DECEMBER 2002 NUMBER 700 - Part I

Solar-Geophysical Data prompt reports

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

Please visit: http://sgd.ngdc.noaa.gov

SGD On-line Edition:
http://www.ngdc.noaa.gov/stp -- Click on SGD Online
SGD PDF version: http://sgd.ngdc.noaa.gov
http://ftp.ngdc.noaa.gov/STP/SOLAR_DATA

NGDC On-Line Addresses:
World-Wide Web: http://www.ngdc.noaa.gov
Gopher gopher.ngdc.noaa.gov
Anonymous FTP: ftp.ngdc.noaa.gov

noaa National Oceanic and Atmospheric Administration / National Environmental Satellite, Data, and Information Service / National Geophysical Data Center / Boulder, Colorado

U.S. DEPARTMENT OF COMMERCE
Donald L. Evans, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Vice Admiral Conrad C. Lautenbacher, Jr., Under Secretary/Administrator

NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
Gregory W. Withee, Assistant Administrator

DECEMBER 2002 NUMBER 700 - Part I

Solar-Geophysical Data prompt reports

Data for October and November 2002

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

NATIONAL GEOPHYSICAL DATA CENTER
Christopher G. Fox, Acting Director
Boulder, Colorado

Subscription information is on the inside back cover.

SOLAR-GEOPHYSICAL DATA

Number 700

(Issued in Two Parts)

Editor: Helen E. Coffey

Chief: Herbert W. Kroehl
Solar-Terrestrial Physics Division

Staff: Edward H. Erwin

CONTENTS

PART I (PROMPT REPORTS) Page

PART II (COMPREHENSIVE REPORTS) Page

NEW DATA:

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

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

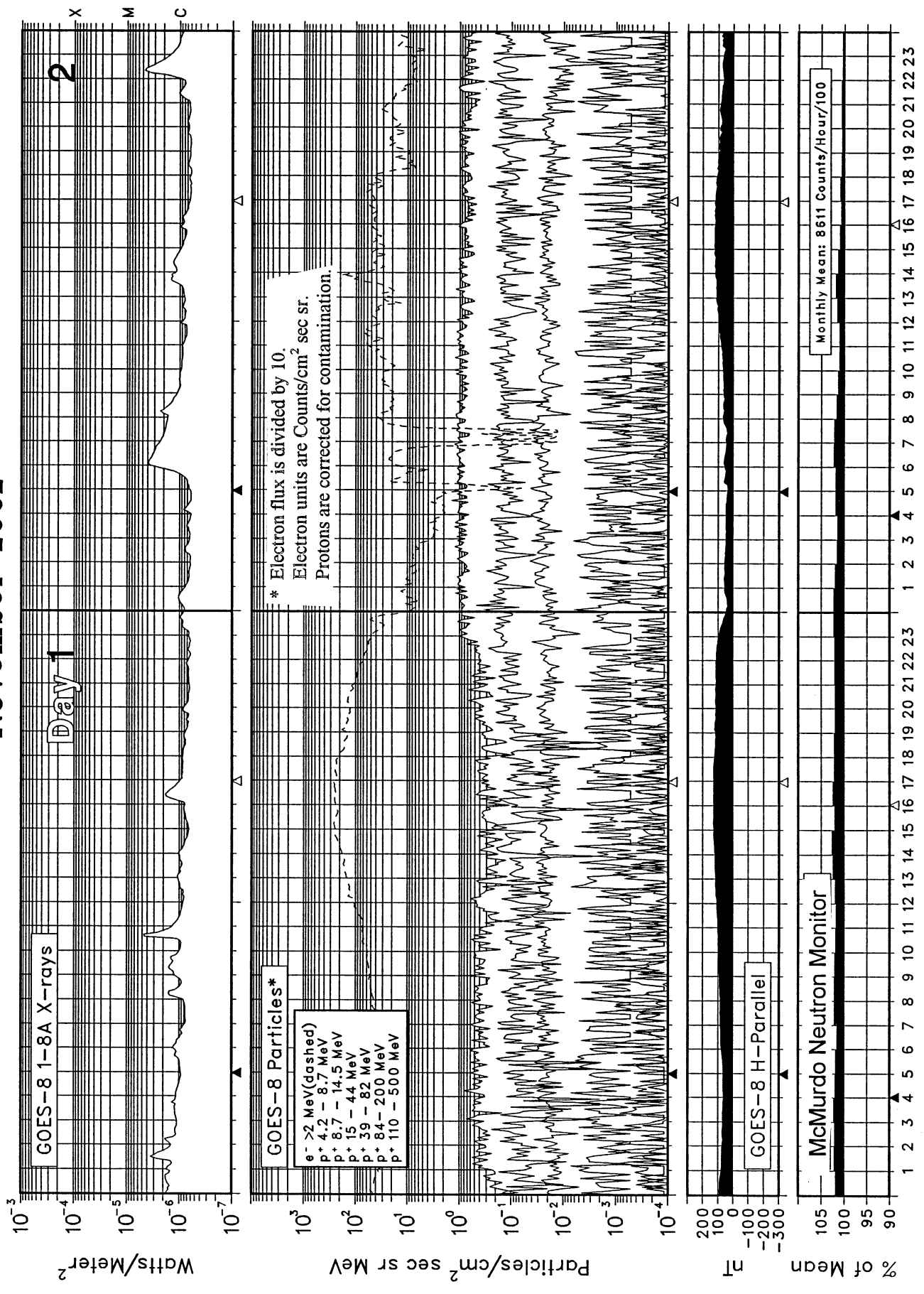
CODE	KIND OF OBSERVATION	APR 02	MAY	JUN	JUL	AUG	SEP	OCT	NOV
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.2aa	International Sunspot Numbers	693A 27	694A 28	695A 26	696A 27	697A 27	698A 27	699A 27	700A 27
A.2c	American Sunspot Numbers	693A 27	694A 28	695A 26	696A 27	697A 27	698A 27	699A 27	700A 27
A.3a	Mt. Wilson Magnetograms	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.3b	Sunspot Mag Class and Regions	694A 91	695A 86	696A100	697A 98	698A 91	699A 91	700A 90	
A.3c	Kitt Peak Magnetograms	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.3d	Mean Solar Magnetic Field (Stanford)	693A 41	694A 41	695A 35	696A 43	697A 49	698A 41	699A 41	700A 39
A.3e	Stanford Magnetograms	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.4	H-alpha Filtergrams	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.5d	PhotometricCa II Faculae(SanFernando)	Jan 92-Dec 96 in 631B 22; 1997-1998 in 663B 66							
A.6c	Stanford Solar Mag Field Synoptic Maps	694A 46	695A 38	696A 48	697A 52	698A 44	699A 46	700A 44	
A.6d	Kitt Peak Solar Mag Field Synoptic Map								
A.6f	Active Prominences and Filaments	698B 48	699B 45	700B 33					
A.6g	Sac Peak Coronal Line Synoptic Maps	694A 48	695A 40	696A 50	697A 54	698A 46	699A48	700A 46	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	694A 52	695A 44	696A 60	697A 58	698A 50	699A 52	700A 50	
A.7j	Coronal Hole Daily Maps (NSO/KP)	694A 82	695A 75	696A 90	697A 89	698A 81	699A 82	700A 81	
A.7k	Coronal Index (Slovak Academy)	1939-1996 in 644B 28							
A.7m	Coronal Mass Ejections (CSPSW)								
A.8aa	2800 MHz- Solar Flux (Penticton)	693A 27	694A 28	695A 26	696A 27	697A 27	698A 27	699A 27	700A 27
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	693A 27	694A 28	695A 26	696A 27	697A 27	698A 27	699A 27	700A 27
A.8g	Adjusted Daily Solar Fluxes (Sagamore)	693A 27	694A 28	695A 26	696A 27	697A 27	698A 27	699A 27	700A 27
A.10g	Nancay Radioheliograph -164&327 MHz	694A147	695A143	696A152	697A153	698A151	699A149	700A138	
A.10h	Nobeyama Radioheliograph -17 GHz	694A 86	695A 80	696A 95	697A 92	698A 85	699A 86	700A 84	
A.11g	Solar X-ray GOES (graphs/event table)	698B 40	699B 36	700B 25					
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.11p	Solar UV Mg II Daily Index	698B 49	699B 47	700B 34					
A.12g	Solar Particles (GOES-7)	693A 4	694A 4	695A 4	696A 4	697A 4	698A 4	699A 4	700A 4
A.12i	Interplanetary Particles (ACE)		699B 50	700B 37					
A.13g	Solar Plasma (ACE)		699B 49	700B 34					
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.17d	ACE Interplanetary Mag Field		699B 48	700B 35					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	693A 30	694A 31	695A 29	696A 30	697A 30	698A 30	699A 30	700A 30
C.1ba	H-alpha Flare Groups	698B 4	699B 4	700B 4					
C.1d	Flare Patrol Obsevations	698B 16	699B 16	700B 9					
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	698B 18	699B 18	700B 11					
C.3	Radio Bursts Fixed Frequency Selected	693A 38	694A 39	695A 33	696A 40	697A 43	698A 38	699A 39	700A 38
C.4	Radio Bursts Spectral	694A117	695A122	696A126	697A125	698A120	699A120	700A114	
C.6	Sudden Ionospheric Disturbances	694A114	695A119	696A125	697A121	698A115	699A118	700A112	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	694A158	695A154	696A159	697A160	698A162	699A160	700A149	
D.1ba	27-day Chart of Kp Indices	694A160	695A156	696A161	697A162	698A164	699A162	700A151	
D.1cb	Monthly Mean aa Indices	694A161	695A157	696A162	697A163	698A165	699A163	700A152	
D.1d	Principal Magnetic Storms	694A166	695A162	696A167	697A168	698A170	699A168	700A157	
D.1f	Sudden Commencements/Flare Effects	694A167	695A163	696A168	697A169	698A171	699A169	700A158	
D.1g	Equatorial Indices Dst	694A163	695A159	696A164	697A165	698A167	699A165	700A154	
D.1l	Polar Cap (PC) Index	694A164	695A160	696A165	697A166	698A168	699A166	700A155	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
F.1h	Cosmic Ray Neutron Cts (Thule)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
F.1l	Cosmic Ray Neutron Cts (Kiel)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
F.1n	Cosmic Ray Neutron Cts (Beijing)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
F.1o	Cosmic Ray Neutron Cts (Moscow)	694A150	695A146	696A154		698A154	699A152	700A141	
F.1p	Cosmic Ray Neutron Cts (Calgary)	694A150	695A146	696A154	697A155	698A154	699A152	700A141	
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	693A 19	694A 20	695A 19	696A 20	697A 20	698A 19	699A 20	700A 19

The entry "694A 52" under Apr 02, for example, means that the sunspot drawings for Apr 02 appear in SOLAR-GEOPHYSICAL DATA No. 694, Part I, and that they begin on page 52. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

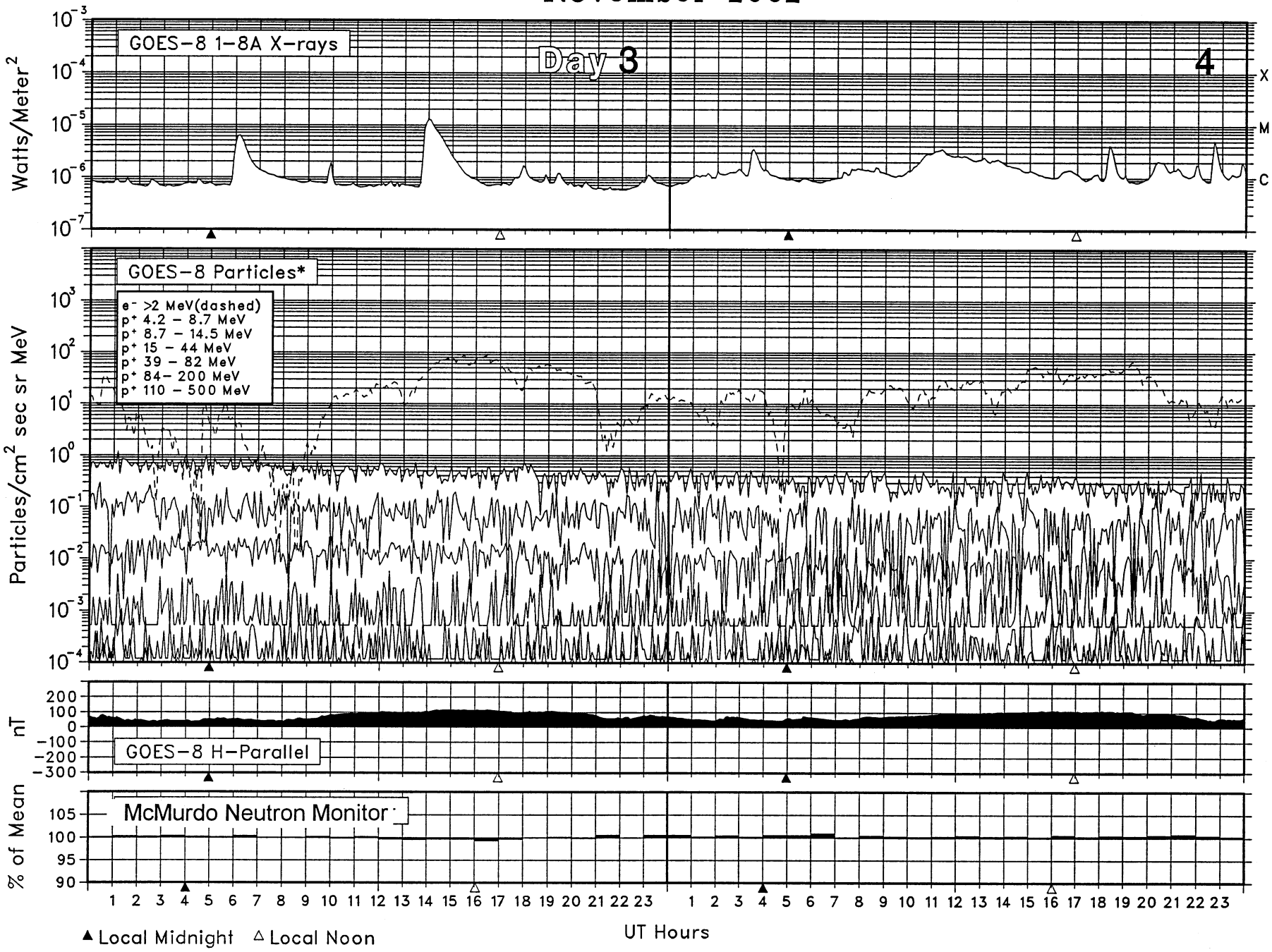
CONTENTS

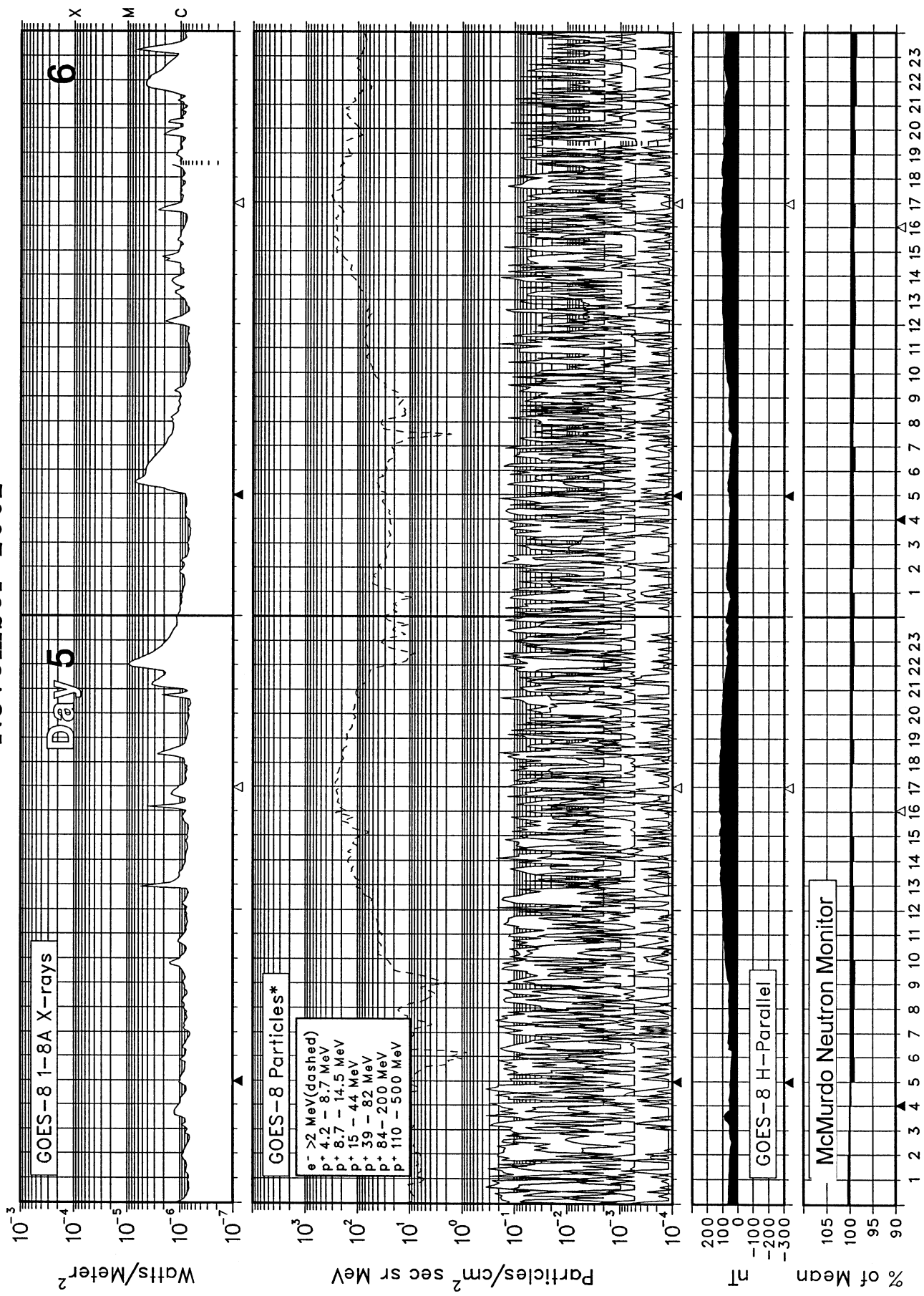
Prompt Reports Number 700 Part I

DATA FOR NOVEMBER 2002

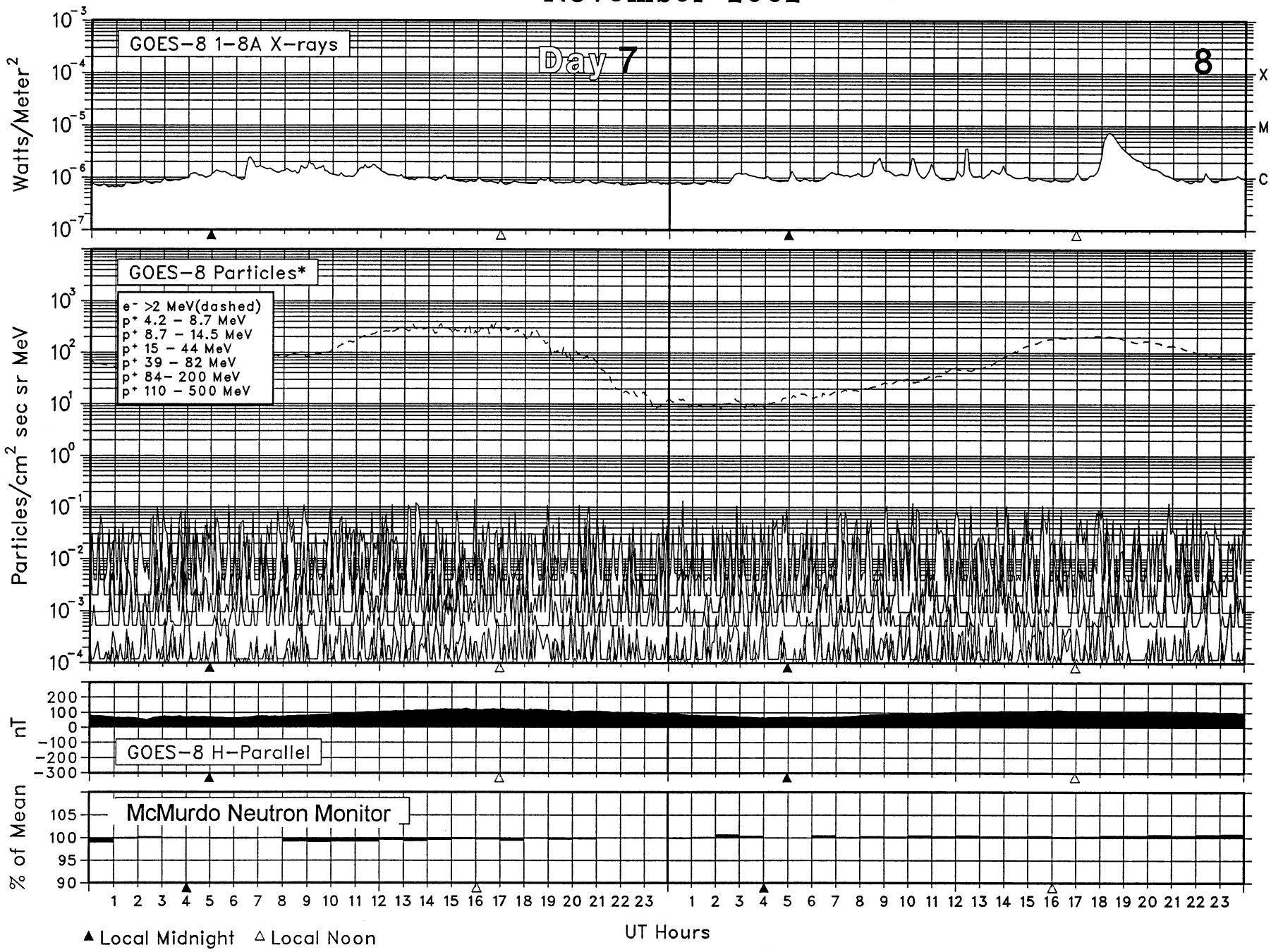

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
GOES-8 1-8A X-rays
Day 1
2
X
M
C
Watts/Meter²
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84- 200 MeV
p⁺ 110 - 500 MeV
* Electron flux is divided by 10.
Electron units are Counts/cm² sec sr.
Protons are corrected for contamination.
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
Monthly Mean: 8611 Counts/Hour/100
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

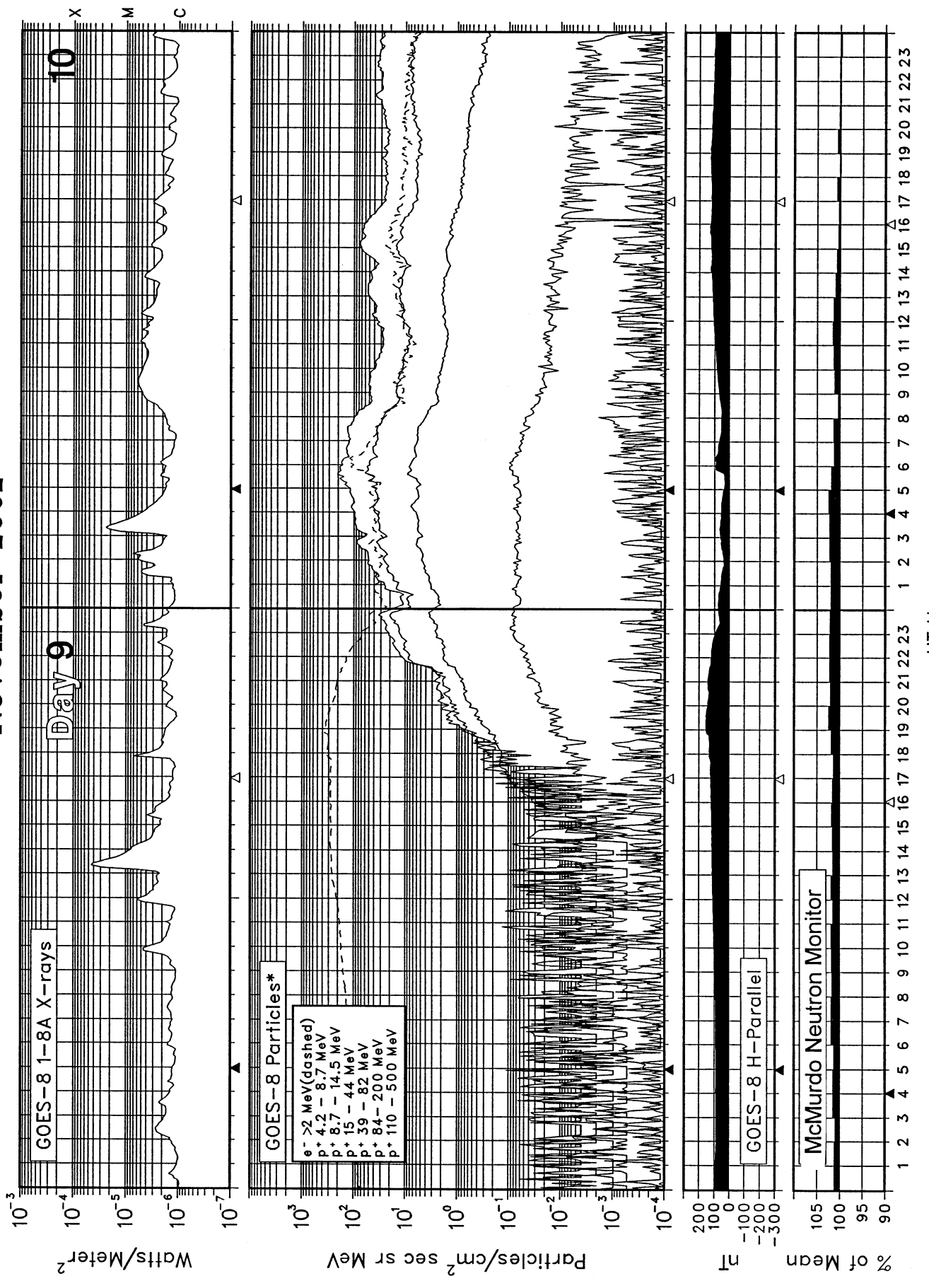
SOLAR-TERRESTRIAL ENVIRONMENT
November 2002



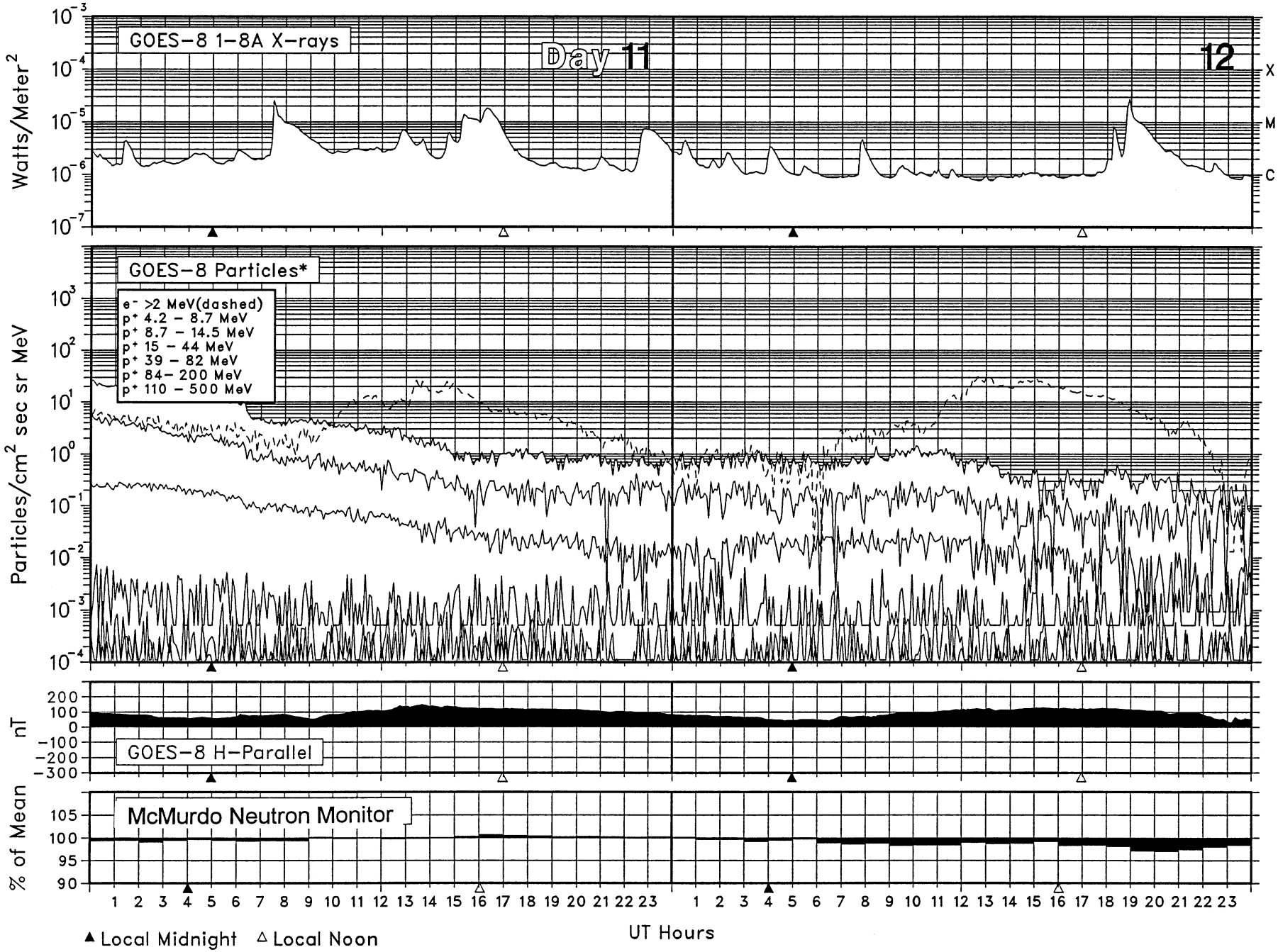

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
Day 5
6
GOES-8 1-8A X-rays
Watts/Meter²
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84- 200 MeV
p⁺ 110 - 500 MeV
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

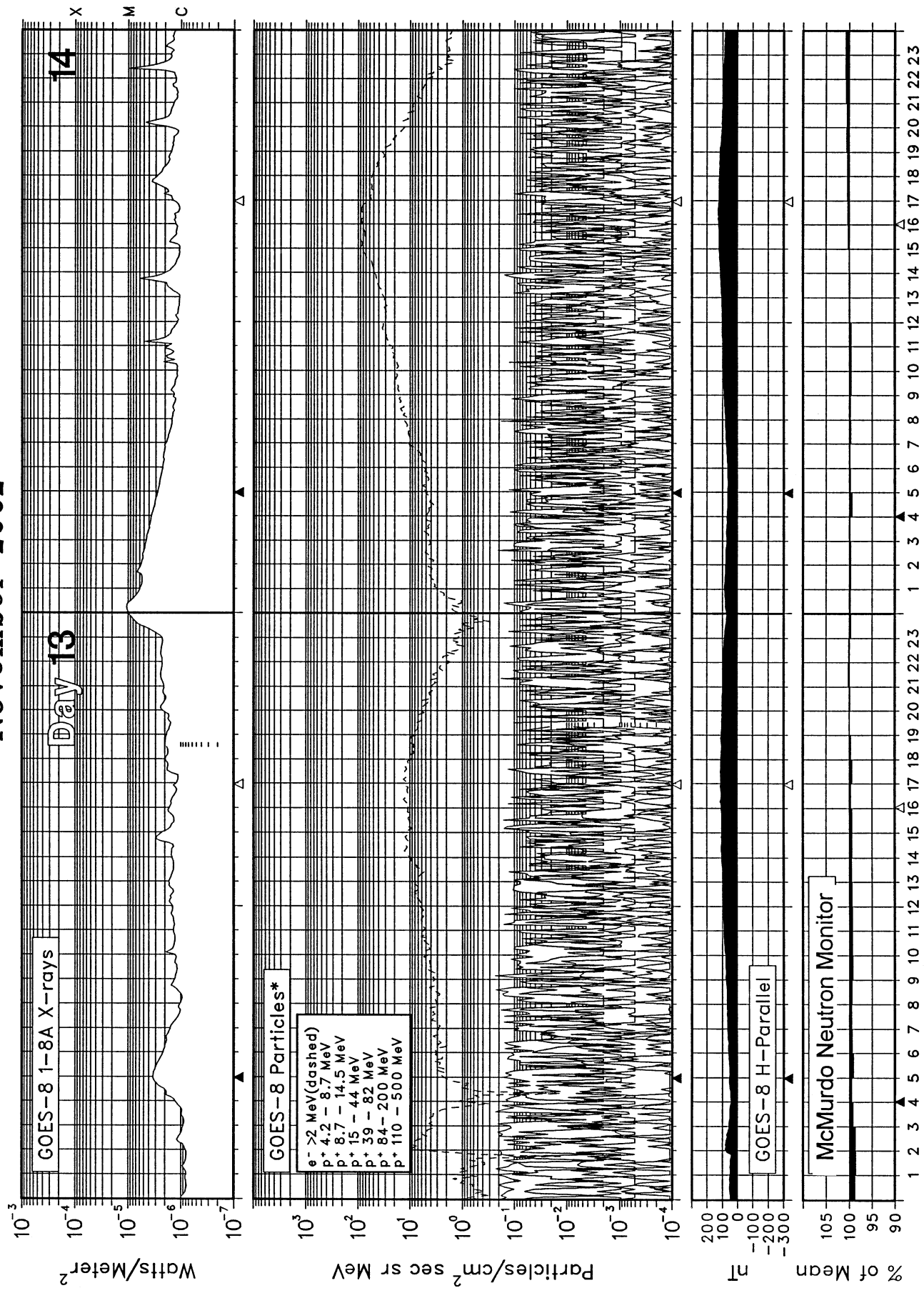
SOLAR-TERRESTRIAL ENVIRONMENT
November 2002



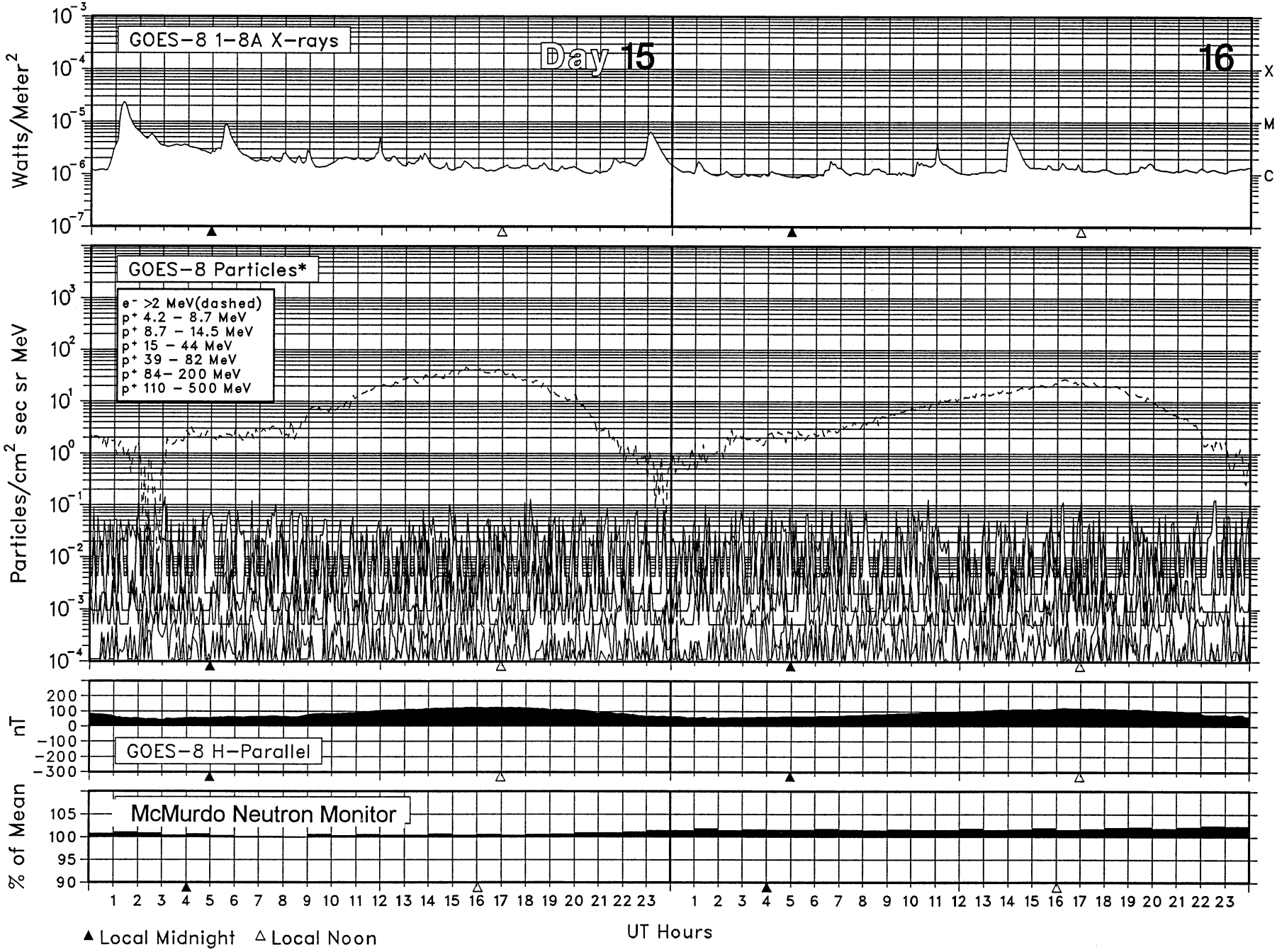

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
Day 9
10
GOES-8 1-8A X-rays
X
M
C
Watts/Meter²
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84- 200 MeV
p⁺ 110 - 500 MeV
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean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

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002

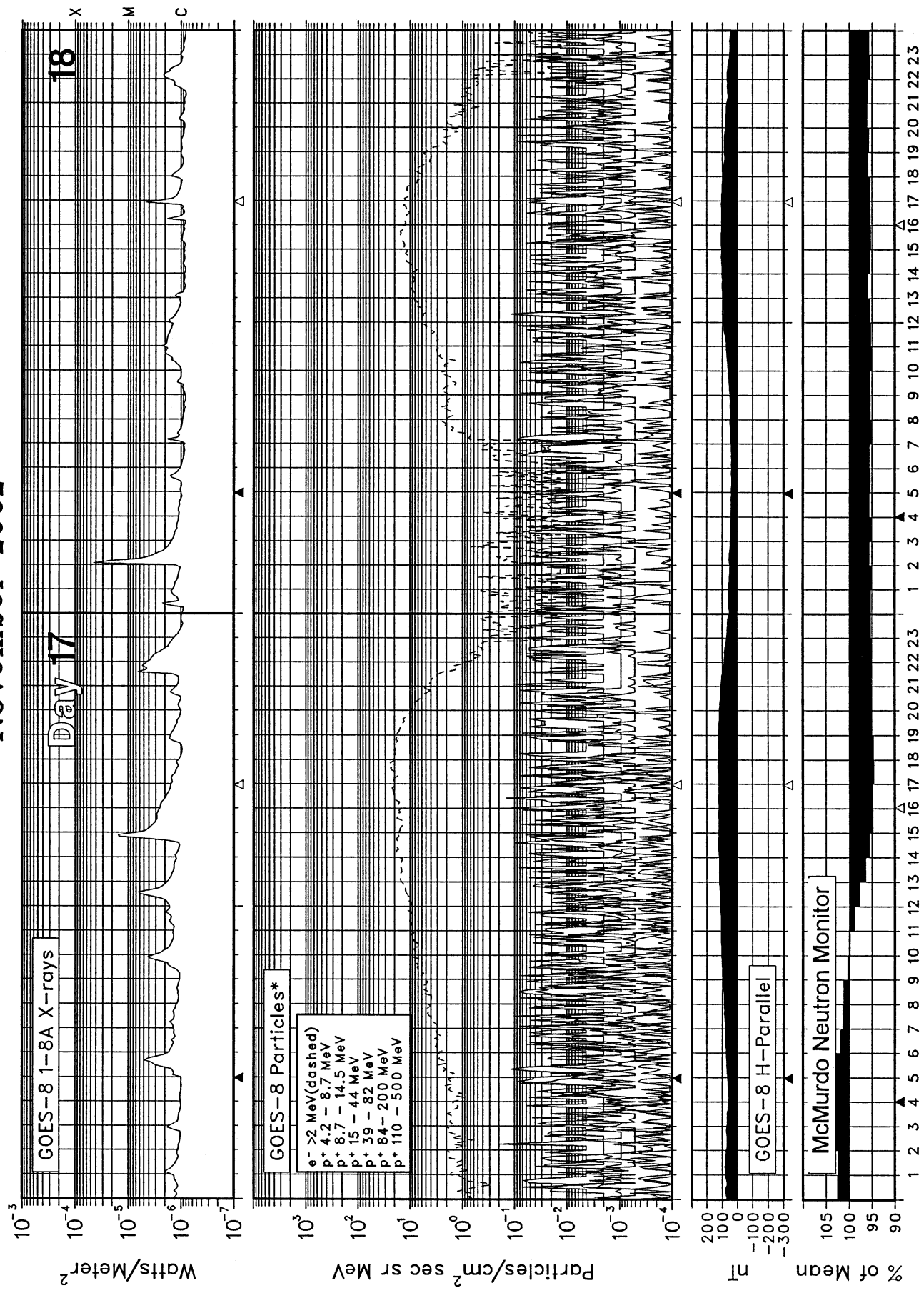



SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
GOES-8 1-8A X-rays
Watts/Meter²
X
M
C
13
14
Day
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84 - 200 MeV
p⁺ 110 - 500 MeV
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

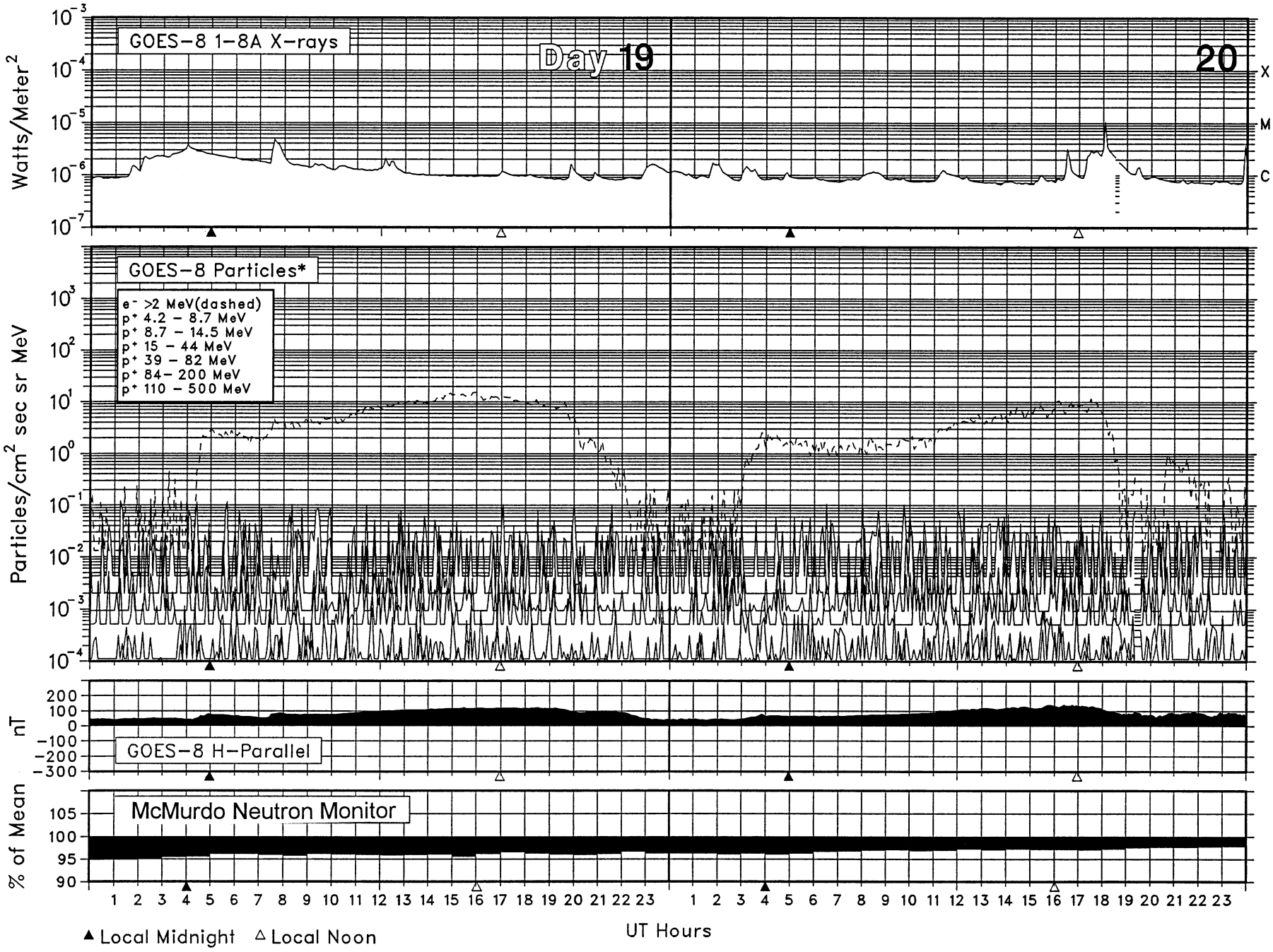
SOLAR-TERRESTRIAL ENVIRONMENT
November 2002



11 Nov 02

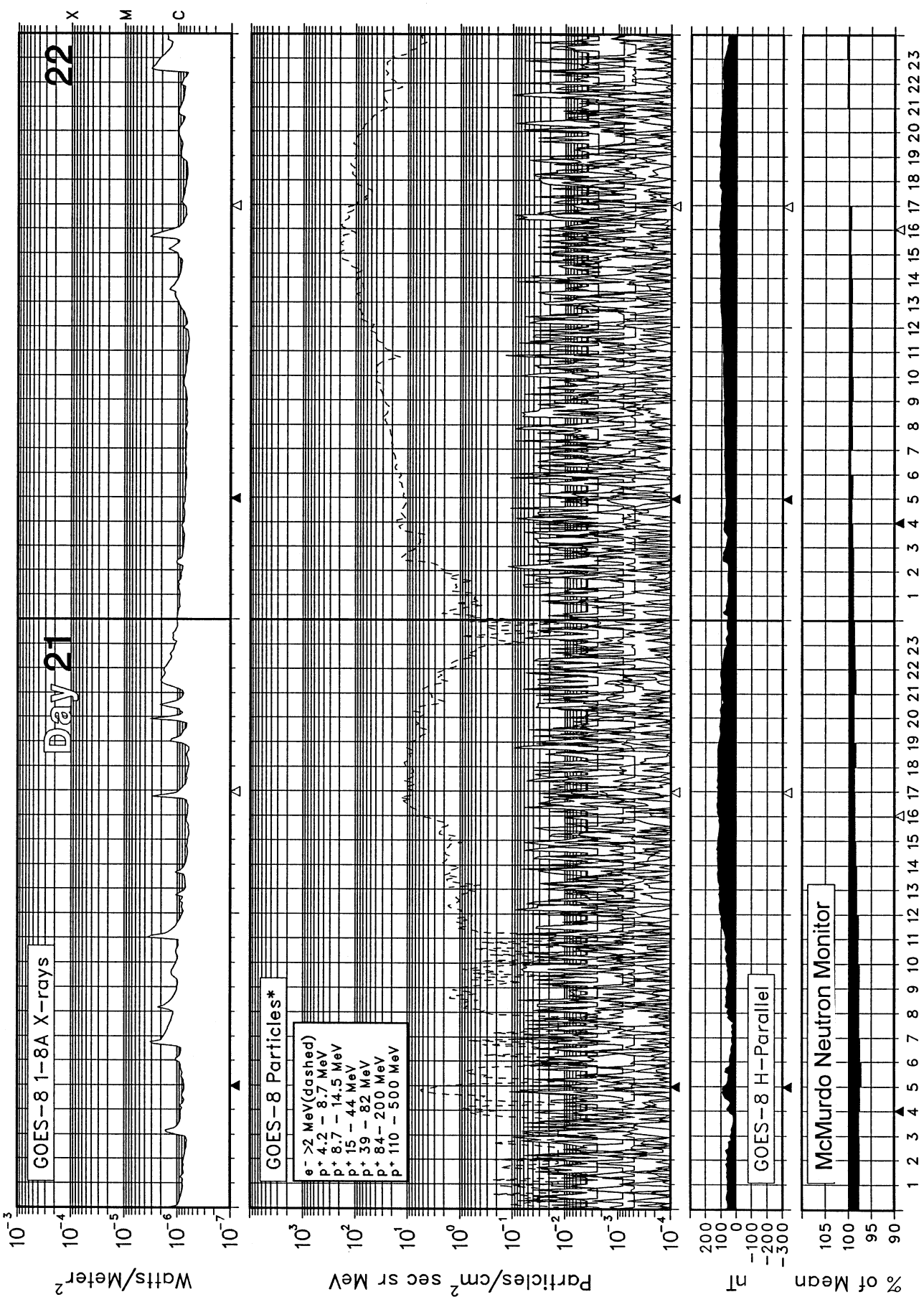

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
Day 17
Day 18
GOES-8 1-8A X-rays
X
M
C
Watts/Meter²
GOES-8 Particles*
e⁻ >2 MeV(dashed)
p⁺ 4.2 - 8.7 MeV
p⁺ 8.7 - 14.5 MeV
p⁺ 15 - 44 MeV
p⁺ 39 - 82 MeV
p⁺ 84 - 200 MeV
p⁺ 110 - 500 MeV
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

SOLAR-TERRESTRIAL ENVIRONMENT
November 2002

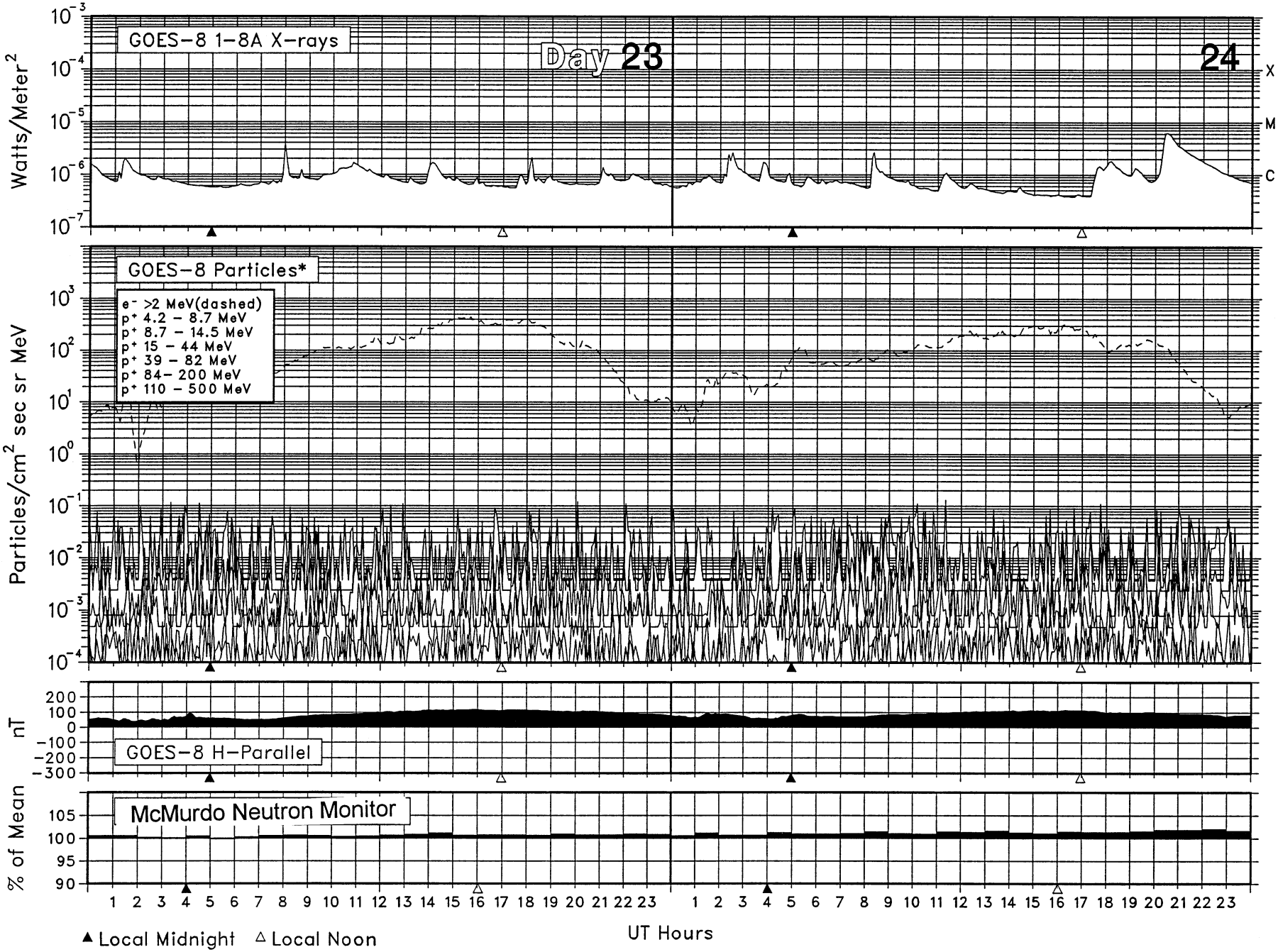


13 Nov 02

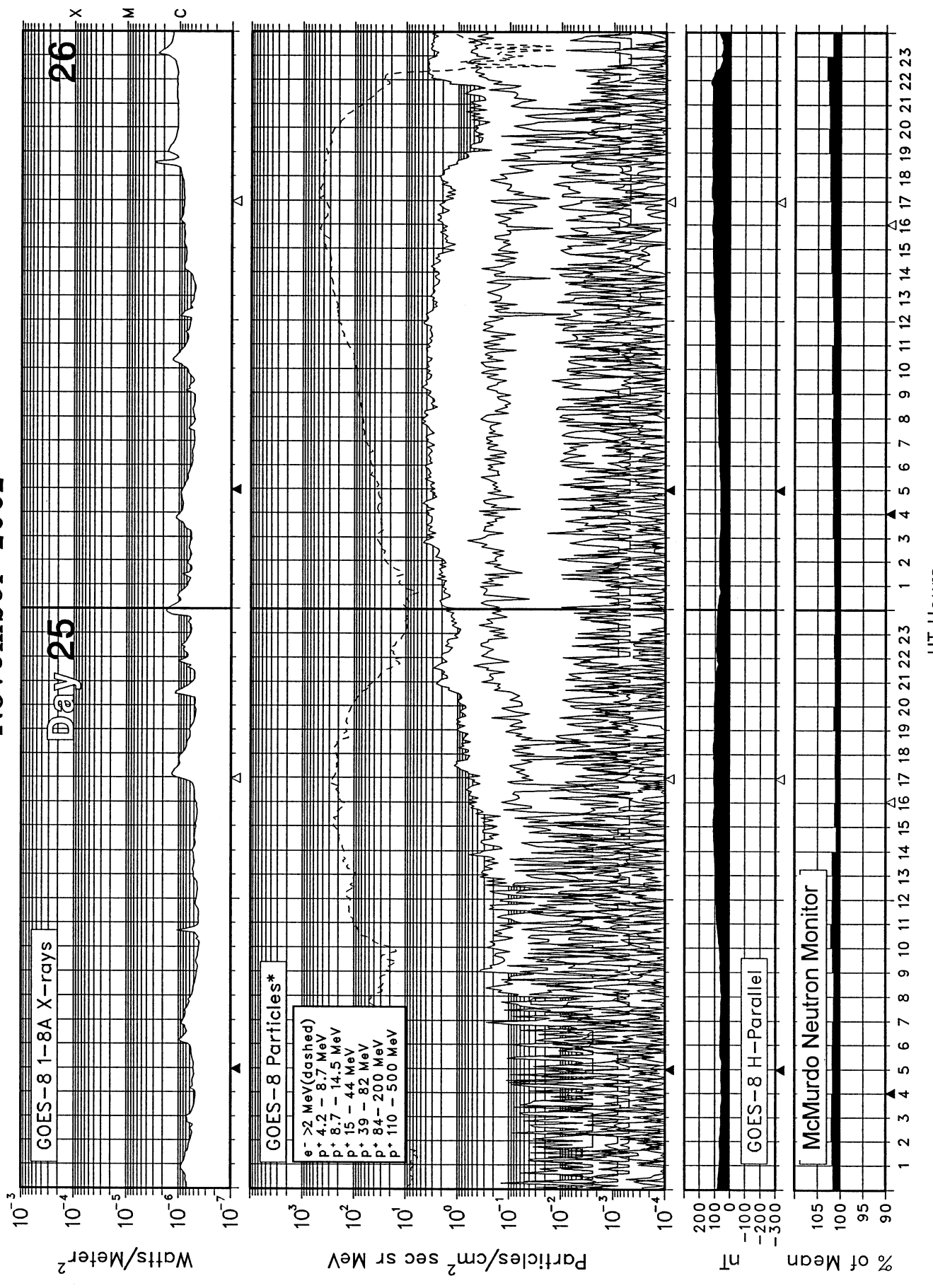
SOLAR-TERRESTRIAL ENVIRONMENT
November 2002



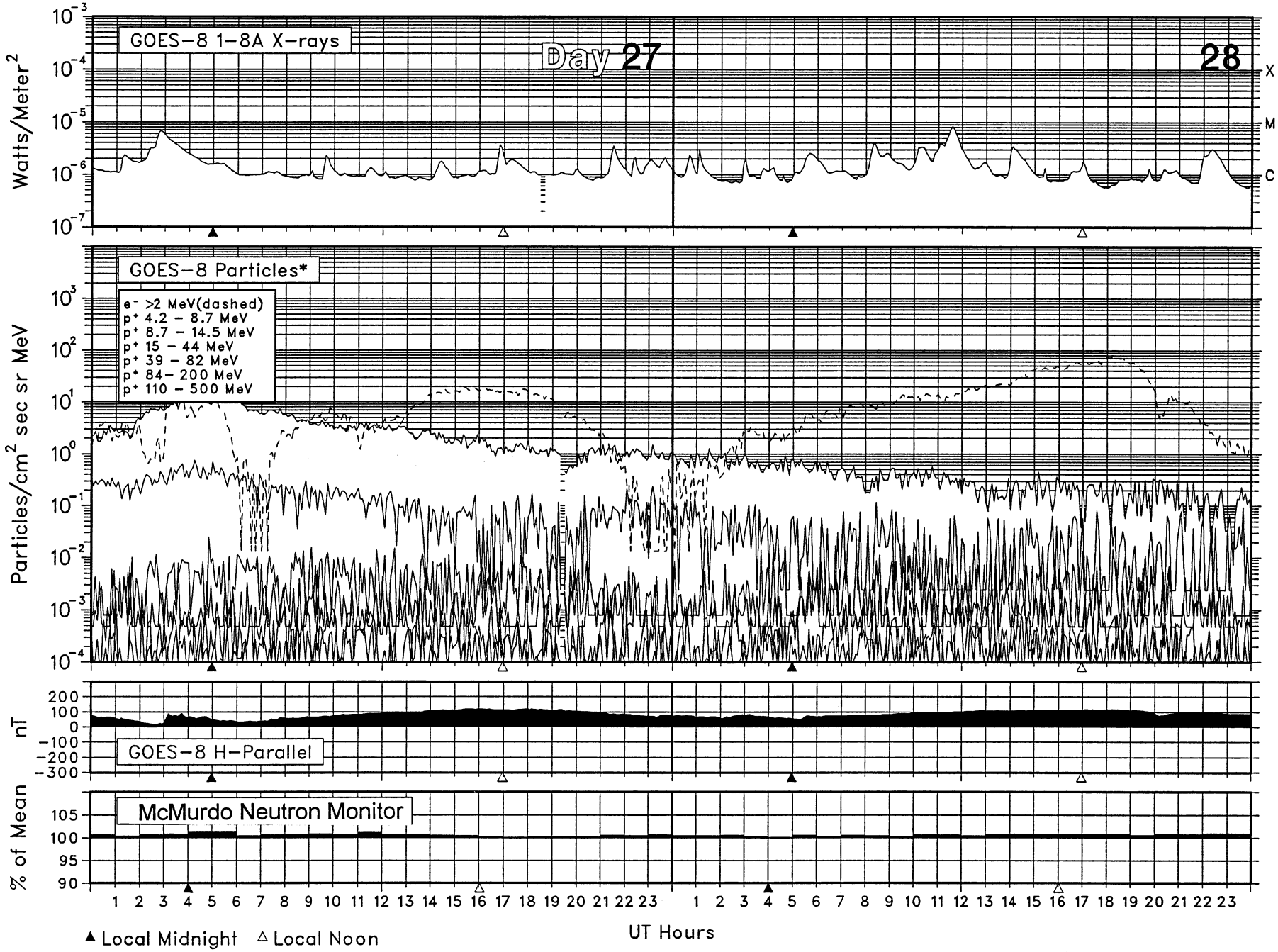
SOLAR-TERRESTRIAL ENVIRONMENT
November 2002



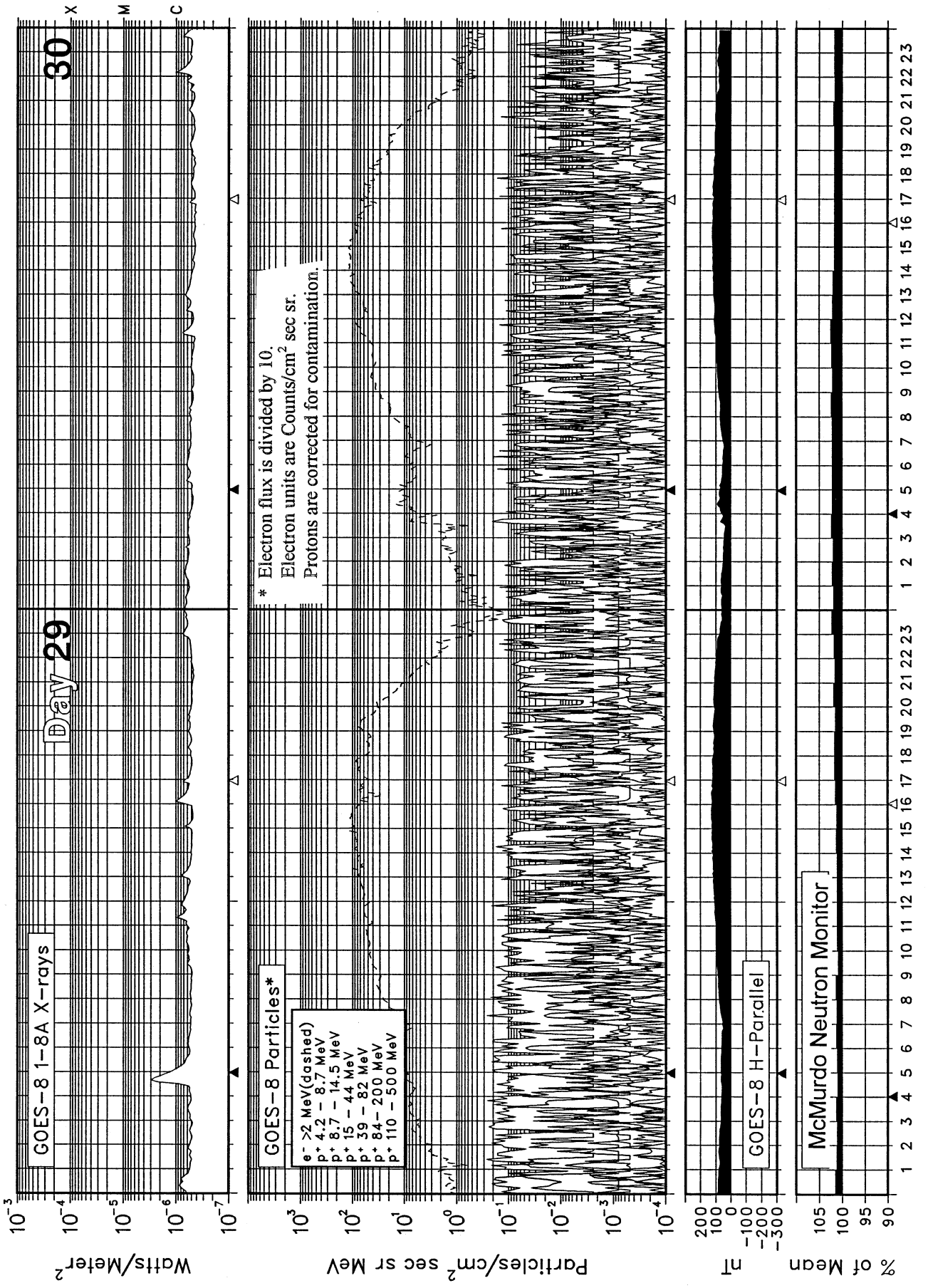
15 Nov 02


SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
Day 25
26
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
November 2002



17 Nov 02


SOLAR-TERRESTRIAL ENVIRONMENT
November 2002
Day 29
30
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
* Electron flux is divided by 10.
Electron units are Counts/cm² sec sr.
Protons are corrected for contamination.
Particles/cm² sec sr MeV
GOES-8 H-Parallel
nT
McMurdo Neutron Monitor
% of Mean
UT Hours
▲ Local Midnight △ Local Noon

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

NOVEMBER 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)
305	01	31	134	170	18	162	N26	W88	0	0	0	01	E	SOL: Eruptive
						165	N19	W74	0	0	0	01	Q	MAG: Quiet
						167	N16	W30	0	0	0	01	Q	PRO: Quiet
						169	S19	W20	0	0	0	01	Q	
						171	N10	W01	0	0	0	01	Q	
						174	S25	E32	0	0	0	01	Q	
						175	N16	E29	0	1	0	01	Q	
						176	N11	E50	0	0	0	01	Q	
						177	N16	E57	1	0	0	01	Q	
						178	N00	W15	0	0	0	01	Q	
306	02	01	169	162	7	165	N19	W87	0	0	0	02	Q	SOL: Eruptive
						167	N17	W42	0	0	0	02	Q	MAG: Quiet
						169	S19	W32	0	0	0	02	Q	PRO: Quiet
						171	N10	W14	0	0	0	02	Q	
						174	S26	E18	0	0	0	02	Q	
						175	N15	E18	1	0	0	02	E	
						176	N10	E37	0	0	0	02	Q	
						177	N15	E43	1	0	0	02	E	
						178	N01	W30	0	0	0	02	Q	
						179	N02	E72	0	0	0	02	Q	
						180	S11	E70	0	0	0	02	Q	
307	03	02	177	165	22	167	N17	W57	0	0	0	03	Q	SOL: Eruptive
						171	N11	W28	0	0	0	03	Q	MAG: Quiet
						174	S26	E02	0	0	0	03	Q	PRO: Quiet
						175	N14	E04	0	0	0	03	Q	
						176	N10	E24	0	0	0	03	Q	
						177	N16	E31	1	0	0	03	E	
						178	N01	W45	0	0	0	03	Q	
						179	N02	E56	0	0	0	03	Q	
						180	S10	E57	2	0	0	03	E	
						181	S06	E42	0	0	0	03	Q	
						182	S17	E68	0	0	0	03	Q	
308	04	03	217	169	23	167	N18	W70	0	0	0	04	Q	SOL: Eruptive
						174	S26	W08	0	0	0	04	Q	MAG: Active
						175	N15	W09	0	0	0	04	Q	PRO: Quiet
						176	N10	E11	0	0	0	04	Q	
						177	N16	E18	3	1	0	04	E	
						178	N02	W58	0	0	0	04	Q	
						179	N02	E43	0	0	0	04	Q	
						180	S10	E43	5	0	0	04	E	
						181	S07	E31	0	0	0	04	Q	
						182	S17	E56	0	0	0	04	Q	
						183	N19	W24	0	0	0	04	Q	
						184	S06	E51	0	0	0	04	Q	
						185	S12	E77	0	0	0	04	Q	
309	05	04	166	177	18	175	N15	W22	0	0	0	05	Q	SOL: Eruptive
						176	N10	W02	0	0	0	05	Q	MAG: Active
						177	N16	E05	2	0	0	05	E	PRO: Quiet
						178	N02	W37	0	0	0	05	Q	
						179	N02	E30	0	0	0	05	Q	
						180	S10	E30	10	0	0	05	E	
						181	S07	E18	0	0	0	05	Q	
						182	S17	E43	0	0	0	05	Q	
						183	N19	W37	0	0	0	05	Q	
						185	S12	E64	0	0	0	05	Q	
310	06	05	175	183	19	175	N15	W36	0	0	0	06	Q	SOL: Active
						176	N10	W15	0	0	0	06	Q	MAG: Active
						177	N16	W09	7	0	0	06	E	PRO: Quiet
						178	N02	W87	0	0	0	06	Q	
						179	N02	E17	0	0	0	06	Q	
						180	S10	E17	6	0	0	06	E	
						182	S17	E29	0	0	0	06	Q	

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

NOVEMBER 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)
						185	S12	E50	1	0	0	06	Q	
						186	N20	E02	0	0	0	06	Q	
311	07	06	234	185	19	175	N14	W54	0	0	0	07	Q	SOL: Active
						176	N10	W28	0	0	0	07	Q	MAG: Active
						177	N17	W22	3	0	0	07	E	PRO: Quiet
						179	N03	E02	0	0	0	07	Q	
						180	S10	W01	8	0	0	07	E	
						182	S18	E16	0	0	0	07	Q	
						185	S13	E36	0	0	0	07	Q	
						186	N19	W12	0	0	0	07	Q	
						187	N07	E07	1	0	0	07	Q	
						188	N11	E22	6	0	0	07	E	
						189	N12	E56	0	0	0	07	Q	
312	08	07	259	190	13	175	N14	W70	0	0	0	08	Q	SOL: Active
						176	N10	W42	0	0	0	08	Q	MAG: Active
						177	N18	W36	1	0	0	08	E	PRO: Quiet
						179	S01	W08	0	0	0	08	Q	
						180	S10	W14	7	0	0	08	E	
						182	S18	E02	0	0	0	08	Q	
						185	S12	E22	0	0	0	08	Q	
						186	N20	W26	0	0	0	08	Q	
						187	N07	W07	0	0	0	08	Q	
						188	N11	E07	2	0	0	08	E	
						189	N14	E43	0	0	0	08	Q	
						190	S22	E54	0	0	0	08	Q	
313	09	08	252	189	7	175	N15	W82	0	0	0	09	Q	SOL: Eruptive
						176	N10	W55	0	0	0	09	Q	MAG: Quiet
						177	N18	W50	0	0	0	09	E	PRO: Quiet
						180	S10	W28	9	0	0	09	E	
						182	S18	W11	0	0	0	09	Q	
						184	S05	W15	0	0	0	09	Q	
						185	S12	E10	0	0	0	09	Q	
						186	N20	W37	0	0	0	09	Q	
						187	N08	W18	0	0	0	09	Q	
						188	N10	W06	0	0	0	09	Q	
						189	N13	E32	0	0	0	09	Q	
						190	S22	E42	0	0	0	09	Q	
						191	S17	E74	0	0	0	09	Q	
314	10	09	174	191	6	176	N10	W68	0	0	0	10	Q	SOL: Eruptive
						177	N18	W63	0	0	0	10	Q	MAG: Quiet
						180	S10	W41	9	1	0	10	P	PRO: IP
						182	S18	W24	0	0	0	10	Q	
						185	S13	W02	0	0	0	10	Q	
						188	N10	W19	1	0	0	10	Q	
						189	N12	E21	0	0	0	10	Q	
						190	S22	E28	0	0	0	10	Q	
						191	S17	E63	4	0	0	10	E	
315	11	10	219	191	18	176	N09	W81	0	0	0	11	Q	SOL: Active
						177	N17	W76	0	0	0	11	Q	MAG: Active
						180	S11	W55	5	1	0	11	P	PRO: IP
						182	S19	W37	0	0	0	11	Q	
						185	S13	W16	0	0	0	11	Q	
						188	N10	W34	0	0	0	11	Q	
						189	N12	E09	0	0	0	11	Q	
						190	S20	E14	0	0	0	11	Q	
						191	S18	E51	4	0	0	11	E	
316	12	11	197	185	10	177	N18	W90	0	0	0	12	Q	SOL: Active
						180	S11	W69	10	2	0	12	E	MAG: Active
						182	S19	W50	0	0	0	12	Q	PRO: Warning
						185	S13	W30	1	0	0	12	Q	
						188	N10	W48	0	0	0	12	Q	

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

NOVEMBER 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)
						189	N15	W04	0	0	0	12	Q	
						190	S22	E00	0	0	0	12	Q	
						191	S18	E39	0	0	0	12	E	
						192	N13	E08	0	0	0	12	Q	
317	13	12	155	178	11	180	S11	W82	7	1	0	13	A	SOL: Eruptive
						182	S18	W65	0	0	0	13	A	MAG: Active
						185	S13	W43	0	0	0	13	A	PRO: Quiet
						190	S21	W14	1	0	0	13	A	
						191	S18	E25	1	0	0	13	A	
						192	N14	W07	0	0	0	13	A	
						193	S02	E21	0	0	0	13	A	
318	14	13	182	182	12	180	S11	W94	0	0	0	14	A	SOL: Active
						182	S18	W76	0	0	0	14	A	MAG: Active
						185	S13	W56	0	0	0	14	A	PRO: Quiet
						189	N17	W34	0	0	0	14	A	
						190	S21	W27	0	0	0	14	A	
						191	S18	E12	4	0	0	14	A	
						192	N14	W22	0	0	0	14	A	
						193	S03	E07	0	0	0	14	A	
						194	S16	E43	0	0	0	14	A	
						195	S15	E78	0	0	0	14	A	
319	15	14	185	184	9	182	S18	W90	1	0	0	15	Q	SOL: Active
						185	S13	W70	0	0	0	15	Q	MAG: Active
						190	S22	W40	0	0	0	15	Q	PRO: Quiet
						191	S18	W01	0	0	0	15	E	
						192	N13	W34	2	0	0	15	E	
						194	S16	E28	0	0	0	15	Q	
						195	S16	E65	5	0	0	15	Q	
						196	S19	W46	0	0	0	15	Q	
						197	N25	E73	0	0	0	15	Q	
320	16	15	185	198	12	185	S14	W82	0	0	0	16	Q	SOL: Active
						190	S22	W55	0	0	0	16	Q	MAG: Active
						191	S18	W16	1	0	0	16	E	PRO: Quiet
						192	N13	W47	10	0	0	16	E	
						194	S16	E15	0	0	0	16	Q	
						195	S15	E53	3	0	0	16	E	
						196	S19	W69	0	0	0	16	Q	
						197	N25	E58	0	0	0	16	Q	
						198	S16	E78	0	0	0	16	E	
321	17	16	162	199	7	191	S18	W28	3	0	0	17	E	SOL: Active
						192	N12	W61	6	0	0	17	E	MAG: Quiet
						193	S02	W32	0	0	0	17	Q	PRO: Quiet
						194	S16	E02	0	0	0	17	Q	
						195	S16	E41	9	0	0	17	Q	
						197	N25	E46	0	0	0	17	Q	
						198	S17	E66	2	0	0	17	E	
322	18	17	139	185	6	191	S18	W41	5	0	0	18	E	SOL: Active
						192	N12	W74	6	0	0	18	E	MAG: Quiet
						194	S17	W12	0	0	0	18	Q	PRO: Quiet
						195	S17	E28	0	0	0	18	Q	
						197	N24	E33	0	0	0	18	Q	
						198	S18	E55	3	1	0	18	E	
323	19	18	119	179	11	191	S18	W55	1	0	0	19	E	SOL: Active
						192	N12	W86	4	0	0	19	Q	MAG: Quiet
						195	S17	E15	0	0	0	19	Q	PRO: Quiet
						197	N24	E20	0	0	0	19	Q	
						198	S18	E43	1	1	0	19	E	
324	20	19	105	168	11	191	S18	W68	2	0	0	20	E	SOL: Active
						195	S17	E02	0	0	0	20	Q	MAG: Quiet

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

NOVEMBER 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)
						197	N24	E07	0	0	0	20	Q	PRO: Quiet
						198	S18	E28	4	0	0	20	E	
325	21	20	108	159	16	191	S18	W81	0	0	0	21	Q	SOL: Eruptive
						195	S17	W11	0	0	0	21	Q	MAG: Active
						197	N24	W06	0	0	0	21	Q	PRO: Quiet
						198	S18	E15	5	1	0	21	E	
						199	N27	E13	0	0	0	21	Q	
						200	N00	E71	0	0	0	21	Q	
326	22	21	143	151	38	191	S18	W94	0	0	0	22	Q	SOL: Eruptive
						194	S17	W64	0	0	0	22	Q	MAG: Active
						195	S17	W24	0	0	0	22	Q	PRO: Quiet
						197	N24	W20	0	0	0	22	Q	
						198	S18	E02	10	0	0	22	E	
						199	N27	W00	0	0	0	22	Q	
						200	N00	E57	0	0	0	22	Q	
						201	S16	W09	0	0	0	22	Q	
327	23	22	124	149	22	195	S17	W37	0	0	0	23	Q	SOL: Eruptive
						197	N24	W33	0	0	0	23	Q	MAG: Active
						198	S18	W12	4	0	0	23	E	PRO: Quiet
						199	N27	W14	0	0	0	23	Q	
						200	N00	E44	0	0	0	23	Q	
						201	S16	W22	0	0	0	23	Q	
328	24	23	126	148	19	195	S17	W51	0	0	0	24	Q	SOL: Eruptive
						197	N24	W46	0	0	0	24	Q	MAG: Active
						198	S18	W25	4	0	0	24	E	PRO: Quiet
						199	N27	W27	0	0	0	24	Q	
						200	N00	E31	0	0	0	24	Q	
						201	S16	W35	0	0	0	24	Q	
329	25	24	123	146	16	195	S16	W66	0	0	0	25	Q	SOL: Eruptive
						197	N26	W58	1	0	0	25	Q	MAG: Active
						198	S18	W36	2	0	0	25	E	PRO: Quiet
						199	N27	W42	0	0	0	25	Q	
						200	S01	E17	0	0	0	25	Q	
						201	S15	W54	0	0	0	25	Q	
						202	N14	E66	2	0	0	25	Q	
330	26	25	106	137	14	195	S16	W81	0	0	0	26	Q	SOL: Eruptive
						197	N25	W71	1	0	0	26	Q	MAG: Active
						198	S18	W48	0	0	0	26	E	PRO: Quiet
						199	N28	W54	0	0	0	26	Q	
						200	S01	E04	0	0	0	26	Q	
						201	S16	W65	0	0	0	26	Q	
						202	N13	E53	0	0	0	26	Q	
331	27	26	100	142	12	195	S16	W92	0	0	0	27	Q	SOL: Eruptive
						197	N24	W84	1	0	0	27	Q	MAG: Active
						198	S18	W61	1	0	0	27	E	PRO: Quiet
						199	N27	W58	0	0	0	27	Q	
						200	S02	W09	0	0	0	27	Q	
						202	N13	E41	0	0	0	27	Q	
						203	N08	E71	0	0	0	27	Q	
332	28	27	112	143	16	198	S18	W75	5	0	0	28	E	SOL: Eruptive
						200	S03	W22	0	0	0	28	Q	MAG: Active
						202	N13	E27	0	0	0	28	Q	PRO: Quiet
						203	N09	E56	0	0	0	28	Q	
						204	N16	E40	2	0	0	28	Q	
						205	N19	E63	0	0	0	28	Q	
						206	S26	E44	0	0	0	28	Q	
						207	S19	E69	7	0	0	28	E	
333	29	28	124	140	15	198	S17	W87	3	0	0	29	E	SOL: Eruptive

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

NOVEMBER 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)
						200	S03	W36	0	0	0	29	Q	MAG: Quiet
						202	N14	E14	0	0	0	29	Q	PRO: Quiet
						203	N09	E43	0	0	0	29	Q	
						204	N17	E28	0	0	0	29	Q	
						205	N19	E49	0	0	0	29	Q	
						206	S27	E30	0	0	0	29	Q	
						207	S19	E59	3	0	0	29	E	
334	30	29	107	141	12	200	S02	W50	0	0	0	30	Q	SOL: Eruptive
						202	N13	W01	0	0	0	30	Q	MAG: Quiet
						203	N10	E29	0	0	0	30	Q	PRO: Quiet
						204	N18	E14	0	0	0	30	Q	
						205	N19	E36	0	0	0	30	Q	
						207	S19	E44	1	0	0	30	E	
						208	N09	E75	0	0	0	30	Q	

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

Magnetic (MAG) Geoadvice

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

Proton (PRO) Geoadvice

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

STRATWARM ALERTS

STRATALERT BERLIN 13 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE OVER THE ATLANTIC SECTOR. MINOR
WARMING IN THE UPPER STRATOSPHERE. TEMPERATURE INCREASE AT 3HPA FROM -34C TO +2C
OVER THE CASPIAN SEA WITHIN ONE WEEK.

STRATALERT BERLIN 14 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE OVER THE ATLANTIC SECTOR.
MINOR WARMING IN THE UPPER STRATOSPHERE, CONTINUING.

STRATALERT BERLIN 15 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE OVER GREENLAND AND NORTHERN EUROPE.
MINOR WARMING IN THE UPPER STRATOSPHERE, CONTINUING.

STRATALERT BERLIN 16 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE OVER GREENLAND AND NORTHERN EUROPE.
MINOR WARMING IN THE UPPER STRATOSPHERE, CONTINUING.

STRATALERT BERLIN 17 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE OVER GREENLAND AND NORTHERN EUROPE.
MINOR WARMING IN THE UPPER STRATOSPHERE, CONTINUING.

STRATALERT BERLIN 18 DECEMBER 2002 1400 UTC STRATALERT EXISTS.

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

NOVEMBER 2002

COLD CONDITIONS PREVAIL IN THE LOWER STRATOSPHERE. PSCS MAY FORM FROM SOUTHEAST GREENLAND TO SCANDANAVIA.

STRATALERT BERLIN 19 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
TEMPERATURE GRADIENT AT 1 HPA REVERSED. COLD CONDITIONS IN THE LOWER STRATOSPHERE PREVAIL.

STRATALERT BERLIN 20 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
MINOR WARMING IN THE UPPERMOST LEVEL, TEMPERATURE GRADIENT AT 1 HPA REVERSED. COLD CODITIONS IN THE LOWER STRATOSPHERE PREVAIL.

STRATALERT BERLIN 21 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE, BUT MINOR WARMING IN THE UPPER LEVELS, TEMPERATURE GRADIENT AT 1 HPA REVERSED.

STRATALERT BERLIN 22 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS IN THE LOWER STRATOSPHERE, BUT MINOR WARMING IN THE UPPER LEVELS.

STRATALERT BERLIN 23 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITION CONTINUES IN THE LOWER STRATOSPHERE, INTENSE WARMING DEVELOPS IN THE UPPER STRATOSPHERE.

STRATALERT BERLIN 24 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS CONTINUE IN THE LOWER STRATOSPHERE, CENTERED OVER THE EUROPEAN ARCTIC; INTENSE WARMING CONTINUES IN THE UPPER STRATOSPHERE CENTERED OVER THE NORTH ATLANTIC/EAST GREENLAND. THE NEXT ALERT WILL BE AVAILABLE ON 26 DECEMBER.

STRATALERT BERLIN 26 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
COLD CONDITIONS OVER THE EUROPEAN ARCTIC CONTINUE IN THE LOWER STRATOSPHERE. INTENSE WARMING CONTINUES IN THE UPPER STRATOSPHERE CENTERED OVER THE NORTH ATLANTIC/EUROPE. AT 10 HPA AND ABOVE A TEMPERATURE INCREASE OF MORE THAN 40 KELVIN DURING ONE WEEK IS OBSERVED OVER THE URAL (10 HPA) AND NORTHERN EUROPE; REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE NORTH POLE EXPECTED WITHIN THE NEXT 5 DAYS.

STRATALERT BERLIN 27 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
STILL COLD CONDITIONS OVER THE EUROPEAN ARCTIC IN THE LOWER STRATOSPHERE. INTENSE WARMING CONTINUES IN THE UPPER STRATOSPHERE CENTERED OVER THE NORTH ATLANTIC/EUROPE. REVERSED TEMPERATURE GRADIENT BETWEEN THE NORTH POLE AND 60N EXPECTED WITHIN THE NEXT 5 DAYS.

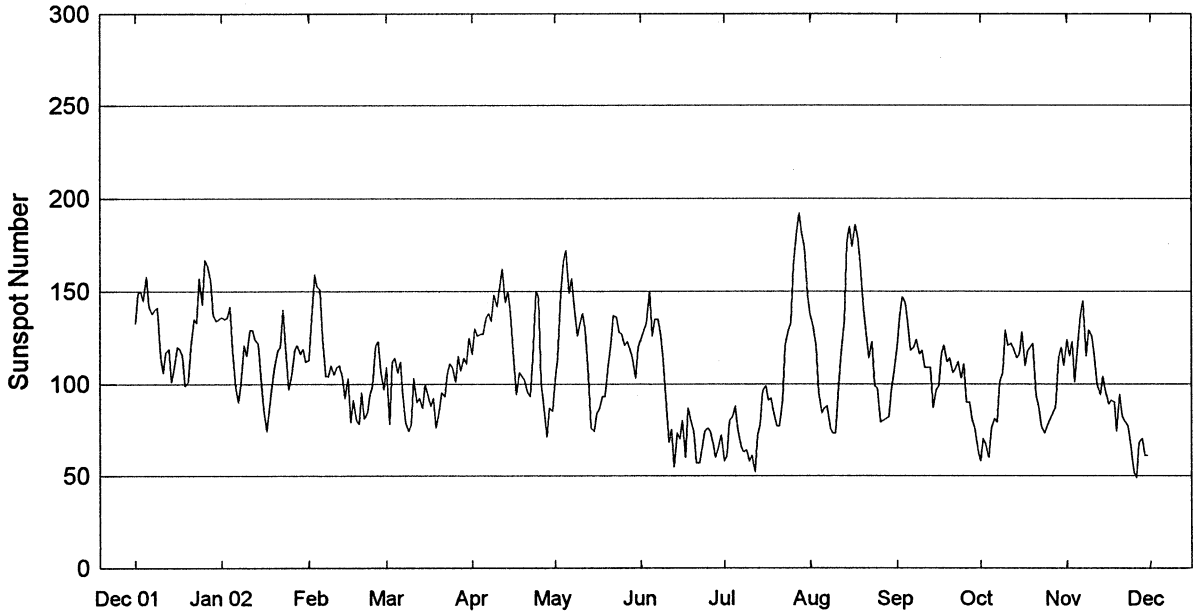
STRATALERT BERLIN 28 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
STILL COLD CONDITIONS OVER THE EUROPEAN ARCTIC IN THE LOWER STRATOSPHERE. INTENSE WARMING CONTINUES IN THE UPPER STRATOSPHERE CENTERED OVER THE NORTH ATLANTIC/EUROPE. REVERSED TEMPERATURE GRADIENT BETWEEN THE NORTH POLE AND 60N AT 1 HPA AND EXPECTED TO EXTEND FROM 10 TO 1 HPA WITHIN THE NEXT 5 DAYS.

STRATALERT BERLIN 29 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
INTENSE WARMING CONTINUES IN THE UPPER AND MID STRATOSPHERE, LOWER STRATOSPHERE REMAINS COLD. WITHIN THE NEXT THREE DAYS: EASTERLY WINDS AT 60N IN 1 HPA; AN ELONGATION OF THE POLAR VORTEX WITH TWO CENTRES IN THE LOWER AND MID-STRATOSPHERE.

STRATALERT BERLIN 30 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
VERY STRONG WARMING CONTINUES IN THE UPPER AND MIDDLE STRATOSPHERE. TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE REVERSED DOWN TO 10 HPA AND NET EASTERLY WINDS AT 60N AT 1 HPA.

STRATALERT BERLIN 31 DECEMBER 2002 1400 UTC STRATALERT EXISTS.
VERY STRONG WARMING CONTINUES IN THE UPPER AND MIDDLE STRATOSPHERE. TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE REVERSED DOWN TO ALMOST 20 HPA AND NET EASTERLY WINDS AT 60N AT 1 HPA.

International Relative Sunspot Numbers
Dec 2001 - Nov 2002

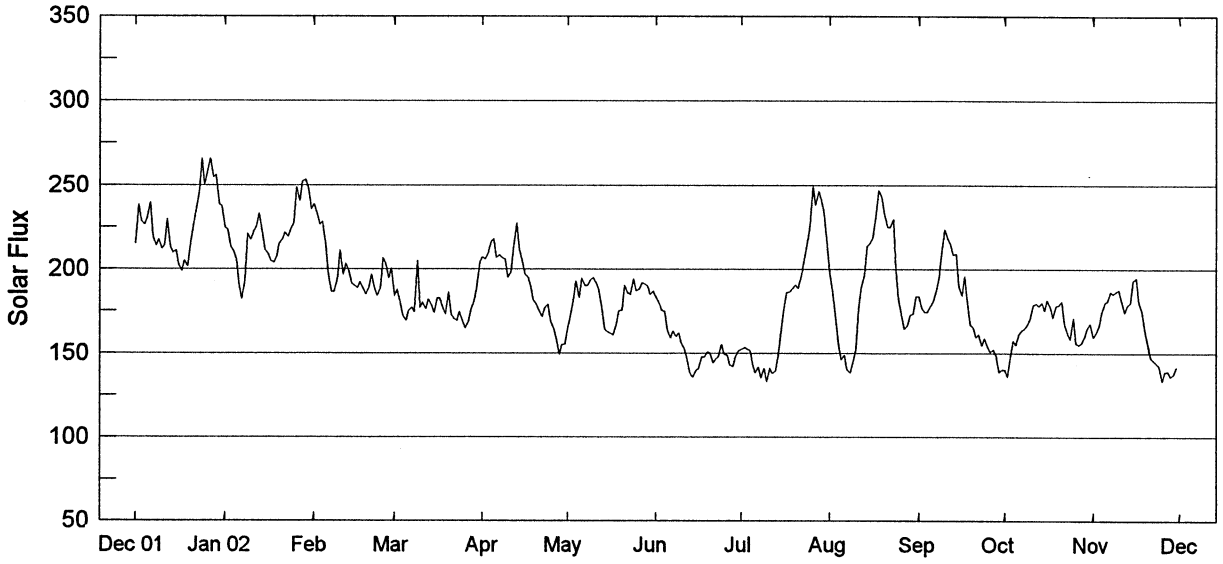


Day	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*
1	133	136	113	109	116	102	124	58	137	120	58	124
2	149	135	135	78	130	114	129	61	132	136	70	115
3	150	136	159	112	126	149	133	80	121	147	67	123
4	145	142	153	114	127	166	150	82	95	144	60	101
5	158	118	151	106	127	172	126	88	84	132	76	122
6	142	98	125	112	136	149	135	75	87	118	81	137
7	138	90	104	93	138	157	135	66	88	120	79	145
8	140	100	104	79	134	142	127	63	76	124	101	115
9	141	121	110	74	148	126	113	64	73	116	106	129
10	115	115	105	78	142	133	88	58	73	118	129	126
11	106	129	109	103	152	138	68	61	99	109	121	114
12	117	129	110	90	162	130	75	52	117	109	122	100
13	119	124	104	92	144	104	55	72	134	109	119	94
14	101	122	92	87	150	76	73	78	177	87	114	104
15	108	104	103	100	138	74	70	96	185	97	116	96
16	120	87	79	94	113	84	80	99	174	99	128	89
17	119	74	91	88	94	86	60	91	186	116	110	91
18	115	86	80	92	106	93	87	92	179	121	118	90
19	99	99	78	76	104	93	79	83	164	112	120	74
20	101	109	95	85	102	107	74	77	140	114	122	94
21	120	118	81	95	95	121	57	77	127	106	93	82
22	135	120	84	93	93	137	57	91	114	108	88	79
23	133	140	94	106	114	136	65	121	123	112	77	77
24	157	115	99	111	150	128	74	129	99	103	73	67
25	143	97	121	109	147	127	76	133	98	111	77	52
26	167	106	123	101	101	121	74	164	79	90	81	49
27	164	118	107	115	88	123	66	182	80	90	84	68
28	156	121	97	107	71	119	60	192	81	80	87	70
29	137	116		114	87	114	66	181	82	76	114	61
30	134	119		111	85	103	72	174	97	64	120	61
31	135	112		125		120		148	106		110	
Mean	132.2	114.1	107.4	98.4	120.7	120.8	88.3	99.6	116.4	109.6	97.5	95.0

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Dec 2001 - Nov 2002

Adjusted to 1 AU



Day	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	215.1	224.5	238.5	184.3	206.7	164.9	183.9	152.3	198.3	183.8	140.1	159.7
2	238.1	223.5	233.7	187.6	205.9	171.7	180.0	153.5	185.7	176.9	136.0	162.1
3	228.3	213.0	226.3	179.6	209.4	182.0	175.4	152.4#	172.7	174.4	146.1	166.5
4	226.6	211.0	228.1	172.0	216.3	192.7	174.7	151.3	155.3	174.2	157.6	174.4
5	230.1	205.2	214.5	169.4	217.6	183.2	163.7	143.5	146.0	178.1	155.1	180.0
6	239.5	190.1	196.9	175.0	206.7	194.3	159.1	138.0	148.8	180.9	161.6	181.2
7	219.3	182.4	186.6	177.0	208.4	190.3	163.1	141.5	140.1	185.6	163.5	186.4
8	213.9	192.6	186.4	174.2	206.8	190.2	159.9	135.3	138.3	194.4	165.1	185.5
9	217.5	220.9	194.1	204.8x	205.8	193.7	161.9	140.9	144.0	209.0	166.8	187.0
10	212.3	217.3	210.9	176.9	195.1	194.8	156.2	133.1	152.4	223.5	171.4	187.7
11	213.9	221.4	196.6	180.0	198.3	191.8	152.4	141.0	176.9	219.0	178.7	181.0
12	229.4	225.7	203.1	176.2	213.0	187.1	146.2	137.7	188.8	215.1	179.7	174.6
13	213.4	232.9	198.5	182.1	227.3	175.6	137.6	139.4	196.8	208.6	178.3	178.6
14	209.9#	221.6	191.3	178.6	211.6	164.2	135.6	148.6	213.5	209.2	180.2	180.2
15	211.0	211.2	190.3	174.0	204.7	162.7	139.7	164.8#	215.7	189.9	175.7	193.2
16	202.5	209.1	188.9	182.7	197.2	162.0	141.0	177.2	219.1	184.5	181.4	194.8
17	199.0	205.0	192.0	182.7	195.0	160.7	147.5	185.9	232.3	195.9	177.7	180.5
18	205.0	203.8	188.4	176.5	189.8	166.8	147.5	186.6	246.9	178.4	171.3	174.8
19	201.6	206.9	185.1	173.3	181.4	175.0	150.5	188.3	242.6	166.7	178.1	164.3
20	214.0	215.2	189.1	186.3	179.0	175.4	149.8	190.7	232.8	165.8	178.7	155.3
21	226.7	217.5	196.7	172.8	175.1	190.4	144.2	188.7	225.0	159.8	180.8	147.2
22	234.9	221.5	187.9	170.4	171.7	185.6	146.6	195.8	225.1	161.1	167.7	145.5
23	246.3	219.4	184.2	169.4	177.2	184.8	147.5	204.6	229.5	154.8	161.9	143.8
24	265.5	223.6	188.9	174.3	178.9	193.9	155.3	215.0	199.8	158.9	158.5	142.5
25	250.3	227.6	206.4	169.1	169.3	187.4	149.5	224.5	182.4	154.2	170.9	133.2
26	259.0	248.7	203.5	164.9	164.7	188.0	148.6	249.1	172.2	150.6	156.1	138.5
27	265.6	240.5	194.9	168.4	159.0	191.6	143.2	238.0	164.7	152.2	155.2	138.8
28	254.6#	252.0	200.4	175.6	149.2	191.4	141.9	246.2	166.4	149.1	156.3	136.0
29	255.7	253.2		180.8	155.2	189.8	147.5	241.1	172.6	138.6	159.4	137.5
30	238.5	248.8		188.2	155.6	185.1	151.4	234.1	173.5#	140.1	165.3	142.1
31	237.5	235.5		204.0		187.0		214.8	183.7		167.7	
Mean	228.2	220.1	200.1	178.4	191.1	182.4	153.4	179.2	188.4	177.8	165.9	165.1

NOTE: # 1700 or1800UT reading - burst in progress (IP) at 2000UT; x Burst IP at 2000UT.

