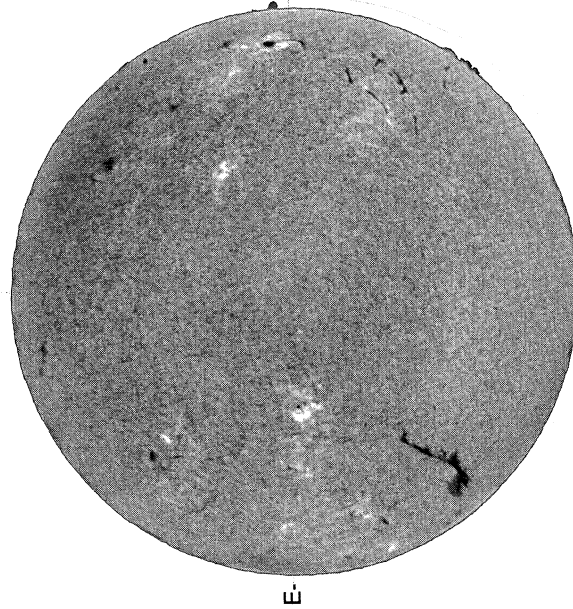
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

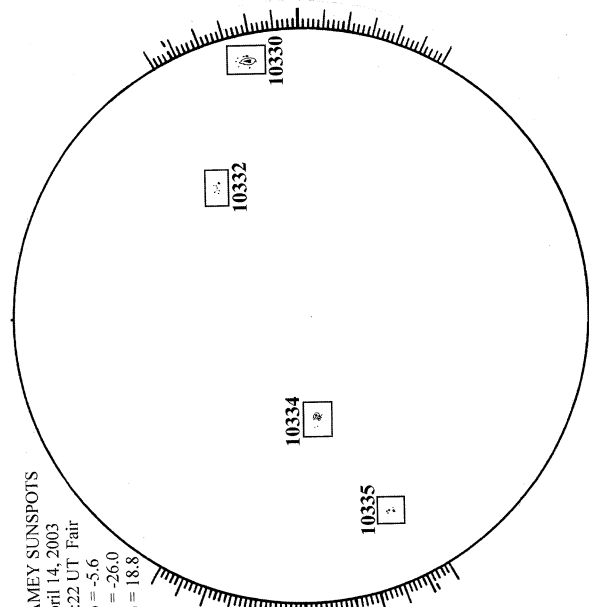
KANZELHOHE H-ALPHA



0610 UT

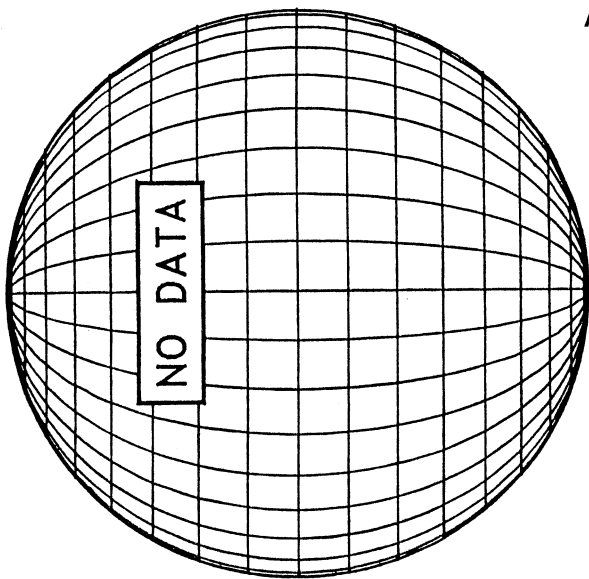
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 14, 2003
12:22 UT Fair
Bp = -5.6
Po = -26.0
Lo = 18.8



1222 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



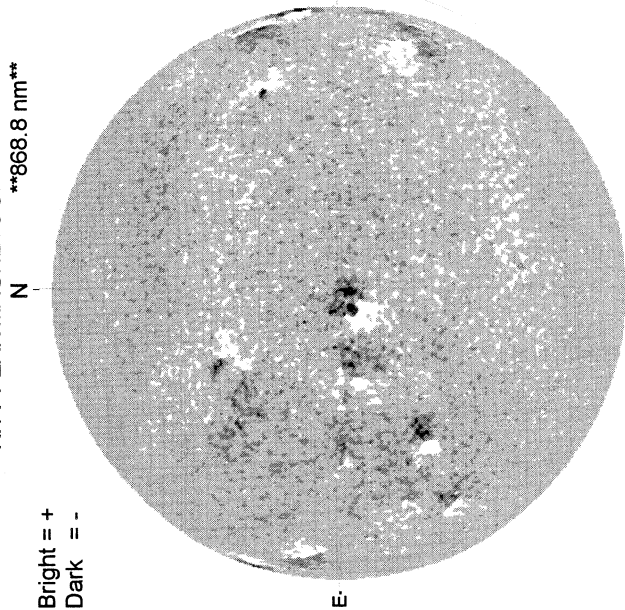
60
Apr 03

APRIL 15, 2003 (P= -26.07, Bo = -5.64, Lo = 11.85)

KITT PEAK MAGNETOGRAM

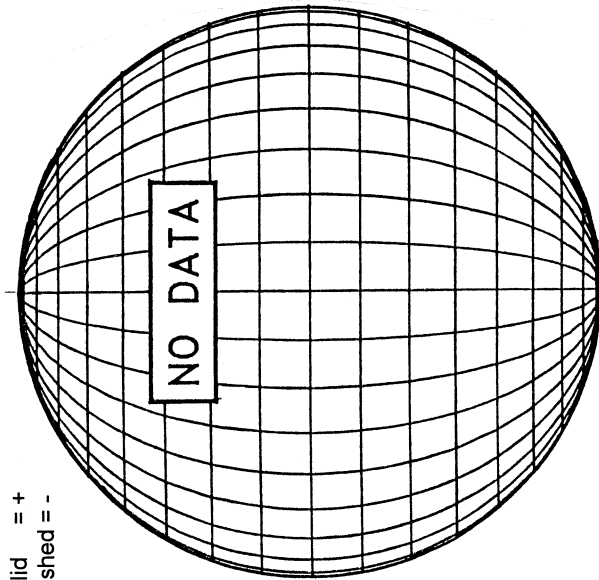
868.8 nm

Bright = +
Dark = -



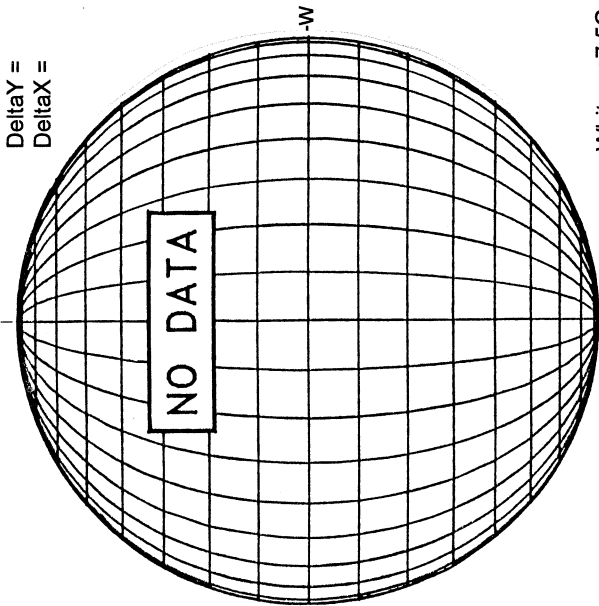
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

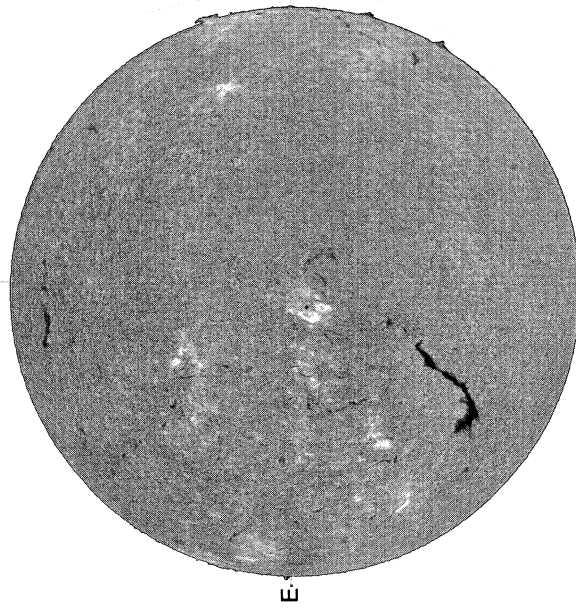
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

2007 UT

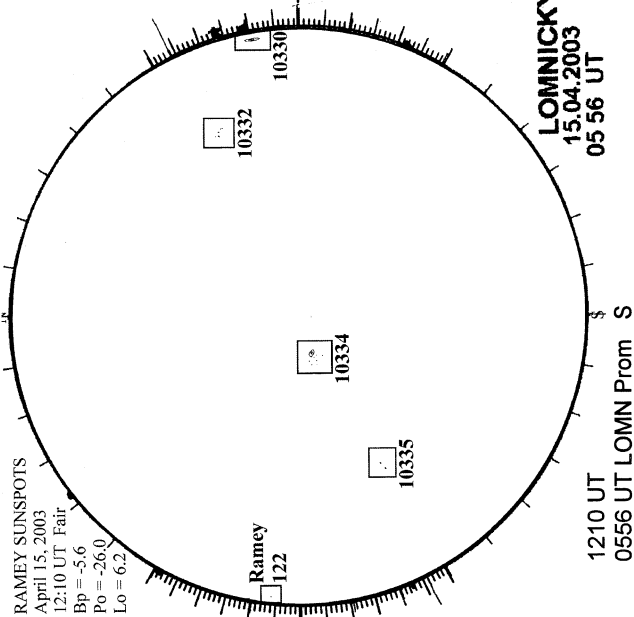
BIG BEAR H-ALPHA



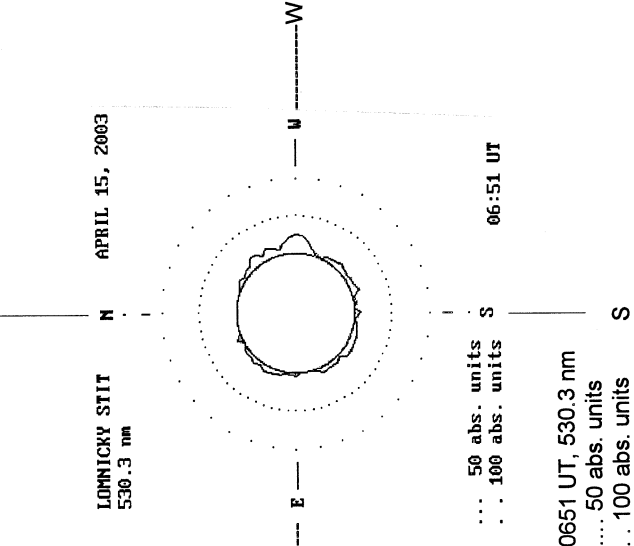
2011 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
April 15, 2003
12:10 UT Fair
Bp = -5.6
Po = -26.0
Lo = 6.2



LOMNICKY PEAK CORONA (1.04 Radii)----

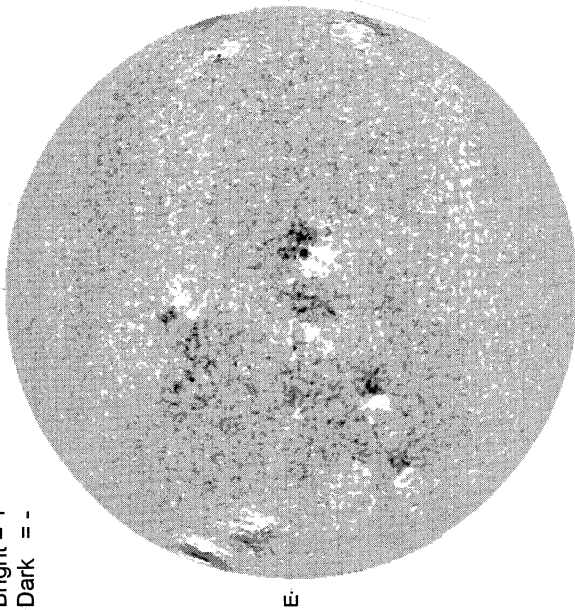


APRIL 16, 2003 (P= -26.01, Bo = -5.57, Lo = 358.64)

KITT PEAK MAGNETOGRAM

868.8 nm

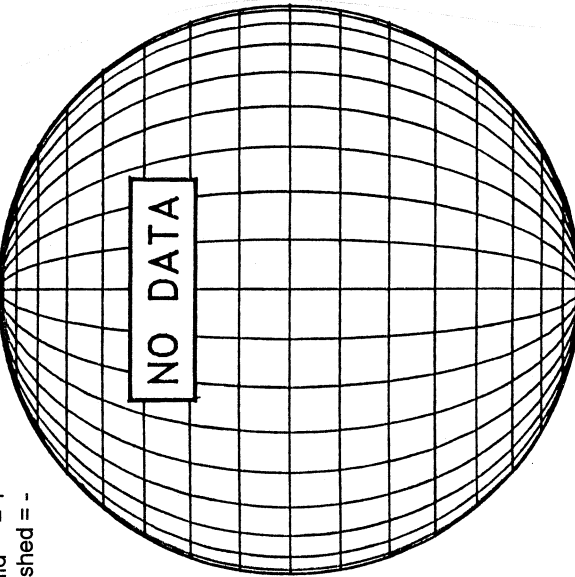
Bright = +
Dark = -



1601 UT

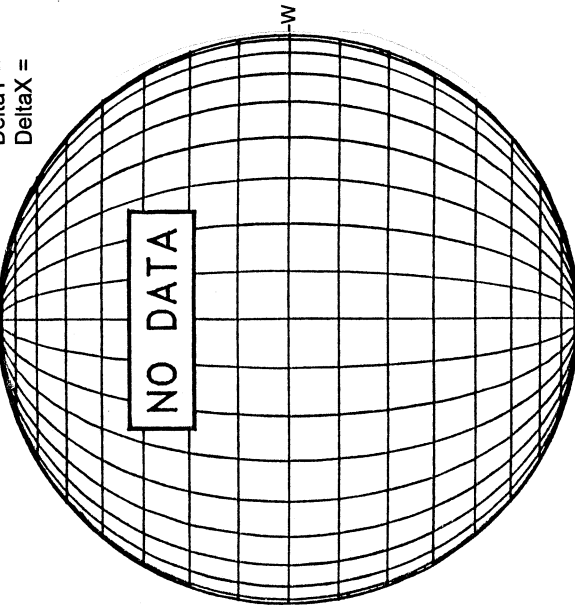
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



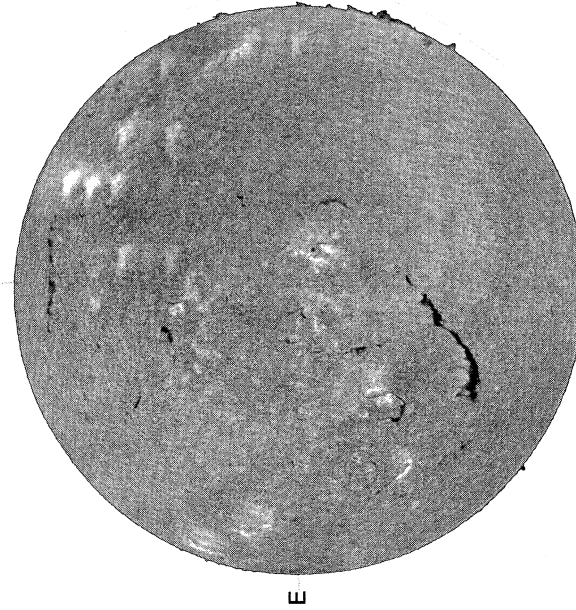
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



White = +7.5G
Black = -7.5G

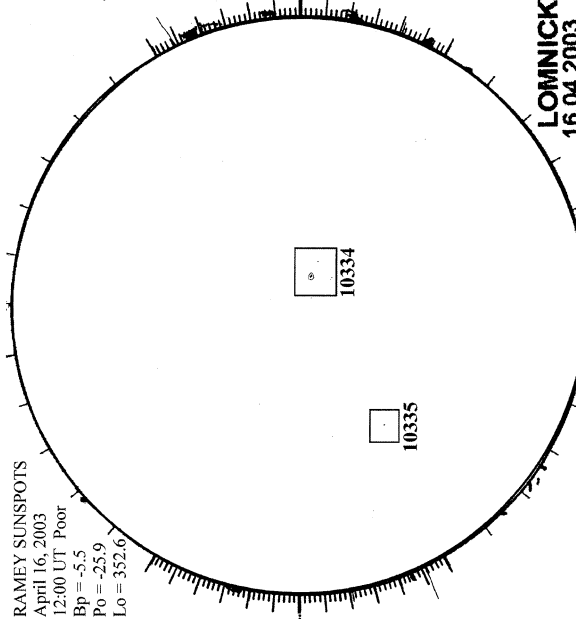
BIG BEAR H-ALPHA



1700 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
April 16, 2003
12:00 UT Poor
Bp = -5.5
Po = -25.9
Lo = 332.6

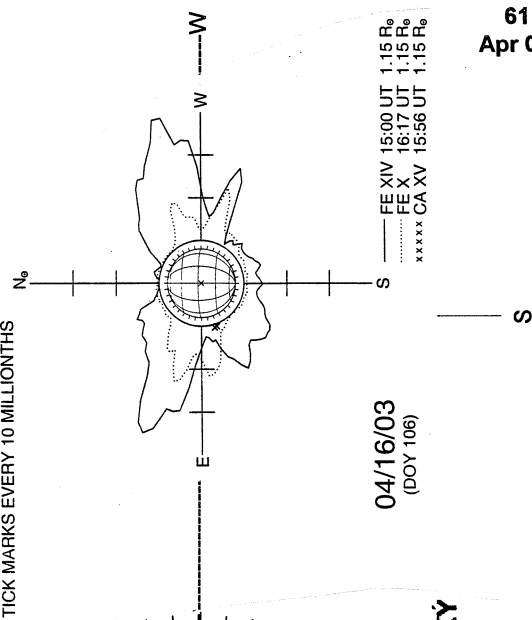


1200 UT

0621 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



04/16/03
(DOY 106)

FE XIV 15:00 UT 1.15 R₀
FE X 16:17 UT 1.15 R₀
CA XV 15:56 UT 1.15 R₀
xxxxx

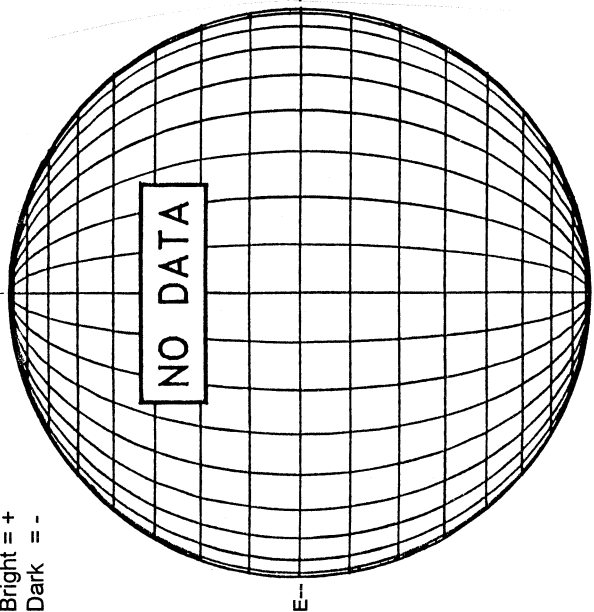
61
Apr 03

APRIL 17, 2003 (P= -25.94, Bo = -5.49, Lo = 345.44)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



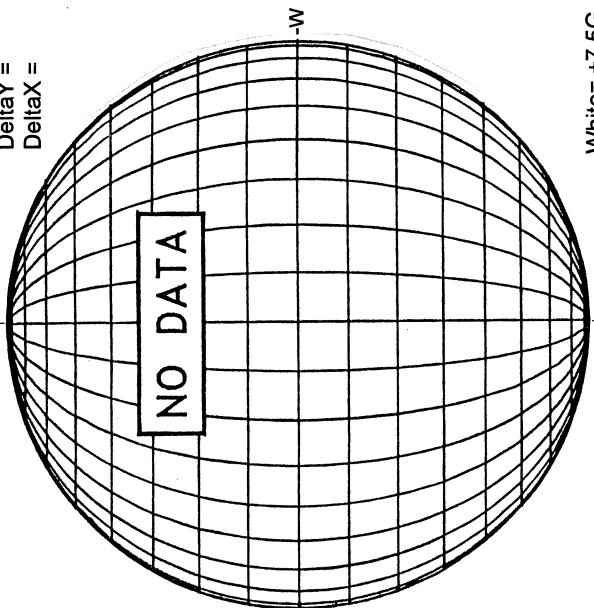
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



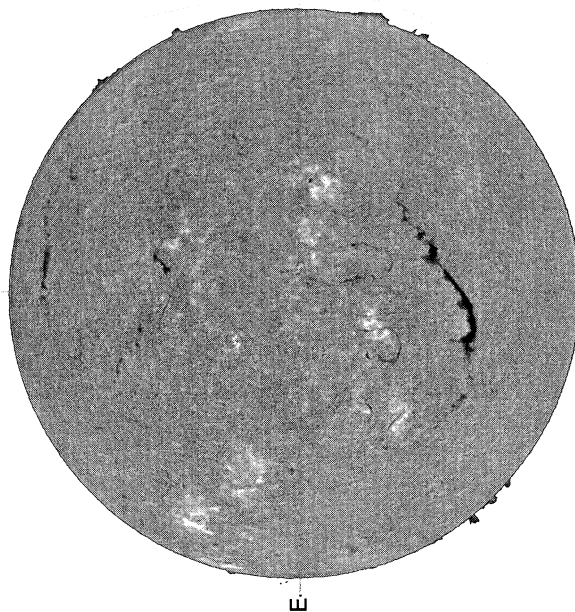
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



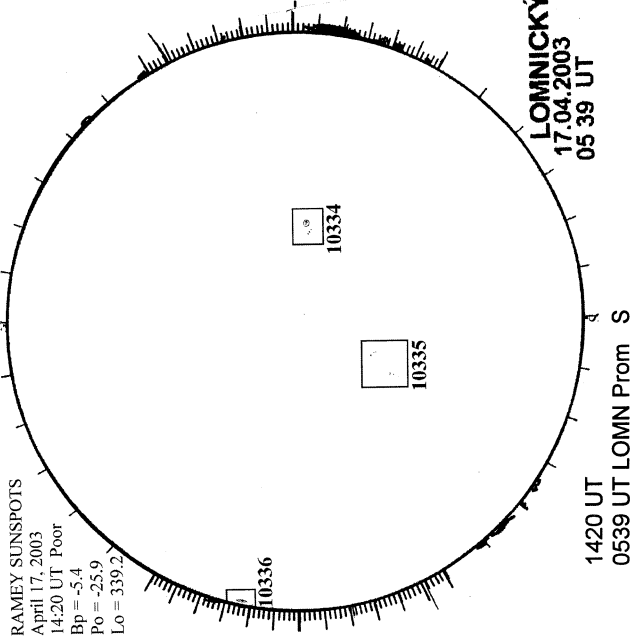
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

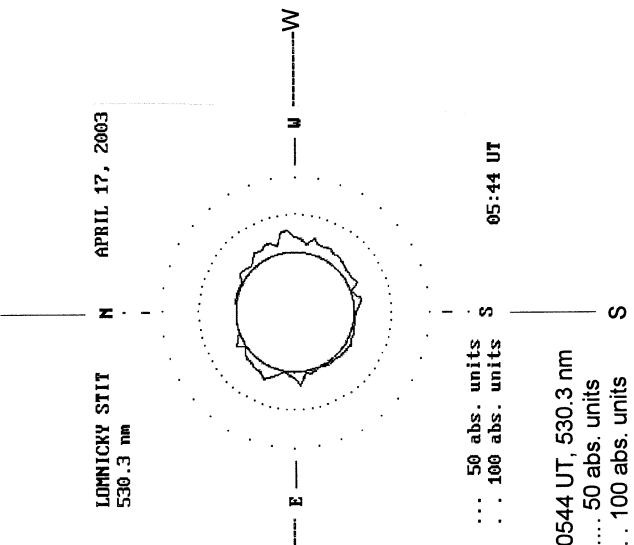


RAMEY SUNSPOT

RAMEY SUNSPOTS
April 17, 2003
14:20 UT Poor
Bp = -5.4
Po = -25.9
Lo = 339.2



LOMNICKY PEAK CORONA (1.04 Radii)----



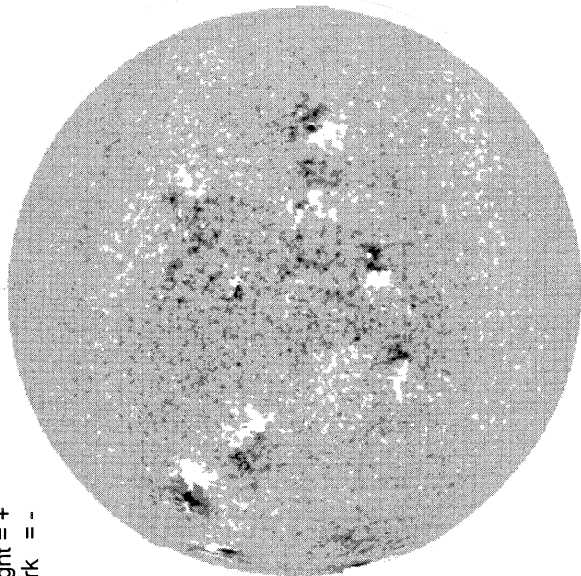
2040 UT

APRIL 18, 2003 (P= -25.87, Bo = -5.40, Lo = 332.23)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1531 UT

STANFORD MAGNETOGRAM

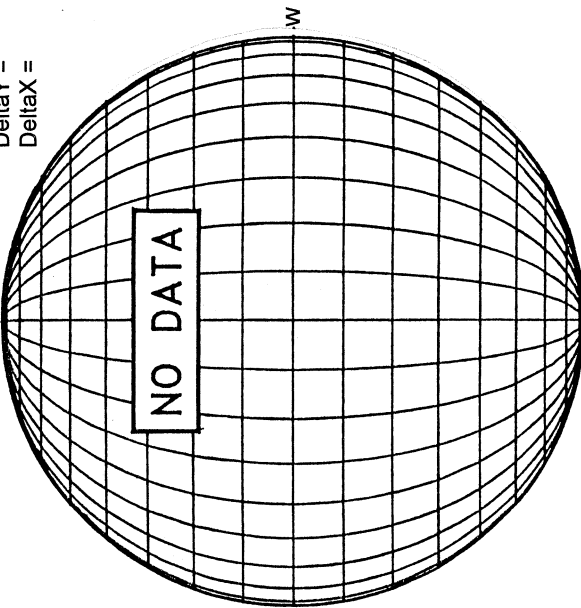
Solid = +
Dashed = -



1919 UT

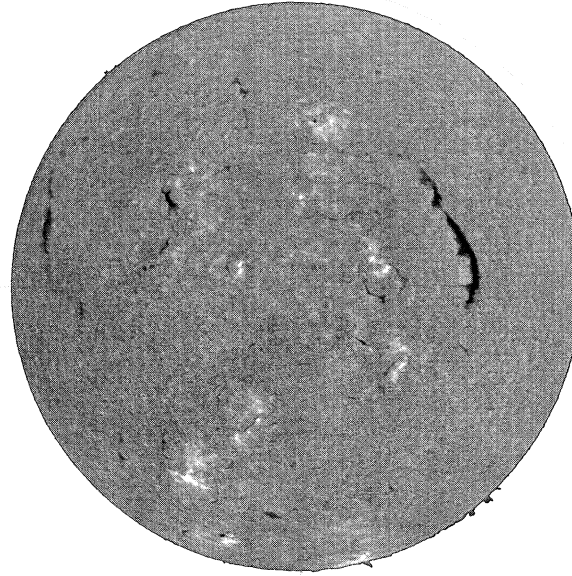
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



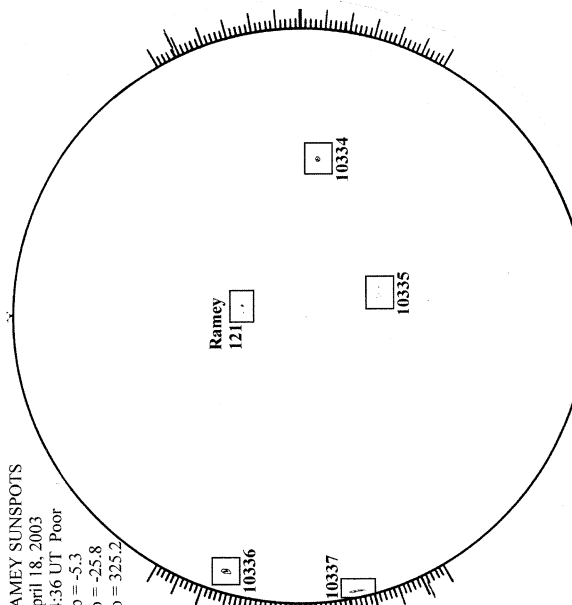
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



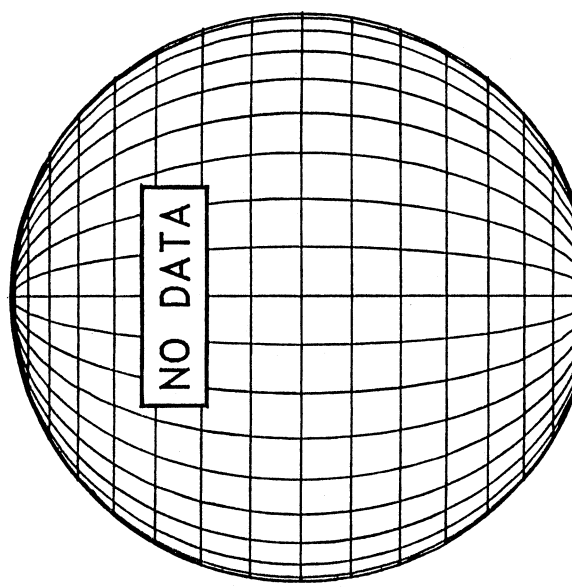
1926 UT

HOLLOMAN SUNSPOT



1436 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

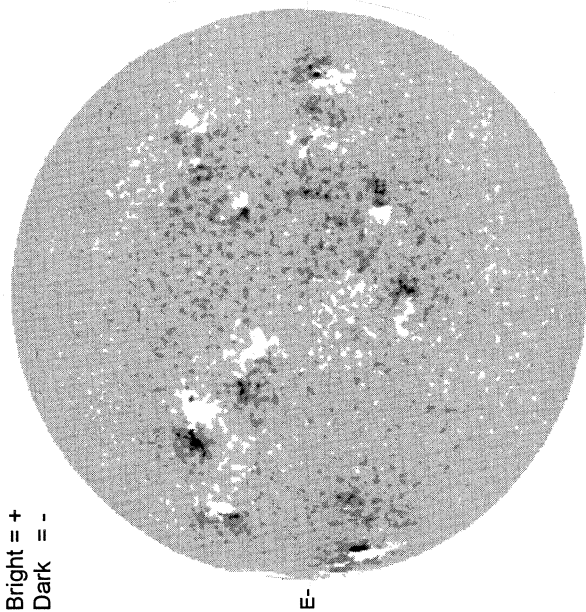


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Apr 03

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****868.8 nm****

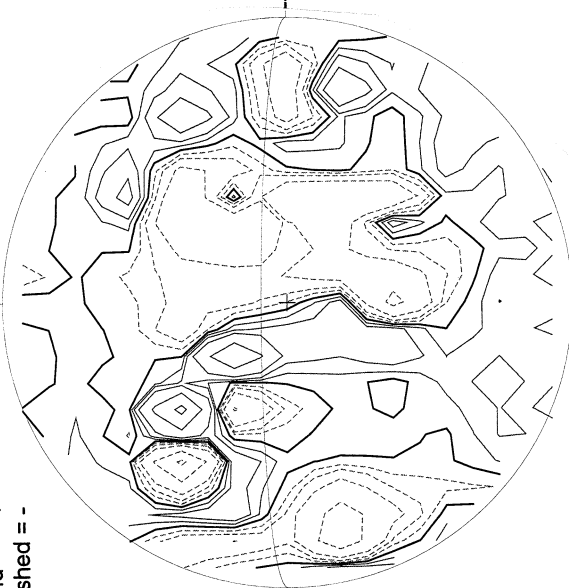
Bright = +
Dark = -



2015 UT

STANFORD MAGNETOGRAM

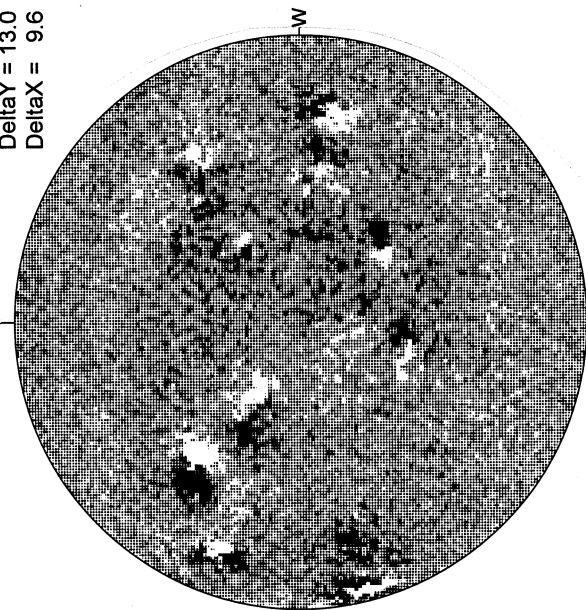
Solid = +
Dashed = -



2001 UT

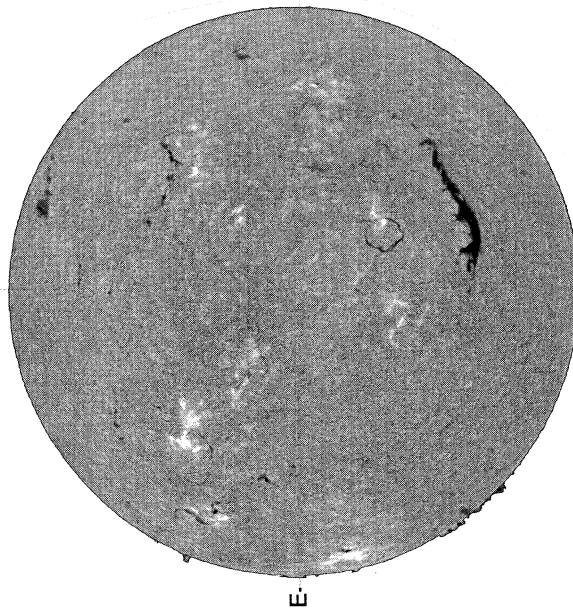
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6

16.04 -
16.99 UT

White = +7.5G
Black = -7.5G

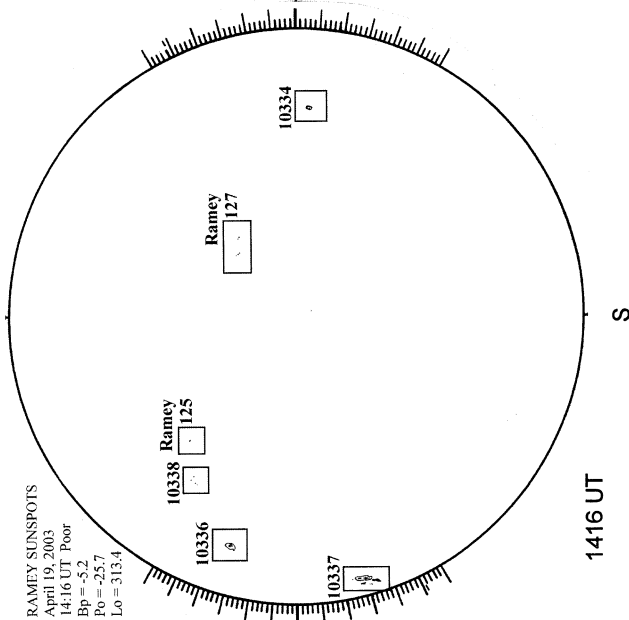
BIG BEAR H-ALPHA



1630 UT

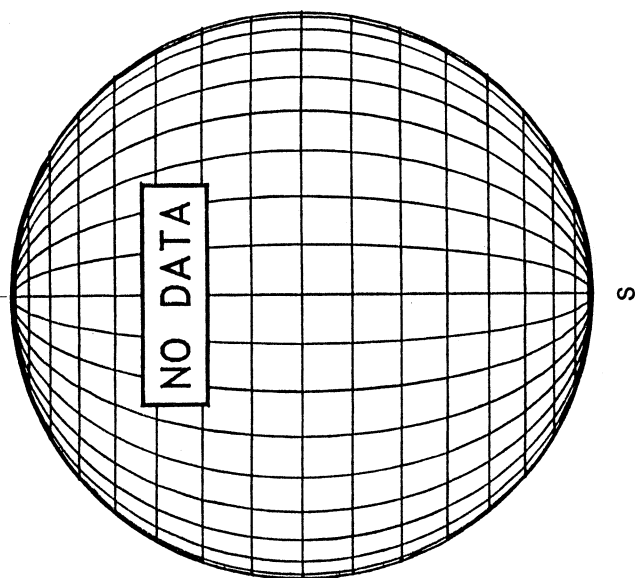
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 19, 2003
14:16 UT Poor
Bp = -5.2
Po = -25.7
Lo = 313.4



1416 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

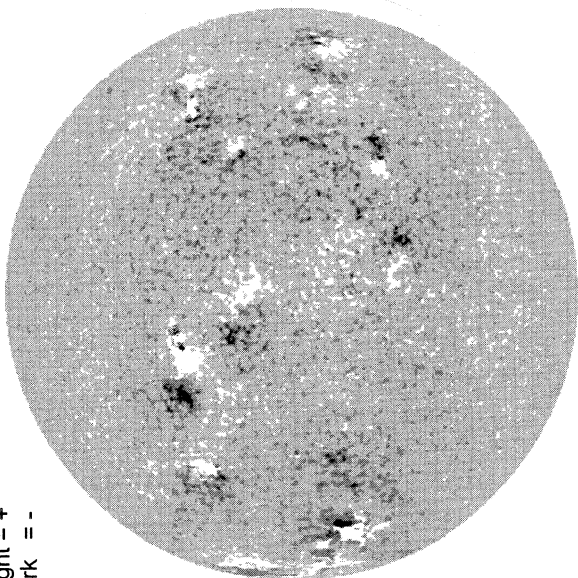


APRIL 20, 2003 (P = -25.70, Bo = -5.24, Lo = 305.82)

KITT PEAK MAGNETOGRAM

868.8 nm

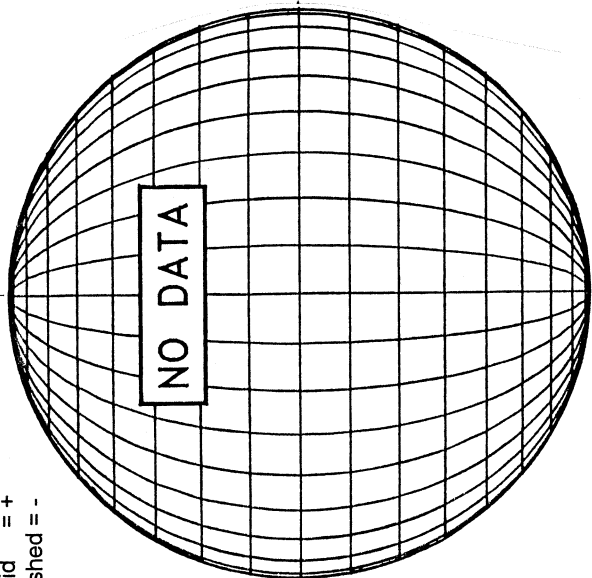
Bright = +
Dark = -



1749 UT

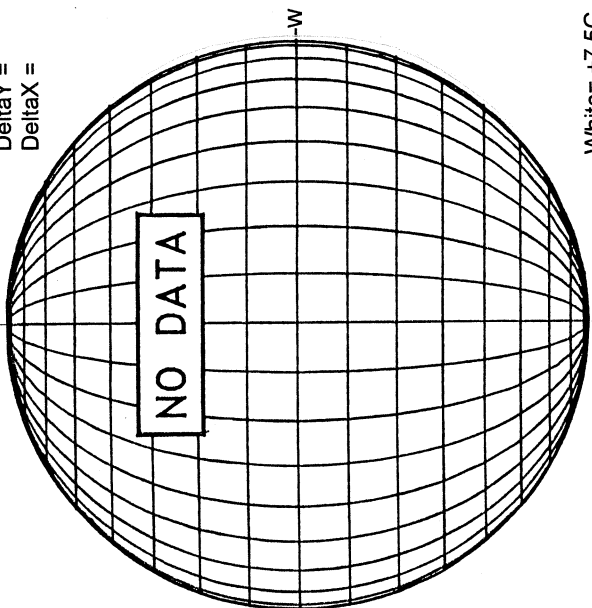
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



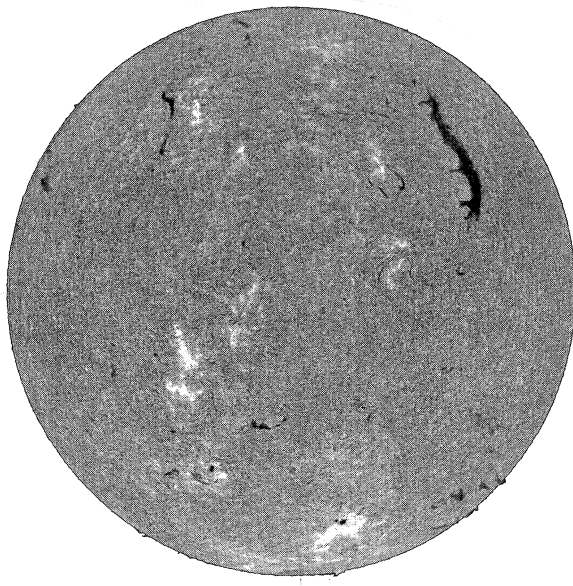
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

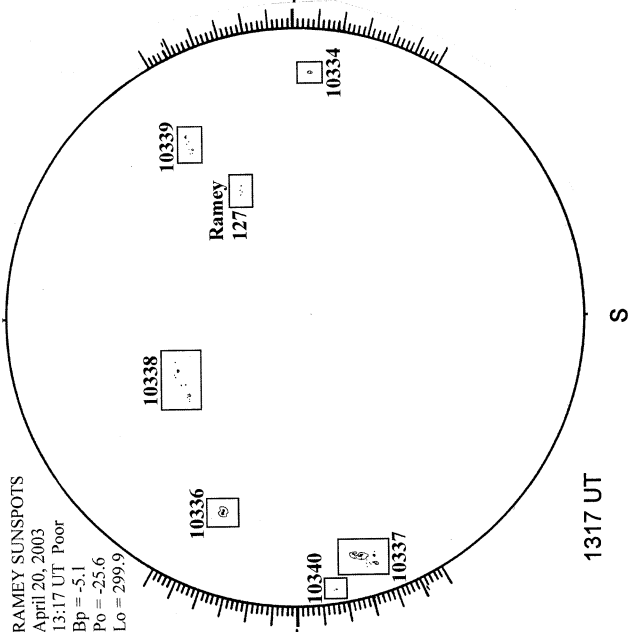
BIG BEAR H-ALPHA



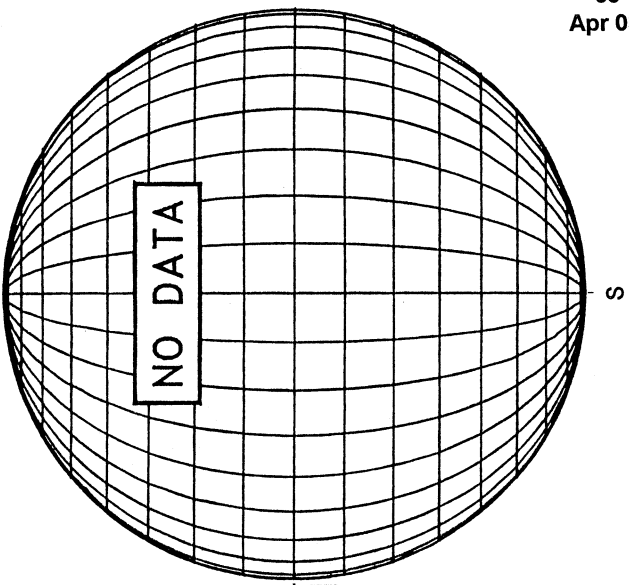
1614 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
April 20, 2003
13:17 UT Poor
Bp = -5.1
Po = -25.6
Lo = 299.9



LOMNICKY PEAK CORONA (1.04 Radii)----

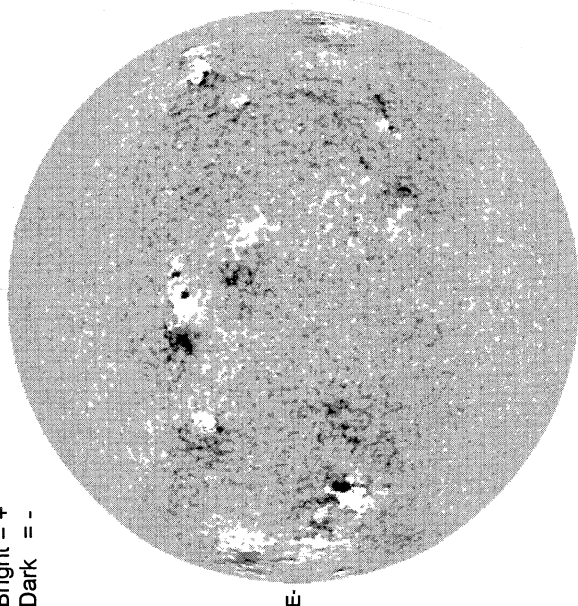


APRIL 21, 2003 (P = -25.60, Bo = -5.15, Lo = 292.61)

KITT PEAK MAGNETOGRAM

868.8 nm

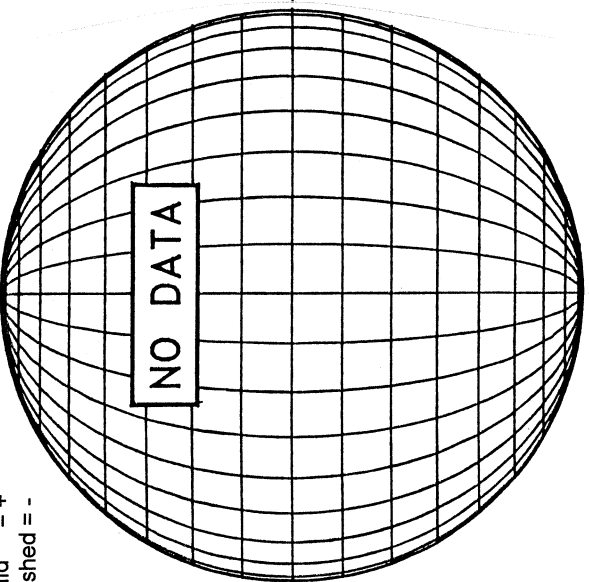
Bright = +
Dark = -



1551 UT

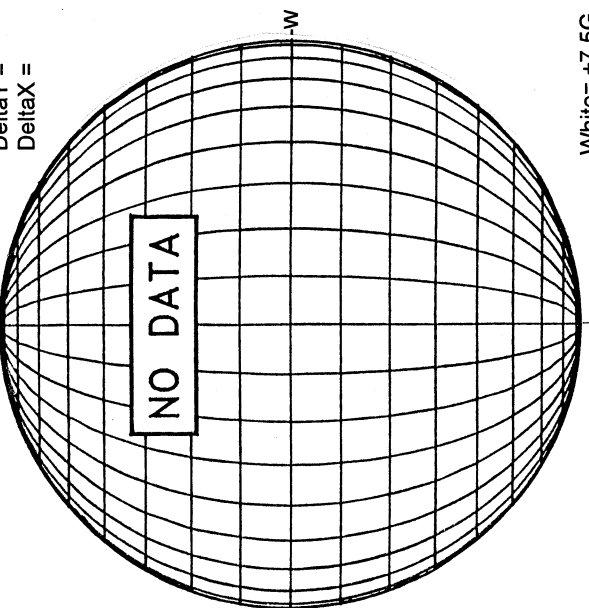
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



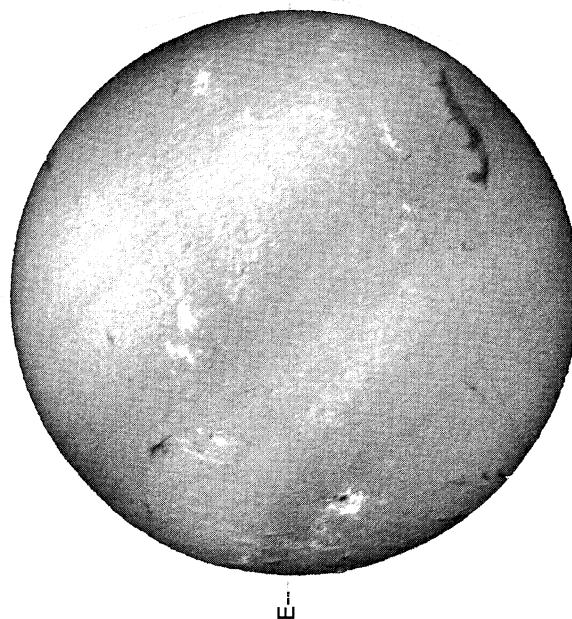
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

MEUDON H-ALPHA

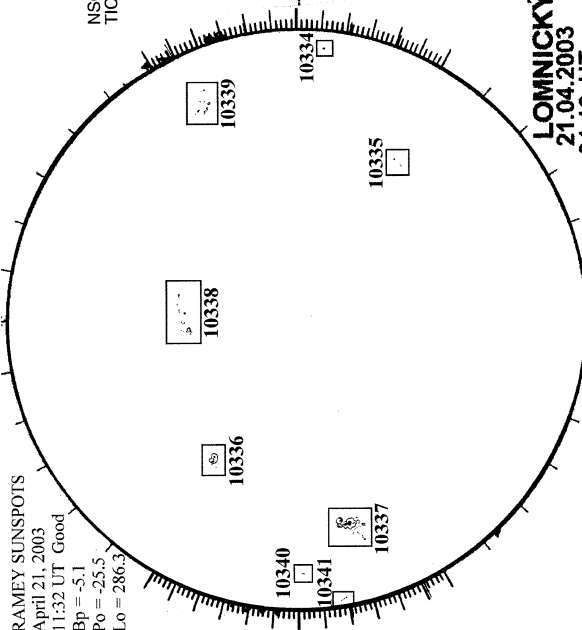


0852 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS

April 21, 2003
11:32 UT Good
Bp = -5.1
Po = -25.5
Lo = 286.3

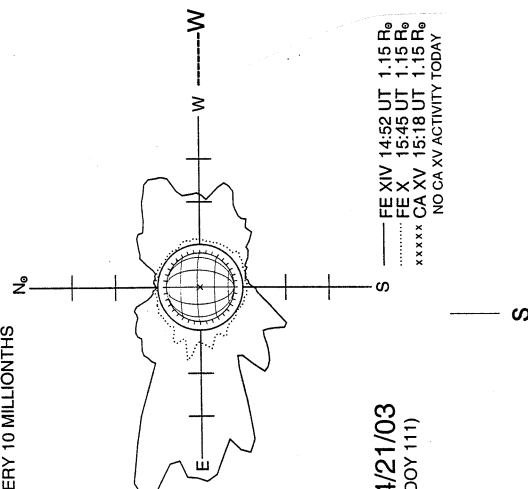


1132 UT

0446 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

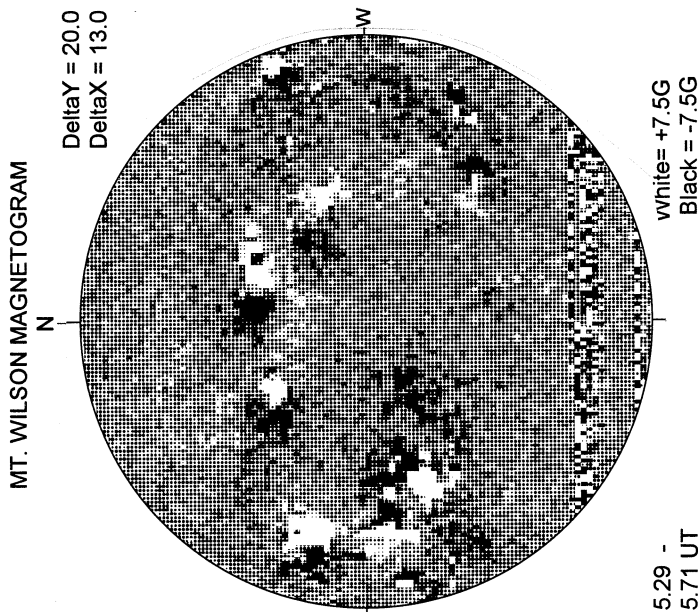
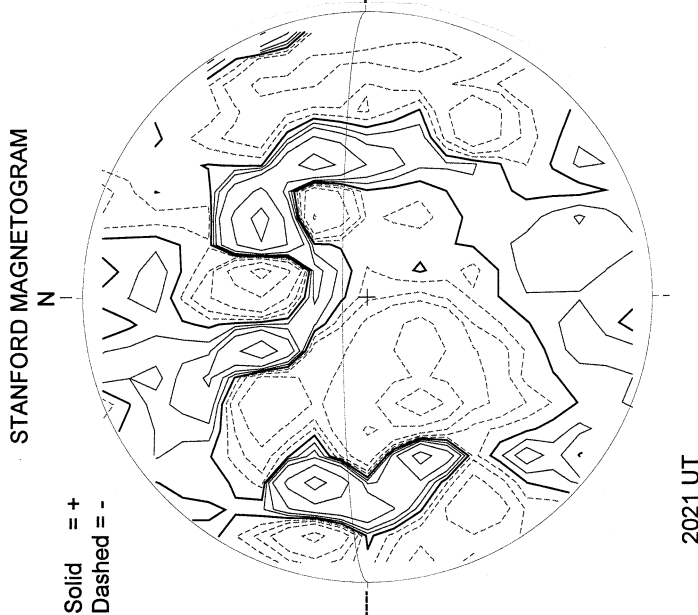
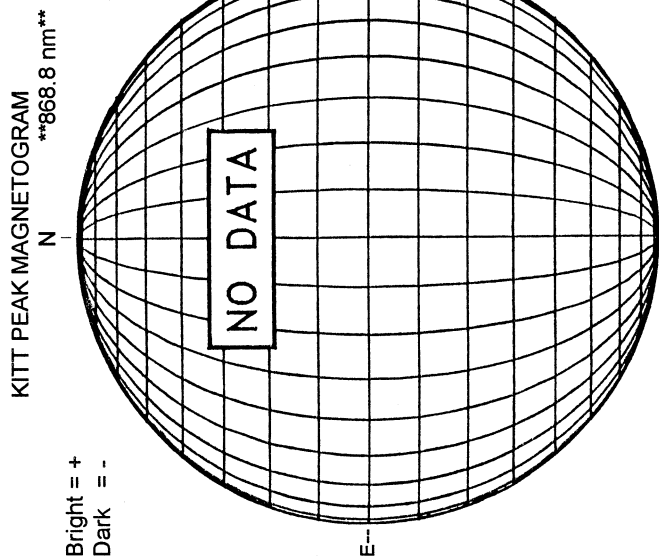
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



