



Solar-Geophysical Data prompt reports

Data for March and April 2003

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

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NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE,
DATA, AND INFORMATION SERVICE

NATIONAL GEOPHYSICAL
DATA CENTER

BOULDER,
COLORADO



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Data for March and April 2003

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NATIONAL GEOPHYSICAL DATA CENTER

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Boulder, Colorado

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SOLAR-GEOPHYSICAL DATA

Number 705

(Issued in Two Parts)

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-- MONTHLY PLOTS	

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A.6d	Kitt Peak Solar Mag Field Synoptic Map						704A 46	705A 42	
A.6f	Active Prominences and Filaments	703B 52	704B 48	705B 40					
A.6g	Sac Peak Coronal Line Synoptic Maps	699A 48	700A 46	701A 44	702A 46	703A 40	704A 46	-----	
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A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	698A 27	699A 27	700A 27	701A 28	702A 29	703A 25	704A 28	705A 25
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C.1d	Flare Patrol Observations	703B 17	704B 17	705B 15					
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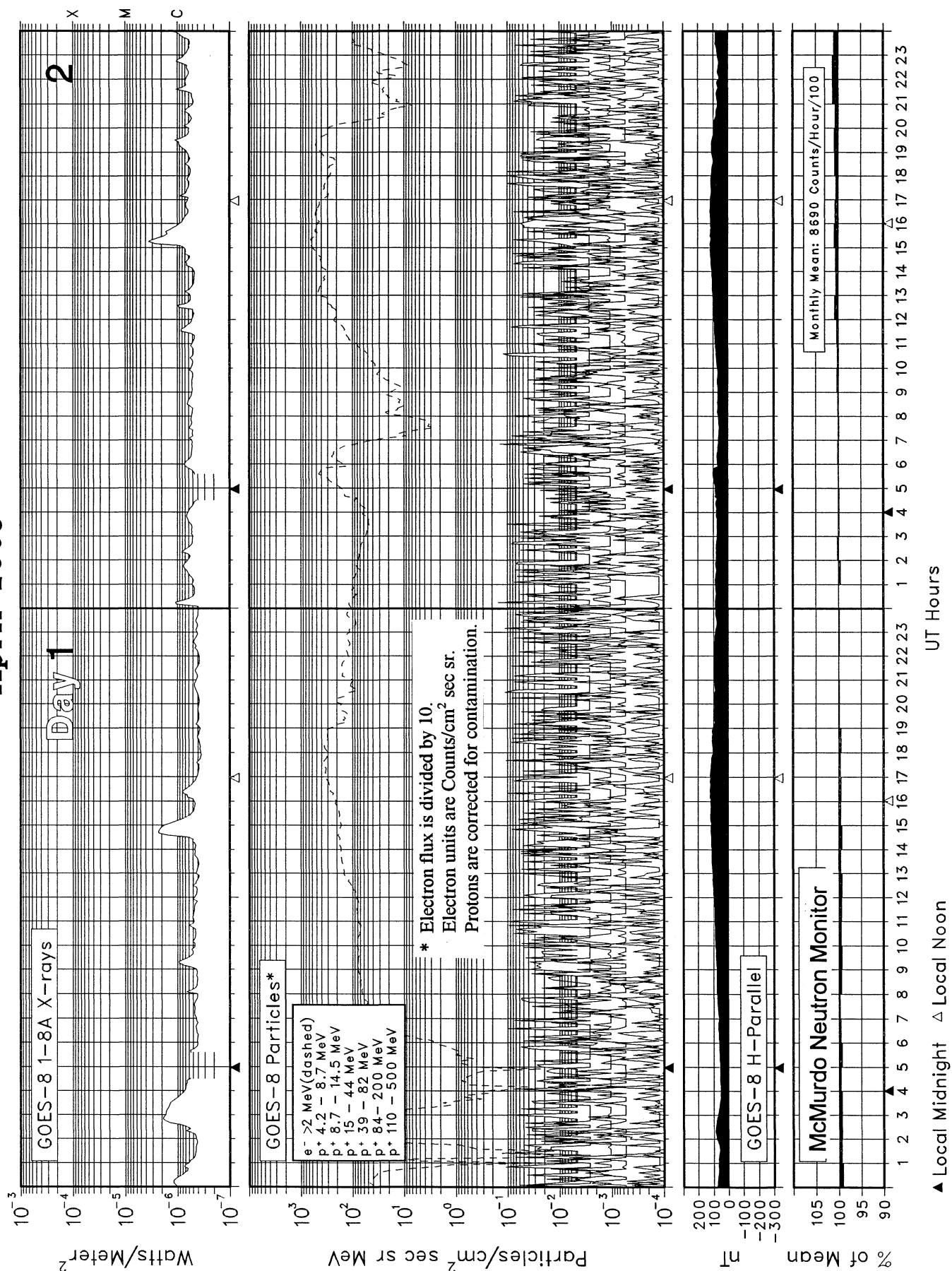
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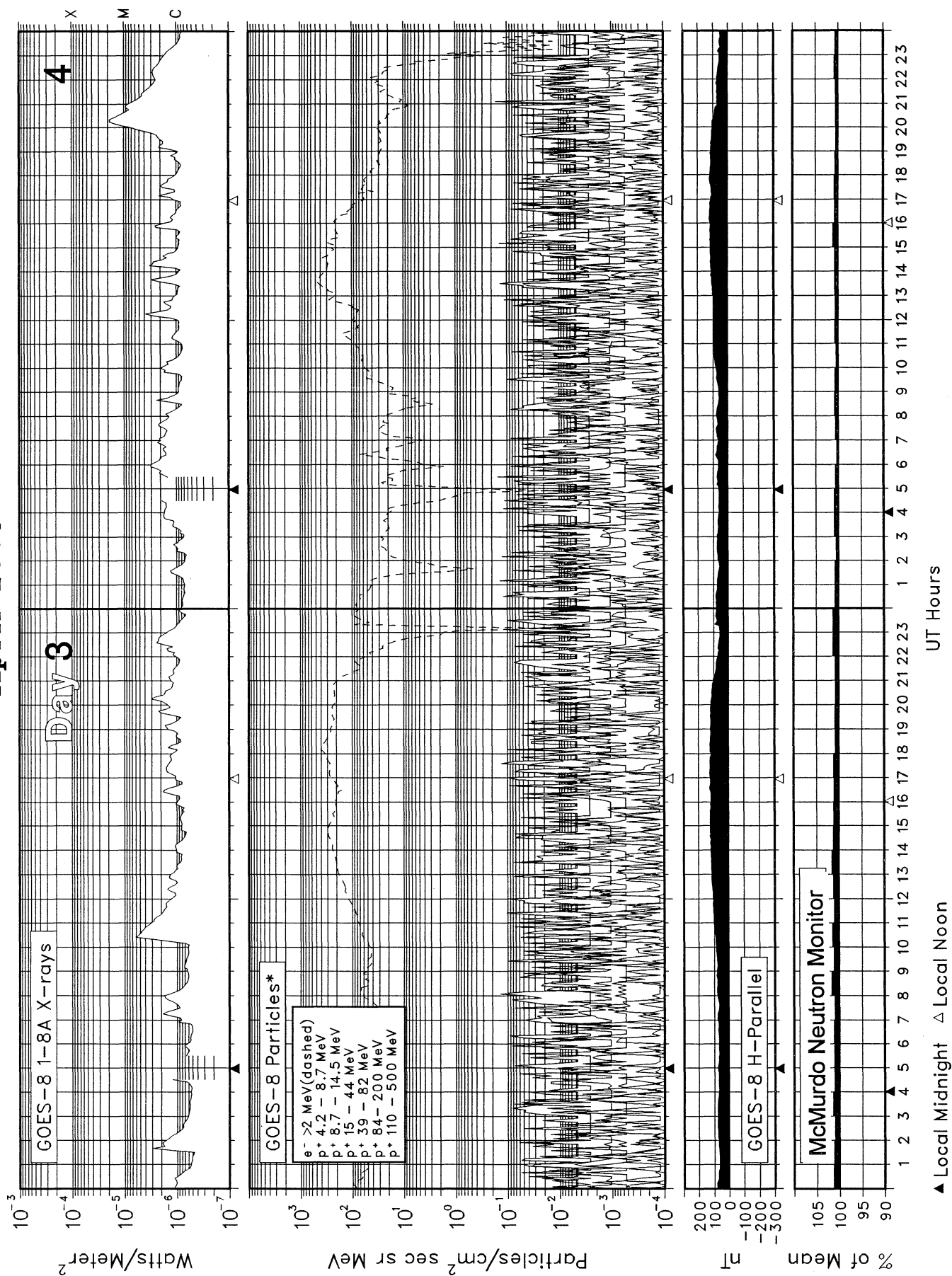
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April 2003

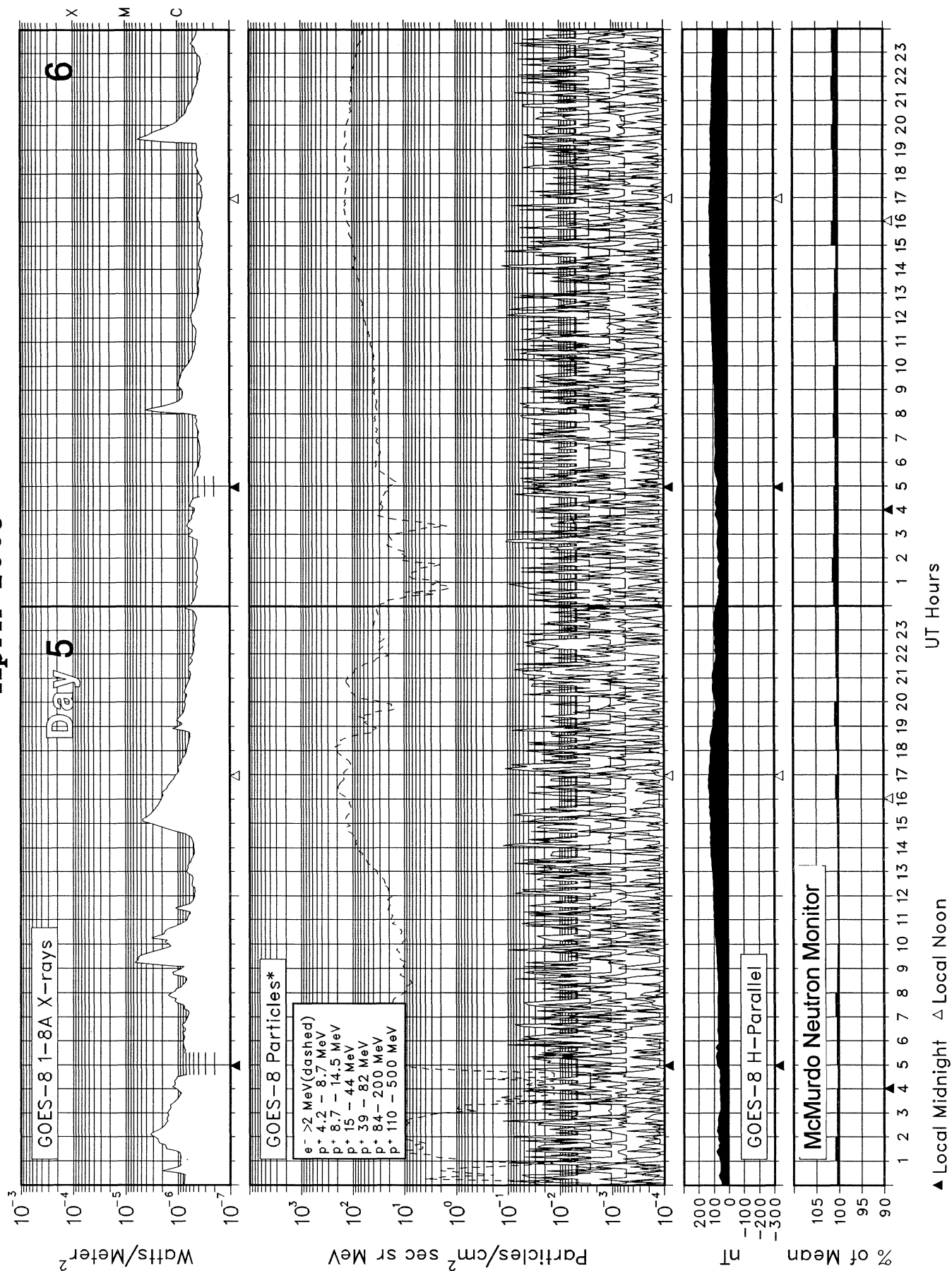


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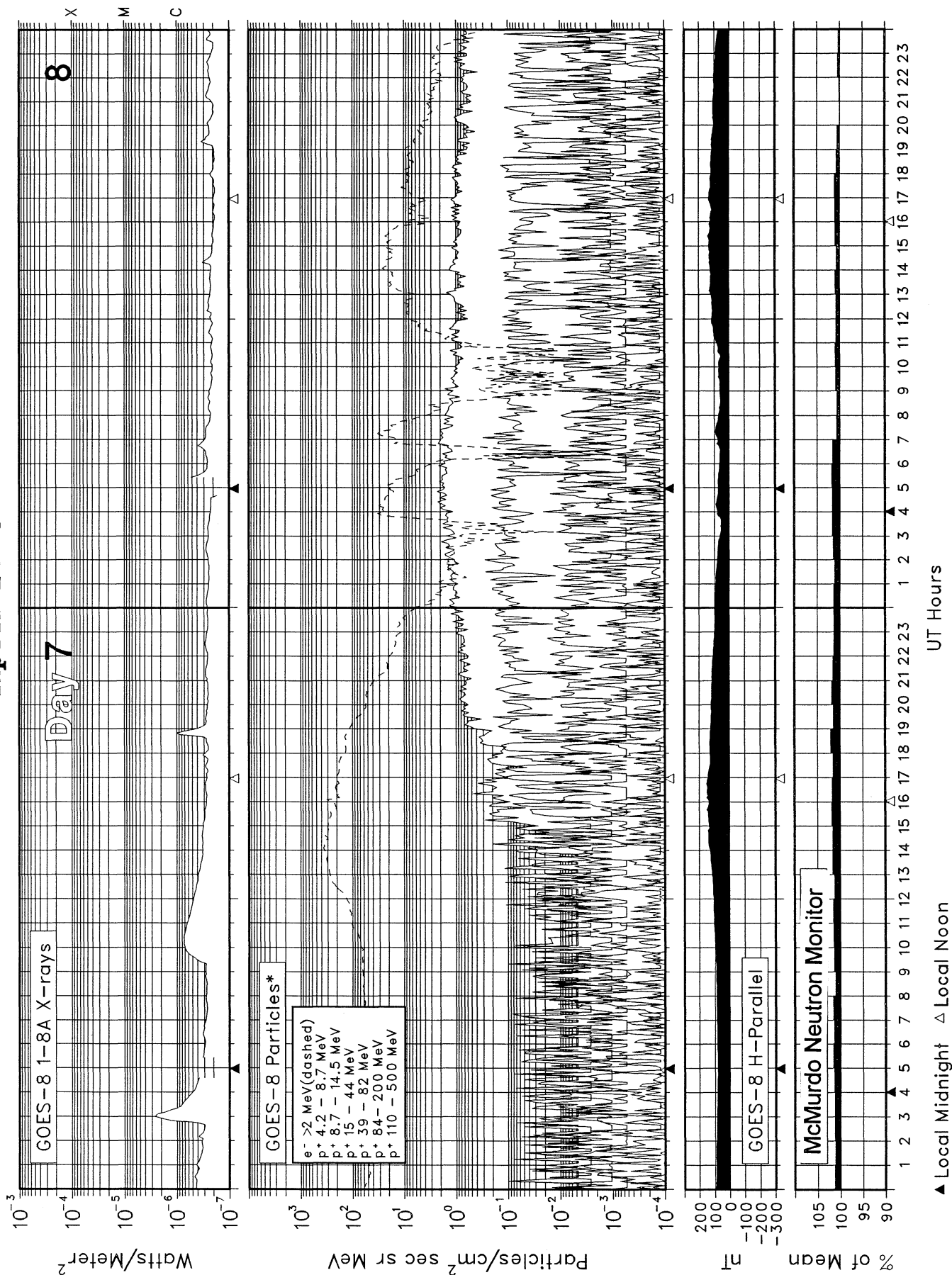


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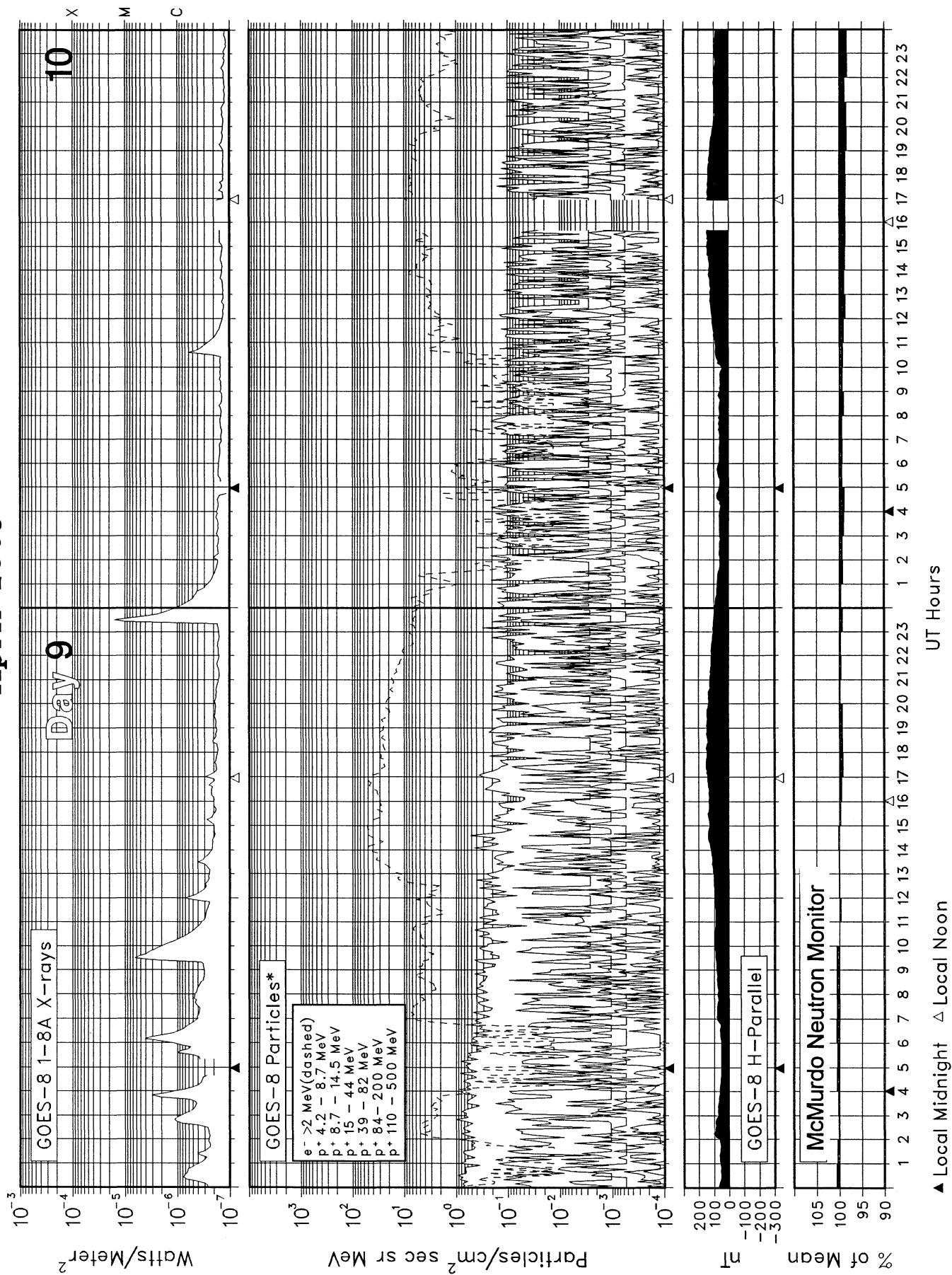
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April 2003



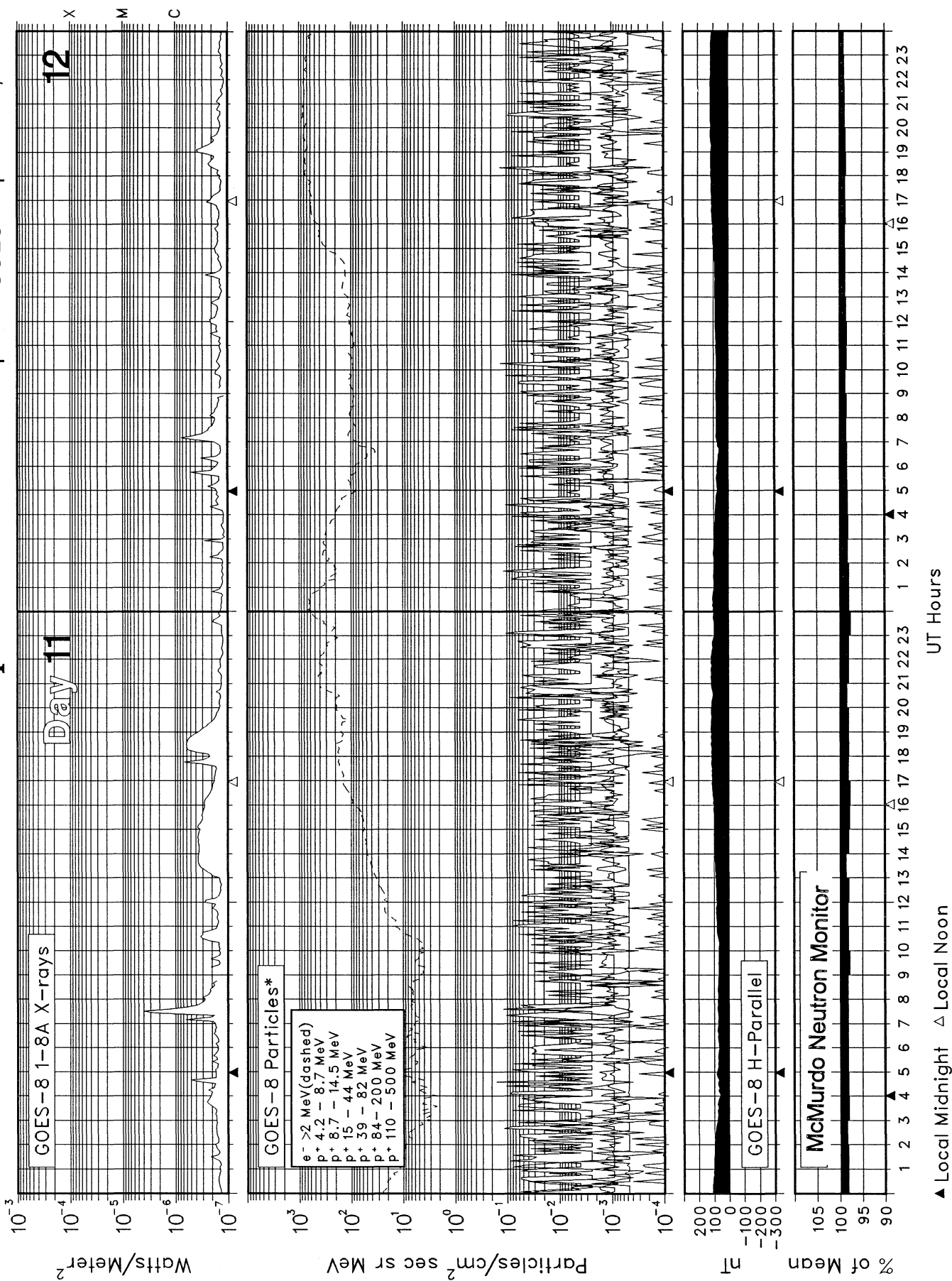
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April 2003



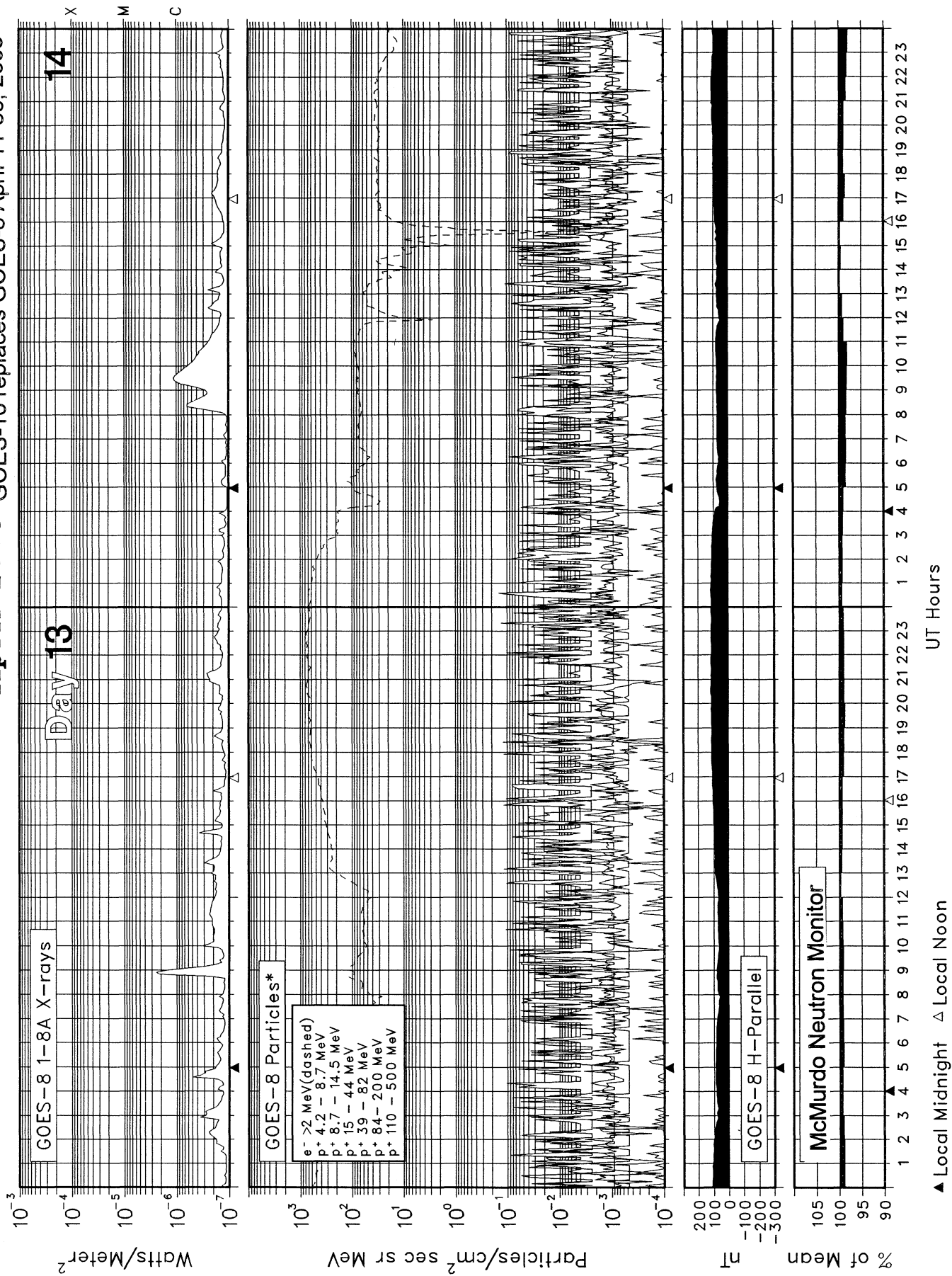
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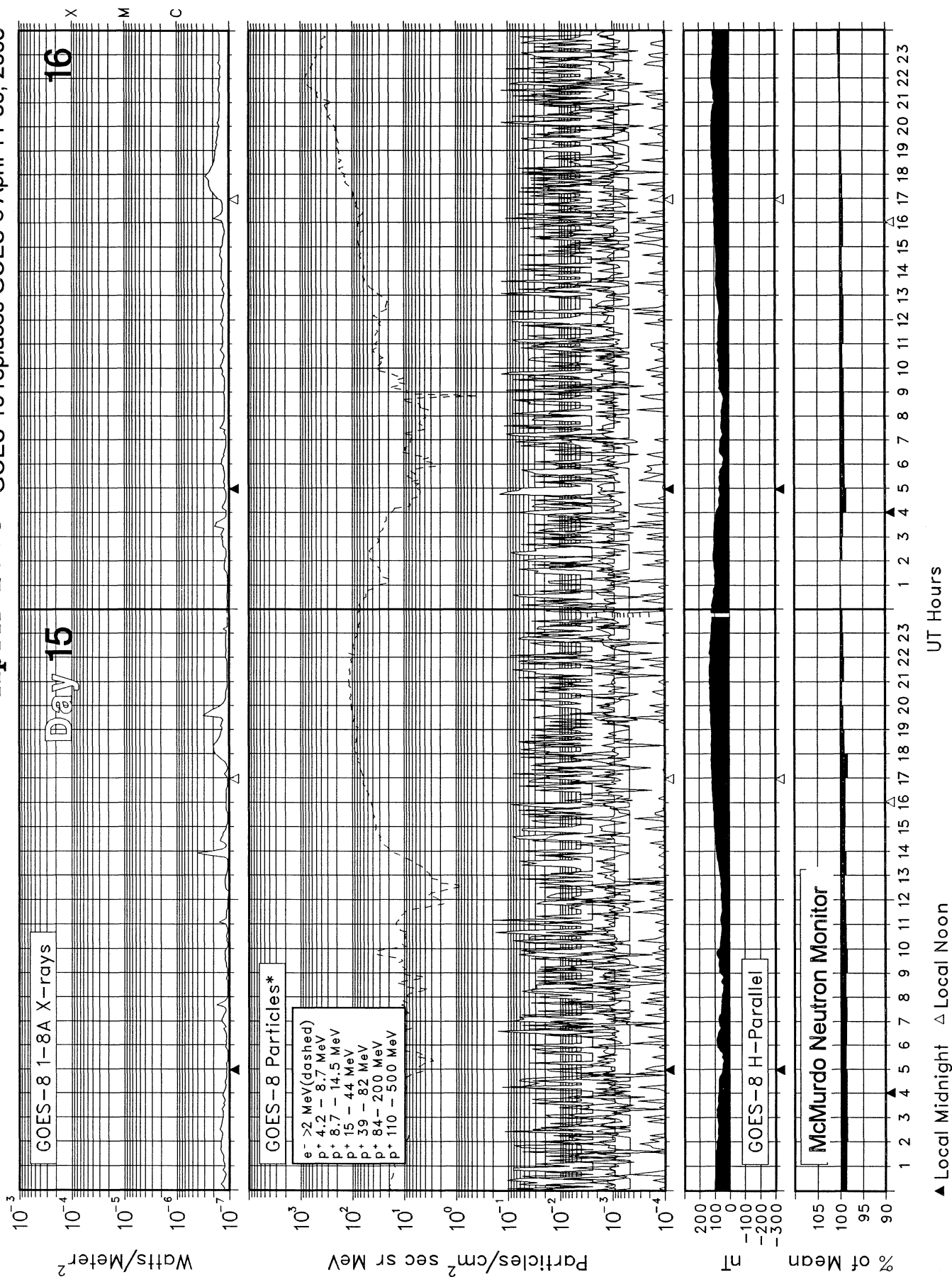
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April 2003 GOES-10 replaces GOES-8 April 11-30, 2003



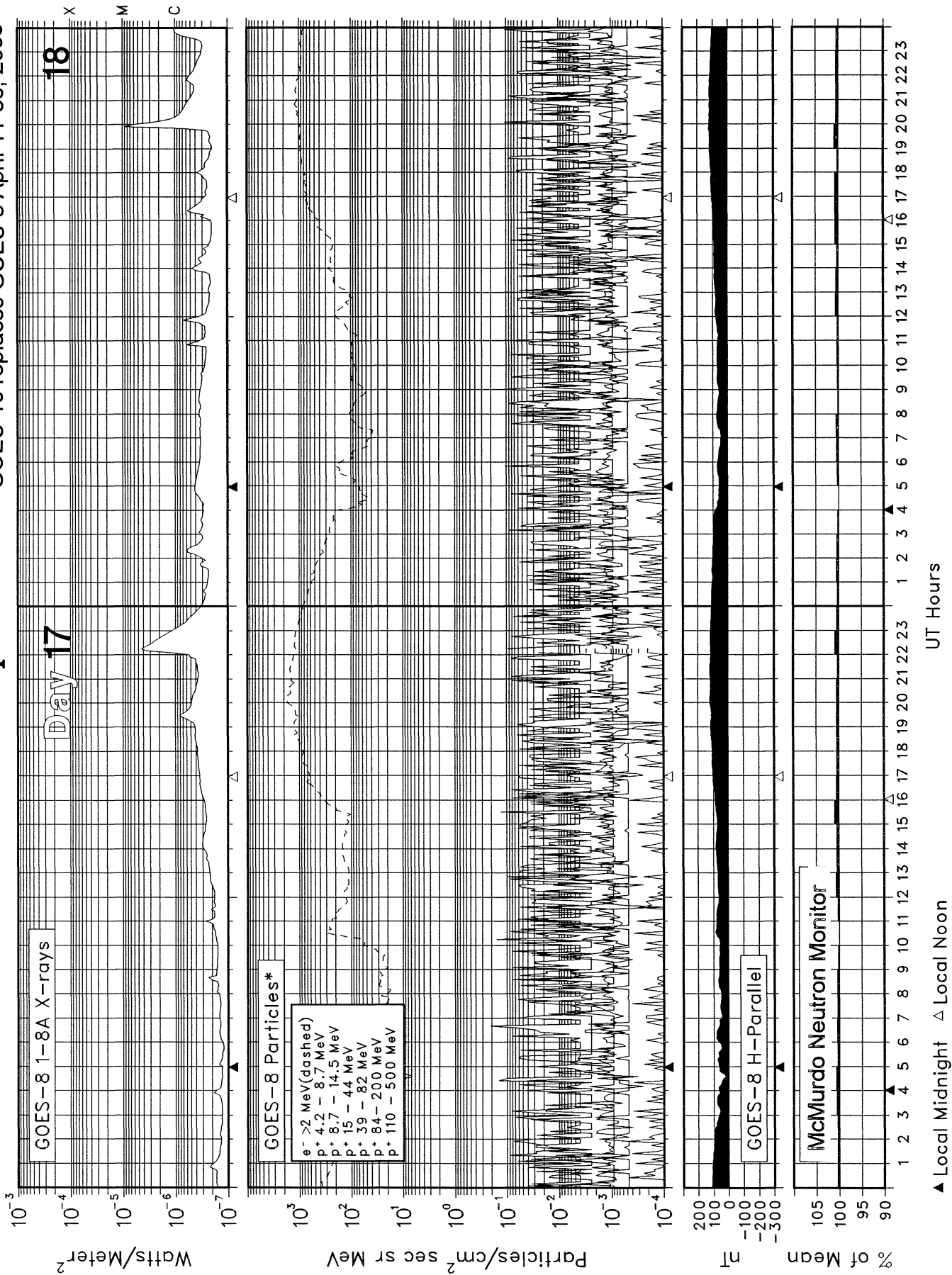
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April 2003 GOES-10 replaces GOES-8 April 11-30, 2003



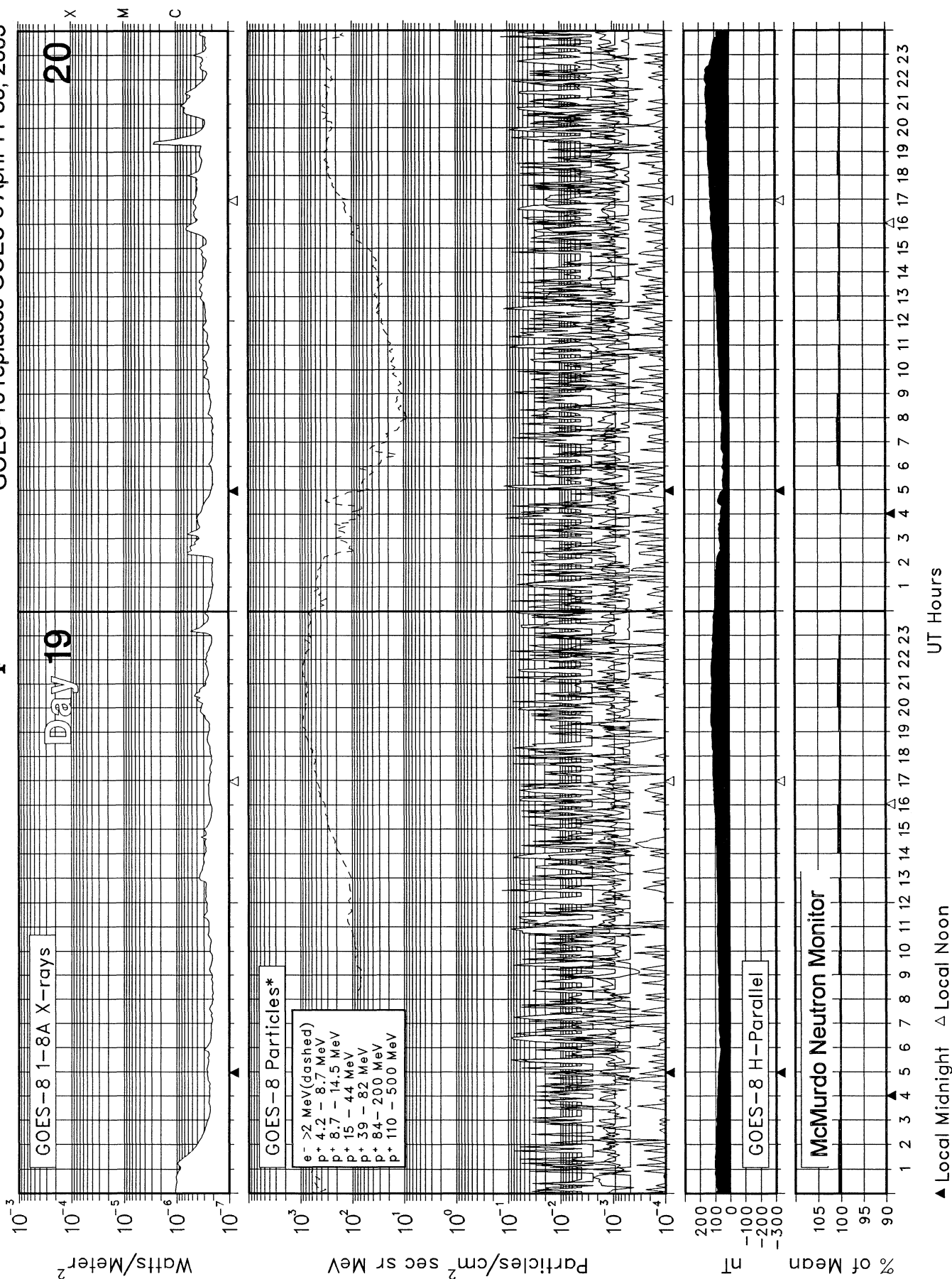
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April 2003 GOES-10 replaces GOES-8 April 11-30, 2003



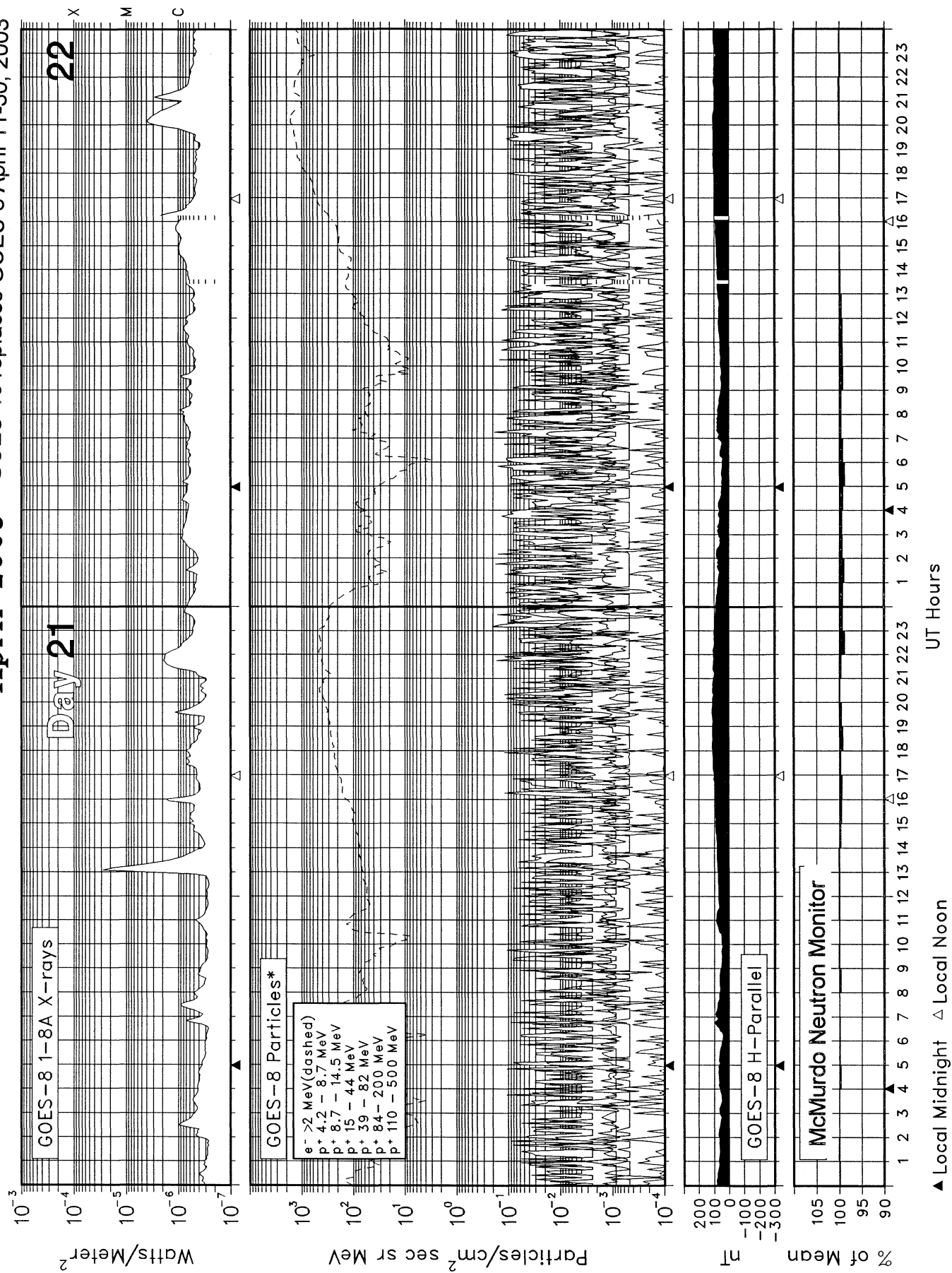
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April 2003 GOES-10 replaces GOES-8 April 11-30, 2003



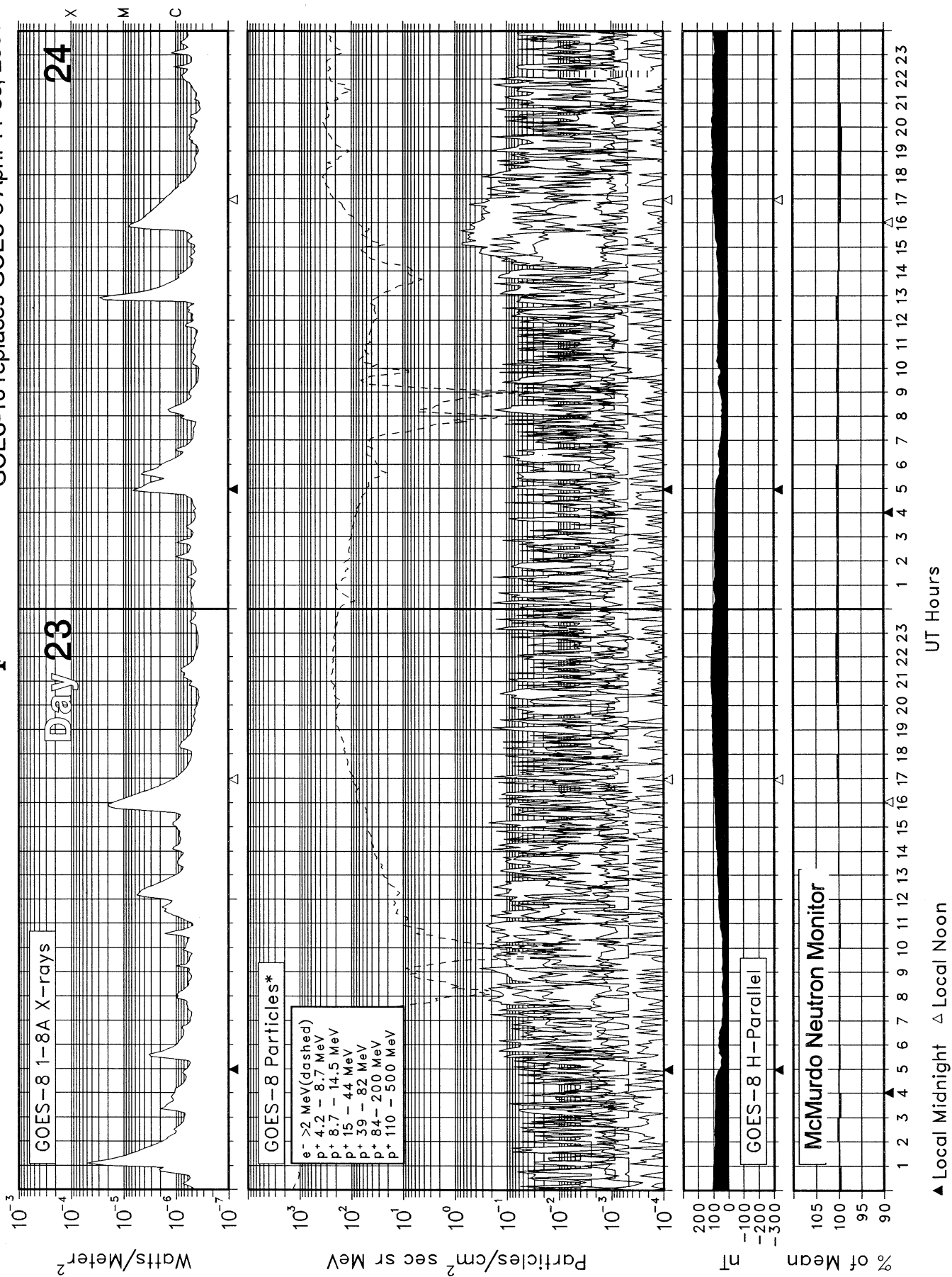
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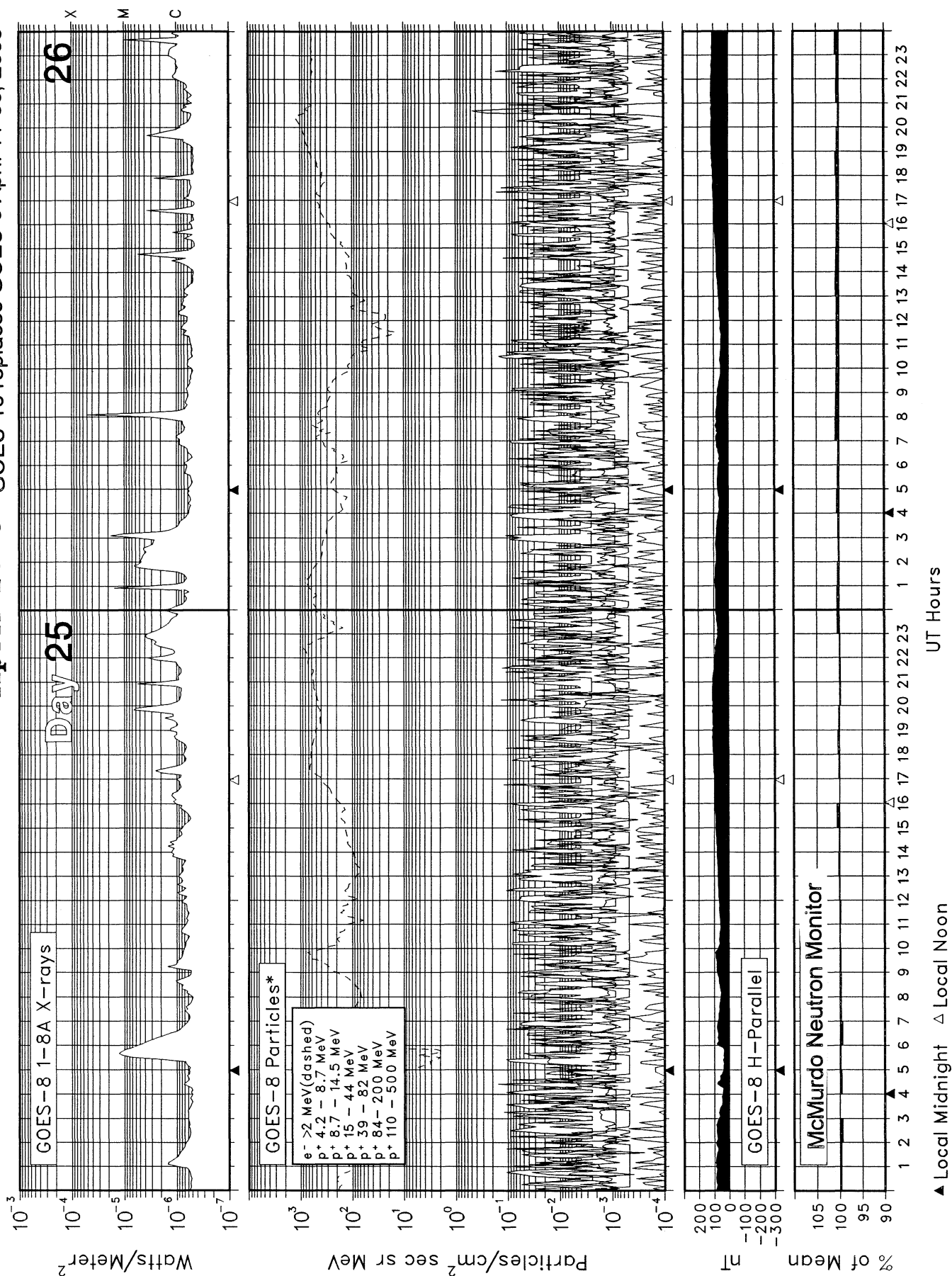
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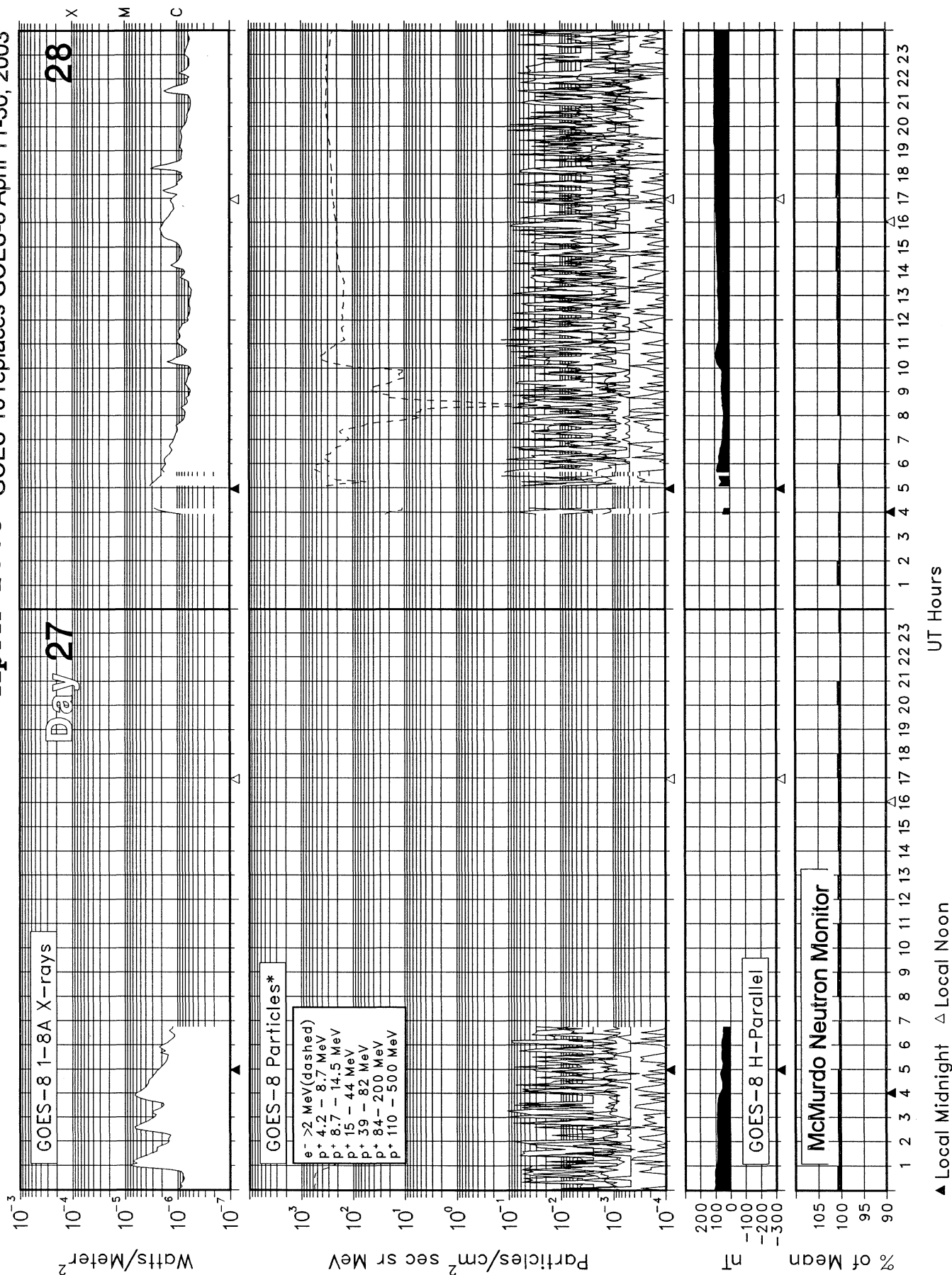
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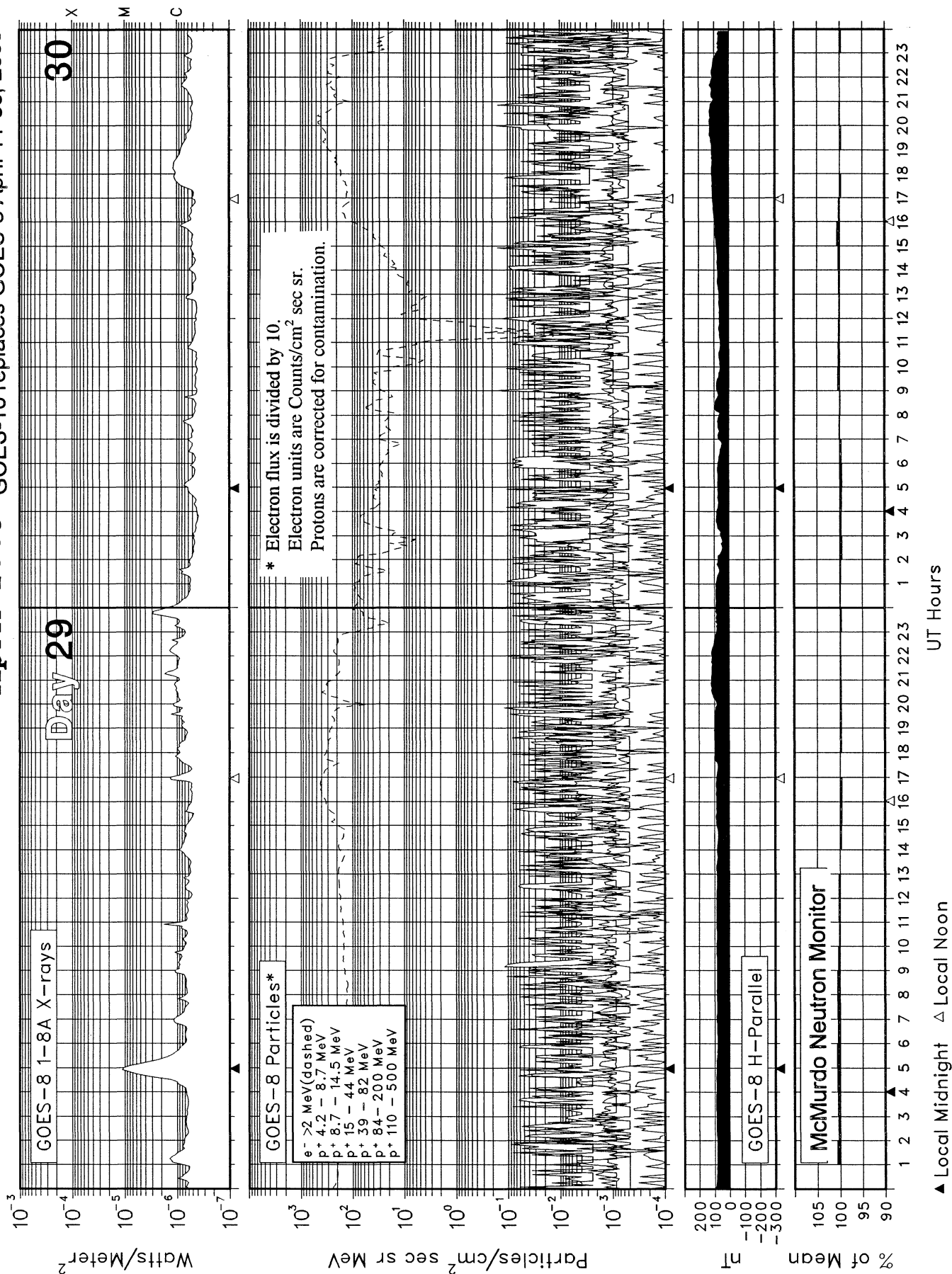
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SOLAR-TERRESTRIAL ENVIRONMENT

April 2003 GOES-10 replaces GOES-8 April 11-30, 2003



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

APRIL 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			
091	01	31	165	160	26	318	S13	W49	0	0	0	01	Q	SOL: Eruptive MAG: Active PRO: Quiet
						319	N13	W57	0	0	0	01	Q	
						321	N06	W16	0	0	0	01	Q	
						323	S08	W29	1	0	0	01	E	
						324	S12	E06	0	0	0	01	Q	
						325	N12	E26	0	0	0	01	Q	
						326	S13	E32	1	0	0	01	Q	
						327	S07	W12	0	0	0	01	Q	
						328	S03	E14	0	0	0	01	Q	
092	02	01	161	153	16	318	S12	W65	2	0	0	02	Q	SOL: Eruptive MAG: Active PRO: Quiet
						319	N12	W74	0	0	0	02	Q	
						321	N06	W29	0	0	0	02	Q	
						323	S08	W43	0	0	0	02	Q	
						324	S11	W08	0	0	0	02	Q	
						325	N12	E14	0	0	0	02	Q	
						326	S13	E21	0	0	0	02	Q	
						327	S06	W25	0	0	0	02	Q	
						328	S13	E02	0	0	0	02	Q	
093	03	02	189	158	21	318	S13	W76	0	0	0	03	Q	SOL: Eruptive MAG: Active PRO: Quiet
						319	N12	W88	0	0	0	03	Q	
						321	N07	W40	0	0	0	03	Q	
						323	S07	W56	0	0	0	03	E	
						324	S12	W21	4	0	0	03	Q	
						325	N10	E05	0	0	0	03	Q	
						326	S11	E09	0	0	0	03	Q	
						327	S05	W38	0	0	0	03	Q	
						328	S12	W13	0	0	0	03	Q	
094	04	03	154	156	15	321	N08	W54	0	0	0	04	Q	SOL: Eruptive MAG: Active PRO: Quiet
						323	S07	W70	0	0	0	04	Q	
						324	S11	W35	6	0	0	04	E	
						325	N11	W09	0	0	0	04	Q	
						326	S11	W04	0	0	0	04	Q	
						327	S04	W53	0	0	0	04	Q	
						329	N01	E18	0	0	0	04	Q	
						330	N07	E74	0	0	0	04	Q	
095	05	04	148	153	24	321	N08	W68	5	0	0	05	E	SOL: Eruptive MAG: Active PRO: Quiet
						323	S07	W87	1	0	0	05	Q	
						324	S11	W45	4	2	0	05	Q	
						325	N12	W24	0	0	0	05	Q	
						326	S11	W17	0	0	0	05	Q	
						327	S06	W76	0	0	0	05	Q	
						329	N02	E04	0	0	0	05	Q	
						330	N07	E62	0	0	0	05	Q	
096	06	05	94	137	22	321	N09	W83	0	0	0	06	E	SOL: Active MAG: Active PRO: Quiet
						324	S11	W62	2	0	0	06	E	
						325	N13	W38	0	0	0	06	Q	
						326	S11	W31	0	0	0	06	Q	
						330	N07	E49	0	0	0	06	Q	
						331	S07	W09	0	0	0	06	Q	
097	07	06	75	126	8	324	S12	W74	1	0	0	07	E	SOL: Eruptive MAG: Quiet PRO: Quiet
						325	N13	W49	0	0	0	07	Q	
						326	S11	W44	0	0	0	07	Q	
						330	N07	E38	0	0	0	07	Q	
						331	S07	W22	0	0	0	07	Q	
098	08	07	77	116	6	324	S13	W85	0	0	0	08	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						325	N15	W63	0	0	0	08	Q	
						326	S10	W57	0	0	0	08	Q	
						330	N07	E24	0	0	0	08	Q	
						331	S07	W34	0	0	0	08	Q	
						332	N11	E58	0	0	0	08	Q	

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Apr 03

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

APRIL 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			
099	09	08	52	112	18	325	N14	W77	0	0	0	09	Q	SOL: Eruptive
						330	N07	E10	0	0	0	09	Q	MAG: Quiet
						331	S08	W48	0	0	0	09	Q	PRO: Quiet
						332	N11	E45	0	0	0	09	Q	
100	10	09	88	109	26	325	N15	W92	0	0	0	10	Q	SOL: Eruptive
						326	S12	W78	3	1	0	10	Q	MAG: Active
						330	N08	W02	0	0	0	10	Q	PRO: Quiet
						331	S08	W62	0	0	0	10	Q	
						332	N11	E31	0	0	0	10	Q	
						333	N11	W36	0	0	0	10	Q	
101	11	10	66	104	27	330	N07	W16	0	0	0	11	Q	SOL: Eruptive
						331	S08	W74	0	0	0	11	Q	MAG: Active
						332	N11	E18	0	0	0	11	Q	PRO: Quiet
						334	S08	E69	0	0	0	11	Q	
102	12	11	49	103	14	330	N07	W31	0	0	0	12	Q	SOL: Eruptive
						332	N10	E04	0	0	0	12	Q	MAG: Active
						334	S08	E55	0	0	0	12	Q	PRO: Quiet
103	13	12	60	102	8	330	N07	W43	0	0	0	13	Q	SOL: Eruptive
						332	N12	W07	0	0	0	13	Q	MAG: Active
						334	S08	E43	0	0	0	13	Q	PRO: Quiet
104	14	13	61	102	11	330	N07	W57	1	0	0	14	Q	SOL: Eruptive
						332	N12	W20	0	0	0	14	Q	MAG: Quiet
						334	S08	E29	0	0	0	14	Q	PRO: Quiet
						335	S21	E56	0	0	0	14	Q	
105	15	14	63	102	15	330	N08	W71	0	0	0	15	Q	SOL: Eruptive
						332	N12	W33	0	0	0	15	Q	MAG: Quiet
						334	S08	E16	0	0	0	15	Q	PRO: Quiet
						335	S21	E42	0	0	0	15	Q	
106	16	15	54	101	24	330	N09	W86	0	0	0	16	Q	SOL: Eruptive
						332	N12	W47	0	0	0	16	Q	MAG: Active
						334	S08	E02	0	0	0	16	Q	PRO: Quiet
						335	S22	E28	0	0	0	16	Q	
107	17	16	40	99	26	335	S10	W12	0	0	0	17	Q	SOL: Quiet
						335	S21	E20	0	0	0	17	Q	MAG: Active
									0	0	0	17		PRO: Quiet
108	18	17	37	101	26	334	S08	W24	0	0	0	18	Q	SOL: Eruptive
						335	S22	E06	0	0	0	18	Q	MAG: Active
						336	N12	E75	0	0	0	18	Q	PRO: Quiet
109	19	18	51	108	19	334	S08	W38	0	0	0	19	Q	SOL: Eruptive
						335	S22	W09	0	0	0	19	Q	MAG: Active
						336	N13	E62	0	0	0	19	Q	PRO: Quiet
						337	S12	E74	0	1	0	19	Q	
110	20	19	69	112	13	334	S07	W51	0	0	0	20	Q	SOL: Eruptive
						335	S21	W21	0	0	0	20	Q	MAG: Active
						336	N13	E50	0	0	0	20	Q	PRO: Quiet
						337	S14	E66	0	0	0	20	Q	
						338	N18	E26	0	0	0	20	Q	
111	21	20	93	119	17	334	S07	W65	0	0	0	21	Q	SOL: Eruptive
						335	S23	W33	0	0	0	21	Q	MAG: Active
						336	N13	E37	0	0	0	21	Q	PRO: Quiet
						337	S14	E55	1	0	0	21	Q	
						338	N18	E09	0	0	0	21	Q	
						339	N18	W45	2	0	0	21	Q	

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			
112	22	21	154	126	18	334	S07	W78	0	0	0	22	Q	SOL: Eruptive MAG: Active PRO: Quiet
						335	S24	W43	0	0	0	22	Q	
						336	N13	E23	0	0	0	22	Q	
						337	S13	E43	2	0	0	22	E	
						338	N18	W05	1	1	0	22	Q	
						339	N16	W58	4	0	0	22	Q	
						340	S04	E55	0	0	0	22	Q	
						341	S10	E74	0	0	0	22	Q	
113	23	22	147	132	19	334	S07	W92	0	0	0	23	Q	SOL: Eruptive MAG: Active PRO: Quiet
						336	N14	E10	0	0	0	23	Q	
						337	S14	E29	0	0	0	23	Q	
						338	N18	W20	2	0	0	23	E	
						339	N16	W71	1	0	0	23	Q	
						340	S06	E43	0	0	0	23	Q	
						341	S10	E61	0	0	0	23	Q	
						342	N18	W07	0	0	0	23	Q	
114	24	23	152	133	16	336	N13	W03	0	0	0	24	Q	SOL: Eruptive MAG: Active PRO: Quiet
						337	S14	E15	0	0	0	24	Q	
						338	N18	W32	2	2	0	24	E	
						339	N16	W84	1	0	0	24	Q	
						340	S06	E30	0	0	0	24	Q	
						341	S10	E50	0	0	0	24	Q	
						342	N18	W21	0	0	0	24	Q	
						343	N06	E60	0	0	0	24	Q	
115	25	24	171	128	21	336	N14	W16	0	0	0	25	Q	SOL: Eruptive MAG: Active PRO: Quiet
						337	S14	E00	1	0	0	25	Q	
						338	N18	W45	2	1	0	25	E	
						340	S07	E13	0	0	0	25	Q	
						342	N17	W35	0	0	0	25	Q	
						343	N06	E45	0	0	0	25	Q	
						344	N16	E39	0	0	0	25	Q	
						345	S17	E74	0	0	0	25	Q	
116	26	25	173	144	26	336	N14	W29	0	0	0	26	Q	SOL: Active MAG: Active PRO: Quiet
						337	S14	W13	0	0	0	26	Q	
						338	N18	W58	4	0	0	26	E	
						342	N17	W48	0	0	0	26	Q	
						343	N06	E32	0	0	0	26	Q	
						344	N16	E26	0	0	0	26	Q	
						345	S17	E61	0	0	0	26	Q	
						346	N16	E61	1	1	0	26	Q	
117	27	26	193	144	12	336	N14	W42	0	0	0	27	Q	SOL: Eruptive MAG: Active PRO: Quiet
						337	S14	W26	0	0	0	27	Q	
						338	N18	W71	10	3	0	27	E	
						342	N17	W61	0	0	0	27	Q	
						343	N06	E19	0	0	0	27	Q	
						344	N16	E13	0	0	0	27	E	
						345	S17	E48	0	0	0	27	Q	
						346	N16	E48	0	0	0	27	Q	
						347	S20	E36	0	0	0	27	Q	
						348	S36	E58	0	0	0	27	Q	
						349	S14	E60	0	0	0	27	Q	
118	28	27	200	154	15	336	N14	W56	0	0	0	28	Q	SOL: Active MAG: Active PRO: Quiet
						337	S14	W40	0	0	0	28	Q	
						338	N18	W85	4	1	0	28	E	
						342	N17	W75	0	0	0	28	Q	
						343	N06	E05	0	0	0	28	Q	
						344	N16	W00	0	0	0	28	E	
						345	S17	E34	0	0				

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

APRIL 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			
119	29	28	175	152	16	348	S36	E44	0	0	0	28	Q	SOL: Eruptive MAG: Active PRO: Quiet
						349	S14	E46	2	0	0	28	Q	
						336	N14	W69	0	0	0	29	Q	
						337	S14	W53	1	0	0	29	E	
						344	N16	W14	1	0	0	29	E	
						345	S17	E21	0	0	0	29	Q	
						346	N16	E23	0	0	0	29	Q	
						347	S20	E09	0	0	0	29	Q	
						348	S36	E31	0	0	0	29	Q	
						349	S14	E33	0	0	0	29	E	
120	30	29	224	155	20	337	S16	W67	1	1	0	30	E	SOL: Active MAG: Active PRO: Quiet
						340	S09	W50	0	0	0	30	Q	
						343	N07	W23	0	0	0	30	Q	
						344	N16	W27	0	0	0	30	E	
						345	S16	E08	0	0	0	30	Q	
						346	N16	E12	0	0	0	30	Q	
						347	S18	W02	0	0	0	30	Q	
						348	S35	E19	0	0	0	30	Q	
						349	S13	E20	3	0	0	30	E	

(1) Region Forecast and Flare (SOL) Advice

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

Magnetic (MAG) Geoadvice

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

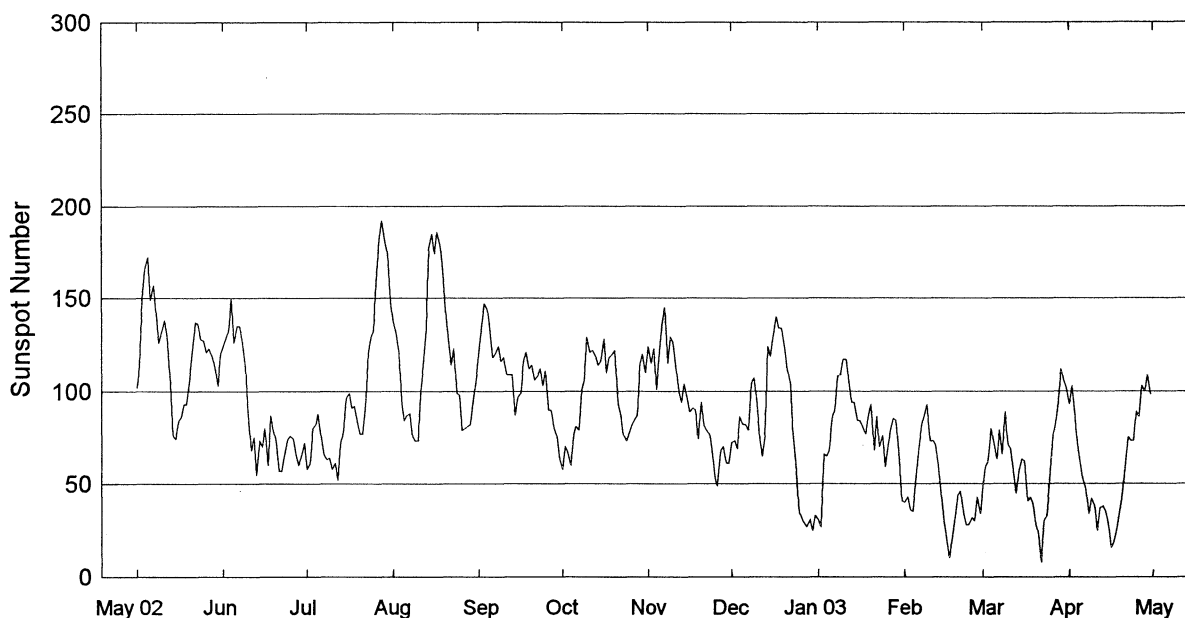
Proton (PRO) Geoadvice

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

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers May 2002 - Apr 2003

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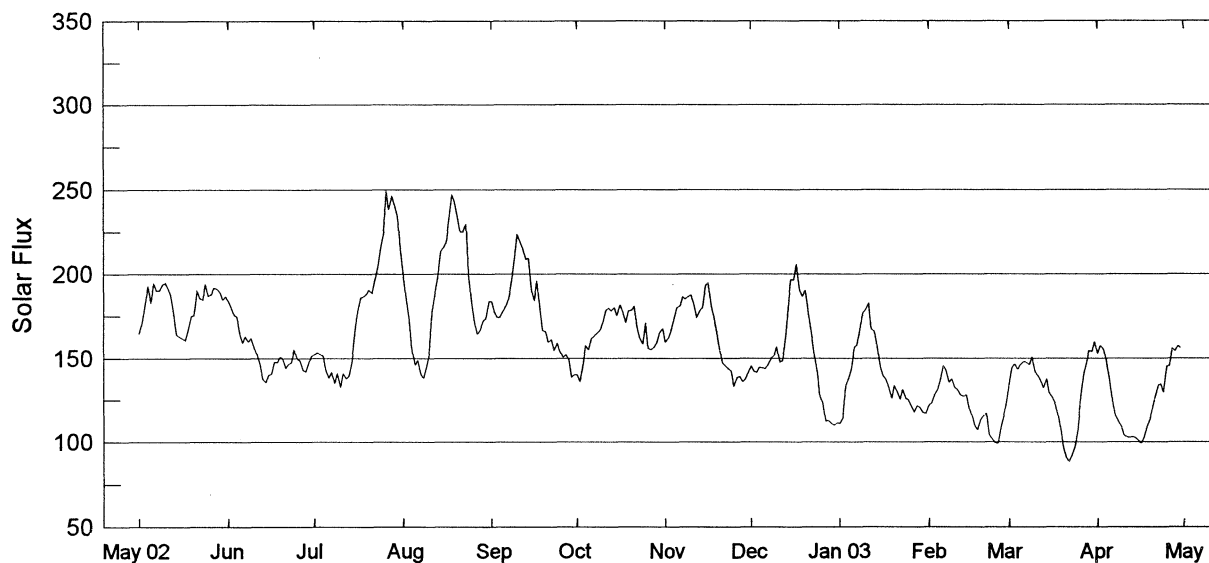


Day	May 02	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03*	Feb*	Mar*	Apr*
1	102	124	58	137	120	58	124	72	31	40	48	93
2	114	129	61	132	136	70	115	66	27	43	59	103
3	149	133	80	121	147	67	123	64	66	36	62	90
4	166	150	82	95	144	60	107	80	65	35	80	72
5	172	126	88	84	132	76	122	82	68	54	72	60
6	149	135	75	87	118	81	137	82	86	68	63	52
7	157	135	66	88	120	79	145	79	90	82	79	48
8	142	127	63	76	124	101	115	98	108	87	66	34
9	126	113	64	73	116	106	129	107	109	93	89	42
10	133	88	58	73	118	129	126	94	117	73	71	38
11	138	68	61	99	109	121	114	74	117	73	69	25
12	130	75	52	117	109	122	100	65	104	71	56	37
13	104	55	72	134	109	119	94	75	94	59	45	38
14	76	73	78	177	87	114	104	124	94	45	58	35
15	74	70	96	185	97	116	102	119	84	31	63	29
16	84	80	99	174	99	128	89	129	84	22	62	16
17	86	60	91	186	116	110	91	140	81	10	41	19
18	93	87	92	179	121	118	83	134	77	20	43	27
19	93	79	83	164	112	120	74	134	87	33	39	34
20	107	74	77	140	114	122	94	124	93	44	29	45
21	121	57	77	127	106	93	82	112	68	46	23	58
22	137	57	91	114	108	88	79	104	86	34	8	75
23	136	65	121	123	112	77	77	75	70	28	30	73
24	128	74	129	99	103	73	67	57	76	28	33	73
25	127	76	133	98	111	77	56	35	59	32	52	89
26	121	74	164	79	90	81	49	32	72	30	75	86
27	123	66	182	80	90	84	68	29	80	43	81	103
28	119	60	192	81	80	87	70	27	85	34	91	100
29	114	66	181	82	76	114	61	31	84		112	109
30	103	72	174	97	64	120	61	29	62		106	98
31	120		148	106		110		33	41		102	
Mean	120.8	88.3	99.6	116.4	109.6	97.5	95.5	80.8	79.5	46.2	61.5	60.0

* = Provisional.

