JUNE 2002 NUMBER 694 - Part I

Solar-Geophysical Data prompt reports

Data for April and May 2002
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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JUNE 2002 NUMBER 694 - Part I

Solar-Geophysical Data prompt reports

Data for April and May 2002

International Standard Serial Number: 0038-0911
Library of Congress Catalog Number: 79-640375 //r81

NATIONAL GEOPHYSICAL DATA CENTER
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SOLAR-GEOPHYSICAL DATA

Number 694

(Issued in Two Parts)

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CONTENTS

PART I (PROMPT REPORTS) Page

PART II (COMPREHENSIVE REPORTS) Page

-- COMING ATTRACTIONS --

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

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	OCT 01	NOV	DEC	JAN 02	FEB	MAR	APR	MAY
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.2aa	International Provisional Sunspot Numbers	687A 28	688A 26	689A 29	690A 30	691A 27	692A 28	693A 27	694A 28
A.2c	American Sunspot Numbers	687A 28	688A 26	689A 29	690A 30	691A 27	692A 28	693A 27	694A 28
A.3a	Mt. Wilson Magnetograms	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.3b	Sunspot Mag Class and Regions	688A102	689A103	690A 98	691A 90	692A 86	693A 91	694A 91	
A.3c	Kitt Peak Magnetograms	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.3d	Mean Solar Magnetic Field (Stanford)	687A 45	688A 45	689A 45	690A 43	691A 41	692A 39	693A 41	694A 41
A.3e	Stanford Magnetograms	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.4	H-alpha Filtergrams	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.5d	Photometric Ca II Faculae (San Fernando)	Jan 92-Dec 96 in 631B 22; 1997-1998 in 663B 66							
A.6c	Stanford Solar Mag Field Synoptic Maps	688A 48	689A 50	690A 48	691A 44	692A 44	693A 44	694A 46	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps								
A.6f	Active Prominences and Filaments	692B 56	693B 59	694B 50					
A.6g	Sac Peak Coronal Line Synoptic Maps	688A 50	689A 56	690A 50	691A 46	692A 46	693A 46	694A 48	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	688A 54	689A 56	690A 54	691A 50	692A 50	693A 50	694A 52	
A.7j	Coronal Hole Daily Maps (NSO/KP)	688A 93	689A 94	690A 89	691A 81	692A 78	693A 81	694A 82	
A.7k	Coronal Index (Slovak Academy)	1939-1996 in 644B 28							
A.7m	Coronal Mass Ejections (CSPSW)		693A 60	694A 52					
A.8aa	2800 MHz- Solar Flux (Penticton)	687A 28	688A 26	689A 29	690A 30	691A 27	692A 28	693A 27	694A 28
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	687A 28	688A 26	689A 29	690A 30	691A 27	692A 28	693A 27	694A 28
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	687A 28	688A 26	689A 29	690A 30	691A 27	692A 28	693A 27	694A 28
A.10g	Nancay Radioheliograph - 164&327 MHz	688A159	689A144	690A145	691A130	692A137	693A137	694A147	
A.10h	Nobeyama Radioheliograph Maps - 17 GHz	688A 96	689A 98	690A 92	691A 84	692A 81	693A 85	694A 86	
A.11g	Solar X-ray GOES (graphs/event table)	692B 46	693B 50	694B 41					
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11n	Solar YOHKOH Soft X-ray Images	688A 85	689A 86	690A 85	----------	----------	----------	----------	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	687A 4	688A 4	689A 4	690A 4	691A 4	692A 4	693A 4	694A 4
A.12h	Interplanetary Particles (SAMPEX)	Jul 95-Dec 96 in 632B 22; Jan-Dec 97 in 647B 33							
A.13e	Solar Plasma (IMP-8)	691B 75	692B 58						
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-May 2001 684B 26 – Complete Mission							
A.16e	VIRGO/SOHO Solar Irradiance	Jan 96-Sep 00 in 678B 46							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan 94 in 611A118							
A.17	IMP-8 Interplanetary Mag Field	----------	----------	----------					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	687A 31	688A 29	689A 32	690A 33	691A 30	692A 31	693A 30	694A 31
C.1ba	H-alpha Flare Groups	692B 4	693B 4	694B 4					
C.1d	Flare Patrol Obsevations	692B 18	693B 21	694B 23					
C.1h	H-alpha Flare Index (ImpxDur)	Jan 76-Dec 85 in 639B 26; Jan 86-Oct 96 in 635B 24; Jan 96-Dec 98 in 665B 63							
C.3	Radio Bursts Fixed Frequency	692B 20	693B 23	694B 25					
C.3	Radio Bursts Fixed Frequency Selected	687A 41	688A 40	689A 43	690A 42	691A 38	692A 37	693A 38	694A 39
C.4	Radio Bursts Spectral	688A134	689A126	690A128	691A118	692A116	693A115	694A117	
C.6	Sudden Ionospheric Disturbances	688A131	689A123	690A125	691A116	692A114	693A112	694A114	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	688A166	689A151	690A155	691A139	692A147	693A148	694A158	
D.1ba	27-day Chart of Kp Indices	688A168	689A153	690A157	691A141	692A149	693A150	694A160	
D.1cb	Monthly Mean aa Indices	688A169	689A154	690A159	691A142	692A150	693A151	694A161	
D.1d	Principal Magnetic Storms	688A174	689A159	690A166	691A147	692A155	693A156	694A166	
D.1f	Sudden Commencements/Flare Effects	688A175	689A160	690A167	691A148	692A156	693A157	694A167	
D.1g	Equatorial Indices Dst	688A171	689A156	690A163	691A144	692A152	693A153	694A163	
D.1l	Polar Cap (PC) Index	688A172	689A157	690A164	691A145	692A153	693A154	694A164	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1h	Cosmic Ray Neutron Cts (Thule)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1l	Cosmic Ray Neutron Cts (Kiel)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1n	Cosmic Ray Neutron Cts (Beijing)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1o	Cosmic Ray Neutron Cts (Moscow)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1p	Cosmic Ray Neutron Cts (Calgary)	688A161	689A146	690A147	691A131	692A139	693A140	694A150	
F.1r	Cosmic Ray Neutron Cts (Goose Bay)								
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	687A 20	688A 19	689A 20	690A 20	691A 18	692A 20	693A 19	694A 20

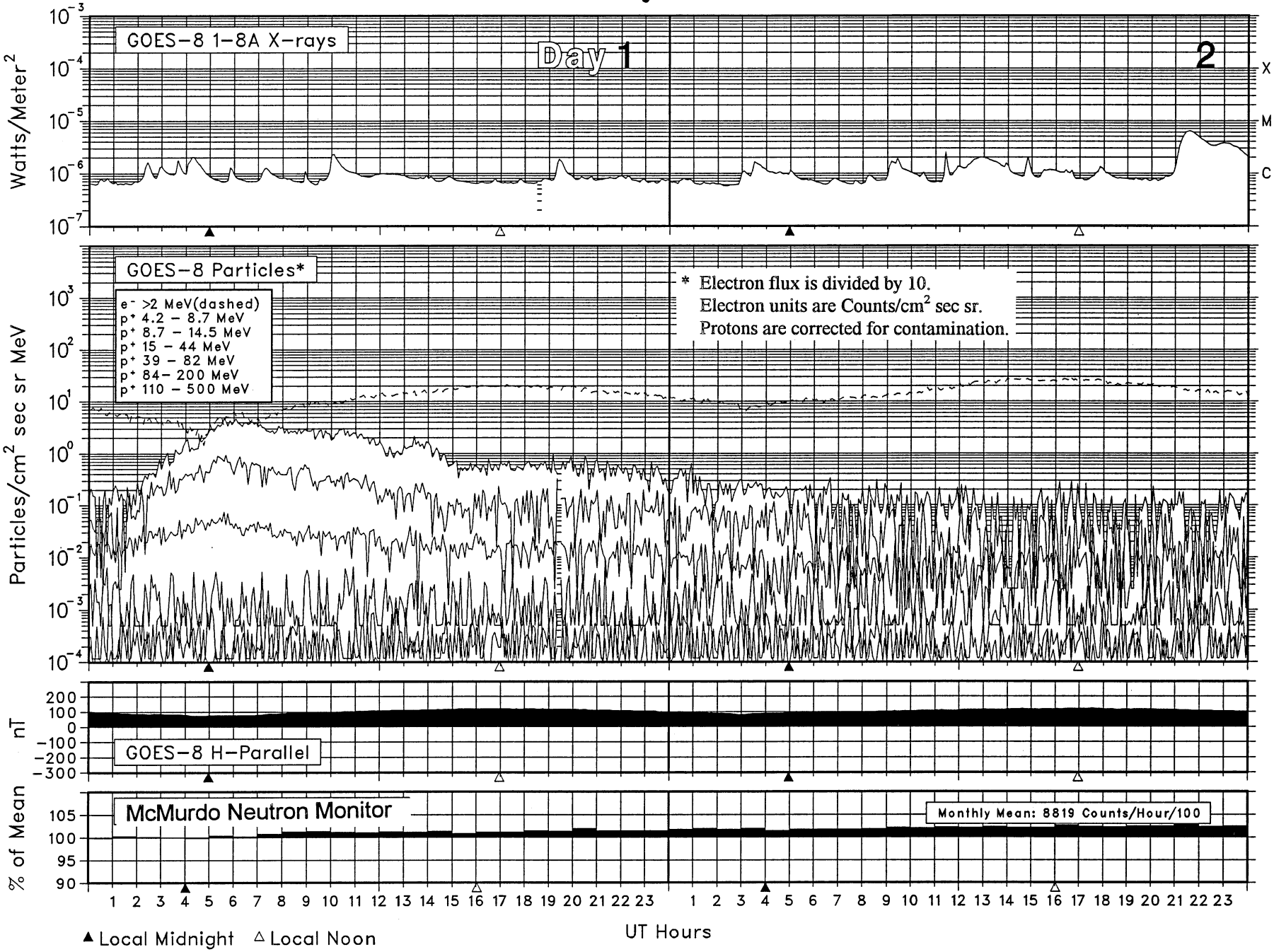
The entry "688A 54" under Oct 01, for example, means that the sunspot drawings for Oct 01 appear in SOLAR-GEOPHYSICAL DATA No. 688, Part I, and that they begin on page 54. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

Prompt Reports — Number 694 Part I

DATA FOR **MAY 2002**

SOLAR-TERRESTRIAL ENVIRONMENT
May 2002



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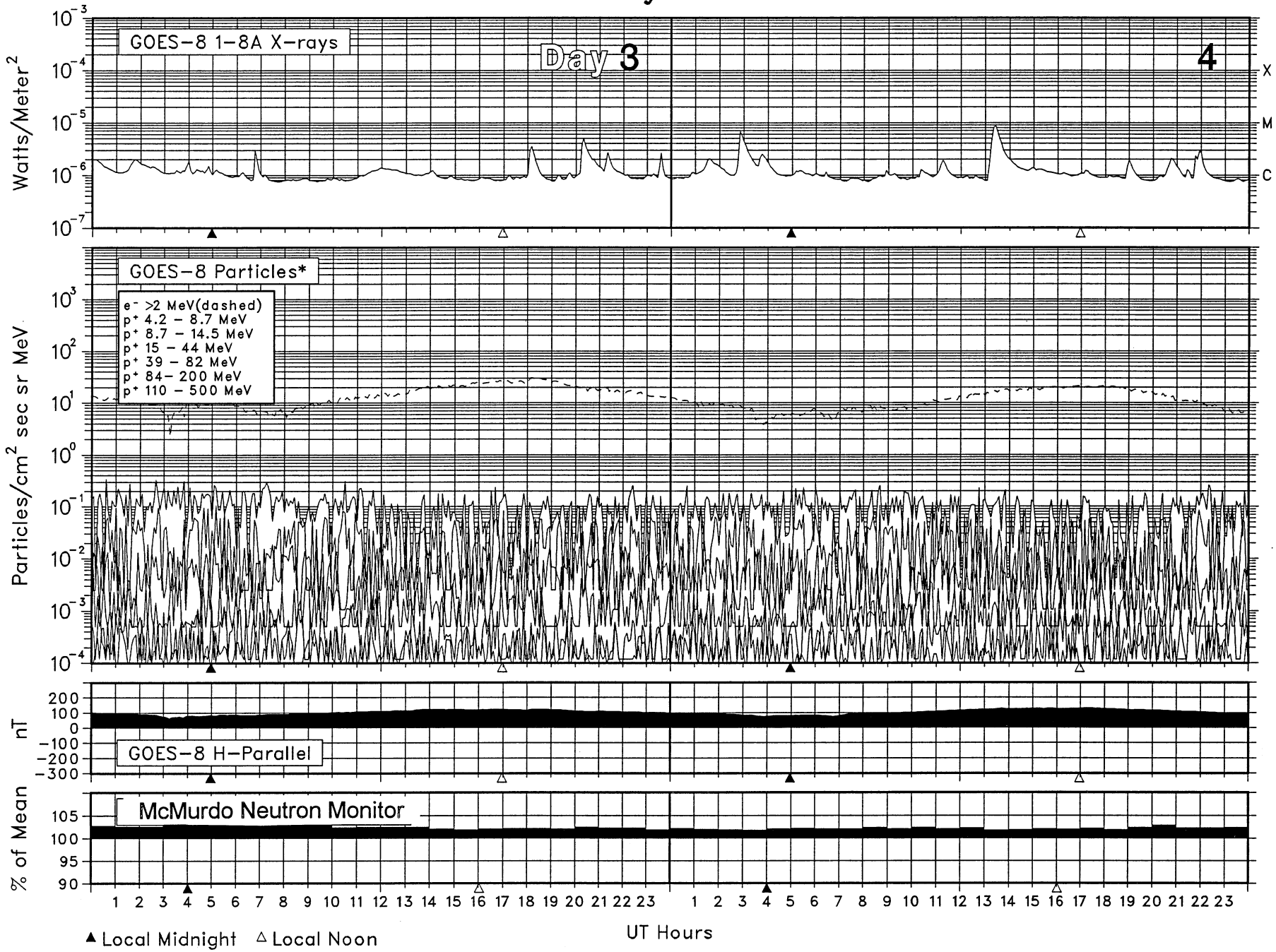
May 2002



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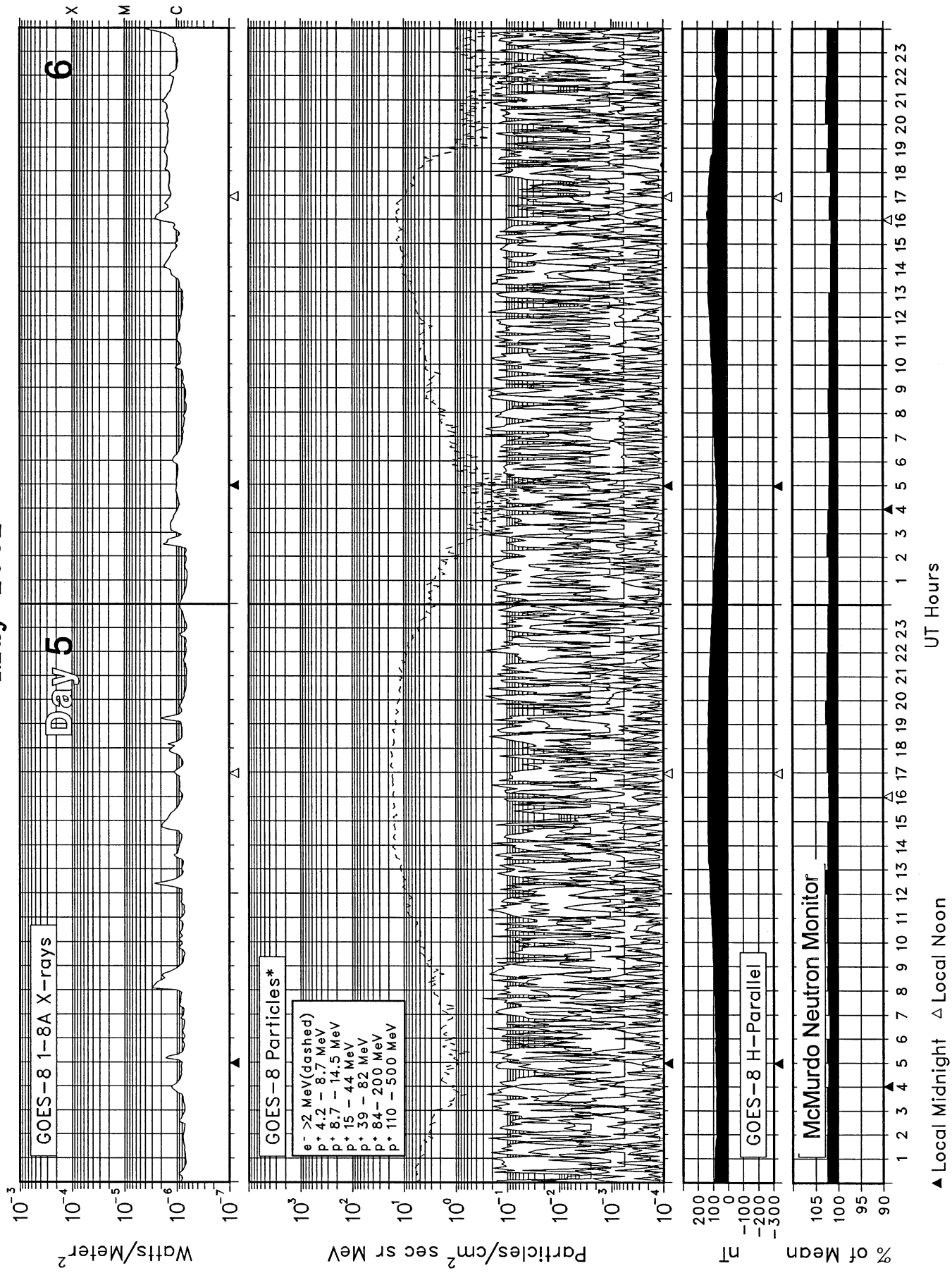
May 2002



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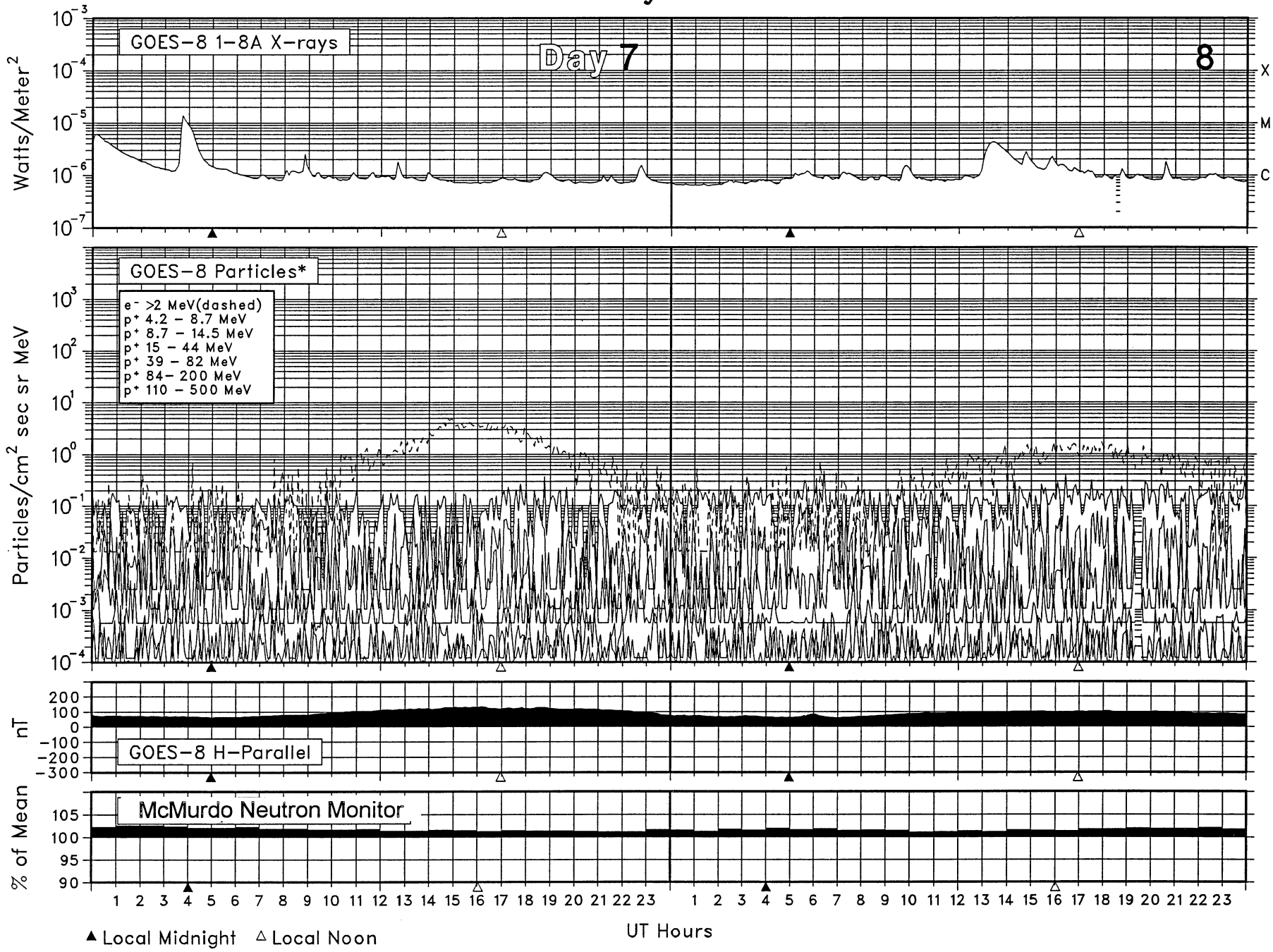
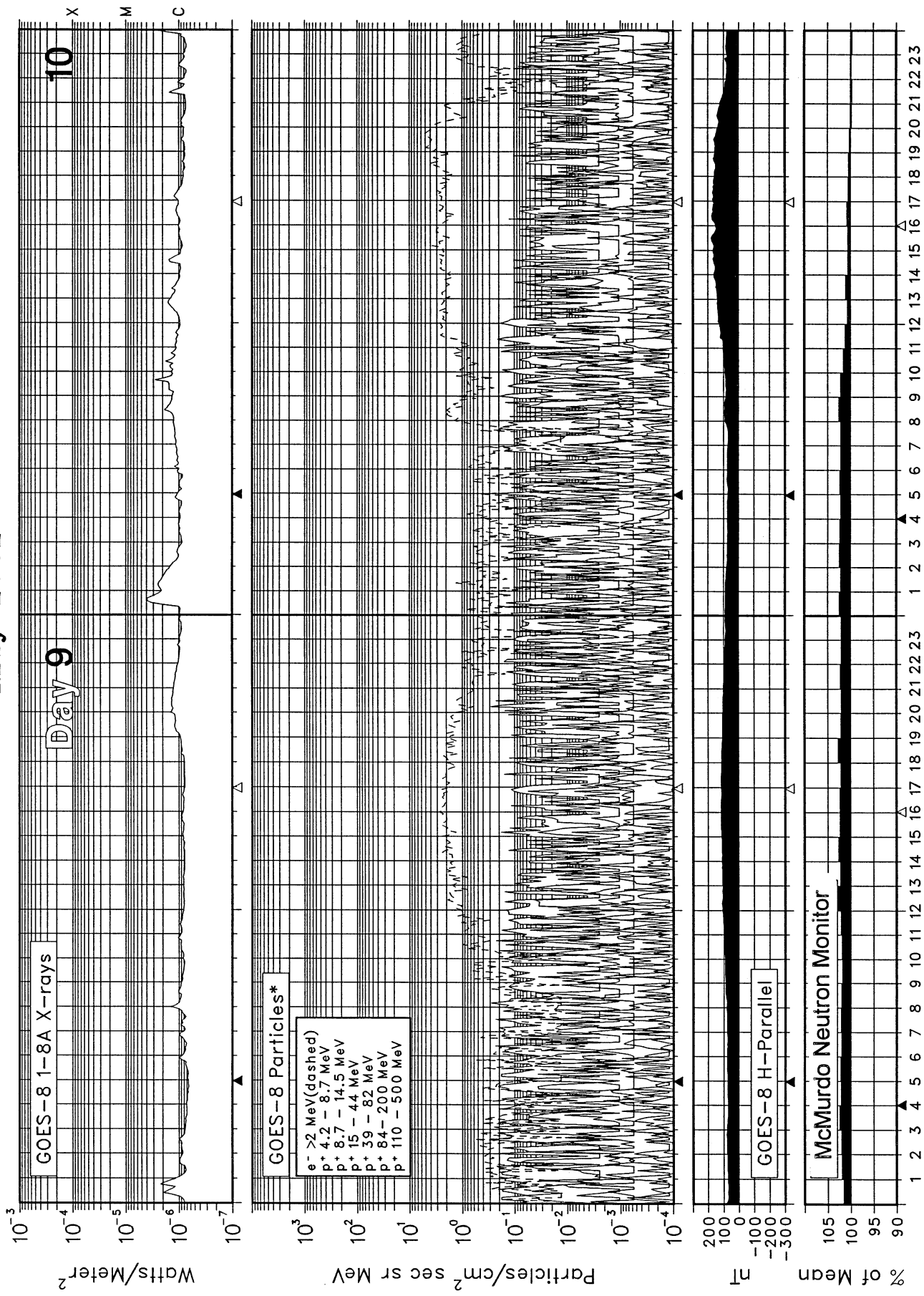
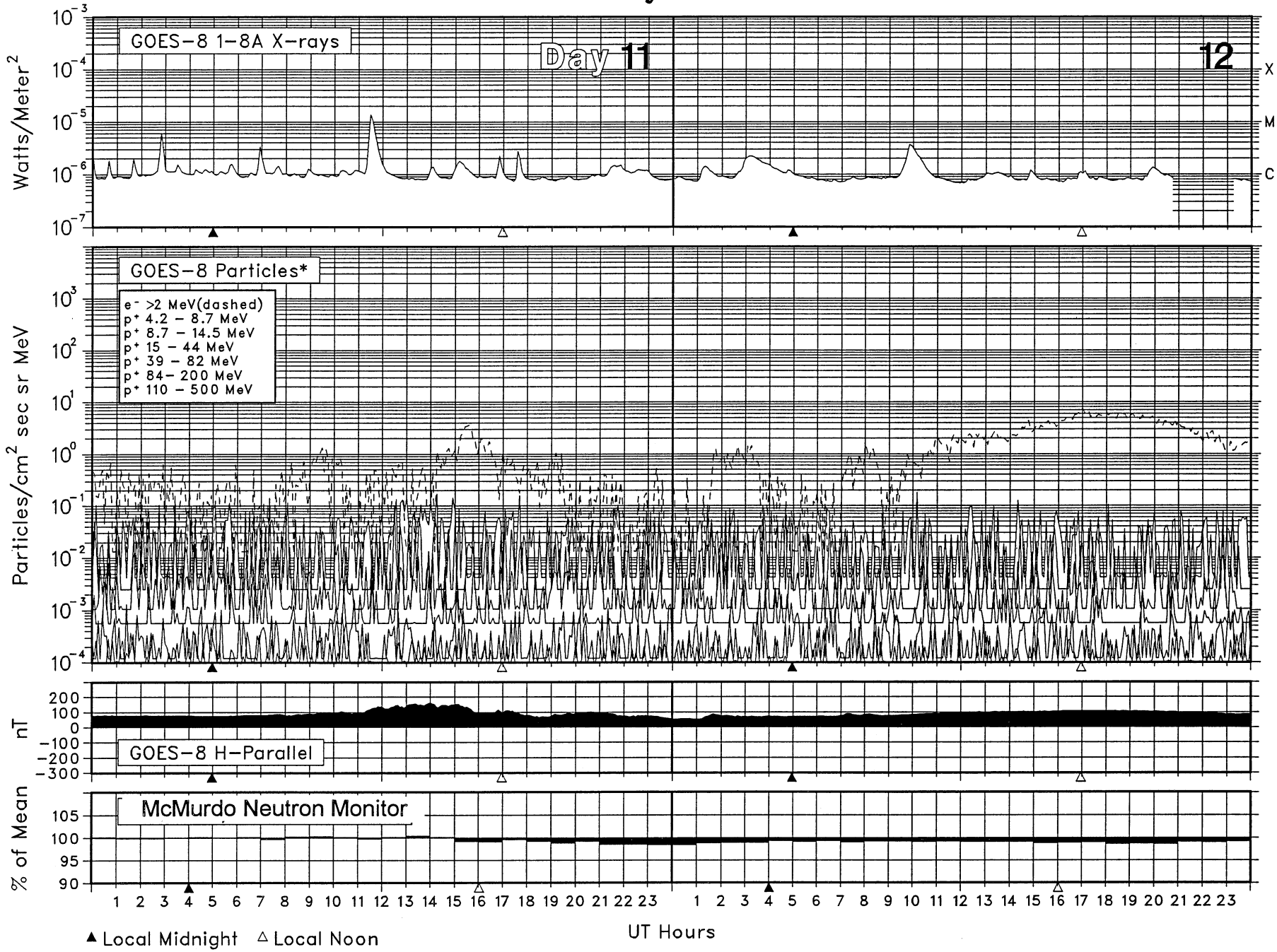



SOLAR-TERRESTRIAL ENVIRONMENT
May 2002
Day 9
10
GOES-8 1-8A X-rays
X
M
C
Watts/Meter²
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84- 200 MeV
p⁺ 110 - 500 MeV
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

SOLAR-TERRESTRIAL ENVIRONMENT
May 2002



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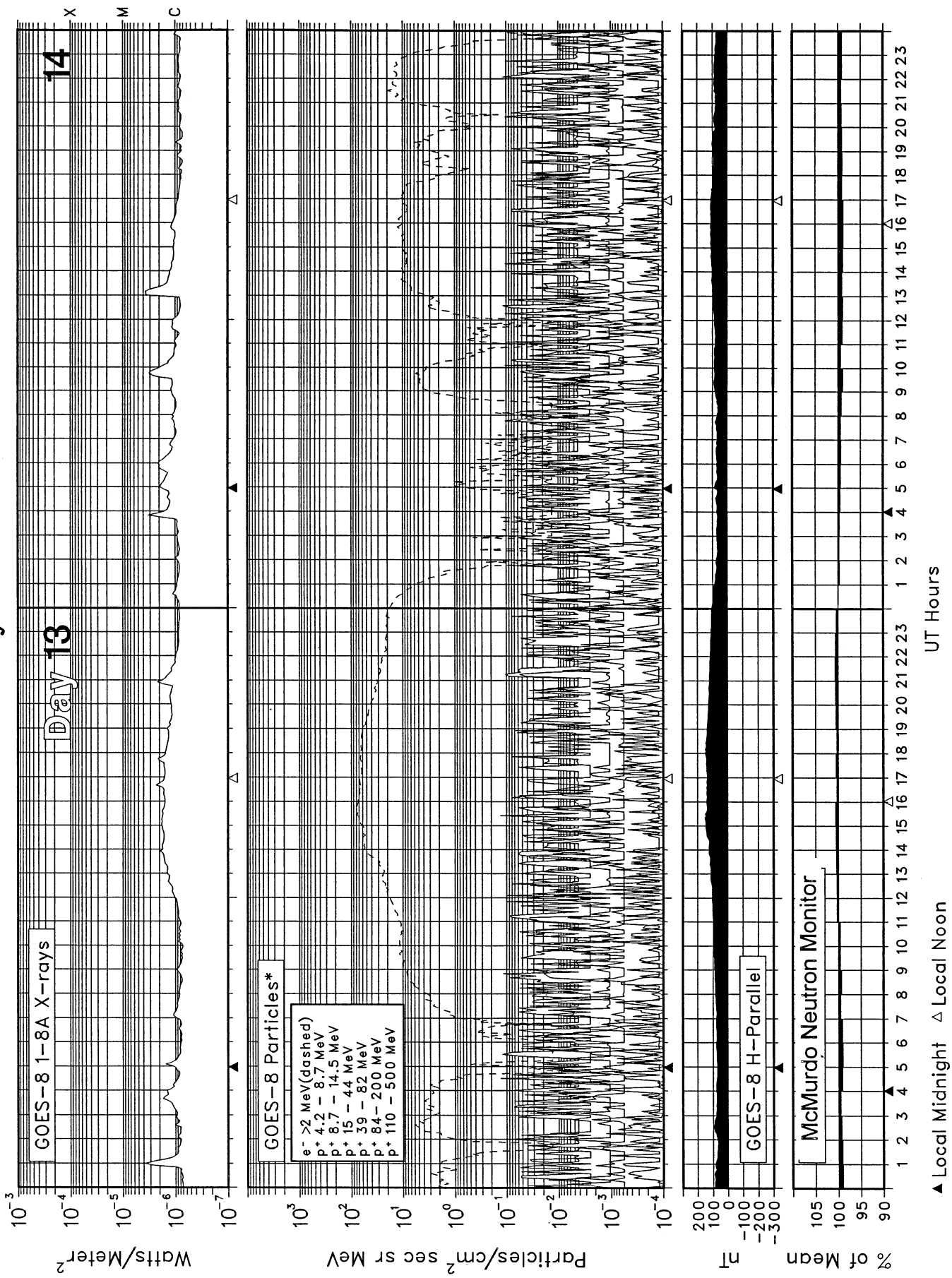
May 2002



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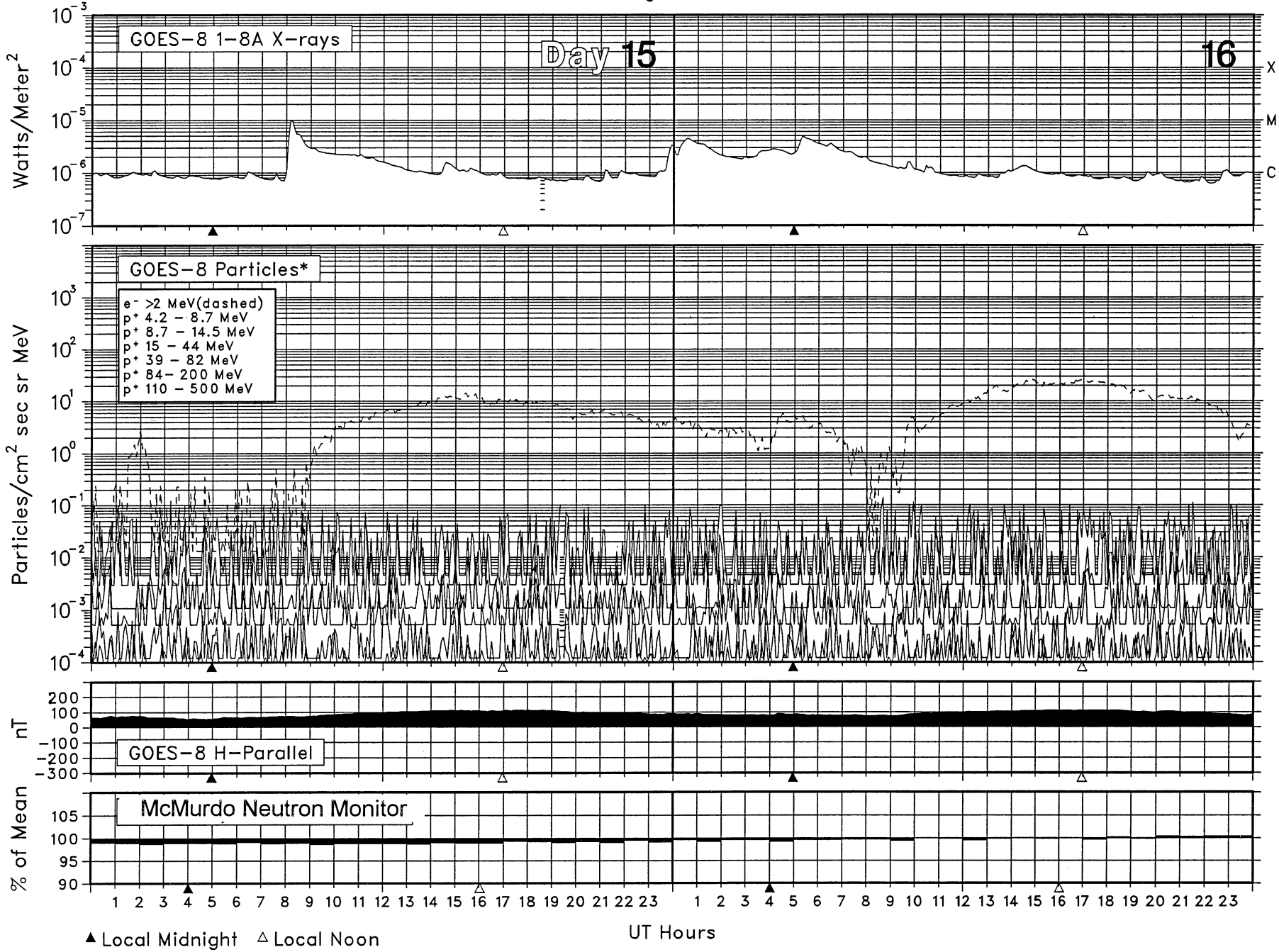

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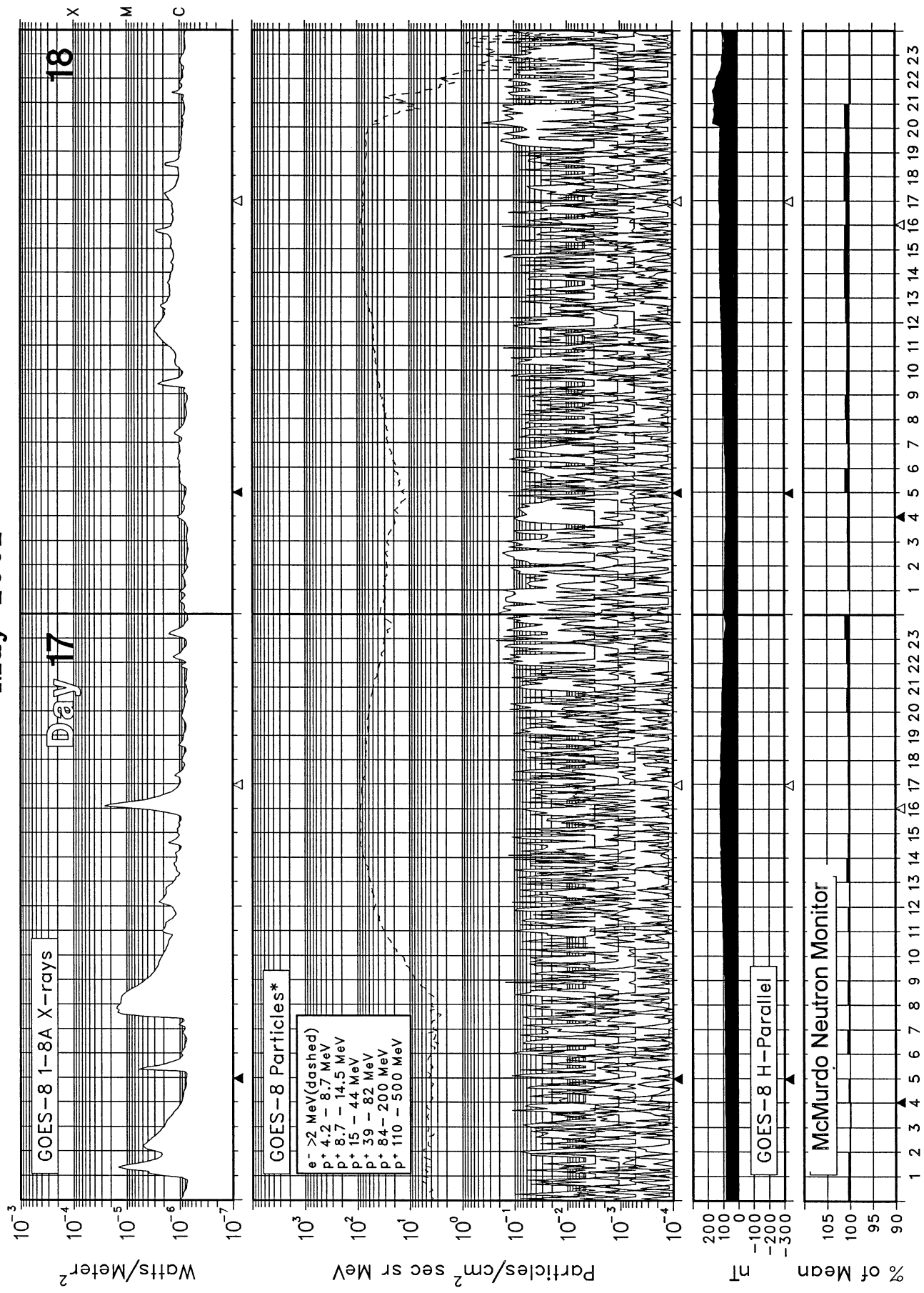

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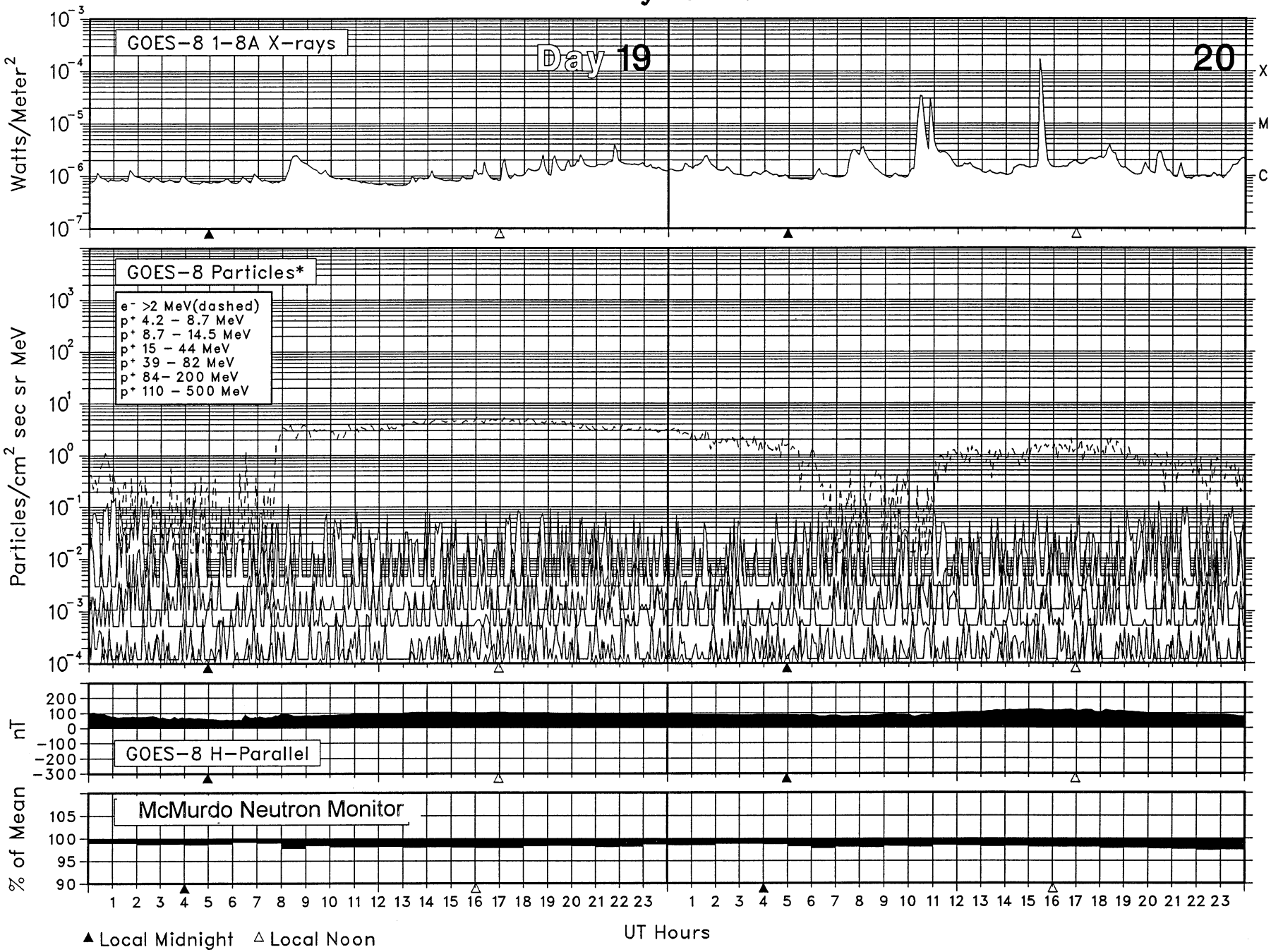
May 2002



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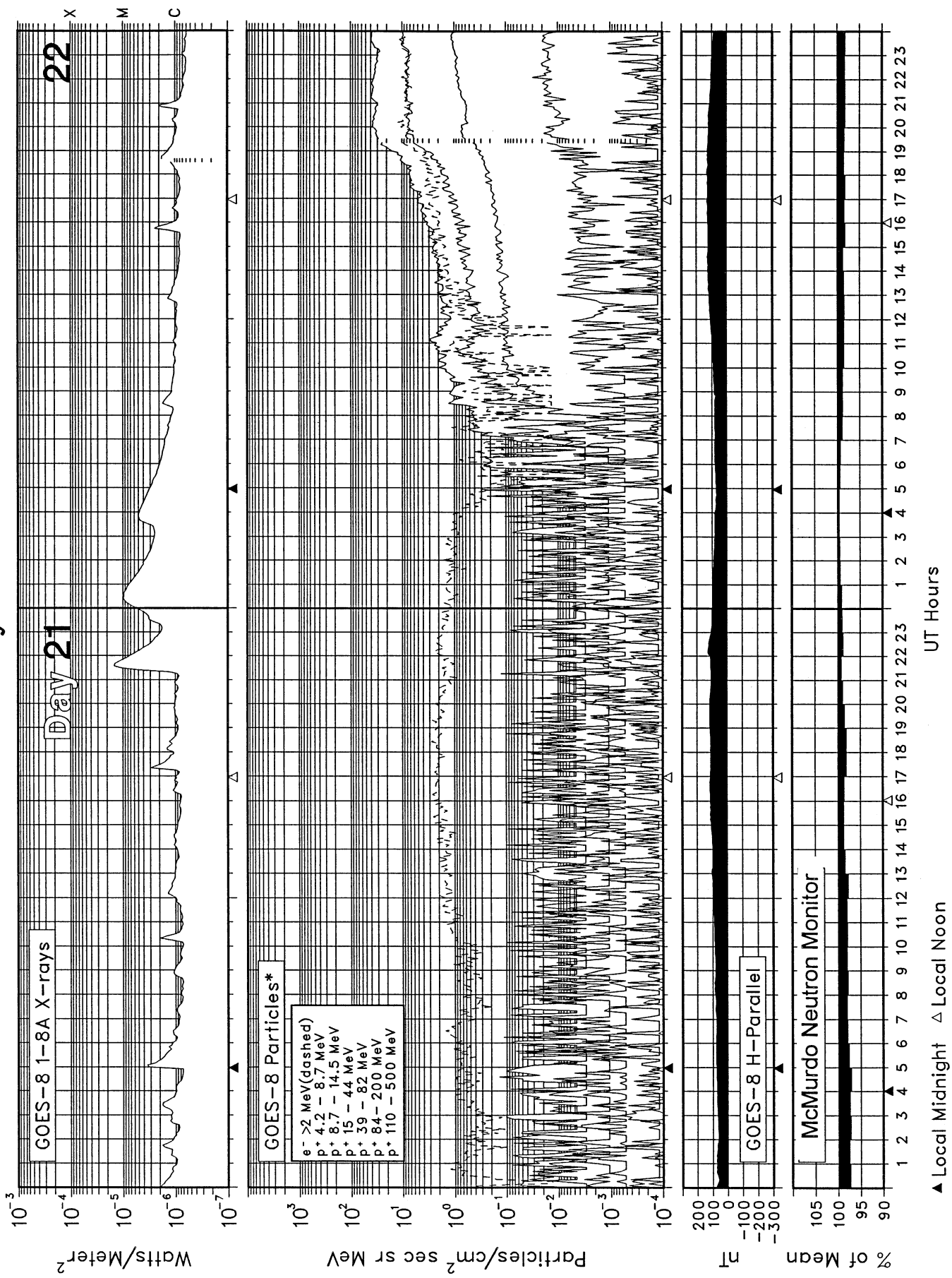
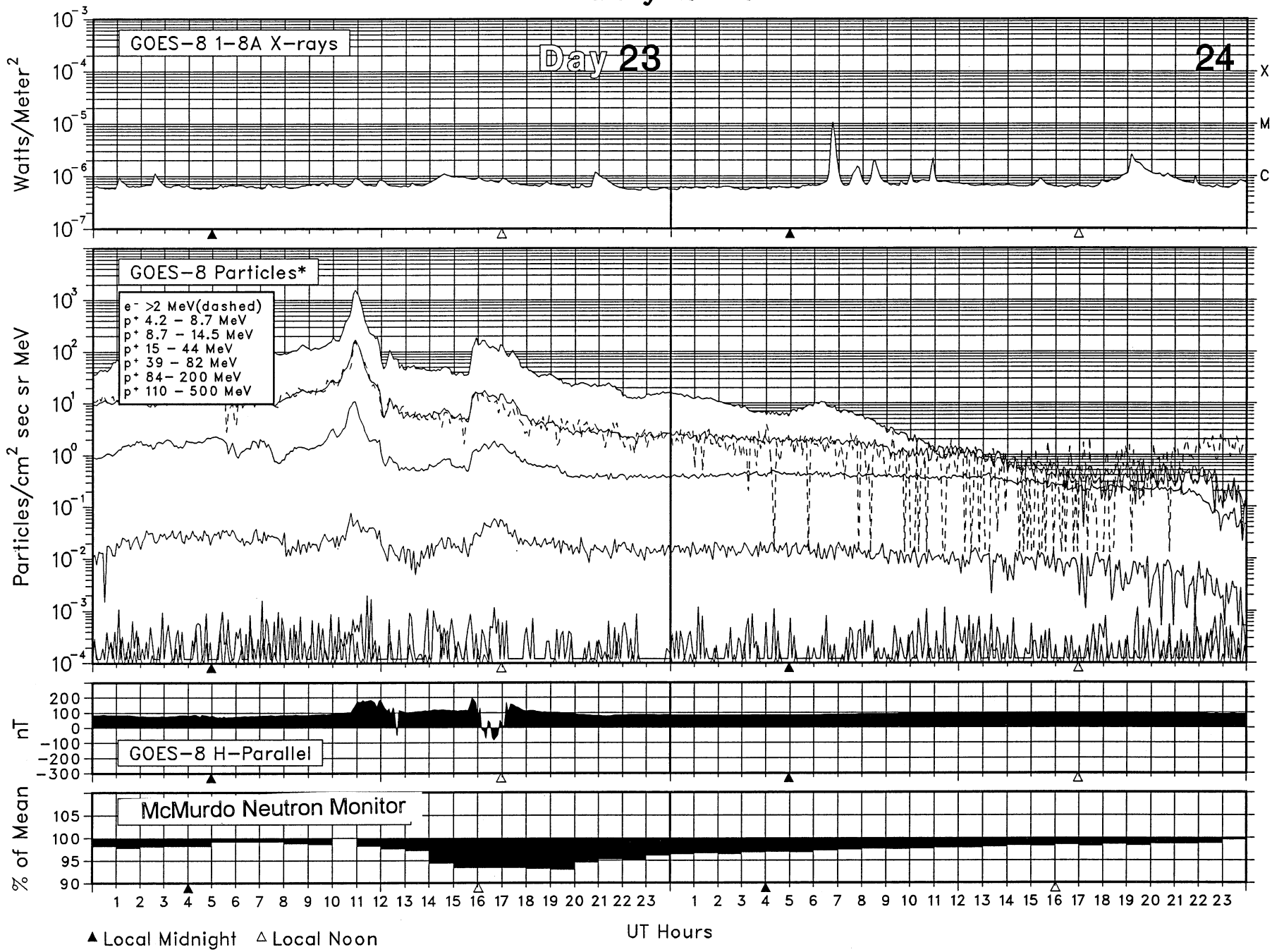
May 2002



SOLAR-TERRESTRIAL ENVIRONMENT
May 2002



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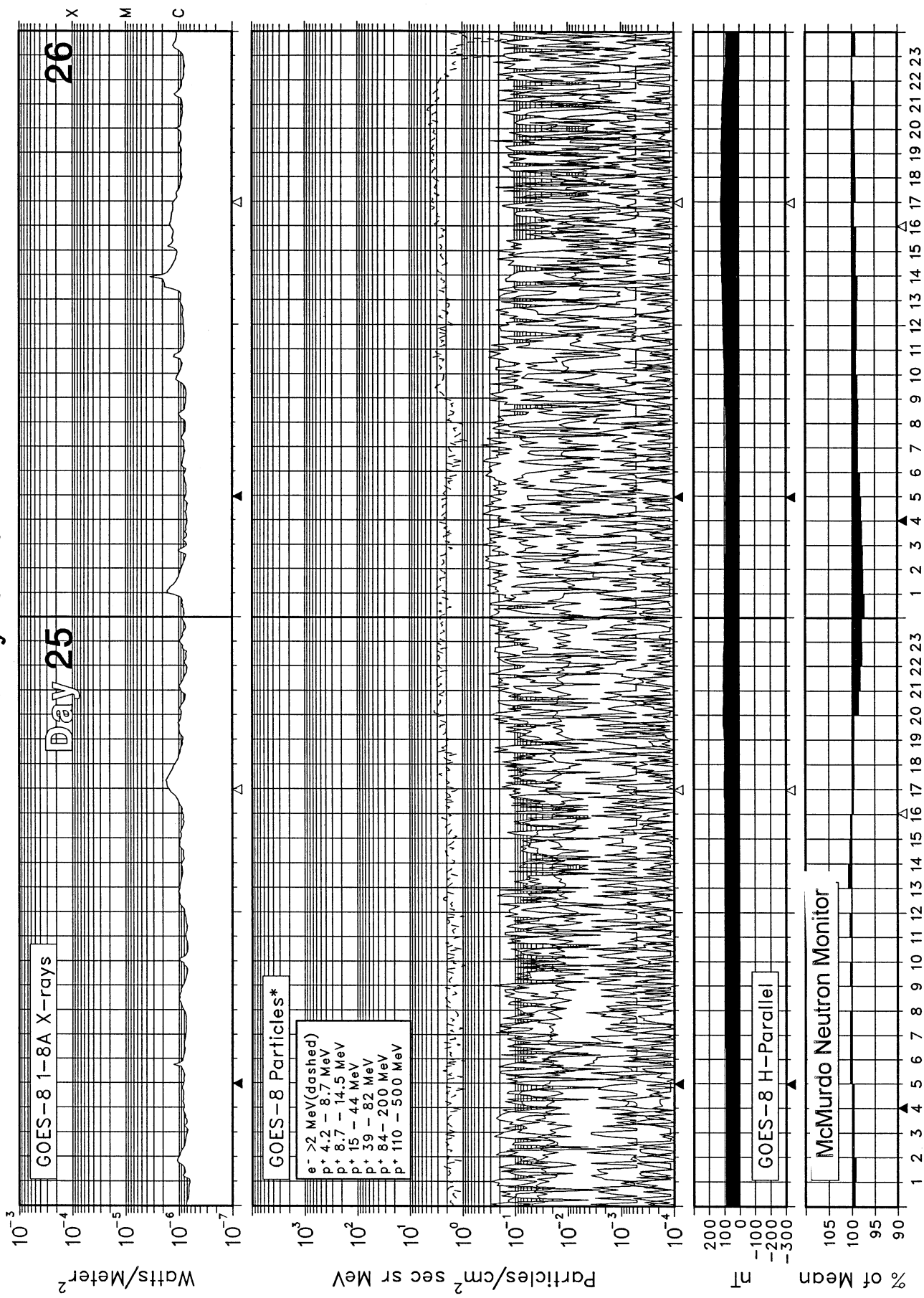
May 2002



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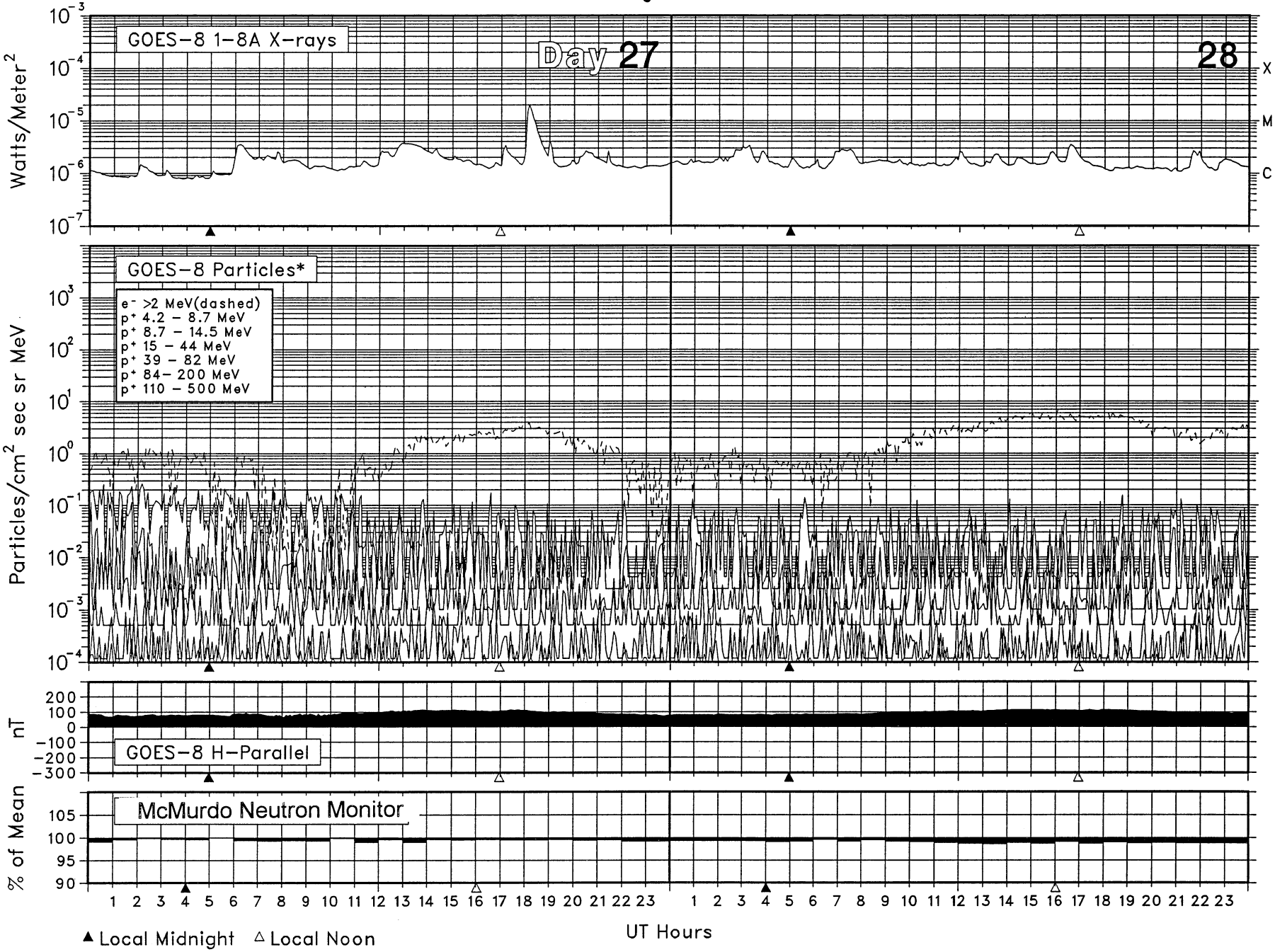
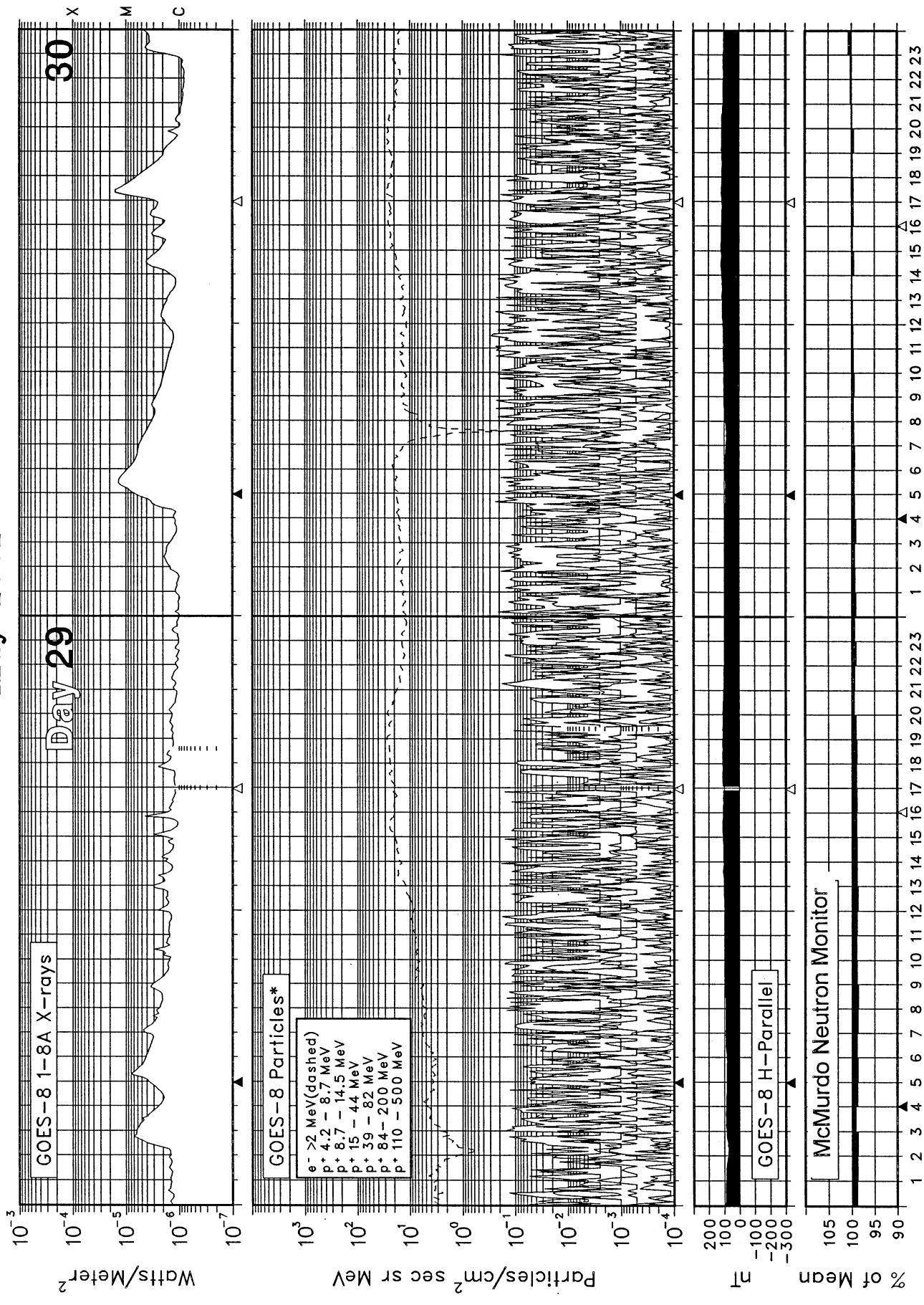
May 2002



17 May 02


SOLAR-TERRESTRIAL ENVIRONMENT
May 2002
Day 29
30
GOES-8 1-8A X-rays
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e⁻ >2 MeV(dashed)
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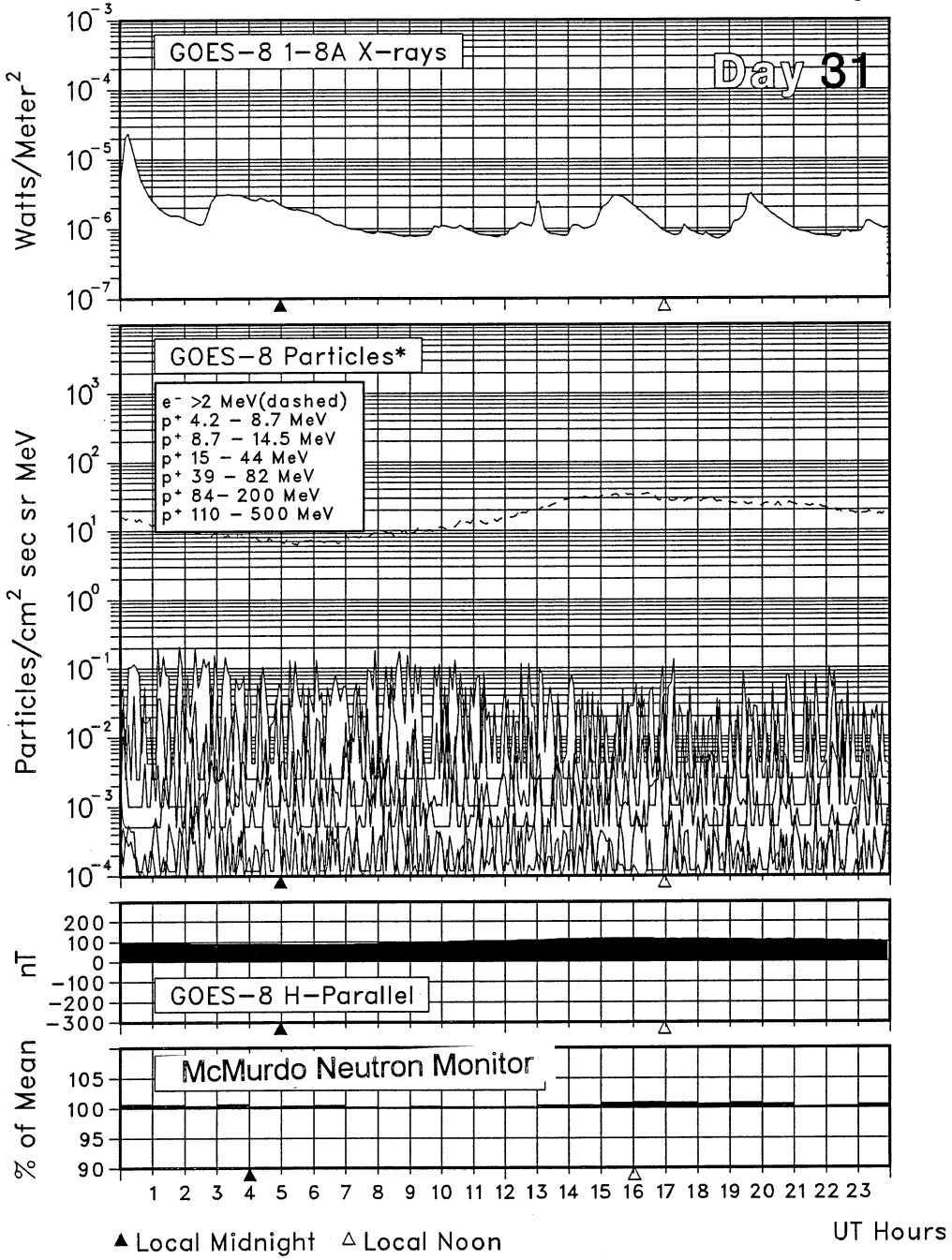

* Electron flux is divided by 10.
Electron units are Counts/cm^2 sec sr.
Protons are corrected for contamination.

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

MAY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
121	01	30	113	153	8	9914	N05	W80	1	0	0	01	Q	SOL: Eruptive
						9915	N12	W69	0	0	0	01	Q	MAG: Quiet
						9919	N14	W28	2	0	0	01	Q	PRO: Quiet
						9922	N22	W38	0	0	0	01	Q	
						9926	N14	W15	0	0	0	01	Q	
						9927	S29	E55	0	0	0	01	Q	
						9928	N18	E61	0	0	0	01	Q	
						9929	N22	E16	0	0	0	01	Q	
122	02	01	166	162	4	9914	N05	W92	0	0	0	02	Q	SOL: Eruptive
						9915	N12	W80	0	0	0	02	Q	MAG: Quiet
						9919	N13	W40	0	0	0	02	Q	PRO: Quiet
						9926	N14	W29	0	0	0	02	Q	
						9927	S30	E43	0	0	0	02	Q	
						9928	N17	E48	0	0	0	02	Q	
						9930	N12	W17	0	0	0	02	Q	
						9931	N15	E19	0	0	0	02	Q	
						9932	S28	E56	5	0	0	02	E	
						9933	N16	E64	0	0	0	02	Q	
						9934	S18	E73	0	0	0	02	Q	
123	03	02	187	169	6	9919	N13	W54	1	0	0	03	Q	SOL: Eruptive
						9926	N14	W42	1	0	0	03	Q	MAG: Quiet
						9927	S29	E27	0	0	0	03	Q	PRO: Quiet
						9928	N17	E35	0	0	0	03	Q	
						9929	N21	W11	0	0	0	03	Q	
						9930	N12	W30	0	0	0	03	Q	
						9931	N16	E06	0	0	0	03	Q	
						9932	S28	E44	0	0	0	03	Q	
						9933	N17	E52	0	0	0	03	Q	
						9934	S18	E62	1	0	0	03	E	
						9935	S18	E33	0	0	0	03	Q	
						9936	S15	E42	0	0	0	03	Q	
124	04	03	242	179	7	9919	N13	W68	0	0	0	04	Q	SOL: Eruptive
						9926	N15	W56	1	0	0	04	Q	MAG: Quiet
						9927	S28	E14	0	0	0	04	Q	PRO: Quiet
						9928	N18	E22	0	0	0	04	Q	
						9929	N22	W26	0	0	0	04	Q	
						9930	N12	W44	0	0	0	04	Q	
						9931	N16	W09	0	0	0	04	Q	
						9932	S28	E31	1	0	0	04	Q	
						9933	N18	E37	0	0	0	04	Q	
						9934	S17	E48	9	0	0	04	E	
						9935	S19	E16	0	0	0	04	Q	
						9936	S16	E27	0	0	0	04	Q	
						9937	S09	E68	0	0	0	04	Q	
						9938	S04	E72	0	0	0	04	Q	
125	05	04	271	190	6	9919	N13	W80	0	0	0	05	Q	SOL: Eruptive
						9926	N14	W70	0	0	0	05	Q	MAG: Quiet
						9927	S28	E02	0	0	0	05	Q	PRO: Quiet
						9928	N17	E10	1	0	0	05	Q	
						9929	N21	W41	1	0	0	05	Q	
						9931	N15	W23	0	0	0	05	Q	
						9932	S28	E19	0	0	0	05	Q	
						9933	N17	E25	0	0	0	05	Q	
						9934	S17	E35	2	0	0	05	E	
						9935	S19	E04	0	0	0	05	Q	
						9936	S17	E15	0	0	0	05	Q	
						9937	S10	E56	2	0	0	05	Q	
						9938	S05	E59	0	0	0	05	Q	
						9939	N16	E67	0	0	0	05	Q	
						9940	N14	E72	0	0	0	05	Q	
126	06	05	317	180	4	9926	N13	W82	0	0	0	06	Q	SOL: Eruptive
						9927	S28	W13	0	0	0	06	Q	MAG: Quiet

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

MAY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9928	N18	W05	1	0	0	06	Q	PRO: Quiet
						9929	N22	W53	1	0	0	06	Q	
						9931	N16	W37	0	0	0	06	Q	
						9932	S28	E05	0	0	0	06	Q	
						9933	N18	E12	0	0	0	06	Q	
						9934	S17	E21	3	0	0	06	E	
						9935	S19	W11	0	0	0	06	Q	
						9936	S17	E01	0	0	0	06	Q	
						9937	S09	E42	1	0	0	06	E	
						9938	S05	E46	0	0	0	06	Q	
						9939	N17	E52	0	0	0	06	Q	
						9940	N13	E55	0	0	0	06	Q	
						9941	S22	E09	0	0	0	06	Q	
						9942	N22	E34	0	0	0	06	Q	
						9943	S11	E63	1	0	0	06	Q	
127	07	06	226	191	10	9928	N18	W18	1	0	0	07	Q	SOL: Eruptive
						9929	N23	W66	0	0	0	07	Q	MAG: Quiet
						9931	N15	W51	0	0	0	07	Q	PRO: Quiet
						9932	S28	W08	0	0	0	07	Q	
						9933	N18	E00	0	0	0	07	Q	
						9934	S17	E08	1	0	0	07	E	
						9935	S19	W23	2	0	0	07	Q	
						9936	S16	W13	0	0	0	07	Q	
						9937	S10	E29	0	0	0	07	Q	
						9938	S05	E32	0	0	0	07	Q	
						9939	N17	E40	0	0	0	07	Q	
						9940	N13	E42	0	0	0	07	Q	
						9941	S22	W03	0	0	0	07	Q	
						9942	N21	E21	0	0	0	07	Q	
						9943	S11	E50	0	0	0	07	Q	
128	08	07	217	187	8	9928	N19	W32	0	0	0	08	Q	SOL: Eruptive
						9929	N23	W81	0	0	0	08	Q	MAG: Quiet
						9931	N15	W66	0	0	0	08	Q	PRO: Quiet
						9932	S27	W20	0	0	0	08	Q	
						9933	N18	W15	0	0	0	08	Q	
						9934	S17	W06	0	0	0	08	E	
						9936	S16	W28	0	0	0	08	Q	
						9937	S09	E15	0	1	0	08	Q	
						9938	S05	E18	0	0	0	08	Q	
						9939	N16	E27	0	0	0	08	Q	
						9940	N15	E28	0	0	0	08	Q	
						9941	S22	W18	0	0	0	08	Q	
						9942	N21	E10	0	0	0	08	Q	
						9943	S10	E37	1	0	0	08	Q	
						9944	N08	E35	0	0	0	08	Q	
						9945	S05	E66	0	0	0	08	Q	
129	09	08	249	187	9	9927	S23	W34	0	0	0	09	Q	SOL: Eruptive
						9928	N19	W45	0	0	0	09	Q	MAG: Quiet
						9931	N15	W79	0	0	0	09	Q	PRO: Quiet
						9932	S27	W33	0	0	0	09	Q	
						9933	N18	W28	0	0	0	09	Q	
						9934	S16	W19	5	0	0	09	E	
						9935	S17	W41	0	0	0	09	Q	
						9936	S16	W41	0	0	0	09	Q	
						9937	S08	E02	2	0	0	09	Q	
						9938	S05	E05	0	0	0	09	Q	
						9939	N16	E14	0	0	0	09	Q	
						9940	N15	E15	1	0	0	09	Q	
						9941	S22	W31	0	0	0	09	Q	
						9942	N21	W03	0	0	0	09	Q	
						9943	S10	E24	0	0	0	09	Q	
						9944	N08	E22	0	0	0	09	Q	
						9945	S05	E53	0	0	0	09	Q	
						9946	S08	E65	0	0	0	09	Q	

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

MAY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
130	10	09	244	190	10	9931	N15	W90	0	0	0	10	Q	SOL: Eruptive
						9932	S27	W46	0	0	0	10	Q	MAG: Quiet
						9933	N18	W41	0	0	0	10	Q	PRO: Quiet
						9934	S16	W32	1	0	0	10	E	
						9935	S19	W64	0	0	0	10	Q	
						9936	S16	W54	0	0	0	10	Q	
						9937	S08	W11	2	0	0	10	E	
						9938	S05	W08	0	0	0	10	Q	
						9939	N19	W01	0	0	0	10	Q	
						9940	N15	E03	0	0	0	10	Q	
						9941	S22	W44	0	0	0	10	Q	
						9943	S10	E11	1	0	0	10	Q	
						9944	N08	E09	0	0	0	10	Q	
						9945	S05	E40	0	0	0	10	Q	
						9946	S06	E52	0	0	0	10	Q	
131	11	10	245	191	13	9932	S27	W56	0	0	0	11	Q	SOL: Eruptive
						9933	N18	W54	0	0	0	11	Q	MAG: Quiet
						9934	S16	W46	4	0	0	11	E	PRO: Quiet
						9937	S08	W25	5	0	0	11	E	
						9938	S05	W21	0	0	0	11	Q	
						9939	N19	W12	0	0	0	11	Q	
						9940	N17	W11	0	0	0	11	Q	
						9941	S22	W58	0	0	0	11	Q	
						9943	S10	W03	0	0	0	11	Q	
						9945	S04	E27	0	0	0	11	Q	
						9946	S06	E38	3	0	0	11	Q	
						9947	N23	W46	0	0	0	11	Q	
						9948	S21	E71	0	0	0	11	Q	
132	12	11	226	188	35	9932	S27	W67	0	0	0	12	Q	SOL: Active
						9933	N18	W67	0	0	0	12	Q	MAG: Quiet
						9934	S17	W59	5	0	0	12	E	PRO: Quiet
						9937	S09	W38	1	1	0	12	E	
						9938	S05	W34	0	0	0	12	Q	
						9940	N17	W24	0	0	0	12	Q	
						9943	S10	W16	0	0	0	12	Q	
						9945	S04	E14	2	0	0	12	E	
						9946	S06	E25	1	0	0	12	E	
						9947	N23	W59	0	0	0	12	Q	
						9948	S21	E61	0	0	0	12	E	
						9949	S16	W06	0	0	0	12	Q	
						9950	S06	E44	1	0	0	12	Q	
133	13	12	210	183	14	9933	N18	W81	0	0	0	13	Q	SOL: Active
						9934	S16	W72	6	0	0	13	E	MAG: Quiet
						9937	S08	W50	0	0	0	13	E	PRO: Quiet
						9938	S06	W47	0	0	0	13	Q	
						9940	N18	W38	0	0	0	13	Q	
						9945	S04	E02	0	0	0	13	E	
						9946	S05	E12	0	0	0	13	Q	
						9948	S22	E50	1	0	0	13	E	
						9949	S16	W20	0	0	0	13	Q	
						9950	S06	E31	0	0	0	13	Q	
						9951	N10	E68	0	0	0	13	Q	
134	14	13	168	172	10	9933	N18	W92	3	0	0	14	Q	SOL: Eruptive
						9934	S16	W84	1	0	0	14	E	MAG: Quiet
						9937	S07	W64	0	0	0	14	E	PRO: Quiet
						9940	N19	W51	0	0	0	14	Q	
						9945	S04	W12	1	0	0	14	Q	
						9946	S05	W02	1	0	0	14	Q	
						9948	S22	E38	1	0	0	14	E	
						9949	S16	W34	0	0	0	14	Q	
						9950	S06	E18	0	0	0	14	Q	
						9951	N10	E55	0	0	0	14	Q	

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

MAY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9952	S15	W22	0	0	0	14	Q	
135	15	14	134	161	27	9934	S15	W98	0	0	0	15	E	SOL: Eruptive
						9937	S07	W77	0	0	0	15	Q	MAG: Quiet
						9940	N19	W67	0	0	0	15	Q	PRO: Quiet
						9945	S04	W26	0	0	0	15	Q	
						9946	S06	W17	0	0	0	15	Q	
						9948	S22	E26	3	0	0	15	E	
						9949	S16	W47	0	0	0	15	Q	
						9950	S05	E04	0	0	0	15	Q	
						9951	N11	E41	0	0	0	15	Q	
136	16	15	137	159	11	9937	S08	W89	0	0	0	16	Q	SOL: Eruptive
						9945	S05	W39	2	0	0	16	Q	MAG: Quiet
						9948	S22	E14	2	1	0	16	E	PRO: Quiet
						9949	S16	W61	0	0	0	16	Q	
						9950	S06	W09	0	0	0	16	Q	
						9951	N11	E28	0	0	0	16	Q	
						9953	N06	W52	0	0	0	16	Q	
						9954	S22	E65	0	0	0	16	Q	
						9955	S14	E67	0	0	0	16	Q	
137	17	16	120	158	9	9945	S03	W54	1	0	0	17	Q	SOL: Eruptive
						9948	S22	E01	0	0	0	17	E	MAG: Quiet
						9950	S05	W23	1	0	0	17	Q	PRO: Quiet
						9951	N11	E14	0	0	0	17	Q	
						9953	N06	W65	0	0	0	17	Q	
						9954	S22	E54	0	0	0	17	Q	
						9955	S14	E55	0	0	0	17	Q	
						9956	S08	W04	0	0	0	17	Q	
						9957	N06	E67	0	0	0	17	E	
138	18	17	134	157	6	9945	S02	W68	0	0	0	18	Q	SOL: Active
						9948	S21	W15	1	0	0	18	E	MAG: Quiet
						9950	S05	W37	0	0	0	18	Q	PRO: Quiet
						9954	S22	E40	2	1	0	18	Q	
						9955	S14	E42	0	0	0	18	Q	
						9957	N08	E58	2	1	0	18	E	
						9958	N04	E50	0	0	0	18	Q	
						9959	N10	E09	0	0	0	18	Q	
139	19	18	140	163	14	9945	S02	W84	0	0	0	19	Q	SOL: Active
						9948	S21	W31	0	0	0	19	Q	MAG: Quiet
						9950	S05	W51	0	0	0	19	Q	PRO: Quiet
						9951	N12	W12	0	0	0	19	Q	
						9954	S22	E27	0	0	0	19	Q	
						9955	S14	E28	2	0	0	19	Q	
						9957	N08	E47	4	0	0	19	E	
						9958	N04	E37	0	0	0	19	Q	
						9960	N15	E74	2	0	0	19	Q	
140	20	19	155	171	16	9945	S01	W95	0	0	0	20	Q	SOL: Active
						9948	S21	W44	0	0	0	20	Q	MAG: Quiet
						9950	S04	W64	0	0	0	20	Q	PRO: Quiet
						9954	S22	E14	0	0	0	20	Q	
						9955	S14	E15	0	0	0	20	Q	
						9957	N08	E34	3	0	0	20	E	
						9958	N04	E24	0	0	0	20	Q	
						9960	N14	E58	0	0	0	20	Q	
						9961	S22	E76	2	0	0	20	Q	
141	21	20	171	171	12	9948	S21	W57	0	0	0	21	Q	SOL: Active
						9950	S04	W77	0	0	0	21	Q	MAG: Quiet
						9954	S20	E01	0	0	0	21	Q	PRO: Quiet
						9955	S15	E02	0	0	0	21	Q	
						9957	N09	E22	0	0	0	21	E	
						9958	N04	E09	0	0	0	21	Q	

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

MAY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9960	N14	E46	1	0	0	21	Q	
						9961	S22	E62	10	2	1	21	E	
						9962	N15	E59	0	0	0	21	Q	
						9963	N17	E75	0	0	0	21	Q	
142	22	21	185	186	10	9948	S20	W70	0	0	0	22	Q	SOL: Active
						9954	S22	W10	0	0	0	22	Q	MAG: Quiet
						9955	S13	W11	0	0	0	22	Q	PRO: Quiet
						9957	N09	E08	0	0	0	22	E	
						9958	N04	W04	0	0	0	22	Q	
						9960	N14	E35	3	1	0	22	E	
						9961	S23	E48	1	0	0	22	E	
						9962	N15	E47	0	0	0	22	Q	
						9963	N17	E60	2	0	0	22	Q	
143	23	22	217	181	9	9948	S21	W84	0	0	0	23	Q	SOL: Active
						9954	S22	W26	0	0	0	23	Q	MAG: Active
						9955	S13	W24	0	0	0	23	Q	PRO: IP
						9957	N10	W04	0	0	0	23	Q	
						9958	N04	W17	0	0	0	23	Q	
						9960	N14	E19	0	0	0	23	Q	
						9961	S22	E34	2	0	0	23	E	
						9962	N15	E34	0	0	0	23	Q	
						9963	N16	E48	0	0	0	23	Q	
						9964	S15	E08	0	0	0	23	Q	
						9965	S10	E62	1	0	0	23	Q	
144	24	23	229	180	43	9954	S22	W38	0	0	0	24	Q	SOL: Active
						9957	N10	W19	0	0	0	24	E	MAG: Active
						9958	N04	W32	0	0	0	24	Q	PRO: IP
						9960	N14	E06	0	0	0	24	Q	
						9961	S22	E22	1	0	0	24	E	
						9962	N15	E21	0	0	0	24	Q	
						9963	N14	E36	1	0	0	24	Q	
						9964	S14	W05	0	0	0	24	Q	
						9965	S10	E48	0	0	0	24	Q	
						9966	N10	E34	0	0	0	24	Q	
						9967	N13	E46	0	0	0	24	Q	
145	25	24	242	189	3	9954	S21	W50	0	0	0	25	Q	SOL: Active
						9957	N11	W32	1	0	0	25	E	MAG: Active
						9958	N04	W44	0	0	0	25	Q	PRO: Quiet
						9960	N14	W09	0	0	0	25	Q	
						9961	S22	E09	0	0	0	25	E	
						9962	N15	E08	1	0	0	25	Q	
						9963	N15	E23	5	1	0	25	Q	
						9964	S14	W16	0	0	0	25	Q	
						9965	S10	E37	0	0	0	25	Q	
						9966	N09	E20	0	0	0	25	Q	
						9967	N13	E33	0	0	0	25	Q	
						9968	S13	E26	0	0	0	25	Q	
146	26	25	221	183	3	9954	S22	W64	0	0	0	26	Q	SOL: Active
						9957	N10	W45	1	0	0	26	E	MAG: Quiet
						9958	N05	W58	0	0	0	26	Q	PRO: Quiet
						9960	N14	W20	1	0	0	26	Q	
						9961	S21	W04	1	0	0	26	E	
						9962	N16	W07	0	0	0	26	Q	
						9963	N14	E09	0	0	0	26	E	
						9965	S08	E19	0	0	0	26	Q	
						9966	N10	E04	0	0	0	26	Q	
						9967	N14	E19	0	0	0	26	Q	
						9968	S14	E13	0	0	0	26	Q	
						9969	N09	E67	6	0	0	26	Q	
147	27	26	232	183	9	9957	N10	W58	2	0	0	27	Q	SOL: Eruptive
						9958	N04	W71	0	0	0	27	Q	MAG: Quiet

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

MAY 2002

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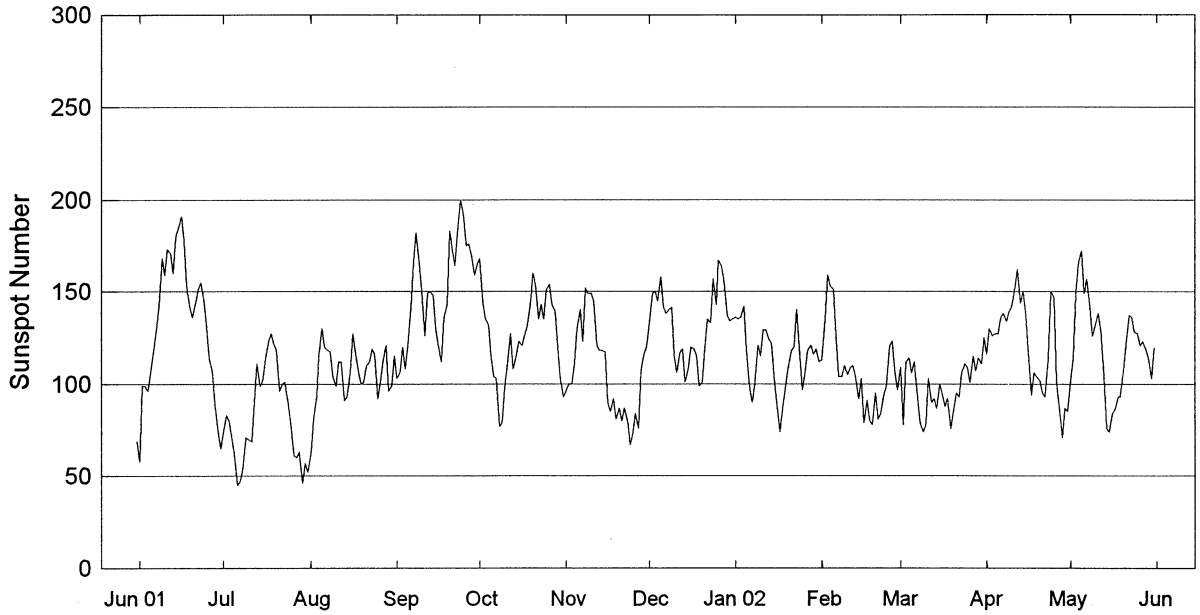
						9960	N15	W31	0	0	0	27	Q	PRO: Quiet
						9961	S21	W17	1	0	0	27	Q	
						9962	N16	W21	0	0	0	27	Q	
						9963	N14	W03	1	0	0	27	Q	
						9965	S08	E05	0	0	0	27	Q	
						9966	N11	W06	0	0	0	27	Q	
						9967	N13	E05	0	0	0	27	Q	
						9968	S14	E00	0	0	0	27	Q	
						9969	N09	E55	4	0	0	27	Q	
						9970	N05	E54	0	0	0	27	Q	
148	28	27	227	187	17	9957	N10	W73	4	1	0	28	E	SOL: Eruptive
						9958	N04	W85	0	0	0	28	Q	MAG: Quiet
						9960	N15	W43	0	0	0	28	Q	PRO: Quiet
						9961	S22	W30	2	0	0	28	Q	
						9962	N16	W34	0	0	0	28	Q	
						9963	N14	W17	0	0	0	28	Q	
						9964	S14	W59	0	0	0	28	Q	
						9965	S08	W07	0	0	0	28	Q	
						9966	N11	W21	0	0	0	28	Q	
						9967	N14	W08	0	0	0	28	Q	
						9969	N09	E42	0	0	0	28	Q	
						9970	N05	E41	0	0	0	28	Q	
149	29	28	218	186	12	9957	N12	W86	2	0	0	29	E	SOL: Eruptive
						9960	N14	W56	0	0	0	29	Q	MAG: Quiet
						9961	S22	W44	0	0	0	29	Q	PRO: Quiet
						9962	N15	W47	0	0	0	29	Q	
						9963	N14	W30	1	0	0	29	Q	
						9965	S07	W21	0	0	0	29	Q	
						9966	N11	W36	0	0	0	29	Q	
						9967	N12	W23	0	0	0	29	Q	
						9969	N09	E30	0	0	0	29	Q	
						9970	N05	E28	0	0	0	29	Q	
						9971	N21	E00	0	0	0	29	Q	
						9972	S21	E56	0	0	0	29	Q	
						9973	S16	E73	1	0	0	29	E	
150	30	29	206	185	8	9960	N14	W69	1	0	0	30	Q	SOL: Eruptive
						9961	S21	W59	0	0	0	30	Q	MAG: Quiet
						9962	N16	W61	0	0	0	30	Q	PRO: Quiet
						9963	N16	W43	0	0	0	30	E	
						9965	S08	W34	0	0	0	30	Q	
						9966	N10	W49	0	0	0	30	Q	
						9967	N12	W38	1	0	0	30	Q	
						9969	N09	E17	0	0	0	30	Q	
						9970	N06	E14	0	0	0	30	Q	
						9972	S21	E44	1	0	0	30	Q	
						9973	S16	E61	7	0	0	30	E	
						9974	N18	E58	0	0	0	30	Q	
						9975	N23	E63	0	0	0	30	Q	
151	31	30	190	180	8	9961	S21	W72	0	0	0	31	Q	SOL: Active
						9963	N16	W56	1	0	0	31	E	MAG: Quiet
						9965	S08	W47	0	0	0	31	Q	PRO: Quiet
						9967	N12	W51	0	0	0	31	Q	
						9969	N09	E04	0	0	0	31	Q	
						9970	N06	E01	0	0	0	31	Q	
						9972	S21	E31	1	0	0	31	E	
						9973	S16	E48	3	1	0	31	E	
						9974	N18	E45	0	0	0	31	Q	
						9975	N23	E50	0	0	0	31	Q	
						9976	S10	E01	0	0	0	31	Q	

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
Jun 2001 - May 2002

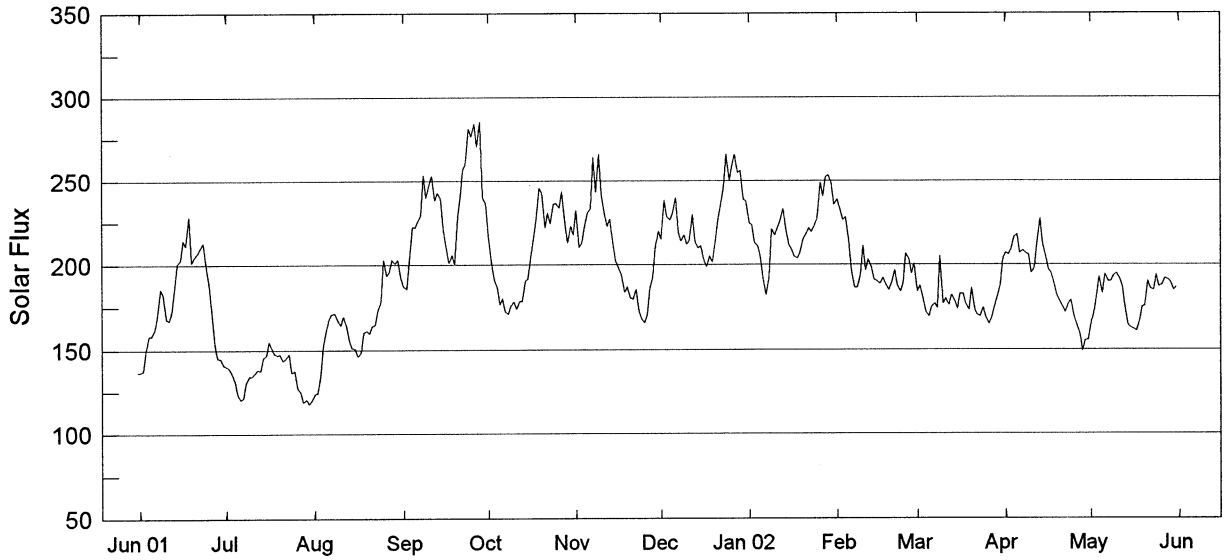


Day	Jun 01	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr*	May*
1	58	74	62	103	168	96	133	136	113	109	116	102
2	99	83	81	106	144	100	149	135	135	78	130	114
3	99	80	93	120	135	100	150	136	159	112	126	149
4	96	71	115	108	132	111	145	142	153	114	127	166
5	106	62	130	120	114	130	158	118	151	106	127	172
6	119	45	120	141	104	140	142	98	125	112	136	149
7	129	47	118	166	103	123	138	90	104	93	138	157
8	142	54	117	182	77	152	140	100	104	79	134	142
9	168	71	104	166	79	149	141	121	110	74	139	126
10	159	70	99	150	98	149	115	115	105	78	142	133
11	173	69	112	126	113	145	106	129	109	103	152	138
12	171	90	112	149	127	121	117	129	110	90	162	130
13	160	111	91	150	108	118	119	124	104	92	144	104
14	180	99	93	148	115	118	101	122	92	87	150	76
15	186	102	106	130	123	117	108	104	103	100	138	74
16	191	113	127	121	121	90	120	87	79	94	113	84
17	178	123	117	112	126	85	119	74	91	88	94	86
18	153	127	106	136	131	92	115	86	80	92	106	93
19	141	122	100	143	143	81	99	99	78	76	104	93
20	136	118	101	183	160	87	101	109	95	85	102	107
21	144	96	110	173	154	80	120	118	81	95	95	121
22	151	100	112	164	135	87	135	120	84	93	93	137
23	155	101	119	186	143	80	133	140	94	106	114	136
24	145	90	116	200	135	67	157	115	99	111	150	128
25	131	79	92	193	151	73	143	97	121	109	147	127
26	114	61	101	175	154	84	167	106	123	101	101	121
27	107	60	112	176	143	76	164	118	107	115	88	123
28	89	63	121	170	139	107	156	121	97	107	71	119
29	74	46	96	159	120	115	137	116		114	87	114
30	65	57	99	165	103	121	134	119		111	85	103
31		52	115		93		135	112		125		120
Mean	134.0	81.8	106.4	150.7	125.5	106.5	132.2	114.1	107.4	98.4	120.4	120.8

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Jun 2001 - May 2002

Adjusted to 1 AU



Day	Jun 01	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May
1	136.8	119.0	123.8	187.4	216.9	232.0	215.1	224.5	238.5	184.3	206.7	164.9
2	137.8	120.5	124.3	185.7	201.1	210.1	238.1	223.5	233.7	187.6	205.9	171.7
3	149.5	118.0	135.5	202.1	191.8	212.5	228.3	213.0	226.3	179.6	209.4	182.0
4	158.3	120.3	152.7	222.1	186.5	223.5	226.6	211.0	228.1	172.0	216.3	192.7
5	158.0	135.6	160.5	221.8	176.8	230.6	230.1	205.2	214.5	169.4	217.6	183.2
6	162.4	120.3	168.3	225.6	180.2	233.2	239.5	190.1	196.9	175.0	206.7	194.3
7	169.8	121.8	171.0	229.5	172.4	263.9	219.3	182.4	186.6	177.0	208.4	190.3
8	185.7	130.5	171.5	253.1	170.8	243.1	213.9	192.6	186.4	174.2	206.8	190.2
9	182.4	134.4	167.8	239.5	175.9	265.6	217.5	220.9	194.1	204.8x	205.8	193.7
10	168.0	134.3	164.7	247.8	178.1	241.0	212.3	217.3	210.9	176.9	195.1	194.8
11	167.4	136.3	169.5	252.9	174.1	229.3	213.9	221.4	196.6	180.0	198.3	191.8
12	171.6	138.3	164.0	238.1	178.5	222.6	229.4	225.7	203.1	176.2	213.0	187.1
13	187.1	137.7	155.5	242.6	178.6	226.8	213.4	232.9	198.5	182.1	227.3	175.6
14	200.9	145.4	151.1	239.3	190.8	212.6	209.9#	221.6	191.3	178.6	211.6	164.2
15	203.2	146.8	150.5	221.7	191.7	202.4	211.0	211.2	190.3	174.0	204.7	162.7
16	214.3	154.7	146.2	209.3	205.8	197.6	202.5	209.1	188.9	182.7	197.2	162.0
17	211.2	150.4	148.4	201.1	215.8	194.0	199.0	205.0	192.0	182.7	195.0	160.7
18	228.5	147.7	159.9	205.7	226.9	183.8	205.0	203.8	188.4	176.5	189.8	166.8
19	201.7	146.9	161.3	200.6	245.6	186.8	201.6	206.9	185.1	173.3	181.4	175.0
20	205.0	147.2	159.8	228.7	242.5	180.6	214.0	215.2	189.1	186.3	179.0	175.4
21	206.9	143.5	163.9	240.5	222.0	179.7	226.7	217.5	196.7	172.8	175.1	190.4
22	210.3	144.9	165.2	257.0	230.4	185.3#	234.9	221.5	187.9	170.4	171.7	185.6
23	213.0	147.8	173.4	260.2	224.1	172.9	246.3	219.4	184.2	169.4	177.2	184.8
24	201.3	136.7	178.7	281.0	236.0	168.6	265.5	223.6	188.9	174.3	178.9	193.9
25	188.4	137.5	203.2	276.6	236.1	165.6	250.3	227.6	206.4	169.1	169.3	187.4
26	173.5	127.2	193.8	284.0	233.6	170.3	259.0	248.7	203.5	164.9	164.7	188.0
27	152.8	125.1	195.9	270.6	243.4	185.3	265.6	240.5	194.9	168.4	159.0	191.6
28	144.9	119.0	203.1	285.5	224.2	193.1	254.6#	252.0	200.4	175.6	149.2	191.4
29	144.6	120.5	200.9	240.2	212.8	210.5	255.7	253.2		180.8	155.2	189.8
30	141.2	118.0	203.0	236.3	222.7	219.6	238.5	248.8		188.2	155.6	185.1
31		120.3	192.2		217.8		237.5	235.5		204.0		187.0
Mean	179.2	135.6	167.1	236.2	206.6	208.1	228.2	220.1	200.1	178.4	191.1	182.4

NOTE: # 1800UT reading - burst in progress (IP) at 2000UT; x Burst IP at 2000UT.

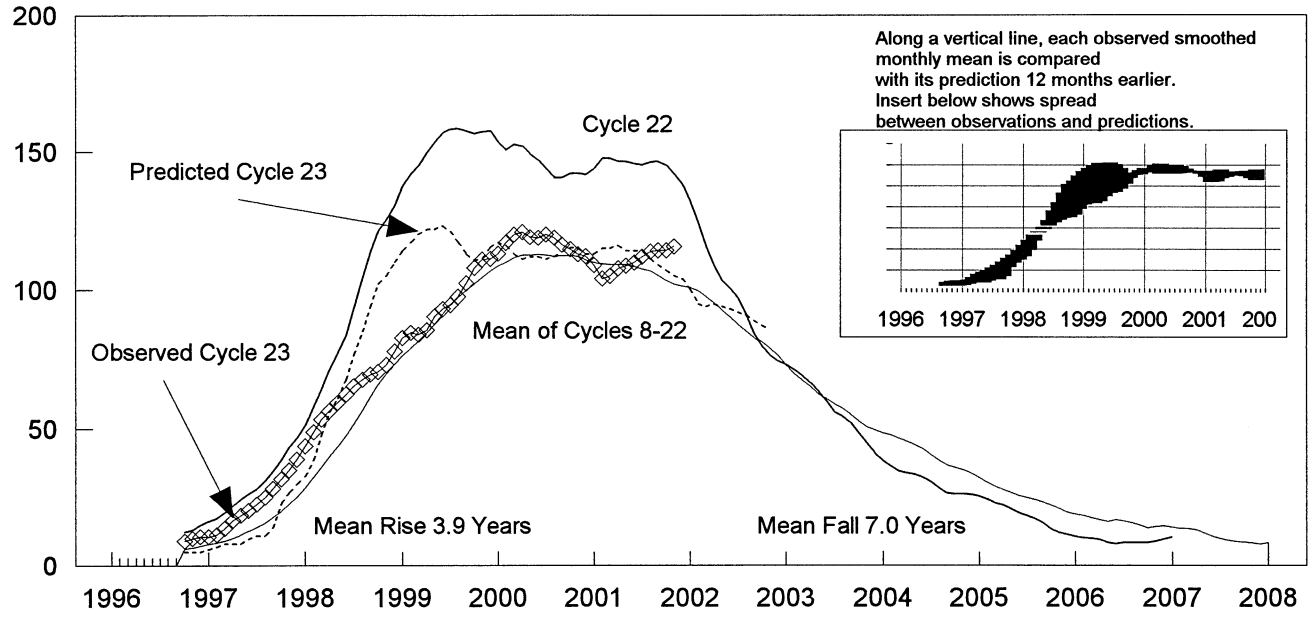
DAILY SOLAR INDICES

May 2002

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit — SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	121	21	102	122	162.4	561	324	197	164.9	158	117	58	43	25
2	122	22	114	131	169.0	555	347	230	171.7	164	124	57	42	27
3	123	23	149	158	179.1	569	341	236	182.0	177	127	60	43	54
4	124	24	166	184	189.5	570	358	240	192.7	184	135	57	40	22
5	125	25	172	171	180.0	558	350	246	183.2	174	136	64	44	20
6	126	26	149	162	190.8	567	353	252	194.3	185	143	60	44	37
7	127	27	157	171	186.8	568	347	243	190.3	183	138	56	43	68
8	128	1	142	153	186.6	569	344	238	190.2	180	140	74	75	60
9	129	2	126	129	190.0	553	351	244	193.7	179	139	68	48	29
10	130	3	133	131	191.0	578	365	269	194.8	182	138	57	43	50
11	131	4	138	139	188.0	581	363	258	191.8	192	133	67	46	23
12	132	5	130	131	183.3	534	354	245	187.1	178	128	65	48	31
13	133	6	104	101	172.0	515	321	217	175.6	165	122	62	49	26
14	134	7	76	81	160.7	557	340	221	164.2	159	124	60	44	30
15	135	8	74	85	159.2	558	343	223	162.7	156	119	60	48	23
16	136	9	84	83	158.4	560	339	229	162.0	157	114	55	43	42
17	137	10	86	88	157.1	573	350	238	160.7	155	111	53	39	24
18	138	11	93	100	163.0	500	228	167	166.8	153	108	51	41	30
19	139	12	93	103	170.9	561	333	241	175.0	168	114	53	40	28
20	140	13	107	117	171.3	568	335	253	175.4	170	118	53	38	23
21	141	14	121	138	185.9	557	335	247	190.4	178	126	53	41	23
22	142	15	137	150	181.1	562	341	253	185.6	177	125	53	38	20
23	143	16	136	142	180.3	575	316	233	184.8	178	127	56	38	20
24	144	17	128	142	189.1	584	327	241	193.9	178	127	56	39	23
25	145	18	127	139	182.6	575	324	236	187.4	175	126	60	43	31
26	146	19	121	137	183.1	571	342	251	188.0	181	128	55	41	21
27	147	20	123	128	186.7	602	344	263	191.6	183	132	56	38	20
28	148	21	119	127	186.4	578	367	275	191.4	184	128	60	41	22
29	149	22	114	119	184.8	604	361	266	189.8	177	127	58	41	28
30	150	23	103	116	180.1	614	359	274	185.1	185	131	58	42	24
31	151	24	120	123	181.9	613	355	290	187.0	176	132	59	45	34
MEAN			120.8	129.1	178.4	567	340	242	182.4	173	127	58	43	30

The International and American sunspot numbers shown above are preliminary values.
NOTE: Radio flux values are from Sagamore Hill, Massachusetts, USA.