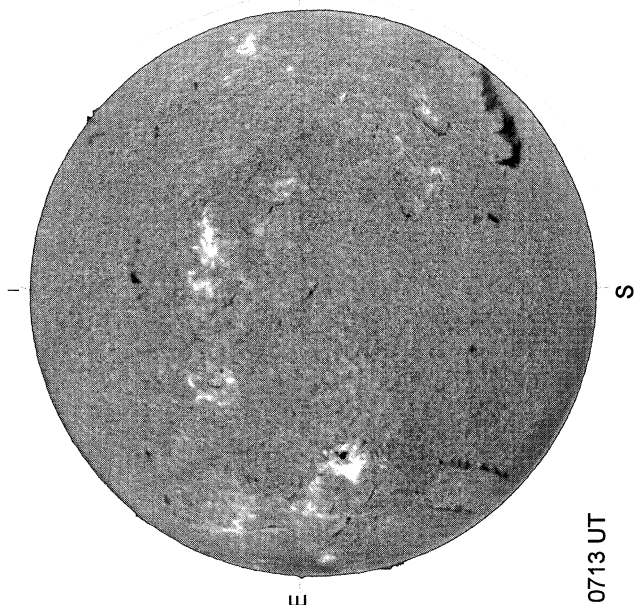
04/21/03
(DOY 111)

FE XIV 14:52 UT 1.15 R_o
FE X 15:45 UT 1.15 R_o
CA XV 15:18 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

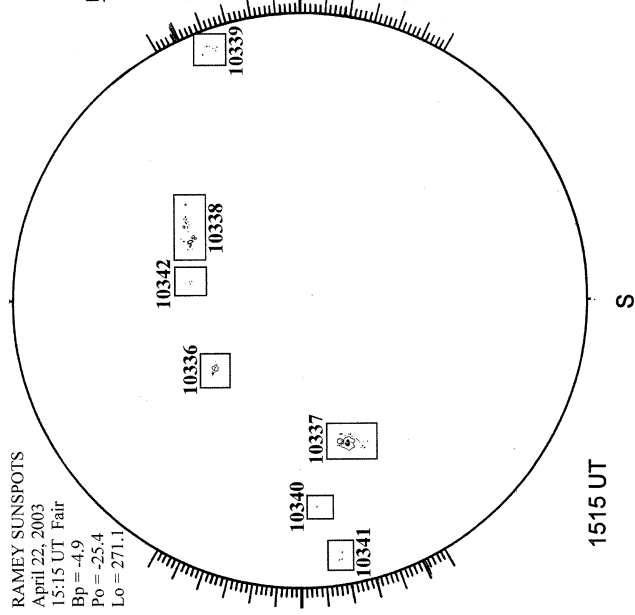
APRIL 22, 2003 (P= -25.50, Bo = -5.06, Lo = 279.40)



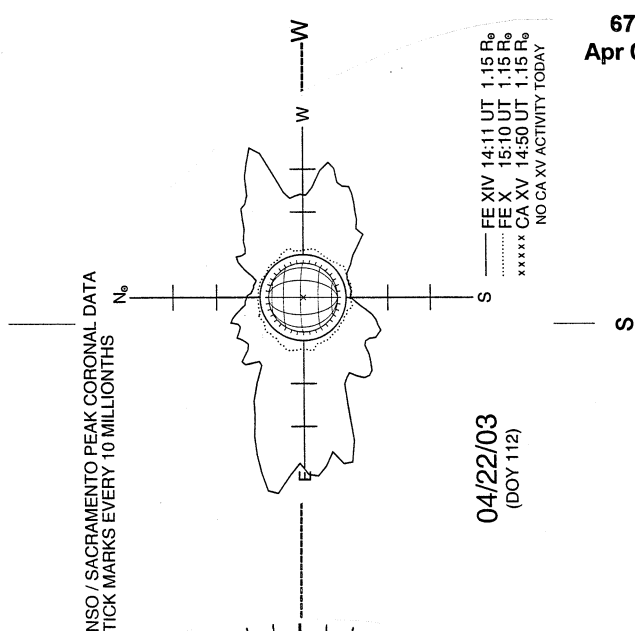
KANZELHOHE H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



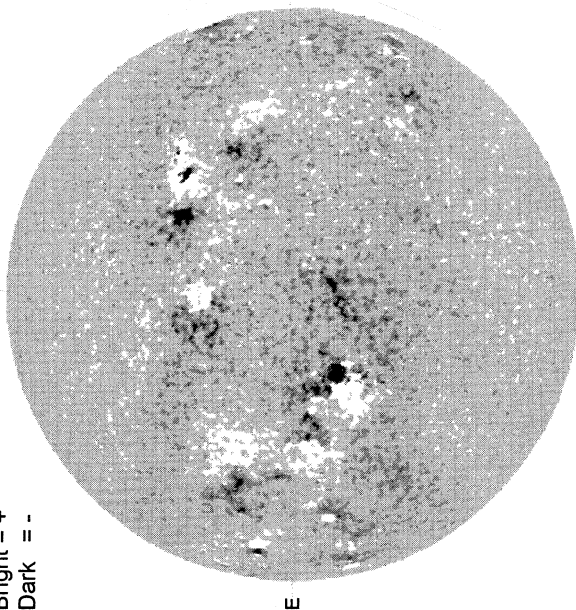
APRIL 23, 2003 (P= -25.38, Bo = -4.97, Lo = 266.19)

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Apr 03

KITT PEAK MAGNETOGRAM

868.8 nm

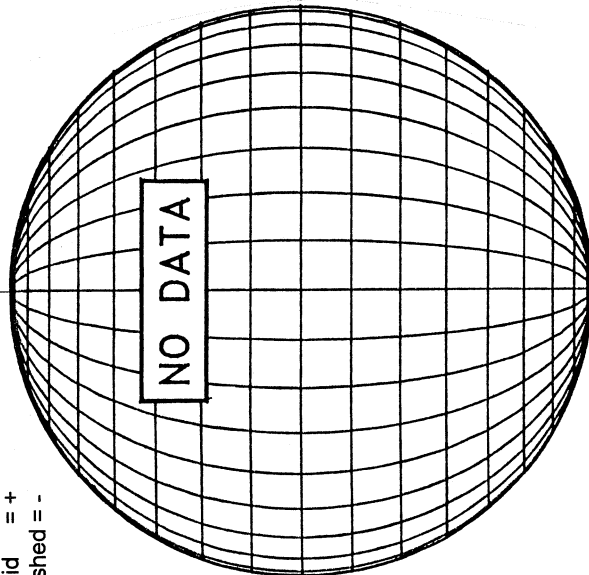
Bright = +
Dark = -



1551 UT

STANFORD MAGNETOGRAM

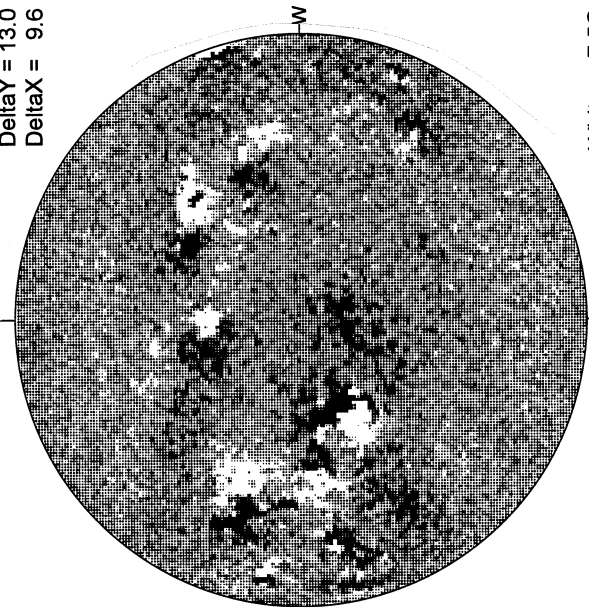
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

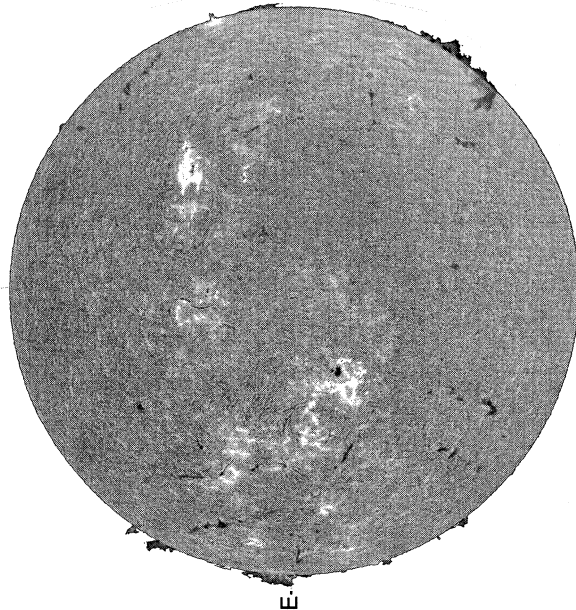
DeltaY = 13.0
DeltaX = 9.6



15.69 -
16.63 UT

White = +7.5G
Black = -7.5G

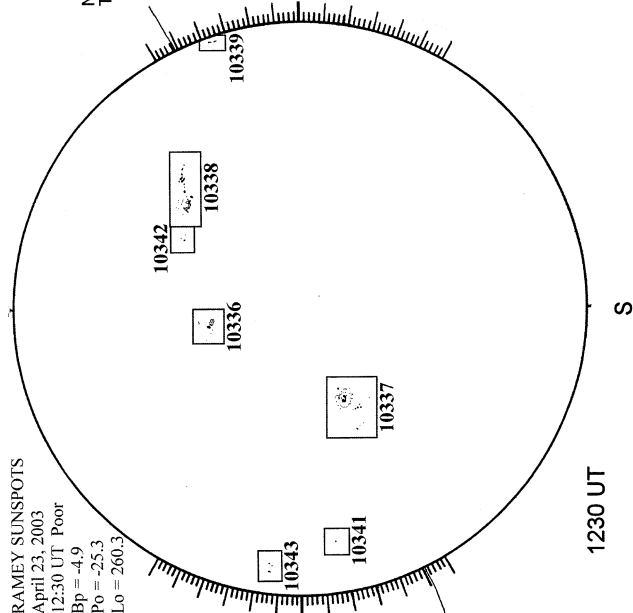
BIG BEAR H-ALPHA



1635 UT

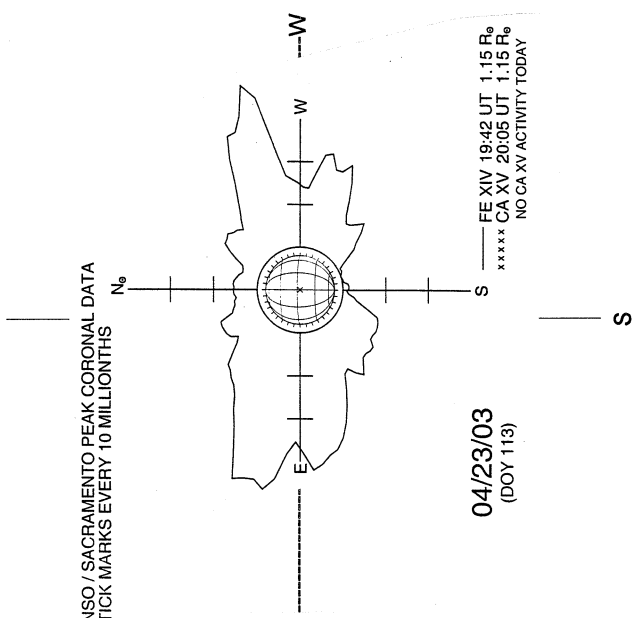
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 23, 2003
12:30 UT Poor
Bp = -4.9
Po = -25.3
Lo = 260.3



1230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



04/23/03
(DOY 113)

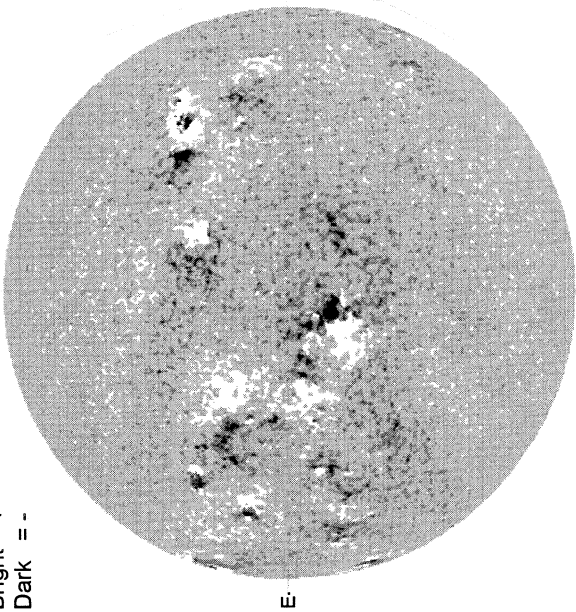
----- FE XIV 19:42 UT 1.15 R_o
***** CA XV 20:05 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

APRIL 24, 2003 (P= -25.26, Bo = -4.88, Lo = 252.98)

KITT PEAK MAGNETOGRAM

868.8 nm

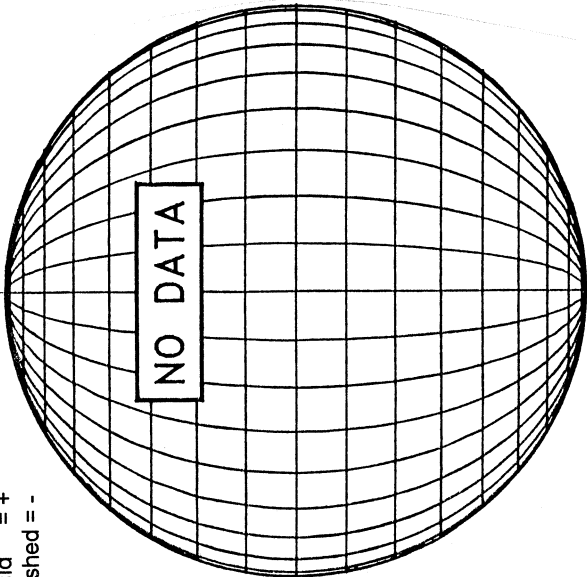
Bright = +
Dark = -



1515 UT

STANFORD MAGNETOGRAM

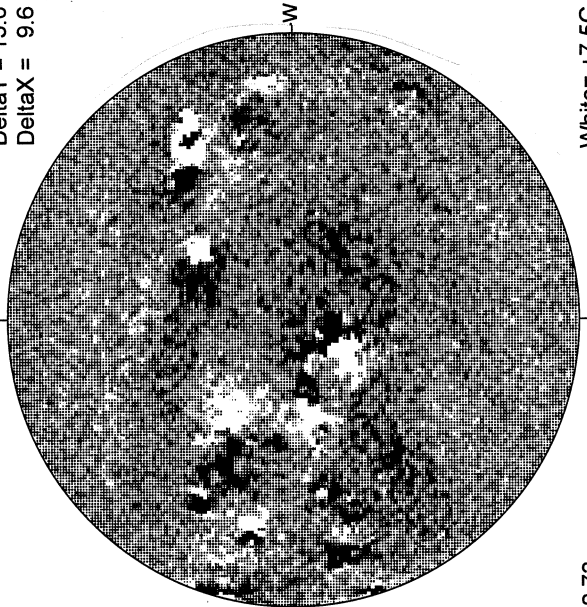
Solid = +
Dashed = -



18.73 -
19.67 UT

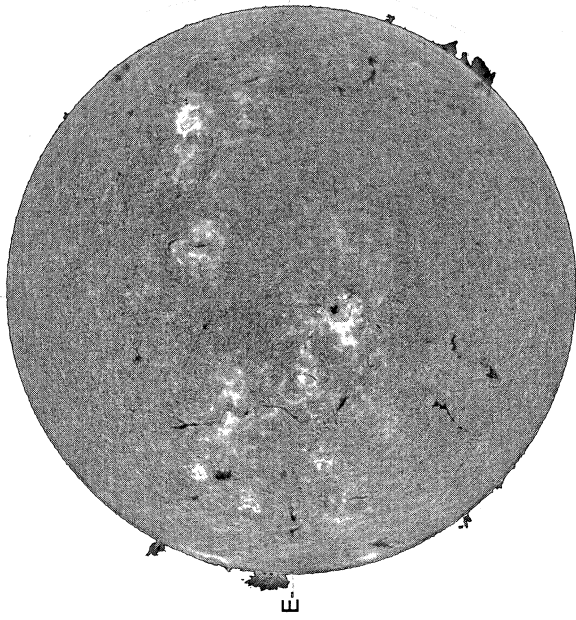
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



White = +7.5G
Black = -7.5G

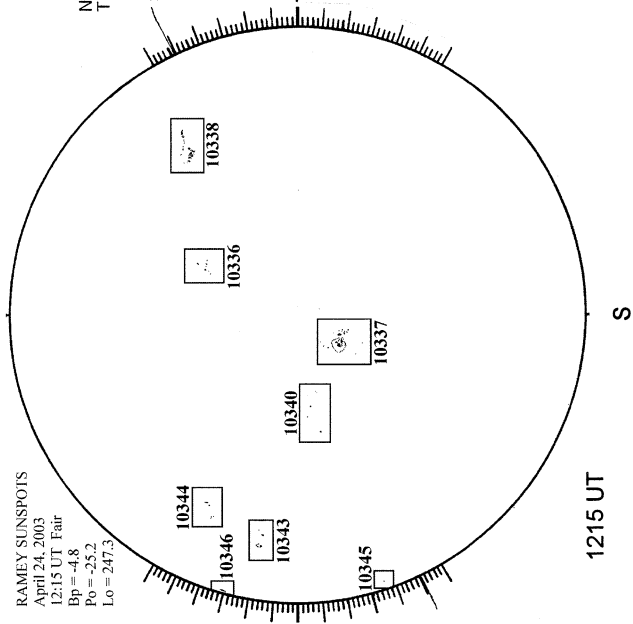
BIG BEAR H-ALPHA



1602 UT

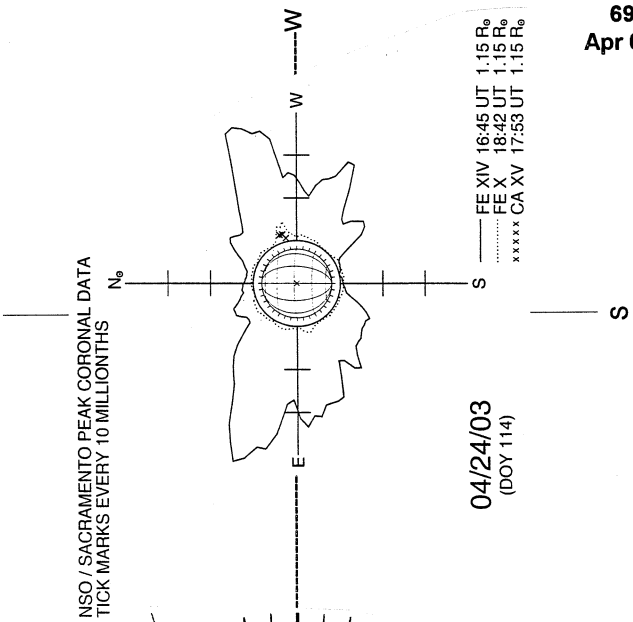
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 24, 2003
12:15 UT Fair
Bp = -4.8
Po = -25.2
Lo = 247.3



1215 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



04/24/03
(DOY 114)

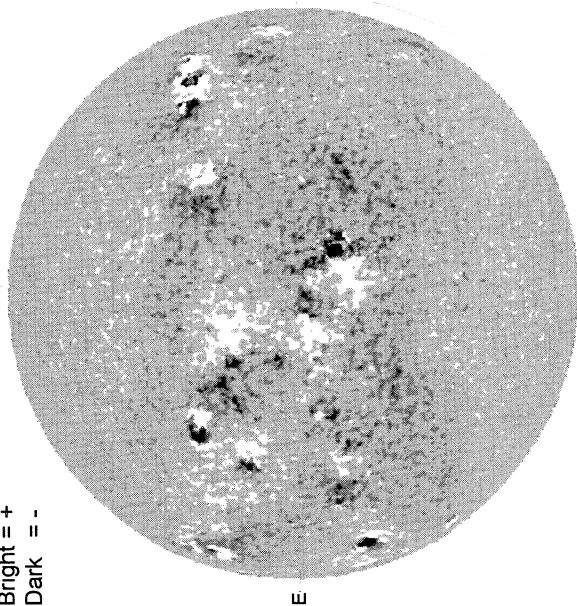
----- EE XIV 16:45 UT 1.15 R₀
..... EE X 18:42 UT 1.15 R₀
xxxxx CA XV 17:53 UT 1.15 R₀

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Apr 03

KITT PEAK MAGNETOGRAM

868.8 nm

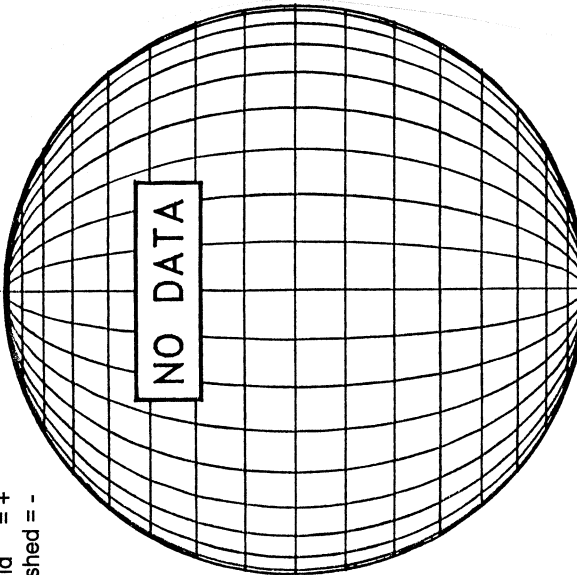
Bright = +
Dark = -



1503 UT

STANFORD MAGNETOGRAM

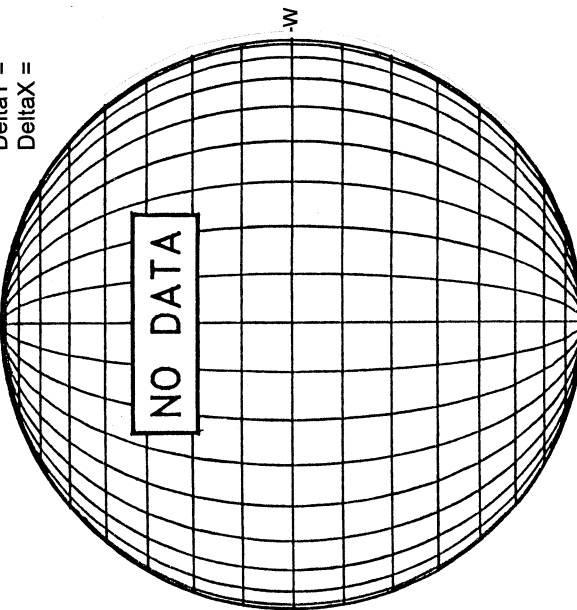
Solid = +
Dashed = -



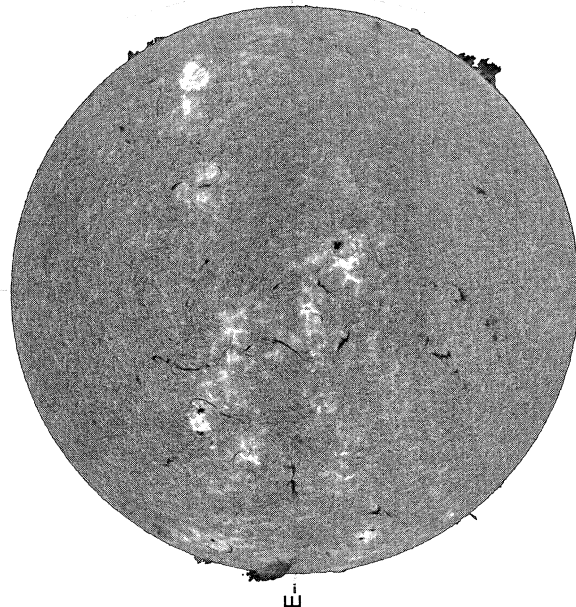
White = +7.5G
Black = -7.5G

MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



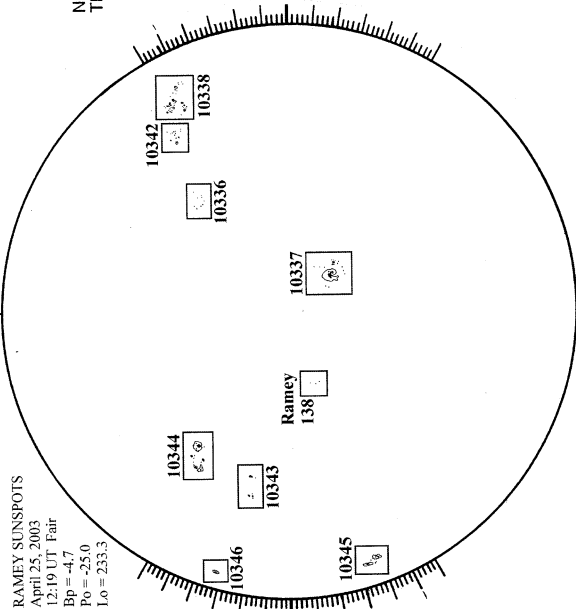
BIG BEAR H-ALPHA



1602 UT

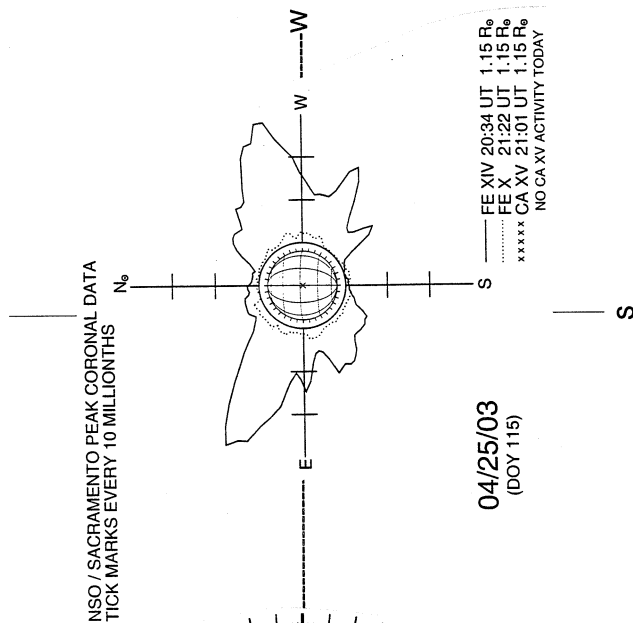
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 25, 2003
12:19 UT Fair
Bp = 4.7
Po = -23.0
Lo = 233.3



1219 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

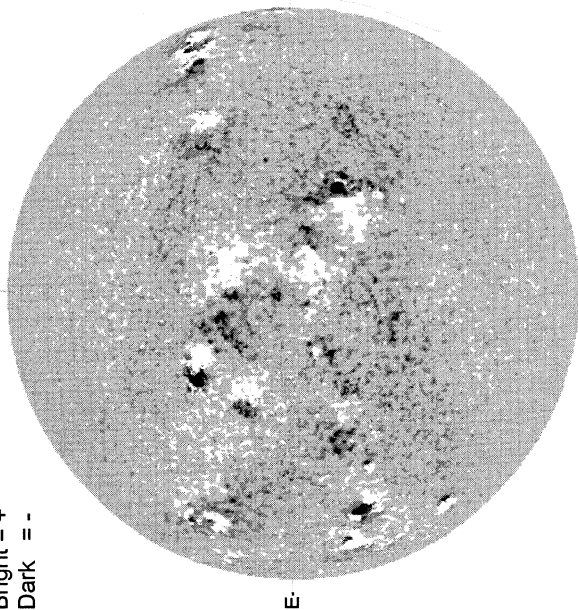


APRIL 26, 2003 (P= -25.00, Bo = -4.70, Lo = 226.56)

KITT PEAK MAGNETOGRAM

868.8 nm

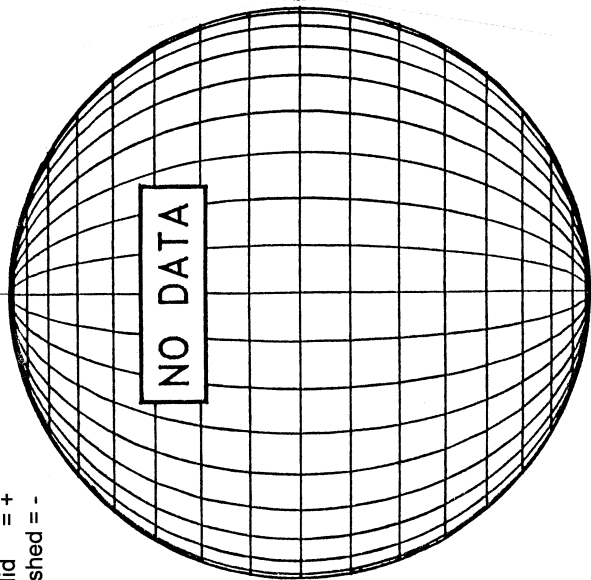
Bright = +
Dark = -



1523 UT

STANFORD MAGNETOGRAM

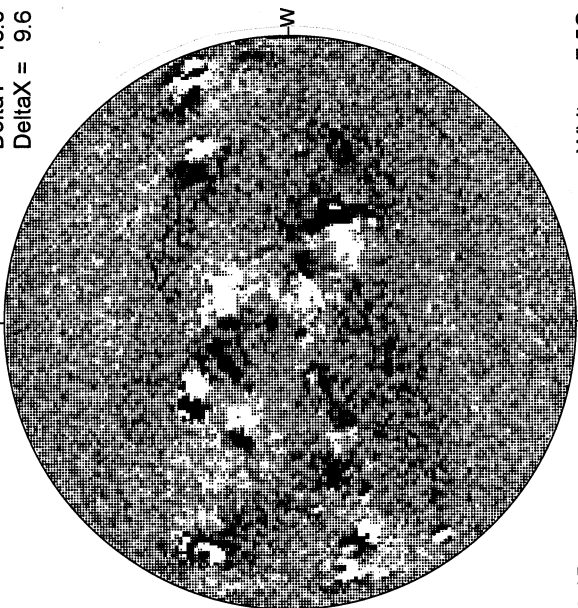
Solid = +
Dashed = -



16.15 -
17.09 UT

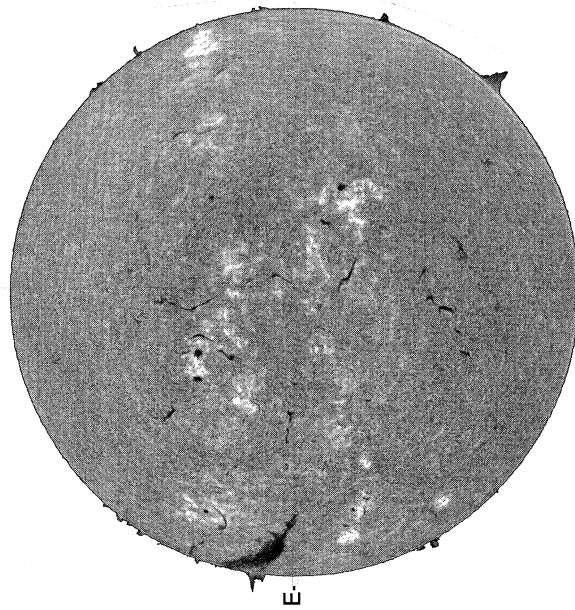
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



White = +7.5G
Black = -7.5G

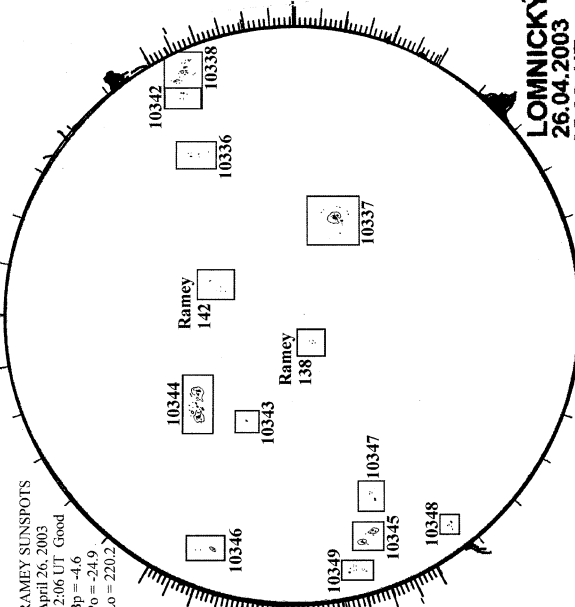
BIG BEAR H-ALPHA



1605 UT

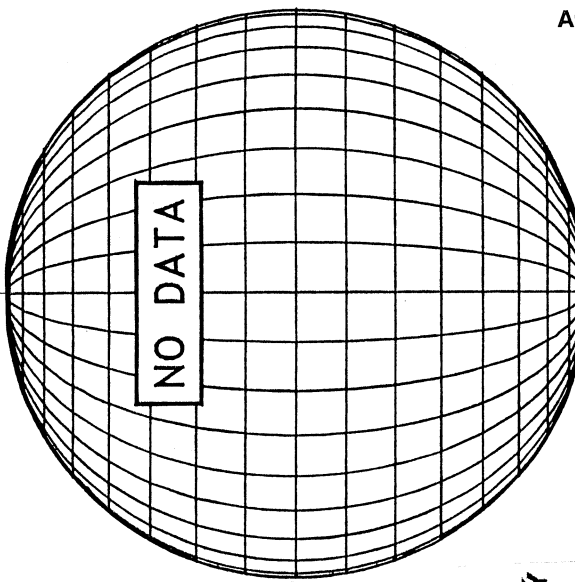
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 26, 2003
12:06 UT Good
Bp = -4.6
Po = -24.9
Lo = 220.2



1206 UT
0522 UT LOMN Prom S

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



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Apr 03

LOMNICKY
26.04.2003
05 22 UT

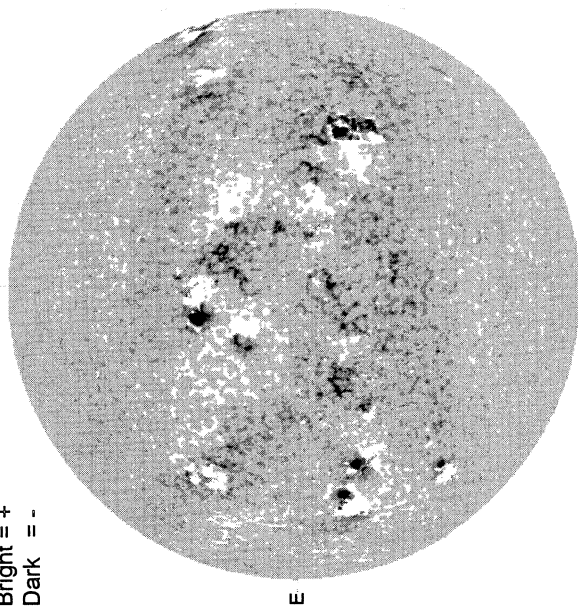
72
Apr 03

APRIL 27, 2003 (P = -24.86, Bo = -4.60, Lo = 213.35)

KITT PEAK MAGNETOGRAM

868.8 nm

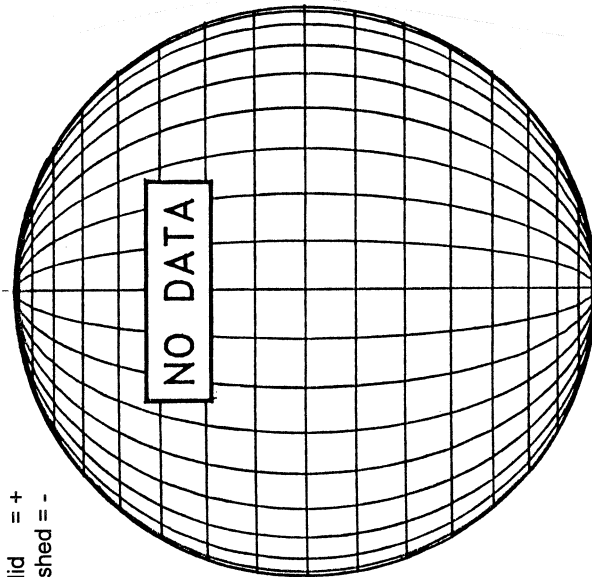
Bright = +
Dark = -



1559 UT

STANFORD MAGNETOGRAM

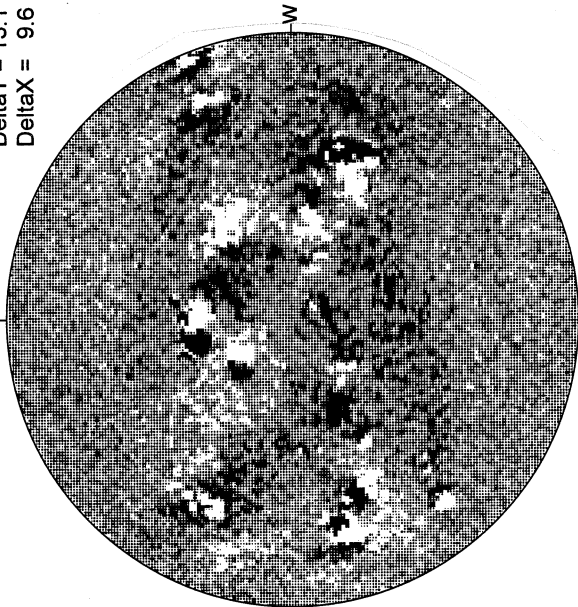
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

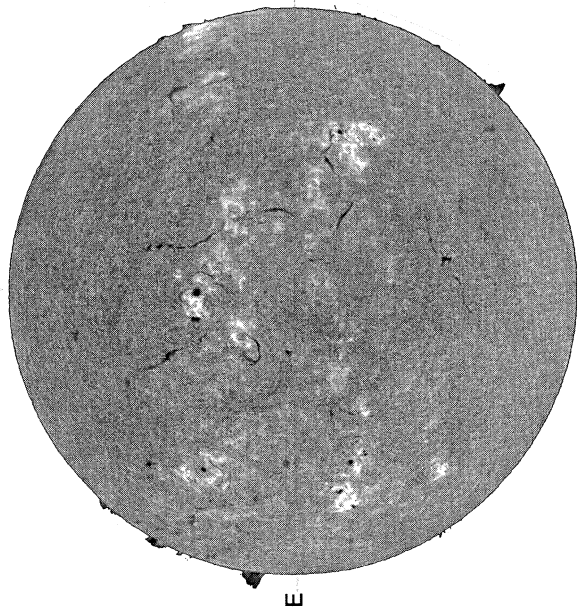
DeltaY = 13.1
DeltaX = 9.6



16.88 -
17.82 UT

White = +7.5G
Black = -7.5G

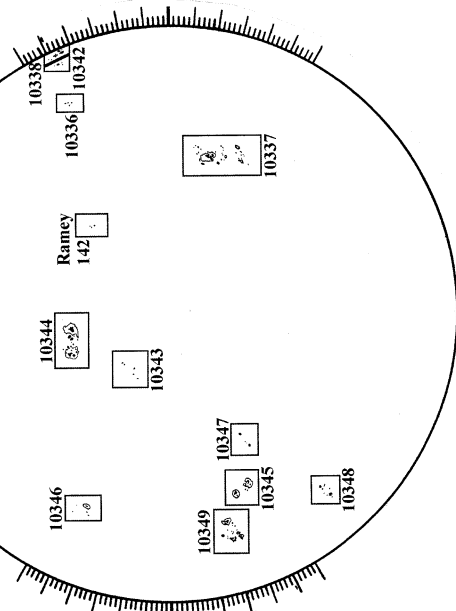
BIG BEAR H-ALPHA



1554 UT

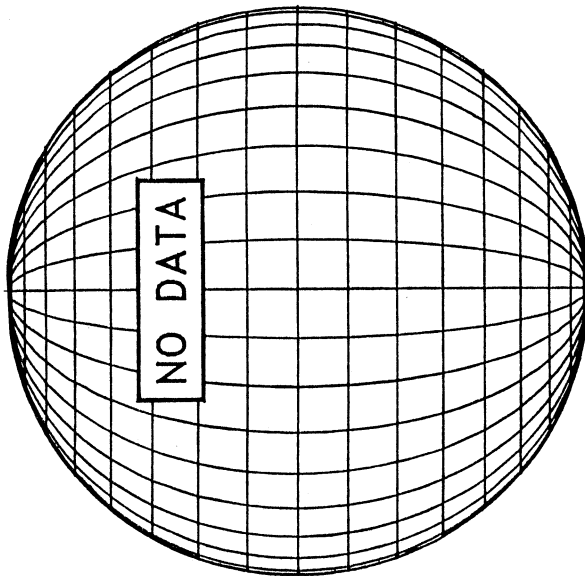
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 27, 2003
12:21 UT Fair
Bp = -4.5
Po = -24.7
Lo = 207.1



1221 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



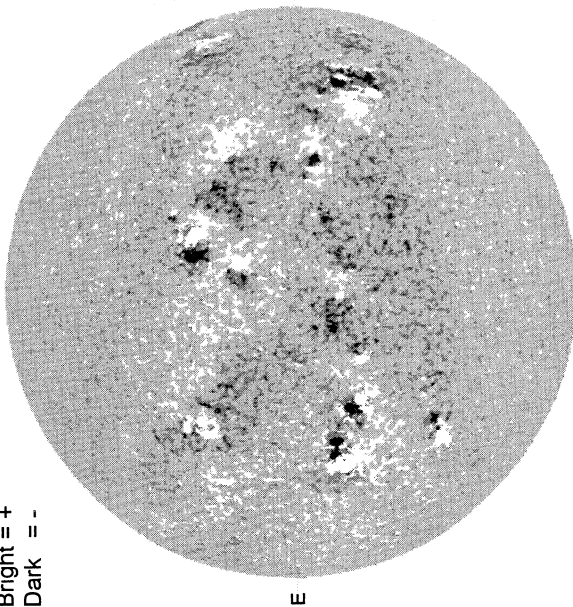
NO DATA

APRIL 28, 2003 (P = -24.71, Bo = -4.51, Lo = 200.13)

KITT PEAK MAGNETOGRAM

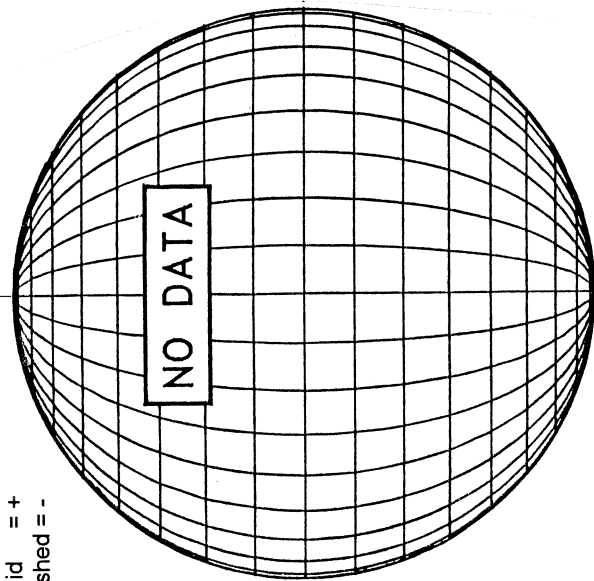
868.8 nm

Bright = +
Dark = -



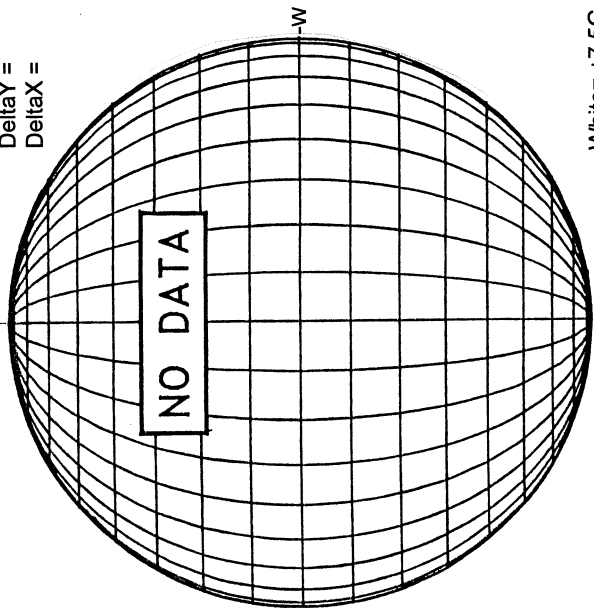
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

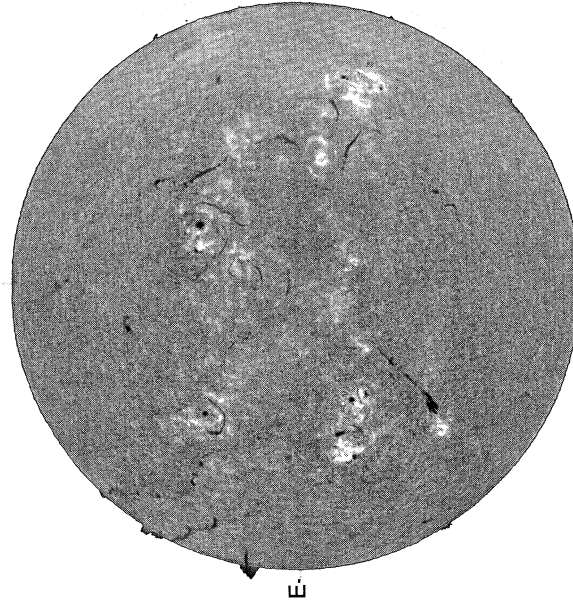
Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

1527 UT

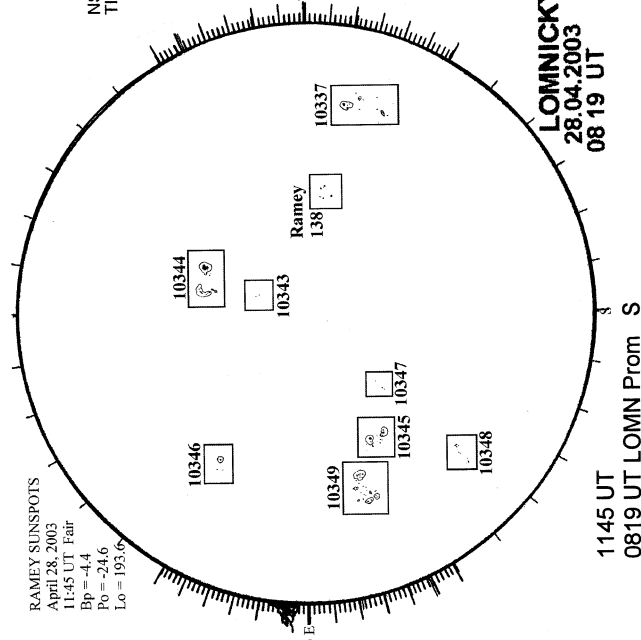
BIG BEAR H-ALPHA



1626 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
April 28, 2003
11:45 UT Fair
Bp = -4.4
Po = -24.6
Lo = 193.6

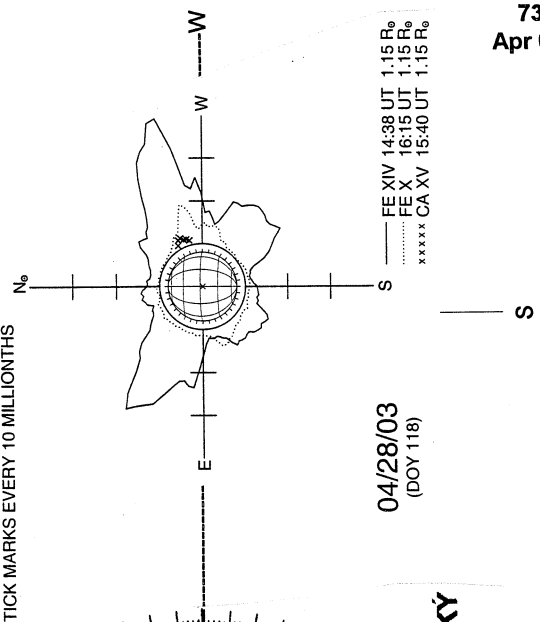


1145 UT
0819 UT LOMN Prom S

LOMNICKY
28.04.2003
08 19 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 10 MILLIONTHS



04/28/03
(DOY 118)

--- FE XIV 14:38 UT 1.15 R_o
... FE X 16:15 UT 1.15 R_o
xxxxx CA XV 15:40 UT 1.15 R_o

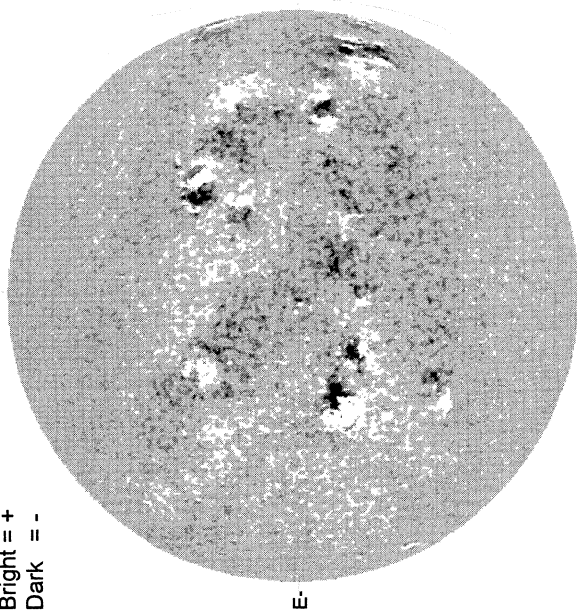
APRIL 29, 2003 (P= -24.56, Bo = -4.41, Lo = 186.92)

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Apr 03

KITT PEAK MAGNETOGRAM

868.8 nm

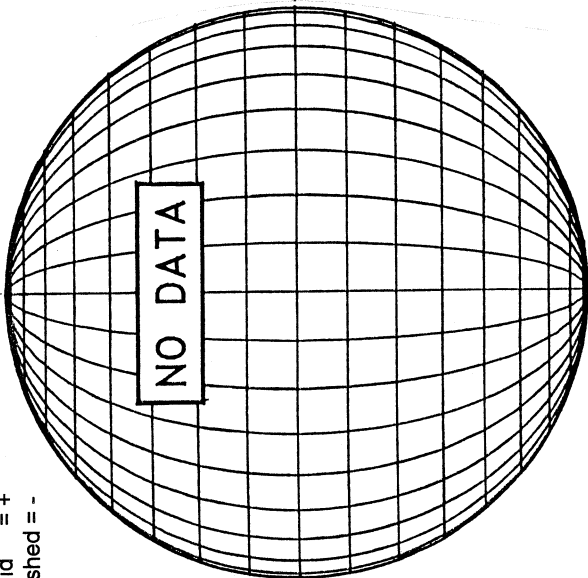
Bright = +
Dark = -



1519 UT

STANFORD MAGNETOGRAM

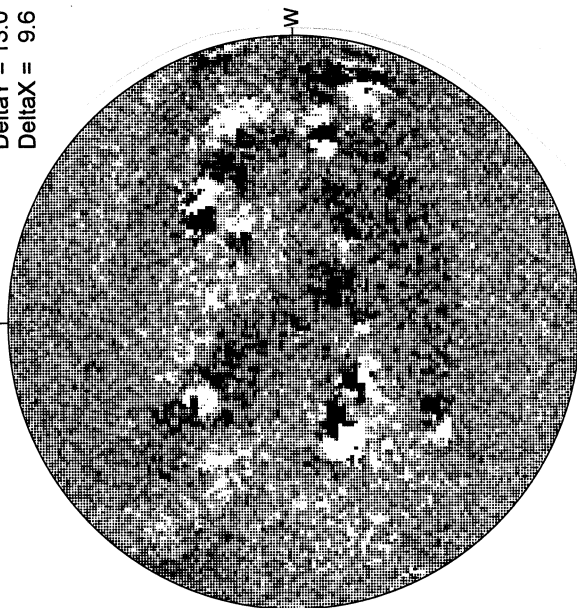
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

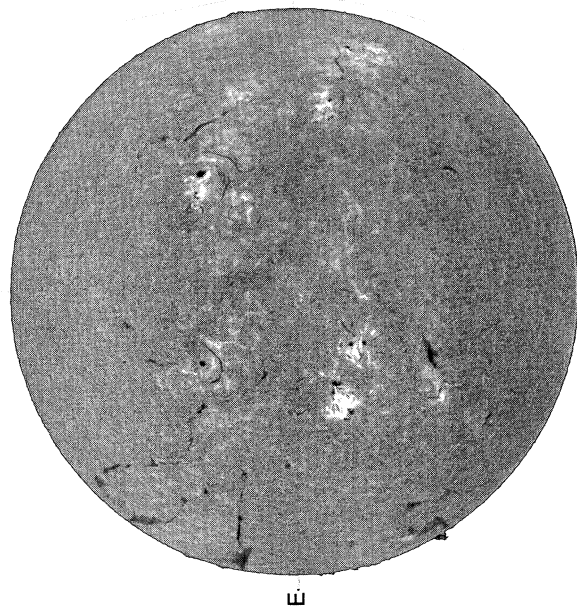
DeltaY = 13.0
DeltaX = 9.6



15.68 -
16.62 UT

White = +7.5G
Black = -7.5G

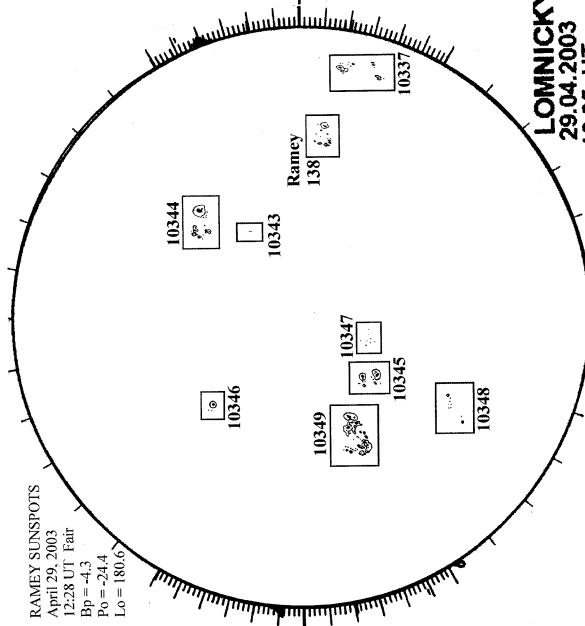
BIG BEAR H-ALPHA



1553 UT

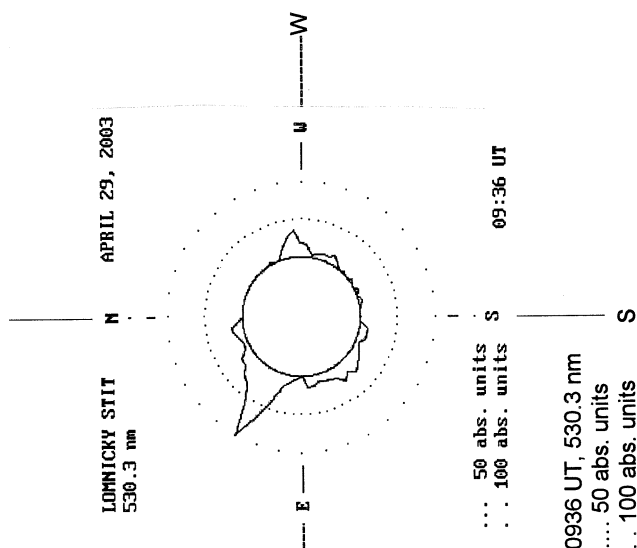
RAMEY SUNSPOT

RAMEY SUNSPOTS
April 29, 2003
12:28 UT Fair
Bp = -4.3
Po = -24.4
Lo = 180.6



1228 UT
1035 UT LOMN Prom S

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



0936 UT, 530.3 nm
... 50 abs. units
.. 100 abs. units

09:36 UT

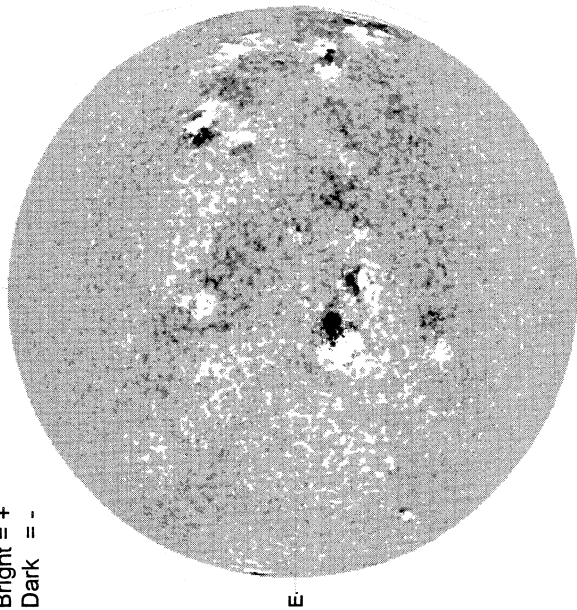
LOMNICKY
29.04.2003

10 35 UT

APRIL 30, 2003 (P= -24.39, Bo = -4.31, Lo = 173.70)