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

Adjusted to 1 AU



Day	May 02	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr
1	164.9	183.9	152.3	198.3	183.8	140.1	159.7	145.5	111.2	122.1	135.6	152.8
2	171.7	180.0	153.5	185.7	176.9	136.0	162.1	142.0	114.4	123.0	144.7	157.3
3	182.0	175.4	152.4#	172.7	174.4	146.1	166.5	141.8	133.1	128.7	146.5	155.7
4	192.7	174.7	151.3	155.3	174.2	157.6	174.4	144.5	138.2	131.0	143.6	148.8#
5	183.2	163.7	143.5	146.0	178.1	155.1	180.0	144.4	143.2	136.2	146.2	137.5
6	194.3	159.1	138.0	148.8	180.9	161.6	181.2	143.9	156.8	145.4	147.9	126.1
7	190.3	163.1	141.5	140.1	185.6	163.5	186.4	146.6	157.8	143.3	147.6	115.9
8	190.2	159.9	135.3	138.3	194.4	165.1	185.5	149.8	168.0	135.4	146.2	112.6
9	193.7	161.9	140.9	144.0	209.0	166.8	187.0	151.6	176.9	137.6	150.6	109.7
10	194.8	156.2	133.1	152.4	223.5	171.4	187.7	156.5	178.7	132.6	141.7	104.1
11	191.8	152.4	141.0	176.9	219.0	178.7	181.0	147.7	182.6	131.4	139.7	103.0
12	187.1	146.2	137.7	188.8	215.1	179.7	174.6	148.4	167.7	128.2	136.2	102.6
13	175.6	137.6	139.4	196.8	208.6	178.3	178.6	161.8	166.2	127.3	132.5	103.0
14	164.2	135.6	148.6	213.5	209.2	180.2	180.2	180.1	158.6	128.1	137.3	102.6
15	162.7	139.7	164.8#	215.7	189.9	175.7	193.2	196.6	145.0	120.6	129.3	101.1
16	162.0	141.0	177.2	219.1	184.5	181.4	194.8	196.5	139.9	115.7	127.2	99.2
17	160.7	147.5	185.9	232.3	195.9	177.7	180.5	205.8	137.1	109.4	123.1#	101.8
18	166.8	147.5	186.6	246.9	178.4	171.3	174.8	190.6	133.0	107.4	117.3	108.7
19	175.0	150.5	188.3	242.6	166.7	178.1	164.3	186.7	126.1	113.6	107.2	113.1
20	175.4	149.8	190.7	232.8	165.8	178.7	155.3	190.3	133.7	115.7	96.6	119.7
21	190.4	144.2	188.7	225.0	159.8	180.8	147.2	177.9	129.4	117.0	90.3	127.0
22	185.6	146.6	195.8	225.1	161.1	167.7	145.5	166.4	125.4	104.3	88.3	133.8
23	184.8	147.5	204.6	229.5	154.8	161.9	143.8	153.7	131.6	101.8	92.4	134.3
24	193.9	155.3	215.0	199.8	158.9	158.5	142.5	142.5	125.8	99.9	97.3	129.8
25	187.4	149.5	224.5	182.4	154.2	170.9	133.2	127.6	124.9	99.5	108.2	145.3
26	188.0	148.6	249.1	172.2	150.6	156.1	138.5	123.2	121.2	107.2	126.6	145.5
27	191.6	143.2	238.0	164.7	152.2	155.2	138.8	112.7	117.7	115.4	140.5	156.1
28	191.4	141.9	246.2	166.4	149.1	156.3	136.0	113.1	121.8	122.6	146.4	154.3
29	189.8	147.5	241.1	172.6	138.6	159.4	137.5	111.0	120.7		154.6	157.4
30	185.1	151.4	234.1	173.5#	140.1	165.3	142.1	110.1	117.6		154.2	155.8
31	187.0		214.8	183.7		167.7		111.3	116.9		159.8	
Mean	182.4	153.4	179.2	188.4	177.8	165.9	165.1	152.3	139.4	121.4	130.8	127.2

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

DAILY SOLAR INDICES

April 2003

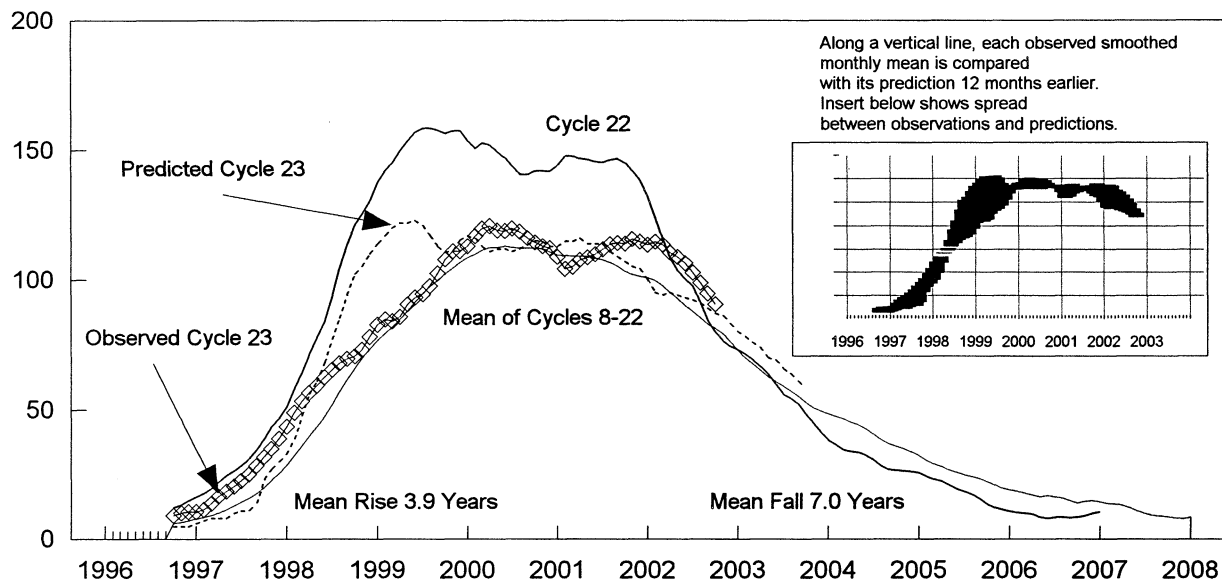
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Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux		-----Solar Flux Adjusted to 1 Astronomical Unit-----							
			Int	Amer	Penticton (2800)	SGMR (15400)	SGMR (8800)	SGMR (4995)	Penticton (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	91	5	93	99	153.0	566	291	195	152.8	151	108	49	32	14
2	92	6	103	111	157.5	559	282	190	157.3	143	108	51	32	14
3	93	7	90	100	155.7	524	297	202	155.7	146	104	52	37	21
4	94	8	72	79	148.6*	505	294	201	148.8*	137	99	51	34	12
5	95	9	60	65	137.4	423	219	161	137.5	128	94	41	32	13
6	96	10	52	56	125.9	561	276	174	126.1	113	85	40	30	12
7	97	11	48	51	115.6	555	269	165	115.9	111	81	44	34	16
8	98	12	34	39	112.3	543	270	165	112.6	104	78	44	35	14
9	99	13	42	44	109.4	538	263	160	109.7	104	74	38	31	20
10	100	14	38	37	103.7	552	260	152	104.1	97	72	42	31	29
11	101	15	25	28	102.6	538	261	156	103.0	99	74	38	30	25
12	102	16	37	44	102.1	536	249	151	102.6	94	71	37	31	19
13	103	17	38	45	102.4	543	246	149	103.0	99	74	38	26	11
14	104	18	35	40	102.0	549	249	153	102.6	96	72	38	27	10
15	105	19	29	32	100.5	552	245	148	101.1	92	69	38	27	11
16	106	20	16	16	98.5	542	232	145	99.2	91	68	41	28	10
17	107	21	19	21	101.0	557	265	153	101.8	103	74	41	28	10
18	108	22	27	31	107.8	560	265	153	108.7	103	74	41	28	10
19	109	23	34	40	112.1	551	253	159	113.1	101	79	42	29	10
20	110	24	45	49	118.5	559	263	167	119.7	112	84	43	30	12
21	111	25	58	62	125.8	555	255	170	127.0	117	90	45	36	12
22	112	26	75	74	132.4	525	269	181	133.8	126	94	43	33	13
23	113	27	73	63	132.8	559	276	181	134.3	130	98	48	40	16
24	114	1	73	80	128.3	565	283	185	129.8	126	97	52	37	26
25	115	2	89	90	143.6	570	275	194	145.3	137	102	49	34	19
26	116	3	86	92	143.7	521	269	178	145.5	138	95	47	37	26
27	117	4	103	102	154.1	570	275	201	156.1	145	104	54	39	15
28	118	5	100	113	152.2	580	270	199	154.3	142	105	49	38	66
29	119	6	109	119	155.1	565	271	209	157.4	142	101	50	41	41
30	120	7	98	110	153.5	573	275	211	155.8	142	95	49	39	21
MEAN			60.0	64.4	126.3	546	265	173	127.2	118	87	44	32	18

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	121+	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	88	84	102
											(3)	(5)	(1)
2003	80	77	75	72	69	66	65	63	61	58	56	55	66
	(6)	(6)	(7)	(9)	(10)	(11)	(11)	(11)	(13)	(14)	(15)	(17)	(11)

Solar Cycle 22

Solar Cycle 23

Min, Max, and Predi

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

+ April 2000 marks Cycle 23 maximum.

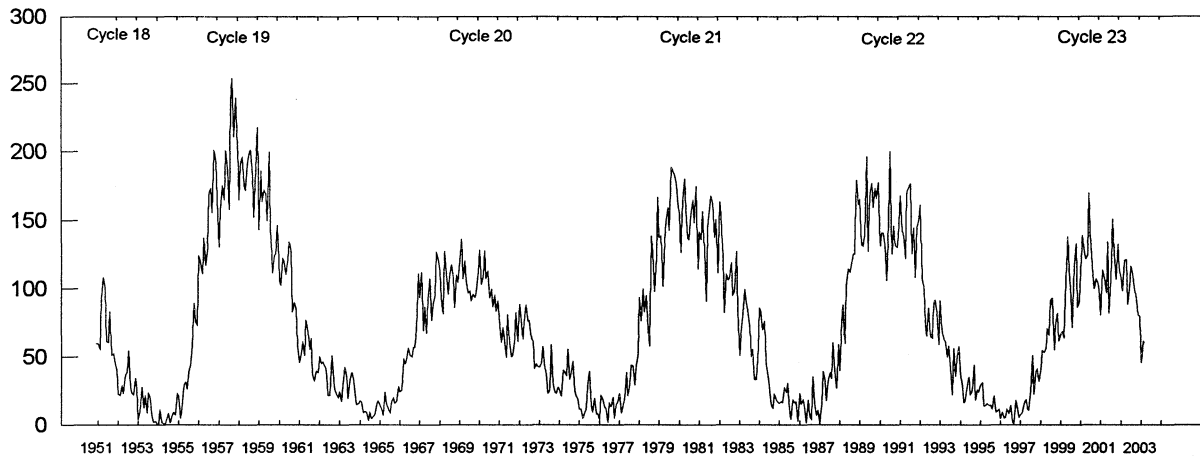
Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2002 and on provisional numbers 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 October 2003 prediction. There exists a 90% chance that in October 2003, the actual smoothed number will fall somewhere between 44 and 72.

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

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

Mean Monthly Sunspot Numbers Jan 1951 - Apr 2003

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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									61.8

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	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)	
HOLL	01	0001	0003	0015	S12	W50	10318	03	28.3	14	SF		3	E		10		F
GOES		0216	0220	0224						8		B 7.8						3.1E-04
GOES		0238	0252	0329			10323			51		C 1.9						4.9E-03
GOES		0804	0807	0809						5		B 9.1						2.0E-04
GOES		1432	1445	1506	S14	W56	10318			34	SF	C 2.3						3.9E-03
HOLL		1436	1437	1512	S14	W56	10318	03	28.5	36	SF		3	E		68		F
RAMY		1437	1445	1454	S13	W59	10318	03	28.2	17	SF		3	E		58		F
GOES	02	0009	0014	0016	S12	W07	10324			7	SF	C 1.8						4.6E-04
HOLL		0012	0014	0020	S12	W07	10324	04	1.5	8	SF		3	E		45		
SVTO		1129	1131	1138	S11	W14	10324	04	1.4	9	SF		3	E		19		
GOES		1129	1133	1139	S11	W14	10324			10	SF	B 9.5						5.0E-04
GOES		1228	1236	1239			10324			11		C 1.1						5.9E-04
GOES		1413	1416	1434						21		B 7.0						8.2E-04
GOES		1507	1516	1528	S11	W14	10324			21	SF	C 3.6						3.4E-03
SVTO		1511	1512U	1529	S10	W16	10324	04	1.4	18	SF		3	E		40		F
HOLL		1527	1528U	1548	S11	W14	10324	04	1.6	21	SF		3	E		31		
GOES		1709	1713	1715			10321			6		C 1.0						3.1E-04
HOLL		2042	2043	2047	S12	W21	10324	04	1.3	5	SF		3	E		22		FH
GOES		2131	2136	2142			10324			11		C 1.1						6.0E-04
GOES		2240	2245	2255						15		C 1.0						8.7E-04
GOES	03	0135	0141	0145	S07	W30	10324			10	SF	C 3.6						1.3E-03
LEAR		0138	0139	0149	S07	W30	10324	03	31.8	11	SF		3	E		53		F
GOES		0428	0434	0436	S07	W32	10324			8	SF	C 1.5						5.1E-04
LEAR		0434	0437	0443	S07	W32	10324	03	31.8	9	SF		3	E		13		
GOES		0653	0658	0702						9		C 1.0						4.7E-04
GOES		0710	0717	0724						14		C 1.9						1.4E-03
GOES		1013	1027	1056	S10	W25	10324			43	1F	C 6.5						1.1E-02
SVTO		1017	1026	1050	S10	W25	10324	04	1.6	33	1F		3	E		147		F
RAMY		1038E	1038U	1107	S11	W26	10324	04	1.5	29D	1F		3	E		110		F
GOES		1814	1818	1821	S12	W30	10324			7	SF	C 1.8						6.1E-04
HOLL		1817	1818	1824	S12	W30	10324	04	1.5	7	SF		3	E		39		
GOES		1856	1910	1916						20		C 1.7						1.8E-03
GOES		1935	1945	1951						16		C 2.5						1.8E-03
HOLL		2016	2017	2024	S12	W31	10324	04	1.5	8	SF		3	E		24		H
GOES		2229	2237	2257	S11	W35	10324			28	SF	C 2.4						3.5E-03
HOLL		2235	2236	2243	S11	W35	10324	04	1.3	8	SF		3	E		10		
LEAR	04	0134	0135	0142	N09	W62	10321	03	30.5	8	SF		3	E		15		F
GOES		0236	0239	0244	S04	W65	10323			8	SF	C 1.2						5.3E-04
LEAR		0238	0241	0248	S04	W65	10323	03	30.3	10	SF		3	E		35		F
GOES		0342	0434	0436			10324			54		C 1.9						5.3E-03
GOES		0650	0655	0703			10324			13		C 2.4						1.6E-03
GOES		0835	0840	0844	S08	W48	10324			9	SF	C 2.8						1.0E-03
SVTO		0837	0840	0847	S08	W40	10324	04	1.4	10	SF		3	E		51		F
LEAR		0839	0840	0847	S08	W48	10324	03	31.8	8	SF		3	E		43		F
GOES		0946	1001	1019			10324			33		C 2.0						3.1E-03
GOES		1208	1217	1222	S12	W40	10324			14	SF	C 3.9						2.5E-03
RAMY		1213	1216	1223	S12	W40	10324	04	1.5	10	SF		3	E		13		F
GOES		1328	1341	1347	N07	W63	10321			19	SF	C 3.1						2.2E-03
HOLL		1347	1355	1402	N07	W63	10321	03	30.9	15	SF		3	E		20		
GOES		1410	1416	1431	S12	W43	10324			21	SF	C 3.4						3.1E-03
HOLL		1415	1416	1427	S12	W43	10324	04	1.3	12	SF		3	E		92		F
HOLL		1416	1421	1508	N08	W62	10321	03	31.0	52	SF		3	E		28		F
HOLL		1436	1445	1454	S11	W40	10324	04	1.6	18	SF		3	E		37		F
GOES		1546	1555	1602			10321			16		C 2.7						2.0E-03
GOES		1700	1704	1706	N08	W64	10321			6	SF	C 1.6						4.4E-04
RAMY		1702	1702	1718D	N09	W68	10321	03	30.7	16D	SF		2	E		48		FH
HOLL		1702	1704	1714	N08	W64	10321	03	31.0	12	SF		3	E		68		F
GOES		1707	1712	1716			10321			9		C 2.2						9.9E-04
GOES		1728	1736	1745						17		C 2.0						1.8E-03
HOLL		1729	1732	1741	N08	W64	10321	03	31.0	12	SF		3	E		24		
HOLL		1735	1739	1745	S12	W45	10324	04	1.3	10	SF		3	E		36		
HOLL		1851	1851	1856	S11	W43	10324	04	1.5	5	SF		3	E		15		
HOLL		1857	1858	1900	N08	W66	10321	03	30.9	3	SF		3	E		13		
GOES		1905	2019	2040			10324			95		M 1.9						4.2E-02
HOLL		1907	1908	1922	N08	W65	10321	03	31.0	15	SF		3	E		35		F

H α S O L A R F L A R E S

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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	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
HOLL	04	1948	1949	1954	N08	W66	10321	03	31.0	6	SF		3	E		18		H
HOLL		1950	2017	2123	S11	W40	10324	04	1.8	93	1F		3	E		155		FH
HOLL		2050	2055	2109	N08	W66	10321	03	31.0	19	SF		3	E		39		F
GOES	05	0031	0037	0042						11		C 2.0						1.0E-03
GOES		0127	0209	0221						54		C 3.4						7.6E-03
GOES		0841	0851	0858						17		C 1.2						1.1E-03
GOES		0909	0916	0940			10324			31		C 6.9						9.4E-03
GOES		1012	1016	1022						10		C 3.5						1.6E-03
GOES		1126	1131	1134						8		C 1.1						5.1E-04
GOES		1421	1509	1538	S12	W58	10324			77	SF	C 4.9						1.1E-02
SVTO		1503	1506U	1524	S11	W53	10324	04	1.6	21	SF		3	E		95		F
HOLL		1503	1507	1520	S12	W58	10324	04	1.2	17	SF		3	E		63		F
RAMY		1506E	1506U	1515	S10	W56	10324	04	1.4	90	SF		3	E		25		F
HOLL		1723	1723	1726	S12	W59	10324	04	1.3	3	SF		3	E		10		
GOES		1850	1856	1903						13		C 1.2						8.1E-04
GOES	06	0800	0811	0819			10324			19		C 4.2						2.9E-03
GOES		1918	1928	1942	S09	W71	10324			24	SF	C 5.9						5.4E-03
HOLL		1922	1923	1947	S09	W71	10324	04	1.5	25	SF		3	E		40		F
GOES	07	0245	0304	0316			10324			31		C 2.6						3.3E-03
GOES		0925	1030	1149						144		B 7.3						5.3E-03
GOES		1843	1849	1855			10324			12		C 1.2						6.2E-04
GOES	08	0441	0520	0528						47		B 7.7						1.6E-03
GOES		1417	1421	1427						10		B 3.2						1.8E-04
GOES		1915	1920	1924						9		B 3.8						1.7E-04
RAMY		1941E	1941U	1952D	S10	W63	10326	04	4.1	110	SF		2	E		12		F
GOES	09	0015	0027	0052						37		B 8.0						1.5E-03
LEAR		0117	0121	0130	S10	W71	10326	04	3.7	13	SF		3	E		65		F
GOES		0118	0126	0130	S10	W71	10326			12	SF	B 4.4						2.8E-04
GOES		0235	0254	0307						32		C 1.1						1.8E-03
GOES		0341	0349	0356	S08	W76	10326			15	SF	C 3.8						2.0E-03
LEAR		0350	0352	0403	S08	W76	10326	04	3.5	13	SF		3	E		19		
GOES		0510	0513	0516						6		B 6.4						1.9E-04
GOES		0531	0537	0545						14		C 1.1						7.3E-04
GOES		0554	0613	0619						25		C 4.7						3.7E-03
GOES		0922	0933	0949						27		C 6.4						6.6E-03
GOES		1154	1159	1207						13		B 7.9						4.7E-04
GOES		1327	1331	1335						8		B 4.2						1.8E-04
GOES		1701	1704	1706						5		B 3.8						9.3E-05
GOES		2323	2329	2334	S10	W78	10326			11	1F	M 2.5						8.5E-03
HOLL		2327	2329	2335	S10	W78	10326	04	4.1	8	1F		3	E		130		
HOLL	10	0030	0030	0120D	S10	E77				50D	3F		3	E		732		
GOES		1031	1035	1042						11		B 7.3						3.3E-04
GOES		1551	1554	1556						5		B 2.6						6.0E-05
GOES		1617	1620	1622						5		B 2.3						5.2E-05
GOES		1628	1631	1633						5		B 2.1						5.4E-05
GOES		1652	1655	1657						5		B 2.3						5.5E-05
GOES	11	0436	0440	0442						6		C 1.4						2.2E-04
GOES		0707	0712	0714						7		B 9.3						2.1E-04
GOES		0723	0730	0732						9		C 7.4						1.7E-03
GOES		0915	0921	0923						8		B 3.5						1.2E-04
GOES		0940	0943	0945						5		B 2.8						6.7E-05
GOES		1024	1027	1029						5		B 3.1						6.8E-05
GOES		1159	1204	1207						8		B 3.5						1.3E-04
GOES		1740	1745	1748						8		B 9.8						2.6E-04
GOES		1808	1833	1857						49		B 6.1						1.6E-03
GOES	12	0047	0051	0053						6		B 2.3						6.5E-05
GOES		0213	0217	0219						6		B 2.6						7.3E-05
GOES		0253	0256	0258						5		B 4.0						7.9E-05
GOES		0419	0422	0424						5		B 2.7						6.4E-05
GOES		0509	0513	0515						6		B 2.8						8.3E-05

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Day	Dur (Min)	Imp		Obs See	Type	Area Measurement			Remarks
							Region					Opt	Xray			Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	12	0538	0546	0548							10	B	6.5						2.2E-04
GOES		0616	0620	0622							6	B	4.7						1.1E-04
GOES		0703	0712	0716							13	B	8.9						4.2E-04
GOES		1126	1130	1132							6	B	2.6						7.6E-05
GOES		1242	1250	1252							10	B	2.1						1.2E-04
GOES		1352	1355	1358							6	B	3.0						9.0E-05
GOES		1652	1656	1701							9	B	2.6						1.2E-04
GOES		1820	1831	1844							24	B	2.3						3.0E-04
GOES		1855	1905	1914							19	B	3.9						3.8E-04
GOES	13	0252	0257	0302							10	B	4.0						1.8E-04
GOES		0432	0437	0441							9	B	6.3						2.2E-04
GOES		0446	0449	0452							6	B	3.6						1.1E-04
GOES		0845	0854	0903	N07	W49	10330				18	SF	C 2.7						1.8E-03
SVTO		0851	0852	0859	N10	W52	10330	04	9.5		8	SF		3	E		30		
LEAR		0851	0854	0906	N07	W49	10330	04	9.7		15	SF		3	E		76		
GOES		0956	1001	1005							9	B	3.6						1.4E-04
GOES		1323	1327	1333							10	B	3.0						1.6E-04
GOES		1439	1443	1446							7	B	5.3						1.5E-04
GOES		1624	1628	1630							6	B	2.4						7.0E-05
GOES		1836	1839	1843							7	B	2.2						7.9E-05
GOES	14	0310	0314	0317							7	B	1.8						6.6E-05
GOES		0602	0605	0607							5	B	1.6						4.2E-05
GOES		0809	0824	0840	S05	E60					31	SF	B 6.4						8.5E-04
LEAR		0818	0819	0825D	S05	E60		04	18.8		7D	SF		3	E		19		
GOES		0900	0930	0955			10335				55	C	1.1						2.7E-03
GOES		1309	1313	1316							7	B	2.9						1.0E-04
GOES		1500	1505	1512							12	B	2.3						1.4E-04
GOES	15	0738	0741	0746			10334				8	B	1.8						7.8E-05
GOES		1348	1356	1400			10330				12	B	4.4						2.2E-04
GOES		1932	1938	1944			10334				12	B	3.7						1.9E-04
GOES	16	0323	0326	0340							17	B	2.0						1.8E-04
GOES		1609	1612	1616							7	B	2.1						8.0E-05
GOES	17	1058	1101	1104							6	B	2.8						9.1E-05
GOES		2204	2216	2236							32	C	4.4						5.9E-03
GOES	18	1047	1052	1057			10337				10	B	6.6						3.0E-04
GOES		1147	1152	1156			10337				9	B	7.6						3.2E-04
GOES		1353	1400	1412			10337				19	B	4.8						4.7E-04
GOES		1606	1610	1616							10	B	3.3						1.8E-04
GOES		1618	1626	1638							20	B	5.6						5.8E-04
GOES		1950	1958	2002			10337				12	M	1.1						4.1E-03
GOES	19	1439	1442	1444	N17	E27					5	SF	B 4.0						1.0E-04
RAMY		1440E	1440U	1447	N17	E27		04	21.7		7D	SF		3	E		12		
GOES		2030	2033	2036							6	B	5.1						1.6E-04
GOES		2307	2313	2318							11	B	5.7						3.0E-04
GOES	20	0217	0224	0229							12	B	7.6						3.9E-04
GOES		0307	0312	0319							12	B	6.2						3.9E-04
LEAR		0728	0730	0732	S13	E67	10337	04	25.4		4	SF		3	E		20		
GOES		1759	1802	1806							7	B	6.1						2.3E-04
GOES		1918	1923	1928	N18	W49	10339				10	SF	C 4.4						1.5E-03
HOLL		1921	1922	1937	N18	W49	10339	04	17.1		16	SF		3	E		51		F
HOLL		2146	2146	2155	N17	W42	10339	04	17.7		9	SF		3	E		11		F
GOES		2258	2301	2305							7	B	4.8						1.8E-04
HOLL	21	0034	0038	0048	N17	W47	10339	04	17.4		14	SF		3	E		10		
GOES		0223	0231	0244							21	B	9.9						1.0E-03
GOES		0644	0650	0655							11	B	7.7						4.1E-04
GOES		1254	1307	1314	N18	E02	10338				20	1N	M 2.8						1.5E-02
RAMY		1302	1308	1325	N18	E02	10338	04	21.7		23	1N		3	E		115		
HOLL		1306	1307	1334	N17	E03	10338	04	21.8		28	1F		3	E		116		F
GOES		1551	1559	1603	S13	E47	10337				12	SF	C 2.3						1.0E-03

H α SOLAR FLARES

APRIL 2003

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LHOLL	21	1554	1600	1610	S13	E47	10337	04	25.2	16	SF		3	E		47		F
GOES		1723	1726	1729						6		B 7.6						2.5E-04
HOLL		1742	1742	1747	N16	W53	10339	04	17.7	5	SF		3	E		29		
GOES		1854	1858	1903						9		B 5.5						2.7E-04
GOES		1929	1935	1941	N18	W52	10339			12	SF	C 1.3						6.8E-04
HOLL		1932	1939	1942	N18	W52	10339	04	17.8	10	SF		3	E		11		
GOES		2123	2147	2213	S08	E47	10337			50	SF	C 1.8						4.8E-03
HOLL		2136	2141	2201	S08	E47	10340	04	25.4	25	SF		3	E		38		
HOLL		2232	2232	2237	N18	W64	10339	04	17.1	5	SF		3	E		11		
GOES	22	0125	0132	0139						14		B 7.2						5.3E-04
GOES		0810	0813	0815			10338			5		C 1.1						2.9E-04
GOES		0929	0935	0938						9		C 1.0						4.8E-04
GOES		1613	1617	1622	N20	W17	10338			9	SF	C 2.2						9.3E-04
HOLL		1615	1616	1624	N20	W17	10338	04	21.4	9	SF		3	E		31		F
RAMY		1616	1616	1622	N19	W18	10338	04	21.3	6	SF		3	E		30		F
GOES		1941	2011	2037	N20	W14	10338			56	SF	C 4.0						8.4E-03
HOLL		1957	2006	2022	N20	W14	10338	04	21.8	25	SF		3	E		35		
RAMY		2001	2005	2017	N18	W15	10338	04	21.7	16	SF		3	E		16		F
GOES		2103	2111	2118	N17	W70	10339			15	SF	C 3.0						2.0E-03
HOLL		2106	2107	2112	N17	W70	10339	04	17.5	6	SF		3	E		26		
GOES	23	0011	0015	0022						11		B 7.9						4.6E-04
GOES		0039	0106	0115	N22	W25	10338			36	1N	M 5.1						3.5E-02
LEAR		0045	0102	0140	N22	W25	10338	04	21.1	55	1N		3	E		187		UF
GOES		0313	0322	0335			10339			22		C 2.2						2.0E-03
GOES		0522	0536	0545			10339			23		C 3.4						3.2E-03
GOES		0752	0758	0814						22		B 9.8						1.2E-03
GOES		0913	0917	0920			10339			7		C 1.1						3.8E-04
GOES		0951	0956	1001						10		B 7.9						4.2E-04
GOES		1031	1035	1041			10338			10		C 1.9						8.4E-04
GOES		1200	1213	1232			10339			32		C 5.8						8.1E-03
GOES		1536	1556	1611	N20	W22	10338			35	1F	M 2.0						2.7E-02
HOLL		1541	1547	1629	N19	W23	10338	04	21.9	48	SF		3	E		82		FH
SVTO		1543	1558	1625	N20	W22	10338	04	22.0	42	1F		3	E		157		F
HOLL		1623	1624	1626	N17	W78	10339	04	17.7	3	SF		3	E		16		
GOES		1811	1822	1835						24		B 8.6						1.1E-03
GOES	24	0116	0120	0126						10		B 6.4						3.4E-04
GOES		0204	0210	0214						10		C 1.2						5.2E-04
GOES		0243	0247	0251			10339			8		C 1.0						4.2E-04
GOES		0448	0456	0509			10339			21		C 7.1						5.7E-03
GOES		0530	0538	0547	S15	E08	10337			17	SF	C 4.5						3.8E-03
LEAR		0532	0533	0548	S15	E08	10337	04	24.8	16	SF		3	E		54		F
GOES		0634	0637	0642			10339			8		C 1.0						4.7E-04
GOES		0749	0756	0802						13		B 8.5						5.4E-04
GOES		0809	0816	0823			10339			14		C 1.4						1.1E-03
GOES		1245	1253	1303	N21	W39	10338			18	1N	M 3.3						2.0E-02
RAMY		1250	1251	1312	N21	W39	10338	04	21.5	22	1N		3	E		132		UF
HOLL		1250	1310	1321	N19	W36	10338	04	21.8	31	SF		3	E		66		F
HOLL		1349	1355	1358	S18	E83			04 30.9	9	SF		3	E		24		
HOLL		1423	1435	1439	S18	E83			04 30.9	16	SF		3	E		31		
GOES		1541	1553	1611						30		C 8.2						9.7E-03
GOES		2228	2233	2235			10338			7		C 1.3						4.2E-04
GOES		2301	2307	2314			10339			13		C 1.2						7.8E-04
HOLL		2329	2332	2337	N21	W42	10338	04	21.7	8	SF		3	E		10		F
GOES	25	0100	0109	0122						22		C 1.5						1.7E-03
GOES		0523	0540	0558	N14	E79	10346			35	SF	M 1.2						1.8E-02
LEAR		0526	0533	0537	N14	E79	10346	05	1.2	11	SF		3	E		41		F
GOES		0819	0840	0847						28		C 1.0						1.5E-03
GOES		0910	0915	0920						10		C 1.7						7.6E-04
GOES		1344	1416	1422	N22	W51	10338			38	SF	C 1.5						2.7E-03
HOLL		1348	1415	1440	N22	W51	10338	04	21.6	52	SF		3	E		62		
RAMY		1415E	1415U	1419	N22	W56	10338	04	21.3	40	SF		3	E		16		H
RAMY		1424E	1424U	1430	N22	W57	10338	04	21.2	60	SF		3	E		18		H
GOES		1712	1722	1728	N21	W54	10338			16	SF	C 2.7						1.9E-03
HOLL		1715	1725	1735	N21	W54	10338	04	21.6	20	SF		3	E		14		

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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	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	25	1720E	1720U	1731	N22	W59	10338	04	21.2	11D	SF		3	E		15		
HOLL		1926	1930	1937	N20	W57	10338	04	21.4	11	SF		3	E		34		F
GOES		1927	1931	1935	N20	W57	10338			8	SF C 1.8							7.3E-04
HOLL		1943	1953	2008	N19	W58	10338	04	21.4	25	SF		3	E		80		FH
GOES		1945	1954	1959	N19	W58	10338			14	SF C 7.5							4.3E-03
GOES		2051	2058	2101	N21	W62	10338			10	SF C 6.8							2.3E-03
HOLL		2054	2056	2113	N21	W62	10338	04	21.1	19	SF		3	E		36		FH
GOES		2154	2200	2204			10338			10	C 4.1							1.7E-03
GOES		2355	2401	2406			10338			11	C 1.6							9.6E-04
GOES	26	0051	0058	0100	N20	W65	10338			9	SF M 2.1							5.2E-03
HOLL		0057	0058	0105	N20	W65	10338	04	21.1	8	SF		3	E		29		
GOES		0138	0151	0225	N21	W59	10338			47	1F C 6.6							1.3E-02
LEAR		0140	0145	0235	N21	W59	10338	04	21.5	55	1F		2	E		120		FH
GOES		0301	0306	0312	N20	W69	10338			11	SN M 2.1							9.3E-03
LEAR		0305E	0309	0315	N20	W69	10338	04	20.8	10D	SN		3	E		52		FE
GOES		0801	0807	0809			10338			8	M 7.0							1.1E-04
RAMY		1422E	1422U	1429	N19	W74	10338	04	20.9	7D	SF		3	E		18		
HOLL		1423	1423	1428	N20	W73	10338	04	21.0	5	SF		3	E		21		
GOES		1426	1430	1433	N20	W73	10338			7	SF C 1.4							4.8E-04
GOES		1439	1446	1450	N21	W66	10338			11	SF C 6.0							2.4E-03
RAMY		1444E	1444U	1456	N20	W74	10338	04	20.9	12D	SF		3	E		19		
HOLL		1444	1452	1455	N21	W66	10338	04	21.5	11	SF		3	E		21		
HOLL		1525	1527	1529	N21	W66	10338	04	21.6	4	SF		3	E		15		
GOES		1537	1543	1546			10338			9	C 1.3							5.2E-04
GOES		1602	1605	1607			10338			5	B 7.4							1.8E-04
GOES		1630	1635	1638	N21	W67	10338			8	SF C 5.5							1.3E-03
RAMY		1634	1634	1638	N20	W76	10338	04	20.9	4	SF		3	E		26		H
HOLL		1634	1635	1638	N21	W67	10338	04	21.5	4	SF		3	E		27		
GOES		1702	1705	1709			10338			7	B 7.7							2.8E-04
GOES		1754	1758	1800	N20	W75	10338			6	SF C 5.1							8.7E-04
RAMY		1758	1759U	1830D	N20	W75	10338	04	21.0	32D	SF		3	E		13		H
GOES		1934	1941	1948	N21	W67	10338			14	SF C 3.8							2.2E-03
HOLL		1935	1938	1947	N21	W67	10338	04	21.7	12	SF		3	E		71		F
GOES		2038	2046	2049						11	B 8.5							4.9E-04
GOES		2052	2055	2057						5	B 9.4							2.3E-04
HOLL		2321	2321	2326	N20	W71	10338	04	21.5	5	SF		3	E		17		
GOES		2337	2340	2342			10338			5	M 2.5							3.4E-03
GOES		2353	2357	2401			10338			8	C 1.2							5.5E-04
HOLL	27	0015	0017	0018	N21	W71	10338	04	21.6	3	SF		3	E		15		
HOLL		0030	0033	0036	N20	W71	10338	04	21.6	6	SF		3	E		16		
HOLL		0044	0059	0122	N21	W67	10338	04	21.9	38	2F		3	E		384		F
LEAR		0049	0059	0147	N20	W72	10338	04	21.5	58	2F		3	E		282		
GOES		0050	0101	0121	N21	W67	10338			31	2F C 9.3							1.1E-02
GOES		0222	0236	0249			10338			27	C 6.7							8.2E-03
LEAR		0310	0314	0322	S16	E57	10349	05	1.4	12	SF		4	E		34		
GOES		0337	0357	0416			10338			39	C 6.5							1.2E-02
GOES		0537	0541	0543			10338			6	C 2.5							7.1E-04
GOES		0737	0740	0743						6	C 8.1							1.9E-03
GOES		0809	0816	0822			10338			13	C 3.6							1.9E-03
GOES		1210	1217	1230			10338			20	C 1.6							1.7E-03
GOES		1329	1333	1341			10338			12	C 1.7							1.1E-03
GOES		1527	1532	1535	N21	W85	10338			8	SF M 1.7							4.4E-03
HOLL		1531	1531	1550D	N21	W85	10338	04	21.1	19D	SF		3	E		26		
GOES		1601	1608	1635			10338			34	C 2.2							3.8E-03
GOES		2131	2134	2139			10338			8	C 1.3							5.6E-04
GOES	28	0357	0436	0520			10337			83	C 4.4							1.7E-02
GOES		1010	1017	1026			10338			16	C 1.5							1.2E-03
GOES		1340	1346	1349			10337			9	B 8.9							4.2E-04
GOES		1405	1417	1423			10338			18	C 1.3							1.1E-03
GOES		1510	1546	1602	S14	W43	10337			52	SF C 2.1							5.4E-03
HOLL		1523	1523	1550	S14	W43	10337	04	25.4	27	SF		3	E		12		F
GOES		1714	1719	1726			10338			12	C 2.0							1.2E-03
GOES		1811	1818	1824	N16	W13	10344			13	SF C 3.3							1.9E-03
HOLL		1815	1815	1826	N16	W13	10344	04	27.8	11	SF		3	E		20		F
GOES		2122	2130	2142						20	C 1.8							1.7E-03

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APRIL 2003

Sta	Day	Start	Max	End	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
		(UT)	(UT)	(UT)											Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	28	2211	2215	2222						11		B 9.3						5.4E-04
GOES	29	0022	0025	0031			10337			9		C 1.0						4.7E-04
GOES		0055	0115	0132			10338			37		C 1.4						2.4E-03
GOES		0432	0459	0510	S12	W55	10337			38	1F	M 1.1						1.6E-02
LEAR		0436	0442	0444	S12	W56	10337	04	25.0	8	SF		3	E		45		F
LEAR		0445	0448	0521D	S12	W55	10337	04	25.0	36D	1F		3	E		104		F
GOES		0647	0659	0711			10349			24		C 1.1						1.5E-03
GOES		0748	0751	0755			10345			7		C 1.0						3.8E-04
GOES		0855	0859	0903			10338			8		C 1.3						5.4E-04
GOES		0940	0948	0950			10338			10		C 1.6						5.9E-04
GOES		1053	1057	1100			10349			7		C 2.1						6.7E-04
GOES		1249	1252	1254			10349			5		B 8.9						2.3E-04
GOES		1334	1401	1415	S13	E27	10349			41	SF	B 9.9						1.8E-03
HOLL		1401	1402	1410	S13	E27	10349	05	1.6	9	SF		3	E		14		
GOES		1534	1538	1541			10349			7		B 8.0						2.8E-04
GOES		1653	1659	1704			10349			11		C 1.7						8.4E-04
GOES		1933	1936	1938			10349			5		C 1.5						3.7E-04
GOES		1954	1959	2007			10349			13		C 1.2						8.8E-04
GOES		2111	2119	2125	S13	E24	10349			14	SF	C 1.7						1.3E-03
HOLL		2117	2117	2128	S13	E24	10349	05	1.7	11	SF		3	E		11		
GOES		2239	2242	2244	S13	E17	10349			5	SF	C 1.4						3.7E-04
HOLL		2241	2242	2245	S13	E17	10349	05	1.2	4	SF		3	E		24		
HOLL		2337	2347	2436	S13	E22	10349	05	1.6	59	SF		3	E		59		
GOES		2339	2349	2357	S13	E22	10349			18	SF	C 3.1						2.7E-03
GOES	30	0125	0128	0131			10349			6		C 1.0						3.1E-04
GOES		0506	0509	0512			10349			6		B 8.8						2.8E-04
GOES		0842	0846	0848			10349			6		B 8.5						2.4E-04
SVTO		1251	1252	1259	S12	W52	10340	04	26.6	8	SF		3	E		10		
GOES		1549	1553	1558			10349			9		B 9.2						4.5E-04
GOES		1718	1815	1919			10345			121		C 1.1						6.9E-03
GOES		2250	2254	2300			10349			10		B 7.8						4.1E-04

"Remarks"

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

34
Apr 03

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

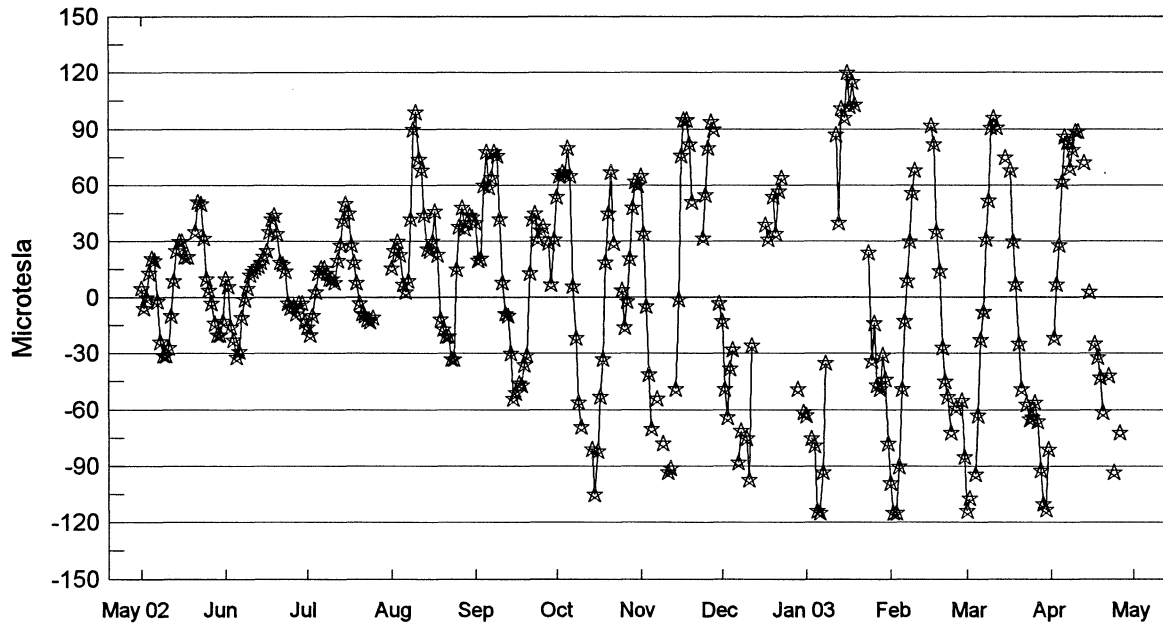
Selected Fixed Frequency Events

APRIL 2003

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 ⁻²² W/m ² Hz)	Mean	Int	Remarks
03	8800	SVTO	4 S/F	1024.0	1025.0	5.0	50.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1024.0	1024.0	10.0	30.0			QL=4 ST=2 TYP=3
04	2695	SGMR	4 S/F	2005.0	2006.0	4.0	65.0			QL=4 ST=2 TYP=3
	2695	PALE	4 S/F	2006.0	2006.0	3.0	66.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2049.0	2050.0	1.0	42.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	2049.0	2049.0	1.0	59.0			QL=4 ST=2 TYP=3
09	2695	PALE	8 S	2327.0	2327.0	1.0	140.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2327.0	2328.0	1.0	140.0			QL=4 ST=2 TYP=3
13	2695	LEAR	8 S	0850.0	0850.0	U	56.0			QL=4 ST=2 TYP=3
18	2695	SGMR	8 S	1953.0	1954.0	1.0	41.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1953.0	1954.0	1.0	44.0			QL=4 ST=2 TYP=3
20	8800	SVTO	4 S/F	1536.0	1536.0	504.0	25.0			QL=4 ST=1 TYP=3
21	2695	SVTO	48 C	1302.0	1304.0	7.0	300.0			QL=4 ST=2 TYP=8
	8800	SGMR	49 GB	1302.0	1304.0	13.0	870.0			QL=4 ST=3 TYP=6
	2695	SGMR	4 S/F	1302.0	1304.0	13.0	340.0			QL=4 ST=3 TYP=3
	8800	SVTO	48 C	1303.0	1304.0	6.0	660.0			QL=4 ST=2 TYP=8
22	8800	SGMR	8 S	1615.0	1615.0	U	41.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1615.0	1615.0	U	50.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1615.0	1615.0	U	34.0			QL=4 ST=2 TYP=3
23	2695	PALE	4 S/F	0100.0	0106.0	13.0	470.0			QL=4 ST=2 TYP=3
	8800	PALE	48 C	0100.0	0102.0	14.0	1200.0			QL=4 ST=2 TYP=8
	8800	SGMR	8 S	1139.0	1139.0	U	36.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1139.0	1139.0	1.0	74.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1542.0	1545.0	5.0	38.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1543.0	1545.0	9.0	48.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1543.0	1546.0	9.0	66.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1543.0	1546.0	6.0	55.0			QL=4 ST=2 TYP=3
24	2695	SGMR	4 S/F	1250.0	1253.0	6.0	100.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1250.0	1253.0	7.0	89.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1251.0	1253.0	6.0	87.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1251.0	1253.0	10.0	120.0			QL=4 ST=2 TYP=3
25	2695	LEAR	4 S/F	0530.0	0531.0	3.0	82.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0530.0	0531.0	11.0	84.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	1948.0	1948.0	1.0	100.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1949.0	1949.0	U	21.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2053.0	2054.0	1.0	110.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	2053.0	2054.0	1.0	98.0			QL=4 ST=2 TYP=3
26	8800	LEAR	8 S	0055.0	0055.0	1.0	260.0			QL=4 ST=2 TYP=3
	2695	LEAR	8 S	0055.0	0055.0	1.0	55.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	0055.0	0055.0	1.0	340.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	0055.0	0055.0	1.0	63.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0303.0	0303.0	U	190.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	0303.0	0303.0	U	250.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0805.0	0805.0	955.0	47.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	0805.0	0805.0	955.0	58.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1442.0	1442.0	U	35.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	2339.0	2339.0	1.0	71.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2339.0	2339.0	U	120.0			QL=4 ST=2 TYP=3
27	8800	SGMR	8 S	1530.0	1530.0	1.0	150.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1530.0	1530.0	4.0	65.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1530.0	1530.0	1.0	140.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1530.0	1530.0	1.0	56.0			QL=4 ST=2 TYP=3
30	2695	SVTO	8 S	0730.0	0731.0	1.0	51.0			QL=4 ST=2 TYP=3

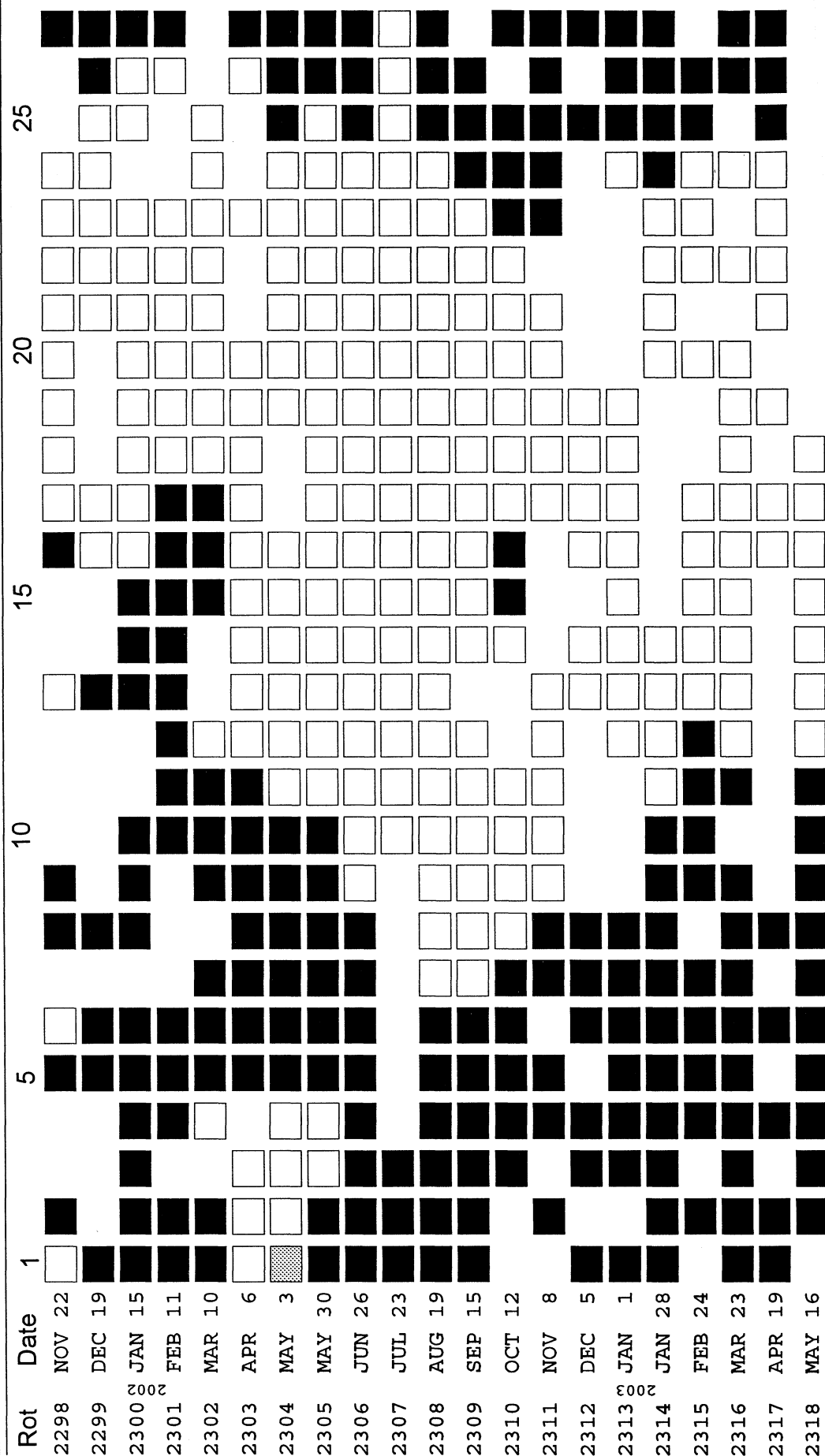
Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

35
Apr 03



Day	May 02	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr
1	5	10	-16	16	40	54	65	-13	-63	-99	-114	—
2	-6	6	-20	25	20	65	34	-49	—	-115	-107	-22
3	0	-16	-10	30	21	67	-5	-64	-75	-115	—	7
4	13	-23	3	23	60	66	-41	-38	-79	-90	-94	28
5	21	-32	13	7	78	80	-70	-28	-114	-49	-63	62
6	20	-29	16	3	59	65	—	—	-115	-13	-23	86
7	-2	-11	16	9	64	6	-54	-88	-93	9	-8	83
8	-24	-1	13	42	78	-22	—	-71	-35	30	31	69
9	-31	5	10	90	76	-56	-78	—	—	56	52	79
10	-31	12	10	99	42	-69	—	-75	—	68	91	89
11	-27	14	8	74	8	—	-93	-97	—	—	96	89
12	-10	16	20	68	-9	—	-91	-26	87	—	91	—
13	9	17	28	44	-10	—	—	—	40	—	—	72
14	25	19	41	26	-30	-81	-49	—	101	—	—	—
15	30	22	50	25	-54	-105	-1	—	96	—	75	3
16	30	25	45	30	-51	-82	76	—	120	92	—	.
17	22	35	28	46	-46	-53	95	39	102	82	68	-25
18	22	42	19	23	-47	-33	95	31	115	35	30	-32
19	—	44	8	-12	-36	19	82	—	103	14	7	-43
20	—	34	-3	-17	-31	45	51	54	—	-27	-25	-61
21	35	19	-9	-21	13	67	—	34	—	-45	-49	—
22	51	18	-10	-21	42	29	—	57	—	-53	—	-42
23	50	14	-12	-33	45	—	—	64	—	-72	-57	—
24	32	-3	-13	-33	31	—	32	—	24	—	-65	-93
25	10	-6	-11	15	36	4	55	—	-34	-59	-64	—
26	4	-5	—	38	38	-16	80	—	-14	—	-56	-72
27	-3	-9	—	48	—	-2	94	—	-47	-55	-66	—
28	-14	-3	—	37	29	21	90	—	-49	-85	-92	—
29	-20	-3	—	40	7	48	—	-49	-31	—	-110	—
30	-20	-13	—	44	31	62	-3	—	-44	—	-113	—
31	-13	—	—	43	—	60	—	-61	-78	—	-81	—

STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity:

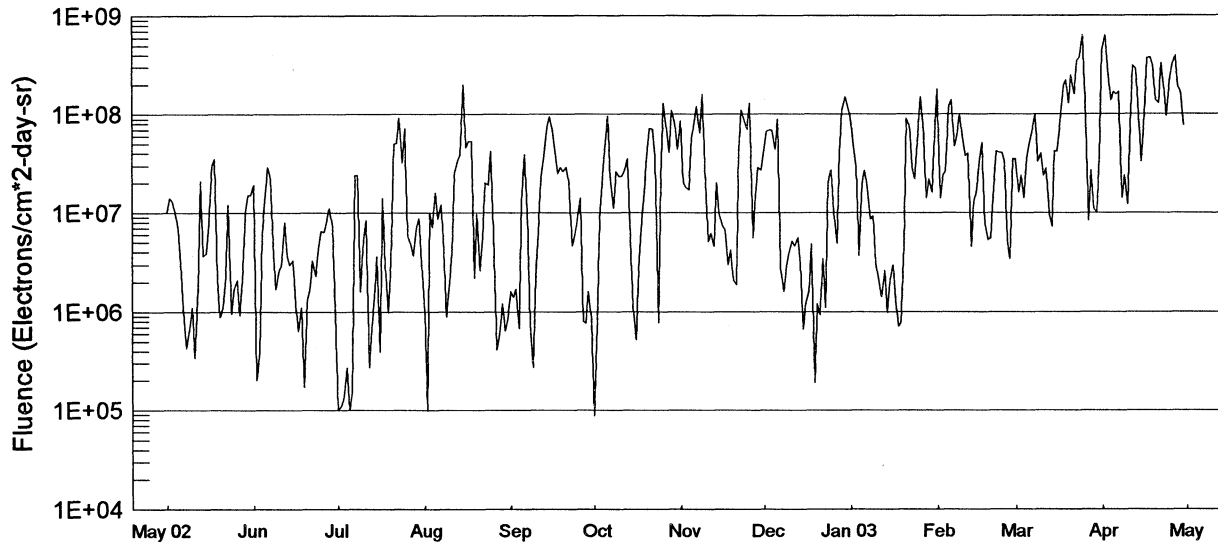
= field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

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

GOES Daily Electron Fluence May 2002 - Apr 2003

37
Apr 03



Day	May 02	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar	Apr
1	9.9E+06	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	1.4E+07	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
3	1.3E+07	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
4	1.0E+07	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	6.9E+06	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	3.1E+06	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	8.3E+05	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
8	4.3E+05	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	1.4E+07
9	7.1E+05	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	2.4E+07
10	1.1E+06	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	1.2E+07
11	3.4E+05	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	7.8E+07
12	1.8E+06	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	3.1E+08
13	2.1E+07	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	2.9E+08
14	3.7E+06	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	9.7E+07
15	3.9E+06	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	3.3E+07
16	7.9E+06	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	1.0E+08
17	3.0E+07	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	3.7E+08
18	3.5E+07	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	3.8E+08
19	2.2E+06	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	3.1E+08
20	8.9E+05	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	1.4E+08
21	1.1E+06	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	1.3E+08
22	2.3E+06	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	3.3E+08
23	1.2E+07	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	1.9E+08
24	9.5E+05	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	9.7E+07
25	1.7E+06	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	2.2E+08
26	2.1E+06	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	3.2E+08
27	9.3E+05	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	3.9E+08
28	2.1E+06	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	1.9E+08
29	1.0E+07	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	1.7E+08
30	1.5E+07	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	7.6E+07
31	1.5E+07		3.1E+06	8.3E+05		4.4E+07		1.2E+08	6.1E+07		3.7E+07	

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

NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES8 is primary satellite as of 27 July, 1998.

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Prompt Reports

Number 705 Part I

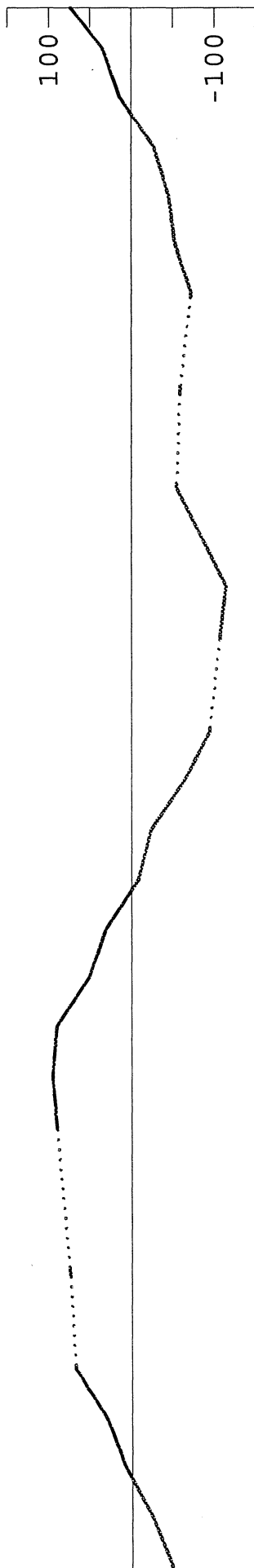
DATA FOR MARCH 2003

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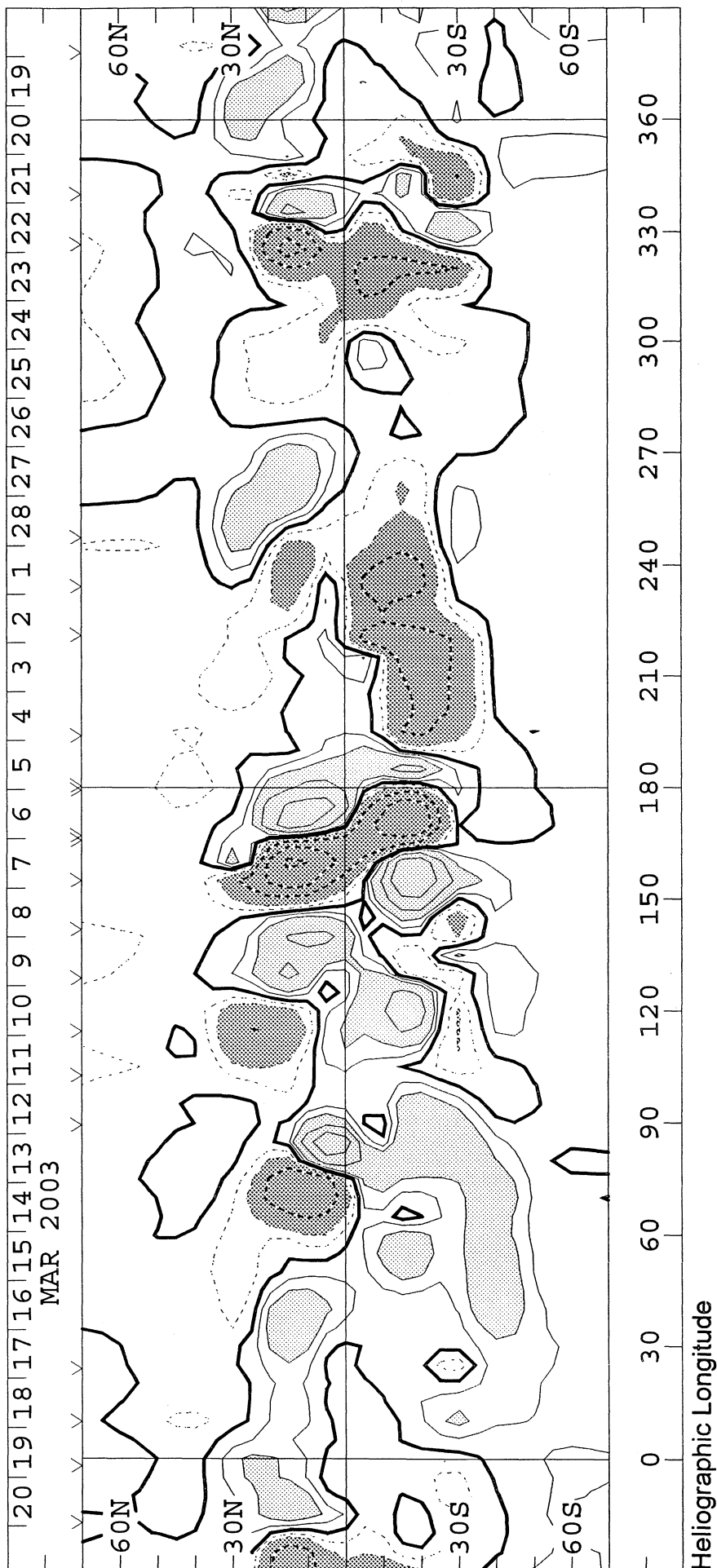
SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 2000
(20 February to 19 March 2003)

WILCOX SOLAR OBSERVATORY

Mean Field

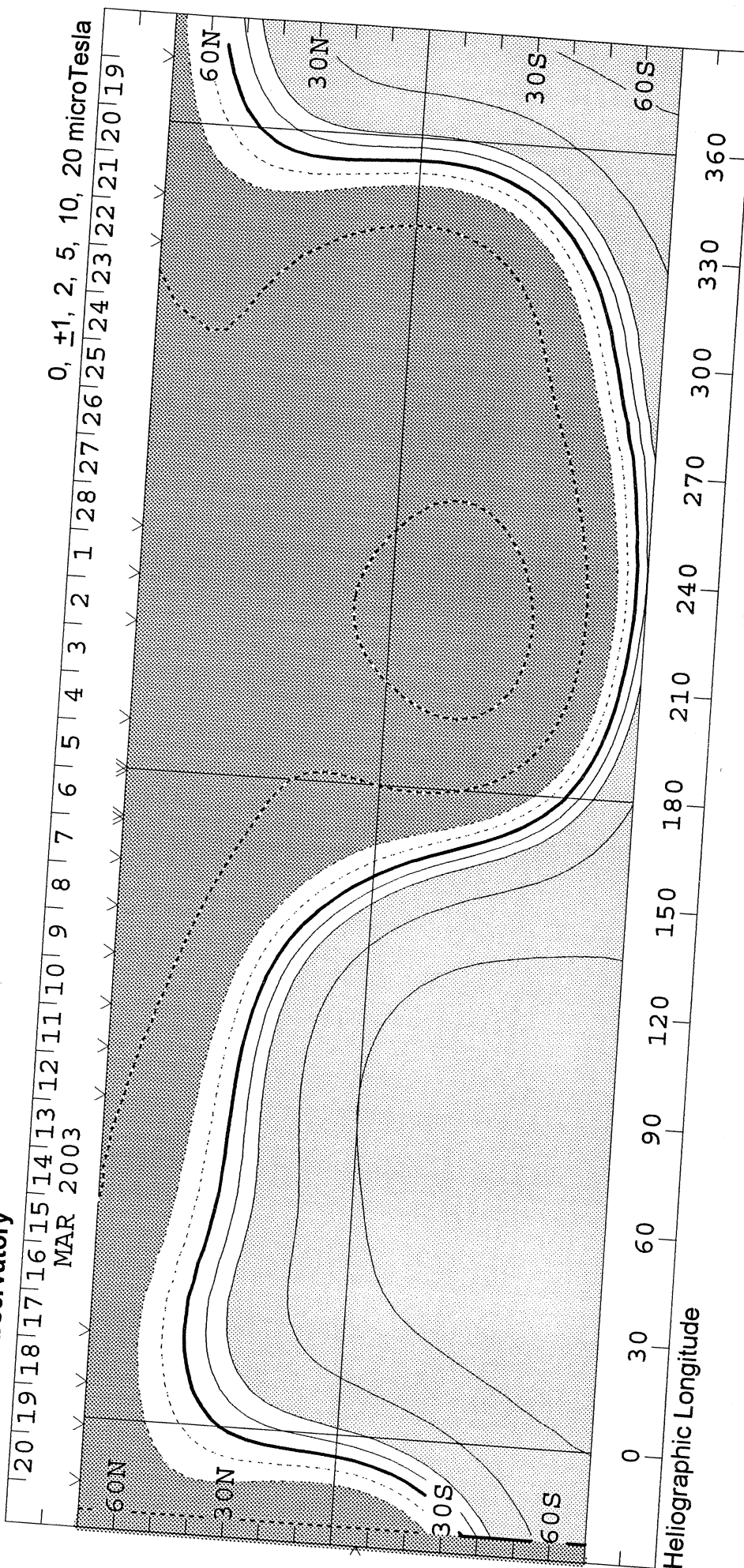


WSO - Photospheric Magnetic Field 0, +100, 200, 500, 1000, 2000 MicroTesla



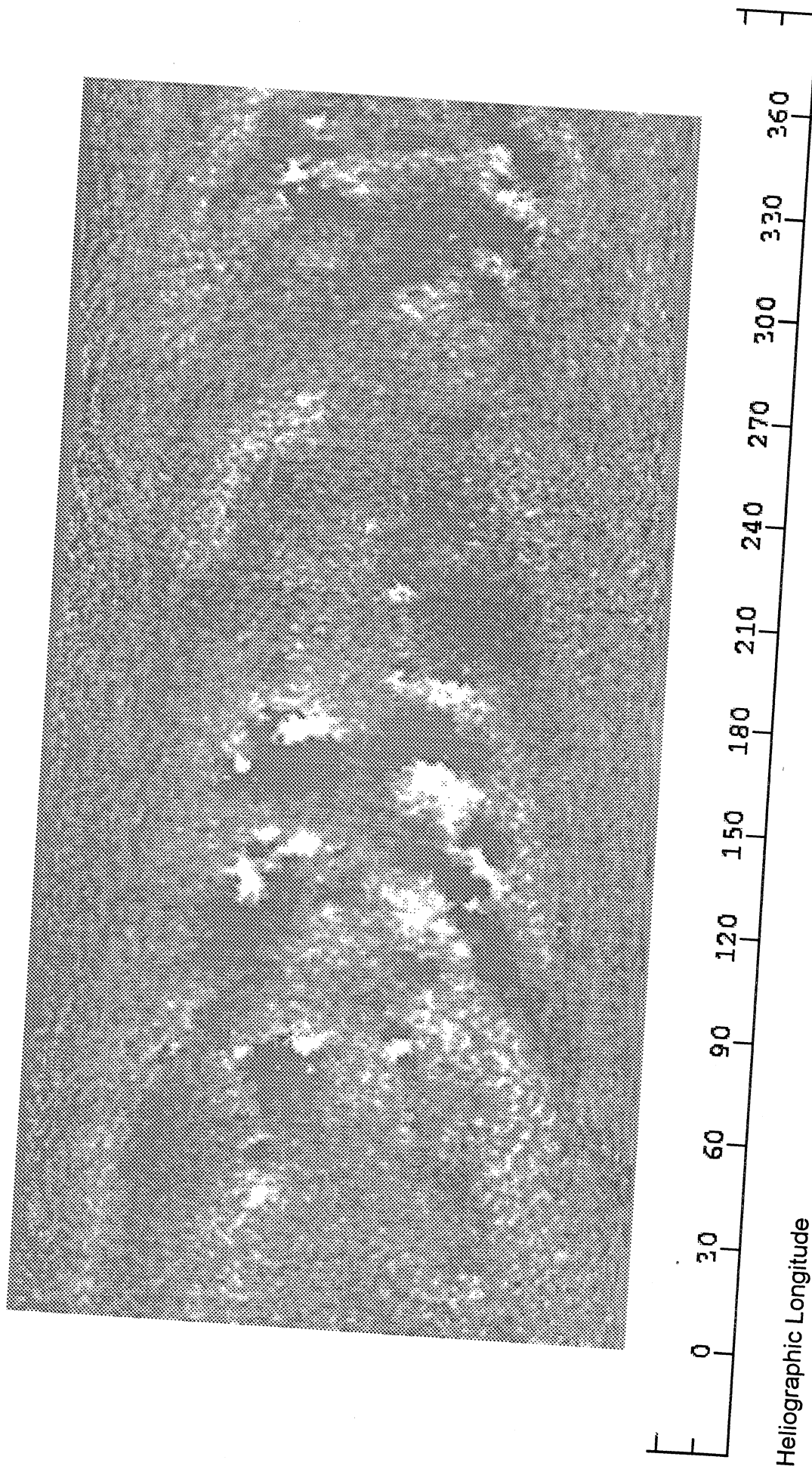
SOLAR MAGNETIC FIELD SYNOPSIS CHART
SOURCE SURFACE FIELD
CARRINGTON ROTATION NUMBER 2000
 (20 February to 19 March 2003)

Wilcox Solar Observatory

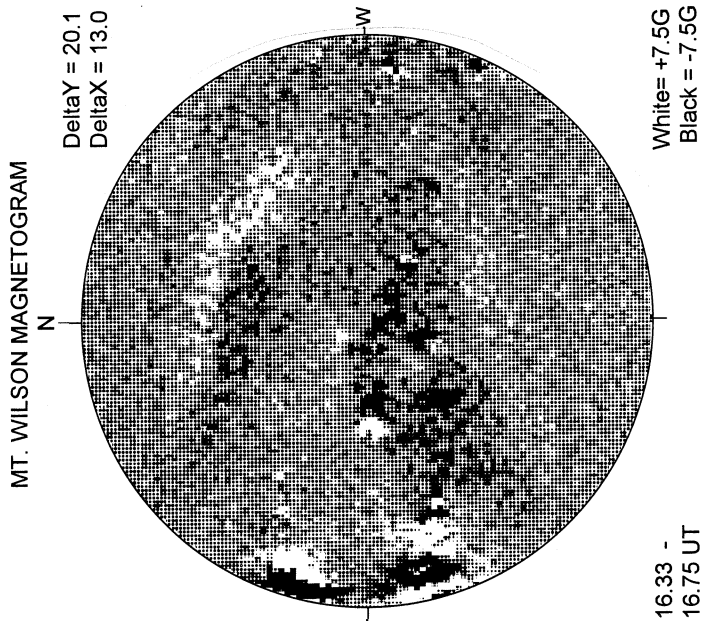
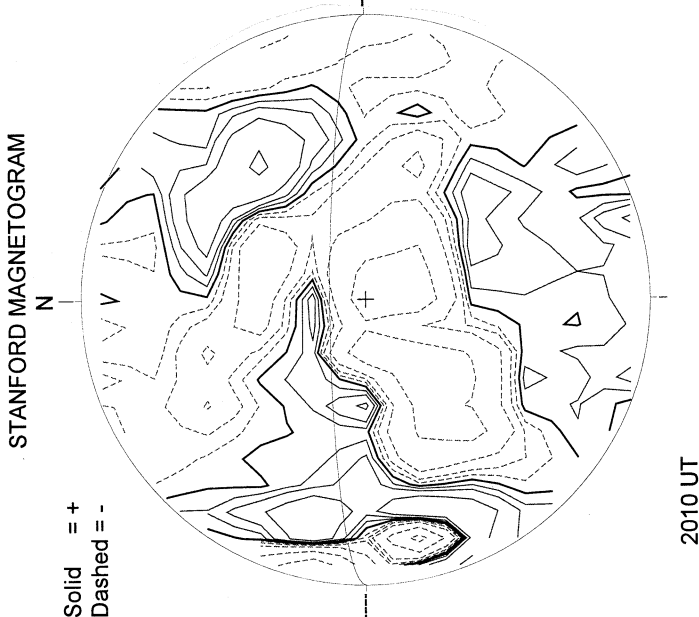
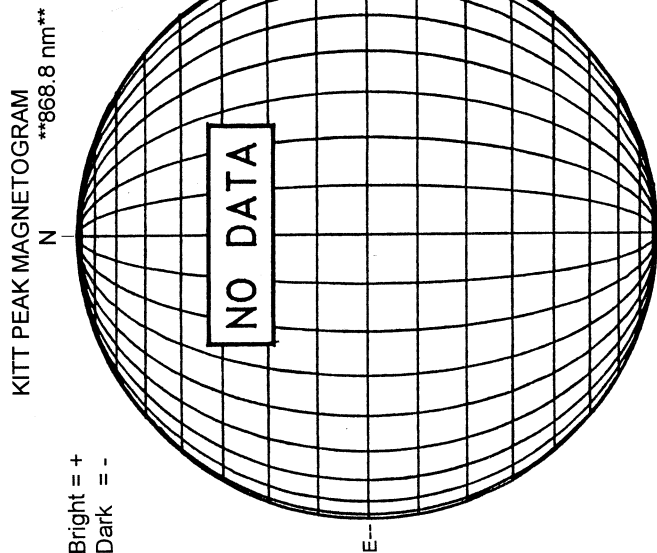


SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 2000
(20 February to 19 March 2003)

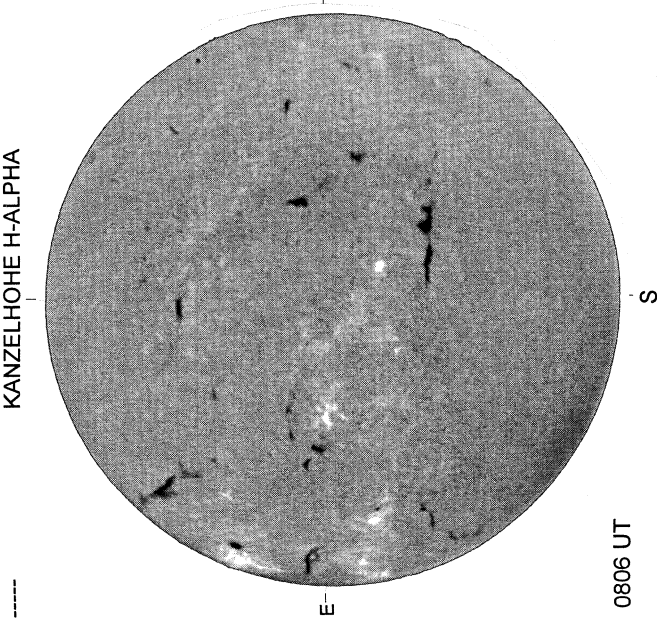
National Solar Observatory/Kitt Peak



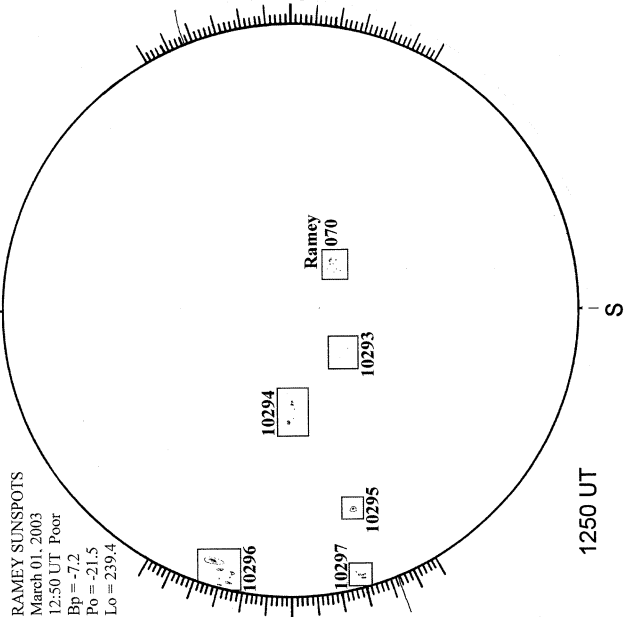
MARCH 1, 2003 (P= -21.43, Bo = -7.21, Lo = 245.24)



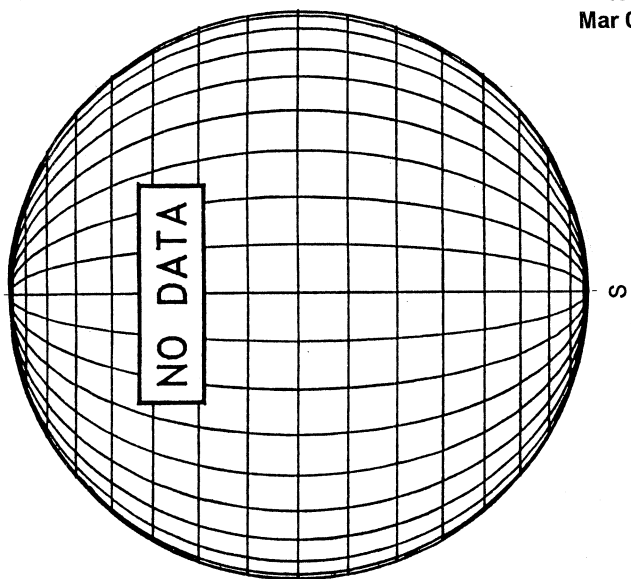
KANZELHOHE H-ALPHA



RAMEY SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)----



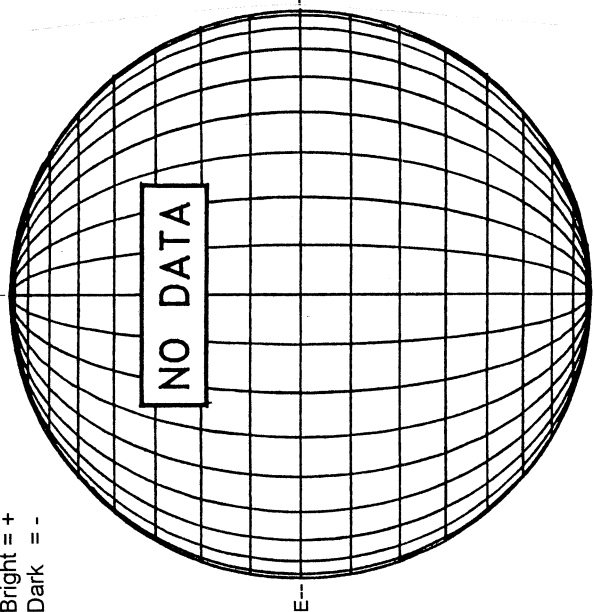
44
Mar 03

MARCH 2, 2003 (P= -21.68, Bo = -7.23, Lo = 232.07)

KITT PEAK MAGNETOGRAM

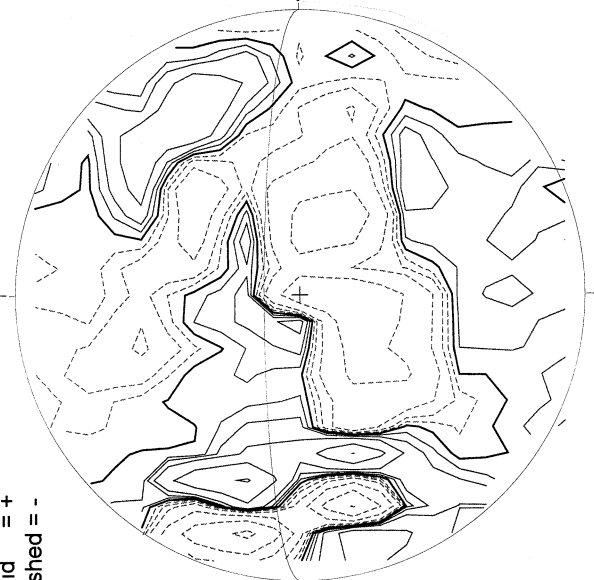
868.8 nm

Bright = +
Dark = -



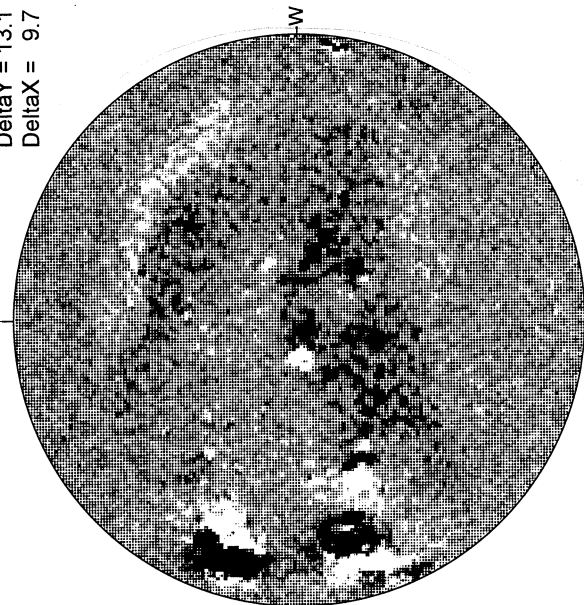
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