DAILY SOLAR INDICES

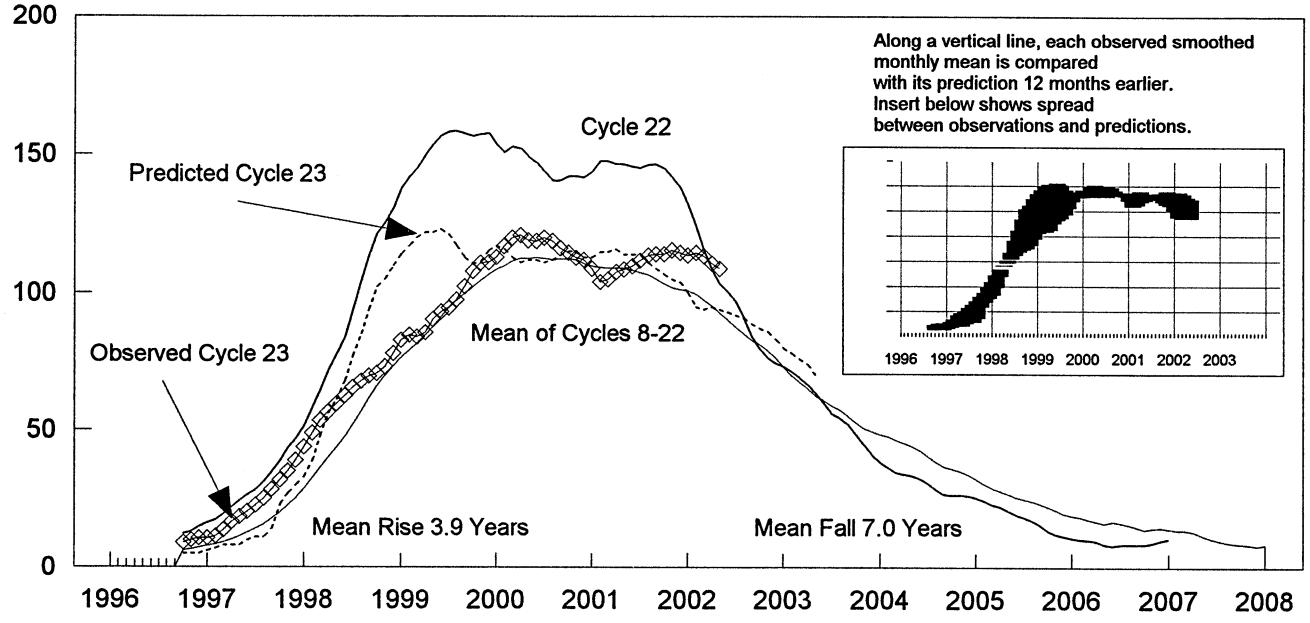
November 2002

	Day	Bartels	Sunspot		Obs Flux		-----Solar Flux Adjusted to 1 Astronomical Unit--------							
	of	Cycle	Numbers		Penticton	SGMR	SGMR	SGMR	Penticton	SGMR	SGMR	SGMR	SGMR	SGMR
Day	Year	Day	Int	Amer	(2800)	(15400)	(8800)	(4995)	(2800)	(2695)	(1415)	(610)	(410)	(245)
1	305	16	124	123	162.2	558	318	213	159.7	156	114	50	32	20
2	306	17	115	122	164.6	564	335	211	162.1	155	115	54	40	43
3	307	18	123	119	169.2	566	325	212	166.5	160	120	56	57	--
4	308	19	101	114	177.4	561	326	226	174.4	163	121	63	56	--
5	309	20	122	128	183.1	556	327	236	180.0	170	122	53	39	89
6	310	21	137	143	184.5	479	279	211	181.2	173	123	45	34	21
7	311	22	145	140	189.8	556	309	223	186.4	173	126	49	36	26
8	312	23	115	132	189.0	566	319	227	185.5	177	129	48	32	23
9	313	24	129	134	190.6	585	335	227	187.0	177	129	48	36	24
10	314	25	126	130	191.4	559	330	231	187.7	170	122	52	34	24
11	315	26	114	112	184.7	511	322	240	181.0	177	125	51	35	25
12	316	27	100	100	178.2	539	300	216	174.6	162	115	47	27	18
13	317	1	94	91	182.4	503	285	222	178.6	166	111	42	32	22
14	318	2	104	114	184.1	550	295	221	180.2	164	116	48	35	27
15	319	3	96	109	197.5	571	324	234	193.2	179	124	53	49	54
16	320	4	89	110	199.2	526	335	234	194.8	184	126	59	65	--
17	321	5	91	98	184.7	519	315	224	180.5	175	123	49	64	--
18	322	6	90	85	178.9	552	337	227	174.8	175	124	51	41	85
19	323	7	74	83	168.2	544	324	216	164.3	159	121	50	39	24
20	324	8	94	88	159.1	549	305	212	155.3	156	117	48	33	29
21	325	9	82	81	150.9	524	295	193	147.2	133	108	48	32	22
22	326	10	79	81	149.1	511	304	191	145.5	133	108	43	31	20
23	327	11	77	82	147.5	544	313	193	143.8	136	106	51	34	21
24	328	12	67	74	146.2	545	296	200	142.5	144	102	50	43	40
25	329	13	52	57	136.8	539	296	178	133.2	133	100	53	53	--
26	330	14	49	51	142.3	549	290	183	138.5	129	99	52	47	56
27	331	15	68	70	142.6	519	299	181	138.8	141	97	50	72	35
28	332	16	70	61	139.7	551	306	177	136.0	135	97	52	41	36
29	333	17	61	61	141.3	539	294	177	137.5	129	100	51	38	31
30	334	18	61	71	146.2	550	302	184	142.1	137	105	52	38	29
31														
MEAN			95	98.7	168.7	542	311	210	165.1	157	114	50	41	34

The International and American sunspot numbers shown 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	115	111
2002	114	115	113	111	109	106	103	100	97	94	91	87	103
						(7)	(7)	(8)	(9)	(12)	(12)	(11)	(6)
2003	83	79	77	74	71	69	67	65	62	60	58	57	69
	(9)	(8)	(8)	(10)	(10)	(10)	(11)	(11)	(12)	(13)	(15)	(17)	(11)

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

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

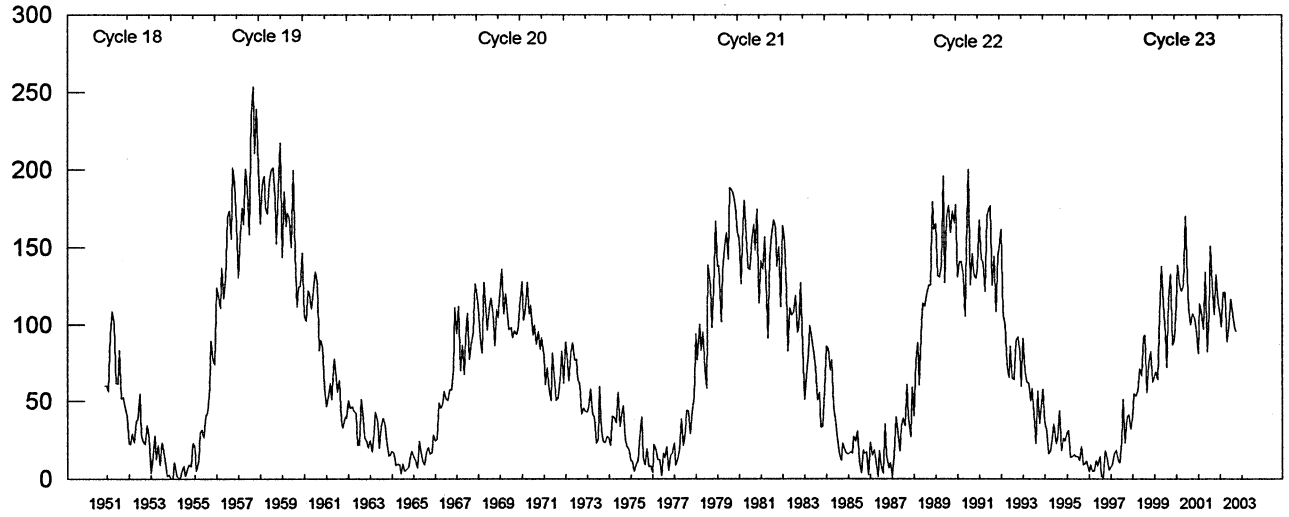
+ April 2000 marks Cycle 23 maximum.

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 Sept 2002 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the May 2003 prediction. There exists a 90% chance that in May 2003, the actual smoothed number will fall somewhere between 61 and 81.

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 - Nov 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	120.7	120.8	88.3	99.9	116.4	109.3	97.5	95.0		106.2	

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

Hα SOLAR FLARES

NOVEMBER 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	01	0258	0309	0314	S17	E16	10198			16	SF	C 2.1						1.3E-03
GOES		0636	0644	0650	S18	E13	10198			14	SF	C 4.0						2.1E-03
GOES		0807	0812	0816	S20	E11	10198			9	SF	C 2.4						1.1E-03
RAMY		1053	1057	1101	N16	E24	10175	11	3.3	8	SF		3	E		17		F
GOES		1059	1104	1106	S19	E11	10198			7	SF	C 6.6						1.6E-03
RAMY		1221	1221	1230	S15	E89		11	8.2	9	SF		3	E		14		
GOES		1338	1341	1344						6		C 1.2						3.7E-04
RAMY		1614	1620	1640	N18	E41	10177	11	4.8	26	SF		3	E		18		F
GOES		1642	1647	1651	S17	E10	10198			9	SF	C 3.8						1.3E-03
GOES		1900	1904	1907	S18	E08	10198			7	SF	C 1.8						6.0E-04
RAMY		1931	1931	1935	N10	W76		10	27.2	4	SF		3	E		34		F
GOES		1951	1957	2000	S17	E08	10198			9	SF	C 3.8						1.3E-03
GOES		2024	2030	2036	S15	E00	10198			12	SF	C 2.2						1.3E-03
GOES	02	0528	0607	0704						96		C 3.9						1.5E-02
GOES		0809	0815	0821	S09	E62	10180			12	SF	C 2.3						1.5E-03
LEAR		0811	0813	0816	S09	E62	10180	11	7.0	5	SF		3	E		35		F
GOES		1325	1345	1403	N12	E37	10177			38	SF	C 1.4						2.9E-03
SVTO		1355	1355	1359	N12	E37	10177	11	5.4	4	SF		3	E		17		F
RAMY		1355	1355	1359	N15	E37	10177	11	5.4	4	SF		3	E		17		F
HOLL		2208	2219	2300D	S09	E52	10180	11	6.8	52D	1F		3	E		185		
GOES		2212	2222	2237	S09	E52	10180			25	1F	C 4.5						5.7E-03
LEAR		2215E	2215U	2250	S12	E58	10180	11	7.3	35D	SF		3	E		78		F
GOES	03	0551	0610	0627	N15	E25	10177			36	SF	C 6.3						9.8E-03
LEAR		0554	0605	0641	N15	E25	10177	11	5.1	47	SF		3	E		90		F
GOES		0948	0957	1000	N17	E24	10177			12	SF	C 2.4						1.1E-03
LEAR		0951	0957	1005	N17	E24	10177	11	5.2	14	SF		3	E		41		F
SVTO		1257E	1258U	1305D	S11	E43	10180	11	6.8	8D	SF		2	E		11		
RAMY		1257	1258	1312	S07	E45	10180	11	6.9	15	SF		3	E		11		
GOES		1341	1403	1427	N14	E25	10177			46	1F	M 1.3						2.4E-02
RAMY		1344	1350	1442	N15	E26	10177	11	5.5	58	1F		3	E		187		FH
SVTO		1356E	1406U	1445D	N15	E20	10177	11	5.1	49D	1F		2	E		261		FH
HOLL		1400	1401	1438	N14	E25	10177	11	5.5	38	1F		3	E		223		FH
HOLL		1445	1446	1454	S08	E43	10180	11	6.8	9	SF		3	E		16		F
RAMY		1734	1801	1817	S06	E43	10180	11	6.9	43	SF		3	E		31		FH
GOES		1748	1759	1803	S06	E43	10180			15	SF	C 1.7						1.3E-03
HOLL		1914	1922	1930	S09	E41	10180	11	6.9	16	SF		3	E		34		
GOES		1917	1925	1927	S09	E41	10180			10	SF	C 1.2						6.8E-04
HOLL		1952	1953	1958	S08	E40	10180	11	6.8	6	SF		3	E		20		F
LEAR	04	0122	0127	0136	S09	E37	10180	11	6.8	14	SF		3	E		36		F
GOES		0200	0204	0206						6		C 1.7						4.9E-04
GOES		0320	0330	0343	N14	E19	10177			23	SF	C 3.7						3.9E-03
LEAR		0324	0330	0346	N14	E19	10177	11	5.6	22	SF		3	E		25		F
LEAR		0511	0515	0535	S10	E33	10180	11	6.7	24	SF		3	E		14		
LEAR		0642	0646	0650	S10	E32	10180	11	6.7	8	SF		3	E		13		
LEAR		0716	0728	0732	S11	E33	10180	11	6.8	16	SF		3	E		11		
LEAR		0733	0735	0738	S10	E36	10180	11	7.0	5	SF		3	E		20		F
LEAR		0752	0755	0809	S10	E31	10180	11	6.6	17	SF		3	E		17		H
LEAR		0837	0838	0846	S10	E31	10180	11	6.7	9	SF		3	E		15		
LEAR		0930	0931	0938	S10	E30	10180	11	6.6	8	SF		3	E		11		
GOES		1005	1120	1213	S08	E31	10180			128	SF	C 3.7						2.0E-02
RAMY		1125E	1127U	1136	S08	E31	10180	11	6.8	11D	SF		3	E		14		F
RAMY		1625	1634	1708	N16	E03	10177	11	4.9	43	SF		3	E		19		F
RAMY		1811E	1822U	1906	S09	E26	10180	11	6.7	55D	SF		3	E		47		F
GOES		1813	1823	1832	S09	E26	10180			19	SF	C 4.4						3.6E-03
GOES		1939	2024	2046						67		C 2.1						5.9E-03
GOES		2154	2158	2203						9		C 2.1						9.7E-04
GOES		2233	2243	2249						16		C 5.4						3.4E-03
GOES		2347	2352	2358						11		C 2.1						1.2E-03
GOES	05	0328	0348	0405	S12	E29	10180			37	SF	C 1.2						2.5E-03
LEAR		0330	0331	0425	S12	E29	10180	11	7.3	55	SF		4	E		16		
GOES		0447	0455	0502	S10	E19	10180			15	SF	C 1.0						8.3E-04
LEAR		0449	0456	0457	S10	E19	10180	11	6.6	8	SF		3	E		15		
LEAR		0458	0511	0514	S10	E19	10180	11	6.6	16	SF		3	E		27		F
GOES		0550	0554	0556	N19	W01	10177			6	SF	C 1.2						3.6E-04

Hα SOLAR FLARES

NOVEMBER 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
LEAR	05	0552	0554	0557	N19	W01	10177	11	5.2	5	SF		3	E		52		FH
GOES		0944	0947	0955	N13	E02	10177			11	SF	C 1.6						9.9E-04
SVTO		0945	0947	0949D	N13	E02	10177	11	5.5	4D	SF		3	E		20		F
GOES		1253	1257	1301	N20	W04	10177			8	SF	C 7.5						2.1E-03
RAMY		1256	1257	1313	S10	E24	10180	11	7.3	17	SN		3	E		83		FH
SVTO		1258E	1302U	1303D	S12	E22	10180	11	7.2	5D	SF		2	E		21		
RAMY		1300	1301	1305	N20	W04	10177	11	5.2	5	SF		3	E		19		FH
RAMY		1344	1350	1356	S09	E15	10180	11	6.7	12	SF		3	E		17		F
RAMY		1400	1401	1406	S10	E15	10180	11	6.7	6	SF		3	E		15		
GOES		1606	1610	1613	N20	W07	10177			7	SN	C 6.4						1.4E-03
RAMY		1609	1610	1620	N20	W07	10177	11	5.1	11	SN		3	E		46		H
GOES		1633	1642	1655	S11	E15	10180			22	SF	C 1.4						1.7E-03
RAMY		1636	1638	1704	S11	E15	10180	11	6.8	28	SF		3	E		63		F
GOES		1815	1822	1831	S14	E57	10185			16	SF	C 2.7						2.0E-03
HOLL		1818	1822	1835	S14	E57	10185	11	10.1	17	SF		3	E		49		F
GOES		2041	2046	2049	N21	W09	10177			8	SF	C 2.8						8.7E-04
HOLL		2043	2044	2054	N21	W09	10177	11	5.2	11	SF		3	E		21		FH
GOES		2101	2111	2135	N15	W06	10177			34	SF	C 3.4						5.3E-03
HOLL		2103	2109	2136	N15	W06	10177	11	5.4	33	SF		3	E		52		F
GOES		2147	2201	2218	N15	W07	10177			31	SF	C 9.5						1.3E-02
HOLL		2152	2153	2219	N15	W07	10177	11	5.4	27	SF		3	E		23		F
GOES	06	0505	0532	0614	S13	E13	10180			69	SF	C 7.2						1.8E-02
LEAR		0509	0528	0559	S13	E13	10180	11	7.2	50	SF		3	E		93		FH
LEAR		0801	0812	0819	N17	W15	10177	11	5.2	18	SF		3	E		24		F
LEAR		0833	0833	0839	S08	E02	10180	11	6.5	6	SF		3	E		20		
LEAR		0838	0838	0847	S04	W10	10181	11	5.6	9	SF		3	E		10		
GOES		1159	1207	1214						15		C 1.9						1.4E-03
GOES		1433	1438	1440	N11	E26	10188			7	SF	C 2.7						7.1E-04
HOLL		1434	1438	1445	N12	E26		11	8.6	11	SF		3	E		37		H
RAMY		1434	1438	1452	N11	E26		11	8.6	18	SF		3	E		47		F
GOES		1441	1445	1448	S08	E03	10180			7	SF	C 2.6						8.9E-04
RAMY		1444	1446	1456	S08	E03	10180	11	6.8	12	SF		3	E		15		F
HOLL		1524	1533	1555	N11	E26		11	8.6	31	SF		3	E		19		FH
RAMY		1532	1543	1554	N11	E25		11	8.5	22	SF		3	E		29		FH
GOES		1636	1642	1645	S08	E06	10180			9	SF	C 3.7						1.1E-03
HOLL		1641	1643	1648	S08	E06	10180	11	7.1	7	SF		3	E		19		F
RAMY		1642	1643	1648	S08	E06	10180	11	7.1	6	SF		3	E		36		H
RAMY		1646	1647	1654	N16	W17	10177	11	5.4	8	SF		3	E		25		FH
HOLL		1646	1647	1654	N16	W16	10177	11	5.5	8	SF		3	E		22		F
RAMY		1756	1758	1807	S09	E02	10180	11	6.9	11	SF		3	E		21		
RAMY		1818	1819	1822	S08	E01	10180	11	6.8	4	SF		3	E		10		
RAMY		1827	1834	1851	N11	E23	10188	11	8.5	24	SF		3	E		24		F
GOES		1830	1833	1835	N12	E24	10188			5	SF	C 1.6						4.5E-04
HOLL		1832	1835	1846	N12	E24	10188	11	8.6	14	SF		3	E		13		F
GOES		1940	1946	1956	N06	E10	10187			16	SF	C 2.2						1.6E-03
RAMY		1943	1945	2023	N05	E09	10187	11	7.5	40	SF		3	E		66		
HOLL		1944	1944	1952	N06	E10	10187	11	7.6	8	SF		3	E		14		F
RAMY		1945	1946	2024	N11	E22	10188	11	8.5	39	SF		3	E		15		
GOES		2014	2019	2022	N12	E23	10188			8	SF	C 2.4						8.5E-04
HOLL		2018	2018	2023	N12	E23	10188	11	8.6	5	SF		3	E		28		
GOES		2031	2034	2036						5		C 1.1						3.0E-04
GOES		2107	2110	2115						8		C 1.2						5.2E-04
GOES		2125	2157	2223	S08	W04	10180			58	SF	C 4.5						1.2E-02
HOLL		2140	2140	2144	S08	W04	10180	11	6.6	4	SF		3	E		14		F
HOLL		2154	2156	2158	S08	W02	10180	11	6.8	4	SF		3	E		14		F
GOES		2308	2316	2323	N16	W21	10177			15	SF	C 7.3						4.0E-03
LEAR		2311	2315	2334	N16	W23	10177	11	5.2	23	SF		2	E		76		F
HOLL		2311	2320	2341	N16	W21	10177	11	5.4	30	SF		3	E		78		F
HOLL		2320	2320	2329	N11	E21	10188	11	8.5	9	SF		3	E		13		F
LEAR	07	0125	0125	0137	N09	E20	10188	11	8.6	12	SF		2	E		13		F
LEAR		0343	0344	0351	S10	W05	10180	11	6.8	8	SF		2	E		34		F
LEAR		0525	0533	0601	S10	W06	10180	11	6.8	36	SF		3	E		72		F
LEAR		0622	0807	0830	S10	W07	10180	11	6.7	128	SF		3	E		43		F
GOES		0624	0635	0648	N17	W30	10177			24	SF	C 2.5						3.0E-03
LEAR		0626	0633	0654	N17	W30	10177	11	5.0	28	SF		3	E		78		F
SVTO		0636	0637	0641	N18	W29	10177	11	5.1	5	SF		3	E		20		F

Hα SOLAR FLARES

NOVEMBER 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
LEAR	07	0827	0827	0841	N10	E16	10188	11	8.5	14	SF		3	E		17		
GOES		0901	0904	0906	S10	W11	10180			5	SF	C 2.8						6.7E-04
SVTO		0903	0904	0908	S10	W11	10180	11	6.5	5	SF		3	E		51		F
RAMY		1140	1145	1152	S12	W16	10180	11	6.3	12	SF		3	E		34		F
RAMY		1156	1159	1208	S08	W07	10180	11	7.0	12	SF		3	E		23		F
RAMY		1328	1329	1335	S22	E62		11	12.3	7	SF		3	E		14		
RAMY		1350	1354	1359	S22	E62		11	12.3	9	SF		3	E		19		
HOLL		1427	1448	1452	S22	E60		11	12.2	25	SF		3	E		31		F
RAMY		1448	1448	1452	S22	E61		11	12.3	4	SF		3	E		16		
RAMY		2034	2034	2045	S06	W16	10180	11	6.6	11	SF		3	E		10		
LEAR	08	0203	0204	0224	S08	W19	10180	11	6.7	21	SF		3	E		30		F
GOES		0501	0506	0512	S07	W22	10180			11	SF	C 1.3						8.0E-04
LEAR		0502	0504	0518	S07	W22	10180	11	6.6	16	SF		2	E		59		F
LEAR		0820	0848	0933	S10	W19	10180	11	6.9	73	SF		3	E		70		F
GOES		0829	0834	0839	S10	W19	10180			10	SF	C 2.1						1.1E-03
GOES		1001	1009	1015						14		C 2.7						1.8E-03
GOES		1051	1055	1101	S08	W26	10180			10	SF	C 1.9						1.0E-03
RAMY		1059	1059	1109	S08	W26	10180	11	6.5	10	SF		3	E		20		
GOES		1219	1224	1227	S09	W26	10180			8	SF	C 5.8						1.9E-03
RAMY		1222	1223	1231	S09	W26	10180	11	6.6	9	SF		3	E		14		
GOES		1351	1355	1358						7		C 2.0						7.2E-04
HOLL		1427	1428	1433	S08	W27	10180	11	6.6	6	SF		3	E		53		F
RAMY		1447	1448	1456	S09	W27	10180	11	6.6	9	SF		3	E		13		
RAMY		1457	1458	1502	S08	W27	10180	11	6.6	5	SF		3	E		14		
GOES		1757	1820	1848	S12	W19	10180			51	1F	C 7.4						1.6E-02
RAMY		1758	1807	1900	S11	W18	10180	11	7.4	62	SF		3	E		90		FH
HOLL		1802	1818	1903	S12	W19	10180	11	7.3	61	1F		3	E		127		FH
GOES		2216	2220	2224						8		C 1.3						5.6E-04
GOES	09	0422	0426	0430						8		C 1.6						7.0E-04
GOES		0944	0954	1003						19		C 4.7						4.6E-03
GOES		1144	1158	1208	S11	W36	10180			24	SF	C 6.3						6.5E-03
RAMY		1148	1148	1218	S11	W36	10180	11	6.8	30	SF		3	E		23		FH
GOES		1308	1323	1336	S12	W29	10180			28	2B	M 4.6						4.8E-02
RAMY		1309	1322	1428	S12	W29	10180	11	7.4	79	2B		3	E		555		UF
RAMY		1317	1317	1322	S12	W01	10185	11	9.5	5	SF		3	E		10		
RAMY		1350	1402	1428	N10	W14	10188	11	8.5	38	SF		3	E		49		F
SVTO		1416E	1416U	1422	S07	W32	10180	11	7.2	6D	SF		2	E		37		F
GOES		1519	1526	1531	S10	W38	10180			12	SF	C 4.1						2.4E-03
RAMY		1522	1526	1530	S10	W38	10180	11	6.8	8	SF		3	E		21		F
HOLL		1533	1551	1604	N15	W81	10175	11	3.5	31	SF		3	E		91		
RAMY		1620	1620	1629	S11	W40	10180	11	6.7	9	SF		3	E		15		F
HOLL		1622	1622	1625	S12	W32	10180	11	7.3	3	SF		3	E		13		
RAMY		1742	1742	1747	S20	E69	10191	11	15.0	5	SF		3	E		22		H
HOLL		1742	1744	1748	S19	E70	10191	11	15.1	6	SF		3	E		39		F
GOES		1747	1752	1758	S19	E70	10191			11	SF	C 7.9						3.6E-03
RAMY		1817	1828	1834	S11	W41	10180	11	6.7	17	SF		3	E		21		
RAMY		1835	1835	1838	S19	E64	10191	11	14.6	3	SF		3	E		11		
RAMY		1919	1920	1925	S11	W42	10180	11	6.6	6	SF		3	E		15		F
RAMY		1956	2004	2025	S10	W42	10180	11	6.7	29	SF		3	E		17		
RAMY		2012	2013	2016	S17	E67	10191	11	14.9	4	SF		3	E		10		
HOLL		2034	2035	2045	S18	E67	10191	11	14.9	11	SF		3	E		45		
HOLL		2109	2117	2123	S10	W44	10180	11	6.6	14	SF		3	E		12		
GOES		2312	2319	2324						12		C 5.8						2.9E-03
GOES	10	0117	0133	0141						24		C 5.5						6.2E-03
GOES		0304	0321	0335	S12	W37	10180			31	2N	M 2.4						3.0E-02
LEAR		0307	0314	0358	S12	W37	10180	11	7.3	51	2N		3	E		522		UF
GOES		0528	0533	0541						13		C 2.3						1.6E-03
LEAR		0743	0743	0746	S10	W49	10180	11	6.6	3	SF		3	E		23		
GOES		0835	0928	1016						101		C 5.9						3.0E-02
LEAR		0939	0939	0943	S17	E60	10191	11	15.0	4	SF		2	E		21		
GOES		1103	1107	1112						9		C 5.5						2.8E-03
GOES		1133	1136	1139	S18	E60	10191			6	SF	C 5.1						1.7E-03
RAMY		1136	1138	1149	S18	E60	10191	11	15.0	13	SF		3	E		23		
RAMY		1143	1217	1242	S08	W48	10180	11	6.9	59	SF		3	E		70		F
GOES		1149	1152	1155						6		C 3.9						1.4E-03

Hα SOLAR FLARES

NOVEMBER 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	10	1210	1215	1226			10180			16		C 5.4						4.6E-03
GOES		1335	1346	1404						29		C 4.5						6.6E-03
RAMY		1419	1419	1424	S12	W43	10180	11	7.3	5	SF		3	E		12		F
GOES		1457	1505	1517			10180			20		C 3.4						3.7E-03
RAMY		1458	1459	1507	S19	E55	10191	11	14.8	9	SF		3	E		15		
RAMY		1459	1504	1531	S10	W54	10180	11	6.6	32	SF		3	E		21		
RAMY		1508	1509	1515	S14	E38	10191	11	13.5	7	SF		3	E		14		
GOES		1556	1605	1613						17		C 2.6						2.5E-03
GOES		1640	1655	1702						22		C 3.3						3.5E-03
GOES		1756	1804	1817						21		C 1.9						2.1E-03
GOES		1844	1856	1908						24		C 2.1						2.9E-03
GOES		1949	1958	2006						17		C 1.6						1.5E-03
GOES		2026	2033	2043						17		C 1.5						1.4E-03
GOES		2118	2129	2205						47		C 2.3						5.6E-03
GOES		2339	2351	2411						32		C 3.2						5.2E-03
LEAR	11	0037	0037	0043	S12	W49	10180	11	7.3	6	SF		3	E		27		F
GOES		0117	0123	0140						23		C 4.9						5.1E-03
LEAR		0235	0236	0238	S10	W51	10180	11	7.3	3	SF		2	E		14		F
LEAR		0344	0355	0411	S11	W52	10180	11	7.2	27	SF		3	E		45		H
LEAR		0648	0651	0700	S11	W54	10180	11	7.2	12	SF		3	E		45		
SVTO		0651	0654	0656	S12	W52	10180	11	7.4	5	SF		3	E		15		
SVTO		0710	0733	0917	S07	W55	10180	11	7.2	127	2B		3	E		546		FE
GOES		0725	0733	0739	S12	W53	10180			14	1N	M 2.9						1.4E-02
LEAR		0729	0731	0807	S12	W53	10180	11	7.3	38	1N		3	E		192		FE
RAMY		1135	1142	1157	S12	W56	10180	11	7.3	22	SF		3	E		52		F
GOES		1225	1254	1310	S12	W57	10180			45	1F	C 7.1						1.4E-02
RAMY		1236	1250	1353	S12	W57	10180	11	7.2	77	1F		3	E		145		FH
SVTO		1237	1249	1318	S07	W59	10180	11	7.1	41	1F		3	E		143		FH
RAMY		1411	1416	1418	S12	W59	10180	11	7.1	7	SF		3	E		12		
SVTO		1437	1439	1457	S07	W59	10180	11	7.2	20	SF		3	E		43		F
GOES		1437	1445	1455	S07	W59	10180			18	SF	C 6.5						5.8E-03
RAMY		1437	1519	1739	S13	W60	10180	11	7.1	182	1N		3	E		112		FH
GOES		1511	1620	1645	S13	W60	10180			94	1N	M 1.8						7.2E-02
RAMY		1732	1732	1740	S14	W28	10185	11	9.6	8	SF		3	E		16		
GOES		2235	2255	2334	S23	E34	10191			59	SF	C 7.4						2.2E-02
LEAR		2241	2325	2443	S23	E34	10191	11	14.6	122	SF		3	E		42		F
GOES	12	0022	0030	0039	S10	W66	10180			17	SF	C 4.8						4.2E-03
LEAR		0028	0030	0051	S10	W66	10180	11	7.1	23	SF		3	E		28		F
LEAR		0211	0212	0233	S11	W67	10180	11	7.0	22	SF		3	E		35		F
GOES		0352	0403	0419						27		C 3.5						4.5E-03
GOES		0742	0749	0758	S12	W66	10180			16	SF	C 5.3						3.5E-03
LEAR		0746	0752	0800	S12	W66	10180	11	7.3	14	SF		3	E		55		F
RAMY		1130	1130	1135	S14	W67	10180	11	7.4	5	SF		3	E		23		F
RAMY		1132	1136	1142	S17	E33	10191	11	15.0	10	SF		3	E		13		F
RAMY		1523	1524	1529	S23	W09	10190	11	11.9	6	SF		3	E		11		
HOLL		1732	1737	1740	S11	W74	10180	11	7.2	8	SF		3	E		12		
RAMY		1755	1817	1834	S12	W77	10180	11	6.9	39	2N		3	E		343		H
HOLL		1756	1818	1839	S11	W75	10180	11	7.1	43	2N		3	E		417		
GOES		1758	1818	1824	S11	W75	10180			26	2N	C 9.9						6.4E-03
RAMY		1801	1801	1813	S19	E28	10191	11	14.9	12	SF		3	E		13		
HOLL		1808	1808	1811	S14	E10	10191	11	13.5	3	SF		3	E		11		
GOES		1841	1856	1903	S11	W76	10180			22	1N	M 2.9						2.0E-02
HOLL		1844	1855	1934	S11	W76	10180	11	7.1	50	1N		3	E		135		F
RAMY		1846	1858	1935	S12	W78	10180	11	6.9	49	1N		3	E		109		
GOES	13	0341	0511	0552						131		C 3.2						1.8E-02
LEAR		0627	0627	0630	N07	W66	10187	11	8.3	3	SF		3	E		16		FH
GOES		1002	1006	1013						11		C 1.9						1.1E-03
GOES		1435	1447	1504	S19	E14	10191			29	SF	C 3.0						4.4E-03
RAMY		1438	1442	1511	S19	E14	10191	11	14.7	33	SF		3	E		16		F
HOLL		1441	1441	1511	S20	E16	10191	11	14.8	30	SF		3	E		17		F
GOES		1727	1803	1823	S20	E15	10191			56	SF	C 1.9						6.1E-03
RAMY		1728	1730	1827	S20	E15	10191	11	14.9	59	SF		3	E		21		
RAMY		1828	1837	1840	S18	E14	10191	11	14.8	12	SF		3	E		20		F
RAMY		1844	1847	1850	S18	E14	10191	11	14.8	6	SF		3	E		13		F
GOES		2303	2417	2452						109		M 1.0						4.8E-02

Hα SOLAR FLARES

NOVEMBER 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	14	1017	1021	1024						7		C 2.6						7.9E-04
GOES		1029	1034	1039						10		C 2.1						1.1E-03
GOES		1107	1111	1115						8		C 5.5						1.8E-03
RAMY		1333	1336	1339	S13	E66	10195	11	19.5	6	SF		3	E		10		F
GOES		1340	1345	1348	S13	E68	10195			8	1N	C 8.1						2.5E-03
RAMY		1341	1345	1404	S13	E68	10195	11	19.7	23	1N		3	E		167		UF
GOES		1511	1515	1528	S13	W66	10182			17	SF	C 1.8						1.5E-03
HOLL		1520	1522	1524	S13	W66	10185	11	9.6	4	SF		3	E		15		
RAMY		1600	1602	1609	S13	E68	10195	11	19.8	9	SF		3	E		32		
GOES		1713	1716	1721						8		C 2.2						9.4E-04
HOLL		1844	1845	1850	S13	E67	10195	11	19.8	6	SF		3	E		19		
GOES		1956	2012	2019	N10	W33	10192			23	SF	C 4.7						4.2E-03
HOLL		2007	2009	2011	N10	W33	10192	11	12.3	4	SF		3	E		29		
GOES		2221	2226	2230						9		M 1.0						3.7E-03
HOLL		2253	2257	2306	S13	E63	10195	11	19.7	13	SF		3	E		17		
LEAR		2255	2257	2308	S15	E62	10195	11	19.6	13	SF		3	E		43		F
LEAR		2315	2316	2321	N12	W34	10192	11	12.4	6	SF		3	E		11		
GOES		2315	2321	2329	N12	W34	10192			14	SF	C 1.9						1.5E-03
GOES	15	0106	0124	0134						28		M 2.4						2.8E-02
GOES		0225	0230	0236	N12	W36	10192			11	SF	C 5.8						3.6E-03
LEAR		0226	0229	0240	N12	W36	10192	11	12.4	14	SF		3	E		31		F
GOES		0524	0536	0545	N13	W36	10192			21	SF	C 8.9						9.1E-03
LEAR		0545	0548	0552	N13	W36	10192	11	12.5	7	SF		3	E		21		F
LEAR		0656	0701	0704	N13	W37	10192	11	12.5	8	SF		3	E		15		
LEAR		0720	0728	0734	N12	W37	10192	11	12.5	14	SF		3	E		27		FH
LEAR		0828	0833	0914	S14	E58	10195	11	19.7	46	SF		2	E		76		F
GOES		0854	0858	0902	S14	E58	10195			8	SF	C 3.3						1.3E-03
RAMY		1133E	1155	1211	N11	W40	10192	11	12.5	38D	1F		3	E		157		F
GOES		1152	1156	1159	N11	W40	10192			7	1F	C 6.2						1.9E-03
RAMY		1225	1226	1235	S11	E58	10195	11	19.9	10	SF		3	E		18		
RAMY		1345	1347	1357	N11	W41	10192	11	12.5	12	SF		3	E		33		F
GOES		1345	1348	1351	N11	W41	10192			6	SF	C 3.2						9.4E-04
GOES		1438	1441	1443						5		C 1.9						4.8E-04
RAMY		1700	1702	1711	N12	W44	10192	11	12.4	11	SF		3	E		19		
RAMY		1803	1804	1808	N11	W46	10192	11	12.3	5	SF		3	E		26		
RAMY		1833	1833	1840	N11	W43	10192	11	12.5	7	SF		3	E		21		
HOLL		1943	1944	1947	S14	E51	10195	11	19.7	4	SF		3	E		13		
HOLL		2235	2235	2240	N13	W45	10192	11	12.5	5	SF		3	E		23		F
GOES		2255	2306	2321						26		C 6.4						8.2E-03
LEAR	16	0258	0259	0306	S16	E51	10195	11	20.0	8	SF		3	E		18		F
LEAR		0404	0411	0414	S16	E47	10195	11	19.7	10	SF		3	E		22		F
GOES		0620	0624	0627	S15	E45	10195			7	SF	C 1.5						5.4E-04
LEAR		0623	0624	0632	S15	E45	10195	11	19.7	9	SF		3	E		74		F
GOES		0632	0636	0642	S19	W18	10191			10	SF	C 1.9						9.8E-04
LEAR		0634	0635	0644	S19	W18	10191	11	14.9	10	SF		3	E		25		F
LEAR		0645	0647	0653	S16	E45	10195	11	19.7	8	SF		3	E		34		F
LEAR		0741	0811	0824	N12	W53	10192	11	12.3	43	SF		3	E		16		F
LEAR		0851	0852	0856	N12	W53	10192	11	12.4	5	SF		3	E		15		
LEAR		0926	0926	0930	S18	E67	10198	11	21.5	4	SF		3	E		21		
LEAR		0934	0937	0942	N12	W53	10192	11	12.4	8	SF		3	E		18		
GOES		1007	1012	1039						32		C 1.8						3.0E-03
GOES		1057	1102	1104	N13	W50	10192			7	SF	C 5.4						1.5E-03
RAMY		1100E	1102U	1113D	N13	W50	10192	11	12.7	13D	SF		3	E		20		
RAMY		1226	1227	1232	S15	E73	10198	11	22.0	6	SF		3	E		29		
GOES		1354	1359	1411	S20	W21	10191			17	SF	C 8.6						5.4E-03
RAMY		1358	1359	1415	S20	W21	10191	11	15.0	17	SF		3	E		44		F
HOLL		1406	1407	1411	S19	W21	10191	11	15.0	5	SF		3	E		17		F
HOLL		1421	1421	1428	S19	W22	10191	11	14.9	7	SF		3	E		19		
HOLL		1422	1426	1435	S14	E42	10195	11	19.8	13	SF		3	E		28		
HOLL		1515	1515	1521	S13	E42	10195	11	19.8	6	SF		3	E		14		
HOLL		1536	1541	1546	S13	E41	10195	11	19.7	10	SF		3	E		19		
RAMY		1538	1538	1546	S12	E41	10195	11	19.7	8	SF		3	E		21		
RAMY		1609	1612	1623	S14	E40	10195	11	19.7	14	SF		3	E		57		
RAMY		1617	1640	1649	N13	W56	10192	11	12.4	32	SF		3	E		22		
HOLL		1638	1640	1645	N15	W55	10192	11	12.5	7	SF		3	E		13		
HOLL		1951	1952	2002	S14	E39	10195	11	19.8	11	SF		3	E		33		FH

Hα SOLAR FLARES

NOVEMBER 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	17	0101	0105	0113	N16	W60	10192			12	SF	C 2.2						1.3E-03
LEAR		0104	0105	0122	N16	W60	10192	11	12.5	18	SF		3	E		49		FH
GOES		0251	0258	0305						14		C 1.7						1.4E-03
GOES		0504	0543	0552						48		C 5.0						7.8E-03
LEAR		0714	0719	0725	N15	W63	10192	11	12.5	11	SF		3	E		19		
GOES		0928	0957	1005						37		C 4.2						5.7E-03
GOES		1116	1119	1122						6		C 1.8						5.7E-04
GOES		1229	1234	1239						10		C 7.0						3.7E-03
HOLL		1435	1452	1516	S18	E62	10198	11	22.3	41	SF		3	E		57		
GOES		1439	1454	1459	S18	E62	10198			20	SF	M 2.0						1.1E-02
HOLL		1442	1444	1447	N15	W67	10192	11	12.5	5	SF		3	E		28		
SVTO		1444E	1444U	1450D	N16	W67	10192	11	12.5	6D	SF		2	E		20		
HOLL		1508	1508	1512	S19	W35	10191	11	14.9	4	SF		3	E		11		
HOLL		1528	1529	1541	S17	W38	10191	11	14.7	13	SF		3	E		11		
HOLL		1529	1529	1541	S18	E65	10198	11	22.6	12	SF		3	E		10		
HOLL		1603	1608	1610	S18	W38	10191	11	14.8	7	SF		3	E		19		
HOLL		1609	1611	1613	N11	W70	10192	11	12.4	4	SF		3	E		15		
HOLL		1635	1635	1639	S17	W39	10191	11	14.7	4	SF		3	E		18		
HOLL		1720	1721	1724	S21	W37	10191	11	14.9	4	SF		3	E		24		
HOLL		1729	1729	1734	N12	W70	10192	11	12.4	5	SF		3	E		15		
GOES		2131	2137	2142	S16	E59	10198			11	SF	C 7.9						3.2E-03
HOLL		2134	2136	2143	S16	E59	10198	11	22.4	9	SF		3	E		16		F
HOLL		2143	2145	2205	N10	W73	10192	11	12.4	22	SF		3	E		21		F
GOES	18	0021	0024	0026	S20	W33	10191			5	SF	C 4.5						8.5E-04
LEAR		0024	0025	0029	S20	W33	10191	11	15.5	5	SF		3	E		31		F
GOES		0201	0208	0211	S17	E56	10198			10	1F	M 7.4						1.8E-02
LEAR		0204	0206	0222	S17	E56	10198	11	22.3	18	1F		3	E		101		FE
LEAR		0437	0440	0445	N13	W80	10192	11	12.1	8	SF		3	E		35		H
GOES		0706	0711	0713	N15	W75	10192			7	1F	C 2.2						6.7E-04
LEAR		0707	0710	0715	N15	W75	10192	11	12.6	8	1F		3	E		112		H
GOES		1005	1101	1131						86		C 2.4						8.5E-03
GOES		1200	1204	1208						8		C 1.9						8.2E-04
GOES		1304	1308	1312						8		C 1.4						6.1E-04
GOES		1613	1617	1620	N15	W79	10192			7	SF	C 2.2						6.7E-04
RAMY		1615	1617	1626	N14	W80	10192	11	12.6	11	SF		3	E		41		
HOLL		1616	1616	1621	N15	W79	10192	11	12.7	5	SF		3	E		10		
RAMY		1650	1650U	1705	N15	W82	10192	11	12.5	15	SF		3	E		52		
GOES		1652	1657	1700	N15	W81	10192			8	SF	C 6.3						1.7E-03
HOLL		1656	1657	1702	N15	W81	10192	11	12.6	6	SF		3	E		44		
GOES		2130	2213	2231						61		C 2.1						5.5E-03
LEAR	19	0207	0208	0211	N32	E43		11	22.5	4	SF		3	E		11		
LEAR		0216	0217	0220	N31	E41		11	22.3	4	SF		3	E		23		F
LEAR		0351	0351	0406	S21	E37	10198	11	22.0	15	SF		3	E		21		F
GOES		0728	0737	0753						25		C 4.9						5.6E-03
GOES		1205	1208	1210						5		C 1.8						4.7E-04
GOES		1205	1214	1216						11		C 2.5						1.2E-03
RAMY		1344	1348U	1351	S20	W66	10191	11	14.5	7	SF		3	E		29		F
RAMY		1438	1445U	1454D	S18	W64	10191	11	14.7	16D	SF		3	E		42		F
RAMY		1528E	1528U	1532	S20	E32	10198	11	22.1	4D	SF		3	E		10		
GOES		1947	1952	1959	S19	E36	10198			12	SF	C 1.7						1.0E-03
HOLL		1950	1951	1957	S19	E36	10198	11	22.6	7	SF		3	E		27		F
RAMY		1953E	2002	2016D	S19	E36	10198	11	22.6	23D	SF		3	E		27		F
RAMY		2050E	2052	2101	S19	E30	10198	11	22.1	11D	SF		3	E		21		
GOES	20	0141	0146	0206						25		C 1.7						2.3E-03
GOES		0302	0312	0316						14		C 1.4						1.1E-03
GOES		0442	0450	0457						15		C 1.1						9.1E-04
RAMY		1110E	1122U	1141D	S19	E22	10198	11	22.1	31D	SF		3	E		30		F
GOES		1115	1124	1131	S19	E22	10198			16	SF	C 1.3						1.1E-03
GOES		1520	1525	1530	S16	E20	10198			10	SF	C 1.0						5.8E-04
RAMY		1522E	1522U	1529	S16	E20	10198	11	22.1	7D	SF		3	E		16		F
GOES		1625	1633	1636						11		C 3.8						1.6E-03
GOES		1715	1807	1809	S19	E24	10198			54	SN	M 1.4						1.1E-02
RAMY		1718	1809U	1827D	S19	E18	10198	11	22.1	69D	SF		3	E		82		FH
HOLL		1800	1806	1819	S19	E24	10198	11	22.6	19	SN		3	E		77		FH
GOES		1924	1929	1934	S19	E21	10198			10	SF	C 1.6						8.3E-04

Hα SOLAR FLARES

NOVEMBER 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
HOLL	20	1927	1929	1934	S19	E21	10198	11	22.4	7	SF		3	E		42		F
GOES		2351	2356	2359	S19	E12	10198			8	SF	C 5.2						1.3E-03
LEAR		2356	2356	2359	S19	E12	10198	11	21.9	3	SF		3	E		14		
LEAR	21	0134	0134	0147	S17	E15	10198	11	22.2	13	SF		4	E		31		
GOES		0258	0309	0314	S17	E16	10198			16	SF	C 2.1						1.3E-03
LEAR		0305	0310	0316	S17	E16	10198	11	22.3	11	SF		4	E		29		F
GOES		0636	0644	0650	S18	E13	10198			14	SF	C 4.0						2.1E-03
LEAR		0639	0642U	0735D	S18	E13	10198	11	22.3	56D	SF		3	E		33		F
GOES		0807	0812	0816	S20	E11	10198			9	SF	C 2.4						1.1E-03
LEAR		0809	0809	0821	S20	E11	10198	11	22.2	12	SF		3	E		19		FH
GOES		1059	1104	1106	S19	E11	10198			7	SF	C 6.6						1.6E-03
SVTO		1102	1105	1111	S19	E11	10198	11	22.3	9	SF		3	E		41		
RAMY		1104	1104	1114	S17	E12	10198	11	22.4	10	SF		3	E		48		F
RAMY		1252	1252	1256	S17	E06	10198	11	22.0	4	SF		3	E		27		
GOES		1338	1341	1344						6		C 1.2						3.7E-04
GOES		1642	1647	1651	S17	E10	10198			9	SF	C 3.8						1.3E-03
HOLL		1644	1646	1655	S17	E10	10198	11	22.4	11	SF		3	E		33		
GOES		1900	1904	1907	S18	E08	10198			7	SF	C 1.8						6.0E-04
HOLL		1902	1902	1907	S18	E08	10198	11	22.4	5	SF		3	E		12		
GOES		1951	1957	2000	S17	E08	10198			9	SF	C 3.8						1.3E-03
HOLL		1953	1954	2004	S17	E08	10198	11	22.4	11	SF		3	E		30		F
GOES		2024	2030	2036	S15	E00	10198			12	SF	C 2.2						1.3E-03
HOLL		2025	2033	2042	S15	E00	10198	11	21.8	17	SF		3	E		26		F
GOES	22	0215	0218	0220	S15	W03	10198			5	SF	C 1.0						3.0E-04
LEAR		0217	0217	0222	S15	W03	10198	11	21.9	5	SF		2	E		31		
RAMY		1157	1158	1204	S15	W09	10198	11	21.8	7	SF		3	E		24		F
GOES		1157	1159	1201	S15	W09	10198			4	SF	B 6.5						2.0E-04
GOES		1536	1542	1553	S17	W07	10198			17	SF	C 3.4						2.6E-03
HOLL		1540	1540	1546	S17	W07	10198	11	22.1	6	SF		3	E		14		F
RAMY		2008	2027	2049D	S19	W12	10198	11	21.9	41D	2F		3	E		327		
GOES		2228	2233	2259						31		C 3.9						4.9E-03
GOES	23	0108	0112	0114						6		C 1.3						3.7E-04
GOES		0119	0125	0138						19		C 2.1						2.0E-03
GOES		0755	0804	0806						11		C 4.6						1.8E-03
GOES		0839	0842	0844	S17	W15	10198			5	SF	C 1.9						3.6E-04
SVTO		0840	0842	0846	S17	W15	10198	11	22.2	6	SF		3	E		89		F
GOES		1047	1052	1056	S17	W13	10198			9	SF	C 1.6						8.5E-04
SVTO		1051	1051	1058	S17	W13	10198	11	22.5	7	SF		3	E		13		
RAMY		1138E	1148U	1200D	S14	W18	10198	11	22.1	22D	SF		3	E		25		F
GOES		1310	1313	1315						5		C 1.0						2.7E-04
GOES		1353	1407	1424						31		C 1.6						2.7E-03
SVTO		1356	1402	1408	S19	W18	10198	11	22.2	12	SF		3	E		22		
RAMY		1356	1414U	1432D	S16	W18	10198	11	22.2	36D	SF		3	E		66		FH
GOES		1739	1745	1749						10		C 1.0						5.7E-04
GOES		1801	1810	1813						12		C 2.7						1.2E-03
GOES		2101	2106	2112						11		C 1.4						7.7E-04
GOES	24	0208	0213	0217						9		C 1.0						5.2E-04
GOES		0219	0223	0226						7		C 3.7						9.7E-04
GOES		0228	0231	0235						7		C 2.8						1.0E-03
GOES		0338	0347	0359						21		C 1.8						1.8E-03
GOES		0445	0449	0453						8		C 1.2						5.1E-04
GOES		0815	0819	0822						7		C 4.8						1.2E-03
RAMY		1127E	1127U	1145	N26	W42	10197	11	21.2	18D	SF		3	E		58		F
RAMY		1432E	1432U	1436	N14	E75		11	30.3	4D	SF		3	E		16		H
RAMY		1625	1625	1630D	N13	E73		11	30.2	5D	SF		3	E		13		
GOES		1723	1809	1840	S19	W37	10198			77	SF	C 1.8						6.2E-03
RAMY		1728E	1728U	1832	S19	W37	10198	11	21.9	64D	SF		3	E		46		F
GOES		2014	2029	2057	S17	W37	10198			43	SF	C 6.4						1.2E-02
RAMY		2035E	2035U	2110D	S17	W37	10198	11	22.0	35D	SF		3	E		83		UF
GOES	25	1038	1042	1045						7		C 1.3						4.0E-04
RAMY		1536	1537	1541	N25	W68	10197	11	20.4	5	SF		3	E		29		
GOES		1623	1710	1800						97		C 1.3						5.2E-03
GOES		2025	2033	2044						19		C 1.2						1.2E-03

Hα SOLAR FLARES

NOVEMBER 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	25	2230	2233	2235						5		C 1.0						2.7E-04
GOES		2342	2357	2412						30		C 1.7						2.6E-03
GOES	26	0901	0906	0911						10		B 7.7						4.1E-04
GOES		1208	1212	1216	N25	W81	10197			8	SF	C 1.0						4.1E-04
RAMY		1210	1211	1216	N25	W81	10197	11	20.2	6	SF		3	E		40		
GOES		1826	1835	1839			10197			13		C 3.6						1.9E-03
GOES		2301	2307	2317	S16	W65	10198			16	SF	C 2.6						2.2E-03
LEAR		2305	2306	2313	S16	W65	10198	11	22.0	8	SF		3	E		24		F
GOES	27	0113	0119	0140						27		C 2.4						3.4E-03
GOES		0206	0251	0358	S18	W66	10198			112	SF	C 6.7						2.6E-02
LEAR		0243	0246	0307	S18	W66	10198	11	22.1	24	SF		3	E		41		F
GOES		0902	0905	0907						5		C 1.4						3.6E-04
GOES		0933	0943	0951			10198			18		C 2.3						2.0E-03
RAMY		1138	1144	1152	S19	E90		12	4.3	14	SF		3	E		39		
RAMY		1153	1205	1211	S19	E69		12	2.8	18	SF		3	E		57		F
RAMY		1224	1226	1231	S19	E90		12	4.4	7	SF		3	E		13		
RAMY		1224	1229	1231	S17	W60	10198	11	22.9	7	SF		3	E		12		
HOLL		1556	1606	1615	S17	E72		12	3.1	19	SF		3	E		42		F
RAMY		1609	1609	1612	S19	E90		12	4.5	3	SF		3	E		26		
RAMY		1620	1638	1702	S19	E89		12	4.5	42	SF		3	E		68		F
RAMY		1621	1643	1652	N15	E48	10202	12	1.3	31	SF		3	E		13		F
RAMY		1637	1643	1653	S20	W72	10198	11	22.2	16	SF		3	E		86		F
GOES		1643	1653	1700	S20	W72	10198			17	SF	C 3.8						2.9E-03
RAMY		1653	1720	1733	N14	E40	10202	11	30.7	40	SF		3	E		16		F
RAMY		1700	1707	1734	S18	W63	10198	11	22.9	34	SF		3	E		23		
RAMY		1720	1730	1742	S19	E86		12	4.3	22	SF		3	E		47		
GOES		2124	2132	2139	S18	E71	10207			15	SF	C 3.5						2.6E-03
HOLL		2127	2127	2130	S18	E71	10207	12	3.3	3	SF		3	E		12		F
GOES		2220	2224	2228	S19	W71	10198			8	SF	C 2.9						1.0E-03
HOLL		2220	2224	2231	S19	W71	10198	11	22.5	11	SF		3	E		57		F
HOLL		2258	2302	2316	S18	W72	10198	11	22.5	18	SF		3	E		34		FH
GOES		2259	2307	2312	S18	W72	10198			13	SF	C 1.9						1.4E-03
GOES	28	0036	0042	0048						12		C 2.4						1.5E-03
GOES		0102	0107	0111	S17	W71	10198			9	1F	C 3.7						1.3E-03
LEAR		0106	0106	0113	S17	W71	10198	11	22.6	7	1F		3	E		105		
GOES		0254	0300	0304	S17	W72	10198			10	SF	C 2.4						1.1E-03
LEAR		0258	0258	0301	S17	W72	10198	11	22.6	3	SF		3	E		22		
GOES		0434	0437	0439						5		C 1.0						2.8E-04
GOES		0520	0543	0604						44		C 2.5						5.4E-03
GOES		0806	0821	0831						25		C 4.3						4.5E-03
GOES		1005	1022	1033						28		C 3.4						5.1E-03
GOES		1047	1136	1150	S20	W74	10198			63	SF	C 8.4						1.8E-02
RAMY		1134E	1134U	1217D	S20	W74	10198	11	22.8	43D	SF		3	E		55		FH
GOES		1246	1256	1303						17		C 1.7						1.7E-03
GOES		1357	1404	1426	S18	E64	10207			29	SF	C 3.5						4.9E-03
RAMY		1358	1408	1428	S18	E64	10207	12	3.4	30	SF		3	E		65		F
SVTO		1359	1402	1414	S23	E64	10207	12	3.5	15	SF		3	E		44		F
GOES		1522	1525	1527	S20	E67	10207			5	SF	C 2.0						4.1E-04
HOLL		1525	1526	1529	S20	E67	10207	12	3.8	4	SF		3	E		33		
GOES		1656	1701	1706						10		C 1.8						9.9E-04
GOES		1943	1946	1949						6		C 1.4						4.4E-04
RAMY		2049E	2049U	2054D	S19	E60	10207	12	3.4	5D	SF		3	E		38		F
GOES		2151	2224	2244						53		C 3.1						7.5E-03
GOES	29	0429	0443	0455						26		C 2.9						3.3E-03
GOES		1501	1505	1511	N19	E52	10207			10	SF	B 7.0						3.7E-04
RAMY		1506	1507	1519	N19	E52	10207	12	3.6	13	SF		3	E		22		
GOES		1600	1608	1620						20		B 9.9						1.0E-03
RAMY		1817	1819	1834	S20	E78		12	5.7	17	SF		3	E		31		
GOES	30	1119	1125	1132	S19	E67	10209			13	SF	B 8.0						5.4E-04
RAMY		1123	1124	1133	S19	E67		12	5.6	10	SF		3	E		43		FH
GOES		2208	2212	2216			10209			8		C 1.1						4.3E-04

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

NOVEMBER 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
01	2695	SVTO	8	S	1027.0	1027.0	U	52.0			QL=4 ST=2 TYP=3
05	8800	SVTO	8	S	1255.0	1256.0	2.0	93.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1256.0	1256.0	1.0	48.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1256.0	1256.0	1.0	66.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1608.0	1609.0	3.0	150.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1608.0	1609.0	1.0	49.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2045.0	2045.0	U	47.0			QL=4 ST=2 TYP=3
09	2695	SGMR	48	C	1310.0	1316.0	650.0	500.0			QL=4 ST=1 TYP=8
	8800	SGMR	48	C	1311.0	1316.0	649.0	330.0			QL=4 ST=1 TYP=8
	2695	SGMR	8	S	1405.0	1405.0	U	30.0			QL=4 ST=2 TYP=3
10	2695	PALE	4	S/F	0307.0	0311.0	10.0	400.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	0309.0	0311.0	6.0	460.0			QL=4 ST=2 TYP=3
11	8800	LEAR	49	GB	0729.0	0730.0	2.0	550.0			QL=4 ST=3 TYP=6
	2695	LEAR	8	S	0729.0	0730.0	2.0	190.0			QL=4 ST=3 TYP=3
	2695	SVTO	4	S/F	0729.0	0730.0	3.0	180.0			QL=4 ST=2 TYP=3
	8800	SVTO	49	GB	0729.0	0730.0	6.0	600.0			QL=4 ST=2 TYP=6
	8800	SGMR	4	S/F	1605.0	1611.0	13.0	120.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1605.0	1611.0	13.0	230.0			QL=4 ST=2 TYP=3
12	8800	SGMR	8	S	1814.0	1814.0	2.0	53.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	1853.0	1855.0	3.0	63.0			QL=4 ST=2 TYP=3
	8800	SGMR	48	C	1853.0	1854.0	3.0	58.0			QL=4 ST=2 TYP=8
	2695	SGMR	46	C	1853.0	1853.0	U	33.0			QL=4 ST=2 TYP=8
13	8800	SGMR	8	S	1437.0	1437.0	U	55.0			QL=4 ST=2 TYP=3
14	2695	SVTO	8	S	1109.0	1109.0	U	51.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	2224.0	2224.0	U	66.0			QL=4 ST=2 TYP=3
16	8800	SGMR	8	S	1357.0	1358.0	1.0	64.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1357.0	1358.0	1.0	62.0			QL=4 ST=2 TYP=3
17	8800	SVTO	8	S	1445.0	1446.0	2.0	100.0			QL=2 ST=2 TYP=3
	2695	SVTO	8	S	1445.0	1446.0	2.0	80.0			QL=2 ST=2 TYP=3
	2695	SGMR	4	S/F	1733.0	1733.0	387.0	170.0			QL=4 ST=1 TYP=3
	8800	SGMR	4	S/F	1733.0	1733.0	387.0	310.0			QL=4 ST=1 TYP=3
	8800	PALE	4	S/F	2134.0	2135.0	3.0	180.0			QL=4 ST=2 TYP=3
18	2695	PALE	8	S	0022.0	0023.0	1.0	58.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	0023.0	0023.0	U	43.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	0203.0	0205.0	3.0	140.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0204.0	0205.0	2.0	160.0			QL=4 ST=2 TYP=3
	8800	LEAR	48	C	0204.0	0205.0	5.0	210.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	0204.0	0205.0	4.0	190.0			QL=4 ST=2 TYP=8
	8800	SGMR	8	S	1654.0	1654.0	1.0	100.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1655.0	1655.0	U	27.0			QL=4 ST=2 TYP=3

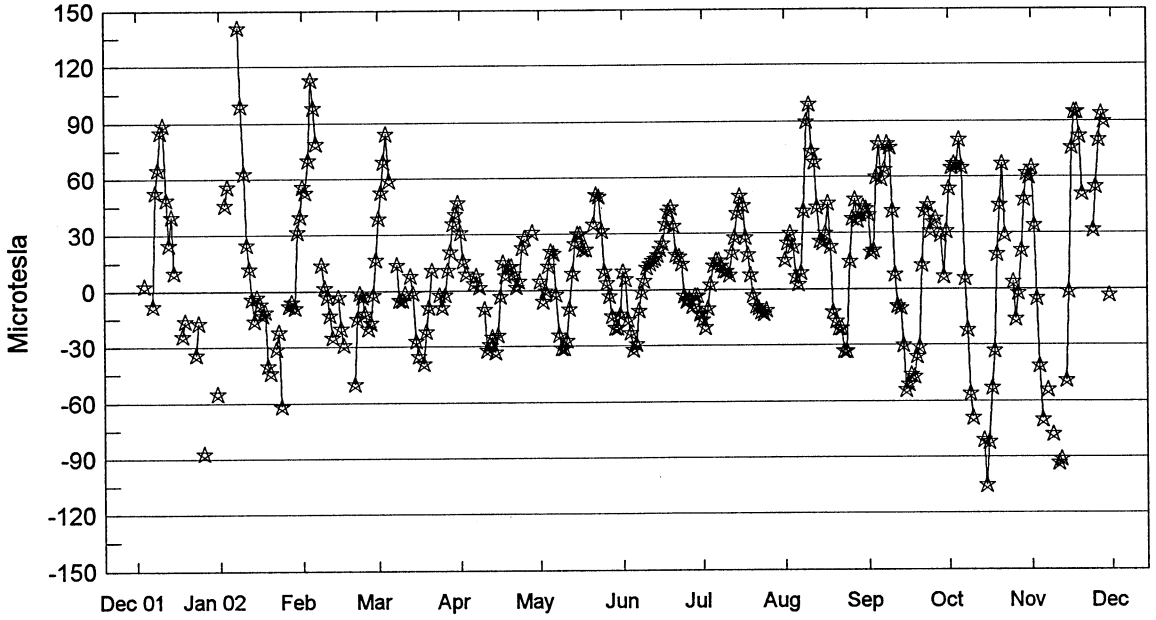
Reports are received routinely from the following observatories:
LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill SVTO = San Vito

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

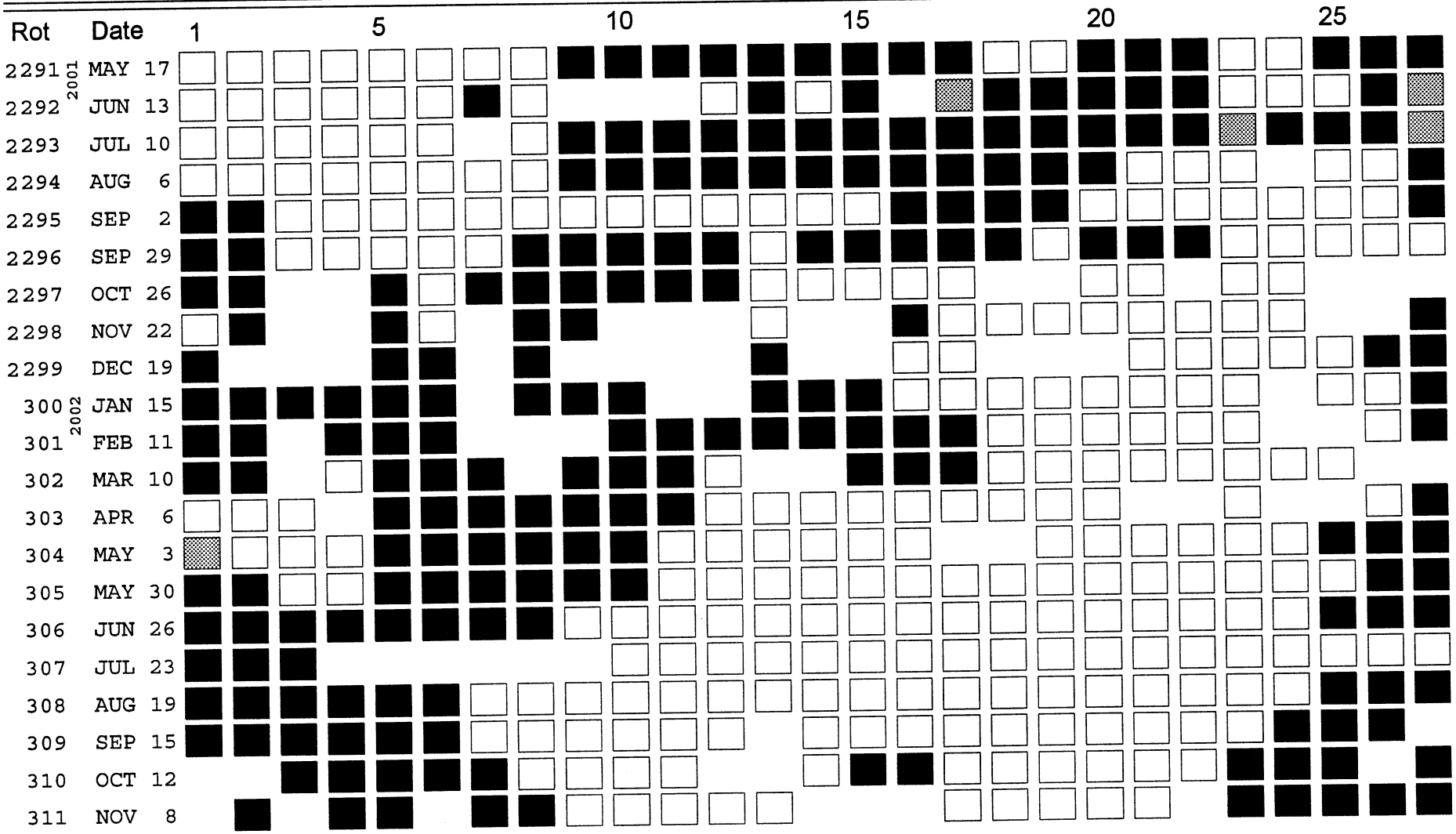
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

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



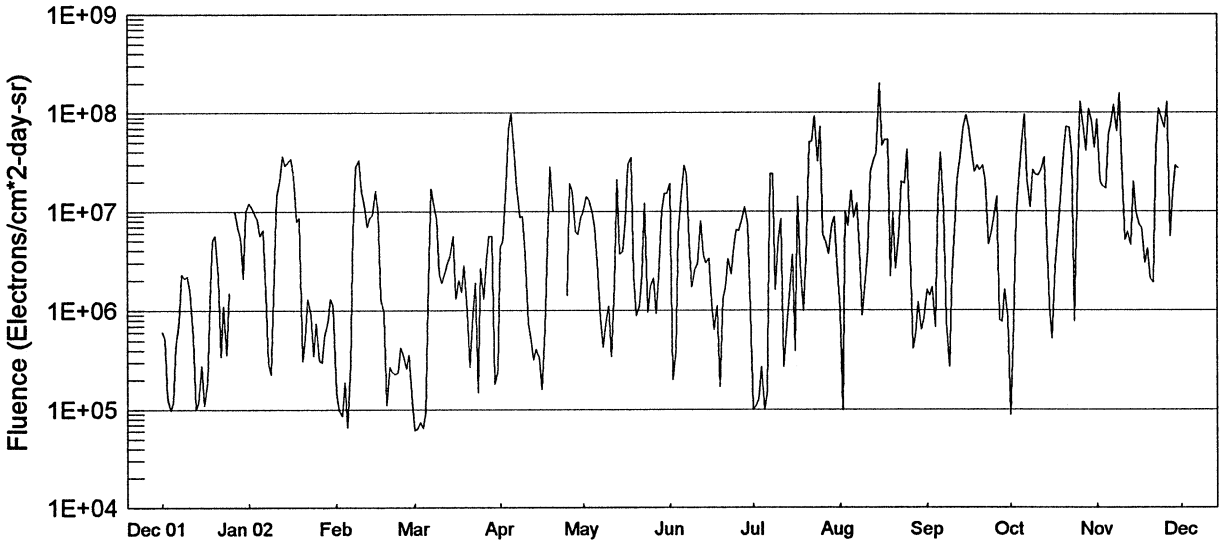
Day	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	---	---	56	39	31	5	10	-16	16	40	54	65
2	---	---	53	53	16	-6	6	-20	25	20	65	34
3	---	46	70	69	9	0	-16	-10	30	21	67	-5
4	3	56	113	84	---	13	-23	3	23	60	66	-41
5	---	---	98	59	---	21	-32	13	7	78	80	-70
6	---	---	79	---	4	20	-29	16	3	59	65	---
7	-8	---	---	---	8	-2	-11	16	9	64	6	-54
8	53	141	14	14	2	-24	-1	13	42	78	-22	---
9	65	99	2	-5	---	-31	5	10	90	76	-56	-78
10	85	63	-3	-5	-10	-31	12	10	99	42	-69	---
11	89	25	-13	-1	-32	-27	14	8	74	8	---	-93
12	49	12	-25	---	-29	-10	16	20	68	-9	---	-91
13	25	-4	---	8	-25	9	17	28	44	-10	---	---
14	40	-16	-3	-1	-33	25	19	41	26	-30	-81	-49
15	10	-3	-20	-27	-24	30	22	50	25	-54	-105	-1
16	---	-7	-29	-35	-3	30	25	45	30	-51	-82	76
17	---	-13	---	---	15	22	35	28	46	-46	-53	95
18	-24	-11	---	-39	8	22	42	19	23	-47	-33	95
19	-16	-40	---	-22	13	---	44	8	-12	-36	19	82
20	---	-44	-50	-9	13	---	34	-3	-17	-31	45	51
21	---	---	-15	11	9	35	19	-9	-21	13	67	---
22	---	-31	-1	---	2	51	18	-10	-21	42	29	---
23	-34	-22	-3	---	5	50	14	-12	-33	45	---	---
24	-17	-62	-12	-2	23	32	-3	-13	-33	31	---	32
25	---	---	-20	-9	28	10	-6	-11	15	36	4	55
26	-87	---	-17	-2	---	4	-5	---	38	38	-16	80
27	---	-8	-2	11	---	-3	-9	---	48	---	-2	94
28	---	-6	17	21	31	-14	-3	---	37	29	21	90
29	---	-9		36	---	-20	-3	---	40	7	48	---
30	---	32		41	---	-20	-13	---	44	31	62	-3
31	-55	40		47		-13		---	43		60	

STANFORD MEAN SOLAR MAGNETIC FIELD



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

GOES Daily Electron Fluence
Dec 2001 - Nov 2002



Day	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	6.1E+05	1.2E+07	1.5E+05	6.1E+04	4.4E+06	9.9E+06	1.9E+07	1.0E+05	1.0E+06	1.6E+06	8.7E+04	8.5E+07
2	5.2E+05	1.1E+07	9.8E+04	6.3E+04	4.9E+06	1.4E+07	2.0E+05	1.1E+05	9.8E+04	1.4E+06	7.4E+05	2.0E+07
3	1.3E+05	9.3E+06	8.6E+04	7.4E+04	1.8E+07	1.3E+07	3.8E+05	1.3E+05	1.0E+07	1.7E+06	8.5E+06	1.8E+07
4	9.9E+04	8.3E+06	1.9E+05	6.5E+04	6.7E+07	1.0E+07	5.9E+06	2.7E+05	7.1E+06	6.8E+05	2.0E+07	1.7E+07
5	1.2E+05	5.7E+06	6.6E+04	9.2E+04	1.0E+08	6.9E+06	1.3E+07	1.0E+05	1.6E+07	1.3E+07	5.1E+07	5.9E+07
6	4.4E+05	6.5E+06	2.9E+05	1.1E+06	3.9E+07	3.1E+06	2.9E+07	1.5E+05	8.6E+06	3.9E+07	9.6E+07	7.8E+07
7	7.6E+05	1.5E+06	6.2E+06	1.7E+07	1.7E+07	8.3E+05	2.3E+07	2.4E+07	1.2E+07	1.0E+07	2.1E+07	1.2E+08
8	2.3E+06	2.9E+05	2.8E+07	1.2E+07	8.7E+06	4.3E+05	4.8E+06	2.4E+07	4.2E+06	7.5E+05	1.1E+07	6.5E+07
9	2.1E+06	2.3E+05	3.3E+07	8.3E+06	8.9E+06	7.1E+05	1.7E+06	1.6E+06	8.8E+05	2.7E+05	2.6E+07	1.6E+08
10	2.2E+06	2.1E+06	1.6E+07	2.3E+06	3.8E+06	1.1E+06	2.6E+06	5.3E+06	2.0E+06	2.3E+06	2.3E+07	2.0E+07
11	1.5E+06	1.4E+07	1.1E+07	1.9E+06	7.4E+05	3.4E+05	2.9E+06	8.3E+06	4.0E+06	6.4E+06	2.3E+07	5.1E+06
12	5.4E+05	2.1E+07	7.0E+06	2.4E+06	5.1E+05	1.8E+06	8.0E+06	2.7E+05	2.5E+07	2.1E+07	2.6E+07	6.2E+06
13	1.0E+05	3.6E+07	8.6E+06	3.0E+06	3.2E+05	2.1E+07	3.7E+06	6.9E+05	3.3E+07	3.7E+07	3.5E+07	4.5E+06
14	1.2E+05	2.9E+07	9.1E+06	3.5E+06	4.1E+05	3.7E+06	3.0E+06	1.4E+06	3.9E+07	6.8E+07	5.4E+06	2.0E+07
15	2.8E+05	3.2E+07	1.6E+07	5.6E+06	3.3E+05	3.9E+06	3.3E+06	3.6E+06	2.0E+08	9.5E+07	1.1E+06	1.0E+07
16	1.1E+05	3.4E+07	1.0E+07	1.3E+06	1.6E+05	7.9E+06	1.2E+06	3.9E+05	4.6E+07	7.2E+07	5.2E+05	7.3E+06
17	1.9E+05	2.3E+07	1.3E+06	2.0E+06	6.5E+05	3.0E+07	6.4E+05	1.4E+07	5.3E+07	4.4E+07	2.7E+06	6.8E+06
18	1.2E+06	7.8E+06	9.5E+05	1.5E+06	4.4E+06	3.5E+07	1.1E+06	2.9E+06	5.3E+07	2.5E+07	6.9E+06	3.0E+06
19	5.1E+06	8.5E+06	1.1E+05	2.8E+06	2.8E+07	2.2E+06	1.7E+05	9.8E+05	2.2E+06	2.9E+07	1.6E+07	4.2E+06
20	5.7E+06	3.1E+05	2.7E+05	9.7E+05	9.9E+06	8.9E+05	1.3E+06	3.3E+06	9.7E+06	2.6E+07	3.8E+07	2.1E+06
21	2.2E+06	5.3E+05	2.4E+05	2.7E+05	-999	1.1E+06	1.7E+06	5.0E+07	2.6E+06	2.9E+07	7.2E+07	1.9E+06
22	3.4E+05	1.3E+06	2.3E+05	7.3E+05	-999	2.3E+06	3.3E+06	5.1E+07	5.7E+06	2.0E+07	7.1E+07	4.3E+07
23	1.1E+06	9.1E+05	2.4E+05	1.9E+06	-999	1.2E+07	2.3E+06	9.2E+07	2.0E+07	4.6E+06	3.7E+07	1.1E+08
24	3.6E+05	3.5E+05	4.2E+05	1.5E+05	-999	9.5E+05	4.3E+06	3.2E+07	1.9E+07	6.0E+06	7.7E+05	9.1E+07
25	1.5E+06	7.4E+05	3.6E+05	2.6E+06	1.4E+06	1.7E+06	6.5E+06	7.2E+07	4.2E+07	8.4E+06	2.2E+07	7.1E+07
26	-999	3.1E+05	2.6E+05	1.3E+06	1.9E+07	2.1E+06	6.4E+06	5.8E+06	6.2E+06	1.4E+07	1.3E+08	1.3E+08
27	9.9E+06	3.0E+05	3.6E+05	3.0E+06	1.6E+07	9.3E+05	8.3E+06	4.8E+06	4.1E+05	8.0E+05	6.9E+07	5.6E+06
28	7.2E+06	5.7E+05	1.2E+05	5.6E+06	6.2E+06	2.1E+06	1.1E+07	3.7E+06	5.7E+05	7.6E+05	4.1E+07	1.5E+07
29	5.3E+06	7.5E+05		5.6E+06	5.8E+06	1.0E+07	7.3E+06	7.2E+06	1.2E+06	1.6E+06	1.1E+08	2.9E+07
30	2.1E+06	1.3E+06		1.8E+05	8.4E+06	1.5E+07	1.0E+06	8.7E+06	6.4E+05	8.5E+05	8.0E+07	2.7E+07
31	1.0E+07	1.1E+06		2.5E+05		1.5E+07		3.1E+06	8.3E+05		4.4E+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.

THIS PAGE LEFT INTENTIONALLY BLANK.

CONTENTS

Prompt Reports — Number 700 Part I

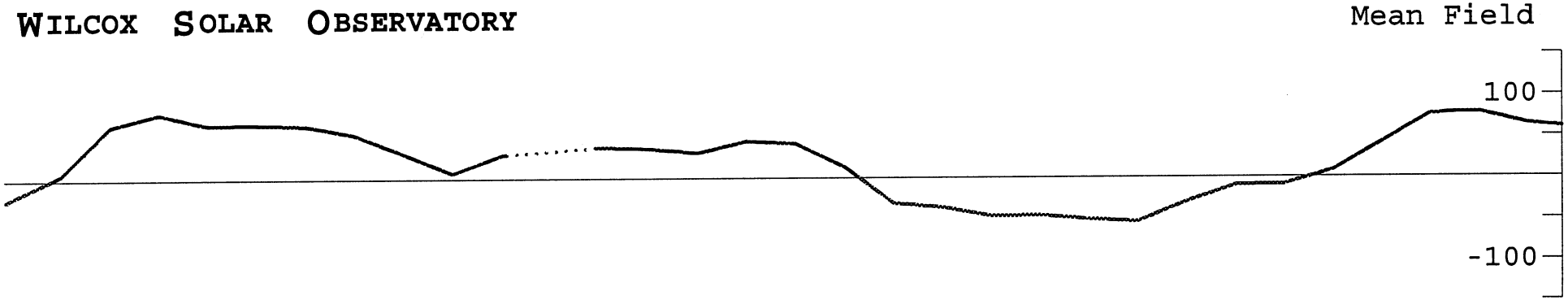
DATA FOR OCTOBER 2002

SOLAR MAGNETIC FIELD SYNOPTIC CHART

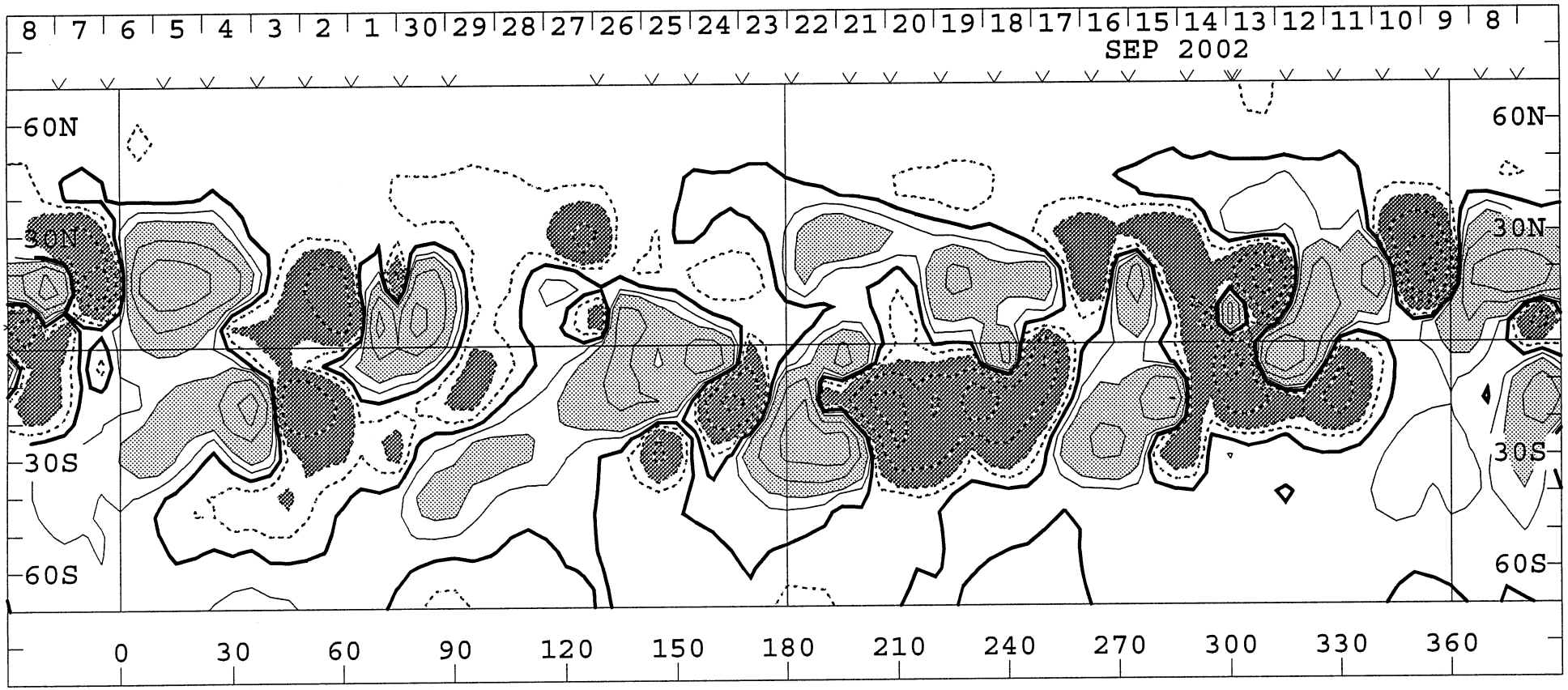
CARRINGTON ROTATION NUMBER 1994

(9 September to 6 October 2002)

WILCOX SOLAR OBSERVATORY



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



Heliographic Longitude

1994

SOLAR MAGNETIC FIELD SYNOPTIC CHART

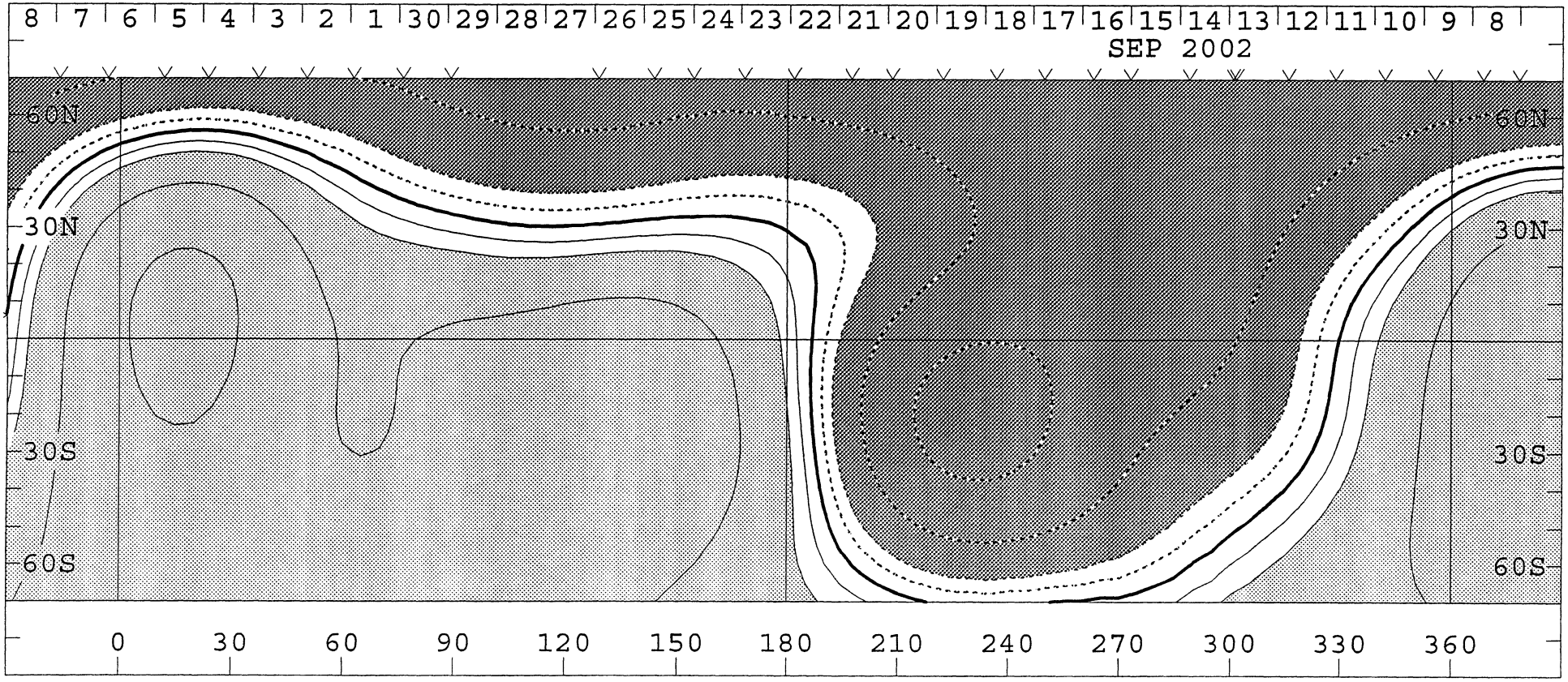
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1994

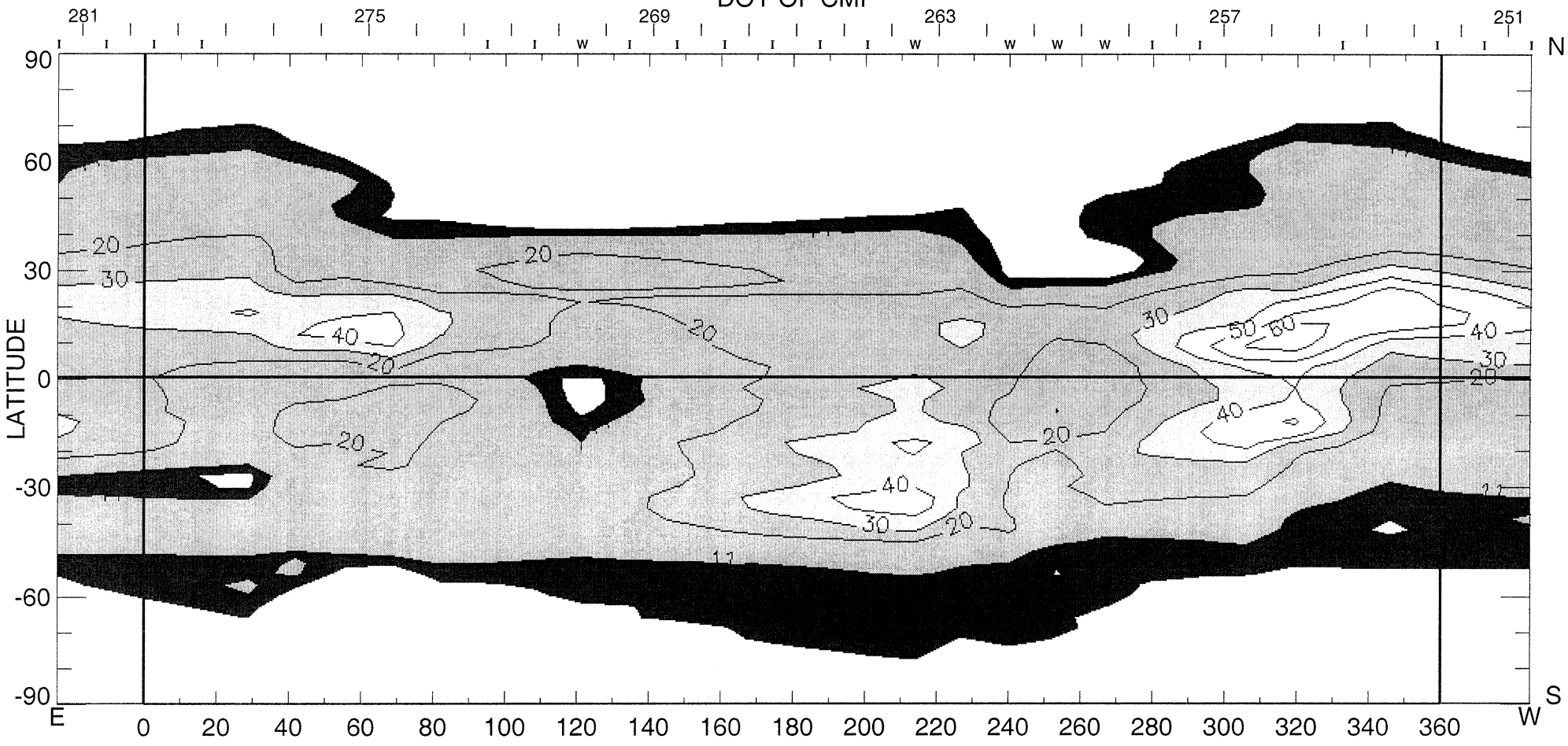
(9 September to 6 October 2002)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla

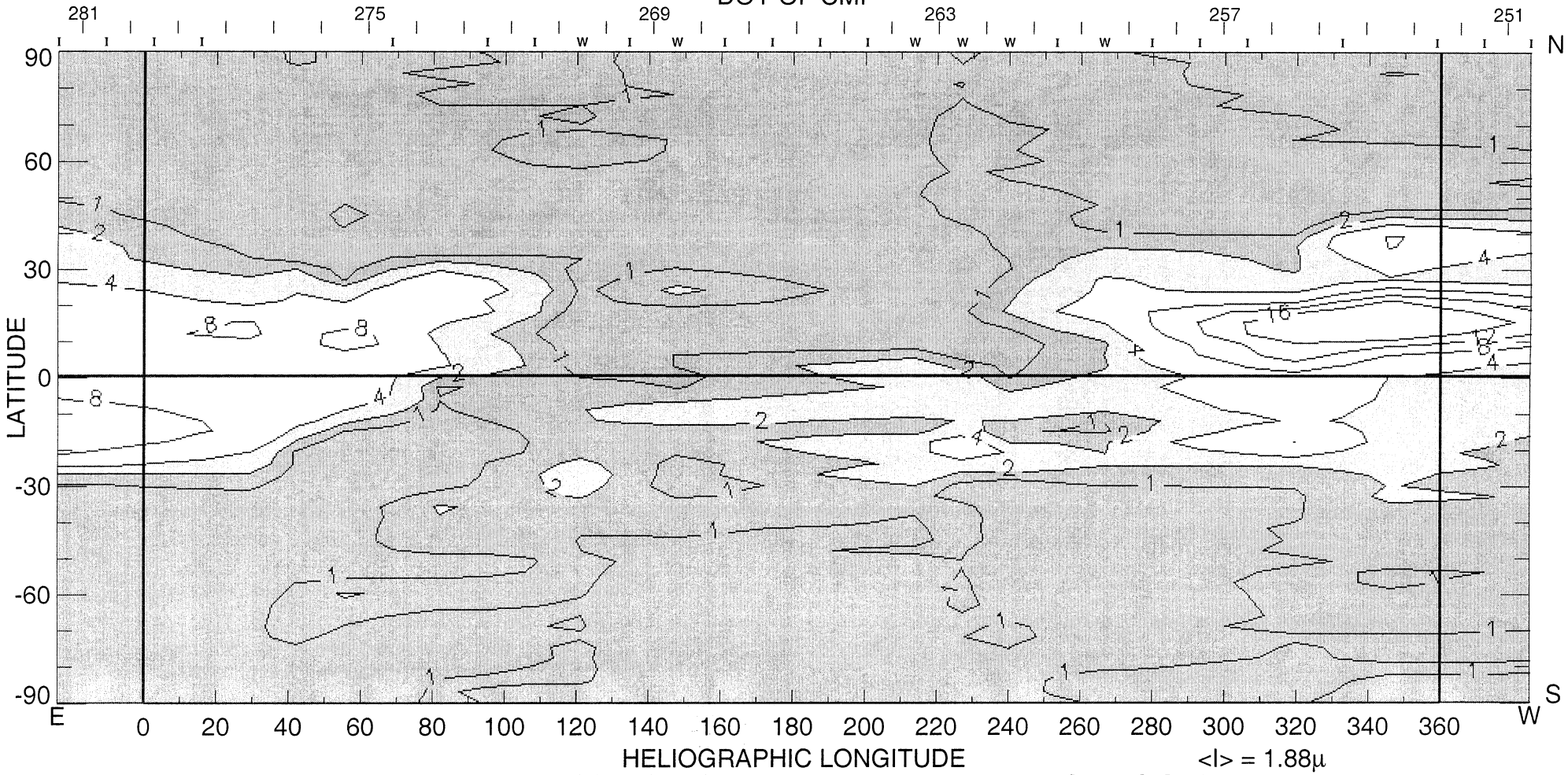


CARRINGTON ROTATION NUMBER 1994 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



(23-Jan-03) 2002 E+W LIMB CONTOURS: 8, 11, 20, 30, 40, 50, 60, 80, 120, 140, 160 MILLIONTHS OF I_o
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

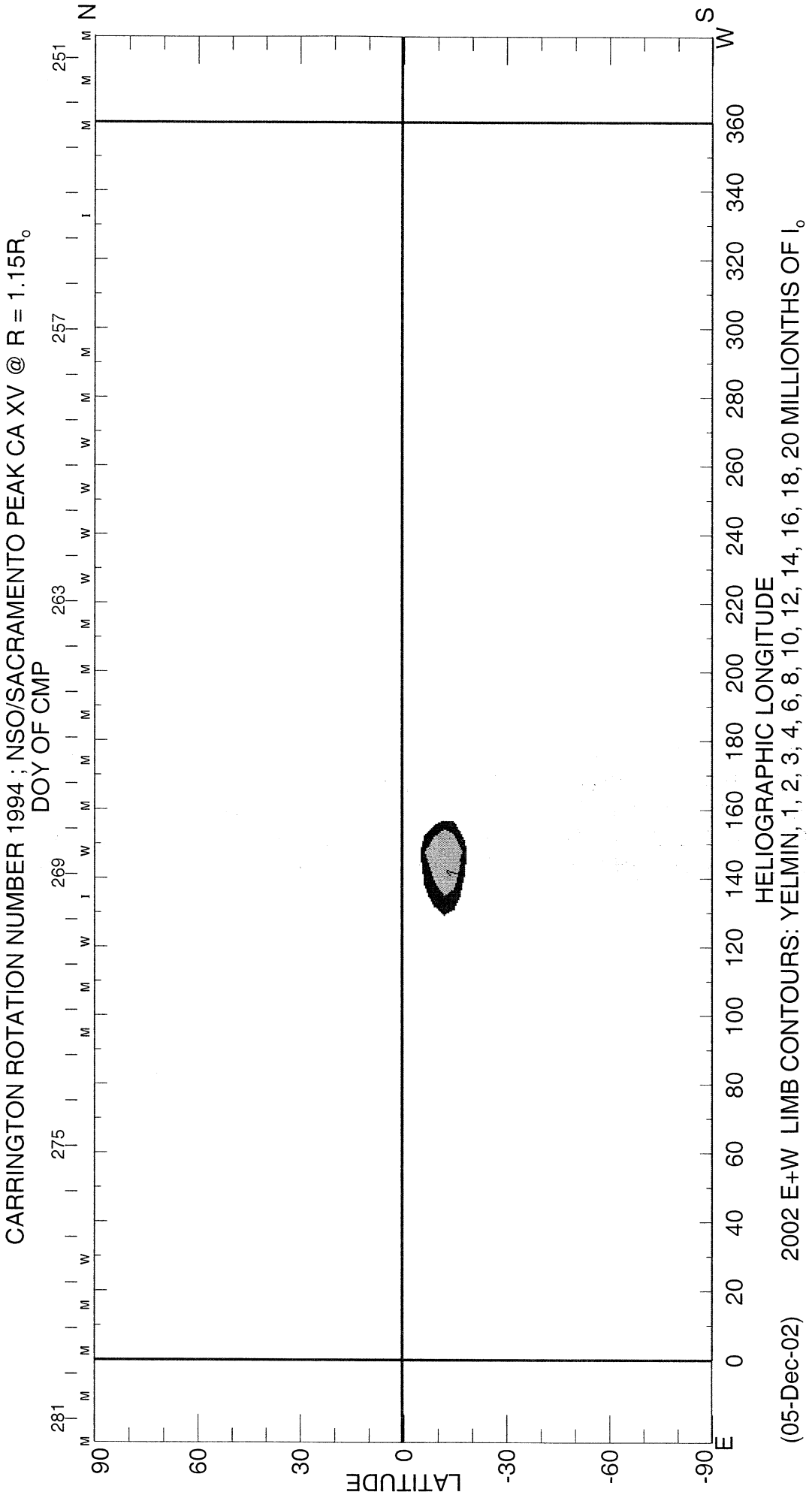
CARRINGTON ROTATION NUMBER 1994 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



(23-Jan-03)

2002 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

altrock Thu Jan 23 11:01:21 2003



SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1994

(9 September to 6 October 2002)

National Solar Observatory/Kitt Peak

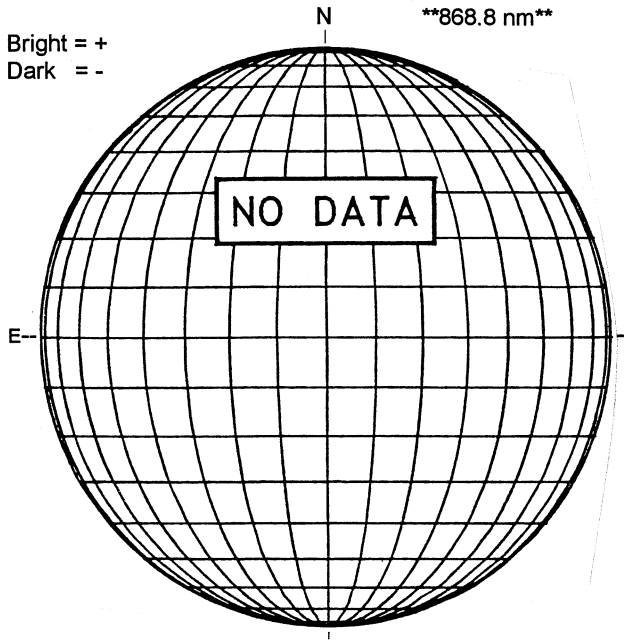
Dates of Observation

PHOTOGRAPHIC DATA UNAVAILABLE AT TIME OF PUBLICATION.