KITT PEAK MAGNETOGRAM
868.8 nm

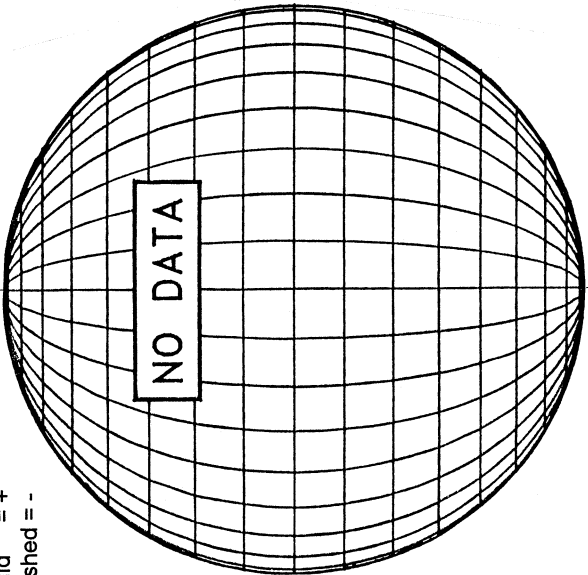
Bright = +
Dark = -



1547 UT

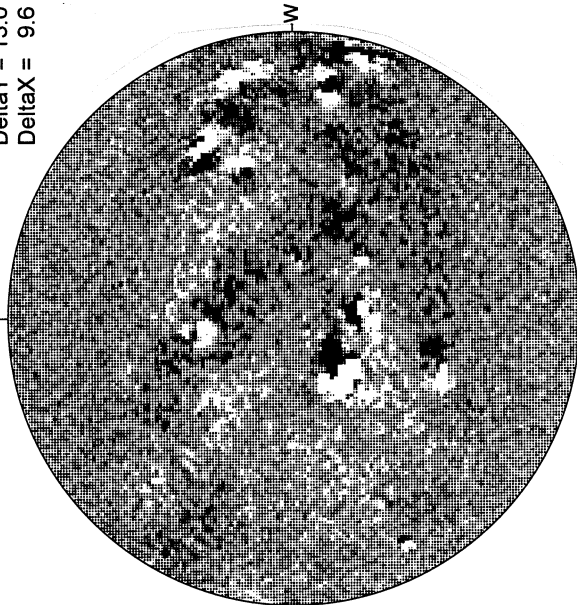
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

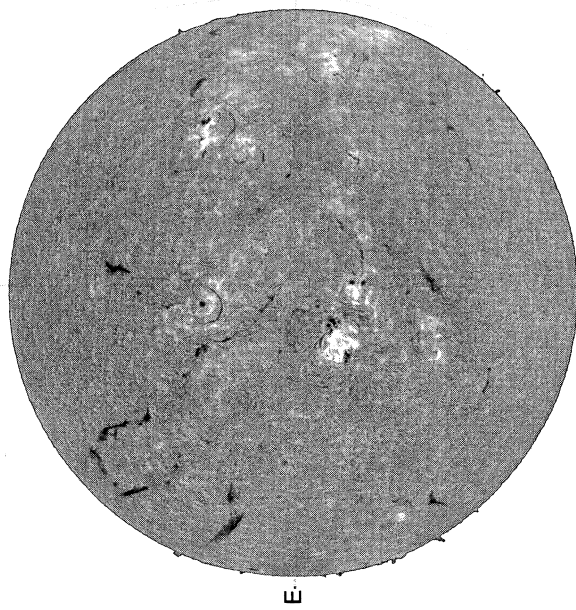
DeltaY = 13.0
DeltaX = 9.6



15.42 -
16.36 UT

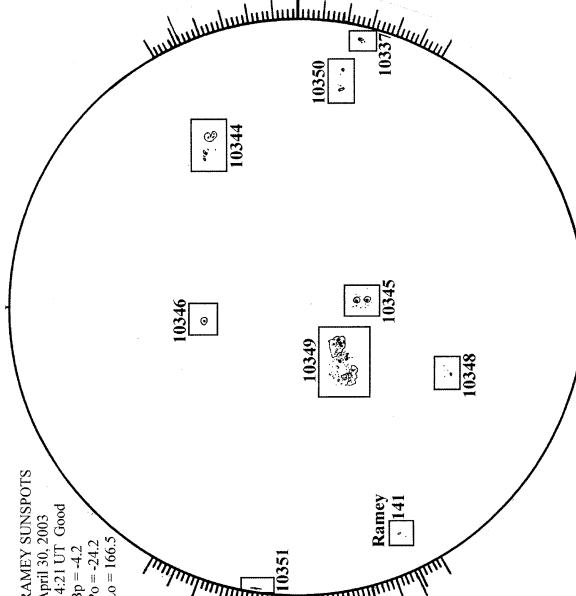
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1551 UT

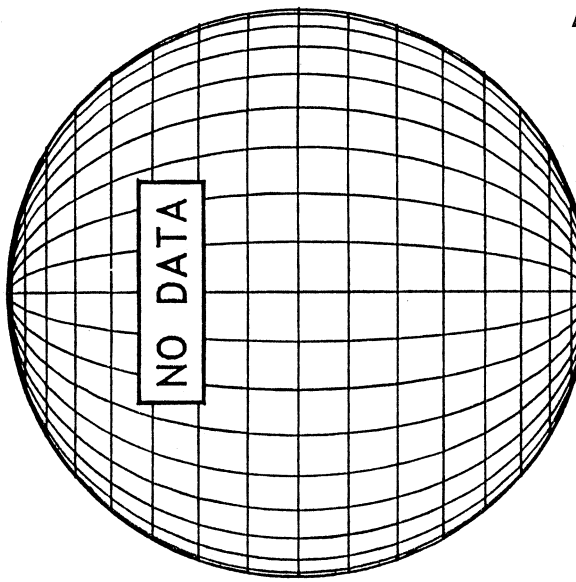
HOLLOMAN SUNSPOT



1421 UT

RAMEY SUNSPOTS
April 30, 2003
14:21 UT Good
Bp = -4.2
Po = -24.2
Lo = 166.5

LOMNICKY PEAK CORONA (1.04 Radii)----

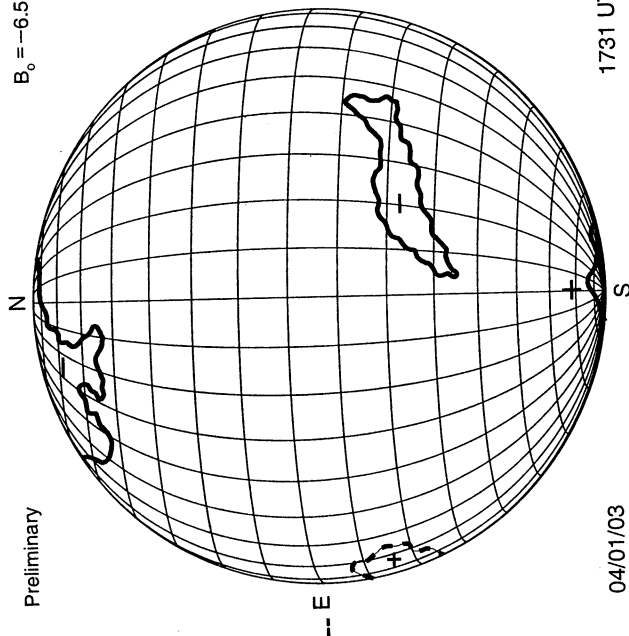


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Apr 03

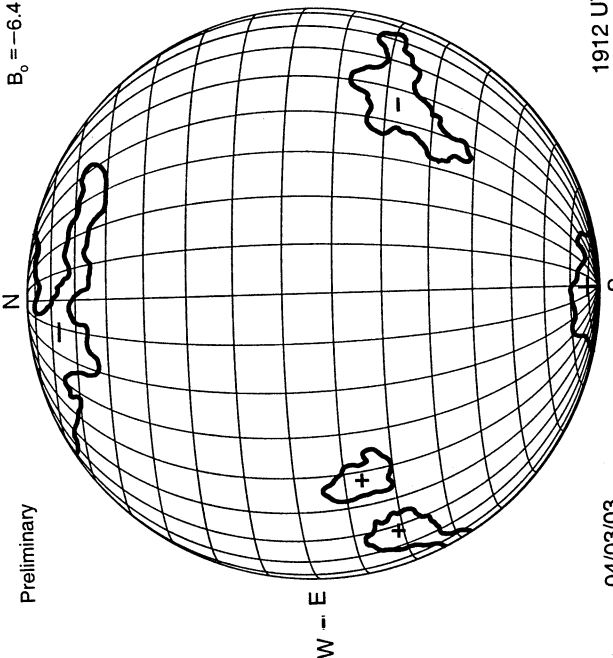
76
Apr 03

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm April 2003

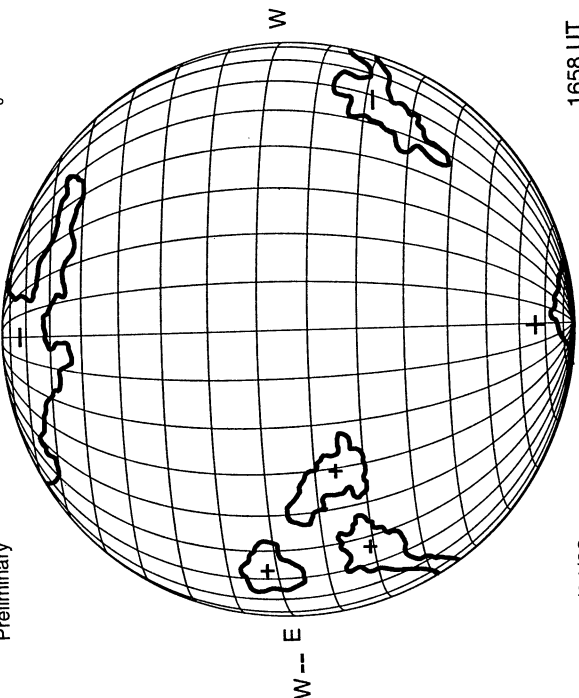
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.5$



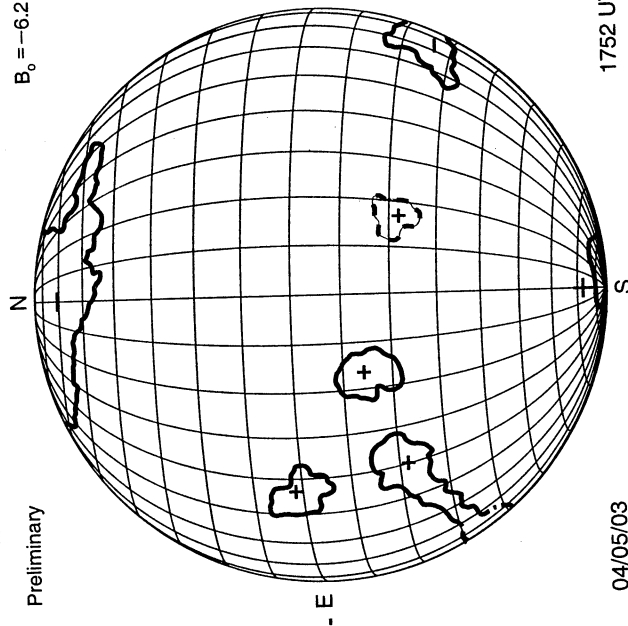
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.4$



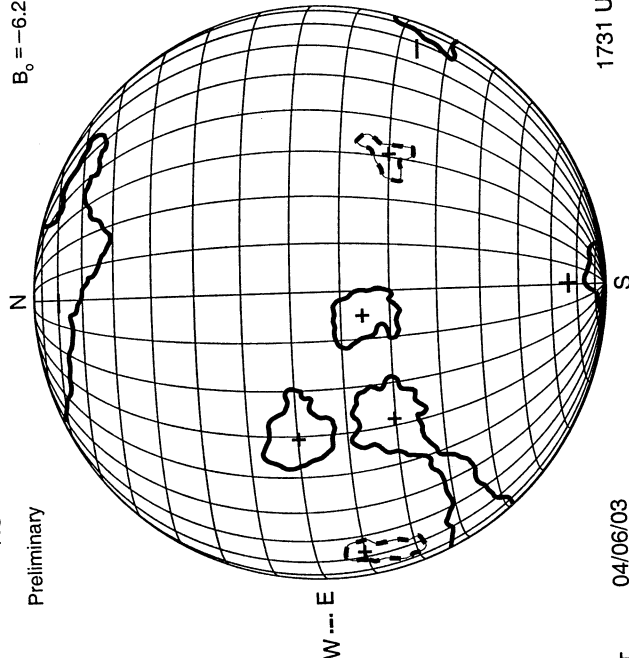
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.3$



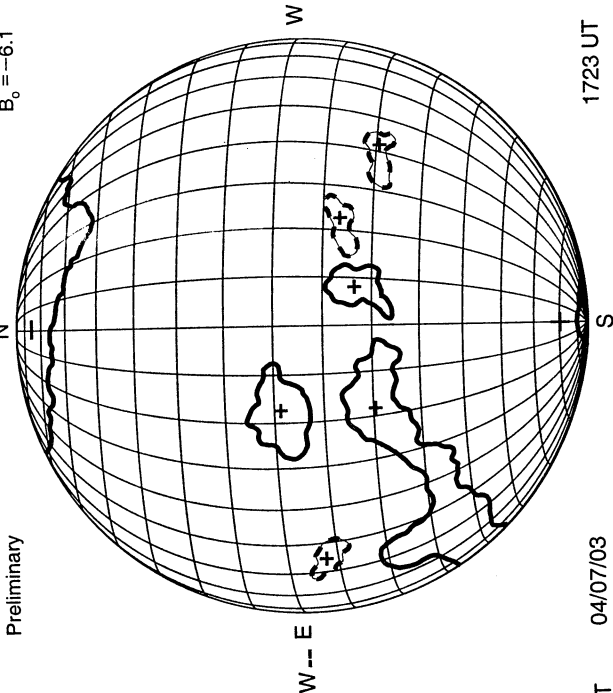
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.2$



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.2$

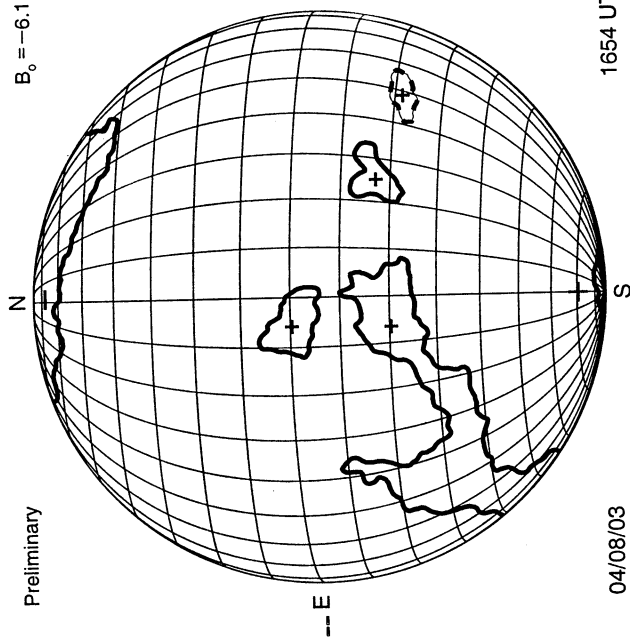


NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -6.1$

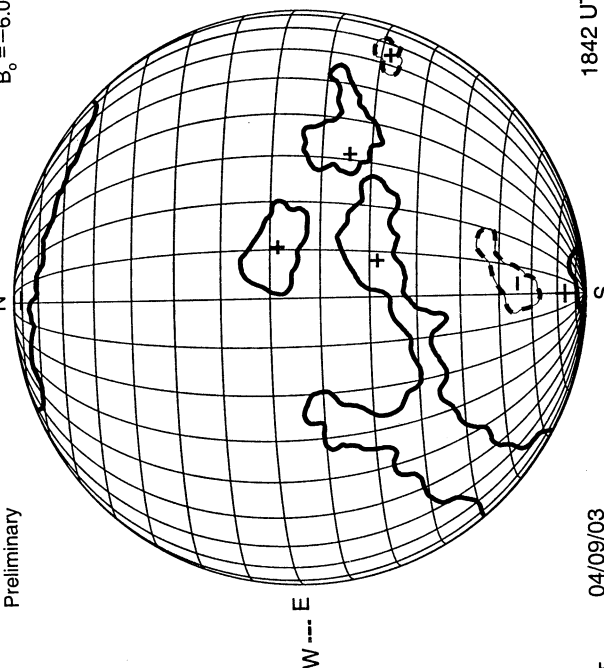


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm April 2003

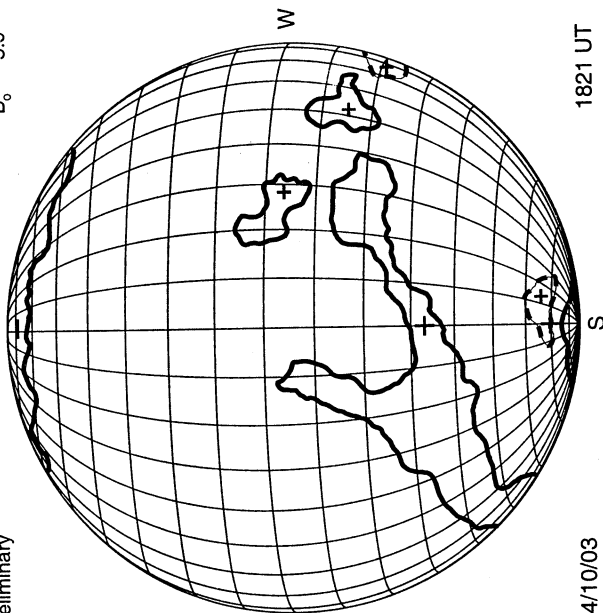
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -6.1$
Preliminary



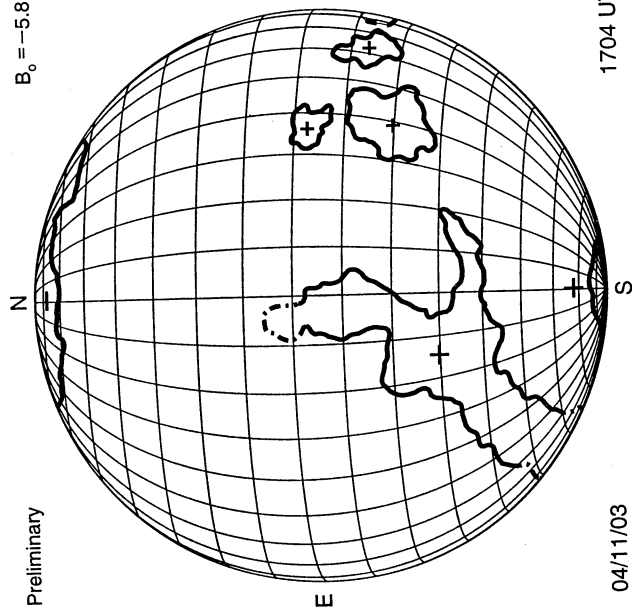
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -6.0$
Preliminary



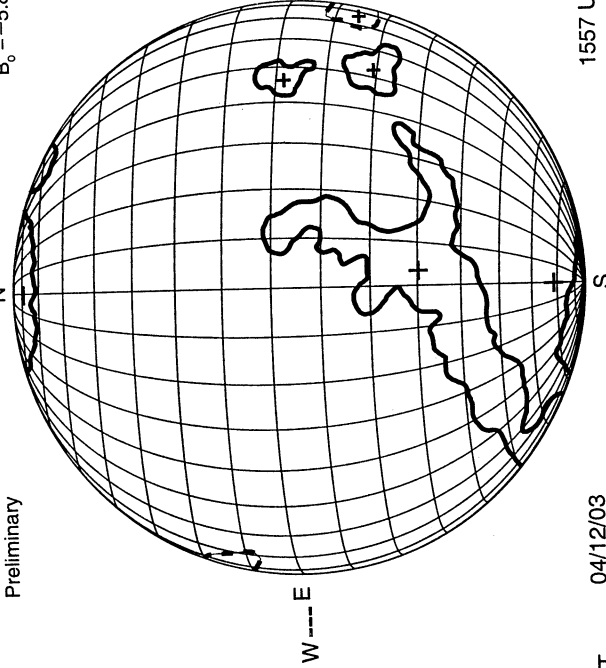
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -5.9$
Preliminary



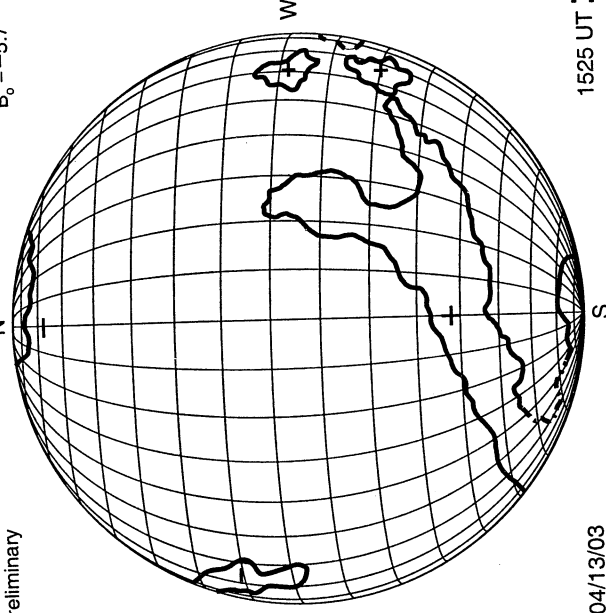
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -5.8$
Preliminary



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -5.8$
Preliminary

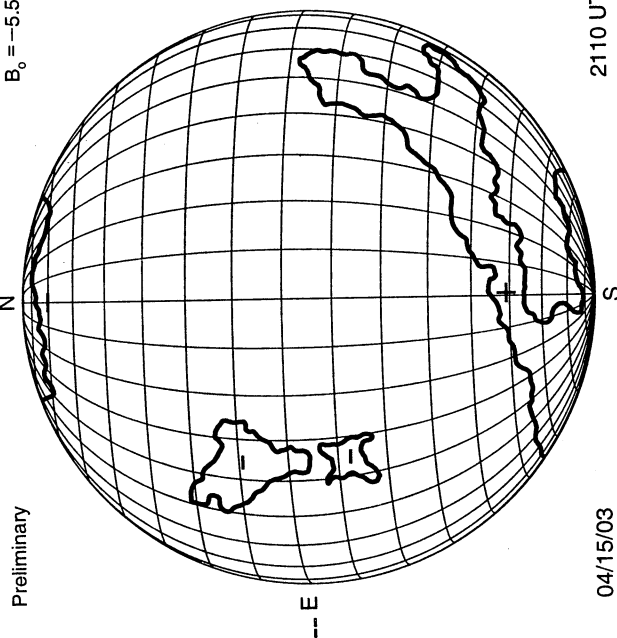


NSO/KP CORONAL HOLE MAP: HE I 1083 nm
 $B_o = -5.7$
Preliminary

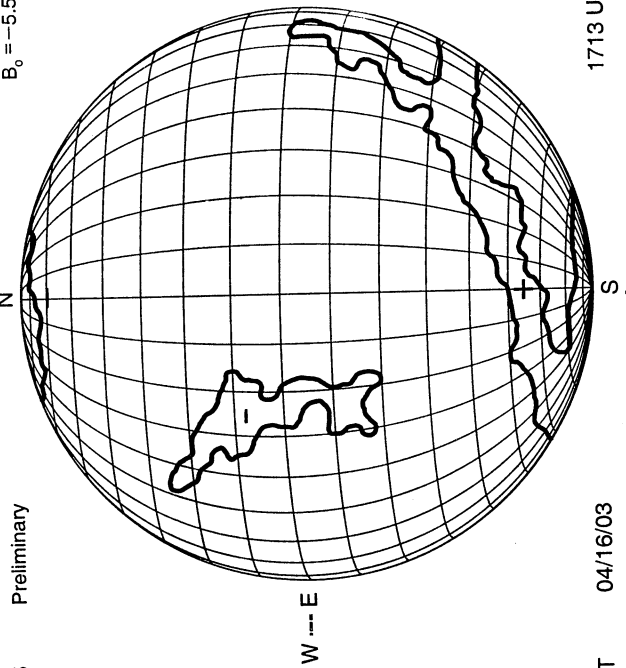


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2003

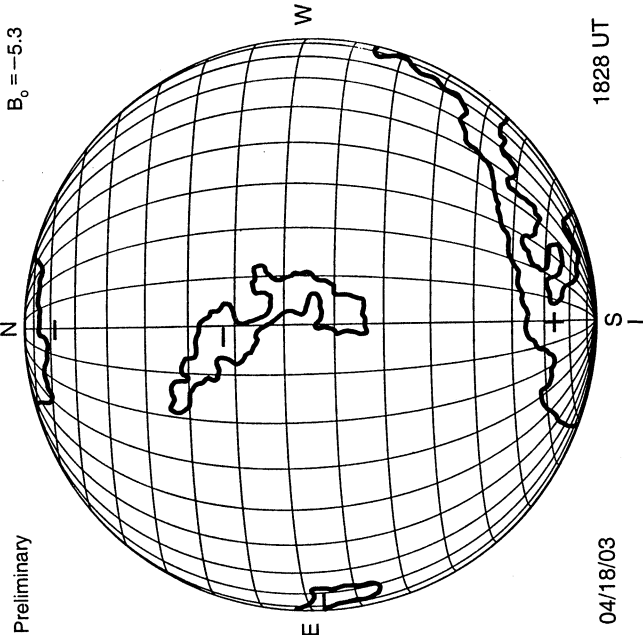
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



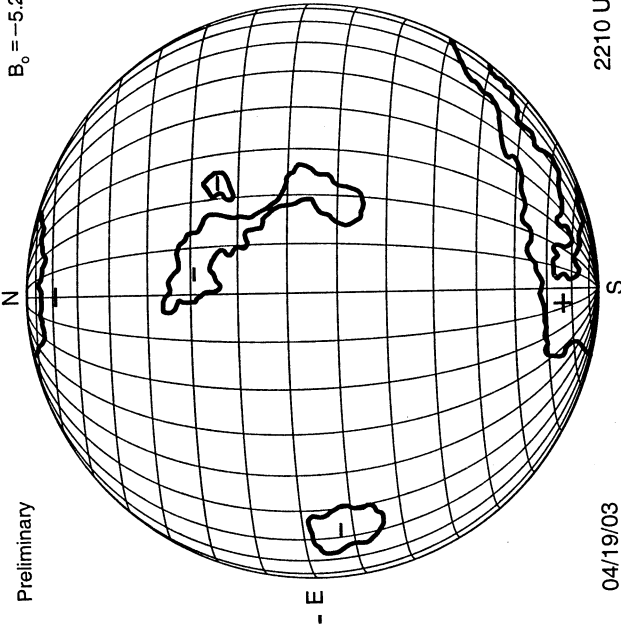
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



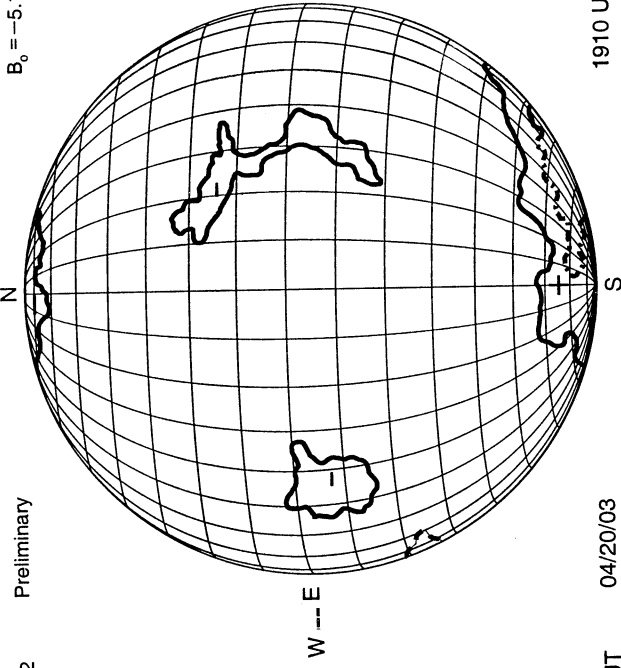
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



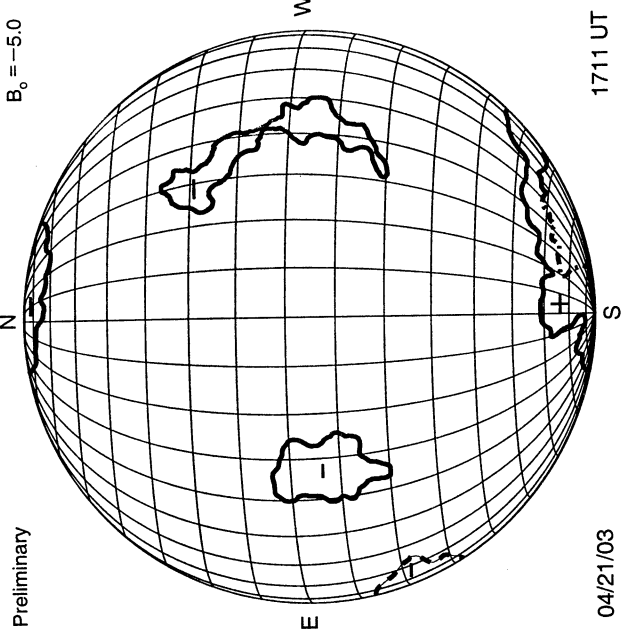
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

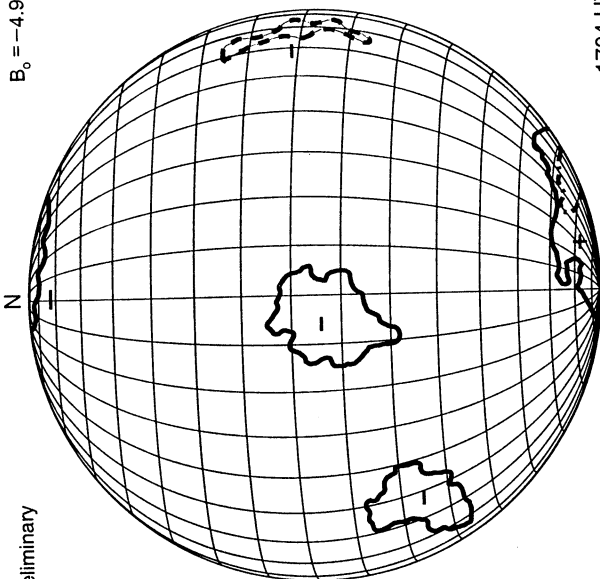


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm April 2003

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.9$

Preliminary

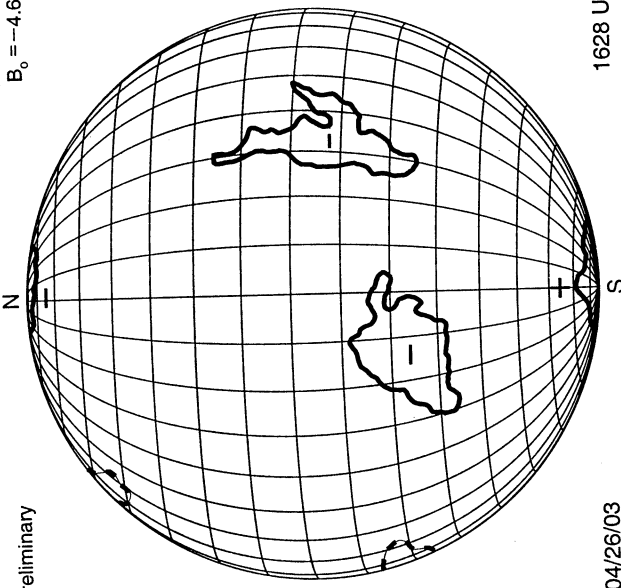


04/23/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.6$

Preliminary

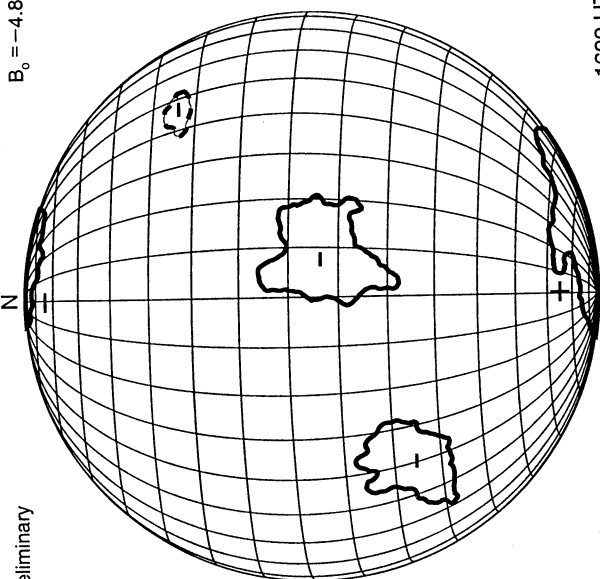


04/26/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.8$

Preliminary

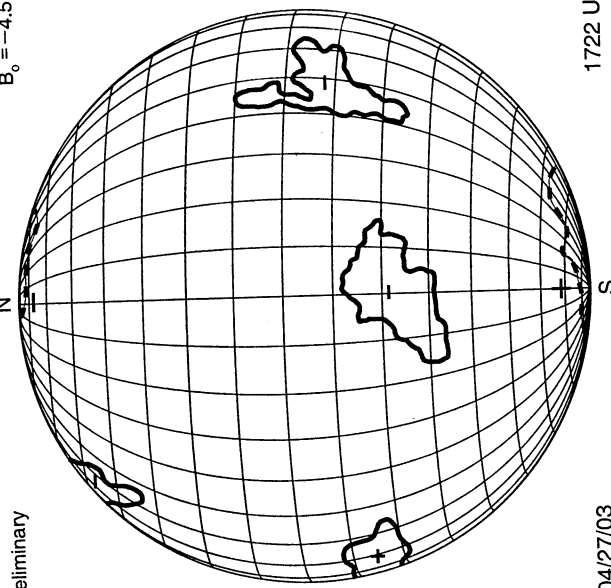


04/24/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.5$

Preliminary



04/27/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.7$

Preliminary

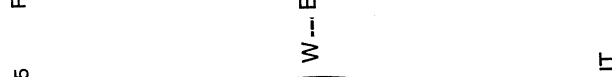


04/25/03

NSO/KP CORONAL HOLE MAP: HE I 1083 nm

$B_o = -4.4$

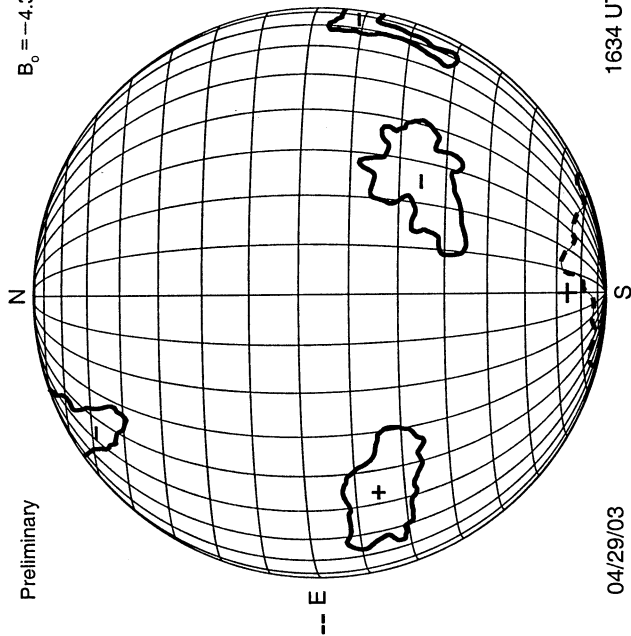
Preliminary



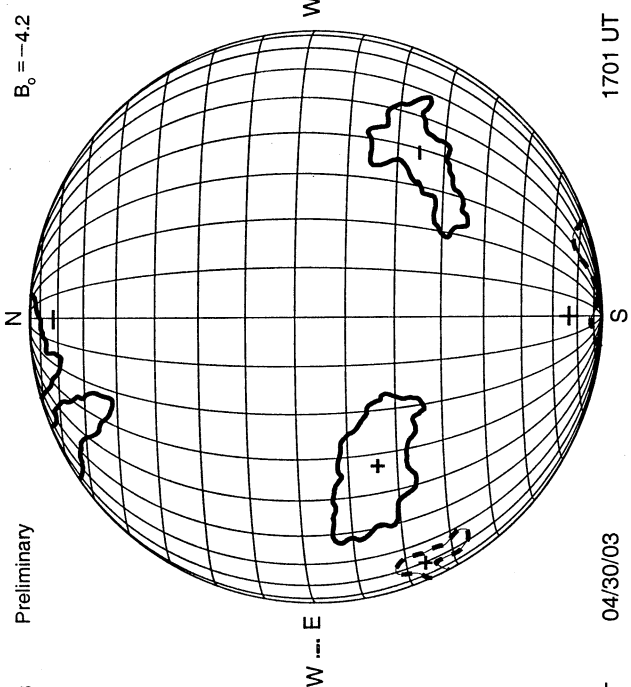
04/28/03

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2003

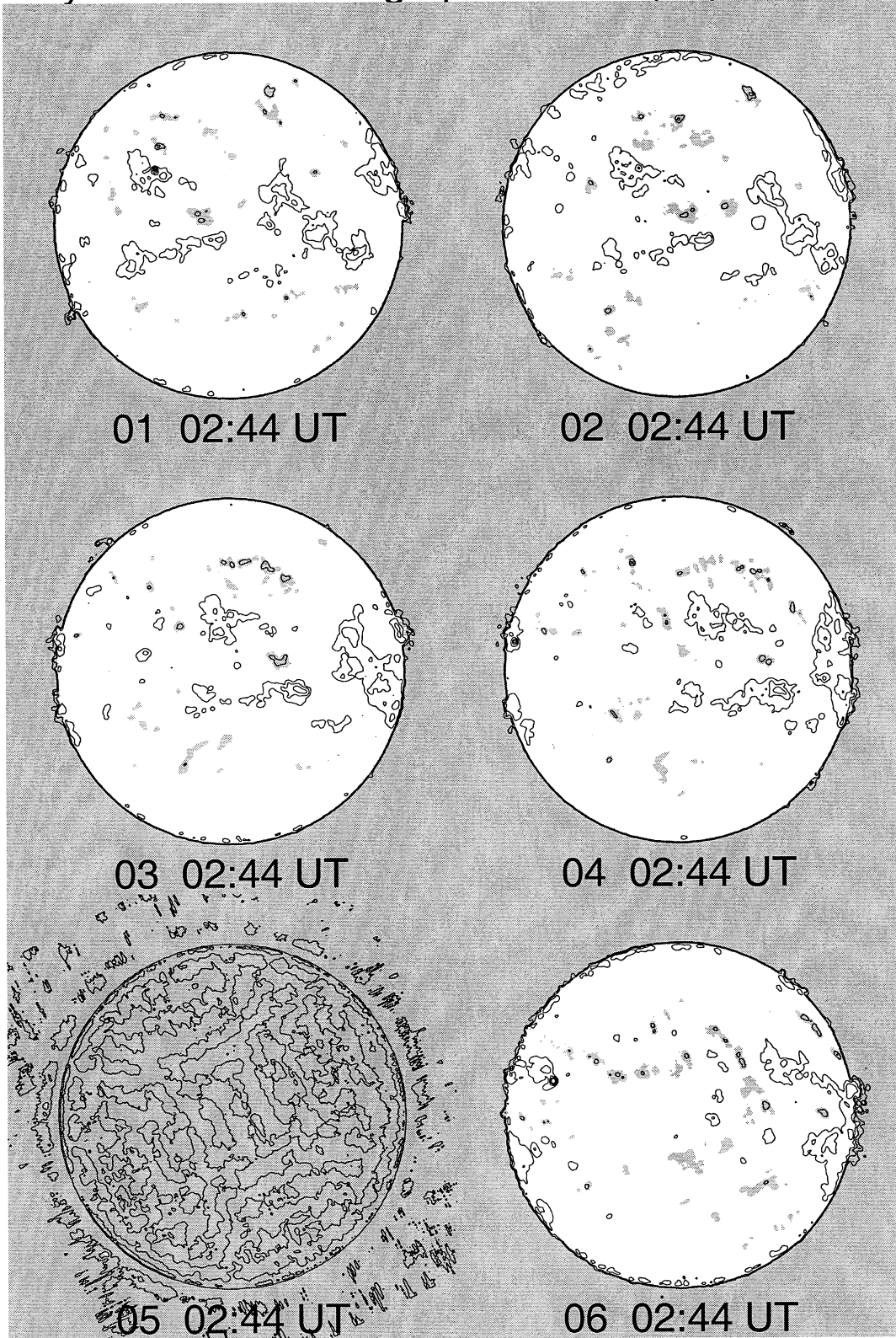
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -4.3$



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -4.2$

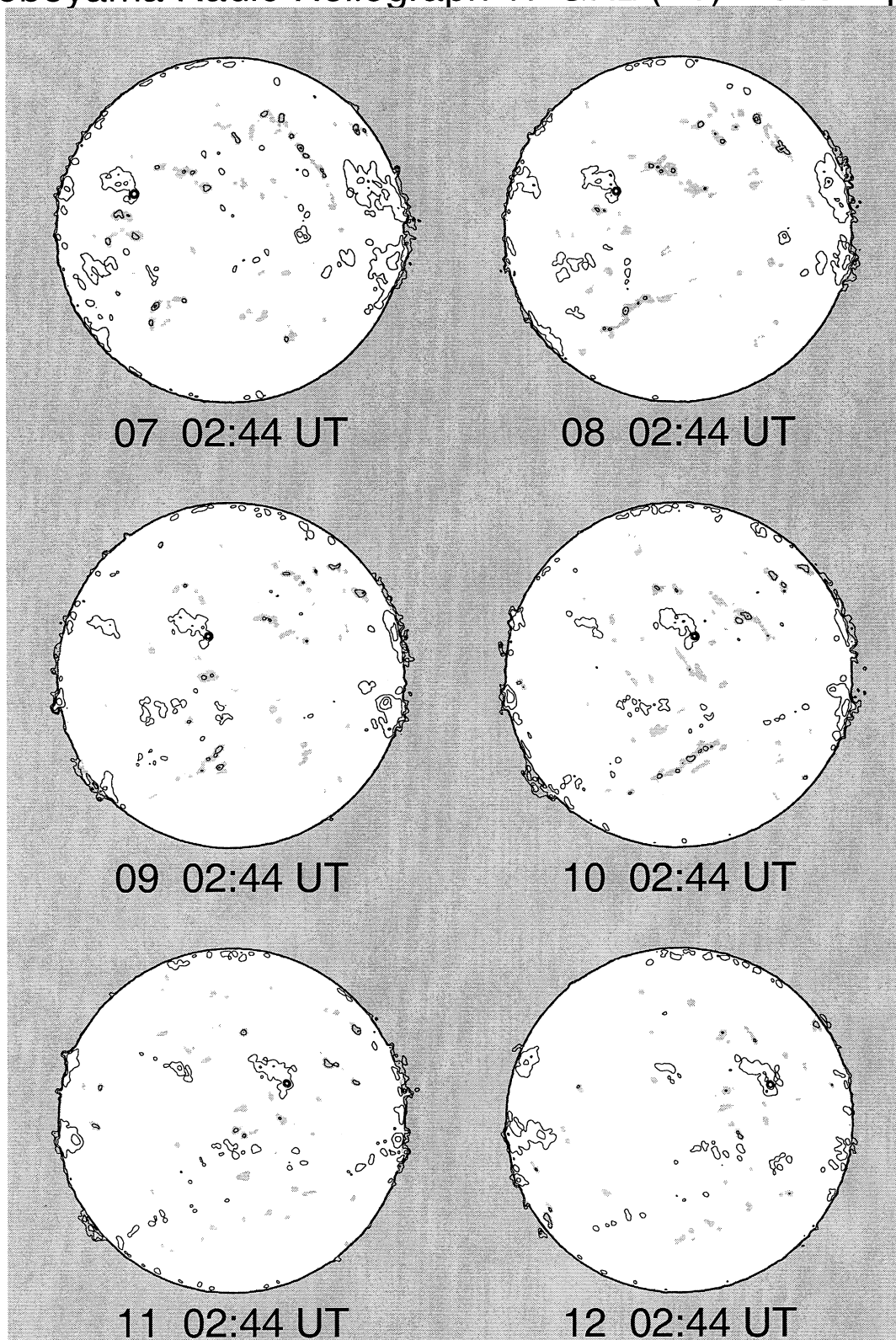


Nobeyama Radio Heliograph 17 GHz (Tb) 2003 April



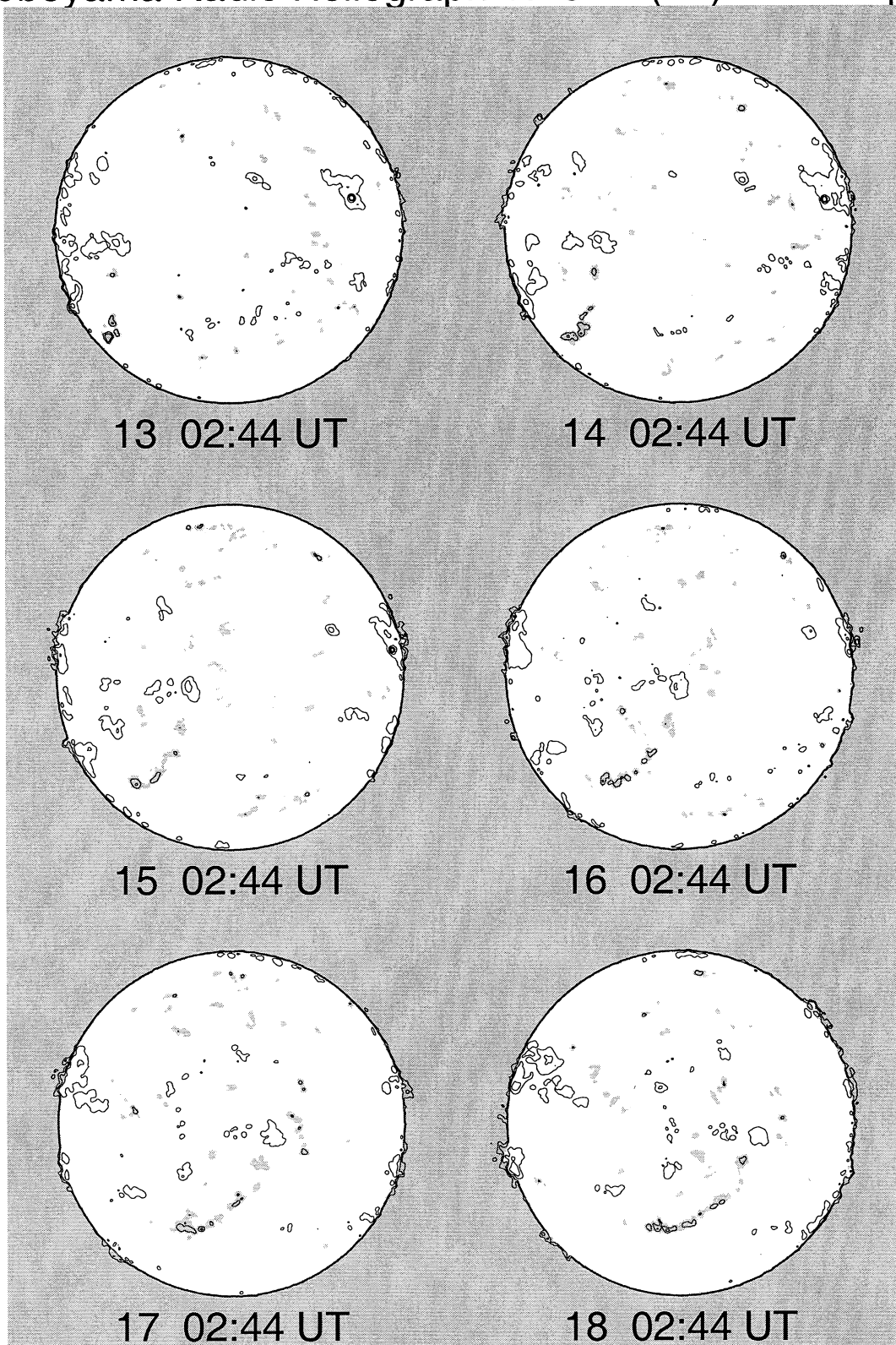
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 April



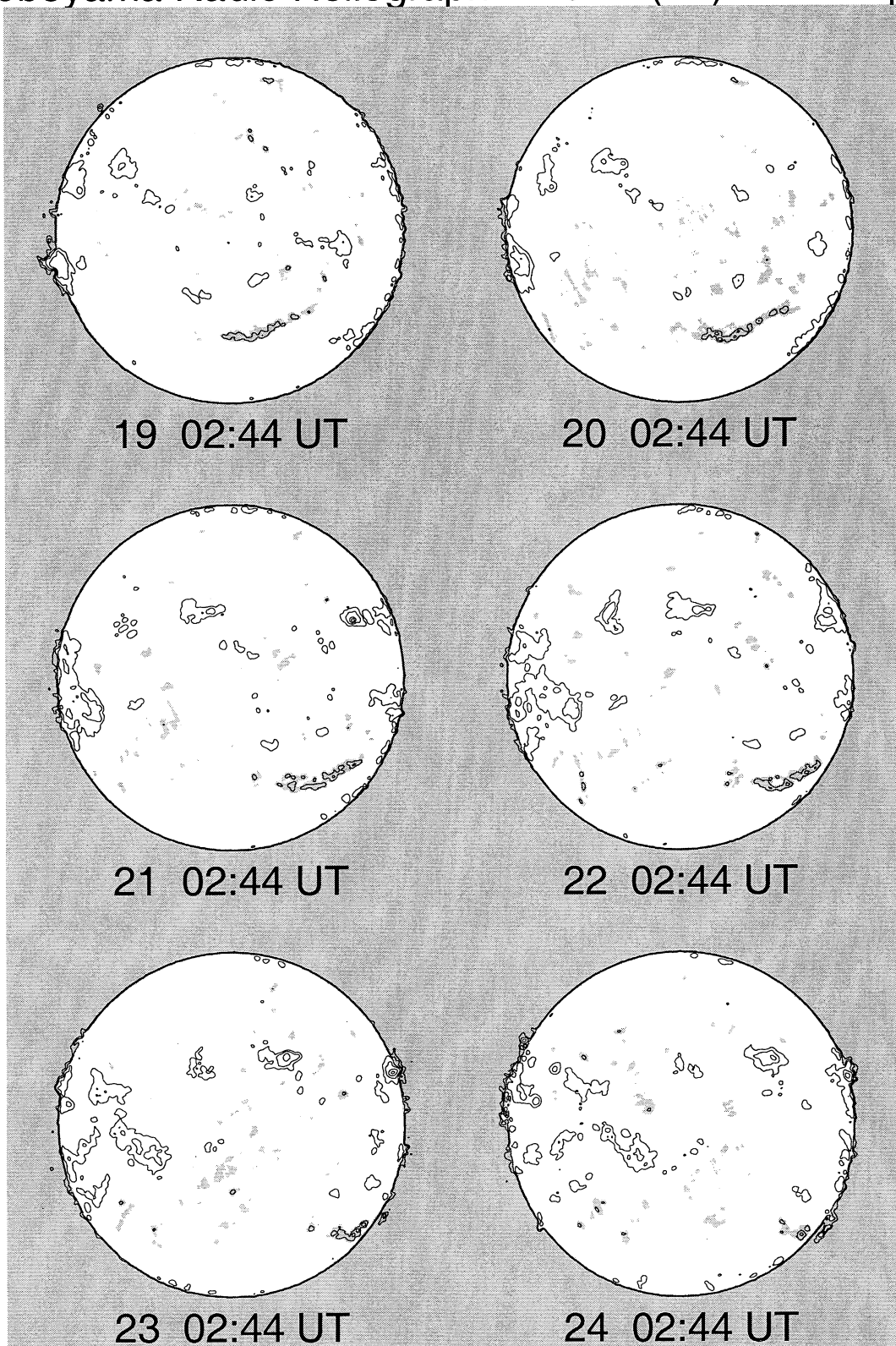
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 April



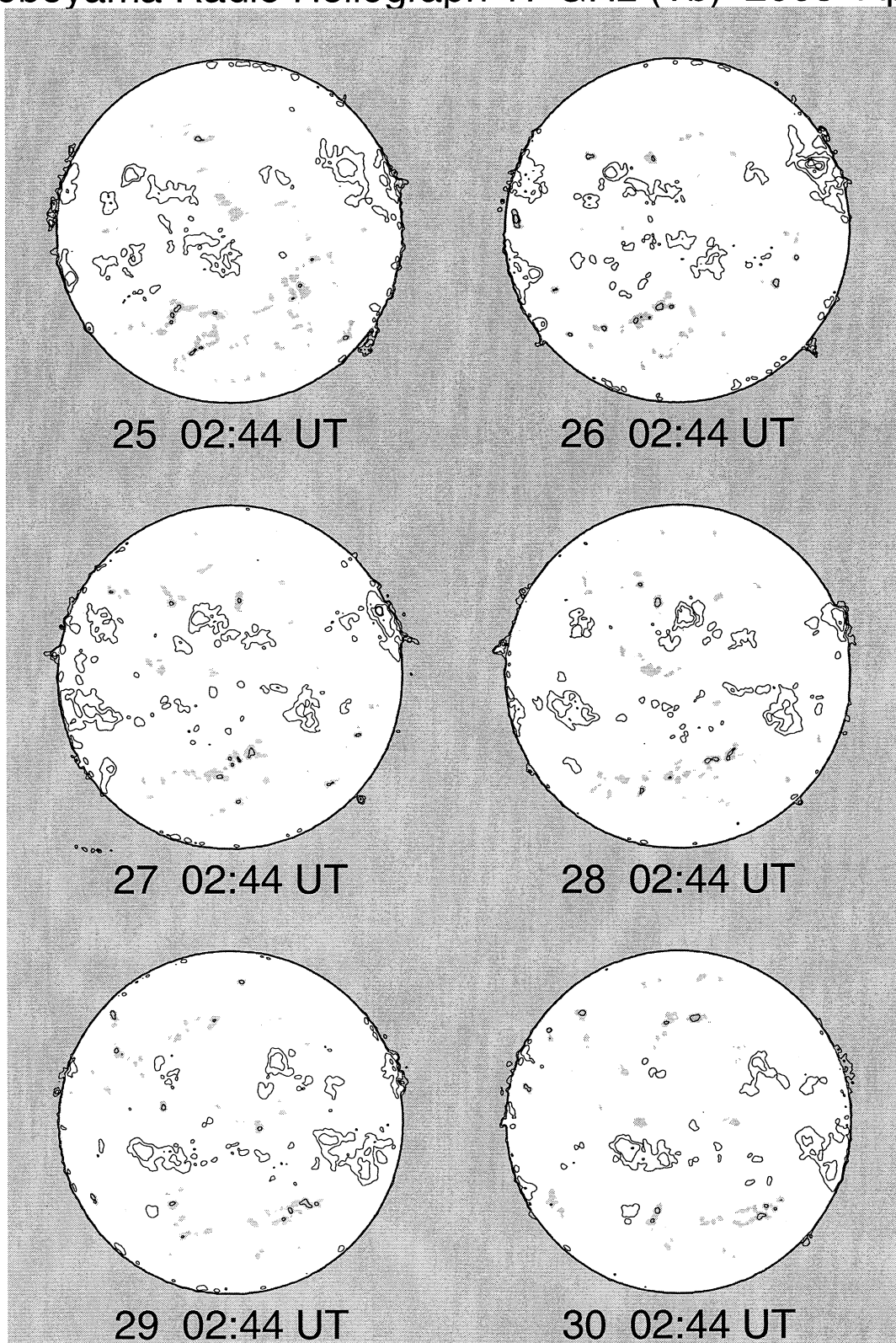
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 April