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	121+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	114	110
												(4)	(0)
2002	113	112	109	106	103	101	98	95	92	89	86	83	99
	(13)	(12)	(12)	(13)	(13)	(14)	(14)	(15)	(16)	(17)	(19)	(21)	(15)

Solar Cycle 22 | Solar Cycle 23 | Min, Max, and Predi

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

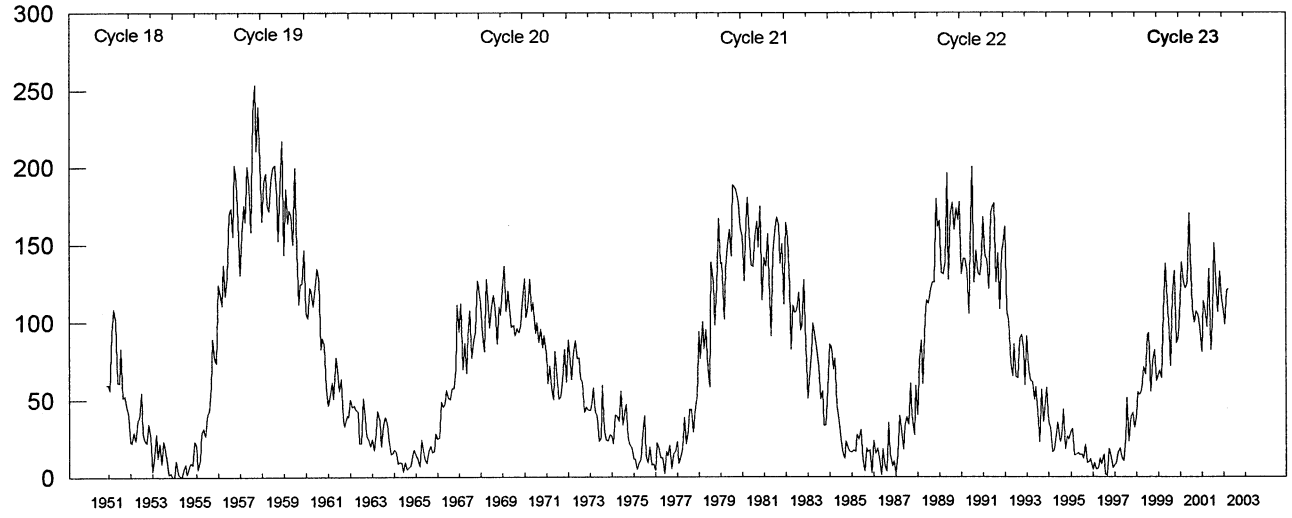
+ April 2000 marks Cycle 23 maximum.

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 2001 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the November 2002 prediction. There exists a 90% chance that in November 2002, the actual smoothed number will fall somewhere between 67 and 105.

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

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

Mean Monthly Sunspot Numbers
Jan 1951 - May 2002



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	120.4	120.8								112.2	

Values are preliminary after Dec 01. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0339	0343	0346	N14	W56	9921			7	SF	C 2.3						7.3E-04
LEAR		0348	0351	0355	N14	W56	9921	04	27.0	7	SF		3	E		32		F
GOES		0404	0419	0432	S28	E67	9932			28	SF	C 2.1						3.0E-03
LEAR		0407	0408	0411	S28	E67		05	6.4	4	SF		3	E		10		
GOES		0547	0553	0600						13		C 1.4						9.0E-04
GOES		0853	0856	0858	S26	E63	9932			5	SF	C 1.4						3.2E-04
LEAR		0856	0856	0859	S26	E63		05	6.3	3	SF		3	E		16		
GOES		0957	1003	1017	S31	E65	9932			20	SF	C 2.4						2.5E-03
SVTO		1001	1001	1009	S31	E65		05	6.5	8	SF		3	E		13		
SVTO		1353	1356	1403	S30	E62		05	6.4	10	SF		3	E		35		F
HOLL		1355	1355	1411	S28	E64		05	6.6	16	SF		3	E		65		
HOLL		1412	1445	1508	S27	E64		05	6.6	56	SF		3	E		44		
GOES		1918	1926	1937						19		C 1.8						1.9E-03
GOES	02	0256	0306	0320	N14	W40	9919			24	SF	C 1.1						1.4E-03
LEAR		0257	0300	0316	N14	W40	9919	04	29.2	19	SF		3	E		45		F
GOES		0326	0332	0351						25		C 1.6						2.2E-03
GOES		0902	0927	0934						32		C 1.9						3.0E-03
GOES		1121	1126	1129						8		C 3.0						9.5E-04
GOES		1444	1450	1455						11		C 2.3						1.1E-03
GOES		2106	2134	2153	N14	W37	9926			47	SF	C 6.3						1.5E-02
HOLL		2111	2117	2303	N14	W37	9926	04	30.1	112	SF		3	E		75		FS
HOLL		2317	2319	2324	S18	E62	9934	05	7.7	7	SF		3	E		19		
LEAR	03	0336	0359	0428	S18	E60	9934	05	7.7	52	SF		3	E		68		F
GOES		0354	0401	0404	S30	E39	9932			10	SF	C 2.0						9.6E-04
LEAR		0400	0401	0405	S30	E39	9932	05	6.2	5	SF		3	E		14		F
GOES		0642	0647	0652	N16	W48	9926			10	SF	C 3.3						1.4E-03
LEAR		0644	0647	0655	N16	W48	9926	04	29.7	11	SF		3	E		49		F
SVTO		0927	0927	0932	S22	E53	9934	05	7.5	5	SF		3	E		13		
HOLL		1353	1353	1358	S17	E54	9934	05	7.7	5	SF		3	E		12		
HOLL		1403	1404	1412	S17	E53	9934	05	7.6	9	SF		3	E		14		
HOLL		1713	1715	1723	S17	E49	9934	05	7.4	10	SF		4	E		16		
GOES		1802	1809	1817	S17	E50	9934			15	1F	C 3.9						2.6E-03
HOLL		1803	1807	1840	S17	E50	9934	05	7.5	37	1F		3	E		108		F
GOES		2012	2020	2029						17		C 5.4						3.8E-03
HOLL		2045	2052	2100	S17	E48	9934	05	7.5	15	SF		3	E		28		
GOES		2114	2121	2127						13		C 2.8						1.7E-03
HOLL		2147	2150	2154	S16	E48	9934	05	7.5	7	SF		3	E		12		
HOLL		2203	2211	2218	S17	E49	9934	05	7.6	15	SF		3	E		22		
GOES		2331	2335	2339						8		C 3.2						1.1E-03
GOES	04	0245	0252	0302	S16	E46	9934			17	SN	C 7.8						5.0E-03
LEAR		0250	0251	0308	S16	E46	9934	05	7.6	18	SN		3	E		62		F
GOES		0339	0345	0357	S17	E44	9934			18	SF	C 2.5						2.5E-03
LEAR		0341	0342	0353	S17	E44	9934	05	7.5	12	SF		3	E		19		F
GOES		1019	1022	1029						10		C 1.3						7.3E-04
GOES		1110	1115	1122	N16	E20	9928			12	SF	C 1.9						1.3E-03
GOES		1309	1325	1338			9937			29		C 9.3						1.0E-02
HOLL		1317	1329	1351	S09	E62	9937	05	9.2	34	SF		3	E		58		
HOLL		1322	1324	1330	N21	W37	9929	05	1.7	8	SF		3	E		19		
SVTO		1322	1325	1345	S12	E63	9937	05	9.3	23	SF		3	E		47		F
GOES		1853	1901	1909	S10	E63	9937			16	SF	C 2.0						1.5E-03
HOLL		1859E	1900U	1908D	S10	E63	9937	05	9.5	9D	SF		3	E		51		
GOES		2124	2129	2132						8		C 1.4						6.0E-04
GOES		2143	2148	2153						10		C 2.7						1.2E-03
GOES		2154	2158	2202						8		C 3.6						1.4E-03
GOES	05	0507	0513	0519						12		C 1.7						1.0E-03
LEAR		0723	0723	0732	N19	E09	9928	05	6.0	9	SF		3	E		14		F
GOES		0804	0808	0811	S20	E28	9934			7	SF	C 4.8						1.3E-03
LEAR		0808	0808	0813	S20	E28	9934	05	7.5	5	SF		3	E		19		FH
GOES		1214	1225	1230	S17	E28	9934			16	SF	C 3.0						1.8E-03
SVTO		1226	1227	1236	S17	E28	9934	05	7.6	10	SF		3	E		19		F
GOES		1438	1446	1512	S10	E51	9937			34	SF	C 1.9						3.4E-03
HOLL		1441	1445	1501	S10	E51	9937	05	9.4	20	SF		3	E		53		F
SVTO		1442	1446	1458	S10	E51	9937	05	9.4	16	SF		3	E		29		F
HOLL		1657	1657	1704	N22	W51	9929	05	1.8	7	SF		3	E		13		

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	05	1807	1811	1814	S17	E22	9934			7	SF	C 1.6						5.7E-04
HOLL		1809	1810	1816	S17	E22	9934	05	7.4	7	SF		3	E		51		
GOES		1911	1914	1919	S12	E66	9943			8	1F	C 2.6						9.6E-04
HOLL		1912E	1914U	1922D	S12	E66	9943	05	10.8	10D	1F		2	E		121		
GOES	06	0226	0231	0247						21		C 1.8						1.9E-03
SVTO		0951E	0951U	0956D	N18	W06	9928	05	5.9	5D	SF		2	E		21		F
GOES		1329	1405	1431	S20	W18	9935			62	SF	C 1.7						5.0E-03
HOLL		1402	1404	1412	S20	W18	9935	05	5.2	10	SF		3	E		17		UF
HOLL		1412	1413	1438	S19	W18	9935	05	5.2	26	SF		3	E		16		U
GOES		1554	1604	1621						27		C 2.5						3.6E-03
HOLL		2024	2025	2027	S17	E10	9934	05	7.6	3	SF		3	E		40		
GOES		2201	2204	2206						5		C 1.7						4.3E-04
GOES		2353	2411	2441						48		C 6.4						1.5E-02
GOES	07	0337	0346	0407						30		M 1.4						1.7E-02
GOES		0800	0804	0808						8		C 1.4						5.7E-04
GOES		0846	0852	0855						9		C 2.8						1.1E-03
GOES		1237	1242	1247						10		C 1.9						9.1E-04
GOES		1354	1358	1404						10		C 1.1						6.4E-04
GOES		1815	1848	1907	S12	E42	9943			52	SF	C 1.1						3.0E-03
RAMY		1838	1843	1914	S09	E42		05	10.9	36	SF		3	E		27		
HOLL		1841	1843	1847	S12	E42	9943	05	10.9	6	SF		3	E		14		F
GOES		2233	2245	2254	S21	W35	9935			21	SF	C 1.6						1.5E-03
HOLL		2241	2241	2252	S21	W35	9935	05	5.3	11	SF		3	E		17		
GOES	08	0426	0429	0431	S11	E16	9937			5	SF	B 6.8						2.0E-04
LEAR		0437E	0437U	0455D	S11	E16	9937	05	9.4	18D	SF		2	E		13		
GOES		0624	0628	0633	N16	E25	9940			9	SF	C 1.0						5.2E-04
LEAR		0627	0628U	0635	N16	E25	9940	05	10.2	8	SF		1	E		21		F
GOES		0937	0947	1001						24		C 1.6						1.9E-03
RAMY		1056	1107	1112	S16	W14	9934	05	7.4	16	SF		3	E		11		
RAMY		1131	1132	1143	S16	W14	9934	05	7.4	12	SF		3	E		12		
RAMY		1149	1149	1208	S17	W11	9934	05	7.6	19	SF		3	E		10		
HOLL		1258E	1320U	1456	S12	W07	9934	05	8.0	118D	SF		3	E		72		F
GOES		1258	1327	1359	S12	W07	9934			61	SF	C 4.2						1.2E-02
GOES		1439	1445	1453						14		C 2.8						2.0E-03
GOES		1546	1552	1556						10		C 2.3						1.3E-03
GOES		1704	1708	1711	S19	W17	9934			7	SF	C 1.1						4.8E-04
HOLL		1705	1707	1712	S19	W17	9934	05	7.4	7	SF		3	E		17		
RAMY		1845	1845	1904	S05	E02	9937	05	8.9	19	SF		3	E		25		F
HOLL		1845	1846	1900	S09	E01	9937	05	8.8	15	SF		3	E		16		F
GOES		2030	2035	2042						12		C 1.9						1.1E-03
GOES	09	0021	0027	0035						14		C 1.9						1.4E-03
GOES		0042	0047	0054						12		C 2.4						1.4E-03
GOES		0647	0650	0655						8		B 9.8						4.5E-04
GOES		0712	0715	0720	S09	W01	9937			8	SF	B 9.5						4.2E-04
LEAR		0713	0716	0735	S09	W01	9937	05	9.2	22	SF		3	E		23		F
GOES		0756	0800	0806	S08	W03	9937			10	SF	C 1.4						7.5E-04
LEAR		0758	0759	0809	S08	W03	9937	05	9.1	11	SF		3	E		41		F
GOES		1047	1051	1057	S09	E16	9943			10	SF	C 1.1						5.9E-04
RAMY		1050	1052	1059	S09	E16	9943	05	10.6	9	SF		3	E		30		F
RAMY		1820	1820	1826	S19	W39	9934	05	6.8	6	SF		3	E		33		F
GOES		2001	2003	2005						4		C 1.6						3.4E-04
GOES	10	0023	0039	0054	S07	E52	9946			31	SF	C 4.0						5.8E-03
LEAR		0027	0038	0102	S07	E52	9946	05	13.9	35	SF		3	E		41		F
LEAR		0105	0126	0202	S03	E50	9946	05	13.8	57	SF		3	E		27		F
GOES		0551	0554	0556						5		C 1.2						3.4E-04
GOES		0822	0827	0832						10		C 1.8						1.0E-03
SVTO		0836	0837	0847	S06	W17	9937	05	9.1	11	SF		3	E		28		
SVTO		0917	0918	0926	S09	W17	9937	05	9.1	9	SF		3	E		10		
GOES		0936	0940	0942	S06	W18	9937			6	SF	C 3.9						8.9E-04
SVTO		0939	0940	0956	S06	W18	9937	05	9.0	17	SF		3	E		43		F
GOES		1023	1027	1030	S07	W19	9937			7	SF	C 1.9						6.9E-04
SVTO		1028E	1029U	1032	S07	W19	9937	05	9.0	4D	SF		3	E		22		
RAMY		1234	1252	1308	S06	E44	9946	05	13.8	34	SF		3	E		13		

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	10	1235	1254	1302	S06	E44	9946			27	SF	C 1.6						2.4E-03
GOES		1428	1432	1443	S07	W20	9937			15	SF	C 1.6						1.3E-03
SVTO		1431	1432U	1437D	S06	W20	9937	05	9.1	6D	SF		3	E		44		F
HOLL		1435	1442	1448	S07	W20	9937	05	9.1	13	SF		3	E		28		F
RAMY		1647	1649	1700	S16	W45	9934	05	7.3	13	SF		3	E		16		
GOES		1706	1710	1716	S18	W43	9934			10	SF	C 1.2						7.1E-04
HOLL		1710	1710	1740	S18	W43	9934	05	7.4	30	SF		3	E		33		F
GOES		2123	2128	2133	S13	W39	9934			10	SF	C 1.6						8.1E-04
HOLL		2125	2126	2139	S13	W39	9934	05	7.9	14	SF		3	E		34		F
GOES		2150	2154	2157	S20	W43	9934			7	SF	C 1.1						4.3E-04
HOLL		2152	2153	2158	S20	W43	9934	05	7.6	6	SF		3	E		14		
GOES		2355	2401	2404	S20	W44	9934			9	SF	C 3.3						1.3E-03
HOLL	11	0002	0002	0007	S20	W44	9934	05	7.6	5	SF		3	E		48		
HOLL		0012	0013	0015	S16	W43	9934	05	7.7	3	SF		3	E		28		
GOES		0036	0041	0045						9		C 1.9						8.1E-04
GOES		0137	0142	0146						9		C 2.3						8.9E-04
GOES		0244	0252	0256						12		C 6.4						3.0E-03
GOES		0328	0332	0336						8		C 1.6						6.8E-04
GOES		0435	0440	0444						9		C 1.2						6.5E-04
GOES		0651	0656	0701						10		C 3.6						1.6E-03
GOES		0736	0739	0743						7		C 1.6						6.1E-04
GOES		1121	1132	1141	S06	W31	9937			20	SF	M 1.4						9.9E-03
SVTO		1137E	1137U	1204	S06	W31	9937	05	9.2	27D	SF		2	E		74		U
HOLL		1357	1408	1425	S06	E24	9945	05	13.4	28	SF		3	E		32		F
HOLL		1455	1455	1532	S06	E22	9945	05	13.3	37	SF		3	E		16		
GOES		1645	1650	1654	S06	E48	9946			9	SF	C 2.7						1.0E-03
HOLL		1647	1649	1654	S06	E48		05	15.3	7	SF		3	E		18		
HOLL		1648	1652	1710	S17	W59	9934	05	7.2	22	SF		3	E		24		
GOES		1732	1738	1741	S17	W58	9934			9	SF	C 3.7						1.2E-03
HOLL		1735	1740	1754	S17	W58	9934	05	7.3	19	SF		3	E		70		
GOES		1832	1836	1837	S15	W57	9934			5	SF	B 9.7						2.6E-04
RAMY		1834	1836	1841D	S15	W57	9934	05	7.4	7D	SF		3	E		35		FH
RAMY		1914	1918	2001D	S15	W59	9934	05	7.3	47D	SF		3	E		10		
GOES		2146	2150	2153						7		C 1.5						6.2E-04
GOES	12	0100	0120	0140						40		C 1.4						2.7E-03
GOES		0229	0316	0400			9928			91		C 2.2						9.0E-03
GOES		0925	0953	1012						47		C 3.7						6.5E-03
RAMY		1214	1215	1220	S16	W70	9934	05	7.2	6	SF		4	E		22		
RAMY		1403	1404	1409	S16	W70	9934	05	7.3	6	SF		4	E		32		
RAMY		1445	1451	1510	S16	W64	9934	05	7.8	25	SF		4	E		16		F
GOES		1446	1451	1500	S16	W64	9934			14	SF	C 1.2						9.3E-04
HOLL		1447	1448	1501	S17	W63	9934	05	7.8	14	SF		3	E		15		
GOES		1650	1653	1659	S16	W66	9934			9	SF	C 1.2						5.9E-04
RAMY		1652	1653	1656	S16	W66	9934	05	7.7	4	SF		3	E		14		
RAMY		1702	1702	1710	S16	W71	9934	05	7.3	8	SF		4	E		13		
GOES		1935	1938	1941	S16	W72	9934			6	SF	C 1.0						3.3E-04
RAMY		1937	1937	1950	S16	W72	9934	05	7.3	13	SF		4	E		30		F
HOLL		1938	1938	1944	S17	W71	9934	05	7.4	6	SF		3	E		22		
GOES		1943	1957	2014						31		C 1.4						2.2E-03
HOLL		2103	2103	2109	S24	E58	9948	05	17.3	6	SF		3	E		10		
RAMY		2103	2104	2118	S25	E56	9948	05	17.2	15	SF		4	E		19		F
GOES	13	0051	0101	0109	S17	W77	9934			18	SF	C 3.9						2.9E-03
HOLL		0059	0059	0108	S17	W77	9934	05	7.2	9	SF		3	E		14		
GOES		0234	0237	0240	S04	E10	9946			6	SF	C 1.1						3.6E-04
LEAR		0236	0236	0241	S04	E10	9946	05	13.8	5	SF		4	E		37		F
GOES		0310	0342	0352	S25	E47	9948			42	SF	C 1.8						3.2E-03
LEAR		0337	0338	0349	S25	E47	9948	05	16.8	12	SF		4	E		12		
GOES		0501	0507	0511						10		C 1.5						8.2E-04
GOES		1637	1641	1647	S05	W01	9945			10	SF	C 2.3						1.3E-03
HOLL		1638	1639	1649	S05	W01	9945	05	13.6	11	SF		3	E		29		FH
RAMY		1638	1639	1700	S06	W01	9946	05	13.6	22	SF		3	E		46		
SVTO		1639	1639	1646	S06	W01	9946	05	13.6	7	SF		3	E		30		FH
RAMY		1724	1727	1737	N21	W75	9933	05	8.0	13	SF		3	E		16		
GOES		1740	1745	1749						9		C 2.3						1.1E-03
RAMY		1855	1855	1859	N22	W77	9933	05	7.9	4	SF		3	E		21		

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	13	1902	1902	1906	N20	W77	9933	05	7.9	4	SF		3	E		15		
GOES		2049	2056	2103						14		C 2.2						1.6E-03
GOES	14	0345	0350	0356						11		C 3.6						1.8E-03
GOES		0453	0504	0516						23		C 1.9						2.4E-03
GOES		0539	0603	0609						30		C 2.2						3.4E-03
GOES		0932	0948	0959	S24	E35	9948			27	SF	C 3.2						4.1E-03
SVTO		0934	0939	1002	S24	E35	9948	05	17.1	28	SF		3	E		89		FH
GOES		1258	1303	1320						22		C 4.2						4.3E-03
SVTO		1546	1548	1554	S24	E31	9948	05	17.0	8	SF		3	E		26		F
RAMY		1546	1549	1553	S22	E31	9948	05	17.0	7	SF		3	E		14		H
HOLL		1842	1843	1853	S25	E26	9948	05	16.8	11	SF		3	E		29		F
RAMY		1846	1851	1856	S25	E27	9948	05	16.9	10	SF		3	E		16		
GOES	15	0800	0813	0825	S23	E23	9948			25	SF	M 1.0						9.6E-03
SVTO		0817	0831	0848	S23	E23	9948	05	17.1	31	SF		3	E		56		F
SVTO		0909	0909	0915	S03	W32	9945	05	13.0	6	SF		3	E		10		F
GOES		1421	1438	1500						39		C 1.6						3.1E-03
HOLL		1447	1448	1449	S22	E07	9948	05	16.1	2	SF		3	E		18		
HOLL		1447	1448	1450	S05	W27	9946	05	13.6	3	SF		3	E		23		
HOLL		1534	1536	1551	S06	W31	9945	05	13.3	17	SF		3	E		16		F
RAMY		1535	1535	1551	S06	W32	9945	05	13.2	16	SF		3	E		12		F
GOES		2108	2114	2120						12		C 1.1						7.7E-04
GOES		2344	2359	2406						22		C 3.5						3.6E-03
GOES	16	0011	0035	0118						67		C 4.5						1.5E-02
GOES		0451	0521	0601						70		C 5.0						1.5E-02
SVTO		0624	0627	0655	S03	W15	9950	05	15.1	31	SF		3	E		31		FH
GOES		0939	0943	0950	S01	W47	9945			11	SF	C 1.7						1.0E-03
SVTO		0941	0945	0954	S01	W47	9945	05	12.9	13	SF		3	E		25		F
GOES	17	0055	0123	0130						35		M 1.5						1.4E-02
GOES		0516	0523	0528	N10	E70	9957			12	2N	C 7.0						3.0E-03
SVTO		0520	0523	0534	N10	E70	9957	05	22.5	14	2N		3	E		307		F
SVTO		0710	0711	0717	S23	W01	9948	05	17.2	7	SF		3	E		29		H
GOES		0727	0754	0840						73		M 1.5						5.2E-02
GOES		1054	1101	1123						29		C 2.1						3.4E-03
GOES		1205	1213	1220	N13	E82				15	SF	C 2.4						2.0E-03
SVTO		1208E	1208U	1220	N13	E89		05	24.2	12D	SF		3	E		67		
RAMY		1210	1210	1216	N13	E82		05	23.7	6	SF		3	E		12		
GOES		1434	1437	1440						6		C 1.8						5.7E-04
GOES		1550	1608	1614	S25	E47	9954			24	SF	M 2.9						1.7E-02
SVTO		1556	1557	1626	S26	E47	9954	05	21.3	30	SF		3	E		55		F
HOLL		1556	1558	1622	S25	E47	9954	05	21.3	26	SF		3	E		34		UF
SVTO		1611	1614	1621	N12	E83		05	23.9	10	SF		3	E		34		
GOES		2210	2215	2221						11		C 1.3						8.2E-04
GOES		2306	2312	2320	N12	E63	9957			14	SF	C 1.6						1.2E-03
HOLL		2307	2308	2325	N12	E63	9957	05	22.7	18	SF		3	E		11		F
GOES	18	0918	0925	0935	N12	E61	9957			17	SF	C 2.6						2.0E-03
SVTO		0922	0925	0945	N12	E61	9957	05	23.0	23	SF		3	E		62		FH
SVTO		0947	0949	0953	N13	E85		05	24.8	6	SF		3	E		64		
GOES		1042	1139	1209			9955			87		C 3.0						1.1E-02
RAMY		1114	1114	1129	S14	E36	9955	05	21.2	15	SF		4	E		10		F
RAMY		1130	1139	1154	S17	E36	9955	05	21.2	24	SF		4	E		16		F
SVTO		1131	1133	1140	S21	E38	9954	05	21.4	9	SF		3	E		15		
SVTO		1133	1137	1145	S14	E36	9955	05	21.2	12	SF		3	E		14		
GOES		1236	1239	1242						6		C 2.5						8.3E-04
SVTO		1248	1249	1253	N12	E80		05	24.6	5	SF		3	E		23		
SVTO		1537	1539	1552	N11	E56	9957	05	22.9	15	SF		3	E		52		F
RAMY		1537	1542	1553	N11	E54	9957	05	22.7	16	SF		4	E		39		FH
HOLL		1537	1544	1554	N12	E55	9957	05	22.8	17	SF		3	E		43		F
GOES		1540	1544	1548	N11	E54	9957			8	SF	C 3.4						1.4E-03
HOLL		1707	1707	1711	N12	E53	9957	05	22.7	4	SF		3	E		16		
GOES		1824	1829	1833	N11	E53	9957			9	SF	C 2.2						1.0E-03
HOLL		1826	1828	1836	N11	E53	9957	05	22.7	10	SF		3	E		47		
GOES		2122	2126	2131						9		C 1.4						6.3E-04
GOES	19	0017	0020	0023						6		C 1.3						3.9E-04

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	19	0138	0143	0149						11		C 1.4						8.0E-04
LEAR		0625	0640	0656	N14	E45	9957	05	22.7	31	SF		3	E		11		
GOES		0646	0649	0659	N14	E45	9957			13	SF	C 1.1						8.0E-04
GOES		0808	0834	0902						54		C 2.5						6.1E-03
HOLL		1323	1326	1328	N11	E43	9957	05	22.8	5	SF		3	E		12		
GOES		1407	1410	1412						5		C 1.4						3.8E-04
GOES		1554	1558	1603						9		C 1.4						6.8E-04
GOES		1618	1622	1624	N08	E37	9957			6	SF	C 2.3						6.1E-04
HOLL		1621	1621	1627	N08	E37	9957	05	22.4	6	SF		3	E		23		
GOES		1704	1711	1716	S22	E76	9961			12	SF	C 2.2						1.3E-03
HOLL		1706	1707	1713	S22	E76	9961	05	25.5	7	SF		3	E		27		
HOLL		1812	1813	1816	S21	E79	9961	05	25.8	4	SF		3	E		18		
GOES		1841	1846	1849						8		C 2.7						1.1E-03
GOES		1909	1914	1919						10		C 3.1						1.3E-03
GOES		1946	1950	1954						8		C 2.1						9.2E-04
GOES		2001	2023	2027						26		C 2.8						3.0E-03
GOES		2143	2148	2152						9		C 4.7						1.9E-03
LEAR	20	0116	0120	0124	S21	E69	9961	05	25.3	8	SF		4	E		36		
LEAR		0337	0338	0343	S23	E76	9961	05	26.0	6	SF		4	E		22		
LEAR		0356	0404	0415	S20	E71	9961	05	25.6	19	SF		4	E		20		
GOES		0719	0733	0734						15		C 2.2						1.1E-03
GOES		0729	0805	0814	S23	E74	9961			45	SF	C 3.9						7.6E-03
LEAR		0732	0732	0740	S23	E74	9961	05	26.0	8	SF		3	E		21		F
GOES		1014	1029	1034			9961			20		M 4.7						2.5E-02
GOES		1049	1053	1056			9961			7		M 5.0						1.2E-02
HOLL		1346	1346	1351	S25	E68	9961	05	25.8	5	SF		3	E		36		
HOLL		1431	1435	1446	N13	E49	9960	05	24.3	15	SF		3	E		24		F
HOLL		1508	1529	1538	S21	E65	9961	05	25.6	30	2N		3	E		296		FH
GOES		1521	1527	1531	S21	E65	9961			10	2N	X 2.1						6.5E-02
RAMY		1525	1526	1538	S21	E56	9961	05	24.9	13	2B		3	E		259		H
HOLL		1811	1819	1839	S23	E67	9961	05	25.9	28	1F		3	E		121		F
GOES		1815	1820	1825	S23	E67	9961			10	1F	C 4.1						2.1E-03
GOES		1946	1951	1956	S24	E70	9961			10	SF	C 1.8						9.8E-04
HOLL		1950	1950	1954	S24	E70	9961	05	26.2	4	SF		3	E		18		
GOES		2017	2024	2037	S21	E62	9961			20	SF	C 3.0						3.0E-03
HOLL		2019	2027	2044	S21	E62	9961	05	25.6	25	SF		3	E		46		F
GOES		2116	2120	2124						8		C 2.0						7.9E-04
HOLL		2155	2156	2200	S21	E60	9961	05	25.5	5	SF		3	E		27		
GOES	21	0139	0144	0148	S24	E58	9961			9	SF	C 2.2						9.3E-04
LEAR		0142	0145	0148	S24	E58	9961	05	25.5	6	SF		4	E		17		
GOES		0458	0503	0510	N15	E44	9960			12	SF	C 4.8						2.2E-03
LEAR		0501	0504U	0549	N15	E44	9960	05	24.5	48	SF		3	E		95		
SVTO		0633	0633	0636D	N14	E74	9963	05	26.9	3D	SF		3	E		25		
GOES		1015	1021	1029	N12	E29	9960			14	SF	C 1.9						1.3E-03
SVTO		1024E	1026U	1026	N12	E29	9960	05	23.6	2D	SF		3	E		11		
GOES		1717	1723	1730	N11	E69	9963			13	SF	C 3.2						1.8E-03
HOLL		1720	1722	1730	N09	E66	9963	05	26.7	10	SF		3	E		20		F
RAMY		1720	1722	1731	N11	E69	9963	05	26.9	11	SF		3	E		55		F
SVTO		1721	1722	1732D	N08	E64	9963	05	26.5	11D	SF		2	E		21		F
GOES		2120	2139	2200	N17	E38	9960			40	2F	M 1.5						2.4E-02
GOES		2314	2430	2528						134		C 9.7						5.0E-02T
HOLL		2327	2418	2517	S25	W64	9948	05	17.0	110	1F		3	E		126		FT
GOES	22	0318	0354	0502						104		C 5.0						2.5E-02
SVTO		0400E	0400U	0437	S22	W53		05	18.1	37D	SF		2	E		26		U
GOES		0824	0831	0848						24		C 1.7						2.2E-03
GOES		1539	1547	1555	S23	E44	9961			16	SF	C 2.5						1.8E-03
RAMY		1542	1548	1606	S23	E44	9961	05	26.0	24	SF		3	E		34		
SVTO		1542	1550	1558	S23	E42	9961	05	25.9	16	SF		3	E		36		F
HOLL		1544	1545	1557	S23	E42	9961	05	25.9	13	SF		3	E		18		F
HOLL		1839	1842	1850	S12	E67	9965	05	27.8	11	SF		3	E		13		F
GOES		2048	2054	2059	S23	E40	9961			11	SF	C 2.4						1.2E-03
HOLL		2052	2052	2057	S23	E40	9961	05	25.9	5	SF		3	E		10		F
RAMY		2054E	2056U	2140D	S23	E38	9961	05	25.8	46D	SF		3	E		80		F
GOES	23	0101	0106	0114						13		B 9.5						6.6E-04

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
GOES	23	0230	0235	0243						13		C 1.1						7.7E-04
HOLL		1659	1700	1702	S24	E30	9961	05	26.0	3	SF		3	E		18		
RAMY		1659	1701	1702	S24	E30	9961	05	26.0	3	SF		3	E		15		
GOES		2042	2051	2110	N11	E38	9963			28	SF	C 1.2						1.7E-03
HOLL		2051	2054	2058	N11	E38	9963	05	26.7	7	SF		3	E		11		F
GOES	24	0637	0646	0651						14		M 1.1						5.6E-03
LEAR		0655	0702	0709	N13	E30	9963	05	26.5	14	SF		3	E		61		F
GOES		0723	0740	0757						34		C 1.3						2.3E-03
GOES		0821	0828	0838	N18	E35	9963			17	SF	C 2.0						1.7E-03
SVTO		0823E	0830U	0845D	N18	E35	9963	05	27.0	22D	SF		2	E		15		FH
GOES		0955	0959	1004						9		C 1.3						5.8E-04
GOES		1050	1055	1058						8		C 2.9						9.4E-04
RAMY		1756	1758	1803	N14	E27	9963	05	26.8	7	SF		3	E		12		
RAMY		1805	1812	1819	N14	E27	9963	05	26.8	14	SF		3	E		13		
GOES		1905	1911	1921			9963			16		C 2.6						2.0E-03
RAMY		1908	1910	1917	N10	W29	9957	05	22.6	9	SF		3	E		21		FH
RAMY		1908	1910	1920	N13	E25	9963	05	26.7	12	SF		3	E		34		F
HOLL		1909	1910	1918	N13	E25	9963	05	26.7	9	SF		3	E		20		F
RAMY		2040	2040	2050	N16	E11	9962	05	25.7	10	SF		3	E		10		F
GOES		2149	2151	2153						4		C 1.1						2.4E-04
GOES	25	0108	0115	0119	N16	W25	9957			11	SF	B 9.3						5.2E-04
HOLL		0114	0114	0117	N16	W25	9957	05	23.1	3	SF		3	E		11		
LEAR		0536	0539	0542	N07	E79		05	31.1	6	SF		3	E		14		
GOES		0543	0547	0550	N12	W09	9960			7	SF	C 1.3						5.0E-04
LEAR		0545	0547	0550	N12	W09	9960	05	24.6	5	SF		3	E		16		F
SVTO		0710	0711U	0715	N07	E82		05	31.4	5	SF		2	E		20		
GOES		1001	1004	1007						6		C 1.1						3.7E-04
SVTO		1619	1624	1628	N07	E73	9969	05	31.1	9	SF		3	E		41		
GOES		1625	1721	1818	S18	W13	9961			113	SF	C 1.7						9.1E-03
RAMY		1650	1659U	1818D	S18	W13	9961	05	24.7	88D	SF		3	E		12		F
HOLL		1657	1657	1711	S18	W12	9961	05	24.8	14	SF		3	E		10		
HOLL		1840	1841	1846	N04	E70	9969	05	31.0	6	SF		3	E		11		
HOLL		1937	1937	1957	N04	E70	9969	05	31.0	20	SF		3	E		11		
HOLL		2009	2013	2022	N04	E69	9969	05	31.0	13	SF		3	E		14		
GOES	26	0045	0106	0122						37		C 1.6						2.9E-03
GOES		0239	0244	0250	N15	E07	9963			11	SF	C 1.1						6.5E-04
LEAR		0241	0241	0252	N15	E07	9963	05	26.6	11	SF		3	E		13		
LEAR		0314	0322	0337	N07	E65	9969	05	31.0	23	SF		3	E		25		
LEAR		0448	0448	0501	N16	W44	9957	05	22.9	13	SF		3	E		13		
LEAR		0618	0619	0621	N06	E64	9969	05	31.0	3	SF		3	E		18		F
GOES		0804	0821	0828						24		C 1.0						1.3E-03
GOES		0922	0946	1011						49		C 1.1						2.8E-03
GOES		1029	1043	1053						24		C 1.3						1.5E-03
RAMY		1327	1331	1400	S23	W11	9961	05	25.7	33	SF		3	E		35		F
HOLL		1329	1334	1352	S22	W13	9961	05	25.6	23	SF		3	E		25		F
RAMY		1349	1358	1410	N03	E58	9969	05	30.9	21	SF		3	E		92		
GOES		1353	1356	1358	S23	W11	9961			5	SF	C 4.4						9.8E-04
HOLL		1356	1356	1405	N04	E57	9969	05	30.8	9	SF		3	E		29		
RAMY		1419	1419	1423	N03	E57	9969	05	30.8	4	SF		3	E		11		
GOES		1506	1510	1514	N03	E57	9969			8	SF	C 1.7						7.1E-04
HOLL		1508	1509	1515	N04	E56	9969	05	30.8	7	SF		3	E		40		
RAMY		1508	1510	1516	N03	E57	9969	05	30.9	8	SF		3	E		63		
SVTO		1511	1511	1514	N03	E58	9969	05	31.0	3	SF		3	E		25		
SVTO		1511	1511	1523	N11	W54	9957	05	22.6	12	SF		3	E		14		
GOES		2117	2125	2134						17		C 1.2						1.1E-03
GOES	27	0157	0208	0226						29		C 1.4						2.2E-03
GOES		0308	0312	0316						8		C 1.1						5.2E-04
GOES		0421	0425	0428	S20	W23	9961			7	SF	B 9.7						3.8E-04
LEAR		0423	0423	0429	S20	W23	9961	05	25.4	6	SF		4	E		13		
SVTO		0505	0507	0516	S19	W26	9961	05	25.2	11	SF		3	E		37		FH
LEAR		0505	0508	0515	S18	W26	9961	05	25.2	10	SF		3	E		18		FH
GOES		0557	0615	0634	N09	W65	9957			37	SF	C 3.5						6.5E-03
LEAR		0602	0605	0619	N09	W65	9957	05	22.4	17	SF		3	E		32		F
SVTO		0604	0606	0616	N08	W65	9957	05	22.4	12	SF		3	E		22		F

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	27	0744	0749	0753						9		C 2.8						1.3E-03
GOES		1158	1206	1232						34		C 2.7						4.9E-03
GOES		1236	1259	1351						75		C 3.7						1.5E-02
SVTO		1308E	1314U	1405	N22	E15		05	28.7	57D	SF		3	E		50		US
GOES		1505	1508	1510	N06	W68	9957			5	SF	C 2.4						6.3E-04
HOLL		1507	1508	1512	N06	W68	9957	05	22.5	5	SF		3	E		31		
HOLL		1518	1520	1524	S17	E90		06	3.5	6	SF		3	E		45		
HOLL		1703	1706	1714	S17	E90		06	3.5	11	1F		3	E		147		
GOES		1703	1711	1715			9957			12		C 4.0						2.1E-03
SVTO		1704	1706	1709D	S19	E87		06	3.3	5D	1N		3	E		129		
HOLL		1709	1710	1712	S21	E77		06	2.6	3	SF		3	E		17		
HOLL		1715	1717	1733	N06	W69	9957	05	22.5	18	SF		3	E		26		
GOES		1800	1810	1823	N11	W69	9957			23	2F	M 2.0						1.9E-02
HOLL		1803	1811	1839	N11	W69	9957	05	22.6	36	2F		3	E		258		FH
GOES		1900	1904	1906	S17	E90				6	SF	C 7.5						1.7E-03
HOLL		1902	1904	1909	S17	E90		06	3.6	7	SF		3	E		99		
GOES		2123	2126	2128	S17	E90				5	SF	C 3.4						7.8E-04
HOLL		2125	2125	2129	S17	E90		06	3.7	4	SF		3	E		93		
HOLL		2154	2158	2203	N11	W75	9957	05	22.3	9	SF		3	E		30		
HOLL	28	0043	0047	0053	S17	E90		06	3.9	10	SF		3	E		71		
GOES		0049	0052	0054	S17	E90				5	SF	C 2.1						5.5E-04
GOES		0341	0349	0359						18		C 2.7						2.6E-03
GOES		0604	0607	0609						5		C 2.2						5.5E-04
GOES		0624	0709	0745						81		C 2.9						1.1E-02
GOES		1159	1203	1209						10		C 2.8						1.5E-03
GOES		1305	1308	1311						6		C 2.0						6.2E-04
GOES		1315	1335	1341						26		C 2.3						3.2E-03
GOES		1413	1428	1445						32		C 2.0						3.5E-03
GOES		1531	1550	1603						32		C 2.6						4.0E-03
GOES		1629	1635	1649	N06	W82	9957			20	SF	C 3.6						3.9E-03
HOLL		1630	1632	1645	N06	W82	9957	05	22.6	15	SF		3	E		47		FH
HOLL		1720	1721	1724	N12	W78	9957	05	22.8	4	SF		3	E		30		
RAMY		1720	1721	1724	N13	W82	9957	05	22.5	4	SF		3	E		32		
HOLL		1826	1828	1834	S12	E09		05	29.4	8	SF		3	E		18		F
GOES		2133	2156	2201	N12	W30	9963			28	SF	C 2.9						3.9E-03
HOLL		2155	2157	2201	N12	W30	9963	05	26.6	6	SF		3	E		21		F
GOES		2245	2259	2331	S18	E78	9973			46	SF	C 1.8						4.7E-03
HOLL		2247	2248	2250	S18	E78	9973	06	3.9	3	SF		3	E		21		
GOES	29	0215	0246	0322						67		C 8.6						2.0E-02
LEAR		0331	0332	0338	S17	E68	9973	06	3.3	7	SF		3	E		73		H
GOES		0425	0519	0542	S20	E53	9972			77	SF	C 8.1						2.0E-02
LEAR		0503	0503	0506	S19	E71	9973	06	3.6	3	SF		3	E		21		
LEAR		0509	0512	0515	S20	E53	9972	06	2.3	6	SF		3	E		13		
GOES		0655	0706	0716						21		C 4.7						5.2E-03
LEAR		0740	0740	0745	S17	E70	9973	06	3.6	5	SF		3	E		13		
GOES		0835	0854	0906						31		C 3.5						5.2E-03
GOES		1008	1011	1018						10		C 2.1						1.1E-03
GOES		1021	1026	1030	S19	E66	9973			9	SF	C 3.4						1.4E-03
SVTO		1024	1027	1033	S19	E66	9973	06	3.5	9	SF		3	E		73		
GOES		1157	1201	1209						12		C 2.4						1.5E-03
GOES		1251	1300	1307	N17	W65	9960			16	SF	C 3.3						2.6E-03
HOLL		1254	1254	1318	N12	W79	9960	05	23.6	24	SF		3	E		50		
SVTO		1254	1259	1308	N17	W65	9960	05	24.6	14	SF		3	E		48		
GOES		1322	1326	1329						7		C 2.6						1.0E-03
GOES		1353	1412	1419						26		C 2.1						2.8E-03
GOES		1445	1449	1453						8		C 1.8						7.8E-04
GOES		1500	1505	1510						10		C 3.3						1.5E-03
GOES		1546	1551	1554	S17	E64	9973			8	SN	C 5.9						1.6E-03
SVTO		1548	1551	1602	S17	E64	9973	06	3.5	14	SN		3	E		70		
HOLL		1548	1552	1607	S18	E62	9973	06	3.4	19	SF		3	E		77		
HOLL		1609	1610	1616	S18	E63	9973	06	3.5	7	SF		3	E		23		
SVTO		1609	1610	1616	S18	E63	9973	06	3.5	7	SF		3	E		11		
SVTO		1621	1623	1631	N13	W34	9967	05	27.1	10	SF		3	E		13		
GOES		1745	1751	1800						15		C 2.5						1.9E-03
GOES		2239	2244	2246	S17	E61	9973			7	SF	C 1.2						4.8E-04
HOLL		2244	2245	2252	S17	E61	9973	06	3.6	8	SF		3	E		35		

Hα SOLAR FLARES

MAY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	29	2323	2325	2328	S18	E59	9973			5	SF	C 1.4						4.1E-04
HOLL		2325	2325	2335	S18	E59	9973	06	3.5	10	SF		3	E		18		
GOES	30	0009	0011	0015	S18	E59	9973			6	SF	C 1.2						4.1E-04
HOLL		0010	0012	0017	S18	E59	9973	06	3.5	7	SF		3	E		49		
GOES		0424	0532	0613						109		M 1.3						5.4E-02
GOES		0832	0841	0849						17		C 3.2						3.2E-03
GOES		1203	1218	1238						35		C 2.2						4.3E-03
GOES		1401	1432	1458						57		C 4.1						1.0E-02
GOES		1528	1540	1555						27		C 3.3						4.5E-03
GOES		1614	1626	1644			9972			30		C 3.5						5.4E-03
SVTO		1620	1625	1644	S17	E53	9973	06	3.7	24	SF		3	E		19		F
SVTO		1628	1637	1646	S22	E38	9972	06	2.6	18	SF		3	E		20		F
SVTO		1711	1718	1749D	S17	E51	9973	06	3.6	38D	SF		3	E		45		F
GOES		1711	1724	1739	S16	E49	9973			28	SF	M 1.6						2.2E-02
HOLL		1711	1726	1828	S16	E49	9973	06	3.4	77	SF		3	E		78		F
GOES		1946	1950	1955	N12	W48	9963			9	SF	C 1.6						7.8E-04
HOLL		1948	1949	2003	N12	W48	9963	05	27.2	15	SF		3	E		42		F
GOES		2323	2325	2328						5		C 1.4						1.2E-03
GOES	31	0004	0016	0025						21		M 2.4						2.2E-02
GOES		0237	0321	0506						149		C 3.1						2.4E-02
GOES		0943	0948	0951						8		C 1.1						5.0E-04
GOES		1257	1305	1309	S18	E36	9973			12	SF	C 2.7						1.6E-03
HOLL		1302	1306	1315	S18	E36	9973	06	3.3	13	SF		3	E		20		F
SVTO		1305	1305	1310	S19	E35	9973	06	3.2	5	SF		3	E		14		F
GOES		1459	1524	1553	S17	E37	9973			54	SF	C 3.0						8.3E-03
HOLL		1518	1518	1527	S17	E37	9973	06	3.4	9	SF		3	E		11		F
RAMY		1905	1907	1910	S21	E60		06	5.4	5	SF		3	E		33		
GOES		1933	1940	1951						18		C 3.2						3.1E-03

"Remarks"

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

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

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

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

MAY 2002

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
02	8800	SGMR	8	S	1123.0	1124.0	2.0	65.0			QL=4 ST=2 TYP=3
03	8800	PALE	8	S	2330.0	2330.0	1.0	200.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	2333.0	2333.0	U	120.0			QL=4 ST=2 TYP=3
04	8800	PALE	8	S	0246.0	0247.0	1.0	92.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0250.0	0250.0	U	70.0			QL=4 ST=2 TYP=3
05	2695	SGMR	8	S	1912.0	1912.0	U	74.0			QL=4 ST=2 TYP=3
07	2695	LEAR	48	C	0340.0	0345.0	6.0	88.0			QL=4 ST=2 TYP=8
	8800	LEAR	48	C	0341.0	0342.0	5.0	71.0			QL=4 ST=2 TYP=8
	2695	PALE	48	C	0344.0	0345.0	1.0	60.0			QL=4 ST=2 TYP=8
	2695	LEAR	4	S/F	0358.0	0402.0	12.0	140.0			QL=4 ST=2 TYP=3
	2695	PALE	48	C	0359.0	0402.0	5.0	120.0			QL=4 ST=2 TYP=8
	8800	LEAR	48	C	0359.0	0402.0	32.0	61.0			QL=4 ST=2 TYP=8
08	2695	SGMR	48	C	1305.0	1309.0	655.0	51.0			QL=4 ST=1 TYP=8
	2695	SGMR	46	C	1325.0	1325.0	635.0	28.0			QL=4 ST=1 TYP=8
11	8800	SVTO	8	S	0653.0	0654.0	1.0	57.0			QL=4 ST=2 TYP=3
	8800	LEAR	46	C	0654.0	0654.0	U	49.0			QL=4 ST=2 TYP=8
	8800	SVTO	4	S/F	0852.0	0853.0	3.0	210.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0853.0	0853.0	2.0	210.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1127.0	1128.0	4.0	72.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1127.0	1128.0	4.0	120.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1127.0	1128.0	2.0	76.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1127.0	1128.0	3.0	61.0			QL=4 ST=2 TYP=3
12	2695	PALE	8	S	1651.0	1652.0	1.0	490.0			QL=4 ST=2 TYP=3
	2695	SGMR	49	GB	1651.0	1652.0	1.0	520.0			QL=4 ST=2 TYP=6
	2695	SVTO	8	S	1651.0	1652.0	1.0	490.0			QL=4 ST=2 TYP=3
13	8800	LEAR	8	S	0356.0	0356.0	1.0	43.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1110.0	1111.0	1.0	240.0			QL=2 ST=2 TYP=3
14	2695	SGMR	8	S	1842.0	1842.0	U	73.0			QL=4 ST=2 TYP=3
17	8800	LEAR	8	S	0519.0	0519.0	1.0	190.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0519.0	0519.0	1.0	110.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0519.0	0520.0	2.0	110.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	0519.0	0519.0	4.0	230.0			QL=4 ST=2 TYP=3
	8800	SVTO	20	GRF	0749.0	0750.0	9.0	44.0			QL=4 ST=2 TYP=2
	8800	SVTO	20	GRF	0803.0	0803.0	4.0	47.0			QL=4 ST=2 TYP=2
	8800	LEAR	46	C	0805.0	0805.0	U	44.0			QL=4 ST=2 TYP=8
	8800	SGMR	8	S	1556.0	1556.0	U	24.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1556.0	1556.0	U	31.0			QL=4 ST=2 TYP=3
19	8800	SGMR	48	C	2145.0	2146.0	3.0	70.0			QL=4 ST=2 TYP=8
20	2695	SGMR	4	S/F	1017.0	1019.0	3.0	60.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1017.0	1020.0	4.0	120.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1037.0	1039.0	5.0	28.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1524.0	1525.0	4.0	420.0			QL=4 ST=2 TYP=3
	8800	SGMR	49	GB	1524.0	1525.0	4.0	1000.0			QL=4 ST=2 TYP=6
21	8800	SVTO	48	C	0501.0	0504.0	4.0	81.0			QL=4 ST=2 TYP=8
	2695	LEAR	8	S	0504.0	0504.0	U	43.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0504.0	0504.0	1.0	81.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0504.0	0504.0	1.0	42.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	2122.0	2126.0	7.0	81.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	2124.0	2125.0	4.0	81.0			QL=4 ST=2 TYP=3
	2695	PALE	48	C	2125.0	2125.0	1.0	53.0			QL=4 ST=2 TYP=8
	2695	LEAR	48	C	2350.0	2351.0	19.0	56.0			QL=4 ST=3 TYP=8
22	2695	PALE	46	C	2350.0	2351.0	18.0	41.0			QL=4 ST=2 TYP=8
24	8800	SVTO	8	S	0410.0	0410.0	U	35.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1052.0	1053.0	2.0	91.0			QL=4 ST=2 TYP=3

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

MAY 2002

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
24	8800	SVTO	8	S	1053.0	1053.0	U	91.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	1908.0	1908.0	U	32.0			QL=4 ST=2 TYP=3
27	2695	SVTO	8	S	1705.0	1705.0	U	24.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	1803.0	1805.0	5.0	77.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1804.0	1805.0	4.0	70.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1805.0	1805.0	U	32.0			QL=4 ST=2 TYP=3
29	8800	PALE	48	C	0243.0	0243.0	2.0	75.0			QL=4 ST=2 TYP=8
	2695	PALE	8	S	0243.0	0244.0	2.0	120.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0246.0	0246.0	1.0	140.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0246.0	0246.0	U	180.0			QL=4 ST=2 TYP=3
30	2695	PALE	4	S/F	2314.0	2324.0	28.0	62.0			QL=4 ST=2 TYP=3
	2695	LEAR	48	C	2318.0	2325.0	22.0	61.0			QL=4 ST=2 TYP=8
	8800	PALE	8	S	2341.0	2341.0	U	29.0			QL=4 ST=2 TYP=3
31	2695	LEAR	48	C	0006.0	0011.0	10.0	100.0			QL=4 ST=2 TYP=8
	2695	PALE	48	C	0006.0	0011.0	10.0	100.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	0006.0	0007.0	17.0	290.0			QL=4 ST=2 TYP=8
	8800	LEAR	48	C	0007.0	0007.0	5.0	160.0			QL=4 ST=2 TYP=8
	2695	SVTO	4	S/F	1251.0	1258.0	9.0	17.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1255.0	1258.0	5.0	62.0			QL=4 ST=2 TYP=3

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

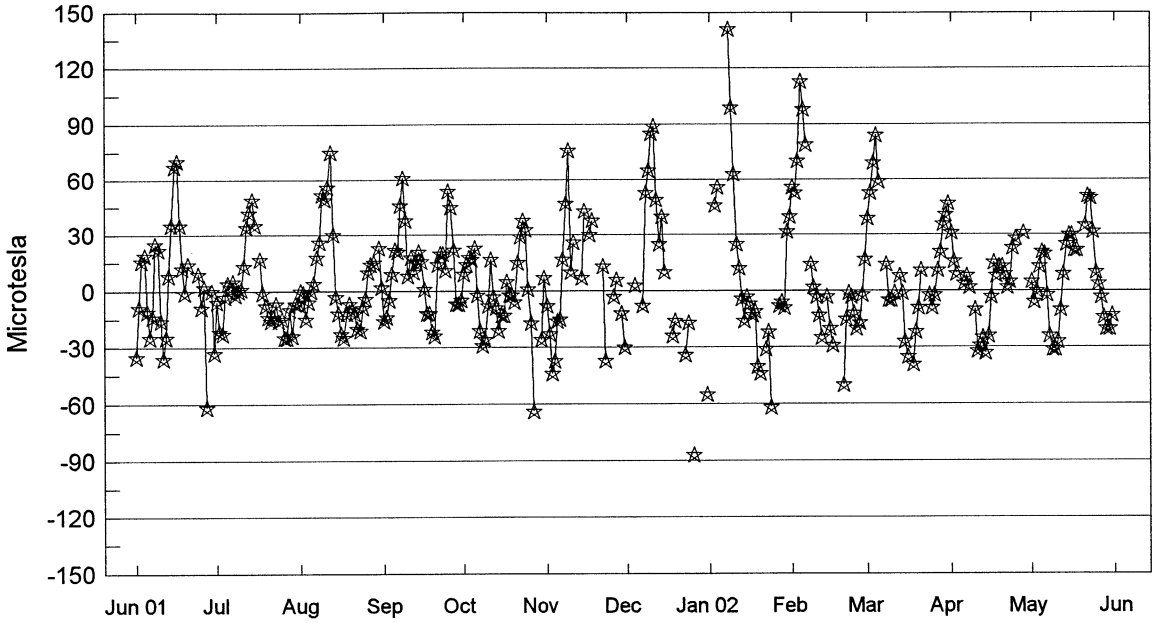
Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precusor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

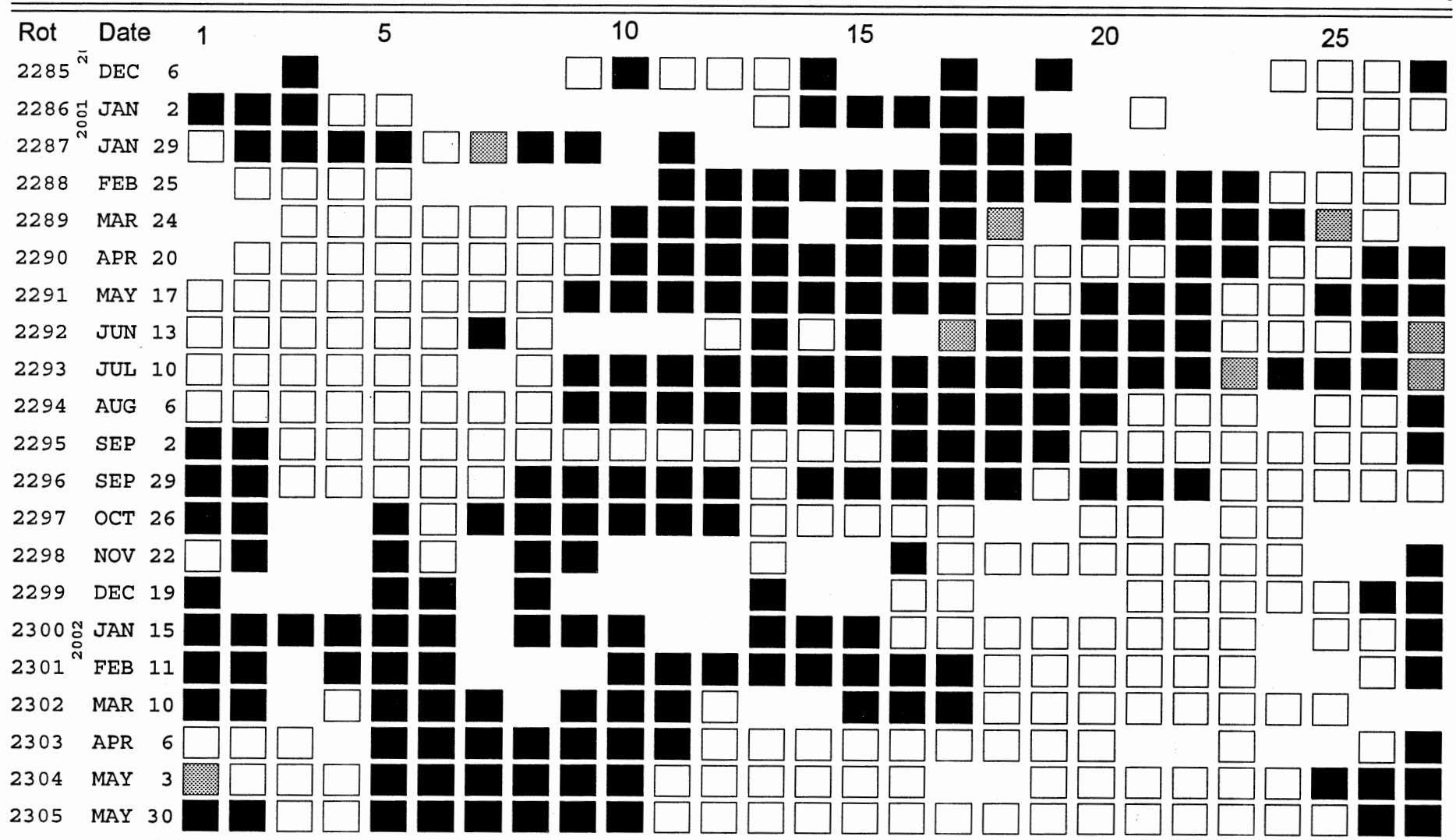
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Penticton, Canada 2800 MHz; and Hiraiso, Japan 500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

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



Day	Jun 01	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May
1	-35	-6	0	-16	9	-8	---	---	56	39	31	5
2	-9	-22	-1	-14	14	-23	---	---	53	53	16	-6
3	16	-23	-15	-5	18	-44	---	46	70	69	9	0
4	19	-3	-6	9	17	-37	3	56	113	84	---	13
5	-11	4	0	22	23	-16	---	---	98	59	---	21
6	-25	2	4	21	-2	-15	---	---	79	---	4	20
7	-14	5	18	46	-21	17	-8	---	---	---	8	-2
8	25	-2	26	61	-29	47	53	141	14	14	2	-24
9	22	0	52	38	-26	76	65	99	2	-5	---	-31
10	-16	1	49	8	-8	10	85	63	-3	-5	-10	-31
11	-36	13	56	18	17	26	89	25	-13	-1	-32	-27
12	-25	34	75	10	-3	---	49	12	-25	---	-29	-10
13	8	42	30	15	-9	---	25	-4	---	8	-25	9
14	35	49	-3	21	-21	7	40	-16	-3	-1	-33	25
15	67	35	-12	16	-13	43	10	-3	-20	-27	-24	30
16	70	---	-23	1	-13	---	---	-7	-29	-35	-3	30
17	35	17	-25	-12	5	30	---	-13	---	---	15	22
18	12	-1	-12	-12	-2	38	-24	-11	---	-39	8	22
19	-1	-8	-7	-22	-2	---	-16	-40	---	-22	13	---
20	14	-14	-10	-24	-6	---	---	-44	-50	-9	13	---
21	---	-16	-12	14	15	---	---	---	-15	11	9	35
22	---	-14	-20	20	29	13	---	-31	-1	---	2	51
23	---	-7	-21	20	38	-37	-34	-22	-3	---	5	50
24	9	-16	-9	11	33	---	-17	-62	-12	-2	23	32
25	-9	-15	-4	54	1	---	---	---	-20	-9	28	10
26	2	-25	10	45	-17	-3	-87	---	-17	-2	---	4
27	-62	-25	14	22	-64	6	---	-8	-2	11	---	-3
28	---	-10	15	-7	---	---	---	-6	17	21	31	-14
29	0	-24	---	-7	---	-12	---	-9		36	---	-20
30	-33	-7	23	-5	-26	-30	---	32		41	---	-20
31		-7	2		7		-55	40		47		-13

STANFORD MEAN SOLAR MAGNETIC FIELD

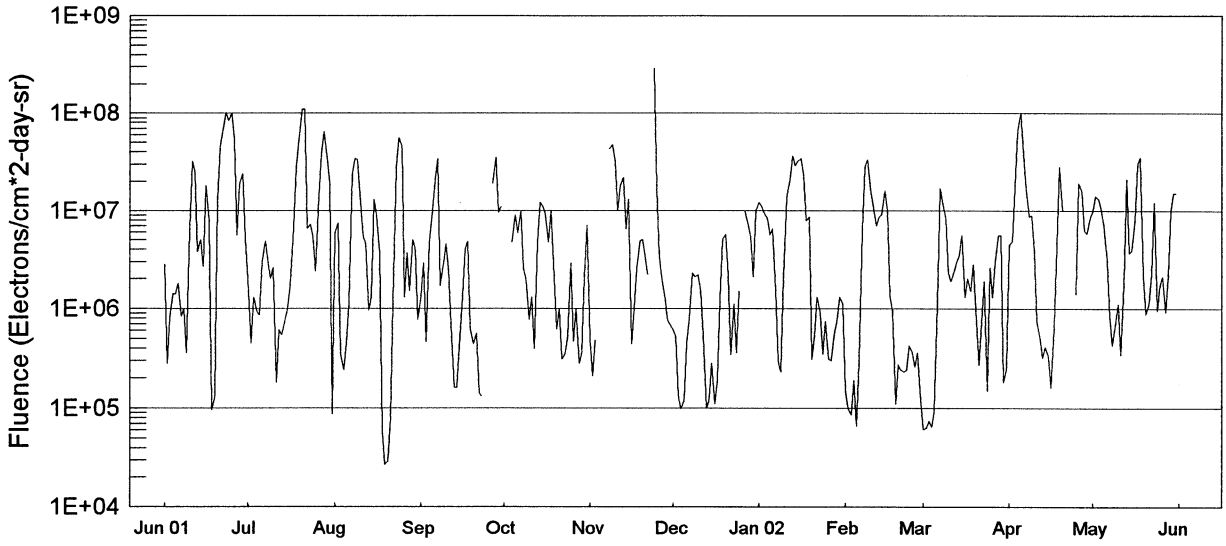


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

= 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
Jun 2001 - May 2002



Day	Jun 01	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May
1	2.8E+06	2.0E+06	5.9E+06	1.3E+06	-999	4.8E+05	6.1E+05	1.2E+07	1.5E+05	6.1E+04	4.4E+06	9.9E+06
2	2.8E+05	4.5E+05	7.4E+06	2.9E+06	-999	2.1E+05	5.2E+05	1.1E+07	9.8E+04	6.3E+04	4.9E+06	1.4E+07
3	8.1E+05	1.3E+06	3.5E+05	4.6E+05	-999	4.8E+05	1.3E+05	9.3E+06	8.6E+04	7.4E+04	1.8E+07	1.3E+07
4	1.4E+06	9.3E+05	2.4E+05	4.8E+06	4.7E+06	-999	9.9E+04	8.3E+06	1.9E+05	6.5E+04	6.7E+07	1.0E+07
5	1.4E+06	8.6E+05	4.5E+05	8.6E+06	9.0E+06	-999	1.2E+05	5.7E+06	6.6E+04	9.2E+04	1.0E+08	6.9E+06
6	1.8E+06	3.0E+06	1.1E+06	2.1E+07	5.9E+06	-999	4.4E+05	6.5E+06	2.9E+05	1.1E+06	3.9E+07	3.1E+06
7	8.4E+05	4.9E+06	2.4E+07	3.4E+07	1.0E+07	-999	7.6E+05	1.5E+06	6.2E+06	1.7E+07	1.7E+07	8.3E+05
8	1.0E+06	3.0E+06	3.4E+07	1.7E+06	2.5E+06	4.3E+07	2.3E+06	2.9E+05	2.8E+07	1.2E+07	8.7E+06	4.3E+05
9	3.6E+05	2.0E+06	3.3E+07	2.8E+06	2.0E+06	4.7E+07	2.1E+06	2.3E+05	3.3E+07	8.3E+06	8.9E+06	7.1E+05
10	6.5E+06	2.6E+06	1.2E+07	4.5E+06	7.7E+05	3.2E+07	2.2E+06	2.1E+06	1.6E+07	2.3E+06	3.8E+06	1.1E+06
11	3.2E+07	1.8E+05	5.4E+06	2.5E+06	1.3E+06	1.0E+07	1.5E+06	1.4E+07	1.1E+07	1.9E+06	7.4E+05	3.4E+05
12	2.5E+07	6.1E+05	4.6E+06	6.9E+05	3.9E+05	1.8E+07	5.4E+05	2.1E+07	7.0E+06	2.4E+06	5.1E+05	1.8E+06
13	3.8E+06	5.4E+05	9.6E+05	1.6E+05	4.7E+06	2.2E+07	1.0E+05	3.6E+07	8.6E+06	3.0E+06	3.2E+05	2.1E+07
14	5.0E+06	7.5E+05	1.3E+06	1.6E+05	1.2E+07	6.5E+06	1.2E+05	2.9E+07	9.1E+06	3.5E+06	4.1E+05	3.7E+06
15	2.7E+06	1.0E+06	1.3E+07	4.1E+05	1.1E+07	1.3E+07	2.8E+05	3.2E+07	1.6E+07	5.6E+06	3.3E+05	3.9E+06
16	1.8E+07	1.7E+06	9.0E+06	1.3E+06	9.2E+06	4.4E+05	1.1E+05	3.4E+07	1.0E+07	1.3E+06	1.6E+05	7.9E+06
17	7.9E+06	6.6E+06	3.6E+06	4.0E+06	4.7E+06	1.0E+06	1.9E+05	2.3E+07	1.3E+06	2.0E+06	6.5E+05	3.0E+07
18	9.5E+04	2.8E+07	5.9E+04	4.8E+06	1.0E+07	2.6E+06	1.2E+06	7.8E+06	9.5E+05	1.5E+06	4.4E+06	3.5E+07
19	1.3E+05	6.2E+07	2.7E+04	6.3E+05	2.8E+06	4.9E+06	5.1E+06	8.5E+06	1.1E+05	2.8E+06	2.8E+07	2.2E+06
20	1.3E+07	1.1E+08	2.9E+04	4.4E+05	6.2E+05	5.0E+06	5.7E+06	3.1E+05	2.7E+05	9.7E+05	9.9E+06	8.9E+05
21	4.5E+07	1.1E+08	8.0E+04	5.6E+05	1.0E+06	3.3E+06	2.2E+06	5.3E+05	2.4E+05	2.7E+05	-999	1.1E+06
22	7.2E+07	6.6E+06	2.2E+06	1.4E+05	3.1E+05	2.2E+06	3.4E+05	1.3E+06	2.3E+05	7.3E+05	-999	2.3E+06
23	1.0E+08	7.2E+06	2.8E+07	1.3E+05	3.5E+05	-999	1.1E+06	9.1E+05	2.4E+05	1.9E+06	-999	1.2E+07
24	8.4E+07	5.3E+06	5.6E+07	-999	5.2E+05	2.9E+08	3.6E+05	3.5E+05	4.2E+05	1.5E+05	-999	9.5E+05
25	1.0E+08	2.4E+06	4.5E+07	-999	2.9E+06	1.7E+07	1.5E+06	7.4E+05	3.6E+05	2.6E+06	1.4E+06	1.7E+06
26	5.4E+07	1.4E+07	1.3E+06	-999	4.7E+05	3.4E+06	-999	3.1E+05	2.6E+05	1.3E+06	1.9E+07	2.1E+06
27	5.6E+06	3.9E+07	3.7E+06	1.9E+07	1.0E+06	2.0E+06	9.9E+06	3.0E+05	3.6E+05	3.0E+06	1.6E+07	9.3E+05
28	1.9E+07	6.5E+07	1.5E+06	3.5E+07	2.8E+05	1.3E+06	7.2E+06	5.7E+05	1.2E+05	5.6E+06	6.2E+06	2.1E+06
29	2.4E+07	3.4E+07	5.0E+06	9.5E+06	3.6E+05	7.6E+05	5.3E+06	7.5E+05		5.6E+06	5.8E+06	1.0E+07
30	5.2E+06	1.9E+07	4.0E+06	1.1E+07	2.1E+06	6.9E+05	2.1E+06	1.3E+06		1.8E+05	8.4E+06	1.5E+07
31		8.7E+04	7.8E+05		7.1E+06		1.0E+07	1.1E+06		2.5E+05		1.5E+07

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

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

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CONTENTS

Prompt Reports — Number 694 Part I

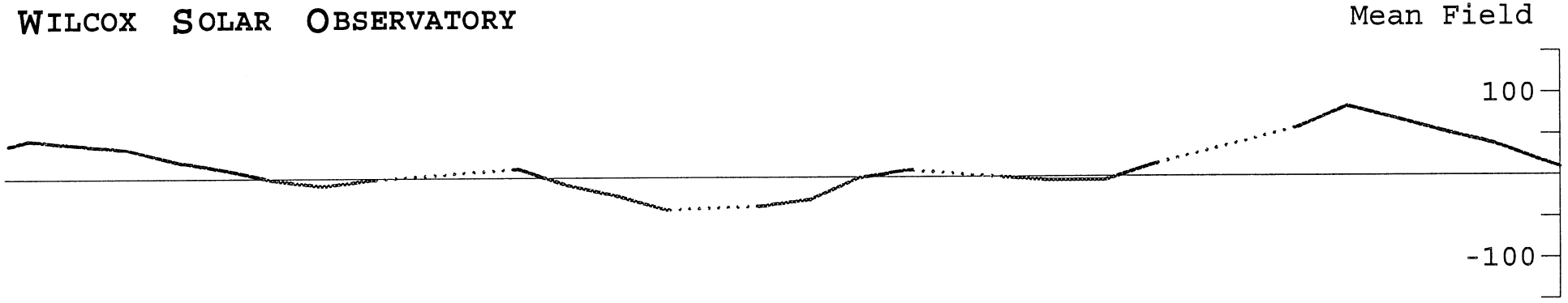
DATA FOR **APRIL 2002**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

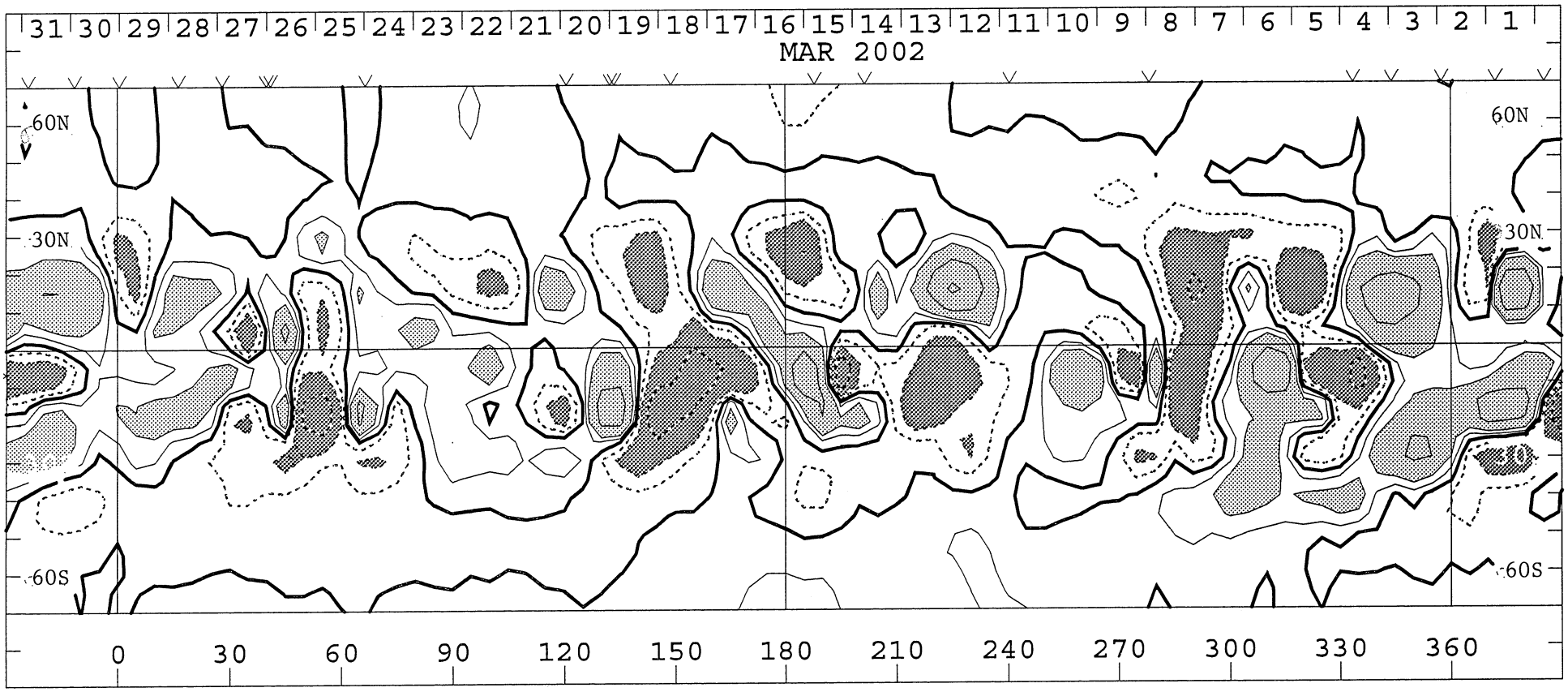
CARRINGTON ROTATION NUMBER 1987

(2 to 30 March 2002)

WILCOX SOLAR OBSERVATORY



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



SOLAR MAGNETIC FIELD SYNOPTIC CHART

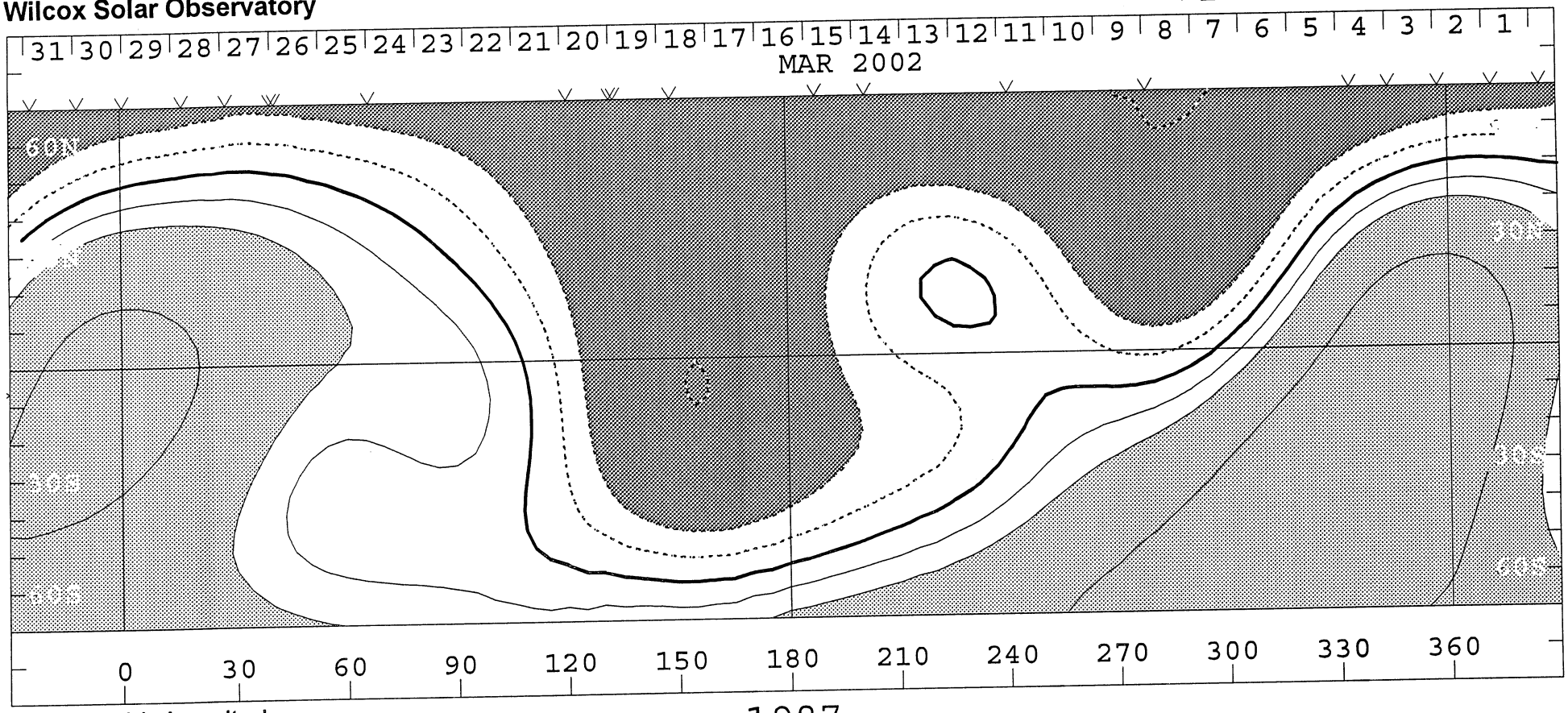
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1987

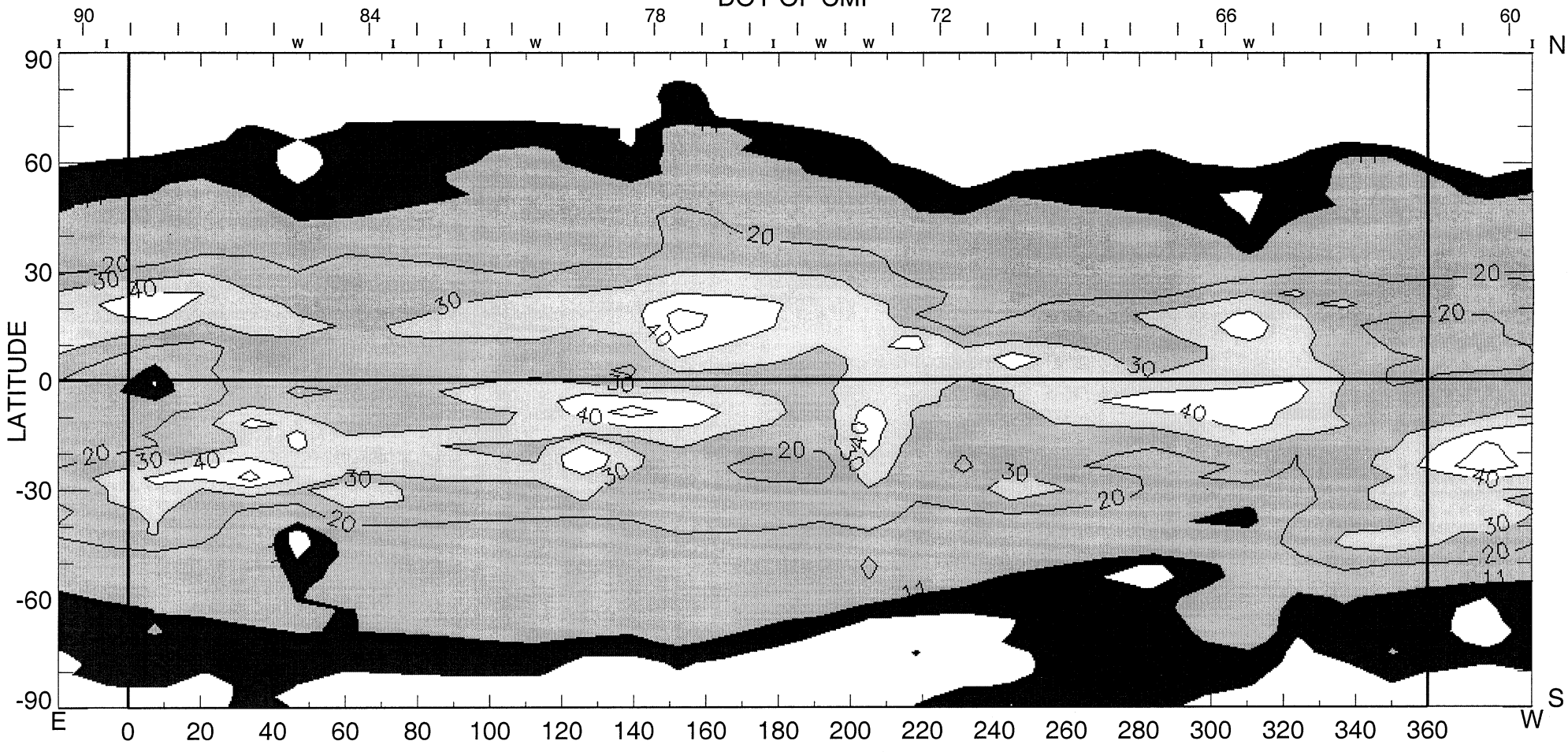
(2 to 30 March 2002)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla

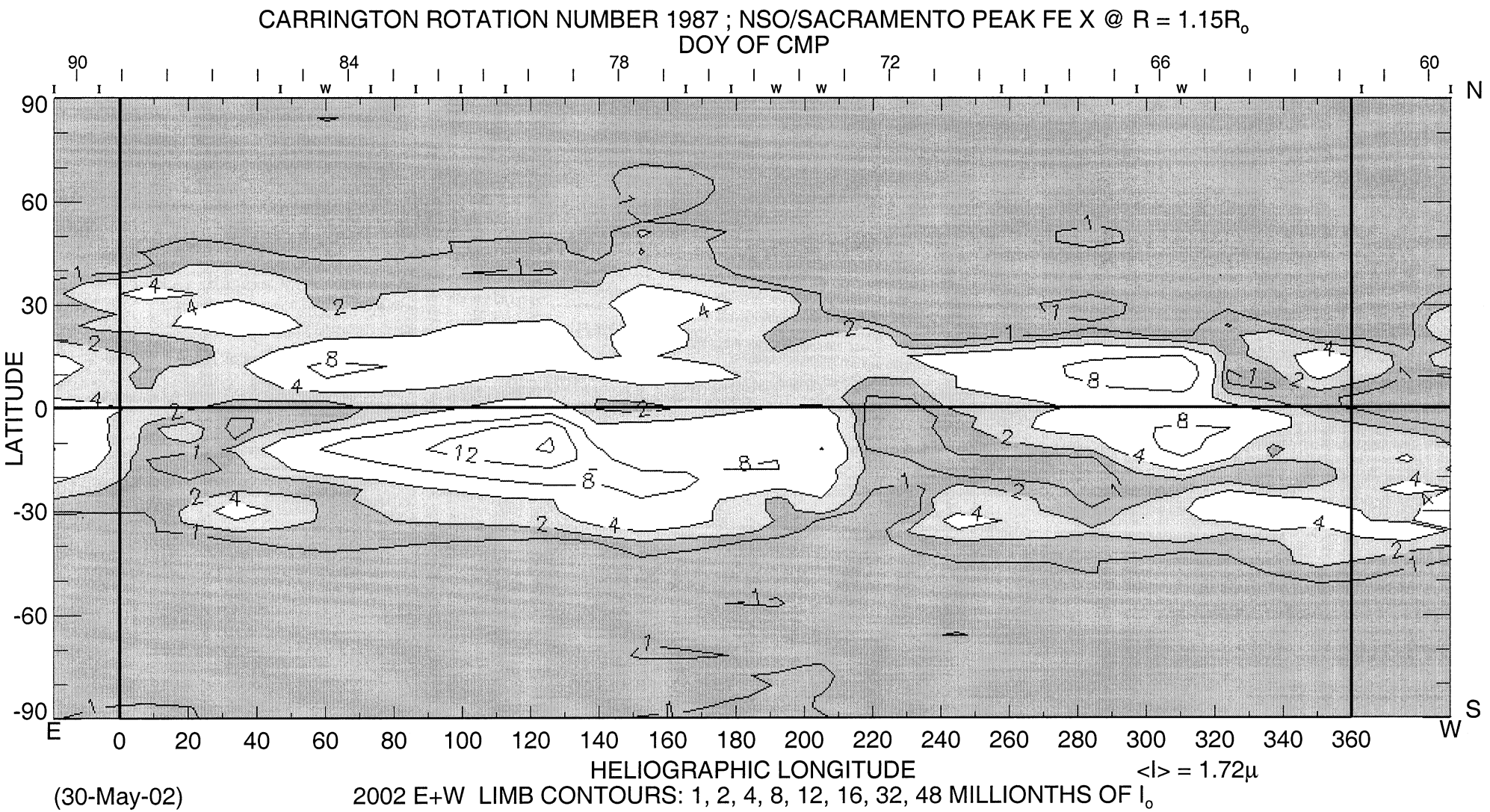


CARRINGTON ROTATION NUMBER 1987 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

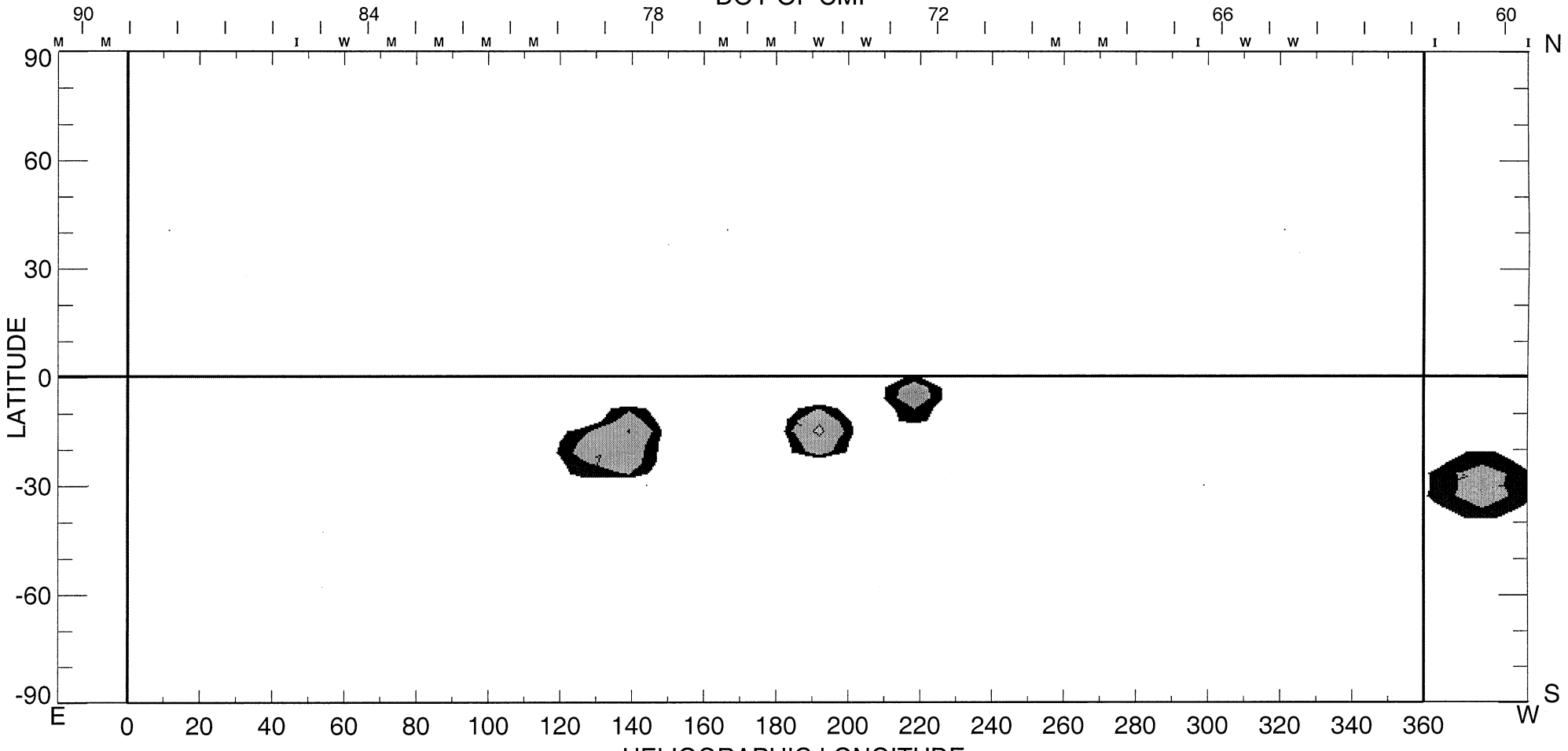


$<I> = 17.09\mu$

(30-May-02) 2002 E+W LIMB CONTOURS: 8, 11, 20, 30, 40, 50, 60, 80, 100, 120, 140 MILLIONTHS OF I_o
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK



CARRINGTON ROTATION NUMBER 1987 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



(30-May-02) 2002 E+W LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

tex Thu May 30 15:34:45 2002

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1987

(2 to 30 March 2002)

National Solar Observatory/Kitt Peak

Dates of Observation

PHOTOGRAPHIC DATA UNAVAILABLE AT TIME OF PUBLICATION.