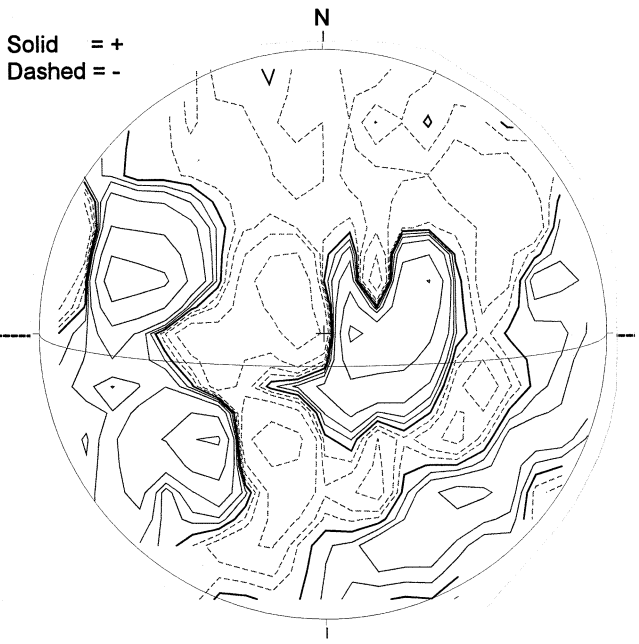
Heliographic Longitude

OCTOBER 1, 2002 (P= 25.97, Bo = 6.73, Lo = 74.95)

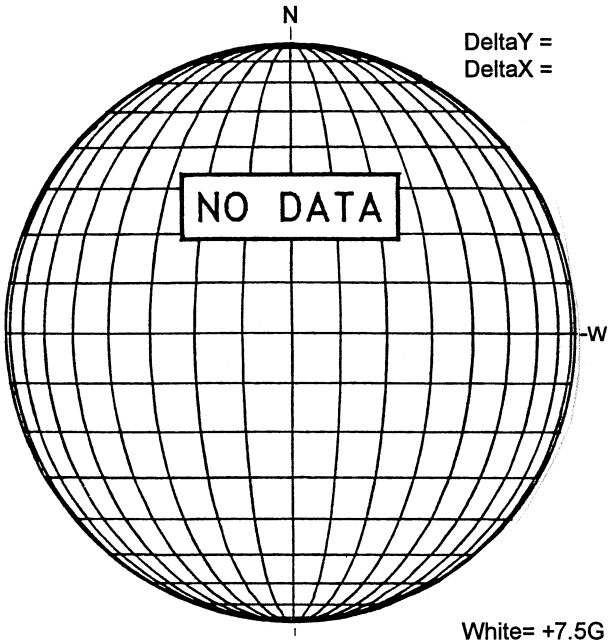
KITT PEAK MAGNETOGRAM



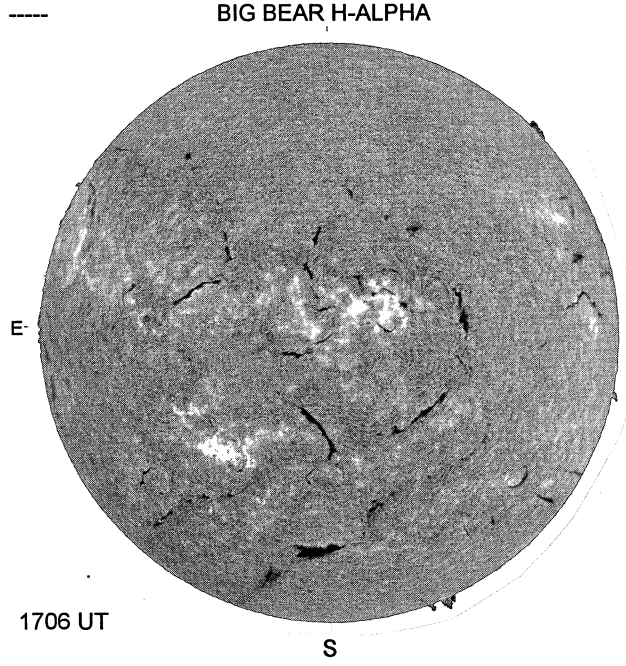
STANFORD MAGNETOGRAM



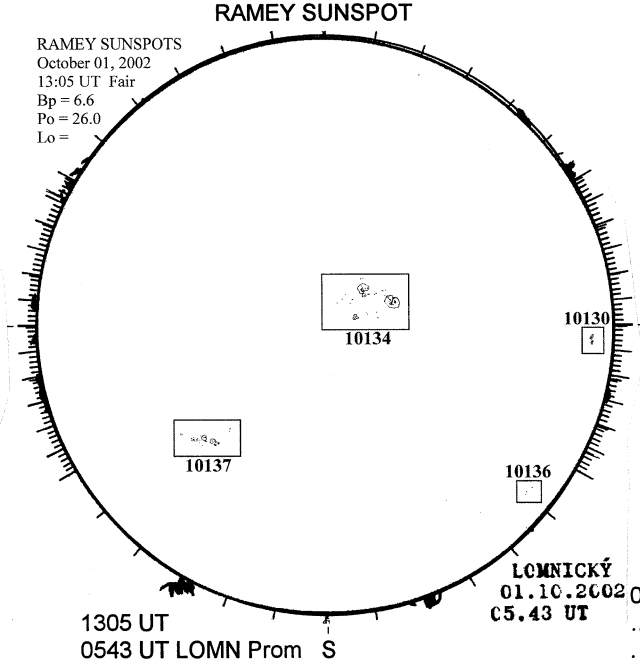
MT. WILSON MAGNETOGRAM



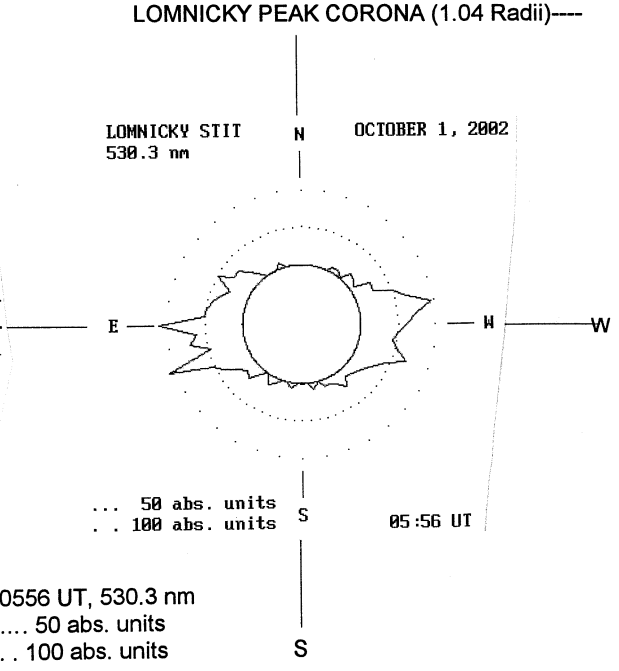
BIG BEAR H-ALPHA



RAMEY SUNSPOT

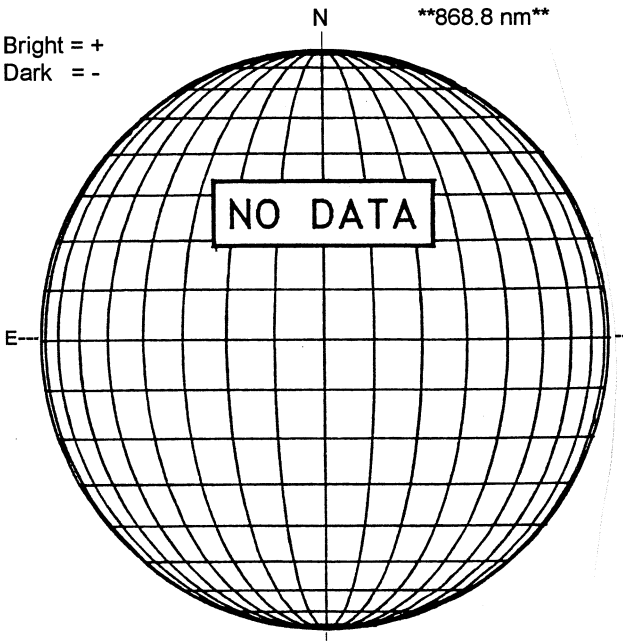


LOMNICKY PEAK CORONA (1.04 Radii)----

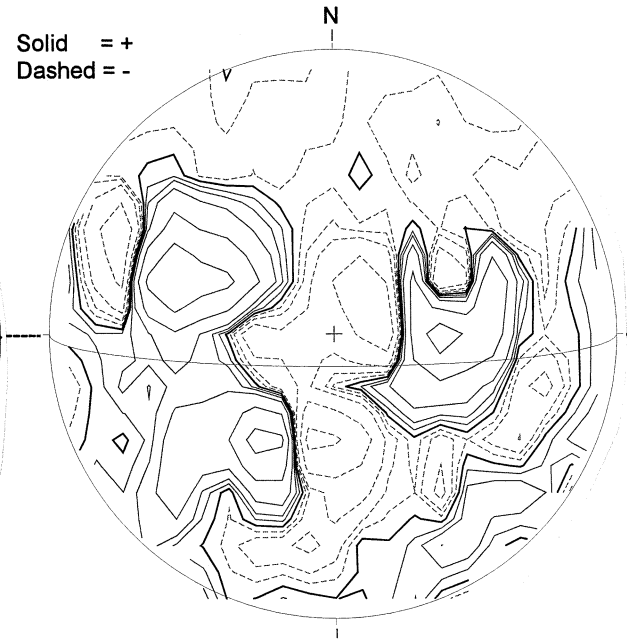


OCTOBER 2, 2002 (P= 26.03, Bo = 6.68, Lo = 61.76)

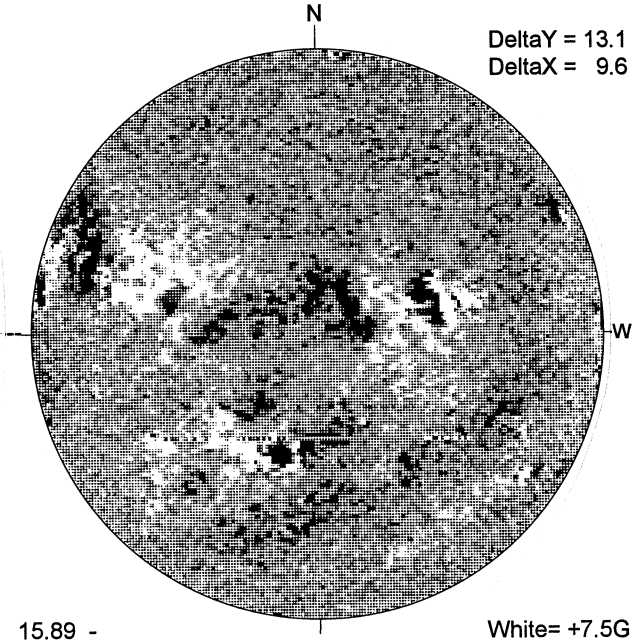
KITT PEAK MAGNETOGRAM



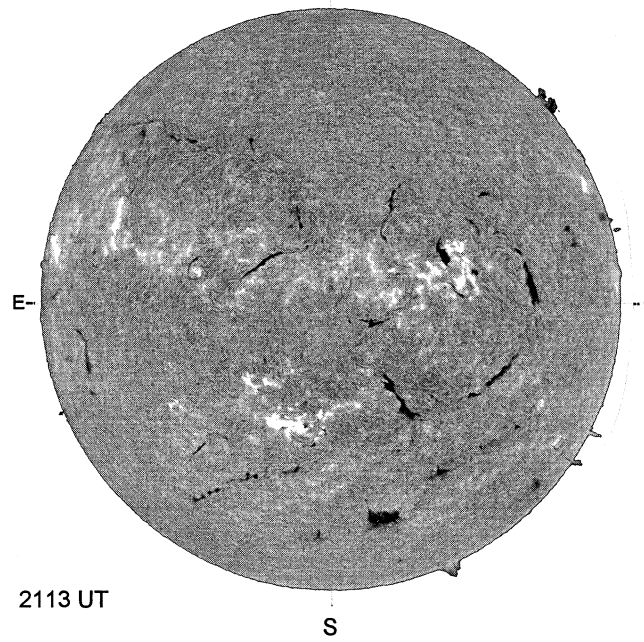
STANFORD MAGNETOGRAM



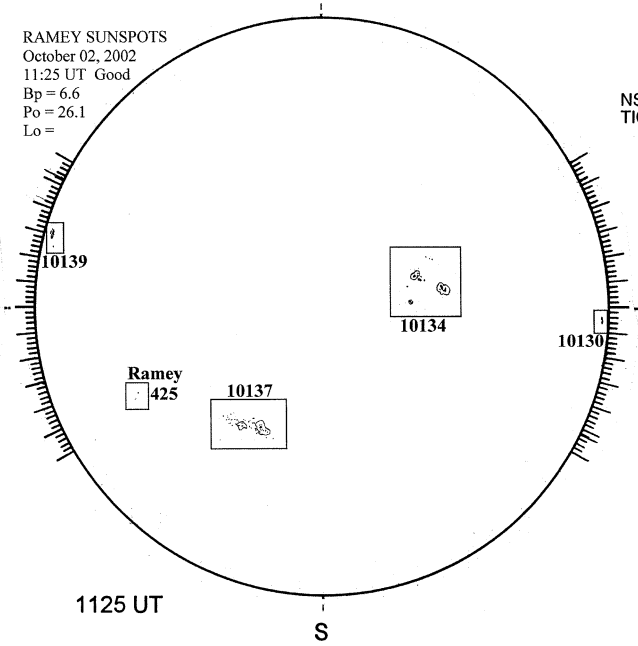
MT. WILSON MAGNETOGRAM



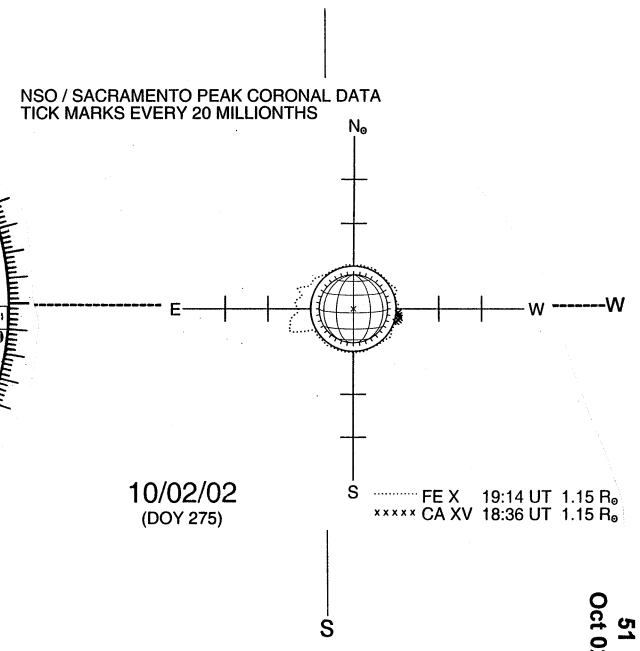
BIG BEAR H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



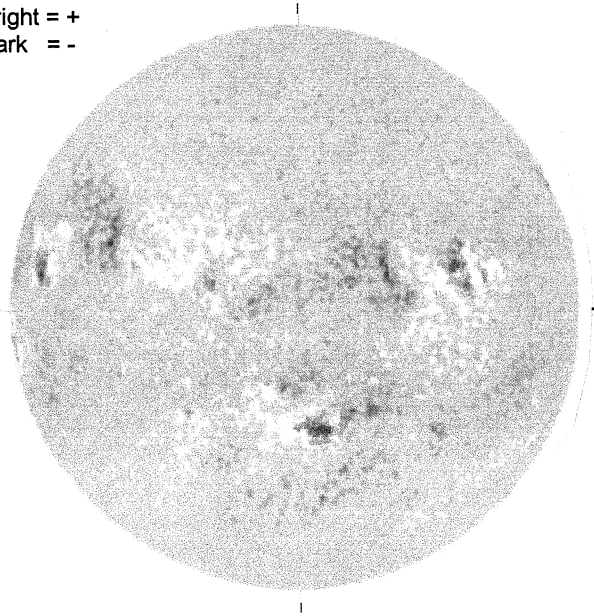
OCTOBER 3, 2002 (P= 26.09, Bo = 6.63, Lo = 48.56)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

1532 UT

STANFORD MAGNETOGRAM

N

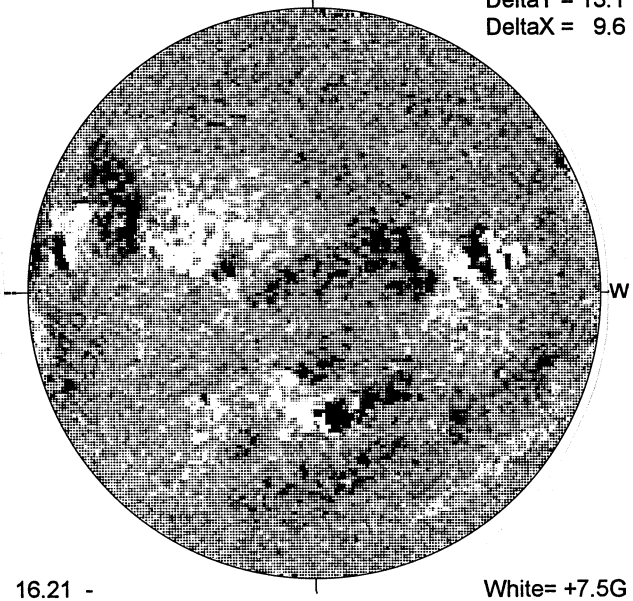
Solid = +
Dashed = -

2102 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

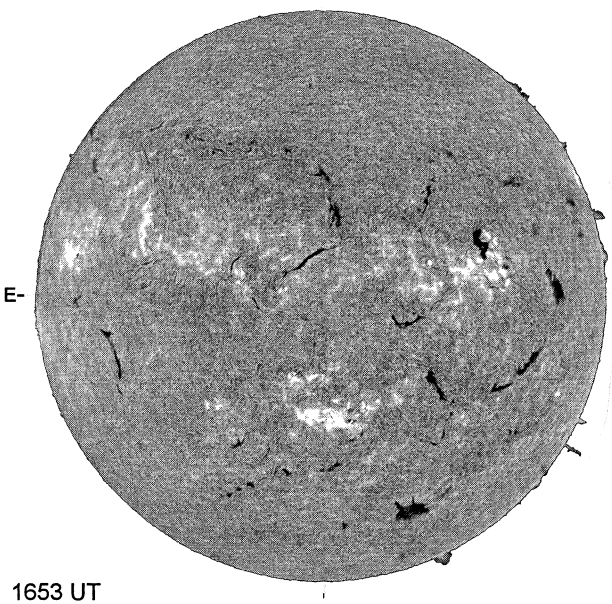


-W

16.21 -
17.16 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

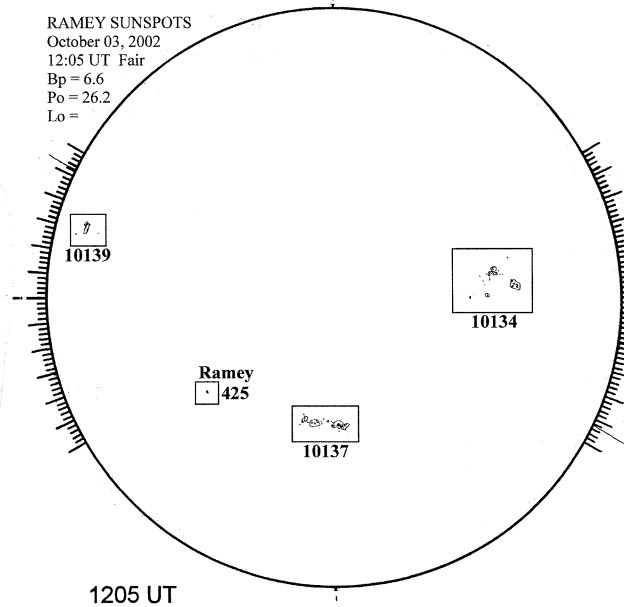


E-

1653 UT

S

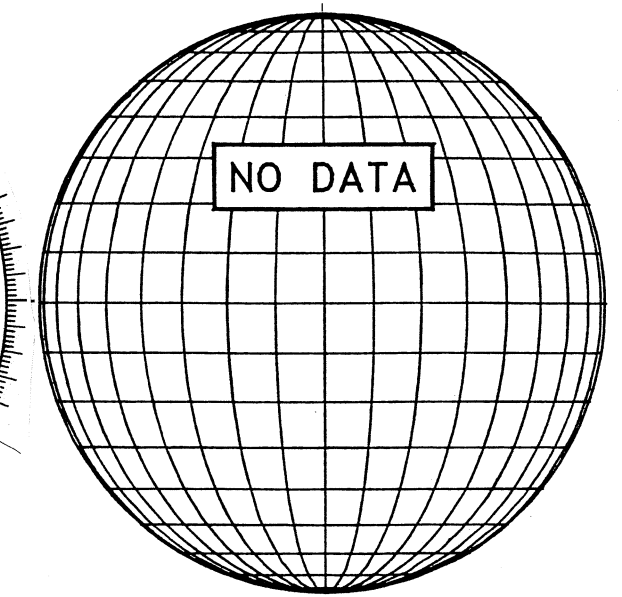
RAMEY SUNSPOT



1205 UT

S

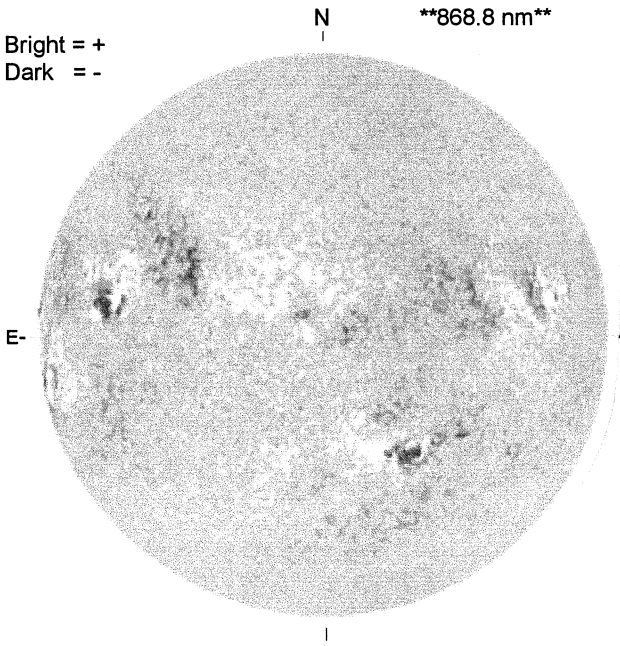
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

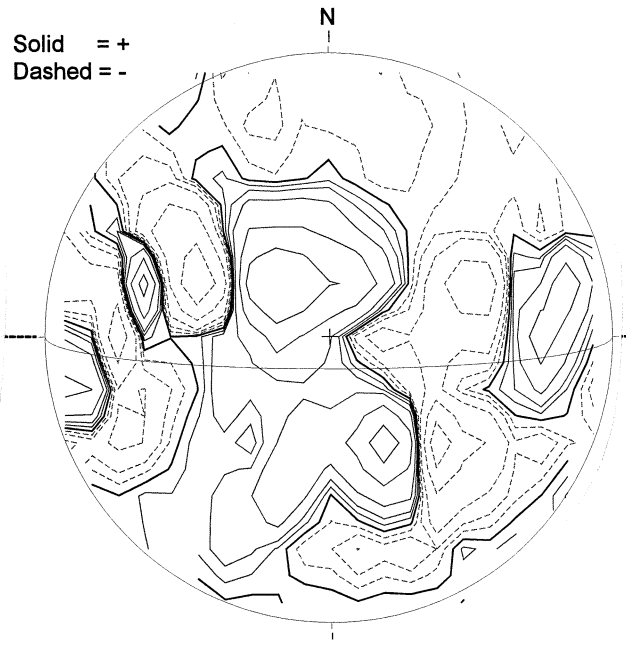
OCTOBER 4, 2002 (P= 26.14, Bo = 6.58, Lo = 35.37)

KITT PEAK MAGNETOGRAM



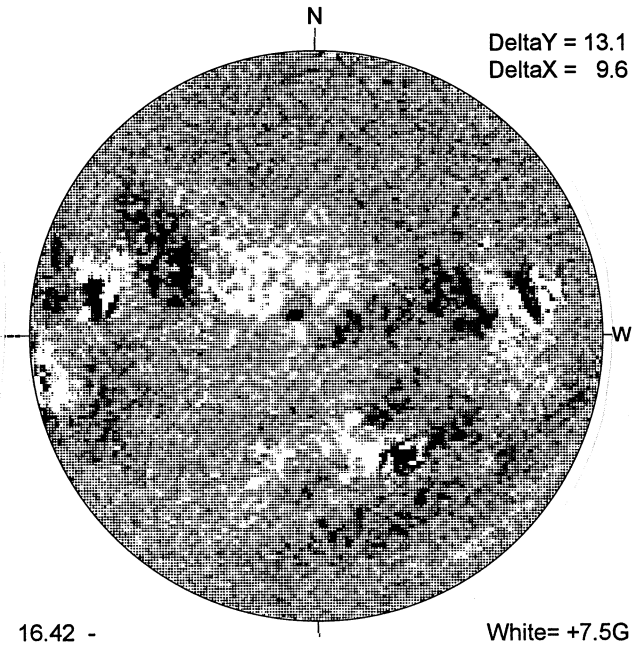
1550 UT

STANFORD MAGNETOGRAM



2129 UT

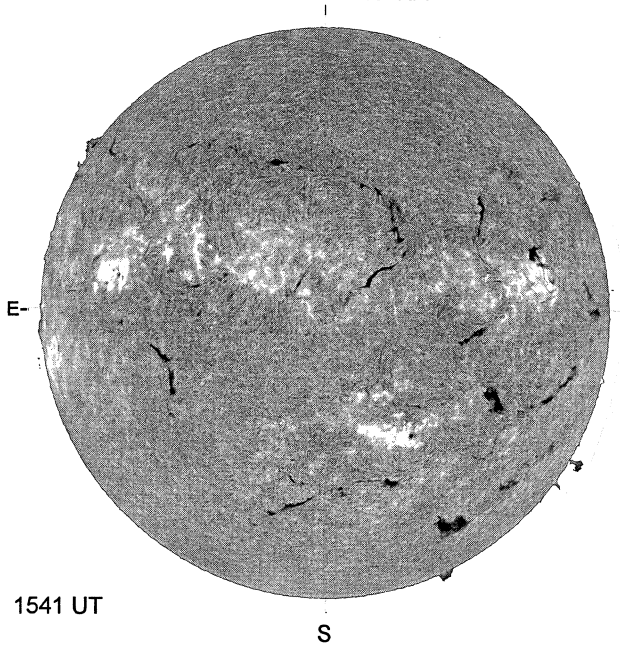
MT. WILSON MAGNETOGRAM



16.42 -
17.36 UT

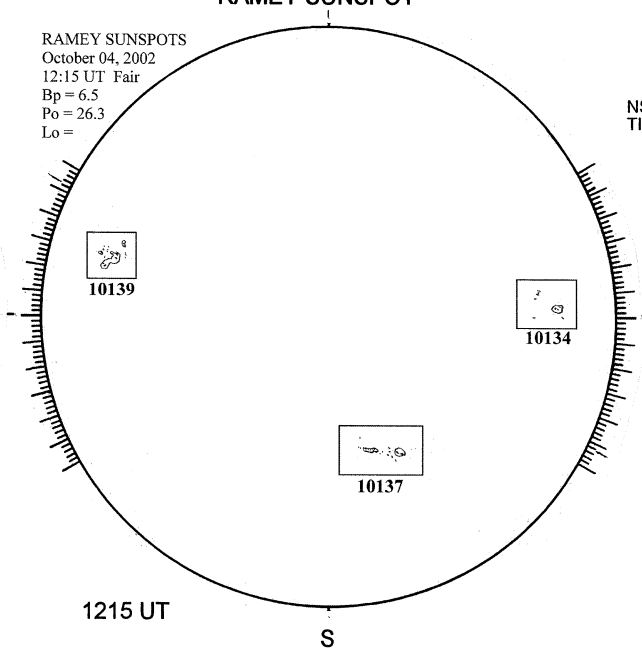
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



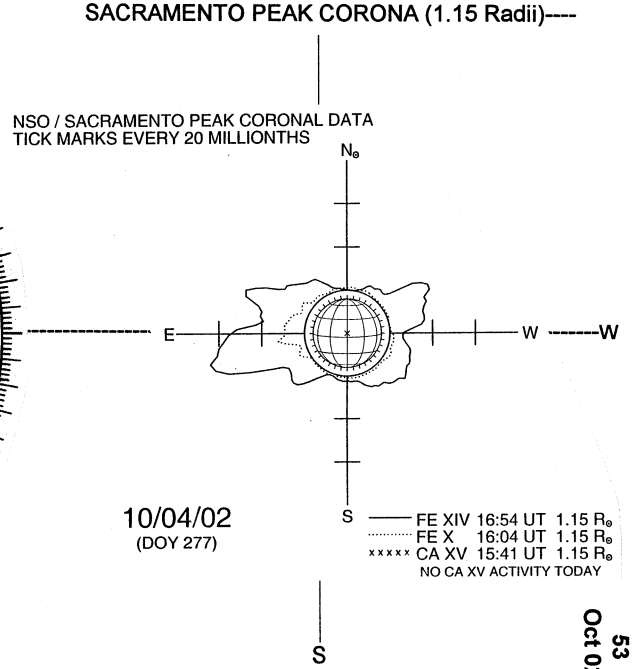
1541 UT

RAMEY SUNSPOT



1215 UT

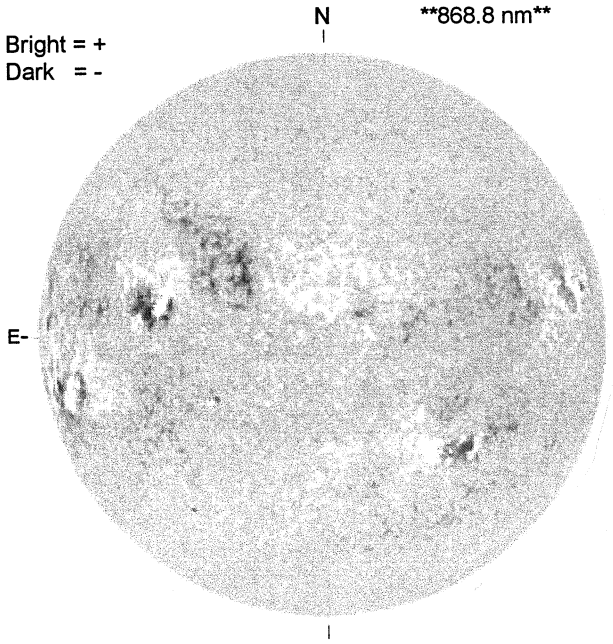
SACRAMENTO PEAK CORONA (1.15 Radii)----



53
Oct 02

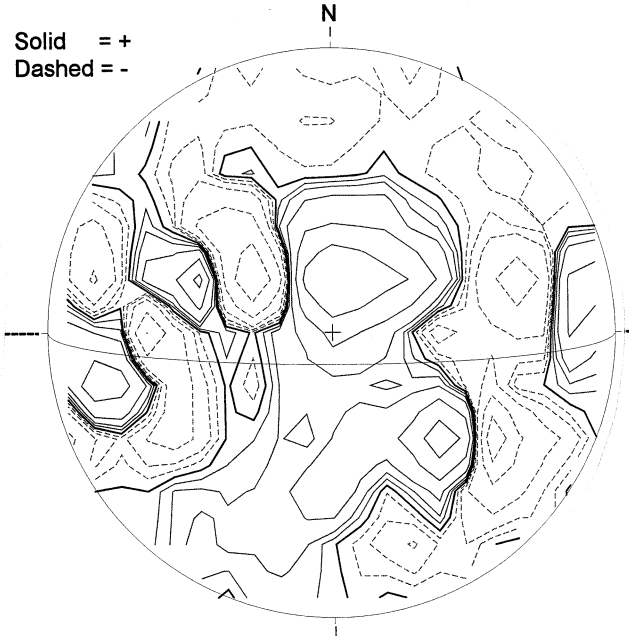
OCTOBER 5, 2002 (P= 26.18, Bo = 6.53, Lo = 22.17)

KITT PEAK MAGNETOGRAM



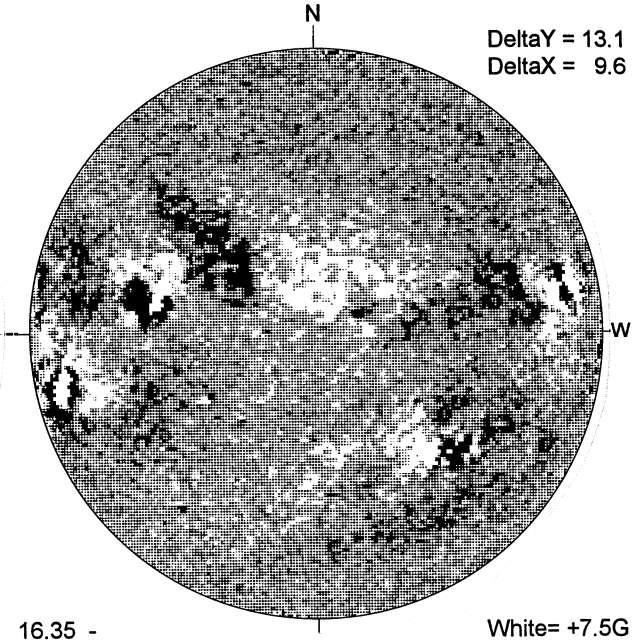
1401 UT

STANFORD MAGNETOGRAM



1853 UT

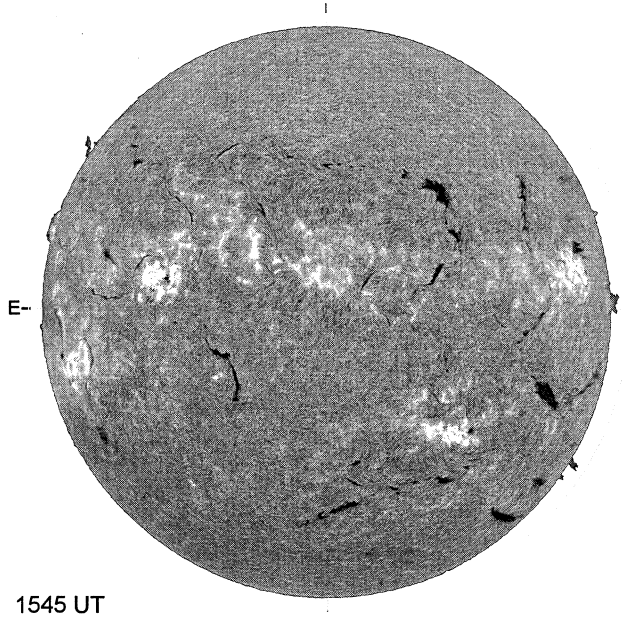
MT. WILSON MAGNETOGRAM



16.35 -
17.30 UT

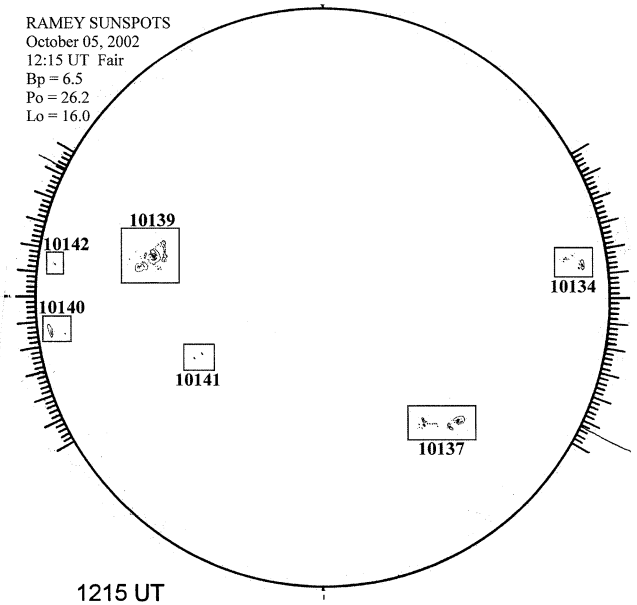
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



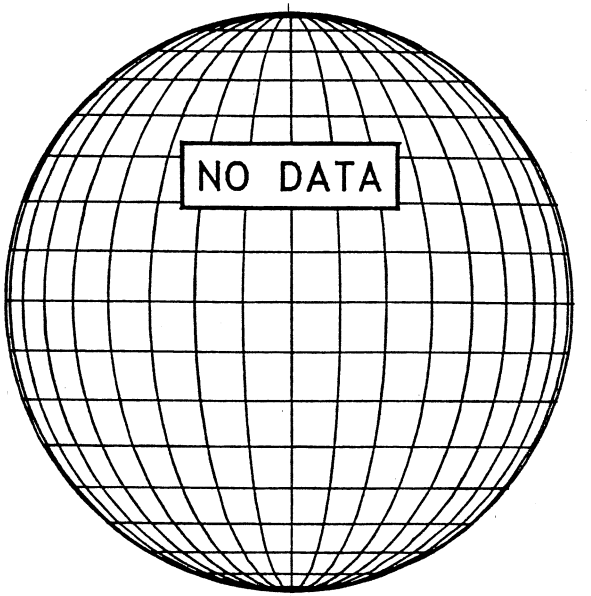
1545 UT

RAMEY SUNSPOT



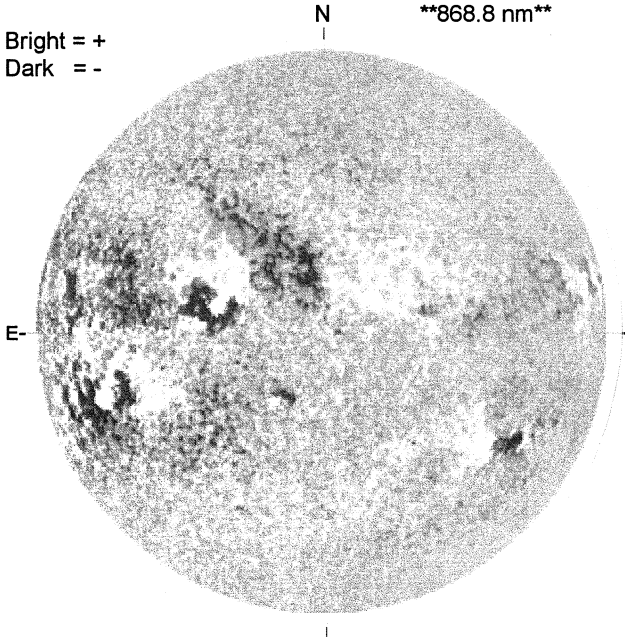
1215 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



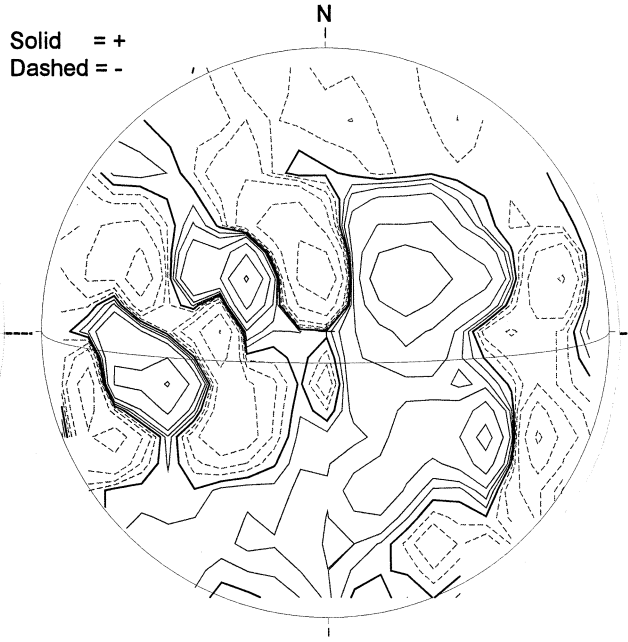
OCTOBER 6, 2002 (P= 26.22, Bo = 6.47, Lo = 8.98)

KITT PEAK MAGNETOGRAM



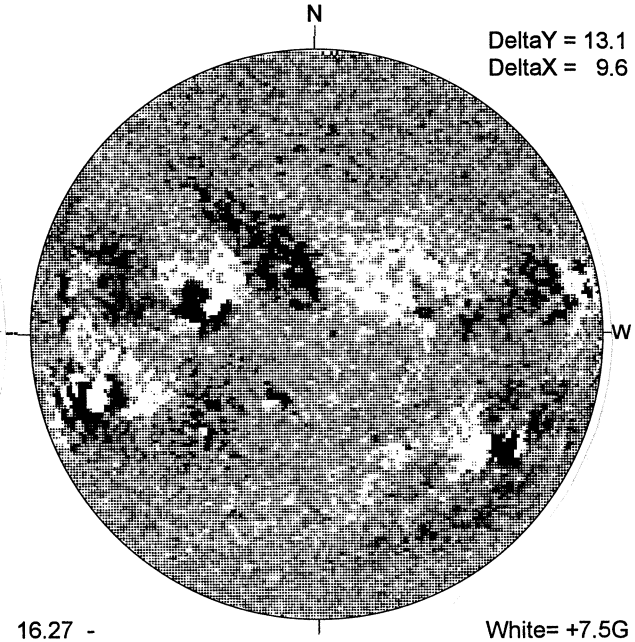
1536 UT

STANFORD MAGNETOGRAM



2218 UT

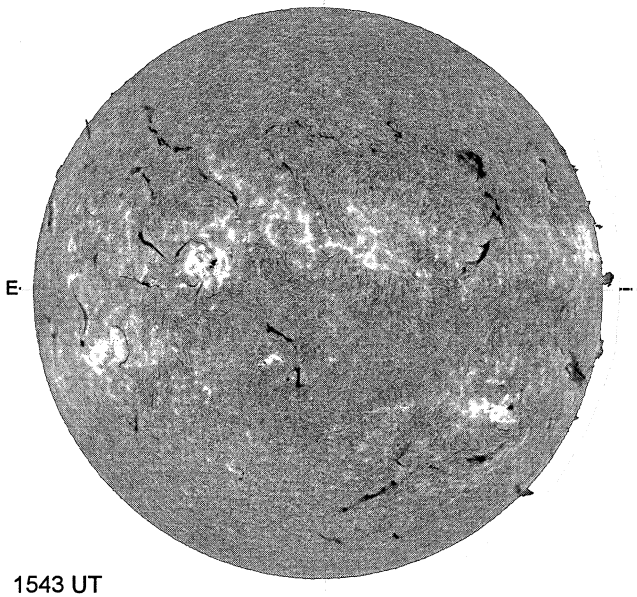
MT. WILSON MAGNETOGRAM



16.27 -
17.22 UT

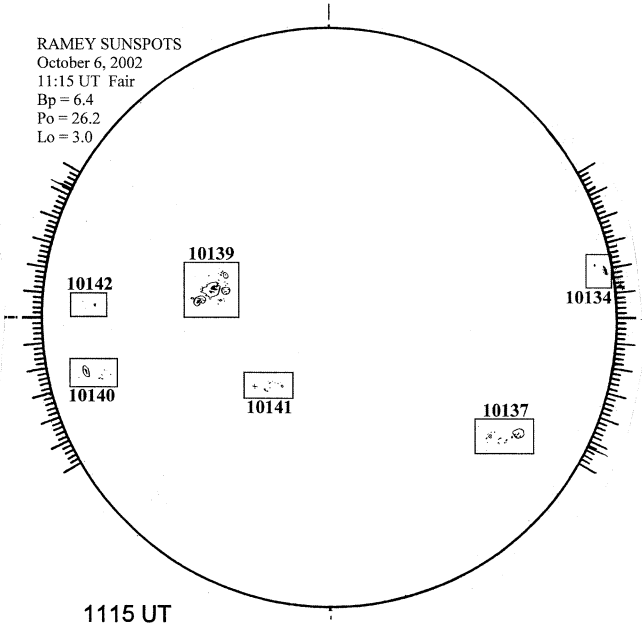
White= +7.5G
Black = -7.5G

----- BIG BEAR H-ALPHA



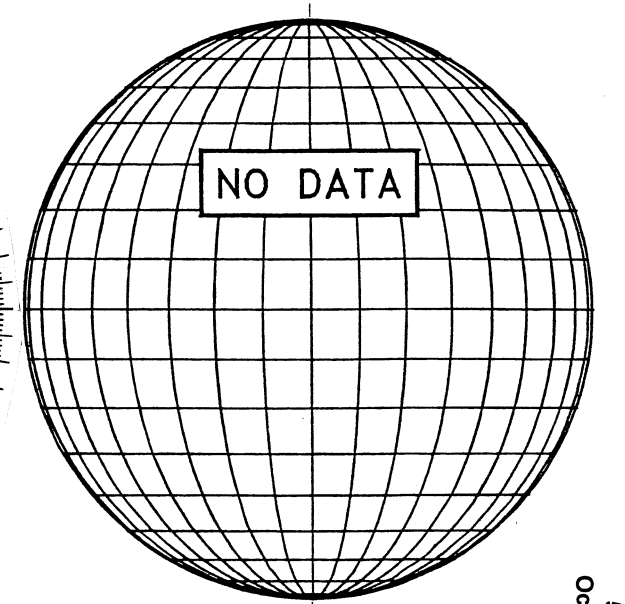
1543 UT

RAMEY SUNSPOT



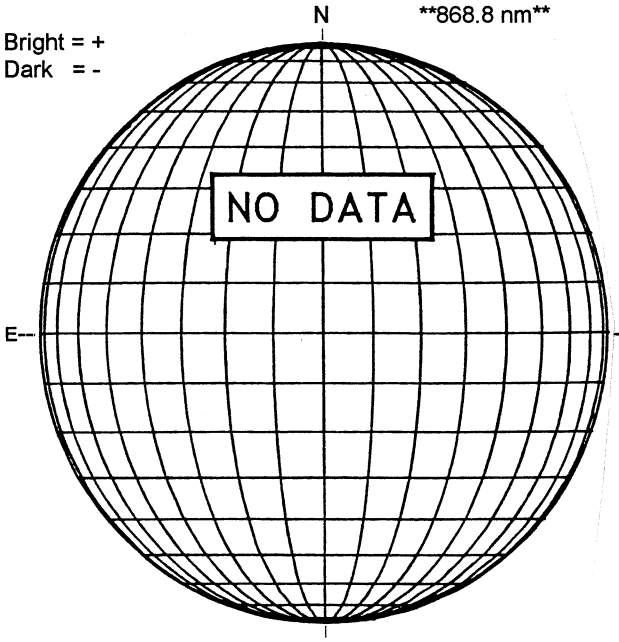
1115 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

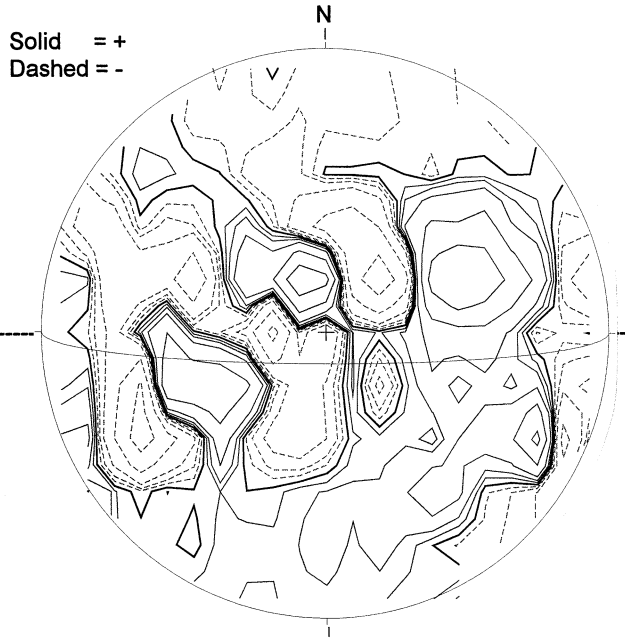


OCTOBER 7, 2002 (P= 26.25, Bo = 6.41, Lo = 355.79)

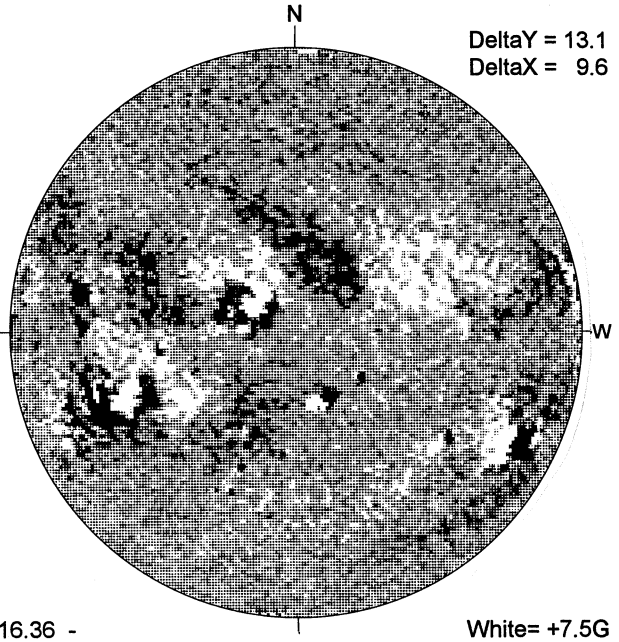
KITT PEAK MAGNETOGRAM



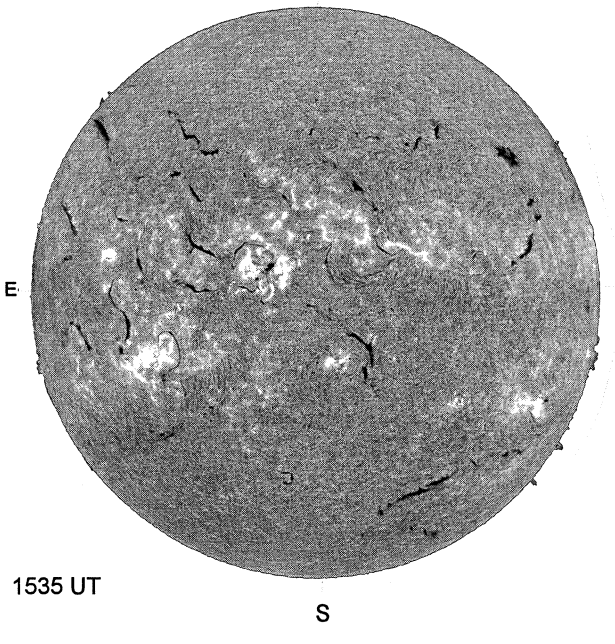
STANFORD MAGNETOGRAM



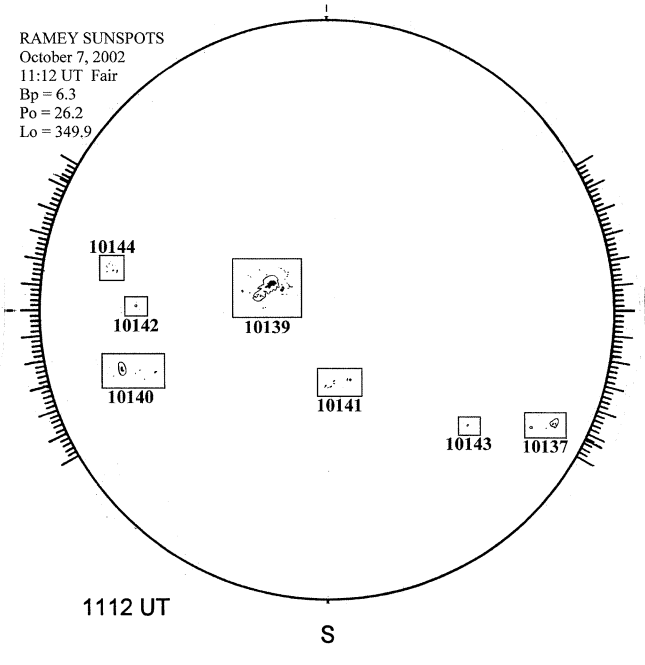
MT. WILSON MAGNETOGRAM



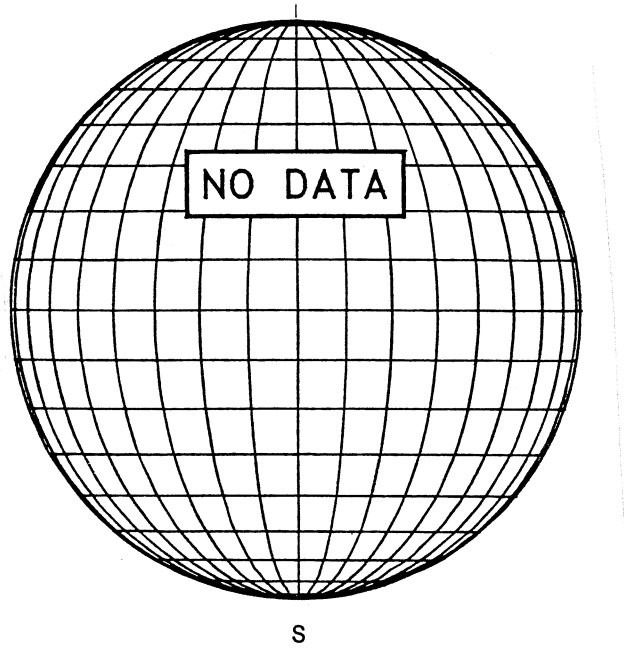
BIG BEAR H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



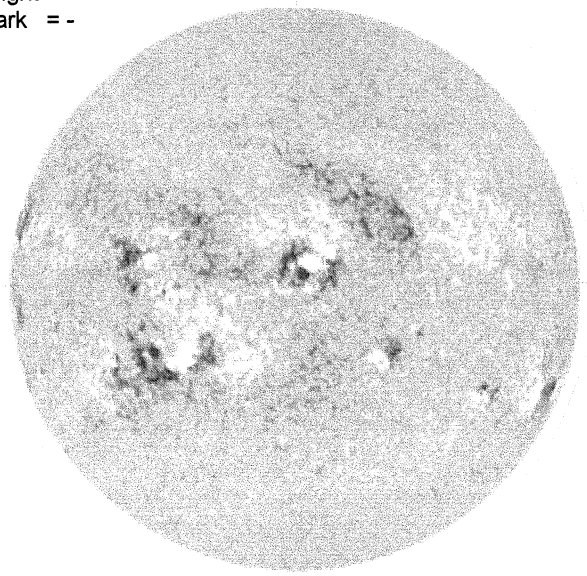
OCTOBER 8, 2002 (P= 26.27, Bo = 6.35, Lo = 342.59)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



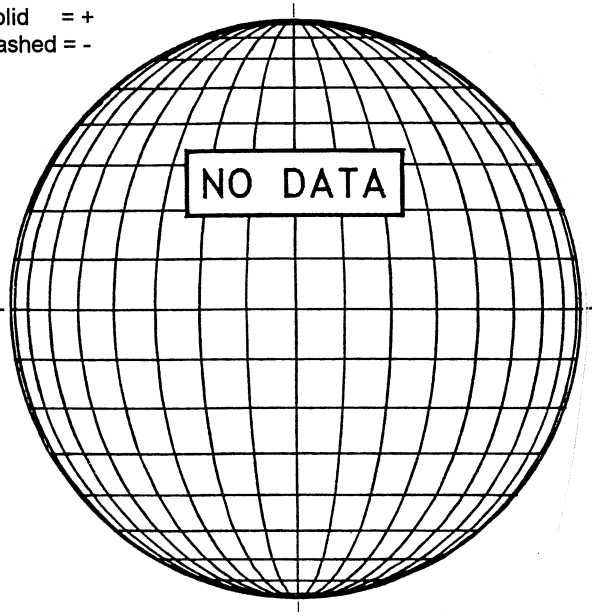
E-

1542 UT

STANFORD MAGNETOGRAM

N

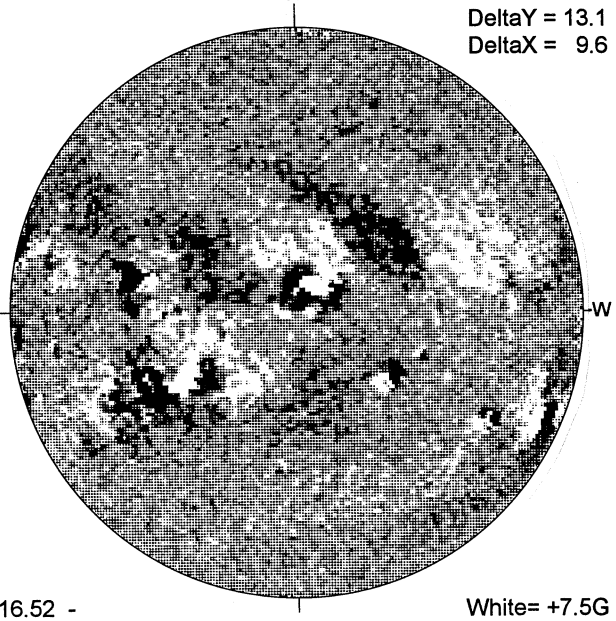
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

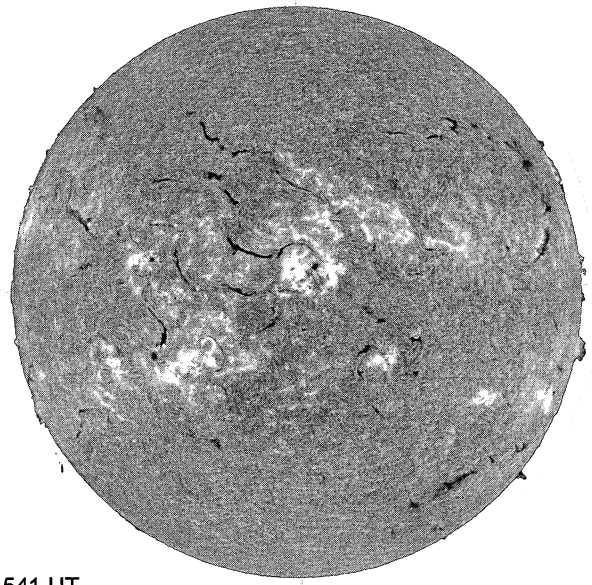


-W

16.52 -
17.47 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

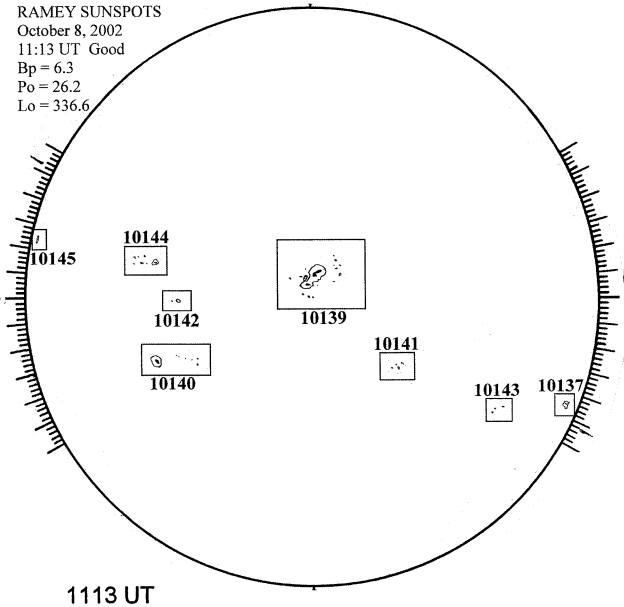


E-

1541 UT

S

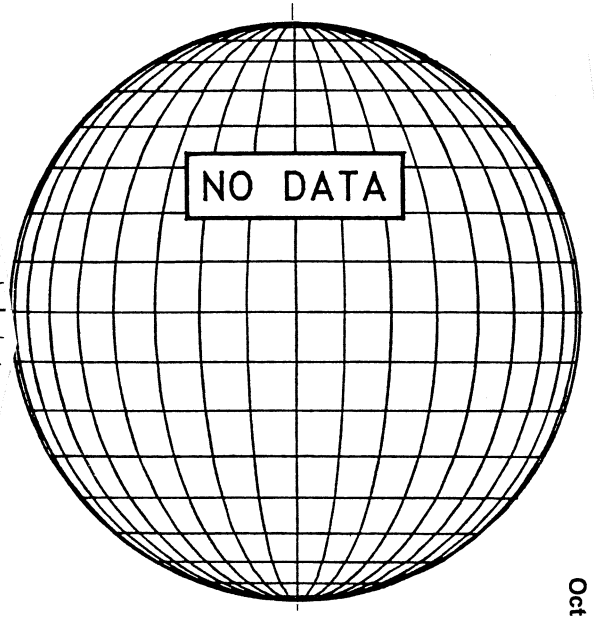
RAMEY SUNSPOT



1113 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

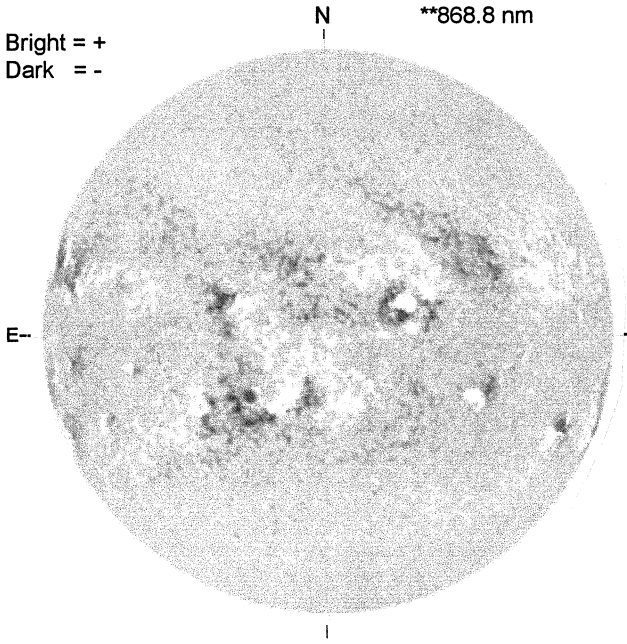


S

57
Oct 02

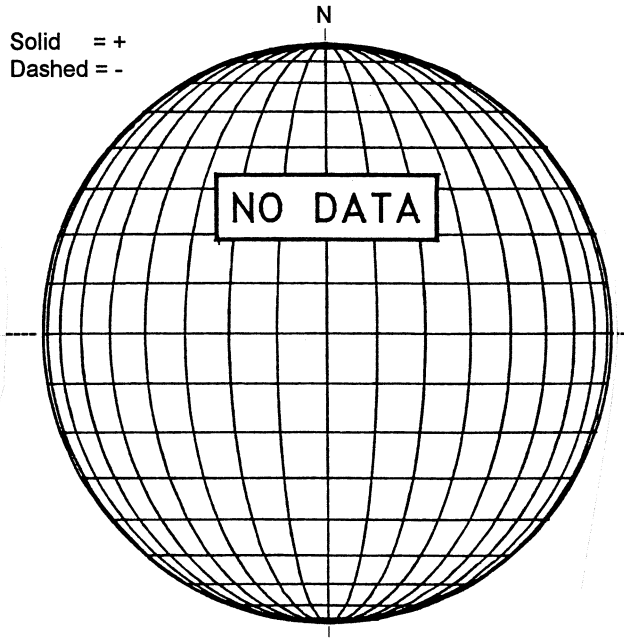
OCTOBER 9, 2002 (P= 26.28, Bo = 6.29, Lo = 329.40)

KITT PEAK MAGNETOGRAM

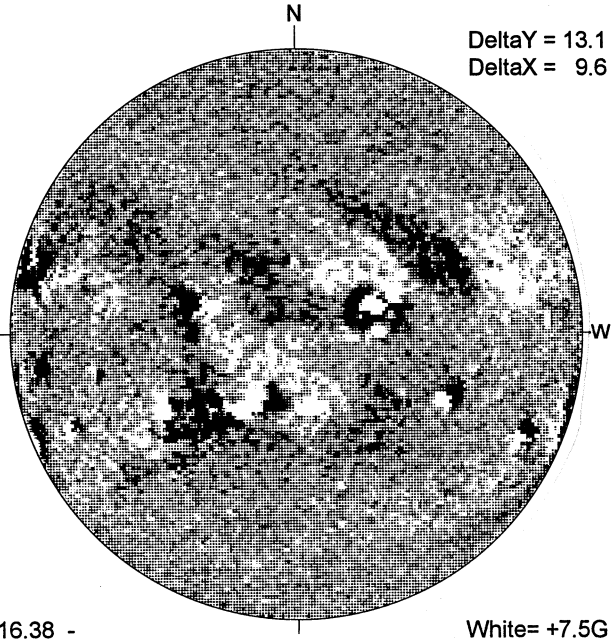


1702 UT

STANFORD MAGNETOGRAM



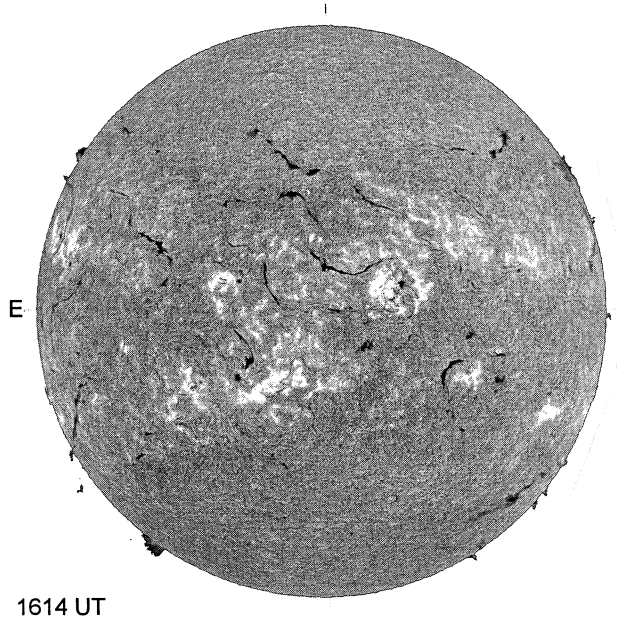
MT. WILSON MAGNETOGRAM



16.38 -
17.33 UT

White= +7.5G
Black = -7.5G

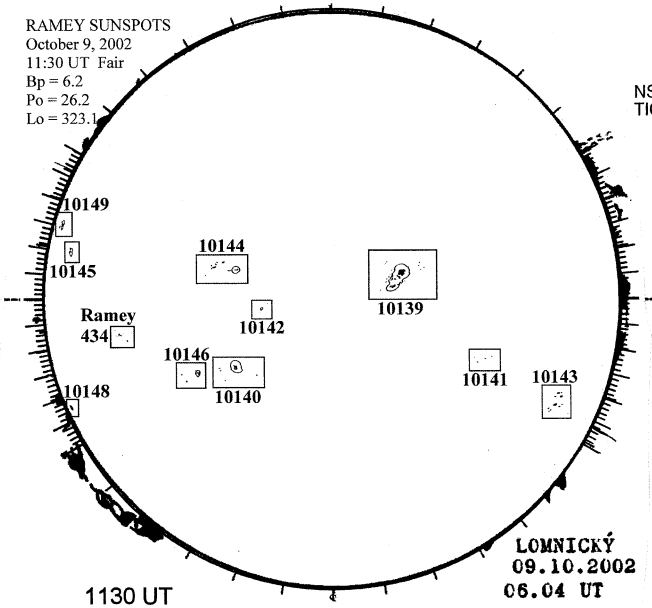
BIG BEAR H-ALPHA



1614 UT

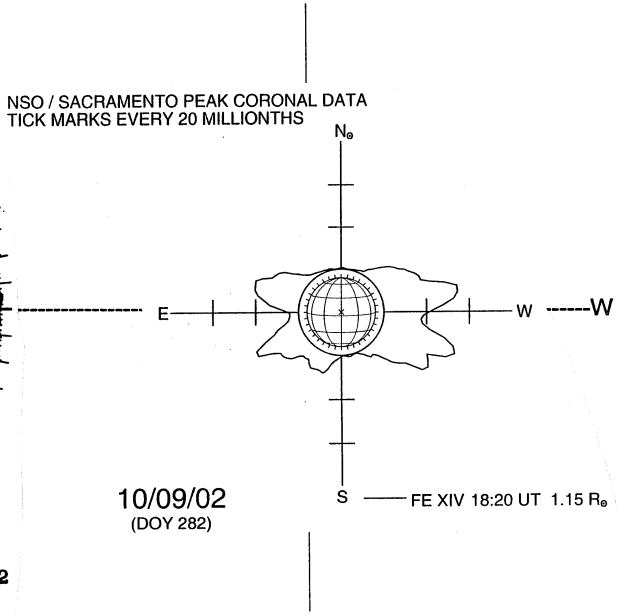
S

RAMEY SUNSPOT



1130 UT
0604 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

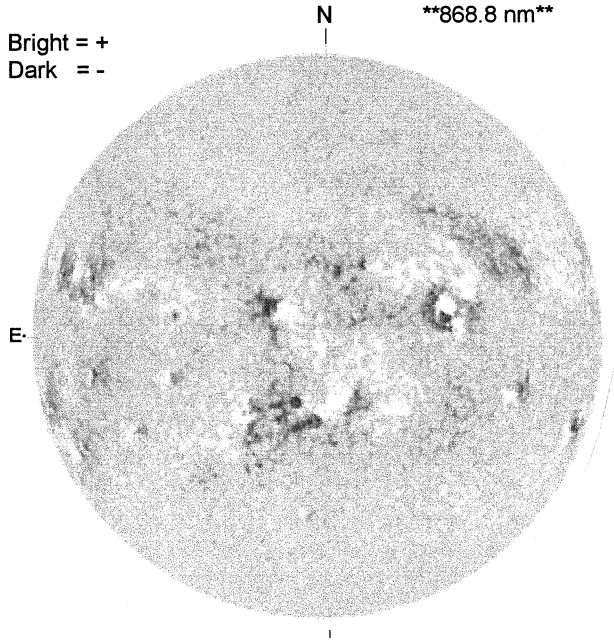


10/09/02
(DOY 282)

S

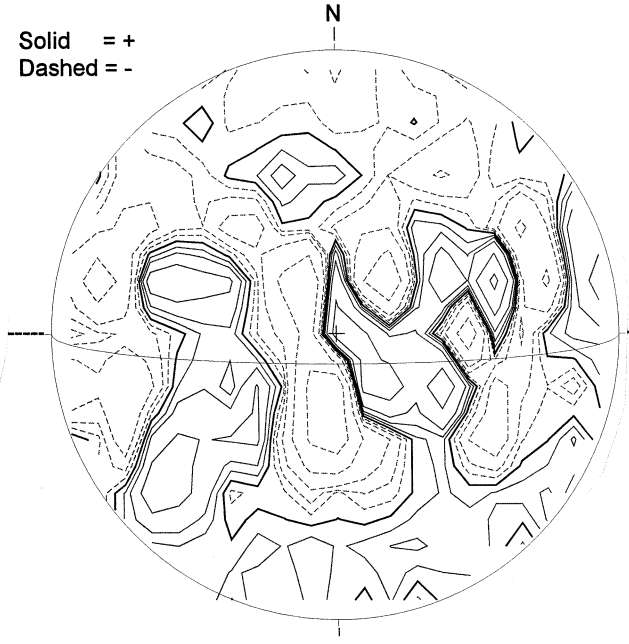
OCTOBER 10, 2002 (P= 26.29, Bo = 6.23 Lo = 316.21)

KITT PEAK MAGNETOGRAM



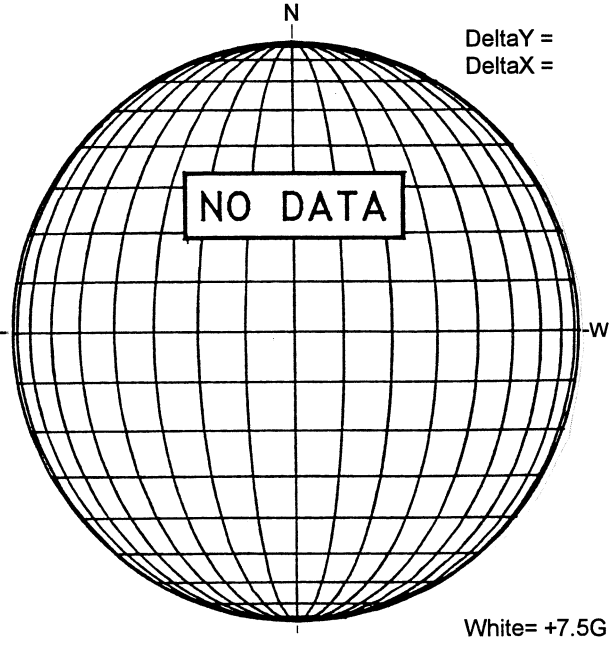
1441 UT

STANFORD MAGNETOGRAM

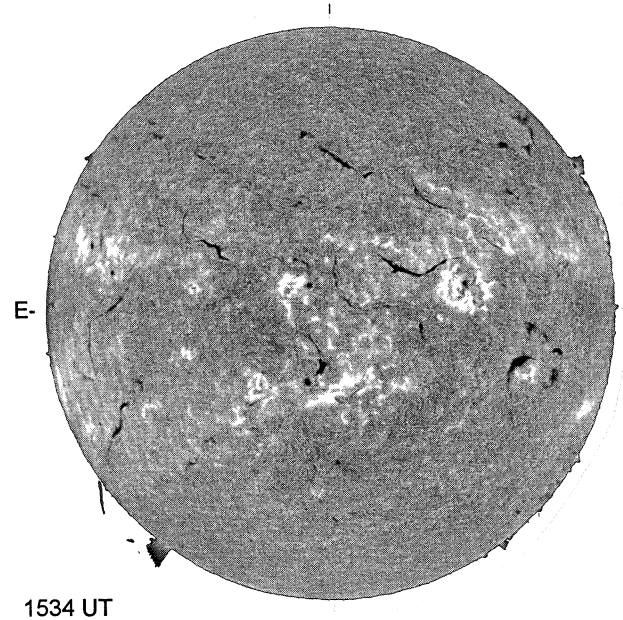


2331 UT

MT. WILSON MAGNETOGRAM

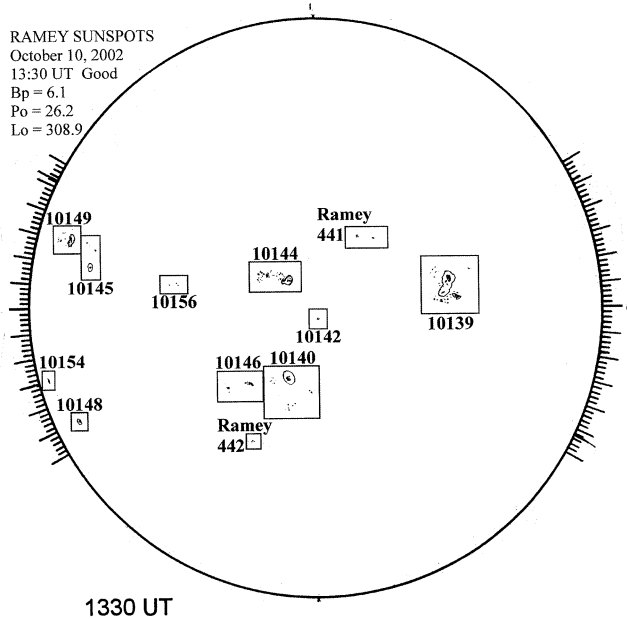


BIG BEAR H-ALPHA



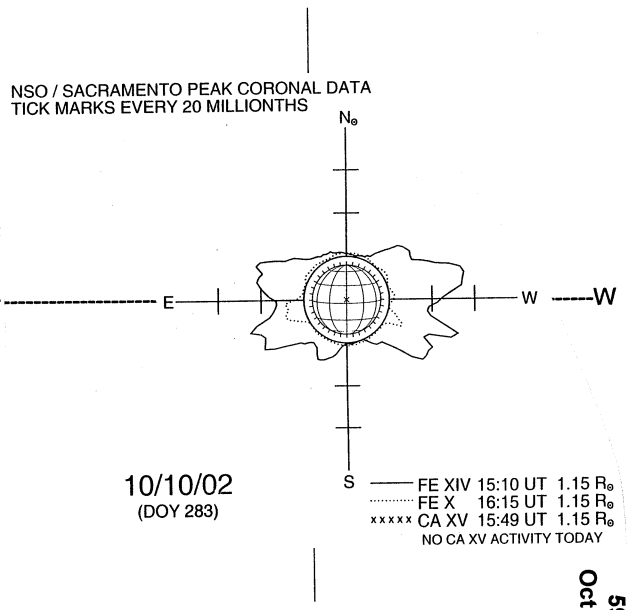
1534 UT

RAMEY SUNSPOTS



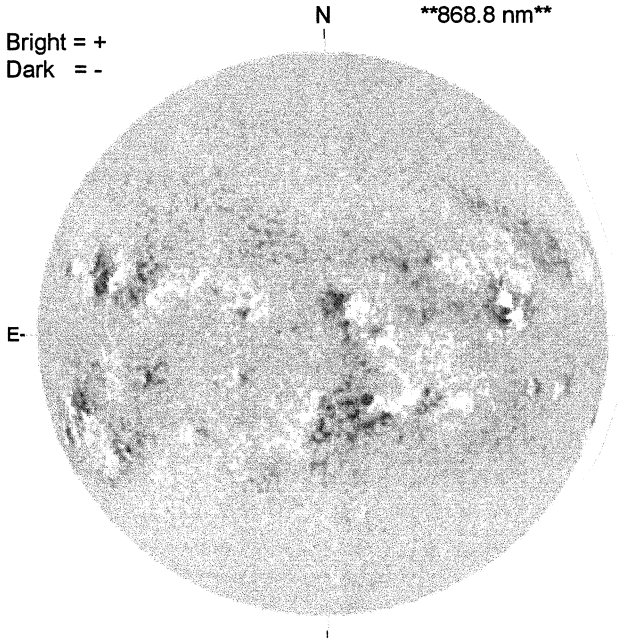
1330 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



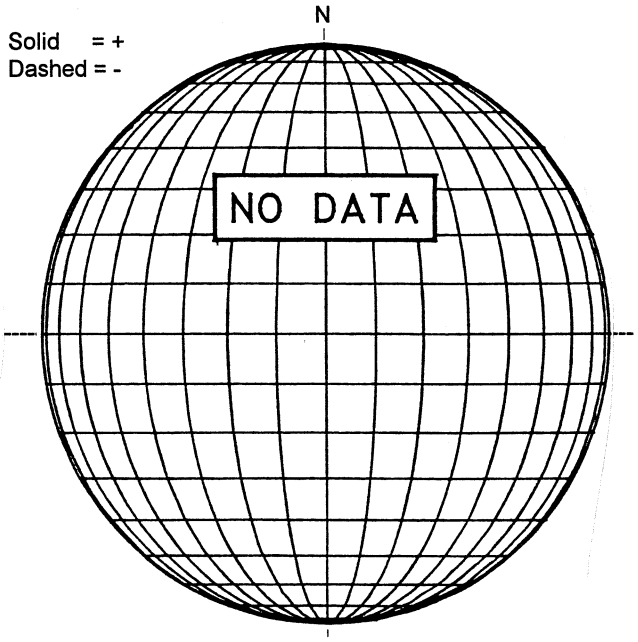
OCTOBER 11, 2002 (P= 26.29, Bo = 6.16, Lo = 303.02)

KITT PEAK MAGNETOGRAM

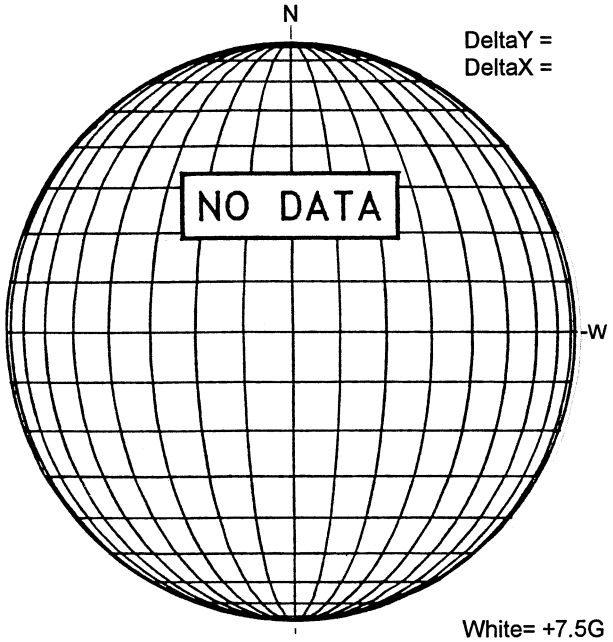


1506 UT

STANFORD MAGNETOGRAM

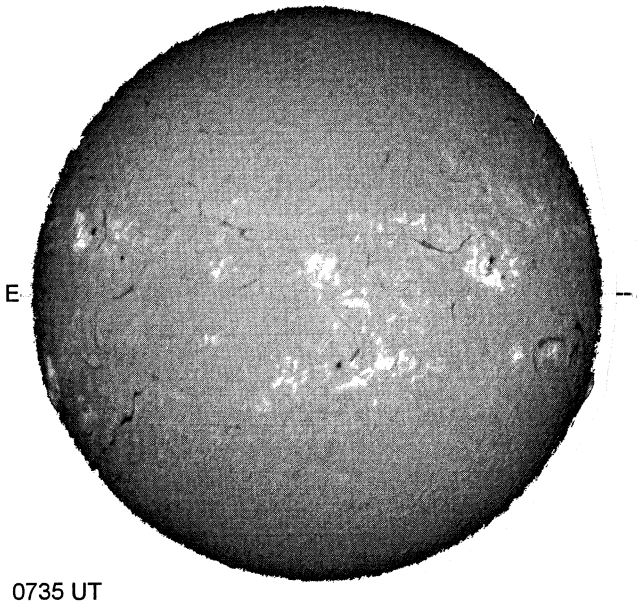


MT. WILSON MAGNETOGRAM



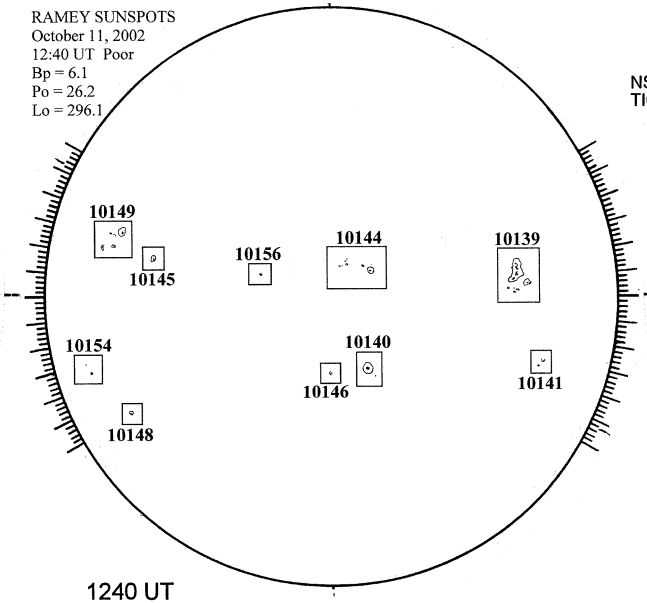
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



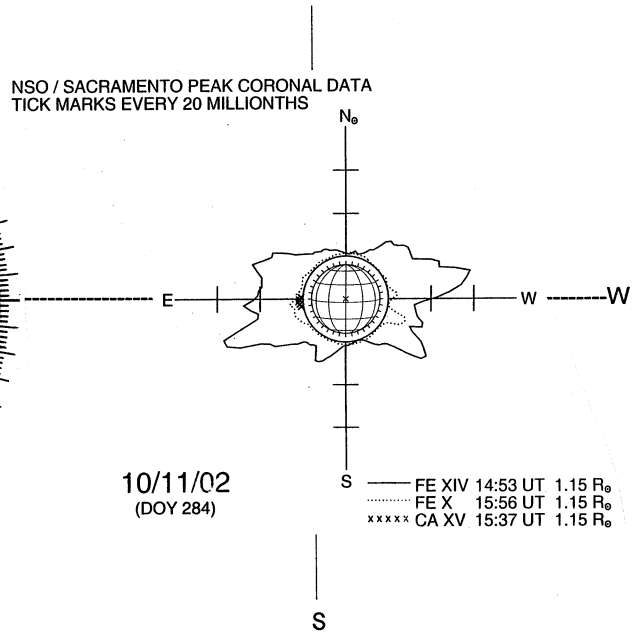
0735 UT

RAMEY SUNSPOTS



1240 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

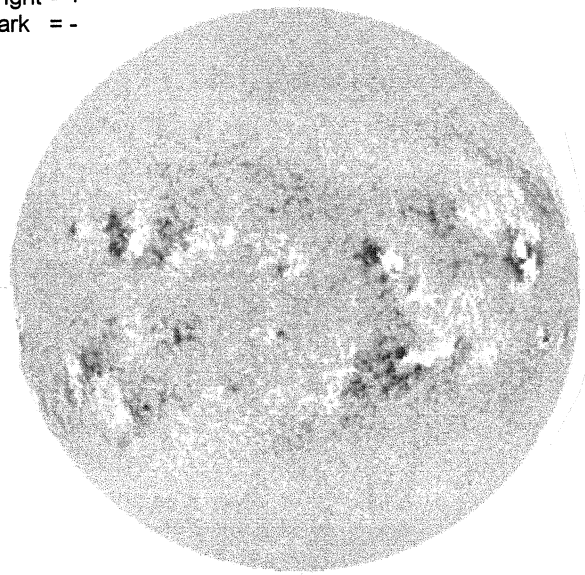


OCTOBER 12, 2002 (P= 26.28, Bo = 6.10 Lo = 289.83)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



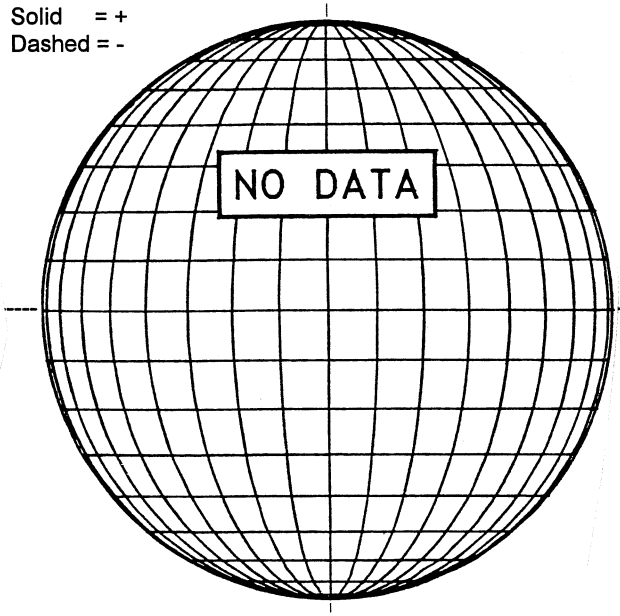
E-

1510 UT

STANFORD MAGNETOGRAM

N

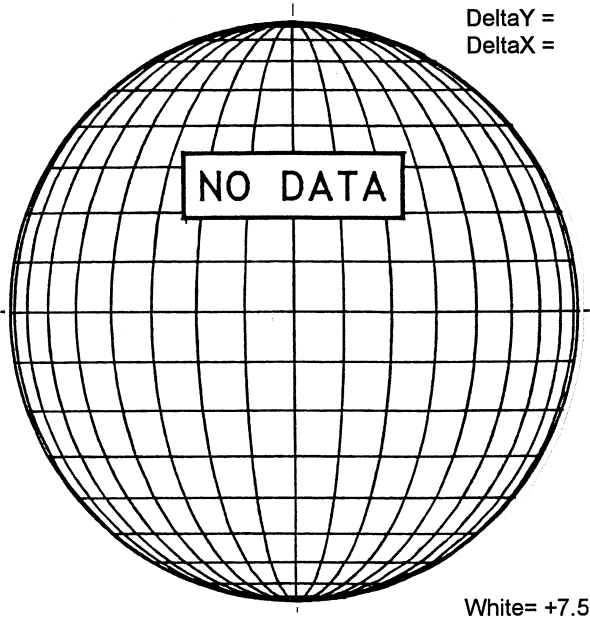
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

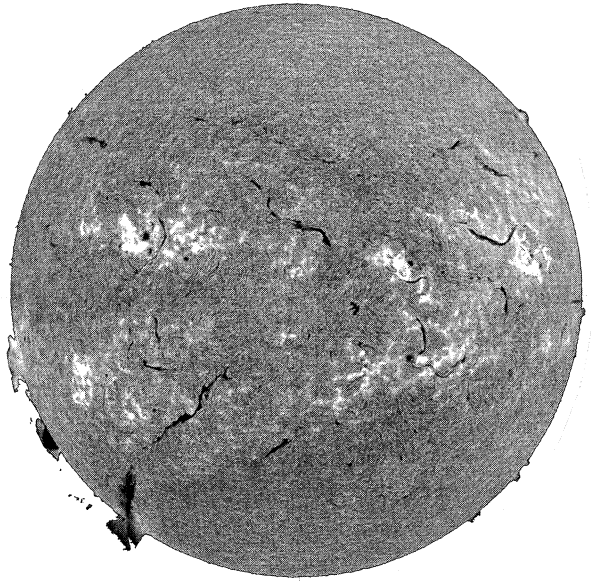
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

---- BIG BEAR H-ALPHA

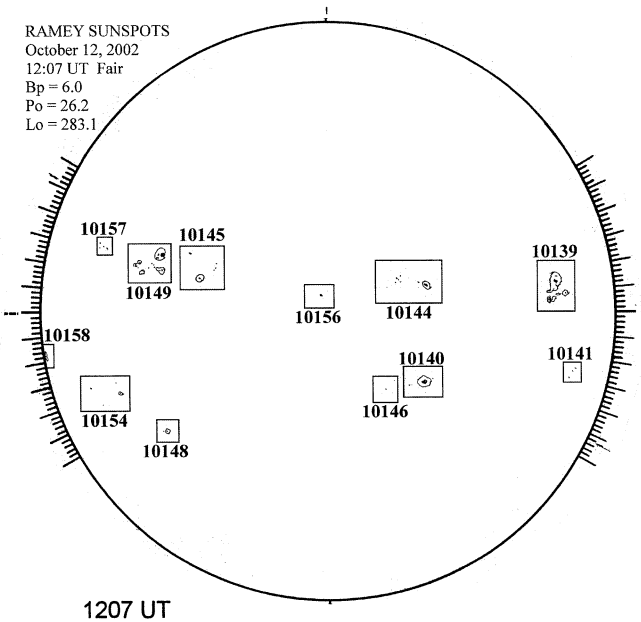


E-

1918 UT

S

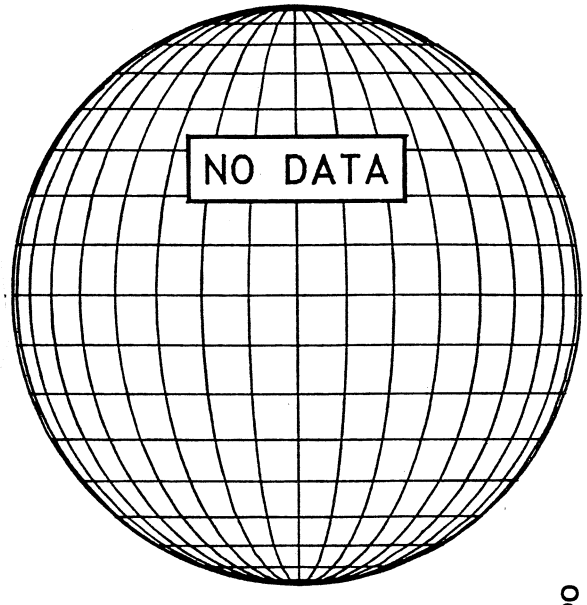
RAMEY SUNSPOTS



1207 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

61
Oct 02

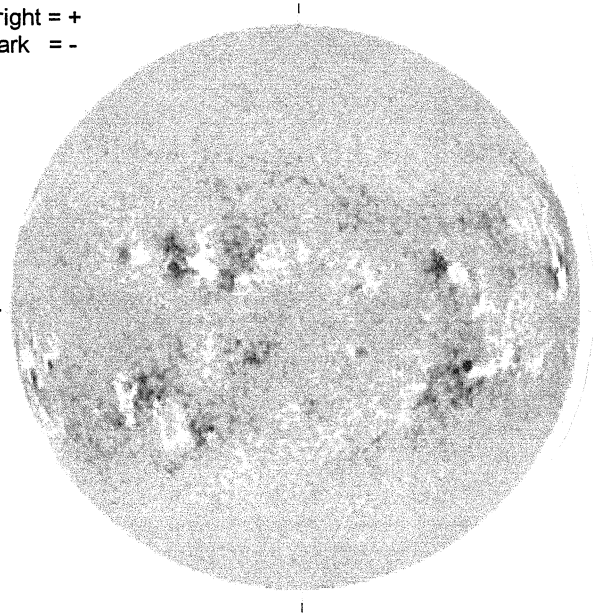
OCTOBER 13, 2002 (P= 26.27, Bo = 6.03, Lo = 276.63)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



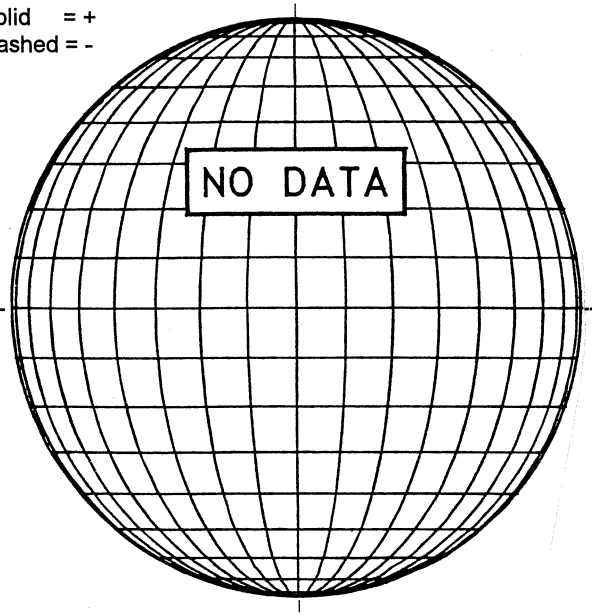
E-

1853 UT

STANFORD MAGNETOGRAM

N

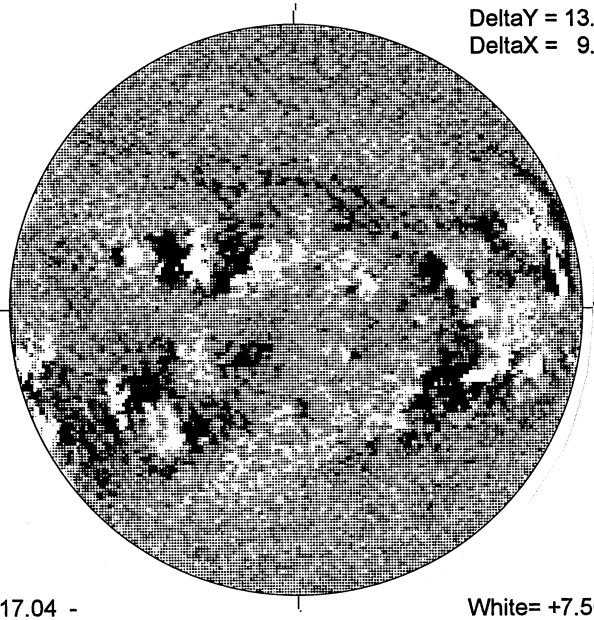
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

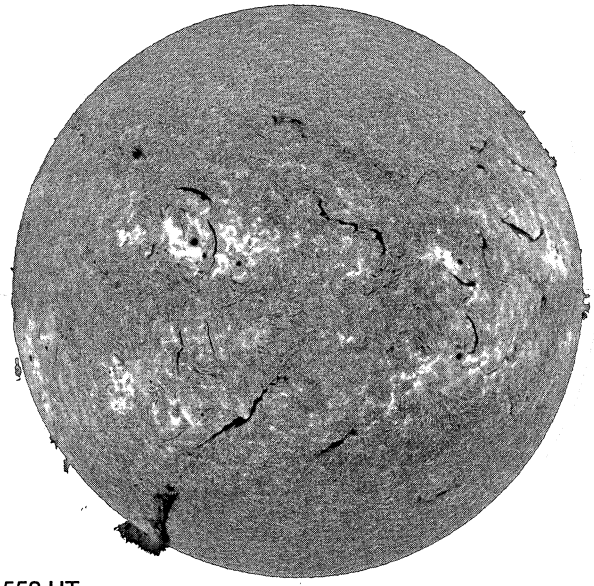


W

17.04 -
17.99 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

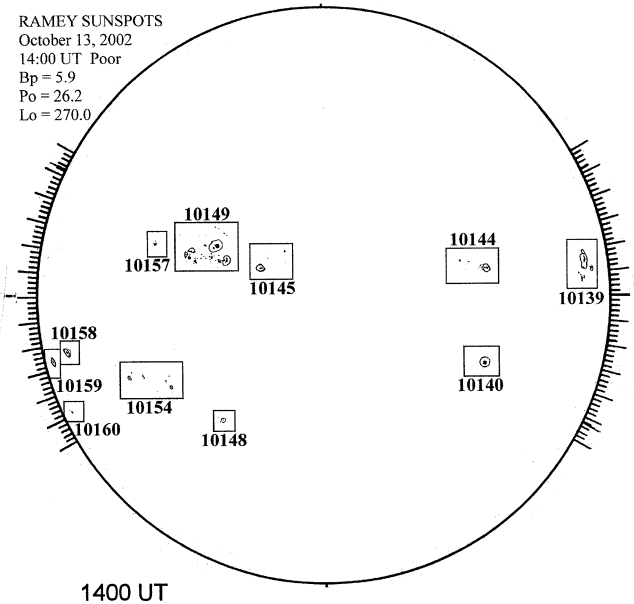


E-

1558 UT

S

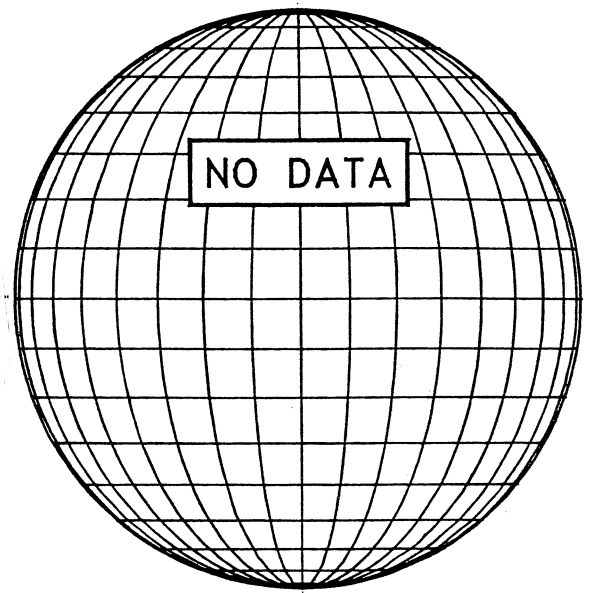
RAMEY SUNSPOT



1400 UT

S

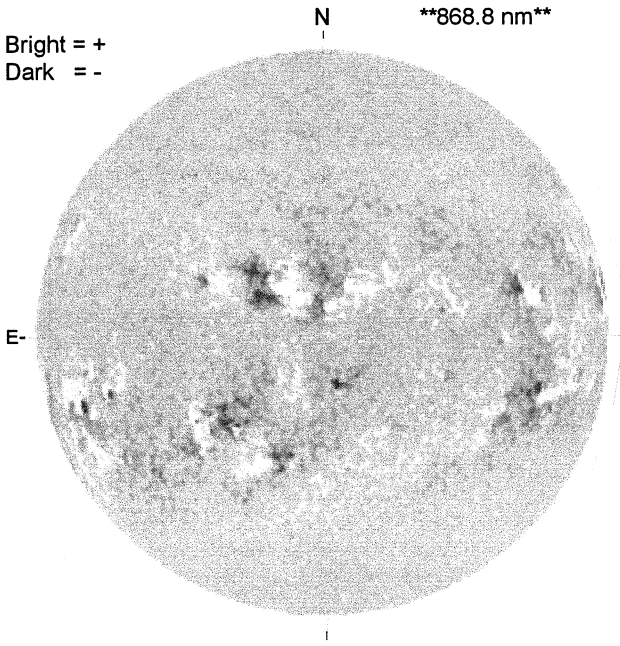
SACRAMENTO PEAK CORONA (1.15 Radii)



S

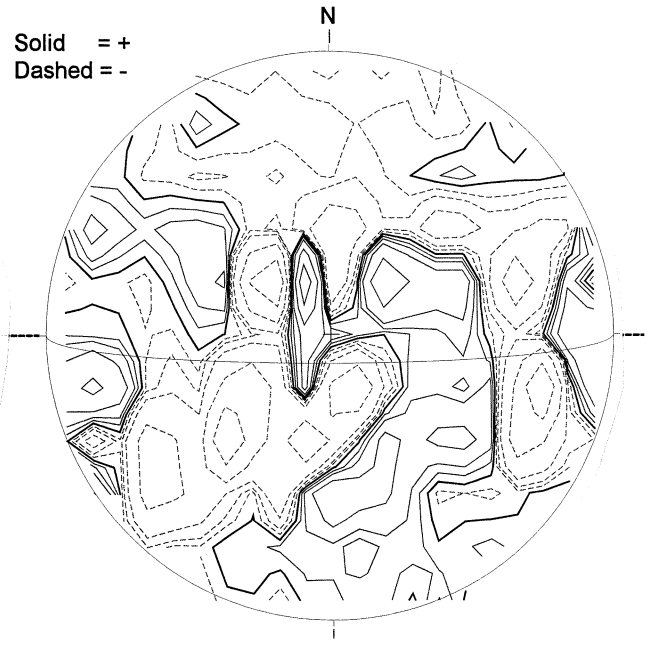
OCTOBER 14, 2002 (P= 26.25, Bo = 5.96, Lo = 263.44)