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 April



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

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Apr 03

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

APRIL 2003

NOAA/ USAF Group	Mt Wilson Group	Sta	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
10324		SVTO	03 27 0735	S16	E78	04 2.2		A	HSX	60	3	5	3
10324		KAND	03 27 0755	S13	E79	04 2.3			CAO		2	2	3
10324		RAMY	03 27 1521	S15	E69	04 1.9		B	DAO	80	5	3	2
10324		HOLL	03 27 1729	S12	E73	04 2.2		B	CAO	50	3	5	3
10324	31673	MWIL	03 27 1730	S13	E69	04 1.9	4	BF					
10324		KAND	03 28 0755	S13	E63	04 2.1			CAO		3	3	3
10324		RAMY	03 28 1202	S14	E59	04 2.0		B	DAO	60	3	5	3
10324		SVTO	03 29 1151	S14	E46	04 2.0		B	BXO	10	3	4	3
10324		KAND	03 29 1225	S13	E48	04 2.1			CAO		3	5	3
10324		RAMY	03 29 1456	S14	E46	04 2.1		B	DSO	40	4	4	2
10324	31673	MWIL	03 29 1600	S14	E45	04 2.1	4	(AP)					
10324		SVTO	03 30 0705	S13	E32	04 1.7		B	ESO	70	8	11	3
10324		KAND	03 30 0955	S11	E27	04 1.4			CSO		6	5	3
10324		KAND	03 30 0955	S14	E35	04 2.0			BXO		4	4	3
10324		RAMY	03 30 1128	S13	E29	04 1.7		B	DSO	40	10	9	3
10324		HOLL	03 30 1430	S13	E28	04 1.7		B	ESO	50	14	12	4
10324	31673	MWIL	03 30 1530	S15	E31	04 2.0	4	(AP)					
10324		KAND	03 31 0905	S11	E13	04 1.3			CAO		10	6	4
10324		SVTO	03 31 1112	S12	E13	04 1.4		B	CSO	30	3	3	3
10324		RAMY	03 31 1145	S12	E16	04 1.7		B	CSO	110	17	13	3
10324		HOLL	03 31 1419	S12	E16	04 1.8		B	CSO	30	14	12	5
10324	31673	MWIL	03 31 1500	S13	E20	04 2.1	4	(AP)					
10324		VORO	03 31 2302	S11	E06	04 1.4			CAI	59	17	6	3
10324		TACH	04 01 0559	S11	E01	04 1.3			BRO	19	3	3	3
10324		SVTO	04 01 0900	S11	W01	04 1.3		B	DAO	60	8	5	3
10324		RAMY	04 01 1200	S12	E00	04 1.5		B	DAO	60	16	8	3
10324	31677	MWIL	04 01 1430	S12	W04	04 1.3	4	(B)					
10324		HOLL	04 01 1530	S11	W05	04 1.3		B	DAO	60	9	5	3
10324		VORO	04 01 2310	S12	W08	04 1.4			CAI	80	11	5	3
10324		SVTO	04 02 0715	S12	W13	04 1.3		B	DSO	100	20	7	4
10324		KAND	04 02 0750	S12	W13	04 1.3			DAO		13	8	3
10324		HOLL	04 02 1500	S11	W16	04 1.4		BG	DAI	160	27	7	3
10324		RAMY	04 02 1730	S11	W18	04 1.4		B	DAI	80	18	8	1
10324		VORO	04 02 2317	S13	W22	04 1.3			DAI	218	21	6	3
10324		LEAR	04 03 0120	S11	W23	04 1.3		BG	DAI	200	35	7	3
10324		TACH	04 03 0507	S12	W25	04 1.3			DAI	119	15	6	3
10324		SVTO	04 03 0618	S11	W26	04 1.3		B	DAI	210	9	8	3
10324		KAND	04 03 1110	S12	W28	04 1.3			DKO		24	8	4
10324		RAMY	04 03 1201	S11	W30	04 1.2		BGD	DAI	200	21	9	3
10324		HOLL	04 03 1445	S12	W31	04 1.3		BGD	DAC	200	20	9	2
10324		VORO	04 03 2303	S13	W35	04 1.3			DAI	329	16	8	3
10324		LEAR	04 04 0012	S11	W36	04 1.3		BG	DAI	350	32	10	3
10324		KAND	04 04 0655	S13	W34	04 1.7			DAC		9	8	3
10324		SVTO	04 04 0801	S12	W41	04 1.2		B	EAI	350	16	11	3
10324		RAMY	04 04 1200	S11	W43	04 1.3		BGD	DAC	390	42	10	4
10324		HOLL	04 04 1435	S12	W43	04 1.4		BGD	DAC	250	26	10	3
10324	31677	MWIL	04 04 1500	S14	W44	04 1.3	5	(D)					
10324		VORO	04 04 2308	S14	W48	04 1.3			DAI	549	25	8	4
10324		LEAR	04 05 0100	S11	W49	04 1.3		BGD	DAI	370	33	10	2
10324		RAMY	04 05 1220	S11	W57	04 1.2		BGD	DAI	220	19	10	3
10324		SVTO	04 05 1310	S11	W58	04 1.2		B	DAI	170	10	11	3
10324		HOLL	04 05 1428	S13	W57	04 1.3		BG	DAC	230	19	9	2
10324		VORO	04 05 2259	S13	W61	04 1.3			DAI	308	12	8	4
10324		SVTO	04 06 0554	S12	W66	04 1.3		BG	DAI	180	7	10	3
10324		RAMY	04 06 1230	S09	W71	04 1.2		BG	DAO	110	9	10	2
10324		HOLL	04 06 1358	S13	W68	04 1.4		BG	DAI	80	13	8	4
10324	31677	MWIL	04 06 1445	S13	W71	04 1.2	4	(BG)					
10324		SVTO	04 07 0855	S13	W78	04 1.5		A	HSX	30	1	2	3
10324		KAND	04 07 1120	S14	W81	04 1.3			HS		2	2	3
10324		RAMY	04 07 1150	S11	W79	04 1.5		A	HAX	30	1	1	3
10324		HOLL	04 07 1432	S14	W80	04 1.5		A	HSX	60	1	1	4
10324	31677	MWIL	04 07 1445	S15	W80	04 1.5	4	(AF)					
10328		VORO	03 27 0020	S14	E80	04 2.0			HAX	82	5		3
10328		VORO	03 27 2334	S14	E67	04 2.0			HAX	71	5		4
10328		VORO	03 29 0013	S14	E52	04 1.9			BRI	32	3	3	4
10328		VORO	03 29 2309	S13	E40	04 2.0			CRI	33	4	3	3
10328	31677	MWIL	03 30 1530	S11	E23	04 1.4	5	(B)					
10328		KAND	03 31 0905	S14	E21	04 2.0			AX		2	3	4

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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
10328	31677	HOLL	03	31	1419	S13 E19	04 2.0		A	AXX		1	1	5
10328		MWIL	03	31	1500	S11 E10	04 1.4	5	(BF)					
10328		RAMY	04	01	1200	S13 E08	04 2.1		B	HSX	10	4	3	3
10328		HOLL	04	02	1500	S12 W09	04 1.9		A	AXX	10	5	3	3
10325	31674	RAMY	03	27	1521	N11 E82	04 2.8		A	HHX	120	1	7	2
10325		HOLL	03	27	1729	N12 E85	04 3.1		A	HHX	180	1	3	3
10325		MWIL	03	27	1730	N14 E80	04 2.8	5	AP					
10325		VORO	03	27	2334	N13 E78	04 2.9			HAX	291	2		3
10325	31674	KAND	03	28	0755	N12 E76	04 3.0			HH		1	3	3
10325		RAMY	03	28	1202	N12 E71	04 2.8		A	HHX	260	1	6	3
10325		VORO	03	29	0013	N13 E65	04 2.9			HHX	441	3		4
10325		SVTO	03	29	1151	N13 E59	04 2.9		A	HAX	240	1	3	3
10325	31674	KAND	03	29	1225	N13 E60	04 3.0			HK		3	3	3
10325		RAMY	03	29	1456	N12 E58	04 3.0		A	HHX	400	1	4	2
10325		MWIL	03	29	1600	N13 E56	04 2.9	5	(AP)					
10325		VORO	03	29	2309	N13 E53	04 3.0			HHX	421	3		3
10325	31674	SVTO	03	30	0705	N13 E48	04 2.9		A	HHX	350	2	4	3
10325		KAND	03	30	0955	N13 E48	04 3.0			HK		2	3	2
10325		RAMY	03	30	1128	N12 E46	04 2.9		BD	CKO	350	3	4	3
10325		HOLL	03	30	1430	N13 E45	04 3.0		B	CKO	280	7	5	4
10325	31674	MWIL	03	30	1530	N13 E45	04 3.0	5	(AP)					
10325		KAND	03	31	0905	N13 E35	04 3.0			DKO		8	6	4
10325		SVTO	03	31	1112	N12 E34	04 3.0		B	DHO	290	4	7	3
10325		RAMY	03	31	1145	N12 E33	04 3.0		B	DKO	370	8	6	3
10325	31674	HOLL	03	31	1419	N12 E30	04 2.8		B	DHO	330	12	6	5
10325		MWIL	03	31	1500	N12 E31	04 3.0	5	(BG)					
10325		VORO	03	31	2302	N13 E27	04 3.0			HHX	397	7		3
10325		TACH	04	01	0559	N13 E21	04 2.8			CSI	350	4	4	3
10325	31674	SVTO	04	01	0900	N12 E22	04 3.0		B	CKO	350	5	8	3
10325		RAMY	04	01	1200	N11 E23	04 3.2		B	DKO	290	11	10	3
10325		MWIL	04	01	1430	N12 E18	04 3.0	5	(BG)					
10325		HOLL	04	01	1530	N12 E16	04 2.8		A	HHX	300	9	6	3
10325	31674	VORO	04	01	2310	N13 E14	04 3.0			HHX	400	4		3
10325		SVTO	04	02	0715	N13 E09	04 3.0		B	CKO	360	4	6	4
10325		KAND	04	02	0750	N12 E10	04 3.1			HK		2	4	3
10325		HOLL	04	02	1500	N10 E09	04 3.3		B	EH1	340	24	13	3
10325	31674	RAMY	04	02	1730	N10 E08	04 3.3		B	EKO	430	11	11	1
10325		VORO	04	02	2317	N13 E02	04 3.1			HHX	363	4		3
10325		LEAR	04	03	0120	N11 E03	04 3.3		B	DKO	370	15	7	3
10325		SVTO	04	03	0618	N11 W04	04 3.0		B	CHO	370	8	12	3
10325	31674	KAND	04	03	1110	N14 W05	04 3.1			CKO		7	4	4
10325		RAMY	04	03	1201	N10 W02	04 3.3		B	DKO	380	10	10	3
10325		HOLL	04	03	1445	N10 W04	04 3.3		BG	EKO	300	10	11	2
10325		VORO	04	03	2303	N13 W11	04 3.1			HKX	345	4		3
10325	31674	LEAR	04	04	0012	N11 W09	04 3.3		B	CKO	360	10	10	3
10325		KAND	04	04	0655	N14 W15	04 3.1			HK		1	3	3
10325		SVTO	04	04	0801	N13 W17	04 3.0		A	HSX	300	2	4	3
10325		RAMY	04	04	1200	N14 W18	04 3.1		B	CKO	360	4	4	4
10325	31674	HOLL	04	04	1435	N11 W18	04 3.2		B	CKO	220	7	9	3
10325		MWIL	04	04	1500	N12 W20	04 3.1	5	(BP)					
10325		VORO	04	04	2308	N13 W24	04 3.1			HKX	375	3		4
10325		LEAR	04	05	0100	N11 W23	04 3.3		B	CKO	360	7	7	2
10325	31674	RAMY	04	05	1220	N11 W32	04 3.1		B	CKO	330	5	6	3
10325		SVTO	04	05	1310	N14 W33	04 3.0		A	HHX	310	1	4	3
10325		HOLL	04	05	1428	N11 W34	04 3.0		B	CKO	320	7	6	2
10325		VORO	04	05	2259	N13 W37	04 3.2			HKX	416	3		4
10325	31674	SVTO	04	06	0554	N15 W40	04 3.2		B	DKO	300	3	6	3
10325		RAMY	04	06	1230	N12 W41	04 3.4		B	CKO	200	5	7	2
10325		HOLL	04	06	1358	N11 W44	04 3.3		B	CKO	230	10	5	4
10325		MWIL	04	06	1445	N13 W46	04 3.1	5	(BP)					
10325	31674	SVTO	04	07	0855	N16 W56	04 3.1		A	HHX	380	1	4	3
10325		KAND	04	07	1120	N14 W57	04 3.2			HK		5	4	3
10325		RAMY	04	07	1150	N17 W57	04 3.2		B	CKO	220	4	4	3
10325		HOLL	04	07	1432	N12 W57	04 3.3		B	CKO	290	3	3	4
10325	31674	MWIL	04	07	1445	N13 W58	04 3.2	5	(AP)					
10325		VORO	04	07	2316	N14 W63	04 3.2			HKX	262	2		3
10325		LEAR	04	08	0105	N13 W65	04 3.1		A	HHX	320	4	3	3
10325		SVTO	04	08	0703	N15 W68	04 3.1		A	HSX	240	1	5	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
10325	31674	HOLL	04 08 1415	N13	W71	04 3.2		B	DSO	230	2	4	3
10325		MWIL	04 08 1430	N13	W71	04 3.2	5	(AP)					
10325		VORO	04 08 2239	N14	W76	04 3.2			HAX	274	5		3
10325		LEAR	04 09 0143	N13	W78	04 3.2		B	DAO	160	3	3	3
10325		SVTO	04 09 0601	N17	W87	04 2.6		A	AXX	20	1	2	3
10325		KAND	04 09 0705	N13	W82	04 3.1			HS		1	3	3
10325		RAMY	04 09 1211	N15	W85	04 3.1		B	DSO	120	3	5	3
10325	31674	MWIL	04 09 1430	N13	W85	04 3.2	4	(AP)					
10325A		SVTO	04 02 0715	N08	E15	04 3.4		A	HRX	20	4	3	4
10325A		KAND	04 02 0750	N05	E15	04 3.4			BXO		3	2	3
10325A		HOLL	04 02 1500	N08	E11	04 3.4		B	DSO	30	7	2	3
10325A		VORO	04 02 2317	N07	E06	04 3.4			BXI	21	7	2	3
10325A		TACH	04 03 0507	N09	E01	04 3.3			CAI	320	5	5	3
10325A		KAND	04 03 1110	N09	E02	04 3.6			BXO		5	3	4
10325A		VORO	04 03 2303	N06	W05	04 3.6			BXO	7	5	6	3
10325A		VORO	04 04 2308	N07	W21	04 3.4			BXO	16	4	3	4
10325A		RAMY	04 05 1220	N09	W31	04 3.2		A	AXX		2	1	3
10325A		HOLL	04 05 1428	N08	W31	04 3.3		A	AXX		1	1	2
10326		KAND	03 28 0755	S11	E86	04 3.8			AX		2	2	3
10326		RAMY	03 28 1202	S12	E80	04 3.5		A	HSX	60	1	3	3
10326		VORO	03 29 0013	S12	E73	04 3.5			HAX	55	1		4
10326		SVTO	03 29 1151	S13	E67	04 3.5		A	HSX	50	1	1	3
10326		KAND	03 29 1225	S11	E70	04 3.8			HA		2	2	3
10326		RAMY	03 29 1456	S13	E67	04 3.7		A	HAX	50	1	2	2
10326	31676	MWIL	03 29 1600	S13	E65	04 3.6	4	(AP)					
10326		VORO	03 29 2309	S12	E61	04 3.6			HAX	56	1		3
10326		SVTO	03 30 0705	S13	E58	04 3.7		A	HSX	70	1	2	3
10326		KAND	03 30 0955	S12	E56	04 3.6			HS		1	2	3
10326		RAMY	03 30 1128	S13	E55	04 3.6		A	HSX	20	1	1	3
10326		HOLL	03 30 1430	S13	E53	04 3.6		A	HAX	50	3	1	4
10326	31676	MWIL	03 30 1530	S12	E52	04 3.6	5	(AP)					
10326		KAND	03 31 0905	S12	E43	04 3.6			HS		1	1	4
10326		SVTO	03 31 1112	S13	E43	04 3.7		B	CSO	30	3	2	3
10326		RAMY	03 31 1145	S13	E41	04 3.6		A	HSX	50	1	1	3
10326		HOLL	03 31 1419	S12	E39	04 3.5		A	HSX	30	1	1	5
10326	31676	MWIL	03 31 1500	S12	E39	04 3.6	5	(AP)					
10326		VORO	03 31 2302	S11	E34	04 3.5			HAX	39	2		3
10326		TACH	04 01 0559	S11	E30	04 3.5			AXX	15	1	1	3
10326		SVTO	04 01 0900	S13	E29	04 3.6		A	HSX	20	1	1	3
10326		RAMY	04 01 1200	S13	E27	04 3.5		A	HSX	20	1	1	3
10326	31676	MWIL	04 01 1430	S12	E26	04 3.6	5	(AP)					
10326		HOLL	04 01 1530	S13	E26	04 3.6		A	HSX	40	1	2	3
10326		VORO	04 01 2310	S11	E21	04 3.5			HSX	39	2		3
10326		SVTO	04 02 0715	S11	E18	04 3.6		A	HSX	20	2	1	4
10326		KAND	04 02 0750	S12	E18	04 3.7			HS		1	4	3
10326		HOLL	04 02 1500	S11	E12	04 3.5		B	CAO	40	8	4	3
10326		RAMY	04 02 1730	S12	E12	04 3.6		A	HSX	30	2	1	1
10326		VORO	04 02 2317	S11	E08	04 3.6			HAX	29	2		3
10326		LEAR	04 03 0120	S12	E09	04 3.7		B	DAO	40	4	6	3
10326		TACH	04 03 0507	S11	E05	04 3.6			AXX	15	1	1	3
10326		SVTO	04 03 0618	S11	E04	04 3.6		A	HSX	20	1	1	3
10326		KAND	04 03 1110	S11	E03	04 3.7			HS		1	1	4
10326		RAMY	04 03 1201	S11	E01	04 3.6		A	HSX	20	2	1	3
10326		HOLL	04 03 1445	S12	E02	04 3.8		B	CSO	40	3	5	2
10326		VORO	04 03 2303	S11	W04	04 3.6			HSX	18	1		3
10326		LEAR	04 04 0012	S12	W03	04 3.8		B	CSO	30	5	6	3
10326		KAND	04 04 0655	S12	W08	04 3.7			HS		1	1	3
10326		SVTO	04 04 0801	S11	W09	04 3.6		A	HSX	20	1	1	3
10326		RAMY	04 04 1200	S11	W12	04 3.6		A	HAX	10	2	1	4
10326		HOLL	04 04 1435	S11	W12	04 3.7		B	CSO	20	4	4	3
10326	31676	MWIL	04 04 1500	S12	W13	04 3.6	5	(AP)					
10326		VORO	04 04 2308	S11	W17	04 3.7			AXX	12	1		4
10326		LEAR	04 05 0100	S11	W19	04 3.6		A	HSX	10	2	1	2
10326		RAMY	04 05 1220	S10	W26	04 3.6		A	HSX	10	2	1	3
10326		SVTO	04 05 1310	S11	W26	04 3.6		A	AXX		1		3
10326		HOLL	04 05 1428	S11	W27	04 3.6		A	HAX	20	1	2	2
10326		VORO	04 05 2259	S11	W30	04 3.7			AXX	9	1		4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP		Max	Mag	Spot	Corrected Area	Spot	Long. Extent	Qual
			Mo	Day	(UT)		Mo	Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	
10326	31676	SVTO	04	06	0554	S11 W35	04	3.6		A	HSX	20	1	1	3
10326		RAMY	04	06	1230	S10 W38	04	3.7		A	AXX	10	1	1	2
10326		HOLL	04	06	1358	S11 W38	04	3.7		A	HSX	10	1	1	4
10326		MWIL	04	06	1445	S11 W40	04	3.6	4	(AP)					
10326		KAND	04	07	1120	S11 W51	04	3.6			AX		1		3
10326	31676	RAMY	04	07	1150	S09 W52	04	3.6		A	AXX	10	1	1	3
10326		HOLL	04	07	1432	S11 W52	04	3.7		A	HSX	10	1	1	4
10326		MWIL	04	07	1445	S11 W53	04	3.6	4	(AP)					
10326		VORO	04	08	2239	S13 W63	04	4.2			BXI	10	4	0	3
10326		LEAR	04	09	0143	S13 W66	04	4.1		B	DAO	60	3	6	3
10326	31676	SVTO	04	09	0601	S10 W69	04	4.1		B	BXO	20	3	6	3
10326		KAND	04	09	0705	S14 W70	04	4.0			DSO		5	7	3
10326		RAMY	04	09	1211	S12 W72	04	4.1		B	DAO	80	9	9	3
10326		MWIL	04	09	1430	S13 W72	04	4.2	5	(B)					
10326		HOLL	04	09	1530	S12 W75	04	4.0		B	DAO	80	2	8	4
10326		VORO	04	09	2234	S12 W77	04	4.1			DRI	47	3	6	3
10329	31682	HOLL	04	02	1500	N02 E35	04	5.2		A	AXX	10	3	2	3
10329		RAMY	04	02	1730	N00 E36	04	5.4		B	DRO	10	2	3	1
10329		VORO	04	02	2317	N01 E31	04	5.3			BRI	11	3	1	3
10329		LEAR	04	03	0120	N01 E31	04	5.4		B	CSO	20	6	3	3
10329		TACH	04	03	0507	N01 E28	04	5.3			BXO	3	2	3	3
10329		SVTO	04	03	0618	N02 E27	04	5.3		B	CAO	20	3	3	3
10329		KAND	04	03	1110	N02 E25	04	5.3			BXO		4	4	4
10329		RAMY	04	03	1201	N01 E24	04	5.3		B	DSO	20	5	3	3
10329		HOLL	04	03	1445	N02 E22	04	5.2		B	BXO	10	3	3	2
10329		VORO	04	03	2303	N02 E18	04	5.3			AXX	4	1		3
10329		LEAR	04	04	0012	N01 E16	04	5.2		B	CSO	10	2	4	3
10329		SVTO	04	04	0801	N02 E13	04	5.3		A	HSX	20	1	1	3
10329		MWIL	04	07	1445	S03 W33	04	5.1	4	(B)					
10331	31680	LEAR	04	05	0100	S07 E04	04	5.3		A	AXX	10	3	2	2
10331		RAMY	04	05	1220	S07 W03	04	5.3		B	CRO	10	5	3	3
10331		SVTO	04	05	1310	S07 W04	04	5.2		B	BXO		2	4	3
10331		HOLL	04	05	1428	S07 W04	04	5.3		B	CSO	30	4	5	2
10331		VORO	04	05	2259	S07 W09	04	5.3			CAI	41	5	3	4
10331		SVTO	04	06	0554	S07 W13	04	5.3		B	DSO	50	3	5	3
10331		RAMY	04	06	1230	S07 W17	04	5.2		B	DAO	30	5	6	2
10331		HOLL	04	06	1358	S07 W17	04	5.3		B	DSO	30	5	6	4
10331		MWIL	04	06	1445	S07 W18	04	5.3	4	(B)					
10331		SVTO	04	07	0855	S07 W26	04	5.4		A	HAX	20	1	2	3
10331		KAND	04	07	1120	S08 W29	04	5.3			CAO		5	3	3
10331		RAMY	04	07	1150	S06 W28	04	5.4		B	DAO	30	6	4	3
10331		HOLL	04	07	1432	S08 W30	04	5.3		B	CAO	30	6	5	4
10331		MWIL	04	07	1445	S07 W32	04	5.2	5	(BF)					
10331		VORO	04	07	2316	S07 W34	04	5.4			HAX	14	2		3
10331		LEAR	04	08	0105	S08 W36	04	5.3		A	HSX	20	2	1	3
10331	SVTO	04	08	0703	S06 W39	04	5.4		A	HSX	20	1	1	2	
10331	HOLL	04	08	1415	S08 W43	04	5.4		A	HSX	10	1	1	3	
10331	MWIL	04	08	1430	S08 W43	04	5.4	4	(AF)						
10331	VORO	04	08	2239	S07 W47	04	5.4			HRX	12	1		3	
10331	LEAR	04	09	0143	S08 W49	04	5.4		A	HAX	10	1	1	3	
10331	KAND	04	09	0705	S08 W53	04	5.3			AX		2	2	3	
10331	RAMY	04	09	1211	S07 W56	04	5.3		B	CRO	10	2	2	3	
10331	MWIL	04	09	1430	S08 W56	04	5.4	4	(AF)						
10331	HOLL	04	09	1530	S08 W58	04	5.3		A	AXX	20	2	2	4	
10331	VORO	04	09	2234	S08 W61	04	5.4			HRX	17	5		3	
10331	LEAR	04	10	0539	S09 W63	04	5.5		B	BXO	20	2	3	2	
10331	KAND	04	10	0705	S09 W66	04	5.3			AX		1		2	
10331	RAMY	04	10	1155	S07 W68	04	5.4		B	CSO	10	2	4	3	
10331	MWIL	04	10	1500	S08 W70	04	5.4	4	(AF)						
10331		HOLL	04	10	1549	S07 W72	04	5.3		A	AXO	20	2		2
10331A	31685	RAMY	04	09	1211	N12 W31	04	7.2		B	CSO	10	3	3	3
10331A		MWIL	04	09	1430	N11 W31	04	7.3	4	(B)					
10331A		HOLL	04	09	1530	N11 W32	04	7.2		A	AXX	10	2	2	4
10331B		LEAR	04	10	0539	S22 W32	04	7.8		A	AXX	10	1	1	2
10331B		RAMY	04	10	1155	S21 W37	04	7.6		A	AXX		1	1	3

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(Ordered by Central Meridian Passage Date)

APRIL 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
10331B	31687	MWIL	04	10	1500	S22 W37	04	7.8	3	(AF)					
10330		SVTO	04	03	0618	N08 E82	04	9.4		A	HSX	90	1	3	3
10330		KAND	04	03	1110	N07 E83	04	9.7			HK		1	2	4
10330		RAMY	04	03	1201	N05 E80	04	9.5		A	HHX	90	1	5	3
10330		HOLL	04	03	1445	N08 E79	04	9.5		A	HHX	270	1	3	2
10330		VORO	04	03	2303	N07 E75	04	9.6			HKX	482	1		3
10330		LEAR	04	04	0012	N07 E77	04	9.8		A	HHX	330	1	4	3
10330		KAND	04	04	0655	N08 E74	04	9.8			HH		1	3	3
10330		SVTO	04	04	0801	N07 E71	04	9.6		A	HHX	310	1	7	3
10330		RAMY	04	04	1200	N07 E67	04	9.5		A	HHX	490	1	4	4
10330		HOLL	04	04	1435	N08 E66	04	9.5		A	HHX	250	1	3	3
10330	31679	MWIL	04	04	1500	N09 E66	04	9.6	5	(AP)					
10330		VORO	04	04	2308	N07 E61	04	9.5			HKX	535	1		4
10330		LEAR	04	05	0100	N07 E62	04	9.7		A	HHX	420	1	3	2
10330		RAMY	04	05	1220	N07 E55	04	9.6		A	HKX	370	1	4	3
10330		SVTO	04	05	1310	N06 E54	04	9.6		A	HKX	460	1	3	3
10330		HOLL	04	05	1428	N07 E53	04	9.6		A	HKX	330	3	3	2
10330		VORO	04	05	2259	N07 E48	04	9.5			HHX	489	1		4
10330		SVTO	04	06	0554	N07 E46	04	9.7		B	DHO	470	2	7	3
10330		RAMY	04	06	1230	N06 E43	04	9.7		B	DKO	330	3	5	2
10330		HOLL	04	06	1358	N07 E43	04	9.8		B	DKO	340	4	6	4
10330	31679	MWIL	04	06	1445	N07 E42	04	9.8	6	(BP)					
10330		SVTO	04	07	0855	N07 E32	04	9.8		A	HHX	330	1	4	3
10330		KAND	04	07	1120	N07 E29	04	9.6			CKO		6	5	3
10330		RAMY	04	07	1150	N06 E31	04	9.8		B	DKO	320	4	6	3
10330		HOLL	04	07	1432	N07 E29	04	9.8		B	CKO	330	6	7	4
10330	31679	MWIL	04	07	1445	N07 E27	04	9.6	6	(BG)					
10330		VORO	04	07	2316	N07 E22	04	9.6			HHX	475	3		3
10330		LEAR	04	08	0105	N08 E22	04	9.7		B	CKO	400	8	5	3
10330		SVTO	04	08	0703	N07 E19	04	9.7		B	CHO	380	2	6	2
10330		HOLL	04	08	1415	N07 E15	04	9.7		BG	DKO	390	8	7	3
10330	31679	MWIL	04	08	1430	N07 E15	04	9.7	6	(BG)					
10330		VORO	04	08	2239	N07 E10	04	9.7			HHX	436	7		3
10330		LEAR	04	09	0143	N08 E08	04	9.7		BG	DKO	460	19	7	3
10330		SVTO	04	09	0601	N08 E08	04	9.8		B	CKO	330	4	5	3
10330		KAND	04	09	0705	N07 E05	04	9.7			CHO		7	6	3
10330		RAMY	04	09	1211	N08 E04	04	9.8		B	DKO	470	15	6	3
10330	31679	MWIL	04	09	1430	N07 E02	04	9.7	6	(BG)					
10330		HOLL	04	09	1530	N07 E01	04	9.7		BG	DKI	430	16	6	4
10330		VORO	04	09	2234	N07 W04	04	9.6			HHX	462	11		3
10330		LEAR	04	10	0539	N07 W07	04	9.7		BG	DKO	380	11	5	2
10330		KAND	04	10	0705	N06 W08	04	9.7			CHO		6	6	2
10330		RAMY	04	10	1155	N07 W10	04	9.7		B	CKI	410	17	7	3
10330	31679	MWIL	04	10	1500	N07 W12	04	9.7	6	(BG)					
10330		HOLL	04	10	1549	N07 W13	04	9.7		B	CHI	320	19	6	2
10330		LEAR	04	11	0110	N06 W18	04	9.7		BG	DHO	380	12	5	2
10330		TACH	04	11	0507	N06 W21	04	9.6			CAI	387	8	3	4
10330		SVTO	04	11	0630	N07 W22	04	9.6		B	CHO	330	4	6	2
10330		RAMY	04	11	1411	N07 W26	04	9.6		B	CKO	380	16	6	3
10330		HOLL	04	11	1440	N06 W26	04	9.7		B	CHO	340	15	5	3
10330	31679	MWIL	04	11	1500	N07 W25	04	9.7	6	(BG)					
10330		LEAR	04	12	0324	N07 W33	04	9.7		B	DHO	390	21	7	2
10330		TACH	04	12	0442	N05 W30	04	9.9			CAI	369	9	4	4
10330		KAND	04	12	0805	N06 W34	04	9.8			DHO		11	6	3
10330		SVTO	04	12	0828	N08 W35	04	9.7		B	CKO	360	11	6	3
10330		HOLL	04	12	1359	N06 W37	04	9.8		BG	DHI	310	22	6	4
10330		LEAR	04	13	0050	N07 W45	04	9.7		B	DHO	300	13	6	4
10330		SVTO	04	13	0526	N08 W47	04	9.7		BG	DHO	330	5	7	3
10330		RAMY	04	13	1140	N06 W52	04	9.6		B	DSO	390	9	6	3
10330		HOLL	04	13	1629	N06 W53	04	9.7		B	CHI	280	9	6	2
10330		VORO	04	13	2303	N07 W57	04	9.7			HHX	460	3		3
10330		LEAR	04	14	0045	N07 W59	04	9.6		B	CHO	260	7	4	4
10330		SVTO	04	14	0632	N09 W63	04	9.5		A	HHX	400	1	5	2
10330		RAMY	04	14	1222	N07 W65	04	9.6		B	DKO	350	8	6	3
10330		HOLL	04	14	1530	N08 W68	04	9.5		B	CHO	200	2	8	2
10330		VORO	04	14	2252	N07 W70	04	9.7			HKX	412	1		2
10330		LEAR	04	15	0145	N07 W74	04	9.5		A	HHX	240	1	4	1
10330		SVTO	04	15	0540	N10 W78	04	9.4		A	HHX	240	1	5	3

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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		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10330		RAMY	04 15	1210	N09	W79	04	9.6		A	HHX	150	1	3	3
10330		LEAR	04 16	0017	N04	W87	04	9.5		A	HAX	120	1	2	5
10330A		RAMY	04 07	1150	S12	E33	04	10.0		B	BXO	10	3	4	3
10330A	31683	MWIL	04 08	1430	S12	E17	04	9.9	4	(AP)					
10330B		HOLL	04 06	1358	S15	E57	04	10.9		A	AXX		1	1	4
10330B		HOLL	04 08	1415	S17	E32	04	11.0		B	BXO	20	3	5	3
10330B	31684	MWIL	04 08	1430	S17	E32	04	11.0	4	(B)					
10330B		LEAR	04 09	0143	S17	E24	04	10.9		B	CSO	20	5	3	3
10330B		KAND	04 09	0705	S18	E21	04	10.9			AX		1		3
10330B	31688	MWIL	04 10	1500	S18	W01	04	10.5	3	(AP)					
10330B		HOLL	04 12	1359	S15	W28	04	10.5		A	AXX	10	1	1	4
10332		RAMY	04 06	1230	N10	E80	04	12.5		A	HAX	30	1	1	2
10332		HOLL	04 06	1358	N11	E79	04	12.5		A	AXX		1	1	4
10332	31681	MWIL	04 06	1445	N12	E77	04	12.4	4	(AP)					
10332		KAND	04 07	1120	N11	E64	04	12.3			AX		2	1	3
10332		RAMY	04 07	1150	N09	E65	04	12.4		A	HAX	20	1	1	3
10332		HOLL	04 07	1432	N12	E63	04	12.3		A	HSX	20	1	1	4
10332	31681	MWIL	04 07	1445	N12	E63	04	12.4	4	(AP)					
10332		VORO	04 07	2316	N11	E57	04	12.2			ARX	18	7		3
10332		LEAR	04 08	0105	N11	E57	04	12.3		A	AXX	10	2	1	3
10332		HOLL	04 08	1415	N11	E49	04	12.3		B	BXO	20	2	1	3
10332	31681	MWIL	04 08	1430	N11	E49	04	12.3	4	(AP)					
10332		VORO	04 08	2239	N11	E44	04	12.2			ARX	10	2		3
10332		LEAR	04 09	0143	N11	E42	04	12.2		B	CSO	30	4	2	3
10332		RAMY	04 09	1211	N10	E37	04	12.3		B	CSO	20	3	3	3
10332	31681	MWIL	04 09	1430	N11	E35	04	12.2	4	(AP)					
10332		HOLL	04 09	1530	N11	E35	04	12.3		B	DAO	30	3	2	4
10332		VORO	04 09	2234	N10	E29	04	12.1			BRI	16	3	2	3
10332		LEAR	04 10	0539	N11	E26	04	12.2		A	AXX	10	2	2	2
10332		KAND	04 10	0705	N11	E26	04	12.2			AX		2	2	2
10332		RAMY	04 10	1155	N10	E24	04	12.3		B	CSO	10	4	3	3
10332	31681	MWIL	04 10	1500	N11	E22	04	12.3	4	(AP)					
10332		HOLL	04 10	1549	N11	E22	04	12.3		A	AXO	10	2		2
10332		LEAR	04 11	0110	N11	E16	04	12.2		A	AXX	10	1	1	2
10332		HOLL	04 11	1440	N10	E08	04	12.2		B	BXO		2	1	3
10332		HOLL	04 12	1359	N12	W02	04	12.4		B	CSO	10	6	3	4
10332		LEAR	04 13	0050	N12	W08	04	12.4		B	CAO	30	4	2	4
10332		SVTO	04 13	0526	N11	W11	04	12.4		A	HSX	20	1	1	3
10332		RAMY	04 13	1140	N12	W13	04	12.5		B	CSO	10	6	3	3
10332		HOLL	04 13	1629	N11	W15	04	12.5		B	CSO	20	3	2	2
10332		VORO	04 13	2303	N11	W21	04	12.4			HRX	18	2		3
10332		LEAR	04 14	0045	N11	W21	04	12.4		B	CAO	30	8	3	4
10332		SVTO	04 14	0632	N12	W24	04	12.5		B	CRO	20	4	4	2
10332		RAMY	04 14	1222	N12	W27	04	12.5		B	CSO	20	8	4	3
10332		HOLL	04 14	1530	N12	W31	04	12.3		B	CSI	20	6	4	2
10332		VORO	04 14	2252	N11	W34	04	12.4			AXX	4	3		2
10332		SVTO	04 15	0540	N13	W37	04	12.4		B	DRO	40	3	3	3
10332		RAMY	04 15	1210	N12	W42	04	12.3		B	CRO	10	5	3	3
10334	31686	MWIL	04 09	1430	S08	E86	04	16.0	5	AP					
10334		HOLL	04 09	1530	S08	E83	04	15.9		A	HAX	60	1	2	4
10334		VORO	04 09	2234	S08	E81	04	16.0			HAX	102	1		3
10334		LEAR	04 10	0539	S06	E78	04	16.1		A	HSX	120	1	2	2
10334		KAND	04 10	0705	S08	E77	04	16.1			HS		1	3	2
10334		RAMY	04 10	1155	S09	E76	04	16.2		B	DAO	80	7	3	3
10334	31686	MWIL	04 10	1500	S08	E73	04	16.1	5	(AP)					
10334		HOLL	04 10	1549	S08	E73	04	16.1		B	CAO	140	5	2	2
10334		LEAR	04 11	0110	S06	E68	04	16.1		B	CAO	160	6	4	2
10334		TACH	04 11	0507	S08	E65	04	16.1			AR	18	3	2	4
10334		SVTO	04 11	0630	S08	E66	04	16.2		B	CSO	110	4	4	2
10334		RAMY	04 11	1411	S09	E61	04	16.2		B	DSO	130	3	4	3
10334		HOLL	04 11	1440	S10	E58	04	16.0		B	CAO	90	5	2	3
10334	31686	MWIL	04 11	1500	S07	E60	04	16.1	5	(BD)					
10334		LEAR	04 12	0324	S07	E53	04	16.1		B	CAO	100	2	3	2
10334		TACH	04 12	0442	S07	E52	04	16.1			BRI	20	6	3	4
10334		KAND	04 12	0805	S08	E51	04	16.2			CAO		5	5	3

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(Ordered by Central Meridian Passage Date)

APRIL 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
10334		SVTO	04 12 0828	S09 E52	04 16.2		B	CAO	130	3	4	3
10334		HOLL	04 12 1359	S08 E47	04 16.1		B	CSO	90	10	3	4
10334		LEAR	04 13 0050	S07 E42	04 16.2		B	CAO	90	6	3	4
10334		SVTO	04 13 0526	S08 E38	04 16.1		A	HAX	120	1	3	3
10334		RAMY	04 13 1140	S08 E35	04 16.1		B	CAO	100	5	3	3
10334		HOLL	04 13 1629	S08 E32	04 16.1		B	CSI	70	3	2	2
10334		VORO	04 13 2303	S07 E28	04 16.0			HSX	122	3		3
10334		LEAR	04 14 0045	S08 E28	04 16.1		B	CSO	80	6	3	4
10334		SVTO	04 14 0632	S08 E24	04 16.1		A	HAX	100	1	3	2
10334		RAMY	04 14 1222	S08 E22	04 16.2		B	DAO	70	10	4	3
10334		HOLL	04 14 1530	S09 E19	04 16.1		B	DSO	40	3	4	2
10334		VORO	04 14 2252	S08 E15	04 16.1			HAX	70	1		2
10334		LEAR	04 15 0145	S08 E13	04 16.0		B	CSO	50	2	2	1
10334		SVTO	04 15 0540	S08 E11	04 16.1		A	HSX	80	2	3	3
10334		RAMY	04 15 1210	S09 E09	04 16.2		B	CSO	40	9	4	3
10334		LEAR	04 16 0017	S11 E01	04 16.1		B	CAO	60	5	5	5
10334		SVTO	04 16 0640	S08 W03	04 16.0		B	CSO	60	2	4	3
10334		RAMY	04 16 1200	S10 W08	04 15.9		B	CAO	40	4	4	2
10334		HOLL	04 16 1505	S08 W08	04 16.0		B	CAO	70	9	4	2
10334	31686	MWIL	04 16 1515	S07 W07	04 16.1	5	(AP)					
10334		VORO	04 16 2349	S08 W12	04 16.1			HAX	60	2		2
10334		LEAR	04 17 0045	S08 W12	04 16.1		A	HSX	60	2	2	4
10334		SVTO	04 17 0818	S07 W17	04 16.1		A	HSX	70	2	3	2
10334		RAMY	04 17 1420	S07 W19	04 16.2		B	DSO	40	4	4	2
10334	31686	MWIL	04 17 1630	S08 W20	04 16.2	5	(BP)					
10334		HOLL	04 17 1917	S08 W22	04 16.1		B	CAO	50	4	3	2
10334		LEAR	04 18 0048	S08 W25	04 16.1		B	CAO	60	5	3	2
10334		SVTO	04 18 0615	S07 W29	04 16.1		A	HSX	60	1	2	3
10334		HOLL	04 18 1436	S08 W34	04 16.0		A	HSX	50	1	1	2
10334	31686	MWIL	04 18 1500	S08 W34	04 16.1	5	(AP)					
10334		LEAR	04 19 0115	S08 W39	04 16.1		A	HSX	40	1	2	3
10334		VORO	04 19 0143	S08 W39	04 16.1			HSX	47	1		3
10334		SVTO	04 19 0615	S07 W42	04 16.1		A	HSX	30	1	1	3
10334		RAMY	04 19 1416	S06 W47	04 16.1		A	HSX	30	1	2	2
10334		HOLL	04 19 1635	S08 W48	04 16.1		A	HSX	30	1	1	2
10334		LEAR	04 20 0130	S08 W53	04 16.1		A	HSX	30	1	1	3
10334		SVTO	04 20 0645	S06 W56	04 16.1		A	HSX	30	1	1	3
10334		KAND	04 20 1045	S08 W58	04 16.1			HS		1	1	3
10334		RAMY	04 20 1317	S06 W59	04 16.1		A	HSX	40	2	1	2
10334		HOLL	04 20 1440	S07 W60	04 16.1		A	HSX	20	1	1	3
10334	31686	MWIL	04 20 1445	S08 W60	04 16.1	5	(AP)					
10334		LEAR	04 21 0005	S08 W65	04 16.1		A	HAX	20	1	2	5
10334		VORO	04 21 0158	S07 W66	04 16.1			HRX	16	1		3
10334		KAND	04 21 0735	S07 W70	04 16.1			AX		2	1	3
10334		RAMY	04 21 1132	S07 W71	04 16.2		A	HSX	20	1	1	4
10334		HOLL	04 21 1545	S07 W75	04 16.0		A	HSX	30	2	2	3
10334		LEAR	04 22 0030	S07 W80	04 16.0		A	HSX	20	3	2	3
10334A		RAMY	04 11 1411	N18 E70	04 16.9		B	CRO	10	2	5	3
10334A		HOLL	04 11 1440	N19 E67	04 16.7		A	AXX	10	1		3
10334A		LEAR	04 17 0045	N19 W08	04 16.4		A	AXX	10	1	1	4
10334B		HOLL	04 16 1505	S13 W01	04 16.5		A	AXX	10	5	2	2
10334C		HOLL	04 16 1505	S06 E03	04 16.8		A	AXX	10	6	3	2
10334C	31689	MWIL	04 16 1515	S07 E05	04 17.0	4	(AP)					
10334C		LEAR	04 17 0045	S06 W05	04 16.6		A	AXX	10	2	2	4
10334C		TACH	04 21 0435	S08 W56	04 17.0			AXX	18	1	1	3
10339		KAND	04 20 1045	N16 W39	04 17.5			BXO		4	2	3
10339		RAMY	04 20 1317	N18 W40	04 17.5		B	CSO	20	6	5	2
10339		HOLL	04 20 1440	N16 W37	04 17.8		B	BXO	10	5	4	3
10339	31694	MWIL	04 20 1445	N16 W39	04 17.6	4	(BG)					
10339		LEAR	04 21 0005	N17 W46	04 17.5		BG	CRO	30	12	7	5
10339		VORO	04 21 0158	N16 W46	04 17.6			CRI	49	9	6	3
10339		TACH	04 21 0435	N17 W44	04 17.8			BRI	18	5	8	3
10339		KAND	04 21 0735	N16 W50	04 17.5			CRO		5	8	3
10339		RAMY	04 21 1132	N17 W52	04 17.5		B	DSO	40	15	9	4
10339	31694	MWIL	04 21 1445	N16 W52	04 17.7	4	B					