Heliographic Longitude

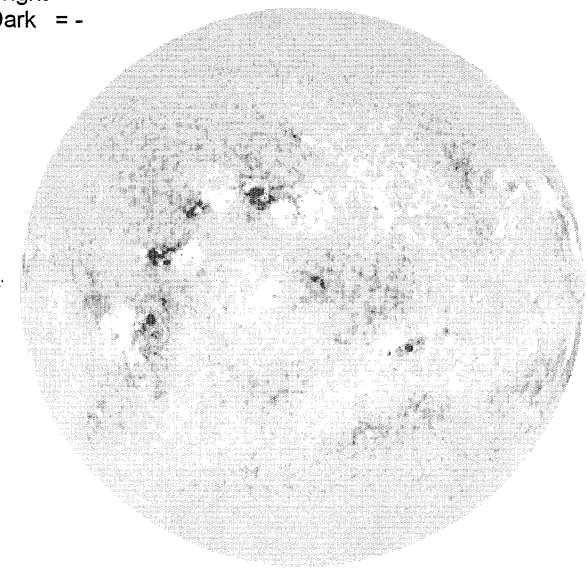
APRIL 1, 2002 (P= -26.16, Bo = -6.55, Lo = 334.17)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E

1542 UT

STANFORD MAGNETOGRAM

N

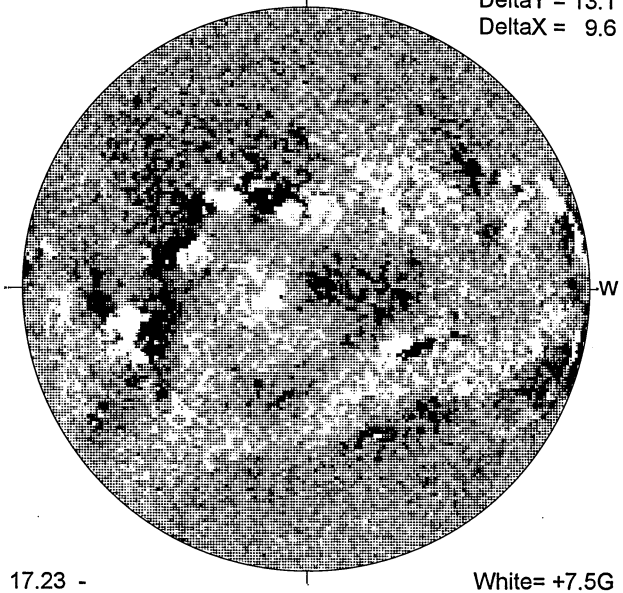
Solid = +
Dashed = -

2127 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

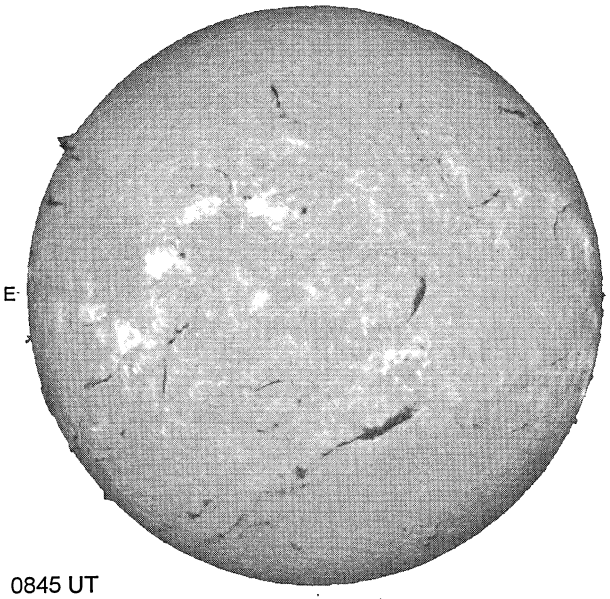


W

17.23 -
18.18 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

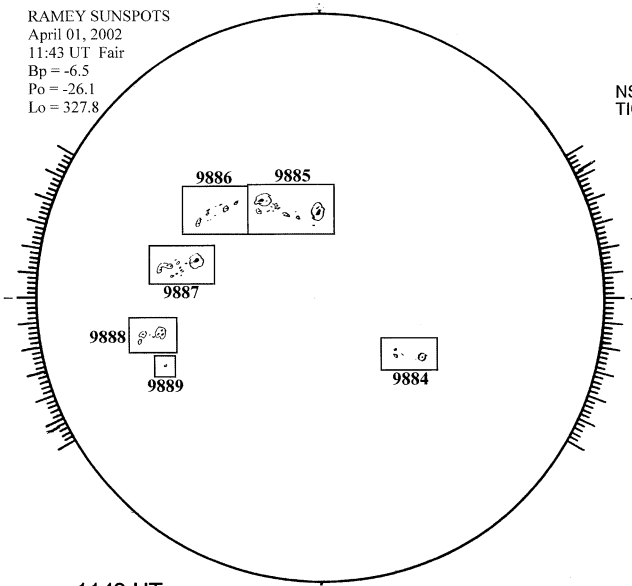


E

0845 UT

S

RAMEY SUNSPOT

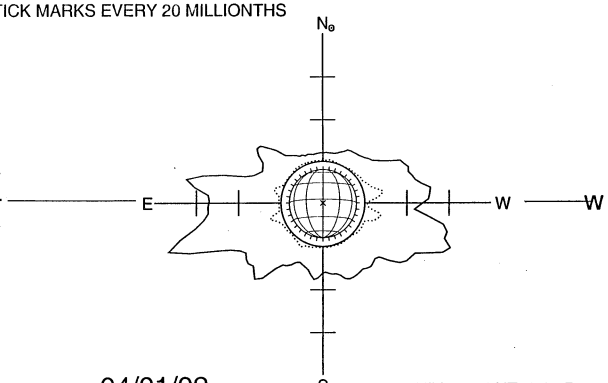


1143 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



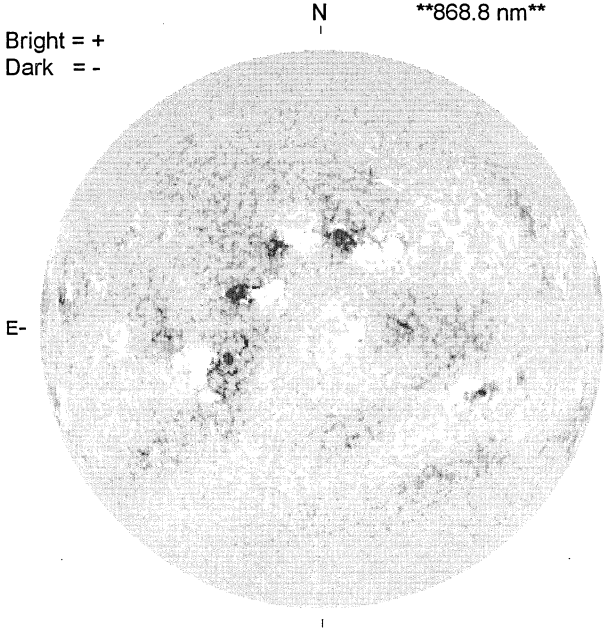
04/01/02
(DOY 91)

FE XIV 15:34 UT 1.15 R⊙
FE X 16:32 UT 1.15 R⊙
CA XV 16:18 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

S

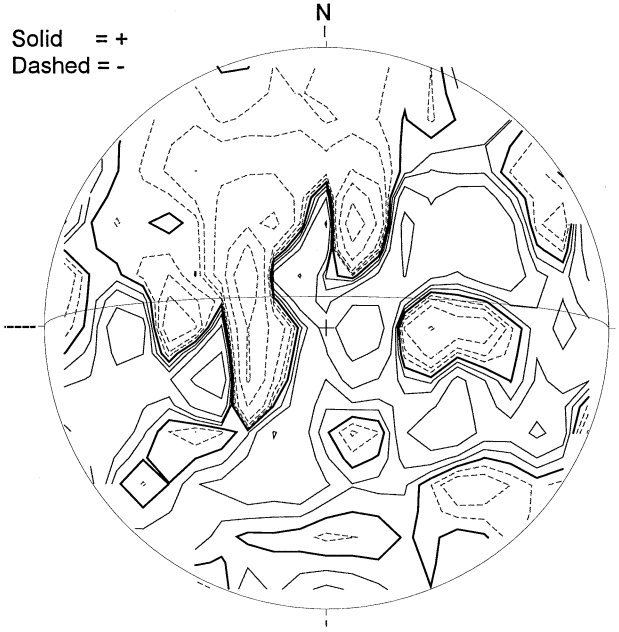
APRIL 2, 2002 (P= -26.20, Bo = -6.50, Lo = 320.97)

KITT PEAK MAGNETOGRAM



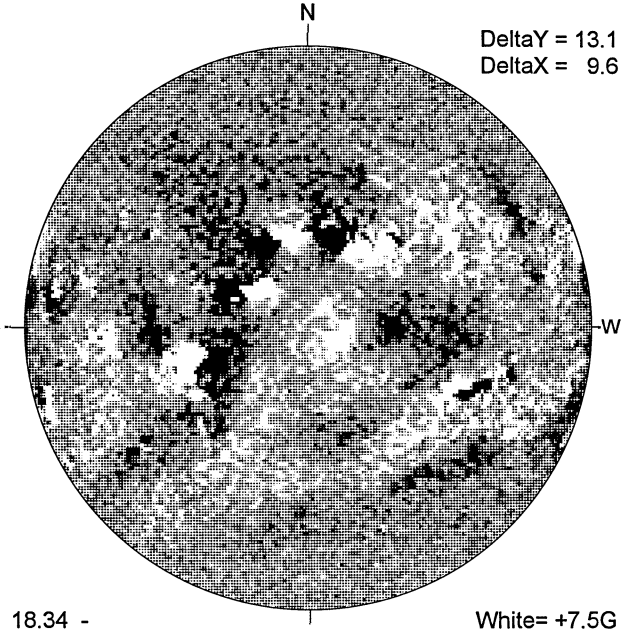
1552 UT

STANFORD MAGNETOGRAM



2117 UT

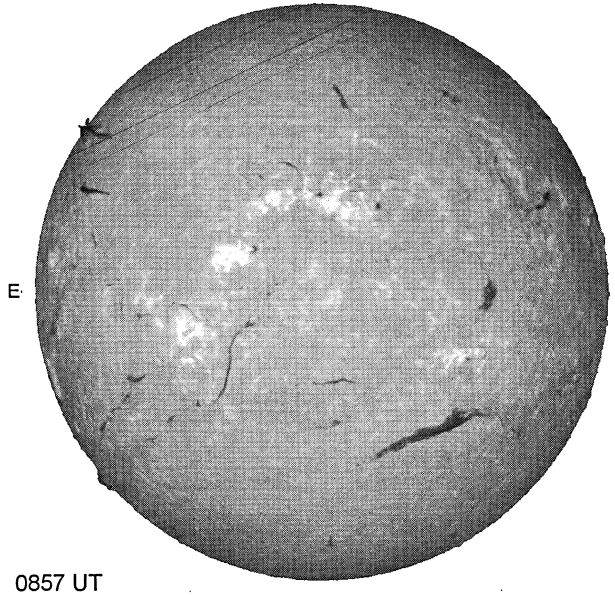
MT. WILSON MAGNETOGRAM



18.34 -
19.29 UT

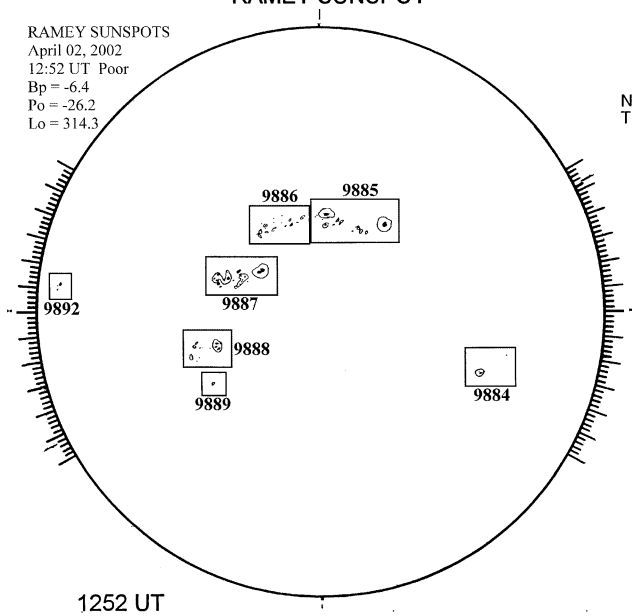
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



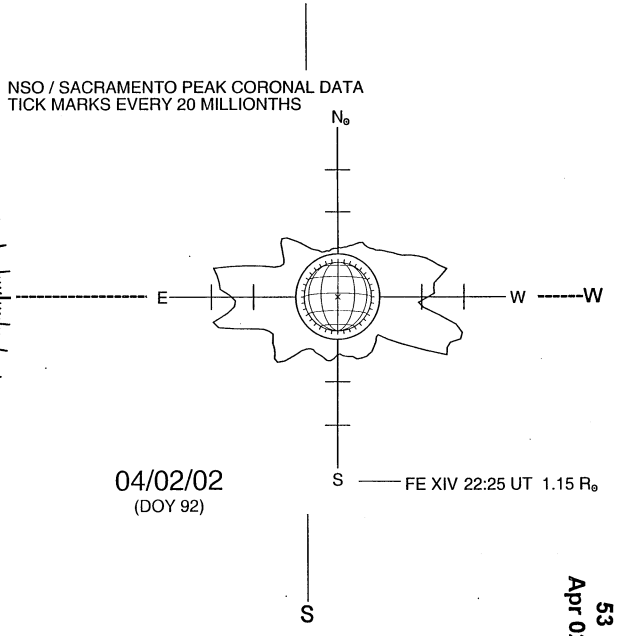
0857 UT

RAMEY SUNSPOT



1252 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



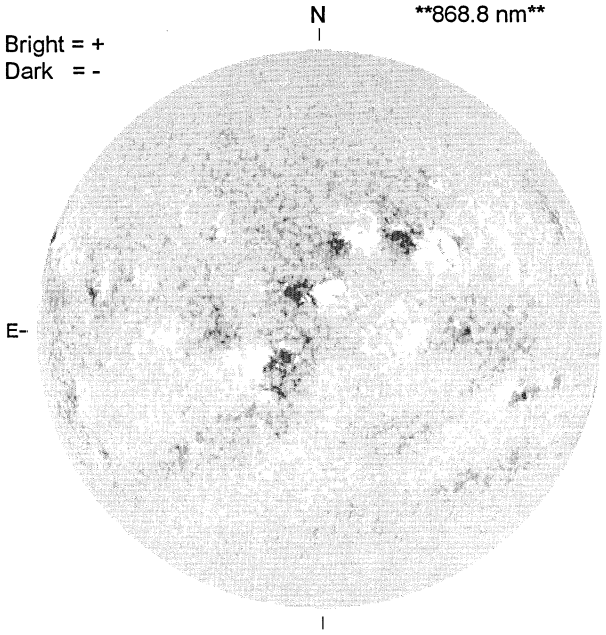
04/02/02
(DOY 92)

S

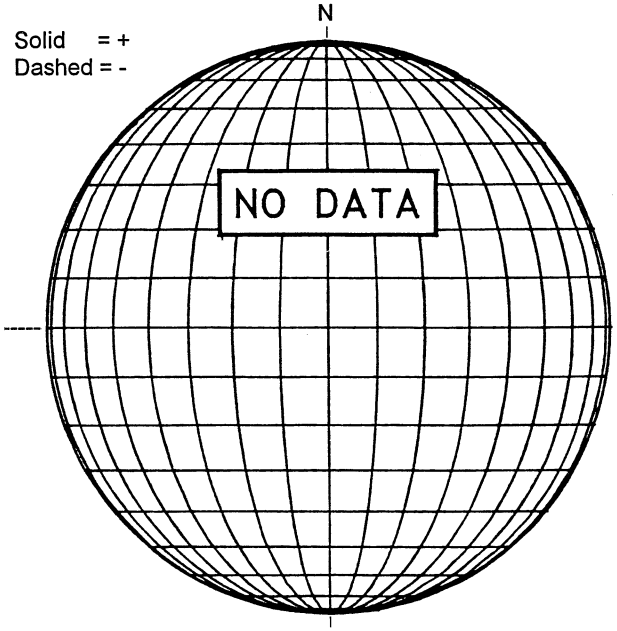
53
Apr 02

APRIL 3, 2002 (P= -26.23, Bo = -6.44, Lo = 307.78)

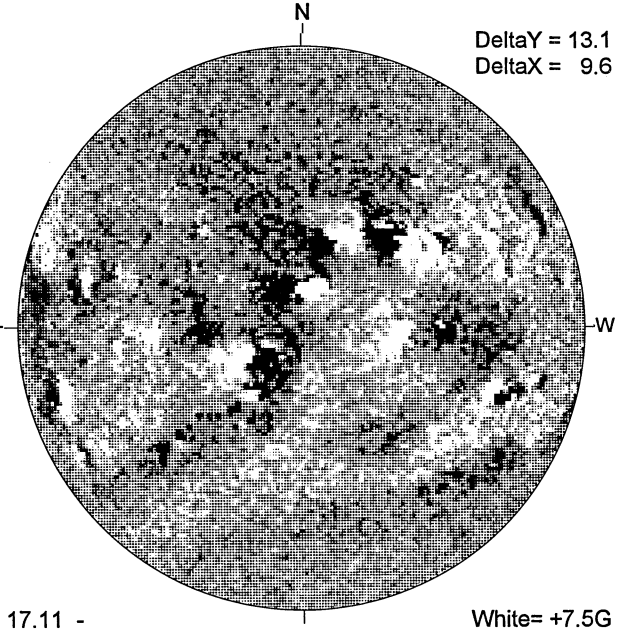
KITT PEAK MAGNETOGRAM



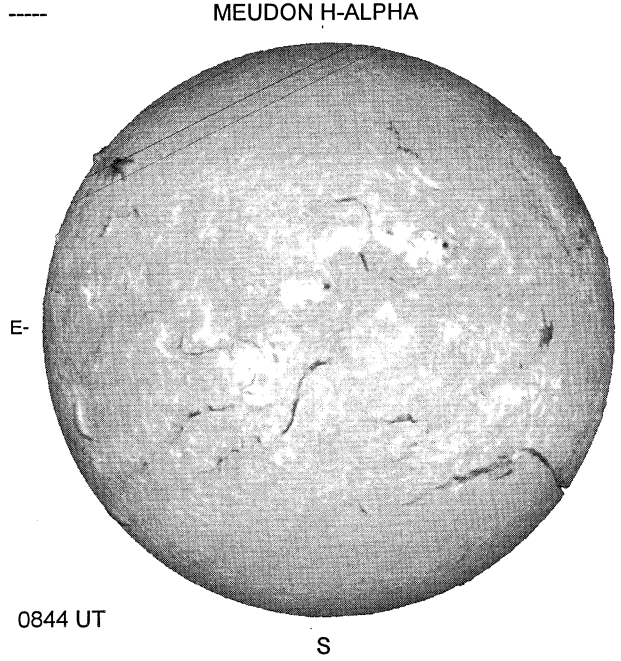
STANFORD MAGNETOGRAM



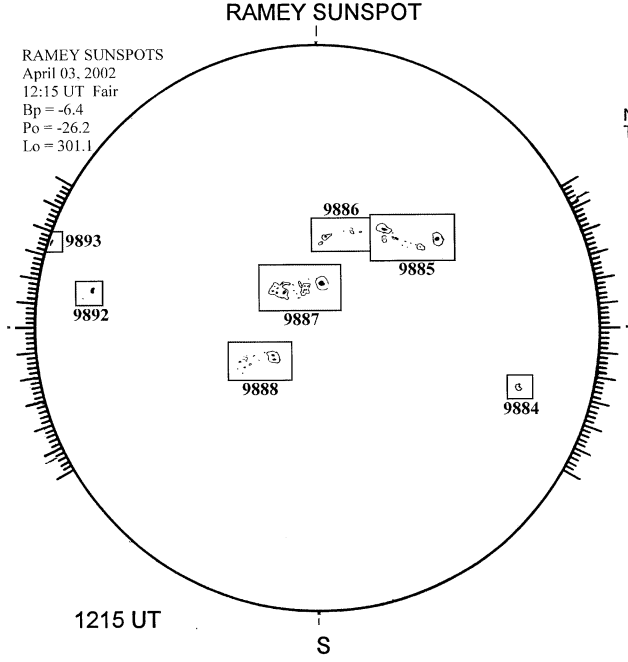
MT. WILSON MAGNETOGRAM



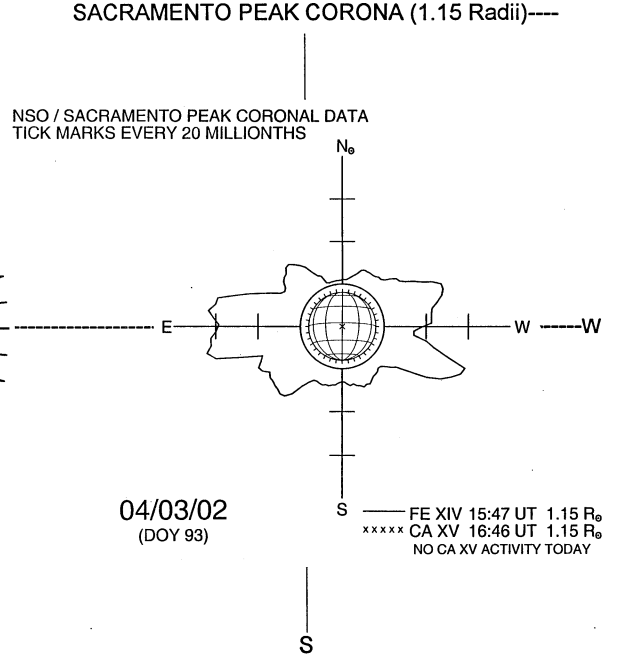
MEUDON H-ALPHA



RAMEY SUNSPOT

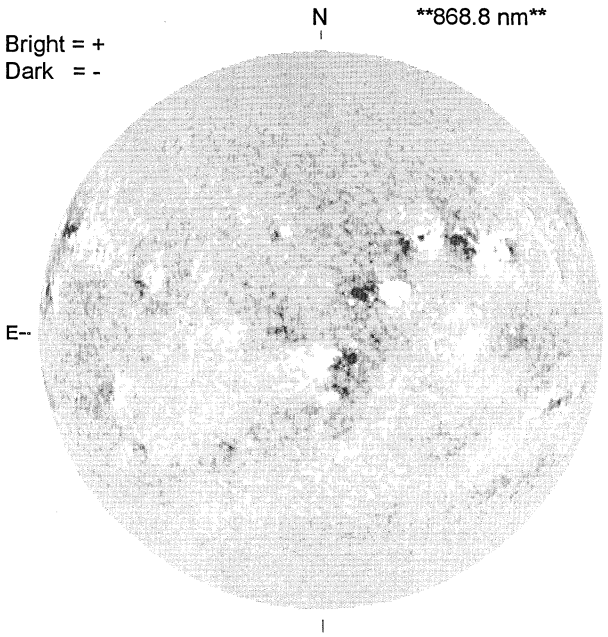


SACRAMENTO PEAK CORONA (1.15 Radii)



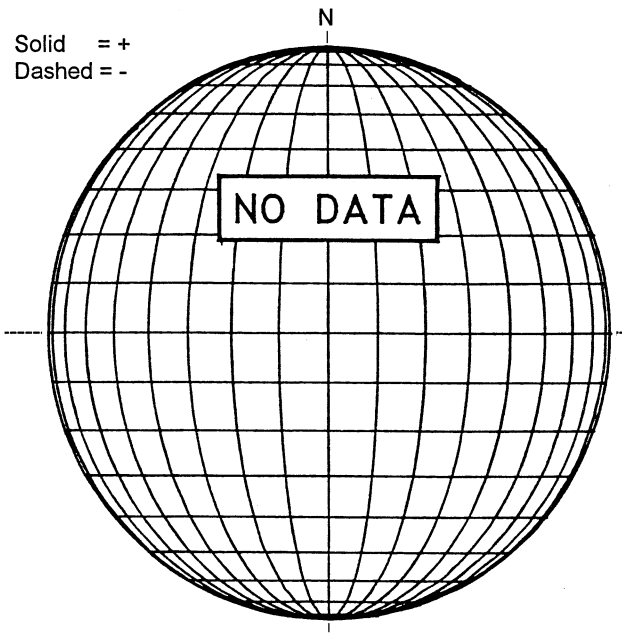
APRIL 4, 2002 (P= -26.26, Bo = -6.38, Lo = 294.59)

KITT PEAK MAGNETOGRAM

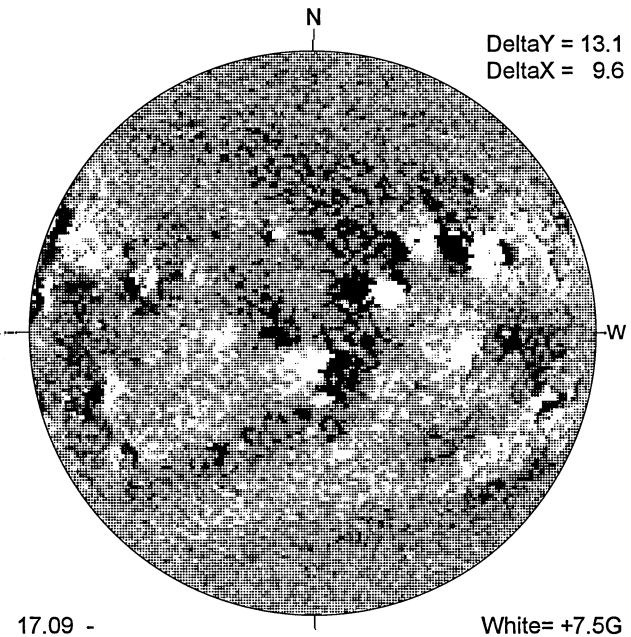


1559 UT

STANFORD MAGNETOGRAM



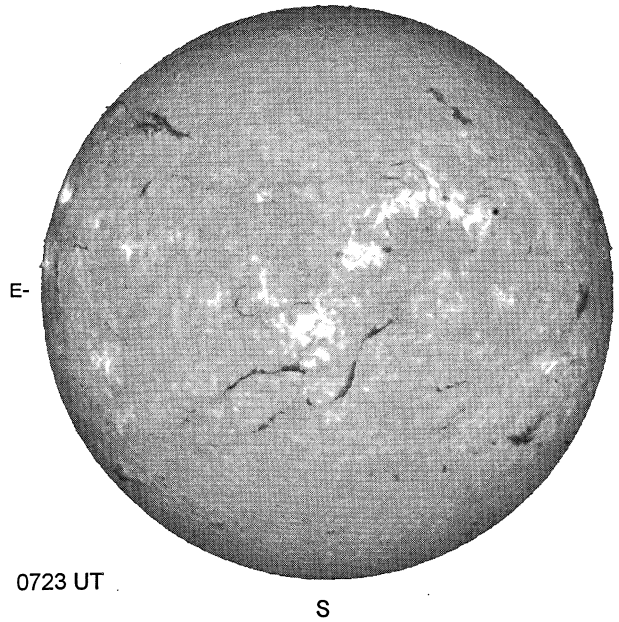
MT. WILSON MAGNETOGRAM



17.09 -
18.04 UT

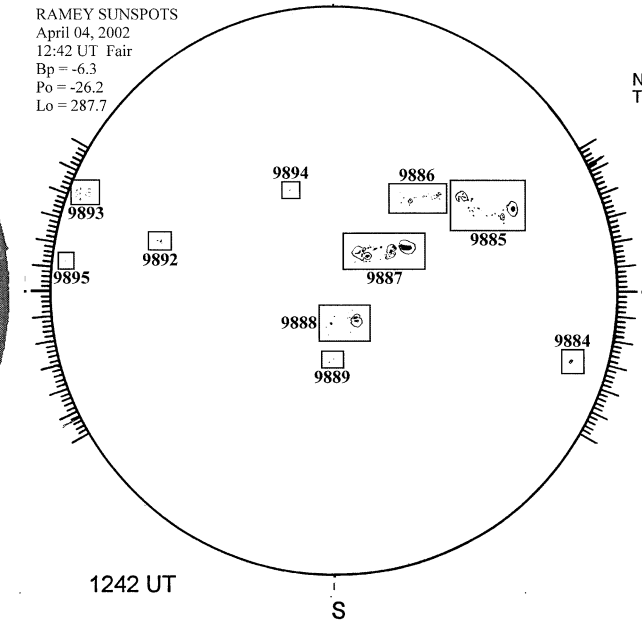
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



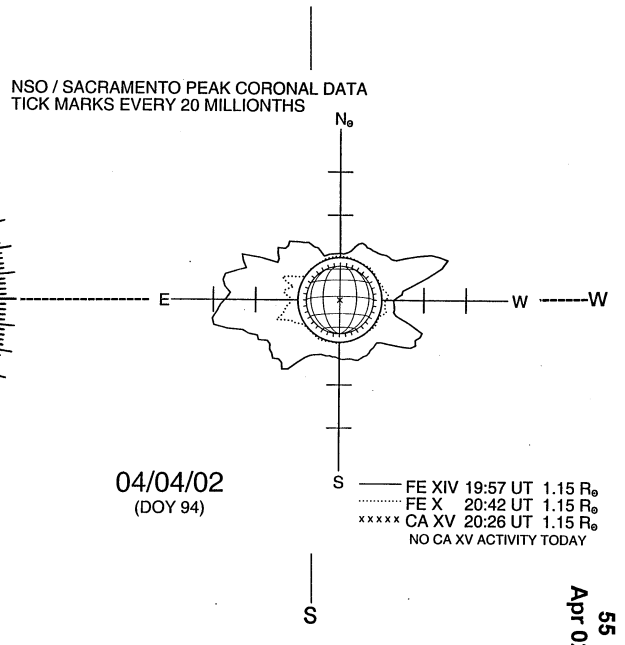
0723 UT

RAMEY SUNSPOT



1242 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



04/04/02
(DOY 94)

55
Apr 02

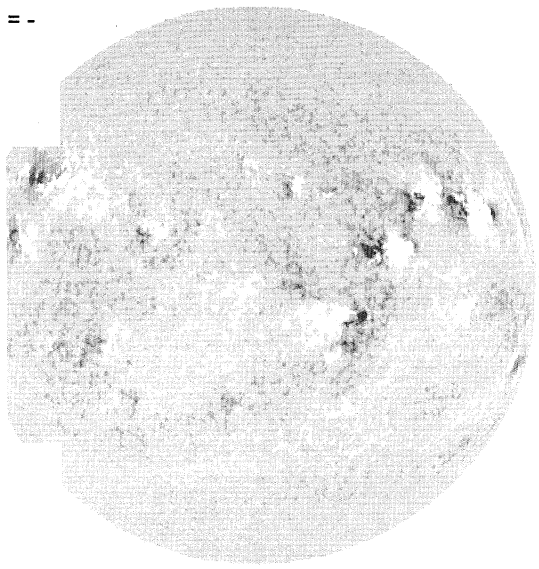
APRIL 5, 2002 (P= -26.28, Bo = -6.32, Lo = 281.39)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



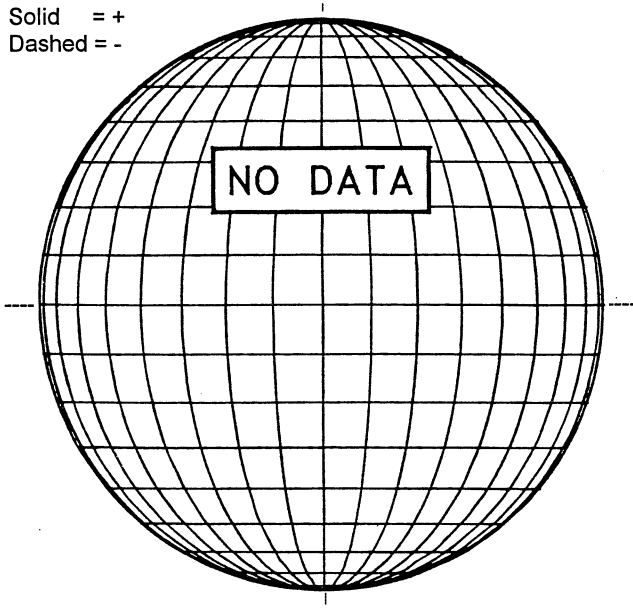
E-----

2148 UT

STANFORD MAGNETOGRAM

N

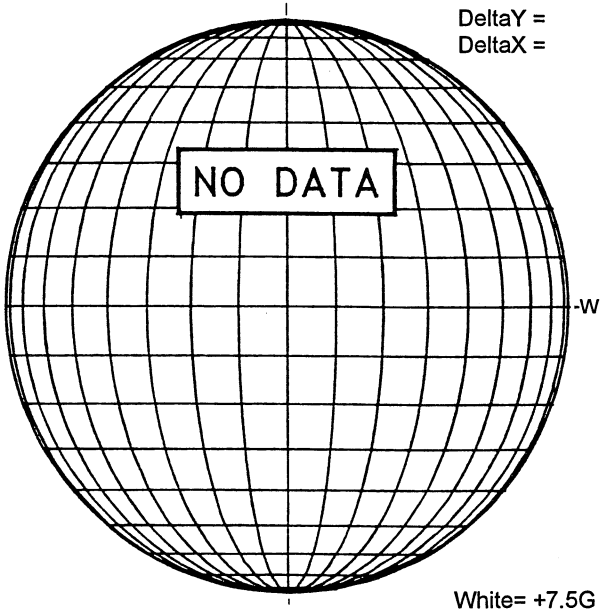
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

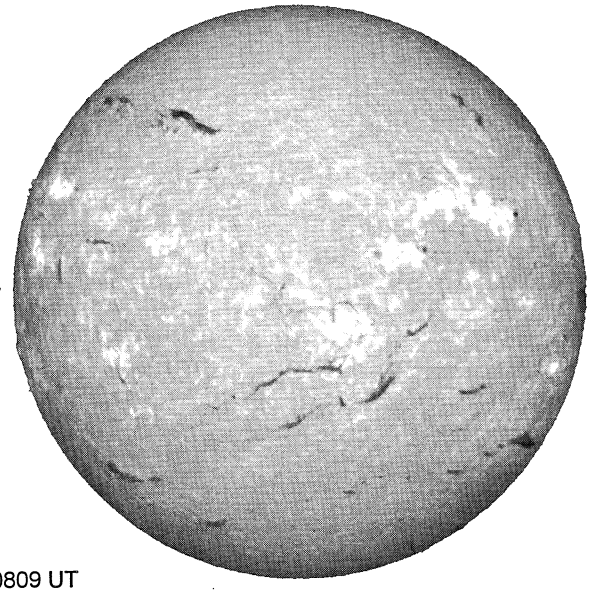
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

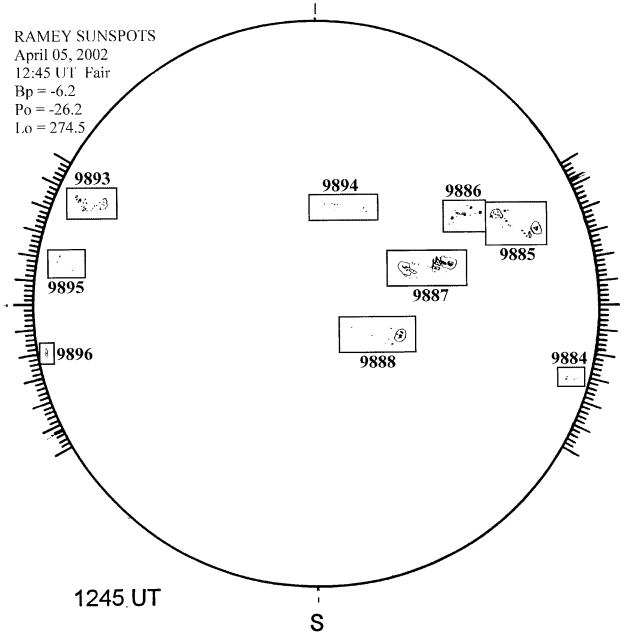


E-

0809 UT

S

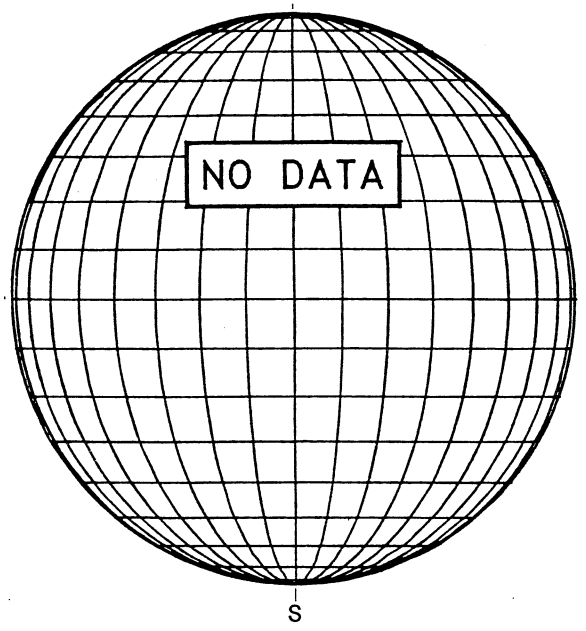
RAMEY SUNSPOT



1245 UT

S

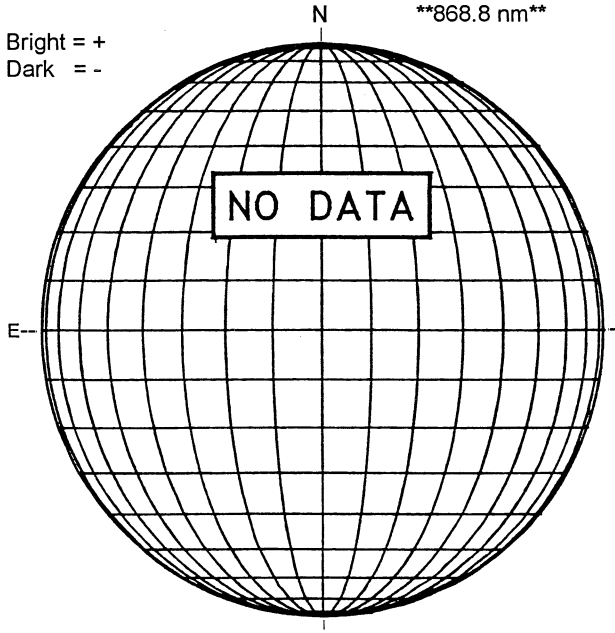
SACRAMENTO PEAK CORONA (1.15 Radii)----



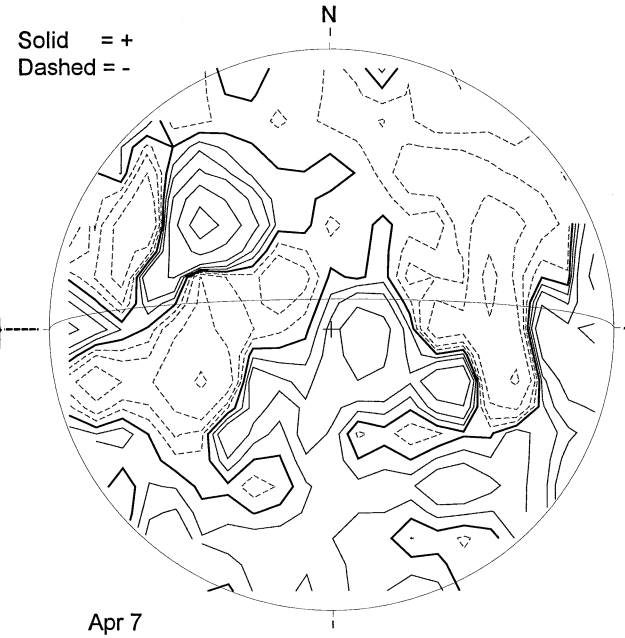
S

APRIL 6, 2002 (P= -26.29, Bo = -6.26, Lo = 268.19)

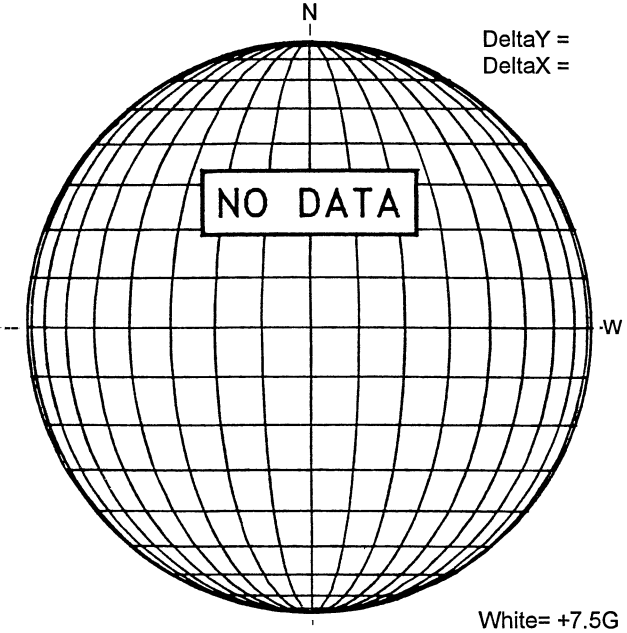
KITT PEAK MAGNETOGRAM



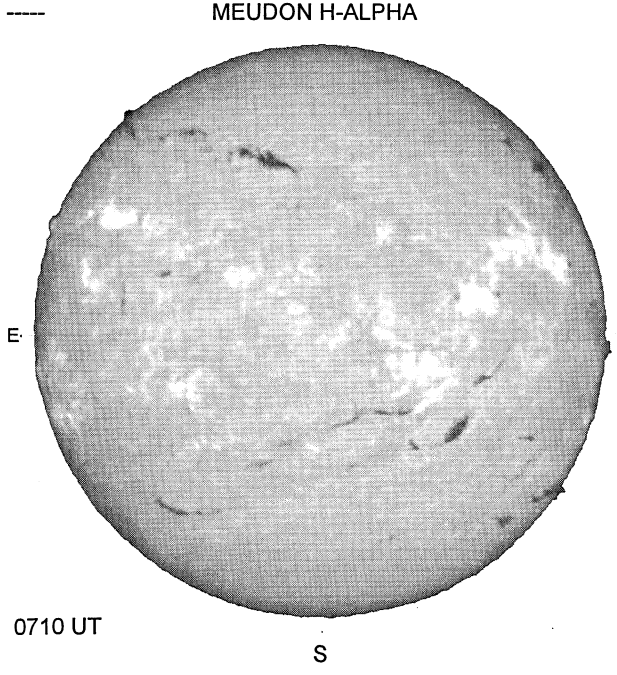
STANFORD MAGNETOGRAM



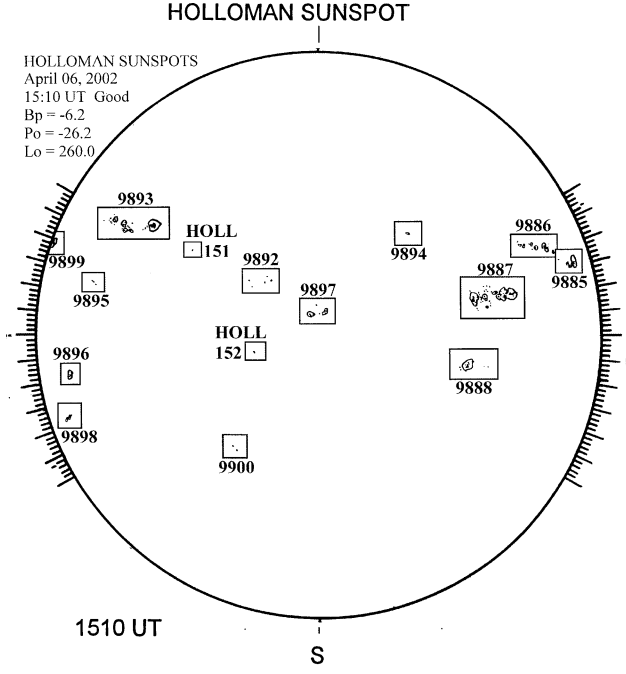
MT. WILSON MAGNETOGRAM



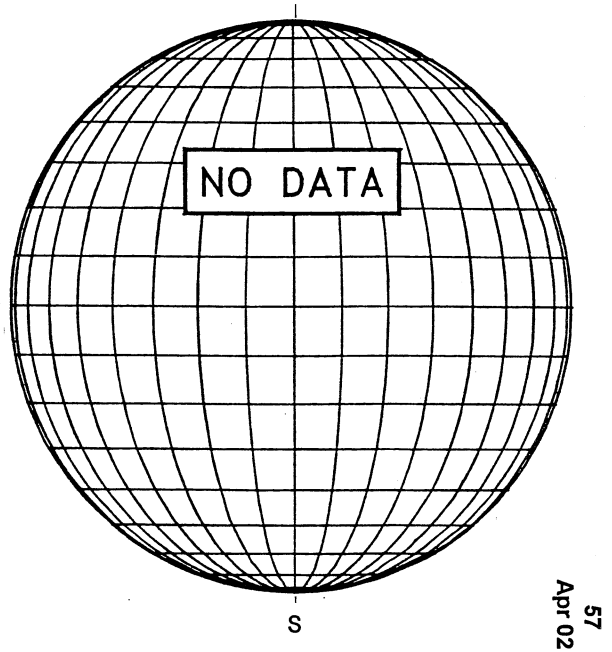
MEUDON H-ALPHA



HOLLOMAN SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



57
Apr 02

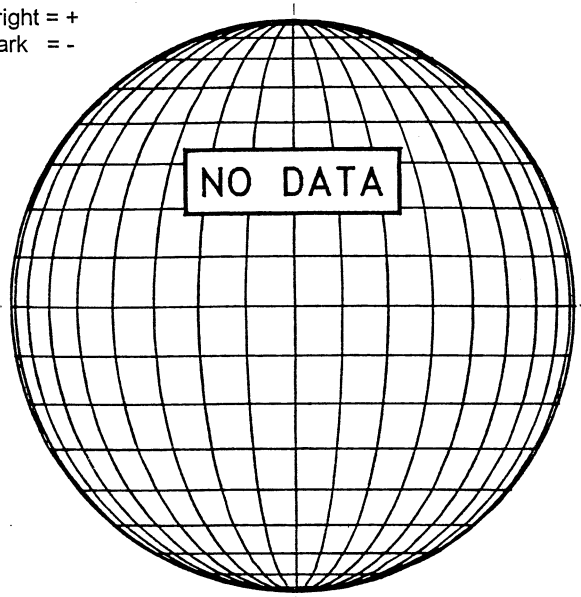
APRIL 7, 2002 (P= -26.29, Bo = -6.20, Lo = 255.00)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

STANFORD MAGNETOGRAM

N

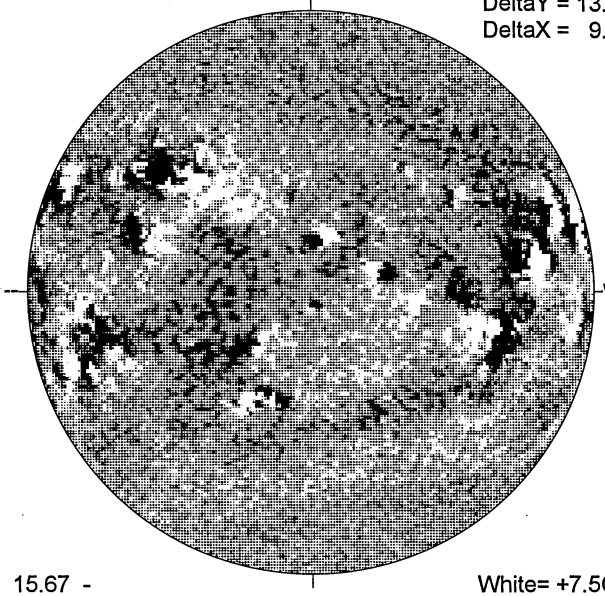
Solid = +
Dashed = -

2204 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

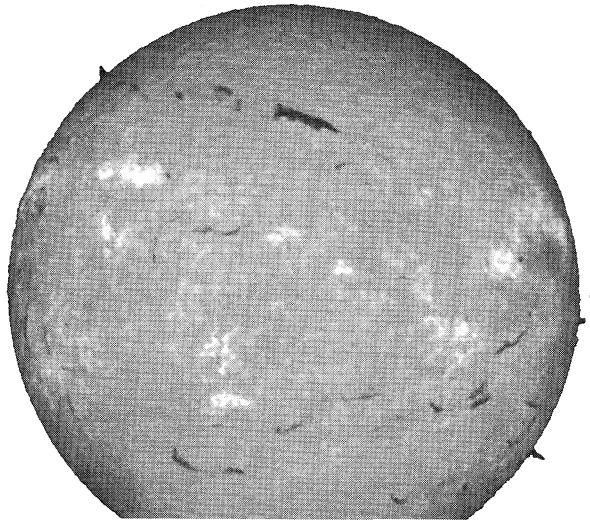


-W

15.67 -
16.62 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

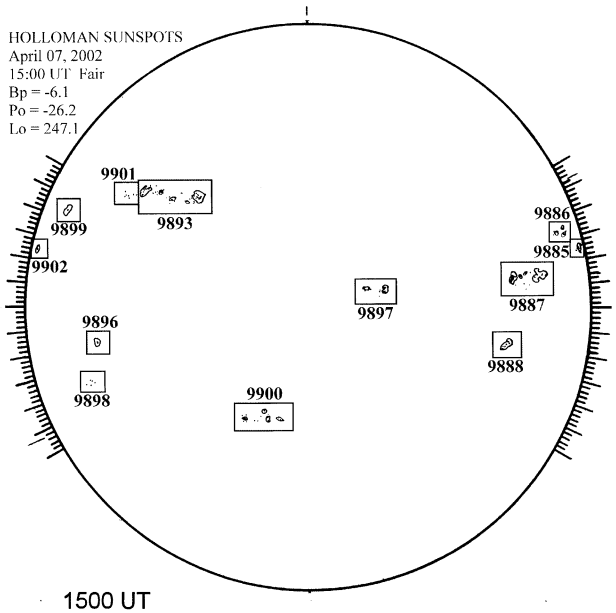


E-

0820 UT

S

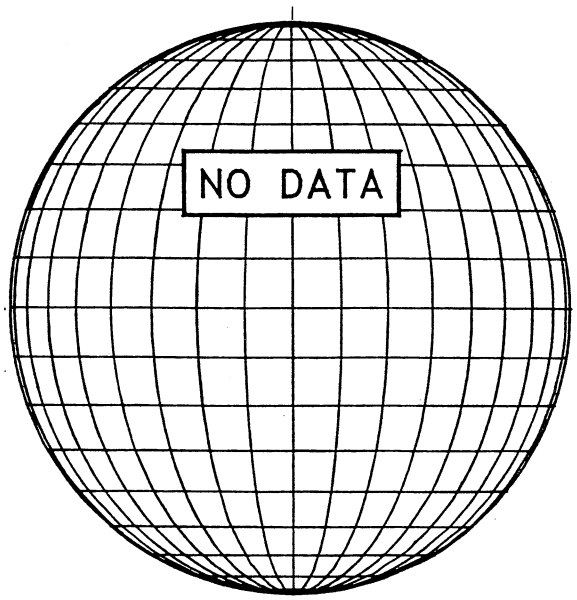
HOLLOMAN SUNSPOTS



1500 UT

S

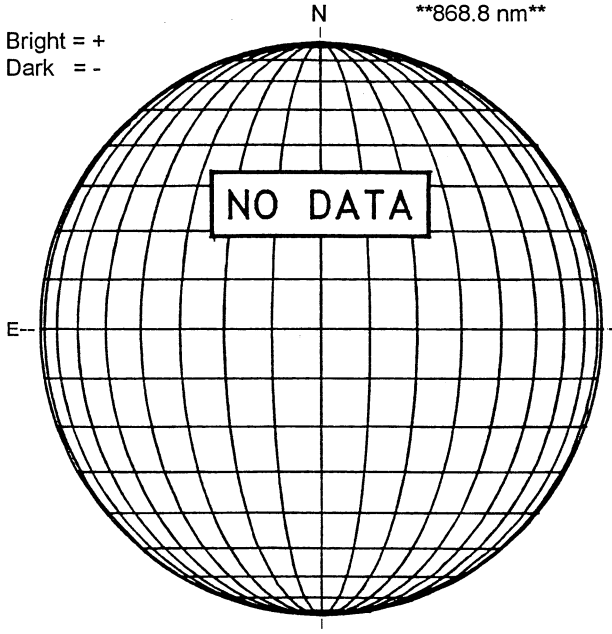
SACRAMENTO PEAK CORONA (1.15 Radii)----



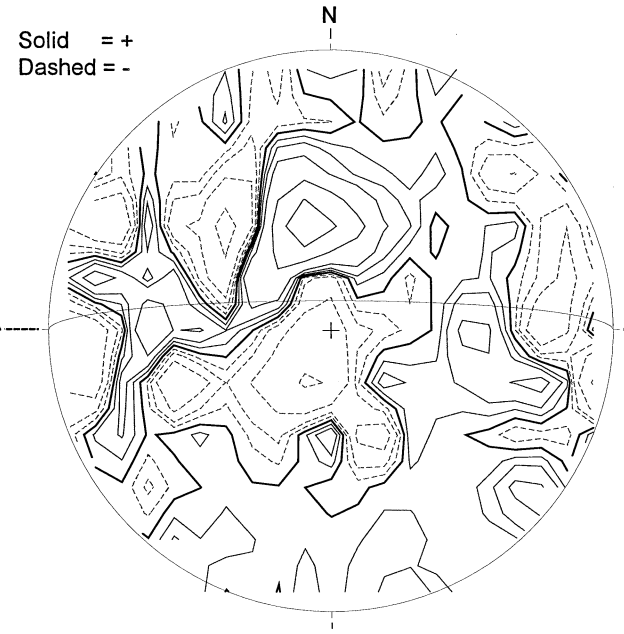
S

APRIL 8, 2002 (P= -26.29, Bo = -6.13, Lo = 241.80)

KITT PEAK MAGNETOGRAM

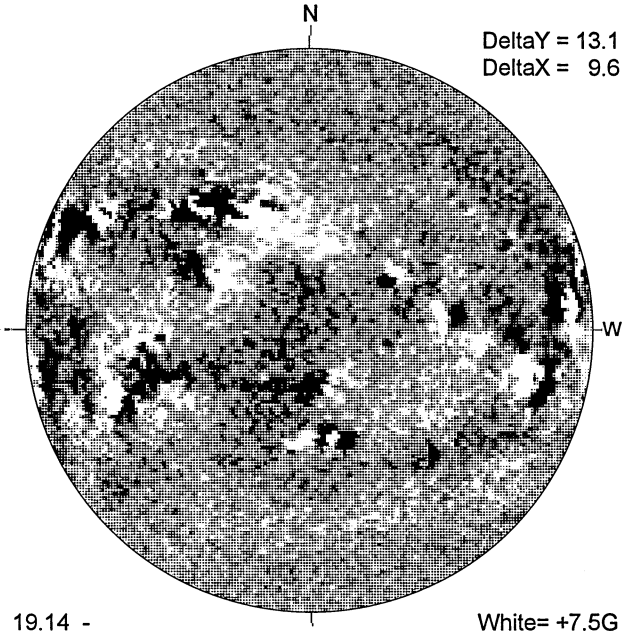


STANFORD MAGNETOGRAM



2135 UT

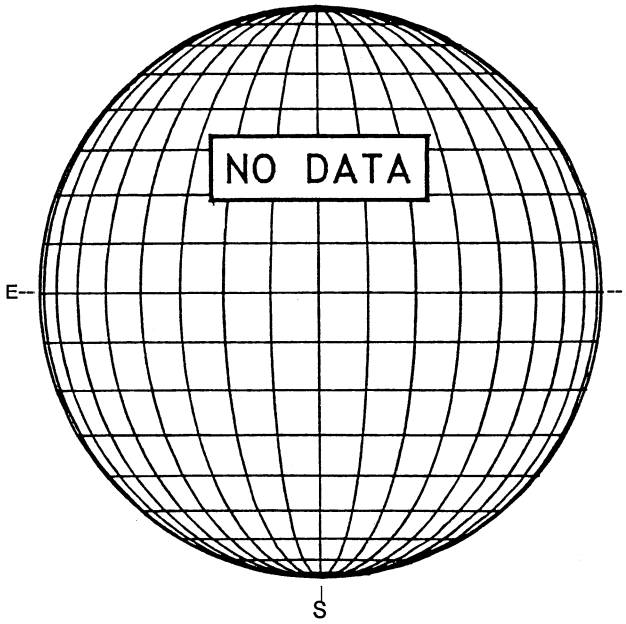
MT. WILSON MAGNETOGRAM



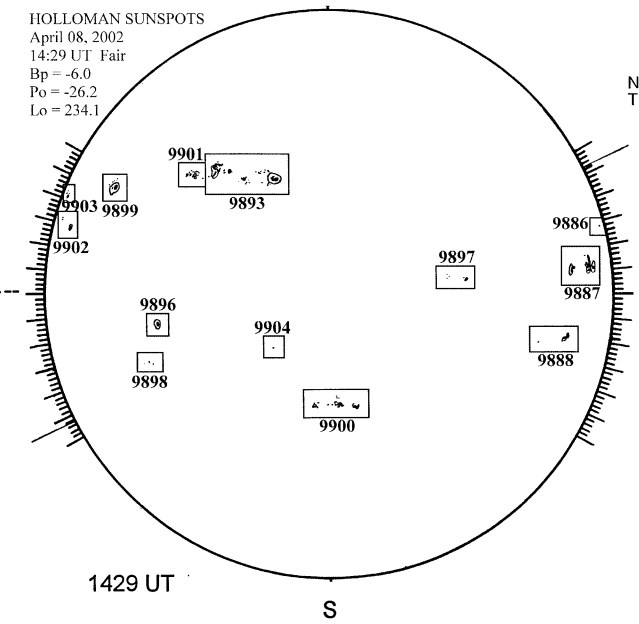
19.14 - 20.09 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

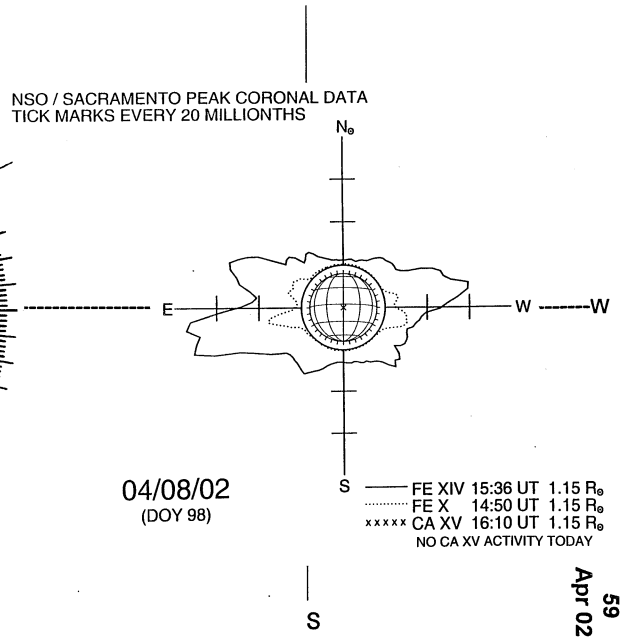


HOLLOMAN SUNSPOT



1429 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

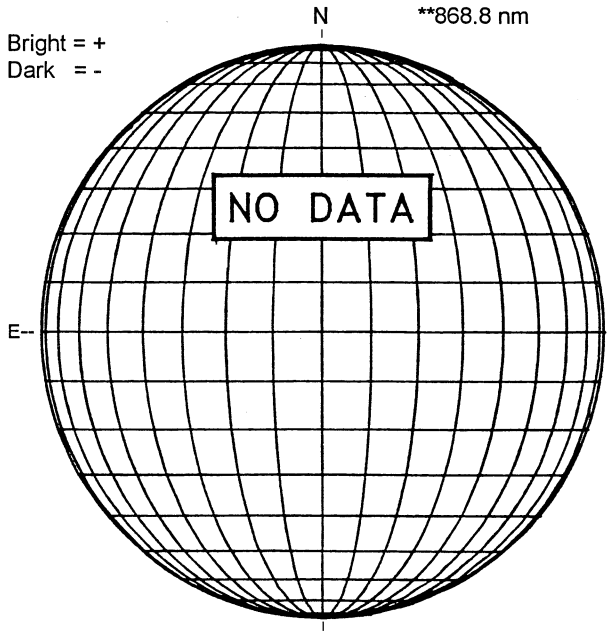


04/08/02
(DOY 98)

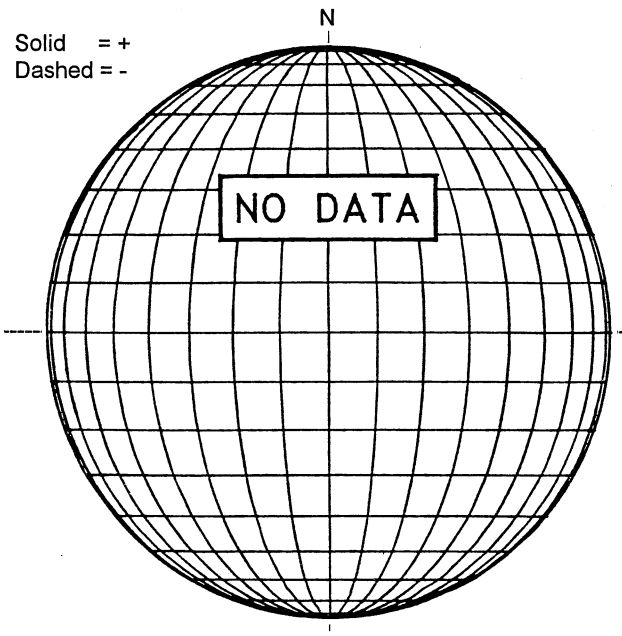
59
Apr 02

APRIL 9, 2002 (P= -26.28, Bo = -6.06, Lo = 228.60)

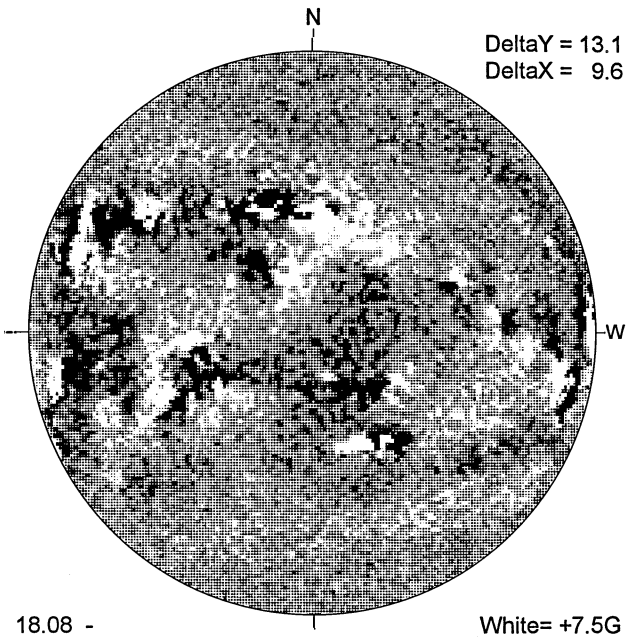
KITT PEAK MAGNETOGRAM



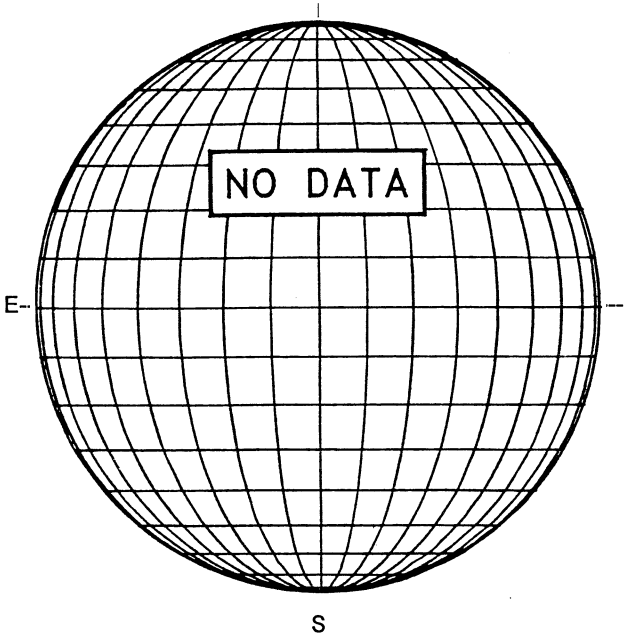
STANFORD MAGNETOGRAM



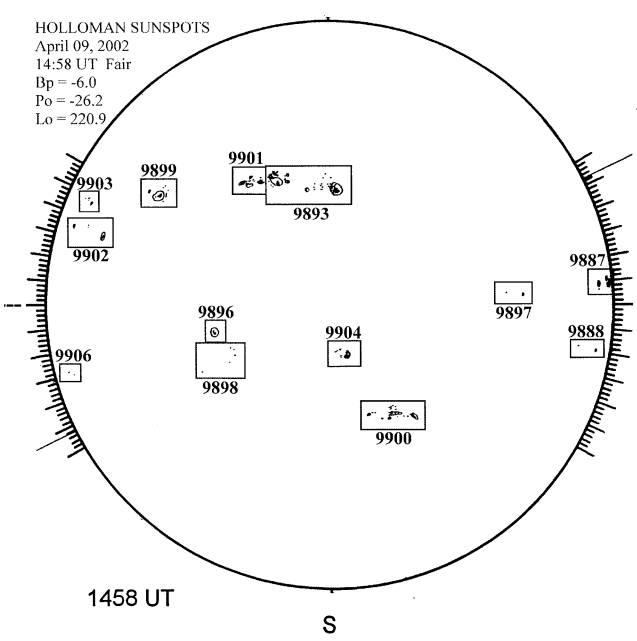
MT. WILSON MAGNETOGRAM



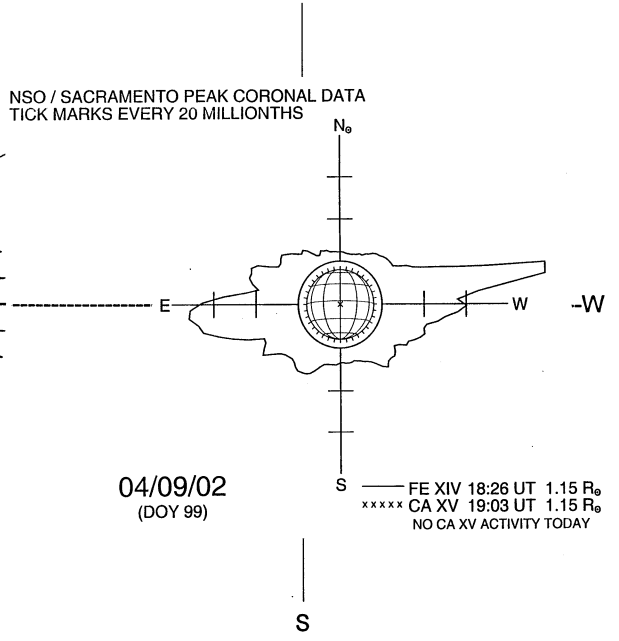
MEUDON H-ALPHA



HOLLOMAN SUNSPOT

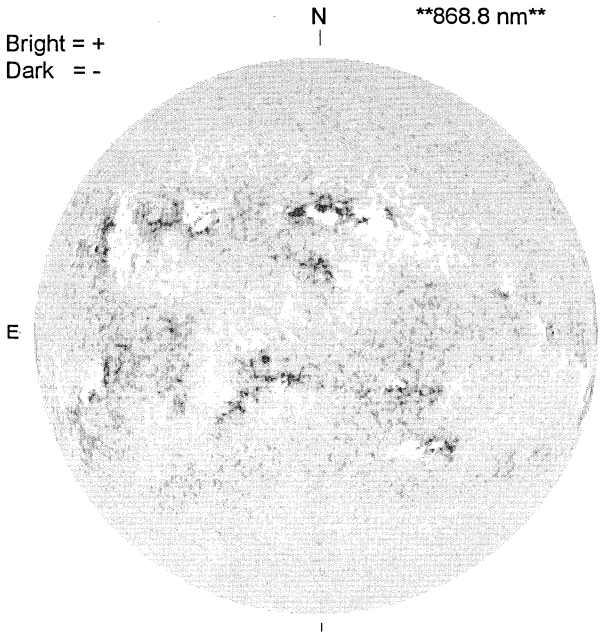


SACRAMENTO PEAK CORONA (1.15 Radii)



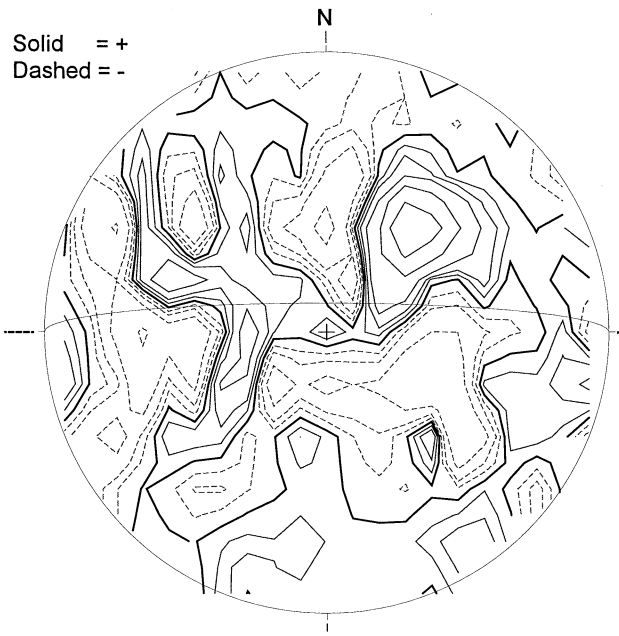
APRIL 10, 2002 (P= -26.26, Bo = -6.00 Lo = 215.40)

KITT PEAK MAGNETOGRAM



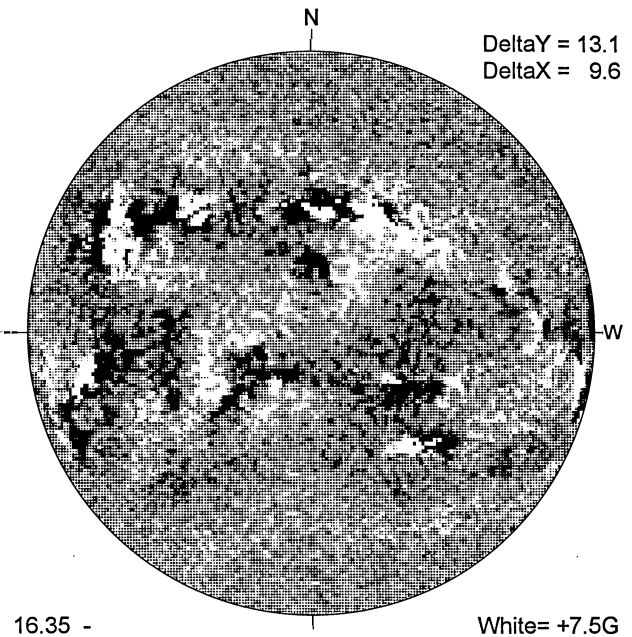
1536 UT

STANFORD MAGNETOGRAM



2115 UT

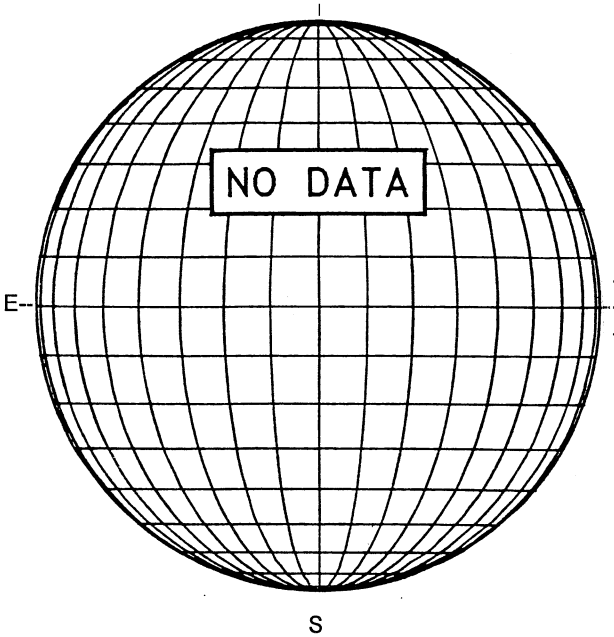
MT. WILSON MAGNETOGRAM



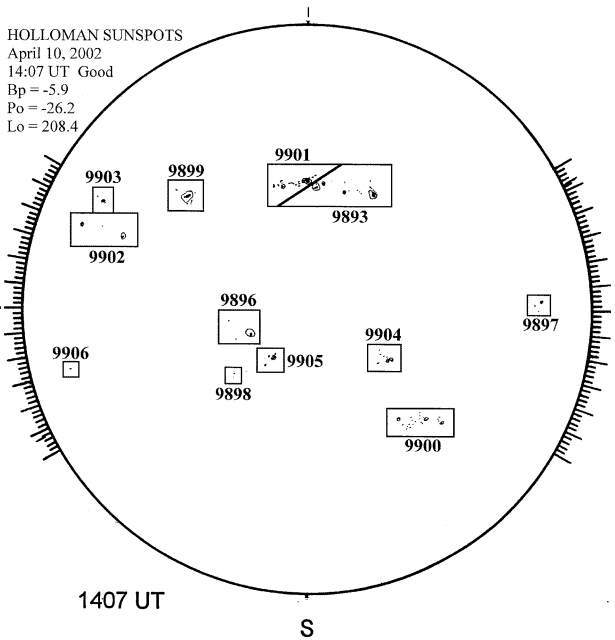
16.35 -
17.29 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

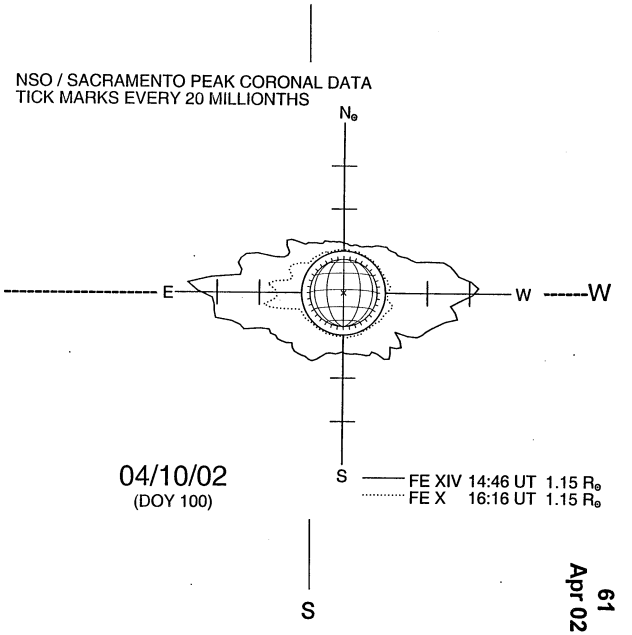


HOLLOMAN SUNSPOTS



1407 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

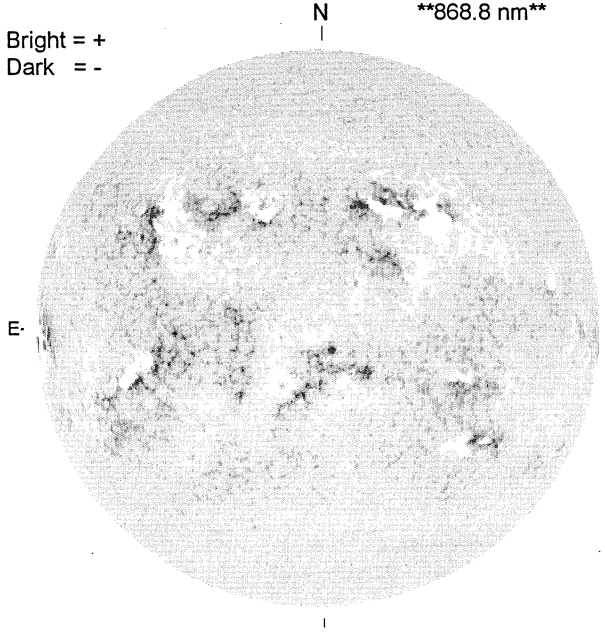


04/10/02
(DOY 100)

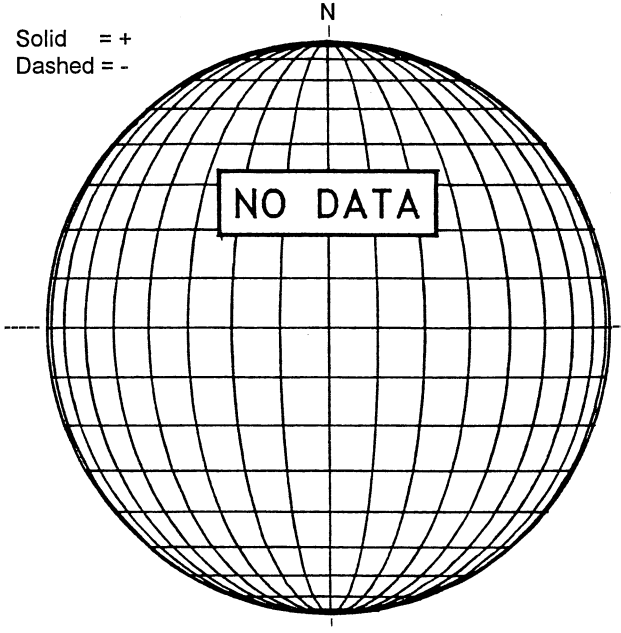
61
Apr 02

APRIL 11, 2002 (P= -26.23, Bo = -5.92, Lo = 202.20)

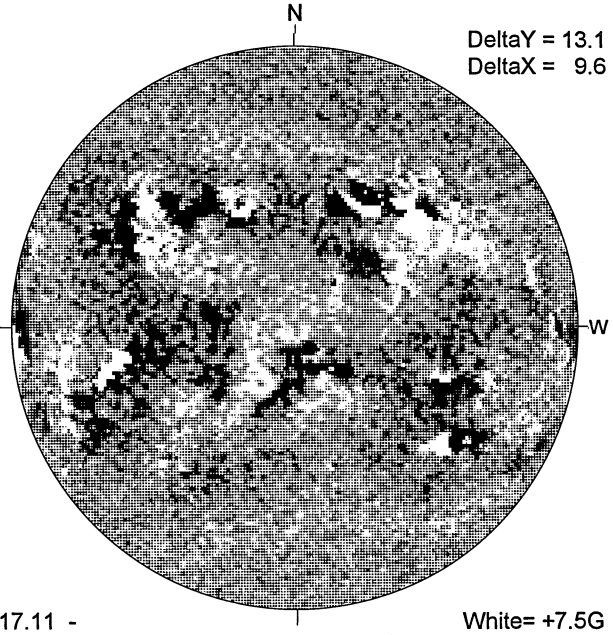
KITT PEAK MAGNETOGRAM



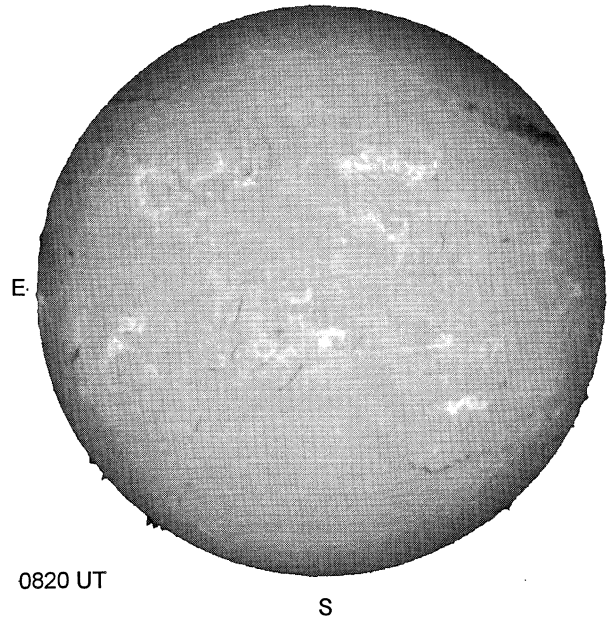
STANFORD MAGNETOGRAM



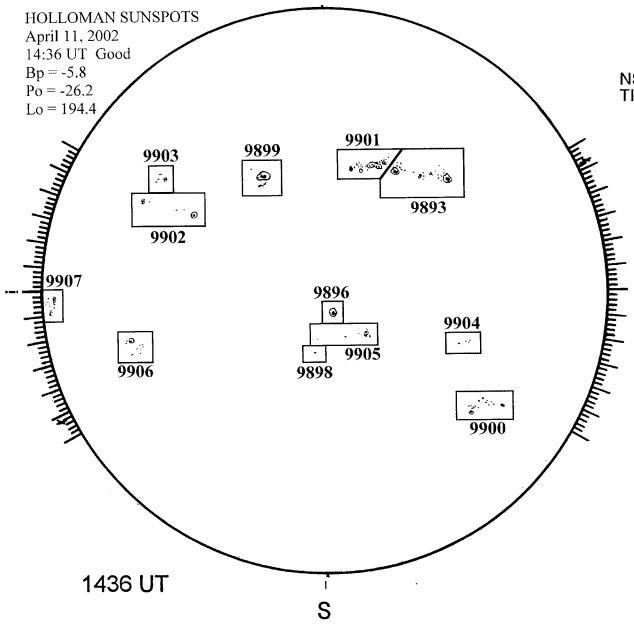
MT. WILSON MAGNETOGRAM



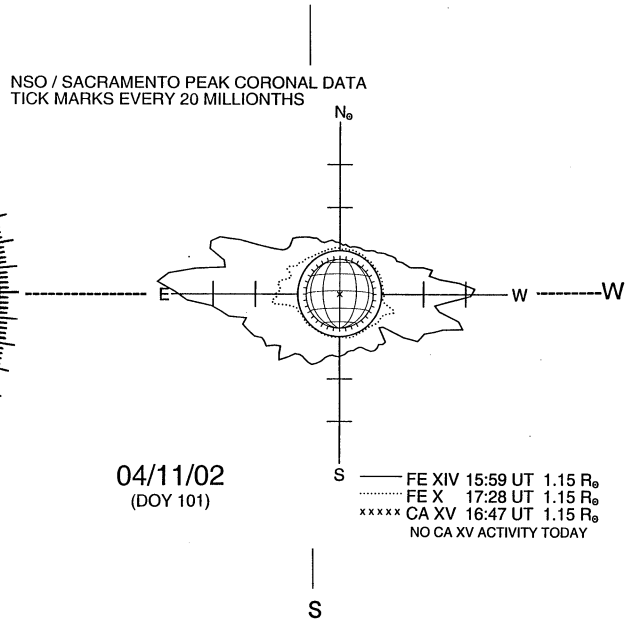
MEUDON H-ALPHA



HOLLOMAN SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



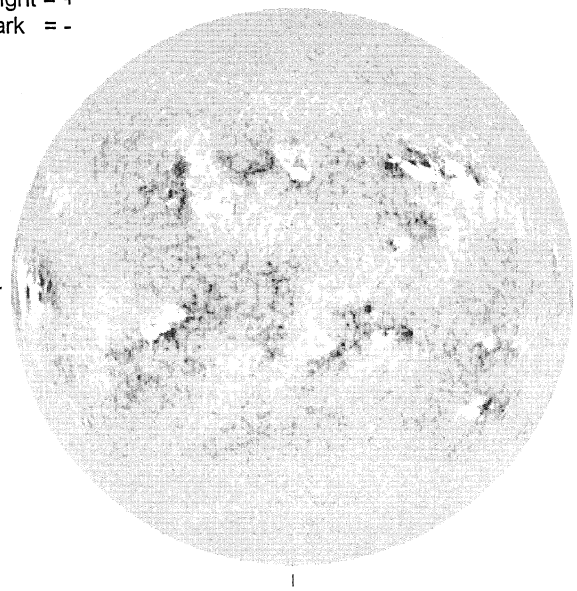
APRIL 12, 2002 (P= -26.20, Bo = -5.85 Lo = 189.00)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E--

1546 UT

STANFORD MAGNETOGRAM

N

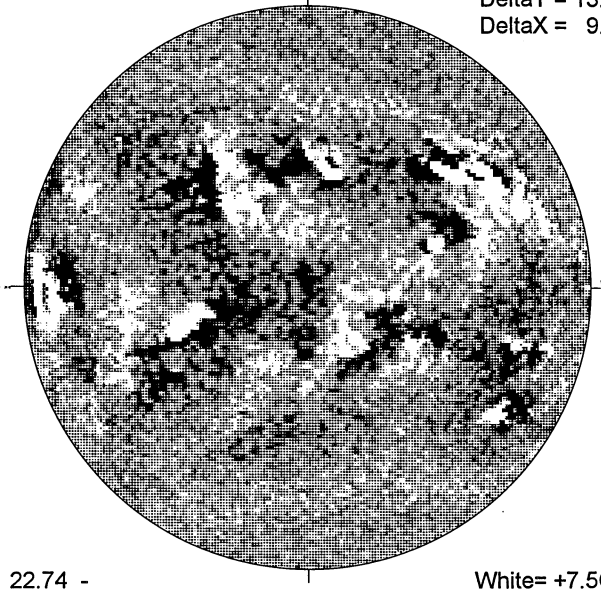
Solid = +
Dashed = -

1753 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

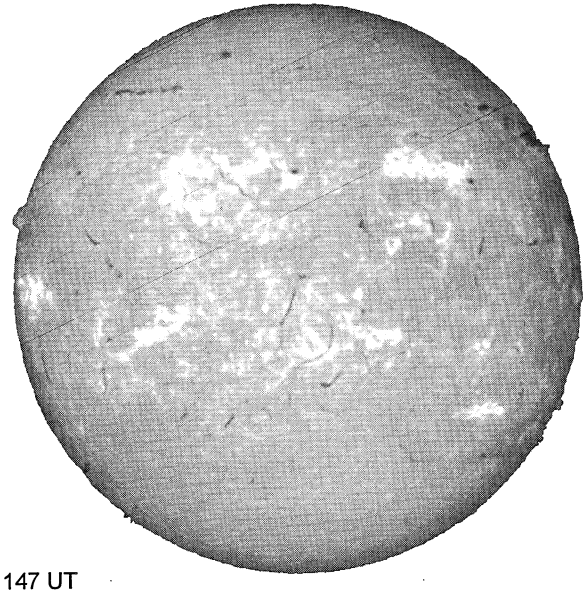


W

22.74 -
23.68 UT

White= +7.5G
Black = -7.5G

---- MEUDON H-ALPHA

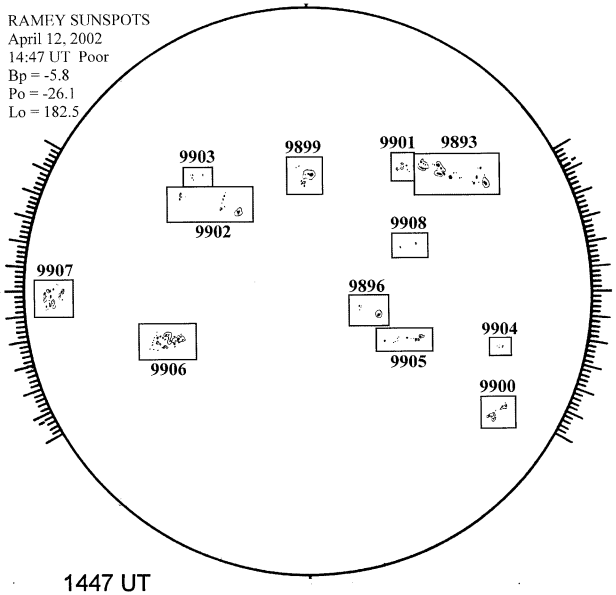


E

1147 UT

S

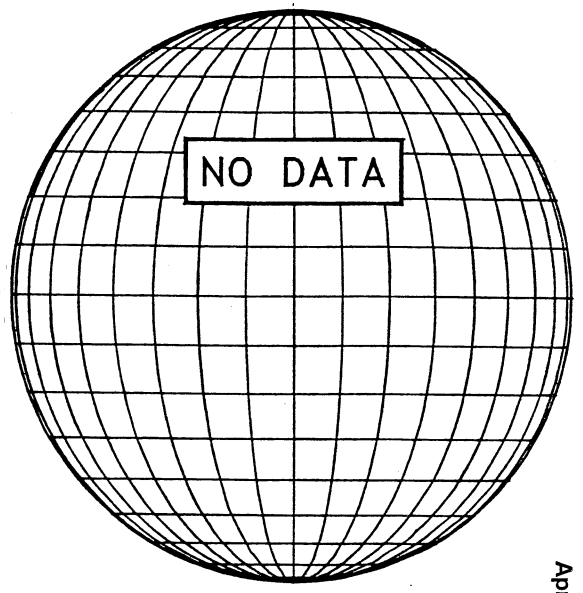
RAMEY SUNSPOTS



1447 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

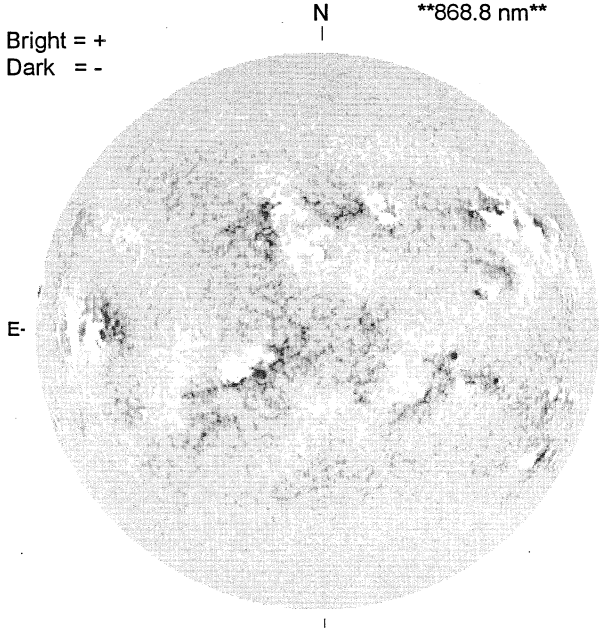


S

63
Apr 02

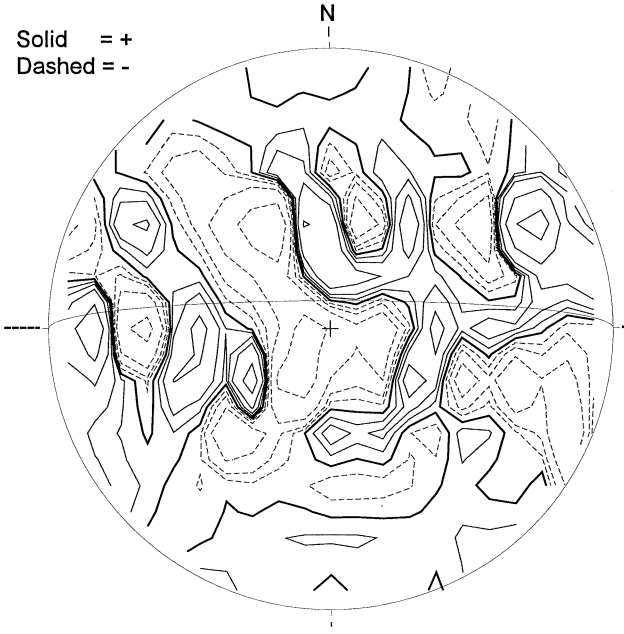
APRIL 13, 2002 (P= -26.16, Bo = -5.78, Lo = 175.80)

KITT PEAK MAGNETOGRAM



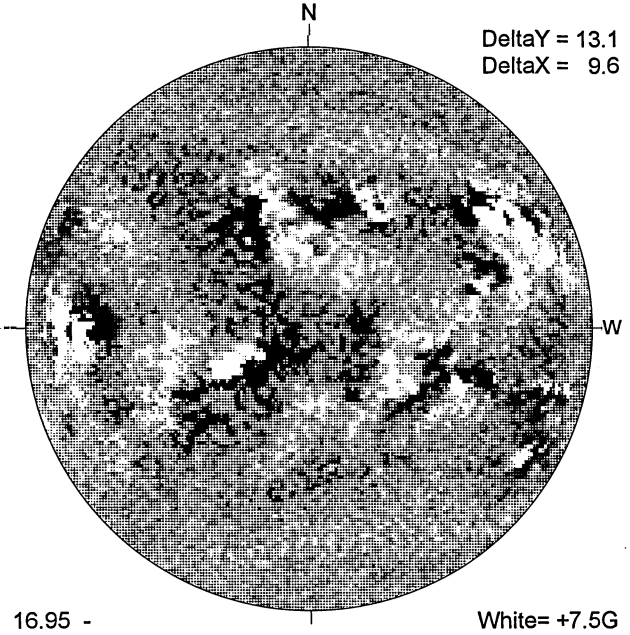
1643 UT

STANFORD MAGNETOGRAM



1903 UT

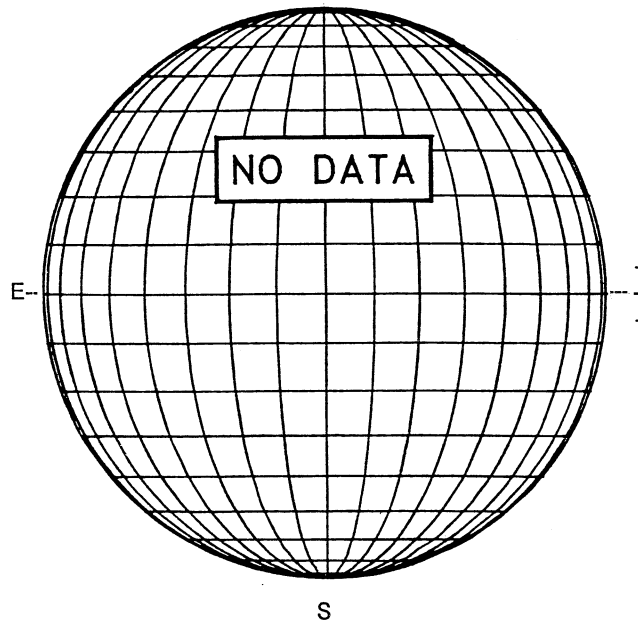
MT. WILSON MAGNETOGRAM



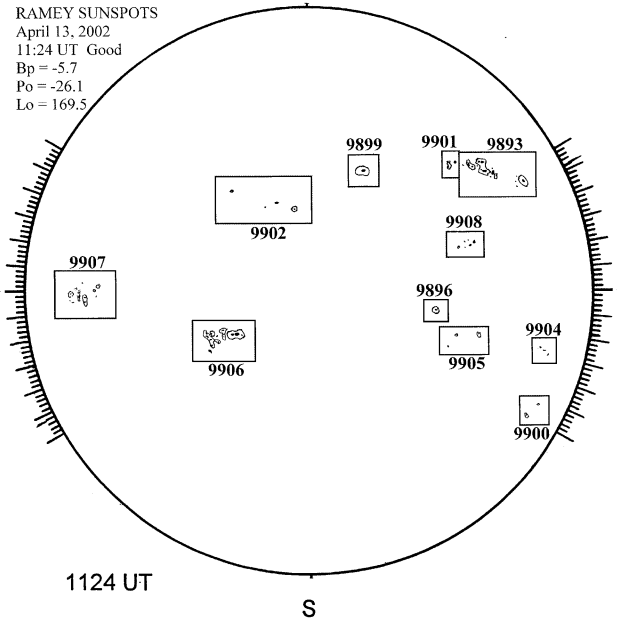
16.95 -
17.89 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

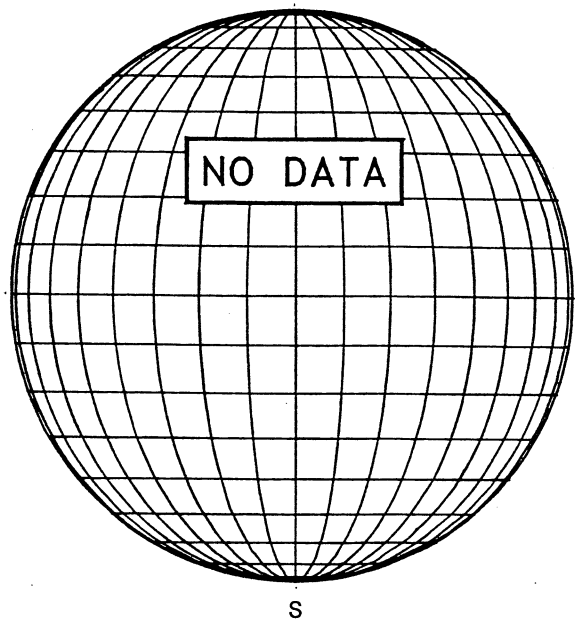


RAMEY SUNSPOT



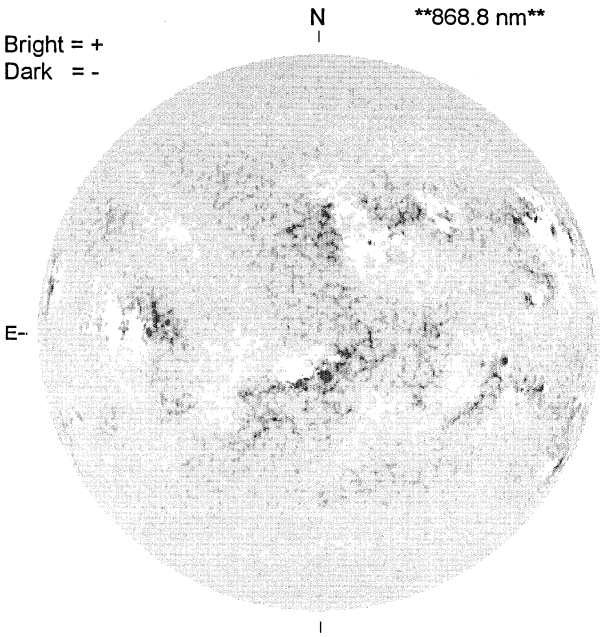
1124 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



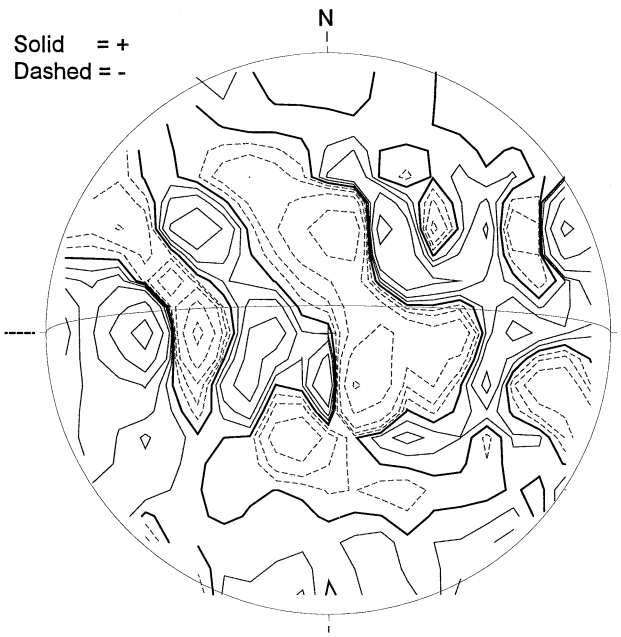
APRIL 14, 2002 (P= -26.11, Bo = -5.70, Lo = 162.60)

KITT PEAK MAGNETOGRAM



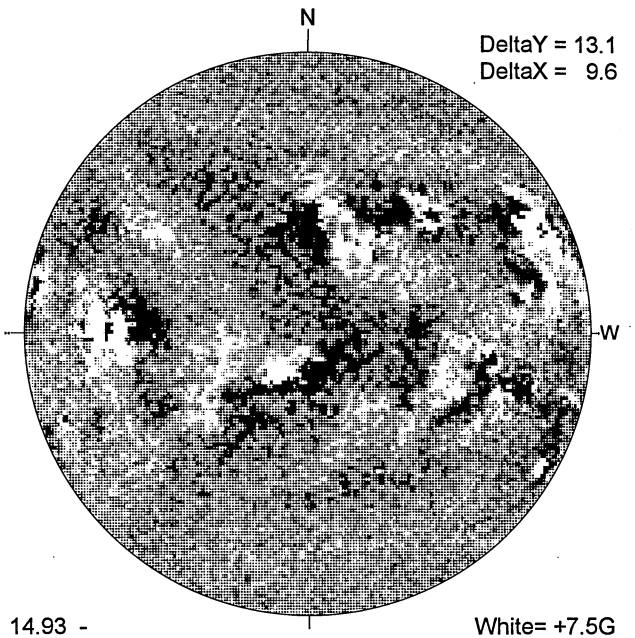
1541 UT

STANFORD MAGNETOGRAM



2222 UT

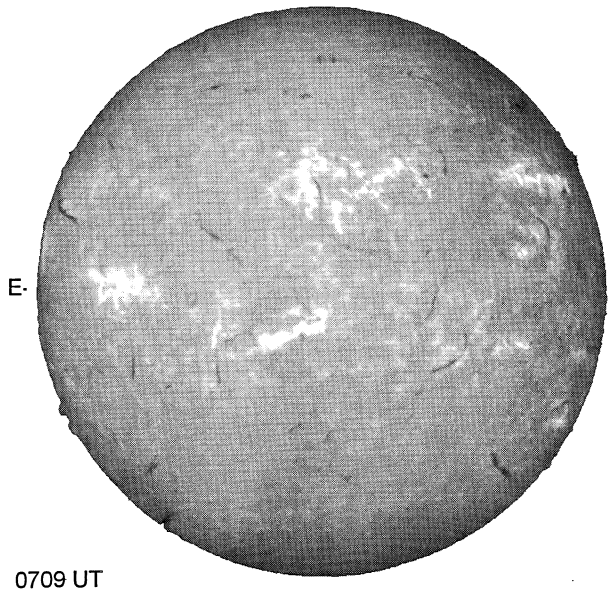
MT. WILSON MAGNETOGRAM



14.93 -
15.87 UT

White= +7.5G
Black = -7.5G

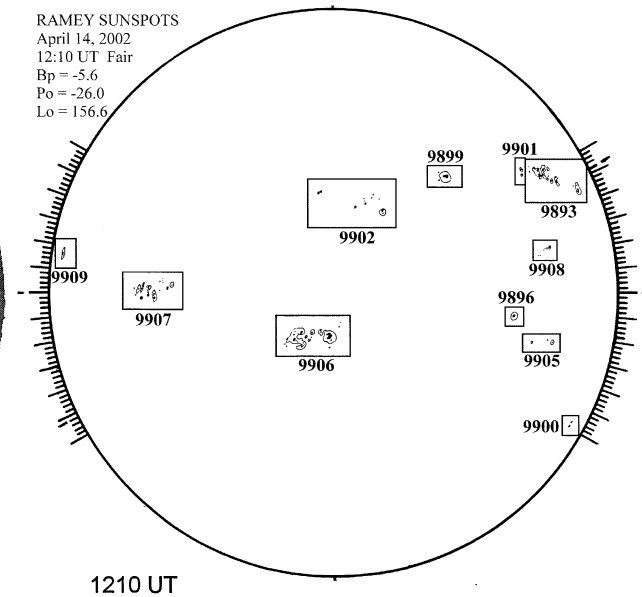
MEUDON H-ALPHA



0709 UT

S

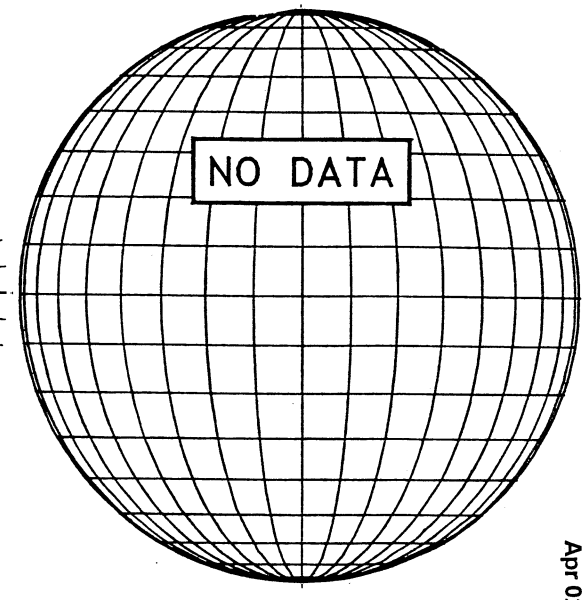
RAMEY SUNSPOT



1210 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)



S

65
Apr 02

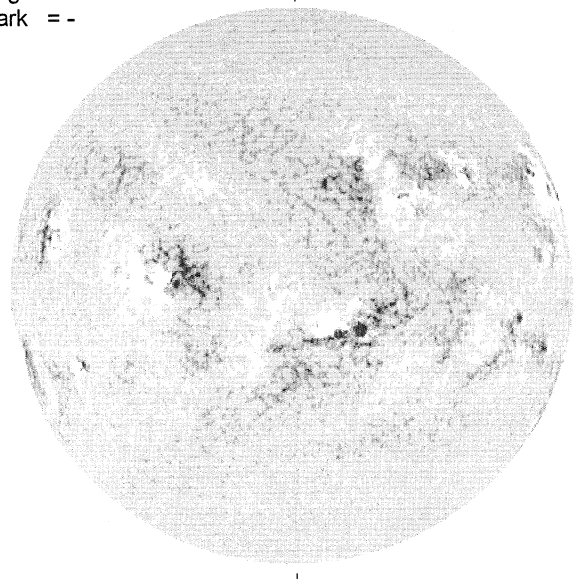
APRIL 15, 2002 (P= -26.06, Bo = -5.62, Lo = 149.40)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



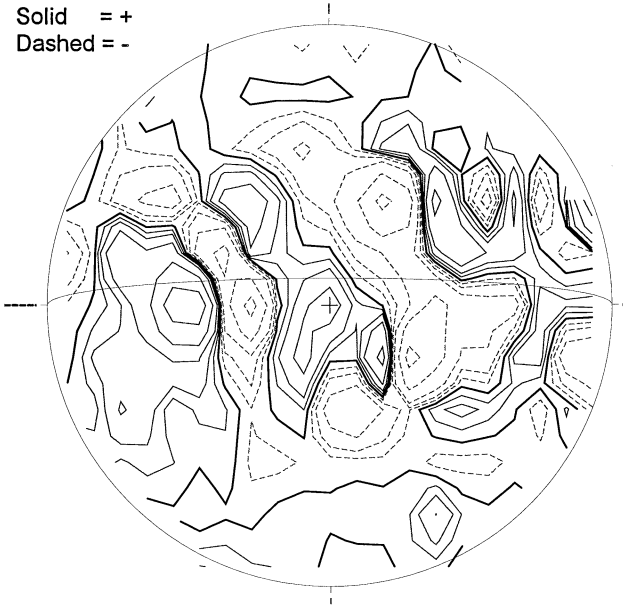
E-

1529 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

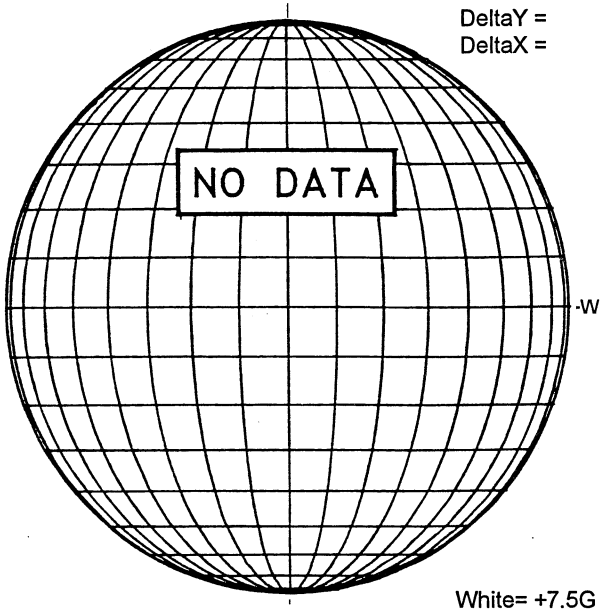


1921 UT

MT. WILSON MAGNETOGRAM

N

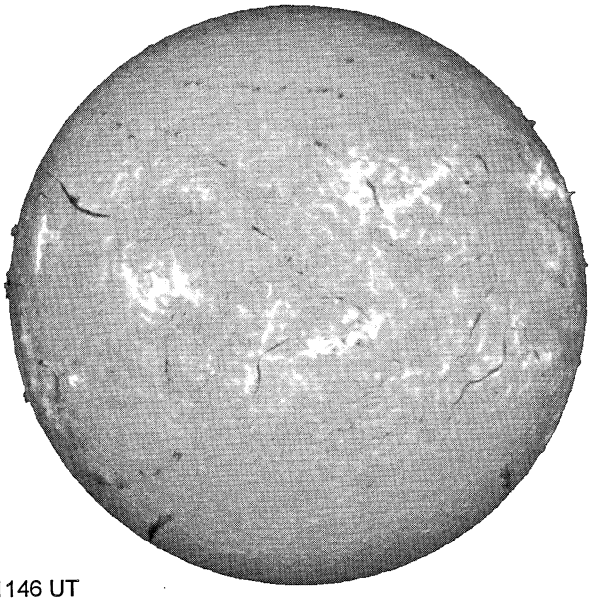
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

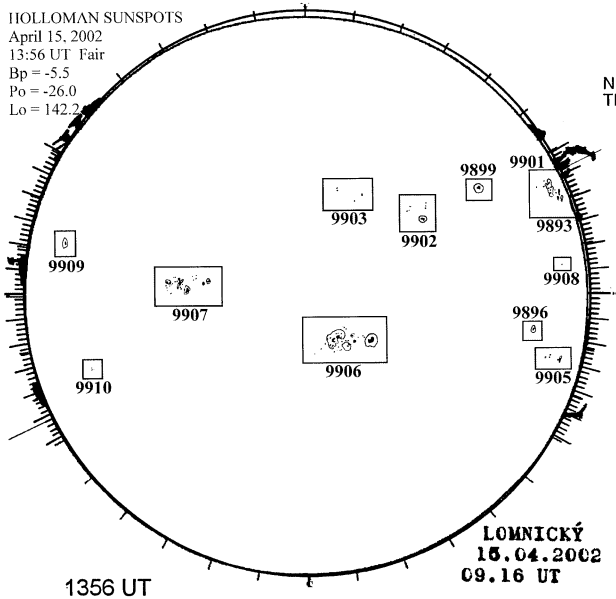


E

1146 UT

S

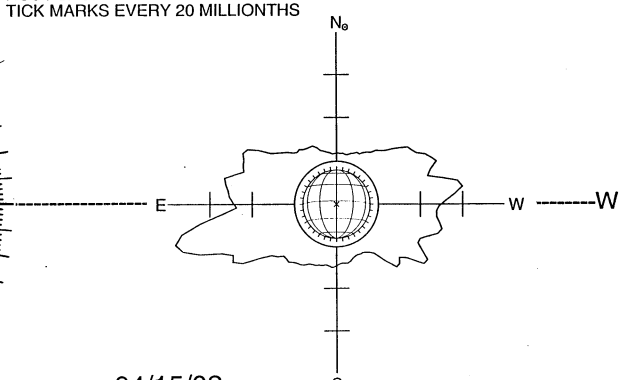
HOLLOMAN SUNSPOT



1356 UT
0916 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



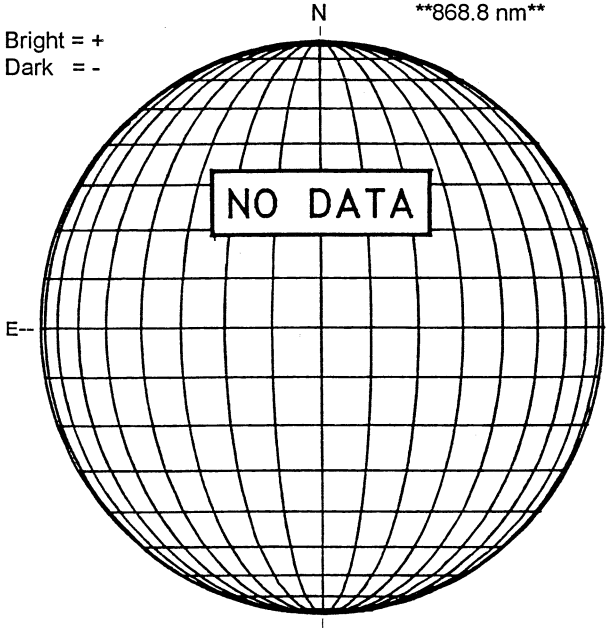
04/15/02
(DOY 105)

FE XIV 17:26 UT 1.15 R⊙

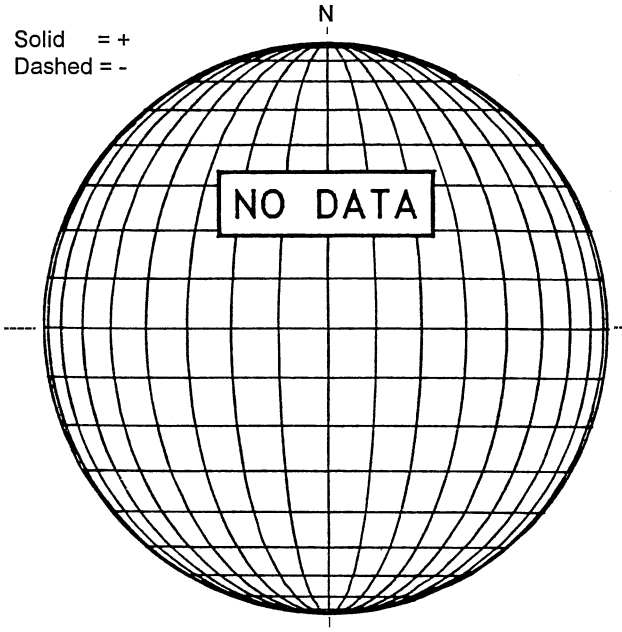
S

APRIL 16, 2002 (P= -26.00, Bo = -5.55, Lo = 136.19)