KITT PEAK MAGNETOGRAM



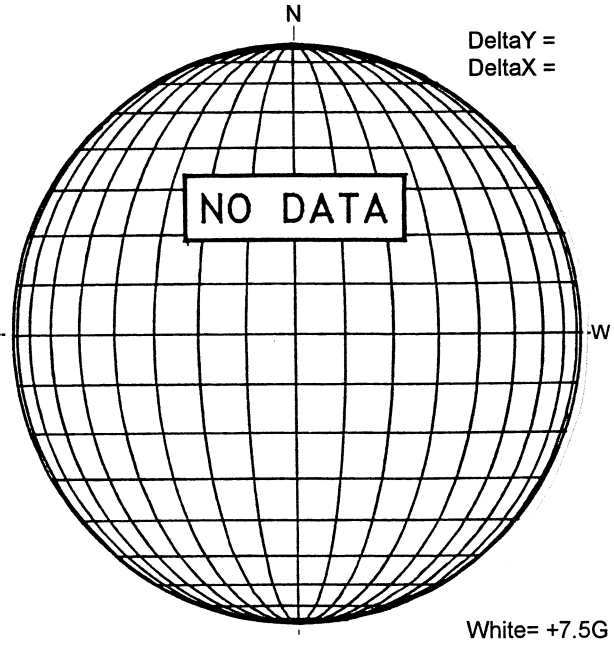
1725 UT

STANFORD MAGNETOGRAM

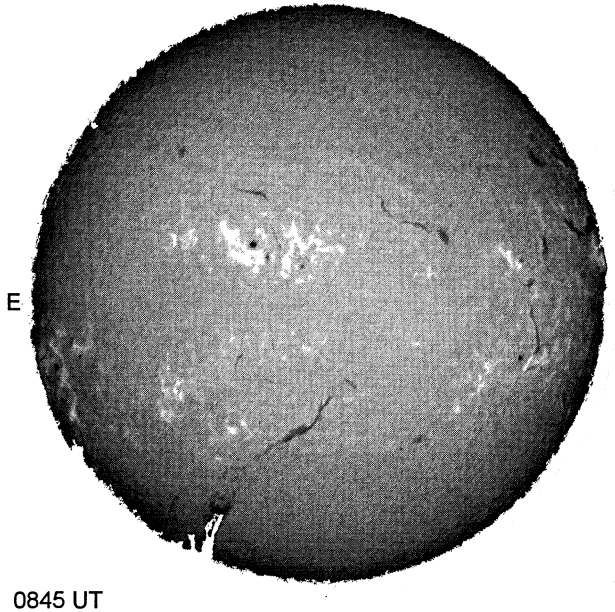


1804 UT

MT. WILSON MAGNETOGRAM



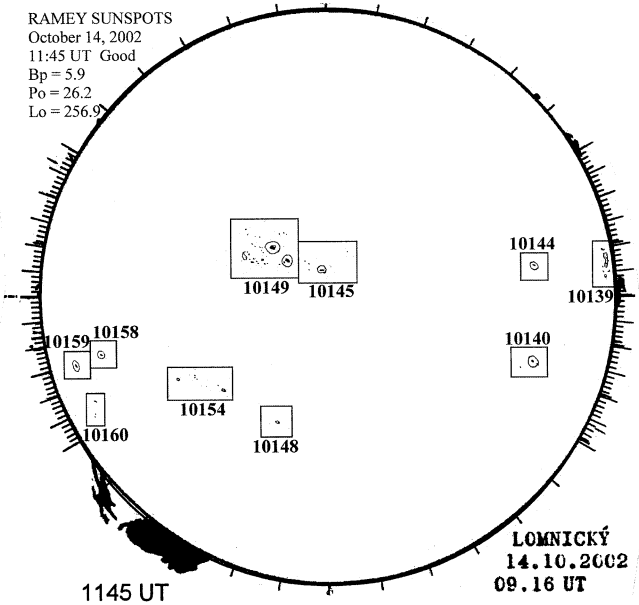
MEUDON H-ALPHA



0845 UT

S

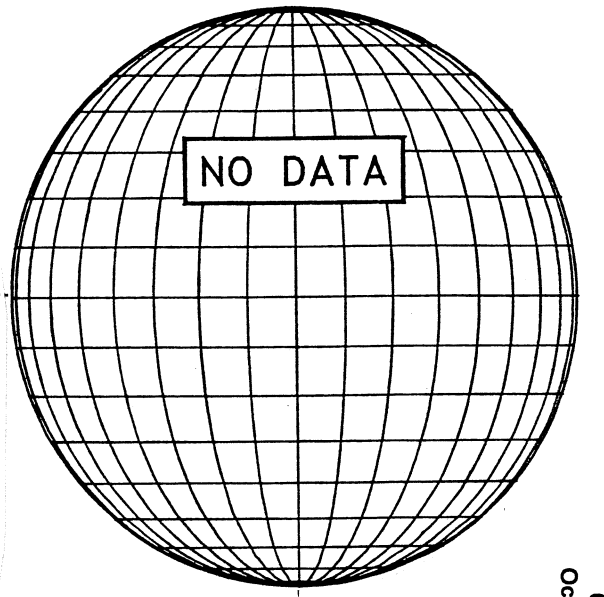
RAMEY SUNSPOT



1145 UT

0916 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

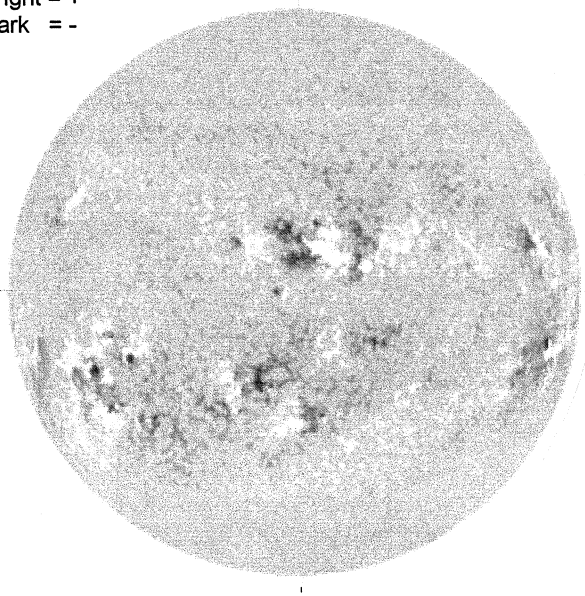
63
Oct 02

OCTOBER 15, 2002 (P= 26.22, Bo = 5.89, Lo = 250.25)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



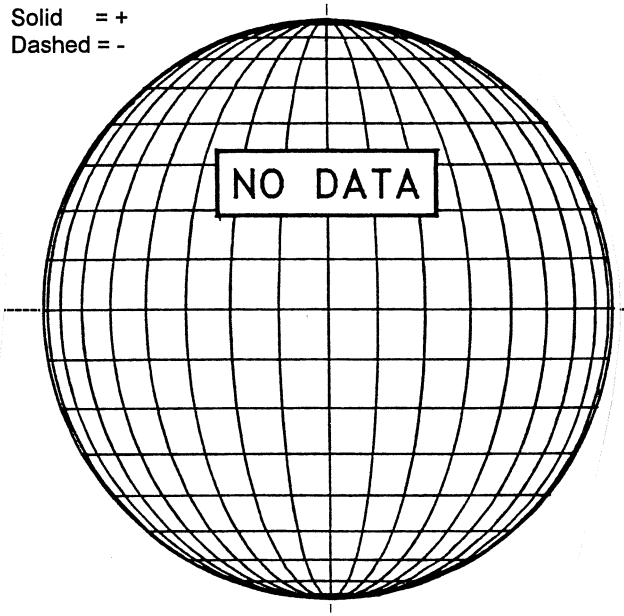
E

1730 UT

STANFORD MAGNETOGRAM

N

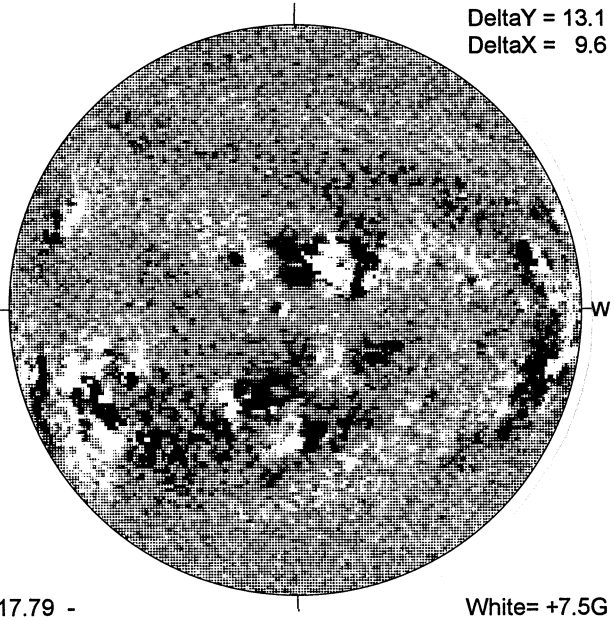
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

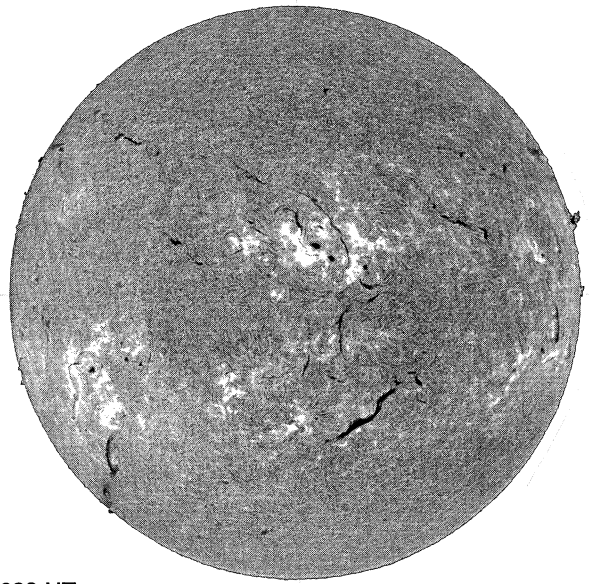


W

17.79 -
18.75 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

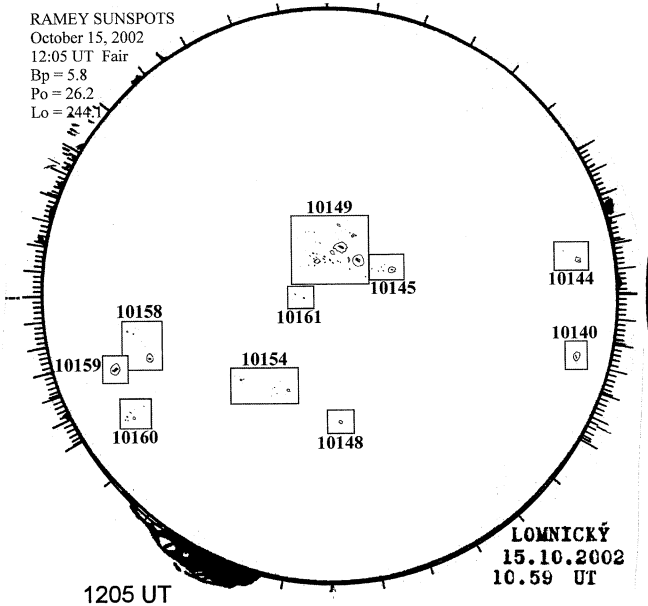


E

1623 UT

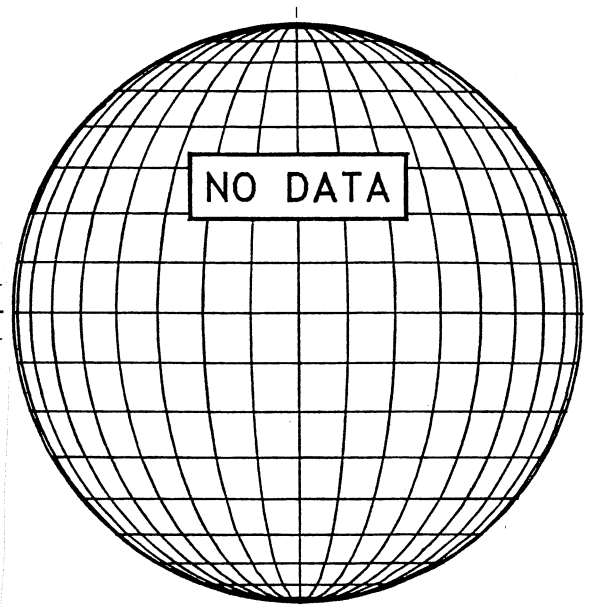
S

RAMEY SUNSPOT



1205 UT
1059 UT LOMN Prom S

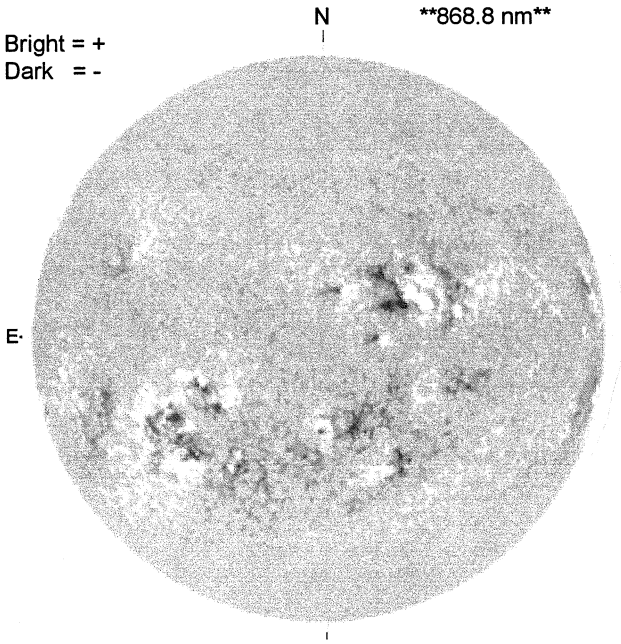
SACRAMENTO PEAK CORONA (1.15 Radii)



S

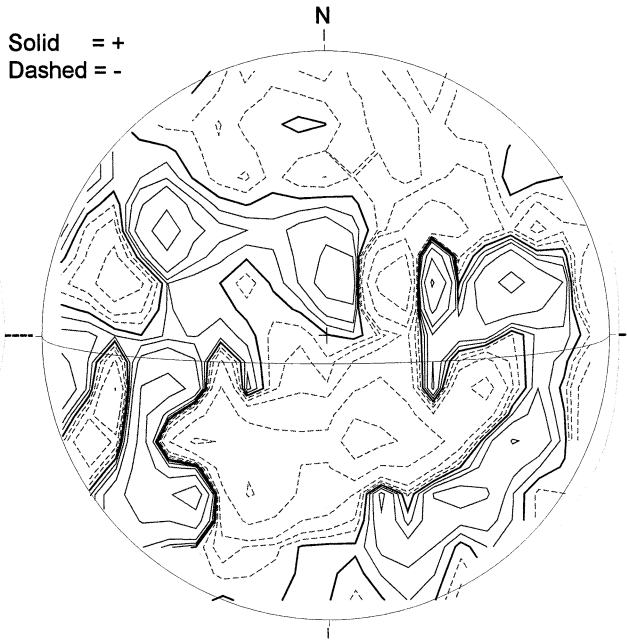
OCTOBER 16, 2002 (P= 26.18, Bo = 5.81, Lo = 237.06)

KITT PEAK MAGNETOGRAM



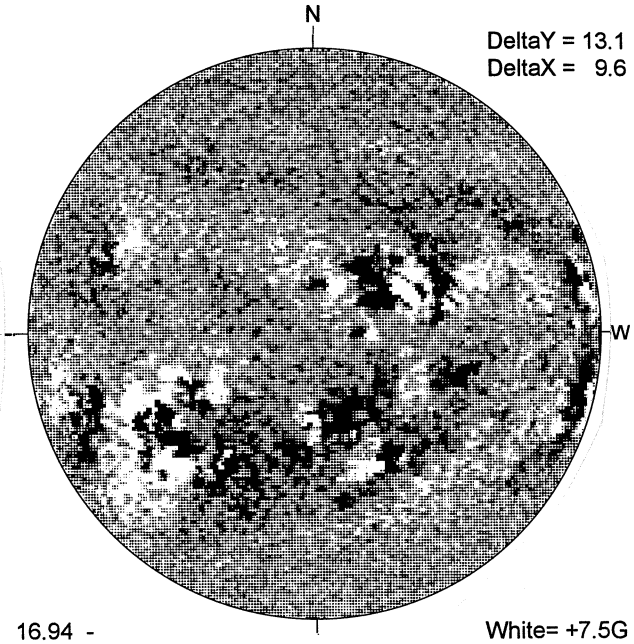
2009 UT

STANFORD MAGNETOGRAM



2125 UT

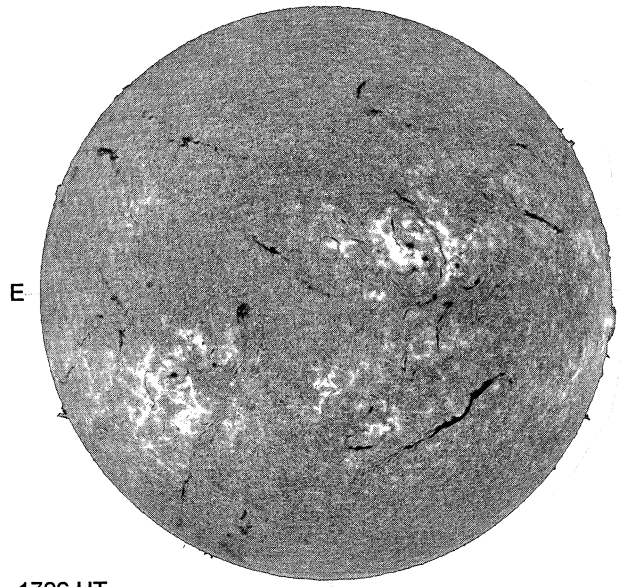
MT. WILSON MAGNETOGRAM



16.94 -
17.90 UT

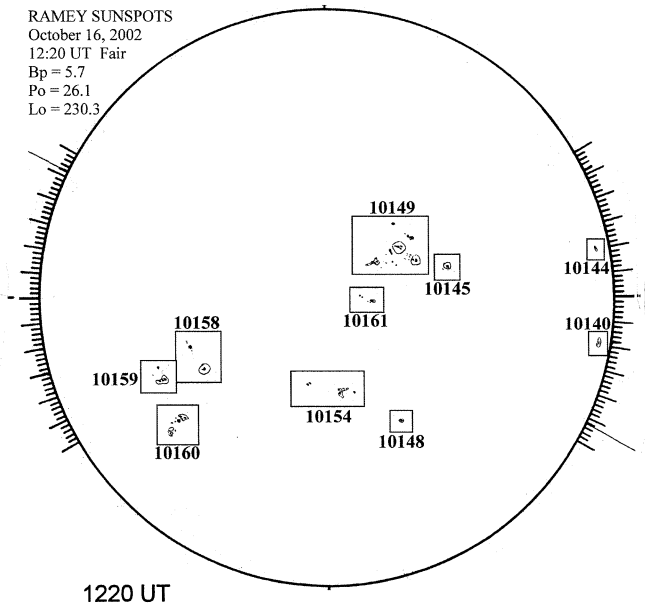
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



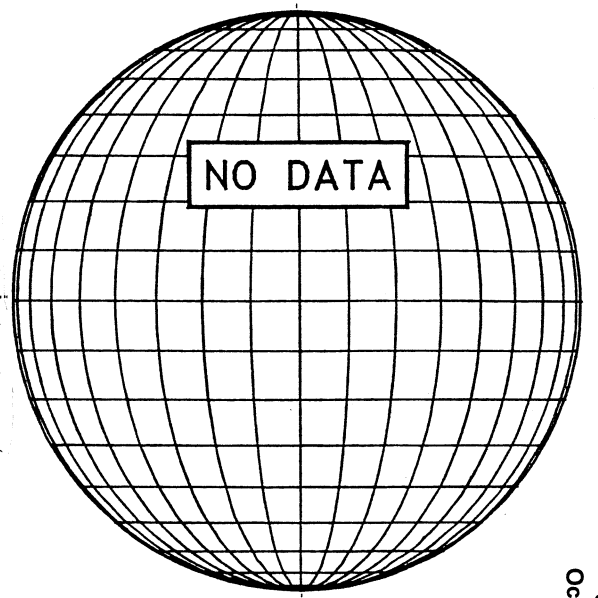
1706 UT

RAMEY SUNSPOT



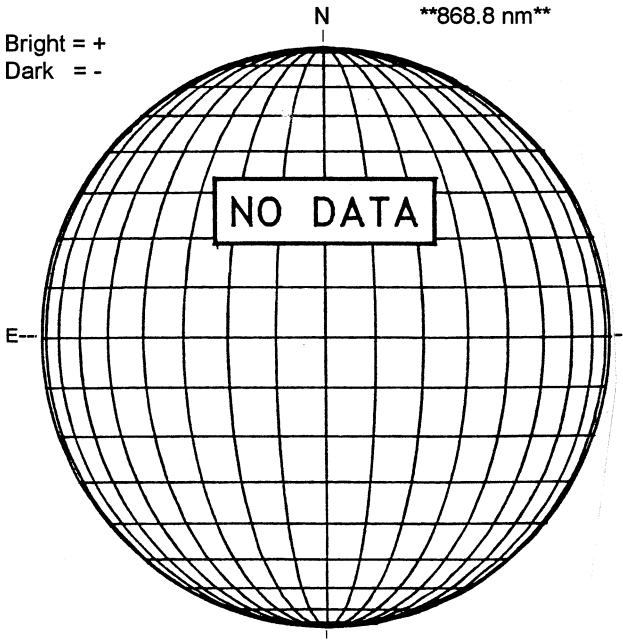
1220 UT

LOMNICKY PEAK CORONA (1.04 Radii)

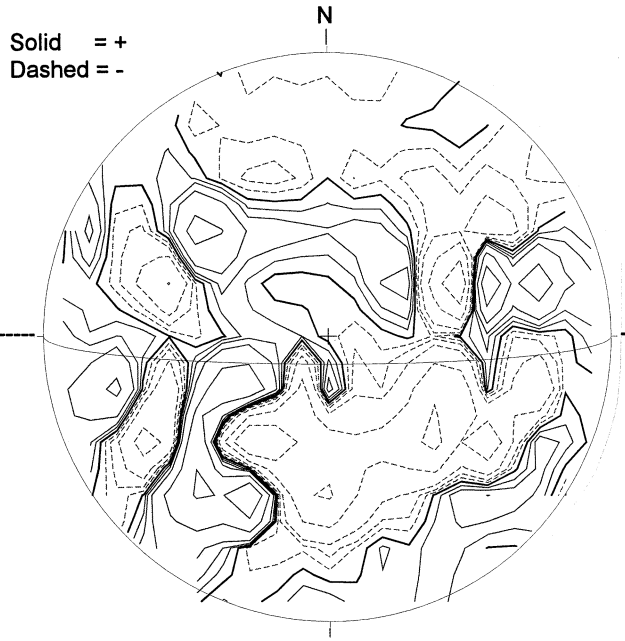


OCTOBER 17, 2002 (P= 26.14, Bo = 5.74, Lo = 223.87)

KITT PEAK MAGNETOGRAM

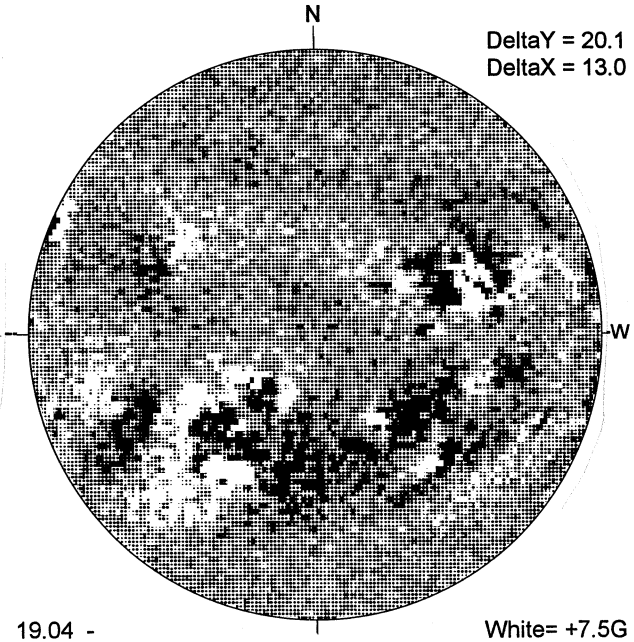


STANFORD MAGNETOGRAM



2141 UT

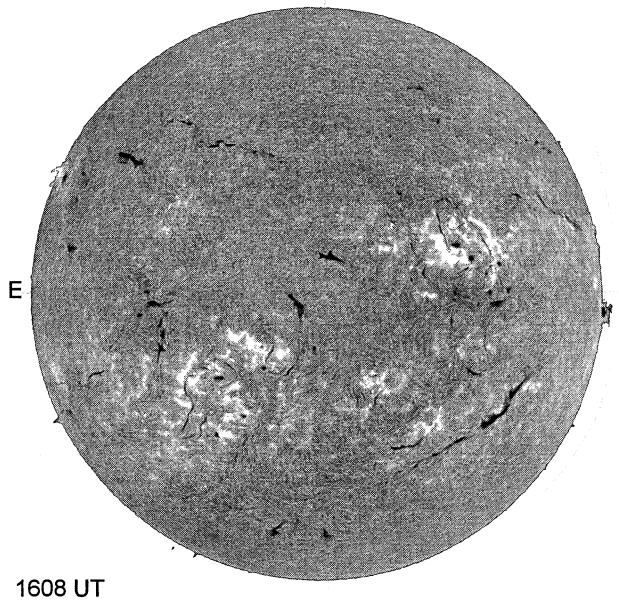
MT. WILSON MAGNETOGRAM



19.04 -
19.46 UT

White= +7.5G
Black = -7.5G

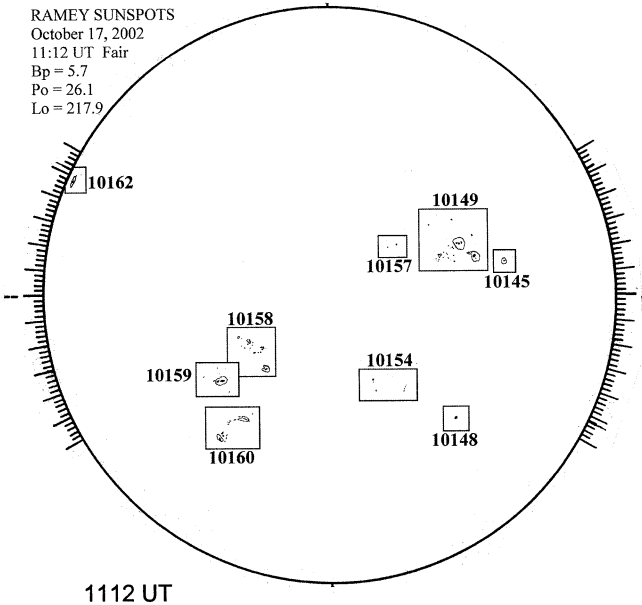
BIG BEAR H-ALPHA



1608 UT

S

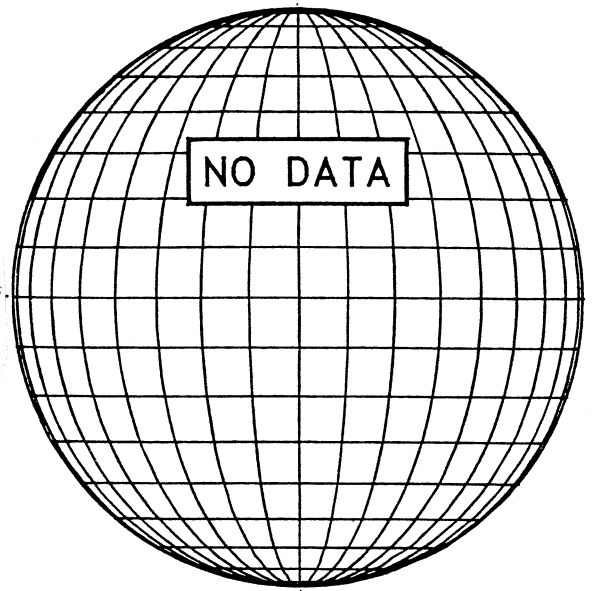
RAMEY SUNSPOT



1112 UT

S

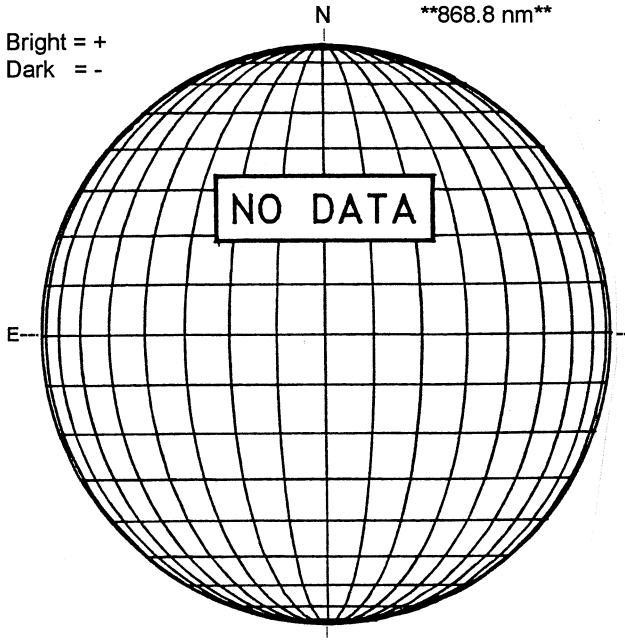
SACRAMENTO PEAK CORONA (1.15 Radii)----



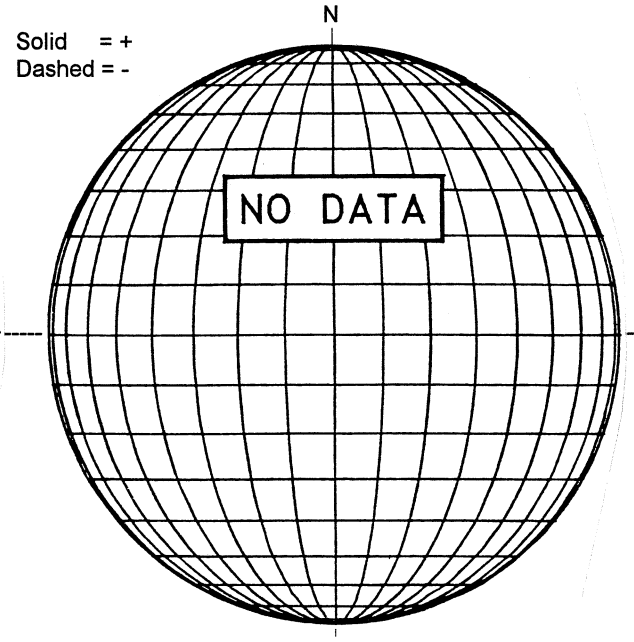
S

OCTOBER 18, 2002 (P= 26.08, Bo = 5.66, Lo = 210.68)

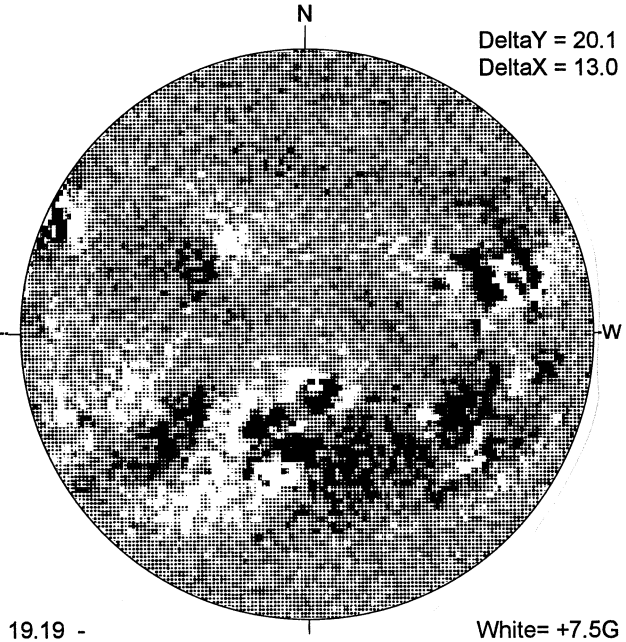
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM



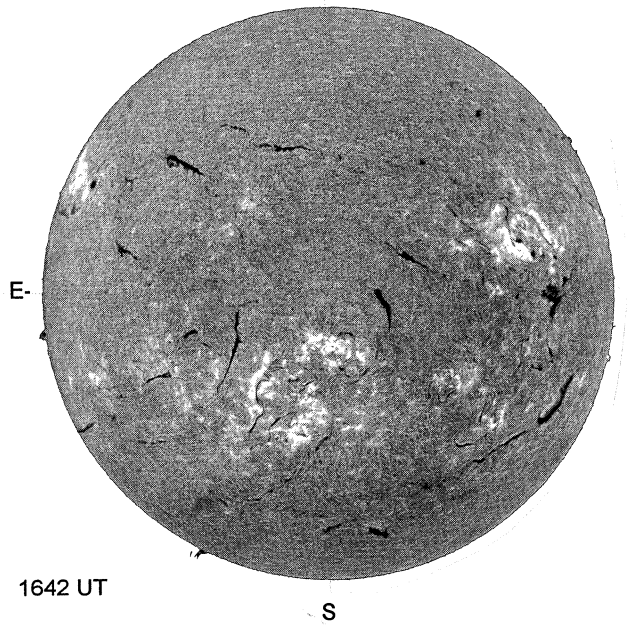
MT. WILSON MAGNETOGRAM



19.19 -
19.61 UT

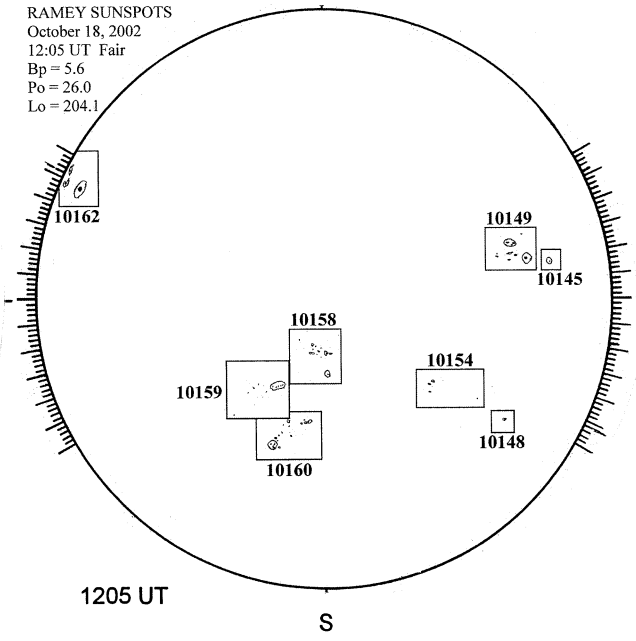
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



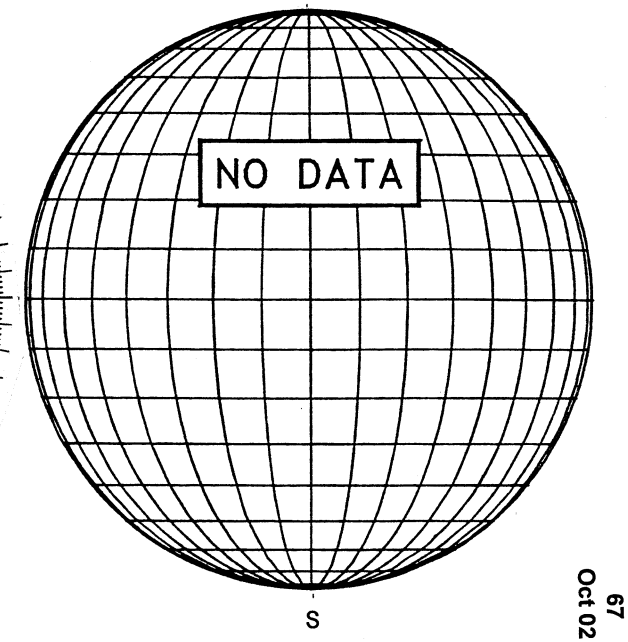
1642 UT

RAMEY SUNSPOT



1205 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

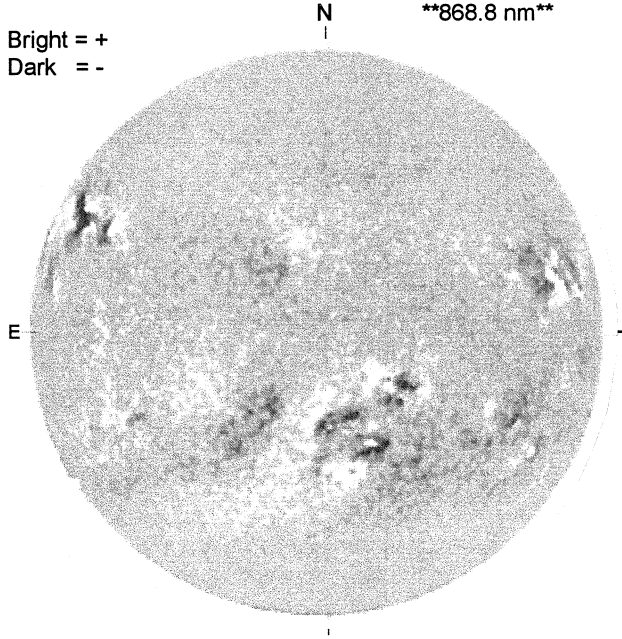


OCTOBER 19, 2002 (P= 26.02, Bo = 5.58, Lo = 197.49)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



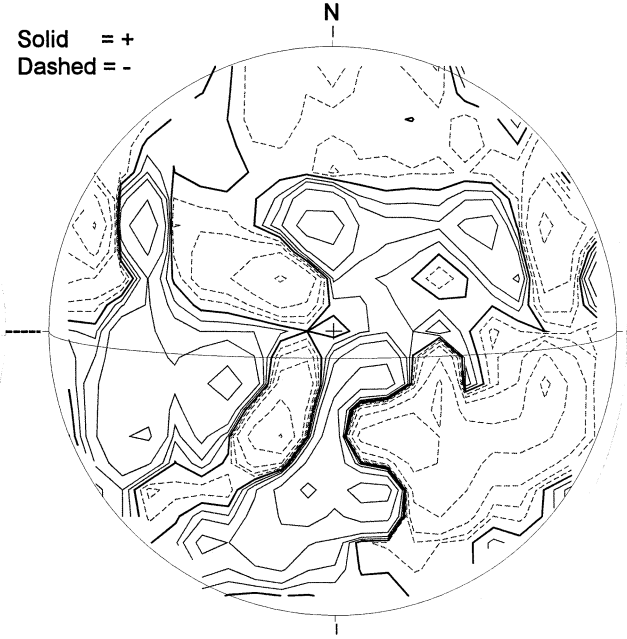
E

1825 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

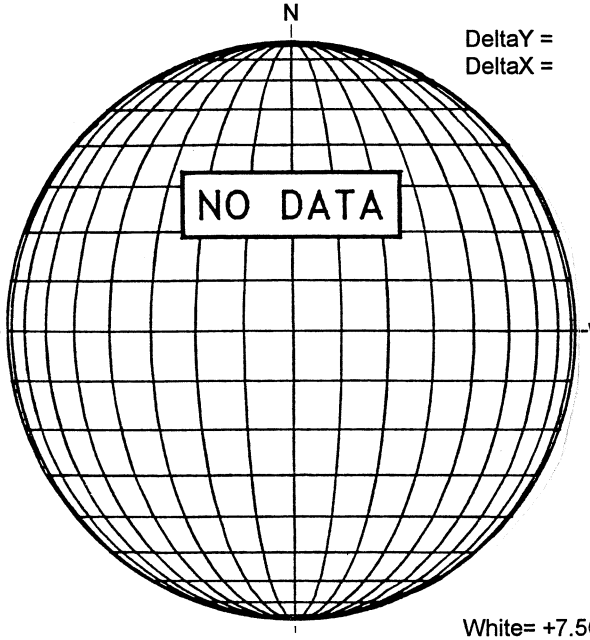


2135 UT

MT. WILSON MAGNETOGRAM

N

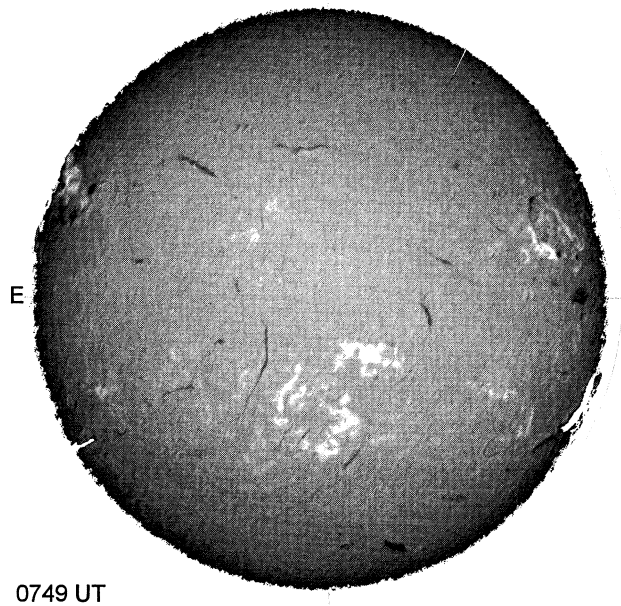
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

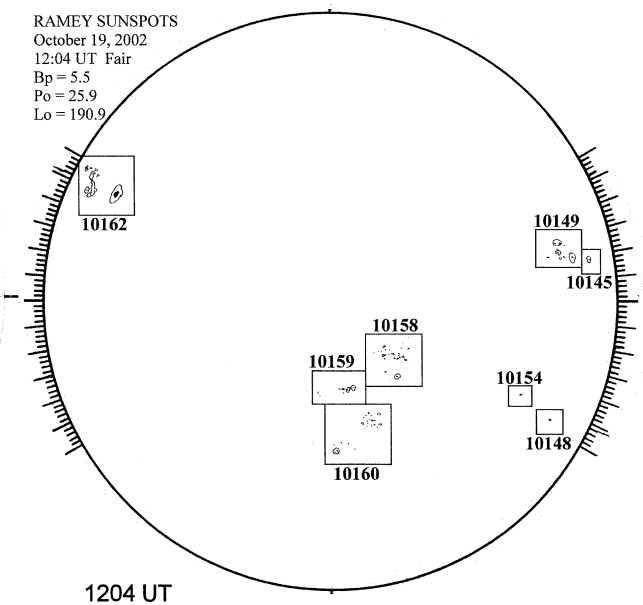


E

0749 UT

S

RAMEY SUNSPOT

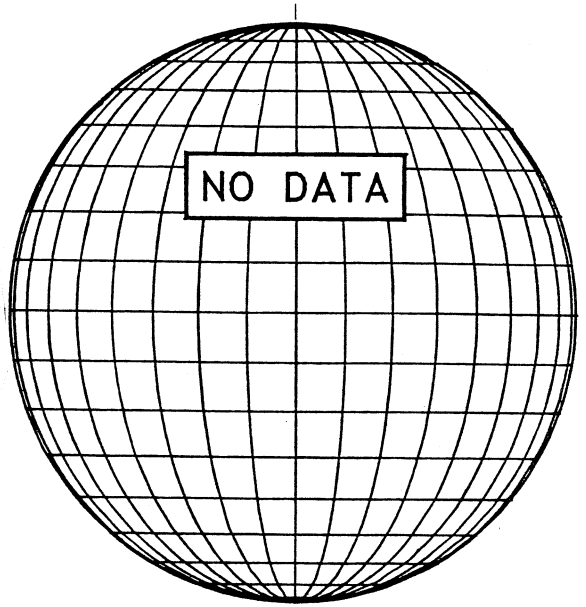


1204 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

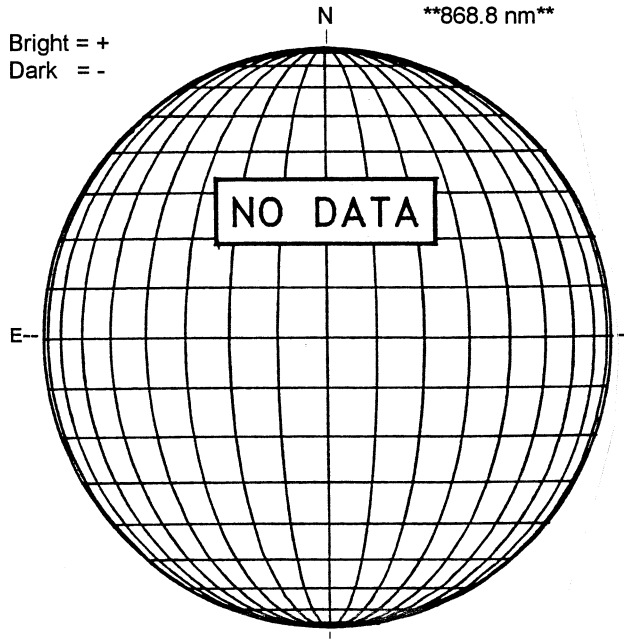
N



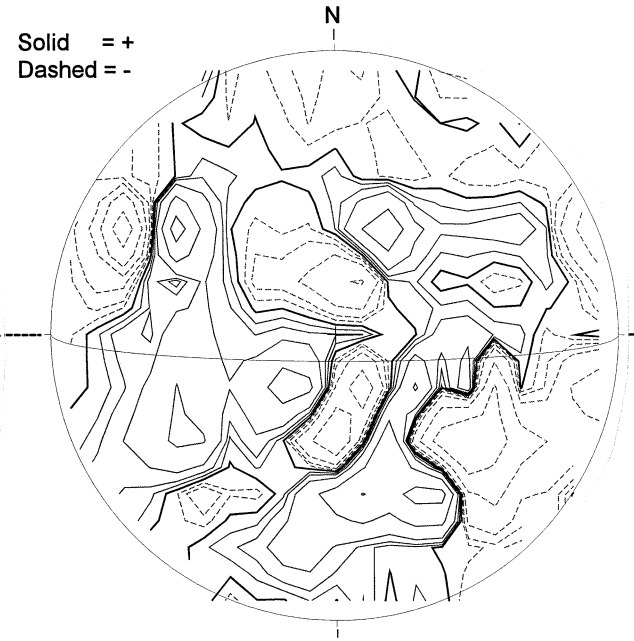
S

OCTOBER 20, 2002 (P= 25.96, Bo = 5.50, Lo = 184.30)

KITT PEAK MAGNETOGRAM

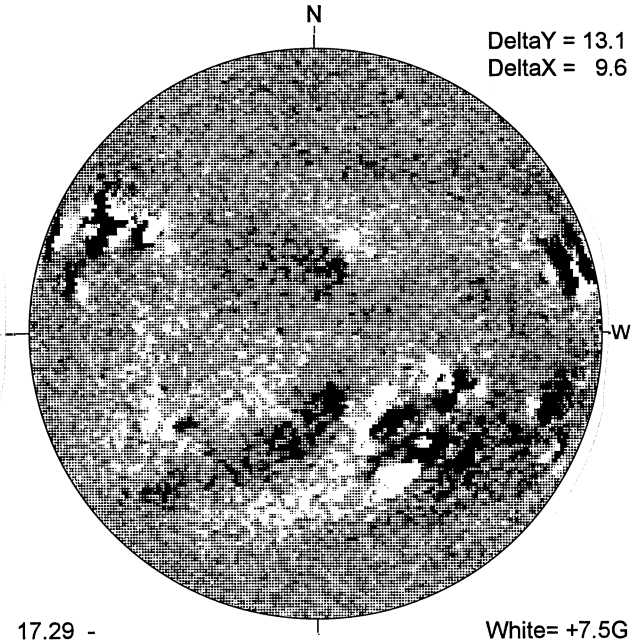


STANFORD MAGNETOGRAM



2143 UT

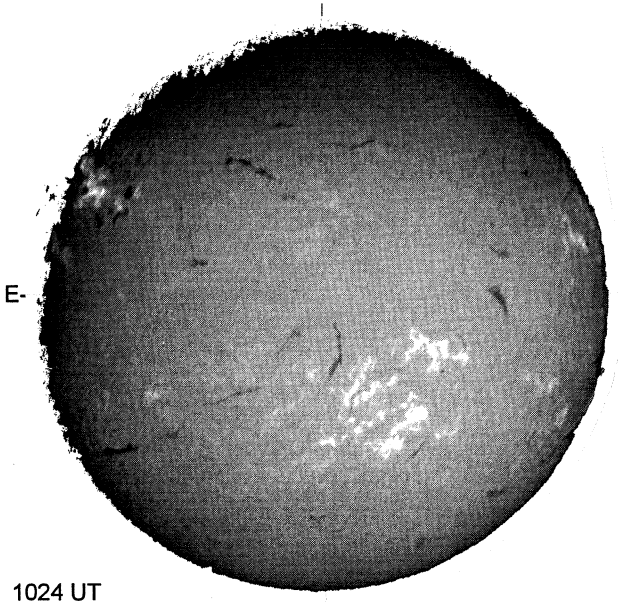
MT. WILSON MAGNETOGRAM



17.29 -
18.25 UT

White= +7.5G
Black = -7.5G

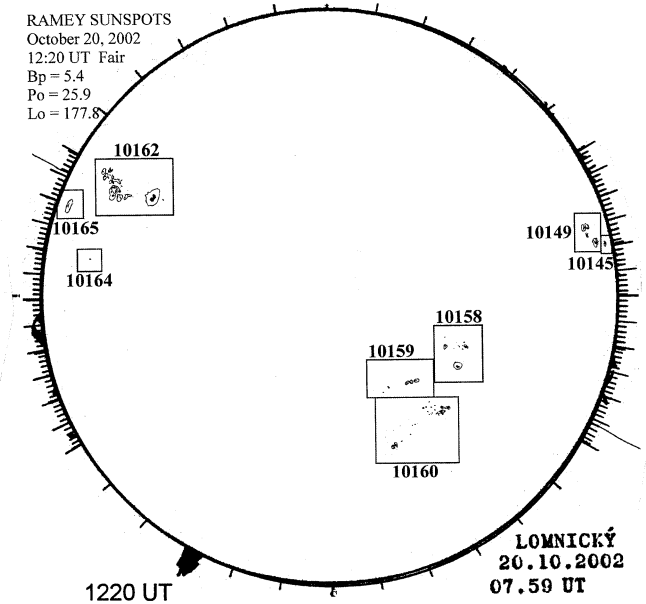
---- MEUDON H-ALPHA



1024 UT

S

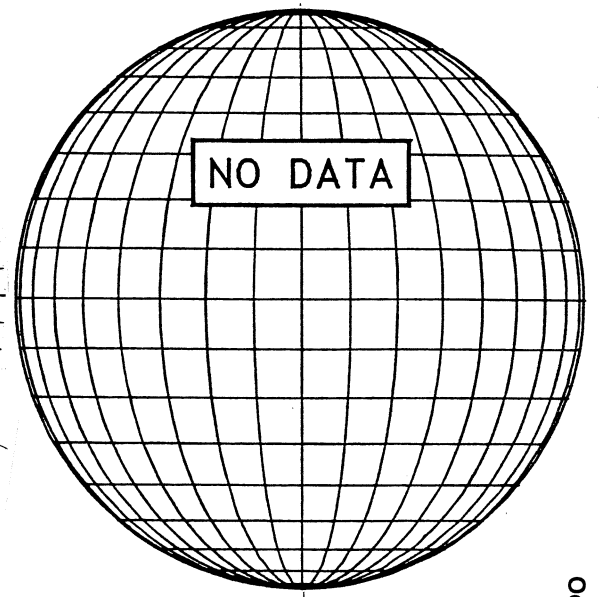
RAMEY SUNSPOT



1220 UT

0759 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

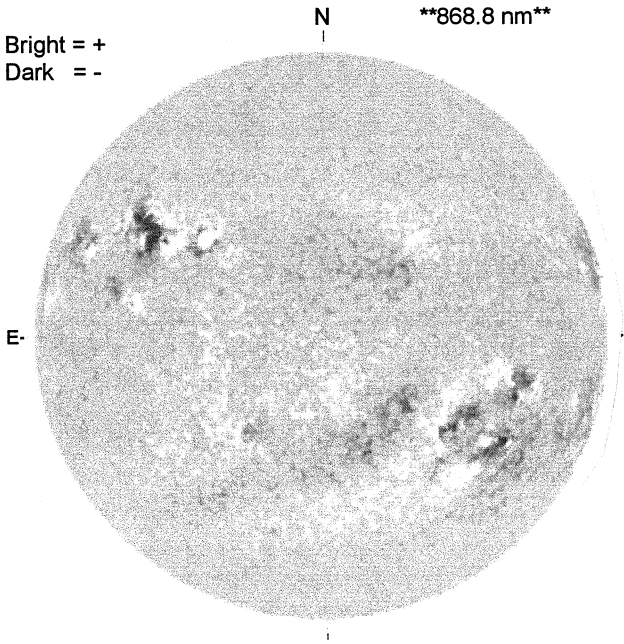


S

69
Oct 02

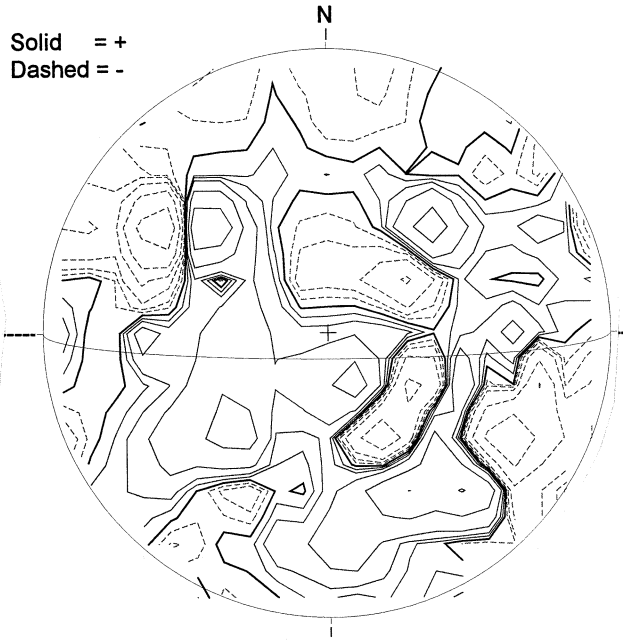
OCTOBER 21, 2002 (P= 25.88, Bo = 5.41, Lo = 171.11)

KITT PEAK MAGNETOGRAM



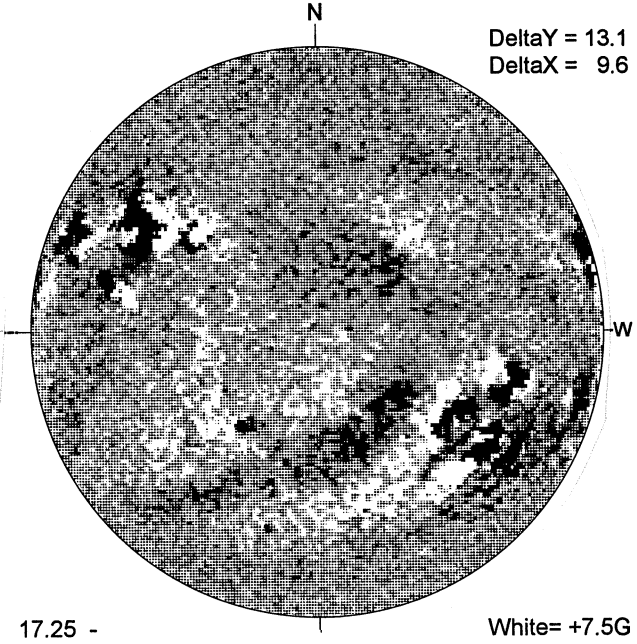
1747 UT

STANFORD MAGNETOGRAM



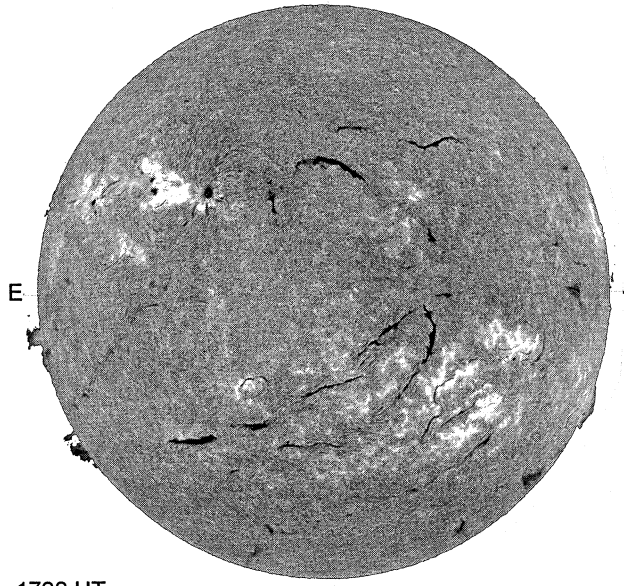
2144 UT

MT. WILSON MAGNETOGRAM



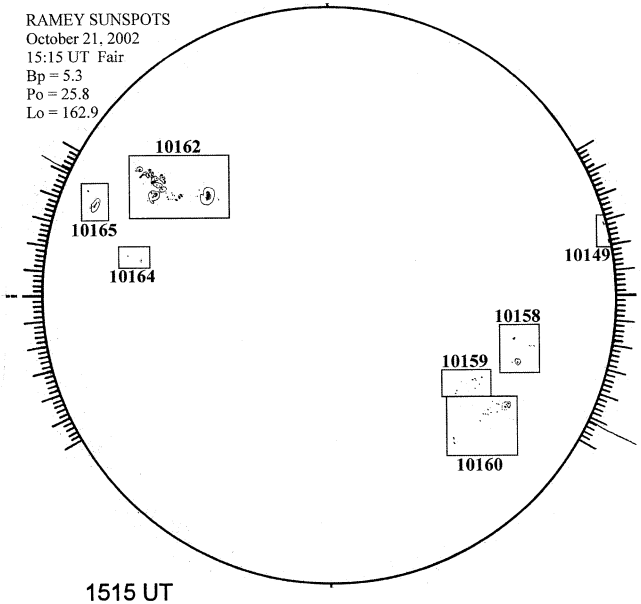
17.25 -
18.21 UT

BIG BEAR H-ALPHA



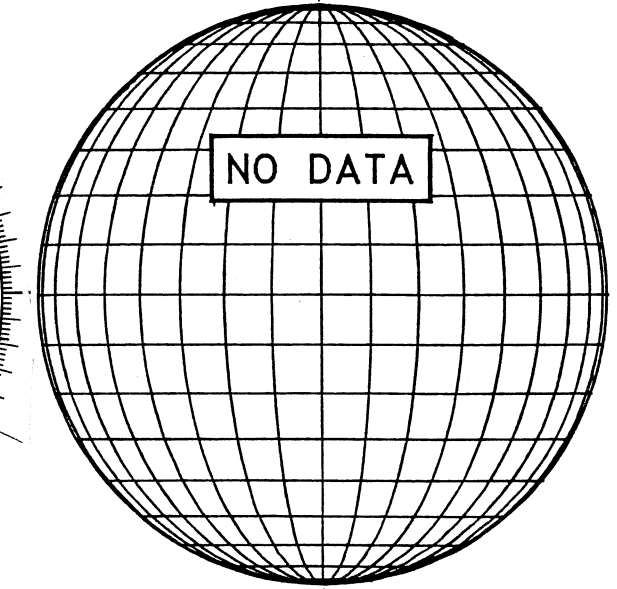
1738 UT

RAMEY SUNSPOT



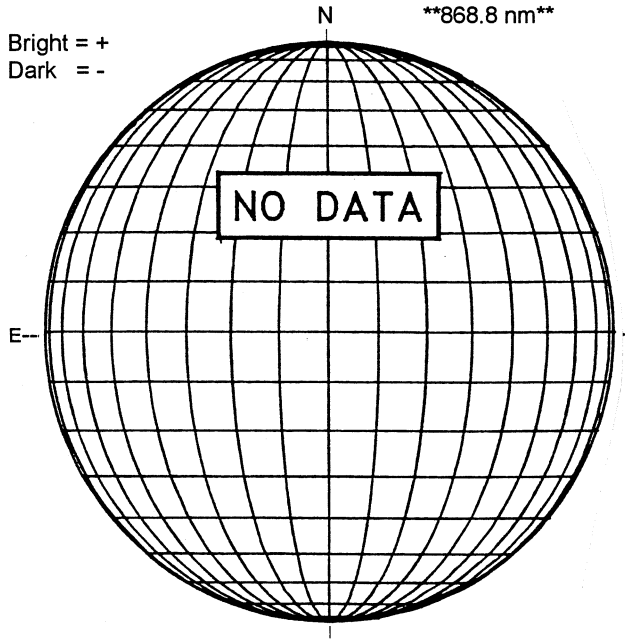
1515 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

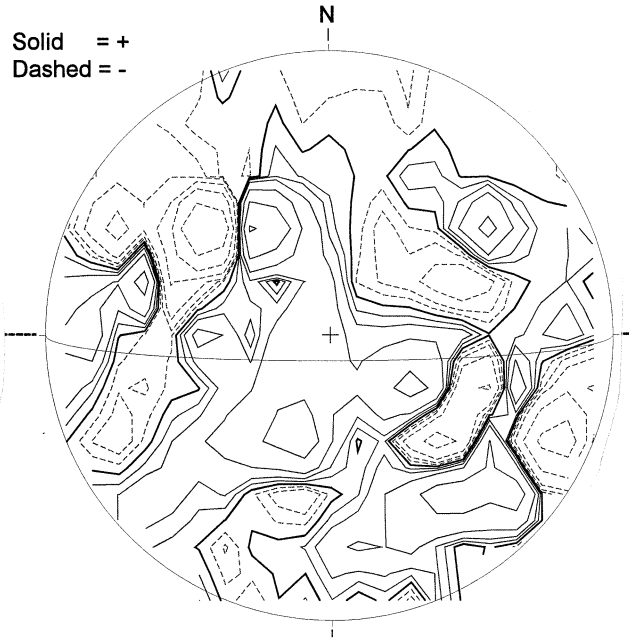


OCTOBER 22, 2002 (P= 25.80, Bo = 5.33, Lo = 157.92)

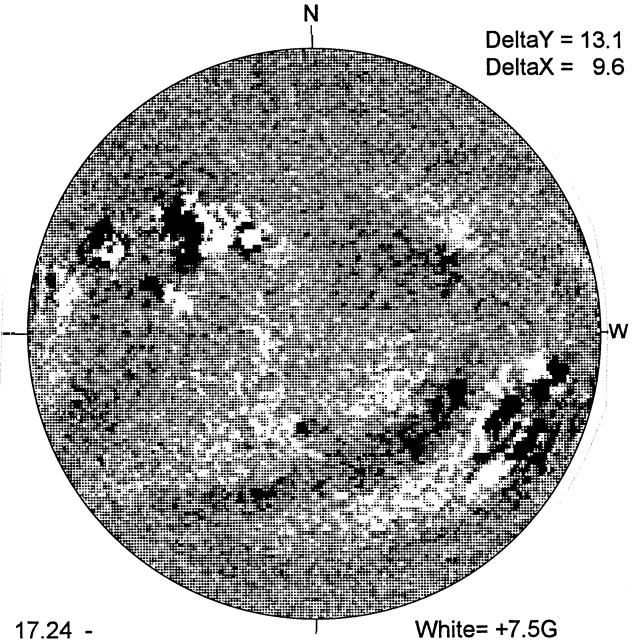
KITT PEAK MAGNETOGRAM



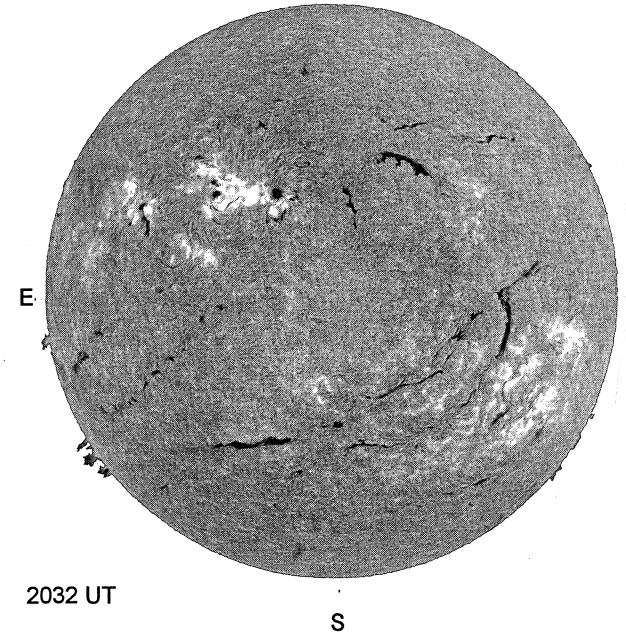
STANFORD MAGNETOGRAM



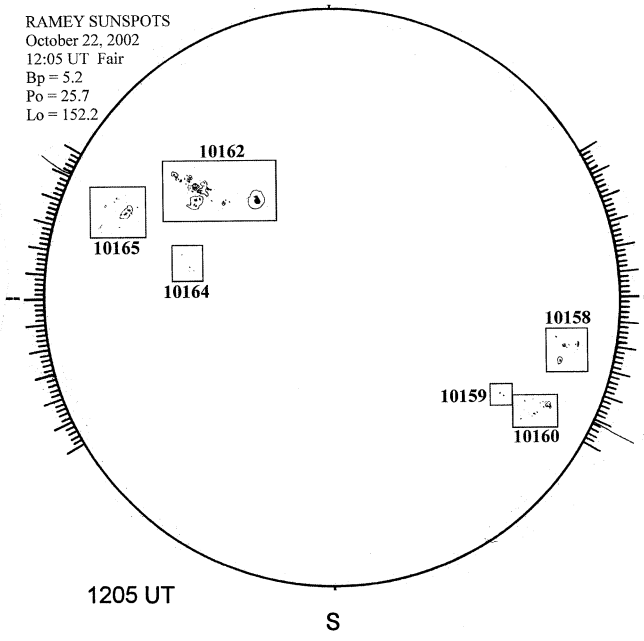
MT. WILSON MAGNETOGRAM



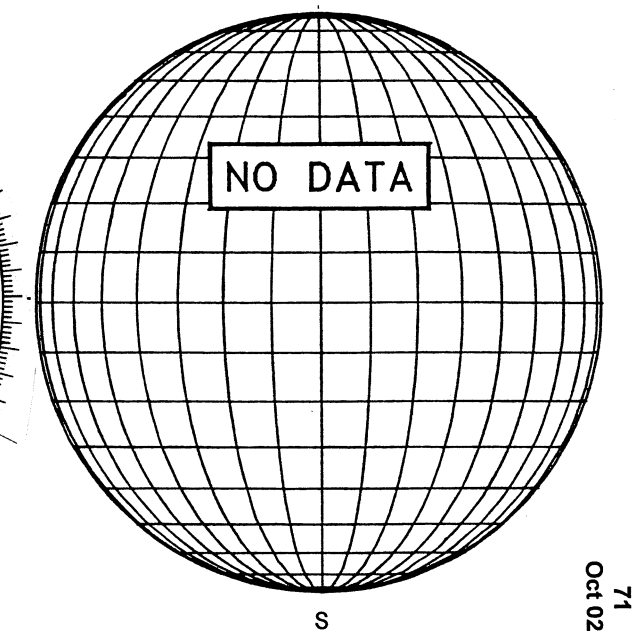
BIG BEAR H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

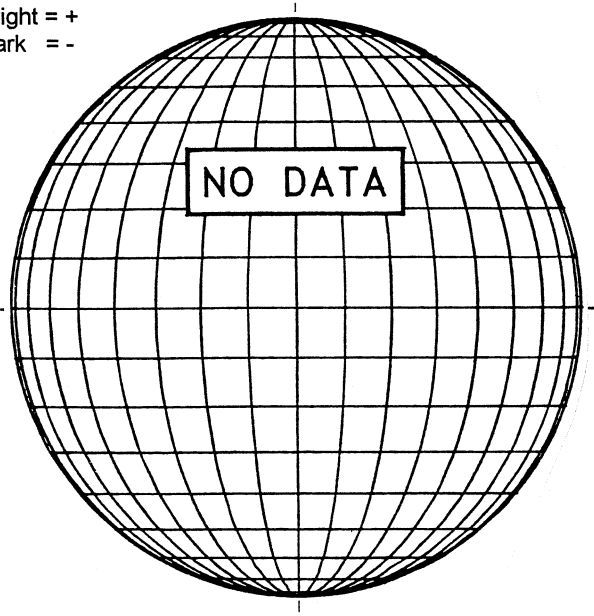


OCTOBER 23, 2002 (P= 25.71, Bo = 5.24, Lo = 144.73)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

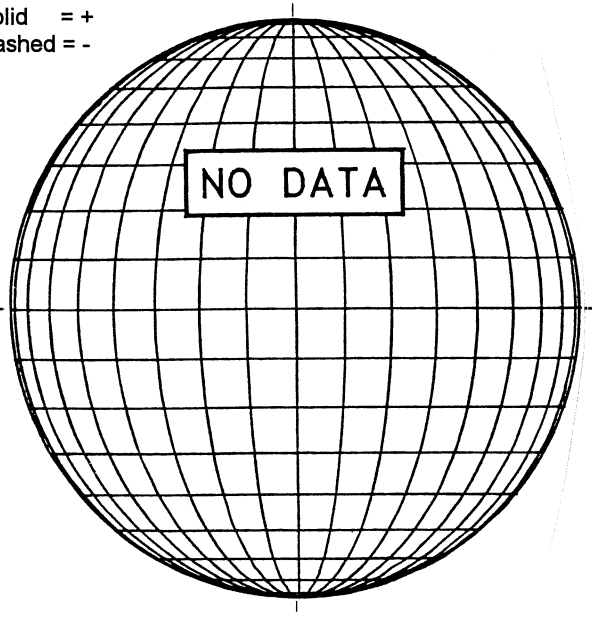


E--

STANFORD MAGNETOGRAM

N

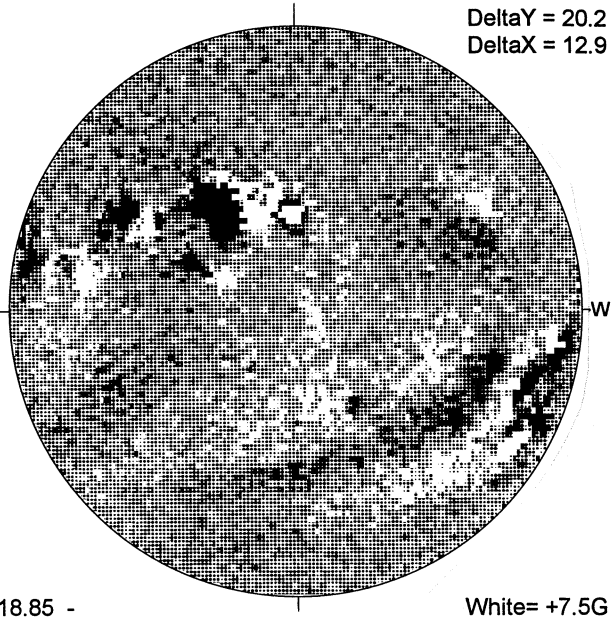
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 20.2
DeltaX = 12.9

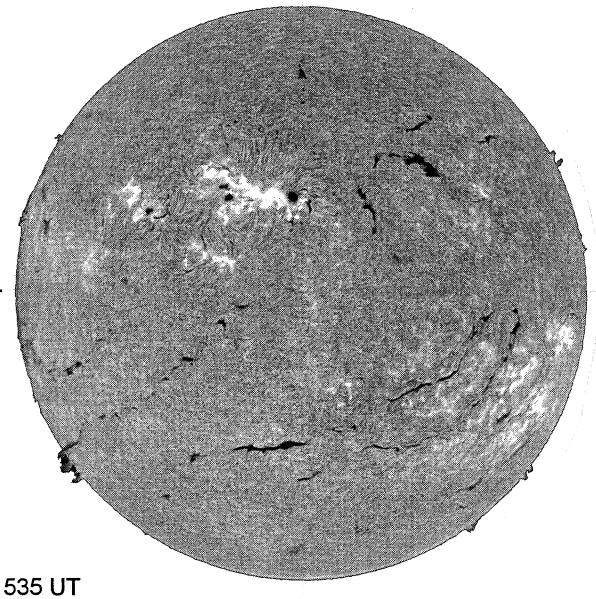


-W

18.85 -
19.27 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

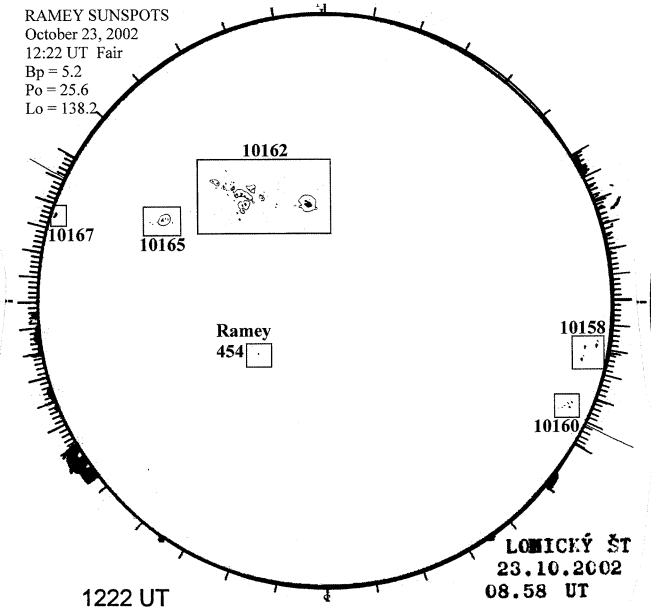


E-

1535 UT

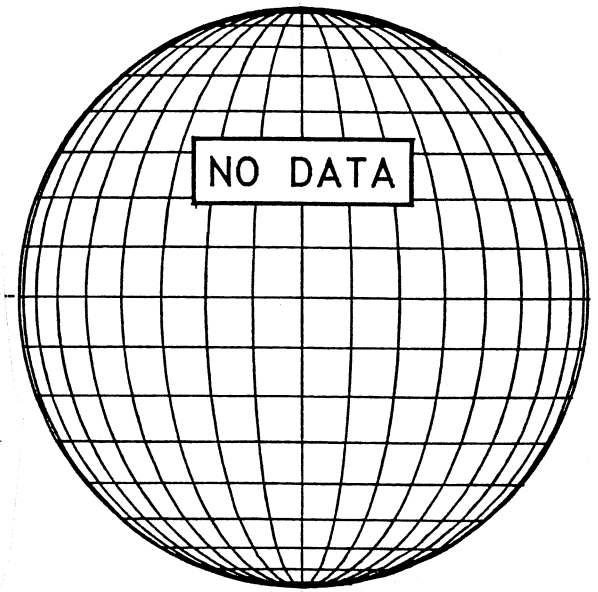
S

RAMEY SUNSPOT



1222 UT
0858 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

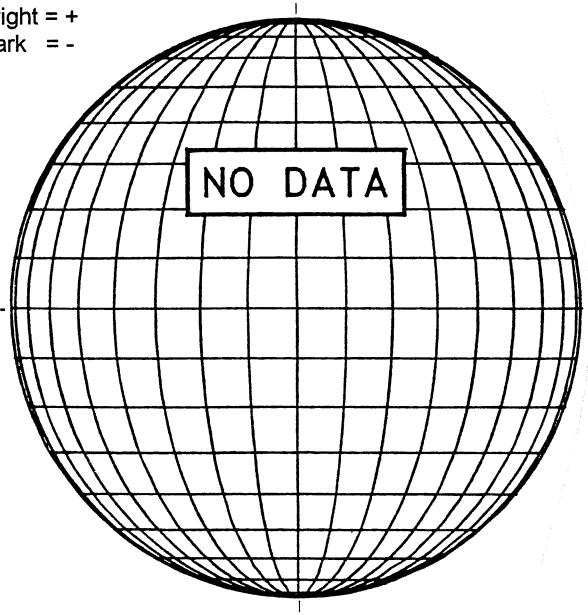
OCTOBER 24, 2002 (P= 25.61, Bo = 5.16, Lo = 131.54)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

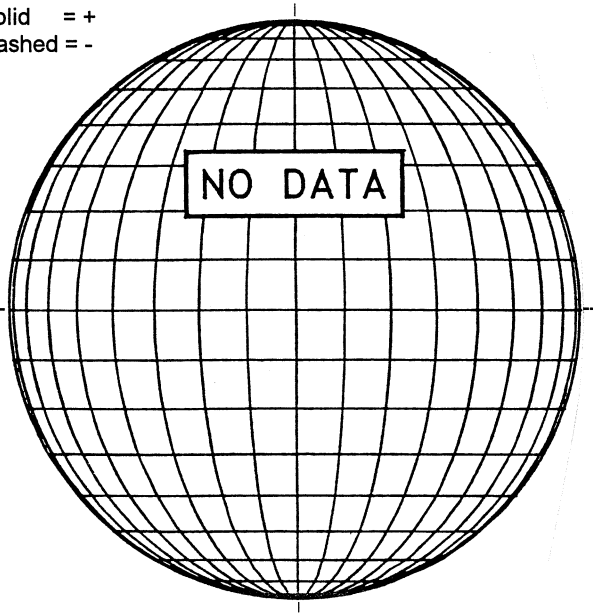


E--

STANFORD MAGNETOGRAM

N

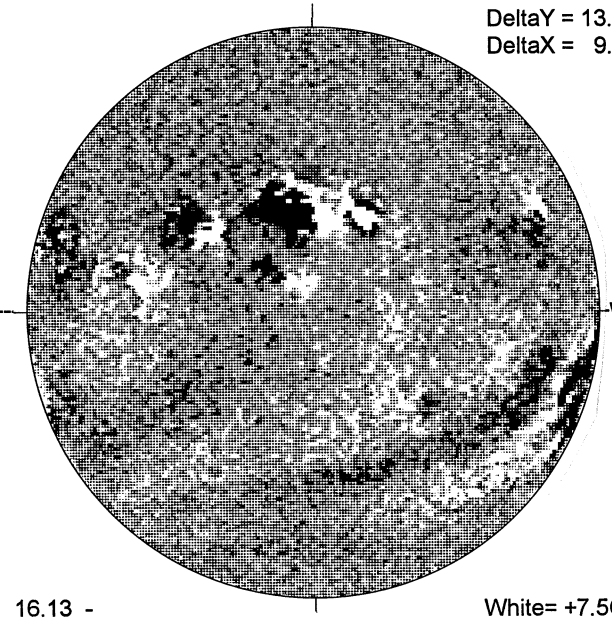
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

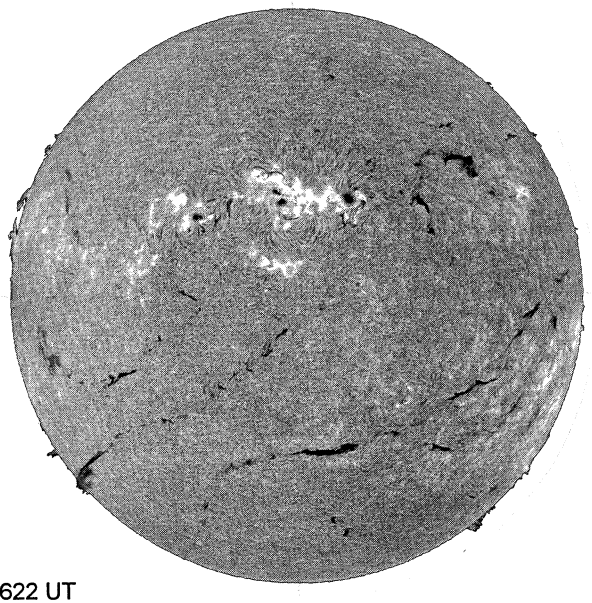


-W

16.13 -
17.09 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

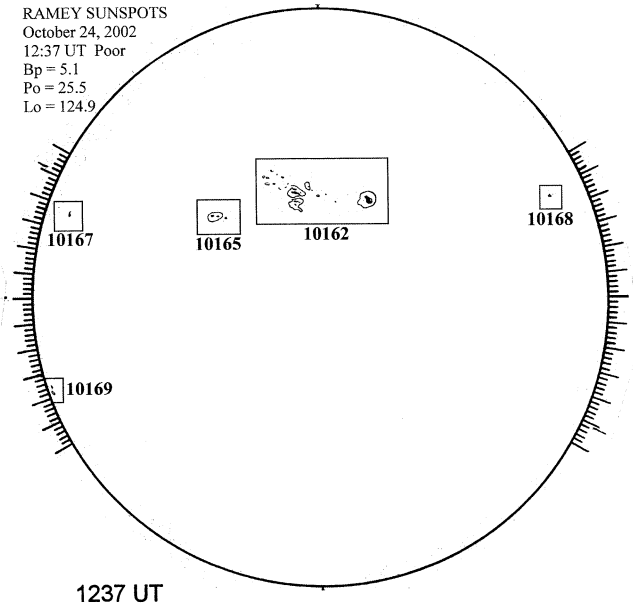


E-

1622 UT

S

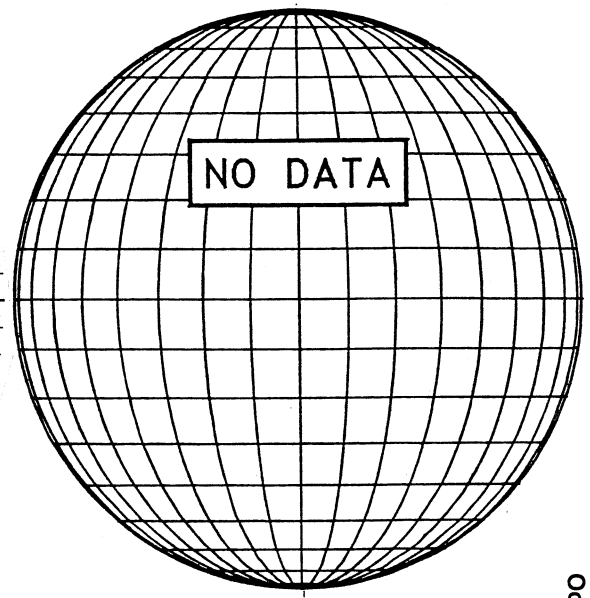
RAMEY SUNSPOT



1237 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

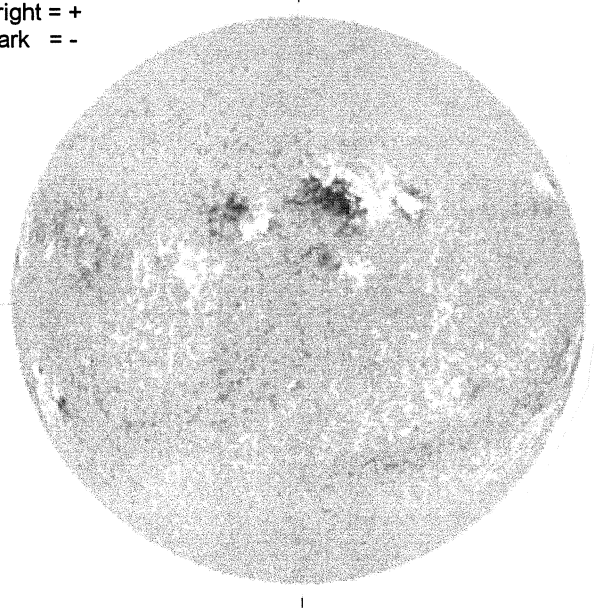
73
Oct 02

OCTOBER 25, 2002 (P= 25.50, Bo = 5.07, Lo = 118.35)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



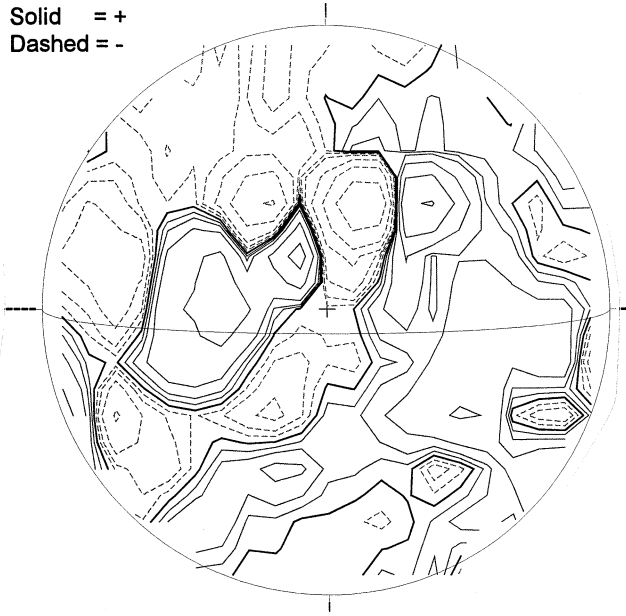
E-

1742 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

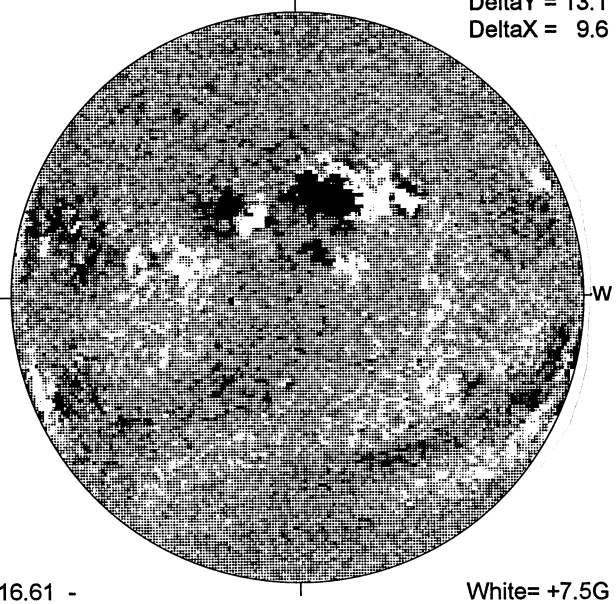


2111 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

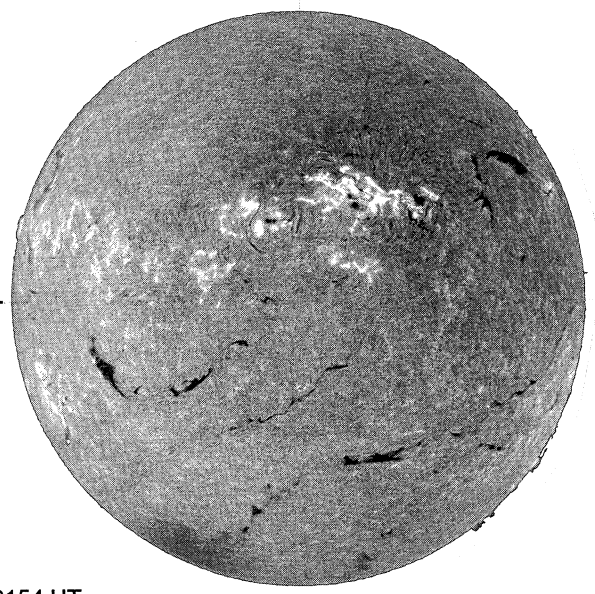


-W

16.61 -
17.57 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

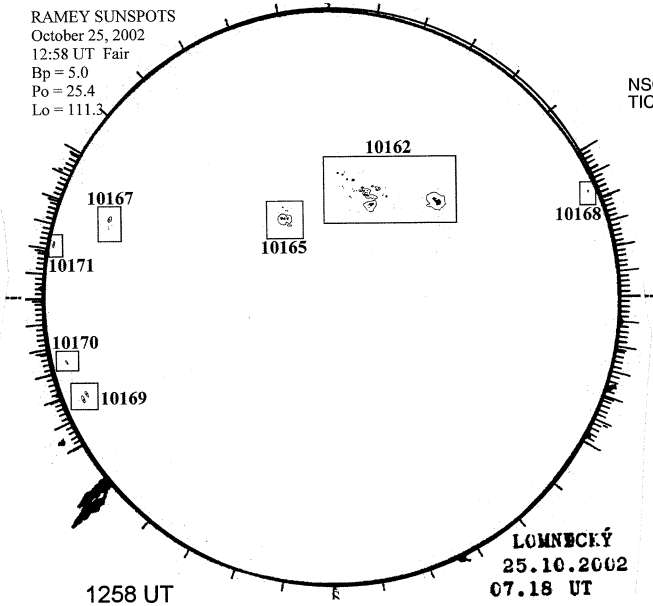


E-

2154 UT

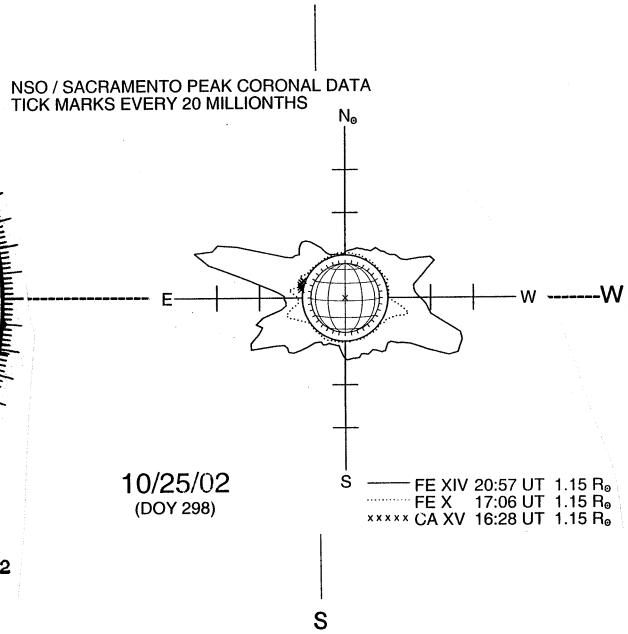
S

RAMEY SUNSPOT



1258 UT
0718 UT LOMN Prom S

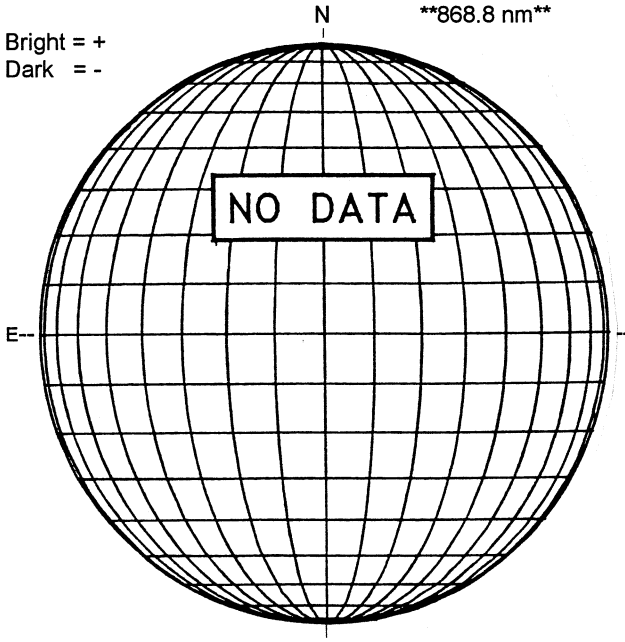
SACRAMENTO PEAK CORONA (1.15 Radii)



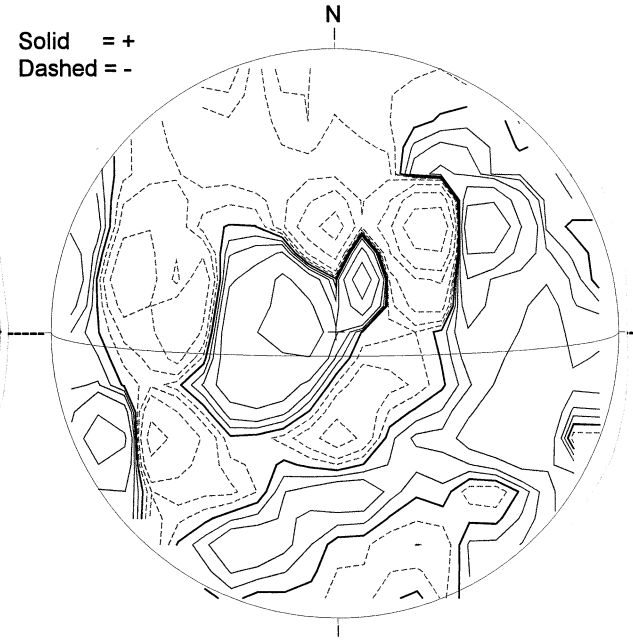
S

OCTOBER 26, 2002 (P= 25.39, Bo = 4.98, Lo = 105.16)

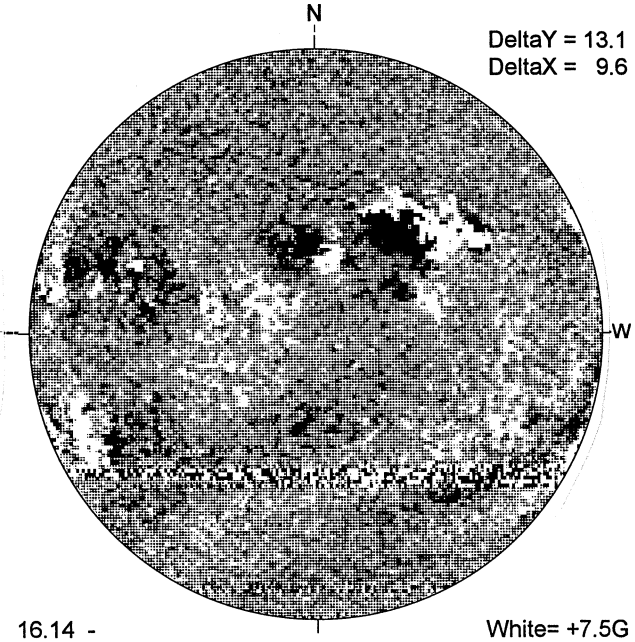
KITT PEAK MAGNETOGRAM



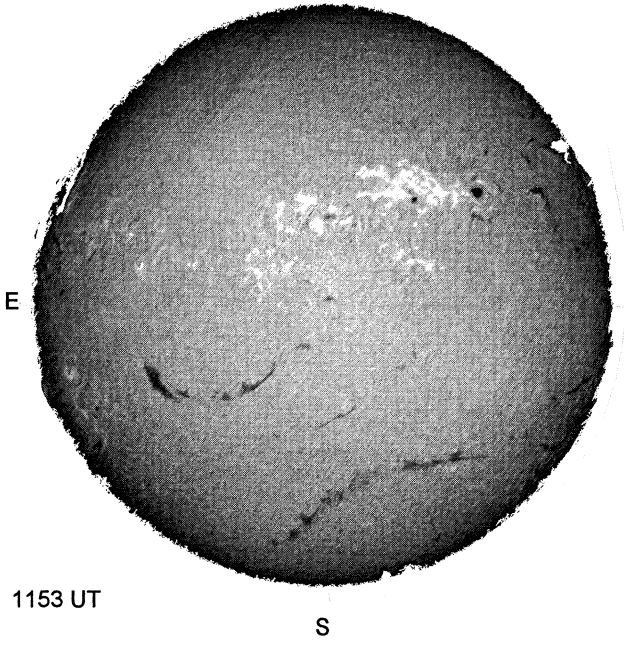
STANFORD MAGNETOGRAM



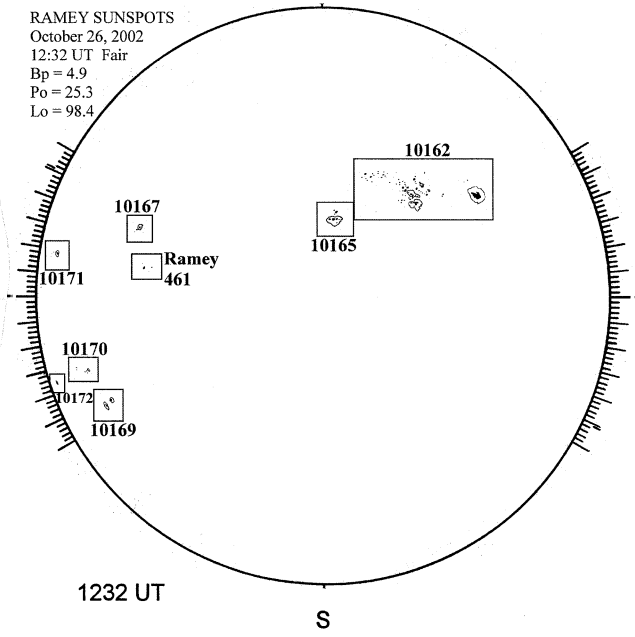
MT. WILSON MAGNETOGRAM



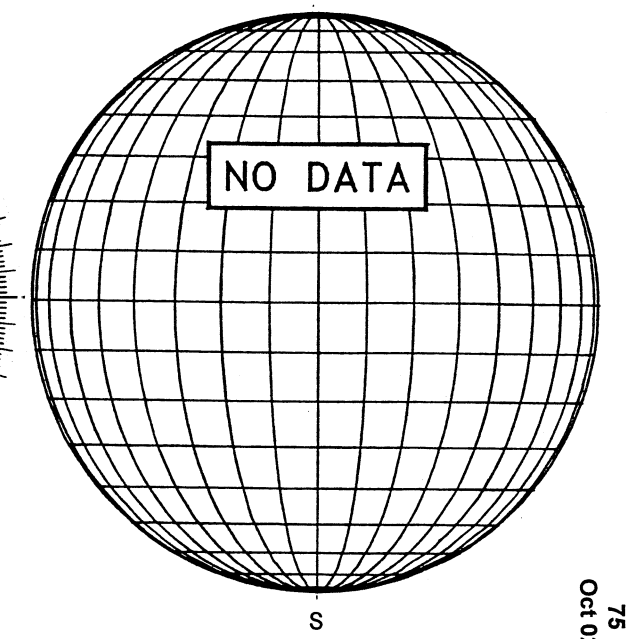
----- MEUDON H-ALPHA



RAMEY SUNSPOT



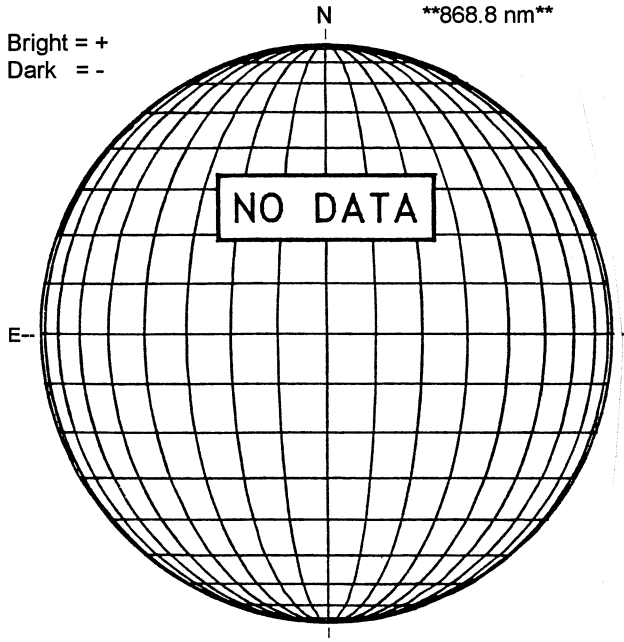
SACRAMENTO PEAK CORONA (1.15 Radii)----



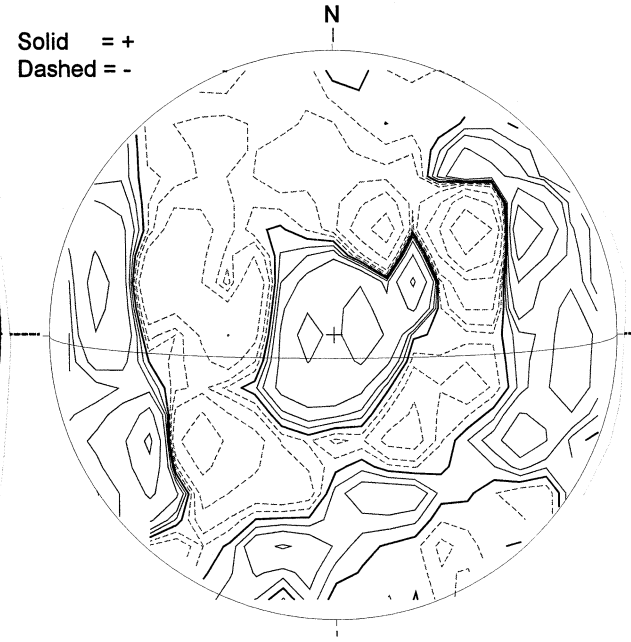
75
Oct 02

OCTOBER 27, 2002 (P= 25.27, Bo = 4.88, Lo = 91.98)