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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
10339		HOLL	04	21	1545	N15 W54	04 17.6		B	DAO	80	9	10	3
10339		LEAR	04	22	0030	N14 W57	04 17.7		B	ESO	70	11	11	3
10339		VORO	04	22	0039	N14 W57	04 17.7			HAX	42	4		2
10339		KAND	04	22	0715	N14 W61	04 17.7			CAO		5	5	2
10339		SVTO	04	22	1110	N18 W66	04 17.4		B	CSO	50	4	4	3
10339		HOLL	04	22	1415	N15 W65	04 17.7		B	DAO	80	9	6	3
10339		RAMY	04	22	1515	N17 W67	04 17.5		B	DSO	30	9	5	3
10339		LEAR	04	23	0026	N14 W70	04 17.7		B	DAO	80	10	5	3
10339		SVTO	04	23	0820	N18 W79	04 17.3		A	HSX	40	2	4	3
10339		KAND	04	23	0855	N15 W78	04 17.5			HS		1	2	3
10339		RAMY	04	23	1230	N17 W79	04 17.5		B	DAO	50	2	3	2
10339		HOLL	04	23	1442	N15 W79	04 17.6		B	CSO	60	2	3	3
10335		HOLL	04	12	1359	S22 E75	04 18.3		B	BXO	10	2	1	4
10335		LEAR	04	13	0050	S20 E68	04 18.2		B	CAO	40	3	2	4
10335		SVTO	04	13	0526	S23 E68	04 18.5		B	DSO	70	3	4	3
10335		RAMY	04	13	1140	S22 E63	04 18.3		B	DSO	20	4	3	3
10335		HOLL	04	13	1629	S21 E58	04 18.1		B	CSO	30	2	3	2
10335		VORO	04	13	2303	S21 E55	04 18.2			HRX	56	3	0	3
10335		LEAR	04	14	0045	S20 E55	04 18.2		B	DSO	50	2	2	4
10335		SVTO	04	14	0632	S23 E52	04 18.3		B	DSO	50	2	3	2
10335		RAMY	04	14	1222	S21 E48	04 18.2		B	DSO	40	5	3	3
10335		HOLL	04	14	1530	S21 E45	04 18.1		B	BXO	10	2	3	2
10335		VORO	04	14	2252	S21 E41	04 18.1			HRX	30	5	1	2
10335		LEAR	04	15	0145	S20 E41	04 18.2		B	DSO	30	2	2	1
10335		SVTO	04	15	0540	S22 E38	04 18.1		B	DSO	40	2	2	3
10335		RAMY	04	15	1210	S22 E34	04 18.1		B	DSO	10	2	3	3
10335		LEAR	04	16	0017	S21 E32	04 18.5		B	CAO	30	15	7	5
10335		RAMY	04	16	1200	S22 E27	04 18.6		A	AXX	10	1	1	2
10335		LEAR	04	17	0045	S22 E18	04 18.4		B	BXO	10	2	6	4
10335		RAMY	04	17	1420	S22 E12	04 18.5		B	CRO	10	5	6	2
10335	31691	MWIL	04	17	1630	S20 E07	04 18.2	4	(B)					
10335		HOLL	04	17	1917	S21 E07	04 18.3		BG	BXO	20	11	7	2
10335		LEAR	04	18	0048	S22 E04	04 18.3		B	BXO	30	9	7	2
10335		HOLL	04	18	1436	S21 W06	04 18.1		B	BXO	10	4	4	2
10335	31691	MWIL	04	18	1500	S21 W06	04 18.2	4	(AP)					
10335		LEAR	04	19	0115	S21 W09	04 18.4		B	BXO	30	7	4	3
10335		LEAR	04	20	0130	S23 W21	04 18.4		B	BXO	20	6	4	3
10335		RAMY	04	21	1132	S24 W37	04 18.6		B	CRO	10	3	3	4
10335		HOLL	04	21	1545	S24 W39	04 18.6		A	AXX	10	2	2	3
10335B		RAMY	04	19	1416	N17 W15	04 18.4		B	BXO	10	5	5	2
10335A		LEAR	04	17	0045	N08 E22	04 18.7		B	BXO	10	3	2	4
10335A		HOLL	04	18	1436	N07 W02	04 18.4		B	CSO	10	3	3	2
10335A	31692	MWIL	04	18	1500	N07 W01	04 18.5	4	(BP)					
10335A		LEAR	04	19	0115	N07 W08	04 18.4		B	CAO	20	3	3	3
10335A		VORO	04	19	0143	N06 W09	04 18.4			AXX	8	3		3
10335A		RAMY	04	20	1317	N07 W27	04 18.5		B	BXO		4	3	2
10335C		LEAR	04	14	0045	S25 E80	04 20.2		A	AXX	10	1	1	4
10335C		LEAR	04	18	0048	S26 E24	04 19.9		A	AXX	10	2	1	2
10338		RAMY	04	19	1416	N17 E28	04 21.7		A	AXX	10	4	3	2
10338		HOLL	04	19	1635	N17 E24	04 21.5		B	BXO	10	2	2	2
10338		LEAR	04	20	0130	N18 E24	04 21.9		BG	ESO	40	11	12	3
10338		SVTO	04	20	0645	N18 E17	04 21.6		B	DAO	40	4	4	3
10338		KAND	04	20	1045	N19 E13	04 21.4			BXO		4	6	3
10338		RAMY	04	20	1317	N19 E13	04 21.5		B	DSO	30	10	8	2
10338		HOLL	04	20	1440	N18 E11	04 21.4		B	DSO	50	8	8	3
10338	31695	MWIL	04	20	1445	N19 E12	04 21.5	4	(BP)					
10338		LEAR	04	21	0005	N18 E10	04 21.8		BG	FSI	70	30	18	5
10338		VORO	04	21	0158	N18 E05	04 21.5			DRI	41	5	7	3
10338		TACH	04	21	0435	N19 E05	04 21.6			BRI	37	4	8	3
10338		KAND	04	21	0735	N19 E02	04 21.5			DAO		7	7	3
10338		RAMY	04	21	1132	N19 W01	04 21.4		B	DAI	20	21	9	4
10338	31695	MWIL	04	21	1445	N18 W01	04 21.5	4	B					
10338		HOLL	04	21	1545	N18 W02	04 21.5		BG	DAI	60	20	10	3
10338		LEAR	04	22	0030	N18 W08	04 21.4		BG	DAI	80	15	9	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
10338		VORO	04 22 0039	N18 W08	04 21.4			CRI	58	15	7	2
10338		KAND	04 22 0715	N17 W10	04 21.5			DAO		11	10	2
10338		SVTO	04 22 1110	N19 W14	04 21.4		B	DSO	80	12	10	3
10338		HOLL	04 22 1415	N18 W14	04 21.5		BGD	EAI	140	24	11	3
10338		RAMY	04 22 1515	N18 W16	04 21.4		B	DAI	90	27	10	3
10338		LEAR	04 23 0026	N17 W21	04 21.4		BG	EAI	220	37	11	3
10338		SVTO	04 23 0820	N18 W25	04 21.4		B	EAI	140	22	11	3
10338		KAND	04 23 0855	N18 W24	04 21.5			EAC		21	11	3
10338		RAMY	04 23 1230	N19 W26	04 21.5		BG	EAI	120	30	14	2
10338		HOLL	04 23 1442	N18 W27	04 21.5		BG	EAC	180	34	14	3
10338		VORO	04 23 2250	N18 W33	04 21.4			DAI	217	20	8	2
10338		LEAR	04 24 0010	N17 W33	04 21.5		BG	EAI	260	27	11	4
10338		KAND	04 24 1055	N18 W40	04 21.4			DAI		11	10	2
10338		RAMY	04 24 1215	N19 W38	04 21.6		BG	DAO	100	16	10	3
10338		HOLL	04 24 1430	N18 W41	04 21.5		BG	EAC	220	29	12	4
10338	31695	MWIL	04 24 1530	N18 W41	04 21.5	4	(D)					
10338		LEAR	04 25 0055	N17 W46	04 21.5		BG	DAO	120	22	10	3
10338		TACH	04 25 0517	N19 W51	04 21.3			CAI	122	8	9	2
10338		RAMY	04 25 1219	N19 W53	04 21.5		BG	EAC	180	38	12	3
10338		HOLL	04 25 1515	N18 W53	04 21.6		BG	EAO	260	18	11	4
10338		VORO	04 25 2309	N19 W59	04 21.5			DAI	442	21	9	3
10338		LEAR	04 26 0025	N17 W58	04 21.6		BG	EAI	310	21	11	2
10338		KAND	04 26 0650	N19 W60	04 21.7			FAO		9	17	3
10338		RAMY	04 26 1206	N21 W67	04 21.4		BG	EAI	270	21	14	4
10338		HOLL	04 26 1525	N19 W68	04 21.4		BG	EAI	240	13	11	2
10338		VORO	04 26 2250	N20 W73	04 21.4			DAI	196	12	11	3
10338		LEAR	04 27 0050	N18 W71	04 21.6		BG	DAI	210	7	7	4
10338		TACH	04 27 0429	N19 W71	04 21.8			BRO	9	3	5	3
10338		KAND	04 27 0715	N19 W77	04 21.4			BXO		5	7	4
10338		RAMY	04 27 1221	N21 W79	04 21.4		B	DAO	90	7	10	3
10338	31695	MWIL	04 27 1430	N20 W80	04 21.5	4	AF					
10338A		RAMY	04 15 1210	N06 E79	04 21.4		A	AXX		1	1	3
10338A		LEAR	04 24 0010	N04 W29	04 21.8		B	BXO	10	3	3	4
10342		LEAR	04 17 0045	N18 E70	04 22.4		A	HRX	30	3	1	4
10342		HOLL	04 22 1415	N18 W02	04 22.4		A	AXX	20	6	2	3
10342		RAMY	04 22 1515	N19 W04	04 22.3		A	AXX	10	5	2	3
10342		LEAR	04 23 0026	N18 W09	04 22.3		B	CRO	20	10	3	3
10342		KAND	04 23 0855	N17 W13	04 22.4			BXO		10	3	3
10342		RAMY	04 23 1230	N19 W15	04 22.4			X		0		2
10342		HOLL	04 23 1442	N17 W17	04 22.3		A	AXX	20	4	2	3
10342		LEAR	04 24 0010	N17 W22	04 22.3		B	BXO	20	6	3	4
10342		HOLL	04 24 1430	N17 W30	04 22.3		A	AXX	10	4	2	4
10342	31696	MWIL	04 24 1530	N17 W32	04 22.2	3	(B)					
10342		LEAR	04 25 0055	N17 W37	04 22.2		B	BXO	10	6	5	3
10342		TACH	04 25 0517	N20 W36	04 22.5			BXO	4	2	3	2
10342		RAMY	04 25 1219	N19 W41	04 22.4		B	CSO	30	13	5	3
10342		HOLL	04 25 1515	N18 W43	04 22.4		B	DSO	80	8	4	4
10342		VORO	04 25 2309	N18 W46	04 22.5			DAI	52	5	4	3
10342		LEAR	04 26 0025	N17 W48	04 22.4		B	DAO	80	6	4	2
10342		RAMY	04 26 1206	N20 W55	04 22.3		B	CSO	30	5	4	4
10342		HOLL	04 26 1525	N19 W58	04 22.2		A	HSX	60	1	1	2
10342		VORO	04 26 2250	N19 W61	04 22.3			HRX	19	4		3
10342		LEAR	04 27 0050	N17 W62	04 22.3		A	HSX	40	1	1	4
10342		TACH	04 27 0429	N18 W64	04 22.3			AXX	3	1	1	3
10342		RAMY	04 27 1221	N21 W69	04 22.2		B	CSO	20	4	3	3
10342	31696	MWIL	04 27 1430	N18 W70	04 22.3	3	(AP)					
10336	31690	MWIL	04 16 1515	N08 E88	04 23.2	4	(AP)					
10336		SVTO	04 17 0818	N10 E85	04 23.7		A	HSX	30	1	3	2
10336		RAMY	04 17 1420	N11 E80	04 23.6		A	HSX	80	1	2	2
10336	31690	MWIL	04 17 1630	N14 E82	04 23.9	4	(AP)					
10336		HOLL	04 17 1917	N13 E77	04 23.6		A	HSX	120	1	2	2
10336		LEAR	04 18 0048	N14 E72	04 23.5		A	HAX	140	1	2	2
10336		SVTO	04 18 0615	N12 E72	04 23.7		A	HSX	180	1	3	3
10336		HOLL	04 18 1436	N12 E67	04 23.6		A	HAX	140	1	2	2
10336	31690	MWIL	04 18 1500	N13 E67	04 23.7	5	(AP)					
10336		LEAR	04 19 0115	N15 E62	04 23.7		A	HAX	120	1	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10336		VORO	04 19 0143	N13	E61	04 23.7			HKX	222	1		3
10336		SVTO	04 19 0615	N12	E59	04 23.7		A	HAX	120	1	2	3
10336		RAMY	04 19 1416	N11	E55	04 23.7		A	HAX	110	2	3	2
10336		HOLL	04 19 1635	N13	E55	04 23.8		A	HAX	140	1	2	2
10336		LEAR	04 20 0130	N13	E48	04 23.7		A	HAX	160	3	3	3
10336		SVTO	04 20 0645	N13	E47	04 23.8		A	HAX	140	1	3	3
10336		KAND	04 20 1045	N13	E43	04 23.7			HS		1	2	3
10336		RAMY	04 20 1317	N12	E43	04 23.8		A	HAX	140	2	3	2
10336		HOLL	04 20 1440	N12	E42	04 23.8		A	HAX	140	1	3	3
10336	31690	MWIL	04 20 1445	N13	E41	04 23.7	5	(AP)					
10336		LEAR	04 21 0005	N13	E36	04 23.7		A	HAX	140	3	3	5
10336		VORO	04 21 0158	N13	E35	04 23.7			HHX	148	2		3
10336		TACH	04 21 0435	N13	E36	04 23.9			HSX	98	1	2	3
10336		KAND	04 21 0735	N13	E32	04 23.7			HA		1	2	3
10336		RAMY	04 21 1132	N13	E30	04 23.7		B	CAO	130	5	4	4
10336	31690	MWIL	04 21 1445	N13	E28	04 23.7	5	AP					
10336		HOLL	04 21 1545	N13	E27	04 23.7		B	CAO	60	5	3	3
10336		LEAR	04 22 0030	N13	E22	04 23.7		B	CAO	100	4	2	3
10336		VORO	04 22 0039	N13	E22	04 23.7			HKX	122	5		2
10336		KAND	04 22 0715	N13	E18	04 23.7			HA		3	3	2
10336		SVTO	04 22 1110	N13	E17	04 23.7		B	DSO	70	3	3	3
10336		HOLL	04 22 1415	N13	E15	04 23.7		B	DSO	60	3	3	3
10336		RAMY	04 22 1515	N18	E14	04 23.7		B	DSO	50	9	3	3
10336		LEAR	04 23 0026	N13	E08	04 23.6		B	CSO	70	7	4	3
10336		SVTO	04 23 0820	N13	E05	04 23.7		B	CSO	50	3	3	3
10336		KAND	04 23 0855	N13	E05	04 23.7			CAO		7	2	3
10336		HOLL	04 23 1442	N13	E02	04 23.8		B	DAO	50	9	4	3
10336		VORO	04 23 2250	N13	W04	04 23.6			HAX	26	4		2
10336		LEAR	04 24 0010	N13	W04	04 23.7		B	CSO	60	11	4	4
10336		KAND	04 24 1055	N12	W10	04 23.7			AX		5	2	2
10336		RAMY	04 24 1215	N15	W10	04 23.7		B	DAO	20	8	5	3
10336		HOLL	04 24 1430	N13	W11	04 23.8		B	CSO	20	4	3	4
10336	31690	MWIL	04 24 1530	N13	W13	04 23.7	4	(AP)					
10336		LEAR	04 25 0055	N12	W17	04 23.7		A	AXX	10	5	2	3
10336		RAMY	04 25 1219	N14	W24	04 23.7		B	BXO	10	9	4	3
10336		HOLL	04 25 1515	N14	W25	04 23.7		B	BXO	20	3	3	4
10336		RAMY	04 26 1206	N15	W37	04 23.7		B	BXO	10	6	4	4
10336		RAMY	04 27 1221	N17	W50	04 23.7		B	BXO	10	4	2	3
10336		LEAR	04 28 0035	N14	W57	04 23.7		B	BXO	10	4	4	3
10336A		HOLL	04 27 1725	S20	W47	04 24.1		B	DAO	60	11	6	2
10336B		VORO	04 26 2250	S19	W27	04 24.9			BRI	17	3	1	3
10336B		LEAR	04 27 0050	S20	W28	04 24.9		B	DAO	30	4	4	4
10336B		VORO	04 27 2226	S19	W40	04 24.9			CAI	85	11	5	3
10336B		TACH	04 28 0419	S19	W44	04 24.8			CAO	53	3	5	3
10336B		VORO	04 29 2304	S20	W68	04 24.8			CRO	33	3	7	3
10337		HOLL	04 18 1436	S12	E79	04 24.6		A	HKX	180	2	1	2
10337	31693	MWIL	04 18 1500	S12	E85	04 25.0	4	(AP)					
10337		LEAR	04 19 0115	S11	E78	04 24.9		A	HKX	180	2	5	3
10337		VORO	04 19 0143	S13	E78	04 24.9			HKX	431	2		3
10337		SVTO	04 19 0615	S14	E78	04 25.1		B	CAO	240	3	7	3
10337		RAMY	04 19 1416	S16	E73	04 25.1		B	DAO	260	9	8	2
10337		HOLL	04 19 1635	S14	E70	04 25.0		B	DAI	300	7	12	2
10337		LEAR	04 20 0130	S13	E66	04 25.0		B	DKO	360	10	10	3
10337		SVTO	04 20 0645	S15	E65	04 25.2		B	DKO	300	7	9	3
10337		KAND	04 20 1045	S13	E63	04 25.2			DAO		7	7	3
10337		RAMY	04 20 1317	S16	E60	04 25.1		B	DKO	340	14	8	2
10337		HOLL	04 20 1440	S14	E60	04 25.1		B	EKI	360	11	11	3
10337	31693	MWIL	04 20 1445	S13	E59	04 25.1	5	(BP)					
10337		LEAR	04 21 0005	S13	E56	04 25.2		B	EKO	390	18	12	5
10337		VORO	04 21 0158	S13	E52	04 25.0			HKX	475	19		3
10337		TACH	04 21 0435	S14	E56	04 25.4			DAI	551	5	7	3
10337		KAND	04 21 0735	S13	E50	04 25.1			DKO		6	8	3
10337		RAMY	04 21 1132	S13	E48	04 25.1		BD	DKI	370	29	8	4
10337	31693	MWIL	04 21 1445	S13	E45	04 25.0	5	BP					
10337		HOLL	04 21 1545	S14	E47	04 25.2		BD	DKI	330	20	7	3
10337		LEAR	04 22 0030	S13	E41	04 25.1		BGD	DKI	250	15	7	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
10337		VORO	04	22	0039	S13 E39	04 25.0			HKX	464	9		2
10337		KAND	04	22	0715	S13 E37	04 25.1			DAO		6	4	2
10337		SVTO	04	22	1110	S14 E34	04 25.0		B	DAO	200	10	9	3
10337		HOLL	04	22	1415	S14 E34	04 25.2		B	DKI	280	24	8	3
10337		RAMY	04	22	1515	S14 E33	04 25.1		BG	DKI	360	28	10	3
10337		LEAR	04	23	0026	S13 E28	04 25.1		BG	EKO	250	26	11	3
10337		SVTO	04	23	0820	S14 E22	04 25.0		B	DKO	400	12	7	3
10337		KAND	04	23	0855	S13 E22	04 25.0			CKO		6	5	3
10337		HOLL	04	23	1442	S15 E19	04 25.0		BG	DKI	280	19	7	3
10337		VORO	04	23	2250	S13 E13	04 24.9			HKX	393	17		2
10337		LEAR	04	24	0010	S14 E13	04 25.0		BG	DKO	360	24	6	4
10337		KAND	04	24	1055	S13 E06	04 24.9			DKO		6	4	2
10337		RAMY	04	24	1215	S14 E06	04 25.0		BG	DKO	210	16	7	3
10337		HOLL	04	24	1430	S14 E06	04 25.0		BG	DKI	250	24	6	4
10337	31693	MWIL	04	24	1530	S13 E04	04 24.9	5	(BP)					
10337		LEAR	04	25	0055	S13 W02	04 24.9		B	DKO	280	18	6	3
10337		TACH	04	25	0517	S13 W04	04 24.9			CAO	230	6	3	2
10337		RAMY	04	25	1219	S13 W08	04 24.9		B	DKO	220	18	7	3
10337		HOLL	04	25	1515	S14 W08	04 25.0		BG	DKO	290	18	8	4
10337		VORO	04	25	2309	S13 W13	04 25.0			HKX	246	10		3
10337		LEAR	04	26	0025	S15 W13	04 25.0		B	DKO	260	10	5	2
10337		KAND	04	26	0650	S14 W17	04 25.0			CKO		7	4	3
10337		RAMY	04	26	1206	S13 W21	04 24.9		B	DKO	210	15	7	4
10337		HOLL	04	26	1525	S13 W23	04 24.9		BG	CAO	200	12	5	2
10337		VORO	04	26	2250	S13 W25	04 25.1			HKX	233	14		3
10337		LEAR	04	27	0050	S15 W27	04 25.0		B	DAO	180	12	5	4
10337		TACH	04	27	0429	S16 W28	04 25.1			CAI	269	10	2	3
10337		KAND	04	27	0715	S17 W31	04 24.9			DAO		6	9	5
10337		RAMY	04	27	1221	S15 W34	04 24.9		BG	EKI	270	34	12	3
10337	31693	MWIL	04	27	1430	S17 W35	04 24.9	5	(D)					
10337		HOLL	04	27	1725	S17 W36	04 25.0		BGD	EAI	240	26	11	2
10337		VORO	04	27	2226	S14 W39	04 25.0			HKX	324	16	2	3
10337		LEAR	04	28	0035	S16 W41	04 24.9		BG	EKC	310	28	11	3
10337		TACH	04	28	0419	S12 W42	04 25.0			DAI	103	5	1	3
10337		RAMY	04	28	1145	S15 W48	04 24.8		BG	DAO	270	13	10	3
10337	31693	MWIL	04	28	1430	S16 W48	04 25.0	5	(D)					
10337		HOLL	04	28	1530	S16 W50	04 24.8		BGD	DAI	240	12	8	4
10337		LEAR	04	29	0355	S17 W56	04 24.9		BG	DAO	290	13	11	3
10337		KAND	04	29	0725	S16 W59	04 24.8			DAO		6	9	5
10337		RAMY	04	29	1228	S15 W61	04 24.9		B	EAO	280	16	12	3
10337		VORO	04	29	2304	S13 W66	04 25.0			HAX	179	4		3
10337		KAND	04	30	0740	S17 W72	04 24.8			CAO		4	4	4
10337		SVTO	04	30	0950	S12 W71	04 25.1		B	DAO	80	2	5	3
10337		RAMY	04	30	1220	S14 W78	04 24.6		BG	DSO	110	8	9	2
10337		HOLL	04	30	1421	S13 W76	04 24.9		B	CSO	60	3	5	4
10337		VORO	04	30	2232	S13 W80	04 24.9			HAX	119	2		3
10337		LEAR	05	01	0105	S15 W80	04 25.1		A	HSX	60	1	2	4
10337		KAND	05	01	1040	S17 W84	04 25.2			DAO		2	2	3
10337A		HOLL	04	25	1515	N08 E10	04 26.4		B	BXO	20	4	4	4
10337A		LEAR	04	26	0025	N11 W03	04 25.8		A	HSX	10	1	1	2
10337A		KAND	04	26	0650	N11 W04	04 26.0			AX		1		3
10337A		RAMY	04	26	1206	N11 W05	04 26.1		B	BXO	10	5	3	4
10337A		RAMY	04	27	1221	N11 W18	04 26.2		A	AXX		3	1	3
10350		SVTO	04	30	0950	S16 W51	04 26.5		B	DAO	50	2	8	3
10350		LEAR	05	01	0105	S12 W59	04 26.7		B	DAO	80	5	9	4
10350		SVTO	05	01	0740	S11 W62	04 26.7		B	DSO	40	4	9	3
10350		HOLL	05	01	1430	S10 W65	04 26.8		B	DAO	50	7	9	2
10350		LEAR	05	02	0045	S11 W72	04 26.7		B	DAO	60	5	10	4
10340		RAMY	04	20	1317	S09 E73	04 26.0		A	AXX	10	2	2	2
10340		LEAR	04	21	0005	S05 E66	04 25.9		A	AXX	10	3	2	5
10340		RAMY	04	21	1132	S03 E62	04 26.1		A	AXX		2	1	4
10340		HOLL	04	21	1545	S05 E60	04 26.1		A	AXX	10	2	2	3
10340		LEAR	04	22	0030	S05 E55	04 26.1		A	AXX	10	2	2	3
10340		VORO	04	22	0039	S06 E55	04 26.1			ARX	6	1		2
10340		SVTO	04	22	1110	S07 E49	04 26.1		A	AXX		1		3
10340		HOLL	04	22	1415	S06 E48	04 26.2		A	HSX	30	2	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
10340		RAMY	04 22	1515	S06	E47	04 26.1		A	HRX		2	1	3
10340		LEAR	04 23	0026	S06	E42	04 26.2		A	HSX	10	2		3
10340		LEAR	04 24	0010	S07	E26	04 25.9		A	AXX	10	2	1	4
10340		RAMY	04 24	1215	S08	E20	04 26.0		B	DSO	10	5	10	3
10340		HOLL	04 24	1430	S07	E18	04 25.9		A	AXX	10	2	1	4
10340		LEAR	04 25	0055	S08	E21	04 26.6		A	AXX	10	3	2	3
10340		RAMY	04 25	1219	S09	E14	04 26.6		A	AXX		3	2	3
10340		RAMY	04 26	1206	S09	E05	04 26.9		A	AXX		3	2	4
10340	31701	MWIL	04 27	1430	S07	W13	04 26.6	3	(AP)					
10340		TACH	04 28	0419	S08	W20	04 26.7			BXO	4	2	2	3
10340		RAMY	04 28	1145	S08	W25	04 26.6		B	BXO	10	6	3	3
10340	31701	MWIL	04 28	1430	S09	W26	04 26.6	4	(B)					
10340		HOLL	04 28	1530	S09	W28	04 26.5		B	DAO	40	19	4	4
10340		LEAR	04 29	0355	S10	W34	04 26.6		B	DAO	110	20	6	3
10340		KAND	04 29	0725	S10	W36	04 26.6			DAO		11	6	5
10340		RAMY	04 29	1228	S08	W38	04 26.7		B	DAO	150	14	7	3
10340		VORO	04 29	2304	S10	W45	04 26.6			DAO	160	8	5	3
10340		KAND	04 30	0740	S11	W51	04 26.5			DAO		3	8	4
10340		RAMY	04 30	1220	S08	W53	04 26.5		B	DAO	50	8	8	2
10340		HOLL	04 30	1421	S11	W55	04 26.5		B	DAO	90	7	8	4
10340		VORO	04 30	2232	S10	W59	04 26.5			DAI	125	8	7	3
10340		KAND	05 01	1040	S09	W68	04 26.4			DAO		3	9	3
10340	31701	MWIL	05 01	1445	S10	W68	04 26.6	4	(B)					
10340		VORO	05 02	0624	S11	W73	04 26.9			HAX	26	2		3
10340	31701	MWIL	05 02	1430	S11	W77	04 26.9	4	(AF)					
10340B		HOLL	04 28	1530	N12	W22	04 27.0		A	AXX		1	1	4
10340C	31702	MWIL	04 27	1430	N19	W04	04 27.3	3	(AP)					
10340C		VORO	04 27	2226	N20	W08	04 27.3			AXX	2	1		3
10340C	31702	MWIL	04 28	1430	N21	W17	04 27.3	4	(B)					
10341		RAMY	04 21	1132	S10	E79	04 27.4		B	CRO	10	4	4	4
10341		HOLL	04 21	1545	S10	E79	04 27.6		A	AXX	10	2	2	3
10341		LEAR	04 22	0030	S08	E72	04 27.4		B	CAO	20	3	4	3
10341		VORO	04 22	0039	S10	E72	04 27.4			HRX	11	4		2
10341		SVTO	04 22	1110	S11	E67	04 27.5		B	BXO	20	4	4	3
10341		HOLL	04 22	1415	S09	E68	04 27.7		B	CSO	40	5	3	3
10341		RAMY	04 22	1515	S10	E66	04 27.6		B	CRO	10	4	4	3
10341		LEAR	04 23	0026	S09	E61	04 27.6		B	CAO	20	4	3	3
10341		SVTO	04 23	0820	S11	E58	04 27.7		A	AXX		1		3
10341		KAND	04 23	0855	S09	E58	04 27.7			AX		1		3
10341		HOLL	04 23	1442	S10	E55	04 27.7		A	AXX		1	1	3
10344		LEAR	04 24	0010	N16	E52	04 27.9		A	AXX	10	1	1	4
10344		RAMY	04 24	1215	N16	E45	04 27.9		B	DAO	20	5	6	3
10344		HOLL	04 24	1430	N16	E44	04 27.9		B	DSO	50	9	6	4
10344	31697	MWIL	04 24	1530	N15	E41	04 27.7	4	(B)					
10344		LEAR	04 25	0055	N16	E37	04 27.8		B	DAO	70	14	6	3
10344		TACH	04 25	0517	N16	E34	04 27.8			CAI	91	5	4	2
10344		RAMY	04 25	1219	N15	E31	04 27.9		B	DAO	170	14	7	3
10344		HOLL	04 25	1515	N15	E29	04 27.8		B	DAI	250	22	7	4
10344		VORO	04 25	2309	N15	E25	04 27.8			DKI	377	28	6	3
10344		LEAR	04 26	0025	N15	E24	04 27.8		B	DKO	390	21	8	2
10344		KAND	04 26	0650	N15	E20	04 27.8			DAO		10	7	3
10344		RAMY	04 26	1206	N15	E18	04 27.9		BG	DKI	390	21	8	4
10344		HOLL	04 26	1525	N15	E16	04 27.8		BGD	DKI	400	17	8	2
10344		VORO	04 26	2250	N15	E13	04 27.9			DKI	493	28	6	3
10344		LEAR	04 27	0050	N16	E11	04 27.9		B	DKI	360	23	8	4
10344		TACH	04 27	0429	N15	E09	04 27.9			DAI	433	6	6	3
10344		KAND	04 27	0715	N15	E09	04 28.0			DAO		7	8	4
10344		RAMY	04 27	1221	N16	E06	04 28.0		B	DKO	400	17	8	3
10344	31697	MWIL	04 27	1430	N15	E04	04 27.9	5	(B)					
10344		HOLL	04 27	1725	N15	E03	04 27.9		BG	DKO	540	18	7	2
10344		VORO	04 27	2226	N16	W00	04 27.9			DKC	559	21	5	3
10344		LEAR	04 28	0035	N15	W01	04 27.9		BG	DKI	510	17	8	3
10344		TACH	04 28	0419	N14	W03	04 27.9			DAI	373	6	7	3
10344		RAMY	04 28	1145	N17	W09	04 27.8		BG	EKO	340	14	11	3
10344	31697	MWIL	04 28	1430	N16	W09	04 27.9	5	(B)					

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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
10344		HOLL	04	28	1530	N17 W11	04 27.8		BG	DKO	380	16	9	4
10344		LEAR	04	29	0355	N15 W16	04 27.9		BG	DKI	420	17	7	3
10344		KAND	04	29	0725	N16 W19	04 27.9			DSO		20	7	5
10344		RAMY	04	29	1228	N17 W21	04 27.9		BG	DAO	320	18	8	3
10344		VORO	04	29	2304	N16 W26	04 28.0			DKI	436	15	5	3
10344		KAND	04	30	0740	N15 W33	04 27.8			DKO		10	7	4
10344		SVTO	04	30	0950	N12 W36	04 27.7		B	DKO	240	6	6	3
10344		RAMY	04	30	1220	N18 W34	04 27.9		BG	DKO	160	13	10	2
10344		HOLL	04	30	1421	N15 W35	04 27.9		BG	DKI	240	9	7	4
10344		VORO	04	30	2232	N16 W40	04 27.9			DAI	360	7	5	3
10344		LEAR	05	01	0105	N14 W42	04 28.0		BG	DAO	210	10	8	4
10344		SVTO	05	01	0740	N16 W47	04 27.8		B	DAO	150	8	8	3
10344		KAND	05	01	1040	N17 W50	04 27.7			DKO		8	9	3
10344		HOLL	05	01	1430	N15 W49	04 28.0		B	DAO	280	13	9	2
10344	31697	MWIL	05	01	1445	N16 W50	04 27.9	5	(BG)					
10344		LEAR	05	02	0045	N14 W54	04 28.0		BG	DKO	270	17	8	4
10344		VORO	05	02	0624	N16 W57	04 28.0			DAI	401	8	5	3
10344		SVTO	05	02	0731	N16 W58	04 28.0		B	DAO	240	6	8	3
10344		KAND	05	02	0815	N15 W61	04 27.8			DAO		7	8	3
10344	31697	MWIL	05	02	1430	N16 W63	04 27.9	5	(B)					
10344		HOLL	05	02	1430	N16 W64	04 27.8		B	DAI	300	7	11	3
10344		LEAR	05	03	0145	N14 W68	04 28.0		B	DKO	310	6	6	3
10344		VORO	05	03	0503	N15 W70	04 28.0			DKI	349	11	5	3
10344		TACH	05	03	0556	N15 W69	04 28.1			CAO	183	3	5	3
10344		KAND	05	03	0612	N16 W75	04 27.7			HA		4	4	4
10344		SVTO	05	03	0825	N17 W74	04 27.8		A	AXX	10	1	1	3
10344		LEAR	05	04	0100	N14 W82	04 27.9		B	DAO	120	6	4	3
10343		SVTO	04	23	0820	N04 E68	04 28.4		B	DRO	30	3	5	3
10343		KAND	04	23	0855	N05 E66	04 28.3			BXO		3	5	3
10343		HOLL	04	23	1442	N07 E65	04 28.5		B	CSO	30	5	7	3
10343		VORO	04	23	2250	N06 E61	04 28.5			AXX	18	5		2
10343		LEAR	04	24	0010	N07 E58	04 28.3		B	CSO	40	4	4	4
10343		KAND	04	24	1055	N05 E53	04 28.4			BXO		3	4	2
10343		RAMY	04	24	1215	N06 E52	04 28.4		B	DAO	40	7	6	3
10343		HOLL	04	24	1430	N06 E50	04 28.3		B	DSO	40	8	7	4
10343	31698	MWIL	04	24	1530	N05 E48	04 28.2	4	(B)					
10343		LEAR	04	25	0055	N06 E44	04 28.3		B	BXO	20	6	5	3
10343		TACH	04	25	0517	N06 E40	04 28.2			BRO	10	3	4	2
10343		RAMY	04	25	1219	N05 E38	04 28.3		B	CAO	20	6	6	3
10343		HOLL	04	25	1515	N05 E35	04 28.2		B	CSO	30	5	6	4
10343		VORO	04	25	2309	N05 E31	04 28.3			BRI	16	5	5	3
10343		LEAR	04	26	0025	N06 E31	04 28.3		B	DAO	30	4	6	2
10343		KAND	04	26	0650	N05 E24	04 28.1			AX		1		3
10343		RAMY	04	26	1206	N05 E21	04 28.1		A	AXX	10	1	1	4
10343		RAMY	04	27	1221	N04 E11	04 28.3		B	BXO	10	5	3	3
10343		RAMY	04	28	1145	N06 W04	04 28.2		A	AXX		2	2	3
10343		RAMY	04	29	1228	N07 W17	04 28.2		A	AXX		2	1	3
10347		RAMY	04	26	1206	S20 E42	04 29.7		B	CSO	20	4	4	4
10347		HOLL	04	26	1525	S19 E40	04 29.7		B	BXO		3	2	2
10347		VORO	04	26	2250	S18 E36	04 29.7			BRI	13	3	2	3
10347		LEAR	04	27	0050	S18 E35	04 29.7		B	DRO	20	2	3	4
10347		TACH	04	27	0429	S18 E33	04 29.7			BXO	4	2	3	3
10347		KAND	04	27	0715	S17 E31	04 29.6			AX		1		4
10347		RAMY	04	27	1221	S19 E28	04 29.6		B	DSO	20	4	4	3
10347	31703	MWIL	04	27	1430	S18 E27	04 29.7	4	(B)					
10347		HOLL	04	27	1725	S18 E28	04 29.8		B	BXO	10	5	3	2
10347		VORO	04	27	2226	S18 E23	04 29.7			AXX	21	5		3
10347		LEAR	04	28	0035	S19 E22	04 29.7		B	BXO	10	4	4	3
10347		RAMY	04	28	1145	S18 E15	04 29.6		B	BXO		3	3	3
10347	31703	MWIL	04	28	1430	S17 E14	04 29.7	4	(B)					
10347		HOLL	04	28	1530	S17 E15	04 29.8		B	BXO	10	3	2	4
10347		RAMY	04	29	1228	S18 E04	04 29.8		B	BXO	10	9	4	3
10347A		KAND	05	01	1040	S05 W23	04 29.8			BXO		2	3	3
10347A		LEAR	05	03	0145	S08 W45	04 29.8		B	BXO	10	2	3	3
10347A		VORO	05	03	0503	S06 W47	04 29.8			BXO	15	2	4	3
10345		RAMY	04	24	1215	S18 E79	04 30.5		A	AXX	10	1	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
10345	31699	HOLL	04 24	1430	S17	E79	04 30.6		B	CSO	40	4	5	4
10345		MWIL	04 24	1530	S15	E78	04 30.5	4	(AP)					
10345		LEAR	04 25	0055	S16	E74	04 30.6		B	CAO	90	5	5	3
10345		TACH	04 25	0517	S16	E72	04 30.7			DSO	169	2	6	2
10345		RAMY	04 25	1219	S18	E66	04 30.5		B	DAO	150	7	6	3
10345		HOLL	04 25	1515	S17	E66	04 30.6		B	DSI	240	10	7	4
10345		VORO	04 25	2309	S16	E61	04 30.6			DAO	295	6	3	3
10345		LEAR	04 26	0025	S16	E60	04 30.6		B	DAO	260	4	6	2
10345		KAND	04 26	0650	S16	E57	04 30.6			DAO		3	5	3
10345		RAMY	04 26	1206	S18	E54	04 30.6		B	DAO	120	7	6	4
10345		HOLL	04 26	1525	S17	E52	04 30.6		B	DAO	180	4	9	2
10345		VORO	04 26	2250	S16	E48	04 30.6			DAO	250	7	2	3
10345		LEAR	04 27	0050	S16	E47	04 30.6		B	DAO	180	5	5	4
10345		TACH	04 27	0429	S16	E45	04 30.6			DAO	157	3	3	3
10345	31699	KAND	04 27	0715	S16	E44	04 30.6			DAO		4	5	4
10345		RAMY	04 27	1221	S18	E40	04 30.6		B	DAO	200	8	5	3
10345		MWIL	04 27	1430	S17	E39	04 30.6	5	(B)					
10345		HOLL	04 27	1725	S16	E39	04 30.7		B	DSO	190	7	4	2
10345		VORO	04 27	2226	S16	E34	04 30.5			DAO	289	8	2	3
10345		LEAR	04 28	0035	S16	E34	04 30.6		B	DAO	200	10	6	3
10345		TACH	04 28	0419	S16	E31	04 30.5			DSO	131	2	2	3
10345		RAMY	04 28	1145	S17	E27	04 30.5		B	DAI	260	18	5	3
10345		MWIL	04 28	1430	S16	E26	04 30.6	5	(B)					
10345		HOLL	04 28	1530	S17	E25	04 30.5		B	DAO	170	12	4	4
10345		LEAR	04 29	0355	S16	E19	04 30.6		B	DAO	180	16	5	3
10345		KAND	04 29	0725	S17	E17	04 30.6			DAO		11	4	5
10345		RAMY	04 29	1228	S17	E13	04 30.5		B	DAO	200	14	5	3
10345		VORO	04 29	2304	S17	E07	04 30.5			HAX	229	8	0	3
10345	31699	KAND	04 30	0740	S17	E03	04 30.5			DAO		4	3	4
10345		SVTO	04 30	0950	S16	E03	04 30.6		B	DAO	150	4	5	3
10345		RAMY	04 30	1220	S17	W02	04 30.4		B	DAO	110	8	5	2
10345		HOLL	04 30	1421	S17	W02	04 30.4		B	DSO	90	14	4	4
10345		VORO	04 30	2232	S17	W06	04 30.5			HAX	202	6	0	3
10345		LEAR	05 01	0105	S17	W07	04 30.5		B	DAO	110	8	3	4
10345		SVTO	05 01	0740	S17	W11	04 30.5		B	DSO	120	4	4	3
10345		KAND	05 01	1040	S15	W13	04 30.5			DAO		5	5	3
10345		HOLL	05 01	1430	S18	W15	04 30.5		B	DAI	120	11	4	2
10345		MWIL	05 01	1445	S17	W15	04 30.5	5	(BG)					
10345		LEAR	05 02	0045	S18	W21	04 30.4		BG	DAO	160	15	9	4
10345		VORO	05 02	0624	S17	W23	04 30.5			HAX	185	6	1	3
10345		SVTO	05 02	0731	S16	W25	04 30.4		B	DAO	140	9	6	3
10345		KAND	05 02	0815	S17	W25	04 30.4			DSO		6	3	3
10345	31699	MWIL	05 02	1430	S17	W28	04 30.5	5	(BG)					
10345		HOLL	05 02	1430	S17	W29	04 30.4		B	DSO	90	11	7	3
10345		LEAR	05 03	0145	S18	W33	04 30.5		BG	DAO	150	13	5	3
10345		VORO	05 03	0503	S17	W36	04 30.5			HAX	156	8	1	3
10345		TACH	05 03	0556	S16	W36	04 30.5			CSO	42	2	2	3
10345		KAND	05 03	0612	S18	W37	04 30.4			DAO		7	3	4
10345		SVTO	05 03	0825	S16	W39	04 30.4		B	DAO	80	2	3	3
10345		HOLL	05 03	1715	S18	W44	04 30.4		B	DSO	80	2	6	2
10345		VORO	05 04	0008	S17	W46	04 30.5			HAX	127	2	1	2
10345		LEAR	05 04	0100	S18	W47	04 30.5		B	DAO	110	5	4	3
10345		KAND	05 04	0600	S18	W51	04 30.4			DAO		5	3	3
10345		TACH	05 04	0707	S17	W52	04 30.3			CSO	50	2	2	3
10345		SVTO	05 04	0725	S16	W51	04 30.4		B	DAO	90	3	3	3
10345		HOLL	05 04	1720	S17	W57	04 30.4		B	DAO	100	4	4	3
10345	31699	LEAR	05 05	0032	S17	W59	04 30.5		B	DAO	60	3	3	4
10345		SVTO	05 05	0645	S16	W64	04 30.4		B	DAO	70	3	4	3
10345		KAND	05 05	0900	S17	W66	04 30.3			DAO		2	3	4
10345		HOLL	05 05	1403	S17	W68	04 30.4		B	CAO	60	2	3	4
10345		LEAR	05 06	0110	S19	W74	04 30.4		A	HSX	30	1	1	2
10345		SVTO	05 06	0510	S16	W76	04 30.4		A	HSX	30	1	2	3
10345		TACH	05 06	0534	S17	W75	04 30.5			AXX	4	1	1	3
10345A		LEAR	05 03	0145	N00	W31	04 30.7		A	AXX	10	1	1	3
10345A		VORO	05 03	0503	N00	W32	04 30.8			AXX	5	2		3
10345A		VORO	05 04	0008	N01	W43	04 30.8			AXX	16	1		2
10345A		LEAR	05 04	0100	N00	W44	04 30.7		B	CAO	10	3	3	3
10345A		KAND	05 04	0600	N01	W48	04 30.7			AX		1		3

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Apr 03

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

APRIL 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
10346		RAMY	04 24	1215	N15	E81	04 30.6		A	HSX	30	1	1	3
10346		HOLL	04 24	1430	N16	E79	04 30.6		A	HSX	60	1	2	4
10346	31700	MWIL	04 24	1530	N15	E80	04 30.7	3	(AP)					
10346		LEAR	04 25	0055	N17	E75	04 30.7		A	HAX	60	1	2	3
10346		TACH	04 25	0517	N16	E70	04 30.5			HSX	50	1	2	2
10346		RAMY	04 25	1219	N15	E70	04 30.8		A	HSX	60	1	2	3
10346		HOLL	04 25	1515	N15	E67	04 30.7		A	HSX	50	1	2	4
10346		VORO	04 25	2309	N15	E63	04 30.7			HSX	109	1		3
10346		LEAR	04 26	0025	N16	E61	04 30.6		A	HSX	90	1	2	2
10346		KAND	04 26	0650	N15	E58	04 30.7			HS		1	2	3
10346		RAMY	04 26	1206	N15	E57	04 30.8		B	CSO	40	3	4	4
10346		HOLL	04 26	1525	N15	E54	04 30.7		A	HSX	70	1	2	2
10346		VORO	04 26	2250	N15	E50	04 30.7			HSX	94	1		3
10346		LEAR	04 27	0050	N16	E49	04 30.7		A	HSX	40	1	1	4
10346		TACH	04 27	0429	N16	E47	04 30.7			HSX	79	1	1	3
10346		KAND	04 27	0715	N16	E47	04 30.9			HA		1	2	4
10346		RAMY	04 27	1221	N16	E45	04 30.9		B	CSO	70	5	4	3
10346	31700	MWIL	04 27	1430	N15	E42	04 30.8	5	(AP)					
10346	31705	MWIL	04 27	1430	N18	E45	05 1.0	3	AF					
10346		HOLL	04 27	1725	N15	E40	04 30.7		A	HSX	80	2	3	2
10346		VORO	04 27	2226	N15	E37	04 30.7			HAX	103	2		3
10346		LEAR	04 28	0035	N16	E36	04 30.7		A	HSX	90	1	2	3
10346		TACH	04 28	0419	N15	E36	04 30.9			CSO	66	2	3	3
10346		RAMY	04 28	1145	N15	E32	04 30.9		B	CSO	80	3	3	3
10346	31700	MWIL	04 28	1430	N16	E30	04 30.9	5	(BP)					
10346		HOLL	04 28	1530	N16	E28	04 30.8		A	HSX	90	3	2	4
10346		LEAR	04 29	0355	N16	E22	04 30.8		B	CSO	100	4	5	3
10346		KAND	04 29	0725	N15	E21	04 30.9			CSO		3	2	5
10346		RAMY	04 29	1228	N15	E19	04 30.9		B	CSO	70	3	3	3
10346		VORO	04 29	2304	N15	E11	04 30.8			HSX	98	1		3
10346		KAND	04 30	0740	N15	E08	04 30.9			HS		1	2	4
10346		SVTO	04 30	0950	N16	E03	04 30.6		A	HSX	60	1	2	3
10346		RAMY	04 30	1220	N16	E05	04 30.9		A	HSX	50	1	2	2
10346		HOLL	04 30	1421	N15	E03	04 30.8		A	HSX	60	1	2	4
10346		VORO	04 30	2232	N14	W01	04 30.9			HSX	92	1		3
10346		LEAR	05 01	0105	N16	W03	04 30.8		A	HSX	50	1	2	4
10346		SVTO	05 01	0740	N15	W07	04 30.8		A	HSX	60	1	2	3
10346		KAND	05 01	1040	N16	W08	04 30.8			HS		1	1	3
10346		HOLL	05 01	1430	N15	W10	04 30.8		A	HSX	60	1	1	2
10346	31700	MWIL	05 01	1445	N15	W10	04 30.8	5	(AP)					
10346		LEAR	05 02	0045	N15	W15	04 30.9		A	HSX	80	1	2	4
10346		VORO	05 02	0624	N15	W18	04 30.9			HSX	102	1		3
10346		SVTO	05 02	0731	N15	W19	04 30.9		A	HSX	40	1	2	3
10346		KAND	05 02	0815	N15	W20	04 30.8			HS		1	2	3
10346		HOLL	05 02	1430	N15	W23	04 30.9		A	HSX	70	1	2	3
10346	31700	MWIL	05 02	1430	N15	W23	04 30.9	5	(AP)					
10346		LEAR	05 03	0145	N15	W29	04 30.9		A	HSX	90	1	2	3
10346		VORO	05 03	0503	N14	W30	04 30.9			HSX	104	1		3
10346		TACH	05 03	0556	N14	W30	05 1.0			HSX	61	1	1	3
10346		KAND	05 03	0612	N15	W32	04 30.8			HS		1	2	4
10346		SVTO	05 03	0825	N15	W32	04 30.9		A	HSX	50	1	1	3
10346		HOLL	05 03	1715	N13	W37	04 30.9		A	HSX	70	1	1	2
10346		VORO	05 04	0008	N14	W40	05 1.0			HSX	100	1		2
10346		LEAR	05 04	0100	N13	W42	04 30.9		A	HSX	80	1	2	3
10346		KAND	05 04	0600	N15	W44	04 30.9			HS		1	1	3
10346		TACH	05 04	0707	N15	W45	04 30.9			HSX	60	1	1	3
10346		SVTO	05 04	0725	N16	W45	04 30.9		A	HSX	60	1	2	3
10346		HOLL	05 04	1720	N14	W50	04 30.9		A	HSX	60	1	2	3
10346		LEAR	05 05	0032	N14	W55	04 30.9		A	HSX	60	1	2	4
10346		SVTO	05 05	0645	N16	W58	04 30.9		A	HSX	40	1	1	3
10346		KAND	05 05	0900	N15	W59	04 30.9			HS		1	2	4
10346		HOLL	05 05	1403	N13	W61	05 1.0		A	HSX	70	1	1	4
10346		LEAR	05 06	0110	N13	W66	05 1.1		A	HSX	50	1	2	2
10346		SVTO	05 06	0510	N16	W68	05 1.0		A	HSX	60	1	2	3
10346		TACH	05 06	0534	N16	W68	05 1.1			HSX	147	1	2	3
10346		KAND	05 06	0845	N15	W74	04 30.8			HS		1	2	4
10346		HOLL	05 06	1320	N13	W71	05 1.2		A	HSX	30	1	1	3
10346	31700	MWIL	05 06	1530	N14	W76	04 30.9	4	(AP)					
10346		LEAR	05 07	0030	N13	W78	05 1.1		A	HSX	60	1	2	3

SUDDEN IONOSPHERIC DISTURBANCES

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Apr 03

APRIL 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	SPA	SES			
01	0801	0803	0808	1-	1					1	0804	B9.1	
01	0920	0934	0948	1	1		1				No flare		
01	1433	1449	1606	2	5		1			1	1432	C2.3	10318
02	1508	1517	1540	1+	5		1			9	1507	C3.6	10324
03	0429	0435	0450	1	1					1	0428	C1.5	10324
03	0713	0715	0743	1+	1					1	0710	C1.9	
03	0748	0805	0942	1	1		1				No flare		
03	1022	1028	1057	2+	5	1	1	1		6	1013	C6.5	10324
03	1500	1519	1530	1	1		1				No flare		
03	2009	2017	2042	2	1					1	2016		10324
04	0550	0557	0628	2	3					2	*		
04	0652	0658	0721	2-	3					2	0650	C2.4	10324
04	0838	0842	0914	1+	5					5	0835	C2.8	10324
04	0950	1001	1020	1+	5					2	0946	C2.0	10324
04	1211	1219	1235	2	5	1	2	1		6	1208	C3.9	10324
04	1335	1341	1401	1	5		1			5	1328	C3.1	10321
04	1414	1420	1448	1	5		1			6	1410	C3.4	10324
04	1547	1554	1612	1	3					4	1546	C2.7	10321
04	1617	1621	1648	1	1		1				No flare		
04	1701	1706	1715	1-	1					1	1700	C1.6	10321
05	0654	0707	0854	1	1		1				No flare		
05	0912	0918	0949	3-	5	1	2	1		8	0909	C6.9	10324
05	1015	1020	1031	2	5	1		1		5	1012	C3.5	
05	1125	1131	1150	1-	3					4	1126	C1.1	
05	1320	1349	1422	1	1		1				No flare		
05	1430	1432	1450	1	1		1				1421	C4.9	10324
05	1456	1511	1527	1+	3		1			2	1421	C4.9	10324
05	1847	1853	1904	1-	1					1	1850	C1.2	
06	0805	0809	0854	3-	5	1	1	1		5	0800	C4.2	10324
06	1920	1928	2011	2	3					3	1918	C5.9	10324
07	1151	1230	1258	1	1		1				No flare		
08	0819	0851	1005	2	1		1				No flare		
08	1035	1050	1206	1	1		1				No flare		
08	1314	1336	1415	1	1		1				No flare		
08	1418	1421	1426	1-	1					1	1417	B3.2	
09	0600	0613	0726	2-	3		1			2	0554	C4.7	
09	0925	0933	1006	3-	5	1	1	1		6	0922	C6.4	
09	1127	1141	1153	1	1		1				No flare		
09	1154	1201	1206	1-	1					1	1154	B7.9	
09	1333	1333	1335	1-	1					1	1327	B4.2	
09	2325	2332	2416	2+	1					1	2323	M2.5	10326
11	0726	0731	0813	3-	5	1	2	1		4	0723	C7.4	
13	0850	0856	0927	1+	5					7	0845	C2.7	10330
14	0504	0505	0532	2	1		1				No flare		
14	0801	0819	0834	2	1					1	0809	B6.4	
15	1357	1400	1406	1-	1					1	1348	B4.4	10330
18	1148	1153	1157	1-	1					1	1147	B7.6	10337
18	1356	1401	1412	1-	1					1	1353	B4.8	10337
18	1953	2000	2041	2	3					3	1950	M1.1	10337
19	1437	1440	1445	1-	1					1	1439	B4.0	
20	1532	1551	1630	1	1		1				No flare		
20	1920	1924	1956	2-	3					4	1918	C4.4	10339

* = no flare patrol.

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Apr 03

SUDDEN IONOSPHERIC DISTURBANCES
APRIL 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			
21	1302	1307	1337	3	5	1	2	1		7	1254	M2.8	10338
21	1556	1601	1609	1-	1					2	1551	C2.3	10337
22	1207	1218U	1251	1	1		1				*		
22	1614	1619	1634	1	5					4	1613	C2.2	10338
22	1952	2009	2103D	2+	1					1	1941	C4.0	10338
22	2104	2107	2123	1	1					1	2103	C3.0	10339
23	1032	1038	1107	1	3					4	1031	C1.9	10338
23	1205	1215	1306	2	5	1	1	1		6	1200	C5.8	10339
23	1542	1545	1555	3	5	1	2	1		8	1536	M2.0	10338
24	0450	0458	0520	2	3					3	0448	C7.1	10339
24	0530	0534	0611	2	3					3	0530	C4.5	10337
24	0811	0815	0847	2	1					1	0809	C1.4	10339
24	1250	1252	1327	3	5	1	2	1		11	1245	M3.3	10338
24	1440	1453	1528	1	1		1				No flare		
24	1545	1547	1606	2+	5	1	2	1		9	1541	C8.2	
25	0056	0100	0105	1-	1					1	0100	C1.5	
25	0529	0534	0543	2	5	1	1	1		3	0523	M1.2	10346
25	0912	0916	0940	1	3					3	0910	C1.7	
25	1359	1410	1422	1	1					1	1344	C1.5	10338
25	1715	1722	1753	2-	3					3	1712	C2.7	10338
25	1948	1953	2031	2	5					5	1945	C7.5	10338
25	2053	2058	2125	1+	5					5	2051	C6.8	10338
25	2159	2202	2232	1+	1					1	2154	C4.1	10338
26	0054	0058	0113	1-	5					3	0051	M2.1	10338
26	0143	0151	0233	2+	1					1	0138	C6.6	10338
26	0302	0306	0349	2-	3					2	0301	M2.1	10338
26	0805	0809	0838	3-	5	1	2	1		5	0801	M7.0	10338
26	1445	1449	1512	2	5	1	2	1		8	1439	C6.0	10338
26	1502	1505	1524	1	1					1	No flare		
26	1541	1543	1604	1	5					4	1537	C1.3	10338
26	1633	1637	1705	2+	5	1	2	1		8	1630	C5.5	10338
26	1756	1759	1832	1+	3					4	1754	C5.1	10338
26	1937	1940	2022	2	3					3	1934	C3.8	10338
26	2337	2340	2405	1+	1					1	2337	M2.5	10338
27	0538	0549	0631	2-	1					1	0537	C2.5	10338
27	0737	0741	0741U	2	5	1	2	1		6	0737	C8.1	
27	0812	0817	0851	1+	3					6	0809	C3.6	10338
27	1211	1217	1233	1	1					2	1210	C1.6	10338
27	1330	1333	1343	1-	1					1	1329	C1.7	10338
27	1530	1532	1550	2+	5	1	1	1		8	1527	M1.7	10338
27	1603	1607	1645	2	5					2	1601	C2.2	10338
27	1607	1625U	1650	1	1		1				1601	C2.2	10338
28	1009	1018	1027	1-	1					1	1010	C1.5	10338
28	1322	1335	1452	1	1		1				1340	B8.9	10337
28	1813	1819	1838	1+	1					1	1811	C3.3	10334
29	1055	1059	1116	1	3					3	1053	C2.1	10349
29	1344	1352	1405	1	1		1				1334	B9.9	10349
29	1405	1410	1441	1	1		1				1334	B9.9	10349
29	1655	1701	1722	1+	1					1	1653	C1.7	10349

OBSERVATORIES REPORTING FOR APRIL 2003

Alberta, Canada	SES	Nerja, Spain	SES
Athens, Greece	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Bedford, Massachusetts, USA	SES	Perth, Australia	SES
Bern, Switzerland	SES	Sofia, Bulgaria	SES
Brookline, Massachusetts, USA	SES	Sussex, United Kingdom	SES
Edenvale, Rep of S. Africa	SES	Torrington, Connecticut, 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.

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

Spectral Observations

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APRIL 2003

OBSERVATION			EVENT				FREQUENCY			Remarks	
Start Day	End Day	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)		
01	0000 0800	HOLL	0005.0	0104.0	III	N	1	32	141	100-200MHz no data	
		LEAR	0006.0	0052.0	III	N	1	25	180		
		CULG	0006.0	0021.0	III	GG	1	27U	180		
		CULG	0052.0	0052.0	III	B	1	30	170		
	0000 0900	HIRA	0052.0	0052.5	III	B	1	25X	110		
		CULG	0243.0	0322.0	III	N	1	20	180		
		LEAR	0302.0	0321.0	III	N	1	25	180		
		CULG	0421.0	0421.0	III	B	3	18X	150		
		HIRA	0421.0	0421.5	III	B	1	30	120		
		LEAR	0421.0	0421.0	III		1	25	180		
		0439 1744	POTS	0528 U	1055	I	S,N	2	200U		400
			CULG	0531.0	0531.0	III	B	1	27U		180
	0600 1200	IZMI	0648.0U	1050.0U	I	N	1	160	270X		
		CULG	0652.0	0704.0	III	G	1	20	180		
		IZMI	0652.5	0653.6	III	G	1	40	140		
		POTS	0659.2	0703.5	III	GG,N	2	200U	450		
		IZMI	0659.5	0703.5	III	GG	1	110	270X		
		POTS	0711.7	0713.6	III	G	2	200U	420		
		IZMI	0713.0	0713.4	III	G	2	165	270X		
		POTS	0718.1	0718.3	III	G	1	200U	280		
		CULG	0719.0	0719.0	III	B	3	23	180		
		HIRA	0719.0	0719.5	III	B	1	25X	110		
		IZMI	0719.0	0719.6	III	B	2	25X	175		
		LEAR	0719.0	0719.0	III		1	25	180		
		POTS	0719.0	0719.3	III	B	2	40X	85U		
		SVTO	0719.0	0719.0	III		1	25	76		
		LEAR	0758.0	0800.0	III		1	25	133		
		SVTO	0758.0	0806.0	III		1	25U	83U		
		IZMI	0758.4	0759.9	III	G	1	25X	130		
		HIRA	0800.5	0801.0	III	B	1	40	130		
		IZMI	0800.6	0801.1	III	G,C,FS	2	25X	160		
		POTS	0800.6	0801.0	III	G	2	40X	85U		
		IZMI	0806.4	0806.6	III	G	1	25X	130		
		IZMI	0927.1	0927.2	III	B	1	45	95		
		IZMI	1008.7	1009.9	III	G	1	25X	95		
		POTS	1009	1055	III	GG,N	2	40X	300		
		SVTO	1009.0	1009.0	III		1	25	42		
		IZMI	1014.7	1024.8	III	GG	2	25X	270X		
		SVTO	1018.0	1020.0	III		1	25	48		
		IZMI	1031.2	1032.9	III	G	1	50	90		
	IZMI	1038.5	1054.7	III	N	2	45	95			
	IZMI	1039.2	1039.4	III	G	1	50	265			
	IZMI	1047.1	1048.8	III	G	2	50	65			
	POTS	1220.0	1220.5	III	B	2	40X	240			
	SGMR	1220.0	1220.0	III		1	30	55			
	SVTO	1220.0	1221.0	III		2	25U	83U			
	POTS	1224.0	1224.7	DCIM		2	230	340			
	0555 1700	POTS	1226.6	1728 U	I	S,N	2	200U	370		
		POTS	1237.7	1238.4	III	G	2	200U	350		
		BLEN	1237.7	1238.4	III	GG,S	1	160	350		
POTS		1328.6	1329.2	DCIM		1	250	460			
POTS		1338	1409	III	GG,N	2	40X	450			
HOLL		1351.0	1357.0	III		1	25	180			
SVTO		1351.0	1405.0	III	N	1	25	180			
SGMR		1355.0	1357.0	III		2	30	55			
POTS		1418.7	1419.9	III	GG	2	200U	500			
HOLL		1435.0	1443.0	III		1	25	180			
0548 1623	SVTO	1435.0	1443.0	III		1	25	180			
	ONDR	1435.2	1437.4	DCIM	G	1	800X	1156			
	BLEN	1435.5	1439.7	III	GG,C	3	100X	4000X			
	POTS	1435.6	1456.7	III	GG,N	2	200U	720			
	HOLL	1449.0	1600.0	III	N	1	25	180			
	SVTO	1449.0	1456.0	III		2	25U	152U			
	SGMR	1450.0	1454.0	III		2	30	80			
	POTS	1646.8	1649.0	III	GG,N	2	200U	720			
	HOLL	1710.0	1710.0	III		1	25	58			
	HOLL	1909.0	1911.0	V		1	25	180			
	PALE	1909.0	1911.0	III		1	25	155			
	SGMR	1909.0	1910.0	III		3	30	80			

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SOLAR RADIO EMISSION Spectral Observations

APRIL 2003

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)	
01	2023	2400	HIRA								
	2020	2400	CULG	2038.0	2049.0	III	G	1	20	180	
02			LEAR	0254.0	0254.0	III		1	25	144	
	0000	0750	CULG	0254.0	0254.0	III	B	1	35U	180	
	0000	0901	HIRA	0254.0	0254.5	III	B	1	30	140	
			PALE	0331.0	0332.0	III		1	25	70	
			CULG	0340.0	0349.0	III	G	1	20	180	
			LEAR	0340.0	0348.0	III		1	25	180	
			HIRA	0342.5	0344.5	III	G	1	25X	200	
	0437	1744	POTS	0446 U	0947	I	S,N	2	200U	330	100-200MHz no data
	0547	1625	ONDR								
	0555	1705	BLN								
	0600	1200	IZMI	0600.0E	0935.0U	I	N	1	180	270	
			LEAR	0615.0	0616.0	III		1	25	180	
			SVTO	0615.0	0619.0	III		1	25	84	
			HIRA	0615.5	0616.0	III	B	1	30	170	
			IZMI	0615.6	0616.4	III	G	2	25X	170	
			CULG	0616.0	0616.0	III	B	1	20	180	
			IZMI	0618.6	0619.5	III	G	1	45	85	
			IZMI	0621.6	0621.8	III	B	1	45	85	
			LEAR	0702.0	0702.0	III		1	25	99	
			SVTO	0702.0	0702.0	III		1	25	80	
			HIRA	0702.5	0703.0	III	B	1	40	70	
			IZMI	0702.5	0702.9	III	G	2	25X	95	
			CULG	0703.0	0703.0	III	B	1	27U	75	
			HIRA	0738.0	0739.0	III	G	1	30	250	
			LEAR	0738.0	0738.0	III		1	25	180	
			SVTO	0738.0	0738.0	III		2	25	123	
			POTS	0738.1	0738.7	III	GG	2	40X	300	
			IZMI	0738.2	0738.7	III	G	2	25X	270X	
			POTS	0755.1	0755.3	DCIM		1	380	500	
			POTS	0755.1	0755.4	III	B	2	40X	500	
			IZMI	0755.2	0755.4	III	B	1	30	50	
			POTS	0755.2	0755.4	III	B	2	40X	340	
			SVTO	0817.0	0819.0	III		1	25	77	
			IZMI	0817.7	0819.4	III	GG	2	25X	160	
			POTS	0817.7	0819.4	III	G	2	40X	85	
			HIRA	0819.0	0819.5	III	B	1	50	70	
			LEAR	0900.0	0901.0	III		1	25	72	
			SVTO	0900.0	0900.0	III		1	25	52	
			IZMI	0900.6	0900.9	III	G	2	25X	60	
			POTS	0900.6	0900.9	III	G	2	40X	60	
			IZMI	0910.5	0910.7	III	G	1	45	65	
			IZMI	0923.0	0923.2	III	B	1	40	65	
			POTS	0923.0	0923.3	III	B	1	40X	80	
			POTS	1034.8	1038.4	III	GG	2	40X	85U	
			POTS	1035.1	1722 U	I	S,N	1	210	380	
			SVTO	1036.0	1038.0	III		1	25	136	
			IZMI	1036.7	1038.3	III	GG	2	25X	190	
			POTS	1038.6	1038.7	DCIM		2	370	440	
			POTS	1634.7	1636.4	III	GG	1	200U	420	
			HOLL	1640.0	1640.0	III		1	25	136	
			SGMR	1640.0	1640.0	III		1	30	50	
			SVTO	1640.0	1640.0	III		1	25	131	
			POTS	1640.2	1640.6	III	G	1	40X	280	
	2020	2400	CULG								
	2022	2400	HIRA								
			HOLL	2022.0	2023.0	III		1	25	106	
			PALE	2022.0	2023.0	III		1	25	79	
03	0000	0750	CULG								
	0000	0902	HIRA								
	0436	1748	POTS	0451 U	1738 U	I	S,N	2	200U	420	100-200MHz no data
	0555	0905	BLN								
	0600	1204	IZMI	0621.0U	1204.0D	I	N	2	50	270X	
			IZMI	0626.0	0640.0	III	N	1	45	95	
			LEAR	0756.0	0943.0	III	N	1	98	180	
			SVTO	0802.0	1348.0	III	N	1	35U	180U	