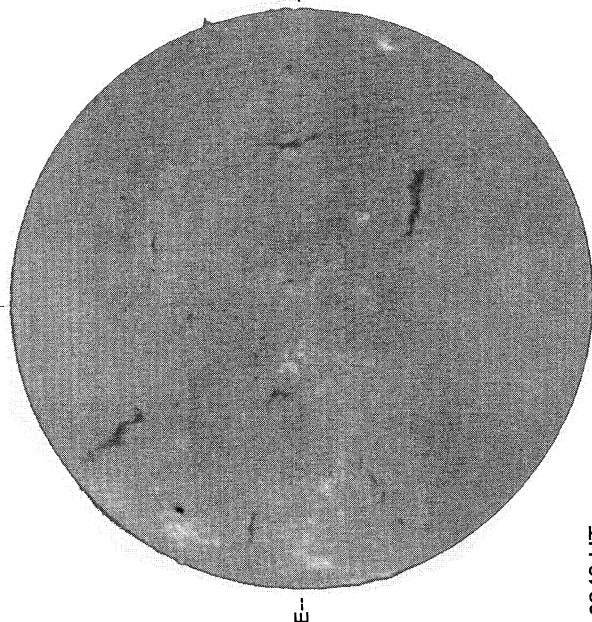
DeltaY = 13.1
DeltaX = 9.7



16.90 -
17.87 UT

White= +7.5G
Black = -7.5G

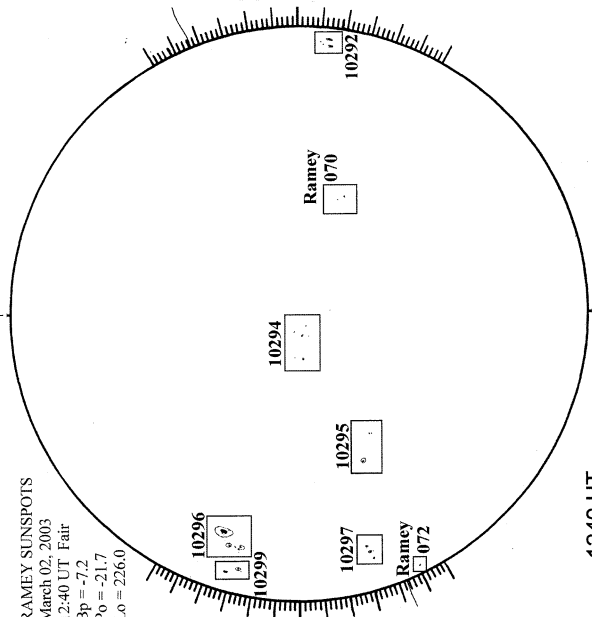
YNAO H-ALPHA



0240 UT

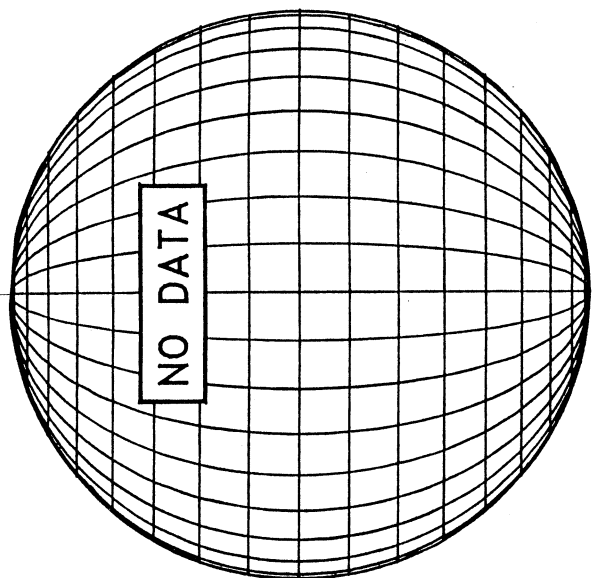
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 02, 2003
12:40 UT Fair
Bp = -7.2
Po = -21.7
Lo = 226.0



1240 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



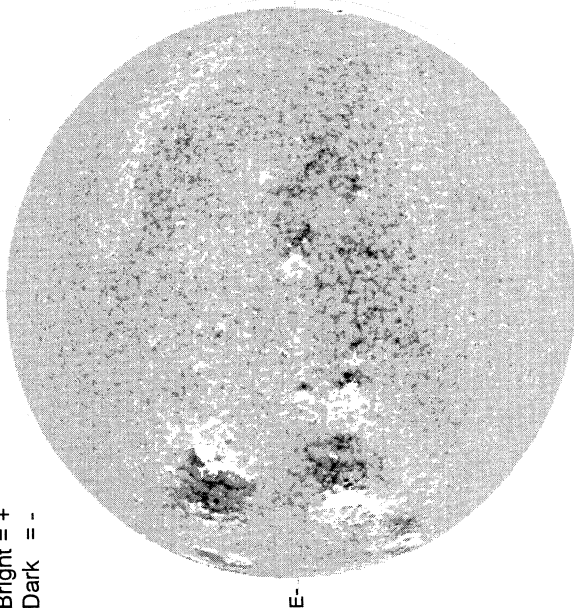
S

MARCH 3, 2003 (P= -21.92, Bo = -7.24, Lo = 218.90)

KITT PEAK MAGNETOGRAM

868.8 nm

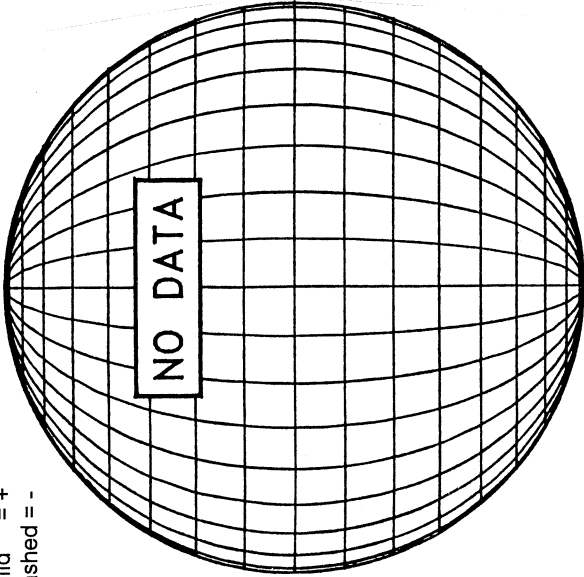
Bright = +
Dark = -



1611 UT

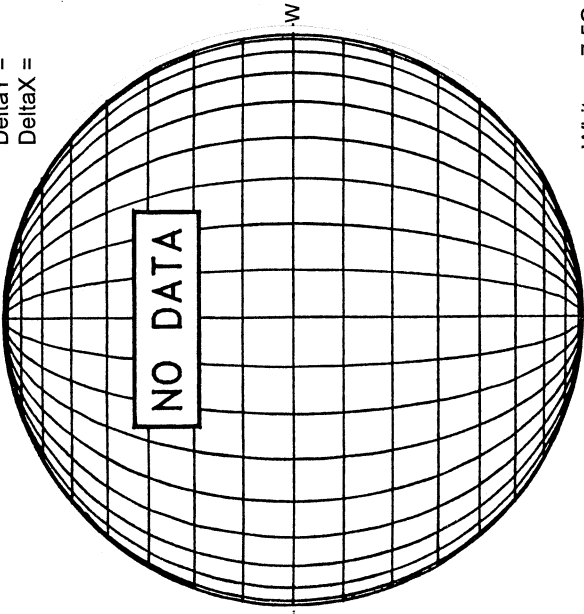
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



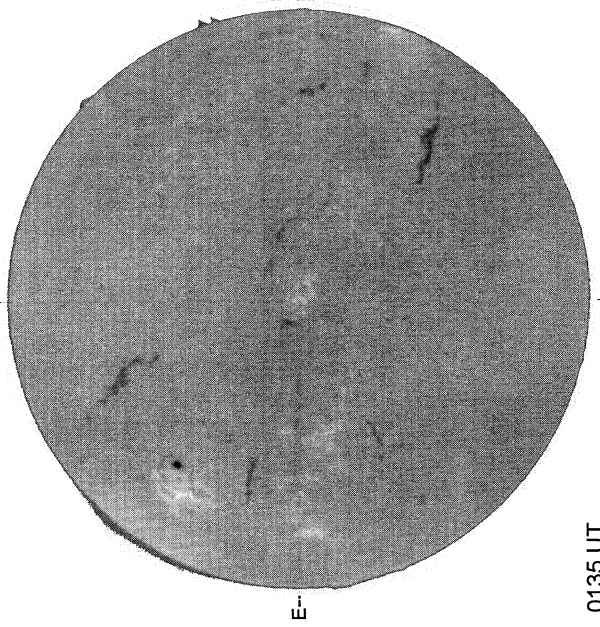
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

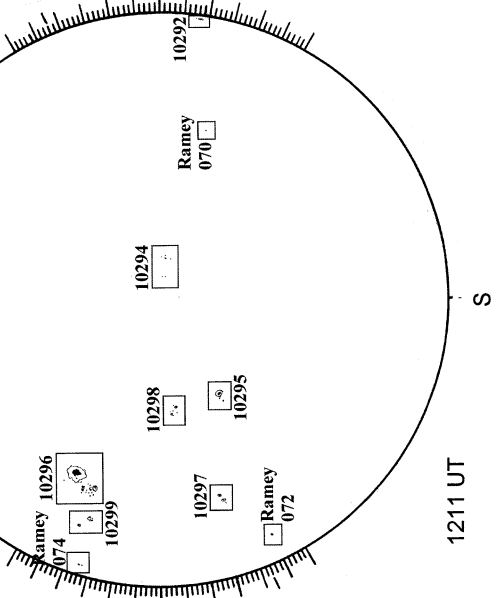
YNAO H-ALPHA



0135 UT

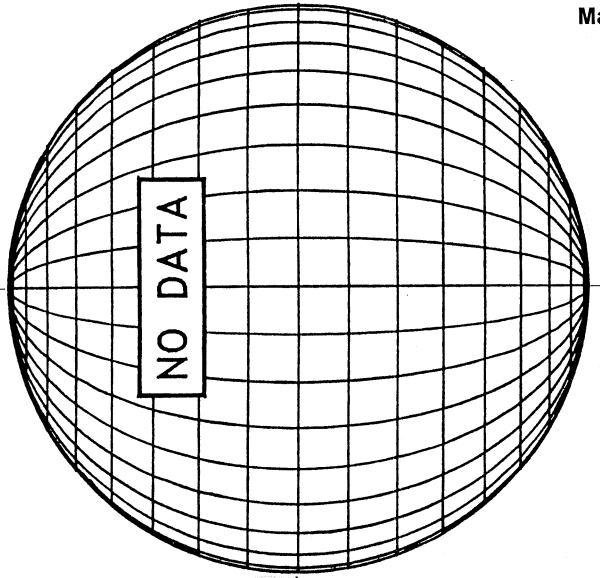
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 03, 2003
12:11 UT Fair
Bp = -7.2
Po = -22.0
Lo = 212.5



1211 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



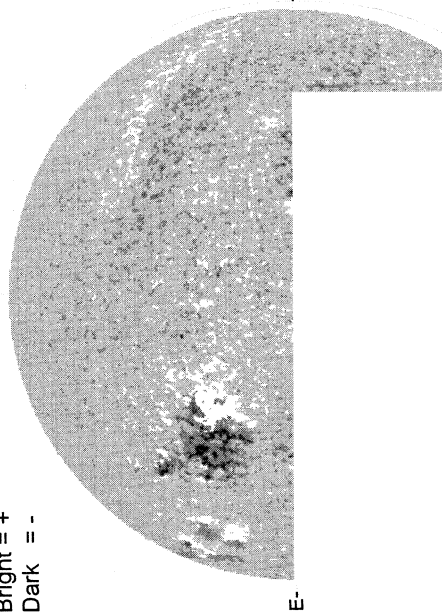
46
Mar 03

MARCH 4, 2003 (P = -22.16, Bo = -7.24, Lo = 205.73)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



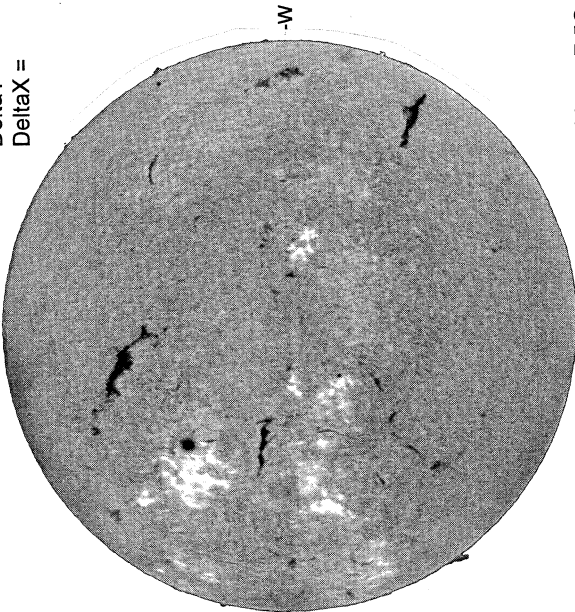
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

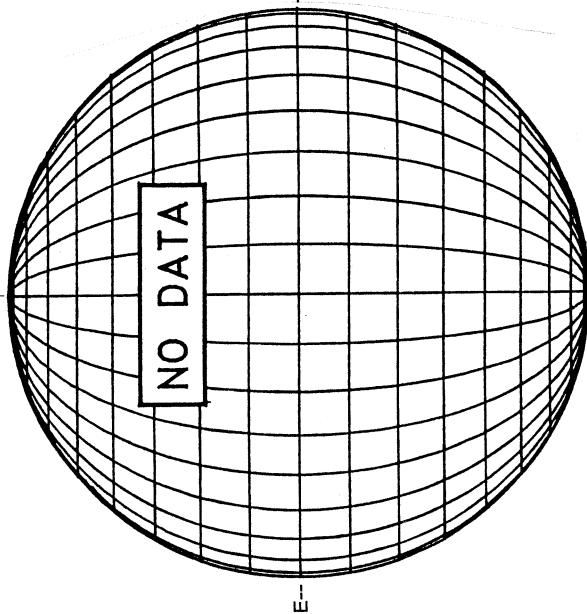


White = +7.5G
Black = -7.5G

1559 UT

2149 UT

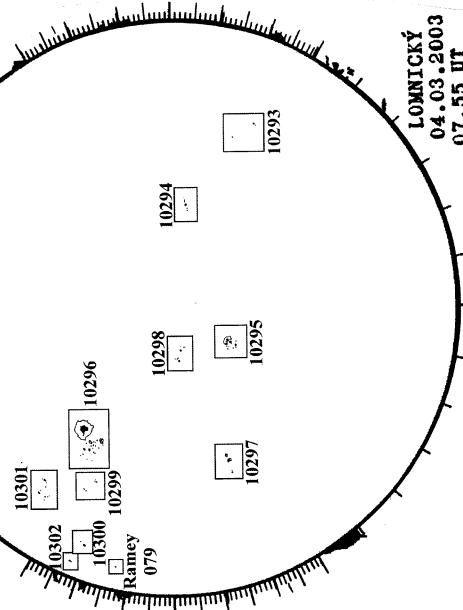
KANZELHOHE H-ALPHA



0734 UT

RAMEY SUNSPOT

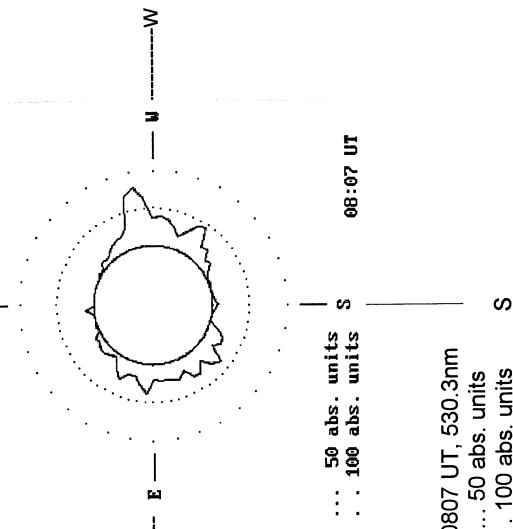
RAMEY SUNSPOTS
March 04, 2003
12:16 UT Fair
Bp = -7.2
Po = -22.2
Lo = 199.3



1216 UT
0755 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)---

LOMNICKY STIT
530.3 nm



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

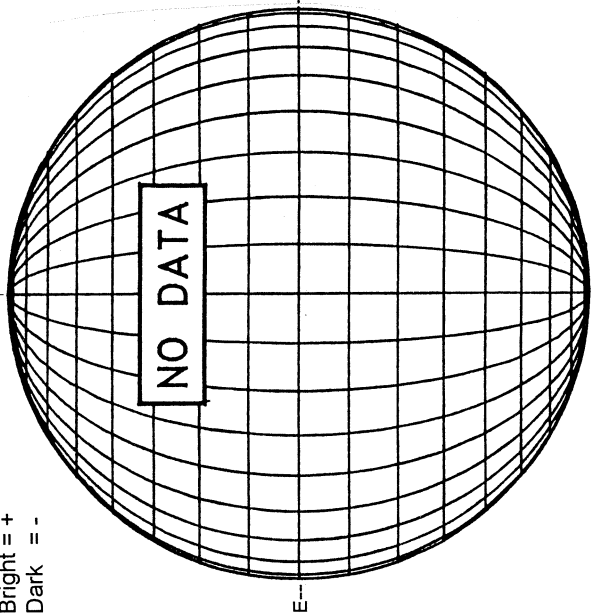
0807 UT, 530.3nm
... 50 abs. units
... 100 abs. units

MARCH 5, 2003 (P = -22.40, Bo = -7.25, Lo = 192.55)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



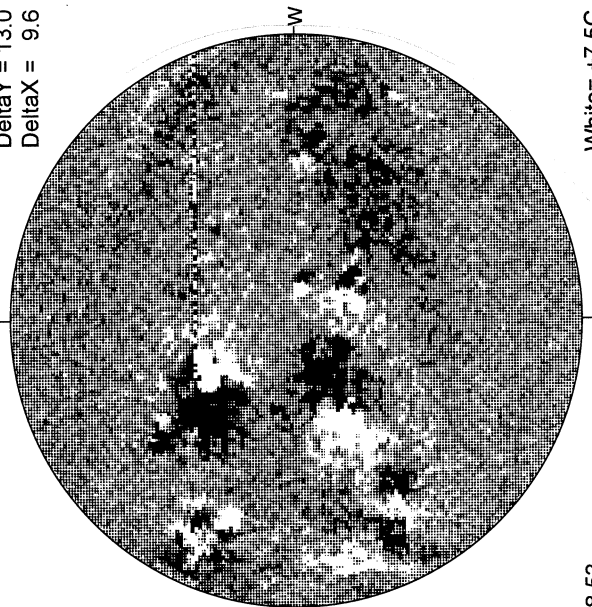
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

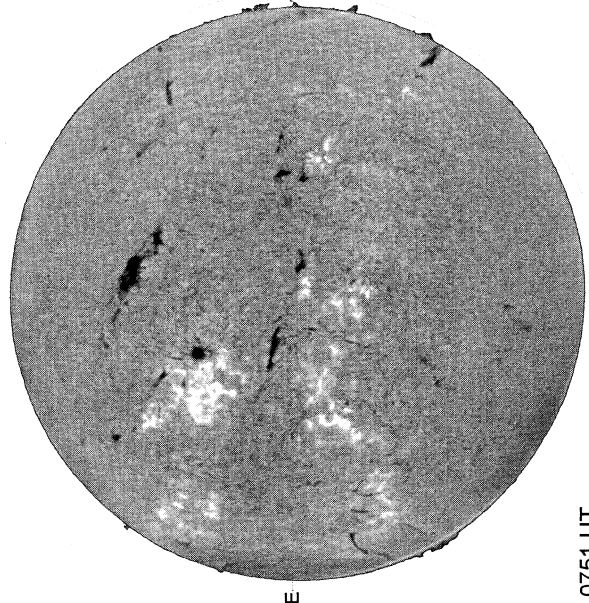
DeltaY = 13.0
DeltaX = 9.6



18.53 -
19.50 UT

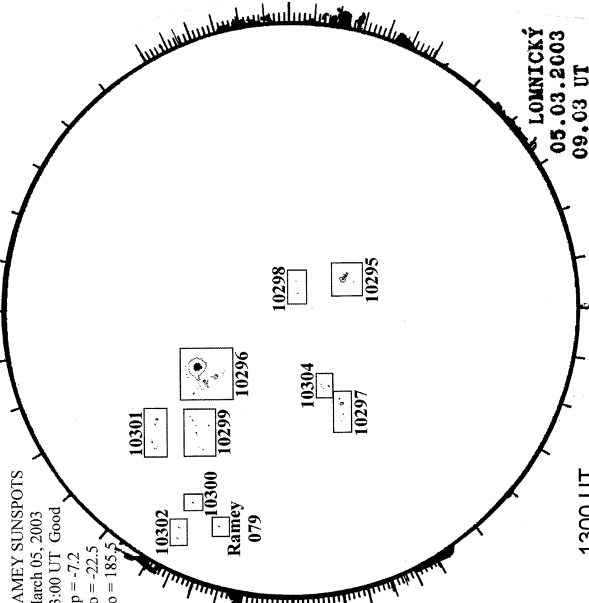
White = +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



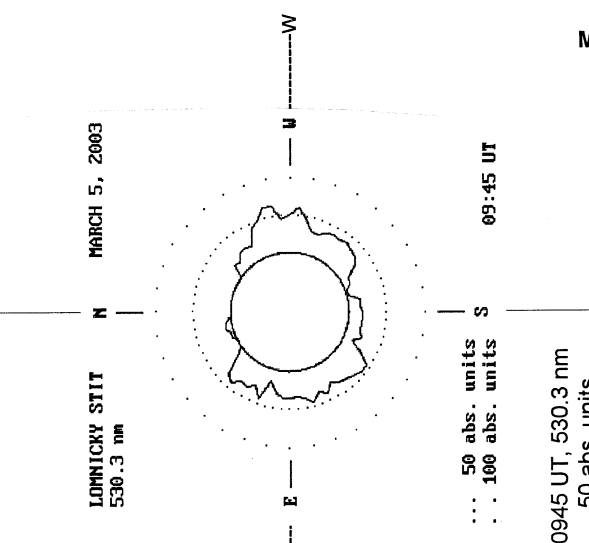
0751 UT

RAMEY SUNSPOT



RAMEY SUNSPOTS
March 05, 2003
13:00 UT Good
Bp = -7.2
Po = -22.5
Lo = 185.5

LOMNICKY PEAK CORONA (1.04 Radii)----



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

0945 UT, 530.3 nm
... 50 abs. units
... 100 abs. units

09:45 UT

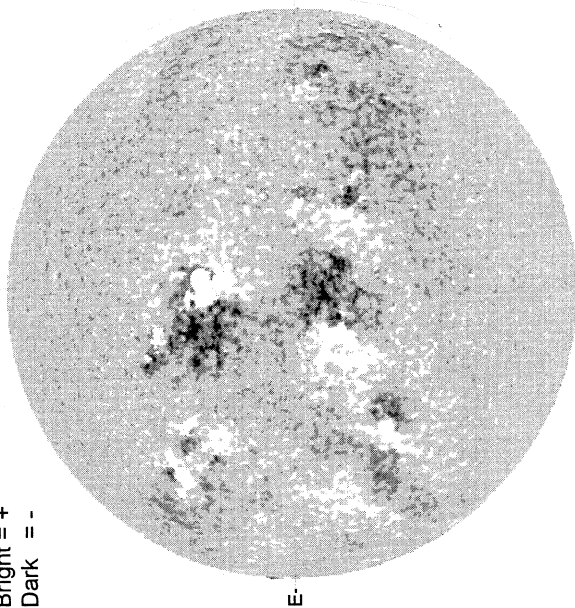
48
Mar 03

MARCH 6, 2003 (P= -22.62, Bo = -7.25, Lo = 179.38)

KITT PEAK MAGNETOGRAM

868.8 nm

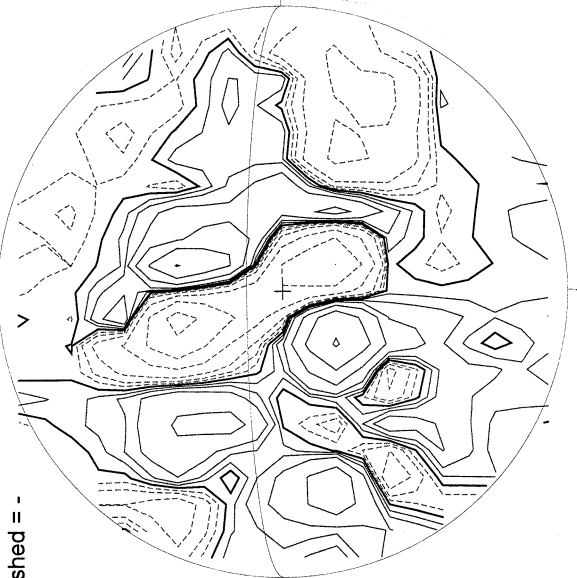
Bright = +
Dark = -



1557 UT

STANFORD MAGNETOGRAM

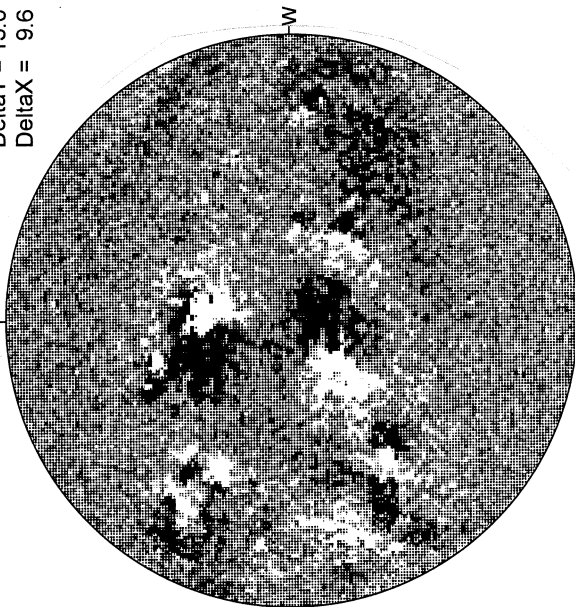
Solid = +
Dashed = -



2224 UT

MT. WILSON MAGNETOGRAM

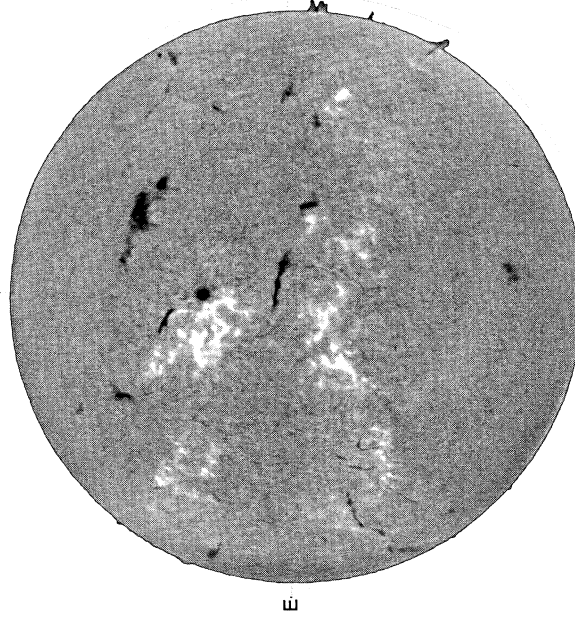
DeltaY = 13.0
DeltaX = 9.6



16.88 -
17.84 UT

White= +7.5G
Black = -7.5G

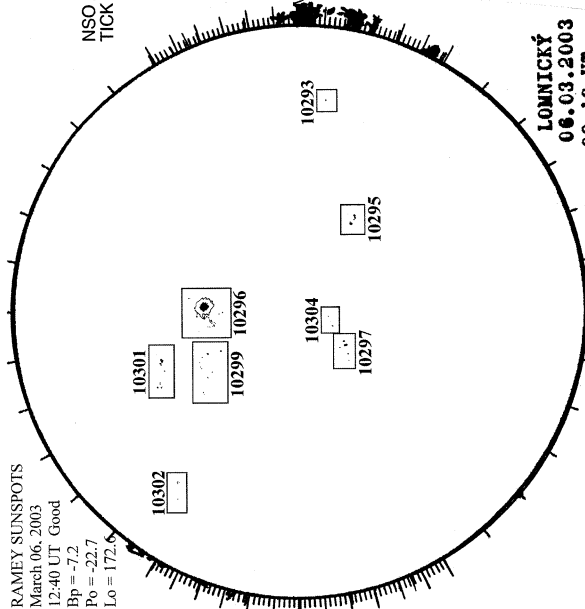
KANZELHOHE H-ALPHA



0800 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
March 06, 2003
12:40 UT Good
Bp = -7.2
Po = -22.7
Lo = 172.6

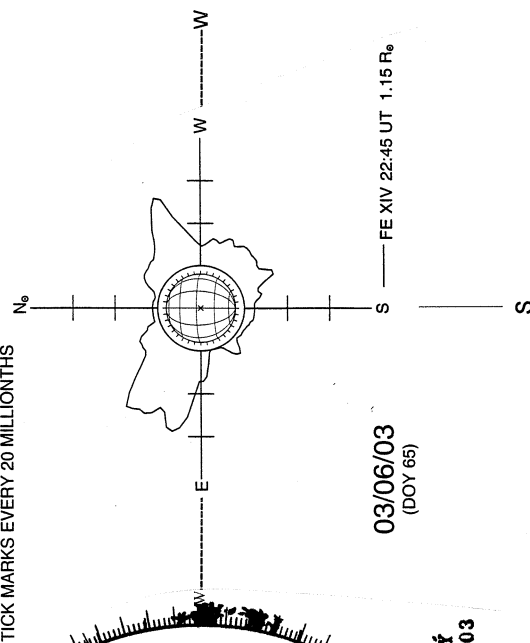


1240 UT
0810 UT LOMN Prom S

LOMNICKÝ
06.03.2003
08.10 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



03/06/03
(DOY 65)

49

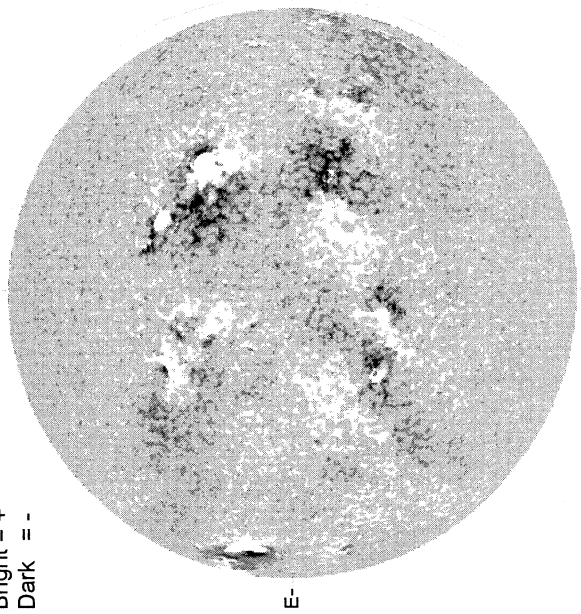
MARCH 8, 2003 (P= -23.06, Bo = -7.25, Lo = 153.03)

50
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1536 UT

STANFORD MAGNETOGRAM

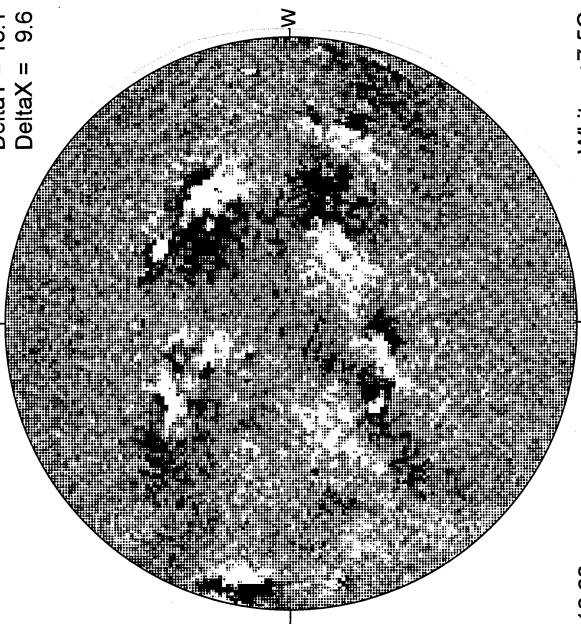
Solid = +
Dashed = -



2023 UT

MT. WILSON MAGNETOGRAM

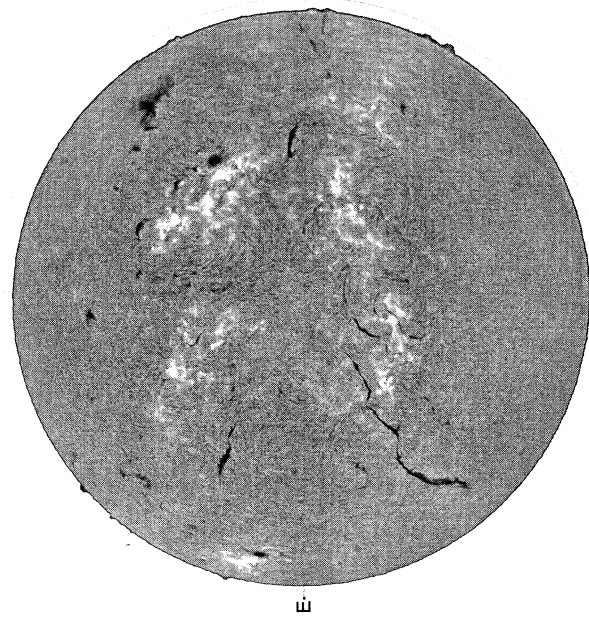
DeltaY = 13.1
DeltaX = 9.6



16.62 -
17.58 UT

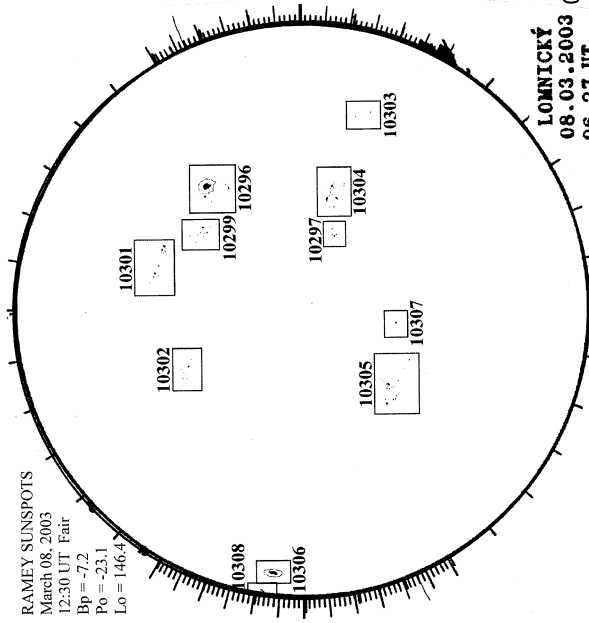
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



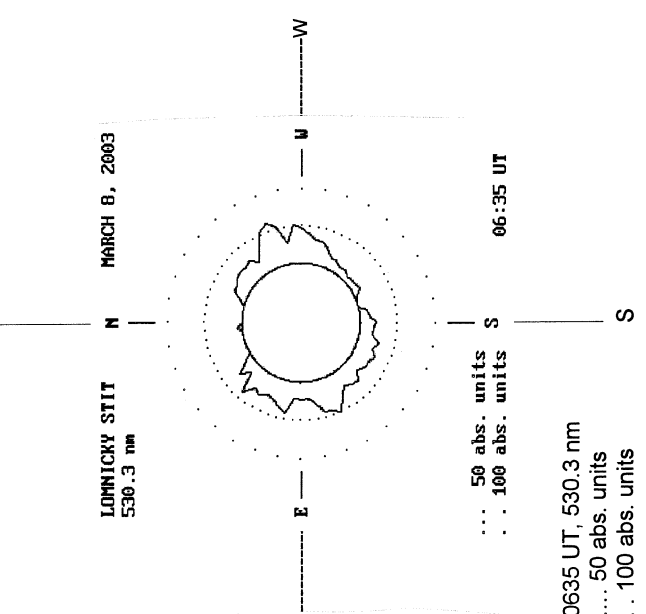
1639 UT

RAMEY SUNSPOT



1230 UT
0627 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



RAMEY SUNSPOTS
March 08, 2003
12:30 UT Fair
Bp = -7.2
Po = -23.1
Lo = 146.4

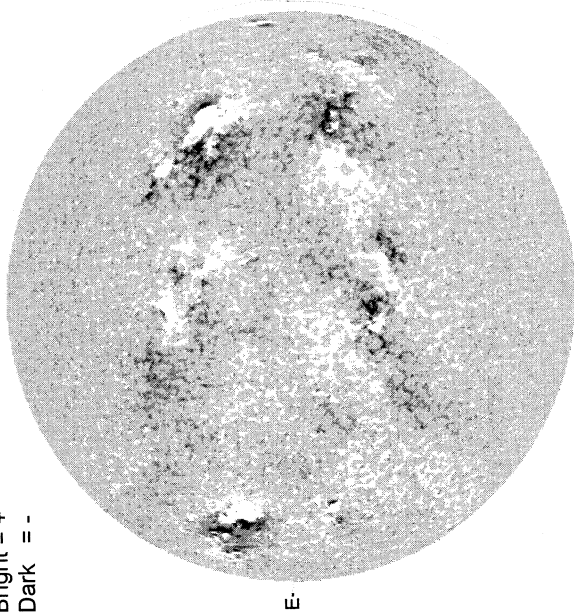
LOMNICKÝ
08.03.2003
06.27 UT

MARCH 9, 2003 (P= -23.26, Bo = -7.25, Lo = 139.85)

KITT PEAK MAGNETOGRAM

**868.8 nm

Bright = +
Dark = -



1540 UT

STANFORD MAGNETOGRAM

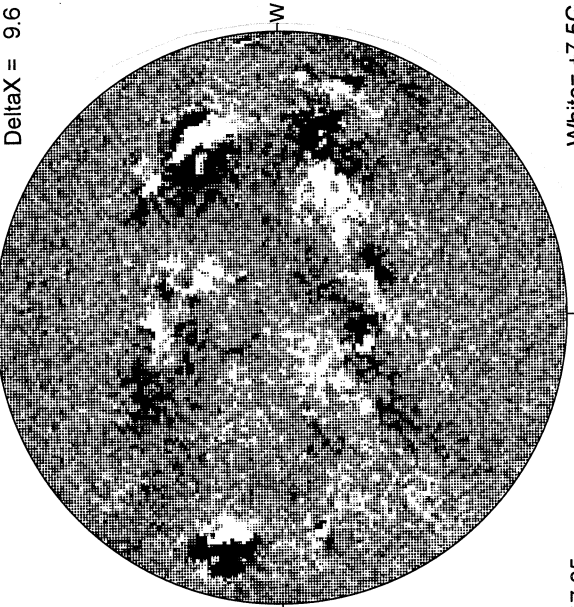
Solid = +
Dashed = -



2009 UT

MT. WILSON MAGNETOGRAM

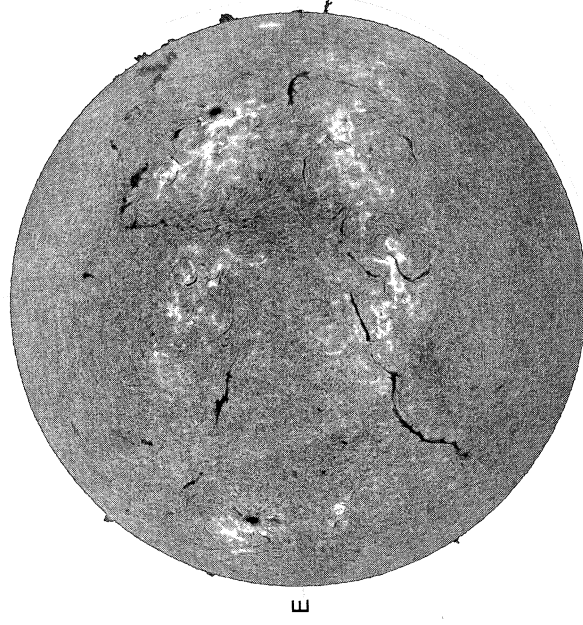
DeltaY = 13.1
DeltaX = 9.6



17.05 -
18.01 UT

White= +7.5G
Black = -7.5G

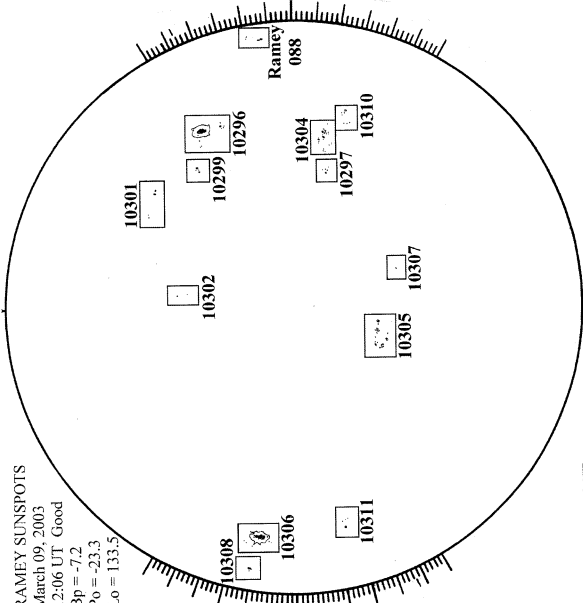
BIG BEAR H-ALPHA



1625 UT

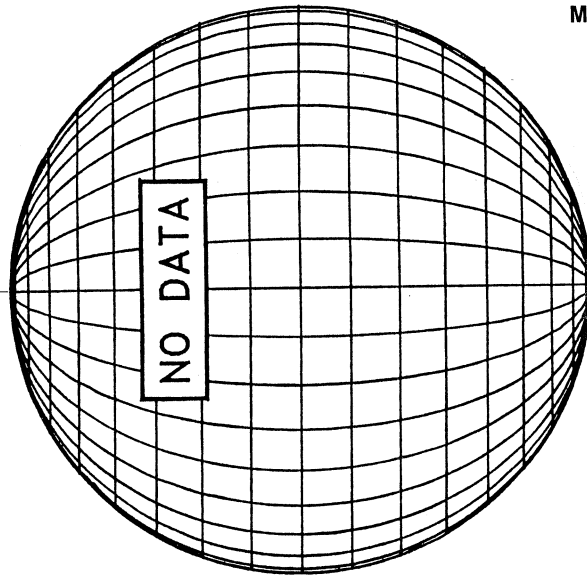
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 09, 2003
12:06 UT Good
Bp = -7.2
Po = -23.3
Lo = 133.5



1206 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



51
Mar 03

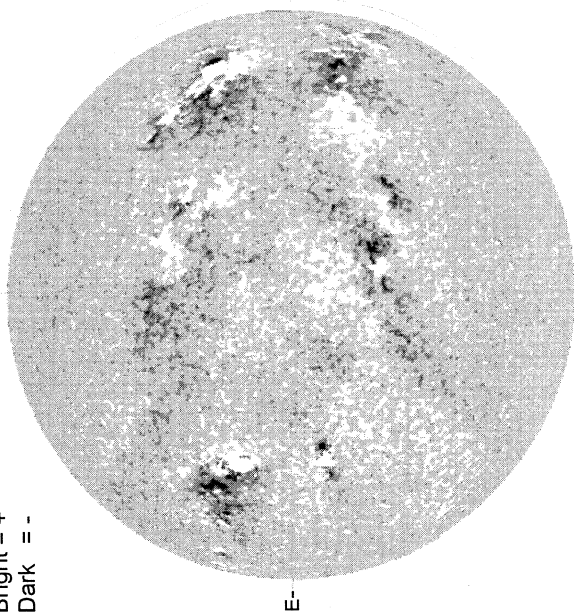
52
Mar 03

MARCH 10, 2003 (P= -23.46, Bo = -7.24 Lo = 126.68)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1559 UT

STANFORD MAGNETOGRAM

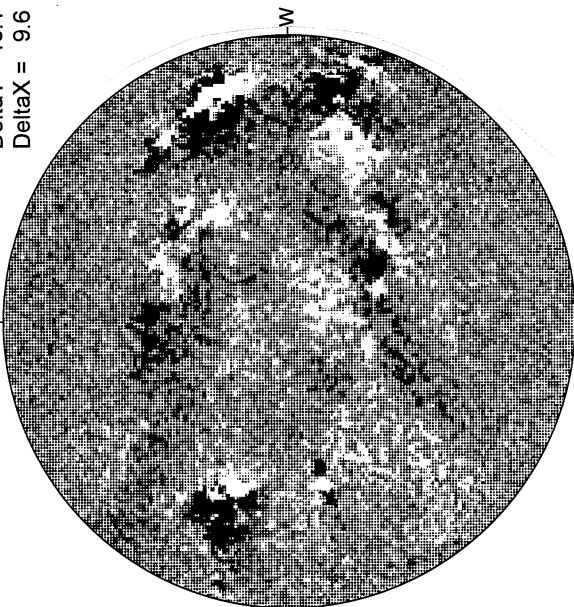
Solid = +
Dashed = -



2155 UT

MT. WILSON MAGNETOGRAM

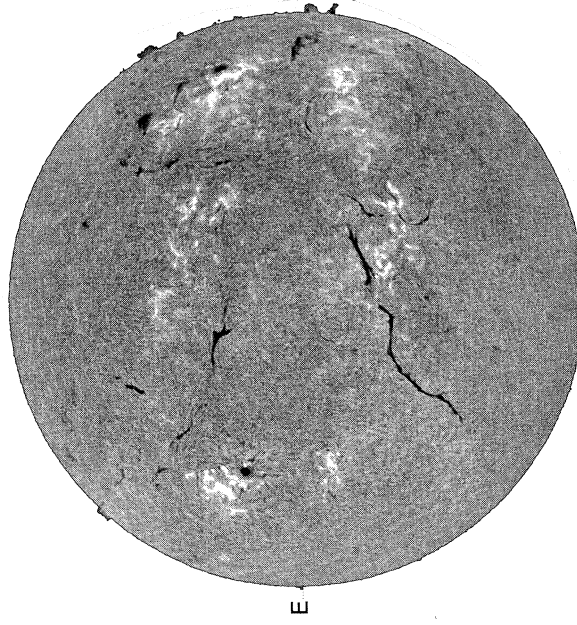
DeltaY = 13.1
DeltaX = 9.6



18.94 -
19.90 UT

White= +7.5G
Black = -7.5G

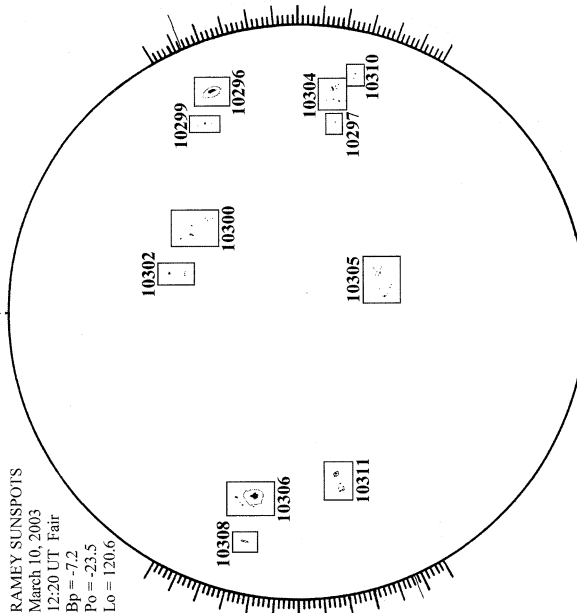
BIG BEAR H-ALPHA



1646 UT

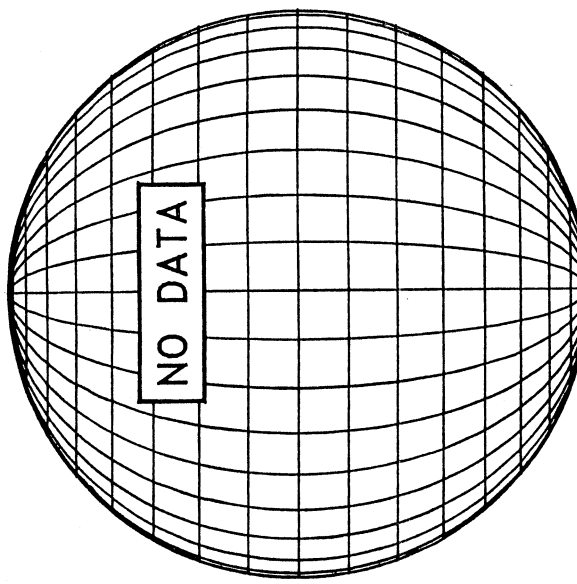
RAMEY SUNSPOTS

RAMEY SUNSPOTS
March 10, 2003
12:20 UT Fair
Bp = -7.2
Po = -23.5
Lo = 120.6



1220 UT

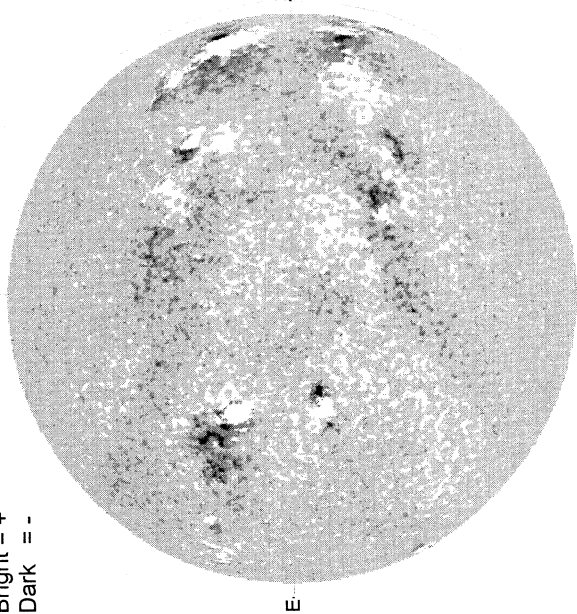
SACRAMENTO PEAK CORONA (1.15 Radii)----



MARCH 11, 2003 (P = -23.66, Bo = -7.23, Lo = 113.50)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1541 UT

STANFORD MAGNETOGRAM

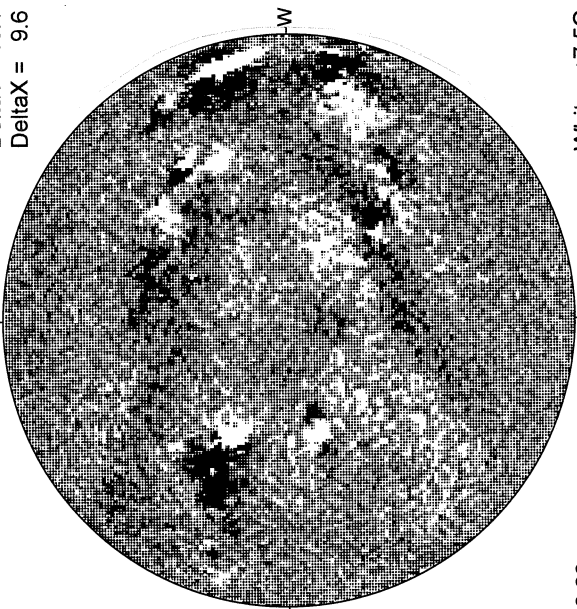
Solid = +
Dashed = -



1937 UT

MT. WILSON MAGNETOGRAM

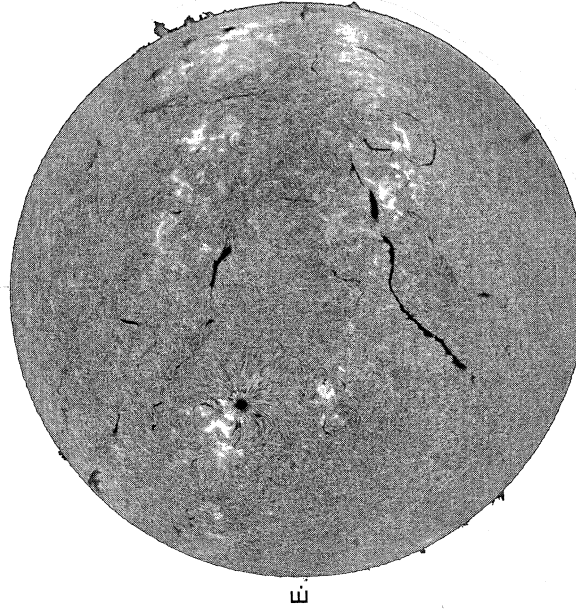
DeltaY = 13.1
DeltaX = 9.6



16.66 -
17.62 UT

White = +7.5G
Black = -7.5G

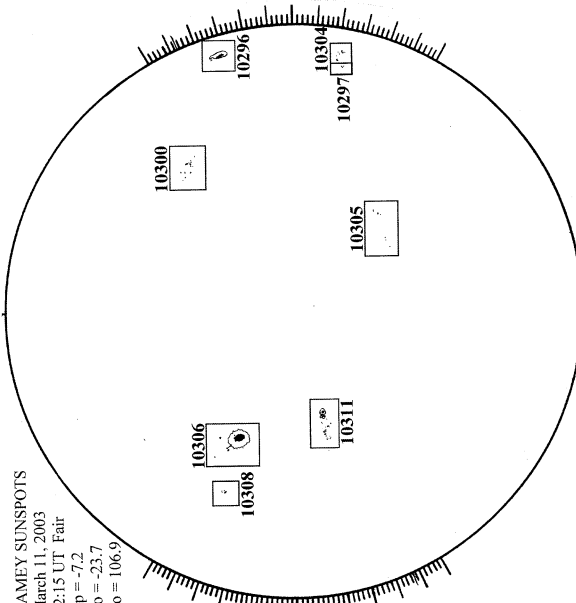
BIG BEAR H-ALPHA



1654 UT

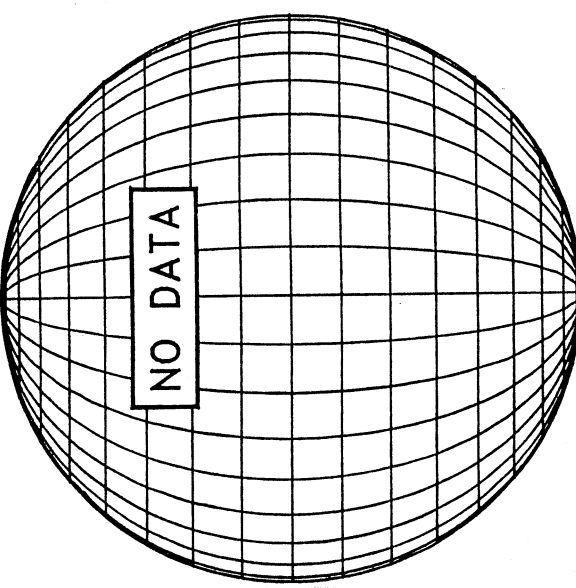
RAMEY SUNSPOTS

RAMEY SUNSPOTS
March 11, 2003
12:15 UT Fair
Bp = -7.2
Po = -23.7
Lo = 106.9



1215 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



53
Mar 03

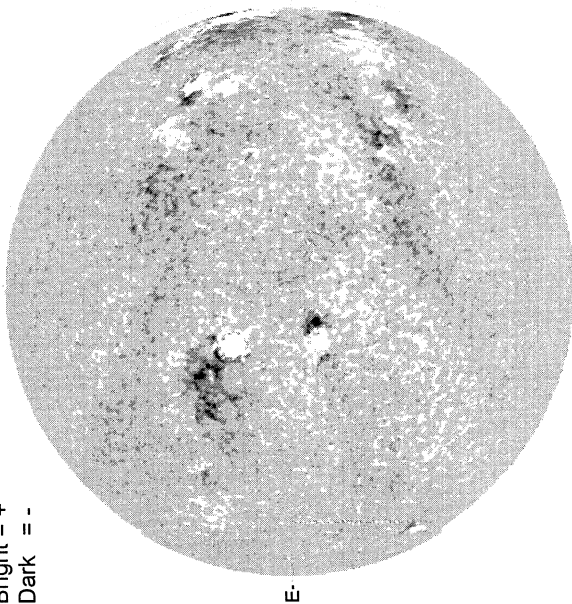
54
Mar 03

MARCH 12, 2003 (P= -23.84 Bo = -7.22 Lo = 100.32)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1554 UT

STANFORD MAGNETOGRAM

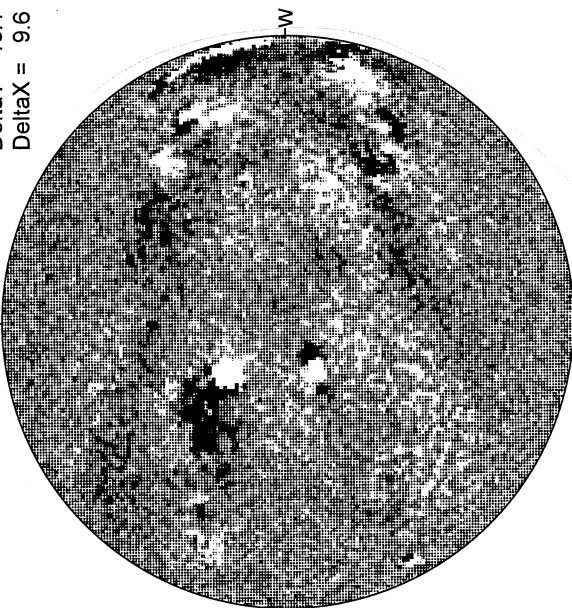
Solid = +
Dashed = -



1953 UT

MT. WILSON MAGNETOGRAM

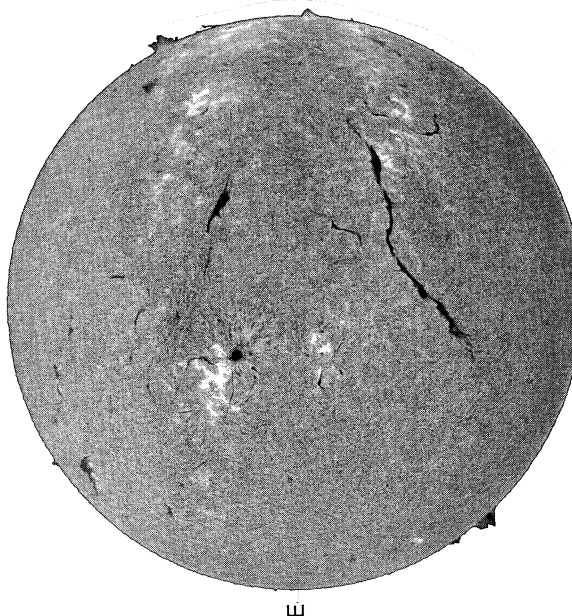
DeltaY = 13.1
DeltaX = 9.6



16.69 -
17.65 UT

White= +7.5G
Black = -7.5G

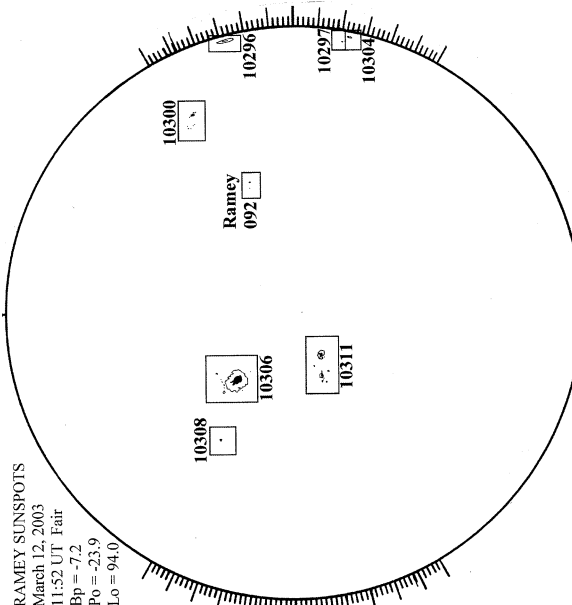
BIG BEAR H-ALPHA



1642 UT

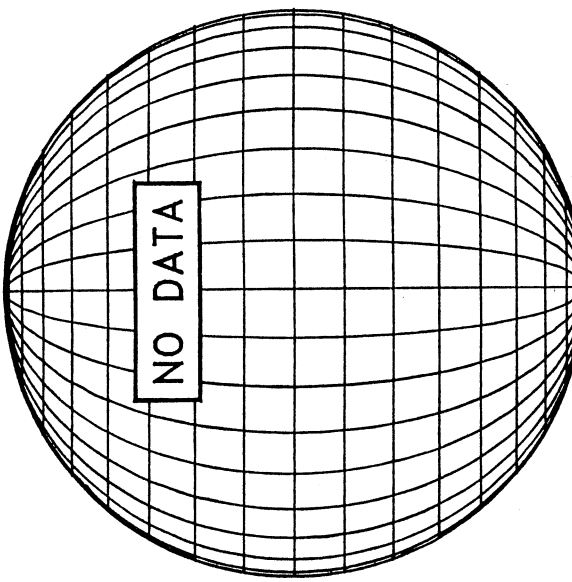
RAMEY SUNSPOTS

RAMEY SUNSPOTS
March 12, 2003
11:52 UT Fair
Bp = -7.2
Po = -23.9
Lo = 94.0



1152 UT

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



S

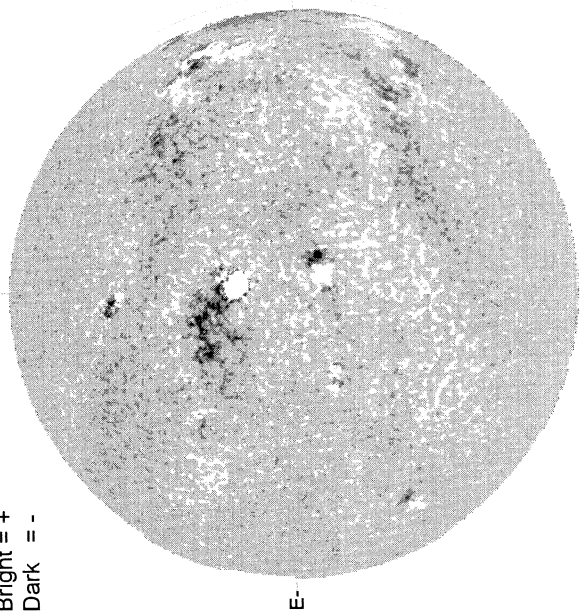
NO DATA

MARCH 13, 2003 (P= -24.02, Bo = -7.21, Lo = 87.14)

KITT PEAK MAGNETOGRAM

868.8 nm

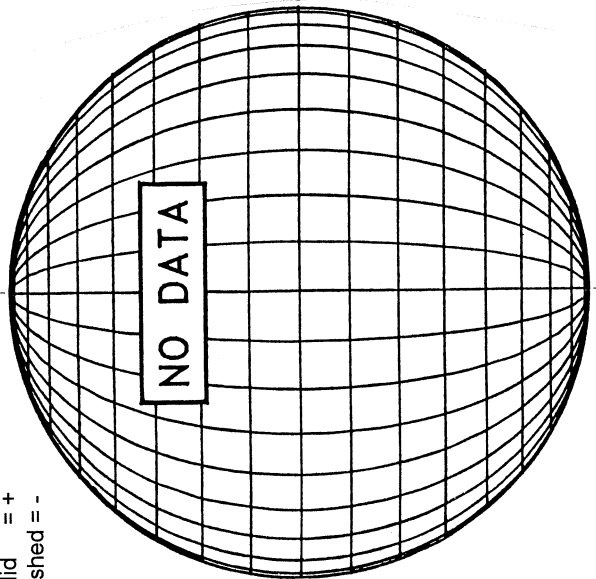
Bright = +
Dark = -



1605 UT

STANFORD MAGNETOGRAM

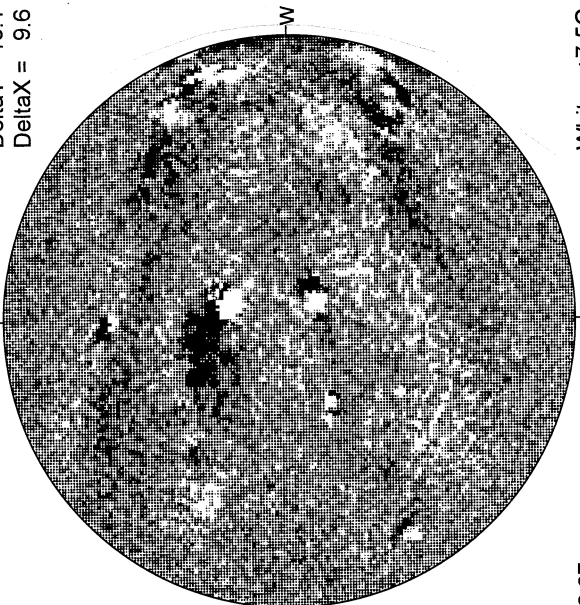
Solid = +
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

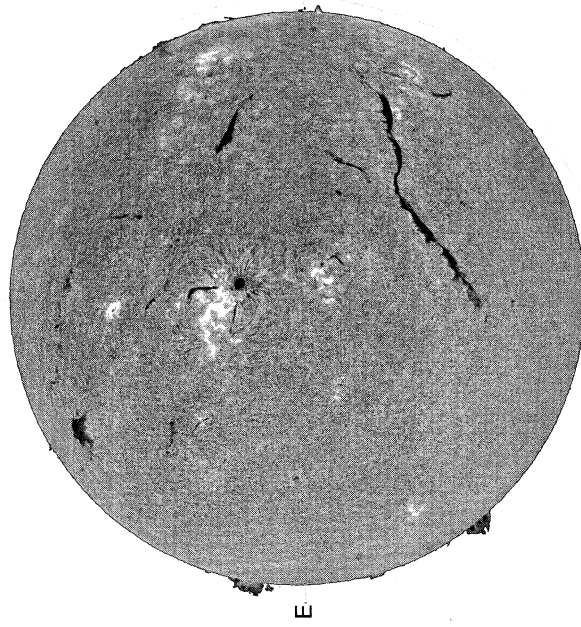
DeltaY = 13.1
DeltaX = 9.6



18.67 -
19.63 UT

White = +7.5G
Black = -7.5G

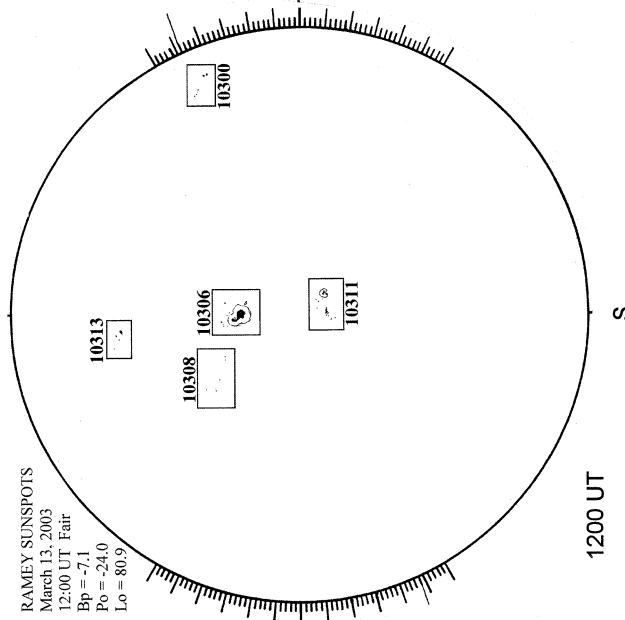
BIG BEAR H-ALPHA



1649 UT

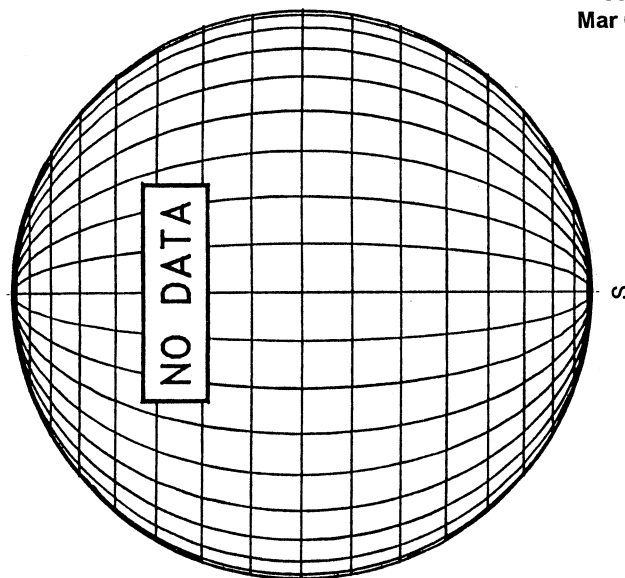
RAMEY SUNSPOTS

March 13, 2003
12:00 UT Fair
Bp = -7.1
Po = -24.0
Lo = 80.9



1200 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



NO DATA

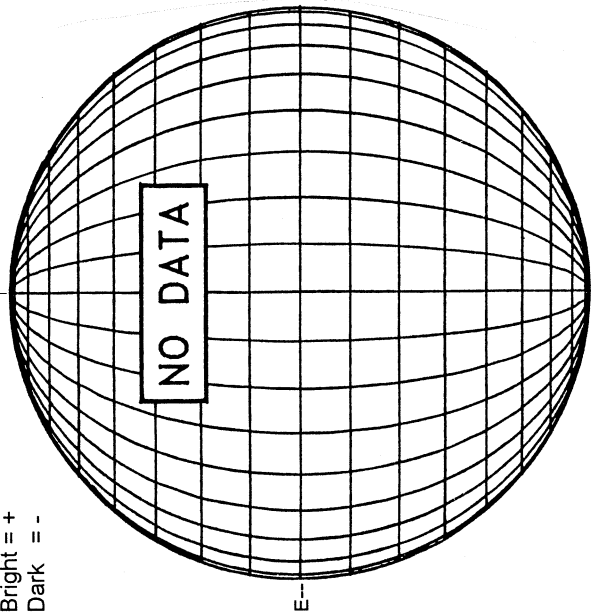
56
Mar 03

MARCH 14, 2003 (P= -24.20, Bo = -7.19, Lo = 73.96)

KITT PEAK MAGNETOGRAM

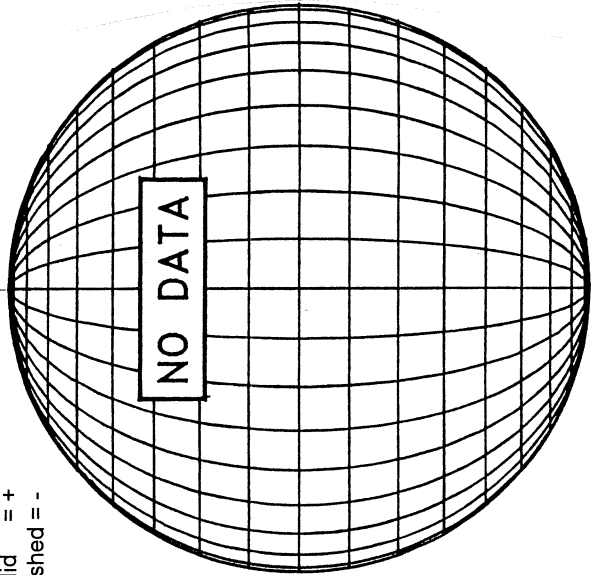
868.8 nm

Bright = +
Dark = -



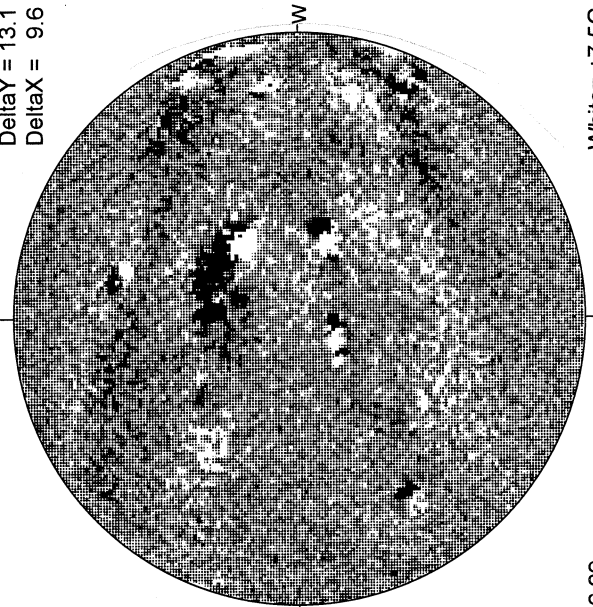
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

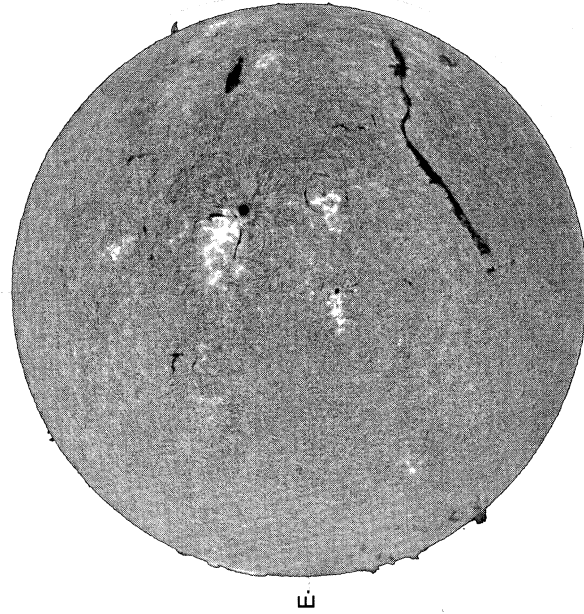
DeltaY = 13.1
DeltaX = 9.6



16.29 -
17.25 UT

White = +7.5G
Black = -7.5G

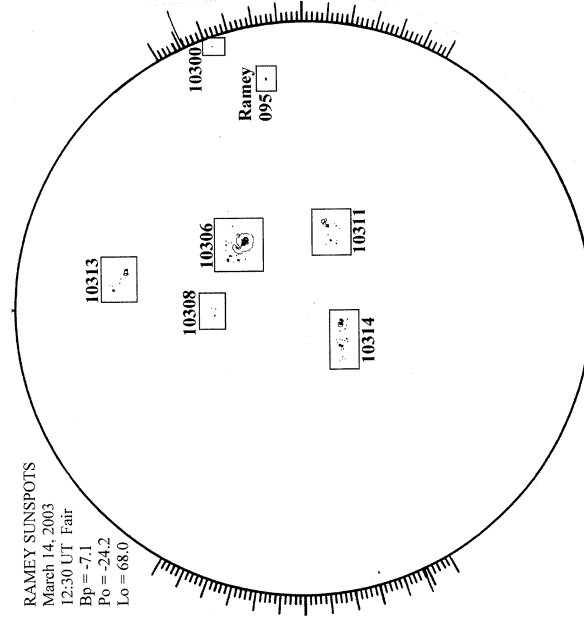
BIG BEAR H-ALPHA



1640 UT

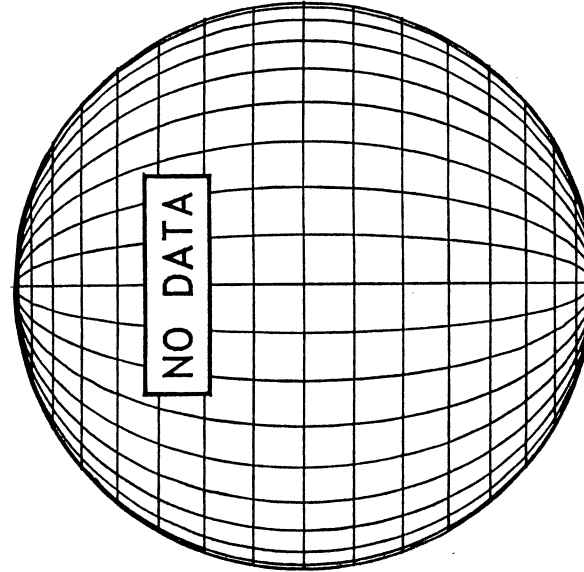
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 14, 2003
12:30 UT Fair
Bp = -7.1
Po = -24.2
Lo = 68.0



1230 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



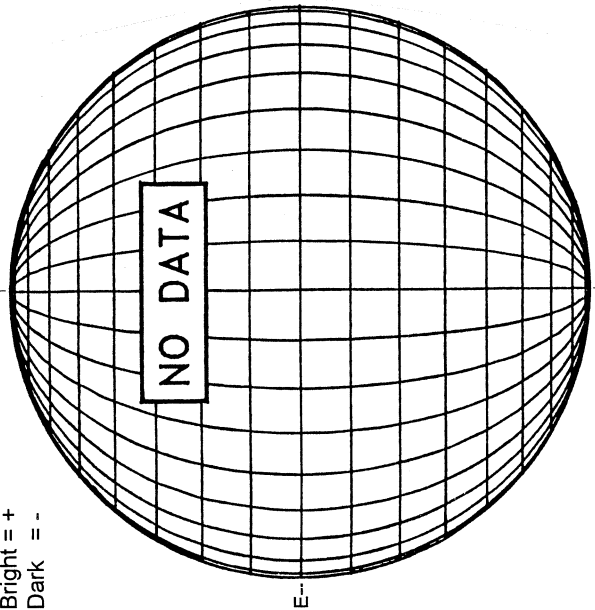
S

MARCH 15, 2003 (P = -24.36, Bo = -7.18, Lo = 60.78)

KITT PEAK MAGNETOGRAM

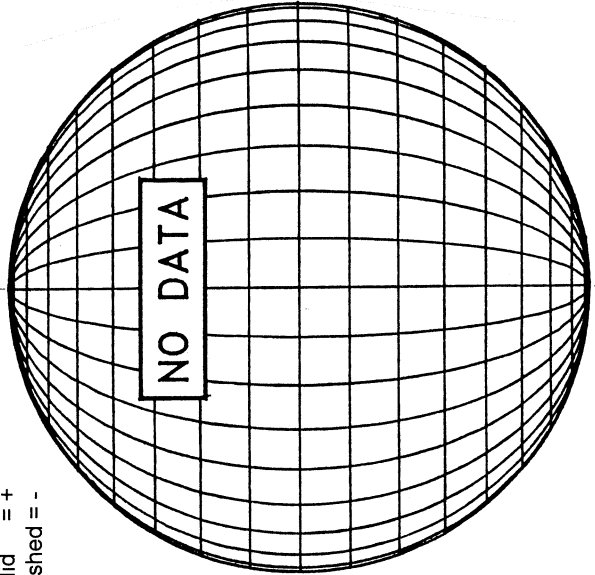
868.8 nm

Bright = +
Dark = -



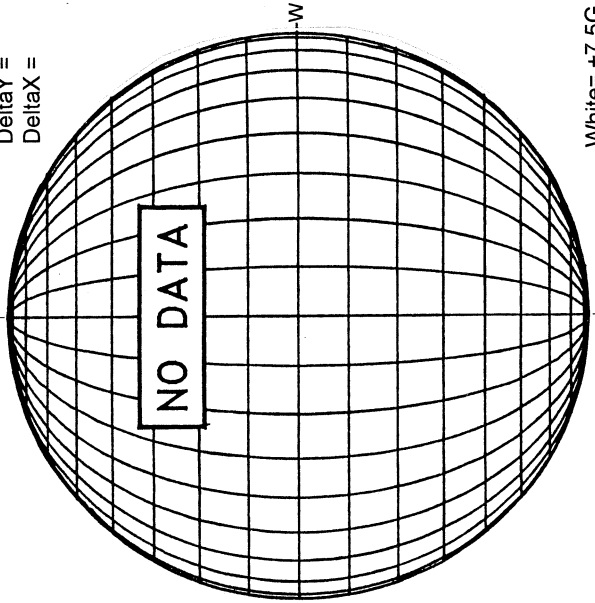
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



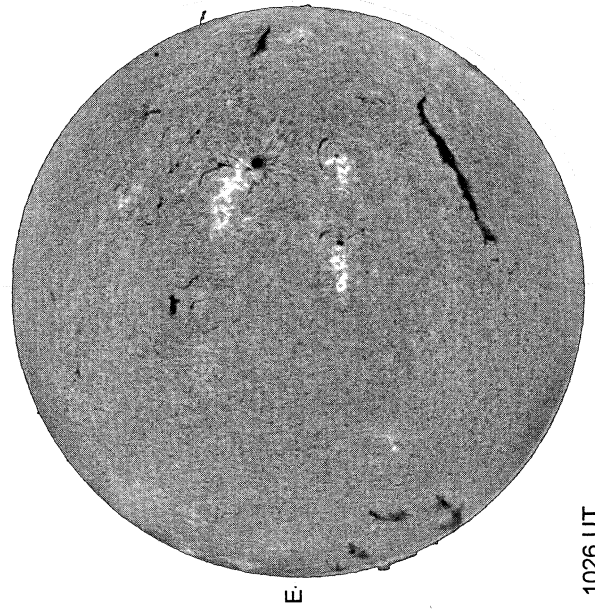
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