KITT PEAK MAGNETOGRAM

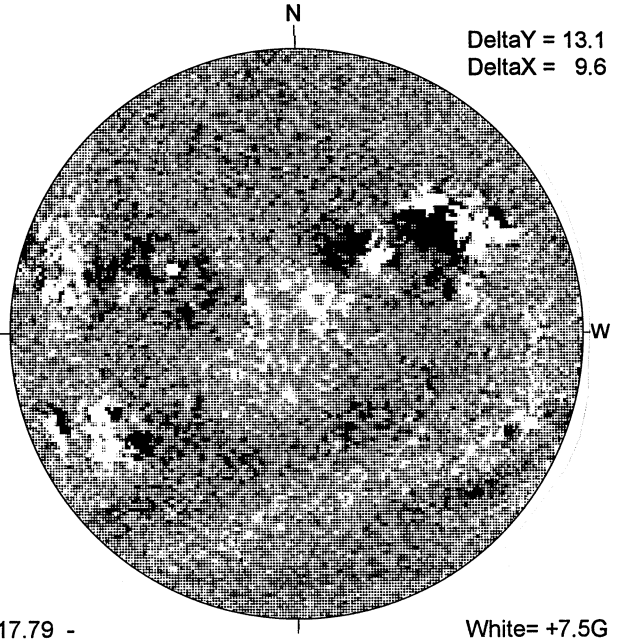


STANFORD MAGNETOGRAM



2111 UT

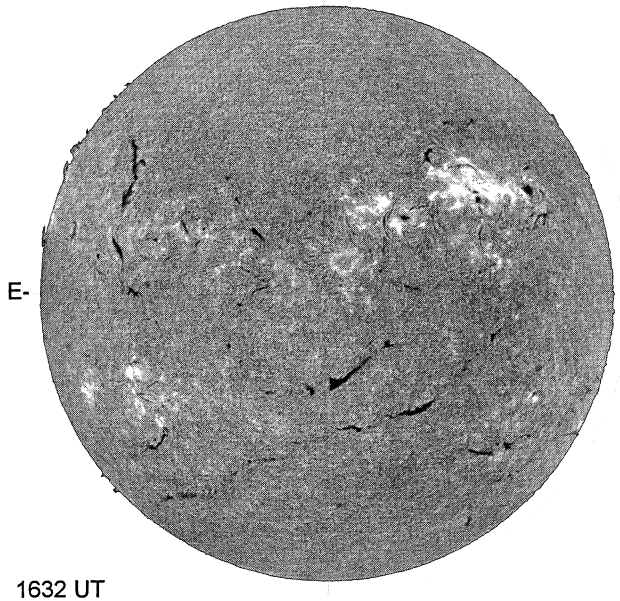
MT. WILSON MAGNETOGRAM



17.79 -
18.75 UT

White= +7.5G
Black = -7.5G

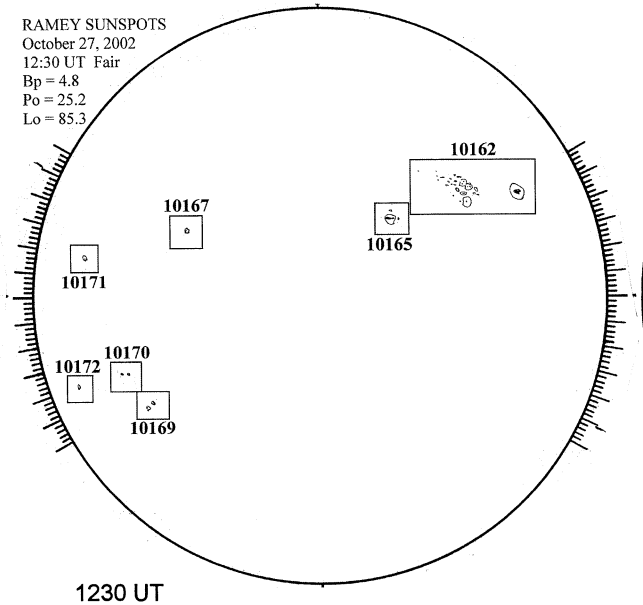
BIG BEAR H-ALPHA



1632 UT

S

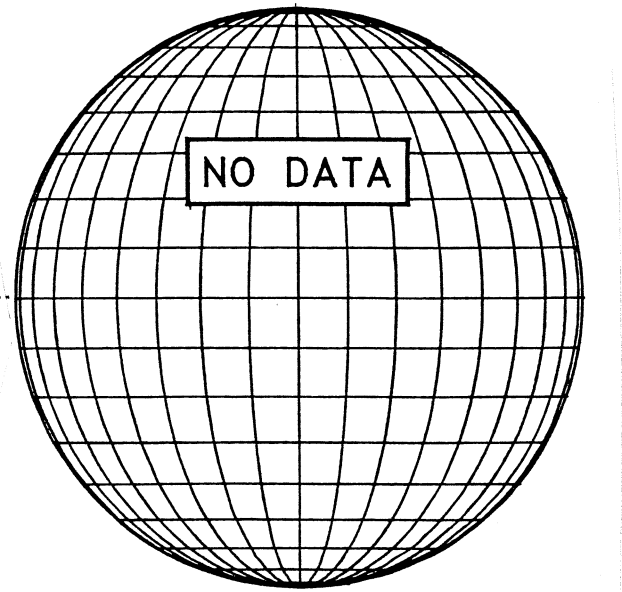
RAMEY SUNSPOT



1230 UT

S

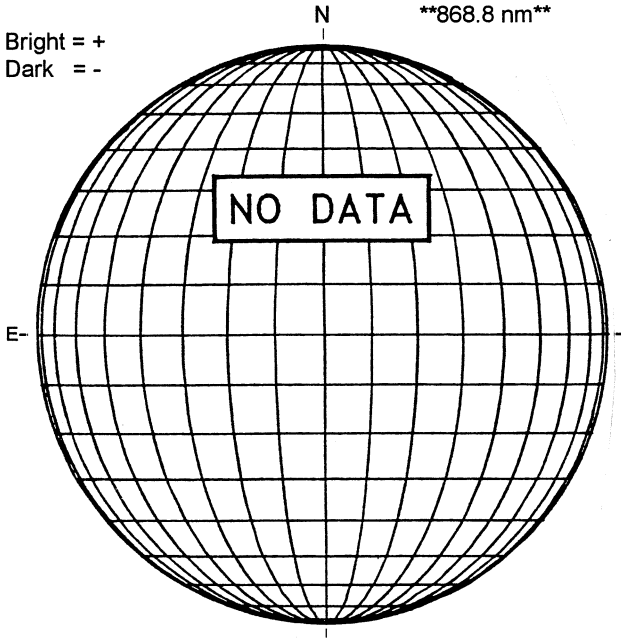
SACRAMENTO PEAK CORONA (1.15 Radii)



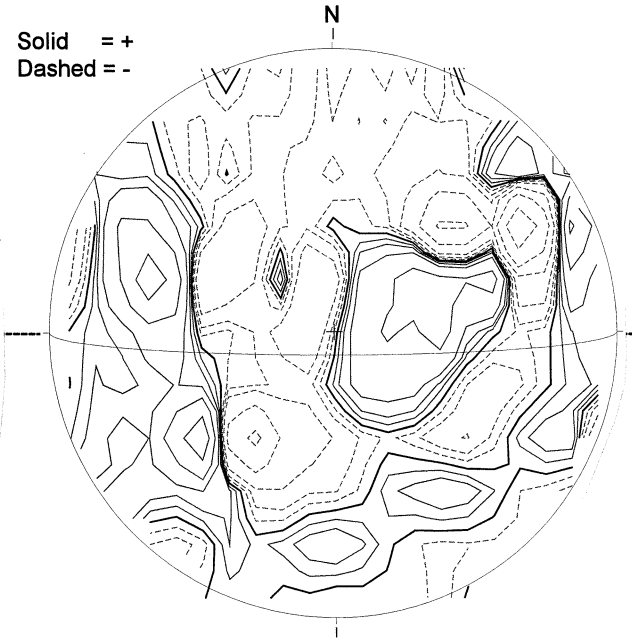
S

OCTOBER 28, 2002 (P= 25.14, Bo = 4.79, Lo = 78.79)

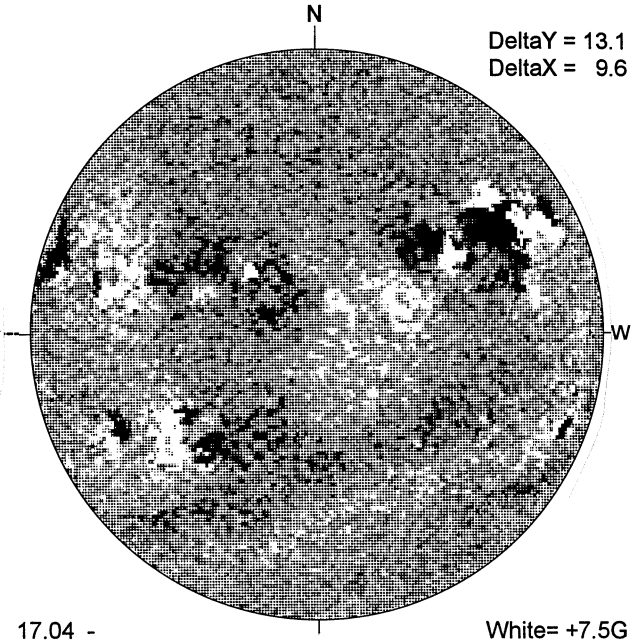
KITT PEAK MAGNETOGRAM



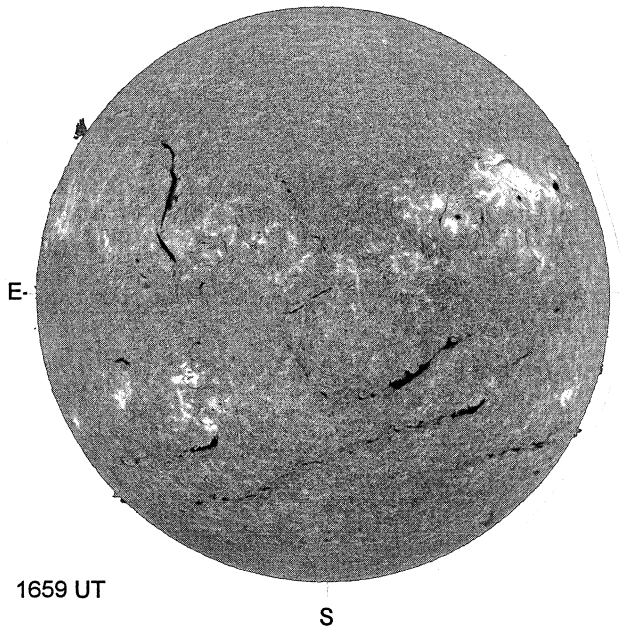
STANFORD MAGNETOGRAM



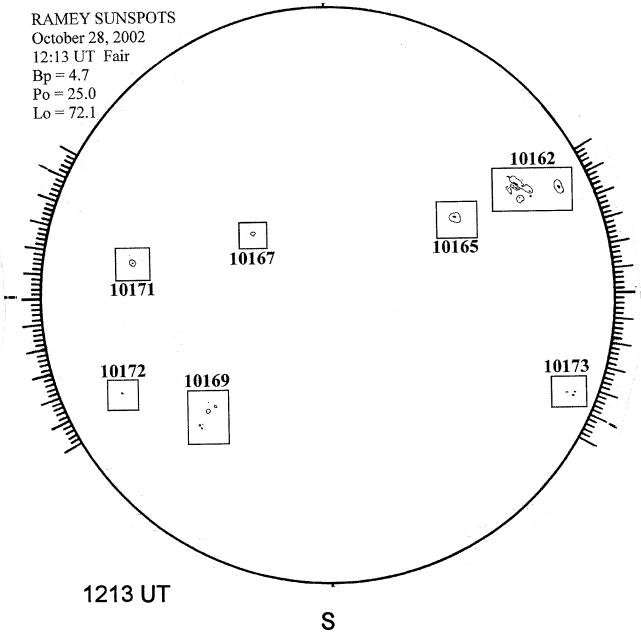
MT. WILSON MAGNETOGRAM



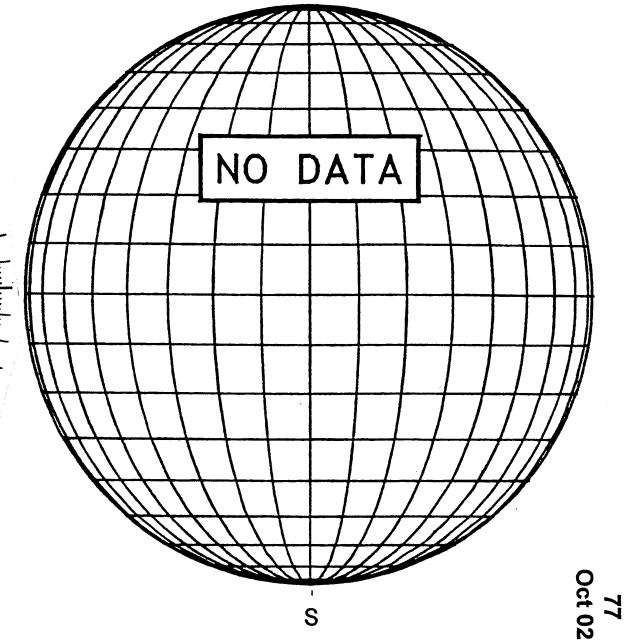
BIG BEAR H-ALPHA



RAMEY SUNSPOT



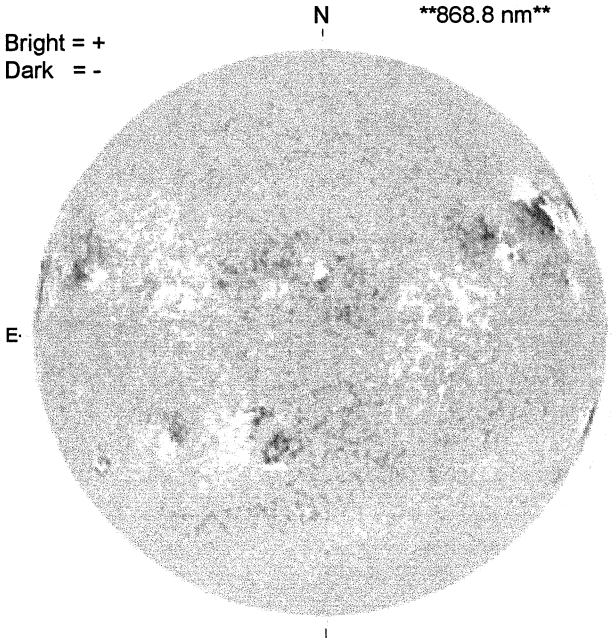
LOMNICKY PEAK CORONA (1.04 Radii)----



77
Oct 02

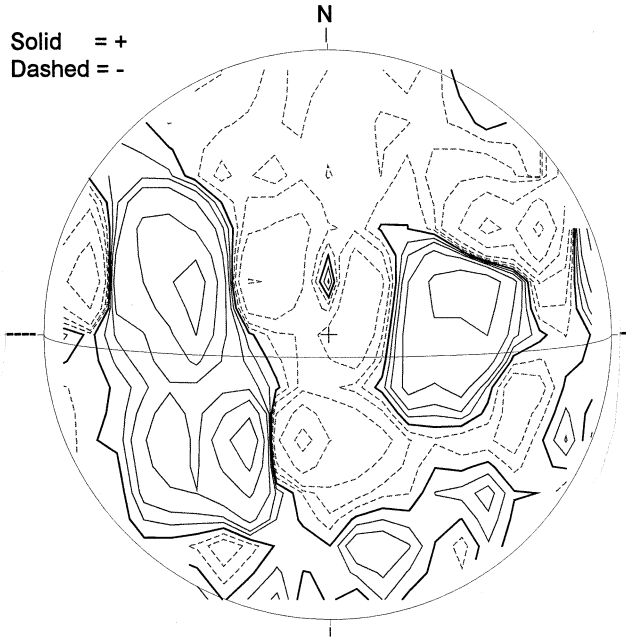
OCTOBER 29, 2002 (P= 25.00 Bo = 4.69, Lo = 65.60)

KITT PEAK MAGNETOGRAM



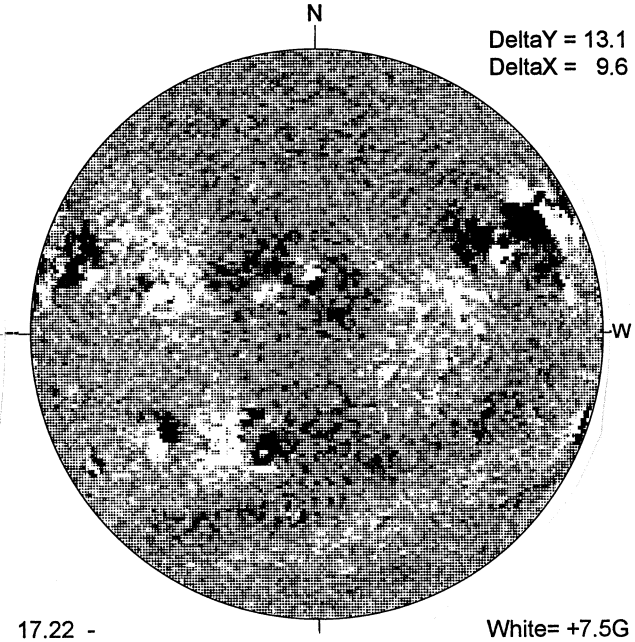
1839 UT

STANFORD MAGNETOGRAM



2112 UT

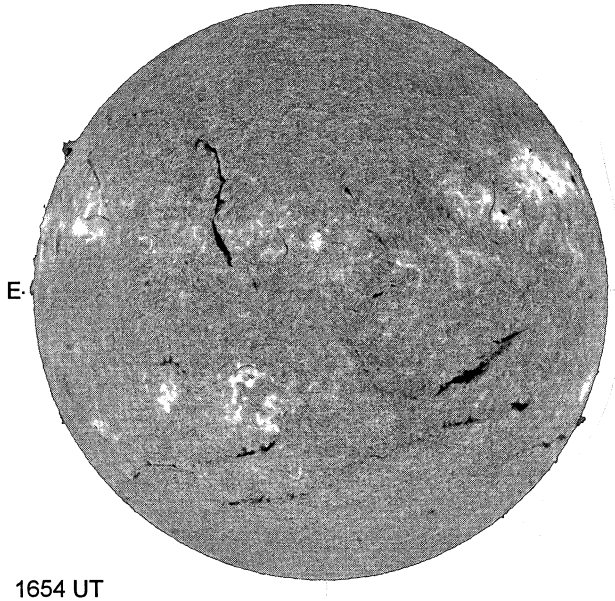
MT. WILSON MAGNETOGRAM



17.22 -
18.18 UT

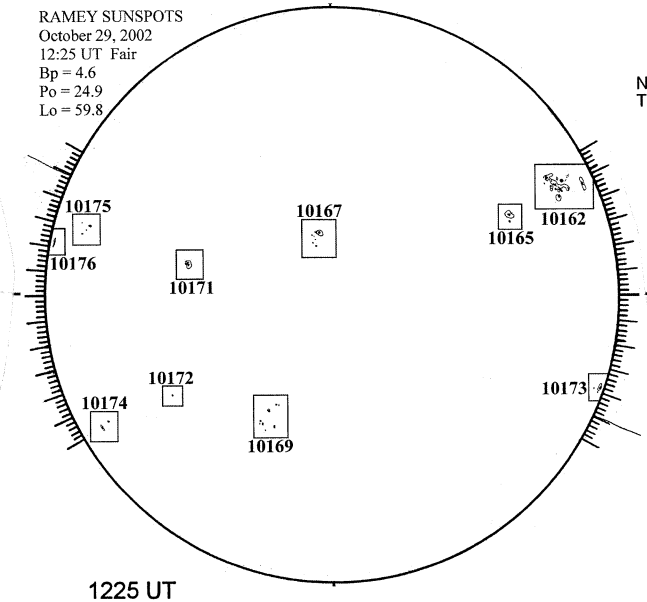
White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA



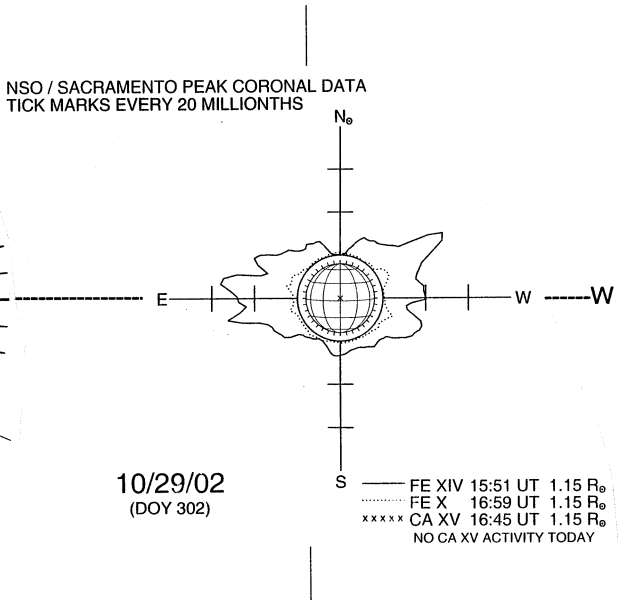
1654 UT

RAMEY SUNSPOT



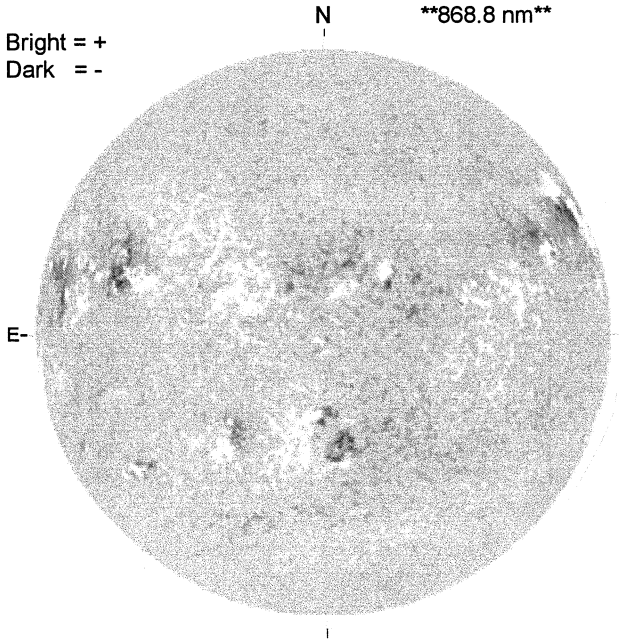
1225 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



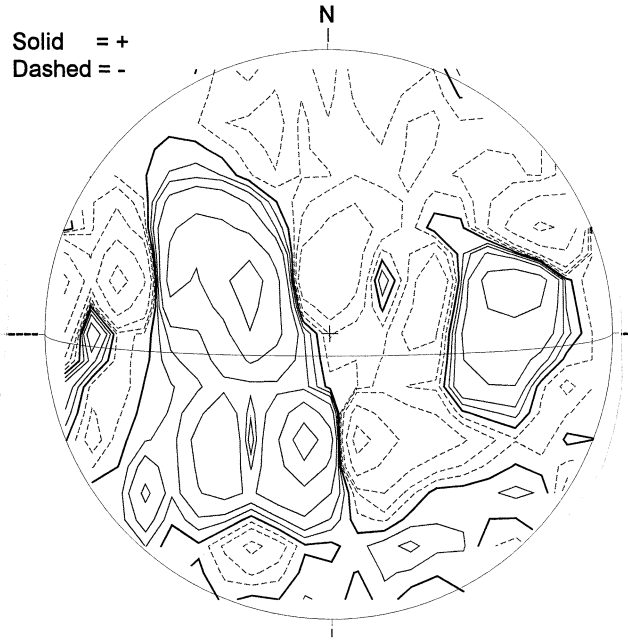
OCTOBER 30, 2002 (P= 24.85, Bo = 4.60, Lo = 52.41)

KITT PEAK MAGNETOGRAM



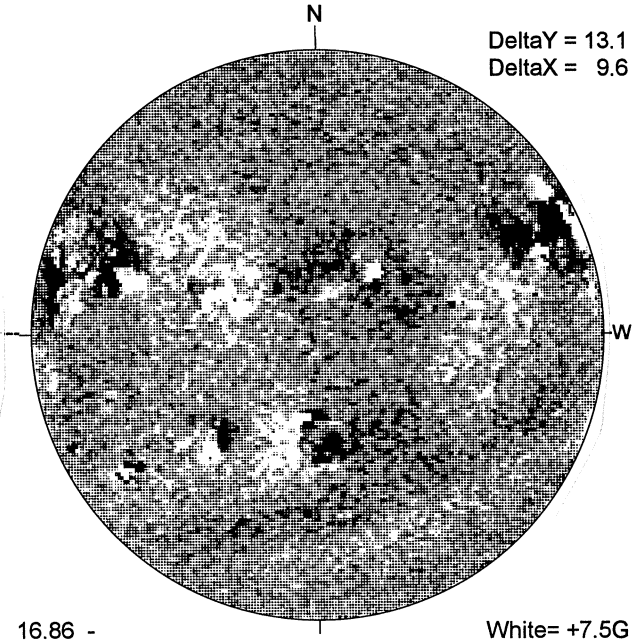
1824 UT

STANFORD MAGNETOGRAM



2105 UT

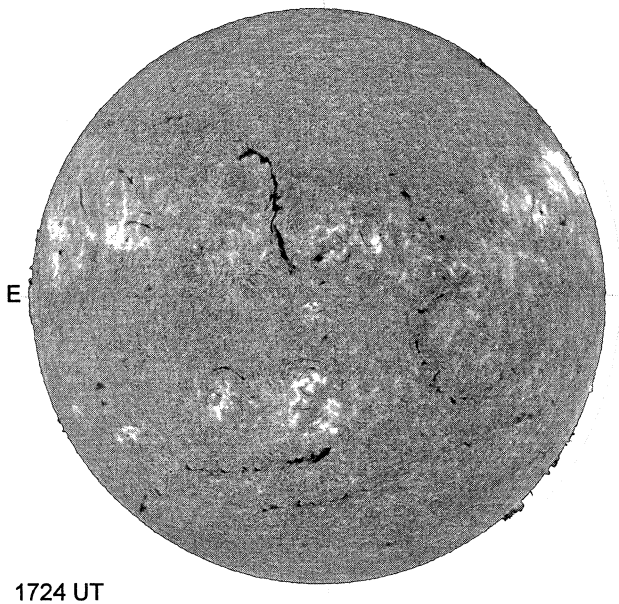
MT. WILSON MAGNETOGRAM



16.86 -
17.83 UT

White= +7.5G
Black = -7.5G

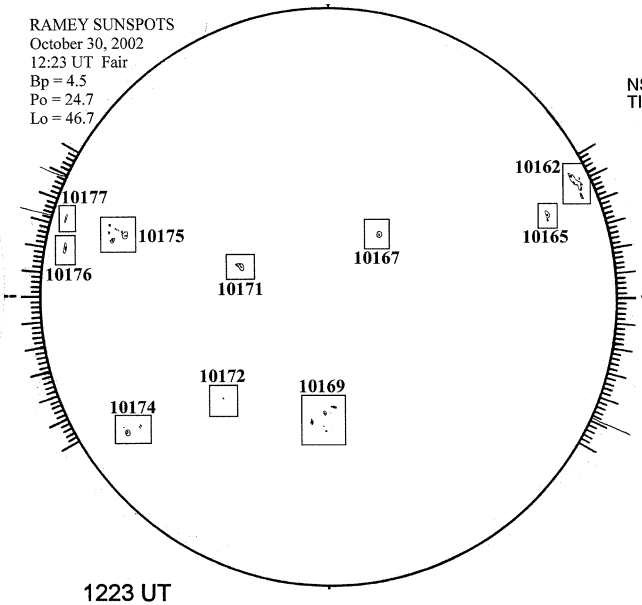
BIG BEAR H-ALPHA



1724 UT

S

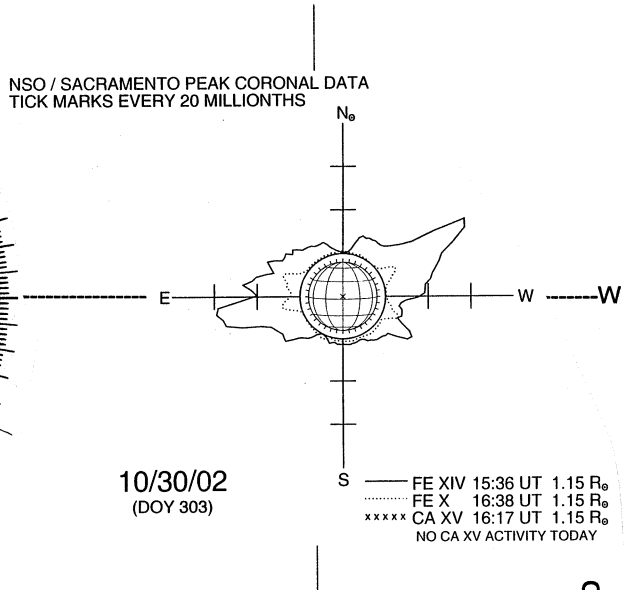
RAMEY SUNSPOT



1223 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)



S

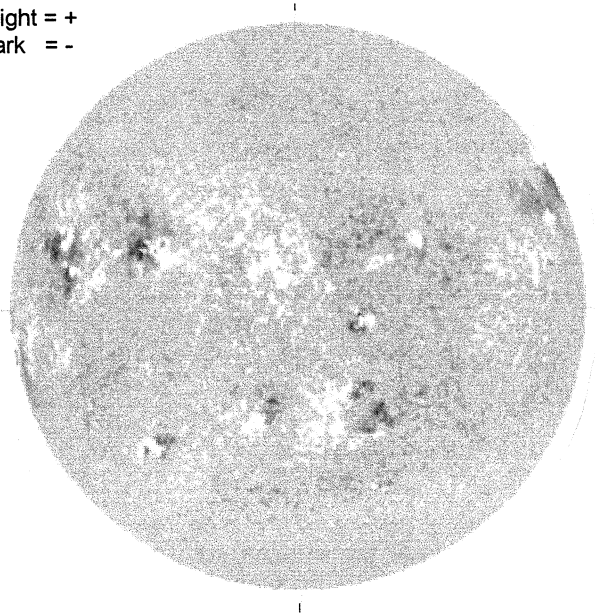
79
Oct 02

OCTOBER 31, 2002 (P= 24.70, Bo = 4.50, Lo = 39.23)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E-

1740 UT

STANFORD MAGNETOGRAM

N

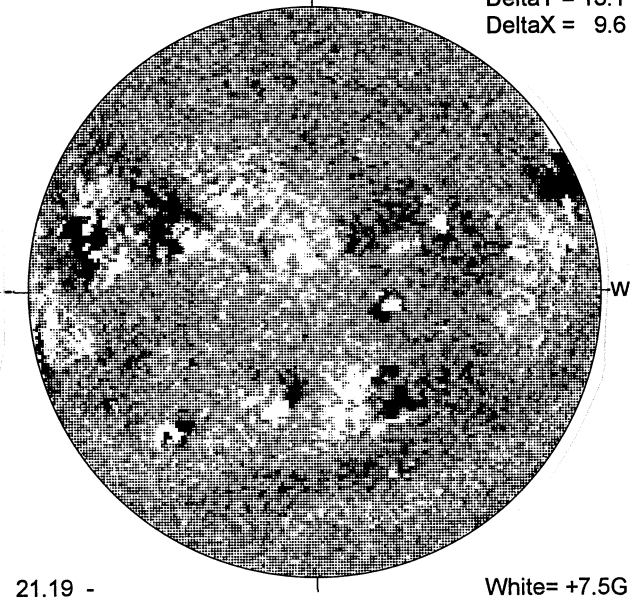
Solid = +
Dashed = -

2139 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

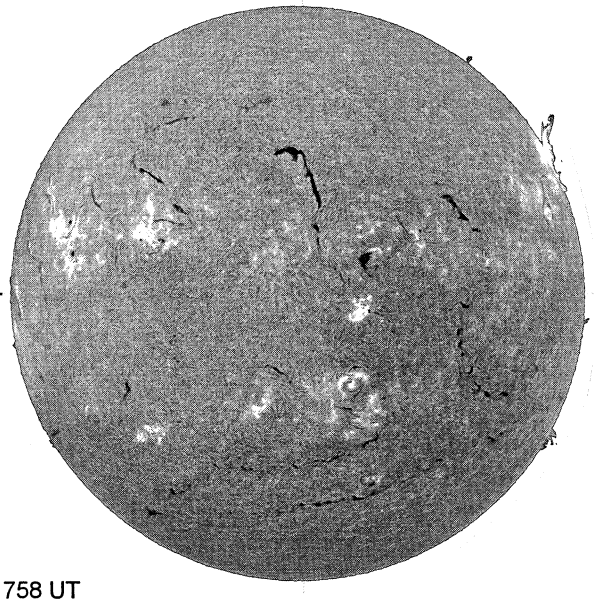


-W

21.19 -
22.15 UT

White= +7.5G
Black = -7.5G

BIG BEAR H-ALPHA

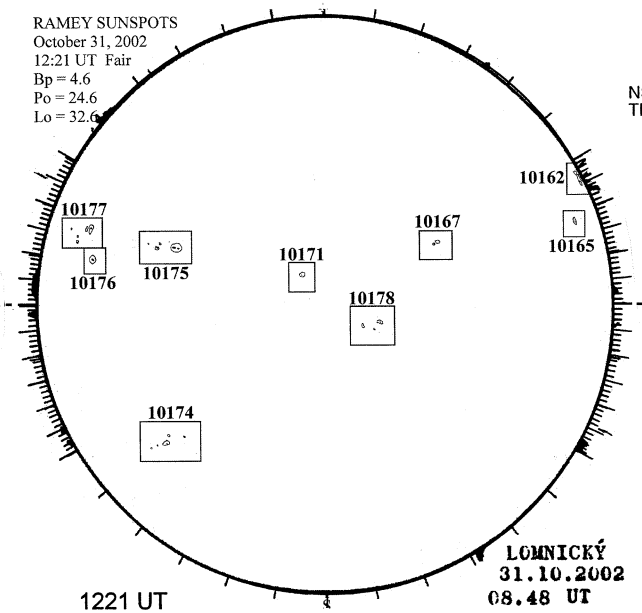


E-

1758 UT

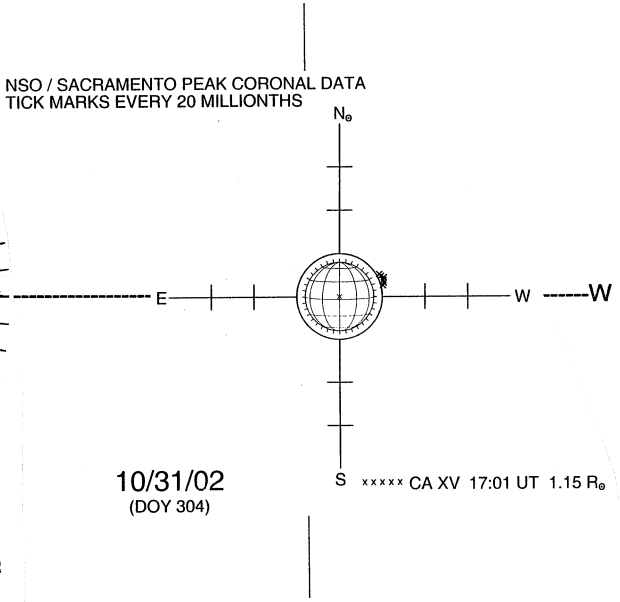
S

RAMEY SUNSPOT



1221 UT
0848 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

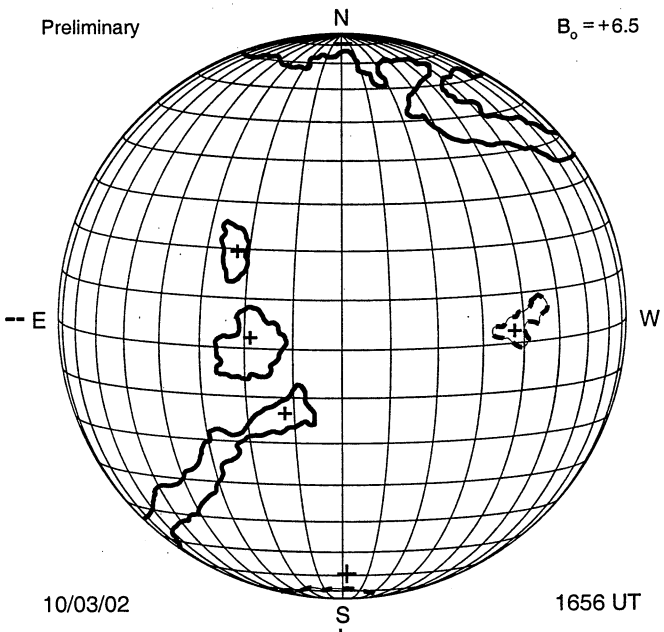


10/31/02
(DOY 304)

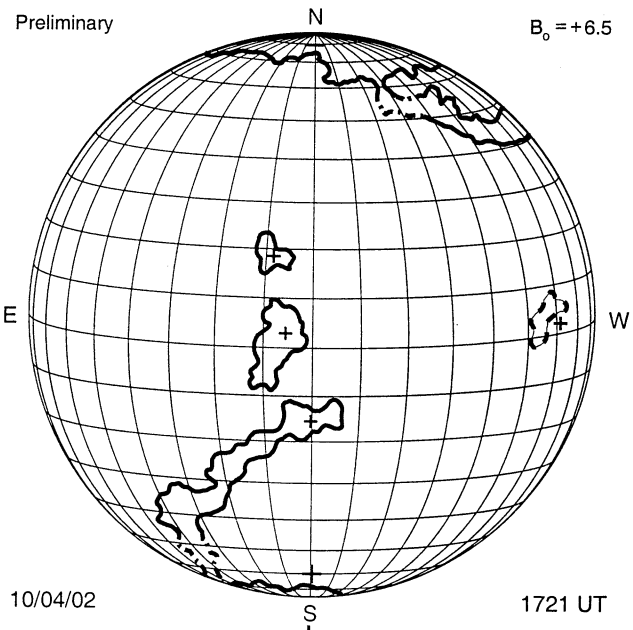
S

KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
October 2002

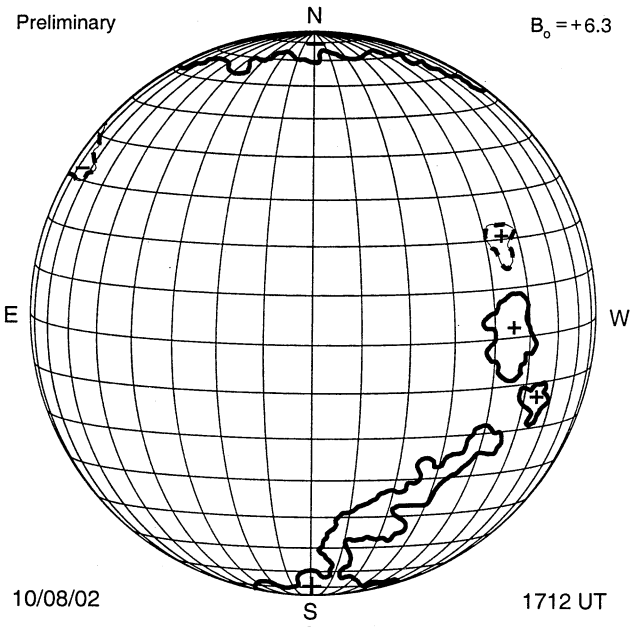
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



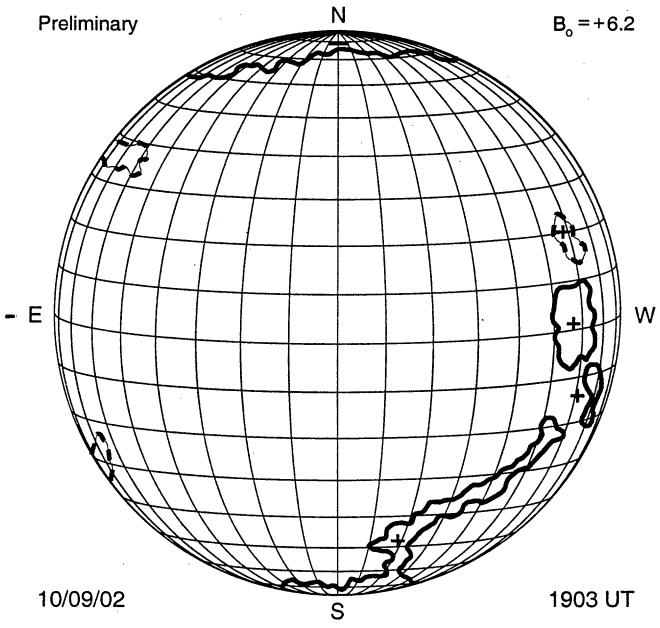
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



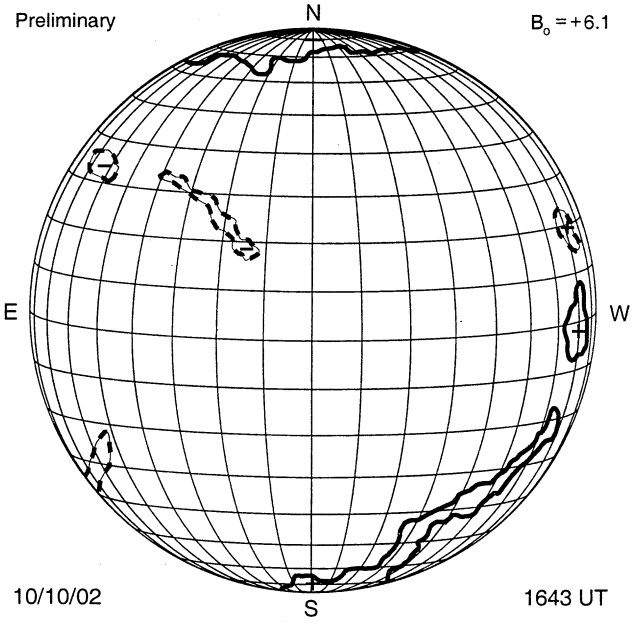
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



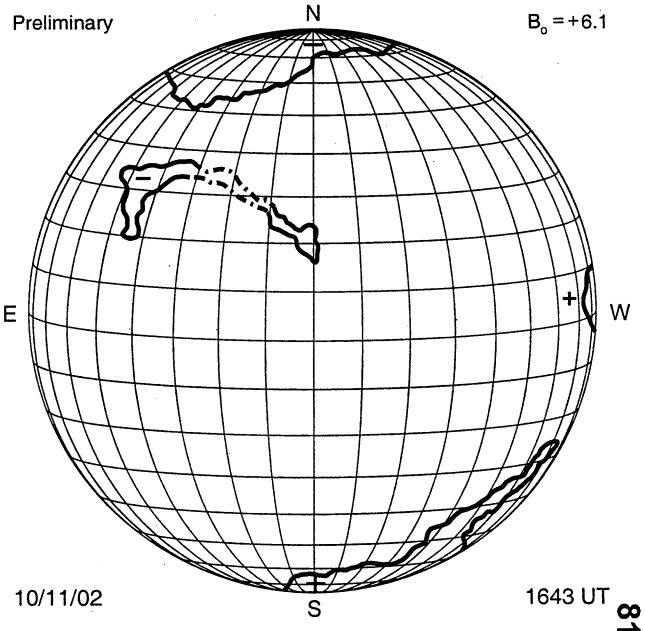
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



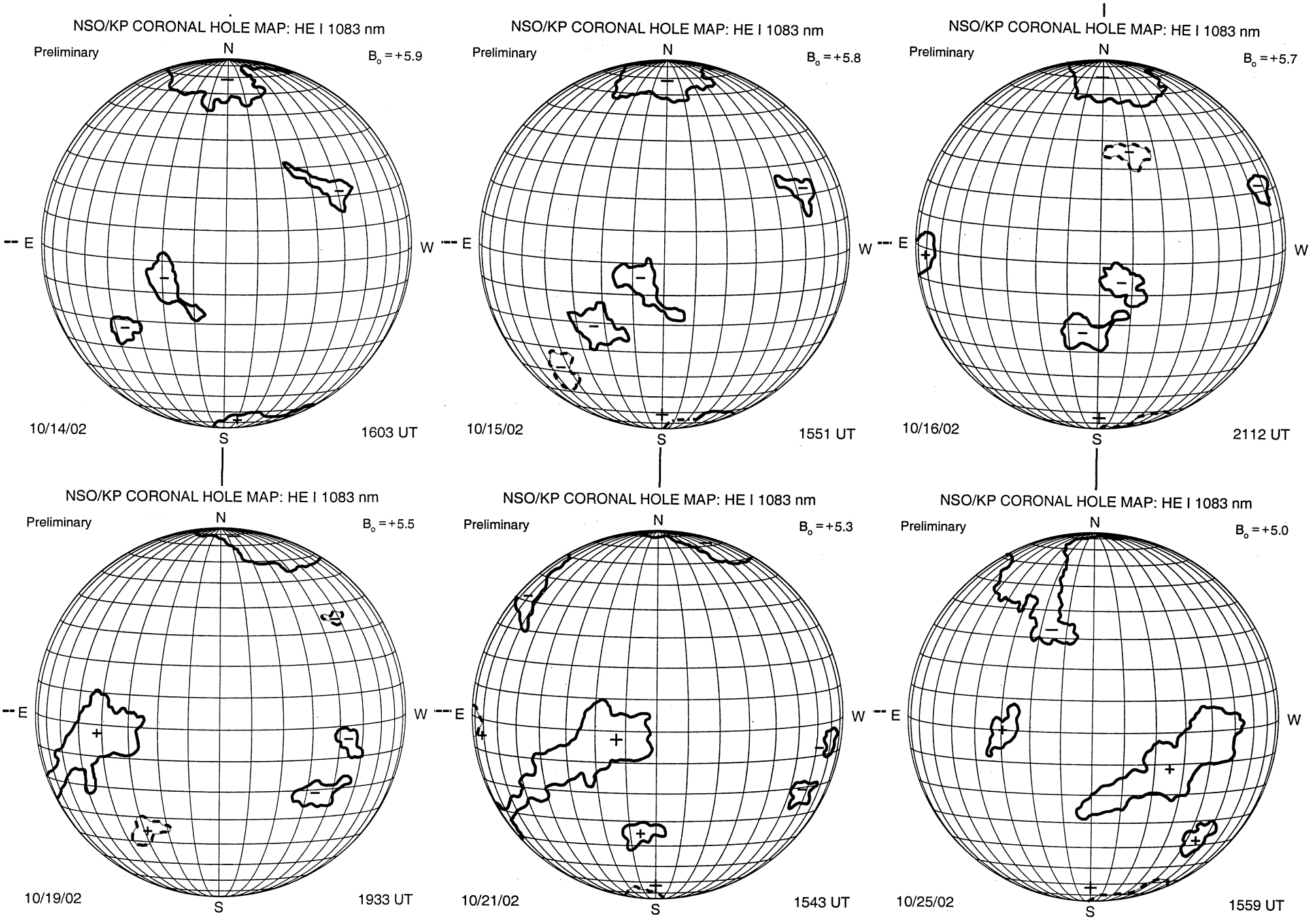
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



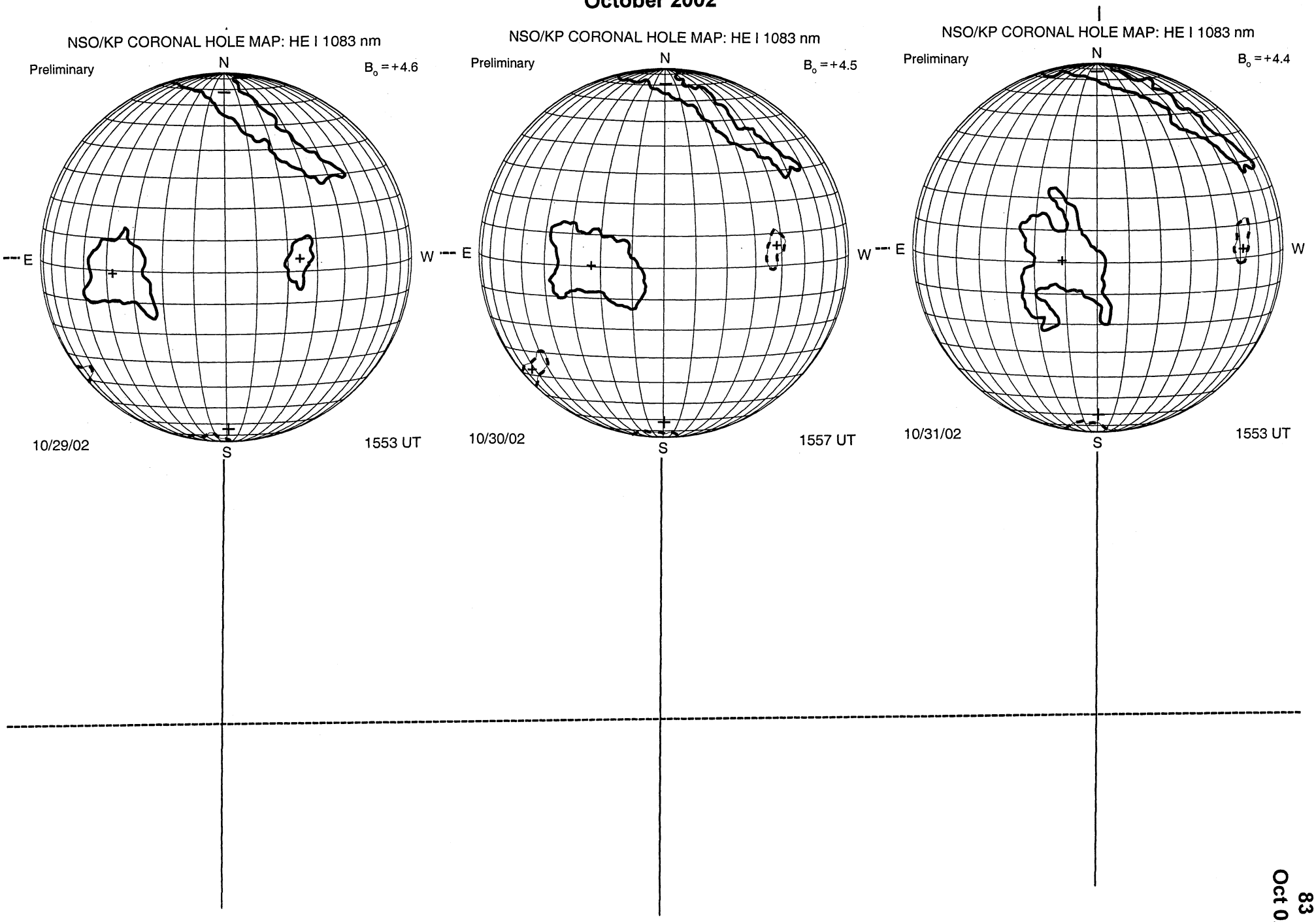
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



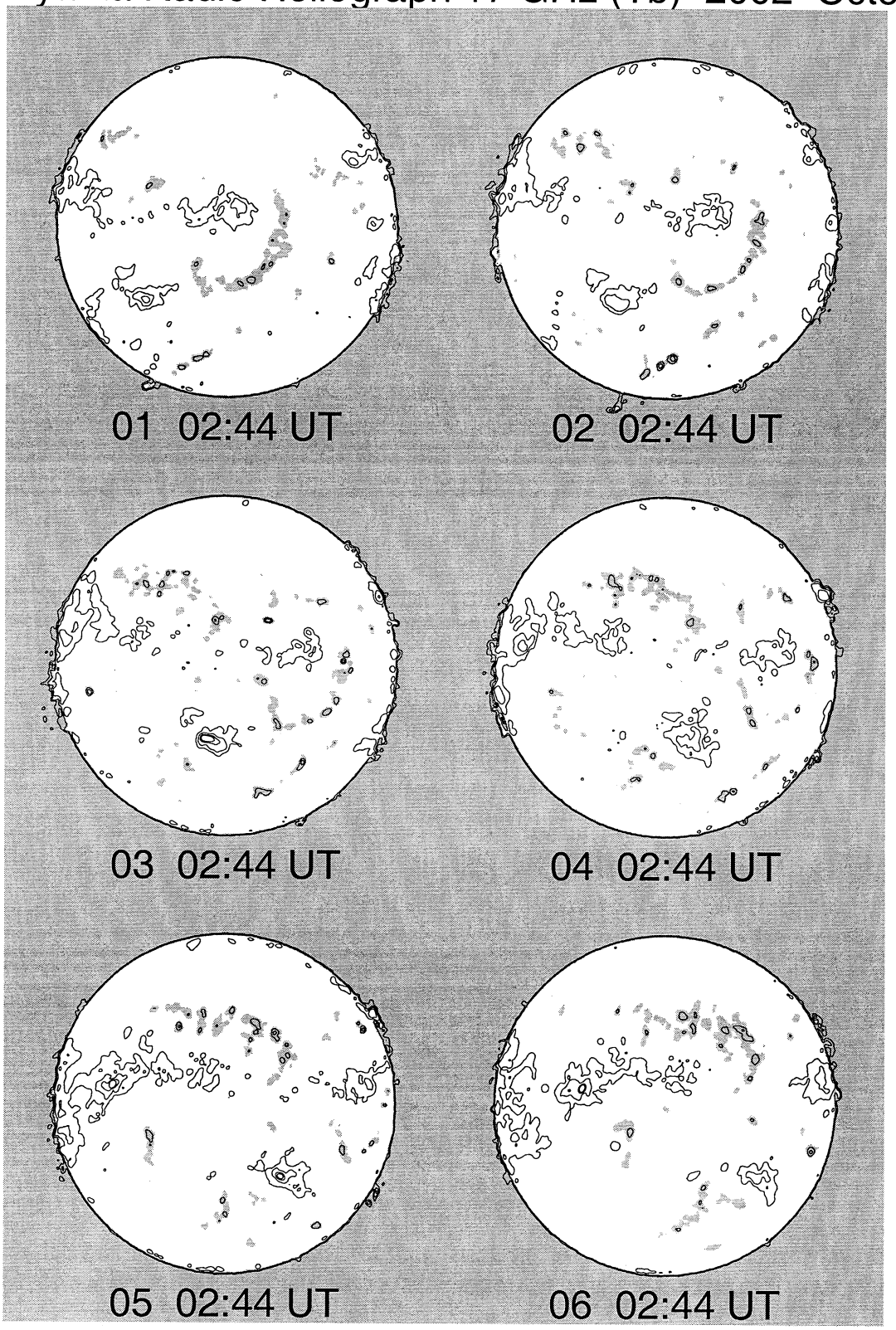
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
October 2002



KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
October 2002

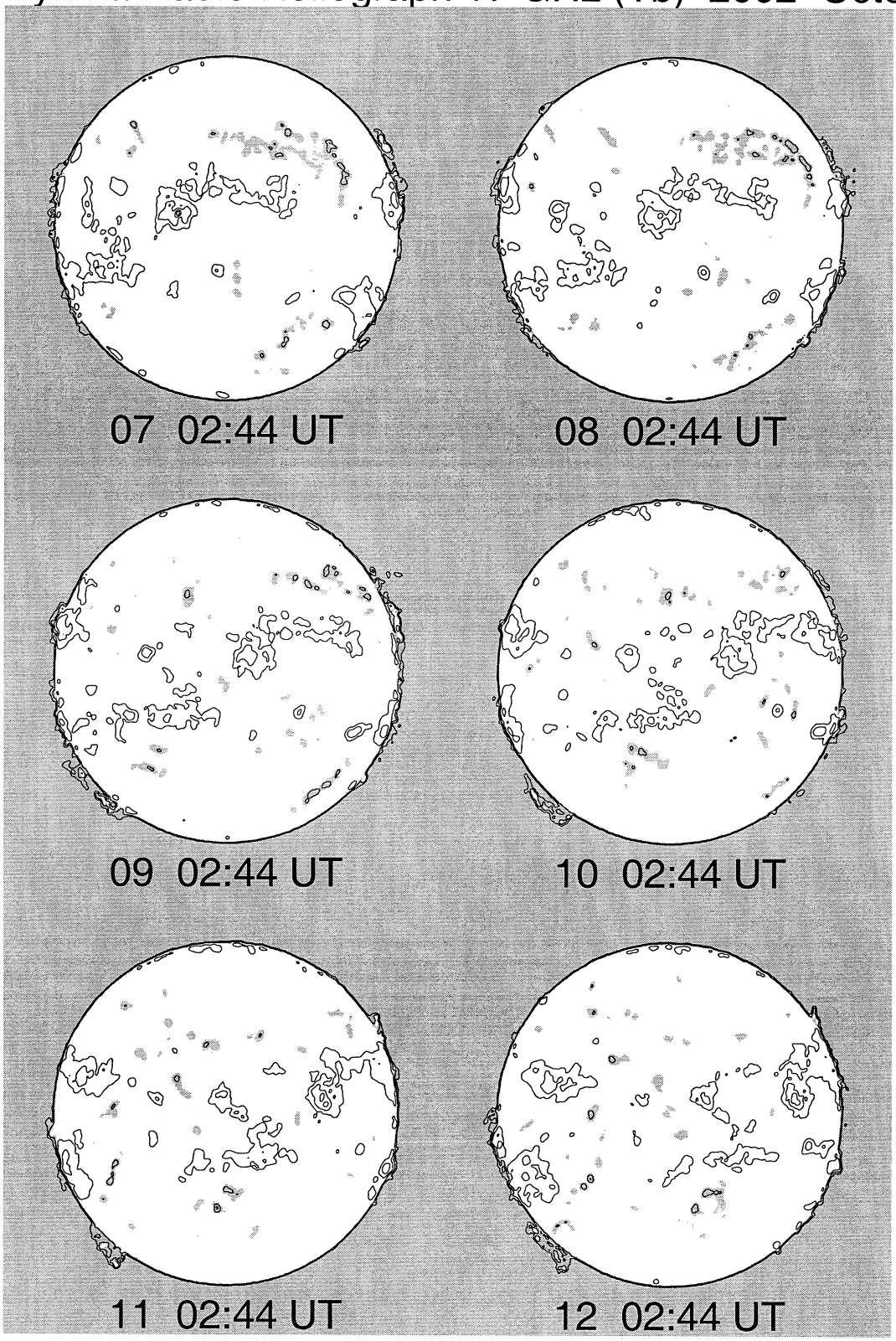


Nobeyama Radio Heliograph 17 GHz (Tb) 2002 October



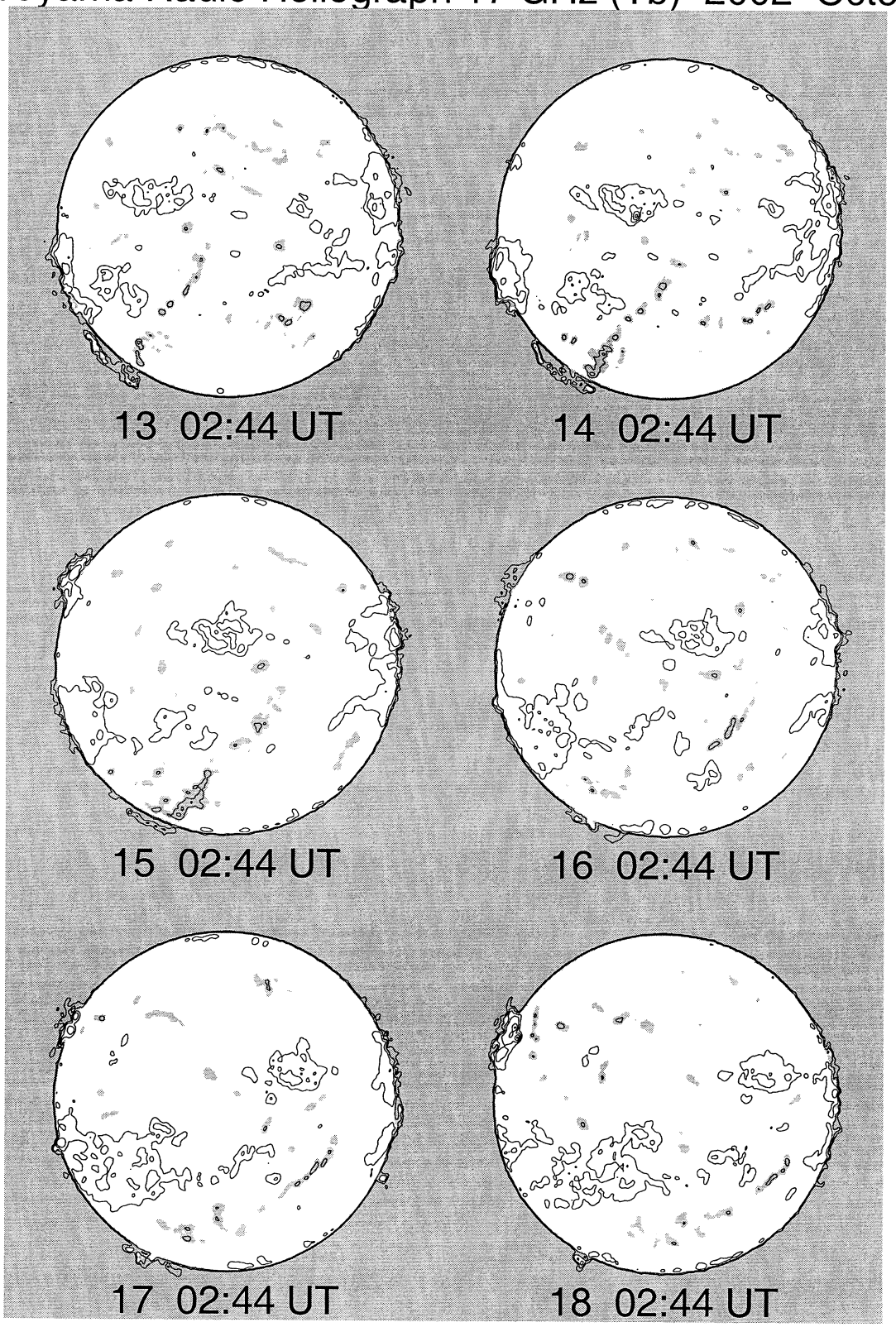
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 October



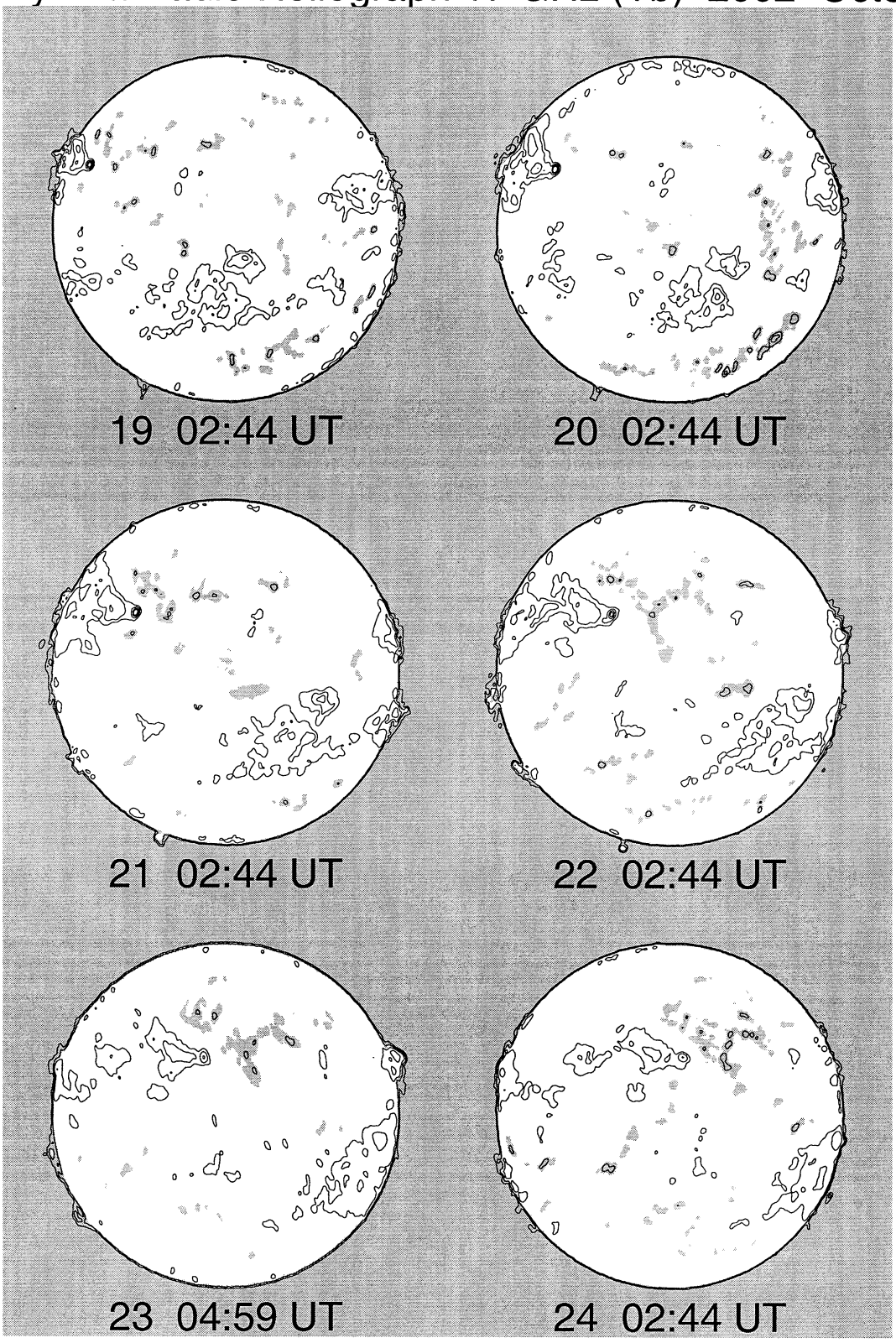
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 October



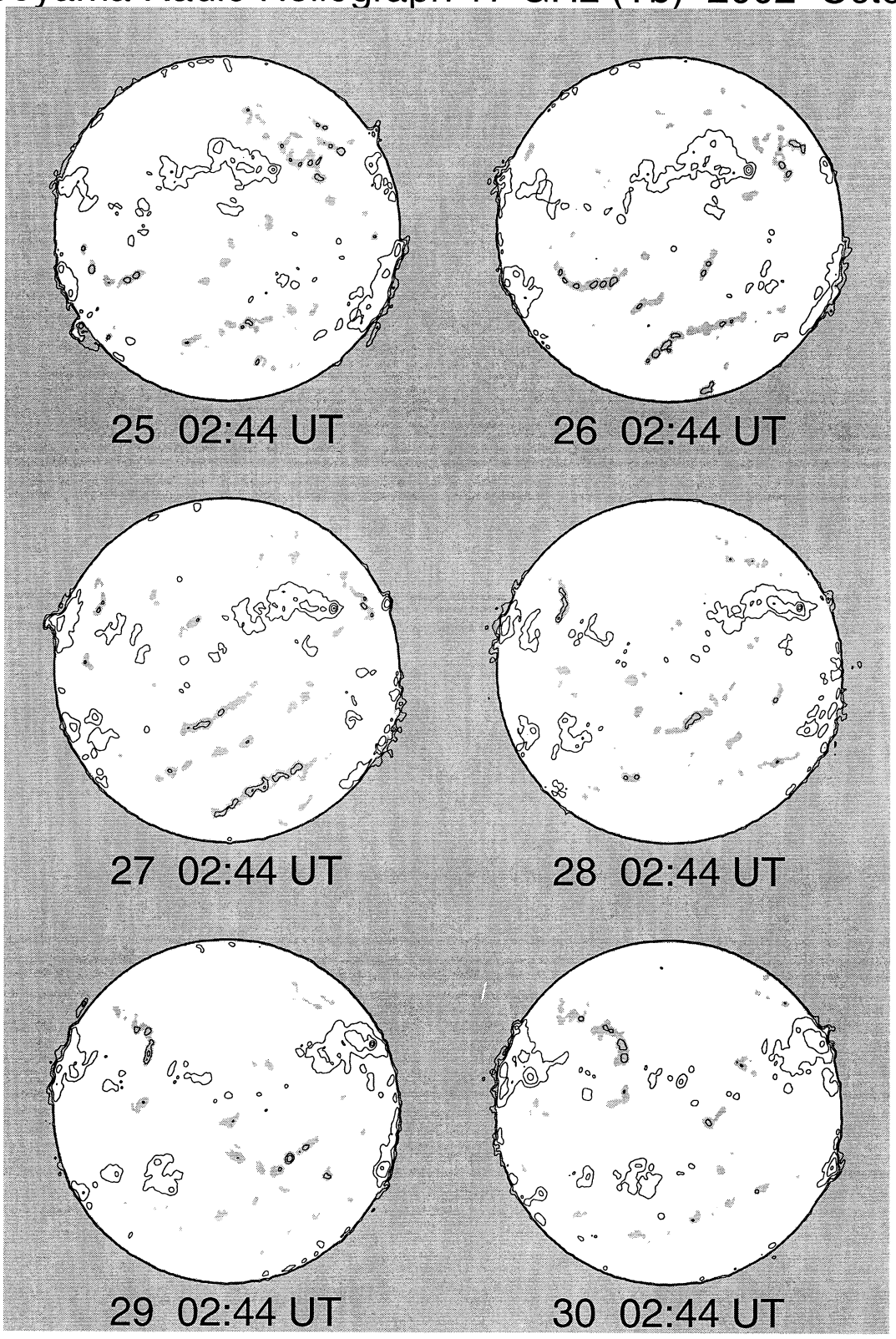
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 October



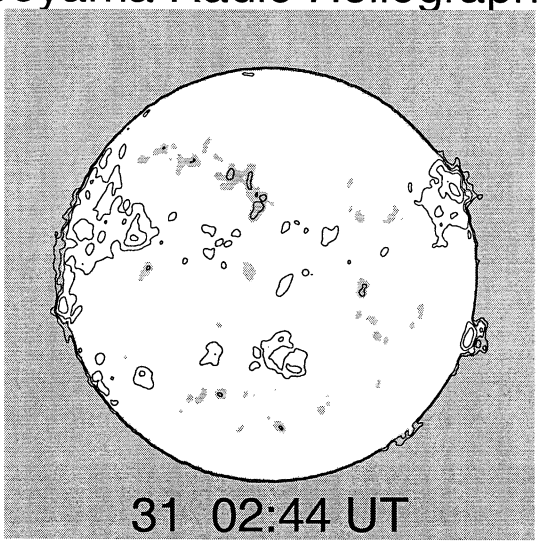
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 October



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 October



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)

OCTOBER 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
10134B		TACH	09 30	0533	N06 E23	10 1.9			AXX	5	1	1	4
10134C		LEAR	09 30	0020	S18 E39	10 3.0		B	CRO	20	3	2	2
10134C		HOLL	10 01	1745	S17 E16	10 2.9		B	BXO	10	4	4	3
10137		VORO	09 28	0035	S18 E72	10 3.5			HAX	41	2		3
10137		HOLL	09 28	1900	S18 E70	10 4.1		B	CAO	60	4	6	3
10137		LEAR	09 29	0035	S18 E62	10 3.7		B	DAO	50	5	7	3
10137		TACH	09 29	0724	S17 E59	10 3.8			CSO	42	2	6	2
10137		SVTO	09 29	0800	S14 E58	10 3.7		B	DSO	40	2	7	3
10137		HOLL	09 29	1617	S17 E54	10 3.8		B	CSO	40	4	9	3
10137		LEAR	09 30	0020	S19 E49	10 3.7		B	DAO	60	5	8	2
10137		TACH	09 30	0533	S19 E45	10 3.7			BRI	23	8	9	4
10137		SVTO	09 30	0635	S16 E45	10 3.7		B	CSO	80	4	6	3
10137		RAMY	09 30	1210	S17 E42	10 3.7		B	DAO	50	4	7	3
10137		LEAR	10 01	0120	S19 E31	10 3.4		BG	DAO	90	16	7	1
10137		SVTO	10 01	0620	S18 E31	10 3.6		B	DSO	160	7	8	3
10137		TACH	10 01	0621	S18 E29	10 3.5			DAI	208	7	8	3
10137		RAMY	10 01	1305	S18 E27	10 3.6		BG	DAI	160	19	9	3
10137		HOLL	10 01	1745	S19 E24	10 3.6		BG	DAI	210	25	9	3
10137		LEAR	10 02	0130	S18 E18	10 3.4		B	DAI	140	28	9	4
10137		VORO	10 02	0312	S19 E17	10 3.4			DAI	255	19	5	3
10137		TACH	10 02	0449	S19 E17	10 3.5			CAI	157	12	7	3
10137		SVTO	10 02	1114	S18 E15	10 3.6		B	DAI	330	14	9	3
10137		RAMY	10 02	1125	S18 E17	10 3.8		BG	EKI	380	38	12	4
10137		HOLL	10 02	1441	S18 E12	10 3.5		B	DKC	400	33	10	3
10137	31453	MWIL	10 02	2100	S19 E07	10 3.4	5	(B)					
10137		VORO	10 02	2240	S19 E07	10 3.5			DAI	464	25	5	2
10137		LEAR	10 03	0120	S19 E05	10 3.4		BG	DKI	250	20	10	3
10137		SVTO	10 03	0617	S19 E05	10 3.6		B	DAO	260	9	9	2
10137		TACH	10 03	0650	S19 E03	10 3.5			DAI	286	17	7	3
10137		RAMY	10 03	1205	S19 E04	10 3.8		BG	EKI	390	25	11	3
10137		HOLL	10 03	1435	S19 W01	10 3.5		BD	EKC	310	20	11	3
10137	31453	MWIL	10 03	1515	S19 W02	10 3.5	5	(B)					
10137		VORO	10 03	2259	S19 W06	10 3.5			DAI	341	14	8	2
10137		LEAR	10 04	0115	S19 W08	10 3.4		BG	DSI	200	11	9	2
10137		TACH	10 04	0601	S19 W10	10 3.5			CAI	237	12	8	2
10137		SVTO	10 04	0915	S19 W13	10 3.4		BG	ESI	260	11	12	3
10137		RAMY	10 04	1215	S20 W12	10 3.6		BG	ESI	150	19	11	3
10137		HOLL	10 04	1418	S19 W15	10 3.4		BG	EAI	260	27	12	2
10137	31453	MWIL	10 04	1515	S19 W16	10 3.4	5	(D)					
10137		VORO	10 04	2315	S18 W21	10 3.4			DAI	316	29	5	3
10137		LEAR	10 05	0120	S16 W24	10 3.2		BGD	DSI	200	12	10	2
10137		TACH	10 05	0448	S18 W22	10 3.5			CAI	254	18	8	3
10137		RAMY	10 05	1215	S20 W26	10 3.5		BG	EAI	230	22	12	3
10137		HOLL	10 05	1425	S19 W28	10 3.5		BG	EAI	240	28	11	4
10137	31453	MWIL	10 05	1515	S19 W29	10 3.4	5	(BG)					
10137		LEAR	10 06	0205	S18 W35	10 3.4		BG	EAO	190	20	11	2
10137		TACH	10 06	0725	S18 W37	10 3.5			DAI	310	10	7	4
10137		RAMY	10 06	1115	S20 W41	10 3.3		BG	DAI	240	18	10	3
10137	31453	MWIL	10 06	1445	S19 W43	10 3.3	5	(B)					
10137		SVTO	10 06	1510	S20 W44	10 3.3		B	EAI	170	6	11	2
10137		HOLL	10 06	1641	S18 W43	10 3.4		B	EAO	210	12	11	2
10137		VORO	10 06	2223	S18 W45	10 3.5			DAI	208	14	8	3
10137		LEAR	10 07	0028	S18 W47	10 3.4		B	DAO	240	12	10	4
10137		TACH	10 07	0612	S18 W49	10 3.5			CAO	189	4	8	2
10137		SVTO	10 07	1051	S19 W53	10 3.4		B	ESI	140	6	11	2
10137		RAMY	10 07	1112	S20 W54	10 3.3		B	DAO	180	5	10	3
10137	31453	MWIL	10 07	1500	S19 W56	10 3.3	5	(BP)					
10137		LEAR	10 08	0020	S18 W61	10 3.4		B	DAO	140	6	10	2
10137		TACH	10 08	0525	S18 W66	10 3.2			HSX	146	1	2	3
10137		SVTO	10 08	0551	S21 W67	10 3.1		A	HSX	120	1	4	3
10137		RAMY	10 08	1113	S20 W71	10 3.0		A	HAX	150	1	3	4
10137	31453	MWIL	10 08	1515	S19 W73	10 3.1	5	(AP)					
10137		HOLL	10 08	2135	S18 W77	10 3.0		A	HSX	120	1	2	3
10137		VORO	10 09	0218	S19 W79	10 3.1			HRX	111	1		3
10137		TACH	10 09	0423	S19 W80	10 3.1			HXX	55	1	2	4
10137		LEAR	10 09	0839	S18 W77	10 3.5		B	DAO	150	3	4	3
10137		SVTO	10 09	0912	S19 W83	10 3.0		B	DSO	70	10	6	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10137		LEAR	10	10	0050	S18	W80	10	3.9		B	DAO	40	2	3	3
10137A		HOLL	10	02	1441	S10	E20	10	4.1		A	AXX	10	3	2	3
10137B	31456	MWIL	10	04	1515	N16	W01	10	4.5	4	(AP)					
10137B		LEAR	10	07	0028	N19	W29	10	4.8		B	BXO	10	2	3	4
10143		RAMY	10	02	1125	S13	E42	10	5.6		B	BXO	10	3	3	4
10143		HOLL	10	02	1441	S16	E37	10	5.4		A	AXX	10	2	2	3
10143	31454	MWIL	10	02	2100	S16	E35	10	5.5	4	(AP)					
10143		VORO	10	02	2240	S16	E33	10	5.4			BXO	10	6	2	3
10143		RAMY	10	03	1205	S13	E28	10	5.6		A	HSX	10	1	1	3
10143		HOLL	10	03	1435	S15	E23	10	5.3		A	AXX	10	1	1	3
10143		RAMY	10	07	1112	S19	W31	10	5.1		A	HRX	10	1	1	3
10143	31464	MWIL	10	07	1500	S17	W32	10	5.2	4	(B)					
10143		LEAR	10	08	0020	S17	W38	10	5.1		B	DAO	30	5	4	2
10143		TACH	10	08	0525	S17	W39	10	5.3			BRI	34	3	3	3
10143		RAMY	10	08	1113	S19	W43	10	5.2		B	DSO	40	3	4	4
10143	31464	MWIL	10	08	1515	S17	W44	10	5.3	4	(BG)					
10143		HOLL	10	08	2135	S17	W47	10	5.3		B	BXO	30	13	6	3
10143		VORO	10	09	0218	S17	W48	10	5.4			BRI	104	5	2	3
10143		TACH	10	09	0423	S17	W49	10	5.4			CAI	57	6	4	4
10143		LEAR	10	09	0839	S17	W49	10	5.6		B	DAO	100	12	6	3
10143		RAMY	10	09	1009	S17	W56	10	5.2		B	DSO	50	10	5	3
10143		HOLL	10	09	1448	S16	W56	10	5.4		B	BXO	40	10	6	4
10143	31464	MWIL	10	09	1515	S17	W56	10	5.4	4	(B)					
10143		VORO	10	09	2227	S19	W60	10	5.3			AXX	68	16		3
10143		LEAR	10	10	0050	S16	W62	10	5.3		BGD	DSO	100	12	6	3
10143	31464	MWIL	10	10	1500	S16	W71	10	5.2	3	(AP)					
10143A		LEAR	10	07	0028	N13	W17	10	5.7		B	CRO	20	5	6	4
10143B		HOLL	10	04	1418	N19	E31	10	7.0		A	AXX	10	2	1	2
10143B	31457	MWIL	10	04	1515	N20	E30	10	6.9	4	(AF)					
10143B		HOLL	10	05	1425	N17	E17	10	6.9		B	BXO	10	3	3	4
10143B	31457	MWIL	10	05	1515	N17	E17	10	6.9	4	(AF)					
10143B	31462	MWIL	10	06	1445	N17	E10	10	7.4	3	AP					
10143B	31457	MWIL	10	06	1445	N18	E03	10	6.8	2	AP					
10143B		HOLL	10	09	1448	N21	W34	10	7.0		A	AXX	10	1	1	4
10141		RAMY	10	05	1215	S06	E27	10	7.5		B	BXO	20	2	3	3
10141		HOLL	10	05	1425	S07	E24	10	7.4		B	CAO	20	2	3	4
10141	31460	MWIL	10	05	1515	S08	E23	10	7.3	4	(B)					
10141		LEAR	10	06	0205	S08	E16	10	7.3		B	CAO	40	3	3	2
10141		TACH	10	06	0725	S08	E13	10	7.3			CAO	45	4	3	4
10141		RAMY	10	06	1115	S07	E12	10	7.4		B	DSO	20	9	4	3
10141	31460	MWIL	10	06	1445	S08	E09	10	7.3	4	(B)					
10141		SVTO	10	06	1510	S07	E09	10	7.3		B	DSO	50	8	5	2
10141		HOLL	10	06	1641	S07	E08	10	7.3		B	DAO	50	8	5	2
10141		VORO	10	06	2223	S07	E05	10	7.3			DRI	53	7	4	3
10141		LEAR	10	07	0028	S08	E04	10	7.3		B	DAO	70	10	5	4
10141		TACH	10	07	0612	S07	E01	10	7.3			BRI	11	5	4	2
10141		SVTO	10	07	1051	S08	W02	10	7.3		B	CRO	40	6	7	2
10141		RAMY	10	07	1112	S08	W02	10	7.3		B	DSO	20	8	6	3
10141	31460	MWIL	10	07	1500	S08	W04	10	7.3	5	(B)					
10141		LEAR	10	08	0020	S08	W10	10	7.3		B	DAO	80	16	7	2
10141		TACH	10	08	0525	S07	W12	10	7.3			BRI	24	7	5	3
10141		SVTO	10	08	0551	S08	W14	10	7.2		A	AXX	20	4	2	3
10141		RAMY	10	08	1113	S08	W18	10	7.1		B	DSO	30	5	3	4
10141	31460	MWIL	10	08	1515	S07	W19	10	7.2	4	(B)					
10141		HOLL	10	08	2135	S07	W24	10	7.1		B	BXO	20	8	3	3
10141		LEAR	10	09	0839	S07	W25	10	7.5		B	DAO	20	4	3	3
10141		RAMY	10	09	1009	S07	W32	10	7.0		B	BXO		3	4	3
10141	31460	MWIL	10	09	1515	S06	W34	10	7.1	4	(AP)					
10141		VORO	10	11	0313	S07	W52	10	7.2			BSO	31	6	3	3
10155		TACH	10	11	0652	S08	W44	10	8.0			AR	4	2	1	4
10155		SVTO	10	11	0924	S11	W45	10	8.0		B	BXO	20	2	3	2
10155		RAMY	10	11	1240	S10	W49	10	7.8		B	DSO	40	2	3	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10155		HOLL	10	11	1457	S08	W47	10	8.1		B	CSO	20	4	3	3
10155		LEAR	10	12	0010	S06	W53	10	8.0		B	CRO	50	6	3	2
10155		SVTO	10	12	0610	S10	W56	10	8.0		B	DSO	50	3	4	3
10155		TACH	10	12	0614	S07	W55	10	8.1			BRO	3	3	3	4
10155		RAMY	10	12	1207	S10	W60	10	8.0		B	BXO	10	4	3	3
10155B		TACH	10	03	0650	N20	E62	10	8.0			HA	169	2	2	3
10155A		HOLL	10	05	1425	N29	E33	10	8.2		A	AXX	10	1	1	4
10139		VORO	10	02	0312	N11	E82	10	8.3			HRX	23	1		3
10139		SVTO	10	02	1114	N15	E80	10	8.5		A	HSX	60	1	2	3
10139		RAMY	10	02	1125	N15	E78	10	8.4		B	DSO	90	4	7	4
10139		HOLL	10	02	1441	N12	E76	10	8.3		B	DAO	160	4	4	3
10139	31455	MWIL	10	02	2100	N11	E73	10	8.4	4	(B)					
10139		VORO	10	02	2240	N12	E71	10	8.3			HRX	126	1		3
10139		LEAR	10	03	0120	N10	E69	10	8.2		B	DSO	120	3	4	3
10139		SVTO	10	03	0617	N16	E68	10	8.4		A	HSX	110	1	3	2
10139		RAMY	10	03	1205	N17	E64	10	8.4		B	CAO	220	6	5	3
10139		HOLL	10	03	1435	N12	E66	10	8.6		B	DSO	190	7	5	3
10139	31455	MWIL	10	03	1515	N11	E65	10	8.5	5	(BP)					
10139		VORO	10	03	2259	N11	E59	10	8.4			DAI	234	10	4	3
10139		LEAR	10	04	0115	N09	E58	10	8.4		BG	DSO	180	11	7	2
10139		TACH	10	04	0601	N12	E56	10	8.5			CAI	537	11	6	2
10139		SVTO	10	04	0915	N12	E54	10	8.4		B	DKO	440	11	10	3
10139		RAMY	10	04	1215	N17	E53	10	8.5		BG	DKI	430	19	10	3
10139		HOLL	10	04	1418	N15	E52	10	8.5		BGD	EKC	540	32	11	2
10139	31455	MWIL	10	04	1515	N11	E51	10	8.5	5	(D)					
10139		VORO	10	04	2317	N11	E46	10	8.4			DAI	584	29	3	3
10139		LEAR	10	05	0120	N16	E45	10	8.5		BG	DKI	320	24	10	2
10139		TACH	10	05	0448	N11	E42	10	8.3			CAI	460	23	9	3
10139		RAMY	10	05	1215	N13	E39	10	8.4		BG	EKI	650	37	11	3
10139		HOLL	10	05	1425	N12	E37	10	8.4		BG	DKC	700	50	9	4
10139	31455	MWIL	10	05	1515	N11	E36	10	8.3	6	(BG)					
10139		LEAR	10	06	0205	N11	E30	10	8.3		BG	DKI	420	32	10	2
10139		TACH	10	06	0725	N10	E28	10	8.4			DKI	865	20	6	4
10139		RAMY	10	06	1115	N11	E26	10	8.4		BG	EKI	680	32	11	3
10139	31455	MWIL	10	06	1445	N11	E23	10	8.3	6	(BG)					
10139		SVTO	10	06	1510	N12	E24	10	8.4		B	EKI	480	13	11	2
10139		HOLL	10	06	1641	N12	E22	10	8.3		BG	DKC	650	33	8	2
10139		VORO	10	06	2223	N11	E20	10	8.4			DKI	595	30	3	3
10139		LEAR	10	07	0028	N10	E19	10	8.4		BG	DKC	630	58	10	4
10139		TACH	10	07	0612	N12	E15	10	8.4			DAI	653	23	9	2
10139		SVTO	10	07	1051	N11	E13	10	8.4		B	EKI	490	14	14	2
10139		RAMY	10	07	1112	N11	E12	10	8.4		BGD	EKI	640	33	11	3
10139	31455	MWIL	10	07	1500	N11	E10	10	8.4	5	(D)					
10139		LEAR	10	08	0020	N10	E05	10	8.4		BG	EKI	580	49	11	2
10139		TACH	10	08	0525	N11	E04	10	8.5			DKI	533	23	8	3
10139		SVTO	10	08	0551	N11	E03	10	8.5		BG	EKI	550	14	13	3
10139		RAMY	10	08	1113	N10	W02	10	8.3		BGD	FKI	550	18	11	4
10139	31455	MWIL	10	08	1515	N11	W03	10	8.4	5	(D)					
10139		HOLL	10	08	2135	N11	W06	10	8.4		BGD	EKC	560	51	11	3
10139		VORO	10	09	0218	N11	W08	10	8.5			DKC	600	4	2	3
10139		TACH	10	09	0423	N11	W10	10	8.4			CHI	178	13	5	4
10139		LEAR	10	09	0839	N10	W08	10	8.7		BGD	DKC	560	44	10	3
10139		SVTO	10	09	0912	N10	W13	10	8.4		A	HKX	560	3	6	2
10139		RAMY	10	09	1009	N11	W14	10	8.4		BGD	CKO	620	19	9	3
10139		HOLL	10	09	1448	N11	W15	10	8.5		BGD	EKC	530	29	11	4
10139	31455	MWIL	10	09	1515	N10	W15	10	8.5	5	(D)					
10139		VORO	10	09	2227	N10	W19	10	8.5			DKC	530	16	2	3
10139		LEAR	10	10	0050	N11	W21	10	8.4		BGD	DKC	500	22	10	3
10139		TACH	10	10	0507	N12	W23	10	8.5			CKI	660	17	7	4
10139		RAMY	10	10	1330	N10	W29	10	8.4		BGD	DKI	520	29	9	4
10139		HOLL	10	10	1438	N11	W27	10	8.6		BGD	DKC	530	27	8	4
10139	31455	MWIL	10	10	1500	N10	W29	10	8.4	5	(BG)					
10139		LEAR	10	11	0045	N11	W33	10	8.5		BGD	DKC	450	17	7	2
10139		VORO	10	11	0313	N09	W34	10	8.6			DKI	689	24	2	3
10139		TACH	10	11	0652	N09	W37	10	8.5			HK	611	10	3	4
10139		SVTO	10	11	0924	N07	W39	10	8.5		B	DHO	640	12	8	2

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

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10139		RAMY	10 11 1240	N09 W42	10 8.4		BG	DKO	610	9	7	2
10139		HOLL	10 11 1457	N10 W41	10 8.5		BD	DKC	650	27	8	3
10139		VORO	10 11 2335	N09 W46	10 8.5			HKC	634	33	3	3
10139		LEAR	10 12 0010	N10 W46	10 8.5		BGD	DKI	520	16	8	2
10139		SVTO	10 12 0610	N07 W50	10 8.5		BG	DAO	570	10	8	3
10139		TACH	10 12 0614	N09 W51	10 8.4			DKI	559	11	6	4
10139		RAMY	10 12 1207	N08 W54	10 8.4		BG	DKO	780	10	8	3
10139		VORO	10 12 2307	N09 W59	10 8.5			HKC	541	14	3	3
10139		LEAR	10 13 0035	N11 W58	10 8.7		BGD	DKO	610	18	8	2
10139		SVTO	10 13 0710	N07 W65	10 8.4		BG	DKO	360	10	10	3
10139		RAMY	10 13 1400	N08 W68	10 8.5		BG	DKO	480	9	8	2
10139		VORO	10 13 2230	N09 W70	10 8.7			DKI	438	15	3	3
10139		LEAR	10 14 0010	N12 W70	10 8.7		BG	DAO	490	9	6	3
10139		SVTO	10 14 0625	N04 W77	10 8.5		BG	EAO	330	7	11	3
10139		RAMY	10 14 1145	N08 W80	10 8.5		BG	EKO	300	8	11	4
10139	31455	MWIL	10 14 1530	N10 W80	10 8.6	5	(AP)					
10139		HOLL	10 14 1700	N09 W82	10 8.5		B	DAO	240	3	5	4
10139		LEAR	10 15 0040	N11 W88	10 8.4		B	DAO	60	2	5	3
10139B	31461	MWIL	10 05 1515	S33 E34	10 8.3	4	(B)					
10139A		HOLL	10 06 1641	S16 E23	10 8.4		A	AXX	10	2	1	2
10139A		LEAR	10 07 0028	S16 E18	10 8.4		A	AXX	10	1		4
10150		HOLL	10 08 2135	S10 E07	10 9.4		A	AXX		1		3
10150		LEAR	10 09 0839	S10 E06	10 9.8		A	HSX	10	3	1	3
10150		HOLL	10 09 1448	S09 W02	10 9.5		A	AXX	10	2	2	4
10150		LEAR	10 10 0050	S09 W07	10 9.5		A	AXX	20	2	2	3
10152		TACH	10 10 0507	N20 W06	10 9.7			BXO	5	2	2	4
10152		RAMY	10 10 1330	N20 W11	10 9.7		B	DSO	10	2	3	4
10152		HOLL	10 10 1438	N21 W11	10 9.8		B	CAO	20	3	5	4
10152	31472	MWIL	10 10 1500	N20 W11	10 9.8	4	(B)					
10152		LEAR	10 11 0045	N20 W17	10 9.7		B	DRO	10	2	6	2
10152		VORO	10 11 0313	N20 W16	10 9.9			AXX	5	2		3
10142	31458	MWIL	10 04 1515	N06 E85	10 11.0	4	AP					
10142		VORO	10 04 2317	N07 E78	10 10.8			AXX	26	1		3
10142		TACH	10 05 0448	N06 E74	10 10.7			AXX	18	1	1	3
10142		RAMY	10 05 1215	N08 E71	10 10.8		A	AXX	20	1	1	3
10142		HOLL	10 05 1425	N07 E69	10 10.8		A	AXX	10	1	1	4
10142	31458	MWIL	10 05 1515	N06 E68	10 10.7	4	(AP)					
10142		LEAR	10 06 0205	N05 E61	10 10.6		A	AXX	10	1		2
10142		TACH	10 06 0725	N05 E58	10 10.6			AXX	14	1	1	4
10142		RAMY	10 06 1115	N06 E58	10 10.8		B	CSO	20	2	5	3
10142	31458	MWIL	10 06 1445	N06 E54	10 10.6	4	(AP)					
10142		SVTO	10 06 1510	N05 E55	10 10.7		A	HSX	10	1	1	2
10142		HOLL	10 06 1641	N06 E53	10 10.7		A	HSX	30	1	1	2
10142		VORO	10 06 2223	N06 E49	10 10.6			HRX	17	1		3
10142		LEAR	10 07 0028	N05 E48	10 10.6		A	HSX	40	1	1	4
10142		TACH	10 07 0612	N06 E45	10 10.6			AXX	14	1	1	2
10142		SVTO	10 07 1051	N05 E43	10 10.7		A	HSX	10	1	1	2
10142		RAMY	10 07 1112	N06 E42	10 10.6		A	HRX	10	1	1	3
10142	31458	MWIL	10 07 1500	N05 E40	10 10.6	5	(AP)					
10142		LEAR	10 08 0020	N05 E34	10 10.5		A	HSX	20	1	1	2
10142		TACH	10 08 0525	N05 E31	10 10.5			AR	19	3	2	3
10142		SVTO	10 08 0551	N05 E32	10 10.6		A	HSX	20	1	1	3
10142		RAMY	10 08 1113	N04 E28	10 10.6		B	CSO	20	2	3	4
10142	31458	MWIL	10 08 1515	N05 E27	10 10.6	5	(BP)					
10142		HOLL	10 08 2135	N04 E23	10 10.6		A	HAX	20	3	2	3
10142		VORO	10 09 0218	N05 E19	10 10.5			HRX	14	1		3
10142		TACH	10 09 0423	N04 E19	10 10.6			AXX	13	1	1	4
10142		LEAR	10 09 0839	N04 E21	10 10.9		A	HSX	10	1	1	3
10142		SVTO	10 09 0912	N05 E16	10 10.6		A	HSX	20	1	1	2
10142		RAMY	10 09 1009	N04 E14	10 10.5		A	HSX	10	1	1	3
10142		HOLL	10 09 1448	N04 E12	10 10.5		A	HAX	20	1	1	4
10142	31458	MWIL	10 09 1515	N04 E12	10 10.5	5	(AP)					
10142		LEAR	10 10 0050	N04 E06	10 10.5		A	HSX	20	1	1	3
10142		TACH	10 10 0507	N03 E05	10 10.6			AXX	5	1	1	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10142		RAMY	10	10	1330	N04	W01	10	10.5		A	HSX	10	1	1	4
10142		HOLL	10	10	1438	N04	W01	10	10.5		A	AXX	10	1	1	4
10142	31458	MWIL	10	10	1500	N04	W02	10	10.5	4	(AP)					
10142		LEAR	10	11	0045	N05	W05	10	10.6		B	BXO	10	4	5	2
10142		VORO	10	11	0313	N07	W03	10	10.9			ARX	9	3	1	3
10142		TACH	10	11	0652	N06	W06	10	10.8			BXO	3	2	2	4
10142		HOLL	10	11	1457	N05	W12	10	10.7		A	AXX		1		3
10140		HOLL	10	04	1418	S07	E81	10	10.7		A	HAX	90	1	2	2
10140	31459	MWIL	10	04	1515	S08	E86	10	11.1	4	AP					
10140		VORO	10	04	2317	S08	E79	10	10.9			HRX	129	1		3
10140		LEAR	10	05	0120	S13	E76	10	10.8		A	HKX	60	1	4	2
10140		TACH	10	05	0448	S08	E75	10	10.8			HSX	253	1	3	3
10140		RAMY	10	05	1215	S05	E68	10	10.6		B	CAO	230	2	5	3
10140		HOLL	10	05	1425	S06	E66	10	10.5		B	CKO	320	7	12	4
10140	31459	MWIL	10	05	1515	S08	E67	10	10.6	5	(AP)					
10140		LEAR	10	06	0205	S09	E60	10	10.6		B	DAO	160	3	8	2
10140		TACH	10	06	0725	S08	E58	10	10.6			CSO	235	4	10	4
10140		RAMY	10	06	1115	S07	E56	10	10.7		B	CSO	150	8	13	3
10140	31463	MWIL	10	06	1445	S08	E50	10	10.4	4	(B)					
10140	31459	MWIL	10	06	1445	S08	E57	10	10.9	5	(AP)					
10140		SVTO	10	06	1510	S07	E57	10	10.9		A	HSX	110	1	2	2
10140		HOLL	10	06	1641	S07	E53	10	10.7		B	CKO	190	7	12	2
10140		VORO	10	06	2223	S07	E52	10	10.8			HHX	242	1		3
10140		LEAR	10	07	0028	S09	E48	10	10.6		B	DSO	230	6	10	4
10140		TACH	10	07	0612	S08	E44	10	10.5			CSI	201	4	9	2
10140		SVTO	10	07	1051	S07	E43	10	10.7		B	CSO	140	4	12	2
10140		RAMY	10	07	1112	S08	E44	10	10.8		B	ESO	200	6	12	3
10140	31463	MWIL	10	07	1500	S08	E37	10	10.4	4	(B)					
10140	31459	MWIL	10	07	1500	S08	E44	10	10.9	5	(AP)					
10140		LEAR	10	08	0020	S09	E34	10	10.6		B	DAO	190	6	10	2
10140		TACH	10	08	0525	S07	E31	10	10.5			CSO	194	2	9	3
10140		SVTO	10	08	0551	S08	E37	10	11.0		A	HSX	140	1	4	3
10140		RAMY	10	08	1113	S08	E28	10	10.6		B	ESO	190	7	11	4
10140	31463	MWIL	10	08	1515	S08	E25	10	10.5	4	(B)					
10140	31459	MWIL	10	08	1515	S08	E31	10	10.9	5	(AP)					
10140		HOLL	10	08	2135	S08	E23	10	10.6		B	CHO	80	12	11	3
10140		VORO	10	09	0218	S07	E25	10	11.0			HHX	203	1		3
10140		LEAR	10	09	0839	S10	E24	10	11.2		B	CSO	170	4	6	3
10140		SVTO	10	09	0912	S08	E22	10	11.0		A	HSX	200	1	2	2
10140		RAMY	10	09	1009	S09	E19	10	10.8		B	CAO	220	5	7	3
10140		HOLL	10	09	1448	S09	E15	10	10.7		B	CHO	180	17	11	4
10140	31459	MWIL	10	09	1515	S08	E19	10	11.0	5	(AP)					
10140	31463	MWIL	10	09	1515	S10	E12	10	10.5	4	(BG)					
10140		VORO	10	09	2227	S07	E14	10	11.0			HHX	180	1		3
10140		LEAR	10	10	0050	S10	E13	10	11.0		B	CAO	160	10	8	3
10140		TACH	10	10	0507	S08	E04	10	10.5			BXI	3	3	5	4
10140		RAMY	10	10	1330	S11	E05	10	10.9		B	CHO	210	12	10	4
10140		HOLL	10	10	1438	S08	E05	10	11.0		B	CHO	220	26	10	4
10140	31459	MWIL	10	10	1500	S09	E06	10	11.1	5	(BG)					
10140		LEAR	10	11	0045	S08	E02	10	11.2		B	CSO	170	5	5	2
10140		VORO	10	11	0313	S07	W02	10	11.0			HAX	192	1		3
10140		SVTO	10	11	0924	S08	W03	10	11.2		B	CSO	190	2	5	2
10140		RAMY	10	11	1240	S08	W08	10	10.9		B	CSO	150	2	3	2
10140		HOLL	10	11	1457	S08	W07	10	11.1		B	CKO	200	6	5	3
10140		VORO	10	11	2335	S07	W14	10	10.9			CAI	188	4	3	3
10140		LEAR	10	12	0010	S08	W14	10	10.9		A	HSX	160	3	3	2
10140		SVTO	10	12	0610	S09	W16	10	11.0		A	HSX	200	1	3	3
10140		RAMY	10	12	1207	S08	W19	10	11.1		B	CSO	200	3	5	3
10140		VORO	10	12	2307	S08	W25	10	11.1			HAX	162	1		3
10140		LEAR	10	13	0035	S07	W27	10	11.0		A	HSX	170	1	2	2
10140		SVTO	10	13	0710	S09	W31	10	11.0		A	HSX	230	1	4	3
10140		RAMY	10	13	1400	S09	W34	10	11.0		A	HSX	170	1	2	2
10140		VORO	10	13	2230	S07	W39	10	11.0			HHX	177	1		3
10140		LEAR	10	14	0010	S07	W40	10	11.0		A	HSX	170	1	2	3
10140		SVTO	10	14	0625	S10	W43	10	11.0		A	HSX	150	1	3	3
10140		RAMY	10	14	1145	S09	W47	10	11.0		B	CSO	220	2	3	4
10140	31459	MWIL	10	14	1530	S08	W47	10	11.1	5	(AP)					
10140		HOLL	10	14	1700	S08	W49	10	11.0		B	CAO	150	6	5	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10140		LEAR	10	15	0040	S07	W54	10	11.0		A	HSX	140	1	2	3
10140		VORO	10	15	0606	S07	W56	10	11.0			HKX	186	3		3
10140		SVTO	10	15	0638	S12	W57	10	11.0		A	HSX	110	1	2	2
10140		RAMY	10	15	1205	S10	W61	10	10.9		A	HSX	140	1	2	3
10140	31459	MWIL	10	15	1515	S08	W61	10	11.1	5	(AP)					
10140		HOLL	10	15	1633	S08	W62	10	11.0		A	HSX	130	2	2	2
10140		VORO	10	15	2248	S07	W64	10	11.1			HAX	133	1		3
10140		LEAR	10	16	0010	S07	W66	10	11.1		A	HAX	140	2	2	4
10140		TACH	10	16	0417	S07	W68	10	11.1			HSX	70	1	1	4
10140		SVTO	10	16	0605	S13	W71	10	10.9		A	HSX	120	1	3	2
10140		RAMY	10	16	1220	S09	W73	10	11.0		A	HSX	180	2	2	3
10140		HOLL	10	16	1500	S08	W73	10	11.1		A	HAX	120	2	2	3
10140	31459	MWIL	10	16	1500	S08	W74	10	11.1	5	(AP)					
10140		VORO	10	16	2258	S08	W78	10	11.1			HRX	43	1		3
10140		LEAR	10	17	0015	S07	W82	10	10.9		A	HAX	60	1	2	3
10140		SVTO	10	17	0815	S12	W89	10	10.6		A	HSX	10	1	1	3
10144		TACH	10	07	0612	N11	E53	10	11.2			AXX	4	1	1	2
10144		RAMY	10	07	1112	N12	E51	10	11.3		B	CRO	20	8	4	3
10144	31465	MWIL	10	07	1500	N12	E48	10	11.2	5	(BP)					
10144		LEAR	10	08	0020	N11	E43	10	11.2		B	DAO	70	11	6	2
10144		TACH	10	08	0525	N11	E40	10	11.2			CSI	73	7	6	3
10144		SVTO	10	08	0551	N12	E39	10	11.2		B	DSO	60	5	5	3
10144		RAMY	10	08	1113	N12	E37	10	11.2		B	DAO	100	7	6	4
10144	31465	MWIL	10	08	1515	N12	E35	10	11.3	5	(BP)					
10144		HOLL	10	08	2135	N12	E32	10	11.3		B	DAO	130	14	7	3
10144		VORO	10	09	0218	N13	E27	10	11.1			CAI	101	8	5	3
10144		TACH	10	09	0423	N12	E28	10	11.3			CAI	62	6	5	4
10144		LEAR	10	09	0839	N11	E29	10	11.5		B	DAO	90	11	5	3
10144		SVTO	10	09	0912	N13	E23	10	11.1		B	DAO	70	4	7	2
10144		RAMY	10	09	1009	N12	E23	10	11.1		B	DSO	140	11	7	3
10144		HOLL	10	09	1448	N12	E21	10	11.2		B	DAO	110	15	7	4
10144	31465	MWIL	10	09	1515	N12	E21	10	11.2	5	(B)					
10144		VORO	10	09	2227	N12	E16	10	11.1			DAI	163	19	6	3
10144		LEAR	10	10	0050	N12	E17	10	11.3		B	DAO	110	10	7	3
10144		TACH	10	10	0507	N11	E13	10	11.2			CAI	79	13	2	4
10144		RAMY	10	10	1330	N12	E08	10	11.2		B	DAI	170	31	7	4
10144		HOLL	10	10	1438	N12	E08	10	11.2		B	DAI	100	20	7	4
10144	31465	MWIL	10	10	1500	N13	E07	10	11.1	5	(B)					
10144		LEAR	10	11	0045	N12	E03	10	11.2		B	DSO	130	13	8	2
10144		VORO	10	11	0313	N12	E01	10	11.2			DAI	214	17	6	3
10144		TACH	10	11	0652	N12	W03	10	11.1			DAO	166	4	5	4
10144		SVTO	10	11	0924	N11	W03	10	11.2		B	DSO	120	3	7	2
10144		RAMY	10	11	1240	N12	W05	10	11.1		B	DSO	100	8	8	2
10144		HOLL	10	11	1457	N12	W04	10	11.3		B	DAI	110	19	7	3
10144		VORO	10	11	2335	N12	W10	10	11.2			DAI	140	13	6	3
10144		LEAR	10	12	0010	N12	W10	10	11.2		B	DSO	100	7	7	2
10144		SVTO	10	12	0610	N11	W15	10	11.1		B	DAO	130	13	8	3
10144		TACH	10	12	0614	N12	W14	10	11.2			CAI	83	11	6	4
10144		RAMY	10	12	1207	N12	W18	10	11.1		B	DSO	100	7	8	3
10144		LEAR	10	13	0035	N12	W23	10	11.3		B	DSO	80	3	7	2
10144		SVTO	10	13	0710	N11	W29	10	11.1		B	CSO	90	4	8	3
10144		RAMY	10	13	1400	N11	W33	10	11.1		B	DSO	100	4	8	2
10144		VORO	10	13	2230	N12	W36	10	11.2			CHI	121	2	6	3
10144		LEAR	10	14	0010	N13	W40	10	11.0		A	HSX	100	1	2	3
10144		SVTO	10	14	0625	N09	W45	10	10.9		A	HSX	80	1	2	3
10144		RAMY	10	14	1145	N10	W48	10	10.9		A	HSX	110	1	2	4
10144	31465	MWIL	10	14	1530	N13	W47	10	11.1	5	(BP)					
10144		HOLL	10	14	1700	N11	W48	10	11.1		B	CSO	90	4	8	4
10144		LEAR	10	15	0040	N13	W53	10	11.0		B	CSO	70	2	6	3
10144		VORO	10	15	0606	N13	W54	10	11.2			CAI	65	8	6	3
10144		SVTO	10	15	0638	N07	W58	10	10.9		A	HSX	30	1	1	2
10144		RAMY	10	15	1205	N11	W60	10	11.0		B	CAO	70	2	6	3
10144	31465	MWIL	10	15	1515	N12	W60	10	11.1	5	(B)					
10144		HOLL	10	15	1633	N12	W60	10	11.2		B	CSO	40	3	7	2
10144		VORO	10	15	2248	N11	W65	10	11.0			HAX	43	1		3
10144		LEAR	10	16	0010	N13	W65	10	11.1		B	CAO	50	2	7	4
10144		TACH	10	16	0417	N12	W70	10	10.9			HSX	63	1	1	4
10144		SVTO	10	16	0605	N07	W72	10	10.9		A	AXX	10	1	1	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)
OCTOBER 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
10144		RAMY	10 16	1220	N11 W74	10 10.9		A	HAX	60	1	1	3
10144		HOLL	10 16	1500	N11 W73	10 11.1		A	HSX	90	1	2	3
10144	31465	MWIL	10 16	1500	N11 W75	10 11.0	4	(AP)					
10144		VORO	10 16	2258	N11 W78	10 11.1			HRX	49	5		3
10144		LEAR	10 17	0015	N12 W80	10 11.0		A	HSX	30	1	2	3
10144A		TACH	10 10	0507	S22 E20	10 11.7			AXX	3	1	1	4
10144A		RAMY	10 10	1330	S22 E13	10 11.6		A	AXX		3	1	4
10146	31466	MWIL	10 08	1515	S10 E40	10 11.6	4	(AP)					
10146		HOLL	10 08	2135	S11 E38	10 11.7		B	BXO	30	9	4	3
10146		VORO	10 09	0218	S09 E35	10 11.7			CRI	32	7	2	3
10146		TACH	10 09	0423	S09 E30	10 11.4			DAI	192	6	12	4
10146		LEAR	10 09	0839	S10 E37	10 12.1		B	DAO	30	6	3	3
10146		SVTO	10 09	0912	S10 E32	10 11.8		B	DSO	20	2	3	2
10146		RAMY	10 09	1009	S11 E31	10 11.7		B	CAO	50	4	4	3
10146		HOLL	10 09	1448	S10 E28	10 11.7		B	CAO	70	11	6	4
10146	31466	MWIL	10 09	1515	S10 E28	10 11.7	4	(B)					
10146		VORO	10 09	2227	S09 E24	10 11.7			CRI	33	6	3	3
10146		LEAR	10 10	0050	S11 E23	10 11.8		B	DAO	50	4	5	3
10146		TACH	10 10	0507	S09 E18	10 11.6			CSI	174	7	3	4
10146		RAMY	10 10	1330	S10 E16	10 11.8		B	DAO	20	5	5	4
10146		HOLL	10 10	1438	S10 E15	10 11.7		B	DAO	40	9	6	4
10146	31466	MWIL	10 10	1500	S09 E12	10 11.5	4	(B)					
10146		LEAR	10 11	0045	S09 E08	10 11.6		A	HSX	20	1	1	2
10146		VORO	10 11	0313	S08 E04	10 11.4			BRO	11	3	4	3
10146		TACH	10 11	0652	S11 E04	10 11.6			CHI	230	4	8	4
10146		SVTO	10 11	0924	S09 E03	10 11.6		A	HRX	10	1	1	2
10146		RAMY	10 11	1240	S09 E01	10 11.6		A	HSX	20	1	1	2
10146		HOLL	10 11	1457	S09 W01	10 11.5		A	HSX	20	1	1	3
10146		VORO	10 11	2335	S09 W06	10 11.5			HAX	18	2		3
10146		LEAR	10 12	0010	S09 W06	10 11.5		A	AXX	10	2	1	2
10146		SVTO	10 12	0610	S09 W08	10 11.6		B	BXO	20	2	2	3
10146		TACH	10 12	0614	S08 W12	10 11.3			CSO	189	2	8	4
10146		RAMY	10 12	1207	S09 W12	10 11.6		A	AXX		1		3
10156		RAMY	10 10	1330	N10 E30	10 12.8		A	AXX		3	2	4
10156		HOLL	10 10	1438	N08 E29	10 12.8		B	BXO	10	3	4	4
10156	31473	MWIL	10 10	1500	N10 E29	10 12.8	3	(B)					
10156		LEAR	10 11	0045	N09 E23	10 12.7		B	BXO	10	2	3	2
10156		TACH	10 11	0652	N08 E21	10 12.9			BRO	14	3	4	4
10156		SVTO	10 11	0924	N10 E17	10 12.7		A	AXX	10	1	1	2
10156		RAMY	10 11	1240	N10 E15	10 12.6		A	HSX	10	1	1	2
10156		HOLL	10 11	1457	N09 E15	10 12.7		A	HSX	20	1	2	3
10156		LEAR	10 12	0010	N09 E08	10 12.6		A	AXX		1		2
10156		SVTO	10 12	0610	N09 E04	10 12.5		A	HRX	10	1	1	3
10156		TACH	10 12	0614	N09 E05	10 12.6			AXX	1	1	1	4
10156		RAMY	10 12	1207	N09 E02	10 12.6		A	AXX	10	1		3
10156		LEAR	10 13	0035	N09 W05	10 12.6		A	AXX		1		2
10147		VORO	10 09	0218	S02 E51	10 12.9			AXX	20	5		3
10147		RAMY	10 09	1009	S03 E47	10 12.9		B	BXO	10	3	3	3
10147		HOLL	10 09	1448	S03 E43	10 12.8		B	BXO	10	2	3	4
10147	31469	MWIL	10 09	1515	S04 E45	10 13.0	3	(B)					
10147		LEAR	10 10	0050	S04 E39	10 12.9		B	BXO	20	2	3	3
10147		TACH	10 10	0507	S03 E38	10 13.0			AXX	3	1	1	4
10151	31467	MWIL	10 08	1515	S15 E69	10 13.8	4	(AP)					
10151		HOLL	10 08	2135	S15 E64	10 13.7		A	AXX	10	2	1	3
10151		LEAR	10 09	0839	S15 E61	10 14.0		A	AXX	10	1		3
10151		HOLL	10 09	1448	S13 E52	10 13.5		A	AXX	10	1	1	4
10151	31483	MWIL	10 17	1515	S14 W54	10 13.5	4	(AP)					
10151		LEAR	10 18	0015	S13 W58	10 13.6		A	AXX	10	1	1	3
10151A		LEAR	10 10	0050	S04 E59	10 14.4		A	HAX	20	1	1	3
10151A		TACH	10 10	0507	S04 E59	10 14.6			AXX	2	1	1	4
10151A		HOLL	10 10	1438	S05 E52	10 14.5		A	AXX	10	1	1	4
10151A	31469A	MWIL	10 10	1500	S04 E51	10 14.4	3	(AP)					
10145		TACH	10 08	0525	N12 E83	10 14.5			HSX	113	1	1	3