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Spectral Observations

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APRIL 2003

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)	
03			IZMI	0831.3	0849.0	III	N	2	40	250	
			IZMI	0841.6	0844.5	III	G	1	45	270X	
			IZMI	0922.0	0922.1	III	B	1	55	165	
			POTS	0925.9	0926.1	III	B,U	1	40X	80	
	0545	1627	ONDR	1021.3	1026.4	DCIM	G	1	800X	2000X	
			ONDR	1023.5	1026.5	DCIM	G	1	2000X	4500X	
			IZMI	1040.6	1057.7	III	G	1	45	95	
			IZMI	1041.9	1042.0	III	B	1	135	240	
			IZMI	1114.6	1146.2	III	N	1	45	95	
			SVTO	1421.0	1653.0	III	N	1	25	156	
			HOLL	1535.0	1535.0	III		1	25	83	
			HOLL	1535.0	1733.0	III	N	1	25	84	
			SVTO	1602.0	1603.0	III		1	25U	157U	
			POTS	1602.8	1604.0	III	GG	2	40X	430	
			POTS	1659.4	1659.6	III	B	2	40X	250	
			SGMR	1947.0	1947.0	III		2	30	50	
	2020	2400	HOLL	2120.0	2208.0	III	N	1	37	121	
			CULG	2120.0	2120.0	III	B	1	27	90	
			CULG	2137.0	2137.0	III	B	1	27	70	
			CULG	2219.0	2220.0	III	G	1	27	90	
			HOLL	2219.0	2219.0	III		1	37	119	
			HOLL	2258.0	0002.0	III	N	1	25	155	
	2020	2400	PALE	2316.0	2317.0	III		1	25	130	
			HIRA	2316.5	2317.0	III	B	2	25X	120	
			CULG	2317.0	2317.0	III	B	2	18	100	
			LEAR	2320.0	0755.0	CONT		1	75	180	
04	0000	0903	HIRA								
			LEAR	0025.0	0755.0	III	N	1	25	88	
	0435	1730	POTS	0443 U	1730 U	I	S,N,DC	2	200U	420	100-200MHz no data
	0543	1628	ONDR								
	0555	1705	BLEN								
	0555	1200	IZMI	0555.0E	0735.0U	III	N	2	45	95	
			IZMI	0555.0E	1200.0U	I	N	2	50	270X	
			SVTO	0600.0	0604.0	III		1	25U	130U	
			IZMI	0601.2	0606.9	III	GG	1	45	185	
			SVTO	0610.0	0748.0	III	N	2	25	180	
			IZMI	0611.1	0639.7	III	S	2	40	210	
			IZMI	0621.1	0622.9	III	G	2	25X	210	
			IZMI	0701.6	0705.3	III	GG	2	25X	135	
	0000	0750	CULG	0702.0	0712.0	III	GG	1	30	180	
			POTS	0702.3	0705.2	III	G	2	40X	80	
			IZMI	0841.5	0841.8	III	G	1	40	85	
			POTS	0841.6	0842.0	III	G	2	40X	85U	
			POTS	0944.5	0953.8	III	GG,N	2	40X	85U	
			IZMI	0945.5	0949.9	III	GG	2	25X	135	
			SVTO	0946.0	0951.0	III		1	25	124	
			POTS	1004.9	1007.5	III	GG	2	40X	85U	
			IZMI	1049.0	1049.3	III	G	1	200	245	
			IZMI	1105.0	1107.0	III	GG	2	25X	95	
			SVTO	1105.0	1106.0	III		1	25U	83U	
			SGMR	1210.0	1211.0	III		1	30	55	
			SVTO	1210.0	1217.0	III		1	25	147	
			POTS	1210.8	1220.2	III	GG,N	3	40X	85U	
			HOLL	1327.0	1345.0	III	N	1	25	150	
			SGMR	1329.0	1336.0	III		1	30	65	
			SVTO	1329.0	1345.0	III	N	1	25	148	
			POTS	1329.3	1330.9	III	GG	2	40X	400	
			POTS	1334.0	1345.0	III	GG,N	2	40X	85U	
			HOLL	1546.0	1547.0	III		1	25	87	
			SVTO	1546.0	1546.0	III		1	25U	83U	
			PALE	1729.0	1729.0	III		1	25	86	
			SGMR	1729.0	1730.0	III		2	30	65	
			HOLL	1956.0	1957.0	III		1	26	39	
			PALE	1956.0	1957.0	III		1	25	51	
			PALE	2005.0	2008.0	III		1	25	180	
	2019	2400	HOLL	2006.0	2006.0	III		1	25	178	
			HIRA								
			HOLL	2019.0	2154.0	CONT		1	25	180	

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

APRIL 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)							
04	2020	2400	HOLL	2028.0	2113.0	III	N	1	25	178	ESS 350							
			CULG	2033.0	2047.0	III	GG	1	30U	90								
			CULG	2057.0	2100.0	UNCLF		1	35	90								
			CULG	2114.0	2122.0	UNCLF		1	30	75								
			CULG	2132.0	2151.0	II	FN	2	30	70								
			LEAR	2314.0	0400.0		CONT	1	25	180								
05	0000	0903	HIRA	0309.0	0313.0	III	G	1	23	90	100-200MHz no data							
	0000	0750	CULG															
	0541	1630	ONDR															
	0550	1710	BLEN	0707	0748	I	S,N	1	200U	240								
	0433	1750	POTS															
			POTS	0827.7	0834.8	III	G,N	1	220	430								
			POTS	0839	U 0904	I	S,N	1	200U	350								
	0608	1200	POTS	0901.8	0902.7	III	G	1	40X	85U								
			IZMI	0901.9	0902.3	III	G,C	2	55	155								
			LEAR	0902.0	0902.0	III		1	25	157								
			SVTO	0902.0	0902.0	III		1	62U	142U								
			IZMI	0939.4	0939.7	III	G	1	45	95								
			POTS	0939.4	0939.8	III	G	2	40X	270								
			POTS	1027.3	1027.8	III	G	1	200U	330								
			POTS	1229.8	1230.2	III	G	2	40X	85U								
			POTS	1256	1511	I	S,N	1	200U	340								
			POTS	1301.9	1302.2	III	G	2	40X	85U								
			POTS	1334.0	1334.4	III	G	2	40X	800X								
			HOLL	1407.0	1409.0	III		1	25	78								
			SGMR	1509.0	1511.0	III		1	30	50								
			SVTO	1509.0	1511.0	III		1	32U	71U								
			POTS	1509.5	1511.1	III	G	1	40X	80								
			POTS	1534.8	1539.2	DCIM		1	210	450								
	POTS	1634	1652	I	S,N	1	200U	270										
	HOLL	1715.0	1715.0	III		1	25	164										
	HOLL	1952.0	0001.0	III	N	1	25	73										
	SGMR	1952.0	2008.0	III	N	1	30	60										
	2017	2400	HIRA	2348.0	2348.0	III		1	114	143								
	2020	2400	CULG															
	06	0000	0750	CULG	0523	U 1419	I	S,N	1	200U		400	100-200MHz no data					
		0000	0904	HIRA														
		0431	1752	POTS														
0550		1710	BLEN	0801	0810	DCIM		2	210	460								
			POTS															
0600		1200	IZMI	0808.0U	1200.0D	I	SG	2	50	270X								
0539		1631	ONDR	0808.1	0809.5	DCIM	G	1	2166	4500X								
			SVTO	0908.0	0908.0	III		1	25	44								
			SVTO	1014.0	1250.0	CONT		1	75	168								
			IZMI	1101.5	1101.5	III	B	1	45	90								
			POTS	1124	1220	I	S,N	2	50	85U								
			POTS	1200.3	1200.7	III	B	1	40X	85U								
			POTS	1223	1250	III	G,N	1	40X	85U								
			POTS	1506	1521	I	S,N	1	250	400								
			HOLL	1845.0	1846.0	III		1	25	58								
2016		2400	HIRA	2348.0	2348.0	III		1	114	143								
2020		2400	CULG															
07		0000	0750	CULG	0021.0	0021.0	III	B	1	100	180	100-200MHz no data						
				CULG	0205.0	0205.0	III	B	1	100	180							
				CULG	0250.0	0257.0	III	G	1	27U	330							
			LEAR	0250.0	0256.0	III		1	25	180								
	0000	0905	HIRA	0250.5	0255.0	III	G	1	25X	280								
			PALE	0251.0	0255.0	III		1	25	180								
			CULG	0505.0	0507.0	III	G	1	35	90								
	0537	1633	ONDR	0629	1113	I	S,N	1	200U	280								
	0545	1710	BLEN															
	0430	1754	POTS															
			POTS								0826.6		0827.4	III	GG	2	200U	440
			LEAR								0849.0		0849.0	III		1	60	112
			SVTO	0849.0	0851.0	III		1	29	70								

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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)	
07	0600	1200	POTS	0849.2	0849.7	III	B	2	50	85U		
			IZMI	0849.2	0850.2	III	G,C	2	50	90		
			IZMI	0901.9	0902.0	III	G	1	45	65		
			POTS	0901.9	0902.1	III	B	1	40X	65		
			POTS	1042.6	1046.1	III	GG	2	200U	750		
			IZMI	1043.3	1045.9	III	GG	2	150	270X		
			POTS	1103.1	1104.0	DCIM		1	210	400		
			IZMI	1111.4	1111.7	III	G,HARM	2	30	90		
			POTS	1111.4	1111.8	III	B	2	55	85U		
			POTS	1143.4	1148.0	DCIM		2	200U	520		
			POTS	1145.2	1145.4	III	B	1	40X	55		
			POTS	1150	1743 U	I	S,N	1	200U	300		
			SVTO	1248.0	1248.0	III		1	28	49		
			POTS	1248.3	1248.5	III	B	1	40X	55		
			POTS	1331.0	1332.5	DCIM	U	1	200U	430		
			POTS	1425.2	1426.6	III	GG	2	70	500		
			HOLL	1426.0	1426.0	III		1	73	160		
			SVTO	1426.0	1426.0	III		1	71	151		
			POTS	1520.8	1521.1	DCIM		1	240	400		
	2015	2400	HIRA	2114.0	2114.5	III	B	1	80	180		
	2020	2400	CULG	2114.0	2115.0	III	G	1	25U	180		
			HOLL	2209.0	2229.0	III	N	1	25	88		
			HIRA	2301.5	2302.0	III	B	1	25X	80		
			CULG	2302.0	2305.0	III	G	1	27	440		
08	0000	0750	CULG	0245.0	0245.0	III	B	1	100	160		
			CULG	0304.0	0304.0	III	B	1	25	180		
			CULG	0321.0	0321.0	III	B	1	90	180		
	0000	0906	HIRA	0321.0	0321.5	III	B	1	80	200		
			LEAR	0354.0	0354.0	III		1	69	180		
			HIRA	0354.5	0355.0	III	B	2	60	130		
	0428	1755	CULG	0355.0	0355.0	III	B	1	65	180		
			POTS	0428 E	1740 U	I	S,N,DC	2	200U	400	100-200MHz no data	
			CULG	0514.0	0658.0	III	N	1	40U	180		
	0534	1634	ONDR									
	0600	1200	IZMI	0616.0	0618.9	III	GG	1	40	90		
			IZMI	0624.0	0624.3	III	G	2	45	220		
			CULG	0730.0	0730.0	III	B	1	27	150		
			IZMI	0730.3	0730.5	III	G	1	45	85		
			IZMI	0733.0U	1200.0D	I	N	2	130	270X		
			IZMI	0822.3	0822.4	III	G	1	25X	95		
			IZMI	0825.5	0827.7	III	GG	2	40	180		
			IZMI	0841.0	0841.2	III	G	1	45	85		
			POTS	0905.0	0905.3	III	B	1	40X	65		
			IZMI	0905.8	0905.9	III	G	1	135	190		
			POTS	0958.1	1000.6	DCIM		2	270	600		
			POTS	1005.5	1006.4	DCIM		1	280	460		
			POTS	1135.3	1135.5	III	B	1	40X	60		
			POTS	1139.3	1140.9	DCIM		2	220	800X		
			POTS	1220.9	1223.5	DCIM		2	200U	800X		
			HOLL	1338.0	1443.0	III	N	1	25	75		
			SVTO	1338.0	1446.0	III	N	1	30U	62U		
			POTS	1338.2	1338.6	III	B,U	2	40	70		
			POTS	1350.3	1350.6	III	B	1	40X	70		
			POTS	1430.9	1431.2	III	B,U	2	55	85U		
			HOLL	1536.0	1536.0	III		1	25	93		
			SVTO	1536.0	1536.0	III		1	39	48		
			HOLL	1927.0	1927.0	III		1	25	90		
					PALE	1927.0	1927.0	III		25U	89U	
					SGMR	1927.0	1927.0	III		1	30	80
	2013	2400	HIRA									
			HOLL	2111.0	2113.0	III		1	25	48		
		2020	2400	CULG	2112.0	2113.0	III	G	1	20	90	
				CULG	2117.0	2117.0	III	B	1	100	180	
	CULG			2300.0	2300.0	III	B	1	30	90		
09	0000	0750	LEAR	0342.0	0348.0	III		1	25	180		
			CULG	0348.0	0349.0	III	G	3	23	230		
	0000	0907	HIRA	0348.5	0349.0	III	B	2	25X	220		

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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)	
09	0427 1754	CULG	0420.0	0422.0	III	G	1	40U	180		
		HIRA	0421.0	0421.5	III	B	1	30	110		
		LEAR	0421.0	0421.0	III		1	25	180		
	0500 1200	POTS	0436 U	1740 U	I	S,N,DC	2	200U	350	100-200MHz no data	
		CULG	0533.0	0533.0	III	B	1	27U	90		
		IZMI	0555.0E	0820.0U	I	N	1	130	270X		
	0532 1636	IZMI	0613.7	0613.8	III	G	1	50	85		
		IZMI	0644.0	0644.1	III	G	1	85	95		
		SVTO	0650.0	0650.0	III		1	25	58		
		IZMI	0650.3	0650.7	III	G	1	25X	95		
		IZMI	0709.2	0709.2	III	B	1	70	90		
		IZMI	0828.1	0828.4	III	G	1	55	90		
		IZMI	0900.5	0901.7	III	G	1	55	85		
		IZMI	0919.4	0919.5	III	G	1	110	150		
		ONDR	0926.1	0930.5	DCIM	G	2	800X	2000X		
		POTS	0927.0	0931.2	DCIM		2	300	800X		
		SVTO	0928.0	0930.0	III		2	25	42		
		ONDR	0929.0	0930.0	DCIM	G	1	2000X	4500X		
		IZMI	0929.5	0930.1	III	G	1	25X	140		
		POTS	0938.3	0938.5	III	B,RS	2	42	55		
		IZMI	1017.5	1017.5	III	B	2	125	160		
		SVTO	1135.0	1135.0	III		1	25	44		
		IZMI	1135.4	1135.7	III	G	1	25X	215		
		POTS	1135.4	1135.7	III	B	2	40X	300		
		SVTO	1212.0	1213.0	III		1	25	42		
		SVTO	1512.0	1513.0	III		1	25	55		
		HOLL	1700.0	1704.0	III		1	25	180		
		SGMR	1700.0	1703.0	III		1	30	65		
		POTS	1700.3	1703.9	III	GG	2	40X	360		
	2011 2400	HIRA									
	2020 2400	CULG	2036.0	2056.0	III	N	1	20	90		
		CULG	2147.0	2147.0	III	B	1	100	180		
		CULG	2327.0	2330.0	III	G	1	30	180		
		LEAR	2327.0	2328.0	III		1	25	123		
		PALE	2339.0	0432.0	CONT		1	99	180		
		CULG	2340.0	2341.0	II	FN	1	57	70		
		CULG	2340.0	2350.0	II	SH	1	57	140	ESS 350	
10	0000 0907	HIRA									
	0000 0740	CULG	0136.0	0154.0	III	N	1	27U	180		
		LEAR	0137.0	0142.0	III		1	25	88		
		CULG	0332.0	0332.0	III	B	1	30U	90		
		CULG	0348.0	0348.0	III	B	1	30U	90		
		CULG	0425.0	0721.0	III	N	1	20	180		
	0426 1757	POTS	0433 U	1742 U	I	S,N,DC	2	200U	390	100-200MHz no data	
	0530 1637	ONDR									
		LEAR	0537.0	0538.0	III		1	25	180		
		SVTO	0537.0	1700.0	III	N	2	25	180		
		SVTO	0538.0	0538.0	III		1	28U	84U		
		LEAR	0543.0	0937.0	III	N	1	25	180		
	0608 1200	IZMI	0545.0E	1156.0U	III	N	1	45	95		
		IZMI	0550.7	0551.4	III	G	1	45U	95U		
		IZMI	0605.7	0605.9	III	G	1	45U	95U		
		IZMI	0608.0E	1200.0D	I	N	2	120	270X		
		IZMI	0621.0	0622.2	III	G	1	40	120		
		IZMI	0750.2	0750.8	III	G	1	40	270X		
		POTS	0750.2	0750.8	III	G	2	40X	50		
		IZMI	0814.5	0814.8	III	G	1	45	145		
		IZMI	0819.5	0822.9	III	G	1	40	140		
		IZMI	0839.4	0839.6	III	G	1	40	155		
		POTS	0839.4	0847.5	III	GG,N	2	40X	480		
		IZMI	0846.4	0847.4	III	G	1	30	265		
		IZMI	0908.9	0913.4	III	GG	1	45	235		
		POTS	0908.9	0909.2	DCIM		1	370	470		
		IZMI	0916.0	0922.6	III	GG	1	35	270X		
		POTS	0922.5	0922.7	III	B	2	40X	85U		
		IZMI	0937.0	0941.0	III	GG	1	45	200		
		POTS	0938.0	0941.1	III	G,N	2	40X	600U		
		POTS	1001.0	1001.7	III	G	3	40X	440		

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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)
10			IZMI	1001.3	1002.1	III	G,C	2	30	260	
			POTS	1001.5	1002.1	V	B	3	40X	60	
			IZMI	1012.4	1013.1	III	G	1	45	135	
			POTS	1012.5	1012.7	III	B	1	40X	240	
			IZMI	1019.7	1020.4	III	G	1	45	90	
			POTS	1051.7	1124.3	III	GG,N,U	2	40X	85U	
			IZMI	1055.6	1058.8	III	G	2	40	150	
			IZMI	1118.5	1118.6	III	B	2	65	95	
			POTS	1210.3	1210.5	III	G	1	40X	60	
			POTS	1221.3	1221.7	III	B	1	40X	85U	
			POTS	1340.0	1340.3	III	B	1	40X	55	
			POTS	1346.3	1346.6	DCIM		2	210	450	
			HOLL	1432.0	1456.0	III	N	1	25	131	
			HOLL	1432.0	1656.0	III	N	1	25	131	
			POTS	1432.0	1446.3	III	GG,N	2	40X	440	
			POTS	1438.4	1448.6	DCIM		1	270	500	
			SGMR	1445.0	1445.0	III		1	30	80	
			PALE	2024.0	2024.0	III		1	25	100	
2010	2400		HIRA	2024.0	2024.5	III	B	1	25X	////	
			HIRA	2243.0	2243.5	III	B	1	25X	////	
2020	2400		CULG	2243.0	2243.0	III	B	1	30U	90	
			CULG	2332.0	2332.0	III	B	1	18	180	
			HIRA	2332.0	2338.0	III	G	1	25X	////	
			HOLL	2332.0	2338.0	III		1	25	180	
			LEAR	2332.0	2338.0	III	N	2	25	180	
			PALE	2332.0	0335.0	III	N	1	25	180	
			CULG	2337.0	2338.0	III	G	1	30	180	
			HOLL	2339.0	2350.0	II		1	71	144	ESS 0241
			LEAR	2339.0	0937.0	CONT		1	64	180	
			CULG	2356.0	2356.0	III	B	1	57	150	
11	0000	0740	CULG	0149.0	0227.0	III	N	1	18	160	
			LEAR	0154.0	0935.0	III	N	1	25	155	
			LEAR	0259.0	0935.0	CONT		1	125	180	
			CULG	0357.0	0357.0	III	B	1	20	150	
	0000	0908	HIRA	0357.0	0357.5	III	B	1	30	110	
			CULG	0406.0	0406.0	III	B	1	50	140	
	0424	1759	POTS	0430 U	1746 U	I	S,N,DC	2	200U	410	100-200MHZ no data
			POTS	0437.9	0438.3	III	G	2	40X	300	
			CULG	0438.0	0438.0	III	B	3	20	150	
			HIRA	0438.0	0438.5	III	B	2	40	130	
			CULG	0453.0	0615.0	III	N	1	40U	180	
			SVTO	0527.0	1413.0	III	N	2	25	180	
			HIRA	0536.5	0541.0	III	G	2	30	200	
			POTS	0536.8	0537.9	III	G	2	40X	400U	
			CULG	0537.0	0539.0	III	G	2	20	180	
	0558	1205	IZMI	0555.9	0559.2	III	GG	2	25X	95U	
			IZMI	0558.0E	1205.0E	I	N,C	2	120	270X	
			IZMI	0600.9	0608.3	III	GG	2	30	85	
			IZMI	0610.4	0614.8	III	GG	2	25X	155	
			HIRA	0611.0	0613.5	III	G	1	30	100	
			SVTO	0709.0	0712.0	III		2	25	180	
			HIRA	0709.5	0711.5	III	G	2	25X	200	
			IZMI	0709.5	0712.6	III	GG,C	2	25X	270X	
			POTS	0709.7	0712.1	III	GG	3	40X	800X	
			CULG	0710.0	0712.0	III	G	3	25	280	
			POTS	0710.2	0710.8	V	B	3	40X	55	
			IZMI	0718.2	0720.3	III	GG	1	35	155	
			CULG	0720.0	0733.0	III	G	1	30U	180	
			IZMI	0726.2	0729.1	III	GG	1	25X	270	
			POTS	0728.0	0728.9	DCIM	RS	2	200U	800X	
	0528	1639	ONDR	0728.3	0728.5	DCIM	G	1	800X	2000X	
			ONDR	0728.3	0728.4	DCIM	G	2	2000X	3621	
			IZMI	0732.4	0733.4	III	G	2	25X	170	
			POTS	0732.5	0745.2	III	G,N	3	40X	85U	
			CULG	0733.0	0733.0	III	B	2	30	170	
			HIRA	0733.0	0733.5	III	B	1	30	130	
			IZMI	0736.4	0748.0	III	GG	2	25X	180	
			SVTO	0806.0	0806.0	III		1	25	150	

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OBSERVATION			EVENT			FREQUENCY			Remarks	
Start Day	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)
11		IZMI	0806.4	0806.6	III	G,C	2	25X	270X	
		POTS	0806.4	0806.6	III	B	2	40X	540	
		HIRA	0806.5	0807.0	III	B	1	40	330	
		IZMI	0818.8	0819.1	III	G	2	25X	160	
		POTS	0818.8	0844.9	III	GG,N	2	40X	620	
		IZMI	0825.2	0828.1	III	G	1	25X	160	
		IZMI	0830.6	0832.8	III	GG	2	25X	270X	
		IZMI	0839.2	0844.5	III	GG	2	30	215	
		IZMI	0857.5	0857.7	III	G	1	45	95	
		IZMI	0907.4	0908.6	III	G	1	40	95	
		POTS	0907.4	0921.6	III	GG,N	3	40X	800X	
		IZMI	0911.7	0912.7	III	G	1	40	95	
		SVTO	0915.0	0921.0	V		2	25	180	
		IZMI	0916.7	0920.6	III	GG,C	2	25X	270X	
		POTS	0919.1	0920.1	V	G	3	40X	60	
		IZMI	0921.1	0921.4	III	G	2	40	270X	
		ONDR	0921.1	0921.2	DCIM	G	2	800X	1939	
		IZMI	0942.1	0944.3	III	GG,C	2	25X	270X	
		POTS	0942.1	0944.2	III	G	3	40X	550	
		IZMI	0950.2	0950.8	III	G	1	40	95	
		POTS	0950.2	0950.5	III	B	1	40X	70	
		IZMI	0955.5	1001.3	III	G	1	45	95	
		POTS	1016.3	1016.7	III	B	1	40X	55	
		POTS	1030.7	1031.0	III	B	1	40X	55	
		IZMI	1041.6	1041.9	III	G	1	45X	95	
		IZMI	1046.4	1048.6	III	G	1	35	190	
		IZMI	1054.2	1054.4	III	G	1	60	95	
		POTS	1059.8	1101.7	III	G	2	40X	320	
		IZMI	1059.9	1101.5	III	G	2	40	170	
		SGMR	1125.0	1125.0	III		1	30	55	
		POTS	1125.3	1125.9	III	GG	3	40X	420	
		IZMI	1125.4	1125.7	III	G	2	25X	270X	
		POTS	1237.0	1237.4	III	B	2	40X	85U	
		POTS	1245.0	1256.0	III	G,N	2	40X	85U	
		POTS	1309.3	1312.2	III	G,N	2	40X	85U	
		HOLL	1337.0	1338.0	III		1	36	141	
		SGMR	1337.0	1355.0	III	N	3	30	80	
		POTS	1337.2	1338.5	III	GG	2	40X	280	
		HOLL	1354.0	1355.0	III		1	25	166	
		POTS	1354.7	1355.1	III	G	3	40X	240	
		POTS	1401.6	1402.3	III	G	2	40X	320	
		SVTO	1503.0	1514.0	III		2	25	180	
		HOLL	1504.0	1702.0	III	N	1	25	141	
		POTS	1504.0	1514.2	III	GG,N	2	40X	800X	
		SGMR	1504.0	1513.0	III	N	2	30	80	
	1235 1715	BLEN	1507.0	1514.1	III	GG,RS	2	100X	1600	
		SVTO	1543.0	1551.0	III		1	36	79	
		SVTO	1606.0	1620.0	III	N	1	28	165	
		POTS	1607.0	1607.6	III	G	2	40X	330	
		SGMR	1607.0	1616.0	III		1	30	55	
HOLL		1730.0	1853.0	III	N	1	25	89		
PALE		1809.0	1809.0	III		1	25	73		
SGMR		1809.0	1809.0	III		1	30	60		
PALE		1823.0	1824.0	III		1	25	83		
HOLL		1903.0	2230.0	III	N	1	25	180		
2020 2400 2009 2400	PALE	1903.0	0404.0	III	N	1	25	88		
	CULG	2115.0	2115.0	III	B	1	30	170		
	HIRA	2115.5	2116.0	III	B	1	25X	140		
	HOLL	2251.0	2252.0	III		1	25	180		
	HIRA	2251.5	2253.0	III	G	1	25X	120		
	CULG	2252.0	2253.0	III	G	1	27	180		
	HOLL	2323.0	2328.0	III		1	25	180		
	HIRA	2325.5	2328.5	III	G	1	25X	200		
	CULG	2326.0	2328.0	III	G	1	27	180		
	LEAR	2327.0	2328.0	III		1	25	180		
12		LEAR	0045.0	0046.0	III		1	25	180	
	0000 0909	HIRA	0045.5	0046.0	III	B	1	25X	130	
	0000 0740	CULG	0046.0	0046.0	III	B	1	18	150	

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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)				Class	Remarks		(MHz)	(MHz)	
12		CULG	0149.0	0149.0	III	B	1	35	90	100-200MHz no data
		CULG	0240.0	0244.0	III	G	1	30	90	
		CULG	0336.0	0336.0	III	B	1	100	400	
		LEAR	0423.0	0424.0	III		1	25	120	
		HIRA	0423.5	0424.0	III	B	1	30	80	
		CULG	0424.0	0424.0	III	B	1	35	130	
		0422 1801	POTS	0432 U	1745 U	I	S,N,DC	2	200U	420
			CULG	0451.0	0513.0	III	N	1	27	150
			POTS	0454.3	0455.4	DCIM		2	200	500
			LEAR	0459.0	0512.0	III	N	1	25	180
			SVTO	0503.0	0510.0	III		1	30	79
		0526 1640	ONDR							
			SVTO	0552.0	0556.0	III		1	39	75
			CULG	0557.0	0557.0	III	B	1	30	90
		0600 1200	IZMI	0600.0E	1200.0D	I	N	1	130	270X
			LEAR	0631.0	0632.0	III		1	25	149
			SVTO	0631.0	1219.0	III	N	2	25	180
			HIRA	0631.5	0632.0	III	B	1	50	120
			IZMI	0631.5	0632.4	III	G	2	40	145
			CULG	0632.0	0710.0	III	N	1	30	150
			IZMI	0638.7	0640.6	III	G	1	40	95
			IZMI	0651.2	0652.0	III	G	1	40	90
			IZMI	0657.5	0658.0	III	G	1	45	90
			IZMI	0710.5	0712.5	III	GG,C	2	25X	260
			CULG	0711.0	0712.0	III	G	2	30	220
			HIRA	0711.0	0736.5	III	G	2	30	260
			LEAR	0711.0	0712.0	III		1	25	180
			SVTO	0711.0	0720.0	III		2	25	180
			POTS	0712.1	0720.3	III	G,N	3	40X	650
			LEAR	0718.0	0720.0	III		1	25	180
			IZMI	0718.9	0720.6	III	GG	2	25X	270X
			CULG	0719.0	0720.0	III	G	1	30	250
		0540 1715	BLEN	0719.0	0720.1	III	GG	2	130	400
			CULG	0734.0	0736.0	III	G	1	40U	180
			LEAR	0734.0	0808.0	III	N	1	25	180
			IZMI	0734.2	0738.0	III	GG	1	25X	175
			POTS	0736.8	0746.3	III	G,N	2	40X	420
			IZMI	0742.0	0747.7	III	GG	1	45	95
			IZMI	0745.3	0745.5	III	G	2	25X	175
			IZMI	0757.6	0757.7	III	G	2	40	95
			POTS	0758.4	0810.8	III	GG,N	3	40X	650
			HIRA	0802.0	0809.0	III	G	2	30	230
			IZMI	0802.1	0809.7	III	GG,U	2	25X	270X
			SVTO	0803.0	0803.0	III		2	25	170
			SVTO	0808.0	0809.0	III		1	28U	84U
			IZMI	0817.4	0823.2	III	GG	1	45	175
			IZMI	0834.9	0935.2	III	G	1	45	95
			POTS	0835.8	0836.3	III	G	1	40X	370
			IZMI	0840.2	0840.8	III	G	1	45	95
			LEAR	0849.0	0934.0	III	N	1	25	180
			HIRA	0849.5	0851.0	III	G	1	40	310
			IZMI	0849.5	0853.5	III	GG	2	25X	270X
			SVTO	0850.0	0850.0	III		2	25	180
			POTS	0850.3	0854.3	III	GG	3	40X	500
			POTS	0856.9	0857.5	DCIM		2	250	580
			SVTO	0900.0	0902.0	III		2	25	180
			IZMI	0900.3	0903.5	III	GG	2	25X	250
			POTS	0901.4	0903.8	III	GG	3	40X	800X
			IZMI	0915.8	0916.0	III	G	1	30	165
			POTS	0916.8	0917.1	III	B	2	40X	270
			POTS	0923.2	0923.4	DCIM		2	230	500
			IZMI	0928.0	0929.0	III	G	2	25X	180
			POTS	0929.1	0930.3	III	GG	2	40X	430
			IZMI	0949.3	0952.3	III	G	2	25X	215
			POTS	0950.5	0951.9	III	G	2	40X	440
			IZMI	1002.3	1006.6	III	G	1	40	90
			POTS	1003.5	1003.8	III	B	2	40X	270
			IZMI	1015.4	1025.6	III	GG	2	25X	270X
			POTS	1016.7	1019.6	III	G,U	2	40X	270

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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)
12			POTS	1026.8	1027.0	III	B,U	1	40X	60	
			IZMI	1028.9	1029.1	III	G	1	180	270X	
			POTS	1030.2	1030.5	DCIM		2	200	530	
			IZMI	1038.2	1038.6	III	G	2	25X	95	
			POTS	1039.6	1040.6	III	G	2	40X	85U	
			IZMI	1058.0	1058.1	III	G	1	45	95	
			POTS	1059.4	1100.0	III	B	2	40X	85U	
			IZMI	1108.9	1113.1	III	GG	2	25X	270X	
			POTS	1109.4	1111.5	III	G	2	40X	280	
			POTS	1121.5	1130.0	III	GG,N	3	40X	560	
			IZMI	1123.0	1131.3	III	GG	2	25X	270X	
			BLEN	1123.2	1130.0	III	GG	2	130	400	
			SGMR	1125.0	1219.0	III	N	2	30	80	
			SVTO	1125.0	1131.0	III		2	25	180	
			IZMI	1125.4	1126.3	III	GG,FS,C	2	25X	270X	
			POTS	1155.0	1203.8	III	G,U	2	40X	280	
			IZMI	1156.3	1158.2	III	G	1	25X	95	
			POTS	1217.2	1218.4	III	GG	2	40X	280	
			HOLL	1251.0	1544.0	III	N	1	25	160	
			POTS	1322.3	1331.7	III	GG	2	40X	800X	
			SVTO	1323.0	1503.0	III	N	2	25	180	
			HOLL	1324.0	1328.0	III		1	25	171	
			SGMR	1325.0	1722.0	III	N	2	30	80	
			POTS	1349.9	1354.7	III	G	2	40X	720	
			BLEN	1353.6	1355.5	III	GG,C	2	100X	4000X	
			POTS	1431.5	1432.2	III	G	3	40X	80	
			POTS	1445.2	1445.6	III	B	2	40X	80	
			SVTO	1530.0	1544.0	III	N	1	27	83	
			POTS	1533.4	1535.7	DCIM		2	200U	420	
			SVTO	1621.0	1622.0	III		1	34	143	
			POTS	1621.1	1621.9	III	G	2	40X	370	
			POTS	1637.6	1643.1	III	GG	2	40X	620	
			BLEN	1640.0	1644.3	III	GG,S	3	100X	600	
			PALE	1642.0	1643.0	III		1	25	180	
			SVTO	1643.0	1643.0	III		1	29	180	
	2020	2400	CULG	2040.0	2115.0	III	N	1	35X	180	
			PALE	2104.0	0424.0	III	N	1	25	180	
			HOLL	2257.0	2258.0	III		1	25	88	
	2008	2400	HIRA	2257.5	2258.0	III	B	1	25X	60	
			CULG	2258.0	2300.0	III	G	1	40	180	
			CULG	2347.0	2354.0	III	G	1	18	180	
			LEAR	2347.0	0003.0	III	N	2	25	180	
			HIRA	2351.5	2352.0	III	B	1	25X	300	
13	0000	0740	CULG	0001.0	0003.0	III	G	1	18	230	
	0000	0910	HIRA	0001.0	0003.0	III	G	2	25X	200	
			CULG	0124.0	0125.0	III	G	1	35U	150	
			LEAR	0124.0	0234.0	III	N	2	25	180	
			CULG	0129.0	0130.0	III	G	2	18X	170	
			HIRA	0129.0	0130.0	III	B	1	25X	140	
			CULG	0147.0	0235.0	III	N	1	30U	180	
			LEAR	0343.0	0349.0	III		1	25	180	
			HIRA	0343.5	0349.0	III	G	1	25X	210	
			CULG	0344.0	0350.0	III	G	1	30U	180	
			CULG	0429.0	0430.0	III	G	1	30U	180	
			HIRA	0429.0	0430.5	III	G	1	40	190	
			LEAR	0429.0	0430.0	III		1	25	180	
	0421	1802	POTS	0429.8	0430.2	DCIM		2	200U	560	100-200MHz no data
			POTS	0445 U	0630 U	I	S,N	1	200U	340	
			CULG	0446.0	0449.0	III	G	1	50	180	
			HIRA	0447.5	0448.0	III	G	1	90	200	
			POTS	0447.6	0449.2	UNCLF		2	200U	370	
			POTS	0711	0717	I	S,N	1	200U	240	
			HIRA	0806.0	0806.5	III	B	1	40	100	
			LEAR	0806.0	0806.0	III		1	25	139	
			POTS	0806.0	0806.8	III	G	2	40X	85U	
			SVTO	0806.0	0807.0	V		2	25U	84U	
	0600	1200	IZMI	0806.0	0806.9	III	G	2	25X	120	
			IZMI	0822.1	0822.2	III	B	1	45	90	

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OBSERVATION			EVENT				FREQUENCY			Remarks
Start Day	End Day	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	
13		HIRA	0847.0	0855.5	III	G	2	40	270	
		LEAR	0847.0	0934.0	III	N	2	25	180	
		SVTO	0847.0	0855.0	III		2	25	180	
		SVTO	0847.0	0859.0	III	N	2	25	180	
		POTS	0847.2	0900.1	III	GG	2	40X	800X	
		IZMI	0847.3	0853.1	III	GG,C	2	25X	270X	
	0524 1642	ONDR	0849.0	0853.0	DCIM	G	2	2000X	4500X	
		ONDR	0849.2	0855.0	DCIM	G	1	800X	2000X	
	0540 1715	BLEN	0849.3	0859.2	III	GG,C	3	100X	4000X	
		IZMI	0853.6	0856.8	III	GG,FS	2	25X	145	
		IZMI	0857.3	0859.7	III	G	2	40	175	
		SVTO	0912.0	0913.0	III		1	25	180	
		POTS	0912.7	0913.1	III	G	1	40X	240	
		IZMI	0912.8	0913.3	III	G	2	50	190	
		POTS	1003	1015	I	S,N	1	200U	300	
		SVTO	1006.0	1006.0	III		1	25	40	
		IZMI	1012.9	1019.0	III	G	2	110	170	
		IZMI	1040.4	1040.5	III	B	1	125	150	
		POTS	1229.7	1230.5	III	G	1	200U	300	
		POTS	1234.0	1234.7	I	S,N	1	200U	260	
		POTS	1234.9	1235.3	III	G	2	40X	70	
		SVTO	1235.0	1235.0	III		1	25U	68U	
		POTS	1238.3	1240.2	III	GG,RS	1	200U	260	
		POTS	1311.1	1311.3	III	B	1	50	80	
		SGMR	1438.0	1444.0	V		3	30	80	
		HOLL	1439.0	1450.0	III		1	25	180	
		SVTO	1439.0	1443.0	V		2	25	180	
		POTS	1439.1	1443.7	III	GG	3	40X	600	
		BLEN	1441.6	1443.4	III	GG,C	1	100X	1600	
		POTS	1442.1	1443.8	V	G	3	40X	55	
		SVTO	1449.0	1450.0	III		1	25	180	
		BLEN	1449.7	1450.0	III	G	1	160	370	
		POTS	1449.8	1450.1	III	G	2	40X	380	
		POTS	1602 U	1716 U	I	S,N	1	200U	350	
		HOLL	2026.0	2031.0	III		1	25	96	
	2006 2400	HIRA	2026.0	2031.0	III	G	1	25X	200	
	2020 2400	CULG	2026.0	2026.0	III	B	1	25	80	
		PALE	2030.0	2031.0	III		1	25	58	
		SGMR	2030.0	.0	III		1	30	80	
		CULG	2031.0	2031.0	III	B	1	27	150	
		CULG	2117.0	2118.0	III	G	3	20	200	
		HIRA	2117.0	2120.5	III	G	2	25X	500	
		HOLL	2117.0	2201.0	III	N	1	25	175	
		PALE	2117.0	0230.0	III	N	1	25	180	
		SGMR	2117.0	2118.0	III		2	30	80	
		CULG	2119.0	2136.0	III	N	1	25	180	
		HOLL	2347.0	0100.0	III	N	1	25	180	
14	0000 0740	CULG	0055.0	0055.0	III	B	1	35	130	
		CULG	0100.0	0100.0	III	B	1	30	130	
	0000 0911	HIRA	0127.5	0128.0	III	B	1	30	80	
		CULG	0128.0	0129.0	III	G	1	30	80	
	0522 1643	ONDR								
	0540 1715	BLEN								
	0600 1200	IZMI	0609.1	0612.3	III	GG	2	40	130	
	0420 1804	POTS	0611.8	0616.9	III	G	2	40X	380	100-200MHz no data
		CULG	0612.0	0617.0	III	B	1	35	160	
		HIRA	0615.5	0616.0	III	B	1	30	110	
		IZMI	0615.6	0616.8	III	GG,FS	2	25X	145	
		IZMI	0626.1	0626.3	CONT		1	40	80	
		IZMI	0648.8	0649.2	III	G	1	45	75	
		CULG	0649.0	0649.0	III	B	1	40U	75	
		IZMI	0705.3	0705.5	III	B	1	45	65	
		POTS	0709.1	0711.2	I	S	1	220	270	
		IZMI	0725.8	0726.0	III	B	2	55	95	
		CULG	0726.0	0726.0	III	B	1	50	90	
		IZMI	0738.1	0738.5	III	G	1	45	95	
		POTS	0748	1213	I	S,N	1	210	320	
		IZMI	0817.4	0825.3	III	GG	2	25X	95	

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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)	
14			HIRA	0818.5	0820.5	III	G	1	40	100		
			POTS	0818.8	0821.5	III	G	2	40X	280		
			LEAR	0819.0	0821.0	III		1	25U	117U		
			SVTO	0819.0	0821.0	III		1	25	78		
			IZMI	0830.7	0831.8	III	G	1	45	95		
			IZMI	0907.2	0911.8	III	GG	1	45	95		
			IZMI	0916.1	0923.1	III	G	1	45	95		
			IZMI	0938.6	0945.3	III	G	1	45	95		
			IZMI	0953.3	0953.6	III	G	1	45	95		
			POTS	0955.0	0955.3	III	B	1	40X	55		
			IZMI	1101.3	1104.7	III	GG	1	45	135		
			IZMI	1148.1	1148.2	III	B	1	55	85		
			POTS	1211.0	1211.3	III	B	1	40X	55		
			POTS	1224.3	1227.6	III	G,N	2	40X	85U		
			POTS	1239.4	1239.6	III	B	2	40X	270		
			SVTO	1336.0	1336.0	III		1	25	42		
			POTS	1349	1355	I	S	1	220	300		
			POTS	1423	1432	I	S	1	240	320		
	2005	2400		HIRA								
	2020	2400		CULG	2036.0	2041.0	III	G	1	23	80	
15			HOLL	0018.0	0020.0	III		1	25	180		
			LEAR	0140.0	0140.0	III		1	25	99		
	0000	0740	CULG	0140.0	0140.0	III	B	1	35	180		
	0000	0912	HIRA	0140.5	0141.0	III	B	1	25X	70		
			LEAR	0535.0	0931.0	III	N	1	48	180		
	0540	1715	BLEN									
	0600	1200	IZMI									
			HOLL	1348.0	1354.0	III		1	25	180		
			SVTO	1348.0	1354.0	III		1	25	131		
	0418	1805	POTS	1348.1	1354.1	III	GG	2	40X	85U	100-200MHz no data	
			SGMR	1350.0	1354.0	III		1	30	50		
			POTS	1502.4	1502.9	I	S	1	200U	330		
			SVTO	1604.0	1705.0	III	N	1	29	119		
			SVTO	1604.0	1707.0	III		1	29	119		
			SVTO	1604.0	1707.0	III	N	1	29	119		
			PALE	1631.0	1958.0	III	N	1	25	71		
	2003	2400		HIRA								
	2030	2400		CULG								
	16	0000	0913	HIRA								
		0417	1807	POTS						100-200MHz no data		
0000		0740	CULG	0456.0	0456.0	III	B	1	40U	90		
0540		1720	BLEN									
			CULG	0546.0	0546.0	III	B	1	50	80		
0600		1200	IZMI									
			HOLL	1401.0	1402.0	III		1	25	55		
			SGMR	1401.0	1402.0	III		1	30	45		
			SVTO	1401.0	1402.0	III		2	25	63		
2002		2222	HIRA									
			HOLL	2213.0	2213.0	III		1	25	66		
			PALE	2213.0	2238.0	III		1	25	60		
2030		2400	CULG	2213.0	2213.0	III	B	1	23	90		
17		0000	0740	CULG	0047.0	0051.0	III	G	1	25	70	
	0517	1647	ONDR									
	0415	1809	POTS	0616	0748	I	S,N	1	200U	350	100-200MHz no data	
	0555	1200	IZMI	0622.7	0622.8	III	B	1	120	190		
			LEAR	0836.0	0839.0	III		1	25U	180U		
			SVTO	0836.0	0838.0	III		1	25	180		
	0134	0914	HIRA	0836.0	0839.0	III	G	1	40	330		
			POTS	0836.2	0839.6	III	GG	2	40X	450		
			IZMI	0836.3	0841.6	III	GG	2	40	270X		
	0535	1720	BLEN	0836.3	0839.3	III	GG	2	160	500		
			POTS	0909.6	0910.4	III	G	2	200U	320		
			IZMI	0909.7	0910.4	III	G	1	110	215		
			POTS	0945.0	0948.7	III	G	1	200U	380		
			IZMI	0947.0	0947.3	III	G	1	110	240		
			POTS	1019.0	1022.3	III	G	1	200U	280		

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OBSERVATION			EVENT		FREQUENCY		Remarks
Start Day	End Day	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	
Day (UT)	(UT)		(UT)	(UT)			
17		POTS	1024.7	1025.5	III	G	2 40X 330
		SVTO	1025.0	1025.0	III		1 75 159
		BLEN	1025.1	1025.2	III	B	1 100X 300
		IZMI	1025.1	1025.4	III	G	2 45 260
		IZMI	1051.0	1051.1	III	B	1 110 240
		POTS	1051.0	1051.2	III	G	1 200U 370
		POTS	1055.3	1056.3	I	DC	2 200U 280
		POTS	1114.9	1115.4	III	G	1 200U 320
		POTS	1128.4	1130.1	III	GG	2 200U 400
		IZMI	1128.5	1132.5	III	GG	1 110 270X
		HOLL	1432.0	1433.0	III		1 25 67
		SVTO	1432.0	1433.0	III		1 25 62
		POTS	1432.8	1433.0	III	B	1 40X 70
		HOLL	1921.0	1957.0	III	N	1 25 63
		PALE	1921.0	1930.0	III		1 25 65
		SGMR	1921.0	1927.0	III		1 30 80
	2000 2400	HIRA					
		HOLL	2328.0	2328.0	III		1 26 62
	2030 2400	CULG	2329.0	2329.0	III	B	1 20 80
18		HIRA					
	0000 0740	CULG	0203.0	0216.0	III	GG	1 23 180
		CULG	0212.0	0213.0	III	G	3 23 300
		LEAR	0212.0	0213.0	III		2 25 180
		PALE	0212.0	0213.0	III		1 25 180
	0000 0915	HIRA	0212.0	0213.0	III	B	3 25X 400
	0515 1649	ONDR					
	0415 1608	POTS	0540.9	0541.5	III	G	1 200U 370 100-200MHz no data
	0600 1200	IZMI	0937.1	0938.2	III	G	1 130 270X
		IZMI	0942.6	0945.8	III	GG	1 130 270X
	0535 1720	BLEN	1141.7	1143.6	III	GG	1 130 340
		IZMI	1141.8	1142.5	III	GG	1 80 270X
		SVTO	1142.0	1143.0	III		1 25 52
		IZMI	1145.6	1145.9	III	G	1 200 270X
	1959 2400	HIRA	2125.0	2125.5	III	B	1 80 180
	2030 2400	CULG	2125.0	2126.0	III	G	1 65 180
19		HOLL	0050.0	0054.0	III		1 25 180
		LEAR	0051.0	0054.0	III		2 25 180
		PALE	0051.0	0054.0	III		1 25 180
	0000 0740	CULG	0051.0	0055.0	III	G	1 20 200
	0000 0915	HIRA	0051.0	0054.5	III	G	1 25X 230
	0513 1650	ONDR					
	0409 1813	POTS	0532 U	0554 U	I	S,N	1 200U 240 100-200MHz no data
		POTS	0725.6	0726.5	III	G	2 200U 330
	0605 1200	IZMI	0725.6	0726.4	III	GG	1 80 270X
		CULG	0726.0	0726.0	III	G	1 65 180
		POTS	0727.4	0728.6	I	S,N	1 200U 230
		POTS	0908 U	1009 U	UNCLF		2 45 70
		POTS	1246.1	1246.4	III	B	1 40X 50
		POTS	1255.9	1256.2	III	G	1 200U 310
		POTS	1327.5	1329.2	DCIM		1 240 440
		POTS	1351.2	1351.6	III	G	1 200U 260
		POTS	1440.7	1443.3	DCIM		2 230 800X
	0530 1720	BLEN	1441.7	1446.3	III	G,S	1 230 900
		POTS	1704.1	1704.4	DCIM		2 300 480
	1958 2400	HIRA					
	2030 2400	CULG					
20	0000 0730	CULG					
	0000 0915	HIRA					
		PALE	0347.0	0436.0	III	N	1 25 62
	0511 1652	ONDR					
	0530 1720	BLEN					
	0408 1814	POTS	0921.5	0922.5	DCIM		2 220 380 100-200MHz no data
		POTS	0926.5	0926.6	UNCLF		2 210 220
		POTS	0939.7	0940.2	DCIM		2 340 720
		POTS	1055.8	1105.0	III	G,N	2 40X 80
0601 2000		IZMI	1055.8	1057.0	III	G	1 45 85

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OBSERVATION			EVENT				FREQUENCY			Remarks
Start Day	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	
20		IZMI	1104.1	1104.9	III	G	1	50	85	
		POTS	1145.5	1147.2	DCIM		2	290	440	
		POTS	1219.2	1219.4	III	B	1	40X	55	
		POTS	1306.8	1311.7	III	G	1	40X	80	
		HOLL	1921.0	1922.0	III		1	25	180	
		SGMR	1921.0	1922.0	III		1	30	80	
		PALE	1922.0	1922.0	III		1	25	86	
		PALE	2054.0	0258.0	III	N	1	25	70	
		HOLL	2127.0	2128.0	III		1	25	99	
1957	2400	HIRA	2127.0	2129.0	III	G	1	25X	130	
2030	2400	CULG	2127.0	2129.0	III	G	1	27	180	
		CULG	2306.0	2306.0	III	B	1	20	180	
		CULG	2320.0	2320.0	III	B	1	23	90	
21	0000 0730	CULG	0421.0	0440.0	III	N	1	30	90	100-200MHz no data
	0407 1817	POTS	0438.2	0441.6	III	GG	2	200U	430	
	0555 1200	IZMI	0551.4	0551.5	III	G	1	50	65	
		POTS	0716	0725	I	S,N	1	200U	270	
		LEAR	0717.0	0725.0	III		1	25	180	
		SVTO	0717.0	0725.0	III		1	25	180	
		IZMI	0717.7	0718.9	III	GG,C	2	40	270X	
		POTS	0717.8	0720.2	III	GG	2	40X	330	
		CULG	0718.0	0722.0	III	G	1	30U	200	
0000	0916	HIRA	0718.0	0722.0	III	G	1	30	210	
		IZMI	0720.1	0722.0	III	GG,C	2	25	270X	
		IZMI	0724.6	0725.3	III	G	1	40	220	
		LEAR	0746.0	0747.0	III		1	25	100	
		SVTO	0746.0	0747.0	III		1	25	58	
		IZMI	0746.6	0746.9	III	G	1	40	95	
		POTS	0746.7	0747.0	III	G	1	40X	60	
		IZMI	0822.0	0822.1	UNCLF		1	45	65	
		POTS	0822.0	0822.2	III	B	1	40X	55	
		IZMI	0849.7	0849.9	III	G	1	45X	95	
		SVTO	0903.0	0904.0	III		1	25	46	
		IZMI	0903.8	0903.9	III	B	1	45	85	
		IZMI	0922.0	0922.7	III	G	1	45	85	
		LEAR	0925.0	0926.0	III		1	25	165	
		POTS	1104.0	1105.1	III	G	2	40X	85U	
		IZMI	1104.1	1104.9	III	G	1	25X	95	
		POTS	1208.0	1214.5	III	G,RS,N	1	40X	80	
		SVTO	1208.0	1212.0	III		1	25U	62U	
		POTS	1217.7	1221.0	DCIM		2	200U	440	
		SVTO	1300.0	1302.0	III		1	25	78	
		POTS	1300.9	1302.5U	III	G	2	40X	270	
		SVTO	1302.0	1320.0	IV		3	25	180	
		ONDR	1302.2	1310.2	DCIM	GG,FS	3	800X	2000X	
0509	1653	ONDR	1302.3	1310.5	DCIM	GG	2	2000X	4500X	
0530	1720	BLEN	1302.4	1309.9	IV	P,S	3	100X	4000X	
		POTS	1302.5	1321	IV		3	40X	800X	
		POTS	1304.5	1316	II		3	40X	500U	
		HOLL	1305.0	1318.0	II		2	25	180	
		HOLL	1306.0	1320.0	IV		1	25	180	
		HOLL	1309.0	1318.0	II		3	25	180	
		SVTO	1309.0	1314.0	II		3	25	180	
		POTS	1353.1	1355.6	I	S,N	1	200U	230	
		HOLL	1531.0	1531.0	III		1	25	66	
		SVTO	1531.0	1534.0	III		1	25U	72U	
		POTS	1531.7	1533.7	III	G	1	40X	55	
		HOLL	1613.0	1830.0	III	N	1	25	69	
		SVTO	1627.0	1627.0	III		1	25	129	
		POTS	1721.9	1722.5	DCIM		1	200U	400	
		POTS	1753.5	1800.7	DCIM		2	200U	420	
		HOLL	2100.0	2100.0	III		1	25	180	
2030	2400	CULG	2100.0	2100.0	III	B	1	65	160	
		CULG	2115.0	2115.0	III	G	1	30	160	
		SGMR	2117.0	2133.0	III	N	2	30	80	
		CULG	2118.0	2121.0	III	G	1	20	180	
		CULG	2130.0	2139.0	III	GG	1	20	180	
		HOLL	2133.0	2139.0	III		1	25	180	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day	End (UT)	(UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
21			CULG	2224.0	2225.0	III	G	1	25	90	
			HOLL	2304.0	2305.0	III		1	25	180	
			CULG	2305.0	2305.0	III	B	1	20	180	
			CULG	2354.0	2357.0	III	G	1	20	180	
			LEAR	2354.0	2359.0	III		1	25	180	
			CULG	2358.0	2400.0	III	G	1	20	180	
22	0000 0735		CULG	0006.0	0006.0	III	B	1	23	90	
			PALE	0018.0	0333.0	III	N	1	25	51	
			CULG	0036.0	0036.0	III	B	1	23	90	
			LEAR	0036.0	0926.0	III	N	1	25	180	
			CULG	0045.0	0045.0	III	B	1	30	80	
			CULG	0142.0	0142.0	III	B	1	40	180	
	0550 0825		CULG	0216.0	0218.0	III	G	2	18	180	
			CULG	0228.0	0324.0	III	S	1	30	150	
			LEAR	0716.0	0734.0	II		2	25	180	ESS 0967
			HIRA	0716.0	0733.0	II		2	30	140	
		0600 1200	IZMI	0716.8	0737.0	II	NARM	2	25X	165	
			CULG	0717.0	0725.0	II	FN	2	30U	65	
	0530 1720		CULG	0717.0	0733.0	II	SH	2	45	160	ESS 800
			SVTO	0717.0	0734.0	II		2	25	180	ESS 0964
			IZMI	0717.3	0717.9	III	G,C	1	165	250	
			BLEN	0717.3	0726.6	III	GG	1	120	400	
			POTS	0717.4	0728	IV		3	40X	400U	
		0405 1819	POTS	0717.4	0734	II		3	40X	85U	100-200MHz no data
			IZMI	0719.5	0721.1	III	GG,C,RS	2	160	265	
			CULG	0720.0	0720.0	III	B	1	27	250	
			IZMI	0806.4	0806.4	III	B	1	50X	75	
			SVTO	0844.0	0845.0	III		1	25	40	
			IZMI	0852.3	0904.0	III	GG	2	25X	175	
	0900 0917		POTS	0857.4	0904.8	III	GG	2	40X	260	
			SVTO	0858.0	0906.0	III		1	25	151	
			HIRA								
			BLEN	0911.7	0911.9	III	G	1	120	400	
			IZMI	0911.7	0911.9	III	G	2	80	270X	
			POTS	0911.8	0912.0	III	G	2	40X	340	
	0507 1654		POTS	0921.3	0924.2	III	G,N	1	40X	80	
			IZMI	0923.8	0924.2	III	G	2	45	80	
			POTS	1032.9	1036.8	III	G	2	40X	85U	
			SVTO	1033.0	1035.0	III		1	25U	83U	
			IZMI	1033.8	1035.9	III	G	1	25X	145	
			POTS	1100.2	1230.8	III	GG,N	1	40X	80	
	1954 2400		POTS	1111	1132	I	S,N	1	200U	280	
			IZMI	1124.7	1124.8	III	B	2	45	65	
			SVTO	1134.0	1135.0	III		1	25U	83U	
			SVTO	1214.0	1230.0	III	N	1	25	50	
			SVTO	1319.0	1325.0	III		2	25	147	
			POTS	1319.1	1336.8	III	G,RS,N	2	40X	370	
	2030 2400		HOLL	1325.0	1325.0	III		1	25	136	
			SVTO	1442.0	1620.0	III	N	1	25	64	
			SGMR	1539.0	1539.0	III		1	30	45	
			POTS	1539.1	1540.7	III	G	1	40X	80	
			POTS	1552.7	1554.1	III	G	1	40X	60	
			HOLL	1614.0	1616.0	III		2	25	180	
	2030 2400		SVTO	1614.0	1616.0	III		3	25	180	
			POTS	1614.7	1616.4	III	GG	3	40X	630	
			BLEN	1615.0	1616.3	DCIM	P,C	3	100X	4000X	
			ONDR	1615.0	1616.0	DCIM	G	2	800X	2000X	
			ONDR	1615.0	1615.5	DCIM	G	1	2000X	4500X	
			PALE	1958.0	2004.0	III		1	25	76	
	1954 2400		HOLL	1959.0	2004.0	III		1	25	86	
			SGMR	2004.0	2004.0	III		1	30	55	
			HIRA	2009.0	2018.0	IV		3	100	380	
			HOLL	2010.0	2018.0	IV		1	111	180	
			PALE	2010.0	2017.0	IV		1	111U	180U	
			HIRA	2110.0	2111.0	III	G	1	25X	110	
	2030 2400		HOLL	2110.0	2110.0	III		1	25	180	
			PALE	2110.0	2110.0	III		1	25	53	
			CULG	2110.0	2111.0	III	G	1	20	130	