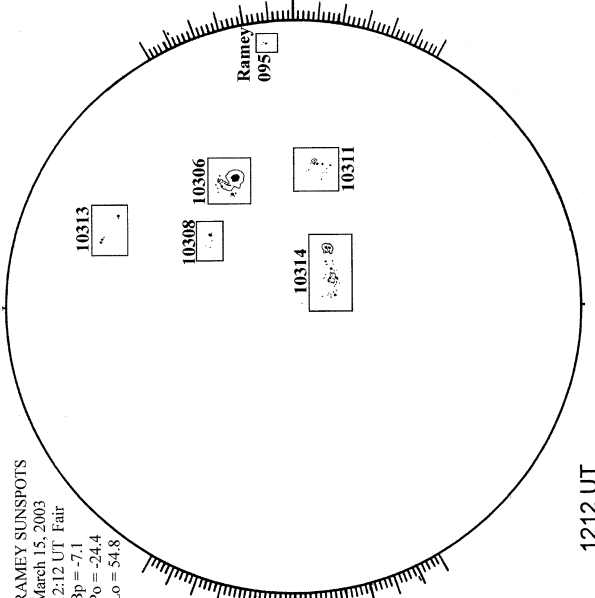
White = +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



1026 UT

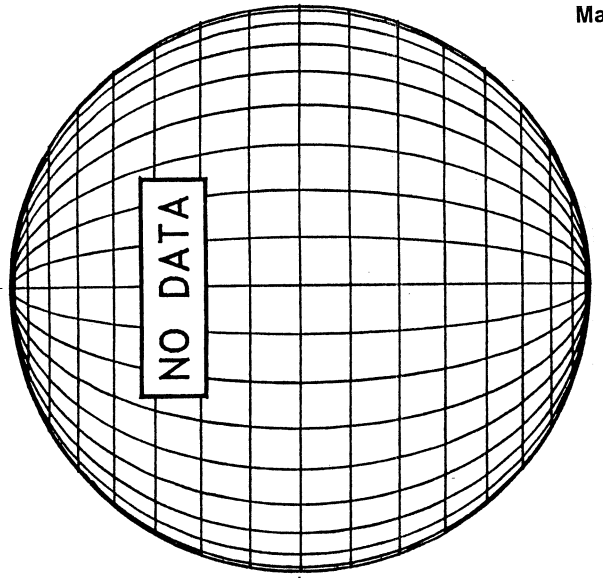
RAMEY SUNSPOT



RAMEY SUNSPOTS
March 15, 2003
12:12 UT Fair
Bp = -7.1
Po = -24.4
Lo = 54.8

1212 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



57
Mar 03

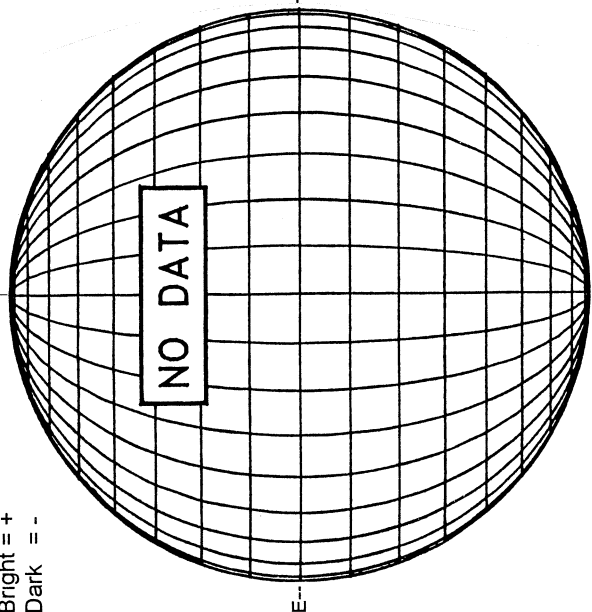
58
Mar 03

MARCH 16, 2003 (P= -24.52, Bo = -7.16, Lo = 47.60)

KITT PEAK MAGNETOGRAM

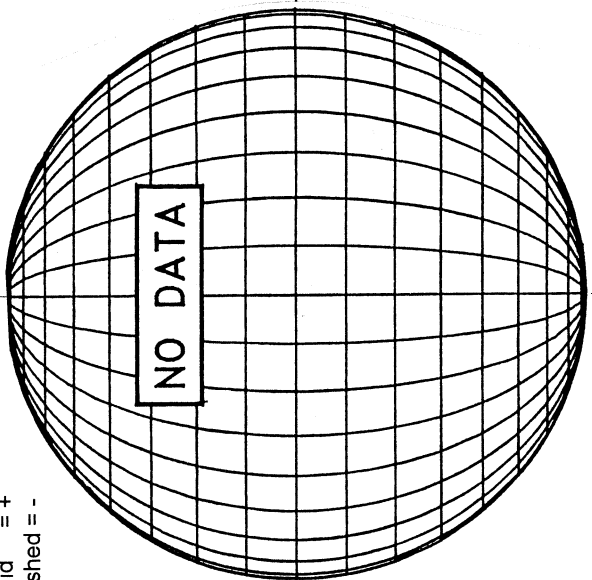
868.8 nm

Bright = +
Dark = -



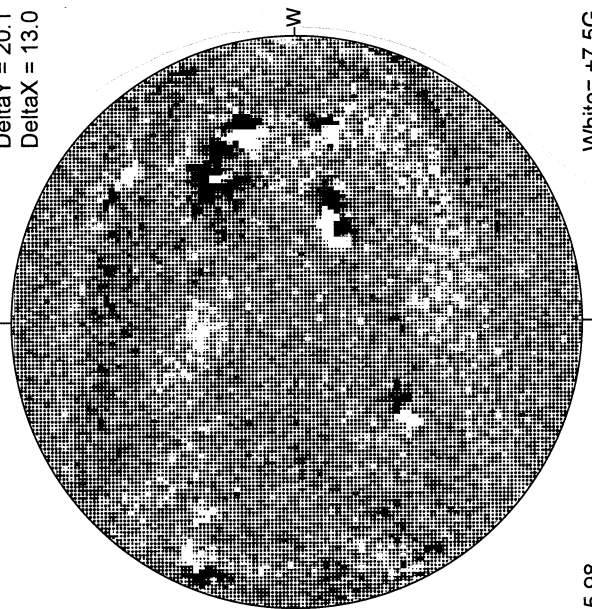
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

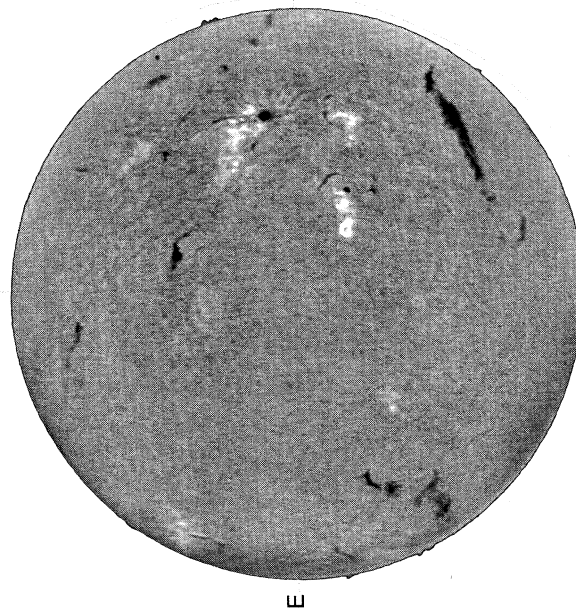
DeltaY = 20.1
DeltaX = 13.0



15.98 -
16.40 UT

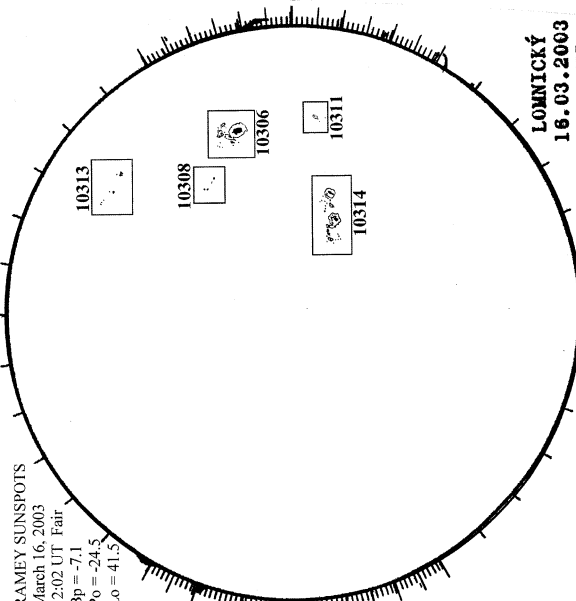
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



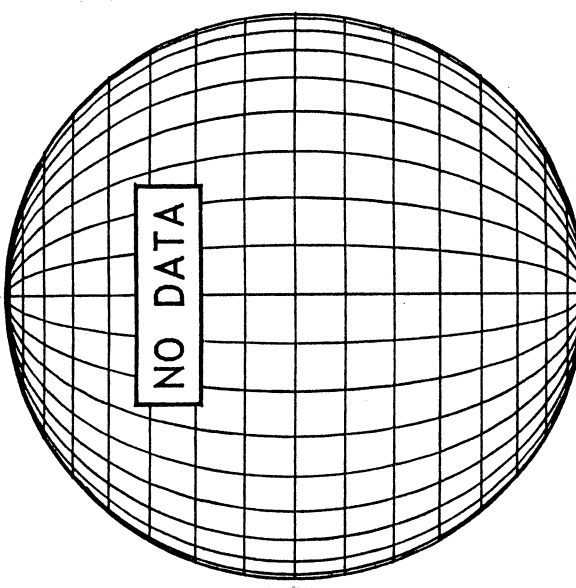
0800 UT

RAMEY SUNSPOT



1202 UT
1450 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



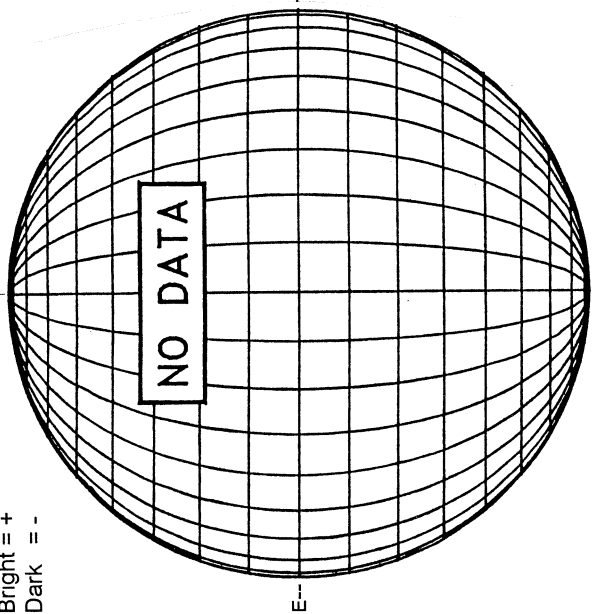
LOMNICKÝ
16.03.2003
14.50 UT

MARCH 17, 2003 (P= -24.68, Bo = -7.14, Lo = 34.42)

KITT PEAK MAGNETOGRAM

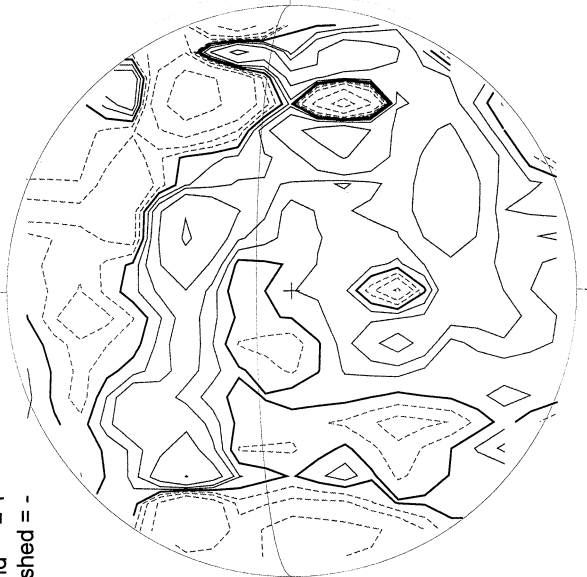
868.8 nm

Bright = +
Dark = -



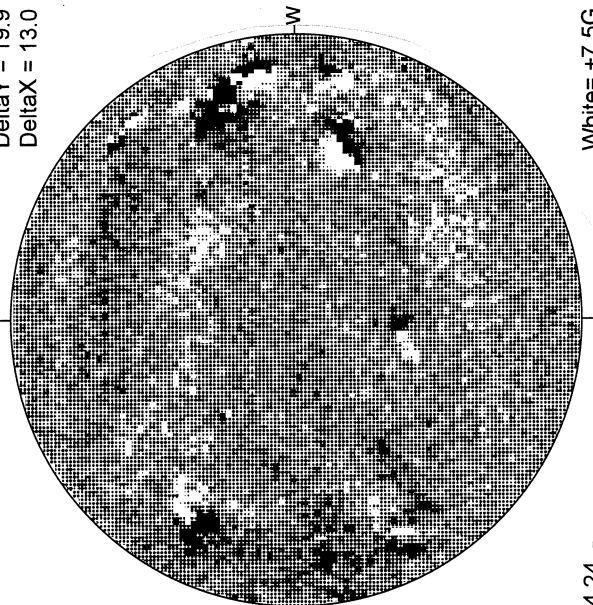
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

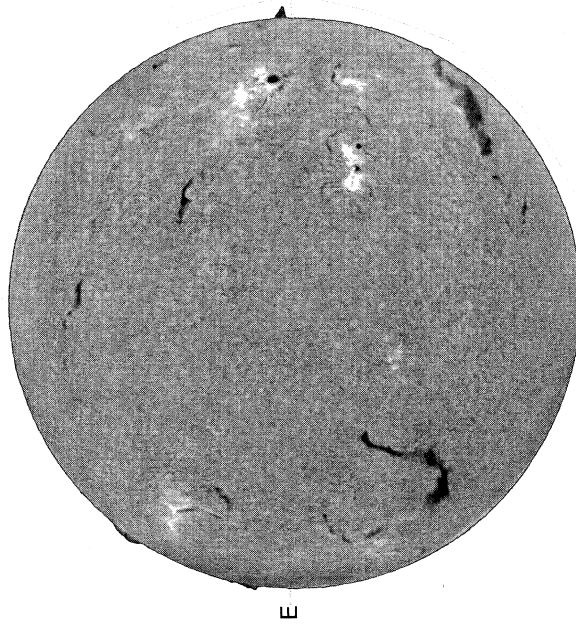
DeltaY = 19.9
DeltaX = 13.0



24.24 -
24.66 UT

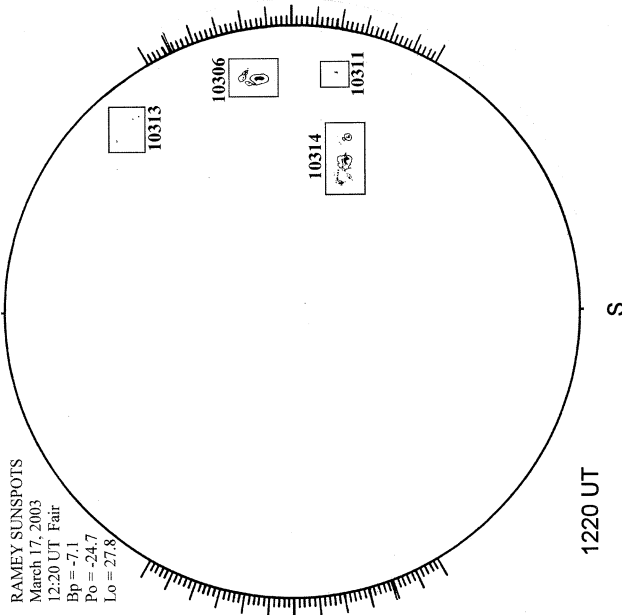
White= +7.5G
Black = -7.5G

KANZELHOHE H-ALPHA



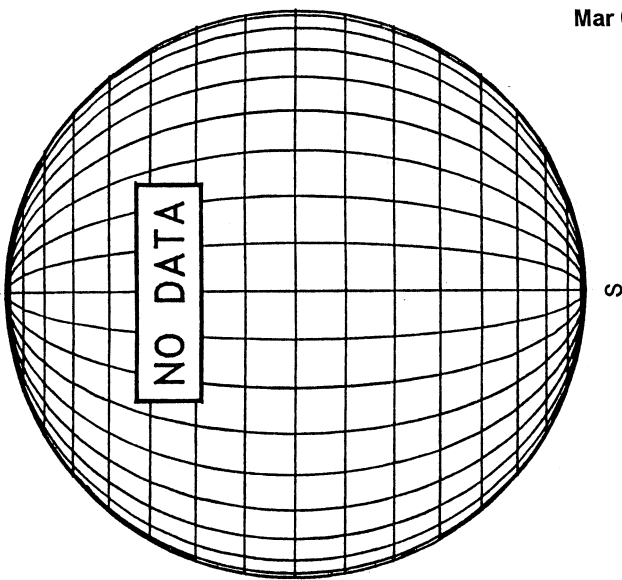
0731 UT

RAMEY SUNSPOT



RAMEY SUNSPOTS
March 17, 2003
12:20 UT Fair
Bp = -7.1
Po = -24.7
Lo = 27.8

LOMNICKY PEAK CORONA (1.04 Radii)----



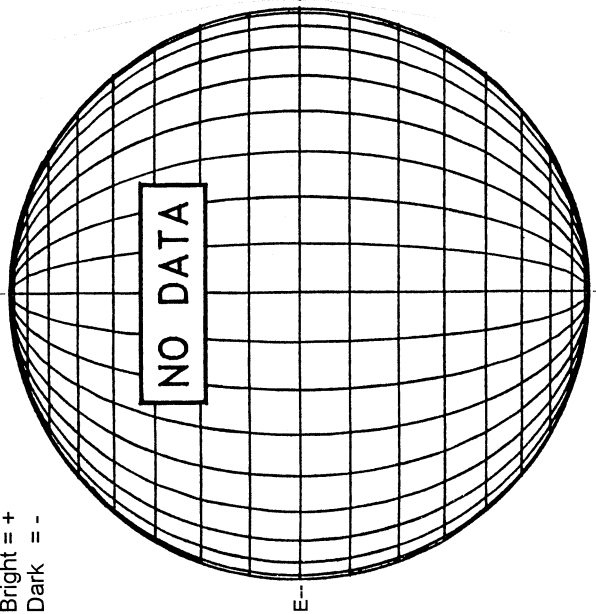
60
Mar 03

MARCH 18, 2003 (P= -24.82, Bo = -7.11, Lo = 21.24)

KITT PEAK MAGNETOGRAM

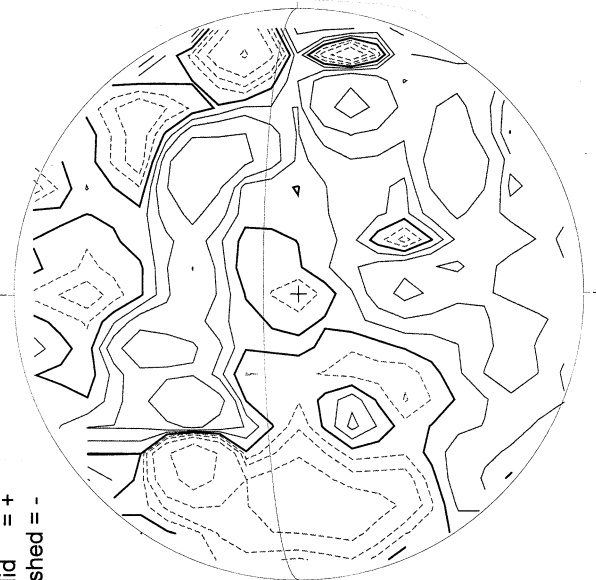
868.8 nm

Bright = +
Dark = -



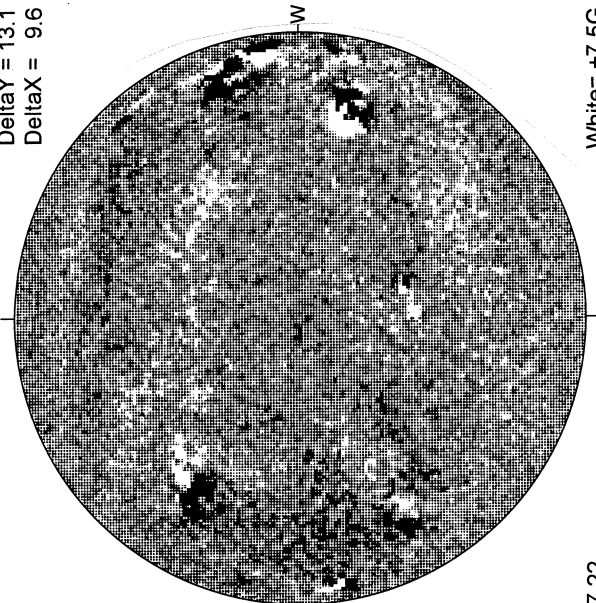
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

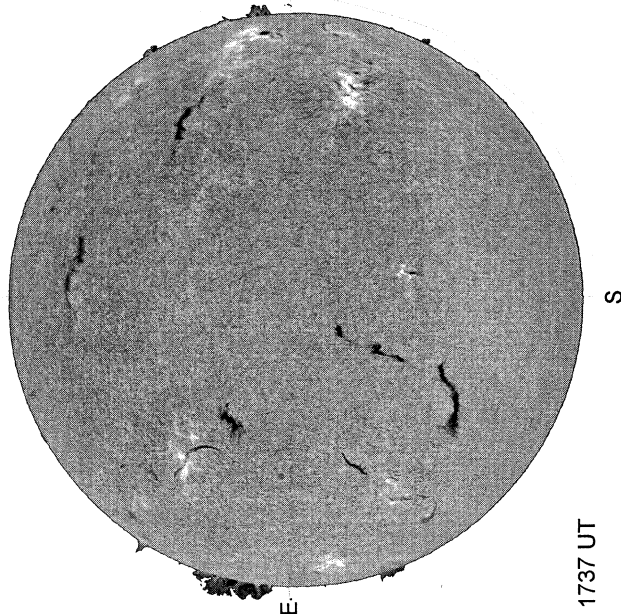
DeltaY = 13.1
DeltaX = 9.6



17.22 -
18.18 UT

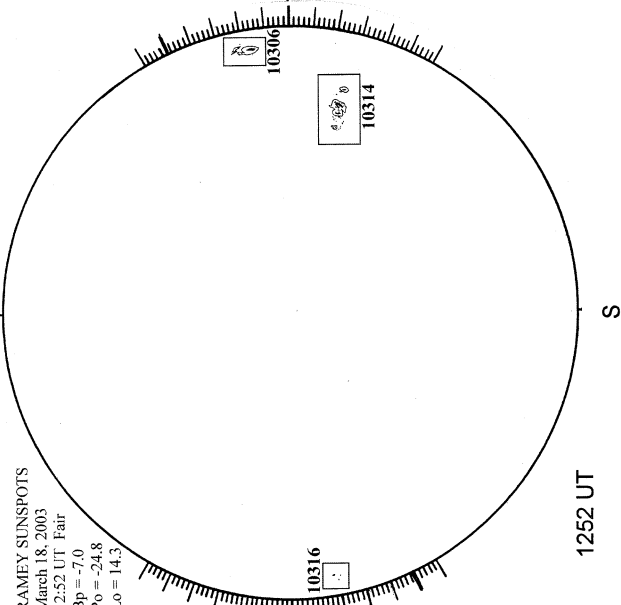
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



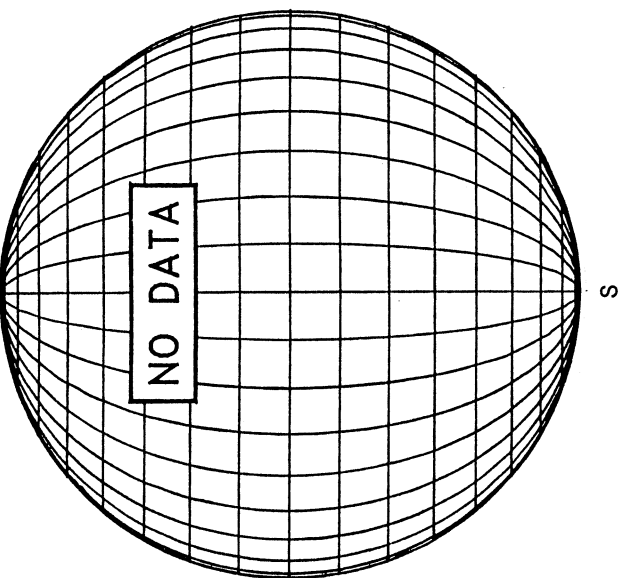
1737 UT

RAMEY SUNSPOT



1252 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



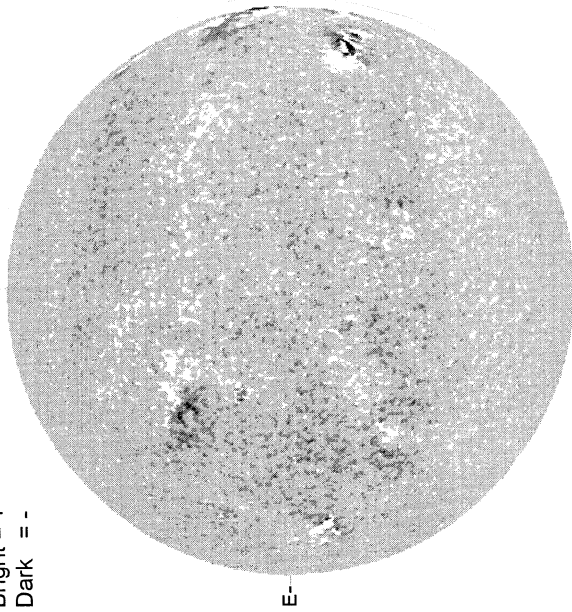
RAMEY SUNSPOTS
March 18, 2003
12:52 UT Fair
Bp = -7.0
Po = -24.8
Lo = 14.3

MARCH 19, 2003 (P= -24.96, Bo = -7.09, Lo = 8.06)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1543 UT

STANFORD MAGNETOGRAM

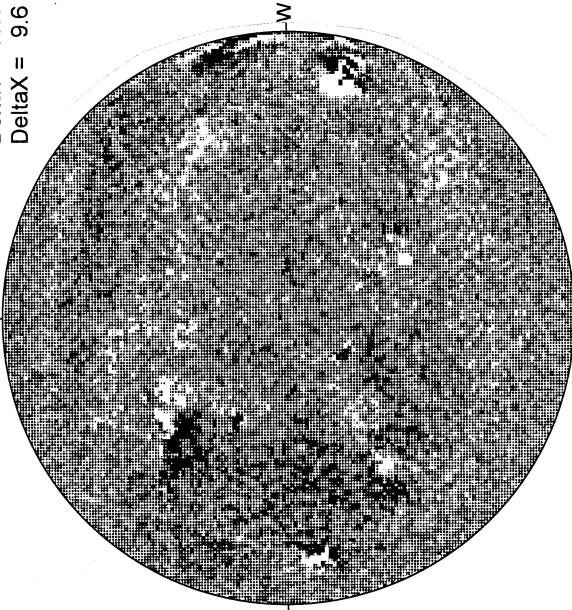
Solid = +
Dashed = -



1817 UT

MT. WILSON MAGNETOGRAM

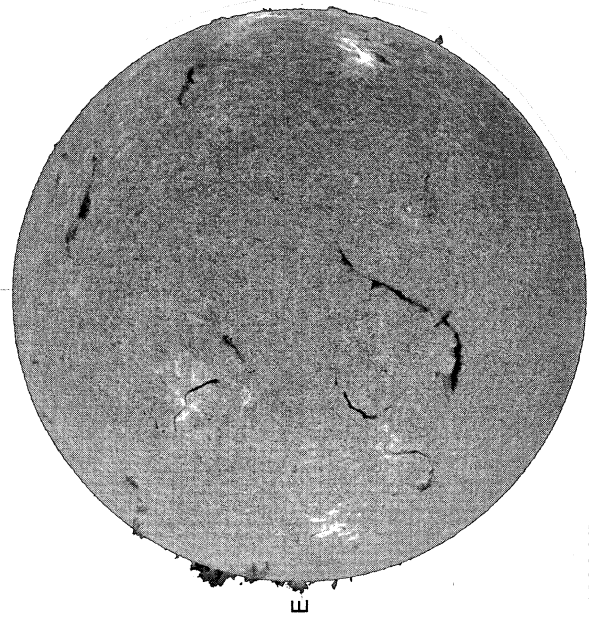
DeltaY = 13.0
DeltaX = 9.6



16.61 -
17.57 UT

White= +7.5G
Black = -7.5G

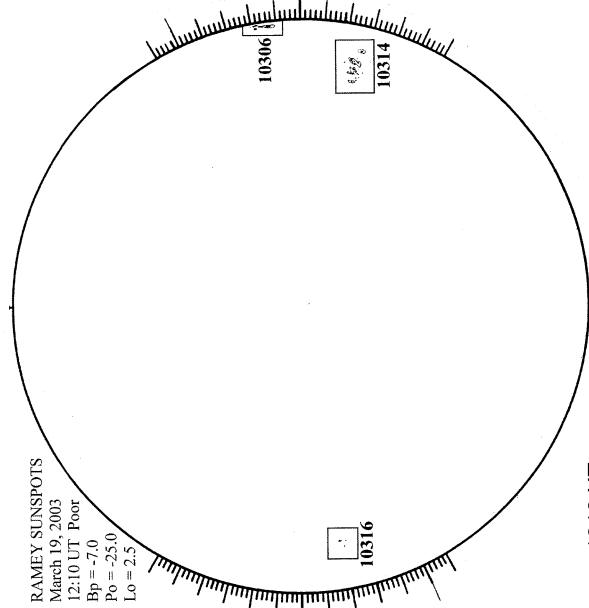
BIG BEAR H-ALPHA



1639 UT

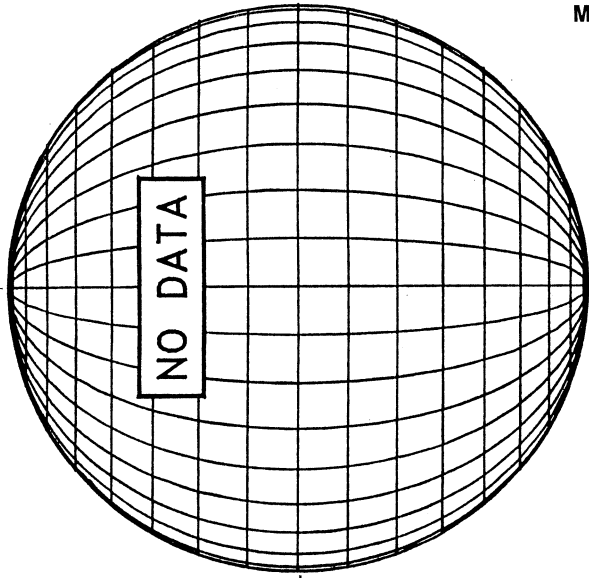
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 19, 2003
12:10 UT Poor
Bp = -7.0
Po = -25.0
Lo = 2.5



1210 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



S

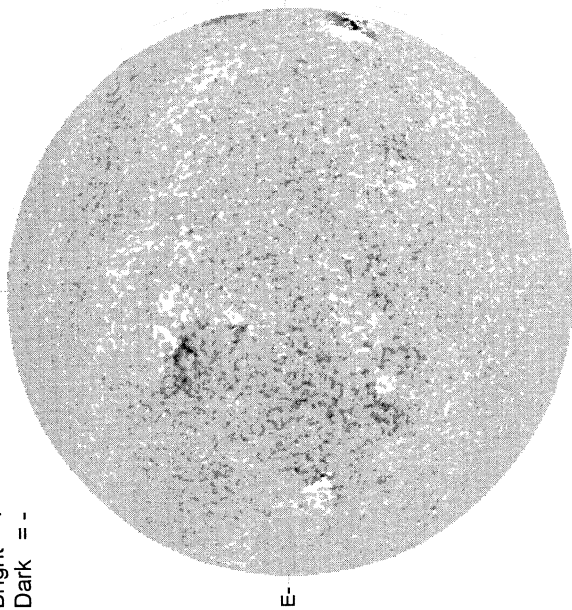
MARCH 20, 2003 (P= -25.10, Bo = -7.06, Lo = 354.87)

62
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1545 UT

STANFORD MAGNETOGRAM

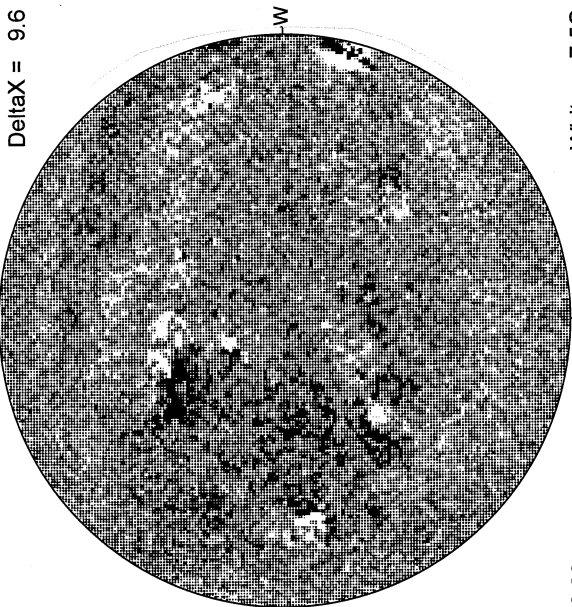
Solid = +
Dashed = -



2219 UT

MT. WILSON MAGNETOGRAM

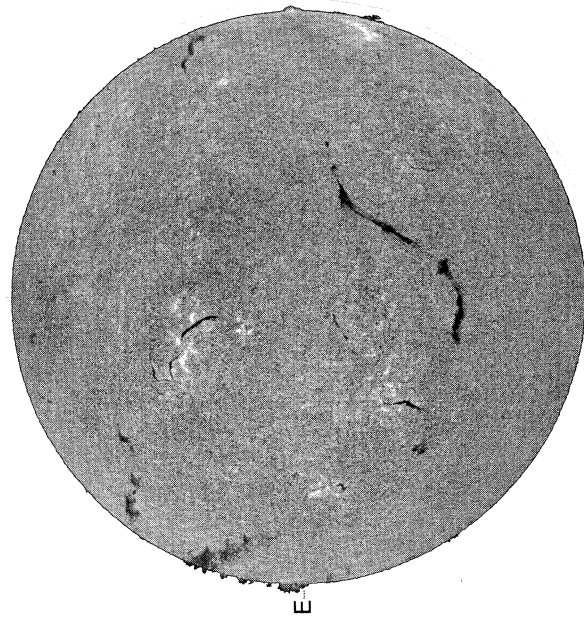
DeltaY = 13.0
DeltaX = 9.6



16.69 -
17.65 UT

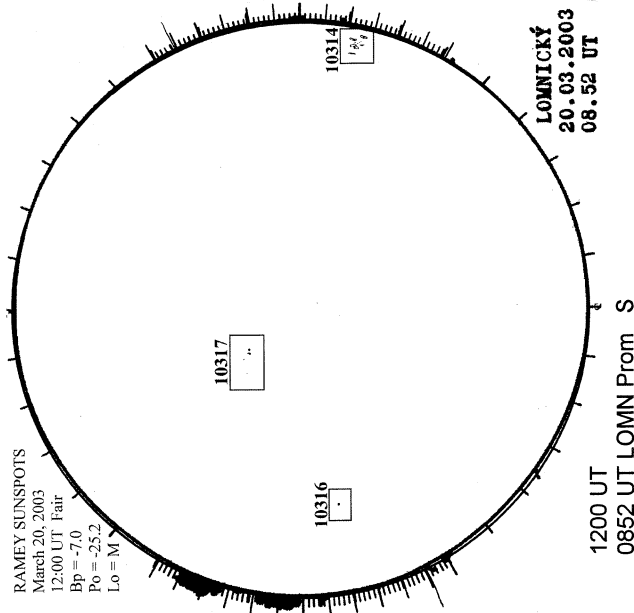
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1650 UT

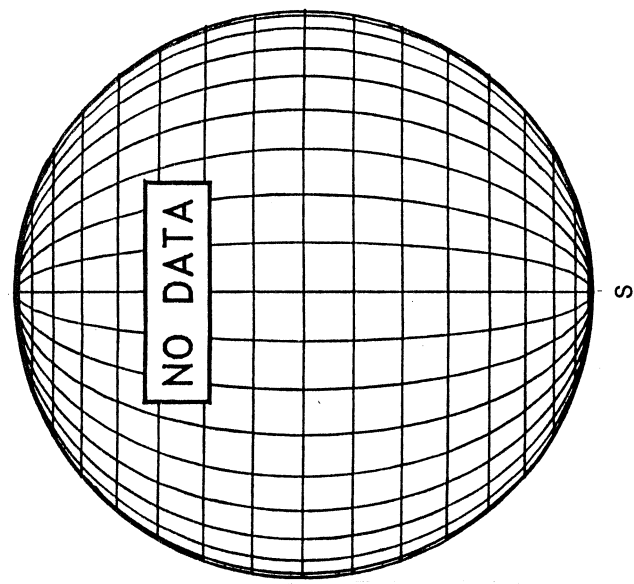
RAMEY SUNSPOT



1200 UT

0852 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



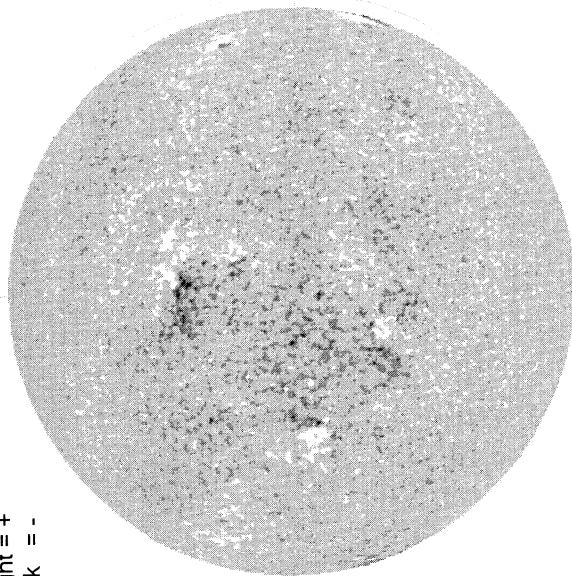
RAMEY SUNSPOTS
March 20, 2003
12:00 UT Fair
Bp = -7.0
Po = -25.2
Lo = M

LOMNICKÝ
20.03.2003
08.52 UT

MARCH 21, 2003 (P= -25.22, Bo = -7.03, Lo = 341.69)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



1540 UT

STANFORD MAGNETOGRAM

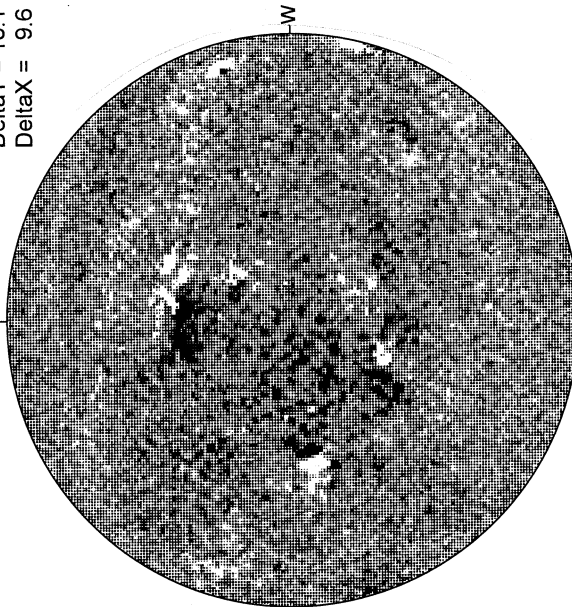
Solid = +
Dashed = -



2203 UT

MT. WILSON MAGNETOGRAM

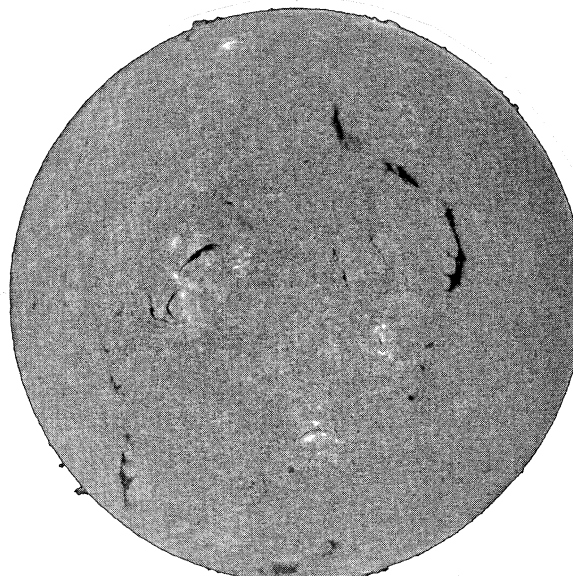
DeltaY = 13.1
DeltaX = 9.6



17.70 -
18.66 UT

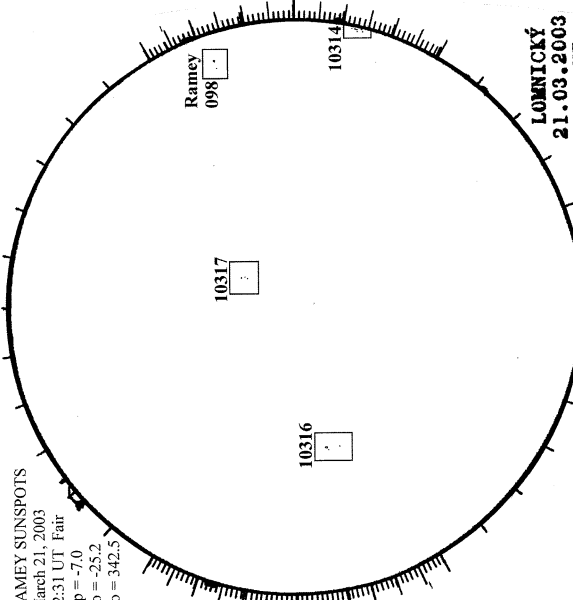
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



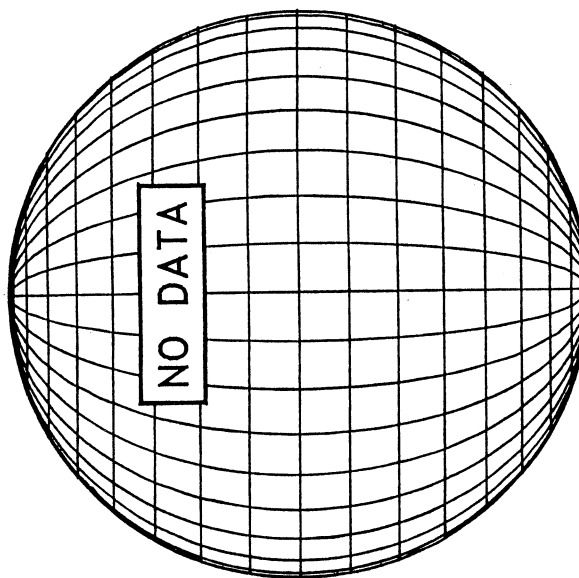
1644 UT

RAMEY SUNSPOT



1231 UT
1132 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

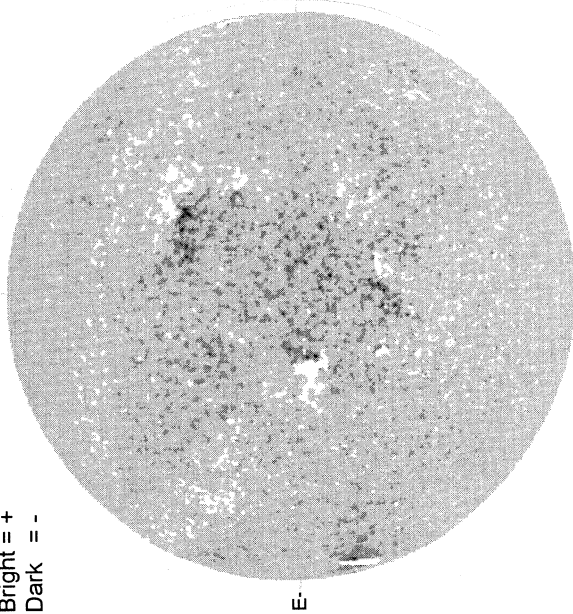
64
Mar 03

MARCH 22, 2003 (P= -25.34, Bo = -7.00, Lo = 328.51)

KITT PEAK MAGNETOGRAM

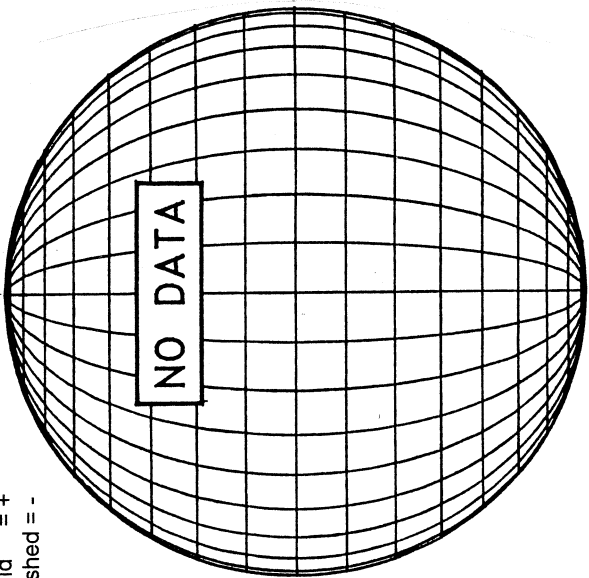
868.8 nm

Bright = +
Dark = -



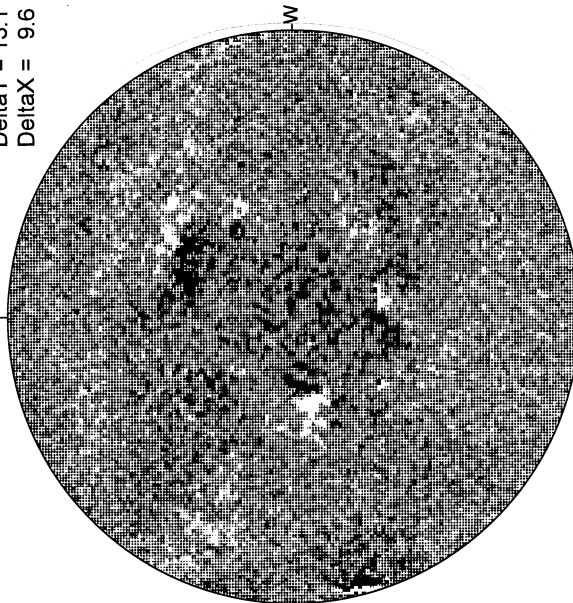
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

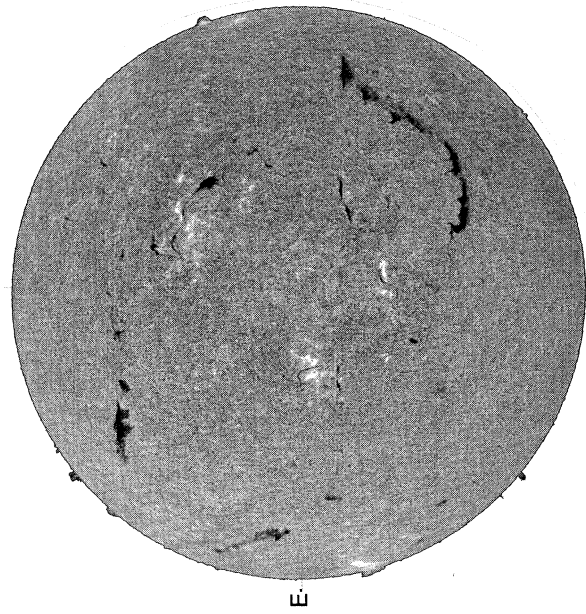


White = +7.5G
Black = -7.5G

16.21 -
17.16 UT

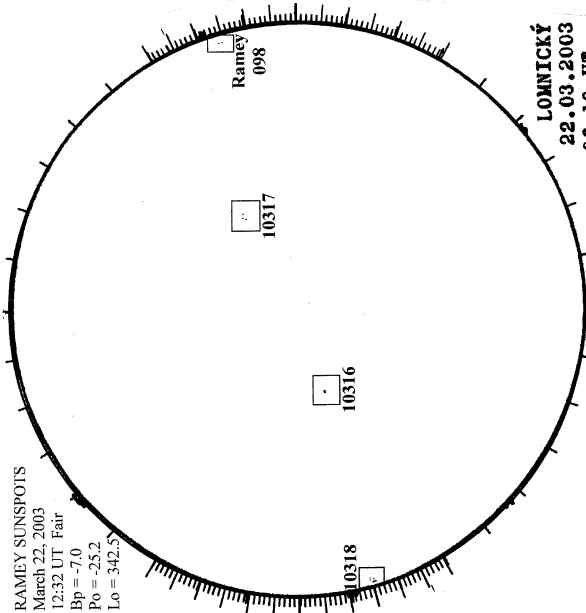
2021 UT

BIG BEAR H-ALPHA



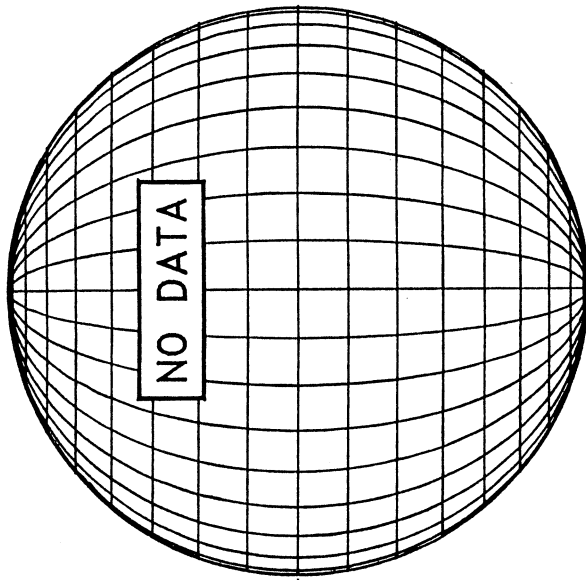
1658 UT

RAMEY SUNSPOT



1232 UT
0618 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



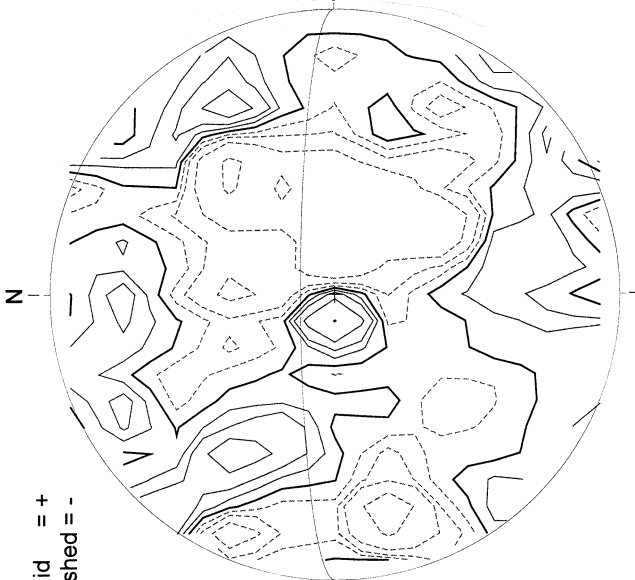
LOMNICKÝ
22.03.2003
06.18 UT

MARCH 23, 2003 (P= -25.45, Bo = -6.96, Lo = 315.32)



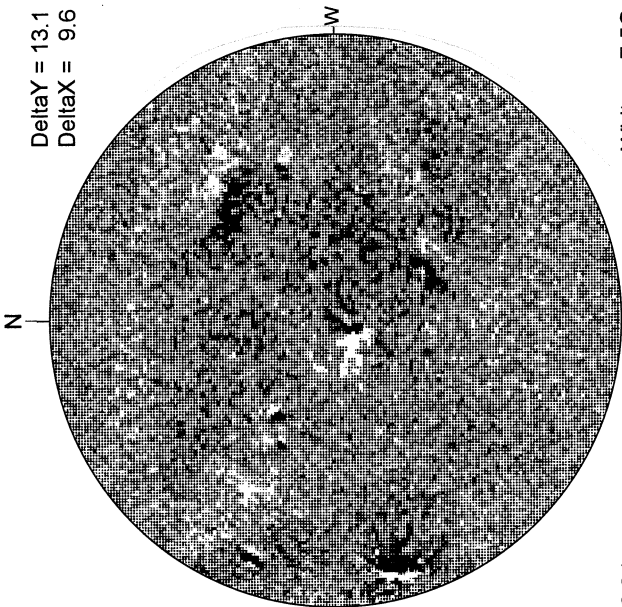
Solid = +
Dashed = -

STANFORD MAGNETOGRAM



1849 UT

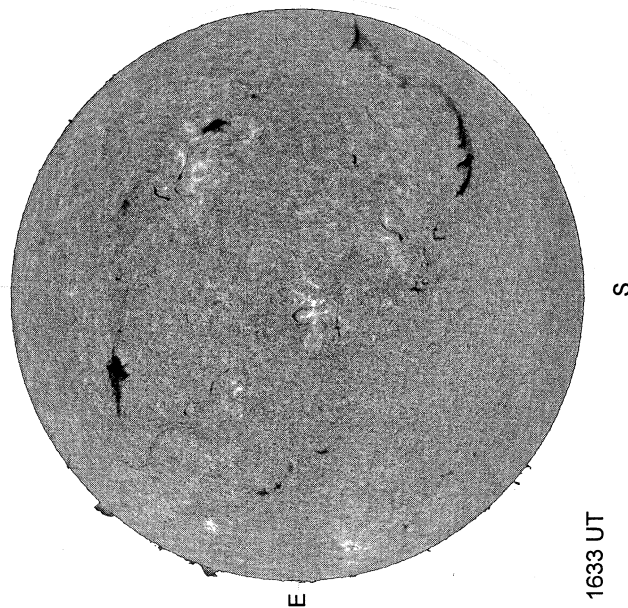
MT. WILSON MAGNETOGRAM



16.34 -
17.29 UT

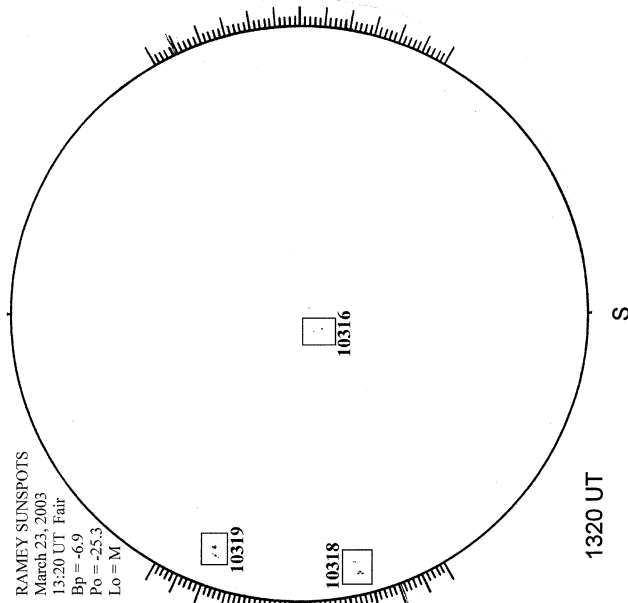
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



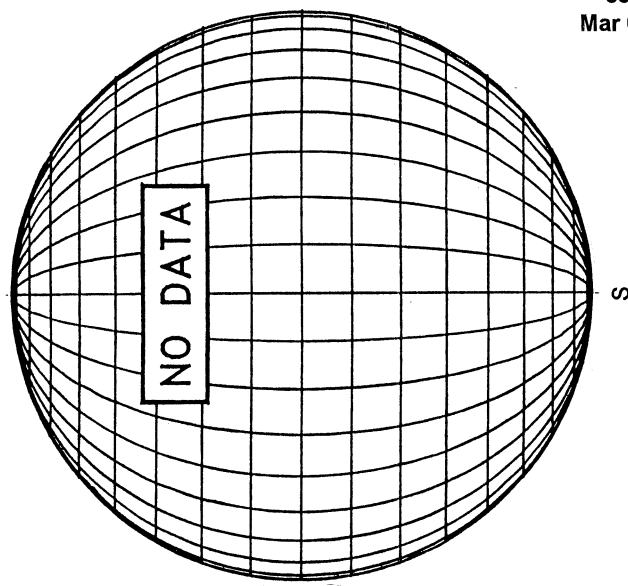
1633 UT

RAMEY SUNSPOT



1320 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



65
Mar 03

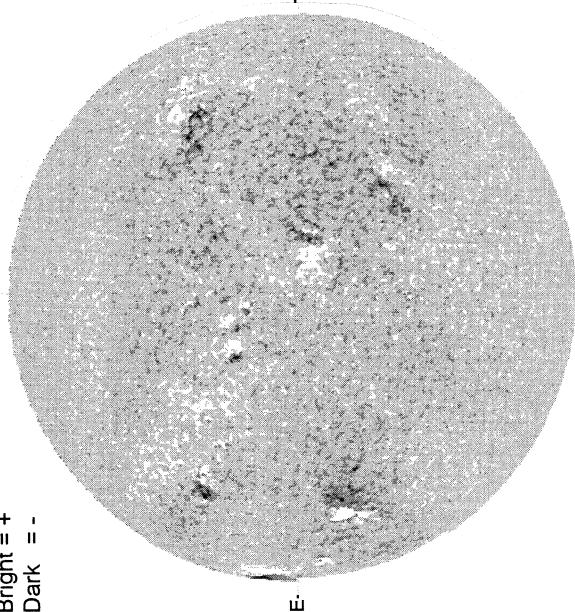
MARCH 24, 2003 (P= -25.56, Bo = -6.93, Lo = 302.13)

66
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

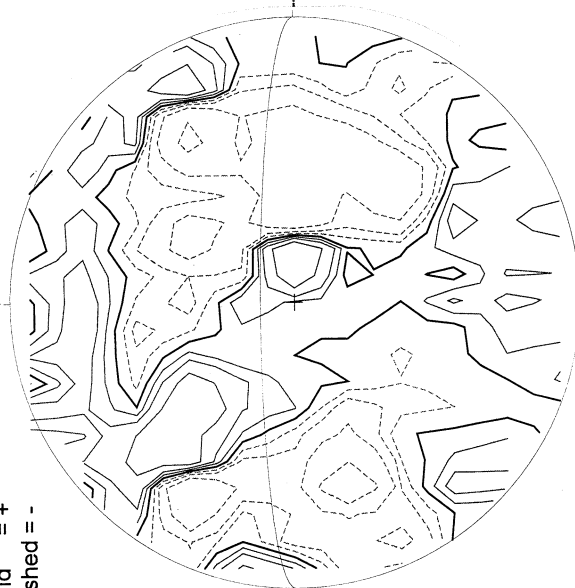
Bright = +
Dark = -



1552 UT

STANFORD MAGNETOGRAM

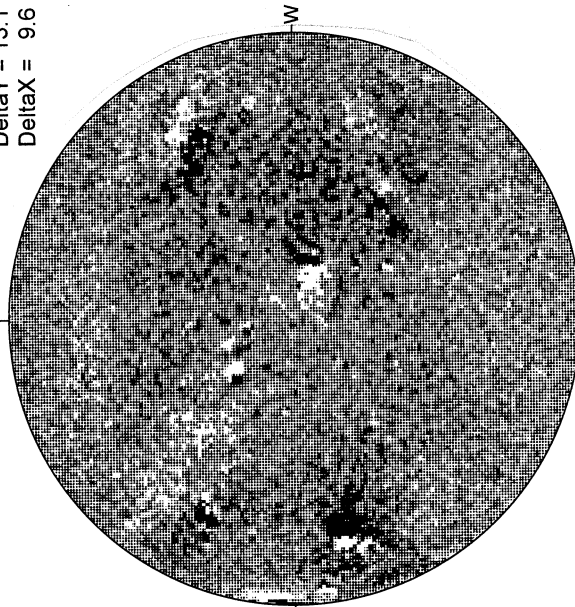
Solid = +
Dashed = -



2149 UT

MT. WILSON MAGNETOGRAM

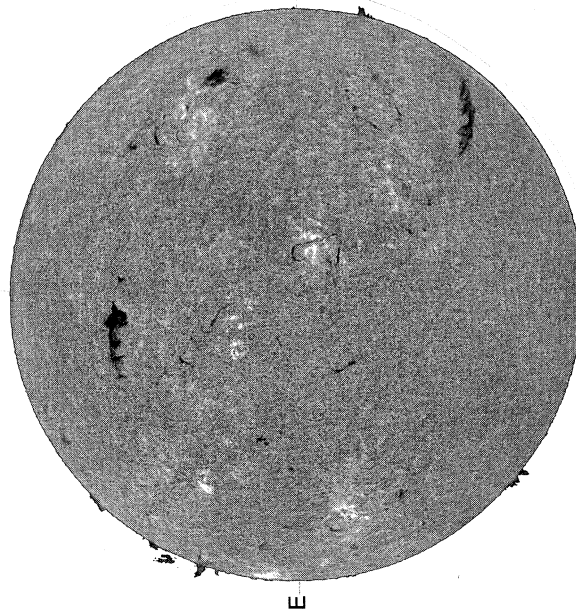
DeltaY = 13.1
DeltaX = 9.6



16.37 -
17.33 UT

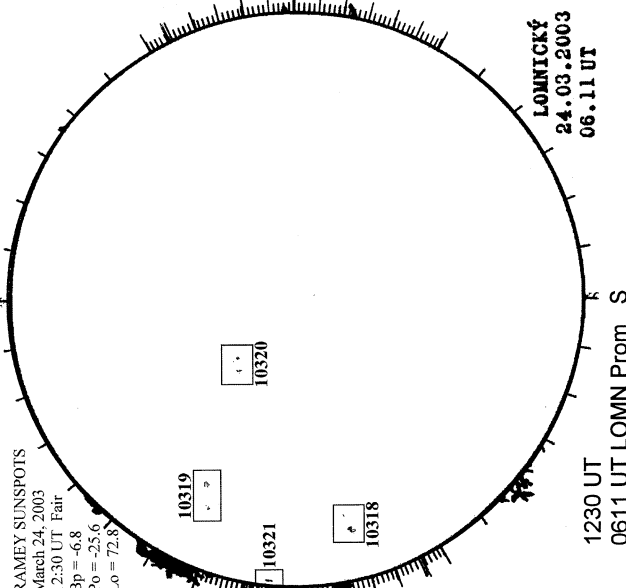
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



1623 UT

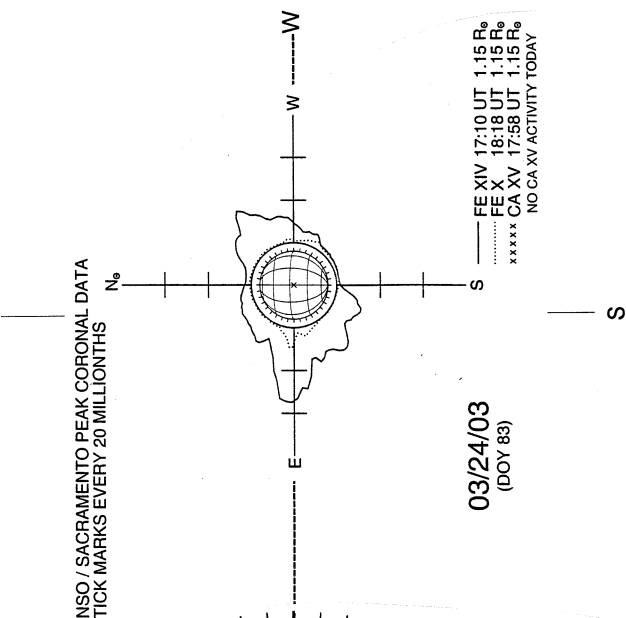
RAMEY SUNSPOT



1230 UT

0611 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



03/24/03
(DOY 83)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

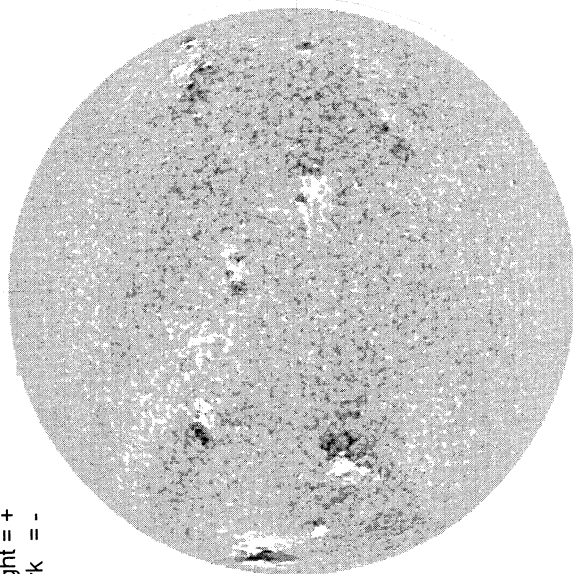
FE XIV 17:10 UT 1.15 R_o
FE X 18:18 UT 1.15 R_o
CA XV 17:58 UT 1.15 R_o
***** NO CA XV ACTIVITY TODAY

MARCH 25, 2003 (P= -25.66, Bo = -6.89, Lo = 288.95)

KITT PEAK MAGNETOGRAM

868.8 nm

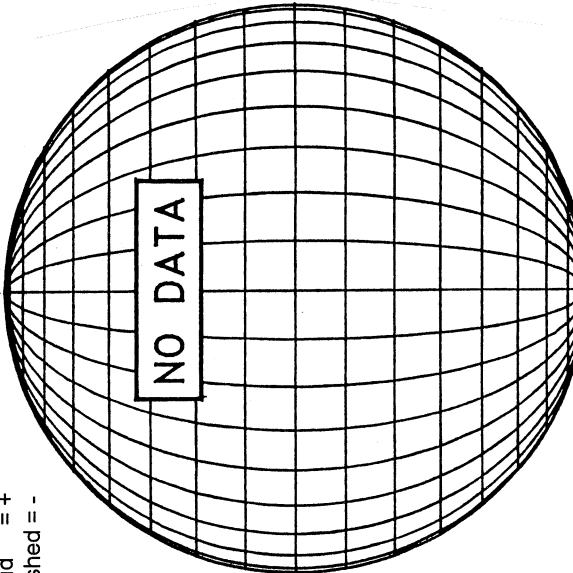
Bright = +
Dark = -



1546 UT

STANFORD MAGNETOGRAM

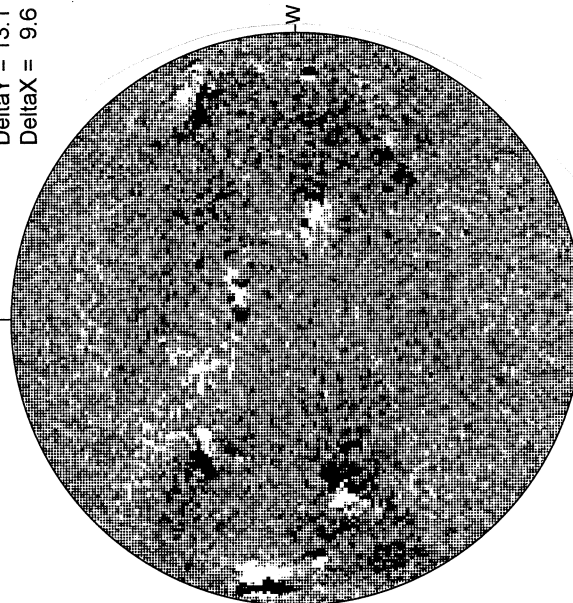
Solid = +
Dashed = -



16.48 -
17.44 UT

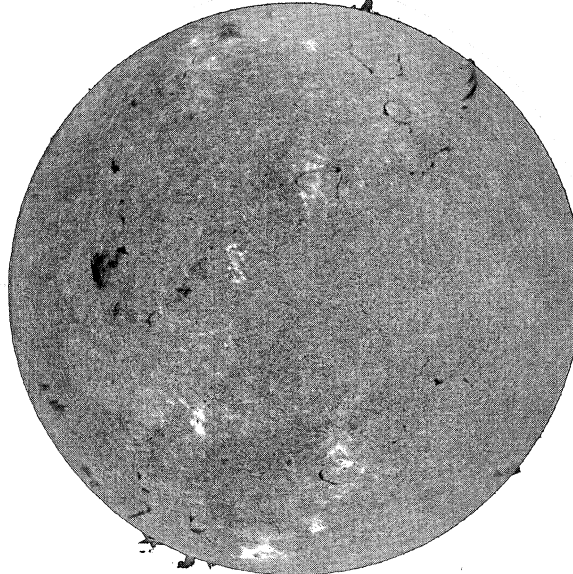
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



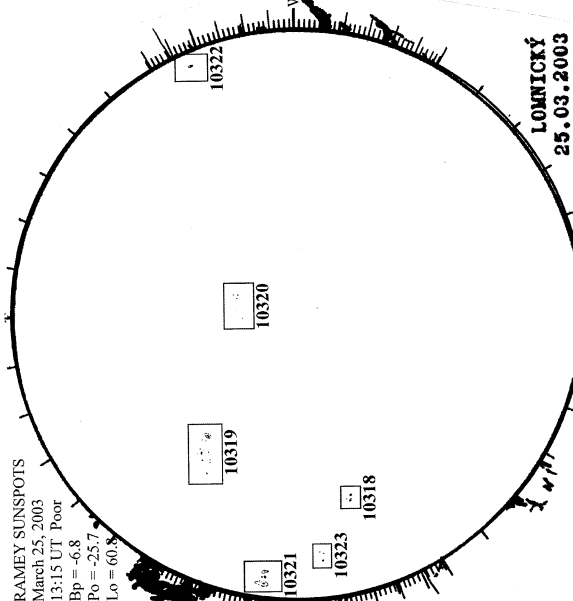
White = +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



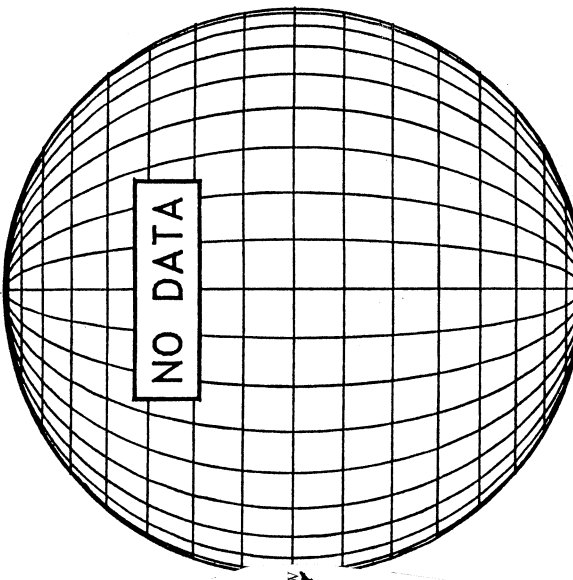
1701 UT

RAMEY SUNSPOT



1315 UT
0706 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



67
Mar 03

MARCH 26, 2003 (P= -25.75, Bo = -6.85, Lo = 275.76)

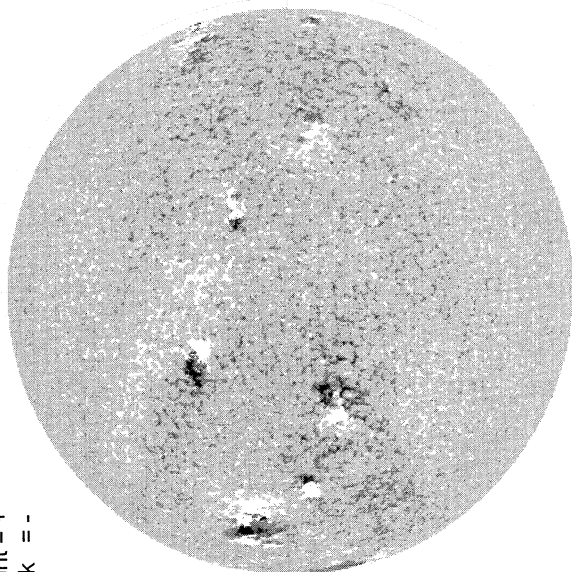
68
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

N

Bright = +
Dark = -

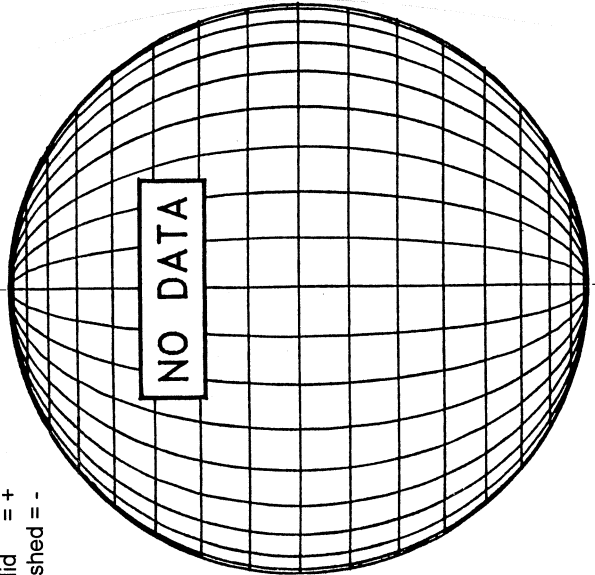


1455 UT

STANFORD MAGNETOGRAM

N

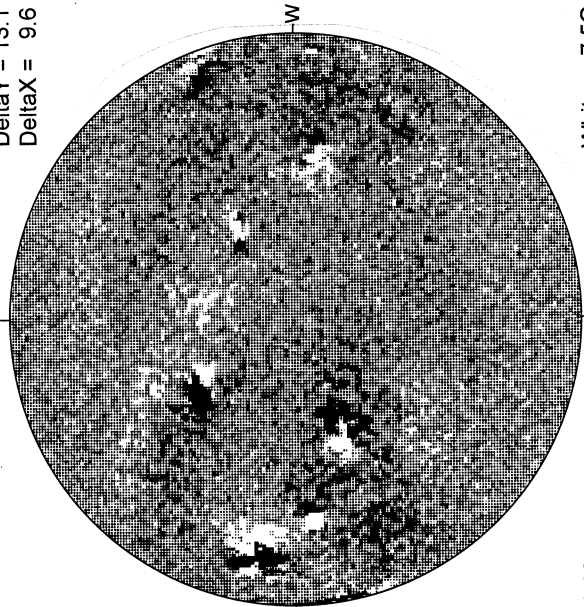
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

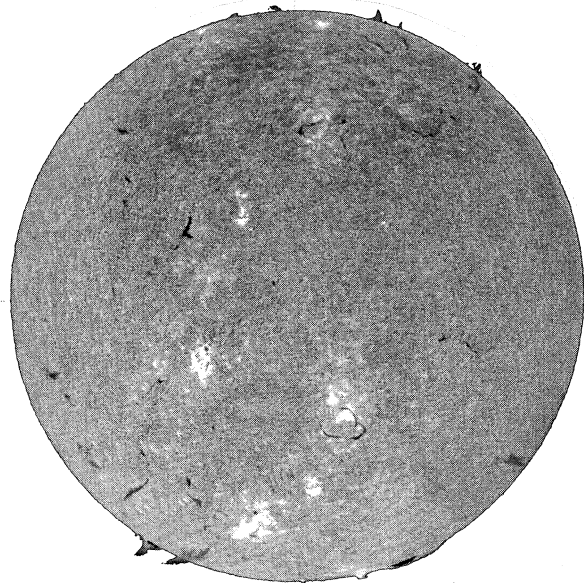
DeltaY = 13.1
DeltaX = 9.6



16.93 -
17.89 UT

White = +7.5G
Black = -7.5G

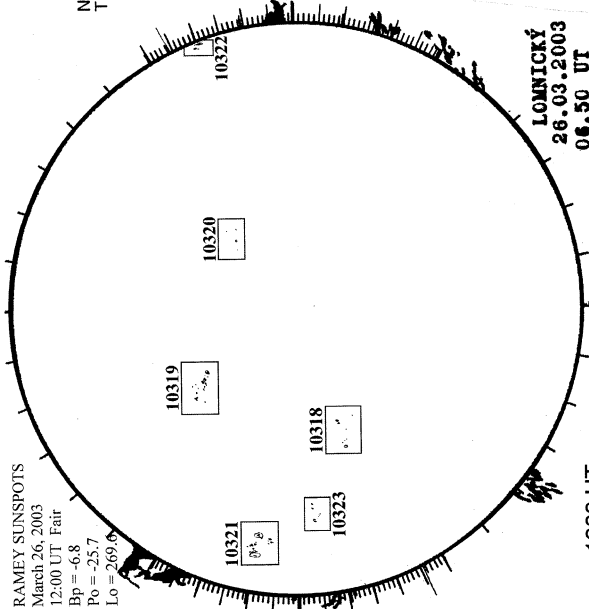
BIG BEAR H-ALPHA



1715 UT

RAMEY SUNSPOT

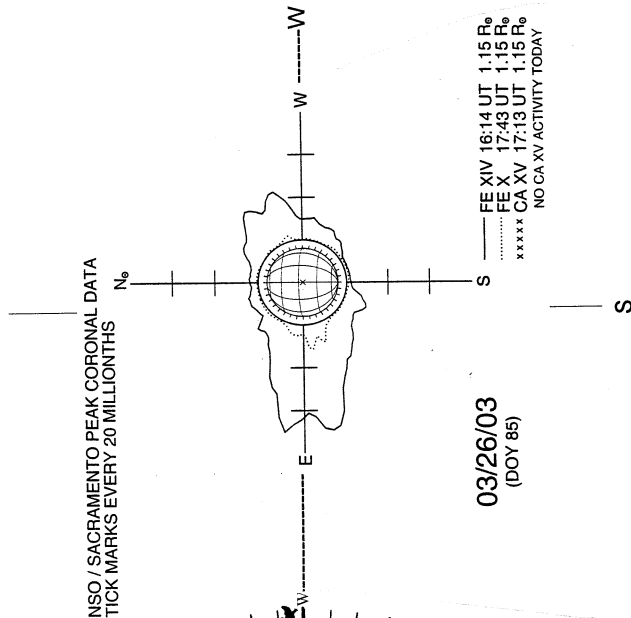
RAMEY SUNSPOTS
March 26, 2003
12:00 UT Fair
Bp = -6.8
Po = -25.7
Lo = 269.6



1200 UT
0650 UT LOMN Prom S

LOMNICKÝ
26.03.2003
06.50 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



03/26/03
(DOY 85)

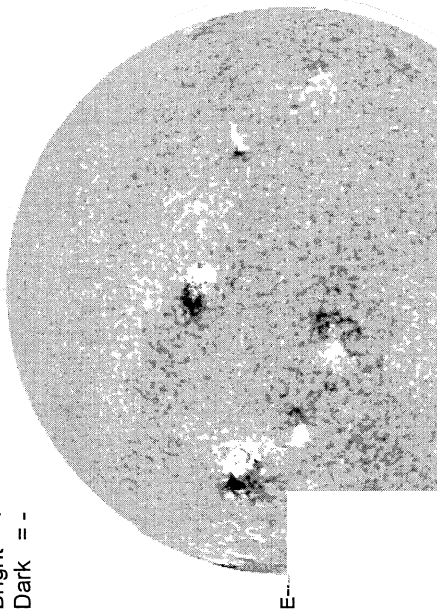
— FE XIV 16:14 UT 1.15 P₀
..... FE X 17:43 UT 1.15 P₀
xxxxx CA XV 17:13 UT 1.15 P₀
NO CA XV ACTIVITY TODAY

MARCH 27, 2003 (P = -25.83, Bo = -6.81, Lo = 262.57)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