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

OCTOBER 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
10145		SVTO	10	08	0551	N12 E85	10	14.6		A	HSX	10	1	1	3
10145		RAMY	10	08	1113	N12 E80	10	14.5		A	HSX	60	1	2	4
10145	31468	MWIL	10	08	1515	N12 E79	10	14.6	4	(AP)					
10145		HOLL	10	08	2135	N12 E74	10	14.5		A	HSX	90	1	2	3
10145		VORO	10	09	0218	N13 E73	10	14.6			HAX	80	1		3
10145		TACH	10	09	0423	N12 E73	10	14.7			HSX	83	1	2	4
10145		LEAR	10	09	0839	N11 E74	10	14.9		A	HAX	90	1	2	3
10145		SVTO	10	09	0912	N13 E70	10	14.7		A	HSX	100	1	2	2
10145		RAMY	10	09	1009	N11 E67	10	14.5		A	HSX	80	1	4	3
10145		HOLL	10	09	1448	N11 E66	10	14.6		A	HAX	100	1	1	4
10145	31468	MWIL	10	09	1515	N12 E66	10	14.6	5	(AP)					
10145		VORO	10	09	2227	N12 E61	10	14.5			HAX	82	1		3
10145		LEAR	10	10	0050	N11 E60	10	14.5		A	HAX	60	1	2	3
10145		TACH	10	10	0507	N11 E59	10	14.6			HSX	96	1	1	4
10145		RAMY	10	10	1330	N14 E56	10	14.8		A	CSO	80	3	6	4
10145		HOLL	10	10	1438	N11 E52	10	14.5		A	HSX	60	1	2	4
10145	31468	MWIL	10	10	1500	N12 E52	10	14.5	5	(AP)					
10145	31474	MWIL	10	10	1500	N15 E50	10	14.4	3	B					
10145		LEAR	10	11	0045	N11 E48	10	14.6		A	HSX	60	1	2	2
10145		VORO	10	11	0313	N12 E45	10	14.5			HAX	78	1		3
10145		TACH	10	11	0652	N12 E45	10	14.7			HSX	85	1	2	4
10145		SVTO	10	11	0924	N13 E42	10	14.6		A	HSX	50	1	2	2
10145		RAMY	10	11	1240	N12 E40	10	14.5		A	HSX	50	1	1	2
10145		HOLL	10	11	1457	N14 E41	10	14.7		B	CAO	100	3	6	3
10145		VORO	10	11	2335	N12 E34	10	14.5			HAX	96	1		3
10145		LEAR	10	12	0010	N11 E34	10	14.6		A	HSX	70	1	2	2
10145		SVTO	10	12	0610	N13 E31	10	14.6		A	HSX	90	1	2	3
10145		TACH	10	12	0614	N15 E32	10	14.7			CSO	71	2	4	4
10145		RAMY	10	12	1207	N14 E27	10	14.5		B	DSO	90	5	6	3
10145		VORO	10	12	2307	N12 E21	10	14.5			HAX	77	1		3
10145		VORO	10	12	2307	N15 E17	10	14.2			ARX	11	1		3
10145		VORO	10	12	2307	N17 E24	10	14.8			AXX	9	2	1	3
10145		LEAR	10	13	0035	N11 E22	10	14.7		A	HSX	40	1	1	2
10145		SVTO	10	13	0710	N13 E17	10	14.6		A	HSX	60	1	3	3
10145		RAMY	10	13	1400	N13 E11	10	14.4		B	DAO	120	3	6	2
10145		VORO	10	13	2230	N12 E08	10	14.5			HHX	100	1		3
10145		VORO	10	13	2230	N15 E04	10	14.2			AXX	6	2		3
10145		LEAR	10	14	0010	N12 E07	10	14.5		A	HSX	80	1	2	3
10145		SVTO	10	14	0625	N12 E04	10	14.6		A	HSX	100	1	2	3
10145		RAMY	10	14	1145	N13 E00	10	14.5		B	CSO	90	5	8	4
10145	31468	MWIL	10	14	1530	N11 W00	10	14.6	5	(BP)					
10145	31474	MWIL	10	14	1530	N14 W04	10	14.3	4	(B)					
10145		HOLL	10	14	1700	N11 W02	10	14.5		A	HAX	100	6	3	4
10145		LEAR	10	15	0040	N12 W06	10	14.6		B	CSO	100	10	3	3
10145		VORO	10	15	0606	N12 W08	10	14.6			HAX	85	5		3
10145		SVTO	10	15	0638	N11 W09	10	14.6		A	HSX	40	1	2	2
10145		RAMY	10	15	1205	N11 W12	10	14.6		B	CSO	60	6	3	3
10145	31468	MWIL	10	15	1515	N11 W13	10	14.6	5	(BP)					
10145		HOLL	10	15	1633	N11 W13	10	14.7		B	CSO	70	6	5	2
10145		VORO	10	15	2248	N11 W18	10	14.6			HAX	56	1		3
10145		LEAR	10	16	0010	N15 W18	10	14.6		B	CSO	80	8	8	4
10145		TACH	10	16	0417	N12 W19	10	14.7			HA	162	3	3	4
10145		SVTO	10	16	0605	N09 W23	10	14.5		A	HSX	40	1	2	2
10145		RAMY	10	16	1220	N12 W25	10	14.6		A	HSX	90	2	2	3
10145		HOLL	10	16	1500	N11 W27	10	14.6		A	HAX	110	2	2	3
10145	31468	MWIL	10	16	1500	N12 W27	10	14.6	5	(BP)					
10145		VORO	10	16	2258	N11 W31	10	14.6			HSX	91	8		3
10145		LEAR	10	17	0015	N12 W32	10	14.6		B	CSO	90	6	5	3
10145		SVTO	10	17	0815	N08 W38	10	14.5		A	HSX	70	1	2	3
10145		RAMY	10	17	1112	N11 W39	10	14.5		A	HSX	50	1	2	3
10145	31468	MWIL	10	17	1515	N12 W40	10	14.6	5	(AP)					
10145		LEAR	10	18	0015	N13 W46	10	14.5		B	CSO	100	4	4	3
10145		TACH	10	18	0632	N11 W49	10	14.6			HA	84	3	2	3
10145		SVTO	10	18	0804	N07 W51	10	14.5		A	HSX	60	1	2	2
10145		RAMY	10	18	1205	N11 W53	10	14.5		A	HSX	60	1	2	3
10145	31468	MWIL	10	18	1530	N12 W54	10	14.6	5	(BP)					
10145		HOLL	10	18	1810	N12 W57	10	14.5		A	HAX	70	1	1	4
10145		VORO	10	18	2248	N11 W57	10	14.7			HAX	84	1		3
10145		LEAR	10	19	0015	N12 W59	10	14.6		A	HSX	60	1	2	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10145		TACH	10	19	0551	N10	W62	10	14.6			HSX	104	1	1	2
10145		SVTO	10	19	0814	N11	W65	10	14.4		A	HSX	40	1	1	3
10145		RAMY	10	19	1204	N11	W67	10	14.5		A	HSX	80	1	2	3
10145		HOLL	10	19	1510	N12	W68	10	14.5		A	HAX	90	1	2	3
10145	31468	MWIL	10	19	1615	N11	W67	10	14.6	5	(AP)					
10145		VORO	10	19	2253	N11	W70	10	14.7			HRX	65	1		3
10145		LEAR	10	20	0020	N12	W72	10	14.6		A	HSX	60	1	1	5
10145		TACH	10	20	0533	N12	W77	10	14.4			HSX	64	1	2	4
10145		SVTO	10	20	0636	N10	W74	10	14.7		A	HSX	60	1	2	3
10145		RAMY	10	20	1220	N11	W80	10	14.5		A	HSX	60	1	1	3
10145	31468	MWIL	10	20	1600	N11	W80	10	14.6	4	(AP)					
10148		RAMY	10	09	1009	S21	E80	10	15.5		A	HSX	30	1	1	3
10148		HOLL	10	09	1448	S21	E73	10	15.2		A	HAX	60	1	1	4
10148	31470	MWIL	10	09	1515	S21	E74	10	15.3	4	(AP)					
10148		VORO	10	09	2227	S20	E68	10	15.1			HRX	45	1		3
10148		LEAR	10	10	0050	S22	E68	10	15.3		A	HAX	40	1	2	3
10148		TACH	10	10	0507	S21	E68	10	15.4			HSX	40	1	1	4
10148		RAMY	10	10	1330	S20	E63	10	15.4		A	HSX	80	2	2	4
10148		HOLL	10	10	1438	S21	E61	10	15.3		A	HAX	80	2	1	4
10148	31470	MWIL	10	10	1500	S21	E59	10	15.1	4	(AP)					
10148		LEAR	10	11	0045	S21	E55	10	15.2		A	HSX	40	1	2	2
10148		VORO	10	11	0313	S20	E54	10	15.3			HAX	52	3		3
10148		TACH	10	11	0652	S20	E53	10	15.3			HSX	53	1	1	4
10148		SVTO	10	11	0924	S19	E52	10	15.3		A	HSX	20	1	2	2
10148		RAMY	10	11	1240	S20	E49	10	15.3		A	HSX	30	1	1	2
10148		HOLL	10	11	1457	S20	E47	10	15.2		A	HAX	60	1	2	3
10148		VORO	10	11	2335	S20	E42	10	15.2			HAX	85	3		3
10148		LEAR	10	12	0010	S21	E42	10	15.2		A	HSX	60	1	2	2
10148		SVTO	10	12	0610	S19	E41	10	15.4		A	HSX	80	1	2	3
10148		TACH	10	12	0614	S19	E39	10	15.2			HSX	51	1	1	4
10148		RAMY	10	12	1207	S20	E37	10	15.3		B	CSO	50	2	3	3
10148		VORO	10	12	2307	S20	E29	10	15.2			HAX	60	2		3
10148		LEAR	10	13	0035	S21	E28	10	15.2		A	HSX	40	2	1	2
10148		SVTO	10	13	0710	S19	E27	10	15.3		B	CSO	20	2	1	3
10148		RAMY	10	13	1400	S20	E22	10	15.3		A	HSX	40	2	2	2
10148		VORO	10	13	2230	S19	E17	10	15.2			HRX	35	3		3
10148		LEAR	10	14	0010	S20	E16	10	15.2		A	HSX	20	2	1	3
10148		SVTO	10	14	0625	S19	E14	10	15.3		BG	KX	20	1	1	3
10148		RAMY	10	14	1145	S20	E11	10	15.3		A	HSX	10	1	1	4
10148	31470	MWIL	10	14	1530	S20	E08	10	15.2	5	(BP)					
10148		HOLL	10	14	1700	S20	E08	10	15.3		A	HSX	40	1	2	4
10148		LEAR	10	15	0040	S20	E03	10	15.2		A	HRX	10	1	1	3
10148		VORO	10	15	0606	S19	E01	10	15.3			HRX	19	1		3
10148		SVTO	10	15	0638	S21	E03	10	15.5		A	HRX	20	1	1	2
10148		RAMY	10	15	1205	S20	W02	10	15.3		A	HSX	20	1	1	3
10148	31470	MWIL	10	15	1515	S20	W03	10	15.4	5	(BP)					
10148		HOLL	10	15	1633	S20	W05	10	15.3		A	HSX	20	1	1	2
10148		VORO	10	15	2248	S19	W08	10	15.3			HRX	15	1		3
10148		LEAR	10	16	0010	S20	W10	10	15.2		A	HSX	20	1	1	4
10148		TACH	10	16	0417	S19	W11	10	15.3			AXX	23	1	1	4
10148		SVTO	10	16	0605	S21	W11	10	15.4		A	AXX		1		2
10148		RAMY	10	16	1220	S20	W17	10	15.2		A	HAX	30	1	1	3
10148		HOLL	10	16	1500	S19	W15	10	15.5		B	CSO	30	7	4	3
10148	31470	MWIL	10	16	1500	S20	W16	10	15.4	5	(AP)					
10148		VORO	10	16	2258	S19	W21	10	15.3			HRX	13	5		3
10148		LEAR	10	17	0015	S20	W22	10	15.3		A	HSX	20	1	1	3
10148		SVTO	10	17	0815	S22	W25	10	15.4		A	HRX	20	1	1	3
10148		RAMY	10	17	1112	S20	W28	10	15.3		A	HSX	10	1	1	3
10148	31470	MWIL	10	17	1515	S20	W30	10	15.3	4	(AP)					
10148		LEAR	10	18	0015	S19	W35	10	15.3		A	HRX	10	1	1	3
10148		TACH	10	18	0632	S20	W36	10	15.5			AXX	7	1	1	3
10148		SVTO	10	18	0804	S23	W37	10	15.5		A	AXX		1		2
10148		RAMY	10	18	1205	S21	W42	10	15.3		A	HSX	10	1	1	3
10148	31470	MWIL	10	18	1530	S20	W43	10	15.3	5	(BP)					
10148		HOLL	10	18	1810	S20	W43	10	15.5		A	AXX	10	1	1	4
10148		VORO	10	18	2248	S20	W46	10	15.4			HRX	13	2		3
10148		LEAR	10	19	0015	S20	W48	10	15.3		A	HRX	20	1	1	4
10148		TACH	10	19	0551	S21	W50	10	15.4			AXX	9	1	1	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10148		SVTO	10	19	0814	S22	W54	10	15.2		A	AXX		1		3
10148		RAMY	10	19	1204	S22	W55	10	15.3		A	HSX	20	1	1	3
10148		HOLL	10	19	1510	S20	W55	10	15.4		A	AXX	10	1	1	3
10148	31470	MWIL	10	19	1615	S21	W57	10	15.3	4	(AP)					
10149		HOLL	10	08	2135	N16	E82	10	15.1		A	HSX	120	1	2	3
10149		VORO	10	09	0218	N17	E81	10	15.2			HRX	122	1		3
10149		TACH	10	09	0423	N16	E84	10	15.5			HSX	378	1	4	4
10149		LEAR	10	09	0839	N16	E81	10	15.5		A	HSX	140	1	2	3
10149		SVTO	10	09	0912	N17	E79	10	15.4		A	HSX	120	1	2	2
10149		RAMY	10	09	1009	N16	E79	10	15.4		A	HAX	80	2	4	3
10149		HOLL	10	09	1448	N17	E77	10	15.5		B	CAO	190	5	8	4
10149	31471	MWIL	10	09	1515	N16	E75	10	15.3	5	(BP)					
10149		VORO	10	09	2227	N17	E70	10	15.2			HAX	142	3		3
10149		LEAR	10	10	0050	N16	E74	10	15.6		B	DAO	140	4	9	3
10149		TACH	10	10	0507	N16	E67	10	15.3			HA	200	4	3	4
10149		RAMY	10	10	1330	N16	E66	10	15.6		B	DAO	190	9	7	4
10149		HOLL	10	10	1438	N16	E65	10	15.5		B	DAO	170	8	8	4
10149	31471	MWIL	10	10	1500	N16	E63	10	15.4	5	(B)					
10149		LEAR	10	11	0045	N15	E60	10	15.6		B	CSO	140	7	9	2
10149		VORO	10	11	0313	N16	E58	10	15.5			CAI	247	11	6	3
10149		TACH	10	11	0652	N15	E54	10	15.4			CAI	145	6	11	4
10149		SVTO	10	11	0924	N16	E55	10	15.6		B	DSI	240	13	9	2
10149		RAMY	10	11	1240	N15	E53	10	15.5		B	DSO	240	5	7	2
10149		HOLL	10	11	1457	N15	E52	10	15.5		B	DAI	240	19	8	3
10149		VORO	10	11	2335	N13	E47	10	15.5			DAI	60	10	6	3
10149		VORO	10	11	2335	N16	E46	10	15.5			CAI	196	9	4	3
10149		LEAR	10	12	0010	N14	E45	10	15.4		B	DAI	360	15	10	2
10149		SVTO	10	12	0610	N17	E43	10	15.5		B	DAO	390	9	8	3
10149		TACH	10	12	0614	N15	E49	10	16.0			EAI	430	11	16	4
10149		RAMY	10	12	1207	N15	E40	10	15.5		B	DAI	440	14	10	3
10149		VORO	10	12	2307	N12	E33	10	15.4			DAI	122	13	6	3
10149		VORO	10	12	2307	N14	E34	10	15.5			DAI	282	14	6	3
10149		LEAR	10	13	0035	N14	E33	10	15.5		B	DAI	380	25	10	2
10149		SVTO	10	13	0710	N17	E29	10	15.5		B	ESO	390	15	13	3
10149		RAMY	10	13	1400	N17	E25	10	15.5		B	DHI	470	37	10	2
10149		VORO	10	13	2230	N13	E19	10	15.4			DAI	162	14	7	3
10149		VORO	10	13	2230	N15	E22	10	15.6			DHI	217	14	6	3
10149		LEAR	10	14	0010	N13	E19	10	15.4		B	DSO	430	21	9	3
10149		SVTO	10	14	0625	N15	E16	10	15.5		B	ESO	400	15	11	3
10149		RAMY	10	14	1145	N16	E12	10	15.4		BG	ESI	500	35	11	4
10149	31471	MWIL	10	14	1530	N14	E11	10	15.5	6	(BG)					
10149		HOLL	10	14	1700	N13	E09	10	15.4		BG	EKI	430	45	11	4
10149		LEAR	10	15	0040	N16	E06	10	15.5		BG	EAI	450	37	12	3
10149		VORO	10	15	0606	N14	E03	10	15.5			DAI	241	11	8	3
10149		VORO	10	15	0606	N16	E02	10	15.4			HAX	183	11		3
10149		SVTO	10	15	0638	N16	E02	10	15.4		B	EAO	460	16	14	2
10149		RAMY	10	15	1205	N16	W02	10	15.3		B	EAI	480	28	11	3
10149	31471	MWIL	10	15	1515	N14	W03	10	15.4	5	(BP)					
10149	31479	MWIL	10	15	1515	N19	W04	10	15.3	4	(B)					
10149		HOLL	10	15	1633	N17	W03	10	15.5		BG	EKC	400	39	12	2
10149		VORO	10	15	2248	N13	W07	10	15.4			DKI	201	11	8	3
10149		VORO	10	15	2248	N15	W08	10	15.3			HKX	189	9		3
10149		LEAR	10	16	0010	N16	W07	10	15.5		BG	EAI	550	48	12	4
10149		TACH	10	16	0417	N16	W09	10	15.5			DAI	540	20	9	4
10149		SVTO	10	16	0605	N15	W13	10	15.3		B	EAO	320	16	11	2
10149		RAMY	10	16	1220	N18	W17	10	15.2		BG	EAI	520	28	13	3
10149	31471	MWIL	10	16	1500	N14	W16	10	15.4	6	(BG)					
10149		HOLL	10	16	1500	N14	W17	10	15.3		BG	EKC	440	31	12	3
10149	31479	MWIL	10	16	1500	N19	W17	10	15.3	4	(BP)					
10149		VORO	10	16	2258	N13	W20	10	15.4			DKI	200	32	8	3
10149		VORO	10	16	2258	N15	W21	10	15.4			HKX	214	21		3
10149		LEAR	10	17	0015	N16	W21	10	15.4		BG	EAI	420	41	13	3
10149		SVTO	10	17	0815	N14	W26	10	15.4		B	ESO	390	19	15	3
10149		RAMY	10	17	1112	N16	W27	10	15.4		BG	DKI	390	26	11	3
10149	31471	MWIL	10	17	1515	N14	W29	10	15.4	5	(BP)					
10149	31479	MWIL	10	17	1515	N19	W31	10	15.3	4	(B)					
10149		LEAR	10	18	0015	N15	W35	10	15.4		B	EAI	440	27	11	3
10149		TACH	10	18	0632	N15	W38	10	15.4			DAI	344	12	9	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10149		SVTO	10	18	0804	N11	W41	10	15.2		B	DAO	260	10	6	2
10149		RAMY	10	18	1205	N14	W43	10	15.2		BG	DAO	450	11	10	3
10149	31471	MWIL	10	18	1530	N15	W44	10	15.3	5	(BG)					
10149	31479	MWIL	10	18	1530	N19	W42	10	15.4	4	(B)					
10149		HOLL	10	18	1810	N15	W46	10	15.3		BG	DKC	330	15	8	4
10149		VORO	10	18	2248	N12	W46	10	15.5			CAI	210	15	8	3
10149		VORO	10	18	2248	N15	W46	10	15.5			HAX	143	3		3
10149		LEAR	10	19	0015	N15	W47	10	15.4		BG	DAO	250	19	8	4
10149		TACH	10	19	0551	N13	W50	10	15.5			DAI	289	10	9	2
10149		SVTO	10	19	0814	N13	W54	10	15.3		B	ESO	230	12	11	3
10149		RAMY	10	19	1204	N13	W57	10	15.2		BG	DAO	320	11	10	3
10149		HOLL	10	19	1510	N14	W58	10	15.2		BG	DAC	380	13	9	3
10149	31471	MWIL	10	19	1615	N14	W58	10	15.3	5	(BG)					
10149		VORO	10	19	2253	N13	W60	10	15.4			CAI	240	7	8	3
10149		VORO	10	19	2253	N16	W60	10	15.4			HAX	134	10		3
10149		LEAR	10	20	0020	N15	W61	10	15.4		BG	DSO	230	12	9	5
10149		TACH	10	20	0533	N14	W66	10	15.2			DSI	315	4	4	4
10149		SVTO	10	20	0636	N14	W65	10	15.4		B	DSO	220	7	8	3
10149		RAMY	10	20	1220	N13	W69	10	15.3		B	DAO	340	4	6	3
10149		HOLL	10	20	1545	N13	W75	10	15.0		BG	EAI	210	9	13	3
10149	31471	MWIL	10	20	1600	N14	W70	10	15.4	4	(AP)					
10149		LEAR	10	21	0010	N15	W77	10	15.2		BG	DAO	150	4	12	2
10149		SVTO	10	21	0632	N14	W79	10	15.3		A	HSX	70	2	8	3
10149		TACH	10	21	0637	N13	W79	10	15.3			DAO	425	4	5	3
10149	31471	MWIL	10	21	1500	N14	W85	10	15.2	4	(AP)					
10149		RAMY	10	21	1515	N14	W84	10	15.3		B	DAO	30	2	3	3
10161		RAMY	10	15	1205	N06	E06	10	15.9		B	BXO	10	2	3	3
10161	31480	MWIL	10	15	1515	N06	E05	10	16.0	4	(B)					
10161		HOLL	10	15	1633	N07	E03	10	15.9		B	CAO	30	4	3	2
10161		LEAR	10	16	0010	N06	W01	10	15.9		B	DRO	30	5	3	4
10161		TACH	10	16	0417	N06	W03	10	15.9			AR	4	2	3	4
10161		SVTO	10	16	0605	N05	W06	10	15.8		A	AXX		1		2
10161		RAMY	10	16	1220	N06	W07	10	16.0		B	CAO	40	5	4	3
10161		HOLL	10	16	1500	N06	W09	10	15.9		B	CSO	30	4	3	3
10161	31480	MWIL	10	16	1500	N06	W09	10	15.9	4	(B)					
10161		VORO	10	16	2258	N05	W14	10	15.9			AXX	7	6		3
10161		LEAR	10	17	0015	N07	W15	10	15.9		B	CSO	20	7	4	3
10161		LEAR	10	18	0015	N08	W28	10	15.9		B	BXO	10	2	2	3
10157		HOLL	10	11	1457	N16	E66	10	16.6		A	AXX	10	1	1	3
10157		VORO	10	11	2335	N16	E60	10	16.5			ARX	15	2		3
10157		LEAR	10	12	0010	N15	E59	10	16.5		A	HRX	10	1	1	2
10157		SVTO	10	12	0610	N18	E58	10	16.7		A	HRX		1		3
10157		RAMY	10	12	1207	N17	E56	10	16.8		B	BXO	20	4	4	3
10157		RAMY	10	13	1400	N16	E38	10	16.5		A	HSX	80	3	1	2
10157		VORO	10	13	2230	N15	E33	10	16.4			AXX	4	4		3
10157		LEAR	10	14	0010	N15	E33	10	16.5		B	CRO	10	2	1	3
10157		VORO	10	15	0606	N16	E17	10	16.5			AXX	5	6		3
10157		VORO	10	16	2258	N16	W07	10	16.4			AXX	4	5		3
10157		LEAR	10	17	0015	N16	W07	10	16.5		A	HSX	10	2	1	3
10157		RAMY	10	17	1112	N16	W13	10	16.5		B	CRO		2	3	3
10157	31484	MWIL	10	17	1515	N16	W15	10	16.5	4	(B)					
10157		TACH	10	18	0632	N20	W30	10	16.0			AR	4	2	1	3
10154		VORO	10	09	2227	S12	E79	10	15.9			HRX	35	1		3
10154		TACH	10	10	0507	S14	E78	10	16.1			HSX	145	1	2	4
10154		RAMY	10	10	1330	S13	E75	10	16.2		A	HSX	30	1	2	4
10154		HOLL	10	10	1438	S12	E71	10	15.9		A	HAX	60	2	1	4
10154	31475	MWIL	10	10	1500	S13	E81	10	16.7	3	(AP)					
10154		LEAR	10	11	0045	S14	E68	10	16.2		A	HSX	20	1	2	2
10154		VORO	10	11	0313	S12	E68	10	16.2			CAI	55	5	6	3
10154		TACH	10	11	0652	S12	E67	10	16.3			BRI	35	4	4	4
10154		SVTO	10	11	0924	S12	E62	10	16.1		B	BXO	30	2	1	2
10154		RAMY	10	11	1240	S11	E61	10	16.1		B	CSO	20	2	3	2
10154		HOLL	10	11	1457	S14	E60	10	16.1		B	CSO	50	3	3	3
10154		VORO	10	11	2335	S12	E53	10	16.0			BRO	38	6	3	3
10154		LEAR	10	12	0010	S13	E53	10	16.0		B	DSO	50	3	5	2
10154		SVTO	10	12	0610	S11	E52	10	16.2		B	CSO	50	2	3	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10154		TACH	10	12	0614	S11	E51	10	16.1			HA	43	2	2	4
10154		RAMY	10	12	1207	S11	E53	10	16.5		B	CSO	50	3	12	3
10154		VORO	10	12	2307	S12	E41	10	16.0			BRO	24	2	1	3
10154		VORO	10	12	2307	S12	E49	10	16.6			BRO	22	4	3	3
10154		LEAR	10	13	0035	S13	E45	10	16.4		B	DSO	50	6	10	2
10154		SVTO	10	13	0710	S10	E43	10	16.5		B	ESO	60	4	11	3
10154		RAMY	10	13	1400	S12	E39	10	16.5		B	ESO	60	7	11	2
10154		VORO	10	13	2230	S11	E36	10	16.6			CAI	29	5	4	3
10154		VORO	10	13	2230	S13	E28	10	16.0			HRX	19	1		3
10154		LEAR	10	14	0010	S13	E33	10	16.5		B	DAO	50	7	10	3
10154		SVTO	10	14	0625	S10	E30	10	16.5		B	ESO	20	4	11	3
10154		RAMY	10	14	1145	S12	E27	10	16.5		B	DSO	40	6	10	4
10154	31475	MWIL	10	14	1530	S12	E26	10	16.6	5	(B)					
10154		HOLL	10	14	1700	S13	E24	10	16.5		B	EAO	40	18	11	4
10154		LEAR	10	15	0040	S13	E18	10	16.4		B	CRO	30	16	12	3
10154		VORO	10	15	0606	S11	E22	10	16.9			HRX	9	1		3
10154		VORO	10	15	0606	S13	E12	10	16.1			HRX	15	2		3
10154		SVTO	10	15	0638	S13	E19	10	16.7		B	BXO	20	5	11	2
10154		RAMY	10	15	1205	S12	E14	10	16.5		B	EAO	20	6	11	3
10154	31475	MWIL	10	15	1515	S12	E12	10	16.5	4	(B)					
10154		HOLL	10	15	1633	S12	E11	10	16.5		B	CSO	30	10	11	2
10154		VORO	10	15	2248	S11	E11	10	16.8			HRX	7	1		3
10154		VORO	10	15	2248	S13	E02	10	16.1			HRX	15	1		3
10154		LEAR	10	16	0010	S12	E06	10	16.4		B	ESO	40	17	11	4
10154		TACH	10	16	0417	S12	E04	10	16.5			BRI	13	7	10	4
10154		SVTO	10	16	0605	S13	E05	10	16.6		B	BXO	10	5	10	2
10154		RAMY	10	16	1220	S13	E00	10	16.5		B	EAO	110	8	11	3
10154	31475	MWIL	10	16	1500	S12	W01	10	16.5	4	(B)					
10154		HOLL	10	16	1500	S12	W02	10	16.5		B	CSO	40	13	9	3
10154		VORO	10	16	2258	S13	W02	10	16.8			ARX	13	12		3
10154		VORO	10	16	2258	S13	W11	10	16.1			ARX	8	9		3
10154		LEAR	10	17	0015	S12	W07	10	16.5		B	EAO	50	20	12	3
10154		SVTO	10	17	0815	S12	W07	10	16.8		B	BXO	10	4	6	3
10154		RAMY	10	17	1112	S12	W12	10	16.6		B	CSO	10	7	8	3
10154	31475	MWIL	10	17	1515	S12	W13	10	16.6	4	(B)					
10154		LEAR	10	18	0015	S12	W21	10	16.4		B	ESO	50	16	12	3
10154		TACH	10	18	0632	S13	W22	10	16.6			BRI	6	6	10	3
10154		SVTO	10	18	0804	S13	W18	10	17.0		B	DRO	10	4	2	2
10154		RAMY	10	18	1205	S13	W27	10	16.5		B	ESO	50	4	11	3
10154	31475	MWIL	10	18	1530	S12	W27	10	16.6	4	(B)					
10154		HOLL	10	18	1810	S12	W26	10	16.8		B	CSO	30	3	4	4
10154		LEAR	10	19	0015	S13	W34	10	16.4		B	EAO	30	5	11	4
10154		TACH	10	19	0551	S15	W42	10	16.1			AXX	4	1	1	2
10154		RAMY	10	19	1204	S15	W44	10	16.2		A	HSX	10	1	1	3
10154		HOLL	10	19	1510	S13	W44	10	16.3		A	AXX	10	1	1	3
10154	31475	MWIL	10	19	1615	S15	W45	10	16.3	4	(AF)					
10154		VORO	10	19	2253	S14	W47	10	16.4			ARX	7	1		3
10154		LEAR	10	20	0020	S13	W49	10	16.3		A	AXX	10	1	1	5
10154		TACH	10	20	0533	S14	W53	10	16.2			AR	5	2	4	4
10154		HOLL	10	20	1545	S15	W58	10	16.3		A	AXX	10	1	1	3
10154	31475	MWIL	10	20	1600	S15	W57	10	16.3	3	(AP)					
10157A		LEAR	10	16	0010	S22	E29	10	18.2		B	BXO	10	5	3	4
10157A	31482	MWIL	10	16	1500	S20	E25	10	18.5	4	(AP)					
10157A		HOLL	10	16	1500	S21	E23	10	18.4		A	AXX	10	3	2	3
10157A		LEAR	10	17	0015	S20	E15	10	18.1		B	BXO	10	4	6	3
10157A	31482	MWIL	10	17	1515	S22	E07	10	18.2	4	(AP)					
10157A		LEAR	10	18	0015	S22	E03	10	18.2		B	CRO	20	6	5	3
10157A		TACH	10	18	0632	S21	E01	10	18.3			AR	1	2	2	3
10157A	31482	MWIL	10	18	1530	S22	W07	10	18.1	4	(AP)					
10157A		HOLL	10	18	1810	S21	W07	10	18.2		B	BXO	10	2	3	4
10157A		TACH	10	23	0435	S19	W60	10	18.6			AR	18	3	1	4
10158		SVTO	10	12	0610	S07	E87	10	18.8		A	HSX	60	1	4	3
10158		RAMY	10	12	1207	S09	E88	10	19.1		A	HSX	120	1	4	3
10158		VORO	10	12	2307	S09	E72	10	18.4			HAX	98	1		3
10158		LEAR	10	13	0035	S11	E75	10	18.7		B	DSO	90	2	6	2
10158		SVTO	10	13	0710	S08	E75	10	18.9		B	ESO	120	2	12	3
10158		RAMY	10	13	1400	S09	E67	10	18.6		A	HSX	140	1	2	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10158		VORO	10	13	2230	S09	E59	10	18.4			HAX	112	1		3
10158		LEAR	10	14	0010	S10	E57	10	18.3		A	HSX	80	1	2	3
10158		SVTO	10	14	0625	S07	E56	10	18.5		A	HSX	120	1	2	3
10158		RAMY	10	14	1145	S08	E53	10	18.5		A	HSX	130	1	3	4
10158	31476	MWIL	10	14	1530	S09	E50	10	18.4	5	(AP)					
10158		HOLL	10	14	1700	S08	E49	10	18.4		A	HAX	90	2	2	4
10158		LEAR	10	15	0040	S08	E47	10	18.5		B	CSO	60	2	8	3
10158		VORO	10	15	0606	S04	E47	10	18.8			AXX	9	2		3
10158		VORO	10	15	0606	S08	E42	10	18.4			HAX	101	1		3
10158		SVTO	10	15	0638	S04	E47	10	18.8		B	CSO	70	3	9	2
10158		RAMY	10	15	1205	S05	E42	10	18.6		B	DSO	100	3	7	3
10158	31481	MWIL	10	15	1515	S05	E42	10	18.8	4	(AP)					
10158	31476	MWIL	10	15	1515	S09	E37	10	18.4	5	(AP)					
10158		HOLL	10	15	1633	S06	E38	10	18.5		B	CSO	190	3	7	2
10158		VORO	10	15	2248	S04	E37	10	18.7			AXX	18	6		3
10158		VORO	10	15	2248	S09	E33	10	18.4			HSX	97	1		3
10158		LEAR	10	16	0010	S07	E34	10	18.5		B	CSO	120	4	7	4
10158		TACH	10	16	0417	S07	E32	10	18.6			CSO	127	3	4	4
10158		SVTO	10	16	0605	S05	E32	10	18.6		B	CSO	50	3	7	2
10158		RAMY	10	16	1220	S07	E27	10	18.5		B	DSO	200	5	6	3
10158	31481	MWIL	10	16	1500	S04	E28	10	18.7	4	(BG)					
10158		HOLL	10	16	1500	S07	E28	10	18.7		B	DAO	90	4	7	3
10158	31476	MWIL	10	16	1500	S09	E25	10	18.5	5	(AP)					
10158		VORO	10	16	2258	S04	E22	10	18.6			BRI	40	7	1	3
10158		VORO	10	16	2258	S09	E20	10	18.4			HSX	69	1		3
10158		LEAR	10	17	0015	S07	E21	10	18.6		B	DAO	120	11	8	3
10158		SVTO	10	17	0815	S04	E18	10	18.7		B	DSI	120	13	9	3
10158		RAMY	10	17	1112	S06	E17	10	18.7		B	DAO	110	16	9	3
10158	31481	MWIL	10	17	1515	S04	E14	10	18.7	5	(B)					
10158	31476	MWIL	10	17	1515	S09	E12	10	18.5	5	(AP)					
10158		LEAR	10	18	0015	S06	E09	10	18.7		BG	DAI	160	20	9	3
10158		TACH	10	18	0632	S06	E03	10	18.5			CSI	107	9	6	3
10158		SVTO	10	18	0804	S06	E04	10	18.6		B	DSO	110	10	7	2
10158		RAMY	10	18	1205	S06	E02	10	18.6		BG	DAI	110	13	6	3
10158	31481	MWIL	10	18	1530	S04	E00	10	18.6	5	(BG)					
10158	31476	MWIL	10	18	1530	S09	W02	10	18.5	5	(AP)					
10158		HOLL	10	18	1810	S05	W03	10	18.5		BG	DAI	130	25	8	4
10158		VORO	10	18	2248	S04	W05	10	18.6			DAI	60	9	3	3
10158		VORO	10	18	2248	S09	W06	10	18.5			HSX	72	3		3
10158		LEAR	10	19	0015	S07	W06	10	18.6		BG	DSO	70	17	5	4
10158		TACH	10	19	0551	S06	W08	10	18.6			CSI	93	9	4	2
10158		SVTO	10	19	0814	S07	W11	10	18.5		B	DSO	150	11	9	3
10158		RAMY	10	19	1204	S06	W13	10	18.5		B	DSI	150	21	6	3
10158		HOLL	10	19	1510	S08	W13	10	18.6		BG	DAI	140	21	6	3
10158	31481	MWIL	10	19	1615	S05	W14	10	18.6	4	(BG)					
10158	31476	MWIL	10	19	1615	S10	W16	10	18.5	5	(AP)					
10158		VORO	10	19	2253	S04	W17	10	18.7			BRI	49	17	4	3
10158		VORO	10	19	2253	S09	W18	10	18.6			HSX	69	4		3
10158		LEAR	10	20	0020	S06	W20	10	18.5		BG	DSO	100	11	6	5
10158		TACH	10	20	0533	S07	W21	10	18.6			CSI	81	5	3	4
10158		SVTO	10	20	0636	S08	W23	10	18.5		B	DSO	80	5	7	3
10158		RAMY	10	20	1220	S08	W27	10	18.5		BG	DAO	140	8	7	3
10158		HOLL	10	20	1545	S08	W26	10	18.7		B	CAO	60	13	7	3
10158	31481	MWIL	10	20	1600	S05	W27	10	18.6	4	(B)					
10158	31476	MWIL	10	20	1600	S10	W28	10	18.6	5	(AP)					
10158		LEAR	10	21	0010	S07	W34	10	18.5		B	CSO	40	2	2	2
10158		SVTO	10	21	0632	S08	W37	10	18.5		A	HSX	30	3	4	3
10158		TACH	10	21	0637	S07	W36	10	18.6			CAI	121	7	3	3
10158	31481	MWIL	10	21	1500	S05	W42	10	18.5	4	(B)					
10158	31476	MWIL	10	21	1500	S09	W41	10	18.5	4	(AP)					
10158		RAMY	10	21	1515	S08	W43	10	18.4		BG	DSO	100	6	7	3
10158		LEAR	10	22	0027	S07	W48	10	18.4		B	DSO	100	6	8	2
10158		TACH	10	22	0526	S07	W50	10	18.5			CSI	150	5	7	3
10158		RAMY	10	22	1205	S09	W56	10	18.3		BG	DSO	140	7	9	3
10158	31481	MWIL	10	22	1500	S06	W58	10	18.3	5	(B)					
10158	31476	MWIL	10	22	1500	S09	W54	10	18.6	5	(AP)					
10158		VORO	10	23	0110	S06	W60	10	18.5			HAX	37	2		3
10158		VORO	10	23	0110	S09	W59	10	18.6			HAX	55	2		3
10158		LEAR	10	23	0125	S06	W63	10	18.3		B	DSO	100	4	8	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10158		TACH	10 23 0435	S08 W64	10 18.4			DSO	97	3	7	4
10158		SVTO	10 23 0925	S08 W68	10 18.3		B	DAO	180	5	9	2
10158		RAMY	10 23 1222	S09 W69	10 18.3		B	DAO	100	5	10	3
10158		HOLL	10 23 1420	S08 W70	10 18.3		B	DAO	80	3	7	3
10158	31481	MWIL	10 23 1500	S06 W70	10 18.4	5	(B)					
10158	31476	MWIL	10 23 1500	S09 W67	10 18.6	5	(AP)					
10158		VORO	10 23 2329	S09 W71	10 18.6			AXX	13	1		2
10158		LEAR	10 24 0010	S06 W75	10 18.4		B	DAO	80	3	8	3
10160		RAMY	10 13 1400	S22 E75	10 19.3		A	HSX	20	1	1	2
10160		LEAR	10 14 0010	S24 E65	10 19.0		A	HRX	20	1	1	3
10160		SVTO	10 14 0625	S17 E64	10 19.1		B	DRO	20	3	6	3
10160		RAMY	10 14 1145	S20 E60	10 19.1		B	BXO	40	3	3	4
10160	31477	MWIL	10 14 1530	S20 E56	10 18.9	4	(BG)					
10160		HOLL	10 14 1700	S20 E56	10 19.0		B	BXO	40	3	4	4
10160		LEAR	10 15 0040	S21 E51	10 18.9		B	BXO	10	3	4	3
10160		VORO	10 15 0606	S18 E46	10 18.7			AXX	7	1		3
10160		VORO	10 15 0606	S22 E50	10 19.1			AXX	21	12		3
10160		SVTO	10 15 0638	S19 E51	10 19.2		B	BXO	20	3	6	2
10160		RAMY	10 15 1205	S20 E47	10 19.1		B	DSO	50	6	6	3
10160	31477	MWIL	10 15 1515	S22 E45	10 19.1	4	(B)					
10160		HOLL	10 15 1633	S19 E43	10 19.0		B	CAO	40	9	8	2
10160		VORO	10 15 2248	S20 E39	10 18.9			BRI	34	6	0	3
10160		VORO	10 15 2248	S22 E43	10 19.2			HRX	28	2		3
10160		LEAR	10 16 0010	S21 E39	10 19.0		B	DAI	100	20	7	4
10160		TACH	10 16 0417	S21 E39	10 19.2			BRI	26	9	4	4
10160		SVTO	10 16 0605	S19 E38	10 19.1		B	CAO	60	13	10	2
10160		RAMY	10 16 1220	S21 E37	10 19.3		BG	DAI	200	14	9	3
10160		HOLL	10 16 1500	S21 E32	10 19.1		B	DAO	250	17	8	3
10160	31477	MWIL	10 16 1500	S22 E33	10 19.2	5	(B)					
10160		VORO	10 16 2258	S19 E25	10 18.9			HAX	88	24		3
10160		VORO	10 16 2258	S23 E31	10 19.3			HAX	87	15		3
10160		LEAR	10 17 0015	S22 E28	10 19.2		B	DAI	120	17	9	3
10160		SVTO	10 17 0815	S20 E25	10 19.2		B	DSO	130	16	9	3
10160		RAMY	10 17 1112	S21 E23	10 19.2		B	DAI	160	21	10	3
10160	31477	MWIL	10 17 1515	S22 E20	10 19.2	5	(B)					
10160		LEAR	10 18 0015	S22 E15	10 19.2		B	DAI	150	26	10	3
10160		TACH	10 18 0632	S21 E11	10 19.1			DAI	166	8	7	3
10160		SVTO	10 18 0804	S21 E12	10 19.2		B	DAO	90	12	10	2
10160		RAMY	10 18 1205	S22 E07	10 19.0		B	DSI	230	16	10	3
10160	31477	MWIL	10 18 1530	S21 E07	10 19.2	5	(B)					
10160		HOLL	10 18 1810	S23 E05	10 19.1		B	EAI	90	28	11	4
10160		VORO	10 18 2248	S19 W01	10 18.9			DRI	46	17	4	3
10160		VORO	10 18 2248	S24 E06	10 19.4			HAX	87	8		3
10160		LEAR	10 19 0015	S23 E00	10 19.0		B	DAO	90	15	9	4
10160		TACH	10 19 0551	S22 W01	10 19.2			CAI	119	15	9	2
10160		SVTO	10 19 0814	S23 W04	10 19.0		B	ESO	90	13	13	3
10160		RAMY	10 19 1204	S21 W06	10 19.0		BG	EKI	130	23	11	3
10160		HOLL	10 19 1510	S20 W08	10 19.0		B	EAI	120	23	11	3
10160	31477	MWIL	10 19 1615	S22 W07	10 19.1	5	(BG)					
10160		VORO	10 19 2253	S18 W14	10 18.9			CRI	119	30	4	3
10160		VORO	10 19 2253	S25 W06	10 19.5			HAX	39	3		3
10160		LEAR	10 20 0020	S21 W14	10 18.9		BG	EAO	110	32	12	5
10160		TACH	10 20 0533	S18 W19	10 18.8			HA	145	3	3	4
10160		SVTO	10 20 0636	S22 W16	10 19.0		BG	FSO	100	12	16	3
10160		RAMY	10 20 1220	S22 W20	10 19.0		BG	EAI	190	22	13	3
10160		HOLL	10 20 1545	S20 W23	10 18.9		BG	EAI	120	43	11	3
10160	31477	MWIL	10 20 1600	S22 W20	10 19.1	4	(BG)					
10160		LEAR	10 21 0010	S21 W26	10 19.0		BG	EAO	70	20	12	2
10160		SVTO	10 21 0632	S22 W31	10 18.9		B	CSO	40	9	14	3
10160		TACH	10 21 0637	S19 W30	10 19.0			CAI	94	16	6	3
10160		TACH	10 21 0637	S26 W22	10 19.6			AR	6	2	1	3
10160	31477	MWIL	10 21 1500	S22 W34	10 19.0	5	(BG)					
10160		RAMY	10 21 1515	S22 W36	10 18.9		BG	EAI	130	20	13	3
10160		LEAR	10 22 0027	S19 W43	10 18.7		B	DAO	90	13	8	2
10160		TACH	10 22 0526	S19 W45	10 18.8			BRI	103	8	6	3
10160		RAMY	10 22 1205	S21 W50	10 18.7		BG	DAO	130	13	10	3
10160	31477	MWIL	10 22 1500	S19 W51	10 18.7	5	(BP)					
10160		VORO	10 23 0110	S18 W57	10 18.7			BXI	36	11	4	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10160		LEAR	10	23	0125	S18	W58	10	18.6		BG	DAO	80	8	6	2
10160		SVTO	10	23	0925	S18	W65	10	18.4		B	DSO	70	4	3	2
10160		RAMY	10	23	1222	S20	W66	10	18.5		B	DSO	60	5	5	3
10160		HOLL	10	23	1420	S19	W67	10	18.5		B	CSO	30	3	3	3
10160	31477	MWIL	10	23	1500	S19	W67	10	18.5	4	(AP)					
10160		LEAR	10	24	0010	S18	W70	10	18.7		B	BXO	30	4	6	3
10159		VORO	10	12	2307	S12	E82	10	19.1			HAX	125	1		3
10159		RAMY	10	13	1400	S12	E78	10	19.4		A	HSX	10	1	2	2
10159		VORO	10	13	2230	S12	E69	10	19.1			HAX	209	2		3
10159		LEAR	10	14	0010	S13	E68	10	19.1		A	HSX	110	2	2	3
10159		SVTO	10	14	0625	S09	E67	10	19.3		A	HSX	100	1	3	3
10159		RAMY	10	14	1145	S12	E65	10	19.4		A	HSX	190	1	3	4
10159	31478	MWIL	10	14	1530	S12	E60	10	19.2	5	(AP)					
10159		LEAR	10	15	0040	S12	E55	10	19.2		A	HRX	180	1	3	3
10159		VORO	10	15	0606	S11	E53	10	19.2			HAX	215	2		3
10159		VORO	10	15	0606	S15	E52	10	19.2			AXX	3	1		3
10159		SVTO	10	15	0638	S09	E54	10	19.3		A	HSX	170	1	4	2
10159		RAMY	10	15	1205	S11	E50	10	19.3		A	HSX	200	1	3	3
10159	31478	MWIL	10	15	1515	S12	E47	10	19.2	5	(AP)					
10159		HOLL	10	15	1633	S11	E47	10	19.2		A	HAX	60	2	3	2
10159		VORO	10	15	2248	S12	E43	10	19.2			HAX	136	2		3
10159		LEAR	10	16	0010	S11	E43	10	19.2		B	CAO	170	4	5	4
10159		TACH	10	16	0417	S11	E41	10	19.3			HA	144	3	2	4
10159		SVTO	10	16	0605	S09	E41	10	19.3		A	HAX	150	2	3	2
10159		RAMY	10	16	1220	S12	E38	10	19.4		B	DAO	170	5	4	3
10159		HOLL	10	16	1500	S11	E35	10	19.2		B	DKO	260	6	7	3
10159	31478	MWIL	10	16	1500	S11	E35	10	19.2	5	(BG)					
10159		VORO	10	16	2258	S11	E29	10	19.1			HAX	192	14		3
10159		LEAR	10	17	0015	S13	E31	10	19.3		B	DAO	180	10	8	3
10159		SVTO	10	17	0815	S09	E27	10	19.4		B	CSO	140	7	7	3
10159		RAMY	10	17	1112	S12	E24	10	19.3		B	CAO	160	6	7	3
10159	31478	MWIL	10	17	1515	S12	E21	10	19.2	5	(BP)					
10159		LEAR	10	18	0015	S12	E18	10	19.4		B	CAO	150	11	9	3
10159		TACH	10	18	0632	S12	E16	10	19.5			CAO	119	4	6	3
10159		SVTO	10	18	0804	S11	E13	10	19.3		B	CAO	100	4	3	2
10159		RAMY	10	18	1205	S15	E11	10	19.3		B	CSO	160	10	12	3
10159	31478	MWIL	10	18	1530	S11	E10	10	19.4	5	(BP)					
10159		HOLL	10	18	1810	S12	E09	10	19.4		B	CAO	110	13	8	4
10159		VORO	10	18	2248	S11	E04	10	19.2			DAC	126	14	2	3
10159		LEAR	10	19	0015	S13	E05	10	19.4		B	DAO	120	9	8	4
10159		TACH	10	19	0551	S12	E01	10	19.3			HA	132	4	3	2
10159		SVTO	10	19	0814	S12	W02	10	19.2		A	HAO	110	3	4	3
10159		RAMY	10	19	1204	S12	W01	10	19.4		B	DSO	80	7	8	3
10159		HOLL	10	19	1510	S12	W02	10	19.5		B	DSO	100	7	9	3
10159	31478	MWIL	10	19	1615	S13	W04	10	19.4	5	(BP)					
10159		VORO	10	19	2253	S11	W09	10	19.3			DRI	77	10	2	3
10159		LEAR	10	20	0020	S12	W11	10	19.2		B	DSO	60	5	3	5
10159		TACH	10	20	0533	S16	W11	10	19.4			CAI	59	16	3	4
10159		SVTO	10	20	0636	S12	W13	10	19.3		A	HSX	60	3	3	3
10159		RAMY	10	20	1220	S12	W14	10	19.4		B	DSO	70	5	8	3
10159		HOLL	10	20	1545	S12	W18	10	19.3		B	DSO	40	10	8	3
10159	31478	MWIL	10	20	1600	S13	W17	10	19.4	4	(BP)					
10159		LEAR	10	21	0010	S12	W22	10	19.3		B	DAO	40	5	7	2
10159		SVTO	10	21	0632	S12	W27	10	19.2		A	AXX	10	3	3	3
10159		TACH	10	21	0637	S12	W23	10	19.5			BRO	34	4	7	3
10159	31478	MWIL	10	21	1500	S13	W29	10	19.4	4	(BG)					
10159		RAMY	10	21	1515	S14	W30	10	19.4		B	DSO	30	8	8	3
10159		LEAR	10	22	0027	S14	W32	10	19.6		B	BXO	10	3	1	2
10159		TACH	10	22	0526	S15	W33	10	19.7			AR	8	3	2	3
10159		RAMY	10	22	1205	S16	W38	10	19.6		B	BXO	10	3	3	3
10159	31478	MWIL	10	22	1500	S13	W42	10	19.4	4	(BG)					
10168		HOLL	10	19	1510	N25	E08	10	20.2		A	HAX	20	3	2	3
10168	31486	MWIL	10	19	1615	N23	E07	10	20.2	4	(AP)					
10168		LEAR	10	20	0020	N24	E03	10	20.2		A	AXX		2		5
10168		SVTO	10	24	0830	N25	W57	10	19.9		A	HSX	10	1	1	2
10168		HOLL	10	24	1600	N24	W62	10	19.9		A	HRX	10	1	1	3
10168		LEAR	10	25	0010	N25	W66	10	19.9		A	HSX	20	1	1	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10168		VORO	10	25	0112	N25	W67	10	19.8			AXX	10	1		2
10168		RAMY	10	25	1258	N23	W76	10	19.7		A	HSX	20	1	1	3
10160C	31489	MWIL	10	20	1600	S20	E06	10	21.1	4	(AP)					
10168B		TACH	10	28	0602	N01	W76	10	22.6			AXX	41	1	1	3
10168A		LEAR	10	18	0015	S15	E68	10	23.1		A	AXX	10	1	1	3
10162B		TACH	10	18	0632	N25	E71	10	23.8			HSX	346	1	3	3
10162B		VORO	10	18	2248	N25	E62	10	23.7			HKX	475	1		3
10162B		TACH	10	19	0551	N25	E59	10	23.8			HSX	493	1	2	2
10162B		VORO	10	19	2253	N25	E50	10	23.8			HKX	414	1		3
10162B		TACH	10	20	0533	N25	E46	10	23.8			HHX	452	1	4	4
10162B		TACH	10	21	0637	N25	E33	10	23.8			HHX	500	1	2	3
10162B		TACH	10	22	0526	N24	E21	10	23.8			HHX	509	2	2	3
10162B	31490	MWIL	10	22	1500	N25	E15	10	23.8	6	(BG)					
10162B		VORO	10	23	0110	N25	E10	10	23.8			HHX	487	19		3
10162B		TACH	10	23	0435	N24	E09	10	23.9			HA	428	2	4	4
10162B	31490	MWIL	10	23	1500	N25	E02	10	23.8	6	(BG)					
10162B		VORO	10	23	2329	N25	W02	10	23.8			HHX	470	3		2
10162B		TACH	10	26	0536	N24	W31	10	23.8			HH	583	2	6	3
10162B		TACH	10	27	0639	N24	W45	10	23.8			HHX	591	1	4	3
10162B	31490	MWIL	10	27	1600	N25	W50	10	23.8	5	(AP)					
10162B		TACH	10	28	0602	N26	W60	10	23.6			HSX	381	1	5	3
10162B	31490	MWIL	10	28	1500	N25	W63	10	23.7	4	(BP)					
10162B		VORO	10	29	0351	N26	W70	10	23.7			HKX	360	5		2
10162B		TACH	10	29	0719	N25	W70	10	23.9			HSX	443	1	6	4
10162B	31490	MWIL	10	29	1545	N25	W77	10	23.7	5	(AP)					
10162B		VORO	10	29	2256	N26	W78	10	23.9			HKX	388	1		2
10162B		TACH	10	30	0521	N25	W83	10	23.8			HSX	341	1	5	3
10173		LEAR	10	28	0057	S16	W56	10	23.8		B	CRO	30	3	3	2
10173		RAMY	10	28	1213	S18	W64	10	23.6		B	DSO	70	3	6	3
10173	31497	MWIL	10	28	1500	S17	W64	10	23.8	5	(B)					
10173		HOLL	10	28	1755	S17	W65	10	23.8		B	CAO	40	4	4	3
10173		LEAR	10	29	0050	S15	W69	10	23.8		B	CSO	60	6	5	3
10173		VORO	10	29	0351	S16	W70	10	23.8			DAI	107	7	4	2
10173		SVTO	10	29	0700	S20	W70	10	23.9		B	DSO	120	4	7	3
10173		TACH	10	29	0719	S17	W72	10	23.8			DSO	113	2	5	4
10173		RAMY	10	29	1225	S19	W79	10	23.5		B	CSO	150	3	4	3
10173		HOLL	10	29	1452	S17	W78	10	23.7		B	CSO	60	2	4	3
10173	31497	MWIL	10	29	1545	S16	W79	10	23.7	5	(B)					
10173		LEAR	10	30	0030	S15	W80	10	24.0		BG	DAO	30	2	4	2
10162		VORO	10	16	2258	N25	E86	10	23.6			HAX	63	1		3
10162		LEAR	10	17	0015	N23	E89	10	23.9		A	HAX	120	1	3	3
10162		SVTO	10	17	0815	N29	E84	10	23.9		A	HHX	180	1	6	3
10162		RAMY	10	17	1112	N24	E82	10	23.8		A	HHX	150	1	4	3
10162	31485	MWIL	10	17	1515	N24	E79	10	23.7	5	(AP)					
10162		LEAR	10	18	0015	N23	E82	10	24.3		B	EHO	330	4	15	3
10162		TACH	10	18	0632	N20	E82	10	24.5			AR	18	2	1	3
10162		SVTO	10	18	0804	N27	E83	10	24.8		B	EKO	360	5	14	2
10162		RAMY	10	18	1205	N26	E77	10	24.5		B	FKO	1020	3	22	3
10162	31485	MWIL	10	18	1530	N25	E74	10	24.4	6	(B)					
10162		HOLL	10	18	1810	N25	E73	10	24.4		BG	FKC	680	16	19	4
10162		VORO	10	18	2248	N27	E78	10	25.0			DAI	478	14	8	3
10162		LEAR	10	19	0015	N26	E70	10	24.4		BG	FKO	810	8	16	4
10162		TACH	10	19	0551	N27	E75	10	25.1			DAI	587	15	10	2
10162		SVTO	10	19	0814	N27	E67	10	24.6		B	FHO	730	11	24	3
10162		RAMY	10	19	1204	N26	E67	10	24.7		BG	FKI	1040	10	25	3
10162		HOLL	10	19	1510	N25	E65	10	24.7		BG	FKC	1010	37	25	3
10162	31485	MWIL	10	19	1615	N25	E59	10	24.2	6	(BG)					
10162		VORO	10	19	2253	N26	E66	10	25.1			EAI	486	39	10	3
10162		LEAR	10	20	0020	N26	E57	10	24.4		BG	FHI	880	27	20	5
10162		TACH	10	20	0533	N26	E62	10	25.0			DAI	388	16	11	4
10162		SVTO	10	20	0636	N27	E55	10	24.6		BG	FHI	820	21	25	3
10162		RAMY	10	20	1220	N26	E51	10	24.5		BG	FKI	1060	28	22	3
10162		HOLL	10	20	1545	N25	E53	10	24.8		BG	FKC	1130	55	23	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10162	31485	MWIL	10 20	1600	N25 E47	10 24.3	6	(D)					
10162		LEAR	10 21	0010	N26 E45	10 24.5		BG	FHI	570	22	18	2
10162		SVTO	10 21	0632	N27 E44	10 24.7		BG	FKC	990	28	24	3
10162		TACH	10 21	0637	N27 E47	10 24.9			DAI	460	40	7	3
10162	31485	MWIL	10 21	1500	N25 E38	10 24.6	6	(D)					
10162		RAMY	10 21	1515	N26 E39	10 24.7		BG	FKI	1090	42	24	3
10162		LEAR	10 22	0027	N26 E33	10 24.6		BG	FKI	1050	34	26	2
10162		TACH	10 22	0526	N26 E35	10 24.9			EAI	700	31	14	3
10162		RAMY	10 22	1205	N27 E29	10 24.8		BGD	EKI	1130	34	25	3
10162	31485	MWIL	10 22	1500	N26 E30	10 24.9	5	(D)					
10162		VORO	10 23	0110	N27 E26	10 25.1			DKI	772	39	8	3
10162		LEAR	10 23	0125	N25 E20	10 24.6		BGD	FKI	1000	32	27	2
10162		TACH	10 23	0435	N26 E23	10 25.0			EAI	558	19	14	4
10162		SVTO	10 23	0925	N25 E16	10 24.6		BG	FHI	1100	32	27	2
10162		RAMY	10 23	1222	N27 E17	10 24.8		BGD	FKI	1190	39	24	3
10162		HOLL	10 23	1420	N26 E15	10 24.8		BGD	FKC	1130	54	25	3
10162	31485	MWIL	10 23	1500	N26 E17	10 24.9	5	(D)					
10162		VORO	10 23	2329	N27 E14	10 25.1			DKI	741	29	13	2
10162		LEAR	10 24	0010	N26 E09	10 24.7		BGD	FKC	1100	63	26	3
10162		SVTO	10 24	0830	N26 E04	10 24.7		BG	FKI	1000	27	27	2
10162		RAMY	10 24	1237	N27 E00	10 24.5		BG	FKI	930	25	26	2
10162		HOLL	10 24	1600	N26 E02	10 24.8		BGD	EKC	920	49	28	3
10162		LEAR	10 25	0010	N26 W02	10 24.8		BGD	FKC	990	79	26	4
10162		VORO	10 25	0112	N27 E01	10 25.1			DKI	371	11	8	2
10162		SVTO	10 25	1220	N25 W14	10 24.4		BG	FKI	700	15	25	2
10162		RAMY	10 25	1258	N26 W12	10 24.6		BG	FKI	860	33	25	3
10162		HOLL	10 25	1530	N25 W12	10 24.7		BGD	FKC	820	47	24	3
10162		TACH	10 26	0536	N27 W11	10 25.4			EAI	327	24	11	3
10162		RAMY	10 26	1232	N26 W21	10 24.9		BG	FKC	920	64	27	3
10162		LEAR	10 27	0010	N27 W26	10 25.0		BG	FKI	600	31	25	2
10162		TACH	10 27	0639	N26 W43	10 23.9			DAI	372	21	11	3
10162		SVTO	10 27	0724	N25 W37	10 24.4		BG	FHI	590	21	20	3
10162		RAMY	10 27	1230	N26 W36	10 24.7		BG	FKI	850	25	29	3
10162		HOLL	10 27	1506	N25 W41	10 24.4		BGD	FKC	620	39	23	2
10162	31485	MWIL	10 27	1600	N26 W35	10 24.9	5	(D)					
10162		LEAR	10 28	0057	N27 W47	10 24.4		BG	FKI	620	54	24	2
10162		TACH	10 28	0602	N26 W42	10 25.0			DAI	437	32	6	3
10162		SVTO	10 28	0850	N24 W49	10 24.6		B	FHI	420	21	20	2
10162		RAMY	10 28	1213	N25 W55	10 24.2		BG	FKI	990	15	23	3
10162	31485	MWIL	10 28	1500	N26 W49	10 24.8	5	(D)					
10162		HOLL	10 28	1755	N25 W55	10 24.5		BGD	FKC	840	39	22	3
10162		LEAR	10 29	0050	N27 W60	10 24.3		BGD	FKC	520	28	21	3
10162		VORO	10 29	0351	N26 W55	10 24.9			DKO	632	51	7	2
10162		SVTO	10 29	0700	N23 W62	10 24.5		BG	FHI	570	30	21	3
10162		TACH	10 29	0719	N25 W56	10 25.0			DAI	332	16	2	4
10162		RAMY	10 29	1225	N26 W68	10 24.2		BG	FKI	700	13	21	3
10162		HOLL	10 29	1452	N26 W69	10 24.2		BG	FKC	620	21	22	3
10162	31485	MWIL	10 29	1545	N26 W62	10 24.8	5	(D)					
10162		VORO	10 29	2256	N26 W64	10 25.0			DKI	654	39	7	2
10162		LEAR	10 30	0030	N27 W72	10 24.4		BD	FKI	580	21	18	2
10162		TACH	10 30	0521	N25 W68	10 24.9			HR	1039	17	1	3
10162		SVTO	10 30	0730	N24 W75	10 24.5		BG	FKI	900	24	17	3
10162		RAMY	10 30	1223	N24 W73	10 24.9		BG	DKO	500	6	9	3
10162		HOLL	10 30	1450	N26 W75	10 24.8		BG	DKO	690	14	9	3
10162	31485	MWIL	10 30	1530	N26 W74	10 24.9	5	(D)					
10162		LEAR	10 31	0220	N27 W82	10 24.7		BG	EKI	540	11	12	1
10162		TACH	10 31	0453	N28 W73	10 25.5			FAO	326	5	16	3
10162		SVTO	10 31	0724	N22 W80	10 25.1		B	DSO	180	2	6	2
10162		RAMY	10 31	1221	N26 W83	10 25.1		A	HKX	240	1	8	3
10162	31485	MWIL	10 31	1530	N27 W87	10 24.9	5	(D)					
10162		HOLL	10 31	1903	N28 W84	10 25.2		A	HAX	60	1	6	3
10162A		RAMY	10 23	1222	S07 E14	10 24.6		A	AXX	10	1	1	3
10162A		HOLL	10 23	1420	S06 E13	10 24.6		A	AXX		1		3
10162A	31491	MWIL	10 23	1500	S05 E12	10 24.5	4	(AF)					
10164	31487	MWIL	10 19	1615	N11 E70	10 24.9	4	(AP)					
10164		RAMY	10 20	1220	N11 E59	10 24.9		A	AXX	20	1	1	3
10164		HOLL	10 20	1545	N11 E58	10 25.0		A	AXX	20	1	1	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10164	31487	MWIL	10 20 1600	N11 E56	10 24.9	4	(AP)					
10164		LEAR	10 21 0010	N10 E52	10 24.9		A	HRX	20	1	1	2
10164		TACH	10 21 0637	N11 E47	10 24.8			AXX	15	1	1	3
10164	31487	MWIL	10 21 1500	N10 E43	10 24.8	4	(AP)					
10164		RAMY	10 21 1515	N11 E44	10 24.9		B	BXO	10	3	4	3
10164		RAMY	10 22 1205	N11 E31	10 24.8		B	BXO	10	3	4	3
10164		LEAR	10 24 0010	N11 E14	10 25.1		B	BXO	20	8	5	3
10164		LEAR	10 25 0010	N11 E01	10 25.1		B	CRO	20	6	5	4
10164A		LEAR	10 28 0057	S12 W29	10 25.8		B	CRO	10	4	2	2
10165	31488	MWIL	10 19 1615	N20 E87	10 26.3	4	AP					
10165		LEAR	10 20 0020	N18 E85	10 26.5		A	HSX	180	1	2	5
10165		TACH	10 20 0533	N20 E78	10 26.2			HSX	331	1	5	4
10165		SVTO	10 20 0636	N21 E79	10 26.3		A	HAX	120	1	3	3
10165		RAMY	10 20 1220	N20 E75	10 26.2		A	HSX	240	1	2	3
10165		HOLL	10 20 1545	N20 E74	10 26.3		A	HAX	180	1	3	3
10165	31488	MWIL	10 20 1600	N21 E73	10 26.3	4	(AP)					
10165		LEAR	10 21 0010	N18 E66	10 26.0		A	HSX	130	1	2	2
10165		SVTO	10 21 0632	N22 E68	10 26.5		B	CAO	210	2	7	3
10165		TACH	10 21 0637	N22 E68	10 26.5			CSO	236	2	7	3
10165	31488	MWIL	10 21 1500	N21 E64	10 26.5	5	(AP)					
10165		RAMY	10 21 1515	N22 E63	10 26.5		B	CAO	350	5	7	3
10165		LEAR	10 22 0027	N20 E58	10 26.4		B	DAO	160	16	8	2
10165		TACH	10 22 0526	N22 E57	10 26.6			CAI	265	5	8	3
10165		RAMY	10 22 1205	N21 E52	10 26.5		B	CKO	330	10	11	3
10165	31488	MWIL	10 22 1500	N21 E51	10 26.5	5	(BG)					
10165		LEAR	10 23 0125	N18 E42	10 26.2		B	CKO	280	4	3	2
10165		TACH	10 23 0435	N20 E45	10 26.6			CAO	152	3	8	4
10165		SVTO	10 23 0925	N21 E38	10 26.3		A	HAX	210	1	4	2
10165		RAMY	10 23 1222	N20 E38	10 26.4		B	CAO	250	6	7	3
10165		HOLL	10 23 1420	N20 E36	10 26.3		B	CAO	180	3	4	3
10165	31488	MWIL	10 23 1500	N20 E35	10 26.3	5	(AP)					
10165		LEAR	10 24 0010	N19 E31	10 26.4		B	CAO	190	8	6	3
10165		SVTO	10 24 0830	N20 E27	10 26.4		B	CAO	230	5	6	2
10165		RAMY	10 24 1237	N21 E22	10 26.2		B	CSO	220	3	4	2
10165		HOLL	10 24 1600	N20 E22	10 26.3		B	CKO	220	7	6	3
10165		LEAR	10 25 0010	N20 E18	10 26.4		B	CAO	250	16	8	4
10165		SVTO	10 25 1220	N21 E12	10 26.4		B	CAO	180	3	5	2
10165		RAMY	10 25 1258	N21 E10	10 26.3		B	CAO	160	6	4	3
10165		HOLL	10 25 1530	N21 E09	10 26.3		B	DKI	220	11	6	3
10165		TACH	10 26 0536	N20 E02	10 26.4			HA	184	9	3	3
10165		RAMY	10 26 1232	N21 W03	10 26.3		B	DAO	150	8	4	3
10165		LEAR	10 27 0010	N21 W08	10 26.4		A	HAX	120	6	3	2
10165		TACH	10 27 0639	N20 W11	10 26.4			HA	169	3	3	3
10165		SVTO	10 27 0724	N21 W13	10 26.3		B	CAO	130	3	4	3
10165		RAMY	10 27 1230	N21 W16	10 26.3		B	DAO	170	4	4	3
10165		HOLL	10 27 1506	N21 W17	10 26.3		B	CKO	170	6	4	2
10165	31488	MWIL	10 27 1600	N21 W16	10 26.4	5	(AP)					
10165		LEAR	10 28 0057	N22 W21	10 26.4		A	HAX	150	4	3	2
10165		TACH	10 28 0602	N20 W24	10 26.4			HA	170	4	4	3
10165		SVTO	10 28 0850	N20 W26	10 26.4		A	HSX	100	2	2	2
10165		RAMY	10 28 1213	N20 W29	10 26.3		A	HSX	180	1	3	3
10165	31488	MWIL	10 28 1500	N21 W29	10 26.4	5	(AP)					
10165		HOLL	10 28 1755	N21 W31	10 26.4		A	HAX	90	2	2	3
10165		LEAR	10 29 0050	N22 W34	10 26.4		A	HSX	90	4	2	3
10165		SVTO	10 29 0700	N18 W39	10 26.3		A	HSX	100	3	2	3
10165		TACH	10 29 0719	N21 W37	10 26.5			HA	98	3	2	4
10165		RAMY	10 29 1225	N20 W41	10 26.4		B	CAO	130	2	3	3
10165		HOLL	10 29 1452	N21 W43	10 26.3		B	CAO	60	4	3	3
10165	31488	MWIL	10 29 1545	N21 W42	10 26.4	5	(BF)					
10165		LEAR	10 30 0030	N21 W47	10 26.4		B	DAO	120	3	3	2
10165		TACH	10 30 0521	N20 W50	10 26.4			HA	140	4	2	3
10165		SVTO	10 30 0730	N17 W52	10 26.4		B	CAO	100	4	5	3
10165		RAMY	10 30 1223	N20 W53	10 26.5		A	HAX	80	2	2	3
10165		HOLL	10 30 1450	N21 W55	10 26.4		B	CAO	90	6	3	3
10165	31488	MWIL	10 30 1530	N21 W55	10 26.4	5	(AP)					
10165		LEAR	10 31 0220	N21 W61	10 26.4		B	CSO	80	2	2	1
10165		TACH	10 31 0453	N21 W62	10 26.4			HSX	64	1	4	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10165		SVTO	10	31	0724	N16	W66	10	26.3		A	HSX	70	1	2	2
10165		RAMY	10	31	1221	N18	W68	10	26.3		A	HSX	50	1	2	3
10165	31488	MWIL	10	31	1530	N20	W68	10	26.4	4	(AP)					
10165		HOLL	10	31	1903	N21	W71	10	26.3		A	HAX	120	2	2	3
10165		LEAR	11	01	0015	N22	W73	10	26.5		A	HAX	120	1	2	3
10165		TACH	11	01	0503	N21	W73	10	26.7			HSX	83	1	3	4
10165		SVTO	11	01	0840	N19	W79	10	26.4		A	HAX	60	1	2	2
10165		RAMY	11	01	1120	N17	W82	10	26.3		A	HAX	60	2	3	3
10165	31488	MWIL	11	01	1545	N21	W81	10	26.5	4	(AP)					
10165C		RAMY	11	01	1120	N07	W78	10	26.7		A	HSX	30	1	1	3
10165A		HOLL	10	30	1450	N12	W28	10	28.5		A	AXX	10	2	1	3
10165A	31501	MWIL	10	30	1530	N10	W28	10	28.5	4	(AP)					
10165B		RAMY	10	26	1232	N09	E38	10	29.4		B	CRO	10	2	3	3
10165B		LEAR	10	27	0010	N09	E33	10	29.5		B	BXO	40	2	3	2
10167		RAMY	10	23	1222	N18	E81	10	29.7		A	HAX	60	1	1	3
10167		HOLL	10	23	1420	N17	E80	10	29.7		A	HSX	60	1	1	3
10167	31492	MWIL	10	23	1500	N17	E80	10	29.7	4	(AP)					
10167		LEAR	10	24	0010	N17	E77	10	29.8		A	HAX	60	1	2	3
10167		SVTO	10	24	0830	N17	E74	10	30.0		A	HSX	10	1	1	2
10167		RAMY	10	24	1237	N19	E68	10	29.7		A	HSX	50	1	1	2
10167		HOLL	10	24	1600	N17	E68	10	29.8		A	HSX	50	1	2	3
10167		LEAR	10	25	0010	N17	E63	10	29.8		A	HAX	40	1	2	4
10167		SVTO	10	25	1220	N17	E57	10	29.8		A	HSX	10	1	1	2
10167		RAMY	10	25	1258	N19	E55	10	29.7		B	CSO	40	3	2	3
10167		HOLL	10	25	1530	N18	E55	10	29.8		A	HAX	60	1	2	3
10167		TACH	10	26	0536	N18	E46	10	29.7			HSX	72	1	1	3
10167		RAMY	10	26	1232	N18	E42	10	29.7		B	CSO	40	2	3	3
10167		LEAR	10	27	0010	N17	E36	10	29.7		A	HSX	10	1	1	2
10167		TACH	10	27	0639	N17	E33	10	29.8			HSX	37	1	1	3
10167		SVTO	10	27	0724	N18	E33	10	29.8		A	HSX	20	1	1	3
10167		RAMY	10	27	1230	N18	E30	10	29.8		A	HAX	20	1	1	3
10167		HOLL	10	27	1506	N18	E28	10	29.8		A	HSX	40	2	1	2
10167	31492	MWIL	10	27	1600	N17	E27	10	29.7	4	(AP)					
10167		LEAR	10	28	0057	N17	E22	10	29.7		B	CAO	60	3	2	2
10167		TACH	10	28	0602	N17	E20	10	29.8			HSX	44	1	1	3
10167		SVTO	10	28	0850	N18	E19	10	29.8		A	HSX	30	1	1	2
10167		RAMY	10	28	1213	N18	E16	10	29.7		A	HSX	20	1	1	3
10167	31492	MWIL	10	28	1500	N17	E14	10	29.7	5	(AP)					
10167		HOLL	10	28	1755	N16	E12	10	29.6		A	HSX	40	3	2	3
10167		LEAR	10	29	0050	N17	E10	10	29.8		A	HSX	40	4	2	3
10167		SVTO	10	29	0700	N18	E05	10	29.7		A	HSX	60	5	3	3
10167		TACH	10	29	0719	N16	E06	10	29.7			HR	27	3	1	4
10167		RAMY	10	29	1225	N17	E03	10	29.7		B	CAO	80	7	4	3
10167		HOLL	10	29	1452	N16	E02	10	29.8		B	CSO	40	7	4	3
10167	31492	MWIL	10	29	1545	N17	E01	10	29.7	5	(BP)					
10167		LEAR	10	30	0030	N17	W03	10	29.8		B	CAO	60	5	4	2
10167		TACH	10	30	0521	N17	W06	10	29.8			HA	53	3	2	3
10167		SVTO	10	30	0730	N15	W08	10	29.7		B	CSO	50	4	5	3
10167		RAMY	10	30	1223	N17	W11	10	29.7		A	HSX	40	1	1	3
10167		HOLL	10	30	1450	N17	W12	10	29.7		B	CSO	50	4	3	3
10167	31492	MWIL	10	30	1530	N17	W12	10	29.7	5	(AP)					
10167		LEAR	10	31	0220	N17	W17	10	29.8		A	HSX	50	2	2	1
10167		TACH	10	31	0453	N17	W18	10	29.8			AR	19	2	2	3
10167		SVTO	10	31	0724	N14	W21	10	29.7		B	CSO	30	3	3	2
10167		RAMY	10	31	1221	N17	W24	10	29.7		B	DSO	30	2	3	3
10167	31492	MWIL	10	31	1530	N16	W25	10	29.7	5	(AP)					
10167		HOLL	10	31	1903	N17	W27	10	29.7		B	CSO	20	4	3	3
10167		LEAR	11	01	0015	N17	W28	10	30.0		A	HSX	40	2	2	3
10167		TACH	11	01	0503	N18	W31	10	29.9			HA	33	2	3	4
10167		SVTO	11	01	0840	N17	W35	10	29.8		A	HSX	20	1	1	2
10167		RAMY	11	01	1120	N16	W37	10	29.8		B	CSO	10	4	2	3
10167	31492	MWIL	11	01	1545	N17	W39	10	29.8	5	(AP)					
10167		LEAR	11	02	0020	N18	W44	10	29.8		A	HSX	20	1	1	4
10167		TACH	11	02	0605	N17	W46	10	29.8			HSX	44	1	1	2
10167		SVTO	11	02	0639	N16	W47	10	29.8		A	HSX	10	1	1	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10167		RAMY	11	02	1236	N18	W51	10	29.7		A	HSX	20	1	1	3
10167	31492	MWIL	11	02	1545	N17	W52	10	29.8	4	(AP)					
10167		LEAR	11	03	0022	N18	W57	10	29.8		A	HSX	10	1	1	4
10167		RAMY	11	03	1232	N17	W64	10	29.7		A	HSX	20	1	1	3
10167		HOLL	11	03	1450	N18	W66	10	29.7		A	AXX	10	1	1	3
10167	31492	MWIL	11	03	1545	N17	W65	10	29.8	4	(AP)					
10169		RAMY	10	24	1237	S18	E80	10	30.6		B	DSO	90	2	3	2
10169		HOLL	10	24	1600	S19	E79	10	30.7		B	DSO	120	2	4	3
10169		LEAR	10	25	0010	S20	E72	10	30.5		B	DAO	120	2	5	4
10169		VORO	10	25	0112	S19	E71	10	30.5			HAX	55	2	3	2
10169		SVTO	10	25	1220	S17	E65	10	30.4		B	CSO	70	2	5	2
10169		RAMY	10	25	1258	S18	E66	10	30.6		B	DSO	100	2	5	3
10169		HOLL	10	25	1530	S20	E64	10	30.5		B	DAO	60	2	3	3
10169		TACH	10	26	0536	S17	E56	10	30.5			HA	198	2	3	3
10169		RAMY	10	26	1232	S19	E53	10	30.6		B	DSO	100	2	4	3
10169		LEAR	10	27	0010	S19	E45	10	30.4		B	DSO	50	2	2	2
10169		TACH	10	27	0639	S19	E44	10	30.6			HA	62	2	1	3
10169		SVTO	10	27	0724	S18	E43	10	30.6		B	DSO	70	2	4	3
10169		RAMY	10	27	1230	S19	E39	10	30.5		B	DSO	50	2	3	3
10169		HOLL	10	27	1506	S18	E37	10	30.4		B	CSO	40	4	3	2
10169	31493	MWIL	10	27	1600	S19	E37	10	30.5	4	(BP)					
10169		LEAR	10	28	0057	S21	E32	10	30.5		B	DAO	90	4	6	2
10169		TACH	10	28	0602	S21	E28	10	30.4			CAI	78	6	3	3
10169		SVTO	10	28	0850	S19	E30	10	30.6		B	DSO	70	6	8	2
10169		RAMY	10	28	1213	S20	E27	10	30.6		B	DSO	60	6	5	3
10169	31493	MWIL	10	28	1500	S20	E25	10	30.5	5	(BG)					
10169		HOLL	10	28	1755	S20	E24	10	30.6		B	DAO	20	15	6	3
10169		LEAR	10	29	0050	S20	E19	10	30.5		B	DAO	50	7	5	3
10169		VORO	10	29	0351	S17	E16	10	30.4			HAX	37	19		2
10169		VORO	10	29	0351	S19	E18	10	30.5			HRX	18	2		2
10169		VORO	10	29	0351	S22	E18	10	30.5			CAI	42	16	3	2
10169		SVTO	10	29	0700	S19	E16	10	30.5		B	DSO	50	11	7	3
10169		TACH	10	29	0719	S20	E16	10	30.5			BRI	12	6	5	4
10169		RAMY	10	29	1225	S20	E14	10	30.6		B	DSO	60	8	7	3
10169		HOLL	10	29	1452	S20	E12	10	30.5		B	DAO	70	8	7	3
10169	31493	MWIL	10	29	1545	S20	E12	10	30.6	5	(BF)					
10169		VORO	10	29	2256	S17	E05	10	30.3			HRX	30	10		2
10169		VORO	10	29	2256	S18	E07	10	30.5			HRX	14	6		2
10169		LEAR	10	30	0030	S20	E06	10	30.5		B	DSO	30	8	6	2
10169		TACH	10	30	0521	S20	E05	10	30.6			BRI	43	5	5	3
10169		SVTO	10	30	0730	S20	E05	10	30.7		B	DAO	50	6	7	3
10169		RAMY	10	30	1223	S20	E01	10	30.6		B	DAO	80	5	6	3
10169		HOLL	10	30	1450	S21	W02	10	30.5		B	CRX	60	11	10	3
10169	31493	MWIL	10	30	1530	S20	W02	10	30.5	4	(BG)					
10169		LEAR	10	31	0220	S19	W09	10	30.4		B	DSO	30	3	4	1
10169		RAMY	11	01	1120	S19	W26	10	30.6		A	AXX		2	1	3
10170		SVTO	10	25	1220	S13	E68	10	30.6		A	AXX		1		2
10170		RAMY	10	25	1258	S11	E71	10	30.9		A	HSX	30	1	2	3
10170		HOLL	10	25	1530	S12	E70	10	30.9		A	HSX	40	1	1	3
10170		TACH	10	26	0536	S11	E61	10	30.8			HSX	65	1	1	3
10170		RAMY	10	26	1232	S12	E59	10	31.0		B	CSO	30	6	5	3
10170		LEAR	10	27	0010	S13	E52	10	30.9		B	CAO	40	3	5	2
10170		TACH	10	27	0639	S12	E48	10	30.9			AR	23	3	2	3
10170		SVTO	10	27	0724	S11	E46	10	30.8		B	CRO	10	2	1	3
10170		RAMY	10	27	1230	S12	E44	10	30.8		B	DSO	30	2	3	3
10170		HOLL	10	27	1506	S12	E42	10	30.8		B	CAO	30	3	4	2
10170	31494	MWIL	10	27	1600	S12	E42	10	30.8	4	(AP)					
10170		LEAR	10	28	0057	S13	E37	10	30.8		B	CAO	20	3	3	2
10170		TACH	10	28	0602	S12	E33	10	30.7			AR	4	2	3	3
10170	31494	MWIL	10	28	1500	S12	E28	10	30.7	4	(AP)					
10170		HOLL	10	28	1755	S12	E27	10	30.8		B	BXO	40	3	3	3
10170		LEAR	10	29	0050	S13	E23	10	30.8		B	CAO	20	3	2	3
10170		VORO	10	29	0351	S12	E21	10	30.7			BRO	8	2	2	2
10170		TACH	10	29	0719	S12	E19	10	30.7			AR	3	2	1	4
10170		HOLL	10	29	1452	S12	E14	10	30.7		A	AXX		1		3
10170	31494	MWIL	10	29	1545	S12	E15	10	30.8	4	(AP)					
10170		VORO	10	29	2256	S11	E09	10	30.6			ARX	5	13		2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

OCTOBER 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
10170		LEAR	10	30	0030	S12	E09	10	30.7		B	CSO	10	4	3	2
10178		LEAR	10	31	0220	N01	W04	10	30.8		B	DAO	30	5	4	1
10178		TACH	10	31	0453	N01	W04	10	30.9			AR	2	3	3	3
10178		SVTO	10	31	0724	S01	W05	10	30.9		B	BXO	20	5	4	2
10178		RAMY	10	31	1221	N01	W09	10	30.8		B	DAO	50	3	4	3
10178	31503	MWIL	10	31	1530	N01	W12	10	30.7	5	(BG)					
10178		HOLL	10	31	1903	N01	W13	10	30.8		B	DAO	70	13	6	3
10178		LEAR	11	01	0015	N02	W16	10	30.9		B	DAO	70	8	5	3
10178		VORO	11	01	0044	N00	W15	10	31.0			BRI	18	8	3	3
10178		VORO	11	01	0044	N02	W17	10	30.9			CAI	62	9	3	3
10178		TACH	11	01	0503	N01	W18	10	31.0			BRO	19	4	4	4
10178		SVTO	11	01	0840	N01	W24	10	30.7		A	HSX	50	3	2	2
10178		RAMY	11	01	1120	S01	W23	10	30.8		B	DAO	90	12	6	3
10178	31503	MWIL	11	01	1545	N01	W26	10	30.8	5	(BP)					
10178		LEAR	11	02	0020	N02	W32	10	30.7		B	DAO	60	10	7	4
10178		VORO	11	02	0246	N03	W33	10	30.7			DAI	138	13	5	3
10178		TACH	11	02	0605	N02	W35	10	30.7			CAI	150	9	6	2
10178		SVTO	11	02	0639	N01	W36	10	30.7		B	DSO	140	7	8	3
10178		RAMY	11	02	1236	N01	W39	10	30.7		B	DAO	110	13	7	3
10178	31503	MWIL	11	02	1545	N02	W42	10	30.6	5	(BP)					
10178		LEAR	11	03	0022	N02	W45	10	30.7		B	DSO	110	12	8	4
10178		RAMY	11	03	1232	N01	W51	10	30.8		B	DAO	120	6	8	3
10178		SVTO	11	03	1330	N03	W56	10	30.5		B	CSO	70	2	2	2
10178		HOLL	11	03	1450	N03	W55	10	30.6		B	CAO	110	5	8	3
10178	31503	MWIL	11	03	1545	N02	W54	10	30.7	5	(BP)					
10178		LEAR	11	04	0100	N04	W62	10	30.5		B	DAO	80	2	4	1
10178		VORO	11	04	0158	N03	W63	10	30.5			HHX	221	3	2	3
10178		SVTO	11	04	0855	N02	W69	10	30.3		A	HAX	60	1	3	3
10178		RAMY	11	04	1223	N01	W72	10	30.2		A	HAX	170	1	2	4
10178		VORO	11	05	0008	N03	W75	10	30.5			HAX	166	3		3
10178		LEAR	11	05	0040	N04	W75	10	30.5		A	HAX	120	1	2	4
10178		RAMY	11	05	1150	N01	W80	10	30.6		A	HSX	60	1	3	4
10171		RAMY	10	25	1258	N12	E80	10	31.6		A	HSX	60	1	2	3
10171		HOLL	10	25	1530	N09	E81	10	31.7		A	HAX	60	1	1	3
10171		TACH	10	26	0536	N11	E74	10	31.8			HSX	170	1	2	3
10171		RAMY	10	26	1232	N10	E70	10	31.8		A	HSX	60	1	2	3
10171		LEAR	10	27	0010	N09	E65	10	31.9		A	HSX	40	1	2	2
10171		TACH	10	27	0639	N10	E62	10	31.9			HSX	106	1	2	3
10171		SVTO	10	27	0724	N12	E60	10	31.8		A	HSX	80	1	2	3
10171		RAMY	10	27	1230	N11	E58	10	31.9		A	HSX	50	1	1	3
10171		HOLL	10	27	1506	N10	E56	10	31.8		A	HAX	70	1	1	2
10171	31495	MWIL	10	27	1600	N10	E55	10	31.8	5	(AP)					
10171		LEAR	10	28	0057	N09	E51	10	31.9		A	HAX	80	1	2	2
10171		TACH	10	28	0602	N10	E47	10	31.8			HA	88	2	2	3
10171		SVTO	10	28	0850	N12	E47	10	31.9		A	HSX	60	1	1	2
10171		RAMY	10	28	1213	N11	E45	10	31.9		A	HSX	50	1	2	3
10171	31495	MWIL	10	28	1500	N10	E43	10	31.8	5	(AP)					
10171		HOLL	10	28	1755	N10	E41	10	31.8		A	HAX	70	3	2	3
10171		LEAR	10	29	0050	N09	E38	10	31.9		A	HSX	60	2	2	3
10171		VORO	10	29	0351	N10	E35	10	31.8			HAX	76	6		2
10171		SVTO	10	29	0700	N13	E33	10	31.8		A	HSX	70	3	2	3
10171		TACH	10	29	0719	N10	E34	10	31.8			HSX	66	1	1	4
10171		RAMY	10	29	1225	N11	E31	10	31.8		A	HAX	70	1	1	3
10171		HOLL	10	29	1452	N11	E29	10	31.8		A	HAX	70	2	2	3
10171	31495	MWIL	10	29	1545	N10	E30	10	31.9	4	(AP)					
10171		VORO	10	29	2256	N10	E25	10	31.8			HAX	50	3		2
10171		LEAR	10	30	0030	N10	E25	10	31.9		A	HAX	50	3	2	2
10171		TACH	10	30	0521	N10	E22	10	31.9			HR	81	3	2	3
10171		SVTO	10	30	0730	N12	E22	11	1.0		A	HAX	40	2	2	3
10171		RAMY	10	30	1223	N11	E18	10	31.9		A	HAX	60	2	2	3
10171		HOLL	10	30	1450	N10	E17	10	31.9		B	CAO	50	6	2	3
10171	31495	MWIL	10	30	1530	N10	E17	10	31.9	5	(AP)					
10171		LEAR	10	31	0220	N10	E11	10	31.9		A	HAX	40	2	2	1
10171		TACH	10	31	0453	N11	E10	10	31.9			HA	36	2	1	3
10171		SVTO	10	31	0724	N10	E08	10	31.9		B	CSO	40	2	2	2
10171		RAMY	10	31	1221	N11	E05	10	31.9		A	HSX	40	1	1	3
10171	31495	MWIL	10	31	1530	N10	E03	10	31.9	5	(AP)					

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

OCTOBER 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
10171		HOLL	10	31	1903	N10	E02	10	31.9		A	HSX	50	1	2	3
10171		LEAR	11	01	0015	N09	W02	10	31.9		A	HSX	20	1	1	3
10171		VORO	11	01	0044	N11	W01	10	31.9			HRX	26	5		3
10171		SVTO	11	01	0840	N10	W06	10	31.9		A	HSX	20	1	1	2
10171		RAMY	11	01	1120	N10	W08	10	31.9		B	CSO	10	3	3	3
10171	31495	MWIL	11	01	1545	N10	W10	10	31.9	5	(BF)					
10171		LEAR	11	02	0020	N11	W15	10	31.9		A	HSX	10	2	1	4
10171		TACH	11	02	0605	N11	W14	11	1.2			BXO	5	2	6	2
10171		RAMY	11	02	1236	N10	W21	10	31.9		A	HSX	10	1	1	3
10171	31495	MWIL	11	02	1545	N13	W22	11	1.0	4	(AP)					

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth
MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey
SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES

OCTOBER 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	1530	1535	1613	2	1					1	1532	C1.3	
03	0216	0220	0252	2-	3					2	0215	M2.1	10137
03	1011	1020	1059	1	5					2	1007	C1.4	
04	0039	0043	0115	2-	3					2	0039	M1.0	10137
04	0152	0154	0222	2-	3					2	0151	C7.0	
04	0419	0425	0500D	2	1					1	0417	C4.1	10137
04	0459	0501	0532	2-	3					2	0457	C5.3	
04	0534	0538	0624	2	3					2	0534	M4.0	10137
04	0854	0856	0858	1-	3					2	0856	C8.0	10137
04	0908	0911	0951	3-	5	1	1	1		6	0856	C8.0	10137
04	1027	1032	1101	2	5	1	1	1		4	1019	C6.2	10139
04	1103	1106	1152	3	5	1	1	1		7	1054	M3.5	10137
04	1149	1153	1210	1	1					1	No flare		
04	1200	1208	1217	1-	1					1	1200	C3.2	
04	1247	1301	1421	3	5	1	1	1		7	1243	M1.2	10139
04	1328	1332	1350	1	1					1	No flare		
04	1549	1601	1607	1-	5	1	1			9	1549	C9.0	10137
04	1705	1709	1732	1+	5					4	1704	M1.2	10137
04	1907	1913	1921	1-	1					1	1907	C5.7	10139
05	0233	0235	0245	1-	1					1	0234	C2.8	10137
05	0516	0521	0552	2-	3					2	0519	C4.2	
05	0726	0728	0741	1-	3					2	0720	C3.4	
05	0749	0751	0807	1	3					2	0748	C2.0	10139
05	0855	0858	0909	1	3					2	0853	C2.5	
05	1042	1045	1155	3	5	1	1	1		5	1039	M1.2	
05	1132	1140	1155	1	1					1	1128	C1.3	10137
05	2053	2101	2110	1-	3					2	2042	M5.9	10139
06	0447	0450	0522	1+	3					2	0446	M2.4	10139
06	1009	1016	1016D	2	5			1		3	1005	C2.2	
06	1153	1155	1241	3-	5	1	1	1		5	1149	M1.0	10139
11	0831	0835	0847	2+	5		1	1		4	0829	C2.4	10139
11	1018	1024	1027	1-	1					1	1015	C2.0	
13	1751	1757	1822	1+	3					3	1746	C4.7	10150
14	0934	0942	1003	2-	5	1		1		3	0931	C4.7	10159
14	1421	1424	1438	1-	5					4	1419	C1.3	
15	1331	1334	1345	1-	3					2	1331	C2.0	10140
15	1351	1353	1404	1-	3					2	1350	C1.7	
15	1411	1416	1445	2+	5		1	1		10	1408	M1.0	10149
16	1148	1151	1159	1-	5					3	1147	C1.8	10160
16	1233	1239	1303	1	5					5	1231	C1.8	
16	1515	1525	1552D	2	1					1	1522		10149
16	1557	1613	1709	2	5					7	1551	C6.5	
17	1157	1208	1223	1+	5					2	1158	C3.5	10158
17	1423	1450	1520D	2+	1					1	1430	C2.0	10159
17	1520	1545	1628	2+	1					1	1540	C1.2	
17	1744	1807	1849	2+	3					2	1730	C3.0	10149
18	0932	0939	0952	1	1					1	0932	C2.7	
18	0959	1009	1015	1-	5					2	1002	C3.0	
18	1208	1215	1225	1-	1					1	1209	C2.3	10162
18	1521	1527	1610	2-	3					3	1519	C2.1	10162
18	1911	1931	2015	2	3					2	1914	C4.1	10162
19	1347	1349	1402	1-	1					1	1341	C1.7	10160
19	1754	1757	1806	1-	1					1	1754	C1.5	10160
19	1818	1829	1910	2	3					4	1816	C5.0	10162

* = no flare patrol.