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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)
22			CULG	2125.0	2125.0	III	G	1	360	710	
			CULG	2141.0	2159.0	III	N	1	23U	50	
			HOLL	2354.0	0006.0	III		1	25	180	
			LEAR	2354.0	2359.0	III		1	25	180	
23	0000 0730		CULG	0002.0	0058.0	III	N	1	30	80	
			CULG	0101.0	0101.0	III	B	1	23	420	
			CULG	0101.0	0106.0	II	FN	3	30	150	
			CULG	0101.0	0106.0	II	SH	3	60	300	ESS 1500
			CULG	0101.0	0122.0	IV	FS	1	30U	1000	
			HOLL	0101.0	0110.0	II		2	25	180	
			PALE	0101.0	0355.0	III	N	3	25	180	
	0000 0613		HIRA	0101.5	0113.5	III	G	3	25X	////	
			CULG	0102.0	0105.0	III	G	3	18	180	
			PALE	0102.0	0113.0	II		2	25	165	ESS 0437
			CULG	0106.0	0115.0	II	FN	3	27U	60	
			CULG	0106.0	0115.0	II	SH	3	50U	130	ESS 550
			CULG	0107.0	0113.0	III	G	3	18X	100	
			LEAR	0107.0	0118.0	II		2	25	180	ESS 0513
			CULG	0115.0	0117.0	III	G	1	30	90	
			CULG	0129.0	0132.0	III	G	1	220	1200	
			CULG	0153.0	0211.0	CONT		1	30U	450	
			LEAR	0153.0	0221.0	IV		1	70	180	
			LEAR	0156.0	0156.0	III		1	25	180	
			HIRA	0156.5	0157.0	III	B	2	25X	////	
			CULG	0157.0	0157.0	III	B	3	20	470	
			CULG	0216.0	0220.0	III	G	1	20	90	
			CULG	0238.0	0345.0	IV		2	250	780	
			CULG	0258.0	0258.0	III	B	1	30	130	
			CULG	0354.0	0558.0	III	N	1	27U	180	
			LEAR	0456.0	0503.0	III		1	25	142	
			LEAR	0527.0	0926.0	III	N	1	25	119	
			SVTO	0528.0	1713.0	III	N	2	25	180	
			SVTO	0535.0	0538.0	III		1	25	84	
	0555 1200		IZMI	0552.0E	1200.0D	III	N	2	25X	95	
			CULG	0607.0	0730.0D	III	S	1	30U	130	
	0404 1820		POTS	0608.6	0611.3	III	GG	2	40X	230	100-200MHz no data
			CULG	0610.0	0612.0	III	G	2	30	90	
			IZMI	0632.1	0637.5	III	GG	2	45	165	
			POTS	0641.9	0646.1	III	G,RS	1	40X	85U	
			SVTO	0659.0	0700.0	III		2	25	41	
			CULG	0700.0	0700.0	III	G	1	400	750	
			POTS	0733	0810	IV	C	2	270	430	
			POTS	0819.6	1047 U	III	GG,N	1	40X	60	
			IZMI	0843.0	0843.2	III	G	2	25X	95	
			IZMI	0859.6	0859.8	III	G	1	25X	95	
			IZMI	0932.5	0936.3	III	G	1	40	95	
			IZMI	1027.0	1028.0	III	G	2	45	95	
			POTS	1052.3U	1059.4U	III	GG	3	40X	230	
			IZMI	1053.4	1058.6	III	GG,C	2	25X	160	
			SGMR	1054.0	1055.0	III		1	30	60	
			POTS	1100 U	1454	III	GG,N	2	40X	80	
	0530 1720		BLEN	1138.0	1142.7	DCIM	C	2	2000	4000X	
			POTS	1214	1335	IV	C	2	270	500	
			SGMR	1214.0	1806.0	III	N	2	30	60	
			HOLL	1315.0	1315.0	III		1	25	88	
			POTS	1329.7	1330.1	III	G	2	200U	330	
			POTS	1350 U	1725 U	I	S,N	2	200U	400	
			HOLL	1410.0	1716.0	III	N	1	25	164	
			POTS	1440.0	1451.6	III	G	2	40X	550	
			ONDR	1540.3	1601.0	DCIM	GG	1	800X	2000X	
	0506 1656		ONDR	1541.0	1606.4	DCIM	G	1	2000X	4500X	
			BLEN	1542.5	1555.7	IV	P	3	200	4000X	
			POTS	1545	1623	IV	C	3	200U	800X	
			BLEN	1558.5	1625.7	II	H	3	300	1000	
			POTS	1627.6	1628.5	III	G	1	40X	70	
			PALE	1641.0	0437.0	III	N	1	25	180	
			HOLL	1904.0	0113.0	III	N	1	25	84	
			SGMR	1904.0	2022.0	III	N	1	30	65	

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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)	
23	1953	2400	HIRA								
	2030	2400	CULG	2105.0	2105.0	III	B	1	35	80	
			CULG	2157.0	2250.0	III	N	1	23	90	
			CULG	2308.0	2400.00	III	S	1	20	100	
			HOLL	2311.0	0113.0	CONT		1	25	124	
			LEAR	2328.0	0924.0	CONT		1	25	180	
24	0000	0720	CULG	0000.0E	0225.0	III	S	1	30U	180	
			CULG	0111.0	0258.0	I	S	1	70	180	
			LEAR	0302.0	0303.0	III		1	25	90	
	0000	0919	HIRA	0302.5	0303.0	III	B	1	25X	60	
			CULG	0303.0	0303.0	III	B	1	20	90	
	0402	1823	POTS	0402 E	0720 U	I	S,N,DC	2	200U	420	100-200MHz no data
			CULG	0405.0	0406.0	III	G	1	30	70	
			LEAR	0405.0	0924.0	III	N	1	25	180	
			CULG	0424.0	0424.0	III	B	1	30	50	
			CULG	0424.0	0720.00	I	S	1	45	90	
			SVTO	0504.0	1714.0	III	N	1	25	180	
			HIRA	0504.5	0505.0	III	B	1	25X	230	
			CULG	0505.0	0505.0	III	B	1	20	160	
			POTS	0505.0	0505.4	III	G	2	40X	670	
			CULG	0514.0	0515.0	III	G	1	20	160	
			HIRA	0514.0	0514.5	III	B	1	25X	130	
			POTS	0514.5	0514.9	III	B	2	40X	240	
	0525	1720	BLEN	0531.2	0534.0	III	GG,RS,C	3	600	4000X	
			IZMI	0603.0E	1200.00	III	N	1	25X	95U	
	0603	1200	IZMI	0603.0E	1200.00	I	S,C	2	40	270X	
			CULG	0615.0	0720.00	III	S,C	1	27	180	
			SVTO	0637.0	1714.0	CONT		1	25	180	
			IZMI	0637.4	0637.6	III	G	1	25X	140	
			POTS	0638.4	0638.7	III	B	1	40X	65	
			POTS	0720 U	1248 U	I	S,N,DC	3	40X	420	
			POTS	0742	1248 U	III	GG,N	2	40X	300	
			IZMI	0746.2	0748.1	III	G	1	25	95	
			IZMI	0757.4	0801.6	III	GG	2	25X	180U	
			IZMI	0809.2	0841.6	III	S	2	25X	155	
			SGMR	1127.0	1947.0	CONT		2	30	75	
			POTS	1248	1318	IV		3	40X	800X	
			POTS	1249.0	1318	II		3	40X	440U	
	0504	1657	ONDR	1249.0	1302.2	DCIM	G	2	2000X	4500X	
			ONDR	1249.1	1258.0	DCIM	GG	2	800X	2000X	
			BLEN	1249.2	1258.7	II	H,C	3	100X	4000X	
			SVTO	1251.0	1306.0	II		2	25	180	ESS 0830
			SGMR	1258.0	1305.0	III		2	30	80	
			HOLL	1300.0	1505.0	IV		1	25	138	
			POTS	1318 U	1726 U	I	S,N,DC	2	40X	420	
			POTS	1325 U	1558	III	GG,N	2	40X	80	
			HOLL	1505.0	0118.0	CONT		1	25	134	
			POTS	1726 U	1804 U	I	S,N	2	200U	400	
			HOLL	1836.0	0118.0	III	N	2	25	163	
			PALE	2021.0	2022.0	III		2	25	180	
	1952	2400	HIRA	2021.0	2122.0	III	B	3	25X	190	
	2030	2400	CULG	2030.0E	2400.00	III	S,C	1	20	180	
			CULG	2206.0	2206.0	III	B	3	20	45	
			CULG	2231.0	2233.0	III	G	3	18	250	
			HIRA	2231.0	2233.0	III	G	1	25X	250	
			CULG	2238.0	2400.00	I	S	1	100	180	
			LEAR	2322.0	0924.0	CONT		1	25	180	
25			CULG	0000.0E	0142.0	I	S	1	100	180	
	0000	0720	CULG	0000.0E	0720.00	III	S,C	1	30	180	
			CULG	0134.0	0135.0	III	G	2	18X	140	
	0000	0920	HIRA	0134.0	0135.0	III	G	1	25X	110	
			HIRA	0224.5	0225.0	III	B	1	25X	220	
			CULG	0225.0	0225.0	III	B	3	18	250	
			HIRA	0318.5	0319.5	III	G	1	110	210	
	0400	1824	POTS	0400 E	0527.7U	I	S,N	2	200U	420	100-200MHz no data
			CULG	0440.0	0445.0	III	G	2	18	290	
			HIRA	0440.0	0445.5	III	G	1	25X	230	

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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)
25			LEAR	0440.0	0924.0	III	N	2	25	180	
			SVTO	0441.0	1715.0	III	N	2	25	180	
			POTS	0441.2	0445.4	III	G	2	40X	500	
			SVTO	0443.0	1715.0	CONT		1	25	180	
			POTS	0501.8	0502.7	III	G	2	40X	500	
0502	1659		ONDR								
			CULG	0502.0	0503.0	III	G	2	20	180	
			HIRA	0502.0	0503.0	III	G	2	25X	140	
			SVTO	0523.0	0526.0	III		2	25	170	
			CULG	0524.0	0527.0	III	G	3	23	150	
			HIRA	0524.0	0526.0	III	G	2	25X	110	
0515	1730		BLN	0524.0	0550.2	III	GG,RS,C	3	100X	4000X	
			POTS	0524.2	0525.7	III	G	2	40X	280	
			POTS	0527.7	0555	IV		2	40X	800X	
			CULG	0528.0	0533.0	III	G	1	25	1500	
			POTS	0529.9	0546.5	II		3	40X	85U	
			CULG	0530.0	0546.0	II	SH	3	45U	150	ESS 700
			CULG	0530.0	0548.0	II	FN	3	20	65	
			HIRA	0530.0	0545.0	II		2	25X	120	
			LEAR	0530.0	0544.0	II		2	25	160	ESS 0814
			CULG	0531.0	0531.0	III	B	3	20	75	
			SVTO	0531.0	0547.0	II		2	25	140	ESS 0604
			CULG	0538.0	0538.0	III	B	1	23U	900	
			CULG	0541.0	0555.0	II	SH	1	30U	180	ESS 700
			CULG	0550.0	0556.0	III	G	2	25	360	
			POTS	0555	0731 U	I	S,N,C	2	200U	420	
			POTS	0603	1651	III	GG,N,RS	2	40X	85U	
			IZMI	0604.0E	1200.0D	III	N	1	45U	95U	
0604	1200		IZMI	0604.0E	1200.0D	I	S	2	25X	220U	
			IZMI	0615.3	0619.7	III	GG	2	25X	260	
			CULG	0617.0	0619.0	III	G	3	25	180	
			HIRA	0617.0	0619.0	III	G	1	25X	80	
			IZMI	0629.6	0630.2	III	G	2	40	270	
			IZMI	0643.8	0644.0	III	B	2	40	150	
			IZMI	0703.6	0706.3	III	G	2	25X	95	
			IZMI	0715.6	0720.1	III	GG	2	25X	160	
			SVTO	0722.0	0723.0	III		2	25	180	
			BLN	0722.9	0723.1	III		1	100X	270	
			IZMI	0722.9	0727.6	III	G	2	25X	145	
			HIRA	0723.0	0723.5	III	B	1	40	230	
			POTS	0731	1705 U	I	S,N,DC,C	2	40X	420	
			IZMI	0750.4	0756.1	III	G	2	25X	205	
			HIRA	0750.5	0751.0	III	B	1	30	190	
			IZMI	0802.5	0802.6	III	B	2	25X	90	
			POTS	0807.7U	0814 U	II		3	40X	85U	
			IZMI	0813.1	0817.0	III	G	1	25X	85	
			IZMI	0849.3	0849.4	III	B,FS	2	40	65	
			IZMI	0857.7	0857.9	III	B	1	125	190	
			SVTO	0927.0	0927.0	III		2	25	180	
			BLN	0927.2	0927.7	III	G,RS	1	100X	500	
			IZMI	0927.2	0927.8	III	GG,C	2	25X	270X	
			POTS	0927.2	0927.8	III	G	3	40X	600	
			BLN	1040.2	1040.5	III	GG	2	150	650	
			IZMI	1040.2	1040.3	III	G	2	155	270X	
			POTS	1040.2	1040.5	DCIM		2	230	640	
			POTS	1126.0	1127.9	III	GG	3	40X	240	
			POTS	1126.4	1127.1	V	G	3	40X	75	
			SGMR	1200.0	2203.0	CONT		2	30	80	
			POTS	1203.9	1207.3	III	G	3	40X	400	
			BLN	1236.6	1244.3	III	GG,RS	2	150	600	
			POTS	1236.7	1244.4	DCIM		2	210	600	
			HOLL	1258.0	0120.0	CONT		1	25	180	
			POTS	1347.0	1348.3	DCIM		2	270	490	
			POTS	1447.2	1448.7	DCIM		2	200U	450	
			PALE	1623.0	0342.0	III	N	1	25	90	
			POTS	1705 U	1808 U	I	S,N	1	200U	380	
			POTS	1713.1	1719.8	DCIM		2	220	550	
			PALE	1728.0	0437.0	III	N	1	25	110	
			HOLL	1913.0	1914.0	III		1	25	129	

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)
25			SGMR	1913.0	1914.0	III		2	30	80	
			SGMR	1949.0	1950.0	III		2	30	70	
	2040	2400	CULG	2040.0E	2400.0D	I	S	1	57	100	
			CULG	2040.0E	2400.0D	III	S,C	1	27	180	
			SGMR	2053.0	2054.0	III		3	30	80	
	1950	2400	HIRA	2053.5	2055.0	III	B	2	25X	270	
			CULG	2054.0	2055.0	III	G	2	23	280	
			CULG	2156.0	2157.0	III	G	3	20	150	
			HIRA	2156.0	2157.0	III	B	1	25X	140	
			CULG	2201.0	2203.0	III	G	3	20	50	
			PALE	2340.0	2344.0	II		1	64	180	ESS 0542
26			CULG	0000.0E	0720.0D	I	S,C	1	57	100	
	0000	0720	CULG	0000.0E	0720.0D	III	C	1	18	180	
			CULG	0054.0	0059.0	III	G	3	18X	300	
			LEAR	0054.0	0056.0	V		2	25	180	
			PALE	0054.0	0058.0	III		2	25	180	
	0000	0921	HIRA	0054.0	0058.5	III	G	3	25X	360	
			LEAR	0057.0	0058.0	III		2	25	180	
			HIRA	0104.5	0105.0	III	B	1	60	420	
			CULG	0105.0	0105.0	III	B	1	30	360	
			LEAR	0231.0	0232.0	III		1	25	180	
			HIRA	0231.5	0232.5	III	B	1	25X	140	
			CULG	0232.0	0233.0	III	G	2	18	170	
			CULG	0300.0	0300.0	III	B	2	27	180	
			HIRA	0300.5	0301.0	III	B	2	30	200	
			CULG	0303.0	0305.0	III	G	3	18X	400	
			HIRA	0303.0	0304.5	III	B	3	25X	500	
			LEAR	0303.0	0304.0	III		2	25	180	
			PALE	0303.0	0304.0	III		2	25	180	
			CULG	0308.0	0313.0	III	G	3	18X	260	
			HIRA	0308.0	0312.0	III	G	2	25X	220	
			LEAR	0309.0	0312.0	III		2	25	180	
			PALE	0309.0	0311.0	III		2	25	155	
			CULG	0341.0	0343.0	III	G	3	18X	110	
			LEAR	0341.0	0342.0	III		1	25	180	
	0358	1827	HIRA	0341.5	0342.5	III	B	1	25X	70	
			POTS	0358 E	0654 U	I	S,N	2	200U	400	100-200MHz no data
			SVTO	0417.0	1716.0	CONT		1	25	180	
			HIRA	0427.0	0428.0	III	G	1	25X	110	
			HIRA	0445.5	0446.5	III	B	1	25X	110	
			HIRA	051							

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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)	
26		LEAR	0803.0	0809.0	III		2	25	180	
	0515 1730	BLEN	0803.1	0810.3	III	GG,C	3	100X	4000X	
		SVTO	0804.0	0807.0	III		3	25	180	
		HIRA	0805.0	0814.0	III	G	3	25X	1000	
	0500 1700	ONDR	0805.3	0807.0	DCIM	G	2	800X	2000X	
		SVTO	0809.0	0814.0	II		2	33U	86U	ESS 0592
		IZMI	0809.6	0914.8	II	HARM	2	30	120	
		IZMI	0812.2	0817.2	III	GG	2	25X	175	
		IZMI	0824.5	0825.5	III	G	2	25X	120	
		HIRA	0825.0	0825.5	III	B	1	25X	110	
		SVTO	0825.0	0825.0	III		2	25U	82U	
		IZMI	0842.6	0849.4	III	GG	2	25X	90	
		IZMI	0910.0	0912.0	III	G,C	2	25X	65	
		IZMI	0955.6	0955.9	III	G,C	2	25X	90	
		SVTO	1007.0	1007.0	III		2	25U	84U	
		IZMI	1007.1	1007.5	III	G,C	2	25X	95	
		SVTO	1038.0	1039.0	III		1	25	58	
		IZMI	1038.8	1039.1	III	G	2	25X	95	
		IZMI	1126.0	1127.9	III	GG,C	2	25X	190	
		SGMR	1126.0	1127.0	V		2	30	80	
		SVTO	1126.0	1127.0	III		2	25	180	
		SVTO	1126.0	1127.0	V		2	25	180	
		SGMR	1203.0	1259.0	III	N	2	30	80	
		SVTO	1204.0	1207.0	III		2	25	169	
		SVTO	1217.0	1217.0	V		3	25	124	
		POTS	1222 U	1808	I	S,N	2	200U	450	
		SVTO	1230.0	1231.0	III		2	25	71	
		POTS	1356.8	1357.6	III	G	2	40X	320	
		HOLL	1420.0	1430.0	III		2	25	180	
		SGMR	1420.0	1956.0	III	N	3	30	80	
		POTS	1420.4	1430.2	III	G	3	40X	410	
		SVTO	1422.0	1424.0	III		3	25	180	
		SVTO	1422.0	1424.0	V		3	25	180	
		POTS	1422.8	1424.1	V	G	3	40X	80	
		SVTO	1428.0	1449.0	III	N	2	25	180	
		POTS	1440.8	1454.6	III	GG,N	2	40X	350	
		HOLL	1442.0	1453.0	II		1	25	180	ESS 0575
		SGMR	1447.0	1453.0	II		2	30	70	ESS 0750
		SVTO	1447.0	1454.0	II		1	29	81	ESS 0617
		POTS	1447.5	1453.5	II	UE	2	40X	80	
		SVTO	1524.0	1716.0	III	N	2	25	180	
		HOLL	1525.0	1527.0	III		2	25	180	
		HOLL	1525.0	2229.0	III	N	2	25	180	
		POTS	1525.9	1527.4	III	G	2	40X	460	
		POTS	1529.5	1530.0	III	G	1	200U	380	
		POTS	1534.9	1535.1	III	B	1	40X	55	
		BLEN	1538.3	1541.0	III	GG	3	100X	450	
		POTS	1539.4	1541.9	III	GG,RS	3	40X	600	
		POTS	1544.6	1551	III	GG,N	2	200U	360	
		POTS	1558.4	1606.3	III	GG	3	40X	630	
		POTS	1620.8	1744	III	GG,N	3	40X	520	
		BLEN	1632.8	1634.6	III	GG,C	3	100X	4000X	
		PALE	1634.0	1635.0	III		1	25	180	
		PALE	1702.0	0415.0	III	N	2	25	180	
		POTS	1754.8	1759.1	III	GG,N	3	40X	670	
	2040 2400	CULG	2040.0E	2210.0	I	S	1	110	170	
		CULG	2045.0	2045.0	III	B	1	900	1300	
		CULG	2054.0	2054.0	III	B	1	650	1100	
		CULG	2144.0	2144.0	III	B	1	27	57	
		CULG	2156.0	2156.0	III	B	1	30	180	
		CULG	2203.0	2204.0	III	G	1	25	90	
		HOLL	2258.0	0019.0	III	N	2	25	180	
	1949 2400	HIRA	2258.0	2258.5	III	B	1	110	230	
		CULG	2302.0	2302.0	III	B	2	27	180	
		HIRA	2302.0	2302.5	III	B	3	30	270	
		CULG	2313.0	2314.0	III	G	2	18	370	
		HIRA	2313.0	2314.0	III	B	2	25X	420	
		CULG	2339.0	2340.0	III	G	3	18X	550	
		HIRA	2339.0	2340.5	III	G	3	25X	500	

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

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day	End Day	(UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
26			HIRA	2340.0	2347.5	II		1	80	230	
			HOLL	2340.0	2348.0	II		1	38	180	ESS 0773
			LEAR	2340.0	2350.0	II		1	76	180	ESS 0557
			CULG	2341.0	2346.0	II	FN	1	27U	100	
			CULG	2341.0	2348.0	II	SH	1	60	220	ESS 800
			CULG	2344.0	2350.0	III	G	1	20	250	
27	0000	0720	CULG	0052.0	0234.0	III	N	1	18	180	
	0000	0922	HIRA	0052.5	0053.0	III	B	1	170	400	
			HOLL	0056.0	0057.0	III		1	25	152	
			HIRA	0056.5	0057.5	III	B	1	25X	160	
			CULG	0057.0	0057.0	III	G	3	18	180	
			HIRA	0111.0	0112.0	III	G	1	25X	100	
			HIRA	0155.5	0158.5	III	G	1	25X	120	
			CULG	0156.0	0159.0	III	G	2	18	150	
			HIRA	0229.5	0230.5	III	G	1	25X	130	
			CULG	0317.0	0327.0	III	G	1	30	80	
			HIRA	0332.5	0333.0	III	B	3	25X	200	
			CULG	0333.0	0333.0	III	B	3	18	180	
			CULG	0339.0	0345.0	III	G	2	27	180	
			HIRA	0339.0	0343.0	III	G	1	25X	210	
			CULG	0353.0	0439.0	III	N	1	30U	140	
	0356	1828	POTS	0356 E	1811 U	I	S,N,DC	2	200U	420	100-200MHz no data
			POTS	0453.9	0454.3	III	B	2	40X	80	
			CULG	0454.0	0456.0	III	G	3	18	130	
			HIRA	0454.0	0456.0	III	G	1	25X	100	
			LEAR	0454.0	0456.0	V		2	25	148	
			SVTO	0454.0	0456.0	III		2	25	80	
			CULG	0538.0	0542.0	III	G	3	18X	180	
			HIRA	0538.0	0541.0	III	G	2	25X	200	
			SVTO	0538.0	0542.0	III		2	25U	138U	
			POTS	0538.2	0541.0	III	G	2	40X	550	
			LEAR	0540.0	0542.0	V		2	25	180	
	0600	1200	IZMI	0600.0E	1200.0D	I	N	1	120	270X	
			POTS	0645.0	0645.8	DCIM		2	330	640	
			IZMI	0729.1	0730.8	III	G	1	45	90	
	0515	1730	BLEN	0737.2	0741.7	III	GG,RS,C	3	100X	4000X	
			HIRA	0737.5	0740.0	III	G	3	25X	500	
			IZMI	0737.5	0740.7	III	GG,C	2	25X	270X	
			POTS	0737.6	0741.7	III	GG	3	40X	800X	
	0459	1701	ONDR	0739.0	0741.4	DCIM	G	1	800X	2000X	
			POTS	0739.2	0741.0	V	G	3	40X	70	
			IZMI	0744.4	0746.1	III	G	2	45	175	
			POTS	0745.6	0746.0	III	G	2	40X	260	
			IZMI	0825.4	0825.5	III	B	1	45	85	
			IZMI	0839.0	0839.2	III	G	1	25X	95	
			POTS	0839.0	0839.2	III	B	1	40X	80	
			POTS	0911.5	0913.1	III	G	1	40X	85U	
			IZMI	1052.0	1052.2	III	G	1	45	95	
			POTS	1052.1	1052.3	III	B	1	40X	85U	
			POTS	1110.1	1110.4	III	G	1	40X	85U	
			SVTO	1305.0	1306.0	III		1	25U	59U	
			POTS	1305.7	1306.1	III	G	2	40X	540	
			HOLL	1529.0	1615.0	III	N	2	25	180	
			HOLL	1529.0	2345.0	III	N	2	25	180	
			SVTO	1529.0	1534.0	III		2	25	180	
			POTS	1529.7	1531.3	III	GG	3	40X	800X	
			SGMR	1530.0	1538.0	III		3	30	80	
			BLEN	1530.3	1531.1	III	GG,V,C	3	100X	4000X	
			BLEN	1532.3	1535.7	II		3	140	500	
			POTS	1532.3	1535.7	II	UE	3	200U	510	
			SVTO	1537.0	1539.0	III		1	33U	84U	
			POTS	1537.6	1538.8	III	G	1	40X	80	
1948	2400		HIRA								
2040	2400		CULG	2254.0	2259.0	III	G	1	25	180	
			LEAR	2346.0	0239.0	III	N	1	25	180	
28	0000	0720	CULG	0026.0	0106.0	III	N	1	20	180	
			CULG	0221.0	0221.0	III	B	1	30	140	

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

APRIL 2003

OBSERVATION			EVENT				FREQUENCY			Remarks
Start Day	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	
28		CULG	0234.0	0235.0	III	G	1	230	360	100-200MHz no data
	0000 0922	HIRA	0234.0	0235.0	III	G	1	210	330	
	0354 1830	POTS	0354 E	1810 U	I	S,N,DC	2	200U	420	
		CULG	0400.0	0402.0	III	G	2	20	180	
		LEAR	0400.0	0401.0	III		1	25	180	
		HIRA	0400.5	0401.5	III	G	1	25X	200	
		CULG	0407.0	0510.0	III	N	1	30	160	
		LEAR	0437.0	0445.0	III		1	25U	180U	
		POTS	0438.7	0501.1	III	GG,N	2	200U	800X	
		SVTO	0439.0	0444.0	III		1	42	78	
		HIRA	0439.5	0440.5	III	G	1	40	110	
	0457 1703	ONDR								
		LEAR	0503.0	0922.0	III	N	1	25	180	
		SVTO	0503.0	0614.0	III	N	1	30	77	
	0515 1730	BLEN								
	0600 1200	IZMI	0600.0E	0820.0U	I	NG	1	200	270X	
		IZMI	1123.7	1123.9	III	G	1	55	125	
		HOLL	2152.0	2152.0	III		1	25	89	
	1947 2400	HIRA	2152.0	2152.5	III	B	1	60	130	
	2040 2400	CULG	2152.0	2152.0	III	B	1	27	180	
		CULG	2312.0	2312.0	III	B	1	30	180	
		LEAR	2323.0	0921.0	III	N	1	25	163	
29	0000 0924	HIRA								100-200MHz no data
	0352 1832	POTS	0352 E	1813 U	I	S,N,DC	2	200U	410	
	0000 0720	CULG	0410.0	0411.0	III	G	1	30U	90	
		CULG	0515.0	0534.0	III	N	1	30	180	
		CULG	0557.0	0557.0	III	B	1	27	90	
	0604 1200	IZMI	0600.4E	1200.0D	I	N	1	45U	270X	
		SVTO	0656.0	0656.0	III		1	36	78	
		IZMI	0656.7	0656.9	III	B	2	40	85	
		SVTO	0706.0	1341.0	III	N	1	25	180	
		IZMI	0722.0U	0922.0U	III	N	2	25X	95U	
		POTS	0741	1221	III	GG,N	2	40X	80	
		IZMI	0748.0	0749.4	III	G	2	40	85	
		IZMI	0922.0	1200.0D	III	S,C	2	25X	95U	
		IZMI	1118.5	1121.8	III	GG	2	25X	170	
		SGMR	1158.0	1232.0	III	N	2	30	55	
		SVTO	1158.0	1158.0	III		2	25	83	
		IZMI	1158.4	1158.9	III	G	2	25X	95	
		POTS	1230.2	1232.5	III	G	2	40X	270	
		SVTO	1250.0	1719.0	CONT		1	35	180	
	0456 1704	ONDR	1615.1	1618.1	DCIM	GG,SP	2	800X	2000X	
		POTS	1615.2	1618.2	DCIM		2	250	800X	
	0515 1715	BLEN	1617.3	1618.2	DCIM	S	3	140	1360	
	1946 2400	HIRA								
	2040 2400	CULG								
30	0350 1834	POTS	0355 U	1813 U	I	S,N	1	200U	420	100-200MHz no data
	0000 0925	HIRA	0355.5	0356.5	III	G	1	110	250	
	0000 0720	CULG	0356.0	0356.0	III	G	1	30	180	
		ONDR	0730.1	0731.2	DCIM	GG	2	800X	2000X	
	0454 1705	ONDR	0730.3	0731.2	DCIM	G	2	2000X	4500X	
	0604 1203	IZMI	0956.5	0956.7	III	B	1	45	95	
		POTS	0956.6	0956.9	III	B	1	40X	85U	
		IZMI	1002.0U	1145.0U	I	N	1	210U	270X	
		IZMI	1026.3	1026.5	III	B	1	45	95	
		IZMI	1044.5	1044.6	III	G	1	180	270	
		POTS	1044.5	1048.5	III	G	2	40X	330	
		IZMI	1126.8	1127.8	III	G	1	45	160	
		POTS	1137.7	1138.2	DCIM		2	270	630	
		POTS	1146.6	1146.8	DCIM		1	280	460	
		IZMI	1202.4	1202.5	III	B	1	110	180	
		POTS	1249.9	1251.0	III	GG	3	40X	480	
	0515 1715	BLEN	1249.9	1251.2	III	GG,V,C	2	100X	4000X	
		SGMR	1250.0	1251.0	III		1	30	50	
		SVTO	1250.0	1251.0	III		2	25	78	
		HOLL	1335.0	1335.0	III		1	25	130	
		POTS	1335.0	1335.3	III	G	2	40X	330	

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

Spectral Observations

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Apr 03

APRIL 2003

OBSERVATION			EVENT				FREQUENCY			Remarks
Start	End	Sta	Start	End	Spectral	Event	Int	Lower	Upper	
Day	(UT)		(UT)	(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)
30			SGMR	1335.0	1335.0	III		2	30	80
			SVTO	1335.0	1335.0	III		1	25U	83U
			POTS	1448.1	1449.9	DCIM		2	290	800X
			BLEN	1448.2	1449.8	III	GG	2	300	2400
			ONDR	1448.5	1449.0	DCIM	G	1	800X	1648
			SVTO	1513.0	1521.0	III		1	25	175
			HOLL	1516.0	1518.0	III		1	25	88
			SGMR	1517.0	1518.0	III		1	30	50
			POTS	1517.6	1518.0	III	G	2	40X	480
			HOLL	1611.0	1611.0	III		1	25	73
			SVTO	1611.0	1611.0	III		1	25	49
			BLEN	1720.8	1723.3	DCIM	P	2	700	1400
1945	2400		HIRA							
2040	2400		CULG							
			HOLL	2300.0	2301.0	III		1	25	70

Event Remarks:

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

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

SWF = Associated short wave fade observed

ESS = Estimated shock speed in km/s (Type II)

FLA = Associated flare observed (class optional)

Stations Reporting:

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

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

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

APRIL 2003

DAY	HELIOGRAPHIC POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/04/03	+0.06	+0.03	I	9H40	15H25 D
01/04/03	+1.24	-0.03	I	8H27 E	15H25 D
02/03/03	+0.20	+0.02	I	8H23 E	15H24 D
03/04/03	+0.68	-0.03	III	8H43 E	15H25 D
04/04/03	+0.95	-0.09	I	8H23 E	15H24 D
05/04/03	-1.15	-0.11	I	14H27	15H24 D
05/04/03	+1.10	-0.16	I	8H23 E	15H24 D
06/04/03	+0.50	+0.81	I	8H22 E	15H23 D
06/04/03	+0.84	+1.21	III	8H22 E	12H49
06/04/03	+1.07	+0.84	I	8H22 E	14H10
07/04/03	-1.29	-0.08	I	8H22 E	15H23 D
07/04/03	-0.47	+0.03	I	8H22 E	15H23 D
08/04/03	-0.64	-0.03	I	8H22 E	15H23 D
08/04/03	-0.22	+0.12	I	8H22 E	15H23 D
09/04/03	+0.14	+0.16	II	8H31 E	15H22 D
10/04/03	+0.16	+0.03	II	8H20 E	15H21 D
10/04/03	+0.54	+0.08	I	8H20 E	15H21 D
11/04/03	+0.47	-0.03	II	8H21 E	15H22 D
12/04/03	+0.96	+0.14	I	8H21 E	15H22 D
21/04/03	+0.09	+0.47	I	8H19 E	15H19 D
22/04/03	+0.33	+0.47	I	10H40	15H19 D
23/04/03	-0.68	-0.37	II	8H19 E	15H19 D
23/04/03	-0.22	-0.12	I	8H19 E	15H19 D
24/04/03	-0.51	-0.28	III	8H47 E	15H19 D
24/04/03	-0.14	-0.17	II	8H47 E	15H19 D
25/04/03	-0.22	-0.28	IV	8H19 E	15H19 D
25/04/03	+0.26	-0.16	IV	8H19 E	15H19 D

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

² IMP1: FLUX< 5 SFU IMP2: 5< FLUX < 20 SFU IMP3: 20< FLUX <100 SFU

IMP4: 100< FLUX <300 SFU IMP5> 300 SFU

³ E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS

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

26/04/03	+0.42	-0.22	IV	8H19 E	15H19 D
27/04/03	-1.04	+0.25	I	8H18 E	15H18 D
27/04/03	-0.12	+0.43	III	8H18 E	15H18 D
27/04/03	+0.68	-0.34	II	8H18 E	15H18 D
28/04/03	-0.91	-0.16	I	8H18 E	15H18 D
28/04/03	-0.08	+0.51	I	8H18 E	15H18 D
28/04/03	+0.81	-0.25	I	8H18 E	15H18 D
29/04/03	-0.37	-0.08	III	8H18 E	15H18 D
29/04/03	+0.45	+0.54	II	8H18 E	15H18 D
29/04/03	+0.91	+0.19	I	8H18 E	15H18 D
30/04/03	-0.20	-0.12	I	8H18 E	15H18 D
30/04/03	-0.34	-0.42	I	8H18 E	15H18 D
30/04/03	-0.02	+0.11	I	8H18 E	15H18 D

SOLAR RADIO NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH

APRIL 2003

DAY	HELIOGRAPHIC POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/04/03	+1.16	+0.23	I	8H27 E	15H25 D
02/04/03	+0.36	-0.03	I	8H23 E	15H24 D
02/04/03	+1.24	+0.17	I	8H23 E	15H24 D
03/03/03	+0.68	-0.11	II	8H43 E	15H25 D
04/03/03	+0.84	-0.16	I	8H23 E	15H24 D
05/04/03	+0.62	+0.57	I	11H05	15H24 D
06/04/03	-0.69	+0.17	I	8H22 E	15H23 D
06/04/03	+0.88	+0.51	I	8H22 E	15H23 D
07/04/03	-0.43	+0.16	I	8H22 E	15H23 D
08/04/03	-0.19	+0.17	I	8H22 E	15H23 D
09/04/03	-0.26	+0.03	I	8H31 E	15H22 D
09/04/03	+0.09	+0.14	I	8H31 E	15H22 D
10/04/03	+0.06	+0.03	I	8H20 E	15H21 D

10/04/03	+0.33	+0.08	I	8H20 E	15H21 D
11/04/03	+0.39	+0.02	I	8H21 E	15H22 D
12/04/03	+0.68	+0.12	I	8H21 E	15H22 D
12/04/03	+0.79	-0.14	I	8H21 E	15H22 D
21/04/03	+0.05	+0.43	I	8H19 E	15H19 D
22/04/03	-0.47	-0.16	I	8H19 E	15H19 D
22/04/03	+0.28	+0.45	I	8H19 E	15H19 D
23/04/03	-0.26	-0.14	I	8H19 E	15H19 D
23/04/03	+0.57	+0.47	II	8H19 E	15H19 D
24/04/03	-0.06	-0.11	II	8H47 E	15H19 D
24/04/03	+0.60	+0.39	III	12H49	15H19 D
25/04/03	-0.64	+0.31	I	8H19 E	15H19 D
25/04/03	+0.19	-0.12	I	8H19 E	15H19 D
26/04/03	-0.34	+0.42	I	8H19 E	15H19 D
26/04/03	+0.39	-0.16	II	8H19 E	15H19 D
27/04/03	-0.22	+0.39	I	8H18 E	15H18 D
27/04/03	+0.00	+0.43	I	8H18 E	15H18 D
28/04/03	+0.09	+0.3'	I	8H18 E	15H18 D
28/04/03	+0.22	+0.50	I	8H18 E	15H18 D
28/04/03	+0.76	-0.22	II	8H18 E	15H18 D
29/04/03	-0.42	-0.12	I	8H18 E	15H18 D
29/04/03	+0.47	+0.48	I	8H18 E	15H18 D
29/04/03	+0.93	-0.20	I	8H18 E	15H18 D
30/04/03	-0.31	-0.19	I	8H18 E	15H18 D
30/04/03	-0.05	+0.03	I	8H18 E	15H18 D
30/04/03	+0.76	+0.42	I	8H18 E	15H18 D
30/04/03	+1.04	-0.22	I	12H12	15H18 D

13, 19, 20 APRIL: 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 increase uncertainties in the deviation, the positions which are indicated are estimated within 0.2 R.
- ** Following a large burst.
- *** Importance not well determined due to the proximity of the very strong other source.
- **** No flux measurements available.

COSMIC RAY INDICES (Neutron Monitor)

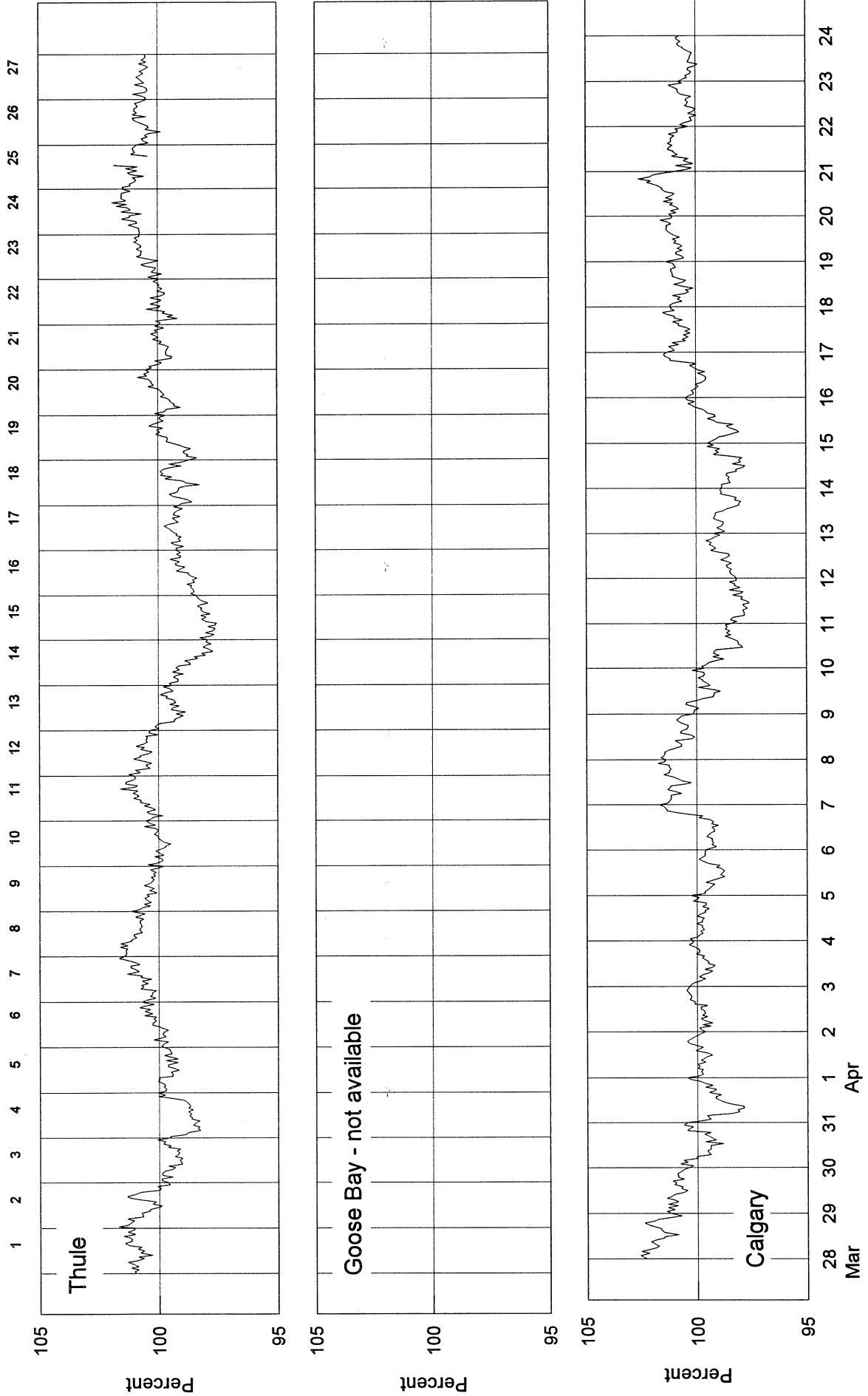
April 2003

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	4003.4	3515.7	5582.5	8402.2	3711.9	1930.3	3437.7
2	4018.7	3547.7	5590.2	8423.7	3729.2	1932.7	3439.5
3	4038.6	3559.8	5629.8	8469.5	3747.4	1936.7	3463.3
4	4063.2	3576.2	5663.3	8528.7	3753.4	1937.3	3476.0
5	4040.9	3570.8	5668.7	8531.8	3753.9	1940.4	3479.1
6	4050.2	3565.5	5677.8	8524.0	3771.7	1948.4	3476.7
7	4094.9	3581.7	5709.0	8588.0	3811.8	1969.7	3480.5
8	4105.7	3585.5	5736.0	8607.2	3821.8	1981.5	3482.1
9	4098.9	3602.5	5735.0	8618.8	3811.5	1980.0	3495.0
10	4072.0	3572.7	5690.8	8546.1	3785.3	1975.5	3492.2
11	4055.3	3561.5	5674.2	8504.0	3763.8	1966.5	3498.5
12	4016.8	3534.7	5625.7	8439.3	3732.3	1961.3	3484.5
13	4054.4	3552.5	5689.1	8531.8	3776.5	1964.8	3507.8
14	4099.3	3570.2	5697.6	8566.7	3791.2	1961.3	3512.7
15	4066.5	3578.3	5667.7	8543.0	3804.2	1957.8	3506.9
16	4077.0	3591.8	5689.9	8554.2	3817.2	1966.8	3511.0
17	4043.4	3541.2	5655.0	8504.9	3753.8	1961.9	3478.8
18	3949.0	3435.2	5516.9	8270.1	3669.2	1935.5	3454.8
19	3960.6	3458.3	5546.6	8321.2	3657.9	1929.1	3433.0
20	3920.8	3432.3	5465.7	8202.7	3654.2	1920.7	3443.6
21	3958.1	3461.7	5519.0	8295.8	3680.3	1922.5	3450.4
22	3969.6	3463.0	5528.8	8317.9	3686.8	1928.1	3455.3
23	3969.0	3466.7	5497.7	8293.1	3673.8	1946.4	3450.4
24	3925.3	3444.8	5469.4	8261.9	3632.4	1924.5	3430.2
25	3945.0	3458.0	5478.3	8292.5	3642.0	1923.8	3439.9
26	3970.5	3454.0	5525.7	8303.0	3660.6	1922.6	3450.3
27	3979.1	3478.0	5561.7	8316.4	3708.2	1926.1	3461.2
28	4005.5	3527.2	5616.0	8402.2	3746.1	1937.8	3479.3
29	4018.1	3544.2	5647.9	8422.3	3732.6	1941.9	3466.8
30	4023.1	3535.0	5626.0	8420.3	3718.6	1939.0	3459.2
31							
Mean	4019.0	3525.5	5612.8	8433.5	3733.3	1945.7	3469.9

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.

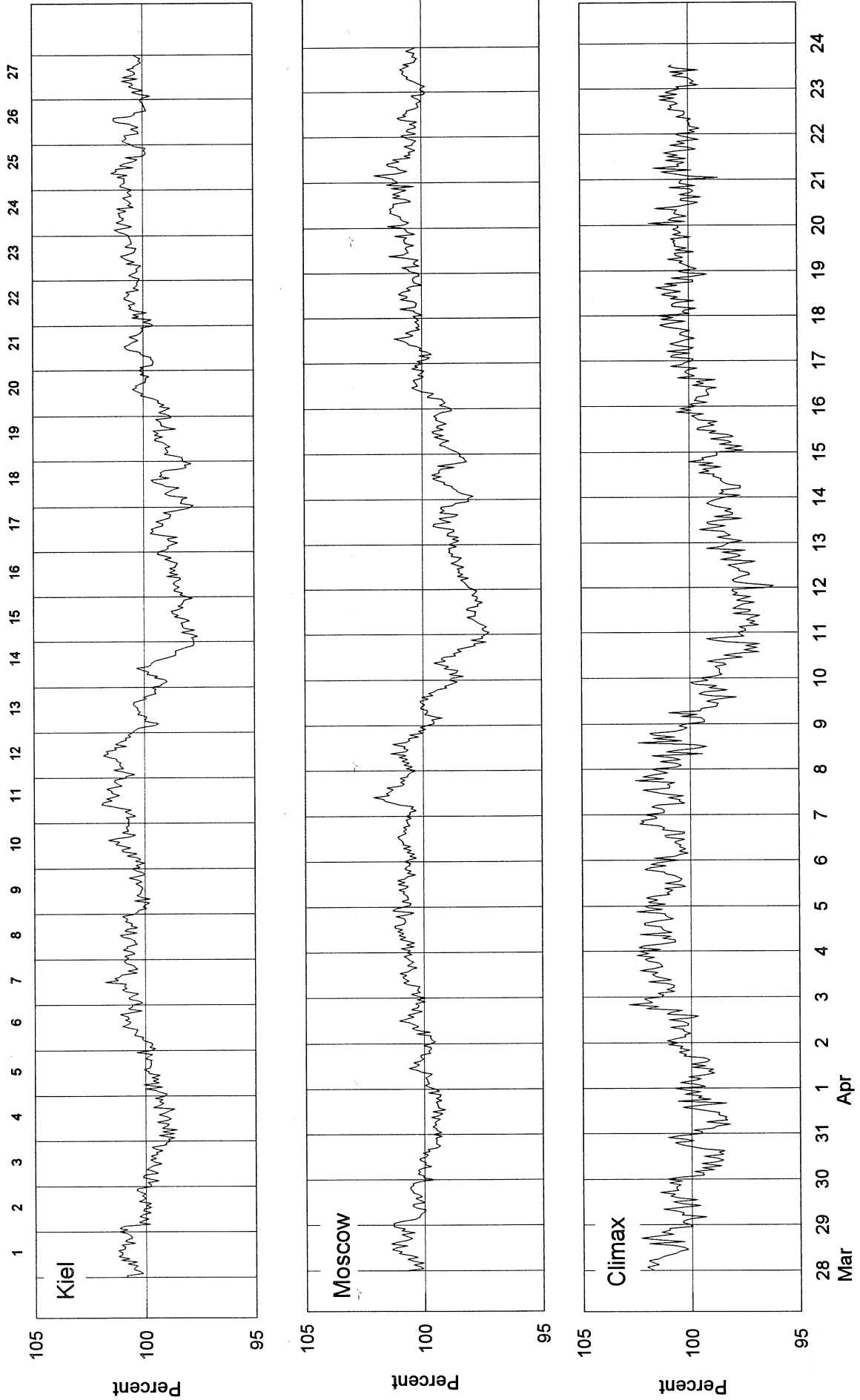
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2316 - Beginning 28 Mar 2003



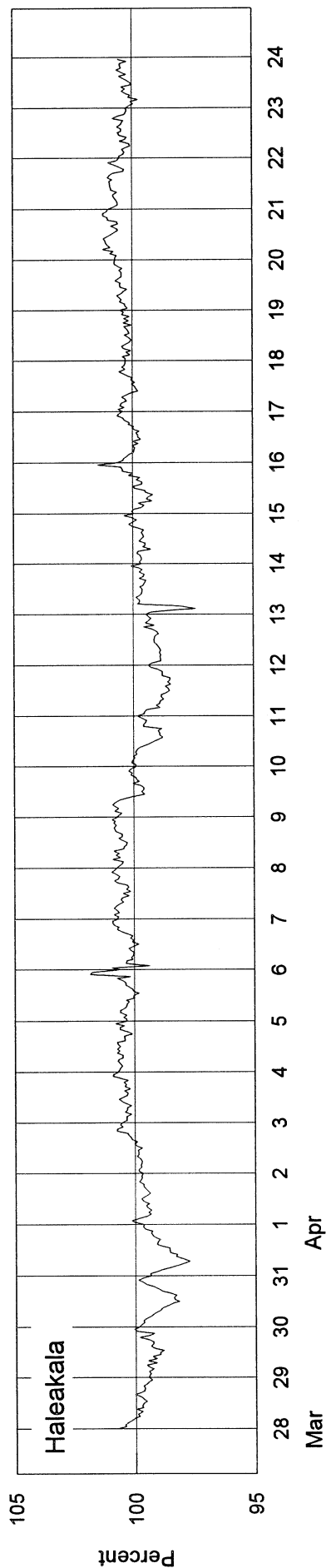
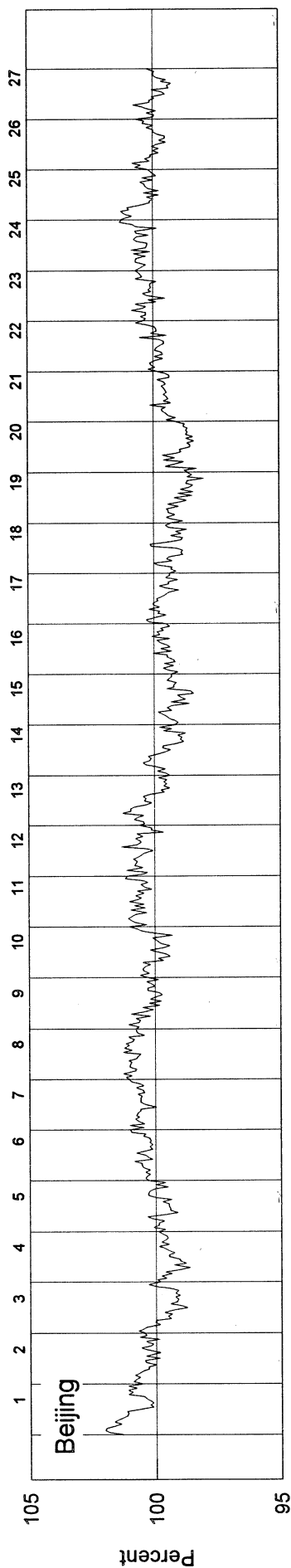
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2316 - Beginning 28 Mar 2003



COSMIC RAY INDICES (Neutron Monitor)