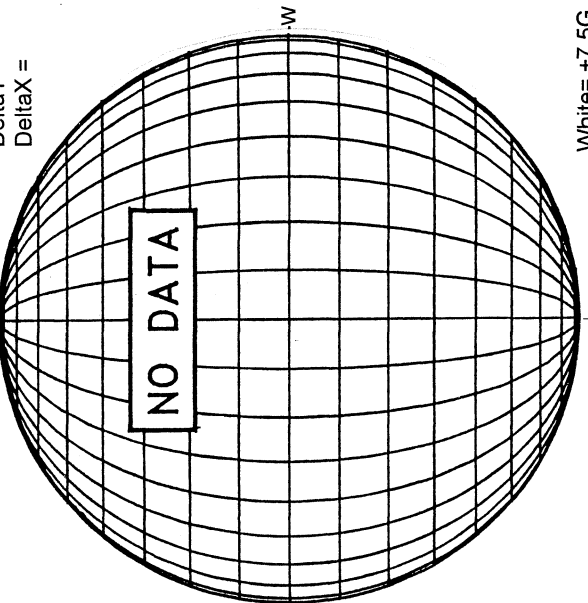
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =

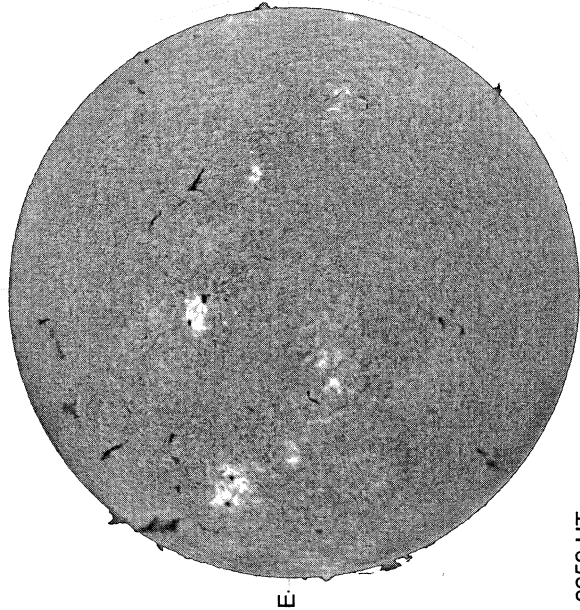


White = +7.5G
Black = -7.5G

1725 UT

2129 UT

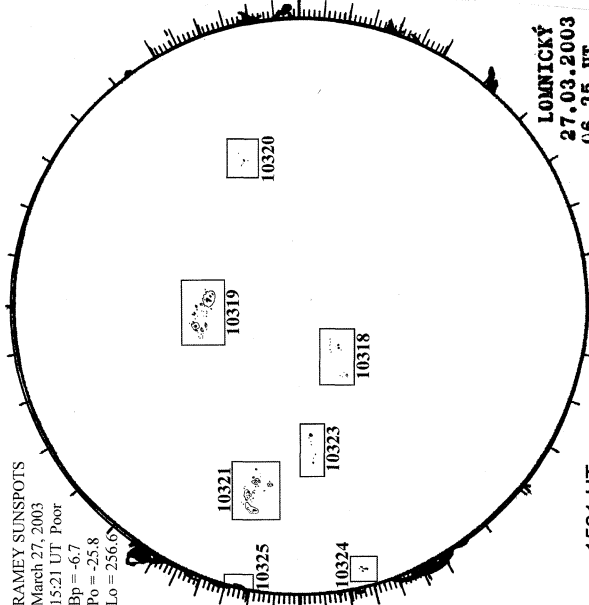
KANZELHOHE H-ALPHA



0652 UT

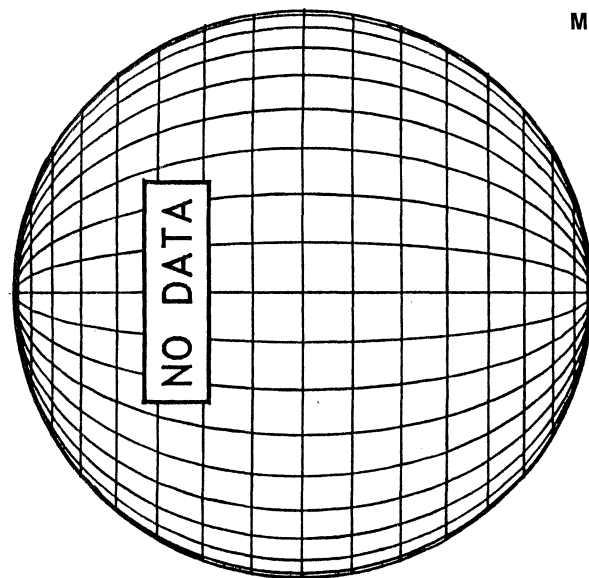
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 27, 2003
15:21 UT Poor
Bp = -6.7
Po = -25.8
Lo = 256.6



1521 UT
0635 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



69
Mar 03

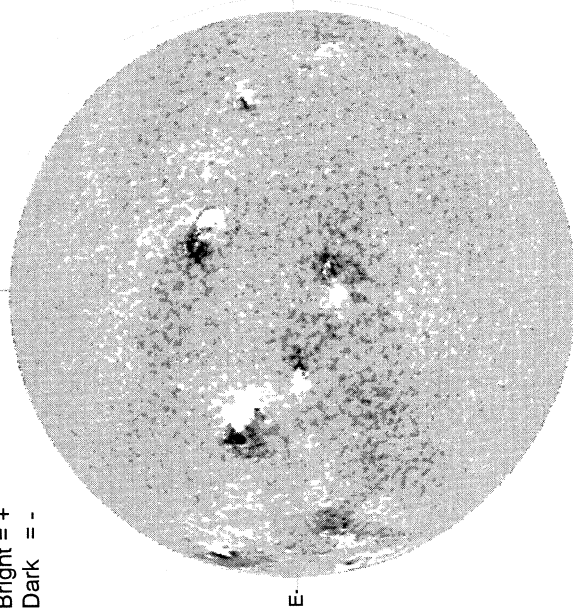
MARCH 28, 2003 (P = -25.91, Bo = -6.76, Lo = 249.38)

70
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

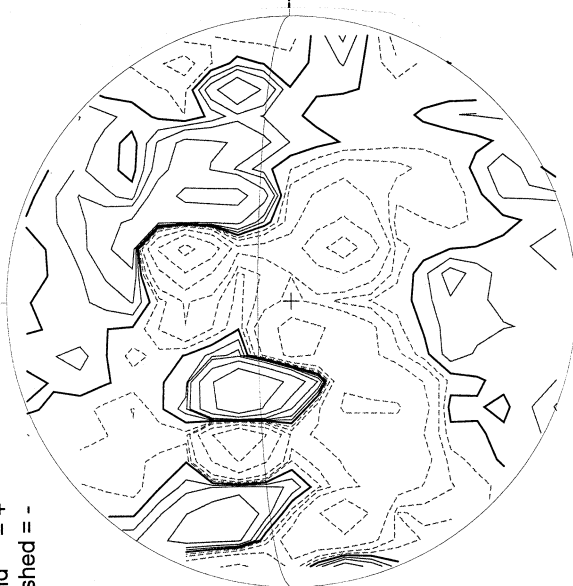
Bright = +
Dark = -



1558 UT

STANFORD MAGNETOGRAM

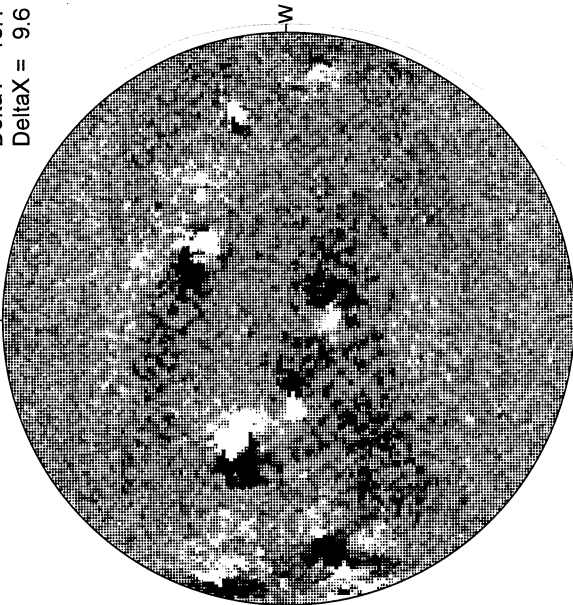
Solid = +
Dashed = -



2203 UT

MT. WILSON MAGNETOGRAM

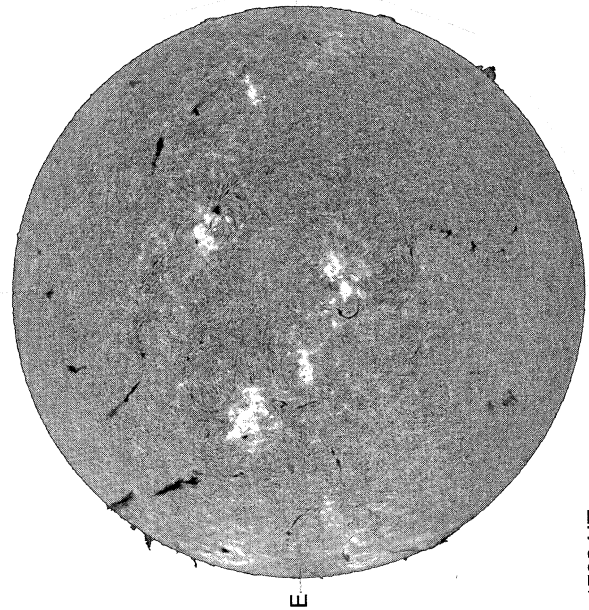
DeltaY = 13.1
DeltaX = 9.6



17.11 -
18.06 UT

White = +7.5G
Black = -7.5G

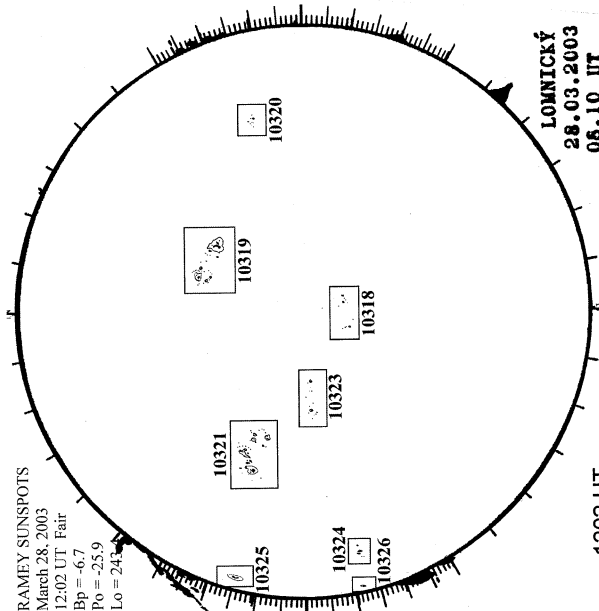
BIG BEAR H-ALPHA



1738 UT

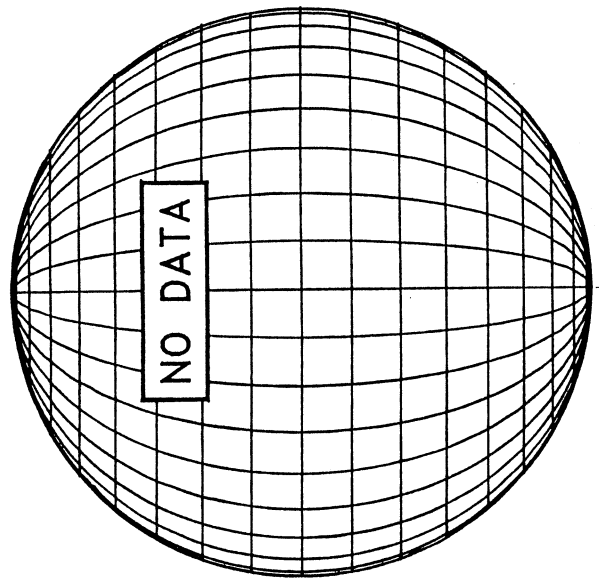
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 28, 2003
12:02 UT Fair
Bp = -6.7
Po = -25.9
Lo = 249.38



1202 UT
0810 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



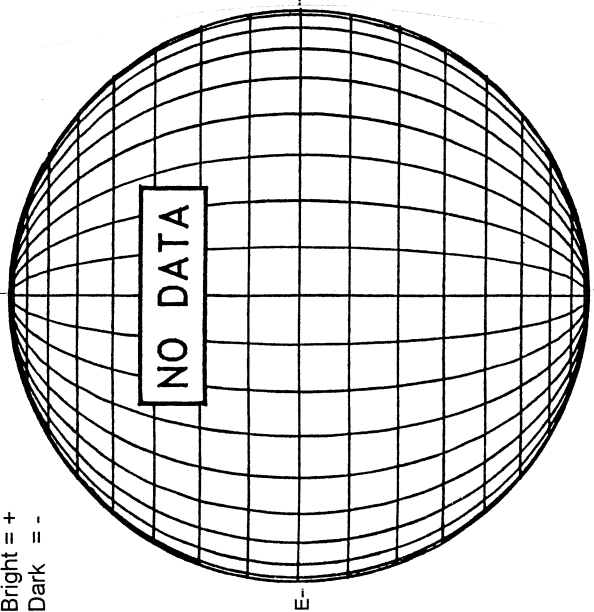
NO DATA

LOWNICKY
28.03.2003
06.10 UT

MARCH 29, 2003 (P= -25.98, Bo = -6.72, Lo = 236.20)

KITT PEAK MAGNETOGRAM
868.8 nm

Bright = +
Dark = -



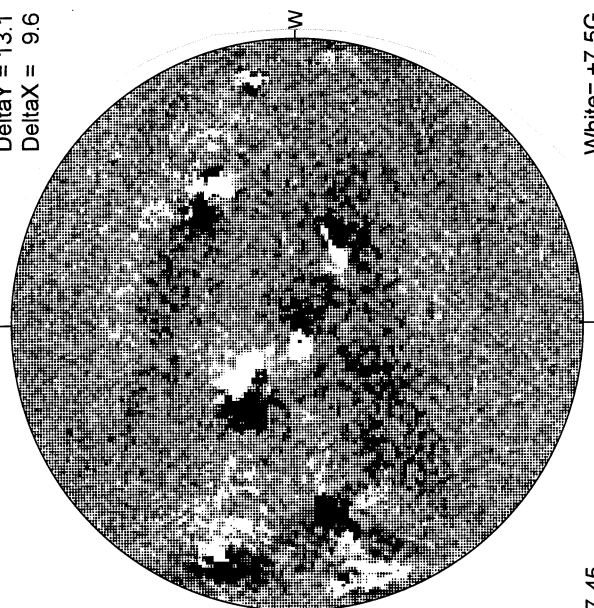
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

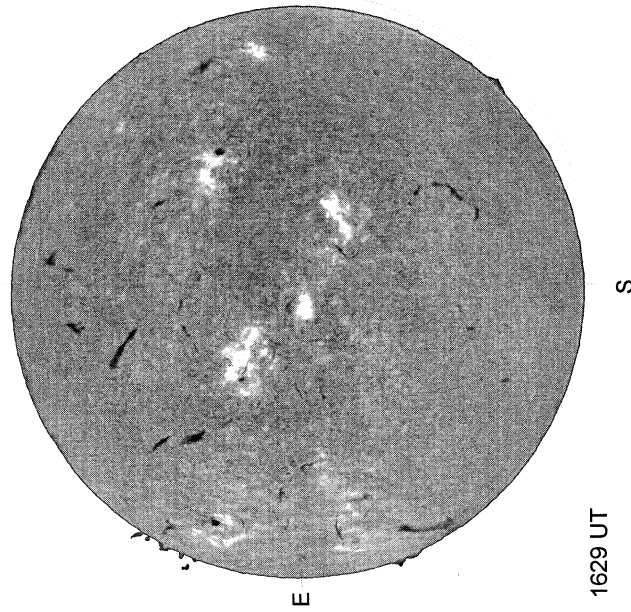
DeltaY = 13.1
DeltaX = 9.6



17.45 -
18.40 UT

White = +7.5G
Black = -7.5G

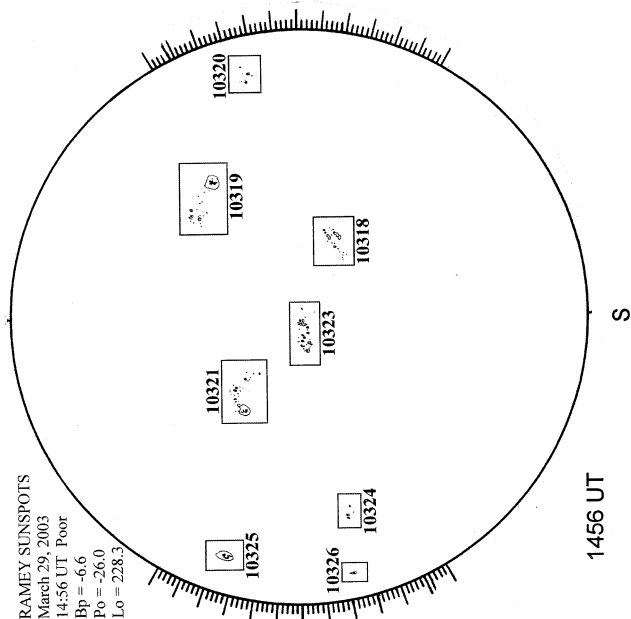
BIG BEAR H-ALPHA



1629 UT

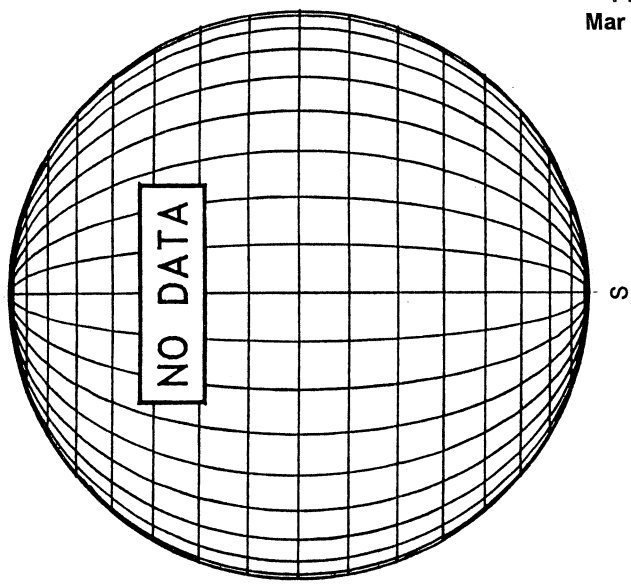
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 29, 2003
14:56 UT Poor
Bp = -6.6
Po = -26.0
Lo = 228.3



1456 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



71
Mar 03

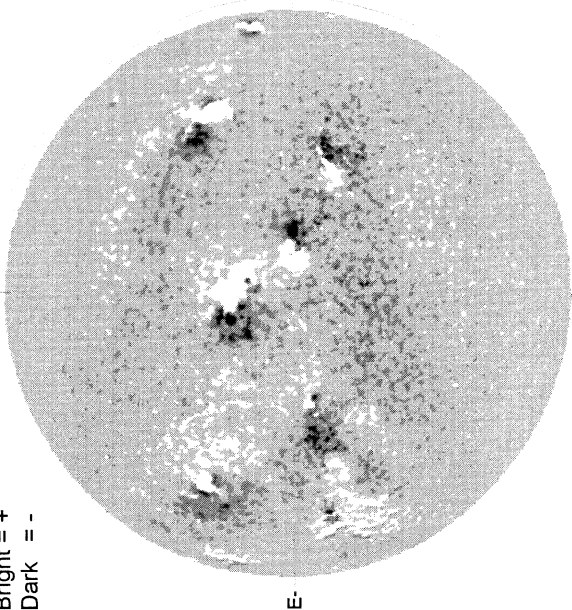
MARCH 30, 2003 (P= -26.04, Bo = -6.67, Lo = 223.01)

72
Mar 03

KITT PEAK MAGNETOGRAM

868.8 nm

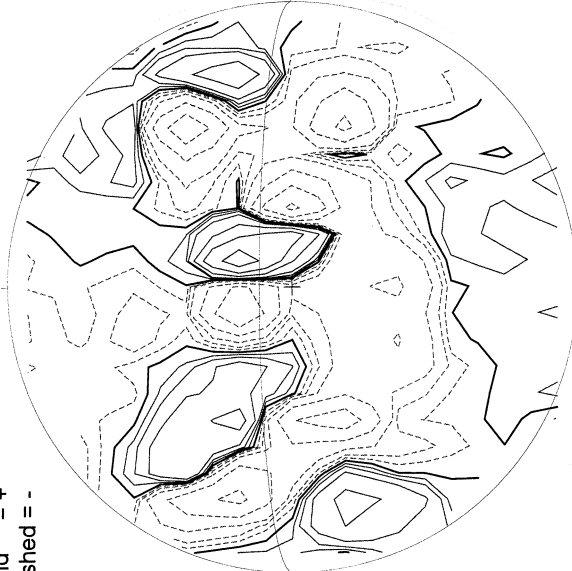
Bright = +
Dark = -



1418 UT

STANFORD MAGNETOGRAM

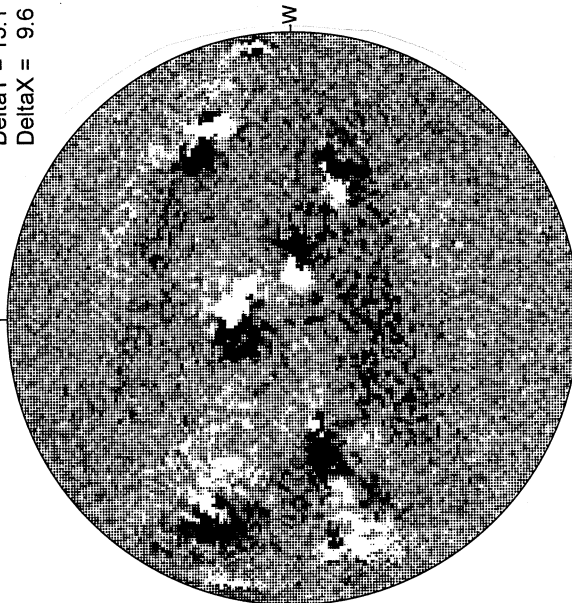
Solid = +
Dashed = -



2023 UT

MT. WILSON MAGNETOGRAM

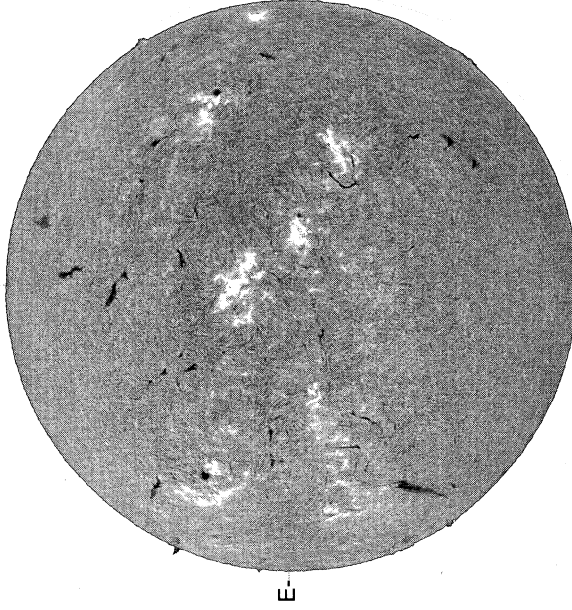
DeltaY = 13.1
DeltaX = 9.6



17.90 -
18.85 UT

White= +7.5G
Black = -7.5G

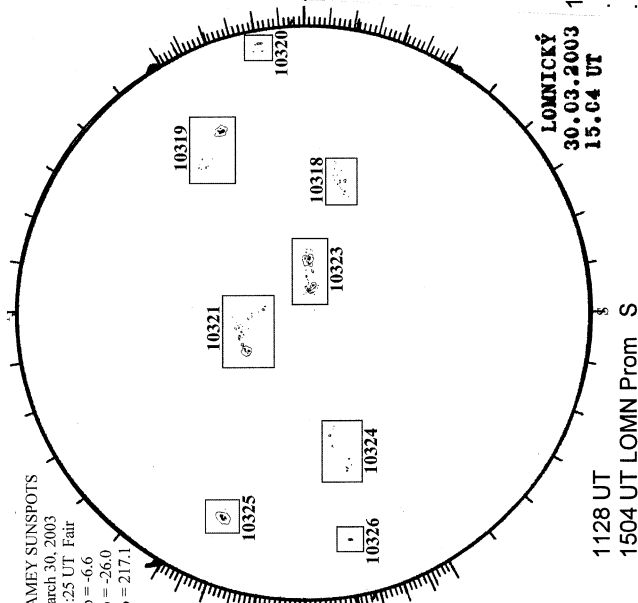
BIG BEAR H-ALPHA



1639 UT

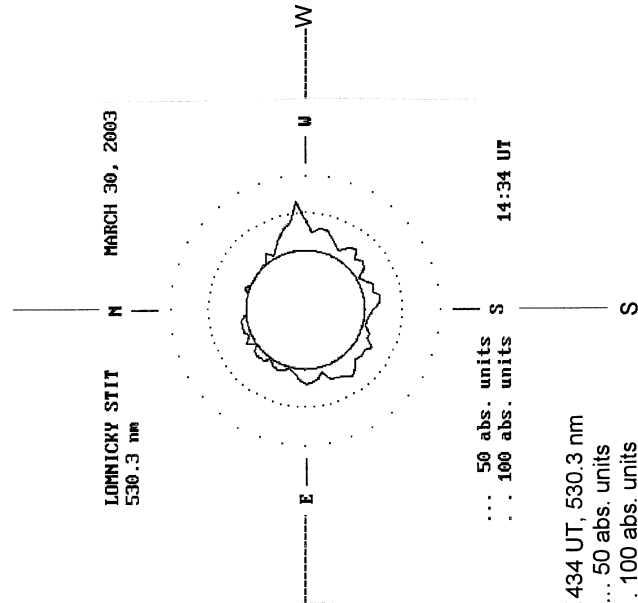
RAMEY SUNSPOT

RAMEY SUNSPOTS
March 30, 2003
11:25 UT Fair
Bp = -6.6
Po = -26.0
Lo = 217.1



1128 UT
1504 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)---



1434 UT, 530.3 nm
... 50 abs. units
... 100 abs. units

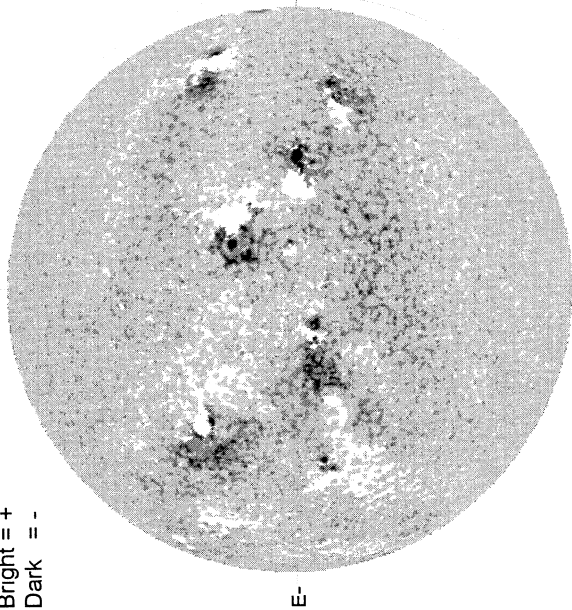
14:34 UT

MARCH 31, 2003 (P= -26.10, Bo = -6.62, Lo = 209.81)

KITT PEAK MAGNETOGRAM

868.8 nm

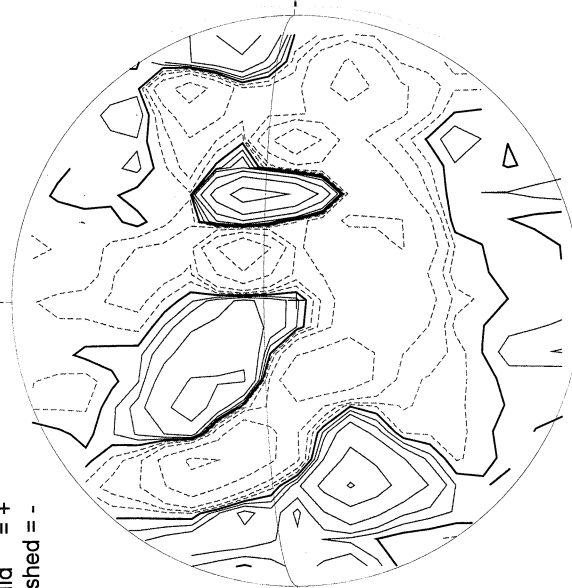
Bright = +
Dark = -



1639 UT

STANFORD MAGNETOGRAM

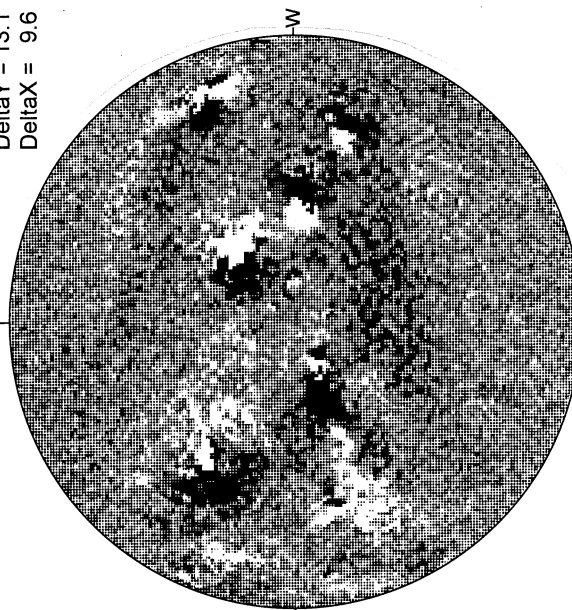
Solid = +
Dashed = -



2136 UT

MT. WILSON MAGNETOGRAM

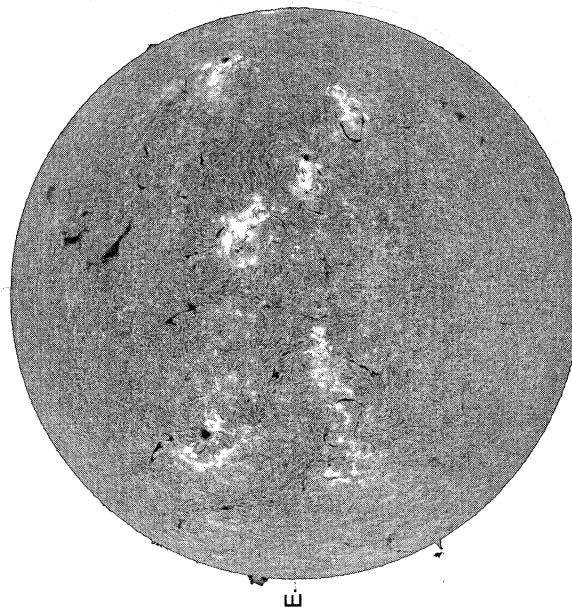
DeltaY = 13.1
DeltaX = 9.6



18.12 -
19.07 UT

White= +7.5G
Black = -7.5G

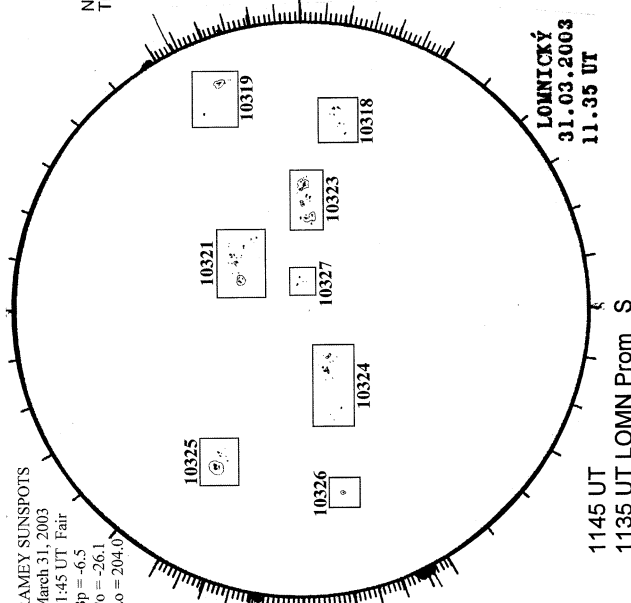
BIG BEAR H-ALPHA



1650 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS
March 31, 2003
11:45 UT Fair
Bp = -6.5
Po = -26.1
Lo = 204.0

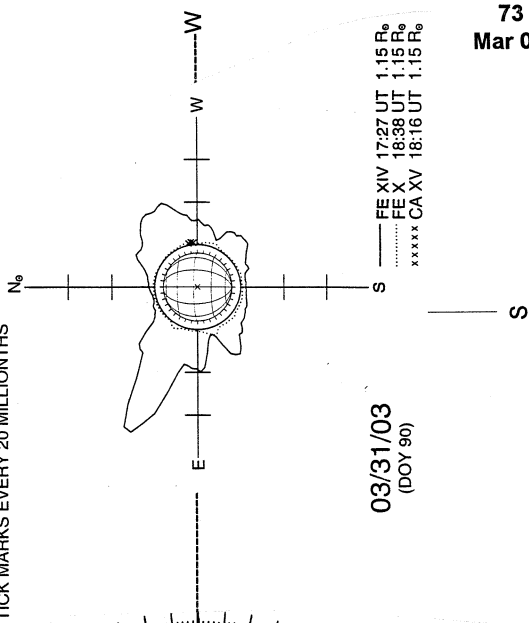


1145 UT
1135 UT LOMN Prom S

LOWNICKY
31.03.2003
11.35 UT

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

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



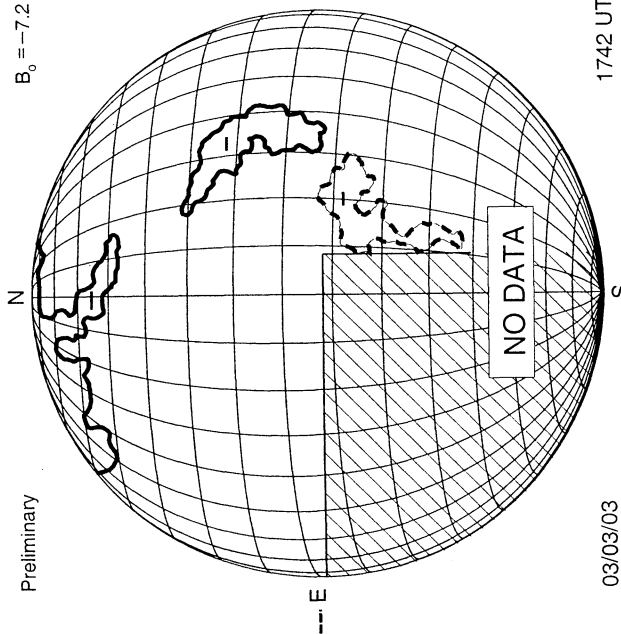
03/31/03
(DOY 90)

FE XIV 17:27 UT 1.15 R_o
FE X 18:38 UT 1.15 R_o
XXXX CA XV 18:16 UT 1.15 R_o

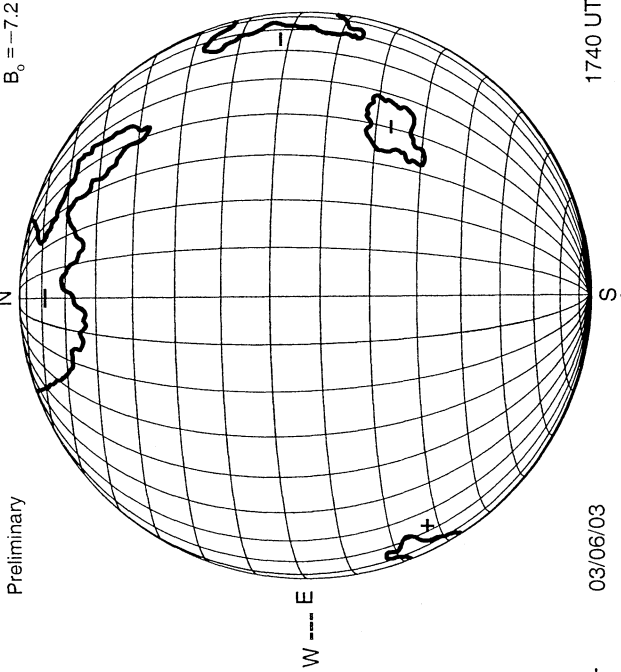
73
Mar 03

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
March 2003

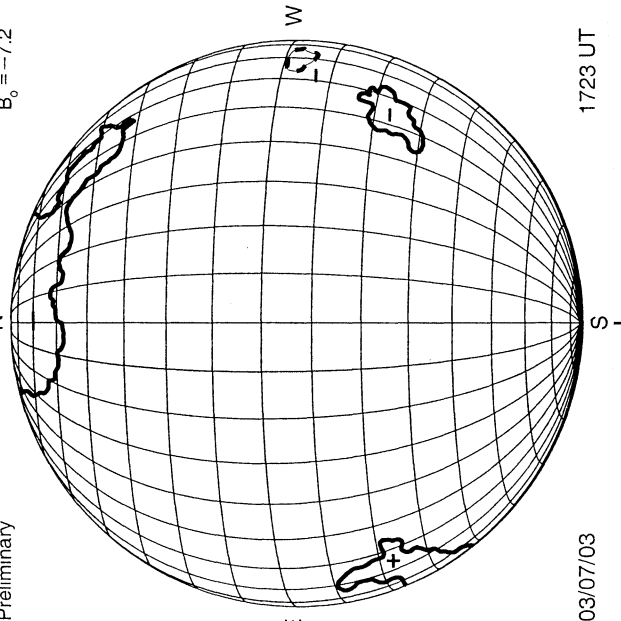
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$



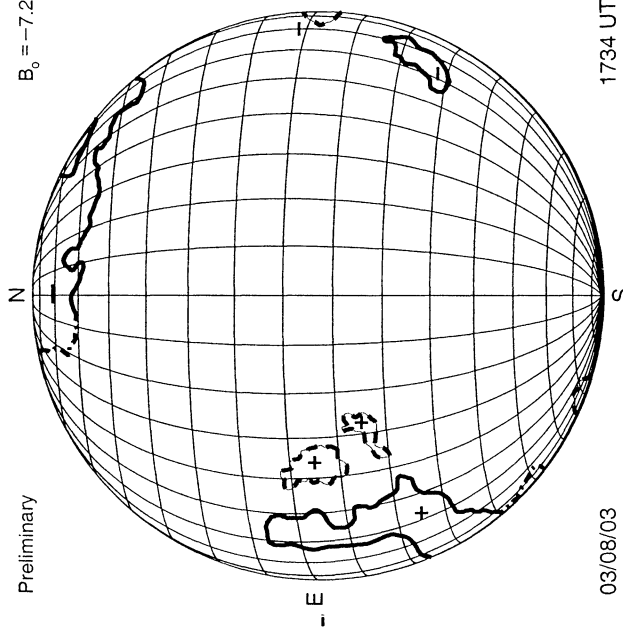
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$



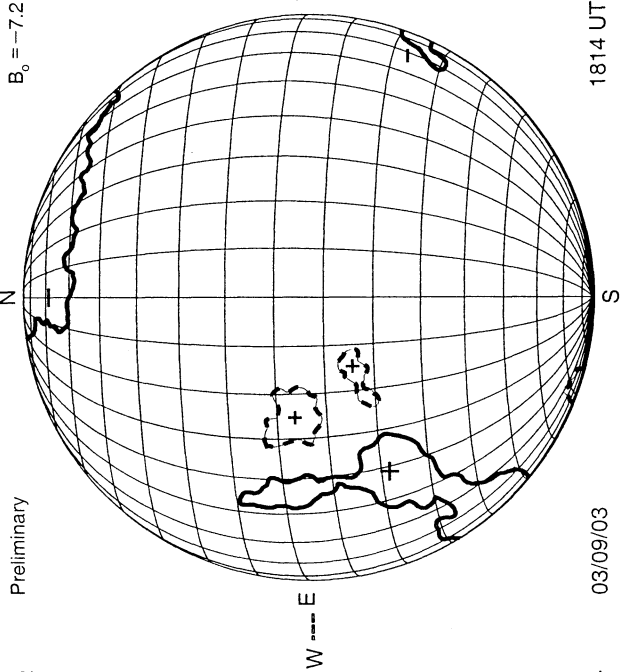
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$



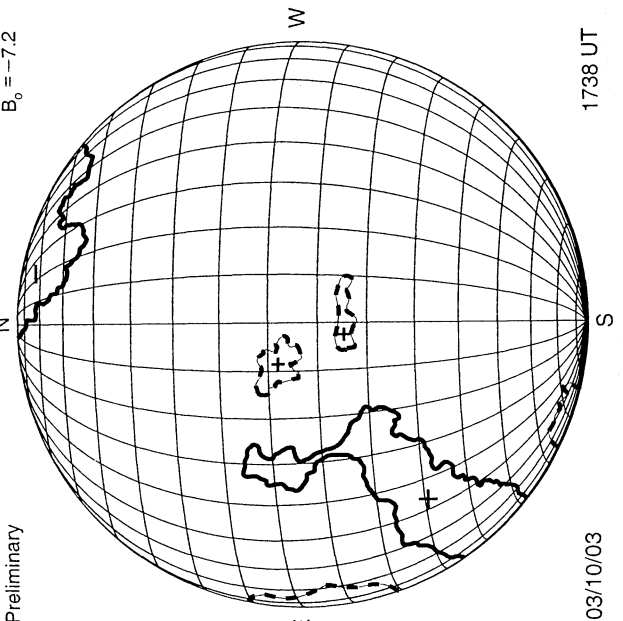
NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$



NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$

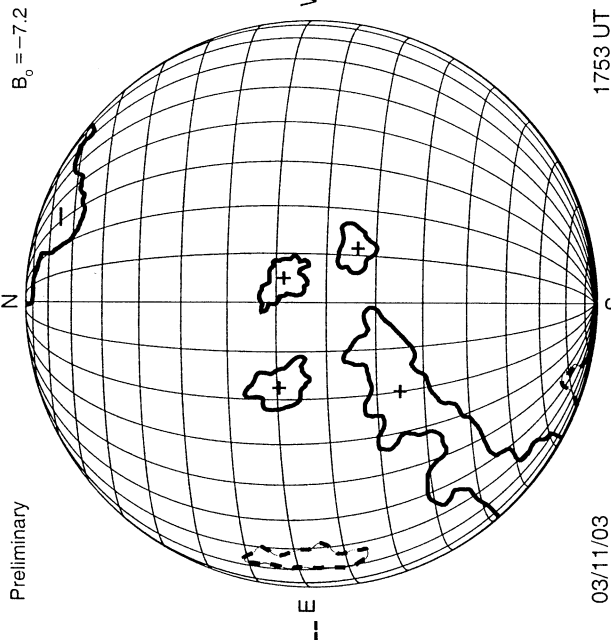


NSO/KP CORONAL HOLE MAP: HE I 1083 nm
Preliminary
 $B_0 = -7.2$

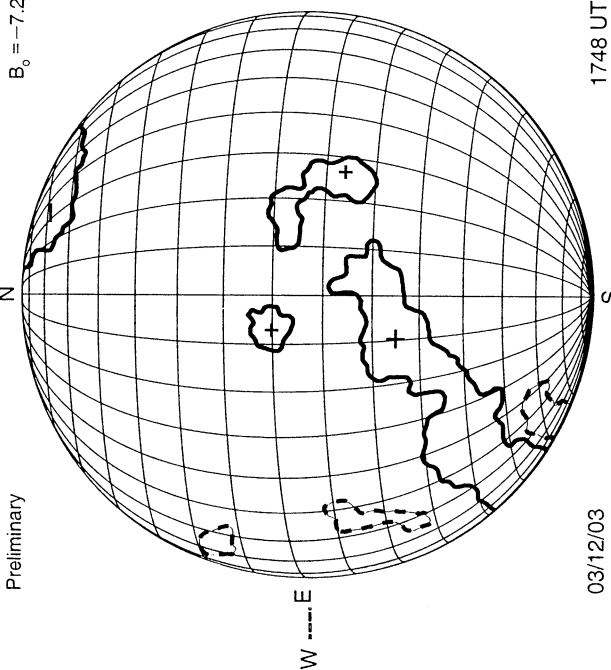


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm March 2003

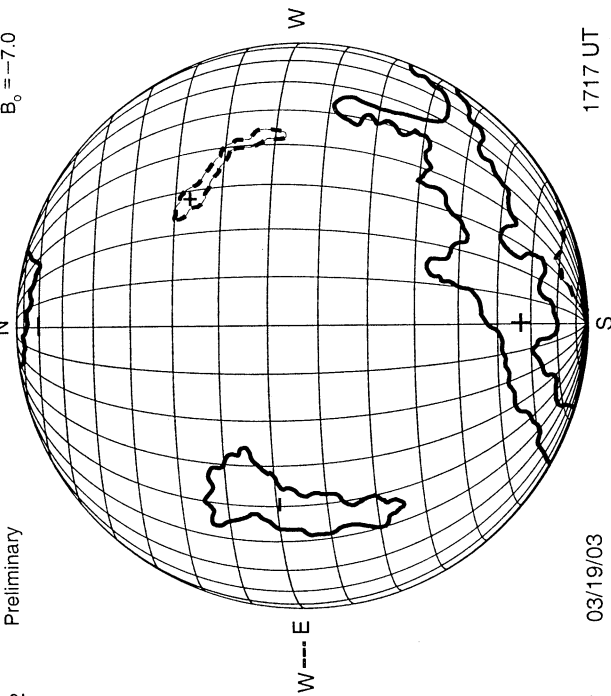
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



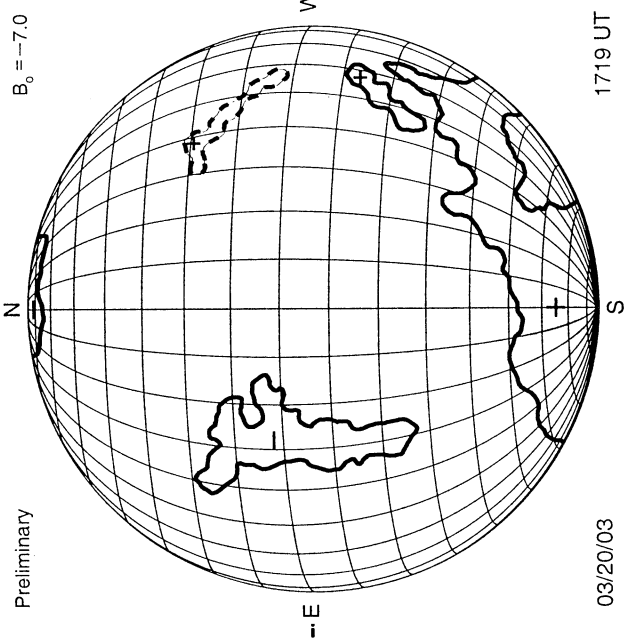
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



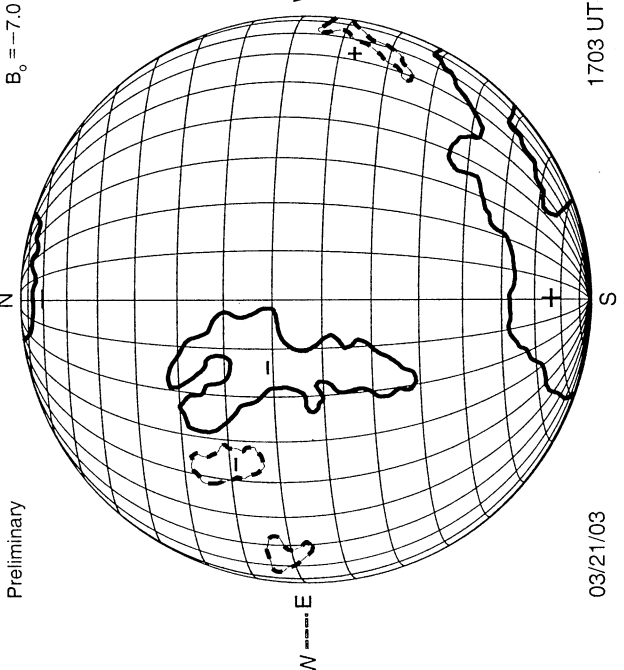
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



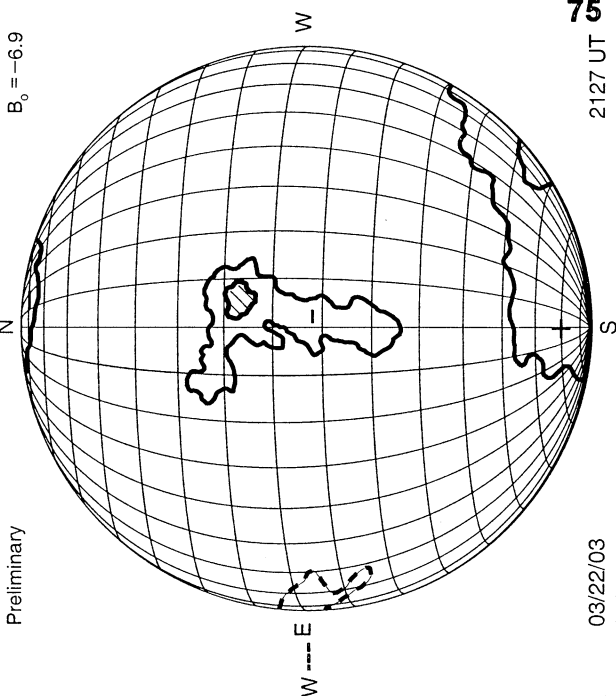
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

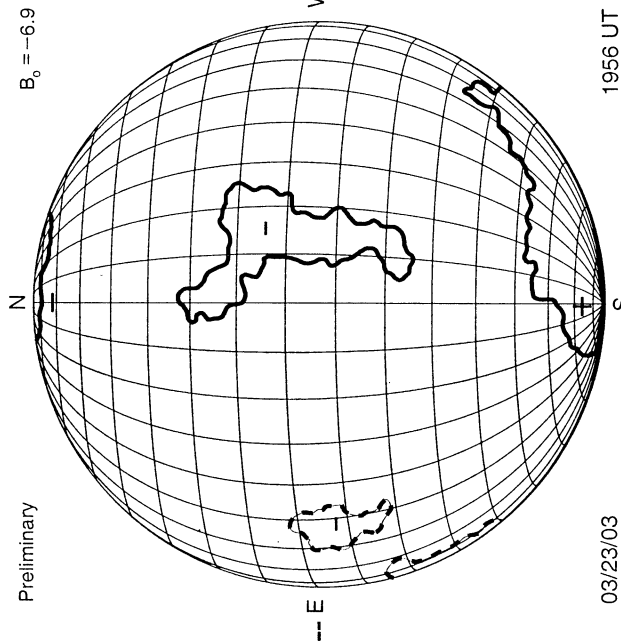


NSO/KP CORONAL HOLE MAP: HE I 1083 nm

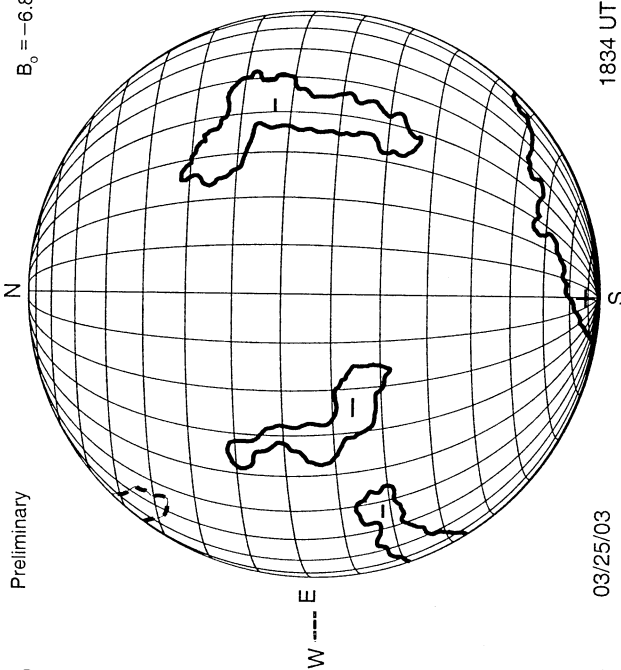


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm March 2003

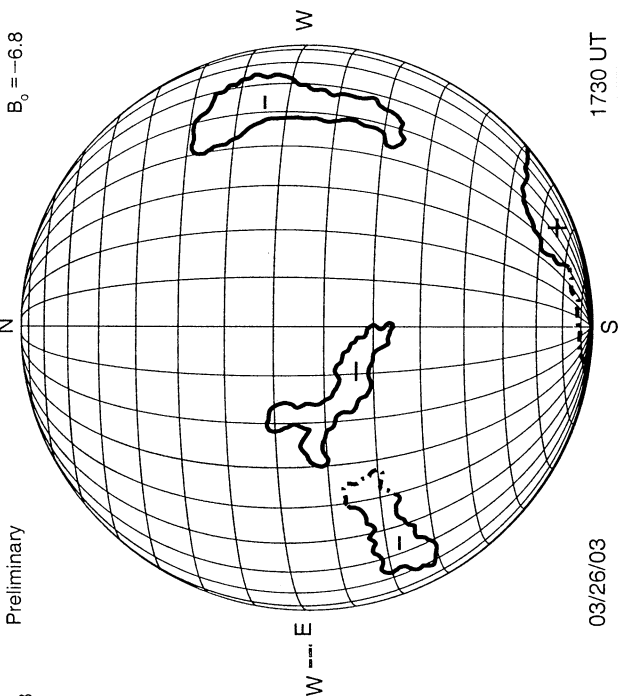
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



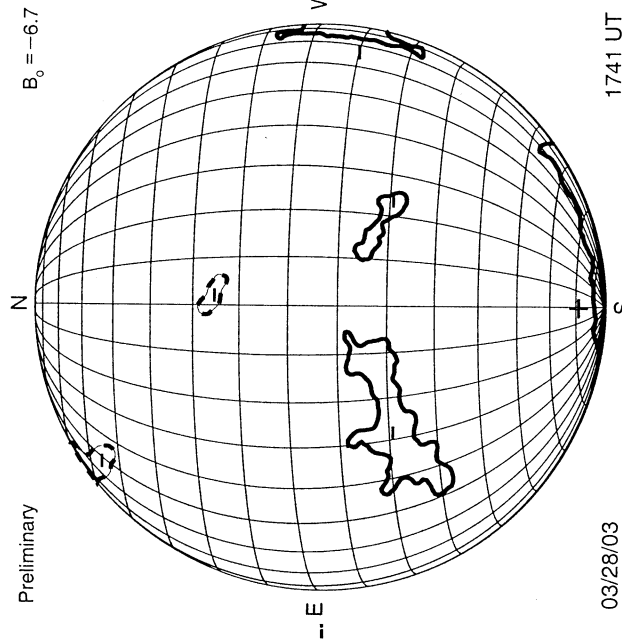
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



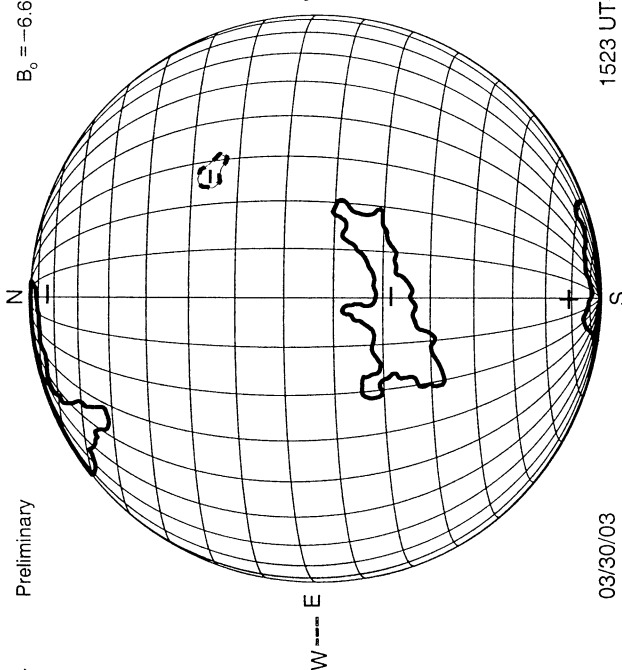
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



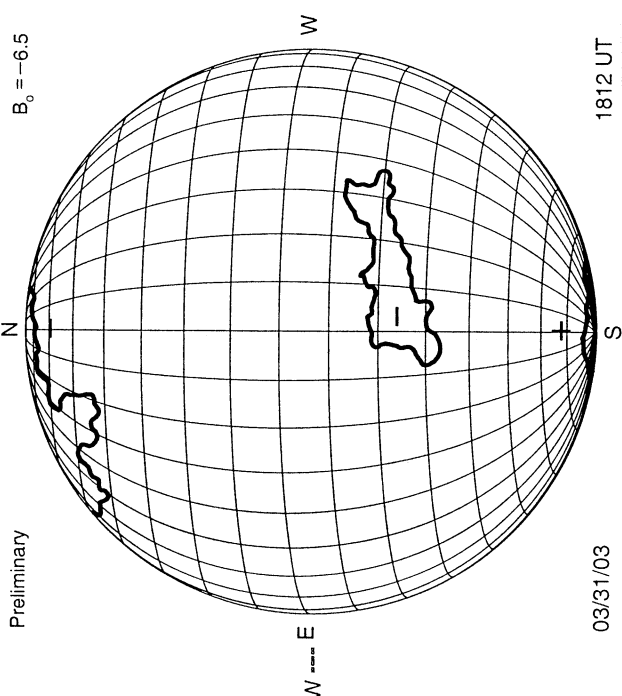
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



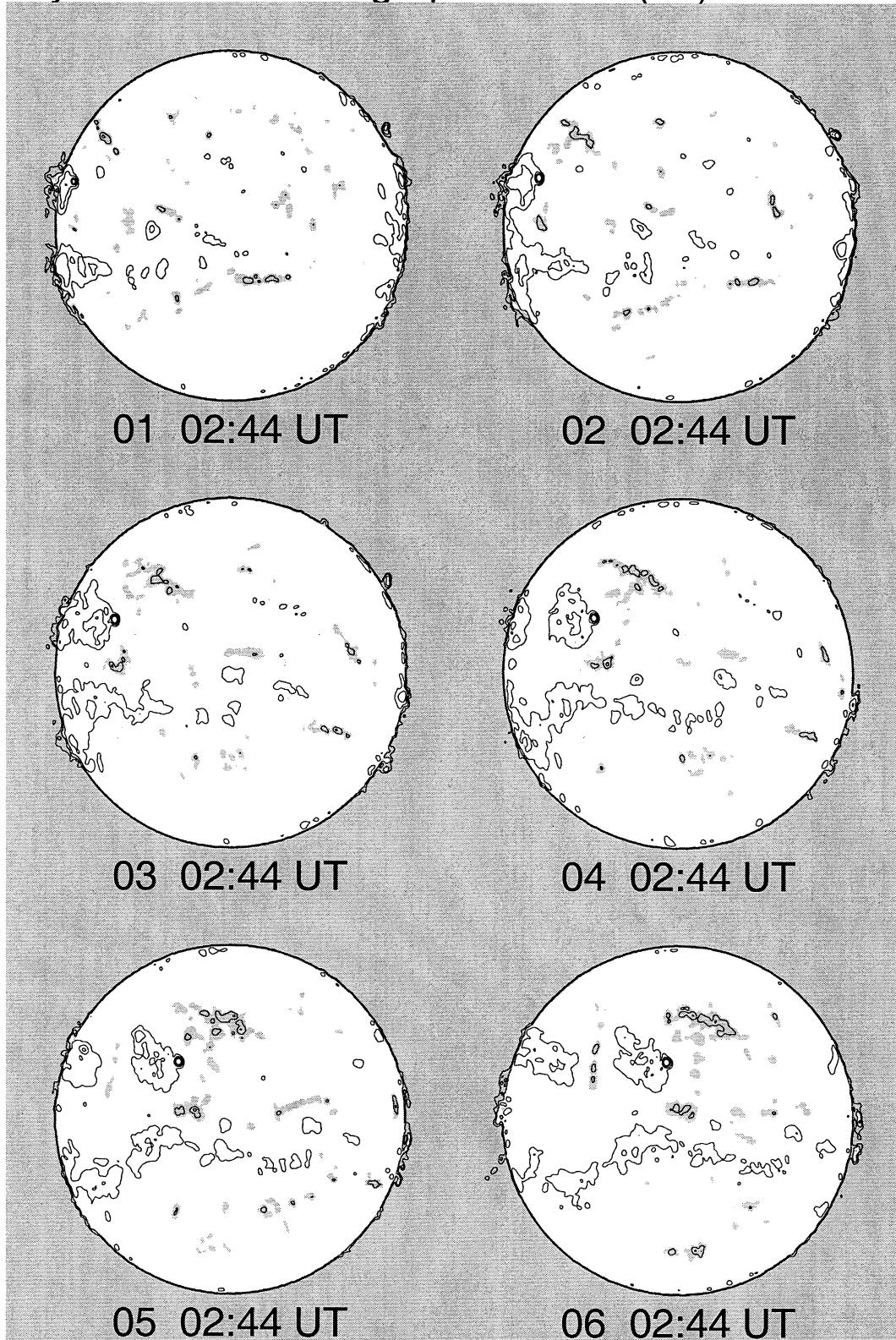
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



NSO/KP CORONAL HOLE MAP: HE I 1083 nm

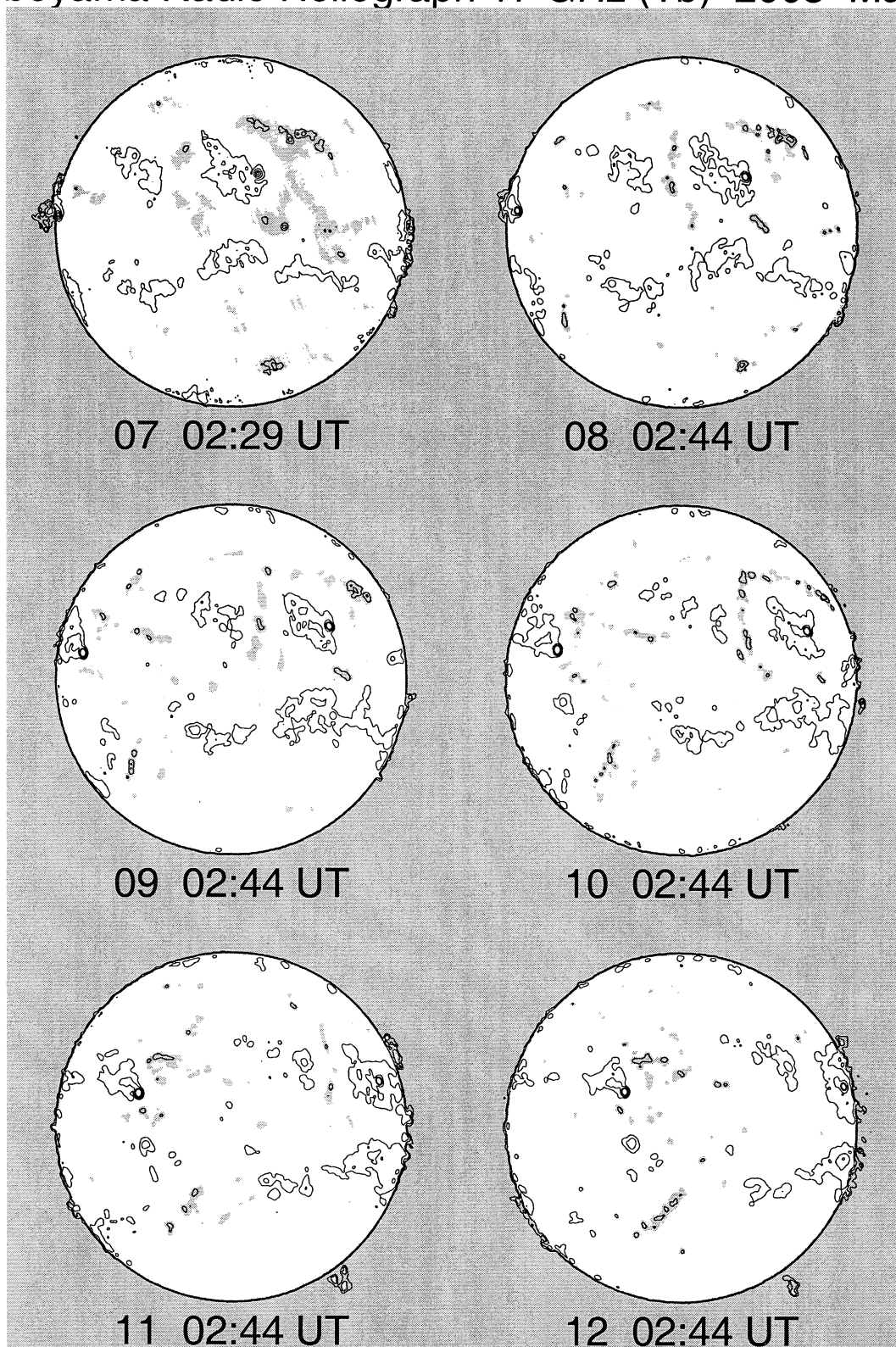


Nobeyama Radio Heliograph 17 GHz (Tb) 2003 March



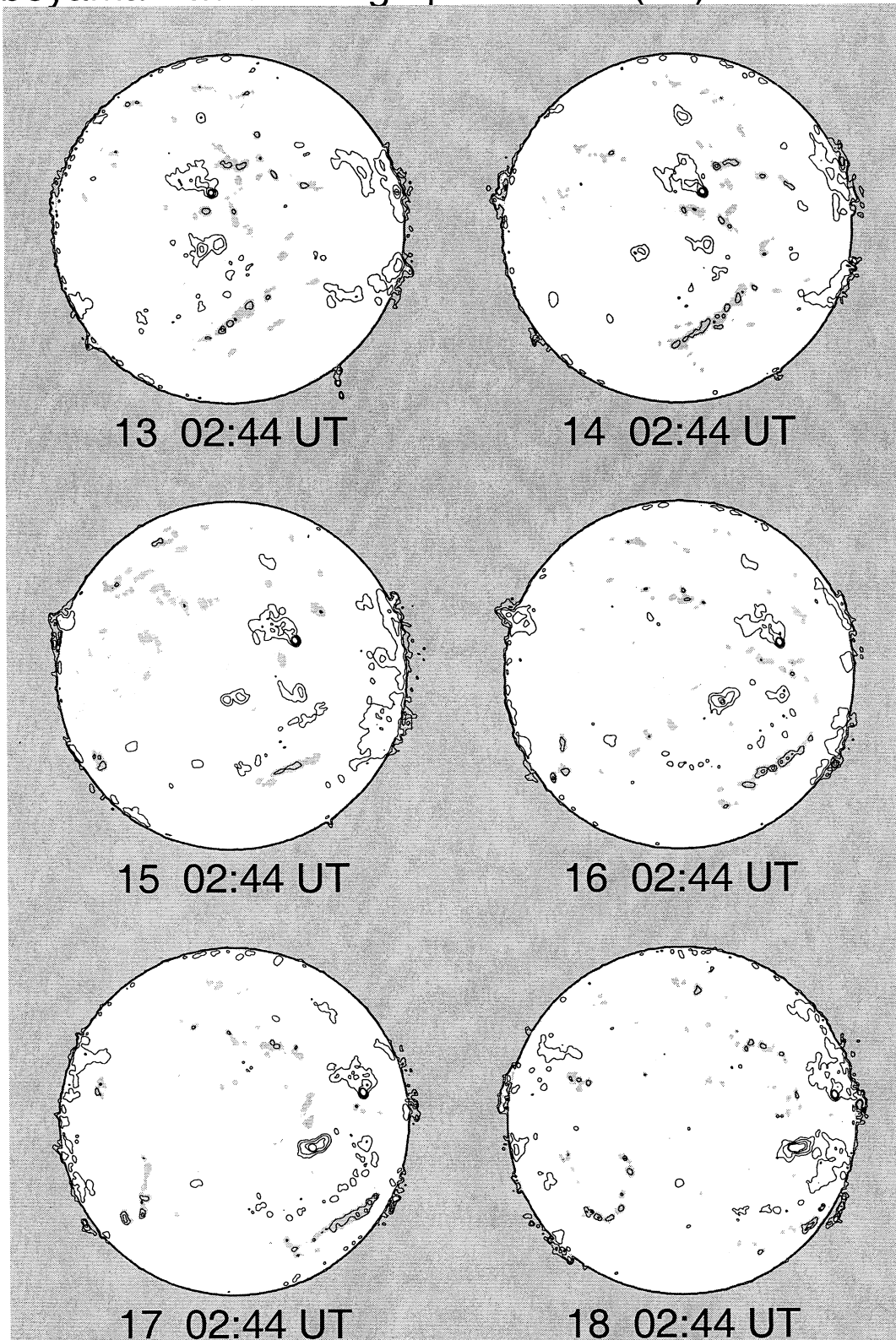
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 March



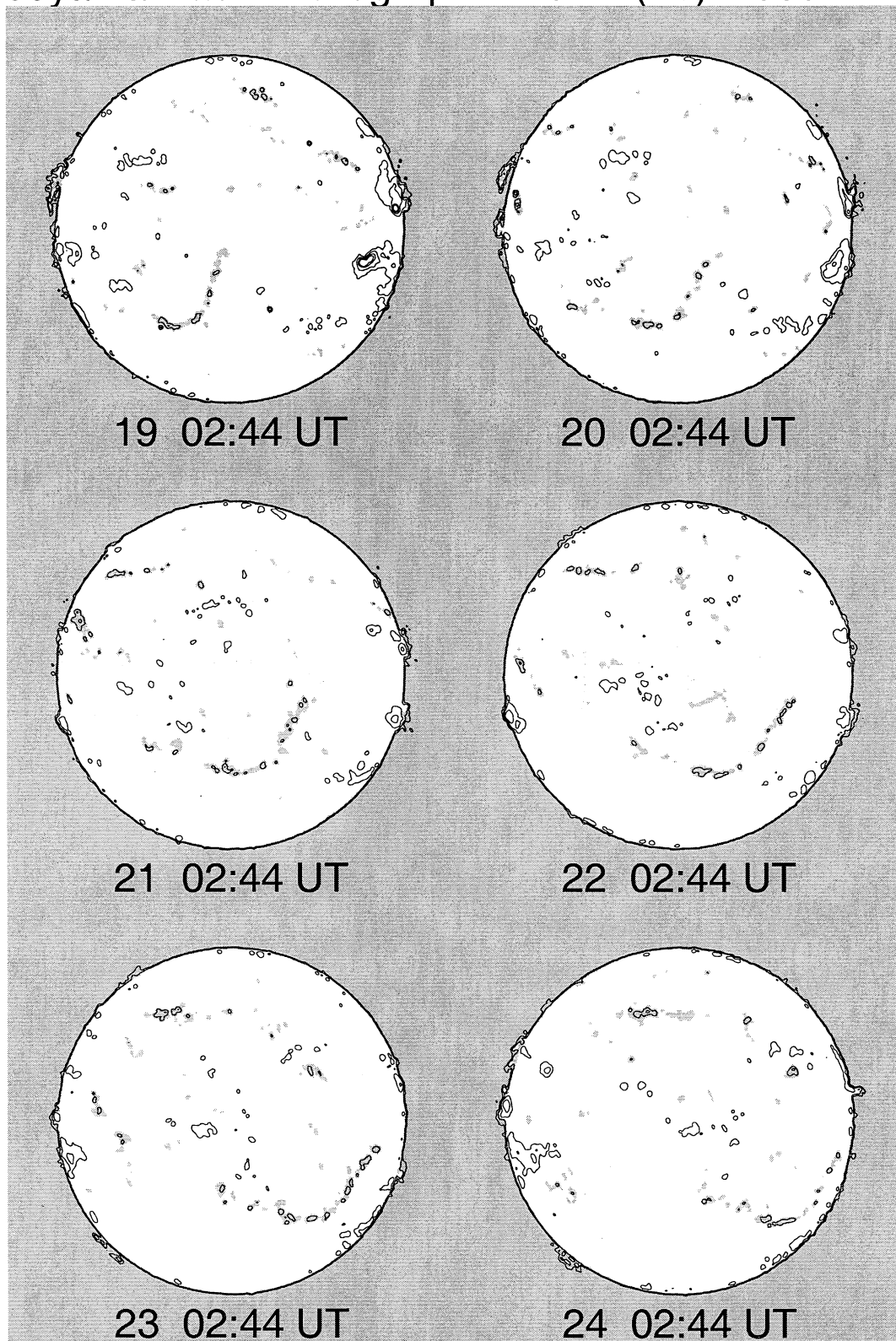
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb $\leq$ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 March



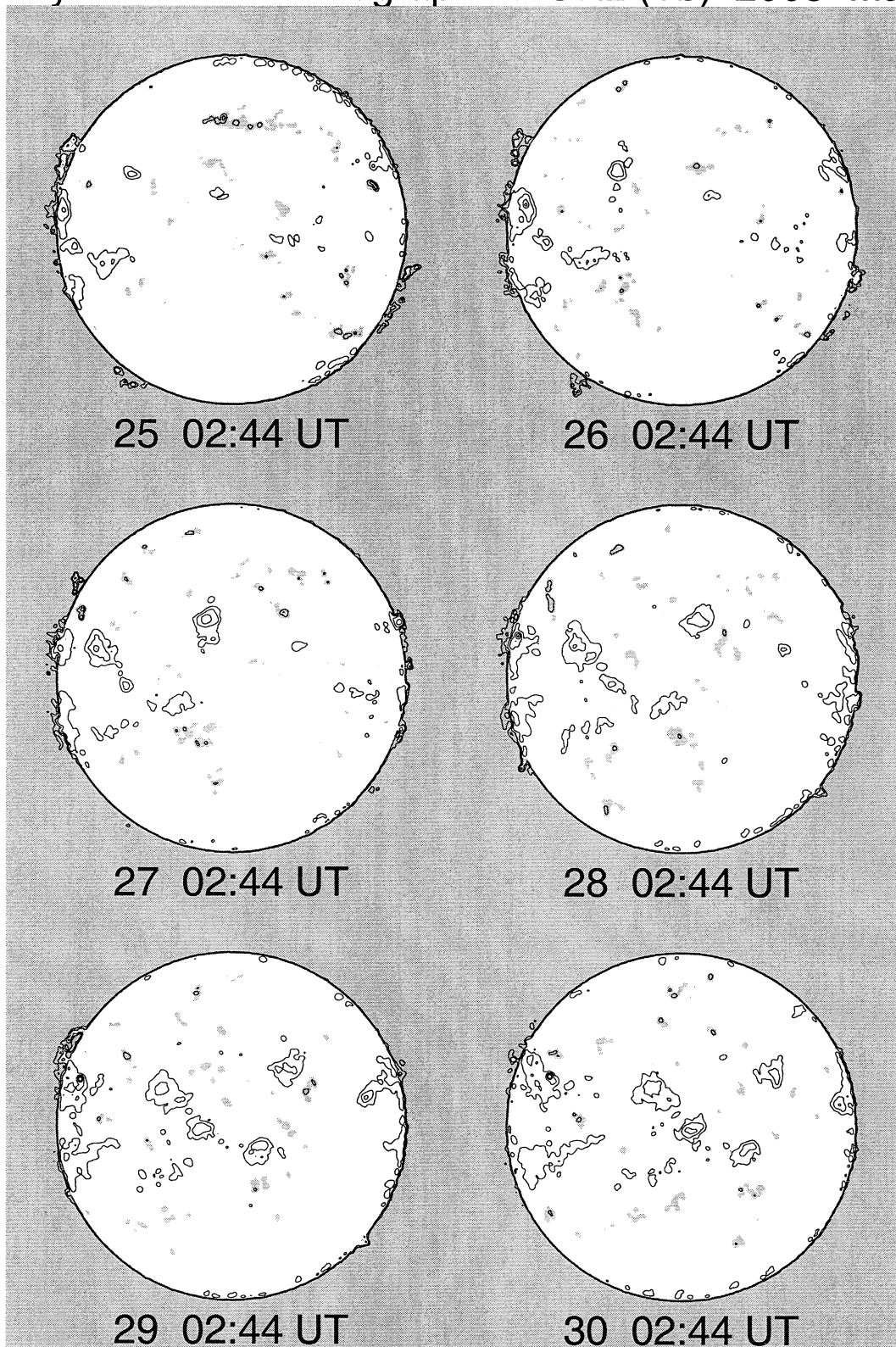
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 March



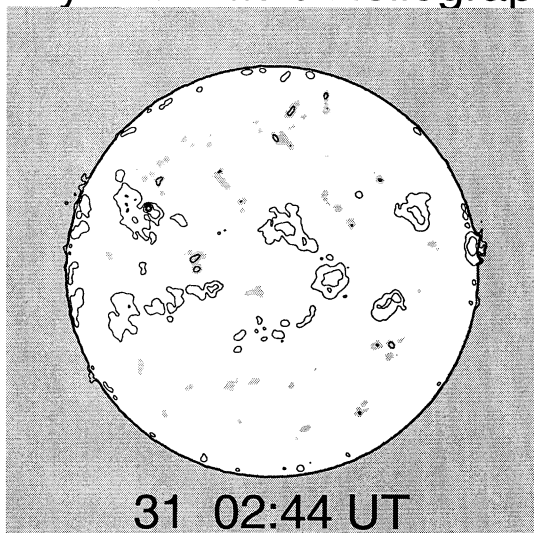
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb $\leq$ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2003 March