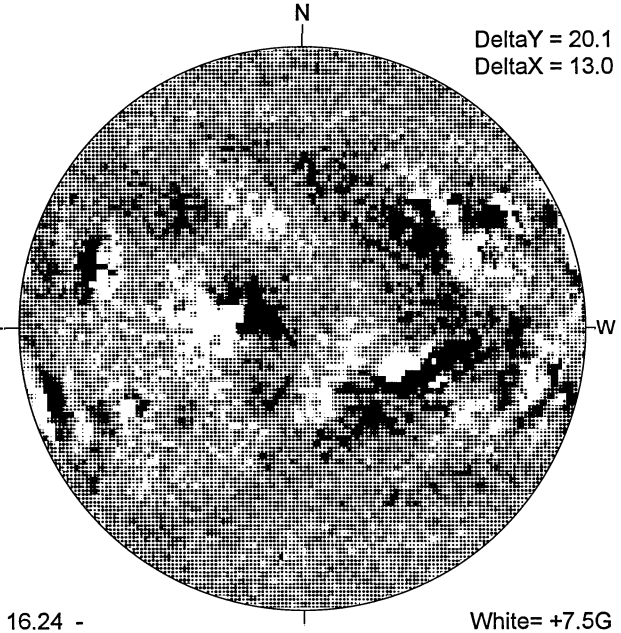
KITT PEAK MAGNETOGRAM



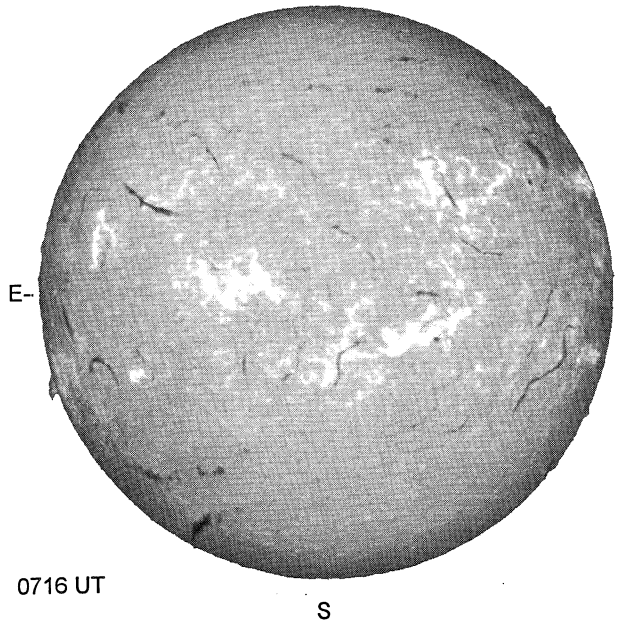
STANFORD MAGNETOGRAM



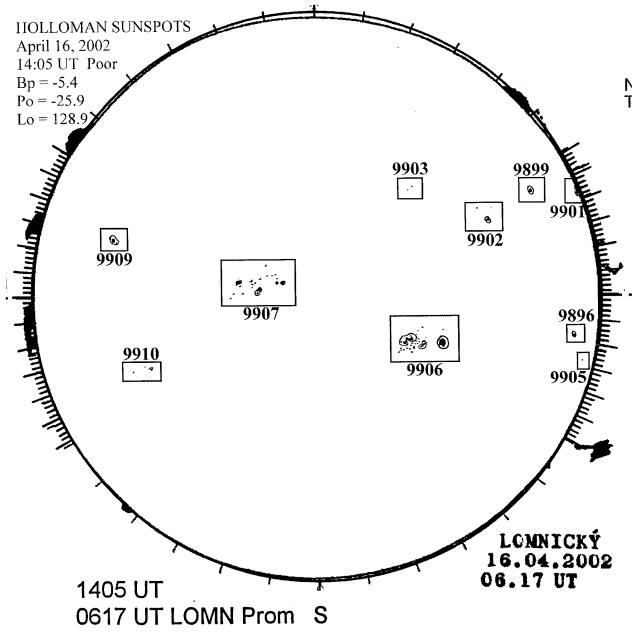
MT. WILSON MAGNETOGRAM



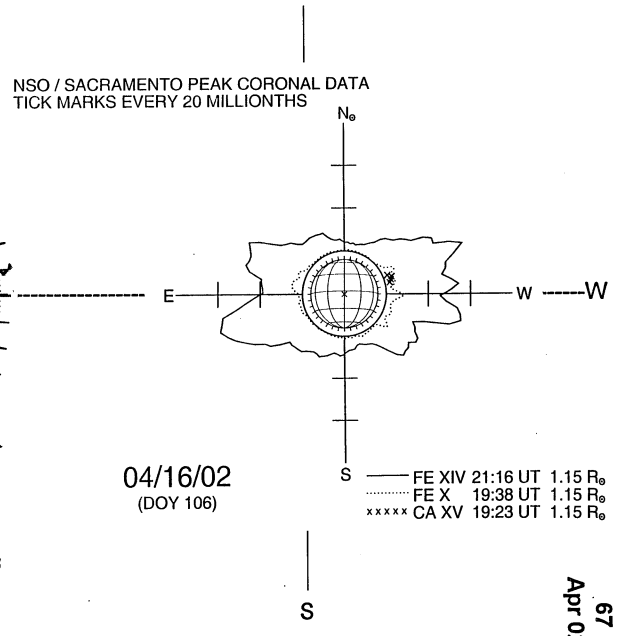
MEUDON H-ALPHA



HOLLOMAN SUNSPOT

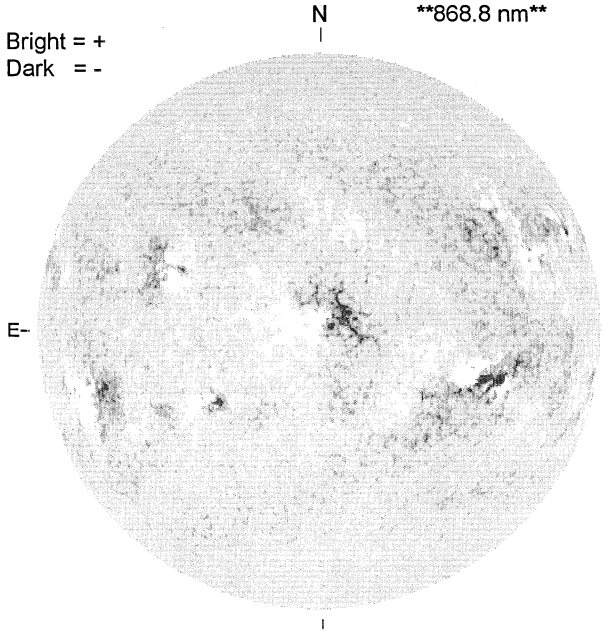


SACRAMENTO PEAK CORONA (1.15 Radii)----



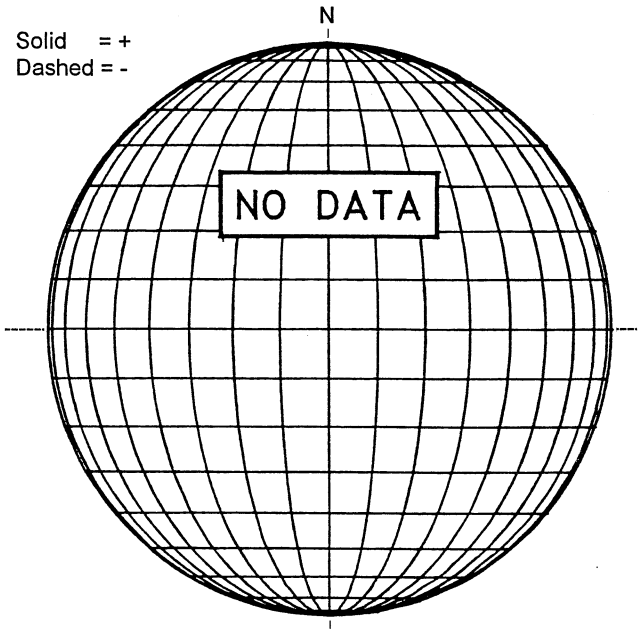
APRIL 17, 2002 (P= -25.93, Bo = -5.46, Lo = 122.99)

KITT PEAK MAGNETOGRAM

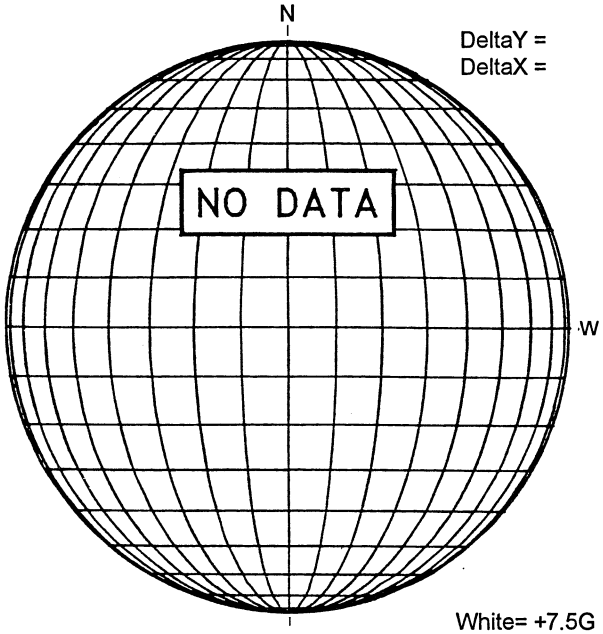


1552 UT

STANFORD MAGNETOGRAM

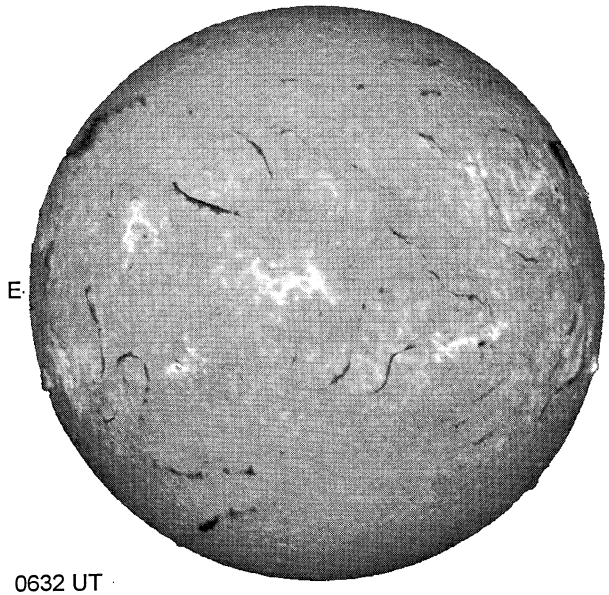


MT. WILSON MAGNETOGRAM



White= +7.5G
Black = -7.5G

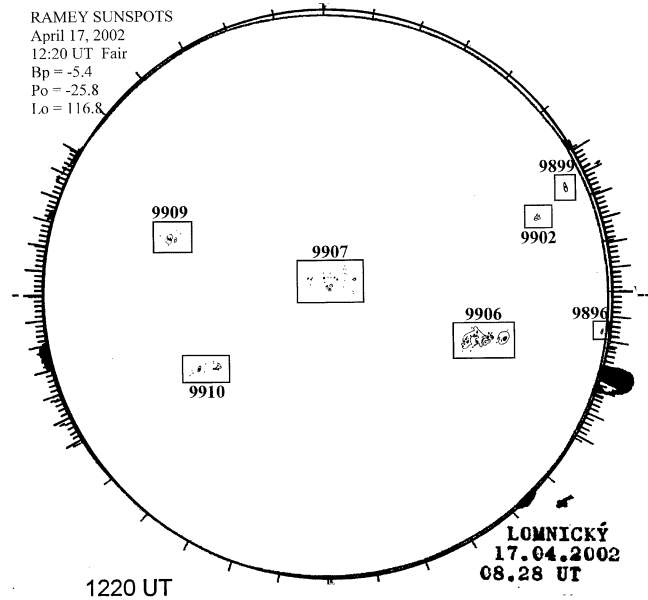
MEUDON H-ALPHA



0632 UT

S

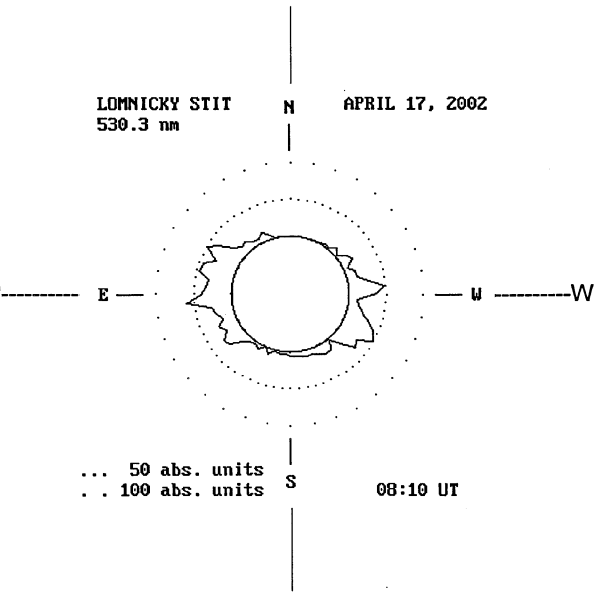
RAMEY SUNSPOT



1220 UT

0828 UT LOMN Prom S

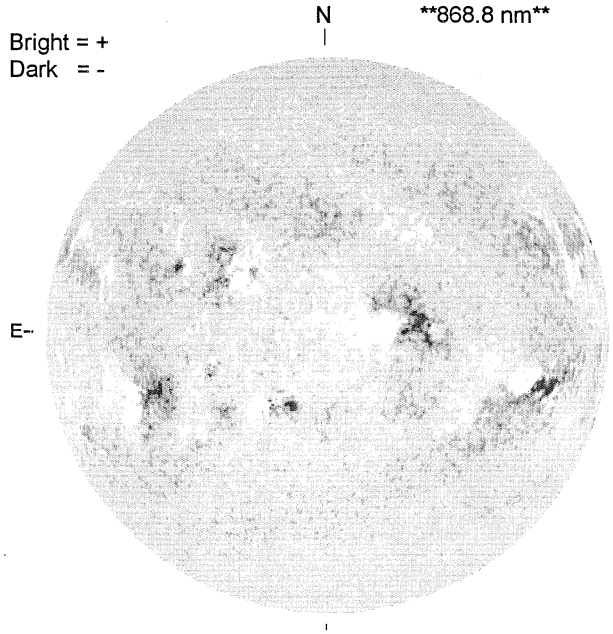
LOMNICKY PEAK CORONA (1.04 Radii)



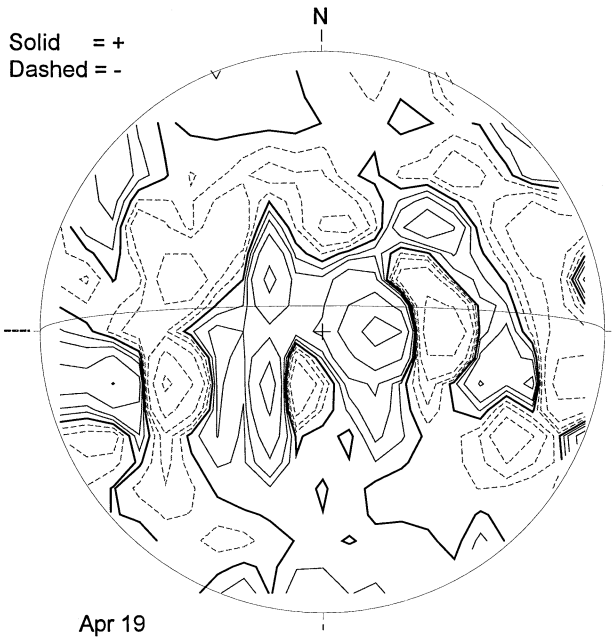
S

APRIL 18, 2002 (P= -25.85, Bo = -5.38, Lo = 109.78)

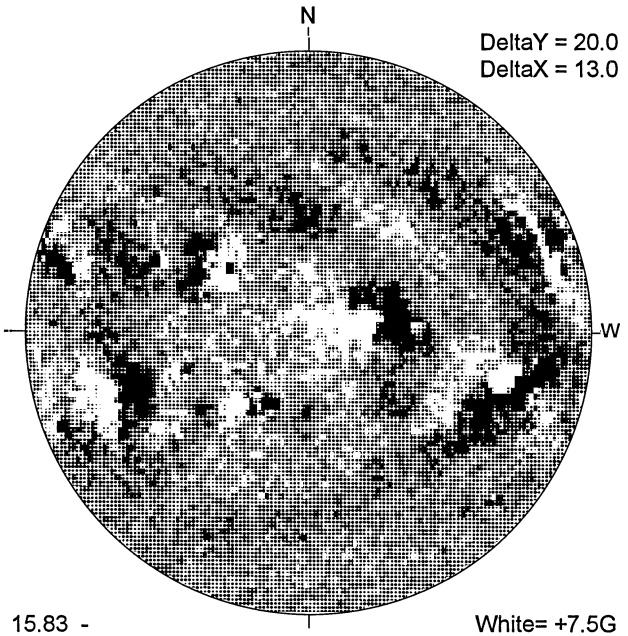
KITT PEAK MAGNETOGRAM



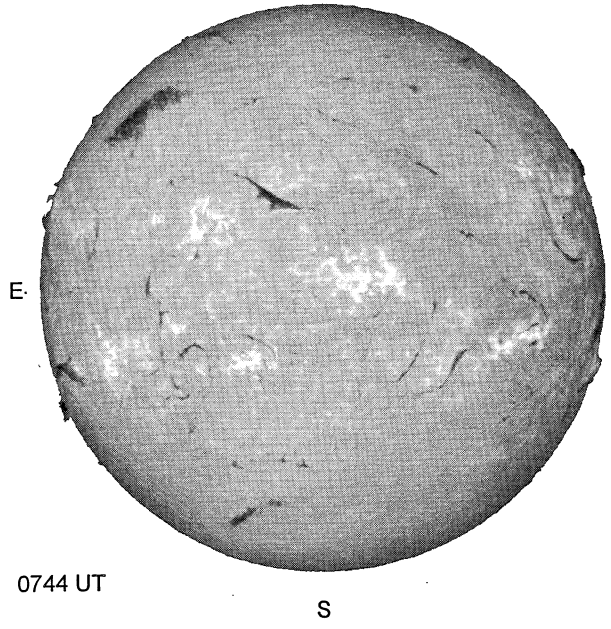
STANFORD MAGNETOGRAM



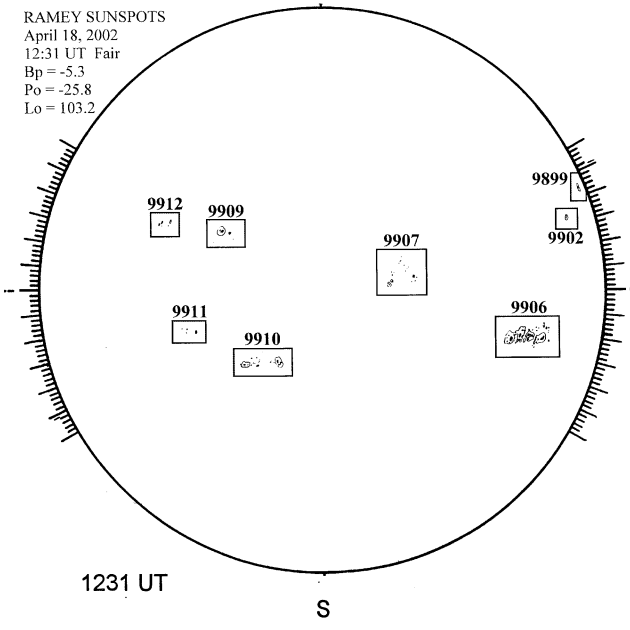
MT. WILSON MAGNETOGRAM



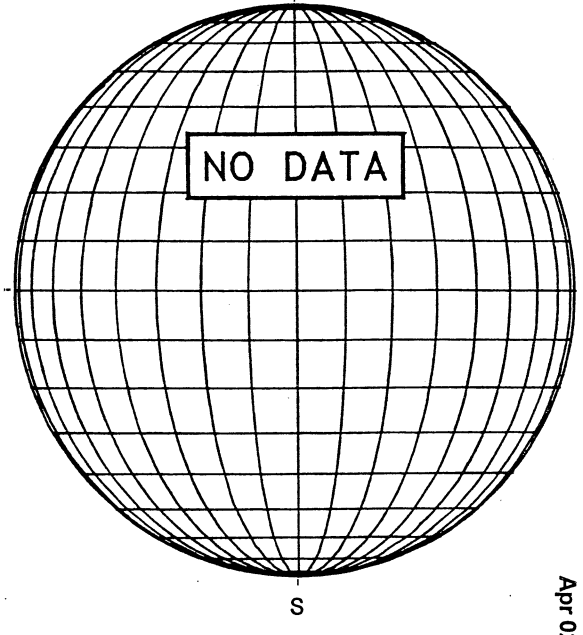
MEUDON H-ALPHA



RAMEY SUNSPOT



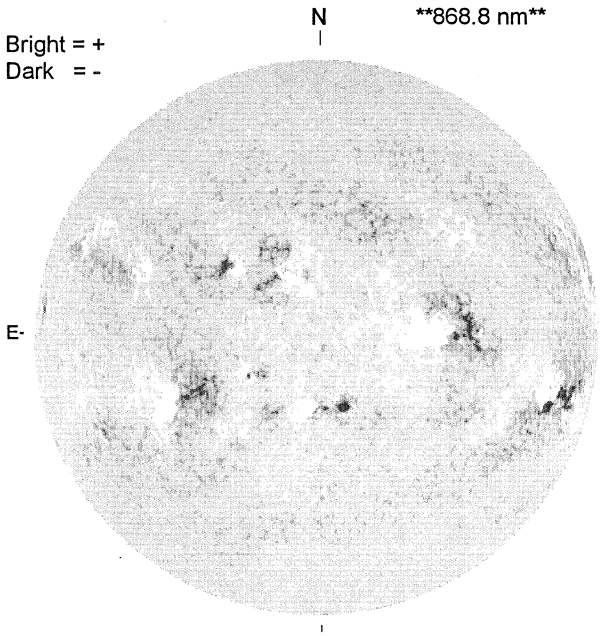
SACRAMENTO PEAK CORONA (1.15 Radii)----



69
Apr 02

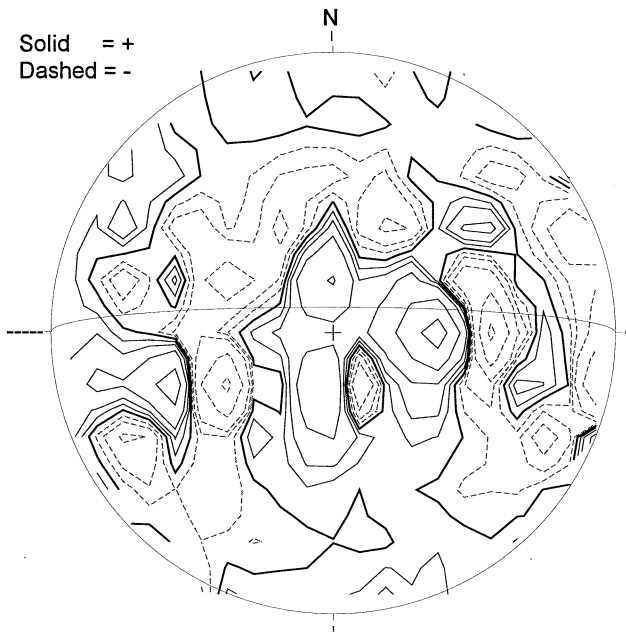
APRIL 19, 2002 (P= -25.77, Bo = -5.30, Lo = 96.58)

KITT PEAK MAGNETOGRAM



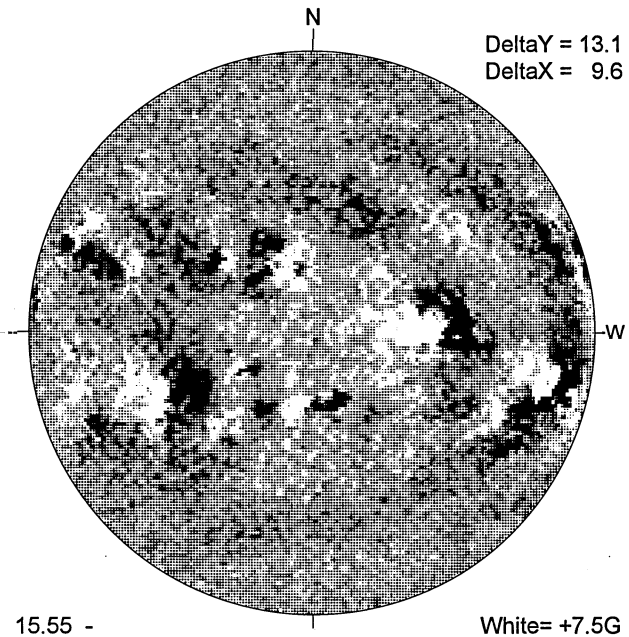
1549 UT

STANFORD MAGNETOGRAM



1827 UT

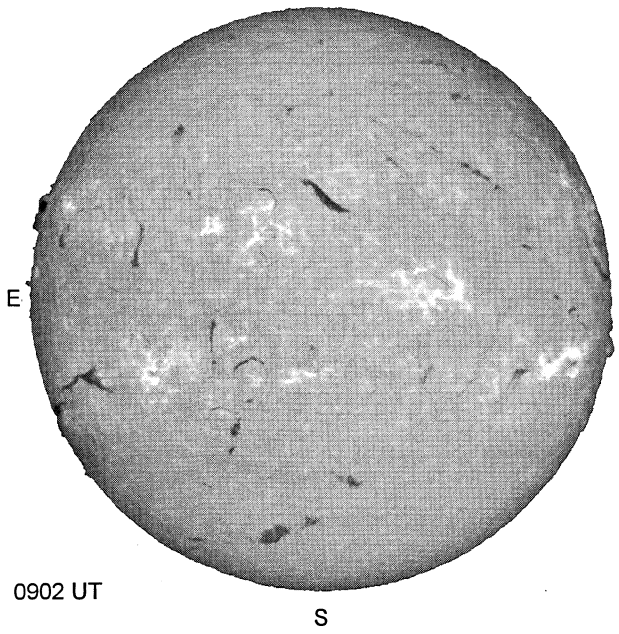
MT. WILSON MAGNETOGRAM



15.55 -
16.49 UT

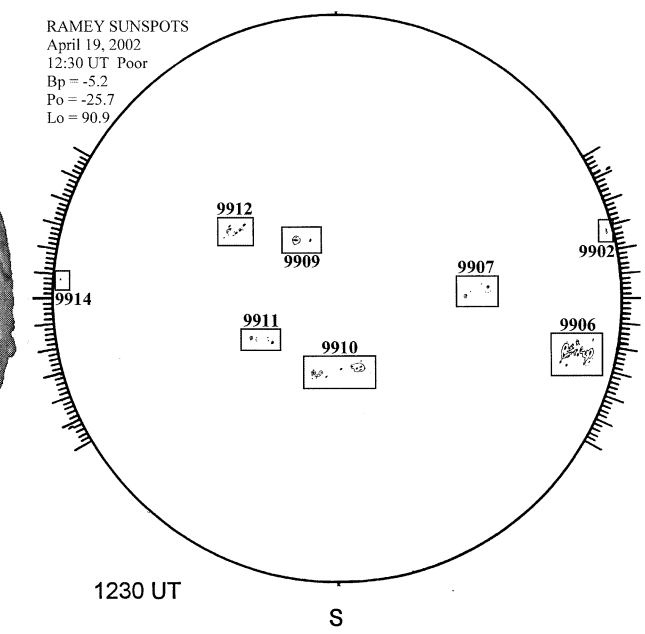
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



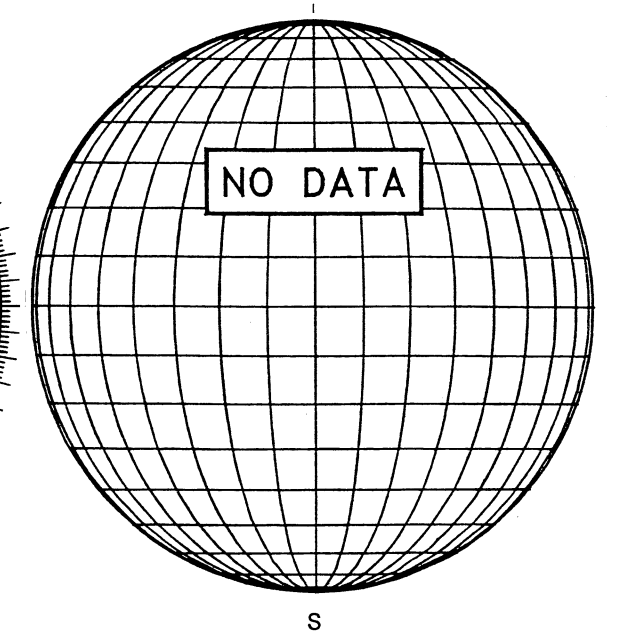
0902 UT

RAMEY SUNSPOT



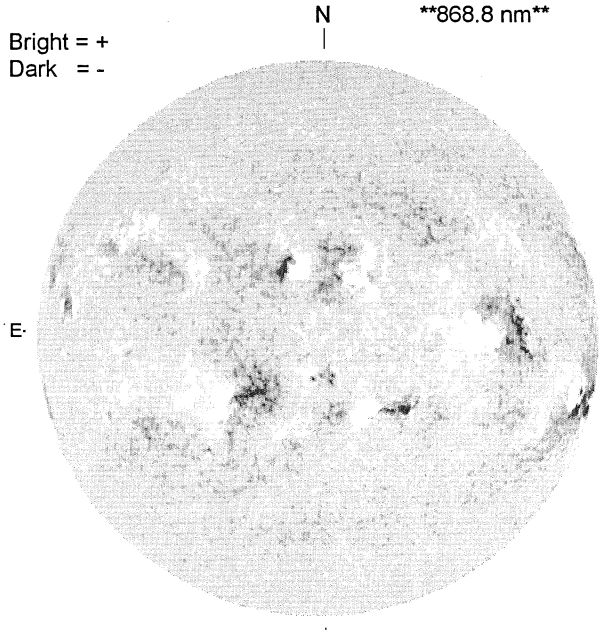
1230 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



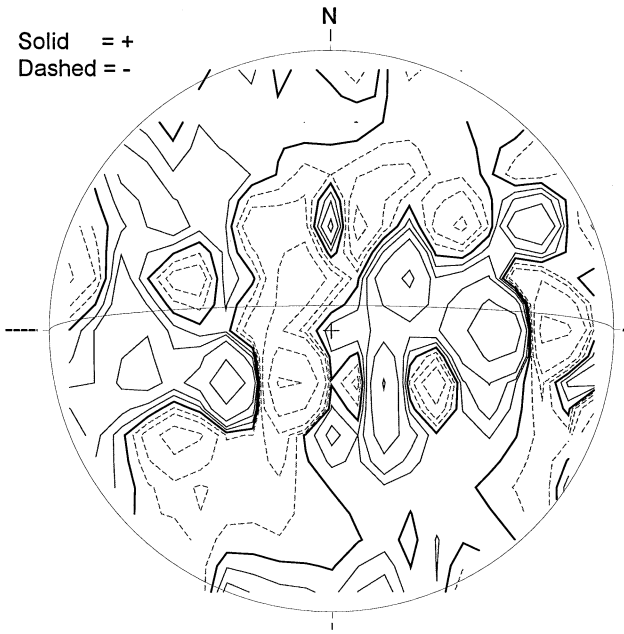
APRIL 20, 2002 (P= -25.68, Bo = -5.21, Lo = 83.37)

KITT PEAK MAGNETOGRAM



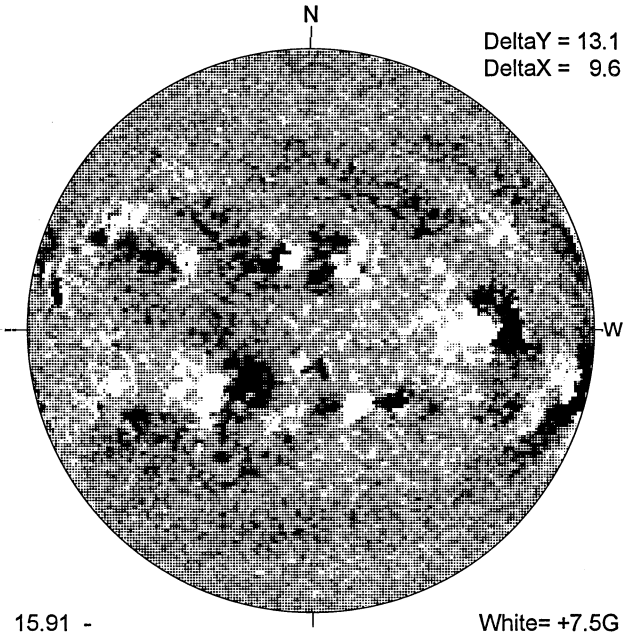
1532 UT

STANFORD MAGNETOGRAM



2242 UT

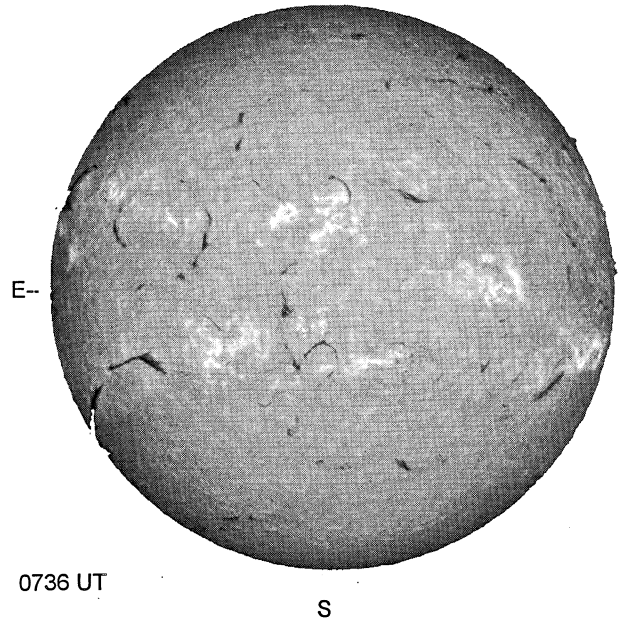
MT. WILSON MAGNETOGRAM



15.91 -
16.85 UT

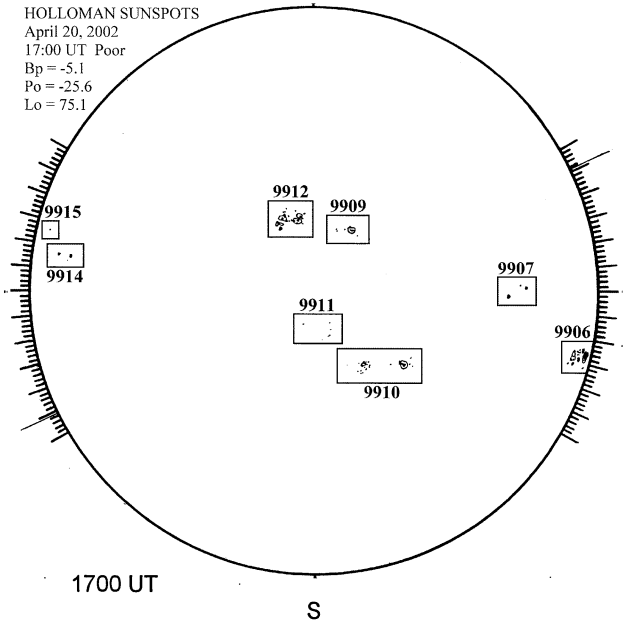
White= +7.5G
Black = -7.5G

---- MEUDON H-ALPHA



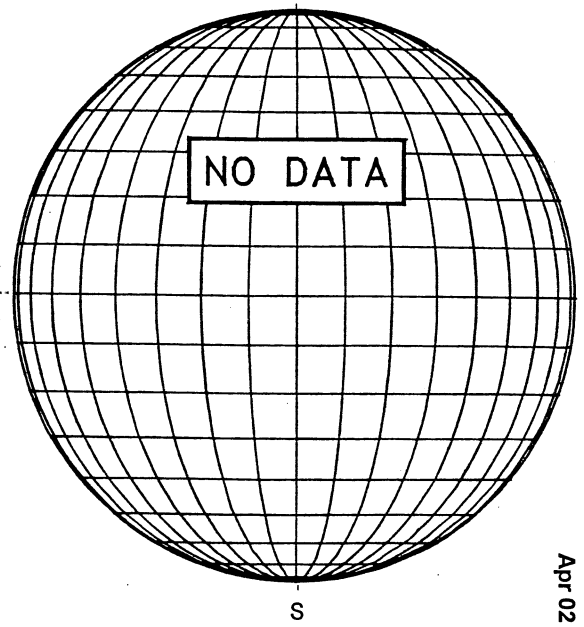
0736 UT

HOLLOMAN SUNSPOT



1700 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



71
Apr 02

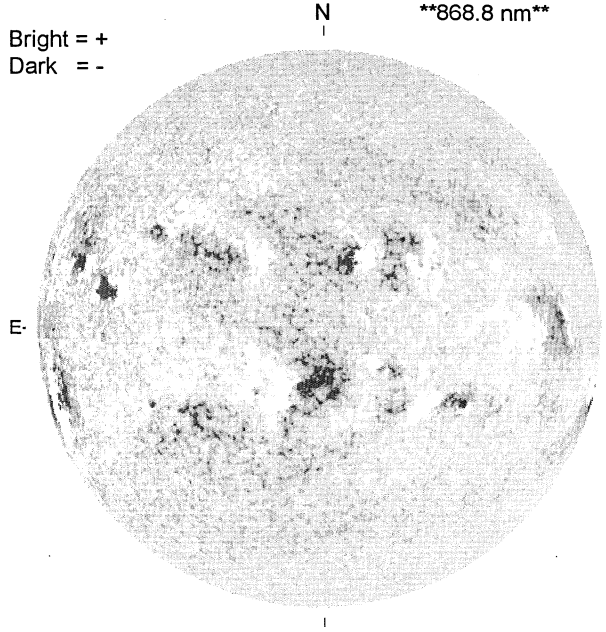
APRIL 21, 2002 (P= -25.58, Bo = -5.13, Lo = 70.16)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

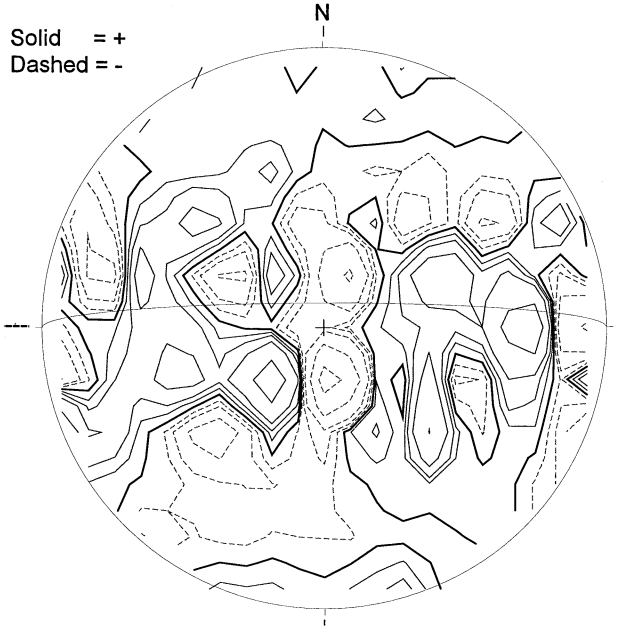


1551 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

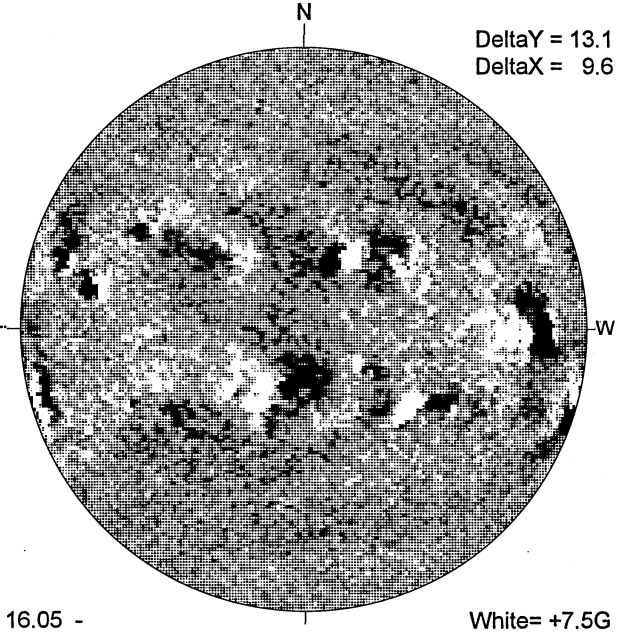


1902 UT

MT. WILSON MAGNETOGRAM

N

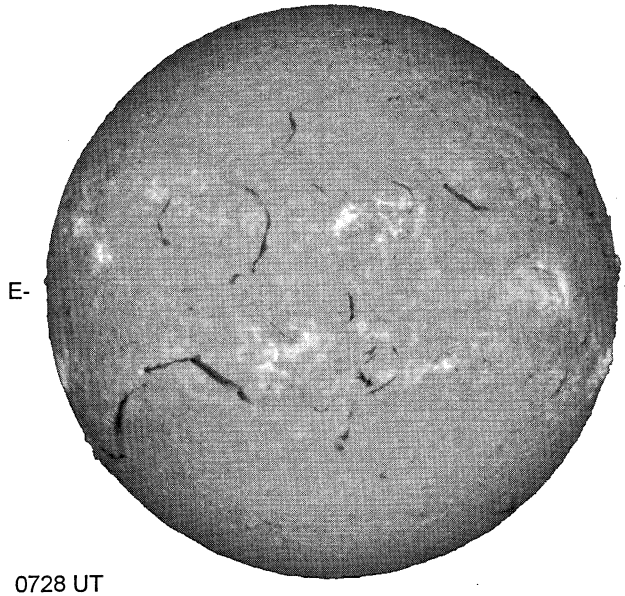
DeltaY = 13.1
DeltaX = 9.6



16.05 -
16.99 UT

White= +7.5G
Black = -7.5G

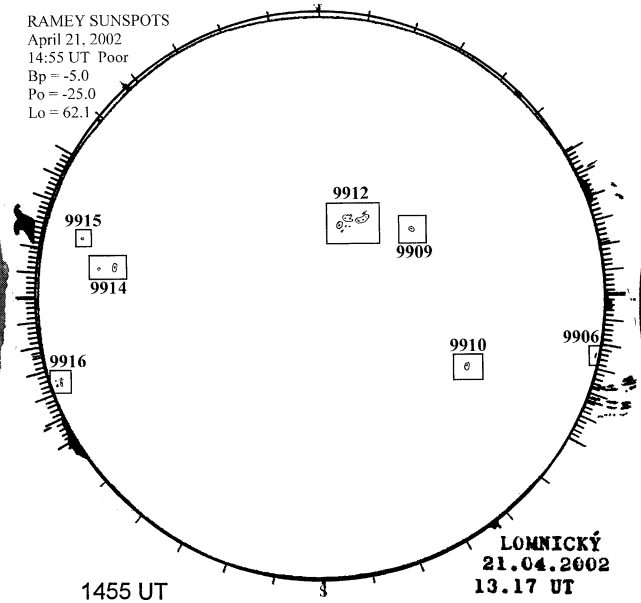
MEUDON H-ALPHA



0728 UT

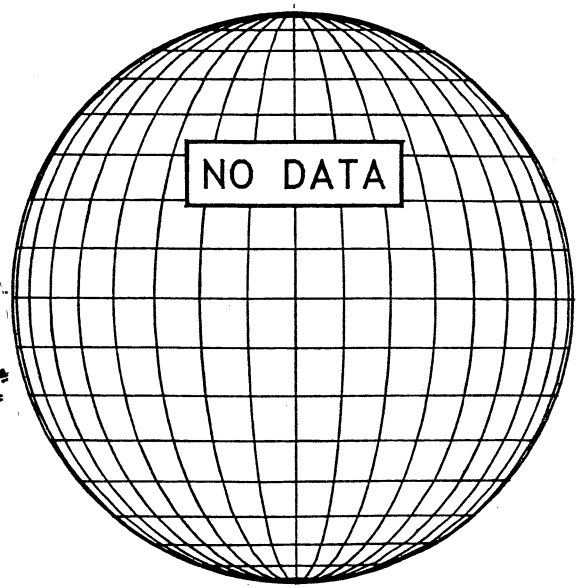
S

RAMEY SUNSPOT



1455 UT
1317 UT LOMN Prom S

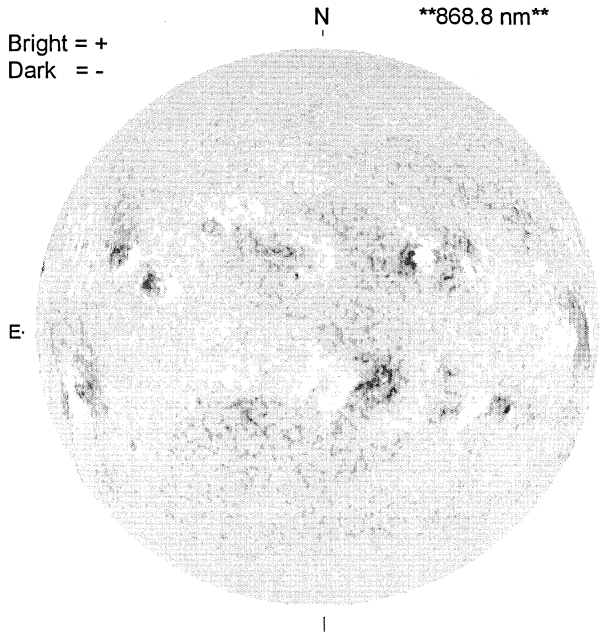
SACRAMENTO PEAK CORONA (1.15 Radii)----



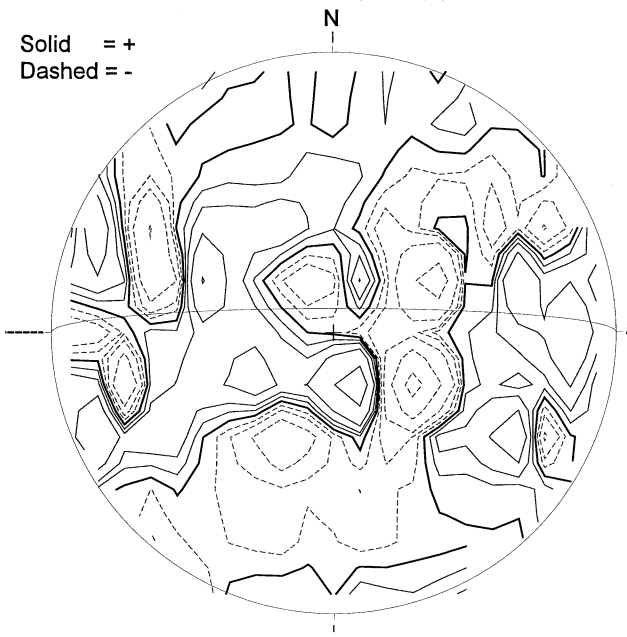
S

APRIL 22, 2002 (P= -25.47, Bo = -5.04, Lo = 56.95)

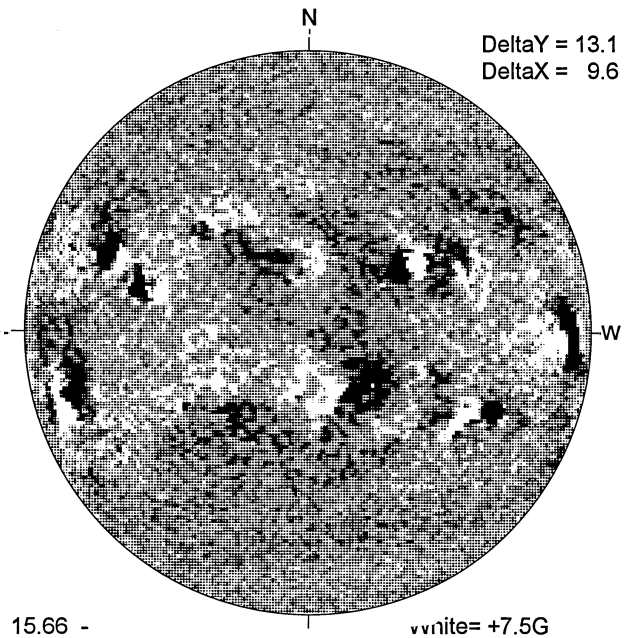
KITT PEAK MAGNETOGRAM



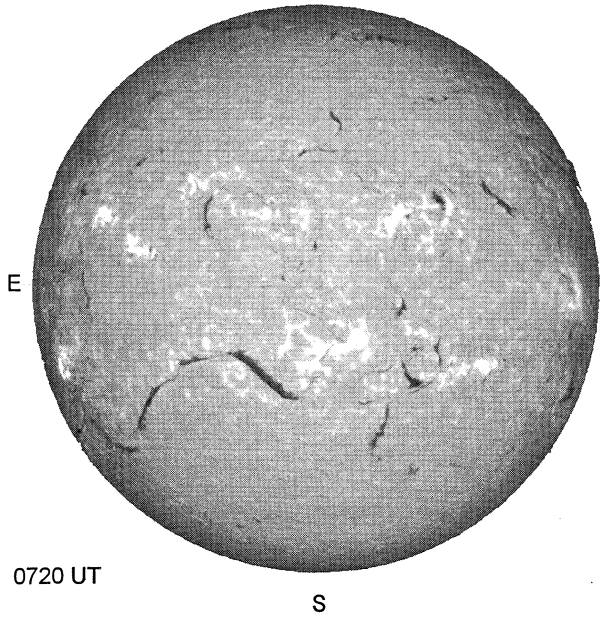
STANFORD MAGNETOGRAM



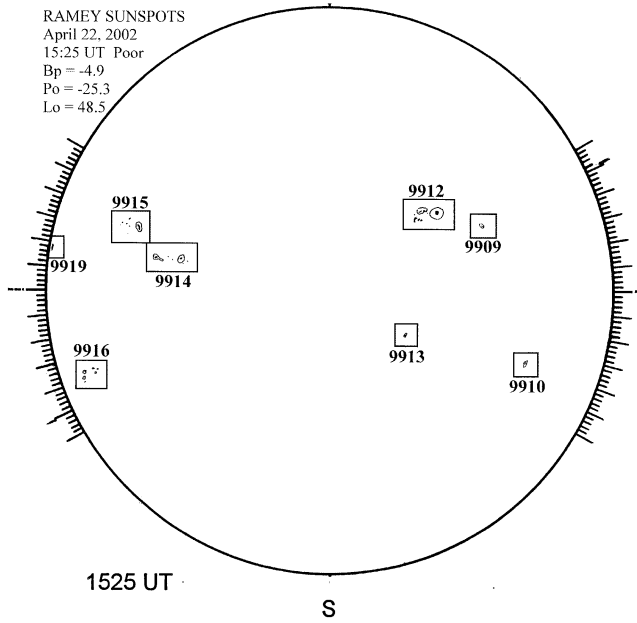
MT. WILSON MAGNETOGRAM



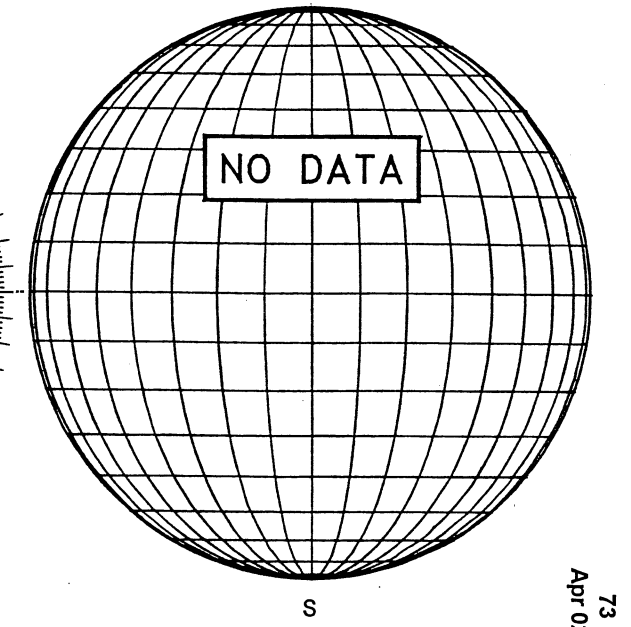
MEUDON H-ALPHA



RAMEY SUNSPOT



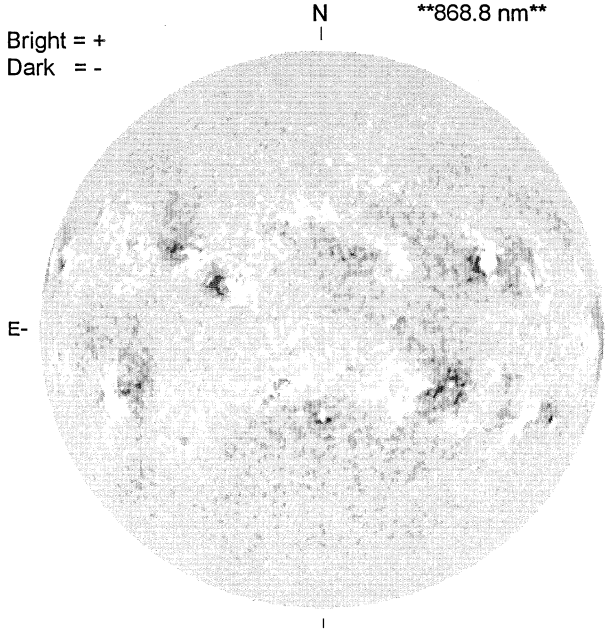
SACRAMENTO PEAK CORONA (1.15 Radii)



73
Apr 02

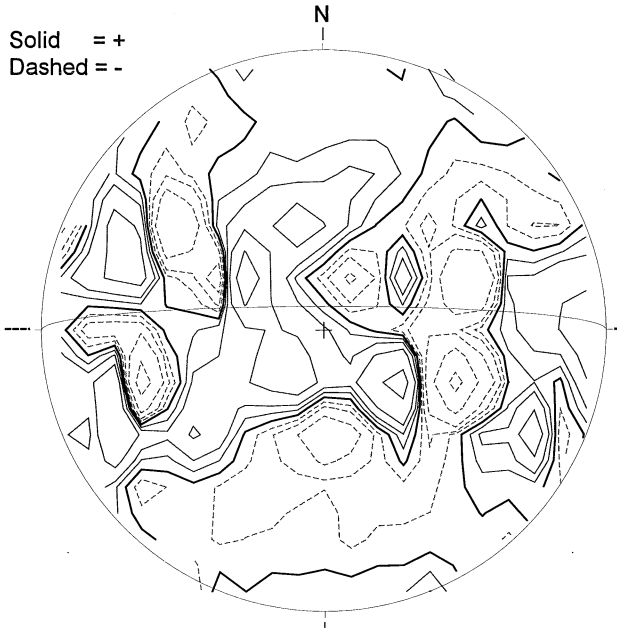
APRIL 23, 2002 (P= -25.36, Bo = -4.95, Lo = 43.74)

KITT PEAK MAGNETOGRAM



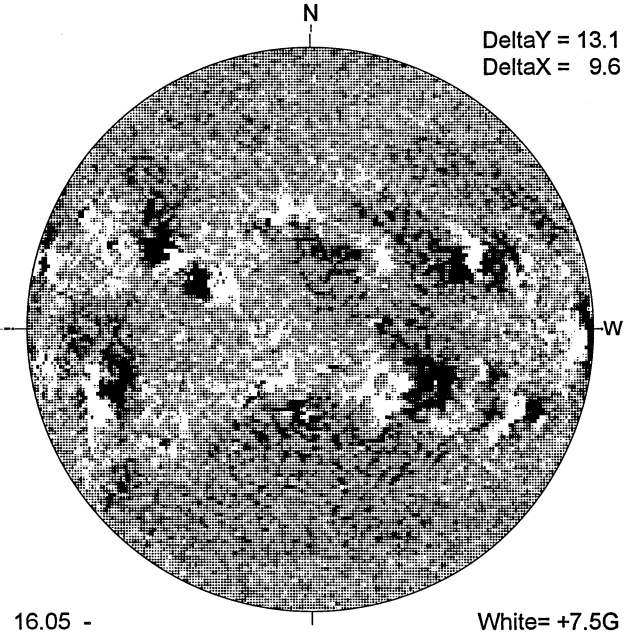
1752 UT

STANFORD MAGNETOGRAM



1851 UT

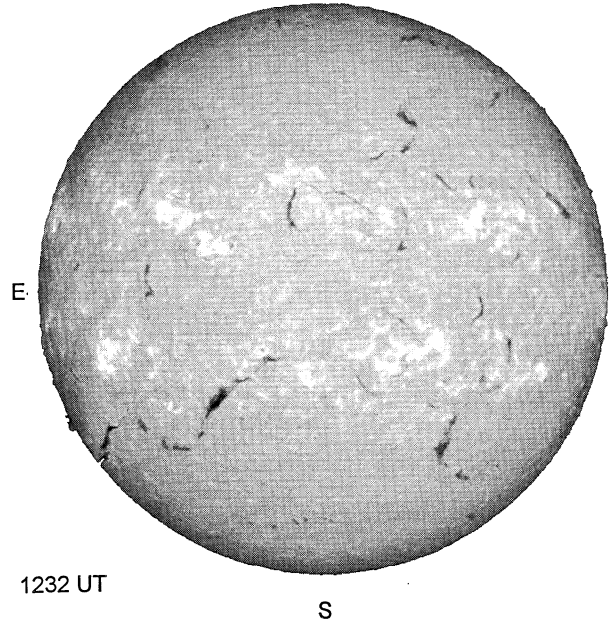
MT. WILSON MAGNETOGRAM



16.05 -
16.98 UT

White= +7.5G
Black = -7.5G

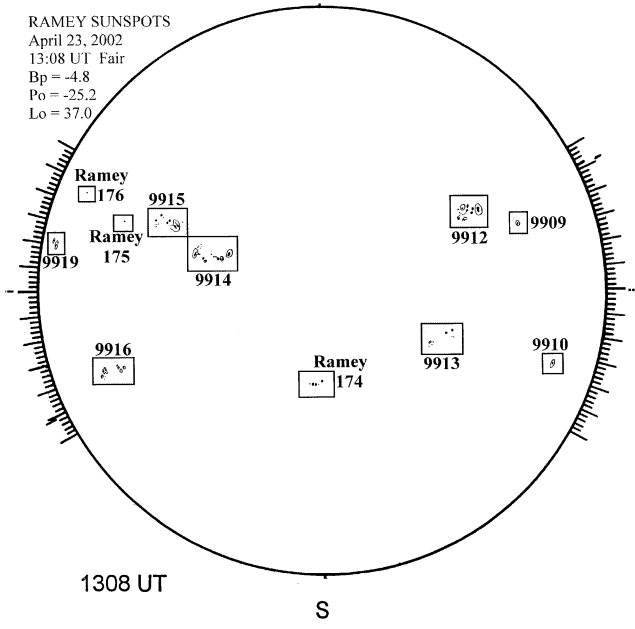
MEUDON H-ALPHA



1232 UT

S

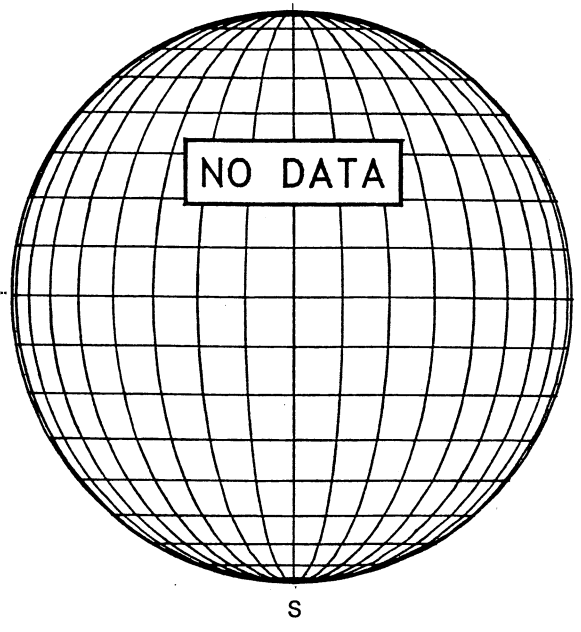
RAMEY SUNSPOT



1308 UT

S

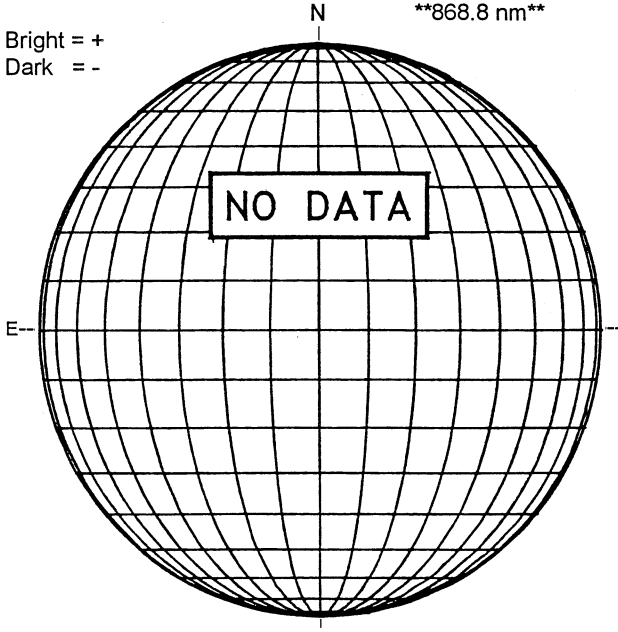
SACRAMENTO PEAK CORONA (1.15 Radii)



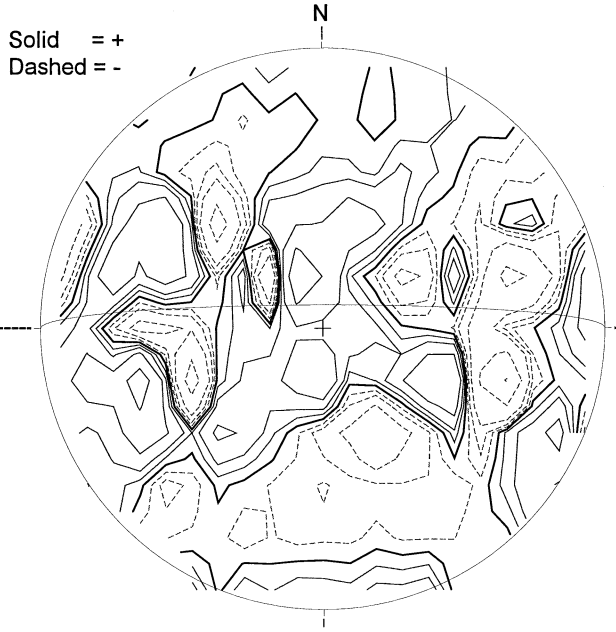
S

APRIL 24, 2002 (P= -25.24, Bo = -4.86, Lo = 30.53)

KITT PEAK MAGNETOGRAM

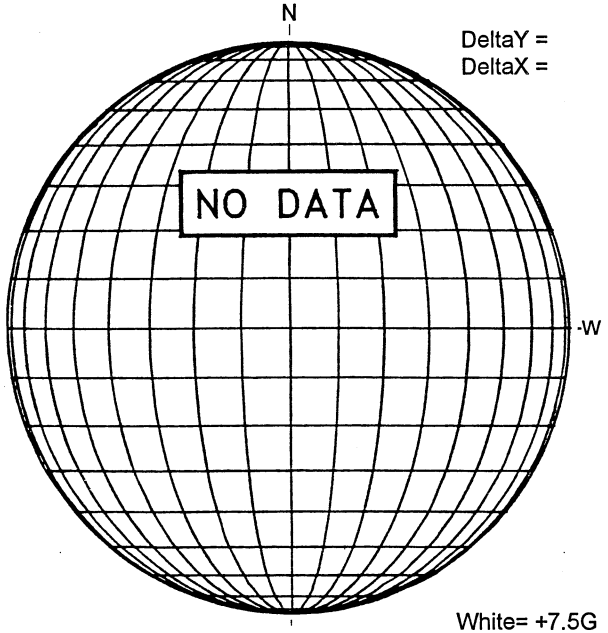


STANFORD MAGNETOGRAM



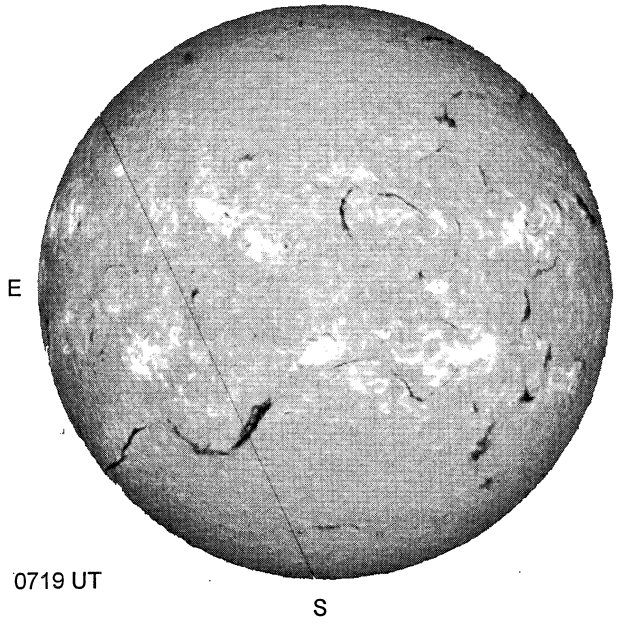
1617 UT

MT. WILSON MAGNETOGRAM



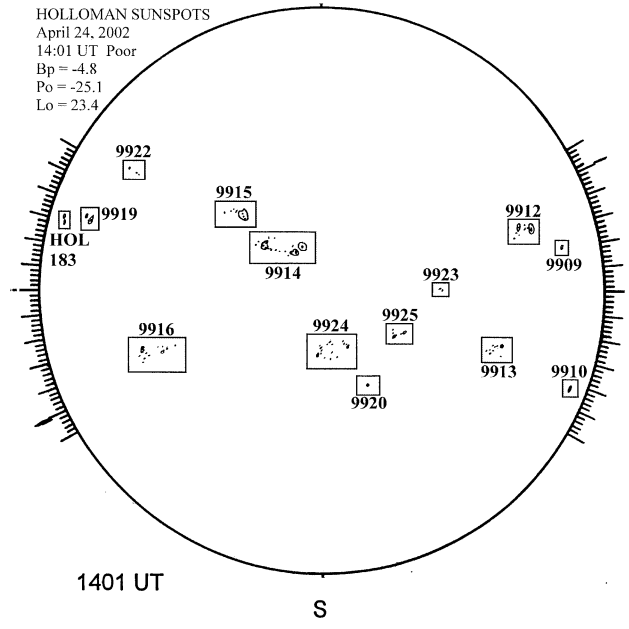
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



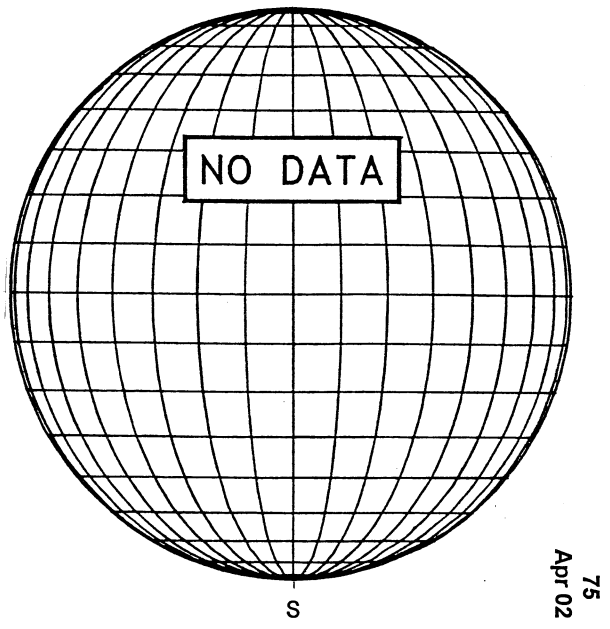
0719 UT

HOLLOMAN SUNSPOT



1401 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



75
Apr 02

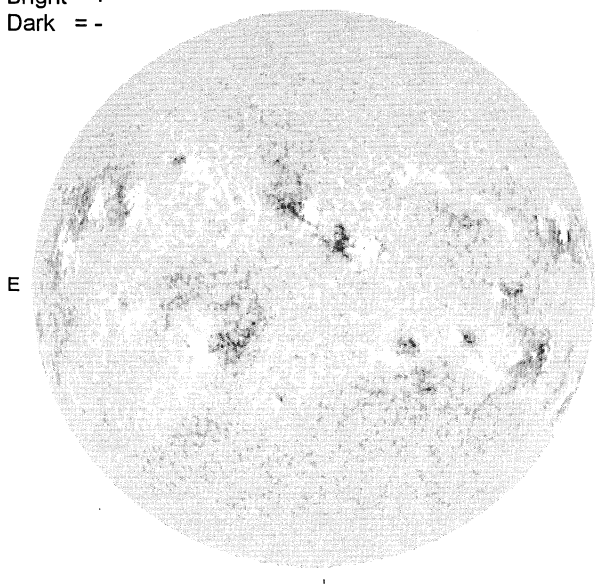
APRIL 25, 2002 (P= -25.11, Bo = -4.77, Lo = 17.32)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



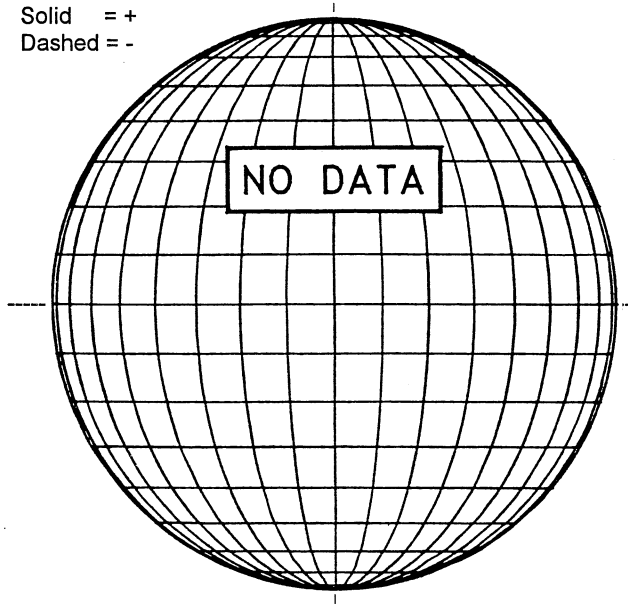
E

1829 UT

STANFORD MAGNETOGRAM

N

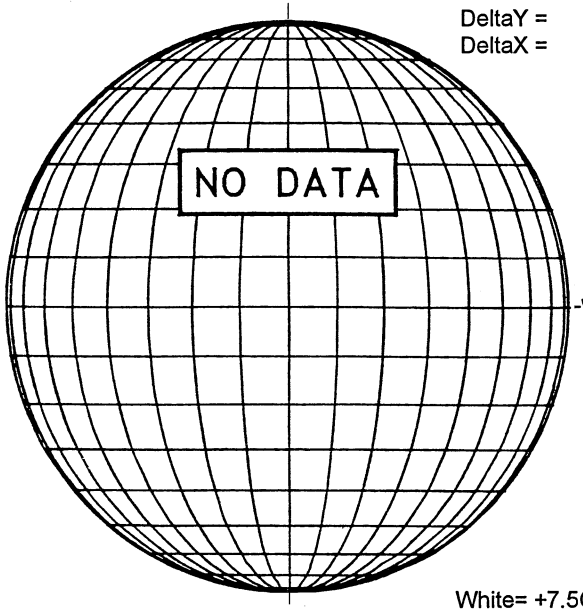
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

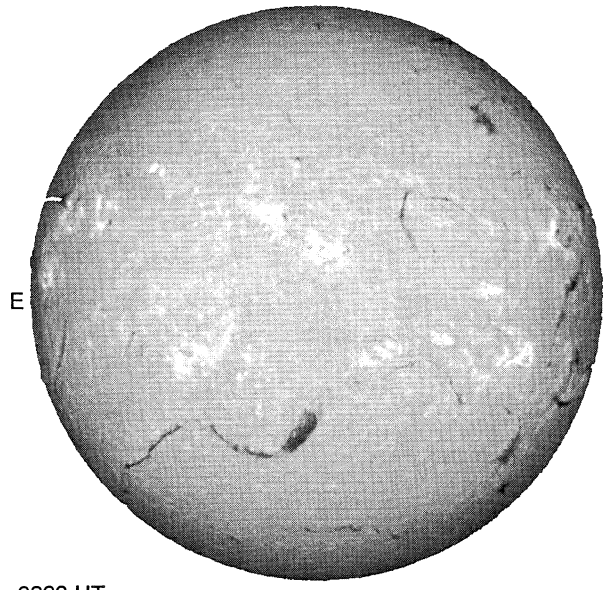
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

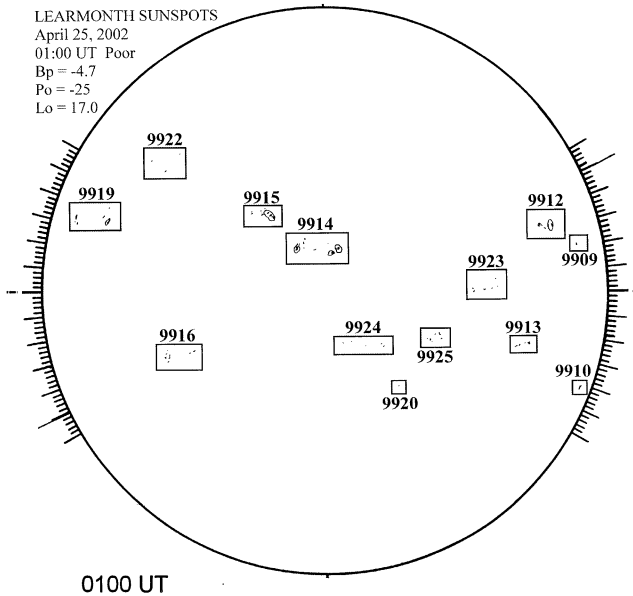


E

0823 UT

S

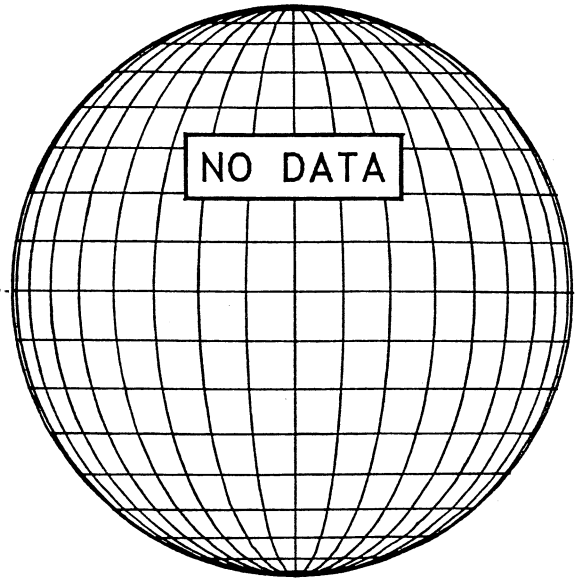
LEARMONTH SUNSPOT



0100 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

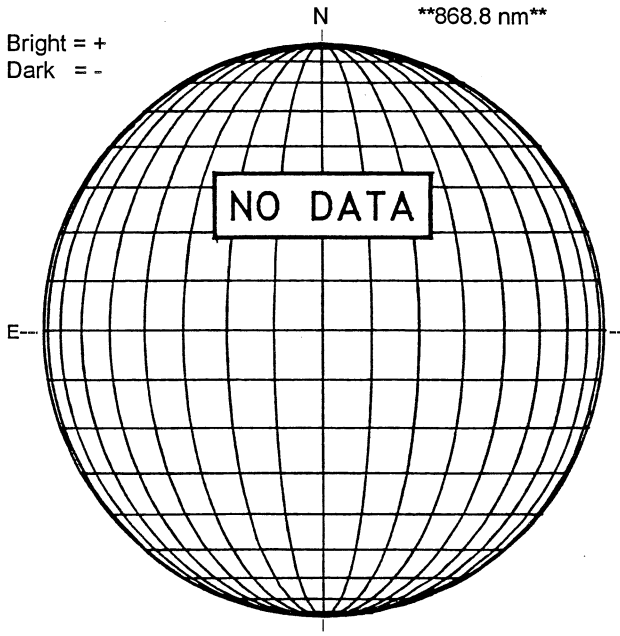


S

APRIL 26, 2002 (P= -24.97, Bo = -4.67, Lo = 4.11)

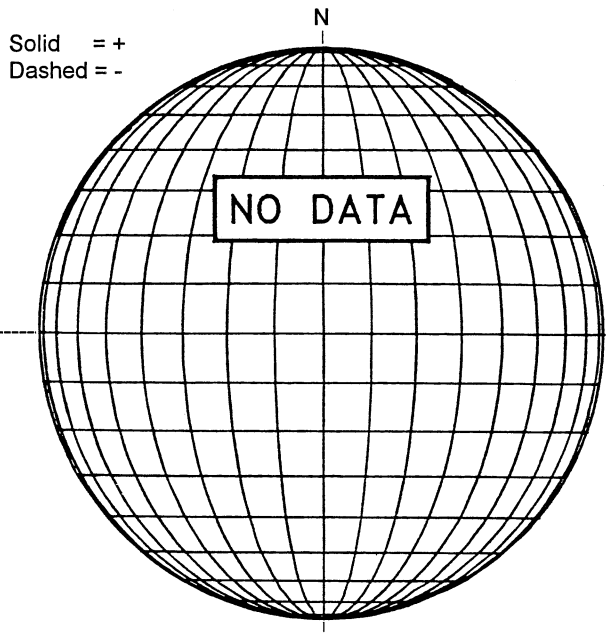
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



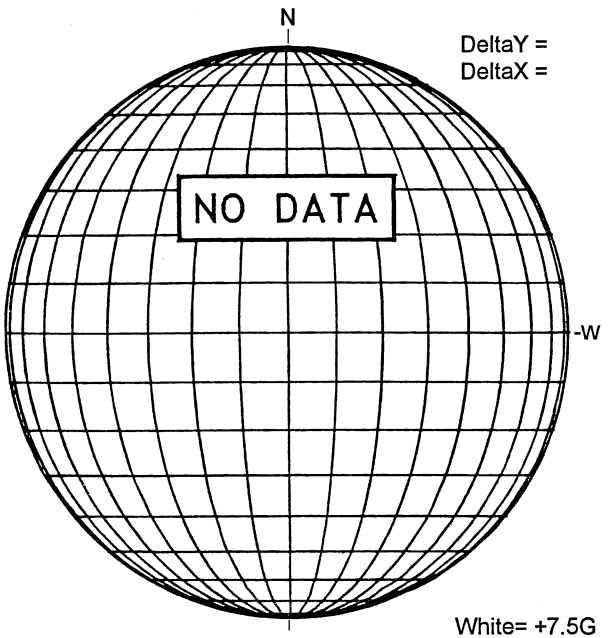
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



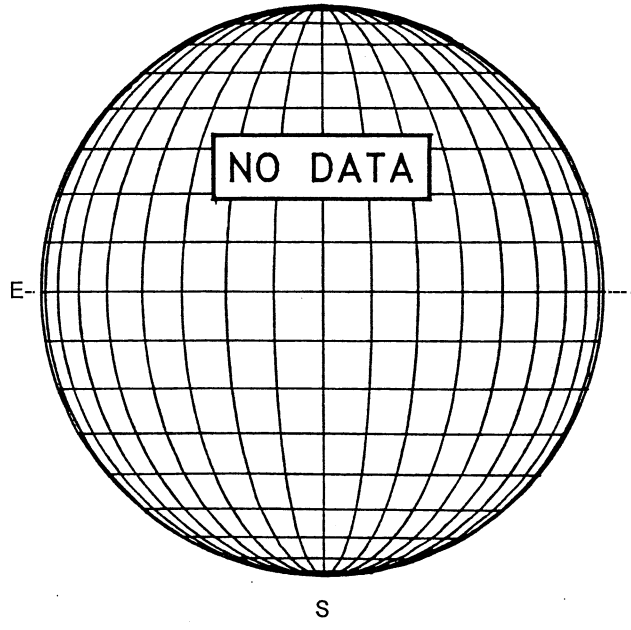
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

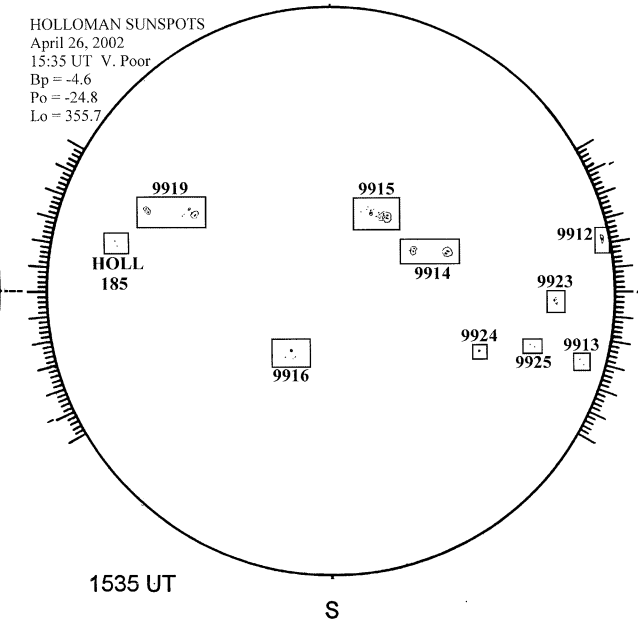


White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA

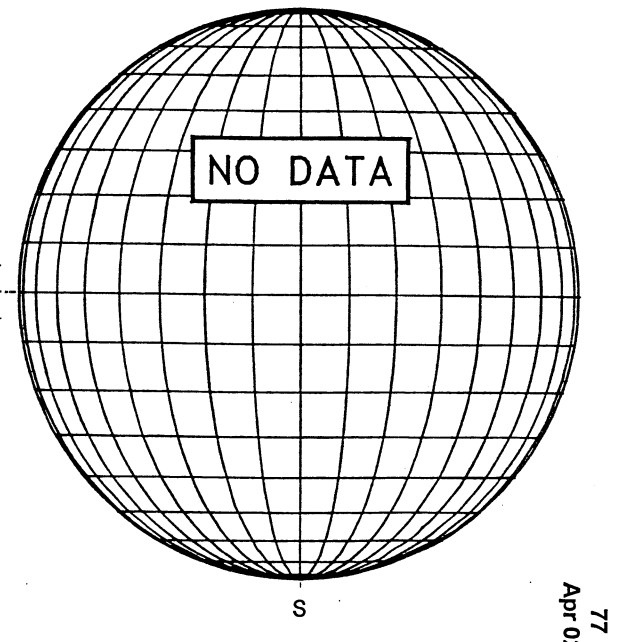


HOLLOMAN SUNSPOT



1535 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



77
Apr 02

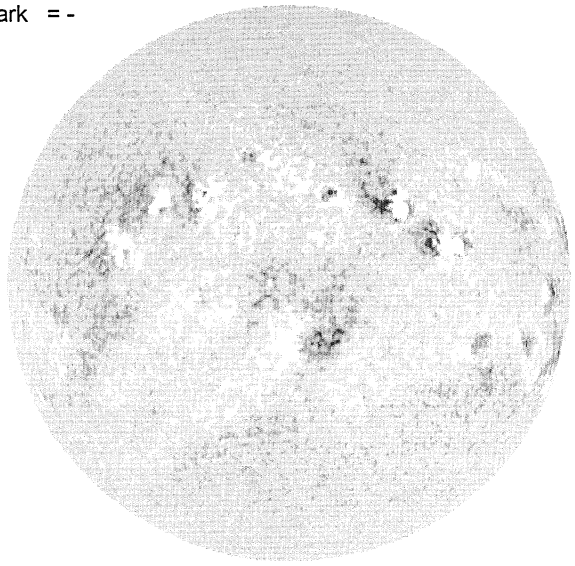
APRIL 27, 2002 (P= -24.83, Bo = -4.58, Lo = 350.90)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



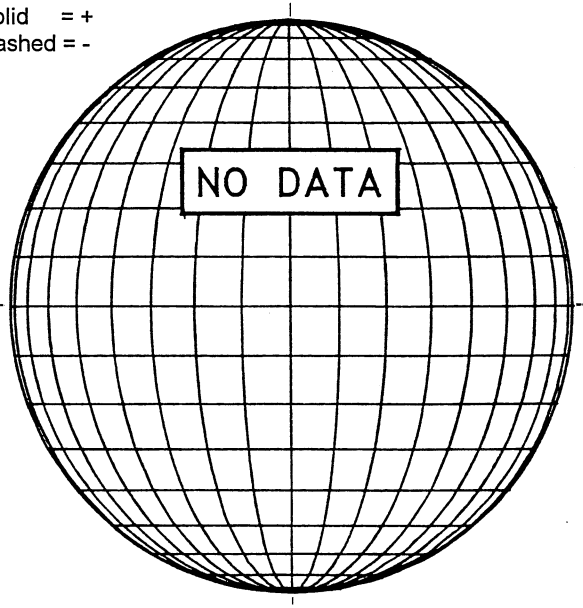
E-

1454 UT

STANFORD MAGNETOGRAM

N

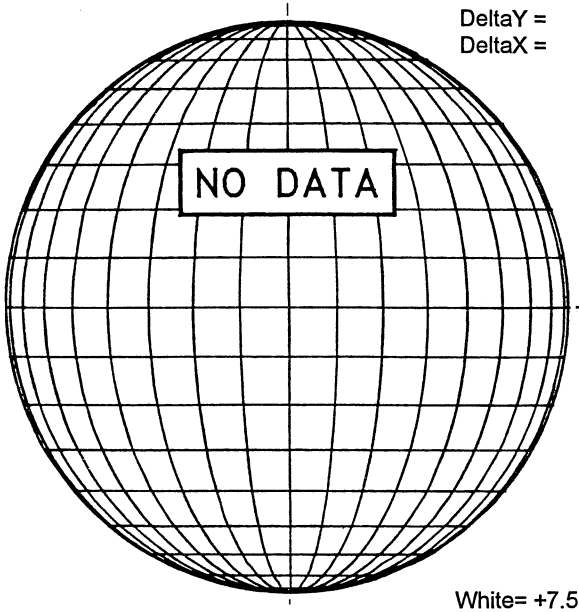
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

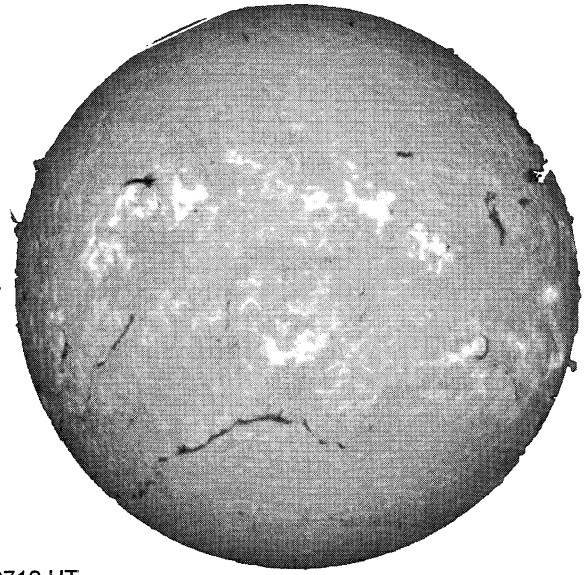
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

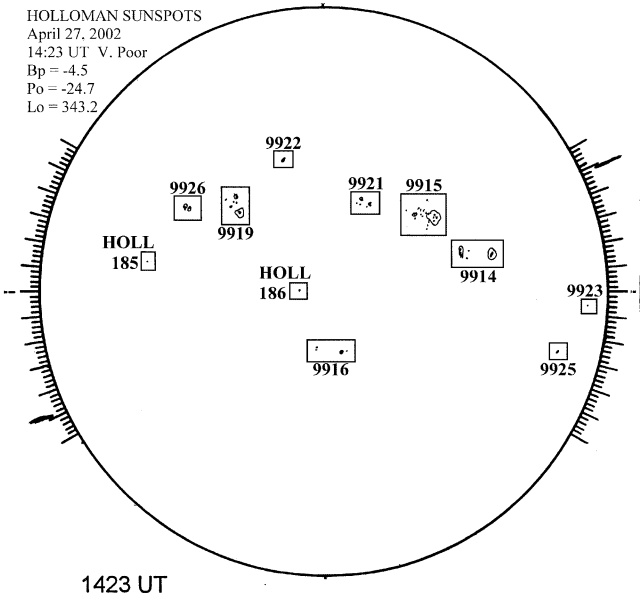


E-

0710 UT

S

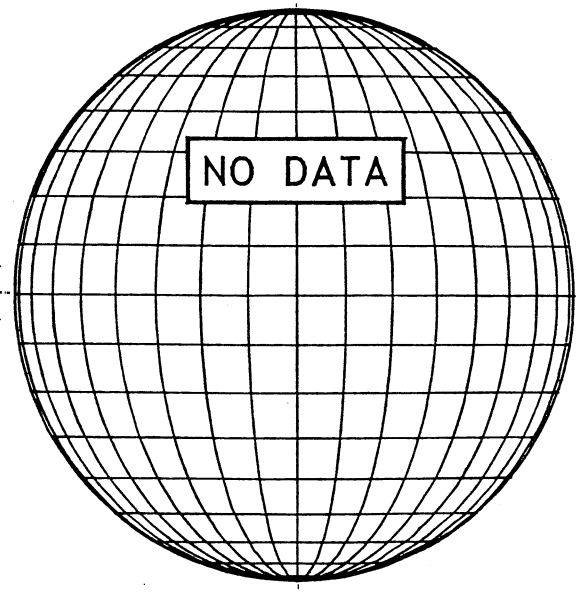
HOLLOMAN SUNSPOT



1423 UT

S

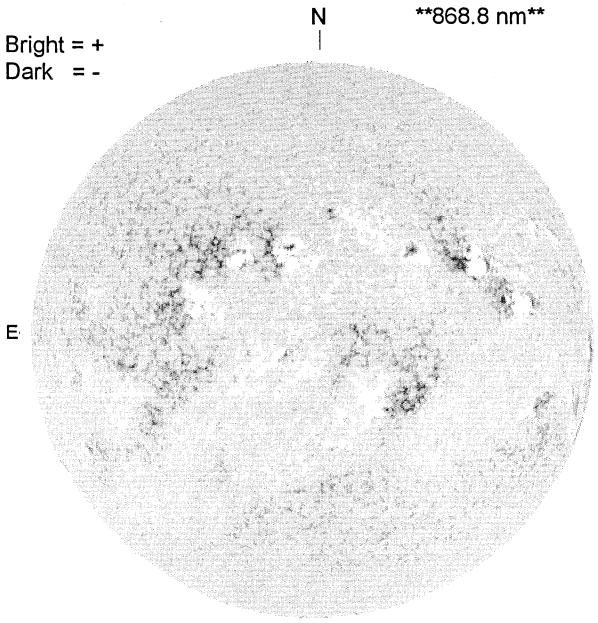
LOMNICKY PEAK CORONA (1.04 Radii)



S

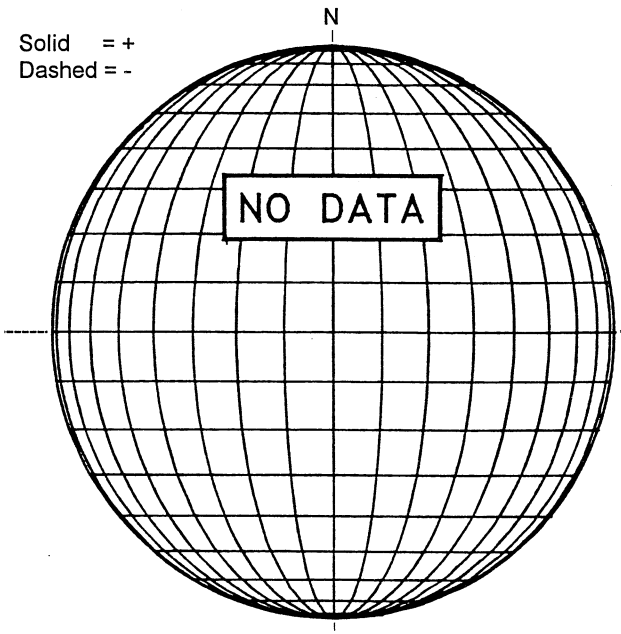
APRIL 28, 2002 (P= -24.68, Bo = -4.48, Lo = 337.68)

KITT PEAK MAGNETOGRAM

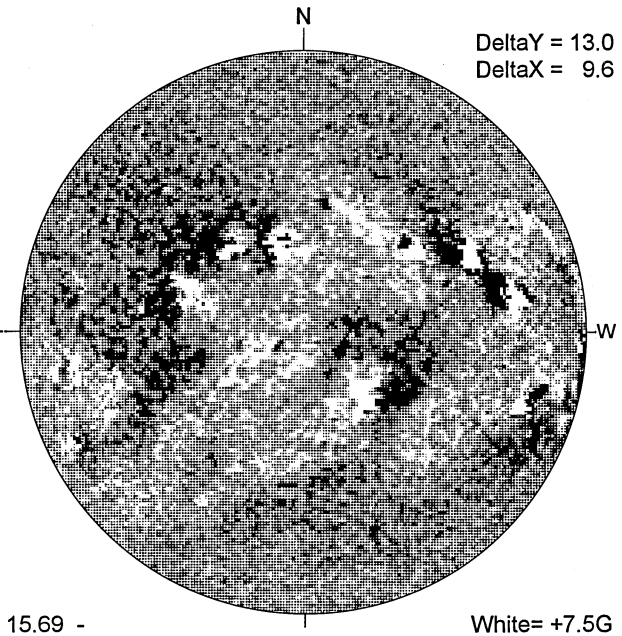


1420 UT

STANFORD MAGNETOGRAM



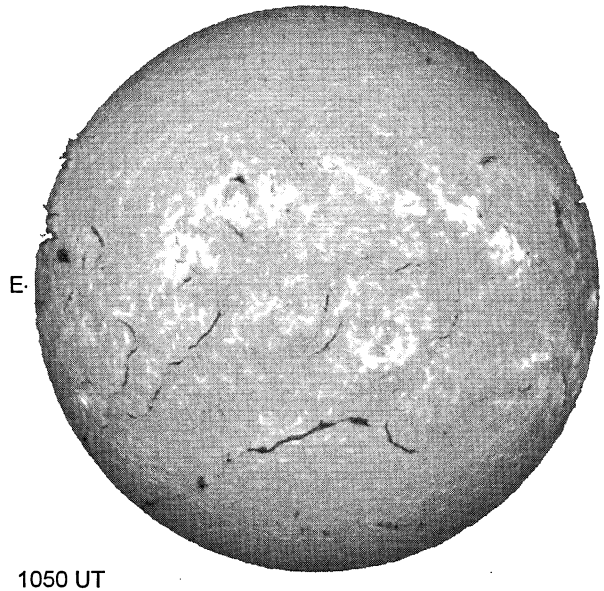
MT. WILSON MAGNETOGRAM



15.69 -
16.63 UT

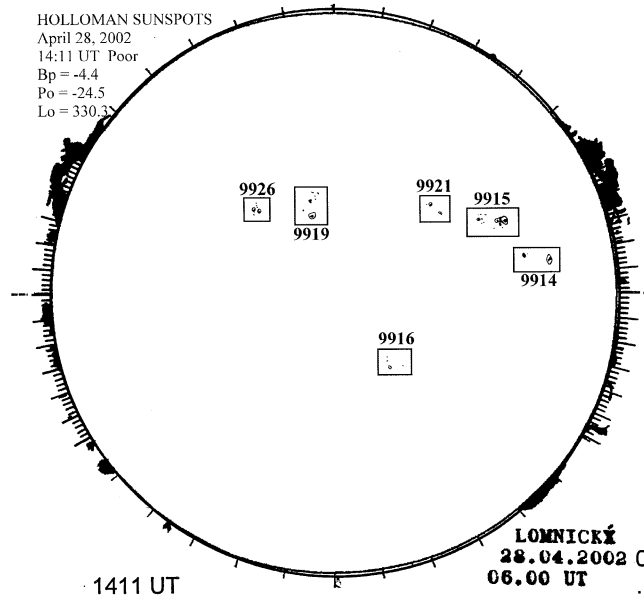
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



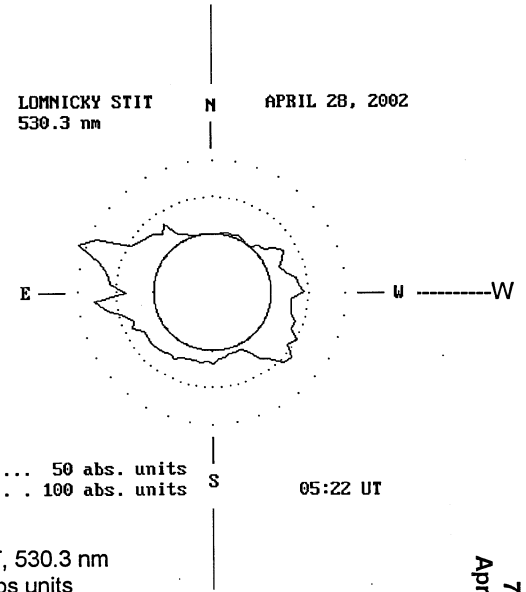
1050 UT

HOLLOMAN SUNSPOT



1411 UT
0600 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0522 UT, 530.3 nm
.... 50 abs units
. . 100 abs units

S

79
Apr 02

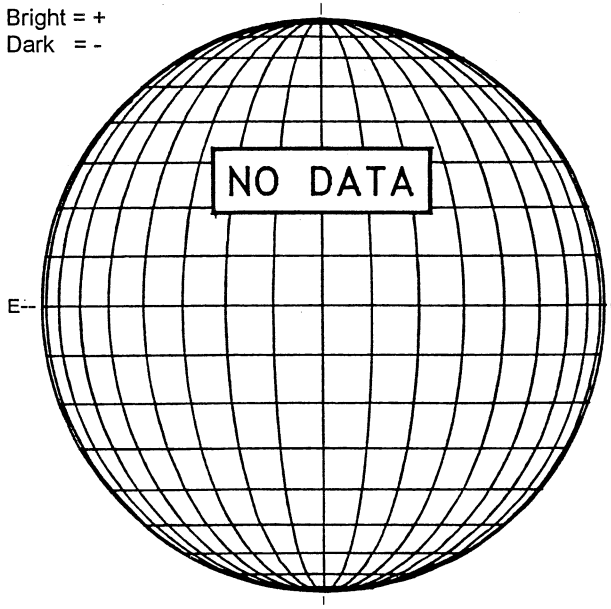
APRIL 29, 2002 (P= -24.52 Bo = -4.38, Lo = 324.47)

80
Apr 02

KITT PEAK MAGNETOGRAM

N **868.8 nm**

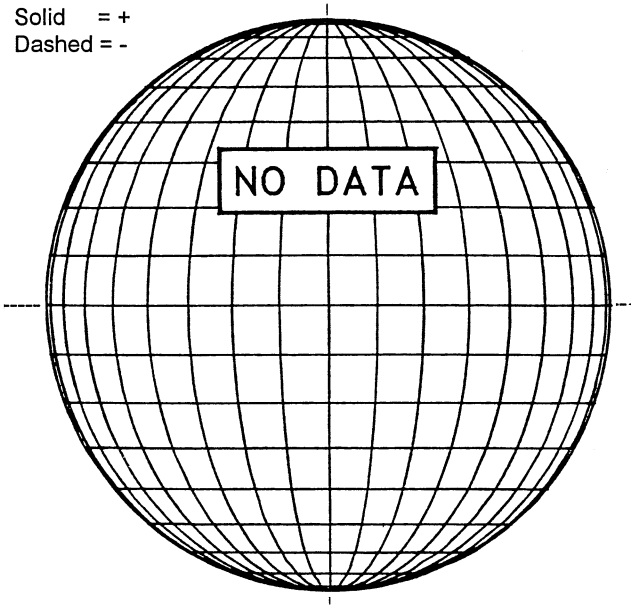
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

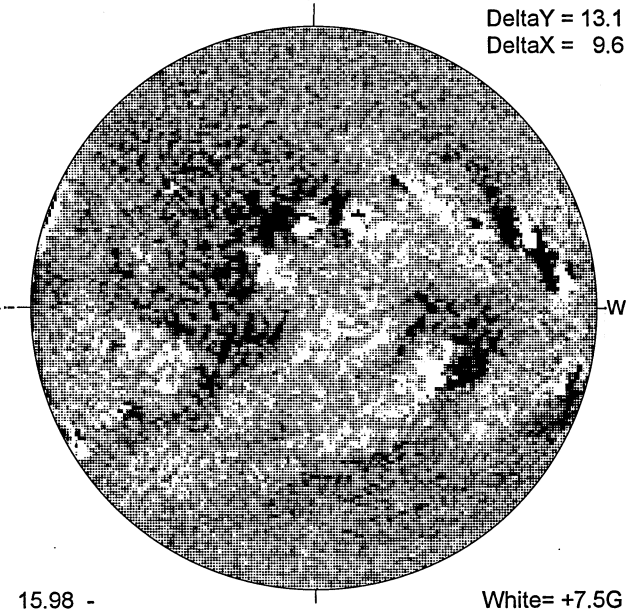
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