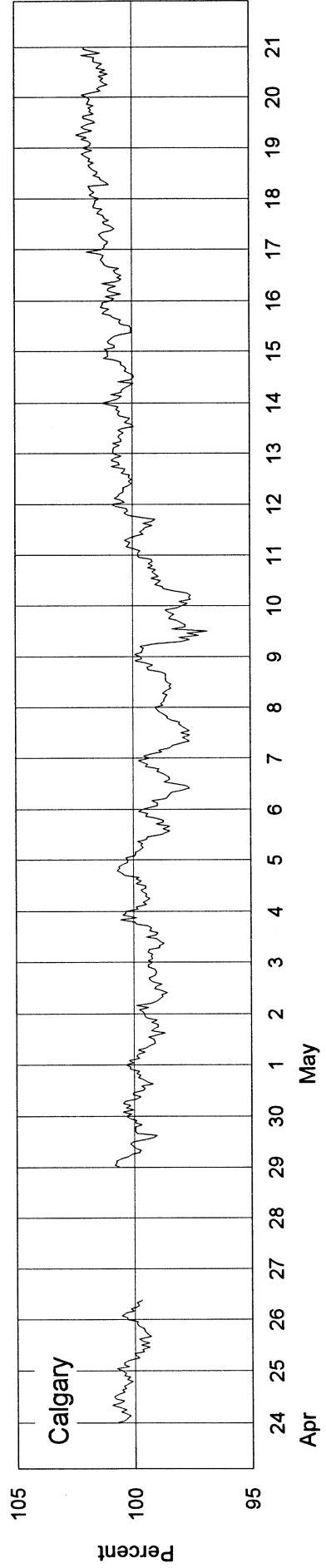
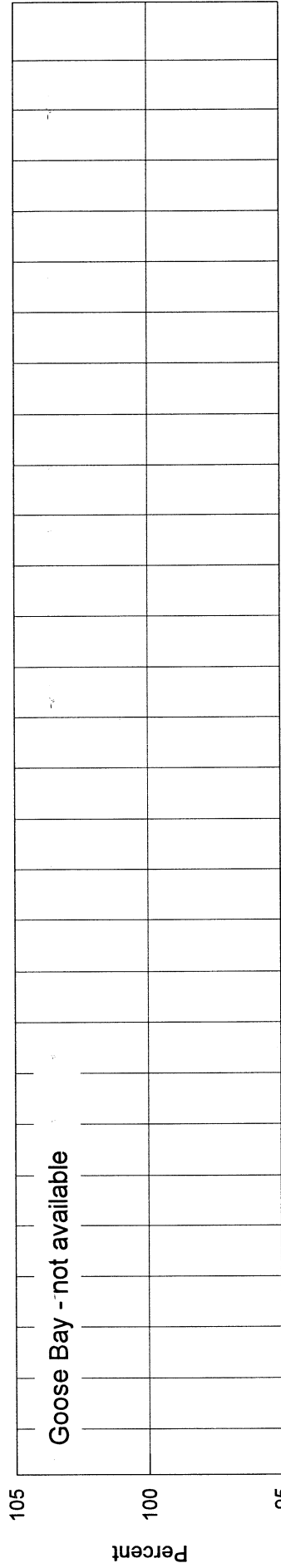
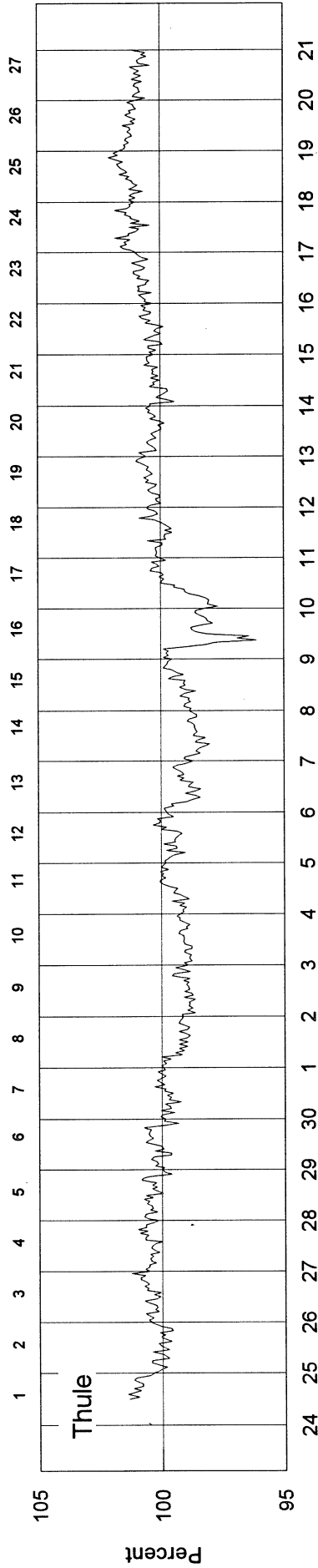
Bartels Rotation 2316 - Beginning 28 Mar 2003



COSMIC RAY INDICES

(Neutron Monitor)

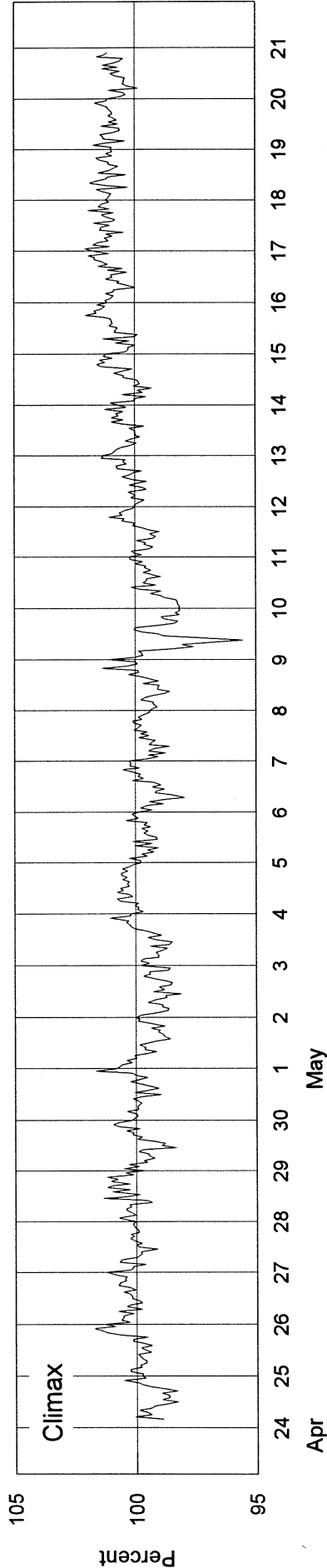
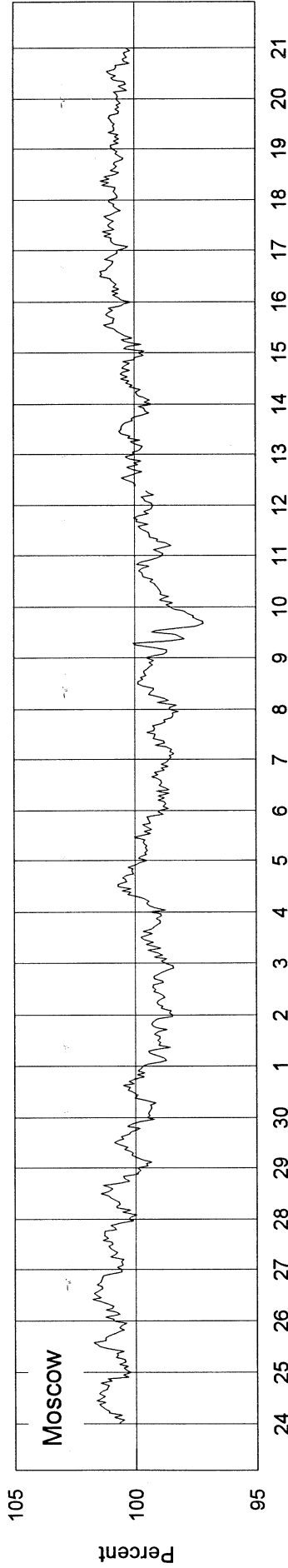
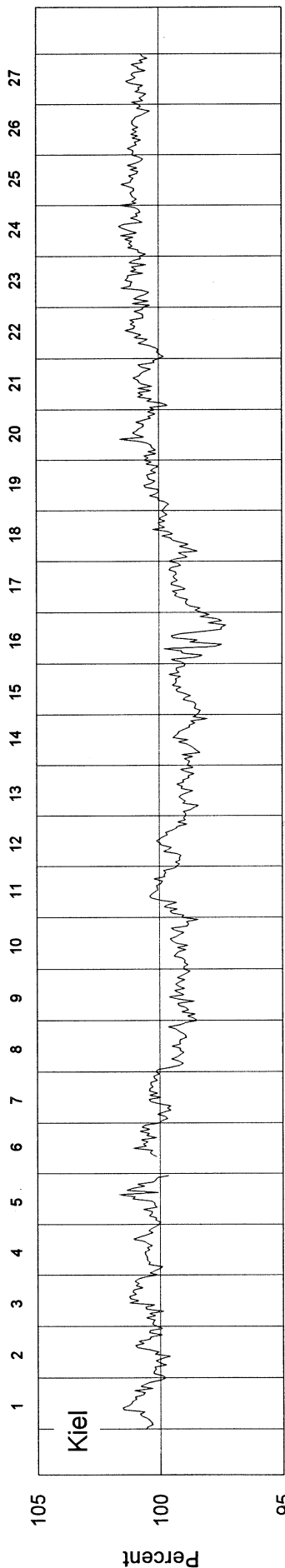
Bartels Rotation 2317 - Beginning 24 Apr 2003



COSMIC RAY INDICES

(Neutron Monitor)

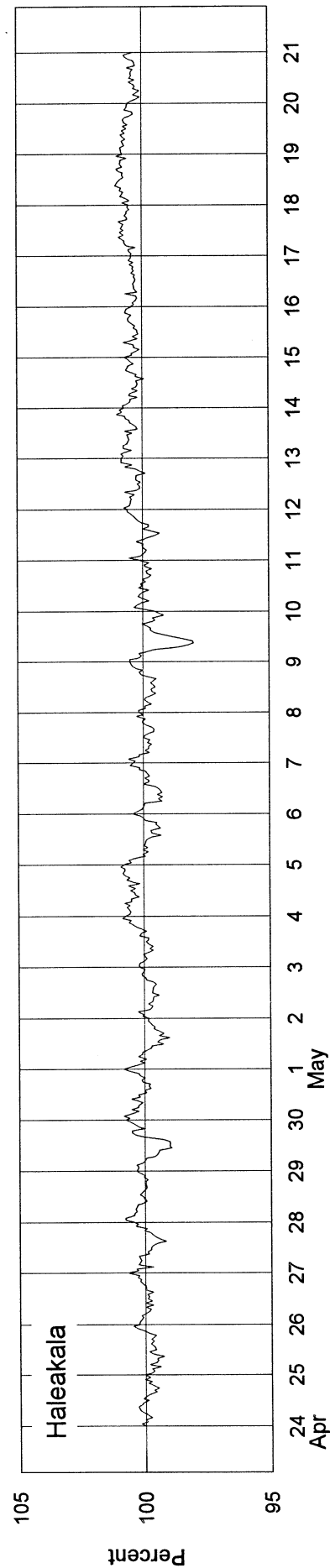
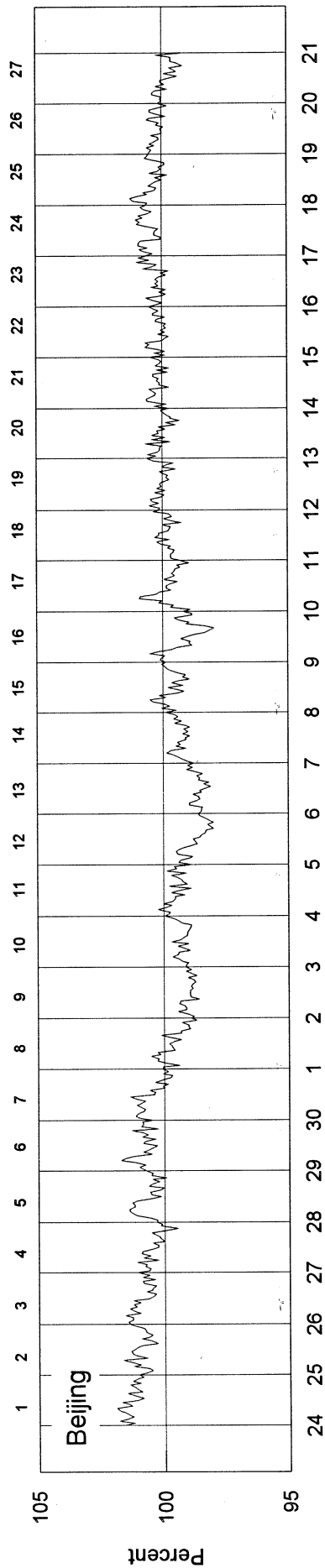
Bartels Rotation 2317 - Beginning 24 Apr 2003



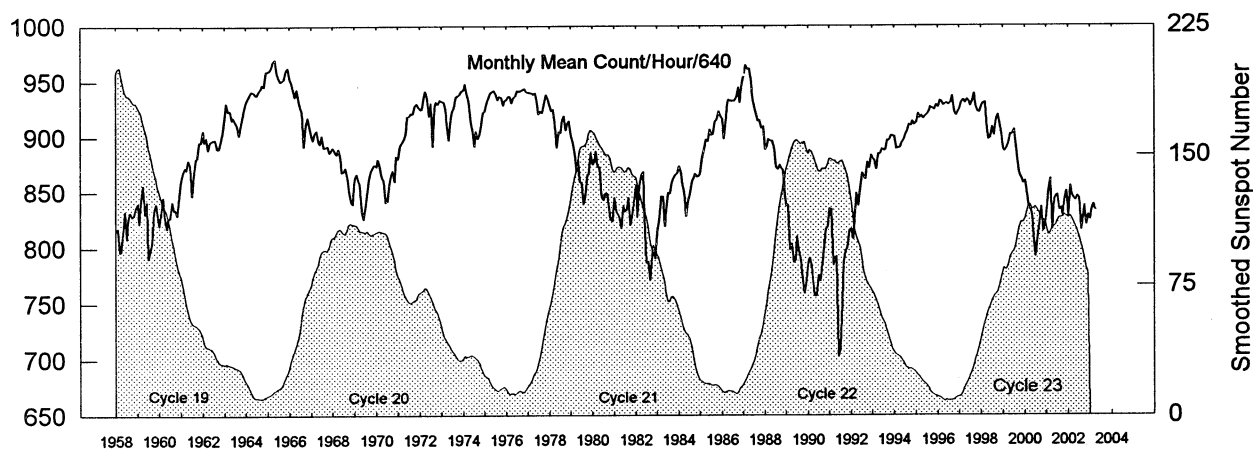
COSMIC RAY INDICES

(Neutron Monitor)

Bartels Rotation 2317 - Beginning 24 Apr 2003



Moscow Neutron Monitor Pressure-Corrected Values Jan 1958 - Apr 2003



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	8171*	8175*	7973*	7971*	8145*	8330*	8087*	8266*	8324*	8291*	8294*	8378*	8200*
1959	8405	8223	8443	8565	8309	8416	7911	7972	8054	8351	8397	8325	8281
1960	8199	8313	8459	8264*	8178*	8272*	8272*	8417	8348	8348	8295	8464	8319*
1961	8619	8682	8731*	8708*	8791*	8759*	8472	8676	8808	8816	8957	8956	8748*
1962	9061	8959	8996	8891	8964*	8974	8977	8977	8908	8902	8973	9056	8940*
1963	9201	9308	9243	9239	9154	9180	9147	9109	9020	9110	9194	9259	9180
1964	9321	9353	9395	9416	9410	9396	9384	9425	9442	9473	9458	9594	9422
1965	9602	9608	9642	9685	9701	9586	9530	9505	9520	9525	9608	9630	9595
1966	9531	9502	9439	9367	9438	9336	9261	9242*	8916	9105*	9178	9094	9284*
1967	9006	8973	9038	9059	8956	8940	9015	8913	8911	8924	8860	8873	8956
1968	8904	8875*	8844*	8892*	8825*	8690*	8689	8725	8635*	8533*	8428	8394	8703*
1969	8628	8666	8606	8584	8334	8261	8378	8510	8612	8689	8731	8751	8562
1970	8735	8799	8749	8639	8608	8418	8420	8540	8656	8702	8596	8827	8641
1971	8805	8921	8952	8982	9028	9185	9190	9219	9215	9285	9302	9276	9113
1972	9260	9254	9367	9419	9364	9192	9311	8916	9275	9319	9298	9336	9275
1973	9333	9321	9258	9107	8975	9160	9233	9263	9368	9376	9392	9423	9267
1974	9431	9481	9390	9327	9153	9062	8916	9054	8983	9027	9092	9222	9178
1975	9238	9317	9361	9405	9415	9425	9395	9339	9370	9361	9285*	9330	9353*
1976	9339	9375	9370	9310	9363	9371	9423	9418	9423	9428	9440	9415	9380
1977	9405	9404	9401	9392	9399	9318	9209	9236	9216	9302	9384*	9341	9334*
1978	9279	9243	9254	9113	8907	9050	9035	9149	9189	9062	9118	9145	9216
1979	9012	8955	8860	8693	8778	8599	8592	8396	8470	8662	8661	8857	8740
1980	8752	8776	8871	8737	8732	8463	8430	8490	8491	8379	8259	8242	8552
1981	8451	8330	8311	8277	8176	8379	8332	8338	8452	8206	8289	8439	8332
1982	8565	8277	8565	8649	8686	8279	7870	7882	7712	7931	8023	7902	8195
1983	8150	8253	8460	8460	8194	8343	8498	8492	8575	8625	8658	8670	8448
1984	8736	8686	8574	8505	8286	8421	8476	8590	8632	8669	8641	8644	8575
1985	8671	8813	8878	8973	8958	9066	9018	9017	9140	9155	9233	9183	9009
1986	9162	8982	9125	9316	9339	9328	9326	9327	9368	9444	9312	9472	9292
1987	9553	9646	9619	9618	9505	9349	9268	9202	9149	9153	9085	9094	9353
1988	8885	8922	8979	8968	8961	8904	8724	8704	8745	8716	8699	8474	8807
1989	8381	8385	7985	8043	7868	7888	8102	7977	7897	7709	7592	7701	7961
1990	7871	7910	7846	7652	7574	7569	7755	7701	7864	8037	8168	8185	7844
1991	8356	8347	7850	7915	7926	7025	7082	7510	7863	7964	8008	8153	7833
1992	8169	8078	8247	8490	8378	8535	8670	8649	8614	8767	8717	8833	8512
1993	8804	8784	8705	8846	8842	8888	8884	8880	8968	8968	9010	9011	8882
1994	9001	8895	8899	8898	8942	8963	9013	9055	9110	9098	9141	9112	9011
1995	9122	9206	9169	9193	9159	9186	9203	9228	9272	9257	9241	9286	9210
1996	9266	9328	9324	9287	9291	9302	9295	9302	9364	9226	9192	9227	9284
1997	9240	9311	9334	9302	9340	9318	9277	9322	9390	9281	9233	9217	9297
1998	9273	9306	9312	9057	8981	8983	9088	9007	9157	9196	9133	9036	9127
1999	8883	8867	8887	8937	9021	9018	9058	8904	8794	8660	8627	8574	8853
2000	8600	8481	8377	8358	8283	8107	7921	8081	8224	8365	8146	8215	8263
2001	8314	8521	8617	8168	8428	8468	8473	8334	8359	8289	8447	8505	8410
2002	8277	8555	8462	8434	8420	8462	8438	8157	8289	8374	8207	8297	8364
2003	8251	8344	8398	8329									8331

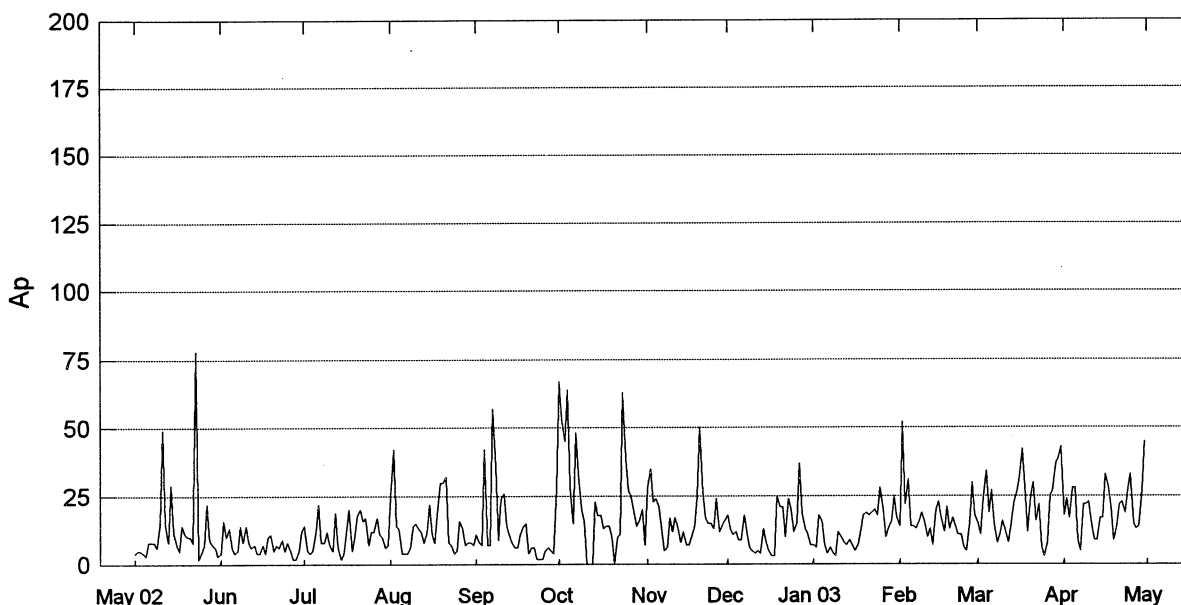
Multiply table entries by 64 to obtain hourly counting rate. Moscow, Russia: N55, E37, Alt= 200 m, Cutoff Rigidity= 2.42GV.
 NOTE: * Indicates data have been restored using the corresponding data of other cosmic ray stations.

Geomagnetic Activity Indices

April 2003

Kp Three-Hourly Indices																			Km 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	5-	4-	2+	2	2+	4-	4	2+	25	18	1.0	4o	4-	2o	2+	2o	3+	4-	2+	31	36	22	27	31																	
2	2+	4	4+	3+	4-	4-	4	5-	30	24	1.2	2o	3+	3o	3+	3+	3o	4-	4o	35	54	35	35	54																	
3	3+	3-	3+	2	3	3	3+	4+	25	17	0.9	3-	2o	3-	3-	3-	3-	3o	4o	27	32	32	25	39																	
4	D4	4+	3+	4	4-	4	4+	5	32+	28	1.2	4-	3-	4-	4-	4o	3+	4o	4+	47	56	58	42	72																	
5	D5	4+	4	3	3	4-	5-	5+	32-	28	1.2	4+	4-	3-	3-	3+	4-	5o	3+	46	50	37	29	58																	
6	Q3A	3-	3	2	2-	1+	3	2-	17	9	0.5	3-	3-	2-	2o	1o	3-	2-	1+	15	20	12	13	20																	
7	Q1	1+	0+	1-	2-	3-	2	1-	10	5	0.2	1+	0+	1o	2o	3-	2-	1-	1o	10	13	10	9	15																	
8		4-	3+	4	5-	4+	4	2-	28	22	1.1	3+	3-	4-	4o	4o	3+	2o	2+	36	41	35	45	31																	
9		4	3+	5-	4	4+	3	2	28	22	1.1	4-	3+	4o	3o	4+	3o	2o	2o	37	36	42	45	33																	
10		3-	4	4	4+	4-	3+	4	29+	23	1.1	3-	4-	4-	4-	3o	3+	4o	3o	38	36	45	37	44																	
11	Q9A	2+	3+	2	2+	2-	3	4	22+	14	0.8	3-	3-	2-	3-	1+	3-	3+	4-	24	26	24	20	30																	
12	Q2A	3+	2	2-	1+	3	2+	1+	16+	9	0.5	3o	2-	2-	2o	3-	2+	1+	1+	16	18	15	14	19																	
13	Q4A	3+	3+	2	2	2+	1+	1+	17-	9	0.5	3o	3o	2o	3-	3-	1+	1o	1o	17	16	21	25	12																	
14		2	3+	1	3-	4+	4-	3	24	17	0.9	2-	3-	1+	3-	4o	3+	3-	4-	29	30	29	14	45																	
15		4-	4	4-	4	3-	2-	2	25-	17	0.9	3+	3o	3+	4+	3o	2-	2-	3o	32	28	30	36	22																	
16	D3	4	3+	5-	5+	4-	4	5	34	33	1.3	4-	3-	4o	5-	4-	3+	5-	4+	53	62	54	56	61																	
17		3+	5-	4	5	4-	5-	4	31	28	1.2	3o	4o	4o	4+	4-	4o	3+	2o	44	44	47	51	41																	
18		2	4+	3+	4+	4+	3	3-	28-	21	1.1	2-	4o	3+	4-	3+	3o	2+	3o	33	43	30	35	38																	
19	Q5A	2+	3-	2	1+	2	2	3	18	9	0.5	2+	3-	2+	1+	2o	2-	3-	3o	18	18	13	11	20																	
20	Q7A	3+	4-	3-	1+	3-	3	2	22+	14	0.8	3o	3o	3-	2-	3-	3-	2+	4o	27	28	21	18	31																	
21		4-	4-	5-	3+	3	3+	4-	29-	22	1.1	3+	4-	4+	4-	3-	3o	3+	3o	39	45	41	49	37																	
22		4-	4	3+	4+	3-	4-	4-	29+	23	1.1	3+	4-	3+	4o	3-	3o	3+	4-	39	43	41	44	40																	
23		2-	4	4-	4-	3+	3	4	26	19	1.0	2o	3+	4-	4-	3o	3-	3+	2+	31	33	32	35	30																	
24		3+	2+	4-	3+	4	4+	5-	31-	27	1.2	3+	2+	4-	3+	4-	4-	4+	4o	44	54	39	30	63																	
25	D2	4	5	4+	5-	4-	4-	3+	34	33	1.3	3+	4o	4-	4-	3+	3o	3o	4+	43	57	41	46	52																	
26	Q10A	3+	2+	3+	2+	3-	3+	4	24	15	0.9	3-	2+	3o	3-	3-	3o	3+	3-	27	36	35	31	40																	
27	Q6A	3-	3	2+	2	2+	3+	4-	22+	13	0.8	3-	3+	3-	3-	3-	3o	3o	3+	28	36	26	26	37																	
28	Q8A	3	4+	4-	4-	2	1+	1+	21	14	0.8	3o	4o	3o	4-	2+	1+	1+	2-	26	26	31	42	15																	
29		2-	2+	2-	1-	4	5	6	26	27	1.2	2-	2+	2o	1-	3o	4+	5o	4+	39	39	30	9	60																	
30	D1	5+	5+	4-	4+	3+	5	5	38	45	1.5	5-	5+	4-	4o	3+	4-	4o	5+	67	62	49	52	60																	
Mean										20	0.96									33.3	37.3	32.7	34.9																		
Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As	Sa	Prov			Ra	Rs	IMF																
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			Ri																					
1	4-	4-	2o	2+	2+	3+	4-	2+	31	4+	3+	2o	2+	2-	3o	4-	3-	31	152.8	93		99	103																		
2	2o	3+	3+	3+	3+	3o	4-	4+	38	2o	3o	3o	3+	3+	3-	4o		33	157.3	103		111	108																		
3	3-	2o	3o	3o	3-	3-	3o	4o	27	3-	2o	3-	3-	2+	3-	3-	4o	26	155.7	90	100		106																		
4	3+	3-	4-	4-	4o	3+	4-	4+	45	4o	3-	4-	4-	4o	3o	4o	5-	49	148.8*	72		79	99																		
5	4o	3+	3-	3-	4-	4-	5-	3+	43	5-	4o	3-	3-	3o	4-	5o	3+	49	137.5	60		65	87																		
6	3-	3-	2-	2+	1+	3-	2-	1+	16	2+	2+	2-	1+	1-	3-	2-	1+	13	126.1	52		56	74																		
7	1+	1-	1-	2o	2+	2o	1-	1o	10	2-	0+	1o	2o	3-	2-	1-	1-	10	115.9	48		51	63																		
8	3o	3o	4-	4+	4o	4-	2o	2+	38	3+	3-	4-	4-	4o	3+	2-	2o	33	112.6	34		39	60																		
9	4-	3o	4o	3o	4o	3+	2+	2+	36	4o	4-	4o	3o	4+	3-	2o	2o	38	109.7	42		44	56																		
10	3-	4-	4-	4o	3+	3+	4-	3+	40	3o	4-	4-	4-	3-	3o	4o	3o	37	104.1	38		37	50																		
11	3-	3o	2-	3-	2-	3o	3+	3+	26	2+	3-	2-	2+	1+	2+	3o	4-	22	103.0	25		28	49																		
12	3-	2-	2-	2-	3o	3-	2-	1+	16	3o	2-	2-	2o	2+	2o	1o	1+	15	102.6	37		44	49																		
13	3-	3-	2+	3-	3-	1+	1o	1+	17	3+	3o	2o	2+	2+	1+	1o	1-	17	103.0	38		45	49																		
14	2-	3-	1+	3-	4o	4-	3o	4-	31	2-	3-	1+	2+	4o	3-	3-	4-	27	102.6	35		40	49																		
15	3+	3+	4-	5-	3+	2o	2o	3o	37	3+	3-	3o	4-	3o	1o	2-	3-	26	101.1	29		32	47																		
16	4-	3o	4+	5-	3+	4-	4+	4-	52	4o	3-	4-	5-	4-	3+	5-	5-	54	99.2	16		16	45																		
17	3-	4+	4o	4o	4-	4+	4-	2o	46	3o	4-	4-	5-	4-	4o	3o	2-	41	101.8	19		21	48																		
18	2-	4+	4-	4-	4-	3o	2+	3o	36	2-	4o	3-	3+	3+	3o	2+	3-	29	108.7	27		31	55																		
19	2o	3-	2+	1+	2+	2o	3-	3o	19	2+	2+	2o	1+	2-	2-	3-	3o	18	113.1	34		40	60																		
20	3o	3+	3-	2o	3o	3o	2+	4-	28	3o	3-	3-	1+	2o	2o	2+	4+	26	119.7	45		49	67																		
21	3o	3+	4+	3+	3o	3+	3+	3+	37	4-	4o	4o	4-	2+	3o	4-	3o	41	127.0	58		62	75																		
22	4-	4-	3+	4o	3-	3+	3+	3+	40	3+	4-	3+	4o	3-	3o	3+	4o	39	133.8	75		74	83																		
23	2o	3+	3+	4-	3o	3o	3o	3-	31	2o	4-	4-	4-	3o	3-	3+	2+	32	134.3	73		63	83																		
24	3o	3-	3+	3+	4-	4-	5-	4o	43	4-	2+	4-	4-	3+	3+	4o	4+	45	129.8	73		80	78																		
25	3+	4-	4-	4o	3o	3+	3-	4+	41	3+	4o	4-	4-	3+	3o	3+	4+	44	145.3	89		90	95																		
26	3o	2+	3o	3-	3-	3o	3+	3-	27	3-	2+	3+	3-	3o	3o	3+	3o	29	145.5	86		92	95																		
27	3-	3o	3-	2+	3-	3+	3o	3o	27	2+	3+	3-	3-	2+	3o	3+	4-	29	156.1	103		102	107																		
28	2+	4-	3o	4-	2+	2-	1+	2o	25	3+	4o	3o	4-	2o	1o	1+	1+	27	154.3	100		113	105																		
29	2-	2+	2+	1+	3+	5-	5+	4o	42	2-	2+	2o	0+	3o	4o	5o	4+	36	157.4	109		119	108																		
30	5-	5-	4-	4-	3o	4o	4o	5o	60	5o	6-	4o	4o	3+	4-	4+	5+	74	155.8	98		110	106																		
Mean										33.5									33.0	127.2	60.0	64.4	75.4																		

Daily Average Indices Ap May 2002 - Apr 2003

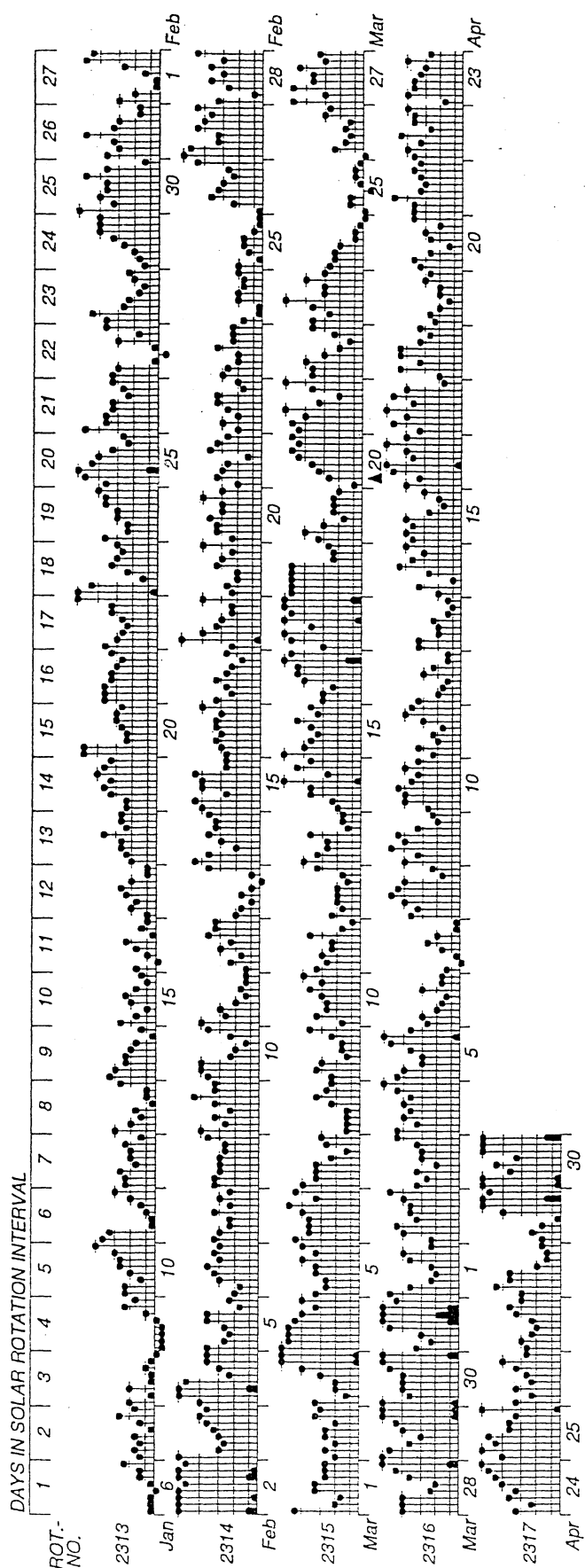


Day	May 02	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr
1	4	4	14	25	11	67	7	18	7	14	15	18
2	5	16	5	42	8	53	28	13	6	52	11	24
3	5	10	4	14	7	45	35	11	18	22	24	17
4	4	13	5	13	42	64	23	12	16	31	34	28
5	3	6	12	4	7	28	24	9	7	14	19	28
6	8	4	22	4	7	15	21	9	4	14	27	9
7	8	5	8	4	57	48	13	18	6	13	15	5
8	8	14	8	6	36	33	5	12	4	16	8	22
9	6	8	12	14	9	20	6	6	3	19	11	22
10	15	14	7	15	24	16	17	5	12	16	16	23
11	49	8	5	13	26	6	12	4	10	10	12	14
12	15	6	19	12	14	6	17	5	8	13	8	9
13	8	7	6	8	11	5	13	4	7	7	14	9
14	29	4	2	12	8	23	8	13	9	20	23	17
15	12	4	4	22	6	18	12	8	7	23	26	17
16	7	7	12	11	6	18	7	5	5	17	31	33
17	5	4	20	8	11	13	7	3	7	12	42	28
18	14	10	5	21	14	14	10	3	12	21	28	21
19	11	11	10	30	15	14	14	25	18	13	12	9
20	10	5	18	30	4	10	25	21	19	17	25	14
21	10	7	20	32	6	8	50	21	18	14	30	22
22	8	6	16	8	6	10	26	10	19	11	16	23
23	78	9	17	7	2	11	17	24	20	11	22	19
24	2	5	7	4	2	63	15	20	18	6	6	27
25	4	8	12	5	2	39	15	12	28	5	3	33
26	7	5	12	16	5	27	13	15	20	15	8	15
27	22	2	17	13	6	25	24	37	10	30	25	13
28	9	2	11	7	5	19	12	19	13	18	27	14
29	7	5	10	8	4	14	14	13	16		37	27
30	6	12	6	8	28	16	16	11	25		39	45
31	3		7	7		20		7	17		43	
Mean	12	7	11	14	13	25	17	13	13	17	21	20

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

GeoForschungsZentrum Potsdam

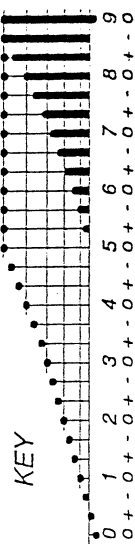
Kp through April 30, 2003



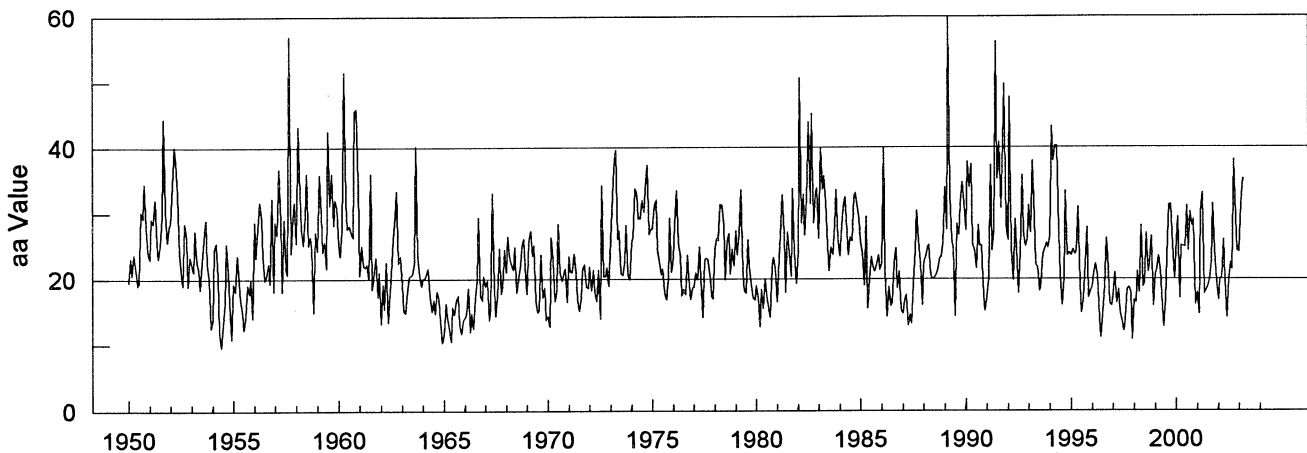
PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 2003 Apr 30

▲ = sudden
commencement



Monthly Mean aa Index Jan 1950 - Apr 2003



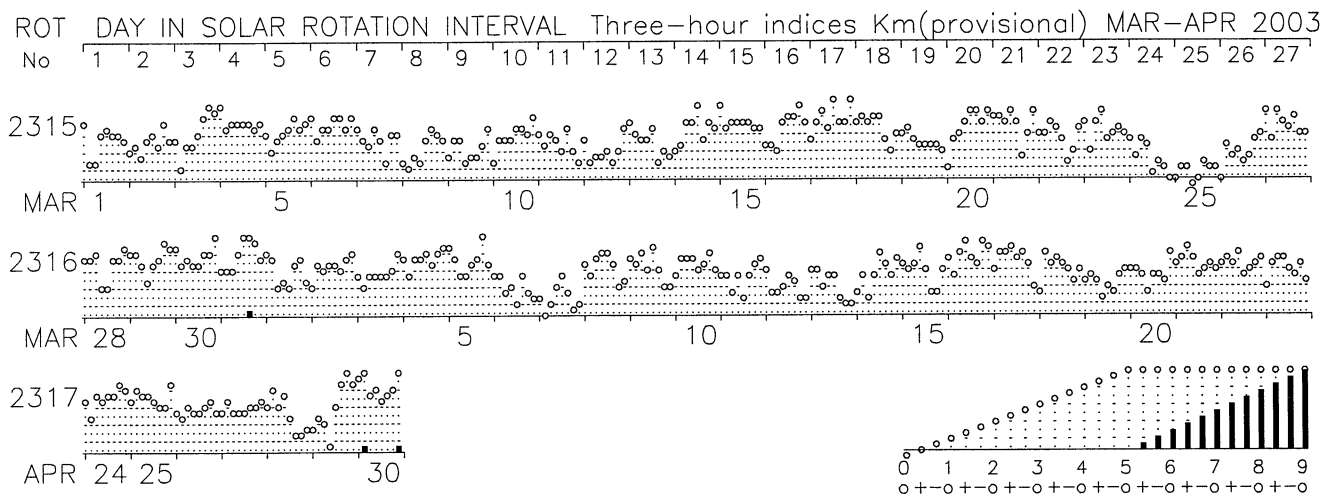
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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									31.4

PLANETARY GEOMAGNETIC ACTIVITY

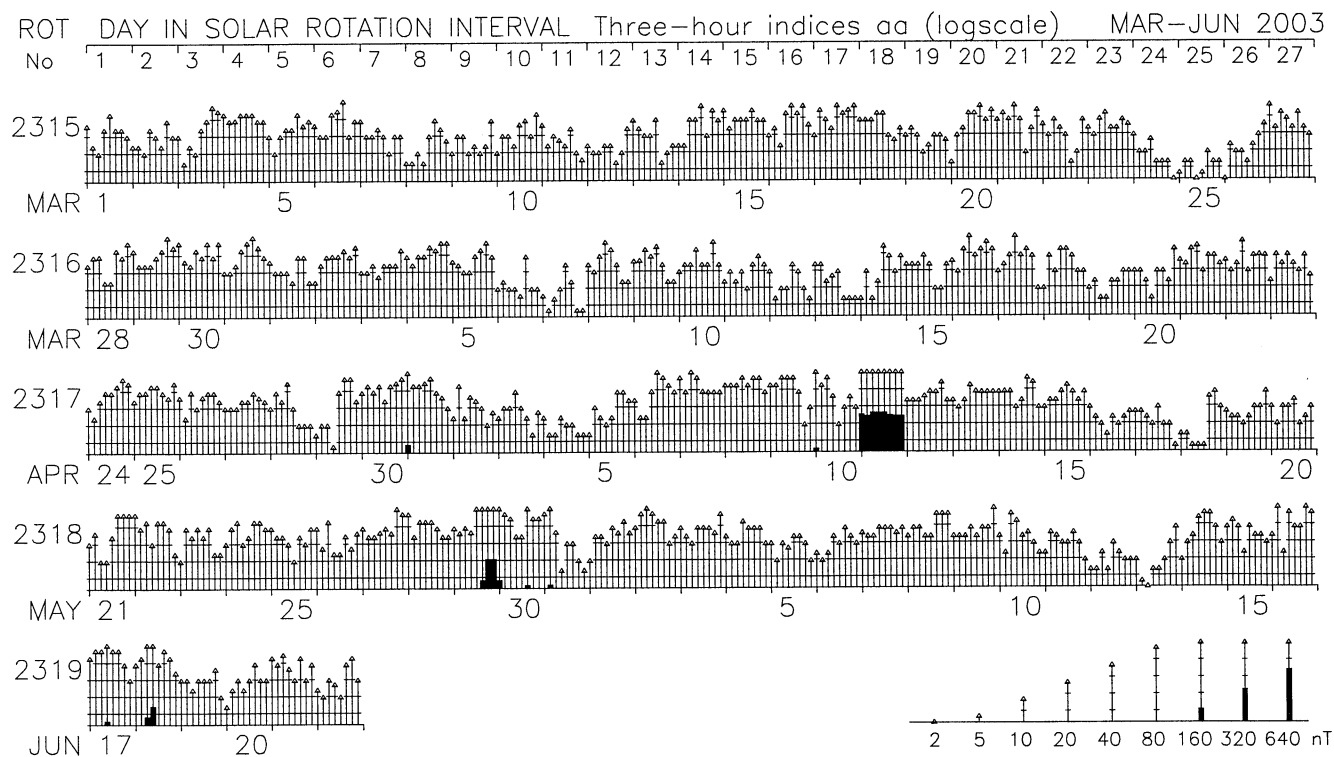
3-HOUR-RANGE INDICES K_m AND a_a BY 27-DAY SOLAR ROTATION INTERVAL

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

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



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

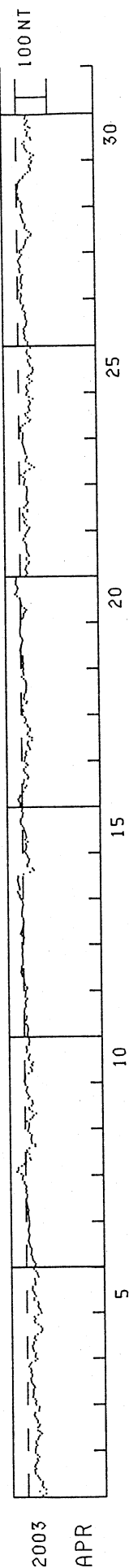


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

APRIL 2003

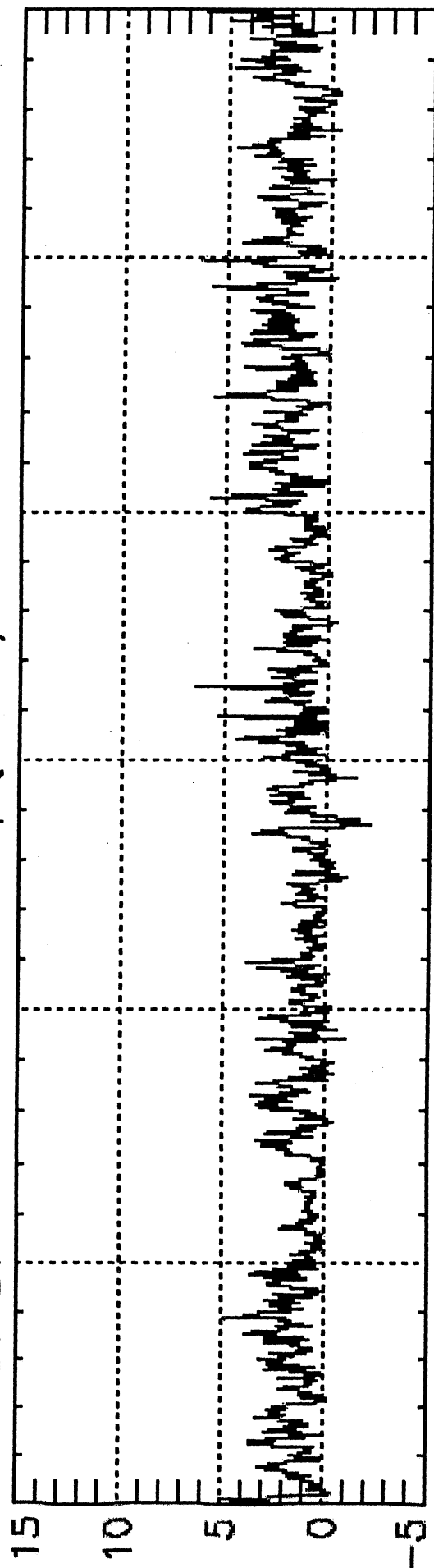
DAY	UNIT=NT																								U. T.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	-45	-56	-36	-55	-48	-43	-45	-45	-38	-32	-28	-23	-19	-21	-24	-21	-23	-27	-30	-29	-34	-29	-23	-23		
2	-23	-25	-28	-25	-24	-31	-32	-37	-43	-38	-31	-31	-35	-37	-31	-31	-27	-22	-20	-23	-35	-35	-37	-27		
3	-24	-27	-22	-16	-17	-18	-18	-18	-22	-21	-16	-11	-10	-10	-14	-13	-10	-12	-10	-4	-8	-12	-25	-30		
4	-24	-25	-27	-20	-17	-15	-16	-19	-21	-26	-22	-25	-33	-43	-48	-47	-44	-35	-24	-23	-26	-23	-34	-45		
5	-44	-42	-38	-35	-37	-34	-23	-23	-28	-24	-22	-18	-17	-18	-26	-27	-26	-24	-37	-36	-33	-29	-23	-18		
6	-26	-28	-24	-21	-18	-17	-13	-15	-15	-16	-12	-10	-7	-5	-7	-8	-10	-8	-6	-6	-8	-10	-10	-10		
7	-7	-7	-7	-5	-5	-7	-5	-3	-3	-2	0	-1	-3	-4	1	-2	1	-2	2	5	6	11	11	10		
8	15	29	25	25	13	6	-2	-16	-14	-2	-12	-5	-3	-12	-31	-30	-21	-18	-18	-18	-19	-13	-7	-9		
9	-12	-12	-11	-6	-16	-23	-27	-35	-22	-14	-11	-21	-25	-24	-22	-10	-14	-9	-6	-3	-5	-7	-2	-2		
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11	-9	-10	-12	-11	-11	-9	-5	-2	-6	-7	-7	-1	1	1	-1	-5	-6	-4	-6	-9	-4	-4	-6	-6		
12	-10	-10	-3	-1	-1	1	2	5	8	10	7	7	7	4	3	4	3	5	6	5	4	6	6	5		
13	5	2	0	-1	6	9	8	5	3	1	-2	-1	0	2	5	6	6	5	4	4	2	3	4	7		
14	11	12	15	19	11	12	13	15	16	17	16	15	-1	-22	-36	-30	-14	-13	-18	-20	-21	-15	-13	-9		
15	-5	-9	-11	-11	-9	-15	-8	-12	-11	-10	-8	-5	-3	0	5	7	7	6	2	1	-1	3	2	5		
16	7	8	12	14	9	7	0	-4	0	-10	-13	-3	-6	-5	-17	-19	-15	-10	-6	-6	-12	-17	-13	-8		
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19	-6	-5	-7	-6	-5	-5	-5	1	2	3	1	-2	-1	-3	-6	-4	0	3	4	4	4	2	2	2		
20	0	-3	-7	-9	-9	-14	-18	-11	-4	-1	0	1	4	12	18	14	12	10	12	15	15	16	13	-6		
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22	-29	-30	-22	-15	-14	-19	-14	-9	-9	-25	-25	-14	-20	-24	-27	-23	-22	-23	-22	-25	-25	-24	-22	-13		
23	-13	-15	-17	-11	-5	-16	-21	-33	-47	-39	-30	-20	-21	-24	-25	-21	-18	-17	-15	-13	-12	-10	-9	-12		
24	-12	-12	-11	-5	-3	-5	-12	-21	-33	-38	-29	-22	-19	-28	-36	-33	-30	-35	-37	-32	-45	-33	-25	-26		
25	-30	-26	-24	-26	-36	-43	-36	-29	-33	-41	-46	-47	-46	-38	-36	-31	-30	-39	-34	-28	-26	-28	-39	-30		
26	-31	-31	-25	-19	-22	-19	-18	-20	-18	-22	-27	-27	-29	-25	-24	-23	-24	-19	-13	-15	-17	-10	-8	-7		
27	-9	-11	-9	-2	-4	-12	-14	-13	-10	-10	-11	-12	-15	-8	-5	-6	-9	-7	-4	-2	-6	-10	-14	-8		
28	-7	-13	-20	-23	-26	-26	-28	-36	-43	-46	-39	-30	-24	-24	-27	-21	-17	-15	-13	-12	-17	-18	-15	-13		
29	-13	-15	-11	-6	-5	-2	-4	0	-1	-3	-4	-4	-7	-11	-19	-23	-28	-38	-46	-46	-41	-41	-47	-49		
30	-43	-48	-57	-45	-35	-30	-27	-26	-21	-26	-47	-46	-35	-34	-38	-31	-45	-40	-29	-32	-37	-29	-31	-44		



WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Qaanaaq (Thule), THL

2003-04-01



4-01 4-06 4-11 4-16 4-21 4-26

Date, mm-dd

Data source: Salar-Terrestrial Physics Division
Danish Meteorological Institute

144
Apr 03

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

APRIL 2003

Sta	Geomag Lat	Commencement Time			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour	
		Day	(UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D K (Min)	H (Gamma)	Z (Gamma)	Day	(UT)
HYB	07.6N	01	1400	..	..	..	..	04(6,7) 05(7)	5	7	140	38	05 22
UJJ	13.6N	03	0330	..	..	..	..		-	8	90	49	05 21
NGP	11.3N	03	0330	..	..	..	..		-	7	128	37	05 21
ABG	09.4N	03	0330	..	..	..	..	04(6,7) 05(7)	5	7	119	37	05 21
PND	02.0N	03	0330	..	..	..	..		-	6	163	74	05 21
TIR	00.6S	03	0330	..	..	..	..		-	5	226	87	05 21
GNA	43.0S	03	1200	..	..	..	..	04(6) 05(6,7)	5	19	88	125	06 12
KRC	16.4N	08	0109	SC	- 27	42	..	08(5)	6	8	132	42	08 16
UJJ	13.6N	08	0215	SC	- 0.6	29	- 6		-	4	100	27	08 18
NGP	11.3N	08	0215	SC	- 1.0	33	- 5		-	6	137	28	08 18
ABG	09.4N	08	0215	SC	- 0.9	27	- 10	08(5)	6	6	129	49	08 18
HYB	07.6N	08	0111	SC	- 0.6	29	- 1	08(4,5,6) 10(7)	5	6	143	33	10 23
PND	02.0N	08	0215	SC	- 0.5	27	30		-	4	161	83	08 18
TIR	00.6S	08	0215	SC	- 0.7	21	28		-	5	229	98	08 18
UJJ	13.6N	14	0700	..	..	..	..		-	4	117	25	15 21
NGP	11.3N	14	0700	..	..	..	..		-	4	151	25	15 21
ABG	09.4N	14	0700	..	..	..	..	14(5)	6	4	135	36	15 21
HYB	07.6N	14	0900	..	..	..	..	14(5,6) 16(4) 17(4)	5	4	144	29	18 24
PND	02.0N	14	0700	..	..	..	..		-	4	131	57	15 21
TIR	00.6S	14	0700	..	..	..	..		-	5	204	63	15 21
CAN	43.6S	14	1200	SC	7	18	15	14(5) 16(4) 17(4)	5	18	93	45	18 01
UJJ	13.6N	16	0400	..	..	..	..		-	3	90	29	17 21
NGP	11.3N	16	0400	..	..	..	..		-	4	120	31	17 21
ABG	09.4N	16	0400	..	..	..	..	16(4,7) 17(4)	5	5	122	42	17 21
PND	02.0N	16	0400	..	..	..	..		-	3	140	51	17 21
TIR	00.6S	16	0400	..	..	..	..		-	3	192	74	17 21
HYB	07.6N	20	1200	..	..	..	..	23(3)	5	6	101	35	24 02
UJJ	13.6N	24	0530	..	..	..	..		-	5	92	31	26 23
NGP	11.3N	24	0530	..	..	..	..		-	6	116	32	26 23
ABG	09.4N	24	0530	..	..	..	..	24(5)	5	6	113	43	26 23
HYB	07.6N	24	0600	..	..	..	..	25(5)	5	5	117	21	26 22
PND	02.0N	24	0530	..	..	..	..		-	5	130	62	26 23
TIR	00.6S	24	0530	..	..	..	..		-	5	195	73	26 23
UJJ	13.6N	29	0500	..	..	..	..		-	6	96	39	01 20
NGP	11.3N	29	0500	..	..	..	..		-	8	134	37	01 20
ABG	09.4N	29	0500	..	..	..	..	29(6,7) 30(4)	5	7	118	79	01 20
HYB	07.6N	29	1200	..	..	..	..	30(4)	5	7	128	33	02 20
HYB	07.6N	29	1736	SC	- 0.6	20	- 3	30(4)	5	7	128	33	02 20
PND	02.0N	29	0500	..	..	..	..		-	6	232	63	01 20
TIR	00.6S	29	0500	..	..	..	..		-	7	235	68	01 20
GNA	43.0S	29	1434	SC	8	36	20	30(8)	6	27	112	132	02 21
CAN	43.6S	29	1200	..	..	..	..	01(1,4,5)	5	17	164	51	01 21

Stations:

ABG = ALIBAG
AMS = MARTIN DE VIVIES
ANN = ANNAMALAINAGAR
BJI = BEIJING
CAN = CANBERRA
CMO = COLLEGE

CZT = PORT ALFRED
DRV = DUMONT D'URVILLE
ETT = ETAIYAPURAM
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS

HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KRC = KARACHI
NGP = NAGPUR
PAF = PORT AUX FRANCAIS

PMG = PORT MORESBY
PND = PONDICHERRY
SHL = SHILLONG
SIT = SITKA
TIR = TIRUNELVELI
UJJ = UJJAIN

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

April 2003

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
08	0111	A: CLF NAG* COI HTY* HYB	06	0730-0737	NGK+
		B: NUR* VAL BDV* HRB SPT GNA CNB	14	1312-1338	GUI
		C: GCK EBR* LIV	19	1601-1620	GUI
			23	0101-0125	MMB+ KAK+ KNY+
			24	1247-1315	BDV+ GUI
			26	0604-0612	HYB
			26	0805-0815	BDV+ MMB+ KNY+
			29	1739-1759	GUI

REPORTING OBSERVATORIES (up to the 3rd of June 2003):

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

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.