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 March



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

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

83
Mar 03

MARCH 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
10293D		RAMY	03 04 1216	S20 W40	03 1.4		B	CSO	20	3	5	3
10293D		HOLL	03 04 1915	S23 W47	03 1.2		B	BXO		2	2	2
10293D		LEAR	03 05 0210	S23 W49	03 1.3		A	AXX		1		4
10293		RAMY	02 26 1203	S22 E44	03 1.9		B	CRO	20	3	4	3
10293		HOLL	02 26 2143	S21 E39	03 1.9		B	BXO	10	3	4	2
10293		LEAR	02 27 0010	S21 E38	03 1.9		B	BXO	10	4	4	4
10293		RAMY	02 27 1210	S21 E33	03 2.0		B	DSO	10	2	3	4
10293		HOLL	02 27 1515	S21 E29	03 1.8		B	BXO	10	2	3	3
10293		RAMY	02 28 1210	S19 E17	03 1.8		B	DSO	20	3	4	3
10293		RAMY	03 01 1250	S17 E08	03 2.1		B	BXO	10	3	3	2
10293A		LEAR	03 03 0018	S06 W12	03 2.1		A	AXX	10	3	1	4
10293C		VORO	03 06 0047	N16 W52	03 2.1			AXX	2	1		3
10293B		KAND	03 03 0920	S21 W04	03 3.1			AX		2	1	3
10293B		VORO	03 04 0001	S23 W08	03 3.4			BXI	13	6	6	3
10293B		LEAR	03 04 0035	S22 W13	03 3.0		A	AXX	10	4	2	4
10293B		TACH	03 04 0508	S22 W16	03 3.0			AXX	1	1	1	3
10294		LEAR	02 26 0150	S07 E69	03 3.2		A	AXX		1		3
10294		HOLL	02 26 2143	S07 E56	03 3.1		B	BXO	10	6	2	2
10294		LEAR	02 27 0010	S06 E54	03 3.0		B	CAO	20	4	4	4
10294		SVTO	02 27 0847	S08 E50	03 3.1		B	DAO	50	5	4	3
10294		RAMY	02 27 1210	S07 E48	03 3.1		B	DSI	30	10	3	4
10294		HOLL	02 27 1515	S08 E46	03 3.1		B	CAO	70	5	4	3
10294		VORO	02 28 0001	S07 E41	03 3.1			DAI	62	6	3	3
10294		LEAR	02 28 0250	S08 E41	03 3.2		B	DSO	40	7	4	3
10294		SVTO	02 28 0755	S07 E37	03 3.1		B	DAO	80	4	4	3
10294		KAND	02 28 0810	S07 E38	03 3.2			DAO		8	4	4
10294		RAMY	02 28 1210	S06 E34	03 3.0		B	DSO	70	9	5	3
10294		HOLL	02 28 1815	S06 E31	03 3.1		B	DSO	70	3	5	3
10294		VORO	03 01 0002	S06 E24	03 2.8			DRI	38	8	4	3
10294		LEAR	03 01 0015	S08 E28	03 3.1		B	CRO	40	11	5	4
10294		TACH	03 01 0633	S08 E24	03 3.1			BRO	34	4	4	3
10294		KAND	03 01 0740	S08 E24	03 3.1			BXO		6	6	4
10294		SVTO	03 01 0840	S06 E23	03 3.1		B	BXO	10	3	5	3
10294		RAMY	03 01 1250	S07 E21	03 3.1		B	DSO	50	6	6	2
10294		HOLL	03 01 1745	S06 E17	03 3.0		B	BSO	20	2	6	3
10294		VORO	03 01 2358	S07 E11	03 2.8			BRI	12	5	5	3
10294		LEAR	03 02 0112	S07 E13	03 3.0		B	DSO	30	5	5	2
10294		RAMY	03 02 1240	S08 E07	03 3.0		B	DSO	30	6	7	3
10294		HOLL	03 02 1425	S07 E03	03 2.8		A	HSX	20	1	1	3
10294		VORO	03 02 2353	S07 W02	03 2.8			BXO	7	2	4	3
10294		LEAR	03 03 0018	S08 E01	03 3.1		B	BXO	30	10	5	4
10294		KAND	03 03 0920	S07 W08	03 2.8			AX		1		3
10294		HOLL	03 03 1545	S08 W08	03 3.0		B	BXO	20	14	5	3
10294		VORO	03 04 0001	S09 W15	03 2.9			AXX	7	2	1	3
10294		LEAR	03 04 0035	S08 W13	03 3.0		B	DRO	20	9	8	4
10294		TACH	03 04 0508	S10 W18	03 2.9			AR	5	2	2	3
10294		SVTO	03 04 0650	S08 W19	03 2.9		B	DSO	20	2	2	3
10294		RAMY	03 04 1216	S09 W21	03 2.9		B	CSO	20	6	4	3
10294		LEAR	03 06 0018	S10 W44	03 2.7		A	HSX	30	1	1	4
10294		VORO	03 06 0028	S10 W44	03 2.7			AXX	27	10		3
10294		HOLL	03 06 1545	S11 W50	03 2.9		A	AXX	10	1	1	3
10294	31643	MWIL	03 06 1545	S11 W53	03 2.7	4	(B)					
10309		LEAR	03 09 0012	N05 W65	03 4.1		B	DRO	20	4	3	4
10309		RAMY	03 09 1206	N05 W70	03 4.3		B	DSO	60	5	6	4
10309	31656	MWIL	03 09 1530	N04 W74	03 4.1	4	(B)					
10309		LEAR	03 09 2346	N05 W79	03 4.1			HAX	44	2		3
10309		VORO	03 10 0041	N07 W79	03 4.1		A	HSX	20	1	1	2
10303		LEAR	03 07 0635	S18 W38	03 4.4		B	BXO	10	3	3	1
10303		RAMY	03 07 1217	S18 W42	03 4.3		B	BXO	20	4	5	2
10303		HOLL	03 07 1530	S18 W42	03 4.4		B	CSO	10	3	5	4
10303	31649	MWIL	03 07 1530	S19 W44	03 4.3	4	(AP)					
10303		RAMY	03 08 1230	S16 W48	03 4.9		B	BXO	10	2	4	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
10295		HOLL	02 26 2143	S18	E79	03 4.9		B	CSO	30	3	3	2
10295		VORO	02 27 0002	S17	E79	03 5.0			HAX	112	2		3
10295		LEAR	02 27 0010	S19	E75	03 4.7		B	CAO	30	3	9	4
10295		SVTO	02 27 0847	S20	E75	03 5.1		B	DSO	90	3	5	3
10295		RAMY	02 27 1210	S18	E73	03 5.1		B	DAO	80	4	6	4
10295		HOLL	02 27 1515	S20	E69	03 4.9		B	CSO	90	3	3	3
10295		VORO	02 28 0001	S17	E66	03 5.0			HAX	73	2		3
10295		LEAR	02 28 0250	S18	E66	03 5.1		A	HSX	70	1	2	3
10295		SVTO	02 28 0755	S17	E62	03 5.0		A	HSX	80	1	3	3
10295		KAND	02 28 0810	S16	E64	03 5.2			CSO		4	4	4
10295		RAMY	02 28 1210	S17	E61	03 5.1		B	CAO	120	5	5	3
10295		HOLL	02 28 1815	S15	E57	03 5.1		B	CSO	70	2	5	3
10295		VORO	03 01 0002	S17	E53	03 5.0			HAX	70	1		3
10295		LEAR	03 01 0015	S18	E53	03 5.0		A	HSX	110	1	2	4
10295		TACH	03 01 0633	S18	E50	03 5.1			HSX	46	1	1	3
10295		KAND	03 01 0740	S18	E51	03 5.2			HS		1	2	4
10295		SVTO	03 01 0840	S18	E49	03 5.1		A	HSX	30	1	2	3
10295		RAMY	03 01 1250	S16	E48	03 5.2		A	HSX	60	1	2	2
10295		HOLL	03 01 1745	S16	E44	03 5.1		A	HSX	60	1	1	3
10295		VORO	03 01 2358	S17	E40	03 5.0			HAX	71	1		3
10295		LEAR	03 02 0112	S17	E40	03 5.1		A	HAX	50	1	2	2
10295		SVTO	03 02 0745	S17	E36	03 5.0		A	HSX	100	1	3	3
10295		RAMY	03 02 1240	S20	E29	03 4.7		B	CSO	60	3	6	3
10295		HOLL	03 02 1425	S17	E32	03 5.0		A	HSX	60	1	1	3
10295		VORO	03 02 2353	S17	E26	03 5.0			HAX	55	1		3
10295		LEAR	03 03 0018	S18	E28	03 5.1		B	CAO	60	5	3	4
10295		SVTO	03 03 0752	S18	E23	03 5.1		A	HSX	40	1	2	3
10295		KAND	03 03 0920	S17	E20	03 4.9			HS		1	2	3
10295		HOLL	03 03 1545	S18	E22	03 5.3		B	CSO	50	7	8	3
10295		VORO	03 04 0001	S17	E14	03 5.1			HAX	55	6		3
10295		LEAR	03 04 0035	S18	E13	03 5.0		B	CAO	60	7	3	4
10295		TACH	03 04 0508	S18	E10	03 5.0			HA	83	2	2	3
10295		SVTO	03 04 0650	S18	E10	03 5.0		B	CAO	50	3	2	3
10295		RAMY	03 04 1216	S19	E08	03 5.1		B	DAO	80	12	4	3
10295		HOLL	03 04 1915	S18	E03	03 5.0		B	CAO	90	11	4	2
10295		VORO	03 04 2343	S17	E01	03 5.1			HAX	78	11		3
10295		LEAR	03 05 0210	S18	E01	03 5.2		B	DAO	90	6	3	4
10295		SVTO	03 05 0659	S18	W03	03 5.1		B	DAO	120	5	4	3
10295		TACH	03 05 0716	S18	W03	03 5.1			CSO	59	2	2	3
10295		RAMY	03 05 1300	S18	W07	03 5.0		B	DAO	70	7	3	4
10295		LEAR	03 06 0018	S18	W12	03 5.1		B	DAO	60	3	2	4
10295		VORO	03 06 0047	S18	W13	03 5.0			HAX	28	5		3
10295		TACH	03 06 0617	S18	W19	03 4.8			AR	27	3	2	4
10295		SVTO	03 06 0915	S17	W18	03 5.0		B	DAO	20	4	3	3
10295		HOLL	03 06 1545	S18	W21	03 5.0		B	DSO	20	6	2	3
10295	31644	MWIL	03 06 1545	S18	W21	03 5.0	4	(AP)					
10295		VORO	03 07 0028	S17	W25	03 5.1			AXX	16	3		3
10295		LEAR	03 07 0635	S16	W29	03 5.1		B	CRO	20	4	2	1
10295		TACH	03 07 0708	S17	W29	03 5.1			AR	3	2	2	3
10295		SVTO	03 07 0745	S17	W30	03 5.0		B	DRO	20	2	3	3
10295		RAMY	03 07 1217	S17	W30	03 5.2		B	DAO	40	3	6	2
10295		HOLL	03 07 1530	S17	W35	03 5.0		B	CSO	10	4	2	4
10295	31644	MWIL	03 07 1530	S18	W31	03 5.3	4	(BP)					
10295		VORO	03 07 2333	S17	W37	03 5.2			AXX	5	1		3
10295		LEAR	03 08 0140	S16	W37	03 5.3		B	BXO	10	2	3	3
10298		SVTO	03 03 0752	S09	E26	03 5.3		A	AXX	10	2	2	3
10298		KAND	03 03 0920	S08	E25	03 5.3			CRO		3	3	3
10298		HOLL	03 03 1545	S08	E21	03 5.2		B	DSO	20	5	3	3
10298		VORO	03 04 0001	S08	E16	03 5.2			BXO	24	6	2	3
10298		LEAR	03 04 0035	S09	E16	03 5.2		B	DAO	30	8	4	4
10298		TACH	03 04 0508	S08	E13	03 5.2			BXO	18	2	4	3
10298		SVTO	03 04 0650	S08	E13	03 5.2		B	DSO	40	4	3	3
10298		RAMY	03 04 1216	S09	E09	03 5.2		B	DSO	30	8	4	3
10298		HOLL	03 04 1915	S08	E05	03 5.2		B	BXO	10	3	3	2
10298		VORO	03 04 2343	S08	E03	03 5.2			BXO	12	12	3	3
10298		LEAR	03 05 0210	S08	E05	03 5.5		B	DAO	30	7	9	4
10298		TACH	03 05 0716	S07	W01	03 5.2			AXX	2	1	1	3
10298		RAMY	03 05 1300	S08	W04	03 5.2		B	BXO		3	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
10310		RAMY	02	28	1210	S13 E79	03	6.5		A	AXX	20	1	1	3
10310		HOLL	03	04	1915	S14 E18	03	6.2		B	BXO	10	2	1	2
10310		LEAR	03	05	0210	S15 E15	03	6.2		B	CRO	20	4	3	4
10310		LEAR	03	06	0018	S17 E03	03	6.2		A	AXX	10	2	1	4
10310		RAMY	03	07	1217	S16 W17	03	6.2		A	AXX	10	1	1	2
10310		VORO	03	08	2339	S17 W37	03	6.2			HRX	15	1		3
10310		LEAR	03	09	0012	S17 W37	03	6.2		B	DAO	40	5	3	4
10310		RAMY	03	09	1206	S16 W43	03	6.2		B	CSO	20	8	6	4
10310		HOLL	03	09	1820	S16 W46	03	6.3		B	BXO	40	3	5	3
10310		VORO	03	09	2346	S17 W51	03	6.1			ARX	13	2		3
10310		LEAR	03	10	0041	S16 W52	03	6.1		A	HAX	10	1		2
10310		KAND	03	10	0800	S17 W58	03	5.9			AX	1	1		4
10310		RAMY	03	10	1220	S13 W59	03	6.1		B	BXO	20	2	3	3
10310		HOLL	03	10	1437	S18 W60	03	6.0		B	BXO	10	2	1	4
10296		VORO	02	28	0001	N13 E83	03	6.3			HKX	195	1		3
10296		SVTO	02	28	0755	N13 E80	03	6.4		A	HHX	180	1	3	3
10296		KAND	02	28	0810	N12 E85	03	6.7			HK		1	3	4
10296		RAMY	02	28	1210	N11 E80	03	6.5		B	DHO	360	2	6	3
10296		HOLL	02	28	1815	N14 E72	03	6.2		A	HHX	450	1	4	3
10296		VORO	03	01	0002	N11 E73	03	6.5			DRI	670	6	5	3
10296		LEAR	03	01	0015	N10 E72	03	6.4		B	DKO	610	12	9	4
10296		TACH	03	01	0633	N10 E72	03	6.7			DAI	500	8	10	3
10296		KAND	03	01	0740	N13 E74	03	6.9			EKO		6	13	4
10296		SVTO	03	01	0840	N11 E73	03	6.8		B	FKO	680	5	16	3
10296		RAMY	03	01	1250	N14 E70	03	6.8		B	FKO	810	8	19	2
10296		HOLL	03	01	1745	N14 E64	03	6.6		B	DHI	530	4	6	3
10296		VORO	03	01	2358	N11 E59	03	6.4			HKX	670	6	5	3
10296		LEAR	03	02	0112	N12 E65	03	6.9		B	EKO	700	14	15	2
10296		SVTO	03	02	0745	N12 E58	03	6.7		B	FHO	650	5	16	3
10296		RAMY	03	02	1240	N10 E54	03	6.6		B	EHO	460	5	9	3
10296		HOLL	03	02	1425	N11 E52	03	6.5		B	DHI	590	5	7	3
10296		VORO	03	02	2353	N11 E46	03	6.4			DHI	694	10	4	3
10296		LEAR	03	03	0018	N11 E48	03	6.6		B	DKI	650	30	10	4
10296		SVTO	03	03	0752	N11 E43	03	6.6		B	DKO	520	9	9	3
10296		KAND	03	03	0920	N13 E46	03	6.8			FKO		11	17	3
10296		HOLL	03	03	1545	N12 E38	03	6.5		BG	DKI	600	18	9	3
10296		VORO	03	04	0001	N12 E35	03	6.6			DHI	736	14	7	3
10296		LEAR	03	04	0035	N11 E34	03	6.6		BG	DKI	700	31	10	4
10296		TACH	03	04	0508	N10 E29	03	6.4			DSI	562	7	4	3
10296		SVTO	03	04	0650	N10 E30	03	6.5		B	DKI	600	10	9	3
10296		RAMY	03	04	1216	N11 E27	03	6.5		BG	DKI	620	24	10	3
10296		HOLL	03	04	1915	N11 E23	03	6.5		BG	DKI	500	16	8	2
10296		VORO	03	04	2343	N12 E21	03	6.6			DHI	647	21	6	3
10296		LEAR	03	05	0210	N11 E21	03	6.7		BG	DKI	580	21	8	4
10296		SVTO	03	05	0659	N10 E17	03	6.6		B	EKI	540	10	11	3
10296		TACH	03	05	0716	N11 E15	03	6.4			CAI	544	7	4	3
10296		RAMY	03	05	1300	N11 E14	03	6.6		BG	DKI	560	33	9	4
10296		LEAR	03	06	0018	N11 E08	03	6.6		BD	DKI	510	19	8	4
10296		VORO	03	06	0047	N12 E05	03	6.4			HHX	528	22		3
10296		TACH	03	06	0617	N09 E02	03	6.4			CAI	511	6	2	4
10296		SVTO	03	06	0915	N11 E03	03	6.6		B	CKO	450	6	7	3
10296	31645	MWIL	03	06	1545	N13 E01	03	6.7	6	(BG)					
10296		HOLL	03	06	1545	N13 W01	03	6.6		BG	DKI	420	15	6	3
10296		VORO	03	07	0028	N12 W8	03	6.4			HHX	460	11		3
10296		LEAR	03	07	0635	N12 W10	03	6.5		GD	DKI	500	16	7	1
10296		TACH	03	07	0708	N10 W11	03	6.5			CAO	525	4	4	3
10296		SVTO	03	07	0745	N12 W11	03	6.5		B	DKO	390	6	8	3
10296		RAMY	03	07	1217	N14 W13	03	6.5		BG	DKO	480	14	7	2
10296	31645	MWIL	03	07	1530	N13 W12	03	6.7	6	(BG)					
10296		HOLL	03	07	1530	N13 W13	03	6.7		BG	DKI	440	26	9	4
10296		VORO	03	07	2333	N12 W20	03	6.5			HHX	478	13		3
10296		LEAR	03	08	0140	N12 W20	03	6.6		GD	DKO	490	22	8	3
10296		KAND	03	08	0650	N12 W24	03	6.5			DHO		6	6	3
10296		SVTO	03	08	0740	N13 W24	03	6.5		A	HKX	420	2	4	3
10296		RAMY	03	08	1230	N14 W27	03	6.5		B	DKO	390	7	6	3
10296	31645	MWIL	03	08	1445	N13 W25	03	6.7	6	(BP)					
10296		HOLL	03	08	1540	N12 W28	03	6.5		BG	DKI	440	14	6	3
10296		VORO	03	08	2339	N12 W32	03	6.6			HHX	583	4		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
10296	31645	LEAR	03 09 0012	N13	W33	03 6.5		B	EKO	550	18	11	4
10296		RAMY	03 09 1206	N13	W39	03 6.6		B	DKO	470	10	8	4
10296		MWIL	03 09 1530	N12	W39	03 6.7	6	(BP)					
10296		HOLL	03 09 1820	N11	W43	03 6.5		G	CHO	270	2	6	3
10296		VORO	03 09 2346	N12	W46	03 6.5			HHX	522	3		3
10296		LEAR	03 10 0041	N12	W47	03 6.5		B	DHO	330	3	7	2
10296		KAND	03 10 0800	N12	W52	03 6.4			HH		1	3	4
10296		RAMY	03 10 1220	N14	W52	03 6.6		A	HHX	450	1	4	3
10296		HOLL	03 10 1437	N11	W55	03 6.5		A	HHX	360	1	4	4
10296		MWIL	03 10 1530	N13	W53	03 6.6	6	(BP)					
10296	31645	VORO	03 10 2331	N12	W59	03 6.5			HHX	446	1		3
10296		LEAR	03 11 0035	N11	W60	03 6.5		B	CHO	340	2	3	3
10296		TACH	03 11 0507	N12	W62	03 6.5			HHX	642	1	4	2
10296		KAND	03 11 1130	N11	W65	03 6.6			HK		1	4	3
10296		HOLL	03 11 1436	N11	W68	03 6.5		A	HHX	260	1	3	4
10296		MWIL	03 11 1530	N12	W67	03 6.6	6	(AP)					
10296		VORO	03 11 2351	N12	W72	03 6.6			HHX	433	1		3
10296		LEAR	03 12 0100	N12	W73	03 6.5		A	HHX	290	1	3	2
10296		KAND	03 12 0805	N11	W78	03 6.5			HH		1	4	3
10296		RAMY	03 12 1152	N13	W78	03 6.6		A	HHX	280	1	4	3
10296	31645	MWIL	03 12 1530	N12	W80	03 6.6	6	(AP)					
10296		HOLL	03 12 1601	N11	W81	03 6.6		A	HKX	120	1	2	3
10304	31646	VORO	03 01 0002	S16	E81	03 7.1			ARX	12	1		3
10304		TACH	03 01 0633	S16	E71	03 6.6			BRO	15	4	10	3
10304		VORO	03 01 2358	S15	E68	03 7.1			DRI	67	9	6	3
10304		VORO	03 02 2353	S15	E55	03 7.1			CAI	71	5	6	3
10304		VORO	03 04 0001	S16	E41	03 7.1			CAI	51	4	5	3
10304		TACH	03 04 0508	S16	E36	03 6.9			AR	21	2	3	3
10304		VORO	03 04 2343	S15	E29	03 7.2			CAI	52	6	5	3
10304		TACH	03 05 0716	S16	E24	03 7.1			CAO	28	3	3	3
10304		RAMY	03 05 1300	S13	E17	03 6.8		A	AXX	10	5	2	4
10304		LEAR	03 06 0018	S12	E10	03 6.8		B	BXO	10	7	3	4
10304	31646	VORO	03 06 0047	S13	E14	03 7.1			CAO	30	7	3	3
10304		TACH	03 06 0617	S15	E09	03 6.9			BRO	10	3	2	4
10304		MWIL	03 06 1545	S15	E03	03 6.9	4	(BP)					
10304		VORO	03 07 0028	S16	E00	03 7.0			AXX	4	1		3
10304		TACH	03 07 0708	S14	W05	03 6.9			BRI	12	5	4	3
10304		RAMY	03 07 1217	S12	W10	03 6.7		B	DAO	50	6	5	2
10304		HOLL	03 07 1530	S13	W12	03 6.7		B	DSO	30	15	10	4
10304		MWIL	03 07 1530	S15	W10	03 6.9	4	(AP)					
10304		VORO	03 07 2333	S14	W15	03 6.8			BXI	26	8	6	3
10304		KAND	03 08 0650	S13	W21	03 6.7			CSO		7	4	3
10304	31646	RAMY	03 08 1230	S12	W24	03 6.7		B	DAO	50	12	7	3
10304		MWIL	03 08 1445	S14	W22	03 6.9	4	(BG)					
10304		HOLL	03 08 1540	S13	W25	03 6.8		B	DSO	40	10	5	3
10304		VORO	03 08 2339	S13	W25	03 7.1			CAI	86	13	9	3
10304		RAMY	03 09 1206	S12	W37	03 6.7		B	DAO	70	19	7	4
10304		MWIL	03 09 1530	S14	W39	03 6.7	4	(BG)					
10304		HOLL	03 09 1820	S12	W39	03 6.8		B	CSC	40	13	4	3
10304		VORO	03 09 2346	S13	W38	03 7.1			CAI	63	16	10	3
10304		LEAR	03 10 0041	S12	W42	03 6.9		BG	DAO	90	18	8	2
10304		KAND	03 10 0800	S14	W49	03 6.6			CRO		5	5	4
10304	31646	RAMY	03 10 1220	S12	W52	03 6.6		B	DSO	60	9	6	3
10304		HOLL	03 10 1437	S13	W53	03 6.6		B	CAO	40	13	6	4
10304		MWIL	03 10 1530	S14	W53	03 6.6	4	(BP)					
10304		VORO	03 10 2331	S13	W59	03 6.5			HAX	42	5		3
10304		LEAR	03 11 0035	S12	W60	03 6.5		A	HAX	40	1	1	3
10304		TACH	03 11 0507	S13	W60	03 6.7			CAO	37	3	5	2
10304		KAND	03 11 1130	S14	W66	03 6.5			DAO		2	6	3
10304		HOLL	03 11 1436	S14	W67	03 6.5		B	DSO	60	9	5	4
10304		MWIL	03 11 1530	S13	W67	03 6.6	4	(B)					
10304		VORO	03 11 2351	S12	W71	03 6.6			DAI	108	5	5	3
10304	31646	LEAR	03 12 0100	S12	W73	03 6.5		B	DSO	30	2	6	2
10304		KAND	03 12 0805	S14	W78	03 6.4			BXO		3	6	3
10304		RAMY	03 12 1152	S12	W81	03 6.4		A	HAX	30	11	2	3
10304		MWIL	03 12 1530	S13	W84	03 6.3	4	(B)					
10304		HOLL	03 12 1601	S14	W86	03 6.2		A	AXX	10	1	1	3
10299		HOLL	03 01 1745	N13	E74	03 7.3		B	DSI	70	2	5	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
10299		VORO	03 01 2358	N12	E71	03 7.3			DAI	104	4	2	3
10299		RAMY	03 02 1240	N12	E67	03 7.6		B	DSO	70	4	4	3
10299		HOLL	03 02 1425	N13	E65	03 7.5		B	DSO	90	2	8	3
10299		VORO	03 02 2353	N12	E58	03 7.4			DAO	89	2	3	3
10299		LEAR	03 03 0018	N12	E59	03 7.4		B	DAO	90	3	3	4
10299		SVTO	03 03 0752	N12	E56	03 7.5		B	CSO	60	3	6	3
10299		HOLL	03 03 1545	N13	E51	03 7.5		B	CAO	40	4	6	3
10299		VORO	03 04 0001	N12	E45	03 7.4			CAO	56	7	3	3
10299		LEAR	03 04 0035	N12	E46	03 7.5		B	DAO	60	5	5	4
10299		TACH	03 04 0508	N12	E41	03 7.3			BRO	8	3	3	3
10299		SVTO	03 04 0650	N12	E44	03 7.6		B	CRO	30	3	6	3
10299		RAMY	03 04 1216	N11	E39	03 7.4		B	CSO	20	5	4	3
10299		HOLL	03 04 1915	N13	E35	03 7.4		B	BXO	30	8	7	2
10299		VORO	03 04 2343	N12	E31	03 7.3			BRO	28	12	3	3
10299		LEAR	03 05 0210	N12	E32	03 7.5		B	DSO	30	6	5	4
10299		SVTO	03 05 0659	N12	E29	03 7.5		B	BXO	20	5	4	3
10299		TACH	03 05 0716	N12	E27	03 7.3			BRI	7	6	2	3
10299		RAMY	03 05 1300	N12	E26	03 7.5		B	CRO	10	9	7	4
10299		LEAR	03 06 0018	N13	E18	03 7.4		B	CRO	30	13	8	4
10299		VORO	03 06 0047	N12	E19	03 7.5			BXO	23	7	5	3
10299		TACH	03 06 0617	N13	E16	03 7.5			BRI	3	5	6	4
10299		HOLL	03 06 1545	N13	E10	03 7.4		B	CSO	20	18	10	3
10299		LEAR	03 07 0635	N13	E04	03 7.6		B	CRO	20	7	8	1
10299		TACH	03 07 0708	N14	W01	03 7.2			BRO	7	4	3	3
10299		RAMY	03 07 1217	N16	W03	03 7.3		B	DSO	50	13	6	2
10299		HOLL	03 07 1530	N13	W04	03 7.3		B	DSO	30	17	5	4
10299		VORO	03 07 2333	N13	W08	03 7.4			BXO	24	5	4	3
10299		LEAR	03 08 0140	N13	W09	03 7.4		B	BXO	50	17	6	3
10299		RAMY	03 08 1230	N15	W17	03 7.2		B	DAO	30	10	5	3
10299		HOLL	03 08 1540	N13	W18	03 7.3		B	BXO	20	11	6	3
10299		LEAR	03 09 0012	N13	W21	03 7.4		B	CRO	30	9	7	4
10299		RAMY	03 09 1206	N14	W30	03 7.2		B	DSO	20	4	3	4
10299		VORO	03 09 2346	N14	W36	03 7.3			BXI	25	8	3	3
10299		LEAR	03 10 0041	N13	W37	03 7.2		B	CAO	20	5	2	2
10299		RAMY	03 10 1220	N16	W42	03 7.3		B	CSO	30	3	3	3
10297		LEAR	03 01 0015	S15	E85	03 7.4		B	BXO	60	7	10	4
10297		KAND	03 01 0740	S16	E80	03 7.4			CRO		2	2	4
10297		SVTO	03 01 0840	S16	E78	03 7.3		A	AXX	10	1		3
10297		RAMY	03 01 1250	S15	E75	03 7.2		B	DAO	120	6	9	2
10297		HOLL	03 01 1745	S15	E70	03 7.0		B	DSO	130	3	6	3
10297		LEAR	03 02 0112	S15	E68	03 7.2		B	DSO	110	8	7	2
10297		SVTO	03 02 0745	S16	E65	03 7.2		B	DSO	40	4	6	3
10297		RAMY	03 02 1240	S16	E61	03 7.1		B	DAO	50	4	5	3
10297		HOLL	03 02 1425	S15	E61	03 7.2		B	CSO	30	2	4	3
10297		LEAR	03 03 0018	S16	E56	03 7.2		B	DAO	60	6	7	4
10297		SVTO	03 03 0752	S16	E49	03 7.0		B	DSO	30	2	3	3
10297		KAND	03 03 0920	S15	E49	03 7.1			DAO		2	2	3
10297		HOLL	03 03 1545	S15	E46	03 7.1		B	DAO	30	4	5	3
10297		LEAR	03 04 0035	S16	E41	03 7.1		B	CSO	80	5	5	4
10297		SVTO	03 04 0650	S17	E37	03 7.1		B	DSO	40	2	3	3
10297		RAMY	03 04 1216	S16	E34	03 7.1		B	DAO	20	4	6	3
10297		HOLL	03 04 1915	S15	E32	03 7.2		B	CSO	30	9	8	2
10297		LEAR	03 05 0210	S16	E25	03 7.0		B	DSO	40	3	2	4
10297		SVTO	03 05 0659	S16	E25	03 7.2		B	CSO	30	4	5	3
10297		RAMY	03 05 1300	S13	E17	03 6.8		B	DSO	30	7	5	4
10297		LEAR	03 06 0018	S15	E15	03 7.1		B	CSO	40	6	5	4
10297		SVTO	03 06 0915	S15	E06	03 6.8		B	DAO	20	5	7	3
10297		HOLL	03 06 1545	S15	E04	03 6.9		B	DAO	30	6	8	3
10297		LEAR	03 07 0635	S14	W04	03 7.0		B	CRO	40	12	10	1
10297		SVTO	03 07 0745	S14	W06	03 6.9		B	DSO	20	3	6	3
10297		RAMY	03 07 1217	S13	W03	03 7.3		B	CAO	30	5	7	2
10297		LEAR	03 08 0140	S14	W16	03 6.9		B	CRO	50	17	7	3
10297		SVTO	03 08 0740	S12	W22	03 6.7		B	BXO	10	2	3	3
10297		RAMY	03 08 1230	S13	W16	03 7.3		B	DSO	20	4	4	3
10297		HOLL	03 08 1540	S14	W16	03 7.4		A	AXX	10	2	1	3
10297		LEAR	03 09 0012	S13	W27	03 7.0		BG	EA0	130	27	13	4
10297		RAMY	03 09 1206	S12	W29	03 7.3		B	CSO	20	5	3	4
10297		HOLL	03 09 1820	S13	W32	03 7.3		B	BXI		2	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10297		LEAR	03	10	0041	S13	W36	03	7.3		A	HRX	10	3	1	2
10297		RAMY	03	10	1220	S12	W43	03	7.3		A	AXX	10	1	1	3
10297		HOLL	03	10	1437	S15	W44	03	7.3		A	AXX		1	1	4
10297		RAMY	03	12	1152	S11	W76	03	6.8		A	AXX	10	1	1	3
10301		VORO	03	04	0001	N21	E48	03	7.7			AXX	11	3	2	3
10301		LEAR	03	04	0035	N22	E48	03	7.7		B	CRO	20	2	3	4
10301		TACH	03	04	0508	N22	E44	03	7.6			BXO	7	2	5	3
10301		SVTO	03	04	0650	N21	E45	03	7.7		B	CRO	30	2	5	3
10301		RAMY	03	04	1216	N21	E41	03	7.6		B	DSO	30	10	6	3
10301		HOLL	03	04	1915	N22	E38	03	7.7		B	CSO	30	8	7	2
10301		VORO	03	04	2343	N21	E34	03	7.6			CAI	86	12	6	3
10301		LEAR	03	05	0210	N22	E35	03	7.8		B	DAO	50	8	3	4
10301		SVTO	03	05	0659	N23	E32	03	7.7		B	DSO	40	5	8	3
10301		TACH	03	05	0716	N23	E28	03	7.5			BRO	33	3	5	3
10301		RAMY	03	05	1300	N22	E27	03	7.6		B	DSO	30	10	8	4
10301		LEAR	03	06	0018	N22	E21	03	7.6		B	DAO	50	12	7	4
10301		VORO	03	06	0047	N21	E19	03	7.5			CRO	33	6	6	3
10301		TACH	03	06	0617	N22	E16	03	7.5			BRO	7	3	6	4
10301		SVTO	03	06	0915	N22	E16	03	7.6		B	CSO	20	3	7	3
10301		HOLL	03	06	1545	N21	E11	03	7.5		B	DAO	50	8	6	3
10301	31647	MWIL	03	06	1545	N22	E12	03	7.6	5	(BG)					
10301		VORO	03	07	0028	N21	E06	03	7.5			CRO	20	4	6	3
10301		LEAR	03	07	0635	N23	E04	03	7.6		B	CRO	40	11	7	1
10301		TACH	03	07	0708	N22	E03	03	7.5			BRI	16	5	6	3
10301		SVTO	03	07	0745	N23	E03	03	7.5		B	DSO	30	4	7	3
10301		RAMY	03	07	1217	N22	E01	03	7.6		BG	DAO	70	11	7	2
10301		HOLL	03	07	1530	N21	E00	03	7.6		B	DAO	60	18	10	4
10301	31647	MWIL	03	07	1530	N22	W01	03	7.6	4	(BG)					
10301		VORO	03	07	2333	N21	W05	03	7.6			CAI	44	12	6	3
10301		LEAR	03	08	0140	N22	W06	03	7.6		B	DRO	60	14	8	3
10301		KAND	03	08	0650	N22	W10	03	7.5			CSO		5	7	3
10301		SVTO	03	08	0740	N23	W08	03	7.7		B	BXO	10	5	6	3
10301		RAMY	03	08	1230	N22	W11	03	7.7		B	DAO	40	11	9	3
10301	31647	MWIL	03	08	1445	N22	W13	03	7.6	4	(B)					
10301		HOLL	03	08	1540	N22	W13	03	7.6		B	DAO	40	9	8	3
10301		VORO	03	08	2339	N22	W18	03	7.6			CAI	46	7	6	3
10301		LEAR	03	09	0012	N22	W18	03	7.6		B	DAO	60	7	7	4
10301		RAMY	03	09	1206	N22	W24	03	7.6		B	CSO	20	4	7	4
10301	31647	MWIL	03	09	1530	N22	W28	03	7.5	4	(B)					
10301		HOLL	03	09	1820	N21	W31	03	7.4		B	BXI	10	3	1	3
10301		VORO	03	09	2346	N21	W30	03	7.7			BRO	23	7	5	3
10301		LEAR	03	10	0041	N22	W33	03	7.5		B	BXO	20	4	2	2
10301A		HOLL	03	06	1545	S21	E14	03	7.7		A	AXX	10	3	2	3
10301A		VORO	03	07	2333	S23	W02	03	7.8			AXX	2	1		3
10301A		LEAR	03	08	0140	S21	W03	03	7.8		B	BXO	10	3	3	3
10301B		HOLL	03	06	1545	N01	E19	03	8.1		B	BXO	20	7	4	3
10307		RAMY	03	02	1240	S25	E80	03	8.7		A	HRX	30	1	1	3
10307		VORO	03	02	2353	S24	E72	03	8.5			AXX	6	1		3
10307		LEAR	03	03	0018	S25	E73	03	8.7		A	AXX	10	1	1	4
10307		VORO	03	04	0001	S24	E59	03	8.5			AXX	6	1		3
10307		LEAR	03	04	0035	S25	E59	03	8.6		A	AXX	10	1	1	4
10307		VORO	03	07	2333	S25	E12	03	8.9			BXO	7	6	3	3
10307		LEAR	03	08	0140	S26	E11	03	8.9		B	BXO	10	4	3	3
10307		KAND	03	08	0650	S26	E09	03	9.0			AX		4	3	3
10307		RAMY	03	08	1230	S26	E03	03	8.7		A	AXX	10	1	1	3
10307	31652	MWIL	03	08	1445	S27	E03	03	8.8	4	(AP)					
10307		HOLL	03	08	1540	S25	E02	03	8.8		B	CSO	10	2	2	3
10307		VORO	03	08	2339	S27	W00	03	9.0			AXX	12	5		3
10307		LEAR	03	09	0012	S27	W02	03	8.8		B	DRO	20	6	4	4
10307		RAMY	03	09	1206	S27	W09	03	8.8		A	AXX		2	2	4
10312		RAMY	03	04	1216	N09	E65	03	9.4		A	AXX		1	1	3
10312		RAMY	03	05	1300	N10	E50	03	9.3		A	AXX		1		4
10312		HOLL	03	07	1530	N10	E19	03	9.1		A	AXX	20	2	2	4
10312	31653	MWIL	03	08	1445	N09	E07	03	9.1	4	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10312	31660	HOLL	03	10	1437	N09	W20	03	9.1		A	AXX		1	1	4
10312		MWIL	03	10	1530	N09	W20	03	9.1	4	(AP)					
10312		VORO	03	10	2331	N09	W25	03	9.1			ARX	5	1		3
10312		LEAR	03	11	0035	N09	W26	03	9.1		A	AXX		1		3
10300		VORO	03	02	2353	N16	E78	03	8.9			AXX	9	1		3
10300		LEAR	03	03	0018	N15	E79	03	9.0		A	AXX	10	1	1	4
10300		KAND	03	03	0920	N15	E75	03	9.1			AX		1		3
10300		HOLL	03	03	1545	N17	E69	03	8.9		A	AXX	10	1	1	3
10300		VORO	03	04	0001	N16	E64	03	8.8			AXX	16	2		3
10300		LEAR	03	04	0035	N16	E65	03	8.9		A	HSX	30	1	1	4
10300		SVTO	03	04	0650	N14	E62	03	9.0		A	AXX		1		3
10300		RAMY	03	04	1216	N15	E58	03	8.9		B	CSO	20	2	3	3
10300		HOLL	03	04	1915	N18	E53	03	8.8		A	AXX	10	1	1	2
10300		RAMY	03	05	1300	N16	E44	03	8.9		A	HRX	10	1	1	4
10300		LEAR	03	06	0018	N17	E38	03	8.9		A	AXX	10	2	1	4
10300		VORO	03	06	0047	N15	E37	03	8.8			AXX	2	1		3
10300		VORO	03	07	0028	N15	E24	03	8.8			AXX	4	1		3
10300		LEAR	03	07	0635	N16	E22	03	8.9		B	BXO	10	3	7	1
10300	31654	MWIL	03	08	1445	N16	E10	03	9.4	3	(AF)					
10300	31654	MWIL	03	09	1530	N16	W05	03	9.3	4	(BF)					
10300		RAMY	03	10	1220	N16	W18	03	9.1		B	DSO	30	8	5	3
10300		HOLL	03	10	1437	N14	W22	03	8.9		B	BXO	10	4	5	4
10300	31654	MWIL	03	10	1530	N15	W20	03	9.1	4	(B)					
10300		VORO	03	10	2331	N15	W22	03	9.3			HRX	29	3		3
10300		LEAR	03	11	0035	N16	W25	03	9.1		B	CSO	20	5	3	3
10300		TACH	03	11	0507	N15	W27	03	9.2			BRI	7	5	4	2
10300		KAND	03	11	1130	N14	W32	03	9.1			CRO		7	4	3
10300		HOLL	03	11	1436	N15	W32	03	9.2		B	DAO	40	12	5	4
10300	31654	MWIL	03	11	1530	N16	W32	03	9.2	4	(B)					
10300		VORO	03	11	2351	N15	W37	03	9.2			CAI	68	16	3	3
10300		LEAR	03	12	0100	N16	W40	03	9.0		B	DAO	60	10	5	2
10300		KAND	03	12	0805	N14	W43	03	9.1			BXO		9	5	3
10300		RAMY	03	12	1152	N16	W44	03	9.1		B	CAO	30	12	6	3
10300	31654	MWIL	03	12	1530	N16	W46	03	9.1	4	(B)					
10300		HOLL	03	12	1601	N16	W47	03	9.1		B	CSO	30	4	6	3
10300		VORO	03	12	2359	N15	W51	03	9.1			CAI	29	7	5	3
10300		LEAR	03	13	0008	N16	W51	03	9.1		B	CSO	50	4	7	3
10300		SVTO	03	13	0725	N18	W58	03	8.9		A	HRX	20	2	1	3
10300	31654	MWIL	03	13	1600	N11	W63	03	8.9	4	(B)					
10300		HOLL	03	13	1603	N16	W62	03	9.0		A	HAX	50	1	1	4
10300		VORO	03	14	0000	N15	W67	03	8.9			HRX	11	1		3
10300		LEAR	03	14	0009	N16	W68	03	8.8		A	AXX	30	3	1	2
10300		RAMY	03	14	1230	N18	W76	03	8.7		A	AXX	20	1	1	3
10302A		HOLL	03	03	1545	S23	E75	03	9.4		A	AXX	10	1	1	3
10302		LEAR	03	04	0035	N19	E74	03	9.7		A	AXX	10	1	1	4
10302		RAMY	03	04	1216	N19	E68	03	9.7		A	HSX	30	1	1	3
10302		HOLL	03	04	1915	N21	E62	03	9.5		A	AXX	10	1	1	2
10302		LEAR	03	05	0210	N19	E62	03	9.8		B	BXO	20	2	1	4
10302		SVTO	03	05	0659	N18	E60	03	9.8		B	BXO	20	2	5	3
10302		RAMY	03	05	1300	N19	E56	03	9.8		B	CRO	20	6	6	4
10302		LEAR	03	06	0018	N20	E48	03	9.7		B	CSO	20	2	2	4
10302		VORO	03	06	0047	N19	E46	03	9.5			AXX	17	2		3
10302		HOLL	03	06	1545	N20	E38	03	9.6		A	AXX	10	3	1	3
10302	31648	MWIL	03	06	1545	N20	E39	03	9.6	4	(AP)					
10302		VORO	03	07	0028	N19	E33	03	9.5			AXX	2	1		3
10302		LEAR	03	07	0635	N20	E32	03	9.7		B	BXO	10	3	5	1
10302		RAMY	03	07	1217	N20	E30	03	9.8		B	DAO	40	6	6	2
10302		HOLL	03	07	1530	N20	E26	03	9.6		B	CAO	10	5	3	4
10302	31648	MWIL	03	07	1530	N20	E27	03	9.7	4	(BG)					
10302		VORO	03	07	2333	N19	E20	03	9.5			CRO	18	7	4	3
10302		LEAR	03	08	0140	N19	E20	03	9.6		B	CRO	20	3	2	3
10302		RAMY	03	08	1230	N18	E12	03	9.4		B	CSO	30	7	6	3
10302		HOLL	03	08	1540	N19	E08	03	9.3		B	BXO	10	6	6	3
10302		LEAR	03	09	0012	N20	E12	03	9.9		A	HRX	10	1		4
10302		RAMY	03	09	1206	N16	W02	03	9.3		B	BXO		2	2	4
10302	31657	MWIL	03	09	1530	N20	W00	03	9.6	4	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10302	31657	RAMY	03	10	1220	N18	W09	03	9.8		B	CAO	20	4	4	3
10302		MWIL	03	10	1530	N20	W11	03	9.8	4	(AP)					
10302		LEAR	03	11	0035	N20	W18	03	9.6		B	CRO	20	3	2	3
10302		TACH	03	11	0507	N20	W19	03	9.7			AXX	9	1	1	2
10305	31650	RAMY	03	07	1217	S22	E32	03	10.0		B	DSO	40	5	4	2
10305		HOLL	03	07	1530	S22	E31	03	10.0		B	DSO	30	7	3	4
10305		MWIL	03	07	1530	S23	E31	03	10.0	5	(B)					
10305		VORO	03	07	2333	S23	E24	03	9.8			CAI	74	12	4	3
10305	31650	LEAR	03	08	0140	S23	E25	03	10.0		B	DSO	70	17	4	3
10305		KAND	03	08	0650	S23	E23	03	10.0			DAO		9	7	3
10305		SVTO	03	08	0740	S23	E22	03	10.0		B	CSO	10	2	4	3
10305		RAMY	03	08	1230	S25	E18	03	9.9		B	DSO	60	16	10	3
10305	31650	MWIL	03	08	1445	S23	E18	03	10.0	5	(B)					
10305		HOLL	03	08	1540	S22	E16	03	9.9		B	DAO	50	15	6	3
10305		VORO	03	08	2339	S23	E11	03	9.8			DAI	66	9	5	3
10305		LEAR	03	09	0012	S23	E13	03	10.0		B	DAO	130	23	6	4
10305	31650	RAMY	03	09	1206	S24	E06	03	10.0		B	DAO	80	15	7	4
10305		MWIL	03	09	1530	S24	E06	03	10.1	5	(B)					
10305		HOLL	03	09	1820	S23	E04	03	10.1		B	CSI	40	11	8	3
10305		VORO	03	09	2346	S23	W03	03	9.7			CSI	63	6	6	3
10305	31650	LEAR	03	10	0041	S23	E00	03	10.0		B	DAO	70	17	6	2
10305		KAND	03	10	0800	S24	W03	03	10.1			DRO		9	6	4
10305		RAMY	03	10	1220	S23	W06	03	10.0		B	DSO	40	16	7	3
10305		HOLL	03	10	1437	S23	W07	03	10.1		B	CSO	30	13	7	4
10305	31650	MWIL	03	10	1530	S24	W07	03	10.1	4	(B)					
10305		VORO	03	10	2331	S23	W11	03	10.1			BRI	15	6	5	3
10305		LEAR	03	11	0035	S24	W12	03	10.1		B	DSO	40	3	6	3
10305		TACH	03	11	0507	S24	W14	03	10.1			BXO	5	2	6	2
10305	31650	KAND	03	11	1130	S25	W19	03	10.0			BXO		3	6	3
10305		HOLL	03	11	1436	S24	W20	03	10.1		B	BXO	110	6	8	4
10305		MWIL	03	11	1530	S24	W23	03	9.9	4	(AP)					
10305A		HOLL	03	06	1545	S15	E47	03	10.2		A	AXX	10	2	1	3
10315	31663	RAMY	03	12	1152	N03	W27	03	10.5		A	AXX		2	2	3
10315		RAMY	03	14	1230	N06	W53	03	10.5		A	HSX	20	1	1	3
10315		HOLL	03	14	1427	N02	W56	03	10.4		A	AXX		1	1	4
10315		MWIL	03	14	1600	N02	W55	03	10.5	4	(AP)					
10315		LEAR	03	15	0013	N03	W61	03	10.4		A	AXX	20	2	1	4
10315		VORO	03	15	0058	N02	W61	03	10.5			ARX	14	1		3
10315		RAMY	03	15	1212	N04	W68	03	10.4		B	CSO	30	3	3	3
10315		HOLL	03	15	1550	N02	W71	03	10.3		A	AXX	20	1	1	3
10315		LEAR	03	16	0022	N02	W74	03	10.5		A	AXX	20	2	1	3
10311	31658	RAMY	03	09	1206	S14	E51	03	13.3		B	CSO	20	4	4	4
10311		MWIL	03	09	1530	S12	E50	03	13.4	4	(B1)					
10311		HOLL	03	09	1820	S12	E48	03	13.4		B	BXO	10	4	5	3
10311		VORO	03	09	2346	S12	E44	03	13.3			CRO	70	10	4	3
10311		LEAR	03	10	0041	S13	E44	03	13.3		B	DAO	60	15	4	2
10311		KAND	03	10	0800	S12	E41	03	13.4			DSO		7	6	4
10311		RAMY	03	10	1220	S12	E38	03	13.4		B	DAO	80	10	5	3
10311		HOLL	03	10	1437	S11	E36	03	13.3		BG	CAO	60	11	6	4
10311	31658	MWIL	03	10	1530	S12	E36	03	13.3	5	(B)					
10311		VORO	03	10	2331	S12	E31	03	13.3			DAI	90	10	6	3
10311		LEAR	03	11	0035	S12	E31	03	13.3		B	DAO	60	9	7	3
10311		TACH	03	11	0507	S12	E27	03	13.2			BRI	21	7	4	2
10311		KAND	03	11	1130	S12	E26	03	13.4			DAO		8	8	3
10311		HOLL	03	11	1436	S12	E23	03	13.3		B	DAI	80	21	7	4
10311		MWIL	03	11	1530	S12	E23	03	13.4	5	(B)					
10311		VORO	03	11	2351	S12	E18	03	13.3			DAI	115	17	6	3
10311	31658	LEAR	03	12	0100	S12	E17	03	13.3		B	DSI	90	6	7	2
10311		KAND	03	12	0805	S12	E13	03	13.3			DAO		10	7	3
10311		RAMY	03	12	1152	S12	E12	03	13.4		B	DAO	130	14	6	3
10311		MWIL	03	12	1530	S12	E10	03	13.4	5	(B)					
10311		HOLL	03	12	1601	S12	E09	03	13.3		B	DSO	70	13	7	3
10311		VORO	03	12	2359	S12	E05	03	13.4			DAI	101	11	6	3
10311		LEAR	03	13	0008	S12	E05	03	13.4		B	DAO	120	10	6	3
10311		SVTO	03	13	0725	S11	E01	03	13.4		B	DAO	120	4	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10311	31658	KAND	03	13	0945	S12	E00	03	13.4			DSO		3	7	3
10311		MWIL	03	13	1600	S13	W05	03	13.3	4	(B)					
10311		HOLL	03	13	1603	S12	W04	03	13.4		B	DSO	100	15	7	4
10311		VORO	03	14	0000	S12	W08	03	13.4			DAI	69	8	4	3
10311		LEAR	03	14	0009	S12	W08	03	13.4		B	DAO	100	9	5	2
10311		SVTO	03	14	0705	S10	W14	03	13.2		B	DAO	100	4	6	3
10311		RAMY	03	14	1230	S13	W17	03	13.2		B	DAO	90	12	6	3
10311		HOLL	03	14	1427	S13	W16	03	13.4		B	DAO	70	16	6	4
10311		MWIL	03	14	1600	S12	W18	03	13.3	4	(BP)					
10311		LEAR	03	15	0013	S12	W23	03	13.3		B	CAO	90	12	5	4
10311	31658	VORO	03	15	0058	S10	W22	03	13.4			CAI	125	9	4	3
10311		SVTO	03	15	0630	S11	W28	03	13.2		B	CAO	30	4	5	2
10311		RAMY	03	15	1212	S11	W30	03	13.2		B	DAO	60	13	5	3
10311		HOLL	03	15	1550	S12	W31	03	13.3		B	CAO	40	13	5	3
10311		VORO	03	16	0009	S11	W37	03	13.2			HAX	55	5		3
10311		LEAR	03	16	0022	S12	W37	03	13.2		B	CAO	70	9	5	3
10311		SVTO	03	16	0625	S07	W42	03	13.1		A	HAX	50	1	2	3
10311		RAMY	03	16	1202	S10	W44	03	13.2		B	CAO	30	4	3	3
10311		MWIL	03	16	1800	S11	W47	03	13.2	4	(AP)					
10311		VORO	03	16	2349	S10	W50	03	13.2			HRX	32	1		3
10311	31658	LEAR	03	17	0032	S11	W51	03	13.2		A	HSX	30	1	1	3
10311		SVTO	03	17	0602	S07	W55	03	13.1		A	HSX	30	1	1	3
10311		TACH	03	17	0808	S12	W56	03	13.1			AXX	18	1	1	3
10311		KAND	03	17	1040	S11	W58	03	13.1			AX		1		3
10311		RAMY	03	17	1220	S12	W59	03	13.1		A	HSX	10	3	1	3
10311		HOLL	03	17	1544	S10	W60	03	13.1		B	BXO	10	2	1	3
10311		MWIL	03	17	1600	S10	W60	03	13.1	4	(AP)					
10311		VORO	03	17	2345	S10	W64	03	13.2			ARX	5	1		3
10311		LEAR	03	18	0145	S12	W65	03	13.2		A	HRX	30	2	3	1
10306	31651	LEAR	03	07	0635	N05	E82	03	13.4		A	HHX	200	1	3	1
10306		TACH	03	07	0708	N06	E86	03	13.7			HSX	285	1	3	3
10306		SVTO	03	07	0745	N06	E85	03	13.7		A	HHX	150	1	5	3
10306		RAMY	03	07	1217	N05	E80	03	13.5		A	HHX	450	1	4	2
10306		MWIL	03	07	1530	N05	E79	03	13.5	5	AP					
10306		HOLL	03	07	1530	N05	E80	03	13.6		A	HKX	300	1	4	4
10306		VORO	03	07	2333	N05	E74	03	13.5			HKX	682	1		3
10306		LEAR	03	08	0140	N05	E72	03	13.4		A	HHX	450	1	4	3
10306		KAND	03	08	0650	N05	E71	03	13.6			HKX		1	4	3
10306		SVTO	03	08	0740	N05	E69	03	13.5		A	HHX	500	1	3	3
10306	31651	RAMY	03	08	1230	N05	E67	03	13.5		A	HHX	480	1	4	3
10306		MWIL	03	08	1445	N05	E65	03	13.5	5	(AP)					
10306		HOLL	03	08	1540	N05	E67	03	13.7		A	HKX	440	1	5	3
10306		VORO	03	08	2339	N05	E60	03	13.5			HKX	624	2		3
10306		LEAR	03	09	0012	N06	E60	03	13.5		B	DHO	490	7	6	4
10306		RAMY	03	09	1206	N04	E54	03	13.5		B	DKO	580	7	6	4
10306		MWIL	03	09	1530	N07	E53	03	13.6	6	(BP)					
10306		HOLL	03	09	1820	N06	E49	03	13.4		A	HHX	560	1	5	3
10306		VORO	03	09	2346	N05	E47	03	13.5			HHX	652	5		3
10306		LEAR	03	10	0041	N05	E48	03	13.6		B	CKO	540	8	6	2
10306	31651	KAND	03	10	0800	N06	E43	03	13.5			CKO		3	6	4
10306		RAMY	03	10	1220	N05	E41	03	13.6		B	DKO	610	5	7	3
10306		HOLL	03	10	1437	N07	E39	03	13.5		B	CHO	430	11	6	4
10306		MWIL	03	10	1530	N07	E38	03	13.5	6	(BG)					
10306		VORO	03	10	2331	N05	E33	03	13.4			HHX	681	3		3
10306		LEAR	03	11	0035	N06	E33	03	13.5		B	CKO	450	6	5	3
10306		TACH	03	11	0507	N08	E29	03	13.4			CAO	596	3	1	2
10306		KAND	03	11	1130	N05	E28	03	13.6			DKO		3	5	3
10306		HOLL	03	11	1436	N06	E25	03	13.5		B	DKO	580	6	5	4
10306		MWIL	03	11	1530	N06	E25	03	13.5	6	(BP)					
10306		VORO	03	11	2351	N05	E20	03	13.5			HHX	647	6		3
10306	31651	LEAR	03	12	0100	N05	E20	03	13.5		B	DKO	500	3	5	2
10306		KAND	03	12	0805	N05	E16	03	13.5			DKO		3	5	3
10306		RAMY	03	12	1152	N06	E14	03	13.5		B	DKO	660	8	6	3
10306		MWIL	03	12	1530	N06	E12	03	13.5	6	(BG)					
10306		HOLL	03	12	1601	N07	E12	03	13.6		B	DKI	570	12	6	3
10306		VORO	03	12	2359	N05	E07	03	13.5			HHX	548	10		3
10306		LEAR	03	13	0008	N07	E08	03	13.6		BG	CKO	620	15	6	3
10306		SVTO	03	13	0725	N06	E04	03	13.6		B	CKO	580	7	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10306	31651	KAND	03	13	0945	N05	E02	03	13.5			CKO		4	5	3
10306		MWIL	03	13	1600	N05	W04	03	13.4	6	(BG)					
10306		HOLL	03	13	1603	N07	W02	03	13.5		B	DKI	530	17	7	4
10306		VORO	03	14	0000	N05	W06	03	13.5			HHX	754	19		3
10306		LEAR	03	14	0009	N07	W06	03	13.5		BG	CKO	580	21	6	2
10306		SVTO	03	14	0705	N07	W10	03	13.5		B	DKO	560	10	9	3
10306	31651	RAMY	03	14	1230	N07	W14	03	13.5		B	DKO	660	14	8	3
10306		HOLL	03	14	1427	N07	W14	03	13.5		B	DKI	530	18	8	4
10306		MWIL	03	14	1600	N05	W15	03	13.5	6	(BG)					
10306		LEAR	03	15	0013	N07	W20	03	13.5		BG	CKO	660	16	6	4
10306		VORO	03	15	0058	N05	W21	03	13.5			HKX	672	11		3
10306		SVTO	03	15	0630	N07	W24	03	13.5		A	HKX	550	2	5	2
10306	31651	RAMY	03	15	1212	N08	W27	03	13.5		B	DKO	660	14	7	3
10306		HOLL	03	15	1550	N07	W28	03	13.6		BGD	DKI	540	16	6	3
10306		VORO	03	16	0009	N05	W33	03	13.5			HKX	602	12		3
10306		LEAR	03	16	0022	N07	W33	03	13.5		BG	DKO	590	11	5	3
10306		SVTO	03	16	0625	N08	W36	03	13.6		B	DKO	660	6	7	3
10306		RAMY	03	16	1202	N08	W39	03	13.6		BD	DKI	640	20	8	3
10306	31651	MWIL	03	16	1800	N05	W44	03	13.4	6	(BG)					
10306		VORO	03	16	2349	N05	W46	03	13.5			HKX	569	7		3
10306		LEAR	03	17	0032	N07	W46	03	13.6		BG	DKO	560	11	5	3
10306		SVTO	03	17	0602	N09	W50	03	13.5		B	DKO	660	4	9	3
10306		TACH	03	17	0808	N04	W52	03	13.4			DAO	384	4	2	3
10306		KAND	03	17	1040	N06	W54	03	13.4			DKO		6	7	3
10306	31651	RAMY	03	17	1220	N04	W56	03	13.3		BD	DKO	610	9	6	3
10306		HOLL	03	17	1544	N06	W57	03	13.4		BD	DKC	550	8	6	3
10306		MWIL	03	17	1600	N05	W57	03	13.4	6	(D)					
10306		VORO	03	17	2345	N06	W59	03	13.6			HKX	727	8		3
10306		LEAR	03	18	0145	N05	W61	03	13.5		BG	DKO	550	4	7	1
10306		SVTO	03	18	0554	N09	W64	03	13.4		B	DKO	530	2	6	3
10306	31651	KAND	03	18	1155	N06	W68	03	13.4			DKO		4	6	3
10306		RAMY	03	18	1220	N07	W67	03	13.5		BD	DKO	720	7	6	3
10306		MWIL	03	18	1530	N06	W69	03	13.5	5	(BG)					
10306		HOLL	03	18	1730	N05	W69	03	13.6		BD	DKO	360	3	6	3
10306		VORO	03	18	2328	N05	W73	03	13.5			HKX	511	12		3
10306		LEAR	03	19	0130	N05	W73	03	13.6		BG	DKO	420	5	9	1
10306	31651	KAND	03	19	0730	N05	W80	03	13.3			DAO		4	6	3
10306		RAMY	03	19	1210	N07	W82	03	13.4		B	DKO	330	4	5	2
10306		SVTO	03	19	1230	N12	W85	03	13.1		B	CSO	190	2	10	3
10306		HOLL	03	19	1518	N06	W82	03	13.5		B	CKO	240	2	4	3
10306		MWIL	03	19	1530	N06	W82	03	13.5	5	(AP)					
10313	31661	SVTO	03	13	0725	N32	E09	03	14.0		A	HRX	10	2	2	3
10313		KAND	03	13	0945	N31	E06	03	13.9			HR		1	1	3
10313		MWIL	03	13	1600	N31	E03	03	13.9	4	(BP)					
10313		HOLL	03	13	1603	N32	E03	03	13.9		B	CSO	50	8	6	4
10313		VORO	03	14	0000	N31	W02	03	13.8			CAI	36	7	2	3
10313		LEAR	03	14	0009	N32	W02	03	13.8		B	CRO	50	10	4	2
10313	31661	SVTO	03	14	0705	N34	W03	03	14.0		B	DAO	70	3	6	3
10313		RAMY	03	14	1230	N32	W09	03	13.8		B	DAO	80	9	6	3
10313		HOLL	03	14	1427	N33	W08	03	14.0		B	DAO	80	5	7	4
10313		MWIL	03	14	1600	N33	W08	03	14.0	4	(B)					
10313		LEAR	03	15	0013	N33	W14	03	13.9		B	DAO	70	4	6	4
10313		VORO	03	15	0058	N32	W14	03	13.9			DAO	65	2	4	3
10313	31661	SVTO	03	15	0630	N34	W15	03	14.1		B	BXO	10	2	6	2
10313		RAMY	03	15	1212	N33	W21	03	13.8		B	DSO	50	6	7	3
10313		HOLL	03	15	1550	N34	W22	03	13.9		B	DSO	80	5	7	3
10313		VORO	03	16	0009	N32	W26	03	13.9			BRO	34	3	5	3
10313		LEAR	03	16	0022	N33	W27	03	13.9		B	DAO	60	3	7	3
10313		SVTO	03	16	0625	N35	W27	03	14.1		B	DSO	60	4	8	3
10313	31661	RAMY	03	16	1202	N32	W34	03	13.8		B	DAO	40	8	7	3
10313		MWIL	03	16	1800	N33	W37	03	13.8	4	(B)					
10313		VORO	03	16	2349	N30	W42	03	13.7			HRX	23	2		3
10313		LEAR	03	17	0032	N30	W41	03	13.8		B	BXO	20	2	2	3
10313		RAMY	03	17	1220	N30	W48	03	13.7		B	BXO	10	4	1	3
10313		HOLL	03	17	1544	N29	W49	03	13.8		A	AXX		1		3
10308	31655	RAMY	03	08	1230	N08	E80	03	14.5		A	HAX	60	1	1	3
10308		MWIL	03	08	1445	N09	E79	03	14.5	3	AP					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10308		HOLL	03	08	1540	N09	E80	03	14.6		A	HSX	60	1	2	3
10308		VORO	03	08	2339	N09	E74	03	14.5			HAX	53	1		3
10308		LEAR	03	09	0012	N08	E73	03	14.5		B	CAO	100	3	3	4
10308		RAMY	03	09	1206	N08	E68	03	14.6		B	CSO	50	2	3	4
10308	31659	MWIL	03	09	1530	N08	E65	03	14.5	4	(AF)					
10308		HOLL	03	09	1820	N09	E63	03	14.5		A	HSX	50	1	1	3
10308		VORO	03	09	2346	N09	E60	03	14.5			HAX	39	1		3
10308		LEAR	03	10	0041	N08	E60	03	14.5		A	HSX	40	1	1	2
10308		KAND	03	10	0800	N09	E56	03	14.5			HS		1	1	4
10308		RAMY	03	10	1220	N08	E53	03	14.5		A	HAX	30	2	1	3
10308		HOLL	03	10	1437	N10	E52	03	14.5		A	HAX	20	1	1	4
10308	31659	MWIL	03	10	1530	N08	E51	03	14.5	5	(AF)					
10308		VORO	03	10	2331	N09	E47	03	14.5			HRX	20	2		3
10308		LEAR	03	11	0035	N09	E46	03	14.5		A	HAX	30	1	1	3
10308		TACH	03	11	0507	N09	E42	03	14.4			HSX	25	1	1	2
10308		KAND	03	11	1130	N09	E42	03	14.6			HA		1	1	3
10308		HOLL	03	11	1436	N10	E38	03	14.5		A	HSO	20	3	1	4
10308	31659	MWIL	03	11	1530	N08	E38	03	14.5	4	(AF)					
10308		VORO	03	11	2351	N09	E33	03	14.5			ARX	10	2		3
10308		LEAR	03	12	0100	N09	E33	03	14.5		A	HSX	10	2	1	2
10308		KAND	03	12	0805	N09	E28	03	14.4			HR		1	1	3
10308		RAMY	03	12	1152	N09	E27	03	14.5		A	HRX	10	1	1	3
10308	31659	MWIL	03	12	1530	N09	E25	03	14.5	4	(AF)					
10308		HOLL	03	12	1601	N11	E24	03	14.5		B	BXO	10	2	3	3
10308		VORO	03	12	2359	N09	E20	03	14.5			ARX	2	1		3
10308		LEAR	03	13	0008	N09	E20	03	14.5		A	AXX	10	2	1	3
10308	31659	MWIL	03	13	1600	N11	E09	03	14.3	3	(AF)					
10308		HOLL	03	13	1603	N11	E07	03	14.2		B	BXO	10	2	3	4
10308		LEAR	03	14	0009	N09	E06	03	14.4		A	HRX	10	3	1	2
10308		RAMY	03	14	1230	N11	E00	03	14.5		B	CSO	10	3	3	3
10308		HOLL	03	14	1427	N11	W02	03	14.4		B	BXO	10	3	3	4
10308	31659	MWIL	03	14	1600	N11	W02	03	14.5	3	(BF)					
10308		LEAR	03	15	0013	N11	W07	03	14.5		B	BRO	10	3	3	4
10308		VORO	03	15	0058	N10	W09	03	14.4			ARX	6	1		3
10308		SVTO	03	15	0630	N11	W12	03	14.4		A	AXX		1		2
10308		RAMY	03	15	1212	N10	W13	03	14.5		B	CSO	20	5	4	3
10308		HOLL	03	15	1550	N10	W17	03	14.4		B	CSO	20	6	3	3
10308		VORO	03	16	0009	N09	W21	03	14.4			BRI	6	3		3
10308		LEAR	03	16	0022	N10	W22	03	14.4		B	BXO	10	4	3	3
10308		SVTO	03	16	0625	N12	W24	03	14.4		B	DSO	30	4	3	3
10308		RAMY	03	16	1202	N10	W27	03	14.5		B	BXO	20	4	3	3
10308	31659	MWIL	03	16	1800	N12	W30	03	14.5	3	(AF)					
10314	31662	MWIL	03	13	1600	S13	E21	03	15.2	3	(AP)					
10314		VORO	03	14	0000	S15	E11	03	14.8			HRX	15	1		3
10314		LEAR	03	14	0009	S14	E14	03	15.1		G	CRO	30	8	7	2
10314		SVTO	03	14	0705	S14	E08	03	14.9		G	DSO	70	5	6	3
10314		RAMY	03	14	1230	S15	E07	03	15.0		BG	DAI	110	21	9	3
10314		HOLL	03	14	1427	S14	E05	03	15.0		B	DAO	90	17	7	4
10314	31662	MWIL	03	14	1600	S14	E03	03	14.9	5	(BG)					
10314		LEAR	03	15	0013	S13	W01	03	14.9		BG	DAO	180	22	9	4
10314		VORO	03	15	0058	S14	W03	03	14.8			DAI	175	15	6	3
10314		SVTO	03	15	0630	S14	W05	03	14.9		B	EAO	160	11	12	2
10314		RAMY	03	15	1212	S14	W07	03	15.0		B	EKI	290	35	11	3
10314		HOLL	03	15	1550	S13	W11	03	14.8		BG	EAI	230	38	11	3
10314		VORO	03	16	0009	S14	W15	03	14.9			DAI	226	21	7	3
10314		LEAR	03	16	0022	S14	W14	03	14.9		BG	EAO	280	39	11	3
10314		SVTO	03	16	0625	S13	W18	03	14.9		BG	EKI	420	22	12	3
10314		RAMY	03	16	1202	S15	W20	03	15.0		BGD	EKI	430	33	11	3
10314	31662	MWIL	03	16	1800	S15	W25	03	14.8	5	(D)					
10314		VORO	03	16	2349	S15	W26	03	15.0			EAI	622	25	11	3
10314		LEAR	03	17	0032	S15	W27	03	15.0		BGD	EKO	330	23	12	3
10314		SVTO	03	17	0602	S14	W31	03	14.9		BG	EKO	440	12	12	3
10314		TACH	03	17	0808	S16	W31	03	15.0			DAI	298	11	11	3
10314		KAND	03	17	1040	S15	W33	03	14.9			EKC		16	14	3
10314		RAMY	03	17	1220	S17	W33	03	15.0		BGD	EKI	510	42	13	3
10314		HOLL	03	17	1544	S16	W35	03	15.0		BGD	EKC	520	29	13	3
10314	31662	MWIL	03	17	1600	S15	W36	03	14.9	4	(D)					
10314		VORO	03	17	2345	S15	W39	03	15.0			EAI	801	27	12	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
10314		LEAR	03 18 0145	S16	W41	03 15.0		BGD	EKI	450	13	11	1
10314		SVTO	03 18 0554	S12	W44	03 14.9		BG	EKI	490	12	15	3
10314		KAND	03 18 1155	S15	W46	03 15.0			EKI		14	14	3
10314		RAMY	03 18 1220	S15	W47	03 14.9		BGD	EKI	660	33	13	3
10314	31662	MWIL	03 18 1530	S15	W49	03 14.9	5	(D)					
10314		HOLL	03 18 1730	S16	W49	03 15.0		BGD	EKC	520	21	14	3
10314		VORO	03 18 2328	S15	W52	03 15.0			EAI	809	33	13	3
10314		LEAR	03 19 0130	S15	W53	03 15.0		BGD	EKI	500	18	14	1
10314		KAND	03 19 0730	S16	W57	03 15.0			EAC		9	13	3
10314		RAMY	03 19 1210	S14	W61	03 14.9		BGD	EKI	490	17	15	2
10314		SVTO	03 19 1230	S11	W60	03 15.0		BG	EAO	210	12	14	3
10314		HOLL	03 19 1518	S15	W62	03 14.9		BGD	EKC	420	23	14	3
10314	31662	MWIL	03 19 1530	S15	W62	03 14.9	5	(B)					
10314		VORO	03 19 2328	S15	W65	03 15.0			EAI	436	29	13	3
10314		LEAR	03 20 0015	S16	W67	03 14.9		BGD	EKI	440	18	15	2
10314		KAND	03 20 0745	S15	W73	03 14.8			FAI		8	16	3
10314		SVTO	03 20 0915	S09	W73	03 14.9		BG	ESO	270	11	15	3
10314		RAMY	03 20 1200	S12	W73	03 15.0		BG	EAO	360	10	13	3
10314		HOLL	03 20 1452	S15	W74	03 15.0		B	EAI	140	5	12	4
10314	31662	MWIL	03 20 1545	S15	W75	03 15.0	4	(B)					
10314		VORO	03 20 2338	S16	W75	03 15.3			DAI	130	10	5	3
10314		LEAR	03 21 0009	S14	W79	03 15.0		BG	EAO	180	7	12	3
10314		SVTO	03 21 0715	S12	W89	03 14.6		A	HAX	30	1	5	3
10314		RAMY	03 21 1231	S13	W87	03 14.9		B	CAO	40	5	6	3
10314A		HOLL	03 09 1820	N05	E75	03 15.4		A	AXX	10	1	1	3
10314C		VORO	03 10 2331	N12	E62	03 15.6			AXX	13	3		3
10314B		VORO	03 20 2338	N11	W54	03 16.9			HRX	15	5		3
10314B		LEAR	03 21 0009	N12	W54	03 16.9		B	BXO	10	2	3	3
10314B		RAMY	03 21 1231	N13	W61	03 16.9		B	BXO	20	2	4	3
10314B		LEAR	03 22 0017	N12	W67	03 17.0		B	BXO	20	2	3	3
10314B		RAMY	03 22 1232	N13	W76	03 16.8		B	BXO	10	2	2	3
10322		SVTO	03 25 0601	N21	W63	03 20.4		A	HRX	10	1	1	3
10322		KAND	03 25 0805	N18	W65	03 20.4			HS		1	2	4
10322		RAMY	03 25 1315	N19	W69	03 20.3		A	HSX	60	1	1	2
10322		HOLL	03 25 1419	N17	W67	03 20.5		A	HSX	60	1	1	3
10322	31670	MWIL	03 25 1530	N18	W68	03 20.5	5	(AP)					
10322		VORO	03 25 2330	N19	W72	03 20.5			HAX	45	1		3
10322		KAND	03 26 0805	N17	W79	03 20.3			HA		2	2	3
10322		RAMY	03 26 1200	N19	W78	03 20.5		B	DAO	90	3	5	3
10322		HOLL	03 26 1415	N16	W79	03 20.6		A	HAX	60	2	2	3
10322	31670	MWIL	03 26 1545	N18	W82	03 20.4	5	AP					
10322A		KAND	03 26 0805	S07	W72	03 20.9			AX		1		3
10317		HOLL	03 19 1518	N04	E20	03 21.1		A	HSX	10	1	1	3
10317	31665	MWIL	03 19 1530	N04	E22	03 21.3	4	(BP)					
10317		VORO	03 19 2328	N04	E15	03 21.1			HRX	9	1		3
10317		LEAR	03 20 0015	N04	E16	03 21.2		B	CAO	20	4	4	2
10317		KAND	03 20 0745	N03	E11	03 21.1			BXO		2	2	3
10317		SVTO	03 20 0915	N04	E11	03 21.2		B	CRO	20	3	3	3
10317		RAMY	03 20 1200	N04	E10	03 21.2		B	DAO	30	4	6	3
10317		HOLL	03 20 1452	N04	E07	03 21.1		A	HSX	10	2	1	4
10317	31665	MWIL	03 20 1545	N04	E06	03 21.1	4	(AP)					
10317		VORO	03 20 2338	N04	E01	03 21.0			AXX	5	2		3
10317		LEAR	03 21 0009	N04	E01	03 21.1		A	AXX	10	4	1	3
10317		RAMY	03 21 1231	N03	W06	03 21.1		B	BXO	10	3	2	3
10317		HOLL	03 21 1528	N04	W08	03 21.0		A	AXX	10	1	1	4
10317		LEAR	03 22 0017	N07	W13	03 21.0		A	AXX	10	1	1	3
10317		RAMY	03 22 1232	N04	W19	03 21.1		B	BXO		3	3	3
10317B	31671	MWIL	03 25 1530	N12	W54	03 21.6	3	(AF)					
10317A		KAND	03 20 0745	S23	E18	03 21.7			AX		2	2	3
10316		VORO	03 17 2345	S10	E78	03 23.8			BRI	14	4	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
10316	31664	SVTO	03 18 0554	S14 E75	03 23.9		A	AXX		1		3
10316		KAND	03 18 1155	S11 E73	03 24.0			BXO		2	1	3
10316		RAMY	03 18 1220	S11 E72	03 23.9		B	DSO	10	3	4	3
10316		MWIL	03 18 1530	S11 E68	03 23.8	3	(AP)					
10316		HOLL	03 18 1730	S11 E68	03 23.8		B	CRO	50	3	2	3
10316		VORO	03 18 2328	S10 E64	03 23.8			ARX	18	1		3
10316		LEAR	03 19 0130	S11 E64	03 23.9		B	CSO	40	4	4	1
10316		KAND	03 19 0730	S10 E61	03 23.9			AX		1	1	3
10316		RAMY	03 19 1210	S12 E58	03 23.9		B	CSO	40	3	4	2
10316		SVTO	03 19 1230	S16 E58	03 23.9		A	AXX		1		3
10316	31664	HOLL	03 19 1518	S12 E56	03 23.8		B	CSO	20	2	3	3
10316		MWIL	03 19 1530	S11 E55	03 23.8	4	(BP)					
10316		VORO	03 19 2328	S10 E51	03 23.8			ARX	11	1		3
10316		LEAR	03 20 0015	S12 E52	03 23.9		B	CAO	40	4	4	2
10316		KAND	03 20 0745	S12 E47	03 23.9			HR		1	1	3
10316		SVTO	03 20 0915	S16 E46	03 23.9		A	HRX	10	1		3
10316		RAMY	03 20 1200	S12 E44	03 23.8		A	HSX	20	1	1	3
10316		HOLL	03 20 1452	S11 E42	03 23.8		A	HSX	20	1	1	4
10316		MWIL	03 20 1545	S11 E42	03 23.8	4	(AP)					
10316		VORO	03 20 2338	S10 E37	03 23.8			ARX	9	1		3
10316	31664	LEAR	03 21 0009	S12 E37	03 23.8		A	HSX	10	1	1	3
10316		SVTO	03 21 0715	S11 E33	03 23.8		A	HSX	10	1	1	3
10316		RAMY	03 21 1231	S12 E30	03 23.8		B	CSO	20	3	3	3
10316		HOLL	03 21 1528	S11 E28	03 23.7		A	HSX	10	1	1	4
10316		MWIL	03 21 1545	S11 E29	03 23.8	5	(AP)					
10316		VORO	03 21 2328	S11 E24	03 23.8			ARX	9	1		3
10316		LEAR	03 22 0017	S12 E24	03 23.8		A	HSX	10	1	1	3
10316		SVTO	03 22 0650	S12 E19	03 23.7		A	AXX		1		3
10316		KAND	03 22 0845	S11 E18	03 23.7			AX		2	1	2
10316		RAMY	03 22 1232	S12 E17	03 23.8		A	HSX	10	1	1	3
10316	31664	HOLL	03 22 1505	S12 E15	03 23.7		B	BXO	10	3	2	3
10316		MWIL	03 22 1530	S11 E16	03 23.8	4	(AP)					
10316		VORO	03 22 2333	S11 E11	03 23.8			AXX	4	1		3
10316		LEAR	03 23 0136	S11 E10	03 23.8		A	AXX	10	2	2	4
10316		SVTO	03 23 0630	S11 E07	03 23.8		B	CSO	20	2	2	3
10316		RAMY	03 23 1320	S10 E03	03 23.8		B	CRO		2	2	3
10316		KAND	03 23 1325	S10 E03	03 23.8			AX		2	1	2
10316		HOLL	03 23 1515	S11 E02	03 23.8		B	BXO	10	3	2	3
10316		MWIL	03 23 1530	S11 E02	03 23.8	4	(AP)					
10316A		VORO	03 24 2352	S08 W10	03 24.2			ARX	4	3		2
10316A		KAND	03 25 0805	S09 W14	03 24.3			BXO		4	4	4
10320	31668	KAND	03 24 0840	N05 E16	03 25.5			DAO		4	4	3
10320		RAMY	03 24 1230	N05 E13	03 25.5		B	DSO	20	6	4	3
10320		HOLL	03 24 1424	N05 E12	03 25.5		B	DSO	30	5	4	4
10320		MWIL	03 24 1545	N05 E12	03 25.5	4	(B)					
10320		VORO	03 24 2352	N05 E08	03 25.6			AXX	5	2		2
10320		SVTO	03 25 0601	N05 E03	03 25.5		B	CSO	40	5	5	3
10320		KAND	03 25 0805	N05 E02	03 25.5			BXO		4	5	4
10320		RAMY	03 25 1315	N06 W03	03 25.3		B	BXO	20	5	7	2
10320		HOLL	03 25 1419	N04 W03	03 25.4		A	AXX		1	1	3
10320		KAND	03 26 0755	N03 W15	03 25.2			BXO		4	3	3
10320	31668	RAMY	03 26 1200	N07 W14	03 25.4		GD	DAX	20	2	7	3
10320		HOLL	03 26 1415	N05 W15	03 25.5		A	HSX	20	5	3	3
10320		MWIL	03 26 1545	N05 W16	03 25.4	4	(AP)					
10320		SVTO	03 27 0735	N06 W24	03 25.5		A	AXX	40	4	3	3
10320		RAMY	03 27 1521	N06 W31	03 25.3		B	CSO	20	6	4	2
10320		HOLL	03 27 1729	N04 W30	03 25.5		B	BXO	10	6	5	3
10320		KAND	03 28 0755	N04 W40	03 25.3			BXO		4	2	3
10320		RAMY	03 28 1202	N06 W42	03 25.3		B	CSO	30	11	5	3
10320		VORO	03 29 0013	N06 W50	03 25.3			CRI	100	9	6	4
10320		SVTO	03 29 1151	N07 W58	03 25.1		B	CSO	30	5	6	3
10320	31675	KAND	03 29 1225	N06 W58	03 25.2			BXO		8	6	3
10320		RAMY	03 29 1456	N07 W57	03 25.3		B	DSO	50	7	7	2
10320		MWIL	03 29 1600	N06 W58	03 25.3	4	(B)					
10320		VORO	03 29 2309	N06 W62	03 25.3			DAI	83	6	3	3
10320		SVTO	03 30 0705	N08 W67	03 25.3		B	CAO	120	5	5	3
10320		KAND	03 30 0955	N06 W70	03 25.2			CSO		2	6	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10320		RAMY	03	30	1128	N07	W69	03	25.3		B	DAO	60	5	7	3
10320		HOLL	03	30	1430	N04	W68	03	25.5		B	CAO	110	3	5	4
10320	31675	MWIL	03	30	1530	N06	W70	03	25.4	5	(BP)					
10320	31675	MWIL	03	31	1500	N06	W84	03	25.3	5	AP					
10319		SVTO	03	23	0630	N13	E64	03	28.1		B	CSO	40	3	4	3
10319		RAMY	03	23	1320	N14	E58	03	27.9		B	DAO	30	7	5	3
10319		KAND	03	23	1325	N14	E60	03	28.1			DSO		2	4	2
10319		HOLL	03	23	1515	N12	E56	03	27.8		B	CAI	30	5	5	3
10319	31667	MWIL	03	23	1530	N13	E57	03	27.9	4	(B)					
10319		VORO	03	23	2336	N13	E53	03	28.0			DAO	40	8	5	2
10319		KAND	03	24	0840	N13	E47	03	27.9			DAO		4	7	3
10319		RAMY	03	24	1230	N14	E45	03	27.9		B	DAO	40	8	8	3
10319		HOLL	03	24	1424	N12	E45	03	28.0		B	DSO	40	9	9	4
10319	31667	MWIL	03	24	1545	N13	E43	03	27.9	5	(BP)					
10319		VORO	03	24	2352	N13	E38	03	27.9			DAI	77	12	8	2
10319		SVTO	03	25	0601	N12	E35	03	27.9		B	DSO	60	5	9	3
10319		KAND	03	25	0805	N13	E33	03	27.8			DAO		9	10	4
10319		RAMY	03	25	1315	N13	E31	03	27.9		B	DSI	80	13	10	2
10319		HOLL	03	25	1419	N13	E29	03	27.8		B	DSI	70	12	9	3
10319	31667	MWIL	03	25	1530	N13	E29	03	27.8	4	(B)					
10319		VORO	03	25	2330	N12	E24	03	27.8			DAI	81	15	8	3
10319		SVTO	03	26	0535	N12	E21	03	27.8		B	DSO	70	5	7	3
10319		KAND	03	26	0805	N13	E18	03	27.7			DAO		10	6	3
10319		RAMY	03	26	1200	N13	E16	03	27.7		B	DAI	100	17	8	3
10319		HOLL	03	26	1415	N14	E14	03	27.6		B	DAI	160	18	8	3
10319	31667	MWIL	03	26	1545	N13	E15	03	27.8	5	(B)					
10319		VORO	03	27	0020	N12	E08	03	27.6			DKI	343	35	5	3
10319		SVTO	03	27	0735	N13	E07	03	27.8		B	DAI	220	24	8	3
10319		KAND	03	27	0755	N13	E03	03	27.5			DKO		17	9	3
10319		RAMY	03	27	1521	N12	E01	03	27.7		BG	DKC	420	39	10	2
10319		HOLL	03	27	1729	N12	W01	03	27.6		B	DKI	410	29	9	3
10319	31667	MWIL	03	27	1730	N12	W01	03	27.6	5	B					
10319		VORO	03	27	2334	N13	W04	03	27.7			DKI	505	32	6	4
10319		KAND	03	28	0755	N13	W08	03	27.7			EKI		27	11	3
10319		RAMY	03	28	1202	N12	W12	03	27.6		BG	EKI	440	32	11	3
10319		VORO	03	29	0013	N13	W17	03	27.7			DKI	507	35	6	4
10319		SVTO	03	29	1151	N12	W24	03	27.7		B	CAO	230	8	11	3
10319		KAND	03	29	1225	N12	W24	03	27.7			EKO		15	11	3
10319		RAMY	03	29	1456	N13	W25	03	27.7		BG	EKO	400	20	12	2
10319	31667	MWIL	03	29	1600	N12	W26	03	27.7	5	(B)					
10319		VORO	03	29	2309	N12	W29	03	27.8			CHI	342	20	9	3
10319		SVTO	03	30	0705	N13	W35	03	27.6		BG	EKO	280	10	13	3
10319		KAND	03	30	0955	N11	W36	03	27.7			CKO		8	11	3
10319		RAMY	03	30	1128	N13	W36	03	27.8		BG	EKO	270	9	11	3
10319		HOLL	03	30	1430	N12	W36	03	27.9		B	EAO	210	12	12	4
10319	31667	MWIL	03	30	1530	N11	W40	03	27.6	5	(BP)					
10319		KAND	03	31	0905	N14	W49	03	27.7			CSO		11	8	4
10319		KAND	03	31	0905	N14	W51	03	27.5			CSO		11	8	4
10319		SVTO	03	31	1112	N13	W52	03	27.5		B	CAO	80	6	4	3
10319		RAMY	03	31	1145	N13	W50	03	27.7		B	DAO	180	4	10	3
10319		HOLL	03	31	1419	N13	W52	03	27.7		B	EAO	140	5	11	5
10319	31667	MWIL	03	31	1500	N12	W52	03	27.7	5	(BP)					
10319		VORO	03	31	2302	N12	W56	03	27.7			CAO	300	4	9	3
10319		TACH	04	01	0559	N12	W58	03	28.0			CSO	132	2	10	3
10319		SVTO	04	01	0900	N13	W66	03	27.5		A	HAX	190	1	4	3
10319		RAMY	04	01	1200	N14	W69	03	27.4		A	HAX	120	1	2	3
10319	31667	MWIL	04	01	1430	N11	W68	03	27.6	5	(AP)					
10319		HOLL	04	01	1530	N10	W69	03	27.6		A	HAX	70	3	2	3
10319		VORO	04	01	2310	N12	W73	03	27.6			HHX	356	4		3
10319		SVTO	04	02	0715	N12	W78	03	27.5		A	HSX	120	2	2	4
10319		KAND	04	02	0750	N10	W77	03	27.6			HS		1	3	3
10319		HOLL	04	02	1500	N12	W85	03	27.3		A	HAX	120	1	2	3
10318		RAMY	03	22	1232	S16	E79	03	28.5		B	CSO	40	4	4	3
10318		HOLL	03	22	1505	S15	E79	03	28.6		B	CAO	30	3	5	3
10318	31666	MWIL	03	22	1530	S14	E79	03	28.6	4	(B)					
10318		VORO	03	22	2334	S14	E76	03	28.7			CAI	62	6	12	3
10318		LEAR	03	23	0136	S14	E74	03	28.6		B	CAO	100	9	8	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10318		SVTO	03 23 0630	S16	E70	03 28.6		B	DSO	80	4	8	3
10318		RAMY	03 23 1320	S14	E67	03 28.6		B	DAO	30	7	5	3
10318		KAND	03 23 1325	S15	E71	03 28.9			HS		2	2	2
10318		HOLL	03 23 1515	S16	E65	03 28.6		B	CAO	80	5	9	3
10318	31666	MWIL	03 23 1530	S14	E66	03 28.6	4	(BF)					
10318		VORO	03 23 2336	S15	E64	03 28.8			DAO	61	9	1	2
10318		KAND	03 24 0840	S15	E59	03 28.8			CSO		3	7	3
10318		RAMY	03 24 1230	S14	E54	03 28.6		B	DAO	60	6	7	3
10318		HOLL	03 24 1424	S16	E53	03 28.6		B	CAO	60	7	7	4
10318	31666	MWIL	03 24 1545	S15	E53	03 28.7	5	(BF)					
10318		VORO	03 24 2352	S14	E44	03 28.3			AXX	3	2		2
10318		VORO	03 24 2352	S15	E50	03 28.8			DAO	39	6	1	2
10318		SVTO	03 25 0601	S17	E47	03 28.8		B	DSO	70	2	2	3
10318		KAND	03 25 0805	S14	E44	03 28.7			DAO		4	8	4
10318		RAMY	03 25 1315	S15	E42	03 28.7		B	DAO	30	3	3	2
10318		HOLL	03 25 1419	S15	E43	03 28.8		B	CSO	20	3	2	3
10318	31666	MWIL	03 25 1530	S15	E41	03 28.7	4	(AF)					
10318		VORO	03 25 2330	S15	E37	03 28.8			HRX	19	4		3
10318		SVTO	03 26 0535	S17	E34	03 28.8		A	HSX	10	1	1	3
10318		KAND	03 26 0805	S15	E30	03 28.6			CSO		7	7	3
10318		RAMY	03 26 1200	S16	E27	03 28.5		B	DSO	70	11	9	3
10318		HOLL	03 26 1415	S15	E27	03 28.6		B	DAO	60	10	10	3
10318	31666	MWIL	03 26 1545	S15	E25	03 28.5	4	(B)					
10318		VORO	03 27 0020	S13	E19	03 28.4			BRI	13	5	6	3
10318		SVTO	03 27 0735	S15	E17	03 28.6		B	DRO	40	5	8	3
10318		KAND	03 27 0755	S15	E16	03 28.5			DRO		5	7	3
10318		RAMY	03 27 1521	S15	E11	03 28.5		B	DSO	40	12	9	2
10318		HOLL	03 27 1729	S15	E11	03 28.6		B	BXO	20	6	7	3
10318	31666	MWIL	03 27 1730	S15	E11	03 28.6	4	B					
10318		VORO	03 27 2334	S14	E07	03 28.5			BRI	15	4	6	4
10318		KAND	03 28 0755	S15	E03	03 28.5			BXO		5	6	3
10318		RAMY	03 28 1202	S15	E00	03 28.5		B	DSO	30	11	7	3
10318		VORO	03 29 0013	S14	W06	03 28.5			DAI	97	18	4	4
10318		SVTO	03 29 1151	S14	W15	03 28.4		B	BXO	20	8	5	3
10318		KAND	03 29 1225	S14	W13	03 28.5			CAO		17	7	3
10318		RAMY	03 29 1456	S13	W16	03 28.4		B	DAO	120	22	8	2
10318	31666	MWIL	03 29 1600	S14	W16	03 28.4	4	(B)					
10318		VORO	03 29 2309	S13	W20	03 28.4			DRI	104	35	5	3
10318		SVTO	03 30 0705	S13	W25	03 28.4		BG	DAI	80	12	8	3
10318		KAND	03 30 0955	S14	W28	03 28.3			CAO		8	7	3
10318		RAMY	03 30 1128	S13	W29	03 28.3		B	DAO	30	18	10	3
10318		HOLL	03 30 1430	S14	W29	03 28.4		B	DSI	70	13	8	4
10318	31666	MWIL	03 30 1530	S14	W30	03 28.4	4	(BG)					
10318		KAND	03 31 0905	S14	W41	03 28.3			CSO		11	8	4
10318		SVTO	03 31 1112	S13	W41	03 28.4		B	DSO	40	7	8	3
10318		RAMY	03 31 1145	S12	W43	03 28.2		B	DAO	80	8	8	3
10318		HOLL	03 31 1419	S13	W45	03 28.2		B	DAO	40	8	7	5
10318	31666	MWIL	03 31 1500	S14	W45	03 28.2	4	(BG)					
10318		VORO	03 31 2302	S13	W49	03 28.3			CRI	36	6	5	3
10318		TACH	04 01 0559	S13	W54	03 28.3			AXX	13	1	1	3
10318		SVTO	04 01 0900	S11	W59	03 28.0		B	CAO	40	3	3	3
10318		RAMY	04 01 1200	S13	W58	03 28.2		B	CRO	20	4	7	3
10318	31666	MWIL	04 01 1430	S13	W61	03 28.1	4	(B)					
10318		VORO	04 01 2310	S13	W62	03 28.4			AXX	7	1		3
10318		VORO	04 01 2310	S18	W61	03 28.4			CAO	19	4	4	3
10318		SVTO	04 02 0715	S13	W67	03 28.3		A	HRX	30	1	1	4
10323		KAND	03 25 0805	S07	E62	03 30.0			AX		1		4
10323		RAMY	03 25 1315	S08	E60	03 30.0		B	CRO	20	3	3	2
10323		HOLL	03 25 1419	S07	E60	03 30.1		B	CSO	20	2	3	3
10323	31672	MWIL	03 25 1530	S08	E59	03 30.1	3	(B)					
10323		VORO	03 25 2330	S08	E52	03 29.9			AXX	10	4		3
10323		KAND	03 26 0805	S07	E49	03 30.0			BXO		5	5	3
10323		RAMY	03 26 1200	S08	E46	03 29.9		B	DSO	60	8	7	3
10323		HOLL	03 26 1415	S07	E44	03 29.9		B	DSO	50	7	6	3
10323	31672	MWIL	03 26 1545	S08	E44	03 29.9	4	(B)					
10323		VORO	03 27 0020	S07	E39	03 29.9			BRI	26	10	6	3
10323		SVTO	03 27 0735	S10	E35	03 29.9		B	CRO	50	8	8	3
10323		KAND	03 27 0755	S07	E35	03 29.9			CSO		3	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
10323		RAMY	03 27	1521	S09	E30	03 29.9		B	DSO	30	7	7	2
10323		HOLL	03 27	1729	S08	E29	03 29.9		B	CAO	30	9	6	3
10323	31672	MWIL	03 27	1730	S07	E28	03 29.8	3	B					
10323		VORO	03 27	2334	S07	E25	03 29.8			CAI	19	5	7	4
10323		KAND	03 28	0755	S08	E20	03 29.8			CAO		7	7	3
10323		RAMY	03 28	1202	S09	E17	03 29.8		B	DSO	30	12	8	3
10323		VORO	03 29	0013	S08	E11	03 29.8			CRI	145	24	8	4
10323		SVTO	03 29	1151	S08	E04	03 29.8		B	DSI	60	16	9	3
10323		KAND	03 29	1225	S08	E06	03 30.0			DAO		19	6	3
10323		RAMY	03 29	1456	S08	E04	03 29.9		B	DAI	160	26	9	2
10323	31672	MWIL	03 29	1600	S08	E04	03 30.0	5	(BG)					
10323		VORO	03 29	2309	S07	W00	03 30.0			DAI	308	30	6	3
10323		SVTO	03 30	0705	S07	W07	03 29.8		B	DAI	270	19	8	3
10323		KAND	03 30	0955	S08	W07	03 29.9			DAI		12	8	3
10323		RAMY	03 30	1128	S08	W08	03 29.9		BG	DKC	300	31	8	3
10323		HOLL	03 30	1430	S08	W10	03 29.8		BG	DAI	170	27	9	4
10323	31672	MWIL	03 30	1530	S08	W10	03 29.9	5	(BG)					
10323		KAND	03 31	0905	S08	W20	03 29.9			DAO		17	10	4
10323		SVTO	03 31	1112	S07	W22	03 29.8		B	DAI	230	12	9	3
10323		RAMY	03 31	1145	S08	W22	03 29.8		BG	EAI	290	18	11	3
10323		HOLL	03 31	1419	S08	W25	03 29.7		BG	EKC	290	29	12	5
10323	31672	MWIL	03 31	1500	S08	W24	03 29.8	5	(B)					
10323		VORO	03 31	2302	S07	W28	03 29.9			DAI	545	20	8	3
10323		TACH	04 01	0559	S08	W31	03 30.0			DAI	200	9	7	3
10323		SVTO	04 01	0900	S06	W35	03 29.8		BG	EAC	320	18	12	3
10323		RAMY	04 01	1200	S08	W37	03 29.8		BG	E O	310	24	11	3
10323	31672	MWIL	04 01	1430	S08	W38	03 29.8	5	(B)					
10323		HOLL	04 01	1530	S09	W38	03 29.9		BG	EAC	420	24	11	3
10323		VORO	04 01	2310	S07	W42	03 29.9			DKI	513	22	9	3
10323		SVTO	04 02	0715	S06	W47	03 29.9		BG	EAI	300	27	11	4
10323		KAND	04 02	0750	S08	W48	03 29.8			FAO		14	12	3
10323		HOLL	04 02	1500	S08	W51	03 29.9		BG	DAC	280	25	10	3
10323		RAMY	04 02	1730	S07	W53	03 29.8		BG	EKI	140	27	12	1
10323		VORO	04 02	2317	S08	W56	03 29.9			DAI	251	22	10	3
10323		LEAR	04 03	0120	S06	W57	03 29.9		B	EAO	330	23	12	3
10323		TACH	04 03	0507	S08	W60	03 29.8			CAI	182	9	10	3
10323		SVTO	04 03	0618	S08	W62	03 29.7		B	EAO	240	7	13	3
10323		KAND	04 03	1110	S08	W63	03 29.8			DAO		11	14	4
10323		RAMY	04 03	1201	S05	W65	03 29.7		B	EAI	190	21	13	3
10323		HOLL	04 03	1445	S08	W65	03 29.8		B	DAO	170	11	12	2
10323		VORO	04 03	2303	S08	W70	03 29.8			CAI	76	9	10	3
10323		LEAR	04 04	0012	S06	W70	03 29.9		B	CAO	260	23	12	3
10323		KAND	04 04	0655	S08	W75	03 29.8			BXO		3	12	3
10323		SVTO	04 04	0801	S08	W75	03 29.8		B	CRO	60	3	13	3
10323		RAMY	04 04	1200	S07	W85	03 29.2		B	DSO	20	2	3	4
10323		HOLL	04 04	1435	S09	W85	03 29.3		B	CAO	30	2	3	3
10321		RAMY	03 24	1230	N04	E82	03 30.6		A	HAX	50	2	2	3
10321		HOLL	03 24	1424	N05	E84	03 30.9		B	CAO	70	3	10	4
10321	31669	MWIL	03 24	1545	N06	E79	03 30.6	5	B					
10321		VORO	03 24	2352	N05	E76	03 30.7			DAI	184	5	6	2
10321		SVTO	03 25	0601	N03	E74	03 30.8		B	DAO	200	4	10	3
10321		KAND	03 25	0805	N05	E73	03 30.8			EAO		5	12	4
10321		RAMY	03 25	1315	N07	E68	03 30.6		B	DAO	360	7	8	2
10321		HOLL	03 25	1419	N07	E68	03 30.7		B	DKI	320	13	11	3
10321	31669	MWIL	03 25	1530	N05	E68	03 30.7	5	(BF)					
10321		VORO	03 25	2330	N05	E63	03 30.7			DAI	311	23	7	3
10321		SVTO	03 26	0535	N02	E63	03 30.9		B	EAO	240	5	11	3
10321		KAND	03 26	0805	N04	E58	03 30.7			DAO		4	2	3
10321		KAND	03 26	0805	N06	E61	03 30.9			DAO		6	10	3
10321		RAMY	03 26	1200	N06	E57	03 30.8		BG	DAI	360	13	10	3
10321		HOLL	03 26	1415	N05	E56	03 30.8		BG	DKI	350	18	9	3
10321	31669	MWIL	03 26	1545	N04	E54	03 30.7	5	(D)					
10321		VORO	03 27	0020	N05	E50	03 30.7			DKI	585	28	8	3
10321		SVTO	03 27	0735	N02	E47	03 30.8		B	DAI	310	28	13	3
10321		KAND	03 27	0755	N03	E42	03 30.5			DAO		5	4	3
10321		KAND	03 27	0755	N06	E48	03 30.9			DAO		6	7	3
10321		RAMY	03 27	1521	N04	E39	03 30.5		BG	EAI	350	34	12	2
10321		HOLL	03 27	1729	N05	E38	03 30.6		BG	EAI	320	27	12	3