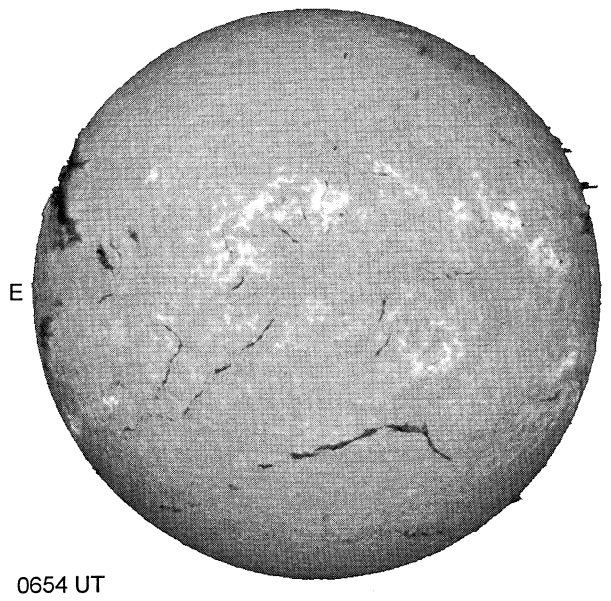
DeltaY = 13.1
DeltaX = 9.6



15.98 -
16.91 UT

White= +7.5G
Black = -7.5G

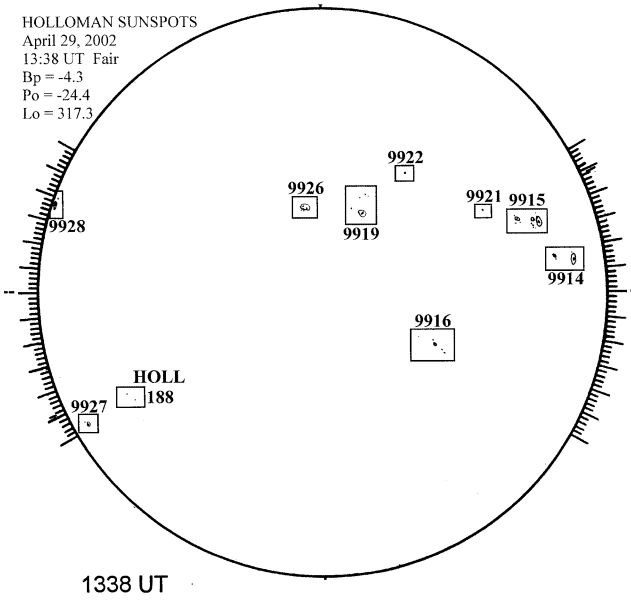
MEUDON H-ALPHA



0654 UT

S

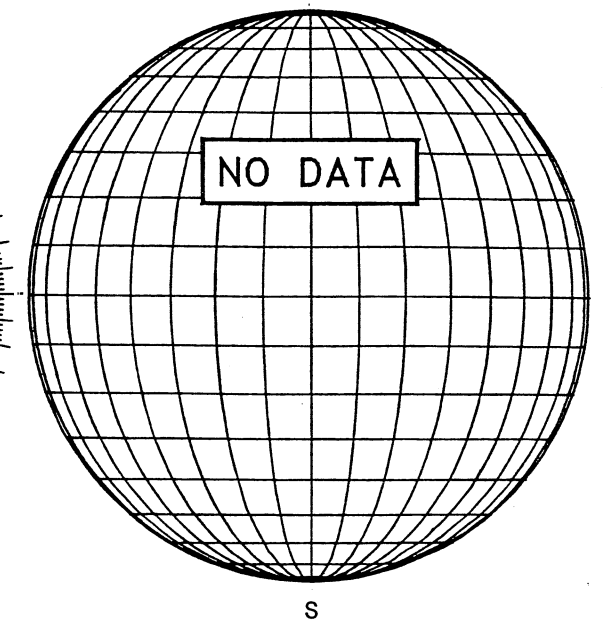
HOLLOMAN SUNSPOT



1338 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

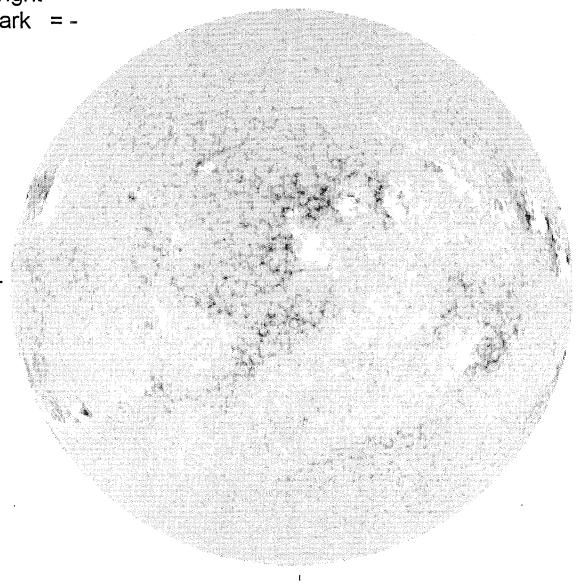
APRIL 30, 2002 (P= -24.36, Bo = -4.29, Lo = 311.25)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



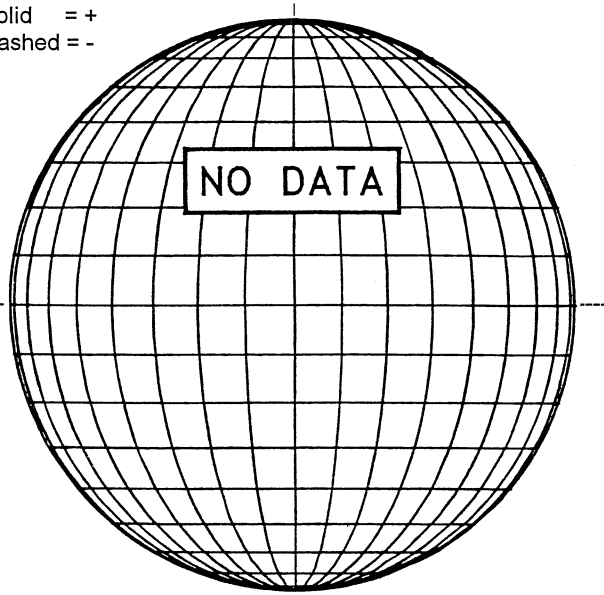
E-

1556 UT

STANFORD MAGNETOGRAM

N

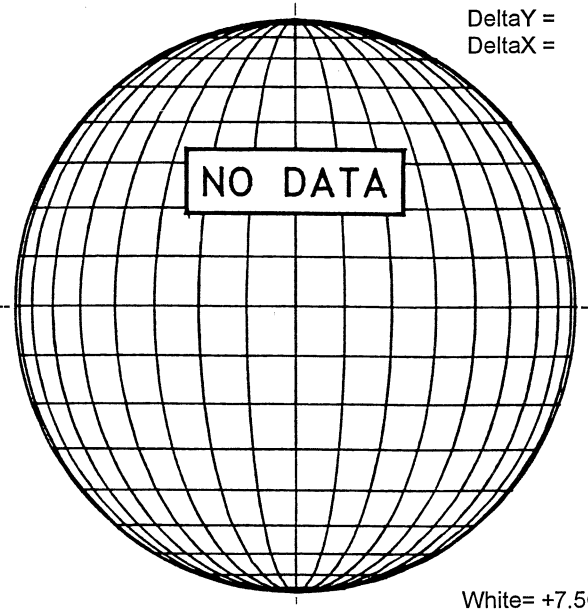
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

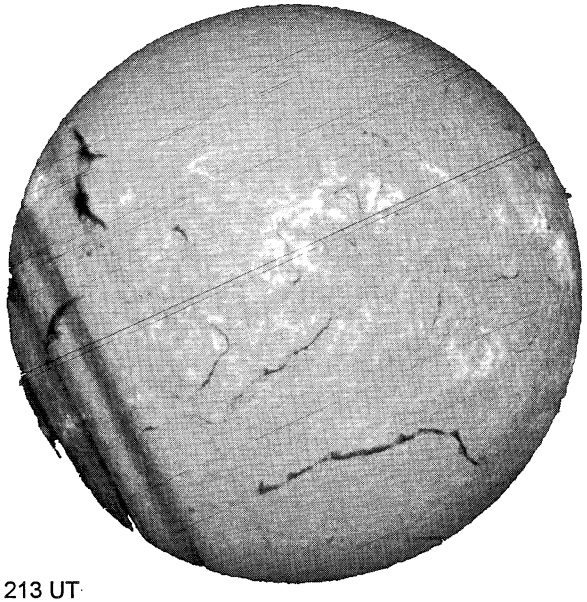
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

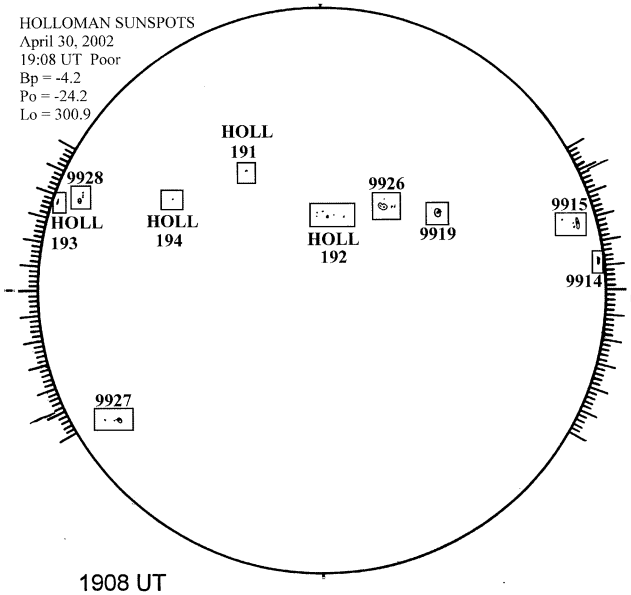


E

1213 UT

S

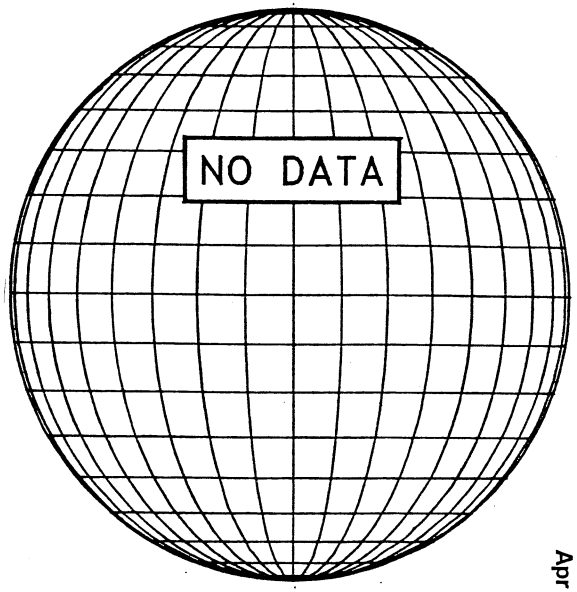
HOLLOMAN SUNSPOT



1908 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----

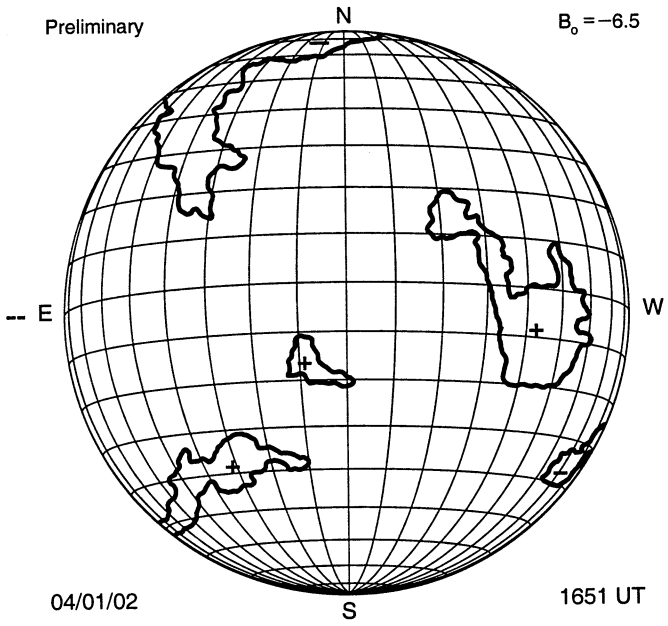


S

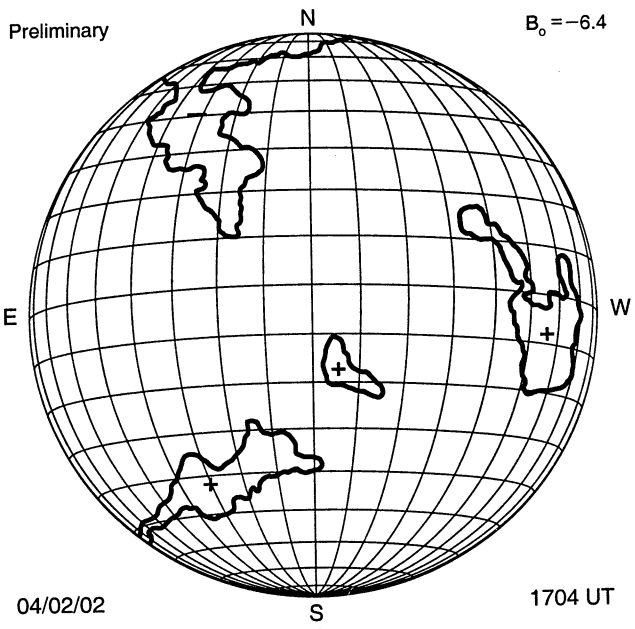
81
Apr 02

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2002

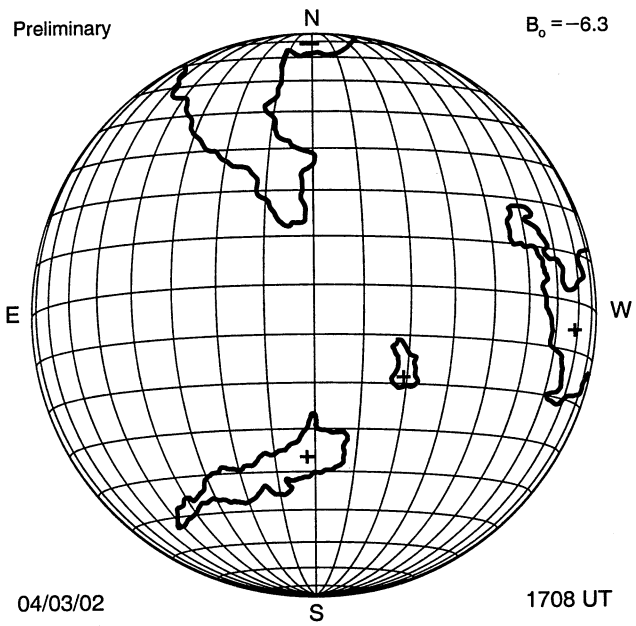
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



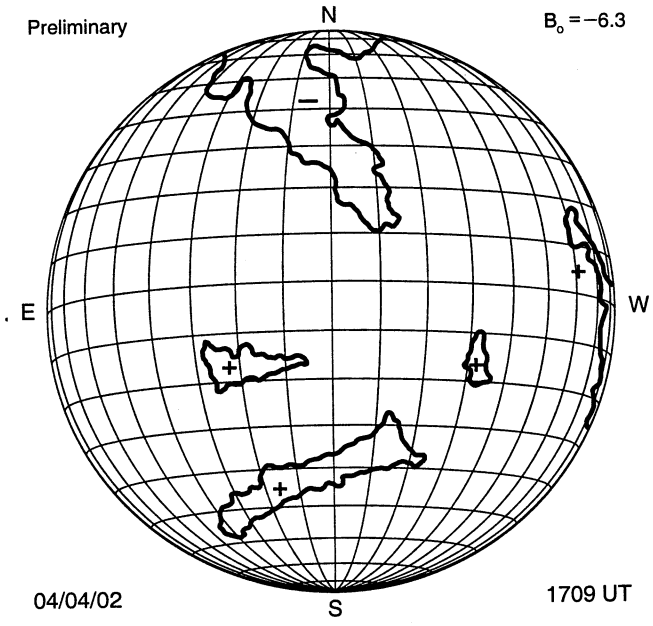
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



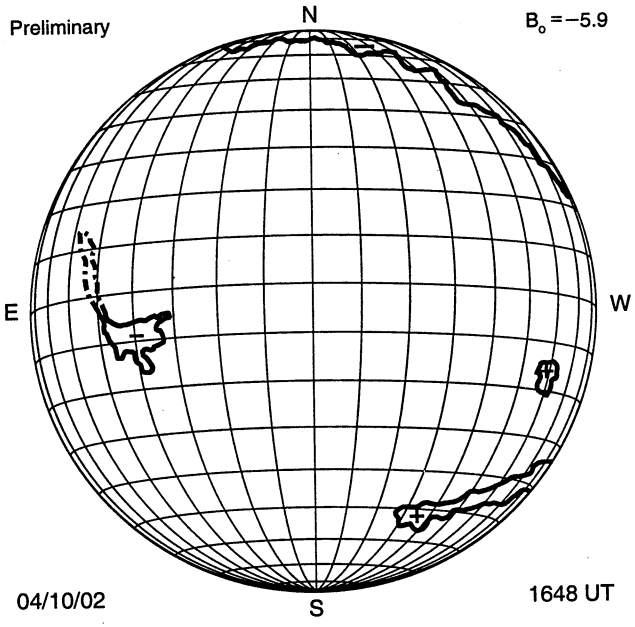
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



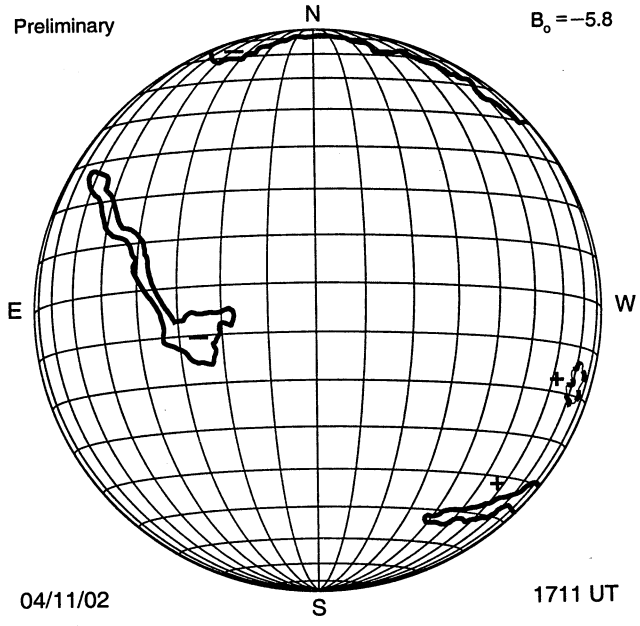
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



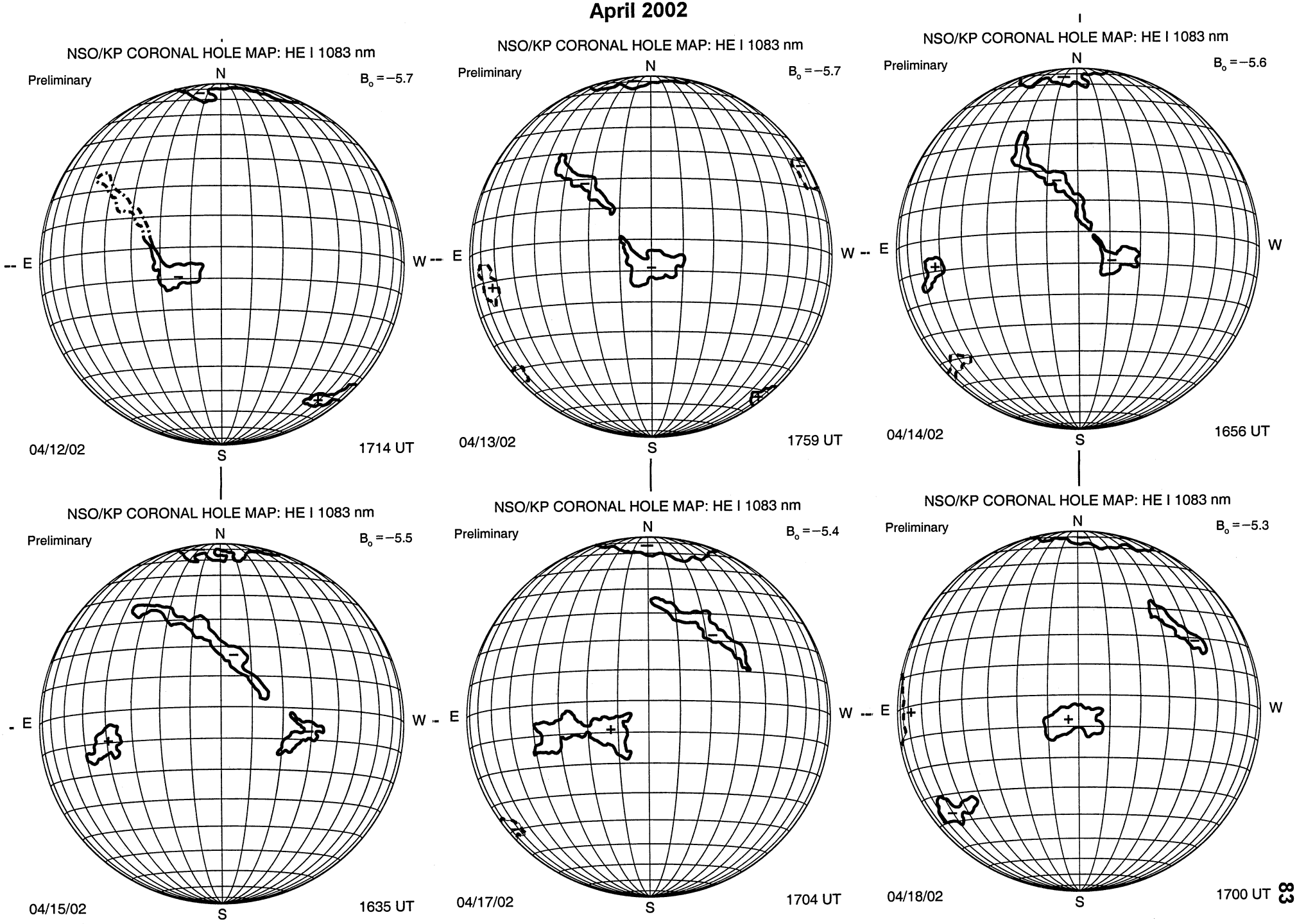
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



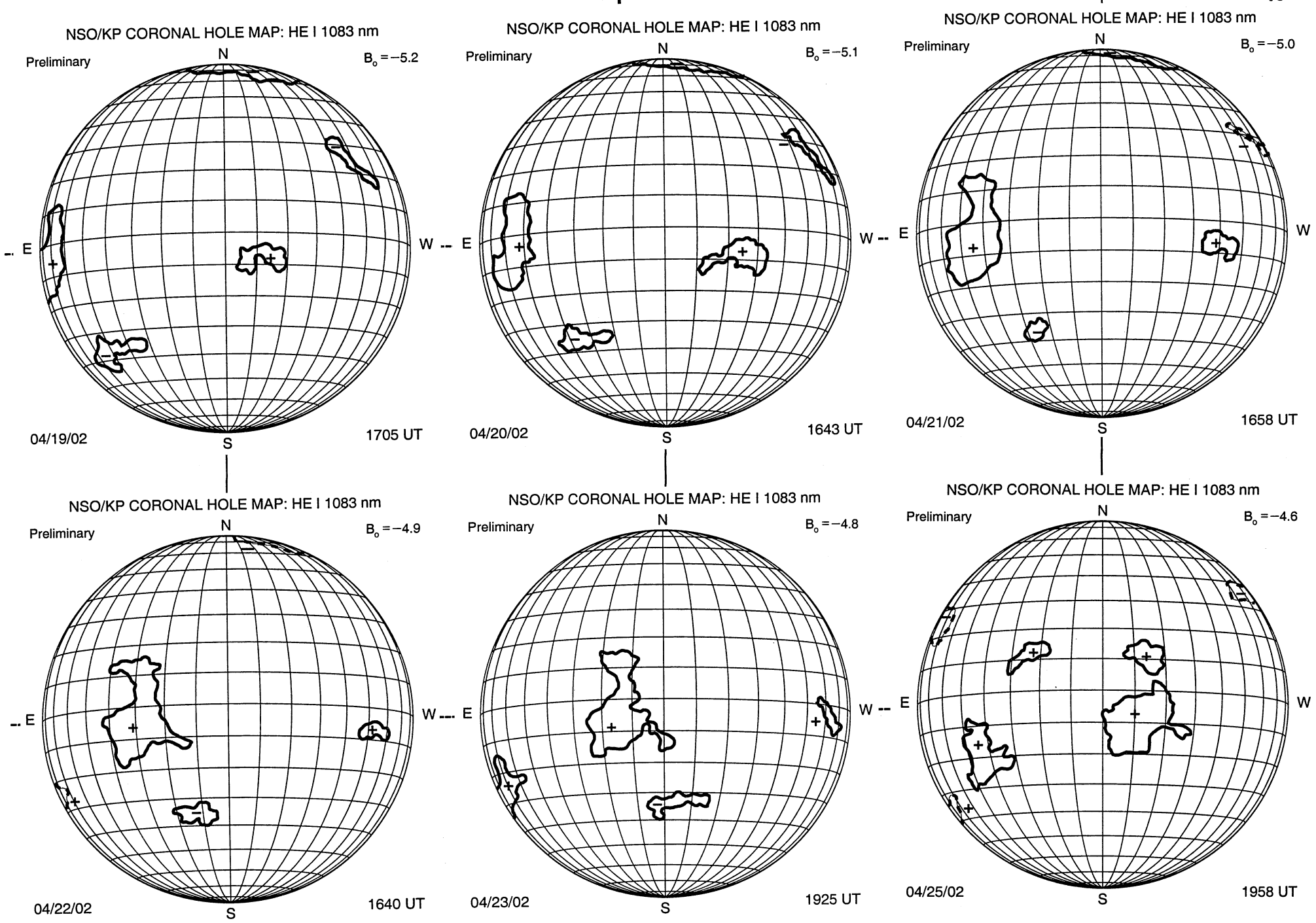
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



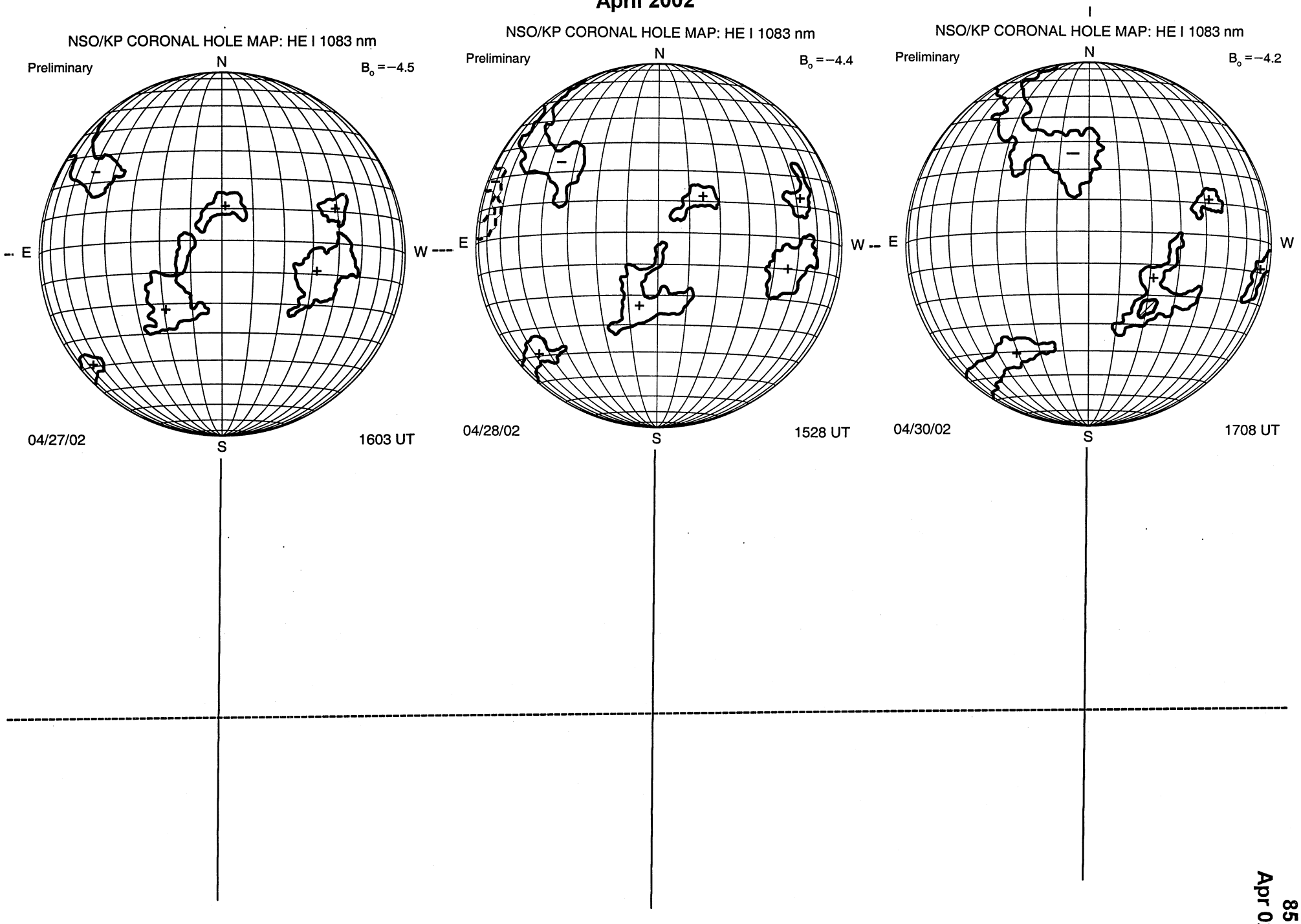
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2002



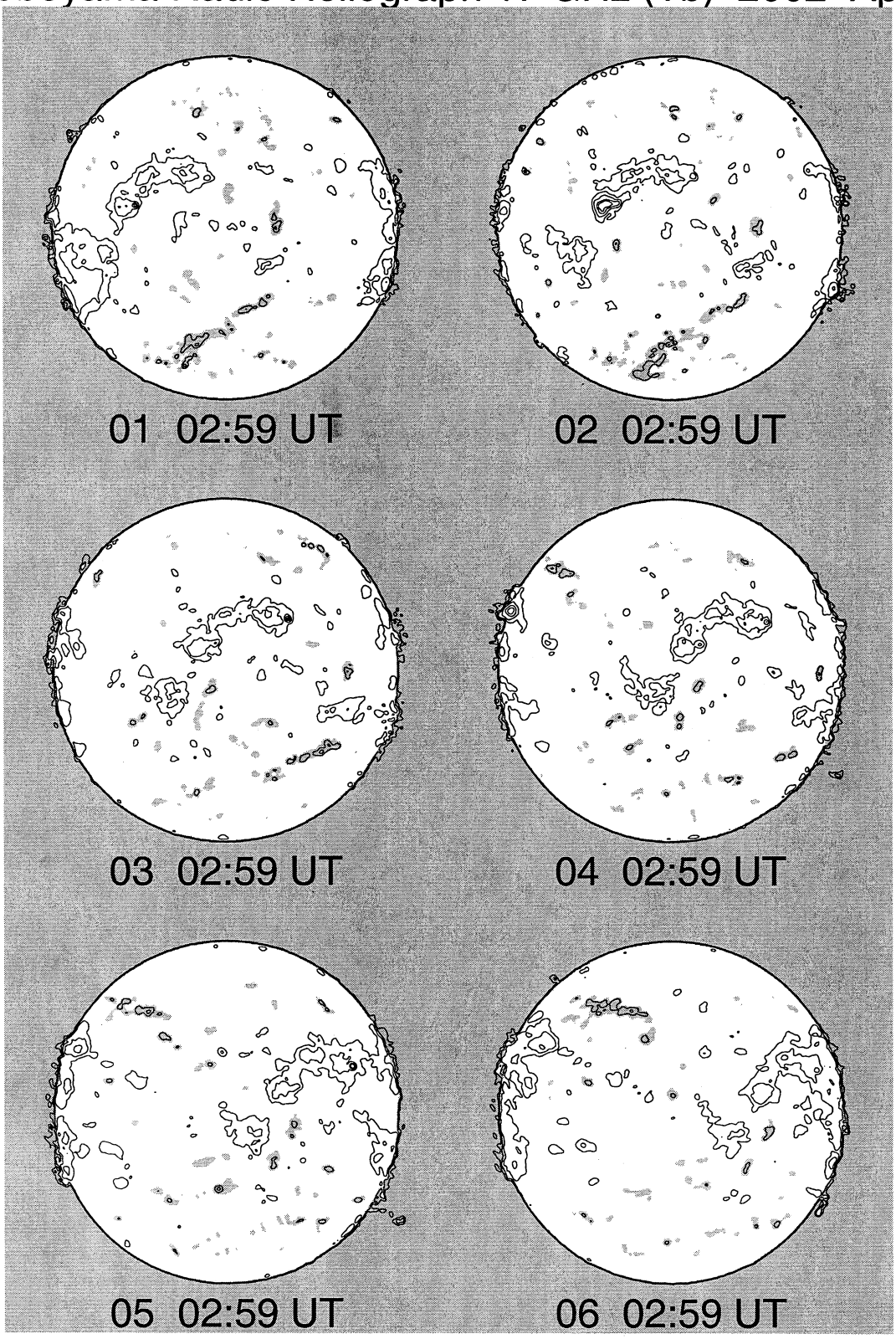
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2002



KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
April 2002

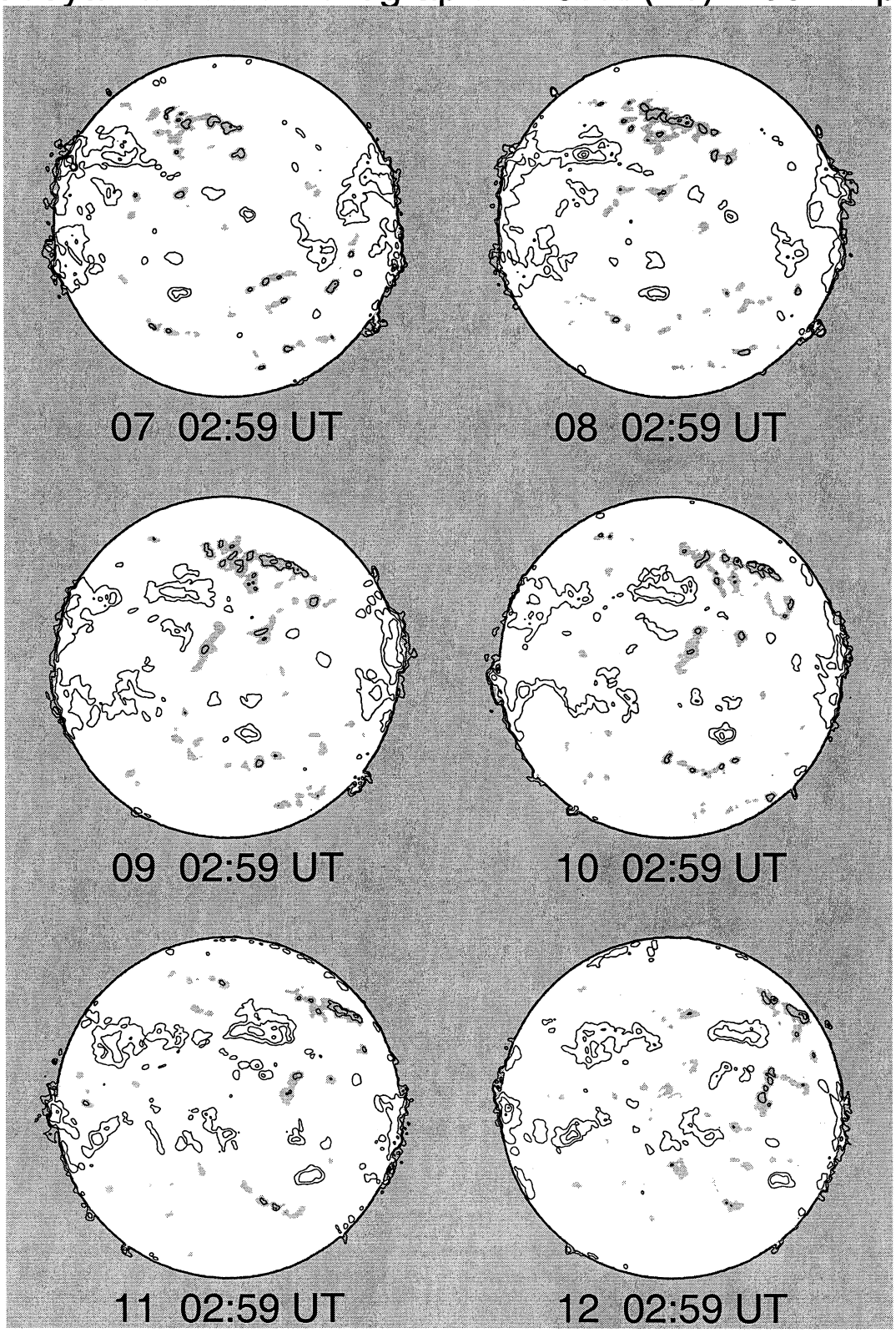


Nobeyama Radio Heliograph 17 GHz (Tb) 2002 April



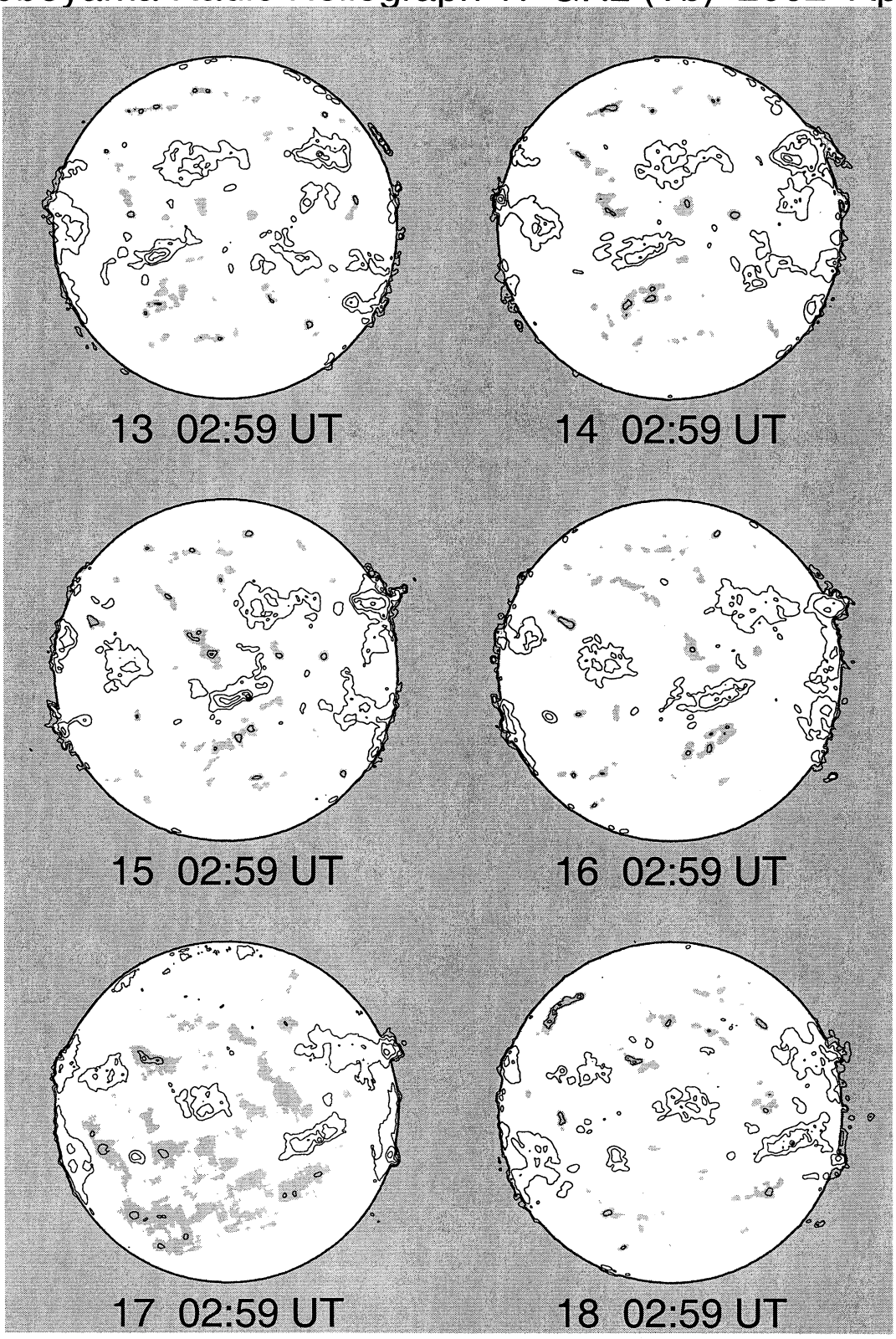
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 April



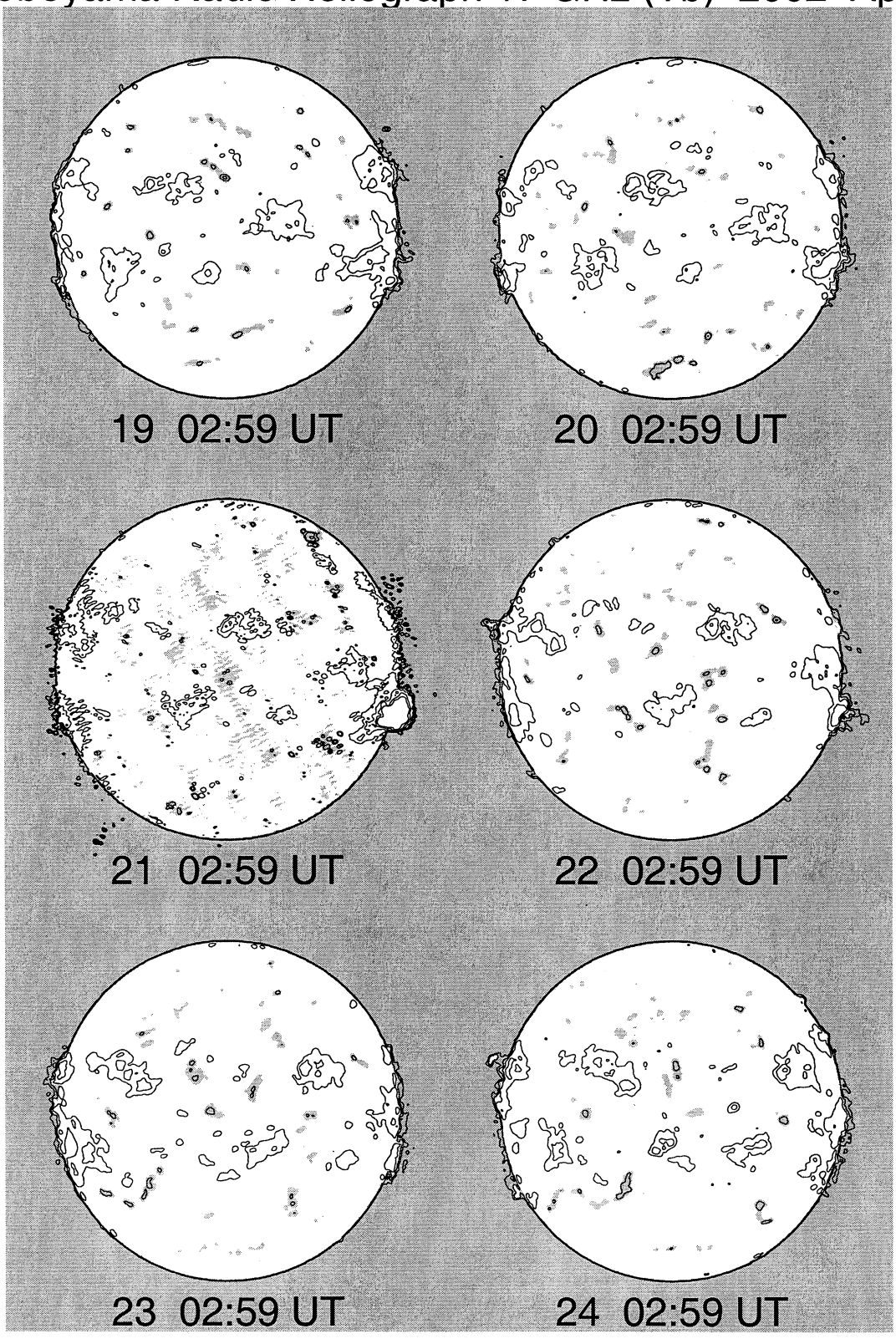
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 April



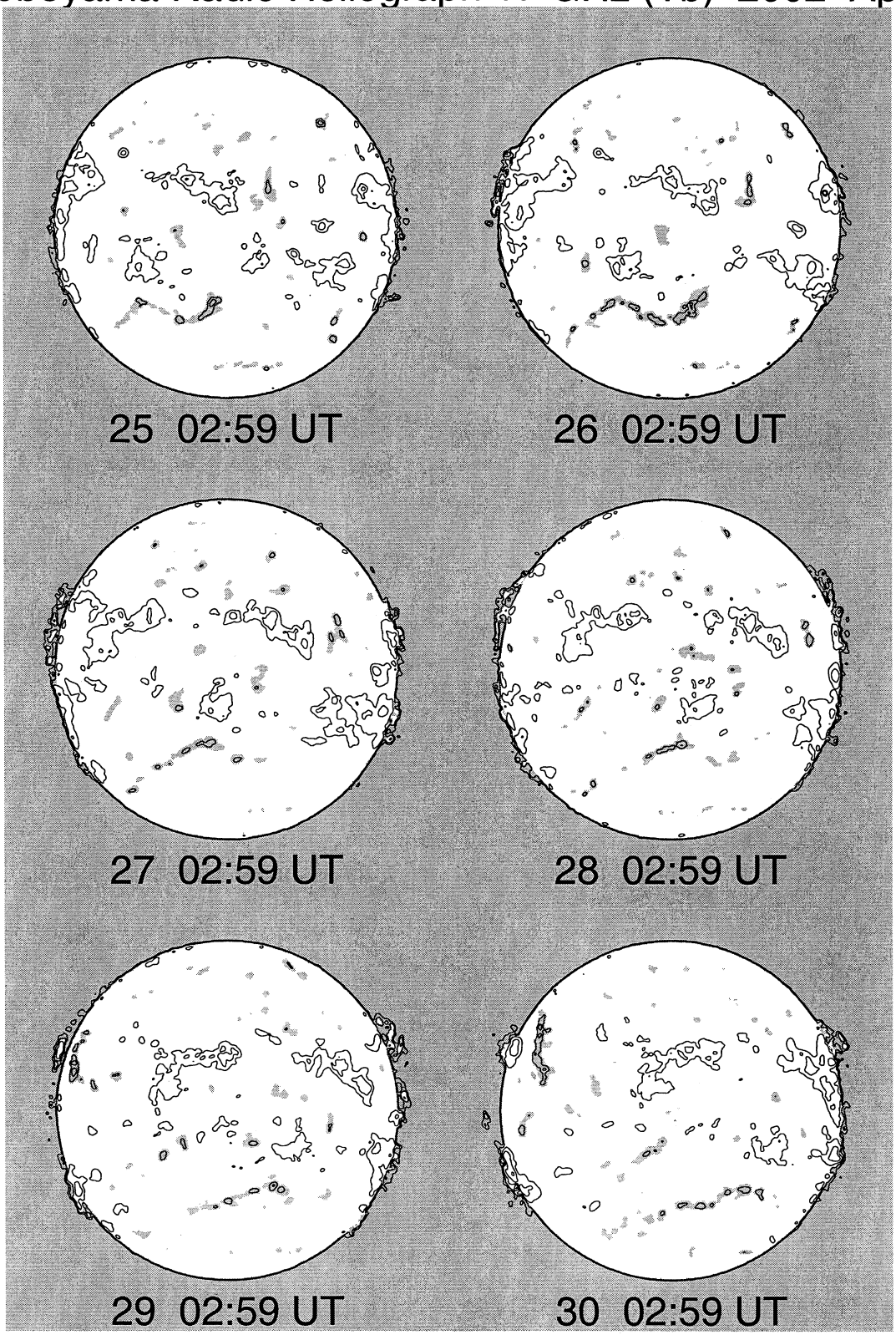
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 April



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

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 April



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

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9884E	31115	MWIL	03	31	1500	S05	E12	04	1.5	3	(AP)					
9884E	31115	MWIL	04	01	1530	S05	W03	04	1.4	4	(AP)					
9884E	31115	MWIL	04	02	1530	S05	W16	04	1.4	4	(AP)					
9884E		VORO	04	02	2231	S06	W21	04	1.4			AXX	11	2		3
9884E		LEAR	04	03	0130	S06	W23	04	1.3		B	BXO	10	2	2	3
9884E		KAND	04	03	0805	S06	W27	04	1.3			AX		2	1	3
9884E	31115	MWIL	04	03	1530	S05	W32	04	1.2	4	(AP)					
9884E		HOLL	04	03	1820	S04	W33	04	1.3		A	AXX	10	2	1	4
9884E		VORO	04	03	2235	S06	W36	04	1.2			AXX	9	2		3
9884E		HOLL	04	04	1450	S06	W46	04	1.2		A	AXX	10	1	1	4
9884C	31109	MWIL	03	30	1600	N25	E25	04	1.6	3	(AP)					
9885		LEAR	03	27	0535	N11	E78	04	2.1		B	DAO	70	2	4	2
9885		TACH	03	27	0727	N12	E77	04	2.1			HXX	10	1	1	3
9885		SVTO	03	27	1130	N12	E77	04	2.3		B	DSO	90	3	6	2
9885		RAMY	03	27	1233	N10	E75	04	2.1		B	DAO	180	5	9	3
9885	31105	MWIL	03	27	1530	N12	E75	04	2.3	4	(B)					
9885		VORO	03	27	2253	N11	E70	04	2.2			DSI	180	3	6	3
9885		TACH	03	28	0427	N11	E63	04	1.9			DSO	190	3	8	4
9885		LEAR	03	28	0615	N11	E65	04	2.1		B	DSX	160	15	9	3
9885		SVTO	03	28	0805	N13	E64	04	2.2		B	DAO	220	8	8	2
9885		RAMY	03	28	1205	N10	E60	04	2.0		B	ESO	200	7	13	2
9885	31105	MWIL	03	28	1600	N11	E59	04	2.1	5	(B)					
9885		LEAR	03	29	0318	N11	E57	04	2.4		BG	FAI	480	24	18	4
9885		SVTO	03	29	0730	N12	E52	04	2.2		BG	EAI	320	32	13	3
9885		RAMY	03	29	1320	N12	E46	04	2.0		B	EAI	560	19	12	3
9885	31105	MWIL	03	29	1600	N12	E47	04	2.2	5	(D)					
9885		VORO	03	29	2255	N12	E41	04	2.0			DSI	683	15	9	3
9885		LEAR	03	30	0522	N11	E37	04	2.0		BGD	EKI	710	41	12	4
9885		SVTO	03	30	0820	N11	E35	04	2.0		BGD	EKI	420	22	14	3
9885		RAMY	03	30	1345	N11	E32	04	2.0		BGD	EKI	560	30	13	3
9885	31105	MWIL	03	30	1600	N11	E31	04	2.0	5	(B)					
9885		VORO	03	30	2245	N12	E27	04	2.0			DSI	815	21	11	3
9885		SVTO	03	31	0612	N10	E24	04	2.1		BGD	FKI	640	19	17	3
9885		RAMY	03	31	1207	N11	E19	04	1.9		BGD	EKI	550	20	13	2
9885	31105	MWIL	03	31	1500	N11	E19	04	2.0	5	(B)					
9885		LEAR	04	01	0026	N10	E14	04	2.1		BG	EHI	730	50	14	4
9885		VORO	04	01	0125	N13	E13	04	2.0			DKI	785	12	13	2
9885		TACH	04	01	0527	N12	E08	04	1.8			DAI	948	14	11	3
9885		SVTO	04	01	0700	N12	E08	04	1.9		BG	FKI	650	24	17	3
9885		RAMY	04	01	1143	N12	E07	04	2.0		BGD	EKI	730	20	14	3
9885	31105	MWIL	04	01	1530	N11	E05	04	2.0	5	(BG)					
9885		VORO	04	01	2233	N12	E01	04	2.0			DKI	719	42	12	3
9885		LEAR	04	02	0328	N12	W02	04	2.0		BG	FKI	510	41	16	1
9885		TACH	04	02	0447	N11	W04	04	1.9			DAI	861	11	10	3
9885		SVTO	04	02	0710	N14	W05	04	1.9		BG	FKI	590	54	17	4
9885		RAMY	04	02	1252	N13	W08	04	1.9		BG	EHO	660	14	15	2
9885	31105	MWIL	04	02	1530	N11	W08	04	2.0	5	(B)					
9885		VORO	04	02	2231	N13	W13	04	1.9			DHI	687	30	12	3
9885		LEAR	04	03	0130	N13	W14	04	2.0		BG	EKI	450	23	15	3
9885		KAND	04	03	0805	N11	W18	04	2.0			EAO		13	15	3
9885		RAMY	04	03	1215	N13	W19	04	2.1		BG	EHO	550	11	14	3
9885	31105	MWIL	04	03	1530	N11	W22	04	2.0	5	(B)					
9885		HOLL	04	03	1820	N13	W22	04	2.1		B	DHI	590	26	15	4
9885		VORO	04	03	2235	N13	W26	04	2.0			DHI	544	24	12	3
9885		LEAR	04	04	0025	N13	W26	04	2.0		B	FHI	590	37	15	2
9885		RAMY	04	04	1242	N13	W33	04	2.0		BG	EKI	520	25	15	3
9885		HOLL	04	04	1450	N12	W35	04	2.0		BG	EHI	470	24	15	4
9885	31105	MWIL	04	04	1600	N11	W35	04	2.0	5	(B)					
9885		LEAR	04	05	0040	N13	W38	04	2.2		BG	EHI	560	24	15	2
9885		RAMY	04	05	1245	N13	W46	04	2.1		BG	EKI	620	22	15	3
9885		HOLL	04	05	1504	N12	W47	04	2.1		BG	EKC	430	19	14	2
9885	31105	MWIL	04	05	2200	N12	W52	04	2.0	5	(B)					
9885		LEAR	04	06	0040	N13	W52	04	2.1		BG	EKI	400	23	15	4
9885		SVTO	04	06	0720	N13	W58	04	1.9		BG	FKI	360	20	17	3
9885		HOLL	04	06	1510	N15	W65	04	1.7		B	DAO	220	4	5	4
9885		RAMY	04	06	1915	N13	W67	04	1.7		BG	DAO	260	6	9	1
9885		LEAR	04	07	0025	N13	W67	04	2.0		B	EAO	180	5	15	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9885		SVTO	04	07	0618	N12	W69	04	2.1		B	DSO	210	2	7	3
9885		HOLL	04	07	1500	N13	W79	04	1.7		A	HAX	120	2	3	3
9885	31105	MWIL	04	07	1645	N12	W74	04	2.1	4	(BG)					
9885		LEAR	04	08	0127	N14	W85	04	1.6		A	HSX	120	4	3	3
9885		KAND	04	08	0720	N13	W80	04	2.3			AX		1		3
9891		LEAR	04	02	0328	S07	E00	04	2.1		B	BXO	20	5	4	1
9891		SVTO	04	02	0710	S08	E01	04	2.4		A	AXX		1		4
9891		LEAR	04	03	0130	S08	W11	04	2.2		B	BXO	10	3	3	3
9891	31118	MWIL	04	03	1530	S07	W18	04	2.3	3	(AF)					
9891		HOLL	04	03	1820	S07	W20	04	2.3		B	BXO	10	2	4	4
9886	31106	MWIL	03	28	1600	N12	E73	04	3.2	4	(AP)					
9886		SVTO	03	29	0730	N13	E66	04	3.3		B	CRO	150	10	8	3
9886		RAMY	03	29	1320	N12	E61	04	3.1		B	DAO	70	4	4	3
9886	31106	MWIL	03	29	1600	N12	E60	04	3.2	4	(B)					
9886		VORO	03	29	2255	N12	E57	04	3.2			BXO	79	4	7	3
9886		LEAR	03	30	0522	N11	E52	04	3.1		B	DAO	120	8	7	4
9886		SVTO	03	30	0820	N12	E50	04	3.1		B	DAO	50	5	8	3
9886		RAMY	03	30	1345	N12	E47	04	3.1		B	DSI	50	11	8	3
9886	31106	MWIL	03	30	1600	N11	E46	04	3.1	5	(BG)					
9886		VORO	03	30	2245	N12	E43	04	3.2			CSO	151	8	7	3
9886		SVTO	03	31	0612	N11	E39	04	3.2		B	DSO	100	10	10	3
9886		RAMY	03	31	1207	N12	E36	04	3.2		B	DAO	100	5	8	2
9886	31106	MWIL	03	31	1500	N11	E34	04	3.2	5	(BG)					
9886		LEAR	04	01	0026	N11	E29	04	3.2		BG	DAO	160	32	7	4
9886		VORO	04	01	0125	N12	E28	04	3.2			DAI	141	4	8	2
9886		TACH	04	01	0527	N12	E23	04	2.9			DAO	295	5	7	3
9886		SVTO	04	01	0700	N12	E25	04	3.2		B	EAO	240	15	11	3
9886		RAMY	04	01	1143	N11	E22	04	3.1		B	DAO	160	11	10	3
9886	31106	MWIL	04	01	1530	N11	E19	04	3.1	5	(B)					
9886		VORO	04	01	2233	N11	E16	04	3.1			DAI	206	24	9	3
9886		LEAR	04	02	0328	N11	E13	04	3.1		BG	DAO	150	29	9	1
9886		TACH	04	02	0447	N11	E11	04	3.0			DAI	178	7	5	3
9886		SVTO	04	02	0710	N13	E12	04	3.2		B	CSO	100	39	12	4
9886		RAMY	04	02	1252	N12	E08	04	3.1		B	DAI	110	20	10	2
9886	31106	MWIL	04	02	1530	N12	E06	04	3.1	4	(B)					
9886		VORO	04	02	2231	N12	E02	04	3.1			DAI	137	14	9	3
9886		LEAR	04	03	0130	N12	E02	04	3.2		B	DSO	110	12	9	3
9886		KAND	04	03	0805	N11	W03	04	3.1			DSO		4	9	3
9886		RAMY	04	03	1215	N13	W04	04	3.2		B	DAO	100	5	9	3
9886	31106	MWIL	04	03	1530	N13	W07	04	3.1	4	(B)					
9886		HOLL	04	03	1820	N13	W07	04	3.2		B	DAO	120	12	8	4
9886		VORO	04	03	2235	N13	W11	04	3.1			CAI	78	15	6	3
9886		LEAR	04	04	0025	N13	W12	04	3.1		BG	DSO	80	15	8	2
9886		RAMY	04	04	1242	N14	W18	04	3.2		B	DSI	60	21	9	3
9886		HOLL	04	04	1450	N13	W21	04	3.0		B	DAO	150	13	8	4
9886	31106	MWIL	04	04	1600	N13	W21	04	3.1	4	(B)					
9886		LEAR	04	05	0040	N13	W26	04	3.1		BGD	DAI	120	26	8	2
9886		RAMY	04	05	1245	N15	W33	04	3.0		B	DAI	80	14	8	3
9886		HOLL	04	05	1504	N13	W34	04	3.1		B	DAI	140	13	8	2
9886	31106	MWIL	04	05	2200	N14	W38	04	3.0	4	(B)					
9886		LEAR	04	06	0040	N13	W39	04	3.1		B	DAC	80	22	8	4
9886		SVTO	04	06	0720	N14	W45	04	2.9		B	CSO	70	13	8	3
9886		HOLL	04	06	1510	N15	W53	04	2.6		B	EAC	190	13	13	4
9886		RAMY	04	06	1915	N15	W55	04	2.6		B	ESO	120	8	11	1
9886		LEAR	04	07	0025	N14	W55	04	2.9		B	BXO	20	6	5	3
9886		SVTO	04	07	0618	N15	W63	04	2.5		B	ESO	120	8	11	3
9886		HOLL	04	07	1500	N14	W68	04	2.5		B	DAO	140	5	6	3
9886	31106	MWIL	04	07	1645	N14	W66	04	2.7	3	AP					
9886		LEAR	04	08	0127	N14	W69	04	2.8		B	BXO	90	5	4	3
9886		TACH	04	08	0429	N13	W72	04	2.7			BRO	16	3	4	4
9886		SVTO	04	08	0734	N15	W75	04	2.6		B	BXO	30	2	4	3
9886		HOLL	04	08	1429	N13	W78	04	2.7		A	AXX	10	1	1	3
9886A		VORO	04	03	2235	S19	W06	04	3.5			AXX	5	1		3
9887		LEAR	03	29	0318	N01	E76	04	3.8		A	AXX		1		4
9887		SVTO	03	29	0730	N01	E76	04	4.0		B	CAO	180	4	5	3

S U N S P O T G R O U P S
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9887		RAMY	03	29	1320	N01	E68	04	3.6		B	DSO	50	6	5	3
9887	31107	MWIL	03	29	1600	N01	E69	04	3.8	4	(B)					
9887		VORO	03	29	2255	N01	E65	04	3.8			DSI	122	5	6	3
9887		LEAR	03	30	0522	N00	E61	04	3.8		B	DAO	200	11	8	4
9887		SVTO	03	30	0820	N01	E58	04	3.7		B	DAO	160	11	8	3
9887		RAMY	03	30	1345	N00	E56	04	3.7		B	DAO	140	9	8	3
9887	31107	MWIL	03	30	1600	N01	E55	04	3.8	5	(BG)					
9887		VORO	03	30	2245	N01	E51	04	3.7			DSI	324	10	8	3
9887		SVTO	03	31	0612	N01	E47	04	3.8		BG	EAI	250	9	11	3
9887		RAMY	03	31	1207	N00	E42	04	3.6		B	EAO	220	13	12	2
9887	31107	MWIL	03	31	1500	N01	E40	04	3.6	5	(BG)					
9887		LEAR	04	01	0026	N01	E36	04	3.7		BG	DKI	470	38	10	4
9887		VORO	04	01	0125	N01	E37	04	3.8			DKI	374	4	9	2
9887		TACH	04	01	0527	N02	E30	04	3.5			DAI	570	16	7	3
9887		SVTO	04	01	0700	N02	E33	04	3.7		BG	EKI	490	17	13	3
9887		RAMY	04	01	1143	N00	E30	04	3.7		B	DKI	500	15	10	3
9887	31107	MWIL	04	01	1530	N01	E27	04	3.7	5	(BG)					
9887		VORO	04	01	2233	N01	E25	04	3.8			DKI	700	37	9	3
9887		LEAR	04	02	0328	N01	E22	04	3.8		BG	EKI	560	40	12	1
9887		TACH	04	02	0447	N02	E17	04	3.5			DAI	959	12	7	3
9887		SVTO	04	02	0710	N03	E20	04	3.8		BG	EKI	690	65	13	4
9887		RAMY	04	02	1252	N01	E17	04	3.8		BG	EKI	800	17	12	2
9887	31107	MWIL	04	02	1530	N01	E14	04	3.7	5	(BG)					
9887		VORO	04	02	2231	N02	E12	04	3.8			DKI	846	37	10	3
9887		LEAR	04	03	0130	N02	E10	04	3.8		BG	EKI	570	24	12	3
9887		KAND	04	03	0805	N01	E06	04	3.8			EAC		21	12	3
9887		RAMY	04	03	1215	N02	E04	04	3.8		BG	EKI	850	19	12	3
9887	31107	MWIL	04	03	1530	N02	E02	04	3.8	5	(BG)					
9887		HOLL	04	03	1820	N03	E01	04	3.8		B	EHI	750	27	12	4
9887		VORO	04	03	2235	N04	E03	04	4.2			DAI	872	31	13	3
9887		LEAR	04	04	0025	N02	W04	04	3.7		BG	EHC	730	33	12	2
9887		RAMY	04	04	1242	N02	W11	04	3.7		BG	EKI	780	25	13	3
9887		HOLL	04	04	1450	N03	W12	04	3.7		BG	EKI	680	24	12	4
9887	31107	MWIL	04	04	1600	N02	W12	04	3.8	5	(BG)					
9887		LEAR	04	05	0040	N03	W17	04	3.7		BG	EKI	750	25	14	2
9887		RAMY	04	05	1245	N02	W23	04	3.8		BG	EKI	680	26	13	3
9887		HOLL	04	05	1504	N03	W24	04	3.8		BG	EKI	630	18	15	2
9887	31107	MWIL	04	05	2200	N02	W27	04	3.9	5	(BG)					
9887		LEAR	04	06	0040	N03	W29	04	3.9		BG	EKI	690	29	14	4
9887		SVTO	04	06	0720	N02	W34	04	3.8		BG	EKI	590	18	14	3
9887		HOLL	04	06	1510	N04	W35	04	4.0		BG	FKC	650	39	16	4
9887		RAMY	04	06	1915	N04	W40	04	3.8		BG	EKO	440	11	11	1
9887		LEAR	04	07	0025	N02	W44	04	3.7		B	EKO	490	19	12	3
9887		SVTO	04	07	0618	N02	W47	04	3.7		B	EKO	490	13	14	3
9887		HOLL	04	07	1500	N03	W52	04	3.7		BG	FKI	570	16	13	3
9887	31107	MWIL	04	07	1645	N02	W52	04	3.8	5	(B)					
9887		LEAR	04	08	0127	N03	W57	04	3.8		B	EKO	410	15	11	3
9887		TACH	04	08	0429	N02	W55	04	4.1			DAO	575	8	9	4
9887		KAND	04	08	0720	N02	W63	04	3.6			ESO		4	12	3
9887		SVTO	04	08	0734	N05	W60	04	3.8		B	EAO	420	4	13	3
9887		RAMY	04	08	1306	N04	W63	04	3.8		B	EAO	360	5	13	2
9887		HOLL	04	08	1429	N03	W63	04	3.9		BG	EKI	450	9	12	3
9887	31107	MWIL	04	08	1430	N02	W65	04	3.7	5	(B)					
9887		LEAR	04	09	0145	N04	W68	04	4.0		BG	EAO	250	9	13	1
9887		KAND	04	09	1050	N03	W76	04	3.8			EAO		6	14	2
9887		RAMY	04	09	1406	N04	W77	04	3.8		B	ESO	210	2	15	2
9887		HOLL	04	09	1458	N03	W77	04	3.9		BG	EAI	270	6	11	3
9887	31107	MWIL	04	09	1500	N02	W77	04	3.9	4	(B)					
9887		VORO	04	09	2342	N02	W77	04	4.2			HAX	193	1		3
9887		LEAR	04	10	0100	N03	W76	04	4.4		BG	CAO	60	2	2	1
9887		TACH	04	10	0457	N03	W78	04	4.4			HSX	250	1	1	4
9887A	31119	MWIL	04	03	1530	S08	E03	04	3.9	3	(AP)					
9889		RAMY	03	30	1345	S19	E64	04	4.4		A	HRX	20	1	1	3
9889	31110	MWIL	03	30	1600	S19	E65	04	4.6	4	(B)					
9889		VORO	03	30	2245	S19	E61	04	4.6			BXO	29	2	5	3
9889		SVTO	03	31	0612	S19	E58	04	4.7		B	BXO	20	2	5	3
9889		RAMY	03	31	1207	S21	E52	04	4.5		B	CSO	30	2	6	2

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9889	31110	MWIL	03	31	1500	S20	E50	04	4.4	4	(B)					
9889		LEAR	04	01	0026	S21	E42	04	4.2		A	HAX	30	2	2	4
9889		VORO	04	01	0125	S19	E43	04	4.3			AXX	13	1		2
9889		TACH	04	01	0527	S17	E36	04	4.0			AXX	20	1	1	3
9889		SVTO	04	01	0700	S19	E40	04	4.3		A	HRX	10	2	2	3
9889		RAMY	04	01	1143	S20	E36	04	4.2		A	HSX	10	1	1	3
9889	31110	MWIL	04	01	1530	S20	E36	04	4.4	4	(BP)					
9889		VORO	04	01	2233	S20	E32	04	4.4			BXI	6	3	5	3
9889		LEAR	04	02	0328	S19	E29	04	4.3		B	CAO	40	8	5	1
9889		TACH	04	02	0447	S17	E26	04	4.2			AXX	10	1	1	3
9889		SVTO	04	02	0710	S19	E29	04	4.5		B	CRO	20	7	4	4
9889		RAMY	04	02	1252	S20	E24	04	4.4		A	HAX	10	1	1	2
9889	31110	MWIL	04	02	1530	S19	E23	04	4.4	4	(B)					
9889		VORO	04	02	2231	S19	E19	04	4.4			AXX	3	1		3
9889		LEAR	04	03	0130	S19	E17	04	4.3		A	AXX		1		3
9889	31110	MWIL	04	03	1530	S19	E10	04	4.4	3	(B)					
9889		VORO	04	03	2235	S18	E07	04	4.5			AXX	6	1		3
9889		RAMY	04	04	1242	S20	E01	04	4.6		B	BXO		2	2	3
9888		LEAR	03	29	0318	S12	E82	04	4.3		A	HSX	100	4	3	4
9888		SVTO	03	29	0730	S11	E80	04	4.3		B	CRO	30	3	7	3
9888		RAMY	03	29	1320	S11	E73	04	4.0		A	HAX	170	3	2	3
9888	31108	MWIL	03	29	1600	S12	E74	04	4.2	4	(AP)					
9888		VORO	03	29	2255	S12	E70	04	4.2			HRX	135	1		3
9888		LEAR	03	30	0522	S13	E68	04	4.3		B	CAO	90	6	4	4
9888		SVTO	03	30	0820	S11	E66	04	4.3		B	CAO	90	3	4	3
9888		RAMY	03	30	1345	S12	E63	04	4.3		B	DAO	140	5	6	3
9888	31108	MWIL	03	30	1600	S12	E63	04	4.4	5	(B)					
9888		VORO	03	30	2245	S12	E59	04	4.4			CSI	215	3	5	3
9888		SVTO	03	31	0612	S12	E55	04	4.4		B	DSO	190	4	7	3
9888		RAMY	03	31	1207	S14	E52	04	4.4		B	DAO	200	6	7	2
9888	31108	MWIL	03	31	1500	S13	E50	04	4.4	5	(B)					
9888		LEAR	04	01	0026	S13	E44	04	4.3		B	DAO	270	20	7	4
9888		VORO	04	01	0125	S13	E45	04	4.4			CAI	231	4	6	2
9888		TACH	04	01	0527	S10	E39	04	4.1			DSO	290	6	8	3
9888		SVTO	04	01	0700	S12	E42	04	4.4		B	DAO	420	11	9	3
9888		RAMY	04	01	1143	S13	E38	04	4.3		B	DAO	320	8	6	3
9888	31108	MWIL	04	01	1530	S13	E37	04	4.4	5	(B)					
9888		VORO	04	01	2233	S13	E33	04	4.4			CAI	373	18	6	3
9888		LEAR	04	02	0328	S13	E30	04	4.4		B	DAO	260	29	8	1
9888		TACH	04	02	0447	S10	E26	04	4.1			CSI	265	6	5	3
9888		SVTO	04	02	0710	S12	E29	04	4.5		B	EKI	270	28	12	4
9888		RAMY	04	02	1252	S13	E25	04	4.4		B	DSO	220	12	7	2
9888	31108	MWIL	04	02	1530	S12	E24	04	4.4	5	(B)					
9888		VORO	04	02	2231	S13	E21	04	4.5			CAI	287	17	6	3
9888		LEAR	04	03	0130	S13	E19	04	4.5		B	DHO	180	14	8	3
9888		KAND	04	03	0805	S13	E15	04	4.5			DAO		15	2	3
9888		RAMY	04	03	1215	S13	E14	04	4.6		B	DAO	290	11	10	3
9888	31108	MWIL	04	03	1530	S12	E10	04	4.4	5	(B)					
9888		HOLL	04	03	1820	S12	E09	04	4.4		B	DKI	220	17	9	4
9888		VORO	04	03	2235	S13	E07	04	4.5			CAI	202	12	6	3
9888		LEAR	04	04	0025	S13	E05	04	4.4		B	DKO	210	11	7	2
9888		RAMY	04	04	1242	S12	E02	04	4.7		B	DAO	190	12	8	3
9888		HOLL	04	04	1450	S12	W03	04	4.4		B	DKO	150	10	7	4
9888	31108	MWIL	04	04	1600	S12	W04	04	4.4	4	(BP)					
9888		LEAR	04	05	0040	S12	W07	04	4.5		B	DAO	170	12	7	2
9888		RAMY	04	05	1245	S12	W12	04	4.6		B	ESO	210	9	11	3
9888		HOLL	04	05	1504	S12	W17	04	4.3		B	CKO	150	5	4	2
9888	31108	MWIL	04	05	2200	S12	W22	04	4.2	5	(AP)					
9888		LEAR	04	06	0040	S13	W23	04	4.3		B	CAO	150	6	5	4
9888		SVTO	04	06	0720	S12	W28	04	4.2		B	CAO	120	3	3	3
9888		HOLL	04	06	1510	S11	W32	04	4.2		A	HKX	150	8	8	4
9888		RAMY	04	06	1915	S11	W35	04	4.2		B	CSO	90	3	3	1
9888		LEAR	04	07	0025	S11	W37	04	4.2		A	HAX	120	4	2	3
9888		SVTO	04	07	0618	S12	W42	04	4.1		B	CAO	130	4	4	3
9888		HOLL	04	07	1500	S11	W46	04	4.2		A	HKX	140	6	4	3
9888	31108	MWIL	04	07	1645	S12	W43	04	4.4	4	(BP)					
9888		LEAR	04	08	0127	S12	W47	04	4.5		B	CSO	130	9	10	3
9888		KAND	04	08	0720	S13	W55	04	4.1			DSO		2	4	3

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9888		SVTO	04	08	0734	S11	W56	04	4.1		B	DSO	140	2	3	3
9888		RAMY	04	08	1306	S10	W58	04	4.2		B	DSO	70	2	3	2
9888		HOLL	04	08	1429	S13	W54	04	4.5		B	CAO	80	4	11	3
9888	31108	MWIL	04	08	1430	S12	W56	04	4.4	4	(BP)					
9888		LEAR	04	09	0145	S12	W65	04	4.2		A	HAX	90	2	3	1
9888		KAND	04	09	1050	S11	W73	04	3.9			AX		1		2
9888		RAMY	04	09	1406	S09	W73	04	4.1		A	HSX	20	1	1	2
9888		HOLL	04	09	1458	S12	W67	04	4.6		B	CSO	20	2	9	3
9888	31108	MWIL	04	09	1500	S12	W68	04	4.5	4	(BP)					
9888		LEAR	04	10	0100	S12	W78	04	4.2		B	CSO	40	2	3	1
9888		SVTO	04	10	1130	S13	W78	04	4.6		A	AXX		1		2
9894		RAMY	04	04	1242	N15	E09	04	5.2		A	AXX		1	1	3
9894		HOLL	04	04	1450	N14	E08	04	5.2		B	BXO	10	3	2	4
9894		LEAR	04	05	0040	N14	E01	04	5.1		B	BXO	10	3	6	2
9894		RAMY	04	05	1245	N15	W05	04	5.1		B	BXO	10	10	9	3
9894		HOLL	04	05	1504	N14	W04	04	5.3		B	CAO	30	3	3	2
9894	31122	MWIL	04	05	2200	N15	W09	04	5.2	4	(AP)					
9894		LEAR	04	06	0040	N15	W11	04	5.2		A	AXX	10	2	1	4
9894		SVTO	04	06	0720	N15	W16	04	5.1		A	AXX	10	3	2	3
9894		HOLL	04	06	1510	N17	W19	04	5.2		A	HAX	20	1	1	4
9897		SVTO	04	06	0720	S01	E04	04	6.6		B	DAO	30	3	3	3
9897		HOLL	04	06	1510	S01	E01	04	6.7		B	DAO	80	6	4	4
9897		RAMY	04	06	1915	S01	W03	04	6.6		B	DSO	20	3	4	1
9897		LEAR	04	07	0025	S01	W05	04	6.6		B	DRO	40	9	5	3
9897		SVTO	04	07	0618	S02	W09	04	6.6		B	DSO	80	8	5	3
9897		HOLL	04	07	1500	S03	W12	04	6.7		B	DAO	100	9	6	3
9897	31125	MWIL	04	07	1645	S02	W15	04	6.6	4	(B)					
9897		LEAR	04	08	0127	S02	W19	04	6.6		B	DSO	60	7	5	3
9897		TACH	04	08	0429	S02	W20	04	6.7			BXI	32	4	4	4
9897		KAND	04	08	0720	S02	W24	04	6.5			BXO		6	5	3
9897		SVTO	04	08	0734	S03	W23	04	6.6		B	DSO	30	7	5	3
9897		RAMY	04	08	1306	S02	W27	04	6.5		B	DSO	20	2	6	2
9897		HOLL	04	08	1429	S02	W27	04	6.6		B	CAO	20	5	5	3
9897	31125	MWIL	04	08	1430	S02	W27	04	6.6	4	(B)					
9897		LEAR	04	09	0145	S02	W33	04	6.6		B	CRO	20	3	5	1
9897		KAND	04	09	1050	S02	W39	04	6.5			BXO		2	6	2
9897		RAMY	04	09	1406	S02	W43	04	6.4		A	HSX	10	1		2
9897		HOLL	04	09	1458	S02	W41	04	6.6		B	CSO	30	2	5	3
9897	31125	MWIL	04	09	1500	S03	W41	04	6.6	4	(BP)					
9897		VORO	04	09	2342	S03	W48	04	6.4			AXX	12	1		3
9897		LEAR	04	10	0100	S03	W48	04	6.4		B	CSO	20	1	1	1
9897		TACH	04	10	0457	S01	W48	04	6.6			AXX	15	1	1	4
9897		SVTO	04	10	1130	S03	W55	04	6.4		A	HSX	20	1	1	2
9897		HOLL	04	10	1407	S02	W54	04	6.5		B	CSO	40	2	3	4
9897	31125	MWIL	04	10	1430	S03	W56	04	6.4	4	(AP)					
9897		RAMY	04	10	1630	S02	W58	04	6.3		A	HSX	20	1	1	2
9897		LEAR	04	11	0050	S02	W62	04	6.4		A	AXX	10	1	1	1
9897	31125	MWIL	04	11	1500	S02	W70	04	6.4	3	(AP)					
9892		VORO	04	01	2225	N04	E76	04	7.6			BXI	20	3	4	2
9892		LEAR	04	02	0328	N04	E72	04	7.5		B	DAO	90	4	5	1
9892		SVTO	04	02	0710	N06	E73	04	7.8		B	CRO	120	6	7	4
9892		RAMY	04	02	1252	N03	E69	04	7.7		B	CSO	30	3	3	2
9892	31117	MWIL	04	02	1530	N05	E66	04	7.6	4	(B)					
9892		VORO	04	02	2231	N05	E64	04	7.7			CAI	62	5	4	3
9892		LEAR	04	03	0130	N04	E60	04	7.5		B	CSO	40	5	5	3
9892		KAND	04	03	0805	N05	E55	04	7.4			HA		2	2	3
9892		RAMY	04	03	1215	N04	E55	04	7.6		B	CSO	30	2	4	3
9892	31117	MWIL	04	03	1530	N05	E53	04	7.6	4	(B)					
9892		HOLL	04	03	1820	N03	E52	04	7.6		B	CAO	40	4	5	4
9892		VORO	04	03	2235	N05	E49	04	7.6			CRO	40	5	4	3
9892		LEAR	04	04	0025	N05	E47	04	7.5		B	CAO	40	4	6	2
9892		RAMY	04	04	1242	N06	E39	04	7.4		A	HSX	20	2	2	3
9892		HOLL	04	04	1450	N06	E37	04	7.4		B	CSI	30	5	2	4
9892	31117	MWIL	04	04	1600	N05	E37	04	7.4	4	(AP)					
9892		LEAR	04	05	0040	N05	E32	04	7.4		A	HRX	10	2	1	2
9892		LEAR	04	06	0040	N05	E18	04	7.4		A	AXX		3	1	4

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APRIL 2002

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9892		SVTO	04	06	0720	N06	E14	04	7.3		A	AXX		1		3
9892		HOLL	04	06	1510	N05	E13	04	7.6		B	BXO	20	5	6	4
9892		LEAR	04	07	0025	N05	E06	04	7.5		B	BXO	10	3	4	3
9892		SVTO	04	07	0618	N05	E04	04	7.6		A	AXX		1		3
9892		SVTO	04	08	0734	N05	W10	04	7.6		B	CRO	10	2	2	3
9892	31129	MWIL	04	08	1430	N04	W14	04	7.5	4	(AP)					
9892A		HOLL	04	06	1510	S09	E14	04	7.7		A	AXX	10	1	1	4
9900		HOLL	04	06	1510	S29	E21	04	8.3		A	AXX	10	2	2	4
9900		RAMY	04	06	1915	S30	E18	04	8.2		A	AXX	10	1		1
9900		LEAR	04	07	0025	S28	E19	04	8.5		B	BXO	20	10	8	3
9900		SVTO	04	07	0618	S29	E16	04	8.5		B	DSO	100	15	8	3
9900		HOLL	04	07	1500	S29	E11	04	8.5		B	DAI	120	16	8	3
9900	31126	MWIL	04	07	1645	S28	E10	04	8.5	5	(BG)					
9900		LEAR	04	08	0127	S29	E06	04	8.5		BG	EAI	130	30	12	3
9900		TACH	04	08	0429	S27	E03	04	8.4			DAI	208	9	8	4
9900		KAND	04	08	0720	S29	E04	04	8.6			ESO		9	11	3
9900		SVTO	04	08	0734	S29	E02	04	8.5		B	EAO	100	16	11	3
9900		RAMY	04	08	1306	S29	W01	04	8.5		B	DAO	150	9	10	2
9900		HOLL	04	08	1429	S28	W01	04	8.5		B	EAI	120	22	11	3
9900	31126	MWIL	04	08	1430	S29	W01	04	8.5	5	(BG)					
9900		LEAR	04	09	0145	S29	W08	04	8.4		BG	DAI	130	19	9	1
9900		KAND	04	09	1050	S28	W13	04	8.4			EAO		22	12	2
9900		RAMY	04	09	1406	S29	W15	04	8.4		B	ESO	210	8	12	2
9900		HOLL	04	09	1458	S28	W14	04	8.5		B	EAI	180	28	12	3
9900	31126	MWIL	04	09	1500	S29	W13	04	8.6	5	(D)					
9900		VORO	04	09	2342	S29	W19	04	8.5			DAO	230	23	11	3
9900		LEAR	04	10	0100	S28	W20	04	8.5		BGD	EAI	160	20	12	1
9900		TACH	04	10	0457	S25	W19	04	8.7			BRI	118	16	11	4
9900		SVTO	04	10	1130	S28	W23	04	8.7		B	DAI	170	20	9	2
9900		HOLL	04	10	1407	S28	W28	04	8.4		B	ESI	80	20	12	4
9900	31126	MWIL	04	10	1430	S29	W27	04	8.5	4	(BG)					
9900		RAMY	04	10	1630	S30	W29	04	8.4		B	DSO	70	12	10	2
9900		VORO	04	10	2205	S30	W31	04	8.5			DAO	154	18	10	2
9900		LEAR	04	11	0050	S27	W34	04	8.4		BG	DAI	120	19	10	1
9900		TACH	04	11	0631	S28	W35	04	8.5			CAI	227	16	10	3
9900		HOLL	04	11	1436	S27	W38	04	8.6		B	DSO	120	16	11	4
9900	31126	MWIL	04	11	1500	S29	W39	04	8.6	4	(BG)					
9900		SVTO	04	11	1502	S28	W42	04	8.3		B	EAO	100	9	11	2
9900		RAMY	04	11	1517	S30	W42	04	8.3		B	DAO	60	11	9	3
9900		VORO	04	11	2314	S30	W44	04	8.5			DAO	219	12	10	2
9900		LEAR	04	12	0030	S28	W45	04	8.5		BG	DAO	130	17	9	4
9900		RAMY	04	12	1447	S29	W51	04	8.6		B	DAO	160	7	6	2
9900	31126	MWIL	04	12	1500	S29	W50	04	8.7	4	BG					
9900		VORO	04	12	2237	S29	W54	04	8.7			DAO	105	4	4	3
9900		LEAR	04	13	0235	S28	W58	04	8.6		BG	DAO	130	12	10	2
9900		HOLL	04	13	1430	S30	W63	04	8.6		B	CSO	80	9	8	4
9900	31126	MWIL	04	13	1500	S28	W63	04	8.7	4	(B)					
9900		VORO	04	14	0044	S26	W75	04	8.2			HRX	39	1		3
9900		LEAR	04	14	0050	S27	W68	04	8.7		B	BXO	20	4	5	2
9900		RAMY	04	14	1210	S29	W75	04	8.6		B	DSO	60	2	3	3
9900		SVTO	04	14	1330	S26	W76	04	8.6		B	DSO	50	4	5	3
9900		HOLL	04	14	1423	S30	W76	04	8.6		A	AXX	20	3	2	3
9900	31126	MWIL	04	14	2000	S29	W76	04	8.9	3	(AP)					
9900A		SVTO	04	06	0720	N13	E32	04	8.7		A	AXX		1		3
9900A		HOLL	04	06	1510	N12	E28	04	8.7		A	AXX	10	1	1	4
9904		HOLL	04	08	1429	S17	E12	04	9.5		A	AXX	10	1	1	3
9904	31130	MWIL	04	08	1430	S16	E11	04	9.4	4	(AP)					
9904		LEAR	04	09	0145	S16	E05	04	9.4		B	CAO	30	6	2	1
9904		KAND	04	09	1050	S16	W01	04	9.4			CSI		9	3	2
9904		RAMY	04	09	1406	S16	W03	04	9.3		B	DSO	70	4	3	2
9904		HOLL	04	09	1458	S16	W03	04	9.4		B	CAO	60	9	3	3
9904	31130	MWIL	04	09	1500	S16	W03	04	9.4	4	(BP)					
9904		VORO	04	09	2342	S16	W08	04	9.4			CAI	100	9	3	3
9904		LEAR	04	10	0100	S17	W08	04	9.4		B	CAO	60	6	3	1
9904		TACH	04	10	0457	S14	W09	04	9.5			CAO	125	4	3	4

S U N S P O T G R O U P S
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9904		SVTO	04	10	1130	S15	W15	04	9.3		B	CAO	60	9	5	2
9904		HOLL	04	10	1407	S17	W18	04	9.2		B	CSO	50	5	4	4
9904	31130	MWIL	04	10	1430	S16	W16	04	9.4	4	(D)					
9904		RAMY	04	10	1630	S17	W19	04	9.2		B	DSO	30	2	2	2
9904		VORO	04	10	2205	S16	W22	04	9.2			BXI	55	6	2	2
9904		LEAR	04	11	0050	S15	W23	04	9.3		BG	DAI	40	7	3	1
9904		TACH	04	11	0631	S16	W26	04	9.3			BRI	59	9	2	3
9904		HOLL	04	11	1436	S17	W31	04	9.2		B	BXO	20	4	3	4
9904	31130	MWIL	04	11	1500	S16	W31	04	9.3	4	(B)					
9904		SVTO	04	11	1502	S15	W32	04	9.2		B	CSO	20	3	3	2
9904		RAMY	04	11	1517	S16	W31	04	9.3		B	CSO	10	3	3	3
9904		VORO	04	11	2314	S16	W36	04	9.2			AXX	8	1		2
9904		LEAR	04	12	0030	S15	W36	04	9.3		B	BXO	30	5	4	4
9904		RAMY	04	12	1447	S15	W45	04	9.2		B	CAO	20	4	3	2
9904	31130	MWIL	04	12	1500	S16	W45	04	9.2	4	B +					
9904		LEAR	04	13	0235	S14	W55	04	8.9		B	BXO	30	8	8	2
9904	31130	MWIL	04	13	1500	S16	W62	04	8.9	3	(B)					
9893		RAMY	04	03	1215	N18	E84	04	9.9		A	HSX	30	1	5	3
9893	31120	MWIL	04	03	1530	N18	E79	04	9.7	4	AP					
9893		HOLL	04	03	1820	N15	E78	04	9.7		A	HSX	60	1	2	4
9893		VORO	04	03	2235	N19	E80	04	10.0			CAI	251	4	6	3
9893		LEAR	04	04	0025	N17	E73	04	9.6		B	DSO	120	5	6	2
9893		RAMY	04	04	1242	N18	E71	04	9.9		B	EAO	220	8	13	3
9893		HOLL	04	04	1450	N18	E70	04	9.9		B	EHO	300	10	13	4
9893	31120	MWIL	04	04	1600	N18	E68	04	9.8	4	(B)					
9893		LEAR	04	05	0040	N17	E65	04	10.0		BG	EAO	310	14	11	2
9893		RAMY	04	05	1245	N21	E59	04	10.0		B	EAI	350	17	15	3
9893		HOLL	04	05	1504	N19	E58	04	10.0		B	EAI	300	12	14	2
9893	31120	MWIL	04	05	2200	N18	E52	04	9.9	5	(BP)					
9893		LEAR	04	06	0040	N17	E50	04	9.8		BG	EAI	360	23	13	4
9893		SVTO	04	06	0720	N19	E46	04	9.8		BG	FAI	300	22	17	3
9893		HOLL	04	06	1510	N16	E45	04	10.0		BG	FKC	470	23	19	4
9893		RAMY	04	06	1915	N17	E40	04	9.8		B	DKO	230	7	10	1
9893		LEAR	04	07	0025	N19	E39	04	10.0		BG	FAI	310	26	16	3
9893		SVTO	04	07	0618	N18	E33	04	9.8		BG	EKI	310	20	13	3
9893		HOLL	04	07	1500	N18	E33	04	10.1		BG	FKC	460	33	19	3
9893	31120	MWIL	04	07	1645	N19	E30	04	10.0	5	(D)					
9893		LEAR	04	08	0127	N18	E25	04	10.0		BGD	FHI	450	32	16	3
9893		TACH	04	08	0429	N17	E18	04	9.5			DAI	610	6	10	4
9893		KAND	04	08	0720	N20	E25	04	10.2			FHO		16	21	3
9893		SVTO	04	08	0734	N18	E17	04	9.6		BG	DSO	260	16	8	3
9893		RAMY	04	08	1306	N18	E22	04	10.2		BG	FKI	620	17	21	2
9893		HOLL	04	08	1429	N19	E19	04	10.0		BGD	FKC	520	38	18	3
9893	31120	MWIL	04	08	1430	N20	E20	04	10.1	5	(D)					
9893		LEAR	04	09	0145	N18	E14	04	10.1		BGD	EKI	460	22	15	1
9893		KAND	04	09	1050	N19	E11	04	10.3			FAO		35	22	2
9893		RAMY	04	09	1406	N18	E03	04	9.8		B	DKO	280	7	7	2
9893		HOLL	04	09	1458	N20	E06	04	10.1		BGD	FAC	510	38	16	3
9893	31120	MWIL	04	09	1500	N20	E07	04	10.2	6	(D)					
9893		VORO	04	09	2342	N18	W03	04	9.7			DHI	385	24	7	3
9893		LEAR	04	10	0100	N19	E01	04	10.1		BGD	FKI	450	39	16	1
9893		TACH	04	10	0457	N18	W07	04	9.7			DAI	465	8	6	4
9893		SVTO	04	10	1130	N19	W08	04	9.9		BG	EKI	350	25	14	2
9893		HOLL	04	10	1407	N18	W11	04	9.7		B	DAO	140	14	8	4
9893		HOLL	04	10	1407	N19	W08	04	10.0		BG	EAC	260	18	14	4
9893	31120	MWIL	04	10	1430	N20	W06	04	10.1	6	(BG)					
9893		RAMY	04	10	1630	N18	W13	04	9.7		B	DKO	260	9	10	2
9893		VORO	04	10	2205	N18	W16	04	9.7			DHI	356	16	7	2
9893		LEAR	04	11	0050	N20	W12	04	10.1		BG	EKI	530	31	15	1
9893		TACH	04	11	0631	N16	W20	04	9.7			CAI	297	11	6	3
9893		HOLL	04	11	1436	N19	W24	04	9.8		BG	EAC	300	29	14	4
9893	31120	MWIL	04	11	1500	N20	W20	04	10.1	5	(D)					
9893		SVTO	04	11	1502	N19	W23	04	9.9		B	ESO	160	16	13	2
9893		RAMY	04	11	1517	N20	W20	04	10.1		BG	FKI	450	29	19	3
9893		VORO	04	11	2314	N18	W30	04	9.7			DHI	387	10	7	2
9893		LEAR	04	12	0030	N19	W26	04	10.0		BG	EAI	330	33	14	4
9893		RAMY	04	12	1447	N21	W35	04	9.9		BGD	FAI	520	28	17	2
9893	31120	MWIL	04	12	1500	N20	W31	04	10.2	5	D *					

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9893		VORO	04	12	2237	N18	W45	04	9.5			DHI	422	4	2	3
9893		LEAR	04	13	0235	N19	W41	04	10.0		BGD	FKI	560	17	16	2
9893		HOLL	04	13	1430	N18	W45	04	10.2		A	HKX	190	4	4	4
9893	31120	MWIL	04	13	1500	N20	W44	04	10.2	5	(D)					
9893		VORO	04	14	0044	N18	W60	04	9.5			HAX	306	1		3
9893		LEAR	04	14	0050	N21	W54	04	9.9		BGD	EKI	410	20	14	2
9893		RAMY	04	14	1210	N21	W60	04	9.9		BGD	FKI	560	19	20	3
9893		SVTO	04	14	1330	N22	W58	04	10.1		B	DSO	140	3	3	3
9893		HOLL	04	14	1423	N18	W58	04	10.2		BGD	EAC	480	12	15	3
9893	31120	MWIL	04	14	2000	N20	W59	04	10.3	4	(BG)					
9893		LEAR	04	15	0048	N20	W67	04	9.9		BGD	CKI	430	13	13	4
9893		SVTO	04	15	0535	N20	W70	04	9.9		A	HAX	180	1	4	2
9893		HOLL	04	15	1356	N17	W74	04	9.9		BG	EAI	360	6	11	3
9893	31120	MWIL	04	16	1445	N21	W81	04	10.4	5	BG					
9895		RAMY	04	04	1242	N05	E75	04	10.1		A	AXX		1	1	3
9895		HOLL	04	04	1450	N05	E75	04	10.2		B	BXO	40	3	5	4
9895	31121	MWIL	04	04	1600	N05	E74	04	10.2	3	(AP)					
9895		LEAR	04	05	0040	N05	E68	04	10.1		B	BXO	10	2	4	2
9895		RAMY	04	05	1245	N06	E65	04	10.4		B	BXO	10	4	9	3
9895		HOLL	04	05	1504	N07	E64	04	10.4		B	BXO	30	3	6	2
9895		LEAR	04	06	0040	N07	E59	04	10.4		B	CRO	20	3	5	4
9895		SVTO	04	06	0720	N08	E57	04	10.6		B	BXO	20	3	2	3
9895		HOLL	04	06	1510	N07	E54	04	10.7		A	AXX	10	3	2	4
9901		LEAR	04	07	0025	N21	E50	04	10.8		B	BXO	20	5	5	3
9901		SVTO	04	07	0618	N22	E45	04	10.7		B	DSO	130	13	10	3
9901		HOLL	04	07	1500	N18	E42	04	10.8		B	BXO	40	7	3	3
9901		LEAR	04	08	0127	N18	E37	04	10.9		B	DSO	80	16	7	3
9901		TACH	04	08	0429	N18	E28	04	10.3			CAI	329	13	5	4
9901		SVTO	04	08	0734	N20	E30	04	10.6		BG	DAI	250	19	10	3
9901		HOLL	04	08	1429	N20	E31	04	11.0		B	DAI	70	15	4	3
9901		LEAR	04	09	0145	N19	E25	04	11.0		B	DAI	70	12	6	1
9901		RAMY	04	09	1406	N20	E15	04	10.7		B	ESI	330	1	11	2
9901		HOLL	04	09	1458	N21	E17	04	10.9		B	DAI	150	17	5	3
9901		VORO	04	09	2342	N21	E09	04	10.7			DAI	873	39	11	3
9901		LEAR	04	10	0100	N20	E13	04	11.0		B	DAI	80	10	3	1
9901		TACH	04	10	0457	N19	E05	04	10.6			CAI	469	25	7	4
9901		SVTO	04	10	1130	N20	E04	04	10.8		B	EAI	280	26	11	2
9901		HOLL	04	10	1407	N20	E03	04	10.8		BGD	EAC	240	22	13	4
9901		RAMY	04	10	1630	N20	E00	04	10.7		B	EAI	220	16	11	2
9901		VORO	04	10	2205	N20	W03	04	10.7			DAI	491	33	11	2
9901		LEAR	04	11	0050	N21	E01	04	11.1		B	DAI	100	13	5	1
9901		TACH	04	11	0631	N17	W07	04	10.7			DAI	473	24	9	3
9901		HOLL	04	11	1436	N20	W11	04	10.8		BGD	DAC	260	24	9	4
9901		SVTO	04	11	1502	N21	W12	04	10.7		B	EAI	290	13	12	2
9901		RAMY	04	11	1517	N21	W08	04	11.0		B	DSO	60	9	3	3
9901		VORO	04	11	2314	N20	W16	04	10.7			DAI	563	24	10	2
9901		LEAR	04	12	0030	N21	W14	04	10.9		BGD	DKI	250	21	7	4
9901		RAMY	04	12	1447	N20	W22	04	10.9		B	DAO	70	8	3	2
9901		VORO	04	12	2237	N19	W31	04	10.6			DAI	617	37	12	3
9901		LEAR	04	13	0235	N21	W28	04	11.0		BGD	DAI	240	18	6	2
9901		HOLL	04	13	1430	N19	W42	04	10.4		BGD	EKC	400	28	12	4
9901		VORO	04	14	0044	N20	W45	04	10.6			DAI	571	28	12	3
9901		LEAR	04	14	0050	N22	W43	04	10.7		B	DAO	140	15	7	2
9901		RAMY	04	14	1210	N22	W47	04	10.9		B	DAO	40	3	3	3
9901		SVTO	04	14	1330	N23	W47	04	10.9		B	EAO	300	25	15	3
9901		HOLL	04	14	1423	N20	W50	04	10.8		B	DKO	240	12	7	3
9901		LEAR	04	15	0048	N22	W58	04	10.6		BG	DAI	320	14	6	4
9901		SVTO	04	15	0535	N23	W62	04	10.4		BG	EAO	310	9	15	2
9901		HOLL	04	15	1356	N19	W64	04	10.7		BGD	DKC	420	9	10	3
9901		LEAR	04	16	0053	N21	W72	04	10.5		BG	EAI	300	7	12	1
9901		SVTO	04	16	0624	N21	W80	04	10.1		BG	DAI	360	3	9	3
9901		TACH	04	16	0633	N22	W74	04	10.6			DAO	95	3	4	3
9901		HOLL	04	16	1405	N21	W78	04	10.6		A	HKX	120	3	2	2
9908		VORO	04	11	2314	N04	W12	04	11.1			BXO	23	4	2	2
9908		LEAR	04	12	0030	N05	W13	04	11.0		B	CAO	20	5	3	4
9908		RAMY	04	12	1447	N04	W21	04	11.0		B	CSO	10	3	4	2

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APRIL 2002

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9908	31137	MWIL	04 12 1500	N04 W22	04 11.0	4	B					
9908		VORO	04 12 2237	N04 W26	04 11.0			BXO	38	6	3	3
9908		LEAR	04 13 0235	N05 W28	04 11.0		B	DRO	30	9	4	2
9908		HOLL	04 13 1430	N03 W36	04 10.9		B	DSO	70	6	5	4
9908	31137	MWIL	04 13 1500	N04 W35	04 11.0	4	(B)					
9908		VORO	04 14 0044	N04 W43	04 10.8			HAX	38	3		3
9908		LEAR	04 14 0050	N05 W41	04 11.0		B	BXO	10	4	4	2
9908		RAMY	04 14 1210	N05 W49	04 10.8		B	CSO	20	6	4	3
9908		SVTO	04 14 1330	N06 W49	04 10.9		B	CSO	30	7	4	3
9908		HOLL	04 14 1423	N03 W49	04 10.9		B	BXO	20	9	6	3
9908	31137	MWIL	04 14 2000	N04 W54	04 10.8	3	(AP)					
9908		LEAR	04 15 0048	N05 W57	04 10.8		B	CRO	50	5	3	4
9908		SVTO	04 15 0535	N07 W60	04 10.7		B	CRO	20	2	3	2
9908		HOLL	04 15 1356	N04 W65	04 10.7		A	AXX	10	1	1	3
9896		LEAR	04 05 0040	S11 E87	04 11.6		A	HSX	90	1	2	2
9896		RAMY	04 05 1245	S11 E79	04 11.5		A	HSX	110	1	2	3
9896		HOLL	04 05 1504	S11 E77	04 11.4		A	HSX	90	1	2	2
9896	31123	MWIL	04 05 2200	S11 E75	04 11.5	4	(AP)					
9896		LEAR	04 06 0040	S11 E71	04 11.4		A	HSX	100	2	2	4
9896		SVTO	04 06 0720	S10 E68	04 11.4		A	HSX	70	1	2	3
9896		HOLL	04 06 1510	S12 E64	04 11.4		A	HAX	150	1	2	4
9896		RAMY	04 06 1915	S12 E61	04 11.4		A	HSX	70	1	2	1
9896		LEAR	04 07 0025	S10 E59	04 11.4		A	HSX	80	1	2	3
9896		SVTO	04 07 0618	S11 E56	04 11.5		A	HSX	70	1	2	3
9896		HOLL	04 07 1500	S12 E50	04 11.4		A	HAX	80	1	2	3
9896	31123	MWIL	04 07 1645	S10 E49	04 11.4	5	(AP)					
9896		LEAR	04 08 0127	S11 E45	04 11.4		A	HSX	80	1	2	3
9896		TACH	04 08 0429	S10 E40	04 11.2			HSX	200	1	2	4
9896		KAND	04 08 0720	S10 E44	04 11.6			HS		1	1	3
9896		SVTO	04 08 0734	S11 E42	04 11.5		A	HSX	100	1	3	3
9896		RAMY	04 08 1306	S12 E38	04 11.4		A	HSX	20	1	1	2
9896		HOLL	04 08 1429	S11 E38	04 11.5		A	HSX	100	1	2	3
9896	31123	MWIL	04 08 1430	S10 E38	04 11.4	5	(AP)					
9896		LEAR	04 09 0145	S11 E32	04 11.5		A	HSX	70	1	2	1
9896		KAND	04 09 1050	S11 E27	04 11.5			HS		1	2	2
9896		RAMY	04 09 1406	S12 E24	04 11.4		A	HSX	60	1	1	2
9896		HOLL	04 09 1458	S11 E24	04 11.4		A	HSX	110	2	2	3
9896	31123	MWIL	04 09 1500	S10 E25	04 11.5	5	(AP)					
9896		VORO	04 09 2342	S10 E20	04 11.5			HHX	163	1		3
9896		LEAR	04 10 0100	S11 E19	04 11.5		A	HSX	60	1	2	1
9896		TACH	04 10 0457	S10 E14	04 11.2			CSO	156	3	6	4
9896		SVTO	04 10 1130	S11 E14	04 11.5		A	HSX	100	1	2	2
9896		HOLL	04 10 1407	S10 E14	04 11.6		B	CAO	130	3	5	4
9896	31123	MWIL	04 10 1430	S10 E12	04 11.5	5	(BP)					
9896		RAMY	04 10 1630	S11 E11	04 11.5		A	HSX	90	1	2	2
9896		VORO	04 10 2205	S10 E08	04 11.5			HHX	161	1		2
9896		LEAR	04 11 0050	S11 E06	04 11.5		A	HAX	60	1	2	1
9896		TACH	04 11 0631	S11 E01	04 11.3			HSX	150	1	2	3
9896		HOLL	04 11 1436	S10 W02	04 11.4		A	HSX	100	1	2	4
9896	31123	MWIL	04 11 1500	S10 W02	04 11.5	5	(BP)					
9896		SVTO	04 11 1502	S11 W03	04 11.4		A	HSX	100	1	3	2
9896		RAMY	04 11 1517	S11 W02	04 11.5		A	HAX	140	2	2	3
9896		VORO	04 11 2314	S10 W06	04 11.5			HHX	115	1		2
9896		LEAR	04 12 0030	S11 W07	04 11.5		A	HSX	80	1	2	4
9896		RAMY	04 12 1447	S10 W13	04 11.6		B	DSO	70	5	5	2
9896	31123	MWIL	04 12 1500	S10 W15	04 11.5	5	AP					
9896		VORO	04 12 2237	S10 W19	04 11.5			HHX	167	1		3
9896		LEAR	04 13 0235	S09 W22	04 11.4		A	HSX	80	1	2	2
9896		HOLL	04 13 1430	S11 W28	04 11.5		A	HAX	110	1	2	4
9896	31123	MWIL	04 13 1500	S10 W27	04 11.6	5	(BP)					
9896		VORO	04 14 0044	S10 W34	04 11.5			HAX	76	1		3
9896		LEAR	04 14 0050	S09 W34	04 11.5		A	HSX	60	1	2	2
9896		RAMY	04 14 1210	S09 W40	04 11.5		A	HSX	80	1	2	3
9896		SVTO	04 14 1330	S08 W42	04 11.4		A	HSX	90	1	2	3
9896		HOLL	04 14 1423	S11 W41	04 11.5		A	HSX	90	1	2	3
9896	31123	MWIL	04 14 2000	S10 W44	04 11.5	5	(AP)					
9896		LEAR	04 15 0048	S09 W48	04 11.4		A	HSX	100	1	2	4
9896		SVTO	04 15 0535	S08 W51	04 11.4		A	HSX	60	1	2	2