OCTOBER 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
20	0036	0042	0100	1	1					1	0032	M1.8	10162
20	0332	0341	0430	2+	1					1	0331	M1.5	10162
20	0501	0515	0612	2+	1					1	0501	M1.2	10160
20	0613	0615	0630	1-	1					1	0611	C3.6	10162
20	0905	0910	0925	1-	1					1	0909	C2.4	10158
20	0951	0956	0956U	1+	1					1	0952		10162
20	1025	1038	1105	2-	3					3	1025	C2.8	
20	1355	1358	1426	3	5	1	1	1		8	1351	C5.9	10162
20	1422	1428	1510	2	5					8	1421	M1.8	10160
20	1755	1807	1849	2+	1					1	1752	C2.6	10154
21	1137	1145	1152	1-	1					1	1130	C2.9	
21	1155	1205	1215	1	5					2	1130	C2.9	
21	1217	1226	1239	1	5					2	1215	C3.7	10162
22	0412	0415	0445	2	1					1	0410	C2.4	10162
22	1243	1251	1311	1	5					3	1243	C2.2	10162
22	1531	1537	1554	1	5					3	1529	M1.0	10162
24	1810	1813	1826	1-	1					1	1802	C7.4	10162
25	0700	0701	0715	1-	1					1	0702		10162
25	1315	1317	1323	1-	1					1	1313	C1.1	10162
28	0915	0919	0933	1-	1					1	0907	C2.1	10162
28	0952	0955	1011	1-	1					1	0950		10162
28	1203	1211	1253	3	5	1	1	1		4	1200	M1.7	10162
28	1416	1419	1431	1-	5					2	1413	C2.5	10162
29	1339	1344	1400	1-	5					3	1342	C2.2	10162
29	1408	1412	1458	2+	1					1	1419	C2.2	10162
29	1418	1428	1500	1+	5					2	1419	C2.2	10162
29	1446	1448	1454	1-	1					1	1445	C1.6	10173
29	1513	1523	1547	2-	5					2	1519	C8.7	10175
29	1522	1532	1602	2-	5					3	1519	C8.7	10175
29	1615	1627	1701	2	3					2	1620	C9.7	10162
29	1623	1636	1744	3-	1					2	1620	C9.7	10162
30	0455	0500	0530	2	1					1	0456	C3.9	
30	0943	0944	0956	1-	1					1	0940	C1.6	
30	1525	1530	1603	2-	3					2	No flare		
30	1629	1641	1717	2+	1					2	1627	C5.5	
30	1716	1721	1727D	1-	1					1	1714	C5.2	
30	1727	1738	1831	2+	1					1	1727	C5.4	10162
31	0919	0922	0951	3	5	1	1	1		4	0918	M1.1	
31	1019	1032	1112	2	3					3	1019	C9.5	10177
31	1618	1626	1642	1	3					5	1617	C3.9	
31	1649	1654	1739	2-	5					6	1647	X1.2	
31	1809	1827	2020	3+	1					1	1802	C8.0	10162

* = no flare patrol.

OBSERVATORIES REPORTING FOR OCTOBER 2002

Amherst, New Hampshire, USA	SES	Milan, Italy	SES
Bedford, Massachusetts, USA	SES	Nerja, Spain	SES
Bern, Switzerland	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Brookline, Massachusetts, USA	SES	Sofia, Bulgaria	SES
Edenvale, Rep of S. Africa	SES	Sussex, United Kingdom	SES
Hoogstraten, Belgium	SES	Torrington, Connecticut, USA	SES
Isola del Gran Sasso, Italy	SES	Villiersdorp, South Africa	SES
Marlborough, Massachusetts, USA	SES		

Observations are not necessarily continuous.

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

OCTOBER 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			CULG	0000.0E	0034.0	I	S	1	110	180	
	0000	0740	CULG	0000.0E	0215.0	III	N	1	57U	90	
			CULG	0249.0	0249.0	III	B	1	57U	80	
			CULG	0322.0	0324.0	III	G	1	40	370	
			LEAR	0322.0	0323.0	III		1	29	180	
	0000	0822	HIRA	0322.0	0323.5	III	G	1	40	360	
			CULG	0424.0	0622.0	III	N	1	25	180	
			LEAR	0424.0	0915.0	III	N	1	25	180	
			HIRA	0428.0	0429.0	III	G	1	40	150	
	0524	1631	POTS	0524 E	1631 U	I	S,N,DC	2	200U	400	100-200MHz no data
			HIRA	0525.0	0526.0	III	B	1	80	230	
			SVTO	0540.0	0630.0	III	N	1	25	180	
			HIRA	0540.5	0542.0	III	G	1	25X	150	
			CULG	0541.0	0542.0	III	G	2	20	140	
			CULG	0549.0	0549.0	III	B	2	40	160	
			CULG	0552.0	0740.0D	I	S	1	150	280	
	0601	1200	IZMI	0601.0E	1200.0D	I	S	1	120	270X	
	0612	1531	ONDR								
			IZMI	0615.7	0616.0	III	G	2	25X	160	
			POTS	0615.7	0615.9	III	B	2	40X	270	
			IZMI	0622.0U	1200.0D	III	N	1	25U	95U	
			CULG	0718.0	0718.0	III	B	1	30	120	
			IZMI	0718.3	0718.5	III	B,C	2	40	215	
			POTS	0718.4	0718.6	III	B	2	40X	80	
	0610	1600	BLEN	0719.6	1600.0X	I	DC	1	200X	450	
			IZMI	0739.1	0739.2	III	B	2	40	170	
			POTS	0739.1	0739.3	III	B	2	40X	80	
			POTS	0800.1	0800.3	III	B	1	40X	60	
			POTS	0815.3	0815.6	III	B	1	40X	60	
			IZMI	0837.6	0837.8	III	B	1	180	270	
			IZMI	0846.8	0847.0	III	B	1	40	65	
			POTS	0949.6	0949.8	III	B	1	40X	70	
			POTS	1015	1028	III	G,N	1	40X	80	
			IZMI	1017.5	1021.7	III	G	2	40	65	
			SVTO	1022.0	1022.0	III		1	25	84	
			IZMI	1022.6	1023.0	III	G	2	25X	95	
			POTS	1101	1108	III	G	2	40X	280	
			IZMI	1104.3	1105.2	III	GG	2	25X	260	
			SVTO	1105.0	1105.0	III		1	25	180	
			IZMI	1105.2	1105.6	III	GG	2	25X	260	
			IZMI	1105.9	1107.7	III	GG	2	35	145	
			POTS	1117	1131	III	G,N	1	40X	80	
			POTS	1255.1	1255.3	III	B	1	40X	85	
			POTS	1316	1332	III	G,N	1	40X	80	
			POTS	1411	1424	III	G,N	1	40X	55	
			HOLL	1537.0	1859.0	III	N	1	25	82	
	2000	2400	CULG	2100.0	2100.0	III	B	1	57U	130	
			CULG	2106.0	2107.0	III	G	1	20	180	
			HOLL	2106.0	2106.0	III		1	25	151	
			CULG	2109.0	2109.0	III	B	1	25	80	
			LEAR	2221.0	0444.0	III	N	1	25	180	
			CULG	2223.0	2225.0	III	G	1	50	170	
			HOLL	2223.0	2223.0	III		1	25	84	
			CULG	2235.0	2239.0	III	G	1	57U	180	
02	0000	0740	CULG	0046.0	0048.0	III	G	1	57U	90	
			PALE	0245.0	0404.0	CONT		1	25	86	
			CULG	0345.0	0345.0	III	B	1	60	130	
	0523	1627	POTS	0523 E	1319	I	S,N,DC	2	200U	380	100-200MHz no data
	0610	1600	BLEN								
	0614	1528	ONDR								
	0600	1200	IZMI	0630.0	1200.0D	I	N	2	180	270X	
			CULG	0650.0	0659.0	III	GG	2	20	170	
			LEAR	0650.0	0657.0	III		1	25	180	
			SVTO	0650.0	0658.0	III		1	25	152	
			IZMI	0650.3	0658.7	III	GG	2	25X	190	
			POTS	0650.3	0656.0	III	GG	3	40X	250	
			IZMI	0711.0	0711.3	III	G	1	95	160	
			LEAR	0835.0	0836.0	III		1	25	68	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
02			SVTO	0835.0	0836.0	III		1	28U	73U	
			IZMI	0835.8	0836.0	III	G,FS	2	25X	65	
			IZMI	0914.7	0914.8	III	B	1	150	260	
			POTS	0927.1	0929.5	III	GG	2	200U	390	
			IZMI	0927.2	0929.4	III	GG	1	150	270X	
			IZMI	0948.8	0949.0	III	B	1	45	65	
			IZMI	1004.3	1004.4	III	B	1	40	84	
			IZMI	1009.0	1009.2	III	B	1	45	140	
			IZMI	1027.3	1027.4	III	B	1	55	95	
			IZMI	1046.7	1046.9	III	B	2	50	115	
			IZMI	1059.2	1059.2	III	B	1	50	85	
			IZMI	1141.1	1141.2	III	G	1	30	65	
			POTS	1349.7	1350.3	I	DC	2	220	300	
			POTS	1411	1627 U	I	S,N	1	200U	330	
			SGMR	1438.0	1439.0	III		1	30	45	
			SVTO	1438.0	1439.0	III		1	28U	41U	
			POTS	1438.7	1439.1	III	B	2	40X	80	
	2000	2400	CULG								
03	0350	0820	HIRA								
	0000	0740	CULG	0549.0	0549.0	III	B	1	120	180	
	0526	1625	POTS	0607.9	0608.9	I	DC	1	220	280	100-200MHz no data
	0610	1600	BLEN								
			POTS	0641.7	0642.3	I	DC	1	200U	270	
	0610	1200	IZMI	0648.5	0648.7	III	B	1	55	95	
			CULG	0649.0	0649.0	III	B	1	57U	100	
			POTS	0725.0	0725.6	I	DC	1	320	370	
			SVTO	0749.0	0749.0	III		1	25	41	
			IZMI	0811.7	0811.9	III	B	1	45	150	
			IZMI	0816.3	0819.1	III	G	1	45	95	
			POTS	0827	1003 U	I	S,N,DC	1	240	370	
			LEAR	0829.0	0829.0	III		1	31	127	
			SVTO	0829.0	0829.0	III		1	25	127	
			IZMI	0829.5	0829.8	III	B	2	25X	240	
			POTS	0829.5	0829.8	III	B	2	40X	350	
			POTS	0852.7	0853.0	III	B	1	40X	80	
			SVTO	0921.0	0921.0	III		1	25	44	
			IZMI	0921.4	0922.4	III	G	1	40	160	
			POTS	0921.6	0922.6	III	G	1	40X	80	
			IZMI	0933.6	0933.7	III	G	1	45	90	
			IZMI	0938.0	0938.1	III	B	1	45	90	
	0615	1526	ONDR	1009.1	1013.4	DCIM	G	1	2332	4500X	
			POTS	1055	1625 U	I	S,N,DC	2	200U	450	
			IZMI	1106.0	1200.0D	I	S	2	110	270X	
			IZMI	1112.6	1112.8	III	B	2	50	90	
			POTS	1112.6	1112.9	III	B	1	40X	85	
			POTS	1127	1145.2	III	G,N	1	40X	85	
			IZMI	1128.5	1132.3	III	GG	1	45	190	
			SVTO	1129.0	1243.0	CONT		1	64	160	
			IZMI	1139.4	1200.0U	III	N	1	45	95	
			IZMI	1144.1	1144.7	III	G	1	45	95	
			POTS	1238	1243	III	G,N	2	40X	280	
			POTS	1337	1434 U	III	GG,N	2	40X	85	
			SVTO	1357.0	1610.0	CONT		1	50	150	
			HOLL	1412.0	1955.0	CONT		1	64	176	
			HOLL	1916.0	1916.0	III		1	25	47	
			HOLL	1956.0	1956.0	III		1	25	87	
	2000	2400	CULG	2017.0	2019.0	III	G	1	60	90	
			HOLL	2113.0	2114.0	III		1	25	113	
	2034	2400	HIRA	2113.5	2114.0	III	G	1	25X	110	
			CULG	2114.0	2114.0	III	G	1	20	130	
			CULG	2118.0	2119.0	III	G	1	25	170	
			CULG	2132.0	2132.0	III	B	1	45U	90	
04			LEAR	0133.0	0133.0	III		2	40	180	
	0000	0740	CULG	0133.0	0133.0	III	B	3	40	300	
	0000	0818	HIRA	0133.0	0133.5	III	B	3	40	300	
			LEAR	0138.0	0139.0	III		1	25	60	
			CULG	0211.0	0212.0	III	G	2	35	100	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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		LEAR	0211.0	0212.0	III		1	25	104	
		HIRA	0211.5	0212.0	III	B	1	30	90	
		CULG	0239.0	0239.0	III	B	1	18	50	
		CULG	0241.0	0321.0	III	N	1	57U	230	
		LEAR	0320.0	0413.0	III	N	1	25	180	
		CULG	0338.0	0403.0	III	N	1	35	150	
		HIRA	0445.5	0447.0	III	G	1	30	150	
0528	1622	POTS	0528 E	0648 U	I	S,N	1	200U	420	100-200MHz no data
		POTS	0644.3	0644.6	DCIM		1	220	550	
0550	1200	IZMI	0644.5	0644.6	III	B	1	45	90	
		CULG	0645.0	0645.0	III	B	1	35	90	
		IZMI	0719.7	0720.0	III	B,C	2	55	95	
		CULG	0720.0	0720.0	III	B	1	60	75	
		POTS	0730.0	0732.3	III	G	1	40X	60	
		SVTO	0730.0	0732.0	V		1	25	53	
		IZMI	0730.7	0731.9	III	G	1	25X	120	
		CULG	0731.0	0732.0	III	G	1	23	65	
		POTS	0752	0824	III	GG,N	1	40X	75	
		POTS	0754.6	0759.2	I	S,N	1	200U	500	
0620	1600	BLEN	0754.9	0759.1	III		2	200X	500	
		SVTO	0804.0	0910.0	III	N	1	25	180	
		IZMI	0804.9	0809.4	III	G	1	40	95	
		LEAR	0807.0	0807.0	III		1	25	104	
		IZMI	0823.6	0824.0	III	B,C	2	40	155	
		LEAR	0844.0	0844.0	III		1	25	117	
		IZMI	0844.4	0844.9	III	G	2	35	140	
		POTS	0844.4	0844.9	III	G	2	40X	85	
		POTS	0901	1150 U	I	S,N	1	200U	400	
		IZMI	0901.8	0905.2	III	G	1	45	95	
		POTS	0903	0917	III	G,N	2	40X	280	
		BLEN	0903.7	0911.6	III	RS	2	340	800	
		IZMI	0906.9	0909.6	III	GG,FS	2	25X	210	
		LEAR	0907.0	0916.0	III		1	25	180	
		POTS	0911.4	0911.7	DCIM		2	200U	600	
		IZMI	0911.5	0916.0	III	GG	2	40	140	
		IZMI	1005.1	1005.3	III	B	1	50	85	
		IZMI	1009.9	1010.7	III	B	2	25X	170	
		POTS	1009.9	1010.3	III	B	3	40X	280	
		SVTO	1010.0	1010.0	III		2	25	119	
		BLEN	1019.5	1026.3	III	GG,S	2	200X	2000	
		POTS	1020	1030	III	GG	2	40X	350	
		SVTO	1022.0	1029.0	III		1	25	161	
		IZMI	1022.4	1027.0	III	GG,C,FS	2	25X	270X	
		POTS	1024.8	1025.9	DCIM		1	350	730	
		IZMI	1028.9	1031.1	III	G	1	25	140	
		IZMI	1101.9	1101.9	III	B	1	110	155	
		IZMI	1132.5	1132.5	III	B	2	145	270X	
		IZMI	1148.7	1148.8	III	B	1	55	65	
		IZMI	1159.5	1159.7	III	B,U	1	120	160	
		BLEN	12046.0	1257.6	DCIM	P	3	200X	2000X	
		POTS	1222	1232 U	I	S,N	1	200U	280	
0725	1524	ONDR	1245.2	1303.0	DCIM	G	1	2000X	4500X	
		POTS	1246.5	1252.8	DCIM		2	230	740	
		SVTO	1247.0	1251.0	V		2	25	180	
		POTS	1247.1	1249.1	III	G	3	40X	300	
		POTS	1247.8	1318 U	I	DC,S	2	200U	420	
		SGMR	1248.0	1249.0	V		2	30	80	
		POTS	1248.4	1251.5	V	G	3	40X	80	
		SVTO	1257.0	1259.0	II		1	112U	156U	ESS 0357
		POTS	1258	1303	II	UE	1	40	60	
		POTS	1357	1423	I	S,N	1	200U	350	
		HOLL	1416.0	1419.0	III		1	25	149	
		SVTO	1416.0	1420.0	III		2	25	127	
		POTS	1416.3	1420.0	III	G	3	40X	85	
		SGMR	1419.0	1420.0	III		1	30	80	
		POTS	1439	1536	I	S,N	1	200U	300	
		PALE	1640.0	0332.0	CONT		1	25	180	
		HOLL	1907.0	1907.0	III		1	25	89	
		PALE	1907.0	1907.0	III		1	25	111	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
04			SGMR	1907.0	1907.0	III		1	30	55	
	2000	2400	CULG	2015.0	2016.0	III	G	1	57U	170	
			CULG	2048.0	2049.0	III	G	1	23	180	
	2035	2400	HIRA	2147.5	2148.5	III	G	1	25X	170	
			CULG	2232.0	2238.0	III	GG	1	23	180	
			CULG	2238.0	2242.0	III	G	3	18X	520	
			CULG	2238.0	2243.0	CONT		1	500	1300	
			HOLL	2238.0	2242.0	III		2	25	180	
			LEAR	2238.0	2243.0	III		3	25	180	
			PALE	2238.0	2243.0	III		1	25	180	
			HIRA	2238.5	2243.0	III	G	3	25X	440	
			CULG	2241.0	2259.0	II	FN	3	30	220	
			CULG	2241.0	2306.0	II	SH	3	35	460	ESS 500
			HIRA	2241.0	2303.0	II		2	25X	210	
			HIRA	2241.0	2306.0	II		3	40	460	
			CULG	2242.0	2245.0	V		1	18	100	
			HOLL	2242.0	2306.0	II		1	25	180	ESS 0383
			LEAR	2244.0	2306.0	II		2	25	180	ESS 0418
			PALE	2245.0	2302.0	II		2	25	180	ESS 0573
05	0000	0816	HIRA								
			LEAR	0006.0	0008.0	III		1	25	106	
	0000	0740	CULG	0006.0	0009.0	III	G	1	57U	100	
			LEAR	0249.0	0249.0	III		1	25	85	
			CULG	0259.0	0259.0	III	B	1	57U	75	
			CULG	0524.0	0552.0	III	N	1	40	100	
	0530	1628	POTS	0658 U	0814 U	I	S,N	1	200U	380	100-200MHz no data
	0724	1521	ONDR	1041.4	1042.3	DCIM	G	2	2000X	4500X	
	0620	1600	BLEN	1041.7	1043.4	DCIM	C	2	500	2000X	
	0600	1200	IZMI	1051.3	1051.4	III	B	1	120	160	
			POTS	1052	1104	I	S,N	1	200U	350	
			POTS	1213.5	1215.9	III	GG	2	40X	270	
			POTS	1218 U	1252 U	I	S,N	1	200U	400	
			BLEN	1240.1	1240.4	III	GG,S	2	430	980	
			POTS	1240.1	1240.4	DCIM		2	400	770	
			POTS	1352.6	1353.1	DCIM		1	400	640	
			BLEN	1352.8	1352.9	III	G	2	400	580	
			BLEN	1405.7	1406.3	III	GG	3	400	650	
			POTS	1405.9	1408.6	DCIM		1	370	730	
			POTS	1415.1	1418.2	DCIM		2	240	760	
			BLEN	1415.2	1418.3	III	GG	3	280	1000	
			POTS	1513.3	1513.5	DCIM		1	360	520	
			POTS	1520.6	1521.7	DCIM		1	320	510	
			POTS	1521.0	1521.8	III	G	1	200U	300	
			POTS	1535.4	1537.4	UNCLF		1	200U	350	
			POTS	1555.4	1555.9	DCIM		1	350	600	
			POTS	1624.6	1628 U	DCIM		1	270U	480U	
	2000	2400	CULG	2045.0	2049.0	III	G	1	57U	180	
	2036	2400	HIRA	2045.5	2047.5	III	G	1	60	130	
			HOLL	2046.0	2047.0	III		1	25	180	
			CULG	2050.0	2059.0	CONT		1	400	1400	
			CULG	2054.0	2056.0	III	G	1	70	160	
			CULG	2057.0	2119.0	II	SH	3	65	180	ESS 250
			HIRA	2057.0	2059.0	II		2	60	200	
			HOLL	2057.0	2119.0	II		1	36	178	ESS 0404
			CULG	2058.0	2112.0	II	FN	2	35	90	
			PALE	2059.0	2115.0	II		1	38	180	ESS 0325
			SGMR	2108.0	2110.0	V		1	30	55	
			PALE	2109.0	2110.0	V		1	34	53	
			LEAR	2325.0	0209.0	CONT		1	25	139	
			CULG	2339.0	2340.0	III	G	1	57U	150	
06			HOLL	0003.0	0004.0	III		1	25	180	
			LEAR	0003.0	0004.0	III		3	25	180	
	0000	0750	CULG	0004.0	0005.0	III	G	3	40	180	
	0000	0815	HIRA	0004.0	0005.0	III	G	3	40	280	
			CULG	0016.0	0158.0	I	S	1	110	160	
			LEAR	0322.0	0322.0	III		1	25	58	
			CULG	0323.0	0323.0	III	B	1	35U	90	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
06	0532	1617	POTS	0535 U	0742 U	I	S,N	1	200U	370	100-200MHz no data
			CULG	0551.0	0551.0	III	B	1	50	100	
			POTS	0816.7	0817.8	III	G	1	200U	300	
	0600	1204	IZMI	0821.2	0821.4	III	G	1	40	95	
			IZMI	0844.4	0846.7	III	G	1	45	95	
			IZMI	0848.4	0849.7	III	G	1	50	150	
			POTS	0850	0931 U	I	S,N	1	200U	340	
			IZMI	0902.0	0902.1	III	B	1	50	85	
			POTS	1000	1319	I	S,N,DC	2	200U	400	
			ONDR	1152.0	1155.4	DCIM	GG	2	800X	1770	
	0620	1519	ONDR	1152.2	1155.3	DCIM	G	1	2000X	4500X	
	0620	1550	BLEN	1152.9	1155.0	III	GG	3	700	1500	
			POTS	1334	1400 U	I	S,N	1	240	330	
			POTS	1519	1617 U	I	S,N	2	200U	400	
			HOLL	1854.0	1854.0	III		1	25	180	
			PALE	1854.0	1854.0	III		1	44	180	
	2000	2400	CULG	2023.0	2025.0	III	G	1	35U	180	
			CULG	2214.0	2221.0	III	G	1	57U	280	
	2037	2400	HIRA	2214.5	2215.0	III	G	1	120	290	
			CULG	2224.0	2225.0	III	G	1	170	400	
			PALE	2246.0	0337.0	III	N	1	25	180	
07	0000	0814	HIRA								
	0000	0750	CULG	0013.0	0015.0	III	G	1	57U	150	
			CULG	0347.0	0347.0	III	B	1	57U	180	
			CULG	0520.0	0520.0	III	B	1	57U	75	
	0534	1551	POTS	0611	0952	I	S,N	1	200U	380	100-200MHz no data
	0622	1517	ONDR								
			CULG	0704.0	0712.0	III	G	1	560U	740	
			POTS	0735.7	0736.9	III	G	1	40X	55	
	0603	1205	IZMI	0756.9	0759.0	I	GG	1	220	270X	
			IZMI	0911.6	0912.1	III	G	2	45	95	
			POTS	0911.6	0912.4	III	G	2	40X	85	
			POTS	1100.1	1100.5	I	DC	1	360	400	
			IZMI	1113.4	1113.5	III	G	1	160	270X	
			POTS	1113.4	1113.6	III	G	2	200U	370	
			POTS	1113.5	1122	I	S,N	1	200U	400	
			POTS	1144.0	1144.2	DCIM		1	300	420	
	0620	1545	BLEN	1220.5	1220.6	III		1	440	540	
			POTS	1248	1551 U	I	S,N,DC	2	270	420	
			POTS	1303.2	1304.8	III	GG	2	70	380	
			SVTO	1304.0	1603.0	CONT		1	25	180	
			POTS	1307.7	1343	III	GG,U	2	200U	420	
			POTS	1312.1	1312.4	III	B	2	200U	730	
			SGMR	1315.0	1316.0	III		1	30	55	
			POTS	1338.4	1339.0	DCIM		2	430	700	
			POTS	1405.3	1408.9	III	G,N	2	200U	390	
	2000	2400	CULG	2140.0	2226.0	III	S	1	130	200	
			CULG	2155.0	2156.0	III	G	1	57U	180	
			LEAR	2216.0	0401.0	CONT		1	64	180	
			CULG	2232.0	2235.0	III	G	1	100	300	
	2038	2400	HIRA	2232.0	2235.0	III	G	1	80	300	
			CULG	2242.0	2242.0	III	B	1	35	100	
			LEAR	2242.0	2242.0	III		1	25	180	
08	0000	0750	CULG	0323.0	0328.0	III	G	1	35	450	
			LEAR	0324.0	0328.0	III		1	25	180	
	0000	0813	HIRA	0324.0	0328.0	III	G	1	60	360	
			PALE	0326.0	0327.0	III		1	25	180	
			CULG	0334.0	0346.0	III	G	1	120	250	
			CULG	0423.0	0425.0	III	G	1	200	270	
			CULG	0432.0	0435.0	III	G	1	75	270	
			HIRA	0432.0	0435.0	III	G	1	80	300	
			LEAR	0432.0	0434.0	III		1	75	180	
			CULG	0441.0	0444.0	III	G	1	57U	360	
			HIRA	0441.0	0444.5	III	G	1	30	320	
			LEAR	0441.0	0444.0	III		2	37	180	
			CULG	0442.0	0442.0	III	B	2	35	160	
			CULG	0445.0	0533.0	I	S	1	120	180	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
08		LEAR	0450.0	0458.0	III		1	75	180	
		CULG	0455.0	0642.0	III	N	1	20	180	
		HIRA	0455.5	0456.0	III	B	1	50	210	
		LEAR	0510.0	0510.0	III		1	34	107	
		LEAR	0533.0	0539.0	III		1	25	180	
		SVTO	0533.0	1126.0	III	N	1	35	180	
		CULG	0534.0	0534.0	III	B	2	20	280	
		HIRA	0534.0	0539.0	III	G	1	25X	300	
0535	1538	POTS	0535 E	1412 U	I	S,N	1	200U	380	100-200MHz no data
		IZMI	0550.0E	1200.0D	III	N	1	45	95	
0550	1200	IZMI	0550.0E	1200.0D	I	N	2	110	270X	
		IZMI	0550.3	0550.6	III	G	1	45	95	
		IZMI	0552.8	0556.8	III	GG	2	25X	270X	
		HIRA	0553.0	0557.0	III	G	1	25X	250	
		LEAR	0553.0	0641.0	III	N	2	25	180	
		IZMI	0604.7	0609.4	III	GG	2	35	270X	
		HIRA	0606.5	0609.0	III	G	1	40	260	
		IZMI	0614.9	0615.0	III	B	2	40	90	
0624	1514	ONDR								
		HIRA	0624.0	0635.0	III	G	1	25X	320	
		IZMI	0624.2	0624.7	III	G	2	35	160	
		POTS	0624.5	0633.5	III	G,N	2	40X	400	
		IZMI	0626.5	0627.8	III	GG	2	35	270X	
0630	1540	BLEN								
		IZMI	0630.3	0635.0	III	GG	2	25X	270X	
		IZMI	0641.4	0641.5	III	B	2	40	95	
		LEAR	0720.0	0720.0	III		1	36	110	
		IZMI	0720.3	0721.0	III	G	2	40	130	
		POTS	0720.3	0721.0	III	G	1	40X	85	
		LEAR	0735.0	0745.0	III		2	34	167	
		HIRA	0735.5	0738.0	III	G	1	40	190	
		IZMI	0735.6	0737.8	III	GG	2	30	180	
		POTS	0735.6	0745.4	III	G,N	2	40X	90	
		CULG	0736.0	0737.0	III	G	1	20	180	
		CULG	0745.0	0745.0	III	B	1	25	100	
		IZMI	0745.2	0745.3	III	B	2	45	95	
		LEAR	0801.0	0935.0	III	N	1	25	180	
		IZMI	0801.2	0802.0	III	GG	2	40	180	
		POTS	0801.2	0802.0	III	G	2	40X	85	
		IZMI	0811.9	0812.8	III	G,C,U	2	75	270X	
		POTS	0811.9	0813.0	III	GG	2	200U	370	
		POTS	0841.6	0844.3	III	G	2	40X	370	
		IZMI	0842.2	0843.4	III	G,FS	2	25X	270	
		IZMI	0916.1	0918.0	III	G	2	25X	180	
		POTS	0916.2	0926.2	III	G,N	2	40X	85	
		IZMI	0925.6	0925.9	III	B	2	40	65	
		IZMI	0927.7	0927.8	III	G	1	180	270X	
		POTS	0927.7	0928.1	III	G	2	200U	420	
		IZMI	0953.0	0957.7	III	GG,FS	1	40	270X	
		POTS	0953.1	1034 U	III	GG,N	1	40X	80	
		POTS	0953.9	0954.3	III	G	1	200U	450	
		LEAR	1003.0	1005.0	III		1	44	157	
		IZMI	1003.6	1010.5	III	GG	1	45	70	
		IZMI	1027.9	1029.2	III	G	2	25X	160	
		POTS	1028.0	1029.3	III	G	2	40X	85	
		POTS	1034.9	1035.9	III	G	2	40X	300	
		IZMI	1035.0	1036.6	III	G	2	30	270X	
		POTS	1059.2	1059.4	III	B	2	40X	85	
		SVTO	1106.0	1316.0	CONT		1	29	172	
		SVTO	1106.0	1316.0	CONT		1	114	172	
		POTS	1141.1	1151.8	III	G,N	1	40X	85	
		IZMI	1150.2	1151.1	I	GG,DC	2	140	215	
		IZMI	1151.6	1151.7	III	B	2	45	95	
		POTS	1202.0	1203.3	III	G	3	40X	330	
		SVTO	1202.0	1203.0	III		1	29U	169U	
		POTS	1223	1325 U	III	GG,N	2	40X	85	
		POTS	1422.3	1422.5	III	B	1	40X	80	
		SVTO	1437.0	1437.0	III		1	29	118	
		POTS	1437.1	1437.8	III	G	2	40X	320	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
Day 08		HOLL	1449.0	1450.0	III		1	25	120	
		POTS	1451.7	1452.8	III	G	1	40X	85	
		HOLL	1642.0	1815.0	III	N	2	25	180	
		HOLL	1833.0	1836.0	III		1	25	122	
		SGMR	1847.0	1847.0	III		1	30	70	
2000	2400	CULG	2001.0	2006.0	III	G	1	50	100	
		CULG	2046.0	2120.0	III	N	1	57U	160	
		CULG	2104.0	2104.0	III	B	1	23	75	
		CULG	2215.0	2216.0	III	G	1	57U	90	
		CULG	2226.0	2226.0	III	B	1	57U	90	
		CULG	2259.0	2301.0	III	G	2	18X	200	
		HOLL	2259.0	2259.0	III		1	25	180	
		LEAR	2259.0	2300.0	III		1	25	180	
2039	2400	HIRA	2259.5	2300.0	III	B	2	25X	300	
Day 09 0000	0811	HIRA								
0000	0750	CULG	0448.0	0448.0	III	G	1	35	80	
0538	1536	POTS	0609	0802 U	I	S,N	1	200U	330	100-200MHz no data
		CULG	0610.0	0611.0	III	G	1	57U	90	
0600	0627	IZMI	0610.2	0610.5	III	B	1	45	95	
		IZMI	0625.5	0625.6	III	B	1	45	95	
0626	1512	ONDR								
0630	1540	BLEN								
		POTS	0653.5	0653.8	DCIM		1	310	420	
		POTS	0727.8	0743.8	III	G,N	1	40X	85	
		LEAR	0728.0	0756.0	III	N	1	25	138	
		SVTO	0728.0	0824.0	III	N	1	25U	75U	
0806	0856	IZMI	0816.5	0816.6	III	B	1	45	95	
		POTS	0838 U	0924	I	S,N	1	200U	280	
		POTS	0903.7	0906.7	III	G	1	40X	80	
0906	1200	IZMI	0906.4	0906.5	III	B	1	45	95	
		POTS	1009.4	1011.2	III	G	1	40X	230	
		IZMI	1011.0	1011.1	III	B	2	40	95	
		POTS	1025.7	1026.3	III	G	1	40X	55	
		POTS	1040.8	1048.7	III	G	1	40X	55	
		IZMI	1042.1	1042.2	CONT	G	1	55	60	
		IZMI	1045.4	1047.8	III	G	1	25X	65	
		POTS	1221	1302 U	I	S,N	1	200U	350	
2000	2400	CULG	2112.0	2112.0	III	B	1	57U	90	
		CULG	2222.0	2222.0	III	B	1	20	170	
		HOLL	2222.0	2222.0	III		1	25	180	
		LEAR	2222.0	2222.0	III		1	31	180	
		PALE	2222.0	2222.0	III		1	25	180	
2040	2400	HIRA	2222.0	2222.5	III	B	1	25X	300	
		LEAR	2253.0	2253.0	III		1	32	87	
		LEAR	2316.0	2316.0	III		1	25	107	
		LEAR	2338.0	0004.0	III	N	1	25	109	
Day 10 0000	0750	CULG	0004.0	0004.0	III	B	1	57U	100	
		CULG	0135.0	0137.0	III	G	1	18	170	
		LEAR	0135.0	0136.0	III		1	25	180	
0000	0810	HIRA	0135.0	0136.5	III	G	1	50	170	
		CULG	0245.0	0249.0	III	G	1	18	120	
		HIRA	0245.0	0248.5	III	G	1	25X	250	
		LEAR	0245.0	0248.0	III		1	25	122	
		LEAR	0346.0	0357.0	III	N	1	25	114	
		CULG	0347.0	0347.0	III	G	1	40	150	
		CULG	0357.0	0358.0	III	G	1	40	90	
		HIRA	0357.0	0357.5	III	B	1	50	100	
		CULG	0502.0	0503.0	III	G	1	20	130	
		LEAR	0502.0	0502.0	III		1	25	140	
		HIRA	0502.5	0503.0	III	B	1	50	130	
0540	1603	POTS	0540 E	0808 U	I	S,N	2	200U	400	100-200MHz no data
		SVTO	0605.0	0606.0	III		1	28	180	
		CULG	0606.0	0608.0	III	G	1	23	180	
		HIRA	0606.0	0608.0	III	G	1	30	220	
		LEAR	0606.0	0607.0	III		1	25	180	
		POTS	0606.0	0607.0	III	G	2	40X	350	
0555	1200	IZMI	0606.0	0608.1	III	GG	2	40	270X	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
10			IZMI	0606.7	0607.0	III	G	2	25X	230	
	0627	1510	ONDR								
	0635	1540	BLEN								
			POTS	0642.8	0643.2	III	G,RS,U	2	200U	380	
			POTS	0719.9	0720.1	III	B	1	40X	80	
			IZMI	0746.3	0747.9	III	G	1	185	270	
			POTS	0846.3	0847.6	III	G	1	40X	55	
			IZMI	0846.4	0847.5	III	G	1	45	65	
			SVTO	0847.0	0847.0	III		1	28U	140U	
			POTS	0926	1059	I	S,N,DC	2	200U	400	
			IZMI	0928.2	0931.4	I	GG	1	180	270	
			IZMI	0931.7	0932.8	III	G	1	45	80	
			IZMI	0940.5	0940.5	III	B	1	45	95	
			IZMI	1005.8	1006.0	III	G,FS	1	40	95	
			POTS	1005.8	1006.1	III	B	2	40X	85	
			POTS	1139	1312 U	I	S,N	1	200U	370	
			POTS	1305.0	1306.0	III	G	1	40X	270	
			POTS	1316.7	1317.0	III	B	1	40X	85	
			POTS	1338	1544 U	I	S,N	1	200U	380	
			POTS	1424.4	1424.6	III	B	1	40X	70	
	2000	2400	CULG	2019.0	2019.0	III	B	1	35	90	
			HOLL	2208.0	2315.0	III	N	1	25	180	
	2040	2400	HIRA	2208.5	2212.5	III	G	1	50	400	
			CULG	2209.0	2213.0	III	G	2	35	180	
			PALE	2209.0	2211.0	III		1	25	180	
			CULG	2216.0	2219.0	II	UE	1	60	90	
			LEAR	2220.0	2248.0	III	N	1	25	180	
			HIRA	2220.5	2221.0	III	B	1	80	210	
			CULG	2221.0	2221.0	III	B	1	90	180	
			CULG	2237.0	2238.0	III	G	2	18	180	
			PALE	2237.0	2238.0	III		1	25	180	
			HIRA	2237.5	2238.5	III	B	2	25X	190	
11			LEAR	0002.0	0010.0	III		1	25	99	
	0000	0750	CULG	0003.0	0010.0	III	G	1	57U	130	
	0000	0808	HIRA	0447.5	0448.0	III	B	3	50	230	
			CULG	0457.0	0501.0	III	G	2	40	350	
			LEAR	0457.0	0457.0	III		2	40	180	
	0542	1602	POTS	0542 E	1018 U	I	S,N	2	200U	400	100-200MHz no data
	0600	0642	IZMI	0556.0	0556.1	III	B	2	45	75	
	0803	1200	IZMI	0805.0	0842.0	I	N	1	140	270X	
			IZMI	1001.7	1001.8	III	B,RS	1	210	270X	
			POTS	1009.8	1013.3	III	G	1	40X	270	
			IZMI	1010.9	1011.5	III	G	1	50	215	
			POTS	1048 U	1128 U	I	S,N	1	200U	300	
			POTS	1126.1	1127.8	III	GG	3	40X	420	
			POTS	1126.8U	1128.0	V	G	3	40X	80	
			SGMR	1127.0	1128.0	III		3	30	80	
			SVTO	1127.0	1128.0	III		2	30	180	
	0629	1508	ONDR	1127.2	1128.4	DCIM	GG	1	866	1925	
			IZMI	1127.5	1129.1	III	GG	2	25X	270X	
	0635	1540	BLEN	1127.5	1129.2	III	GG	3	200X	2000X	
			IZMI	1127.7	1129.4	V		2	25X	160	
			POTS	1128 U	1602 U	I	S,N,DC	2	200U	400	
			IZMI	1134.0U	1146.0	I	S	1	110	270X	
			POTS	1134.4	1137.6	III	GG	1	65	300	
			POTS	1154.0	1154.2	DCIM	U	2	320	410	
			POTS	1555	1602 U	III	G	2	200U	330	
			HOLL	1725.0	1729.0	III		1	25	180	
			PALE	1957.0	1957.0	III		1	25	85	
			HOLL	2039.0	2039.0	III		1	25	90	
	2000	2400	CULG	2039.0	2039.0	III	B	1	23	150	
	2040	2400	HIRA								
			LEAR	2256.0	2256.0	III		1	25	180	
12	0000	0806	HIRA	0138.0	0138.5	III	B	1	230	400	
			LEAR	0253.0	0253.0	III		1	25	113	
			LEAR	0317.0	0328.0	III		1	25	113	
	0000	0750	CULG	0317.0	0322.0	III	G	1	57U	130	

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

OCTOBER 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			HIRA	0317.5	0321.0	III	G	1	40	200	
	0545	1558	POTS	0545 E	1331	I	S,N	2	200U	400	100-200MHz no data
	0631	1505	ONDR								
			LEAR	0857.0	0857.0	III		1	55	140	
			LEAR	0914.0	1009.0	III	N	1	25	180	
			POTS	0914.3	0922.3	III	G,N,U	2	40X	270	
			POTS	0945.5	0947.0	III	GG	3	40X	330	
	0640	1535	BLEN	0945.9	0946.6	III	GG	2	200X	330	
			POTS	0946.8	0947.7	V	G	2	40X	70	
			POTS	1252.8	1254.3	III	G	2	40X	350	
			POTS	1323.9	1324.8	III	G	3	40X	250	
			POTS	1400	1553 U	I	S,N,DC	1	200U	400	
			HOLL	1406.0	1410.0	III		1	25	180	
			POTS	1406.8	1413.3	III	GG,N	3	40X	450U	
			SGMR	1409.0	1410.0	III		2	30	80	
			BLEN	1409.6	1410.0	III	GG,S	3	200X	400	
			POTS	1409.8	1410.5	V	G	3	40X	80	
			POTS	1441.8	1442.0	III	B	1	50	230	
			POTS	1501.1	1501.5	III	B,U	2	40X	85	
			HOLL	2258.0	2259.0	III		1	25	160	
			LEAR	2258.0	2259.0	III		1	30	150	
	2000	2400	CULG	2258.0	2300.0	III	G	1	40	170	
	2041	2400	HIRA	2258.5	2259.5	III	B	1	50	170	
13			LEAR	0427.0	0509.0	III	N	1	25	151	
	0000	0750	CULG	0427.0	0431.0	III	G	1	57U	170	
	0000	0805	HIRA	0427.0	0427.5	III	B	1	80	250	
			CULG	0437.0	0437.0	III	B	1	80	150	
			CULG	0445.0	0445.0	III	B	1	35	75	
			CULG	0510.0	0510.0	III	B	1	40	90	
	0547	1558	POTS	0547 E	1558 U	I	S,N,DC	2	200U	400	100-200MHz no data
	0600	1204	IZMI	0600.0	1205.9D	I	N	1	120	270X	
			CULG	0608.0	0609.0	III	G	1	57U	80	
			IZMI	0608.4	0608.9	III	G	1	50	155	
			LEAR	0629.0	0630.0	III		1	62	135	
			IZMI	0629.7	0631.4	III	G	2	55	270	
			CULG	0630.0	0631.0	III	G	1	60	150	
	0633	1503	ONDR								
			IZMI	0657.0	0657.1	III	B	1	45	70	
			LEAR	0707.0	0715.0	III		1	35	180	
			CULG	0712.0	0716.0	III	G	1	57U	180	
			HIRA	0712.0	0715.5	III	G	1	80	220	
			IZMI	0712.0	0712.2	III	G,HARM	2	50	255	
			POTS	0712.0	0715.4	III	G	2	40X	270	
			IZMI	0714.9	0715.5	III	G	2	80	230	
	0600	1200	IZMI	0748.1	0748.8	III	G	1	45	85	
			LEAR	0812.0	0815.0	III		1	65	180	
			IZMI	0812.6	0813.8	III	G,G	2	50	270X	
			POTS	0812.7	0813.8	III	G	2	60	350	
			IZMI	0815.2	0818.6	III	G	1	110	175	
	0915	1535	BLEN								
			IZMI	1049.0	1049.1	III	B	1	125	160	
			IZMI	1101.0	1101.1	III	B	1	130	160	
			IZMI	1112.9	1113.0	III	B	2	45	85	
			POTS	1243.2	1244.2	III	G	2	40X	320	
			HOLL	1739.0	1739.0	III		1	25	180	
			PALE	1739.0	1821.0	III	N	2	25	180	
			HOLL	1753.0	1817.0	III	N	1	25	180	
			PALE	1754.0	1814.0	II		3	25	94	ESS 0448
			SGMR	1754.0	1823.0	II		3	30	80	ESS 0900
			HOLL	1758.0	1817.0	II		2	25	180	ESS 0453
			HOLL	1759.0	1830.0	IV		1	25	103	
			PALE	1759.0	1824.0	IV		1	25	112	
			HOLL	2208.0	2208.0	III		1	25	86	
			PALE	2208.0	2208.0	III		1	25	100	
	2000	2400	CULG	2208.0	2208.0	III	B	1	23	100	
	2042	2400	HIRA	2208.0	2208.5	III	B	1	30	100	
			LEAR	2352.0	0538.0	III	N	1	25	180	
			HOLL	2356.0	0014.0	CONT		1	37	131	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
13			HIRA	2357.0	2416.0	III	G	1	25X	200	
			CULG	2358.0	2400.0D	III	GG	1	57U	180	
14	0000	0750	CULG	0000.0E	0003.0	III	GG	1	30	180	
			CULG	0004.0	0008.0	II	FN	1	25	45	
			CULG	0004.0	0008.0	II	SH	1	50	100	FLA ESS 1000
			CULG	0007.0	0015.0	III	GG	3	27	120	
			PALE	0007.0	0015.0	III		1	25	124	
	0000	0804	HIRA	0151.5	0152.0	III	B	1	120	340	
			CULG	0238.0	0241.0	III	G	1	60	90	
			CULG	0246.0	0247.0	III	G	1	40	75	
			CULG	0251.0	0355.0	III	S,C	1	60	180	
			PALE	0251.0	0328.0	CONT		1	25	180	
			CULG	0256.0	0256.0	III	B	1	23	100	
			HIRA	0256.0	0256.5	III	B	1	25X	110	
			CULG	0301.0	0301.0	III	B	1	30	100	
			CULG	0409.0	0448.0	III	N	1	60	90	
			HIRA	0422.5	0424.5	III	G	1	25X	280	
			CULG	0423.0	0425.0	III	G	2	30	120	
	0556	0755	IZMI	0556.0E	0755.0D	I	N	1	45	270	
			IZMI	0602.6	0603.3	III	G	2	30	100	
	0549	1555	POTS	0602.9	0603.3	III	G	2	40X	85	100-200MHz no data
			CULG	0603.0	0603.0	III	G	1	35	100	
			HIRA	0603.0	0603.5	III	B	1	50	110	
			LEAR	0603.0	0603.0	III		1	25	93	
			SVTO	0603.0	0603.0	III		1	32U	84U	
			CULG	0633.0	0635.0	III	G	1	57U	80	
			IZMI	0633.5	0635.0	III	G,U	2	40	95	
			POTS	0633.9	0634.9	III	G	1	40X	60	
			CULG	0646.0	0654.0	III	G	1	400	740	
			IZMI	0646.0	0717.0U	III	N	1	45	95	
			POTS	0646.0	0703.3	DCIM		2	240	800X	
	0640	1535	BLEN	0646.2	0700.0	II	P	3	200X	800	
			BLEN	0655.7	0745.0	DCIM	C	3	500	2000X	
			POTS	0704	0717	III	G,N	2	40X	85	
			CULG	0705.0	0717.0	III	G	1	30	90	
			IZMI	0712.4	0713.4	I	GG,DC	2	70	85	
			LEAR	0713.0	0716.0	III		1	25	74	
			IZMI	0713.3	0716.5	III	GG,DC	2	25X	75	
			SVTO	0714.0	0714.0	III		1	30	64	
			POTS	0748	0850 U	I	S,N	1	200U	250	
	0815	1200	IZMI	0815.0E	1155.0U	I	N	1	45	270X	
			POTS	0906	1005 U	I	S,N,DC	1	200U	300	
			POTS	0917.9	0918.2	DCIM		2	380	660	
			LEAR	0922.0	0923.0	III		1	25	138	
			IZMI	0922.7	0923.5	III	G,C	2	25X	190	
			POTS	0922.8	0952	III	G,N	2	40X	85	
			SVTO	0923.0	0923.0	III		1	29	81	
	0635	1501	ONDR	0929.2	0932.1	DCIM	GG	2	800X	1377	
	0640	1535	BLEN	0929.5	0939.7	III	GG,RS	2	280	1500	
			IZMI	0937.8	0938.8	III	G	1	40	210	
			IZMI	0941.4	0947.8	III	GG,DC	2	40	65	
			IZMI	1000.1	1000.5	III	G	1	120	170	
			IZMI	1012.4	1012.5	III	B	1	45	85	
			POTS	1012.4	1012.6	III	B	1	40X	80	
			POTS	1052	1056	I	S,N	1	200U	280	
			POTS	1207.0	1207.9	DCIM		2	450	710	
			POTS	1244	1252	I	S,N	1	220	300	
			POTS	1419	1458	IV		2	40X	800X	
			ONDR	1419.1	1432.5	DCIM	GG	2	800X	2000X	
			BLEN	1419.4	1432.2	II	P	3	200X	1600	
			ONDR	1419.5	1429.0	DCIM	G	1	2000X	4500X	
			HOLL	1420.0	1600.0	III	N	1	25	180	
			SVTO	1420.0	1501.0	III	N	2	77U	180U	
			SGMR	1421.0	1438.0	II		1	30	80	ESS 0600
			SGMR	1421.0	1501.0	III	N	2	30	80	
			POTS	1426.5	1439	II	F,H,G	3	40X	85U	
			SGMR	1427.0	1438.0	II		1	30	80	ESS 0600
			HOLL	1429.0	1438.0	II		1	25	180	ESS 0743

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
14			SVTO	1433.0	1437.0	II		1	28U	180U	ESS 0773
			POTS	1501	1506	III	G,N	2	40X	250	
			POTS	1515	1535	DCIM		2	270	450	
			SGMR	1532.0	1533.0	III		1	30	55	
			POTS	1548.9	1549.7	III	G	2	200U	350	
			HOLL	1659.0	1700.0	III		1	25	131	
			PALE	1659.0	1700.0	III		1	25	120	
			SGMR	1659.0	1700.0	III		1	30	70	
			HOLL	1745.0	1745.0	III		1	25	180	
	2000	2400	CULG								
	2043	2400	HIRA								
			HOLL	2352.0	0014.0	III	N	1	25	142	
			HOLL	2356.0	0014.0	CONT		1	37	131	
15	0000	0130	CULG								
	0230	0750	CULG								
	0629	1200	IZMI	0635.7	0637.6	III	GG	1	45	95	
			IZMI	0731.5	0732.2	III	GG	2	150	270X	
	0000	0802	HIRA	0731.5	0732.0	III	G	1	130	240	
	0551	1551	POTS	0731.5	0732.3	III	G,RS	2	200U	380	100-200MHz no data
			POTS	0732.7	0742	I	S,N	1	200U	300	
			IZMI	0734.8	0734.9	III	B	2	180	210	
			POTS	0858.0	0908.3	III	G,N	1	40X	85	
			LEAR	0908.0	0908.0	III		1	25	143	
			SVTO	0908.0	0908.0	III		1	74	139	
			IZMI	0908.1	0908.2	III	G	2	40	145	
			POTS	1122.2	1131.7	III	G,N	1	40X	55	
			IZMI	1131.4	1131.5	III	B	1	50	65	
			POTS	1334	1342	III	G,N	2	40X	80	
			ONDR	1410.2	1416.0	DCIM	G	1	800X	2000X	
	0645	1535	BLEN	1410.3	1413.7	III	RS	3	450	2000X	
	0637	1458	ONDR	1411.3	1413.3	DCIM	G	1	2000X	4500X	
	2000	2400	CULG								
	2044	2400	HIRA								
16			LEAR	0117.0	1010.0	CONT		1	85	180	
			LEAR	0430.0	0430.0	III		1	64	135	
	0000	0750	CULG	0430.0	0431.0	III	G	1	57U	130	
	0000	0801	HIRA	0430.5	0431.0	III	B	1	60	140	
	0552	1200	IZMI	0552.0E	1200.0D	I	S,DC	2	110	270X	
	0553	1551	POTS	0553 E	1551 U	I	S,N,DC	2	200U	400	100-200MHz no data
	0645	1535	BLEN								
			CULG	0702.0	0706.0	III	G	2	20	110	
			HIRA	0702.0	0705.5	III	G	1	40	180	
			LEAR	0702.0	0705.0	III		2	25	180	
			SVTO	0702.0	0706.0	III		1	29U	142U	
			IZMI	0702.1	0707.2	III	GG,C	2	25X	270	
			POTS	0702.3	0705.7	III	GG	2	40X	450U	
			SVTO	0838.0	1549.0	CONT		1	32U	180U	
			IZMI	0842.9	0843.7	III	G	2	90	250	
			ONDR	0959.2	1000.0	DCIM	G	1	964	1583	
	0638	1456	ONDR	0959.2	0959.5	DCIM	G	1	2000X	4500X	
			IZMI	1048.7	1048.9	UNCLF		2	45	90	
			POTS	1233.2	1234.3	III	G	2	200U	340	
			POTS	1247.7	1251.5	III	G	2	40X	85	
			HOLL	1340.0	0010.0	CONT		1	66	180	
			POTS	1440.9	1441.1	III	B	1	40X	55	
	2000	2400	CULG	2000.0E	2143.0	I	S	1	100	150	
	2045	2400	HIRA								
			LEAR	2207.0	1010.0	CONT		1	78	180	
			CULG	2301.0	2400.0D	I	S	1	120	160	
17	0000	0800	HIRA								
	0000	0750	CULG	0000.0	0215.0	I	S	1	80	140	
			LEAR	0303.0	0303.0	III		1	25	180	
			CULG	0304.0	0304.0	III	B	1	35	90	
			CULG	0330.0	0401.0	I	S	1	110	140	
			CULG	0431.0	0750.0D	I	S	1	110	250	
			SVTO	0518.0	1328.0	CONT		1	44	180	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
17			CULG	0550.0	0553.0	III	G	1	23	90	
	0556	1548	POTS	0556 E	1538 U	I	S,N,DC,C	2	200U	400	100-200MHz no data
	0600	1200	IZMI	0600.0E	1200.0D	I	S	2	80	270x	
	0640	1454	ONDR								
	0645	1530	BLEN								
			CULG	0712.0	0720.0	III	G	1	60	110	
			POTS	1124.2	1127.5	DCIM		2	270	480	
			POTS	1250.2	1250.7	III	G	2	40X	330	
			POTS	1348.3	1355.4	III	G,N	1	40X	85	
			POTS	1419.6	1419.8	III	B	1	40X	65	
			PALE	1645.0	0310.0	CONT		1	41	180	
			PALE	1701.0	1701.0	III		1	34	60	
			LEAR	2310.0	2310.0	III		1	25	89	
	2000	2400	CULG	2310.0	2310.0	III	B	1	35	75	
			LEAR	2350.0	2358.0	III		1	25	180	
	2046	2400	HIRA	2350.0	2351.0	III	G	1	100	160	
			CULG	2351.0	2351.0	III	B	1	30	150	
			CULG	2358.0	2358.0	III	B	1	20	90	
18			LEAR	0121.0	0121.0	III		1	25	104	
	0000	0759	HIRA	0121.5	0122.0	III	B	1	30	100	
			LEAR	0333.0	0334.0	III		1	25	129	
			HIRA	0333.5	0334.0	III	B	1	40	110	
	0000	0750	CULG	0334.0	0334.0	III	G	1	35	110	
			HIRA	0432.0	0432.5	III	B	1	110	210	
			LEAR	0519.0	0519.0	III		1	25	120	
	0559	1545	POTS	0559 E	1545 U	I	S,N,C	2	200U	400	100-200MHz no data
	0600	1200	IZMI	0619.5	0620.5	III	G	2	45	85	
			CULG	0620.0	0620.0	III	G	1	55U	75	
	0642	1452	ONDR								
	0645	1530	BLEN								
			IZMI	0719.8	0721.1	III	G	1	130	270	
			POTS	0720.2	0720.7	DCIM		2	320	420	
			POTS	0720.5	0720.7	III	G,RS	1	200U	420	
			POTS	0808	0813	III	G	1	40X	60	
			IZMI	0810.5	0812.9	III	GG	1	40	90	
			LEAR	0914.0	0918.0	III		1	101	180	
			SVTO	0914.0	0915.0	III		1	117	180	
			IZMI	0914.3	0915.1	III	G,U	2	110	270X	
			POTS	0914.3	0918.7	III	G,RS	2	200U	380	
			IZMI	0917.9	0918.6	III	G	2	130	260	
			POTS	1016.2	1016.4	III	G	2	40X	55	
			IZMI	1016.3	1016.4	III	B	1	45	65	
			IZMI	1057.4	1057.8	III	G	1	120	230	
			POTS	1215.2	1215.8	III	G	1	65	300	
			POTS	1217.4	1217.6	III	B	2	40X	85	
			POTS	1242.4	1242.8	III	B	1	40X	85	
			POTS	1302.7	1303.2	III	B	2	40X	270	
			PALE	1744.0	1748.0	III		1	25	180	
	2000	2400	CULG	2007.0	2007.0	III	B	1	30	80	
			CULG	2355.0	2355.0	III	B	1	30	90	
			LEAR	2355.0	2355.0	III		1	25	115	
	2047	2400	HIRA	2355.0	2355.5	III	B	1	30		
19			LEAR	0105.0	0106.0	III		1	25	99	
	0000	0758	HIRA	0105.5	0106.0	III	B	1	30		
	0000	0750	CULG	0106.0	0106.0	III	G	1	30	90	
			LEAR	0524.0	0525.0	III		1	62	147	
			CULG	0525.0	0526.0	III	G	1	60	280	
	0607	0720	IZMI	0607.0E	0720.0E	I	S	1	130	250	
			IZMI	0630.3	0630.6	III	G	1	50	85	
	0606	1543	POTS	0637 U	1543 U	I	S,N,DC,C	2	200U	330	100-200MHz no data
			POTS	0959.5	1012.5	III	G,N	3	40X	800X	
	0650	1530	BLEN	1006.5	1012.4	III	GG,P,S	2	200X	1100	
	0644	1449	ONDR	1011.2	1011.4	DCIM	G	2	800X	1147	
			ONDR	1045.5	1054.0	DCIM	GG	2	800	1414	
			POTS	1045.9	1056.2	III	GG	3	40X	800X	
			BLEN	1046.0	1056.1	III	GG,P,S	2	200X	1600	
			POTS	1127.1	1127.6	III	G	2	200U	380	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
19			POTS	1148.2	1149.3	III	G	2	200U	380	
			BLEN	1148.6	1149.3	III	GG,P	2	200X	1600	
			POTS	1149.1	1149.3	DCIM		1	660	700	
			POTS	1201.3	1203.9	III	G	2	40X	450	
			POTS	1241.4	1241.7	III	G	2	40X	570	
			HOLL	1342.0	1445.0	III	N	1	102	180	
			BLEN	1342.3	1343.9	III	GG,P	3	200X	2000X	
			POTS	1342.4	1249.4	III	GG,N	3	50	800X	
			POTS	1407.6	1407.8	III	G	2	200U	500U	
			HOLL	1629.0	1630.0	III		1	25	180	
			HOLL	1755.0	1820.0	III	N	1	25	180	
			PALE	1755.0	1756.0	III		1	25	180	
			SGMR	1756.0	1756.0	III		1	30	65	
			PALE	1805.0	1930.0	III	N	1	25	180	
			SGMR	1818.0	1820.0	III		1	30	65	
	2000	2400	CULG	2051.0	2051.0	III	B	1	27	80	
			CULG	2113.0	2117.0	III	G	2	18X	160	
			HOLL	2113.0	2116.0	III		1	25	180	
			PALE	2114.0	2117.0	III		1	25	180	
	2048	2400	HIRA	2114.0	2116.5	III	G	1	30		
			CULG	2131.0	2131.0	III	B	1	23	80	
20	0000	0750	CULG	0032.0	0032.0	III	G	1	200	280	
			CULG	0039.0	0041.0	III	G	2	18X	420	
			LEAR	0039.0	0051.0	III	N	1	25	180	
	0000	0757	HIRA	0039.5	0041.0	III	G	1	25X		
			CULG	0044.0	0046.0	III	G	1	60	420	
			CULG	0046.0	0049.0	III	G	1	40	90	
			CULG	0206.0	0206.0	III	B	1	200	240	
			LEAR	0222.0	0222.0	III		1	137	180	
			CULG	0318.0	0319.0	III	G	1	50	120	
			CULG	0327.0	0329.0	III	G	2	18	260	
			LEAR	0327.0	0328.0	III		1	25	180	
			PALE	0327.0	0328.0	III		1	25	180	
			HIRA	0327.5	0328.0	III	B	1	30		
			CULG	0421.0	0421.0	III	B	1	30	75	
			LEAR	0421.0	0421.0	III		1	25	180	
			CULG	0451.0	0451.0	III	B	1	50	120	
			LEAR	0451.0	1012.0	III	N	1	25	180	
			CULG	0458.0	0459.0	III	G	2	18	240	
			HIRA	0458.0	0459.0	III	B	1	40		
			CULG	0505.0	0507.0	III	G	1	20	140	
			CULG	0511.0	0515.0	III	G	1	23	1100	
			CULG	0525.0	0547.0	III	N	1	35	120	
			HIRA	0540.0	0540.5	III	B	1	90		
			CULG	0611.0	0617.0	III	GG	2	20	460	
			HIRA	0611.0	0614.0	III	G	2	30	260	
	0605	1541	POTS	0611.4	0616.6	III	GG	2	40X	730	100-200MHz no data
			LEAR	0612.0	0614.0	V		2	25	180	
			SVTO	0612.0	0613.0	III		2	25	180	
			POTS	0633	1523 U	I	S,N,DC	2	200U	400	
			SVTO	0738.0	0739.0	V		2	25	180	
			POTS	0738.1	0738.9	III	G	3	40X	450	
			HIRA	0738.5	0739.0	III	B	1	40		
			POTS	0738.7	0739.2	V	B	3	40X	80	
			CULG	0739.0	0739.0	III	B	2	27	260	
			SVTO	0805.0	0810.0	III		1	63U	180U	
			POTS	0805.7	0810.9	III	G,N	3	40X	440	
			LEAR	0858.0	0903.0	III		2	25	180	
			SVTO	0858.0	0903.0	V		2	25	180	
			POTS	0858.7	0905.0	III	GG	3	40X	450	
	0700	1530	BLEN	0901.2	0905.0	III	GG,P	2	200X	2000X	
			ONDR	0901.3	0903.0	DCIM	G	1	800X	2000X	
	0646	1447	ONDR	0901.3	0902.3	DCIM	G	1	2000X	4500X	
			POTS	0902.5	0903.8	V	G	3	40X	80	
			POTS	0917.0	0917.8	III	G	2	40X	290	
			SVTO	0917.0	0917.0	III		1	52	180	
			POTS	1121.0	1137.0	III	GG,N	2	40X	430	
			SVTO	1121.0	1135.0	III	N	1	25	180	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
20		POTS	1121.7	1122.7	DCIM		1	330	510	
		POTS	1214.6	1214.8	DCIM		1	280	450	
		SVTO	1219.0	1258.0	III	N	1	25	180	
		POTS	1219.7	1226.2	III	G,N	1	40X	80	
		POTS	1235.7	1238.5	III	G,N	2	40X	380	
		POTS	1257.1	1302.8	III	G,N,RS	2	40X	400U	
		POTS	1400.7	1401.0	III	B	2	40X	80	
		POTS	1400.7	1401.0	III	B	2	40X	80	
		HOLL	1410.0	1412.0	III		1	25	180	
		SVTO	1410.0	1412.0	III		2	25	180	
		POTS	1410.9	1413.0	III	GG	3	40X	230	
		SGMR	1411.0	1412.0	III		1	30	60	
		ONDR	1411.2	1413.1	DCIM	G	1	884	2000X	
		ONDR	1411.3	1412.2	DCIM	G	1	2000X	4500X	
		BLEN	1411.5	1412.6	DCIM	C	2	1000	2000X	
		POTS	1421	1439	III	GG	2	40X	75	
		ONDR	1422.0	1428.2	DCIM	GG,SP	1	800X	2000X	
		ONDR	1422.1	1427.1	DCIM	G	1	2000X	4500X	
		BLEN	1422.5	1428.4	DCIM	P	2	200X	2000X	
		POTS	1423.0	1427.2	III	GG	2	40X	330	
		POTS	1426.3	1427.0	DCIM		2	350	480	
		HOLL	1432.0	1439.0	II		1	25	180	ESS 0637
		POTS	1432.8	1442	II	F,H	3	40X	85U	
		SGMR	1433.0	1437.0	II		1	35	60	ESS 0680
		SVTO	1433.0	1439.0	II		2	37	147	ESS 0657
		HOLL	1439.0	1545.0	III	N	1	25	128	
		HOLL	2008.0	2029.0	III	N	1	25	180	
	2000	CULG	2008.0	2008.0	III	B	1	23	140	
		CULG	2029.0	2030.0	III	G	3	23	170	
		CULG	2104.0	2104.0	III	G	1	23	75	
		HOLL	2157.0	2157.0	III		1	25	135	
	2049	HIRA	2157.5	2158.0	III	G	1	30		
21	0000	CULG								
		LEAR	0040.0	1013.0	III	N	1	25	180	
	0000	HIRA	0058.5	0059.0	III	B	1	200	500	
		HIRA	0239.0	0240.0	III	G	2	110	220	
		HIRA	0318.0	0318.5	III	B	1	110	210	
		HIRA	0338.0	0338.5	III	B	1	100	220	
		HIRA	0342.5	0343.0	III	B	1	80	210	
	0604	IZMI	0610.0U	1000.0U	I	N	1	130	270	
	0607	POTS	0612.2	0613.4	III	G	2	200U	340	100-200MHz no data
		HIRA	0613.0	0614.0	III	B	1	50	230	
		IZMI	0613.0	0613.7	III	GG	2	45	270X	
		SVTO	0613.0	0613.0	III		1	60	180	
		POTS	0614 U	1539 U	I	S,N,DC	2	200U	400	
		IZMI	0618.2	0621.4	III	G	1	45	75	
		IZMI	0635.3	0636.5	III	G	1	45	260	
		SVTO	0640.0	0640.0	III		1	41	125	
		IZMI	0640.1	0640.3	III	G	2	40	150	
		IZMI	0702.0	0702.1	III	G	1	45	95	
		HIRA	0718.0	0720.5	III	G	1	50	220	
		SVTO	0718.0	0719.0	III		1	33	125	
		IZMI	0718.3	0720.7	III	GG	2	40	250	
		POTS	0718.4	0719.9	III	G,RS	2	40X	250	
	0648	ONDR	0730.2	0731.2	DCIM	GG	1	1034	2000X	
		ONDR	0742.2	0745.3	DCIM	GG	2	955	2000X	
		IZMI	0758.9	0759.2	III	G	1	55	90	
		POTS	0833.7	0834.4	III	G	2	65	390	
	0705	BLEN	0833.7	0834.4	III	G	3	200X	400	
		IZMI	0833.8	0834.5	III	G,C	2	55	270X	
		SVTO	0834.0	0834.0	III		1	71	180	
		SVTO	0912.0	0921.0	III	N	1	63	180	
		IZMI	0912.7	0913.5	III	GG	2	40	200	
		POTS	0912.9	0913.3	III	G	1	40X	270	
		IZMI	0920.2	0924.7	III	GG	2	110	255	
		POTS	0920.2	0924.4	III	G	2	200U	420	
		IZMI	0938.8	0938.9	III	B	1	180	260	
		IZMI	0946.5	0947.5	III	G	2	45	215	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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	0946.6	0946.9	III	B	1	40X	230	
			POTS	1015.7	1016.8	III	GG	2	200U	380	
			BLEN	1016.0	1028.0	III	GG	2	200X	800	
			IZMI	1016.0	1016.6	III	GG	2	180	270X	
			POTS	1025.7	1028.0	DCIM		2	270	440	
			IZMI	1034.3	1034.6	III	G	1	55X	170	
			POTS	1034.4	1034.6	III	B	1	40X	80	
			IZMI	1041.6	1042.5	III	GG	2	50	215	
			SVTO	1042.0	1042.0	III		1	71	168	
			POTS	1042.1	1042.5	III	G	1	55	240	
			IZMI	1111.5	1112.2	III	G	1	55	175	
			SVTO	1115.0	1117.0	III		1	60	150	
			IZMI	1115.5	1117.2	III	GG	2	40	230	
			POTS	1115.6	1117.2	III	G	2	40X	300	
			SVTO	1154.0	1201.0	III		1	36	180	
			IZMI	1154.6	1156.7	III	G	1	90	270X	
			POTS	1200.9	1201.6	III	G	2	40X	320	
			SVTO	1346.0	1354.0	III		2	28U	180U	
			POTS	1346.2	1354.8	III	GG	3	40X	500U	
			BLEN	1346.7	1354.0	III	GG,S	2	200X	1800	
			HOLL	1347.0	1354.0	III		1	25	180	
			SGMR	1347.0	1354.0	III		1	30	65	
			BLEN	1418.8	1429.3	III	GG	2	200X	500	
			POTS	1418.9	1419.8	DCIM		2	220	430U	
			POTS	1429.0	1429.2	III	G	2	200U	260	
			POTS	1512.3	1513.6	III	G	3	200U	400U	
			BLEN	1512.4	1512.6	III	G	2	200X	700	
			HOLL	1524.0	1527.0	III		1	25	131	
			SVTO	1524.0	1527.0	III		1	78	171	
			POTS	1524.3	1524.8	III	G	2	40X	380	
			HOLL	1615.0	1627.0	III	N	1	25	180	
			HOLL	1908.0	1910.0	III		1	25	180	
			PALE	1908.0	1910.0	V		1	25	180	
			PALE	2008.0	0348.0	III	N	1	25	180	
	2000	2320	CULG	2028.0	2028.0	III	B	1	30	90	
			CULG	2034.0	2034.0	III	B	1	30	90	
			CULG	2158.0	2241.0	III	N	1	30	160	
	2050	2400	HIRA	2158.0	2158.5	III	B	1	30	130	
			HIRA	2209.0	2211.5	III	G	1	40	220	
			HIRA	2215.5	2217.0	III	G	1	40	210	
			HIRA	2240.5	2241.0	III	B	1	25X	210	
22	0000	0750	CULG	0156.0	0336.0	III	N	1	23	57U	
	0000	0754	HIRA	0156.0	0201.5	III	G	1	25X	230	
			HIRA	0212.0	0213.0	III	G	1	25X	210	
			HIRA	0230.0	0231.0	III	G	1	50	230	
			HIRA	0306.5	0307.0	III	B	1	25X	240	
			HIRA	0321.0	0322.0	III	B	1	40	210	
			HIRA	0334.5	0336.0	III	G	2	30	510	
	0610	1547	POTS	0610 E	0940 U	I	S,N,DC	2	230	400	100-200MHz no data
			IZMI	0629.8	0630.1	III	B	1	55	155	
	0650	1442	ONDR	0702.0	0705.0	DCIM	GG	1	800X	1531	
			IZMI	0707.2	0710.4	III	G	1	45	160	
			CULG	0715.0	0728.0	I	S	1	300	480	
			CULG	0736.0	0737.0	III	G	1	30	70U	
			HIRA	0736.0	0737.0	III	G	1	40	180	
			SVTO	0736.0	0746.0	III		1	25	180	
			IZMI	0736.2	0737.4	III	G,C	2	25X	190	
			POTS	0736.2	0746.5	III	GG,N	2	40X	600	
			IZMI	0739.2	0739.4	III	G	1	55	85	
			IZMI	0742.8	0744.5	III	GG,C	2	40	270X	
			HIRA	0743.0	0746.5	III	G	1	50	510	
			CULG	0744.0	0745.0	III	G	1	35	60U	
			IZMI	0746.1	0747.6	III	G	2	110	270X	
	0705	1515	BLEN	0746.2	0746.6	III	GG	2	200X	800	
	0600	1200	IZMI	0750.0U	0820.0U	I	N	1	50	260U	
			POTS	0805.3	0845	III	GG,N	1	40X	80	
			IZMI	0805.6	0806.0	III	G	1	40	130	
			IZMI	0813.5	0815.6	III	GG	1	45	170	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
22			SVTO	0824.0	0825.0	III		1	25	180	
			IZMI	0824.4	0825.2	III	GG	2	40	165	
			IZMI	0825.0	0825.7	CONT		2	45	90	
			IZMI	0838.9	0844.5	III	GG	2	40	170	
			IZMI	0916.0	0924.3	III	N	1	45	260	
			SVTO	0925.0	0925.0	III		2	25	180	
			BLEN	0925.3	0925.7	III	GG,S	2	200X	1000	
			POTS	0925.3	0926.7	III	G	2	40X	600	
			IZMI	0925.4	0926.4	III	G,C	2	25X	270X	
			POTS	0940 U	1547 U	I	S,N,DC	2	200U	530	
			IZMI	0948.6	0954.0	III	G	1	45	145	
			IZMI	1016.0	1200.0D	I	S	2	110	270X	
			POTS	1018	1030	III	GG	2	40X	700	
			IZMI	1018.1	1018.3	III	G	2	45	160	
			IZMI	1022.1	1023.0	III	G	2	45	210	
			IZMI	1024.4	1030.8	III	GG,FS	2	25X	270X	
			IZMI	1026.5	1026.8	III	G,C	2	25X	270X	
			IZMI	1046.5	1048.3	III	G,FS	2	40	215	
			POTS	1102	1111	III	G	1	40X	80	
			IZMI	1102.4	1110.9	III	N	2	40	145	
			IZMI	1104.1	1104.9	III	G,FS	2	40	215	
			POTS	1201	1112	III	G	1	40X	80	
			ONDR	1236.3	1239.5	DCIM	GG	1	800X	2000X	
			BLEN	1237.0	1239.9	DCIM	P	3	800	1900	
			POTS	1404.8	1405.5	III	GG	2	200U	450	
			HOLL	1811.0	1814.0	III		1	25	180	
			PALE	1811.0	1812.0	III		1	25	180	
			SGMR	1811.0	1812.0	III		1	30	55	
			PALE	1925.0	1926.0	III		1	25	90	
	2000	2400	CULG	2000.0E	2400.0D	I	S	1	220	290U	
			CULG	2009.0	2017.0	III	G	1	23	90	
			CULG	2050.0	2050.0	III	B	1	30	170	
			HOLL	2056.0	0006.0	CONT		1	25	177	
			CULG	2107.0	2107.0	III	B	1	57U	80	
			CULG	2119.0	2121.0	III	G	1	23	170	
	2050	2400	HIRA	2119.5	2120.0	III	B	1	90	170	
			CULG	2238.0	2238.0	III	B	1	35	90	
			HIRA	2238.0	2238.5	III	B	1	40	110	
			CULG	2320.0	2320.0	III	B	1	35	90	
			HIRA	2320.0	2320.5	III	B	1	40	150	
			LEAR	2320.0	2320.0	III		1	25	148	
			HIRA	2334.5	2335.0	III	B	1	40	80	
			CULG	2335.0	2335.0	III	B	1	35	90	
23	0000	0750	CULG	0000.0E	0044.0	I	S	1	220	320	
			CULG	0007.0	0007.0	III	B	1	35	70	
			CULG	0108.0	0241.0	III	N	1	20	170	
			LEAR	0111.0	0112.0	III		1	25	180	
			CULG	0112.0	0112.0	III	B	2	18	140	
			PALE	0112.0	0112.0	III		1	25	89	
	0000	0752	HIRA	0112.0	0112.5	III	B	2	30	120	
			HIRA	0130.0	0138.5	III	G	1	25X	160	
			LEAR	0130.0	0138.0	III		1	25	180	
			LEAR	0231.0	1014.0	III	N	1	25	180	
			HIRA	0237.5	0242.5	III	G	1	25X	160	
			CULG	0242.0	0242.0	III	G	2	18	180	
			PALE	0242.0	0242.0	III		1	25	180	
			HIRA	0318.5	0319.5	III	G	2	30	220	
			HIRA	0333.0	0334.0	III	G	3	25X	290	
			HIRA	0351.5	0352.0	III	B	1	40	110	
			CULG	0352.0	0750.0D	III	N	1	18	160	
			CULG	0409.0	0410.0	III	G	3	18X	430	
			HIRA	0409.0	0411.0	III	B	3	25X	410	
			LEAR	0409.0	0410.0	III		2	25	180	
			HIRA	0418.0	0423.5	III	G	1	25X	200	
	0550	1200	IZMI	0550.0E	1200.0D	I	N	1	130	270X	
			IZMI	0554.0U	1010.0U	III	N	1	45	95	
			SVTO	0604.0	0606.0	III		1	25	155	
			IZMI	0605.4	0608.9	III	GG,FS	2	45	155	

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

OCTOBER 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
23			HIRA	0605.5	0607.0	III	G	2	40	140	
	0613	1536	POTS	0613 E	1220 U	I	S,N,DC	2	200U	400	100-200MHz no data
			IZMI	0640.6	0643.6	III	GG	1	40	240	
	0652	1440	ONDR								
			IZMI	0653.3	0655.9	III	G	2	40	140	
			POTS	0711.6	0735 U	III	G,N	2	40X	380	
			IZMI	0717.8	0718.8	III	G	2	40	160	
			IZMI	0728.2	0745.7	III	N	2	45	120	
			POTS	0736 U	0804 U	III	G,N	1	40X	70	
			POTS	0758.7	0759.6	III	GG	2	200U	600	
			IZMI	0758.8	0759.2	III	G	1	80	180	
	0710	1515	BLEN	0758.8	0759.3	III	GG	2	200X	600	
			POTS	0835.0	0838.4	III	G	2	40X	400	
			IZMI	0835.1	0838.4	III	GG	2	25X	170X	
			LEAR	0836.0	0838.0	III		2	25	180	
			SVTO	0837.0	0838.0	V		2	25	180	
			BLEN	0837.4	0837.7	III	G	1	200X	450	
			IZMI	0837.4	0838.3	III	G,C	2	25X	270X	
			POTS	0856.1	0857.0	III	G	1	200U	470	
			IZMI	0856.5	0856.6	III	G	1	120	270	
			POTS	0937.3	0943.8	III	G,N	1	40X	400	
			IZMI	0942.3	0943.7	III	GG	1	40	95	
			IZMI	1028.5	1034.8	III	GG	2	40X	140	
			POTS	1028.6	1123	III	GG,N	2	40X	400	
			SVTO	1031.0	1538.0	III	N	2	25	180	
			IZMI	1031.2	1033.1	III	GG,C	2	25X	270	
			IZMI	1038.9	1039.0	III	G	1	110	180	
			IZMI	1041.9	1042.1	III	G	2	40	270X	
			IZMI	1048.4	1048.5	III	B	1	110	270X	
			IZMI	1056.7	1057.0	III	G	1	85	270X	
			IZMI	1100.7	1101.4	III	G,C	1	40	85	
			IZMI	1106.5	1106.6	III	B	2	45	65	
			IZMI	1116.7	1117.0	III	G,C	2	40	185	
			IZMI	1122.6	1122.8	III	B	2	40	120	
			POTS	1142.9	1143.3	III	G	1	40X	70	
			SVTO	1210.0	1221.0	V		2	25	180	
			POTS	1220.7	1222.2	III	G	3	40X	600	
			BLEN	1220.8	1221.4	III	GG,RS,V	3	200X	650	
			SGMR	1221.0	1221.0	III		2	30	80	
			POTS	1251 U	1418	III	G,N	1	40X	70	
			POTS	1315 U	1536 U	I	S,N	1	200U	400	
			POTS	1444.8	1445.9	III	G	2	40X	300	
			HOLL	1445.0	1445.0	III		1	25	150	
			HOLL	1445.0	1559.0	III	N	1	25	150	
			SGMR	1445.0	1445.0	III		1	30	45	
			POTS	1502.0	1503.1	III	G	2	40X	260	
			HOLL	1746.0	1748.0	III		1	25	130	
			HOLL	1809.0	1809.0	III		1	25	180	
			HOLL	1927.0	1929.0	III		1	25	180	
			PALE	1927.0	1930.0	III		1	25	180	
			SGMR	1929.0	1930.0	III		1	30	80	
	2000	2400	CULG	2000.0E	2059.0	I	S	1	210	280	
			CULG	2039.0	2400.0D	III	N	1	18	180	
			PALE	2055.0	0021.0	III	N	1	25	180	
			LEAR	2309.0	2309.0	III		1	25	180	
	2051	2400	HIRA	2309.0	2309.5	III	B	1	30	120	
			HOLL	2323.0	2323.0	III		1	25	160	
			LEAR	2323.0	2325.0	III		1	25	180	
			HIRA	2323.5	2324.0	III	B	1	30	130	
24	0000	0750	CULG	0000.0E	0750.0D	III	N	1	18	180	
			LEAR	0004.0	0012.0	V		3	25	180	
			CULG	0009.0	0011.0	III	G	3	18X	360	
			PALE	0009.0	0010.0	III		2	25	180	
	0000	0751	HIRA	0009.0	0011.0	III	B	3	25X	400	
			LEAR	0018.0	0556.0	CONT		1	69	180	
			CULG	0021.0	0750.0D	I	S	1	160	280	
			PALE	0031.0	0233.0	CONT		1	111U	180U	
			CULG	0045.0	0045.0	III	B	1	180	300	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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		HIRA	0045.0	0048.0	III	G	1	80	320	
		CULG	0053.0	0055.0	III	G	1	220	520	
		LEAR	0123.0	0124.0	III		1	25	93	
		HIRA	0132.5	0133.0	III	B	1	40	70	
		LEAR	0137.0	0138.0	III		1	25	92	
		LEAR	0151.0	1014.0	III	N	1	25	180	
		HIRA	0151.5	0152.0	III	B	1	40	110	
		HIRA	0204.5	0205.0	III	B	1	30	200	
		CULG	0226.0	0228.0	III	G	1	100	450	
		HIRA	0226.0	0229.0	III	G	1	50	610	
		HIRA	0254.0	0254.5	III	B	1	30	90	
		HIRA	0328.0	0328.5	III	B	1	30	200	
		HIRA	0337.0	0357.0	III	G	1	25X	320	
		CULG	0340.0	0342.0	III	G	2	20	250	
		CULG	0355.0	0357.0	III	GG	2	18	280	
		HIRA	0418.5	0419.0	III	B	1	30	140	
		HIRA	0429.0	0429.5	III	B	1	40	220	
		IZMI	0551.0E	1200.0D	III	N	1	25X	95	
0551	1200	IZMI	0551.0E	0806.0	I	N,C	2	45	270X	
		HIRA	0608.0	0608.5	III	B	1	130	220	
		IZMI	0608.3	0608.6	III	G	2	130	270X	
0615	1535	POTS	0615 E	0800 U	I	S,N,DC	2	200U	420	100-200MHz no data
		IZMI	0621.0	0621.4	III	G,FS	2	45	90	
		IZMI	0623.6	0624.3	III	G,C	2	50	90	
		IZMI	0632.2	0632.7	III	G,FS	2	45	65	
0654	1438	ONDR								
		SVTO	0656.0	0815.0	III	N	1	25	180	
		IZMI	0656.5	0657.3	III	GG	2	40	180	
		POTS	0656.6	0802.3	III	GG,N	3	40X	650	
		IZMI	0704.5	0705.9	III	GG,FS	2	40	170	
		IZMI	0706.4	0707.7	III	GG	2	55	190	
		IZMI	0709.0	0718.7	III	GG	2	45	270X	
		IZMI	0710.3	0710.6	III	G,C	2	40	190	
		IZMI	0720.4	0726.6	III	GG	2	55	270X	
		CULG	0722.0	0723.0	III	G	1	60	280	
0715	1515	BLEN	0734.5	0803.0	III	GG,RS	3	200X	800	
		IZMI	0735.5	0737.6	III	GG,C	2	45	270X	
		CULG	0736.0	0737.0	III	G	1	50U	280	
		HIRA	0736.0	0739.5	III	G	2	40	400	
		CULG	0738.0	0739.0	III	G	2	23	280	
		IZMI	0738.0	0739.8	III	GG,C	2	45	270X	
		SVTO	0738.0	0739.0	III		2	25	180	
		IZMI	0740.2	0741.0	III	G	2	40	270X	
		IZMI	0741.9	0742.4	III	G	1	50	190	
		IZMI	0745.9	0759.0	III	GG,FS	2	25X	270X	
		IZMI	0754.5	0755.2	III	G,C	2	25X	270X	
		POTS	0800	0847	IV		2	40X	650	
		SVTO	0800.0	0802.0	III		2	25	180	
		IZMI	0800.6	0802.1	III	GG,C	2	25X	270X	
		POTS	0801.2	0801.9	V	G	3	40X	70	
		IZMI	0806.0	0850.0U	I	S,C	2	45	270X	
		IZMI	0815.1	0815.6	III	G	2	40	95	
		POTS	0819	0832	II	UE	2	40X	85U	
		IZMI	0835.5	0835.6	CONT		2	130	175	
		POTS	0847	1535	I	S,N,DC	2	200U	420	
		IZMI	0850.0	1200.0D	I	N	2	45	270X	
		IZMI	0854.2	0854.2	III	G,C	2	40	170	
		POTS	0854.2	0854.6	III	B	2	40X	80	
		IZMI	0908.8	0909.1	III	G,C	2	40	95	
		POTS	0908.8	0909.2	III	B	2	40X	420	
		POTS	0934.4	0935.5	DCIM		1	380	480	
		POTS	0934.5	0934.7	III	B	2	40X	70	
		POTS	0947.0	0951.4	III	G	2	40X	400	
		IZMI	0947.1	0947.6	III	G	1	45	140	
		SVTO	0949.0	0951.0	III		2	25	180	
		IZMI	0949.5	0949.7	III	G	2	25X	215	
		IZMI	0949.6	0950.0	V		2	45	95	
		IZMI	0950.9	0951.2	III	G,FS	2	25X	170	
		POTS	0952.2	1024 U	III	G	1	40X	70	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
24			IZMI	0952.8	0953.0	III	G	1	130	225	
			IZMI	1014.4	1017.5	III	G	1	50	160	
			IZMI	1025.4	1027.3	III	GG	2	50	175	
			IZMI	1033.6	1035.4	III	GG	1	55	170	
			IZMI	1039.3	1039.7	III	G	1	110	170	
			POTS	1053	1124	III	GG,N	3	40X	450	
			IZMI	1055.5	1056.0	III	G,FS	1	40	90	
			IZMI	1057.0	1057.3	III	G	2	25X	160	
			SVTO	1057.0	1057.0	III		2	25	180	
			IZMI	1057.1	1057.6	V		2	40	70	
			IZMI	1100.2	1105.8	III	GG	1	35	175	
			SVTO	1111.0	1415.0	III	N	2	25	180	
			IZMI	1111.2	1112.2	III	GG,C	2	25X	270	
			IZMI	1120.1	1128.9	III	GG	1	55	190	
			IZMI	1123.1	1124.6	III	GG	2	50	270	
			IZMI	1132.9	1138.4	III	GG	1	35	160	
			POTS	1136	1344 U	III	GG,N	2	40X	70	
			IZMI	1147.1	1149.2	III	GG,C	2	35	270X	
			POTS	1147.4	1148.2	III	B	2	40X	500	
			IZMI	1158.5	1200.4	III	GG	2	30	160	
			POTS	1158.5	1158.9	III	B	2	40X	300	
			SGMR	1218.0	1219.0	III		1	30	55	
			POTS	1334.6	1335.0	III	G	2	40X	600	
			POTS	1402	1427	III	GG,N	3	40X	650	
			BLEN	1402.2	1424.3	III	GG,P	3	200X	1200	
			HOLL	1404.0	1405.0	III		1	25	180	
			HOLL	1404.0	1445.0	III	N	1	25	180	
			SGMR	1404.0	1413.0	V		1	30	50	
			SVTO	1418.0	1421.0	III		2	25	180	
			POTS	1443.9	1446.3	III	G,N	2	40X	300	
			SGMR	1444.0	1445.0	III		2	30	45	
			HOLL	1604.0	1623.0	III	N	1	25	180	
			PALE	1648.0	1848.0	III	N	1	25	180	
			HOLL	1804.0	1814.0	III		2	25	180	
			HOLL	1804.0	1846.0	III	N	2	25	180	
			PALE	1807.0	1810.0	III		2	25	180	
			SGMR	1807.0	1820.0	III	N	3	30	80	
			PALE	1812.0	2041.0	CONT		1	66	180	
			HOLL	1815.0	1953.0	IV		1	75	180	
			HOLL	1932.0	1932.0	III		1	25	160	
	2000	2400	CULG	2000.0E	2024.0	III	S,C	1	40U	180	
			CULG	2019.0	2144.0	I	S	1	65	280	
			CULG	2026.0	2027.0	III	G	2	25	180	
			CULG	2035.0	2214.0	III	N	1	18	180	
			PALE	2125.0	2126.0	III		1	25	135	
	2053	2400	HIRA	2126.0	2126.5	III	B	1	30	200	
			LEAR	2202.0	0930.0	III	N	1	25	180	
			CULG	2249.0	2251.0	III	G	1	30	150	
			CULG	2326.0	2400.0D	III	N	1	27	170	
			CULG	2338.0	2343.0	III	GG	2	18X	280	
			HIRA	2338.0	2343.0	III	G	2	25X	280	
			HOLL	2338.0	2343.0	III		1	25	180	
25	0000	0750	CULG	0000.0E	0039.0	III	N	1	18	180	
			CULG	0120.0	0553.0	I	S	1	110	260	
			CULG	0128.0	0213.0	III	N	1	50U	180	
			CULG	0252.0	0430.0	III	N	1	18	180	
			CULG	0516.0	0516.0	III	B	1	23	130	
	0608	1200	IZMI	0608.0E	1200.0D	I	N	2	120	270X	
			IZMI	0616.1	0616.2	III	B	1	45	85	
	0618	1530	POTS	0618 E	1530 U	I	S,DC,N	2	200U	420	100-200MHz no data
			POTS	0644	0645	III	G	2	40X	350	
			CULG	0644.0	0645.0	III	G	1	18X	230	
			IZMI	0644.0	0645.1	III	GG	2	25X	250	
			SVTO	0644.0	0645.0	III		1	25	180	
	0000	0750	HIRA	0644.0	0645.0	III	B	2	50	210	
			CULG	0702.0	0702.0	III	B	1	200	500	
			POTS	0702.1	0702.7	DCIM		2	220	800X	
	0756	1436	ONDR	0702.1	0702.3	DCIM	G	2	800X	1817	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
25			IZMI	0716.1	0716.3	III	G	1	135	215	
			CULG	0721.0	0723.0	III	G	1	20	230	
			POTS	0721.0	0722.9	III	G	2	40X	400	
			IZMI	0721.5	0725.2	III	GG	2	25X	270X	
			SVTO	0722.0	0723.0	III		1	34U	126U	
			HIRA	0722.5	0723.0	III	B	1	40	120	
			IZMI	0800.5	0800.6	III	B	1	40	85	
			POTS	0800.5	0800.8	III	B	2	40X	55	
			IZMI	0843.1	0843.2	III	G	2	95	175	
			POTS	0938	1018	III	GG,N	1	40X	80	
			IZMI	0940.6	0957.0	I	S	2	40	95	
			IZMI	0948.2	0948.3	III	B	2	150	185	
			IZMI	1001.3	1001.5	III	B,C	2	25X	125	
			IZMI	1017.3	1017.5	III	G	1	40	160	
			SVTO	1056.0	1101.0	III		1	31U	180U	
			POTS	1056.6	1111	III	GG	2	40X	650	
			IZMI	1058.7	1059.5	III	G	2	25X	165	
			IZMI	1100.9	1102.4	III	G,DC	2	30	215	
			IZMI	1105.5	1105.7	III	G	1	40	255	
			IZMI	1109.6	1110.7	III	G	2	115	175	
			POTS	1201.6	1214.8	III	GG	2	40X	520	
			SVTO	1202.0	1213.0	III	N	1	32U	180U	
			POTS	1221	1312 U	III	GG,N	1	40X	70	
			POTS	1259.0	1300.8	III	G	2	40X	280	
			SVTO	1300.0	1300.0	III		1	32U	143U	
			POTS	1359	1415	III	GG	3	40X	600	
			SGMR	1403.0	1408.0	V		1	30	75	
			SVTO	1403.0	1414.0	III	N	2	32U	180U	
			ONDR	1403.5	1407.1	DCIM	G	1	800X	2000X	
			HOLL	1404.0	1408.0	III		1	25	180	
	0715	1515	BLEN	1404.0	1413.1	III	GG,P	3	200X	2000X	
			ONDR	1404.1	1407.1	DCIM	G,W	1	2000X	4500X	
			HOLL	1441.0	1847.0	III	N	1	25	135	
			SVTO	1448.0	1448.0	III		1	75U	83U	
			POTS	1448.1	1448.4	III	G	2	40X	85	
			HOLL	1740.0	1752.0	II		1	25	87	ESS 0368
			PALE	1744.0	1748.0	II		1	25	180	ESS 0780
			SGMR	1746.0	1811.0	III	N	2	30	80	
			HOLL	1749.0	1859.0	IV		1	101	180	
			PALE	1754.0	1901.0	IV		1	25	180	
	2000	2400	CULG	2006.0	2016.0	UNCLF		1	23	45	
			CULG	2034.0	2400.0D	I	S	1	120	290	
			CULG	2037.0	2112.0	III	S	1	23	100	
			CULG	2145.0	2154.0	III	GG	1	100	160	
			HOLL	2147.0	2148.0	III		1	25	134	
	2054	2400	HIRA	2147.5	2148.0	III	B	1	40	120	
			CULG	2148.0	2149.0	III	G	2	18	140	
			CULG	2218.0	2220.0	III	G	1	50U	130	
			CULG	2237.0	2237.0	III	B	1	23	90	
			CULG	2240.0	2250.0	III	G	1	50	90	
26	0000	0750	CULG	0000.0E	0750.0D	I	S	1	140	300	
			CULG	0130.0	0130.0	III	B	1	50U	90	
			CULG	0313.0	0329.0	III	GG	1	18	330	
	0000	0749	HIRA	0316.0	0328.5	III	G	3	40	310	
			CULG	0327.0	0328.0	III	G	3	18	520	
			CULG	0332.0	0349.0	CONT		1	50U	120	
			CULG	0404.0	0404.0	III	B	1	30	180	
			CULG	0549.0	0549.0	III	B	1	200	460	
	0601	1200	IZMI	0601.0E	1200.0D	I	S,C	2	120	270X	
	0620	1530	POTS	0620 E	1530 U	I	S,DC,N	2	200U	500U	100-200MHz no data
	0715	1515	BLEN								
			POTS	0719	0729	II	F,H	2	40X	85U	
			IZMI	0719.7	0728.2	I	S	2	40	95	
			CULG	0720.0	0728.0	UNCLF		1	35	90	
			IZMI	0741.3	0741.4	III	B	1	50	65	
			POTS	0756	0807	III	G,N	1	40X	60	
			IZMI	0756.2	0756.5	III	G	1	45	85	
	0758	1433	ONDR								