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

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MARCH 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
10321	31669	MWIL	03 27 1730	N05	E39	03 30.6	5	D *					
10321		VORO	03 27 2334	N05	E37	03 30.7			DKI	472	37	8	4
10321		KAND	03 28 0755	N03	E29	03 30.5			DAO		8	4	3
10321		KAND	03 28 0755	N05	E35	03 30.9			DAO		12	7	3
10321		RAMY	03 28 1202	N04	E27	03 30.5		BG	EAC	370	38	12	3
10321		VORO	03 29 0013	N05	E23	03 30.7			DAI	355	31	7	4
10321		SVTO	03 29 1151	N04	E16	03 30.7		B	DAI	150	11	9	3
10321		KAND	03 29 1225	N03	E13	03 30.5			DAO		6	2	3
10321		KAND	03 29 1225	N05	E19	03 30.9			DAI		16	7	3
10321		RAMY	03 29 1456	N04	E16	03 30.8		BG	DKI	270	26	8	2
10321	31669	MWIL	03 29 1600	N05	E15	03 30.8	5	(BG)					
10321		VORO	03 29 2309	N03	E11	03 30.8			CKI	298	30	8	3
10321		SVTO	03 30 0705	N04	E06	03 30.7		B	EAI	220	17	12	3
10321		KAND	03 30 0955	N02	E00	03 30.4			DSO		7	4	3
10321		KAND	03 30 0955	N06	E07	03 30.9			DAO		9	7	3
10321		RAMY	03 30 1128	N04	E04	03 30.8		B	DKI	220	26	9	3
10321		HOLL	03 30 1430	N07	E02	03 30.7		BG	EHC	200	30	11	4
10321	31669	MWIL	03 30 1530	N05	E01	03 30.7	4	(BG)					
10321		KAND	03 31 0905	N03	W14	03 30.3			BXO		2	3	4
10321		KAND	03 31 0905	N06	W07	03 30.8			CAO		18	6	4
10321		SVTO	03 31 1112	N06	W08	03 30.9		B	CAO	110	9	7	3
10321		RAMY	03 31 1145	N06	W12	03 30.6		BG	EAI	220	20	11	3
10321		HOLL	03 31 1419	N05	W11	03 30.8		BG	ESI	120	20	11	5
10321	31669	MWIL	03 31 1500	N05	W11	03 30.8	5	(BG)					
10321		VORO	03 31 2302	N04	W17	03 30.7			CAI	178	14	8	3
10321		TACH	04 01 0559	N06	W18	03 31.0			CSO	67	3	5	3
10321		SVTO	04 01 0900	N07	W21	03 30.9		B	CSO	120	6	8	3
10321		RAMY	04 01 1200	N06	W22	03 30.9		B	DAO	70	18	10	3
10321	31669	MWIL	04 01 1430	N06	W25	03 30.8	5	(BG)					
10321		HOLL	04 01 1530	N04	W25	03 30.9		BG	EAI	110	25	11	3
10321		VORO	04 01 2310	N06	W30	03 30.8			CAI	206	16	8	3
10321		SVTO	04 02 0715	N08	W32	03 31.0		BG	DAO	180	12	5	4
10321		KAND	04 02 0750	N05	W31	03 31.0			DAO		8	5	3
10321		HOLL	04 02 1500	N06	W35	03 31.0		B	DAI	190	17	6	3
10321		RAMY	04 02 1730	N07	W36	03 31.0		B	DAI	130	15	6	1
10321		VORO	04 02 2317	N07	W41	03 31.0			DAI	207	13	3	3
10321		LEAR	04 03 0120	N08	W43	03 30.9		BG	DAI	140	12	7	3
10321		TACH	04 03 0507	N06	W44	03 31.0			CSI	89	9	4	3
10321		SVTO	04 03 0618	N07	W45	03 31.0		B	DAO	130	8	7	3
10321		KAND	04 03 1110	N08	W47	03 31.0			DAO		12	7	4
10321		RAMY	04 03 1201	N09	W47	03 31.0		B	DAO	150	14	7	3
10321		HOLL	04 03 1445	N07	W50	03 31.0		B	DSO	150	9	5	2
10321		VORO	04 03 2303	N06	W55	03 30.9			DAI	174	7	4	3
10321		LEAR	04 04 0012	N08	W55	03 31.0		BG	DAO	270	18	6	3
10321		KAND	04 04 0655	N07	W60	03 30.9			DAO		5	6	3
10321		SVTO	04 04 0801	N08	W61	03 30.9		B	CAO	130	8	8	3
10321		RAMY	04 04 1200	N08	W63	03 30.9		B	DAI	200	13	6	4
10321		HOLL	04 04 1435	N08	W63	03 31.0		B	DAI	180	13	7	3
10321		VORO	04 04 2308	N07	W67	03 31.0			DAI	340	13	3	4
10321		LEAR	04 05 0100	N08	W69	03 31.0		B	DAI	300	10	7	2
10321		RAMY	04 05 1220	N10	W79	03 30.7		B	DAI	100	7	9	3
10321		SVTO	04 05 1310	N09	W79	03 30.7		B	BXO	10	2	6	3
10321		HOLL	04 05 1428	N07	W78	03 30.8		B	DAI	100	5	7	2
10321		VORO	04 05 2259	N06	W79	03 31.0			HKX	171	2		4
10327		RAMY	03 31 1145	S07	W06	03 31.0		B	DSO	30	4	4	3
10327		HOLL	03 31 1419	S07	W07	03 31.1		B	BXO	10	4	3	5
10327	31678	MWIL	03 31 1500	S06	W07	03 31.1	4	(B)					
10327		VORO	03 31 2302	S06	W12	03 31.1			BXO	9	4	3	3
10327		TACH	04 01 0559	S06	W15	03 31.1			BXO	12	2	2	3
10327		SVTO	04 01 0900	S06	W17	03 31.1		B	CSO	30	3	4	3
10327		RAMY	04 01 1200	S06	W18	03 31.1		B	DAO	20	4	4	3
10327	31678	MWIL	04 01 1430	S06	W21	03 31.0	4	(B)					
10327		HOLL	04 01 1530	S06	W21	03 31.1		B	DAO	40	3	3	3
10327		VORO	04 01 2310	S06	W25	03 31.1			BRO	27	4	4	3
10327		SVTO	04 02 0715	S05	W29	03 31.1		B	CRO	30	6	4	4
10327		KAND	04 02 0750	S06	W30	03 31.1			CRO		5	5	3
10327		HOLL	04 02 1500	S05	W34	03 31.1		B	DSO	40	6	5	3
10327		RAMY	04 02 1730	S03	W34	03 31.2		B	DSO	20	7	4	1

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

MARCH 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
			Mo	Day	(UT)										
10327	31678	VORO	04	02	2317	S05	W38	03	31.1		BRI	16	5	4	3
10327		LEAR	04	03	0120	S04	W39	03	31.1		DAO	30	6	5	3
10327		TACH	04	03	0507	S05	W41	03	31.1	B	BRI	3	4	5	3
10327		KAND	04	03	1110	S05	W48	03	31.0		BXO		4	7	4
10327		RAMY	04	03	1201	S04	W50	03	30.9		CSO	20	6	5	3
10327		LEAR	04	04	0012	S05	W58	03	30.8		B BXO	20	4	4	3
10327		RAMY	04	04	1200	S07	W63	03	30.9		A AXX	10	2	1	4
10327		MWIL	04	04	1500	S05	W63	03	31.0	5	(B)				

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua

RAMY = Ramey
SVTO = San Vito

TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES

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Mar 03

MARCH 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	0837	0843	0928	2-	5					2	0834	C2.4	10292
01	1328	1333	1344	1-	5					2	1326	C1.2	
01	1422	1430	1449	1	5					8	1420	C3.0	10292
01	1537	1542	1554	1-	5					7	1537	C1.9	10296
01	1653	1654	1704	1-	1					1	1650	B8.4	10296
01	1710	1720	1738	1+	3					4	1709	C2.1	10296
01	1905	1909	1922	1-	3					4	1903	C3.5	10296
05	1333	1336	1339	1-	3					2	1333	B9.8	10301
05	1533	1535	1536	1-	1					1	1533	B6.8	
08	0928	0936	1013	2	1					1	0925	C2.6	10306
08	1000	1002	1006	1-	1					1	0925	C2.6	10306
09	0645	0649	0735	2-	5					3	0641	C4.4	10304
09	1510	1516	1522	1-	5					2	1510	C1.6	10304
09	1748	1754	1813	1	3					3	1747	C2.0	10310
11	1836	1837	1842	1-	1					1	1837	B5.3	
15	1325	1337	1352	1+	1					1	No flare		
15	1526	1530	1549	2+	5		1	1		12	1521	C3.7	10314
15	2003	2013	2102	2	3					6	2000	C8.4	10314
16	1125	1132	1140	1-	5					2	1121	C1.0	
16	1255	1315	1323	1+	1					1	1251	C1.2	
16	1418	1429	1509	2	5					6	*		
17	1636	1651	1700	1	1					1	1635	C7.7	10314
17	2014	2017	2047	2	1					1	2014	C6.9	
18	0500	0510	0535	3+	1					1	*		
18	0555	0600	0636	2	5					2	0551	M2.5	10314
18	0737	0744	0826	2+	1					1	0734		10314
18	1013	1023	1056	2-	5					7	1009	C2.4	
18	1156	1209	1300	3	5	1	1	1		9	1151	X1.5	10314
18	1404	1414	1429	1	1					1	No flare		
18	1612	1617	1639	1	5					8	1612	C2.8	10314
18	1636	1640	1646	1-	3					2	1638	C1.3	
18	1654	1700	1706	1-	1					1	No flare		
18	1850	1904	1943	2	3					4	1849	C5.9	
18	2057	2100	2109	1-	1					1	2101	B8.9	
19	0303	0306	0335	2	1					1	0258	M1.5	
19	0639	0646	0735	2	5					3	0636	M1.6	10314
19	0948	0950	1007	3	5	1	1	1		4	0934	M3.7	10314
19	1124	1129	1206	2	5	1	1	1		4	1120	C5.8	10314
19	1330	1336	1350	3	5	1	1	1		10	1325	M1.4	10314
19	1607	1613	1619	1-	3					3	1606	C1.1	
19	1638	1648	1718	2-	3					5	1632	C3.2	10314
19	1708	1710	1728	1-	3					2	1707	C1.9	
19	1815	1822	1841	1	3					4	1802	C1.3	10314
19	1846	1854	1939	2	3					5	1845	C6.3	10314
19	2043	2051	2101	1-	1					1	2039	C1.3	
19	2104	2108	2116	1-	1					1	2100	C1.8	10314
19	2125	2130	2147	1	3					2	2122	C2.2	10314
19	2159	2202	2232	1+	3					2	2155	C3.5	10314
19	2313	2315	2337	1	1					1	2310	C2.0	10314
20	1128	1136	1156	3	5	1	1	1		7	1125	M1.5	10314
20	1651	1736	1833	3	1					1	No flare		
21	0903	0910	0919	1-	3					2	0858	C1.1	10314
21	1420	1429	1446	1	5					7	1415	C1.8	10314
22	0656	0659	0735	2-	5					3	0650	C1.3	10314
22	0852	0858	0904	1-	1					1	0849	B4.0	10314

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MARCH 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			
22	0945	0951	1000	1-	1					1	0938	B5.1	10314
22	1226	1230	1237	1-	1					1	1222	B3.8	10314
23	1145	1213	1243	2+	1					1	1146	C1.9	10318
23	1341	1347	1354	1-	1					1	1341	B7.3	10321
23	1902	1905	1924	1	1					1	1903	C1.1	10321
24	1309	1314	1321	1-	1					1	1210	C1.2	10321
26	1704	1711	1728	1	5					6	1705	C2.2	
27	0533	0539	0622	2+	1					1	0531	C1.2	10319
27	0659	0704	0726	1+	5					3	0656	C1.3	10321
27	0943	0946	0952	2	5	1		1		7	0940	C3.6	10322
27	1451	1457	1526	1+	5					9	1449	C2.3	10322
27	1940	1944	2012	1+	3					4	1938	C1.6	10320
27	1954	1959	2024	1+	1					1	No flare		
29	1014	1019	1039	2+	5	1	1	1		8	1011	C7.2	10318
29	1228	1233	1247	3-	5	1	1	1		10	1224	C5.7	10323
29	1304	1307	1317	1-	3					2	1303	C1.2	
29	1400	1412	1450	2	1					1	No flare		
29	1503	1518	1549	2	5					7	1500	C4.2	10318
29	1655	1702	1727	1+	5					7	1655	C4.7	
29	1833	1839	1931	2	3					5	1831	C8.2	10318
30	0124	0128	0143	1	1					1	0121	C3.6	
31	1617	1621	1628	1-	1					1	1615	C1.6	10323

* = no flare patrol.

OBSERVATORIES REPORTING FOR MARCH 2003

Alberta, Canada	SES	Marlborough, Massachusetts, USA	SES
Athens, Greece	SES	Milan, Italy	SES
Bedford, Massachusetts, USA	SES	Nerja, Spain	SES
Bern, Switzerland	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Brookline, Massachusetts, USA	SES	Sofia, Bulgaria	SES
Dundas, Ontario, Canada	SES	Sussex, United Kingdom	SES
Edenvale, Republic of S. Africa	SES	Torrington, Connecticut, USA	SES
Houston, Texas, USA	SES	Udine City, Italy	SES
Isola del Gran Sasso, Italy	SES	Villiersdorp, South Africa	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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Mar 03

MARCH 2003

OBSERVATION		Sta	EVENT		Spectral Class	Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End Day (UT)		Start (UT)	End (UT)				Lower (MHz)	Upper (MHz)	
01	0000 0832	HIRA								
	0000 0800	CULG	0232.0	0232.0	III	B	1	25	80	
		CULG	0256.0	0359.0	I	S	1	150	250	
		CULG	0300.0	0351.0	III	N	1	30	180	
		CULG	0634.0	0634.0	III	B	1	23	130	
	0659 1531	ONDR								
		CULG	0725.0	0725.0	III	B	1	25	80	
		IZMI	0828.0	1200.00	I	N	2	150	270X	
		IZMI	1015.2	1017.6	III	G	2	25X	175	
		SVTO	1016.0	1017.0	III		2	28U	170U	
		IZMI	1016.8	1017.1	V	G	2	25X	85	
		SVTO	1029.0	1029.0	III		1	71U	130U	
		IZMI	1029.4	1029.6	III	G	1	65	140	
		SVTO	1118.0	1119.0	III		1	75	141	
		IZMI	1118.6	1119.0	III	G	2	45	170	
		IZMI	1124.0	1124.3	III	G	1	40	60	
		SVTO	1327.0	1330.0	III		1	28U	143U	
		SVTO	1344.0	1617.0	III	N	1	28U	126U	
		HOLL	1531.0	1551.0	III		1	25	180	
		SGMR	1531.0	1540.0	III		1	30	50	
		SVTO	1538.0	1539.0	III		2	25	180	
	0730 1600	BLEN	1538.3	1539.2	III	V	2	120	350	
		HOLL	1649.0	1653.0	III		1	25	86	
		SGMR	1649.0	1900.0	III	N	1	30	80	
		HOLL	1755.0	1805.0	III		1	25	140	
		HOLL	1818.0	1825.0	III		1	25	180	
		HOLL	1859.0	0045.0	III	N	1	25	90	
	2000 2400	CULG	2039.0	2039.0	III	B	1	20	45	
		CULG	2047.0	2049.0	III	G	1	20	140	
	2108 2400	HIRA								
		CULG	2137.0	2139.0	III	G	3	18	120	
		PALE	2137.0	0236.0	CONT		1	25	180	
		CULG	2140.0	2144.0	III	G	1	100	180	
		CULG	2239.0	2239.0	III	B	1	30	130	
		CULG	2316.0	2400.00	I	S	1	100	180	
02	0000 0800	CULG	0000.0E	0553.0	I	S	1	100	280	
		CULG	0017.0	0553.0	III	N	1	60	180	
		CULG	0108.0	0111.0	III	G	1	23	180	
		LEAR	0258.0	0550.0	CONT		1	79	180	
		PALE	0325.0	0419.0	CONT		1	25	180	
		LEAR	0406.0	0409.0	III		1	25	180	
		CULG	0407.0	0410.0	III	G	3	18	180	
	0000 0833	HIRA	0407.5	0409.5	III	G	1	25X	U	
		CULG	0515.0	0515.0	III	B	1	30	50	
	0657 1533	ONDR								
		IZMI	0734.0	1202.00	I	N	2	160	270X	
		IZMI	0743.2	0746.4	III	G	1	55	80	
		IZMI	0805.8	0805.9	III	B	1	55	85	
		IZMI	0833.3	0833.5	III	B	1	45	65	
		IZMI	0836.4	0836.6	III	G	1	55	190	
		IZMI	0858.6	0900.3	III	GG	1	40	160	
		IZMI	0908.9	0909.0	III	G	1	145	205	
		IZMI	0942.4	0942.6	III	G	1	45	90	
		LEAR	1009.0	1011.0	III		1	25	180	
		IZMI	1015.5	1015.6	III	G	1	110	150	
		IZMI	1020.2	1021.9	III	G	1	45	155	
		IZMI	1101.8	1113.5	I	GG,DC	2	175	250	
		IZMI	1106.2	1107.4	III	G	1	110	175	
		IZMI	1200.9	1201.1	III	G	1	45	150	
		SVTO	1412.0	1418.0	III		1	28U	175U	
	2000 2400	CULG	2032.0	2040.0	III	G	1	20	160	
		HOLL	2037.0	2039.0	III		1	25	123	
		CULG	2230.0	2230.0	III	B	1	25	90	
		CULG	2247.0	2249.0	III	G	1	25	150	
	2107 2400	HIRA	2247.5	2249.0	III	G	1	25X	U	
		CULG	2300.0	2316.0	I	S	1	220	780	
		CULG	2320.0	2320.0	III	B	1	30	90	
		CULG	2350.0	2351.0	III	G	1	30	130	

Spectral Observations

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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)	
03	0000	0800	CULG	0001.0	0003.0	III	G	1	30	90		
			CULG	0225.0	0225.0	III	B	1	23	90		
	0000	0834	HIRA	0225.0	0225.5	III	B	1	25X	U		
			CULG	0229.0	0233.0	III	G	1	60	260		
			CULG	0326.0	0328.0	III	G	2	23	180		
			LEAR	0326.0	0328.0	III		1	25	180		
			HIRA	0326.5	0328.0	III	G	1	25X	U		
			CULG	0329.0	0332.0	III	G	1	35	130		
			LEAR	0518.0	0526.0	III		1	25	180		
			CULG	0519.0	0527.0	III	G	1	30	180		
			HIRA	0525.0	0526.0	III	B	1	25X	U		
			0654	1534	ONDR							
	0715	1605	CULG	0656.0	0657.0	III	G	1	30	90		
			BLEN									
			CULG	0735.0	0735.0	III	B	1	30	65		
			IZMI	0741.2	0741.3	III	G	1	120	240		
			IZMI	0820.2	0945.0U	I	N	1	220	260		
			LEAR	0942.0	0943.0	III		1	25	180		
			SVTO	0942.0	0943.0	III		1	61	180		
			IZMI	0942.5	0943.7	III	GG	2	40	270X		
			IZMI	0945.0	1200.00	I	S,DC	2	110	270X		
			IZMI	0945.8	0946.7	III	G	1	45	95		
			IZMI	1003.2	1003.7	III	G	2	45	90		
			IZMI	1021.9	1022.1	III	G	1	45	160		
			SVTO	1029.0	1323.0	CONT		1	131	180		
			HOLL	1930.0	1937.0	III		1	25	180		
			SGMR	1931.0	1937.0	III		1	30	60		
			2010	2400	CULG	2010.0E	2107.0	I	S	1	100	170
					CULG	2022.0	2103.0	III	N	1	20	100
					HOLL	2031.0	2043.0	III		1	25	86
			2105	2400	HIRA							
					CULG	2119.0	2119.0	III	B	1	30	80
			CULG	2226.0	2226.0	III	B	1	35	80		
	04	0000	0835	HIRA								
				CULG	0046.0	0046.0	III	B	1	40	80	
		0000	0800	CULG	0124.0	0127.0	III	G	1	27	160	
				CULG	0250.0	0251.0	III	G	1	60	90	
				CULG	0516.0	0517.0	III	G	1	60	200	
				LEAR	0516.0	0516.0	III		1	64	180	
				CULG	0601.0	0753.0	III	N	1	40	160	
0652				1536	ONDR							
0715		1605	BLEN									
			IZMI	0735.8	0738.8	III	G	1	55	65		
0700		1200	IZMI	0837.7	0837.9	III	G	1	55	90		
			IZMI	0903.9	0904.0	III	B	1	45	65		
			IZMI	0925.8	0927.1	III	G	1	45	95		
			IZMI	1025.6	1025.7	III	B	1	55	90		
			IZMI	1103.5	1106.4	III	G	1	55	90		
			IZMI	1133.3	1133.6	III	G	1	55	90		
			IZMI	1151.2	1158.3	III	G	1	45	95		
			2104	2400	HIRA							
2010		2400	CULG	2244.0	2244.0	III	B	1	40	90		
05		0000	0836	HIRA								
	CULG			0137.0	0138.0	III	G	1	27	70		
	0000	0800	CULG	0159.0	0159.0	III	B	1	40	120		
			LEAR	0159.0	0159.0	III		1	48	105		
			CULG	0258.0	0259.0	III	G	1	100	500		
			CULG	0611.0	0611.0	III	B	1	100	170		
			0650	1538	ONDR							
	0700	1200	IZMI	0654.5	0654.7	III	B	1	45	85		
			CULG	0655.0	0655.0	III	B	1	50	90		
	0715	1605	BLEN									
			IZMI	0807.2	0807.5	III	B	1	55	85		
			IZMI	0821.0	0821.1	III	B	1	45	85		
			IZMI	0822.3	0822.7	III	G	2	80	270X		
			IZMI	0912.0U	0956.0U	I	S	2	200	270X		
			IZMI	1054.3	1057.0	I	N	1	220	270X		

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
05			IZMI	1129.7	1130.3	III	G	1	40	85	
	2102	2400	HIRA								
	2000	2400	CULG	2322.0	2342.0	I	S	1	170	300	
			LEAR	2327.0	2346.0	CONT		1	118	180	
06	0000	0837	HIRA								
	0000	0800	CULG	0112.0	0112.0	III	B	2	18	90	
			CULG	0243.0	0323.0	I	S	1	180	280	
			CULG	0440.0	0540.0	I	S	1	130	350	
			CULG	0554.0	0554.0	III	B	1	50	90	
	0647	1540	ONDR								
	0655	1200	IZMI	0712.8	0713.0	III	B	1	50	65	
	0715	1605	BLEN								
			IZMI	0811.00	0846.0	I	N	2	220	270X	
			SGMR	1233.0	1234.0	III		1	35	55	
			SVTO	1233.0	1234.0	III		1	25	180	
	2101	2400	HIRA	2343.5	2344.0	III	B	1		600	
	2010	2400	CULG	2344.0	2344.0	III	B	1	300	620	
			CULG	2349.0	2354.0	III	G	1	80	160	
07	0000	0838	HIRA								
			LEAR	0020.0	1007.0	III	N	1	25	180	
	0000	0800	CULG	0020.0	0022.0	III	G	1	27	180	
			CULG	0038.0	0038.0	III	B	1	100	180	
			CULG	0101.0	0102.0	III	G	1	40	180	
			CULG	0123.0	0141.0	III	N	1	25	180	
			CULG	0244.0	0244.0	III	B	1	65	250	
			CULG	0324.0	0324.0	III	B	1	50	90	
			CULG	0335.0	0338.0	III	G	1	50	90	
			CULG	0435.0	0800.00	III	N	1	30	180	
			SVTO	0624.0	0628.0	III		1	31	80	
	0650	1200	IZMI	0719.4	0719.7	CONT		2	130	200	
			IZMI	0728.9	0730.0	III	G,C	2	70	270X	
			LEAR	0729.0	0729.0	III		1	25	180	
			SVTO	0729.0	0729.0	III		1	114	180	
			CULG	0730.0	0730.0	III	B	1	65	260	
			SVTO	0737.0	0737.0	III		1	111	140	
			IZMI	0746.4	0746.5	III	B	1	55	85	
	0747	1541	ONDR								
			SVTO	0805.0	0826.0	III	N	2	38	180	
			IZMI	0811.8	0817.7	III	GG,FS	2	40	270X	
			LEAR	0817.0	0834.0	III		1	25	180	
			IZMI	0823.1	0825.6	III	GG	1	120	170	
			IZMI	0826.0	0826.3	III	G	2	110	175	
			IZMI	0832.4	0832.6	III	B	1	55	85	
			IZMI	0853.1	0856.7	III	GG	1	40	160	
			IZMI	0903.2	0903.3	III	B	1	50	65	
			IZMI	0930.5	0934.4	III	G	1	110	165	
			IZMI	0935.0	0935.1	III	G	2	110	165	
			SVTO	1010.0	1316.0	III	N	1	30	154	
			IZMI	1053.0	1200.00	I	N	2	160	270X	
			IZMI	1110.8	1114.7	III	G	1	110	170	
			IZMI	1127.9	1128.6	III	G	2	45	180	
			IZMI	1135.9	1137.4	III	G	2	40	160	
			IZMI	1155.4	1158.1	III	G	1	110	180	
	1205	1605	BLEN								
			SGMR	1348.0	1349.0	III		2	30	80	
			SVTO	1348.0	1352.0	III		2	280	1800	
			HOLL	1544.0	1545.0	III		1	25	180	
			SVTO	1544.0	1546.0	III		2	25	180	
			HOLL	1627.0	1627.0	III		1	102	180	
			HOLL	1646.0	1648.0	III		1	45	180	
			PALE	1729.0	2133.0	III	N	1	25	180	
			SGMR	1936.0	1936.0	III		1	30	65	
	2010	2400	CULG	2027.0	2049.0	III	N	2	18	180	
			SGMR	2033.0	2048.0	III		1	30	65	
	2100	2400	HIRA								
			CULG	2134.0	2134.0	III	G	1	40	160	
			CULG	2150.0	2150.0	III	B	1	57	90	

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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)	
07			CULG	2214.0	2217.0	III	G	1	27	180
			CULG	2259.0	2259.0	III	B	1	40	80
08	0000	0839	HIRA							
			LEAR	0102.0	0608.0	III	N	1	25	180
	0000	0800	CULG	0102.0	0122.0	III	N	1	30	180
			CULG	0240.0	0243.0	III	G	1	23	80
			CULG	0305.0	0305.0	III	B	1	35	80
			CULG	0314.0	0314.0	III	B	1	50	180
			CULG	0608.0	0608.0	III	B	1	27	90
			SVTO	0608.0	0608.0	III		1	38U	79U
	0700	1200	IZMI	0730.4	0730.5	III	B	1	130	175
			IZMI	0751.9	0752.1	III	G	1	120	170
			IZMI	0827.5	0828.6	III	G	1	55	90
			IZMI	0848.2	0850.4	III	G	1	40	90
			LEAR	0907.0	0908.0	III		1	25	180
			SVTO	0907.0	0908.0	III		1	28U	83U
			IZMI	0907.6	0908.1	III	G	2	25X	190
	0730	1605	BLEN	0921.0	0942.6	DCIM	P	3	120	4000X
			IZMI	0922.2	0922.9	III	B	1	40	90
			ONDR	0925.4	0939.0	DCIM	GG	2	800X	2000X
	0643	1544	ONDR	0925.4	0934.5	DCIM	GG	2	2000X	4500X
			IZMI	0926.0	0934.0	I	S	2	180	270X
			LEAR	0933.0	0934.0	III		1	88	180
			IZMI	0933.4	0934.4	III	G	2	110	180
			IZMI	0936.4	0936.4	III	B	1	80	120
			ONDR	0946.2	0947.3	DCIM	GG	2	1016	1920
			LEAR	0954.0	0954.0	III		1	25	180
			SVTO	0954.0	0955.0	III		1	29U	138U
			IZMI	1023.1	1023.1	III	B,RS	1	130	180
			IZMI	1028.4	1028.8	III	G	1	25X	85
			IZMI	1109.0	1109.1	III	B	1	110	160
			IZMI	1125.2	1126.1	III	G	2	25X	155
			IZMI	1142.3	1142.5	III	B	1	55	65
			HOLL	1432.0	1438.0	III		1	39	180
			SVTO	1432.0	1438.0	III		1	54U	151U
			HOLL	1948.0	2230.0	III	N	1	60	127
	2010	2400	CULG	2010.0E	2049.0	III	N	1	30	160
			CULG	2032.0	2033.0	III	G	2	60	170
	2059	2400	HIRA							
			CULG	2225.0	2250.0	III	N	1	30	100
			HOLL	2313.0	2313.0	III		1	51	180
			LEAR	2313.0	2313.0	III		1	46	180
			PALE	2313.0	2313.0	III		1	46	180
			CULG	2317.0	2317.0	III	B	1	60	90
			CULG	2347.0	2400.0D	III	N	1	30	180
09	0000	0800	CULG	0000.0E	0026.0	III	N	1	30	180
			CULG	0011.0	0012.0	III	G	2	35	180
			HOLL	0011.0	0017.0	III		1	25	180
			LEAR	0011.0	0017.0	III		2	25	180
			PALE	0011.0	0416.0	III	N	1	25	180
	0000	0840	HIRA	0011.0	0017.5	III	G	1	25X	U
			CULG	0017.0	0017.0	III	B	1	23	450
			CULG	0159.0	0159.0	III	B	1	57	80
			LEAR	0230.0	0232.0	III		3	25	180
			CULG	0231.0	0231.0	III	G	3	18	250
			HIRA	0231.0	0232.0	III	B	3	25X	U
			CULG	0243.0	0244.0	III	G	1	25	180
			LEAR	0243.0	0244.0	III		1	33	155
			LEAR	0335.0	0339.0	III		1	35	175
			HIRA	0335.5	0339.5	III	G	1	25X	U
			CULG	0336.0	0342.0	III	G	1	30	180
			CULG	0406.0	0432.0	III	N	1	30	180
			CULG	0427.0	0428.0	III	G	2	23	180
			HIRA	0427.0	0428.0	III	B	1	30	U
			LEAR	0427.0	0427.0	III		2	25	180
			CULG	0523.0	0612.0	III	N	1	30	180
			CULG	0639.0	0716.0	III	N	1	30	180

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
09	0641 1545	LEAR	0640.0	0647.0	III		2	25	180	
		ONDR								
		CULG	0644.0	0647.0	III	G	3	25	230	
		HIRA	0644.0	0647.0	III	B	2	30		U
	0700 1200	CULG	0646.0	0651.0	V		1	30	130	
		CULG	0659.0	0705.0	UNCLF		1	35	85	
		IZMI	0701.1	0704.0	II		1	55	90	
		IZMI	0707.7	0708.0	III	B	1	55	85	
		IZMI	0716.9	0716.9	III	B	1	170	190	
		IZMI	0724.3	1143.0U	III	N	1	45	95	
		IZMI	0911.7	0911.7	III	B	2	45	65	
		IZMI	0930.0	0931.7	III	GG,C	2	25X	210	
		LEAR	0930.0	0931.0	III		1	25	180	
		IZMI	0945.0	0948.1	III	G	1	35	65	
		IZMI	1005.6	1006.8	III	GG	2	55	270X	
	0700 1610	BLEN	1353.7	1354.2	III	S	2	260	480	
		HOLL	1750.0	1752.0	III		2	25	180	
		PALE	1750.0	1753.0	III		2	25	180	
	2010 2400	CULG	2043.0	2043.0	III	B	1	35	90	
	2057 2400	HIRA								
		CULG	2359.0	2359.0	III	G	1	35	90	
10	0000 0800	CULG	0046.0	0046.0	III	B	1	30	45	
		LEAR	0242.0	1005.0	III	N	1	25	180	
		CULG	0245.0	0245.0	III	B	1	60	90	
		CULG	0306.0	0309.0	III	G	1	35	140	
	0000 0840	HIRA	0307.5	0308.0	III	B	1	30		U
		CULG	0315.0	0316.0	III	G	2	20	140	
		HIRA	0315.0	0316.0	III	B	1	25X		U
		CULG	0424.0	0426.0	III	G	1	25	75	
		CULG	0500.0	0533.0	III	N	1	18	100	
		CULG	0534.0	0548.0	III	GG	2	25	260	
		CULG	0550.0	0800.0D	III	S,C	1	30U	180	
		IZMI	0655.3	0656.4	III	GG	2	40	95	
		IZMI	0700.0E	1200.0D	III	N	1	40	95	
	0700 1200	IZMI	0700.0E	0750.0U	I	S	1	45	95	
		IZMI	0748.5	0751.5	III	GG	2	25X	180	
		IZMI	0757.4	0758.3	III	G	2	35	160	
		IZMI	0811.1	0813.5	III	G	2	25X	165	
		IZMI	0843.1	0851.3	III	GG,C	2	25X	270X	
		IZMI	0852.3	0854.6	I	GG	2	155	190	
		IZMI	0856.9	0859.1	III	G	1	50	180	
		IZMI	0907.7	0908.0	III	G,C	2	25X	120	
		IZMI	0942.0	1052.0	I	N	1	150	270X	
		IZMI	0949.4	0953.4	III	G	2	25X	85	
		IZMI	0959.9	1006.0	III	GG,C	2	25X	270X	
	0700 1615	LEAR	1001.0	1004.0	III		2	25	180	
		BLEN	1001.5	1003.6	III	GG,RS	3	100X	4000X	
		IZMI	1001.7	1004.8	CONT		2	25X	175	
	0638 1547	ONDR	1002.1	1004.1	DCIM	G	1	800X	2000X	
		ONDR	1002.2	1003.2	DCIM	G	1	2000X	4500X	
		BLEN	1040.1	1042.7	III	GG,RS	3	300	700	
		IZMI	1041.3	1041.5	III	G	2	35	95	
		BLEN	1048.1	1056.2	III	GG	2	100X	500	
		IZMI	1052.0	1200.0D	I	S	2	45U	250	
		IZMI	1052.8	1056.3	III	GG	2	25X	270X	
		IZMI	1114.1	1114.2	III	B	2	50	95	
		BLEN	1252.5	1257.0	III	GG	1	100X	700	
		SGMR	1256.0	1257.0	III		1	30	70	
		SGMR	1327.0	1327.0	III		1	30	70	
		ONDR	1335.5	1336.3	DCIM	G	2	955	1386	
		HOLL	1534.0	1535.0	III		1	36	157	
		HOLL	1913.0	1914.0	III		1	25	69	
	2010 2400	CULG	2034.0	2330.0	III	N	1	23	180	
	2055 2400	HIRA								
		CULG	2100.0	2400.0D	I	S	1	85	170	
		LEAR	2305.0	1004.0	III	N	1	25	85	
11	0000 0800	CULG	0000.0E	0800.0D	I	S	1	100	170	

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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)		
11	0000	0841	CULG	0002.0	0800.0D	III	N	1	20	180			
			HIRA	0154.5	0158.0	III	G	1	30		U		
			CULG	0156.0	0156.0	III	B	2	20	110			
			SVTO	0614.0	0746.0	III	N	1	28U	137U			
	0637	1549	ONDR										
			CULG	0700.0	0708.0	III	G	3	23	180			
			HIRA	0700.0	0708.5	III	G	1	30		U		
			IZMI	0700.0E	1200.0D	III	N	2	25X	95			
			IZMI	0700.3	0704.5	III	GG	2	25X	160			
			IZMI	0708.0	0709.6	III	GG	2	25X	270X			
			IZMI	0716.0U	1200.0D	I	N	1	110	250			
			HIRA	0746.5	0747.0	III	B	1	40		U		
			IZMI	0746.5	0746.9	III	G,C	2	25X	160			
			CULG	0747.0	0747.0	III	B	2	23	180			
			IZMI	0808.0	0808.4	III	G	1	45	215			
			IZMI	0828.1	0830.8	III	G	1	25X	95			
			IZMI	0838.2	0840.5	III	GG,C	1	25X	90			
			IZMI	0902.4	0903.4	III	G	2	25X	240			
			SVTO	0907.0	0908.0	III		1	25	147			
	0650	1615	BLEN	0907.6	0908.2	III	G,S	2	130	450			
			IZMI	0907.8	0908.6	III	G,C	2	28X	270			
			IZMI	0927.0	0929.5	III	G	2	25	215			
			IZMI	0942.9	0944.5	III	GG	2	30	195			
			IZMI	0949.4	0950.0	III	G,C	1	25X	155			
			IZMI	0956.0	1004.1	III	GG	2	25X	95			
			SVTO	0959.0	1001.0	V		3	25	180			
			IZMI	0959.8	1001.2	III	GG,C	3	25X	270X			
			IZMI	1045.2	1045.6	III	G,U	2	25X	155			
			IZMI	1057.2	1057.3	III	B	2	25X	95			
			IZMI	1128.3	1128.8	III	G	2	35	95			
			BLEN	1218.9	1227.3	III	GG	3	130	700			
			SGMR	1322.0	1322.0	III		1	30	65			
			HOLL	1414.0	1416.0	II		1	126	143			
			HOLL	1418.0	1418.0	III		1	40	62			
			SGMR	1418.0	1418.0	III		1	30	55			
			SGMR	1543.0	2222.0	III	N	3	30	80			
			PALE	1719.0	1720.0	III		1	26	84			
			PALE	1751.0	1752.0	III		1	25	132			
			HOLL	1839.0	1840.0	III		2	25	179			
			HOLL	1839.0	1840.0	III		2	25	180			
			PALE	1839.0	1840.0	III		2	25	180			
			PALE	1856.0	1916.0	III	N	2	25	180			
			PALE	1856.0	1944.0	III	N	2	25	180			
	2010	2400	CULG	2032.0	2400.0D	III	N	1	25	180			
			CULG	2034.0	2400.0D	I	S	1	60	180			
			CULG	2054.0	2054.0	III	B	3	25	160			
			CULG	2059.0	2059.0	III	G	3	25	160			
			CULG	2126.0	2127.0	III	G	3	20	170			
			CULG	2127.0	2128.0	V		3	20	90			
			CULG	2151.0	2151.0	III	B	2	25	180			
			CULG	2159.0	2159.0	III	B	2	20	35			
			2154	2400	HIRA	2327.5	2328.5	III	B	3	25X		U
					CULG	2328.0	2328.0	III	B	3	18X	180	
					HIRA	2341.5	2342.0	III	B	3	25X		U
					CULG	2342.0	2342.0	III	B	3	18X	280	
12	0000	0800	CULG	0000.0E	0800.0D	I	S	1	110	180			
			CULG	0000.0E	0538.0	III	N	1	23	180			
			CULG	0042.0	0046.0	III	G	2	25	260			
			HIRA	0042.0	0043.0	III	B	1	30		U		
	0000	0842	HIRA	0207.0	0213.0	III	G	1	25X		U		
			CULG	0209.0	0213.0	III	G	2	20	180			
			CULG	0618.0	0619.0	III	G	1	30	250			
			IZMI	0652.0E	1200.0D	I	S	1	110	270X			
	0652	1200	CULG	0658.0	0732.0	III	N	1	30	160			
			IZMI	0658.2	0658.5	III	B	2	35	150			
			IZMI	0732.2	0732.4	III	B	2	35	65			
			IZMI	0802.0	0802.1	III	G	1	45	90			
			IZMI	0807.9	0808.9	III	G	1	45	90			

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			IZMI	0811.7	0812.3	III	G	1	45	95	
			IZMI	0821.0	0824.5	III	G	1	50	90	
			IZMI	0836.4	0837.1	III	G,C	1	40	95	
			IZMI	0917.7	0918.2	III	G	1	50	85	
			IZMI	0935.6	0937.1	III	G	1	120	270X	
0645	1620		BLEN	0938.0	0939.8	III	GG,C,S	3	100X	4000X	
			ONDR	0938.2	0939.4	DCIM	GG	2	800X	1888	
			IZMI	0938.3	0939.9	III	GG,C,F,S	2	35	170X	
0633	1551		ONDR	0938.4	0939.4	DCIM	G	1	2381	4500X	
			IZMI	1008.8	1009.0	III	B	1	25X	45	
			IZMI	1017.0	1017.0	III	B	1	45	90	
			IZMI	1032.9	1053.0	III	G	1	125	160	
			IZMI	1034.7	1035.0	III	G	2	50	160	
			IZMI	1038.4	1140.9	III	G	1	45	90	
			IZMI	1058.0	1058.9	III	G	1	50	85	
			IZMI	1104.4	1104.5	III	G,C	1	55	65	
			IZMI	1117.6	1117.9	III	G	2	40	240	
			IZMI	1140.2	1142.1	III	GG	2	85	215	
2010	2400		CULG	2010.0E	2400.0D	III	N	1	23	150	
2152	2400		CULG	2010.0E	2400.0D	I	S,C	1	100	180	
			HIRA								
			HOLL	2153.0	2310.0	III	N	1	25	180	
13			CULG	0000.0E	0108.0	III	N	1	23	90	
0000	0800		CULG	0000.0E	0800.0D	I	S	1	100	180	
			CULG	0147.0	0800.0D	III	N	1	23	180	
			CULG	0210.0	0216.0	III	G	3	18X	230	
			LEAR	0210.0	0219.0	III		1	25	180	
0000	0843		HIRA	0210.0	0216.0	III	G	1	25X	U	
0631	1553		ONDR								
0640	1630		BLEN								
			IZMI	0701.0E	1200.0U	I	N	1	110	270	
0701	1200		IZMI	0701.0E	1200.0U	III	N	1	25X	95	
			IZMI	0725.6	0726.8	III	G	2	40	95	
			SVTO	0747.0	0749.0	III		1	25	140	
			IZMI	0749.2	0749.6	III	G,HARM	2	35	190	
			IZMI	0821.5	0821.9	III	B,C	1	55	95	
			IZMI	0838.6	0838.9	III	G,C	1	40	85	
			IZMI	0934.4	0934.6	III	B	2	40	65	
			IZMI	1003.5	1003.6	III	G	1	180	250	
			IZMI	1019.5	1019.7	III	B,U	2	115	215	
			SVTO	1020.0							

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
13			LEAR	2357.0	0109.0	III	N	1	25	100	
			CULG	2358.0	2358.0	III	B	1	23	180	
14	0000	0800	CULG	0000.0E	0800.0D	I	S	1	110	180	
			CULG	0007.0	0800.0D	III	N	1	25	180	
			LEAR	0205.0	1002.0	III	N	2	25	175	
			CULG	0213.0	0213.0	III	B	2	18	90	
	0000	0844	HIRA	0213.0	0213.5	III	B	1	30		U
			CULG	0233.0	0233.0	III	B	2	20	90	
			HIRA	0233.0	0233.5	III	B	1	30		U
			CULG	0304.0	0304.0	III	B	3	18X	230	
			HIRA	0304.0	0304.5	III	B	2	25X		U
			CULG	0412.0	0412.0	III	G	2	20	90	
			HIRA	0412.0	0412.5	III	B	1	25X		U
			CULG	0437.0	0437.0	III	B	2	20	90	
			CULG	0451.0	0453.0	III	G	2	20	160	
			CULG	0541.0	0541.0	III	B	2	30	170	
			HIRA	0541.0	0542.0	III	B	1	25X		U
			SVTO	0541.0	0541.0	III		1	30	77	
			SVTO	0613.0	1632.0	III	N	2	25	170	
	0629	1554	ONDR								
			IZMI	0700.0E	1204.0D	III	N	1	45	95	
	0700	1204	IZMI	0700.0E	1204.0D	I	N	1	110	220	
			IZMI	0700.8	0702.6	I	GG,C	2	135	145	
			IZMI	0735.7	0736.8	III	G	2	45	95	
			IZMI	0741.8	0742.2	III	G,HARM	2	55	90	
			IZMI	0749.2	0750.6	III	GG	2	30	180	
			CULG	0750.0	0750.0	III	B	2	25	160	
			IZMI	0751.5	0800.3	III	GG	2	30	180	
			IZMI	0836.3	0836.7	III	B	2	40	95	
			IZMI	0919.8	0920.8	II	G,C	2	40	270X	
			IZMI	0948.5	0949.0	III	G	1	35X	90	
			IZMI	1046.4	1047.0	III	G,HARM	2	30	90	
			IZMI	1124.7	1127.0	III	G	1	30	95	
			IZMI	1149.4	1149.9	III	G	1	70	265	
			SGMR	1306.0	1402.0	III	N	1	30	65	
	0640	1630	BLEN	1505.5	1506.6	III	GG	2	120	400	
			SGMR	1516.0	1601.0	III	N	1	30	80	
			PALE	1729.0	0334.0	III	N	1	25	180	
			SGMR	1813.0	1814.0	III		1	30	65	
			SGMR	1905.0	1955.0	III	N	1	30	80	
			HOLL	2031.0	2108.0	III	N	1	25	180	
	2010	2400	CULG	2032.0	2032.0	III	B	1	25	90	
			CULG	2036.0	2036.0	III	B	1	25	90	
			CULG	2057.0	2400.0D	I	S	1	110	180	
			CULG	2114.0	2114.0	III	B	1	23	90	
			CULG	2132.0	2400.0D	III	N	1	25	180	
	2150	2400	HIRA								
15	0000	0058	HIRA								
			CULG	0000.0E	0126.0	I	S	1	120	180	
	0000	0800	CULG	0000.0E	0800.0D	III	N	1	20	180	
			LEAR	0117.0	0118.0	III		1	25	81	
			LEAR	0225.0	0242.0	III	N	2	25	180	
			CULG	0226.0	0227.0	III	G	3	23	240	
			LEAR	0319.0	1000.0	III	N	2	25	180	
			CULG	0324.0	0326.0	III	G	3	18X	260	
			CULG	0329.0	0330.0	III	G	2	57	360	
			CULG	0334.0	0335.0	III	G	2	18X	180	
			CULG	0415.0	0416.0	III	G	3	18X	180	
			CULG	0516.0	0516.0	III	B	2	18	180	
			CULG	0521.0	0521.0	III	B	3	18	440	
			SVTO	0523.0	0659.0	III	N	1	25	180	
	0711	1200	IZMI	0711.0E	1200.0U	I	N	1	120	190	
			IZMI	0713.7	0713.9	III	G	1	55	165	
			IZMI	0735.4	0741.9	III	GG	1	45	90	
			IZMI	0814.8	0815.0	III	B	2	50	85	
			IZMI	0826.9	0829.5	III	G	1	35	85	
			SVTO	0829.0	0829.0	III		1	28U	43U	

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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)
15		IZMI	0917.3	0917.5	III	B	1	45	85	
		IZMI	0945.7	0945.9	III	B	1	40	160	
		IZMI	0952.1	0953.8	I	GG,DC	2	135	165	
		IZMI	1018.7	1022.0	III	G	1	55	85	
		IZMI	1028.0	1028.2	III	G	1	30	65	
		IZMI	1031.3	1034.3	III	G	1	45	65	
		ONDR	1039.0	1039.3	DCIM	G	2	1166	2000X	
0627 1556		ONDR	1039.0	1039.3	DCIM	G	2	2000X	2645	
0640 1630		BL EN	1039.1	1039.8	III	GG,RS	3	1270	2700	
		IZMI	1050.0	1050.1	III	B	1	50	85	
		IZMI	1057.7	1057.8	III	B	1	45	90	
		IZMI	1103.6	1104.3	III	G	2	60	215	
		IZMI	1110.6	1114.1	III	GG	1	35	165	
		IZMI	1131.3	1136.1	III	GG	2	50	170	
		IZMI	1144.8	1145.0	III	G	2	80	190	
		BL EN	1326.0	1327.3	III	GG,RS	3	100X	3500	
		SVTO	1326.0	1330.0	III		1	25	180	
		SVTO	1338.0	1342.0	III		1	32U	155U	
		SGMR	1342.0	1343.0	III		1	30	80	
		ONDR	1524.0	1529.3	DCIM	G	2	2000X	4500X	
		ONDR	1524.1	1527.3	DCIM	GG	2	800X	2000X	
		BL EN	1524.6	1530.5	DCIM	P,C	3	140	4000X	
		SGMR	1526.0	1527.0	III		1	30	50	
		SVTO	1526.0	1527.0	III		1	39U	81U	
		PALE	1658.0	0016.0	CONT		1	25	180	
		HOLL	2002.0	2038.0	III		1	25	180	
		SGMR	2002.0	2006.0	III		1	30	80	
2010 2400		CULG	2010.0E	2400.0D	III	S,C	1	20	180	
		CULG	2036.0	2050.0	III	GG	2	20	90	
		PALE	2042.0	2043.0	V		2	25	180	
		SGMR	2042.0	2045.0	V		2	30	80	
		CULG	2043.0	2043.0	III	G	3	23	180	
		CULG	2136.0	2136.0	III	B	2	20	45	
		CULG	2145.0	2151.0	III	G	1	360	520	
		HOLL	2213.0	2214.0	III		1	25	180	
2149 2400		HIRA	2213.5	2214.5	III	B	2	30	U	
		CULG	2214.0	2215.0	III	G	2	20	180	
		PALE	2214.0	2214.0	III		1	25	180	
		LEAR	2305.0	0508.0	III	N	2	25	180	
		CULG	2307.0	2308.0	UNCLF		2	30	70	
		HIRA	2307.0	2307.5	II		1	30	40	
		HOLL	2307.0	2307.0	III		1	25	75	
		LEAR	2307.0	2307.0	II		1	32	75	ESS 2043
16	0000 0800	CULG	0000.0E	0058.0	III	N	1	20	180	
		CULG	0002.0	0003.0	III	G	3	27	200	
		LEAR	0002.0	0002.0	III		2	25	180	
		PALE	0002.0	0003.0	III		2	25	180	
0000 0845		HIRA	0002.0	0003.5	III	G	2	30	U	
		HIRA	0025.0	0033.5	III	G	2	30	U	
		HOLL	0025.0	0033.0	III		1	25	180	
		CULG	0030.0	0033.0	III	G	3	20	200	
		CULG	0041.0	0042.0	III	G	3	23	180	
		CULG	0054.0	0055.0	III	G	2	20	180	
		CULG	0356.0	0800.0D	III	S,C	1	27	180	
		LEAR	0430.0	1000.0	CONT		1	25	180	
		SVTO	0521.0	1012.0	CONT		1	36U	180U	
		LEAR	0541.0	0542.0	III		2	25	180	
		CULG	0542.0	0542.0	III	G	2	27	230	
		IZMI	0700.0E	1128.0U	III	N	1	45	95	
0700 1200		IZMI	0700.0E	1200.0U	I	N	2	50	270X	
0635 1635		BL EN	0755.6	0755.7	III	B	1	240	400	
		BL EN	0806.7	0810.9	II	H, C	3	130	400	
		ONDR	0806.5	0810.5	DCIM	G	1	800X	2000X	
0625 1558		ONDR	0807.0	0808.3	DCIM	G	1	2000X	4432	
		IZMI	0807.9	0809.4	II	HARM	2	130	270X	
		LEAR	0809.0	0809.0	III		1	25	180	
		SVTO	0809.0	0813.0	III		2	33	79	
		IZMI	0809.4	0809.8	III	G,C	2	40	215	

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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)
16			HIRA	0809.5	0810.0	III	B	1	40	U	
			IZMI	0810.0U	0811.6	IV		2	110	170	
			LEAR	0812.0	0813.0	III		1	25	180	
			IZMI	0812.7	0813.7	III	GG,FS	2	35	95	
			HIRA	0813.0	0813.5	III	B	2	40	U	
			IZMI	0838.5	0838.7	III	G	2	95	160	
			IZMI	0927.9	0928.0	III	G	1	140	215	
			IZMI	0950.8	0951.4	III	G	1	50	95	
			IZMI	1035.8	1035.9	III	B	2	50	90	
			HOLL	1458.0	1505.0	III		1	25	72	
			SVTO	1505.0	1505.0	III		1	25	62	
			HOLL	2058.0	2104.0	III		1	25	87	
			PALE	2104.0	2104.0	III		1	25	136	
			SGMR	2104.0	2104.0	III		1	30	50	
	2000	2400	CULG	2104.0	2104.0	III	B	2	25	160	
			CULG	2134.0	2159.0	III	N	1	20	40	
	2148	2400	HIRA								
			CULG	2229.0	2229.0	III	B	1	30	90	
			HOLL	2359.0	0003.0	III		1	25	180	
17	0000	0846	HIRA								
	0000	0800	CULG	0210.0	0210.0	III	B	1	20	70	
			CULG	0215.0	0800.0D	III	N	1	25	180	
	0656	1202	IZMI	0704.3	0709.6	III	G	1	45	90	
			SVTO	0748.0	0755.0	III		2	25	59	
			IZMI	0753.3	0754.6	III	G	2	25X	155	
			IZMI	0823.0U	1129.0U	I	N	1	130	260	
			IZMI	0825.4	0825.5	III	B	1	45	65	
			SVTO	0857.0	0858.0	III		1	25	65	
			IZMI	0857.3	0858.8	III	G	2	25X	155	
			IZMI	0932.7	0932.8	III	B	1	45	85	
			IZMI	0947.0	0948.0	III	G	2	25X	165	
	0622	1559	ONDR	0949.3	0950.3	DCIM	G	1	800X	1808	
	0630	1635	BLEN	0949.3	0950.6	III	GG,RS,C	2	260	1800	
			SVTO	1008.0	1014.0	V		2	25	180	
			IZMI	1008.5	1008.8	III	G,U	2	110	215	
			BLEN	1008.6	1014.7	DCIM	P	3	100X	1700	
			ONDR	1010.4	1011.5	DCIM	G	1	800X	2000X	
			ONDR	1010.5	1011.3	DCIM	G,W	1	2000X	4139	
			IZMI	1010.8	1012.5	III	GG,C,F,S	2	25X	270X	
			IZMI	1014.4	1014.7	III	G	2	25X	155	
			IZMI	1024.8	1024.9	III	B	1	25X	85	
			SVTO	1147.0	1148.0	III		1	25	60	
			IZMI	1147.8	1148.2	III	B	2	25X	95	
			ONDR	1149.5	1153.5	DCIM	GG	1	800X	2000X	
			BLEN	1149.6	1155.1	DCIM	P	3	250	4000X	
			IZMI	1152.3	1152.4	UNCLF		2	125	270X	
			ONDR	1341.4	1342.4	DCIM	G,W	1	2000X	4256	
			BLEN	1341.7	1342.9	DCIM	C	1	700	4000X	
			HOLL	1437.0	1437.0	III		1	25	87	
			SVTO	1437.0	1437.0	III		1	42U	84U	
			HOLL	1458.0	1459.0	III		1	25	88	
			SVTO	1458.0	1459.0	III		1	38	85	
			HOLL	1614.0	1614.0	III		1	25	139	
			SGMR	1614.0	1614.0	III		1	30	55	
			SVTO	1614.0	1614.0	III		1	28	117	
			HOLL	1638.0	1640.0	III		1	25	85	
			SGMR	1638.0	1640.0	III		1	30	50	
			BLEN	1638.2	1639.9	DCIM	P	3	200	1800	
			HOLL	1841.0	2350.0	III	N	1	25	180	
			PALE	1842.0	1842.0	III		1	25	180	
			SGMR	1843.0	2015.0	III	N	3	30	80	
			PALE	1857.0	1859.0	III		2	25	180	
			PALE	1901.0	1905.0	III		1	25	180	
			PALE	1948.0	1949.0	III		1	25	180	
	2000	2400	CULG	2000.0E	2107.0	CONT		1	30U	160	
			CULG	2014.0	2027.0	III	G	1	20	180	
			PALE	2014.0	2015.0	III		1	25	155	
			CULG	2018.0	2104.0	III	N	1	20	45	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Time				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
17		CULG	2120.0	2120.0	III	B	1	40	180	
		CULG	2134.0	2134.0	III	B	1	20	320	
		CULG	2258.0	2300.0	III	G	1	20	260	
	2146 2400	HIRA	2259.5	2300.0	III	B	1	40	U	
		CULG	2325.0	2326.0	III	G	1	23	180	
		CULG	2332.0	2400.00	III	N	1	25	90	
18	0000 0800	CULG	0000.0E	0035.0	III	N	1	25	120	
		LEAR	0033.0	0034.0	III		2	25	180	
		CULG	0034.0	0034.0	III	G	3	18X	500	
		PALE	0034.0	0034.0	III		1	25	180	
	0000 0847	HIRA	0034.0	0034.5	III	B	3	25X	1100	
		CULG	0140.0	0140.0	III	B	1	27	160	
		CULG	0151.0	0800.00	I	S	1	110	170	
		CULG	0202.0	0232.0	III	N	1	25	150	
		LEAR	0221.0	0223.0	III		1	49	126	
		CULG	0321.0	0321.0	III	G	1	100	320	
		CULG	0403.0	0404.0	III	G	1	300	800	
		CULG	0441.0	0800.00	III	N	1	30	180	
		CULG	0536.0	0536.0	III	B	1	40	260	
		CULG	0544.0	0601.0	III	G	1	18	1000	
		HIRA	0554.0	0600.0	III	G	1	U	1200	
		SVTO	0559.0	0600.0	III		1	25	180	
	0655 1200	IZMI	0655.0E	1120.0U	I	N	1	120	190	
	0620 1601	ONDR	0656.4	0718.2	DCIM	G	2	800X	1016	
		ONDR	0759.3	0802.4	DCIM	G	2	800X	1569	
	0625 1640	BLEN	0800.9	0806.9	III	G,RS,V	2	200	1200	
		IZMI	0820.2	0822.1	III	G	1	45X	155	
		ONDR	0853.1	0858.2	DCIM	G	2	800X	2000X	
		BLEN	0857.2	0858.7	III	GG,S,C	2	100X	4000X	
		IZMI	0857.2	0858.4	III	G	2	125	270X	
		ONDR	0857.4	0858.2	DCIM	G	1	2098	4500X	
		BLEN	0916.6	0922.7	III	G,RS	2	390	1100	
		IZMI	0930.5	0930.7	UNCLF		1	200	215	
		IZMI	0943.7	0943.8	III	B	2	45	85	
		IZMI	0947.0	0947.1	III	B	1	50X	85	
		IZMI	1032.6	1032.8	III	G	1	185	270X	
		BLEN	1053.2	1054.3	III	GG	2	160	700	
		IZMI	1103.5	1110.4	III	GG	1	45	95	
		IZMI	1108.3	1119.7	III	G	2	55	160	
		BLEN	1133.3	1142.8	III	GG,S	1	160	420	
		IZMI	1133.4	1134.1	III	G	2	55	270X	
		IZMI	1136.6	1136.7	III	B	2	240	270X	
		IZMI	1142.4	1142.4	III	B	2	240	270X	
		IZMI	1147.3	1149.0	III	G	1	55	270X	
		BLEN	1148.7	1313.6	IV	P,C,S	1	100X	4000X	
		ONDR	1156.2	1349.3	DCIM	GG,FS	2	2000X	4500X	
		ONDR	1158.3	1335.4	DCIM	GG,SP,FS	3	800X	2000X	
		IZMI	1159.7	1200.5	III	G	2	50	85	
		BLEN	1205.0X	1216.5	II	H	1	100X	780	
		SVTO	1208.0	1216.0	III		2	25	180	
		SGMR	1211.0	1229.0	III	N	3	30	80	
		SGMR	1216.0	1220.0	II		3	30	80	ESS 0850
		SVTO	1216.0	1221.0	II		1	25	73	ESS 0507
		SVTO	1219.0	1318.0	IV		2	25	180	
		SVTO	1220.0	1230.0	II		1	25	73	ESS 0507
		HOLL	1339.0	1400.0	III	N	1	25	180	
		SGMR	1339.0	1352.0	III	N	2	30	80	
		SVTO	1339.0	1342.0	III		2	25	140	
		HOLL	1348.0	1352.0	II		1	52	147	ESS 0901
		SVTO	1351.0	1401.0	II		2	25	138	ESS 1425
		SVTO	1431.0	1437.0	III		1	25	74	
		HOLL	1641.0	1641.0	III		1	25	126	
		HOLL	1641.0	1711.0	III	N	1	25	180	
		SGMR	1641.0	1641.0	III		1	30	75	
		SGMR	1707.0	1711.0	III		1	30	50	
	2010 2400	CULG	2102.0	2105.0	III	G	1	23	90	
	2144 2400	HIRA								
		CULG	2233.0	2233.0	III	B	1	27	70	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
19	0000	0800	CULG	0030.0	0030.0	III	B	1	60	90	
			PALE	0107.0	0109.0	III		1	25	54	
			CULG	0108.0	0110.0	III	G	3	18X	160	
	0000	0848	HIRA	0108.0	0109.5	III	G	3	25X		U
			LEAR	0110.0	0110.0	III		1	25	180	
			CULG	0215.0	0217.0	III	G	3	18X	180	
			HIRA	0215.0	0219.0	III	G	2	25X		U
			LEAR	0215.0	0219.0	V		2	25	180	
			PALE	0215.0	0217.0	V		2	25	180	
			PALE	0217.0	0224.0	III		1	25	180	
			CULG	0218.0	0220.0	III	G	2	30	180	
			CULG	0221.0	0221.0	III	B	1	120	280	
			CULG	0222.0	0230.0	II	SH	1	70	130	FLA ESS 550
			LEAR	0223.0	0235.0	II		1	25	180	ESS 0333
			CULG	0224.0	0225.0	III	G	2	25	90	
			PALE	0225.0	0235.0	III		1	25	180	
			CULG	0230.0	0240.0	III	GG	3	20	50	
			HIRA	0230.5	0234.0	III	G	1	30		U
			CULG	0339.0	0339.0	III	B	1	20	75	
			CULG	0402.0	0402.0	III	B	1	20	57	
	0625	1640	BLEN	0645.1	0646.7	III	G,C	2	1100	4000X	
			CULG	0700.0	0700.0	III	B	1	23	50	
			LEAR	0843.0	0844.0	III		1	25U	180U	
			SVTO	0843.0	0844.0	III		1	25	125	
			BLEN	0843.9	0844.1	III	G	2	100X	350	
	0658	1200	IZMI	0843.9	0844.4	III	G	2	25X	270X	
	0618	1603	ONDR	0950.1	0955.0	DCIM	G	2	2000X	4500X	
			ONDR	0950.5	0952.0	DCIM	G	1	1138	2000X	
			BLEN	0950.6	0956.6	DCIM	C	3	560	4000X	
			IZMI	1026.5	1027.9	III	G	2	25X	270X	
			ONDR	1123.1	1124.3	DCIM	GG	3	814	1414	
			BLEN	1123.5	1124.9	III	S,C	3	560	4000X	
			ONDR	1123.5	1127.5	DCIM	G	1	2000X	4500X	
			SVTO	1156.0	1205.0	III		1	25	44	
			IZMI	1156.4	1156.7	III	G	1	35	155	
			SGMR	1307.0	1307.0	III		2	30	70	
			SVTO	1307.0	1307.0	III		2	25	84	
			ONDR	1328.5	1333.4	DCIM	G	1	2000X	4500X	
			BLEN	1328.7	1334.4	III	GG,C	3	1200	4000X	
			ONDR	1329.0	1331.5	DCIM	G	1	1114	2000X	
			PALE	2134.0	0337.0	III	N	1	25	180	
	2010	2400	CULG	2154.0	2157.0	III	G	1	20	45	
			CULG	2158.0	2159.0	III	G	1	18	460	
	2143	2400	HIRA	2158.0	2158.5	III	G	1	25X	600	
20	0000	0800	CULG								
			LEAR	0516.0	0517.0	III		1	25	144	
	0700	1200	IZMI	0711.0	1150.0U	I	N	2	120	270X	
			LEAR	0727.0	0727.0	III		1	25	76	
	0625	1640	BLEN	0728.7	0729.3	III	GG,RS	1	300	700	
			SVTO	0829.0	0829.0	III		1	25	77	
	0000	0849	HIRA	0829.0	0829.5	III	B	1	30		U
			IZMI	0829.3	0829.5	III	B	2	35	75	
			SVTO	0849.0	0850.0	III		1	25	39	
			IZMI	0849.7	0849.9	III	G	1	45	85	
			IZMI	0934.0	0934.2	III	B	1	45	65	
			IZMI	0957.0	0957.1	III	B	1	165	265	
			ONDR	1126.5	1137.5	DCIM	G	2	800X	2000X	
	0616	1604	ONDR	1127.1	1130.3	DCIM	G	2	2000X	4500X	
			BLEN	1127.2	1129.4	III	GG,C	3	470	4000X	
			IZMI	1136.0	1136.4	III	B	1	45	95	
			BLEN	1144.5	1145.6	III	GG	1	180	550	
			IZMI	1144.7	1145.0	III	G	1	55	120	
	2010	2400	HOLL	2055.0	2056.0	III		1	28	86	
			CULG	2055.0	2056.0	III	G	1	23	130	
	2141	2400	HIRA								
21	0000	0123	HIRA								
	0000	0800	CULG	0037.0	0037.0	III	B	1	20	45	