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9896		HOLL	04	15	1356	S11	W54	04	11.5		A	HSX	100	1	2	3
9896		LEAR	04	16	0053	S09	W60	04	11.5		A	HSX	70	1	2	1
9896		SVTO	04	16	0624	S11	W66	04	11.3		A	HSX	90	1	2	3
9896		TACH	04	16	0633	S08	W61	04	11.7			HSX	50	1	2	3
9896		HOLL	04	16	1405	S10	W68	04	11.5		A	HSX	100	1	1	2
9896	31123	MWIL	04	16	1445	S09	W70	04	11.4	4	(AP)					
9896		LEAR	04	17	0045	S09	W72	04	11.6		A	HSX	60	2	2	3
9896		VORO	04	17	0053	S10	W74	04	11.5			HRX	48	1		3
9896		SVTO	04	17	0608	S10	W78	04	11.4		A	HSX	60	1	2	3
9896		RAMY	04	17	1220	S09	W79	04	11.6		A	HSX	30	1	2	3
9896		HOLL	04	17	1425	S12	W80	04	11.6		A	AXX	10	1	1	3
9905	31133	MWIL	04	09	1500	S16	E24	04	11.4	4	(BG)					
9905		VORO	04	09	2342	S17	E18	04	11.3			AXX	7	1		3
9905		LEAR	04	10	0100	S16	E15	04	11.2		B	BXO	10	2	4	1
9905		SVTO	04	10	1130	S16	E10	04	11.2		B	CAO	50	6	6	2
9905		HOLL	04	10	1407	S17	E09	04	11.3		B	CSO	50	4	3	4
9905	31133	MWIL	04	10	1430	S16	E10	04	11.4	4	(B)					
9905		RAMY	04	10	1630	S16	E07	04	11.2		B	DSO	20	3	5	2
9905		VORO	04	10	2205	S16	E04	04	11.2			BXO	68	7	4	2
9905		LEAR	04	11	0050	S15	E03	04	11.3		B	CAO	30	10	5	1
9905		TACH	04	11	0631	S15	W03	04	11.0			BRO	36	5	4	3
9905		HOLL	04	11	1436	S15	W08	04	11.0		B	CAO	50	8	6	4
9905	31133	MWIL	04	11	1500	S15	W08	04	11.0	4	(B)					
9905		SVTO	04	11	1502	S15	W08	04	11.0		B	CSO	50	9	6	2
9905		RAMY	04	11	1517	S15	W10	04	10.9		B	CSO	10	4	3	3
9905		VORO	04	11	2314	S15	W14	04	10.9			BXO	46	6	2	2
9905		LEAR	04	12	0030	S15	W13	04	11.0		B	DAO	40	12	6	4
9905		RAMY	04	12	1447	S16	W21	04	11.0		B	DAO	60	12	9	2
9905	31133	MWIL	04	12	1500	S15	W21	04	11.0	4	B					
9905		VORO	04	12	2237	S16	W26	04	11.0			BXO	93	7	6	3
9905		LEAR	04	13	0235	S15	W28	04	11.0		BG	DAO	40	10	7	2
9905		HOLL	04	13	1430	S15	W37	04	10.8		B	DAO	70	4	9	4
9905	31133	MWIL	04	13	1500	S15	W36	04	10.9	4	(B)					
9905		VORO	04	14	0044	S14	W42	04	10.8			DSO	79	4	6	3
9905		LEAR	04	14	0050	S13	W43	04	10.8		B	CAO	50	4	7	2
9905		RAMY	04	14	1210	S14	W49	04	10.8		B	DSO	50	3	7	3
9905		SVTO	04	14	1330	S13	W53	04	10.6		B	DSO	60	4	9	3
9905		HOLL	04	14	1423	S15	W48	04	11.0		B	DAO	80	5	10	3
9905	31133	MWIL	04	14	2000	S15	W53	04	10.8	4	(BP)					
9905		LEAR	04	15	0048	S14	W57	04	10.7		B	DSO	150	12	7	4
9905		SVTO	04	15	0535	S13	W59	04	10.8		B	DSO	70	4	8	2
9905		HOLL	04	15	1356	S16	W64	04	10.7		B	CAO	70	5	8	3
9905		LEAR	04	16	0053	S14	W70	04	10.7		B	DSO	90	3	6	1
9905		SVTO	04	16	0624	S16	W76	04	10.5		B	DSO	60	3	8	3
9905		TACH	04	16	0633	S14	W73	04	10.7			CSO	35	2	10	3
9905		HOLL	04	16	1405	S15	W76	04	10.8		A	AXX	10	1	1	2
9905	31133	MWIL	04	16	1445	S15	W78	04	10.7	4	(B)					
9898		HOLL	04	05	1504	S19	E84	04	12.0		A	AXX	10	1	1	2
9898	31124	MWIL	04	05	2200	S18	E80	04	12.0	4	(AP)					
9898		LEAR	04	06	0040	S19	E77	04	11.9		A	HAX	30	1	2	4
9898		SVTO	04	06	0720	S18	E74	04	11.9		B	CSO	30	2	2	3
9898		HOLL	04	06	1510	S19	E71	04	12.0		B	DAO	50	2	2	4
9898		RAMY	04	06	1915	S20	E68	04	12.0		B	DSO	50	2	3	1
9898		LEAR	04	07	0025	S18	E65	04	12.0		B	BXO	10	4	3	3
9898		SVTO	04	07	0618	S18	E63	04	12.0		B	CSO	40	3	3	3
9898		HOLL	04	07	1500	S18	E55	04	11.8		B	BXO	30	5	3	3
9898	31124	MWIL	04	07	1645	S18	E54	04	11.8	4	(B)					
9898		LEAR	04	08	0127	S19	E50	04	11.9		B	CRO	30	4	2	3
9898		TACH	04	08	0429	S18	E43	04	11.5			AR	6	2	2	4
9898		KAND	04	08	0720	S17	E47	04	11.9			AX		1		3
9898		SVTO	04	08	0734	S19	E46	04	11.8		B	CSO	10	3	3	3
9898		RAMY	04	08	1306	S20	E42	04	11.7		A	AXX		1		2
9898		HOLL	04	08	1429	S18	E42	04	11.8		A	AXX	10	2	1	3
9898	31124	MWIL	04	08	1430	S18	E42	04	11.8	3	(AF)					
9898		LEAR	04	09	0145	S18	E36	04	11.8		A	AXX		1		1
9898		KAND	04	09	1050	S18	E32	04	11.9			AX		1		2
9898		RAMY	04	09	1406	S18	E24	04	11.4		B	DSO	20	2	8	2

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9898		HOLL	04	09	1458	S16	E24	04	11.4		B	BXO	10	5	8	3
9898		LEAR	04	10	0100	S19	E23	04	11.8		A	AXX		1		1
9898		TACH	04	10	0457	S15	E15	04	11.3			BXO	20	2	6	4
9898		SVTO	04	10	1130	S18	E18	04	11.8		A	AXX	10	1	1	2
9898		HOLL	04	10	1407	S19	E17	04	11.9		A	AXX	10	2	1	4
9898	31135	MWIL	04	10	1430	S18	E15	04	11.7	4	(AF)					
9898		RAMY	04	10	1630	S19	E14	04	11.7		A	HSX	10	1	1	2
9898		LEAR	04	11	0050	S18	E09	04	11.7		A	AXX		1		1
9898		HOLL	04	11	1436	S18	E03	04	11.8		A	AXX	10	1	1	4
9898	31135	MWIL	04	11	1500	S18	E02	04	11.8	3	(AF)					
9898		RAMY	04	11	1517	S16	E05	04	12.0		B	BXO		4	4	3
9899		HOLL	04	06	1510	N18	E75	04	12.3		A	HAX	180	1	3	4
9899		RAMY	04	06	1915	N17	E76	04	12.6		A	HSX	90	1	2	1
9899		LEAR	04	07	0025	N19	E75	04	12.7		A	HSX	120	1	2	3
9899		SVTO	04	07	0618	N18	E71	04	12.7		A	HSX	180	1	3	3
9899		HOLL	04	07	1500	N17	E63	04	12.4		A	HAX	240	1	3	3
9899	31127	MWIL	04	07	1645	N19	E64	04	12.6	5	(AP)					
9899		LEAR	04	08	0127	N18	E59	04	12.5		A	HSX	180	3	4	3
9899		TACH	04	08	0429	N18	E52	04	12.1			HSX	300	1	4	4
9899		KAND	04	08	0720	N19	E58	04	12.7			HS		2	3	3
9899		SVTO	04	08	0734	N18	E57	04	12.6		B	DSO	220	4	4	3
9899		RAMY	04	08	1306	N17	E55	04	12.7		B	CSO	170	2	4	2
9899		HOLL	04	08	1429	N18	E54	04	12.7		A	HKX	300	8	3	3
9899	31127	MWIL	04	08	1430	N19	E53	04	12.6	6	(BP)					
9899		LEAR	04	09	0145	N18	E46	04	12.6		BG	DKO	270	8	9	1
9899		KAND	04	09	1050	N19	E42	04	12.6			CKO		9	5	2
9899		RAMY	04	09	1406	N17	E40	04	12.6		B	DSO	150	5	5	2
9899		HOLL	04	09	1458	N18	E40	04	12.7		B	DAO	250	10	6	3
9899	31127	MWIL	04	09	1500	N19	E40	04	12.7	6	(BG)					
9899		VORO	04	09	2342	N20	E36	04	12.7			HKX	431	5	3	3
9899		LEAR	04	10	0100	N18	E34	04	12.6		BG	DSO	230	8	5	1
9899		TACH	04	10	0457	N19	E30	04	12.5			CAO	332	4	4	4
9899		SVTO	04	10	1130	N19	E29	04	12.7		B	DSO	260	15	5	2
9899		HOLL	04	10	1407	N18	E27	04	12.6		B	CAO	190	8	5	4
9899	31127	MWIL	04	10	1430	N19	E27	04	12.7	5	(BG)					
9899		RAMY	04	10	1630	N19	E26	04	12.7		B	DAO	230	5	4	2
9899		VORO	04	10	2205	N19	E23	04	12.7			HKX	499	5	3	2
9899		LEAR	04	11	0050	N17	E23	04	12.8		BG	DHO	250	5	5	1
9899		TACH	04	11	0631	N17	E16	04	12.5			CAO	323	6	3	3
9899		HOLL	04	11	1436	N17	E14	04	12.7		B	DAO	200	8	4	4
9899	31127	MWIL	04	11	1500	N19	E13	04	12.6	5	(BP)					
9899		SVTO	04	11	1502	N18	E14	04	12.7		B	DSO	140	4	6	2
9899		RAMY	04	11	1517	N18	E12	04	12.5		B	DSO	240	5	4	3
9899		VORO	04	11	2314	N18	E09	04	12.6			HKX	334	5	1	2
9899		LEAR	04	12	0030	N17	E08	04	12.6		B	DSO	180	9	6	4
9899		RAMY	04	12	1447	N18	E00	04	12.6		B	DAO	190	8	4	2
9899	31127	MWIL	04	12	1500	N19	W00	04	12.6	5	BP					
9899		VORO	04	12	2237	N18	W04	04	12.6			HKX	391	3	1	3
9899		LEAR	04	13	0235	N18	W06	04	12.6		B	DAO	190	8	4	2
9899		HOLL	04	13	1430	N18	W15	04	12.5		A	HAX	150	3	3	4
9899	31127	MWIL	04	13	1500	N18	W14	04	12.5	5	(AP)					
9899		VORO	04	14	0044	N19	W19	04	12.6			HKX	308	4		3
9899		LEAR	04	14	0050	N19	W19	04	12.6		A	HAX	160	3	2	2
9899		RAMY	04	14	1210	N19	W25	04	12.6		B	CSO	180	3	3	3
9899		SVTO	04	14	1330	N19	W27	04	12.5		B	CSO	220	5	5	3
9899		HOLL	04	14	1423	N18	W27	04	12.5		A	HSX	180	3	3	3
9899	31127	MWIL	04	14	2000	N18	W30	04	12.5	5	(AP)					
9899		LEAR	04	15	0048	N19	W32	04	12.6		B	CSO	180	2	3	4
9899		SVTO	04	15	0535	N20	W35	04	12.5		B	DAO	170	3	5	2
9899		HOLL	04	15	1356	N17	W40	04	12.5		A	HSX	170	1	2	3
9899		LEAR	04	16	0053	N19	W45	04	12.6		A	HSX	120	2	2	1
9899		SVTO	04	16	0624	N18	W49	04	12.5		B	CSO	160	2	4	3
9899		TACH	04	16	0633	N19	W45	04	12.8			HSX	180	1	3	3
9899		HOLL	04	16	1405	N18	W53	04	12.5		A	HSX	110	1	2	2
9899	31127	MWIL	04	16	1445	N19	W54	04	12.5	5	(AP)					
9899		LEAR	04	17	0045	N19	W58	04	12.6		A	HSX	80	1	2	3
9899		VORO	04	17	0053	N19	W58	04	12.6			HRX	147	1		3
9899		SVTO	04	17	0608	N19	W64	04	12.4		A	HSX	110	1	4	3

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9899		RAMY	04	17	1220	N20	W65	04	12.5		A	HSX	100	1	3	3
9899		HOLL	04	17	1425	N18	W67	04	12.5		A	HAX	100	1	2	3
9899		SVTO	04	18	0920	N20	W79	04	12.3		A	HSX	120	1	2	3
9899		RAMY	04	18	1231	N20	W80	04	12.4		A	HSX	60	1	2	3
9899		HOLL	04	18	1430	N17	W80	04	12.5		A	HAX	120	1	2	3
9899	31127	MWIL	04	18	1445	N19	W80	04	12.5	5	AP					
9902C	31138	MWIL	04	12	1500	S13	E16	04	13.8	4	AP					
9902B	31142	MWIL	04	14	2000	S22	W09	04	14.1	3	(AP)					
9902		HOLL	04	07	1500	N11	E89	04	14.3		A	HAX	120	1	2	3
9902	31128	MWIL	04	07	1645	N12	E80	04	13.7	5	AP					
9902		LEAR	04	08	0127	N11	E85	04	14.4		A	HSX	80	1	2	3
9902		TACH	04	08	0429	N12	E68	04	13.3			HSX	60	1	2	4
9902		KAND	04	08	0720	N13	E74	04	13.9			HS		1	2	3
9902		SVTO	04	08	0734	N13	E78	04	14.2		B	CSO	90	3	10	3
9902		RAMY	04	08	1306	N10	E70	04	13.8		A	HSX	50	1	2	2
9902		HOLL	04	08	1429	N14	E72	04	14.0		B	CSO	90	3	10	3
9902	31128	MWIL	04	08	1430	N12	E68	04	13.7	5	(AP)					
9902		LEAR	04	09	0145	N14	E69	04	14.3		B	EAO	170	3	14	1
9902		KAND	04	09	1050	N12	E61	04	14.0			CAO		4	14	2
9902		RAMY	04	09	1406	N10	E62	04	14.2		B	ESO	80	3	15	2
9902		HOLL	04	09	1458	N13	E62	04	14.3		B	ESO	130	4	15	3
9902	31128	MWIL	04	09	1500	N13	E54	04	13.7	5	(AP)					
9902		VORO	04	09	2342	N12	E50	04	13.7			HHX	214	1		3
9902		LEAR	04	10	0100	N13	E54	04	14.1		B	ESO	60	3	15	1
9902		TACH	04	10	0457	N13	E46	04	13.7			DSO	150	2	7	4
9902		SVTO	04	10	1130	N13	E49	04	14.2		B	FSO	110	3	17	2
9902		HOLL	04	10	1407	N12	E49	04	14.3		B	EAO	90	4	14	4
9902	31128	MWIL	04	10	1430	N11	E43	04	13.8	5	(AP)					
9902		RAMY	04	10	1630	N13	E46	04	14.1		B	ESO	130	3	14	2
9902		VORO	04	10	2205	N11	E37	04	13.7			HAX	88	1		2
9902		LEAR	04	11	0050	N12	E42	04	14.2		B	ESO	90	3	14	1
9902		TACH	04	11	0631	N11	E32	04	13.7			CSO	182	2	6	3
9902		TACH	04	11	0631	N14	E43	04	14.5			HX	60	2	1	3
9902		HOLL	04	11	1436	N13	E37	04	14.4		B	FSO	80	6	16	4
9902	31128	MWIL	04	11	1500	N13	E37	04	14.4	5	(B)					
9902		SVTO	04	11	1502	N13	E34	04	14.2		B	ESO	110	3	15	2
9902		RAMY	04	11	1517	N13	E34	04	14.2		B	ESO	70	5	12	3
9902		VORO	04	11	2314	N11	E23	04	13.7			HAX	74	1		2
9902		LEAR	04	12	0030	N14	E32	04	14.4		B	CSO	110	7	14	4
9902		RAMY	04	12	1447	N13	E21	04	14.2		B	FAO	140	11	14	2
9902	31128	MWIL	04	12	1500	N12	E20	04	14.1	5	B					
9902		VORO	04	12	2237	N11	E13	04	13.9			HAX	130	4	4	3
9902		LEAR	04	13	0235	N12	E14	04	14.2		B	DSO	80	8	14	2
9902		HOLL	04	13	1430	N13	E08	04	14.2		B	EAO	100	7	13	4
9902	31128	MWIL	04	13	1500	N13	E06	04	14.1	5	(BP)					
9902		VORO	04	14	0044	N11	W04	04	13.7			HAX	120	3		3
9902		LEAR	04	14	0050	N12	E02	04	14.2		B	EAO	80	10	14	2
9902		RAMY	04	14	1210	N13	W04	04	14.2		B	ESO	60	11	14	3
9902		SVTO	04	14	1330	N13	W09	04	13.9		B	ESO	80	12	11	3
9902		HOLL	04	14	1423	N13	W06	04	14.1		B	CSO	120	12	16	3
9902	31128	MWIL	04	14	2000	N14	W13	04	13.8	4	(BP)					
9902		LEAR	04	15	0048	N12	W15	04	13.9		B	CSO	140	10	5	4
9902		SVTO	04	15	0535	N13	W18	04	13.9		B	DSO	100	5	5	2
9902		HOLL	04	15	1356	N12	W24	04	13.8		B	CSO	100	7	5	3
9902		LEAR	04	16	0053	N12	W29	04	13.8		B	CAO	70	8	5	1
9902		SVTO	04	16	0624	N11	W33	04	13.8		B	CSO	70	5	6	3
9902		TACH	04	16	0633	N13	W30	04	14.0			CSO	64	3	3	3
9902		HOLL	04	16	1405	N13	W38	04	13.7		B	CSO	60	3	4	2
9902	31128	MWIL	04	16	1445	N13	W37	04	13.8	4	(BP)					
9902		LEAR	04	17	0045	N13	W41	04	13.9		B	CSO	60	4	3	3
9902		VORO	04	17	0053	N11	W43	04	13.8			HRX	51	1		3
9902		SVTO	04	17	0608	N13	W46	04	13.8		B	CSO	60	2	5	3
9902		RAMY	04	17	1220	N12	W49	04	13.8		B	CAO	50	4	3	3
9902		HOLL	04	17	1425	N11	W51	04	13.8		A	HSX	30	1	1	3
9902		VORO	04	18	0028	N11	W57	04	13.7			HRX	61	1		3
9902		SVTO	04	18	0920	N12	W62	04	13.7		A	HSX	40	1	2	3

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9902		RAMY	04	18	1231	N13	W63	04	13.8		A	HSX	40	2	3	3
9902		HOLL	04	18	1430	N12	W65	04	13.7		A	HAX	100	1	2	3
9902	31128	MWIL	04	18	1445	N12	W66	04	13.6	4	(AP)					
9902		VORO	04	18	2202	N11	W68	04	13.8			HRX	70	1		3
9902		LEAR	04	19	0025	N12	W69	04	13.8		A	HSX	60	1	2	4
9902		SVTO	04	19	0725	N12	W78	04	13.4		A	HSX	30	1	1	3
9902		RAMY	04	19	1230	N13	W79	04	13.6		A	HSX	30	1	2	2
9902A		VORO	04	11	2314	S31	E32	04	14.5			HAX	32	1		2
9903		SVTO	04	08	0734	N19	E83	04	14.6		B	DSO	60	2	7	3
9903		RAMY	04	08	1306	N18	E80	04	14.6		B	ESO	60	2	11	2
9903		HOLL	04	08	1429	N20	E79	04	14.6		B	CSO	50	4	4	3
9903	31131	MWIL	04	08	1430	N14	E79	04	14.6	4	B					
9903		LEAR	04	09	0145	N18	E71	04	14.5		B	DSO	60	2	4	1
9903		KAND	04	09	1050	N19	E71	04	14.9			BXO		2	3	2
9903		RAMY	04	09	1406	N17	E65	04	14.5		B	DSO	50	2	3	2
9903		HOLL	04	09	1458	N19	E63	04	14.4		B	CAO	50	6	5	3
9903	31131	MWIL	04	09	1500	N15	E65	04	14.5	4	(BP)					
9903	31132	MWIL	04	09	1500	N20	E62	04	14.4	5	(B)					
9903		VORO	04	09	2342	N15	E60	04	14.5			DSO	78	3	7	3
9903		VORO	04	09	2342	N20	E60	04	14.6			DSO	80	3	2	3
9903		LEAR	04	10	0100	N19	E57	04	14.4		B	CAO	110	10	4	1
9903		TACH	04	10	0457	N16	E59	04	14.7			HSX	80	1	2	4
9903		TACH	04	10	0457	N20	E52	04	14.2			CSO	90	2	3	4
9903		SVTO	04	10	1130	N21	E55	04	14.7		B	DAO	110	6	9	2
9903		HOLL	04	10	1407	N18	E51	04	14.5		B	CSO	40	3	3	4
9903	31131	MWIL	04	10	1430	N15	E51	04	14.5	5	(B)					
9903	31132	MWIL	04	10	1430	N20	E50	04	14.4	4	(B)					
9903		RAMY	04	10	1630	N20	E50	04	14.5		B	DSO	20	2	3	2
9903		VORO	04	10	2205	N15	E51	04	14.8			HAX	74	1		2
9903		VORO	04	10	2205	N19	E46	04	14.4			DSO	34	2	3	2
9903		LEAR	04	11	0050	N19	E46	04	14.5		B	DAO	60	4	5	1
9903		TACH	04	11	0631	N18	E38	04	14.2			CAI	3	5	3	3
9903		HOLL	04	11	1436	N18	E38	04	14.5		B	CSO	40	4	3	4
9903	31132	MWIL	04	11	1500	N19	E38	04	14.5	4	(BP)					
9903		SVTO	04	11	1502	N19	E38	04	14.5		B	DSO	40	5	4	2
9903		RAMY	04	11	1517	N20	E38	04	14.5		B	DSO	20	6	3	3
9903		VORO	04	11	2314	N15	E37	04	14.8			HAX	36	1		2
9903		VORO	04	11	2314	N19	E33	04	14.5			BXO	16	2	3	2
9903		LEAR	04	12	0030	N18	E30	04	14.3		B	CRO	30	4	4	4
9903		RAMY	04	12	1447	N19	E25	04	14.5		B	CSO	20	5	3	2
9903	31132	MWIL	04	12	1500	N19	E24	04	14.4	4	B					
9903		VORO	04	12	2237	N15	E24	04	14.7			AXX	32	4		3
9903		VORO	04	12	2237	N19	E18	04	14.3			AXX	5	1		3
9903	31132	MWIL	04	13	1500	N20	E10	04	14.4	3	(AP)					
9903		VORO	04	14	0044	N15	E10	04	14.8			AXX	14	2		3
9903		SVTO	04	14	1330	N15	E03	04	14.8		A	HSX	10	1	1	3
9903	31141	MWIL	04	14	2000	N18	W01	04	14.7	3	(AP)					
9903		LEAR	04	15	0048	N16	E01	04	15.1		A	AXX	20	5	3	4
9903		SVTO	04	15	0535	N16	W07	04	14.7		A	HSX	10	1	1	2
9903		HOLL	04	15	1356	N16	W08	04	15.0		B	BXO	10	4	6	3
9903		LEAR	04	16	0053	N16	W12	04	15.1		A	AXX	100	2	1	1
9903		SVTO	04	16	0624	N16	W16	04	15.0		A	AXX	10	2	1	3
9903		HOLL	04	16	1405	N18	W21	04	15.0		A	AXX	10	2	2	2
9903	31141	MWIL	04	16	1445	N18	W21	04	15.0	4	(AF)					
9906		HOLL	04	09	1458	S16	E72	04	15.1		B	BXO	20	2	4	3
9906	31134	MWIL	04	09	1500	S15	E70	04	14.9	4	(B)					
9906		HOLL	04	10	1407	S16	E60	04	15.1		A	AXX	10	1	1	4
9906	31134	MWIL	04	10	1430	S14	E59	04	15.1	4	(B)					
9906		RAMY	04	10	1630	S15	E58	04	15.1		B	DSO	30	2	3	2
9906		VORO	04	10	2205	S14	E56	04	15.1			HAX	62	3		2
9906		LEAR	04	11	0050	S16	E53	04	15.0		B	DAO	60	5	5	1
9906		TACH	04	11	0631	S15	E46	04	14.7			CAI	95	8	1	3
9906		HOLL	04	11	1436	S16	E45	04	15.0		B	CSO	70	9	6	4
9906	31134	MWIL	04	11	1500	S15	E44	04	14.9	4	(B)					
9906		SVTO	04	11	1502	S15	E44	04	14.9		B	DAO	100	8	4	2
9906		RAMY	04	11	1517	S15	E45	04	15.0		B	DSO	70	10	4	3

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APRIL 2002

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9906		VORO	04	11	2314	S14	E39	04	14.9			DSO	126	19	3	2
9906		LEAR	04	12	0030	S16	E38	04	14.9		B	DAI	150	17	6	4
9906		RAMY	04	12	1447	S15	E31	04	15.0		BG	DAI	280	25	9	2
9906	31134	MWIL	04	12	1500	S15	E30	04	14.9	5	BG					
9906		VORO	04	12	2237	S14	E26	04	14.9			DSO	446	23	7	3
9906		LEAR	04	13	0235	S16	E24	04	14.9		BG	DKC	430	41	9	2
9906		HOLL	04	13	1430	S14	E18	04	15.0		BG	DKC	490	37	10	4
9906	31134	MWIL	04	13	1500	S15	E17	04	14.9	5	(D)					
9906		VORO	04	14	0044	S15	E12	04	14.9			DSO	492	30	8	3
9906		LEAR	04	14	0050	S15	E11	04	14.9		BGD	DKI	560	41	9	2
9906		RAMY	04	14	1210	S15	E04	04	14.8		BGD	EKI	630	26	12	3
9906		SVTO	04	14	1330	S14	E03	04	14.8		BG	EKI	620	33	14	3
9906		HOLL	04	14	1423	S15	E04	04	14.9		BGD	EKC	720	32	12	3
9906	31134	MWIL	04	14	2000	S15	E00	04	14.8	5	(D)					
9906		LEAR	04	15	0048	S15	W03	04	14.8		BGD	EKI	700	47	13	4
9906		SVTO	04	15	0535	S15	W05	04	14.8		BG	EKO	600	12	12	2
9906		HOLL	04	15	1356	S15	W07	04	15.0		BGD	FKC	740	32	13	3
9906		LEAR	04	16	0053	S15	W16	04	14.8		BGD	EKI	480	29	12	1
9906		SVTO	04	16	0624	S15	W19	04	14.8		BGD	EKI	660	21	13	3
9906		TACH	04	16	0633	S12	W17	04	15.0			DAI	822	10	8	3
9906		HOLL	04	16	1405	S14	W23	04	14.8		BGD	EKC	540	35	13	2
9906	31134	MWIL	04	16	1445	S15	W23	04	14.9	5	(D)					
9906		LEAR	04	17	0045	S13	W28	04	14.9		BGD	EKI	580	26	11	3
9906		VORO	04	17	0053	S15	W29	04	14.8			DKI	883	12	9	3
9906		SVTO	04	17	0608	S14	W32	04	14.8		BGD	EKI	630	19	14	3
9906		RAMY	04	17	1220	S13	W35	04	14.9		BGD	EKI	730	28	12	3
9906		HOLL	04	17	1425	S15	W37	04	14.8		BGD	EKC	660	31	13	3
9906		VORO	04	18	0028	S15	W41	04	14.9			DKI	884	14	10	3
9906		SVTO	04	18	0920	S13	W47	04	14.8		BG	EAC	770	29	15	3
9906		RAMY	04	18	1231	S13	W48	04	14.9		BGD	EKC	740	34	14	3
9906		HOLL	04	18	1430	S15	W50	04	14.8		BGD	EKC	810	35	15	3
9906	31134	MWIL	04	18	1445	S14	W48	04	15.0	5	(B)					
9906		VORO	04	18	2202	S14	W53	04	14.9			DKI	1003	12	10	3
9906		LEAR	04	19	0025	S13	W54	04	14.9		BG	EKC	830	48	14	4
9906		SVTO	04	19	0725	S14	W58	04	14.9		BG	EKI	740	28	15	3
9906		RAMY	04	19	1230	S13	W61	04	14.9		BGD	EKI	790	29	14	2
9906		HOLL	04	19	1520	S15	W61	04	15.0		BGD	EKC	1010	35	15	3
9906		VORO	04	19	2245	S15	W67	04	14.9			DKI	1021	12	11	3
9906		LEAR	04	20	0023	S14	W67	04	14.9		BG	EKC	770	41	15	4
9906		SVTO	04	20	0553	S15	W70	04	14.9		BG	DAI	620	14	9	3
9906	31134	MWIL	04	20	1500	S15	W74	04	15.0	5	(B)					
9906		HOLL	04	20	1700	S14	W76	04	15.0		BG	EAC	600	19	15	2
9906		LEAR	04	21	0015	S14	W77	04	15.2		BG	EAI	330	14	12	3
9906		SVTO	04	21	1032	S16	W89	04	14.7		B	DAO	90	4	9	3
9906		HOLL	04	21	1355	S16	W86	04	15.0		B	DAO	120	3	10	3
9906	31134	MWIL	04	21	1445	S16	W83	04	15.3	4	(AF)					
9906		RAMY	04	21	1455	S12	W88	04	15.0		A	HSX	30	1	4	2
9906C	31139	MWIL	04	13	1500	S24	E24	04	15.5	3	(AP)					
9906A	31143	MWIL	04	14	2000	S17	E15	04	16.0	3	(AP)					
9907A	31144	MWIL	04	14	2000	S20	E30	04	17.1	3	(AP)					
9907		LEAR	04	11	0050	S04	E84	04	17.3		A	HSX	30	1	2	1
9907		TACH	04	11	0631	S03	E79	04	17.2			CAI	112	4	1	3
9907		HOLL	04	11	1436	S04	E78	04	17.4		B	DAI	200	14	10	4
9907	31136	MWIL	04	11	1500	S03	E78	04	17.4	5	(B)					
9907		SVTO	04	11	1502	S05	E78	04	17.5		B	ESO	240	6	11	2
9907		RAMY	04	11	1517	S03	E80	04	17.6		B	ESO	240	7	13	3
9907		VORO	04	11	2314	S02	E74	04	17.5			DAO	426	5	9	2
9907		LEAR	04	12	0030	S05	E73	04	17.5		BG	EKI	380	10	14	4
9907		RAMY	04	12	1447	S04	E65	04	17.5		BG	EAI	370	21	11	2
9907	31136	MWIL	04	12	1500	S03	E66	04	17.5	5	BG					
9907		VORO	04	12	2237	S02	E61	04	17.5			DAO	609	18	9	3
9907		LEAR	04	13	0235	S05	E58	04	17.4		BG	EAI	360	25	13	2
9907		HOLL	04	13	1430	S04	E51	04	17.4		BG	DAC	480	33	9	4
9907	31136	MWIL	04	13	1500	S03	E52	04	17.5	5	(B)					
9907		VORO	04	14	0044	S02	E47	04	17.5			DAO	347	14	10	3

SUNSPOT GROUPS
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APRIL 2002

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9907		LEAR	04 14	0050	S05 E46	04 17.5		B	DAI	480	28	10	2
9907		RAMY	04 14	1210	S04 E39	04 17.4		B	DAI	300	19	10	3
9907		SVTO	04 14	1330	S05 E38	04 17.4		B	DAI	290	25	10	3
9907		HOLL	04 14	1423	S03 E38	04 17.4		BG	EAI	310	28	12	3
9907	31136	MWIL	04 14	2000	S04 E36	04 17.5	4	(B)					
9907		LEAR	04 15	0048	S05 E33	04 17.5		BG	EAI	290	50	11	4
9907		SVTO	04 15	0535	S04 E31	04 17.5		B	DAO	220	13	10	2
9907		HOLL	04 15	1356	S03 E25	04 17.4		BG	EAI	290	31	11	3
9907		LEAR	04 16	0053	S04 E19	04 17.4		B	DAO	230	36	10	1
9907		SVTO	04 16	0624	S03 E16	04 17.5		B	EAO	180	17	11	3
9907		TACH	04 16	0633	S02 E15	04 17.4			CAI	131	14	8	3
9907		HOLL	04 16	1405	S03 E12	04 17.5		BG	EAI	110	24	12	2
9907	31136	MWIL	04 16	1445	S03 E12	04 17.5	4	(B)					
9907		LEAR	04 17	0045	S03 E06	04 17.5		B	ESI	50	31	10	3
9907		VORO	04 17	0053	S03 E06	04 17.5			BXI	155	16	9	3
9907		SVTO	04 17	0608	S02 E03	04 17.5		B	EAI	150	23	11	3
9907		RAMY	04 17	1220	S03 W01	04 17.4		B	EAI	80	27	11	3
9907		HOLL	04 17	1425	S03 W03	04 17.4		BG	DAI	120	17	10	3
9907		VORO	04 18	0028	S03 W08	04 17.4			BXI	145	8	8	3
9907		SVTO	04 18	0920	S02 W14	04 17.3		B	DAI	80	16	9	3
9907		RAMY	04 18	1231	S01 W16	04 17.3		B	DSO	50	17	6	3
9907		HOLL	04 18	1430	S03 W17	04 17.3		B	DAO	80	15	6	3
9907	31136	MWIL	04 18	1445	S03 W17	04 17.3	4	(BP)					
9907		VORO	04 18	2202	S03 W18	04 17.6			BXI	61	4	12	3
9907		LEAR	04 19	0025	S03 W23	04 17.3		B	CAO	80	10	8	4
9907		SVTO	04 19	0725	S03 W27	04 17.3		B	DSO	70	6	8	3
9907		RAMY	04 19	1230	S03 W29	04 17.3		B	DSO	40	7	6	2
9907		HOLL	04 19	1520	S04 W31	04 17.3		B	DSO	70	6	6	3
9907		VORO	04 19	2245	S04 W36	04 17.2			AXX	70	5	5	3
9907		LEAR	04 20	0023	S03 W36	04 17.3		B	DAO	90	8	7	4
9907		SVTO	04 20	0553	S03 W40	04 17.2		B	DSO	50	3	6	3
9907	31136	MWIL	04 20	1500	S04 W44	04 17.3	4	(AP)					
9907		HOLL	04 20	1700	S03 W46	04 17.3		B	DAO	40	3	6	2
9907		LEAR	04 21	0015	S03 W48	04 17.4		B	CRO	30	3	6	3
9907		SVTO	04 21	1032	S03 W57	04 17.2		B	BXO	20	2	5	3
9907		HOLL	04 21	1355	S04 W58	04 17.2		B	BXO	10	2	5	3
9907	31136	MWIL	04 21	1445	S04 W57	04 17.3	4	(AP)					
9907B	31146	MWIL	04 16	1445	S01 E24	04 18.4	4	(AF)					
9910	31145	MWIL	04 14	2000	S21 E67	04 20.0	3	(AP)					
9910		LEAR	04 15	0048	S22 E62	04 19.8		B	BXO	50	6	4	4
9910		SVTO	04 15	0535	S22 E60	04 19.8		B	BXO	20	2	3	2
9910		HOLL	04 15	1356	S18 E54	04 19.7		A	AXX	10	3	1	3
9910		LEAR	04 16	0053	S21 E48	04 19.7		B	CAO	40	6	5	1
9910		SVTO	04 16	0624	S21 E46	04 19.8		B	DRO	30	4	5	3
9910		TACH	04 16	0633	S17 E42	04 19.5			BXO	31	2	3	3
9910		HOLL	04 16	1405	S19 E41	04 19.7		B	CSO	30	4	7	2
9910	31145	MWIL	04 16	1445	S19 E40	04 19.7	4	(B)					
9910		LEAR	04 17	0045	S20 E34	04 19.6		B	CSO	20	5	7	3
9910		VORO	04 17	0053	S19 E30	04 19.3			AXX	17	1		3
9910		SVTO	04 17	0608	S19 E32	04 19.7		B	DAO	70	5	7	3
9910		RAMY	04 17	1220	S20 E27	04 19.6		B	DAO	60	14	8	3
9910		HOLL	04 17	1425	S19 E27	04 19.7		B	DSO	90	9	8	3
9910		VORO	04 18	0028	S20 E21	04 19.6			DSI	259	6	6	3
9910		SVTO	04 18	0920	S19 E16	04 19.6		B	DAO	220	15	10	3
9910		RAMY	04 18	1231	S20 E13	04 19.5		B	DAO	160	21	9	3
9910		HOLL	04 18	1430	S20 E12	04 19.5		B	DAO	250	17	10	3
9910	31145	MWIL	04 18	1445	S20 E13	04 19.6	5	(B)					
9910		VORO	04 18	2202	S20 E09	04 19.6			DKO	274	2	9	3
9910		LEAR	04 19	0025	S20 E07	04 19.5		B	DAO	250	21	10	4
9910		SVTO	04 19	0725	S20 E02	04 19.5		B	EAO	190	12	11	3
9910		RAMY	04 19	1230	S20 E00	04 19.5		B	EAO	230	14	11	2
9910		HOLL	04 19	1520	S20 W02	04 19.5		B	DKO	180	17	10	3
9910		VORO	04 19	2245	S20 W05	04 19.6			CHI	341	8	9	3
9910		LEAR	04 20	0023	S20 W06	04 19.5		B	EAO	190	30	12	4
9910		SVTO	04 20	0553	S20 W08	04 19.6		B	EAO	190	15	13	3
9910	31145	MWIL	04 20	1500	S20 W14	04 19.5	5	(BG)					
9910		HOLL	04 20	1700	S20 W15	04 19.6		B	EAO	150	21	12	2

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9910		LEAR	04	21	0015	S21	W18	04	19.6		B	EAO	140	14	11	3
9910		SVTO	04	21	1032	S21	W26	04	19.4		B	ESO	90	11	11	3
9910		HOLL	04	21	1355	S21	W26	04	19.6		B	CAO	90	13	12	3
9910	31145	MWIL	04	21	1445	S20	W27	04	19.5	4	(B)					
9910		RAMY	04	21	1455	S18	W33	04	19.1		A	HAX	50	1	1	2
9910		LEAR	04	22	0035	S21	W34	04	19.4		B	EAO	100	11	11	3
9910		SVTO	04	22	0611	S21	W37	04	19.4		B	ESO	100	4	11	3
9910	31145	MWIL	04	22	1430	S21	W42	04	19.4	5	(BP)					
9910		HOLL	04	22	1445	S22	W40	04	19.5		B	CSO	60	4	11	3
9910		RAMY	04	22	1525	S18	W47	04	19.1		A	HAX	50	1	1	2
9910		LEAR	04	23	0141	S21	W46	04	19.5		B	CSO	90	3	11	2
9910		RAMY	04	23	1308	S17	W59	04	19.1		A	HSX	80	1	3	3
9910	31145	MWIL	04	23	1430	S21	W56	04	19.3	5	(BP)					
9910		HOLL	04	23	1622	S21	W58	04	19.2		A	HSX	70	1	2	2
9910		LEAR	04	24	0038	S21	W59	04	19.5		B	CSO	80	2	10	4
9910		VORO	04	24	0442	S22	W67	04	19.0			HSX	70	1		2
9910		TACH	04	24	0529	S20	W64	04	19.3			HSX	60	1	2	3
9910		SVTO	04	24	0607	S22	W69	04	18.9		A	HSX	100	1	2	2
9910		KAND	04	24	1300	S20	W72	04	19.0			HA		1	2	3
9910		HOLL	04	24	1401	S21	W71	04	19.1		A	HSX	60	1	1	2
9910		VORO	04	24	2130	S21	W77	04	19.0			HSX	68	1		2
9910		LEAR	04	25	0100	S21	W74	04	19.4		A	HSX	40	2	2	2
9909	31140	MWIL	04	13	1500	N02	E87	04	20.1	5	AP					
9909		VORO	04	14	0044	N07	E82	04	20.2			HAX	184	1		3
9909		LEAR	04	14	0050	N07	E79	04	19.9		A	HSX	60	1	2	2
9909		RAMY	04	14	1210	N07	E75	04	20.1		A	HSX	120	1	3	3
9909		SVTO	04	14	1330	N05	E78	04	20.4		B	CSO	120	2	6	3
9909		HOLL	04	14	1423	N07	E74	04	20.1		A	HSX	180	1	2	3
9909	31140	MWIL	04	14	2000	N07	E69	04	20.0	4	(AP)					
9909		LEAR	04	15	0048	N06	E67	04	20.0		A	HSX	190	1	2	4
9909		SVTO	04	15	0535	N07	E67	04	20.2		A	HSX	180	1	4	2
9909		HOLL	04	15	1356	N07	E60	04	20.1		A	HSX	160	1	2	3
9909		LEAR	04	16	0053	N06	E54	04	20.1		A	HAX	130	2	2	1
9909		SVTO	04	16	0624	N08	E51	04	20.1		B	CSO	140	2	4	3
9909		TACH	04	16	0633	N08	E48	04	19.9			HSX	200	1	2	3
9909		HOLL	04	16	1405	N08	E47	04	20.1		A	HAX	120	2	2	2
9909	31140	MWIL	04	16	1445	N07	E47	04	20.1	5	(AP)					
9909		LEAR	04	17	0045	N06	E40	04	20.0		B	DSO	70	4	3	3
9909		VORO	04	17	0053	N08	E41	04	20.1			HAX	194	2		3
9909		SVTO	04	17	0608	N08	E37	04	20.0		B	DAO	120	4	4	3
9909		RAMY	04	17	1220	N08	E34	04	20.1		B	DAO	120	6	6	3
9909		HOLL	04	17	1425	N08	E33	04	20.1		A	HSX	70	3	2	3
9909		VORO	04	18	0028	N07	E28	04	20.1			HAX	170	2		3
9909		SVTO	04	18	0920	N08	E23	04	20.1		A	HSX	100	3	3	3
9909		RAMY	04	18	1231	N08	E21	04	20.1		B	CSO	90	3	3	3
9909		HOLL	04	18	1430	N07	E20	04	20.1		B	DSO	120	3	3	3
9909	31140	MWIL	04	18	1445	N07	E19	04	20.0	4	(AP)					
9909		VORO	04	18	2202	N08	E15	04	20.0			HAX	151	2		3
9909		LEAR	04	19	0025	N07	E14	04	20.1		A	HSX	120	4	4	4
9909		SVTO	04	19	0725	N08	E09	04	20.0		B	DAO	110	2	3	3
9909		RAMY	04	19	1230	N08	E08	04	20.1		B	DSO	90	3	4	2
9909		HOLL	04	19	1520	N07	E07	04	20.2		A	HSX	130	4	3	3
9909		VORO	04	19	2245	N07	E02	04	20.1			HSX	117	3		3
9909		LEAR	04	20	0023	N07	E02	04	20.2		B	CSO	100	6	6	4
9909		SVTO	04	20	0553	N08	W02	04	20.1		B	DAO	110	8	6	3
9909	31140	MWIL	04	20	1500	N08	W06	04	20.2	5	(BP)					
9909		HOLL	04	20	1700	N07	W07	04	20.2		B	CAO	70	5	5	2
9909		LEAR	04	21	0015	N07	W12	04	20.1		B	CSO	60	3	3	3
9909		SVTO	04	21	1032	N05	W18	04	20.1		A	HSX	40	2	2	3
9909		HOLL	04	21	1355	N07	W19	04	20.1		A	HAX	60	3	2	3
9909	31140	MWIL	04	21	1445	N08	W19	04	20.2	5	(AP)					
9909		RAMY	04	21	1455	N09	W19	04	20.2		A	HSX	40	1	1	2
9909		LEAR	04	22	0035	N07	W25	04	20.1		A	HSX	40	2	2	3
9909		SVTO	04	22	0611	N08	W28	04	20.1		A	HSX	70	1	2	3
9909	31140	MWIL	04	22	1430	N07	W33	04	20.1	5	(AP)					
9909		HOLL	04	22	1445	N07	W33	04	20.1		A	HSX	40	1	2	3
9909		RAMY	04	22	1525	N10	W33	04	20.2		A	HSX	40	1	1	2
9909		LEAR	04	23	0141	N07	W39	04	20.1		A	HSX	40	2	1	2

S U N S P O T G R O U P S
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9909		RAMY	04	23	1308	N10	W45	04	20.2		A	HSX	40	1	2	3
9909	31140	MWIL	04	23	1430	N07	W45	04	20.2	5	(AP)					
9909		HOLL	04	23	1622	N07	W46	04	20.2		A	HSX	50	1	2	2
9909		LEAR	04	24	0038	N07	W51	04	20.2		A	HSX	60	1	1	4
9909		VORO	04	24	0442	N07	W54	04	20.1			HSX	48	1		2
9909		TACH	04	24	0529	N07	W52	04	20.3			HSX	50	1	1	3
9909		SVTO	04	24	0607	N08	W57	04	20.0		A	HSX	30	1	2	2
9909		KAND	04	24	1300	N08	W59	04	20.1			HS		1	2	3
9909		HOLL	04	24	1401	N07	W59	04	20.2		A	HAX	40	1	1	2
9909		VORO	04	24	2130	N08	W64	04	20.1			HSX	30	1		2
9909		LEAR	04	25	0100	N08	W64	04	20.2		A	HSX	20	1	1	2
9909		KAND	04	25	1230	N09	W72	04	20.1			AX		1		3
9909		VORO	04	25	2157	N07	W76	04	20.2			AXX	14	1		3
9911		SVTO	04	18	0920	S13	E32	04	20.8		B	CRO	20	4	3	3
9911		RAMY	04	18	1231	S13	E29	04	20.7		B	CSO	20	4	4	3
9911		HOLL	04	18	1430	S12	E28	04	20.7		B	BXO	10	4	3	3
9911	31147	MWIL	04	18	1445	S13	E27	04	20.6	4	(B)					
9911		VORO	04	18	2202	S13	E25	04	20.8			BXI	35	3	4	3
9911		LEAR	04	19	0025	S13	E22	04	20.7		B	DAO	50	7	5	4
9911		SVTO	04	19	0725	S13	E18	04	20.7		B	CSO	40	4	5	3
9911		RAMY	04	19	1230	S13	E16	04	20.7		B	DSO	40	8	6	2
9911		HOLL	04	19	1520	S12	E18	04	21.0		B	CAO	20	5	2	3
9911		VORO	04	19	2245	S12	E12	04	20.8			BXI	39	5	3	3
9911		LEAR	04	20	0023	S12	E09	04	20.7		B	DAO	40	9	6	4
9911		SVTO	04	20	0553	S13	E05	04	20.6		B	DSO	30	9	7	3
9911	31147	MWIL	04	20	1500	S12	E00	04	20.6	4	(B)					
9911		HOLL	04	20	1700	S13	W01	04	20.6		B	BXO	10	5	6	2
9911A	31152	MWIL	04	21	1445	S25	W07	04	21.1	4	(AF)					
9912		SVTO	04	18	0920	N11	E37	04	21.2		B	DSO	40	4	3	3
9912		RAMY	04	18	1231	N10	E35	04	21.1		B	DSO	40	5	4	3
9912		HOLL	04	18	1430	N11	E32	04	21.0		B	DAO	70	4	4	3
9912	31148	MWIL	04	18	1445	N11	E33	04	21.1	4	(B)					
9912		VORO	04	18	2202	N10	E30	04	21.2			CRI	101	4	3	3
9912		LEAR	04	19	0025	N09	E28	04	21.1		B	DAO	70	12	4	4
9912		SVTO	04	19	0725	N10	E23	04	21.0		B	DAO	90	8	5	3
9912		RAMY	04	19	1230	N10	E22	04	21.2		B	DAO	70	13	4	2
9912		HOLL	04	19	1520	N09	E19	04	21.1		B	DAO	20	15	5	3
9912		VORO	04	19	2245	N10	E15	04	21.1			DAI	184	9	3	3
9912		LEAR	04	20	0023	N09	E14	04	21.1		B	DAO	210	32	6	4
9912		SVTO	04	20	0553	N11	E12	04	21.1		B	DAO	160	20	6	3
9912	31148	MWIL	04	20	1500	N10	E07	04	21.1	5	(B)					
9912		HOLL	04	20	1700	N10	E05	04	21.1		B	DAI	260	21	6	2
9912		LEAR	04	21	0015	N09	E02	04	21.2		BG	DAI	230	23	6	3
9912		SVTO	04	21	1032	N10	W05	04	21.1		BG	DAI	250	15	9	3
9912		HOLL	04	21	1355	N10	W07	04	21.0		BG	DAC	320	29	7	3
9912	31148	MWIL	04	21	1445	N10	W07	04	21.1	5	(B)					
9912		RAMY	04	21	1455	N10	W07	04	21.1		B	DAO	300	13	7	2
9912		LEAR	04	22	0035	N09	W13	04	21.0		BG	DAI	300	23	6	3
9912		SVTO	04	22	0611	N10	W16	04	21.0		BG	DAI	340	12	8	3
9912	31148	MWIL	04	22	1430	N10	W20	04	21.1	5	(BD)					
9912		HOLL	04	22	1445	N09	W20	04	21.1		BD	DKC	310	14	7	3
9912		RAMY	04	22	1525	N12	W21	04	21.1		B	DSO	350	8	6	2
9912		LEAR	04	23	0141	N09	W27	04	21.0		B	DSI	300	17	6	2
9912		RAMY	04	23	1308	N12	W32	04	21.1		B	DAO	230	15	7	3
9912	31148	MWIL	04	23	1430	N10	W34	04	21.0	5	(B)					
9912		HOLL	04	23	1622	N10	W34	04	21.1		B	DKI	210	15	7	2
9912		LEAR	04	24	0038	N09	W39	04	21.1		B	DSI	280	21	5	4
9912		VORO	04	24	0442	N10	W42	04	21.0			DKI	348	6	3	2
9912		TACH	04	24	0529	N09	W40	04	21.2			DAI	340	10	4	3
9912		SVTO	04	24	0607	N09	W45	04	20.9		BG	DAO	200	12	8	2
9912		KAND	04	24	1300	N11	W46	04	21.1			DSO		5	7	3
9912		HOLL	04	24	1401	N09	W47	04	21.0		B	DAO	170	7	7	2
9912		VORO	04	24	2130	N11	W52	04	21.0			DAI	352	6	4	2
9912		LEAR	04	25	0100	N11	W53	04	21.0		B	DAO	130	6	6	2
9912		KAND	04	25	1230	N12	W56	04	21.3			CAO		4	13	3
9912		VORO	04	25	2157	N10	W66	04	20.9			HAX	277	3		3

SUNSPOT GROUPS
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APRIL 2002

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9912		LEAR	04	26	0040	N11	W66	04	21.1		BG	DSO	120	6	6	2
9912		SVTO	04	26	0627	N11	W67	04	21.2		BG	CAO	150	7	11	3
9912		HOLL	04	26	1535	N09	W78	04	20.8		A	HAX	90	1	2	1
9912		VORO	04	26	2248	N10	W79	04	21.0			HAX	181	1		2
9912		LEAR	04	27	0028	N11	W78	04	21.1		A	HAX	90	2	2	3
9912		SVTO	04	27	0537	N11	W78	04	21.4		B	DAO	60	2	5	3
9913		LEAR	04	19	0025	S15	E34	04	21.6		B	CAO	30	3	3	4
9913		HOLL	04	19	1520	S15	E28	04	21.7		B	BXO	80	9	7	3
9913		LEAR	04	20	0023	S16	E22	04	21.7		B	BXO	30	7	7	4
9913		SVTO	04	20	0553	S15	E19	04	21.7		B	CSO	20	5	5	3
9913	31149	MWIL	04	20	1500	S12	E11	04	21.4	4	(AP)					
9913		LEAR	04	21	0015	S17	E10	04	21.8		B	BXO	30	10	7	3
9913		HOLL	04	21	1355	S17	E03	04	21.8		B	BXO	10	5	3	3
9913	31153	MWIL	04	21	1445	S16	E02	04	21.8	4	(BP)					
9913		LEAR	04	22	0035	S15	W07	04	21.5		B	CRO	20	6	2	3
9913		SVTO	04	22	0611	S14	W10	04	21.5		B	CRO	20	3	1	3
9913	31153	MWIL	04	22	1430	S15	W13	04	21.6	4	(BG)					
9913		HOLL	04	22	1445	S15	W13	04	21.6		B	BXO	40	7	4	3
9913		RAMY	04	22	1525	S14	W16	04	21.4		A	HSX	10	1	1	2
9913		LEAR	04	23	0141	S15	W20	04	21.5		B	CRO	20	2	3	2
9913		RAMY	04	23	1308	S14	W27	04	21.5		B	DSO	40	9	7	3
9913	31153	MWIL	04	23	1430	S16	W26	04	21.6	4	(BP)					
9913		HOLL	04	23	1622	S15	W26	04	21.7		B	CSO	10	6	6	2
9913		LEAR	04	24	0038	S16	W32	04	21.6		BG	CSO	40	17	5	4
9913		VORO	04	24	0442	S15	W35	04	21.5			BXI	29	4	2	2
9913		TACH	04	24	0529	S14	W33	04	21.7			BRO	35	5	3	3
9913		SVTO	04	24	0607	S15	W37	04	21.4		B	DSO	40	8	6	2
9913		KAND	04	24	1300	S14	W39	04	21.6			CSO		6	4	3
9913		HOLL	04	24	1401	S16	W39	04	21.6		B	CSO	40	9	5	2
9913		VORO	04	24	2130	S15	W44	04	21.6			BXI	33	6	4	2
9913		LEAR	04	25	0100	S14	W46	04	21.6		B	CSO	40	6	5	2
9913		KAND	04	25	1230	S14	W53	04	21.5			BXO		6	6	3
9913		VORO	04	25	2157	S14	W59	04	21.4			AXX	7	1		3
9913		LEAR	04	26	0040	S14	W60	04	21.5		B	CAO	40	8	6	2
9913		SVTO	04	26	0627	S15	W64	04	21.4		B	CRO	40	5	4	3
9913		HOLL	04	26	1535	S17	W66	04	21.6		B	BXO	20	2	4	1
9913B	31154	MWIL	04	21	1445	N11	E11	04	22.4	4	(AP)					
9913A		LEAR	04	20	0023	S21	E32	04	22.5		B	BXO	20	2	2	4
9923		LEAR	04	24	0038	S03	W19	04	22.6		B	CRO	30	10	4	4
9923		TACH	04	24	0529	S03	W20	04	22.7			AR	22	2	1	3
9923		SVTO	04	24	0607	S03	W23	04	22.5		B	CAO	20	4	3	2
9923		KAND	04	24	1300	S03	W26	04	22.6			BXO		2	5	3
9923		HOLL	04	24	1401	S04	W25	04	22.7		A	AXX	10	2	2	2
9923		LEAR	04	25	0100	S03	W35	04	22.4		B	CRO	40	6	7	2
9923		KAND	04	25	1230	S02	W40	04	22.5			BXO		7	8	3
9923		LEAR	04	26	0040	S03	W47	04	22.5		B	DAO	50	9	7	2
9923		SVTO	04	26	0627	S03	W52	04	22.4		B	CSO	30	7	8	3
9923		HOLL	04	26	1535	S05	W53	04	22.7		B	CRO	30	3	2	1
9923		LEAR	04	27	0028	S02	W59	04	22.6		B	CRO	30	4	4	3
9923		SVTO	04	27	0537	S03	W63	04	22.5		B	BXO	20	3	6	3
9923		HOLL	04	27	1423	S04	W66	04	22.7		A	AXX	10	1	1	1
9923A		SVTO	04	22	0611	N06	E09	04	22.9		A	AXX		1		3
9923A	31156	MWIL	04	22	1430	N06	E05	04	23.0	4	(B)					
9923A		HOLL	04	22	1445	N05	E04	04	22.9		B	BXO	20	3	3	3
9925		KAND	04	24	1300	S12	W15	04	23.4			BXO		4	3	3
9925		HOLL	04	24	1401	S14	W16	04	23.4		B	DSO	40	5	4	2
9925		LEAR	04	25	0100	S14	W24	04	23.2		B	DSO	40	8	4	2
9925		KAND	04	25	1230	S12	W30	04	23.3			BXO		13	7	3
9925		LEAR	04	26	0040	S13	W36	04	23.3		B	CRO	30	5	5	2
9925		SVTO	04	26	0627	S14	W41	04	23.2		B	CSO	20	5	6	3
9925		HOLL	04	26	1535	S14	W47	04	23.1		B	BXO	10	2	2	1
9925		LEAR	04	27	0028	S13	W53	04	23.0		B	BXO	10	2	2	3
9925		SVTO	04	27	0537	S14	W55	04	23.1		A	AXX	20	2	1	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9925		HOLL	04 27	1423	S14 W58	04 23.2		A	HSX	10	1	1	1
9925A	31160	MWIL	04 23	1430	S04 W03	04 23.4	4	(B)					
9920		LEAR	04 23	0141	S23 E09	04 23.8		B	CRO	20	3	3	2
9920		RAMY	04 23	1308	S24 E01	04 23.6		B	DSO	30	5	3	3
9920	31161	MWIL	04 23	1430	S24 E02	04 23.7	4	(D)					
9920		HOLL	04 23	1622	S23 E01	04 23.7		B	CSO	30	2	3	2
9920		LEAR	04 24	0038	S23 W02	04 23.9		B	CAO	20	2	4	4
9920		TACH	04 24	0529	S22 W06	04 23.8			AXX	40	1	1	3
9920		SVTO	04 24	0607	S23 W07	04 23.7		B	CRO	10	2	2	2
9920		KAND	04 24	1300	S23 W10	04 23.8			AX		2	1	3
9920		HOLL	04 24	1401	S23 W11	04 23.7		A	HSX	10	1	1	2
9920		LEAR	04 25	0100	S24 W16	04 23.8		B	CSO	20	2	1	2
9920		KAND	04 25	1230	S23 W22	04 23.8			AX		2	1	3
9920		LEAR	04 27	0028	S20 W40	04 24.0		B	CRO	10	2	2	3
9920		KAND	04 27	0630	S22 W45	04 23.8			AX		1		4
9924		LEAR	04 24	0038	S17 E05	04 24.4		BG	DAO	50	21	6	4
9924		TACH	04 24	0529	S16 E01	04 24.3			BRI	97	11	5	3
9924		SVTO	04 24	0607	S16 E02	04 24.4		B	DAO	70	14	6	2
9924		KAND	04 24	1300	S16 W01	04 24.5			CRO		10	7	3
9924		HOLL	04 24	1401	S17 W02	04 24.4		B	DAO	50	17	9	2
9924		LEAR	04 25	0100	S15 W08	04 24.4		B	DAO	30	6	8	2
9924		KAND	04 25	1230	S15 W17	04 24.2			AX		3	1	3
9924		LEAR	04 26	0040	S15 W25	04 24.1		B	CRO	10	2	2	2
9924		SVTO	04 26	0627	S16 W27	04 24.2		B	BXO	10	4	5	3
9924		HOLL	04 26	1535	S16 W33	04 24.1		A	HSX	10	1	1	1
9924		LEAR	04 27	0028	S15 W39	04 24.1		A	HRX	10	1		3
9924	31164	MWIL	04 29	1445	S15 W75	04 23.9	3	(AP)					
9914		RAMY	04 19	1230	N03 E79	04 25.4		A	HSX	20	1	1	2
9914		HOLL	04 19	1520	N05 E76	04 25.3		A	AXX	10	1	1	3
9914		LEAR	04 20	0023	N03 E70	04 25.2		B	CAO	60	5	5	4
9914		SVTO	04 20	0553	N08 E70	04 25.5		B	CSO	30	2	4	3
9914	31150	MWIL	04 20	1500	N06 E63	04 25.3	4	(B)					
9914		HOLL	04 20	1700	N05 E62	04 25.3		B	DSO	40	3	7	2
9914		LEAR	04 21	0015	N04 E57	04 25.3		B	CAO	60	4	5	3
9914		SVTO	04 21	1032	N05 E52	04 25.3		B	CAO	60	5	7	3
9914		HOLL	04 21	1355	N05 E48	04 25.2		B	DAO	90	8	5	3
9914	31150	MWIL	04 21	1445	N05 E48	04 25.2	5	(BP)					
9914		RAMY	04 21	1455	N03 E49	04 25.3		B	DSO	70	2	5	2
9914		LEAR	04 22	0035	N04 E43	04 25.2		B	DSO	120	8	7	3
9914		SVTO	04 22	0611	N04 E41	04 25.3		B	DSO	140	5	7	3
9914	31150	MWIL	04 22	1430	N05 E35	04 25.2	5	(B)					
9914		HOLL	04 22	1445	N04 E35	04 25.2		B	DAI	190	16	8	3
9914		RAMY	04 22	1525	N05 E35	04 25.3		B	DAO	150	7	8	2
9914		LEAR	04 23	0141	N04 E29	04 25.2		BG	DAO	110	16	8	2
9914		RAMY	04 23	1308	N03 E22	04 25.2		B	DAO	150	15	8	3
9914	31150	MWIL	04 23	1430	N04 E22	04 25.2	5	(B)					
9914		HOLL	04 23	1622	N04 E23	04 25.4		B	DAI	170	14	10	2
9914		LEAR	04 24	0038	N04 E16	04 25.2		B	DAO	240	31	9	4
9914		TACH	04 24	0529	N03 E10	04 25.0			DAI	476	13	8	3
9914		SVTO	04 24	0607	N05 E12	04 25.1		B	DAO	210	11	10	2
9914		KAND	04 24	1300	N04 E09	04 25.2			DSO		7	9	3
9914		HOLL	04 24	1401	N04 E10	04 25.3		BG	EAC	240	18	11	2
9914		LEAR	04 25	0100	N04 E02	04 25.2		B	DAO	180	10	9	2
9914		KAND	04 25	1230	N05 W04	04 25.2			EAO		8	11	3
9914		LEAR	04 26	0040	N05 W12	04 25.1		B	DAO	250	12	9	2
9914		SVTO	04 26	0627	N04 W16	04 25.1		B	DSO	290	7	9	3
9914		HOLL	04 26	1535	N04 W21	04 25.1		B	DSO	160	5	9	1
9914		LEAR	04 27	0028	N05 W25	04 25.1		B	DSO	220	12	9	3
9914		SVTO	04 27	0537	N05 W28	04 25.1		B	DSO	220	8	9	3
9914		KAND	04 27	0630	N06 W29	04 25.1			DSO		5	9	4
9914		HOLL	04 27	1423	N04 W33	04 25.1		B	DAO	220	5	9	1
9914		LEAR	04 28	0335	N05 W40	04 25.1		B	DSO	200	8	9	2
9914		SVTO	04 28	0630	N06 W42	04 25.1		B	DSO	180	3	10	3
9914		HOLL	04 28	1411	N04 W46	04 25.1		B	DAO	140	4	8	2
9914		LEAR	04 29	0120	N06 W53	04 25.1		B	DSO	130	3	8	1

SUNSPOT GROUPS
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APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9914		TACH	04	29	0518	N05	W52	04	25.3			DSO	220	2	6	3
9914		SVTO	04	29	0913	N06	W58	04	25.0		B	DSO	180	2	8	2
9914		KAND	04	29	1300	N07	W61	04	25.0			CAO		4	10	4
9914		HOLL	04	29	1338	N05	W58	04	25.2		B	DAO	150	4	8	3
9914	31150	MWIL	04	29	1445	N05	W61	04	25.0	4	(BP)					
9914		LEAR	04	30	0116	N05	W68	04	25.0		B	CSO	100	3	8	4
9914		SVTO	04	30	0732	N05	W70	04	25.1		B	CSO	120	2	10	3
9914	31150	MWIL	04	30	1445	N05	W77	04	24.8	5	AP					
9914		HOLL	04	30	1908	N06	W80	04	24.8		A	HSX	110	1	2	2
9914		LEAR	05	01	0027	N05	W80	04	25.1		A	HSX	50	1	2	3
9915	31151	MWIL	04	20	1500	N14	E77	04	26.4	4	(B)					
9915		HOLL	04	20	1700	N12	E72	04	26.1		A	AXX	10	1	1	2
9915		LEAR	04	21	0015	N10	E65	04	25.9		B	BXO	30	3	3	3
9915		SVTO	04	21	1032	N12	E63	04	26.2		B	CRO	40	2	5	3
9915		HOLL	04	21	1355	N12	E59	04	26.0		B	CSO	40	4	5	3
9915	31151	MWIL	04	21	1445	N12	E59	04	26.0	4	(B)					
9915		RAMY	04	21	1455	N09	E59	04	26.0		A	HAX	20	1	1	2
9915		LEAR	04	22	0035	N12	E53	04	26.0		B	DAO	90	7	5	3
9915		SVTO	04	22	0611	N12	E51	04	26.1		B	DAO	90	5	5	3
9915	31151	MWIL	04	22	1430	N12	E45	04	26.0	5	(B)					
9915		HOLL	04	22	1445	N12	E46	04	26.1		B	CAI	180	15	8	3
9915		RAMY	04	22	1525	N10	E47	04	26.2		B	DAO	120	7	7	2
9915		LEAR	04	23	0141	N12	E39	04	26.0		B	DAO	190	15	7	2
9915		RAMY	04	23	1308	N10	E33	04	26.0		B	DAO	200	14	6	3
9915	31151	MWIL	04	23	1430	N12	E32	04	26.0	5	(BG)					
9915		HOLL	04	23	1622	N12	E32	04	26.1		B	DKO	140	11	8	2
9915		LEAR	04	24	0038	N12	E26	04	26.0		BG	CAO	170	14	6	4
9915		TACH	04	24	0529	N09	E19	04	25.6			HSX	280	1	2	3
9915		SVTO	04	24	0607	N13	E22	04	25.9		B	CAO	220	8	7	2
9915		KAND	04	24	1300	N11	E18	04	25.9			HA		2	2	3
9915		HOLL	04	24	1401	N12	E18	04	25.9		B	DKO	150	7	5	2
9915		LEAR	04	25	0100	N12	E13	04	26.0		B	CAO	130	10	5	2
9915		KAND	04	25	1230	N11	E06	04	26.0			CAO		8	6	3
9915		LEAR	04	26	0040	N12	E01	04	26.1		B	DAO	190	12	7	2
9915		SVTO	04	26	0627	N11	W04	04	26.0		B	DAO	180	11	7	3
9915		HOLL	04	26	1535	N11	W09	04	26.0		B	DKI	210	15	7	1
9915		LEAR	04	27	0028	N12	W14	04	26.0		B	DKO	280	15	7	3
9915		SVTO	04	27	0537	N11	W17	04	25.9		B	DKO	270	15	8	3
9915		KAND	04	27	0630	N13	W18	04	25.9			DAO		14	5	4
9915		HOLL	04	27	1423	N11	W22	04	25.9		B	DKI	310	18	7	1
9915		LEAR	04	28	0335	N12	W29	04	26.0		B	DAI	260	20	8	2
9915		SVTO	04	28	0630	N13	W31	04	25.9		BG	ESO	260	18	11	3
9915		HOLL	04	28	1411	N12	W36	04	25.9		B	DAI	200	16	8	2
9915		LEAR	04	29	0120	N13	W42	04	25.9		B	DAI	180	7	7	1
9915		TACH	04	29	0518	N12	W41	04	26.1			DAO	280	4	6	3
9915		SVTO	04	29	0913	N13	W47	04	25.8		B	DSO	200	6	7	2
9915		KAND	04	29	1300	N13	W49	04	25.8			DAO		5	8	4
9915		HOLL	04	29	1338	N12	W47	04	26.0		B	DAI	210	11	8	3
9915	31151	MWIL	04	29	1445	N12	W49	04	25.9	5	(B)					
9915		LEAR	04	30	0116	N12	W55	04	25.9		B	DSO	80	6	8	4
9915		SVTO	04	30	0732	N12	W61	04	25.7		BG	EAO	240	6	14	3
9915	31151	MWIL	04	30	1445	N12	W63	04	25.9	4	BP					
9915		HOLL	04	30	1908	N12	W69	04	25.6		B	CSO	170	4	8	2
9915		LEAR	05	01	0027	N11	W67	04	26.1		B	DAO	190	5	9	3
9915		SVTO	05	01	0549	N14	W70	04	26.0		B	CAO	150	3	9	3
9915		KAND	05	01	0820	N12	W75	04	25.8			CSO		4	10	4
9915	31151	MWIL	05	01	1445	N12	W77	04	25.9	4	(BP)					
9915		HOLL	05	01	1510	N12	W78	04	25.8		A	HAX	120	2	2	4
9915A		LEAR	04	22	0035	S30	E56	04	26.4		B	CRO	20	2	4	3
9915A		SVTO	04	22	0611	S30	E54	04	26.5		B	CRO	20	2	2	3
9915A	31157	MWIL	04	22	1430	S28	E49	04	26.4	4	(AP)					
9915A		HOLL	04	22	1445	S28	E49	04	26.4		A	AXX	10	1	1	3
9915A		KAND	04	25	1230	S29	E12	04	26.5			AX		2		3
9921	31158	MWIL	04	22	1430	N14	E57	04	26.9	4	(AP)					
9921		RAMY	04	23	1308	N11	E46	04	27.0		A	AXX		1	1	3
9921	31158	MWIL	04	23	1430	N13	E43	04	26.8	4	(AP)					

S U N S P O T G R O U P S
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APRIL 2002

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9921		HOLL	04 23 1622	N14 E44	04 27.0		A	AXX	10	2	2	2
9921		LEAR	04 27 0028	N12 W01	04 26.9		B	DAO	30	6	2	3
9921		SVTO	04 27 0537	N14 W04	04 26.9		B	DAO	30	4	4	3
9921		KAND	04 27 0630	N15 W05	04 26.9			BXO		6	3	4
9921		HOLL	04 27 1423	N13 W08	04 27.0		B	DAO	30	6	3	1
9921		LEAR	04 28 0335	N14 W16	04 26.9		B	DAO	40	5	4	2
9921		SVTO	04 28 0630	N14 W18	04 26.9		B	CSO	50	7	6	3
9921		HOLL	04 28 1411	N14 W22	04 26.9		B	DSO	50	3	4	2
9921		LEAR	04 29 0120	N15 W28	04 26.9		B	DSO	20	3	3	1
9921		SVTO	04 29 0913	N14 W34	04 26.8		B	CRO	10	2	1	2
9921		HOLL	04 29 1338	N14 W36	04 26.8		A	AXX	10	1	1	3
9921	31158	MWIL	04 29 1445	N13 W37	04 26.8	3	(AP)					
9916		LEAR	04 21 0015	S17 E83	04 27.3		A	HSX	30	1	2	3
9916		SVTO	04 21 1032	S17 E79	04 27.4		B	CSO	60	3	5	3
9916		HOLL	04 21 1355	S15 E76	04 27.3		B	DAO	150	4	7	3
9916	31155	MWIL	04 21 1445	S16 E77	04 27.4	4	(B)					
9916		RAMY	04 21 1455	S18 E77	04 27.5		B	DAO	150	4	6	2
9916		LEAR	04 22 0035	S16 E72	04 27.5		B	DAO	120	5	8	3
9916		SVTO	04 22 0611	S17 E71	04 27.6		B	DSO	130	5	9	3
9916	31155	MWIL	04 22 1430	S16 E65	04 27.5	4	(B)					
9916		HOLL	04 22 1445	S16 E63	04 27.4		B	ESO	200	16	13	3
9916		RAMY	04 22 1525	S19 E65	04 27.6		B	DSO	130	6	10	2
9916		LEAR	04 23 0141	S17 E58	04 27.5		B	DAO	150	9	9	2
9916		RAMY	04 23 1308	S20 E52	04 27.5		B	DAO	120	8	8	3
9916	31155	MWIL	04 23 1430	S16 E52	04 27.5	5	(B)					
9916		HOLL	04 23 1622	S17 E51	04 27.5		B	DAI	190	11	9	2
9916		LEAR	04 24 0038	S18 E44	04 27.4		B	EAO	120	25	12	4
9916		TACH	04 24 0529	S16 E37	04 27.0			CAI	198	15	10	3
9916		SVTO	04 24 0607	S17 E40	04 27.3		B	EAO	90	12	13	2
9916		KAND	04 24 1300	S17 E40	04 27.6			ESO		8	12	3
9916		HOLL	04 24 1401	S17 E38	04 27.5		B	EAO	80	12	11	2
9916		LEAR	04 25 0100	S17 E32	04 27.5		B	DAO	50	9	8	2
9916		KAND	04 25 1230	S18 E29	04 27.7			BXO		12	9	3
9916		LEAR	04 26 0040	S18 E19	04 27.5		B	DAO	40	10	9	2
9916		SVTO	04 26 0627	S18 E17	04 27.6		B	CRO	20	5	10	3
9916		HOLL	04 26 1535	S17 E08	04 27.2		B	CSO	30	5	3	1
9916		LEAR	04 27 0028	S18 E07	04 27.5		B	CSO	20	9	7	3
9916		SVTO	04 27 0537	S18 E03	04 27.5		B	CRO	10	4	5	3
9916		KAND	04 27 0630	S15 E00	04 27.3			CSO		2	3	4
9916		HOLL	04 27 1423	S17 W03	04 27.4		B	CSO	20	4	7	1
9916		LEAR	04 28 0335	S17 W09	04 27.5		B	CRO	20	9	6	2
9916		SVTO	04 28 0630	S18 W10	04 27.5		B	BXX	40	8	7	3
9916		HOLL	04 28 1411	S18 W13	04 27.6		B	CSO	30	4	5	2
9916		HOLL	04 29 1338	S15 W25	04 27.7		B	CSO	30	4	5	3
9916	31155	MWIL	04 29 1445	S17 W27	04 27.6	3	(AF)					
9916A		HOLL	04 27 1423	S05 E06	04 28.0		A	AXX	10	1	1	1
9922		RAMY	04 23 1308	N18 E61	04 28.2		A	AXX	10	1	1	3
9922	31162	MWIL	04 23 1430	N21 E58	04 28.0	4	(AP)					
9922		HOLL	04 23 1622	N20 E59	04 28.2		A	AXX	10	2	3	2
9922		LEAR	04 24 0038	N21 E52	04 28.0		A	AXX	10	1		4
9922		KAND	04 24 1300	N22 E49	04 28.3			BXO		3	4	3
9922		HOLL	04 24 1401	N21 E46	04 28.1		B	BXO	20	3	4	2
9922		LEAR	04 25 0100	N23 E37	04 27.9		B	BXO	30	5	7	2
9922		KAND	04 25 1230	N21 E35	04 28.2			BXO		4	5	3
9922		LEAR	04 26 0040	N22 E25	04 27.9		B	BXO	20	3	11	2
9922		HOLL	04 27 1423	N22 E08	04 28.2		A	HAX	20	1	2	1
9922		LEAR	04 28 0335	N22 W02	04 28.0		A	AXX	10	1		2
9922		LEAR	04 29 0120	N22 W13	04 28.0		A	AXX	20	3	2	1
9922		TACH	04 29 0518	N20 W14	04 28.2			AR	22	2	1	3
9922		SVTO	04 29 0913	N22 W17	04 28.1		B	CSO	20	2	2	2
9922		KAND	04 29 1300	N22 W19	04 28.1			AX		2	3	4
9922		HOLL	04 29 1338	N21 W18	04 28.2		A	AXX	10	1	1	3
9922	31162	MWIL	04 29 1445	N22 W21	04 28.0	4	(B)					
9922		SVTO	04 30 0732	N22 W29	04 28.1		B	BXO	10	2	7	3
9922		HOLL	05 01 1510	N18 W49	04 28.0		A	AXX	20	3	2	4
9919	31159	MWIL	04 22 1430	N12 E86	04 29.1	5	AP					

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9919		HOLL	04	22	1445	N12	E85	04	29.0		A	HSX	60	1	2	3
9919		RAMY	04	22	1525	N09	E85	04	29.0		A	HSX	60	1	5	2
9919		LEAR	04	23	0141	N11	E77	04	28.9		B	DSO	210	3	5	2
9919		RAMY	04	23	1308	N09	E72	04	28.9		B	DSO	120	2	6	3
9919	31159	MWIL	04	23	1430	N12	E71	04	28.9	5	(B)					
9919		HOLL	04	23	1622	N11	E71	04	29.0		B	DAO	180	2	3	2
9919		LEAR	04	24	0038	N11	E70	04	29.3		B	FAO	280	8	16	4
9919		TACH	04	24	0529	N11	E65	04	29.1			DAI	187	6	11	3
9919		SVTO	04	24	0607	N13	E68	04	29.4		B	FAO	210	6	18	2
9919		KAND	04	24	1300	N11	E61	04	29.1			DSO		2	3	3
9919		HOLL	04	24	1401	N11	E58	04	28.9		B	DAO	150	2	3	2
9919		LEAR	04	25	0100	N12	E58	04	29.4		B	EAO	100	7	15	2
9919		KAND	04	25	1230	N11	E48	04	29.1			DSO		3	4	3
9919		LEAR	04	26	0040	N12	E45	04	29.4		BG	EAO	200	6	13	2
9919		SVTO	04	26	0627	N12	E42	04	29.4		B	ESO	200	6	14	3
9919		HOLL	04	26	1535	N12	E36	04	29.4		B	ESO	130	8	14	1
9919		LEAR	04	27	0028	N11	E27	04	29.0		B	DSO	110	2	3	3
9919		SVTO	04	27	0537	N13	E24	04	29.0		B	DSO	100	4	6	3
9919		KAND	04	27	0630	N14	E23	04	29.0			CSO		3	4	4
9919		KAND	04	27	0630	N17	E24	04	29.1			AX		1		4
9919		HOLL	04	27	1423	N12	E24	04	29.4		B	EAO	150	9	14	1
9919		HOLL	04	27	1423	N13	E18	04	28.9		B	DAO	170	6	5	1
9919		LEAR	04	28	0335	N13	E12	04	29.0		BG	DSO	120	8	6	2
9919		SVTO	04	28	0630	N14	E10	04	29.0		B	DSO	140	9	8	3
9919		HOLL	04	28	1411	N15	E05	04	29.0		B	DSO	110	7	4	2
9919		LEAR	04	29	0120	N15	W02	04	28.9		B	DSO	100	9	4	1
9919		TACH	04	29	0518	N13	W04	04	28.9			CSI	235	4	1	3
9919		SVTO	04	29	0913	N15	W06	04	28.9		B	DSO	100	8	6	2
9919		KAND	04	29	1300	N14	W08	04	28.9			CSO		2	4	4
9919		KAND	04	29	1300	N17	W09	04	28.8			BXO		5	2	4
9919		HOLL	04	29	1338	N15	W08	04	29.0		B	CSO	70	5	6	3
9919	31159	MWIL	04	29	1445	N13	W08	04	29.0	4	(BP)					
9919	31165	MWIL	04	29	1445	N16	W10	04	28.8	4	(B)					
9919		LEAR	04	30	0116	N14	W15	04	28.9		B	CSO	40	6	3	4
9919		SVTO	04	30	0732	N14	W17	04	29.0		B	CSO	110	6	8	3
9919	31159	MWIL	04	30	1445	N13	W23	04	28.9	5	AP					
9919		HOLL	04	30	1908	N13	W29	04	28.6		A	HSX	70	1	2	2
9919		LEAR	05	01	0027	N12	W28	04	29.0		A	HAX	70	1	2	3
9919		SVTO	05	01	0549	N13	W31	04	29.0		A	HSX	50	1	2	3
9919		KAND	05	01	0820	N13	W32	04	29.0			HS		1	1	4
9919	31159	MWIL	05	01	1445	N12	W36	04	29.0	5	(AP)					
9919		HOLL	05	01	1510	N13	W36	04	29.0		A	HSX	70	1	2	4
9919		LEAR	05	02	0109	N12	W42	04	29.0		A	HSX	70	1	2	3
9919		SVTO	05	02	0632	N14	W44	04	29.0		A	HAX	60	1	1	3
9919		KAND	05	02	1150	N14	W49	04	28.9			HS		1	1	3
9919	31159	MWIL	05	02	1600	N12	W50	04	29.0	5	(AP)					
9919		HOLL	05	02	1610	N13	W50	04	29.0		A	HSX	60	1	2	3
9919		LEAR	05	03	0020	N13	W55	04	29.0		A	HSX	30	1	2	2
9919		SVTO	05	03	0606	N15	W58	04	29.0		A	HAX	80	1	1	2
9919		KAND	05	03	0750	N16	W59	04	28.9			HS		1	1	3
9919		HOLL	05	03	1420	N12	W63	04	28.9		A	HSX	40	1	2	4
9919	31159	MWIL	05	03	1445	N12	W63	04	29.0	4	(AP)					
9919		LEAR	05	04	0140	N13	W68	04	29.0		A	HSX	30	1	2	3
9919		KAND	05	04	0825	N15	W74	04	28.8			HS		1	2	4
9919	31159	MWIL	05	04	1445	N13	W76	04	29.0	4	(AP)					
9919A	31166	MWIL	04	29	1445	S09	W04	04	29.3	3	(AF)					
9926	31163	MWIL	04	23	1430	N12	E85	04	30.0	5	AP					
9926		KAND	04	24	1300	N12	E76	04	30.3			HA		2	2	3
9926		HOLL	04	24	1401	N14	E70	04	29.9		B	DSO	60	2	3	2
9926		KAND	04	25	1230	N12	E61	04	30.1			HA		4	2	3
9926		LEAR	04	27	0028	N11	E38	04	29.9		B	DAO	80	4	2	3
9926		SVTO	04	27	0537	N13	E35	04	29.9		B	DAO	50	3	4	3
9926		KAND	04	27	0630	N14	E34	04	29.8			DAO		3	4	4
9926		HOLL	04	27	1423	N12	E30	04	29.8		B	DSO	50	3	3	1
9926		LEAR	04	28	0335	N12	E22	04	29.8		B	DSO	70	4	3	2
9926		SVTO	04	28	0630	N13	E21	04	29.8		B	DSO	50	9	3	3
9926		HOLL	04	28	1411	N14	E13	04	29.6		B	DSO	50	8	3	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

APRIL 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9926		LEAR	04	29	0120	N14 E11	04	29.9		B	DSO	70	3	2	1
9926		TACH	04	29	0518	N13 E06	04	29.7			HA	100	3	2	3
9926		SVTO	04	29	0913	N13 E07	04	29.9		B	CAO	100	3	2	2
9926		KAND	04	29	1300	N14 E04	04	29.8			HA		3	2	4
9926		HOLL	04	29	1338	N14 E04	04	29.9		A	HAX	60	3	2	3
9926	31163	MWIL	04	29	1445	N13 E04	04	29.9	4	(BP)					
9926		LEAR	04	30	0116	N13 W03	04	29.8		B	CSO	40	5	2	4
9926		SVTO	04	30	0732	N14 W06	04	29.9		A	HAX	60	3	2	3
9926	31163	MWIL	04	30	1445	N14 W11	04	29.8	4	AP					
9926		HOLL	04	30	1908	N14 W13	04	29.8		B	CAO	90	6	4	2
9926		LEAR	05	01	0027	N13 W17	04	29.8		BG	DAO	80	12	4	3
9926		SVTO	05	01	0549	N15 W19	04	29.9		BG	DAO	70	9	4	3
9926		KAND	05	01	0820	N14 W20	04	29.9			CSO		12	4	4
9926	31163	MWIL	05	01	1445	N15 W24	04	29.9	5	(BG)					
9926		HOLL	05	01	1510	N14 W25	04	29.8		B	DAO	70	12	6	4
9926		LEAR	05	02	0109	N14 W30	04	29.9		BG	DAO	90	14	5	3
9926		SVTO	05	02	0632	N15 W33	04	29.9		BG	DSO	70	7	6	3
9926		KAND	05	02	1150	N15 W36	04	29.9			DSO		6	5	3
9926	31163	MWIL	05	02	1600	N14 W38	04	29.9	4	(BG)					
9926		HOLL	05	02	1610	N14 W38	04	29.9		BG	DAI	90	6	5	3
9926		LEAR	05	03	0020	N14 W44	04	29.8		BG	DAO	40	4	5	2
9926		TACH	05	03	0523	N11 W55	04	29.2			HSX	100	1	1	3
9926		TACH	05	03	0523	N12 W43	04	30.0			BRO	30	3	5	3
9926		SVTO	05	03	0606	N17 W45	04	29.9		BG	DSO	50	3	6	2
9926		KAND	05	03	0750	N17 W47	04	29.8			BXO		3	5	3
9926		HOLL	05	03	1420	N14 W52	04	29.8		B	BXO	40	5	6	4
9926	31163	MWIL	05	03	1445	N15 W51	04	29.8	4	(BG)					
9926		LEAR	05	04	0140	N14 W58	04	29.8		BG	DRO	50	6	5	3
9926		TACH	05	04	0528	N12 W68	04	29.2			HSX	60	1	2	2
9926		SVTO	05	04	0720	N14 W64	04	29.6		A	HSX	30	1	3	2
9926		HOLL	05	04	1520	N13 W65	04	29.8		A	HAX	60	1	2	4
9926		LEAR	05	05	0010	N13 W69	04	29.9		A	HSX	40	1	1	3
9926A		HOLL	04	26	1535	N07 E50	04	30.4		B	BXO	20	2	2	1
9926A		LEAR	04	27	0028	N02 E45	04	30.4		B	BXO	10	2	4	3
9926A		HOLL	04	27	1423	N03 E38	04	30.4		A	AXX	10	1	1	1
9930		HOLL	04	30	1908	N12 W02	04	30.6		B	CSO	10	6	7	2
9930		VORO	04	30	2228	N11 W03	04	30.7			AXX	13	1		1
9930		LEAR	05	01	0027	N12 W05	04	30.6		B	CAO	30	9	6	3
9930		SVTO	05	01	0549	N13 W06	04	30.8		B	CSO	30	8	4	3
9930		KAND	05	01	0820	N13 W08	04	30.7			CRO		6	5	4
9930	31171	MWIL	05	01	1445	N12 W12	04	30.7	4	(B)					
9930		HOLL	05	01	1510	N12 W14	04	30.6		B	CSO	30	13	5	4
9930		VORO	05	01	2141	N12 W16	04	30.7			BXO	58	6	5	1
9930		LEAR	05	02	0109	N12 W18	04	30.7		B	DRO	60	14	5	3
9930		SVTO	05	02	0632	N13 W20	04	30.8		B	DRO	40	6	5	3
9930		KAND	05	02	1150	N13 W23	04	30.7			CAO		6	6	3
9930	31171	MWIL	05	02	1600	N12 W26	04	30.7	4	(B)					
9930		HOLL	05	02	1610	N12 W26	04	30.7		B	DSO	40	6	5	3
9930		LEAR	05	03	0020	N12 W32	04	30.6		B	DRO	30	5	6	2
9930		VORO	05	03	0045	N12 W31	04	30.7			BXO	17	6	4	1
9930		TACH	05	03	0523	N10 W32	04	30.8			BXO	20	2	3	3
9930		SVTO	05	03	0606	N13 W34	04	30.7		B	DSO	20	3	6	2
9930		HOLL	05	03	1420	N12 W39	04	30.6		B	CRO	20	2	5	4
9930	31171	MWIL	05	03	1445	N12 W39	04	30.7	4	(B)					
9926G		HOLL	05	01	1510	S09 W10	04	30.9		B	BXO	10	4	6	4

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

APRIL 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0823	0840	0925	1	1		1				No flare		
01	1004	1038U	1115	1	1		1				No flare		
01	1530	1538	1553	2	5	1	2	1		1	1529	C3.0	9886
02	0433	0438	0500	1+	1					1	0431	C6.0	
02	0713	0718	0735	1	1					1	No flare		
02	0743	0748	0842	1+	1					1	0742	C2.4	
02	1318	1321	1344	2	5	1	2	1		2	1315	C4.0	9887
02	1406	1412	1432	2	5	1	2	1		6	1404	C3.3	9887
02	1440	1444	1456	1-	5					2	1438	C2.6	9887
02	1458	1500	1515	1-	5					2	No flare		
02	1541	1547	1609	1	5		1			4	1541	C2.5	9887
02	1657	1701	1729	1+	5					4	1656	C2.8	9887
02	1731	1735	1739	1-	1					1	1734	C1.3	
02	1900	1904	1929	1+	5					3	1900	C2.2	
02	2001	2007	2050	2	5					2	1955	C3.1	
02	2240	2244	2315	2	1					1	2237	C2.3	
03	0745	0805	1003	1	1		1				No flare		
03	1422	1426	1437	2+	5	1	1	1		5	1418	C2.8	
03	1957	2001	2023	1+	5					2	1955	C3.2	
04	0423	0435	0530	2+	1					1	0423	C9.8	9893
04	0646	0649	0704	1	1					1	0651	C3.0	9888
04	0903	0911	0930	1	1					1	No flare		
04	1043	1045	1129	3	5	1	2	1		7	1041	M1.4	
04	1415	1419	1436	1	5		1			5	1413	C3.0	
04	1434	1437	1451	1-	5					5	1433	C3.0	9885
04	1527	1540	1601	3-	5	1	2	1		10	1524	M6.1	
05	1309	1315	1349	1+	5		1			5	1307	C3.0	
05	1438	1443	1458	1	5		1			4	1439	C2.5	9887
05	1515	1521	1551	1+	5		1			7	1513	C3.4	9893
05	1716	1720	1745	2-	5					4	1716	C3.0	9886
05	1947	1950	2036	2+	1					1	1947	C2.9	9885
06	0607	0619	0657	2-	5		1			3	0604	C9.5	9893
06	1040	1045	1110	1+	1					1	No flare		
06	1404	1415	1459	1+	5	1	1	1		4	1403	C2.6	9887
06	1945	1948	2017	1+	1					1	1945	C2.0	9893
07	0516	0520	0535	1	1					1	0519	C2.7	9893
07	0818	0824	0824D	2+	5	1	1	1		5	0814	C6.0	9893
07	1420	1429	1501	2	5	1	1	1		5	1417	C4.4	9898
07	1508	1515	1537	1+	5					2	1507	C2.8	
07	1912	1919	2008	2+	1					1	1917	C1.7	
09	0039	0042	0050	1-	1					1	0038	M2.1	9899
09	0601	0609	0730	2	5		1			2	0602		9903
09	0728	0738	0823	2-	5					3	No flare		
09	1259	1302	1337	3-	5		2	1		8	1254	M1.1	
09	1548	1555	1628	2	5					2	No flare		
09	1727	1734	1747	1	1					1	1730	C2.2	
09	1906	1914	2004	2+	5					2	1908	C4.1	9904
10	0644	0649	0720	1+	5					3	0641	C4.3	9899
10	1226	1231	1304	3	5	1	2	1		11	1223	M8.2	9893
10	1418	1425	1456	1+	5		1			6	1417	C5.0	
10	1538	1542	1608	1	5		1			5	1538	C4.2	9893
10	1848	1853	1900	1-	5					2	1848	M1.6	9899
10	1857	1904	1952	2	5					6	1848	M1.6	9899
11	0601	0609	0652	2	3					2	0559	C4.4	9900
11	0904	0906	0920	1-	1					1	0901	C2.3	
11	0928	0932	0947	1	5					3	0924	C3.4	
11	1554	1558	1620D	1+	1					1	1553	C2.0	

* = no flare patrol.

APRIL 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
11	1620	1626	1646	2+	5	1	2	1		7	1616	C9.2	9904
11	1834	1838	1922	2	5					5	1833	C7.2	
12	0307	0310	0330	1	1					1	0304	C5.0	9907
12	1308	1311	1345	3	5	1	2	1		10	1305	M1.4	
12	1335	1344	1405	1+	5					5	*		
12	1559	1602	1628	3-	5	1	2	1		7	1557	C7.7	9907
12	1730	1741	1757	1	5					2	1731	M4.0	9901
12	1738	1750	1933	3-	3					5	1731	M4.0	9901
13	1011	1017	1111	1+	1					1	1008	C3.2	
13	1212	1216	1230	1+	5	1		1		1	1208	C3.1	9907
13	1333	1339	1339D	2-	5	1	1	1		3	1331	C2.6	
13	1631	1636	1702	1+	1					1	1629	C2.3	9907
14	0449	0453	0515	1	5					2	0448	C8.6	9907
14	0651	0655	0719	2	5					3	0650	C5.3	9907
14	0729	0735	0824	3	5	1	1	1		4	0728	C9.6	9893
14	1006	1011	1106	1	1		1				*		
14	1337	1342	1438	2+	5					2	1337	C3.8	9906
14	1932	1943	2041	2+	5					2	1936	C2.0	
14	2052	2058	2104D	1-	1					1	2051	C4.4	9907
14	2104	2115	2224	2+	1					1	2104	C7.3	9893
14	2225	2230	2330	2+	1					1	2222	C7.2	9893
15	1726	1731	1811	2-	5					2	1722	C3.1	9905
15	1932	1933	1947	1-	1					1	1935	C1.6	
15	2306	2315	2413	2+	1					1	2305	M1.2	
16	0752	0859	0945	1	1		1				No flare		
16	1040	1046	1120	3	5	1	2	1		5	1037	C9.3	9904
16	1301	1316	1420	3	5	1	2	1		8	1253	M2.5	9893
16	1538	1540	1552	1-	3					2	1535	C2.9	
17	0654	0656	0720	1	3					2	0652	C1.8	9905
17	0746	0813	1039	3	5	1		1		3	0746	M2.6	9906
17	0751	0824	1024	2+	5		2			3	0746	M2.6	9906
17	1124	1127	1142	1-	1					1	1135		9906
17	1337	1343	1413	1+	5		1			6	1337	C6.9	9905
17	1652	1700	1745	2	5					7	1650	C9.8	
18	0637	0642	0651	2+	5	1	2	1		3	0636	C9.4	
18	0858	0907	0940	1+	5		1			3	0905		9906
18	1045	1050	1122	1	5					3	1044	C2.6	
18	1513	1518	1556	2	5					3	1512	C3.0	9905
19	0701	0705	0722	1	3		1			2	0658	C3.3	
19	0752	0754	0805	1-	3					2	0750	C2.0	9906
19	0903	0908	0929	2-	5	1		1		3	0901	C2.3	
19	1518	1521	1542D	1	1					1	1516	C2.5	9906
19	1542	1552	1630	2+	1					1	1544		9906
19	1642	1646	1732	2	5					4	No flare		
19	1813	1822	1930	2+	5					4	1814	C3.4	9906
19	2006	2010	2045	2	1					1	2005	C1.6	
19	2107	2115	2230	2+	1					1	2107	C2.2	
19	2338	2340	2420D	2	1					1	No flare		
20	1154	1211	1251	2+	1					1	1141	C2.7	
20	1421	1423	1515	2+	1					1	1419	C2.1	
20	1536	1545	1638	2	5		1			7	1538	C4.1	9912
20	1737	1745	1830	2+	1					1	1734	C2.2	
21	0553	0605	0630	1+	1					1	0607		9912
21	1240	1251	1311	1	1		1				*		
21	1737	1810	1836	2+	1					1	1737	C8.3	
22	0545	0550	0636	2-	1					1	0543	C5.5	9916
22	0803	0811	0830	1	1		1				No flare		

* = no flare patrol.

APRIL 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
22	1202	1211	1245	3-	5	1	1	1		3	1154	C2.8	9912
22	1359	1401	1406	1-	1					1	No flare		
24	1547	1556	1622	2+	5	1	2	1		5	1544	C4.8	9912
24	1633	1642	1730	2+	1					1	1632	C2.3	9916
24	1742	1752	1830	2+	1					1	1743	C1.9	
24	2150	2155	2249	2	5					3	2146	M1.7	9912
25	0539	0542	0548	1	3					2	0536	C2.8	9912
25	0557	0601	0621	1+	1					1	0554	C2.5	9912
25	1857	1904	2000	2+	1					1	1855	C1.6	
26	0922	0940U	1050	1	1		1				0958	C1.2	
26	1456	1502	1545	2+	1					1	1452	C2.0	
26	1934	1943	2030	2+	1					1	1931	C2.1	
27	1532	1541	1629	2	5					5	1529	C4.0	9919
28	0909	0922U	1004	1	1		1				No flare		
29	0830	0843U	0908	1	1		1				No flare		
29	0913	0917	0923	2	5	1		1			No flare		
29	0925	0931	1003	2+	5	1	2	1		3	0922	C3.4	
29	1044	1048	1057	2	5	1	1	1			1032	C4.1	
29	1247	1255	1316	2	5	1	2	1		1	1257	C2.2	
30	0637	0641	0656	2+	5	1		1			0647	C3.2	9919
30	0652	0656	0705	1+	3					2	0647	C3.2	9919
30	0806	0809	0902	3	5	1	1	1		1	0817	M1.3	
30	0821	0825	0924	2	5		1			4	0817	M1.3	
30	1055	1110	1151	2+	5	1	2	1		3	1106	C3.2	9914
30	1401	1409	1427	1+	5	1		1			1410	C3.7	
30	1412	1420	1503	2-	3					9	1410	C3.7	

* = no flare patrol.