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
26			IZMI	0806.7	0807.0	III	B	1	40	90	
			IZMI	0829.5	0830.0	III	GG	1	90	260	
			IZMI	0846.0	0846.2	III	G,C	1	45	85	
			IZMI	1037.9	1038.1	III	G	1	50	190	
			POTS	1037.9	1038.2	III	B	2	40X	270	
			POTS	1224.0	1225.2	DCIM		2	350	600	
			POTS	1428.3	1433.8	III	GG	2	40X	500U	
			HOLL	1643.0	1643.0	III		1	25	139	
	2000	2400	CULG	2000.0E	2333.0	I	S	1	60	170	
			CULG	2012.0	2050.0	III	N	1	25	80	
			HOLL	2032.0	2300.0	CONT		1	75	175	
			HOLL	2034.0	2035.0	III		1	25	180	
			HOLL	2053.0	2053.0	III		1	25	164	
	2055	2400	HIRA								
			LEAR	2203.0	0128.0	III	N	1	25	180	
			HOLL	2252.0	2355.0	III	N	1	25	180	
			HOLL	2258.0	2311.0	II		2	25	180	ESS 1015
27			LEAR	0307.0	0313.0	III		1	25	127	
	0000	0748	HIRA	0308.5	0309.0	III	B	1	25X	110	
	0000	0750	CULG	0309.0	0309.0	III	B	1	18	120	
			LEAR	0326.0	0431.0	III	N	1	25	180	
	0623	1528	POTS	0623 E	1528 U	I	S,DC,N	2	200U	400	100-200MHz no data
	0700	1431	ONDR								
	0715	1515	BLEN								
			POTS	0749	0831	III	GG,N	2	40X	55	
	0650	1200	IZMI	0758.1	0800.0	III	G	1	25X	65	
			IZMI	0811.0	1200.0D	I	N	1	175	270X	
			IZMI	0818.2	0821.2	III	G	2	25X	85	
			IZMI	1013.8	1014.1	III	B	2	30	75	
			POTS	1013.8	1014.1	III	B	2	40X	80	
			IZMI	1046.0	1046.1	III	B	1	55	65	
			IZMI	1152.1	1152.2	III	B	1	25X	45	
			SVTO	1258.0	1258.0	III		1	30U	83U	
			POTS	1258.1	1258.4	III	B	2	40X	350	
			POTS	1357.7	1358.4	III	G	1	40X	70	
			POTS	1418.4	1418.7	III	B	1	40X	50	
	2056	2400	HIRA	2155.5	2201.0	III	G	1	25X	150	
	2000	2400	CULG	2156.0	2201.0	III	G	1	18	90	
			LEAR	2252.0	2255.0	III		2	25	180	
			CULG	2253.0	2312.0	III	G	3	18X	110	
			HIRA	2253.0	2312.0	III	G	2	25X	140	
			PALE	2253.0	2255.0	III		1	25	180	
			HIRA	2258.5	2307.0	II		3	25X	100	
			HIRA	2258.5	2307.0	II		3	50	200	
			CULG	2259.0	2307.0	II	SH	3	45	160	ESS 900
			CULG	2300.0	2310.0	II	FN	3	18X	70	
			LEAR	2302.0	2313.0	II		2	25	180	ESS 0909
			PALE	2304.0	2307.0	II		1	25	180	ESS 0634
			PALE	2308.0	2312.0	III		1	25	180	
			CULG	2329.0	2331.0	III	G	2	18	50U	
28			LEAR	0113.0	0120.0	III		1	25	129	
	0000	0747	HIRA	0117.0	0119.0	III	G	1	25X	110	
	0000	0750	CULG	0117.0	0119.0	III	G	1	18	80	
			HIRA	0139.0	0139.5	III	B	1	25X	80	
			LEAR	0139.0	0139.0	III		1	25	87	
			LEAR	0226.0	0229.0	III		1	25	180	
			CULG	0227.0	0227.0	III	G	1	18	80	
			HIRA	0227.0	0227.5	III	B	1	30	110	
			LEAR	0325.0	0910.0	CONT		1	114	180	
			LEAR	0359.0	0653.0	III	N	1	25	180	
			CULG	0400.0	0401.0	III	G	1	20	90	
			HIRA	0400.0	0401.0	III	B	1	60	130	
			CULG	0423.0	0433.0	III	G	1	20	90	
			HIRA	0430.5	0433.0	III	G	1	30	150	
			LEAR	0513.0	0519.0	III		2	25	180	
			HIRA	0513.5	0520.0	III	G	2	40	180	
			CULG	0514.0	0520.0	III	G	1	20	90	

SOLAR RADIO EMISSION
Spectral Observations

OCTOBER 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
28	0625	1528	POTS	0625 E	0954 U	I	S,DC	3	200U	450U	100-200MHz no data
			CULG	0647.0	0652.0	CONT		1	120	240	
	0650	1200	IZMI	0650.0E	0900.0E	I	SC	2	110	270X	
			POTS	0701	0719	III	G,N	1	40X	50	
			IZMI	0701.5	0701.6	III	B	2	35	65	
			IZMI	0701.8	0710.0	III	N	1	45	65	
			CULG	0702.0	0702.0	III	B	1	30	50	
			LEAR	0850.0	0852.0	III		2	25	180	
			SVTO	0850.0	0852.0	III		2	25	180	
	0715	1515	BLEN	0850.0	0852.8	III	GG,RS	2	200X	4000X	
			IZMI	0850.1	0852.6	III	GG,C	2	25X	270X	
			POTS	0850.3	0853.3	III	G	3	40X	420	
	0702	1429	ONDR	0850.3	0851.5	DCIM	GG	2	1095	2000X	
			IZMI	0900.0	0915.0U	I	N	1	170	270X	
			IZMI	0930.3	0930.4	III	B	1	45	70	
			IZMI	0956.4	0957.2	III	G	1	45	85	
			POTS	0956.4	0957.3	III	G	1	40X	55	
			POTS	1002 U	1528 U	I	S,N	2	200U	400	
			IZMI	1002.3	1200.0	I	N	1	200	270X	
			IZMI	1005.1	1005.2	III	B	1	110	160	
			IZMI	1059.1	1059.5	III	G	1	130	180	
			IZMI	1107.5	1107.6	III	B	1	110	175	
			SVTO	1245.0	1324.0	CONT		1	77U	180U	
			POTS	1301.3	1315.5	III	G,N	2	40X	85	
			SVTO	1304.0	1305.0	III		1	25	180	
			POTS	1334.6	1343.7	III	GG,N	3	40X	380	
			HOLL	1337.0	1341.0	III		1	25	141	
			SVTO	1338.0	1341.0	III		2	25	149	
			POTS	1339.5	1340.5	V	B	3	40X	75	
			POTS	1359.4	1407.8	III	G,N	2	40X	85	
			HOLL	1404.0	1404.0	III		1	25	88	
			SVTO	1404.0	1404.0	III		1	74U	142U	
			POTS	1430.8	1431.1	III	B	1	50	230	
			HOLL	1910.0	1910.0	III		1	25	172	
			HOLL	1927.0	2128.0	III	N	2	25	180	
			PALE	1928.0	1929.0	V		1	25	180	
			SGMR	1928.0	1929.0	III		3	30	80	
			PALE	1942.0	1948.0	III		1	25	180	
			LEAR	2224.0	2226.0	III		1	25	180	
	2056	2400	HIRA	2224.5	2226.5	III	G	1	30	240	
			HOLL	2225.0	2226.0	III		1	25	167	
			PALE	2225.0	2226.0	III		1	56	180	
	2000	2400	CULG	2225.0	2227.0	III	G	1	18	90	
			HIRA	2237.0	2238.0	III	B	1	30	190	
			LEAR	2237.0	2237.0	III		1	25	180	
			CULG	2238.0	2238.0	III	B	1	20	80	
29			LEAR	0020.0	0022.0	III		1	25	180	
	0000	0745	HIRA	0020.0	0022.0	III	G	1	30	200	
	0000	0750	CULG	0020.0	0022.0	III	G	1	18X	80	
			LEAR	0202.0	0203.0	III		1	25	113	
			HIRA	0202.5	0203.0	III	B	1	30	110	
			CULG	0203.0	0205.0	III	G	1	18	75	
			LEAR	0215.0	0215.0	III		1	25	100	
			LEAR	0231.0	0232.0	III		1	25	180	
			PALE	0231.0	0231.0	III		1	25	138	
			HIRA	0231.5	0232.0	III	B	1	30	130	
			CULG	0232.0	0232.0	III	B	1	18	90	
			LEAR	0251.0	0323.0	CONT		1	112	180	
			CULG	0301.0	0302.0	III	G	1	18X	100	
			HIRA	0301.0	0301.5	III	B	1	25X	160	
			LEAR	0301.0	0301.0	III		1	25	180	
			PALE	0301.0	0301.0	III		1	25	180	
			CULG	0350.0	0352.0	III	G	1	18	90	
			LEAR	0350.0	0351.0	III		1	25	180	
			HIRA	0350.5	0351.5	III	G	1	50	130	
			HIRA	0420.5	0424.0	II		1	110	270	
			LEAR	0422.0	0423.0	III		1	25	180	
			LEAR	0446.0	1016.0	III	N	1	25	180	

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

OCTOBER 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
29		CULG	0447.0	0551.0	III	N	1	18	100	
		HIRA	0456.0	0457.0	III	G	1	40	160	
		HIRA	0516.0	0520.0	III	G	1	25X	210	
		HIRA	0536.0	0536.5	III	B	1	40	130	
0628	1525	POTS	0628 E	1525 U	I	S,N,DC	2	200U	400	100-200MHz no data
0702	1200	IZMI	0702.0E	1200.0D	I	N	1	120	270X	
0704	1427	ONDR								
		IZMI	0712.3	0712.4	III	B	1	45	65	
0715	1515	BLEN								
		SVTO	0738.0	0739.0	III		1	42	144	
		IZMI	0739.2	0741.0	III	GG	2	40	270X	
		POTS	0739.6	0740.1	III	B	2	40X	290	
		CULG	0740.0	0740.0	III	B	1	23	60	
		IZMI	0742.2	0749.3	III	N	1	45	70	
		POTS	0824	0846	III	G,N	2	40X	70	
		IZMI	0829.5	0832.7	III	GG,RS	2	40	75	
		POTS	0837.6	0839.2	III	GG	2	200U	500	
		IZMI	0837.8	0838.3	III	G	2	110	270X	
		SVTO	0838.0	0845.0	III		1	30	147	
		IZMI	0838.8	0838.9	III	G	2	90	270X	
		IZMI	0845.3	0845.5	III	B	2	25	65	
		POTS	0941	0944	III	G,N	1	40X	55	
		IZMI	0941.5	0941.7	III	B	1	45	85	
		POTS	1010	1019.1	III	G,N	2	40X	85	
		SVTO	1018.0	1019.0	III		1	25	83	
		IZMI	1018.5	1019.0	III	G	2	25X	120	
		IZMI	1056.2	1057.0	III	G	2	25X	180	
		IZMI	1105.0	1106.0	III	G	1	45	85	
		IZMI	1119.1U	1120.0	III	G,C,FS	1	40	190	
		POTS	1119.3	1124.4	III	G,N	2	40X	80	
		IZMI	1121.9	1124.1	III	G,FS	1	45	160	
		POTS	1129.8	1135.8	III	G,N	2	200U	500	
		IZMI	1131.4	1139.6	III	G	1	110	270	
		POTS	1346.8	1347.0	III	B	2	40X	75	
		SVTO	1408.0	1441.0	CONT		1	80U	180U	
		HOLL	1414.0	1802.0	CONT		1	64	180	
		HOLL	1935.0	1936.0	III		1	25	180	
2000	2400	CULG	2000.0E	2044.0	III	N	1	18	80	
2057	2400	HIRA								
30		LEAR	0007.0	0008.0	III		1	25	180	
		PALE	0007.0	0008.0	III		1	25	180	
0000	0116	HIRA	0007.5	0008.5	III	G	1	30	200	
0000	0750	CULG	0008.0	0008.0	III	G	1	18	100	
		LEAR	0602.0	0603.0	III		1	25	103	
		SVTO	0602.0	0603.0	III		1	25U	80U	
0537	0745	HIRA	0602.5	0603.0	III	B	1	30	120	
		CULG	0603.0	0603.0	III	G	1	23	80	
0631	1523	POTS	0639	1103	I	S,N,DC	2	200U	440	100-200MHz no data
0653	1200	IZMI	0653.0E	1145.0U	I	S	1	110X	270X	
0706	1425	ONDR								
0720	1510	BLEN								
		IZMI	0812.3	0812.4	III	B	1	80	95	
		LEAR	0836.0	1017.0	CONT		1	99	180	
		SVTO	0853.0	1007.0	CONT		1	82U	180U	
		POTS	0959.9	1000.2	III	B	1	40X	70	
		POTS	1126	1203	I	S,N	1	200U	400	
		POTS	1128.0	1128.4	III	G	1	40X	55	
		POTS	1232	1310	I	S,N	2	200U	280	
		POTS	1318.5	1318.8	III	G	1	40X	55	
		POTS	1323.5	1325.2	DCIM		2	220	450	
		HOLL	1413.0	1414.0	III		1	110	180	
		POTS	1413.4	1415.0	III	G	2	40X	300	
		SVTO	1414.0	1414.0	III		1	111U	165U	
		POTS	1434	1310	I	S,N	2	200U	250	
		POTS	1514.9	1519.0	DCIM		2	230	450	
		HOLL	1712.0	1715.0	III		1	25	180	
		HOLL	1907.0	2001.0	III	N	1	25	180	
		PALE	1907.0	2014.0	III	N	1	25	180	

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

OCTOBER 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
30	2000	2400	CULG	2043.0	2048.0	III	G	1	18	70	
			LEAR	2158.0	0131.0	CONT		1	114	180	
			CULG	2232.0	2237.0	III	G	1	18	90	
			LEAR	2232.0	2305.0	III	N	1	25	180	
	2058	2400	HIRA	2233.0	2237.5	III	G	1	25X	210	
			CULG	2302.0	2305.0	III	G	1	23	80	
31			LEAR	0017.0	0017.0	III		1	25	84	
	0000	0750	CULG	0017.0	0017.0	III	B	1	30	80	
			CULG	0034.0	0034.0	III	G	1	30	80	
			LEAR	0034.0	0034.0	III		1	25	80	
			LEAR	0117.0	0219.0	III	N	1	25	180	
			CULG	0144.0	0144.0	III	B	1	18	75	
			CULG	0150.0	0153.0	III	G	1	40U	90	
	0050	0744	HIRA	0150.5	0152.0	III	G	1	30	200	
			LEAR	0506.0	0507.0	III		1	25	104	
			HIRA	0506.5	0507.0	III	B	1	30	120	
			CULG	0507.0	0507.0	III	B	1	30	80	
	0633	1521	POTS	0645	0757	I	S,N,DC	2	200U	330	100-200MHz no data
	0700	1200	IZMI	0700.0E	0720.0	I	N	1	190	270X	
			IZMI	0751.1	0753.9	III	GG	1	180	270	
			POTS	0850	0909	I	S,N	1	200U	320	
			ONDR	0921.0	0926.5	DCIM	GG,SP	2	800X	2000X	
	0708	1423	ONDR	0921.3	0926.5	DCIM	G	1	2000X	4500X	
	0720	1510	BLEN	0921.6	0926.8	DCIM	P	3	500	4000X	
			POTS	0925.4	0925.7	DCIM		2	450	730	
			POTS	0940.9	0943.6	III	G	2	40X	320	
			IZMI	0941.0	0943.0	III	G	1	35	160	
			IZMI	0948.6	0949.2	III	G	1	50	90	
			SVTO	1056.0	1056.0	III		1	63U	180U	
			POTS	1056.4	1058.6	III	G	2	45	280	
			IZMI	1056.7	1057.3	III	G,C	2	50	270X	
			SVTO	1128.0	1131.0	III		1	74	180	
			POTS	1128.2	1132.1	III	G,N	2	40X	360	
			IZMI	1128.3	1128.9	III	G,C	2	80	270X	
			IZMI	1131.0	1132.3	III	G	1	55	170	
			POTS	1157.8	1221	I	S,N	1	200U	330	
			SVTO	1158.0	1205.0	III		2	25	180	
			IZMI	1158.5	1200.0D	III	GG,C	2	25X	210	
			POTS	1158.5	1208.3	III	GG	3	40X	300	
			POTS	1159.5	1201.3	V	B	3	40X	65	
			POTS	1356	1521 U	I	S,N	1	200U	270	
			HOLL	1651.0	1815.0	III	N	1	25	145	
	2000	2400	CULG	2006.0	2006.0	III	B	1	20	90	
			CULG	2129.0	2129.0	III	B	1	18	70	
			CULG	2144.0	2144.0	III	B	1	18	90	
			LEAR	2226.0	2300.0	III	N	1	66	140	
	2059	2400	HIRA	2226.5	2227.0	III	B	1	80	110	
			CULG	2227.0	2230.0	III	G	1	60	170	

SOLAR RADIO NOISE STORM AT 164 MHZ
FROM NANÇAY RADIOHELIOGRAPH
OCTOBER 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/10/02	+0.14	+0.03	II	8H10 E	15H10 D
01/10/02	+1.01	+0.16	I	8H10 E	15H10 D
02/10/02	+0.47	+0.11	I	8H10 E	15H10 D
02/10/02	+1.12	+0.20	I	8H10 E	15H10 D
03/10/02	+0.65	+0.05	III	8H10 E	15H10 D
04/10/02	-1.02	-0.08	II	12H50	15H10 D
04/10/02	+0.85	+0.20	I	8H45 E	15H10 D
05/10/02	+1.15	+0.12	I	8H09 E	13H07
06/10/02	-0.53	+0.06	I	8H09 E	15H09 D
07/10/02	-0.16	-0.09	IV	13H03	15H09 D
07/10/02	+1.13	-0.54	I	8H09 E	15H09 D
08/10/02	-0.59	-0.22	III	8H08 E	15H08 D
09/10/02	-1.15	+0.54	I	8H08 E	15H08 D
11/10/02	-0.85	+0.28	II	13H10	15H08 D
12/10/02	-0.54	+0.42	I	8H07 E	15H07 D
12/10/02	-0.45	-0.23	I	11H57	15H07 D
12/10/02	+1.01	-0.14	I	8H07 E	15H07 D
13/10/02	-0.31	+0.19	I	8H07 E	15H07 D
14/10/02	-1.60	+0.29	II	8H07 E	15H07 D
16/10/02*	-0.02	-0.33	IV	8H05 E	14H43 D
17/10/02*	-1.47	+0.56	I	8H06 E	15H06 D
17/10/02*	+0.23	-0.37	III	8H06 E	15H06 D
18/10/02	-1.07	+0.57	III	8H06 E	15H06 D
19/10/02	-1.09	+0.68	II	8H06 E	15H06 D
20/10/02	-1.19	+0.62	I	8H06 E	15H06 D
20/10/02	-0.90	+0.90	I	8H06 E	15H06 D
20/10/02	+0.34	-0.40	I	8H06 E	11H24
21/10/02	-1.09	+0.51	I	8H05 E	13H56 D
22/10/02*	-0.95	+0.48	II	8H56 E	14H28 D
23/10/02*	-0.64	+0.39	II	8H31 E	14H19 D
24/10/02*	-0.48	+0.36	II	8H33 E	15H05 D
24/10/02*	+0.34	+0.367	III	8H33 E	15H05 D
25/10/02*	-0.17	+0.45	I	8H06 E	15H05 D
25/10/02*	+0.62	+0.62	II	8H06 E	15H05 D
26/10/02*	-0.25	+0.39	I	8H04 E	15H05 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

26/10/02*	+0.57	+0.42	I	8H04 E	15H05 D
27/10/02*	-0.91	+0.16	I	8H04 E	15H05 D
27/10/02*	+0.56	+0.65	I	8H04 E	15H05 D
27/10/02*	+1.13	+0.50	I	8H04 E	15H05 D
28/10/02	-0.84	-0.20	I	8H04 E	15H05 D
28/10/02	+1.16	+0.37	I	8H04 E	15H05 D
29/10/02	-0.57	+0.02	III	8H13 E	15H05 D
30/10/02	-0.29	+0.11	III	8H03 E	15H04 D
30/10/02	+1.53	+0.74	I	8H03 E	12H24
31/10/02	-0.95	+0.25	I	10H20	11H48

NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH

OCTOBER 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY					
01/10/02	+0.03	+0.09	I	12H06	15H10 D
01/10/02	+0.42	+0.09	I	8H10 E	15H10 D
01/10/02	+1.04	+0.28	I	13H00	15H10 D
02/10/02	+0.47	+0.05	I	8H10 E	15H10 D
02/10/02	+.1.15	+0.09	I	8H10 E	15H10 D
03/10/02	-1.04	+0.06	I	12H20	15H10 D
03/10/02	+0.68	+0.08	III	8H10 E	15H10 D
04/10/02	-0.85	-0.11	I	8H45 E	15H10 D
04/10/02	+0.34	-0.50	I	8H45 E	15H10 D
04/10/02	+0.91	+0.14	I	8H45 E	15H10 D
05/10/02	-0.64	+0.06	I	8H09 E	15H09 D
05/10/02	+1.10	+0.1#2	I	8H09 E	15H09 D
06/10/02	-0.39	-0.06	I	8H09 E	15H09 D
07/10/02	-0.11	-0.11	IV	13H03	15H09 D
07/10/02	+1.04	-0.50	I	8H09 E	15H09 D
08/10/02	-0.57	-0.14	II	8H08 E	15H08 D
09/10/02	-0.51	-0.26	I	8H08 E	15H08 D
10/10/02	-0.09	+0.11	I	8H08 E	15H08 D
10/10/02	+0.60	-0.11	I	8H08 E	15H08 D
11/10/02	-0.84	+0.25	I	8H09 E	15H08 D
11/10/02	+0.85	+0.02	I	8H09 E	15H08 D
12/10/02	-0.88	+0.09	I	8H07 E	15H07 D
12/10/02	-0.54	-0.29	I	8H07 E	15H07 D
12/10/02	+0.59	+0.11	I	8H07 E	15H07 D
13/10/02	-0.60	+0.06	I	8H07 E	15H07 D
13/10/02	-0.25	+0.12	III	8H07 E	15H07 D
13/10/02	+1.15	+0.17	I	8H07 E	15H07 D

14/10/02	+0.03	+0.14	I	8H07 E	15H07 D
15/10/02	+0.22	+0.11	I	8H07 E	15H07 D
16/10/02*	+0.00	-0.40	III	8H05 E	14H43 D
16/10/02*	+0.47	+0.12	I	8H05 E	14H43 D
17/10/02*	-1.26	+0.37	I	8H06 E	15H06 D
17/10/02*	+0.22	-0.42	I	8H06 E	15H06 D
17/10/02*	+0.62	+0.12	I	8H06 E	15H06 D
18/10/02	-1.10	+0.54	II	8H06 E	15H06 D
18/10/02	+0.91	+0.16	I	8H06 E	15H06 D
19/10/02	-1.09	+0.37	III	8H06 E	15H06 D
20/10/02	-1.02	+0.31	I	8H06 E	15H06 D
20/10/02	-0.90	+0.70	II	8H06 E	15H06 D
20/10/02	+0.36	-0.42	I	8H06 E	11H08
21/10/02	-0.84	+0.17	I	8H05 E	13H56 D
21/10/02	-0.43	+0.20	I	8H05 E	13H56 D
22/10/02*	-0.22	+0.23	III	8H56 E	14H28 D
23/10/02*	-0.65	+0.19	I	8H31 E	14H19 D
23/10/02*	-0.45	+0.22	I	8H31 E	14H19 D
23/10/02*	-0.05	+0.36	I	8H31 E	14H19 D
24/10/02*	+0.29	+0.40	III	8H33 E	15H05 D
25/10/02*	-0.12	+0.34	I	8H06 E	15H05 D
25/10/02*	+0.45	+0.28	II	8H06 E	15H05 D
26/10/02*	+0.67	+0.26	III	8H04 E	15H05 D
27/10/02*	+0.98	+0.37	I	8H04 E	15H05 D
28/10/02	-0.76	-0.17	I	8H04 E	12H05
28/10/02	+1.07	+0.26	I	8H04 E	15H05 D
29/10/02	-0.88	-0.64	I	8H13 E	15H05 D
29/10/02	-0.56	-0.14	II	8H13 E	15H05 D
29/10/02	+1.02	+0.76	I	12H37	15H05 D
39/10/02	+1.12	+0.31	I	12H37	15H05 D
30/10/02	-0.36	-0.05	I	8H03 E	15H04 D
30/10/02	+1.18	+0.33	I	8H03 E	15H04 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 mode 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

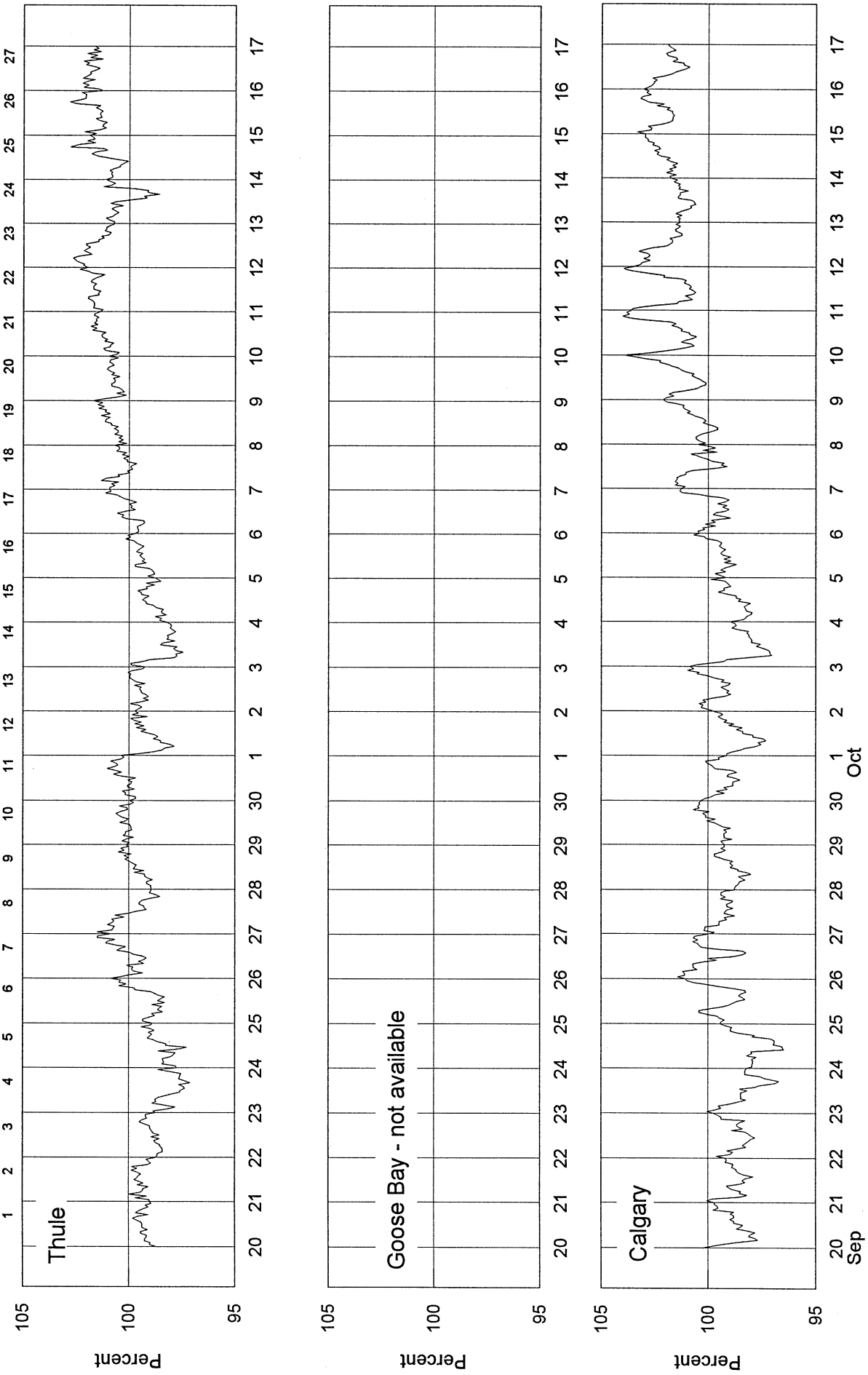
**** no flux measurements available

COSMIC RAY INDICES
(Neutron Monitor)
October 2002

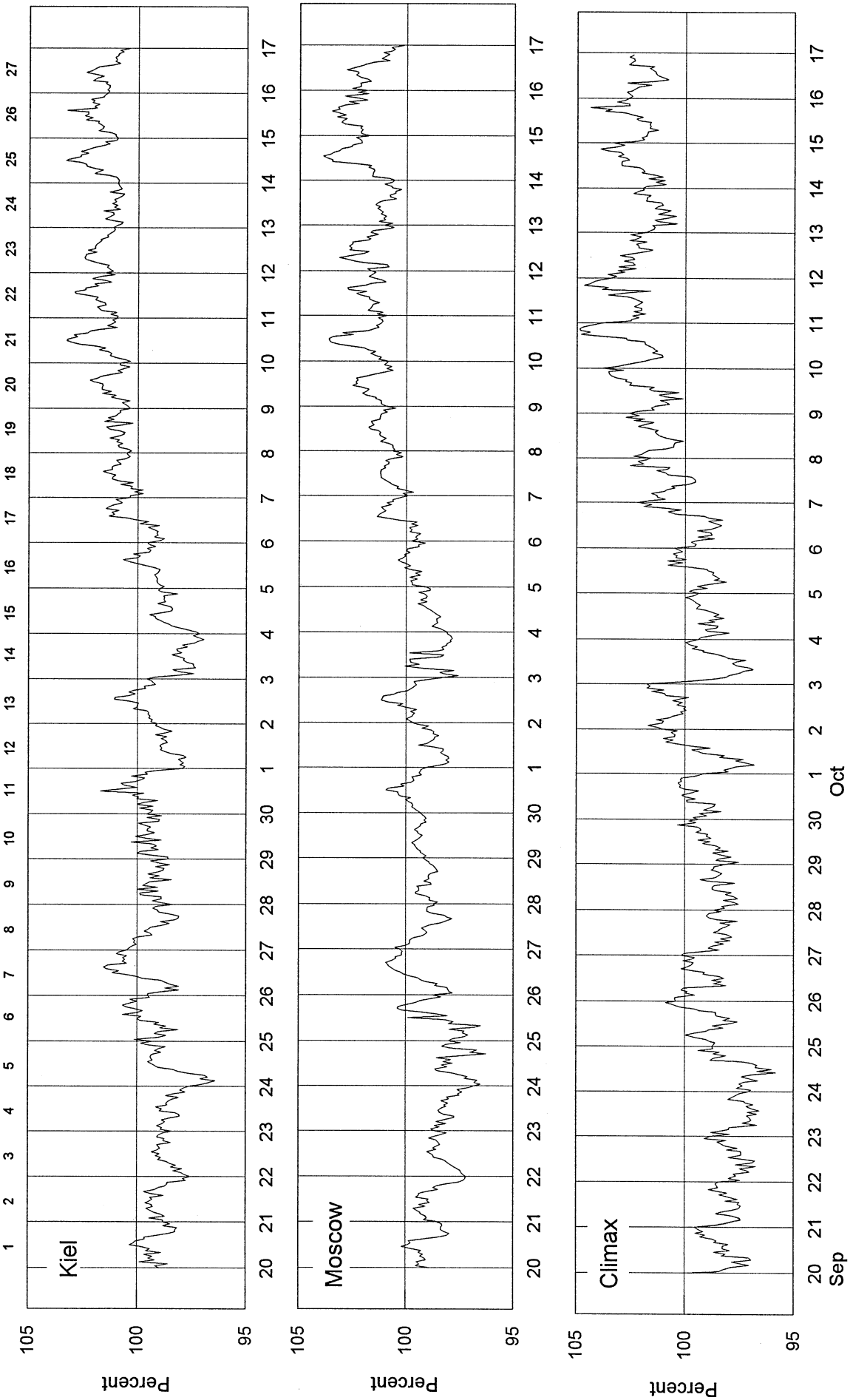
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	3956.1		3446.2	5534.2	8270.3	3704.7	1914.4	3448.1
2	3974.1	not	3489.5	5607.8	8388.6	3766.6	1935.5	3486.8
3	3923.0	available	3439.2	5498.8	8266.2	3687.4	1903.7	3437.3
4	3946.9		3451.3	5537.7	8286.5	3703.3	1915.4	3436.3
5	3968.2		3475.8	5586.1	8365.1	3721.0	1928.4	3455.8
6	3991.4		3489.8	5622.8	8410.6	3721.8	1929.2	3460.4
7	4006.7		3515.0	5656.2	8442.7	3775.0	1947.3	3483.2
8	4025.1		3514.8	5666.6	8480.7	3793.6	1946.6	3476.2
9	4021.4		3544.0	5681.7	8516.6	3810.9	1948.9	3486.8
10	4041.8		3563.2	5715.0	8554.2	3841.3	1958.8	3507.7
11	4057.6		3561.5	5716.5	8527.2	3844.8	1955.2	3499.9
12	4061.0		3574.3	5715.1	8547.9	3833.2	1965.2	3508.3
13	4005.6		3539.5	5675.1	8465.8	3791.2	1950.0	3492.9
14	4038.9		3572.2	5726.3	8584.6	3826.4	1959.6	3500.0
15	4059.5		3580.8	5722.0	8603.0	3827.8	1958.0	3474.0
16	4062.7		3562.5	5697.5	8530.7	3814.6	1949.1	3450.0
17	4037.7		3535.0	5662.0	8460.9	3786.0	1938.6	3441.8
18	4008.5		3506.3	5621.6	8413.7	3754.7	1935.1	3431.8
19	3960.2		3454.2	5546.6	8260.2	3671.8	1925.5	3404.9
20	3931.6		3421.7	5474.4	8179.6	3641.0	1915.9	3384.3
21	3897.1		3398.3	5439.1	8136.1	3612.0	1921.2	3377.8
22	3899.2		3412.7	5464.0	8186.4	3617.9	1924.9	3396.1
23	3929.2		3464.2	5521.2	8220.9	3678.5	1943.7	3433.2
24	3923.5		3444.3	5532.4	8268.5	3682.3	1957.2	3434.4
25	3926.6		3442.3	5517.0	8233.9	3664.0	1939.8	3426.8
26	3930.9		3454.2	5534.1	8248.4	3671.9	1933.0	3438.3
27	3929.6		3450.7	5536.4	8276.8	3688.2	1935.5	3449.4
28	3961.9		3467.2	5559.1	8338.4	3698.2	1932.8	3445.3
29	3984.2		3497.8	5576.5	8379.4	3710.9	1938.5	3462.1
30	3978.2		3506.7	5610.0	8376.7	3720.9	1934.0	3468.5
31	3979.0		3498.2	5624.7	8369.1	3719.3	1945.5	3473.3
Mean	3981.0		3492.7	5599.3	8373.9	3734.9	1938.3	3453.9

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.

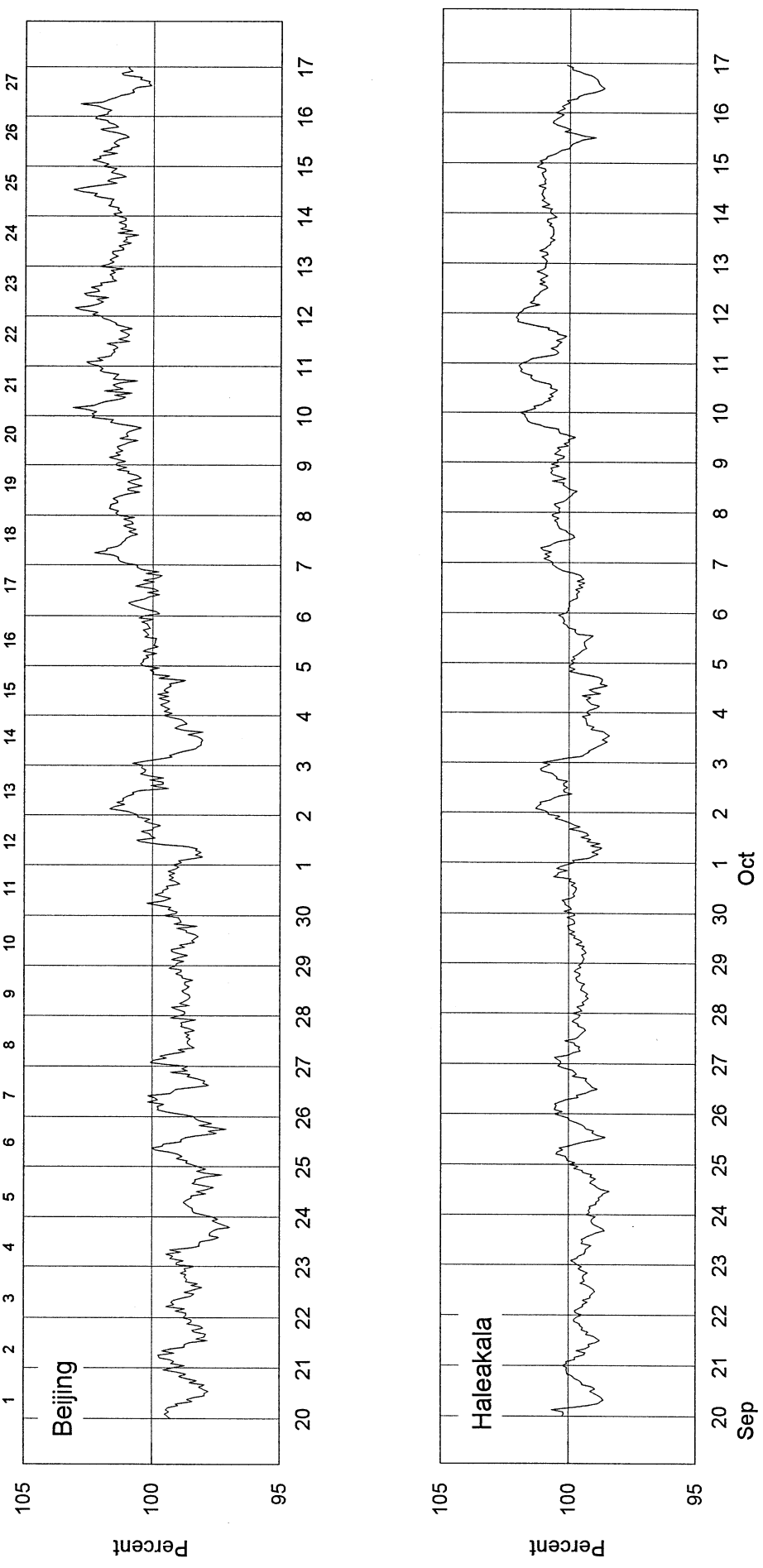
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2309 - Beginning 20 Sept 2002



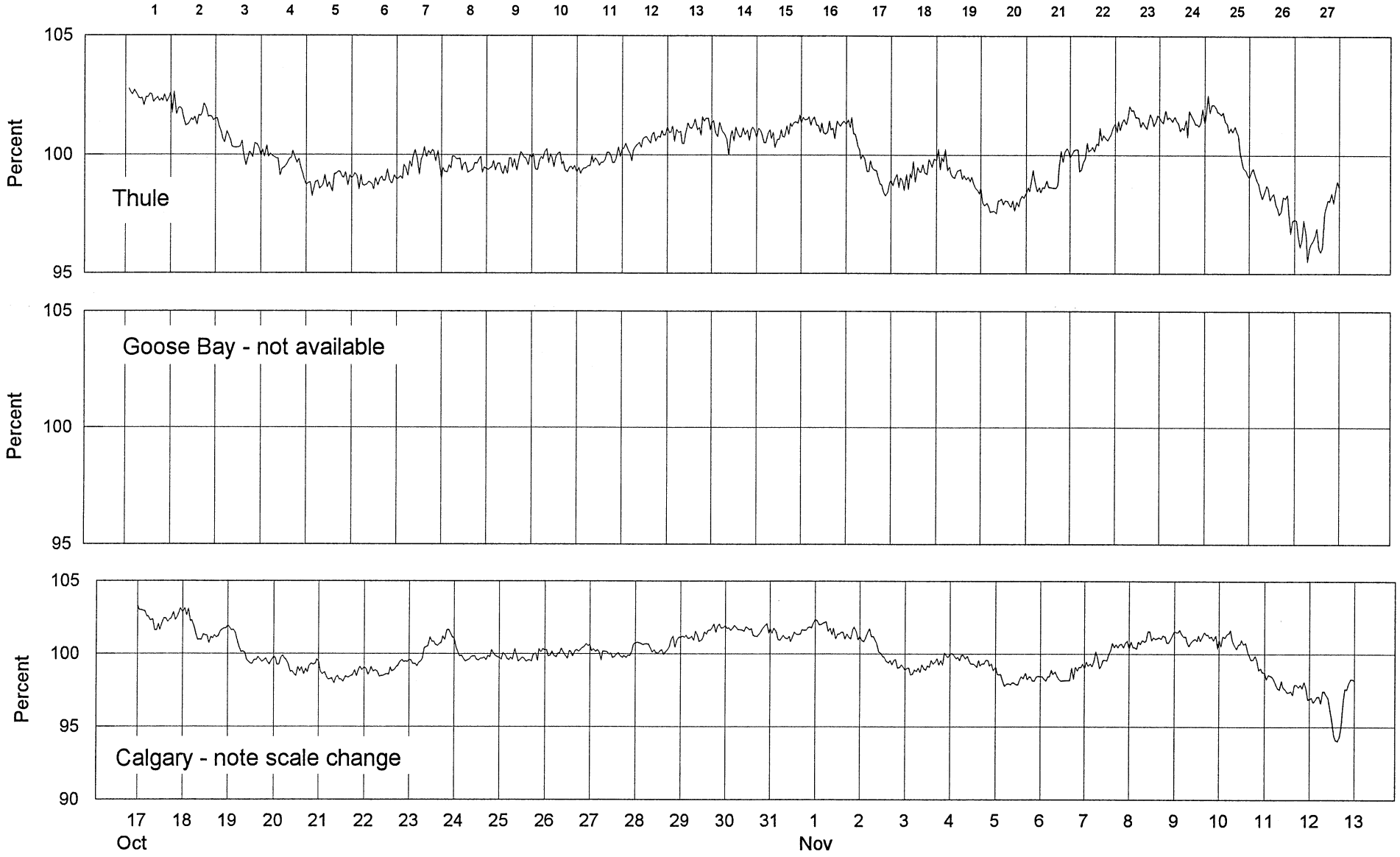
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2309 - Beginning 20 Sept 2002



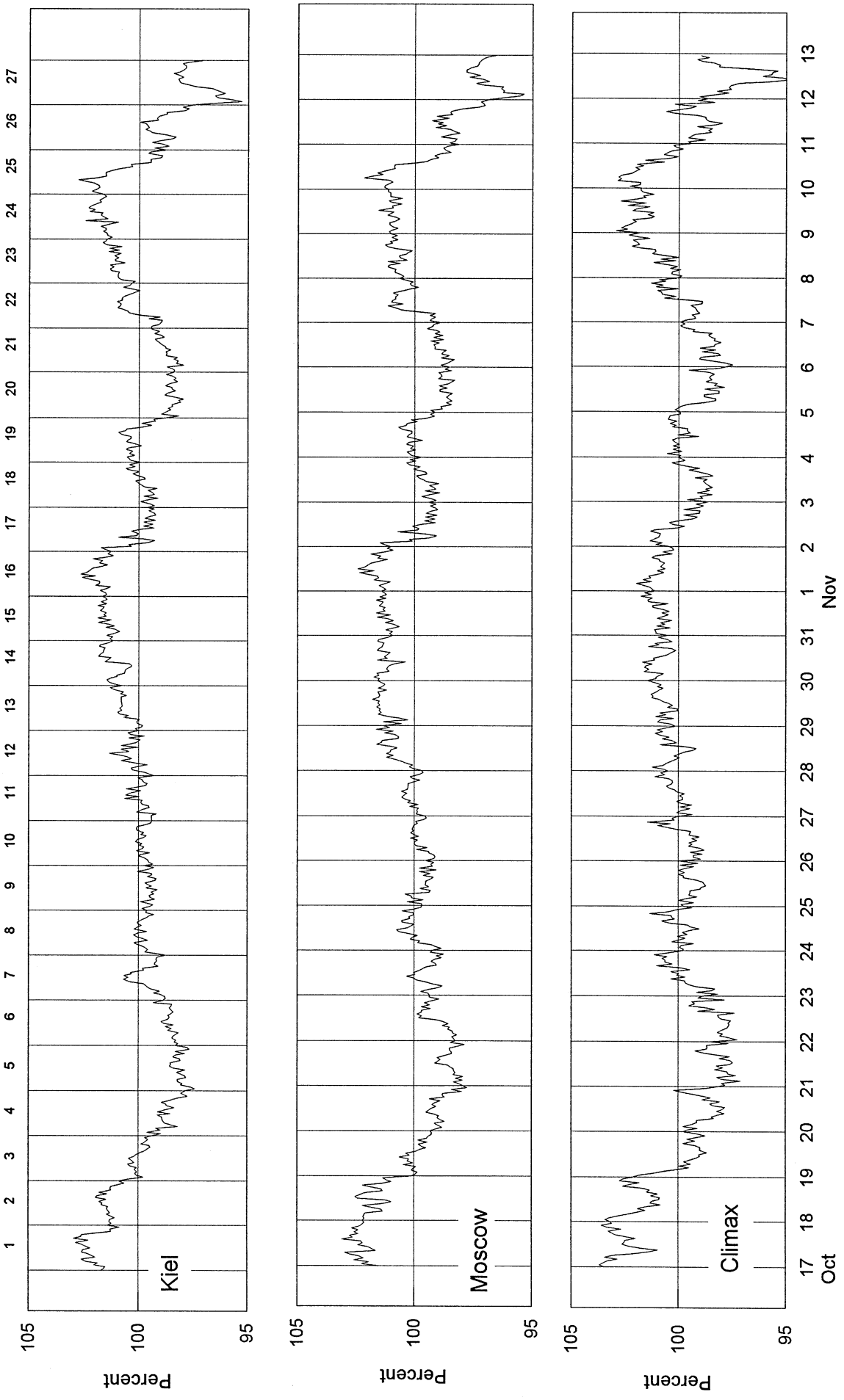
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2309 - Beginning 20 Sept 2002



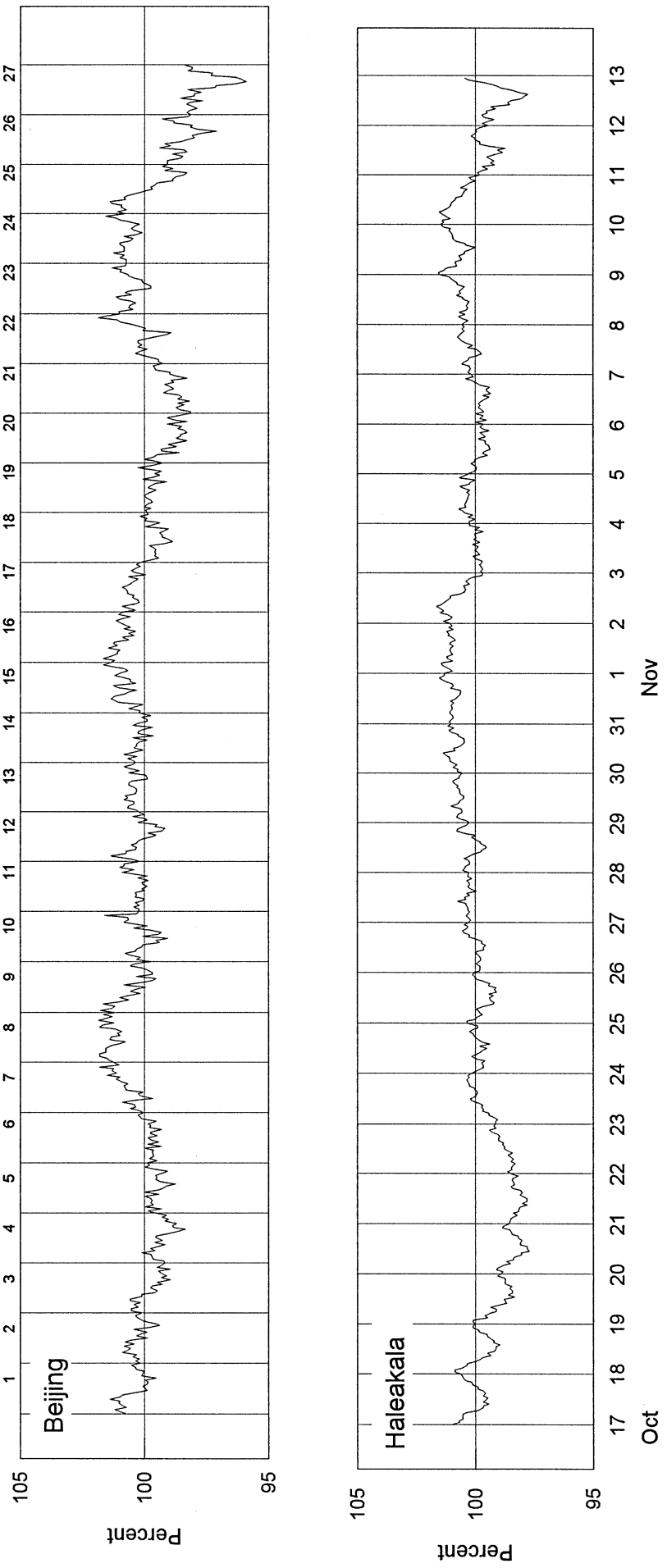
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2310 - Beginning 17 Oct 2002



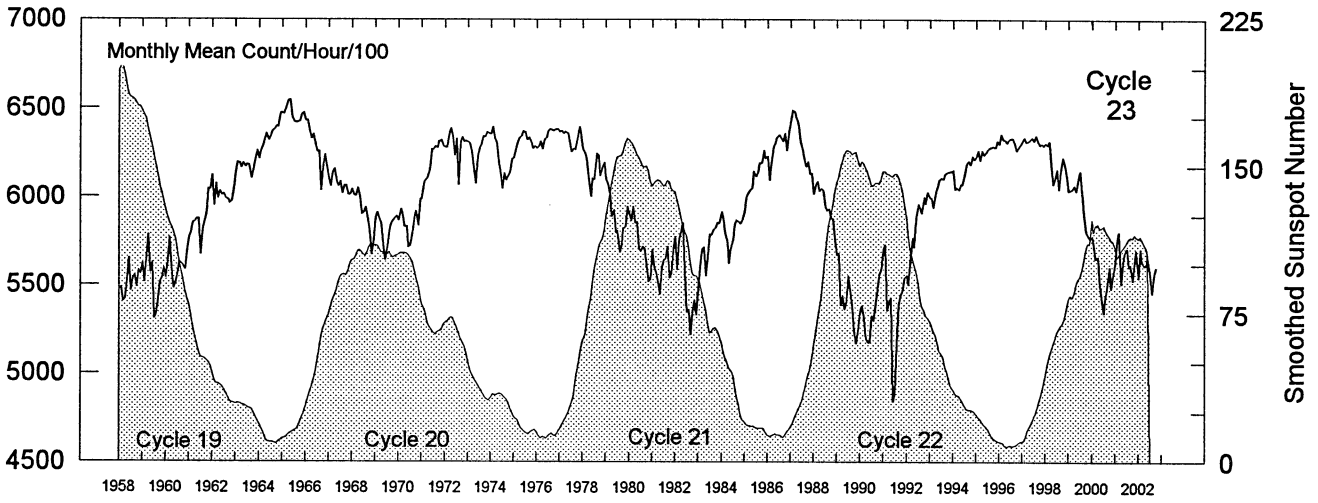
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2310 - Beginning 17 Oct 2002



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2310 - Beginning 17 Oct 2002



Kiel Neutron Monitor Pressure-Corrected Values
Jan 1958 - Oct 2002



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	5481	5488	5409	5417	5523	5651	5466	5538	5553	5485	5584	5561	5513
1959	5623	5515	5659	5783	5569	5625	5307	5328	5420	5518	5536	5593	5540
1960	5539	5628	5764	5596	5480	5509	5557	5628	5620	5607	5586	5692	5601
1961	5766	5793	5853	5856	5872	5874	5672	5804	5859	5898	6046	6041	5861
1962	6122	5949	6072	5989	6030	6010	6013	5991	5982	5963	5971	6052	6012
1963	6125	6197	6191	6163	6194	6168	6185	6182	6103	6133	6197	6260	6175
1964	6215	6253	6287	6331	6355	6321	6347	6366	6383	6399	6393	6475	6344
1965	6474	6469	6506	6542	6545	6451	6424	6420	6423	6424	6467	6475	6468
1966	6433	6432	6375	6330	6353	6300	6258	6258	6033	6168	6236	6172	6279
1967	6101	6061	6139	6155	6088	6061	6086	6016	6064	6063	6014	6009	6071
1968	6041	6011	6001	6048	5997	5901	5910	5937	5878	5805	5673	5739	5912
1969	5876	5909	5872	5845	5686	5640	5700	5812	5843	5864	5879	5887	5818
1970	5863	5928	5906	5830	5831	5716	5719	5803	5885	5915	5832	5985	5851
1971	5985	6081	6094	6103	6151	6268	6265	6286	6275	6314	6322	6288	6203
1972	6281	6278	6351	6387	6344	6232	6328	6065	6306	6334	6313	6318	6295
1973	6309	6298	6250	6155	6074	6220	6271	6296	6341	6340	6365	6360	6273
1974	6353	6391	6331	6308	6201	6139	6047	6132	6090	6113	6139	6215	6205
1975	6217	6267	6308	6334	6341	6370	6363	6320	6334	6313	6272	6286	6310
1976	6275	6281	6314	6269	6325	6331	6370	6380	6379	6375	6383	6380	6339
1977	6366	6371	6355	6366	6357	6322	6254	6272	6263	6317	6391	6355	6332
1978	6271	6242	6215	6113	5998	6101	6095	6241	6232	6117	6167	6193	6165
1979	6104	6063	6006	5883	5923	5794	5806	5682	5723	5820	5827	5942	5881
1980	5905	5862	5942	5850	5854	5702	5690	5717	5704	5611	5522	5528	5741
1981	5697	5600	5569	5517	5447	5600	5642	5650	5717	5539	5564	5702	5604
1982	5772	5586	5755	5799	5848	5582	5347	5362	5217	5349	5414	5329	5530
1983	5481	5606	5702	5711	5549	5659	5787	5785	5814	5820	5852	5849	5718
1984	5911	5880	5799	5740	5622	5706	5753	5837	5867	5856	5844	5864	5807
1985	5911	5986	6016	6038	6049	6142	6114	6135	6193	6192	6260	6220	6105
1986	6229	6093	6176	6280	6308	6336	6350	6331	6315	6356	6259	6359	6283
1987	6429	6489	6484	6443	6410	6319	6273	6217	6171	6198	6131	6131	6308
1988	6013	6064	6085	6030	6047	6033	5945	5922	5931	5880	5872	5761	5965
1989	5673	5678	5385	5441	5360	5407	5552	5460	5378	5228	5167	5241	5414
1990	5348	5381	5313	5197	5177	5173	5324	5297	5382	5471	5563	5584	5351
1991	5696	5726	5355	5405	5431	4841	4882	5162	5390	5443	5466	5540	5361
1992	5553	5500	5624	5766	5713	5869	5956	5942	5905	5994	5960	6024	5817
1993	5996	5992	5937	6026	6061	6094	6108	6099	6129	6137	6142	6141	6072
1994	6150	6042	6052	6067	6070	6068	6129	6189	6203	6183	6226	6209	6132
1995	6225	6260	6205	6260	6234	6250	6267	6279	6281	6285	6279	6319	6262
1996	6301	6354	6330	6324	6306	6325	6332	6331	6303	6262	6277	6294	6312
1997	6313	6337	6313	6314	6324	6336	6317	6347	6319	6295	6301	6289	6317
1998	6305	6293	6312	6177	6069	6101	6154	6042	6149	6220	6190	6124	6178
1999	6034	6040	6041	6062	6032	6100	6140	6023	5898	5805	5780	5765	5977
2000	5778	5729	5650	5661	5537	5441	5339	5425	5487	5602	5481	5542	5556
2001	5629	5736	5800	5509	5631	5678	5707	5602	5614	5527	5637	5694	5647
2002	5540	5701	5628	5613	5610	5651	5562	5455	5556	5599			5592

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

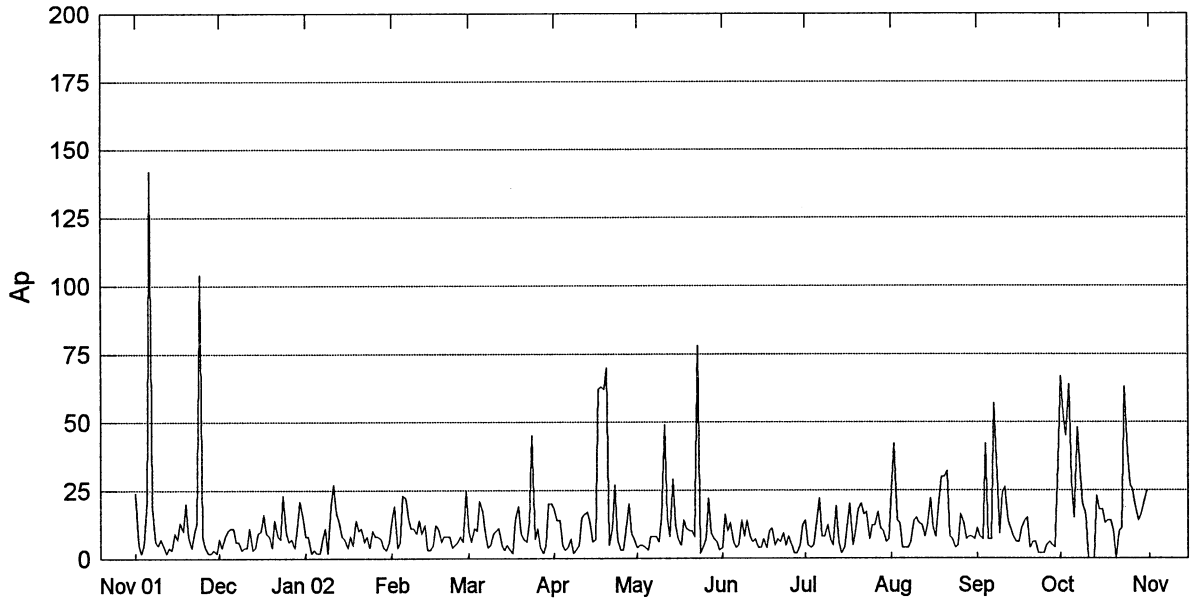
Geomagnetic Activity Indices

October 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	D3	2-	3-	5-	6-	7-	7+	5-	7-	40	67	1.7	2-	2+	3+	5o	7-	7-	4+	6o	102	105	64	44	126	
2	D5	7	7+	5+	4-	3-	3+	3-	3+	35+	53	1.6	6-	5+	4+	3+	3+	3+	3-	3+	59	68	45	77	36	
3		6	3-	4-	3	4-	5	6+	6-	36	45	1.5	5-	3-	3+	3-	4o	5-	5+	5-	60	68	75	51	91	
4	D2	7+	6-	6	5-	4	4-	6+	4+	42	64	1.7	6-	4o	5o	4+	4-	4-	5-	4o	73	85	78	97	66	
5		4+	4+	3-	3+	5-	5+	3+	3	31	28	1.2	3+	3+	2+	4-	4+	4+	3+	3-	41	48	40	41	47	
6		2-	3+	4-	3	1+	2-	4-	4	22+	15	0.9	1+	3-	3o	3-	1+	2o	3+	4-	24	37	21	25	33	
7	D4	3+	5+	6-	4-	5	5-	6-	6-	39	48	1.6	3o	4-	5-	3+	4+	4+	5-	5-	59	71	53	46	78	
8		5-	6	4+	4	4	4+	3+	2+	33	33	1.3	3+	4+	3o	4-	4+	3+	3o	2o	42	45	37	46	36	
9		1	3	4+	3+	4-	4	4-	3+	26+	20	1.0	1o	2+	4-	4-	3+	4-	3+	3o	33	42	31	21	52	
10		3	4-	4	4	2+	2	1+	3	23+	16	0.9	2o	3o	4-	4o	3-	2o	1+	3-	27	35	25	40	20	
11	Q3	1+	2	2	2-	2	2-	1	2-	13+	6	0.3	2-	2-	2o	2+	2o	2+	1+	2-	14	11	12	10	13	C
12	Q2	2-	1	1+	2+	2-	2	1-	2-	12+	6	0.3	1+	1-	1o	3-	2o	2+	1+	1+	12	12	12	13	11	CC
13	Q1	1+	2-	2-	1	1	1	2-	2-	11	5	0.2	1+	1+	1+	1o	1+	1-	2-	2o	9	9	10	8	11	C
14		3-	4-	5-	3+	5-	4-	3	3	29-	23	1.1	2-	3o	4-	4-	5o	4-	3-	3o	40	33	34	32	35	
15		3-	3+	3-	4	3-	4	4-	3-	26-	18	1.0	3o	3+	3-	4-	3-	4-	4-	3-	33	40	39	35	44	
16		3+	2-	2-	2+	3-	3	6-	3	23+	18	1.0	2+	1+	1+	2+	2o	3-	5o	3o	27	33	23	16	40	
17	Q8A	4-	3+	3-	2-	3	2	2+	3-	21+	13	0.7	3o	2+	2+	1+	3-	2+	2+	3o	21	27	21	22	26	
18	Q10A	3+	3+	2+	2	3	3	3-	3	23-	14	0.8	3o	3-	2-	2-	3-	3-	3-	3o	22	32	23	25	30	
19	Q9A	3-	3+	3-	2	2	2+	4-	4-	22+	14	0.8	3-	3-	2+	2-	2o	2o	3+	3o	22	26	28	26	28	
20	Q6A	3	3+	2-	2+	3-	2-	2-	3-	19	10	0.6	3-	3-	1+	2o	2+	2-	2-	3-	17	24	19	23	20	
21	Q4A	2	3-	3-	2-	2	2	2-	2	17-	8	0.4	2-	2o	2+	2-	2-	2o	2-	2-	14	17	11	13	15	
22	Q5A	3	2-	2-	4-	2+	2-	3-	1	18-	10	0.6	2+	1+	2-	4-	3o	2-	3-	1o	19	24	25	28	22	
23	Q7A	1	1	2	2	3	3+	3	3+	19-	11	0.6	1+	1o	2-	2o	3o	3+	3o	3+	22	25	18	12	31	
24	D1	5	6-	4+	6	6	6+	6-	5-	44-	63	1.7	4-	4-	4-	5-	5+	5o	5-	4+	70	101	69	71	100	
25		6	5	5	4+	5-	3	3+	4+	36-	39	1.4	5-	4o	4+	4-	4+	3-	3o	4-	50	62	51	64	49	
26		4	4	4-	5-	4	4	4+	3	32-	27	1.2	3o	3+	3+	4o	4-	4-	4o	3-	42	52	34	42	43	
27		3	4	4-	3-	4-	4	4	5	30	25	1.2	3-	3o	3+	2+	4-	4o	4o	4o	39	48	37	24	61	
28		5-	4-	3+	3+	3	2+	3+	3-	26+	19	1.0	4o	3o	3-	3o	3-	2+	3o	3-	29	38	30	44	24	
29		3+	3-	3	4-	3-	2-	3	3	23	14	0.8	3-	2+	2+	3+	3-	2-	3-	2+	21	28	19	25	22	
30		2	3-	5	3-	2	2+	3+	3	23	16	0.9	2o	2+	4+	3-	2o	2+	3+	2+	26	28	31	34	25	
31		4	3+	3	3+	4	4	3+	2	27	20	1.0	3+	2+	3-	3o	4o	4o	3+	2+	34	40	30	29	41	
Mean											25	1.00									35.6	42.4	33.8		38.1	

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	2-	3-	4-	6-	7-	7-	4+	6o	116	2-	2+	3+	4+	6+	6+	4o	6-	88	140.1	58	64	89		
2	6-	6o	5o	3+	3+	4-	3-	4-	71	5+	5-	4-	3+	3+	3-	3-	3o	48	136.0	70	73	85		
3	5o	2+	3o	3-	4+	5-	5+	5o	63	4+	3-	3+	3-	4-	5-	5o	5-	56	146.1	67	63	96		
4	6o	5-	5o	5-	4o	4-	5o	4o	82	5-	3+	5o	4+	4-	4-	5-	4+	64	157.6	60	75	108		
5	4-	4-	2+	4-	5o	5-	4-	3o	49	3o	3o	2+	4-	4-	4-	3+	2o	32	155.1	76	91	106		
6	1+	3o	3+	3-	1+	2+	4-	4-	27	2-	2o	3-	3-	1+	2-	3o	4-	21	161.6	81	88	113		
7	3o	4+	5o	3+	5-	5-	5o	5-	71	3-	3o	4+	3o	4-	4-	4o	5-	46	163.5	79	96	115		
8	4-	5-	3o	4+	5-	4o	3o	2o	49	3+	4-	3+	3+	4o	3o	3o	2o	35	165.1	101	102	116		
9	1o	2+	4o	4o	4-	4o	4-	3+	39	1o	2o	3o	3o	3-	3+	3+	3-	26	166.8	106	107	118		
10	2+	3o	4o	4+	3o	2+	1+	3o	32	2-	3o	4-	3+	2+	2o	1+	2+	22	171.4	129	126	123		
11	1+	1+	2o	3-	2+	3-	1+	2+	16	2-	2o	2-	2o	1+	2o	1+	1+	13	178.7	121	131	131		
12	1+	1o	1o	3o	2+	3-	1+	2-	14	1+	1-	1o	3-	1+	2-	1+	1o	10	179.7	122	131	132		
13	1+	1+	1+	1+	1+	1o	2-	2o	10	1+	1+	1+	1-	1o	1-	1+	2-	8	178.3	119	125	131		
14	2-	3+	4o	4o	5+	4-	3-	3-	46	2-	3o	3+	3o	4+	3+	3-	3o	33	180.2	114	122	133		
15	2+	3o	3o	4-	3o	4-	4-	2+	32	3+	3+	3-	3+	3-	4-	4-	3-	35	175.7	116	126	128		
16	2+	1+	2-	2+	2+	3o	5o	3o	28	2+	1+	1+	3-	2-	2+	5o	3o	26	181.4	128	127	134		
17	3o	2+	2+	1+	3-	3-	2o	3o	21	3+	2+	2+	1+	2+	2-	3-	3+	22	177.7	110	125	130		
18	3o	3-	2o	2-	3-	3o	2+	3o	22	3+	3-	2-	2-	3-	2+	3-	3o	22	171.3	118	128	123		
19	3-	3-	2o	2-	2+	2+	3o	3o	22	3-	3-	2+	2o	2-	2-	3+	3o	22	178.1	120	127	130		
20	2+	3-	1o	2o	2+	2o	2-	3-	17	3-	3-	2-	2o	2+	1+	2o	2+	17	178.7	122	123	131		
21	2-	2+	2+	1+	2o	2+	2-	2-	15	2o	2-	2o	2-	1+	2-	2-	2-	13	180.8	93	102	133		
22	3-	1+	1+	4-	3o	2-	3-	1o	19	2+	2-	2o	4-	3o	2-	3-	1o	20	167.7	88	93	119		
23	1+	1o	2o	2o	3o	4-	3+	3+	24	1+	1+	1+	2o	3o	3o	3-	3+	20	161.9	77	82	113		
24	4o	4o	4o	5o	6-	5+	5o	4o	79	4-	3+	4-	4+	5o	5-	4+	4+	62	158.5	73	78	109		
25	5o	4+	5-	4-	4+	3+	3o	3+	57	5-	4-	4-	3+	4o	2+	3-	4-	42	170.9	77	80	123		
26	3o	4-	4-	4+	4o	4o	4+	3o	48	3o	3o	3o	4-	3+	4-	4o	3-	35	156.1	81	95	107		
27	3-	3o	3+	2+	4o	4+	4+	4+	45	3-	3-	3+	2o	3+	4-	4-	4-	33	155.2	84	99	106		
28	4-	3+	3-	3o	3o	3-	3o	3-	30	4o	3o	3-	3o	3-	2o	3-	2+	27	156.3	87	94	107		
29	3-	2+	2+	4-	3o	2-	3-	3-	25	3-	2o	2+	3-	2+	1+	2+	2+	18	159.4	114	110	110		
30	2o	2+	4+	3o	2o	3-	4-	3-	29	2o	2o	4o	3-	2-	2o	3o	2+	23	165.3	120	114	117		
31	4-	3-	3-	3o	5-	4+	3+	3-	39	3+	2o	3-	3-	4-	4-	3o	2o	29	167.7	110	107	119		
Mean									39.9									31.2	165.9	97.5	103.5	117.2		

Daily Average Indices Ap
Nov 2001 - Oct 2002

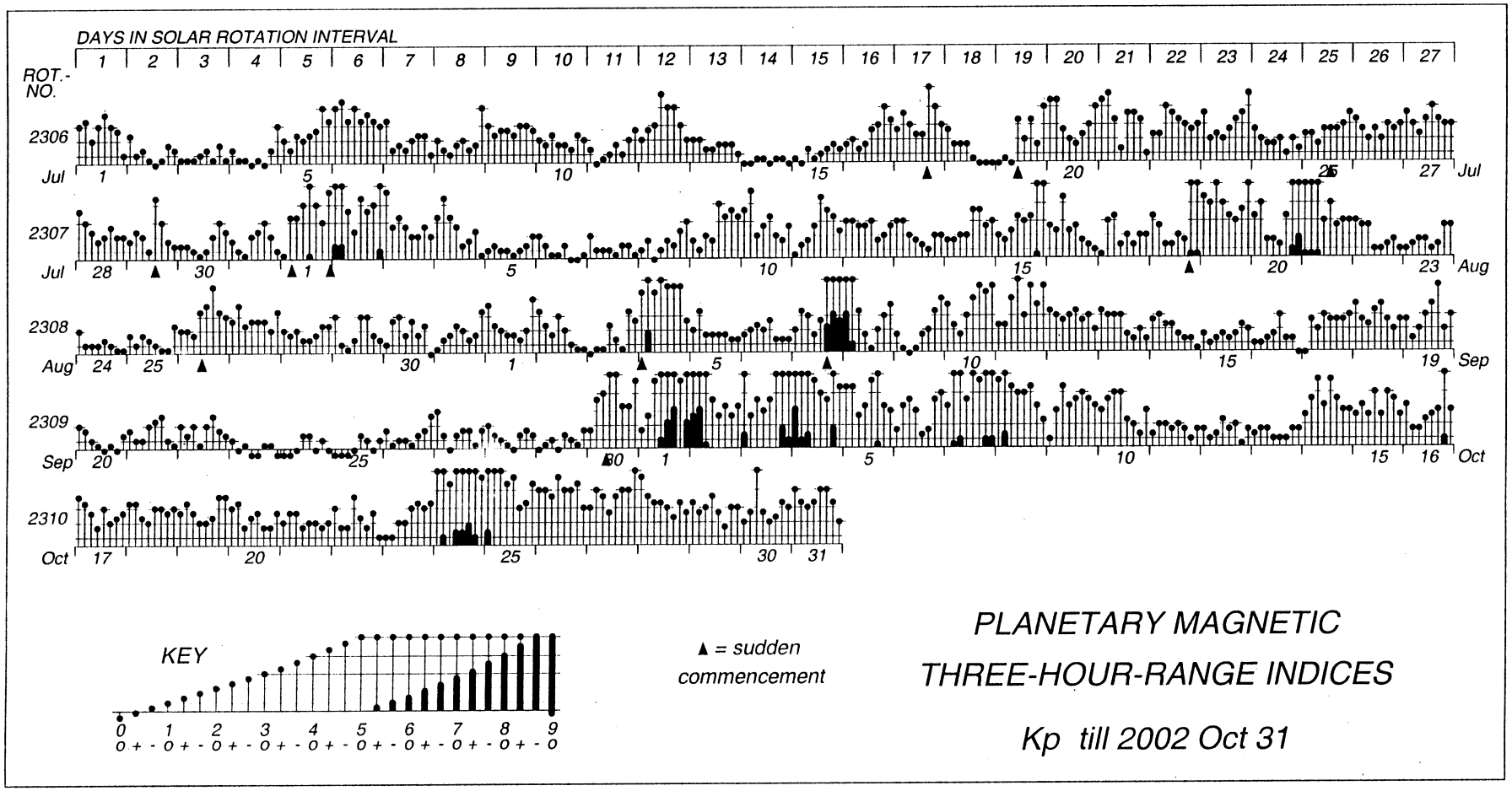


Day	Nov01	Dec	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	24	7	8	14	10	18	4	4	14	25	11	67
2	5	4	8	19	6	14	5	16	5	42	8	53
3	2	8	2	4	11	14	5	10	4	14	7	45
4	5	10	3	6	10	5	4	13	5	13	42	64
5	21	11	2	23	21	3	3	6	12	4	7	28
6	142	11	2	22	17	4	8	4	22	4	7	15
7	19	6	7	15	9	7	8	5	8	4	57	48
8	6	6	11	11	4	2	8	14	8	6	36	33
9	5	3	2	11	5	3	6	8	12	14	9	20
10	7	4	19	9	9	5	15	14	7	15	24	16
11	5	4	27	14	10	15	49	8	5	13	26	6
12	2	11	17	9	11	16	15	6	19	12	14	6
13	4	3	13	12	5	17	8	7	6	8	11	5
14	3	4	8	3	3	13	29	4	2	12	8	23
15	9	9	7	3	5	6	12	4	4	22	6	18
16	7	10	4	5	3	7	7	7	12	11	6	18
17	13	16	8	12	2	62	5	4	20	8	11	13
18	10	9	5	11	14	63	14	10	5	21	14	14
19	20	8	14	6	19	62	11	11	10	30	15	14
20	8	4	10	8	9	70	10	5	18	30	4	10
21	4	14	11	8	7	5	10	7	20	32	6	8
22	9	8	6	8	6	11	8	6	16	8	6	10
23	13	7	8	4	13	27	78	9	17	7	2	11
24	104	23	4	5	45	7	2	5	7	4	2	63
25	8	9	10	6	7	3	4	8	12	5	2	39
26	4	6	8	8	11	3	7	5	12	16	5	27
27	2	7	8	6	4	10	22	2	17	13	6	25
28	2	4	7	25	2	20	9	2	11	7	5	19
29	3	11	4		5	9	7	5	10	8	4	14
30	2	21	3		20	7	6	12	6	8	28	16
31		15	6		20		3		7	7		20
Mean	16	9	8	10	10	17	12	7	11	14	13	25

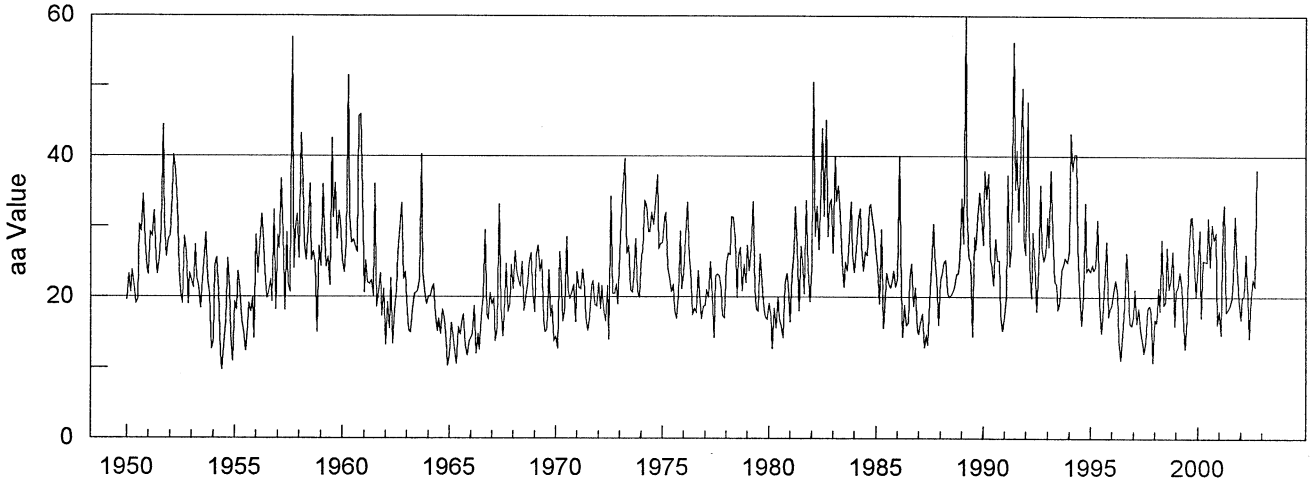
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through October 31, 2002



Monthly Mean aa Index Jan 1950 - Oct 2002

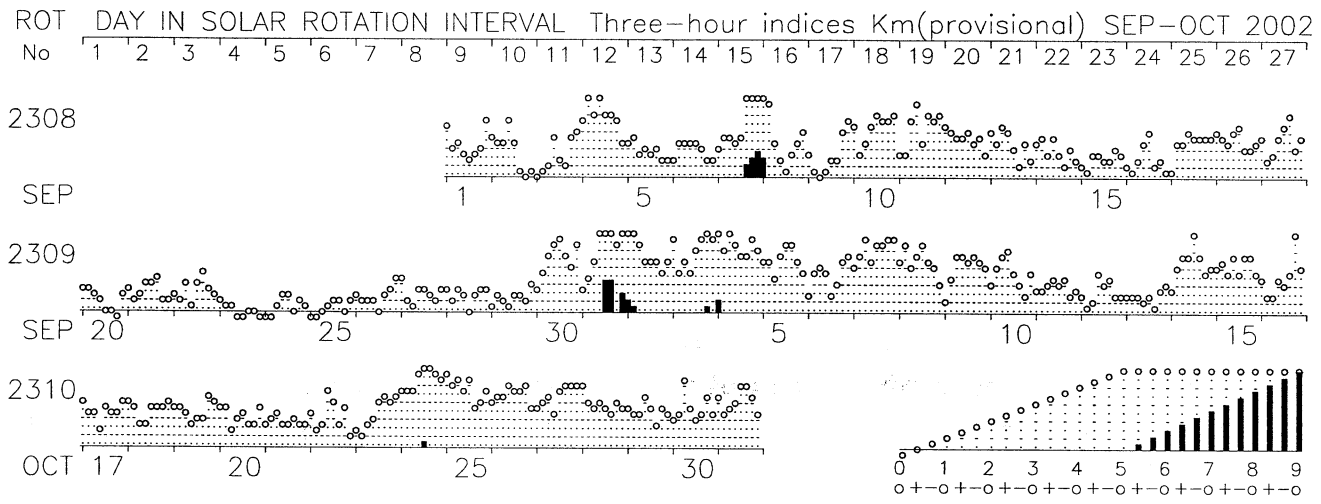


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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	19.9	14.2	19.9	22.5	21.4	38.1			21.9

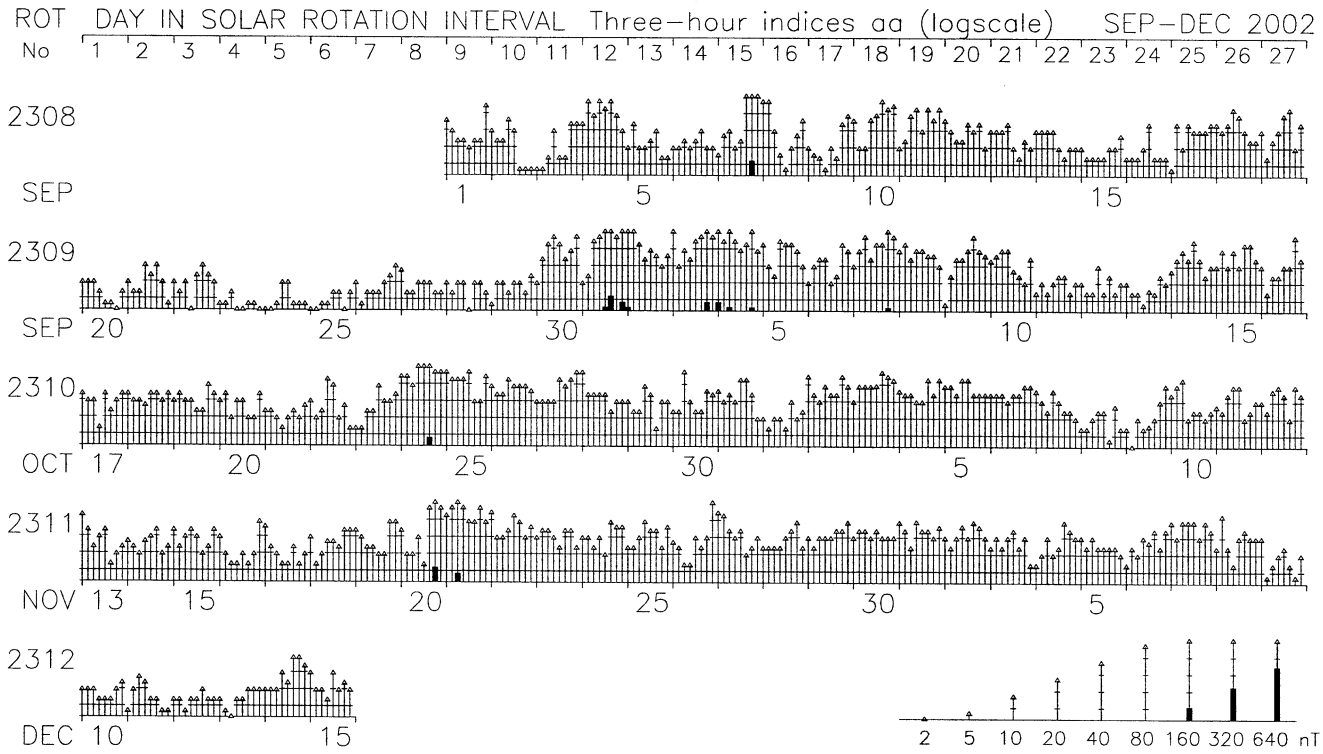
PLANETARY GEOMAGNETIC ACTIVITY

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

ISGI PUBLICATION OFFICE – EMail : ISGI.PUBOFF@cetp.ipsl.fr
CETP, 4 Avenue de Neptune, F-94107 Saint Maur des Fosses CEDEX – FRANCE



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.

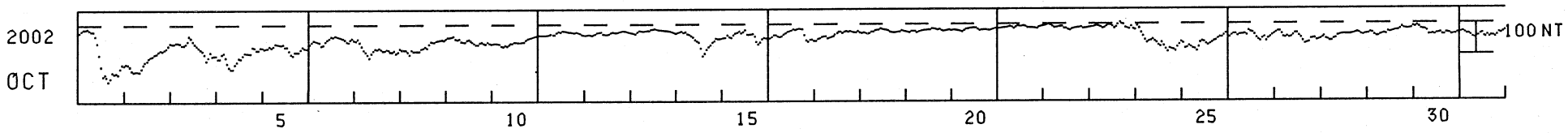
WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

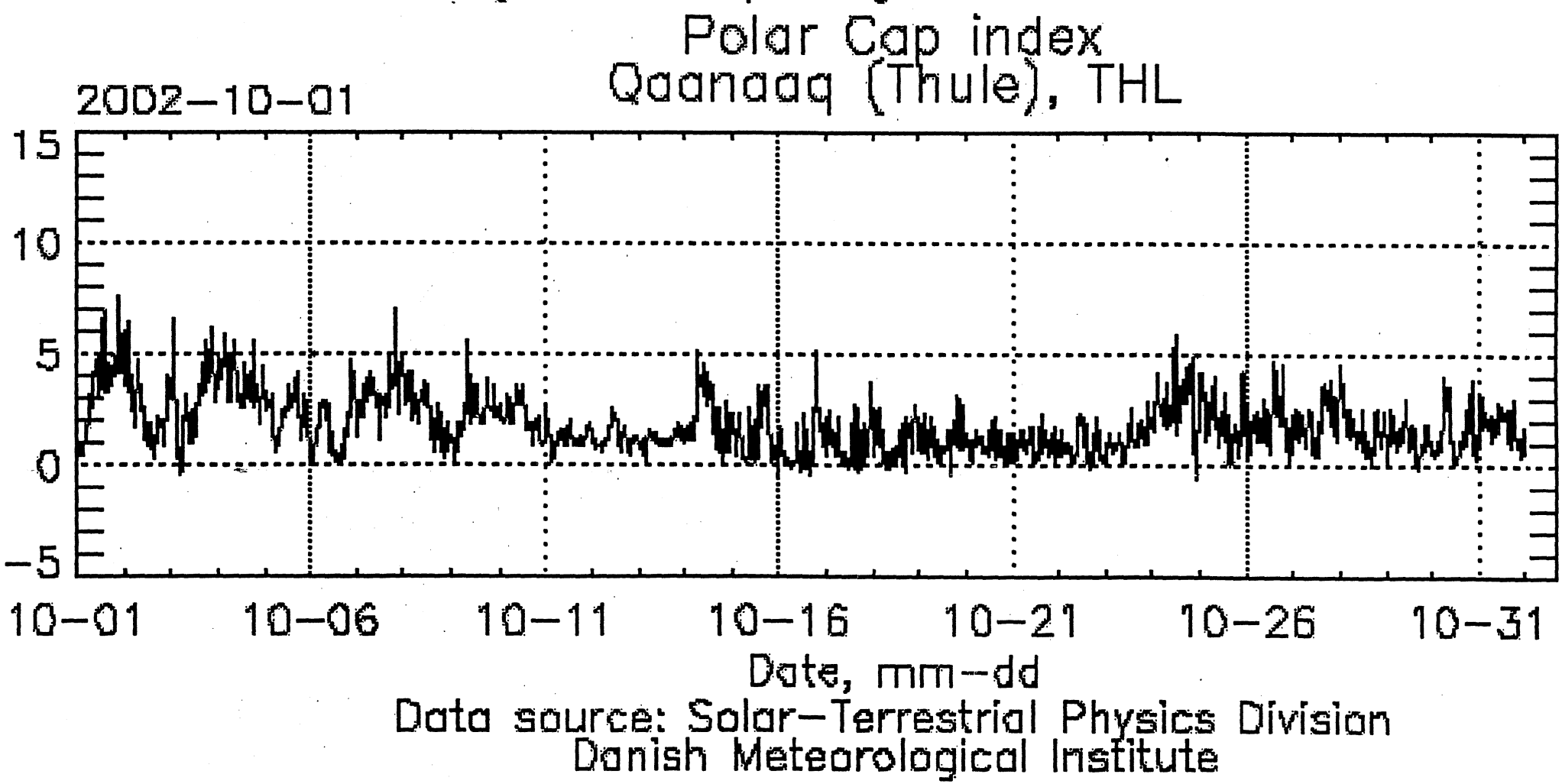
OCTOBER 2002

UNIT=NT U.T.

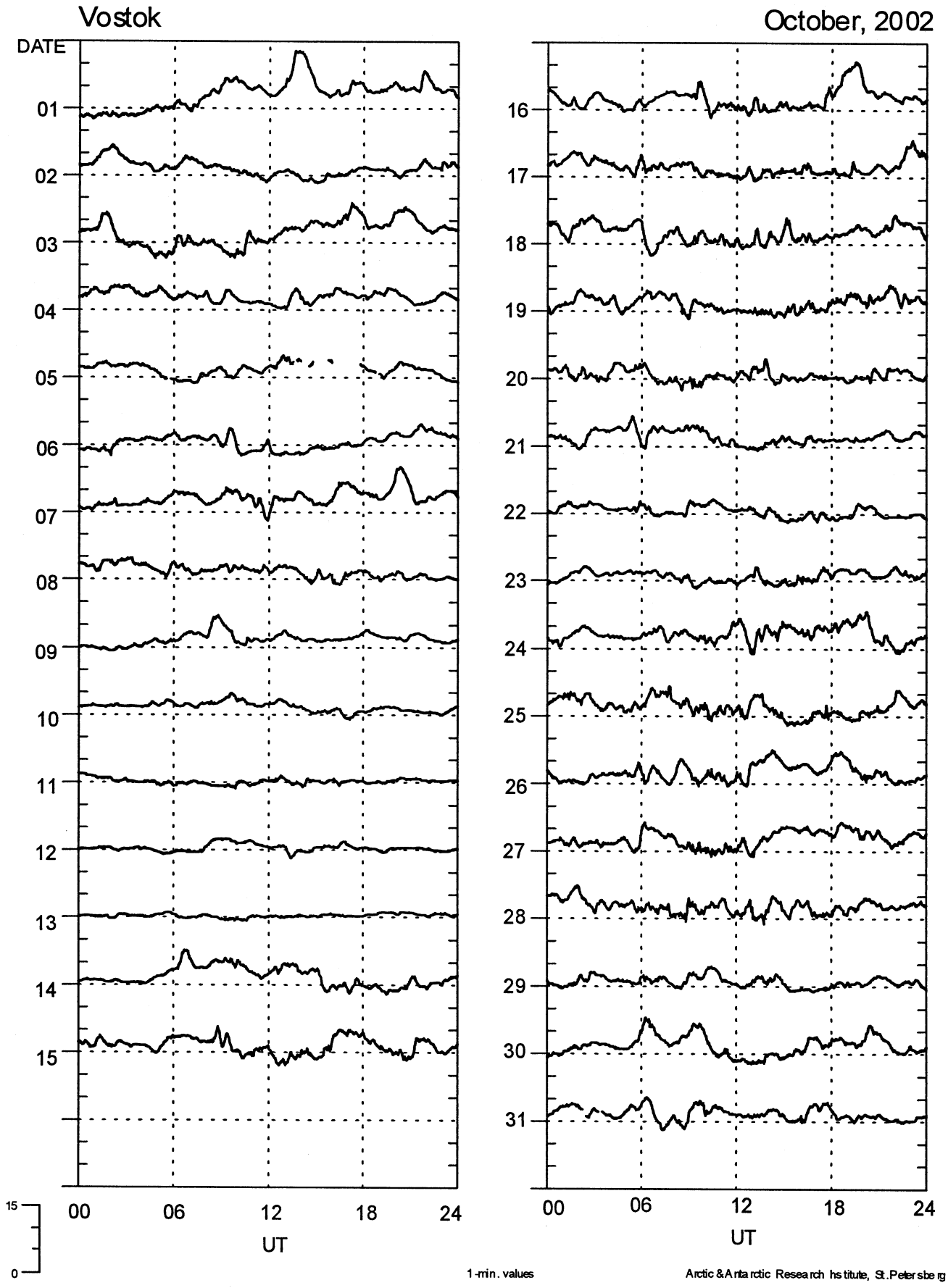
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-25	-18	-13	-13	-12	-15	-19	-21	-35	-58	-96	-135	-166	-159	-168	-183	-173	-154	-157	-156	-159	-141	-127	-130
2	-125	-128	-135	-148	-151	-150	-149	-151	-140	-128	-119	-115	-106	-103	-100	-95	-92	-85	-82	-83	-80	-75	-66	-58
3	-61	-60	-57	-55	-58	-64	-64	-60	-51	-36	-42	-51	-60	-66	-74	-80	-84	-94	-116	-104	-89	-101	-99	-99
4	-109	-110	-95	-90	-104	-124	-136	-143	-142	-127	-119	-108	-109	-98	-90	-90	-92	-92	-71	-74	-81	-82	-74	-74
5	-78	-76	-76	-68	-74	-68	-61	-62	-63	-64	-62	-71	-72	-83	-94	-98	-88	-88	-88	-80	-70	-75	-78	-71
6	-62	-57	-50	-51	-53	-57	-66	-65	-54	-48	-43	-37	-39	-34	-38	-39	-41	-44	-48	-53	-57	-47	-44	-50
7	-51	-45	-56	-69	-82	-87	-97	-107	-92	-83	-78	-79	-76	-80	-84	-84	-79	-81	-89	-87	-83	-91	-88	-78
8	-82	-81	-81	-88	-96	-82	-85	-86	-86	-86	-77	-75	-71	-75	-63	-54	-56	-55	-52	-50	-49	-48	-49	-45
9	-42	-42	-40	-38	-45	-47	-46	-54	-57	-57	-49	-47	-51	-57	-60	-64	-64	-58	-56	-61	-62	-57	-60	-62
10	-61	-61	-60	-63	-69	-70	-67	-68	-64	-61	-60	-55	-56	-59	-59	-57	-57	-50	-45	-43	-42	-39	-37	-37
11	-36	-36	-35	-35	-35	-32	-31	-32	-32	-27	-23	-24	-21	-21	-23	-25	-24	-25	-26	-25	-26	-29	-33	-35
12	-34	-32	-32	-34	-33	-30	-27	-24	-25	-31	-33	-33	-31	-27	-25	-26	-26	-25	-23	-21	-21	-23	-25	-26
13	-27	-29	-30	-25	-21	-21	-23	-21	-20	-19	-15	-15	-14	-15	-17	-17	-18	-19	-19	-21	-22	-25	-26	-29
14	-27	-25	-23	-26	-25	-31	-33	-38	-41	-50	-54	-58	-77	-102	-94	-82	-74	-66	-59	-54	-46	-48	-48	-45
15	-44	-43	-36	-42	-43	-35	-28	-27	-22	-29	-24	-18	-32	-32	-33	-31	-39	-57	-64	-59	-48	-44	-46	-48
16	-46	-41	-36	-36	-40	-42	-39	-32	-29	-25	-23	-20	-16	-17	-15	-14	-14	-16	-35	-51	-57	-50	-50	-54
17	-53	-47	-46	-41	-40	-39	-45	-43	-41	-40	-33	-28	-24	-25	-28	-25	-23	-24	-23	-25	-26	-26	-22	-26
18	-28	-27	-28	-31	-28	-25	-24	-21	-18	-17	-14	-15	-17	-18	-20	-24	-26	-26	-27	-25	-25	-21	-23	-25
19	-25	-26	-23	-22	-22	-26	-24	-22	-19	-20	-18	-17	-17	-14	-14	-16	-17	-16	-20	-22	-20	-20	-18	-19
20	-17	-18	-19	-19	-22	-24	-19	-15	-14	-14	-12	-12	-11	-16	-21	-18	-17	-17	-18	-19	-17	-16	-13	-13
21	-13	-13	-12	-12	-12	-10	-8	-10	-13	-9	-6	-7	-7	-6	-8	-11	-12	-12	-12	-14	-13	-9	-8	-5
22	-5	-3	-1	-3	-7	-11	-11	-10	-7	-7	-13	-13	-18	-21	-15	-13	-12	-12	-12	-9	-14	-13	-11	-12
23	-10	-9	-7	-5	-7	-9	-13	-12	-8	-4	-3	-8	-14	-10	-2	6	2	-1	-12	-14	-15	-7	-16	-17
24	-6	-14	-28	-39	-51	-61	-56	-54	-49	-55	-61	-69	-73	-61	-70	-82	-90	-79	-82	-84	-89	-76	-66	-58
25	-63	-80	-77	-71	-76	-80	-82	-88	-76	-60	-56	-58	-64	-68	-64	-61	-55	-54	-48	-44	-43	-37	-31	-35
26	-43	-37	-32	-33	-40	-35	-35	-34	-33	-38	-23	-27	-29	-34	-45	-51	-55	-47	-44	-55	-48	-44	-38	-33
27	-29	-25	-24	-32	-44	-45	-42	-45	-43	-37	-31	-31	-40	-46	-56	-64	-62	-60	-49	-47	-47	-53	-51	-50
28	-46	-42	-49	-51	-57	-55	-49	-47	-40	-38	-34	-34	-36	-36	-34	-34	-32	-31	-28	-31	-36	-37	-35	-33
29	-32	-29	-30	-37	-42	-42	-38	-36	-33	-35	-26	-29	-27	-24	-22	-23	-18	-12	-16	-18	-18	-17	-15	-9
30	-11	-7	-12	-18	-19	-21	-25	-37	-37	-36	-37	-33	-32	-30	-37	-37	-30	-31	-32	-37	-36	-35	-30	-29
31	-28	-27	-31	-34	-36	-40	-46	-47	-44	-41	-34	-33	-44	-45	-40	-45	-42	-41	-45	-39	-30	-33	-29	-25



WDC C1 for Geomagnetism, Copenhagen



PC INDEX


Vostok
October, 2002
DATE
01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
00
06
12
18
24
UT
15
0
1-min. values
Arctic & Antarctic Research Institute, St. Petersberg

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

OCTOBER 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)
BJI	28.8N	01	0115	SC	1.1	6	0	01(4)	7	14	222	50	02	18
KRC	16.4N	01	1606	SC	- 11	124	54	01(4,6)	7	11	184	63	02	04
UJJ	13.6N	01	0600	..	..	..	..		-	2	247	38	02	15
NGP	11.3N	01	0600	..	..	..	..		-	6	310	30	02	15
ABG	09.4N	01	0600	..	..	..	..	01(4)	7	5	309	39	02	15
HYB	07.6N	01	0300	..	..	..	..	01(5)	8	5	324	39	05	23
PND	02.0N	01	0600	..	..	..	..		-	3	323	116	02	15
TIR	00.6S	01	0600	..	..	..	..		-	5	373	164	02	15
HER	33.6S	01	06--	..	..	..	..	02(6,8)	6	47	234	186	02	12
GNA	43.0S	01	0300	..	..	..	..	01(5,6)	6	40	193	286	02	21
CAN	43.6S	01	0600	..	..	..	..	01(5)	6	26	185	83	02	21
GNA	43.0S	02	2100	..	..	..	..	03(5,6,7,8) 04(3,4) 05(4,5)	5	21	115	173	05	21
CAN	43.6S	02	2100	..	..	..	..	04(3)	6	25	167	77	05	03
KRC	16.4N	03	1700	..	..	..	..	03(7)	6	6	115	49	04	03
UJJ	13.6N	03	0700	..	..	..	..		-	3	130	40	04	22
NGP	11.3N	03	0700	..	..	..	..		-	6	176	27	04	22
ABG	09.4N	03	0700	..	..	..	..	03(7)	6	5	171	51	04	22
PND	02.0N	03	0700	..	..	..	..		-	3	187	116	04	22
TIR	00.6S	03	0700	..	..	..	..		-	4	268	97	04	22
HER	33.6S	03	15--	..	..	..	..	03(7,8) 04(7,8)	5	25	113	118	05	06
UJJ	13.6N	06	2100	..	..	..	..		-	4	94	33	08	19
NGP	11.3N	06	2100	..	..	..	..		-	4	98	30	08	19
ABG	09.4N	06	2100	..	..	..	..	07(5,7)	-	4	105	46	08	19
HYB	07.6N	06	1600	..	..	..	..	07(5,6,7) 08(5)	5	4	148	31	09	23
PND	02.0N	06	2100	..	..	..	..		-	3	121	88	08	19
TIR	00.6S	06	2100	..	..	..	..		-	--	--	--	08	19
HER	33.6S	06	18--	..	..	..	..	07(8)	5	27	93	96	08	21
UJJ	13.6N	14	0630	..	..	..	..		-	4	149	33	14	21
NGP	11.3N	14	0630	..	..	..	..		-	3	192	23	14	21
ABG	09.4N	14	0630	..	..	..	..	14(4)	6	4	180	45	14	21
HYB	07.6N	14	0200	..	..	..	..	14(5)	6	6	197	39	17	09
PND	02.0N	14	0630	..	..	..	..		-	3	195	57	14	21
TIR	00.6S	14	0630	..	..	..	..		-	4	261	72	14	21
HER	33.6S	16	16--	..	..	..	..	16(7)	5	19	59	87	17	09
BJI	28.8N	23	15--	..	..	..	..	24(5)	6	12	139	34	25	19
UJJ	13.6N	23	2200	..	..	..	..		-	4	117	24	15	18
NGP	11.3N	23	2200	..	..	..	..		-	4	134	22	15	18
ABG	09.4N	23	2200	..	..	..	..	24(4)	7	4	140	28	15	18
HYB	07.6N	23	0500	..	..	..	..	24(5,6)	6	6	179	24	26	21
PND	02.0N	23	2200	..	..	..	..		-	3	152	61	15	18
TIR	00.6S	23	2200	..	..	..	..		-	4	200	91	15	18
HER	33.6S	23	10--	..	..	..	..	24(5,8) 25(1)	5	32	139	110	29	12
GNA	43.0S	23	1500	..	..	..	..	24(4,5,6)	5	22	136	171	25	21
KRC	16.4N	24	1100	..	..	..	..	24(4)	6	5	96	68	25	14
CAN	43.6S	24	0600	..	..	..	..	24(4,5,6) 25(5)	5	21	168	51	25	21
GNA	43.0S	26	0600	..	..	..	..	26(6,7)	5	15	85	84	27	03
HYB	07.6N	27	0500	..	..	..	..	27(5,6)	5	4	134	27	31	22

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)

October 2002

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
None			06	0449-0500	MMB KAK KNY
			12	0927-0939	NAG

REPORTING OBSERVATORIES (up to the 4th of December 2002):
SOD NGK VAL BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY GUI HYB GNA HER CNB

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

Note that we have included data of the Antartic Station LIVINGSTONE (62º 39' 44" S, 60º23' 41" W) -- Luis F.