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OBSERVATION		Sta	EVENT		Int	FREQUENCY		Remarks
Day	Start End (UT) (UT)		Start End (UT) (UT)	Spectral Class		Lower (MHz)	Upper (MHz)	
21	0247 0507	HIRA						
	0620 1645	CULG	0529.0 0529.0	III	B	1	23	80
	0622 0850	BLEN						
	0700 1200	HIRA						
	0613 1606	IZMI						
	2010 2400	ONDR	0901.1 0902.2	DCIM	G,W	1	2000X	4246
	2139 2400	CULG						
		HIRA						
22	0000 0851	HIRA						
	0000 0800	CULG	0253.0 0254.0	III	G	1	40	160
	0611 1608	ONDR						
	0703 1200	IZMI						
	0615 1645	BLEN	1111.8 1112.2	III	GG,RS	1	380	900
	2010 2400	CULG						
	2138 2400	HIRA						
23		LEAR	0045.0 0047.0	III		2	25	180
		HOLL	0046.0 0046.0	III		1	25	180
	0000 0800	CULG	0046.0 0047.0	III	G	2	30	180
	0000 0852	HIRA	0046.0 0047.0	III	B	1	30	U
		CULG	0337.0 0337.0	III	B	1	40	90
	0609 1609	ONDR						
	0615 1645	BLEN						
	0655 1202	IZMI	0950.6 0951.1	III	G	1	45	90
		IZMI	1027.9 1028.7	III	GG	2	25X	170
		IZMI	1154.4 1158.8	III	G	1	45	65
		IZMI	1200.0 1201.2	I	GG,DC	2	130	160
		IZMI	1201.2 1201.3	III	B	2	120	190
	2010 2400	CULG						
	2136 2400	HIRA						
24	0000 0800	CULG						
	0000 0853	HIRA						
	0607 1611	ONDR						
	0615 1645	BLEN						
	0703 1200	IZMI						
	2010 2400	CULG						
	2135 2400	HIRA						
25		LEAR	0318.0 0319.0	III		1	72	180
	0000 0800	CULG	0318.0 0319.0	III	G	1	35	280
	0000 0854	HIRA	0321.0 0321.5	III	B	1	30	U
		CULG	0510.0 0511.0	III	G	1	30	180
	0604 1613	ONDR						
	0655 1200	IZMI	1143.4 1144.4	III	G	1	180	270X
	0610 1645	BLEN	1223.6 1224.2	III	GG,S	2	100X	600
		SGMR	1224.0 1224.0	III		1	40	55
		SVTO	1224.0 1224.0	III		1	25	180
		SVTO	1250.0 1250.0	III		1	25	78
	2010 2400	CULG						
	2134 2400	HIRA						
26	0000 0800	CULG	0212.0 0217.0	III	G	1	30	140
		CULG	0322.0 0324.0	III	G	1	35U	160
		LEAR	0528.0 0538.0	III		1	25	180
		SVTO	0528.0 0529.0	III		1	25	75
		CULG	0529.0 0529.0	III	G	1	20	180
	0000 0855	HIRA	0529.0 0529.5	III	B	1	40	200
		HIRA	0538.5 0539.0	III	B	1	50	130
		CULG	0539.0 0539.0	III	B	1	20	180
	0602 1614	ONDR						
	0700 1200	IZMI	0843.6 0843.8	III	B	1	45	165
		SVTO	1402.0 1402.0	III		1	25	79
		HOLL	1418.0 1420.0	III		1	25	180
		SGMR	1418.0 1524.0	III	N	2	30	80
		SVTO	1418.0 1420.0	III		1	25	180
		HOLL	1437.0 1730.0	III	N	1	25	180
		SVTO	1437.0 1437.0	III		2	25	180

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SOLAR RADIO EMISSION Spectral Observations

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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)
26			SVTO	1437.0	1524.0	III	N	2	25	180	
			SGMR	1619.0	1631.0	III	N	2	30	80	
			SVTO	1619.0	1624.0	III		1	25	180	
	0610	1645	BLEN	1619.0	1624.0	III	GG	2	100X	400	
			SVTO	1630.0	1631.0	III		1	25	180	
	2010	2400	CULG	2103.0	2105.0	III	G	1	20	130	
	2132	2400	HIRA								
27	0000	0855	HIRA								
	0000	0800	CULG	0011.0	0011.0	III	B	1	30	90	
			CULG	0030.0	0031.0	III	G	1	30	130	
	0700	1200	IZMI	0744.3	0744.4	III	B	1	180	260	
			IZMI	0838.6	0838.8	III	G	2	110	270X	
	0600	1650	BLEN	0838.6	0839.1	III	GG	2	140	580	
			IZMI	0856.4	0909.6	I	N	1	210	270X	
			IZMI	0928.6	0928.7	III	B	1	40	145	
			IZMI	1002.0	1002.1	III	B	1	45	95	
			IZMI	1011.0	1011.2	III	G,C	2	110	270X	
			SVTO	1011.0	1015.0	III		1	25	180	
			IZMI	1014.7	1014.9	III	G	2	25X	210	
			IZMI	1017.3	1017.4	III	B	1	45	90	
			IZMI	1101.9	1103.6	III	G	1	200	265	
			IZMI	1107.3	1107.4	III	G	2	35	155	
			SVTO	1112.0	1238.0	III	N	2	25	180	
			IZMI	1112.8	1113.0	III	G	2	80	270	
			IZMI	1115.9	1117.5	III	GG	2	25X	270X	
			IZMI	1129.7	1130.3	II	G	2	00	160	
			IZMI	1137.2	1137.3	III	B	1	110	190	
			IZMI	1144.2	1144.7	III	G	1	50	180	
			SGMR	1205.0	1209.0	III		2	30	80	
			BLEN	1238.1	1238.7	III	GG	2	180	450	
			HOLL	1335.0	1415.0	III	N	1	26	168	
			HOLL	1335.0	1652.0	III	N	1	25	180	
			SVTO	1335.0	1345.0	III		2	25	180	
			SGMR	1340.0	1345.0	III		2	30	70	
			SVTO	1420.0	1423.0	III		2	25	135	
			SGMR	1429.0	1702.0	III	N	2	30	80	
			SVTO	1429.0	1429.0	III		1	25	48	
			SVTO	1454.0	1456.0	III		2	25	180	
	0600	1616	ONDR	1454.0	1455.3	DCIM	G,W	1	2000X	4500X	
			BLEN	1454.2	1457.0	III	GG	2	100X	450	
			SVTO	1530.0	1530.0	III		1	25	137	
			BLEN	1554.9	1557.9	III	GG	2	200	420	
			SVTO	1605.0	1606.0	III		1	25	137	
			HOLL	2039.0	2039.0	III		1	29	148	
			PALE	2039.0	2039.0	III		1	25	155	
	2020	2400	CULG	2039.0	2040.0	III	G	1	20	150	
	2130	2400	HIRA								
			CULG	2230.0	2233.0	III	G	1	20	180	
28	0000	0856	HIRA								
	0000	0800	CULG	0319.0	0320.0	III	G	1	30U	180	
			CULG	0515.0	0515.0	III	G	1	30U	160	
	0558	1617	ONDR								
			CULG	0640.0	0640.0	III	B	3	18	180	
			SVTO	0640.0	0654.0	III	N	1	25	180	
			CULG	0645.0	0645.0	III	B	2	23	180	
			IZMI	0725.7	0729.7	III	GG	1	35	135	
			IZMI	0735.5	0738.3	III	GG,FS	2	25X	270X	
			CULG	0736.0	0741.0	III	G	2	20	200	
			SVTO	0736.0	1417.0	III	N	2	25	180	
			IZMI	0739.5	0741.2	III	GG	2	25X	270X	
			CULG	0757.0	0757.0	III	B	1	25	150	
			IZMI	0757.0	0758.0	III	G	2	25X	270X	
			IZMI	0815.2	0818.5	III	GG	1	25X	260	
			IZMI	0842.0	0842.2	III	G	2	40	155	
			IZMI	0902.6	0903.9	III	GG	2	25X	270	
			IZMI	1104.4	1106.5	III	GG	2	25X	270X	
			IZMI	1109.3	1109.5	III	B	2	45	180	

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OBSERVATION		Sta	EVENT		Int	FREQUENCY		Remarks
Start Day	End Day		Start (UT)	End (UT)		Lower (MHz)	Upper (MHz)	
(UT)	(UT)				(1-3)			
28	0600 1650	IZMI	1128.0	1128.2	III	G	2	25X 270X
		SGMR	1128.0	1239.0	III	N	2	30 80
		BLEN	1128.0	1131.2	III	GG	2	100X 350
		IZMI	1130.3	1131.8	III	GG	2	25X 270X
		IZMI	1148.7	1150.3	III	GG	2	25X 215
		IZMI	1151.3	1151.4	III	B	1	80 215
		IZMI	1156.2	1156.9	III	GG	1	25X 215
		HOLL	1417.0	1417.0	III		1	44 180
		SGMR	1535.0	1645.0	III	N	2	30 55
		SVTO	1535.0	1547.0	III	N	1	34 155
		PALE	1735.0	1736.0	III		1	25 159
		SGMR	1735.0	1936.0	III	N	3	30 80
		PALE	1800.0	0140.0	III	N	1	25 178
		PALE	1932.0	1936.0	III		1	25 65
	2020 2400	PALE	1952.0	1952.0	III		1	25 54
		CULG	2031.0	2034.0	III	G	1	25 180
		SGMR	2033.0	2136.0	III	N	2	30 80
		CULG	2101.0	2140.0	III	N	1	25 180
	2128 2400	CULG	2106.0	2106.0	III	B	2	25 180
		HIRA						
		CULG	2231.0	2234.0	III	G	1	27 180
		CULG	2318.0	2320.0	III	G	1	20 180
		CULG	2354.0	2357.0	III	G	1	30 90
29	0000 0800	LEAR	0037.0	0037.0	III		1	25 180
		CULG	0037.0	0037.0	III	B	1	18 180
		CULG	0050.0	0053.0	III	G	1	25 180
		LEAR	0050.0	0053.0	III		1	25 180
	0000 0857	HIRA	0051.0	0051.5	III	B	1	50 200
		CULG	0131.0	0140.0	III	G	1	30 180
		CULG	0217.0	0218.0	III	G	1	27 140
		CULG	0230.0	0231.0	III	G	1	30 150
	0700 1200	CULG	0314.0	0318.0	III	G	1	40U 180
		CULG	0417.0	0422.0	III	G	1	27 180
		CULG	0507.0	0535.0	III	N	1	27 180
		LEAR	0520.0	0522.0	III		1	25 180
		HIRA	0520.5	0521.0	III	B	1	50 130
		IZMI	0722.0U	0900.0U	I	N	1	130 260
		LEAR	0925.0	0947.0	III	N	1	25 180
		IZMI	0925.9	0957.0	III	S	2	25X 260
		SVTO	0927.0	0945.0	III	N	1	25 180
	0556 1619	ONDR	1014.2	1023.2	DCIM	G,W	1	2000X 4500X
		SVTO	1016.0	1021.0	III		2	25 180
		IZMI	1016.4	1017.2	III	G	1	25X 160
		ONDR	1017.3	1021.1	DCIM	G	1	800X 2000X
	0600 1655	BLEN	1017.4	1021.2	DCIM	C	2	100X 4000X
		IZMI	1018.4	1019.8	III	GG,C	2	25X 270X
		IZMI	1020.4	1021.3	III	GG	2	25X 270X
		IZMI	1025.2	1051.0	III	N	1	30 165
		SVTO	1040.0	1046.0	III		1	25U 46U
		ONDR	1226.5	1230.0	DCIM	G	1	2303 4500X
		BLEN	1227.0	1227.9	DCIM	C	2	2100 4000X
		SVTO	1303.0	1312.0	III		2	25 180
		ONDR	1303.5	1310.1	DCIM	GG	1	800X 1320
		BLEN	1303.6	1311.2	III	GG	2	100X 4000X
		SGMR	1304.0	1310.0	III		2	30 80
		SVTO	1342.0	1343.0	III		1	25 78
		SVTO	1500.0	1506.0	III		1	25U 156U
		ONDR	1501.4	1506.1	DCIM	G	1	2000X 4500X
		ONDR	1501.5	1510.4	DCIM	G	1	800X 2000X
		BLEN	1501.6	1510.9	DCIM	C	2	100X 4000X
	2020 2400	SVTO	1510.0	1556.0	III	N	1	25 180
		HOLL	1837.0	1839.0	III		1	25 180
		SGMR	1837.0	1900.0	III	N	1	30 70
		PALE	1838.0	1839.0	III		1	25 180
		HOLL	1850.0	2015.0	III	N	1	25 180
		HOLL	2049.0	2050.0	III		1	25 180
		SGMR	2049.0	2050.0	III		1	30 80
		CULG	2049.0	2055.0	III	G	1	40U 180

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Mar 03

SOLAR RADIO EMISSION Spectral Observations

MARCH 2003

OBSERVATION			Sta	Start		End		EVENT		Int	FREQUENCY		Remarks
Day	Start (UT)	End (UT)		(UT)	(UT)	(UT)	(UT)	Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
29	2127	2400	HIRA										
30	0000	0858	HIRA										
			LEAR	0215.0	0215.0			III		1	64	126	
	0000	0800	CULG	0215.0	0215.0			III	B	1	60U	90	
			CULG	0552.0	0552.0			III	B	1	100	180	
	0553	1620	ONDR										
	0555	1655	BLEN										
	0606	1200	IZMI	0606.0E	1200.0D			I	N	1	180U	270X	
			IZMI	1000.4	1000.9			III	G	1	40	95	
	2020	2400	CULG	2057.0	2057.0			III	B	1	40U	60	
	2126	2400	HIRA										
			CULG	2156.0	2156.0			III	B	1	20	60	
31	0000	0800	CULG	0020.0	0020.0			III	B	1	60U	90	
	0000	0859	HIRA	0020.0	0020.5			III	B	1	25X	110	
	0551	1622	ONDR										
	0555	1655	BLEN										
	0555	1200	IZMI	0757.3	0757.5			III	B	1	45	90	
			IZMI	0956.0	0956.2			III	B	1	45	85	
			SVTO	1126.0	1126.0			III		1	25	150	
			IZMI	1126.1	1126.3			III	b	2	25X	170	
			SVTO	1248.0	1252.0			III		1	25	69	
			SGMR	1252.0	1252.0			III		1	30	60	
	2020	2400	CULG	2036.0	2114.0			III	N	1	20	90	
	2125	2400	HIRA										
			CULG	2227.0	2228.0			III	G	1	65	170	
			CULG	2235.0	2238.0			III	G	1	65	170	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

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

Stations Reporting:

CULG = Culgoora	IZMI = Izmiran	LEAR = Learmonth	ONDR = Ondrejov
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
MARCH 2003

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/03/03	-1.12	+0.12	I	8H32 E	15H33 D
02/03/03	-0.99	+0.20	II	8H32 E	15H33 D
03/03/03	-0.68	+0.33	IV	8H32 E	15H33 D
05/03/03	-0.22	+0.45	I	8H53 E	15H32 D
05/03/03	+1.40	-0.20	I	8H53 E	15H32 D
06/03/03	+0.05	+0.62	II	8H31 E	15H32 D
07/03/03	+0.39	+0.39	II	8H31 E	15H32 D
09/03/03	+0.93	+0.43	I	8H30 E	15H31 D
10/03/03	-0.59	+0.11	III	8H30 E	15H31 D
11/03/03	-0.42	+0.06	III	8H30 E	15H31 D
12/03/03	-0.20	+0.09	III	8H33 E	15H31 D
12/03/03	+1.13	+0.84	II	8H33 E	15H31 D
13/03/03	+0.11	+0.00	III	8H32 E	15H30 D
14/03/03	+0.31	+0.02	III	8H29 E	15H30 D
15/03/03	-0.03	-0.17	I	8H29 E	15H30 D
15/03/03	+0.54	-0.03	III	8H29 E	15H30 D
16/03/03	+0.43	-0.25	II	8H28 E	15H29 D
16/03/03	+0.87	-0.12	II	8H28 E	15H29 D
16/03/03	+1.29	+0.39	I	8H28 E	15H29 D
17/03/03	+0.50	-0.12	II	8H38 E	15H29 D
18/03/03	+0.59	-0.14	II	8H30 E	15H29 D
20/03/03	+1.21	-0.40	I	8H29 E	15H28 D
20/03/03	+1.35	+0.70	I	8H29 E	15H28 D
23/03/03	+1.43	+0.64	II	8H26 E	11H58
27/03/03	-0.76	+0.28	I	8H36 E	13H35
27/03/03	-0.28	-0.33	I	8H36 E	15H26 D
27/03/03	-0.02	+0.33	I	8H36 E	14H50
28/03/03	-0.05	-0.14	I	8H25 E	15H26 D
29/03/03	+0.33	+0.20	I	8H28 E	15H26 D
30/03/03	+0.82	+0.29	I	11H02	15H25 D
30/03/03	+0.08	+0.05	I	13H33	15H25 D
31/03/03	+1.33	-0.06	I	8H24 E	15H25 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

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MARCH 2003

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START (UT)	END (UT)
01/03/03	-1.01	+0.17	II	8H32 E	15H33 D
02/03/03	-0.91	+0.28	II	8H32 E	15H33 D
02/03/03	+1.10	-0.16	I	8H32 E	15H33 D
03/03/03	-0.62	+0.37	III	8H32 E	15H33 D
03/03/03	+1.21	-0.25	I	8H32 E	15H33 D
04/03/03	-0.34	+0.45	I	8H32 E	15H33 D
04/03/03	+1.21	-0.25	I	8H32 E	15H33 D
05/03/03	-0.17	+0.43	II	8H53 E	15H32 D
06/03/03	+0.12	+0.47	II	8H31 E	15H32 D
07/03/03	+0.39	+0.45	I	8H31 E	14H13
08/03/03	+0.57	+0.39	I	8H31 E	15H32 D
09/03/03	-0.74	+0.11	I	8H30 E	15H31 D
10/03/03	-0.53	+0.12	II	8H30 E	15H31 D
11/03/03	-0.29	+0.14	II	8H30 E	15H31 D
12/03/03	-0.17	-0.08	I	8H33 E	15H31 D
12/03/03	-0.06	+0.11	I	8H33 E	15H31 D
12/03/03	+1.05	+0.64	II	8H33 E	15H31 D
13/03/03	+0.12	-0.09	I	8H32 E	15H30 D
14/03/03	-0.08	-0.14	I	8H29 E	15H30 D
14/03/03	+0.28	+0.00	I	8H29 E	15H30 D
14/04/03	+0.29	-0.12	I	8H29 E	15H30 D
15/03/03	+0.19	-0.12	II	8H29 E	15H30 D
15/03/03	+0.51	+0.03	II	8H29 E	15H30 D
16/03/03	+0.33	-0.22	II	8H28 E	15H29 D
16/03/03	+0.74	+0.02	I	8H28 E	15H29 D
17/03/03	+0.43	-0.14	I	8H38 E	15H29 D
17/03/03	+0.65	-0.25	I	8H38 E	15H29 D
17/03/03	+0.91	+0.00	I	8H38 E	15H29 D
18/03/03	+0.65	-0.16	II	8H30 E	15H29 D
18/03/03	+0.85	-0.36	II	8H30 E	15H29 D
19/03/03	+1.16	-0.11	II	8H29 E	15H29 D
20/03/03	+1.16	-0.40	I	8H29 E	15H28 D
20/03/03	+1.19	-0.09	I	8H29 E	15H28 D
20/03/03	+1.30	+0.39	I	8H29 E	15H28 D

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MARCH 2003

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START (UT)	END (UT)
25/03/03	+0.95	+0.51	I	8H26 E	14H40
26/03/03	+1.09	+0.48	I	13H00	15H27 D
27/03/03	-0.71	+0.28	II	8H36 E	15H26 D
27/03/03	-0.12	+0.39	I	8H36 E	15H26 D
27/03/03	+0.09	+0.36	I	8H36 E	15H26 D
28/03/03	-0.05	-0.12	I	8H25 E	15H26 D
28/03/03	+0.39	+0.37	I	8H25 E	15H26 D
29/03/03	+0.60	+0.31	II	8H28 E	15H26 D
30/03/03	+0.16	+0.00	I	12H40	15H25 D
30/03/03	+0.87	+0.31	I	8H24 E	15H25 D
30/03/03	+1.12	+0.17	I	8H24 E	15H25 D
31/03/03	+0.48	-0.03	I	8H24 E	15H25 D
31/03/03	+1.04	+0.26	I	8H24 E	15H25 D

: NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

- * For the days marked by an asterisk, intense ionospheric gravity waves are observed during the whole day . Without a more detailed analysis leading to decreased uncertainties in the deviation , the positions which are indicated are estimated within +/- 0.2 R.
- ** Following a large burst.
- *** Importance not well-determined due to the proximity of a very strong alternate source.
- **** No flux measurements available.

COSMIC RAY INDICES
(Neutron Monitor)

March 2003

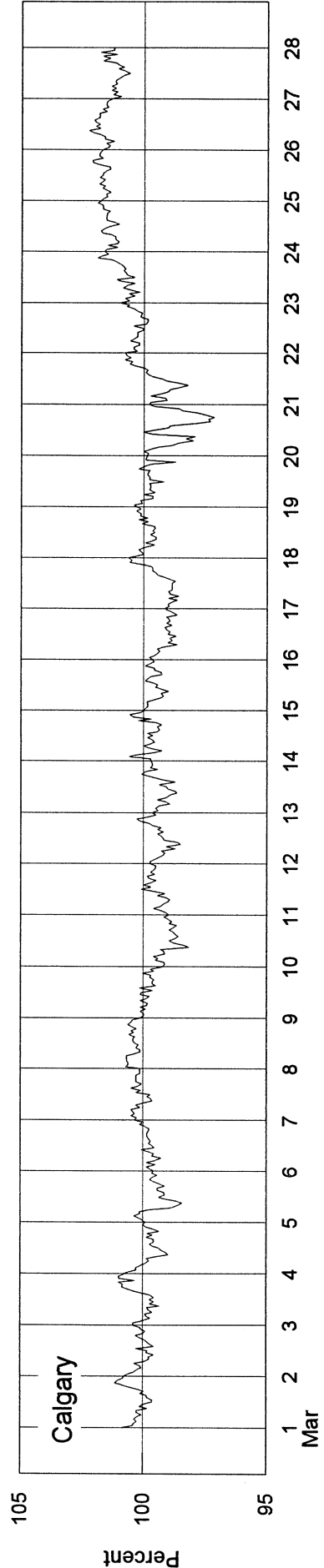
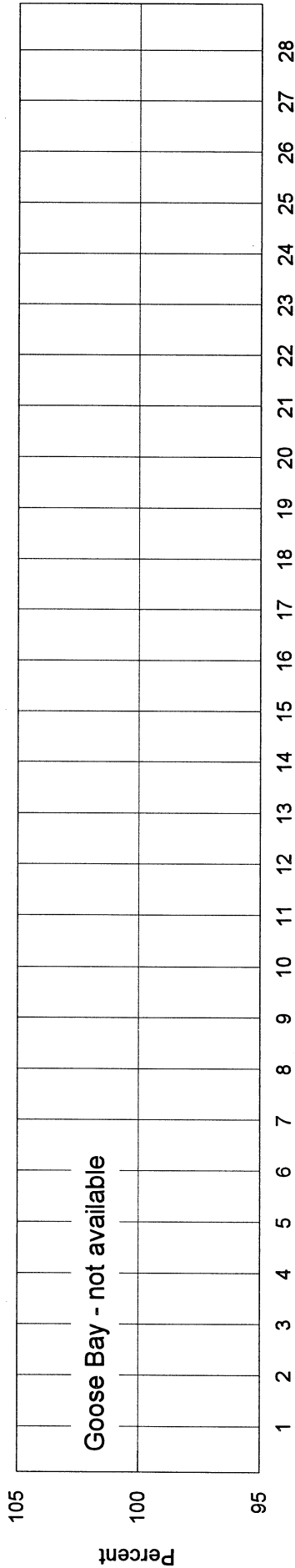
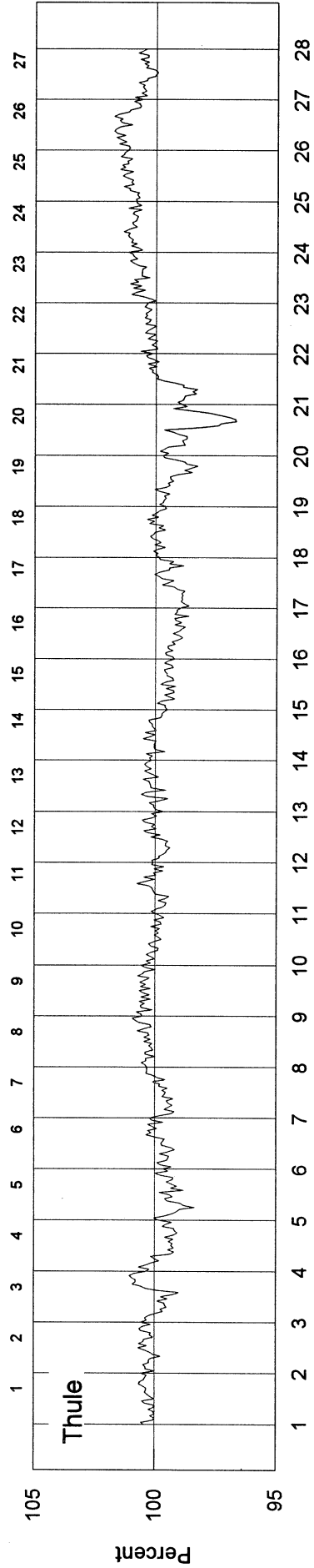
Day	THULE Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4006.7	3536.2	5683.5	8449.4	3771.4	1934.6	3476.3
2	4008.0	3528.0	5681.3	8435.9	3770.1	1939.8	3475.5
3	4000.3	3531.0	5685.3	8439.6	3764.4	1946.6	3470.1
4	3979.9	3518.2	5648.2	8385.5	3760.5	1944.8	3471.3
5	3968.7	3507.0	5627.6	8371.5	3757.8	1939.9	3465.4
6	3985.7	3517.3	5642.2	8396.2	3760.9	1946.1	3468.8
7	3984.1	3532.5	5650.5	8408.9	3759.4	1946.0	3465.5
8	4010.1	3542.0	5664.3	8424.9	3754.6	1945.3	3462.5
9	4013.3	3521.3	5631.5	8416.3	3739.8	1946.8	3456.5
10	3996.0	3489.2	5595.7	8367.0	3723.5	1937.9	3449.4
11	3994.3	3506.8	5614.7	8386.7	3738.3	1948.7	3465.7
12	3992.5	3504.0	5627.3	8397.4	3729.3	1948.9	3458.7
13	4001.0	3502.2	5642.1	8413.4	3733.0	1946.3	3458.9
14	3997.5	3519.2	5614.4(23)	8370.6	3724.3	1943.4	3453.1
15	3974.7	3511.5	5588.9	8335.1	3708.8	1941.1	3447.0
16	3961.7	3493.8	5575.5	8339.0	3704.4	1937.1	3445.5
17	3965.6	3498.8	5601.9	8369.4	3737.0	1950.9	3450.8
18	3993.3	3523.5	5604.3	8404.1	3747.0	1960.6	3449.5
19	3967.6	3519.3	5591.2	8378.0	3712.2	1961.4	3445.6
20	3936.9	3481.0	5521.8	8251.3	3657.4	1949.9	3438.1
21	3974.5	3512.8	5593.6	8345.3	3706.7	1958.3	3442.7
22	4005.0	3535.8	5627.1	8390.9	3735.8	1967.6	3452.8
23	4022.1	3556.8	5635.5	8411.5	3758.7	1972.2	3456.3
24	4032.5	3577.5	5656.2	8465.8	3767.5	1973.2	3467.2
25	4040.1	3586.2	5671.9	8495.5	3776.2	1971.7	3476.3
26	4047.0	3587.0	5681.5	8470.7	3772.9	1970.4	3479.5
27	4012.6	3567.8	5652.1	8415.2	3761.8	1974.0	3463.7
28	4013.1	3554.8	5626.6	8390.1	3735.2	1965.2	3440.6
29	3998.6	3523.2	5596.6	8361.7	3707.7	1951.8	3423.4
30	3953.2	3484.0	5562.2	8313.0	3675.2	1937.0	3415.1
31	3927.5	3459.3	5533.3	8280.5	3664.3	1933.7	3404.7
Mean	3992.0	3523.5	5623.5	8389.7	3735.9	1951.3	3454.7

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)

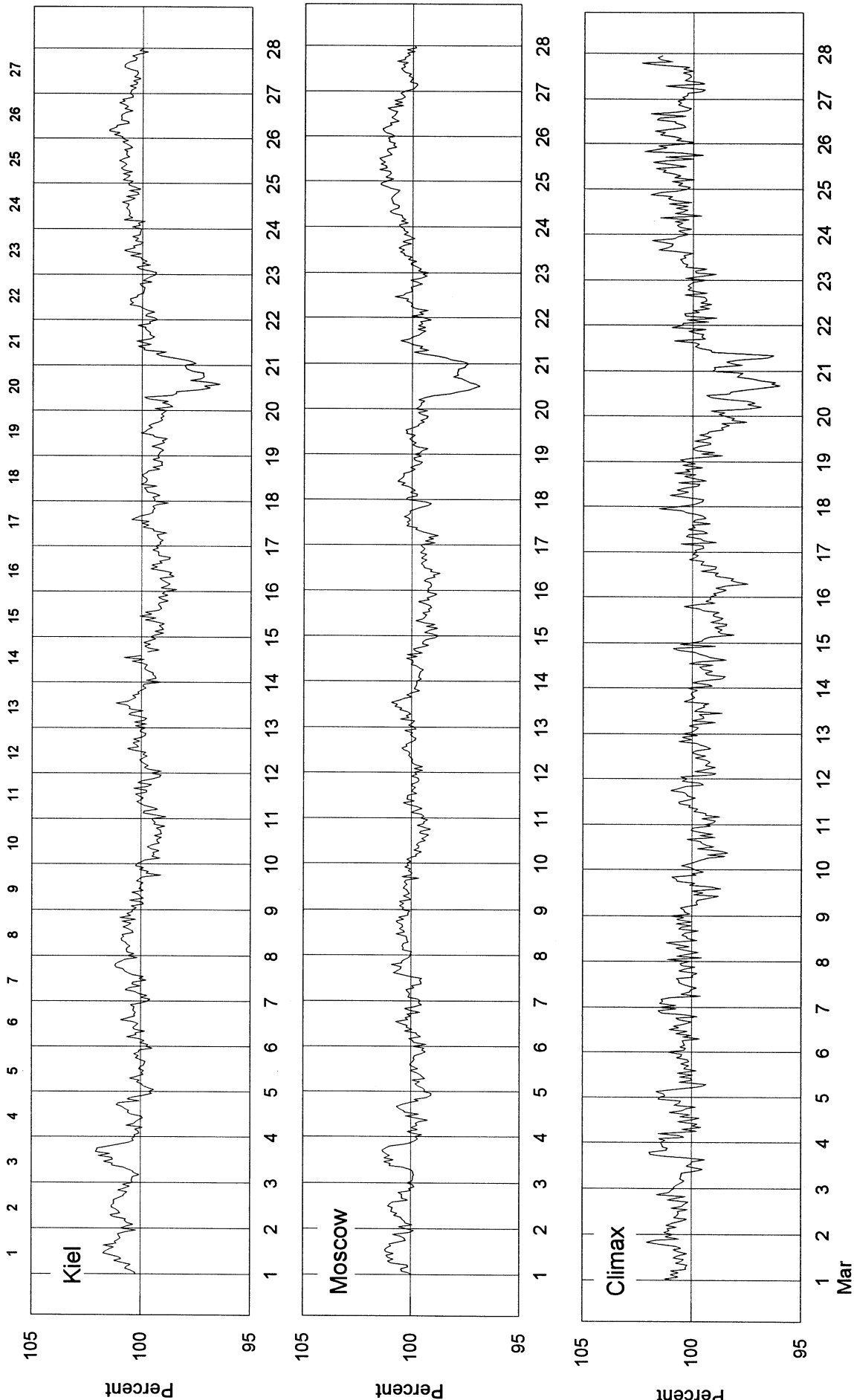
Bartels Rotation 2315 - Beginning 1 March 2003



COSMIC RAY INDICES

(Neutron Monitor)

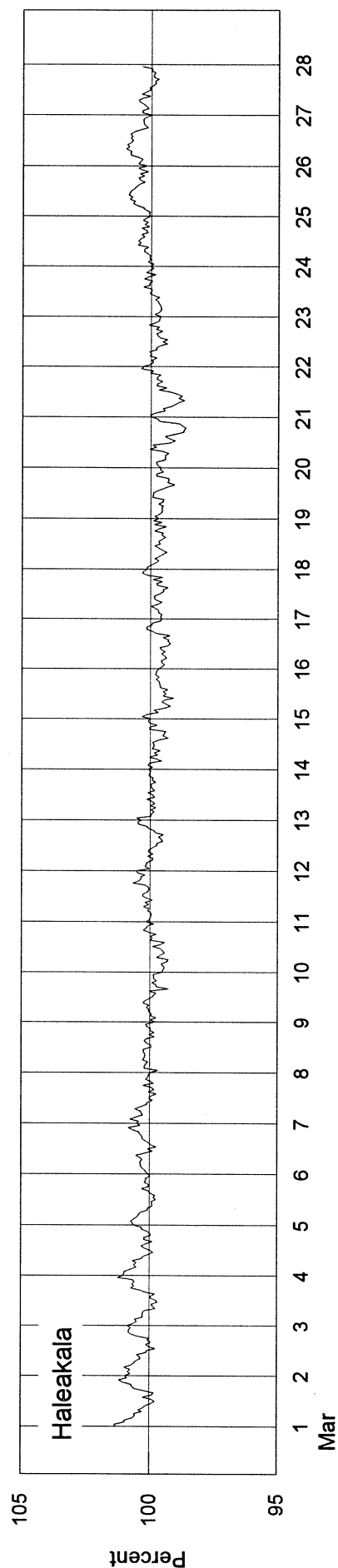
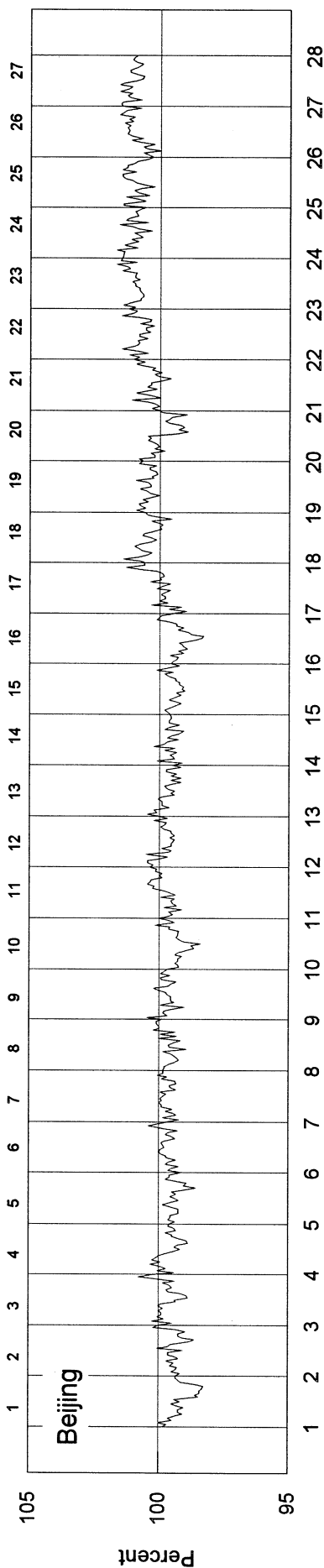
Bartels Rotation 2315 - Beginning 1 March 2003



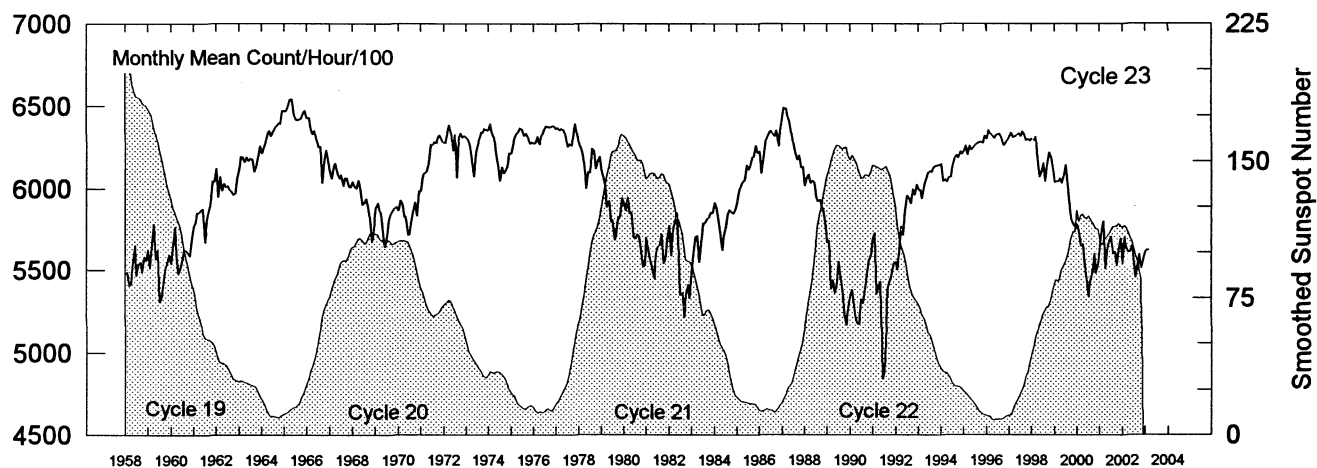
COSMIC RAY INDICES

(Neutron Monitor)

Bartels Rotation 2315 - Beginning 1 March 2003



Kiel Neutron Monitor Pressure-Corrected Values Jan 1958 - Mar 2003



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

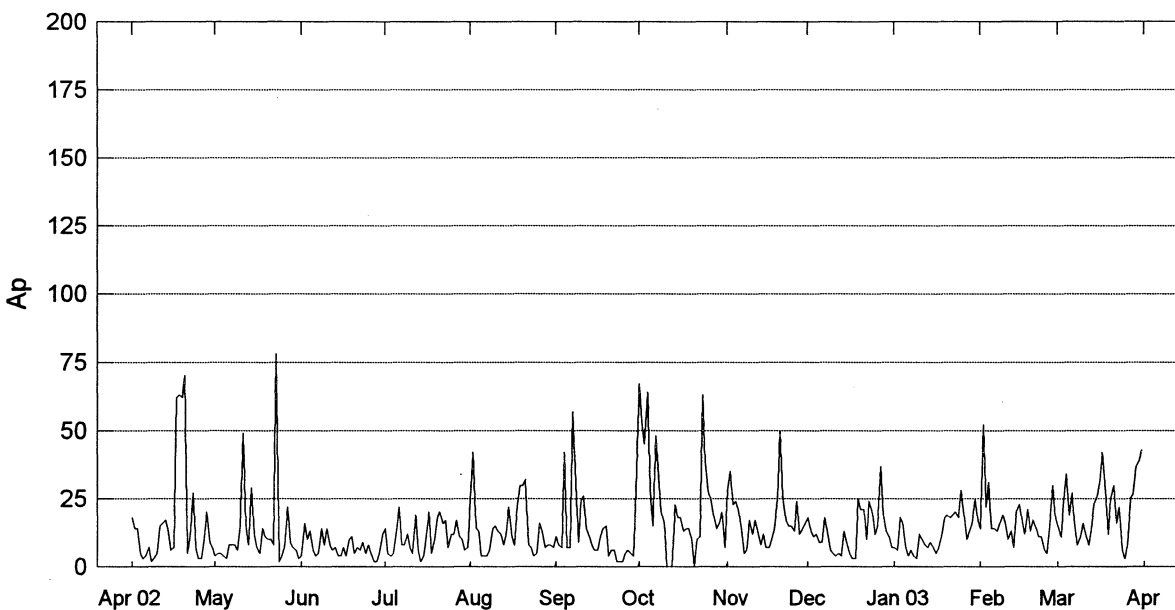
Multiply table entries by 100 to obtain hourly counting rate. Kiel, Germany: N54, E10, Alt= 54 m, Cutoff Rigidity= 2.32GV.

Geomagnetic Activity Indices

March 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	4+	2	2-	3+	3+	3-	3-	3-	23-	15	0.8	4-	1+	1+	3o	3+	3o	3o	3-	27	34	27	24	37																													
2	Q7A	2	3-	2	3-	3-	2	3+	20+	11	0.6	2o	2+	2-	3-	3o	2+	4-	3-	23	25	21	19	27																													
3		3+	1+	2	2	3	4	5+	26+	24	1.2	3-	1o	2+	2+	3o	4o	5-	4+	37	41	30	15	56																													
4	D5	5	5-	5-	5-	4+	4	3+	35-	34	1.3	5-	3+	4-	4-	4-	4-	3+	4-	47	55	49	52	52																													
5		3+	3-	3-	3+	3+	4	3+	27-	19	1.0	3o	2o	3-	3o	3+	4o	3+	4-	33	40	27	23	43																													
6		4+	4-	4-	4-	4	5-	3+	32-	27	1.2	4o	3-	3+	3+	4o	4o	3+	4o	46	50	45	36	60																													
7		4	3+	3+	3+	2+	1+	3-	23+	15	0.9	3+	3-	2+	3+	3-	1+	3o	3o	26	30	22	31	21																													
8	Q5A	1+	1+	1+	1+	2+	2+	3-	16	8	0.5	1+	1o	2-	1+	3-	3+	3o	3-	18	18	22	9	31																													
9	Q6A	2+	3+	3	1+	2-	2-	2+	19+	11	0.6	2-	3-	3-	1+	2-	2-	2+	3+	18	24	16	18	22																													
10		2-	3+	3-	3-	3	4-	3	24	16	0.9	1+	3-	3-	3-	3+	3+	3o	4o	30	35	26	19	41																													
11	Q8A	3+	3-	3	2+	2+	4-	2-	20	12	0.7	3o	2+	3o	3-	2o	3+	2o	1+	23	20	21	24	17																													
12	Q4A	2+	2-	2	2	2	1+	2-	16+	8	0.4	3-	1+	2-	2-	2o	1+	2o	3+	16	15	16	14	17																													
13	Q10A	4	3+	3-	3-	4-	1+	2-	21	14	0.8	4-	3o	3-	3-	3+	1+	2o	2-	24	23	29	31	21																													
14		2	2+	4-	4-	5+	3-	4+	28-	23	1.1	2o	2+	4-	4-	5-	3-	4-	3+	39	41	44	31	54																													
15		5	4	4-	3+	4-	4+	3+	31	26	1.2	5-	3+	4-	4-	4-	4-	3+	3+	45	56	43	48	51																													
16		3	3	2+	4	4+	4+	6	32-	31	1.3	2+	2+	2o	4-	4o	4o	5-	4-	42	52	45	33	64																													
17	D1	3	5-	5	4-	5+	5-	5	37	42	1.5	3-	4-	4+	3+	5o	4-	4-	5o	58	64	49	42	72																													
18		5-	5-	5-	5-	5-	2+	2+	31-	28	1.2	4-	4o	4-	4o	4o	3-	2o	3o	41	46	36	49	34																													
19	Q9A	3+	4	3	2-	2+	2+	2+	21	12	0.7	3o	3+	3-	2+	2+	2+	2+	2o	22	27	17	23	21																													
20		1	3-	3+	4-	4+	5-	4+	29-	25	1.2	1o	3-	3o	4-	4+	4+	4-	4+	43	54	40	31	63																													
21		4+	5-	4	5	3+	2	4-	32	30	1.3	4o	4o	4-	4+	4-	2-	3o	4+	48	47	49	58	39																													
22		4-	4-	4	3	2	1+	2+	24-	16	0.9	3o	3o	4-	3+	3-	1+	2o	3+	29	35	22	35	22																													
23		4-	3-	4-	5	3	3	4	28	22	1.1	4-	2o	4-	4+	3-	3o	3+	3o	36	42	35	40	37																													
24	Q2	3-	2+	2+	2	1	1	1-	12+	6	0.3	3-	2-	3-	2+	1-	1+	1o	0+	12	11	12	17	7 C																													
25	Q1	0+	1+	1+	0	1-	1	1	6+	3	0.1	0+	1o	1o	0o	0+	1+	1o	1o	5	7	7	6	8 CC																													
26	Q3A	0+	2+	2-	1+	2-	1+	3	14+	8	0.4	0+	2+	2-	2o	1+	2-	3-	3o	15	18	13	11	21																													
27		5-	3	5-	4-	4-	4+	3	30+	25	1.2	4+	3-	4+	4-	3+	4o	3o	3o	45	47	44	54	37																													
28		4	4	4	2+	2	4-	4+	30	27	1.2	4-	4-	4o	2o	2o	4-	4-	4+	42	46	39	35	50																													
29	D4	5	5-	4-	3	4	4+	5+	35+	37	1.4	4o	4o	3+	2+	3+	4-	5-	4+	49	73	34	39	68																													
30	D3	5+	4-	4	4	4	5-	5	36+	39	1.4	4+	3+	4-	3+	3+	4o	4o	5o	53	66	49	52	63																													
31	D2	3+	2+	3	5-	6-	6+	6-	35+	43	1.5	3o	3o	3o	4o	5o	5+	5-	4-	58	57	51	35	74																													
Mean										21	0.96	33.9										38.7	31.8	35.2																													
Ks Three-Hourly Indices																									Prov					IMF																							
Day	1	2	3	4	5	6	7	8	An	1	2	3	4	5	6	7	8	As	Sa	Ri	Ra	Rs	IMF																														
1	3+	1+	1+	3o	3+	3o	3+	3-	27	4-	2-	1+	3-	3+	3-	3o	3o	27	135.6	48	53	84																															
2	2-	2+	2+	3o	3o	2+	4o	3-	26	2o	2o	1+	2+	3o	2+	3+	3o	21	144.7	59	63	94																															
3	2+	1o	3-	3-	3o	4o	4+	4+	36	3-	1o	2+	2+	3o	4o	5o	4o	38	146.5	62	64	96																															
4	4o	3+	3o	4-	4o	4-	3+	4-	45	5o	3+	4o	4-	3+	3+	3+	4-	49	143.6	80	77	93																															
5	3o	2o	3-	3+	3+	4o	3+	3+	34	3o	2o	3-	3o	3o	4-	3o	4o	32	146.2	72	73	96																															
6	4o	3o	4-	3+	4+	4+	4-	4o	49	4o	3-	3o	3o	4o	4o	3o	4+	43	147.9	63	66	98																															
7	3+	3-	3-	3o	2+	1+	3o	3-	24	4-	3-	2+	3+	3-	1+	3o	4-	29	147.6	79	80	97																															
8	1+	1o	2-	1+	3-	3+	3-	3-	18	1+	1o	2-	2-	2+	3o	3o	2+	17	146.2	66	77	96																															
9	1+	3-	3-	1+	2-	2-	2+	3o	17	2o	3-	3-	1+	2-	2-	2+	4-	19	150.6	89	91	101																															
10	1+	3-	3o	3-	4-	3+	3o	4o	32	1+	3-	3-	3-	3+	3o	3o	4o	29	141.7	71	78	91																															
11	3o	2o	3-	3o	2+	3+	2-	1+	22	3o	2+	3+	2+	2o	3+	2+	2-	23	139.7	69	74	89																															
12	2+	1o	2-	2-	2-	2-	1+	4-	15	3-	2o	2-	2o	2o	1+	2+	3o	17	136.2	56	59	85																															
13	4-	3o	2+	2+	3o	1+	2-	2-	23	4-	3-	3-	3o	4-	2-	2+	2-	25	132.5	45	56	81																															
14	2o	2o	4o	4-	5-	3-	4o	4-	42	2o	3-	3+	4-	4+	3o	4-	3o	37	137.3	58	68	86																															
15	5-	3+	4o	4-	4-	4o	4-	4-	51	4+	3+	3o	3+	3+	3o	3o	3o	39	129.3	63	75	78																															
16	2+	2+	2o	4-	5-	4o	5o	4-	45	2+	3-	2o	4-	4-	4-	5-	4-	40	127.2	62	62	75																															
17	3-	4-	5-	3+	6-	4o	4o	5+	67	3-	3+	4o	3o	5-	3+	3+	5o	48	123.1*	41	46	71																															
18	4-	4+	4-	4o	4+	3-	2+	3o	45	4-	4-	3+	4o	4-	2+	2o	3-	36	117.3	43	46	65																															
19	3o	3+	3-	2+	3-	3-	3-	2+	25	3+	3o	2+	2o	2o	2o	2o	2-	20	107.2	39	41	54																															
20	1-	3-	3o	4-	4o	5-	4o	4+	45	1+	3-	3o	4-	4+	4o	3+	4o	42	96.6	29	32	42																															
21	4-	4+	4o	4+	4+	2-	3o	4o	50	4+	4-	3+	4+	3+	2o	3+	5-	46	90.3	23	16	36																															
22	3+	3o	4-	4-	3o	1+	2+	3+	31	3o	3-	4o	3o	2+	1+	2-	3+	27	88.3	8	14	33																															
23	3o	2o	4o	5-	3o	3+	4-	3+	41	4o	2o	3o	4o	2+	3-	3o	3-	32	92.4	30	25	38																															
24	3-	2-	3o	3-	1o	1+	1o	0+	14	3-	2-	2+	2+	1-	1+	1-	0o	11	97.3	33	40	43																															
25	0+	1-	1+	0o	0+	2-	1o	1o	6	0+	1o	1o	0+	0o	1+	1o	1o	5	108.2	52	52	55																															
26	0o	2+	1+	2+	1+	2o	3-	3o	16	0+	2+	2-	2-	2-	1+	2+	3o	14	126.6	75	71	75																															
27	4o	3-	4+	4-	3+	4o	3+	3o	43	5-	3-	5-	4-	3+	4-	3o	3+	47	140.5	81	88	90																															
28	3o	3o	4o	2o	2o	4o	3+	4+	38	4o	4o	4+	2o	2o	4-	4o	5-	46	146.4	91	105	96																															
29	4-	4-	3+	2+	4-	4-	5-	5-	50</																																												

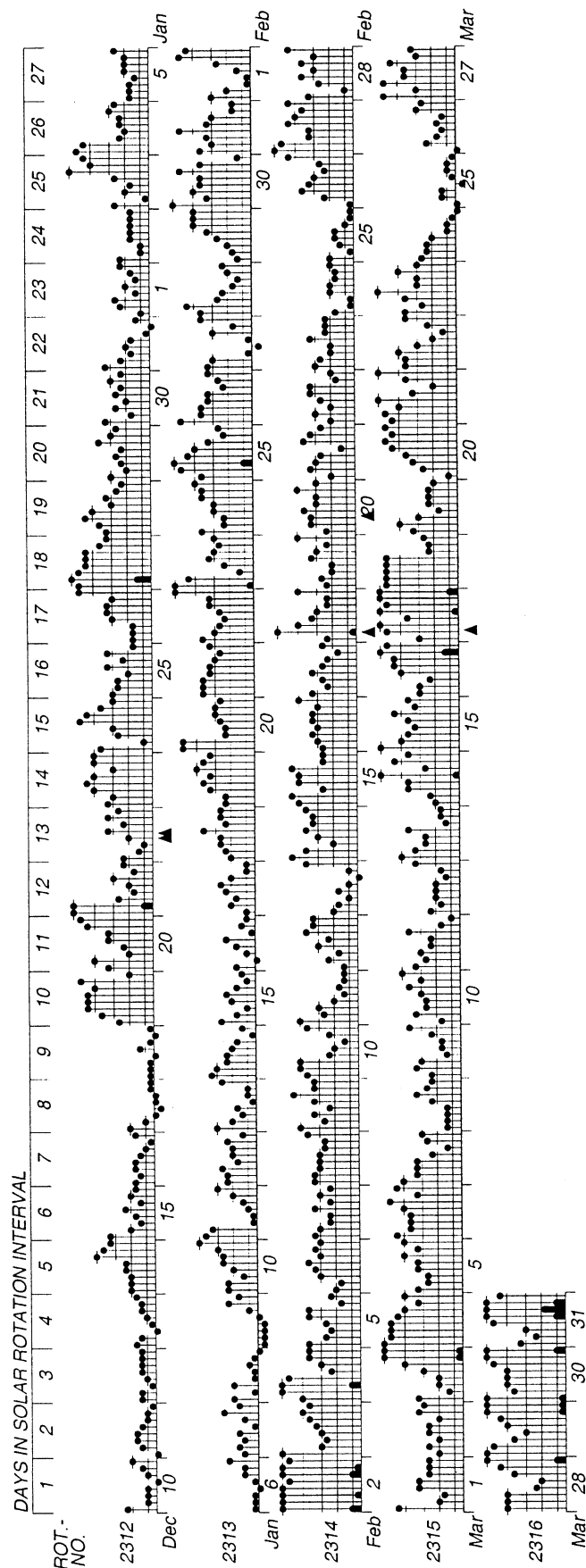
Daily Average Indices Ap Apr 2002 - Mar 2003



Day	Apr 02	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 03	Feb	Mar
1	18	4	4	14	25	11	67	7	18	7	14	15
2	14	5	16	5	42	8	53	28	13	6	52	11
3	14	5	10	4	14	7	45	35	11	18	22	24
4	5	4	13	5	13	42	64	23	12	16	31	34
5	3	3	6	12	4	7	28	24	9	7	14	19
6	4	8	4	22	4	7	15	21	9	4	14	27
7	7	8	5	8	4	57	48	13	18	6	13	15
8	2	8	14	8	6	36	33	5	12	4	16	8
9	3	6	8	12	14	9	20	6	6	3	19	11
10	5	15	14	7	15	24	16	17	5	12	16	16
11	15	49	8	5	13	26	6	12	4	10	10	12
12	16	15	6	19	12	14	6	17	5	8	13	8
13	17	8	7	6	8	11	5	13	4	7	7	14
14	13	29	4	2	12	8	23	8	13	9	20	23
15	6	12	4	4	22	6	18	12	8	7	23	26
16	7	7	7	12	11	6	18	7	5	5	17	31
17	62	5	4	20	8	11	13	7	3	7	12	42
18	63	14	10	5	21	14	14	10	3	12	21	28
19	62	11	11	10	30	15	14	14	25	18	13	12
20	70	10	5	18	30	4	10	25	21	19	17	25
21	5	10	7	20	32	6	8	50	21	18	14	30
22	11	8	6	16	8	6	10	26	10	19	11	16
23	27	78	9	17	7	2	11	17	24	20	11	22
24	7	2	5	7	4	2	63	15	20	18	6	6
25	3	4	8	12	5	2	39	15	12	28	5	3
26	3	7	5	12	16	5	27	13	15	20	15	8
27	10	22	2	17	13	6	25	24	37	10	30	25
28	20	9	2	11	7	5	19	12	19	13	18	27
29	9	7	5	10	8	4	14	14	13	16		37
30	7	6	12	6	8	28	16	16	11	25		39
31		3		7	7		20		7	17		43
Mean	17	12	7	11	14	13	25	17	13	13	17	21

GeoForschungsZentrum Potsdam

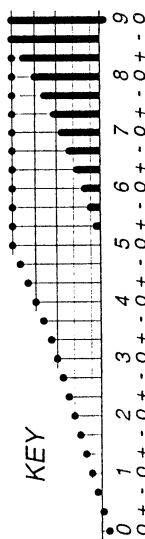
Kp through March 31, 2003

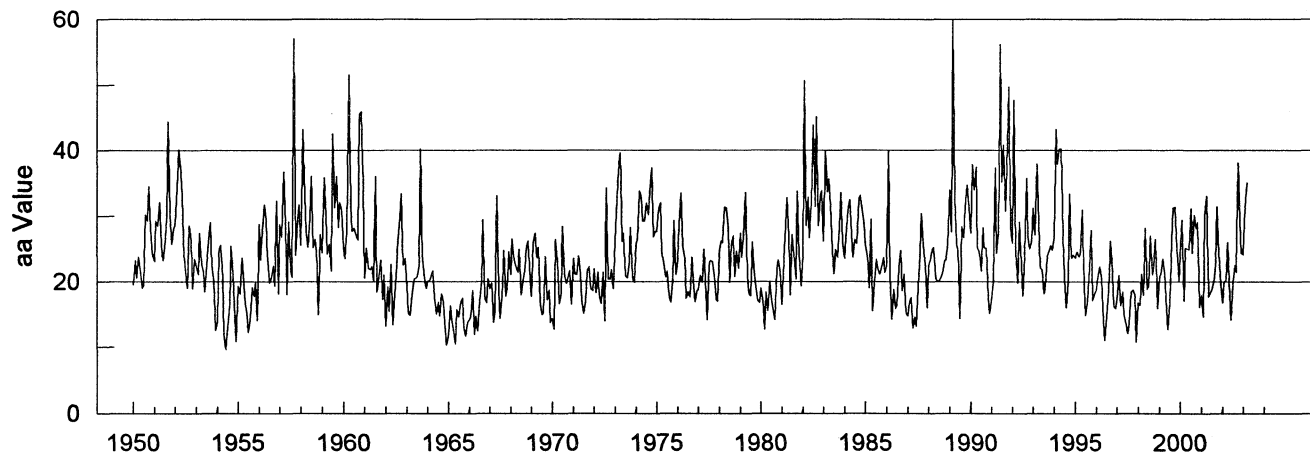


PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 2003 Mar 31

▲ = sudden commencement





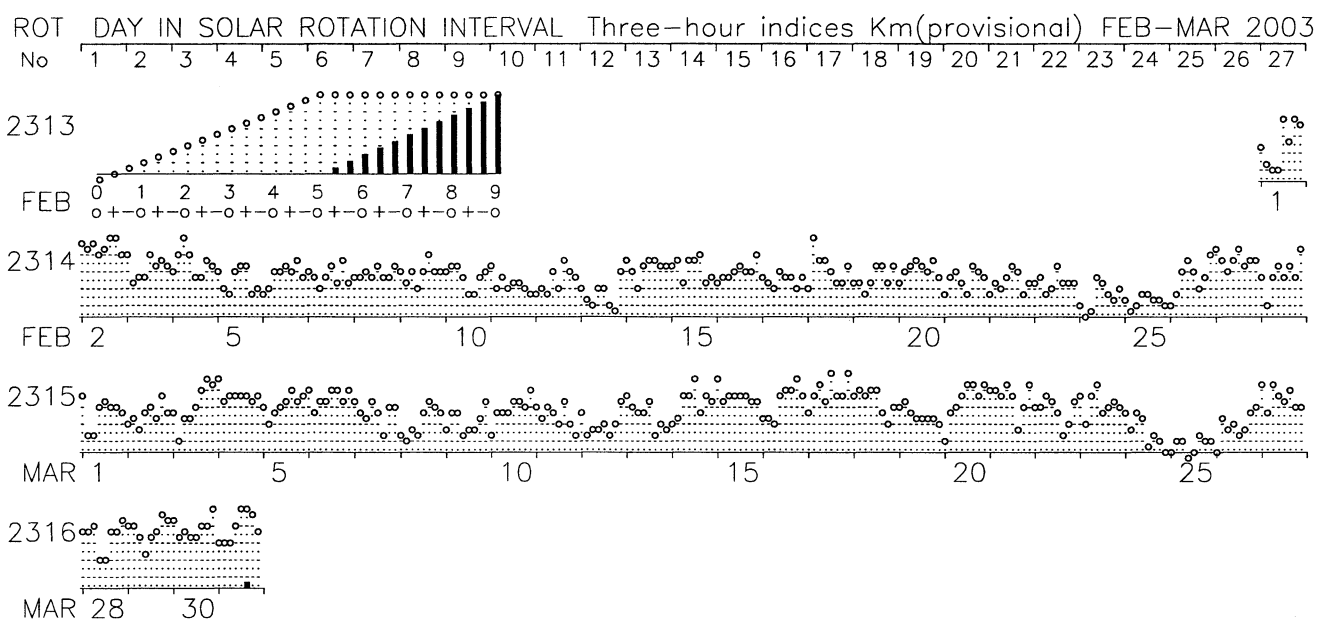
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4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

PLANETARY GEOMAGNETIC ACTIVITY

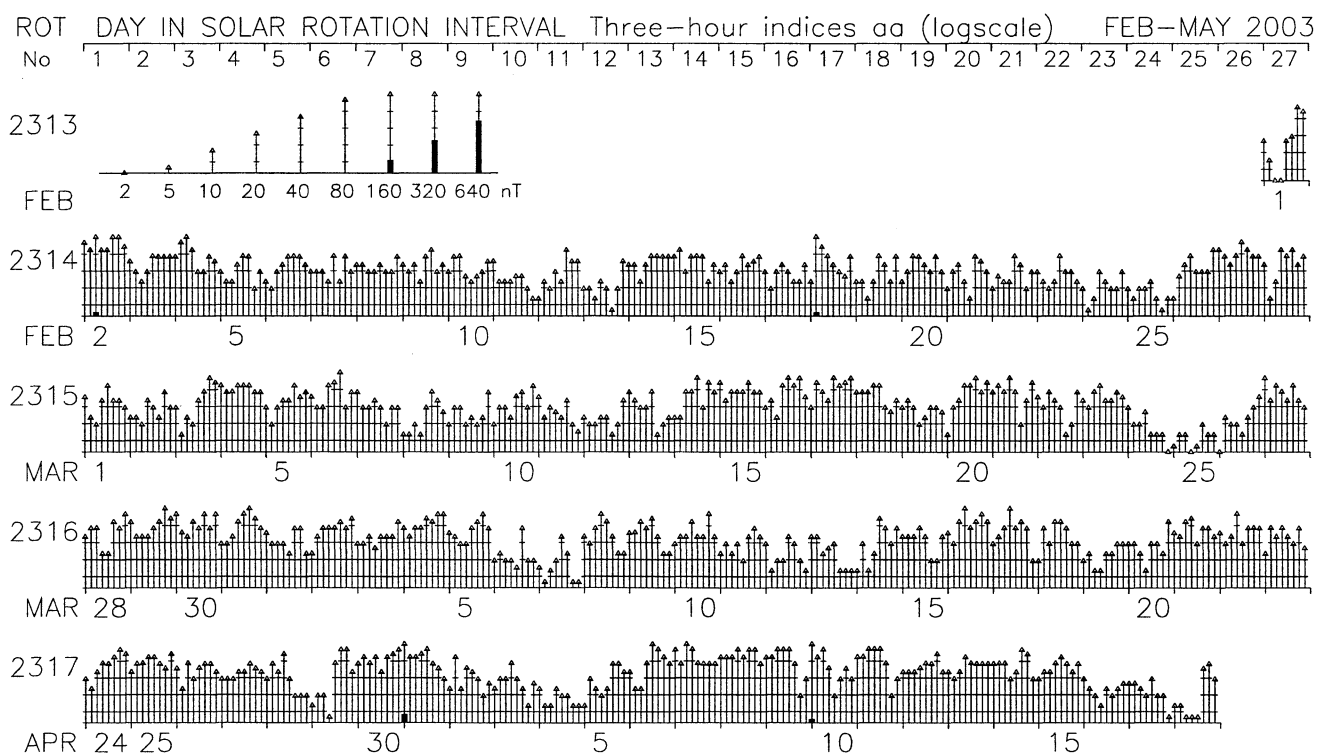
3-HOUR-RANGE INDICES K_m AND a_a BY 27-DAY SOLAR ROTATION INTERVAL

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.

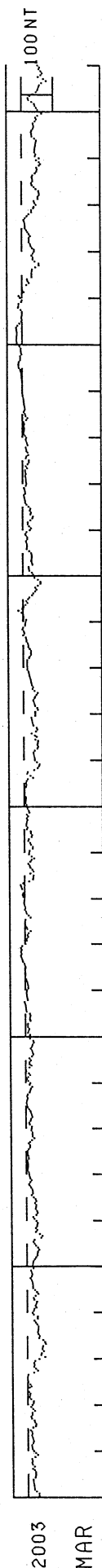


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

MARCH 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	-34	-34	-27	-21	-19	-18	-18	-15	-15	-23	-24	-25	-24	-19	-14	-19	-13	-12	-14	-12	-23	-31	-25	-17		
2	-14	-12	-12	-15	-17	-15	-14	-12	-13	-11	-8	-16	-24	-26	-23	-19	-11	-10	-14	-14	-23	-16	-10	-13		
3	-17	-17	-10	-6	-7	-7	-4	1	-5	-12	-7	-1	2	1	1	2	-21	-33	-26	-19	-22	-20	-24	-38		
4	-55	-44	-46	-51	-48	-47	-49	-58	-55	-49	-38	-40	-36	-32	-36	-34	-34	-31	-26	-23	-32	-32	-20	-16		
5	-20	-22	-28	-27	-29	-30	-23	-19	-26	-34	-31	-25	-17	-18	-17	-16	-13	-9	-13	-15	-13	-12	-20	-16		
6	-17	-17	-19	-25	-29	-32	-33	-34	-39	-36	-29	-24	-19	-25	-45	-49	-42	-28	-32	-29	-32	-33	-35	-30		
7	-25	-21	-31	-35	-33	-28	-30	-30	-27	-31	-29	-22	-16	-19	-20	-17	-13	-9	-8	-11	-15	-11	-9	-7		
8	-8	-4	-5	-5	-6	-5	-4	-7	-8	-6	-4	-4	-8	-12	-12	-7	-11	-17	-26	-21	-20	-20	-16	-18		
9	-17	-11	-10	-13	-16	-19	-18	-16	-13	-10	-5	-3	-2	-2	-4	-6	-3	-5	-11	-14	-15	-20	-12	-13		
10	-8	-4	-8	-13	-9	-1	0	-11	-18	-11	-12	-15	-12	-19	-25	-23	-21	-16	-21	-23	-27	-24	-14	-16		
11	-14	-8	-10	-11	-7	-7	-8	-15	-14	-14	-16	-13	-3	-1	-2	-2	2	3	-7	-5	-5	-3	-3	-6		
12	-9	-9	-7	-8	-6	-3	0	-2	-2	0	0	-1	0	4	7	9	12	13	12	14	12	14	9	-1		
13	0	-5	-6	-10	-8	-12	-18	-8	-5	-1	0	1	-1	-17	-11	-5	-3	0	-1	1	4	4	4	2		
14	5	8	5	2	10	12	14	6	-14	-26	-29	-29	-18	-28	-25	-17	-15	-12	-18	-23	-30	-23	-14	-13		
15	-15	-26	-27	-20	-18	-12	-13	-23	-24	-21	-19	-8	-9	-5	-5	-7	-10	-7	-12	-8	-15	-13	-9	-8		
16	-8	-3	-5	-6	-5	-2	-2	-2	-2	-6	-7	-6	-7	-12	-29	-21	-10	-12	-33	-43	-48	-49	-41	-35		
17	-35	-32	-30	-31	-35	-44	-45	-43	-45	-45	-38	-42	-34	-25	-40	-44	-42	-30	-29	-27	-26	-25	-38	-37		
18	-38	-45	-43	-37	-34	-32	-30	-36	-38	-41	-46	-35	-29	-30	-27	-25	-24	-23	-21	-18	-18	-16	-11	-11		
19	-11	-11	-12	-11	-18	-21	-24	-24	-24	-19	-15	-15	-13	-9	-10	-7	0	-3	-2	3	0	-5	-5	-7		
20	-9	-2	-1	1	5	15	3	-2	-7	-14	-10	-15	-21	-29	-33	-39	-44	-39	-48	-57	-55	-47	-38	-28		
21	-32	-28	-21	-17	-18	-31	-28	-26	-28	-28	-29	-27	-19	-12	-14	-13	-12	-10	-13	-13	-9	-7	-12	-22		
22	-26	-19	-15	-16	-24	-31	-33	-25	-26	-23	-24	-17	-12	-7	-7	-6	-4	-3	-7	-7	-5	-4	-9	-11		
23	-10	-10	-9	-8	-9	-7	-8	-13	-9	-15	-20	-19	-10	-12	-18	-16	-12	-12	-10	-15	-13	-11	-9	-11		
24	-7	-3	-3	-6	-6	-4	-5	-4	-11	-15	-10	-7	-4	-6	-7	-6	-5	-4	-4	-4	-2	1	2	0		
25	0	2	0	2	2	3	4	4	4	5	7	11	13	13	11	7	7	8	3	5	6	6	10	13		
26	17	21	20	18	17	18	19	21	20	16	9	4	2	4	2	0	1	5	14	11	12	4	1	7		
27	11	1	-5	-1	2	1	-14	-23	-17	-15	-31	-30	-30	-30	-33	-43	-54	-53	-41	-35	-34	-30	-35	-40		
28	-40	-33	-28	-27	-23	-22	-22	-27	-23	-18	-14	-9	-9	-10	-7	-5	-10	-15	-23	-30	-31	-38	-40	-45		
29	-42	-40	-51	-52	-56	-55	-54	-46	-39	-32	-31	-34	-34	-33	-35	-44	-47	-49	-48	-55	-60	-57	-47	-55		
30	-44	-46	-41	-41	-43	-43	-45	-46	-48	-42	-32	-32	-30	-33	-38	-39	-37	-37	-44	-48	-45	-51	-64	-57		
31	-52	-47	-43	-42	-32	-23	-20	-26	-37	-47	-51	-54	-55	-59	-64	-79	-71	-54	-62	-66	-63	-57	-59	-51		

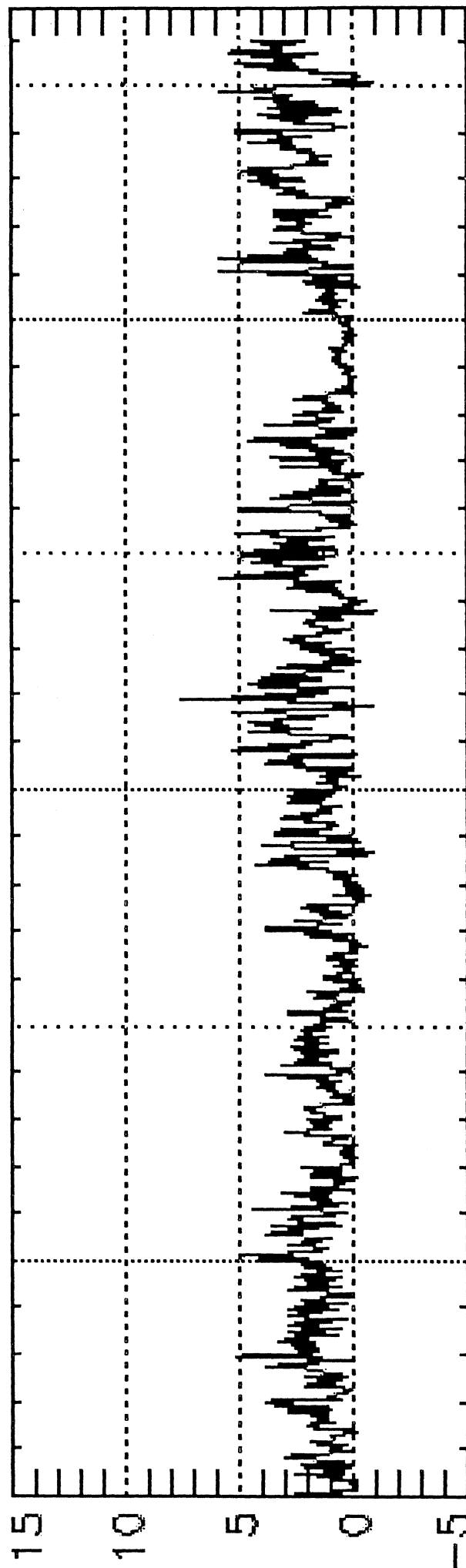


Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for March 2003.

WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Qaanaaq (Thule), THL

2003-03-01



3-01 3-06 3-11 3-16 3-21 3-26 3-31

Date, mm-dd

Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

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

MARCH 2003

Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	D K (Min)	Ranges			End Hour Day (UT)
		Time Day (UT)	Type		D (Min)	H (Gamma)	Z (Gamma)			D H	Z		
KRC	16.4N	03	1210	..	..	..	..	03(6,7)	5	4	75	40	04 22
UJJ	13.6N	03	1200	..	..	..	..		-	3	64	22	04 23
NPG	11.3N	03	1200	..	..	..	..		-	4	--	13	04 23
ABG	09.4N	03	1200	..	..	..	..	03(6) 06(5,6) 08(6)	5	3	78	28	04 23
HYB	07.6N	03	1100	..	..	..	..	03(6)	5	4	85	14	05 03
PND	02.0N	03	1200	..	..	..	..		-	3	87	49	04 23
TIR	00.6S	03	1200	..	..	..	..		-	3	136	63	04 23
GNA	43.0S	03	0600	..	..	..	..	03(6)	6	18	69	105	05 06
HYB	07.6N	05	1000	..	..	..	..	06(5,6)	5	3	115	19	07 03
CAN	43.6S	06	0300	..	..	..	..	06(5,6)	5	15	120	40	07 06
BJI	28.8N	14	04--	..	..	..	..	14(3)	5	10	90	28	15 24
UJJ	13.6N	14	0400	..	..	..	..		-	4	104	24	15 22
NPG	11.3N	14	0400	..	..	..	..		-	4	134	17	15 22
ABG	09.4N	14	0400	..	..	..	..	14(3)	5	3	129	32	15 22
HYB	07.6N	14	0500	..	..	..	..	14(3,4,5) 15(6,7)	4	4	140	20	15 23
PND	02.0N	14	0400	..	..	..	..		-	3	145	63	15 22
TIR	00.6S	14	0400	..	..	..	..		-	4	205	89	15 22
KRC	16.4N	16	1212	..	..	..	..	17(8)	6	11	142	70	18 15
UJJ	13.6N	16	0400	..	..	..	..		-	5	105	37	18 19
NPG	11.3N	16	0400	..	..	..	..		-	5	135	29	18 19
ABG	09.4N	16	0400	..	..	..	..	16(5,6)	5	5	135	51	18 19
HYB	07.6N	16	0500	..	..	..	..	17(5,6,8) 18(4,5)	5	5	108	32	18 20
PND	02.0N	16	0400	..	..	..	..		-	4	146	76	18 19
TIR	00.6S	16	0400	..	..	..	..		-	4	208	83	18 19
BJI	28.8N	20	0244	SC	0.7	19	1	20(2)	5	9	70	32	21 24
UJJ	13.6N	20	0443	SC	- 0.4	17	- 5		-	3	129	23	21 15
NPG	11.3N	20	0443	SC	0.1	21	- 3		-	4	169	23	21 15
ABG	09.4N	20	0443	SC	- 0.5	18	- 7	20(4) 21(2) 23(4)	5	5	161	33	21 15
HYB	07.6N	20	0444	SC	- 0.4	19	- 1	20(4,8) 21(4,5)	4	4	158	18	22 03
PND	02.0N	20	0443	SC	- 0.1	25	15		-	3	169	66	21 15
TIR	00.6S	20	0443	SC	- 0.6	39	41		-	3	223	101	21 15
GNA	43.0S	20	0300	..	..	..	..	20(4,5,6)	5	21	63	126	21 15
BJI	28.8N	26	17--	..	..	..	..	27(6)	5	11	98	32	27 24
KRC	16.4N	26	1736	..	..	..	..	27(6)	5	6	120	40	28 06
UJJ	13.6N	26	0630	..	..	..	..		-	3	145	25	27 21
NPG	11.3N	26	0630	..	..	..	..		-	4	146	20	27 21
ABG	09.4N	26	0630	..	..	..	..	27(6)	5	5	180	30	27 21
HYB	07.6N	26	0500	..	..	..	..	27(6)	5	4	180	16	27 24
PND	02.0N	26	0630	..	..	..	..		-	3	181	46	27 21
TIR	00.6S	26	0630	..	..	..	..		-	4	229	52	27 21
HYB	07.6N	28	0500	..	..	..	..	31(6)	6	7	180	32	01 04
UJJ	13.6N	29	0430	..	..	..	..		-	3	77	38	30 24
NPG	11.3N	29	0430	..	..	..	..		-	6	107	34	30 24
ABG	09.4N	29	0430	..	..	..	..	31(6)	6	6	99	48	30 24
PND	02.0N	29	0430	..	..	..	..		-	5	115	66	30 24
TIR	00.6S	29	0430	..	..	..	..		-	5	183	88	30 24
KRC	16.4N	31	1000	..	..	..	..	31(6)	6	6	100	50	01 02
CAN	43.6S	31	0000	..	..	..	..	31(5,6)	5	18	120	48	04 03

Stations:

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

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

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

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

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

March 2003

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
20	0444	B: SOD* NUR* C: BDV* EBR* HTY LIV*	03	1513-1524	GUI
			11	1717-1740	GUI
			19	0947-1000	NGK BDV

REPORTING OBSERVATORIES (up to the 5th of May 2003):

SOD NUR NGK VAL BDV CLF HRB NAG GCK EBR SPT HTY GUI 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.