OBSERVATORIES REPORTING FOR APRIL 2002

Alberta, Canada	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	Parma, Ohio, USA	SES
Cambridge, England, UK	SES	Sofia, Bulgaria	SES
Edenvale, Rep of S. Africa	SES	Sussex, United Kingdom	SES
High Bridge, New Jersey, USA	SES	Torrington, Connecticut, USA	SES
Houston, Texas, USA	SES	Upice, Czech Republic	SEA
Isola del Gran Sasso, Italy	SES	Villiersdorp, South Africa	SES
Marlborough, Massachusetts, USA	SES		

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01	0000	0900	HIRA	0151.0	0151.5	III	B	1	70	230	
	0000	0800	CULG	0152.0	0152.0	III	B	1	57X	170	
			CULG	0355.0	0356.0	III	G	1	65	140	
			HIRA	0355.0	0355.5	III	B	1	60	130	
			CULG	0424.0	0424.0	III	B	1	57X	75	
			LEAR	0523.0	0739.0	CONT		1	125	180	
	0450	1745	POTS	0529 U	1623 U	I	S,N,DC	2	110U	360	400-800MHZ no data
	0550	1700	BLEN								
	0605	1200	IZMI	0605.0E	1200.0D	I	S	1	120	270X	
			LEAR	0901.0	1009.0	CONT		1	113	180	
	0549	1624	ONDR	1531.0	1531.1	DCIM	GG	2	1175	1995	
			PALE	1848.0	1850.0	III		1	25	65	
			PALE	1947.0	2158.0	III	N	1	25	120	
			SGMR	1947.0	1955.0	III	N	2	30	80	
			HOLL	1948.0	1955.0	III		1	25	140	
			HOLL	2008.0	2101.0	III	N	1	25	129	
	2020	2400	CULG	2020.0E	2104.0	III	N	1	57X	120	
	2023	2400	HIRA								
02	0000	0750	CULG	0054.0	0054.0	III	G	1	60	170	
			CULG	0221.0	0223.0	III	G	1	57X	90	
			CULG	0403.0	0404.0	III	G	1	57X	700	
	0000	0901	HIRA	0403.0	0403.5	III	B	1	50	130	
			CULG	0422.0	0422.0	III	B	1	57X	90	
			HIRA	0422.0	0422.5	III	B	1	40	80	
	0450	1745	POTS	0454 E	1210 U	I	S,N	1	200U	380	400-800MHZ no data
			CULG	0529.0	0529.0	III	B	1	57X	160	
			CULG	0722.0	0750.0D	III	N	1	57X	90	
	0600	1200	IZMI	0808.0	1025.0U	I	N	1	200	270X	
			IZMI	1138.9	1141.7	III	GG,C	2	25X	270X	
			SVTO	1139.0	1141.0	III		2	28U	176U	
	0550	1700	BLEN	1139.0	1141.2	III	GG	1	100X	380	
			POTS	1139.2	1141.5	III	GG	3	40X	320	
			SGMR	1140.0	1141.0	V		2	30	80	
			POTS	1140.2	1140.5	V		2	40X	70	
			POTS	1343 U	1537 U	I	S,N	1	200U	300	
	0546	1626	ONDR	1406.3	1407.1	DCIM	G,W	1	2986	4500X	
			POTS	1436.6	1436.8	UNCLF		1	110U	170U	
			PALE	1835.0	1836.0	III		1	25	70	
			SGMR	1835.0	1836.0	V		1	30	55	
			HOLL	2024.0	2345.0	III	N	1	25	84	
			PALE	2138.0	2141.0	III		1	25	180	
	2021	2400	HIRA	2139.0	2139.5	III	B	1	25X	60	
			LEAR	2254.0	2255.0	III		1	99	180	
			PALE	2254.0	2255.0	III		1	108	151	
			HIRA	2254.5	2255.0	III	B	1	100	320	
	2130	2400	CULG	2255.0	2255.0	III	G	1	100	180	
			LEAR	2303.0	2306.0	III		1	75	170	
			CULG	2304.0	2306.0	III	G	1	57X	280	
			HIRA	2305.5	2306.0	III	B	1	70	200	
03	0000	0750	CULG	0006.0	0006.0	III	B	1	100	180	
	0000	0902	HIRA	0006.0	0006.5	III	B	1	90	200	
			CULG	0028.0	0028.0	III	B	1	100	180	
			HIRA	0028.0	0028.5	III	B	1	90	330	
			CULG	0101.0	0101.0	III	B	1	270	390	
			HIRA	0101.0	0101.5	III	B	1	290	400	
			CULG	0104.0	0105.0	III	G	1	65	180	
			HIRA	0104.0	0104.5	III	B	1	80	240	
			LEAR	0104.0	0104.0	III		1	74	180	
			CULG	0108.0	0108.0	III	B	1	100	140	
			CULG	0207.0	0209.0	III	G	1	110	160	
			LEAR	0207.0	0213.0	III		1	25	180	
			CULG	0212.0	0214.0	III	G	2	60	360	
			HIRA	0212.0	0213.0	III	B	2	60	350	
			CULG	0305.0	0305.0	III	B	1	65	180	
			HIRA	0305.0	0305.5	III	B	1	100	170	
			LEAR	0305.0	0305.0	III		1	75	173	
			CULG	0315.0	0316.0	III	G	1	100	440	

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

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
03			LEAR	0315.0	0316.0	III		1	98	180	
			HIRA	0315.5	0316.0	III	B	1	90	370	
			HIRA	0401.5	0402.0	III	B	1	90	390	
			CULG	0402.0	0402.0	III	B	1	75	400	
			CULG	0412.0	0413.0	III	G	3	57X	450	
			HIRA	0412.0	0413.0	III	B	2	30	400	
			LEAR	0412.0	0413.0	III		2	25	180	
			LEAR	0419.0	0424.0	III		1	25	180	
			CULG	0420.0	0421.0	III	G	1	60	180	
			CULG	0424.0	0424.0	III	B	1	57X	230	
			HIRA	0424.0	0424.5	III	B	1	30	230	
	0445	1745	POTS	0453 U	1617 U	I	S,N,DC	2	110U	400X	400-800MHZ no data
			LEAR	0454.0	0517.0	III	N	1	35	180	
			CULG	0455.0	0500.0	III	G	2	57X	380	
			HIRA	0456.0	0456.5	III	B	2	60	140	
			SVTO	0458.0	0459.0	III		1	36	157	
			HIRA	0458.5	0459.5	III	B	2	40	390	
			CULG	0509.0	0512.0	III	G	1	65	180	
			CULG	0509.0	0539.0	I	S	1	280	420	
			CULG	0516.0	0518.0	III	G	1	57X	180	
			CULG	0551.0	0626.0	III	N	1	57X	180	
			LEAR	0625.0	0625.0	III		1	78	111	
			POTS	0656.9	0657.3	III	G	1	110U	380	
			CULG	0657.0	0657.0	III	B	1	85	380	
			HIRA	0657.0	0657.5	III	B	1	80	270	
			LEAR	0657.0	0657.0	III		1	85	180	
	0550	1700	BLEN	0722.7	0724.6	III	GG	1	200	400	
	0550	1200	IZMI	0723.0	0723.8	III	GG	2	200	270X	
			IZMI	0731.8	0732.4	III	G	1	180	270X	
			IZMI	0817.7	0821.1	III	GG	2	85	270X	
			POTS	0817.8	1002.2	III	GG,S,N	2	110U	360	
			LEAR	0819.0	0928.0	III	N	1	50	174	
			SVTO	0819.0	0928.0	CONT		1	75	180	
			HIRA	0819.5	0821.5	III	G	1	80	320	
			IZMI	0851.6	0851.9	III	G	1	60	150	
			IZMI	0912.5	0912.7	III	G	1	200	270X	
			IZMI	0927.1	0928.3	III	GG	2	105	270X	
			BLEN	0927.5	0928.3	III	GG	1	200	400	
			IZMI	0947.7	0948.2	I	G	2	250	270X	
			IZMI	0958.4	0959.3	III	G	1	170	270X	
			LEAR	1001.0	1002.0	III		1	135	180	
			SVTO	1001.0	1004.0	III		1	74	180	
			IZMI	1001.4	1002.0	III	GG	2	105	270X	
			BLEN	1001.5	1002.6	III	GG	1	200	400	
			IZMI	1027.0	1116.0	I	N	1	230	270X	
			BLEN	1121.2	1121.7	III	G,S	1	280	420	
			SVTO	1130.0	1135.0	III		1	60	180	
			IZMI	1130.2	1132.6	III	GG	2	50	270X	
			POTS	1130.2	1135.8	III	GG,S	3	40X	400X	
			BLEN	1130.3	1133.7	III	GG,C	2	100X	3000	
			IZMI	1133.0	1133.8	III	GG	2	50	270	
			ONDR	1133.1	1133.4	DCIM		1	800X	1123	
			IZMI	1135.5	1136.8	III	G	2	95	270X	
			BLEN	1402.7	1403.5	III	G,RS	1	140	540	
			ONDR	1419.4	1423.0	DCIM	GG	1	800X	2000X	
	0544	1627	ONDR	1419.4	1422.4	DCIM	G	1	2000X	2957	
			BLEN	1419.8	1423.3	III	GG,C,S	2	140	3000	
			HOLL	1455.0	1455.0	III		1	69	180	
			HOLL	2024.0	2025.0	III		1	25	180	
			PALE	2024.0	2025.0	III		1	75	180	
	2020	2400	HIRA	2024.5	2025.0	III	B	1	120	310	
	2025	2400	CULG	2025.0	2025.0	III	B	1	80	300	
			CULG	2049.0	2051.0	III	G	1	57X	180	
			CULG	2122.0	2123.0	III	G	1	57X	90	
			HOLL	2122.0	2123.0	III		1	25	95	
			CULG	2208.0	2209.0	III	G	1	57X	90	
			HOLL	2208.0	2209.0	III		1	36	81	
			HIRA	2208.5	2209.0	III	B	1	50	100	
			CULG	2315.0	2315.0	III	G	1	57X	300	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
03		HIRA	2315.0	2315.5	III	B	1	25X	320	
		HOLL	2315.0	2315.0	III		1	25	85	
		LEAR	2315.0	2315.0	III		1	25	180	
		PALE	2315.0	2315.0	III		1	25	54	
04		LEAR	0420.0	0421.0	III		1	43	180	
0000	0903	HIRA	0420.5	0421.0	III	B	1	50	220	
0000	0705	CULG	0421.0	0421.0	III	G	1	57X	180	
		CULG	0430.0	0457.0	III	N	1	57X	180	
		CULG	0435.0	0447.0	II	FN	2	57X	90	
		CULG	0437.0	0451.0	II	SH	2	57X	140	ESS 400
		HIRA	0438.0	0447.0	II		2	40	70	
		HIRA	0438.0	0448.0	II		2	60	130	
		LEAR	0438.0	0447.0	II		1	39	123	ESS 0286
		LEAR	0439.0	0447.0	II		1	41	143	
		SVTO	0439.0	0447.0	II		1	35	113	ESS 0463
0445	1750	POTS	0450 E	1057 U	I	S,N,DC	2	110U	400X	400-800MHZ no data
		CULG	0545.0	0617.0	I	S	1	300	390	
0600	1200	IZMI	0605.0	0930.0	I	N	1	230	270X	
		IZMI	0643.7	0655.7	III	G	1	125	270X	
		CULG	0651.0	0652.0	III	G	1	120	700	
		HIRA	0651.0	0652.5	III	B	2	200	420	
0542	1629	ONDR	0651.2	0652.3	DCIM	GG	1	800X	2000X	
		IZMI	0651.4	0652.4	III	GG	2	180	270X	
0550	1700	BLEN	0651.5	0655.4	III	GG,C,S	2	200	4000X	
		CULG	0654.0	0656.0	III	G	1	60	350	
		BLEN	0809.0	0809.6	III	GG	2	100X	500	
		HIRA	0809.0	0810.0	III	B	3	40	400	
		IZMI	0809.0	0810.2	III	GG,C	3	25X	270X	
		LEAR	0809.0	0809.0	III		2	25	180	
		POTS	0809.0	0809.5	III	G	3	40X	400X	
		SVTO	0809.0	0809.0	V		2	25	180	
		POTS	0809.4	0810.2	V		3	40X	70	
		BLEN	0830.0	1705.0X	I	DC	2	200	400	
		IZMI	0949.4	0949.7	III	G	2	125	270X	
		SVTO	1006.0	1007.0	III		1	55	180	
		IZMI	1006.4	1006.9	III	G,U	2	60	270X	
		POTS	1006.4	1006.8	III	G	3	40X	350	
		POTS	1006.7	1007.0	V		2	40X	70	
		IZMI	1012.0	1020.0	I	N	1	230	270X	
		IZMI	1032.5	1032.6	III	B	1	230	270X	
		POTS	1042.8	1046.1	III	GG	2	40X	170U	
		IZMI	1042.9	1046.2	III	GG	2	25X	210	
		SVTO	1043.0	1045.0	III		2	25	151	
		BLEN	1044.6	1047.0	III	GG,RS	2	180	720	
		POTS	1044.7	1045.2	V	G	2	40X	70	
		POTS	1101 U	1549 U	I	S,N,DC	2	200U	350	
		IZMI	1136.0	1200.0D	I	N	1	230	270X	
		BLEN	1147.3	1152.0	III	GG,RS	3	100X	500	
		IZMI	1148.7	1149.9	III	GG	2	80	270X	
		POTS	1148.8	1155.2	III	GG	2	60	400X	
		SVTO	1149.0	1155.0	III		1	75	180	
		IZMI	1151.3	1152.8	III	GG	2	75	270X	
		IZMI	1154.3	1155.1	III	GG	2	90	240	
		POTS	1230.2	1230.3	III	B	2	110U	170U	
		POTS	1334.2	1334.4	III	G	2	110U	300	
		HOLL	1411.0	1411.0	III		1	68	180	
		SVTO	1411.0	1411.0	III		1	75	180	
		POTS	1411.2	1411.6	III	G	2	110U	320	
		BLEN	1434.3	1435.0	III	G,C	2	300	4000X	
		POTS	1503.3	1503.5	III	B	2	110U	250	
		BLEN	1527.4	1531.7	III	GG,C	3	300	4000X	
		ONDR	1527.4	1531.2	DCIM	GG	2	800X	2000X	
		HOLL	1528.0	1530.0	III		2	25	180	
		SGMR	1528.0	1530.0	III		2	30	80	
		SVTO	1528.0	1530.0	V		2	25	150	
		ONDR	1529.0	1530.3	DCIM	G	1	2000X	4500X	
		BLEN	1531.2	1541.0	II		3	190	380	
		POTS	1531.2	1532.5	II		2	110U	370	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
04		POTS	1602 U	1732 U	I	S,N	1	150	300	
		HOLL	2042.0	2046.0	III		1	25	129	
2030	2400	CULG	2042.0	2042.0	III	B	1	57X	80	
		CULG	2046.0	2046.0	III	B	1	57X	100	
2019	2400	HIRA	2046.0	2046.5	III	B	1	30	120	
		CULG	2121.0	2122.0	III	G	1	57X	90	
		CULG	2133.0	2133.0	III	B	1	57X	90	
		HIRA	2133.0	2133.5	III	B	1	25X	170	
05		LEAR	0116.0	0116.0	III		1	41	90	
0000	0705	CULG	0116.0	0116.0	III	B	1	57X	90	
0000	0904	HIRA	0116.0	0116.5	III	B	1	40	100	
0445	1750	POTS	0445 E	0657 U	I	S,N,DC	2	150	380	400-800MHZ no data
0540	1630	ONDR								
0550	1705	BLEN	0550.0X	1705.0X	I	DC	3	150	420	
		CULG	0558.0	0559.0	III	G	1	150	250	
		LEAR	0558.0	0558.0	III		1	150	180	
		HIRA	0558.5	0559.0	III	B	1	130	280	
0601	1200	IZMI	0602.0	0604.0	I	N	1	240	270X	
		CULG	0630.0	0630.0	III	B	1	150	250	
		HIRA	0630.0	0630.5	III	B	2	150	220	
		LEAR	0630.0	0630.0	III		1	145	180	
		IZMI	0630.1	0630.9	III	G	2	150	270X	
		IZMI	0722.6	0723.9	III	GG	2	70	270X	
		POTS	0722.7	0723.9	III	G	2	60	360	
		HIRA	0723.0	0725.5	III	G	2	70	310	
		LEAR	0723.0	0723.0	III		1	69	180	
		SVTO	0723.0	0723.0	III		1	70	180	
		IZMI	0724.7	0725.5	III	GG	2	180	270X	
		POTS	0724.8	0725.5	DCIM		2	200U	360	
		POTS	0740.5	1150 U	I	S,N,DC	2	200U	400X	
		IZMI	0845.1	0845.2	III	B	1	180	270X	
		IZMI	0928.3	0928.5	III	B	1	240	270X	
		POTS	1012.3	1014.3	III	G	2	40X	360	
		SVTO	1013.0	1014.0	III		1	25	135	
		IZMI	1013.5	1013.9	III	GG	2	125	270X	
		IZMI	1013.9	1014.7	III	G,C	2	25X	180	
		POTS	1014.2	1014.8	V	G	3	40X	70	
		IZMI	1018.6	1019.2	III	G	1	180	270X	
		IZMI	1040.6	1040.9	III	G	2	90	175	
		POTS	1040.6	1040.8	III	G	1	110U	170U	
		IZMI	1046.8	1047.2	III	G,C	1	180	270X	
		SVTO	1103.0	1104.0	III		1	55U	158U	
		IZMI	1103.6	1104.3	III	G,U	2	30	100	
		POTS	1103.7	1104.2	III	G	2	40X	240	
		BLEN	1111.6	1112.2	III	DC	1	540	900	
		IZMI	1157.2	1157.5	III	B	1	60	160	
		POTS	1219.0	1223.5	I	S,N	2	200U	300	
		POTS	1401.4	1404.2	III	G	1	110U	220	
		POTS	1433 U	1444 U	I	S	1	250	350	
		BLEN	1434.3	1434.7	III		1	300	530	
		POTS	1511.4	1511.8	III	G,W	1	110U	170U	
		HOLL	1611.0	1945.0	III	N	1	25	180	
		POTS	1611.2	1611.8	III	G,W	1	110U	170U	
		POTS	1705.5	1705.8	III	B	1	40X	300	
		SGMR	1708.0	1709.0	III		1	30	80	
		PALE	1846.0	1849.0	III		1	25	65	
2030	2400	CULG	2121.0	2130.0	III	G	1	57X	90U	
		CULG	2247.0	2259.0	III	G	1	57X	100U	
		LEAR	2247.0	2249.0	III		1	33	180	
2018	2400	HIRA	2247.0	2248.5	III	G	1	30	300	
		CULG	2330.0	2331.0	III	G	1	57X	90U	
		HIRA	2330.0	2331.0	III	B	1	100	140	
		LEAR	2330.0	2331.0	III		1	60	180	
		HOLL	2344.0	2344.0	III		1	25	68	
		CULG	2354.0	2354.0	III	B	1	65	90U	
		HIRA	2354.0	2354.5	III	B	1	50	150	
		LEAR	2354.0	2354.0	III		1	71	180	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
06	0000	0715	CULG	0005.0	0021.0	III	N	1	57X	90U	
			CULG	0055.0	0055.0	III	N	1	57X	100U	
			CULG	0128.0	0135.0	III	G	1	57X	100U	
			PALE	0128.0	0153.0	III	N	1	25	150	
			PALE	0128.0	0431.0	III	N	1	25	150	
			LEAR	0143.0	0156.0	II		1	43	82	ESS 0296
	0000	0905	HIRA	0144.0	0156.0	II		1	40	80	
			CULG	0145.0	0154.0	II	UE	1	57X	75U	
			HIRA	0223.0	0223.5	III	B	1	40	140	
			LEAR	0223.0	0224.0	III		1	72	165	
			CULG	0250.0	0251.0	III	G	1	57X	90U	
			LEAR	0250.0	0337.0	III	N	1	36	157	
			CULG	0413.0	0414.0	III	G	1	57X	100U	
	0440	1750	POTS	0448 U	1322 U	I	S,N,DC	2	200U	380	400-800MHZ no data
	0538	1632	ONDR								
	0550	1705	BLEN	0609.3	0617.0	III	GG,C	2	300	4000X	
			CULG	0610.0	0625.0	III	N	1	57X	80U	
			HIRA	0610.0	0618.5	III	G	1	50	310	
			LEAR	0610.0	0618.0	III		1	25	180	
			SVTO	0610.0	0618.0	III		1	28U	166U	
			POTS	0610.2	0625.0	III	GG,N	2	110U	300	
	0603	1200	IZMI	0610.2	0610.8	III	G	2	60	270X	
			IZMI	0611.1	0613.3	III	G,C	1	45	180	
			IZMI	0614.8	0616.0	III	G,C	1	45	75	
			IZMI	0617.6	0618.2	III	G	2	90	270X	
			IZMI	0620.7	0620.8	III	B	1	130	170	
			LEAR	0624.0	0625.0	III		1	67	89	
			CULG	0707.0	0708.0	III	G	1	57X	160U	
			HIRA	0707.0	0711.5	III	G	3	30	280	
			LEAR	0707.0	0711.0	V		3	25	180	
			SVTO	0707.0	0711.0	III		2	28U	75U	
			IZMI	0707.5	0709.7	III	G	2	25X	155	
			POTS	0707.5	0710.6	III	G	2	40X	300	
			CULG	0710.0	0712.0	III	G	3	57X	160U	
			IZMI	0710.0	0710.8	III	G	2	25X	160	
			IZMI	0710.2	0711.8	V	G	2	25X	70	
			POTS	0710.3	0711.9	V	G	2	40X	130	
			SVTO	0845.0	0916.0	III	N	1	25U	180U	
			POTS	0845.7	0845.9	III	B	1	40X	130	
			IZMI	0845.8	0845.9	III	G	2	30	70	
			IZMI	0855.1	0855.3	III	B	1	35	70	
			POTS	0855.1	0855.3	UNCLF		1	40X	60	
			POTS	0904.9	0905.2	UNCLF		1	40X	60	
			IZMI	0905.0	0905.2	III	B	1	40	75	
			POTS	0909.2	0917.3	III	GG,N	3	40X	300	
			IZMI	0909.4	0910.8	III	GG,C	2	25X	270X	
			LEAR	0910.0	0917.0	III		1	25	180	
			IZMI	0912.0	0912.3	III	G	1	40	80	
			IZMI	0914.4	0916.8	III	GG	1	40	270X	
			POTS	0916.2	0916.9	V	G	2	40X	130	
			POTS	0934.3	0935.9	III	G	2	110U	360	
			POTS	0938.8	0939.0	III	B	2	40X	300	
			IZMI	0938.9	0939.1	III	G	2	50	165	
			IZMI	1021.7	1021.9	III	G	1	110	180	
			POTS	1021.7	1022.4	III	G	1	40X	360	
			POTS	1030.8	1032.7	III	G,W	1	40X	300	
			IZMI	1032.5	1032.8	III	B	2	60	75	
			POTS	1126.1	1134.3	III	GG	2	40X	300	
			IZMI	1127.4	1130.5	III	GG	2	45	270	
			IZMI	1133.2	1134.2	III	G	2	85	270X	
			POTS	1159.0	1159.2	III	B,W	1	110U	150	
			POTS	1246.9	1248.9	III	G	2	40X	150	
			SVTO	1247.0	1249.0	III		1	28U	82U	
			POTS	1248.8	1249.6	V	B	2	40X	70	
			POTS	1331.7	1337.8	III	G,W	1	110U	150	
			POTS	1357.0	1401.2	III	G,N	2	40X	220	
			POTS	1438 U	1503 U	I	S,N	1	200U	260	
			HOLL	1718.0	1718.0	III		1	25	71	
	2017	2400	HIRA								

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

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
06	2030	2400	CULG								
07			LEAR	0002.0	0005.0	III		1	36	180	
	0000	0750	CULG	0003.0	0026.0	III	N	1	57X	90U	
	0000	0906	HIRA	0003.0	0006.0	III	G	1	50	210	
			LEAR	0009.0	0011.0	III		1	54	180	
			LEAR	0012.0	0027.0	II		1	34	115	ESS 0586
			HOLL	0014.0	0026.0	II		1	32	90	ESS 0585
			PALE	0017.0	0024.0	II		1	25	90	ESS 0494
			LEAR	0032.0	0036.0	III		1	28	68	
			CULG	0159.0	0200.0	III	G	1	57X	90U	
			HIRA	0159.0	0201.0	III	G	1	60	150	
			LEAR	0159.0	0201.0	III		1	73	150	
			HIRA	0440.0	0442.0	III	G	1	25X	120	
			LEAR	0440.0	0442.0	III		1	25	180	
			CULG	0441.0	0442.0	III	G	1	57X	90U	
	0440	1750	POTS	0442 U	1541 U	I	S,N,DC	2	200U	350	400-800MHZ no data
			HIRA	0524.5	0525.0	III	B	2	80	110	
	0550	1200	IZMI	0635.5	0635.7	III	G	2	180	270X	
			CULG	0705.0	0705.0	III	B	1	57X	140U	
			IZMI	0751.3	0752.0	III	G	1	220	270X	
			POTS	0814.7	1018.3	III	GG,N	1	110U	220	
			LEAR	0824.0	0824.0	III		1	76	130	
			IZMI	0833.9	0834.0	III	B	1	110	160	
			IZMI	0843.5	0850.4	III	GG	2	25X	90	
			LEAR	0845.0	0849.0	III		1	30	109	
			SVTO	0845.0	0850.0	III		1	29U	78U	
			POTS	0845.8	0849.8	UNCLF	N	1	40X	70	
			HIRA	0846.0	0846.5	III	B	1	30	90	
			IZMI	0908.8	0909.9	III	G	2	110	170	
			IZMI	1009.0	1020.0	I	N	1	220	270X	
			SVTO	1016.0	1017.0	III		1	28U	46U	
			SVTO	1114.0	1114.0	III		1	29U	83U	
			IZMI	1114.2	1114.4	III	G	2	45	95	
			POTS	1114.2	1114.5	III	B	1	40X	140	
			SVTO	1129.0	1135.0	III		1	29U	148U	
			IZMI	1129.1	1131.2	III	G	2	45	155	
			POTS	1129.1	1135.7	III	G	2	40X	300	
			POTS	1240.9	1246.4	III	GG	3	40X	360	
			SVTO	1241.0	1246.0	III		2	28U	153U	
			SGMR	1244.0	1246.0	III		2	30	80	
			POTS	1244.2	1246.2	V	G	3	40X	70	
	0550	1705	BLEN	1244.2	1244.9	III	GG,RS	2	150	500	
			SGMR	1256.0	1257.0	III		2	30	80	
			HOLL	1325.0	1325.0	III		1	25	89	
			SGMR	1325.0	1424.0	III	N	3	30	80	
			SVTO	1325.0	1325.0	III		1	25U	83U	
			POTS	1325.3	1325.8	III	G	2	40X	150	
			HOLL	1335.0	1341.0	III		2	25	180	
			SVTO	1335.0	1343.0	III		3	26U	177U	
			POTS	1335.3	1341.7	III	GG	3	40X	400X	
			POTS	1337.4	1341.3	V	G	3	40X	70	
			HOLL	1343.0	1500.0	III	N	1	25	180	
			POTS	1358.0	1358.3	III	B	3	40X	220	
			SVTO	1358.0	1358.0	III		2	28U	146U	
			POTS	1358.2	1358.5	V	B	3	40X	70	
			SVTO	1406.0	1410.0	III		2	25U	175U	
			POTS	1406.3	1410.5	III	G	2	40X	300	
			ONDR	1419.3	1422.2	DCIM	GG	2	800X	1953	
	0536	1633	ONDR	1419.3	1424.1	DCIM	G	1	2000X	4461	
			BLEN	1419.9	1430.5	DCIM	P,C	3	150	4000X	
			SVTO	1420.0	1426.0	V		2	25U	143U	
			POTS	1420.6	1430.1	III	GG,N	2	40X	300	
			POTS	1421.1	1423.0	V	G	2	40X	70	
			POTS	1423.2	1423.8	UNCLF	UE	1	130	220	
			SVTO	1429.0	1430.0	III		1	34U	150U	
			POTS	1517.0	1519.3	UNCLF		1	110U	150	
			BLEN	1618.7	1619.9	III	GG,S	2	390	560	
			POTS	1630.4	1630.7	UNCLF		1	110U	150	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
07			HOLL	1651.0	1659.0	III		1	25	180	
			SGMR	1651.0	1653.0	III		3	30	80	
			SVTO	1651.0	1653.0	III		2	29U	175U	
			POTS	1652.8	1653.3	III	G	2	40X	300	
			HOLL	1807.0	0055.0	III	N	1	25	180	
			PALE	1814.0	1818.0	III		1	25	180	
			SGMR	1815.0	1817.0	III		3	30	55	
			HOLL	1906.0	1908.0	V		2	25	180	
			PALE	1906.0	1908.0	V		2	25	180	
			SGMR	1906.0	1908.0	III		3	30	80	
			SGMR	1906.0	2100.0	III	N	3	30	80	
	2030	2400	CULG	2030.0E	2400.0D	III	N	1	57X	180	
			CULG	2100.0	2100.0	III	B	2	57X	180	
			PALE	2100.0	2103.0	III		1	25	180	
	2015	2400	HIRA	2100.0	2101.0	III	B	2	25X	200	
			PALE	2133.0	0355.0	III	N	1	25	180	
			CULG	2149.0	2150.0	III	G	2	57X	180	
			HIRA	2149.0	2150.0	III	B	1	50	200	
			LEAR	2250.0	2341.0	CONT		1	56	100	
			LEAR	2253.0	0131.0	III	N	2	25	180	
			HIRA	2333.0	2336.0	III	G	2	30	300	
			CULG	2335.0	2336.0	III	G	3	57X	180	
08	0000	0750	CULG	0000.0E	0038.0	III	N	1	57X	180	
	0000	0906	HIRA	0015.5	0021.5	III	G	2	25X	340	
			CULG	0018.0	0021.0	III	G	2	57X	320	
			CULG	0035.0	0036.0	III	G	2	57X	300	
			HIRA	0035.0	0036.0	III	B	3	30	300	
			HIRA	0124.5	0125.0	III	B	1	30	120	
			CULG	0125.0	0125.0	III	G	1	57X	140	
			CULG	0131.0	0131.0	III	B	1	57X	460	
			HIRA	0131.0	0131.5	III	B	1	30	500	
			HIRA	0210.5	0214.5	III	G	1	300	420	
			CULG	0211.0	0213.0	III	G	1	300	440	
			CULG	0226.0	0232.0	III	G	1	57X	120	
			CULG	0300.0	0304.0	III	G	1	57X	600	
			LEAR	0300.0	0303.0	III		1	25	173	
			HIRA	0301.0	0303.0	III	G	1	30	730	
			LEAR	0309.0	0320.0	III	N	1	25	174	
			CULG	0310.0	0321.0	III	N	1	57X	180	
			HIRA	0357.5	0358.5	III	G	1	300	560	
			CULG	0358.0	0358.0	III	G	1	320	550	
			CULG	0451.0	0451.0	III	B	1	320	550	
			HIRA	0451.0	0451.5	III	B	1	310	600	
			CULG	0505.0	0750.0D	III	N	1	57X	180	
			LEAR	0505.0	0525.0	III	N	1	25	180	
			SVTO	0505.0	0529.0	III	N	1	30	143	
			LEAR	0548.0	0559.0	III		1	60	180	
			HIRA	0548.5	0549.0	III	B	1	100	330	
			HIRA	0559.0	0559.5	III	B	1	50	400	
			SVTO	0559.0	0559.0	III		1	34	56	
			SVTO	0617.0	0644.0	III	N	1	30	124	
	0600	1200	IZMI	0617.1	0618.1	III	G	1	45	95	
			IZMI	0620.5	0622.6	III	G	1	45	90	
			LEAR	0624.0	0626.0	III		1	29	180	
			IZMI	0624.1	0626.2	III	GG	2	30	160	
			HIRA	0624.5	0626.0	III	G	1	30	150	
			IZMI	0637.4	0637.7	III	G	1	180	270X	
			IZMI	0643.7	0644.0	III	B	2	50	90	
			IZMI	0708.1	0708.3	III	B	1	165	215	
			SVTO	0721.0	0725.0	III		1	38	59	
			LEAR	0807.0	0818.0	III		1	80	180	
			SVTO	0807.0	0818.0	III	N	1	75	145	
			HIRA	0807.5	0818.5	III	G	1	80	210	
			IZMI	0807.5	0808.0	III	G	1	105	145	
			IZMI	0810.9	0811.6	III	G	1	110	210	
			IZMI	0812.4	0813.7	III	GG	2	60	210	
			IZMI	0816.3	0818.3	III	GG	1	105	185	
	0856	1750	POTS	0856 E	1159 U	I	S,N,DC	1	200U	320	400-800MHZ no data

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
08			POTS	0926.2	0927.2	DCIM		2	200U	380	
			IZMI	0926.4	0927.1	III	G	2	140	270X	
			IZMI	0944.0	0946.3	I	GG	1	200	270X	
			IZMI	0945.0	0946.3	III	G	1	25X	95	
			SVTO	0945.0	0946.0	III		1	30	45	
			POTS	0945.8	0946.3	UNCLF		1	40X	220	
			POTS	1055.9	1058.5	III	G,W	1	40X	130	
			IZMI	1056.0	1058.4	III	GG	2	40	95	
			SVTO	1056.0	1058.0	III		1	42	77	
			POTS	1114.2	1114.8	III	G,W	1	40X	150	
			IZMI	1114.3	1114.8	III	G	1	45	160	
	0534	1635	ONDR	1118.2	1122.4	DCIM	G	1	2000X	4500X	
			SVTO	1119.0	1119.0	III		1	69	180	
			POTS	1119.4	1120.2	III	G	2	40X	360	
	0545	1710	BLEN	1119.4	1121.3	III	GG,C	2	100X	4000X	
			IZMI	1119.5	1119.9	III	G	2	60	270X	
			POTS	1144.5	1150.7	III	G,N,W	1	40X	170U	
			IZMI	1150.4	1150.6	III	B	1	45	90	
			SVTO	1232.0	1233.0	III		1	28U	78U	
			POTS	1232.8	1233.2	UNCLF		2	40X	70	
			POTS	1243.5	1243.7	III	B,W	1	110U	220	
			POTS	1243.5	1250 U	I	S,DC	1	200U	300	
			POTS	1335.3	1611 U	I	S,N,DC	2	110U	360	
			BLEN	1339.7	1344.6	III	GG,C	2	200	4000X	
			POTS	1614.4	1618.2	II	UE	2	110U	170U	
			SVTO	1615.0	1617.0	III		1	70	180	
			SVTO	1652.0	1653.0	III		1	113	175	
			POTS	1652.7	1653.8	UNCLF		2	200U	340	
			BLEN	1652.8	1653.7	III	G	1	140	380	
			HOLL	1720.0	1726.0	III		1	25	134	
			POTS	1723.6	1727.0	UNCLF		1	200U	300	
			SGMR	1726.0	1726.0	III		1	30	60	
			PALE	1842.0	1913.0	III	N	1	25	180	
			PALE	1842.0	2321.0	III	N	2	25	180	
			HOLL	1843.0	2030.0	III	N	1	25	180	
			SGMR	1843.0	1903.0	III	N	2	30	80	
			SGMR	1926.0	1932.0	III		2	30	80	
			HOLL	2127.0	2128.0	III		1	25	128	
	2013	2400	HIRA	2127.5	2128.5	III	G	1	50	110	
	2030	2400	CULG	2128.0	2129.0	III	G	2	57X	150	
			HOLL	2252.0	0005.0	III	N	1	25	180	
			LEAR	2252.0	2252.0	III		1	40	179	
			HIRA	2252.5	2253.0	III	B	1	60	280	
			CULG	2253.0	2253.0	III	B	1	57X	160	
			LEAR	2319.0	2322.0	V		1	25	180	
			HIRA	2319.5	2321.0	III	G	1	80	500	
			CULG	2320.0	2321.0	III	G	1	57X	180	
			CULG	2321.0	2322.0	V		1	57X	100	
09	0000	0740	CULG	0019.0	0019.0	III	B	1	100	160	
			CULG	0039.0	0039.0	III	G	1	57X	830	
			HOLL	0039.0	0042.0	III		1	25	180	
			LEAR	0039.0	0043.0	V		2	25	180	
			PALE	0039.0	0044.0	V		3	25	180	
	0000	0907	HIRA	0039.0	0043.0	III	G	3	25X	580	
			CULG	0040.0	0042.0	III	G	3	57X	140	
			CULG	0040.0	0046.0	V		1	57X	160	
			HIRA	0041.5	0051.0	II		3	40	200	
			HIRA	0041.5	0100.0	II		3	50	390	
			CULG	0042.0	0044.0	II	FN	2	110	200	ESS 900
			CULG	0042.0	0044.0	II	SH	2	220	400	SWF FLA
			PALE	0042.0	0048.0	II		2	25	180	ESS 0483
			LEAR	0043.0	0058.0	II		2	50	180	ESS 0552
			CULG	0044.0	0050.0	II	FN	3	57X	100U	
			CULG	0044.0	0051.0	II	SH	3	80	240	ESS 450
			HOLL	0049.0	0057.0	II		1	44	180	ESS 0454
			CULG	0052.0	0100.0	II	SH	1	60	130	ESS 500
			LEAR	0102.0	0818.0	IV		1	84	180	
			CULG	0103.0	0106.0	III	G	1	100	180	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
09		CULG	0110.0	0145.0	I	S	1	100	170	
		CULG	0131.0	0324.0	I	S,C	1	57X	100	
		CULG	0200.0	0740.0D	III	S,C	1	57X	180	
		CULG	0329.0	0425.0	I	S	1	120	180	
	0430 1800	POTS	0434 U	1736 U	I	S,DC,C	2	110U	380	400-800MHZ no data
		LEAR	0538.0	0539.0	III		1	85	180	
		SVTO	0538.0	0539.0	III		1	124U	180U	
		HIRA	0538.5	0539.0	III	B	1	110	490	
		POTS	0538.6	0539.0	III	G	2	110U	400X	
		CULG	0539.0	0539.0	III	B	1	57X	240	
	0551 1200	IZMI	0551.0	0800.0U	I	S	2	110	270	
		IZMI	0638.2	0638.3	III	B	2	110	160	
		POTS	0638.2	0641.5	III	G,N	2	110U	400X	
		CULG	0641.0	0641.0	III	B	1	80	460	
		HIRA	0641.0	0641.5	III	B	1	100	740	
	0545 1710	BLEN	0641.2	0641.7	III	GG	2	170	1000	
		BLEN	0714.0	0734.1	DCIM	S	2	300	4000X	
	0532 1636	ONDR	0727.5	0733.3	DCIM	G	1	2000X	4500X	
		BLEN	0750.1	0758.3	III	GG	2	160	520	
		HIRA	0758.0	0806.5	III	G	1	50	210	
		IZMI	0758.0	0758.4	III	G	2	30	215	
		LEAR	0758.0	0806.0	III		1	25	180	
		POTS	0758.0	0806.5	III	GG,N	2	40X	250	
		SVTO	0758.0	0806.0	III		1	25	180	
		IZMI	0802.2	0806.1	III	GG	2	30	95	
		IZMI	0806.3	0806.4	III	G	2	120	180	
		IZMI	0841.0	0848.0	I	N	1	130	160	
		HIRA	0856.0	0856.5	III	B	1	60	110	
		LEAR	0856.0	0857.0	III		1	56	115	
		LEAR	0918.0	0918.0	III		1	25	180	
		SVTO	0918.0	0918.0	III		1	25	180	
		IZMI	0918.2	0918.8	III	G	2	25X	210	
		POTS	0918.3	0919.3	III	G	2	40X	250	
		POTS	0937.4	0939.2	III	G,N	1	40X	150	
		IZMI	0939.4	0939.7	III	B	1	45	150	
		SVTO	1008.0	1031.0	III	N	1	25	180	
		IZMI	1008.4	1008.9	III	B	1	50	120	
		IZMI	1008.4	1009.7	I	GG,DC	2	135	155	
		POTS	1029.8	1031.9	III	G	2	40X	110	
		IZMI	1029.9	1031.2	III	G	2	30	155	
		POTS	1205.5	1206.6	III	G	1	40X	140	
		SGMR	1214.0	1215.0	III		3	30	80	
		SVTO	1214.0	1215.0	V		2	25	180	
		POTS	1214.3	1215.4	III	G	3	40X	300	
		POTS	1214.6	1215.7	V	G	3	40X	70	
		POTS	1245.2	1253.0	III	GG,N	1	40X	300	
		BLEN	1245.3	1308.0	III	GG,C	3	100X	4000X	
		SVTO	1252.0	1252.0	III		1	58U	131U	
		ONDR	1257.0	1305.3	DCIM	GG	2	800X	2000X	
		ONDR	1257.0	1305.3	DCIM	GG	2	2000X	4500X	
		SVTO	1330.0	1344.0	III		1	25	180	
		POTS	1330.9	1331.7	III	G	1	40X	220	
		HOLL	1343.0	1344.0	III		1	25	180	
		SGMR	1343.0	1347.0	III		2	30	65	
		SGMR	1343.0	1739.0	III	N	3	30	80	
		POTS	1343.3	1344.1	III	G	3	40X	300	
		POTS	1419.8	1425.8	III	GG	3	40X	300	
		BLEN	1420.0	1425.6	III	GG	2	130	420	
		HOLL	1420.0	1425.0	III		2	25	180	
		SVTO	1420.0	1425.0	III		2	25	180	
		HOLL	1449.0	2115.0	III	N	1	25	162	
		SVTO	1449.0	1659.0	III	N	2	25	180	
		POTS	1449.4	1500.6	III	GG,N	3	40X	300	
		POTS	1515.9	1516.4	III	G	2	40X	300	
		POTS	1550.2	1635.0	III	GG,N	3	40X	380	
		PALE	1657.0	2040.0	III	N	2	25	180	
		POTS	1657.7	1658.3	UNCLF		2	40X	70	
		POTS	1714.2	1714.5	UNCLF		1	40X	60	
		SGMR	1905.0	2039.0	III	N	2	30	80	

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

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
09	2030	2400	CULG	2101.0	2102.0	III	G	1	57X	180	
			HOLL	2140.0	2140.0	III		1	25	180	
			PALE	2140.0	2140.0	III		1	25	180	
	2011	2400	HIRA	2140.5	2141.0	III	B	1	25X	70	
			LEAR	2249.0	0022.0	III	N	1	32	153	
			CULG	2250.0	2352.0	III	N	1	57X	160	
			HOLL	2256.0	0045.0	III	N	1	25	136	
			HIRA	2325.0	2333.0	III	G	1	200	500	
			HIRA	2352.0	2352.5	III	B	1	30	120	
10	0000	0740	CULG	0019.0	0020.0	III	G	1	57X	180	
	0000	0908	HIRA	0019.0	0019.5	III	B	1	30	300	
			HIRA	0022.5	0023.0	III	B	1	30	80	
			CULG	0023.0	0023.0	III	B	1	57X	90	
			CULG	0055.0	0056.0	III	G	1	57X	130	
			LEAR	0056.0	0056.0	III		1	39	140	
			CULG	0106.0	0109.0	III	G	2	57X	160	
			LEAR	0106.0	0108.0	III		1	39	149	
			HIRA	0107.0	0108.5	III	G	1	30	120	
			CULG	0136.0	0141.0	III	G	1	57X	120	
			HIRA	0139.0	0139.5	III	B	1	25X	190	
			LEAR	0139.0	0330.0	III	N	2	25	180	
			LEAR	0151.0	0256.0	CONT		1	75	180	
			CULG	0154.0	0243.0	I	S	1	70	150	
			CULG	0210.0	0214.0	III	G	1	57X	150	
			CULG	0228.0	0229.0	III	G	1	57X	170	
			HIRA	0228.5	0229.0	III	B	1	25X	80	
			CULG	0245.0	0246.0	III	G	1	100	160	
			HIRA	0303.5	0304.0	III	B	3	25X	190	
			CULG	0304.0	0304.0	III	G	3	57X	180	
			CULG	0318.0	0318.0	III	B	1	350	420	
			CULG	0323.0	0325.0	UNCLF		1	80	140	
			CULG	0334.0	0334.0	III	B	1	57X	90	
			HIRA	0341.5	0342.0	III	B	1	50	210	
			LEAR	0406.0	0837.0	III	N	1	73	105	
			CULG	0407.0	0409.0	III	G	1	57X	90	
			HIRA	0408.0	0408.5	III	B	1	50	100	
			CULG	0417.0	0419.0	III	G	1	57X	180	
			CULG	0424.0	0425.0	III	G	1	130	320	
			CULG	0439.0	0439.0	III	G	1	57X	180	
			HIRA	0439.0	0439.5	III	B	1	25X	180	
	0430	1800	POTS	0441 U	1042 U	I	S,N,DC	1	110U	400X	400-800MHZ no data
			CULG	0510.0	0510.0	III	B	1	57X	300	
			HIRA	0510.0	0510.5	III	B	2	30	270	
			CULG	0516.0	0659.0	III	N	1	57X	180	
			CULG	0532.0	0534.0	III	G	2	57X	180	
			HIRA	0532.0	0538.5	III	G	2	30	160	
			POTS	0532.8	0551.3	III	GG,N	1	40X	170U	
			SVTO	0533.0	0838.0	III	N	1	25	180	
	0601	1200	IZMI	0616.4	0616.5	III	B	1	45	70	
			HIRA	0617.5	0618.0	III	B	1	30	120	
			POTS	0617.6	0617.7	III	B	2	40X	150	
			HIRA	0633.5	0634.5	III	G	1	40	190	
			POTS	0633.5	0634.3	III	G	1	40X	140	
			IZMI	0633.6	0634.5	III	G,C	2	30	195	
	0530	1638	ONDR	0649.3	0657.5	DCIM	GG	2	800X	1784	
	0545	1715	BLEN	0654.6	0657.1	III	GG,C	2	280	4000X	
			POTS	0655.3	0657.7	UNCLF		2	40X	60	
			HIRA	0657.0	0657.5	III	B	1	25X	100	
			SVTO	0657.0	0657.0	III		2	25	80	
			IZMI	0657.2	0658.4	III	G	2	25X	95	
			IZMI	0721.1	0721.2	III	B	1	40	70	
			IZMI	0742.3	0743.8	III	G	2	180	270X	
			IZMI	0759.1	0759.1	III	B	2	225X	270X	
			IZMI	0806.0	0955.0U	I	S	1	140	270X	
			POTS	0807.3	0827.0	III	GG,N	1	40X	170U	
			IZMI	0807.4	0807.5	III	G	1	50	85	
			IZMI	0809.6	0809.6	III	B	1	130	160	
			BLEN	0820.8	0822.5	III	G	3	220	650	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
10		BLEN	0835.3	0843.5	DCIM	P	2	600	1000	
		IZMI	1102.4	1109.5	III	GG	1	45	150	
		BLEN	1103.3	1109.8	DCIM	P	2	300	1500	
		POTS	1104.7	1126.7	III	GG,N	2	40X	300	
		IZMI	1104.8	1105.6	III	G,FS	2	35	160	
		SVTO	1105.0	1105.0	III		1	25	140	
		BLEN	1111.0	1115.5	III	GG,RS	2	200	730	
		IZMI	1113.1	1113.2	III	G	1	125	240	
		IZMI	1113.4	1113.9	III	G,FS	2	45	160	
		IZMI	1126.5	1126.6	III	B	1	110	150	
		IZMI	1140.0	1200.0D	I	S	2	130	270X	
		POTS	1159.5	1230 U	I	S,N,DC	2	110U	400X	
		POTS	1223.7	1228.2	III	GG	2	40X	170U	
		SVTO	1224.0	1320.0	III	N	2	25	180	
		ONDR	1226.0	1247.0	DCIM	GG	2	2000X	4500X	
		ONDR	1226.2	1236.5	DCIM	GG,FS	2	800X	2000X	
		BLEN	1226.8	1235.5	II	H	3	100X	500	
		POTS	1228.6	1253.0	II		3	40X	230	
		POTS	1230.0	1248 U	IV		3	40X	400X	
		SVTO	1230.0	1254.0	II		2	25U	134U	ESS 0702
		SGMR	1231.0	1253.0	II		2	30	80	ESS 0540
		POTS	1248 U	1435 U	I	S,N,DC	2	110U	300	
		POTS	1258.2	1305.0	III	GG	2	40X	170U	
		ONDR	1259.1	1310.0	DCIM	G	2	800X	1400	
		HOLL	1301.0	1354.0	III	N	1	25	141	
		BLEN	1301.2	1310.4	DCIM	P	3	300	1400	
		POTS	1308.2	1309.5	II		3	40X	170U	
		HOLL	1850.0	1910.0	III	N	2	25	180	
		SGMR	1850.0	1905.0	V		2	30	80	
		HOLL	1907.0	1913.0	II		1	76	180	ESS 0389
		HOLL	1959.0	2000.0	III		1	25	180	
		SGMR	1959.0	2000.0	III		2	30	80	
	2010 2400	HIRA								
		CULG	2030.0E	2400.0D	III	N	1	57X	180	
	2030 2400	CULG	2030.0E	2400.0D	I	S,C	1	60	170	
		LEAR	2250.0	0513.0	CONT		1	74	180	
11		CULG	0000.0E	0149.0	III	N	1	57X	180	
	0000 0740	CULG	0000.0E	0258.0	I	S,C	1	70	170	
		CULG	0253.0	0344.0	III	N	1	57X	180	
		PALE	0253.0	0309.0	III	N	3	25	180	
		LEAR	0305.0	0308.0	V		2	25	180	
		CULG	0306.0	0307.0	III	G	3	57X	350	
	0000 0908	HIRA	0306.0	0310.0	III	G	3	25X	290	
	0430 1800	POTS	0455.5	1529 U	I	S,N,DC	1	110U	360	
	0550 1200	IZMI	0550.0E	0610.0U	I	N	1	140	250	
		CULG	0720.0	0720.0	III	B	1	57X	90	
		IZMI	0823.8	0826.2	III	GG	2	25X	270X	
		POTS	0823.8	0826.3	III	GG	3	40X	300	
		HIRA	0824.0	0826.0	III	G	2	30	290	
		SVTO	0824.0	0826.0	III		2	28U	161U	
		SVTO	0933.0	0933.0	III		1	28U	40U	
		IZMI	1011.7	1011.8	III	B	1	165	190	
		IZMI	1053.0	1053.1	III	B	1	55	75	
		IZMI	1113.6	1113.7	III	B	1	45	80	
		IZMI	1121.6	1121.7	III	B	1	45	60	
		SVTO	1123.0	1210.0	III	N	2	28U	47U	
		IZMI	1124.1	1124.4	III	G	1	30	55	
		POTS	1209.7	1210.7	III	G	2	40X	170U	
		POTS	1330.6	1346.2	III	GG,N	1	40X	170U	
		SVTO	1345.0	1346.0	III		1	37U	83U	
		SVTO	1402.0	1404.0	III		1	33U	56U	
		HOLL	1511.0	1513.0	III		1	25	92	
		POTS	1554.8	1555.0	III	B	1	110U	250	
		SVTO	1615.0	1624.0	III		1	28	174	
		ONDR	1615.5	1622.1	DCIM	GG	2	2000X	4500X	
		POTS	1616.8	1625.7	III	GG	2	40X	320	
		SGMR	1617.0	1647.0	II		1	30	80	ESS 0800
	0528 1639	ONDR	1619.4	1626.0	DCIM	G	1	800X	2000X	

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
11	0545	1715	BLEN	1619.8	1625.4	DCIM	P,C	3	130	4000X	
			HOLL	1626.0	1640.0	II		1	25	138	ESS 0608
			POTS	1626.0	1635.0	II		2	40X	150	
			SVTO	1626.0	1638.0	II		2	28	172	ESS 0631
			PALE	1627.0	1638.0	II		1	25U	103U	ESS 0738
			POTS	1635.0	1635.2	III	B	1	130	240	
			HOLL	2018.0	2043.0	III	N	1	25	164	
			PALE	2018.0	2041.0	III	N	1	25	180	
			SGMR	2034.0	2041.0	III		2	30	70	
	2009	2400	HIRA	2034.0	2043.5	III	G	1	25X	210	
	2030	2400	CULG	2038.0	2043.0	III	G	2	57X	180	
			HOLL	2259.0	2301.0	V		2	25	180	
			LEAR	2259.0	2301.0	V		1	25	180	
			CULG	2300.0	2302.0	III	G	3	57X	180	
			HIRA	2300.0	2302.0	III	G	3	25X	200	
			CULG	2310.0	2310.0	III	B	1	57X	160	
			CULG	2345.0	2353.0	III	G	1	57X	180	
			HIRA	2346.0	2353.0	III	B	1	25X	180	
12	0000	0740	CULG	0401.0	0401.0	III	B	1	57X	180	
			CULG	0416.0	0438.0	I	S	1	70	120	
			LEAR	0417.0	0442.0	CONT		1	75	122	
	0425	1800	POTS	0447.5	1028 U	I	DC,C	2	110U	600	
			CULG	0448.0	0457.0	III	G	1	60	600	
			SVTO	0452.0	0531.0	III	N	1	33U	148U	
			CULG	0453.0	0457.0	CONT		1	300	1200	
			LEAR	0454.0	0456.0	III		1	30	180	
	0000	0909	HIRA	0455.0	0457.0	III	G	1	50	240	
			CULG	0458.0	0501.0	II	FN	1	57X	75	ESS 600
			CULG	0458.0	0501.0	II	SH	1	110	150	
			CULG	0502.0	0503.0	III	G	1	57X	180	
			CULG	0505.0	0507.0	II	FN	1	57X	70	
			CULG	0505.0	0509.0	II	SH	1	95	130	ESS 400
			HIRA	0505.0	0507.0	II		1	50	60	
			HIRA	0505.0	0509.0	II		1	90	120	
			LEAR	0505.0	0510.0	II		1	46	97	ESS 0363
			LEAR	0505.0	0510.0	II		1	52	128	ESS 0363
			CULG	0506.0	0740.0D	III	S,C	1	57X	250	
			SVTO	0506.0	0507.0	II		1	52U	128U	ESS 0366
			HIRA	0507.0	0820.0	IV		1	70	230	
			LEAR	0507.0	0820.0	IV		1	71	180	
			SVTO	0554.0	0601.0	III		1	32U	79U	
			LEAR	0600.0	0601.0	III		1	34	180	
	0600	1200	IZMI	0600.0E	0835.0U	I	S	2	60	270X	
			IZMI	0600.9	0601.7	III	G	2	30	270X	
			POTS	0600.9	0601.7	III	G	2	40X	350	
			CULG	0601.0	0602.0	III	G	2	57X	160	
			HIRA	0601.0	0601.5	III	B	1	30	240	
			IZMI	0621.5	0622.0	III	G	1	50	75	
			IZMI	0702.8	0702.9	III	B	1	45	70	
			LEAR	0723.0	0802.0	III	N	1	25	174	
			SVTO	0748.0	0816.0	III	N	1	28U	82U	
			IZMI	0748.4	0751.1	III	GG	2	25X	95	
			POTS	0748.5	0756.2	III	GG,N	2	40X	170U	
			HIRA	0749.0	0756.5	III	G	1	30	170	
			IZMI	0753.3	0753.7	III	G	1	45	70	
			IZMI	0755.4	0756.5	III	G	2	25X	95	
			LEAR	0858.0	0858.0	III		1	67	116	
			POTS	0911.4	0911.5	III	B,W	1	40X	140	
			SVTO	0947.0	0948.0	III		1	28U	176U	
			POTS	1027.9	1030.8	III	GG	3	120	600	
	0540	1715	BLEN	1027.9	1030.9	III	GG,S,RS	3	130	4000X	
			IZMI	1028.0	1030.8	III	GG	2	125	270X	
			POTS	1030 U	1250 U	I	S,N	1	200U	300	
			POTS	1109.3	1109.4	DCIM	W	1	200U	800X	
			IZMI	1159.4	1159.9	III	G	1	130	210	
			POTS	1159.6	1159.9	III	G	1	110U	250	
	0526	1641	ONDR	1308.1	1311.4	DCIM	G	2	2000X	4500X	
			ONDR	1308.2	1311.1	DCIM		1	800X	2000X	

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
12			BLEN	1308.6	1310.6	III	GG,C	3	500	4000X	
			POTS	1518.4	1520.3	DCIM		1	200U	300	
			POTS	1536.8	1536.9	DCIM		1	200U	300	
			POTS	1610 U	1748 U	I	S,N	1	220	360	
			HOLL	1748.0	1830.0	IV		1	95	180	
			PALE	1949.0	0420.0	III	N	1	25	180	
	2008	2400	HIRA								
	2030	2400	CULG	2233.0	2400.0D	I	S	1	140	180	
			HOLL	2345.0	2358.0	III	N	1	25	76	
13	0000	0740	CULG	0000.0E	0022.0	I	S	1	140	180	
			CULG	0103.0	0201.0	I	S	1	150	230	
			CULG	0204.0	0204.0	III	B	1	57X	90	
			CULG	0334.0	0334.0	III	B	1	57X	90	
	0425	1805	POTS	0431 U	0601 U	I	DC,C	2	200U	360	
			CULG	0451.0	0451.0	III	G	1	57X	180	
			LEAR	0451.0	0451.0	III		1	25	146	
			SVTO	0451.0	0451.0	III		1	28U	61U	
	0000	0910	HIRA	0451.0	0451.5	III	B	1	30	130	
			CULG	0457.0	0458.0	III	G	1	57X	160	
			HIRA	0457.0	0457.5	III	B	1	50	130	
			LEAR	0457.0	0457.0	III		1	60	127	
	0524	1642	ONDR								
	0530	1715	BLEN								
			CULG	0542.0	0546.0	III	G	1	57X	170	
			LEAR	0542.0	0545.0	III		1	58	180	
			HIRA	0545.0	0545.5	III	B	1	50	190	
			POTS	0545.0	0545.2	III	B	2	110U	170U	
			SVTO	0545.0	0545.0	III		1	41U	141U	
			POTS	0609 U	0811 U	I	S,N,DC	2	120	300	
	0603	1200	IZMI	0636.2	0636.4	III	B	2	45	70	
			IZMI	0648.2	0652.8	III	GG	1	180	270X	
			POTS	0847 U	1025 U	I	S,N	1	200U	360	
			IZMI	1010.3	1010.4	III	B	1	110	180	
			POTS	1010.3	1010.5	III	B	1	110U	300	
			POTS	1233 U	1345 U	I	S,N	1	200U	360	
			POTS	1501.0	1501.2	DCIM		2	320	550	
			POTS	1622.4	1622.5	DCIM		2	280	450	
			HOLL	1819.0	2003.0	III	N	1	25	142	
			SGMR	1832.0	1832.0	III		1	30	50	
			HOLL	1833.0	2200.0	CONT		1	25	130	
			PALE	1842.0	1920.0	III	N	1	25	86	
	2040	2400	CULG	2040.0E	2200.0	III	N	1	57X	130	
	2006	2400	HIRA	2131.5	2135.5	III	G	1	200	500	
			HOLL	2212.0	2213.0	III		1	25	180	
			HIRA	2212.5	2213.0	III	B	2	100	330	
			CULG	2213.0	2213.0	III	B	1	70	320	
			CULG	2310.0	2400.0D	III	N	1	57X	90	
			HOLL	2323.0	0114.0	III	N	1	25	153	
			CULG	2339.0	2339.0	III	B	1	57X	400	
			HIRA	2339.0	2339.5	III	B	1	60	320	
			LEAR	2339.0	2339.0	III		1	74	180	
			HIRA	2340.0	2359.0	III	G	1	30	80	
			LEAR	2342.0	2353.0	III		1	34	96	
			PALE	2353.0	0434.0	III	N	1	25	90	
			LEAR	2356.0	0110.0	III	N	1	25	180	
14	0000	0740	CULG	0000.0E	0102.0	III	N	1	57X	180	
	0000	0911	HIRA	0040.0	0045.0	III	G	1	40	220	
			CULG	0050.0	0052.0	III	G	2	60	340	
			HIRA	0050.0	0051.5	III	G	1	60	230	
			CULG	0138.0	0140.0	III	G	1	57X	180	
			CULG	0342.0	0342.0	III	B	1	57X	370	
			CULG	0345.0	0355.0	UNCLF		1	57X	180	II?
			LEAR	0349.0	0413.0	III	N	1	28	180	
			CULG	0405.0	0406.0	III	G	1	57X	90	
			HIRA	0405.5	0406.0	III	B	1	25X	80	
	0420	1805	POTS	0442 U	0723 U	I	S,N	1	200U	360	
	0522	1643	ONDR								

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
14		POTS	0533.1	0536.7	DCIM		2	300	600	
		CULG	0534.0	0534.0	III	G	1	57X	80	
		HIRA	0543.5	0544.0	III	B	1	40	80	
		CULG	0544.0	0545.0	III	G	1	57X	80	
		POTS	0631.3	0643.4	III	GG,N	2	110U	300	
		LEAR	0632.0	0722.0	III	N	1	25	180	
		SVTO	0632.0	0742.0	III	N	2	25	180	
	0602 1200	IZMI	0632.7	0633.4	III	G	1	50	175	
		CULG	0633.0	0740.0D	III	N	1	57X	180	
		HIRA	0641.0	0643.0	III	G	1	40	320	
		IZMI	0641.2	0642.9	III	GG	1	30	270X	
		IZMI	0701.0	0701.3	III	B	2	50	100	
	0530 1715	BLEN	0720.6	0743.3	III	GG,C	3	100X	4000X	
		IZMI	0722.5	0722.7	III	B	1	65	150	
		POTS	0722.5	0743.4	III	GG,N	3	40X	500	
		LEAR	0726.0	0731.0	III		1	25	180	
		IZMI	0726.7	0733.0	III	GG	2	25X	270X	
		CULG	0727.0	0731.0	III	GG	2	57X	300	
		HIRA	0727.0	0743.0	III	G	2	30	400	
		SVTO	0728.0	0728.0	III		1	25	169	
		POTS	0728.2	0731.5	V		3	40X	70	
		IZMI	0728.5U	0731.5U	CONT		1	25X	270X	
		LEAR	0732.0	0736.0	III		2	25	180	
		IZMI	0734.8	0735.9	III	GG	2	40	270X	
		CULG	0735.0	0736.0	III	G	1	57X	520	
		IZMI	0736.1	0744.0U	I	N	1	120	270X	
		POTS	0739.8	0740.3	DCIM		2	250	500	
		IZMI	0740.0	0741.2	III	G	2	180	270X	
		LEAR	0740.0	0742.0	III		1	44	180	
		IZMI	0740.4	0742.9	I	GG	2	50	65	
		HIRA	0744.0	0755.0	II		1	30	70	
		LEAR	0744.0	0758.0	II		2	25	82	ESS 0762
		SVTO	0744.0	0759.0	II		3	25	73	ESS 0730
		IZMI	0744.4	0749.2	II	HARM	2	25X	75	
		POTS	0744.5	0754.0	II		3	40X	75	
		IZMI	0749.2	0756.5	II	HARM	2	25X	80	
		POTS	0754 U	1748 U	I	S,N,DC	2	110U	360	
		HIRA	0846.0	0847.5	III	G	1	100	280	
		LEAR	0846.0	0847.0	III		1	91	180	
		SVTO	0846.0	0847.0	III		1	114	180	
		IZMI	0846.1	0847.3	III	G,U	2	110	270X	
		POTS	0846.1	0847.3	III	G	2	110U	350	
		SVTO	1004.0	1004.0	III		1	114	180	
		IZMI	1004.2	1004.4	III	G	2	90	170	
		IZMI	1122.4	1122.6	III	G	1	220	270X	
		POTS	1237.3	1241.8	III	GG	2	40X	300	
		SGMR	1240.0	1241.0	III		1	30	55	
		SVTO	1240.0	1241.0	III		1	25	135	
		SVTO	1316.0	1343.0	III	N	1	25	146	
		SGMR	1353.0	1354.0	III		1	30	50	
		SVTO	1353.0	1532.0	III	N	1	25	180	
		POTS	1353.7	1354.0	UNCLF		2	40X	60	
		POTS	1415.0	1415.8	III	G	2	40X	170U	
		HOLL	1441.0	1443.0	III		1	25	84	
		SGMR	1443.0	1443.0	III		1	30	55	
		SGMR	1443.0	1615.0	III	N	1	30	55	
		POTS	1443.1	1538.2	III	GG,N	2	40X	300	
		HOLL	1452.0	1723.0	III	N	1	25	135	
		BLEN	1532.2	1534.8	III	GG	1	150	450	
		HOLL	1806.0	1807.0	III		1	25	180	
		PALE	1806.0	1807.0	III		1	34	180	
		SGMR	1806.0	1807.0	III		1	30	55	
		PALE	1924.0	0326.0	III	N	3	25	180	
		HOLL	1932.0	0030.0	III	N	1	25	180	
		SGMR	1942.0	1942.0	III		1	30	73	
	2040 2400	CULG	2040.0E	2400.0D	III	S,C	1	57X	180	
	2004 2400	HIRA	2052.5	2053.0	III	B	1	110	160	
		CULG	2101.0	2109.0	UNCLF		2	57X	90	II?
		HOLL	2101.0	2234.0	CONT		1	25	170	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
14		PALE	2104.0	2105.0	II		1	30	66	ESS 0930
		SGMR	2104.0	2227.0	III	N	1	30	80	
		HOLL	2107.0	2110.0	II		1	32	85	ESS 0897
		HIRA	2117.0	2118.0	III	B	1	30	140	
		HIRA	2135.0	2142.0	III	G	1	30	130	
		HIRA	2223.5	2227.5	III	G	3	25X	200	
		CULG	2224.0	2226.0	III	G	3	57X	180	
		HOLL	2224.0	2228.0	V		2	25	180	
		HOLL	2228.0	0100.0	IV		1	25	180	
		CULG	2229.0	2233.0	II	UE	2	57X	90	FLA
		HIRA	2229.0	2233.5	II		1	50	90	
		PALE	2233.0	2240.0	II		1	36	54	ESS 0610
		HOLL	2234.0	2242.0	II		1	31	88	ESS 0577
		CULG	2243.0	2244.0	III	G	2	57X	180	
		LEAR	2253.0	2252.0	IV		2	25	180	
		HIRA	2311.5	2312.0	III	B	2	230	500	
		PALE	2325.0	0434.0	CONT		2	25	180	
		CULG	2334.0	2400.0D	I	S,C	1	60	180	
15		CULG	0000.0E	0204.0	I	S,C	2	57X	180	
	0000 0730	CULG	0000.0E	0306.0	III	S,C	1	57X	180	
		CULG	0204.0	0310.0	I	S,C	3	57X	140	
	0000 0912	HIRA	0246.0	0251.0	III	G	3	25X	150	
		LEAR	0247.0	0251.0	V		2	25	180	
		CULG	0306.0	0348.0	III	S,C	3	57X	1100U	
		HIRA	0325.5	0326.0	III	B	1	30	210	
		CULG	0348.0	0511.0	III	S,C	2	57X	400	
	0417 1805	POTS	0417 E	1755 U	I	S,C,DC	3	110U	380	
		SVTO	0432.0	0805.0	IV		1	54	180	
		CULG	0511.0	0730.0D	III	S,C	1	57X	250	
	0520 1645	ONDR								
		IZMI	0551.0E	0830.0U	III	N	1	45	95	
	0551 1200	IZMI	0551.0E	1200.0D	I	S	2	60	270X	
		HIRA	0607.0	0607.5	III	B	1	30	70	
		SVTO	0607.0	0607.0	III		1	25	63	
		IZMI	0607.1	0607.2	III	B	2	30	75	
		IZMI	0711.8	0714.8	III	GG,FS	2	25X	270X	
		CULG	0712.0	0714.0	III	G	3	57X	200	
		HIRA	0712.0	0714.0	III	G	2	30	200	
		LEAR	0712.0	0716.0	III		1	25	180	
		SVTO	0712.0	0717.0	III		1	25	180	
		POTS	0712.2	0716.8	III	GG	3	40X	300	
		IZMI	0716.7	0717.1	III	G	2	30	80	
		HIRA	0757.5	0758.0	III	B	1	30	70	
		IZMI	0757.8	0758.2	III	B	2	25X	80	
		POTS	0757.9	0758.2	III	B	2	40X	70	
		SVTO	0758.0	0758.0	III		1	25	80	
		HIRA	0811.5	0812.5	III	G	1	40	140	
		IZMI	0811.6	0812.6	III	G	1	25	145	
		POTS	0812.0	0812.6	III	B	2	40X	60	
		SVTO	0812.0	0812.0	III		1	25	73	
		HIRA	0847.5	0853.0	III	G	2	100	500	
		IZMI	0847.6	0850.6	III	G	2	170	270X	
		POTS	0847.6	0853.1	III	GG	3	110U	500	
	0530 1715	BLEN	0847.6	0853.6	III	GG,S	2	150	800	
		IZMI	0851.3	0852.1	III	G	2	130	270X	
		IZMI	0852.6	0853.6	III	G	2	105	270X	
		SVTO	0919.0	0920.0	III		1	30	54	
		POTS	0926.9	0927.1	DCIM		2	400	500	
		IZMI	0947.3	0949.0	III	GG	1	30	80	
		BLEN	0952.1	0958.9	III	GG	2	150	500	
		IZMI	0952.2	0953.5	III	GG	2	180	270X	
		POTS	0952.2	1001.3	DCIM		2	300	600	
		SVTO	1003.0	1705.0	CONT		1	25	180	
		IZMI	1017.7	1019.5	I	GG,DC	2	125	175	
		IZMI	1018.3	1018.3	III	B	2	50	145	
		POTS	1018.3	1018.5	III	B	2	40X	170U	
		IZMI	1036.8	1037.2	III	B	1	30	70	
		IZMI	1128.7	1131.4	II	HARM	2	130	265	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
15		POTS	1139.4	1142.9	DCIM		3	200U	800X	
		IZMI	1142.7	1142.9	III	G	2	165	270X	
		HOLL	1306.0	0120.0	CONT		1	66	180	
		HOLL	1330.0	1437.0	III	N	1	25	86	
		SVTO	1432.0	1436.0	III		1	25	85	
		HOLL	1538.0	2330.0	III	N	1	25	86	
		SGMR	1538.0	1539.0	III		1	30	55	
		SVTO	1538.0	1539.0	III		1	25	75	
		SVTO	1602.0	1610.0	III		1	25	180	
		POTS	1602.7	1609.5	III	GG	3	40X	170U	
		SGMR	1608.0	1609.0	III		1	30	60	
		SGMR	1640.0	1857.0	III	N	1	30	75	
		PALE	1724.0	0434.0	CONT		1	25	180	
	2040 2400	CULG	2040.0E	2400.0D	III	S,C	1	57X	300	
		CULG	2208.0	2400.0D	I	S	1	70	200	
	2003 2400	HIRA	2229.5	2230.0	III	B	1	25X	90	
		LEAR	2252.0	0954.0	CONT		1	75	180	
16		CULG	0000.0E	0155.0	I	S	1	60	160	
	0000 0730	CULG	0000.0E	0730.0D	III	S,C	1	57X	280	
		HOLL	0007.0	0009.0	III		1	25	88	
		HOLL	0114.0	0115.0	III		1	25	180	
		LEAR	0114.0	0116.0	III		1	25	82	
	0000 0913	HIRA	0114.5	0116.0	III	G	2	25X	70	
		HIRA	0214.0	0214.5	III	B	2	50	310	
		CULG	0331.0	0409.0	I	S,C	1	60	160	
		HIRA	0336.0	0337.0	III	B	1	60	280	
	0420 1805	POTS	0423 E	1755 U	I	S,C,DC	3	110U	400	
		CULG	0444.0	0645.0	I	S	2	60	170	
		SVTO	0445.0	1706.0	CONT		1	25U	180U	
		POTS	0457 U	0500.5	II	UE	2	200U	400U	
	0556 1200	IZMI	0559.0E	1200.0D	I	S,C	2	50	270X	
		SVTO	0623.0	0624.0	III		1	33U	46U	
		IZMI	0801.2	0801.3	CONT		2	220	270X	
		POTS	0801.2	0801.3	UNCLF		2	200U	280	
		IZMI	0815.6	0815.6	III	B	1	55	70	
		IZMI	0823.9	0825.7	III	GG	1	120	270X	
		POTS	0825.1	0825.3	III	G	2	110U	300	
		POTS	0840.5	0841.0	III	G	3	40X	300	
		IZMI	0840.7	0841.0	III	B	2	55	75	
		SVTO	0935.0	0935.0	III		1	46U	66U	
		IZMI	0935.6	0935.8	III	B	2	45	95	
		IZMI	1039.3	1039.5	III	B	1	130	190	
	0518 1646	ONDR	1039.5	1046.0	DCIM	G	1	2000X	4500X	
	0545 1715	BLEN	1040.5	1048.8	II	C	1	100X	4000X	
		SVTO	1041.0	1042.0	III		2	28U	129U	
		IZMI	1041.6	1043.9	III	G	2	25X	270X	
		POTS	1041.6	1042.1	III	G	3	40X	300	
		POTS	1042.0	1048 U	IV		3	120	800X	
		ONDR	1043.2	1044.4	DCIM	G	2	800X	1095	
		IZMI	1044.4	1045.5	CONT		1	230	270X	
		POTS	1045.5	1051 U	II	UE	3	40	250	
		IZMI	1045.8	1046.1	III	G	2	170	260	
		IZMI	1045.9	1049.5	II	HARM	2	120	210	
		SVTO	1046.0	1049.0	II		1	132U	180U	ESS 0326
		IZMI	1048.6	1048.8	III	G	2	170	215	
		SVTO	1122.0	1139.0	III	N	1	30U	160U	
		POTS	1122.8	1123.1	III	B	2	40X	250	
		IZMI	1122.9	1123.1	III	G,C	2	25X	120	
		IZMI	1139.3	1139.6	III	B	2	50	140	
		POTS	1139.3	1139.6	III	B	2	40X	150	
		ONDR	1302.3	1320.1	DCIM	G	1	2000X	4500X	
		BLEN	1311.4	1311.7	III	GG	1	230	390	
		POTS	1311.4	1311.7	DCIM		2	250	600	
		BLEN	1318.5	1319.7	DCIM	P,C	1	750	4000X	
		HOLL	1441.0	1455.0	II		1	47	91	ESS 0559
		PALE	1646.0	0435.0	CONT		1	25	180	
		HOLL	1658.0	1701.0	III		1	25	180	
		POTS	1658.5	1658.9	III	B	3	110U	300	

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

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
16	2001	2400	HIRA								
	2040	2400	CULG	2040.0E	2400.0D	III	S,C	2	57X	180	
			CULG	2145.0	2400.0D	I	S	1	57X	100	
			LEAR	2252.0	0750.0	CONT		1	42	180	
17			CULG	0000.0E	0449.0	I	S	2	57X	160	
	0000	0730	CULG	0000.0E	0431.0	III	S,C	2	57X	270	
			LEAR	0127.0	0127.0	III		1	25	125	
	0000	0914	HIRA	0127.0	0127.5	III	B	1	25X	70	
			CULG	0151.0	0151.0	III	B	3	57X	380	
			HIRA	0151.0	0152.0	III	B	3	25X	380	
			LEAR	0151.0	0151.0	III		2	25	180	
	0415	1810	POTS	0416 E	0756 U	I	S,C,DC	3	110U	360	
			SVTO	0429.0	0808.0	CONT		1	25U	180U	
			CULG	0431.0	0730.0D	III	S,C	1	57X	180	
			CULG	0449.0	0730.0D	I	S	1	60	170	
	0600	1200	IZMI	0600.0E	1200.0	I	S,C,FS	2	45	270X	
			SVTO	0726.0	0727.0	III		1	29U	60U	
			IZMI	0736.7	0738.1	III	G	2	65	270X	
	0516	1648	ONDR	0743.3	1128.3	DCIM	GG	3	2000X	4500X	
	0530	1715	BLEN	0749.6	0758.1	III	GG,RS	3	720	3300	
			LEAR	0750.0	0953.0	IV		2	25	180	
			BLEN	0754.5	0820.5	II		3	100X	600	
			BLEN	0754.5	1052.0	DCIM	P,C,S	3	150	4000X	
			POTS	0756	1100 U	IV		3	40X	800X	
			SVTO	0756.0	0800.0	III		1	28U	65U	
			IZMI	0804.2	0832.0U	CONT		2	25X	270X	
			POTS	0808 U	0816	II		3	40X	80	
			SVTO	0808.0	0823.0	II		2	25U	79U	ESS 0814
			IZMI	0809.6	0810.4	III	G	2	40	100	
			IZMI	0811.6	0813.9U	II	HARM	2	25X	70	
			IZMI	0813.8	0816.0	UNCLF		2	25X	70	
			IZMI	0814.2	0817.6	UNCLF		/	230	270	
			SVTO	0817.0	0824.0	III		1	25	180	
			SVTO	0817.0	1356.0	IV		1	25	180	
			IZMI	0823.2	0825.7	III	G	2	40	270X	
			IZMI	0826.0	1200.0	III	N	2	25X	270X	
			IZMI	0833.5U	1200.0	CONT		2	50	160	
			IZMI	0840.0U	1032.0U	CONT		2	25	270X	
			BLEN	0845.2	0908.7	II		3	100X	1400	
			BLEN	0945.6	1024.8	II		3	100X	900	
			SGMR	1011.0	1632.0	IV		1	30	80	
			POTS	1100 U	1559 U	I	S,C,DC	3	40X	300	
			BLEN	1122.9	1125.2	III	GG,C	3	400	4000X	
			POTS	1122.9	1124.2	DCIM		2	450	700	
			HOLL	1249.0	0114.0	CONT		1	45	136	
			SVTO	1449.0	1605.0	CONT		1	25U	180U	
			POTS	1558.6	1600.0	III	G	2	120	320	
			BLEN	1558.9	1559.3	III	G	1	190	310	
			POTS	1559 U	1752 U	I	S,C	2	120	300	
			HOLL	1643.0	1824.0	III	N	1	25	127	
			BLEN	1643.3	1643.5	III		2	140	400	
			POTS	1643.3	1643.5	III	G	2	120	380	
			PALE	1804.0	0435.0	III	N	1	25	180	
			PALE	1804.0	1842.0	III	N	1	25	75	
			SGMR	1804.0	2125.0	III	N	1	30	80	
			HOLL	1932.0	1933.0	III		1	41	180	
			HOLL	2007.0	2011.0	III		1	35	169	
	2000	2400	HIRA	2010.5	2011.0	III	B	3	40	320	
	2040	2400	CULG	2040.0E	2400.0D	III	S,C	1	57X	180	
			HIRA	2120.5	2121.0	III	B	1	70	170	
			CULG	2121.0	2123.0	UNCLF		2	60	85	
			HIRA	2126.0	2126.5	III	B	1	200	290	
			HOLL	2212.0	2243.0	III	N	1	25	133	
			HIRA	2215.5	2216.0	III	B	1	40	110	
			CULG	2216.0	2216.0	III	B	3	57X	130	
			HIRA	2219.0	2220.0	III	B	1	25X	170	
			LEAR	2254.0	0952.0	CONT		2	48	180	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
18	0000	0730	CULG	0000.0E	0730.0D	III	S,C	1	57X	180	
			CULG	0101.0	0102.0	III	G	1	60	300	
	0000	0915	HIRA	0101.0	0101.5	III	B	1	120	220	
			CULG	0109.0	0109.0	III	B	1	350	460	
			HIRA	0109.0	0109.5	III	B	1	330	510	
			LEAR	0144.0	0146.0	III		2	33	180	
			HIRA	0144.5	0146.0	III	G	2	40	400	
			CULG	0145.0	0146.0	III	G	2	57X	280	
			CULG	0210.0	0235.0	I	S	1	60	160	
			CULG	0310.0	0405.0	I	S	1	57X	170	
			CULG	0405.0	0405.0	III	B	1	57X	320	
	0415	1810	POTS	0432 U	1803 U	I	S,C,DC	2	110U	300	
			SVTO	0441.0	0839.0	CONT		1	37	180	
			HIRA	0504.5	0505.0	III	B	1	70	240	
			POTS	0504.6	0504.8	III	U	2	200U	320	
			HIRA	0508.0	0509.0	III	B	1	60	140	
	0514	1649	ONDR								
			POTS	0517.2	0517.3	III	B	1	110U	300	
			POTS	0523.4	0523.8	DCIM		2	250	380	
			IZMI	0602.0E	0745.0U	III	N	1	45	95	
	0602	1200	IZMI	0602.0E	1200.0D	I	S,C	1	60	270X	
			LEAR	0604.0	0605.0	III		2	25	180	
			SVTO	0604.0	0605.0	III		2	25	165	
			HIRA	0604.5	0606.0	III	B	3	30	140	
			IZMI	0604.6	0605.2	III	G,C	2	25X	250	
			IZMI	0604.6	0605.8	V	G	2	40	90	
			POTS	0604.6	0605.6	III	G	3	40X	300	
			CULG	0605.0	0606.0	III	G	3	57X	160	
			IZMI	0622.0	0624.7	III	GG	2	85	270X	
	0530	1715	BLEN	0640.0	0647.9	DCIM	P,C	3	1000	2000	
			IZMI	0657.0	0658.0	III	G	1	50	160X	
			HIRA	0736.0	0739.0	III	G	1	40	110	
			IZMI	0736.0	0739.2	III	GG	2	45X	100	
			IZMI	0839.1	0839.4	III	G	2	30	130	
			POTS	0839.1	0839.4	III	B	2	40X	170U	
			IZMI	0911.2	0914.6	I	GG,DC	2	220	270	
			SVTO	0929.0	1240.0	III	N	2	25	136	
			IZMI	0931.8	0932.2	III	B	2	45	100	
			POTS	0931.9	0935.4	III	G	2	40X	300	
			IZMI	0935.0	0937.9	III	G	2	25X	170	
			IZMI	1001.3	1001.8	III	G,HARM	2	25X	140	
			POTS	1001.3	1001.5	III	G	2	40X	150	
			POTS	1001.4	1001.7	V		2	40X	70	
			IZMI	1029.8	1030.3	III	G	2	25X	75	
			IZMI	1039.2	1044.2	III	GG	1	25X	100	
			POTS	1042.3	1047.7	III	GG	2	40X	250	
			IZMI	1042.4	1043.0	III	G	2	25X	160	
			IZMI	1045.0	1045.2	III	B	2	25	80	
			IZMI	1046.2	1046.9	III	G	1	25X	75	
			IZMI	1047.1	1047.6	III	G	2	50	160	
			IZMI	1052.7	1053.0	III	G	1	50	75	
			POTS	1115.8	1116.6	UNCLF		2	40X	140	
			IZMI	1115.9	1118.7	III	G,C	1	30	90	
			IZMI	1138.2	1138.3	III	G	2	130	260	
			SVTO	1147.0	1247.0	CONT		1	75	180	
			POTS	1219.1	1229.9	UNCLF		2	40X	60	
			SVTO	1348.0	1430.0	III	N	1	25	144	
			HOLL	1350.0	1835.0	III	N	1	25	180	
			POTS	1350.0	1351.6	III	G	2	40X	150	
			SGMR	1350.0	1350.0	III		1	30	50	
			BLEN	1428.9	1431.0	III	GG	1	180	400	
			POTS	1429.3	1430.3	III	GG	2	110U	500	
			SVTO	1608.0	1612.0	III		1	25	125	
			SGMR	1609.0	1609.0	III		1	30	46	
			POTS	1700.8	1701.6	DCIM		2	250	380	
			HOLL	1756.0	2043.0	CONT		1	46	180	
			PALE	1915.0	1920.0	III		1	25	180	
			SGMR	1915.0	1920.0	III		1	30	68	
	2040	2400	CULG	2040.0E	2253.0	III	N	1	57X	160	

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
18			CULG	2144.0	2144.0	III	B	1	75	320	
			HOLL	2206.0	2207.0	III		1	25	131	
			PALE	2206.0	2207.0	III		1	25	180	
	1959	2400	HIRA	2206.5	2207.5	III	B	2	25X	180	
			CULG	2207.0	2207.0	III	G	3	57X	160	
			SGMR	2207.0	2207.0	III		1	30	80	
			CULG	2234.0	2349.0	I	S	1	60	85	
			HOLL	2252.0	2252.0	III		1	25	88	
			HIRA	2252.5	2253.0	III	B	1	25X	110	
			HOLL	2334.0	2334.0	III		1	35	50	
19	0000	0730	CULG	0124.0	0129.0	III	G	1	57X	90	
	0000	0916	HIRA	0127.0	0129.0	III	G	1	25X	70	
			CULG	0134.0	0202.0	I	S	1	70	160	
			CULG	0208.0	0233.0	III	N	1	57X	90	
			HIRA	0321.5	0322.0	III	B	1	40	110	
			CULG	0322.0	0322.0	III	B	1	57X	130	
			CULG	0420.0	0431.0	III	G	1	57X	150	
			HIRA	0421.5	0422.0	III	B	1	60	100	
	0410	1810	POTS	0428 U	0903 U	I	S,C,N	1	120	300	
			CULG	0453.0	0454.0	III	G	1	57X	90	
			CULG	0454.0	0524.0	I	S	1	100	160	
	0513	1651	ONDR								
			CULG	0522.0	0526.0	III	G	1	57X	100	
			LEAR	0522.0	0525.0	III		1	25	123	
			SVTO	0522.0	0540.0	III	N	1	25	80	
			HIRA	0522.5	0526.0	III	G	1	25X	110	
			CULG	0534.0	0534.0	III	B	1	57X	90	
			CULG	0539.0	0541.0	III	G	1	57X	180	
			LEAR	0539.0	0540.0	III		1	25	128	
			HIRA	0539.5	0540.0	III	B	1	40	120	
	0600	1200	IZMI	0600.0E	1200.0D	I	N	1	120	270X	
			CULG	0658.0	0658.0	III	B	1	57X	90	
			IZMI	0658.0	0658.3	III	B	1	25X	70	
			SVTO	0658.0	0703.0	V		2	25	180	
			CULG	0700.0	0701.0	III	G	3	57X	180	
			HIRA	0700.0	0701.0	III	B	3	30	380	
			IZMI	0700.0	0701.1	III	GG,C	2	25X	270X	
			LEAR	0700.0	0703.0	III		2	25	180	
			POTS	0700.2	0703.9	III	GG	3	40X	380	
	0530	1715	BLEN	0700.2	0703.8	III	GG	2	100X	700	
			IZMI	0700.3	0701.7	V		2	45	70	
			POTS	0700.6	0701.7	V		3	40X	70	
			IZMI	0702.9	0703.9	III	GG	2	60	270X	
			CULG	0703.0	0704.0	III	G	1	57X	180	
			LEAR	0808.0	0808.0	III		1	25	60	
			SVTO	0808.0	0808.0	III		1	25	57	
			IZMI	0808.4	0808.9	III	G,C	1	25X	70	
			POTS	0808.4	0808.8	UNCLF		2	40X	60	
			POTS	0937.4	1019 U	I	S,N	1	130	300	
			POTS	1052 U	1728 U	I	S,N,DC	2	120	320	
			HOLL	1544.0	1545.0	III		1	25	100	
			SVTO	1544.0	1545.0	III		1	25U	80U	
			SVTO	1603.0	1604.0	III		1	25	60	
			HOLL	1604.0	1604.0	III		1	25	70	
			PALE	1653.0	1653.0	III		1	25	138	
			HOLL	1853.0	1853.0	III		1	29	141	
			HOLL	2006.0	2007.0	III		1	25	130	
			PALE	2006.0	2007.0	III		1	25	85	
			SGMR	2006.0	2006.0	III		1	30	50	
	1958	2400	HIRA	2006.0	2008.0	III	G	1	30	120	
	2040	2400	CULG	2123.0	2400.0D	I	S	1	80	180	
			HOLL	2313.0	2314.0	III		1	38	63	
			HIRA	2313.5	2314.0	III	B	1	30	70	
20	0000	0720	CULG	0000.0E	0720.0D	I	S	1	65	180	
			HOLL	0022.0	0023.0	III		1	34	83	
			PALE	0023.0	0023.0	III		1	25	74	
	0000	0916	HIRA	0023.0	0023.5	III	B	1	25X	70	

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

APRIL 2002

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
20		CULG	0123.0	0123.0	III	B	1	57X	90	
0410	1810	POTS	0452 U	1357 U	I	N,S,DC	1	120	300	
		POTS	0455.7	0457.8	DCIM	RS	2	220	500	
0511	1652	ONDR								
		CULG	0517.0	0517.0	III	B	1	57X	180	
0600	1200	IZMI	0600.0E	1200.0D	I	N	1	90	220	
		SVTO	0636.0	0637.0	III		1	25	53	
		IZMI	0636.6	0637.0	III	B	1	25X	45	
		SVTO	0911.0	0914.0	III		1	25	60	
		IZMI	0911.2	0911.7	CONT		1	25X	70	
		POTS	0911.2	0914.1	UNCLF		2	40X	60	
		IZMI	0913.1	0914.0	III	G	2	45	70	
		POTS	0948.3	0948.4	DCIM		2	280	380	
		SGMR	1222.0	1224.0	III		1	30	50	
		SVTO	1222.0	1224.0	III		1	25	60	
		POTS	1222.4	1224.1	III	G,RS	2	40X	70	
		SVTO	1325.0	1326.0	III		1	25	54	
		POTS	1329.5	1337.3	DCIM		2	250	500	
0530	1715	BLEN	1329.5	1337.6	III	GG,RS,U	2	260	3500	
		SVTO	1347.0	1347.0	III		1	31	44	
		POTS	1444.8	1447.2	III	GG,W	1	110U	150	
		HOLL	1446.0	1446.0	III		1	25	54	
		SGMR	1446.0	1446.0	III		1	34	40	
		SVTO	1446.0	1446.0	III		1	30	54	
		POTS	1504.7	1504.8	III	B,W	1	110U	150	
		POTS	1507 U	1608 U	I	N,S	1	200U	250	
		HOLL	1557.0	1558.0	III		1	25	84	
		SGMR	1557.0	1558.0	V		1	30	60	
		SVTO	1557.0	1558.0	III		1	25U	157U	
		POTS	1557.2	1604.6	III	G	2	40X	170U	
		POTS	1620.4	1620.6	III	B	2	110U	280	
		HOLL	1720.0	1812.0	III	N	1	25	83	
		PALE	1720.0	1720.0	III		1	33	66	
		SGMR	1720.0	1846.0	III	N	1	30	65	
		PALE	1743.0	1746.0	III		1	30	71	
		PALE	1811.0	1812.0	III		1	33	76	
2040	2400	CULG	2148.0	2148.0	III	B	1	57X	80	
		HOLL	2235.0	2236.0	III		1	25	70	
		HOLL	2310.0	2311.0	III		1	25	81	
		PALE	2310.0	2311.0	III		1	25	48	
		CULG	2311.0	2311.0	III	B	1	57X	90	
1957	2400	HIRA	2311.0	2311.5	III	B	1	30	80	
21		HIRA	0039.5	0040.0	III	B	2	25X	360	
0000	0720	CULG	0111.0	0112.0	III	G	1	200	470	
0000	0917	HIRA	0111.0	0120.0	III	G	1	90	600	
		CULG	0113.0	0118.0	III	G	1	57X	380	
		HIRA	0117.0	0154.0	IV		3	30	220	
		HOLL	0117.0	0122.0	III		1	25	138	
		PALE	0118.0	0135.0	II		2	25	180	ESS 0778
		CULG	0119.0	0130.0	II	SH	3	57X	130	FLA ESS 500
		HIRA	0119.0	0126.0	II		3	25X	80	
		CULG	0120.0	0124.0	CONT		1	300	900	
		CULG	0120.0	0150.0	III	S,C	1	57X	240	
		HOLL	0122.0	0127.0	II		1	25	180	ESS 0730
		LEAR	0125.0	0136.0	II		2	25	180	ESS 0742
		CULG	0130.0	0132.0	III	G	2	57X	210	
		CULG	0134.0	0238.0	I	S,C	1	57X	120	
		LEAR	0136.0	0238.0	IV		1	25	124	
		PALE	0136.0	0207.0	IV		1	25	86	
		CULG	0148.0	0245.0	IV		3	130	1800X	
		PALE	0208.0	0354.0	III	N	1	25	180	
		CULG	0209.0	0220.0	III	GG	2	57X	180	
		LEAR	0209.0	0219.0	III		2	25	180	
		HIRA	0210.0	0222.0	III	G	2	25X	210	
		CULG	0421.0	0501.0	III	N	1	57X	90	
0509	1653	ONDR								
0410	1815	POTS	0532.1	0620 U	I	N,S	1	250	320	
		POTS	0631.0	0631.4	UNCLF		1	120	140	

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
21			POTS	0637.7	0716 U	I	N,S	2	120	360	
			CULG	0642.0	0642.0	III	B	1	57X	180	
			HIRA	0642.0	0642.5	III	G	1	70	210	
	0621	1200	IZMI	0642.2	0642.5	III	GG	2	50	230	
			POTS	0806.6	0922. U	I	N,DC	1	240	340	
			SVTO	1001.0	1002.0	III		1	25	61	
			IZMI	1001.6	1002.4	III	G,C	2	25X	80	
			POTS	1001.6	1002.5	III	G	3	40X	240	
			POTS	1129.7	1129.8	III	B,W	1	110U	130	
			POTS	1240.8	1240.9	III	B,W	1	110U	130	
			POTS	1341.5	1341.7	III	B	2	110U	170U	
	0525	1720	BLEN	1727.5	1728.5	DCIM	C	2	280	520	
			POTS	1727.6	1729.5	DCIM		2	240	450	
			HOLL	1728.0	1731.0	III		1	25	85	
			HOLL	2006.0	2009.0	III		1	25	180	
			PALE	2006.0	2009.0	III		1	25	87	
	1956	2400	HIRA	2006.0	2009.5	III	G	1	25X	500	
			SGMR	2008.0	2009.0	III		1	30	80	
			HOLL	2039.0	2040.0	III		1	25	180	
			PALE	2039.0	2040.0	III		1	25	147	
			SGMR	2039.0	2040.0	III		1	30	70	
	2040	2400	CULG	2040.0	2040.0	III	B	1	57X	200	
			HOLL	2208.0	2212.0	III		1	25	180	
			CULG	2209.0	2212.0	III	G	1	57X	180	
			HIRA	2209.0	2212.0	III	G	1	30	380	
			HIRA	2232.5	2233.0	III	B	1	70	160	
			CULG	2233.0	2233.0	III	B	1	57X	180	
			CULG	2330.0	2400.0D	III	N	1	57X	180	
			HOLL	2330.0	2338.0	III		1	25	180	
			PALE	2331.0	0407.0	III	N	1	25	180	
			LEAR	2337.0	0006.0	III	N	1	25	180	
			HOLL	2343.0	0115.0	III	N	1	25	180	
22	0000	0720	CULG	0000.0E	0127.0	III	N	1	57X	180	
			LEAR	0039.0	0040.0	III		1	37	142	
	0000	0918	HIRA	0039.5	0041.0	III	G	1	30	130	
			LEAR	0059.0	0059.0	III		1	37	141	
			LEAR	0059.0	0059.0	III		1	63	120	
			HIRA	0127.0	0127.5	III	B	1	30	170	
			LEAR	0127.0	0127.0	III		1	61	126	
			CULG	0224.0	0227.0	III	G	1	57X	180	
			HIRA	0224.0	0224.5	III	B	1	25X	130	
			LEAR	0224.0	0226.0	III		1	37	169	
			CULG	0300.0	0304.0	III	G	1	57X	180	
			LEAR	0300.0	0303.0	III		1	25	180	
			HIRA	0301.0	0303.0	III	G	1	30	220	
			CULG	0404.0	0408.0	III	G	1	57X	180	
			LEAR	0407.0	0408.0	III		1	63	170	
			CULG	0437.0	0437.0	III	B	1	57X	90	
			CULG	0501.0	0504.0	III	G	1	57X	180	
	0405	1815	POTS	0503.3	0507.6	III	G,N	2	110U	300	
			CULG	0514.0	0520.0	III	G	3	57X	600	
			POTS	0514.3	0524.6	III	GG	3	40X	800X	
			HIRA	0515.0	0523.0	III	G	3	25X	510	
			SVTO	0515.0	0524.0	III		2	25	180	
			CULG	0522.0	0525.0	III	G	1	57X	400	
			CULG	0543.0	0551.0	III	G	1	57X	250	
			LEAR	0543.0	0550.0	III		1	25	180	
			SVTO	0543.0	0550.0	III		1	25	180	
			POTS	0543.2	0550.8	III	GG	2	40X	300	
	0545	1200	IZMI	0545.1	0548.8	III	GG	1	45	95U	
	0525	1720	BLEN	0545.2	0547.3	III	GG,RS	3	700	4000X	
			IZMI	0550.3	0550.7	III	G	2	25X	95U	
			POTS	0610.9	0611.7	III	G	3	60U	300	
			CULG	0611.0	0611.0	III	B	1	57X	180	
			HIRA	0611.0	0611.5	III	B	2	60	290	
			IZMI	0611.0	0612.4	III	G,HARM	2	50	270X	
			LEAR	0611.0	0611.0	III		1	60	180	
			SVTO	0611.0	0611.0	III		1	43U	160U	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
22		SVTO	0641.0	0645.0	III		1	27U	83U	
		CULG	0642.0	0720.0D	III	N	1	57X	180	
		IZMI	0642.0	0643.1	III	G	1	40	180	
		POTS	0642.9	0654.2	III	GG,N	1	110U	240	
		HIRA	0643.0	0643.5	III	B	1	40	170	
		SVTO	0712.0	0834.0	III	N	3	25	180	
		IZMI	0712.1	0712.3	III	G	1	115	160	
		POTS	0712.2	0731.4	III	GG,N	3	40X	300	
		LEAR	0713.0	0718.0	III		1	50	180	
		HIRA	0713.5	0714.0	III	B	1	60	230	
		IZMI	0713.7	0713.8	III	G	2	50	260	
		HIRA	0717.0	0718.5	III	G	1	70	200	
		IZMI	0717.0	0718.6	III	GG	1	50	210	
		LEAR	0727.0	0833.0	III	N	2	25	180	
		IZMI	0727.4	0729.1	III	GG	2	25X	270	
		HIRA	0728.0	0729.0	III	G	2	50	230	
		HIRA	0731.0	0731.5	III	B	1	30	180	
		IZMI	0731.2	0731.4	III	G	2	30	270X	
		POTS	0736.3	0834.0	III	GG,N	3	40X	600	
		IZMI	0736.4	0739.0	III	GG	2	25X	270X	
		HIRA	0737.0	0745.0	III	G	2	30	420	
		BLEN	0737.1	0741.5	III	GG	1	100X	600	
		IZMI	0739.5	0742.5	III	GG	2	25X	270X	
		IZMI	0743.4	0743.8	III	G	2	45	185	
		IZMI	0744.6	0744.9	III	G,C	2	25X	190	
		IZMI	0752.8	0753.4	III	G,C	1	50	145	
		IZMI	0754.7	0759.0	III	GG	2	25X	270X	
		HIRA	0755.0	0810.0	III	G	3	30	420	
		IZMI	0759.6	0806.1	III	GG	2	25X	270X	
		BLEN	0800.2	0813.2	III	GG	2	100X	600	
		BLEN	0800.9	0813.4	III	GG	1	100X	600	
		IZMI	0806.4	0807.7	III	GG,C	2	25X	270X	
		IZMI	0808.0	0809.7	III	GG	2	25	270X	
		IZMI	0813.1	0813.4	III	G	1	50	240	
		IZMI	0824.0	0824.9	III	G	2	25	270	
		IZMI	0830.1	0831.4	III	G	1	30	90	
		BLEN	0833.3	0833.7	III	G	2	100X	350	
		IZMI	0833.4	0833.7	III	G,HARM	3	25X	270X	
		IZMI	0833.4	0833.9	V	HARM	2	25X	190	
		HIRA	0833.5	0834.0	III	B	3	30	240	
		POTS	0912.2	0912.7	III	G	1	130	160	
		IZMI	0912.6	0912.7	III	G	1	120	180	
		POTS	0926.9	0927.0	III	B	1	110U	130	
		POTS	0942.3	0943.8	III	G	2	40X	170U	
		IZMI	0942.4	0942.5	III	G,FS	1	45	155	
		POTS	1007.7	1008.5	III	G	2	40X	170U	
		IZMI	1007.8	1008.5	III	G,FS,C	2	40	180	
		POTS	1019.5	1531 U	I	N,S	1	220	350	
		IZMI	1057.0U	1130.0	I	S	1	230	270X	
		IZMI	1128.0	1128.1	III	B	1	25X	70	
		POTS	1128.0	1128.2	UNCLF		2	40X	60	
		SVTO	1128.0	1128.0	III		1	28U	56U	
		SVTO	1128.0	1128.0	III	N	1	28U	56U	
		SVTO	1128.0	1206.0	III	N	1	28U	56U	
		IZMI	1152.3	1152.6	III	B	1	25X	70	
		POTS	1152.4	1152.6	UNCLF		2	40X	70	
		POTS	1203.3	1206.8	III	G	3	40X	170U	
0507	1655	ONDR	1205.2	1208.2	DCIM	G	2	2000X	4500X	
		BLEN	1205.5	1208.1	III	G,C	2	100X	4000X	
		SGMR	1206.0	1206.0	III		1	30	80	
		SVTO	1206.0	1207.0	V		2	25	180	
		SVTO	1207.0	1222.0	II		1	25	159	ESS 0804
		POTS	1207.5	1221	II		3	40X	170U	
		SGMR	1212.0	1219.0	II		1	30	60	ESS 0627
		HOLL	1328.0	1330.0	III		1	25	180	
		SVTO	1328.0	1330.0	III		1	35U	136U	
		POTS	1328.7	1331.8	III	G,N	3	40X	300	
		POTS	1426.0	1433.0	III	G,N	2	110U	170U	
		SVTO	1450.0	1452.0	III		1	31U	164U	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
22			HOLL	1451.0	1452.0	III		1	25	180	
			POTS	1451.0	1452.7	III	GG	3	40X	300	
			SGMR	1451.0	1451.0	III		1	30	60	
			BLEN	1451.1	1451.6	III	G,S	2	100X	600	
			HOLL	1618.0	1619.0	III		1	25	180	
			SVTO	1618.0	1619.0	III		1	30U	180U	
			BLEN	1618.8	1619.3	III	G,S	1	100X	650	
			POTS	1618.8	1620.3	III	GG	2	40X	280	
			SGMR	1619.0	1619.0	III		2	30	60	
			POTS	1644 U	1758 U	I	N,S	1	200U	350	
	1954	2400	HIRA								
	2040	2400	CULG	2040.0E	2128.0	III	N	1	57X	180	
			HOLL	2138.0	2201.0	III	N	1	25	64	
			PALE	2138.0	0243.0	III	N	1	25	180	
			CULG	2202.0	2202.0	III	B	1	57X	90	
			CULG	2240.0	2400.0D	III	N	1	57X	90	
			HOLL	2249.0	0118.0	III	N	1	25	86	
			LEAR	2256.0	0230.0	III	N	1	25	180	
23	0000	0720	CULG	0000.0E	0027.0	III	N	1	57X	90	
			CULG	0036.0	0159.0	III	S	1	57X	130	
			CULG	0204.0	0204.0	III	G	1	57X	300	
	0000	0918	HIRA	0204.0	0204.5	III	B	1	90	310	
	0505	1656	ONDR								
			CULG	0518.0	0518.0	III	G	1	57X	180	
	0405	1815	POTS	0518.2	0518.7	III	G	2	110U	300	
			POTS	0530 U	0927 U	I	S,N	1	200U	300	
			POTS	0610.6	0611.5	III	G	2	110U	170U	
	0556	1200	IZMI	0610.6	0611.8	III	GG	2	45	210	
			CULG	0611.0	0631.0	III	N	1	57X	180	
			HIRA	0611.0	0612.0	III	B	1	30	200	
			LEAR	0611.0	0611.0	III		1	29	180	
			SVTO	0611.0	0611.0	III		1	25U	126U	
			IZMI	0613.2	0613.5	III	G	1	180	220	
			IZMI	0630.0	0630.8	III	G	1	60	190	
			POTS	0630.0	0630.8	III	G	2	110U	170U	
			POTS	0704.9	0706.3	III	G	2	110U	170U	
			CULG	0705.0	0706.0	III	G	1	57X	160	
			IZMI	0706.0	0706.3	III	B	1	50	70	
			LEAR	0750.0	0753.0	III		1	25	180	
			SVTO	0750.0	0751.0	III		1	25	180	
			HIRA	0750.5	0754.0	III	G	3	40	200	
			POTS	0750.7	0753.8	III	GG	3	40X	170U	
			IZMI	0750.8	0751.1	III	G,C	3	25X	205	
			IZMI	0750.9	0751.2	V	G,C	2	45	70	
			IZMI	0751.2	0752.0	CONT		1	45	95	
			IZMI	0753.3	0753.8	III	G	1	45	190	
			HIRA	0806.0	0808.0	III	G	1	100	470	
			IZMI	0806.6	0807.7	III	GG	2	125	270X	
			POTS	0806.6	0807.8	III	G	3	110U	650	
			POTS	0822.3	0825.7	III	G	2	110U	170U	
			IZMI	0825.5	0825.7	III	B	1	65	160	
			IZMI	0911.1	0911.8	I	GG	2	130	155	
			POTS	0911.1	0913.3	I	S,DC	2	120	160	
			IZMI	0927.0	0927.5	III	G	2	25X	270X	
			LEAR	0927.0	0928.0	V		1	30	180	
			POTS	0927.0	0927.4	III	G	3	40X	300	
			SVTO	0927.0	0928.0	III		2	25	180	
			IZMI	0927.3	0928.3	V	G,HARM	2	25X	155	
			POTS	0927.4	0928.4	V		3	40X	170U	
			POTS	0928 U	1429 U	I	S,N	1	120	300	
			IZMI	0933.7	0934.4	I	GG	1	125	180	
			POTS	0948.0	0948.2	III	B,W	1	120	170U	
			POTS	1112.3	1114.2	III	G	2	40X	170U	
			IZMI	1112.4	1113.9	III	GG	1	45	180	
			IZMI	1145.4	1145.5	UNCLF		1	250	270X	
			SGMR	1220.0	1221.0	III		1	30	80	
			SVTO	1220.0	1222.0	III		1	25	180	
			POTS	1220.2	1222.5	III	G	3	40X	250	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
23			POTS	1230.6	1230.8	III	B	2	40X	130	
			POTS	1255.3	1255.4	III	B	2	40X	160	
			POTS	1351.9	1352.2	DCIM		2	300	500	
	0820	1720	BLEN	1352.0	1352.5	III	G	1	300	500	
			HOLL	1436.0	1440.0	III		1	25	82	
			SVTO	1436.0	1440.0	III		1	28U	64U	
			POTS	1544.6	1545.3	DCIM		2	280	600	
			POTS	1558.8	1559.6	III	G	1	110U	170U	
			HOLL	1738.0	1744.0	III		1	25	180	
			PALE	1741.0	0350.0	III	N	1	25	180	
			SGMR	1742.0	1744.0	III		1	30	60	
			POTS	1742.3	1744.0	III	GG	2	200U	400U	
			HOLL	1900.0	1907.0	III		1	25	180	
			SGMR	1903.0	1904.0	III		2	30	80	
			HOLL	1914.0	1914.0	III		1	25	86	
			HOLL	1952.0	2029.0	III	N	1	25	180	
	1953	2400	HIRA	2029.0	2030.0	III	G	1	25X	210	
	2040	2400	CULG	2040.0E	2218.0	III	N	1	57X	170	
			HOLL	2128.0	2223.0	III	N	1	25	180	
			CULG	2245.0	2344.0	III	N	1	57X	150	
24	0000	0720	CULG	0008.0	0239.0	III	N	1	57X	160	
			HOLL	0009.0	0119.0	III	N	1	25	75	
			LEAR	0010.0	0649.0	III	N	1	72	175	
			CULG	0246.0	0246.0	III	B	1	180	280	
			CULG	0347.0	0549.0	III	N	1	57X	140	
	0405	1815	POTS	0437 U	1800 U	I	N,DC	2	120	350	
			POTS	0500.7	0505.8	III	GG,N	2	130	500	
			CULG	0632.0	0720.0D	III	N	1	57X	160	
			LEAR	0705.0	0808.0	III	N	1	25	180	
	0600	1200	IZMI	0725.8U	0729.2	III	GG	1	60	155	
			POTS	0726.6	0736.9	III	GG	3	40X	500	
			SVTO	0729.0	0736.0	V		2	25	180	
	0000	0919	HIRA	0729.5	0735.5	III	G	1	30	270	
			IZMI	0729.6	0731.8	III	GG,C	2	25	270X	
	0520	1720	BLEN	0729.9	0737.7	III	GG,S,C	2	100X	4000X	
			ONDR	0731.5	0737.0	DCIM	G,W	1	2000X	4500X	
	0503	1658	ONDR	0731.5	0733.1	DCIM	G	1	800X	1634	
			IZMI	0731.9	0735.3	III	GG,C	2	25X	270X	
			POTS	0802.3	0802.7	DCIM		2	350	500	
			BLEN	0802.4	0802.7	III	GG,U,S	2	360	660	
			IZMI	0844.6	0845.4	III	G	2	40	270X	
			POTS	0844.6	0845.8	III	G	2	40X	300	
			SVTO	0845.0	0845.0	III		1	25	142	
			LEAR	0924.0	0926.0	III		1	73	180	
			SVTO	0924.0	0926.0	III		1	48	180	
			POTS	0924.4	0926.3	III	GG	3	170U	320	
			IZMI	0924.6	0926.3	III	GG	2	85	270X	
			SVTO	1018.0	1023.0	V		1	25	172	
			BLEN	1018.5	1022.3	III	GG	2	100X	480	
			IZMI	1018.5	1020.1	III	GG	2	25X	210	
			POTS	1018.5	1023.2	III	GG	3	40X	360	
			IZMI	1019.7	1020.8	UNCLF	,DC	2	130	145	
			POTS	1020.8	1020.9	DCIM		2	400	600	
			IZMI	1020.9	1023.1	III	GG	2	25	160	
			POTS	1047.9	1049.0	DCIM		2	320	550	
			IZMI	1110.9	1111.0	III	B	1	50	90	
			BLEN	1124.9	1128.3	III	GG,V,C	1	100X	2700	
			POTS	1124.9	1128.3	III	GG	3	40X	600	
			IZMI	1125.0	1125.4	III	GG	3	55	270X	
			SVTO	1125.0	1126.0	III		2	50	180	
			IZMI	1125.1	1125.9	V	G	2	55	210	
			IZMI	1125.9	1126.3	III	G,U	2	120	270X	
			IZMI	1126.8	1130.4	III	G	1	130	270X	
			SVTO	1222.0	1230.0	III		1	25	180	
			POTS	1227.9	1228.1	DCIM		2	320	400	
			SVTO	1241.0	1248.0	III		1	25	56	
			POTS	1241.2	1241.4	III	B	1	40X	70	
			HOLL	1315.0	1319.0	III		1	25	180	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
24		SGMR	1315.0	1342.0	III	N	2	30	80	
		SVTO	1315.0	1319.0	V		2	25	180	
		POTS	1315.1	1319.2	III	GG	3	40X	500	
		SVTO	1333.0	1343.0	III		2	25	180	
		POTS	1333.8	1342.7	III	GG	3	40X	350	
		HOLL	1335.0	1342.0	III		1	25	179	
		BLEN	1335.8	1342.5	III	GG,S	2	100X	470	
		HOLL	1538.0	1541.0	III		1	25	139	
		HOLL	1744.0	1750.0	III		1	25	180	
		PALE	1744.0	1747.0	III		1	25	180	
		POTS	1744.7	1745.8	III	G	2	40X	380	
		SGMR	1745.0	1746.0	III		1	30	80	
		POTS	1749.5	1750.4	UNCLF		3	200U	320	
		PALE	1814.0	0437.0	III	N	2	25	180	
		CULG	2040.0E	2400.0D	I	S	1	110	180	
	2040	2400 CULG	2040.0E	2400.0D	III	N	1	57X	170	
		HOLL	2105.0	2107.0	III		1	25	180	
		CULG	2106.0	2108.0	III	G	3	57X	180	
		SGMR	2106.0	2106.0	III		1	30	80	
	1951	2400 HIRA	2106.0	2107.5	III	G	3	30	210	
		HOLL	2209.0	0120.0	III	N	2	25	180	
		CULG	2228.0	2230.0	III	G	3	57X	300	
		HIRA	2228.5	2230.0	III	G	3	25X	340	
		SGMR	2229.0	2229.0	III		1	30	80	
		LEAR	2256.0	0947.0	CONT		1	25	180	
25		CULG	0000.0E	0525.0	I	S,C	1	100	180	
	0000	0720 CULG	0000.0E	0720.0D	III	S	1	57X	180	
		CULG	0349.0	0426.0	III	GG	2	57X	260	
	0000	0920 HIRA	0349.0	0430.0	III	G	2	30	190	
		CULG	0406.0	0406.0	III	B	3	57X	230	
		SVTO	0417.0	1300.0	CONT		1	25	180	
	0400	1815 POTS	0418 U	1757 U	I	N,DC	2	120	360	
		POTS	0542.7	0543.2	III	G	2	120	160	
	0545	1200 IZMI	0545.9	0547.0	III	G	1	35	75	
		LEAR	0554.0	0557.0	III		2	25	180	
		LEAR	0554.0	0557.0	V		2	25	180	
		SVTO	0554.0	0557.0	V		2	25	180	
		HIRA	0554.5	0558.0	III	G	3	25X	400	
	0520	1720 BLEN	0554.6	0557.2	III	GG	3	100X	600	
		IZMI	0554.7	0556.3	III	G,C	2	25X	180	
		IZMI	0554.7	0559.1	V		2	25X	90U	
		POTS	0554.7	0559.9	III	GG	3	40X	700	
		BLEN	0554.9	0557.2	DCIM	P,C	3	300	4000X	
		CULG	0555.0	0557.0	III	G	3	57X	430	
	0502	1659 ONDR	0555.1	0556.4	DCIM	G	2	800X	2000X	
		CULG	0556.0	0559.0	V		1	57X	160	
		IZMI	0559.1	0752.0U	III	N	1	45	95U	
		IZMI	0603.9	0606.6	III	G	1	45	93	
		IZMI	0616.6	0621.1	III	GG	1	30	90	
		POTS	0621.5	0641.0	III	GG	2	40X	300	
		IZMI	0624.0	0625.5	III	GG,C,FS	2	25X	270X	
		LEAR	0624.0	0625.0	III		1	25	180	
		SVTO	0624.0	0625.0	III		1	25	180	
		HIRA	0624.5	0635.5	III	B	1	30	220	
		CULG	0625.0	0625.0	III	B	2	57X	180	
		HIRA	0630.0	0630.5	III	B	1	50	190	
		LEAR	0630.0	0630.0	III		1	25	101	
		IZMI	0630.3	0630.9	III	G	2	40	190	
		IZMI	0631.3	0645.5	III	S	2	45	175	
		IZMI	0643.7	0644.6	III	G	2	40	120	
		IZMI	0714.8	0716.3	III	G,C	2	25X	95	
		POTS	0715.2	0715.4	III	B	2	40X	130	
		IZMI	0720.4	0720.5	III	B	1	40	70	
		HIRA	0832.0	0832.5	III	B	1	50	220	
		LEAR	0832.0	0832.0	III		1	25	180	
		SVTO	0832.0	0832.0	III		1	25	180	
		POTS	0832.4	0832.7	III	B	2	40X	250	
		IZMI	0832.5	0832.6	III	B	2	30	240	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
25		IZMI	0834.0	0834.1	III	B	1	45	70	
		IZMI	0841.0U	1200.0D	III	N	1	30	95	
		IZMI	0842.6U	0851.2	III	GG	1	30	70	
		IZMI	0901.4	0902.0	III	G	2	45	185	
		POTS	0901.4	0903.6	III	G	2	40X	300	
		IZMI	0903.5	0903.7	III	B,FS	2	25X	70	
		IZMI	0904.0U	1200.0D	I	N	2	130	270X	
		IZMI	0935.9	0940.9	III	G	1	25X	70	
		POTS	0941.3	0942.9	III	G	2	40X	150	
		IZMI	0941.4	0942.9	III	G	2	25X	180	
		IZMI	0946.1	0948.0	III	GG	2	45	100	
		IZMI	1021.5	1021.7	III	B	1	45	95	
		POTS	1021.5	1021.7	III	G	2	40X	160	
		IZMI	1032.6	1032.7	III	B	2	25X	90	
		IZMI	1146.6	1146.8	III	B	1	25X	75	
		IZMI	1151.4	1151.9	III	G	2	45	75	
		POTS	1244.4	1320.3	UNCLF	N	2	40X	60	
		POTS	1329.4	1406.0	III	GG,N	2	40X	140U	
		HOLL	1350.0	2345.0	III	N	1	25	114	
		SVTO	1359.0	1715.0	III	N	1	25	180	
		POTS	1426.2	1432.1	III	G,N	3	40X	160	
		POTS	1437.4	1508.9	I	N,DC	2	40X	70	
		SGMR	1522.0	1522.0	III		1	30	60	
		POTS	1522.1	1525.0	III	G	2	40X	60	
		SGMR	1626.0	1629.0	III		1	30	63	
		POTS	1709.5	1713.3	III	G	2	110U	300	
	1950	HIRA								
		CULG	2040.0E	2400.0D	I	S,C	1	80	160	
	2040	CULG	2040.0E	2400.0D	III	S,C	1	57X	180	
		HOLL	2108.0	0115.0	CONT		1	25	180	
		PALE	2119.0	0414.0	III	N	1	25	144	
		LEAR	2258.0	0945.0	CONT		1	57	180	
		LEAR	2258.0	0945.0	CONT		1	87	180	
		HOLL	2336.0	0120.0	CONT		1	77	180	
26		CULG	0000.0E	0720.0D	I	S,C	1	60	180	
	0000	CULG	0000.0E	0238.0	III	S,C	1	57X	180	
		CULG	0314.0	0314.0	III	B	1	57X	180	
		CULG	0419.0	0720.0D	III	N	1	57X	180	
	0400	POTS	0420 U	1805 U	I	DC,C	3	120	300	
		SVTO	0446.0	0922.0	CONT		1	25	180	
		SVTO	0446.0	0950.0	CONT		1	25	180	
	0500	ONDR								
		IZMI	0550.0E	1200.0D	III	N	1	25X	95X	
	0550	IZMI	0550.0E	1200.0D	I	S,C	2	60	270X	
		IZMI	0606.4	0606.6	III	B	2	45X	90X	
	0525	BLEN	0810.0	1500.0	I	N	1	100X	370	
		IZMI	0812.0	0812.2	III	B	2	40	75	
		LEAR	0812.0	0812.0	III		1	25	66	
		POTS	0812.0	1147 U	III	GG,N	2	40X	250	
		SVTO	0812.0	1203.0	III	N	1	25U	81U	
	0000	HIRA	0812.0	0812.5	III	B	1	40	90	
		IZMI	0824.5	0824.7	III	B	2	40	95	
		IZMI	0832.3	0833.0	III	G	2	40	70	
		IZMI	0853.2	0854.2	III	G	2	25X	145	
		IZMI	0955.5	0959.0	III	G	2	25X	70	
		IZMI	1024.0	1024.2	III	B	2	25X	75	
		POTS	1300.7	1300.8	III	B	2	40X	150	
		HOLL	1311.0	2015.0	III	N	1	25	75	
		SGMR	1311.0	1756.0	III	N	1	30	60	
		SGMR	1311.0	1956.0	III	N	1	30	60	
		SVTO	1311.0	1622.0	III	N	1	25	180	
		POTS	1332.3	1343.2	UNCLF		2	40X	60	
		POTS	1358.6	1358.9	III	G	2	40X	220	
		POTS	1436.8	1509.3	UNCLF	N	2	40X	60	
		SVTO	1627.0	1716.0	CONT		1	25U	180U	
		HOLL	1628.0	2015.0	CONT		1	74	180	
		PALE	1646.0	2101.0	CONT		1	25	180	
	1949	HIRA								

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

APRIL 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
26	2040	2400	CULG	2040.0E	2106.0	III	S,C	1	57X	180	
			CULG	2123.0	2400.0D	III	S	1	57X	180	
			LEAR	2257.0	0944.0	CONT		1	52	180	
			CULG	2306.0	2400.0D	I	S,C	1	80	160	
			PALE	2318.0	0438.0	CONT		1	25	180	
			HOLL	2322.0	0115.0	CONT		1	25	180	
27	0000	0922	HIRA								
			CULG	0000.0E	0018.0	I	S	1	80	180	
	0000	0720	CULG	0000.0E	0124.0	III	S	1	57X	180	
			CULG	0129.0	0720.0D	I	S,C	1	100	230	
			CULG	0321.0	0346.0	III	S	1	57X	150	
	0355	1820	POTS	0420 U	1421 U	I	DC,C	3	120	380	
			CULG	0438.0	0521.0	III	N	1	57X	90	
	0458	1702	ONDR								
	0550	1200	IZMI	0550.0E	1200.0D	I	S,C	2	110	270X	
			CULG	0555.0	0555.0	III	G	1	57X	80	
	0525	1720	BLEN	0610.0	1420	I	N	1	100X	400	
			SVTO	1129.0	1253.0	CONT		1	74U	165U	
			SVTO	1152.0	1152.0	III		1	28U	73U	
			IZMI	1152.2	1152.4	III	G	1	45	90	
			POTS	1152.2	1152.4	III	B	2	40X	130	
			SVTO	1311.0	1316.0	III		1	28U	82U	
			POTS	1315.7	1315.9	III	G	2	40X	170U	
			SVTO	1339.0	1339.0	III		1	36U	73U	
			HOLL	1403.0	1630.0	CONT		1	25	137	
			SVTO	1403.0	1426.0	III	N	1	25	180	
			POTS	1412.8	1417.1	III	GG	2	40X	150	
			SGMR	1414.0	1414.0	III		1	30	55	
			POTS	1421 U	1529 U	I	DC,C	3	40X	380	
			SVTO	1426.0	1633.0	CONT		1	25	180	
			SGMR	1428.0	2051.0	CONT		1	30	80	
			POTS	1529 U	1802 U	I	DC,C	3	120	380	
			HOLL	1814.0	1827.0	III	N	1	25	86	
			HOLL	1909.0	1910.0	III		1	25	180	
			PALE	1909.0	1910.0	III		1	25	180	
			HOLL	1936.0	1937.0	III		1	25	180	
			PALE	1936.0	1937.0	III		1	25	135	
			HOLL	2012.0	2013.0	III		1	25	56	
			PALE	2012.0	2013.0	III		1	25	53	
	2040	2400	CULG	2040.0E	2354.0	III	S,C	1	57X	180	
			HOLL	2231.0	0100.0	III	N	1	25	180	
			PALE	2231.0	0354.0	III	N	1	25	180	
	1948	2400	HIRA	2247.5	2248.0	III	B	1	25X	220	
			HOLL	2251.0	0015.0	CONT		1	51	180	
			LEAR	2258.0	0230.0	CONT		1	47	180	
28	0000	0720	CULG	0022.0	0047.0	III	N	1	57X	160	
			CULG	0114.0	0114.0	III	B	1	57X	90	
			CULG	0300.0	0300.0	III	B	1	57X	90	
			CULG	0336.0	0337.0	III	G	1	57X	150	
			CULG	0355.0	0355.0	III	B	1	57X	150	
	0355	1820	POTS	0420 U	1210 U	I	DC,C	3	120	380	
			CULG	0454.0	0520.0	III	N	1	57X	90	
	0457	1703	ONDR								
	0520	1720	BLEN								
			CULG	0536.0	0539.0	III	G	1	57X	180	
			LEAR	0536.0	0545.0	III		1	25	180	
			SVTO	0536.0	0618.0	III	N	1	25	180	
			POTS	0536.7	0545.3	III	GG,N	2	40X	300	
			CULG	0541.0	0542.0	III	G	2	57X	200	
	0000	0841	HIRA	0541.5	0542.0	III	B	2	30	200	
			CULG	0545.0	0545.0	III	G	1	57X	150	
	0701	1200	IZMI	0701.0E	0820.0U	I	N	1	130	270	
			CULG	0714.0	0716.0	III	G	1	57X	180	
			HIRA	0714.0	0716.0	III	G	1	50	190	
			LEAR	0714.0	0717.0	III		1	25	180	
			SVTO	0714.0	0715.0	III		1	25	147	
			IZMI	0714.1E	0716.0	III	GG	1	40	180	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
28		POTS	0714.2	0717.3	III	G	2	40X	170U	
		IZMI	0803.6	0803.8	III	B	1	45	70	
		POTS	0947.4	0949.2	III	G	2	40X	300	
		IZMI	0948.4	0949.2	III	GG	2	40	220	
		IZMI	1046.2	1047.2	I	GG	1	120	175	
		POTS	1210 U	1807 U	I	N,S,C	2	120	200U	
		HOLL	1822.0	1825.0	III		1	25	180	
	2040	CULG	2139.0	2139.0	III	B	1	57X	180	
		CULG	2147.0	2151.0	UNCLF		1	70	170	
		CULG	2248.0	2248.0	III	B	1	57X	90	
		HOLL	2248.0	2248.0	III		1	25	180	
		LEAR	2313.0	2313.0	III		1	25	54	
29	0000 0720	CULG	0026.0	0026.0	III	G	1	150	290	
		PALE	0039.0	0046.0	III		1	25	149	
		CULG	0040.0	0045.0	III	G	2	57X	180	
		LEAR	0040.0	0044.0	III		1	25	180	
		HOLL	0042.0	0043.0	III		1	25	180	
		CULG	0103.0	0211.0	I	S	1	110	180	
		CULG	0141.0	0141.0	III	B	1	57X	100	
		CULG	0210.0	0214.0	III	G	1	57X	100	
		CULG	0223.0	0225.0	III	G	1	57X	460	
		LEAR	0223.0	0224.0	III		1	25	180	
		PALE	0223.0	0224.0	III		1	25	141	
		CULG	0244.0	0244.0	III	B	1	57X	80	
	0355 1820	POTS	0414 U	1435 U	I	S,N,DC,C	2	120	380	
		CULG	0440.0	0445.0	III	G	1	57X	90	
		CULG	0551.0	0553.0	III	G	1	57X	180	
		LEAR	0551.0	0552.0	III		1	54	180	
		SVTO	0551.0	0552.0	III		1	44	142	
		POTS	0551.2	0552.3	III	G	2	40X	170U	
	0600 1200	IZMI	0600.0E	1200.0D	I	S,C	2	110	270X	
		CULG	0641.0	0641.0	III	B	1	57X	180	
		IZMI	0641.3	0641.4D	III	G	2	120	260X	
		POTS	0641.4	0647.8	III	GG,N	2	40X	320	
		LEAR	0646.0	0647.0	III		1	65	180	
		SVTO	0646.0	0648.0	III		1	39	143	
		IZMI	0646.7	0647.4	III	GG	2	60	175	
		CULG	0647.0	0648.0	III	G	1	57X	180	
		IZMI	0647.3	0648.0	III	GG	2	180	270X	
	0520 1730	BLEN	0647.3	0647.6	III	GG	2	180	370	
		CULG	0705.0	0720.0D	III	S,C	1	120	200	
		IZMI	0718.0U	0730.0U	III	N	2	160	270X	
		IZMI	0732.3	0739.1	I	GG,DC	2	125	270X	
		POTS	0800.7	0802.0	III	GG	3	40X	300	
		IZMI	0800.8	0801.7	III	GG,C	2	45	270X	
		LEAR	0801.0	0801.0	III		1	54	180	
		SVTO	0801.0	0801.0	III		1	41	148	
		SVTO	0822.0	0824.0	III		2	25	61	
		IZMI	0822.3	0823.8	CONT		1	25X	70	
		POTS	0822.4	0824.0	UNCLF		2	40X	60	
		BLEN	0909.7	0910.5	III	GG,C	1	190	800	
		BLEN	0924.7	0927.9	III	GG,S,C	3	100X	4000X	
		LEAR	0926.0	0926.0	III		1	72	180	
		SVTO	0926.0	0939.0	III	N	2	35	180	
		IZMI	0926.1	0927.8	III	GG,U	2	75	270X	
		POTS	0926.1	0927.8	III	G	3	60	500	
		IZMI	0933.7	0936.7	UNCLF		2	45	60	
	0455 1705	ONDR	0935.5	0938.4	DCIM	G	1	2000X	4500X	
		LEAR	0936.0	0938.0	III		1	41	180	
		ONDR	0936.0	0939.0	DCIM	G	1	800X	2000X	
		BLEN	0936.2	0942.0	III	GG,C,P	3	100X	4000X	
		IZMI	0936.2	0939.6	III	GG,C	2	25X	270X	
		POTS	0936.3	0939.8	III	GG	3	40X	400	
		BLEN	0955.0	0955.2	III	G,C	2	180	690	
		POTS	0955.0	0955.2	DCIM		2	220	600	
		IZMI	1005.0	1005.3	III	G	2	25X	205	
		SVTO	1005.0	1005.0	III		1	25	147	
		POTS	1005.1	1005.4	III	B	3	40X	250	

SOLAR RADIO EMISSION
Spectral Observations

APRIL 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
29			SVTO	1025.0	1258.0	CONT		1	25	180	
			ONDR	1032.4	1033.5	DCIM	G	2	800X	1058	
			IZMI	1048.7	1049.9	III	GG,C	2	40	270X	
			POTS	1048.7	1049.6	III	G	3	40X	300	
			POTS	1049.5	1049.9	V		2	40X	140	
			IZMI	1056.0	1056.7	III	G	2	55	215	
			IZMI	1057.1	1058.8	III	GG,FS	2	25X	270X	
			POTS	1057.2	1058.7	III	G	3	40X	450	
			IZMI	1131.3	1134.3	I	GG,DC	2	195	270	
			POTS	1156.4	1159.5	III	G,RS	2	40X	160	
			IZMI	1156.5	1157.5	III	G,FS	2	25X	155	
			IZMI	1157.8	1158.1	UNCLF	HARM	2	45	150	
			SVTO	1201.0	1214.0	II		1	44	152	ESS 0395
			POTS	1201.3	1216	II		3	40X	160	
			SGMR	1211.0	1212.0	II		2	47U	67U	
			POTS	1255.5	1255.7	III	B	2	40X	130	
			SVTO	1352.0	1411.0	III	N	1	28U	175U	
			POTS	1352.7	1354.3	III	G	3	40X	300	
			HOLL	1353.0	1354.0	III		1	25	148	
			HOLL	1404.0	1405.0	III		1	25	132	
			SGMR	1404.0	1405.0	III		1	30	60	
			POTS	1405.7	1406.1	III	G	2	40X	140	
			POTS	1435 U	1803 U	I	S,N	2	200U	300	
			HOLL	2006.0	2007.0	III		1	25	123	
	2040	2400	CULG	2139.0	2139.0	III	B	1	100	150	
			CULG	2251.0	2257.0	III	G	1	60	160	
			CULG	2347.0	2351.0	III	G	1	57X	140	
30	0045	0317	HIRA								
	0000	0720	CULG	0141.0	0142.0	III	G	1	57X	160	
			CULG	0145.0	0146.0	III	G	1	57X	100	
			CULG	0302.0	0302.0	III	G	1	75	240	
	0355	1820	POTS	0430 U	1035 U	I	N,S,DC	1	200U	360	
			CULG	0546.0	0549.0	III	G	1	57X	180	
			LEAR	0546.0	0548.0	III		1	54	180	
			SVTO	0546.0	0548.0	III		1	37	138	
			POTS	0546.2	0548.8	III	G	2	120	170U	
	0550	1200	IZMI	0550.0E	1200.0D	I	N	1	180	270X	
	0602	0925	HIRA	0647.0	0652.0	III	G	1	110	420	
			IZMI	0647.5	0651.8	III	GG	2	120	270X	
			POTS	0647.5	0653.2	III	GG,RS	3	120	500	
	0515	1740	BLEN	0647.5	0651.9	III	GG,S,C	2	100X	4000X	
			CULG	0648.0	0652.0	III	G	1	57X	400	
			LEAR	0648.0	0652.0	III		1	70	180	
			SVTO	0648.0	0651.0	III		1	116U	153U	
			POTS	0907.7	0910.8	III	GG	2	40X	150	
			IZMI	0908.5	0909.8	III	G	1	45	160	
			POTS	1035 U	1806 U	I	N,S,DC	2	120	360	
			IZMI	1043.8	1044.5	I	GG,DC	2	170	210	
			SVTO	1056.0	1056.0	III		1	25	55	
			IZMI	1056.4	1056.5	III	B	1	45	90	
			POTS	1056.4	1056.6	III	B	1	40X	70	
			SGMR	1230.0	1231.0	III		2	30	80	
			SVTO	1230.0	1231.0	III		2	25	180	
			POTS	1230.2	1232.3	III	G	3	40X	700	
			BLEN	1230.3	1230.7	III	C	2	100X	800	
			HOLL	1349.0	1412.0	III	N	1	25	86	
			SVTO	1349.0	1349.0	III		1	25	53	
			SVTO	1403.0	1404.0	III		1	25	140	
			POTS	1403.6	1403.8	III	B	1	40X	150	
	0453	1706	ONDR	1411.0	1411.3	DCIM		1	2000X	3191	
			ONDR	1411.1	1411.3	DCIM		1	1508	2000X	
			BLEN	1515.9	1630.0	I	DC	2	140	470	
			HOLL	1558.0	1608.0	III		1	25	85	
			SGMR	1559.0	1608.0	III		1	30	50	
			SVTO	1559.0	1608.0	III		1	25	153	
			POTS	1600.1	1602.1	III	GG	1	120	600	
			HOLL	1950.0	1953.0	III		1	25	90	
			PALE	1950.0	1952.0	III		1	25	86	

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

APRIL 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	FREQUENCY Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
30		SGMR	1951.0	1952.0	III		1	30	47	
		LEAR	2359.0	2359.0	III		1	25	81	
1944	2400	HIRA	2359.0	2359.5	III	B	1	25X	80	
2040	2400	CULG	2359.0	2359.0	III	B	1	57X	140	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

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

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

APRIL 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/04/02	+0.26	-0.14	III	8H25 E	15H25 D
03/04/02	-0.28	+0.12	I	12H42	15H24 D
06/04/02	-0.85	+0.67	I	10H50	15H23 D
07/04/02	-0.67	+0.64	I	8H23 E	15H23 D
09/04/02	-0.62	+0.60	I	8H22 E	15H22 D
09/04/02	-0.03	-0.31	I	8H22 E	15H22 D
09/04/02	+0.03	-0.48	I	8H22 E	15H22 D
10/04/02	-0.54	+0.50	I	8H25 E	15H22 D
11/04/02	-0.05	+0.57	I	8H37 E	15H22 D
11/04/02	+0.14	-0.37	I	8H37 E	15H22 D
12/04/02	+0.17	+0.48	II	8H22 E	15H22 D
14/04/02	-0.19	-0.05	I	8H21 E	15H21 D
14/04/02	+0.91	+0.96	I	8H21 E	15H21 D
15/04/02	+0.26	-0.03	IV	8H21 E	15H21 D
16/04/02	+0.59	-0.28	IV	8H21 E	15H21 D
17/04/02	+0.53	+0.02	IV	8H20 E	15H20 D
18/04/02	+1.24	-0.14	III	8H20 E	15H20 D
19/04/02	+1.53	-0.09	II	8H20 E	15H20 D
20/04/02	+1.61	-0.03	II	8H20 E	15H20 D
22/04/02	-1.05	-0.28	I	8H18 E	15H18 D
23/04/02	-0.93	-0.23	II	8H53 E	15H23 D
24/04/02	-0.73	-0.20	III	8H35 E	15H19 D
25/04/02	-0.43	-0.25	I	8H19 E	15H19 D
25/04/02	-0.25	+0.28	II	8H19 E	15H19 D
25/04/02	+0.23	+0.25	I	8H19 E	15H19 D
26/04/02	+0.05	+0.20	III	8H28 E	15H19 D
26/04/02	+0.28	+0.29	III	8H28 E	15H19 D
27/04/02	+0.51	+0.20	IV	8H18 E	15H19 D
28/04/02	+0.68	+0.38	I	8H18 E	15H19 D
29/04/02	+0.05	+0.20	II	9H48	15H19 D
29/04/02	+0.93	+0.28	I	8H18 E	15H19 D
29/04/02	+0.96	+0.05	I	8H18 E	15H19 D
30/04/02	+1.16	+0.00	I	8H18 E	15H19 D

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

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

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

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

APRIL 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/04/02	-0.74	+0.09	I	8H25 E	15H25 D
01/04/02	-0.67	+0.26	I	8H25 E	15H25 D
01/04/02	-0.05	+0.11	I	13H19	15H25 D
01/04/02	+0.06	+0.34	I	8H25 E	15H25 D
01/04/02	+0.31	-0.17	I	8H25 E	15H25 D
02/04/02	-0.51	+0.12	II	9H11 E	15H25 D
02/04/02	-0.43	-0.16	II	9H11 E	15H25 D
02/04/02	+0.39	+0.50	II	9H11 E	15H25 D
03/04/02	-0.23	+0.12	II	8H24 E	15H24 D
03/04/02	-0.17	-0.20	III	8H24 E	15H24 D
03/04/02	+0.70	+0.33	III	8H24 E	15H24 D
04/04/02	+0.02	+0.26	I	8H24 E	15H24 D
04/04/02	+0.36	+0.20	I	8H24 E	15H24 D
04/04/02	+0.85	+0.43	II	8H24 E	15H24 D
05/04/02	+0.26	+0.16	I	8H23 E	15H23 D
05/04/02	+0.62	+0.16	I	8H23 E	15H23 D
05/04/02	+1.13	+0.29	I	8H23 E	15H23 D
06/04/02	+0.88	+0.19	II	8H23 E	15H23 D
07/04/02	-0.91	+0.45	I	8H23 E	15H23 D
07/04/02	+1.05	+0.11	I	8H23 E	15H23 D
08/04/02	-0.82	+0.51	I	8H23 E	15H23 D
08/04/02	+1.16	+0.09	I	8H23 E	15H23 D
09/04/02	-0.59	+0.36	I	8H22 E	15H22 D
09/04/02	-0.56	+0.54	I	8H22 E	15H22 D
09/04/02	+0.03	-0.20	I	8H22 E	15H22 D
10/04/02	-0.43	+0.39	III	8H25 E	15H22 D
11/04/02	-0.06	+0.50	I	8H37 E	15H22 D
11/04/02	+0.12	-0.34	I	8H37 E	15H22 D
12/04/02	-1.15	-0.06	I	8H22 E	15H22 D
12/04/02	+0.08	+0.42	I	8H22 E	15H22 D
13/04/02	+0.37	+0.37	I	8H21 E	15H21 D
13/04/02	+0.64	+0.54	I	11H00	15H21 D
14/04/02	+0.02	+0.17	I	8H21 E	15H21 D

14/04/02	+0.90	-0.47	I	8H21 E	15H21 D
14/04/02	+1.05	+0.78	I	8H21 E	10H45
15/04/02	+0.36	-0.11	IV	8H21 E	15H21 D
16/04/02	+0.57	-0.25	III	8H21 E	15H21 D
17/04/02	-0.37	-0.28	I	13H28	15H20 D
17/04/02	+0.51	+0.19	III	11H40	15H20 D
17/04/02	+0.53	-0.05	IV	8H20 E	15H20 D
17/04/02	+0.90	-0.23	I	12H16	15H20 D
18/04/02	-0.14	-0.33	I	8H20 E	15H20 D
18/04/02	+0.96	-0.33	I	12H58	15H20 D
18/04/02	+1.19	-0.11	III	8H20 E	12H10
19/04/02	+0.12	-0.34	I	8H20 E	15H20 D
19/04/02	+1.12	-0.31	II	8H20 E	15H20 D
19/04/02	+1.27	-0.12	II	9H54	15H20 D
20/04/02	-0.23	+0.14	I	8H20 E	14H42
20/04/02	+1.46	-0.08	I	8H20 E	14H50
22/04/02	-1.04	-0.25	I	8H18 E	15H18 D
22/04/02	-0.68	+0.17	II	8H18 E	15H18 D
23/04/02	-0.90	-0.23	II	8H53 E	15H23 D
23/04/02	-0.53	+0.17	I	8H53 E	15H23 D
24/04/02	-0.71	-0.23	III	8H35 E	15H19 D
25/04/02	+0.17	+0.14	II	8H19 E	15H19 D
26/04/02	+0.74	+0.33	II	8H28 E	15H19 D
26/04/02	+0.84	+0.11	II	8H28 E	15H19 D
27/04/02	+0.64	+0.19	III	8H18 E	15H19 D
28/04/02	+0.73	+0.34	II	8H18 E	15H19 D
28/04/02	+0.84	+0.11	II	8H18 E	15H19 D
29/04/02	+0.09	+0.16	II	9H44	15H19 D
29/04/02	+0.95	+0.29	II	8H18 E	15H19 D
29/04/02	+0.98	+0.03	I	8H18 E	15H19 D
30/04/02	+1.02	+0.17	I	8H18 E	15H19 D
30/04/02	+1.15	+0.03	I	8H18 E	15H19 D

NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst

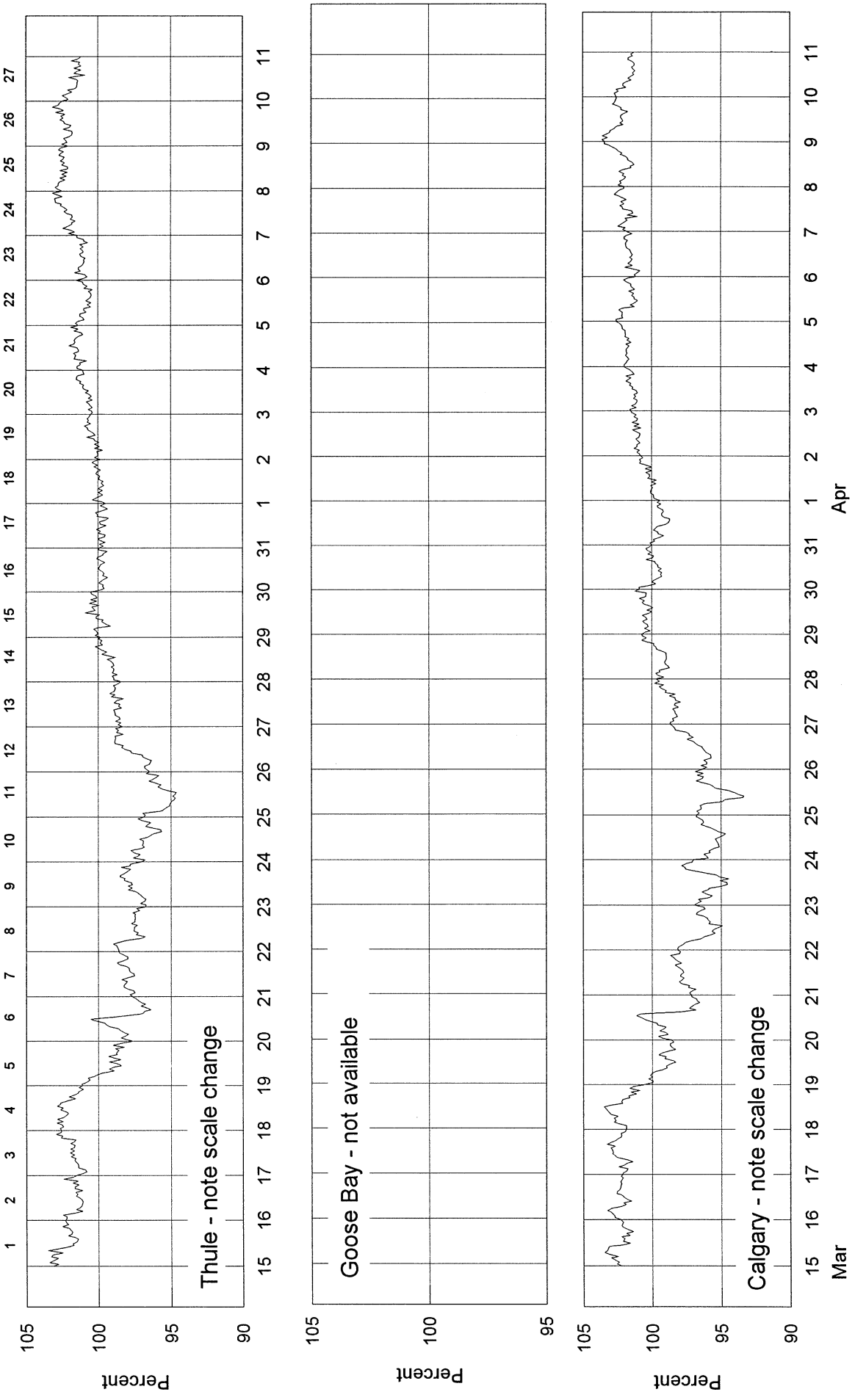
*** Importance not well determined due to the proximity off the very strong other source

COSMIC RAY INDICES
(Neutron Monitor)
April 2002

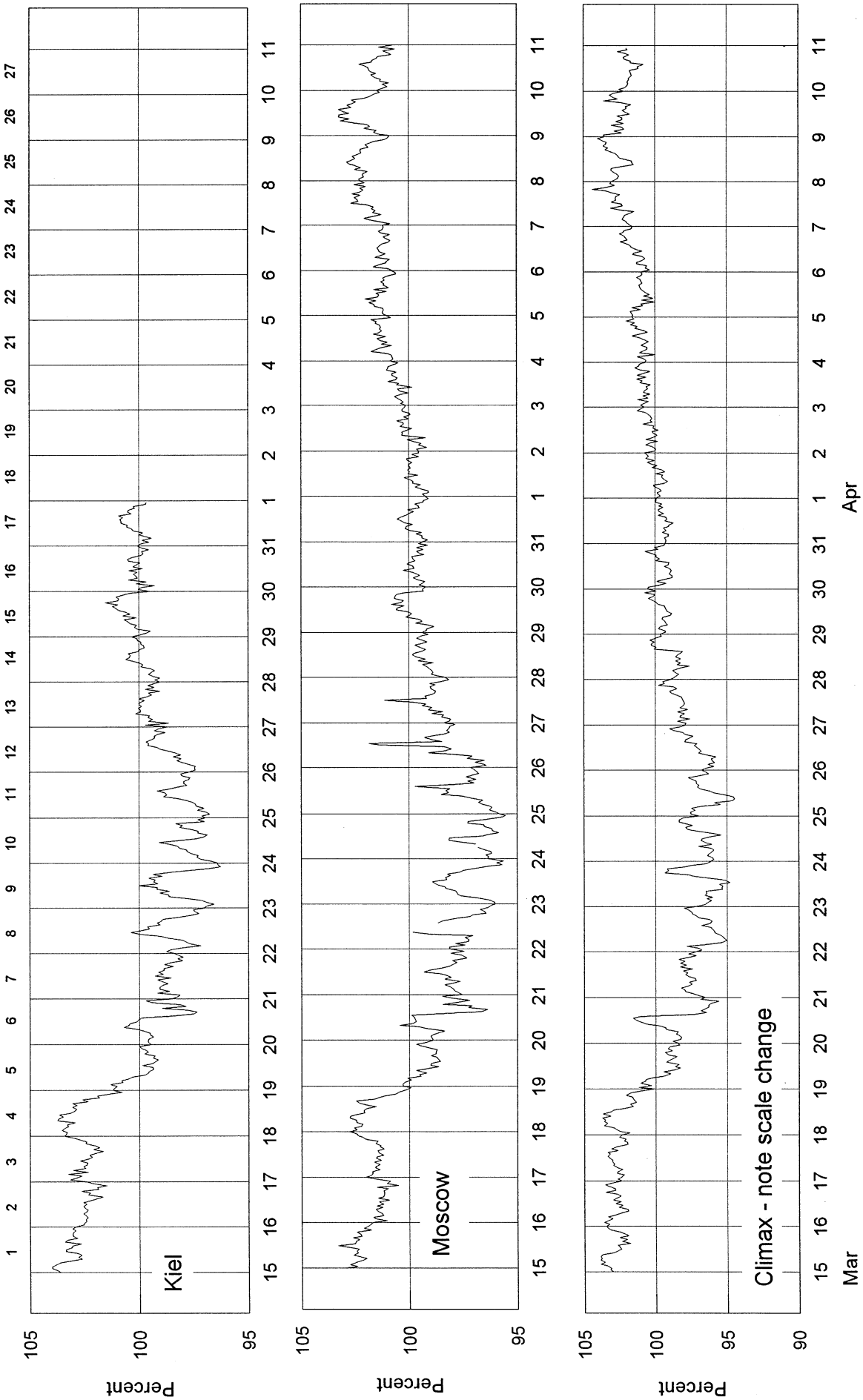
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4003.4	not	3515.7	not	8402.2	3711.9	1930.3	3437.7
2	4018.7	available	3547.7	available	8423.7	3729.2	1932.7	3439.5
3	4038.6		3559.8		8469.5	3747.4	1936.7	3463.3
4	4063.2		3576.2		8528.7	3753.4	1937.3	3476.0
5	4040.9		3570.8		8531.8	3753.9	1940.4	3479.1
6	4050.2		3565.5		8524.0	3771.7	1948.4	3476.7
7	4094.9		3581.7		8588.0	3811.8	1969.7	3480.5
8	4105.7		3585.5		8607.2	3821.8	1981.5	3482.1
9	4098.9		3602.5		8618.8	3811.5	1980.0	3495.0
10	4072.0		3572.7		8546.1	3785.3	1975.5	3492.2
11	4055.3		3561.5		8504.0	3763.8	1966.5	3498.5
12	4016.8		3534.7		8439.3	3732.3	1961.3	3484.5
13	4054.4		3552.5		8531.8	3776.5	1964.8	3507.8
14	4099.3		3570.2		8566.7	3791.2	1961.3	3512.7
15	4066.5		3578.3		8543.0	3804.2	1957.8	3506.9
16	4077.0		3591.8		8554.2	3817.2	1966.8	3511.0
17	4043.4		3541.2		8504.9	3753.8	1961.9	3478.8
18	3949.0		3435.2		8270.1	3669.2	1935.5	3454.8
19	3960.6		3458.3		8321.2	3657.9	1929.1	3433.0
20	3920.8		3432.3		8202.7	3654.2	1920.7	3443.6
21	3958.1		3461.7		8295.8	3680.3	1922.5	3450.4
22	3969.6		3463.0		8317.9	3686.8	1928.1	3455.3
23	3969.0		3466.7		8293.1	3673.8	1946.4	3450.4
24	3925.3		3444.8		8261.9	3632.4	1924.5	3430.2
25	3945.0		3458.0		8292.5	3642.0	1923.8	3439.9
26	3970.5		3454.0		8303.0	3660.6	1922.6	3450.3
27	3979.1		3478.0		8316.4	3708.2	1926.1	3461.2
28	4005.5		3527.2		8402.2	3746.1	1937.8	3479.3
29	4018.1		3544.2		8422.3	3732.6	1941.9	3466.8
30	4023.1		3535.0		8420.3	3718.6	1939.0	3459.2
31								
Mean	4019.0		3525.5		8433.5	3733.3	1945.7	3469.9

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

COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2302 - Beginning 15 Mar 2002



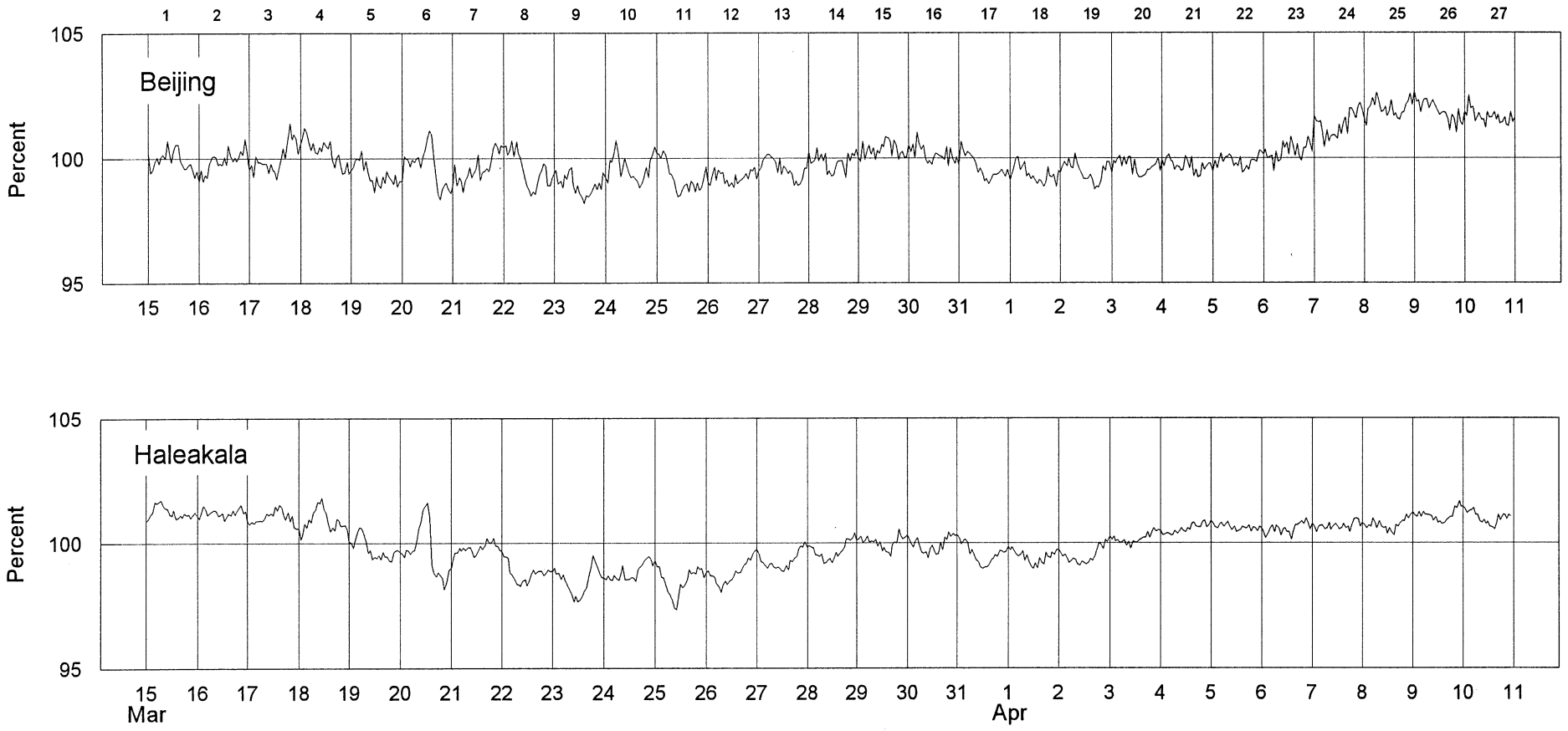
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2302 - Beginning 15 Mar 2002



COSMIC RAY INDICES

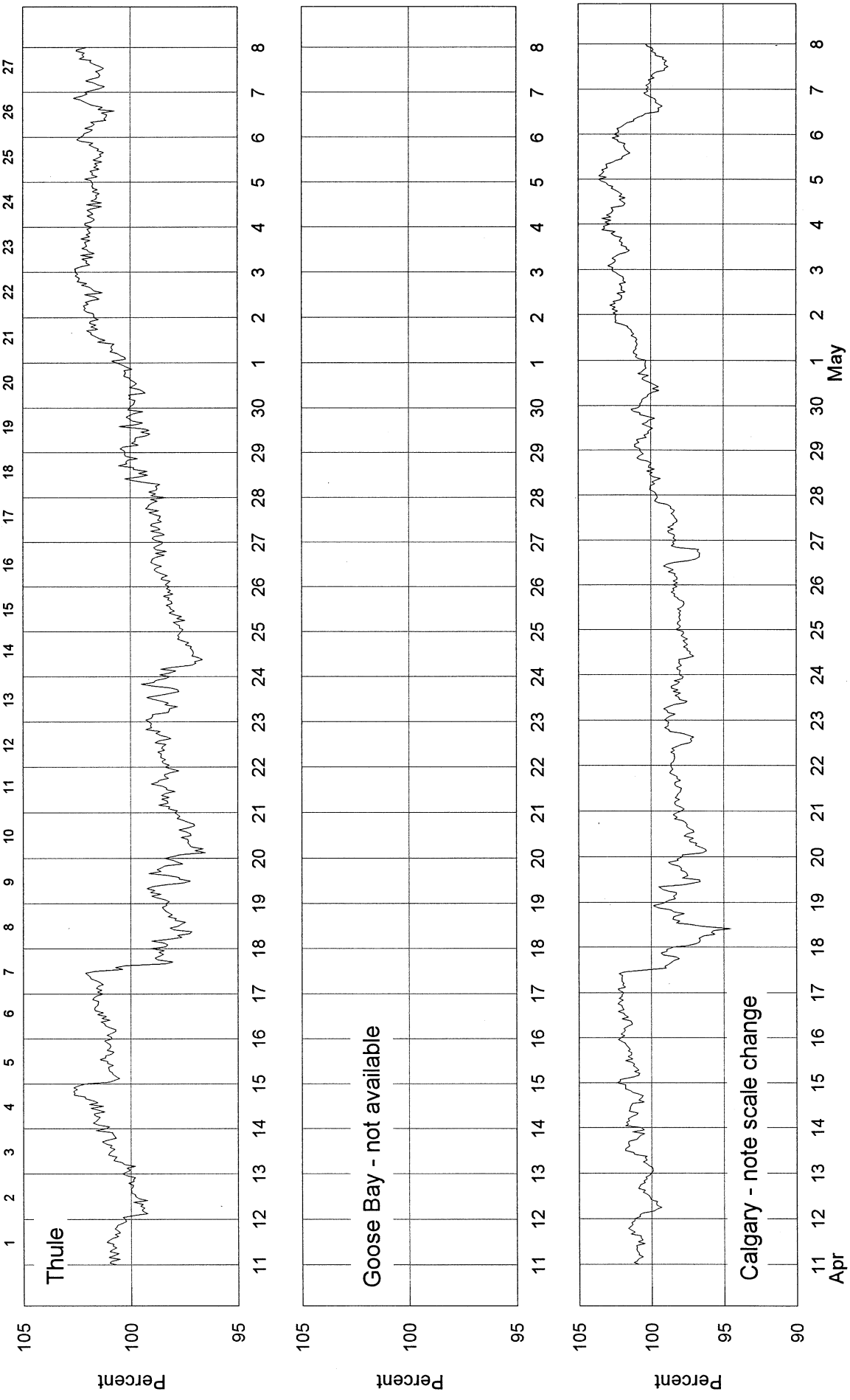
(Neutron Monitor)

Bartels Rotation 2302 - Beginning 15 Mar 2002

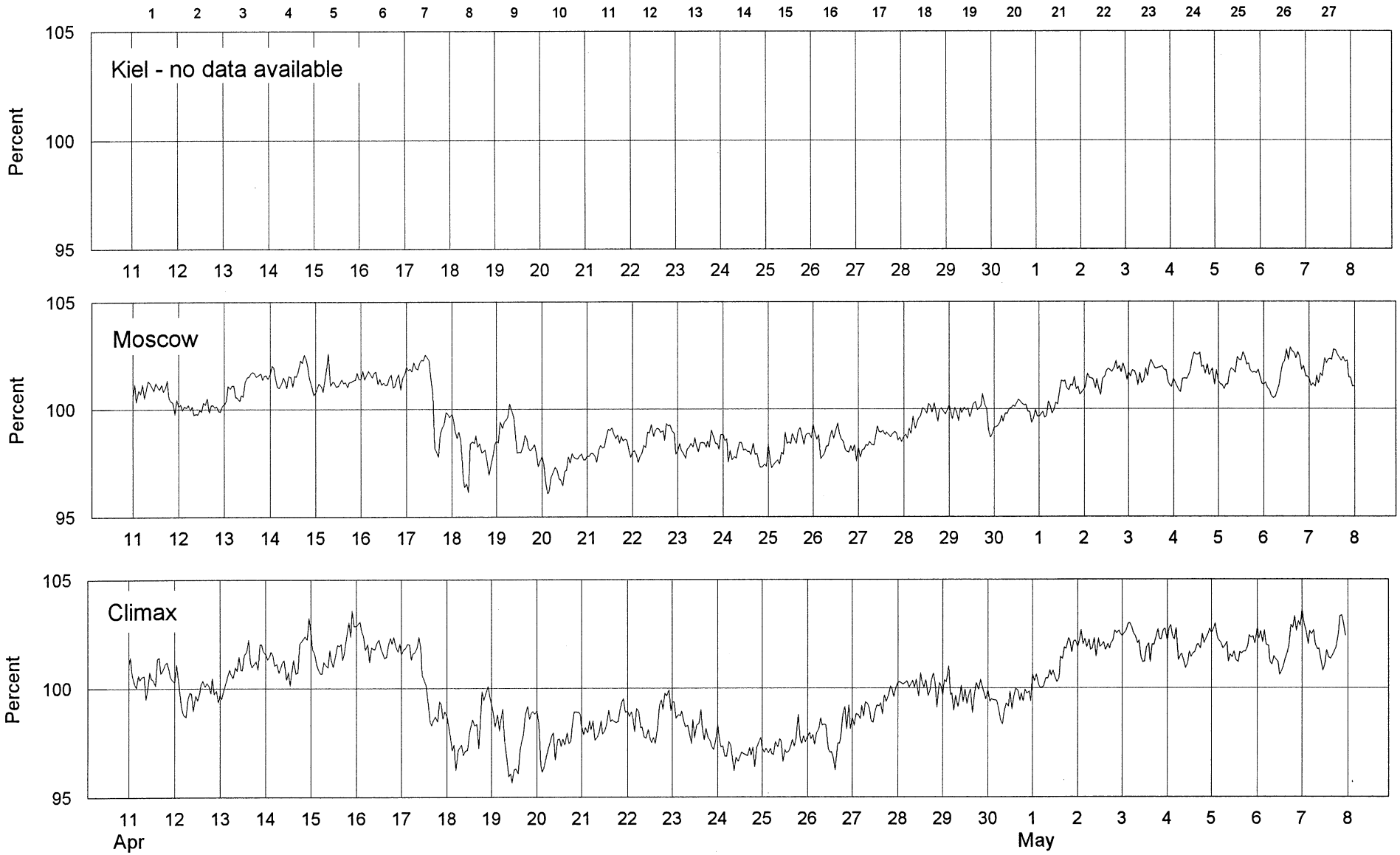


153
Apr 02

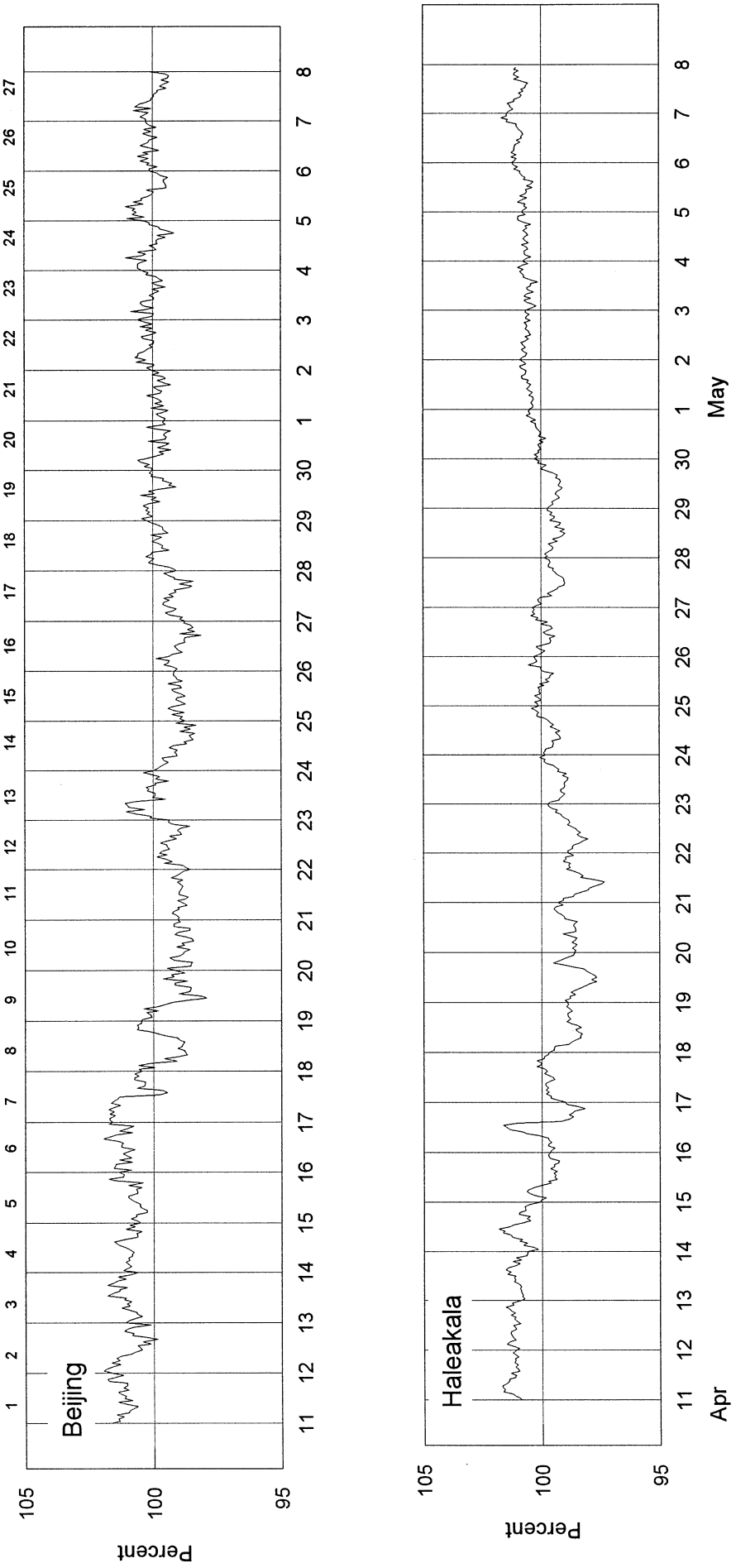
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002



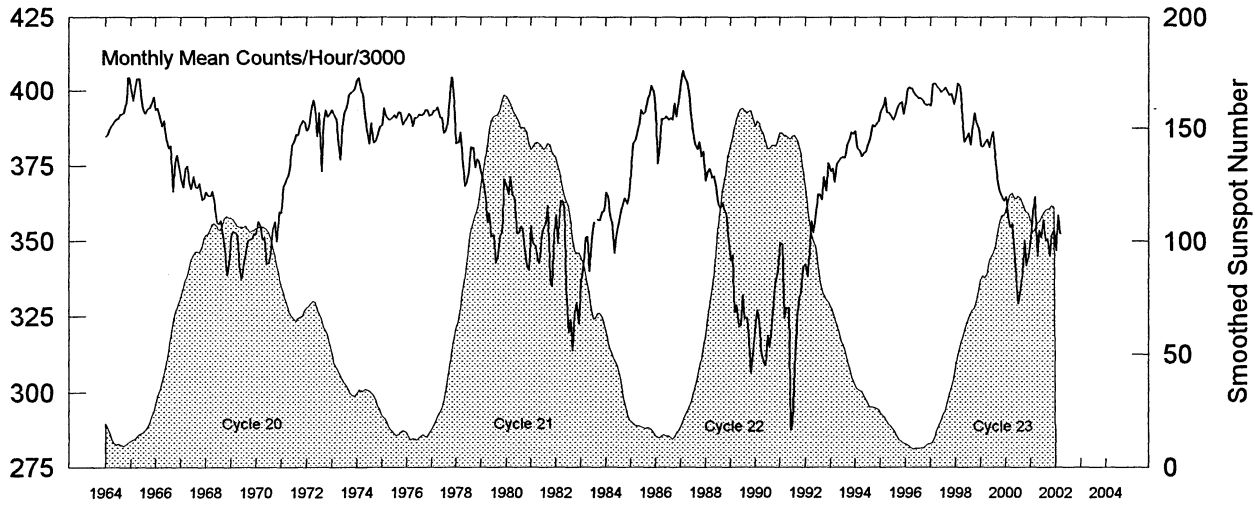
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Apr 2002



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

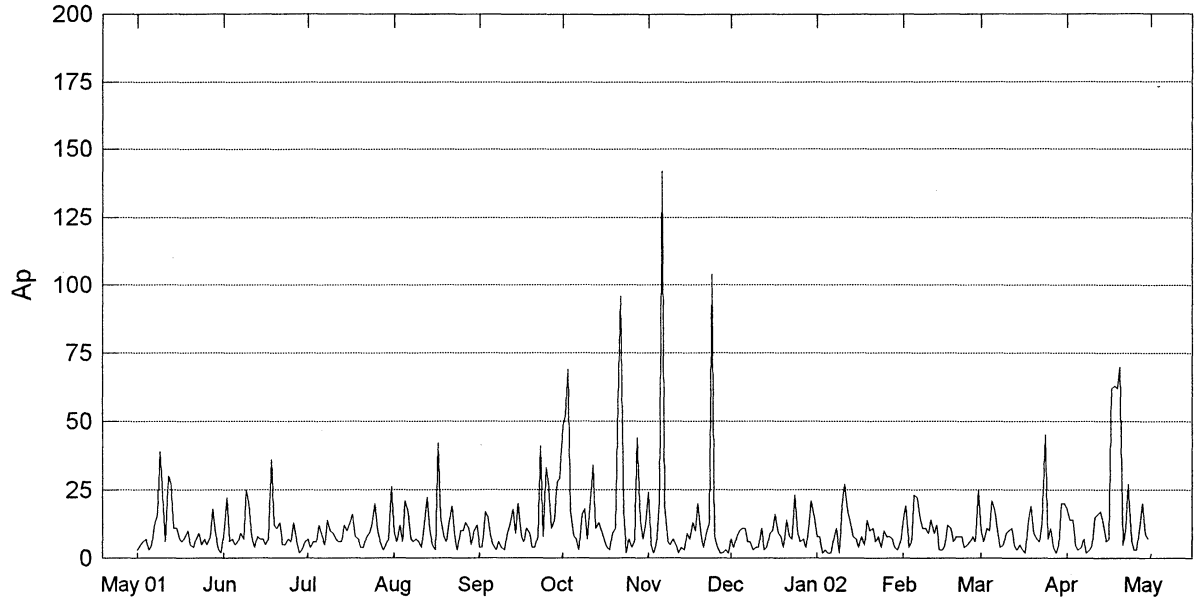
Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

Geomagnetic Activity Indices
April 2002

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		3+	4-	4+	3+	4-	3	3	1+	26-	18	1.0	3-	3o	4o	3-	3o	3-	3-	2-	28	35	25	34	26	
2		2	4	4+	4-	2	1+	2	1+	21-	14	0.8	2o	4-	4o	3o	2o	1+	2-	2-	24	27	23	37	13	
3		3+	4	4-	3	2	2	2+	2	22+	14	0.8	3-	3+	3o	3-	2-	2-	2o	2o	21	30	17	35	13	
4	Q7	2-	2	2-	2-	2	1-	1-	1-	11	5	0.2	2-	2-	2o	2+	2o	1o	1-	1-	11	13	15	16	12	C
5	Q4	1	1+	0+	0+	1	0+	1+	0+	6	3	0.1	1-	1+	0+	0o	1o	0o	1o	0+	4	6	5	7	5	CC
6	Q6	1	1+	0+	1	1	1	1	1	8-	4	0.1	1o	1o	0+	1+	1+	1o	1o	1o	6	6	9	7	8	CC
7		2-	1+	2	2+	3	2+	1-	1-	14	7	0.4	1+	1+	2+	2o	3-	2o	1-	0+	12	20	11	15	17	K
8	Q1	0	0	1-	1-	1-	0+	1-	0+	3+	2	0.0	0o	0o	1-	1-	0+	0+	1-	0o	2	4	3	4	3	CK
9	Q2	1-	1	1	0+	1	1-	0+	1-	6-	3	0.1	1o	1-	1o	0+	1-	0+	0o	1-	4	8	4	6	6	CC
10	Q9	0	1-	1	1+	3-	2+	1+	1+	11-	5	0.2	0o	0+	1-	1+	2-	2o	1+	1+	8	11	7	5	13	C
11		2+	1+	3+	4	3+	3+	2+	3+	23+	15	0.9	2o	1+	3-	3o	3o	3-	2o	3o	22	40	16	31	25	
12		4+	3-	2+	3-	4-	3-	3-	3	24	16	0.9	4-	2o	2+	2+	3o	2+	2+	3o	24	36	22	29	29	
13		3	3+	3-	3+	3+	4-	3	3+	26-	17	0.9	3-	3o	3-	4-	3+	3+	3o	3o	32	38	21	28	31	
14		3+	3+	1	1	4+	4-	1+	0+	18+	13	0.8	3o	3o	2-	2o	4+	3o	1o	0+	25	26	25	17	33	
15	Q10	2	1	0+	0+	2-	2	2	2+	12-	6	0.2	2-	2-	1-	1+	1+	2-	2-	2+	11	14	10	9	15	C
16		2	3-	3-	1-	1+	1-	2-	1+	13	7	0.3	2-	2+	2+	1o	1o	1-	2-	2o	12	16	8	15	10	C
17	D3	3	3	3-	6	7-	7+	6+	3	38	62	1.7	3-	3-	3-	5o	5o	6-	5o	3-	64	97	64	46	116	
18	D2	7	7-	6-	6-	4+	5-	4	4+	42+	63	1.7	6-	5+	5o	5-	4-	4o	3+	4o	76	69	76	89	56	
19	D4	4-	4-	4+	6	6	6+	7-	5+	42	62	1.7	4-	3+	4-	5o	5o	5o	6-	5o	81	87	78	60	105	
20	D1	7	7+	6-	4+	5	6	5-	3-	43-	70	1.8	6o	6+	6-	4+	4-	4+	4o	2+	88	79	69	95	54	
21	Q8	2+	2-	1	1-	1	1-	1+	2+	11	5	0.2	2o	1+	1o	1o	1+	1o	1o	2o	10	10	8	9	9	C
22		3-	4	2-	2-	2+	3	2	1	18+	11	0.6	3-	3o	1+	2o	2-	3-	2-	1o	17	20	18	18	20	
23	D5	1	5-	6	3+	3+	4+	2+	3+	28+	27	1.2	1-	5-	5o	3o	3o	4-	2+	3o	42	44	43	56	31	
24		3+	2-	1+	2-	1+	2	1+	2	15-	7	0.4	3o	2-	1o	2o	2-	2o	2-	2-	14	15	13	15	13	
25	Q5	2	1-	0	0+	1-	1-	1	0	5+	3	0.0	1+	1-	0o	0+	0+	0+	1o	0o	3	5	5	7	4	CC
26	Q3	1-	0+	0+	0+	0+	1	1+	1+	6-	3	0.1	0+	0+	1-	0+	0+	1-	1o	1+	5	7	7	5	9	CC
27		1+	1+	1	2+	3	3-	3+	3	18	10	0.6	1+	1+	1+	2+	2+	2+	3-	3-	17	21	15	12	24	
28		4-	5-	4	3+	3+	3+	2+	2	27-	20	1.0	3+	4o	4-	4-	3o	3-	2+	2+	34	46	39	56	29	
29		2	1	1+	3-	3	3-	2	2+	17	9	0.5	1+	1o	2-	3-	3-	3-	2+	2+	16	24	17	14	26	
30		2	2	1+	2	3-	2	2-	0+	14	7	0.3	2o	2o	2-	2o	3-	2-	1+	0+	13	15	13	13	15	
Mean											17	0.65									24.2	29.1	22.9	26.0	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	3-	3+	4-	3-	3o	3-	3-	2-	27	3-	3o	4+	3-	3-	3-	3o	1+	29	206.7	116	130	161	
2	2o	3+	4-	3o	2+	2-	2-	2-	23	2o	4o	4o	3o	2-	1o	2-	1+	25	205.9	130	124	160	
3	3-	3+	3o	3o	2o	2o	2+	2o	23	3-	4-	3-	3-	1+	1+	2-	2-	20	209.4	126	128	164	
4	2-	2o	2o	2+	2+	1+	1o	1o	13	2-	2-	2o	2+	2-	1o	1-	1-	10	216.3	127	117	172	
5	0+	1+	0o	0o	1-	0+	1+	1o	4	1o	1+	0+	0o	1+	0o	1-	0o	4	217.6	127	130	173	
6	1o	1+	0o	1+	1+	1+	1+	1o	7	1o	1o	0+	1-	1o	0+	1-	1o	5	206.7	136	140	161	
7	1+	1+	2+	2o	3o	2+	1o	1-	14	2-	1+	2o	2-	2o	1+	0o	0+	10	208.4	138	147	163	
8	0o	0o	1-	0+	1-	0+	1o	0+	3	0o	0o	1-	1-	0o	0o	1-	0o	2	206.8	134	149	161	
9	1o	1-	1o	0+	1+	1-	0o	1o	5	1-	1-	1-	0o	0o	0o	0o	1-	2	205.8	139	152	160	
10	0o	0+	1-	2-	2+	3-	2-	2-	10	0o	0+	1-	1-	1o	1+	1+	1+	6	195.1	142	152	149	
11	2o	1+	3o	3+	3+	3o	2+	4-	27	2o	1+	2+	3-	3-	2+	2-	3-	18	198.3	152	163	152	
12	4o	2o	3-	3-	3+	3-	3-	3o	28	3+	2o	2o	2+	3-	2-	2o	3-	20	213.0	162	162	168	
13	3-	3-	2+	4-	3+	4-	3o	3o	32	3-	3+	3o	4-	3o	3-	3o	3o	32	227.3	144	159	183	
14	3o	3o	1+	1+	5-	3o	1+	1o	25	3+	3+	2-	3-	4o	3-	1-	0o	24	211.6	150	152	167	
15	2-	1+	1o	1-	2-	2o	2o	2+	12	1+	2o	1-	1+	1+	1+	1+	2o	10	204.7	138	139	159	
16	2-	2+	3-	1o	1+	1+	1+	2-	12	2-	2+	2+	1-	0+	0+	2+	2+	12	197.2	113	117	151	
17	3-	3-	3-	5o	5-	6o	5+	3o	69	3-	3-	3o	5-	5o	5+	5o	3-	59	195.0	94	106	149	
18	6-	6-	5o	5-	4-	4o	3+	4o	79	5+	5o	5o	5-	4o	4o	3+	4+	74	189.8	106	116	143	
19	4-	3+	4o	5+	5+	5o	6-	5o	81	4-	3o	4-	5o	5o	5o	6-	5+	81	181.4	104	111	134	
20	6o	6+	6-	5-	4-	5-	4o	2+	95	6o	6o	5o	4+	3+	4+	4o	2+	82	179.0	102	104	131	
21	2o	1+	1+	1+	1+	1o	1+	2+	11	2+	1+	1o	1-	1+	1-	1o	2-	9	175.1	95	99	127	
22	2+	3+	2-	2o	2o	3o	2o	1o	19	3-	3o	1+	2-	1+	2+	2-	1o	15	171.7	93	102	123	
23	0+	4+	5+	3o	3o	4o	2+	3o	42	1o	5-	5o	3+	3o	4-	2o	3o	42	177.2	114	125	129	
24	3-	2-	1o	2-	2+	2o	2-	2-	14	3+	2-	1+	2o	1+	2-	1+	1+	14	178.9	150	162	131	
25	2-	1-	0o	0o	1-	1-	1+	0o	4	1o	0+	0o	1-	0o	0o	0+	0o	2	169.3	147	146	121	
26	0+	0o	0+	0+	1-	1+	1+	2-	5	1-	1-	1-	0o	0o	0+	0+	1+	3	164.7	101	110	116	
27	2-	1+	1o	2+	3-	3-	3o	3o	19	1+	1+	1+	2o	2+	2-	3-	2+	14	159.0	88	88	110	
28	3+	4o	4-	4-	3o	3o	3-	3-	36	3o	4+	4-	4-	3o	2+	2o	2-	32	149.2	71	77	99	
29	2-	1o	1+	3-	3o	3o	2+	2+	18	1o	1o	2-	2+	2o	2o	3-	2o	14	155.2	87	79	106	
30	2+	2o	2-	2o	3o	2+	2-	1-	15	2-	2-	2-	2o	2+	1+	1-	0o	10	155.6	85	89	106	
Mean									25.7									22.7	191.1	120.4	125.8	144.4	

Daily Average Indices Ap
May 2001 -Apr 2002

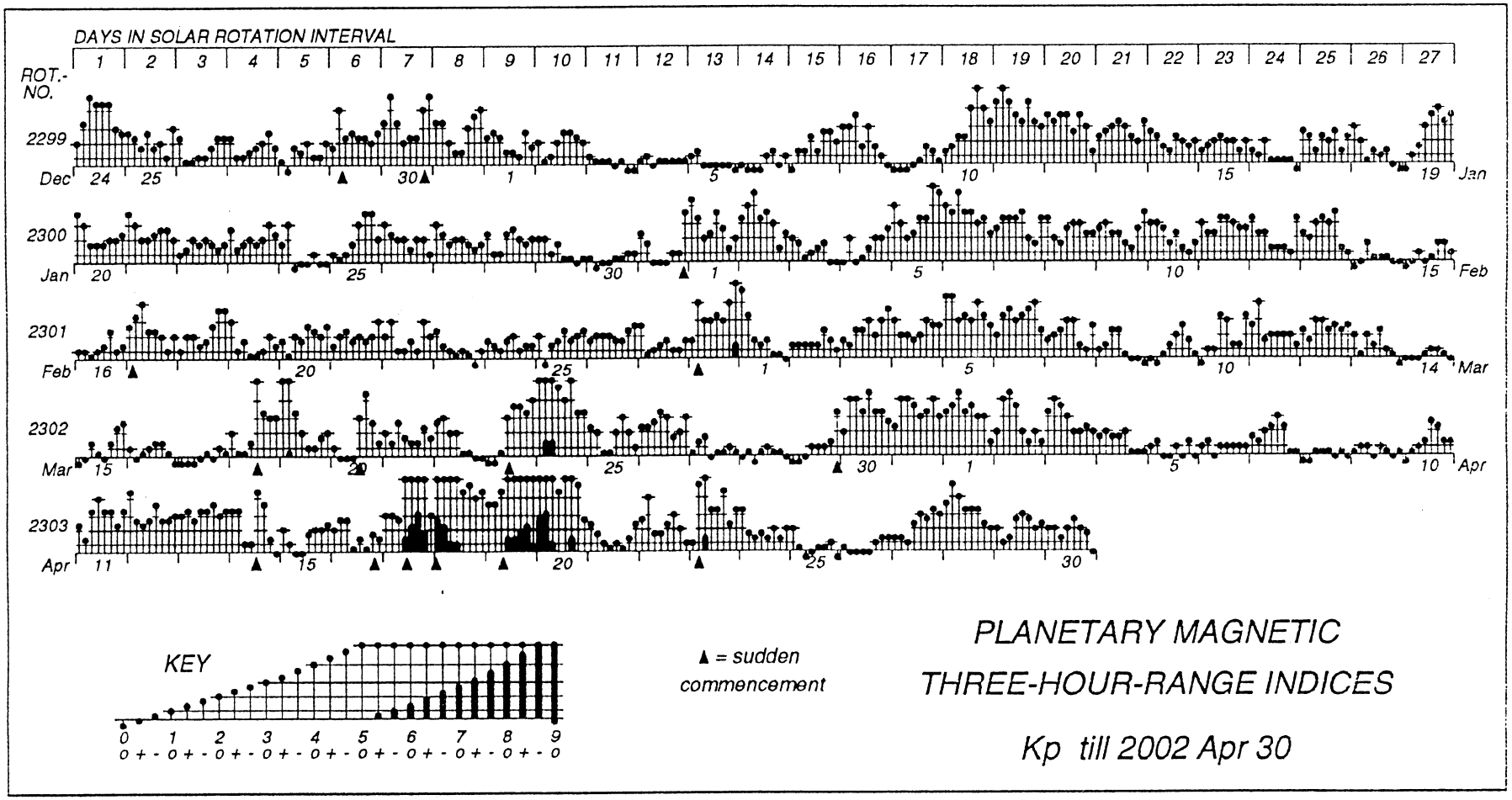


Day	May 01	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr
1	3	9	7	9	4	48	24	7	8	14	10	18
2	5	22	4	6	4	52	5	4	8	19	6	14
3	6	6	6	12	17	69	2	8	2	4	11	14
4	7	7	6	6	15	17	5	10	3	6	10	5
5	3	5	12	21	8	8	21	11	2	23	21	3
6	5	6	8	17	5	7	142	11	2	22	17	4
7	12	9	5	7	3	3	19	6	7	15	9	7
8	16	7	14	6	6	16	6	6	11	11	4	2
9	39	25	10	7	4	18	5	3	2	11	5	3
10	23	20	9	6	3	7	7	4	19	9	9	5
11	6	8	7	4	9	21	5	4	27	14	10	15
12	30	4	6	12	12	34	2	11	17	9	11	16
13	27	8	6	22	18	11	4	3	13	12	5	17
14	11	7	12	10	9	13	3	4	8	3	3	13
15	11	7	10	5	20	10	9	9	7	3	5	6
16	7	5	13	3	8	7	7	10	4	5	3	7
17	6	7	16	42	6	4	13	16	8	12	2	62
18	8	36	8	15	11	3	10	9	5	11	14	63
19	10	12	7	8	9	9	20	8	14	6	19	62
20	5	11	4	6	4	11	8	4	10	8	9	70
21	4	13	4	13	4	57	4	14	11	8	7	5
22	7	5	8	19	8	96	9	8	6	8	6	11
23	9	5	9	8	41	17	13	7	8	4	13	27
24	5	7	12	3	8	2	104	23	4	5	45	7
25	7	6	20	10	33	7	8	9	10	6	7	3
26	5	13	10	10	26	4	4	6	8	8	11	3
27	8	6	6	13	11	6	2	7	8	6	4	10
28	18	2	3	11	14	44	2	4	7	25	2	20
29	9	3	5	5	28	14	3	11	4		5	9
30	3	6	7	10	29	7	2	21	3		20	7
31	2		26	12		12		15	6		20	
Mean	10	10	9	11	13	20	16	9	8	10	10	17

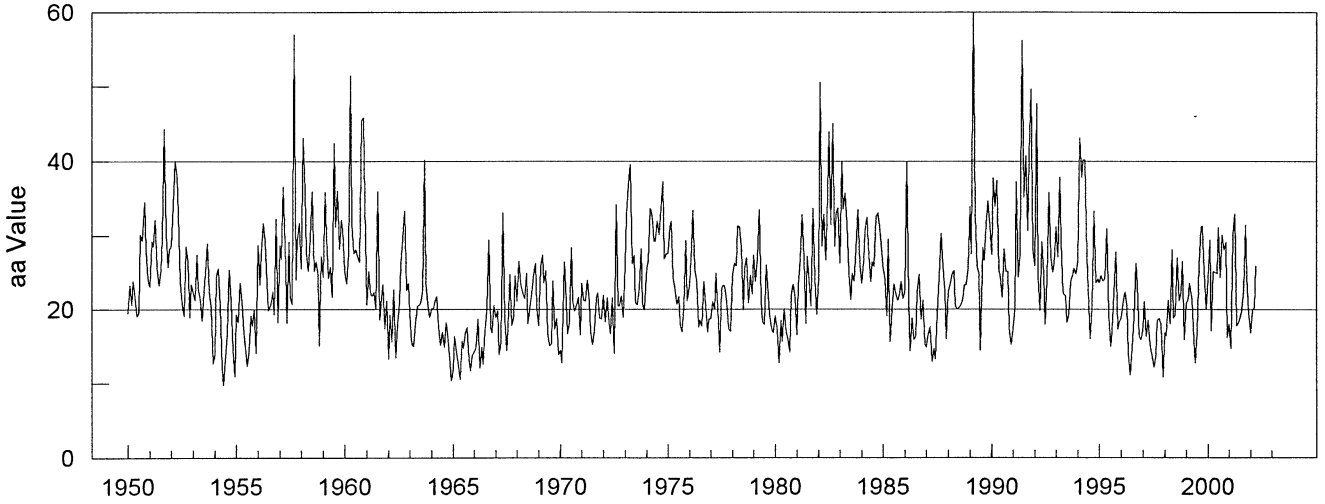
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through April 30, 2002



Monthly Mean aa Index Jan 1950 - Apr 2002



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									20.8

PLANETARY GEOMAGNETIC ACTIVITY

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

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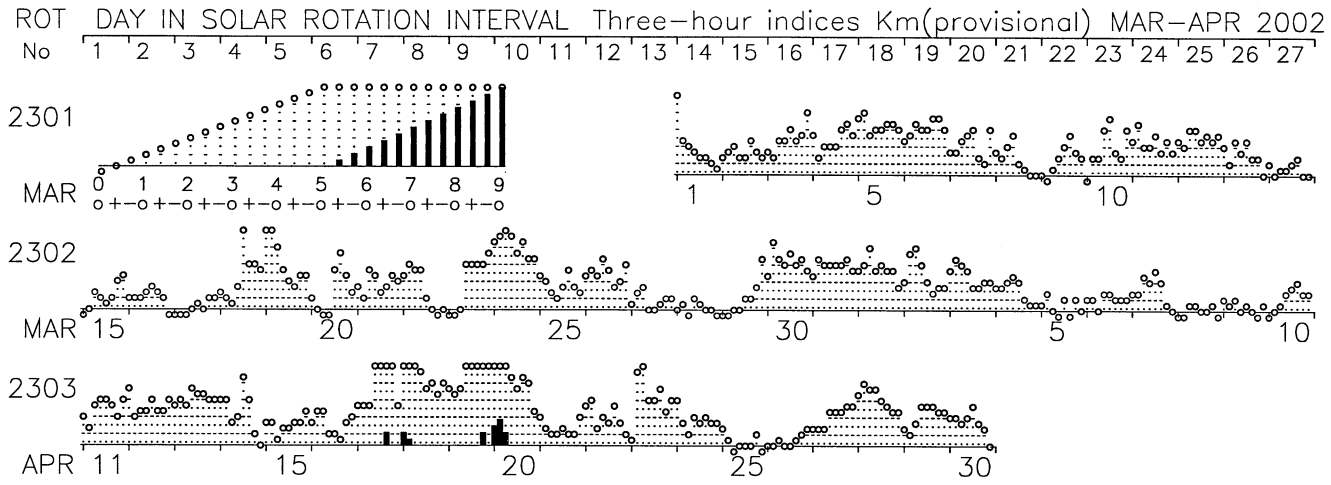
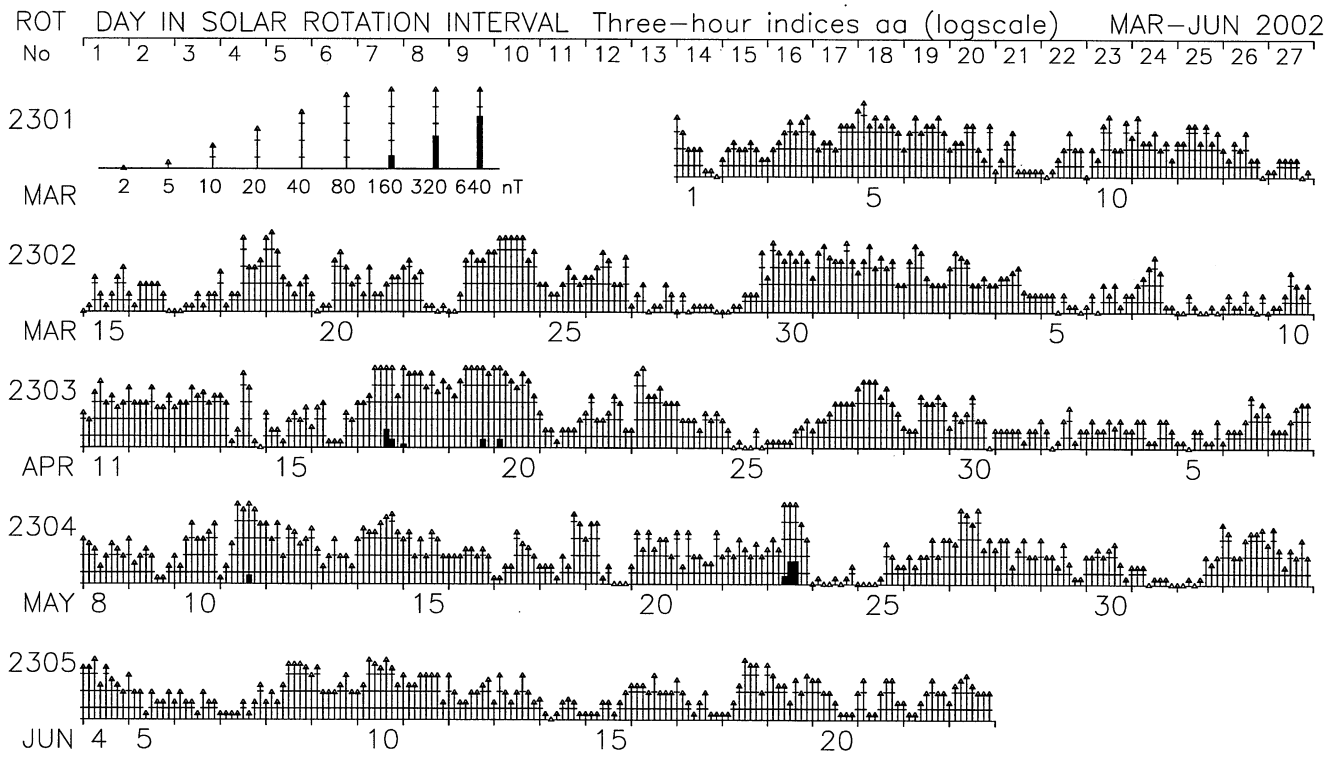
CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX - FRANCE



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.

WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

APRIL 2002

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
																							U. T.	
1	-4	-1	-1	-4	-9	-19	-21	-29	-21	-17	-19	-19	-18	-16	-18	-20	-16	-14	-13	-11	-7	-4	-2	-2
2	-4	-7	-9	-12	-20	-20	-28	-41	-39	-30	-31	-29	-24	-19	-20	-19	-16	-13	-11	-11	-9	-8	-7	-7
3	-12	-14	-18	-14	-16	-22	-17	-19	-17	-17	-17	-14	-9	-7	-5	-2	-1	-3	-7	-7	-7	-4	-1	-1
4	0	1	-2	-4	-4	-7	-5	-6	-7	-7	-9	-11	-10	-11	-13	-9	-5	-3	-2	-1	-1	-2	0	2
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9	11	10	9	9	8	7	8	7	9	12	15	16	17	17	19	20	21	23	25	24	24	22	21	21
10	21	24	27	29	29	27	26	25	26	23	19	19	21	23	25	24	22	21	22	20	21	24	21	22
11	22	21	22	26	25	21	23	21	15	22	20	20	18	15	13	10	10	11	12	11	16	17	23	36
12	19	1	2	0	-5	-1	-4	2	2	8	5	3	4	7	3	5	8	7	6	6	4	8	14	20
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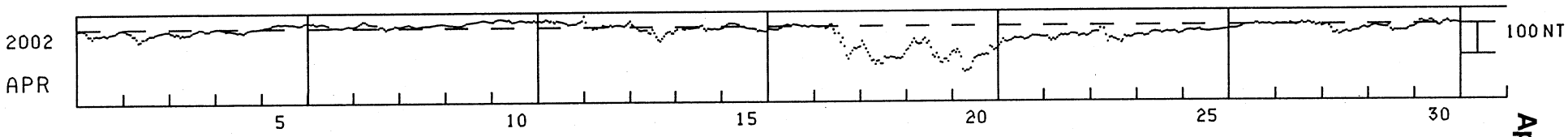
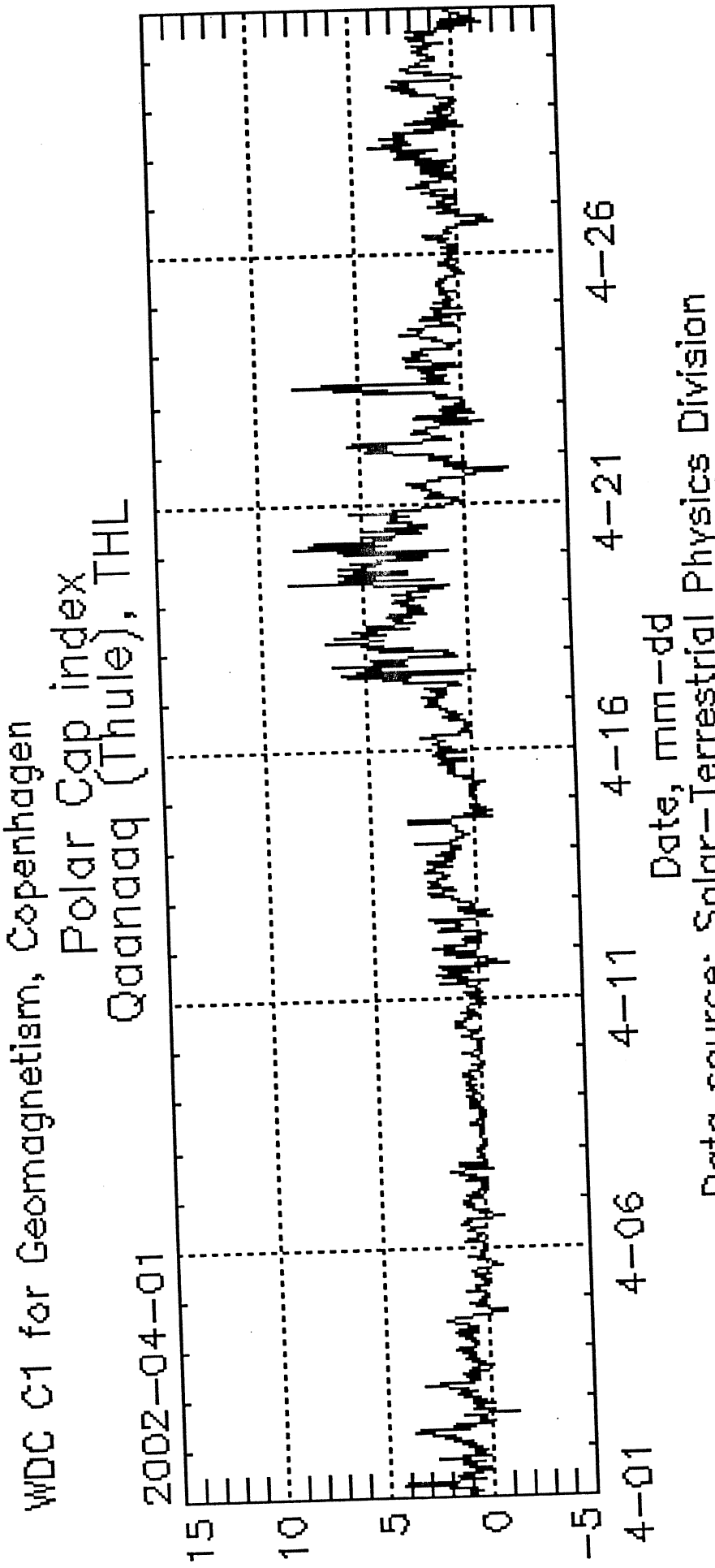
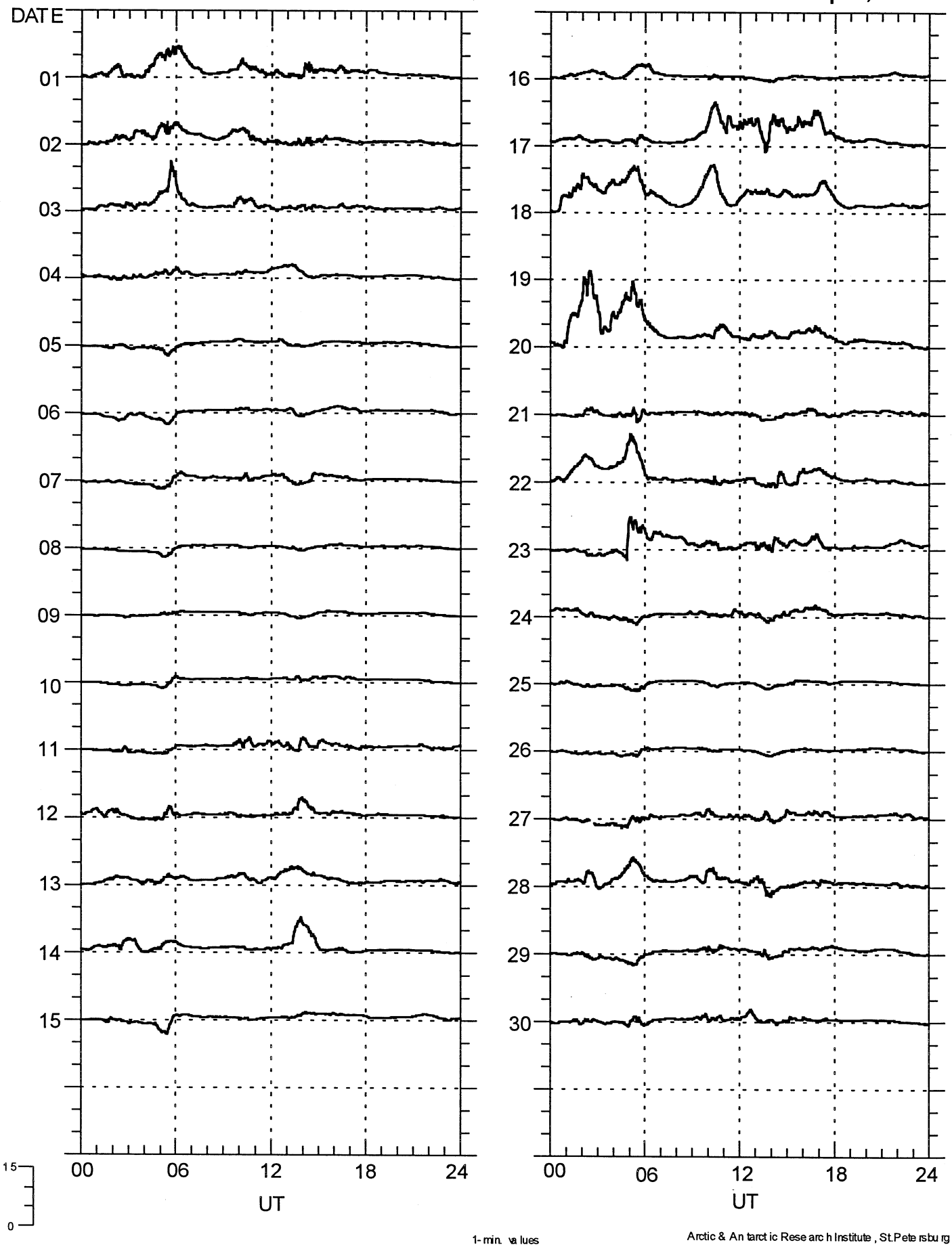



WDC C1 for Geomagnetism, Copenhagen
Polar Cap index
Qaanaaq (Thule), THL
2002-04-01
15
10
5
0
-5
4-01
4-06
4-11
4-16
4-21
4-26
Date, mm-dd
Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

PC INDEX

Vostok

April, 2002



1-min. values

Arctic & Antarctic Research Institute, St.Petersburg

PRINCIPAL MAGNETIC STORMS

APRIL 2002

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
UJJ	13.6N	11	0600	..	..	..	..		-	6	137	43	13	20
NGP	11.3N	11	0600	..	..	..	..		-	6	183	33	13	20
ABG	09.4N	11	0600	..	..	..	..	11(3) 12(1) 13(5,6)	5	6	176	53	13	20
HYB	07.6N	11	0100	..	..	..	..	12(1,6) 13(1,6)	5	6	185	23	14	08
PND	02.0N	11	0600	..	..	..	..		-	4	185	60	13	20
TIR	00.6S	11	0600	..	..	..	..		-	4	237	66	13	20
ETT	00.7S	11	0100	..	..	..	..		-	4	266	68	14	20
HYB	07.6N	14	1235	SC	- 0.2	9	0		-	--	--	--	--	--
BJI	28.8N	17	1106	SC	4.0	72	5	17(6)	6	6	153	28	--	--
KRC	16.4N	17	1109	SC	- 6	76	45	17(4,5,6,7)	6	12	238	59	18	03
UJJ	13.6N	17	1106	SC	- 1.1	46	- 9		-	7	173	38	18	23
NGP	11.3N	17	1106	SC	- 0.6	38	- 8		-	6	214	29	18	23
ABG	09.4N	17	1106	SC	- 1.3	34	- 15	17(5,6,7)	6	7	209	41	18	23
HYB	07.6N	17	1107	SC	- 1.5	52	- 4	17(6)	7	6	204	27	19	07
PND	02.0N	17	1106	SC	- 0.7	50	35		-	5	206	92	18	23
TIR	00.6S	17	1106	SC	- 1.4	58	71		-	5	226	105	18	23
ETT	00.7S	17	1107	SC	- 0.9	65	54		-	5	234	101	19	07
HER	33.6S	17	1108	SC	8	51	47	20(1)	6	40	177	176	20	21
GNA	43.0S	17	0900	..	..	..	..	17(7) 19(4,7)	6	28	165	172	21	06
CAN	43.6S	17	0900	..	..	..	..	17(4,5,6,7) 18(3,4,6) 19(4,5,6,7) 20(1,2,3)	5	27	193	93	21	06
BJI	28.8N	18	0035	SC	4.0	8	1	18(1)	5	16	86	52	19	06
BJI	28.8N	19	0835	SC	0.7	40	3	20(2)	6	13	192	54	20	24
KRC	16.4N	19	0833	SC	- 4	55	28	19(4,5,6,8) 20(2)	6	13	205	74	20	19
UJJ	13.6N	19	0834	SC	- 0.6	19	- 4		-	10	156	45	20	20
NGP	11.3N	19	0834	SC	- 0.8	22	- 5		-	11	200	30	20	20
ABG	09.4N	19	0834	SC	- 0.6	16	- 9	19(4,5,6,8) 20(2)	6	11	183	66	20	20
HYB	07.6N	19	0836	SC	- 0.5	20	- 2	19(6)	7	9	193	30	20	24
PND	02.0N	19	0834	SC	- 0.2	26	29		-	8	203	92	20	20
TIR	00.6S	19	0834	SC	- 0.9	33	38		-	9	272	105	20	20
ETT	00.7S	19	0836	SC	- 0.4	43	38		-	7	273	117	20	24
KRC	16.4N	23	0451	SC	- 2	69	30	23(3)	6	9	141	77	24	06
UJJ	13.6N	23	0446	SC	- 0.3	56	- 15		-	5	146	35	23	21
NGP	11.3N	23	0446	SC	0.4	65	- 10		-	5	187	31	23	21
ABG	09.4N	23	0446	SC	- 0.7	57	- 15	23(2,3)	6	5	179	45	23	21
HYB	07.6N	23	0450	SC	- 0.5	63	- 8	23(3)	6	7	191	19	24	01
TIR	00.6S	23	0446	SC	- 1.7	114	110		-	5	292	209	23	21
ETT	00.7S	23	0450	SC	- 1.5	60	65		-	5	300	101	24	22
HER	33.6S	23	0449	SC	3	19	17	23(3)	5	17	104	61	23	18
CAN	43.6S	23	0448	SC	3.9	72	3	23(2,3)	5	14	136	54	23	21
HYB	07.6N	27	0300	..	..	..	..		-	--	--	--	--	--
ETT	00.7S	27	0100	..	..	..	..		-	4	227	75	30	21

Stations:

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

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

April 2002

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
14	1234	B: GUI	04	1527-1556	NGK BDV SPT GUI
		C: NGK* GCK EBR HYB	09	0039-0115	MMB KAK KNY
17	1107	A: NUR* NGK* VAL* CLF* NAG* MMB* SPT* KAK* KNY* GUI HYB ETT HER	09	1257-1309	NGK BDV
		B: BDV* HRB* GCK* EBR* LIV	10	1226-1245	NGK BDV GUI
19	0835	A: VAL* CLF* LIV			
		B: NUR* NGK* BDV* HRB* NAG* GCK* MMB* EBR* SPT* KAK* KNY* HYB ETT			
23	0448	A: NUR VAL* CLF* SPT* GUI* HYB ETT HER			
		B: BDV* NAG* EBR* GNA CNB LIV			
		C: NGK* HRB GCK			

REPORTING OBSERVATORIES (up to the 4th of June 2002):
NUR NGK VAL BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY GUI HYB ETT GNA HER 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 Antartic Station LIVINGSTONE (62º 39' 44" S, 60º23' 41" W) -- Luis F.